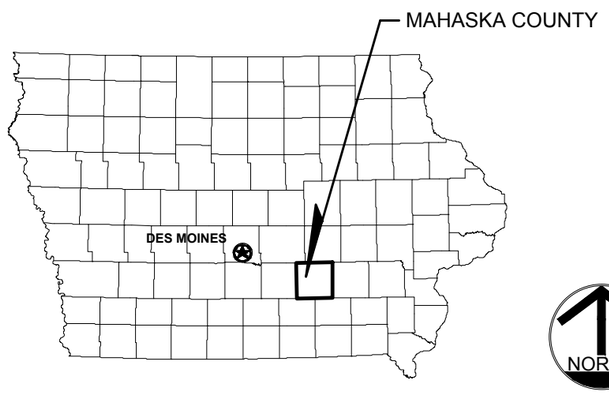
OLDHAM (IA-204)
AML RECLAMATION PROJECT

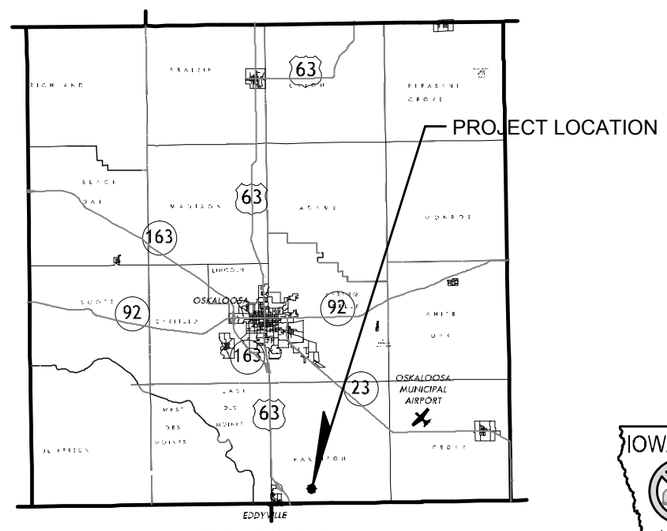
SECTION 32/33, TOWNSHIP 74N, RANGE 15W
MAHASKA COUNTY

DIVISION OF SOIL CONSERVATION
IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP

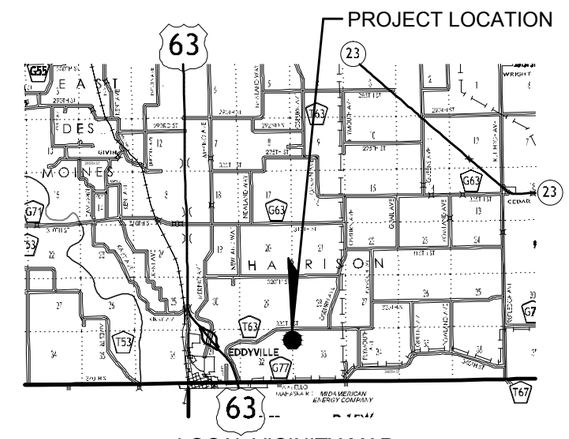
FUNDED BY:
U.S. DEPARTMENT OF THE INTERIOR
OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT
GRANT NO: S12AF20039
IN PARTNERSHIP WITH MAHASKA SWCD AND PATHFINDERS RC&D
WATERSHED COOPERATIVE AGREEMENT PROGRAM



STATE OF IOWA



MAHASKA COUNTY



LOCAL VICINITY MAP

IOWA ONE CALL
CALL 2 Working Days BEFORE YOU DIG
1 (800) 292-8989

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

PROJECT ENGINEER:
W.J. GREENLEES, P.E. & D.K. BHATNAGAR, P.E.
MINES & MINERALS BUREAU
TEL: (515) 281-5643
E-MAIL: wallace.greenlees@iowaagriculture.gov

LICENSED PROFESSIONAL ENGINEER
WALLACE JAMES GREENLEES
16735
IOWA

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: 11-29-2012
Name (printed or typed): WALLACE J. GREENLEES
License Number: 16735
My license renewal date is: DECEMBER 31, 2012
Pages or sheets covered by this seal: ENTIRE DOCUMENT

LICENSED PROFESSIONAL ENGINEER
DHARMVIR BHATNAGAR
11116
IOWA

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: DKBhatnagar Date: 11-29-2012
Name (printed or typed): DHARMVIR BHATNAGAR
License Number: 11116
My license renewal date is: DECEMBER 31, 2012
Pages or sheets covered by this seal: ENTIRE DOCUMENT

FILE: OLDHAM_AML.DWG

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REVISED: NO
ISSUED: 11-29-2012
CHKD. BY: MLB
DRAWN BY: WJG
DESIGN BY: DKB & WJG

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

IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP

OLDHAM
AML RECLAMATION PROJECT

COVER SHEET

PROJECT NOTES

GENERAL NOTES:

1. ALL IMPROVEMENTS SHOWN ON THESE PLANS SHALL COMPLY WITH THE GENERAL CONDITIONS, STANDARDS, AND SPECIFICATIONS SET FORTH IN PROJECT DOCUMENTS. THESE INCLUDE STANDARD CONSTRUCTION SPECIFICATIONS SET FORTH BY THE DIVISION OF SOIL CONSERVATION AS WELL AS THE SUPPLEMENTAL SPECIFICATIONS ESTABLISHED BY THE ENGINEER. SPECIFICATIONS OR STANDARDS INCORPORATED BY REFERENCE SHALL ALSO BE FOLLOWED.

2. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE DIVISION'S STANDARD SPECIFICATIONS AND THE ENGINEER'S SUPPLEMENTAL SPECIFICATIONS.

2. 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 OF SOIL CONSERVATION.

3. REFERENCES TO PARTICULAR PRODUCTS, TRADENAMES, OR MANUFACTURERS IS INTENDED FOR CLARITY ONLY AND DO NOT REPRESENT EXCLUSION OR ENDORSEMENT BY THE STATE OF IOWA. EQUIVALENT PRODUCTS OR MATERIALS MAY BE SUITABLE, SUBJECT TO THE APPROVAL OF THE ENGINEER.

3. CONTRACTOR SHALL PROVIDE AT LEAST 48 HOURS NOTICE TO THE ENGINEER AND/OR DIVISION PRIOR TO COMMENCING CONSTRUCTION.

UTILITY NOTES:

1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT ALL EXISTING 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 PAVED STREETS CAUSED BY TRENCHING AND GRADING OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. EXISTING UTILITY LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE.

2. UNDERGROUND FACILITIES STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS, PUBLIC RECORDS, AND FIELD INVESTIGATION. THEIR LOCATIONS SHALL BE CONSIDERED TO BE APPROXIMATE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT IOWA ONE-CALL AND/OR EACH UTILITY COMPANY FOR THE FIELD LOCATION(S) OF EXISTING UTILITY LINES IN OR NEARBY THE CONSTRUCTION AREA PRIOR TO BEGINNING ANY CONSTRUCTION.

3. THERE MAY BE ADDITIONAL PRIVATE OR OTHER UNDERGROUND UTILITIES NOT SHOWN OR KNOWN AT THE TIME OF THE PUBLICATION OF THIS DRAWING. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXISTENCE AND LOCATION OF ANY ADDITIONAL UNDERGROUND UTILITIES NOT SHOWN ON THIS DRAWING IN ORDER TO AVOID DAMAGE THERETO.

4. THE CONTRACTOR SHALL EXCERCISE PROPER CAUTION TO PROTECT EXISTING UTILITY IMPROVEMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE THERETO AT NO ADDITIONAL EXPENSE TO THE OWNER OR DIVISION.

CONSTRUCTION SURVEYING NOTES:

1. THE CONTRACTOR SHALL HIRE A SURVEYOR THAT POSSESSES GPS EQUIPMENT CAPABLE OF COMMUNICATING WITH THE IOWA RTN OR SIMILAR CONTINUOUSLY OPERATING REFERENCE STATION NETWORK. THE SURVEYORS EQUIPMENT SHALL BE CAPABLE OF COLLECTING AND STAKING OUT DATA IN THE IOWA STATE PLANE COORDINATE SYSTEM.

2. GPS MACHINE CONTROL IS NOT REQUIRED FOR THIS PROJECT.

3. HORIZONTAL MEASUREMENTS ARE IN U.S. SURVEY FEET. THIS DRAWING IS SET TO THE NAD 1983 IOWA STATE PLANE, SOUTH ZONE COORDINATE SYSTEM.

4. ELEVATION MEASUREMENTS ARE BASED UPON THE NAVD 1988 AND ARE IN U.S. FEET.

5. EXISTING TOPOGRAPHY SHOWN ON THIS DRAWING WAS DEVELOPED FROM LIDAR INFORMATION FOR MAHASKA COUNTY, IOWA THAT IS PUBLICLY AVAILABLE THROUGH THE NATURAL RESOURCES GEOGRAPHIC INFORMATION SYSTEMS LIBRARY. LIDAR DATA WAS COLLECTED IN THE SPRING OF 2008 AND PUBLISHED FEBRUARY 19, 2010, IT IS MADE AVAILABLE THROUGH A PROGRAM OF THE IOWA DEPARTMENT OF NATURAL RESOURCES.

6. THREE LOCAL CONTROL POINTS HAVE BEEN ESTABLISHED FOR THIS PROJECT. THE CONTRACTOR SHALL DIRECT HIS SURVEYOR TO VERIFY THEIR CORRECTNESS AS NECESSARY TO FACILITATE PROPER CONSTRUCTION STAKING.

7. SHOULD THERE EXIST SIGNIFICANT DIFFERENCES BETWEEN THE LIDAR ELEVATIONS SHOWN ON THE DRAWINGS AND THOSE REPORTED BY THE SURVEYING EQUIPMENT, THE CONTRACTOR SHALL DIRECT HIS SURVEYOR TO CALIBRATE THE GPS INSTRUMENTS TO THE LIDAR ELEVATIONS SHOWN.

TABLE: ESTIMATED QUANTITIES

ITEM NO.	ITEM	SPEC. SECTION	QTY.	UNITS
1	MOBILIZATION	02100	1	LUMP SUM
2	CLEARING & SITE PREPARATION	02100	9.9	ACRES
3	OFF-SITE WASTE DISPOSAL	02100	8	TON
4	IMPOUNDMENT DISCHARGE	02110	1	LUMP SUM
5	SURFACE ROUGHENING	02120	9.9	ACRES
6	SILT FENCE INSTALLATION	02120	1950	LF
7	SILT FENCE REMOVAL	02120	1950	LF
8	STRAW WATTLE, 9" DIA.	02120	1000	LF
9	RECP, TYPE 3.B	02120	81	SY
10	EXCAVATION	02200	25120	CY
11	SELECT BORROW	02250	11550	CY
12	TERRACES	02300	442	LF
13	EROSION STONE 6"	02300	16.0	TON
14	RIPRAP, CLASS E	02300	47.0	TON
15	GROUT	02300	40	CY
16	PIPE, HDPE, 10"	02300	100	LF
17	PIPE, HDPE, 15"	02300	90	LF
18	RISER, TERRACE 10"	02300	1	EACH
19	RISER, OTHER, IA. DOT SW-513, 4'x4'	02300	1	EACH
20	PIPE OUTLET, SCH. 40 PVC, 10"	02300	1	EACH
21	PIPE OUTLET, SDR 26 PVC, 15"	02300	1	EACH
22	FIELD FENCE	02500	821	EACH
23	SINGLE GATE (1 – 16' PANEL)	02500	1	EACH
24	AG LIME, SUBGRADE, (15 TON ECCE/ACRE)	02400	149	TON ECCE
25	MULCH, SUBGRADE, (5 TON/ACRE)	02400	0.6	ACRES
26	AG LIME, SEEDING, (5 TON ECCE/ACRE)	02700	49.5	TON ECCE
27	NITROGEN (N), (100 LB./ACRE)	02700	990	POUNDS
28	PHOSPHOROUS (P), (60 LB./ACRE)	02700	594	POUNDS
29	POTASSIUM (K), (80 LB./ACRE)	02700	792	POUNDS
30	PERMANENT SEEDING	02700	8.9	ACRES
31	MULCH, SEEDING (3 TON/ACRE)	02700	9.3	ACRES
32	WETLAND SEEDING ABOVE WATERLINE	02700	0.4	ACRES

PROJECT CONSTRUCTION NOTES:

1. QUANTITIES OF FERTILIZER AND LIME ARE ESTIMATED FOR BIDDING PURPOSES. ACTUAL QUANTITIES APPLIED WILL BE DETERMINED BY SOIL TESTS.

2. REQUIRED CONSTRUCTION STAKING: CLEARING LIMITS, LINES AND GRADE FOR NEW POND, TERRACE ALIGNMENT AND ELEVATION, ROUGH GRADING FOR THE SUBGRADE, AND AUXILLARY SPILLWAY DITCH ALIGNMENT AND GRADE.

3. SLOPE STAKING, AND GRADE STAKES FOR OTHER MASS CUT OR FILL AREAS ARE RECOMMENDED, IN SUBSTANTIAL CONFORMANCE TO THE REQUIREMENTS OF SPECIFICATION SECTION 02010,3.6 A.

LEGEND

- OE — OVERHEAD ELECTRIC
- UE — UNDERGROUND ELECTRIC
- UT — UNDERGROUND TELEPHONE
- OT — OVERHEAD TELEPHONE
- SAN — SANITARY SEWER
- ST — STORM SEWER OR TERRACE DRAIN
- W — WATER LINE
- G — NATURAL GAS LINE
- FO — FIBER OPTIC LINE
- TREE CLEARING LIMIT
- EXISTING FENCE
- PROPOSED FENCE
- SILT FENCE
- FILTER SOCK
- STRAW WATTLE
- TERRACE RIDGE
- TERRACE CHANNEL FLOW DIRECTION
- NO — BURN — ¼ MILE BURN RADIUS LIMIT LINE
- SURVEY CONTROL POINT
- SECTION CORNER FOUND
- POWER POLE

REVISION:	DATE:	DESCRIPTION:
1		
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4		

FILE: OLDHAM_AML.DWG

DESIGN BY: WJG & DKB | DRAWN BY: WJG | CHKD. BY: MLB | ISSUED: 11-29-2012 | REVISED: NO

DIVISION OF SOIL CONSERVATION
IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP
HENRY A. WALLACE BUILDING
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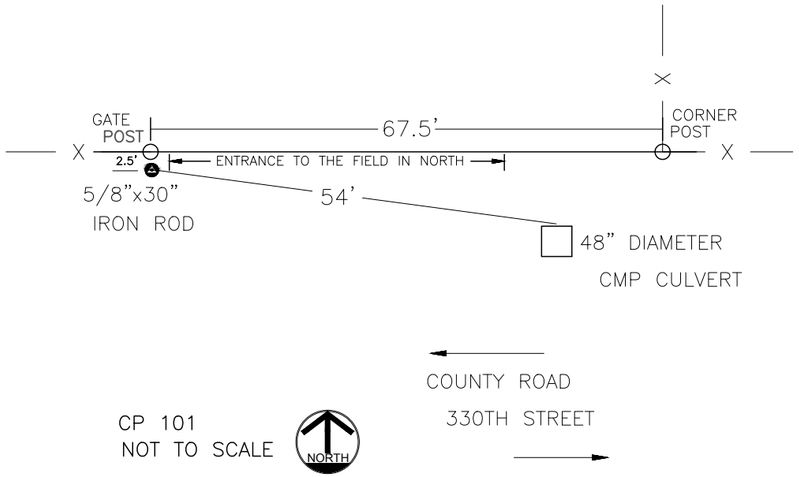
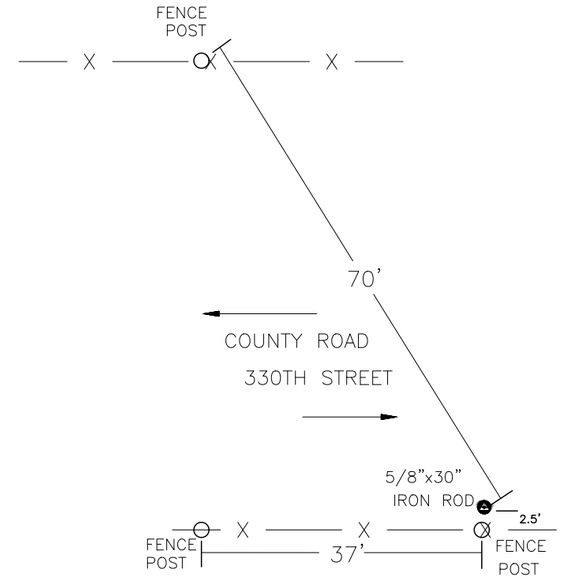
OLDHAM
AML RECLAMATION PROJECT

PROJECT NOTES, LEGEND, & QUANTITIES



CP 101
NOT TO SCALE



CP 100
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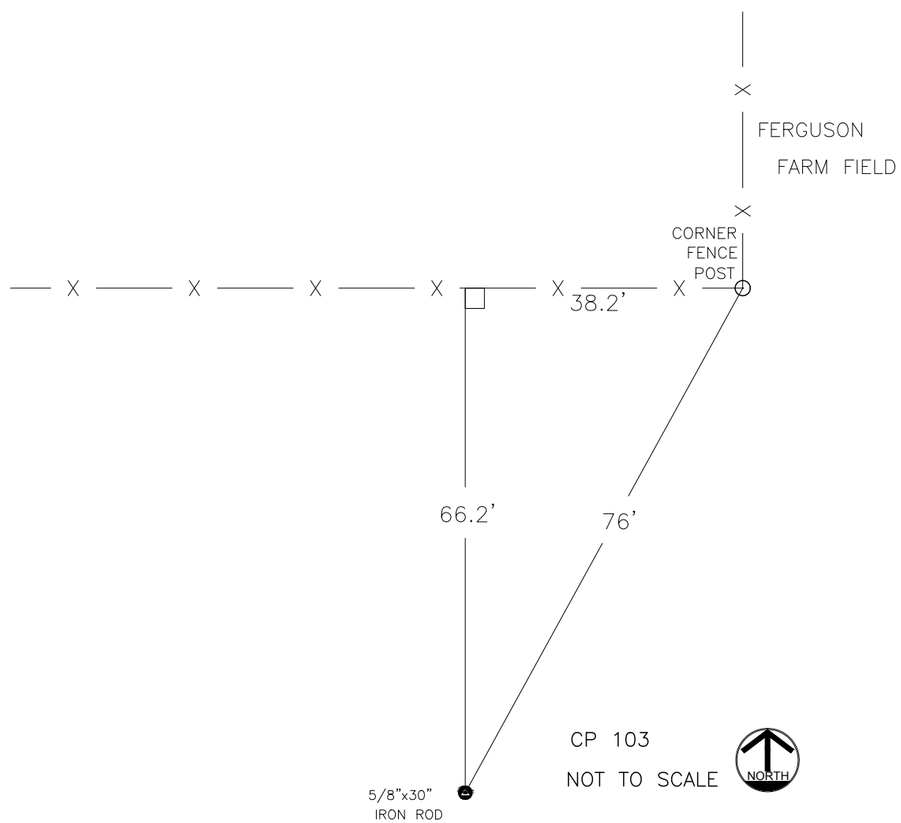

CP 103
NOT TO SCALE

CONTROL POINT COORDINATES

CONTROL POINT NO.	COORDINATES		
	NORTH (FT.)	EAST (FT.)	ELEV. (FT.)
CP 100	429662.186	1887960.868	762.72
CP 101	429718.531	1887460.037	749.96
CP 103	428768.723	1887767.727	740.66

CONTROL POINT CP100 IS AT THE NORTH FENCE OF FERGUSON FARM FIELD SOUTH OF THE COUNTY ROAD AND EAST OF THE PROJECT AREA.

CONTROL POINT CP101 IS AT THE CORNER FENCE POST FOR THE OPENING OF A FARM FIELD NORTH OF THE COUNTY ROAD.

CONTROL POINT CP103 IS SOUTHWEST OF THE CORNER FENCE POST AND SOUTHEAST OF POND 4.

FILE: OLDHAM_AML.DWG

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SURVEY CONTROL POINT TIES AND COORDINATES

DIVISION OF SOIL CONSERVATION
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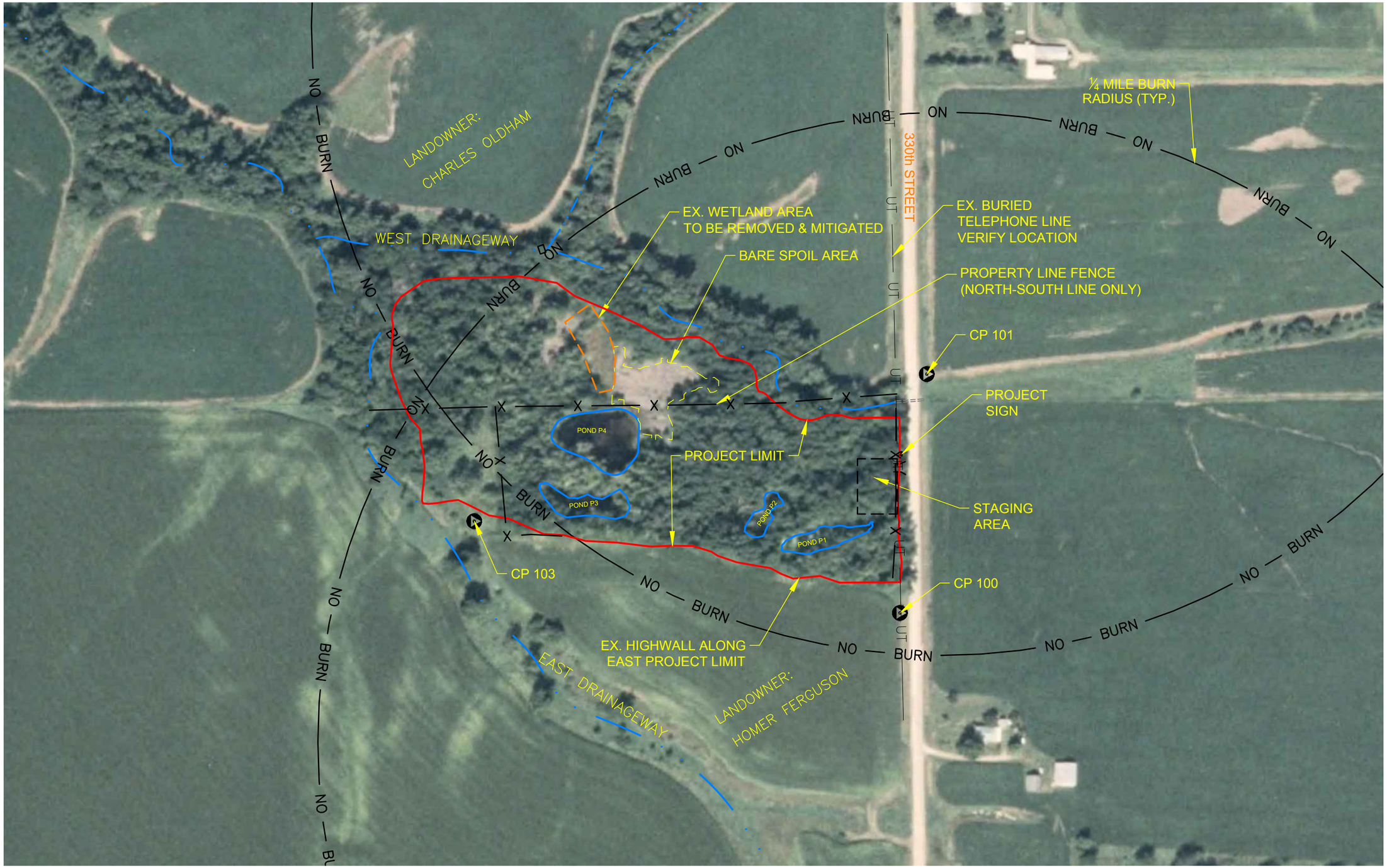

0 200 400

SCALE: 1"=200'

NORTH

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OLDHAM
AML RECLAMATION PROJECT

SITUATION PLAN
BURN RADII & SURVEY CONTROL

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

REVISION:	DATE:	DESCRIPTION:
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SHEET 4 OF 19

NOTES THIS SHEET:

1. A BUS BODY, REMNANTS OF A WOODEN SHED (NORTH OF POND P4), AND OTHER DEBRIS SHALL BE REMOVED FROM THE SITE.
2. ALL TREES SHALL BE REMOVED FROM WITHIN THE CLEARING LIMITS.
3. THE ENTIRE SITE IS ENCLOSED WITHIN THE ¼ MILE "NO BURN" RADII. CONSENT FROM THE NEIGHBORING PROPERTY OWNERS SHALL BE REQUIRED TO BURN WITHIN THE ¼ MILE BURN RADIUS.
4. IF PERMISSION CANNOT BE OBTAINED TO BURN, TREES AND LIMBS SHALL BE STACKED OUTSIDE THE PROJECT AREA IN A LOCATION SATISFACTORY TO THE LANDOWNER.

0 100 200

SCALE: 1"=100'

NORTH

REVISION:	DATE:	DESCRIPTION:
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(515)281-4246

OLDHAM
AML RECLAMATION PROJECT

SITUATION PLAN
CLEARING & SITE PREPARATION

SHEET 5 OF 19

EX. WETLAND
TO BE MITIGATED

PROJECT LIMITS

STA. 0+00
N=428466.237
E=1887601.22

CP101
N=429718.531
E=1887460.04

STA. 12+00
N=429666.237
E=1887601.22

POND P4

POND P3

POND P2

POND P1

SITE
ENTRANCE

STAGING
AREA

CP102
N=428769.928
E=1887768.41

CP100
N=429662.186
E=1887960.87

330th STREET

0+00.00 0+50.00 1+00.00 1+50.00 2+00.00 2+50.00 3+00.00 3+50.00 4+00.00 4+50.00 5+00.00 5+50.00 6+00.00 6+50.00 7+00.00 7+50.00 8+00.00 8+50.00 9+00.00 9+50.00 10+00.00 10+50.00 11+00.00 11+50.00 12+00.00

POND INFORMATION

POND	pH	WATER SURFACE ELEV. (FT)	ESTIMATED WATER SURF. AREA (AC)	ESTIMATED WATER DEPTH (FT)	ESTIMATED MUCK DEPTH (FT)	EST. WATER VOLUME (GALLONS)	DEWATERED AND BACKFILLED?
P1	6.6	744	0.15	6	2	282,000	YES
P2	6.9	746	0.08	4	2	101,000	YES
P3	7.2	738	0.18	4	4	236,000	YES
P4	6.9	737	0.41	8	NOT MEAS.	808,000	NO

NOTES THIS SHEET:
1. PONDS TO BE DEWATERED SHALL NOT BE DISCHARGED INTO POND P4.
2. DEWATERING ACTIVITIES SHALL TAKE PLACE AROUND POND P4

0 100 200
SCALE: 1"=100'

NORTH

FILE: OLDHAM_AML.DWG

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2		
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4		

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OLDHAM
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SITUATION PLAN
SURVEY BASELINE & POND DETAILS

IMPROVED LOW-WATER STREAM CROSSING SEE DETAIL 10-16

GRADED PATH FOR IMPROVED LANDOWNER ACCESS

INSTALL 804 LF FENCE ALONG OLD FENCE ALIGNMENT SEE DETAIL 11-16

EX. FENCE (REMAINS NORTH OF STREAM)

10' WIDE SWALE DRAINING TOWARD POND P4

4:1 OR FLATTER SIDE SLOPES EA. SIDE

HIGH POINT IN PATH

INSTALL ONE (1) 16' SINGLE GATE SEE DETAIL 12-16

EX. FENCE (REMAINS OUTSIDE OF PROJECT LIMITS)

8' WIDE AUX. GRASSED SPILLWAY

PROPOSED 0.6 Ac WETLAND, 2' DEEP THROUGHOUT NORMAL POOL ELEV. = 737.0 WETLAND MULCH APPLIED BELOW WATER LINE

PRECAST RECTANGULAR CONCRETE RISER FOR PRIMARY WETLAND SPILLWAY SEE DETAIL 3-15

POND P4 USED AS EXISTING NORMAL POOL ELEV.=737.0

12' WIDE x 21' LONG SPILLWAY BETWEEN POND P4 & CONSTRUCTED WETLAND, 6:1 OR FLATTER SIDE SLOPES EA. SIDE SEE DETAIL 6-15

CONSTRUCTED TERRACE

TERRACE RISER

EX. EAST ENTRANCE (NOT MAPPED) REMOVED BY OTHERS

330th STREET

NOTES THIS SHEET:

1. PROPOSED CONTOURS SHOWN AT 1' INTERVALS FOR GREATER DETAIL. EXISTING CONTOURS SHOWN AT 2' INTERVALS

0.4 Ac ZONE FOR WETLAND SEEDING ABOVE WATER LINE. SEED IN A BAND 10' WIDE BETWEEN ELEV. 737.0 AND 739.0. SEE TABLE 3.0 IN SUPPLEMENTAL SPECS. OTHER AREAS RECEIVE SEED MIX SPECIFIED ON TABLE 1.0 IN SUPPLEMENTAL SPECS.

0.6 Ac ZONE FOR APPLICATION OF WETLAND MULCH BELOW NORMAL POOL ELEV. USE RATE OF 5 TON/Ac

0 100 200

SCALE: 1"=100'

NORTH

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OLDHAM
AML RECLAMATION PROJECT

POST RECLAMATION PLAN
FENCING & WETLAND SEEDING

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

SITE INFORMATION:

1. SITE IS LOCATED IN SECTIONS 32 and 33, TOWNSHIP 73N, RANGE 15W IN MAHASKA COUNTY.

2. THIS SWPPP COVERS THE RECLAMATION OF APPROXIMATELY TEN (10) ACRES OF STRIP MINED LAND.

3. THE PRIMARY SOIL ASSOCIATION IS STRIP MINED SOIL. SURROUNDED BY LADOGA SILT LOAM.

4. RUNOFF FROM THE CONSTRUCTION AREA WILL FLOW INTO AN UNNAMED TRIBUTARY OF DES MOINES RIVER.

5. THE AVERAGE NRCS RUNOFF CURVE NUMBER FOR THIS LAND AFTER PERMANENT VEGETATION IS ESTABLISHED IS ESTIMATED TO BE 69 FOR PASTURE IN HYDROLOGIC SOIL GROUP B.

GENERAL:

1. THIS PROJECT WILL BE COVERED BY NPDES GENERAL PERMIT NO. 2 WHICH REGULATES RUNOFF FROM CONSTRUCTION SITES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PERFORM THE REQUIRED MONITORING INSPECTION, AND MAINTENANCE OF ALL BEST MANAGEMENT PRACTICES (BMPs) AS REQUIRED BY THE PERMIT.

2. 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 STORM WATER POLLUTION PREVENTION PLAN (SWPPP) FOR THE ENTIRE CONTRACT. THIS REPONSIBILITY SHALL BE FURTHER SHARED WITH ALL ITS SUBCONTRACTORS.

3. THE WORK SHALL BE DONE IN ACCORDANCE WITH THIS PLAN, THE CONTRACT DRAWINGS, AND SECTION 02120 OF THE CONSTRUCTION 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.

4. A COPY OF THE SWPPP SHALL BE KEPT IN A CONTRACTOR-SUPPLIED, WEATHER-PROTECTED ENCLOSURE SUCH AS A MAILBOX, SO THAT THE PLAN IS ACCESSIBLE AT THE SITE AT ALL TIMES. A SIGN OR NOTICE POSTED BY THE CONTRACTOR SHALL INDICATE THE PLAN'S LOCATION.

5. THE CONTRACTOR SHALL NOTIFY THE IOWA DNR, THE DIVISION, AND THE LOCAL POLICE DEPARTMENT OF ANY HAZARDOUS CONDITIONS AS SOON AS POSSIBLE BUT NOT MORE THAN SIX (6) HOURS AFTER ONSET OF HAZARDOUS CONDITIONS. HAZARDOUS CONDITIONS ARE DEFINED AS ANY SITUATION INVOLVING THE ACTUAL, IMMINENT, OR PROBABLE SPILLAGE, LEAKAGE, OR RELEASE OF A HAZARDOUS SUBSTANCE ONTO THE LAND, INTO WATERS OF THE STATE, OR INTO THE ATMOSPHERE, WHICH CREATES AN IMMEDIATE OR POTENTIAL DANGER TO THE PUBLIC HEALTH OR SAFETY OR THE ENVIRONMENT.

6. CONTRACTOR SHALL FOLLOW THE IOWA CONSTRUCTION SITE EROSION CONTROL MANUAL.

EROSION CONTROLS:

1. GRANULAR SURFACING SHALL BE INSTALLED AND MAINTAINED AT THE ENTRANCE INTO THE SITE AND OFFICE PARKING AREA TO CONTROL MUD FROM BEING TRACKED OFF SITE. ON AND OFF SITE TRACKING OF MUD SHALL BE REMOVED AS NECESSARY, IN ADDITION, WATER SHALL BE APPLIED TO HAUL ROADS AND OTHER DISTURBED EARTHEN SURFACES AS NECESSARY TO CONTROL DUST THROUGHOUT THE CONTRACT PERIOD.

2. 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.

3. EXISTING VEGETATION IN AREAS NOT NEEDED FOR CONSTRUCTION SHALL BE PRESERVED.

4, WHERE PRACTICABLE, SILT FENCE SHALL BE INSTALLED AT THE DOWNSTREAM PERIMETER OF THE CONSTRUCTION AREA PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITY.

5. RISERS, INLETS, INTAKES, AND OTHER SUCH WATER-CONVEYING STRUCTURES SHALL BE PROTECTED WITH SILT FENCES AT THE TIME OF THEIR INITIAL INSTALLATION.

6. IN AREAS WHERE PRESENCE OF SILT FENCE WILL INTERFERE WITH CONSTRUCTION ACTIVITIES, DIVERSION DITCHES AND TEMPORARY SEDIMENT TRAPS SHALL BE UTILIZED UNTIL THE SILT FENCE OR OTHER PRACTICES CAN BE INSTALLED.

EROSION CONTROLS CONTINUED:

7. LOCATIONS AND QUANTITIES OF SILT FENCE OR OTHER 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 THE ENGINEER.

8. 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.

9. 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.

10. NO MORE THAN FIVE (5) TOTAL ACRES OF EXPOSED ERODIBLE AREA IS ALLOWED AT ANY ONE TIME WITHOUT PERMISSION OF THE DIVISION OR ENGINEER.

11. WHEN AREAS REACH FINAL GRADE, THEY SHALL BE STABILIZED BY INCORPORATING MULCH AT THE RATE OF THREE (3) TONS PER ACRE INTO THE UPPER TWELVE (12) INCHES OF THE SOIL SURFACE. PERMANENT SEEDING SHALL BE INTIATED AS SOON THEREAFTER WITHIN THE SEEDING SEASONS OUTLINED IN THE SPECIFICATIONS. EROSION CONTROL MEASURES BY THE CONTRACTOR SHALL CONTINUE UNTIL PERMANENT 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.

INSPECTIONS:

1. SITE INSPECTION SHALL BE PERFORMED BY QUALIFIED PERSONNEL OF THE CONTRACTOR, OR BY THE DIVISION OR THE ENGINEER. INSPECTIONS SHALL BE PERFORMED ONCE EVERY SEVEN (7) DAYS AND WITHIN TEWNTY-FOUR (24) HOURS FROM THE END OF A STORM PRODUCING ONE-HALF (1/2) OR GREATER RAINFALL.

2. INSPECTIONS SHALL INCLUDE: ALL SILT FENCES, HAY BALE DIKES, DITCHES, SEDIMENT TRAPS, AND ALL OTHER EROSION CONTROL DEVICES; AREAS DISTURBED BY CONSTRUCTION ACTIVITY OR USED FOR STORAGE OF MATERIALS WHICH ARE EXPOSED TO PRECIPITATION; POLLUTION CONTROL MEASURES TO ENSURE PROPER OPERATION; DRAINAGE LOCATIONS TO DETERMIN EFFECTIVENESS IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATERS; AND LOCATION WHERE VEHICLES AND EQUIPMENT ENTER AND EXIT THE SITE FOR EVIDENCE OF OFF-SITE TRACKING.

3. SITE INSPECTION REPORTS SHALL BE PROPERLY SIGNED BY THE PERSON CONDUCTING THE INSPECTION. THE REPORT SHALL INCLUDE: DATE, NAME AND TITLE/POSITION OF THE INSPECTOR; WEATHER INFORMATION; LOCATION OF SEDIMENT/POLLUTANT DISCHARGE; CONTROL MEASURES A) REQUIREING MAINTENANCE, B) THAT HAVE FAILED, AND C) THAT ARE NEEDED; AND CORRECTIVE ACTIONS REQUIRED INCLUDING CHANGES/UPDATES TO THE SWPPP.

4. THE FINDINGS OF EACH INSPECTION SHALL BE RECORDED AND KEPT AT THE SITE IN A PROJECT FILE. THE CONTRACTOR SHALL IMMEDIATELY BEGIN CORRECTIVE ACTION ON ALL DEFICIENCIES FOUND. ALL CORRECTIVE ACTIONS SHALL BE COMPLETED WITHIN THREE (3) WORKING DAYS OF THE INSPECTION.

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 FENCES WHEN THEIR INSTALLED CAPACITY IS REDUCED BY FIFTY (50) PERCENT OR MORE.

3. SEDIMENT WHICH ESCAPES THE SITE SHALL BE CLEANED UP BY THE CONTRACTOR AND RETURNED TO THE SITE FOR PROPER DISPOSAL.

FILE: OLDHAM_AML.DWG

REVISION:	DATE:	DESCRIPTION:
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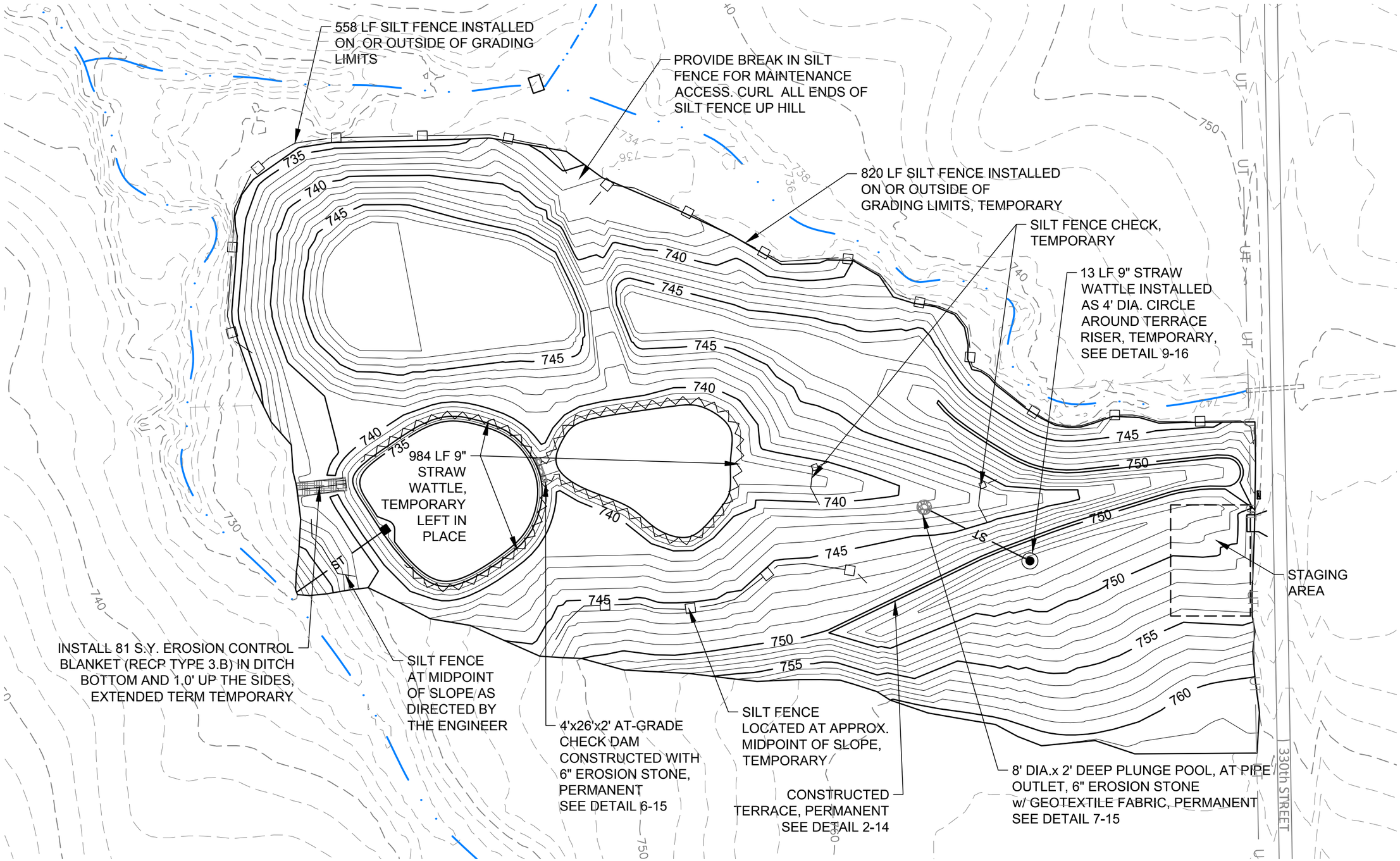
DESIGN BY: WJG & DKB | DRAWN BY: WJG | CHKD. BY: MLB | ISSUED: 11-29-2012 | REVISED: NO

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

OLDHAM
AML RECLAMATION PROJECT

SWPPP DESCRIPTION

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)



NOTES THIS SHEET:

1. PROPOSED CONTOURS SHOWN AT 1' INTERVALS FOR GREATER DETAIL. EXISTING CONTOURS SHOWN AT 2' INTERVALS

6" EROSION STONE

RECP TYPE 3.B SEE SPEC. SEC. 2120, 2.1H

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OLDHAM
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SWPPP BMP's

SHEET **9** OF **19**

SELECT BORROW
ADJUSTMENT AREA
VARY SLOPES & ELEV. AS
NEEDED FOR VOLUME
BALANCE. SEE SHT. 11
FOR PROPOSED CONTOURS

SOUTH END OF PROJECT: 2.8 AC
SELECT BORROW AREA,
13,570 CY TOTAL EXCAVATION
10,141 CY AVAIL. FOR EXPORT TO
NORTH AS SELECT BORROW
ASSUMES 15% SHRINKAGE, 0% BULKING

NORTH END OF PROJECT: 7.1 AC
CONSTRUCT 1.0' LOWER THAN FINISHED GRADE,
INCLUDING TERRACE BUT EXCLUDING EX. POND P4
23,100 CY EXCAVATION
11,550 CY SELECT MATERIAL VOL. REQ'D TO FILL TOP 1.0'
ASSUMES 15% SHRINKAGE, 0% BULKING

POND P4

FOR OPERATIONS AT
SOUTH END OF PROJECT,
CONSTRUCT PROPOSED
POND & IMMEDIATE VICINITY
TO LINES AND GRADES
PRIOR TO REMAINING
EXCAVATION

330th STREET

EXCAVATION AREA FOR
SELECT BORROW

AREA TO CONSTRUCT 1' LOWER THAN FINISHED CONTOURS SHOWN ON
SHEET 11. PLACEMENT OF 1.0' SELECT FILL MUST INCLUDE TERRACE
CONSTRUCTION. TERRACE IS CONSTRUCTED OF SPOIL MATERIAL
EXCEPT FOR TOP 1.0'

0 100 200
SCALE: 1"=100'

NORTH

FILE: OLDHAM_AML.DWG

REVISION:	DATE:	DESCRIPTION:
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HENRY A. WALLACE BUILDING
502 E. 9th STREET, DES MOINES, IOWA 50319
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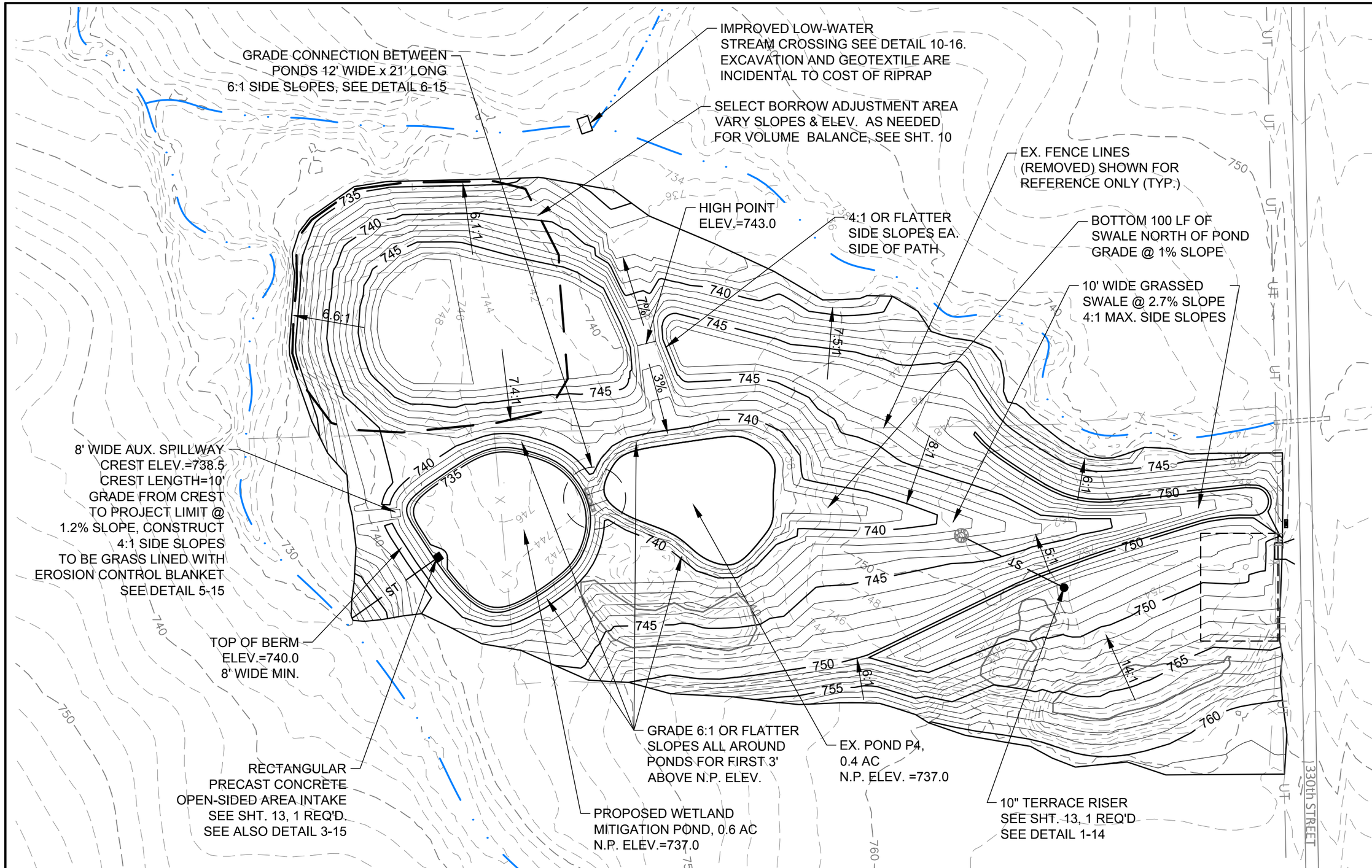
(SITE NAME)
AML RECLAMATION PROJECT

SELECT BORROW & FILL PLAN

SHEET 10 OF 19



NOTES THIS SHEET:

1. PROPERTY LINES, SECTION LINES, AND FENCE LINES, IF SHOWN, ARE APPROXIMATE.
2. PROPOSED GRADING CONTOURS SHOWN ARE TO FINISHED ELEVATION WHICH INCLUDES 1.0' OF SELECT FILL.
3. AREAS TO RECEIVE SELECT FILL SHALL BE BUILT 1.0' LOWER THAN CONTOUR LINES SHOWN ON THIS SHEET. REFER TO SHT. 10
4. PROPOSED CONTOURS SHOWN AT 1' INTERVALS FOR GREATER DETAIL. EXISTING CONTOURS SHOWN AT 2' INTERVALS

0 100 200

SCALE: 1"=100'

NORTH

REVISION:	DATE:	DESCRIPTION:
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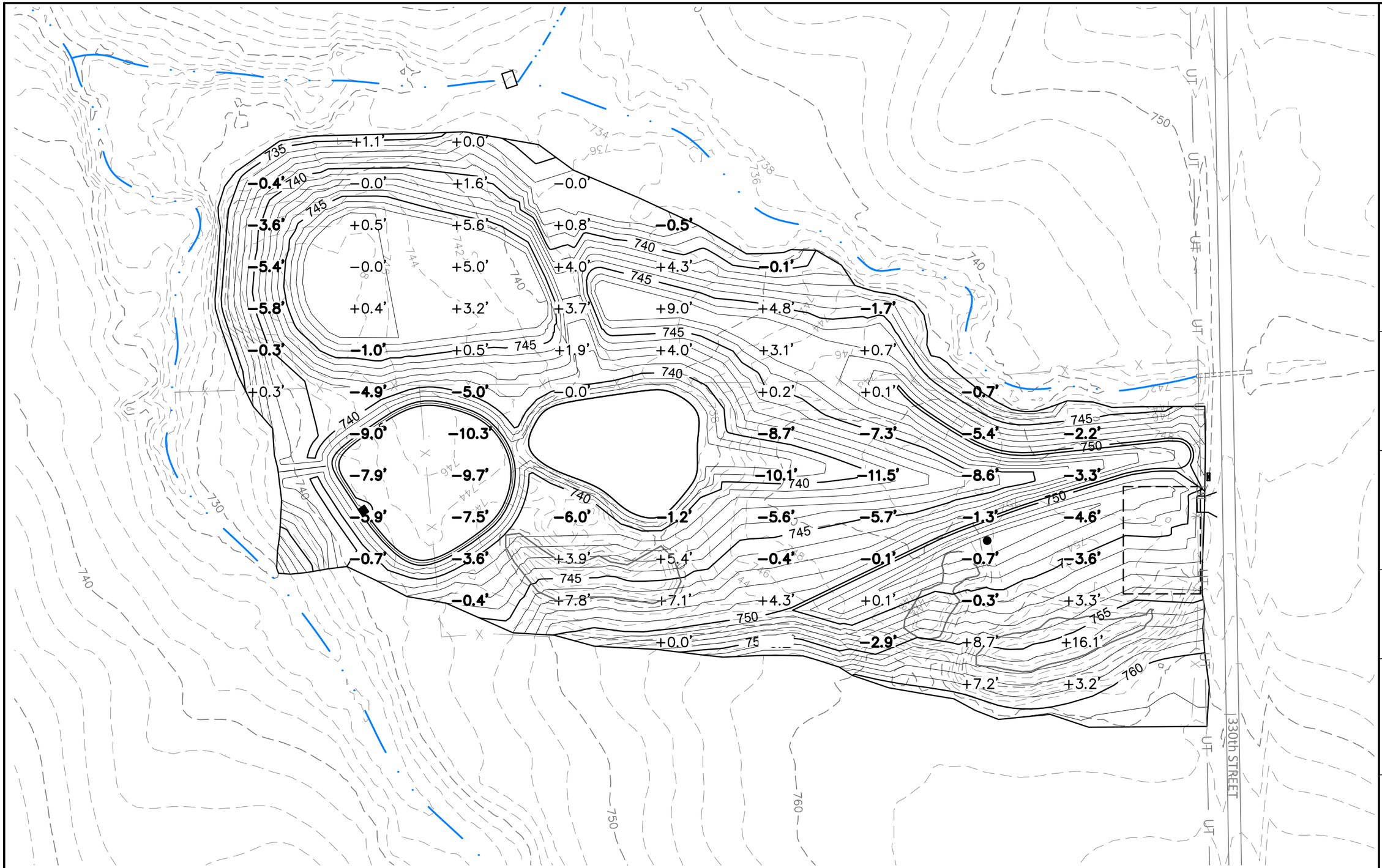
OLDHAM
AML RECLAMATION PROJECT

FINISHED GRADING PLAN

SHEET 11 OF 19



NOTES THIS SHEET:

1. NEGATIVE (–) VALUES INDICATE AREAS OF CUT
2. POSITIVE (+) VALUES INDICATED AREAS OF FILL.
3. ALL VALUES SHOWN ARE IN FEET
4. PROPOSED CONTOURS SHOWN AT 1' INTERVALS FOR GREATER DETAIL. EXISTING CONTOURS SHOWN AT 2' INTERVALS
5. ALL CONTOURS SHOWN ARE TO FINISHED GRADE WHICH INCLUDES TERRACE CONSTRUCTION.

0 100 200

SCALE: 1"=100'

NORTH

REVISION:	DATE:	DESCRIPTION:
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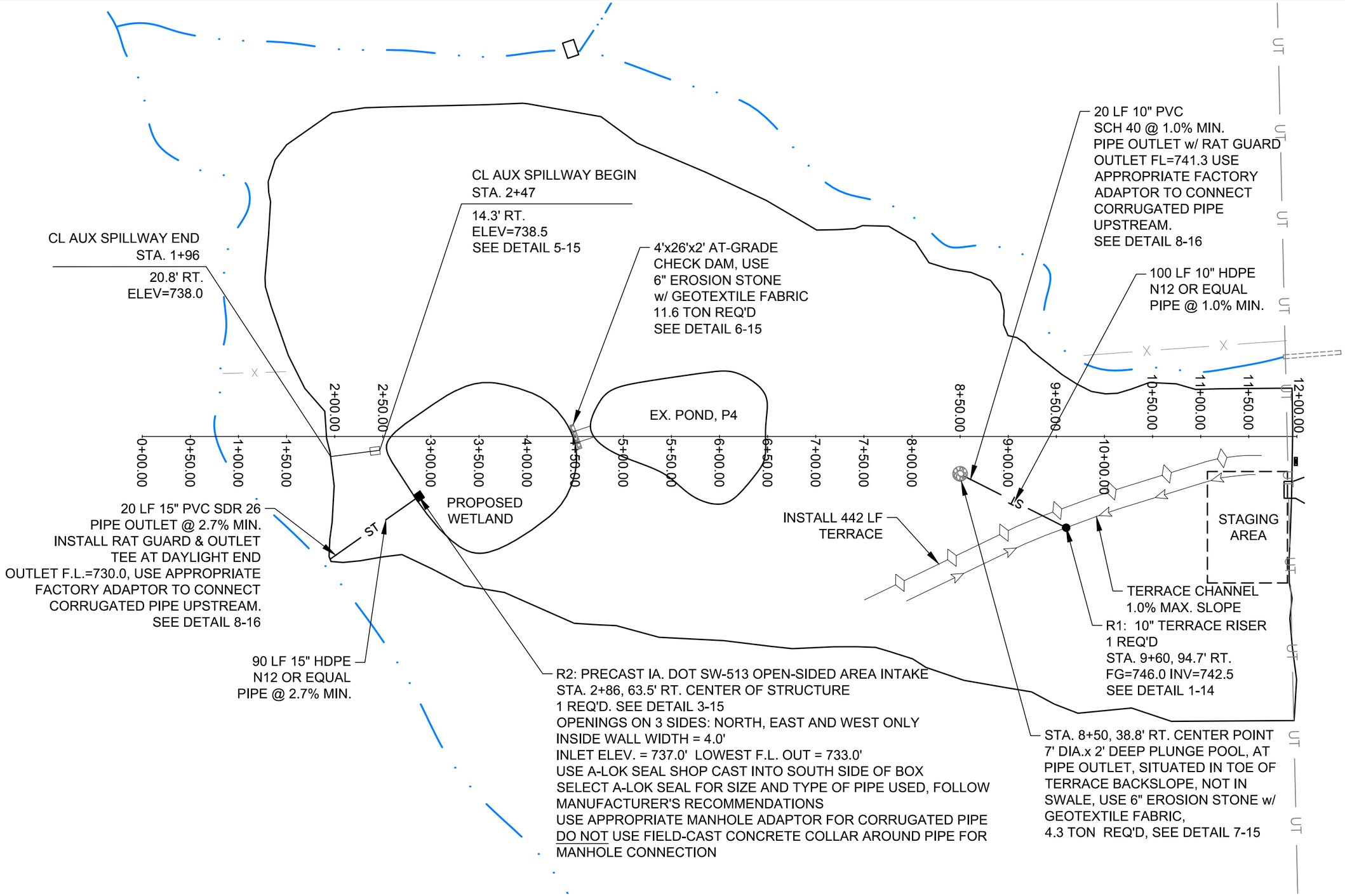
OLDHAM
AML RECLAMATION PROJECT

FINISHED GRADING
CUT & FILL PLAN

SHEET **12** OF **19**



NOTES THIS SHEET:
1. FG=FINISH GRADE ELEVATION AT BASE OF INLET RISER; INV=FLOWLINE INVERT ELEVATION OF THE PIPE OR TEE.
2. PC=POINT OF CURVATURE; PT=POINT OF TANGENCY; CL=CENTERLINE; AUX=AUXILLIARY
3. ALL ELEVATIONS ARE SHOWN IN FEET.
4. PIPE SLOPES SHOWN ARE MINIMUM REQUIREMENTS FOR DESIGN CAPACITY. FIELD CONDITIONS MAY ALLOW STEEPER PIPE SLOPES.

REVISION:	DATE:	DESCRIPTION:
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FILE: OLDHAM_AML.DWG

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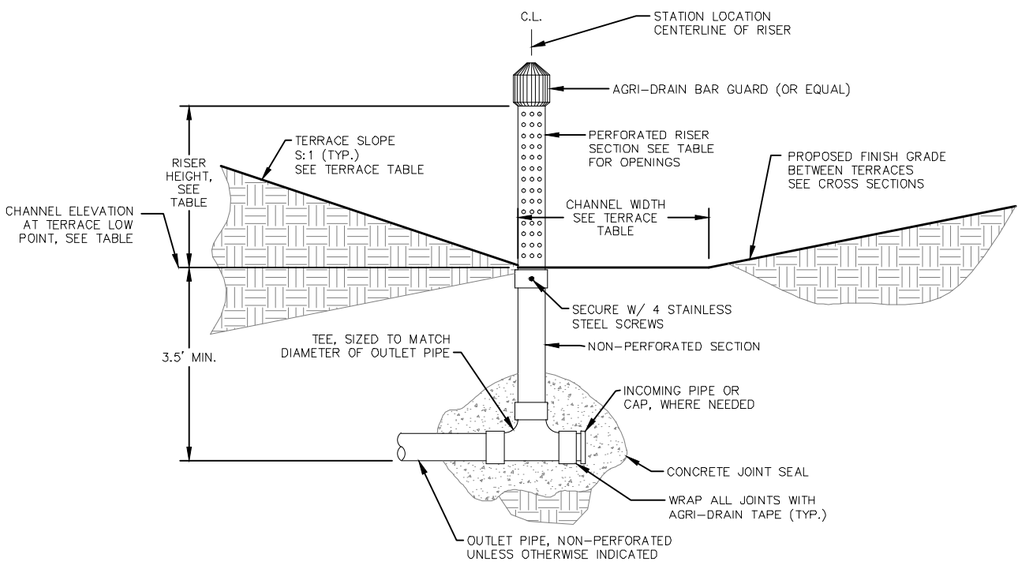
OLDHAM
AML RECLAMATION PROJECT

DRAINAGE PLAN

SHEET **13** OF **19**



NOTE: TWO (2) STEEL FENCE POSTS
REQUIRED TO SUPPORT RISER, NOT SHOWN

1/14 TERRACE INTAKE DETAIL

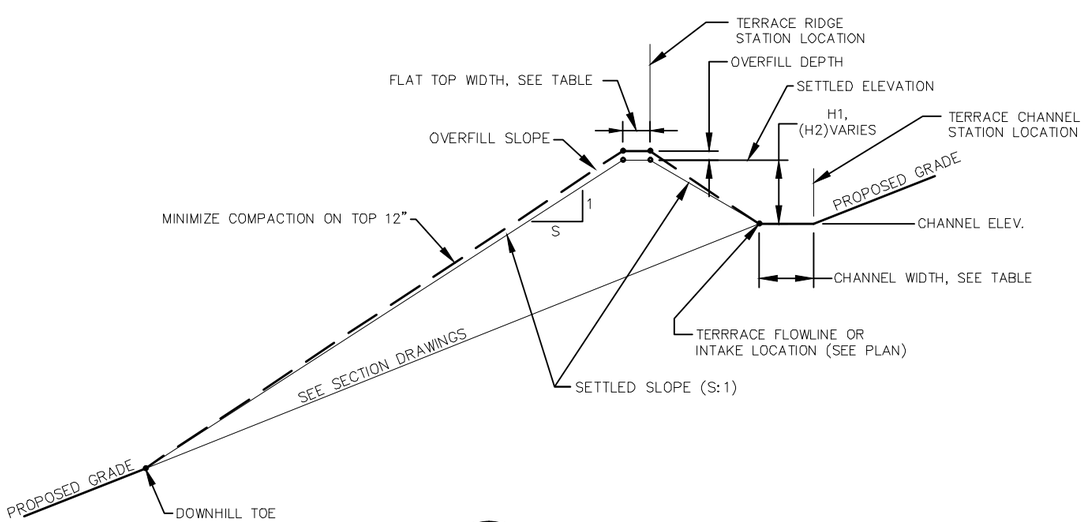
SCALE: NONE

TABLE: TERRACE INTAKES, PIPES & OUTLETS

		INTAKE RISER								TERRACE PIPE/TILE			OUTLET/END TREATMENT		
LOCATION I.D.	DWG. SHEET	DIA. (IN.)	INTAKE MATERIAL	HOLES QTY./FT	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	OUTLET TEE (Y/N)	DISCHARGE INTO
R1	13	10	PLASTIC	72	1	746	2.5	YES	13	10	1.0	PLASTIC	YES	NO	PL. POOL

NOTES:

1. UNLESS OTHERWISE NOTED, 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 UNLESS NOTED OTHERWISE ON PLAN SHEETS. STRAW WATTLE SHALL BE STAKED IN PLACE 45 DEG. MIN. INTERVAL AROUND THE CIRCLE.
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.



2/14 FILL TERRACE DETAIL

SCALE: NONE

TABLE: FILL TERRACE INFORMATION

				LOW POINT			RIDGE				CHANNEL			HIGH POINT	
TERRACE I.D.	DWG. SHEET	FILL VOLUME (C.Y.)	MAX. SETTLED SLOPE (S:1)	ELEV. (FT.)	H1 HEIGHT (FT.)	OVERFILL DEPTH, (FT.)	SETTLED ELEV. (FT.)	LENGTH, (L.F.)	WIDTH, (FT.)	LEG	LENGTH (L.F.)	WIDTH (FT.)	MAX. SLOPE (%)	CHANNEL ELEV. (FT.)	H2 HEIGHT (FT.)
T1	13	**	5	746	4.0	0.5	+4	442	3	N	205	2	1.0	+2.1	1.9
										S	183	2	1.1	+2.0	2.0

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 A MINIMUM ADDITIONAL 12.5% OF H1 OR 6 INCHES, WHICHEVER IS GREATER UNLESS NOTED OTHERWISE.
7. CHANNEL LENGTHS ARE MEASURED ALONG THE STATION LOCATION LINE, IN THE CHANNEL BED, TOWARD THE HIGH POINT FROM THE LOW POINT LOCATION.
8. THE FILL VOLUME IS THE ESTIMATED SETTLED VOLUME OF SOIL OF THE TERRACE CONSTRUCTED ABOVE THE FINISHED GRADE NOT INCLUDING OVERFILL.
9. ** VOLUME FOR TERRACE CONSTRUCTION IS INCLUDED IN THE OVERALL EARTHWORK QUANTITY.

FILE: OLDHAM_AML.DWG

REVISION:	DATE:	DESCRIPTION:
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ISSUED: 11-29-2012 REVISED: NO

CHKD. BY: MLB

DRAWN BY: WJG

DESIGN BY: WJG & DKB

DIVISION OF SOIL CONSERVATION
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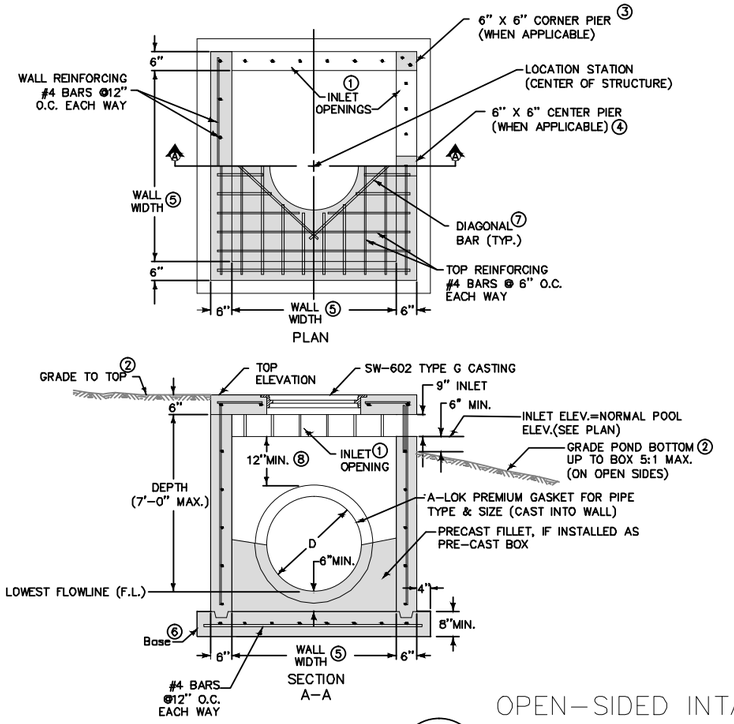
OLHAM
AML RECLAMATION PROJECT

TYPICAL DETAILS



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 CONTRACT DOCUMENTS.

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.

① 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.

② GRADE POND BOTTOM UP TO BOX (6 INCHES MIN.) BELOW INLET ON OPEN SIDES. GRADE TO TOP ELEVATION ON CLOSED SIDES.

③ CORNER PIER REQUIRED BETWEEN OPENINGS OF TWO ADJACENT WALLS. EXTEND WALL REINFORCING VERTICALLY THROUGH PIER. INSTALL ONE ADDITIONAL 15-INCH #4 BAR IN PIER.

④ 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.

⑤ 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.

⑥ 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.

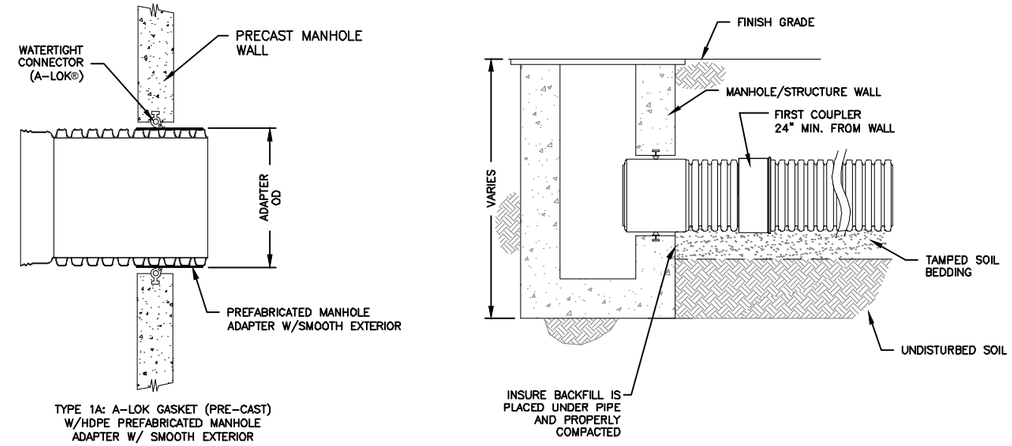
⑦ INSTALL FOUR #4 DIAGONAL BARS AT ALL PIPE OPENINGS.

⑧ 12" MINIMUM WALL HEIGHT ABOVE ALL PIPES.

3/15 OPEN-SIDED INTAKE DETAIL IA. DOT SW-513 (MODIFIED)

SCALE: NONE

INLETS ON 3 SIDES, NORTH, EAST, & WEST
A-LOK ON SOUTH WALL OF BOX
WALL WIDTH=4'X4'
INLET ELEV.=737.0 LOWEST F.L. OUT=733.0



TYPE 1A: A-LOK GASKET (PRE-CAST) W/HDPE PREFABRICATED MANHOLE ADAPTER W/ SMOOTH EXTERIOR

SEE MANUFACTURER'S LITERATURE FOR HDPE CONNECTIONS TO MANHOLES AND STRUCTURES FOR INSTALLATION RECOMMENDATIONS.

PIPE SIZE (IN)	ADAPTER OD (IN)	ADS PRODUCT CODES	A-LOK RING® **
12	14.75	1222AAPP	480
15	18.5	1522AAPP	600

NOTES:

PERFORMANCE HIGHLY DEPENDENT ON INSTALLATION. CONTRACTOR MUST INSURE MANHOLE GASKET IS UNIFORMLY SEATED AROUND STRUCTURE ADAPTER. EXTRA PRECAUTIONS MUST BE TAKEN TO PREVENT DIFFERENTIAL SETTLEMENT BETWEEN THE PIPE AND MANHOLE.

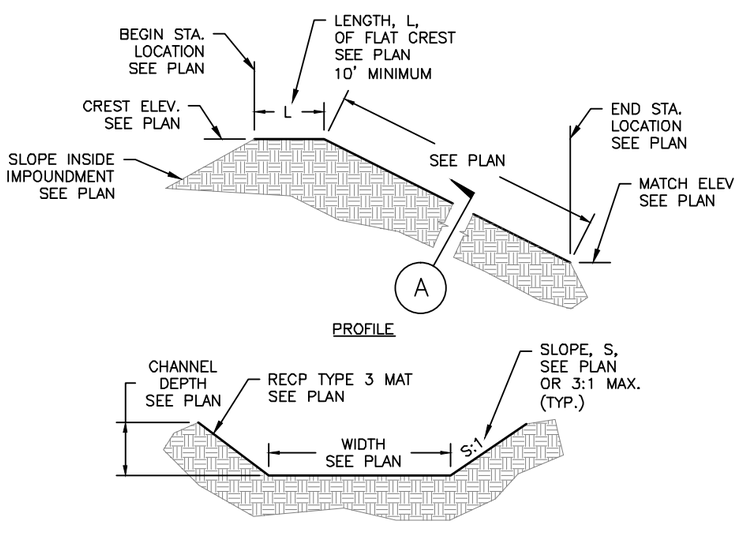
** THIRD PARTY – CODES AS SUPPLIED BY MANUFACTURER

A-LOK is a registered trademark of A-LOK Products, Inc. (www.a-lok.com)

4/15 A-LOK MANHOLE ADAPTOR DETAIL

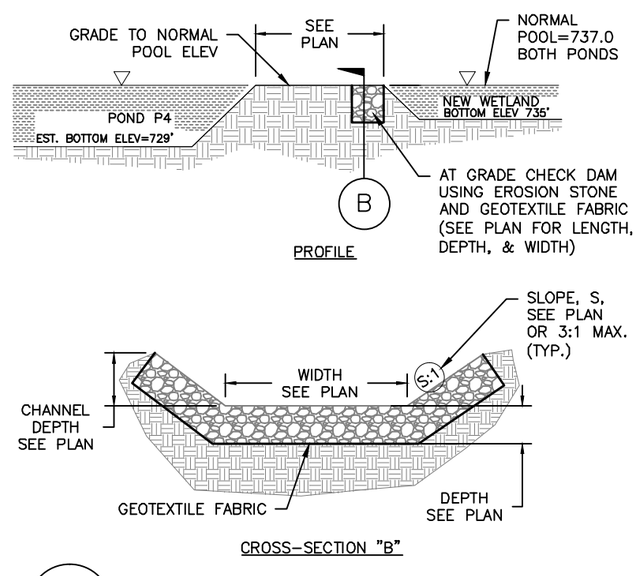
SCALE: NONE

NOTE: DETAIL ASSUMES PIPE DRAINS TOWARD STRUCTURE. FOR PIPE DRAINING AWAY FROM STRUCTURE, LAY PIPE PIPE WITH BELLS POINTING IN UPSTREAM DIRECTION.



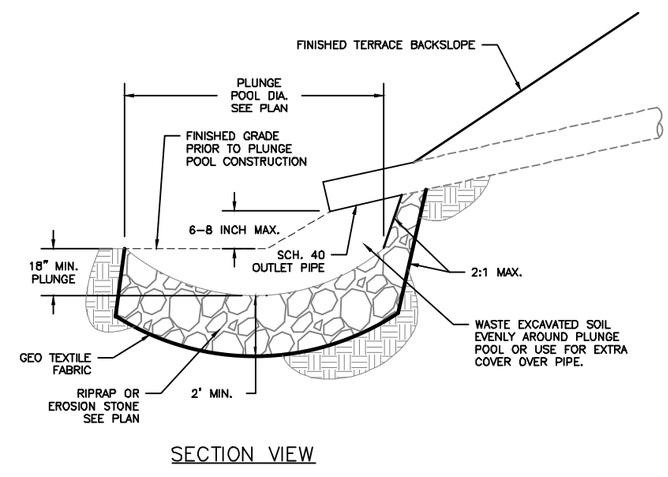
5/15 AUX. SPILLWAY DETAIL

SCALE: NONE



6/15 POND CONNECTION DETAIL

SCALE: NONE



7/15 PLUNGE POOL DETAIL

SCALE: NONE

FILE: OLDHAM_AML.DWG

REVISION:	DATE:	DESCRIPTION:
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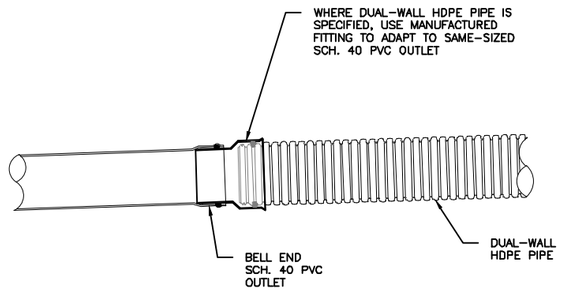
DESIGN BY: WJG & DKB | DRAWN BY: WJG | CHKD. BY: MLB | ISSUED: 11-29-2012 | REVISED: NO

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

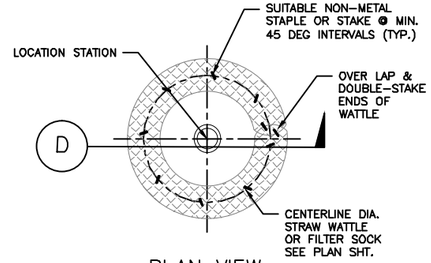
OLDHAM AML RECLAMATION PROJECT

TYPICAL DETAILS



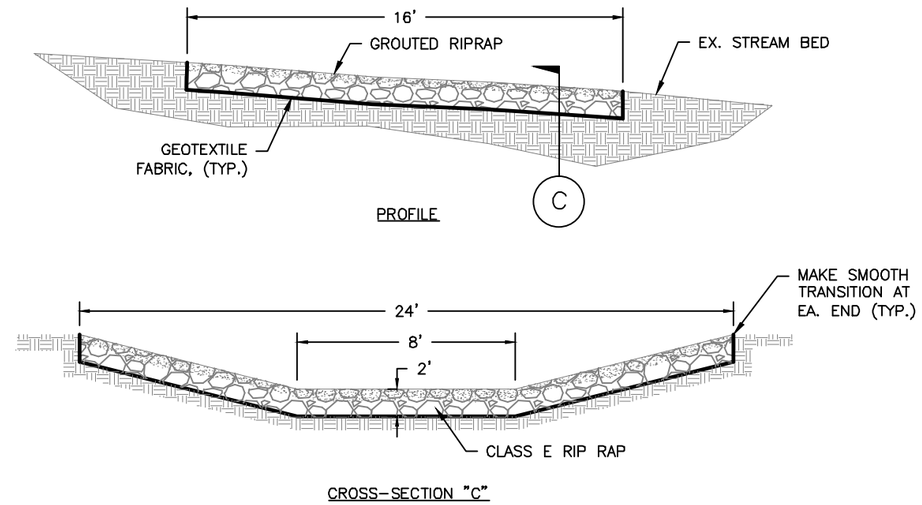
8/16 DUAL-WALL/PVC SCH. 40 ADAPTOR

SCALE: NONE



9/16 TERRACE RISER PROTECTION DETAIL

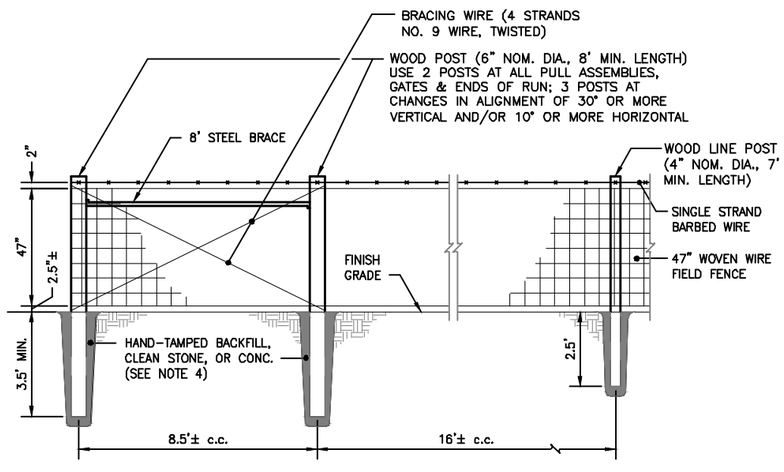
SCALE: NONE



10/16 LOW WATER CROSSING DETAIL

SCALE: NONE

NOTE: COSTS OF EXCAVATION & GEOTEXTILE FABRIC ARE INCIDENTAL TO COST OF RIPRAP.



FENCE DETAIL NOTES:

1. ALL FENCING TO BE WOVEN WIRE UNLESS OTHERWISE NOTED.

2. FENCING DETAIL IS SIMILAR TO IOWA DOT STANDARD ROAD PLAN MI-103 EXCEPT ALL POSTS MUST BE WOOD AND NO BARBED WIRE REQUIRED AS THE BOTTOM STRAND BELOW THE WOVEN FENCING.

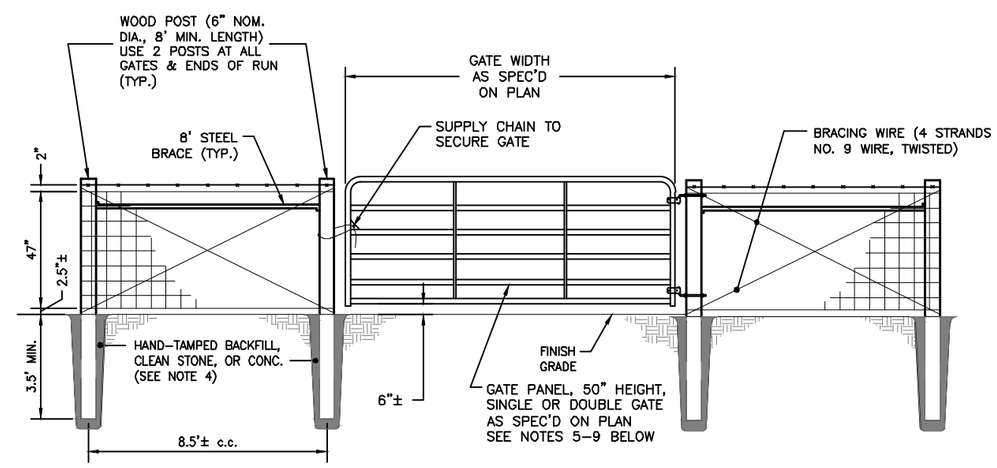
3. BRACE END POST TO FIRST INTERIOR POST WITH STEEL BRACE AND BRACING WIRE. SIMILAR DETAIL AT ALL REQUIRED CORNER POST, ANGLE POST AND PULL POST ASSEMBLIES.

4. IN LIEU OF EXCAVATING, POSTS MAY BE SET BY DRIVING. IN EITHER EVENT, CLEAR UTILITIES PRIOR TO INSTALLING FENCE POSTS.

5. PAY LENGTH 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. THERE SHALL BE NO SEPARATE PAY FOR BRACE PANELS.

11/16 WOVEN WIRE FENCE DETAIL

SCALE: NONE



GATE DETAIL NOTES:

1. ALL FENCING TO BE WOVEN WIRE UNLESS OTHERWISE NOTED.

2. FENCING DETAIL IS SIMILAR TO IOWA DOT STANDARD ROAD PLAN MI-103 EXCEPT ALL POSTS MUST BE WOOD AND NO BARBED WIRE 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 REQUIRED CORNER POSTS AND GATE POST ASSEMBLIES.

4. IN LIEU OF EXCAVATING, POSTS MAY BE SET BY DRIVING. IN EITHER EVENT, CLEAR UTILITIES PRIOR TO INSTALLING FENCE POSTS.

5. UNLESS OTHERWISE NOTED, MIN. GATE PANEL LENGTH FOR SINGLE GATES IS 12 FEET. TWO (2) 12-FOOT PANELS SHALL BE INSTALLED FOR DOUBLE GATES.

6. WHERE SPECIFIED CLEAR WIDTH FOR DOUBLE GATES IS LESS THAN 24', ALLOW GATE PANELS TO OVERLAP.

7. SECURE DOUBLE GATES TOGETHER AT ENDS OPPOSITE HINGES.

8. ALL GATES SHALL BE BUILT FROM TWO (2) INCH DIAMETER STEEL TUBE AND SHOP PAINTED. USE MOUNTING HARDWARE AND HINGES RECOMMENDED BY GATE MANUFACTURER.

9. 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.

12/16 GATE DETAIL

SCALE: NONE

REVISION:	DATE:	DESCRIPTION:
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FILE: OLDHAM_AML.DWG

REVISED: NO

ISSUED: 11-29-2012

CHKD. BY: MLB

DRAWN BY: WJG

DESIGN BY: WJG & DKB

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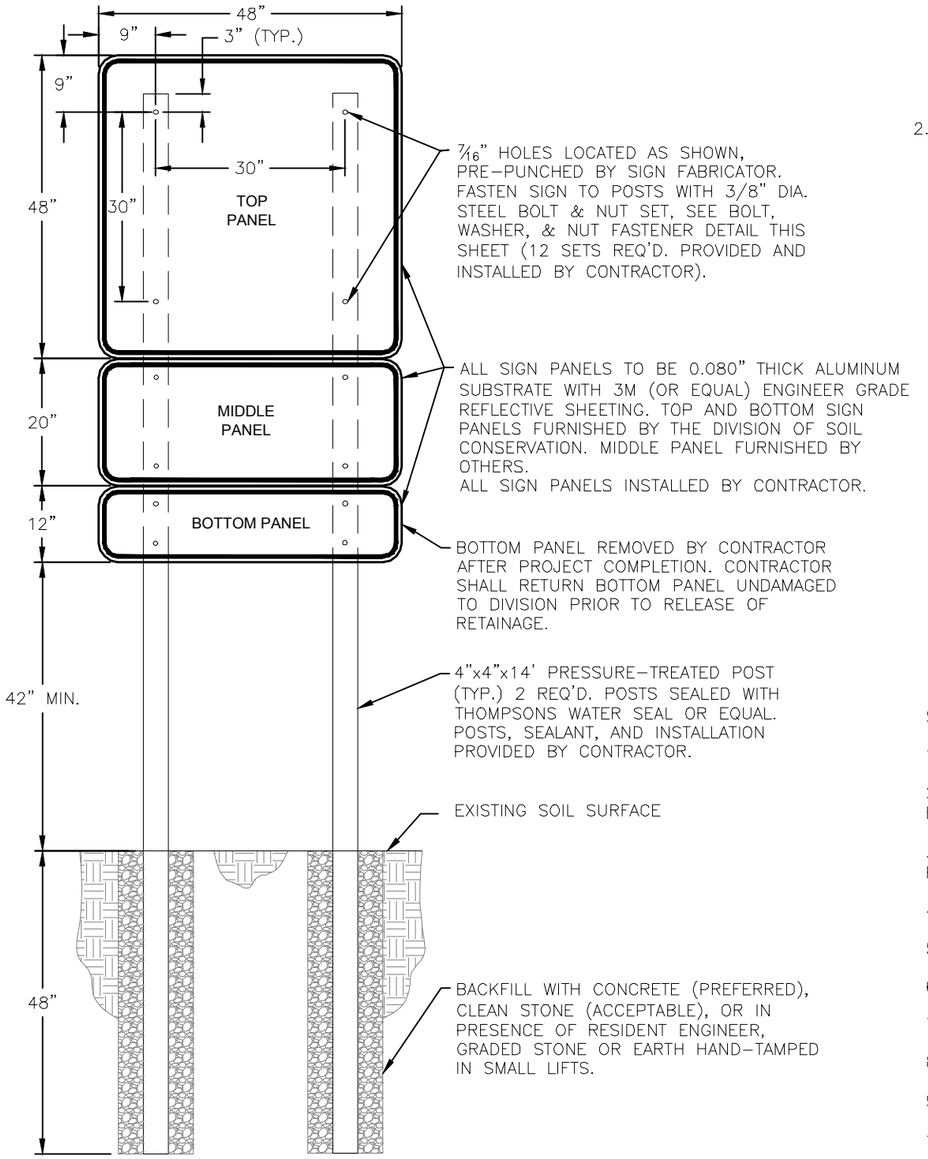
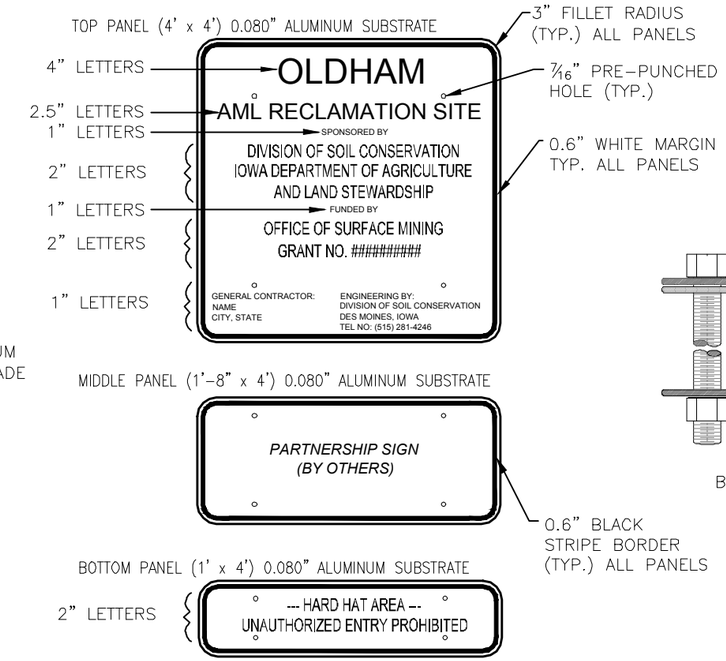
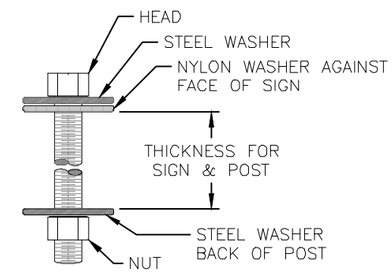
OLDHAM
AML RECLAMATION PROJECT

TYPICAL DETAILS







BOLT, WASHER, & NUT FASTENER DETAIL
NOT TO SCALE

SIGNAGE NOTES:

1. LETTERING AND SIGN FABRICATION SHALL BE PERFORMED BY A PROFESSIONAL SIGN MAKER.

2. SIGN PANELS SHALL BE COVERED WITH WHITE, 3M ENGINEER GRADE PRISMATIC REFLECTIVE SHEETING SERIES 3430, OR EQUAL, MEETING ASTM D4956 TYPE I. SHEETING SHALL BE APPLIED PER MANUFACTURER'S RECOMMENDATIONS.

3. LETTERING SHALL BE BLACK. INK FOR LETTERING SHALL BE 3M SERIES 880N OR EQUAL APPLIED PER MANUFACTURER'S RECOMMENDATIONS.

4. LETTERING AND LINE SPACING SHALL BE ADJUSTED TO AVOID INTERFERENCE WITH PRE-PUNCHED HOLES.

5. LETTERING AND SHEETING MUST HAVE A MINIMUM 5-YEAR PERFORMANCE WARRANTY AGAINST PEELING AND CRACKING.

6. ALL EXPOSED WOOD SHALL BE SEALED WITH THOMPSONS WATER SEAL OR EQUAL MEETING ASTM D-4446-08.

7. ALL STEEL HARDWARE PIECES SHALL BE GALVANIZED OR RUST RESISTANT.

8. NYLON AND STEEL WASHERS SHALL BE USED AS SHOWN ON THE BOLT, WASHER, NUT FASTENER DETAIL ABOVE.

9. CLEAR UTILITIES WITH IOWA ONE-CALL (800) 292-8989 BEFORE EXCAVATING FOR POSTS.

10. SECURE ENGINEERS APPROVAL FOR SIGN LOCATION BEFORE INSTALLATION.

11. COSTS FOR POSTS, HARDWARE, WOOD SEALANT AND SIGN INSTALLATION SHALL BE INCIDENTAL TO MOBILIZATION.

12. 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.

13. 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.

14. ONE (1) PROJECT SIGN IS REQUIRED, LOCATED AS SHOWN ON PLANS.

SCALE: 1"=2'

FILE: OLDHAM_AML.DWG

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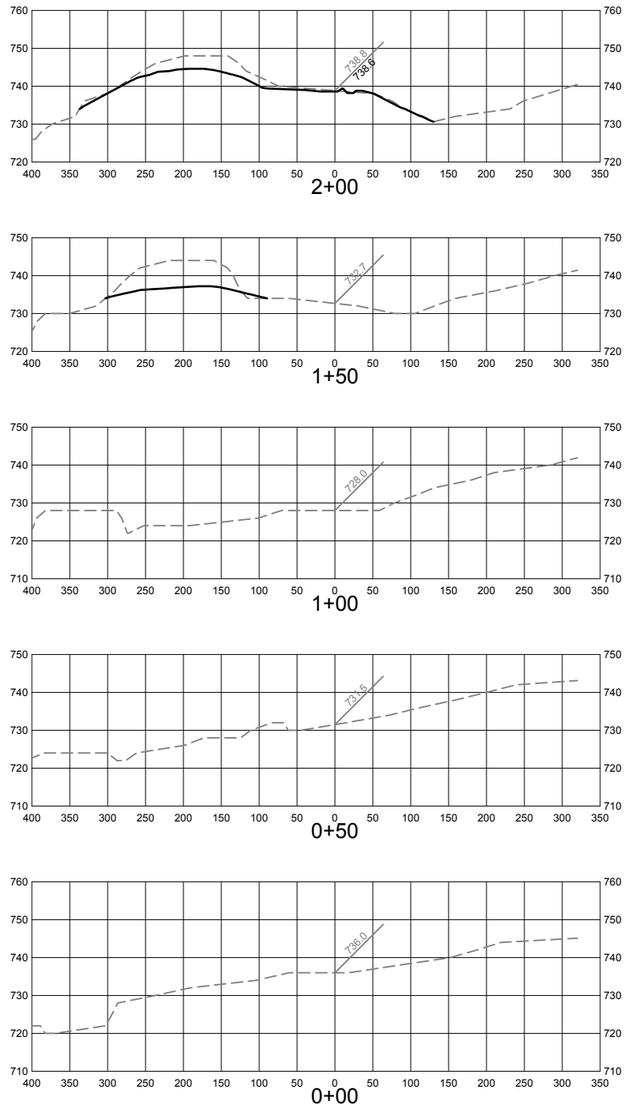
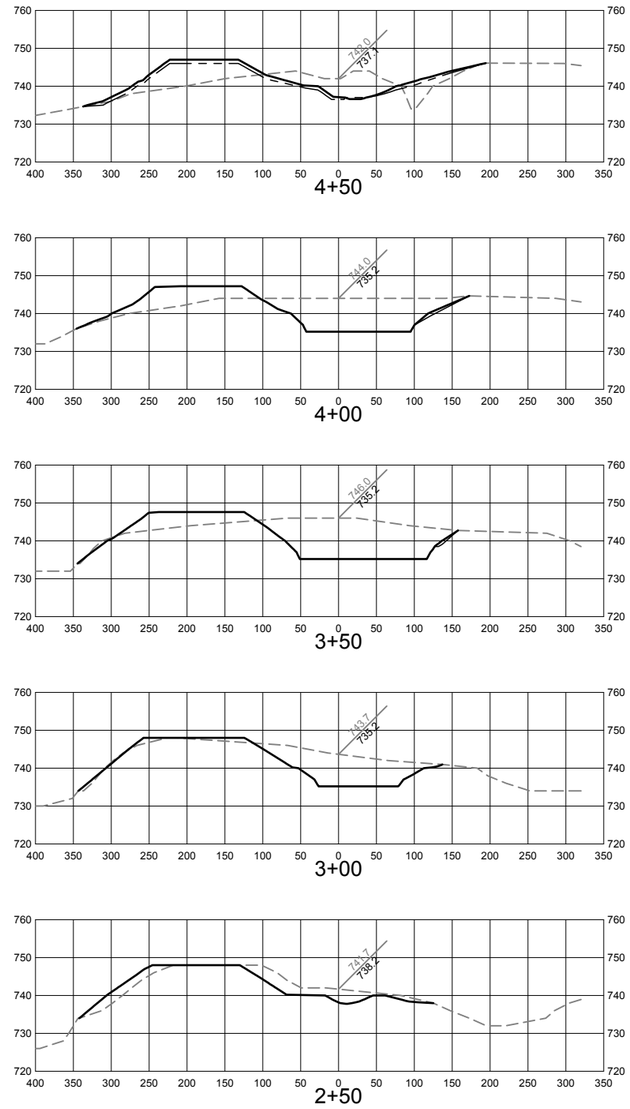
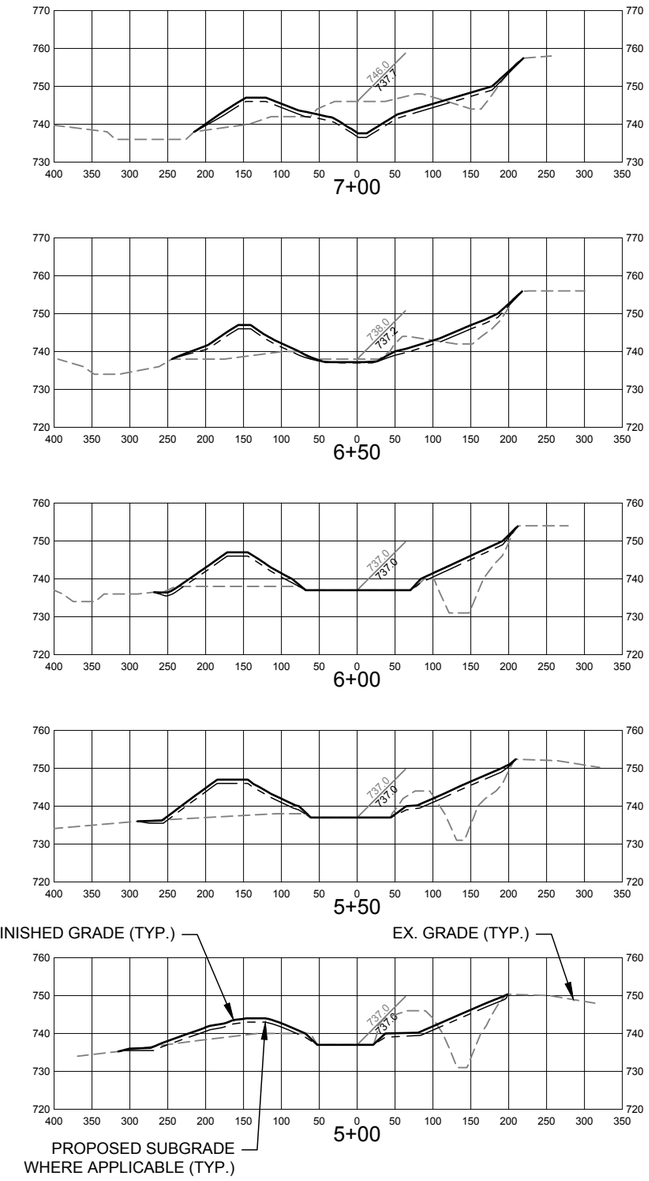
OLDHAM
AML RECLAMATION PROJECT

TYPICAL DETAILS
PROJECT SIGNAGE

SHEET **17** OF **19**







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

FILE: OLDHAM_AML.DWG

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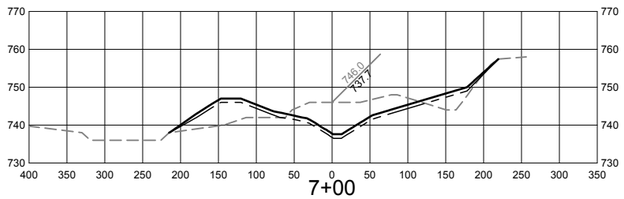
CROSS-SECTIONS

SHEET
18 OF **19**



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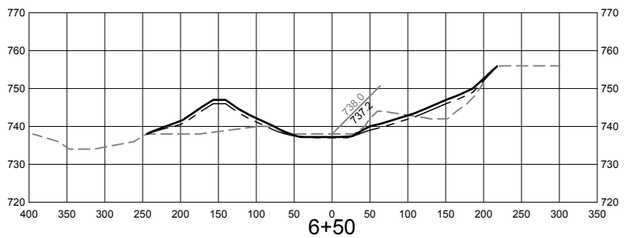

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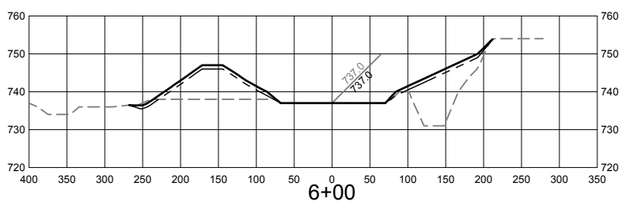

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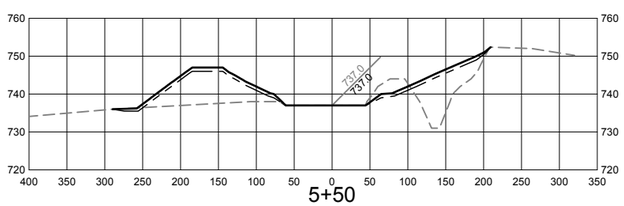

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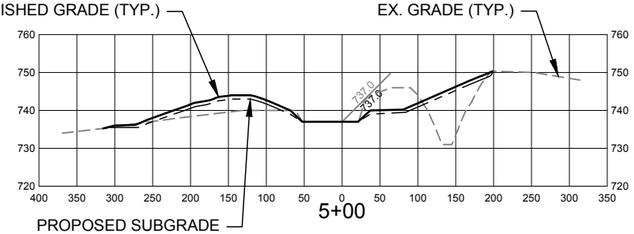

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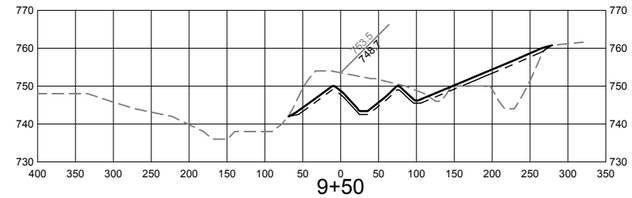

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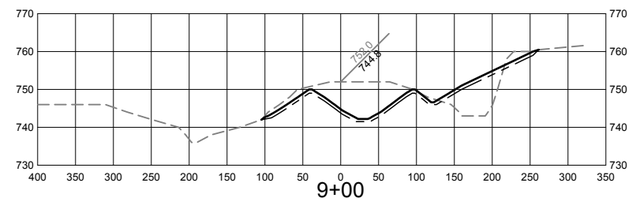

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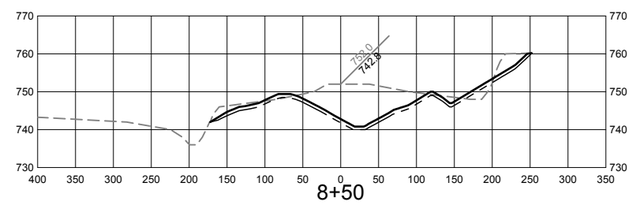

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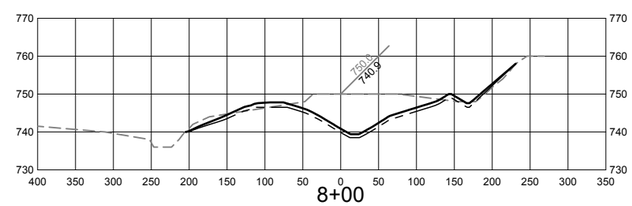

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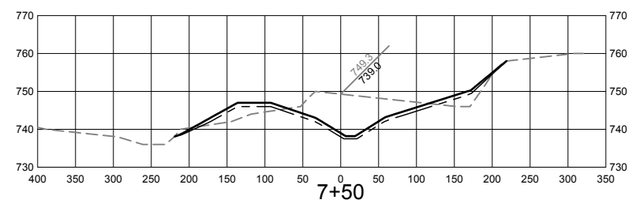

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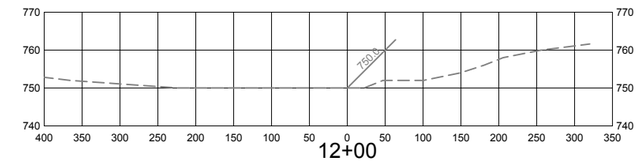

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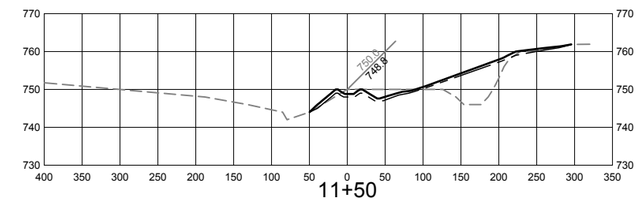
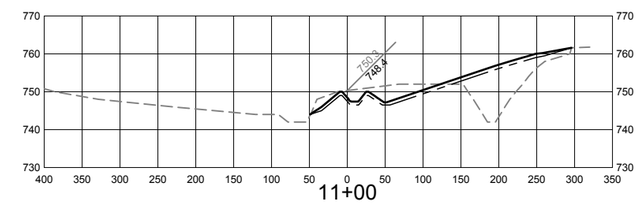


11+50



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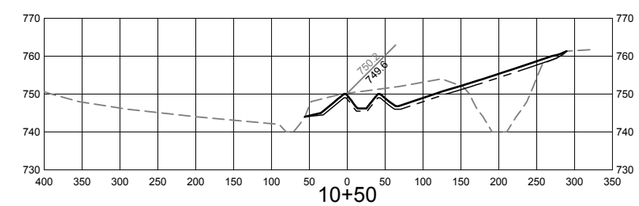

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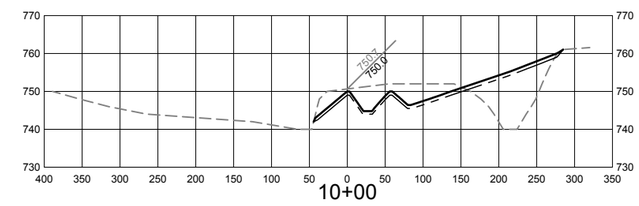

10+00

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

FILE: OLDHAM_AML.DWG

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CROSS-SECTIONS

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