ELEVATIONS TABLE			
CUT/FILL	MINIMUM ELEVATION	MAXIMUM ELEVATION	COLOR
CUT	−45.500	−15.500	
CUT	−15.500	0.000	
FILL	0.000	15.500	
FILL	15.500	36.500	

NOTES:
1. NEGATIVE (−) VALUES INDICATE AREAS OF CUT.
2. POSITIVE (+) VALUES INDICATE AREAS OF FILL.
3. ALL VALUES SHOWN ARE IN FEET.
4. ALL CONTOURS SHOWN ARE TO FINISHED GRADE, WHICH INCLUDES TERRACE CONSTRUCTION.
5. PROPOSED CONTOURS ARE SHOWN AT 1' INTERVALS NEAR TERRACES AND PONDING AREAS. PROPOSED CONTOURS ARE SHOWN AT 2' INTERVALS ALL OTHER AREAS, UNLESS NOTED OTHERWISE. EXISTING CONTOURS ARE SHOWN AT 2' INTERVALS.

GRAPHIC SCALE
0 120' 240' 360'

N

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FILE: 049.001

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

CHKD. BY: KLJ

DRAWN BY: BAY

DESIGN BY: LTL

SYTSMA (IA-123)
AML RECLAMATION PROJECT

CUT AND FILL PLAN

SHEET 7 OF 15

OUTFALL #1
SEE DETAIL #1,
SHEET 10

OUTFALL #2
SEE DETAIL #1,
SHEET 10

OUTFALL #3
SEE DETAIL #1,
SHEET 10

TERRACE RISER INTAKE R5
SEE DETAIL #1, SHEET 9

TERRACE T5
SEE DETAIL #2, SHEET 9

TERRACE T6
SEE DETAIL #2, SHEET 9

TERRACE RISER INTAKE R6
SEE DETAIL #1, SHEET 9

PIPE P6

OUTFALL #4
SEE DETAIL #2 SHEET 10

TERRACE RISER INTAKE R8
SEE DETAIL #1, SHEET 9

OUTFALL #5
SEE DETAIL #1, SHEET 10

PIPE P8

TERRACE RISER
INTAKE R1
SEE DETAIL #1,
SHEET 9

PIPE P1

TERRACE T1
SEE DETAIL #2,
SHEET 9

PIPE P3

PIPE P5

PIPE P4

TERRACE T2
SEE DETAIL #2, SHEET 9

TERRACE RISER INTAKE R2
SEE DETAIL #1, SHEET 9

PIPE P2

TERRACE RISER INTAKE R3
SEE DETAIL #1, SHEET 9

TERRACE T3
SEE DETAIL #2, SHEET 9

TERRACE AUXILIARY SPILLWAY
SEE SHEET 6 AND DETAIL #3, SHEET 9

TERRACE TRANSITION
PLACE 105 TON EROSION STONE
12" DEEP OVER ENGINEERING FABRIC.
TOP OF ROCK IS FINISHED GRADE.

TERRACE RISER INTAKE R4
SEE DETAIL #1, SHEET 9

TERRACE T4
SEE DETAIL #2, SHEET 9

TERRACE T8
SEE DETAIL #2
SHEET 9

PIPE P7

TERRACE T7
SEE DETAIL #2, SHEET 9

TERRACE RISER INTAKE R7
SEE DETAIL #1, SHEET 9

TERRACE AUXILIARY SPILLWAY
SEE SHEET 6 AND DETAIL #3, SHEET 9

TERRACE TRANSITION
PLACE 145 TON EROSION STONE
12" DEEP OVER ENGINEERING FABRIC.
TOP OF ROCK IS FINISHED GRADE.

TABLE: TERRACE PIPE DATA

Pipe Segment				Pipe Diameter	Pipe Length	Finish Grade	Invert	Invert	Slope
ID	Material	U/S Structure	D/S Structure	(inches)	(feet)	U/S	U/S	D/S	
P1	Dual Wall HDPE	R1 - 10" Terrace Riser Intake	Outfall #1	10	110	786.00	782.50	769.30	12.00%
P2	Dual Wall HDPE	R2 - 12" Terrace Riser Intake	R3 - 10" Terrace Riser Intake	12	191	805.50	802.00	782.50	10.21%
P3	Dual Wall HDPE	R3 - 10" Terrace Riser Intake	Outfall #2	15	125	786.00	782.50	766.25	13.00%
P4	Dual Wall HDPE	R4 - 12" Terrace Riser Intake	R5 - 10" Terrace Riser Intake	12	190	803.80	800.30	782.50	9.37%
P5	Dual Wall HDPE	R5 - 10" Terrace Riser Intake	Outfall #3	15	148	786.00	782.50	764.00	12.50%
P6	Dual Wall HDPE	R6 - 10" Terrace Riser Intake	Outfall #4	10	125	786.00	782.50	766.00	13.20%
P7	Dual Wall HDPE	R7 - 12" Terrace Riser Intake	R8 - 10" Terrace Riser Intake	10	181	806.00	800.60	780.60	11.05%
P8	Dual Wall HDPE	R8 - 10" Terrace Riser Intake	Outfall #5	12	184	786.00	780.60	756.68	13.00%

NOTES:
1. FG=FINISH GRADE ELEVATION AT BASE OF INLET RISER; INV=FLOWLINE INVERT ELEVATION OF THE PIPE OR TEE.
2. ALL ELEVATIONS ARE SHOWN IN FEET.
3. PIPES SLOPES SHOWN ARE MINIMUM REQUIREMENTS FOR DESIGN CAPACITY. FIELD CONDITIONS ARE EXPECTED TO ALLOW STEEPER PIPE SLOPES.
4. TERRACE CHANNELS HAVE 1% MAXIMUM LONGITUDINAL SLOPE. SEE DETAIL #2, SHEET 9.

GRAPHIC SCALE
0 120' 240' 360'

N

FILE: 049.001

REVISED:

ISSUED: 08-26-15

CHKD. BY: KLJ

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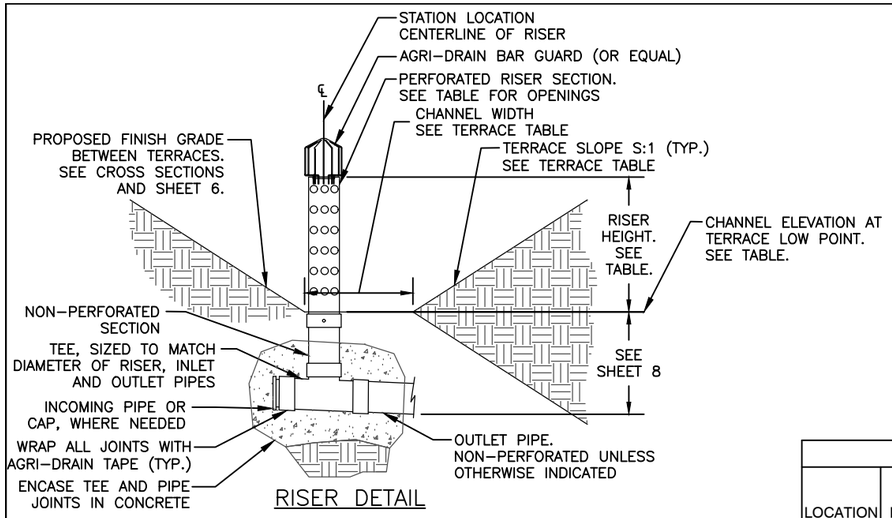
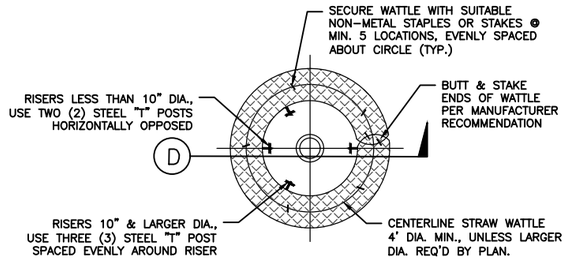
AML RECLAMATION PROJECT

DRAINAGE AND TERRACE PLAN

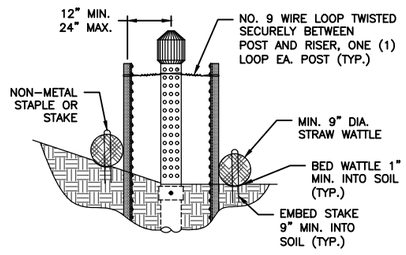
SHEET 8 OF 15



RISER DETAIL



PLAN VIEW



SECTION "D"

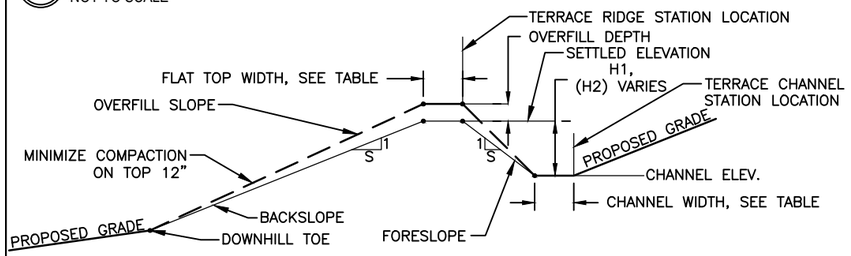
NOTE:
1. FILTER SOCK FILLED WITH WOOD CHIPS OR COMPOST MAY BE USED IN LIEU OF STRAW WATTLE. IF USED, SECURE FILTER SOCK IN PLACE PER MANUFACTURER'S RECOMMENDATION.
2. COST OF STEEL "T" POSTS & NO. 9 WIRE ARE INCIDENTAL TO THE COST OF RISER INSTALLATION.

NOTES:
1. UNLESS OTHERWISE NOTES, TWO (2) STEEL FENCE POSTS SHALL BE INSTALLED ADJACENT TO AND ON OPPOSITE SIDES OF EACH TERRACE INTAKE RISER TO REINFORCE AGAINST OVERTURNING. FENCE POSTS SHALL BE WIRED TO THE INTAKE RISER.
2. COST OF FENCE POSTS SHALL BE CONSIDERED INCIDENTAL TO COST OF INSTALLING INTAKE RISER.
3. INSTALL PRESCRIBED LENGTH OF 9" DIA. STRAW WATTLE AROUND EACH INTAKE IN THE FORM OF A 4' DIA. CIRCLE. 4' DIA. CIRCLE WILL CONTAIN APPROXIMATELY 12.5 LF OF STRAW WATTLE. STRAW WATTLE SHALL BE STAKED IN PLACE.
4. LAST 20 LF OF ALL PLASTIC PIPE OR TILING TO DAYLIGHT SHALL BE SCH. 40 PVC OR SDR 26. PROPER ADAPTORS FROM PLASTIC TO PVC SHALL BE USED.
5. ALL STORM SEWER SHALL MEET SUDAS STANDARD SPECIFICATIONS. HDPE OR PVC MAY BE USED.

1 TERRACE INTAKE DETAILS
NOT TO SCALE

TABLE: TERRACE INTAKES, PIPES & OUTLETS

LOCATION I.D.	DWG. SHEET	INTAKE RISER								TERRACE PIPE/TILE			OUTLET/END TREATMENT		
		DIA. (IN.)	INTAKE MATERIAL	HOLES	HOLE SIZE (IN.)	CHANNEL LOW PT. ELEV(FT)	RISER HEIGHT (FT)	BAR GUARD (Y/N)	9" STRAW WATTLE, L.F.	PIPE DIA. (IN.)	MIN. SLOPE (%)	PIPE MATERIAL	RODENT GUARD (Y/N)	OUTLET TEE (Y/N)	DISCHARGE INTO
R1	6;8	10	PLASTIC	72/FT	1.00	786.00	2.5	Y	12.5	10	12.00	DUAL WALL HDPE	Y	Y	OUTFALL #1
R2	6;8	12	PLASTIC	72/FT	1.25	805.50	2.5	Y	12.5	12	10.21	DUAL WALL HDPE	N	N	RISER INTAKE R3
R3	6;8	10	PLASTIC	72/FT	1.00	786.00	2.5	Y	12.5	15	13.00	DUAL WALL HDPE	Y	Y	OUTFALL #2
R4	6;8	12	PLASTIC	72/FT	1.25	803.80	3.0	Y	12.5	12	9.37	DUAL WALL HDPE	N	N	RISER INTAKE R5
R5	6;8	10	PLASTIC	72/FT	1.00	786.00	2.5	Y	12.5	15	12.50	DUAL WALL HDPE	Y	Y	OUTFALL #3
R6	6;8	10	PLASTIC	72/FT	1.00	786.00	2.5	Y	12.5	10	13.20	DUAL WALL HDPE	Y	Y	OUTFALL #4
R7	6;8	12	PLASTIC	72/FT	1.25	806.00	2.5	Y	12.5	10	11.05	DUAL WALL HDPE	N	N	RISER INTAKE R8
R8	6;8	10	PLASTIC	72/FT	1.00	786.00	2.5	Y	12.5	12	13.00	DUAL WALL HDPE	Y	Y	OUTFALL #5

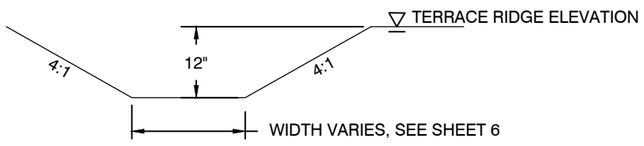


NOTES:
1. CHANNEL AND RIDGE ELEVATIONS ARE SHOWN RELATIVE TO THE LOW POINT ELEVATION OF THE TERRACE CHANNEL AT THE INTAKE RISER.
2. H1=HEIGHT FROM LOW POINT IN THE TERRACE CHANNEL AT THE INTAKE TO TOP OF THE SETTLED RIDGE.
3. H2=HEIGHT FROM HIGH POINT IN THE TERRACE CHANNEL AT THE ENDS TO TOP OF THE SETTLED RIDGE.
4. TERRACE RIDGES ARE UNIFORM (LEVEL) THROUGHOUT THE ENTIRE LENGTH.
5. RIDGE LENGTHS ARE MEASURED ALONG THE CENTERLINE OF THE RIDGE.
6. OVERFILL DEPTH IS 6 INCHES.
7. CHANNEL LENGTHS ARE MEASURED FROM THE HIGH POINT TO THE LOW POINT LOCATION ALONG THE CENTERLINE OF THE CHANNEL BOTTOM.
8. ** VOLUME FOR TERRACE CONSTRUCTION IS INCLUDED IN THE OVERALL EARTHWORK QUANTITY. THE OVERALL EARTHWORK QUANTITY DOES NOT INCLUDE OVERFILL DEPTH.

2 FILL TERRACE DETAIL
NOT TO SCALE

TABLE: FILL TERRACE INFORMATION

TERRACE I.D.	DWG. SHEET	FILL VOLUME (C.Y.)	MAX. SETTLED FORE-SLOPE (S:1)	MAX. SETTLED BACK SLOPE (S:1)	LOW POINT		OVERFILL DEPTH (FT.)	RIDGE			LEG	CHANNEL			HIGH POINT	
					ELEV. (FT.)	H1 HEIGHT (FT.)		SETTLED ELEV. (FT.)	LENGTH (L.F.)	WIDTH (FT.)		LENGTH (L.F.)	WIDTH (FT.)	MAX. SLOPE (%)	CHANNEL ELEV. (FT.)	H2 HEIGHT (FT.)
T1	6;8	**	4:1	4:1	786.00	4.00	0.50	+4.00	387	4	W	199	5	1.00	788.00	2.00
											E	175	5	1.00	787.75	2.25
T2	6;8	**	4:1	4:1	805.50	4.50	0.50	+4.50	599	4	NW	304	5	0.82	808.00	2.00
											SE	271	5	0.92	808.00	2.00
T3	6;8	**	4:1	4:1	786.00	4.00	0.50	+4.00	373	4	NW	192	5	0.90	787.75	2.25
											SE	188	5	1.00	787.90	2.10
T4	6;8	**	4:1	5:1	803.80	6.20	0.50	+6.20	879	4	W	459	5	0.80	807.50	2.50
											SE	428	5	0.80	807.20	2.80
T5	6;8	**	4:1	4:1	786.00	4.00	0.50	+4.00	412	4	SW	244	5	0.80	788.00	2.00
											E	178	4	1.00	787.80	2.20
T6	6;8	**	4:1	3:1	786.00	4.00	0.50	+4.00	319	4	NW	152	4	1.00	787.50	2.50
											S	150	4	1.00	787.50	2.50
T7	6;8	**	4:1	4:1	806.00	4.00	0.50	+4.00	540	4	W	258	4	0.80	808.00	2.00
											E	258	4	0.80	808.00	2.00
T8	6;8	**	4:1	5:1	786.00	4.00	0.50	+4.00	516	4	W	256	4	0.80	788.00	2.00
											E	207	4	1.00	788.00	2.00



3 TERRACE AUXILIARY SPILLWAY DETAIL
NOT TO SCALE

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FILE: 049.001
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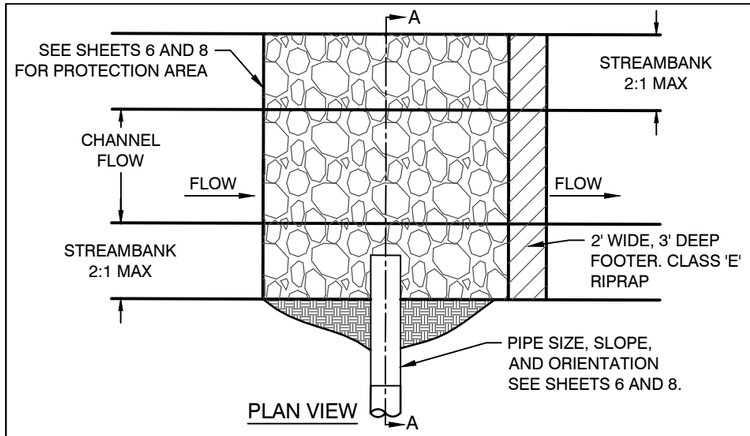
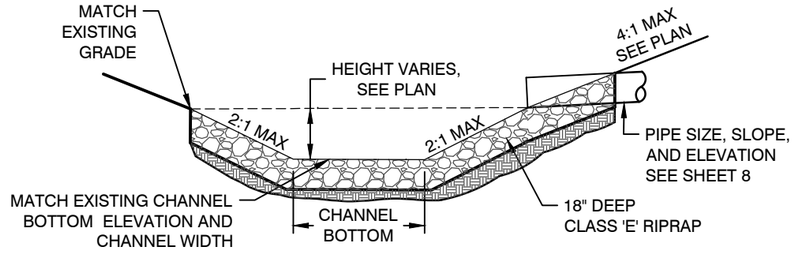
SYTSMA (IA-123)
AML RECLAMATION PROJECT

TYPICAL DETAILS

SHEET 9 OF 15



PLAN VIEW

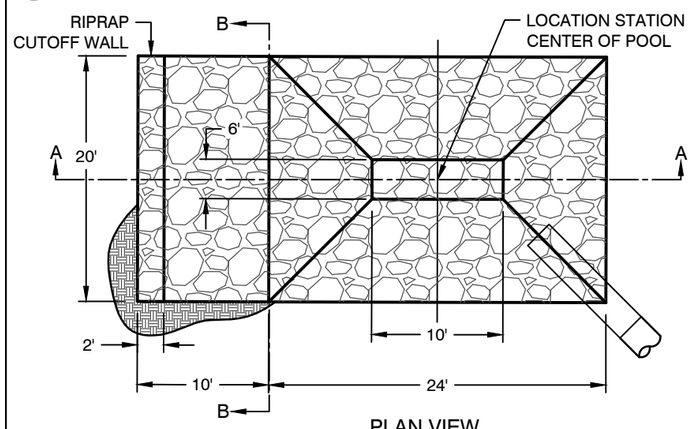


SECTION A-A

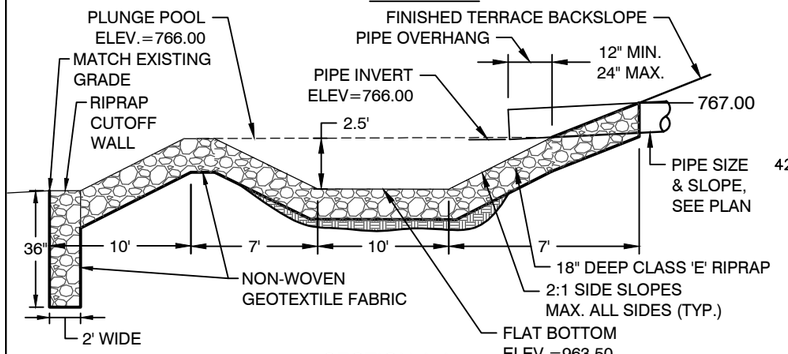
ESTIMATED RIPRAP QUANTITIES	
OUTLET ID	CLASS 'E' (TON)
1	30
2	130
3	80
4	60
5	40

1 OUTLET PROTECTION AT STREAM DETAIL (OUTLETS #1, 2, 3, 5)

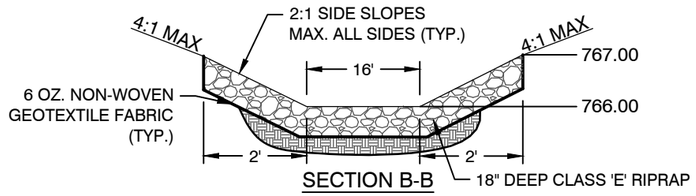
NOT TO SCALE



PLAN VIEW



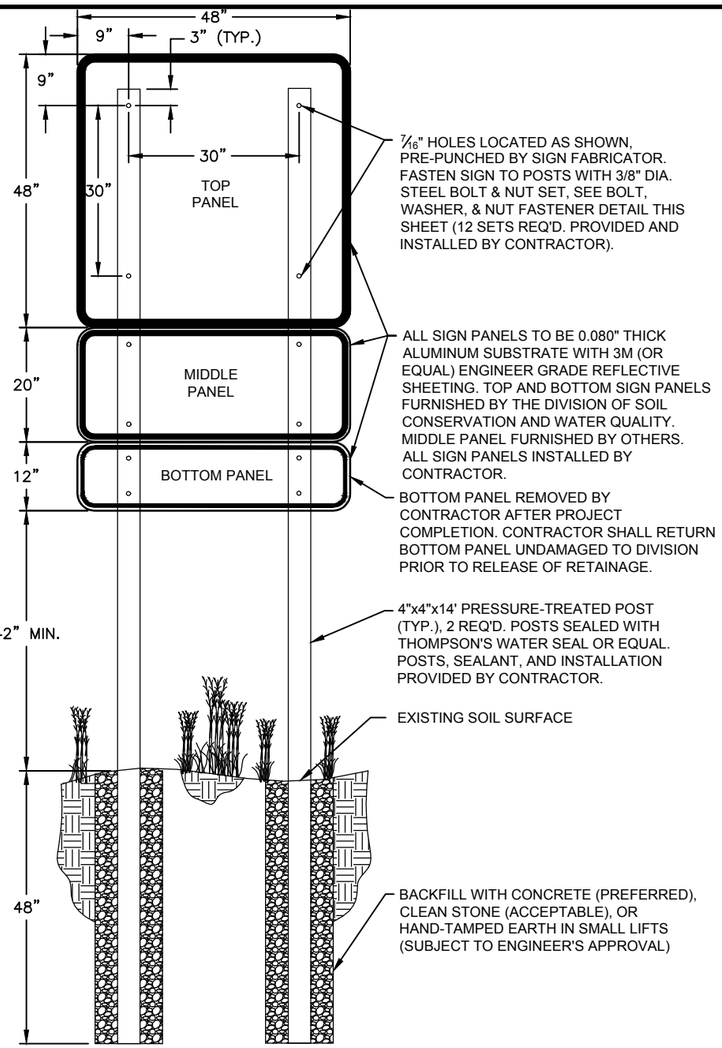
SECTION A-A

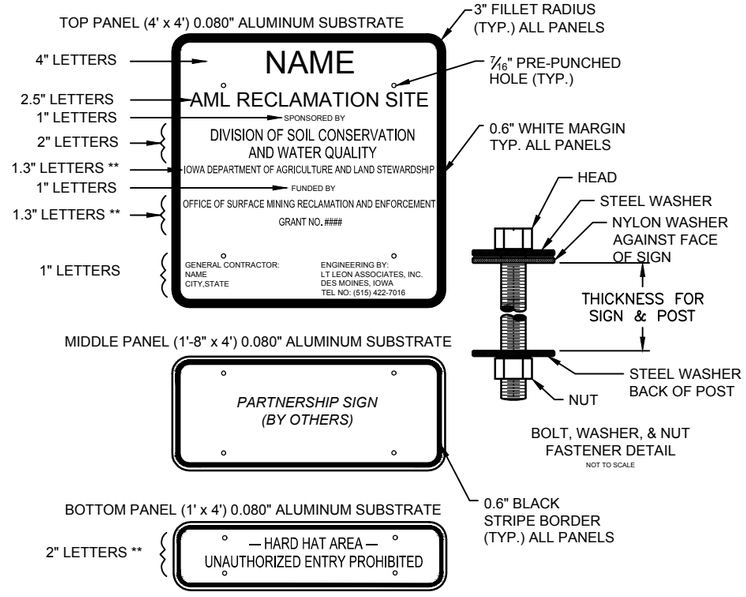


SECTION B-B

2 PLUNGE POOL DETAIL (OUTLET #4)

NOT TO SCALE





BOLT, WASHER, & NUT
FASTENER DETAIL

NOT TO SCALE

*** 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.

3 AML SIGN DETAIL

NOT TO SCALE

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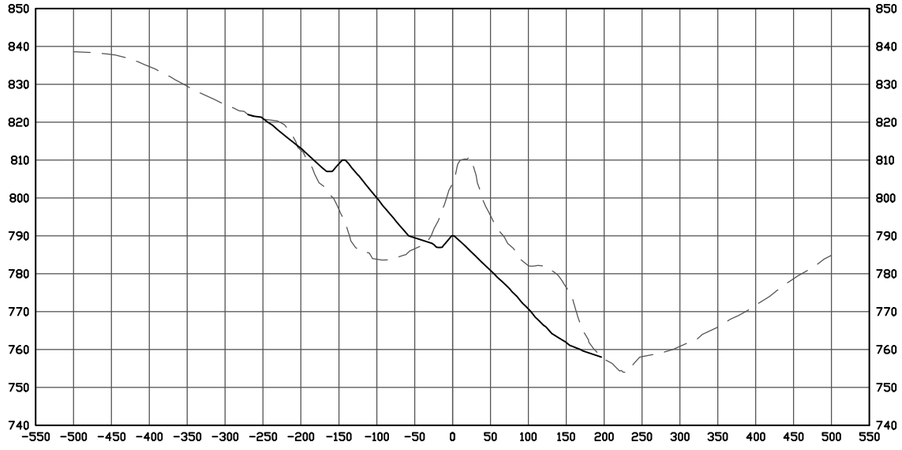
SYTSMA (IA-123)
AML RECLAMATION PROJECT

TYPICAL DETAILS

SHEET
10 OF 15



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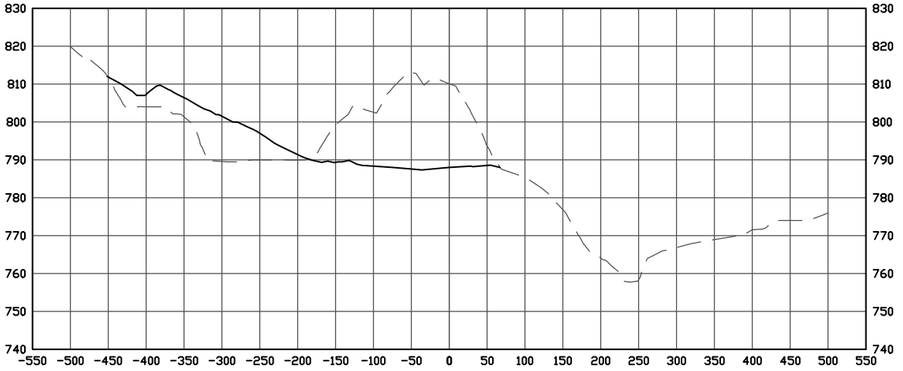

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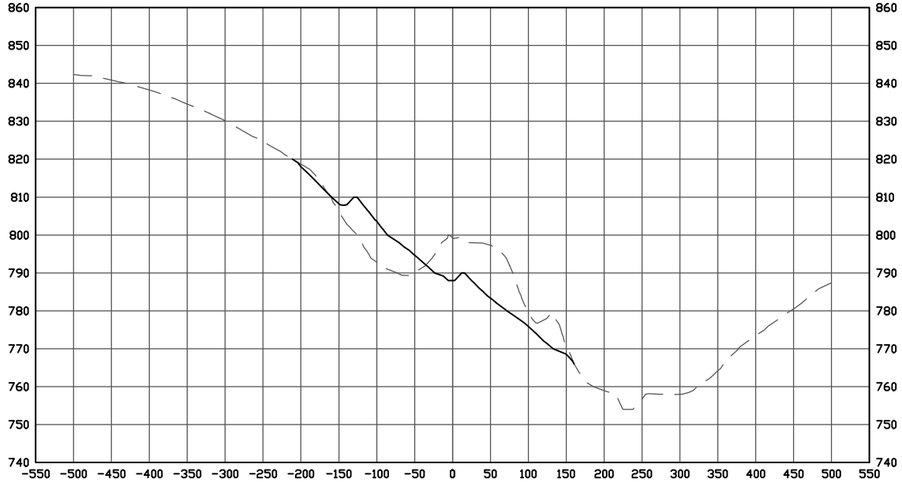

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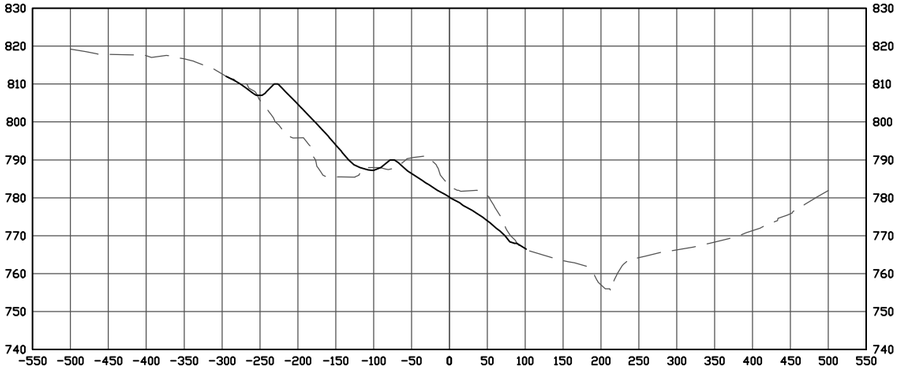

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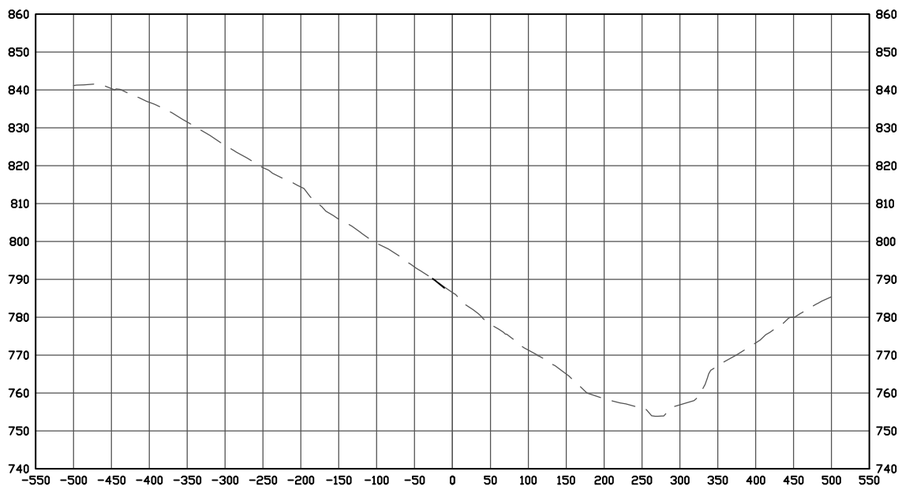

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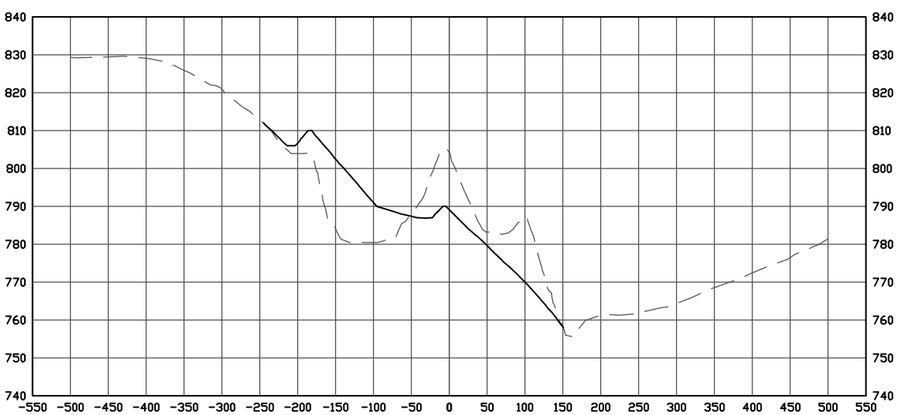

4+00

NOTES THIS SHEET:
1. CROSS SECTIONS ARE TAKEN FROM PROJECT CENTERLINE. SEE SHEET 5.

SCALE: 1"=200' HORIZONTAL
1"=40' VERTICAL

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LTL	BAY	KLJ	08-26-15	

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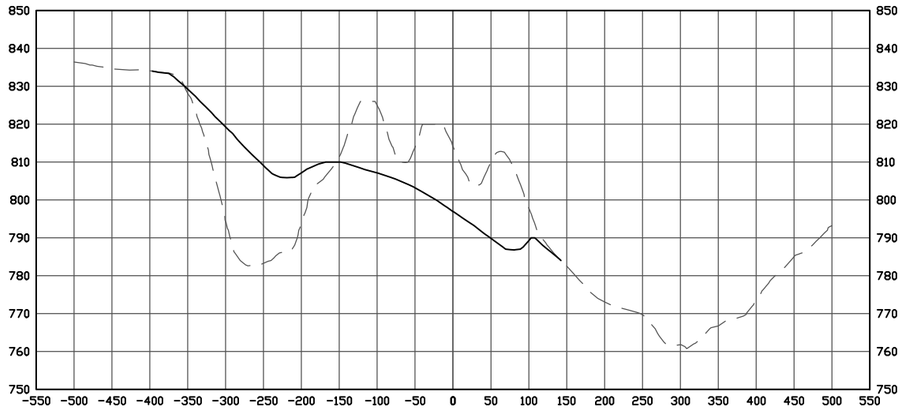
SYTSMA (IA-123)
AML RECLAMATION PROJECT

CROSS SECTIONS

SHEET 11 OF 15



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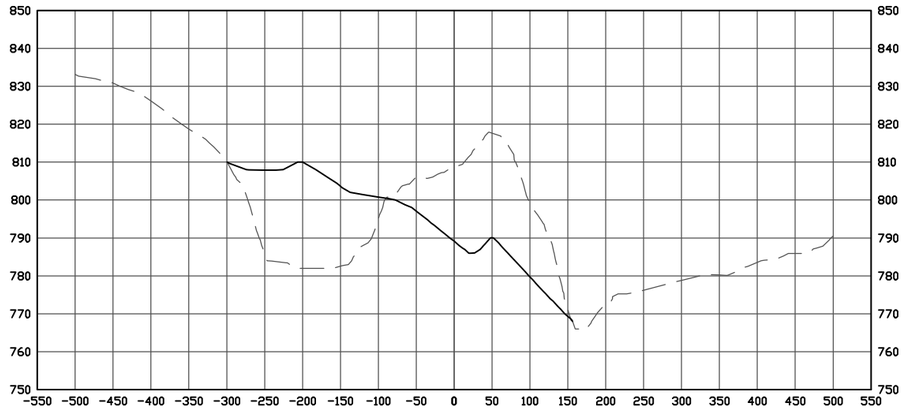

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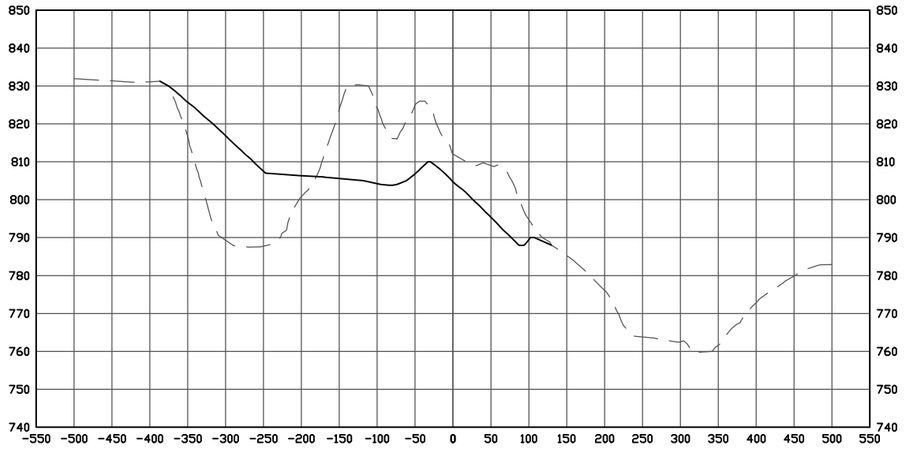

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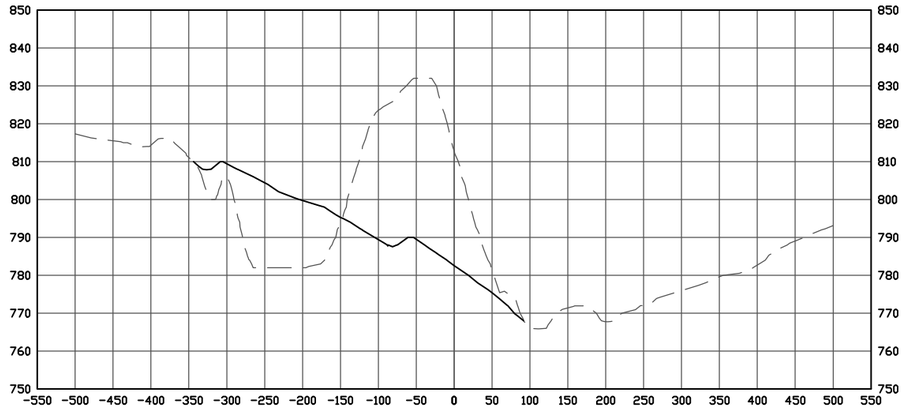

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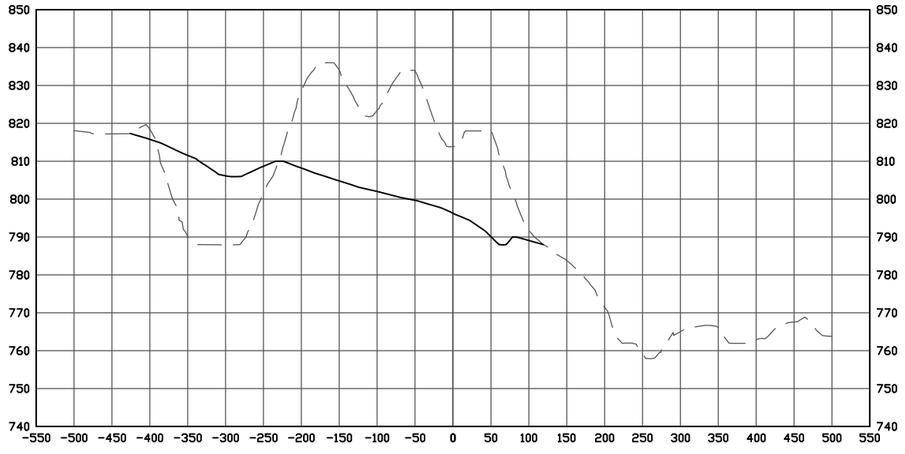

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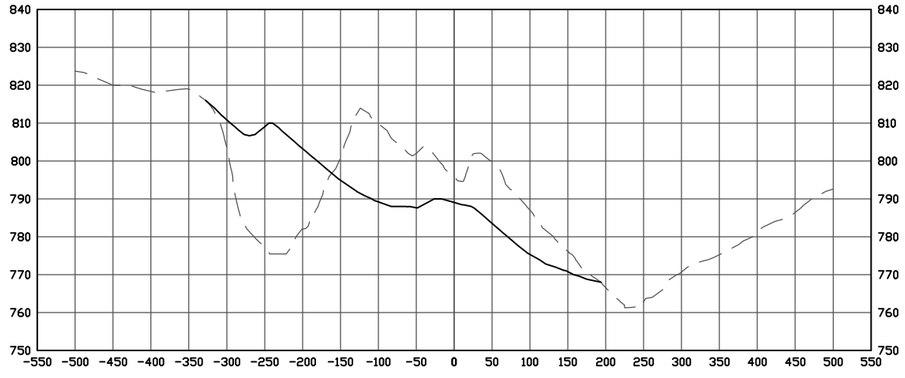

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NOTES THIS SHEET:
1. CROSS SECTIONS ARE TAKEN FROM PROJECT CENTERLINE. SEE SHEET 5.

SCALE: 1"=200' HORIZONTAL
1"=40' VERTICAL

FILE: 049.001

LT LEON ASSOCIATES • INC
501 EAST LOCUST STREET SUITE 400
DES MOINES IOWA 50309
office 515-422-7016
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DESIGN BY: LTL
DRAWN BY: BAY
CHKD. BY: KLJ
ISSUED: 08-26-15
REVISED:

DIVISION OF SOIL CONSERVATION AND WATER QUALITY
IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP
HENRY A. WALLACE BUILDING
502 E. 9th STREET, DES MOINES, IOWA 50319
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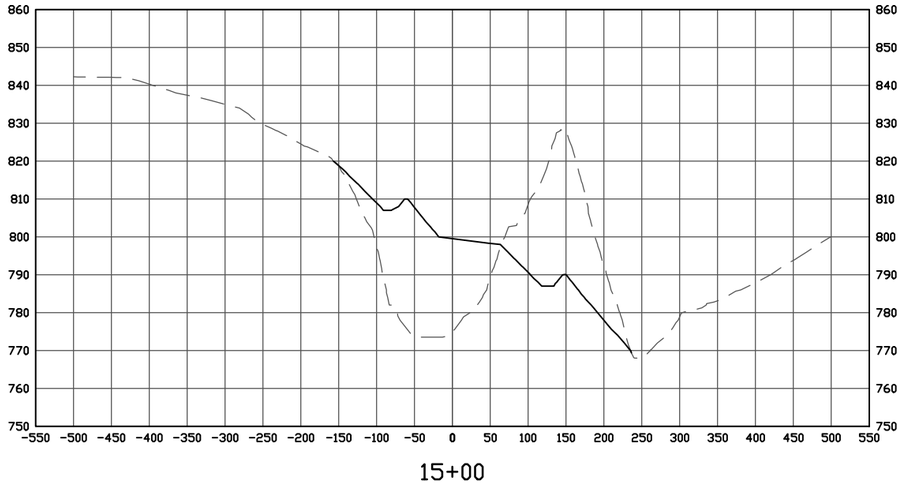
SYTSMA (IA-123)
AML RECLAMATION PROJECT

CROSS SECTIONS

SHEET 12 OF 15



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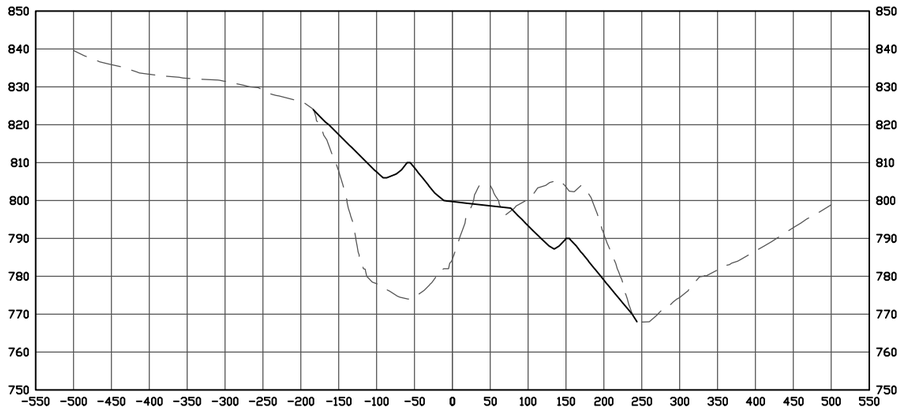

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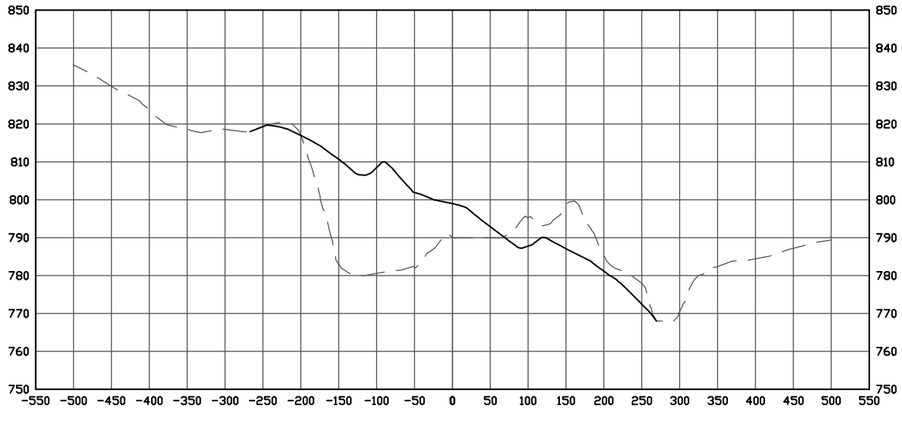

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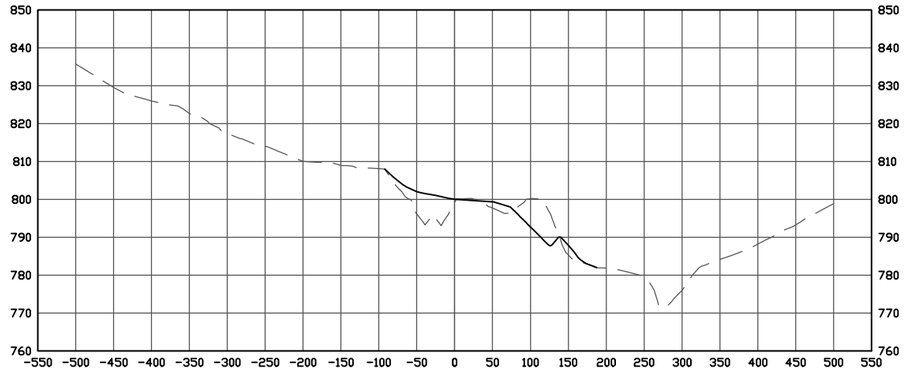

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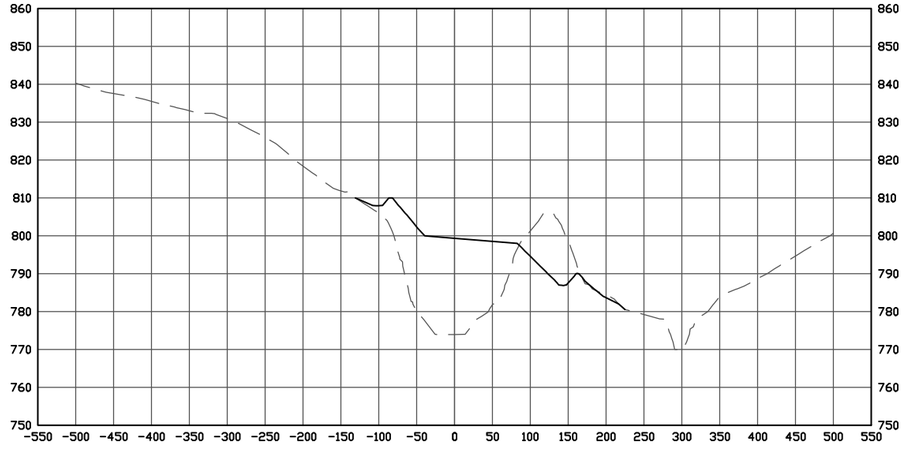

16+00

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CROSS SECTIONS

SHEET 13 OF 15

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

SITE INFORMATION:

1. SITE IS LOCATED IN THE SOUTH ½ OF THE NORTHEAST ¼ SECTION 2, TOWNSHIP 75 NORTH, RANGE 19 WEST, MARION COUNTY, IOWA.

2. THIS SWPPP COVERS THE RECLAMATION OF APPROXIMATELY 17 ACRES OF STRIP MINED LAND.

3. THE PREDOMINATE SOIL TYPES ARE: MINE SPOIL (502) SURROUNDED BY LINDLEY LOAM.

4. RUNOFF FROM THE CONSTRUCTION AREA WILL FLOW INTO AN UNNAMED TRIBUTARY TO ENGLISH CREEK WHICH IS A TRIBUTARY TO DES MOINES RIVER.

5. THE AVERAGE NRCS RUNOFF CURVE NUMBER FOR THIS LAND AFTER PERMANENT VEGETATION IS ESTABLISHED IS ESTIMATED TO BE 74. SOILS ON THIS SITE ARE EXPECTED TO BE IN THE "C" HYDROLOGIC SOIL GROUP.

GENERAL:

1. THIS SHEET IS INCLUDED IN THE PLANS TO SUMMARIZE THE SWPPP. PARTICULAR SWPPP INFORMATION CAN BE FOUND IN THE SWPPP BOOK FOR THE PROJECT AND ON THE DRAWING(S) SHOWING LOCATIONS OF THE BEST MANAGEMENT PRACTICES (BMPS).

2. THIS PROJECT WILL BE COVERED BY NPDES GENERAL PERMIT NO. 2 WHICH REGULATES POLLUTION IN STORMWATER RUNOFF FROM SITES WHERE THERE IS INDUSTRIAL ACTIVITY ASSOCIATED WITH CONSTRUCTION ACTIVITIES.

3. A COPY OF THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE KEPT ON SITE IN A WEATHER-PROOF ENCLOSURE, LIKE A MAILBOX OR SIMILAR CONTAINER PROVIDED BY THE CONTRACTOR. THE ENCLOSURE MAY BE LOCKED, BUT THE PLAN SHALL BE ACCESSIBLE TO THE ENGINEER OR DIVISION PERSONNEL AT ALL TIMES. THE SWPPP MUST BE MADE AVAILABLE WITHIN THREE (3) HOURS OF A REQUEST FROM REGULATORY PERSONNEL. A SIGN OR NOTICE POSTED BY THE CONTRACTOR SHALL INDICATE THE PLAN'S LOCATION ON SITE.

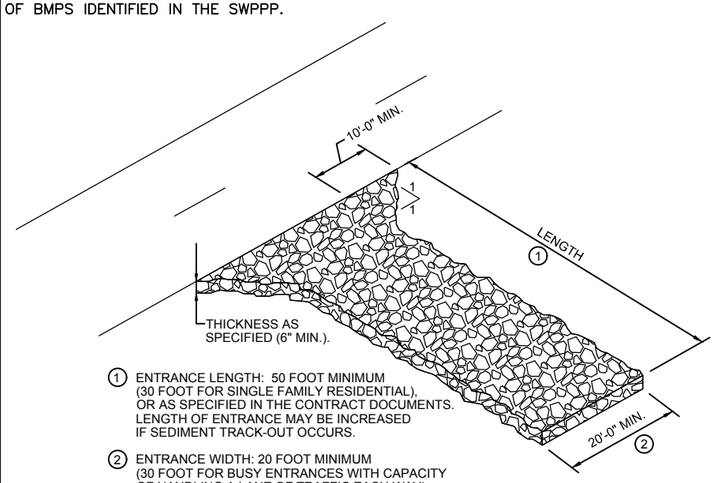
4. THE PRIME CONTRACTOR AND ALL ITS SUBCONTRACTORS SHALL CONDUCT THEIR OPERATIONS IN A MANNER WHICH MINIMIZES EROSION AND PREVENTS SEDIMENTS FROM LEAVING THE CONSTRUCTION SITE. THE PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION AND COMPLIANCE OF THE SWPPP FOR THE ENTIRE CONTRACT. THIS RESPONSIBILITY SHALL BE FURTHER SHARED WITH ALL ITS SUBCONTRACTORS.

5. SIGNED CONTRACTOR AND SUBCONTRACTOR CERTIFICATION STATEMENTS SHALL BE INCLUDED WITH THE SWPPP BOOK.

6. 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.

7. A COPY OF THE CONTRACTOR'S ANTICIPATED SEQUENCE OF CONSTRUCTION EVENTS SHOULD BE INCLUDED IN THE SWPPP BOOK.

8. CONTRACTOR SHALL FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR THE INSTALLATION OF BMPS IDENTIFIED IN THE SWPPP.



1. ENTRANCE LENGTH: 50 FOOT MINIMUM (30 FOOT FOR SINGLE FAMILY RESIDENTIAL), OR AS SPECIFIED IN THE CONTRACT DOCUMENTS. LENGTH OF ENTRANCE MAY BE INCREASED IF SEDIMENT TRACK-OUT OCCURS.

2. ENTRANCE WIDTH: 20 FOOT MINIMUM (30 FOOT FOR BUSY ENTRANCES WITH CAPACITY OF HANDLING A LANE OF TRAFFIC EACH WAY). FLARE THE ENTRANCE WHERE IT MEETS THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.

1 STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE

EROSION CONTROLS:

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 OFF SITE. TRACKING OF SEDIMENTS OFF-SITE WILL BE REDUCED BY AVOIDING VEHICLE TRAFFIC ACROSS WET SURFACE SOILS. IF GRANULAR SURFACING AT THE SITE ENTRANCE 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 DOWNSTREAM 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 SILT FENCES, STRAW WATTLES, OR FILTER SOCK AT THE TIME OF THEIR INITIAL INSTALLATION.

7. IN AREAS WHERE PRESENCE OF SILT FENCE, 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 PLAN ARE APPROXIMATE. ACTUAL LOCATIONS OR QUANTITIES ARE TO BE DETERMINED IN THE FIELD WITH THE APPROVAL OF THE DIVISION OR 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 TWENTY-ONE (21) 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.

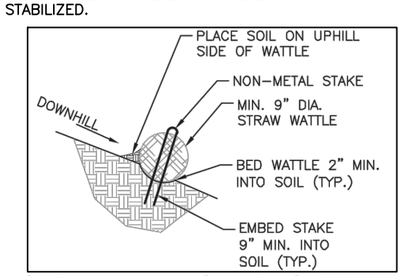
11. EROSION CONTROL MEASURES BY THE CONTRACTOR SHALL CONTINUE UNTIL VEGETATIVE GROUND COVER IS ESTABLISHED AND ACCEPTED BY THE DIVISION.

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.



2 STRAW WATTLE INSTALLATION

NOT TO SCALE

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 CONTRACTOR AND IT SHALL BE PERFORMED BY QUALIFIED PERSONNEL UNDER HIS OR HER INSTRUCTION. 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 AT THE SITE IN THE SWPPP BOOK. THE CONTRACTOR SHALL BEGIN CORRECTIVE ACTION ON ALL DEFICIENCIES FOUND AS SOON AS PRACTICABLE.

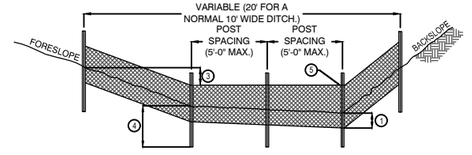
5. THE SWPPP MAY BE REVISED BASED ON FINDINGS OF THE INSPECTIONS. SUCH REVISIONS SHALL BE MADE WITHIN SEVEN (7) DAYS OF THE INSPECTION. THE CONTRACTOR SHALL IMPLEMENT ALL REVISIONS.

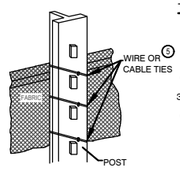
6. COPIES OF INSPECTION REPORTS WILL BE RETAINED WITH THE SWPPP FOR THREE (3) YEARS FROM THE DATE THE PERMIT COVERAGE TERMINATES.

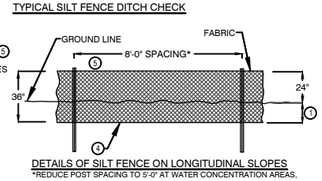
MAINTENANCE:

1. THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL MEASURES IN PROPER WORKING ORDER FOR THE DURATION OF THE CONTRACT. IF A MEASURE IS NO LONGER NEEDED AS DETERMINED BY THE DIVISION OR ENGINEER, IT SHALL BE REMOVED, MAINTENANCE INCLUDES CLEANING, REPAIRING, OR REPLACING AS REQUIRED. IN GENERAL, MAINTENANCE SHALL BE PERFORMED PRIOR TO THE NEXT ANTICIPATED STORM EVENT.

2. REMOVE SEDIMENT FROM SEDIMENT TRAPS, DITCHES, AND SILT FENCE WHEN THEIR INSTALLED CAPACITY IS REDUCED BY FIFTY (50) PERCENT OR MORE.



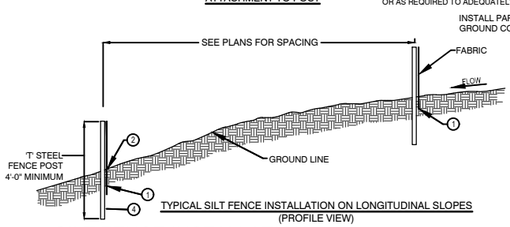


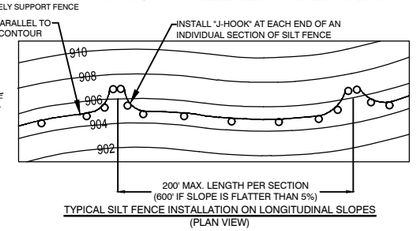


GENERAL NOTES:

INSTALL SILT FENCE ACCORDING TO THE REQUIREMENTS OF SUDAS AND AT LOCATIONS SHOWN IN THE CONTRACT DOCUMENTS OR AS DIRECTED BY THE ENGINEER.

1. INSERT 12 IN. OF FABRIC A MINIMUM OF 6 IN. DEEP (FABRIC MAY BE FOLDED BELOW THE GROUND LINE)
2. COMPACT GROUND BY DRIVING ALONG EACH SIDE OF THE SILT FENCE AS REQUIRED TO SUFFICIENTLY SECURE THE FABRIC IN THE TRENCH TO PREVENT PULLOUT AND FLOW UNDER THE FENCE.
3. IN DITCHES, EXTEND SILT FENCE UP SIDE SLOPE SO THE BOTTOM ELEVATION AT THE END OF THE FENCE IS A MINIMUM OF 2 IN. HIGHER THAN THE TOP OF THE FENCE IN THE LOW POINT OF THE DITCH.
4. STEEL POSTS TO BE EMBEDDED 20 IN. UNLESS OTHERWISE ALLOWED BY THE JURISDICTIONAL ENGINEER.
5. SECURE TOP OF ENGINEERING FABRIC TO STEEL POSTS USING WIRE OR PLASTIC TIES (50 LB. MIN.) SEE DETAILS OF "ATTACHMENT TO POSTS."





3 SILT FENCE INSTALLATION

NOT TO SCALE

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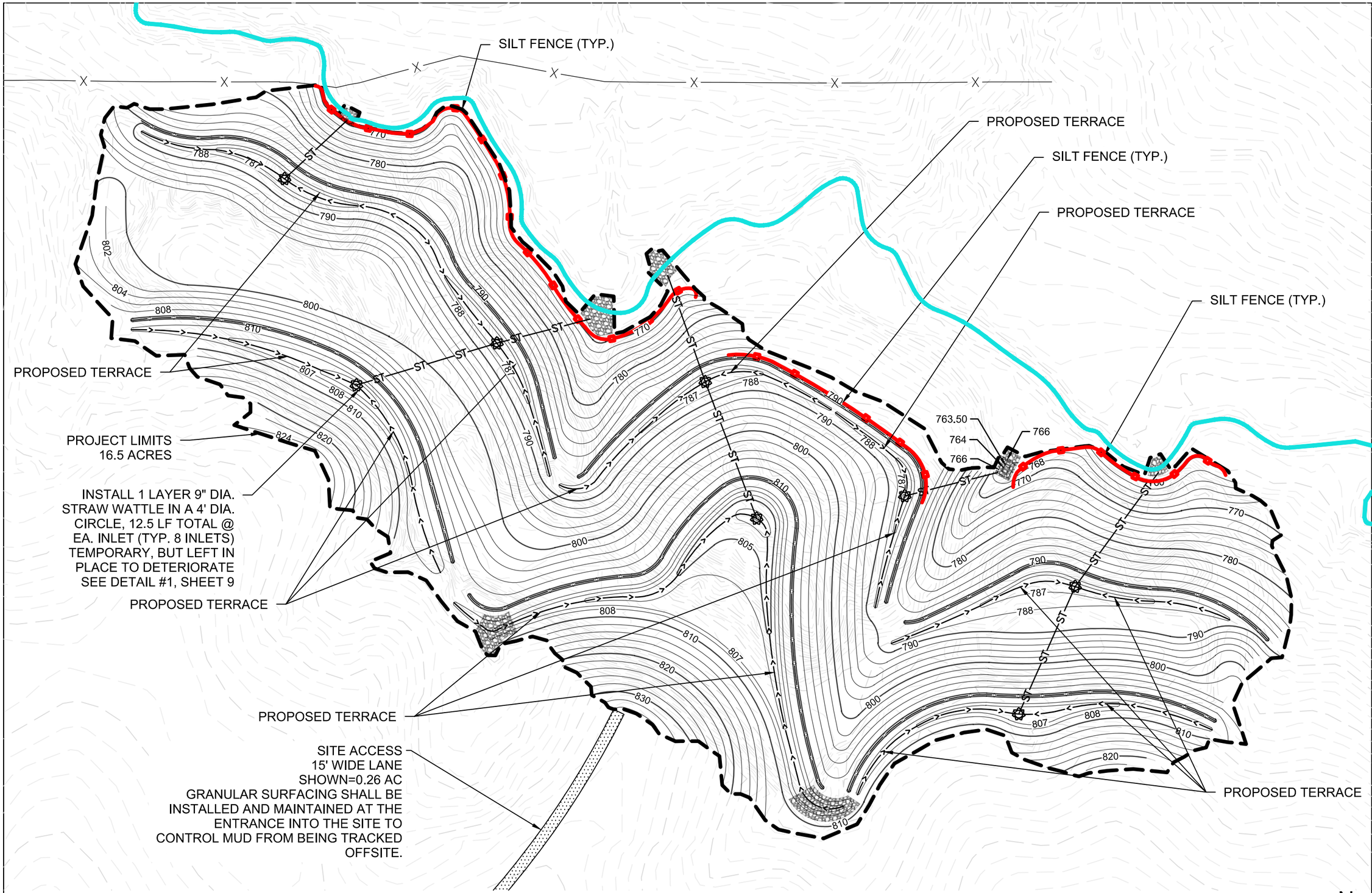
SYTSMA (IA-123)
AML RECLAMATION PROJECT

SWPPP DESCRIPTION

SHEET 14 OF 15



GRAPHIC SCALE

0 120' 240' 360'

NOTES THIS SHEET:
1. CURL BEGINNING AND END OF EACH LENGTH STRAW WATTLE UPSLOPE.
2. INSTALL ALL STRAW WATTLE ALONG THE CONTOUR AND EMBED THE WATTLE PER DETAIL #2, SHEET 15.

N

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SHEET 15 OF 15