IOWA DEPARTMENT OF AGRICULTURE & LAND STEWARDSHIP

Division of Soil Conservation and Water Quality

Cover Sheet

To:	All plan holders	From:	Tracy Bruun, Division
Pages:	80	Phone:	515-344-6279
Re:	Cal883432B Nutrient Reduction Wetland (Bid 26-08)	Date:	August 21, 2026

Comments:

- Cover Sheet 1
- Addendum No. 1 with Attachments 1, 2 and 3 2-75
- Pre-Bid Meeting Minutes 76-79
- Pre-Bid meeting attendance list/Updated plan holders list 80
- Electronic files for grading can be obtained by e-mail by contacting Spencer Pech with ISG Inc at 563-920-5758 or spencer.pech@isginc.com.

- END OF COVER PAGE -

IOWA DEPARTMENT OF AGRICULTURE & LAND STEWARDSHIP

MIKE NAIG
SECRETARY OF AGRICULTURE

Hoover State Office Building ▪ 1305 E. Walnut Street ▪ Des Moines, IA 50319 ▪ (515) 281.5321 ▪ IowaAgriculture.gov

August 21, 2026

Division of Soil Conservation and Water Quality
1305 E Walnut Street
Des Moines, IA 50319

TO: Prospective Bidders

Subject: **Addendum No. 1** to Bid Documents
CAL883432B Nutrient Reductionl Wetland Project – Bid No. 26-8
Calhoun County, Iowa

This addendum forms a part of the bidding contract documents and modifies the original bidding documents posted July 31, 2026. An updated bidding form, Document CC.– Proposal and Schedule of Prices is attached with the addendum acknowledged. This updated bidding form must be used for 26-8 and all bidders must acknowledge this addendum on Page CC-2. **FAILURE TO DO SO WILL SUBJECT BIDDER TO DISQUALIFICATON.**

Description:

DOCUMENT CC– PROPOSAL AND SCHEDULE OF PRICES, 26-8 (See Attachment No.1)

- Please use the updated Document CC, to acknowledge Addendum No. 1 (See Attachment No. 1):

Plans (See Attachment No. 2)

- Bid Item #25 “Silt fence” has been added; details of the Water Control Structure and CMP slotted riser installation have been modified; clarification of the easement boundary and total easement area are included and the material of the drawdown pipe has been revised to include dual wall HDPE. Attached are the revised set of Plans.

Specifications (See Attachment No. 3)

- The Technical Specifications booklet has also been revised to include the revisions noted in the plans, including the addition of Bid Item #25 “Silt fence” to Specifications IA CS-005 “Pollution Control” and details of the sign installation to be provided by IDALS. Attached are the revised set of Technical Specifications.

Sincerely,

Sara Smith, P.E.

Sara Smith, P.E.
Water Resources Bureau

Attachment No. 1 – Updated Document CC
Attachment No. 2 – Revised set of Plans
Attachment No. 3 – Revised set of Technical Specifications

End of Addendum No. 1

The Iowa Department of Agriculture and Land Stewardship is an equal opportunity employer and provider.

Time and Date for Bid Submissions: 3:00 PM, 08/26/2026
BIDDER LOGIN –
https://solutions.sciquest.com/apps/Router/SupplierLogin?CustOrg=DASIowa

Time and Date of Bid Opening: 3:00 PM, August 26, 2026

Bid Opening TEAMS: +1 469-998-7627,,352050218#

Project Description and Location: Cal883432B Nutrient Reduction Wetland Project
Section 32, Township 88 North, Range 34 West
Calhoun County, Iowa

PROPOSAL AND SCHEDULE OF PRICES

Proposal of

_____

(PRINT Name of Bidder: COMPANY & CONTACT)

Located at _____

(FULL Address)

(_____) _____

(Telephone Number)

Amount of Proposal Guarantee	Description of Work	Specified Completion Date	Liquidated Damages
10% of Base Bid	All Work Except Seeding	June 15, 2027	$175.00 Per Day
	Seeding - Buffer Seeding – Structure	06/30/2027 09/15/2027	$125.00 Per Day
	Seeding must be done within the respective seeding period		

The undersigned hereby agrees, if awarded the contract, to execute the proposed contract and to furnish satisfactory Performance Bond in an amount not less than one hundred percent (100%) of the contract award within fourteen (14) days from the date when Notice-of-Award is received, and to provide all supervision, labor, materials, and equipment required to complete the project designated above, for the prices hereinafter set forth, in strict compliance with the Contract Documents prepared by the Division.

Further, the parties agree and acknowledge as follows:

- The amount of loss or damages likely to be incurred by Division are uncertain and said loss is incapable or very difficult to quantify and estimate;
- The amount specified for liquidated damages herein bear a reasonable relationship to, and are not plainly or grossly disproportionate to, the probable loss likely to be incurred by Division in connection with any delay on part of the Contractor;
- The amount of liquidated damages fixed herein bears a reasonable relationship to Division's anticipated losses and/or actual losses;
- The amount of liquidated damages herein fairly approximates Division's loss at the time of making of this Agreement;

- The amount of liquidated damages fixed herein are fair and reasonable and it approximates to the extent possible the actual loss to Division as a result of any delay on the part of Contractor; and
- Division and Contractor are sophisticated parties and negotiated this Agreement at arm's length.

Now therefore, in consideration of the mutual obligations set forth herein, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

- Contractor will commence the work after the Preconstruction Conference and by the Construction Start Date approved by Division in the Construction Progress Schedule.
- Contractor will complete the work within the specified time period identified in the contract, or as amended, or be responsible for liquidated damages per day as set forth in the above table.
- The liquidated damages may be withheld from payments made to the Contractor by the Division upon written notice that liquidated damages have begun to accrue, and such damages are in addition to other remedies available as provided for in this contract and applicable law.

A Proposal Guarantee in the amount stipulated herein is included with this proposal, to be forfeited to the Division, if the undersigned fails or refuses to execute the contract and furnish satisfactory Performance Bond, if awarded the contract.

By _____
(Signed)

_____
(PRINT NAME)

_____
(Title) (Date)

In executing this proposal, Bidder acknowledges receipt of Addendum Number 1 dated 08/21/2026

In executing this proposal, Bidder acknowledges receipt of Addendum Number _____ dated _____

In executing this proposal, Bidder acknowledges receipt of Addendum Number _____ dated _____

THE FOLLOWING AFFIDAVIT MUST BE COMPLETED AND NOTARIZED, OR THIS BID WILL BE REJECTED

AFFIDAVIT

The signatory, being duly sworn, does depose and say that the undersigned is an authorized representative of:

_____
(Name of Firm)

Located at _____

hereinafter referred to as "Bidder" and does hereby affirm to have personal knowledge that said Bidder has thoroughly examined the Contract Documents, carefully prepared the Proposal and Schedule of Prices form, and has checked the same in detail before submitting; and that said Bidder, or the agents, officers, or employees thereof, have not, either directly or indirectly, entered into any agreement, participated in any collusion or fraud, or otherwise taken any action in restraint of free competitive bidding in connection with this bid.

_____
(Signed)

_____
(PRINT name)

Subscribed and sworn to before me this _____ day

of _____, 20____

_____
(Signed, Notary)

My Commission Expires _____, 20_____

Must include notary stamp

SCHEDULE OF PRICES

Cal883432B Project
Contract No. 26-08
Section 32, Township 88 North, Range 34 West, Calhoun County, Iowa

Name of Bidder:

IMPACS Item No.	Eng's Item No.	Work or Material	Spec No.	Est Qty	Unit	Unit Price	Total
1.1	1	Site Stripping and Preparation (Wetland)	IA-CS-001	1	LS		
1.2	2	Site Stripping and Preparation (Wasting)	IA-CS-001	1	LS		
1.2	3	Crop Damage	IA-CS-001	0	AC		
1.3	4	Structure, waterway & channel seeding	IA-CS-006	1	AC		
1.4	5	Buffer Seeding	IA-CS-006	3	AC		
1.5	6	Temporary Seeding	IA-CS-006	1	AC		
1.6	7	Mobilzation & Demobilization	CS-008	1	LS		
1.7	8	Drain Tile Investigation	IA-CS-009	2	HR		
1.8	9	Connecting to Existing Tile	IA-CS-009	1	EA		
1.9	10	Cap Existing Tile	IA-CS-009	1	EA		
1.10	11	Excavation (General)	IA-CS-021	4,269	CY		
1.11	12	Earthfill (General)	IA-CS-023	2,551	CY		
1.12	13	Earthfill (Wasting)	IA-CS-023	1,889	CY		
1.13	14	Drainfill	IA-CS-024	18	TN		
1.14	15	Topsoil Placement	IA-CS-026	5,174	CY		
1.15	16	Tied Concrete Block Mat	IA-CS-031	2,750	SF		
1.16	17	Water Control Structure Assembly	IA-CS-045	1	EA		
1.17	18	Trench Drain	IA-CS-046	1	EA		
1.18	19	Corrugated Polyethylene Pipe (Non-perforated)	IA-CS-046				
1.18	19A	12-inch Diameter	IA-CS-046	581	LF		
1.19	19B	10-inch Diameter	IA-CS046	148	LF		
1.20	20	Slotted 18-inch CMP Riser Structure	IA-CS-051	1	EA		
1.22	21	CMP Tile Outlets with Animal Guard	IA-CS-051				
1.21	21A	15-inch diameter by 20 feet	IA-CS-051	1	EA		
1.22	21B	12-inch diameter by 20 feet	IA-CS-051	1	EA		
1.23	22	Riprap. IDOT Class E	IA-CS-061	15	TN		
1.24	23	Erosion Stone	IA-CS-061	16	TN		
1.25	24	Straw Wattle	IA-CS-005	100	LF		
1.26	25	Silt Fences	IA-CS-005	1325	LF		

TOTAL BASE BID……$_____

Worksheet purposes only. Bids will only be accepted through the on-line Iowa Management of Procurement & Contracts System (IMPACS). To register and learn about IMPACS, go to:
https://solutions.sciquest.com/apps/Router/SupplierLogin?CustOrg=DASIowa

END OF DOCUMENT CC

Attachment No. 2

Revised set of Plans

IDALS CAL883432B
NUTRIENT REDUCTION WETLAND
CALHOUN COUNTY, IOWA
CONSTRUCTION PLANS
ISG PROJECT # 24-30402

IA NRCS JOB CLASS III

TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, JUDGEMENT, BELIEF, THE PLANS MEET APPLICABLE NRCS STANDARDS.

ENGINEER'S SIGNATURE DATE

CONTRACTOR IS RESPONSIBLE FOR CALLING IOWA ONE CALL

ONE CALL TICKET NO.

I HAVE REVIEWED AND AGREE WITH THE CONTENTS OF THE PLAN AND SPECIFICATIONS AS PREPARED.

LANDOWNER SIGNATURE DATE

IF A CULTURAL RESOURCE IS IDENTIFIED DURING CONSTRUCTION, WORK WILL STOP IMMEDIATELY AND THE LOCAL NRCS FIELD OFFICE WILL BE NOTIFIED.

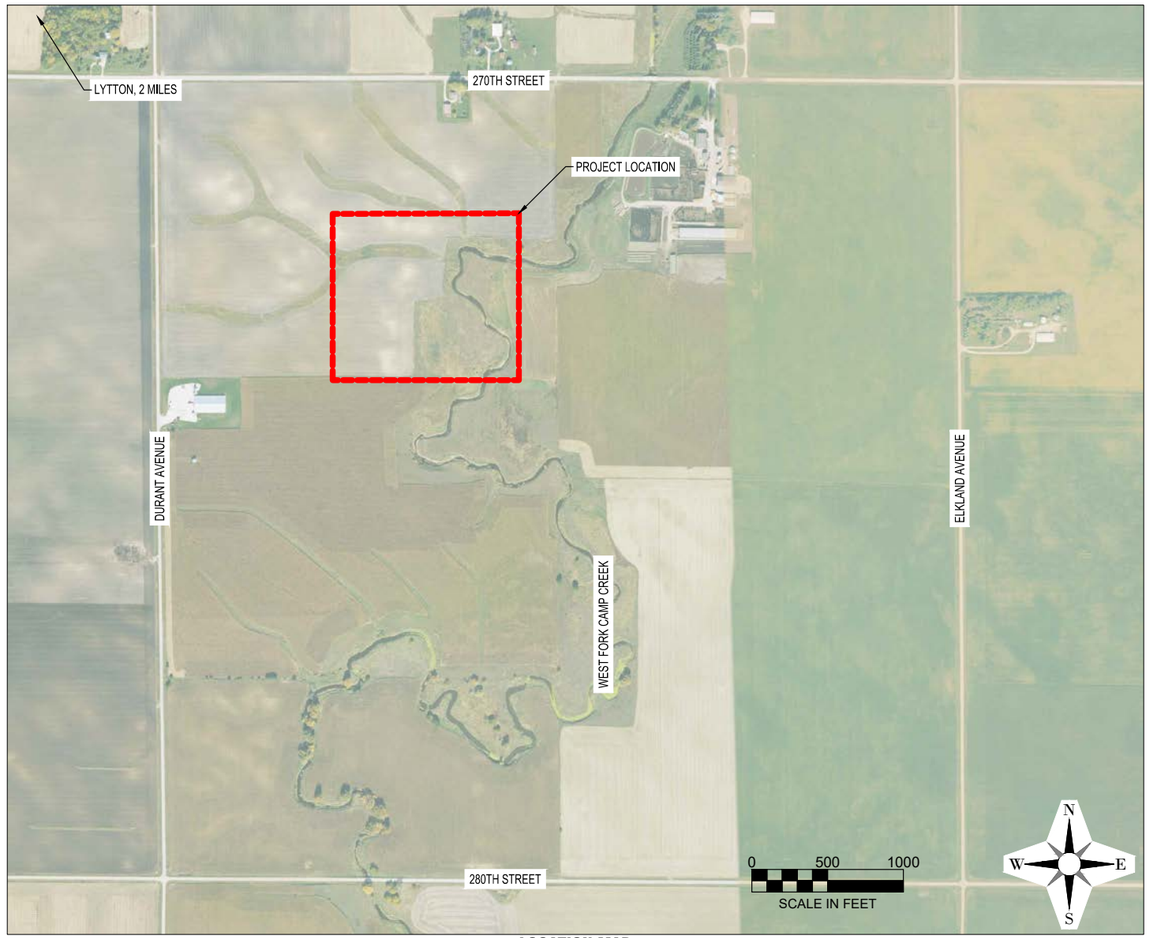
I CERTIFY THAT THIS PRACTICE HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.

CONTRACTORS SIGNATURE DATE

ENGINEER'S REP. SIGNATURE DATE

SHEET INDEX

C0-10 TITLE
C0-20 NOTES AND QUANTITIES
C0-30 DETAILS
C0-31 DETAILS
C0-32 DETAILS
C0-33 DETAILS
C1-10 SITE RESTORATION PLAN
C2-10 EXISTING SITE - WATERSHED
C3-10 SITE PLAN
C3-20 INLET PLAN & PROFILE
C3-21 OUTLET PLAN & PROFILE
C4-10 GRADING PLAN
C4-20 CUT - FILL
C4-30 CROSS SECTION



LOCATION MAP

SEAL

LICENSED PROFESSIONAL ENGINEER
SPENCER DEAN PECH P28161
IOWA

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.

Spencer D Pech 8-19-2026

(signature) (date)

Printed or typed name SPENCER DEAN PECH

License number 25713

My license renewal date is December 31, 2026

Pages or sheets covered by this seal:
REVISIONS ON SHEETS C0-10, C0-20, C0-30, C0-31, C1-10, C3-10, AND C3-21

SEAL

LICENSED PROFESSIONAL ENGINEER
CALEB RASMUSSEN 25713
IOWA

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.

Caleb Rasmussen 2-13-2025

(signature) (date)

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

TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, JUDGEMENT, AND BELIEF, THESE PLANS MEET THE APPLICABLE NRCS STANDARDS AND APPLICABLE LAWS AND REGULATIONS.

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

1. 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.
2. 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.
3. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES OR CONDITIONS REQUIRING INFORMATION OR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
4. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES OR CONDITIONS REQUIRING INFORMATION OR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
5. 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.
6. 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.
7. ALL DISSIMILAR METALS SHALL BE EFFECTIVELY ISOLATED FROM EACH OTHER TO AVOID GALVANIC CORROSION.
8. 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.
9. 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).

PROJECT INDEX:

OWNER:

IDALS
WATER RESOURCES BUREAU
HOOVER STATE OFFICE BUILDING
1305 E. WALNUT STREET
DES MOINES, IA 50319

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

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.

B.M. ELEVATION=1216.76
CUT "X" IN TOP OF RCP CULVERT SOUTH SIDE OF FIELD DRIVE ALONG DURANT AVE AND SOUTH PROPERTY LINE.

TOPOGRAPHIC SURVEY

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

IOWA DEPARTMENT OF AGRICULTURE & LAND STEWARDSHIP

IOWA ONE CALL
1-800-292-8989
www.iowaonecall.com

SHEET NOT VALID UNLESS THIS TEXT IS COLOR.

THIS DOCUMENT IS THE PROPERTY OF I & S GROUP, INC. AND MAY NOT BE USED, COPIED OR DUPLICATED WITHOUT PRIOR WRITTEN CONSENT.

PROJECT
IDALS CAL883432B NUTRIENT REDUCTION WETLAND
CALHOUN COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY
8-18-2026	REVISIONS FOLLOWING PRE-BID MEETING	HLC

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

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.
19. IDALS AND ISG DO NOT GUARANTEE THE WETLAND WILL FILL OR REMAIN FILLED WITH WATER.

TILE INSTALLATION

20. 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.
21. 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.
22. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ALL TILE FOUND DURING THE TILE INVESTIGATION AND DURING WETLAND EXCAVATION.
23. CONTRACTOR SHALL MAKE EFFORT TO SEGREGATE ORGANIC TOPSOIL TO MINIMUM DEPTH OF 12 INCHES FOR ALL TILE WORK OUTSIDE OF EXCAVATION AND FILL AREAS.
24. 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.
25. 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.
26. 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

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

CONSERVATION PRACTICE STANDARDS

PRIMARY

656: CONSTRUCTED WETLAND

SUPPORTING

327: CONSERVATION COVER
342: CRITICAL AREA PLANTING
356: DIKE OR LEVEE
587: STRUCTURE FOR WATER CONTROL
606: SUBSURFACE DRAIN
620: UNDERGROUND OUTLET

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	-	Structure, waterway, & channel seeding	IA CS-006	1.0	AC	
5	-	Buffer seeding	IA CS-006	3.0	AC	
6	-	Temporary Seeding	IA CS-006	1.2	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	18	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	
24	-	Straw Wattle	IA-CS-005	100	LF	
25	-	Silt Fence	IA-CS-005	1325	LF	

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	-	Structure, waterway, & channel seeding	IA CS-006	X	Inspection: seed bed preperation Review: visual
5	-	Buffer seeding	IA CS-006	X	Inspection: seed bed preperation Review: visual
6	-	Temporary 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 earthern 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-046	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
	B.	12" x 20'	IA CS-051	X	Review: visual
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
24	-	Straw Wattle	IA-CS-005	X	Inspection: Verify proper installation and total linear feet of material Review: visual
25	-	Silt Fence	IA-CS-005	X	Inspection: Verify proper installation and total linear feet of material Review: visual

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

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PROJECT

IDALS CAL883432B NUTRIENT REDUCTION WETLAND

CALHOUN COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY
8-13-2026	ADD SILT FENCE TO IOW & INSPC	HLC

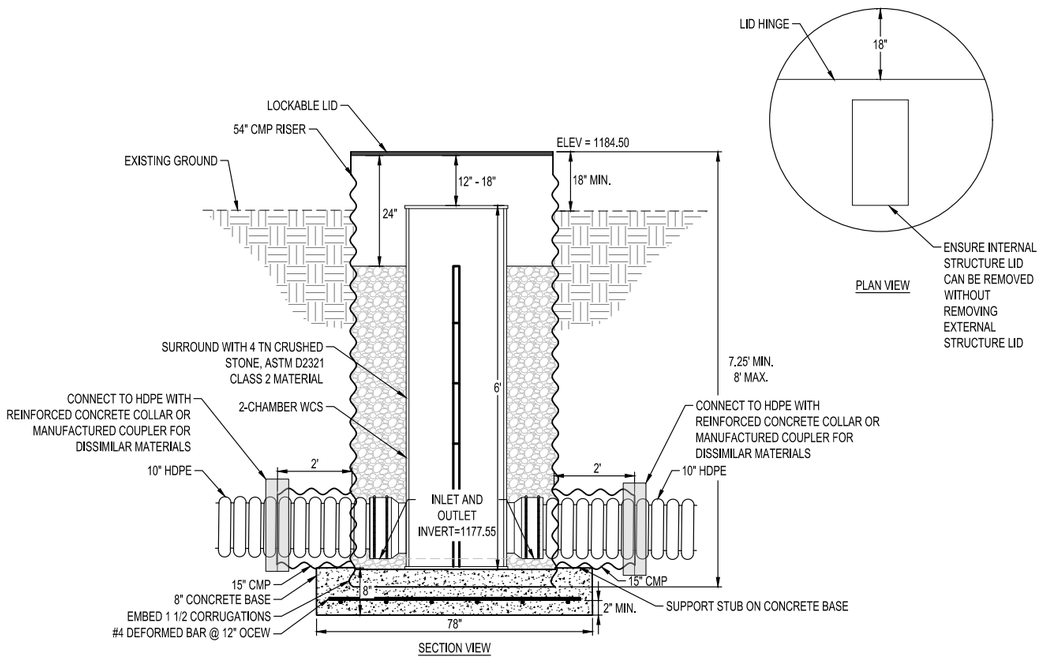
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FILE NAME	30402-C0-DETAILS
DRAWN BY	JAT
DESIGNED BY	HPT
REVIEWED BY	CDR
ORIGINAL ISSUE DATE	2-13-2025
CLIENT PROJECT NO.	-

TITLE

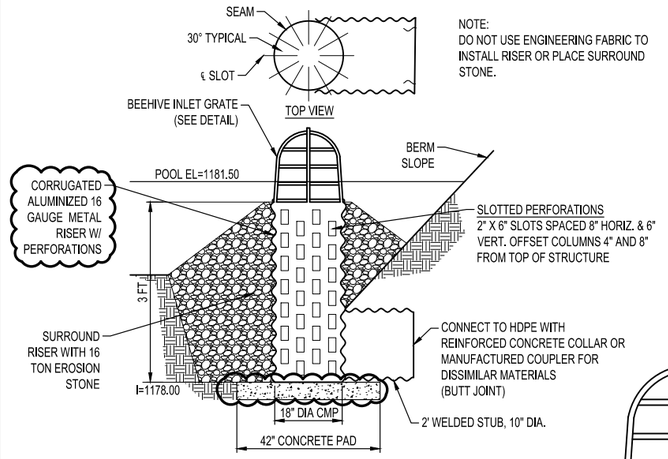
NOTES AND QUANTITIES

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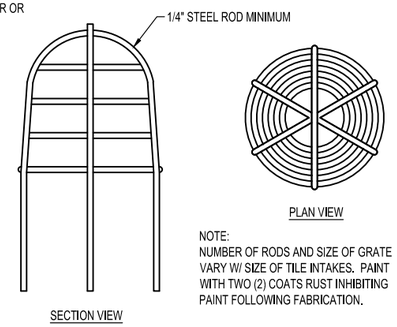
C0-20



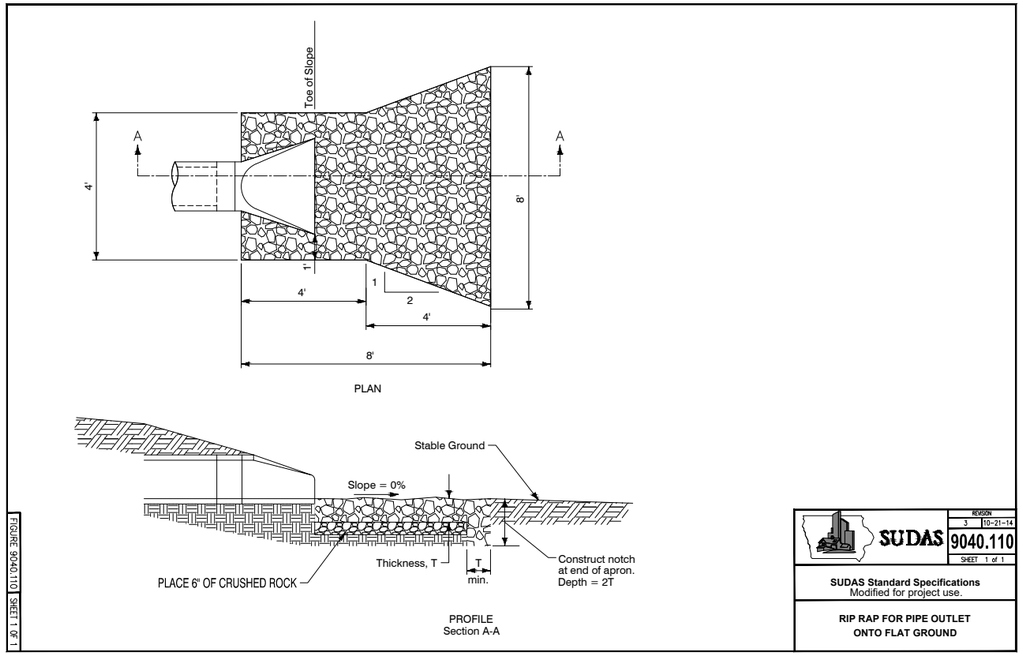
WATER CONTROL STRUCTURE
NTS



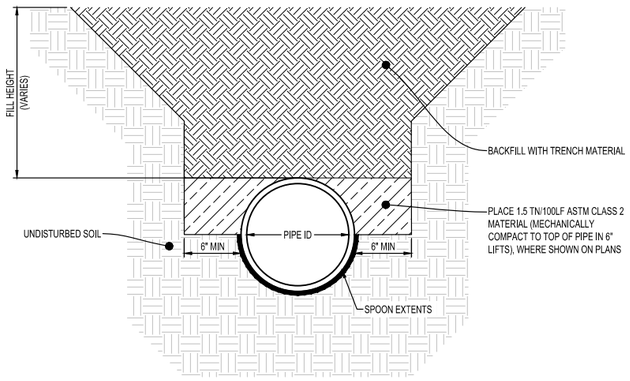
CMP SLOTTED INTAKE RISER
NTS



BEEHIVE INLET GRATE (STEEL BARS)
NTS



NOTE: IN LIEU OF FABRIC USE 1.5TN ASTM CLASS 2, 6 INCH THICK



NOTES:

1. ASTM CLASS 2 AND BACKFILL SHALL BE INCIDENTAL TO CONSTRUCTION.
2. SPOON DIMENSIONS SHALL COMPLY WITH PIPE MANUFACTURER'S SPECIFICATIONS.
3. THE FIRST LIFT OF BACKFILL SHALL BE PLACED WITH AN EXCAVATOR WITH NO MORE THAN 2' OF DROP.
4. 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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REVISION SCHEDULE

DATE	DESCRIPTION	BY
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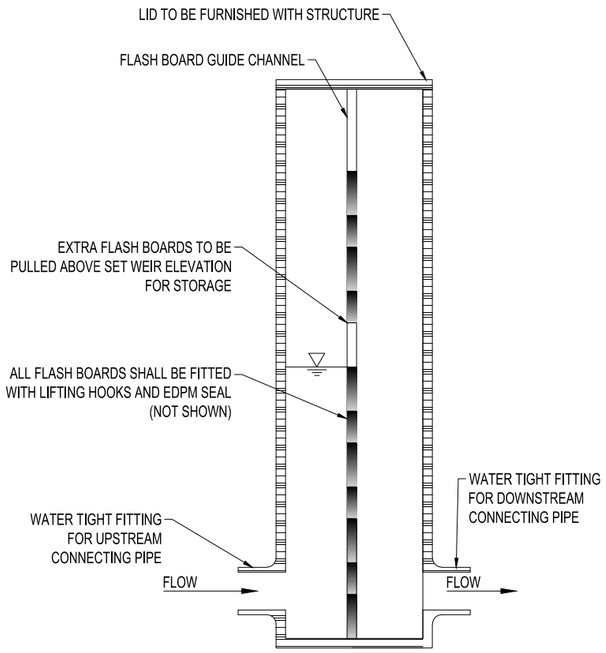
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TITLE

DETAILS

SHEET

C0-30



OPTION 1
WATER CONTROL STRUCTURE DETAIL
NTS

OPTION 1 WCS SPECIFIC:

1. FLASH BOARDS SHALL BE PVC.
2. ALL RIVETS SHALL BE STAINLESS STEEL.
3. FLASHBOARD CHANNEL SHALL BE ANODIZED ALUMINUM.
4. FLASHBOARDS WILL REMAIN IN STRUCTURE DURING INSTALLATION.
5. FLASHBOARDS SHALL BE LUBRICATED UPON REMOVAL.

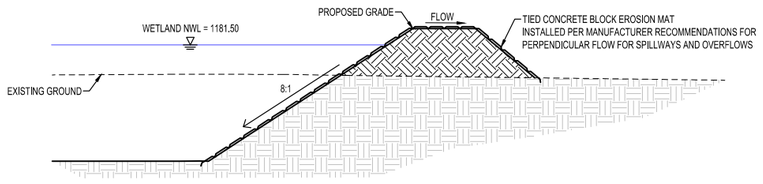
WCS GENERAL NOTES:

1. TOOL TO REMOVE FLASHBOARDS/ACTUATE VALVE IS TO REMAIN IN WCS FOLLOWING INSTALLATION.
2. FOR INLET ADAPTER, MAX SIZE IS TWO SIZES DOWN FROM STRUCTURE SIZE (I.E. 8" ADAPTER ON 12" STRUCTURE.
3. 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.
4. WATER CONTROL STRUCTURES WILL HAVE A MINIMUM OF 20' NONPERFORATED PIPE BETWEEN WATER CONTROL STRUCTURE AND DITCH.
5. ~~ONE ANTISEEP COLLAR WILL BE INSTALLED ON THE 20' OF NONPERFORATED PIPE BETWEEN THE WATER CONTROL STRUCTURE AND DITCH.~~
6. FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION OF WATERTIGHT TEE, INCLUDING MINIMUM ANGLE OF SEPARATION.
7. WATER TIGHT TEE, QUANTITY, AND INSTALLATION METHOD DEPENDENT ON WCS MANUFACTURER.
8. FINAL CONFIGURATION OF WATER CONTROL STRUCTURES WILL BE DETERMINED BY AVAILABILITY FROM THE MANUFACTURER.
9. COMPONENTS OF WATER CONTROL STRUCTURES MAY BE PRICED SEPARATELY DEPENDING ON THE SUPPLIER.

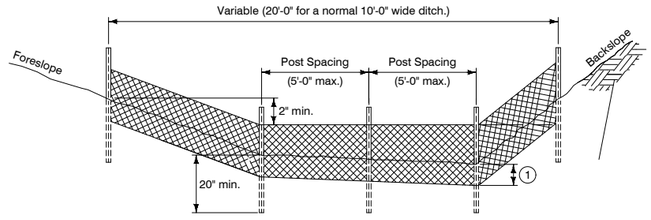
NRCS NOTES*:

1. WATER CONTROL STRUCTURE (WCS) MATERIALS AND INSTALLATION SHALL BE IN CONFORMANCE WITH IOWA NRCS CONSTRUCTION SPECIFICATION (CS) IA-45, PLASTIC (PVC, PE) PIPE.
2. 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.
3. 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.
4. WCS SHALL PROVIDE FLOW CAPACITY EQUAL TO OR GREATER THAN THAT OF ADJACENT PIPE UNDER EXPECTED FLOW CONDITIONS.
5. STOP BOARDS SHALL PROVIDE A WATER-TIGHT SEAL UNDER 4 FT OF PRESSURE HEAD (MIN.).
6. 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.
7. STOP BOARD REMOVAL TOOL SHALL BE PROVIDED.
8. 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).
9. ALL CONNECTIONS SHALL BE WATER-TIGHT.
10. STRUCTURE LID SHALL BE PROVIDED ~~WITH LOCKING MECHANISM~~.
11. BACKFILL AROUND THE WCS SHALL MEET THE REQUIREMENTS OF CS IA-45. NORMAL STOP BOARD OPERATION SHALL BE VERIFIED FOLLOWING BACKFILL.
12. ~~MARK LOCATION OF EACH STRUCTURE USING POST OR MANUFACTURED MARKER FLAG FOR SAFETY IN THE FIELD~~

*FROM USDA-NRCS IA-1530 STANDARD DRAWING
STRIKEOUT ITEMS ARE NOT REQUIRED FOR THIS SET

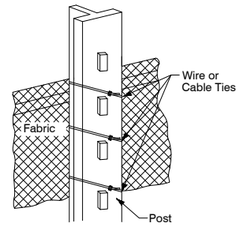


AUXILIARY SPILLWAY
WITH CONCRETE EROSION MAT
NTS



TYPICAL SILT FENCE DITCH CHECK

1 Insert 12 inches of fabric a minimum of 6 inches deep (fabric may be folded below the ground line).



ATTACHMENT TO POST

SUDAS
REVISION 2 10-21-14
9040.119
SHEET 1 of 1

SUDAS Standard Specifications

SILT FENCE

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PROJECT

IDALS CAL883432B NUTRIENT REDUCTION WETLAND

CALHOUN COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY
8-13-2026	ADDED SILT FENCE DETAIL	HLC

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

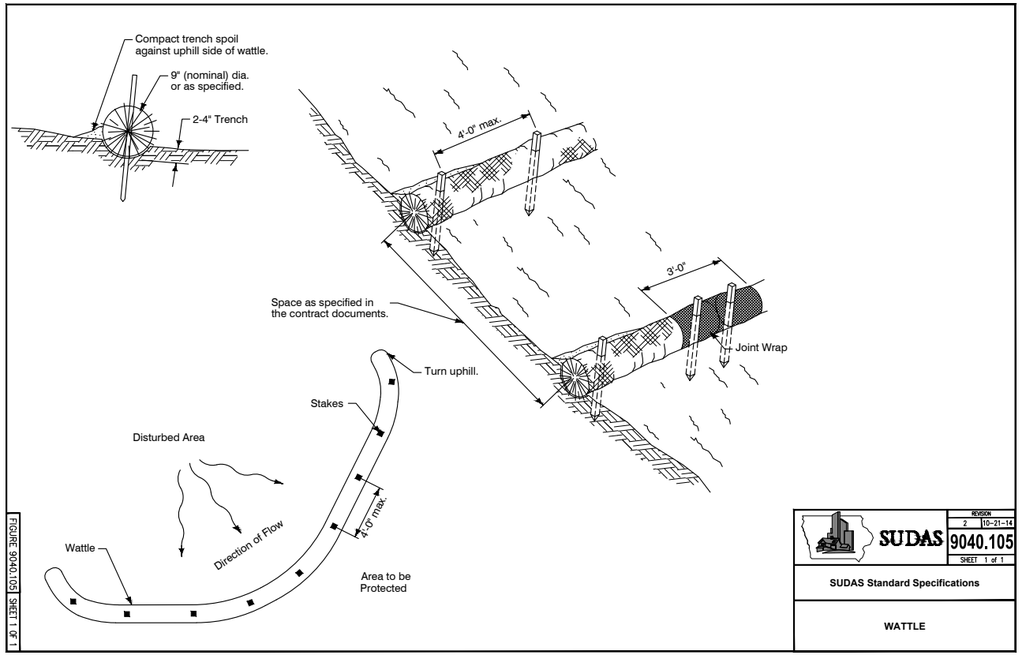


FIGURE 9040.105 SHEET 1 OF 1

SUDAS | REVISION 2 10-21-14 | 9040.105 | SHEET 1 of 1

SUDAS Standard Specifications

WATTLE

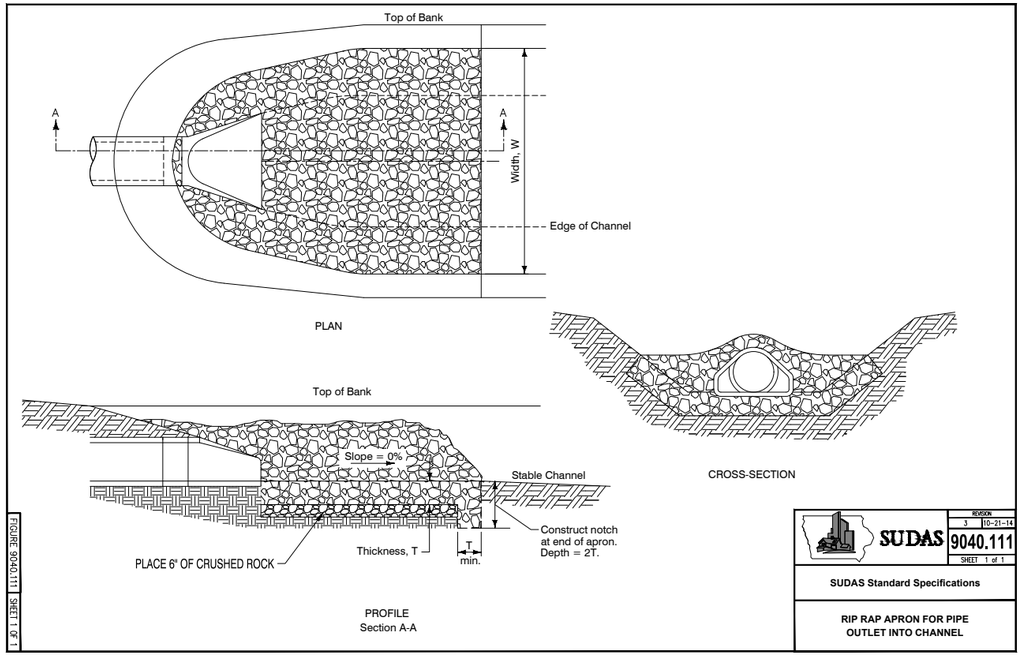
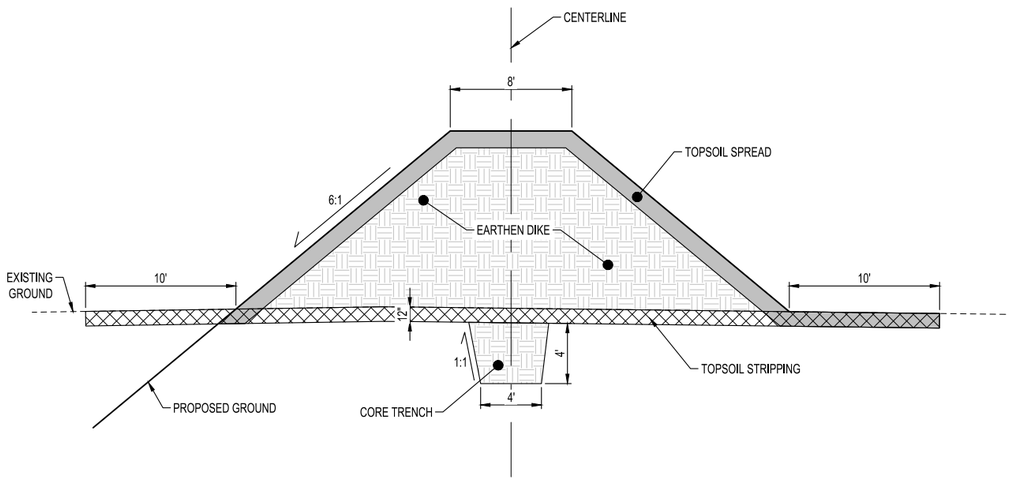


FIGURE 9040.111 SHEET 1 OF 1

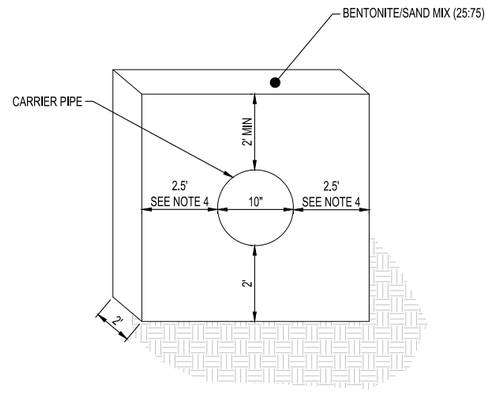
SUDAS | REVISION 3 10-21-14 | 9040.111 | SHEET 1 of 1

SUDAS Standard Specifications

RIP RAP APRON FOR PIPE OUTLET INTO CHANNEL



DIKE AND CORE TRENCH
TYPICAL SECTION
NTS



TRENCH DAM
NTS

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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CALHOUN COUNTY IOWA

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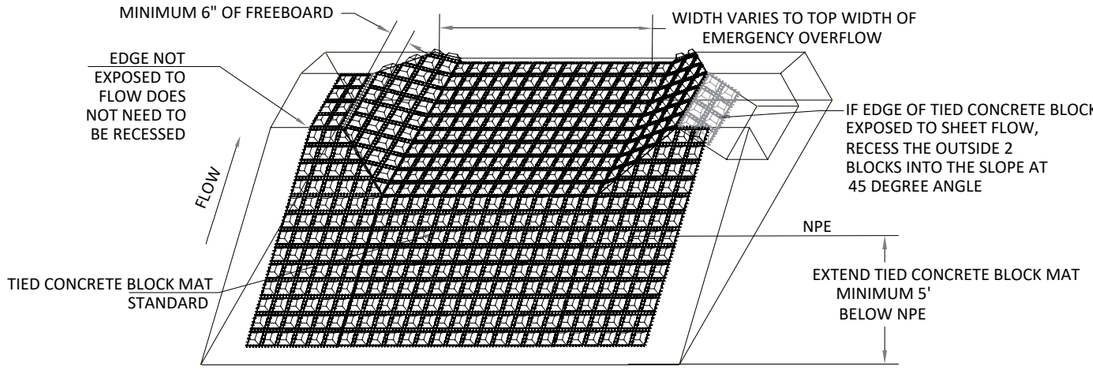
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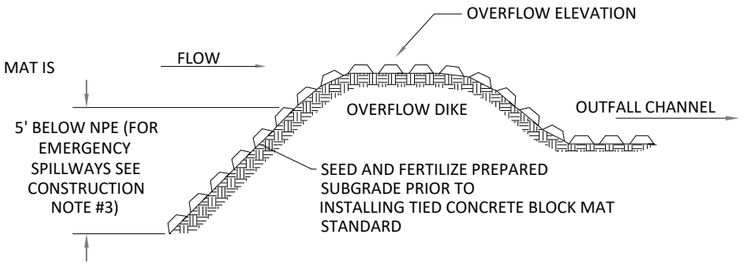
SHEET

C0-32

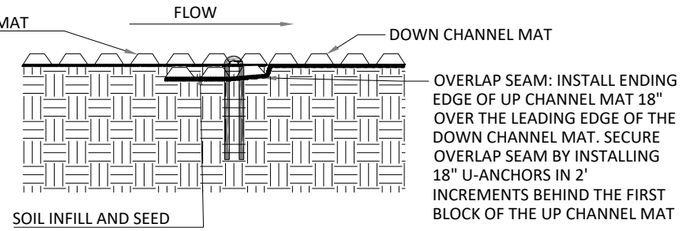
EMERGENCY SPILLWAY - ISOMETRIC VIEW



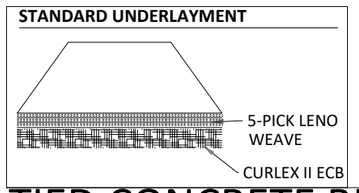
OVERFLOW DIKE - PROFILE VIEW



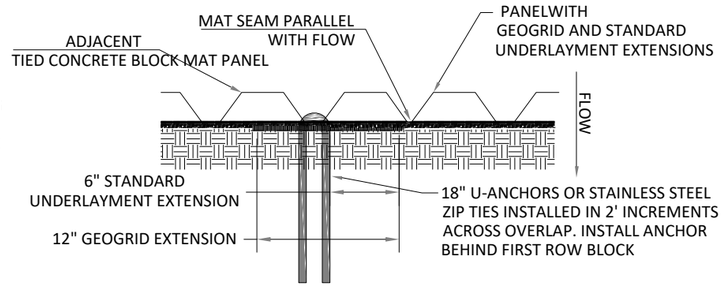
1. OVERLAP METHOD FOR SEAMS PERPENDICULAR TO FLOW



STANDARD UNDERLAYMENT



2. OVERLAP METHOD FOR SEAMS PARALLEL TO FLOW



TIED CONCRETE BLOCK MAT - OVERFLOW CHANNEL PARALLEL TO FLOW

CONSTRUCTION NOTES:

1. AN ENGINEER OR MANUFACTURERS REPRESENTATIVE SHALL BE ONSITE FOR THE START OF THE INSTALLATION.
2. ALL SUBGRADE SURFACES PREPARED FOR PLACEMENT OF MATS SHALL BE SMOOTH AND FREE OF ALL ROCKS, STICKS, ROOTS, OTHER PROTRUSIONS, OR DEBRIS OF ANY KIND. THE PREPARED SURFACE SHALL PROVIDE A FIRM UNYIELDING SUBGRADE FOR THE MATS.
3. PRIOR TO THE TIED CONCRETE BLOCK MAT INSTALLATION SEED AND FERTILIZE SUBGRADE WITH SITE SPECIFIC SEED MIX IN ACCORDANCE WITH THE PROJECT PLANS AND SPECIFICATIONS.
4. MAT SHALL EXTEND 5' BELOW NORMAL POND ELEVATION. (FOR EMERGENCY OVERFLOW INSTALLATIONS EXTEND THE MAT 3' DOWN THE INSIDE FACE OF THE OVERFLOW DIKE.)
5. INSTALL TIED CONCRETE BLOCK MAT ROLLS. MANUFACTURER RECOMMENDS INSTALLING THE WIDEST MAT POSSIBLE FOR SPILLWAY APPLICATIONS.
   - 5.1. FOR WIDTHS WIDER THAN 16', INSTALL 15.5' WIDE MATS WITH GEOGRID AND STANDARD UNDERLAYMENT EXTENSIONS. INSTALL ADJACENT MAT OVER THE 12" GEOGRID AND 6" STANDARD UNDERLAYMENT EXTENSIONS OF THE ADJACENT MATS. ENSURE THE GEOGRID AND STANDARD UNDERLAYMENT EXTENSIONS ARE LAYING FLAT ON THE SUBGRADE BEFORE INSTALLING ADJACENT MAT OVER THE EXTENSIONS. INSTALL #3 REBAR 18" U-ANCHORS IN 2' INCREMENTS ACROSS THE GEOGRID AND STANDARD EXTENSION ABUTMENT. INSTALL ANCHORS PERPENDICULAR TO THE FLOW DIRECTLY BEHIND FIRST ROW OF BLOCKS ON THE ADJACENT MAT.
   - 5.2. FOR ADDITIONAL SECTIONS OF MAT, OVERLAP THE DOWNSTREAM SECTION 18" WITH UPSTREAM SECTION OF MAT. PRIOR TO INSTALLING OVERLAP, FLIP UPSTREAM MAT BACK 24". EXCAVATE 2.25" OF SOIL 18" FROM THE END OF THE UPSTREAM MAT. DOWNSTREAM SECTION IS THEN LAID IN THE SHALLOW TRENCH. RETURN AND TAMP SOIL OVER INITIAL EDGE AND SEED AREA. FLIP END OF UPSTREAM MAT OVER THE SOIL COVERED INITIAL LEADING EDGE. SEED AND FERTILIZE SOIL INFILL PRIOR TO FLIPPING END OF UPSTREAM MAT OVER THE SOIL COVERED INITIAL LEADING EDGE OF DOWNSTREAM MAT. SECURE PERPENDICULAR OVERLAP SEAMS BY INSTALLING #3 REBAR - 18" U ANCHORS PERPENDICULAR TO FLOW IN 2' INCREMENTS.
6. AT THE END OF THE ARMORED SPILLWAY, EMBED THE MAT 18" IN A TERMINATION TRENCH. FILL AND COMPACT TERMINATION TRENCH WITH SUITABLE FILL. (AS SPECIFIED BY EOR.)

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CALHOUN COUNTY IOWA

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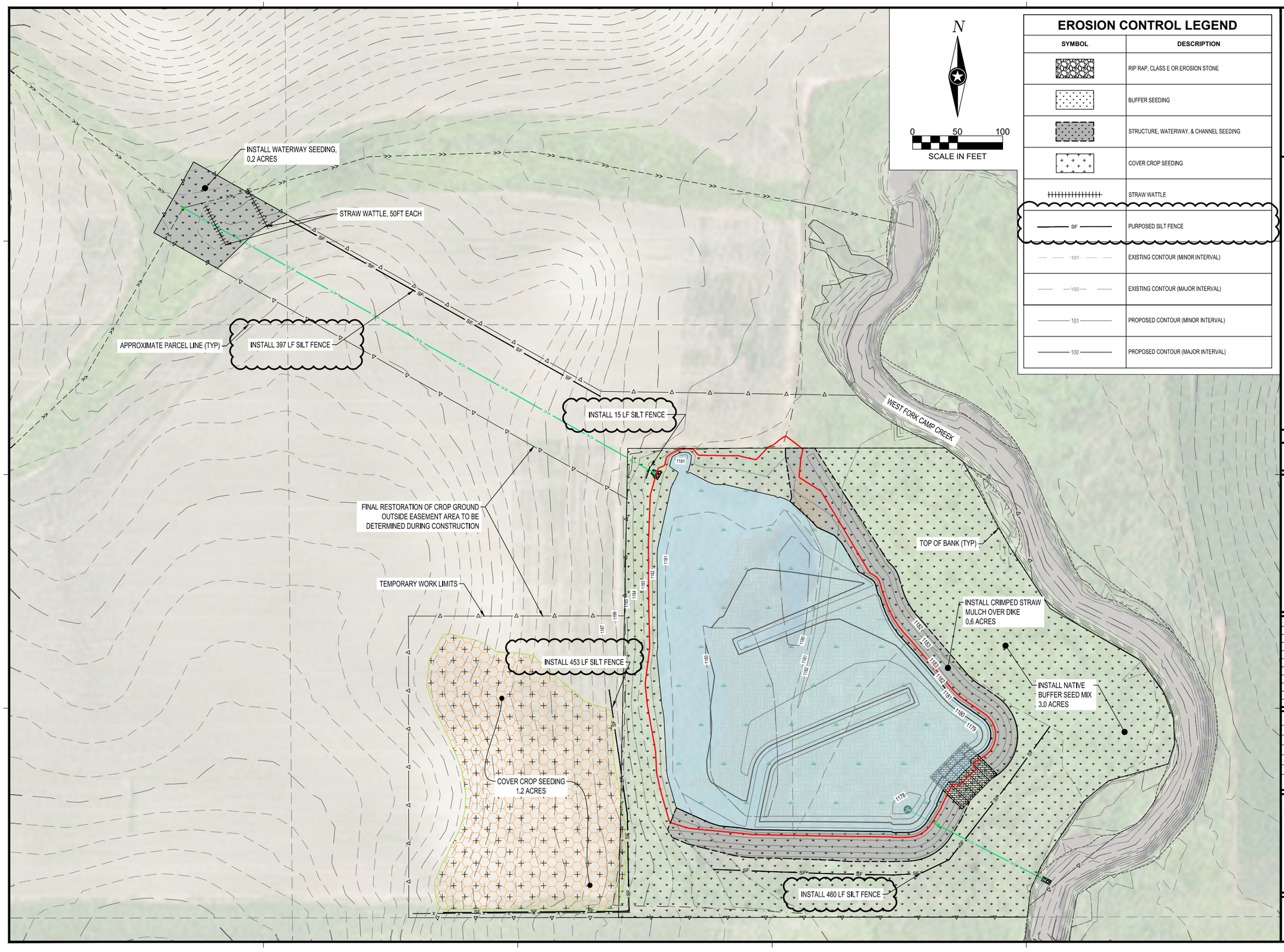
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TITLE

DETAILS

SHEET

C0-33



EROSION CONTROL LEGEND

SYMBOL	DESCRIPTION
	RIP RAP, CLASS E OR EROSION STONE
	BUFFER SEEDING
	STRUCTURE, WATERWAY, & CHANNEL SEEDING
	COVER CROP SEEDING
	STRAW WATTLE
SF	PURPOSED SILT FENCE
101	EXISTING CONTOUR (MINOR INTERVAL)
100	EXISTING CONTOUR (MAJOR INTERVAL)
101	PROPOSED CONTOUR (MINOR INTERVAL)
100	PROPOSED CONTOUR (MAJOR INTERVAL)

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PROJECT

IDALS CAL883432B NUTRIENT REDUCTION WETLAND

CALHOUN COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY
8-13-2026	ADDED SILT FENCE OUTLINES AND ANNOTATIONS	HLC

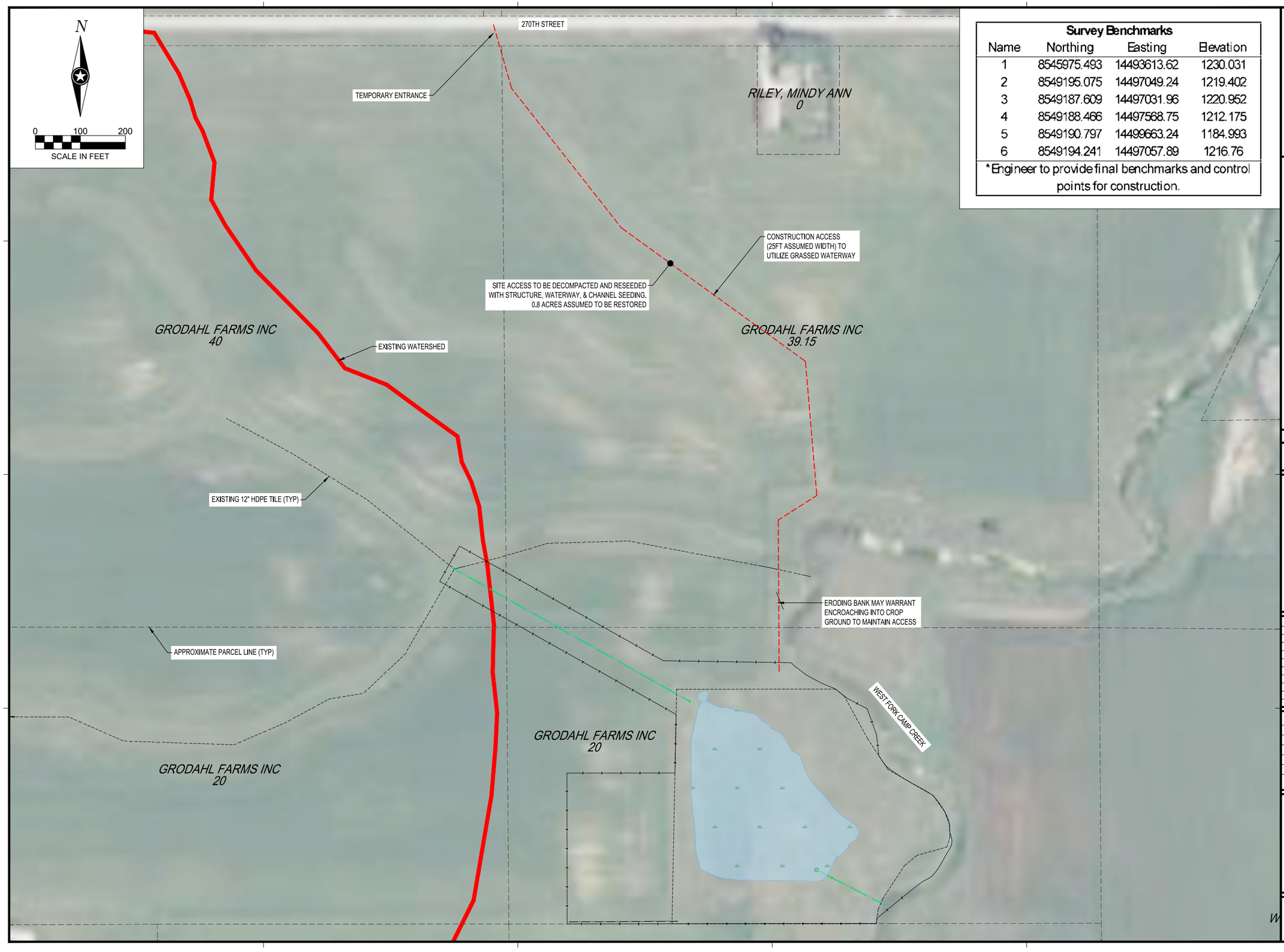
PROJECT NO.	24-30402
FILE NAME	30402-C1-SWPPP
DRAWN BY	JAT
DESIGNED BY	HPT
REVIEWED BY	CDR
ORIGINAL ISSUE DATE	2-13-2025
CLIENT PROJECT NO.	-

TITLE

SITE RESTORATION PLAN

SHEET

C1-10



Survey Benchmarks

Name	Northing	Easting	Elevation
1	8545975.493	14493613.62	1230.031
2	8549195.075	14497049.24	1219.402
3	8549187.609	14497031.96	1220.952
4	8549188.466	14497568.75	1212.175
5	8549190.797	14499663.24	1184.993
6	8549194.241	14497057.89	1216.76

*Engineer to provide final benchmarks and control points for construction.

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PROJECT

IDALS CAL883432B NUTRIENT REDUCTION WETLAND

CALHOUN COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

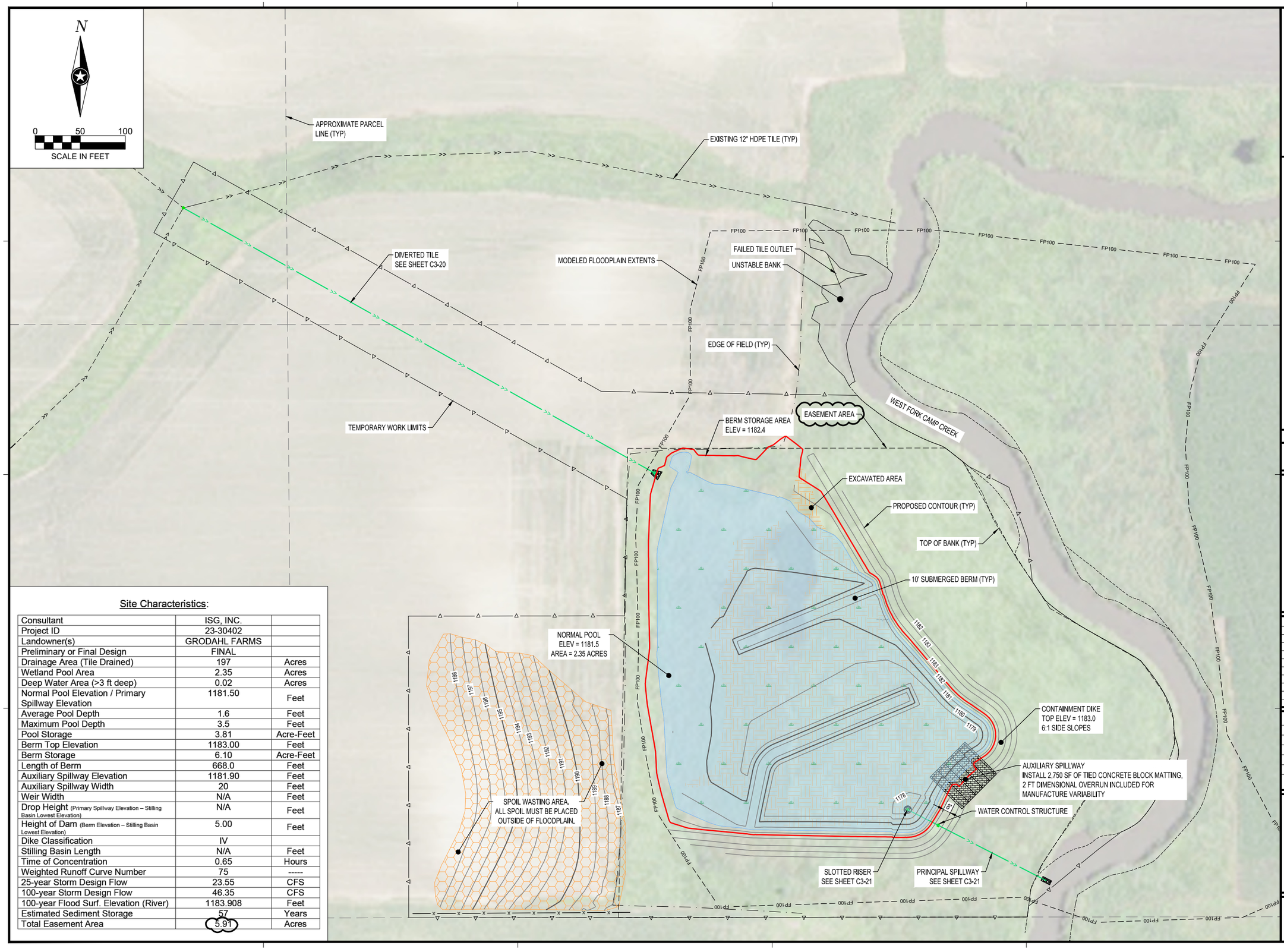
PROJECT NO.	24-30402
FILE NAME	30402-C2-EX-SITE
DRAWN BY	JAT
DESIGNED BY	HPT
REVIEWED BY	CDR
ORIGINAL ISSUE DATE	2-13-2025
CLIENT PROJECT NO.	-

TITLE

EXISTING SITE - SITE ACCESS

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	5.91	Acres

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IDALS CAL883432B NUTRIENT REDUCTION WETLAND

CALHOUN COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY
8-13-2026	CORRECTED EASEMENT ANNOTATION/ SITE CHARACTERISTIC TABLE VALUE	HLC

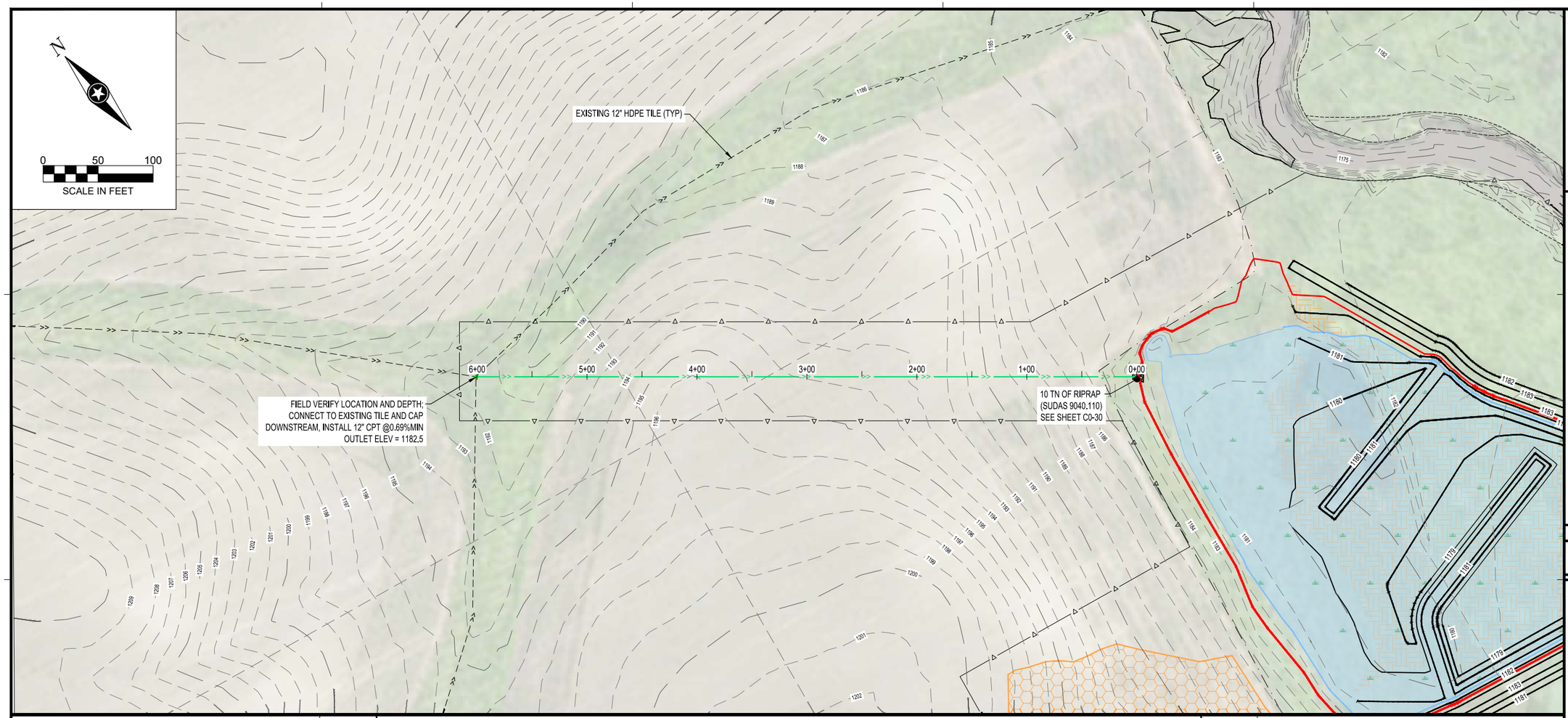
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FILE NAME	30402-C3-SITE
DRAWN BY	JAT
DESIGNED BY	HPT
REVIEWED BY	CDR
ORIGINAL ISSUE DATE	2-13-2025
CLIENT PROJECT NO.	-

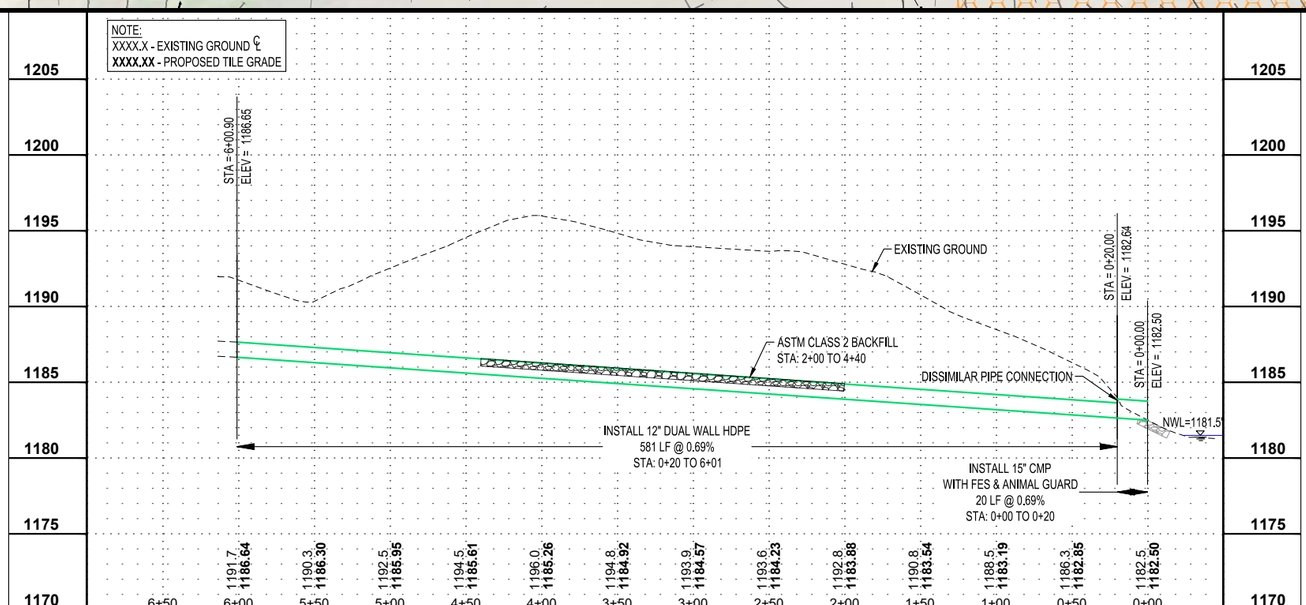
TITLE

SITE PLAN

SHEET

C3-10





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PROJECT

IDALS CAL883432B NUTRIENT REDUCTION WETLAND

CALHOUN COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

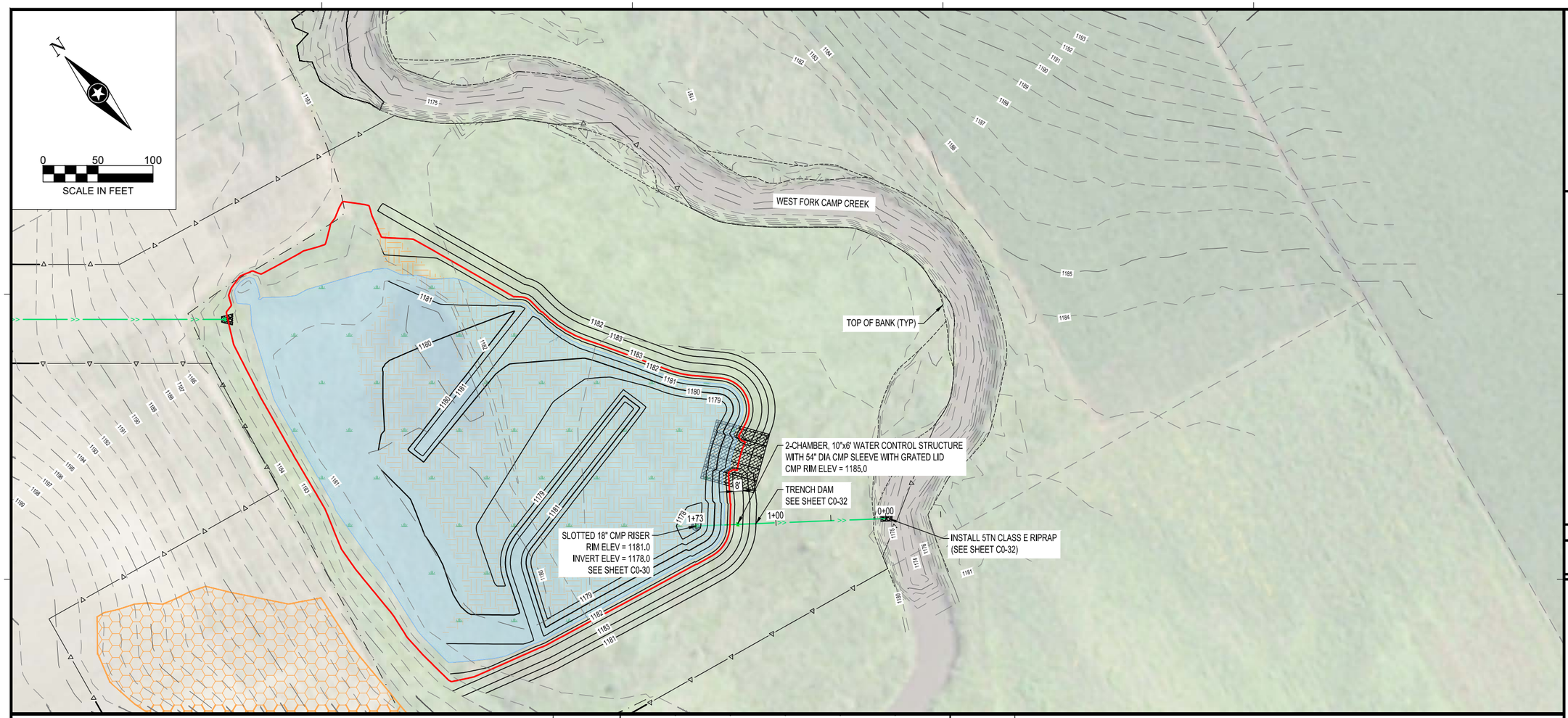
PROJECT NO.	24-30402
FILE NAME	30402-C3-PROFILE
DRAWN BY	JAT
DESIGNED BY	HPT
REVIEWED BY	CDR
ORIGINAL ISSUE DATE	2-13-2025
CLIENT PROJECT NO.	-

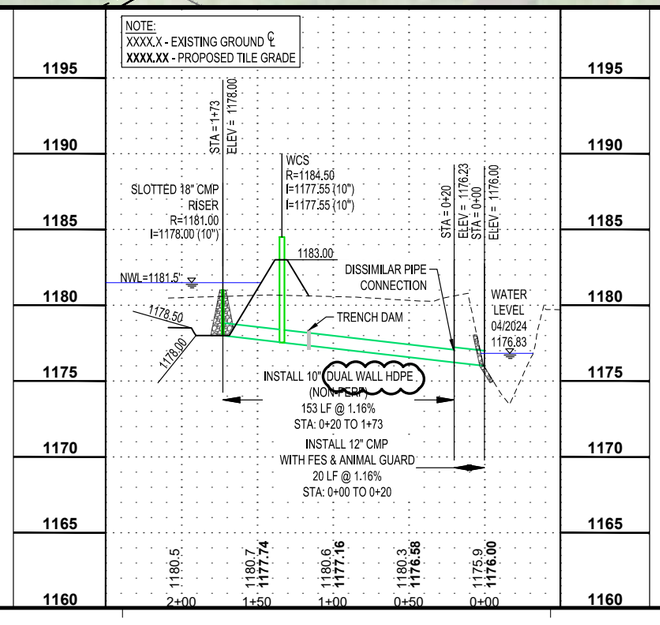
TITLE

INLET PLAN & PROFILE

SHEET

C3-20





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PROJECT

IDALS CAL883432B NUTRIENT REDUCTION WETLAND

CALHOUN COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY
8-13-2026	CORRECTED PIPE TO "DUAL WALLED"	HLC

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

N

0 50 100

SCALE IN FEET

EDGE OF FIELD (TYP)

TEMPORARY WORK LIMITS

EXISTING CONTOUR (TYP)

NORMAL POOL
ELEV = 1181.5

SPOIL WASTING AREA.
ALL SPOIL MUST BE PLACED
OUTSIDE OF FLOODPLAIN.

BERM STORAGE AREA
ELEV = 1182.4

EXCAVATED AREA

PROPOSED CONTOUR (TYP)

TOP OF BANK (TYP)

10' SUBMERGED BERM (TYP)

CONTAINMENT DIKE
TOP ELEV = 1183.0
6:1 SIDE SLOPES

WEST FORK CAMP CREEK

-2.5%
-2.2%
-4.1%
-9.3%
-4:1
-5.3%
-1.1%
-2.2%
10'
-6:1
-0.2%
-3.8%
-5:1
-8:1

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PROJECT

IDALS CAL883432B NUTRIENT REDUCTION WETLAND

CALHOUN COUNTY IOWA

REVISION SCHEDULE

DATE	DESCRIPTION	BY

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

N

0 50 100

SCALE IN FEET

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

TEMPORARY WORK LIMITS

TOP OF BERM ELEVATION

EDGE OF FIELD (TYP)

EXCAVATED AREA

WEST FORK CAMP CREEK

TOP OF BANK (TYP)

10' SUBMERGED BERM (TYP)

NORMAL POOL
ELEV = 1181.5
AREA = 2.35 ACRES

CONTAINMENT DIKE
TOP ELEV = 1183.0
6:1 SIDE SLOPES

SPOIL WASTING AREA.
ALL SPOIL MUST BE PLACED
OUTSIDE OF FLOODPLAIN.

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PROJECT

IDALS CAL883432B NUTRIENT REDUCTION WETLAND

CALHOUN COUNTY IOWA

REVISION SCHEDULE		
DATE	DESCRIPTION	BY

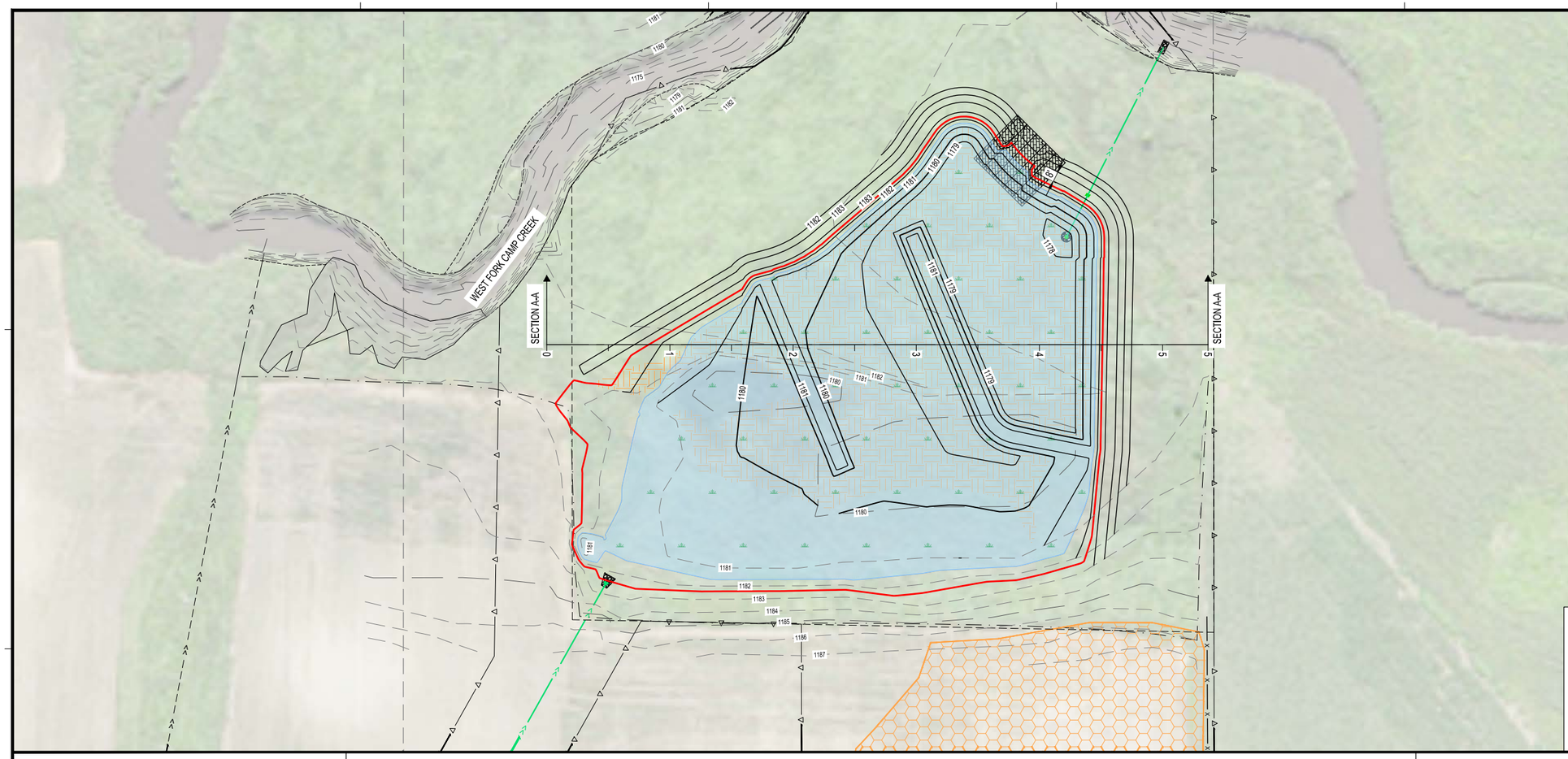
PROJECT NO.	24-30402
FILE NAME	30402-C4-CUTFILL
DRAWN BY	JAT
DESIGNED BY	HPT
REVIEWED BY	CDR
ORIGINAL ISSUE DATE	2-13-2025
CLIENT PROJECT NO.	-

TITLE

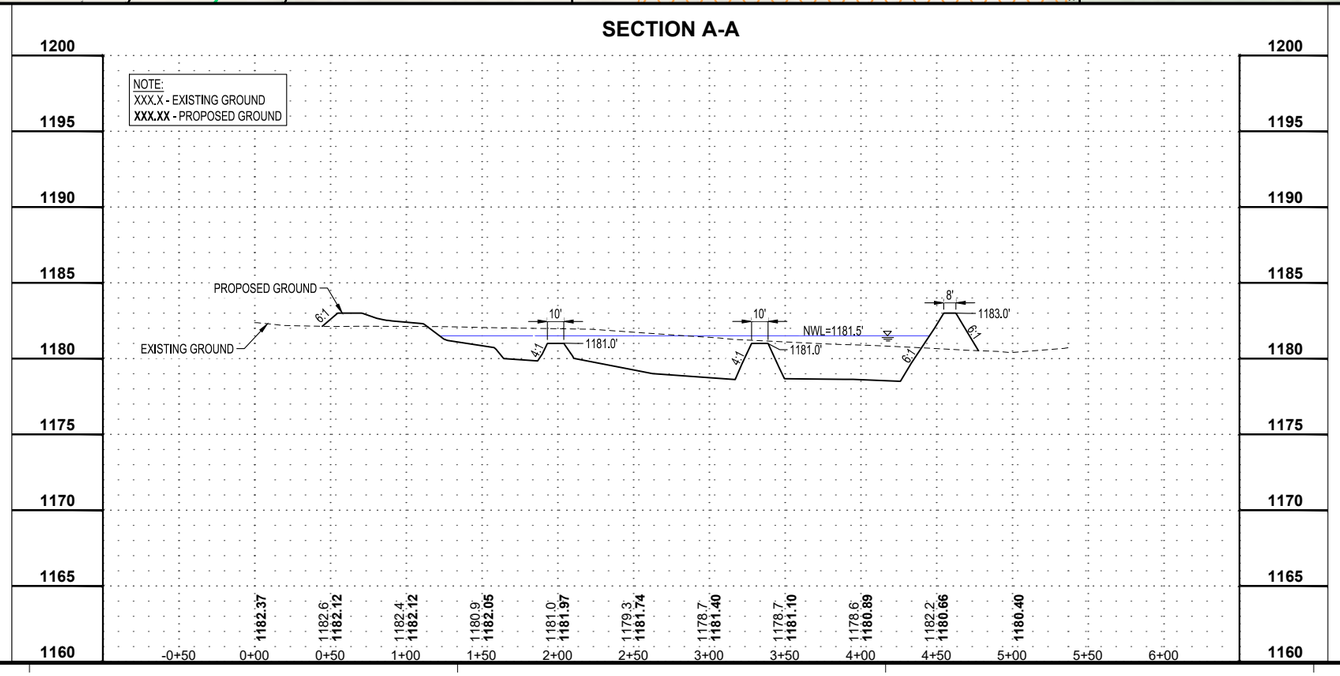
CUT - FILL

SHEET

C4-20



SECTION A-A



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PROJECT

IDALS CAL883432B NUTRIENT REDUCTION 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

Attachment No. 3

Revised Technical Specifications Booklet

GRODAHL WETLAND

TECHNICAL SPECIFICATIONS FOR IDALS CAL883432B WETLAND DEVELOPMENT CALHOUN COUNTY

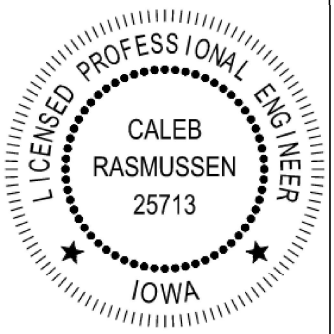
FEBRUARY 2025
PROJECT NO. 23-30402

Owner:
IDALS
Water Resources Division
502 E 9th St
DES MOINES, IOWA 50319

FROM:
CALEB RASMUSSEN, PE
ISG
1725 NORTH LAKE AVE.
STORM LAKE, IOWA 50588
712-732-7745

PROJECT MANUAL FOR
IDALS CAL883432B; GRODAHL WETLAND
WETLAND DEVELOPMENT
CALHOUN COUNTY, IOWA
2025

PROJECT NO. 23-30402



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

Caleb Rasmussen 2/21/2025

Caleb Rasmussen, P.E. Date

License No.: 25713

My License Renewal Date is December 31, 2026

Sections covered by this seal:

All sections Listed in Table of Contents



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

Spencer D Pech 8/19/2026

Spencer Dean Pech, P.E. Date

License No.: P28161

My License Renewal Date is December 31, 2026

Sections covered by this seal:

Revised Pages IA CS-005 Page 3, IA CS-008 Page 2 and 3

PROJECT MANUAL FOR
IDALS CAL883432B; GRODAHL WETLAND
WETLAND DEVELOPMENT
CALHOUN COUNTY, IOWA
2025

PROJECT NO. 23-30402

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PLANS

SHEET C0-10 TO C4-30 (14 SHEETS)

Construction Specification
000 IA CS-00-1 Site Preparation

1. SCOPE

Site preparation work shall consist of clearing, grubbing, stripping, refuse removal, bank sloping and structure removal on the site as necessary to rid the site of all undesirable materials on or near the surface and prepare the site for the structure. All woody growth within the construction area shall be cleared and all stumps and roots one inch in diameter or larger shall be grubbed from the site. In addition, all areas within 25 feet of the footprint of the structure shall be cleared and grubbed except as directed by NRCS. The work shall also consist of the removal and disposal of structures (including fences) that must be removed to perform other items of work.

For wetland restoration, enhancement, or creation projects, the wetland area shall be disturbed as little as possible and existing naturally vegetated spillway areas shall not be disturbed.

2. FOUNDATION PREPARATION

The construction areas shall be stripped a minimum of 6 inches to remove all unsuitable materials such as organic matter, grasses, weeds, sod, debris, and stones larger than 6 inches in diameter.

In an earth embankment foundation area, all channel banks and sharp breaks shall be sloped to no steeper than 1.5 horizontal to 1 vertical.

The foundation area shall be thoroughly scarified before placement of fill material. The surface shall have moisture added or shall be compacted if necessary, so that the first layer of fill material can be compacted and bonded to the foundation.

3. STRIPPED MATERIAL DISPOSAL

Suitable soil material shall be stockpiled for use as topsoil. The other stripped materials shall be buried, removed from the site, or disposed of as directed by the owner or NRCS. Whenever possible, material shall not be disposed of in the pool area created by the structure.

Stockpiled materials around a construction site should be placed so as not to hinder subsequent construction operations.

4. DISPOSAL OF REFUSE MATERIALS

Waste materials from clearing and structure removal shall be burned or buried at locations approved by the owner. Buried materials shall be covered with a minimum of 2 feet of earthfill. Whenever possible, material shall not be disposed of in any pool area created by the structure.

All refuse shall be disposed of in a manner which complies with all local and state regulations.

5. SALVAGE

Items to be salvaged shall be as shown on the drawings. Structures and fencing materials that are designated to be salvaged shall be carefully removed and neatly placed in the specified storage areas.

6. SPECIFIC SITE REQUIREMENTS

A. Measurement and Payment

Compensation for any work item described in the contract documents but not listed in the bid schedule will be included in the payment for the item of work to which it is made subsidiary. Such items and bid items to which they are made subsidiary are identified in Items of Work and Construction Details section of this specification.
For items of work which lump sum prices are established in the contract, the quantity of work will not be measured for payment. Payment for each item will be made at the contract lump sum price and will constitute full compensation for completion of the work.

For items of work for which specific unit prices are established in the contract, the payment will be made based on the approved quantity measured by the engineer or weight tickets. Payment will constitute full compensation of the work completed as defined by each work item.

B. Items of Work and Construction Details

"Site Stripping and Preparation":

1. Bid Item No. 1, 2

This item will consist of work to remove and dispose of existing material to remove vegetation on areas to be excavated or filled. Total depth of vegetative stripping and topsoil stripping shall equal a combined depth of 12" in the embankment footprint and 9" in all other areas unless otherwise noted in the plans, with the estimated cubic yards of topsoil removal as shown in the plans. The topsoil replacement quantity shall be paid separately.

This item will also include any tree and brush removal along with any fences. These shall be considered incidental to site stripping.

This item will be paid out as a lump sum. Partial payment, if requested, will be to the nearest quartile (25%, 50%, 75%, 100%)

"Crop damage"

2. Bid item No. 3

This bid item is not anticipated. Contractor shall bid $0/Acre. Final cost to be negotiated by owner and landowner and will be a pass-through cost via awarded contractor.

Construction Specification
000 IA CS-005 Pollution Control 2011

1. SCOPE

The work shall consist of installing measures or performing work to control erosion and minimize the production of sediment and other pollutants to water and air during construction operations.

2. MATERIALS

All materials furnished shall meet the requirements shown on the drawings or in the specifications.

3. EROSION AND SEDIMENT CONTROL MEASURES AND WORKS

The measures and works shall include, but are not limited to, the following:

Staging of Earthwork Activities: The excavation and moving of soil materials shall be scheduled so that areas unprotected from erosion will be minimized. These areas will be unprotected for the shortest time feasible.

Seeding: Structures and disturbed areas shall be seeded as soon as possible after construction is completed.

Temporary seedings may be used as an alternative to other stabilization measures as approved by NRCS.

Mulching: Construction areas that have been disturbed but have no construction activity scheduled for 21 days or more shall have erosion protection measures applied by the 14th day. This erosion protection may be mulching or other approved temporary measures. Construction areas shall not be left open during a winter shutdown period and shall be protected by mulching.

All seeding and mulching shall be completed in accordance with the seeding plan and Iowa Construction Specification IA-6, Seeding and Mulching for Protective Cover.

The following works may be temporary. If they are installed as a temporary measure, they shall be removed and the area restored to its original state when they are no longer needed or when permanent measures are installed.

Diversions: Diversions may be required to divert clean runoff water away from work areas and to collect runoff from work areas for treatment and safe disposition.

Stream Crossings: Culverts or bridges may be required where construction equipment must cross streams.

Sediment Basins: Sediment basins may be required to settle and filter out sediment from eroding areas to protect properties and streams below the construction site.

Sediment Filters: Straw bale filters, geotextile sediment fences, or other equivalent methods may be used to trap sediment from areas of limited runoff. Sediment filters shall be properly anchored to prevent erosion under them.

Waterways: Waterways may be required for the safe removal of runoff from fields, diversions, and other structures or measures

4. CHEMICAL POLLUTION

The Contractor shall provide watertight tanks or barrels or construct a sump sealed with plastic sheets to be used to dispose of chemical pollutants, such as drained lubricating or transmission oils, greases, soaps, concrete mixer wash water, asphalt, etc., produced as a by-product of the construction work.

At the completion of the construction work, sumps shall be removed and the area restored without causing pollution.

Sanitary facilities such as chemical toilets or septic tanks shall not be placed adjacent to live streams, wells, or springs. They shall be located at a distance sufficient to prevent contamination of any water sources. At the completion of construction work, facilities shall be disposed of without causing pollution.

5. AIR POLLUTION

The burning of brush or trash or disposal of other materials shall adhere to local and state regulations.

Fire prevention measures shall be taken to prevent the start or the spreading of wild fires, which result from project work. Fire breaks or guards shall be constructed at locations shown on the drawings.

All public access or haul roads used by the contractor during construction of the project shall be sprinkled or otherwise treated to fully suppress dust. All dust control methods shall insure safe operations at all times. If chemical dust suppressants are used, the material shall be a commercially available product specifically designed for dust suppression and the application shall follow manufacturer's requirements and recommendations. A copy of the product data sheet and manufacturer's recommended application procedures shall be provided to the Engineer five working days before use.

6. MAINTENANCE, REMOVAL, AND RESTORATION

All pollution control measures and works shall be adequately maintained in a functional condition as long as needed during the construction operation. All temporary measures shall be removed and the site restored to as near original conditions as practical.

7. SPECIFIC SITE REQUIREMENTS

A. Measurement and Payment

Compensation for any work item described in the contract documents but not listed in the bid schedule will be included in the payment for the item of work to which it is made subsidiary. Such items and bid items to which they are made subsidiary are identified in Items of Work and Construction Details section of this specification.

For items of work which lump sum prices are established in the contract, the quantity of work will not be measured for payment. Payment for each item will be made at the contract lump sum price and will constitute full compensation for completion of the work.

For items of work for which specific unit prices are established in the contract, the payment will be made based on the approved quantity measured by the engineer or weight tickets. Payment will constitute full compensation of the work completed as defined by each work item.

B. Items of Work and Construction Details

"Straw Wattle"

1. Bid Item No. 24

Installation, replacement, and removal of wattles shall be performed in accordance with SUDAS Section 9040 – Erosion and Sediment Control.

Measurement will be in linear feet for each type and size of wattle. Payment will be at the unit price per linear foot for each type and size of wattle. Unit price includes, but is not limited to, anchoring stakes, restoration of the area to finished grade, and off-site disposal of wattle and accumulated sediment.

Silt Fence

2. Bid Item No. 25

This item shall consist of the installation, maintenance, replacement, and removal of silt fences and shall be performed in accordance with SUDAS Section 9040 – Erosion and Sediment Control

Measurement will be in linear feet for each type and size of silt fence. Payment will be at the unit price per linear foot for each type and size of silt fence. Unit price includes, but is not limited to, anchoring stakes, and off-site disposal of accumulated sediment.

Silt fence is shown on the Site Restoration plan sheet. Silt fence locations and sizes are approximate. Exact location and length of silt fence needed will be determined during construction. If accumulated sediment reaches a level one-half the height of the fence, remove the accumulated sediment. The silt fence shall be carefully inspected and any maintenance needed shall be included in bid item.

Construction Specification
000 IA-6 Seeding and Mulching for Protective Cover

1. SCOPE

The work shall consist of seeding, mulching, and fertilizing all disturbed areas and other areas as indicated on the drawings or otherwise designated.

2. SEEDBED PREPARATION AND APPLICATION

The entire area to be seeded shall be reasonably smooth and all washes and gullies shall be filled to conform to the desired cross-section before actual seedbed preparation is begun. At this stage of the operation, the required fertilizer and lime shall be applied uniformly and incorporated into the top 3 inches of the soil with suitable tillage equipment. The seedbed preparation operation shall be suspended when the soil is too wet or too dry. The seedbed shall be loosened to a depth of at least three inches.

On side slopes steeper than 2-1/2 horizontal to1 vertical, the 3 inch minimum depth of seedbed preparation is not required, but the soil shall be worked enough to insure sufficient loose soil to provide adequate seed cover.

Unless otherwise specified, the seeding operation shall be performed immediately after preparation of the seedbed. The seed shall be drilled or broadcast by equipment that will insure uniform distribution of the seed.

3. MATERIALS

The seeding, fertilizing, and mulching requirements are as specified on Form IA-CPA-4.

Straw from cereal grains or hay will be used as mulching material. It shall be relatively free of weeds.

4. MULCH APPLICATION

The required mulching shall be performed as soon as possible after seeding unless otherwise specified. The mulch shall be applied uniformly over the area. The type and rate shall be as specified. When mulching is required, all areas seeded during any one day shall be mulched within 24 hours. The mulch may be spread by any means that results in a uniform cover.

The mulch shall be anchored. Anchoring of the mulch may be performed by a mulch anchoring tool or regular farm disk weighted and set nearly straight, by installation of mulch netting, or by other methods approved by NRCS.

5. SPECIFIC SITE REQUIREMENTS

A. Measurement and Payment

Compensation for any work item described in the contract documents but not listed in the bid schedule will be included in the payment for the item of work to which it is made subsidiary. Such items and bid items to which they are made subsidiary are identified in Items of Work and Construction Details section of this specification.

For items of work which lump sum prices are established in the contract, the quantity of work will not be measured for payment. Payment for each item will be made at the contract lump sum price and will constitute full compensation for completion of the work.

For items of work for which specific unit prices are established in the contract, the payment will be made based on the approved quantity measured by the engineer or weight tickets. Payment will constitute full compensation of the work completed as defined by each work item.

B. Items of Work and Construction Details

Bid Item No. 4 Structure & Channel Seeding

This item will consist of seeding the waterways and any other disturbed areas noted on the plans or as determined by engineer. The all portions of the dike and easement areas are to be seeded with bid item no. 6.

All seed must be clean and weed free. Seeding rates are expressed in bulk pounds per acre. Seed quality shall not drop below 70% Pure Live Seed (PLS) where PLS = (percent germination plus percent dormant seed) times percent purity.

Seeding rates are as follows:

Smooth Brome grass	25 pounds/acre

Seed shall be applied with a drill and placed at ¼ to ½ inch deep.

Fertilizer shall be applied on the entire seeding area at the following rate:

Nitrogen (N)	30 pound/acre
Phosphorus (P_2O_5)	30 pounds/acre
Potassium (K_2O)	40 pounds/acre

Straw mulch shall be applied at a rate of 2 tons per acre on all areas receiving structure and channel seeding.

Seeding shall be completed during the following seeding periods:

Spring	March 1 to May 15
Summer	August 1 to September 15
Fall	November 15 to Freeze-up

If construction is completed during any other time of the year, the seeding shall be performed at the next seeding period.

If seeding is completed during the spring seeding period, a companion crop of oats shall be seeded at a rate of 1-1/2 bushels per acre.

Measurement will be based on the areas successfully seeded to the nearest 0.1 acre.

Bid Item No. 5 Buffer Seeding

This item will consist of seeding the areas designated on the plans as buffer seeding and include borrow areas, disturbed areas not seeded as part of structural seeding, and other areas within the easement. Buffer seeding is not required in area below normal pool elevation established by the weir elevation.

Some areas of the site may have existing CRP vegetation or steep slopes with existing vegetation. Local NRCS personnel will determine if these areas will be included as part of the buffer seeding areas for this project or will be left as is. This may affect the bid quantity and Contractor will verify with Engineer the number of acres that will require buffer seeding.

All seed must be clean and weed free. Seeding rates are expressed in pounds of pure live seed per acre. All seed must be yellow-tagged Iowa ecotype unless approved otherwise by owner.

Seeding mixture shall include a minimum of 5 native grasses and 10 native forbs. The mixture shall provide a minimum of 30 grass seeds per square foot and 10 forbs seeds per square foot. Number of seeds will be based on Iowa Conservation Practice 327 "Native Species for Wildlife". Contractor's proposed seed mix shall be submitted to Engineer and local NRCS office for approval at least 2 weeks before seed is to be applied.

Seeding shall be completed during the following seeding periods:

Spring	April 1 to June 30
Fall	November 15 to Freeze-up

The seed bed shall be properly prepared prior to seeding:

(a) Any weed control measures shall be completed prior to seeding. If spraying is used, then a span of two weeks shall be allowed between spraying and seeding.

(b) If the land was in soybeans, no additional tillage is required. If the land was in corn or other vegetation, areas to be seeded shall be disked to thoroughly loosen and pulverize the soil to a depth of 3 inches. This may require multiple passes of equipment. If the land was used for pasture and has a smooth surface, the preparation in non-disturbed areas to be seeded shall include mowing any vegetation taller than 12 inches and applying an appropriate herbicide at the labeled rates to emergent growth 2 to 4 weeks after mowing. After the vegetation has died, the area shall be disked thoroughly loosen and pulverize the soil depth of 3 inches. If emergent growth occurs prior to seeding, the areas shall receive a second application of herbicide. Seeding shall not occur until the existing vegetation has died (about 1 week).

(c) If deeper disking is used at the site, a lighter disk or spring harrow shall be used to remove deep furrows.

(d) After disking operations and prior to seed application, the seedbed shall be firmed with a cultipacker or similar piece of equipment.

(e) No lime or fertilizer is to be applied.

Sow seed with contour using a grassland or rangeland drill set for the specified seeding rates. The drill shall be equipped with double coulter furrow openers. The drill shall be

subject to acceptance by Engineer. Overlap each successive seeding pass to ensure complete coverage.

Plant seed not more than 1/4 inch deep; some seed may be seen on the surface after seeding.

Broadcasting by centrifugal-type or hydroseeder broadcasters, or by hand shall be allowed in areas not accessible to drills or other equipment. Once broadcast, the seed must be covered with soil to a depth no greater than 1/4 inch by means of hand rakes or other approved methods.

Upon completion of the seeding operation, cultipack the seedbed to provide a positive seed-soil contact. If the drill seeder is equipped with an approved cultipacker or press wheels, separate operations shall not be necessary. The type of cultipacker/seeder to be used shall be subject to acceptance by Engineer.

Includes crimped straw mulching of 0.6 acres Apply as described in bid item no. 5.

Measurement will be based on the area successfully seeded and measured to the nearest 0.1 acre.

Bid Item No. 6 Temporary Seeding

This item will consist of seeding the spoil wasting area.

All seed must be clean and weed free. Seeding rates are expressed in pounds of pure live seed per acre. Seed quality shall not drop below 70% Pure Live Seed (PLS) where PLS = (percent germination plus percent dormant seed) times percent purity.

Seeding rates are as follows:

Oats	40.0 pounds/acre

Seeding shall be completed during the following seeding periods:

Spring	April 1 to June 30
Fall	November 15 to Freeze-up

The seed bed shall be properly prepared prior to seeding:

(a) Any weed control measures shall be completed prior to seeding. If spraying is used, then a span of two weeks shall be allowed between spraying and seeding.

(b) If the land was in soybeans, no additional tillage is required. If the land was in corn or other vegetation, areas to be seeded shall be disked to thoroughly loosen and pulverize the soil to a depth of 3 inches. This may require multiple passes of equipment. If the land was used for pasture and has a smooth surface, the preparation in non-disturbed areas to be seeded shall include mowing any vegetation taller than 12 inches and applying an appropriate herbicide at the labeled rates to emergent growth 2 to 4 weeks after mowing. After the vegetation has died, the area shall be disked thoroughly loosen and pulverize the soil depth of 3 inches. If emergent growth occurs prior to seeding, the areas

shall receive a second application of herbicide. Seeding shall not occur until the existing vegetation has died (about 1 week).

(c) If deeper disking is used at the site, a lighter disk or spring harrow shall be used to remove deep furrows.

(d) After disking operations and prior to seed application, the seedbed shall be firmed with a cultipacker or similar piece of equipment.

(e) No lime or fertilizer is to be applied.

Sow seed with contour using a grassland or rangeland drill set for the specified seeding rates. The drill shall be equipped with double coulter furrow openers. The drill shall be subject to acceptance by Engineer. Overlap each successive seeding pass to ensure complete coverage.

Seed shall be applied with a drill and planted at ¼ to ½ inch deep.

Measurement will be based on the area successfully seeded and measured to the nearest 0.1 acre.

Weed Control (Not a Bid item)

Weed control may be needed in portions of this site depending upon the start date of the contract, the initiation of grading, and the seeding dates.

Weed control will be added to the contract with a change order to be negotiated between Contractor and Division based on conditions observed and the type of weed control used and will be paid only once. If delays require additional weed control, this will be paid for at Contractor's own expense.

Weed control may include placement of a cover crop such as oats or rye, spraying with appropriate chemicals, or disking. If thistles are present, only spraying is allowed for weed control and shall include appropriate chemicals designed to control thistles.

NATURAL RESOURCES CONSERVATION SERVICE
CONSTRUCTION SPECIFICATION

Construction Specification 8—Mobilization and Demobilization

1. SCOPE

The work consists of the mobilization and demobilization of the contractor's forces and equipment necessary for performing the work required under the contract. It does not include mobilization and demobilization for specific items of work for which payment is provided elsewhere in the contract. Mobilization will not be considered as work in fulfilling the contract requirements for commencement of work.

2. EQUIPMENT AND MATERIAL

Mobilization shall include all activities and associated costs for transportation of contractor's personnel, equipment, and operating supplies to the site; establishment of offices, buildings, and other necessary general facilities for the contractor's operations at the site; premiums paid for performance and payment bonds including coinsurance and reinsurance agreements as applicable; and other items specified in section 4 of this specification.

Demobilization shall include all activities and costs for transportation of personnel, equipment, and supplies not required or included in the contract from the site; including the disassembly, removal, and site cleanup of offices, buildings, and other facilities assembled on the site specifically for this contract.

This work includes mobilization and demobilization required by the contract at the time of award. If additional mobilization and demobilization activities and costs are required during the performance of the contract as a result of changed, deleted, or added items of work for which the contractor is entitled to an adjustment in contract price, compensation for such costs will be included in the price adjustment for the item or items of work changed or added.

3. PAYMENT

Payment will be made as the work proceeds, after presentation of paid invoices or documentation of direct costs by the contractor showing specific mobilization and demobilization costs and supporting evidence of the charges of suppliers, subcontractors, and others. When the total of such payments is less than the lump sum contract price, the balance remaining will be included in the final contract payment. Payment of the lump sum contract price for mobilization and demobilization will constitute full compensation for completion of the work.

Payment will not be made under this item for the purchase costs of materials having a residual value, the purchase costs of materials to be incorporated in the project, or the purchase costs of operating supplies.

4. ITEMS OF WORK AND CONSTRUCTION DETAILS

A. Measurement and Payment

Compensation for any work item described in the contract documents but not listed in the bid schedule will be included in the payment for the item of work to which it is made subsidiary. Such items and bid items to which they are made subsidiary are identified in Items of Work and Construction Details section of this specification.

For items of work which lump sum prices are established in the contract, the quantity of work will not be measured for payment. Payment for each item will be made at the contract lump sum price and will constitute full compensation for completion of the work.

For items of work for which specific unit prices are established in the contract, the payment will be made based on the approved quantity measured by the engineer or weight tickets. Payment will constitute full compensation of the work completed as defined by each work item.

B. Items of Work and Construction Details

1. Bid Item No. 7 "Mobilization and Demobilization"

This item shall consist of mobilizing and demobilizing personnel and equipment in preparation to perform the work within the scope of this contract.

Any work that is necessary to provide access to the site including, but not limited to, grading, temporary culverts, and clearing will be included in this item. When construction is completed access areas will be restored, as close as practical, to its original condition.

Any fence removed for access and /or to provide work area shall be replaced with same or like materials as approved by the engineer.

The Contractor shall exercise caution to minimize the amount of damage caused by the grading and clearing operations.

Portable toilets shall be provided at the construction site and used for the sanitary facilities.

This item shall not include transportation of personnel, equipment and operating supplies within the work limits areas of this contract.

Payment will constitute full compensation for related subsidiary item, Pollution Control.

Payment will be made as the work proceeds and will paid out on the percent of the project complete as the work progresses. Payment of the lump sum contract price for mobilization and demobilization will constitute full compensation for the completion of the work.

Contractor is to contact "Iowa One Call" for utility locations a minimum of two (2) days prior to any excavation/construction. The ticket number must be provided to Engineer.

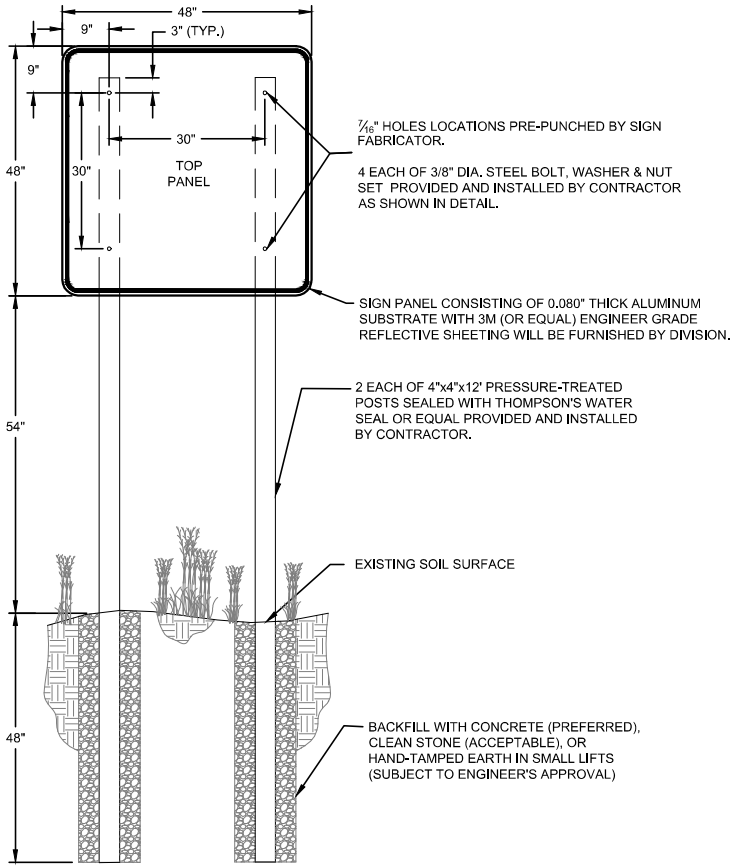
2. Incidental "Pollution Control"

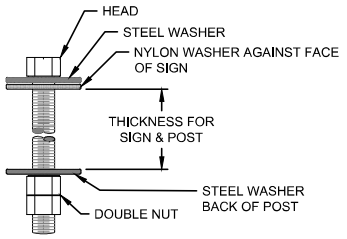
This item is incidental to Bid item No. 7: Mobilization and Demobilization

This item shall consist of applying and performing all construction activities in a manner that will minimize water pollution, air pollution and soil erosion. This includes all materials, labor, transportation, maintenance, removal, and disposal of storm water controls.

3. Subsidiary Item – Sign Installation

This item shall include all labor, materials, equipment and Iowa One Call notifications to install sign provided by Iowa Department of Agriculture and Land Stewardship, as shown on the plans or on next page.





BOLT, WASHER, & NUT FASTENER DETAIL
NOT TO SCALE

SIGNAGE NOTES:

1. DIVISION WILL FURNISH SIGN PANEL. CONTRACTOR IS RESPONSIBLE FOR PROVIDING POSTS, HARDWARE, AND INSTALLATION .

2. ALL EXPOSED WOOD SHALL BE SEALED WITH THOMPSON'S WATER SEAL OR EQUAL MEETING ASTM D-4446-08.

3. ALL STEEL HARDWARE PIECES SHALL BE GALVANIZED OR RUST RESISTANT.

4. NYLON AND STEEL WASHERS SHALL BE USED AS SHOWN ON THE BOLT, WASHER, NUT FASTENER DETAIL ABOVE.

5. CLEAR UTILITIES WITH IOWA ONE-CALL AT 811 OR (800) 292-8989 BEFORE EXCAVATING FOR POSTS.

6. SECURE DIVISION AND LANDOWNERS APPROVAL FOR SIGN LOCATION BEFORE INSTALLATION.

7. COSTS FOR POSTS, HARDWARE, WOOD SEALANT AND SIGN INSTALLATION SHALL BE INCIDENTAL TO MOBILIZATION.

8. CONTRACTOR SHALL INSTALL SIGN POSTS USING A PLYWOOD OR OTHER SUITABLE TEMPLATE TO MAINTAIN ACCURATE POST SPACING AND ALIGNMENT DURING BACKFILLING OF THE POST HOLES. TO AVOID BENDING OF THE SIGN PANELS, POSTS SHALL NOT BE INSTALLED OR BACKFILLED WITH SIGN PANELS ATTACHED.

9. ONE (1) PROJECT SIGN SHALL BE INSTALLED UNLESS NOTED OTHERWISE.

STANDARD DETAIL FOR SIGN INSTALLATION

DIVISION OF SOIL CONSERVATION AND WATER QUALITY

NATURAL RESOURCES CONSERVATION SERVICE
CONSTRUCTION SPECIFICATION

IA-9 SUBSURFACE DRAIN INVESTIGATION, REMOVAL, AND REPAIR

1. SCOPE

The work shall consist of investigation, location, repair, and/or removal of subsurface drains (tile) near new or existing animal waste storage facilities or in wetland restoration, enhancement, or creation project areas, or other situations where subsurface drains may be present.

2. INVESTIGATION AND LOCATION

An inspection trench at least 10 inches wide shall be dug at the location shown on the drawings or as directed by the engineer or his representative. The trench shall be at least 6 feet deep measured from the original ground line, unless otherwise shown on the plans. The Engineer or his representative shall examine the trench and excavated material to identify tile lines.

Size, material, operating condition and direction of flow of each conduit shall be documented. Location and flow line elevation of each conduit shall be surveyed with horizontal and vertical control based on benchmarks shown on the plans.

The inspection trench shall be documented by surveying the natural ground and trench bottom location and elevations at the beginning, end, and every 50 feet for trenches longer than 50 feet.

Backfilling shall not be started without approval of the Engineer. See Section 5 for backfill specifications.

Trench shields, shoring and bracing, or other methods necessary to safeguard the workers and work, and to prevent damage to the existing improvements shall be furnished, placed, and subsequently removed by the contractor.

3. TILE REPAIR

Unless designated for removal, replace damaged conduit with new conduit having equal or greater capacity using material specified in Section 6 or 7. When replacing short sections of clay or concrete tile with single-wall corrugated polyethylene pipe, use the next larger nominal size.

Make connections with manufactured fittings and tight joints. Where joints have gaps that would allow soil to enter, cover the joint with a permanent type material such as coal tar pitch treated roofing paper, fiber glass sheet or mat, or plastic sheet.

If the investigation trench has been excavated below the existing drain grade, backfill the trench with gravel or well-pulverized soil in layers not over four (4) inches thick and tamp by hand or manually directed power tamper to provide a firm foundation for the conduit at the existing grade. Do not backfill with any soil containing broken tile fragments.

Using selected soil free of hard clods, rocks, or frozen soil, hand tamp the backfill material around the haunch of the pipe in layers not over four (4) inches thick to provide support. Hold the conduit in place

mechanically while placing excavated material around and over the conduit to ensure proper alignment and grade is maintained. Complete the backfill operation according to Section 5.

4. TILE REMOVAL

Remove conduits as shown on the plans or directed by the Engineer or his representative, including envelope filter material or other flow enhancing material when present.

Cap or plug the open ends of the disconnected conduit to prevent soil entry when the conduit will continue to function downstream, or otherwise shown on the plans. For a minimum distance of two feet around each sealed conduit end, backfill in layers not over four (4) inches thick and tamp by hand or manually directed power tamper to a density equal to or greater than the surrounding undisturbed soil. Do not backfill with any soil containing broken tile fragments, large stones, frozen material, or large dry clods.

Where tile are located beneath an existing animal waste facility or earthen embankment, remove the tile or fill the entire length of tile with concrete or Portland cement grout as shown on the plans. When tile removal is specified, the owner shall contact the Iowa Department of Natural Resources (IDNR) for permission to remove the drainage tile under the waste facility structure. The structure shall be emptied of waste or lowered to a point below the tile prior to its removal. The structure must be retested for percolation and the results submitted to IDNR and approval received prior to reusing the structure.

If shown on the plans or directed by the engineer, reroute upstream drain lines so the capacity of the upstream drainage system is maintained. Install conduit in accordance with Iowa Construction Specification IA-46, Tile Drains for Land Drainage.

5. BACKFILL

Compact soil around disturbed tile as specified in Section 3 (Tile Repair) and Section 4 (Tile Removal). Keep the backfill within 5 feet of the conduit free from large stones, frozen material, and large dry clods. Unless otherwise shown on the plans, backfill the remainder of the trench as follows:

For trenches located under or near structures, backfill in 12-inch layers and compact each layer to a density equal to or greater than the surrounding undisturbed soil.

For other locations, backfill the remainder of each trench with the excavated soil material which shall extend above the ground surface and be well rounded over the trench.

6. MATERIALS

Unless otherwise shown on the plans, conduit and fittings used for repair shall conform to the specifications listed in Table 1. Perforated pipe shall have a water inlet area of at least 1 square inch per foot, provided by perforations spaced uniformly along the long axis of the pipe. The perforations shall be circular or slots. Circular perforations shall not exceed 3/16 inch in diameter. Slots shall not be more than 1/8 inch wide.

Table 1. Acceptable pipe for subsurface drain repair

Kind of Pipe[#]	Specification
Corrugated Polyethylene (PE) Pipe and Fittings, 3 to 6 inch	ASTM F 405
Corrugated Polyethylene (PE) Pipe and Fittings, 3 to 24 inch	ASTM F 667
Corrugated Profile Wall (Dual Wall) Polyethylene (PE) pipe, 2 to 60 inch	ASTM F 2648[$]
Corrugated Profile Wall (Dual Wall) Polyethylene (PE) pipe, 12 to 60 inch	ASTM F 2306[$]
Polyvinyl Chloride (PVC) Plastic Pipe, Schedules 40, 80 and 120	ASTM D 1785
PVC Pressure-Rated Pipe (SDR Series)	ASTM D 2241
Clay drain tile	ASTM C 4
Concrete drain tile	ASTM C 412

[#]Pipe sizes are nominal and the ranges are inclusive

[$]Pipe conforming to AASHTO M 252 (3 to 10 inch), or AASHTO M 294 (12 to 60 inch) is acceptable.

7. SPECIFIC SITE REQUIREMENTS

A. Measurement and Payment

Compensation for any work item described in the contract documents but not listed in the bid schedule will be included in the payment for the item of work to which it is made subsidiary. Such items and bid items to which they are made subsidiary are identified in Items of Work and Construction Details section of this specification.

For items of work which lump sum prices are established in the contract, the quantity of work will not be measured for payment. Payment for each item will be made at the contract lump sum price and will constitute full compensation for completion of the work.

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B. Items of Work and Construction Details

"Drain Tile Investigation"

1. Bid Item No. 8

This item will consist of the excavation necessary to locate and determine the tie-in locations for the tile locations shown on the plans. This item shall also include backfilling of the trenches.

The extent of the tile investigation shall be as shown on the drawings. If extra work is required to locate additional tile not shown on the drawings, the Contractor can request additional compensation, but it must be first approved by the Division.

"Connect to Existing Tile"
2. Bid Item No.9

This item includes all labor, tools, equipment, and materials to make the specified connections between the existing field tile line and the new tile main including: excavation, trench bottom shaping, cutting and fitting of tile, placement of collars, placement and binding of tile compaction of soil bedding envelope, trench backfill, the keeping and delivery of a log of connections made, and miscellaneous associated work necessary to complete the item.

Includes temporary blocking or diverting flowing water while the connection is made.

Does not include repairs or connections to tile intercepted during installation of new tile as a part of the wetland project.

"Cap Existing Tile"
1. Bid Item No. 10

This item consists of capping and abandoning the downstream tile after the new tile has been connected.

Includes all materials, labor and equipment necessary to successfully cap the downstream tile.

No wood products are to be used in capping of the tile. The tile cap shall be either manufactured fitting or custom fitting made of metal or HDPE grouted in place.

Construction Specification
000 IA-11 Removal of Water

1. SCOPE

The work shall consist of the removal of surface water and ground water as needed to perform the required construction in accordance with the plans and specifications.

2. DIVERTING SURFACE WATER

The Contractor shall build, maintain and operate all cofferdams, channels, diversions, flumes, sumps, and other temporary protective works needed to divert surface water away from the construction site while construction is in progress.

3. DEWATERING THE CONSTRUCTION SITE

Foundations, cutoff trenches, borrow areas and other parts of the construction site shall be dewatered as needed for proper execution of the construction work. The Contractor shall furnish, install, operate and maintain all works and equipment needed to perform the dewatering.

4. EROSION AND POLLUTION CONTROL

Removal of water from the construction site, including the borrow areas shall be accomplished in such a manner that erosion and the transmission of sediment and other pollutants are minimized.

5. REMOVAL OF TEMPORARY WORKS

After temporary works have served their purposes and before the Contractor leaves the site, they shall be removed.

6. SPECIFIC SITE REQUIREMENTS

A. Measurement and Payment

Compensation for any work item described in the contract documents but not listed in the bid schedule will be included in the payment for the item of work to which it is made subsidiary. Such items and bid items to which they are made subsidiary are identified in Items of Work and Construction Details section of this specification.

For items of work which lump sum prices are established in the contract, the quantity of work will not be measured for payment. Payment for each item will be made at the contract lump sum price and will constitute full compensation for completion of the work.

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B. Items of Work and Construction Details

1. Subsidiary Item - Dewatering

This item shall include all costs to divert, pump, dam or other means to dewater the site as needed to complete construction activities.

No separate payment will be made for Removal of Water. Compensation for this item shall be made subsidiary to other bid items requiring removal of water in order to complete.

Construction Specification
000 IA-21 Excavation

1. SCOPE

The work shall consist of the excavation required by the drawings and specifications and disposal of the excavated materials. The cutoff trench and any other required excavations shall be dug to the lines and grades shown on the drawings or as staked in the field. Structure or trench excavations will conform to all safety requirements of OSHA.

2. USE OF EXCAVATED MATERIALS

Suitable materials from the specified excavations shall be used in the construction of required permanent earth fill. The suitability of materials for specific purposes shall be determined by the NRCS Inspector.

3. DISPOSAL OF WASTE MATERIAL

All surplus or waste material shall be disposed of in areas shown on the drawings or as approved by the NRCS Inspector. The waste material shall be smoothed and sloped to provide drainage.

4. STRUCTURE AND TRENCH EXCAVATION

Structure or trench excavations will conform to all safety requirements of OSHA.

5. BORROW EXCAVATION

When the quantities of suitable materials obtained from specified excavations are insufficient to construct the specified fills, additional materials shall be obtained from the designated borrow areas as shown on the drawings or as approved by NRCS and the landowner. On wetland projects, borrow shall not be taken from the wetland area within 10 feet of the embankment or as shown on the drawings.

Borrow areas shall be excavated and grading completed in a manner to eliminate steep or unstable side slopes or hazardous or unsightly conditions.

6. OVER-EXCAVATION

Excavation beyond the specified lines and grades shall be corrected by filling the resulting voids with compacted earthfill, except that if the earth is to become the subgrade for riprap, sand or gravel bedding or drainfill, the voids shall be filled with material conforming to the specifications for the riprap, bedding or drainfill, as appropriate.

7. SPECIFIC SITE REQUIREMENTS

A. Measurement and Payment

Compensation for any work item described in the contract documents but not listed in the bid schedule will be included in the payment for the item of work to which it is made subsidiary. Such items and bid items to which they are made subsidiary are identified in Items of Work and Construction Details section of this specification.

For items of work which lump sum prices are established in the contract, the quantity of work will not be measured for payment. Payment for each item will be made at the contract lump sum price and will constitute full compensation for completion of the work.

For items of work for which specific unit prices are established in the contract, the payment will be made based on the approved quantity measured by the engineer or weight tickets. Payment will constitute full compensation of the work completed as defined by each work item.

The volume of excavation as provided in the bid quantities has been determined from the topographic information shown on the Drawings using a computer program. Payment will be made based on the planned quantities provided unless additional excavation is directed by the Engineer. Excavation resulting from the contractor's improper construction operations, as determined by the Engineer, is not included for measurement and payment.

B. Items of Work and Construction Details

"Excavation (General)":

Bid Item No. 11

This item will consist of excavation and grading of material needed for the following typical items as shown in the plans:

- Establishing pool final grade
- Core Trench (for tile identification)
- Borrow excavation for containment dike fill
- Auxiliary spillway.

Excavations required for the placement of tile exploration, new tile installation, riprap placement, tied concrete block matting, and temporary construction entrance are not included in this bid quantity and will not be measured for payment. The cost of excavation for these items are incidental and should be included as part of their corresponding bid items.

Widening of the core trench beyond plan detail is acceptable but shall not exceed 10 feet. No additional compensation is to be paid for contractor elected over excavation.

This item does not include the excavation for site stripping or topsoil, which is covered under Specification IA-CS-001. "Site Preparation".

This item includes the hauling of excavated material to be used as earthfill or spoil.

The material excavated with suitable quality shall be used within the dike as directed by engineer.

Suitable excess excavated material shall be disposed of along top of banks for tile outlet channels or in designated areas by Engineer or Engineer's Representative.

See Specification IA-CS-023 for compaction method.

Payment will be based on plan quantity. If unsuitable material is found at the bottom of the core trench, the over excavation shall be measured and paid in a change order.

Payment will constitute full compensation for the following related Subsidiary items: Pollution Control; Removal of Water; and Structure Excavation.

1. Subsidiary Item – Borrow Excavation

   This item will consist of excavation of the borrow area for placement of cohesive material in the embankment core and compacted clay liner, if included and as shown in the plans. The cost for excavation and transporting of borrow shall be included in corresponding bid Items listed in Specification IA-CS-023 “Earthfill”.

   Borrow from any other area will not be allowed unless directed and approved by the Engineer.

   The topsoil from the borrow area shall be removed to a minimum depth of 6" and stockpiled. When the borrow operations have been completed, grades shall be returned to that indicated on the plans and the topsoil shall be uniformly spread over the entire borrow area to a depth of 6".

   No separate payment will be made for strip or respread of topsoil over borrow area.

2. Subsidiary Item – Structure Excavation

   This item shall consist of the excavation necessary to install the riprap, corrugated metal pipe (CMP) conduit, CMP tile outlets and water control structure in the locations and as shown on the drawings.

   No separate payment will be made for Structure Excavation. Compensation for this item will be included in payment with the corresponding bid items for CMP conduit; CMP water control structure; steel sheet pile; and riprap.

Construction Specification
000 IA-23 Earthfill

1. SCOPE

The work shall consist of the construction of earth fills required by the drawings and specifications. The completed work shall conform to the lines, grades, and elevations shown on the drawings or as staked in the field.

2. MATERIALS

All fill materials shall be obtained from required excavations and designated borrow areas. Fill materials shall contain no sod, brush, roots or other bio-degradable materials. Rocks larger than 6 inches in diameter shall be removed prior to compaction of the fill.

3. FOUNDATION PREPARATION

Foundations for earthfill shall be stripped a minimum of 6 inches to remove vegetation and other unsuitable materials. Foundation surfaces shall be scarified to a minimum depth of 2 inches prior to placing fill material.

Foundation and abutment surfaces shall not be sloped steeper than 1.5 horizontal to 1 vertical unless otherwise shown on the drawings.

4. PLACEMENT

Fill shall not be placed until the required excavation and foundation preparation have been completed and the foundation has been inspected and approved by NRCS. Fill shall not be placed upon a frozen surface, nor shall snow, ice, or frozen material be incorporated in the fill.

Adjacent to structures or pipes, fill shall be placed in a manner which will prevent damage. The height of the fill adjacent to structures or pipes shall be increased at approximately the same rate on all sides.

The materials used throughout the earth fill shall be essentially uniform. Selective placement shall be as shown on the drawings or approved by NRCS.

If the surface of any layer becomes too hard and smooth for proper bond with the succeeding layer, it shall be scarified to a minimum depth of 2 inches before the next layer is placed.

The top surfaces of embankments shall be maintained approximately level during construction, except that a cross-slope of approximately 2% shall be maintained to ensure effective drainage.

When moving fill material from the borrow area(s) to the embankment by use of bulldozers only, the following steps shall be followed:

- Immediately after the borrow material is pushed to the embankment, it shall be spread in horizontal lifts placed parallel to the centerline of the embankment.
- Compactive effort will then be applied by operating equipment parallel to the centerline of the fill or embankment.
- Lift thicknesses shall be in strict compliance with Clause 6, below.

Sectional fills are not allowed unless they are shown on the construction drawings.

5. CONTROL OF MOISTURE CONTENT

The moisture content of the fill material shall be adequate for obtaining the required compaction. Material that is too wet shall be dried to meet this requirement, and material that is too dry shall have water added and mixed until the requirement is met.

The moisture content of the fill material shall be such that a ball formed with the hands does not crack or separate when struck sharply with a pencil and will easily ribbon out between the thumb and finger.

Earth foundations under and adjacent to concrete structures shall be prevented from drying and cracking before concrete and backfill are placed.

The application of water to the fill materials shall be accomplished at the borrow areas insofar as possible.

6. COMPACTION

Earth fill shall be compacted by one of the following methods as specified on the plans or in Section 8, Special Specifications. If no method is specified, compaction will be in accordance with Method 1.

- Method 1 - Earthfill shall be placed so that the wheels or tracks of the loaded hauling equipment, traveling in a direction parallel to the centerline of fill, pass over the entire surface of each layer being placed. Low ground pressure vehicles shall not be used for this purpose.
- Method 2 - Two (2) complete passes of a tamping-type roller will be made over each layer. The roller shall be capable of exerting a minimum force of two hundred (200) pounds per square inch.
- Method 3 - Minimum density shall be 90% of the maximum density as determined by ASTM D 698 and as shown on the plans.

The maximum thickness of a lift of fill before compaction shall be 9 inches, unless otherwise indicated on the drawings.

Fill adjacent to structures, pipe conduits, and appurtenances shall be placed in layers not more than 4 inches thick and compacted to a density equivalent to that of the surrounding fill. Methods used to obtain compaction for fine or coarse grained materials are as follows:

- For fine grained materials, hand tamping or manually directed power tampers may be used. Hand compaction only shall be used to compact the earthfill under the bottom half of circular pipes. Manually directed power tampers shall not be used in tight spaces where applying full compactive effort will result in direct contact of the tamper plate with the pipe. Care should be taken so that compaction around the spillway pipe does not cause uplift of the pipe resulting in a void beneath the pipe.
- For coarse grained materials (sands and gravels), vibratory plate compactors shall be used for obtaining compaction. However, hand tamping shall be used to compact the material under the bottom half of circular pipes.

In all cases, follow manufacturer instructions for the specific compaction equipment being used. Heavy equipment shall not be operated within 2 feet of any structure or pipe.

Compacting of fill adjacent to concrete structures shall not be started until the concrete is 7 days old.

7. ISLANDS, MOUNDS, AND LOAFING AREAS ON WETLAND RESTORATION, ENHANCEMENT, OR CREATION PROJECTS

Islands shall be randomly located within the wetland area at locations shown on the drawings or as staked in the field. The orientation of island shorelines shall be random with attention given to prevailing

winds to limit wave damage. In general, the side of the island with the longest dimension shall be parallel to the prevailing wind direction. Side slopes of islands shall be as shown on the drawings, but in no case shall be steeper than 6 horizontal to 1 vertical. Island shapes shall be irregular.

Loafing areas shall be constructed in the areas shown on the drawings or as staked in the field and shall be graded to drain runoff water. The elevation of at least one loafing area should be above the maximum water level whenever possible.

Excavated material not suitable for embankments, wetland dikes, or islands can be used to create mounds or blended into surrounding topography to create a natural appearance. Spoil material shall not be spread on existing wetland areas.

Organic soils shall not be used to construct islands, loafing areas, dikes, or embankments.

8. SPECIFIC SITE REQUIREMENTS

A. Measurement and Payment

For items of work which specific unit prices are established in the contract, the volume of earthfill will be computed to the nearest cubic yard by the method of average cross-sectional end areas. No deduction in volume will be made for embedded items, such as, conduits inlet structures and their appurtenances. The pay limits for computation shall be as shown on the drawings with the further provisions that earthfill voids resulting from over excavation of the foundation, outside specified lines and grades, will be included in the measurement for payment only under the following conditions:

- Where such over excavation is directed by the engineer to remove unsuitable material, and
- Where the unsuitable condition is not a result of the contractor's improper construction operations as determined by the engineer.

Earthfill beyond the specified lines and grades to backfill excavation required for compliance with OSHA requirements will be considered subsidiary to the earthfill bid item(s).

Payment for each type and compaction class of earthfill and earth backfill is made at the contract unit price for that type and compaction class of earthfill. Such payment will constitute full compensation for all labor, material, equipment, and all other items necessary and incidental to the performance of the work.

Compensation for any item of work described in the contract, but not listed in the bid schedule is included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in this specific section.

B. Items of Work and Construction Details

Items of work to be performed in conformance with this specification and the construction details therefore are:

"Earthfill (General)":

1. Bid Item No. 12

This item shall consist of the earthfill necessary to construct the submerged berms, dike, and core trench and additional fill to be placed over the tile to provide adequate cover. Cohesive

material found during general grading and compacted liner removal can be used for these areas. Sand and gravel found on site shall not be used for this earthfill.

Compaction shall be Method 1. Contractor shall describe means and methods of compaction of the core trench at the preconstruction meeting.

Rocks larger than 6" shall be removed prior to compaction.

Payment for these items shall be based on plan quantity unless additional length or location of tile varies from what is shown on the plans. The plan quantity is based on neat lines and does not account for any shrinkage.

Payment will constitute full compensation for the following related Subsidiary items: Pollution Control, Removal of Water, and Backfill Required Excavation.

"Earthfill (Wasting)":

2. Bid Item No. 13

This item will consist of earthfill placement and compaction necessary to construct the portion of the embankment that is not considered part of the embankment core. Cohesive material found during general grading and compacted liner removal can be used for this area. Sand and gravel found on site shall not be used for fill for these items

Compaction shall be Method 1.

Rocks larger than 6" shall be removed prior to compaction.

Payment for this item shall be based on plan quantity. The plan quantity is based on neat lines and does not account for any shrinkage.

Payment will constitute full compensation for the following related Subsidiary items: Pollution Control, Removal of Water, and Backfill Required Excavation.

3. Subsidiary Item – Backfill Required Excavation

This item shall consist of backfilling the areas excavated to install the other components related to the project such as piping or structures and to locate and remove the tile lines.

Compaction adjacent to the structures shall be as indicated above. All other compaction shall be Method 1 or equivalent.

No separate payment will be made for Backfill of Structure Excavation. Compensation for this item will be included in payment for Corrugated Metal Pipe; CMP Drawdown Structure; Riser Inlet Structure, Tile Investigation and Removal and Dual Wall HDPE.

Construction Specification
000 IA-24 Drainfill

1. SCOPE

The work shall consist of furnishing and placing drainfill required in the construction of structure drainage systems and filter diaphragms around conduits.

2. MATERIALS

Drainfill shall be sand, gravel, or crushed stone. It shall be composed of clean, hard, durable mineral particles free from organic matter, clay balls, soft particles, or other substances that would interfere with their free-draining properties. Aggregates of crushed limestone may be used only for coarse drainfill but shall be thoroughly washed and screened so that not more than 3 percent by weight is finer than a No. 4 sieve.

Coarse drainfill shall be graded as follows:

U.S. Sieve Designation	Percent Passing Sieve
1 1/2	100
3/4	75-100
1/2	25-80
3/8	20-60
No. 4	0-10
No. 8	0-5
No. 100	0-3

Fine drainfill shall be graded as follows:

U.S. Sieve Designation	Percent Passing Sieve
3/8	100
No. 4	95-100
No. 8	75-95
No. 16	50-70
No. 30	25-50
No. 50	10-20
No. 100	0-6
No.200	0-3

3. BASE PREPARATION

Foundation surfaces and trenches shall be free of organic matter, loose soil, foreign substances, and standing water when the drainfill is placed.

4. PLACEMENT

Drainfill shall not be placed until the trench excavation has been inspected and approved by NRCS. Installation of the drainage conduit shall be inspected and approved by NRCS before covering it with

drainfill. No foreign materials shall be allowed to become intermixed with or otherwise contaminate the drainfill. Drainfill material shall be placed in a manner to avoid segregation of particles by size.

5. COMPACTION

1. Foundation Trench Drain
   a. No compaction will be required beyond that resulting from the placing and spreading operations.
2. Filter Diaphragm
   a. Each layer of sand material shall be flooded with clean water prior to compaction.
   b. Compaction shall be accomplished while the material is wet from step (1) above.
   c. Each layer shall be compacted by a minimum of 2 passes of a hand directed vibratory plate compactor over the entire layer surface.
   d. Layer thickness shall not exceed 12 inches after compaction.
3. Filter Diaphragm Outlet
   a. Sand material shall be placed so the layer thickness does not exceed 4 inches after compaction.
   b. Each layer shall be compacted by a minimum of 2 passes of a hand directed vibratory plate compactor over the entire layer surface.

6. SPECIFIC SITE REQUIREMENTS

A. Measurement and Payment

Compensation for any work item described in the contract documents but not listed in the bid schedule will be included in the payment for the item of work to which it is made subsidiary. Such items and bid items to which they are made subsidiary are identified in Items of Work and Construction Details section of this specification.

For items of work which lump sum prices are established in the contract, the quantity of work will not be measured for payment. Payment for each item will be made at the contract lump sum price and will constitute full compensation for completion of the work.

For items of work for which specific unit prices are established in the contract, the payment will be made based on the approved quantity measured by the engineer or weight tickets. Payment will constitute full compensation of the work completed as defined by each work item.

B. Items of Work and Construction Details

"Drainfill":

1. Bid Item No.14

This item is part of the construction of the tiles, including backfill with material meeting the requirements of fine drainfill or ASTM Class 2 material, as shown in the plans.

Measurement and payment shall be on a plan quantity, verified by quarry ticket. Plan quantity listed in the proposal will be used to measure and pay for the bid to the nearest 0.1 ton.

Payment will constitute full compensation for the following related subsidiary items: Site Preparation and Pollution Control.

Construction Specification
000 IA-26 Topsoiling

1. SCOPE

The work shall consist of salvaging topsoil from borrow areas or required excavations and spreading it on the exposed disturbed areas.

2. QUALITY OF TOPSOIL

Topsoil shall consist of friable surface soil reasonably free of grass, roots, weeds, sticks, stones, or other foreign materials.

3. EXCAVATION

After the site has been cleared and grubbed, the topsoil shall be removed from borrow areas and required excavation areas to the depth as shown on the drawings. Topsoil shall be stockpiled at locations approved by NRCS.

4. SPREADING

Spreading shall not be done when the ground or topsoil is frozen, excessively wet, or otherwise in a condition detrimental to the work. Surfaces designated to be covered shall be lightly scarified just prior to the spreading operation. Where compacted fills are designated to be covered by topsoil, the topsoil shall be placed concurrently with the fill and shall be bonded to the compacted fill with the equipment.

Topsoil shall be placed to the minimum depth shown on the drawings. After the spreading operation is completed, the surface shall be finished to a reasonably smooth surface.

5. SPECIFIC SITE REQUIREMENTS

A. Measurement and Payment

Compensation for any work item described in the contract documents but not listed in the bid schedule will be included in the payment for the item of work to which it is made subsidiary. Such items and bid items to which they are made subsidiary are identified in Items of Work and Construction Details section of this specification.

For items of work which lump sum prices are established in the contract, the quantity of work will not be measured for payment. Payment for each item will be made at the contract lump sum price and will constitute full compensation for completion of the work.

For items of work for which specific unit prices are established in the contract, the payment will be made based on the approved quantity measured by the engineer or weight tickets. Payment will constitute full compensation of the work completed as defined by each work item.

B. Items of Work and Construction Details

1. Bid Item No. 15 Topsoil Placement

This item will consist of spreading salvaged and stockpiled topsoil as the surface layer of all excavations and earthfills that will be seeded. Topsoil shall be placed as final lift.

Areas to receive a minimum of 6-inch layer of topsoil include areas of the embankment that are do not have riprap, borrow area and additional fill placed over new tile and any other areas noted in the plans.

Measurement and payment for Topsoiling shall be on a plan quantity. Plan quantity listed in the proposal will be used to measure and pay for the bid.

Grading areas with less than 6 inches of cut will not require topsoil respreading unless required by engineer.

Payment will constitute full compensation for the following related subsidiary items: Site Preparation and Pollution Control.

Construction Specification
000 IA-31 Concrete

1. SCOPE

The work shall consist of furnishing, forming, placing, finishing, and curing Portland cement concrete including steel reinforcement.

2. MATERIALS

Portland Cement shall conform to ASTM C 150 and shall be Type I or Type II.

Fine Aggregates shall conform to ASTM C 33 and shall be composed of clean, uncoated grains of material.

Coarse Aggregates shall be gravel or crushed stone conforming to ASTM C 33 and shall be clean, hard, durable and free from clay or coating of any character. The maximum size of coarse aggregate shall be 1 1/2 inches or as shown on the drawings.

Water shall be clean and free from injurious amounts of oil, acid, salt, alkali, organic matter, or other deleterious substances.

Air entraining agent shall conform to ASTM C 260.

Fly ash may be used as a partial substitution for Portland cement and shall be in strict compliance with ASTM C 618, Class F or C. The loss by ignition shall not exceed 4.0 percent.

Blast-furnace slag may be used as a partial substitution for Portland cement and shall be in conformance with ASTM C 989 for ground granulated blast-furnace slag (GGBF slag).

Water-reducing admixtures shall conform to ASTM C 494 and may be the following types:

1. Type A - Water-reducing admixture
2. Type D - Water-reducing and retarding admixture
3. Type F - Water-reducing, high range admixture (superplasticizer).
4. Type G - water-reducing, high range, and retarding admixture (superplasticizer).

Type D or G admixture may be used when the air temperature is over 80 degrees F. at the time of mixing and/or placement.

Calcium Chloride or other antifreeze compounds or accelerators will not be allowed.

Preformed expansion joint filler shall be a commercially available product made of bituminous, sponge rubber or closed cell foam materials with a minimum thickness of 1/2 inch.

Reinforcing steel shall be free from loose rust, oil, grease, paint, or other deleterious matter. Reinforcing steel shall conform to one or more of the following:

1. Reinforcing Bars - ASTM A 615 or A 996, Grade 40 or greater, deformed.
2. Welded Wire Fabric - ASTM A 185 or A 497.

Waterstops shall be either metallic or nonmetallic. Metallic waterstops shall be fabricated from sheets of copper or galvanized steel. Nonmetallic waterstops shall be made of natural or synthetic rubber or vinyl chloride polymer or copolymer. Rubber, polymer and copolymer waterstops shall have ribbed or bulb-type

anchor flanges and a hollow tubular center bulb, unless otherwise shown on the drawings. All waterstops shall be of the sizes shown on the drawings.

Curing compound shall be a liquid membrane-forming compound suitable for spraying on the concrete surface. The curing compound shall meet the requirements of ASTM C 309 Type 2 (white pigmented).

3. CONCRETE DESIGN MIX

The contractor will be responsible for the determining the design mix proportions in accordance with the requirements included in this paragraph and shall provide a copy of the mix to the NRCS Engineer at Natural Resources Conservation Service least 3 days prior to placing any concrete. The concrete mix shall be of such proportions as to provide a minimum strength of 3500 p.s.i. in 28 days, unless otherwise shown on the drawings. The air content shall be 4 to 8 percent of the volume of the concrete at the time of placement. The slump shall be 2 to 5 inches except when superplasticizer is used. The slump shall be 3 inches or less prior to the addition of superplasticizer admixture and shall not exceed 7 1/2 inches following addition and mixing. The fine aggregate shall be 30-50 percent of the total combined aggregate based on oven dry weights. The contractor shall provide tests to verify that the design mix meets the requirements. In lieu of this, one of the following mix proportions per cubic yard may be used:

Mix Number	Minimum Cement, Pounds	Fly Ash, Pounds	GGBF Slag, Pounds	Maximum **Water, Gallons
1	564	0	0	33
2	470	45-90	0	31-34
3	517	129	0	31*
4	366	114	91	31*
5	259	103	155	31*

** Total of available aggregate moisture, mixing water added at the plant and mixing water added at the job site (one gallon equals 8.33 pounds).
* Requires water reducing admixture.

4. MIXTURES AND MIXING

Ready-mixed concrete shall be batched, mixed and transported in accordance with ASTM C 94. Concrete shall be uniform and thoroughly mixed when delivered to the forms. No mixing water in excess of the amount shown for the design mix or in an amount that would cause the maximum slump to be exceeded shall be added to the concrete during mixing, hauling or after arrival at the point of delivery. The concrete shall be batched and mixed so that the temperature of the concrete at the time of placing shall be between 50 and 90 degrees F.

5. BATCH TICKET

The contractor shall obtain from the supplier a delivery ticket for each batch of concrete before unloading at the site. The following information shall be included on the ticket: name of concrete supplier, job name or location, date, truck number, amount of concrete, time loaded or time of first mixing cement, aggregate, and mixing water added at the plant, type and amount of cement, type and amount of admixtures, oven dry weights of fine and coarse aggregate, and moisture content(%) or weight of water contained in the aggregates.

The following information shall be added to the batch ticket on site: mixing water added on site, time concrete arrived on site and time concrete was unloaded.

Upon completion of the concrete placement, copies of all batch tickets shall be provided to NRCS.

6. REINFORCING STEEL

Before reinforcement is placed, the surfaces of the bars or mesh shall be cleaned to remove any loose, flaky rust, mill scale, oil, grease, or other foreign substances. After placement, the reinforcement shall be maintained in a clean condition until it is completely embedded in the concrete.

Reinforcing bars shall be cut and bent according to ACI Standard 315.

Tack welding of bars shall not be permitted. Reinforcement shall be accurately placed as shown on the drawings and secured in position in a manner that will prevent its displacement during placement of concrete. Metal chairs, metal hangers, metal spacers or concrete chairs shall be used to support reinforcement. Precast concrete chairs shall be manufactured from concrete equal in quality to the concrete being placed. Precast concrete chairs shall be moist at the time concrete is placed

Splices of reinforcing bars shall be made only at the locations shown on the drawings, unless otherwise approved by the NRCS Engineer. All reinforcing splices and placement shall be in accordance with ACI 318 and as shown on the drawings.

After placement of the reinforcement, concrete shall not be placed until the reinforcement has been inspected and approved by NRCS.

7. PREPARATION OF FORMS AND SUBGRADE

Prior to placement of concrete, the forms and subgrade shall be free of woodchips, sawdust, debris, water, ice, snow, extraneous oil, mortar, or other harmful substances or coatings. Any oil on the reinforcing steel or other surfaces required to be bonded to the concrete shall be removed. All surfaces shall be firm and damp prior to placing concrete. Placement of concrete on mud, dried earth, uncompacted fill, or frozen subgrade will not be permitted.

The forms and associated false-work shall be substantial and unyielding and shall be constructed so that the finished concrete will conform to the specified dimensions and elevations. Forms will be mortar tight. Forms with torn surfaces, worn edges, dents or other defects will not be used. Forms shall be coated with a nonstaining form release agent before being set into place. Excess form coating material shall not stand in puddles in the forms or come in contact with the steel reinforcement or hardened concrete against which fresh concrete is to be placed.

Form accessories to be partially or wholly embedded in the concrete, such as ties and hangers, shall be of a commercially manufactured type. Non fabricated wire shall not be used. Form ties shall be constructed so that the ends or end fasteners can be removed without causing spalling at the surface of the concrete.

Metal form ties used within the forms on structures with a total volume of concrete exceeding fifteen cubic yards shall be equipped with cones or other devices that permit their removal to a depth of at least one inch without damage to the concrete. The holes resulting from cones and other devices shall be patched in accordance with Section 9.

Form ties except those specifically covered by the preceding paragraph shall be broken off flush with the formed surface. Any surface areas which have been spalled or otherwise damaged shall be repaired in accordance with Section 9.

Steel tying and form construction adjacent to new concrete shall not be started until concrete has cured at least 12 hours.

Concrete joints shall be of the type and at the locations shown on the drawings. Splices in metal waterstops shall be brazed, welded or overlapped and bolted.

Splices in nonmetallic waterstops shall be cemented or joined as recommended by the manufacturer.

8. PLACING CONCRETE

Concrete shall not be placed until the subgrade, forms, and steel reinforcement have been inspected and approved by the NRCS Inspector. Any deficiencies are to be corrected before the concrete is delivered for placement.

Concrete shall be delivered to the site and discharged into the forms within 1 1/2 hours after the introduction of the cement to the aggregates. When a superplasticizer is used, the concrete shall be discharged within the manufacturer's recommended time limit for discharge after addition of the admixture. In hot weather or under conditions contributing to quick setup of the concrete, discharge of the concrete shall be accomplished in 45 minutes unless a set-retarding admixture is used, in which case the manufacturer's recommended time limit will apply.

Addition of water at the job site may be done at the beginning of placement of each load of concrete in order to obtain allowable slump, provided that the maximum water content and water/cement ratio in the design mix is not exceeded. Addition of water will not be permitted after placement of the load has started.

The concrete shall be deposited as closely as possible to its final position in the forms and shall be worked into corners and around reinforcement and other embedded items in a manner which prevents segregation. Formed concrete shall be deposited in layers 24 inches or less in depth and shall be continuously deposited so that no concrete will be deposited on concrete which has hardened sufficiently to cause the formation of "cold joints". Concrete containing superplasticizer shall be placed in lifts not exceeding 5 feet in depth. If the surface layer of concrete sets during placement to the degree that it will not flow and merge with the succeeding layer when tamped or vibrated, the contractor shall discontinue placing concrete and install a construction joint. Construction joints shall be completed as shown on the drawings or by one of the following methods:

1. The joint shall be constructed using a 6 inch wide by 1/4 inch steel plate. The surfaces of the construction joint shall be prepared by washing and scrubbing with a wire brush or wire broom to expose coarse aggregate. The steel plate shall be embedded 3" in the concrete.
2. The joint surface shall be cleaned to expose coarse aggregate by sandblasting or air-water cutting after the concrete has gained sufficient strength to prevent displacement of the coarse aggregate or cement fines. The surface of the concrete shall not be cut so deep as to undercut the coarse aggregate. The joint shall be washed to remove all loose material after cutting.

The surfaces of all construction joints shall be kept continuously moist for at least 1 hour prior to placement of the new concrete. The new concrete shall be placed directly on the cleaned and washed surface. New concrete shall not be placed until the hardened concrete has cured at least 12 hours.

Concrete shall not be dropped more than 5 feet vertically unless suitable equipment is used to prevent segregation. Concrete containing superplasticizer shall not be dropped more than 12 feet vertically.

Immediately after the concrete is placed in the forms, it shall be consolidated by vibration, spading or hand tamping as necessary to insure smooth surfaces and dense concrete. Care should be taken not to over-vibrate concrete containing superplasticizer. Vibration shall not be supplied directly to the reinforcing steel, the forms or concrete which has hardened to the degree that it does not insure a monolithic bond with the preceding layer, The use of vibrators to transport concrete in the forms or conveying equipment will not be permitted.

9. FORM REMOVAL AND FINISHING

Forms shall be left in place for at least 24 hours after placing concrete. Forms shall be removed in such a way as to prevent damage to the concrete. Supports shall be removed in a manner that will permit concrete to take the stresses due to its own weight uniformly and gradually.

Immediately after removal of the forms, concrete which is honey combed, damaged or otherwise defective shall be repaired or replaced. All cavities or depressions resulting from form tie removal shall be patched with a non-shrink grout, mortar mix or epoxy-type sealer. Non-shrink grout consists of 1 part cement and 2-1/2 parts sand that will pass a No. 16 sieve. Only enough water shall be added to produce a filling which is at the point of becoming rubbery when the material is solidly packed.

All repaired and patched areas shall be cured as required in Section 10.

10. CURING

Concrete shall be cured for a period of not less than 7 consecutive days by one of the following approved methods:

1. Membrane Curing: Concrete shall be cured with white pigmented curing compound. The compound shall be sprayed on moist concrete as soon as free water has disappeared but shall not be applied to any surface until patching, repairs and finishing of that surface are completed. Curing compound shall not be applied to surfaces requiring bond to subsequently placed concrete, such as construction joints, shear plates, reinforcing steel, and other embedded items. Surfaces subjected to heavy rainfall or running water within 3 hours after curing compound has been applied or surfaces damaged by subsequent construction operations during the curing period, shall be reapplied in the same manner as the original application.
2. Moist Curing: Concrete shall be cured by maintaining all surfaces continuously wet for the entire curing period.
3. Cover: Adequately cover an exposed structure with burlap mats, or other material and continually soak with water.

11. BACKFILLING

Backfilling may begin when the curing period has ended. Backfill against the structure will be placed in no more than 4-inch layers and compacted by hand tamping or with manually directed power tampers or plate vibrators. Layers compacted in this manner shall extend not less than 2 feet from any part of the concrete structure.

12. HOT AND COLD WEATHER CONCRETING

When the atmospheric temperature may be expected to drop below 40° F. at the time concrete is delivered to the work site, during placement, or at any time during curing period, concrete shall be mixed, placed and protected in accordance with ACI Standard 306, “Recommended Practice for Cold Weather Concreting.”

When climatic or other conditions are such that the temperature of the concrete may reasonably be expected to exceed 90o F. at the time of delivery to the work site, during placement or during the first 24 hours after placement, concrete shall be mixed, placed and protected in accordance with ACI Standard 305, “Recommended Practice for Hot Weather Concreting.”

13. SPECIFIC SITE REQUIREMENTS

A. Measurement and Payment

Compensation for any work item described in the contract documents but not listed in the bid schedule will be included in the payment for the item of work to which it is made subsidiary. Such items and bid items to which they are made subsidiary are identified in Items of Work and Construction Details section of this specification.

For items of work which lump sum prices are established in the contract, the quantity of work will not be measured for payment. Payment for each item will be made at the contract lump sum price and will constitute full compensation for completion of the work.

For items of work for which specific unit prices are established in the contract, the payment will be made based on the approved quantity measured by the engineer or weight tickets. Payment will constitute full compensation of the work completed as defined by each work item.

B. Items of Work and Construction Details

"Tied Concrete Block Mat"

1. Bid Item No. 16

This item shall consist of all necessary materials, labor, and transportation necessary for the installation of tied concrete block matting (TCBM).

TCBM shall be Flexamat 'standard' or equivalent. Installation shall be "perpendicular to flow" for spillways and overflows.

Measure and payment will be based on plan quantity. Plan quantity does not account for overlap or key ins. Quantity does include a 2 feet dimensional overrun to account for variability in manufacture's dimensions. This over run maybe used for key in.

Where specified, this item includes all labor, transportation, and materials necessary for the installation of bedding material.

Items subsidiary to the installation include excavation for structures and dewatering.

Subsidiary Item - Concrete

This item shall consist of all necessary concrete, reinforcing steel, formwork, materials, and labor to place poured concrete and reinforced concrete as shown in the drawings including, but not limited to, the Water Control Structure and concrete collars around pipe connections.

No separate payment will be made for Concrete. Compensation for this item will be included in the payment for the Water Control Structure and Tile Installation.

Construction Specification
000 IA-45 Plastic (PVC, PE) Pipe

1. SCOPE

The work shall consist of furnishing and installing plastic pipe and the necessary fittings specified herein or as shown on the drawings. This specification does not cover subsurface drainage systems.

2. MATERIALS

Corrugated Polyethylene (PE) Tubing. Corrugated PE tubing and fittings shall conform to the requirements of the applicable specification listed below:

Kind of Pipe	Specification
Corrugated Polyethylene(PE) Tubing and Fittings,	
Nominal Sizes 3 to 6 inch, inclusive	ASTM F 405
Large Diameter Corrugated Polyethylene Tubing and Fittings,	
Nominal Sizes 8 to 24 inch, inclusive	ASTM F 667
Polyethylene (PE) Large Diameter Profile Wall Sewer and Drain Pipe	ASTMF 894

Poly(Vinyl Chloride) (PVC) Plastic Pipe. PVC pipe and fittings shall conform to the requirements of the applicable specification listed below:

Kind of Pipe	Specification
PVC Plastic Pipe, Schedules 40, 80 and 120	ASTM D 1785
PVC Pressure-Rated Pipe (SDR Series)	ASTM D 2241
PVC Pressure Pipe, 4 in. through 12 in., for Water Distribution	AWWA C900
PVC Water Transmission Pipe, Nominal Diameters 14 in through 36 in	AWWA C905

PVC and PE Plastic Pipe. Plastic pipes meant for non-potable, livestock water supply shall conform to the requirements of the applicable specification listed below:

Kind of Pipe	Specification
Polyethylene (PE) Plastic Pipe, (SIDR-PR) Based on	
Controlled Inside Diameter	ASTM D 2239
PVC Pressure-Rated Pipe (SDR Series)	ASTM D 2241

3. FITTINGS AND JOINTS

Pipe joints shall conform to the details shown on the drawings. Pipe shall be installed and joined in accordance with the manufacturer's recommendations.

Joints may be bell and spigot type with elastomeric gaskets, coupling type with elastomeric gasket on each end, or solvent cemented. Gaskets shall conform to ASTM D 1869. Solvent cemented joints shall not be used for pond spillway pipes. Solvent cemented joints for PVC pipe and fittings shall be in

accordance with ASTM D 2855. When a lubricant is required to facilitate joint assembly, it shall be a type having no detrimental effect on the gasket or pipe material.

Mechanical joints (split couplings and snap couplings) may be used when joining PE pipe and fittings when the pipe is used for non-pressure flow and a free draining sand or gravel bedding material is provided. Elastomeric-sealed mechanical joints shall be used when joining PE pipe and fittings under pressure flow or where seepage cannot be tolerated. Where non-pressure pipe is specified, the fittings shall be of the same or similar materials as the pipe and shall provide the same durability and strength as the pipe.

A special case of livestock water supply involves pipes through a dam or embankment. Only PE pipe meeting the above specification may be used. PE pipe, of 1 ¼, 1 ½, or 2-inch diameter shall be installed so that there are no joints within the embankment area.

Where pressure pipe is specified, fittings shall have a design capacity equal to or exceeding that specified for the pipe to which it is attached. Fittings shall be cast iron, steel, one piece injection molded plastic fitting or fabricated from plastic pipe and one piece injection molded plastic fittings. Pressure pipe fittings shall conform to the requirements of the applicable specification listed below.

Kind of Fitting	Specification
Threaded PVC Plastic Pipe Fittings, Schedule 80	ASTM D 2464
PVC Plastic Pipe Fittings, Schedule 40	ASTM D 2466
PVC Plastic Pipe Fittings, Schedule 80	ASTM D 2467
Butt Heat Fusion (PE) Plastic Fittings for PE Plastic Pipe and Tubing	ASTM D 3261
Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals	ASTM D 3139
PVC Pressure Pipe, 4 in. through 12 in., for Water Distribution	AWWA C900
PVC Water Transmission Pipe, Nominal Diameters 14 in through 36 in	AWWA C905

4. HANDLING AND STORAGE

Pipe shall be delivered to the job site and handled by means which provide adequate support to the pipe and does not subject it to undue stresses or damage. When handling and placing plastic pipe, care shall be taken to prevent impact blows, abrasion damage, and gouging or cutting (by metal surfaces or rocks). All special handling requirements of the manufacturer shall be strictly observed. Special care shall be taken to avoid impact when the pipe must be handled at temperatures of 40 degrees F (4.4 degrees C) or less.

Pipe shall be stored on a relatively flat surface so that the barrels are evenly supported. Unless the pipe is specifically coated to withstand exposure to ultraviolet radiation, it shall be covered with an opaque material when stored outdoors for a period of 15 days or longer.

5. TRENCHING

Plastic pipe conduits shall be installed in trenches or plowed in according to the following methods:

1. **Trencher Constructed** - When conditions permit, trenching for pipelines, which are buried from 5 to 6 feet deep, are usually done with a narrow 4 to 6 inch wide chain trencher. Where there is little gravel and the ground is not too wet, these trenchers bring up well pulverized soil that makes good backfill material. Where rocks are not present, any of this material may be backfilled directly around the pipe. There is no practical way to compact the fill in these narrow trenches. The owner must be made aware that this material normally consolidates to its maximum extent in two to five years, but depressions or low spots can be hazards to livestock, humans and equipment.

2. **Backhoe Constructed Trench** – Backhoe trenches are usually a minimum of 12 inches wide. The material frequently comes out of the trench as clods, large chunks, and rocks. Immediately backfill over the pipe with 4 to 6 inches of soil that is free of these clods, large chunks, and rocks. If adequate excavated material is not available, then material such as sand or fine gravel should be imported and placed around the pipe to a depth of 4 to 6 inches over the top of the pipe. Fill the trench with the remaining excavated material.
3. **Plowing** – Plowing, or ripping, is a trenchless method for installing plastic pipe. It is a multi-stage process consisting of positioning a vibrating or static (non-vibrating) plow equipped with a trailing product guide which feeds pipe to the depth setting of the plow as it moves forward. The pipe is inserted into the ground continuously along a predetermined path and depth. The vertical depth of installation is controlled by hydraulic adjustment of the plow shear head and the surface contours. The depth of insertion must be continually adjusted to compensate for changes in terrain.

6. LAYING AND BEDDING THE PIPE

Plastic pipe conduits and fittings shall be installed as shown on the drawings and specified herein. The pipe shall be laid so that there is no reversal of grade between joints, unless otherwise shown on the drawings. The pipe shall be placed with the bell end upstream, unless otherwise specified. The pipe shall be carefully placed on the bedding or into the pipe trench.

Care shall be taken to prevent distortion and damage during unusually hot (over 90 degrees F) or cold weather (under 40 degrees F). After the pipe has been assembled in the trench, it shall be allowed to reach ground temperature before backfilling to prevent pull out of joints due to thermal contraction.

The pipe ends and the couplings shall be free of foreign material when assembled. During the placement of the pipe, each open end of the pipeline shall be closed off by a suitable cover or plug at the end of work on the pipeline each day and until work resumes or installation is complete.

Perforated pipe shall be laid with the perforations down and oriented symmetrically about the vertical centerline. Perforations shall be clear of any obstructions when the pipe is laid.

Pipe shall be firmly and uniformly supported throughout the entire length. Bell-holes shall be made in the bedding under bells or couplings and other fittings to prevent the pipe from being supported by fittings.

1. Earth Bedding. When bedding is specified, the pipe shall be firmly and uniformly bedded in a shaped bedding groove that closely conforms to the bottom of the pipe for a depth equal to a minimum of 1 inch or 5 percent of the diameter of the pipe, whichever is greater. The bedding material shall be free of rocks or stones greater than 0.5 inch diameter and earth clods greater than 2 inch diameter.

2. Sand or Gravel Bedding. When sand or gravel bedding is specified, the pipe shall be firmly and uniformly placed on a sand or gravel bed. Sand or gravel fill shall be carefully placed and compacted as specified herein and as shown on the drawings.

A few installations of above ground pipelines have been noted. These installations are normally laid directly on the ground and very close to an existing fence line for protection. Only those pipelines designed to withstand exposure to ultraviolet radiation may be utilized for these installations.

Adequate thrust control shall be incorporated in these installations.

7. BACKFILL

The pipe shall be held down during backfilling to the top of the pipe to prevent its being lifted from its original placement.

Within 2 feet of the pipe, backfill shall be carefully placed and compacted by means of hand tamping or manually directed power tampers or plate vibrators to form a continuous uniform support around the pipe. Maximum thickness of layers before compaction within 2 feet of the pipe shall be 4 inches and at more than 2 feet from the pipe a maximum thickness before compaction shall be 9 inches. Unless otherwise specified, the initial backfill shall be compacted to a density equivalent to that of the adjacent fill or foundation materials.

The water content of cohesive backfill material shall be such that, kneaded in the hand, the soil will form a ball which does not readily separate. For non-cohesive sand and gravel backfill material, water content is not a concern for thin lifts.

8. SPECIFIC SITE REQUIREMENTS

A. Measurement and Payment

Compensation for any work item described in the contract documents but not listed in the bid schedule will be included in the payment for the item of work to which it is made subsidiary. Such items and bid items to which they are made subsidiary are identified in Items of Work and Construction Details section of this specification.

For items of work which lump sum prices are established in the contract, the quantity of work will not be measured for payment. Payment for each item will be made at the contract lump sum price and will constitute full compensation for completion of the work.

For items of work for which specific unit prices are established in the contract, the payment will be made based on the approved quantity measured by the engineer or weight tickets. Payment will constitute full compensation of the work completed as defined by each work item.

B. Items of Work and Construction Details

Refer to Specification CS-46 for all plastic pipe measure and payment.

NATURAL RESOURCES CONSERVATION SERVICE
CONSTRUCTION SPECIFICATION

IA-46 TILE DRAINS FOR LAND DRAINAGE

1. SCOPE

The work shall consist of furnishing and installing drainage tubing and tile and the necessary fittings and appurtenances.

2. MATERIALS

Concrete drain tile shall conform to the requirements of ASTM C 412 and clay drain tile shall conform to the requirements of ASTM C 4.

Corrugated polyethylene (PE) pipe (tubing) and fittings shall conform to ASTM F 405 (3" to 6") or F 667 (3" to 24"), as appropriate. Corrugated profile wall (dual wall) polyethylene (PE) pipe shall meet or exceed the requirements of ASTM F 2648 (2" to 60") or ASTM F 2306 (12" to 60"). Pipe conforming to AASHTO M 252 (3" to 10") or AASHTO M 294 (12" to 60") is acceptable. Perforated tubing shall have a water inlet area of at least 1 square inch per foot, provided by perforations spaced uniformly along the long axis of the tubing. The perforations shall be circular or slots. Circular perforations shall not exceed 3/16 inch in diameter. Slots shall not be more than 1/8 inch wide.

TRENCH DAM

Composite Bentonite Aggregate Material & Properties

The 20% Bentonite / 80% Aggregate blend of CBA shall have the following properties:

Tests[1]	Method[2]	20%/80% CBA[3]
Visual Classification - Practice for Description and Identification of Soils	ASTM D2488	Gray poorly graded gravel with bentonite coating (GP)
Moisture Content[4]	ASTM D2216, AASHTO T265	10-20%
Dry Bulk Density	ASTM C29	75-85 pcf
Specific Gravity[5]	ASTM D854, AASHTO T100	2.63
Atterberg Limits - Liquid Limit	ASTM D4318, AASHTO T89	55%
Permeability - Flexible Wall Permeameter[6]	ASTM D5084	$1x10^{-7}$ to $5x10^{-9}$ cm/s
Consolidation - Incremental Loading[7]	ASTM D2435, AASHTO T216	C_c = 0.35, e_o=0.85 Coefficient of Consolidation = 0.03-0.48 in^2/min
Consolidation - Swell Pressure[8]	ASTM D4546, AASHTO T258	310-360 psf
Shear Strength - Direct Shear	ASTM D3080, AASHTO T236	139 psf, 31.4°
Shear Strength - Unconfined Compression[9]	ASTM D2166, AASHTO T208	70-220 psf
Shear Strength - Triaxial Unconsolidated-Undrained (Q or UU)	ASTM D2850, AASHTO T296	520 psf, 0°
Shear Strength - Triaxial Consolidated-Undrained (R or CU)[10]	ASTM D4767, AASHTO T297	180 psf, 11.7° (total) 140 psf, 25.8° (effective)
Compaction - Standard Proctor	ASTM D698, AASHTO T99	Optimum Moisture Content 16.9% Maximum Dry Density 107.5 pcf
Compaction - Modified Proctor	ASTM D1557, AASHTO T180	Optimum Moisture Content 10.1% Maximum Dry Density 123.3 pcf
Compaction - 15-Blow	US Army Corps of Engineers	Optimum Moisture Content 21.3% Maximum Dry Density 98.8 pcf
Free Swell[11]	ASTM D5890	25 (min.)

Aggregate:

a. Aggregate used in CBA shall be nominal AASHTO #8 (1/4 – 3/8") or custom-sized to meet project-specific needs.

b. A limestone or non-calcareous substitute may be used if deemed project appropriate by the Owner / Engineer.

Bentonite Clay:

a. Bentonite Clay used in CBA shall be a natural Wyoming Sodium Bentonite (Montmorillonite) with a minimum swell index of 25 or approved equal. Properties of the Bentonite Clay may vary based on project-specific conditions.

b. Bentonite Clay used in CBA shall be a minus 200-mesh powder (i.e., all particles passing a 200-mesh sieve) that is odorless and light gray in color Properties of the Bentonite Clay may vary based on project-specific conditions.

3. EXCAVATION

Unless otherwise specified, excavation for and subsequent installation of each drain line shall begin at the outlet end and progress upstream.

The trench or excavation for the tile shall be constructed to the line, depths, cross sections, and grade shown on the drawings or as directed by the NRCS Inspector. The trench bottom shall be smooth and free of exposed rock. If rock is encountered in the trench bottom, over-excavate the trench and place at least 6 inches of compacted earth or sand bedding in the trench to bring it up to the conduit grade.

If not otherwise shown on the drawings, trench width at the top of the conduit shall be the minimum required to permit installation and provide bedding conditions suitable to support the load on the conduit, but with not less than three (3) inches of clearance on each side of the conduit. Maximum trench width shall be the conduit diameter plus 12 inches measured at the top of the conduit, unless approved bedding is installed.

Trench shields, shoring and bracing, or other methods, necessary to safeguard the workers and work, and to prevent damage to the existing improvements shall be furnished, placed, and subsequently removed by the contractor.

Plow installation is allowed. Minimum trench width shall be two (2) inches wider than the conduit on each side. Grade control and bedding conditions shall be closely inspected during plow installation. Boulders, cobbles, or cemented soil scan cause the plow to jump or lose grade. These hardpoints can also puncture or dimple and deform the pipe.

4. PREPARING THE BEDDING

Unless otherwise specified, no filter or envelope is required. In stable soils the bottom of the trench shall be shaped to form a semicircular, trapezoidal, or 90 degree "V" groove in its center. The groove shall be shaped to fit the size of tile. The 90-degree "V" groove shall not be used on conduits greater than 6 inches in diameter.
If the bottom of the trench does not provide a sufficiently stable or firm foundation for the drain tile, a sand-gravel mix or other approved materials shall be used to stabilize the bottom of the trench.

5. FILTER OR ENVELOPE MATERIAL

When a filter is specified, the shape of the bottom of the trench, gradation and the thickness of the filter or envelope material to be placed around the tile will be as shown on the drawings. The envelope or filter

material shall be placed in the bottom of the trench just prior to the laying of the tile. The tile shall then be laid and the envelope or filter material placed over the tile.

6. PLACEMENT AND JOINT CONNECTIONS

All drains shall be laid to grade.

Joints between lateral drain tile shall vary with soil type as follows:

a. Peat and muck - 1/4 inch preferred, 3/8 inch maximum
b. Clay - 1/8 inch preferred, 1/4 inch maximum
c. Silt and loam - 1/16 inch preferred, 1/8 inch maximum
d. Sand - tightest possible fit.

Joint between main drain tile which serve only to collect and transport drainage water from lateral tile lines should be the tightest fit possible.

Where the joint width exceeds the maximum above, the joint shall be covered with a permanent type material such as coal tar pitch treated roofing paper, fiber glass sheet or mat, or plastic sheet.

After placement and blinding of plastic tubing, but prior to backfilling, sufficient time shall elapse to allow the tubing to reach the ambient temperature of the trench. All split fittings shall be securely tied with nylon cord before backfill is placed. When corrugated plastic tubing is used, no more than 5% stretch will be allowed.

7. CONNECTIONS

Lateral connections will be made with manufactured appurtenances (wyes, tees, etc.) comparable in strength and durability with the specified tile or tubing unless otherwise shown on the drawings.

Existing tile lines not shown on the drawings but encountered during installation shall be bridged across the trench or connected into the new line, as directed by NRCS.

Connections with the outlet pipe shall be made watertight.

8. OUTLETS

A continuous section of non-perforated conduit at least 20 feet long shall be used at the outlet. At least two-thirds of the outlet pipe shall be buried in the ditch bank, and the cantilever section must extend to the toe of the ditch side slope or the side slope protected from erosion. Acceptable materials for use at the outlet include the following:

a. Corrugated metal pipe, galvanized or aluminum, 16 gauge minimum;
b. Smooth steel pipe with a minimum wall thickness of 3/16 inch;
c. Smooth plastic pipe, polyvinyl chloride (PVC), with a SDR of 26 or less or schedule 40 or heavier; or
d. Corrugated profile wall (dual wall) polyethylene pipe (PE).

All plastic (PVC) and polyethylene pipe (PE) outlets shall include ultra-violet stabilizer. PVC or PE pipe outlets shall not be used where burning vegetation on the outlet ditch bank is likely to create a fire hazard.

The outlet shall be equipped with a flap-gate type rodent guard.

9. BLINDING

After the tubing or tile is placed in the excavated groove, friable material from the sides of the trench shall be placed around the tubing, completely filling the trench to a depth of not less than three inches over the top of the tubing. For material to be suitable it must not contain hard clods, rocks, frozen soil, or fine material which will cause a silting hazard to the drain. Tubing placed during any one day shall be blinded by the end of the day's work.

10. BACKFILLING

The backfilling of the trench shall be completed as rapidly as consistent with the soil conditions. Automatic backfilling machines may be used. Backfill shall extend above the ground surface and be well rounded over the trench.

Unless otherwise shown on the plans, in mineral soils, the minimum cover over subsurface drains shall be 2.4 feet. In organic soils, the minimum depth of cover after initial subsidence shall be 3.0 feet.

11. SPECIAL SPECIFICATIONS

A. Measurement and Payment

Compensation for any work item described in the contract documents but not listed in the bid schedule will be included in the payment for the item of work to which it is made subsidiary. Such items and bid items to which they are made subsidiary are identified in Items of Work and Construction Details section of this specification.

For items of work which lump sum prices are established in the contract, the quantity of work will not be measured for payment. Payment for each item will be made at the contract lump sum price and will constitute full compensation for completion of the work.

For items of work for which specific unit prices are established in the contract, the payment will be made based on the approved quantity measured by the engineer or weight tickets. Payment will constitute full compensation of the work completed as defined by each work item.

B. Items of Work and Construction Details

"Water Control Structure"

1. Bid Item No. 17

This item will consist of furnishing and installing a 2 chamber, 6' tall drain basin with integral flash boards and water tight couplers. Also includes furnishing and installing surrounding 8 vertical feet of 54" CMP Riser-14ga., welded CMP stubs, metal-hinged-lockable lid, concrete base, reinforcing steel, and concrete collars.

Measurement and payment shall be lump sum.

Payment will also include all subsidiary items required for installation such as trench excavations, backfill, site preparation, and removal of water, nuts, bolts, washers, fittings, concrete base, and granular internal filling.

"Trench Dam"

2. Bid Item No. 18

This item will consist of furnishing and installing a trench dam along the outlet pipe.

Measurement and payment shall be lump sum.

Payment will also include all subsidiary items required for installation such as trench excavations, backfill, site preparation, and removal of water.

"Corrugated Polyethylene pipe (non-perforated)":

3. Bid Item No. 19

This item will consist of furnishing and installing Corrugated Polyethylene pipe (non-perforated) used as a drain tile as shown on the drawings.

Measurement and payment for Corrugated Polyethylene pipe (non-perforated) shall be on an installed linear foot basis, and shall include all necessary fittings and adapters.

Payment will also include all subsidiary items required for installation such as trench excavations, backfill, site preparation, and removal of water, and concrete collar at joint. Additional fill required to provide adequate cover as needed is included in Earthfill, General.

Construction Specification
000 IA-51 Corrugated Metal Pipe Conduits

1. SCOPE

The work shall consist of furnishing and placing circular, arched or elliptical corrugated metal pipe and the necessary fittings.

2. MATERIALS

Metallic-coated steel corrugated pipe and fittings shall be zinc-coated or aluminized, Type 2, and shall conform to the requirements of ASTM A 760 and A 929 for the specified type and size of pipe. Aluminum corrugated pipe shall conform to the requirements of ASTM B 745 for the specified type and size of pipe. All pipe is subject to the following additional requirements:

1. When polymer coating is specified, pipe, coupling bands and anti-seep collars shall be coated in accordance with ASTM A 762. All riveted joints shall be caulked as described in paragraph B.
2. Pipe with annular corrugations shall be furnished with caulked seams. Riveted pipe joints shall be caulked with a bituminous mastic material during fabrication to provide a watertight joint. All circumferential and longitudinal seams shall be caulked before riveting. This shall be accomplished by applying a uniform bead of the mastic compound to the inner lap surface before riveting such that when the rivets are in place, all voids are filled and a coating of mastic is between the lap surfaces. The inner surface of coupling bands shall be asphalt coated in the field prior to installation. A neoprene gasket having a minimum thickness of 3/8 inch and a minimum width of 7 inches may be used in lieu of mastic coated coupling bands.
3. Welded or lock seams in helical corrugated pipe are considered to be watertight.
4. When close riveted pipe is specified: (1) the pipe shall be fabricated so that the rivet spacing in the circumferential seams shall not exceed 3 inches, except that 12 rivets will be sufficient to secure the circumferential seams in 12-inch pipe, and (2) in those portions of the longitudinal seams that will be covered by the coupling bands, the rivets shall have finished flat heads or the rivets and holes shall be omitted and the seams shall be connected by welding to provide a minimum of obstruction to the seating off the coupling bands.
5. Double riveting or double spot welding of pipe less than 42 inches in diameter may be required. If specified, the riveting or welding shall be done in the manner specified for pipe 42 inches or greater in diameter.

3. COUPLING BANDS

Coupling bands shall meet the requirements of the table below or have detailed drawings submitted for approval by the State Conservation Engineer. Coupling bands shall be of the same minimum thickness (gage) as the pipe being connected.

4. FABRICATION

Fabrication of all appurtenances shall be done as shown on the drawings. All appurtenances shall be made of metallic-coated steel when corrugated steel pipe is used and aluminum when used with aluminum pipe. Dissimilar metals shall not be installed in contact with each other.

Description of Coupling Band	Maximum Fill Height, Ft.	Maximum Pipe Diam., In.
24-inch wide coupling band with four 1/2-inch Diam. galvanized rods with tank lugs for annular or helical corrugated metal pipe. Bands shall have a minimum lap of 3 inches.	All	All
Hugger band from Armco Steel Corp. for helical corrugated metal pipe with reformed ends; and for annular corrugated pipe. Bands include O-ring gaskets and two 1/2-inch Diam.	35	48
Hugger band without rods and lugs but	20	24
Angles riveted or welded to a coupling band and drawn tight with bolts. Bands shall be a minimum of 7 corrugations wide and have a minimum lap of 2 inches.	35	15
Flanged couplings for helical corrugated 25 12 pipe welded to the ends of the pipe and field assembled by a minimum of 3/8-inch Diam. bolts. A joint sealer shall be placed between the flanges to ensure water tightness	25	12
1/ Use is limited to sites where soft foundation and conduit elongation is not anticipated.		

5. REPAIR OF DAMAGED COATINGS

The Contractor shall place the pipe without damaging the pipe or coatings. The pipe shall be transported and handled in a manner to prevent damage to the pipe or coating. Breaks, scuffs, or other damage to the various coatings shall be repaired as follows:

1. Metallic Coating - by thoroughly wire brushing the damaged area and cleaning with solvent, and then painting two coats of one of the following paints:
   a. Zinc Dust - Zinc Oxide Primer conforming to ASTM D 79 and D 520.
   b. Single package, moisture cured urethane prime in silver metallic color.
   c. Zinc-rich cold galvanized compound, brush, or aerosol applications.
2. Polymer Coating - apply two coats of polymer material similar to and compatible with the durability, adhesion and appearance of the original polymer coating. The repair coating shall be a minimum thickness of 0.010 (10 mils) after drying and shall bond securely to the pipe.

6. LAYING AND BEDDING THE PIPE

The pipe shall be laid to the line and grade shown on the drawings and shall be firmly and uniformly bedded throughout its entire length. Details of the bedding are as shown on the drawings.

The pipe shall be laid with the outside laps of circumferential joints pointing upstream and with longitudinal laps on the sides at approximately the vertical mid-height of the pipe. Field welding of corrugated galvanized steel pipe will not be permitted. The pipe sections shall be joined with coupling bands.

7. BACKFILLING

Special care shall be taken during backfill operations not to disturb the grade and alignment.

The pipe shall be tied down or loaded sufficiently during backfilling around the sides to prevent its being lifted from the bedding.

Backfill material shall have sufficient moisture so that optimum compaction can be obtained. Backfill around the pipe shall be placed in layers not more than 4 inches thick before compaction.

Each layer of backfill shall be compacted with power tampers, hand tampers, or plate vibrators to the same density requirements as specified for the adjacent embankment. Backfill over and around the pipe shall be brought up uniformly on all sides. The passage of earth moving equipment will not be allowed over the pipe until backfill has been placed above the top of the pipe surface to a depth of two (2) feet.

8. SPECIFIC SITE REQUIREMENTS

A. Measurement and Payment

Compensation for any work item described in the contract documents but not listed in the bid schedule will be included in the payment for the item of work to which it is made subsidiary. Such items and bid items to which they are made subsidiary are identified in Items of Work and Construction Details section of this specification.

For items of work which lump sum prices are established in the contract, the quantity of work will not be measured for payment. Payment for each item will be made at the contract lump sum price and will constitute full compensation for completion of the work.

For items of work for which specific unit prices are established in the contract, the payment will be made based on the approved quantity measured by the engineer or weight tickets. Payment will constitute full compensation of the work completed as defined by each work item.

B. Items of Work and Construction Details

"Slotted 18" CMP Riser Structure":

1. Bid Item No. 20

This item will consist of providing and installing the Inlet Riser Structure as shown on the drawings, including the trash rack and concrete base, if shown.

Provide detailed shop drawings of the riser inlet structure and appurtenances.

Measurement and payment for Inlet Riser Structure shall be on a lump sum basis.

Subsidiary items include concrete base, excavation and backfill, and control of water.

"CMP Tile Outlets with Animal Guard":

2. Bid Item No. 21

This item will consist of furnishing and installing the CMP pipe and fittings shown on the plans for tile outlets, including animal guard at outlet end of pipe.

The corrugated metal pipe shall be 16-gauge minimum, zinc coated or aluminum coated with annular or helical corrugations.

Connect dissimilar pipes with manufactured adapters or couplings if available. A concrete collar shall be used as shown on the plans. Connections shall be watertight.

Installation shall be so at least two-thirds of the outlet pipe shall be buried in the ditch bank, and the cantilever section must extend to the toe of the ditch side slope or the side slope protected from erosion.

Measurement and payment shall be on an installed foot basis will constitute full compensation for this bid item and related subsidiary items.

Payment will constitute full compensation for the following related items: Pollution Control, Removal of Water, Animal Guard, Riprap, and Geotechnical Fabric.

3. Subsidiary Item – CMP Animal Guard

   This item will consist of furnishing and installing the CMP animal guard, for each size tile such as AgriDrain RG series or IDALS approved equal.

   No separate payment will be made for the CMP animal guard. Compensation for this item shall be included in the payment for CRCS and CMP tile outlet pipes.

4. Subsidiary Item – Corrugated Metal Water-tight Coupling Bands

   This item will consist of furnishing and installing the corrugated metal coupling bands for connections of all pipe sections and structure stubouts.

   No separate payment will be made for the CMP coupling bands. Compensation for this item shall be included in the payment for CRCS metal outlet pipe.

5. Subsidiary Item – CMP Flared End Section

   This item will consist of furnishing and installing the CMP flared end sections at the specified locations in the plans.

   No separate payment will be made for the CMP Flared End Sections. Compensation for this item shall be included in the payments for CRCS metal outlet pipe.

Construction Specification
000 IA-61 Loose Rock Riprap

1. SCOPE

The work shall consist of the construction of loose rock riprap revetments, structures and blankets, including filter layers or bedding where specified.

2. MATERIALS

Rock for loose rock riprap, filter layers or bedding shall come from sources approved by NRCS. The rock shall be excavated, selected and handled as necessary to meet the quality and grading requirements of this specification and the construction drawings.

Individual rock fragments shall be dense, sound and free from cracks, seams and other defects conducive to accelerated weathering. The rock fragments shall be angular to sub rounded in shape. The least dimension of an individual rock fragment shall not be less than 1/3 the greatest dimension of the fragment unless otherwise specified on the construction drawings.

3. SUBGRADE PREPARATION

The subgrade surfaces on which the riprap or bedding is to be placed shall be cut or filled and graded to the lines and grades shown on the drawings. When fill to subgrade lines is required, it shall consist of approved materials and shall be compacted to a density equal to the adjacent existing soil material.

Rock materials shall not be placed until the foundation preparation is completed and the subgrade surfaces have been inspected and approved by NRCS.

4. EQUIPMENT-PLACED ROCK RIPRAP

Rock shall be placed by equipment on the surfaces and to the depths specified. The riprap shall be constructed to the full thickness in one operation and in such a manner as to avoid serious displacement of the underlying materials. The rock shall be delivered and placed in a manner that will ensure that the riprap in place shall be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact, one to another, with the smaller rocks and spalls filling the voids between the larger rocks. Placement of rock shall begin at the bottom of the slope or downstream end of the structure.

Riprap shall be placed in a manner to prevent damage to structures. Hand placing will be required to the extent necessary to prevent damage to adjacent structures.

5. HAND-PLACED RIPRAP

Rock shall be placed by hand on the surfaces and to the depths specified. It shall be securely bedded with the larger rocks firmly in contact, one to another. Spaces between the larger rocks shall be filled with smaller rocks and spalls. Smaller rocks shall not be grouped as a substitute for larger rock. Flat slab rock shall be laid on edge unless otherwise specified. Placement of rock shall begin at the bottom of the slope or downstream end of the structure.

6. FILTER LAYERS OR BEDDING

When the drawings specify filter layers or bedding beneath riprap, the filter or bedding material shall be spread uniformly on the prepared subgrade surfaces to the depth specified. Compaction of filter layers or

bedding will not be required, but the surface of such layers shall be finished reasonably free of mounds, dips or windrows.

7. SPECIFIC SITE REQUIREMENTS

A. Measurement and Payment

Compensation for any work item described in the contract documents but not listed in the bid schedule will be included in the payment for the item of work to which it is made subsidiary. Such items and bid items to which they are made subsidiary are identified in Items of Work and Construction Details section of this specification.

For items of work which lump sum prices are established in the contract, the quantity of work will not be measured for payment. Payment for each item will be made at the contract lump sum price and will constitute full compensation for completion of the work.

For items of work for which specific unit prices are established in the contract, the payment will be made based on the approved quantity measured by the engineer or weight tickets. Payment will constitute full compensation of the work completed as defined by each work item.

B. Items of Work and Construction Details

1. Bid Item No. 22 Riprap

This item shall consist of furnishing and placing the rock riprap in the locations as shown on the drawings.

Rock shall be Class E Revetment Stone as defined by Iowa Department of Transportation (DOT).

All riprap shall be screened by running the stone over a grizzly or plate screen with a minimum opening of 8 inches. This operation shall be done at the quarry. The portion of the stone that is removed by the screening operation will not be acceptable for use as riprap.

Payment will be based on actual tonnage delivered to the site based on weight tickets to the nearest 0.1 ton, subject to the approval of the engineer.

Payment will constitute full compensation for the following related subsidiary items: Pollution Control, Removal of Water, Structure Excavation and Geotextile Fabric.

2. Bid Item No. 23 Erosion Stone

This item shall consist of installing erosion stone at the locations shown in the drawings.

Erosion stone must meet the Iowa DOT Specifications 4130 to be considered acceptable.

Erosion stone gradation should be with a nominal size of 6 inches, with 100% passing the 9 inch screen and 100% being retained by the 3 inch screen.

Payment will be based on actual tonnage delivered to the site based on weight tickets, to the nearest 0.1 ton, subject to the approval of the engineer.

CAL883432B COUNTY WETLAND PROJECT
CAL883432B - BID NO. 26-08
PREBID MEETING
August 12, 2026 - 10:00 AM
Calhoun County Conservation, 905 W High St, Rockwell City

Opening date and time: Wednesday, August 26, 2026, beginning at 3:00 PM

Tracy Blocker, Division of Soil Conservation and Water Quality (Division) opened the meeting.

A) Introductions

Luke Arpenter, ISG	Jesse Crutcher, ISG	Owen Oeltjenbruns, ISG
Mark Hungate, ISG	Zach Mercer, ISG	Sara Smith, IDALS
Tracy Blocker, IDALS	Jeff Grodahl, landowner	Jim Frederick
Ty Fittje, Rise Up Construction		

- There are three projects being bid at this time:
    1. This one
    2. One in Hardin
    3. One in Floyd

- This wetland project is funded as part of the Water Quality Initiative that is being used to help implement the Iowa Nutrient Reduction Strategy.

A) Bidding

1. Time of Completion:

a) All work except for seeding: June 15, 2027
b) STRUCTURE seeding: 09/15/2027
c) BUFFER seeding: 06/30/2027
d) Note seedings must be done in the seeding window as specified in the Construction Specification IA-006 Seeding and Mulching for Protective Cover.

2. Liquidated Damages:

a) There are liquidated damages provisions in the contract, absent a No-Fault Extension.
b) All work except for seeding - damages **$175 per day**
c) Structure seeding - damages **$125 per day**
d) Buffer seeding - damages **$125 per day**

3. Taxes:

No sales tax for materials purchased

4. **Measurement and Payment:**

a) Measuring & Calculating: The specifications describe the method to be used in measuring and calculating the payment quantities for each work item
b) Payments will be made on the basis of monthly estimates from the engineer
c) Mobilization will be paid as a percentage of the lump-sum bid amount, prorated based on the percentage of work completed.
d) Materials stored on site; 97% of cost with invoice
e) Payments will be made in amounts equal to ninety-seven percent (97%) of the value of work completed. (In most cases)

5. **Method of Bidding:**

UNIT PRICE:

a) This is a unit price contract
b) Bidders shall submit unit price for each bid item covered by the specifications. Prices shall cover complete work and include all costs incidental thereto unless otherwise indicated.
c) The base bid includes all items 1 through 23 Eng / 1 through 24 IMPACS
d) A separate Document CC Schedule of Prices WORKSHEET was provided
e) Any questions that should be considered as part of an addendum must be submitted in writing by August 19, 2026 by 3:00 PM.
f) The Division will make every attempt to issue any necessary addenda no later than the day after the last date for questions. If an addendum is sent, you must acknowledge that you received it on page 2 Document CC Proposal-Acknowledgement-Affidavit
g) Scope of Work: If the Scope of Work changes, this will be addressed with an Amendment or Change Order

6. **Submission of Bids, Proposal-Acknolwedgment-Affidavit and Bid Security:**

a) Bids must be submitted within IMPACS no later than 3:00 PM 08/26/2026 https://bids.sciquest.com/apps/Router/PublicEvent?CustomerOrg=DASIowa&tab=PHX_NAV_SourcingOpenForBid&tmstmp=1786368048168

b) Upload under Vendor Attahments
   1. Proposal-Acknolwedgment-Affidavit (Document CC pages 1-3) and must be signed by a legally authorized representative of the Bidder, notarized with stamp and Addedum acknowledged
   2. Bid Bond (Document EE, including POA)
   3. Certified checks must be delivered to IDALS 3 hours in advance of the opening.

c) If forms are not accurately completed, this shall prevent the reading of that Bidder's bid.

d) Multiple bids: If you submit bids for multiple projects but do not wish to accept all projects for which you are the apparent low bidder, you must notify Tracy Blocker by email at tracy.blocker@iowaagriculture.gov **at least 30 minutes prior to bid closing** and follow up with a phone call.

NOTE: If an addedum is issued after you enter susmbit your bid, IMPACS will withdraw your bid.

e) All Water Resources wetland bids closing that day will be opened beginning at **3:00 PM**.

f) To hear the bids read aloud dial in by phone +1 469-998-7627, 352050218#

g) Bids may NOT be mailed nor hand delivered.

7. **Evaluation of bids and award of Construction Contract:**

a) Nutrient Reduction Wetland Project shall be awarded to the lowest, responsible, responsive bidder as determined by the Division.

b) In evaluating the bids:
   1. alternates,
   2. bid price,
   3. experience,
   4. contracts in default,
   5. responsibility of the Bidder,
   6. and similar factors in determining which bid it deems to be in the best interest of the Division for the project
   7. Bid tabulations for this Nutrient Reduction Wetland Project will be prepared the week following the Bid Opening and distributed to all Bidders and plan holders

8. Bidder's Qualifications:

All Bidders shall meet the following qualifications:

1. Contractors are required to be registered with the Iowa Division of Labor (14 days)

2. Bidders shall submit a statement of Bidder's qualifications:
   a) including experience,
   b) contracts that are in default,
   c) available equipment,
   d) personnel,
   e) and financial ability to perform the work (Section 2 of Document BB)

9. Execution of Contract:

1. Within fourteen (14) calendar days from the date of receipt of the Notice-of-Award, the party to whom the Project is awarded shall be required to:
   - ✓ execute the Contract;
   - ✓ obtain the appropriate insurance coverage and Performance/Payment Bond;
   - ✓ provide their Iowa Division of Labor Public Registration Number;
   - ✓ and submit the Construction Progress Schedule (Document JJ)

   Failure of the Bidder to execute the Contract, the Division may, at its option, consider the Bidder in default, in which case the bid security accompanying the bid shall become the property of the Division.

3. The Division, within fourteen (14) days of receipt of an acceptable and properly executed
   a) Performance/Payment Bond,
   b) certification of acceptable insurance coverage,
   c) and properly executed Contract;

   shall sign the Contract and return to such party an executed copy of the Contract. Should the Division not execute the Contract within such period, the Contractor may, by submitting written notice, withdraw the signed Contract, effective upon receipt of the notice.

4. The Notice-to-Proceed shall be issued within five (5) days of the execution of the Contract by the Division, **provided that the Construction Progress Schedule has been accepted by the Division.**
   a) May not purchase materials until you receive a Notice to Proceed
   b) Pre-construction meeting must be held no more than 14 days in advance of construction starting.

10. Questions and Addenda:

a) Any oral interpretations given shall be valid only if confirmed by written addendum. All interpretation requests should be addressed in writing and received no later than 3:00 PM August, 19 2026.

b) Questions concerning interpretation or intent of the Plans and Construction Specifications should be directed to:
0: 0 with ISG Inc and must copy
Tracy Blocker: tracy.Blocker@iowaagriculture.gov with the Division.

c) All other questions concerning the Contract Documents should be addressed to Tracy Blocker, Division: 515 344-6279 or tracy.Blocker@iowaagriculture.gov.

The Division reserves the right to revise or amend the Contract Documents prior to the date set forth for receipt of bids. Such revisions and amendments, if any, shall be announced by an addendum or addenda to the Contract Documents.

- Copies of such addenda shall be furnished to all plan holders.
- Bidders are required to acknowledge receipt of any addenda by listing such addenda in the Proposal (Document CC).

B) Engineer's Discussion:

- Note that we have made revisions to the Cal883432B (Grodahl) Wetland plans, specifications, and cost estimate discussed in the pre-bid meeting on Wednesday 8-12-2026 . They are included in Addendum No. 1.
- Addendum is being issued because of an old set of plans was accidentally posted. In addition, the following changes has been made to the engineering plans:
  - Change WCS to 2 chambers
  - Add wattles for erosion control.
  - Add 6 tons of drain fill
  - Add silt fence for erosion control.
  - Add sign to the project site
  - Correct easement area callout and table

- ISG staff provided overview of the project and design details, and highlighted the following:
  - Technical guidance of plans
  - Highlighted bid items and their intent in the bid
  - Explain the specifications and anything out of the ordinary

- IDALS staff recommended interested contractors to read the technical specifications and plans.

- Dewatering of the site is subsidiary to the work to construct the project, and no additional payment will be made.

Division of Soil Conservation & Water Quality - Water Resources Bureau

Plan Holders List for Bid **26-07** **26-08** **26-09**

as of

Project ID **Flo971628B & Cal892022C & Har892022C**

08/21/2026

Pre-Bid held 08/11/26

Bid Opening **August 26, 2026 @ 3:00 PM**

	Name	Email	Company	Street Address	City	State	Zip code	Phone
26-07	**Flo971628B**							
PB	Chris Wicks	CedarRidgePrecision@gmail.com	Cedar Ridge Precision (CRP)		Nashua	IA		319-415-8494
PB	Jim Rausch	Rausch Construction	jim@rauschconstinc.com	2725 HWY 24	Fort Atkinson	IA	52144	563-419-1775
PB	Brent Mehmert	brent@mehmerttiling.biz	Mehmert Tiling	8635 HWY 9	Limesprings	IA	52155	563-547-5115
PH	Eric Deters	edeters@melleninc.com	Mellen and Associates	3404 S 11th ST	CO BLUFFS	IA	51501	712-322-9333
PH	Lacey	quotes@coleexcavating.com	Cole Excavating, LLC					641.823.4700
PH	Dalton Kinzel	dalton.kinzel@coreandmain.com	Core & Main	2500 SE Enterprise Dr	Grimes	IA	50111	515-259-8042

Division of Soil Conservation & Water Quality - Water Resources Bureau

Plan Holders List for Bid **26-07** **26-08** **26-09**

as of

Project ID **Flo971628B & Cal892022C & Har892022C**

08/21/2026

Pre-Bid held 08/12/26

Bid Opening **August 26, 2026 @ 3:00 PM**

	Name	Email	Company	Street Address	City	State	Zip code	Phone
26-08	**Cal892022C**							
PB	Ty Fittje	constructionriseabove@gmail.com	Rise Above Construction					641-529-9671
PH	Jacob Franz	jacob.franz@metalculverts.com	Metal Culverts Inc					573-681-2707
PH	Eric Deters	edeters@melleninc.com	Mellen and Associates	3404 S 11th ST	CO BLUFFS	IA	51501	712-322-9333
PH	Lacey	quotes@coleexcavating.com	Cole Excavating, LLC					641.823.4700
PH	Rob Rasmussen	Robert.Rasmussen@coreandmain.com	Core & Main	2500 SE Enterprise Dr	Grimes	IA	50111	515-259-8056

Division of Soil Conservation & Water Quality - Water Resources Bureau

Plan Holders List for Bid **26-07** **26-08** **26-09**

as of

Project ID **Flo971628B & Cal892022C & Har892022C**

08/21/2026

Pre-Bid held 08/13/26

Bid Opening **August 26, 2026 @ 3:00 PM**

	Name	Email	Company	Street Address	City	State	Zip code	Phone
26-09	**Har892022C**							
PB	Evan Hurd	evan.hurd@hls-co.com	Heritage Land Solutions (Iron Heritage Properites LLC	302 Broad St	Story City	IA	50248	515.520.0711
PB	Will Halstead	will.halstead@hls-co.com	Heritage Land Solutions (Iron Heritage Properites LLC	302 Broad St	Story City	IA	50248	515.954.0187
PB	Brett Schipper	brett@mcdowellandsons.com	McDowell & Sons Contractors, Inc.					641-640-2216
PB	Casey Staley	staley146@hotmail.com	Weidemann Inc	105 Tracy St	Dows	IA	50071	641-373-2269
PB	Blair Weidermann	blairweidemann@yahoo.com	Weidemann Inc	104 Tracy St	Dows	IA	50071	641-425-6956
PH	Lacey	quotes@coleexcavating.com	Cole Excavating, LLC					641.823.4700
PH	Darin Eastvold	bids@larsonscontracting.com	Larson Contracting Central LLC	508 W Main St PO Box 7	Lake Mills	IA	50450	406.890.4211
PH	Dustin Wallis	dustin.wallis@armodus.com	Armodus	PO Box 1	Mondamin	IA	51557	402-669-1898
PH	Dalton Kinzel	dalton.kinzel@coreandmain.com	Core & Main	2500 SE Enterprise Dr	Grimes	IA	50111	515-259-8042

KEY

X	on plan holders list, did **NOT** sumit bid
Y	on plan holders list, submitted bid
NP	not on plan holders list, submitted bid
PB	attended pre-bid
PH	on plan holders list
IDALS	staff
PR	Plan Room
E	Engineer of Record
tab	Requested bid tab