

NUTRIENT REDUCTION WETLAND CARROLL COUNTY, IOWA CAR853313A JEO PROJECT NO. 210779.18




ENGINEER CONTACTS:

PROJECT CONTACT JUAN A. ARELLANES, PE
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THE CURRENT NRCS STANDARD SPECIFICATIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

NRCS ENGINEER JOB CLASS IV



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. To the best of my professional knowledge, judgement and belief, these plans meet applicable NRCS standards.

10/03/2025
(date)

(signature) _____

Printed or typed name: Juan Alejandro Arellanes Gallarzo Jr.

License Number: 28990

My license renewal date is December 31, 2025.

Pages or sheets covered by this seal:
ALL SHEETS IN THIS PLAN SET

I HAVE REVIEWED AND AGREE WITH THE CONTENT OF THE PLAN AND SPECIFICATIONS AS PREPARED:

CLIENT REPRESENTATIVE: _____
NAME DATE

CONTRACTOR IS RESPONSIBLE FOR CALLING IOWA ONE CALL

ONE CALL TICKET NO.:

IF A CULTURAL RESOURCE IS IDENTIFIED DURING CONSTRUCTION, ALL WORK SHALL HALT, AND THE NRCS ARCHEOLOGIST SHALL BE NOTIFIED IMMEDIATELY. 515.323.2253

PROJECT SPONSOR:



NOTE:
NEITHER THE OWNER (CLIENT) NOR JEO CONSULTING GROUP, INC. ASSUMES ANY RESPONSIBILITY FOR UTILITY LOCATIONS BEING ACCURATELY SHOWN OR NOT SHOWN ON THE PLANS. A REQUEST FOR UTILITY LOCATES WAS MADE FOR THIS LOCATION AS PER THE ONE-CALL NOTIFICATION SYSTEM ACT.
(DATE: 03/09/23 TICKET NO.: 552301402.)

UTILITIES SHOWN ARE FROM FIELD MARKINGS PROVIDED IN THE FIELD BY THE UTILITY PROVIDERS.

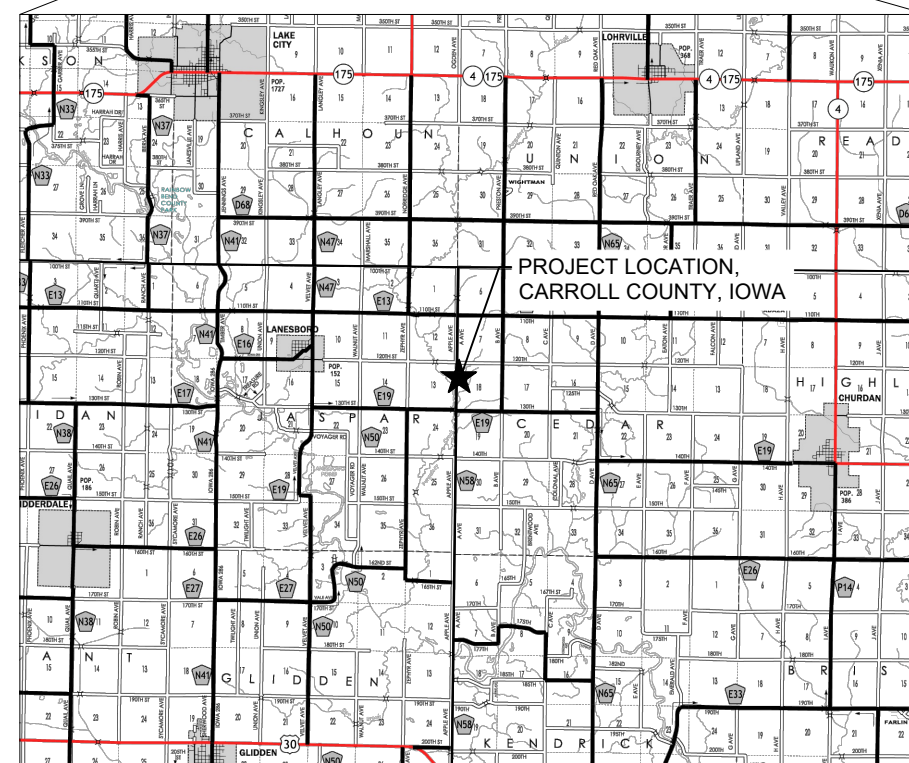
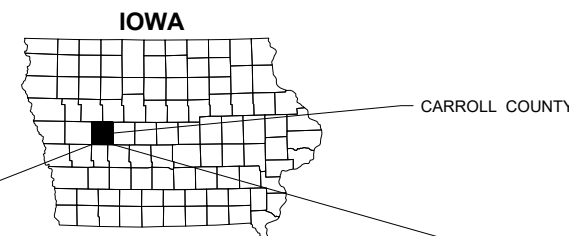
THE EXACT LOCATION AND/OR SIZE OF UNDERGROUND FEATURES MAY NOT BE ACCURATELY, COMPLETELY AND RELIABLY DEPICTED. FIELD VERIFICATION OF UTILITIES MAY BE REQUIRED. CONTRACTOR(S) SHALL NOTIFY THE RESPECTIVE UTILITY COMPANIES BEFORE COMMENCING ANY WORK.



CONTRACTOR IS RESPONSIBLE FOR CALLING IOWA ONE CALL 1-800-292-8989 AT LEAST 48 HOURS PRIOR TO BEGINNING ANY EXCAVATION OR WORK.

INDEX OF SHEETS:

SHEET NO:	SHEET NAME:
A.1	COVER SHEET & LOCATION MAP
A.2	SYMBOLS SHEET
B.1	TYPICAL CROSS SECTION DETAILS
C.1	CONSTRUCTION NOTES & TABULATIONS
CG.1 - CG.3	SURVEY CONTROL
D.1	EXISTING SITE & REMOVALS PLAN
D.2	OVERALL PROPOSED SITE PLAN
D.3	PROPOSED GRADING PLAN - WETLAND
D.4	PROPOSED GRADING PLAN - BORROW
M.1	PLAN & PROFILE - DAM STRUCTURE
M.2	PLAN & PROFILE - PRINCIPAL SPILLWAY
M.3	PLAN & PROFILE - DRAWDOWN STRUCTURE
M.4	PLAN & PROFILE - LONGITUDINAL WETLAND
R.1	SEEDING & EROSION CONTROL PLAN
U.1 - U.5	DETAILS



LOCATION MAP

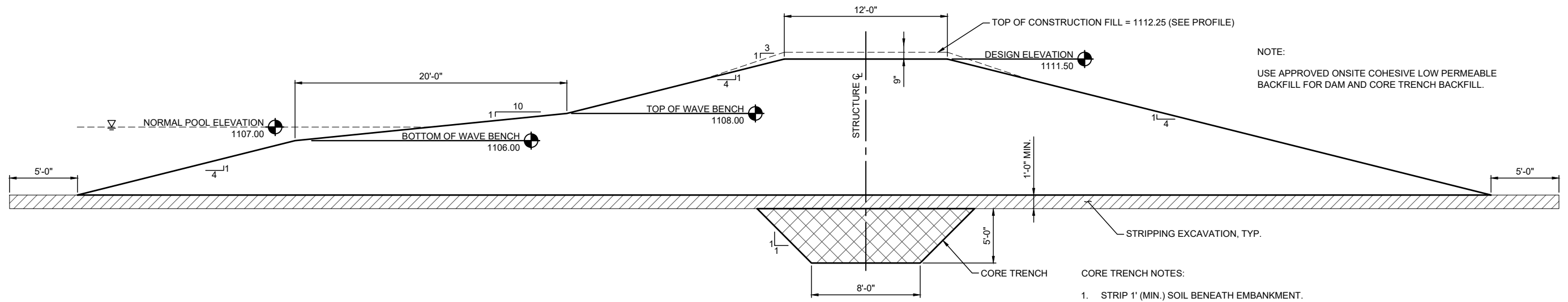
ALL SITE PLAN INFORMATION IS BASED UPON US SURVEY FEET (sFT)

NUTRIENT REDUCTION WETLAND
CARROLL COUNTY, IOWA
CAR853313A

COVER SHEET & LOCATION MAP

JEO PROJECT NO.	210779.18
FILE NAME	S-210779.18-A.dwg
FIELD CREW	JR & DHM
FIELD BOOK	MIS20
DESIGNED BY	JAA
DRAWN BY	GL
CHECKED BY	JSS
APPROVED BY	JTM
REVISIONS	10/03/2025

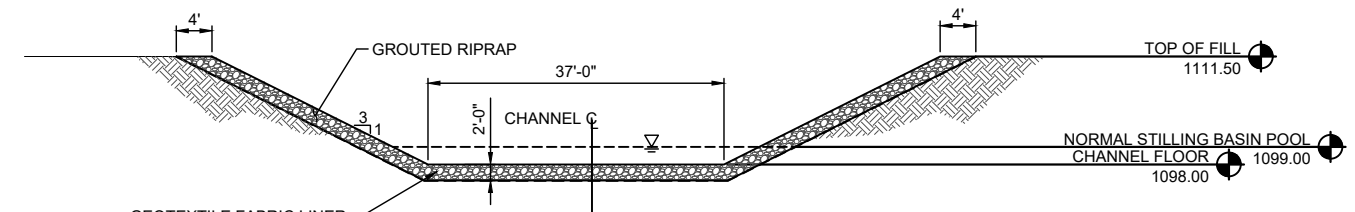
SHEET **A.1**



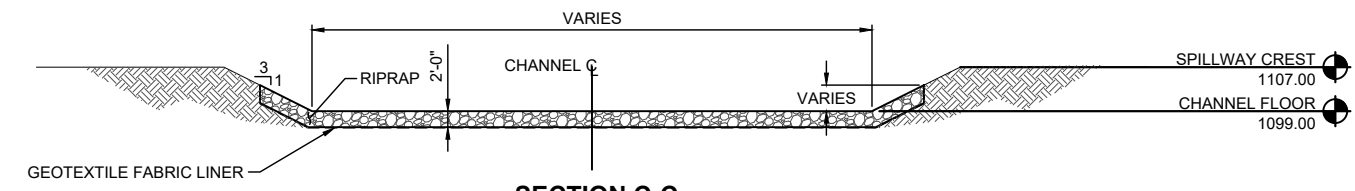
NOTE:
USE APPROVED ONSITE COHESIVE LOW PERMEABLE BACKFILL FOR DAM AND CORE TRENCH BACKFILL.

- CORE TRENCH NOTES:
1. STRIP 1' (MIN.) SOIL BENEATH EMBANKMENT.
 2. EXCAVATE MINIMUM 4' DEEP CORE TRENCH.
 3. BACKFILL WITH COHESIVE, LOW PERMEABLE MATERIAL AND COMPACT PER EMBANKMENT SPECIFICATIONS.

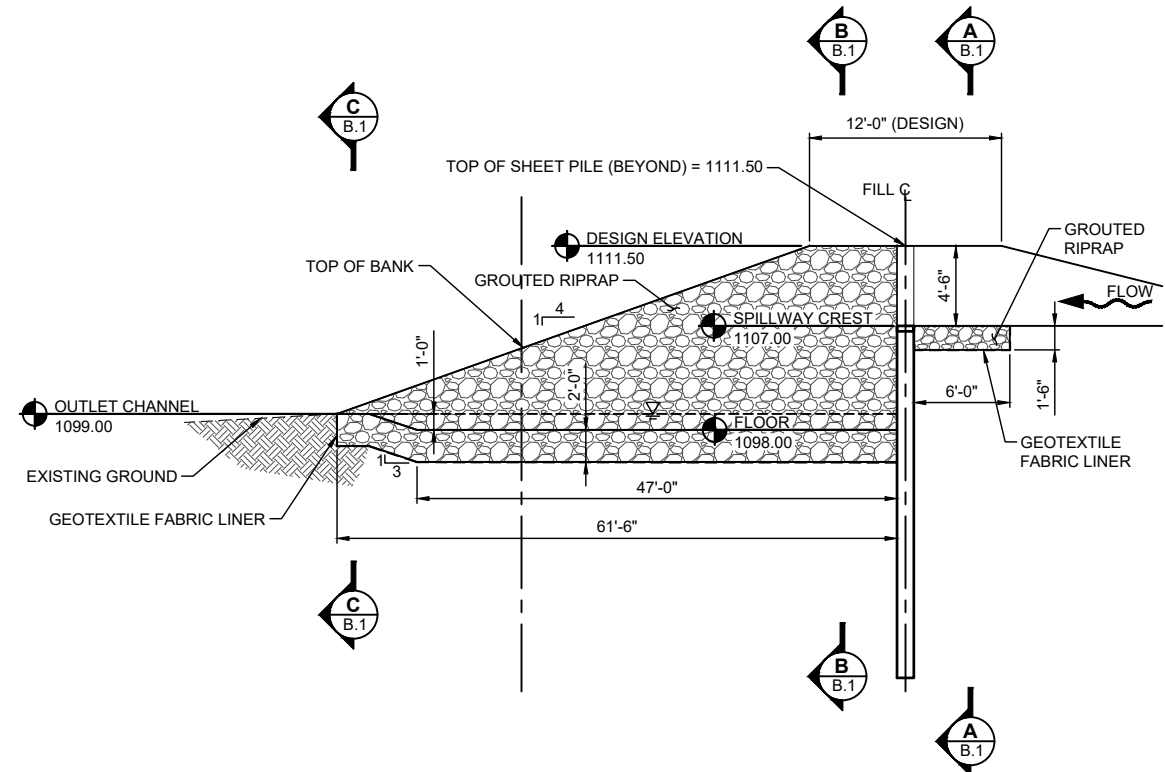
1 TYPICAL DAM SECTION
SCALE: N.T.S.



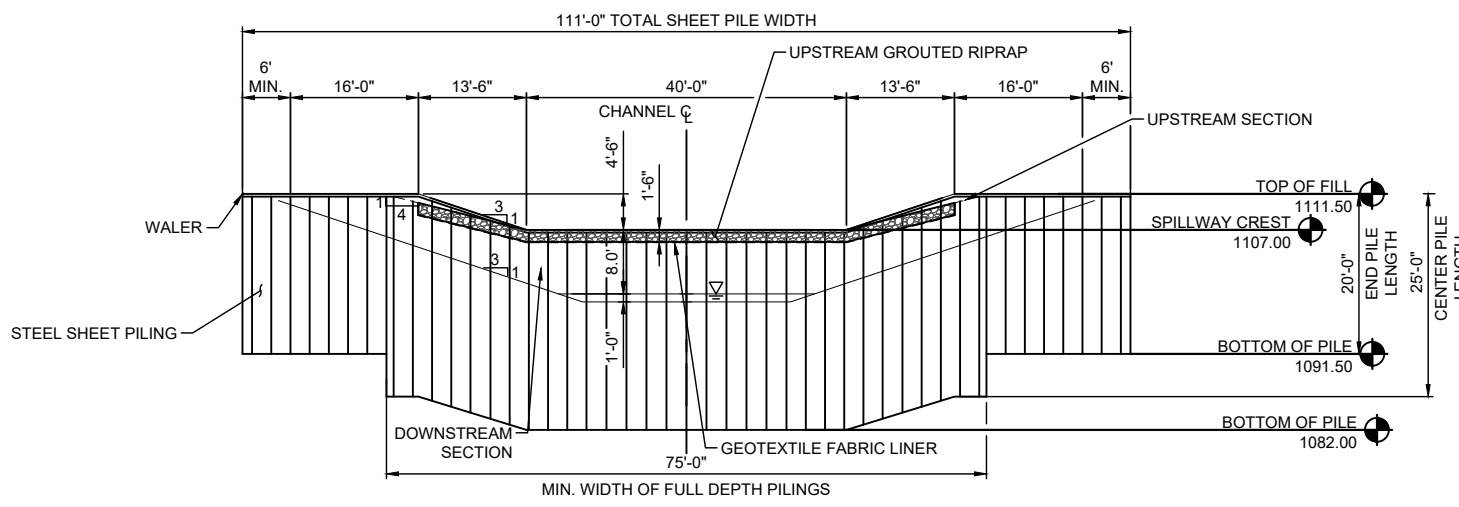
SECTION B-B
SCALE: N.T.S.



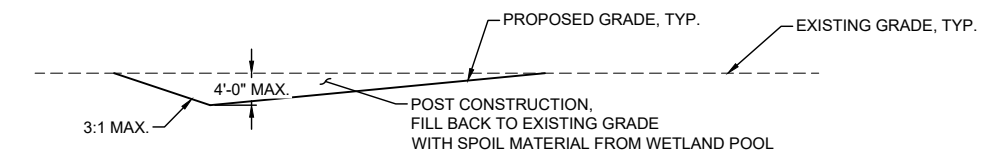
SECTION C-C
SCALE: N.T.S.



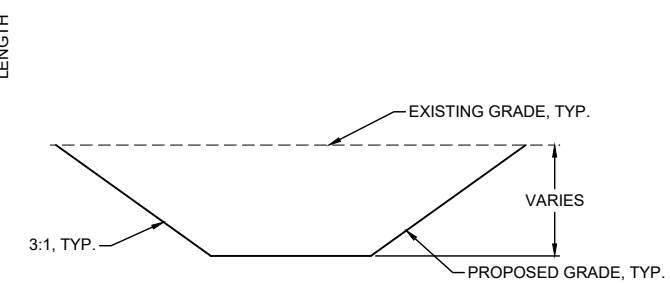
2 CENTERLINE OF PRINCIPAL SPILLWAY
SCALE: N.T.S.



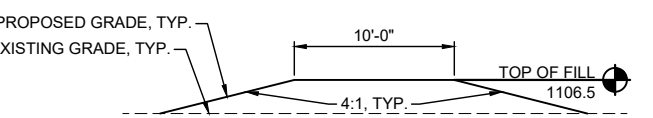
SECTION A-A
SCALE: N.T.S.



3 BORROW EXCAVATION - TYPICAL SECTION
SCALE: N.T.S.



4 SWALE - TYPICAL SECTION
SCALE: N.T.S.



5 SUBMERGED BERM - TYPICAL SECTION
SCALE: N.T.S.

NUTRIENT REDUCTION WETLAND
CARROLL COUNTY, IOWA
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TYPICAL CROSS SECTION DETAILS

JEO PROJECT NO.	210779.18
FILE NAME	S-210779.18-B.dwg
FIELD CREW	JR & DHM
FIELD BOOK	MIS20
DESIGNED BY	JAA
DRAWN BY	JSS
GTL	JTM
CHECKED BY	JSS
APPROVED BY	JTM
REVISIONS	10/03/2025

GENERAL NOTES:

- THIS PROJECT SHALL BE CONSTRUCTED TO THE IOWA NRCS CONSTRUCTION SPECIFICATIONS AND ALL SUBSEQUENT REVISIONS. ["https://efotg.sc.egov.usda.gov/#/state/IA/documents/section=4&folder=-843"](https://efotg.sc.egov.usda.gov/#/state/IA/documents/section=4&folder=-843)
- OWNER AND ENGINEER SHALL BE CONTACTED A MINIMUM OF 72 HOURS PRIOR TO COMMENCING WORK ON THE PROJECT.
- NOTIFY UTILITIES AT LEAST 48 HOURS PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES. CONTRACTOR IS RESPONSIBLE FOR DETERMINING EXISTENCE AND EXACT LOCATION OF ALL UTILITIES AND AVOIDING DAMAGE TO UTILITIES AND SERVICES DURING CONSTRUCTION. ANY DAMAGE DUE TO THE CONTRACTOR'S NEGLIGENCE SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE. COORDINATE AND COOPERATE WITH UTILITY COMPANIES DURING CONSTRUCTION. UTILITY ONE CALL: 1-800-292-8989.
- CONTRACTOR SHALL SUBMIT A SCHEDULE FOR PERFORMANCE OF WORK ITEMS. THIS SCHEDULE SHALL BE PROVIDED AT THE PRE-CONSTRUCTION CONFERENCE. NO WORK SHALL BEGIN UNTIL A SCHEDULE HAS BEEN SUBMITTED AND ACCEPTED BY THE ENGINEER.
- CONTRACTOR SHALL REMAIN WITHIN LIMITS OF CONSTRUCTION FOR ALL WORK UNLESS AUTHORIZATION IS GIVEN BY OWNER AND ENGINEER PRIOR TO COMMENCING SUCH WORK.
- PROTECT ALL TREES, SHRUBS, AND OTHER VEGETATION UNLESS NOTED IN THE PLANS. ANY TREES OR SHRUBS DAMAGED SHALL BE REPLACED AT THE CONTRACTOR'S OWN EXPENSE.
- CONTRACTOR IS LIABLE FOR DAMAGES TO PUBLIC AND PRIVATE PROPERTY CAUSED BY THEIR ACTION OR INACTION IN PROVIDING FOR HANDLING OF STORM WATER FLOW DURING CONSTRUCTION.
- BID QUANTITIES SHALL NOT BE EXCEEDED WITHOUT PRIOR WRITTEN AUTHORIZATION FROM OWNER AND ENGINEER. ANY ITEM OR WORK NECESSARY TO COMPLETE THE PROJECT NOT DIRECTLY CALLED FOR AS A BID ITEM SHALL BE CONSIDERED INCIDENTAL TO OTHER ITEMS FOR WHICH PAYMENT IS MADE.
- ELEVATION OF PIPES REFER TO FLOWLINES.
- ANY ADDITIONAL EXCAVATION REQUIRED FOR RESHAPING OF ADJACENT AREAS TO PROVIDE DRAINAGE IS CONSIDERED INCIDENTAL TO THE PROJECT.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO HAUL EXCESS MATERIAL TO DESIGNATED WASTE AREAS NOTED ON THE PLANS, INCLUDING SOILS WHICH ARE NOT APPROVED FOR INCORPORATION INTO THE WORK INVOLVED ON THIS PROJECT. NO PAYMENT FOR OVERHAUL WILL BE ALLOWED FOR MATERIAL HAULED TO THESE SITES. ADDITIONAL WASTE AREAS FOR EXCESS SOIL WILL BE DESIGNATED BY THE ENGINEER ON SITE AFTER CONSTRUCTION COMMENCES.
- OVERHAUL ON THIS PROJECT SHALL BE CONSIDERED INCIDENTAL AND NO ADDITIONAL PAYMENT WILL BE MADE.
- CONTRACTOR SHALL NOTIFY ENGINEER OF ANY FIELD TILE ENCOUNTERED DURING CONSTRUCTION. CONTRACTOR TO ROUTE DISTURBED TILE TO CLOSEST DRAINAGE OUTLET, DITCH, OR POND.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ANY AND ALL NRCS STANDARD DETAIL DRAWINGS AND SPECIFICATIONS NECESSARY FOR THE PROJECT THAT ARE NOT DIRECTLY GIVEN WITH THIS PROJECT.
- COMPLETELY REMOVE AND DISPOSE OF TREES, SHRUBS AND VEGETATION DESIGNATED FOR REMOVAL ON THE PLANS. DISPOSE OF IN ACCORDANCE WITH APPLICABLE LAWS AND REGULATIONS.
- CONTRACTOR SHALL SATISFY THEMSELVES PRIOR TO SUBMISSION OF BIDS AS TO THE SOIL CONDITIONS.
- PROTECT AND SAVE ALL PROPERTY CORNER MONUMENTS. CONTRACTOR TO REPLACE IF REMOVED OR DAMAGED AT THEIR OWN EXPENSE.
- STRIP, SALVAGE, AND RESPREAD TOP SIX INCHES OF TOPSOIL IN ALL AREAS WITHIN THE CONSTRUCTION LIMITS AS PER SPECIFICATIONS, EXCEPT AREAS NOT DISTURBED BY CONSTRUCTION AND USED TO STOCKPILE SOIL AND MATERIALS. MECHANICALLY LOOSEN THE TOP 18 INCHES OF SOIL ON ALL HAUL ROADS AND OVERLY COMPACTED AREAS PRIOR TO RE-SPREADING OF TOPSOIL.
- CONTRACTOR SHALL KEEP UP TO DATE RECORDS ON ALL MEASUREMENTS, MATERIALS DELIVERIES AND PLACEMENTS, AND AS-BUILT DRAWINGS.
- CONTRACTOR SHALL ATTEND PROGRESS MEETINGS AS REQUESTED BY THE ENGINEER AND OWNER.
- DIMENSIONS, UTILITIES, AND GRADING ARE BASED ON AVAILABLE INFORMATION AT THE TIME OF DESIGN. DEVIATIONS MAY BE NECESSARY IN THE FIELD. REPORT ANY SUCH CHANGES OR CONFLICTS BETWEEN THE PLAN AND FIELD CONDITIONS TO ENGINEER IMMEDIATELY AND PRIOR TO CONTINUING OF WORK.

UTILITY WARNING:

- THE UTILITIES HAVE SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND/OR RECORDS OBTAINED. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES OR SUBSURFACE FEATURES SHOWN COMPRISE ALL SUCH ITEMS IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES OR SUBSURFACE FEATURES SHOWN ARE IN THE EXACT LOCATION INDICATED EXCEPT WHERE NOTED.

PROJECT DATA TABLE		
CONSULTANT	JEO CONSULTING GROUP, INC.	
PROJECT ID	CAR853313A	
LANDOWNER(S)	DAVID REMSBURG, DOZIER TRUST, AND VG LEGACY FARMS, LLC	
PRELIMINARY OR FINAL DESIGN	FINAL	
DRAINAGE AREA	317	ACRES
WETLAND POOL AREA	2.09	ACRES
DEEP WATER AREA (>3 FT DEEP)	0.36	ACRES
NORMAL POOL ELEVATION / PRIMARY SPILLWAY ELEVATION	1107	FEET
AVERAGE POOL DEPTH	2.26	FEET
MAXIMUM POOL DEPTH	7.0	FEET
POOL STORAGE	4.70	ACRE-FEET
BERM ELEVATION	1111.5	FEET
BERM STORAGE	17.98	ACRE-FEET
LENGTH OF BERM	307	FEET
WEIR WIDTH	40	FEET
DROP HEIGHT (PRIMARY SPILLWAY ELEVATION – STILLING BASIN LOWEST ELEVATION)	9	FEET
HEIGHT OF DAM (BERM ELEVATION – STILLING BASIN LOWEST ELEVATION)	13.5	FEET
STILLING BASIN LENGTH	50	FEET
TIME OF CONCENTRATION	1.24	HOURS
WEIGHTED RUNOFF CURVE NUMBER	79.67	-----
25-YEAR STORM DESIGN FLOW	387.74	CFS
100-YEAR STORM DESIGN FLOW	871.17	CFS
100-YEAR FLOOD SURF. ELEVATION	1109.93	FEET
ESTIMATED SEDIMENT STORAGE	59	YEARS
TOTAL EASEMENT AREA	8.13	ACRES

WETLAND STORAGE TABLE		
CONTOUR ELEVATION (FT)	CONTOUR AREA (AC)	CUMULATIVE VOLUME, AVG. END (AC-FT)
1100	0.05	0
1101	0.12	0.09
1102	0.20	0.25
1103	0.27	0.49
1104	0.36	0.81
1105	0.95	1.46
1106	1.72	2.80
1107	2.09	4.70
1108	2.43	6.96
1109	2.81	9.59
1110	3.24	12.61
1111	3.69	16.08
1111.50	3.76	17.98

QUANTITY TABULATIONS					
ITEM	DESCRIPTION	SPEC. ITEM	UNIT	QUANTITY	AS-BUILT
1	SITE STRIPPING & PREPARATION	IA CS-001	LS	1	
2	CROP DAMAGES***	IA CS-001	ACRE	0	
3	FENCE REMOVAL & REPLACEMENT	IA CS-001	LF	344	
4	POLLUTION CONTROL	IA CS-005	LS	1	
5	STRAW WATTLE, 9" DIA.	IA CS-005	LF	2,175	
6	STRUCTURE SEEDING	IA CS-006	ACRE	0.3	
7	WATERWAY SEEDING ***	IA CS-006	ACRE	0.3	
8	BUFFER SEEDING	IA CS-006	ACRE	12.1	
9	MOBILIZATION & DEMOBILIZATION*	CS-008	LS	1	
10	TILE INVESTIGATION	IA CS-009	LS	1	
11	STEEL SHEET PILING	IA CS-013	SF	2,595	
12	EXCAVATION (SWALE)	IA CS-021	CY	533	
13	EXCAVATION (WETLAND EXTENSION)	IA CS-021	CY	3,379	
14	EXCAVATION (CORE TRENCH)	IA CS-021	CY	588	
15	EXCAVATION (BORROW)	IA CS-021	CY	3,057	
16	EARTHFILL (DAM)	IA CS-023	CY	2,075	
17	EARTHFILL (DAM AS CONSTRUCTED)**	IA CS-023	CY	118	
18	EARTHFILL (POOL)**	IA CS-023	CY	1,404	
19	EARTHFILL (DAM CORE)**	IA CS-023	CY	588	
20	EARTHFILL (BORROW)**	IA CS-023	CY	3,057	
21	DRAINFILL, FINE	IA CS-024	CY	25	
22	TOPSOIL PLACEMENT	IA CS-026	CY	3,205	
23	CMP WATER CONTROL STRUCTURE	IA CS-051	LS	1	
24	CMP RISER INLET STRUCTURE	IA CS-051	EA	1	
25	CMP DRAWDOWN WETLAND OUTLET PIPE (15" DIA.)	IA CS-051	LF	136	
26	CMP FLARED END SECTION W/ BAR GUARD	IA CS-051	EA	1	
27	24" ANIMAL GUARD	IA CS-051	EA	1	
28	RIPRAP	IA CS-061	TON	812	
29	CONCRETE GROUT	IA CS-062	CY	98	
30	GEOTEXTILE FABRIC	IA CS-095	SY	653	

QUANTITY NOTES:

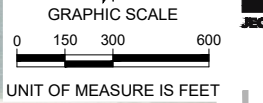
- * INCLUDES SHAPING AND MAINTENANCE ON THE INGRESS/EGRESS.
- ** EARTHFILL (EMBANKMENT) ASSUMES NO COMPACTION FACTOR.
- *** QUANTIFIED AREAS ARE APPROXIMATE AND SHALL BE DETERMINED BY CONTRACTOR, ENGINEER, AND OWNER.



**NUTRIENT REDUCTION WETLAND
 CARROLL COUNTY, IOWA
 CAR853313A**

CONSTRUCTION NOTES & TABULATIONS

JEO PROJECT NO. 210779.18
 FILE NAME S-210779-18-C.dwg
 FIELD CREW JR & DHM
 FIELD BOOK MIS20
 DESIGNED BY DATE
 JAA 06-17-2024
 DRAWN BY DATE
 GTL 07-31-2024
 CHECKED BY DATE
 JSS 06-21-2024
 APPROVED BY DATE
 JTM
 REVISIONS 10/03/2025 Δ

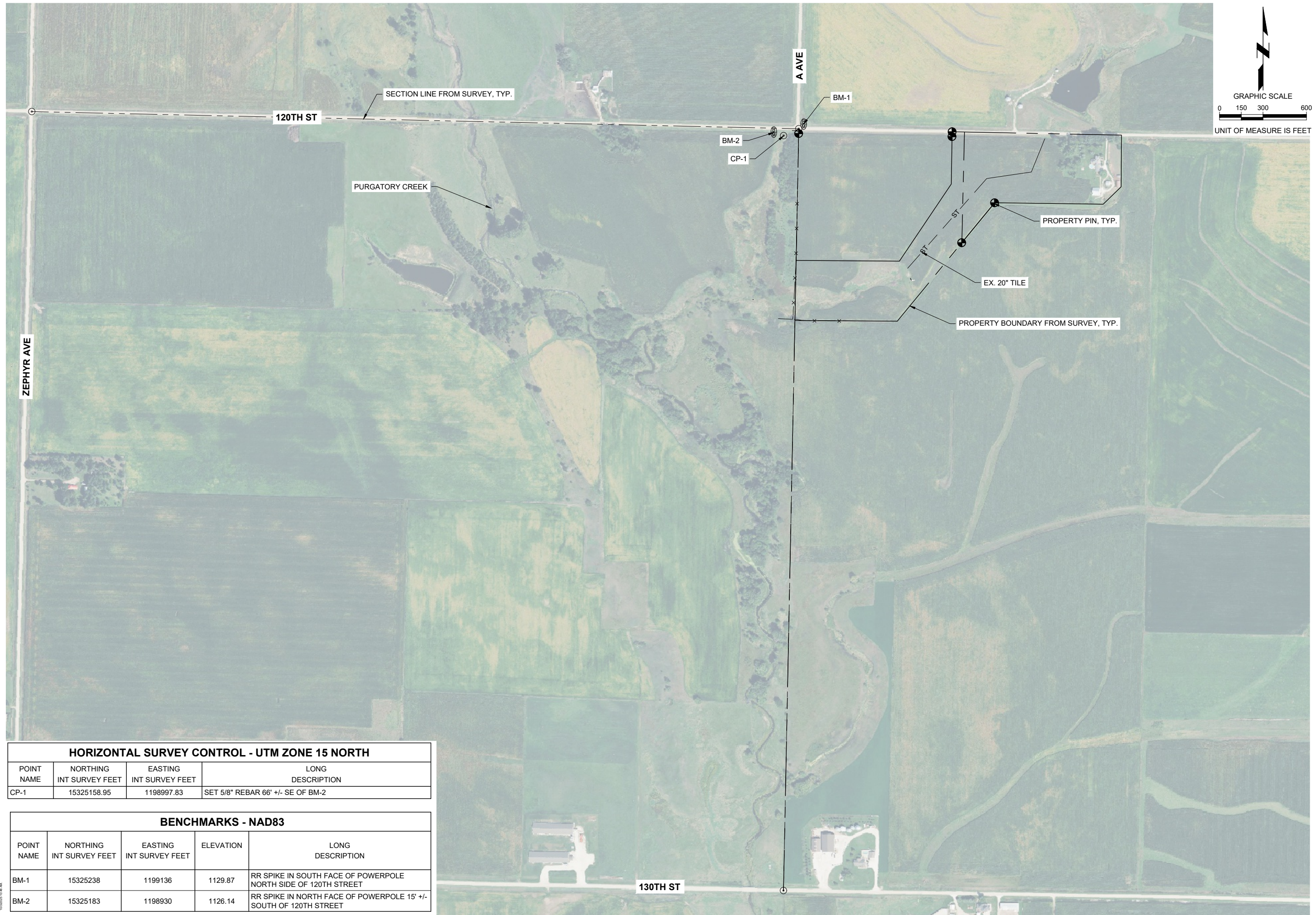


NUTRIENT REDUCTION WETLAND
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 CAR853313A

SURVEY CONTROL

JEO PROJECT NO.	210779.18
FILE NAME	S-210779-16-CG.dwg
FIELD CREW	JR & DHM
FIELD BOOK	MIS20
DESIGNED BY	JAA
DATE	06-17-2024
DRAWN BY	GTL
DATE	07-31-2024
CHECKED BY	JSS
DATE	06-21-2024
APPROVED BY	JTM
DATE	
REVISIONS	10/03/2025 Δ

SHEET
CG.1



HORIZONTAL SURVEY CONTROL - UTM ZONE 15 NORTH

POINT NAME	NORTHING INT SURVEY FEET	EASTING INT SURVEY FEET	LONG DESCRIPTION
CP-1	15325158.95	1198997.83	SET 5/8" REBAR 66' +/- SE OF BM-2

BENCHMARKS - NAD83

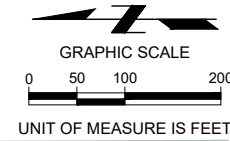
POINT NAME	NORTHING INT SURVEY FEET	EASTING INT SURVEY FEET	ELEVATION	LONG DESCRIPTION
BM-1	15325238	1199136	1129.87	RR SPIKE IN SOUTH FACE OF POWERPOLE NORTH SIDE OF 120TH STREET
BM-2	15325183	1198930	1126.14	RR SPIKE IN NORTH FACE OF POWERPOLE 15' +/- SOUTH OF 120TH STREET

J:\Projects\2024\16-CG.dwg - Carroll County Nutrient Reduction Wetland - CAR853313A.dwg - Drawing - 10/03/2025 10:40 AM

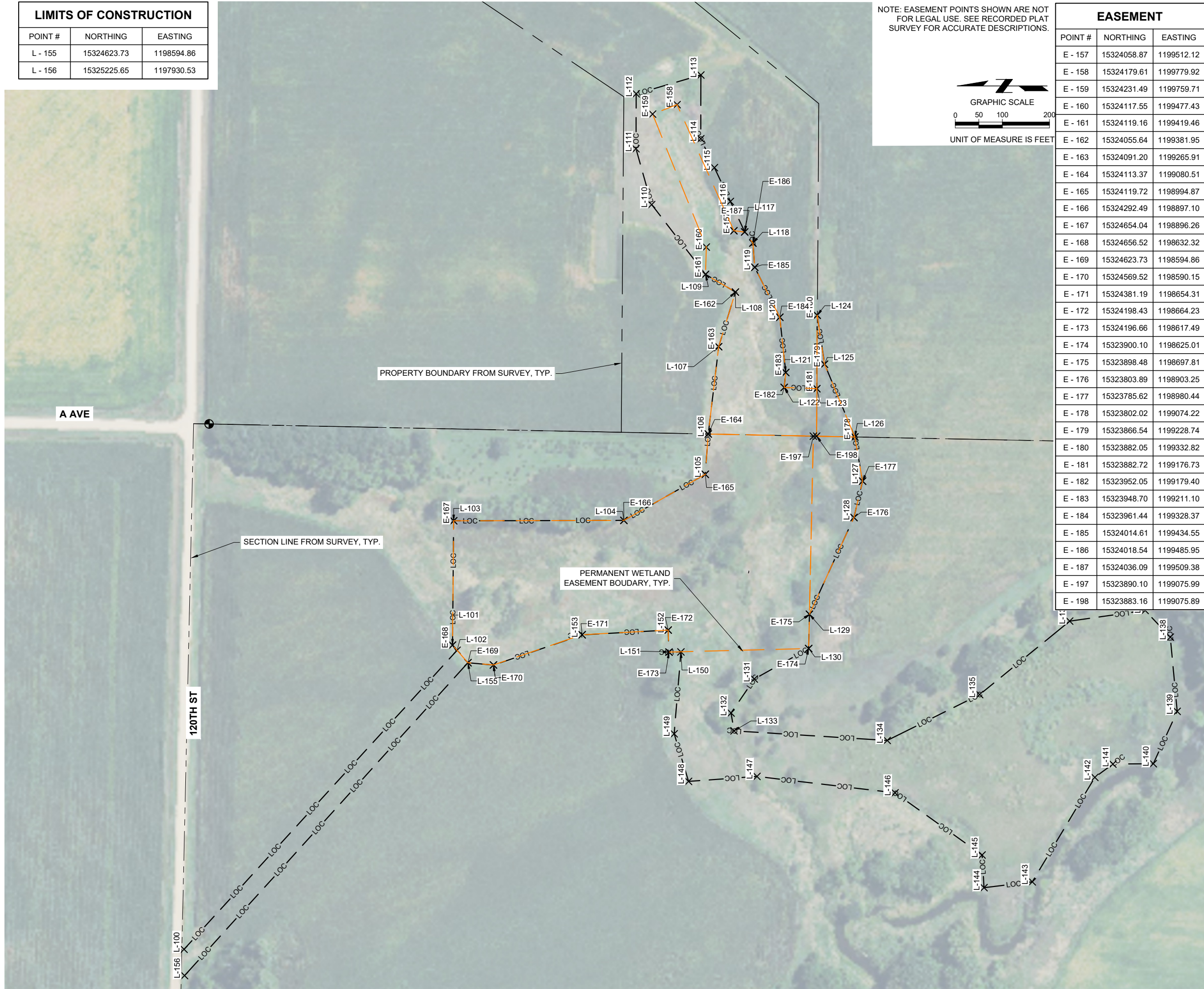
LIMITS OF CONSTRUCTION		
POINT #	NORTHING	EASTING
L - 100	15325226.72	1197986.34
L - 101	15324656.52	1198632.32
L - 102	15324646.78	1198621.19
L - 103	15324654.04	1198896.26
L - 104	15324292.49	1198897.10
L - 105	15324119.72	1198994.87
L - 106	15324113.32	1199080.56
L - 107	15324091.20	1199265.91
L - 108	15324055.64	1199381.95
L - 109	15324119.16	1199419.46
L - 110	15324233.55	1199567.66
L - 111	15324266.84	1199686.27
L - 112	15324266.43	1199802.85
L - 113	15324128.97	1199842.76
L - 114	15324129.21	1199707.39
L - 115	15324100.26	1199646.14
L - 116	15324066.32	1199574.30
L - 117	15324035.83	1199509.78
L - 118	15324018.54	1199485.95
L - 119	15324014.61	1199434.55
L - 120	15323961.44	1199328.37
L - 121	15323948.70	1199211.10
L - 122	15323952.05	1199179.40
L - 123	15323882.72	1199176.73
L - 124	15323882.05	1199332.82
L - 125	15323866.54	1199228.74
L - 126	15323802.02	1199074.22
L - 127	15323785.62	1198980.44
L - 128	15323803.89	1198903.25
L - 129	15323898.48	1198697.81
L - 130	15323900.10	1198625.01
L - 131	15324015.52	1198560.22
L - 132	15324064.91	1198488.15
L - 133	15324058.59	1198450.24
L - 134	15323733.26	1198429.83
L - 135	15323536.89	1198527.18
L - 136	15323345.68	1198683.23
L - 137	15323185.44	1198705.94
L - 138	15323131.97	1198649.19
L - 139	15323117.39	1198491.52
L - 140	15323168.03	1198380.46
L - 141	15323253.90	1198379.65
L - 142	15323292.31	1198351.39
L - 143	15323425.08	1198129.63
L - 144	15323527.58	1198117.20
L - 145	15323531.73	1198186.61
L - 146	15323716.51	1198318.60
L - 147	15324009.92	1198353.42
L - 148	15324155.18	1198342.88
L - 149	15324185.70	1198443.99
L - 150	15324171.40	1198617.80
L - 151	15324196.66	1198617.49
L - 152	15324198.43	1198664.23
L - 153	15324381.19	1198654.31
L - 154	15324569.52	1198590.15

LIMITS OF CONSTRUCTION		
POINT #	NORTHING	EASTING
L - 155	15324623.73	1198594.86
L - 156	15325225.65	1197930.53

NOTE: EASEMENT POINTS SHOWN ARE NOT FOR LEGAL USE. SEE RECORDED PLAT SURVEY FOR ACCURATE DESCRIPTIONS.



EASEMENT		
POINT #	NORTHING	EASTING
E - 157	15324058.87	1199512.12
E - 158	15324179.61	1199779.92
E - 159	15324231.49	1199759.71
E - 160	15324117.55	1199477.43
E - 161	15324119.16	1199419.46
E - 162	15324055.64	1199381.95
E - 163	15324091.20	1199265.91
E - 164	15324113.37	1199080.51
E - 165	15324119.72	1198994.87
E - 166	15324292.49	1198897.10
E - 167	15324654.04	1198896.26
E - 168	15324656.52	1198632.32
E - 169	15324623.73	1198594.86
E - 170	15324569.52	1198590.15
E - 171	15324381.19	1198654.31
E - 172	15324198.43	1198664.23
E - 173	15324196.66	1198617.49
E - 174	15323900.10	1198625.01
E - 175	15323898.48	1198697.81
E - 176	15323803.89	1198903.25
E - 177	15323785.62	1198980.44
E - 178	15323802.02	1199074.22
E - 179	15323866.54	1199228.74
E - 180	15323882.05	1199332.82
E - 181	15323882.72	1199176.73
E - 182	15323952.05	1199179.40
E - 183	15323948.70	1199211.10
E - 184	15323961.44	1199328.37
E - 185	15324014.61	1199434.55
E - 186	15324018.54	1199485.95
E - 187	15324036.09	1199509.38
E - 188	15324035.83	1199509.78
E - 189	15324066.32	1199574.30
E - 190	15324100.26	1199646.14
E - 191	15324129.21	1199707.39
E - 192	15324128.97	1199842.76
E - 193	15324266.43	1199802.85
E - 194	15324266.84	1199686.27
E - 195	15324233.55	1199567.66
E - 196	15324119.16	1199419.46
E - 197	15324058.59	1198450.24
E - 198	15323883.16	1199075.89

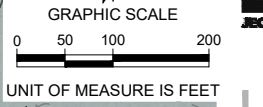


NUTRIENT REDUCTION WETLAND
 CARROLL COUNTY, IOWA
 CAR853313A

SURVEY CONTROL
 LIMITS OF CONSTRUCTION

JEO PROJECT NO.	210779.18
FILE NAME	S-210779-16-CG.dwg
FIELD CREW	JR & DHM
FIELD BOOK	MIS20
DESIGNED BY	DATE
JAA	06-17-2024
DRAWN BY	DATE
GTL	07-31-2024
CHECKED BY	DATE
JSS	06-21-2024
APPROVED BY	DATE
JTM	
REVISIONS	10/03/2025

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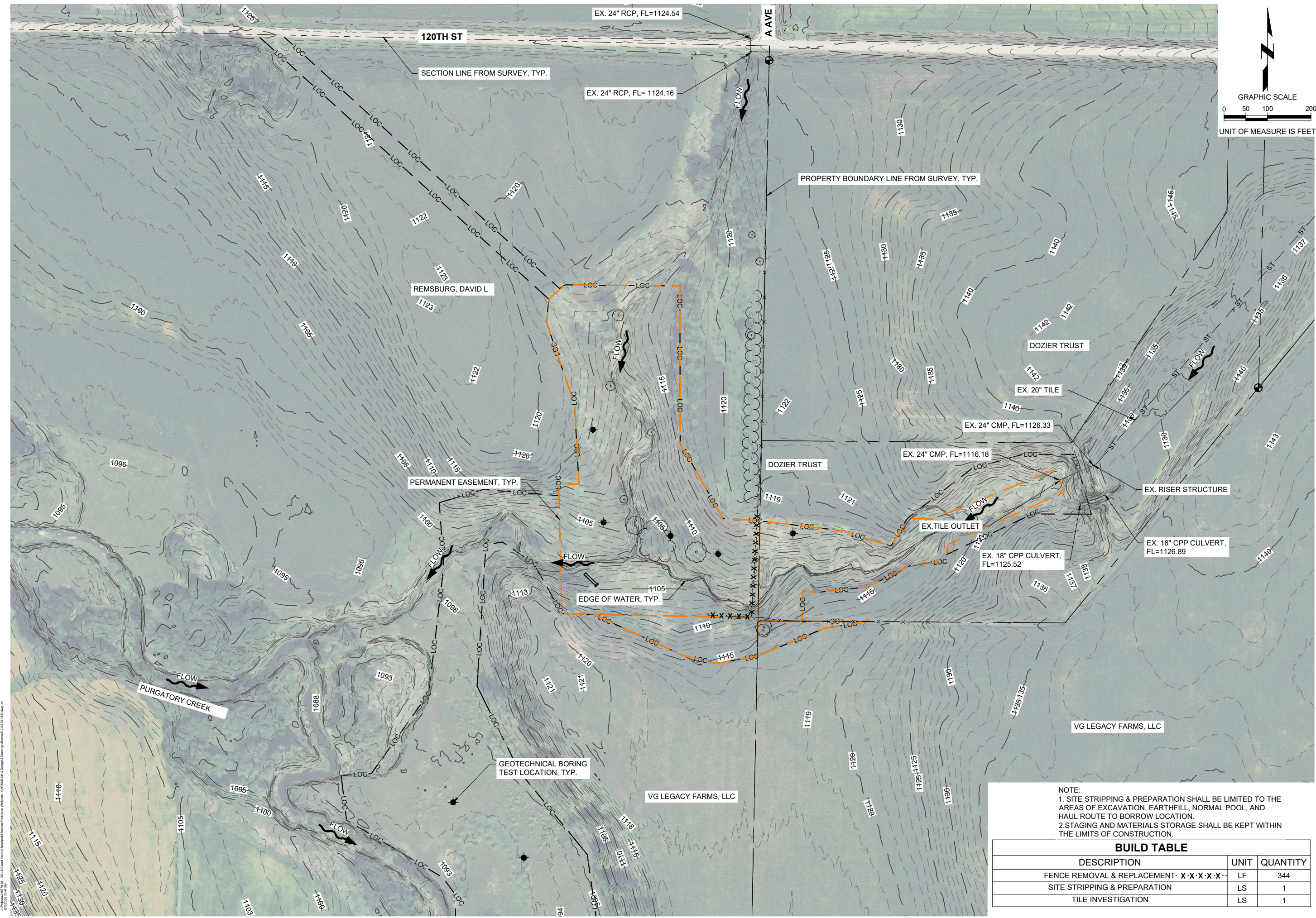


NUTRIENT REDUCTION WETLAND
 CARROLL COUNTY, IOWA
 CAR853313A

EXISTING SITE & REMOVALS PLAN

JEO PROJECT NO.	210779.18
FILE NAME	S-210779-18-0.dwg
FIELD CREW	JR & DHM
FIELD BOOK	MIS20
DESIGNED BY	JAA
DATE	06-17-2024
DRAWN BY	GTL
DATE	07-31-2024
CHECKED BY	JSS
DATE	06-21-2024
APPROVED BY	JTM
DATE	
REVISIONS	10/03/2025 Δ

SHEET
D.1



NOTE:
 1. SITE STRIPPING & PREPARATION SHALL BE LIMITED TO THE AREAS OF EXCAVATION, EARTHFILL, NORMAL POOL, AND HAUL ROUTE TO BORROW LOCATION.
 2. STAGING AND MATERIALS STORAGE SHALL BE KEPT WITHIN THE LIMITS OF CONSTRUCTION.

BUILD TABLE		
DESCRIPTION	UNIT	QUANTITY
FENCE REMOVAL & REPLACEMENT · X · X · X · X · X ·	LF	344
SITE STRIPPING & PREPARATION	LS	1
TILE INVESTIGATION	LS	1

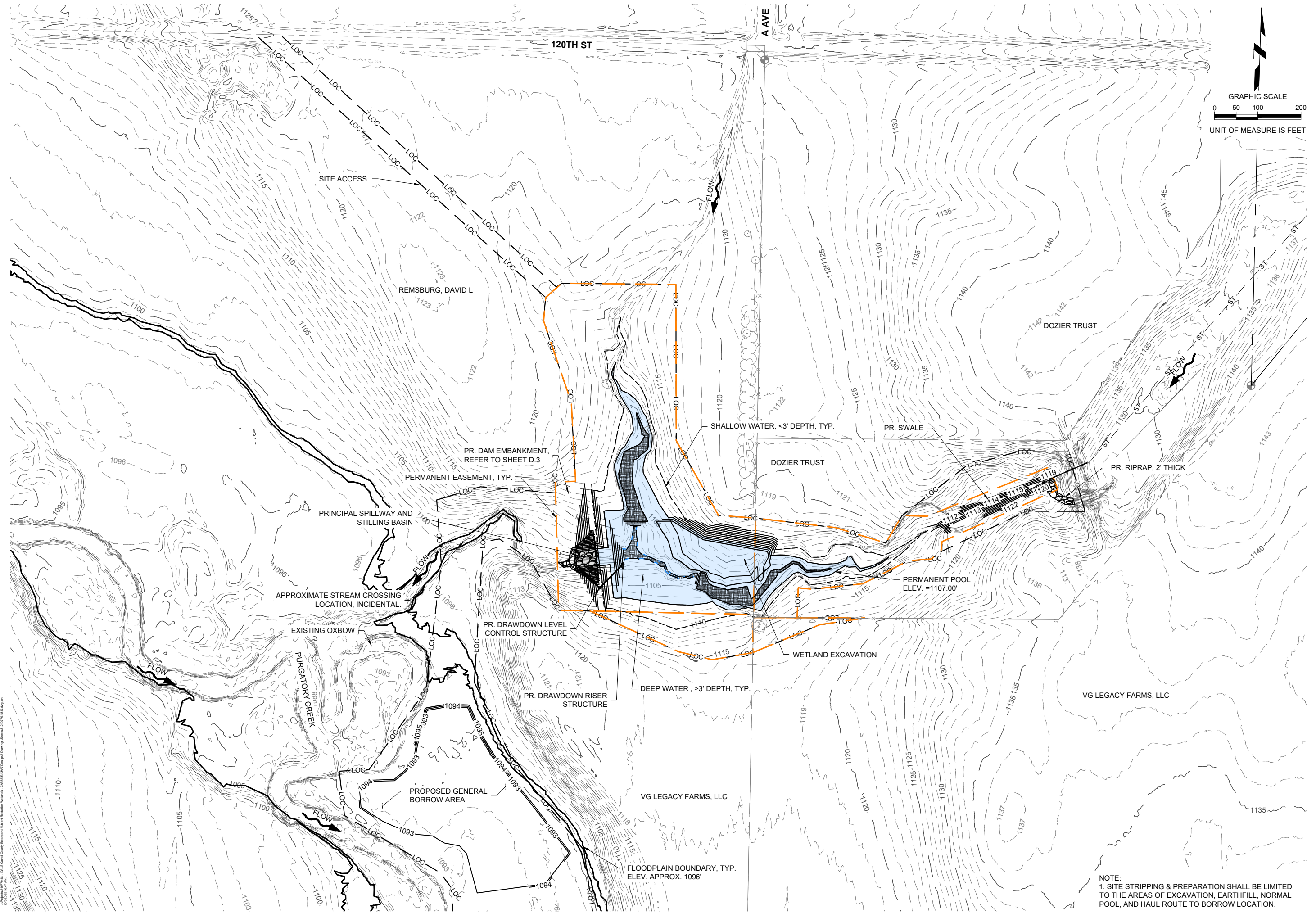
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 10/03/2025 10:45 AM



GRAPHIC SCALE
0 50 100 200
UNIT OF MEASURE IS FEET

NUTRIENT REDUCTION WETLAND
CARROLL COUNTY, IOWA
CAR853313A

OVERALL PROPOSED SITE PLAN



NOTE:
1. SITE STRIPPING & PREPARATION SHALL BE LIMITED TO THE AREAS OF EXCAVATION, EARTHFILL, NORMAL POOL, AND HAUL ROUTE TO BORROW LOCATION.

JEO PROJECT NO.	210779.18
FILE NAME	S-210779-18-D.dwg
FIELD CREW	JR & DHM
FIELD BOOK	MIS20
DESIGNED BY	JAA
DATE	06-17-2024
DRAWN BY	GTL
DATE	07-31-2024
CHECKED BY	JSS
DATE	06-21-2024
APPROVED BY	JTM
DATE	
REVISIONS	10/03/2025

SHEET
D.2

APPENDIX 10/19/24 - CARROLL COUNTY Nutrient Reduction Wetland - CARROLL COUNTY Design - 10/19/24.dwg
10/20/2024 9:41 AM



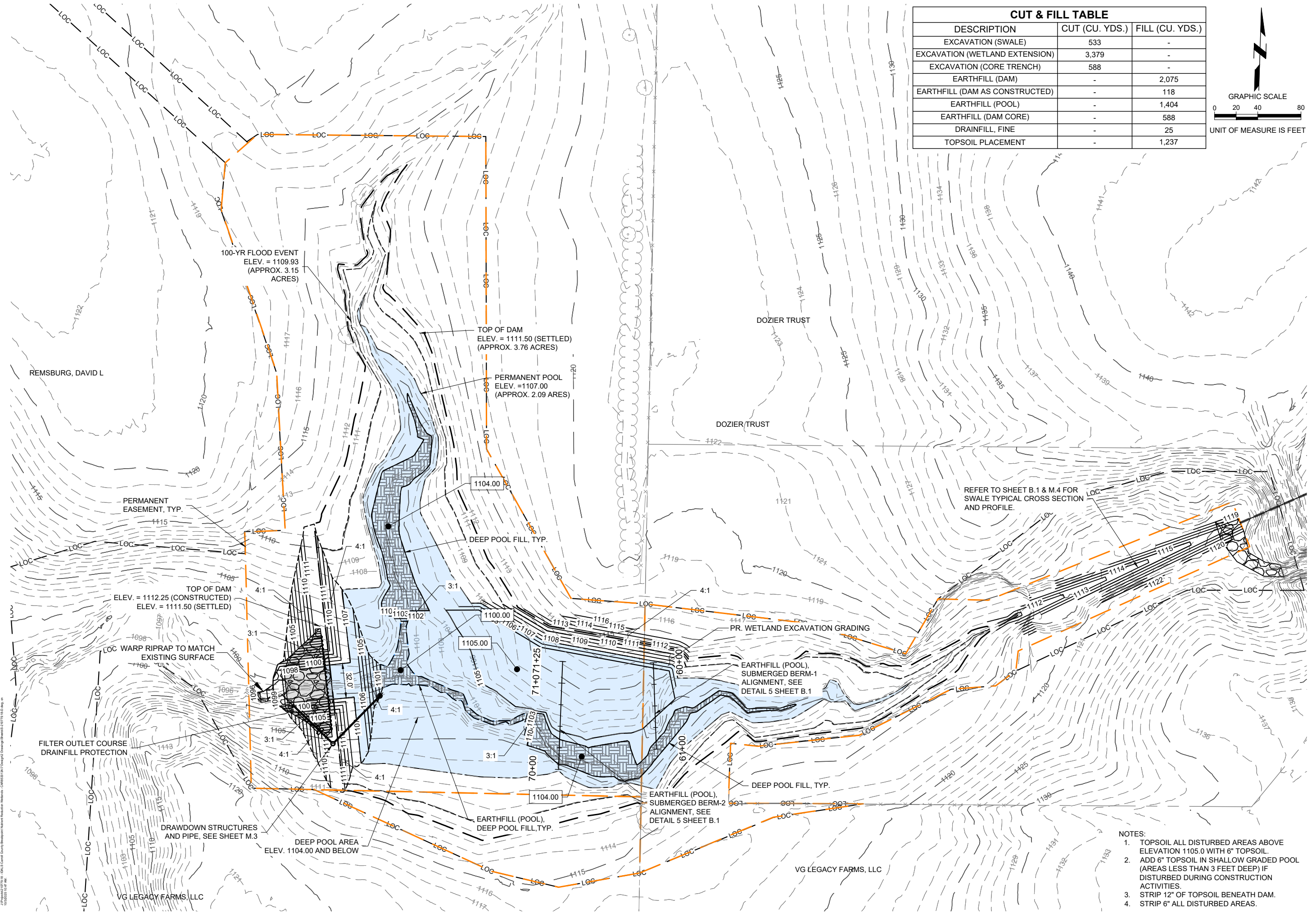
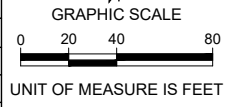
NUTRIENT REDUCTION WETLAND
 CARROLL COUNTY, IOWA
 CAR853313A

PROPOSED GRADING PLAN
 WETLAND

JEO PROJECT NO. 210779.18
 FILE NAME S-210779-18-0.dwg
 FIELD CREW JR & DHM
 FIELD BOOK MIS20
 DESIGNED BY DATE
 JAA 06-17-2024
 DRAWN BY DATE
 GTL 07-31-2024
 CHECKED BY DATE
 JSS 06-21-2024
 APPROVED BY DATE
 JTM
 REVISIONS 10/03/2025

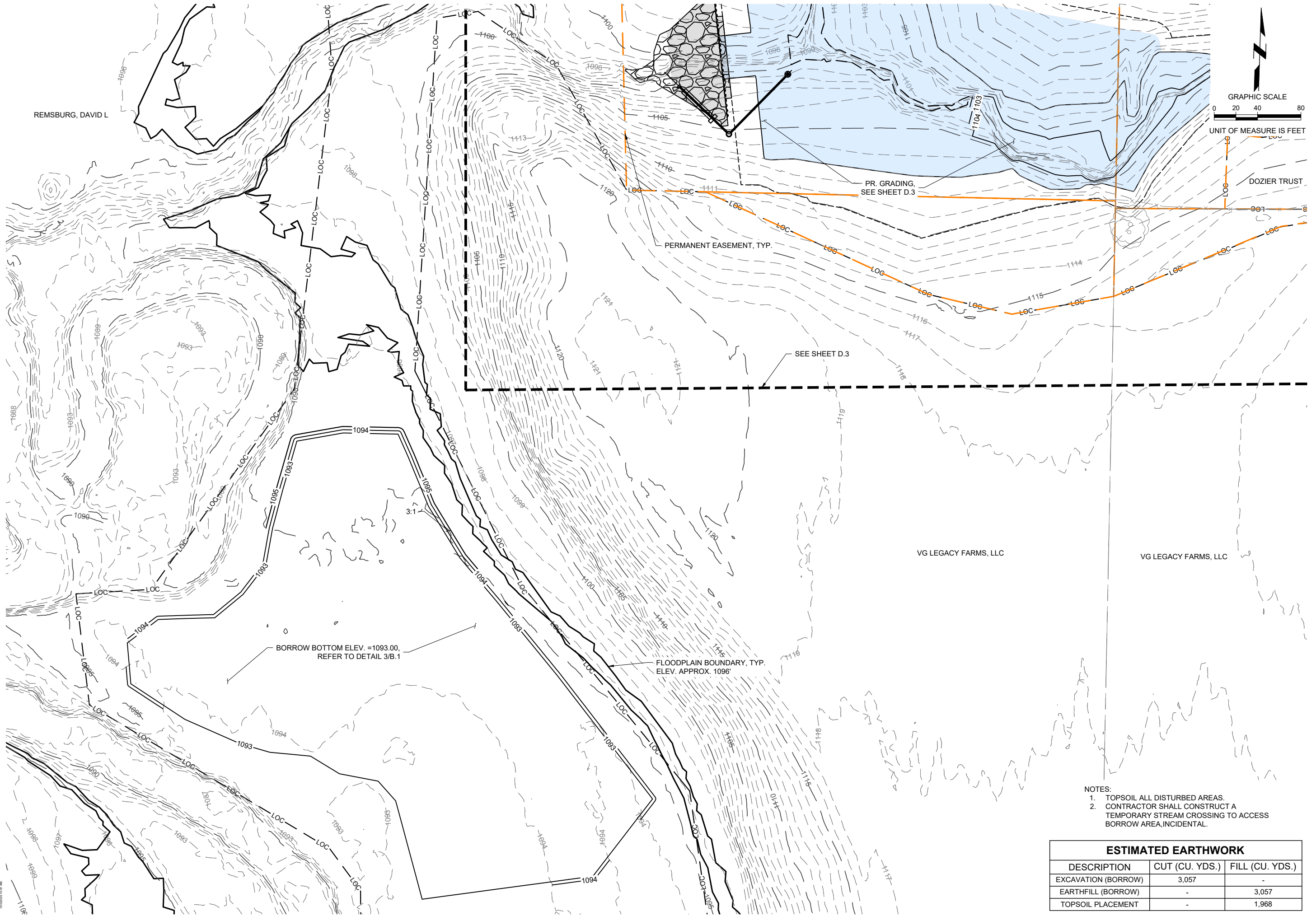
SHEET **D.3**

CUT & FILL TABLE		
DESCRIPTION	CUT (CU. YDS.)	FILL (CU. YDS.)
EXCAVATION (SWALE)	533	-
EXCAVATION (WETLAND EXTENSION)	3,379	-
EXCAVATION (CORE TRENCH)	588	-
EARTHFILL (DAM)	-	2,075
EARTHFILL (DAM AS CONSTRUCTED)	-	118
EARTHFILL (POOL)	-	1,404
EARTHFILL (DAM CORE)	-	588
DRAINFILL, FINE	-	25
TOPSOIL PLACEMENT	-	1,237



- NOTES:
1. TOPSOIL ALL DISTURBED AREAS ABOVE ELEVATION 1105.0 WITH 6" TOPSOIL.
 2. ADD 6" TOPSOIL IN SHALLOW GRADED POOL (AREAS LESS THAN 3 FEET DEEP) IF DISTURBED DURING CONSTRUCTION ACTIVITIES.
 3. STRIP 12" OF TOPSOIL BENEATH DAM.
 4. STRIP 6" ALL DISTURBED AREAS.

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- NOTES:
1. TOPSOIL ALL DISTURBED AREAS.
 2. CONTRACTOR SHALL CONSTRUCT A TEMPORARY STREAM CROSSING TO ACCESS BORROW AREA, INCIDENTAL.

ESTIMATED EARTHWORK		
DESCRIPTION	CUT (CU. YDS.)	FILL (CU. YDS.)
EXCAVATION (BORROW)	3,057	-
EARTHFILL (BORROW)	-	3,057
TOPSOIL PLACEMENT	-	1,968

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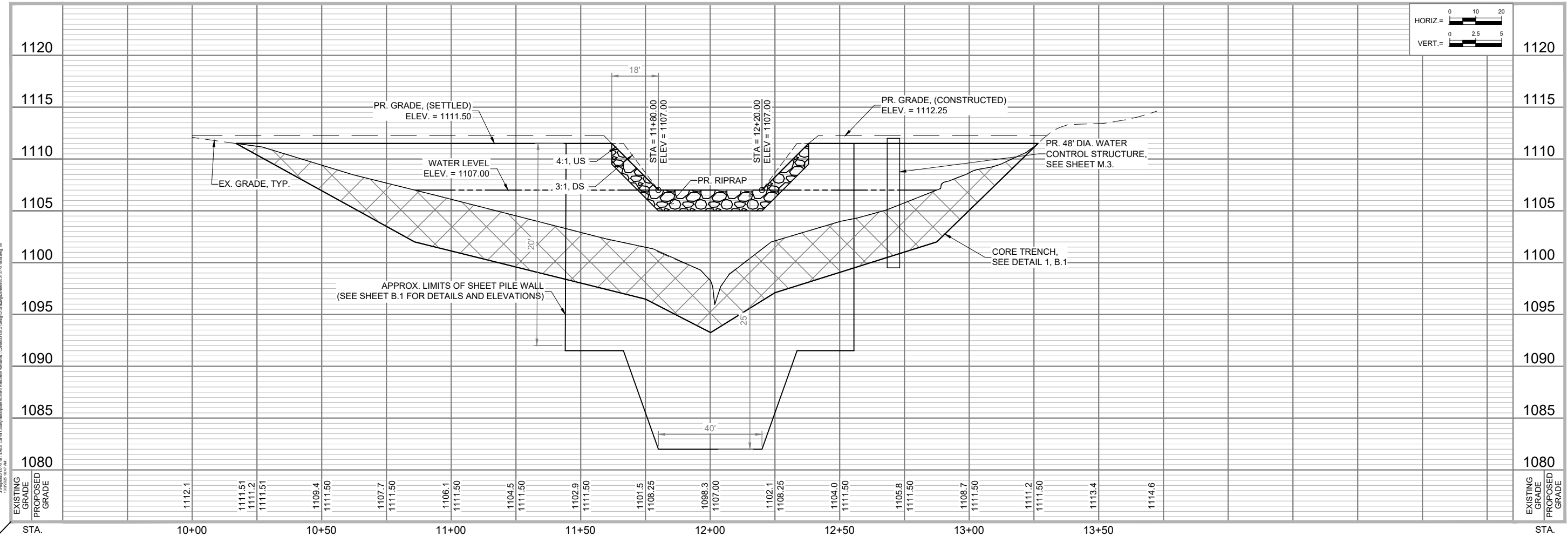
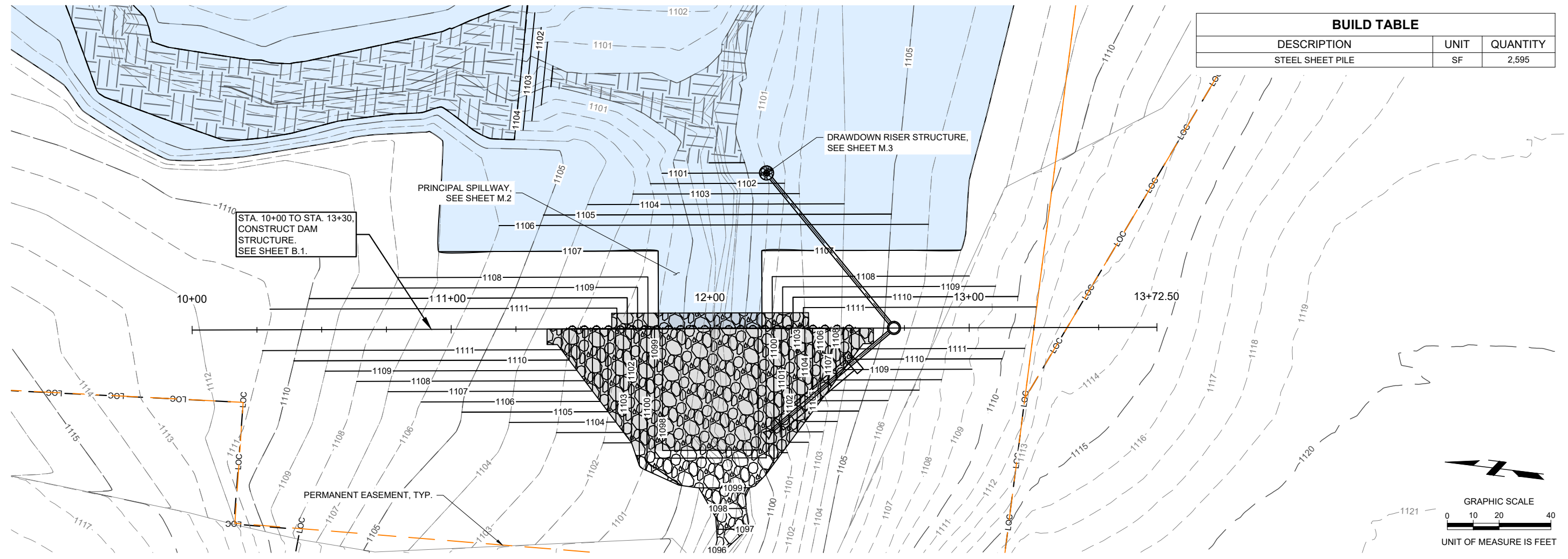
NUTRIENT REDUCTION WETLAND
 CARROLL COUNTY, IOWA
 CAR853313A

PLAN & PROFILE - DAM STRUCTURE

JEO PROJECT NO. 210779.18
 FILE NAME S:210779-18-M.dwg
 FIELD CREW JR & DHM
 FIELD BOOK MIS29
 DESIGNED BY DATE
 JAA 06-17-2024
 DRAWN BY DATE
 GTL 07-31-2024
 CHECKED BY DATE
 JSS 06-21-2024
 APPROVED BY DATE
 JTM
 REVISIONS 10/03/2025 Δ

SHEET **M.1**

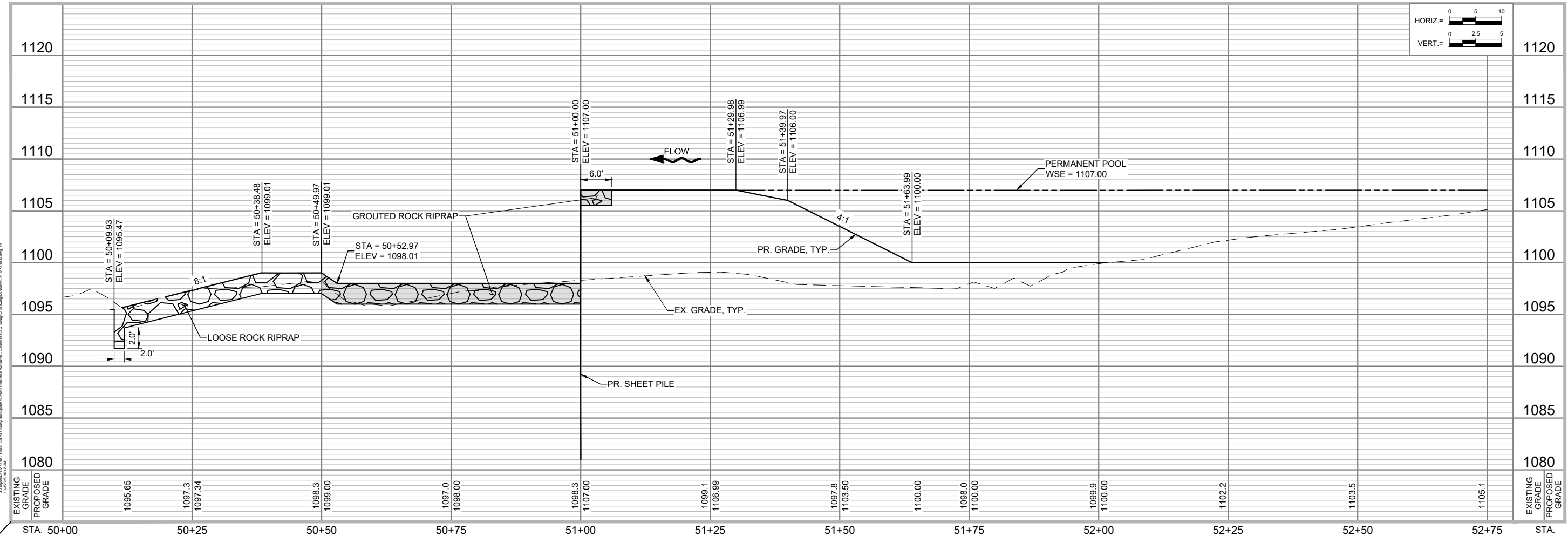
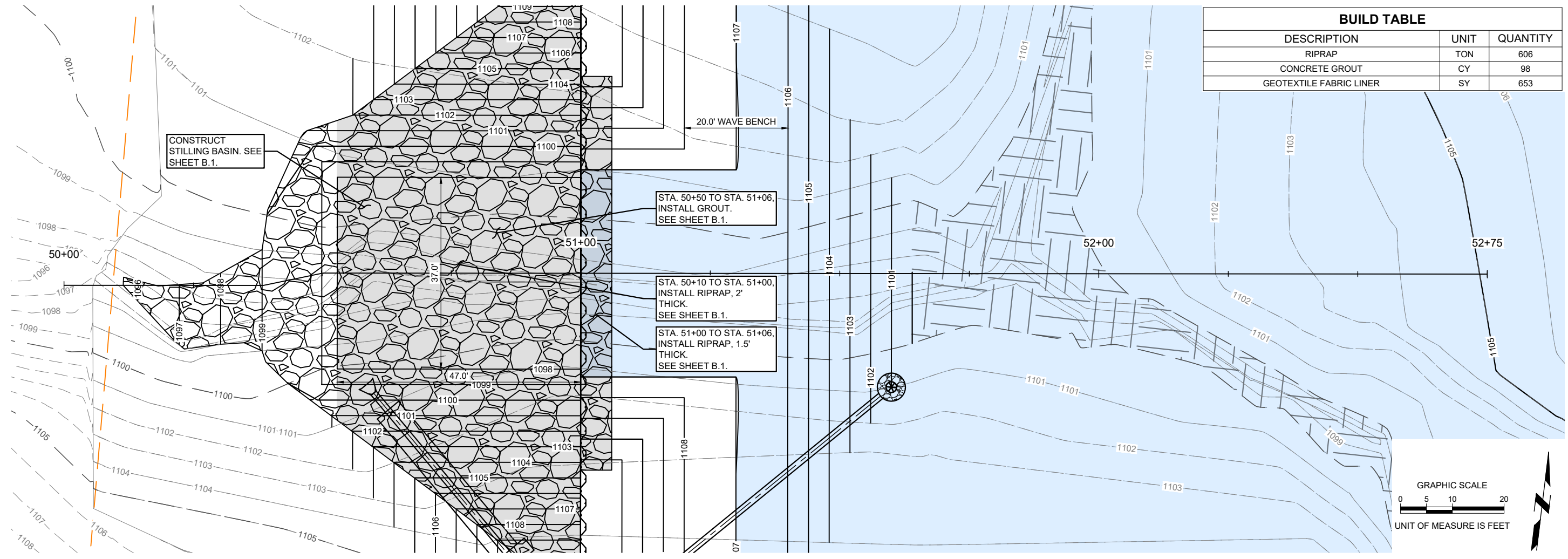
BUILD TABLE		
DESCRIPTION	UNIT	QUANTITY
STEEL SHEET PILE	SF	2,595



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BUILD TABLE		
DESCRIPTION	UNIT	QUANTITY
RIPRAP	TON	606
CONCRETE GROUT	CY	98
GEOTEXTILE FABRIC LINER	SY	653

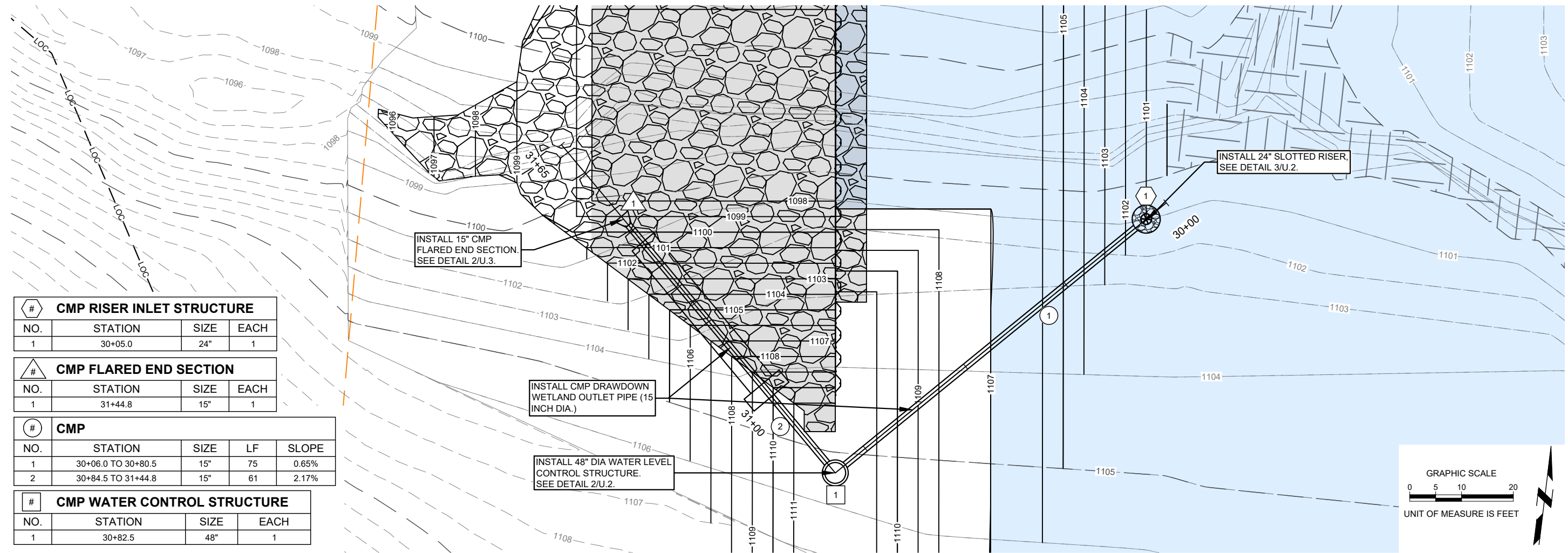


NUTRIENT REDUCTION WETLAND
CARROLL COUNTY, IOWA
CAR853313A

PLAN & PROFILE - PRINCIPAL SPILLWAY

JEO PROJECT NO. 210779.18
FILE NAME S:210779-18-M.dwg
FIELD CREW JR & DHM
FIELD BOOK MIS29
DESIGNED BY DATE
JAA 06-17-2024
DRAWN BY DATE
GTL 07-31-2024
CHECKED BY DATE
JSS 06-21-2024
APPROVED BY DATE
JTM
REVISIONS 10/3/2025 Δ

SHEET M.2

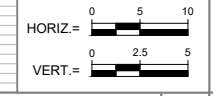
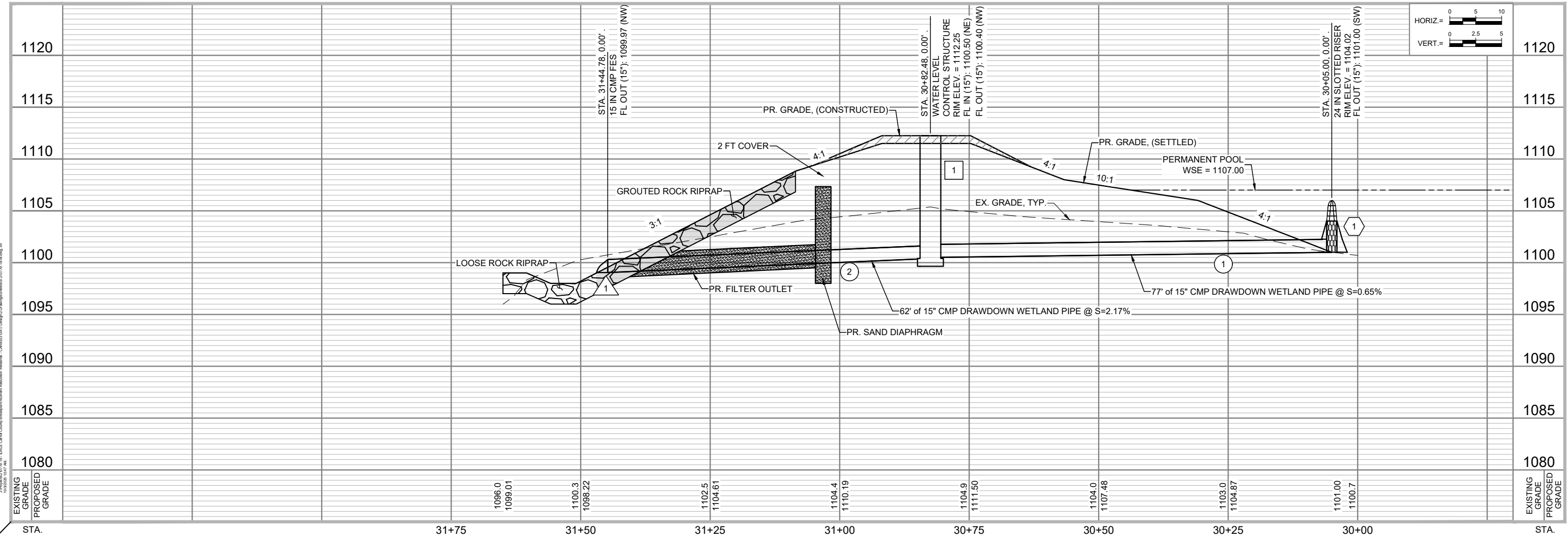
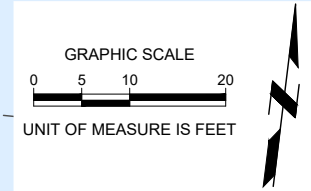


#	CMP RISER INLET STRUCTURE		
NO.	STATION	SIZE	EACH
1	30+05.0	24"	1

#	CMP FLARED END SECTION		
NO.	STATION	SIZE	EACH
1	31+44.8	15"	1

#	CMP			
NO.	STATION	SIZE	LF	SLOPE
1	30+06.0 TO 30+80.5	15"	75	0.65%
2	30+84.5 TO 31+44.8	15"	61	2.17%

#	CMP WATER CONTROL STRUCTURE		
NO.	STATION	SIZE	EACH
1	30+82.5	48"	1



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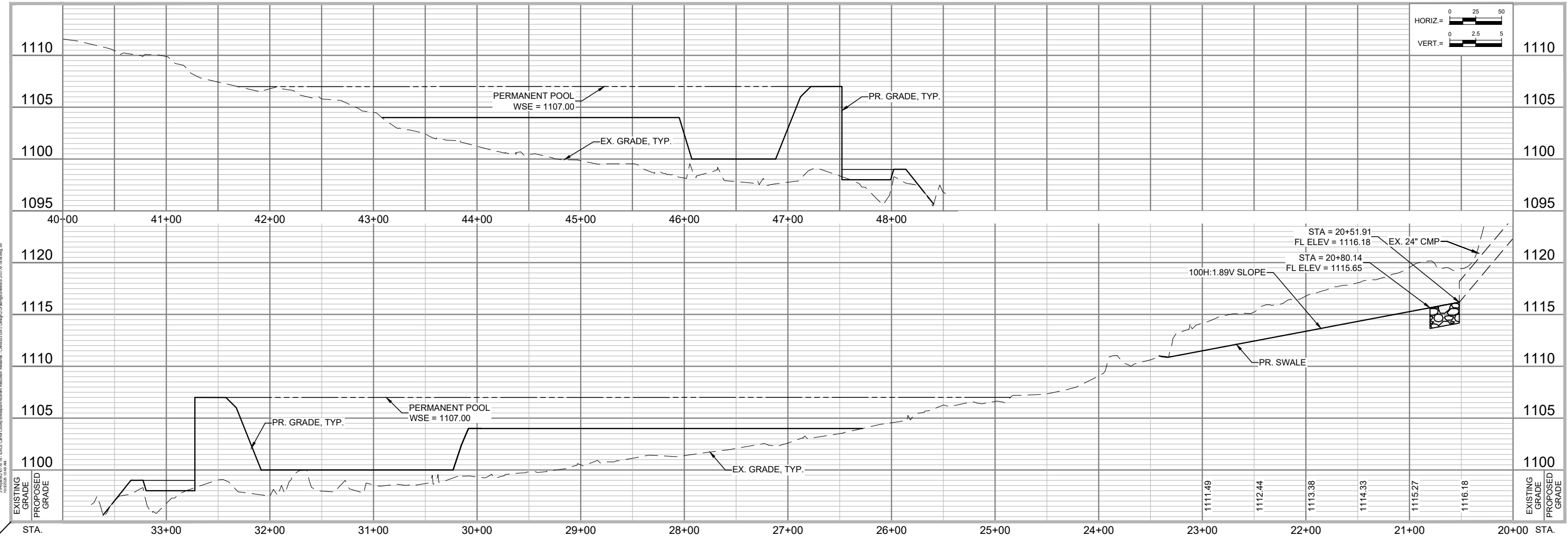
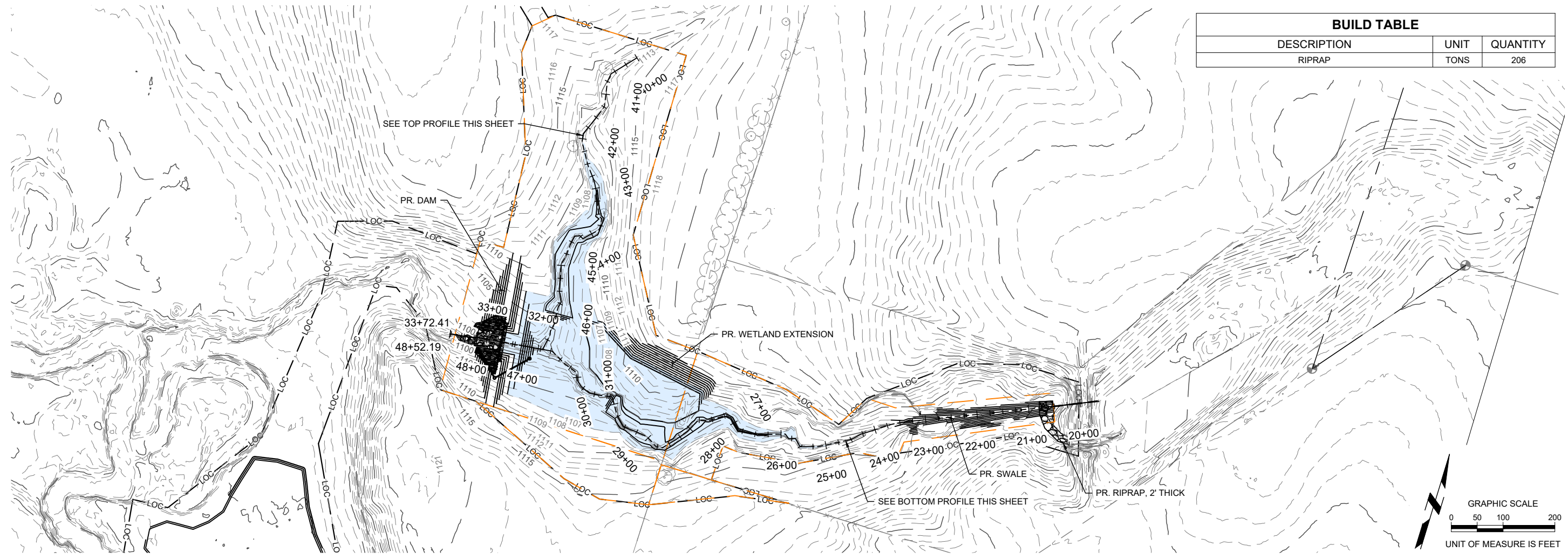
NUTRIENT REDUCTION WETLAND
 CARROLL COUNTY, IOWA
 CAR853313A

PLAN & PROFILE - LONGITUDINAL WETLAND

JEO PROJECT NO. 210779.18
 FILE NAME S:210779-18-M.dwg
 FIELD CREW JR & DHM
 FIELD BOOK MIS29
 DESIGNED BY DATE
 JAA 06-17-2024
 DRAWN BY DATE
 GTL 07-31-2024
 CHECKED BY DATE
 JSS 06-21-2024
 APPROVED BY DATE
 JTM
 REVISIONS 10/03/2025 Δ

SHEET **M.4**

BUILD TABLE		
DESCRIPTION	UNIT	QUANTITY
RIPRAP	TONS	206

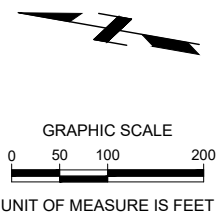





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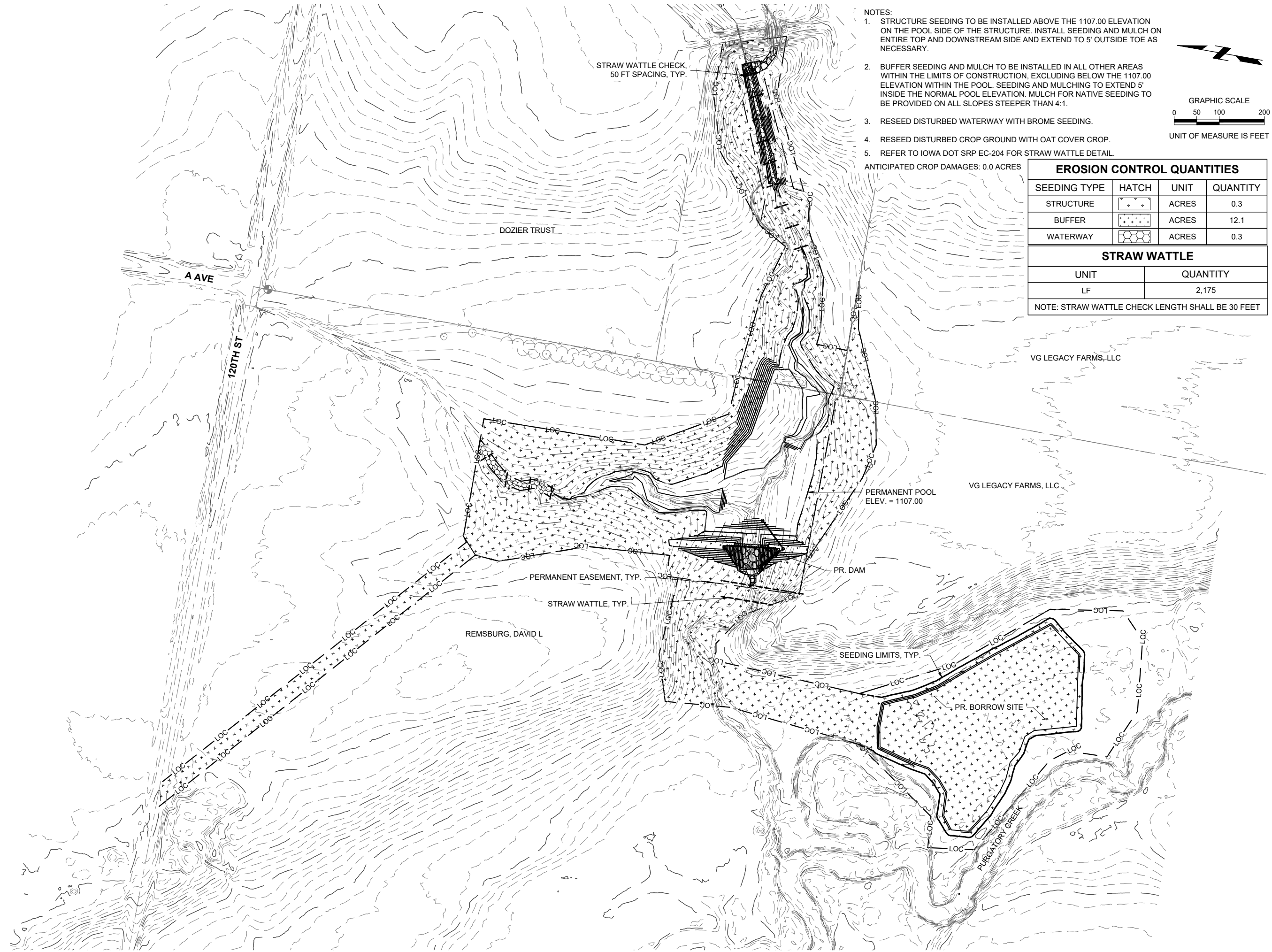
NOTES:

1. STRUCTURE SEEDING TO BE INSTALLED ABOVE THE 1107.00 ELEVATION ON THE POOL SIDE OF THE STRUCTURE. INSTALL SEEDING AND MULCH ON ENTIRE TOP AND DOWNSTREAM SIDE AND EXTEND TO 5' OUTSIDE TOE AS NECESSARY.
2. BUFFER SEEDING AND MULCH TO BE INSTALLED IN ALL OTHER AREAS WITHIN THE LIMITS OF CONSTRUCTION, EXCLUDING BELOW THE 1107.00 ELEVATION WITHIN THE POOL. SEEDING AND MULCHING TO EXTEND 5' INSIDE THE NORMAL POOL ELEVATION. MULCH FOR NATIVE SEEDING TO BE PROVIDED ON ALL SLOPES STEEPER THAN 4:1.
3. RESEED DISTURBED WATERWAY WITH BROME SEEDING.
4. RESEED DISTURBED CROP GROUND WITH OAT COVER CROP.
5. REFER TO IOWA DOT SRP EC-204 FOR STRAW WATTLE DETAIL.

ANTICIPATED CROP DAMAGES: 0.0 ACRES



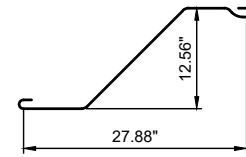
EROSION CONTROL QUANTITIES			
SEEDING TYPE	HATCH	UNIT	QUANTITY
STRUCTURE		ACRES	0.3
BUFFER		ACRES	12.1
WATERWAY		ACRES	0.3
STRAW WATTLE			
UNIT		QUANTITY	
LF		2,175	
NOTE: STRAW WATTLE CHECK LENGTH SHALL BE 30 FEET			



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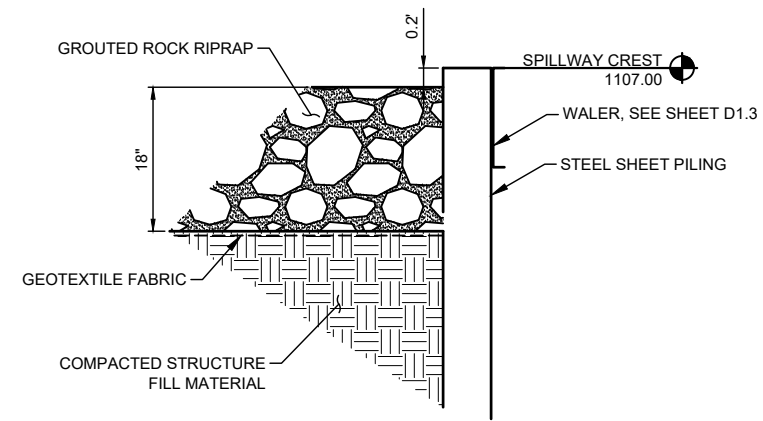
DESIGN NOTES:

1. DESIGN SHEET PILE AREA = 2,595 SF
2. SHEET PILE:
 - MINIMUM SECTION MODULUS = 24.2 CU.IN. PER FT. OF WALL
 - MINIMUM THICKNESS = 0.375 IN.
 - MINIMUM STEEL GRADE = 36 KSI
 - MEET ASTM A-328, A-572, OR A-690 MATERIAL SPECIFICATION
 - MINIMUM MOMENT OF INERTIA OF 152 IN. PER FOOT OF WALL
3. PILING TO BE INSTALLED STARTING FROM THE CENTER OF THE WEIR SECTION AND PROGRESSING AWAY FROM CENTERLINE.
4. ALTERNATE SHEET PILE SECTIONS THAT MEET THE MINIMUM REQUIREMENTS NOTED ABOVE MUST BE PRE-APPROVED BY THE ENGINEER PRIOR TO THE BID. ALTERNATES MUST BE SUBMITTED PRIOR TO THE PRE-BID MEETING. APPROVED ALTERNATES WILL BE PUBLISHED IN AN ADENDUM.



PZC 13 SHEET PILE CROSS-SECTION
SCALE: N.T.S.

1 SHEET PILING DETAIL
SCALE: N.T.S.



2 GROUDED ROCK RIPRAP (UPSTREAM SECTION)
SCALE: N.T.S.

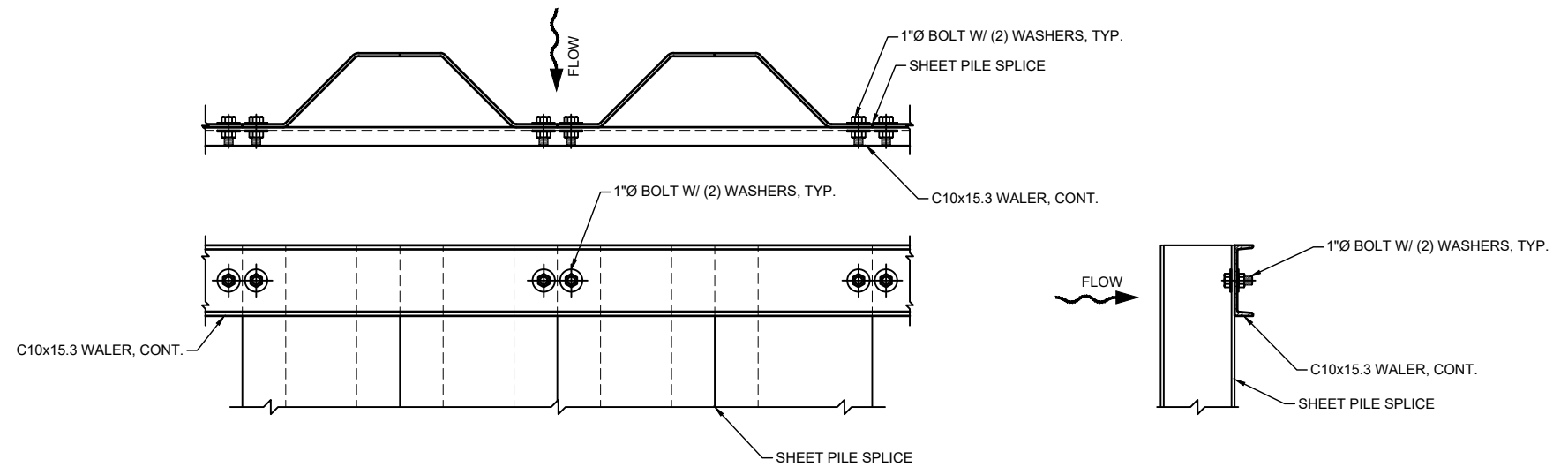
NOTES:

AN AREA 4' WIDE ADJACENT TO THE SHEET PILE, EXTENDING THE LENGTH OF THE WEIR SHALL BE CONSTRUCTED FROM EXCESS GROUT TO HAVE A FLAT, LEVEL SURFACE WITH FLOAT FINISH. NO PORTION OF THIS AREA OR THE RIPRAP UPSTREAM SHALL EXCEED ELEVATION 972.80.

FINISH GROUP / RIPRAP SHALL BE 0.2 FEET BELOW TOP OF SHEET PILING.

NOTES:

1. ALL BOLTS WILL BE 1" DIA. WITH 2 WASHERS, BOLT SHALL BE EXTENDED A MINIMUM OF 1/2" BEYOND THE NUT.
2. ALL HOLES SHALL BE DRILLED 1/16" DIA LARGER THAN THE BOLT.
3. IT IS RECOMMENDED THAT THE WALER SHALL BE PLACED ON THE DOWNSTREAM SIDE OF THE WEIR.
4. ANY HOLES LEFT IN THE SHEET PILE (LIFTING HOOKS, ETC.) SHALL BE CLOSED OFF TO NOT ALLOW WATER TO FLOW THROUGH SHEET PILE.
5. AFTER SHEETING AND WALER INSTALLATION ALL SHEETING IS TO BE CUT TO CONFORM WITH 3:1 SLOPE.
6. STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST SPECIFICATION AISC. FABRICATOR SHALL SUBMIT SHOP DRAWINGS. FABRICATE AFTER ENGINEER'S REVIEW.
7. DEFLECTION SHALL BE MADE IN FABRICATED PIECES AND STILL CONFORM TO THE DIMENSIONS.
8. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ALLOWABLE CONSTRUCTION LIVE LOADS.
9. PROVIDE ALL NECESSARY TEMPORARY BRACING, SHORING, GUYING OR OTHER MEANS TO AVOID EXCESSIVE STRESSES AND TO HOLD STRUCTURAL ELEMENTS IN PLACE DURING CONSTRUCTION.
10. IF CONTRACTOR WISHES TO WELD WALER TO SHEET PILE INSTEAD OF BOLTING, CONTRACTOR MUST PROVIDE ENGINEER THE DESIGN AND SPECIFICATIONS THEY INTEND TO FOLLOW.

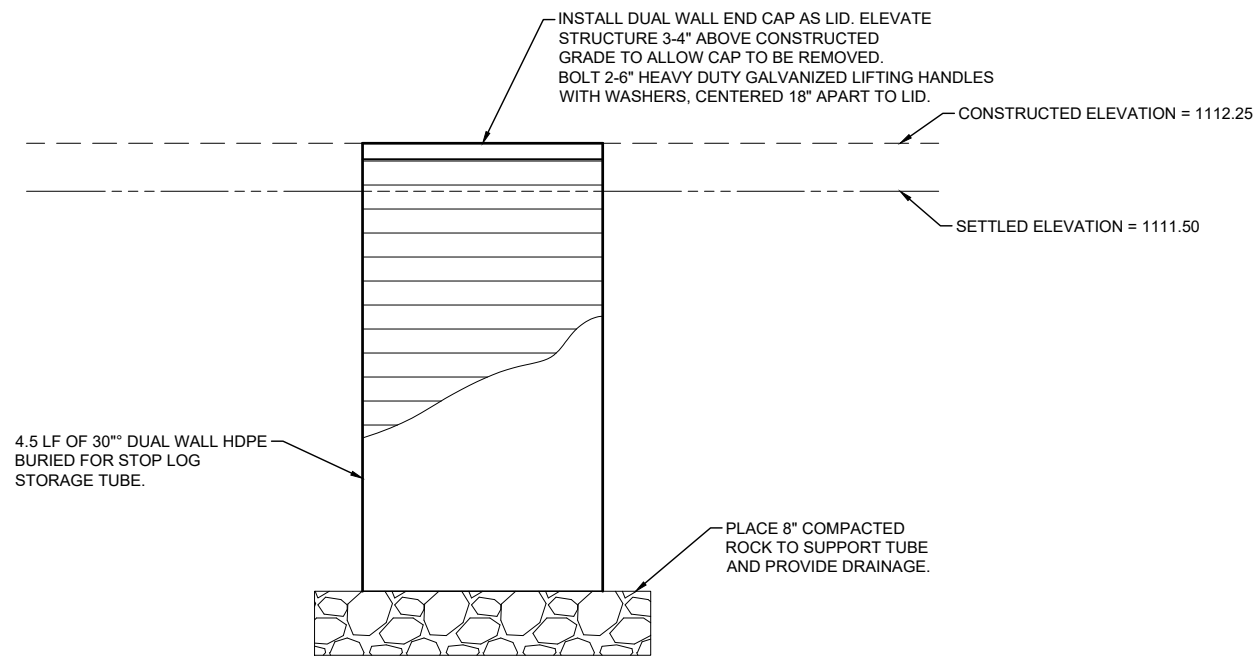


3 WALER DETAIL
SCALE: N.T.S.

NUTRIENT REDUCTION WETLAND
CARROLL COUNTY, IOWA
CAR853313A

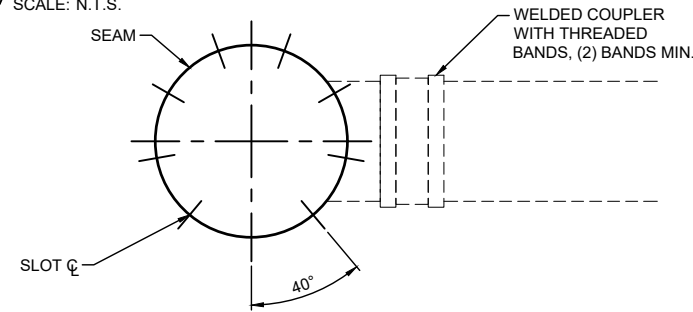
SHEET PILE DETAILS

JEO PROJECT NO.	210779.18
FILE NAME	S-210779-18-U.dwg
FIELD CREW	JR & DHM
FIELD BOOK	MIS20
DESIGNED BY	DATE
JAA	06-17-2024
DRAWN BY	DATE
GTL	07-31-2024
CHECKED BY	DATE
JSS	06-21-2024
APPROVED BY	DATE
JTM	
REVISIONS	10/03/2025

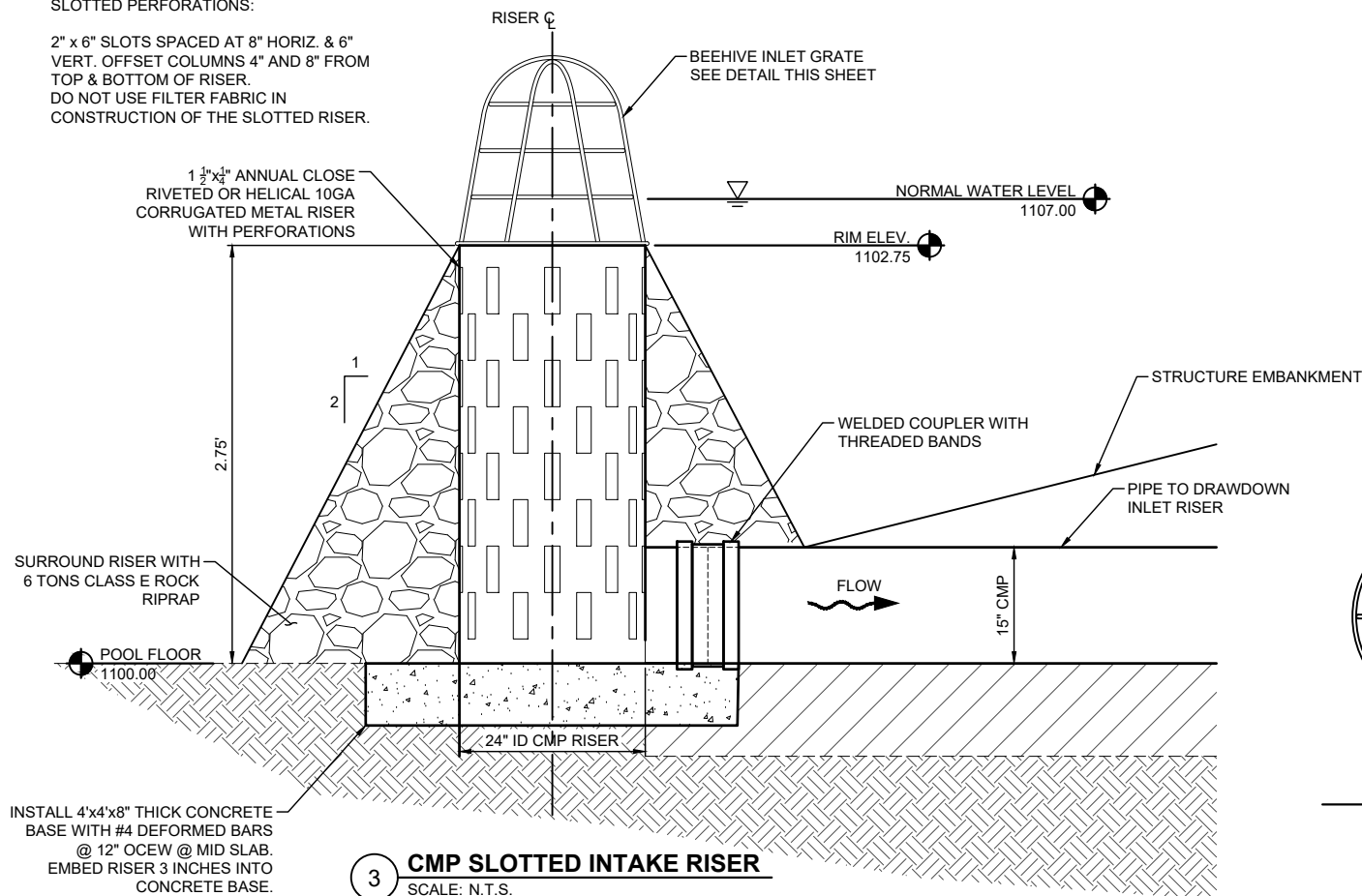


1 COVER & STOP LOG STORAGE STRUCTURE

SCALE: N.T.S.

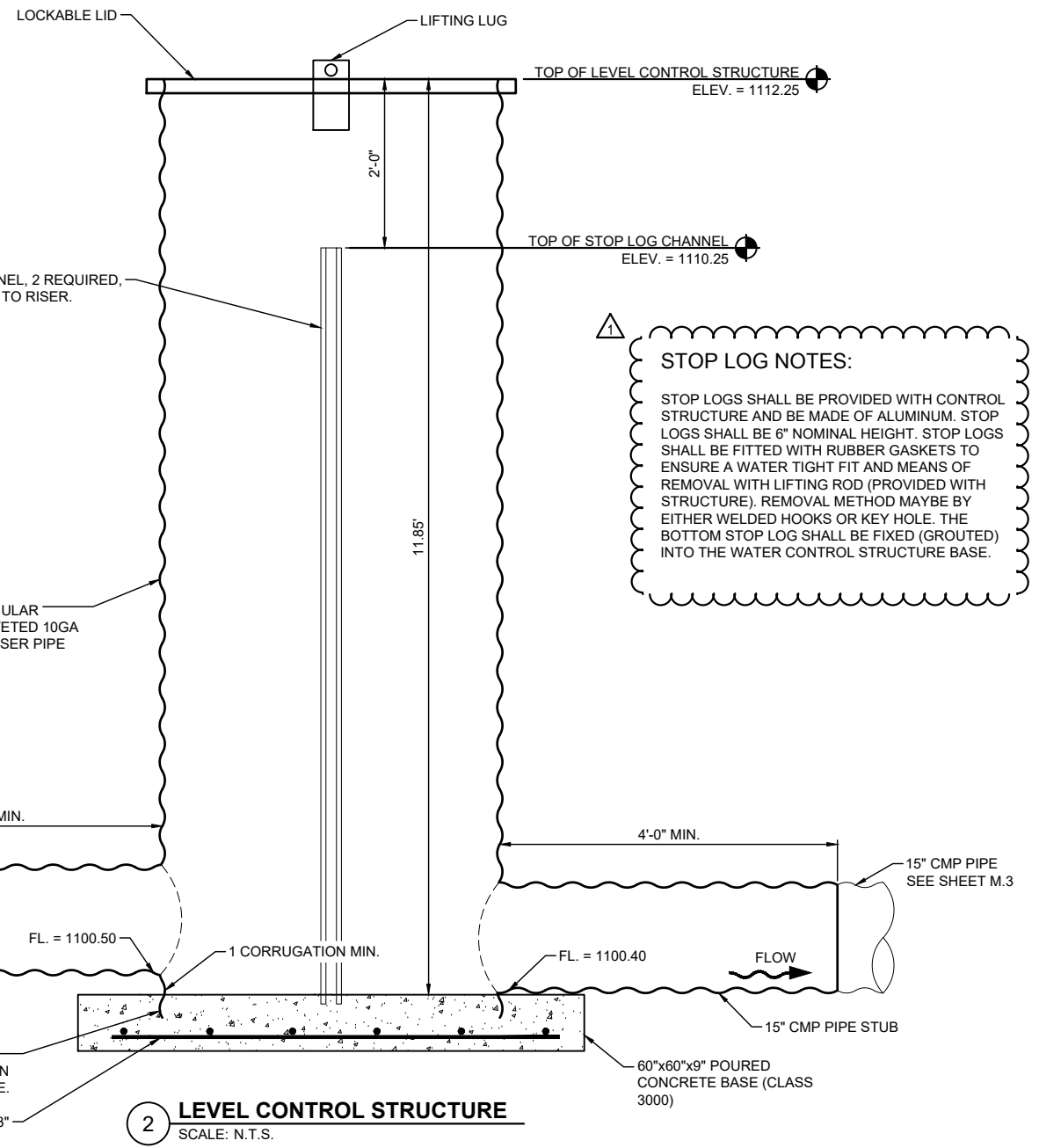


NOTE:
SLOTTED PERFORATIONS:
2" x 6" SLOTS SPACED AT 8" HORIZ. & 6" VERT. OFFSET COLUMNS 4" AND 8" FROM TOP & BOTTOM OF RISER. DO NOT USE FILTER FABRIC IN CONSTRUCTION OF THE SLOTTED RISER.



3 CMP SLOTTED INTAKE RISER

SCALE: N.T.S.



2 LEVEL CONTROL STRUCTURE

SCALE: N.T.S.

NOTE:
THE FOLLOWING DESIGNATION FOR PIPE CLASSIFICATION, CORRUGATIONS AND COATINGS WHEN REFERRED TO ON THE DRAWINGS ARE IN ACCORDANCE WITH CURRENT ASTM'S:

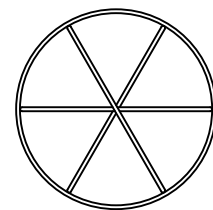
A760 STANDARD SPECIFICATION FOR CORRUGATED STEEL PIPE, METALLIC-COATED.

A761 STANDARD SPECIFICATION FOR STEEL, GALVANIZED CORRUGATED STRUCTURAL PLATES AND FASTENERS.

A849 STANDARD SPECIFICATION FOR POST-COATED AND LINED CORRUGATED STEEL SEWER AND DRAINAGE PIPE (BITUMINOUS OR CONCRETE)

A885 STANDARD SPECIFICATION OF STEEL SHEET, ZINC AND ARIMID FIBER COMPOSITE-COATED FOR CORRUGATED STEEL SEWER, CULVERT AND UNDERDRAIN PIPE.

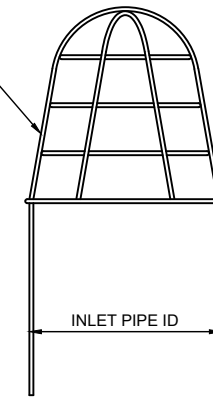
NOTE:
TAR MASTIC ON ALL JOINTS FOR RISER AND PIPE TEE'S.



PLAN

BEEHIVE NOTES:

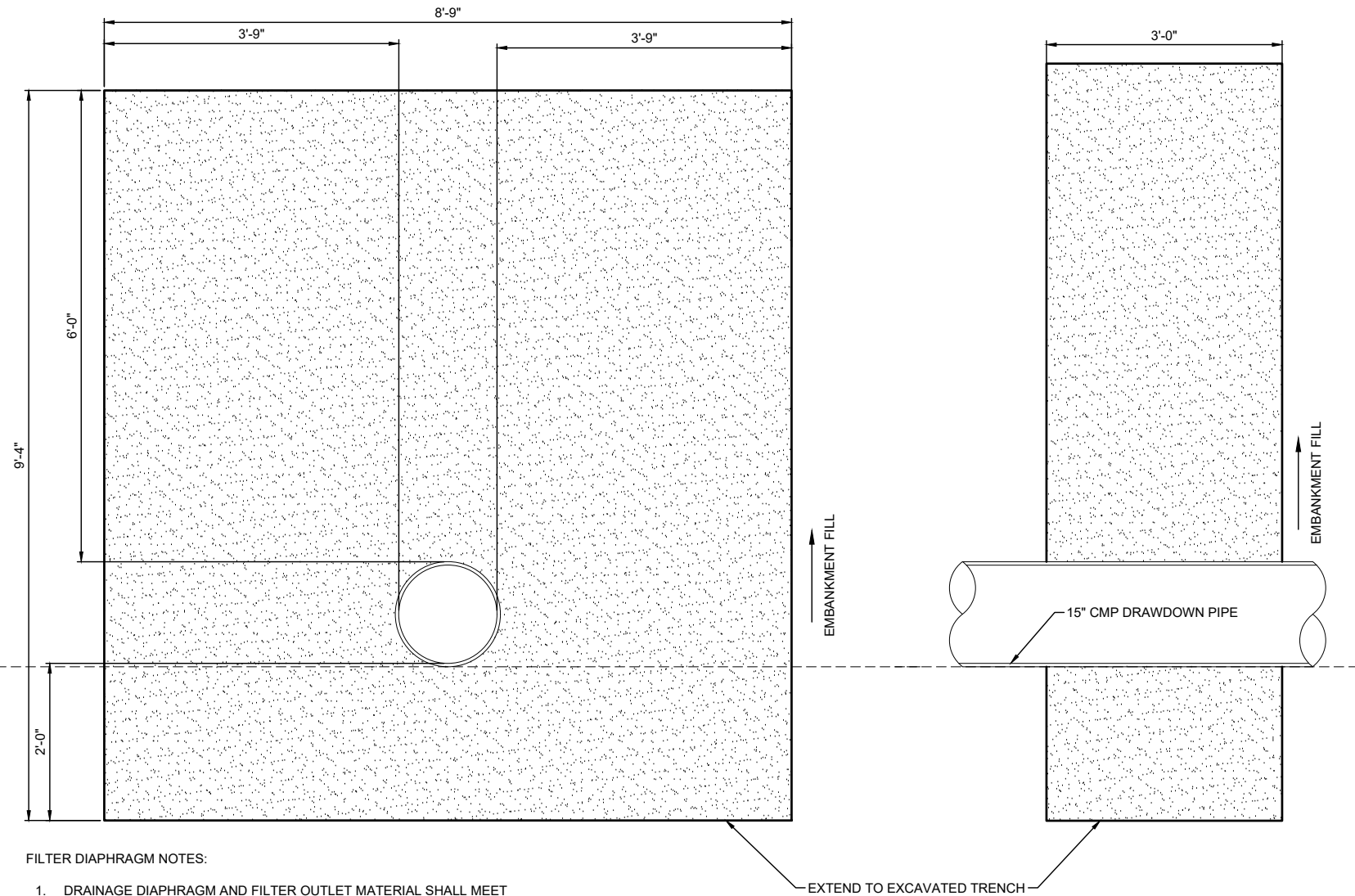
NUMBER OF BARS AND SIZE OF GRATE VARIES WITH SIZE OF TILE INTAKES. PAINT WITH (2) COATS RUST INHIBITING PAINT FOLLOWING FABRICATION.



SECTION

4 BEEHIVE INLET GRATE (STEEL BARS)

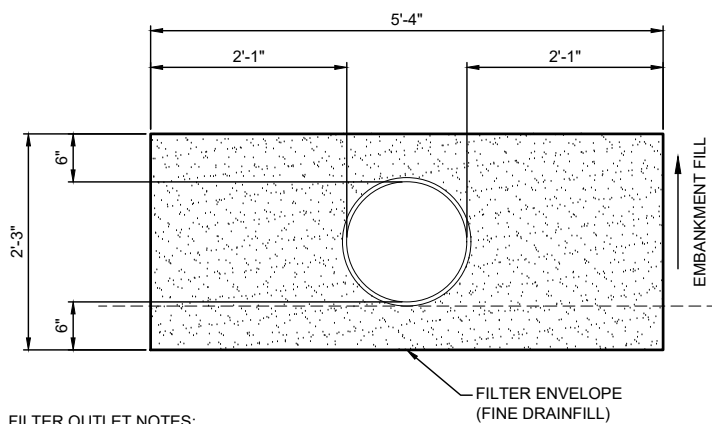
SCALE: N.T.S.



FILTER DIAPHRAGM NOTES:

1. DRAINAGE DIAPHRAGM AND FILTER OUTLET MATERIAL SHALL MEET THE FINE DRAINFILL GRADATION OF IA-24, DRAINFILL SPECIFICATION.
2. FILTER MATERIAL SHALL BE PLACED IN 8" LIFTS MAXIMUM.
3. SEE PROFILE VIEW FOR LOCATION.

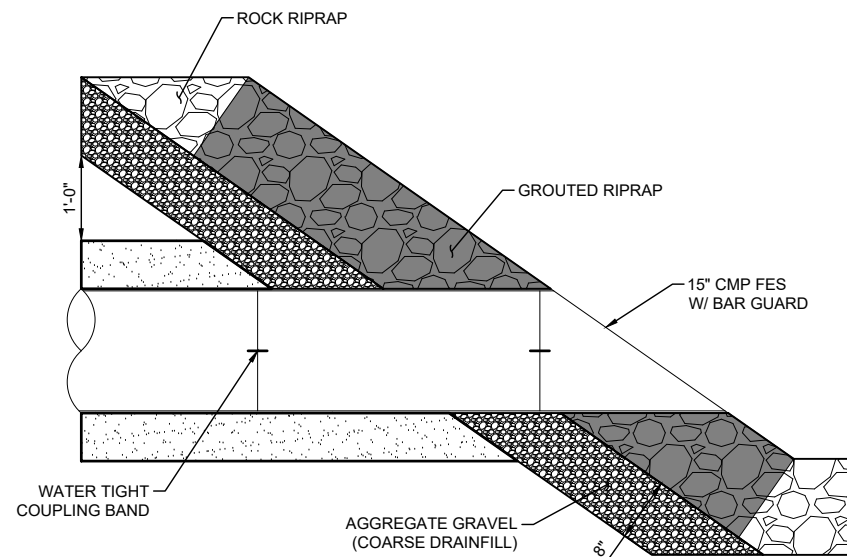
1 FILTER DIAPHRAGM OUTLET
SCALE: N.T.S.



FILTER OUTLET 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 DIRECTION.
3. DO NOT PLACE GEOTEXTILE FABRIC BETWEEN GRAVEL LAYER AND ROCK RIPRAP.

2 FILTER OUTLET
SCALE: N.T.S.



METAL PIPE REQUIREMENTS:

NOTE: THE FOLLOWING DESIGNATIONS FOR PIPE CLASSIFICATIONS, CORRUGATIONS AND COATINGS WHEN REFERRED TO ON THE DRAWINGS ARE IN ACCORDANCE WITH CURRENT ASTM'S:

- A760 STANDARD SPECIFICATION FOR CORRUGATED STEEL PIPE, METALLIC-COATED FOR SEWERS AND DRAINS.
- A761 STANDARD SPECIFICATION FOR CORRUGATED STEEL STRUCTURAL PLATE, ZINC-COATED, FOR FIELD BOLTED PIPE, PIPE ANCHORS, AND ARCHES.
- A762 STANDARD SPECIFICATION FOR CORRUGATED STEEL PIPE, POLYMER PRECOATED FOR SEWERS AND DRAINS.
- A849 STANDARD SPECIFICATION FOR POST APPLIED COATINGS, PAVINGS, AND LININGS FOR CORRUGATED STEEL SEWER AND DRAINAGE PIPE.
- A885 STANDARD SPECIFICATION FOR STEEL SHEET, ZINC AND ARAMID FIBER COMPOSITE-COATED FOR CORRUGATED STEEL SEWER, CULVERT AND UNDERDRAIN PIPE.

PIPE CLASSIFICATION:

- TYPE I FULL CIRCULAR CROSS-SECTION
- TYPE II, THIS IS TYPE I PIPE WHICH HAS BEEN REFORMED INTO A PIPE ARCH HAVING APPROXIMATELY A FLAT BOTTOM

CORRUGATION REQUIREMENTS FOR TYPE I AND II PIPE:

NOMINAL SIZE (INCH):

- 1 1/2 x 1/4 (AVAILABLE ONLY IN HELICALLY CORRUGATED PIPE)
- 2 2/3 x 1/2
- 3 x 1

COATINGS - SEE FABRICATION NOTE No. 1:

- ALUMINUM COATED STEEL - SEE FABRICATION NOTE NO. 5
- ZINC COATED STEEL - SEE FABRICATION NOTE NO. 5
- POLYMER PRECOATED - SEE FABRICATION NOTE NO. 5
- ARAMID FIBER COMPOSITE, BITUMINOUS COATED
- FULLY BITUMINOUS COATED

CORRUGATION TYPES - SEE FABRICATION NOTE No. 1:

- ANNULAR, CLOSE RIVETED
- HELICAL

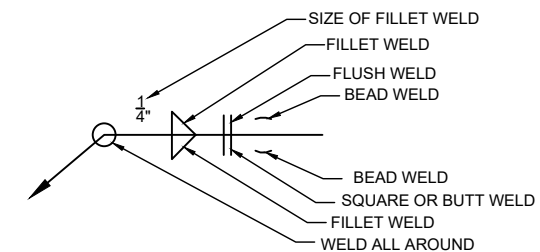
FABRICATION NOTES:

- 1) WHEN SEVERAL DIFFERENT COATINGS OR CORRUGATIONS ARE CHECKED IN THE COLUMN BOXES, EACH TYPE IS ACCEPTABLE, BUT ONLY ONE TYPE SHALL BE USED IN EACH INSTALLATION.
- 2) COUPLING BANDS PER DETAIL "A" SHALL HAVE THE SAME CORRUGATION REQUIREMENT AND THE SAME COATING AS THE DESIGNATED PIPE.
- 3) ALL WELDS AND ALL HEAT AFFECTED AREAS ON COATED STEEL SHALL BE THOROUGHLY CLEANED AND TREATED IN ACCORDANCE WITH ASTM'S.
- 4) FOR PIPE LARGER THAN 15" DIAMETER, THE ROD SHALL BE 1/2" DIAMETER. DIAMETER HOLES IN THE LUGS SHALL BE 1/8" LARGER THAN THE DIAMETER OF THE ROD USED.
- 5) DURING FABRICATION, WHEN ASPHALT COATING IS NOT USED, RIVETED SEAMS SHALL BE CAULKED WITH AN ASPHALT OR TAR BASED MATERIAL MEETING ASTM A849 TO PROVIDE A WATERTIGHT SEAM. ALL CIRCUMFERENTIAL AND LONGITUDINAL SEAMS SHALL BE CAULKED BEFORE RIVETING. THIS SHALL BE ACCOMPLISHED BY APPLYING A UNIFORM BEAD OF THE ASPHALT OR TAR BASED COMPOUND TO THE INNER LAP SURFACE BEFORE RIVETING SUCH THAT WHEN THE RIVETS ARE IN PLACE ALL VOIDS ARE FILLED.
- 6) CLOSE RIVETED PIPE SHALL BE FABRICATED SO THAT THE RIVET SPACING IN THE CIRCUMFERENTIAL SEAMS SHALL NOT EXCEED 3 INCHES.

INSTALLATION NOTES:

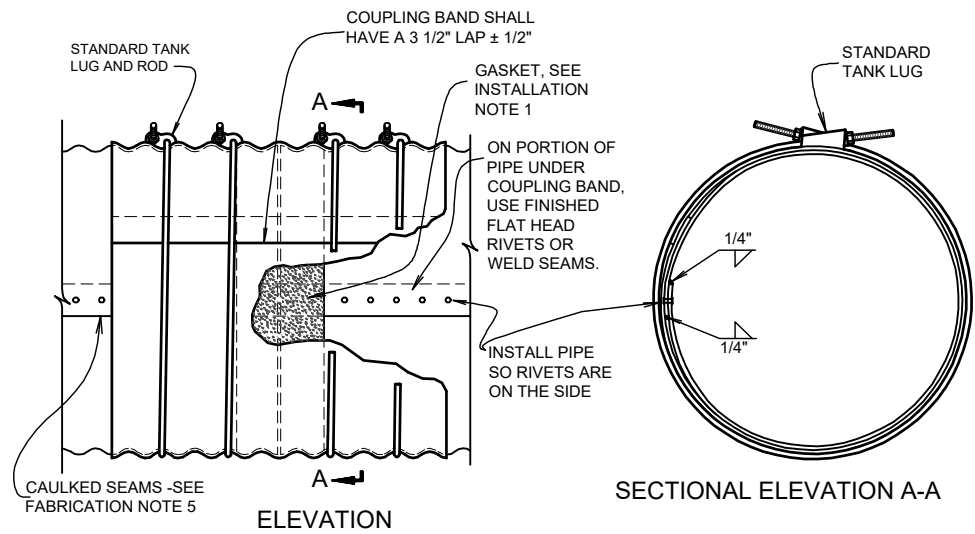
- 1) THE SLEEVE TYPE NEOPRENE GASKET SIZE SHALL BE 3/8" THICK WITH A MINIMUM WIDTH OF 7" CENTERED ON THE PIPE JOINT AND FASTENED AT ENDS TO FORM A FULL CIRCLE. IN LIEU OF A NEOPRENE GASKET, ASPHALT OR TAR BASED MASTIC MAY BE USED FOR DETAIL "A" AND "B". (SEE NOTE 5)
- 2) IN CONNECTING THE PIPE SECTIONS, THE COUPLING BANDS WILL BE CENTERED ON THE PIPE JOINT AND ALIGNED FOR COMPLETE AND TIGHT NESTING OF CORRUGATIONS BETWEEN COUPLING BAND AND EACH PIPE SECTION. RODS AND LUGS ON COUPLING BANDS WILL BE INSTALLED ACCORDING TO THE DRAWINGS. THE NUTS ON THE RODS WILL BE TIGHTENED WITHOUT OVER STRESS AND WILL BE RETIGHTENED AT LEAST TWICE AFTER INITIAL INSTALLATION. AT INTERVALS OF APPROXIMATELY 1/2 HOUR. THE FINAL TENSION ON THE RODS SHALL BE DETERMINED BY THE ENGINEER. BACKFILLING AROUND THE PIPE, EXCEPT AT COUPLING BANDS, MAY PROCEED DURING THE INTERVALS REQUIRED FOR TIGHTENING BANDS.
- 3) BEFORE COUPLING BANDS ARE INSTALLED ON RIVETED PIPE, THE PIPE SECTIONS THAT ARE TO BE CONNECTED SHALL BE ROTATED SO RIVETS ON THE PIPE ARE ON THE SIDE OF THE PIPE (SEE DETAIL "A") AND THE INSIDE LAPS ARE POINTED DOWNSTREAM.
- 4) ON BITUMINOUS COATED PIPE, REMOVE EXCESS BITUMINOUS COATING FROM CORRUGATIONS WHERE BANDS AND PIPE JOIN.
- 5) THE ENDS OF THE TWO PIPE SECTIONS AND THE LAP SEAM WILL BE COATED WITH 1/4" OF ASPHALT OR TAR BASED MASTIC (ASTM A849, TROWEL GRADE) FOR DETAIL "A" COUPLING BANDS. THE MASTIC COATED AREAS SHOULD BE KEPT FREE OF ALL DIRT, GRAVEL, AND OTHER FOREIGN MATERIAL UNTIL BANDS ARE IN PLACE AND TIGHTENED. WHEN AIR TEMPERATURE IN 50°F OR LOWER, HEAT WILL BE APPLIED TO SOFTEN, BUT NOT BURN OR MELT, THE MASTIC.
- 6) FLANGE COUPLING BANDS SHALL BE ALIGNED WITH THE MATCHING SLOTS, AND NUTS ON THE BOLTS TIGHTENED SECURELY. NEOPRENE GASKET OR MASTIC SHALL BE USED BETWEEN FLANGES, AND NUTS WILL BE RETIGHTENED AFTER COMPLETE ASSEMBLY.

COUPLING BAND REQUIREMENTS						
GAGE	BAND TYPE AND NUMBER OF RODS REQUIRED		NUMBER BANDS REQUIRED	SEE DETAIL		
14	<input checked="" type="checkbox"/>	2 FT. WITH 4 RODS FOR 36" DIA. PIPE	AS REQUIRED	<input checked="" type="checkbox"/>	A	<input checked="" type="checkbox"/> B
-		4 FT. WITH 6 RODS FOR 54" DIA. PIPE	-		A	B

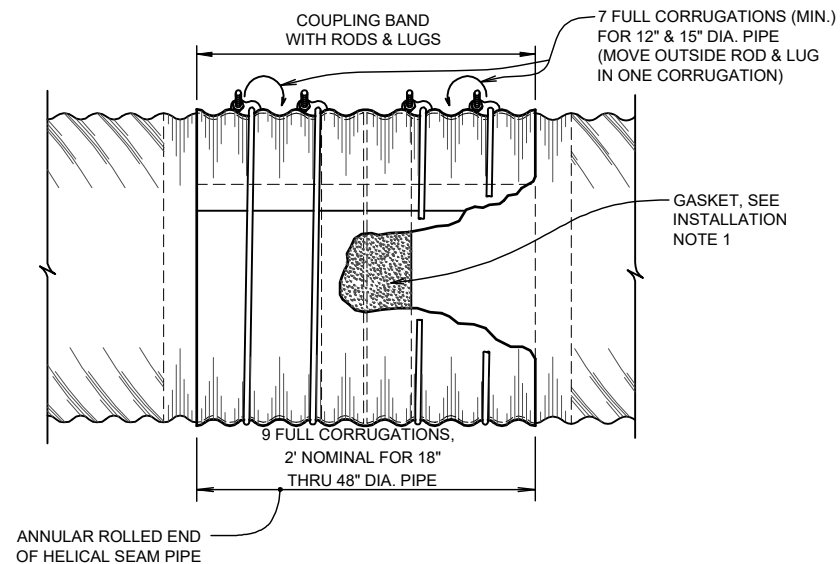


NOTE:
WELD SYMBOL ABOVE LINE INDICATES WELD IS ON OPPOSITE SIDE OF JOINT TO WHICH ARROWS POINTS.
WELD SYMBOL BELOW LINE INDICATES WELD IS ON SIDE OF JOINT TO WHICH ARROW POINTS.

1 WELD SYMBOLS
SCALE: N.T.S.



1 WATERTIGHT COUPLING BAND FOR ANNULAR PIPE
SCALE: N.T.S.



1 WATERTIGHT COUPLING BAND FOR HELICAL PIPE
SCALE: N.T.S.

