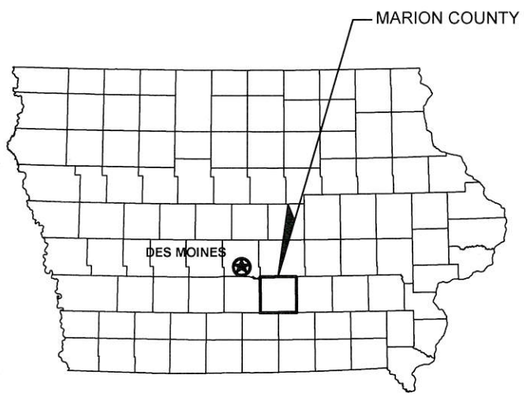
SYTSMA (IA-123)
AML RECLAMATION PROJECT

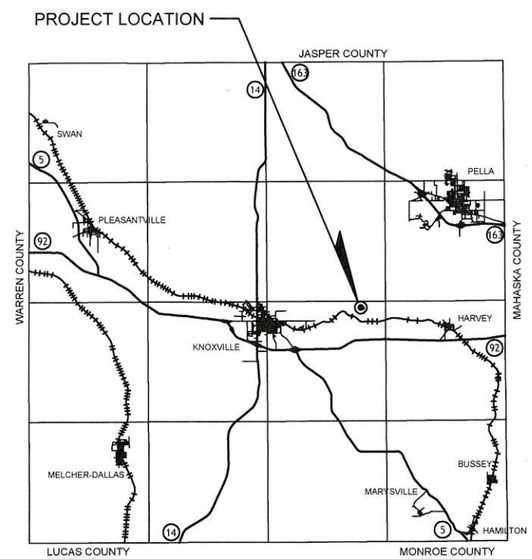
NE ¼ SECTION 2, TOWNSHIP 75N, RANGE 19W, MARION COUNTY, IOWA

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

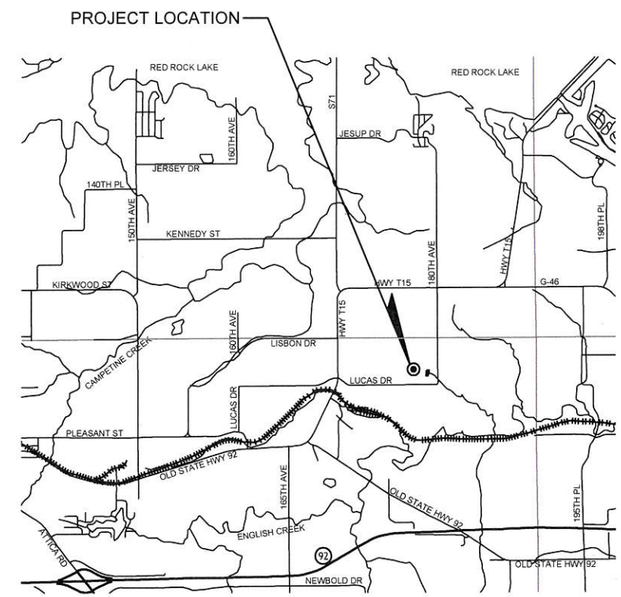
FUNDED BY:
U.S. DEPARTMENT OF THE INTERIOR
OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT
GRANT NO: XXXX



STATE OF IOWA



MARION COUNTY



LOCAL VICINITY

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

ENGINEER:
LT LEON ASSOCIATES, INC.
500 E. LOCUST STREET, SUITE 400
DES MOINES, IOWA
TEL: (515) 422-7016

INDEX OF SHEETS:

1 TITLE SHEET
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Reference to particular products, tradenames, or manufacturers is intended for clarity only and does not represent endorsement by the State of Iowa. Equivalent products or materials may be suitable, subject to the approval of the Engineer or Division.

LICENSED PROFESSIONAL ENGINEER
LUIS T. LEON
18685
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: Date: 8/26/2015
Name (printed or typed): LUIS T. LEON, P.E.
License Number: 18685
My license renewal date is: DECEMBER 31, 2015
Pages or sheets covered by this seal: ENTIRE DOCUMENT

FILE: 049.001

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DESIGN BY: LTL	DRAWN BY: BAY	CHKD. BY: KLJ	ISSUED: 08-26-15	REVISED:

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TITLE SHEET

SHEET 1 OF 15

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 AND WATER QUALITY 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.

3. 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 AND WATER QUALITY.

4. 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.

5. CONTRACTOR SHALL PROVIDE AT LEAST 48 HOURS NOTICE TO THE ENGINEER AND 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 CONTRACTOR'S 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 EXERCISE 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 SURVEY NOTES:

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

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

3. EXISTING TOPOGRAPHY SHOWN ON THIS DRAWING WAS DEVELOPED FROM LIDAR INFORMATION FOR MARION COUNTY, IOWA THAT IS PUBLICLY AVAILABLE THROUGH THE NATIONAL 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.

4. LOCAL CONTROL POINTS HAVE BEEN ESTABLISHED FOR THIS PROJECT. SEE SHEET 3.

5. 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 ELELVATIONS SHOWN.

ITEM NO.	DESCRIPTION	SPEC. SECTION	QUANTITY	UNIT
1	MOBILIZATION	02100	1	LS
2	SITE CLEARING AND PREPARATION	02100	12.6	ACRES
3	HYDRATED LIME, (CA(OH)2)	02110	0.20	TON
4	IMPOUNDMENT DISCHARGE	02110	1	LUMP SUM
5	SILT FENCE INSTALLATION	02120	1,424	LF
6	STRAW WATTLE INSTALLATION, 9" DIA.	02120	100	LF
7	STABILIZED CONSTRUCTION ENTRANCE	02120	40	TON
8	STABILIZED CONSTRUCTION ENTRANCE REMOVAL	02120	1	LUMP SUM
9	EXCAVATION	02200	178,000	CY
10	FILL MATERIAL, RUBBLE	02230	30	TON
11	FILL MATERIAL, GRANULAR BACKFILL	02230	15	TON
12	RIPRAP, CLASS "E"	02300	340	TON
13	EROSION STONE	02300	250	TON
14	FILTER FABRIC	02300	760	SY
15	RISER - TERRACE (10" PLASTIC)	02300	5	EA
16	RISER - TERRACE (12" PLASTIC)	02300	3	EA
17	PIPE, HDPE, 10"	02300	416	LF
18	PIPE, HDPE, 12"	02300	565	LF
19	PIPE, HDPE, 15"	02300	273	LF
20	PIPE OUTLET, SCH. 40 PVC, 10"	02300	2	EA
21	PIPE OUTLET, SCH. 40 PVC, 12"	02300	1	EA
22	PIPE OUTLET, SDR 26 PVC, 15"	02300	2	EA
23	TERRACES	02300	4,025	LF
24	AGRICULTURAL LIME, SUBGRADE, (30 TON ECCE/ACRE)	02400	489	TON ECCE
25	MULCH, SUBGRADE, (5 TONS/ACRE)	02400	16.3	ACRES
26	AGRICULTURAL LIME, SEEDING, (5 TON ECCE/ACRE)	02700	82	TON ECCE
27	FERTILIZER, NITROGEN (N), (40 LB./ACRE)	02700	652	POUNDS
28	FERTILIZER, PHOSPHOROUS (P), (60 LB./ACRE)	02700	978	POUNDS
29	FERTILIZER, POTASSIUM (K), (100 LB./ACRE)	02700	1,630	POUNDS
30	INTERIM SEEDING	02700	16.3	ACRES
31	MULCH, SEEDING (2 TONS/ACRE)	02700	16.3	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. QUANTITIES OF HYDRATED LIME ARE ESTIMATED FOR BIDDING PURPOSES. ACTUAL QUANTITIES APPLIED WILL BE DETERMINED BY WATER QUALITY TESTS.

3. REQUIRED CONSTRUCTION STAKING: PROJECT LIMITS, TOP OF PROPOSED STREAM BANK, TERRACE ALIGNMENT AND ELEVATION, PIPE OUTLET LOCATIONS AND ELEVATION AND ROUGH GRADING.

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

LEGEND

- OHE — EXISTING OVERHEAD ELECTRIC
- 810 — EXISTING CONTOUR
- 810 — PROPOSED CONTOUR
- ST — TERRACE DRAIN
- EXISTING POND
- X — EXISTING FENCE
- SILT FENCE
- STRAW WATTLE
- TERRACE RIDGE
- TERRACE CHANNEL FLOW DIRECTION
- UNNAMED TRIBUTARY
- NO BURN — ¼ MILE BURN RADIUS LIMIT LINE
- EDGE OF ROADWAY SURFACE
- PROPERTY LINE
- PROJECT LIMITS
- SURVEY CONTROL POINT
- POWER POLE
- RIPRAP OR EROSION STONE
- SITE ACCESS
- POTENTIAL LOCATION OF MINE SHAFT

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FILE: 049.001

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ISSUED: 08-26-15

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IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP

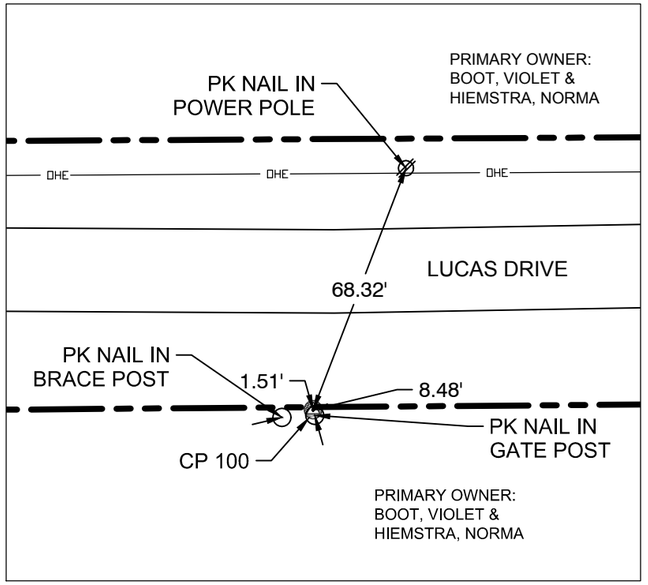
CHKD. BY: KLJ

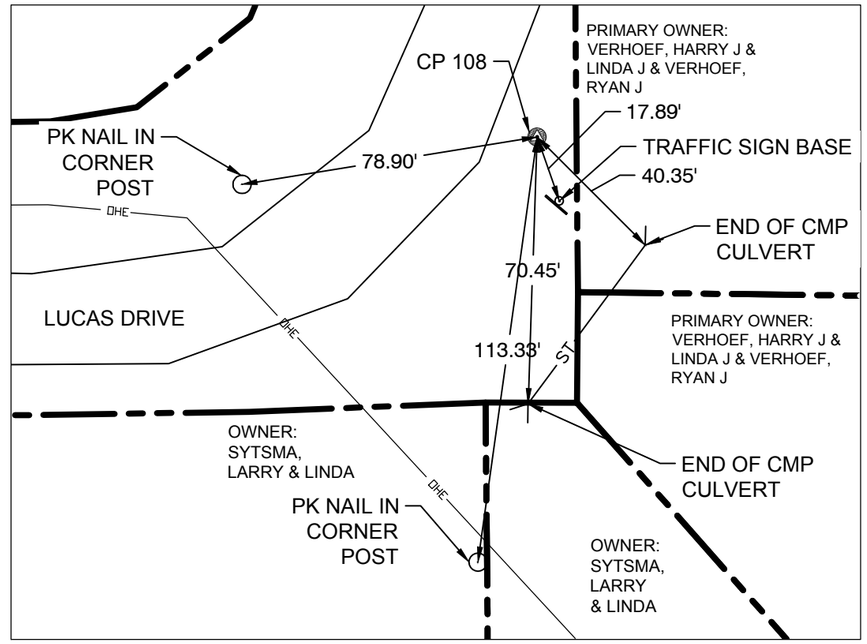
DRAWN BY: BAY

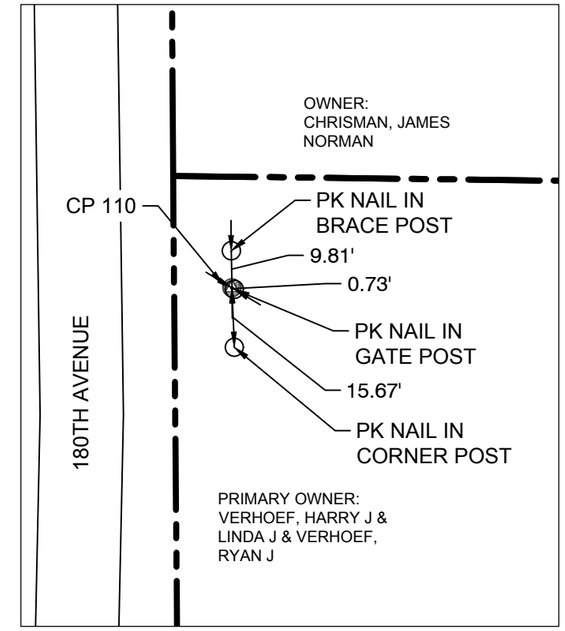
DESIGN BY: LTL

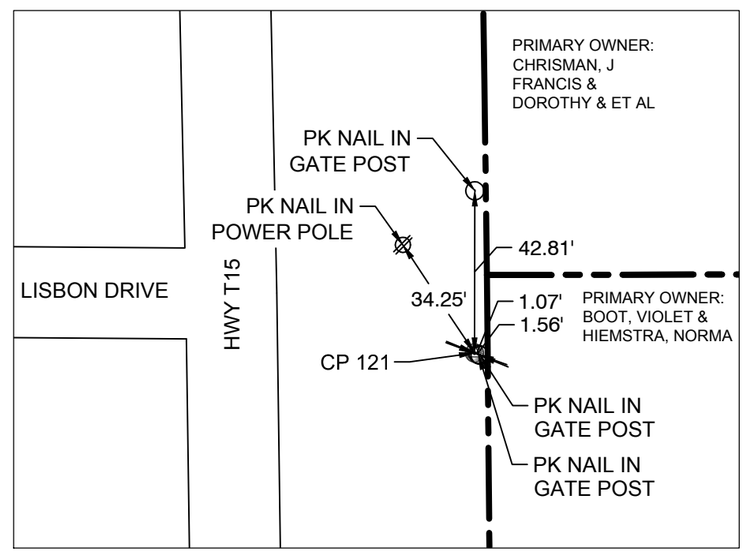
SYTSMA (IA-123)
AML RECLAMATION PROJECT

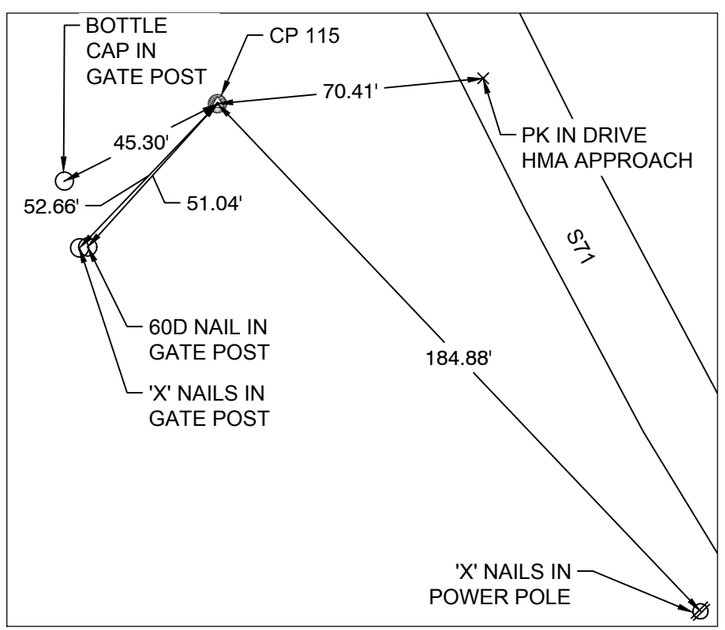
PROJECT NOTES, QUANTITIES AND LEGEND











CONTROL POINTS COORDINATES

DWG. SHEET	POINT I.D.	NORTH (FT.)	EAST (FT.)	ELEV. (FT.)	FOUND OR SET?	SIZE/TYPE
	CP 100	484238.165	1773567.528	816.632	SET	5/8" I.R. W/BLUE CAP #19968
4	CP 108	484344.058	1776452.511	790.864	SET	5/8" I.R. W/BLUE CAP #19968
4	CP 110	485593.496	1776467.236	801.941	SET	5/8" I.R. W/BLUE CAP #19968
	CP 115	489379.841	1771104.642	835.348	FOUND	5/8" I.R. NEXT TO ORANGE FIBERGLASS SURVEY MARKER POST
	CP 121	486713.255	1771202.266	847.189	SET	5/8" I.R. W/BLUE CAP #19968

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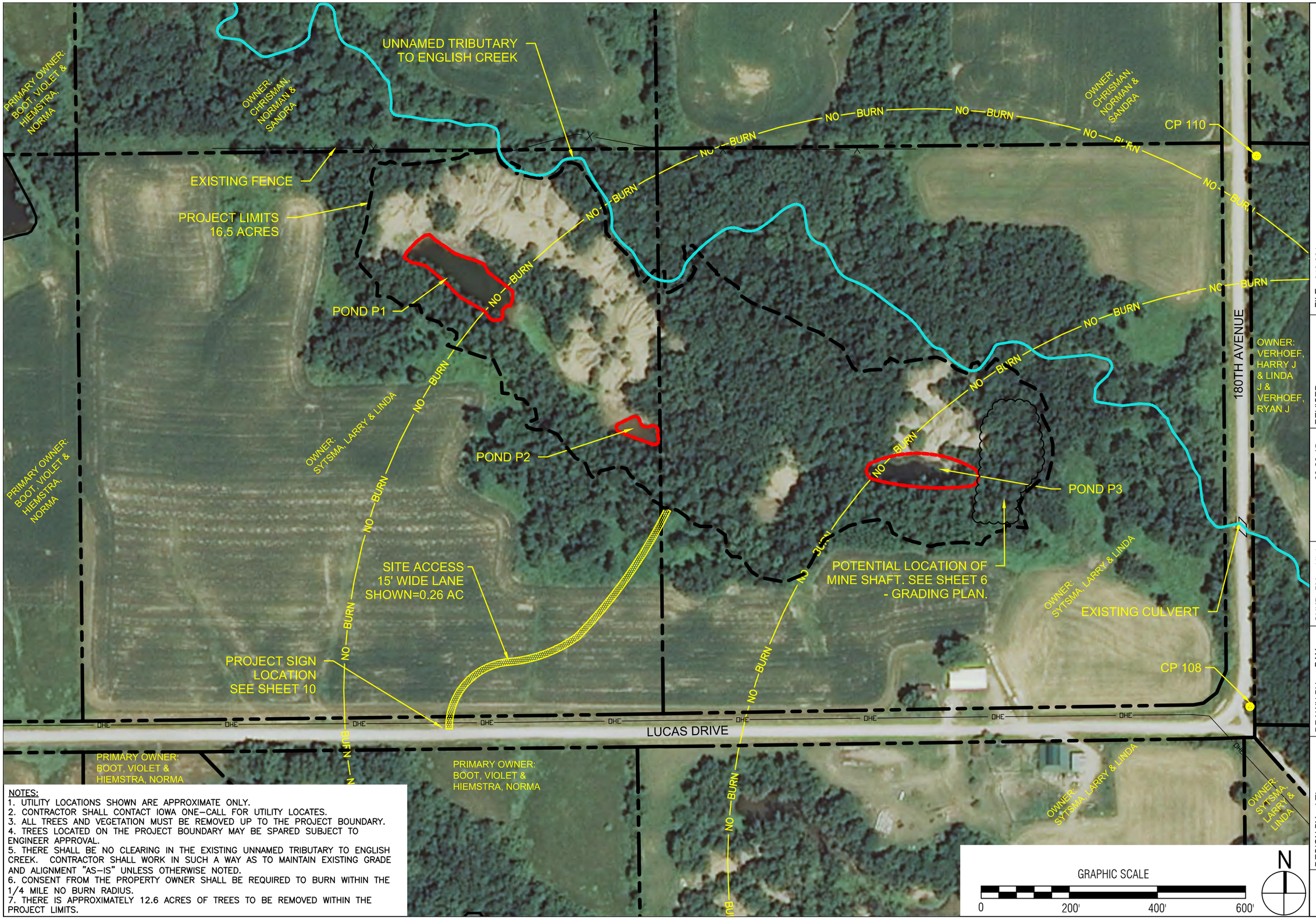
CONTROL POINT
COORDINATES AND TIES



NOTES:
1. UTILITY LOCATIONS SHOWN ARE APPROXIMATE ONLY.
2. CONTRACTOR SHALL CONTACT IOWA ONE-CALL FOR UTILITY LOCATES.
3. ALL TREES AND VEGETATION MUST BE REMOVED UP TO THE PROJECT BOUNDARY.
4. TREES LOCATED ON THE PROJECT BOUNDARY MAY BE SPARED SUBJECT TO ENGINEER APPROVAL.
5. THERE SHALL BE NO CLEARING IN THE EXISTING UNNAMED TRIBUTARY TO ENGLISH CREEK. CONTRACTOR SHALL WORK IN SUCH A WAY AS TO MAINTAIN EXISTING GRADE AND ALIGNMENT "AS-IS" UNLESS OTHERWISE NOTED.
6. CONSENT FROM THE PROPERTY OWNER SHALL BE REQUIRED TO BURN WITHIN THE 1/4 MILE NO BURN RADIUS.
7. THERE IS APPROXIMATELY 12.6 ACRES OF TREES TO BE REMOVED WITHIN THE PROJECT LIMITS.

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SITUATION PLAN - CLEARING & SITE PREPARATION

PROPERTY LINE FENCE

PROJECT LIMITS 16.5 ACRES

POND P1

POND P2

POND P3

UNNAMED TRIBUTARY TO ENGLISH CREEK

CP 110

180TH AVENUE

SITE ACCESS 15' WIDE LANE SHOWN=0.26 AC

EXISTING CULVERT

POTENTIAL LOCATION OF MINE SHAFT. SEE SHEET 6 - GRADING PLAN.

LUCAS DRIVE

CP 108

GRAPHIC SCALE

0 200' 400' 600'

N

POND INFORMATION

POND	WATER SURFACE ELEV. (FT)	ESTIMATED WATER SURF. AREA (AC)	ESTIMATED WATER DEPTH (FT)	ESTIMATED MUCK DEPTH (FT)	EST. WATER VOLUME (GALLONS)	FATE OF WATER BODY?	WATER QUALITY	
							pH	IRON
P1	779	0.433	4.0	4.5	447,492	DRAINED AND FILLED	3.24	5.45
P2	780	0.078	1.5	0.5	20,751	DRAINED AND FILLED	3.19	17.4
P3	786	0.355	5.0	5.0	848,665	DRAINED AND FILLED	6.51	0.649

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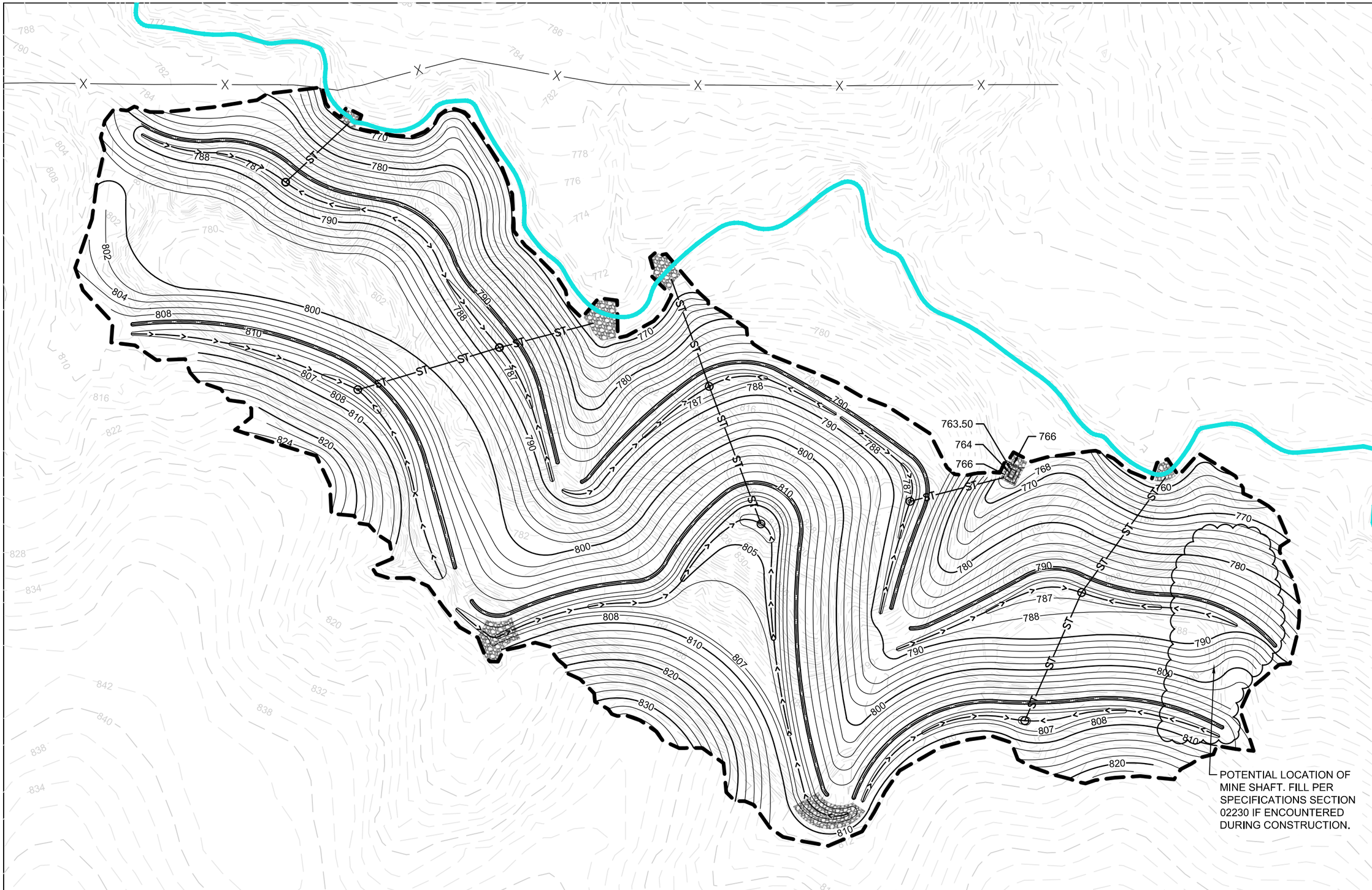
SITUATION PLAN - SURVEY BASELINE DETAILS



NOTES:
1. PROPERTY LINES, SECTION LINES, AND FENCE LINES, IF SHOWN, ARE APPROXIMATE.
2. AVOID DISTURBANCE OF EXISTING CHANNEL GRADE AND ALIGNMENT.
3. PROPOSED GRADING CONTOURS ARE TO FINISHED GRADE.
4. PROPOSED CONTOURS ARE SHOWN AT 1' INTERVALS NEAR TERRACES AND PONDING AREAS. PROPOSED CONTOURS ARE SHOWN AT 2' INTERVALS IN ALL OTHER AREAS, UNLESS NOTED OTHERWISE. EXISTING CONTOURS ARE SHOWN AT 2' INTERVALS.

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GRADING PLAN

SHEET 6 OF 15