

AGENDA
REGULAR DRAINAGE MEETING
DD 55 & DD 55-3 CREP Wetlands Project
January 22, 2019 1:00 PM

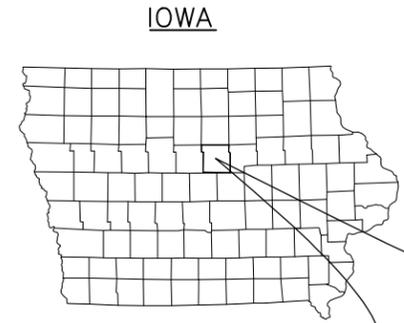
1. Open Meeting
2. Approve Agenda
3. DD 55 & DD 55-3 - Discuss W Possible Action - CREP Wetland Project
Mike Bourland, P.E., will present plans for a wetland project in DD 55 and DD 55-3.

Documents:

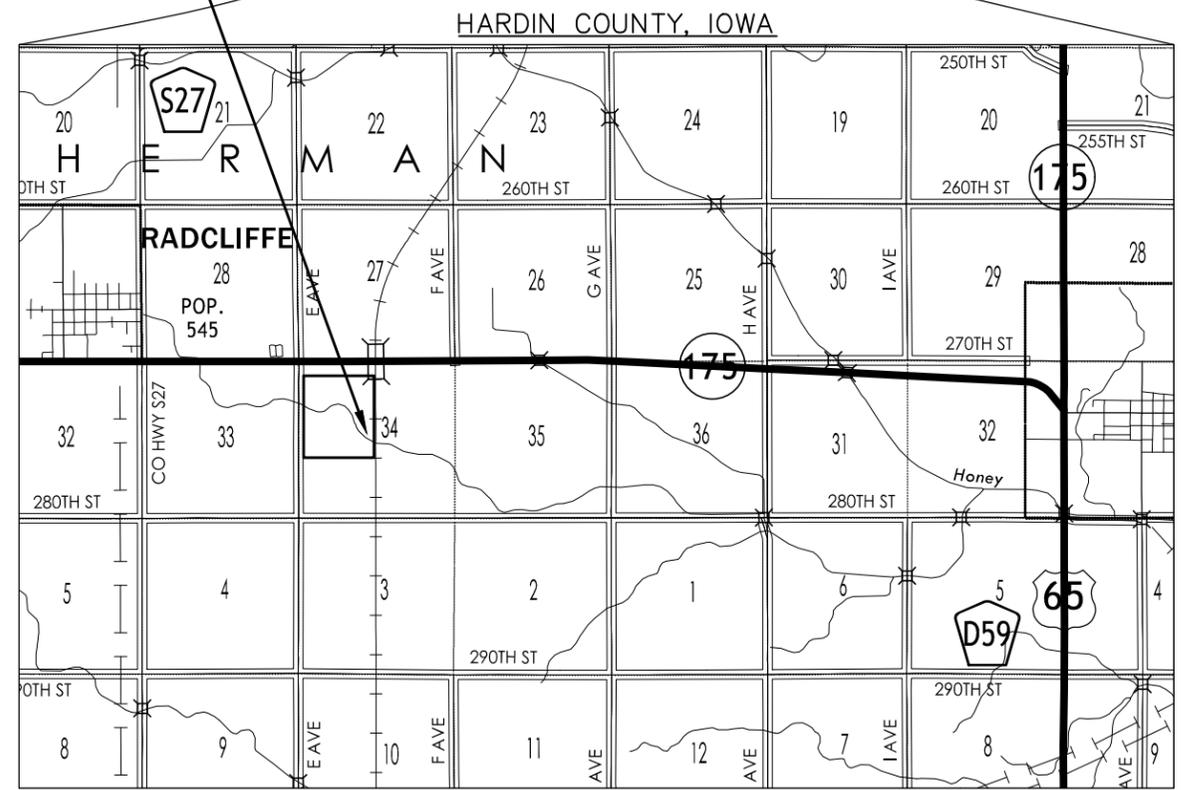
[DD 55 HAR872234B WETLAND PERMITTING PLANS.PDF](#)
[DD 55 WETLAND PROJECT EMAIL.PDF](#)

4. Other Business
5. Adjourn Meeting

CREP WETLAND PROJECT HAR872234 HARDIN COUNTY, IOWA



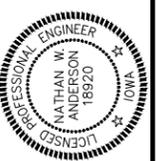
PROJECT LOCATION



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REVISIONS			
NO.	DATE	DESCRIPTION	ISSUED FOR REVIEW ONLY
1	7/10/19		ISSUED FOR PERMITTING
2	7/16/19		ISSUED FOR PERMITTING

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.
Nathan W. Anderson
 Nathan W. Anderson
 License Number 18920
 My license renewal date is December 31, 2017
 Pages or sheets covered by this seal:



PROJECT PARTNERS



GENERAL NOTES

WHERE PUBLIC UTILITY FIXTURES ARE SHOWN AS EXISTING ON THE PLANS OR ENCOUNTERED WITHIN THE CONSTRUCTION AREA, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE OWNER OF THESE UTILITIES BY CALLING IOWA ONE CALL (1-800-292-8989) AT LEAST 48 HOURS PRIOR TO THE BEGINNING OF ANY CONSTRUCTION. THE CONTRACTOR SHALL AFFORD ACCESS TO THESE FACILITIES FOR NECESSARY MODIFICATION OF SERVICES. UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE RECORDS AND SURVEYS, AND THEREFORE THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THEIR EXISTENCE AND EXACT LOCATION AND TO AVOID DAMAGE THERETO. NO CLAIMS FOR ADDITIONAL COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR FOR ANY INTERFERENCE OR DELAY CAUSED BY SUCH WORK.



TITLE SHEET
 CREP WETLAND HAR872234
 HARDIN COUNTY, IOWA

SCALE:	AS SHOWN
PROJECT NO.	8738
DRAWN BY:	NWA
CHECKED BY:	TH
SHEET	A-1

SITE CHARACTERISTICS		
Project ID	Har872234	
Preliminary or Final Design	Final	
Drainage Area	1893	Acres
Wetland Pool Area	15.5	Acres
Deep Water Area (>3 ft deep)	1.8	Acres
Normal Pool Elevation	1136	Feet
Average Pool Depth	1.9	Feet
Maximum Pool Depth	9	Feet
Pool Storage	30.7	Acre-Feet
Berm Elevation	1142	Feet
Berm Storage	210	Acre-Feet
Length of Berm	511	Feet
Auxillary Spillway Elevation	NA	Feet
Auxillary Spillway Width	NA	Feet
Weir Width	60	Feet
Drop Height	7	Feet
Time of Concentration	4.6	Hours
Weighted Runoff Curve Number	88	----
25-year Storm Design Inflow	1387	CFS
100-year Storm Design Inflow	1928	CFS
100-year Flood Surface Elevation	1140.9	Feet

* PRINCIPAL SPILLWAY DESIGN STORM (24-HOUR)
 ** AUXILIARY SPILLWAY DESIGN STORM (24-HOUR)

EARTHWORK BALANCE SUMMARY

Item	Cubic Yards	Comment
Unadjusted Embankment	8,600	Core + Berm + Internal Diversions (Compacted Fill)
Shrinkage Factor	1.2	Assumed
Adjusted Embankment	10,320	(8600*1.2) Material Requiring Compaction to Specification
Non Borrow Excavation	2,900	Interior cuts (sediment basin & channel) + Core Core material gets recompactd in trench. Use other cuts to form interior diversions as this material is not suitable for embankment
Topsoil Stripping	4,100	Assumed 24" thick. Majority of stripped topsoil used for infills on north side (~2,500 CY) with remainder used to minimally cover embankment, tile overs, and other disturbances. Excess topsoil to be spoiled on infills. Does not include topsoiling for borrow areas. Borrow area topsoiling is incidental
Misc. Fill	950	Minimal Compaction (tile cover)
Balance	8,370	(10,320 + 950) - 2,900 (Borrow)

ESTIMATED QUANTITIES OF WORK AND LIST OF SPECIFICATIONS

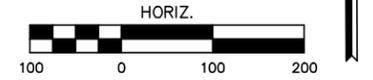
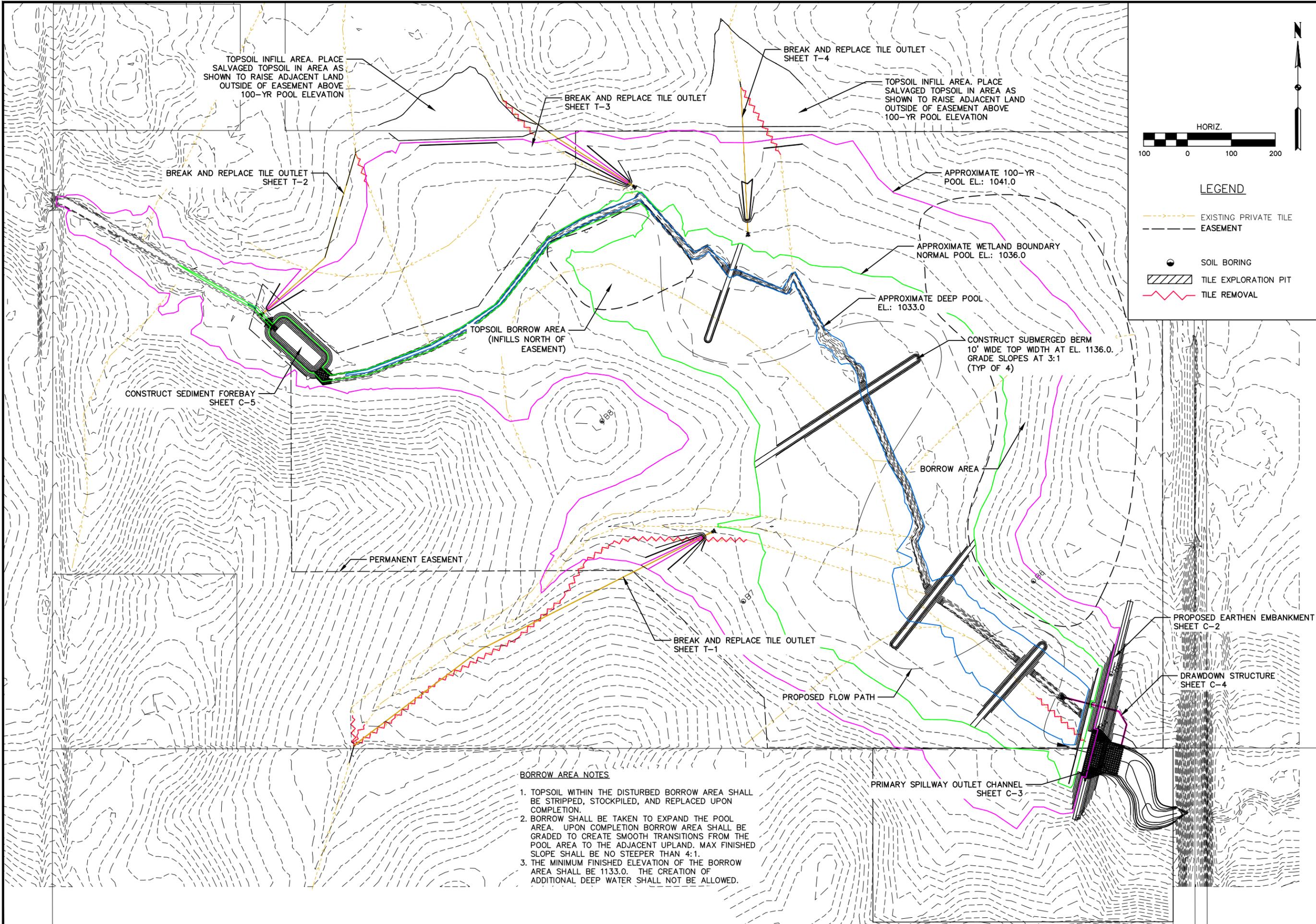
ITEM	DESCRIPTION	SPECIFICAITON	UNIT QUANTITY	UNIT
1	SITE STRIPPING	IA-1	1	LS
2	CLEARING AND GRUBBING	IA-1	1	AC
3	STRUCTURE AND CHANNEL SEEDING	IA-6	2	AC
4	BUFFER SEEDING - NEW	IA-6	15.5	AC
5	BUFFER SEEDING - EXISTING	IA-6	9.6	AC
6	MOBILIZATION	IA-8	1	LS
7	DRAIN TILE INVESTIGATION & REMOVAL	IA-9	1	LS
8	SHEET PILING	IA-13	2870	SF
9	EXCAVATION (P)	IA-21	10320	CY
10	EARTHFILL (P)	IA-23	10320	CY
11	TOPSOILING (P)	IA-1	4100	CY
12	CORRUGATED PE TILE - 8"	IA-9	1060	LF
13	CORRUGATED PE TILE - 12"	IA-9	929	LF
14	CORRUGATED METAL PIPE - 18"	IA-51	220	LF
15	CMP DRAWDOWN STRUCTURE	IA-51	1	EA
16	CMP RISER INLET STRUCTURE	IA-51	1	EA
17	CMP STOP LOG STORAGE STRUCTURE	IA-51	1	EA
18	CMP TILE OUTLET - 8"	IA-51	60	LF
19	CMP TILE OUTLET - 12"	IA-51	20	LF
20	RIPRAP	IA-61	1050	TON
21	CONCRETE GROUT FOR RIPRIAP	IA-62	200	CY



REVISIONS			
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1	7/10/19		ISSUED FOR PERMITTING
2	7/16/19		

PROJECT INFORMATION AND QUANTITIES
 CREP WETLAND - HAR872234
 HARDIN COUNTY, IOWA

SCALE: AS SHOWN
 PROJECT NO. 8738
 DRAWN BY: NWA
 CHECKED BY: TH
 SHEET



LEGEND

- EXISTING PRIVATE TILE
- EASEMENT
- SOIL BORING
- TILE EXPLORATION PIT
- TILE REMOVAL

REVISIONS

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- BORROW AREA NOTES**
1. TOPSOIL WITHIN THE DISTURBED BORROW AREA SHALL BE STRIPPED, STOCKPILED, AND REPLACED UPON COMPLETION.
 2. BORROW SHALL BE TAKEN TO EXPAND THE POOL AREA. UPON COMPLETION BORROW AREA SHALL BE GRADED TO CREATE SMOOTH TRANSITIONS FROM THE POOL AREA TO THE ADJACENT UPLAND. MAX FINISHED SLOPE SHALL BE NO STEEPER THAN 4:1.
 3. THE MINIMUM FINISHED ELEVATION OF THE BORROW AREA SHALL BE 1133.0. THE CREATION OF ADDITIONAL DEEP WATER SHALL NOT BE ALLOWED.

PROJECT OVERVIEW SHEET
CREP WETLAND - HAR872234
HARDIN COUNTY, IOWA

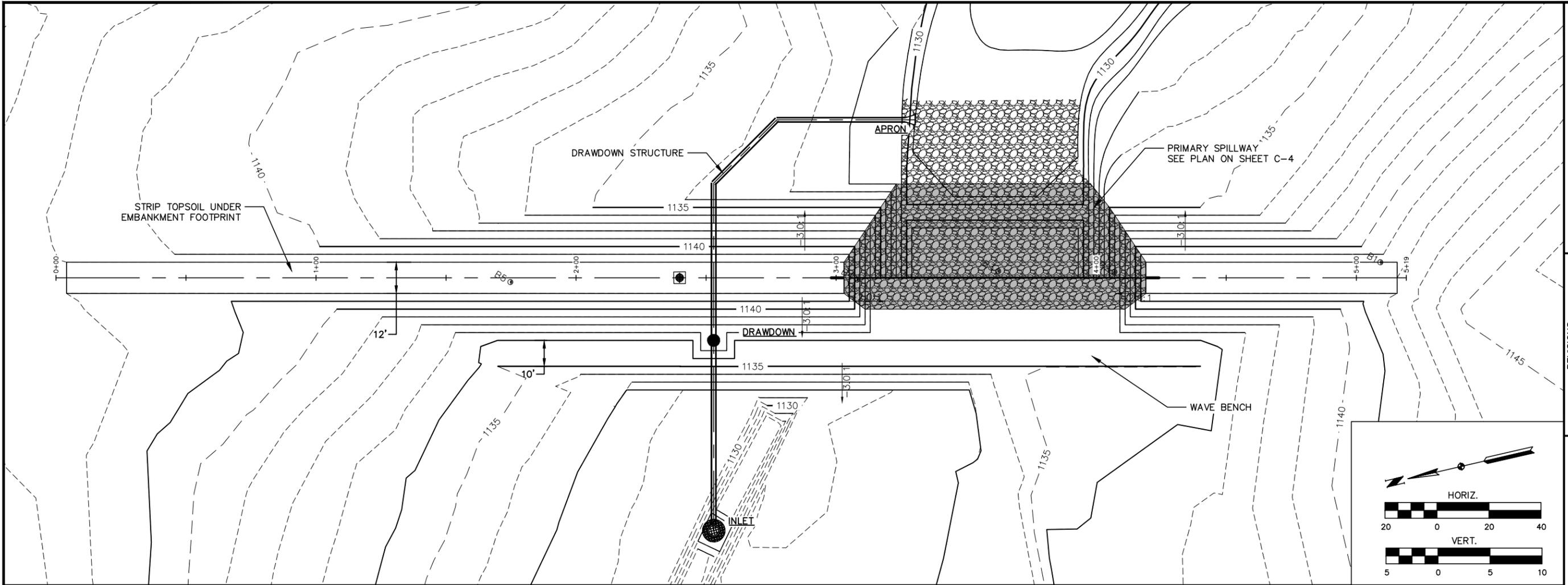
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PROJECT NO. 8734

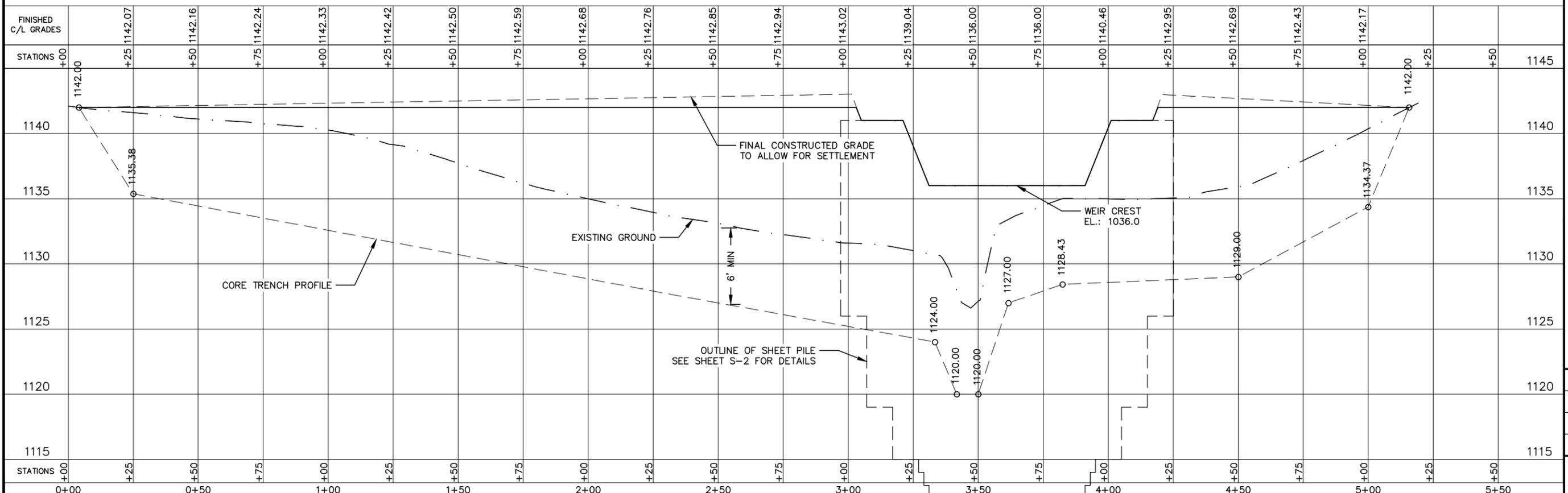
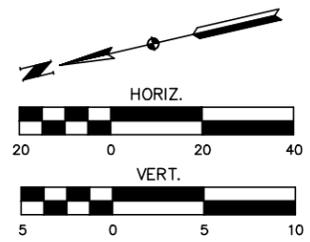
DRAWN BY: NWA

CHECKED BY: NA

SHEET C-1

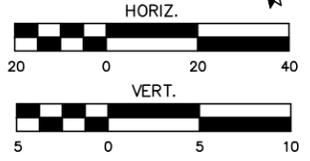
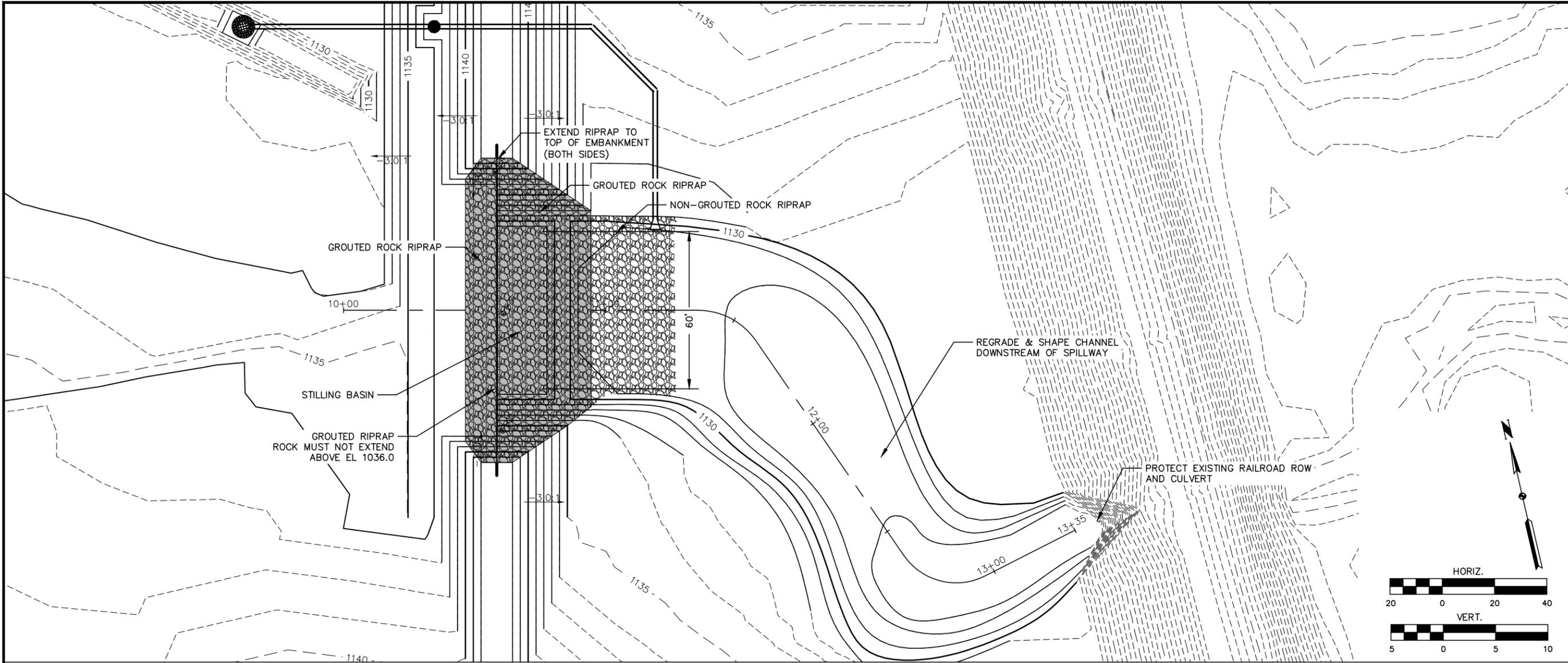


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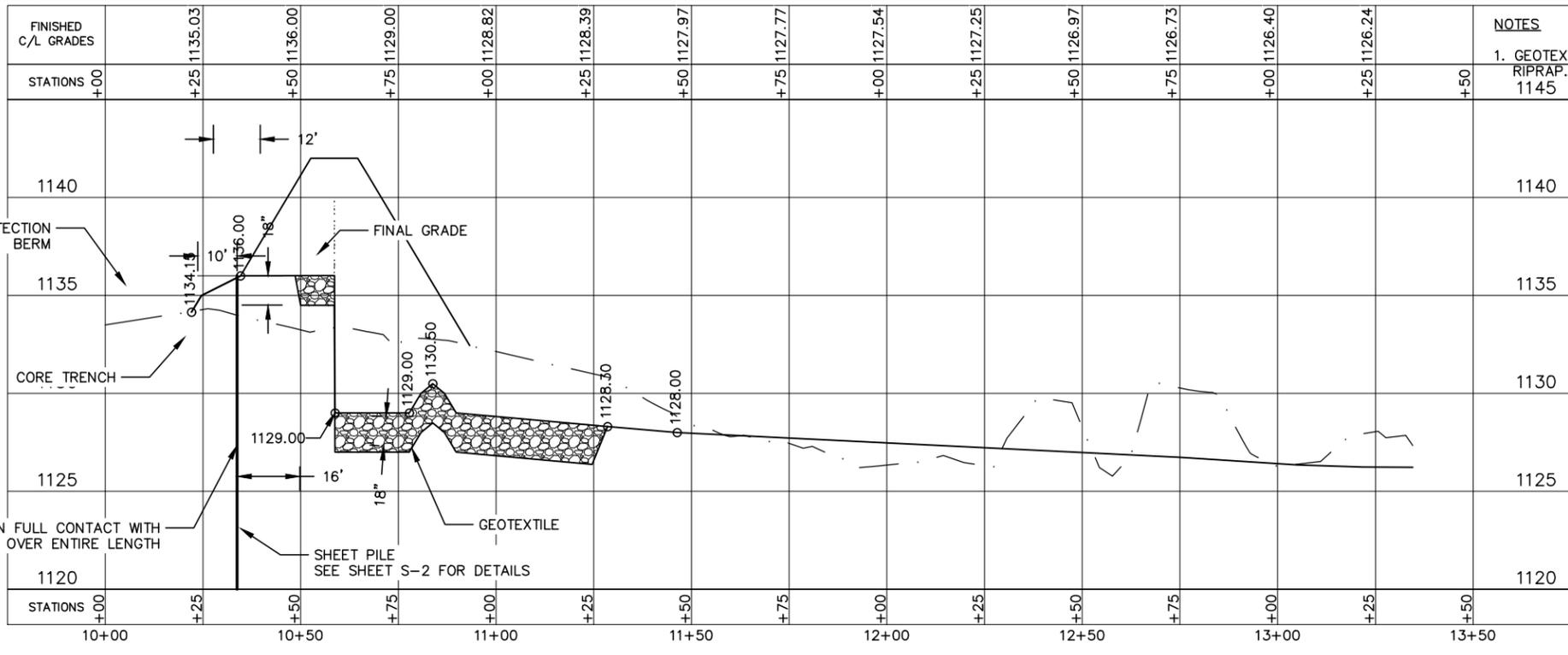
EMBANKMENT PLAN & PROFILE
CREP WETLAND - HAR872234
HARDIN COUNTY, IOWA

SCALE:	AS SHOWN
PROJECT NO.	8734
DRAWN BY:	NWA
CHECKED BY:	NA
SHEET	C-2



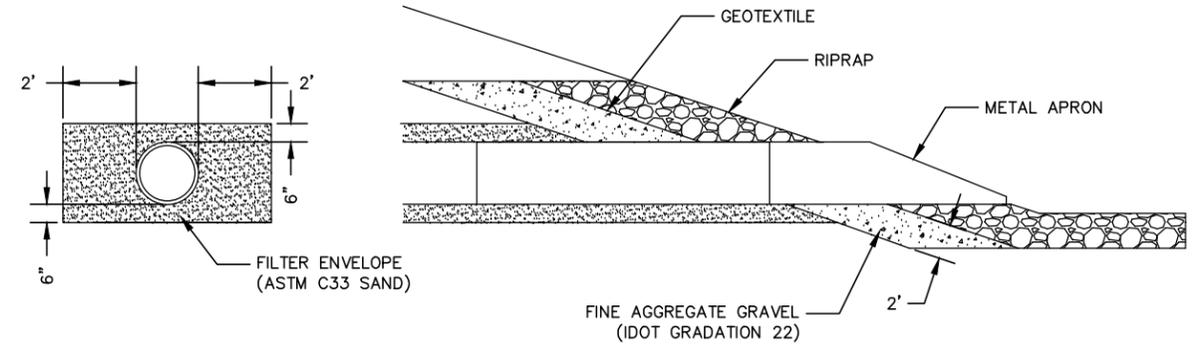
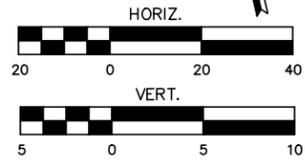
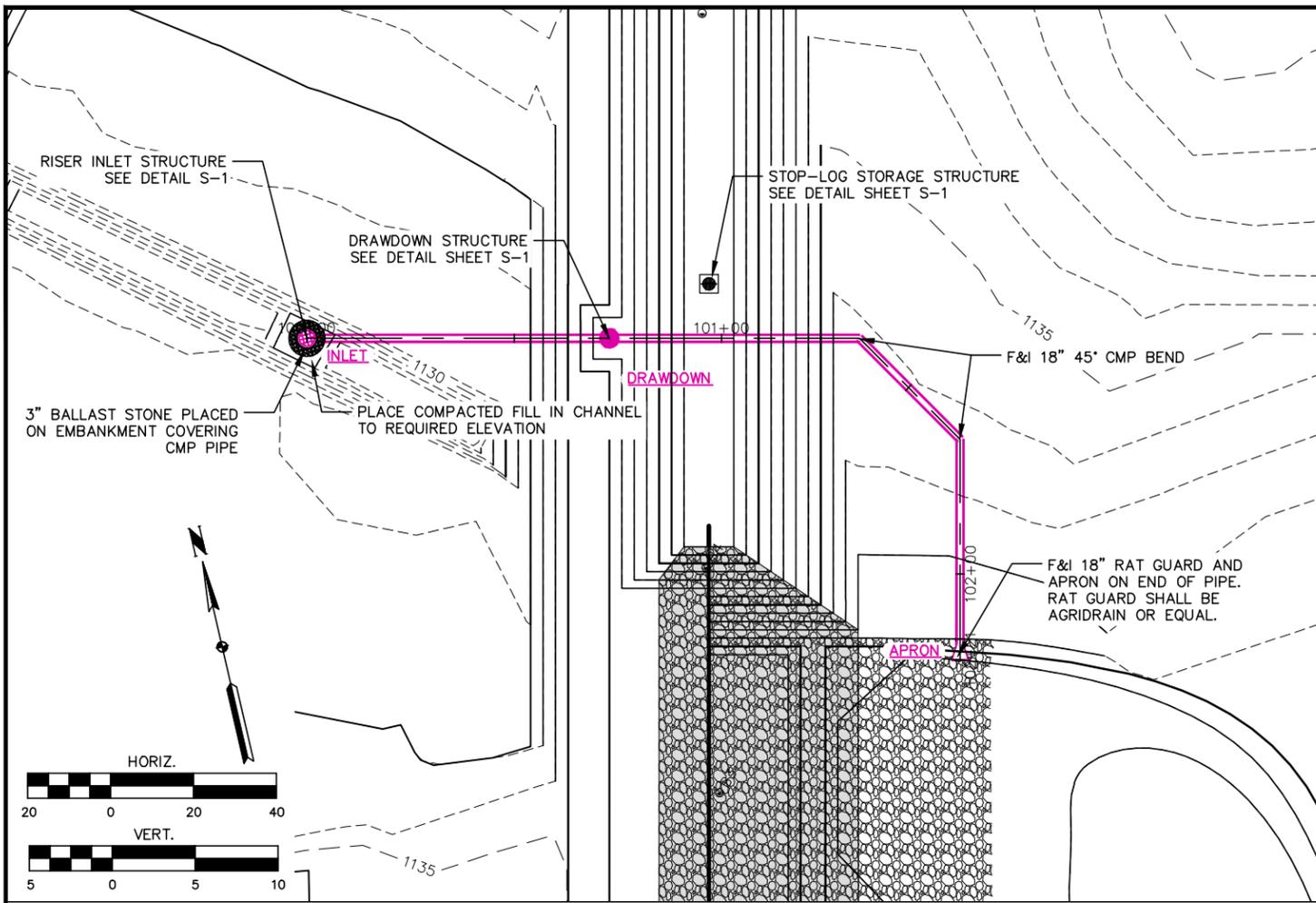
REVISIONS			
NO.	DATE	DESCRIPTION	
1	8/15/16	ISSUED FOR REVIEW ONLY	
2	7/16/19	ISSUED FOR PERMITTING	

PRIMARY SPILLWAY PLAN & PROFILE
CREP WETLAND - HAR872234
HARDIN COUNTY, IOWA



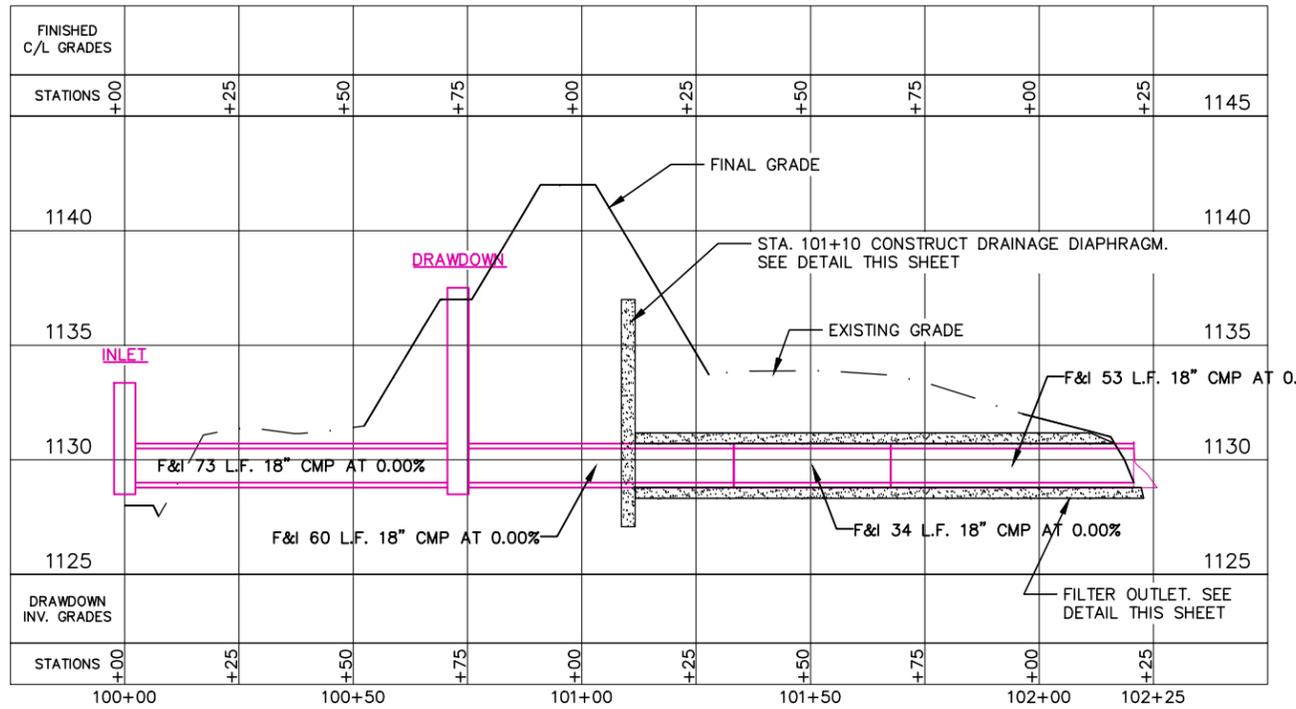
NOTES
1. GEOTEXTILE SHALL BE PLACED UNDER ALL RIPRAP.

SCALE:	AS SHOWN
PROJECT NO.	8734
DRAWN BY:	NWA
CHECKED BY:	NA
SHEET	C-3

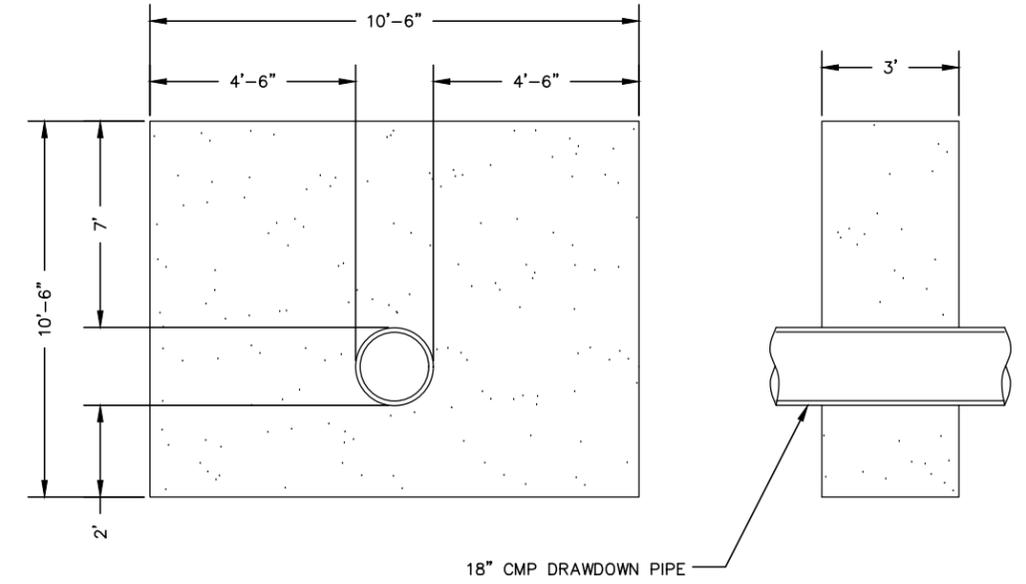


- NOTES
1. THE FILTER ENVELOPE SHALL FULLY SURROUND THE OUTLET PIPE FROM THE FILTER DIAPHRAGM TO OUTLET.
 2. EXTEND GRAVEL LAYER 1' BEYOND FILTER FACE IN ALL DIRECTIONS.

FILTER OUTLET DETAIL
NOT TO SCALE



- NOTES
1. DRAINAGE DIAPHRAGM AND FILTER OUTLET MATERIAL SHALL BE ASTM C33 SAND.
 2. FILTER MATERIAL SHALL BE PLACED IN 8" LIFTS MAXIMUM.

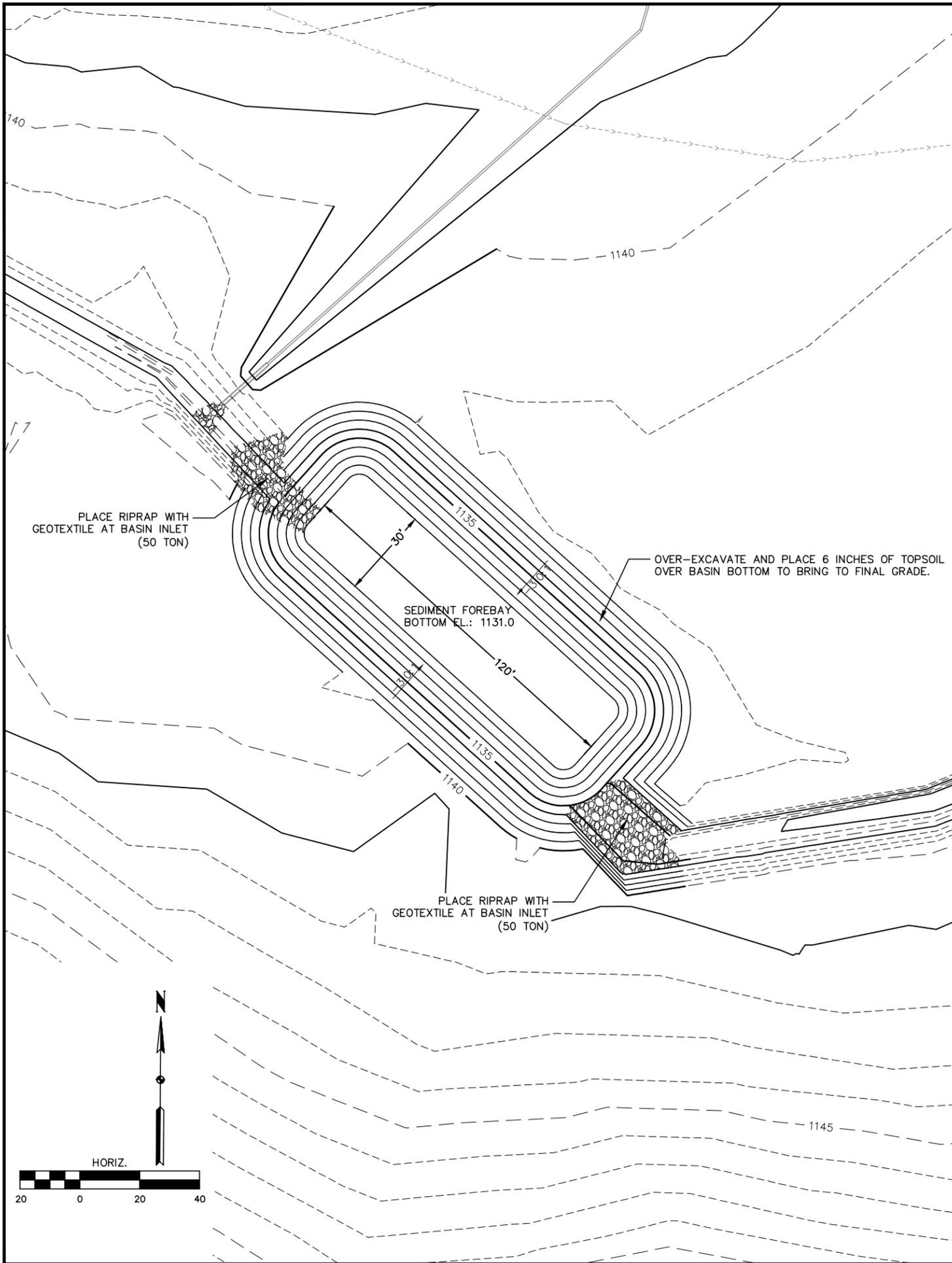


FILTER DIAPHRAGM DETAIL
NOT TO SCALE

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DRAWDOWN PLAN & PROFILE
CREP WETLAND - HAR872234
HARDIN COUNTY, IOWA

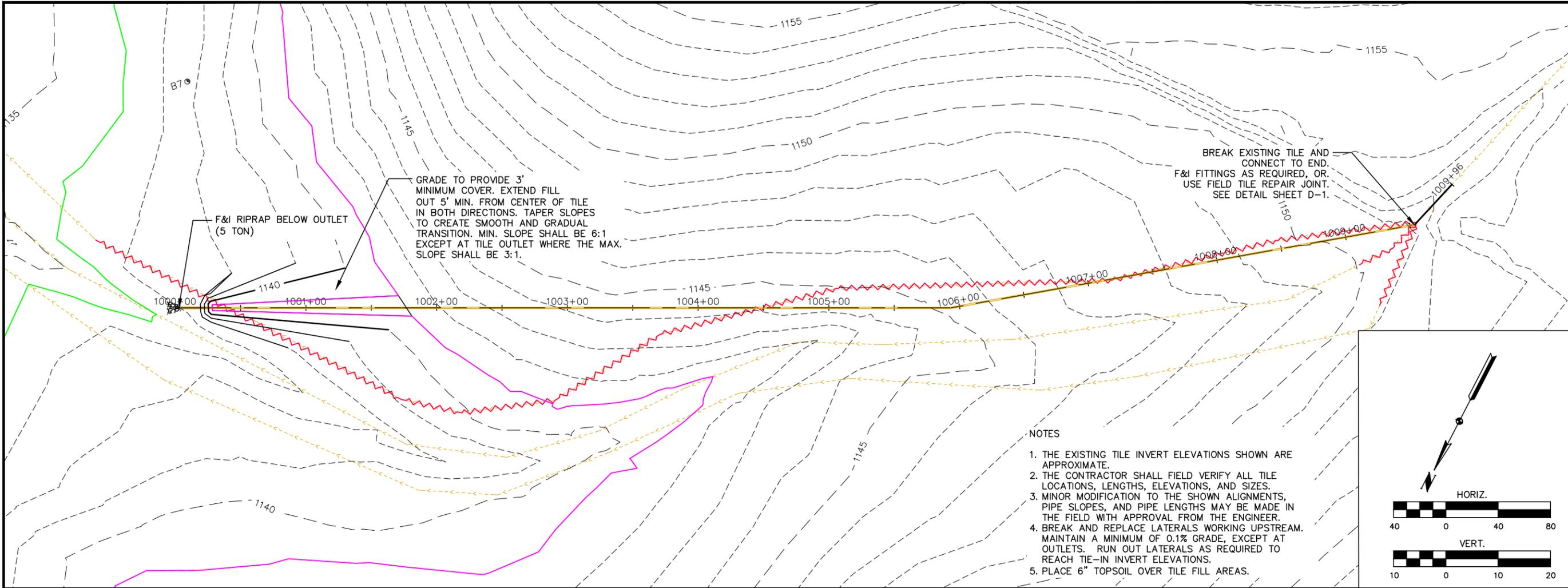
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PROJECT NO.	8734
DRAWN BY:	NWA
CHECKED BY:	NA
SHEET	C-4



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SEDIMENT FOREBAY PLAN
 CREP WETLAND - HAR872234
 HARDIN COUNTY, IOWA

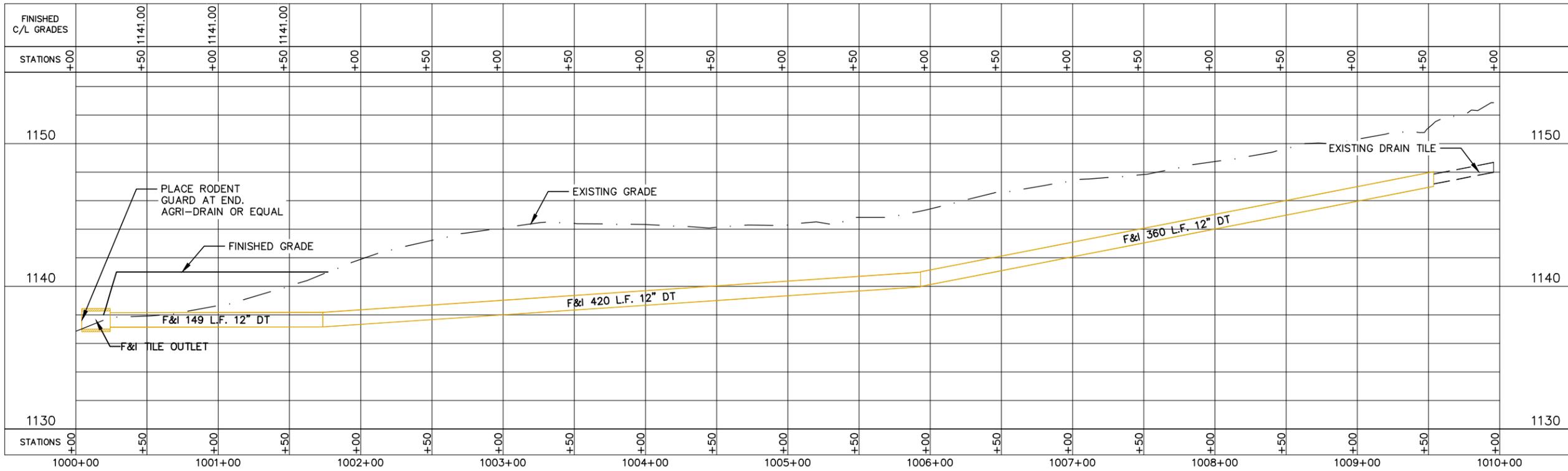
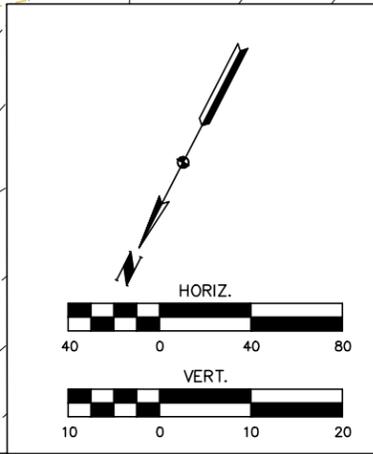
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PROJECT NO.	8734
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CHECKED BY:	NA
SHEET	C-5



REVISIONS			
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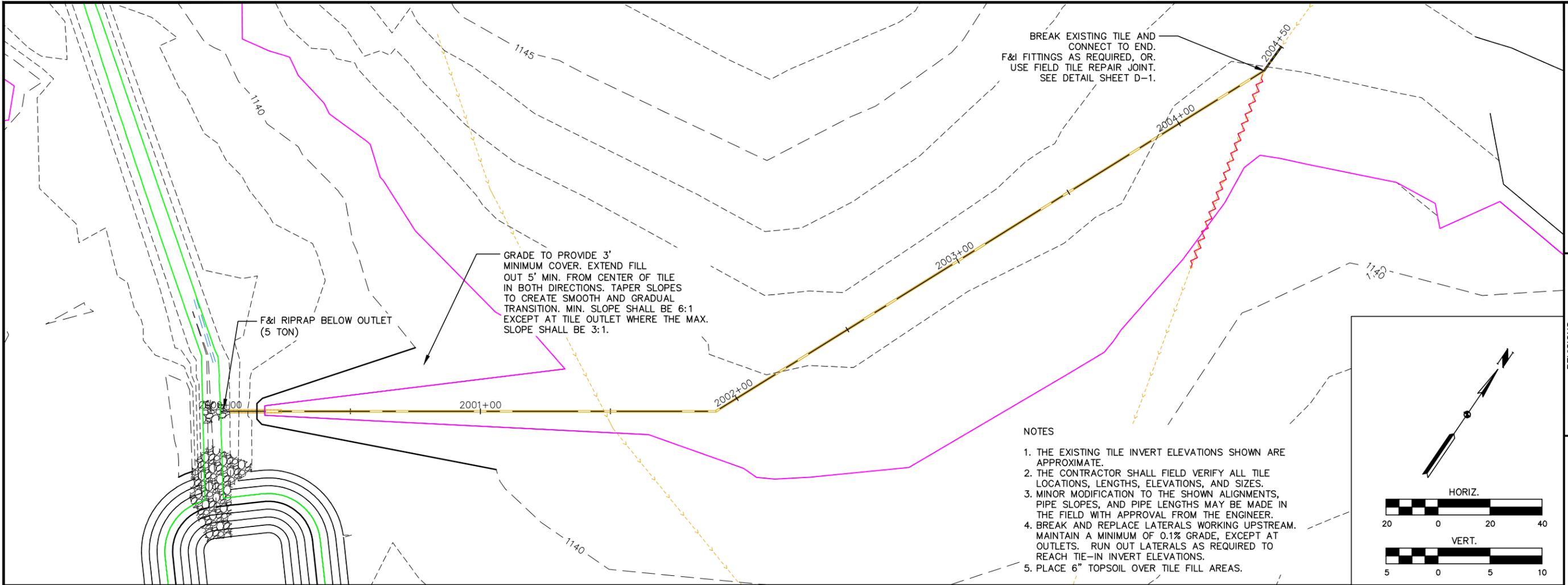
NOTES

1. THE EXISTING TILE INVERT ELEVATIONS SHOWN ARE APPROXIMATE.
2. THE CONTRACTOR SHALL FIELD VERIFY ALL TILE LOCATIONS, LENGTHS, ELEVATIONS, AND SIZES.
3. MINOR MODIFICATION TO THE SHOWN ALIGNMENTS, PIPE SLOPES, AND PIPE LENGTHS MAY BE MADE IN THE FIELD WITH APPROVAL FROM THE ENGINEER.
4. BREAK AND REPLACE LATERALS WORKING UPSTREAM. MAINTAIN A MINIMUM OF 0.1% GRADE, EXCEPT AT OUTLETS. RUN OUT LATERALS AS REQUIRED TO REACH TIE-IN INVERT ELEVATIONS.
5. PLACE 6" TOPSOIL OVER TILE FILL AREAS.

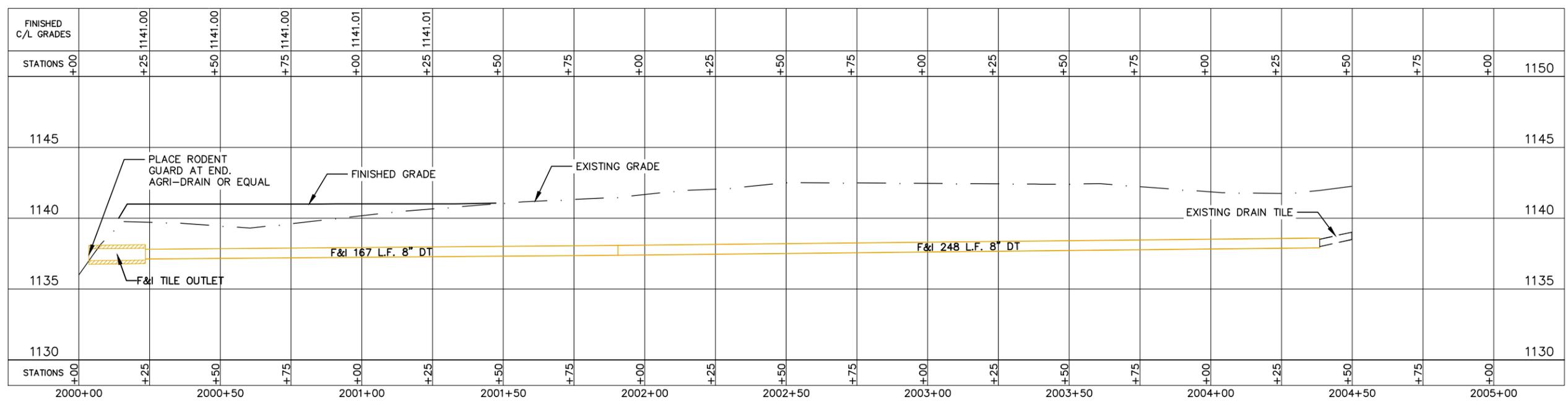
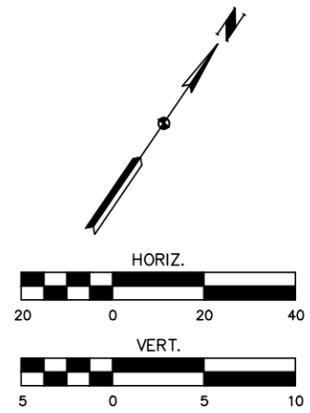


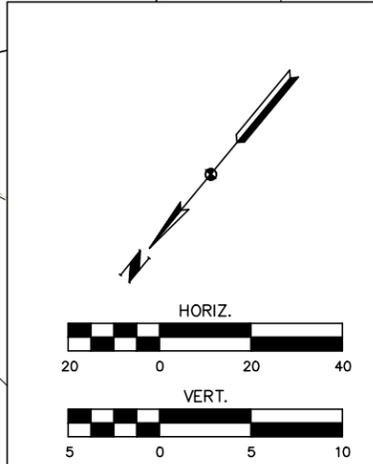
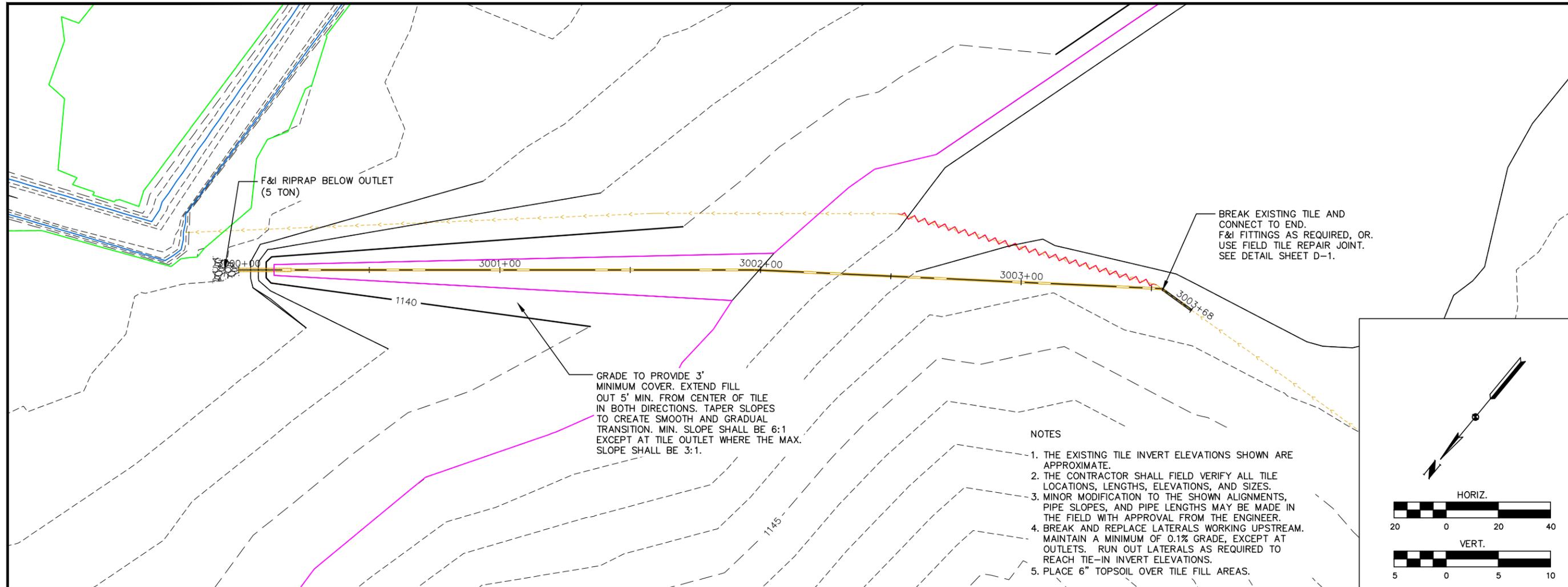
TILE 1 PLAN & PROFILE
CREP WETLAND - HAR872234
HARDIN COUNTY, IOWA

SCALE:	AS SHOWN
PROJECT NO.	8734
DRAWN BY:	NWA
CHECKED BY:	NA
SHEET	T-1

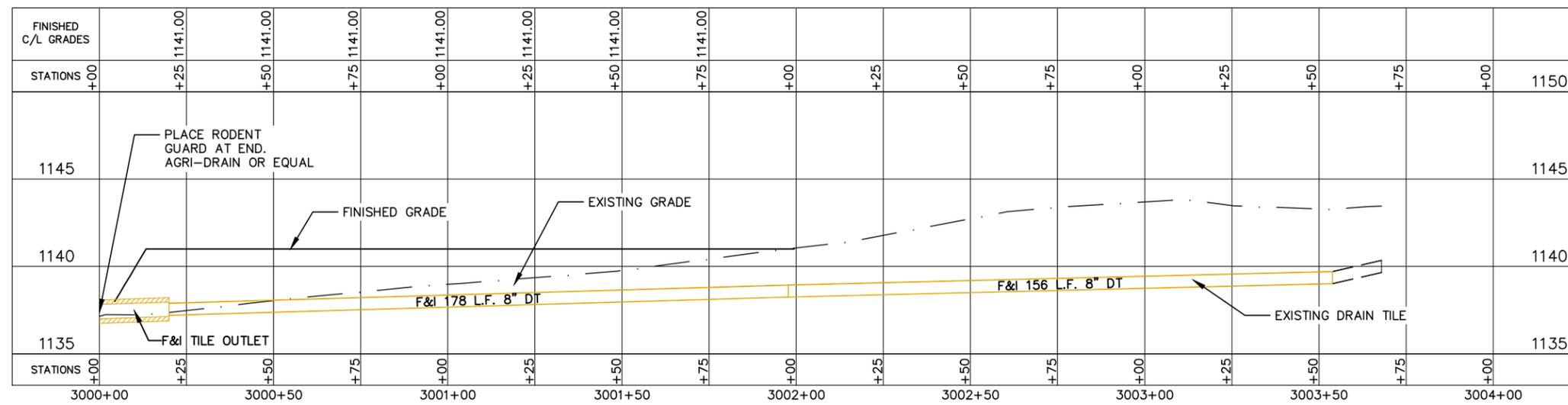


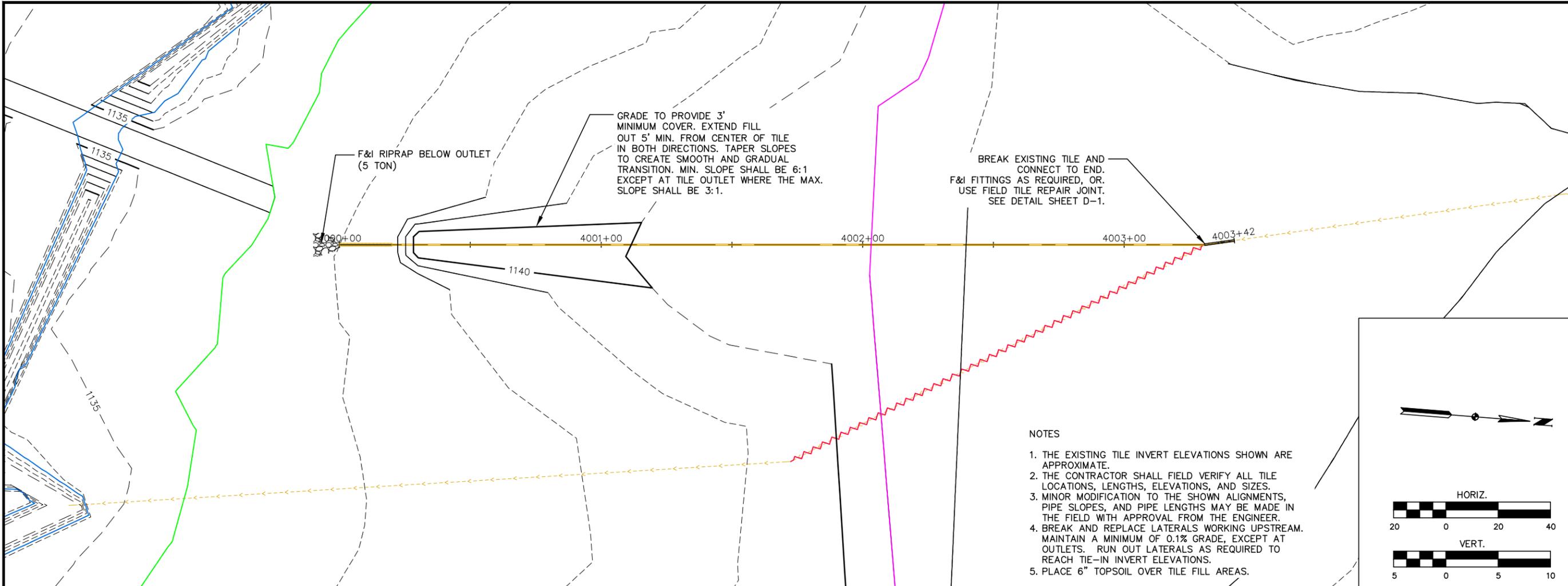
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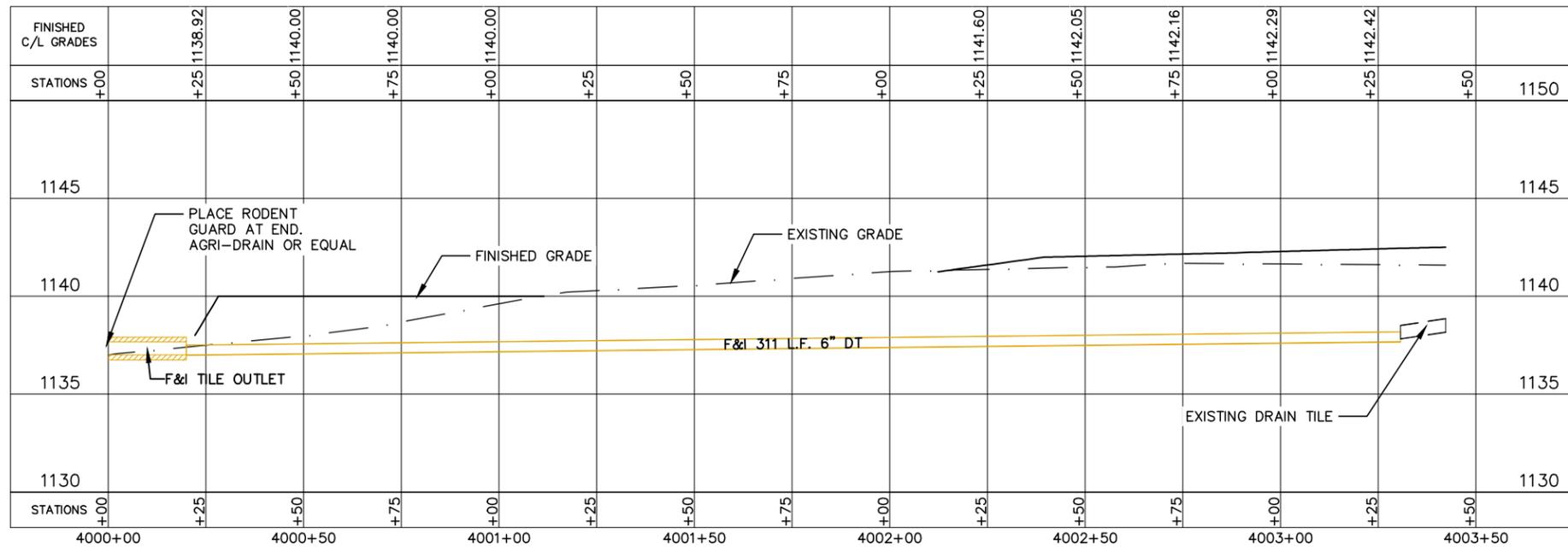
REVISIONS	
NO.	DATE
1	7/10/19
2	7/16/19





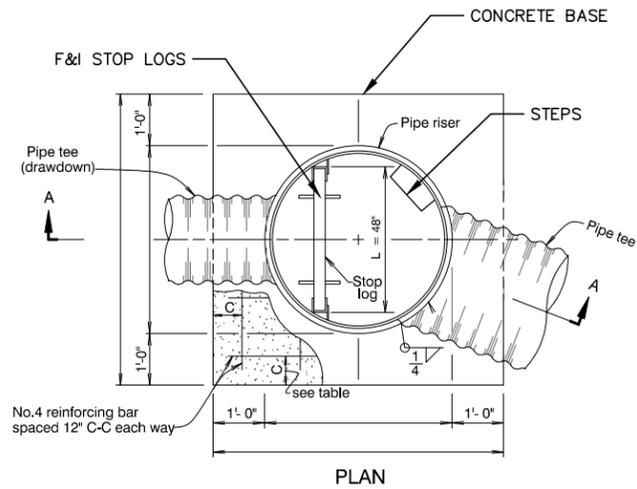
- NOTES**
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 2. THE CONTRACTOR SHALL FIELD VERIFY ALL TILE LOCATIONS, LENGTHS, ELEVATIONS, AND SIZES.
 3. MINOR MODIFICATION TO THE SHOWN ALIGNMENTS, PIPE SLOPES, AND PIPE LENGTHS MAY BE MADE IN THE FIELD WITH APPROVAL FROM THE ENGINEER.
 4. BREAK AND REPLACE LATERALS WORKING UPSTREAM. MAINTAIN A MINIMUM OF 0.1% GRADE, EXCEPT AT OUTLETS. RUN OUT LATERALS AS REQUIRED TO REACH TIE-IN INVERT ELEVATIONS.
 5. PLACE 6" TOPSOIL OVER TILE FILL AREAS.

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TILE 4 PLAN & PROFILE
CREP WETLAND - HAR872234
HARDIN COUNTY, IOWA

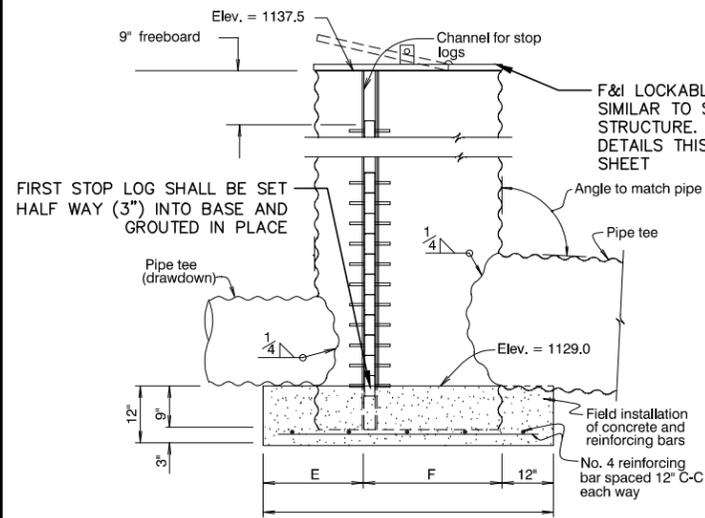
SCALE:	AS SHOWN
PROJECT NO.	8734
DRAWN BY:	NWA
CHECKED BY:	NA
SHEET	T-4



REQUIREMENT TABLE			
X IN BOX INDICATES THE REQUIREMENTS THAT APPLY TO STRUCTURE INDICATES - NOT APPLICABLE			
CONCRETE: CLASS	<input type="checkbox"/> 3000	<input type="checkbox"/> 3000M	<input checked="" type="checkbox"/> 4000
CORRUGATED METAL PIPE RISER: 54" DIA., 10 GA., 11.5 FT.			
PIPE TEE: 18" DIA., 14 GA., 4 FT. NOMINAL LENGTH, WELDED TO RISER			
PIPE TEE (DRAWDOWN): 18" DIA., 14 GA., 4 FT. NOMINAL LENGTH, WELDED TO RISER			
PIPE CLASSIFICATION	RISER	PIPE TEE	DRAWDOWN
ANNULAR CORRUGATION	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
HELICAL CORRUGATION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> TYPE I, FULL CIRCULAR CROSS-SECTION FABRICATED	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> TYPE II, THIS IS TYPE I PIPE WHICH HAS BEEN REFORMED INTO A PIPE ARCH HAVING APPROXIMATELY A FLAT BOTTOM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CORRUGATION REQUIREMENTS - NOMINAL SIZE (INCH)			
<input checked="" type="checkbox"/> 2 2/3 x 1/2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> 3 x 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COATINGS AND FABRICATION			
SEE METAL PIPE REQUIREMENTS AND COUPLING BANDS SHEET			

FABRICATION AND INSTALLATION NOTES:

- FOR FABRICATION OF RISERS ON HELICAL PIPE A FILLER STRIP MAY BE USED TO INSURE A WATERTIGHT SEAL BETWEEN THE RISER AND TEE.
- WHEN MORE THAN ONE COATING IS CHECKED IN THE COLUMN BOXES EACH TYPE IS ACCEPTABLE BUT ONLY ONE TYPE OF COATING SHALL BE USED IN EACH INSTALLATION.
- ALL WELDS AND HEAT AFFECTED AREAS ON GALVANIZED METAL TO BE TREATED IN ACCORDANCE WITH SPECIFICATIONS.
- NO. 4 REINFORCED BAR = 1/2" DIA. = 0.668 LB. PER LIN. FT.
- ALL SEAMS CUT, DUE TO FABRICATING IN HELICAL PIPE, SHALL BE WELDED FOR A LENGTH OF 1" FROM THE EDGE OF THE CUT AND TREATED ACCORDING TO SPECIFICATIONS.
- THE "L" DIMENSION OF THE RISER SHALL BE CHECKED PRIOR TO FABRICATION OF THE STRUCTURAL TUBING LENGTH.
- THE LOCKABLE LID SHALL BE FABRICATED FROM CMP, AND CUT IN A CIRCULAR SHAPE TO FIT THE RISER. HOLES SHALL BE DRILLED THROUGH THE CORRUGATIONS TO PASS THE LOCKING BAR.

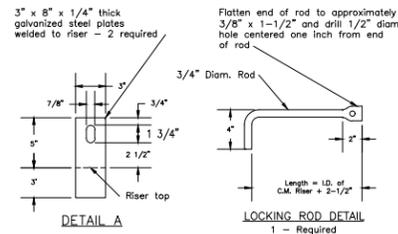


MATERIAL LIST FOR RISER CONCRETE BASE

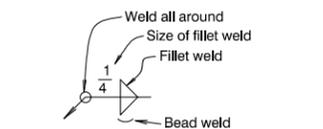
DIA. OF RISER IN INCHES	48	54	60	66	72	78
CONCRETE, CU.YDS.	1.33	1.56	1.81	2.08	2.37	2.68
NO. 4 REINFORCING BAR, LIN.FT.	66	84	91	112	120	144
LENGTH OF EACH BAR, FT.-IN.	5-6	6-0	6-6	7-0	7-6	8-0
TOTAL NUMBER OF BARS	12	14	14	16	16	18
TOTAL WEIGHT - NO. 4 BARS, LBS.	44.1	56.1	60.8	74.8	80.2	96.2

NO. 4 REINFORCING BAR = 1/2 IN. DIA. = 0.668 LBS./LIN.FT.

LOCKING LID DETAILS



WELD SYMBOLS

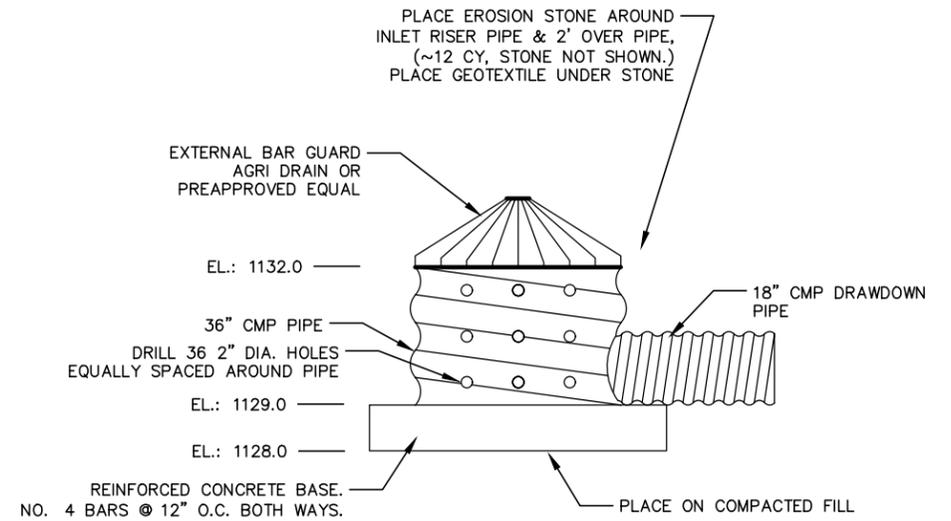


NOTE:
Weld symbol placed above line indicates weld is on opposite side of joint to which arrow points.
Weld symbol below line indicates weld is on side of joint to which arrow points.

* THIS PLAN ADAPTED FROM NRCS STANDARD DETAIL

DRAWDOWN STRUCTURE DETAIL

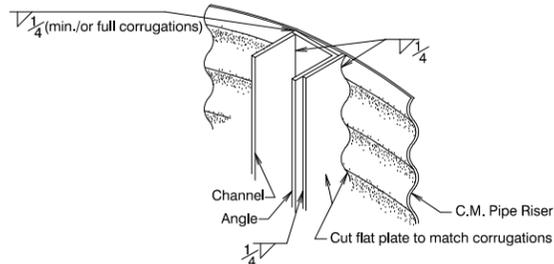
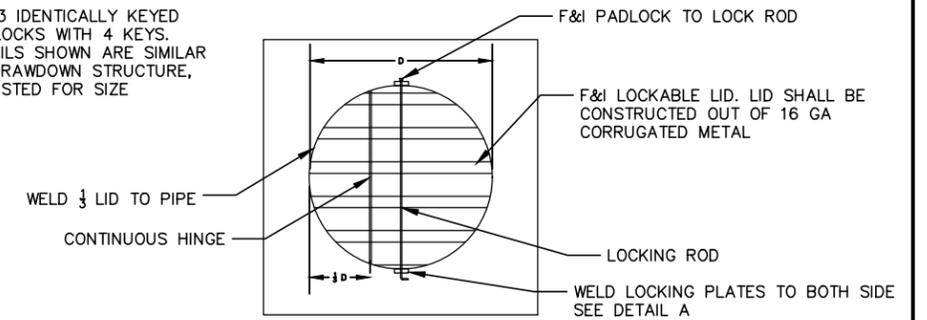
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RISER INLET STRUCTURE DETAIL
NOT TO SCALE

NOTES

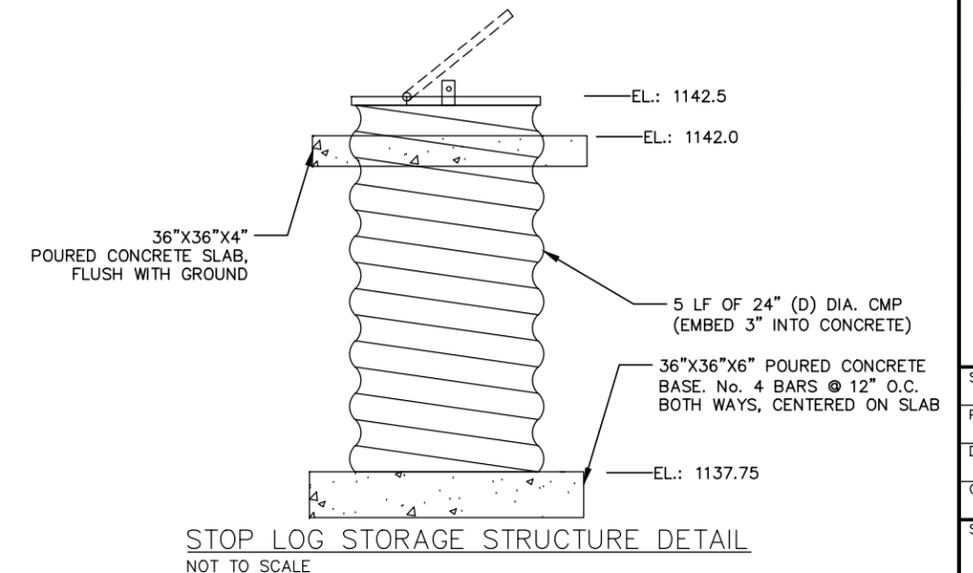
- F&I 3 IDENTICALLY KEYED PADLOCKS WITH 4 KEYS.
- DETAILS SHOWN ARE SIMILAR TO DRAWDOWN STRUCTURE, ADJUSTED FOR SIZE



CHANNEL INSTALLATION

NOTES

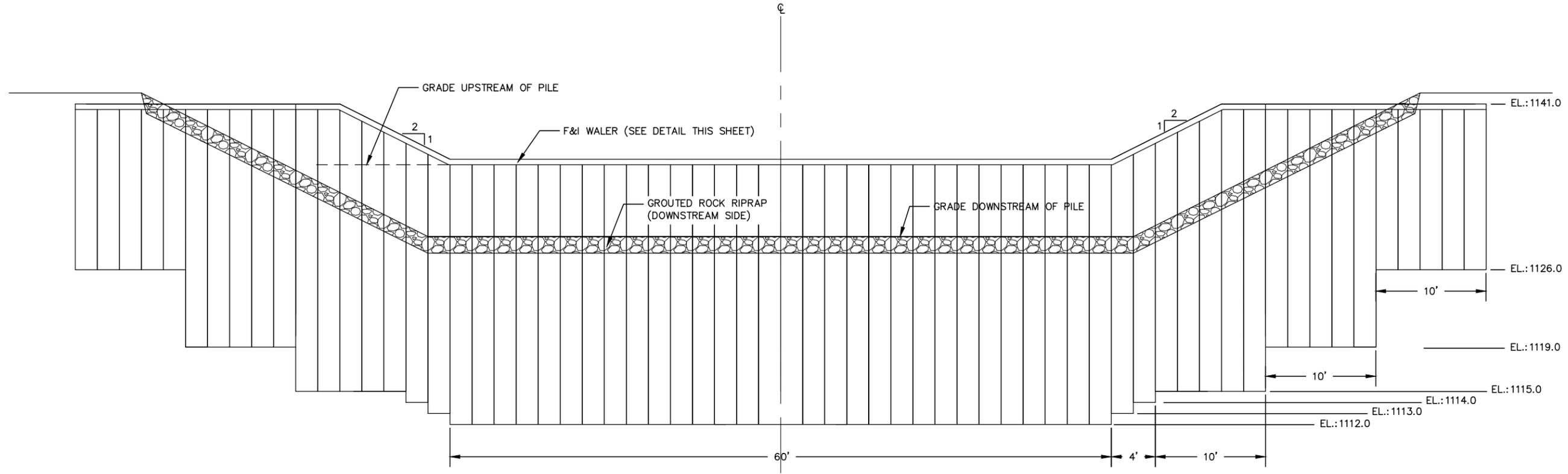
- F&I 16, 2" WIDE X 6" DEEP STOP-LOGS, EXTENDING FROM INVERT EL. 1128.75 TO EL. 11136.75. STOP-LOGS SHALL BE MANUFACTURED ALUMINUM OR PVC.
- STOP LOG CHANNELS SHALL BE CONSTRUCTED TO ACCOMMODATE THE SUPPLIED STOP LOGS ACCORDING TO THE MANUFACTURER'S REQUIREMENTS. PRE-FABRICATED CHANNELS MAY BE USED IN LIEU OF CHANNEL SHOWN. CHANNEL AND STOP LOGS MUST PROVIDE A WATER-TIGHT SEAL. BOTTOM CHANNEL SHALL BE PROVIDED AND SHALL BE SET INTO CONCRETE. CONTRACTOR SHALL PROVIDE DETAILED SHOP DRAWINGS OF CONTROL STRUCTURE.
- STOP-LOG SET LEVEL SHALL BE AS DIRECTED BY THE OWNER. DO NOT SET LOGS UNTIL DIRECTED.
- CONTRACTOR SHALL FURNISH 2 10-LONG LIFTING RODS. SEE SPECIFICATIONS.



REVISIONS			
NO.	DATE	DESCRIPTION	ISSUED FOR PERMITTING
1	7/10/19	ISSUED FOR REVIEW ONLY	
2	7/16/19	ISSUED FOR PERMITTING	

DRAWDOWN STRUCTURE DETAILS
CREP WETLAND - HAR872234
HARDIN COUNTY, IOWA

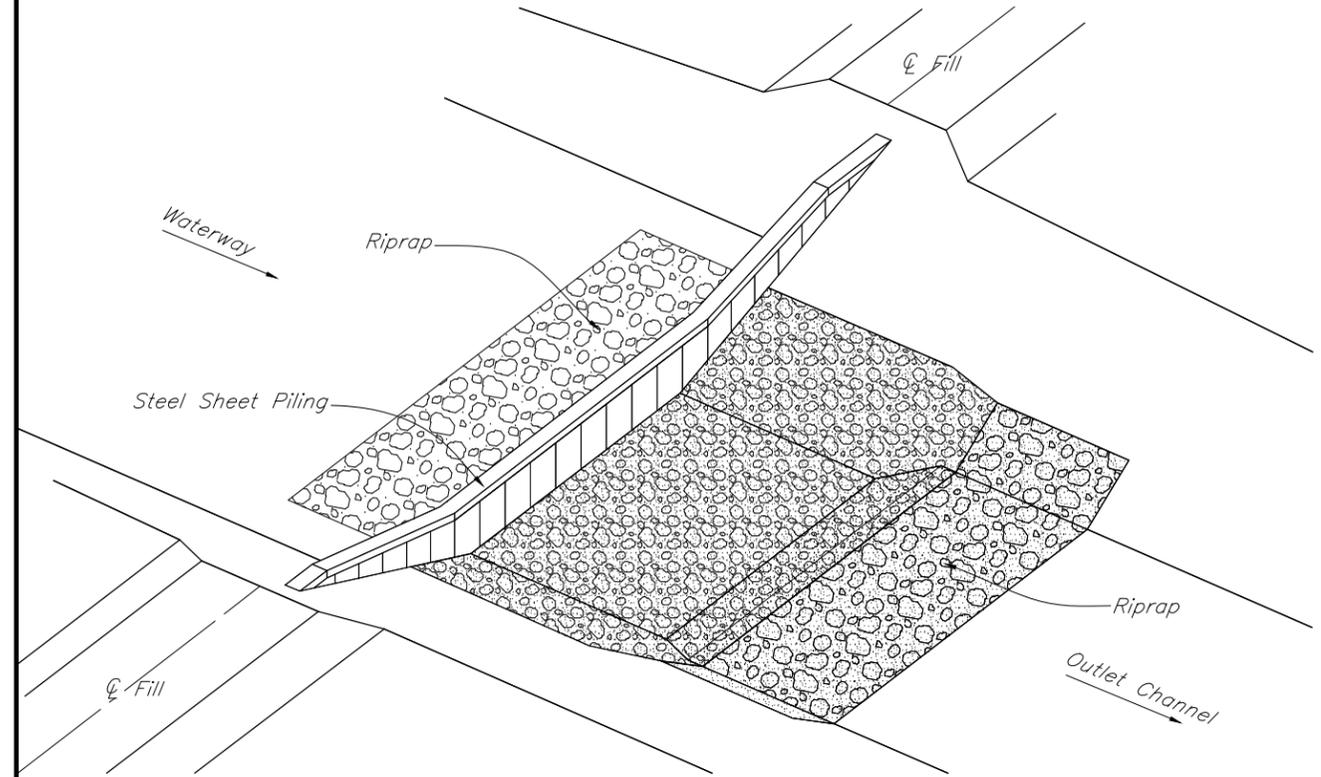
SCALE:	AS SHOWN
PROJECT NO.	8734
DRAWN BY:	NWA
CHECKED BY:	NA
SHEET	S-1



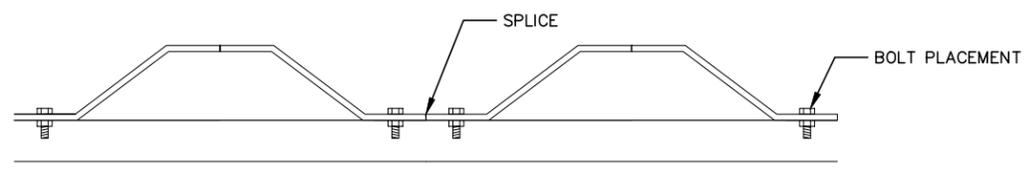
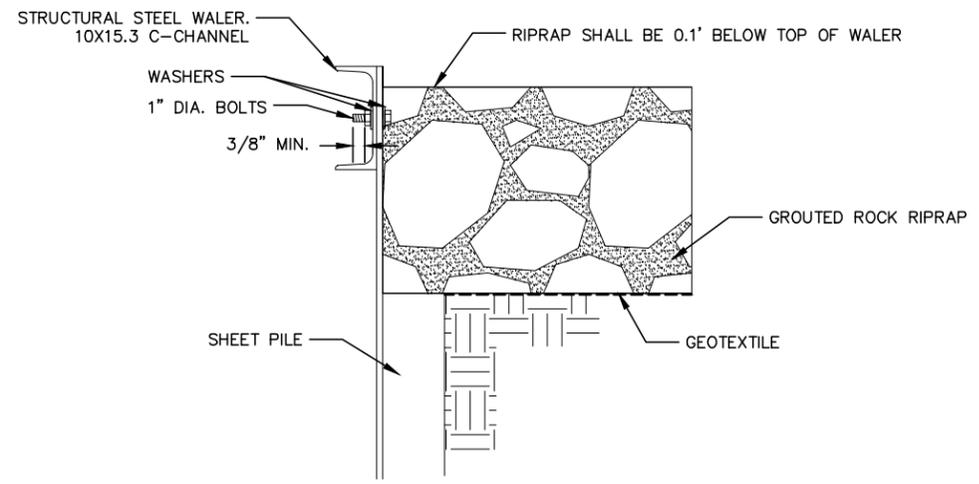
SHEET PILE SECTION
SCALE: 1"=5'

SHEETPILE DESIGN CRITERIA
MINIMUM SECTION MODULUS: 24 IN³/FT
MINIMUM THICKNESS: 0.35 INCHES
MINIMUM MOMENT OF INERTIA: 140 IN³/FT
MINIMUM GRADE STEEL: 36 KSI

REVISIONS	
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2	ISSUED FOR PERMITTING



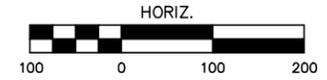
ISOMETRIC VIEW (TYPICAL)
NOT TO SCALE



TYPICAL WALER DETAIL
NOT TO SCALE

SHEETPILE DETAILS
CREP WETLAND - HAR872234
HARDIN COUNTY, IOWA

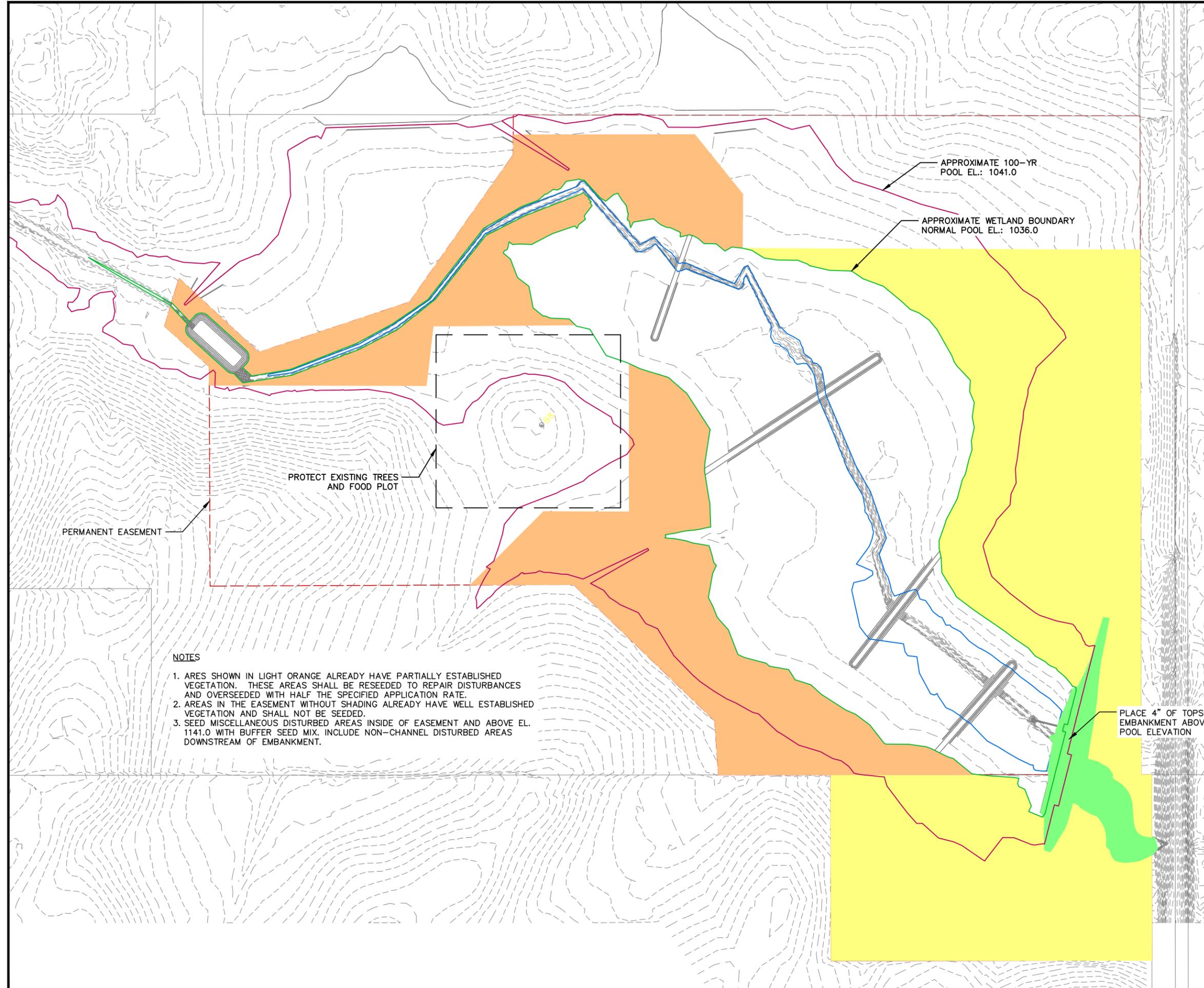
SCALE:	AS SHOWN
PROJECT NO.	8734
DRAWN BY:	NWA
CHECKED BY:	NA
SHEET	S-2



LEGEND

- BROME SEED MIX (STRUCTURAL & CHANNEL SEEDING)
- BUFFER SEED MIX (NEW ESTABLISHMENT)
- BUFFER SEED MIX (EXISTING ESTABLISHMENT)

REVISIONS	
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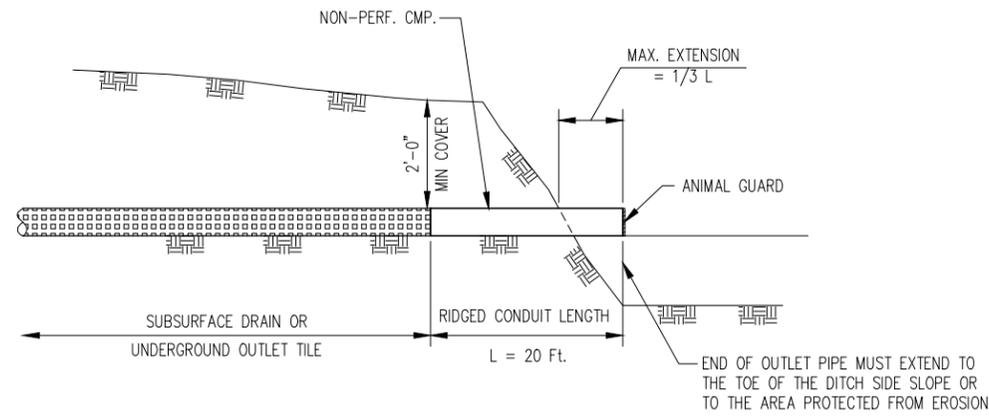


NOTES

1. AREAS SHOWN IN LIGHT ORANGE ALREADY HAVE PARTIALLY ESTABLISHED VEGETATION. THESE AREAS SHALL BE RESEEDING TO REPAIR DISTURBANCES AND OVERSEEDING WITH HALF THE SPECIFIED APPLICATION RATE.
2. AREAS IN THE EASEMENT WITHOUT SHADING ALREADY HAVE WELL ESTABLISHED VEGETATION AND SHALL NOT BE SEEDING.
3. SEED MISCELLANEOUS DISTURBED AREAS INSIDE OF EASEMENT AND ABOVE EL. 1141.0 WITH BUFFER SEED MIX. INCLUDE NON-CHANNEL DISTURBED AREAS DOWNSTREAM OF EMBANKMENT.

SEEDING PLAN
CREP WETLAND - HAR872234
HARDIN COUNTY, IOWA

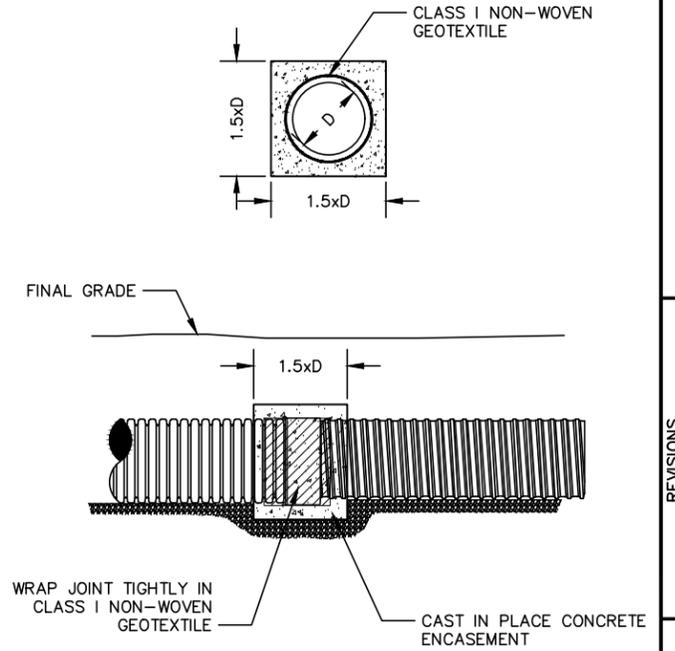
SCALE:	AS SHOWN
PROJECT NO.	8734
DRAWN BY:	NWA
CHECKED BY:	NA
SHEET	P-1



CROSS SECTION AT CENTERLINE OF PIPE

NOTE: TILE OUTLETS MAY BE CONNECTED TO THE UPSTREAM TILE WITH THE SAME NOMINAL DIAMETER PIPE SIZE, OR OUTLET MAY BE ONE NOMINAL SIZE LARGER WITH UPSTREAM TILE INSERTED INTO RIDGED PIPE. WHERE THE SAME NOMINAL DIAMETER PIPE SIZES ARE USED, PROVIDE ADAPTOR FITTING. WHERE DIFFERENT NOMINAL PIPE SIZES ARE USED, GROUT ANNULAR SPACE AROUND JOINT. OUTLETS LISTED ON BID SHEET ASSUME SAME NOMINAL DIAMETER. NO ADDITIONAL PAYMENT (FOR BOTH THE OUTLET PIPE AND INSERTED TILE) SHALL BE MADE IS LARGER NOMINAL DIAMETER PIPE IS USED.

NOTE: FIELD TILE REPAIR JOINTS SHALL BE USED TO JOIN DIS-SIMILAR PIPE MATERIALS. WHEN CONNECTING SIMILAR MATERIAL MANUFACTURED FITTINGS MAY BE USED.



REVISIONS	
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DRAIN TILE OUTLET DETAIL

REVISED: 8/11/18
SHEET: 1 OF 1
PLATE NO.



FIELD TILE REPAIR JOINT DETAIL

REVISED: 2/01/08
SHEET:
PLATE NO.

DETAILS
CREP WETLAND - HAR872234
HARDIN COUNTY, IOWA

SCALE: AS SHOWN
PROJECT NO. 8734
DRAWN BY: NWA
CHECKED BY: NA
SHEET D-1



Denise Smith

From: Becca Junker
Sent: Friday, October 11, 2019 10:27 AM
To: Denise Smith
Subject: FW: Another Wetland Project in Hardin County
Attachments: Har872234B Permitting Plans.pdf

From: Bourland, Mike <Mike.Bourland@iowaagriculture.gov>
Sent: Thursday, October 10, 2019 3:31 PM
To: Becca Junker <BJunker@hardincountyia.gov>
Subject: Another Wetland Project in Hardin County

Hi Becca

Attached is a set of plans for a wetland project in Hardin County. It is located in Drainage District 55 and Joint District 55 and 3 on the north side. We are wanting to make modifications to the tile as shown on the plans to daylight them into the wetland for nitrate reduction. The landowners have agreed to this project and we are wanting to get approval from the County to proceed with this project and plan to bid this project for construction in February 2020. Please let me know what we need to do at this time. Thanks for your help.

Also, when you get a chance, can you forward the meeting minutes to me for the other wetland project in Hardin County with Steve Perry. Thanks.

Michael L. Bourland, P.E.
Senior Environmental Engineer



Wallace State Office Building
502 E. 9th St. Des Moines, IA 50319

Phone: (515) 242-6130
Mike.Bourland@IowaAgriculture.gov