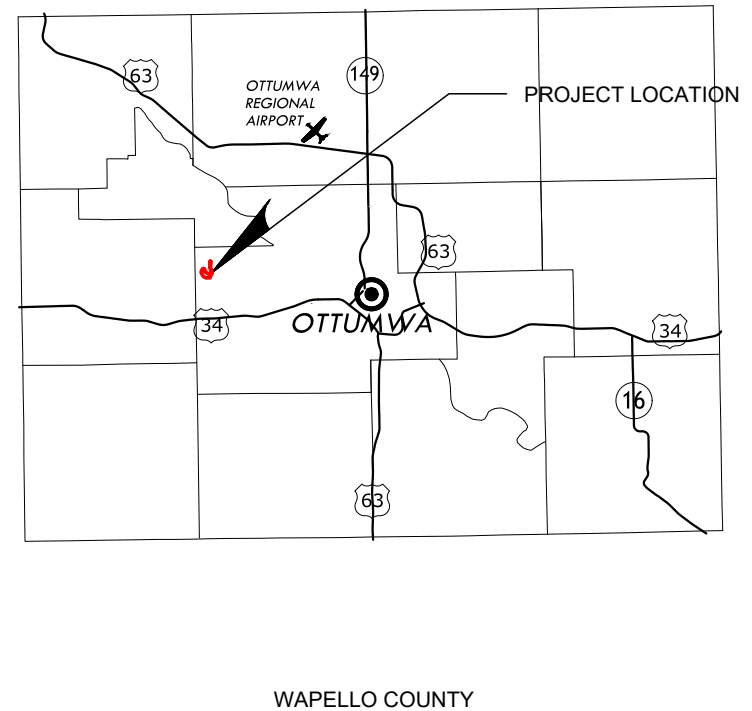
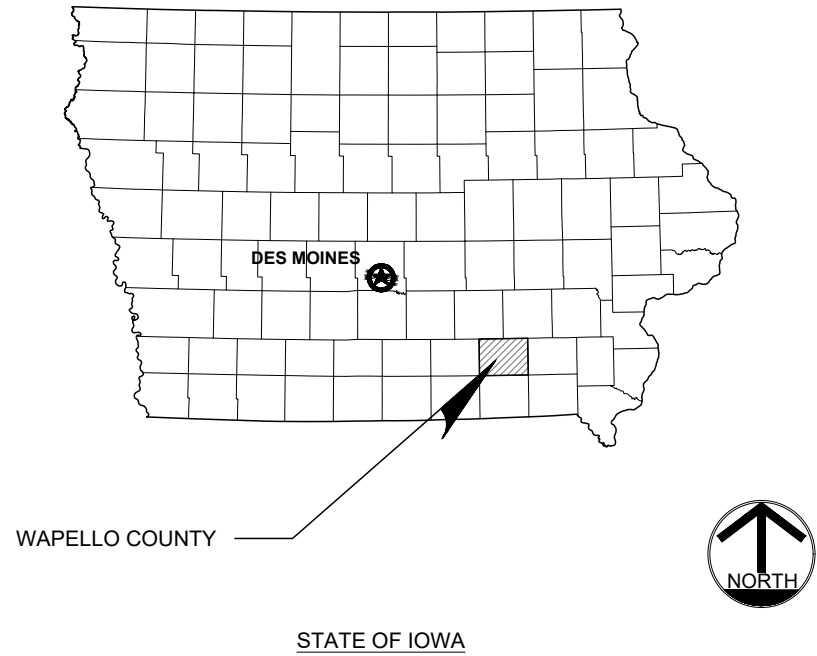


# BOS (IA-172) AML RECLAMATION PROJECT

SOUTHWEST  $\frac{1}{4}$  OF SECTION 18 + NORTHWEST  $\frac{1}{4}$  OF SECTION 19, TOWNSHIP 72 NORTH,  
RANGE 14 WEST, WAPELLO COUNTY

IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP  
DIVISION OF SOIL CONSERVATION AND WATER QUALITY

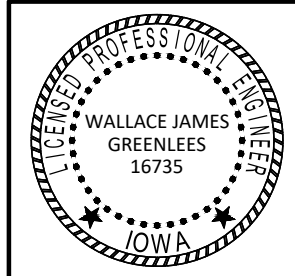
FUNDED BY:  
U.S. DEPARTMENT OF THE INTERIOR  
OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT  
GRANT NO: S24AF00059



**PREPARED FOR:**  
IOWA DEPARTMENT OF AGRICULTURE & LAND STEWARDSHIP  
DIVISION OF SOIL CONSERVATION & WATER QUALITY  
HENRY A. WALLACE BUILDING  
502 E. 9TH STREET  
DES MOINES, IOWA 50319  
(515) 281-4246

**ENGINEER:**  
WALLACE J. GREENLEES, P.E.  
MINES & MINERALS BUREAU  
TEL: (515)-281-5643  
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- INDEX OF SHEETS:**
- 1 COVER SHEET
  - 2 GENERAL NOTES AND QUANTITIES
  - 3 SITUATION PLAN WITH SURVEY CONTROL
  - 4 ACCESS ROUTE PREPARATION PLAN
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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

Signature: *Wallace J. Greenlees* Date: 6-25-2024  
Name (printed or typed): WALLACE J. GREENLEES  
License Number: 16735  
My license renewal date is: December 31, 2024  
Pages or sheets covered by this seal: ENTIRE DOCUMENT

DESIGN BY: WJG	DRAWN BY: WJG	CHKD. BY: MLB	ISSUED: 6-25-2024	REVISED: -----	FILE: 01_BOS_AML.DWG	REVISION:	DATE:	DESCRIPTION:
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**IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP**  
DIVISION OF SOIL CONSERVATION AND WATER QUALITY  
HENRY A. WALLACE BUILDING  
502 E. 9TH STREET, DES MOINES, IOWA 50319  
(515) 281-4246

**BOS**  
**AML RECLAMATION PROJECT**  
**COVER SHEET**

**SHEET**  
**1 OF 19**

# GENERAL NOTES

## TABLE: BID QUANTITIES

	ITEM	SECTION	UNIT	QTY
1	MOBILIZATION	02100	LS	1
2	CLEARING & SITE PREPARATION	02100	AC	34.6
3	OFFSITE WASTE DISPOSAL	02100	TON	50
4	IMPOUNDMENT DISCHARGE	02110	LS	1
5	CAUSTIC SODA, LIQUID, 20-25%	02110	GAL	275
6	FILTER SOCK, 12" DIA.	02120	LF	860
7	TURF REINFORCING MAT, (TRM TYPE 2)	02120	SY	150
8	TIED CONCRETE BLOCK MAT (TCBM)	02120	SF	1100
9	EXCAVATION	02200	CY	322900
10	TERRACES	02300	LF	7239
11	MACADAM STONE	02300	TON	150
12	EROSION STONE	02300	TON	175
13	RIP RAP, CLASS E	02300	TON	327
14	RISER, TERRACE, 6"	02300	EA	6
15	RISER, TERRACE, 8"	02300	EA	4
16	RISER, TERRACE, 10"	02300	EA	1
17	RISER, IA DOT SW-513, MOD. 4X4	02300	EA	2
18	DWPE, DUAL WALL PIPE, 6"	02300	LF	405
19	DWPE, DUAL WALL PIPE, 8"	02300	LF	580
20	DWPE, DUAL WALL PIPE, 10"	02300	LF	569
21	DWPE, DUAL WALL PIPE, 12"	02300	LF	304
22	DWPE, DUAL WALL PIPE, 15"	02300	LF	149
23	PPHP DUAL WALL PIPE, 18"	02300	LF	360
24	CMP CULVERT, 18"	02300	LF	30
25	OUTLET, SCH 40 PVC, 8"	02300	LF	2
26	OUTLET, SCH 40 PVC, 10"	02300	EA	3
27	OUTLET, PPHP, 12"	02300	EA	2
28	OUTLET, PPHP, 15"	02300	EA	1
29	FINISH GRADING, CHANNEL	02300	LF	996
30	AG LIME, SUBGRADE	02400	TON ECCE	1300
31	WETLAND UNDERCUT & REPLACEMENT	02400	ACRE	2.8
32	WETLAND MULCH, SUBGRADE	02400	ACRE	2.8
33	MULCH, SUBGRADE	02400	ACRE	31.8
34	FENCE	02500	LF	40
35	SINGLE GATE, 16'	02500	EA.	1
36	DOUBLE 14' GATE	02500	EA.	1
37	AG LIME, SEEDING	02700	TON ECCE	160
38	FERMENTED BIOTIC SOIL ADDITIVE	02700	LB	100
39	NITROGEN, N	02700	LB	1400
40	PHOSPHOROUS, P	02700	LB	2700
41	POTASSIUM, K	02700	LB	6400
42	SEEDING, UPLAND MIX	02700	ACRE	31.4
43	SEEDING, WETLAND FRINGE	02700	ACRE	0.4
44	MULCH, SEEDING	02700	ACRE	31.8

### BID QUANTITY NOTES:

- COST OF CLEARING AND MAINTAINING THE ACCESS ROUTE IS INCIDENTAL TO MOBILIZATION.
- 15% SHRINKAGE WAS USED FOR EARTHWORK VOLUME BALANCE CALCULATIONS.
- QUANTITY OF AG LIME, SUBGRADE, IS ESTIMATED TO BE 35 TON ECCE/ACRE.
- QUANTITY OF AG LIME, SEEDING, IS ESTIMATED TO BE 5 TON ECCE/ACRE.
- WETLAND SUBGRADE MULCH IS APPLIED AT A RATE OF 10 TON/ACRE.
- MULCH, SUBGRADE IS APPLIED AT A RATE OF 5 TON/ACRE.
- MULCH, SEEDING IS APPLIED AT A RATE OF 2 TON/ACRE.
- MANHOLE PIPE ADAPTER SLEEVES ARE INCIDENTAL TO THE UNIT PRICE FOR PIPE.
- PIPE STRAPS ARE REQUIRED AT EACH PIPE JOINT AND ARE INCIDENTAL TO THE UNIT PRICE FOR PIPE.
- GRANULAR BACKFILL, WHERE SPECIFIED, IS INCIDENTAL TO THE UNIT PRICE FOR THE PIPE.
- GRANULAR BACKFILL USED AS LEVELING COURSE FOR STRUCTURES IS INCIDENTAL TO THE STRUCTURE.
- FERMENTED BIOTIC SOIL ADDITIVE SHALL BE BIOSOL FORTE OR APPROVED EQUAL.
- TIED CONCRETE BLOCK MAT SHALL BE FLEXAMAT PLUS OR APPROVED EQUAL.
- TRM SHALL BE LANDLOK 450, RECYCLEX OR APPROVED EQUAL.

### GENERAL NOTES:

- REFERENCES TO "DIVISION" SHALL MEAN "DIVISION OF SOIL CONSERVATION & WATER QUALITY"
- ALL IMPROVEMENTS SHOWN ON THESE PLANS SHALL COMPLY WITH THE GENERAL CONDITIONS, STANDARDS, AND SPECIFICATIONS SET FORTH IN PROJECT DOCUMENTS. SPECIFICATIONS OR STANDARDS INCORPORATED BY REFERENCE SHALL ALSO BE FOLLOWED.
- OWNERSHIP: THIS DOCUMENT, AND THE IDEAS AND DESIGN CONTAINED IN THIS DOCUMENT, ARE AN INSTRUMENT OF PROFESSIONAL SERVICE, AND MAY NOT BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN CONSENT OF THE DIVISION.
- REFERENCES TO PARTICULAR PRODUCTS, TRADENAMES, OR MANUFACTURERS ARE INTENDED FOR CLARITY ONLY AND DO NOT REPRESENT EXCLUSION OR ENDORSEMENT BY THE DIVISION OR THE STATE OF IOWA. EQUIVALENT PRODUCTS OR MATERIALS MAY BE SUITABLE, SUBJECT TO THE APPROVAL OF THE ENGINEER.
- CONTRACTOR SHALL PROVIDE AT LEAST 48 HOURS NOTICE TO THE ENGINEER AND/OR DIVISION PRIOR TO COMMENCING CONSTRUCTION.

### UTILITY NOTES:

- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT ALL EXISTING PUBLIC AND/OR PRIVATE UTILITIES AND PUBLIC ROADWAYS, INCLUDING ANY NOT SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER IF ANY CONFLICTS WITH THE DRAWINGS OCCUR. ANY DAMAGE TO EXISTING UTILITIES AND/OR PUBLIC ROADWAYS CAUSED BY CONTRACTOR TRENCHING SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- UNDERGROUND FACILITIES STRUCTURES AND UTILITIES ARE PLOTTED FROM AVAILABLE SURVEYS, PUBLIC RECORDS, AND FIELD INVESTIGATION WHEN AVAILABLE. THEIR LOCATIONS SHALL BE CONSIDERED TO BE APPROXIMATE ONLY.

### CONSTRUCTION SURVEYING NOTES:

- THIS DRAWING IS SET TO THE NAD 1983 IOWA STATE PLANE, SOUTH ZONE COORDINATE SYSTEM. ELEVATION INFORMATION IS BASED UPON THE NAVD 1988.
- EXISTING TOPOGRAPHY SHOWN ON THIS DRAWING WAS DEVELOPED FROM LIDAR INFORMATION THAT WAS COLLECTED IN THE SPRING OF 2008 AND PUBLISHED MARCH, 2010. LIDAR DATA IS PUBLICLY AVAILABLE FROM IOWA GEODATA, <https://geodata.iowa.gov/> WHICH IS MADE AVAILABLE BY THE IOWA DEPARTMENT OF NATURAL RESOURCES.
- DURABLE CONTROL POINTS WERE ESTABLISHED FOR THIS PROJECT. CONTRACTOR SHALL FIELD VERIFY THEIR LOCATIONS AND ELEVATIONS. IF ANY ADDITIONAL CONTROL POINTS ARE REQUIRED, SUCH WORK BECOMES THE RESPONSIBILITY OF THE CONTRACTOR.
- IF SIGNIFICANT DIFFERENCES EXIST BETWEEN THE LIDAR ELEVATIONS SHOWN AND THOSE REPORTED BY SURVEYING EQUIPMENT, THE CONTRACTOR SHALL CALIBRATE THE SURVEYING INSTRUMENTS TO THE LIDAR INFORMATION IN CONSULTATION WITH THE DIVISION.

### REQUIRED CONSTRUCTION STAKING:

- GRADING LIMIT, AND ACCESS ROUTE
- LOCATIONS OF PIPE OUTLETS, RISERS, AND INTAKE STRUCTURES
- WETLAND POOL
- ALL CHANNELS
- MAIN RIDGES

IF GPS GUIDED MACHINE CONTROL IS USED, ITEMS 3, 4, & 5 MAY BE WAIVED

### LEGEND

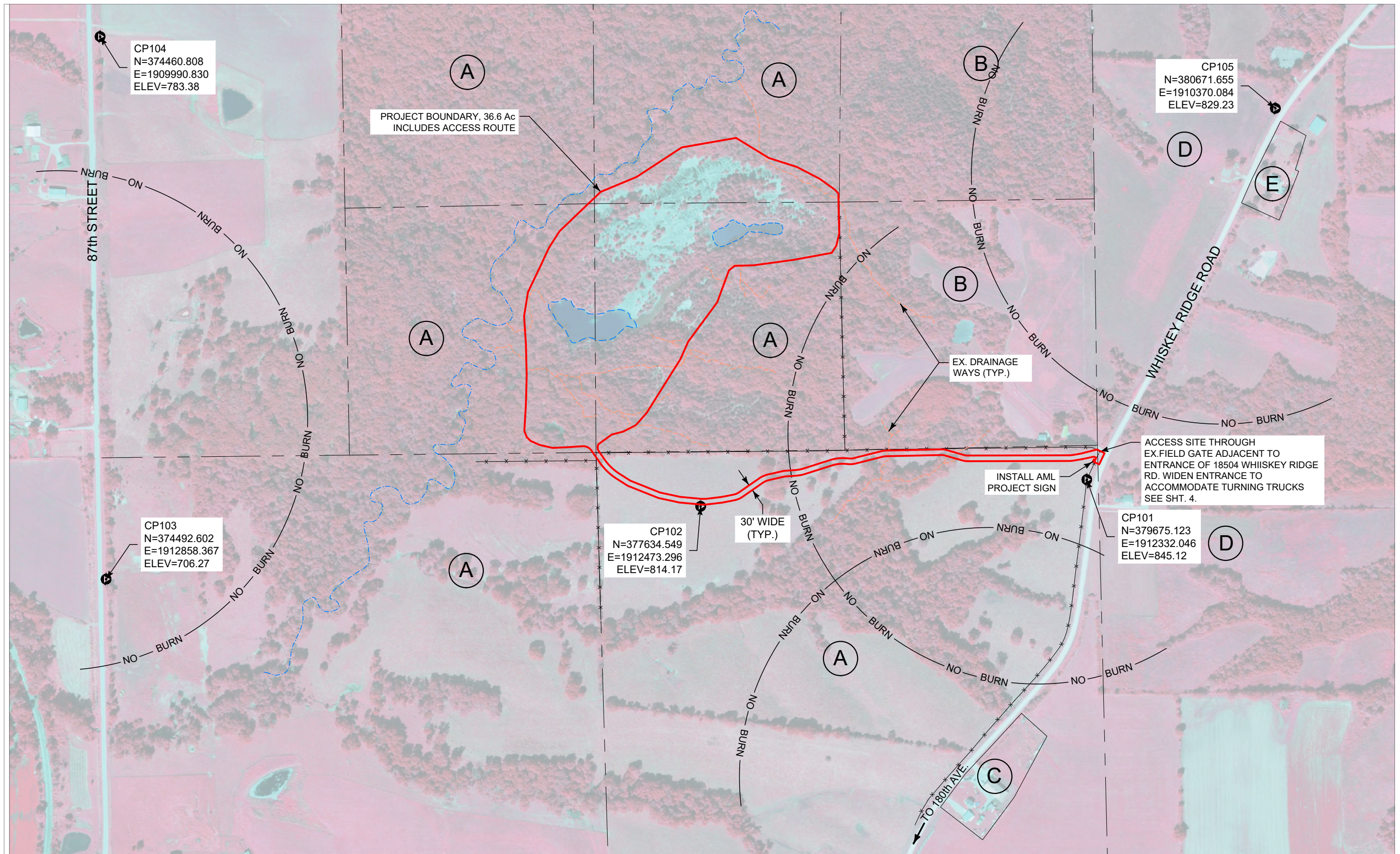
- PROJECT BOUNDARY
- GRADING LIMIT
- DRAINAGE CONDUIT
- EXISTING DRAINAGE DITCH OR WATER WAY
- EXISTING STREAM
- LAND SURVEY SECTION LINE
- LANDOWNER PROPERTY LINE
- EXISTING FENCE LINE
- PROPOSED NEW FENCE CONSTRUCTION
- CHANNEL CENTERLINE & FLOW DIRECTION
- TERRACE RIDGE CENTER LINE
- 1/4 MILE BURN RADIUS LIMIT
- FILTER SOCK
- TEMPORARY EARTH DIVERSION
- EX. TREE TO PROTECT
- EX. PIT POND
- EX. WETLAND
- PROPOSED WETLAND POOL
- SURVEY CONTROL POINT
- SECTION CORNER FOUND
- POWER POLE
- TERRACE CHANNEL HIGH POINT
- PLASTIC TERRACE RISER
- SEEP OR ARTESION
- ROCK SURFACING RIPRAP OR EROSION STONE
- TIED CONCRETE BLOCK MAT
- HYBRID TURF INSTANT ARMOR MAT (HTIA)
- TURN REINFORCING MAT (TRM)
- ROLLED EROSION CONTROL MAT (RECP)
- COMPACTED GRANULAR TRENCH BACKFILL

### GLOSSARY OF COMMON ABBREVIATIONS:

- SEE SPECIFICATION SECTION 02220, 1.3, A. FOR DEFINITIONS OF "ACCESS ROUTE", "GRADING LIMITS", & "PROJECT BOUNDARY."
- FG = FORM GRADE ELEVATION; THE LOWEST INLET OPENING ELEVATION FOR A RISER OR STRUCTURE TO RECEIVE WATER FROM A POND OR CHANNEL
- INV = INVERT; THE LOWEST FLOWLINE ELEVATION OF A CONDUIT, RISER TEE, OR STRUCTURE
- SWPE = SINGLE-WALL CORRUGATED HIGH DENSITY POLYETHYLENE CONDUIT
- DWPE = DUAL-WALL HIGH DENSITY POLYETHYLENE CORRUGATED CONDUIT MEETING ASTM 2648-07
- PPHP = POLYPROPYLENE HIGH PERFORMANCE CORRUGATED DUAL-WALL PIPE MEETING ASTM 2736-10 FOR 12-30" DIA. (i.e. ADS N-12HP OR APPROVED EQUAL)
- RCP = REINFORCED CONCRETE PIPE
- CMP = CORRUGATED METAL PIPE
- FES = FLARED END STRUCTURE OR PIPE APRON
- RIM = ELEVATION OF A STRUCTURE LID OR HIGHEST EDGE OF A PLUNGE POOL
- LF = LINEAL FEET
- NP = NORMAL POOL ELEVATION FOR WATER FEATURES
- HP = HIGH POINT ELEVATION, TYPICALLY IN A TERRACE FLOWLINE
- CL = CENTERLINE
- PC = POINT OF CURVATURE, TRANSITION FROM A STRAIGHT LINE TO A CURVE
- PT = POINT OF TANGENCY, TRANSITION FROM A CURVE TO A STRAIGHT LINE
- PI = POINT OF INTERSECTION OR BEND POINT ON A LINE
- SHT. OR SHTS. = PLAN SET SHEET OR SHEETS
- EX. = "EXISTING" i.e. "EXISTING CMP CULVERT"
- PPL = "PLUNGE POOL" EROSION CONTROL PRACTICE AT PIPE OUTLETS

NOTE: THE LEGEND OF SYMBOLS, LINETYPES, AND LIST OF ABBREVIATIONS SHOWN ABOVE ARE GENERIC. NOT ALL SYMBOLS, LINETYPES, OR ABBREVIATIONS LISTED APPEAR ON THE ACCOMPANYING DRAWINGS FOR THIS PROJECT. SYMBOLS, LINETYPES, OR ABBREVIATIONS NOT LISTED HERE ARE SPECIFICALLY CALLED OUT WHERE NECESSARY.

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DATE:					
REVISION:					
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 IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP DIVISION OF SOIL CONSERVATION AND WATER QUALITY HENRY A. WALLACE BUILDING 502 E. 9th STREET, DES MOINES, IOWA 50319 (515) 281-4246					
<b>BOS</b> <b>AML RECLAMATION PROJECT</b> <b>GENERAL NOTES AND QUANTITIES</b>					
SHEET <b>2 of 19</b>					

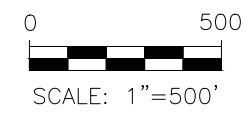



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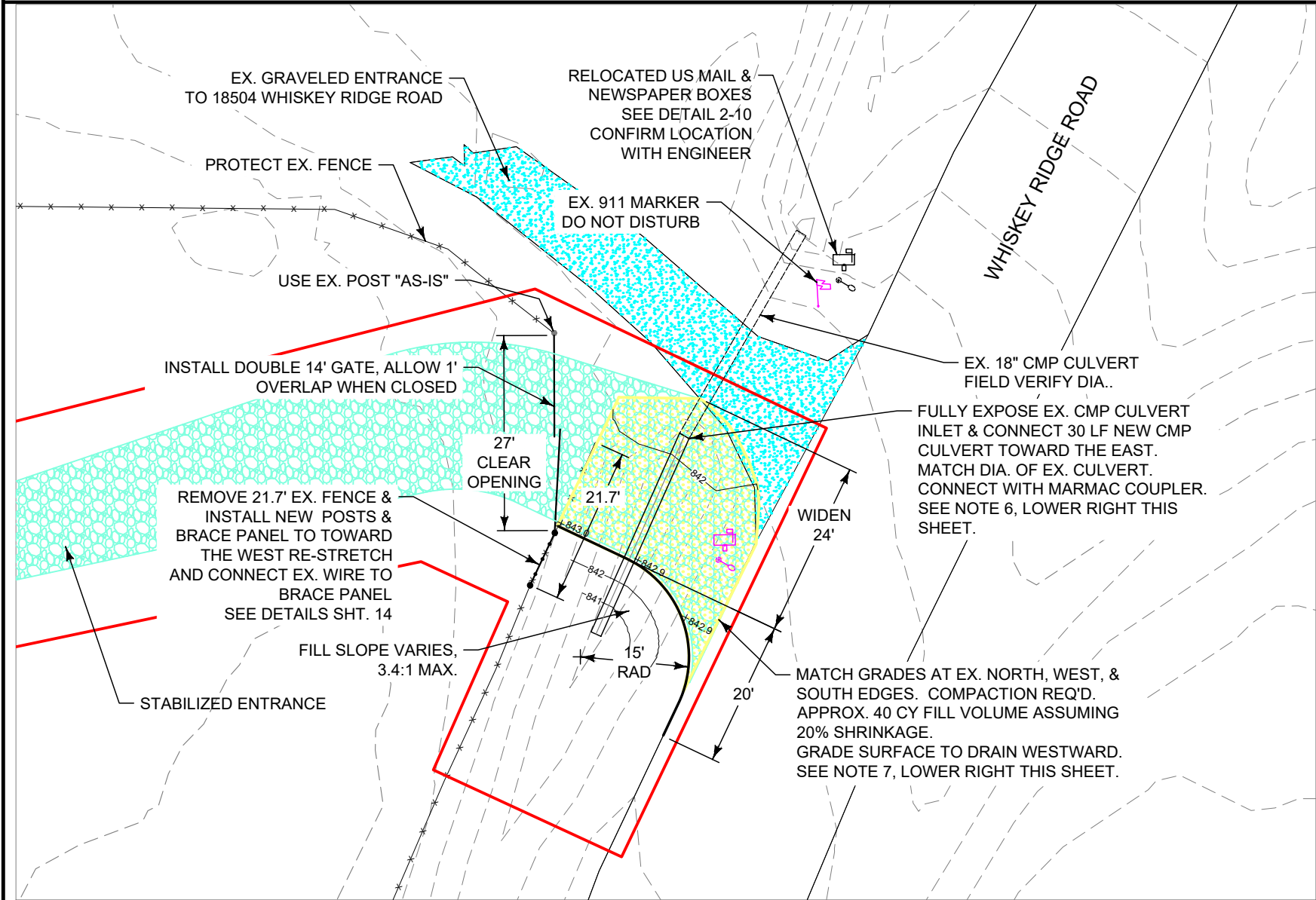
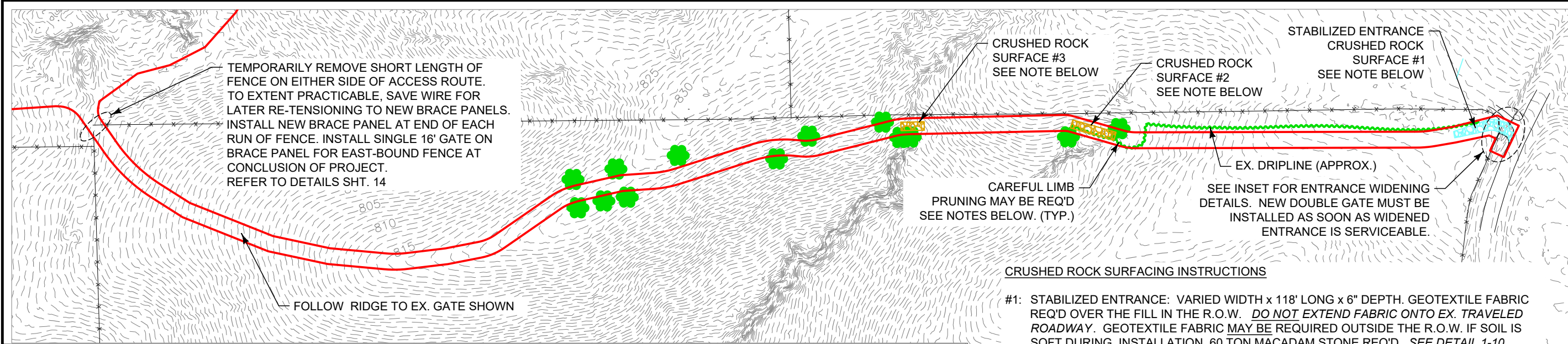
1. FIELD VERIFY LOCATIONS & ELEVATIONS OF ALL CONTROL POINTS.
2. CONTROL POINTS WERE ESTABLISHED BY ENGINEER. EACH IS AN IRON ROD WITH A PINK CAP FLUSH WITH SOIL SURFACE AND EACH IS MARKED WITH A STEEL "T" POST.
3. PROPERTY LINES ARE APPROXIMATE AND BASED UPON MAHASKA COUNTY ASSESSOR INFORMATION.
4. FIELD ENTRANCE AND ACCESS ROUTE MUST REMAIN OPEN TO LANDOWNER.
5. FIELD ENTRANCE AND ACCESS ROUTE SHALL BE RESTORED AT NO ADDITIONAL COST TO DIVISION.
6. CONTRACTOR IS RESPONSIBLE FOR ANY CROP DAMAGE CAUSED WHILE ACCESSING THE SITE.

**LANDOWNERS:**

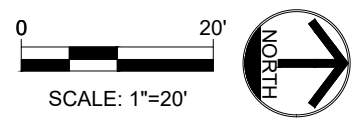
- A: CONRAD, RANDY F. / MELANIE
- B: THIHER, TERRI L.
- C: JOYCE, NATHAN / JENNY
- D: HIGGINS ROBERT LEE / KATHY L.
- E: TENINTY, DONALD C. / KAITLYNN N.



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<b>BOS</b> <b>AML RECLAMATION PROJECT</b> <b>SITUATION PLAN</b> <b>WITH SURVEY CONTROL</b>					
IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP DIVISION OF SOIL CONSERVATION AND WATER QUALITY HENRY A. WALLACE BUILDING 502 E. 9th STREET, DES MOINES, IOWA 50319 (515) 281-4246					
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<b>SHEET</b> <b>3 OF 19</b>					

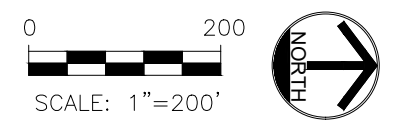


ENTRANCE WIDENING DETAIL



**CRUSHED ROCK SURFACING INSTRUCTIONS**

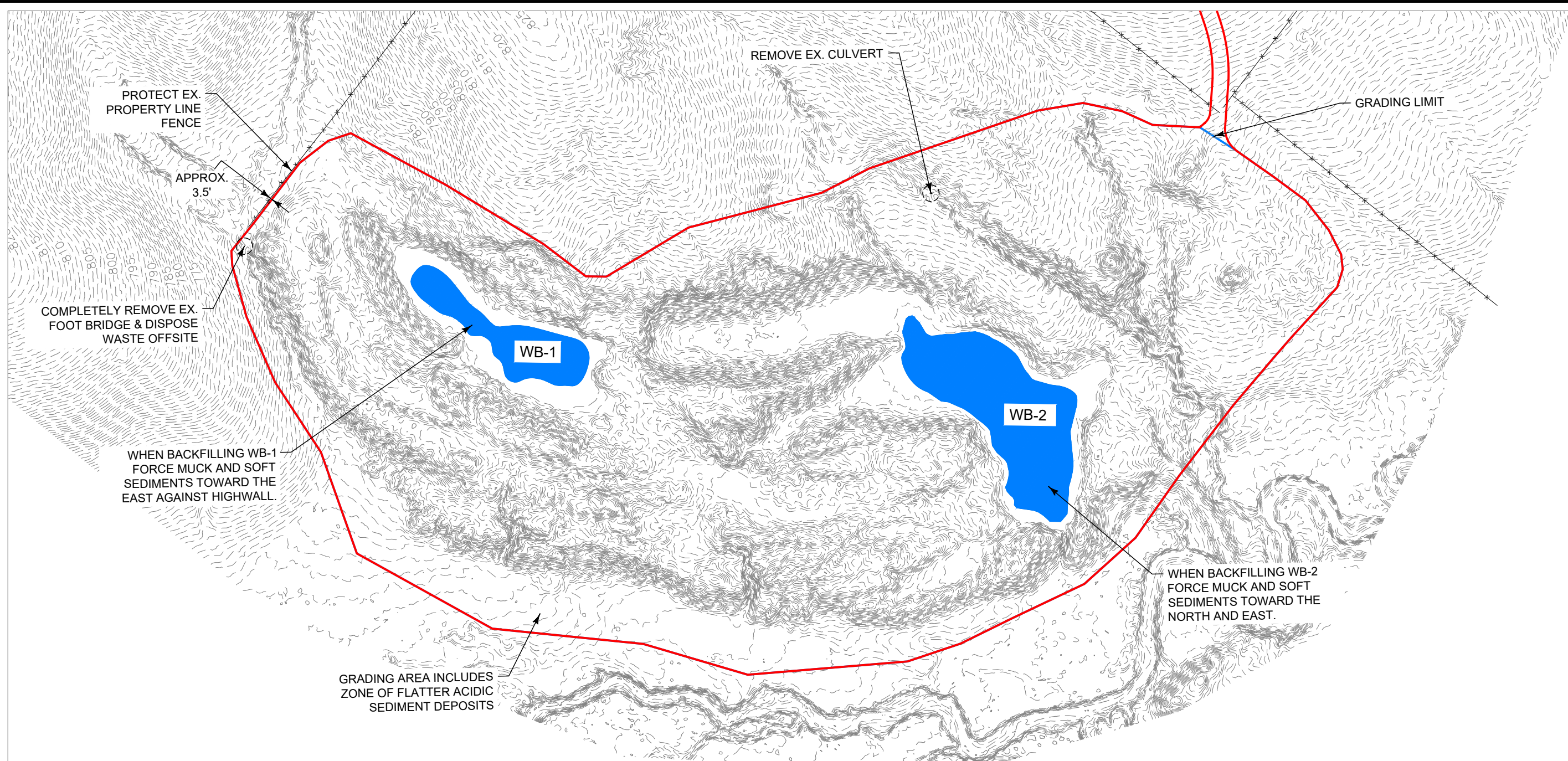
- #1: STABILIZED ENTRANCE: VARIED WIDTH x 118' LONG x 6" DEPTH. GEOTEXTILE FABRIC REQ'D OVER THE FILL IN THE R.O.W. *DO NOT EXTEND FABRIC ONTO EX. TRAVELED ROADWAY*. GEOTEXTILE FABRIC MAY BE REQUIRED OUTSIDE THE R.O.W. IF SOIL IS SOFT DURING INSTALLATION. 60 TON MACADAM STONE REQ'D. *SEE DETAIL 1-10.*
  - #2: STABILIZED CROSSING OVER ERODED DRAINAGEWAY: 16' WIDE x 85' LONG x 20" DEPTH. EXCAVATE WIDTH, LENGTH & DEPTH. CONSOLIDATE AND SMOOTH STONE WITH HEAVY EQUIPMENT. APPROX. 60 TON MACADAM STONE & 75 TON EROSION STONE REQ'D. *SEE DETAIL 4-10.*
  - #3: STABILIZED CROSSING OVER ERODED DRAINAGEWAY: 16' WIDE x 44' LONG x 20" DEPTH, INSTALL WITH SAME PROCEDURE AS PROVIDED FOR #2 ABOVE. 30 TON MACADAM STONE REQUIRED & 40 TON EROSION STONE REQ'D. *SEE DETAIL 4-10*
- A. CENTER ALL ROCK SURFACING WITHIN SPECIFIED ACCESS ROUTE.
  - B. USE EXCAVATED SOIL AS FILL FOR THE ENTRANCE WIDENING AND TO FILL RUTS, GULLIES OR HOLES IN THE IMMEDIATE VICINITY OF THE CRUSHED ROCK SURFACING (WITHIN THE PROJECT BOUNDARY).
  - C. CRUSHED ROCK SPECIFIED ABOVE SHALL BE CONSIDERED PERMANENT.
  - D. CONSTRUCT WIDENED ENTRANCE AND STABILIZED CROSSINGS AS SOON AS POSSIBLE BEFORE INITIATION OF CLEARING.



**NOTES THIS SHEET:**

1. TREES MUST BE CLEARED BETWEEN DATES OF OCTOBER 1 AND MARCH 31.
2. ACCESS ROUTE IS ALIGNED TO AVOID EX. TREES. PROTECT EX. TREES ALONG THE ROUTE TO THE EXTENT PRACTICABLE. NOT ALL TREES ARE SHOWN.
3. MINOR PRUNING OF BRANCHES IS ACCEPTABLE IF NECESSARY AND IF DONE CAREFULLY BY CUTTING ONLY. BREAKING LIMBS IS NOT PERMITTED.
4. INSTALL NEW BRACE PANEL (BP) ASSEMBLIES, NEW GATES, AND RE-TENSION EX. FENCE WIRE. AS INDICATED.
5. PRIOR TO REMOVAL, CONTRACTOR SHALL MAP LOCATION OF EX. FENCE FOR LATER RE-INSTALLATION ALONG EXISTING FENCE ALIGNMENT.
6. COST OF MARMAC COUPLER IS INCIDENTAL TO COST OF CMP CULVERT.
7. COST OF EXCAVATION & COMPACTION FOR ENTRANCE WIDENING IS INCIDENTAL TO MOBILIZATION.

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<b>BOS</b> <b>AML RECLAMATION PROJECT</b> <b>ACCESS ROUTE</b> <b>PREPARATION PLAN</b>					
IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP DIVISION OF SOIL CONSERVATION AND WATER QUALITY HENRY A. WALLACE BUILDING 502 E. 9th STREET, DES MOINES, IOWA 50319 (515) 281-4246					
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SHEET <b>4 OF 19</b>					



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 AND WATER QUALITY  
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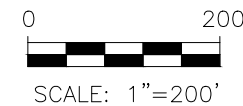
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 DRAWN BY: WJG  
 CHKD. BY: MLB  
 BOS  
 AML RECLAMATION PROJECT  
 SITE PREPARATION PLAN

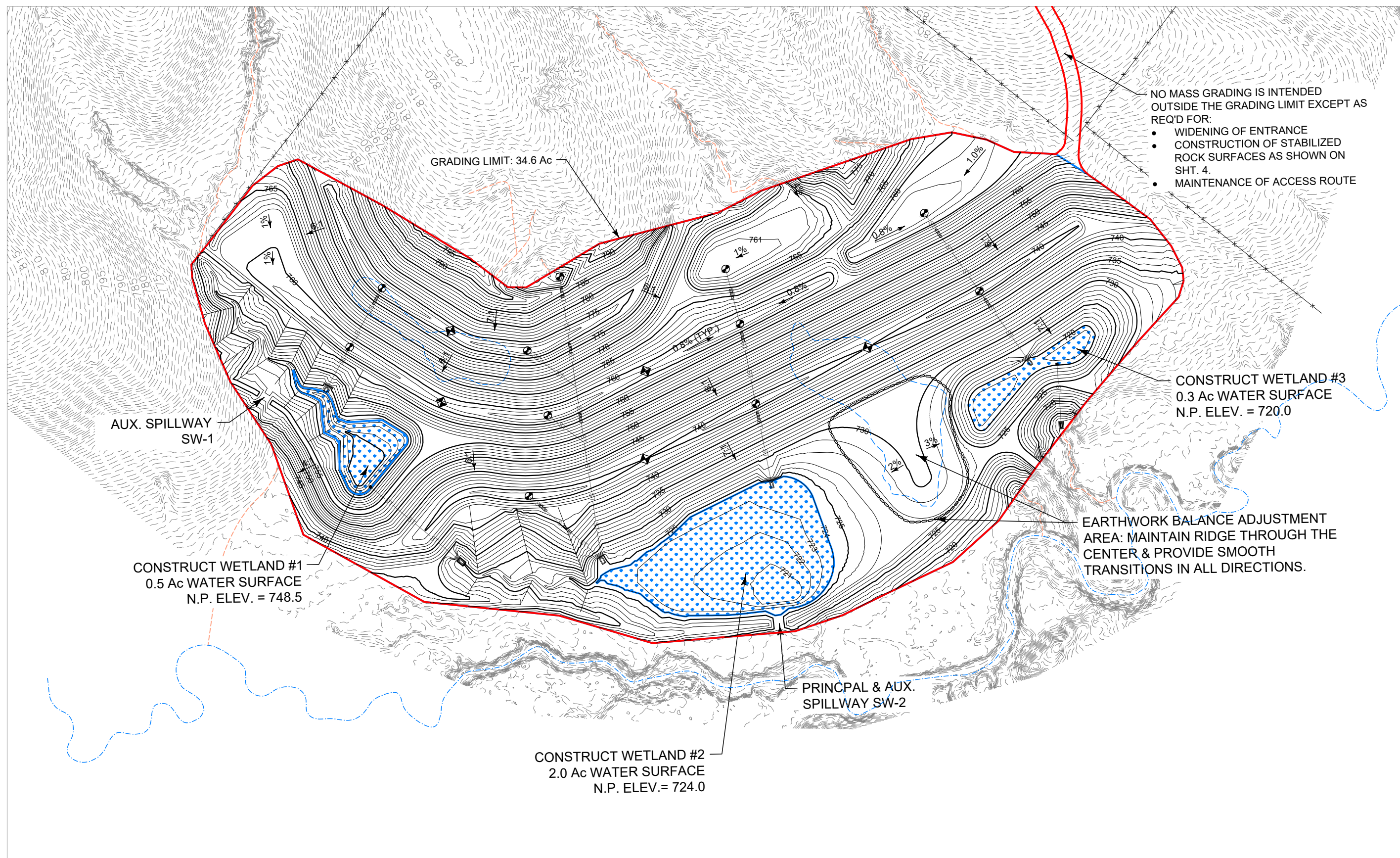
IDENTIFIER	pH	IRON (mg/L)	WATER	WATER	EST. MAX.	EST. MUCK DEPTH (ft)	EST. WATER VOLUME (cubic feet)	DEWATER AND BACKFILL
			SURFACE ELEV (ft)	SURFACE AREA (Ac)	WATER DEPTH (ft)			
WB-1	3.8	1.18	745.9	0.6	4.9	5	66,400	YES
WB-2	3.2	0.871	727.2	1.4	16.7	5	559,000	YES

DATA FROM WATER SAMPLES COLLECTED FEB. 13, 2024  
 WATER SURFACE ELEVATIONS AND BATHYMETRY MEASURED JULY 20, 2023

NOTES THIS SHEET:

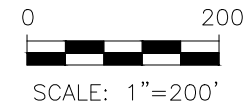
1. TREES MUST BE CLEARED BETWEEN DATES OF OCTOBER 1 AND MARCH 31.
2. EXERCISE CARE WHEN WORKING NEAR DRIPLINE OF TREES TO BE PROTECTED
3. VERIFY WATER QUALITY OF EACH POND PRIOR TO DISCHARGE.
4. RECYCLING OF ANY OR ALL METAL REFUSE, ENCOUNTERED ON THE SITE IS ENCOURAGED.
5. BURYING OF WASTE ON SITE IS PROHIBITED.
6. USE GOGGLES WITH A FACE SHIELD AND OTHER APPROPRIATE PROTECTIVE GEAR WHEN HANDLING LIQUID CAUSTIC SODA TO NEUTRALIZE THE PONDS.



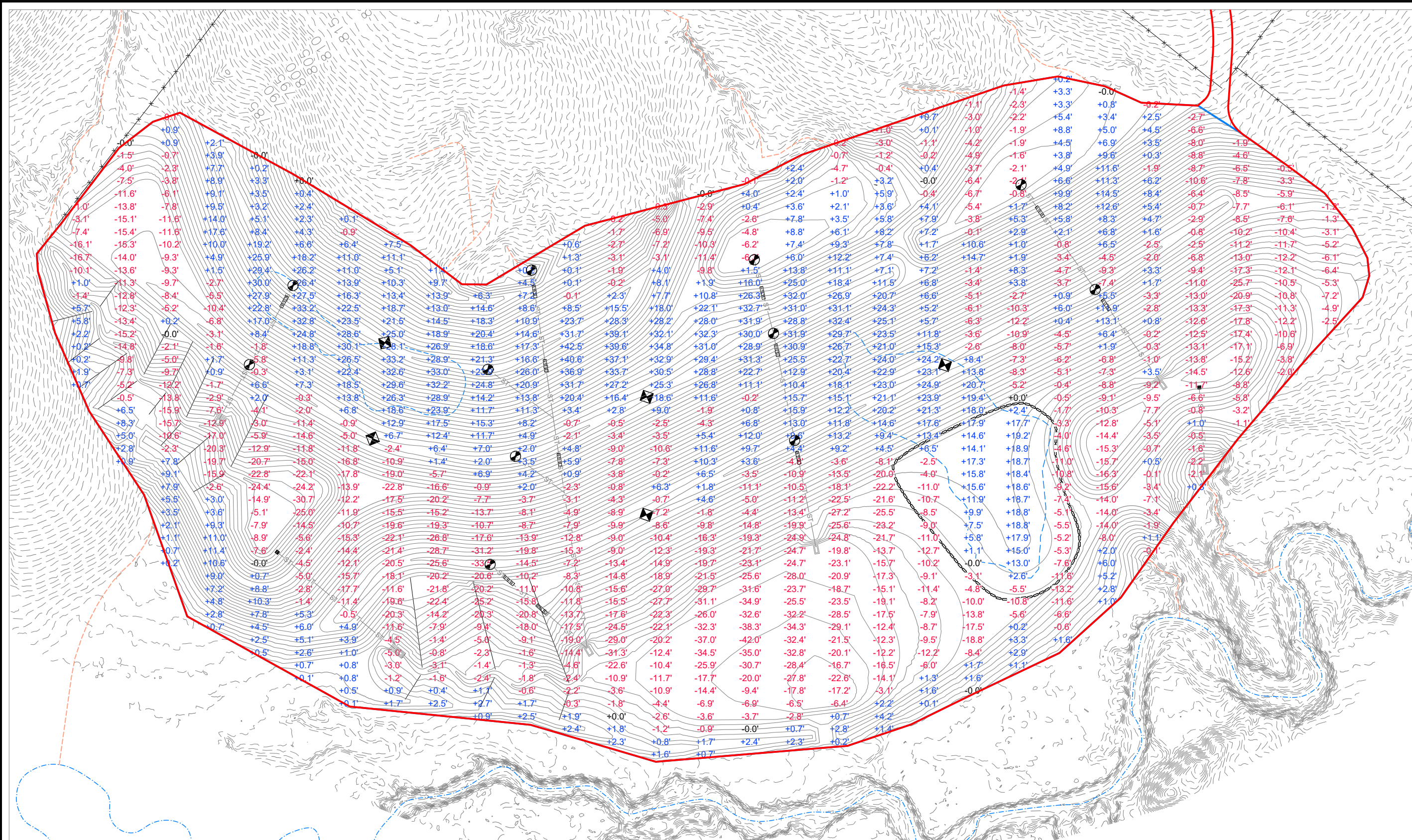


**NOTES THIS SHEET:**

1. PRIOR TO CONSTRUCTING PROPOSED IMPOUNDMENT BERMS REMOVE ALL SOFT SEDIMENTS AND ORGANIC MATTER FROM THE BASE OF THE PROPOSED BERM. SEE GENERAL SPECIFICATION SECTION 2200, 3.7, A.
2. OUTLINES OF EX. PONDS SHOWN FOR REFERENCE ONLY.
3. RATE OF SHRINKAGE FOR GENERAL FILL IS ASSUMED TO BE 15%.
4. OVERBUILD RIDGES OF TERRACES AT LEAST SIX (6) INCHES TO ACCOUNT FOR SETTLEMENT AND SUBGRADE PREPARATION.

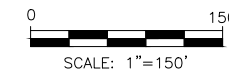



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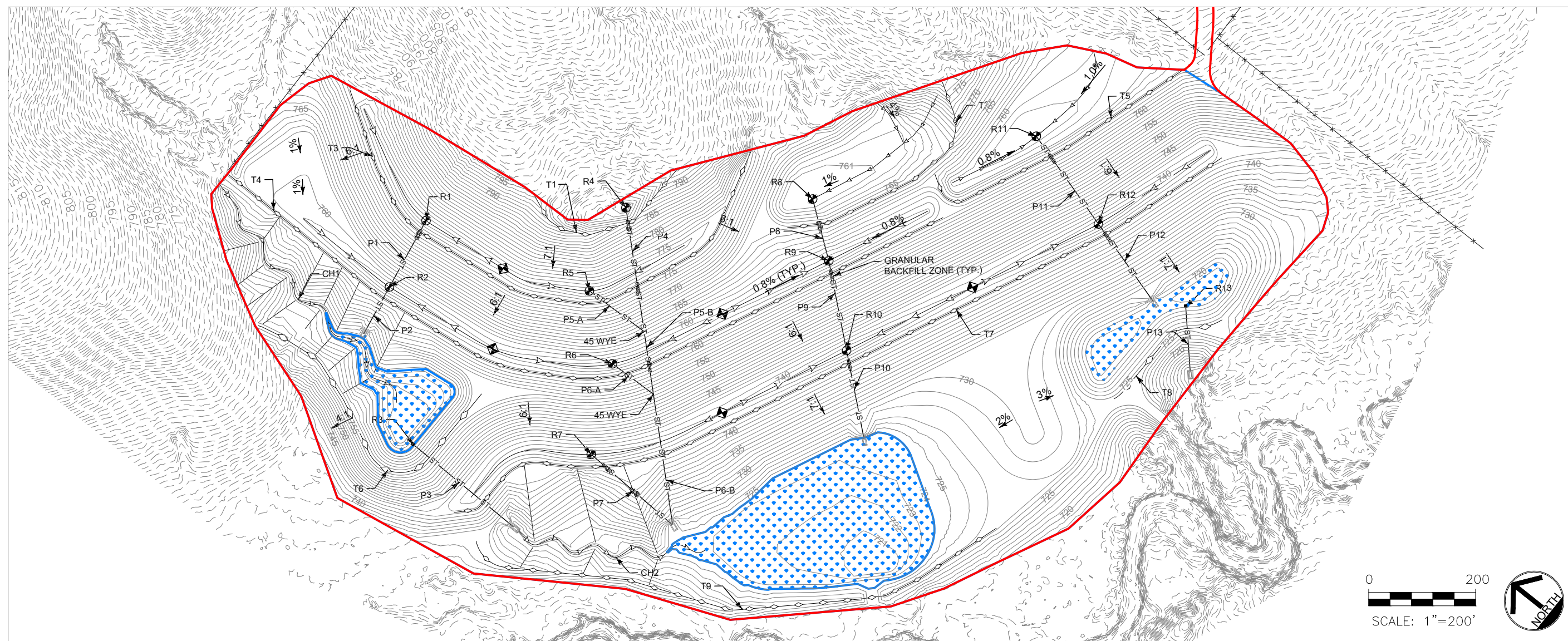
**NOTES:**

1. THIS SHEET DRAWN TO A LARGER SCALE TO IMPROVE CLARITY FOR THE CUTS AND FILLS.
2. CUTS AND FILLS SHOWN ARE TO FINISHED GRADE. ADDITIONAL FILL DEPTH MAY BE REQUIRED FOR SHRINKAGE AND SETTLEMENT.
3. EX. POND BOUNDARIES SHOWN FOR REFERENCE ONLY.
4. FILLS ABOVE EX. PONDS ARE SHOWN TO TOP OF MUCK AND DO NOT ACCOUNT FOR MUCK DISPLACEMENT.
5. CUTS & FILLS DO NOT INCLUDE EXCAVATION FOR PLACEMENT OF STONE EROSION CONTROL PRACTICES.
6. SEE SUPPLEMENTAL SPECIFICATIONS, SECTION 2200, 3.9 H. FOR REQUIREMENTS IN AREAS REQUIRING 15 OR MORE FEET OF FILL.



DESIGN BY: WJG	DRAWN BY: WJG	CHKD. BY: MLB	ISSUED: 6-25-2024	REVISED: ----	<div style="text-align: center;">  <p><b>IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP</b> DIVISION OF SOIL CONSERVATION AND WATER QUALITY HENRY A. WALLACE BUILDING 502 E. 9th STREET, DES MOINES, IOWA 50319 (515) 281-4246</p> </div>
<p><b>BOS AML RECLAMATION PROJECT CUT-FILL PLAN</b></p>					
<p><b>SHEET 7 OF 19</b></p>					

FILE: 01_BOS_AML.DWG	REVISION:	DATE:	DESCRIPTION:
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PROPOSED RISER (INTAKE) INFORMATION

RISER	SIZE	MAT'L	TYPE	LOWEST INLET ELEV. (F.G.)	OUTLET INVERT ELEV. (a.)
R1	8	PLASTIC	HICKENBOTTOM	772	768
R2	8	PLASTIC	HICKENBOTTOM	757	753
R3	4' x 4'	CONCRETE	IA-DOT SW-513 MOD.	748.5	744.5
R4	8	PLASTIC	HICKENBOTTOM	781	777
R5	6	PLASTIC	HICKENBOTTOM	772	768
R6	6	PLASTIC	HICKENBOTTOM	757	753
R7	6	PLASTIC	HICKENBOTTOM	738	734
R8	10	PLASTIC	HICKENBOTTOM	760	756
R9	6	PLASTIC	HICKENBOTTOM	757	753
R10	6	PLASTIC	HICKENBOTTOM	738	734
R11	8	PLASTIC	HICKENBOTTOM	757	753
R12	6	PLASTIC	HICKENBOTTOM	738	734
R13	4' x 4'	CONCRETE	IA-DOT SW-513 MOD.	720	716

PROPOSED PIPE INFORMATION

PIPE	SIZE (IN.)	MAT'L	LENGTH (FT.)	SLOPE (%)	UPSTREAM F.L. ELEV.	DOWNSTREAM F.L. ELEV.	DOWNSTREAM CONNECTION
P1	8	DWPE	143	10.5	768	753	RISER R2 TEE
P2	12	DWPE	78	3.0	753	750	12" PPHP OUTLET
P3	18	PPHP	240	5.4	744.5	731.5	PPHP
P4	8	DWPE	235	9.5	777	754.7	WYE @ P5-B
P5-A	6	DWPE	129	10.4	768	754.7	WYE @ P5-B
P5-B	10	DWPE	119	9.5	754.7	743.5	WYE @ P6-B
P6-A	6	DWPE	96	10.0	753	743.5	WYE @ P6-B
P6-B	12	DWPE	226	VAR	743.5	726	12" PPHP OUTLET
P7	6	PPHP	180	4.0	734	726	6" PVC OUTLET
P8	10	DWPE	120	2.5	756	753	RISER R9 TEE
P9	10	DWPE	172	11.0	753	734	RISER R10 TEE
P10	15	DWPE	149	5.0	734	725.5	15" PPHP OUTLET
P11	8	DWPE	202	9.4	753	734	RISER R12 TEE
P12	10	DWPE	158	7.0	734	721.5	10" PVC OUTLET
P13	18	PPHP	120	2	716	713.5	PPHP

PROPOSED TERRACE INFORMATION

RISER	LENGTH (FT.)	RIDGE WIDTH	RIDGE ELEV.
T1	345	5	VARIES 786-794
T2	475	5	VARIES 766-777
T3	1095	5	776
T4	1520	5	761
T5	560	5	763
T6	325	10	755
T7	1615	5	742
T8	260	10	725
T9	1044	5	VARIES 727-735

PROPOSED CHANNELS

CHANNEL	LENGTH (FT.)
CH1	587
CH2	409

NOTES THIS SHEET:

- CHANNEL LENGTHS ARE MEASURED TO THE NEAREST 1.0 FOOT ON THE HORIZONTAL PLANE.
- AGRI-DRAIN (OR EQUAL) PIPE STRAPS ARE REQ'D AT EACH PIPE JOINT
- RODENT GUARDS ARE REQ'D WERE EACH PIPE OUTLETS TO DAYLIGHT
- PIPE LENGTHS DO NOT INCLUDE THE LAST 20' WHERE "PVC OUTLET" OR PPHP OUTLET THE IS DOWNSTREAM CONNECTION.
- GRANULAR BACKFILL ZONES SHALL BE ENCASED WITH 8 OZ. FILTER FABRIC. SEE SUPPLEMENTAL SPECS 02300, 3.6.6. APPROX. 10 TON REQ'D EA. ZONE

NOTES THIS SHEET CONT'D:

- LOCATIONS AND LENGTHS OF GRANULAR BACKFILL ZONES ARE APPROXIMATE. GRANULAR BACKFILL IS REQ'D WHEREVER DEPTH ABOVE TOP TOP OF DWPE IS 10' OR MORE. SEE DETAIL 5-10 GRANULAR BACKFILL IS INCIDENTAL TO COST OF THE PIPE.
- SEE SWPPP BMP PLAN FOR PLUNGE POOLS AND BURIED CHECK DAMS.
- USE PREMIUM SPLIT COUPLER, FERNCO, MARMAC OR OTHER ENGINEER APPROVED COUPLER FOR CONNECTING DWPE TO PVC & PPHP OUTLETS.

FILE: 01\_BOS\_AML.DWG

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ISSUED: 6-25-2024

IOWA DEPARTMENT OF AGRICULTURE  
AND LAND STEWARDSHIP  
DIVISION OF SOIL CONSERVATION  
AND WATER QUALITY  
HENRY A. WALLACE BUILDING  
502 E. 9th STREET, DES MOINES, IOWA 50319  
(515) 281-4246

CHKD. BY: MLB

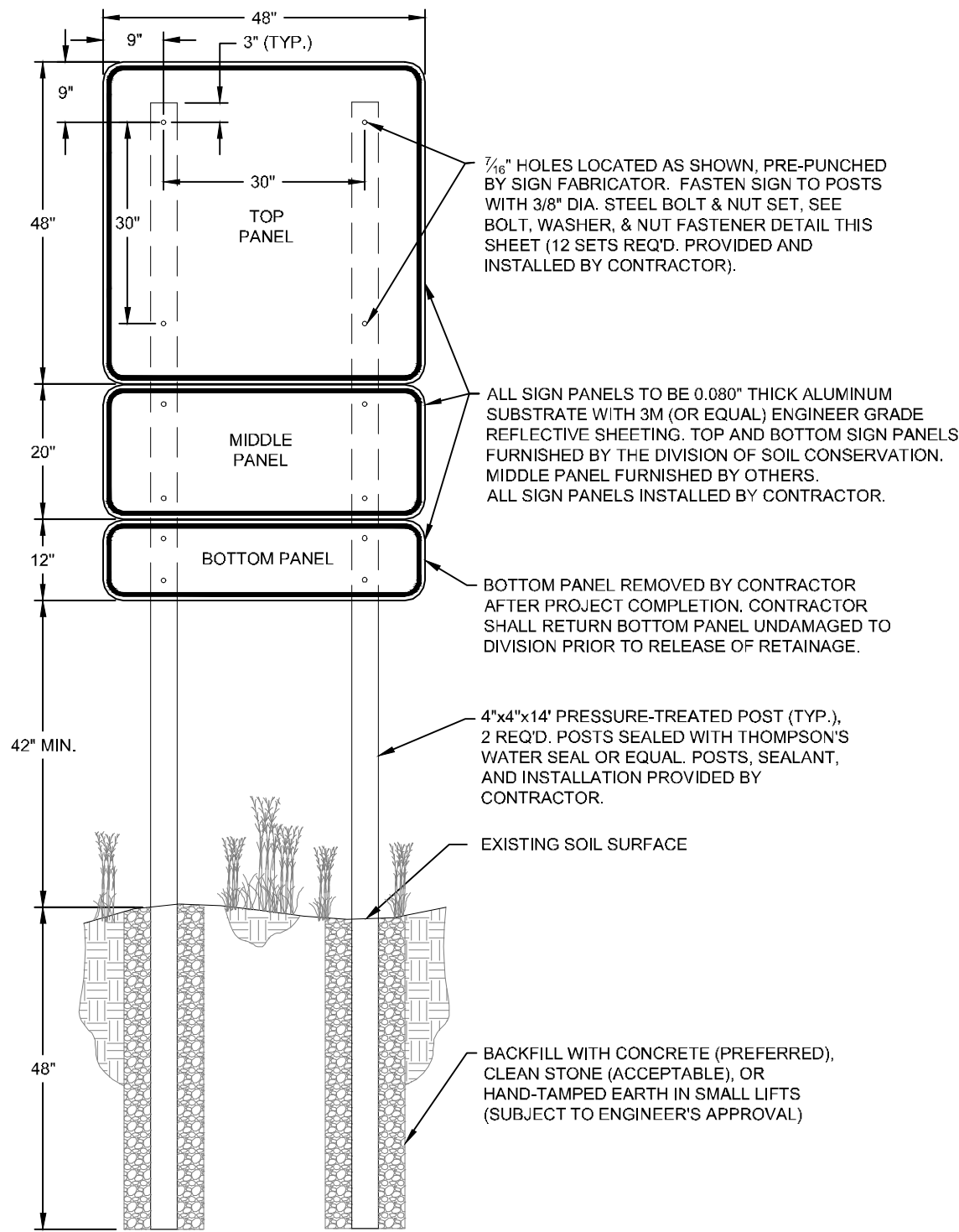


DRAWN BY: WJG

**BOS**  
**AML RECLAMATION PROJECT**  
**DRAINAGE PLAN**

DESIGN BY: WJG





7/16" HOLES LOCATED AS SHOWN, PRE-PUNCHED BY SIGN FABRICATOR. FASTEN SIGN TO POSTS WITH 3/8" DIA. STEEL BOLT & NUT SET, SEE BOLT, WASHER, & NUT FASTENER DETAIL THIS SHEET (12 SETS REQ'D. PROVIDED AND INSTALLED BY CONTRACTOR).

ALL SIGN PANELS TO BE 0.080" THICK ALUMINUM SUBSTRATE WITH 3M (OR EQUAL) ENGINEER GRADE REFLECTIVE SHEETING. TOP AND BOTTOM SIGN PANELS FURNISHED BY THE DIVISION OF SOIL CONSERVATION. MIDDLE PANEL FURNISHED BY OTHERS. ALL SIGN PANELS INSTALLED BY CONTRACTOR.

BOTTOM PANEL REMOVED BY CONTRACTOR AFTER PROJECT COMPLETION. CONTRACTOR SHALL RETURN BOTTOM PANEL UNDAUNAGED TO DIVISION PRIOR TO RELEASE OF RETAINAGE.

4"x4"x14' PRESSURE-TREATED POST (TYP.), 2 REQ'D. POSTS SEALED WITH THOMPSON'S WATER SEAL OR EQUAL. POSTS, SEALANT, AND INSTALLATION PROVIDED BY CONTRACTOR.

EXISTING SOIL SURFACE

BACKFILL WITH CONCRETE (PREFERRED), CLEAN STONE (ACCEPTABLE), OR HAND-TAMPED EARTH IN SMALL LIFTS (SUBJECT TO ENGINEER'S APPROVAL)

TOP PANEL (4' x 4') 0.080" ALUMINUM SUBSTRATE

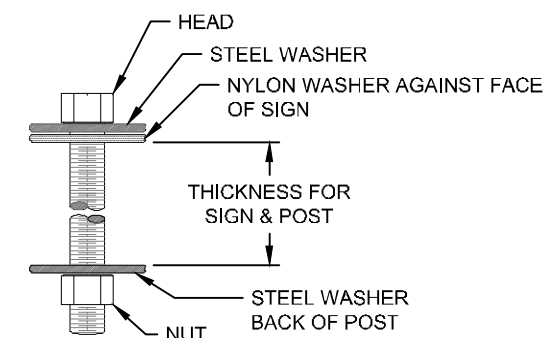


7/16" PRE-PUNCHED HOLE (TYP.)

MIDDLE PANEL (1'-8" x 4') 0.080" ALUMINUM SUBSTRATE



BOTTOM PANEL (1' x 4') 0.080" ALUMINUM SUBSTRATE

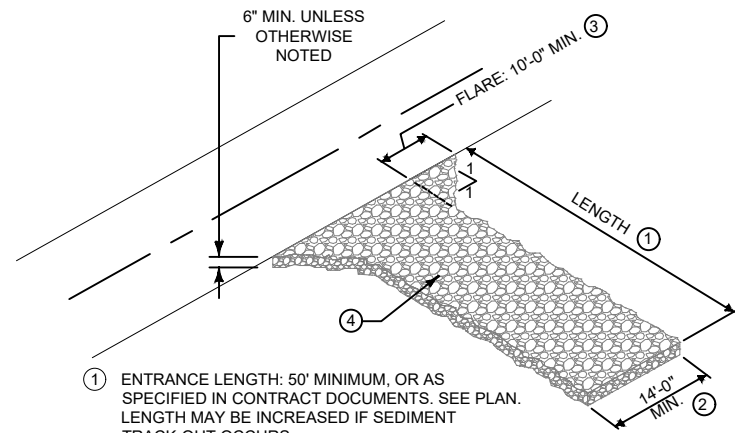


\*\* LETTER WIDTH = 75% OF THE LETTER HEIGHT

SIGNAGE NOTES:

1. DIVISION WILL FURNISH TOP AND BOTTOM SIGN PANELS. MIDDLE PANEL PROVIDED BY OTHERS. CONTRACTOR IS RESPONSIBLE FOR PROVIDING POSTS, HARDWARE, AND INSTALLATION FOR ALL PANELS.
2. ALL EXPOSED WOOD SHALL BE SEALED WITH THOMPSON'S WATER SEAL OR EQUAL MEETING ASTM D-4446-08.
3. ALL STEEL HARDWARE PIECES SHALL BE GALVANIZED OR RUST RESISTANT.
4. NYLON AND STEEL WASHERS SHALL BE USED AS SHOWN ON THE BOLT, WASHER, NUT FASTENER DETAIL ABOVE.
5. CLEAR UTILITIES WITH IOWA ONE-CALL (800) 292-8989 BEFORE EXCAVATING FOR POSTS.
6. SECURE ENGINEERS APPROVAL FOR SIGN LOCATION BEFORE INSTALLATION.
7. COSTS FOR POSTS, HARDWARE, WOOD SEALANT AND SIGN INSTALLATION SHALL BE INCIDENTAL TO MOBILIZATION.
8. CONTRACTOR SHALL INSTALL SIGN POSTS USING A PLYWOOD OR OTHER SUITABLE TEMPLATE TO MAINTAIN ACCURATE POST SPACING AND ALIGNMENT DURING BACKFILLING OF THE POST HOLES. TO AVOID BENDING OF THE SIGN PANELS, POSTS SHALL NOT BE INSTALLED OR BACKFILLED WITH SIGN PANELS ATTACHED.
9. ONE (1) PROJECT SIGN IS REQUIRED, LOCATED AS SHOWN ON PLANS.

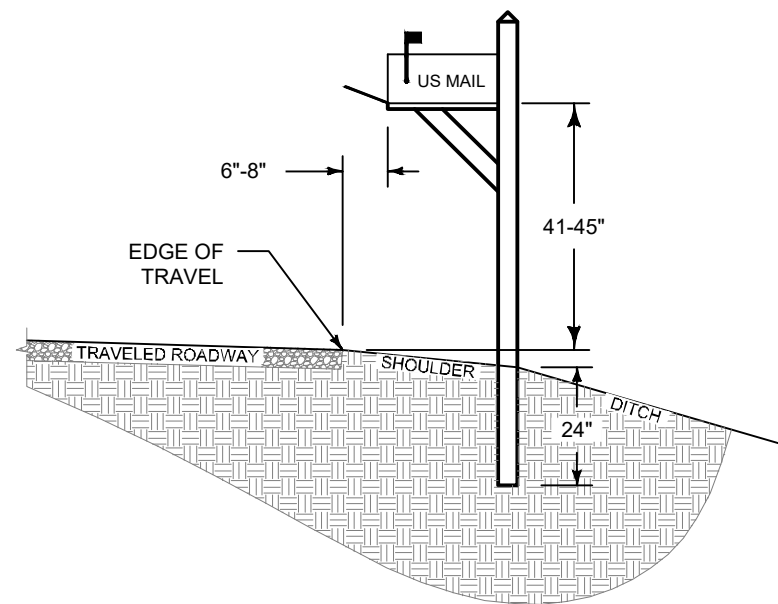
DESIGN BY: WJG	DRAWN BY: WJG	CHKD. BY: MLB	ISSUED: 6-25-2024	REVISED: -----	FILE: 01_BOS_AML.DWG
<p>IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP          DIVISION OF SOIL CONSERVATION AND WATER QUALITY          HENRY A. WALLACE BUILDING          502 E. 9th STREET, DES MOINES, IOWA 50319          (515) 281-4246</p>					
<p><b>BOS</b>  <b>AML RECLAMATION PROJECT</b>  <b>PROJECT SIGN DETAIL</b></p>					
<p>REVISION: 1 2 3 4</p>					
<p>DATE: _____</p>					
<p>DESCRIPTION:</p>					



- ① ENTRANCE LENGTH: 50' MINIMUM, OR AS SPECIFIED IN CONTRACT DOCUMENTS. SEE PLAN. LENGTH MAY BE INCREASED IF SEDIMENT TRACK-OUT OCCURS.
- ② ENTRANCE WIDTH: 14' MINIMUM, FOR RURAL PROJECTS OR AS SPECIFIED IN CONTRACT DOCUMENTS. A 20' WIDTH MAY BE REQUIRED WHERE TWO-WAY TRAFFIC IS FREQUENT. SEE PLAN
- ③ FLARE: CONFORM TO EX. ENTRANCE AT PUBLIC ROADWAY, IF APPLICABLE
- ④ MATERIAL: MACADAM STONE BASE PER IOWA D.O.T. SECTION 4122

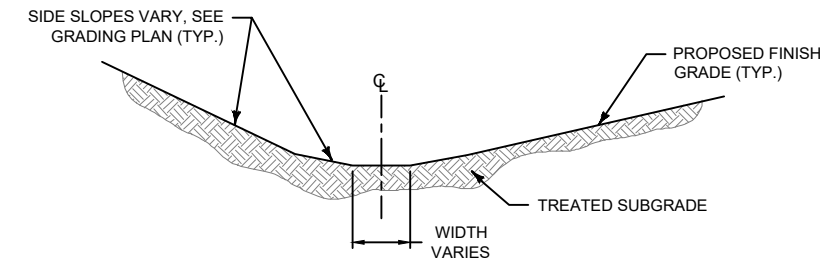
ADAPTED FROM SUDAS -- FIGURE 9040.120

**1**  
**10** STABILIZED ENTRANCE DETAIL  
SCALE: NONE

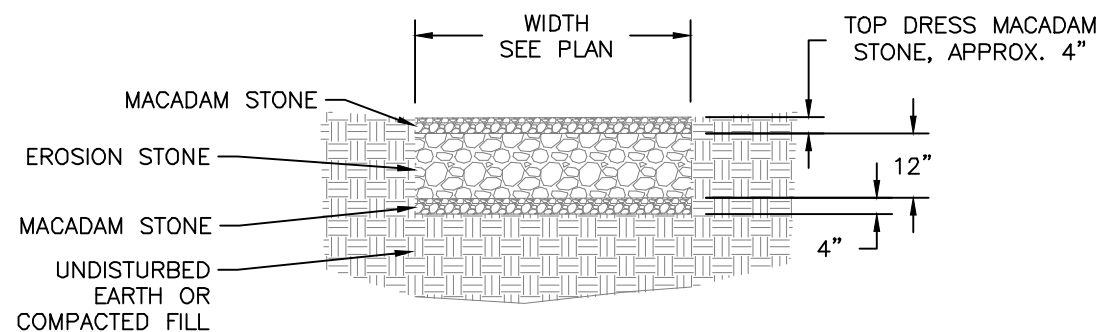


- NOTES:
- 1. DETERMINE WHERE TRAVELED EDGE OF ROADWAY IS LOCATED RELATIVE TO EXISTING MAILBOX POSITION PRIOR TO ITS RELOCATION.
  - 2. NEWSPAPER BOX MAY BE MOUNTED TO THE MAILBOX POST PROVIDED IT DOES NOT TOUCH AND IT IS NOT SUPPORTED BY THE US MAILBOX.

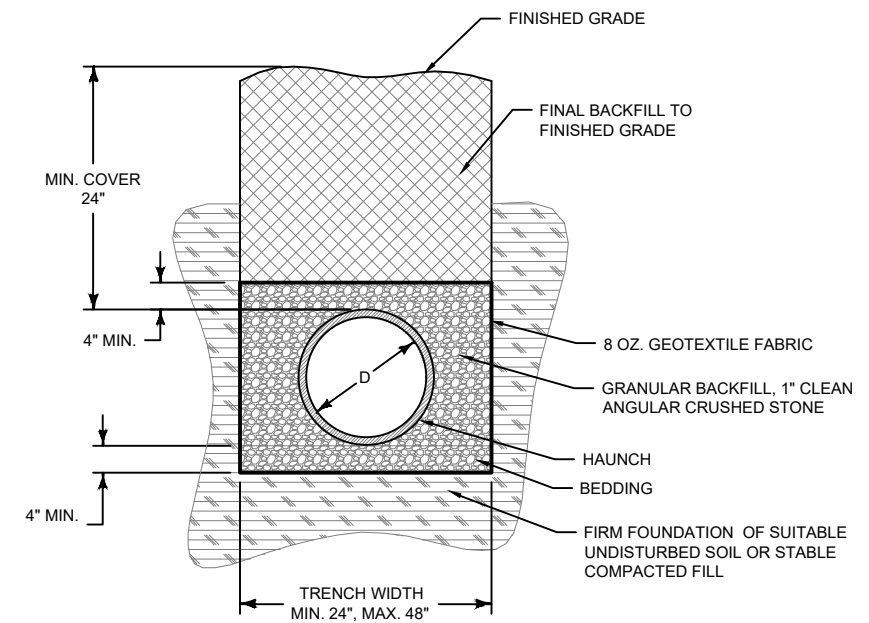
**2**  
**10** US MAILBOX INSTALLATION DETAIL  
SCALE: NONE



**3**  
**10** MEANDERED CHANNEL DETAIL  
SCALE: NONE



**4**  
**10** STABILIZED ROCK SURFACE AT EX. DRAINAGE WAYS  
SCALE: NONE



**5**  
**10** GRANULAR BACKFILL DETAIL  
SCALE: NONE

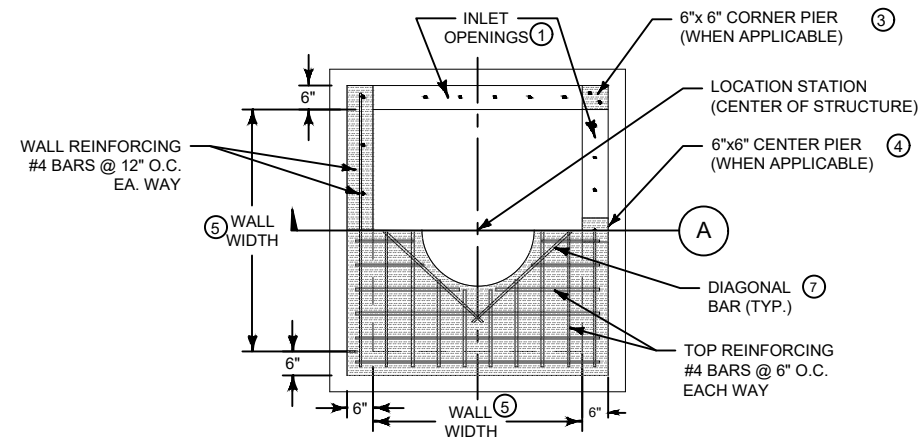
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 502 E. 9th STREET, DES MOINES, IOWA 50319  
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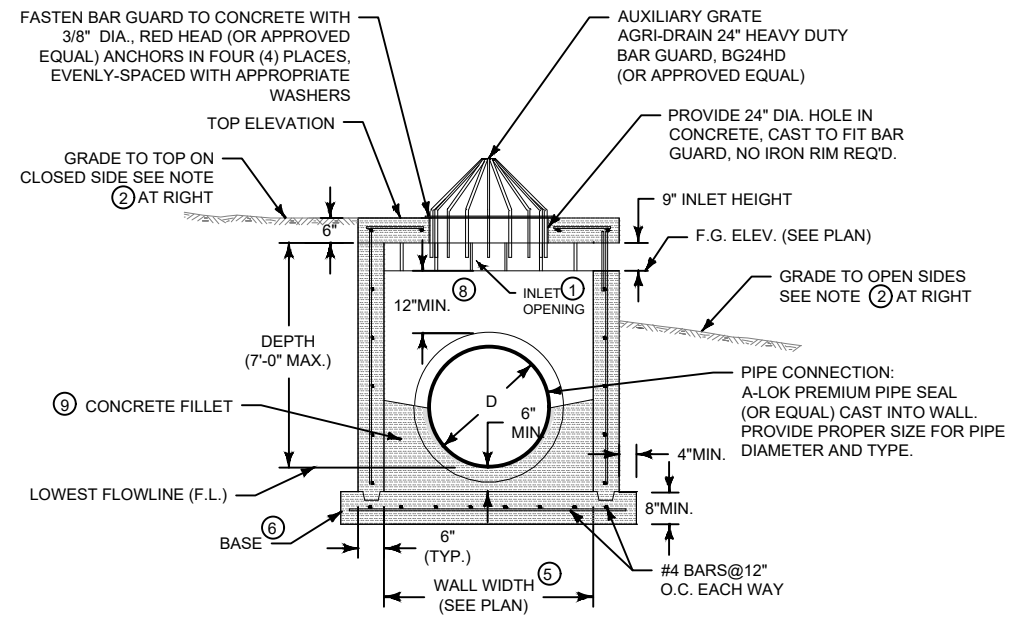


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**BOS**  
**AML RECLAMATION PROJECT**  
**TYPICAL DETAILS**



PLAN



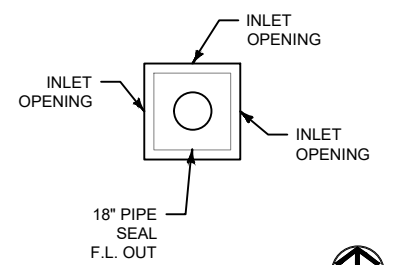
CROSS-SECTION "A"

**RISER DETAIL IA. DOT SW-513 (MODIFIED) WITH AUXILIARY GRATE**

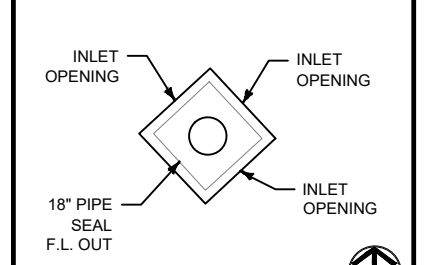
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SCALE: NONE  
SEE DETAILS BELOW FOR OPENING AND PIPE SEAL LOCATIONS  
SEE PIPE CONNECTION DETAIL THIS SHEET  
SEE DRAINAGE PLAN FOR PIPE DIAMETER AND TYPE

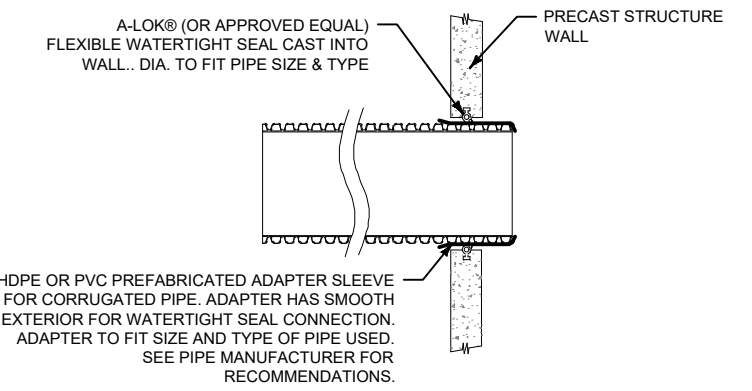
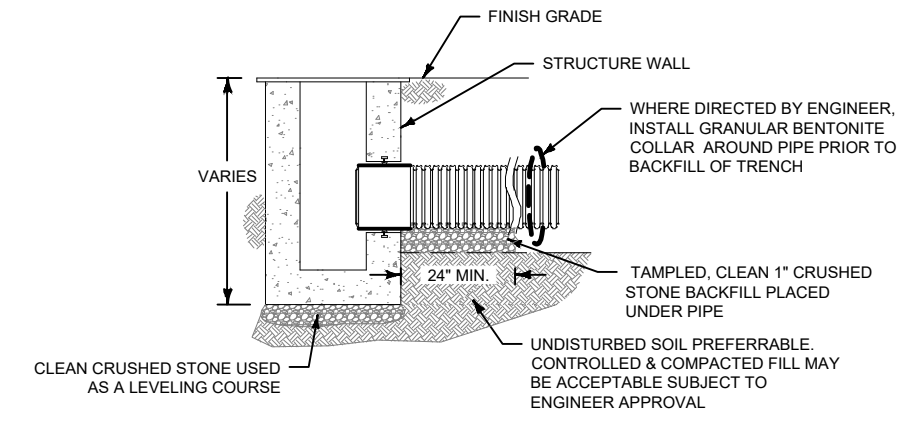
RISER R3: INLET OPENINGS ON 3 SIDES  
A-LOK (OR EQUAL) PIPE SEAL ON SOUTH WALL.  
WALL WIDTH=4'X4',  
F.G. ELEV=748.5 LOWEST F.L. OUT=744.5



RISER R13: INLET OPENINGS ON 3 SIDES, A-LOK (OR EQUAL) PIPE SEAL ON SOUTH WEST WALL.  
WALL WIDTH=4'X4',  
F.G. ELEV=720.0 LOWEST F.L. OUT=716.0



- THIS DRAWING SHOWS STRUCTURE AS CAST IN PLACE. STRUCTURE MAY BE PRECAST. A PRECAST INSTALLATION IS PREFERABLE.
- STRUCTURE MAY BE BUILT WITH OPENINGS ON ANY OR ALL SIDES. PROVIDE OPENINGS AND ORIENTATION AS SPECIFIED IN THE PLANS.
- ADJACENT WALLS MAY HAVE DIFFERENT WIDTHS BASED UPON PIPE CONFIGURATION, BUT STRUCTURE MUST BE RECTANGULAR.
- SEE PLAN OR ACCOMPANYING NOTES ON DETAIL SHEET FOR INSTALLED DIMENSIONS, ELEVATIONS, AND PIPE SIZES.
- CONSTRUCT INLET OPENINGS WITH 15-INCH #4 EPOXY-COATED BARS AT 8 INCHES ON CENTER. EMBED BARS A MINIMUM OF 3 INCHES INTO WALLS AND TOP AT ALL OPENINGS.
  - GRADE DRAINAGE DITCH TO FORM GRADE (F.G.) ELEVATION ON OPEN SIDES. 4:1 MAX. GRADE TO TOP ELEVATION ON CLOSED SIDES. FOR WETLAND APPLICATIONS, GRADE POND BOTTOM UP TO WITHIN 6 INCHES BELOW F.G. ELEVATION.
  - CORNER PIER REQUIRED BETWEEN OPENINGS OF TWO ADJACENT WALLS. EXTEND WALL REINFORCING VERTICALLY THROUGH PIER. INSTALL ONE ADDITIONAL 15-INCH #4 BAR IN PIER.
  - CENTER PIER REQUIRED AT CENTER OF ANY INLET OPENING WITH LENGTH OF 5 FEET OR GREATER. EXTEND WALL REINFORCING VERTICALLY THROUGH PIER. INSTALL ONE ADDITIONAL 15-INCH #4 BAR IN PIER.
  - WALL WIDTHS VARY WITH PIPE DIAMETER. PROVIDE 6 INCHES OF WALL WIDTH (MINIMUM) EACH SIDE OF PIPE OPENING. MINIMUM WALL WIDTH IS 36 INCHES. MAXIMUM WALL WIDTH IS 72 INCHES.
  - CAST-IN-PLACE BASE SHOWN. IF BASE IS PRECAST INTEGRAL WITH WALLS, THE FOOTPRINT OF BASE IS NOT REQUIRED TO EXTEND BEYOND THE OUTER EDGE OF THE WALLS.
  - INSTALL FOUR #4 DIAGONAL BARS AT ALL PIPE OPENINGS.
  - 12" MINIMUM WALL HEIGHT ABOVE ALL PIPES.
  - PRECAST FILLETS ARE PREFERABLE. IF CASTING FILLET IN PLACE, PREVENT CONCRETE FROM TOUCHING THE PIPE OR THE FLEXIBLE SEAL.



CLOSE-UP SECTION SHOWING A-LOK GASKET WITH PREFABRICATED ADAPTER SLEEVE

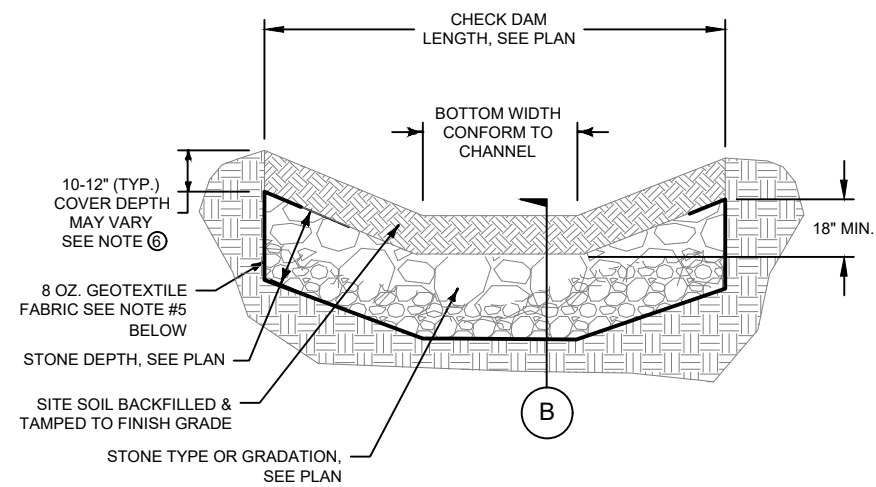
- NOTES:
- BELL ENDS OF ALL PIPE CONNECTIONS SHALL LIE POINTED TOWARD THE UPSTREAM DIRECTION.
  - SEE MANUFACTURER'S LITERATURE FOR INSTALLATION RECOMMENDATIONS OF HDPE & PPH CONNECTIONS TO MANHOLES AND STRUCTURES.
  - CONTRACTOR MUST VERIFY THAT A-LOK (OR APPROVED EQUAL) SEAL IS UNIFORMLY SEATED AROUND ADAPTER SLEEVE. EXTRA PRECAUTIONS MUST BE TAKEN TO PREVENT DIFFERENTIAL SETTLEMENT BETWEEN THE PIPE AND STRUCTURE.
  - A-LOK IS A REGISTERED TRADEMARK OF A-LOK PRODUCTS, INC. (www.a-lok.com)
  - OTHER TYPES OF FLEXIBLE SEALS, PROPERLY INSTALLED, MAY BE ACCEPTABLE WITH ENGINEER'S APPROVAL.
  - COST OF CLEAN STONE LEVELING COURSE IS INCIDENTAL TO COST OF THE STRUCTURE.
  - GRANULAR BENTONITE (WHEN USED) IS INCIDENTAL TO COST OF STRUCTURE UNLESS OTHERWISE NOTED.

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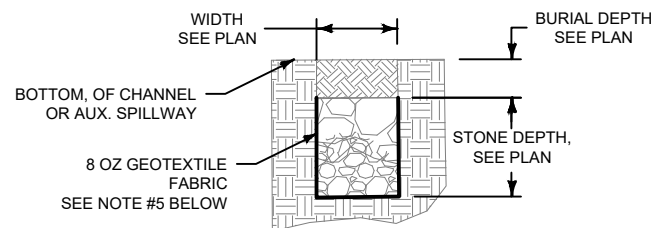
**PIPE CONNECTION DETAIL FOR STRUCTURES WITH FLEXIBLE PIPE SEALS**

SCALE: NONE

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DATE:					
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IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP DIVISION OF SOIL CONSERVATION AND WATER QUALITY HENRY A. WALLACE BUILDING 502 E. 9th STREET, DES MOINES, IOWA 50319 (515) 281-4246					
<b>BOS AML RECLAMATION PROJECT</b>					
<b>TYPICAL DETAILS</b>					



SECTION, BURIED CHECK DAM

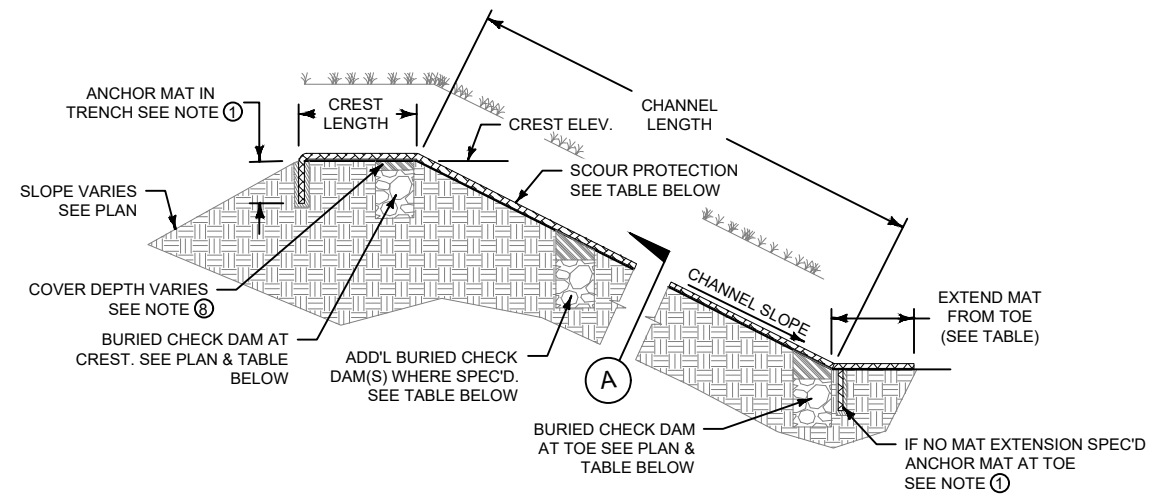


SECTION "B"

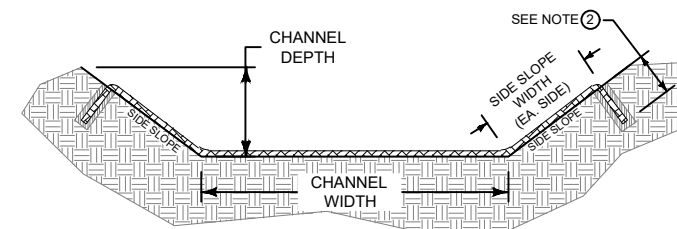
NOTES:

1. PLACE BURIED CHECK DAMS IN LOCATIONS SPECIFIED ON THE PLAN. TYPICAL LOCATIONS ARE IMMEDIATELY UPSTREAM OF ANY PLACE WHERE A FLAT SLOPE BREAKS INTO A STEEPER SLOPE. WHEN PLACED IN STREAMS, THESE ARE TYPICALLY PLACED IN STRAIGHT REACHES OF THE STREAM BED.
2. WHEN SPECIFIED, MIX EROSION STONE WITH THE RIPRAP TO CHOKE THE VOIDS BETWEEN STONES AS ILLUSTRATED ABOVE. SEE PLAN FOR TYPE OF STONE OR GRADATION TO BE USED IN EACH APPLICATION.
3. WHEN MIXING RIPRAP WITH EROSION STONE: PLACE EROSION STONE IN FIRST 6"-8" LIFT AT BOTTOM OF EXCAVATION, THEN PLACE APPROXIMATELY 12" OF RIPRAP, THEN WORK A 4"-6" LIFT OF EROSION STONE INTO VOIDS OF RIPRAP. PLACE NEXT LIFT OF RIPRAP. REPEAT UNTIL SPECIFIED DEPTH OF STONE IS PLACED.
4. WHEN SPECIFIED, CHOKE VOIDS IN THE RIPRAP WITH SITE SOIL IN LIEU OF EROSION STONE. PLACE SOIL INTO VOIDS OF RIPRAP USING PROCEDURE SIMILAR TO NOTE 3 ABOVE
5. WHEN VOIDS IN THE RIPRAP ARE CHOKED WITH SOIL, FILTER FABRIC IS NOT REQUIRED UNLESS OTHERWISE NOTED ON THE PLAN.
6. SEE TABLE OF BURIED CHECK DAMS FOR COVER DEPTHS.

1 BURIED CHECK DAM DETAIL  
12 SCALE: NONE



PROFILE



CROSS-SECTION "A"

AUXILIARY SPILLWAY DIMENSIONS							
SPILLWAY No.	CREST ELEV.	CREST LENGTH	SIDE SLOPE	CHANNEL WIDTH	CHANNEL DEPTH	CHANNEL LENGTH	CHANNEL SLOPE
SW-1	753.0	15'	5:1	12'	2'	46'	4.3%
SW-2	724.0	32'	5:1	12'	3'	5'	10%

- NOTES:  
a. CREST WIDTH = CHANNEL WIDTH  
b. GRADE CRESTS FLAT (0%)

AUXILIARY SPILLWAY SCOUR PROTECTION							
SPILLWAY No.	SCOUR PROTECTION	TOTAL MAT LENGTH	WIDTH EA. SIDE	TOTAL MAT WIDTH	TOE ANCHOR TRENCH	EXTEND FROM TOE	BURIED CHECK DAM(S)
SW-1	TRM,TYPE 2	61'	5'	22'	NO	8'	BCD-6 @ CREST, BCD-7 @ TOE
SW-2	TCBM	40'	6.5'	27.5'	NO	1.5'	BCD-11 @ TOE

SCOUR PROTECTION NOTES:

1. 18" FOR TCBM & HTIA MAT, 6" FOR TRM & RECP
2. 12" FOR TCBM & HTIA MAT, 6" FOR TRM & RECP (TYP. EA. SIDE)
3. SECURE MATS TIGHTLY TO SOIL SURFACE WITH ENGINEER-APPROVED ANCHORS OR STAKES.FOLLOW MANUFACTURER'S REQUIREMENTS FOR SPACING OF ANCHORS OR STAKES
4. USE EPOXY COATED U-ANCHORS OR PERCUSSION ANCHORS FOR TCBM & HTIA MATS
5. USE MIN. 6" LONG PLASTIC STAKES FOR TRM AND RECP
6. TCBM & HTIA DIMENSIONS INCLUDE MATERIAL PLACED IN ANCHOR TRENCHES & LAP SPLICES WHERE APPLICABLE
7. MATERIAL PLACED IN ANCHOR TRENCHES & LAPS ARE NOT INCLUDED IN DIMENSIONS FOR TRM AND RECP.
8. SEE TABLE OF BURIED CHECK DAMS FOR COVER DEPTH.

2 AUXILIARY SPILLWAY & SCOUR PROTECTION DETAIL  
12 SCALE: NONE

FILE: 01\_BOS\_AML.DWG

REVISION: 1 DATE: 2 3 4

ISSUED: 6-25-2024

CHKD. BY: MLB

DRAWN BY: WJG

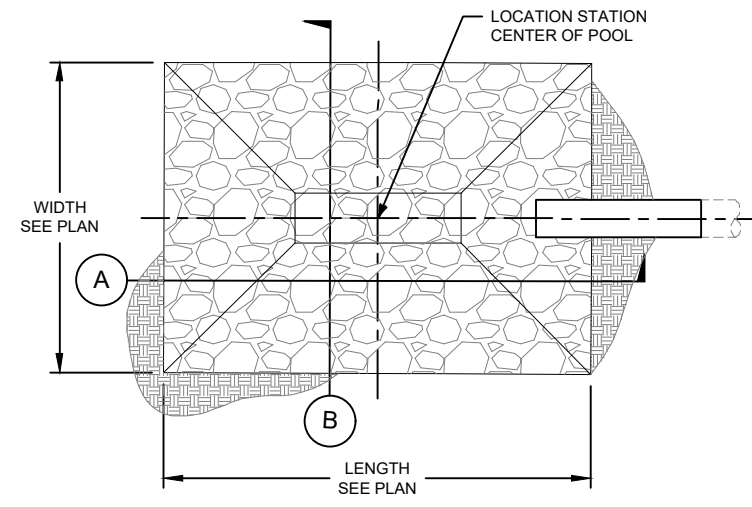
DESIGN BY: WJG

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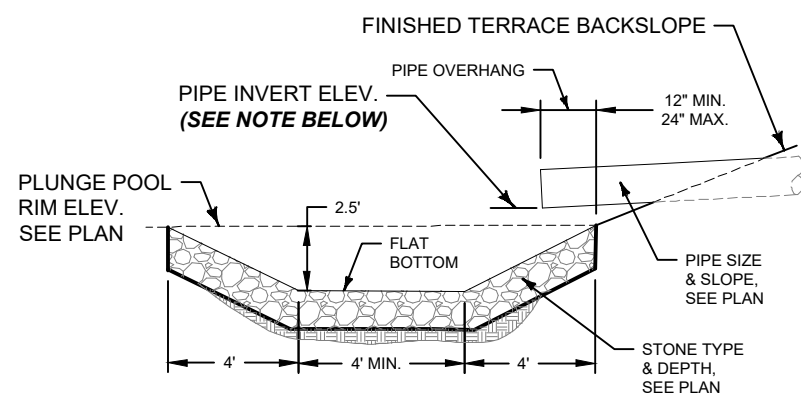
IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP  
DIVISION OF SOIL CONSERVATION AND WATER QUALITY  
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(515) 281-4246

BOS AML RECLAMATION PROJECT

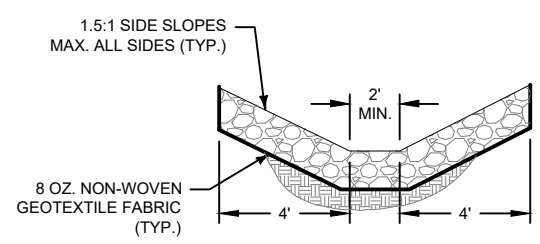
TYPICAL DETAILS



**PLAN VIEW**



**SECTION "A"**

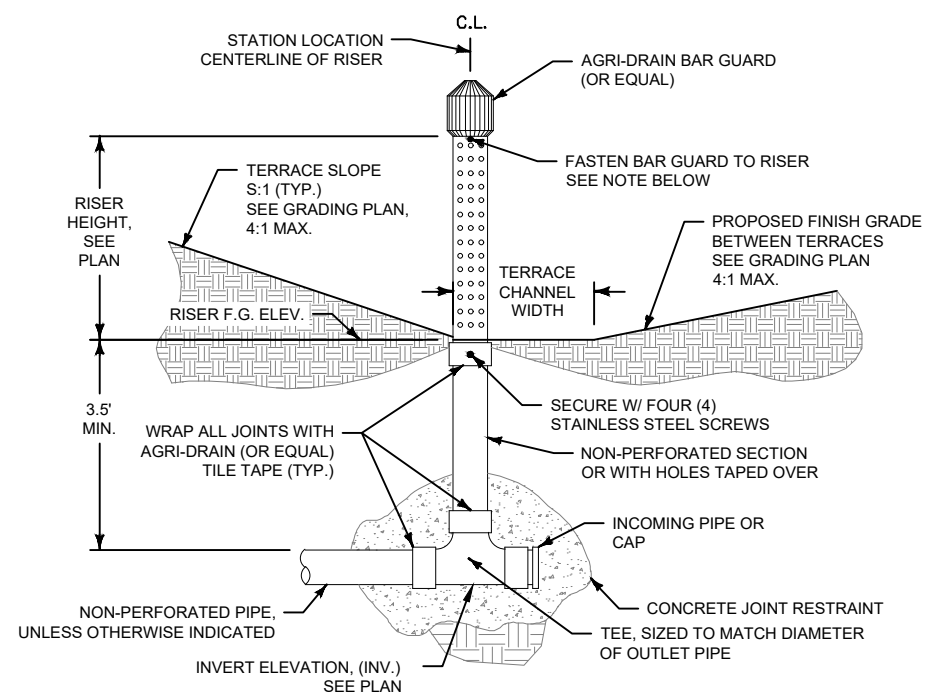


**SECTION "B"**

- NOTE:**
1. ALL PIPES SHOULD OUTLET 1.5' ABOVE RIM
  2. ALL PIPES DRAINING INTO WETLAND POOLS MUST OUTLET AT LEAST 1.5' ABOVE NORMAL POOL LEVEL.

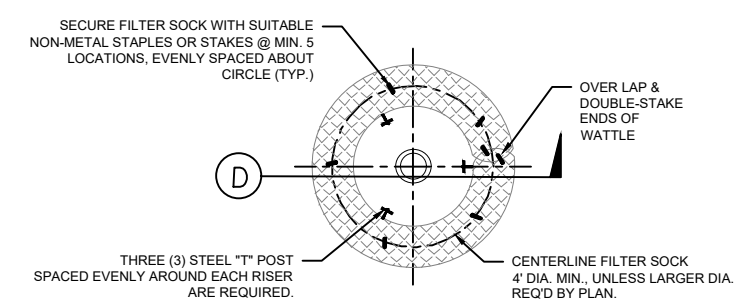
**1** **PLUNGE POOL DETAIL**  
13

SCALE: NONE  
PLUNGE POOL DIMENSIONS ARE PROVIDED WITH THE PLUNGE POOL INFORMATION ON THE SWPPP PLAN

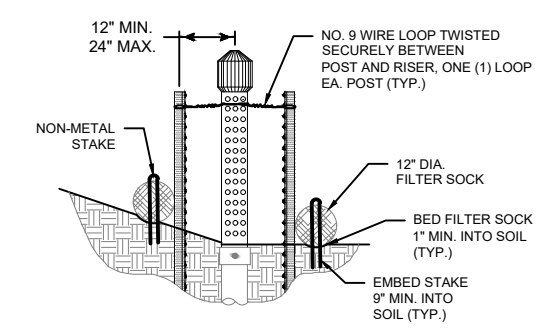


- NOTE:**
1. IF APPROVED BY THE ENGINEER, AGRI-DRAIN (OR EQUAL) PIPE STRAPS MAY BE USED IN LIEU OF CONCRETE TO RESTRAIN ALL CONNECTIONS OF THE RISER AND TEE ASSEMBLY.
  2. IF PIPE STRAPS ARE USED ALL METAL "D" RINGS SHALL BE COVERED WITH TILING TAPE.
  3. FASTEN BAR GUARD TO RISER WITH THREE (3) SELF-TAPPING SCREWS OR THREE (3) STAINLESS STEEL ZIP TIES EQUALLY SPACED ABOUT RISER.

**2** **RISER INSTALLATION DETAIL**  
13 SCALE: NONE



**PLAN VIEW**



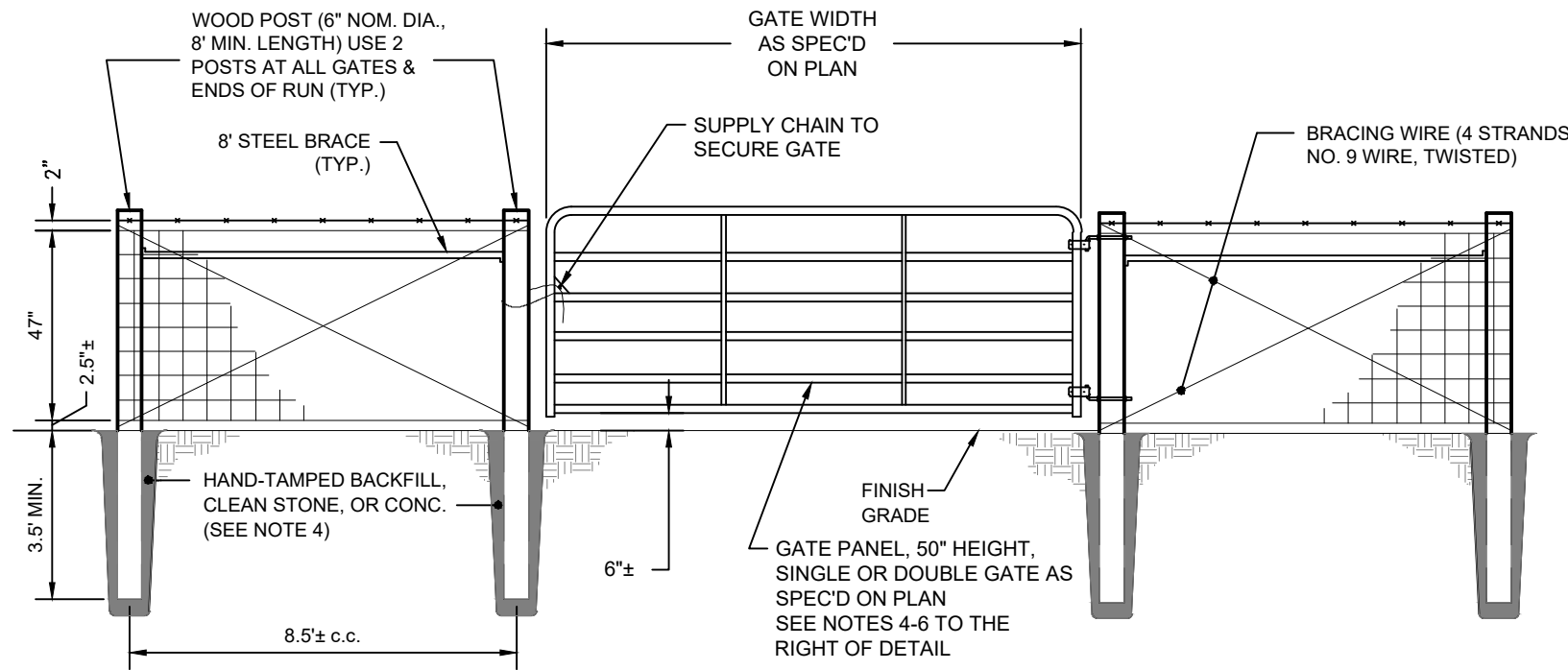
**SECTION "D"**

- NOTE:**
1. COST OF STEEL "T" POSTS ARE INCIDENTAL TO THE COST OF RISER INSTALLATION.

**3** **RISER PROTECTION DETAIL**  
13 SCALE: NONE

FILE: 01_BOS_AML.DWG	REVISION:	1	2	3	4
DATE:	DESCRIPTION:				
ISSUED: 6-25-2024	REVISED:				
CHKD. BY: MLB	ISSUED BY: WJG	IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP DIVISION OF SOIL CONSERVATION AND WATER QUALITY HENRY A. WALLACE BUILDING 502 E. 9th STREET, DES MOINES, IOWA 50319 (515) 281-4246			
DESIGN BY: WJG	DRAWN BY: WJG				
<b>BOS</b> <b>AML RECLAMATION PROJECT</b>		<b>TYPICAL DETAILS</b>			

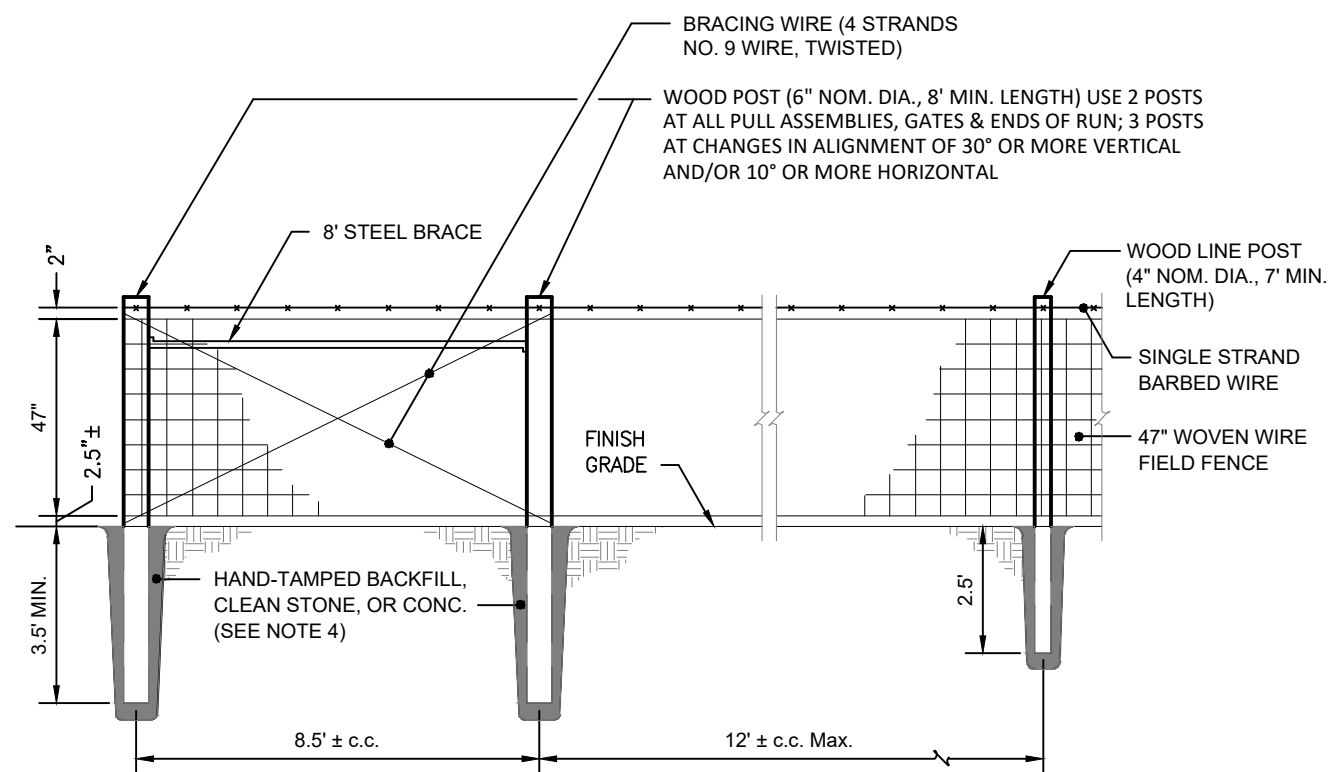




**GATE DETAIL NOTES:**

1. INSTALL ALL POSTS AND CONSTRUCT BRACE PANELS AS SPECIFIED IN FENCE DETAIL
2. UNLESS OTHERWISE NOTED, MIN. GATE PANEL LENGTH FOR SINGLE GATES IS 12 FEET. TWO (2) 12-FOOT PANELS SHALL BE INSTALLED FOR DOUBLE GATES. SEE PLAN FOR LENGTH OF GATE PANELS.
3. UNLESS OTHERWISE NOTED, ALLOW GATE PANELS TO OVERLAP A MINIMUM TWELVE (12) INCHES WHEN CLOSED. MAXIMUM OVERLAP SHALL BE NO GREATER THAN TWENTY-FOUR (24) INCHES.
4. SECURE DOUBLE GATES TOGETHER AT ENDS OPPOSITE HINGES.
5. WHENEVER POSSIBLE, HANG THE GATE WITH HINGES INTALLED ONTO A BRACE PANEL ASSEMBLY.
6. ALL GATES SHALL BE BUILT FROM TWO (2) INCH DIAMETER STEEL TUBE AND SHOP PAINTED. USE MOUNTING HARDWARE AND HINGES RECOMMENDED BY GATE MANUFACTURER.
7. DETAIL FOR DOUBLE GATE IS SIMILAR.
8. PAYMENT IS BY LUMP SUM FOR EACH GATE ASSEMBLY INSTALLED. DOUBLE GATES, WHERE SPECIFIED, ARE PAID FOR AS ONE (1) UNIT. BRACE PANELS AS SHOWN ON EACH END OF GATE ARE PAID PER LINEAL FOOT AS FENCING.


**1 SINGLE GATE DETAIL**  
SCALE: NONE

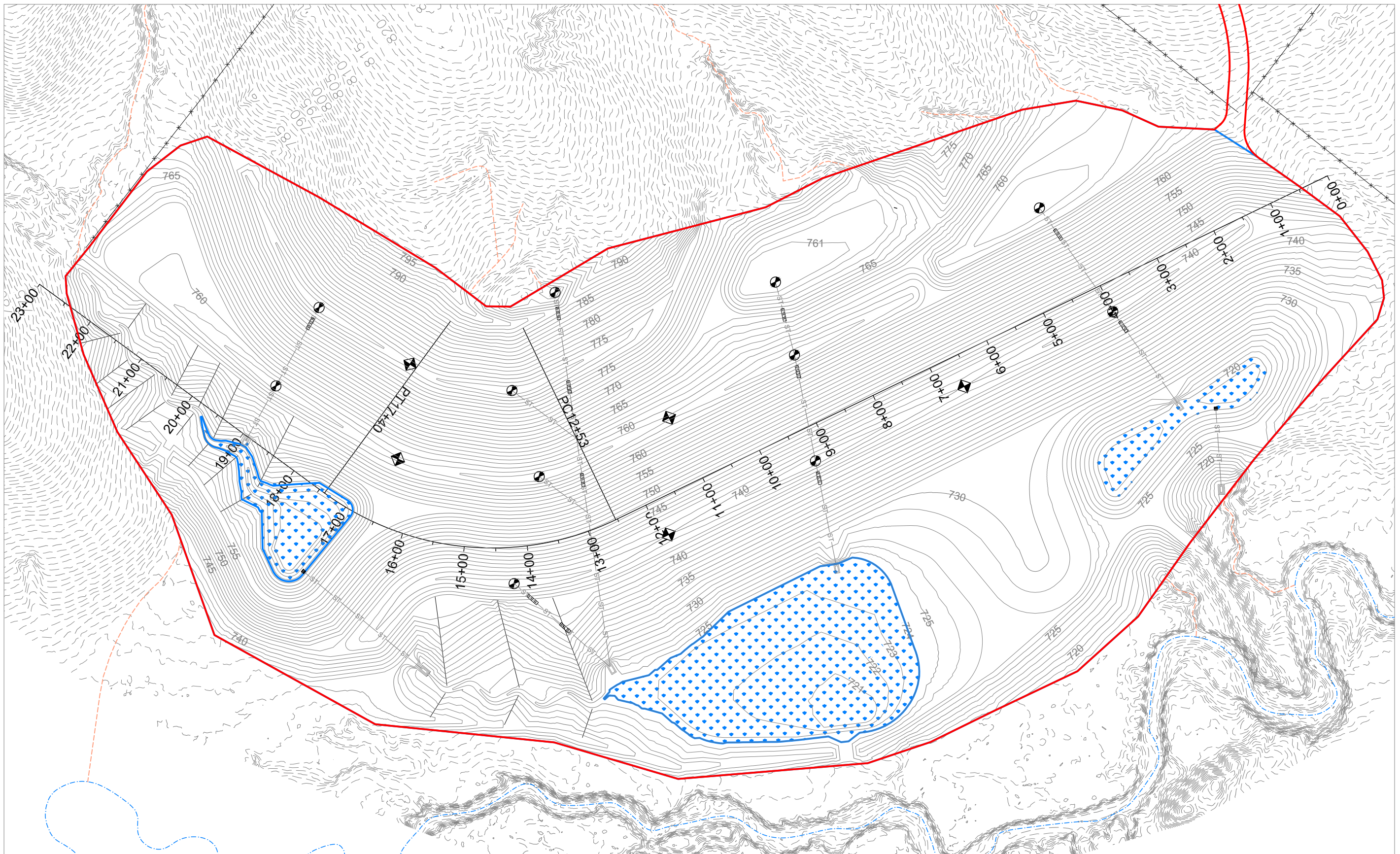


**FENCE DETAIL NOTES:**

1. ALL FENCING SHALL BE WOVEN WIRE UNLESS OTHERWISE NOTED OR DETERMINED BY CONSULTATION WITH DIVISION AND ENGINEER.
2. FENCING DETAIL IS SIMILAR TO IOWA DOT STANDARD ROAD PLAN MI-103, EXCEPT:
  - 2.a. ALL POSTS SHALL BE PRESSURE TREATED WOOD FOR GROUND CONTACT; CREOSOTE TREATED POSTS ARE ACCEPTABLE.
  - 2.b. LINE POST SPACING IS REDUCED TO 12' MAXIMUM.
  - 2.c. NO BARBED WIRE IS REQUIRED AS THE BOTTOM STRAND BELOW THE WOVEN FENCING.
3. BRACE END POST TO FIRST INTERIOR POST WITH STEEL BRACE AND BRACING WIRE. SIMILAR DETAIL AT ALL CORNER POST, ANGLE POST AND PULL POST ASSEMBLIES.
4. CLEAR UTILITIES PRIOR TO INSTALLING FENCE POSTS.
5. IN LIEU OF EXCAVATING, POSTS MAY BE SET BY DRIVING.
6. PAY LENGTH FOR FENCE EXCLUDES GATES. FOR PURPOSE OF BIDDING, PAY LENGTH IS PLAN LENGTH MEASURED FROM POINT TO POINT. ACTUAL PAY LENGTH WILL BE MEASURED IN THE FIELD ALONG THE SLOPE AND ALONG THE CONTOUR. LENGTH OF BRACE PANELS ARE INCLUDED WITH PAYMENT LENGTH FOR FENCE. COST OF BRACES AND BRACE WIRES ARE INCIDENTAL TO FENCING.
7. FIVE (5) STRANDS OF BARBED WIRE MAY BE SUBSTITUTED FOR THE WOVEN WIRE ONLY IN CONSULTATION WITH THE ENGINEER AND DIVISION

**2 FENCE DETAIL**  
SCALE: NONE

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<b>BOS</b> <b>AML RECLAMATION PROJECT</b>			<b>TYPICAL DETAILS</b>		
SHEET <b>14 OF 19</b>					



NOTES THIS SHEET:  
 1. THIS SHEET SHOWN AT A LARGER SCALE IMPROVED FOR CLARITY.

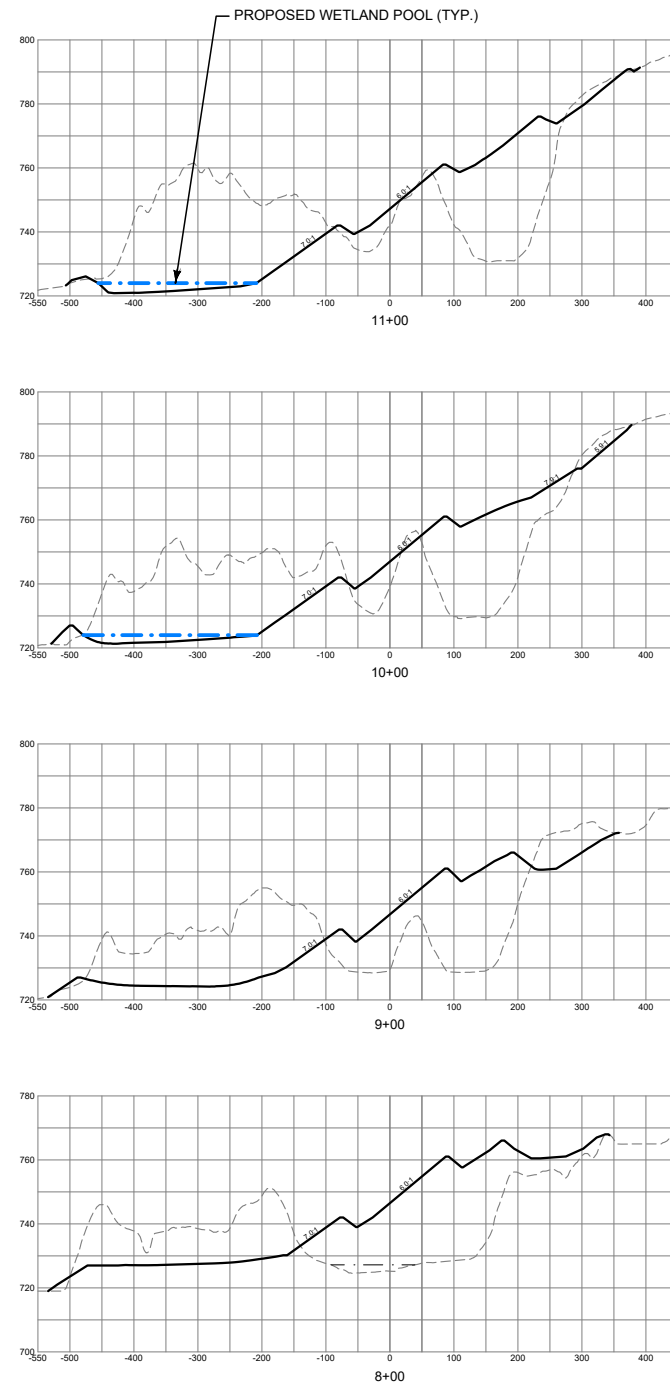
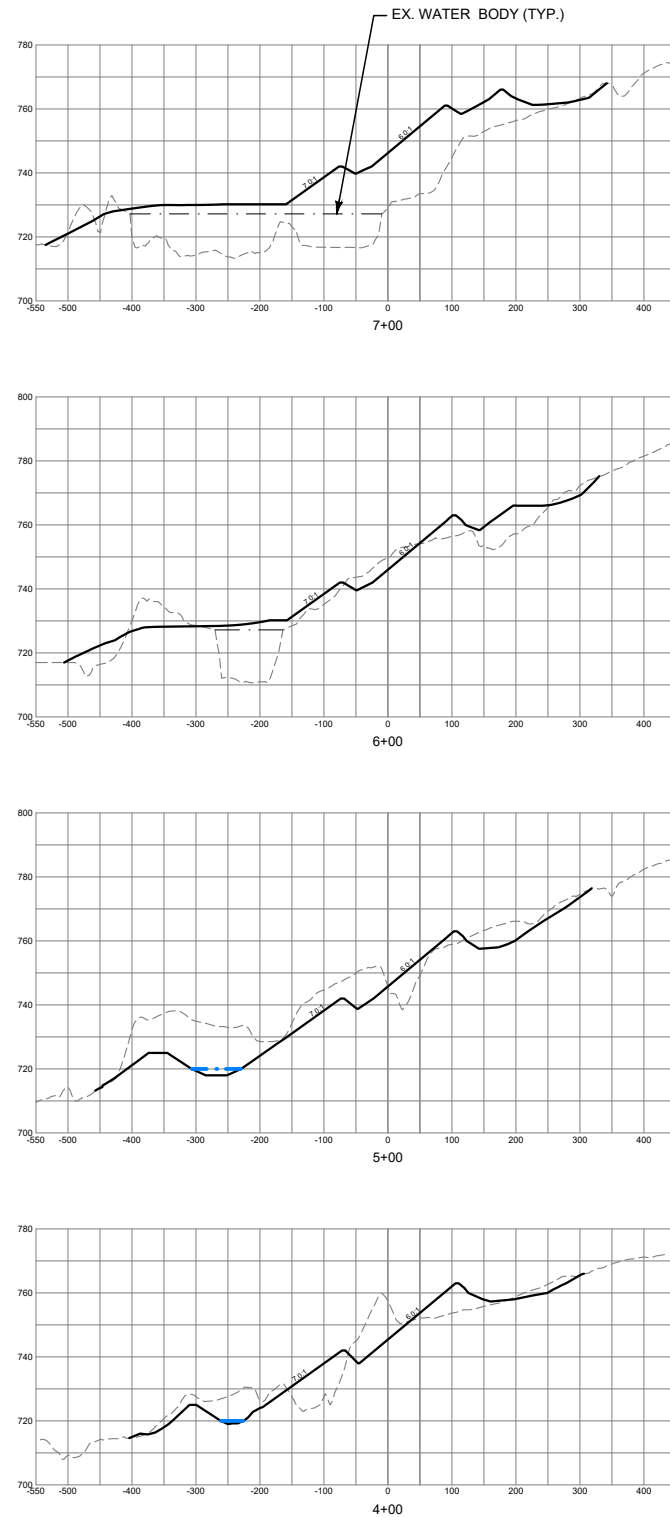
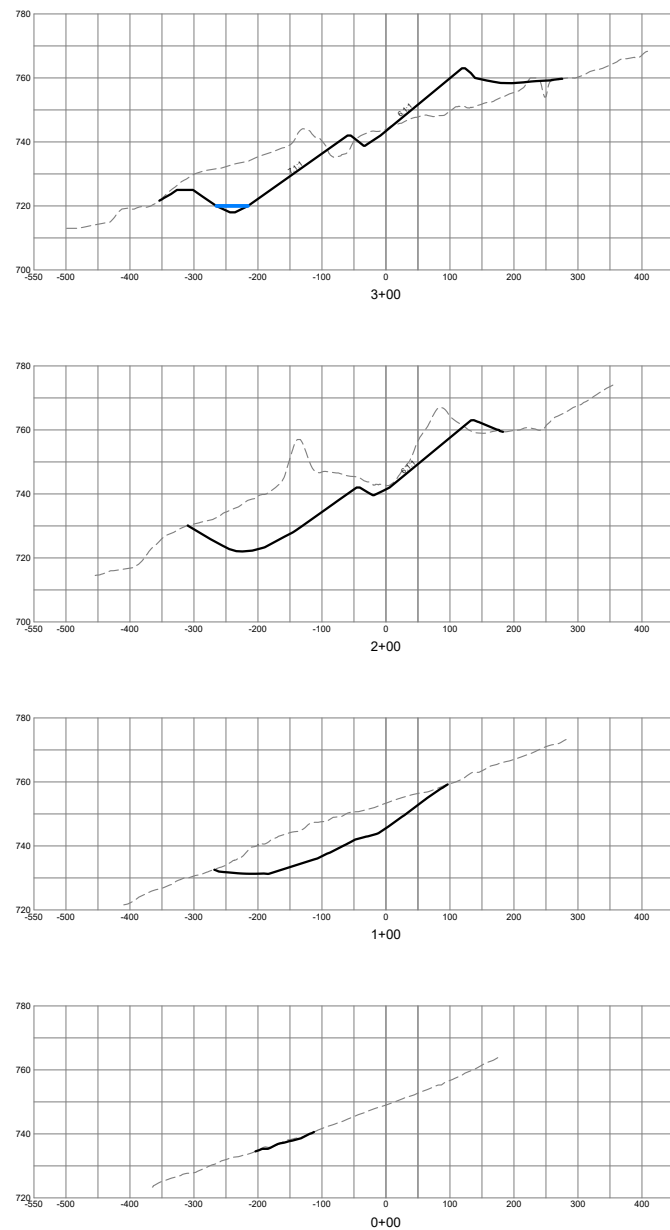
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 REVISED: -----  
 CHKD. BY: MLB  
 DRAWN BY: WJG  
 DESIGN BY: WJG


IOWA DEPARTMENT OF AGRICULTURE  
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 DIVISION OF SOIL CONSERVATION  
 AND WATER QUALITY  
 HENRY A. WALLACE BUILDING  
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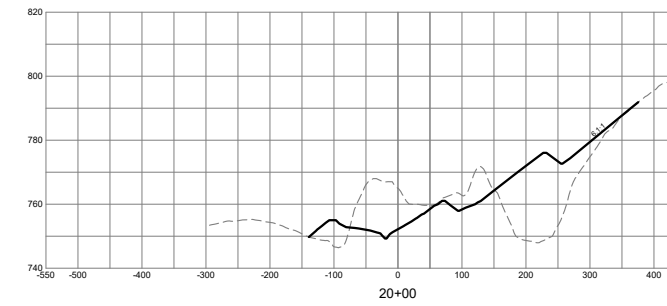
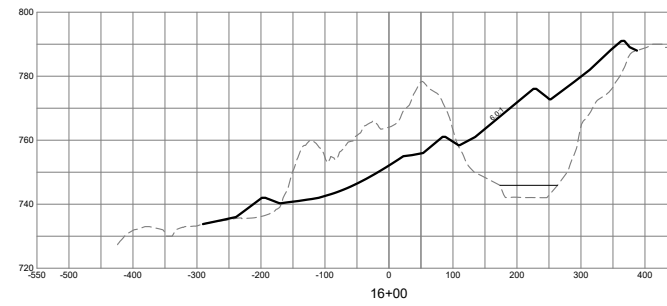
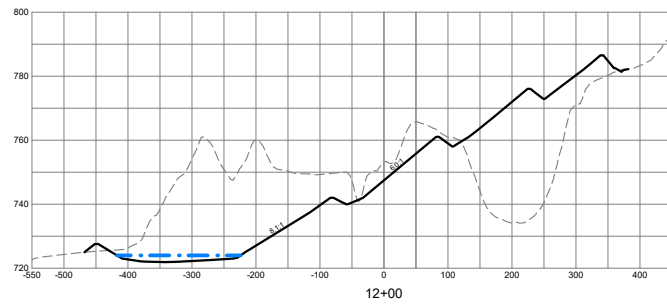
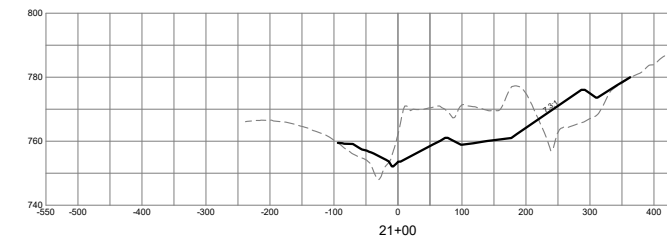
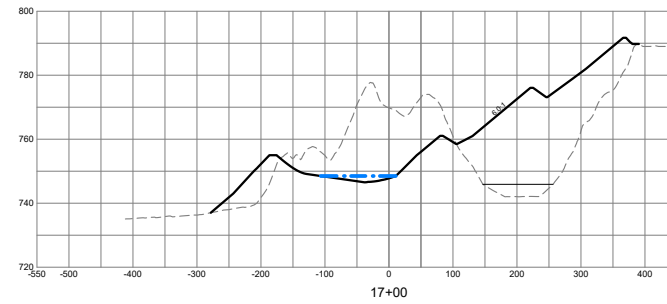
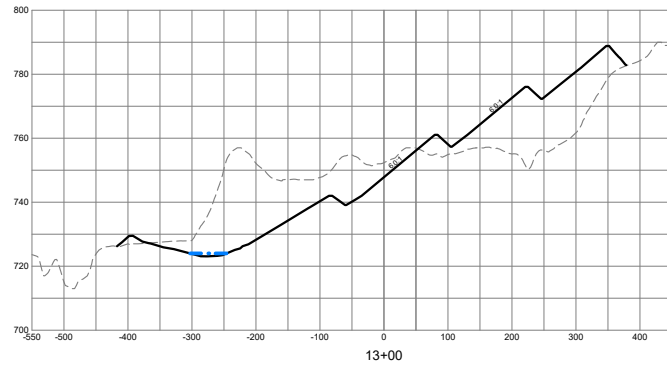
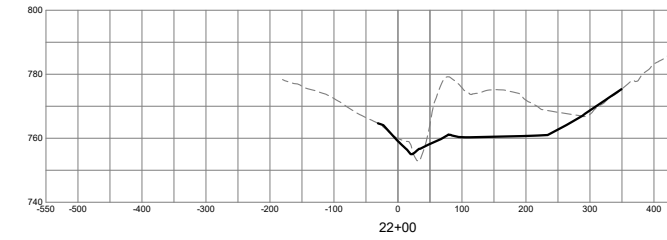
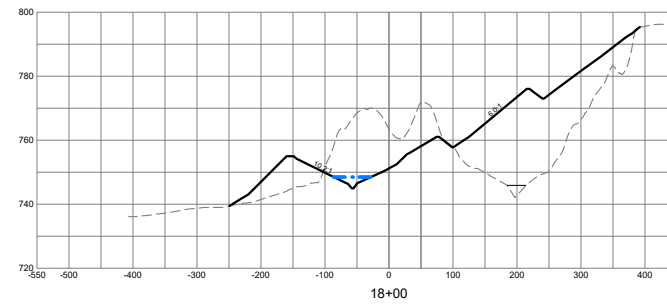
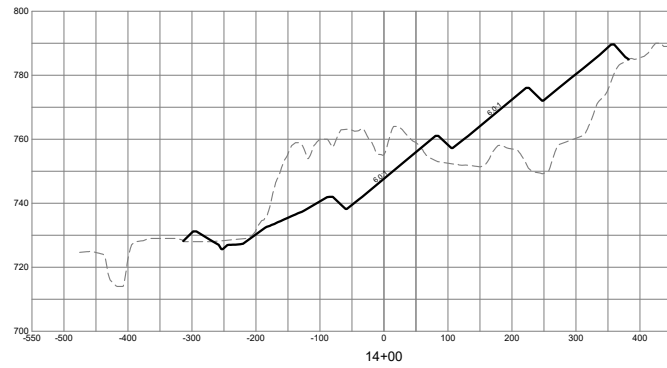
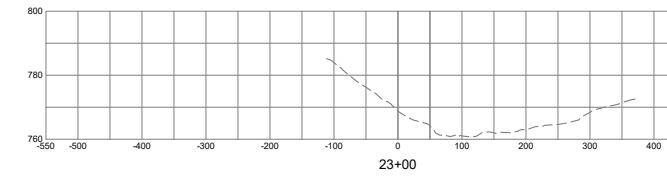
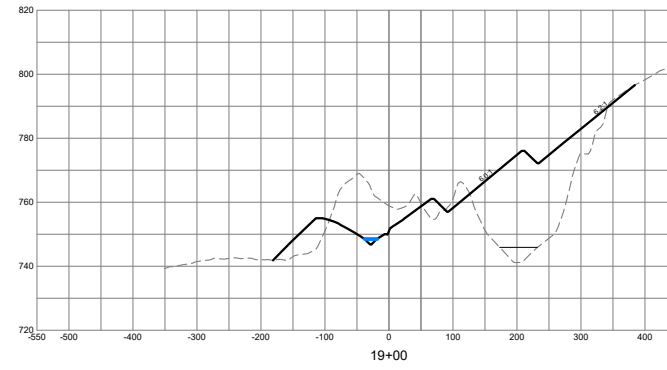
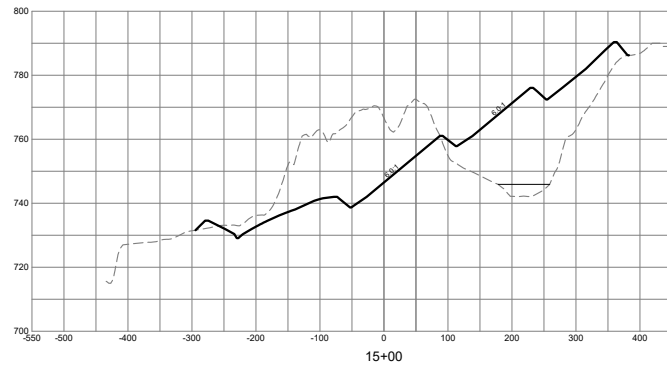
**BOS**  
**AML RECLAMATION PROJECT**  
**CROSS-SECTION BASELINE**



STA. 0+00 TO 11+00  
 HORIZ. SCALE: 1" = 300' VERT. SCALE: 1" = 60'

DESIGN BY: WJG	DRAWN BY: WJG	CHKD. BY: MLB	ISSUED: 6-25-2024	REVISED: -----	FILE: 01_BOS_AML.DWG
<b>BOS</b> <b>AML RECLAMATION PROJECT</b> <b>BASELINE CROSS SECTIONS</b>			REVISION:	DATE:	DESCRIPTION:
			1		
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			IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP DIVISION OF SOIL CONSERVATION AND WATER QUALITY HENRY A. WALLACE BUILDING 502 E. 9th STREET, DES MOINES, IOWA 50319 (515) 281-4246		
<b>SHEET</b> <b>16 OF 19</b>					





STA. 12+00 TO 23+00  
 HORIZ. SCALE: 1" = 300' VERT. SCALE: 1" = 60'

FILE:	01_BOS_AML.DWG		
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DATE:			
DESCRIPTION:			

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 CHKD. BY: MLB  
 DRAWN BY: WJG  
 DESIGN BY: WJG



IOWA DEPARTMENT OF AGRICULTURE  
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 DIVISION OF SOIL CONSERVATION  
 AND WATER QUALITY  
 HENRY A. WALLACE BUILDING  
 502 E. 9th STREET, DES MOINES, IOWA 50319  
 (515) 281-4246

**BOS**  
**AML RECLAMATION PROJECT**  
**BASELINE CROSS SECTIONS**

# STORM WATER POLLUTION PREVENTION PLAN (SWPPP) SUMMARY

(REVISED: 07-20-2021)

SITE INFORMATION:

1. SITE IS LOCATED IN THE SW ¼ SECTION 18 & NW ¼ SECTION 19, T-72N, R-14W, , WAPELLO COUNTY, IOWA.
2. THIS SWPPP COVERS THE RECLAMATION OF APPROXIMATELY 34.6 ACRES OF STRIP MINED LAND.
3. THE PREDOMINATE SOIL TYPES ARE: MINE SPOIL (5025)
4. RUNOFF FROM THE CONSTRUCTION AREA WILL FLOW INTO AN UNNAMED TRIBUTARY TO THE BEAR CREEK TO THE DES MOINES RIVER.
5. THE AVERAGE NRCS RUNOFF CURVE NUMBER FOR THIS LAND AFTER PERMANENT VEGETATION IS ESTABLISHED IS ESTIMATED TO BE 80. SOILS ON THIS SITE ARE SHOWN IN THE NRCS SOIL SURVEY AS BEING IN THE "D" HYDROLOGIC SOIL GROUP.

GENERAL:

1. THIS PROJECT WILL BE COVERED BY NPDES GENERAL PERMIT NO. 2 WHICH REGULATES STORMWATER DISCHARGE ASSOCIATED WITH INDUSTRIAL ACTIVITY FOR CONSTRUCTION ACTIVITIES.
2. THIS SHEET IS INCLUDED IN THE PLANS TO SUMMARIZE THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP). PARTICULAR INFORMATION CAN BE FOUND IN THE SWPPP DOCUMENTATION, WHICH SHALL INCLUDE:
  - A) THE SWPPP NARRATIVE DEVELOPED BY THE ENGINEER EXPLAINING HOW GENERAL PERMIT No. 2 REQUIREMENTS WILL BE MET
  - B) A COPY OF THE PERMIT AUTHORIZATION
  - C) CONTRACTOR AND SUB-CONTRACTOR CERTIFICATION STATEMENTS
  - D) ANTICIPATED SEQUENCE OF CONSTRUCTION EVENTS
  - E) DRAWINGS SHOWING LOCATIONS OF EROSION AND SEDIMENT CONTROL PRACTICES
  - F) COMPLETED INSPECTION REPORTS
  - G) MODIFICATIONS AND REPAIR DOCUMENTATION
3. THE SWPPP DOCUMENTATION SHALL BE KEPT AND MAINTAINED BY THE DIVISION IN AN ELECTRONIC FORM ACCESSIBLE TO DIVISION PERSONNEL, ENGINEER, AND CONTRACTOR AT ALL TIMES. THE ELECTRONIC SWPPP DOCUMENTATION MUST BE MADE AVAILABLE WITHIN THREE (3) HOURS OF A REQUEST FROM REGULATORY PERSONNEL.
4. THE PRIME CONTRACTOR AND ALL ITS SUBCONTRACTORS SHALL CONDUCT THEIR OPERATIONS IN A MANNER WHICH MINIMIZES EROSION AND PREVENTS SEDIMENTS FROM LEAVING THE CONSTRUCTION SITE. THE PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION AND COMPLIANCE OF THE SWPPP FOR THE ENTIRE CONTRACT. THIS RESPONSIBILITY SHALL BE FURTHER SHARED WITH ALL OF ITS SUB-CONTRACTORS.
5. THE WORK SHALL BE DONE IN ACCORDANCE WITH THE SWPPP, THE CONTRACT DRAWINGS, AND SECTION 02120 OF THE PROJECT SPECIFICATIONS. IN THE EVENT OF CONFLICT BETWEEN THESE REQUIREMENTS AND WATER POLLUTION CONTROL LAWS, RULES OR REGULATIONS OF OTHER FEDERAL, STATE OR LOCAL AGENCIES, THE MORE RESTRICTIVE LAWS, RULES OR REGULATIONS SHALL APPLY.
6. CONTRACTOR SHALL FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR THE INSTALLATION OF ALL BMPs IDENTIFIED IN THE SWPPP.

RECORD OF CHANGES:

- |                |              |
|----------------|--------------|
| 1. DATE: _____ | DESCRIPTION: |
| 2. DATE: _____ | DESCRIPTION: |
| 3. DATE: _____ | DESCRIPTION: |
| 4. DATE: _____ | DESCRIPTION: |

EROSION AND SEDIMENT CONTROLS (GENERAL):

1. GRANULAR SURFACING SHALL BE INSTALLED AND MAINTAINED AT THE ENTRANCE INTO THE SITE AND ANY IDENTIFIED PARKING AREAS TO CONTROL MUD FROM BEING TRACKED FROM THE SITE. TRACKING OF SEDIMENTS OFF-SITE WILL BE REDUCED BY AVOIDING VEHICLE TRAFFIC ACROSS WET SURFACE SOILS. IF GRANULAR SURFACING AT THE SITE ENTRANCE IS DOES NOT EFFECTIVELY PREVENT TRACKING OF MUD FROM THE SITE, THEN VEHICLE TIRES SHALL BE MANUALLY CLEANED TO THE EXTENT PRACTICABLE. CONTRACTOR SHALL REMOVE TRACKED MUD AND SOIL FROM ADJOINING ROADWAYS.
2. WATER SHALL BE APPLIED TO HAUL ROADS AND OTHER DISTURBED EARTHEN SURFACES AS NECESSARY TO CONTROL DUST THROUGHOUT THE CONTRACT PERIOD.
3. WATER PUMPED DURING CONSTRUCTION OPERATIONS SHALL BE HANDLED IN A PROPER MANNER. EROSION AND SCOUR SHALL BE PREVENTED AT POINTS WHERE THE PUMP(S) DISCHARGE. LEVEL SPREADERS, RIP-RAP, AND/OR OTHER ENERGY ABSORBING DEVICES OR APPROPRIATE BMPs SHALL BE USED.
4. EXISTING VEGETATION IN AREAS NOT NEEDED FOR CONSTRUCTION SHALL BE PRESERVED.
5. WHERE INDICATED ON DRAWINGS, SEDIMENT CONTROL PRACTICES SHALL BE INSTALLED AT OR ALONG THE PERIMETER OF THE CONSTRUCTION AREA PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITY.
6. RISERS, INLETS, INTAKES, AND OTHER SUCH WATER-CONVEYING STRUCTURES SHALL BE PROTECTED WITH STRAW WATTLES, OR FILTER SOCK AT THE TIME OF THEIR INITIAL INSTALLATION.
7. IN AREAS WHERE THE PRESENCE OF FILTER SOCK OR STRAW WATTLE WILL INTERFERE WITH CONSTRUCTION ACTIVITIES, DIVERSION DITCHES AND TEMPORARY SEDIMENT TRAPS SHALL BE UTILIZED UNTIL THE SILT FENCE OR OTHER PRACTICES CAN BE INSTALLED.
8. LOCATIONS AND QUANTITIES OF BMPs SHOWN ON THE DRAWINGS ARE APPROXIMATE. ACTUAL LOCATIONS OR QUANTITIES ARE TO BE DETERMINED IN THE FIELD WITH THE APPROVAL OF THE DIVISION OR THE THE PROJECT ENGINEER.
9. AS THE WORK PROGRESSES, ADDITIONAL EROSION CONTROL MEASURES DEEMED NECESSARY, AS DETERMINED BY THE DIVISION OR ENGINEER AFTER INVESTIGATION, SHALL BE FURNISHED, INSTALLED AND MAINTAINED BY THE CONTRACTOR.
10. IF CONSTRUCTION ACTIVITY IS NOT PLANNED TO OCCUR IN A DISTURBED AREA FOR AT LEAST FOURTEEN (14) DAYS, THE AREA SHALL BE STABILIZED AS SOON AS PRACTICABLE AND WITHIN FOURTEEN (14) DAYS FOLLOWING THE LAST DISTURBANCE (UNLESS THE GROUND IS FROZEN OR SNOW COVERED) BY SURFACE ROUGHENING, TEMPORARY SEEDING, OR OTHER APPROVED METHOD.
11. EROSION CONTROL MEASURES BY THE CONTRACTOR SHALL CONTINUE UNTIL VEGETATIVE GROUND COVER IS ESTABLISHED. AND ACCEPTED BY THE DIVISION.
12. ALL AREAS DISTURBED BEYOND CONSTRUCTION LIMITS SHOWN ON THIS PLAN MUST BE SEEDED AND STABILIZED. THE SEED MIXTURE USED SHOULD INCLUDE SPECIES SIMILAR TO AND COMPATIBLE WITH THE SURROUNDING VEGETATION.

OTHER POLLUTION CONTROLS:

1. THE CONTRACTOR SHALL MAINTAIN THE CONSTRUCTION SITE FREE OF ALL WASTES INCLUDING LITTER, USED PARTS, USED OIL AND CONTAINERS, TIRES, AND ANY OTHER WASTES GENERATED BY CONSTRUCTION ACTIVITIES. SANITARY WASTE GENERATED ON SITE SHALL BE TREATED AND DISPOSED OF IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REQUIREMENTS. CONTRACTOR DISPOSAL OF UNUSED CONSTRUCTION MATERIALS AND WASTES SHALL ALSO COMPLY WITH FEDERAL, STATE, AND LOCAL REGULATIONS.
2. CONCRETE WASHOUT RESIDUE SHOULD BE CONTAINED AND HAULED OFF SITE ONCE IT HARDENS. AREAS WHERE CONCRETE WASHOUT OCCURS SHALL BE FILLED AND STABILIZED.

TOPSOIL PRESERVATION:

THE SITE IS AN ABANDONED COAL MINE RECLAMATION PROJECT; NO TOPSOIL EXISTS PRIOR TO RECLAMATION-RELATED CONSTRUCTION ACTIVITIES. THEREFORE, THE TOPSOIL PRESERVATION REQUIREMENT WILL NOT BE MET. THE SITE CONSISTS OF MINE SPOIL MATERIAL CLASSIFIED AS MINE PITS AND DUMPS - SOIL TYPE 502 ON USDA SOIL SURVEY MAPS. AFTER FINAL GRADE IS ACHIEVED, AGRICULTURAL LIME WILL BE APPLIED AT A RATE TO BE DETERMINED BY SOIL TESTS. THE AGRICULTURAL LIME, ALONG WITH 5 TONS OF MULCH WILL BE INCORPORATED INTO THE UPPER ONE (1) FOOT OF THE MINE SPOIL TO PRODUCE A GROWING MEDIUM AS OUTLINED IN PROJECT SPECIFICATION 02400. AFTER A PERIOD OF TIME TO ALLOW FOR NEUTRALIZATION AND MULCH DECOMPOSITION, THE SITE WILL BE PREPARED FOR SEEDING. AGRICULTURAL LIME, FERTILIZER, SEED AND CRIMPED MULCH WILL BE APPLIED AS OUTLINED IN PROJECT SPECIFICATION 02700.

INSPECTIONS:


1. SITE INSPECTION IS THE RESPONSIBILITY OF THE DIVISION WITH ASSISTANCE FROM CONTRACTOR WHEN REQUESTED; SITE INSPECTIONS SHALL BE PERFORMED BY QUALIFIED PERSONNEL. INSPECTIONS SHALL BE PERFORMED ONCE EVERY SEVEN (7) DAYS.
2. ALL INSTALLED BMPs SHALL BE INSPECTED FOR CONDITION AND EFFECTIVENESS.
3. SITE INSPECTION REPORTS SHALL BE PROPERLY SIGNED BY THE PERSON CONDUCTING THE INSPECTION. THE REPORT SHALL INCLUDE:
  - A) DATE, NAME AND TITLE/POSITION OF THE INSPECTOR;
  - B) WEATHER INFORMATION;
  - C) LOCATION OF SEDIMENT/POLLUTANT DISCHARGE(S);
  - D) BMPs THAT ARE NEEDED, REQUIRE MAINTENANCE, OR HAVE FAILED,
  - E) CORRECTIVE ACTIONS REQUIRED;
  - F) CHANGES/UPDATES TO THE SWPPP.
4. THE FINDINGS OF EACH INSPECTION SHALL BE RECORDED AND KEPT IN AN ELECTRONIC FORMAT WITH THE ELECTRONIC SWPPP.
5. IF INSPECTIONS FIND DEFICIENCIES, THE CONTRACTOR SHALL BEGIN CORRECTIVE ACTION ON ALL DEFICIENCIES AS SOON AS PRACTICABLE.
6. THE SWPPP MAY BE REVISED BASED ON FINDINGS OF THE INSPECTIONS. SUCH REVISIONS SHALL BE MADE WITHIN SEVEN (7) DAYS OF THE INSPECTION. THE CONTRACTOR SHALL IMPLEMENT ALL REVISIONS.
7. COPIES OF INSPECTION REPORTS WILL BE RETAINED WITH THE SWPPP FOR THREE (3) YEARS FROM THE DATE THE PERMIT COVERAGE TERMINATES.

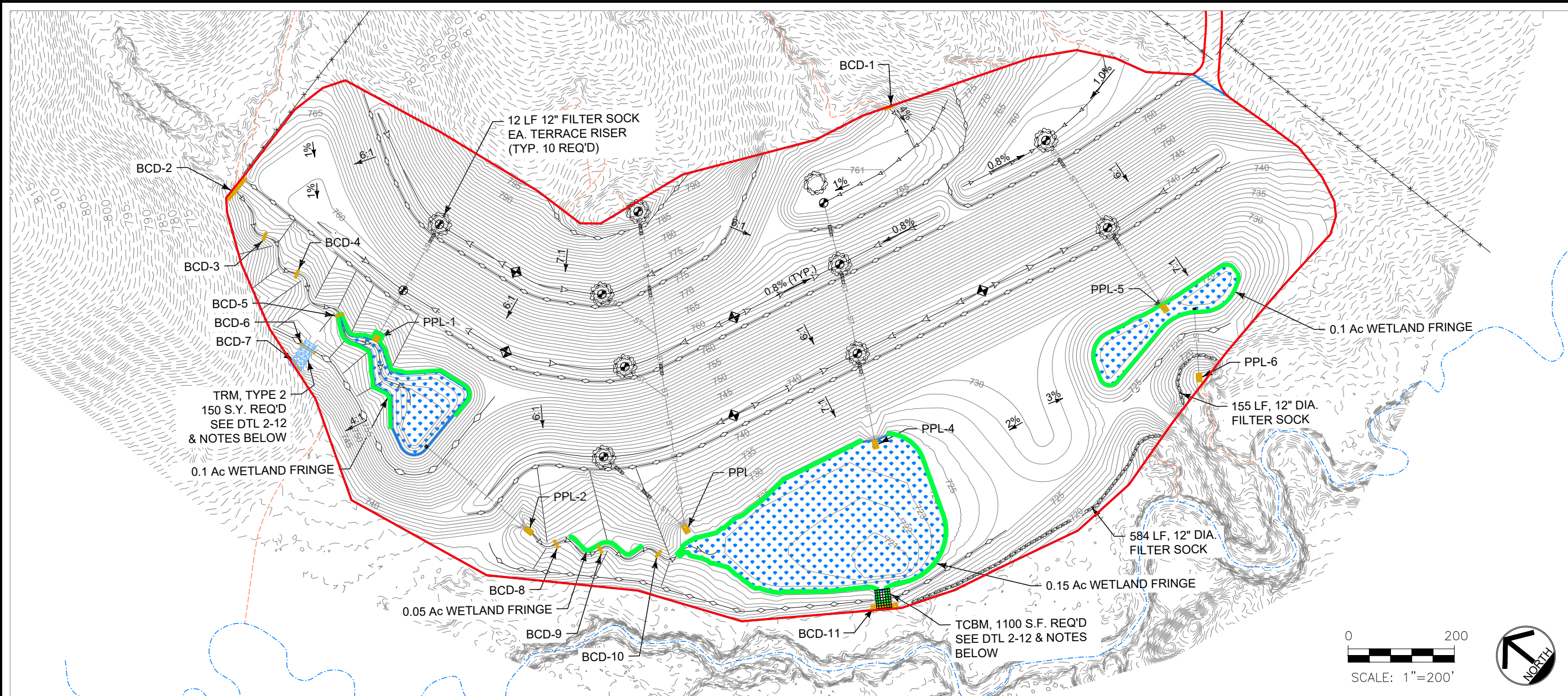
MAINTENANCE:

1. THE CONTRACTOR SHALL MAINTAIN ALL EROSION AND SEDIMENT CONTROL PRACTICES IN PROPER WORKING ORDER FOR THE DURATION OF THE CONTRACT. IF A PRACTICE IS NO LONGER NEEDED AS DETERMINED BY THE DIVISION OR ENGINEER, IT SHALL BE REMOVED.
2. MAINTENANCE INCLUDES CLEANING, REPAIRING, OR REPLACING AS REQUIRED. IN GENERAL, MAINTENANCE SHALL BE PERFORMED PRIOR TO THE NEXT ANTICIPATED STORM EVENT.
3. REMOVE SEDIMENT FROM SEDIMENT TRAPS, DITCHES, AND SILT FENCES WHEN THEIR INSTALLED CAPACITY IS REDUCED BY FIFTY (50) PERCENT OR MORE.

SITE SPECIFIC EROSION AND SEDIMENT CONTROLS:

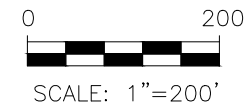
1. SEE SWPPP BMP PLAN

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CHKD. BY:	MLB	ISSUED:	6-25-2024
DRAWN BY:	WJG	ISSUED:	6-25-2024
DESIGN BY:	WJG	ISSUED:	6-25-2024
			
IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP DIVISION OF SOIL CONSERVATION AND WATER QUALITY HENRY A. WALLACE BUILDING 502 E. 9th STREET, DES MOINES, IOWA 50319 (515) 281-4246			
BOS AML RECLAMATION PROJECT		SWPPP SUMMARY	



TRM, TYPE 2  
150 S.Y. REQ'D  
SEE DTL 2-12  
& NOTES BELOW

TCBM, 1100 S.F. REQ'D  
SEE DTL 2-12 & NOTES  
BELOW



BURIED CHECK DAM (BCD) INFORMATION

PPL	WIDTH (FT)	LENGTH (FT)	STONE DEPTH (FT)	COVER DEPTH (INCH)	EROSION STONE (ton)	RIPRAP (ton)	MACADAM STONE BASE (ton)	INSTALL OVER FILTER FABRIC	CHOKE VOIDS W/ SITE SOIL
BCD-1	4	18	3	12	0	12	0	NO	YES
BCD-2	8	52	3	12	0	69	0	NO	YES
BCD-3	4	18	3	12	0	12	0	NO	YES
BCD-4	4	18	3	12	0	12	0	NO	YES
BCD-5	4	18	3	12	0	12	0	NO	YES
BCD-6	6	32	3	12	0	32	0	NO	YES
BCD-7	4	22	3	12	0	15	0	NO	YES
BCD-8	4	18	3	12	0	12	0	NO	YES
BCD-9	4	18	3	12	0	12	0	NO	YES
BCD-10	4	18	3	12	0	12	0	NO	YES
BCD-11	8	50	3	12	0	67	0	NO	YES

PROPOSED PLUNGE POOL (PPL) INFORMATION

PPL	RIM ELEV. (ft)	WIDTH (ft)	LENGTH (ft)	DEPTH (ft)	EROSION STONE (ton)	RIPRAP (ton)	MACADAM STONE BASE (ton)	INSTALL OVER FILTER FABRIC
PPL-1	748.5	10	12	2.5	16	0	0	YES
PPL-2	730	10	16	2.5	16	0	0	YES
PPL-3	724.5	10	16	2.5	7	15	0	YES
PPL-4	724	10	16	2.5	7	15	0	YES
PPL-5	720	10	16	2.5	7	15	0	YES
PPL-6	712	10	16	2.5	7	15	0	YES

NOTES THIS SHEET:

- SEE TABLES FOR DIMENSIONS OF PLUNGE POOLS AND BURIED CHECK DAMS.
- DIAMETER OF FILTER SOCK SHOWN ENCIRCLING TERRACE RISERS IS NOT TO SCALE. IT IS EXAGGERATED FOR CLARITY.
- SEED ALL WETLAND FRINGE AREAS BY HAND IN A 5' WIDE BAND ALONG THE NORMAL POOL LEVEL. INCORPORATE WETLAND FRINGE SEED WITH HAND TOOLS OR SMALL POWER EQUIPMENT.
- INSTALLATION TO TIED CONCRETE BLOCK MAT(TCBM) AND TURF REINFORCING MAT (TRM) SHALL CONFORM TO MANUFACTURER RECOMMENDATIONS.
- APPLY SEED, FERTILIZER, & 50 LB. FERMENTED BIOTIC SOIL ADDITIVE (OR APPROVED EQUAL) UNDER TRM AND TIED BLOCK MAT IMMEDIATELY PRIOR TO ITS INSTALLATION.
- SOIL SURFACE UNDER TRM AND TCBM SHALL BE SMOOTH. TRM SHALL BE INSTALLED TIGHTLY AGAINST THE SOIL SURFACE SECURED WITH MIN. 6" LONG PLASTIC STAKES.
- COORDINATE WITH ENGINEER AND SUPPLIER TO DETERMINE PLACEMENT & COMBINATION OF ROLL SIZES TO MINIMIZE WASTE OF TRM & TCBM.
- AVOID CUTTING TCBM TO FIT.

DESIGN BY: WJG  
DRAWN BY: WJG  
CHKD. BY: MLB  
ISSUED: 6-25-2024  
REVISED: -----  
FILE: 01\_BOS\_AML.DWG  
REVISION: 1  
DATE: 2  
3  
4

DESCRIPTION:

IOWA DEPARTMENT OF AGRICULTURE  
AND LAND STEWARDSHIP  
DIVISION OF SOIL CONSERVATION  
AND WATER QUALITY  
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BOS  
AML RECLAMATION PROJECT  
SWPPP BMP PLAN