

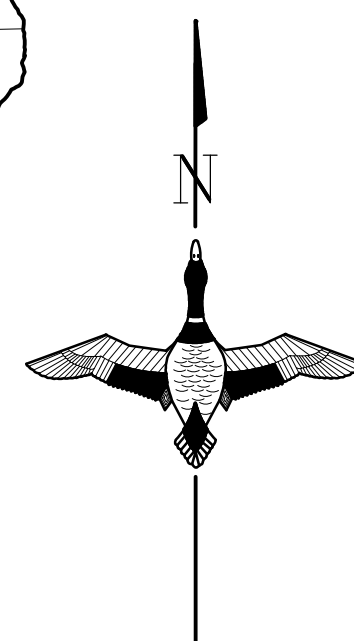


EMMET COUNTY
S14, T100N, R31W
IOWA

IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP
& UNITED STATES DEPARTMENT OF AGRICULTURE
IOWA ENGINEERING JOB CLASS V



TICKET #: -



SHEET INDEX	
SHEET NUMBER	SHEET TITLE
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License No: P26317
License renewal date: December 31, 2027
Pages of sheets covered by this seal: 1 - 16 (C001 - C401)

				GREAT LAKES/ATLANTIC REGIONAL OFFICE 7322 NEWMAN BOULEVARD, BUILDING 2, STE. 200 DEXTER, MICHIGAN 48130 (734) 623-2000 www.ducks.org			
COVER SHEET PROJECT NO. EMM1003114B EMMET COUNTY IOWA							
CAD FILE:				IA-340-13 Cover & Specs			
DESIGNED BY: AS				DATE:			
DRAWN BY: CK, WAJ				10-1-2026			
SURVEYED BY: AS, AB				PROJECT NUMBER:			
REVIEWER: TP				US-IA-340-13			
C001				Revisions			
Revision	Sheet	Date	By				
1	C001-C401	12-10-2024	W.A.J.				
2	C001-C401	1-31-2025	A.S.				
3	C001-C401	4-23-2025	A.S.				
4	C001-C002	10-1-2026	C.K.				

NOT FOR CONSTRUCTION

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ESTIMATED QUANTITIES					
NOTE #	BID ITEM #	SPEC #	DESCRIPTION	QUANTITY	UNIT
1	1	IA CS-001	STRIPPING	LS	1
2	2	IA CS-001	CROP DAMAGE	AC	0
3	3	IA CS-006	STRUCTURE SEEDING	AC	0.5
4	4	IA CS-006	BUFFER SEEDING	AC	16.8
5	5	CS-008	MOBILIZATION & DEMOBILIZATION	LS	1
6	6	IA CS-009	DRAINAGE TILE INVESTIGATION	LS	1
7	7	IA CS-013	STEEL SHEET PILING	SF	2,172
8	8	IA CS-021	EXCAVATION (GENERAL)	CY-P	979
9	9	IA CS-023	EARTHFILL (GENERAL)	CY-P	1,348
10	10	IA CS-023	EARTHFILL (GENERAL DAM)	CY-P	337
11	11	IA CS-023	EARTHFILL (DAM CORE)	CY-P	826
12	12	IA CS-024	DRAINFILL (SAND)	TN	60
13	13	IA CS-026	TOPSOIL PLACEMENT	CY-P	2,483
14	14	IA CS-046	TOE DRAIN (6"Ø PERFORATED CPP)	LF	104
15	15	IA CS-046	12"Ø HDPE DUAL-WALL	LF	151
16	16	IA CS-051	ALUMINUM WATER CONTROL STRUCTURE (WCS)	LS	1
17	17	IA CS-051	ALUMINUM CMP DRAWDOWN PIPE	LF	123
18	18	IA CS-046, IA CS-081	STOPLOG STORAGE STRUCTURE	LS	1
19	19	IA CS-051	CMP OUTLET - 8"Ø	LF	40
20	20	IA CS-051	CMP OUTLET - 15"Ø	LF	20
21	21	IA CS-061	RIPRAP (IA DOT CLASS E)	TN	672
22	22	IA CS-062	CONCRETE GROUT	CY	118
23	23	IA CS-051	36" ALUMINUM CMP RISER INLET	LS	1
24	24	IA CS-061	MACADAM STONE	TN	50

1. BID ITEM FOR STRIPPING SHALL INCLUDE REMOVAL OF THE FIRST 12" OF TOPSOIL MATERIAL ABOVE THE BERM, SUBMERGED BERMS, SEDIMENTATION BASIN, CHANNEL FILL AREA, AND TILE COVER AREA (ESTIMATED STRIPPING QUANTITY IS 1,993 C.Y.). THIS MATERIAL SHALL BE STOCKPILED ON-SITE FOR RESPREAD, WHICH IS INCLUDED IN A SEPARATE BID ITEM. DNR HAS ALREADY CUT DOWN TREES TO WAIT HEIGHT WITHIN THE FOOTPRINT OF THE STRUCTURES AND WITHIN 25 FEET OF THE STRUCTURES. CONTRACTOR SHALL MOVE CUT DOWN TREES/BRUSH AND STOCKPILE ON-SITE TO BURN OR REMOVE. CONTRACTOR SHALL FINISH CUTTING DOWN STUMPS TO GROUND LEVEL AND GRUB STUMPS IN ACCORDANCE WITH SPECIFICATIONS.
2. CROP DAMAGES WILL BE A PASS-THROUGH COST BY THE CONTRACTOR TO THE LANDOWNER. ENGINEER WILL MEASURE THIS AREA AND IDALS WILL AGREE WITH THE LANDOWNER ON A UNIT COST DURING CONSTRUCTION. BID ITEM FOR CROP DAMAGE SHALL INCLUDE AREA OF CROPS DAMAGED, AS NECESSARY, IN ORDER TO COMPLETE THE WORK AS DETAILED. CONTRACTOR SHALL MINIMIZE CROP DAMAGE AS MUCH AS POSSIBLE DURING CONSTRUCTION ACTIVITIES.
3. BID ITEM FOR STRUCTURE SEEDING SHALL CONSIST OF SEEDING, MULCHING, AND FERTILIZING ALL THE STRUCTURES, EMBANKMENTS, AND ALL OTHER DISTURBED AREAS (OUTSIDE OF POOL AREA), AS INDICATED ON THE DRAWINGS OR OTHERWISE DESIGNATED. SEED MIX SHALL BE APPROVED BY ENGINEER AT LEAST 2 WEEKS BEFORE PLANNED SEEDING.
4. BID ITEM FOR BUFFER SEEDING SHALL 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. SEED MIX SHALL BE APPROVED BY ENGINEER AT LEAST 2 WEEKS BEFORE PLANNED SEEDING.
5. BID ITEM FOR MOBILIZATION & DEMOBILIZATION SHALL INCLUDE THE SUPPLY OF ALL LABOR, MATERIAL AND EQUIPMENT TO TRANSPORT ALL NEEDED LABOR, MATERIAL AND EQUIPMENT, TO AND FROM THE PROJECT SITE, TO SUCCESSFULLY COMPLETE THE PROJECT AS SHOWN ON THE PLANS. ANY ADDITIONAL MOBILIZATION OF MANPOWER, EQUIPMENT, OR MATERIALS REQUIRED TO COMPLETE THE PROJECT SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE.
6. BID ITEM FOR DRAINAGE TILE INVESTIGATION SHALL CONSIST OF INVESTIGATION, LOCATION, REPAIR, REMOVAL AND/OR CAPPING/PLUGGING OF SUBSURFACE DRAINS (TILE) IN WETLAND RESTORATION AREA, ENHANCEMENT, OR CREATION PROJECT AREAS, OR OTHER SITUATIONS WHERE SUBSURFACE DRAINS MAY BE PRESENT. THIS BID ITEM DOES NOT INCLUDE INSTALLATION OF NEW TILE, WHICH IS INCLUDED IN SEPARATE LINE ITEMS.
7. BID ITEM FOR STEEL SHEET PILING SHALL CONSIST OF FURNISHING AND DRIVING THE SPECIFIED SHEET PILING AT THE LOCATION SHOWN ON THE DRAWINGS. THIS BID ITEM SHALL INCLUDE SHEET PILING CAP AND ALL OTHER LABOR AND MATERIALS NECESSARY TO PROVIDE A COMPLETE INSTALLATION. SHOP DRAWINGS SHALL BE REQUIRED FOR SHEET PILE STRUCTURE.
8. BID ITEM FOR EXCAVATION (GENERAL) SHALL CONSIST OF EXCAVATION AND GRADING OF MATERIAL NEEDED FOR THE BERM CORE TRENCH, SEDIMENTATION BASIN, AND INLET/OUTLET CHANNELS. IT IS ESTIMATED THAT 490 C.Y. WILL BE UTILIZED AS GENERAL FILL AND 489 C.Y. WILL BE SPOILED.
9. BID ITEM FOR EARTHFILL (GENERAL) SHALL CONSIST OF THE EARTHFILL NECESSARY TO CONSTRUCT THE SUBMERGED BERMS, CHANNEL FILL AND ADDITIONAL FILL TO BE PLACED OVER THE TILE TO PROVIDE ADEQUATE COVER. COHESIVE MATERIAL FOUND DURING GENERAL EXCAVATION CAN BE USED FOR THESE AREAS. SAND AND GRAVEL FOUND ON SITE SHALL NOT BE USED FOR THIS EARTHFILL. IT IS ESTIMATED THAT 858 C.Y. OF GENERAL FILL MATERIAL WILL NEED TO BE EXCAVATED FROM THE BORROW AREA FOR THE GENERAL EARTHFILL.
10. BID ITEM FOR EARTHFILL (GENERAL DAM) SHALL CONSIST OF EXCAVATING, PLACING AND COMPACTING EARTHFILL NECESSARY TO CONSTRUCT THE PORTION OF THE EMBANKMENT THAT IS NOT CONSIDERED PART OF THE EMBANKMENT CORE. COHESIVE MATERIAL FOUND DURING GENERAL EXCAVATION CAN BE USED FOR THIS AREA. SAND AND GRAVEL FOUND ON SITE SHALL NOT BE USED FOR FILL FOR THIS ITEM. IT IS ESTIMATED THAT 337 C.Y. OF GENERAL FILL MATERIAL WILL NEED TO BE EXCAVATED FROM THE BORROW AREA FOR GENERAL (DAM) CONSTRUCTION.
11. BID ITEM FOR EARTHFILL (DAM CORE) SHALL CONSIST OF EXCAVATING, PLACING AND COMPACTING EARTHFILL NECESSARY TO CONSTRUCT THE PORTION OF THE EMBANKMENT DESIGNATED THE EMBANKMENT CORE, INCLUDING THE CORE TRENCH. COHESIVE MATERIAL TAKEN FROM THE DESIGNATED BORROW AREA SHOULD BE USED FOR THIS AREA (ESTIMATED 826 C.Y.). ESTIMATED PLAN VALUE INCLUDES 25% SHRINKAGE FACTOR.
12. BID ITEM FOR DRAINFILL (SAND) SHALL CONSIST OF FURNISHING AND PLACING DRAINFILL REQUIRED IN THE CONSTRUCTION OF STRUCTURE DRAINAGE SYSTEMS AND FILTER DIAPHRAGMS AROUND CONDUITS. THIS ITEM WILL CONSIST OF THE EXCAVATION NECESSARY TO CONSTRUCT THE TIE DRAINS, INCLUDING BACKFILL WITH MATERIAL MEETING THE REQUIREMENTS OF FINE DRAINFILL. GRADATIONS SHALL BE PROVIDED TO ENGINEER PRIOR TO ARRIVING ON-SITE.
13. BID ITEM FOR TOPSOIL PLACEMENT SHALL 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 THE FINAL LIFT. AREAS TO RECEIVE A MINIMUM OF 6" LAYER OF TOPSOIL INCLUDE AREAS OF THE EMBANKMENT THAT DO NOT HAVE RIPRAP, BORROW AREA, AND ADDITIONAL FILL PLACED OVER NEW TILE. FOR THIS QUANTITY, 2,052 C.Y. IS PLANNED TO BE RE-SPREAD OUTSIDE OF POOL AREA WITHIN EASEMENT, WHILE 431 C.Y. IS PLANNED TO UTILIZED AS THE FINAL 6" LIFT FOR THE BERMS AND TILE COVER.
14. BID ITEM FOR TOE DRAIN (6"Ø PERFORATED CMP) SHALL CONSIST OF FURNISHING AND INSTALLING 6-INCH PERFORATED CORRUGATED POLYETHYLENE TUBING (SINGLE WALL) USED AS A DRAIN TILE FOR THE TOE DRAIN AS SHOWN ON THE DRAWINGS. SAND BACKFILL AROUND THE TILE SHALL BE PAID UNDER A SEPARATE BID ITEM. 20' LENGTHS OF 8"Ø GALVANIZED CMP SHALL BE UTILIZED AT THE EXPOSED OUTLETS OF THE TOE DRAIN TILE (TWO LOCATIONS). THE METAL OUTLET SHALL BE PAID UNDER A SEPARATE BID ITEM.
15. BID ITEM FOR 12"Ø HDPE DUAL-WALL SHALL CONSIST OF FURNISHING AND INSTALLING 12-INCH, NON-PERFORATED, HDPE DUAL-WALL CORRUGATED POLYETHYLENE TUBING USED AS A DRAIN TILE AS SHOWN ON THE DRAWINGS. MEASUREMENT AND PAYMENT FOR 12-INCH NON-PERFORATED DUAL-WALL POLYETHYLENE TUBING SHALL BE ON AN INSTALLED LINEAR FOOT BASIS, AND SHALL INCLUDE ALL NECESSARY FITTINGS AND ADAPTERS. A 20' LENGTH OF 15"Ø GALVANIZED CMP SHALL BE UTILIZED AT THE EXPOSED OUTLET OF THE TILE (ONE LOCATION). THE METAL OUTLET SHALL BE PAID UNDER A SEPARATE BID ITEM.
16. BID ITEM FOR ALUMINUM WATER CONTROL STRUCTURE SHALL CONSIST OF PROVIDING AND INSTALLING THE ALUMINUM DRAIN DOWN STRUCTURE, STOP LOGS, AND CONCRETE BASE AS SHOWN ON THE DRAWINGS AND DETAIL SHEETS. THE WCS SHALL BE FROM WISCONSIN FLOWGATE, OR APPROVED EQUAL. SHOP DRAWINGS SHALL BE APPROVED BY ENGINEER PRIOR TO FABRICATION.
17. BID ITEM FOR ALUMINUM CMP DRAINDOWN PIPE SHALL CONSIST OF PROVIDING AND INSTALLING THE 15-INCH DIAMETER CMP INLET AND OUTLET PIPES AS SHOWN ON THE DRAWINGS.
18. THE BID ITEM FOR STOPLOG STORAGE BOX SHALL INCLUDE ALL LABOR AND MATERIALS TO PROVIDE THE STOPLOG STORAGE BOX, AS DETAILED IN THE PLANS. EXACT LOCATION SHALL BE DETERMINED IN THE FIELD WITH APPROVAL FROM ENGINEER.
19. BID ITEM FOR CMP OUTLET 8"Ø SHALL CONSIST OF FURNISHING AND INSTALLING THE 8"Ø CMP AND FITTINGS SHOWN ON THE PLANS FOR THE TOE DRAIN OUTLETS (2 LOCATIONS), INCLUDING ANIMAL GUARD AT OUTLET END OF PIPE.
20. BID ITEM FOR CMP OUTLET - 15"Ø SHALL CONSIST OF FURNISHING AND INSTALLING THE 15"Ø CMP AND FITTINGS SHOWN ON THE PLANS FOR TILE OUTLETS, INCLUDING ANIMAL GUARD AT OUTLET END OF PIPE.
21. BID ITEM FOR RIPRAP (IA DOT CLASS E) SHALL CONSIST OF FURNISHING AND PLACING THE ROCK RIPRAP IN THE LOCATIONS AS SHOWN ON THE DRAWINGS. ROCK SHALL BE CLASS E REVELMENT STONE AS DEFINED BY IOWA DEPARTMENT OF TRANSPORTATION. NON-WOVEN FILTER FABRIC IS REQUIRED BENEATH ALL ROCK/RIPRAP AND SHALL BE SECURED TO SLOPES AND BOTTOM, USING PINS, AS NOTED IN THE SPECIFICATIONS. QUANTITY IS BASED ON TONS. CONTRACTOR SHALL PROVIDE SCALE TICKETS WITH WEIGHTS INCLUDING TARE WEIGHTS, GROSS WEIGHTS, AND NET WEIGHTS OF MATERIAL DELIVERED. CONTRACTOR SHALL PROVIDE GRADATIONS TO ENGINEER PRIOR TO RIPRAP ARRIVING ON-SITE.
22. BID ITEM FOR CONCRETE GROUT SHALL CONSIST OF FURNISHING AND PLACING CONCRETE GROUT ON THOSE PORTIONS OF THE RIPRAP SHOWN ON THE DRAWINGS. GROUT FILL QUANTITY IS BASED ON AN APPLICATION RATE OF 0.6FT³/FT² OF RIPRAP. WHITE PIGMENTED CURE SHALL BE APPLIED AND IS INCIDENTAL TO THIS BID ITEM.
23. BID ITEM FOR 36"Ø ALUMINUM CMP RISER INLET SHALL CONSIST OF PROVIDING AND INSTALLING THE 36-INCH DIAMETER CMP RISER IN WETLAND AS SHOWN ON THE DRAWINGS. SHOP DRAWINGS SHALL BE APPROVED BY ENGINEER PRIOR TO FABRICATION.
24. THE BID ITEM FOR MACADAM STONE SHALL INCLUDE ALL MATERIAL AND LABOR TO PROVIDE THE MACADAM STONE IN THE DOWNSTREAM PORTION OF THE STILLING BASIN, AS SPECIFIED BY ENGINEER OR ER. CONTRACTOR SHALL PROVIDE SCALE TICKETS WITH WEIGHTS INCLUDING TARE, GROSS, AND NET WEIGHTS OF MATERIAL DELIVERED. PAYMENT WILL BE BASED ON THE CONTRACTOR'S UNIT PRICE ON TONS USED. ALL MACADAM STONE SHALL BE APPROVED BY ENGINEER PRIOR TO PLACEMENT/DELIVERY TO SITE.
25. DEWATERING AND WATER MAINTENANCE IS THE CONTRACTOR'S RESPONSIBILITY, AND IS CONSIDERED INCIDENTAL TO THE PROJECT.

SPECIFICATIONS, QUANTITIES, & NOTES
PROJECT NO. EMM1003114B
EMMET COUNTY

By	Date	Revisions	Sheet	Revision
W.A.J.	12-10-2024	FINAL SITE PLAN	C001-C001	1
A.S.	1-31-2025	IDALS REV/ISONS	C001-C001	2
A.S.	4-23-2025	IDALS REVISIONS	C001-C001	3
C.K.	10-1-2026	RE-BID REVISIONS	C001-C002	4

CAD FILE:

IA-340-13 Cover & Specs

DESIGNED BY: AS

DRAWN BY: CK, WJ

SURVEYED BY: AS, AB

REVIEWER: TP

DATE:
10-1-2026

PROJECT NUMBER:
US-IA-340-13

C002

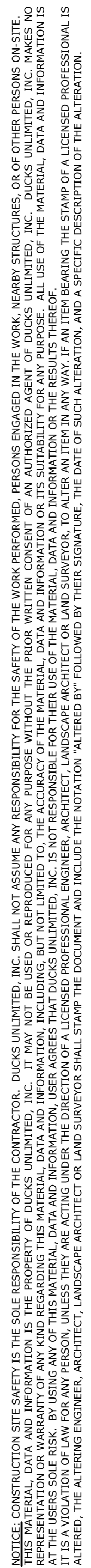


7322 NE

IOWA

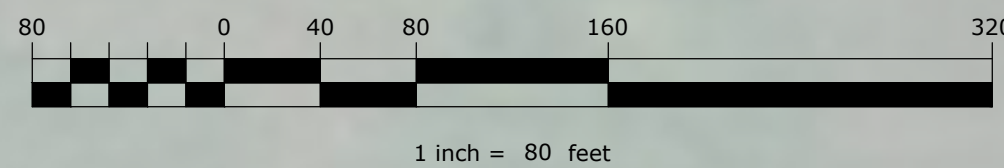
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NOT FOR CONSTRUCTION

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Revisions		Date	By
Revision	Sheet		
1	C001-C001	12-10-2024	W.A.J
2	C001-C001	1-31-2025	A.S.
3	C001-C001	4-23-2025	A.S.
4	C001-C002	10-1-2026	C.K.

CAD FILE:

IA-340-13 Topo Survey

DESIGNED BY: AS

DRAWN BY: CK, WJ

SURVEYED BY: AS, AB

REVIEWER: TP

DATE:
10-1-2026

PROJECT NUMBER:
US-IA-340-13

C052

NOT FOR CONSTRUCTION

NOTE:
ALL OTHER TILE IN DITCH ON SHEETS C051 &
C052 ARE CURRENTLY OUTLETTING WITH INVERTS
AT LEAST 1.0' ABOVE THE PROPOSED NWL.

- APPROX. EASEMENT BOUNDARY
100-YEAR STORM ELEV. = 1208

SUBMERGED BERM TOP ELEV. = 1201.70;
10' WIDE TOP W/ 3:1 SIDE SLOPES

- CONSTRUCTION ACCESS

BORROW AREA /
EXPAND POOL
(SEE NOTES THIS

FILL CHANNEL
FROM BEND TO
WETLAND

NWL 8.2 ACRES A
ELEV. = 1202.20

IA DOT CLASS E RIPRAP AT 1.5' DEPTH

EXCAVATE 50' X 100' SEDIMENTATION
BASIN AND CHANNEL TO DIRECT WATER
TOWARDS SOUTH END OF WETLAND

NWL 8.2 ACRES AT
ELEV. = 1202.20

PROPOSED 15"Ø CMP OUTLET
INV. ELEV. = 1203.20

TILE #1 - PROPOSED 12"Ø HDPE
DUAL-WALL INTERCEPT WITH EXISTING
12"Ø CONCRETE TILE AT INV. ELEV. =
1204.36; PROVIDE 3' MIN. COVER

WETLAND PROFILE #2
(SEE SHEET C202 FOR PROFILE)

90' WIDE CREST SHEET PILE
WEIR STRUCTURE ELEV. =
1202.20; TOP OF SIDEWALLS
1208.00

PROPOSED BERM TOP ELEV. = 1209.00;
12' WIDE TOP W/ 3:1 SIDE SLOPES; 10'
WIDE WAVE BERM ON UPSTREAM SIDE

6" CDD TOP

ATED RIPRAP STILLING
1 ELEV. = 1198.20

- 48"Ø ALUMINUM
INV = 1200.00

MP SLOTTED
H MOUNDED
= 1202.20

NOTES:
1. STRIP 12" - 24" TOP SOIL BEFORE OBTAINING BORROW MATERIAL. BORROW AREA TO BE EXCAVATED TO APPROXIMATELY 3.5' DEPTH AFTER TOPSOIL REMOVAL. TOPSOIL TO BE PLACED BACK INTO EXCAVATED AREA AND SPREAD OUT AT COMPLETION.

APPROX. EASEMENT BOUNDARY

GRAPHIC SCALE

1 inch = 50 feet



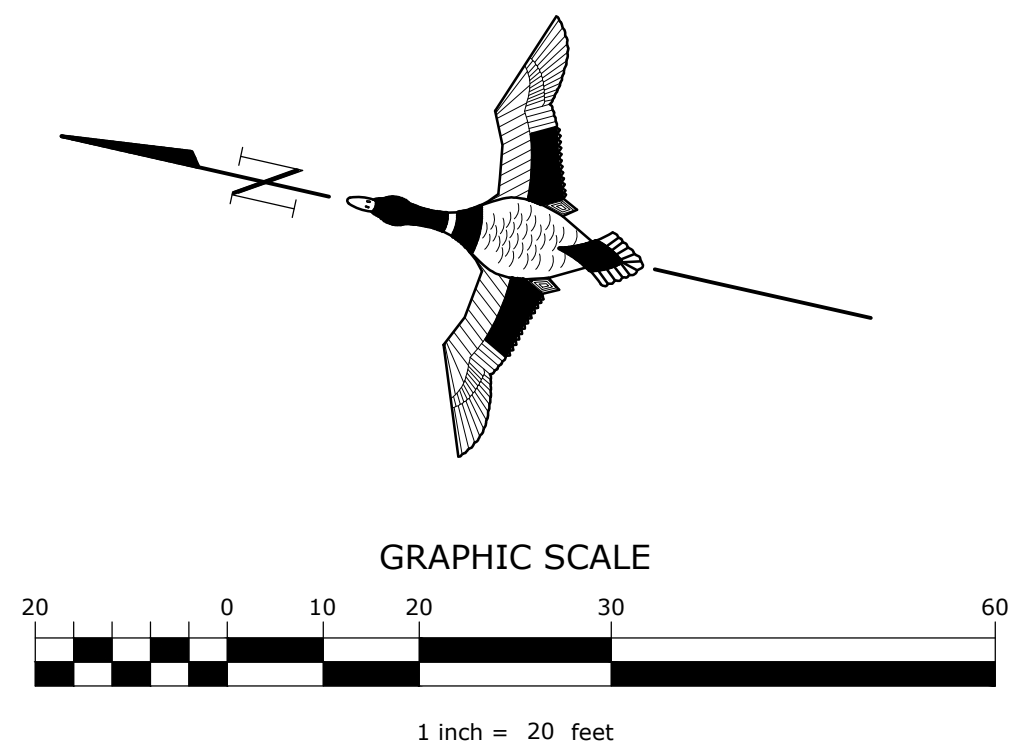
 7322 NEWMAN BOULEVARD, BUILDING 2, STE. 2000
DEXTER, MICHIGAN 48130
(734) 623-2000

ENLARGED SITE PLAN
PROJECT NO. EMM1003114B
EMMET COUNTY
IOWA

CAD FILE: IA-340-13 Site Plan			
DESIGNED BY: AS			
DRAWN BY: CK, WAJ			
SURVEYED BY: AS, AB			
REVIEWER: TP			
DATE: 10-1-2026			
PROJECT NUMBER: US-1A-340-13			
C102			

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NOTE:
BERM SHALL BE OVERBUILT BY 5%
(1209.5'), SO THAT THE SETTLED TOP OF
BERM WILL BE 1209.0'

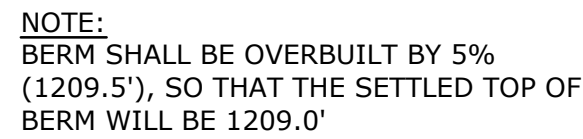
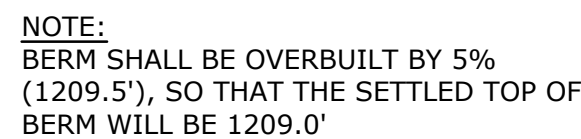


GREAT LAKES/ATLANTIC REGIONAL OFFICE

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DUCKS UNLIMITED

EMBANKMENT PLAN & PROFILE
PROJECT NO. EMM1003114B
EMMET COUNTY
IOWA



NOTE:
CLAY CORE FROM STA: 0+84.29 TO STA: 2+51.54

	Revision	Sheet	Revisions	Date	By
	1	C001-C001	FINAL SITE PLAN	12-10-2024	W.A.J.
	2	C001-C001	IDALS REVISIONS	1-31-2025	A.S.
	3	C001-C001	IDALS REVISIONS	4-23-2025	A.S.
	4	C001-C002	RE-BID REVISIONS	10-1-2026	C.K.

IA-340-13 Site Plan
DESIGNED BY: AS
DRAWN BY: CK, WAJ
SURVEYED BY: AS, AB
REVIEWER: TP
DATE: 10-1-2026
PROJECT NUMBER: US-IA-340-13
C201

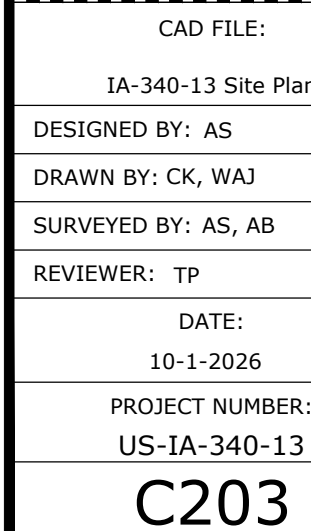
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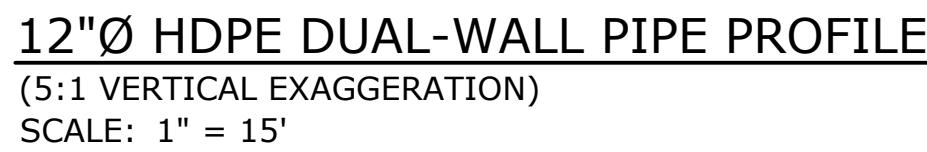
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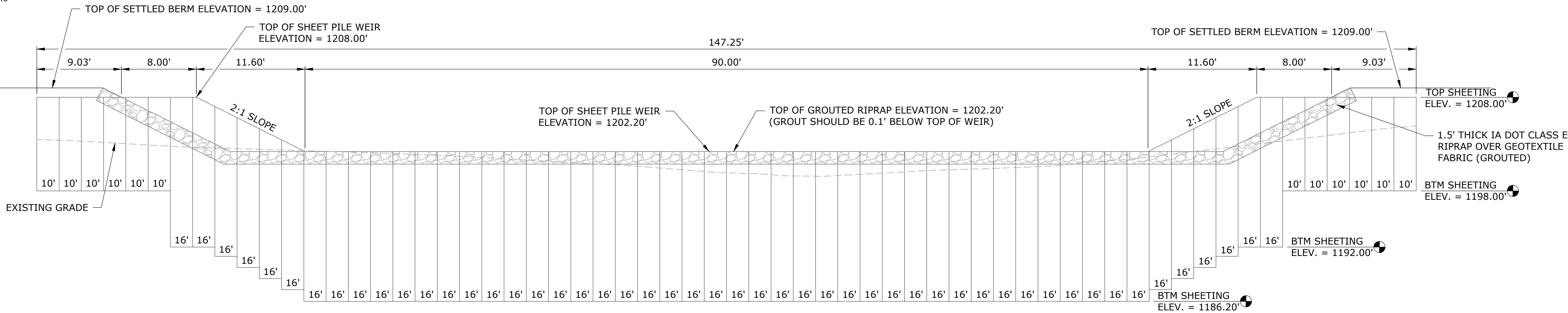
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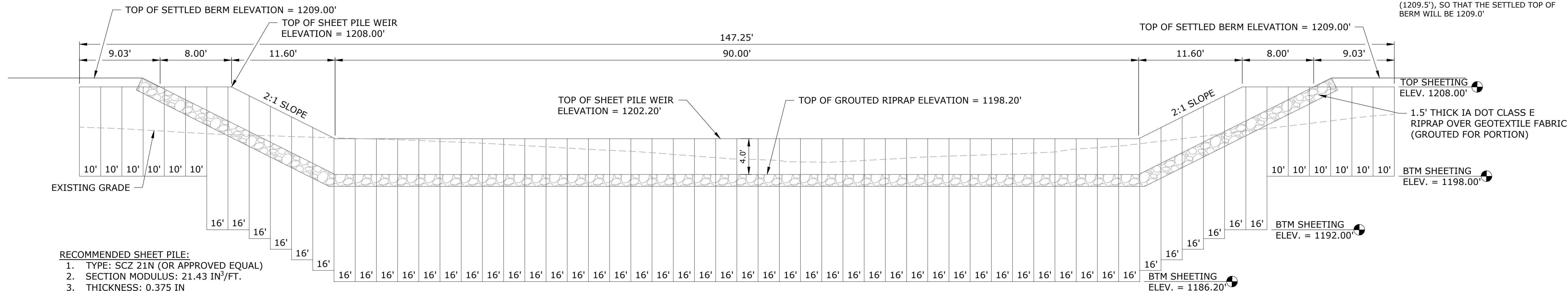


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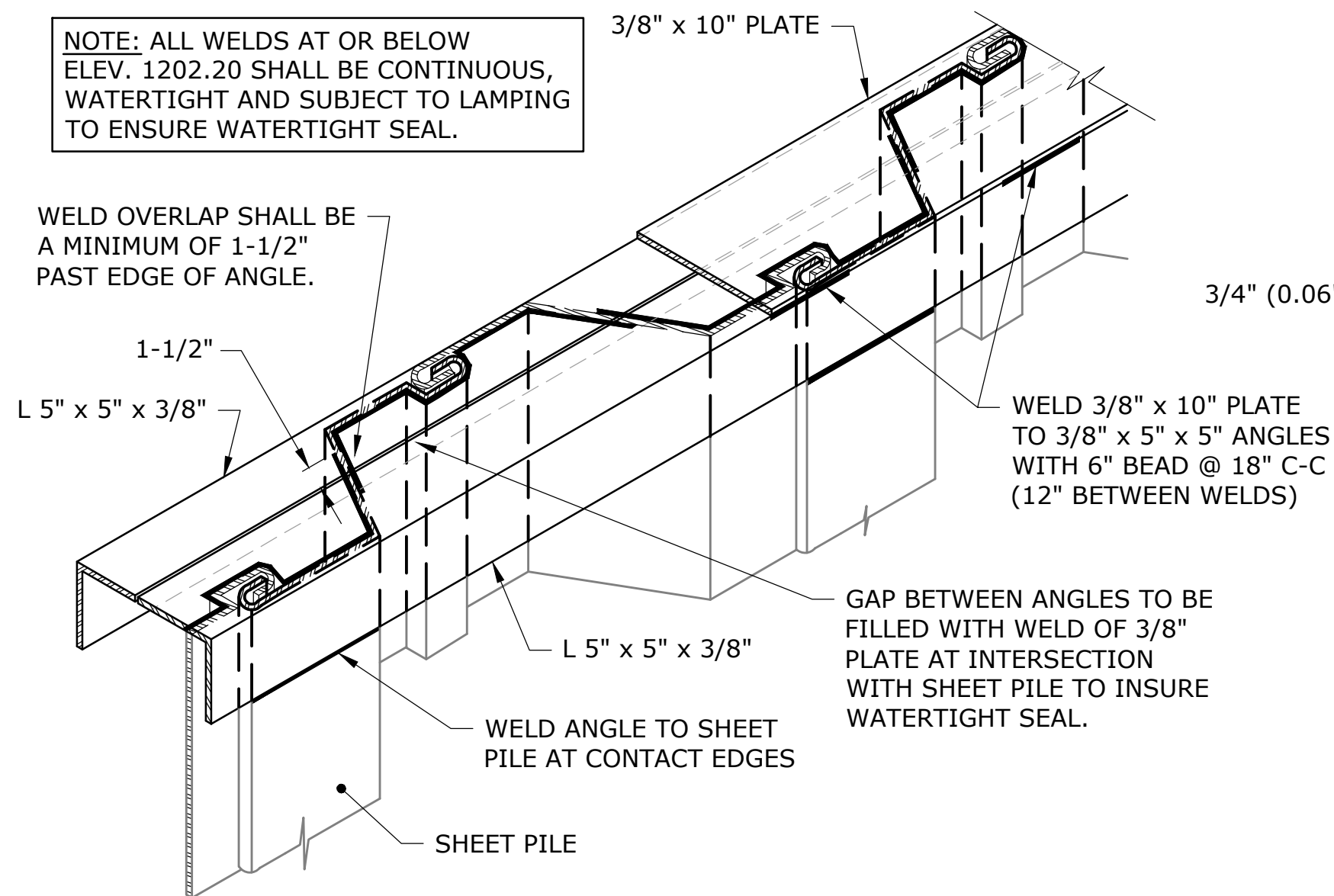
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SCALE: 1" = 6'

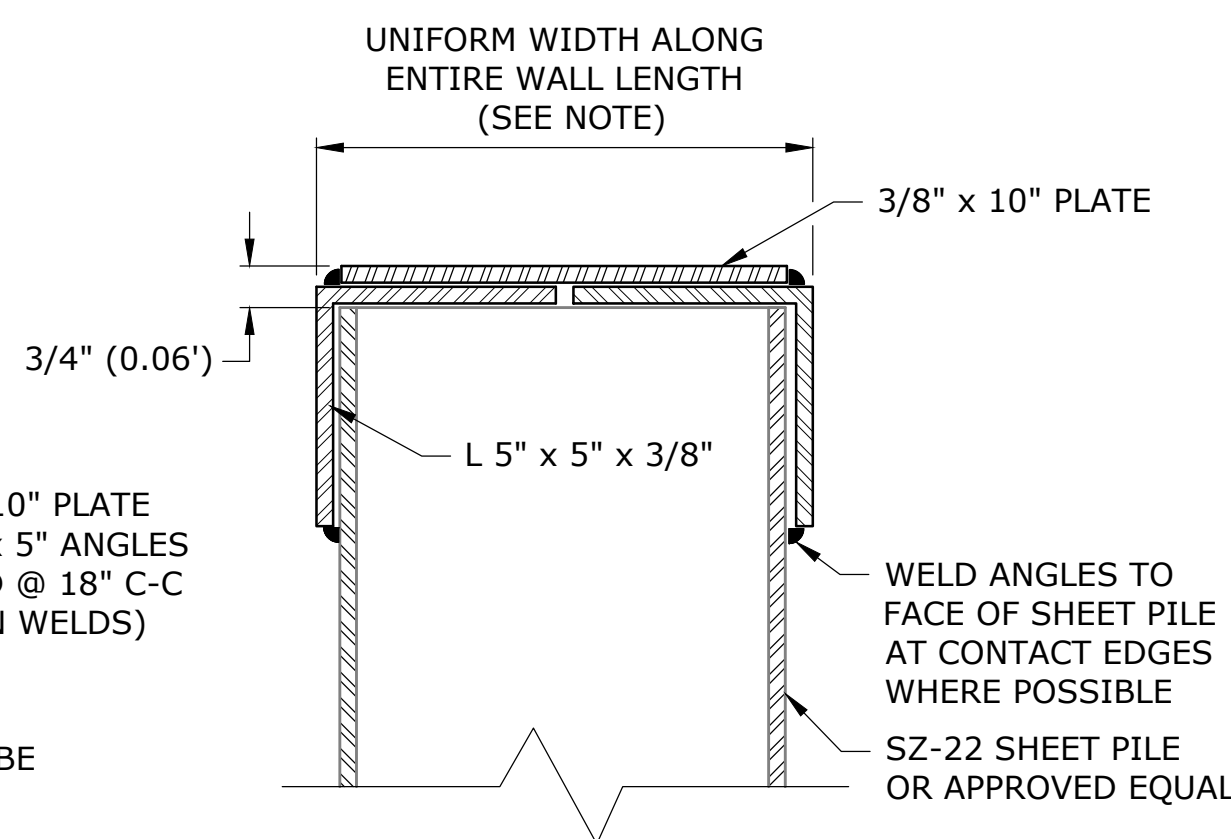


SCALE: 1" = 6'

- NOTE: ALL WELDS AT OR BELOW ELEV. 1202.20 SHALL BE CONTINUOUS, WATERTIGHT AND SUBJECT TO LAMPING TO ENSURE WATERTIGHT SEAL.**



SHEET PILE CAP FABRICATION DETAIL



NOTE: CAP WIDTH VARIES DEPENDING ON ALIGNMENT OF SHEET PILE WALL; HOWEVER, ONCE THE APPROPRIATE WIDTH IS DETERMINED, IT SHALL REMAIN UNIFORM ALONG ENTIRE LENGTH OF WALL.

PILE CAP SECTION VIEW

NOT TO SCALE

1. TYPE: SCZ
2. SECTION MODULUS: 4.4 IN³/FT.
3. THICKNESS: 0.25 IN
4. MOMENT OF INERTIA: 8.1 IN⁴/FT.
5. STEEL GRADE: 50 KSI

NOTES:

1. ALL WELDS TO BE 1/4" FILLET WELDS (SEE DU SPECIFICATIONS).
2. ALL WELDS WILL BE SUBJECT TO LAMPING. ANY AREAS FAILING WILL BE RE-WELDED BEFORE ACCEPTANCE OF PROJECT.
3. TOP OF SHEET PILE SHALL BE TRIMMED TO GRADES INDICATED ON PLANS TO REMOVE ANY DAMAGE CAUSED BY DRIVING, ANY TRIMMING OVER 3" SHALL BE CONSIDERED CUT-OFF AND WILL BE DEDUCTED FROM THE COST OF "SHEET PILE INSTALLATION & MATERIALS".
4. ABOVE ELEV. 1202.20 PILE CAP NEED NOT BE WATERTIGHT, WELDS SHALL, CONSIST OF A 6" BEAD AT 18" C-C (12" BETWEEN WELDS).
5. LENGTH OF PILE CAP AS SHOWN ON THE PLANS.

GREAT LAKES/ATLANTIC REGIONAL OFFICE

7322 NEWMAN BOULEVARD, BUILDING 2, STE. 200
DEXTER, MICHIGAN 48130
(734) 623-2000
www.ducks.org

 **DUCKS UNLIMITED**

SHEET PILE DETAILS
PROJECT NO. EMM1003114B
EMMET COUNTY
IOWA

[illegible]

Revision	Sheet	Revisions
1	C001-C401	FINAL SITE PLAN
2	C001-C401	IDALS REVISIONS
3	C001-C401	IDALS REVISIONS
4	C001-C002	RE-BID REVISIONS

CAD FILE:

IA-340-13 Details

DESIGNED BY: AS

DRAWN BY: CK, WAJ

SURVEYED BY: AS AP

REVIEWED: TO

DATE:

DATE:
10-1-2026

PROJECT NUMBER

US-IA-340-

C30-

C30.

NOT FOR CONSTRUCTION

BERM "WAVE" SHELF AT ELEVATION = 1202.2'

12.00'

3:1 SL

COMPACTED

POROUS MATERIAL

6"Ø PERFORATED CPP

12" SITE PREPARATION

TOE DRAIN; PLACE AS SHOWN ON
EMBANKMENT PLAN VIEW, OR, WHERE
EMBANKMENT IS AT LEAST 3.5' IN HEIGHT

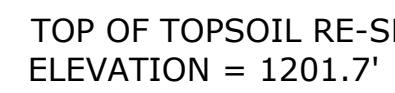
SCALE: 1" = 3'



SCALE: 1" = 3'



SCALE: 1" = 3'



SCALE: 1" = 3'

IOWA

CAD FILE:

IA-340-13 Details

DESIGNED BY: AS

DRAWN BY: CK, WA

SURVEYED BY: AS,

REVIEWER: TP

DATE: _____

10-1-2026

PROJECT NUMBER:

US-IA-340-13

C302

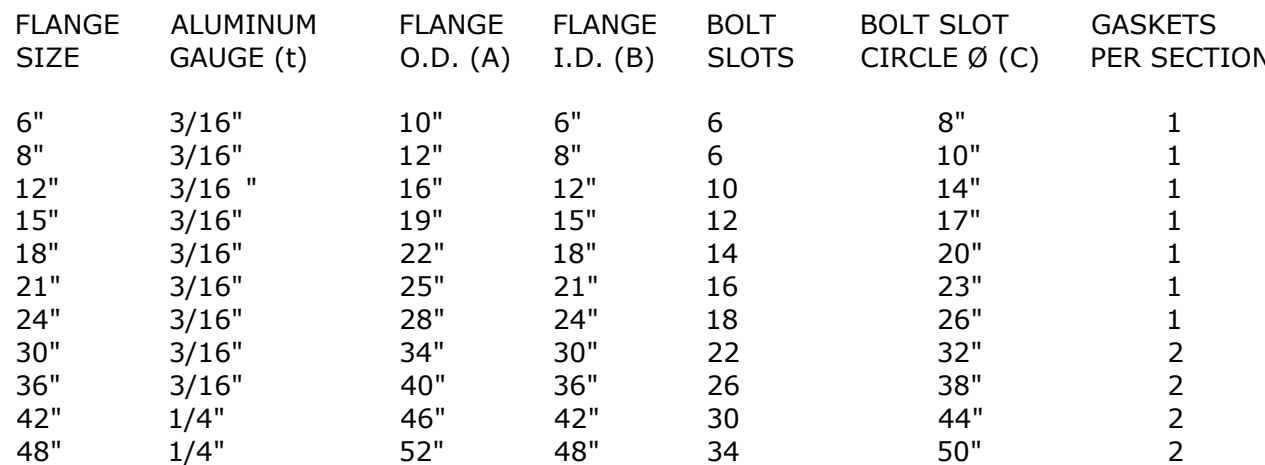
CS02

NOT FOR CONSTRUCTION

[illegible]

NOTES:

1. DIMENSION "H" INCLUDES 0.5 FOOT OF RISER, EMBEDDED IN CONCRETE.
2. ALL METAL PIPE SHALL BE CONNECTED WITH FLANGE COUPLERS.
3. DOWNSTREAM PIPE OUTLET SHALL CONFORM TO SLOPE FOR PIPE DIAMETERS 30 INCHES AND LARGER.
4. INLET AND/OR OUTLET PIPES GREATER THAN 20 LINEAR FEET SHALL BE FABRICATED USING MULTIPLE SECTIONS, NOT TO EXCEED 20 LINEAR FEET, CONNECTED WITH FLANGE COUPLERS. A FULL 20 FOOT SECTION MUST BE UTILIZED AS THE END SECTION OF PIPE.
5. BOTTOM 6"-8" OF ALUMINUM MUST BE COATED WITH FOUNDATION COATING BEFORE EMBEDMENT INTO CONCRETE.



FLANGE COUPLER DETAIL

NOT TO SCALE





NOT TO SCALE



SCALE: 1" = 3'



NOT TO SCALE



NOT TO SCALE



NOT TO SCALE



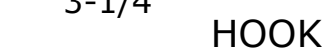
1. WELD A 2" x 1/4" STRAP TO THE BOTTOM EDGE OF THE COVER, AROUND ENTIRE CIRCUMFERENCE.
2. COVER SIZE SHALL BE DETERMINED BY THE RISER DIAMETER PLUS 4".
3. HINGED DOOR LENGTH SHALL BE DETERMINED BY THE RISER DIAMETER MINUS 5" EITHER SIDE OF RISER.

NOT TO SCALE



NOTE: BOTTOM 6" - 8" OF ALUMINUM RISER SHALL BE COATED WITH FOUNDATION COATING BEFORE EMBEDMENT INTO CONCRETE.

NOT TO SCALE



NOTE:
L1 AND L2 EQUAL HEIGHT OF RISER PLUS 1' MAX LENGTH FOR EACH 5'. AFTER ADD A SECOND EXTENSION L3 2 PER STRUCTURE. MATERIAL TO BE STEEL.

NOT TO SCALE

CAD FILE:

IA-340-13 Details

DESIGNED BY: AS

DRAWN BY: CK, WAJ

SURVEYED BY: AS, AE

REVIEWER: TP

DATE: _____

10-1-2026

PROJECT NUMBER:

US-IA-340-13

C304

CS04

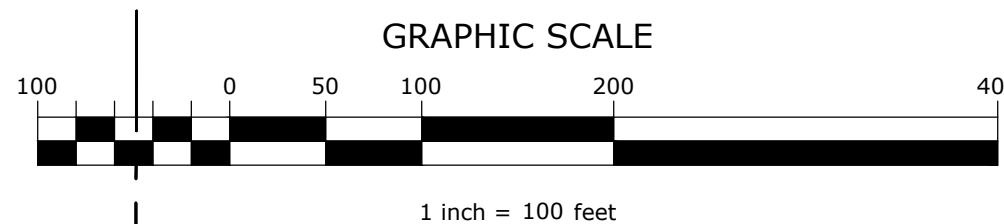
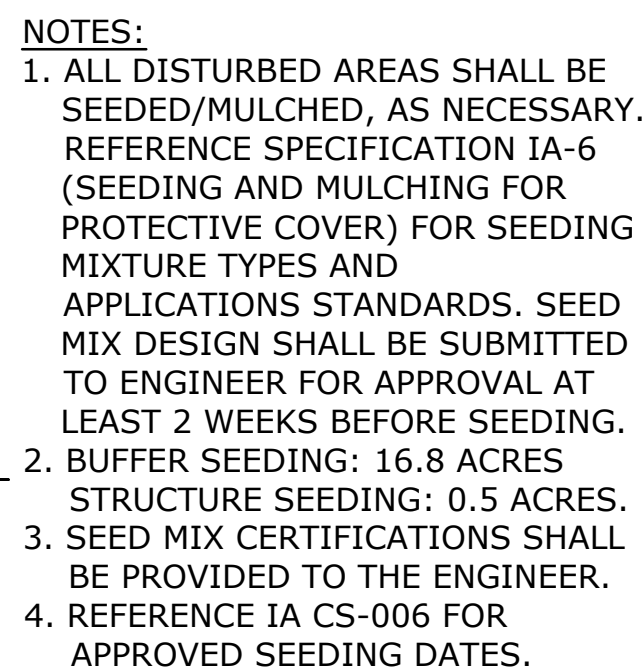
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Revisions		Date	By
1	FINAL SITE PLAN	12-10-2024	W.A.J.
2	C001-C401	1-31-2025	A.S.
3	C001-C401	4-23-2025	A.S.
4	C001-C002	10-7-2026	C.K.

NOT FOR CONSTRUCTION

C:\Users\kinzie\Documents\Iowa - Documents\Iowa\02_C3D Projects\IA-340-2 CREP Projects\EMMET NEARY\C3D_DRAWING\IA-340-13 Site Plan.dwg, 10/1/2026 3:17 PM, Christian Kinzie, SEEDING PLAN, None



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