CONSTRUCTION PLANS FOR

IDALS NO. CER962218C

NUTRIENT REDUCTION WETLAND

CERRO GORDO COUNTY, IOWA

MAY 2025

THE SPECIFICATIONS AS PREPARED BY IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP AND BOLTON & MENK, INC. SHALL BE CONSIDERED PART OF THIS DOCUMENT. NATURAL RESOURCES CONSERVATION SERVICE CONSTRUCTION SPECIFICATIONS SHALL APPLY.

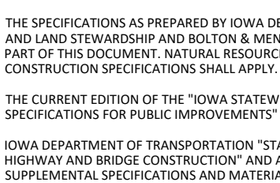
THE CURRENT EDITION OF THE "IOWA STATEWIDE URBAN STANDARD SPECIFICATIONS FOR PUBLIC IMPROVEMENTS" SHALL GOVERN.

IOWA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION" AND ALL CURRENT GENERAL SUPPLEMENTAL SPECIFICATIONS AND MATERIALS INSTRUCTIONAL MEMORANDUM SHALL GOVERN AS REFERENCED.

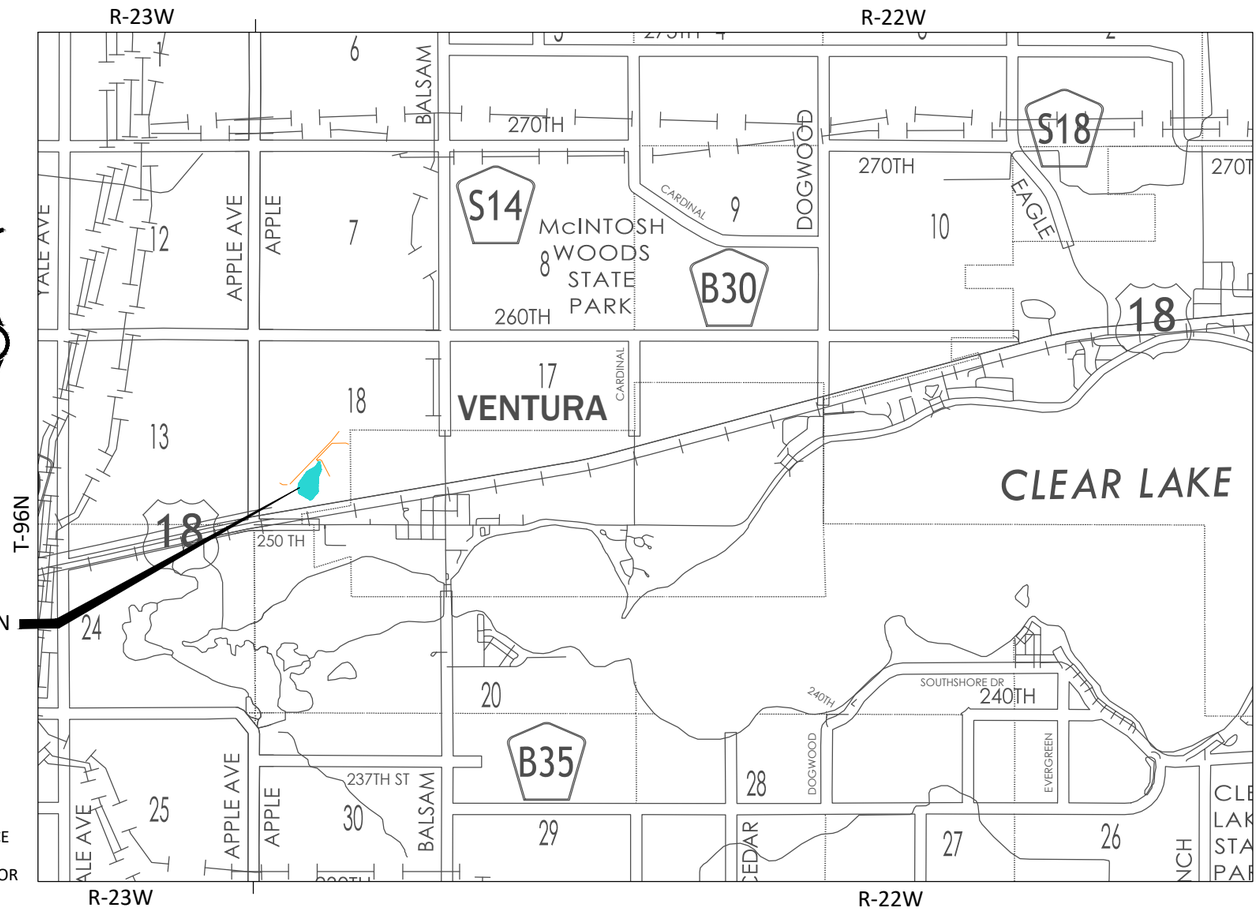
ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND ORDINANCES WILL BE COMPLIED WITH IN THE CONSTRUCTION OF THIS PROJECT.

IOWA ONE CALL
1-800-292-8989 | 811
www.iowaonecall.com

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."
THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING IOWA ONE CALL BY PHONE AT 811, OR ON THE WEB AT HTTP://WWW.IOWAONECALL.COM/. TICKET# _____. TICKET NUMBER MUST BE PROVIDED TO IDALS AND THE ENGINEER PRIOR TO COMMENCEMENT OF WORK.



PROJECT LOCATION



NOTES
1. IF A CULTURAL RESOURCE IS IDENTIFIED DURING CONSTRUCTION, STOP WORK IMMEDIATELY AND NOTIFY THE LOCAL NATURAL RESOURCES CONSERVATION SERVICE OFFICE.
2. THERE IS NO GUARANTEE THAT THE WETLAND WILL FILL OR REMAIN FILLED WITH WATER.

SHEET LIST TABLE

SHEET NUMBER	SHEET TITLE
A.01	TITLE SHEET
A.02	PLAN OVERVIEW
A.03	EXISTING CONDITIONS & REMOVALS
B.01	CPDT INSTALLATION DETAIL
B.02	MISC. DETAILS
C.01	ESTIMATE QUANTITIES
D.01	GRADING PLAN
K.01	SEEDING PLAN
M.01	PARTIAL CAPTURE INLET
M.02	PARTIAL CAPTURE INLET & MAIN RE-LAY
M.03	LATERALS 4 & 5 RE-LAY
M.04	WETLAND OUTLET

CONSERVATION PRACTICE STANDARDS USED:
656 - CONSTRUCTED WETLAND

NRCS JOB CLASS: IV
300 AC<WATERSHED AREA<1000 AC

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

CLIENT ACCEPTANCE

SIGNATURE DATE

IOWA DEPARTMENT OF AGRICULTURE & LAND STEWARDSHIP

PROJECT DATUM: STATE PLANE
HORIZONTAL: IOWA NORTH
VERTICAL: NAVD 1988

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.

Brandon Short
Digitally signed by Brandon Short
DN: C=US, E=brandon.short@bolton-menk.com, CN=Brandon Short
Date: 2025.05.27 15:49:14-05'00'

LICENSED PROFESSIONAL ENGINEER
BRANDON C. SHORT, 29449
IOWA

BRANDON C. SHORT, PE

LICENSE NUMBER: 29449 DATE: 05-27-2025

MY LICENSE RENEWAL DATE IS 12/31/2026

PAGES OR SHEETS COVERED BY THIS SEAL:

ALL SHEETS

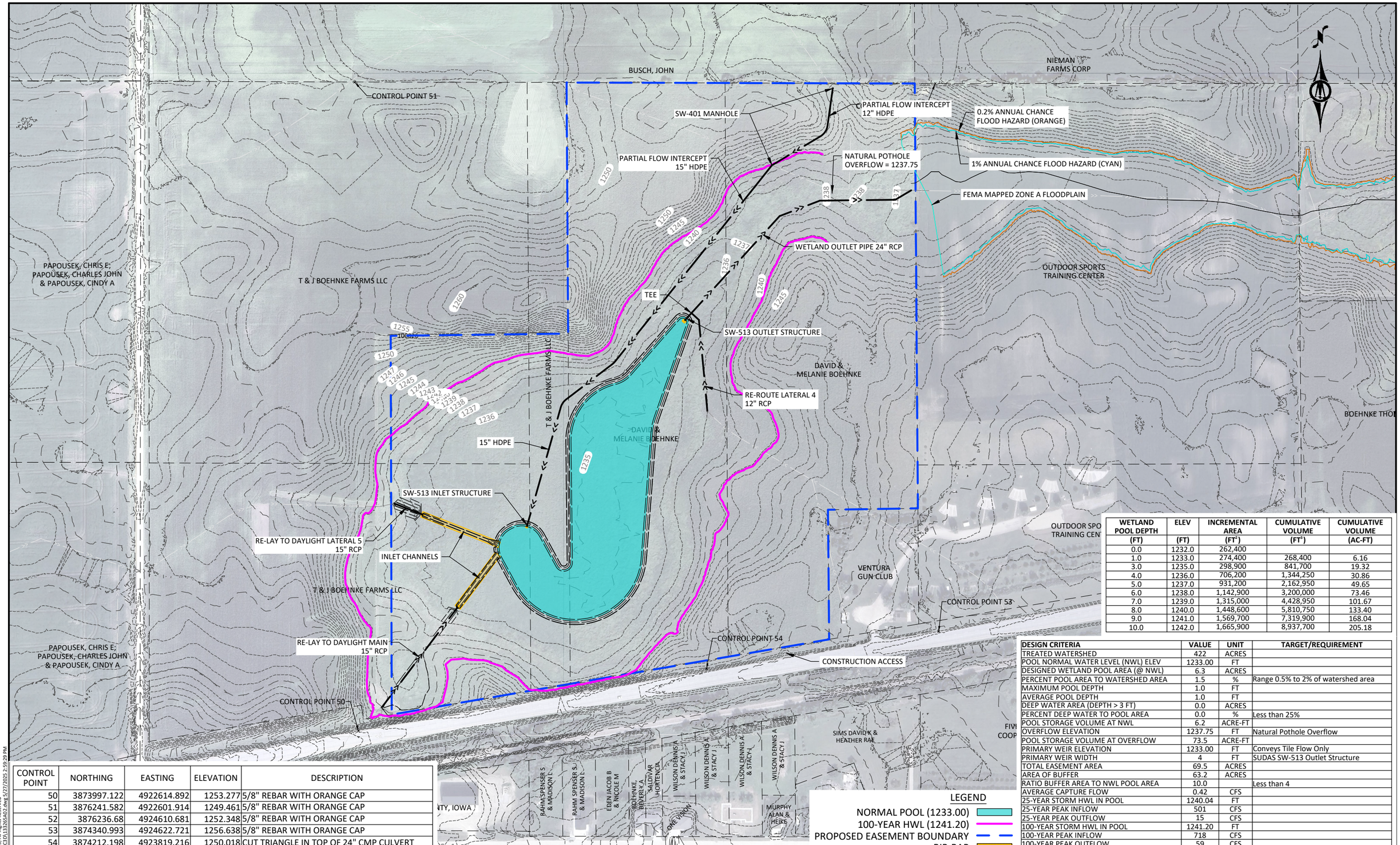
BOLTON & MENK
1519 BALTIMORE DRIVE
AMES, IA 50010
Phone: (515) 233-6100
Email: Ames@bolton-menk.com
www.bolton-menk.com

DESIGNED	BCS
DRAWN	BCS
CHECKED	JPR
CLIENT PROJ. NO.	0T7.133265

REV	DESCRIPTION	DATE
1.0	PLANS FOR BID	2025-05-27

IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP
IDALS PROJ. NO. CER962218C
TITLE SHEET

SHEET A.01



CONTROL POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
50	3873997.122	4922614.892	1253.277	5/8" REBAR WITH ORANGE CAP
51	3876241.582	4922601.914	1249.461	5/8" REBAR WITH ORANGE CAP
52	3876236.68	4924610.681	1252.348	5/8" REBAR WITH ORANGE CAP
53	3874340.993	4924622.721	1256.638	5/8" REBAR WITH ORANGE CAP
54	3874212.198	4923819.216	1250.018	CUT TRIANGLE IN TOP OF 24" CMP CULVERT

WETLAND POOL DEPTH (FT)	ELEV (FT)	INCREMENTAL AREA (FT^2)	CUMULATIVE VOLUME (FT^3)	CUMULATIVE VOLUME (AC-FT)
0.0	1232.0	262,400		
1.0	1233.0	274,400	268,400	6.16
3.0	1235.0	298,900	841,700	19.32
4.0	1236.0	706,200	1,344,250	30.86
5.0	1237.0	931,200	2,162,950	49.65
6.0	1238.0	1,142,900	3,200,000	73.46
7.0	1239.0	1,315,000	4,428,950	101.67
8.0	1240.0	1,448,600	5,810,750	133.40
9.0	1241.0	1,569,700	7,319,900	168.04
10.0	1242.0	1,665,900	8,937,700	205.18

DESIGN CRITERIA	VALUE	UNIT	TARGET/REQUIREMENT
TREATED WATERSHED	422	ACRES	
POOL NORMAL WATER LEVEL (NWL) ELEV	1233.00	FT	
DESIGNED WETLAND POOL AREA (@ NWL)	6.3	ACRES	
PERCENT POOL AREA TO WATERSHED AREA	1.5	%	Range 0.5% to 2% of watershed area
MAXIMUM POOL DEPTH	1.0	FT	
AVERAGE POOL DEPTH	1.0	FT	
DEEP WATER AREA (DEPTH > 3 FT)	0.0	ACRES	
PERCENT DEEP WATER TO POOL AREA	0.0	%	Less than 25%
POOL STORAGE VOLUME AT NWL	6.2	ACRE-FT	
OVERFLOW ELEVATION	1237.75	FT	Natural Pothole Overflow
POOL STORAGE VOLUME AT OVERFLOW	73.5	ACRE-FT	
PRIMARY WEIR ELEVATION	1233.00	FT	Conveys Tile Flow Only
PRIMARY WEIR WIDTH	4	FT	SUDAS SW-513 Outlet Structure
TOTAL EASEMENT AREA	69.5	ACRES	
AREA OF BUFFER	63.2	ACRES	
RATIO BUFFER AREA TO NWL POOL AREA	10.0		Less than 4
AVERAGE CAPTURE FLOW	0.42	CFS	
25-YEAR STORM HWL IN POOL	1240.04	FT	
25-YEAR PEAK INFLOW	501	CFS	
25-YEAR PEAK OUTFLOW	15	CFS	
100-YEAR STORM HWL IN POOL	1241.20	FT	
100-YEAR PEAK INFLOW	718	CFS	
100-YEAR PEAK OUTFLOW	59	CFS	

LEGEND
- NORMAL POOL (1233.00)
- 100-YEAR HWL (1241.20)
- PROPOSED EASEMENT BOUNDARY
- RIP-RAP

HORZ. SCALE 0 150 300 FEET

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DRAWN BCS			
CHECKED JPR			
CLIENT PROJ. NO. 0T7.133265			

IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP
IDALS PROJ. NO. CER962218C
PLAN OVERVIEW

SHEET A.02

NOTES:
1. ALL CLAY TILES TO BE DEMOLISHED MAY BE REMOVED OR CRUSHED IN PLACE.
2. PLASTIC TILES SHALL BE REMOVED AND DISPOSED OF WHERE BROKEN.
3. ALL TILE SHALL BE DESTROYED THROUGH WETLAND POOL.

SURVEYED 15" CLAY TILE FLOWLINE = 1242.56

SURVEYED TOP OF 10" CLAY TILE = 1242.21

REMOVE TILE MAIN FOR MINIMUM 50 FEET

CAP EXISTING MAIN UPSTREAM OF LATERAL 3 CONNECTION

0.2% ANNUAL CHANCE FLOOD HAZARD (ORANGE)

1% ANNUAL CHANCE FLOOD HAZARD (CYAN)

FEMA MAPPED ZONE A FLOODPLAIN

PROPOSED EASEMENT BOUNDARY

REMOVE TILES MIN. EVERY 100 FT THROUGH WETLAND

REMOVE TILE FOR 20 FT DOWNSTREAM OF NEW PIPE CONNECTION

EXISTING STORM BOUNCES
GREEN: 5-YEAR
PURPLE: 10-YEAR
YELLOW: 25-YEAR
ORANGE: 100-YEAR

BREAK TILE FOR 20 FT DOWNSTREAM OF NEW PIPE CONNECTION

SURVEYED TOP OF 15" CLAY TILE = 1238.08

BREAK TILES MIN. EVERY 100 FT THROUGH WETLAND

BREAK TILE FOR 20 FT DOWNSTREAM OF NEW PIPE CONNECTION

SURVEYED TOP OF 12" CLAY TILE = 1235.96

STORM RESPONSE ANALYSIS			
STORM	EXISTING HWL	PROPOSED HWL	DIFFERENCE
5-YEAR	1238.51	1238.01	-0.50
10-YEAR	1239.39	1238.96	-0.43
25-YEAR	1240.30	1240.04	-0.26
100-YEAR	1241.37	1241.20	-0.17

BUSCH, JOHN
NIEMAN FARMS CORP
PAPOUSEK, CHRIS E; PAPOUSEK, CHARLES JOHN & PAPOUSEK, CINDY A
T & J BOEHNKE FARMS LLC
DAVID & MELANIE BOEHNKE
OUTDOOR SPORTS TRAINING CENTER
VENTURA GUN CLUB
FIVE STAR COOPERATIVE
SIMS DAVID K & HEATHER RAE
SKINNER, RANDALL J
MURPHY ALAN & HEIKS
CERRO GORDO COUNTY, IOWA
RAHM SPENSER S & MADISON L
EDEN JACOB B & NICOLE M
BOEHNKE, BRYCE L & SALDIVAR HORTENCIA
WILSON DENNIS A & STACY J
SHOARS, SCOTT S & CORINE K
KELSEY, JAMES MICHAEL & KELSEY, NANCY P
ZIMMER, JIM A
RICKE, RANDOLPH D & RICKE, LISA J
COOK, BRUCE E & COOK, DEBBIE L
DYKSTRA, BRUCE J TRUST & DYKSTRA LORENE W TRUST
CITY OF VENTURA
THOE, STEVEN D & THOE, KRYSTAL M
MARKLA, JEFFREY DAVID JOHNSON-MARKLA, L & KARI RAE
JOHNSON GORDON SUSAN M FAMILY TR

HORZ. SCALE 0 150 300 FEET

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IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP
IDALS PROJ. NO. CER962218C
EXISTING CONDITIONS & REMOVALS

SHEET A.03

CORRUGATED POLYETHYLENE DRAINAGE TUBING MATERIAL & INSTALLATION NOTES

1. ALL CPDT AND CONNECTORS FURNISHED SHALL BE IN COMPLIANCE WITH MATERIAL STANDARDS ASTM F405 AND F667, AS APPLICABLE, AND SHALL BE CLASSIFIED AS HEAVY-DUTY UNDER THOSE STANDARDS.
2. EXCEPT MODIFIED HEREIN OR OTHERWISE APPROVED BY ENGINEER, ALL CPDT SHALL BE INSTALLED IN COMPLIANCE WITH THE ASTM 449 STANDARD PRACTICE.
3. FOR PIPES 6" DIAMETER AND SMALLER A 90° V GROOVE BOTTOM MAY BE USED, FOR ALL LARGER PIPE A TRAPEZOIDAL BOTTOM OR A CIRCULAR BOTTOM CONFORMING TO THE OUTSIDE DIAMETER OF THE PIPE SHALL BE USED. PRIOR TO THE INSTALLATION OF CPDT, CONTRACTOR MUST PROVE TO ENGINEER THAT THE INSTALLATION REQUIREMENTS, INCLUDING THE SHAPE OF THE TRENCH BOTTOM, WILL BE ACCOMPLISHED.
4. WHERE TRENCH BOTTOM IS IN FIRM UNDISTURBED SOIL, SHAPE TRENCH BASE GROOVE. WHERE EXCESS CUT OCCURS, OVEREXCAVATE AND PLACE MINIMUM THREE (3) INCH THICK, GRAVELLY SAND BEDDING TO RESTORE GRADE. THIS BEDDING SHALL MEET THAT REQUIRED FOR TRENCH INSTALLATION TYPE 3 ON PLAN SHEET C.02. IF DUE TO CONTRACTOR ERROR THIS MATERIAL AND WORK IS SUBSIDIARY TO THE INSTALLATION OF THE PIPE. CONTRACTOR MAY SUBSTITUTE PIPE BEDDING ROCK AS THE BEDDING MATERIAL.
5. NATIVE SOILS MAY BE USED AS BACKFILL MATERIAL UNLESS UNSTABLE TRENCH CONDITIONS PREVENT THE TRENCH BOTTOM HOLDING THE SHAPED GROOVE. IF TRENCH BOTTOM WILL NOT HOLD GROOVE SHAPE CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY. A FLAT BOTTOM TRENCH INSTALLATION WILL THEN BE ASSUMED. THE REQUIRED BEDDING MATERIAL WILL BE PAID UNDER THE TILE TRENCH STABILIZATION AND CRADLING ROCK BID ITEM.
6. MINIMUM TRENCH WIDTH IS PIPE OUTSIDE DIAMETER PLUS FOUR (4) INCHES FOR PLOWED INSTALLATION AND PIPE OUTSIDE DIAMETER PLUS TWELVE (12) INCHES FOR OPEN TRENCH INSTALLATION.
7. ALL LATERAL CONNECTIONS, ELBOWS, TEES, ALIGNMENT CURVES, START HOLES AND ALL PORTIONS OF THE TRENCH NOT MEETING THE GROOVED TRENCH INSTALLATION REQUIREMENTS SHALL BE FILLED TO A MINIMUM OF SIX (6) INCH COVER OVER THE PIPE WITH GRADED CRUSHED STONE OR GRAVEL AS SHOWN ON TABLE 2 OF THIS SHEET. UNLESS DUE TO CONTRACTOR ERROR THIS BEDDING MATERIAL WILL BE PAID UNDER THE TILE TRENCH STABILIZATION AND CRADLING ROCK BID ITEM.
8. MANUFACTURER'S ENDCAPS SHALL BE INSTALLED AT THE TERMINATION OF EACH LINE UNLESS A CONNECTION TO AN EXISTING DRAIN IS MADE.
9. WITH THE INSTALLATION OF THE FIRST REACH OF CPDT ON THE PROJECT, CONTRACTOR IS REQUIRED TO WORK WITH THE ENGINEER TO CHECK AND CONFIRM THAT THE PIPE STRETCH, IF ANY, DOES NOT EXCEED 5%.
10. ALIGNMENT TURNS MAYBE MADE USING EITHER A MANUFACTURED FITTING OR CURVING THE LINE WITH A 25' MINIMUM RADIUS.

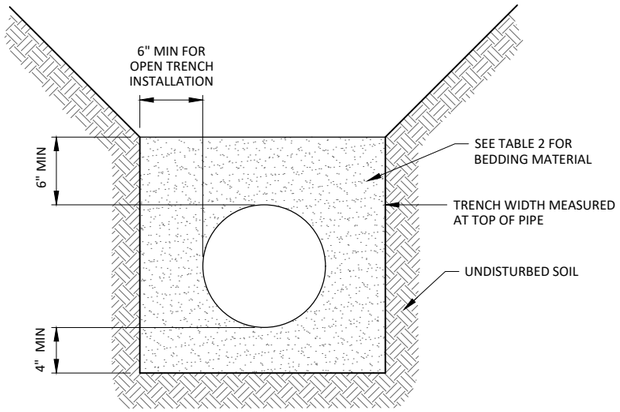
Table 1
Maximum Allowable Buried Depth to Flowline of CPDT

Nominal Pipe Diameter (IN)	Pipe Quality (ASTM)	Trench Width at Top of the Pipe (FT)			
		12"	18"	24"	30" or Greater
4	Standard	13	7	5.5	5
	Heavy-duty	Any	10	7	6
6	Standard	10	7	5.5	5
	Heavy-duty	Any	9.5	6.5	6
8	Standard	10	7	5.5	5
	Heavy-duty	Any	10	7	6
10	Heavy-duty	...	9	7	6
12	Heavy-duty	...	9	7	6
15	Heavy-duty	...	...	7	6

Table 2
Acceptable Bedding Material and Compaction Requirements

Description	Percentage Passing Sieve Sizes			Minimum Standard Density (%)	Maximum Compaction Layer Height (IN.)
	1"	3/4"	No. 4		
Crushed Stone Crushed Gravel*	100%	> 95%	< 5%	Dumped	18

* Class 1 Bedding Material Per SUDAS 3010.202A is an Allowable Substitute



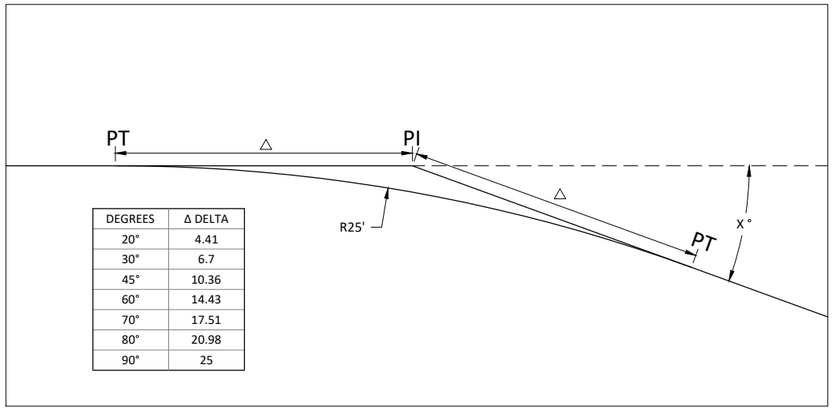
FILL TRENCH TO 6" ABOVE TOP OF PIPE WITH CRUSHED STONE OR GRAVEL MEETING THE REQUIREMENTS IN TABLE 2. BEDDING MATERIAL SHALL BE INCIDENTAL TO THE PIPE INSTALLATION.

FLAT BOTTOM TRENCH INSTALLATION

NOT TO SCALE

SOURCE: ASTM F449

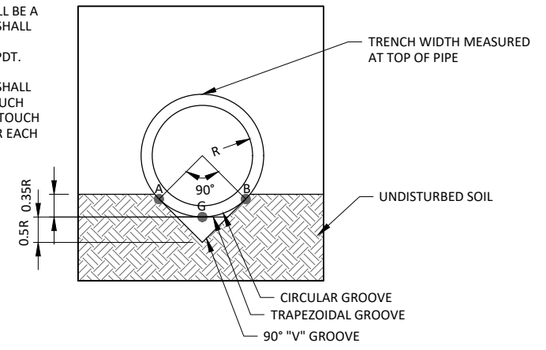
NOTE: THIS IS AN ALLOWED ALTERNATIVE INSTALLATION FOR CPDT



DEGREES	Δ DELTA
20°	4.41
30°	6.7
45°	10.36
60°	14.43
70°	17.51
80°	20.98
90°	25

THE CIRCULAR GROOVE SHALL BE A MINIMUM 0.35R DEEP AND SHALL MATCH THE OUTSIDE CURVE SHAPE OF THE DEFLECTED CPDT.

THE TRAPEZOIDAL GROOVE SHALL BE SHAPED AND ADJUSTED SUCH THAT POINTS A, B, & C WILL TOUCH THE UNDEFLECTED CPDT FOR EACH SIZE INSTALLED.



PREFFERED TRENCH INSTALLATION BOTTOM

TRAPEZOIDAL GROOVE, "V" GROOVE, & CIRCULAR GROOVE

NOT TO SCALE

SOURCE: ASTM F449

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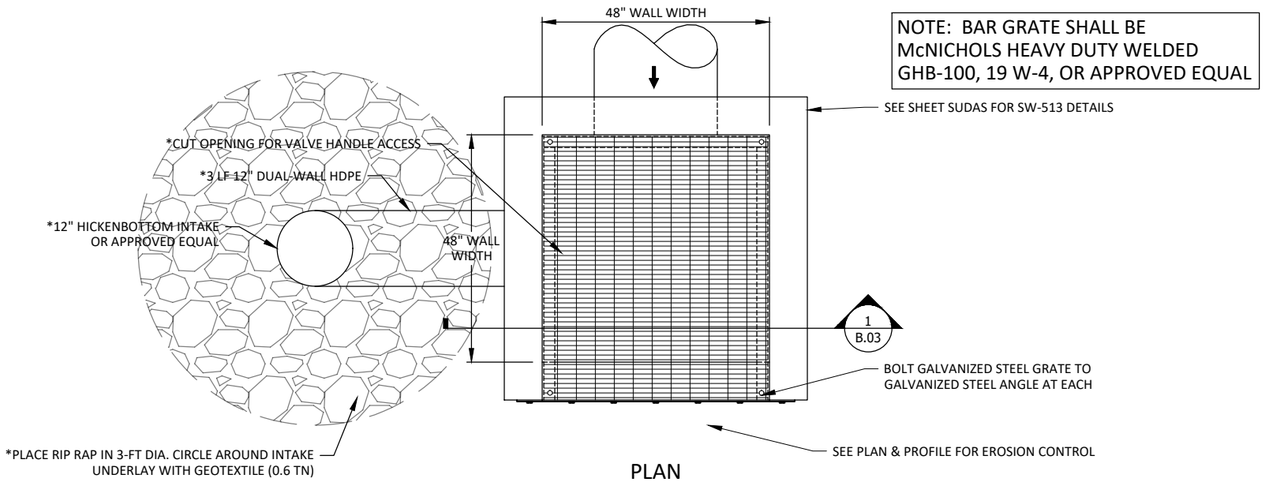
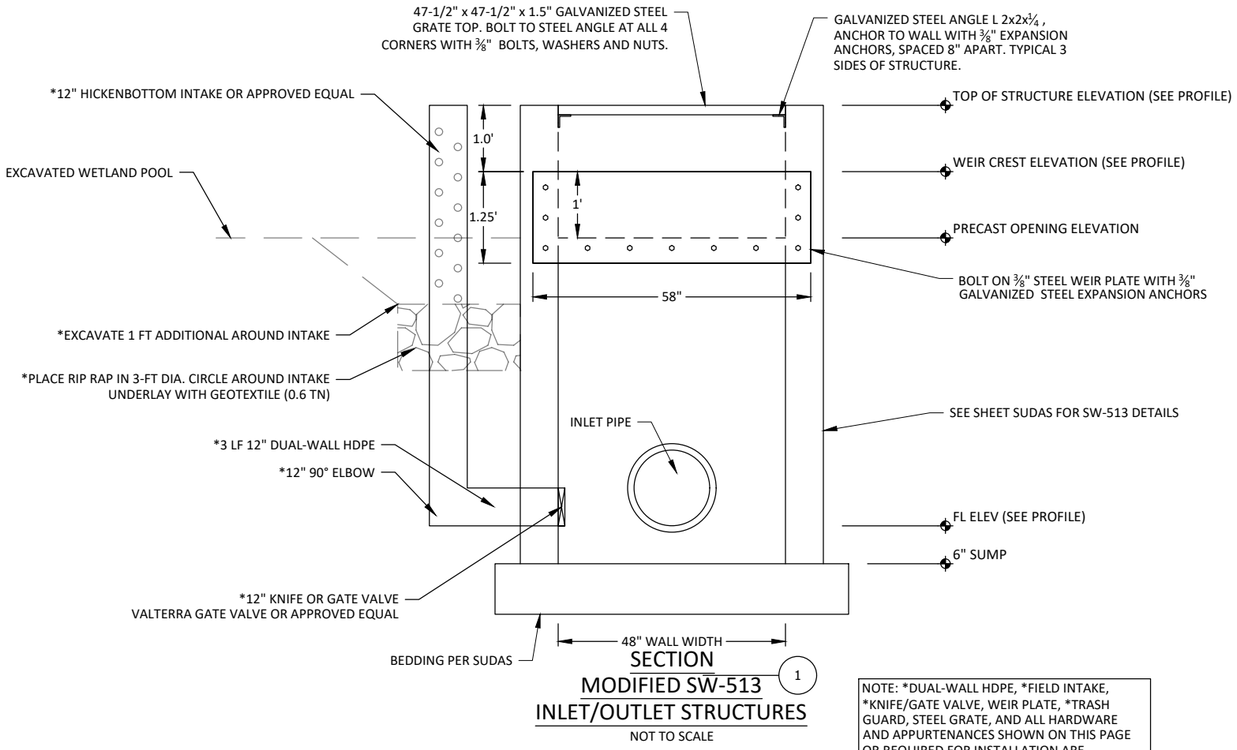
IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP
IDALS PROJ. NO. CER962218C
CPDT INSTALLATION DETAIL

SHEET B.01



NOTE: BAR GRATE SHALL BE McNICHOLS HEAVY DUTY WELDED GHB-100, 19 W-4, OR APPROVED EQUAL

PLAN
MODIFIED SW-513
INLET/OUTLET STRUCTURES
NOT TO SCALE



SECTION
MODIFIED SW-513
INLET/OUTLET STRUCTURES
NOT TO SCALE

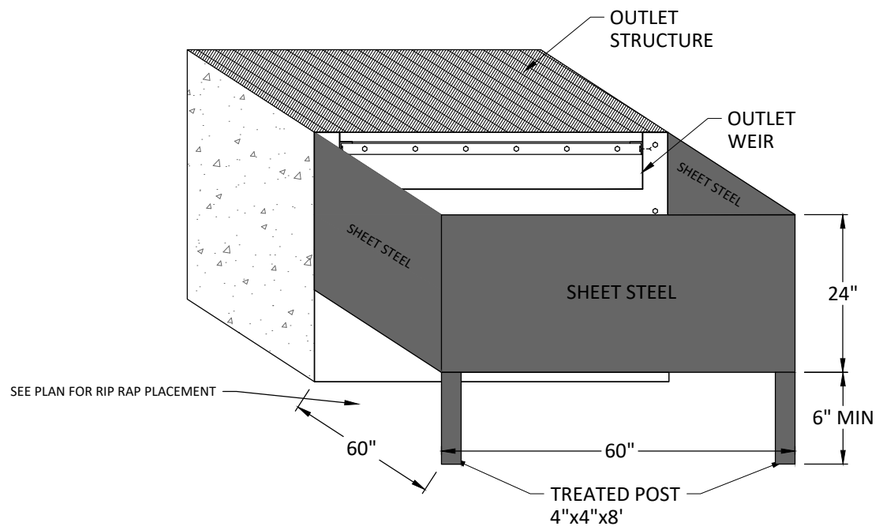
1

NOTE: *DUAL-WALL HDPE, *FIELD INTAKE, *KNIFE/GATE VALVE, WEIR PLATE, *TRASH GUARD, STEEL GRATE, AND ALL HARDWARE AND APPURTENANCES SHOWN ON THIS PAGE OR REQUIRED FOR INSTALLATION ARE SUBSIDIARY TO THE OUTLET STRUCTURE.

*ITEMS MARKED WITH AN ASTERISK APPLY TO OUTLET STRUCTURE ONLY

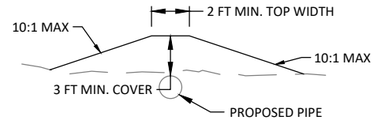
TRASH GUARD FOR WETLAND OUTLET STRUCTURE

NOT TO SCALE

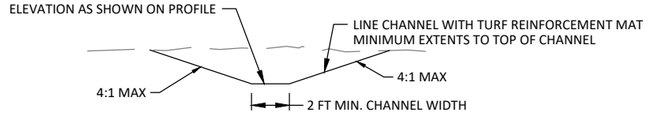


2 - 4" x 4" x 8' TREATED POSTS
3 - STEEL SHEETS - 60" x 24" x 3/8"
ANGLE IRON--EITHER WELDED OR BOLTED--ON TOP AND BOTTOM OF EACH SHEET AS BRACE
BOLT TRASH GUARD ONTO OUTLET STRUCTURE
GRADING AS NECESSARY TO ALLOW FLOW OF WATER UNDER TRASH GUARD WITH 6" MINIMUM CLEARANCE

COVER BERM CROSS SECTION



INLET CHANNEL CROSS SECTION



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MISC. DETAILS

SHEET B.02

Bid Item	Sub-Item	Description	Specifications		Plan No.	Quantity Estimate	
			No.	Page		Quantity	Unit
1	-	Site stripping & preparation	IA CS-001			1.0	LS
2	-	Crop damage	IA CS-001			0.0	AC
3	-	Seeding					
	A.	Buffer seeding	IA CS-006			9.1	AC
	B.	Structure & Channel Seeding	IA CS-006			1.1	AC
4	-	Mobilization and demobilization	IA CS-008			1	LS
5	-	Drain tile investigation and removal	IA CS-009			8	HR.
6	-	Excavation (General)	IA CS-021			32583	CY
	-	Earthfill (General)	IA CS-023			773	CY
8	-	Reinforced Concrete Pipe					
	A.	12"	IA CS-031			352	LF
	B.	15"	IA CS-031			538	LF
	D.	24"	IA CS-031			959	LF
9	-	Dual-Wall HDPE Pipe - 12" Diameter	IA CS-046			371	LF
10	-	Dual-Wall CPDT - 15" Dia.	IA CS-046			1542	LF
11	-	Tile Connection - 12" Dia. Or Larger	IA CS-046			3	EA
12	-	Modified SW-513 - Inlet	IA CS-031			1	EA
13	-	Modified SW-513 - Outlet	IA CS-031			1	EA
14	-	SW-401 Manhole (48" Diameter)	IA CS-031			1	EA
15	-	SW-401 Manhole (60" Diameter)	IA CS-031			1	EA
16	-	15" Apron, Footing, Bar Guard	IA CS-031			2	EA
17	-	Class E Rip Rap	IA CS-061			22	TN
18	-	Turf Reinforcement Mat	IA CS-095			1202	SY

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IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP
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ESTIMATE QUANTITIES

SHEET
C.01

SECONDARY SPOIL AREA

SPOIL AREA

GRADE TO EXISTING GROUND SURFACE AT 6:1 SLOPES, TYP.

EXCAVATE POOL TO 1232.00

100-YR HWL

INLET CHANNEL
SEE M.02

INLET CHANNEL
SEE M.03

COVER BERM
SEE M.02

COVER BERM
SEE M.03

FILL LOW POINT
GRADE TO DRAIN
SEE M.02

EASEMENT BOUNDARY

NOTES:
1. APPROVED SPOIL AREAS ARE SHOWN HERE. ALTERNATIVE SPOIL AREAS SHALL BE APPROVED BY THE ENGINEER.
2. SPOILS SHALL BE PLACED ABOVE THE 100-YEAR HIGH WATER LEVEL.
3. GRADE SPOIL PILES TO DRAIN
4. 8:1 MAX SLOPES ON SPOIL PILES
5. MAX FILL 4 FEET
6. SPOIL PILES SHALL HAVE TOPSOIL AS THE FINAL LIFT
7. SPOIL PILES SHALL BE SEEDED WITH BUFFER SEEDING

HORZ. SCALE 0 100 200 FEET

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1519 BALTIMORE DRIVE
AMES, IA 50010
Phone: (515) 233-6100
Email: Ames@bolton-menk.com
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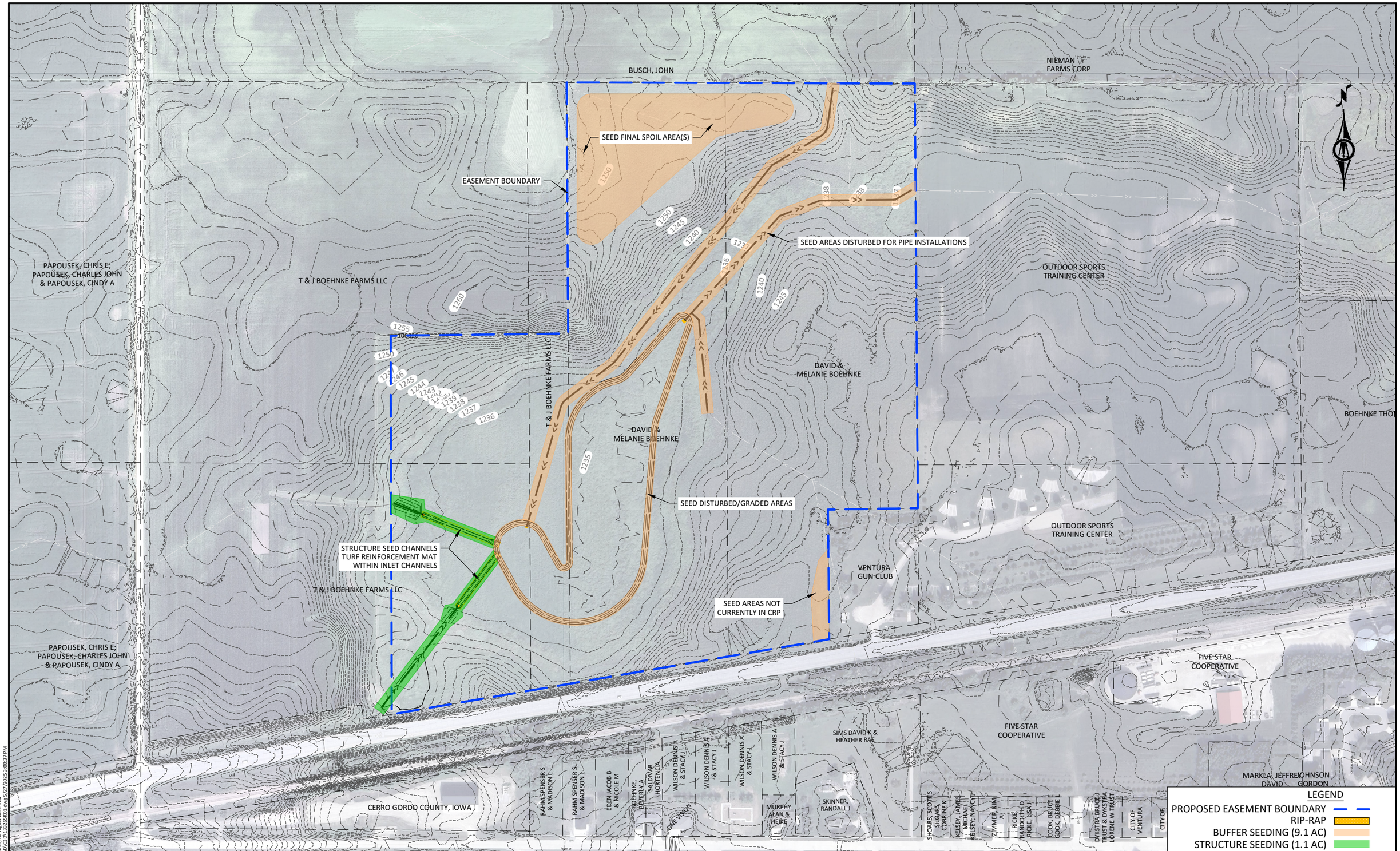
DESIGNED	REV	DESCRIPTION	DATE
BCS	1.0	PLANS FOR BID	2025-05-27
DRAWN BCS			
CHECKED JPR			
CLIENT PROJ. NO. OT7.133265			

IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP
IDALS PROJ. NO. CER962218C
GRADING PLAN

SHEET D.01



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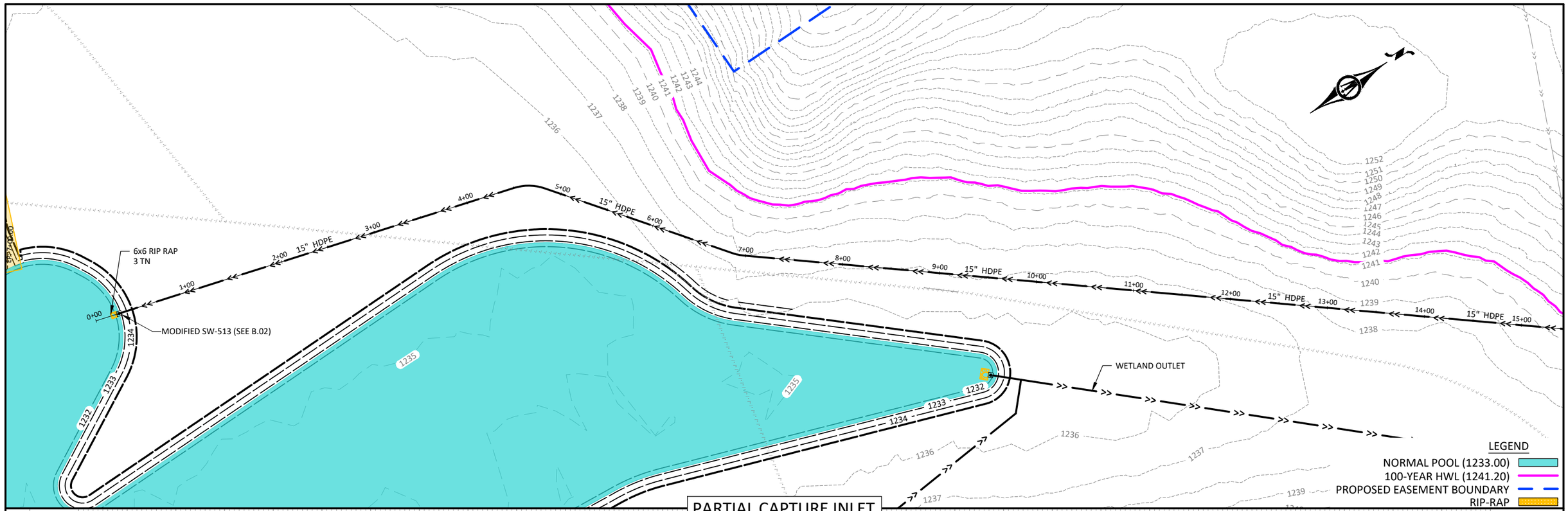
DESIGNED	REV	DESCRIPTION	DATE
BCS	1.0	PLANS FOR BID	2025-05-27
DRAWN BCS			
CHECKED JPR			
CLIENT PROJ. NO. 0T7.133265			

IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP

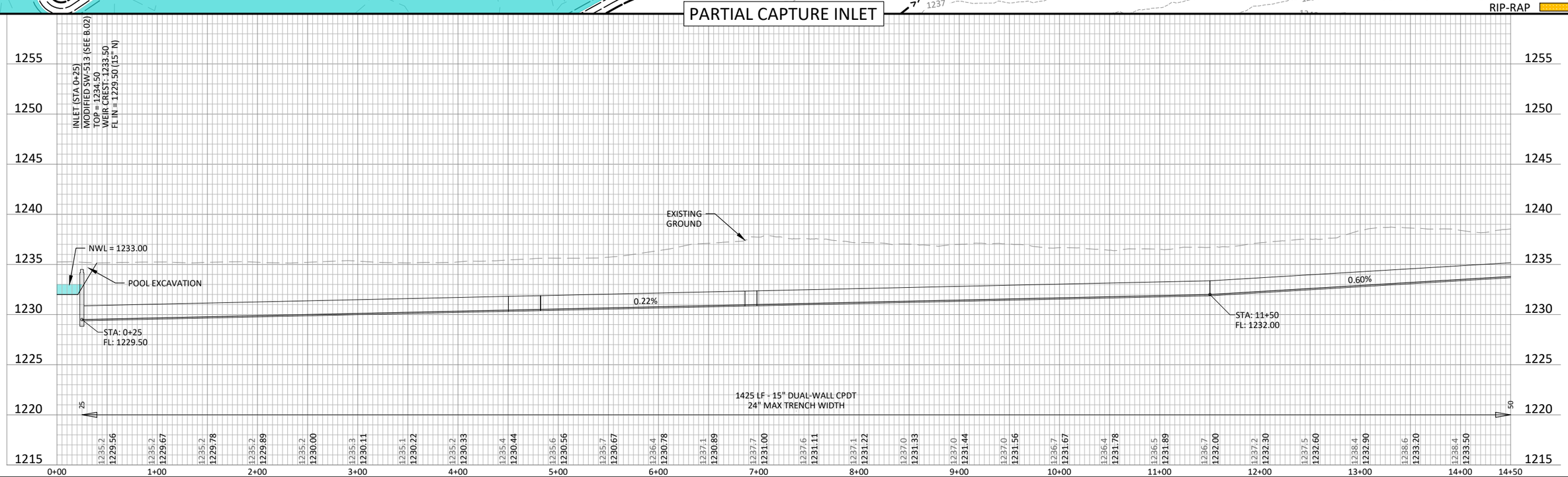
IDALS PROJ. NO. CER962218C

SEEDING PLAN

SHEET K.01



PARTIAL CAPTURE INLET



HORZ. 0 50 100 SCALE FEET

VERT. 0 5 10 SCALE FEET

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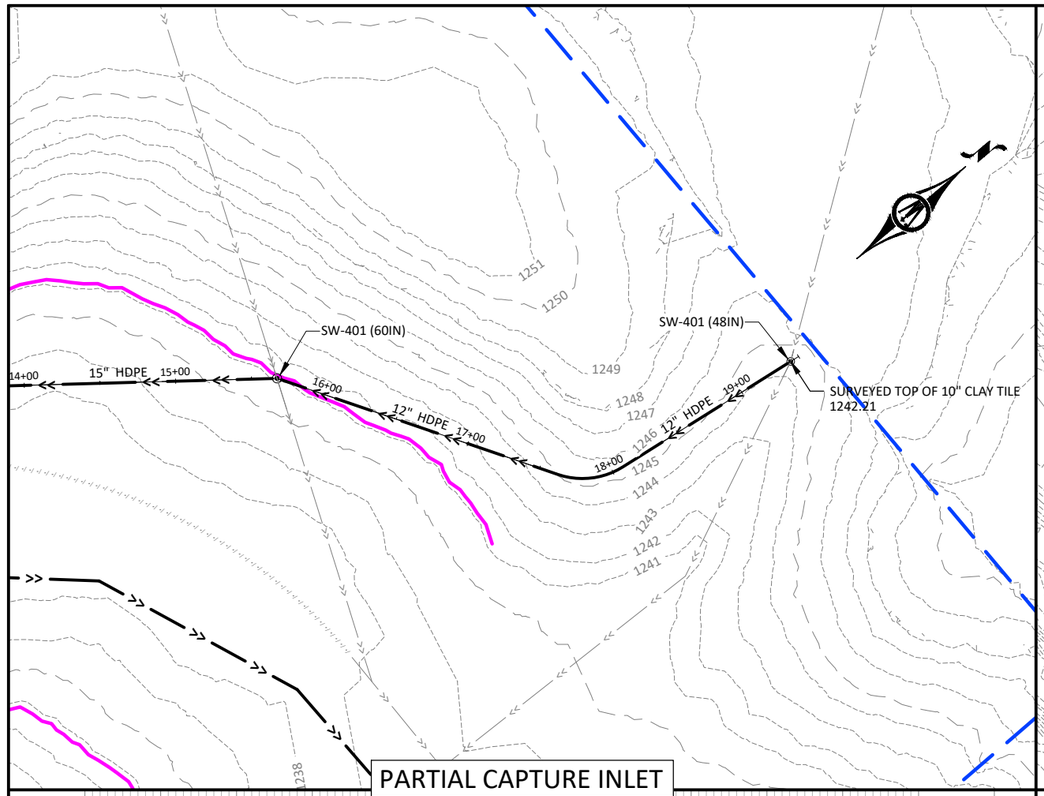
DESIGNED	BCS
DRAWN	BCS
CHECKED	JPR
CLIENT PROJ. NO.	07.133265

REV	DESCRIPTION	DATE
1.0	PLANS FOR BID	2025-05-27

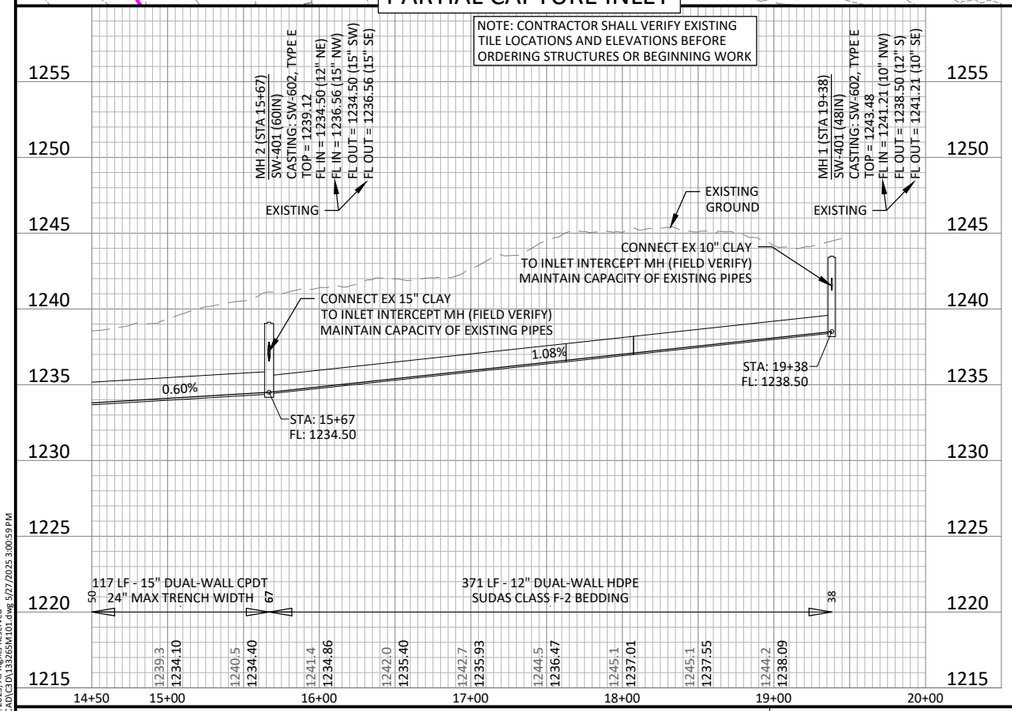
IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP
IDALS PROJ. NO. CER962218C
PARTIAL CAPTURE INLET

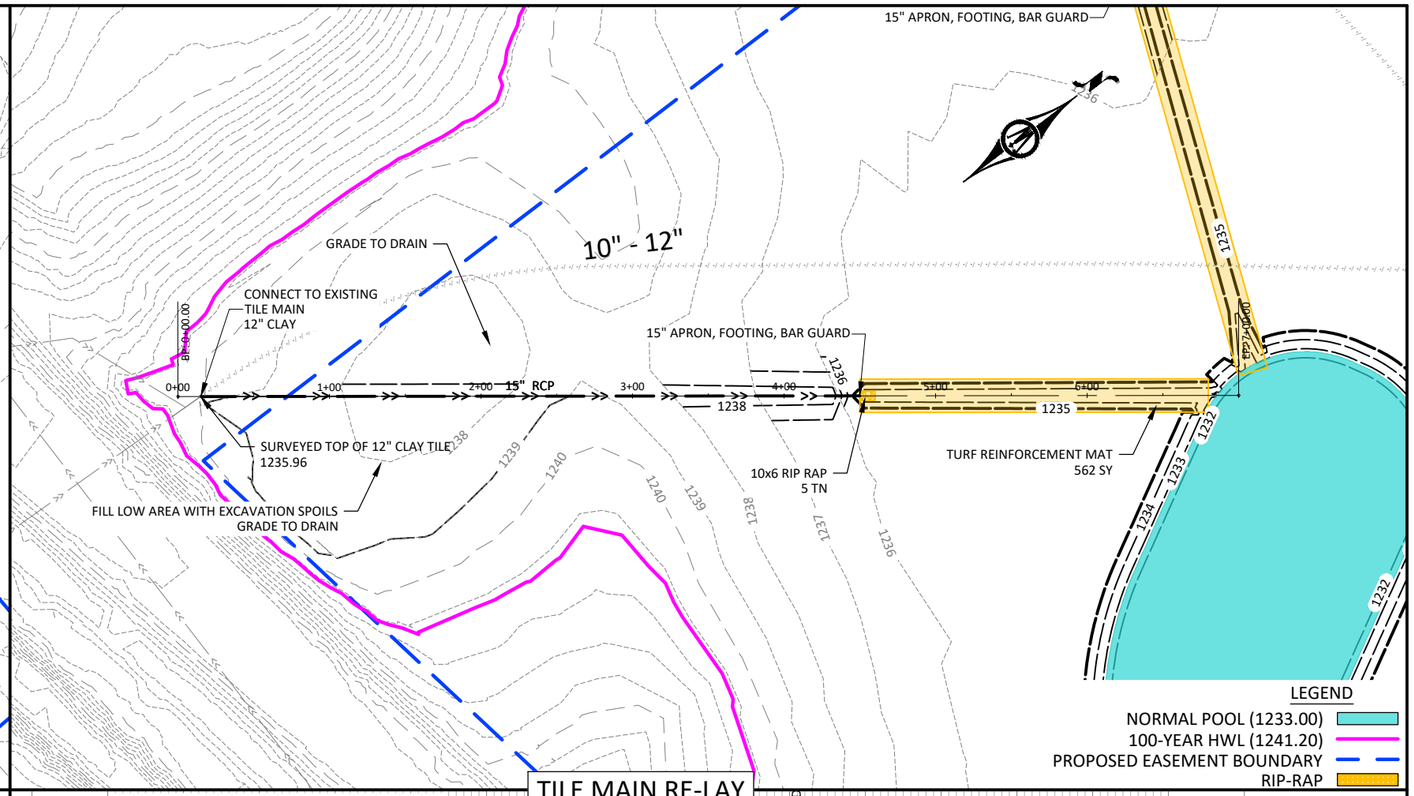
SHEET M.01

h:\IDALS\07\133265\CAD\C3D\133265M101.dwg 5/27/2025 3:00:53 PM

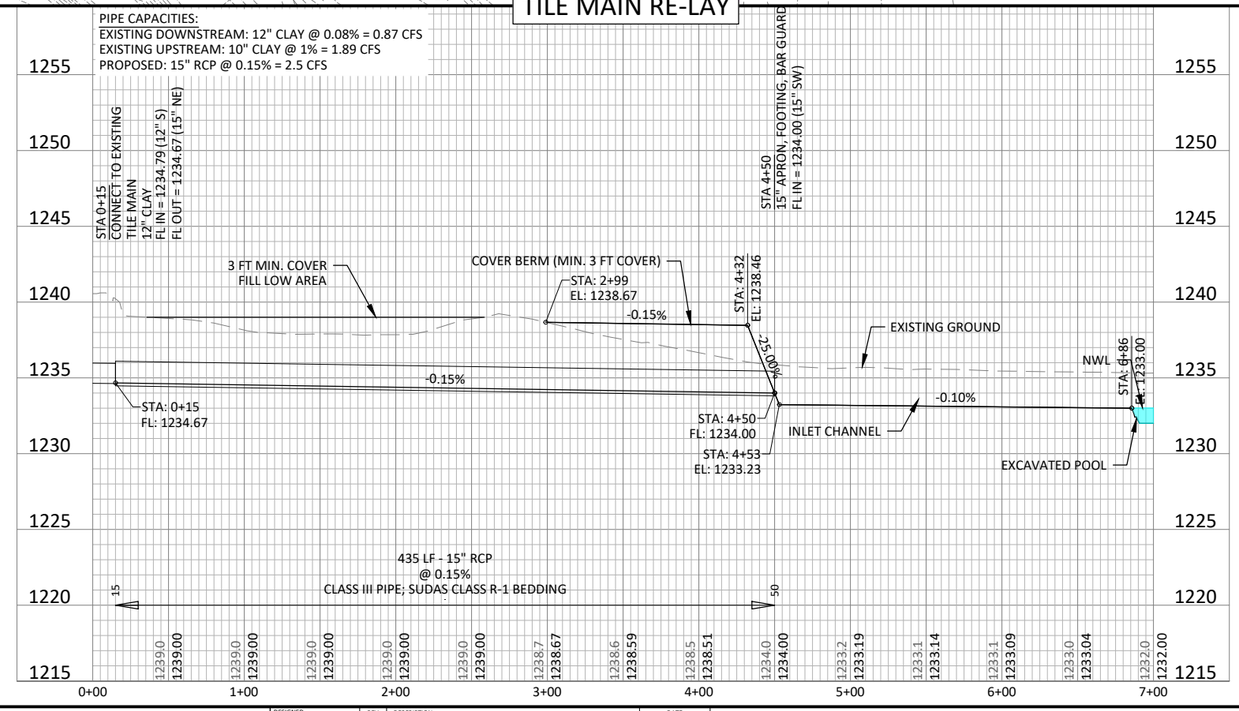


PARTIAL CAPTURE INLET





TILE MAIN RE-LAY



HORZ. SCALE 0 50 100 FEET
VERT. SCALE 0 5 10 FEET

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DESIGNED	REV	DESCRIPTION	DATE
BCS	1.0	PLANS FOR BID	2025-05-27
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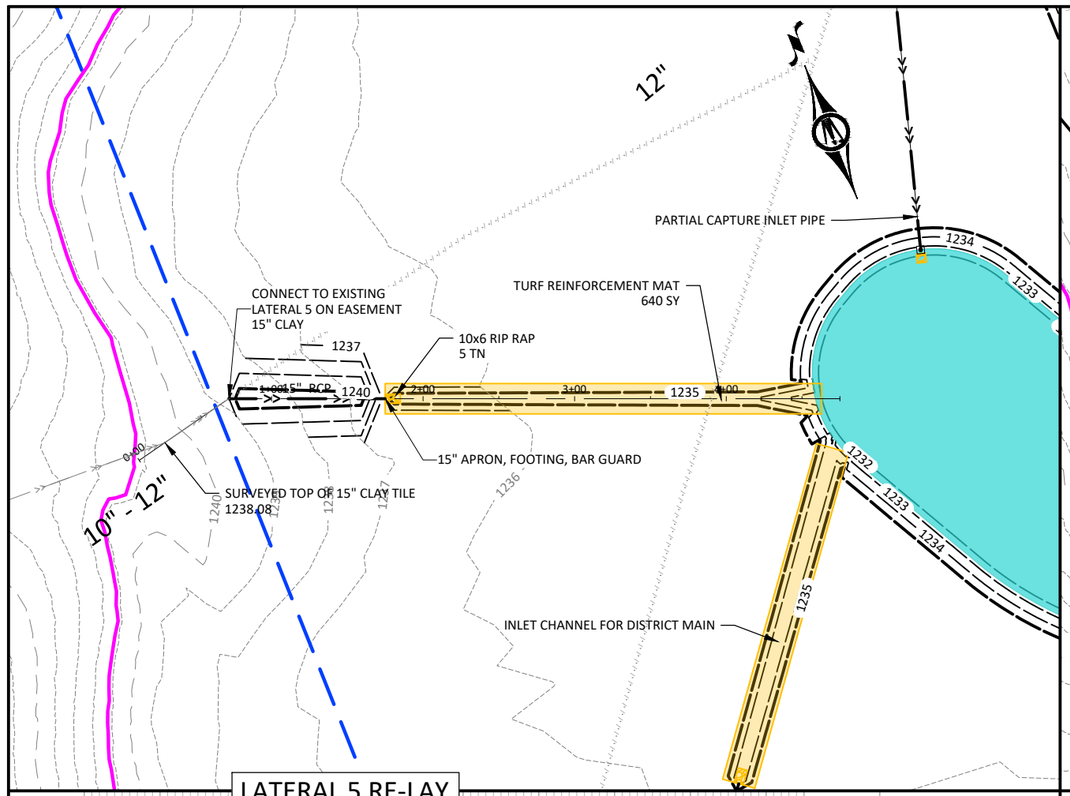
CHECKED JPR			
CLIENT PROJ. NO. 0T7.133265			

IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP
IDALS PROJ. NO. CER962218C
PARTIAL CAPTURE INLET & MAIN RE-LAY

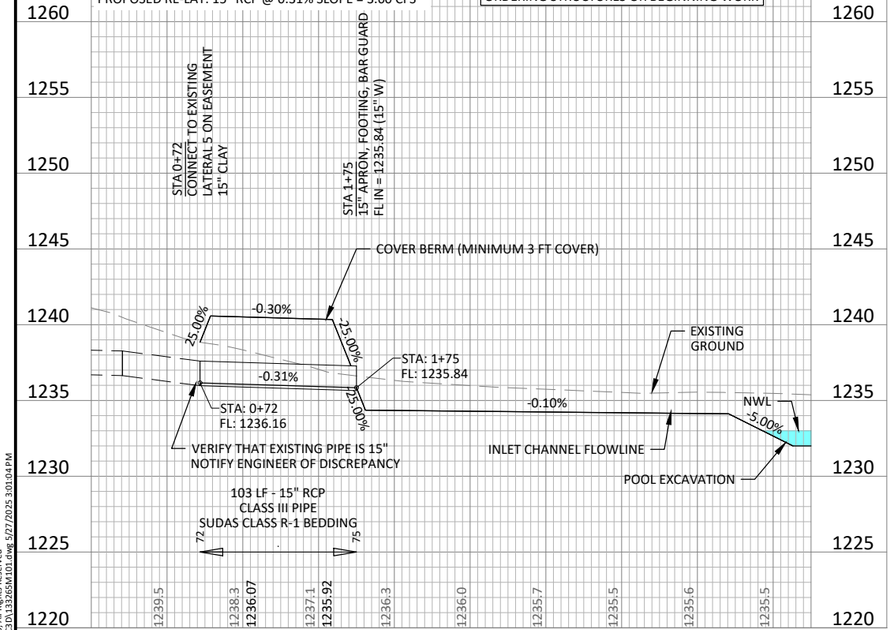
SHEET M.02

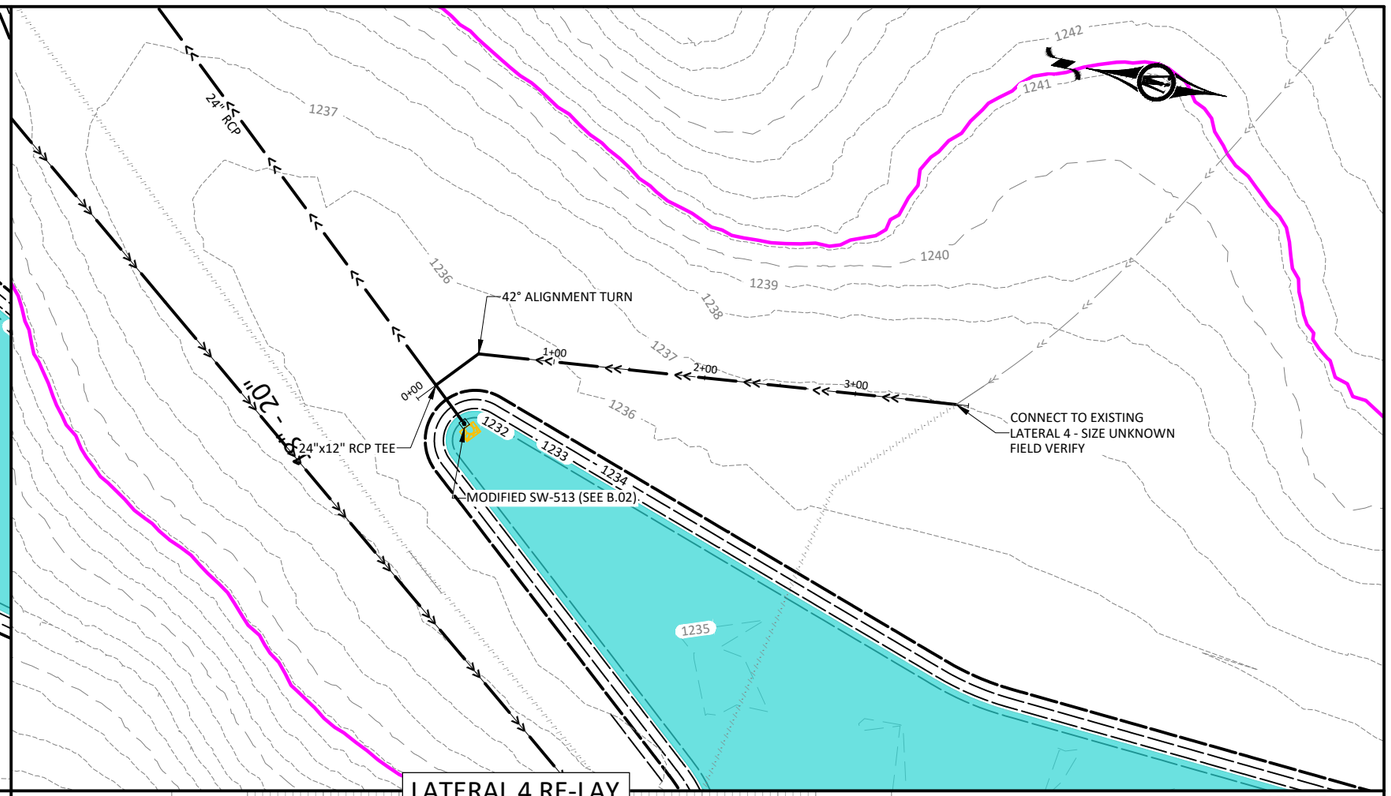


LATERAL 5 RE-LAY

PIPE CAPACITIES:
LATERAL 5: ½" DC = 3.36 CFS
PROPOSED RE-LAY: 15" RCP @ 0.31% SLOPE = 3.60 CFS

NOTE: CONTRACTOR SHALL VERIFY EXISTING TILE LOCATIONS AND ELEVATIONS BEFORE ORDERING STRUCTURES OR BEGINNING WORK

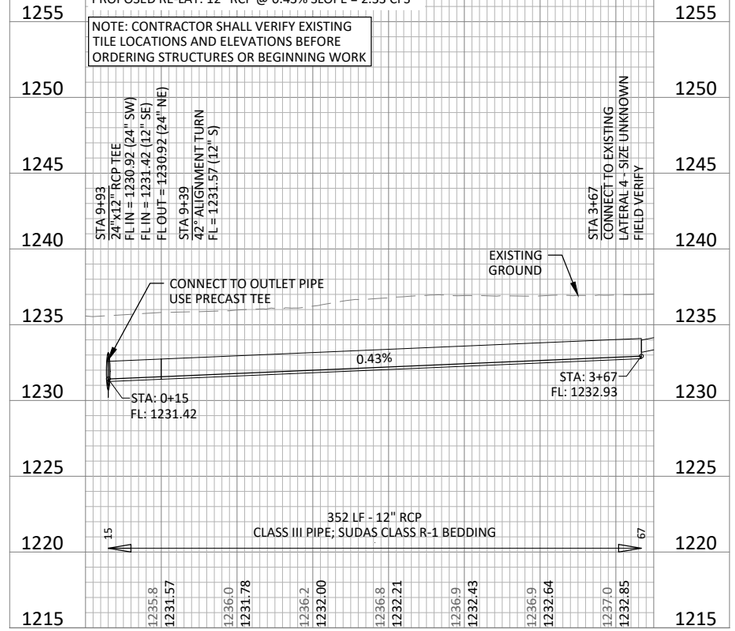




LATERAL 4 RE-LAY

PIPE CAPACITIES:
LATERAL 4: ½" DC = 0.672 CFS
PROPOSED RE-LAY: 12" RCP @ 0.43% SLOPE = 2.33 CFS

NOTE: CONTRACTOR SHALL VERIFY EXISTING TILE LOCATIONS AND ELEVATIONS BEFORE ORDERING STRUCTURES OR BEGINNING WORK



LEGEND
- NORMAL POOL (1233.00)
- 100-YEAR HWL (1241.20)
- PROPOSED EASEMENT BOUNDARY
- RIP-RAP

HORZ. 0 50 100 SCALE FEET
VERT. 0 5 10 SCALE FEET

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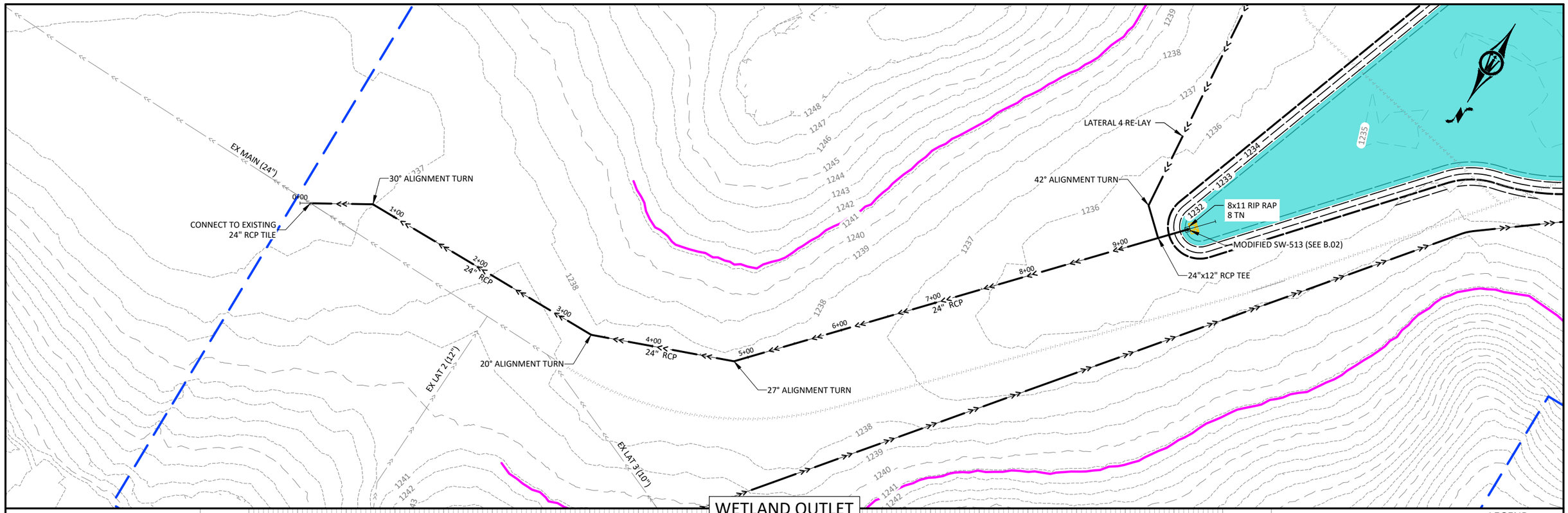
BCS	1.0	PLANS FOR BID	2025-05-27
DRAWN BCS			
CHECKED JPR			
CLIENT PROJ. NO. 0T7.133265			

IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP
IDALS PROJ. NO. CER962218C
LATERALS 4 & 5 RE-LAY

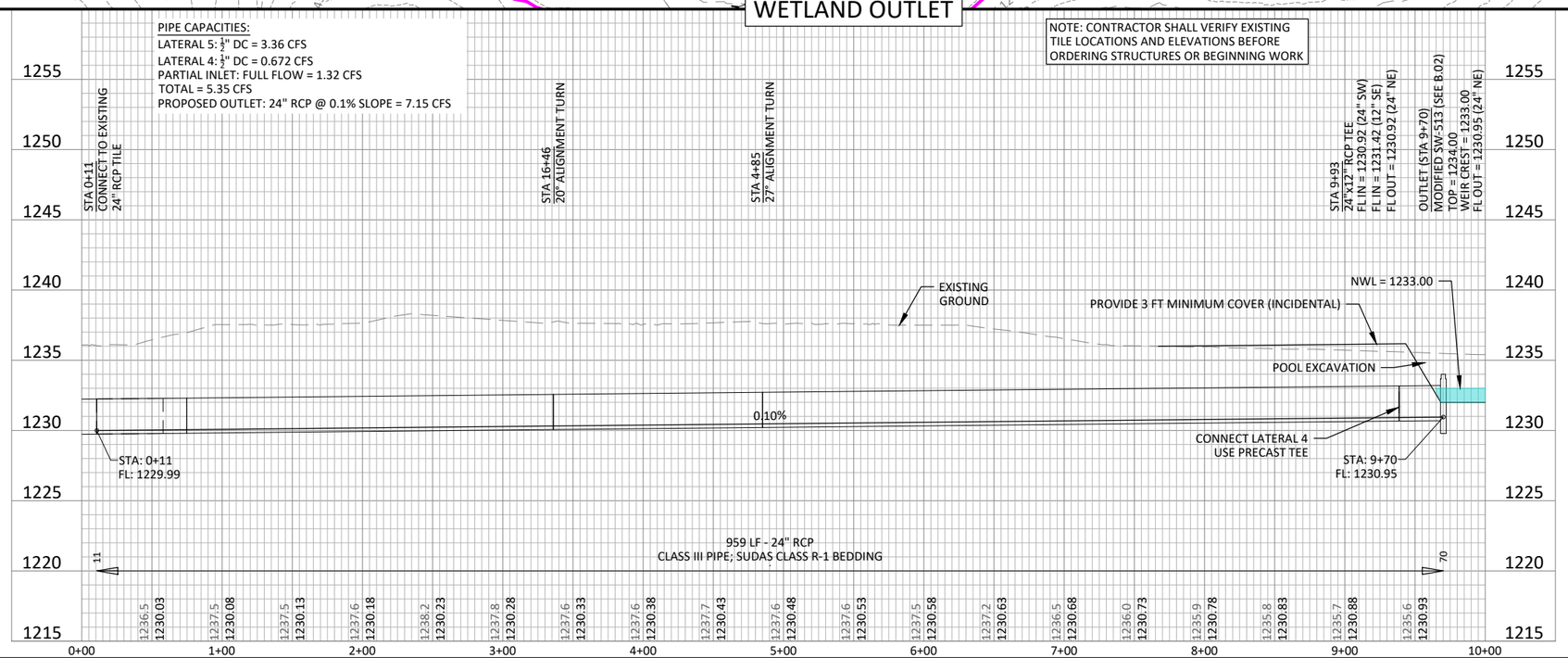
SHEET M.03



PIPE CAPACITIES:
LATERAL 5: ¾" DC = 3.36 CFS
LATERAL 4: ¾" DC = 0.672 CFS
PARTIAL INLET: FULL FLOW = 1.32 CFS
TOTAL = 5.35 CFS
PROPOSED OUTLET: 24" RCP @ 0.1% SLOPE = 7.15 CFS

NOTE: CONTRACTOR SHALL VERIFY EXISTING TILE LOCATIONS AND ELEVATIONS BEFORE ORDERING STRUCTURES OR BEGINNING WORK

LEGEND
NORMAL POOL (1233.00)
100-YEAR HWL (1241.20)
PROPOSED EASEMENT BOUNDARY
RIP-RAP



HORZ. SCALE 0 50 100 FEET
VERT. SCALE 0 5 10 FEET

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CHECKED JPR			
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IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP
IDALS PROJ. NO. CER962218C
WETLAND OUTLET

SHEET M.04