

VANDERBEEK-LANGSTRAAT AML RECLAMATION PROJECT

BID NO. IA-160-075

SECTION 3, TOWNSHIP 73 NORTH, RANGE 15 WEST, WAPELLO COUNTY, IOWA; &
 SECTION 34, TOWNSHIP 74 NORTH, RANGE 15 WEST, MAHASKA 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: S15AF20016

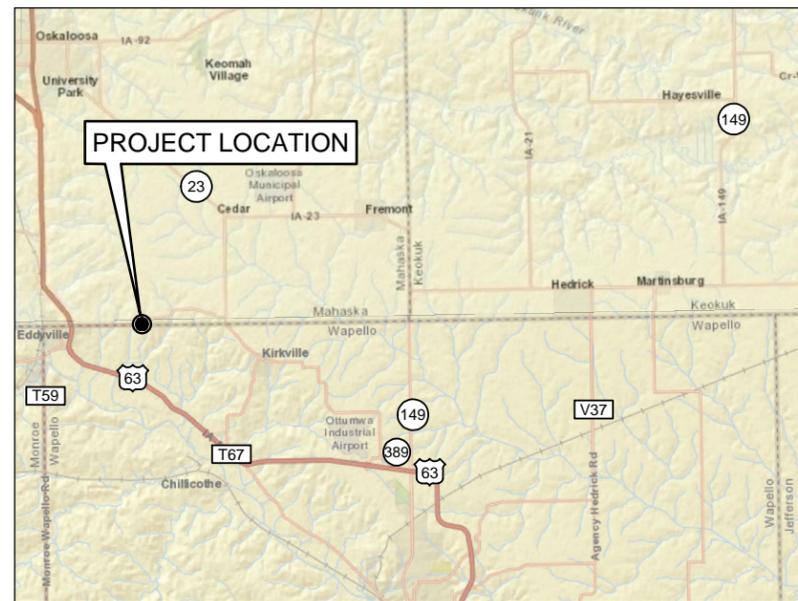
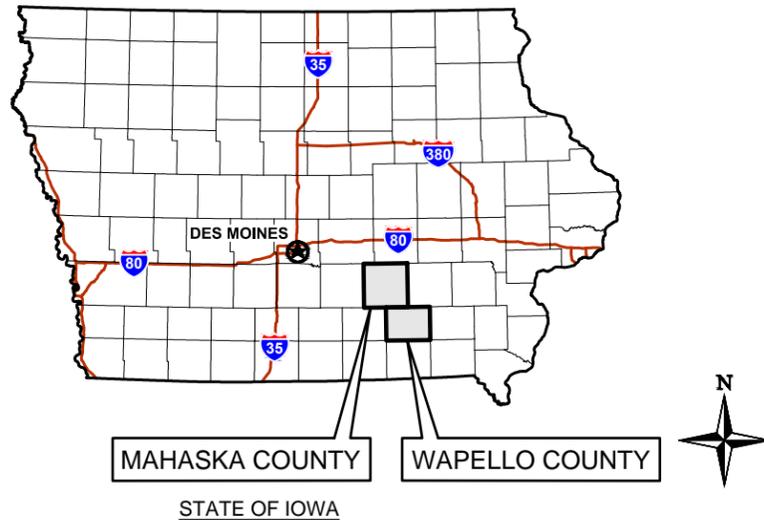


Image Citation: ESRI World Street Map, 2012
 MAHASKA AND WAPELLO COUNTIES



Image Citation: ESRI World Street Map, 2012
 LOCAL VICINITY

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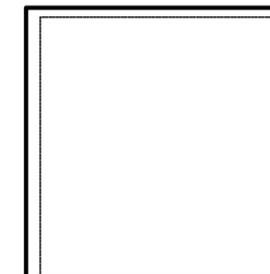
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 IOWA DEPARTMENT OF AGRICULTURE & LAND STEWARDSHIP
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 (515) 281-4246

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I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa

Signature: _____ Date: _____

Name (printed or typed): DERRICK R. THOMPSON

License Number: 22366

My license renewal date is: 12/31/2015

Pages or sheets covered by this seal: ENTIRE DOCUMENT



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CHKD. BY: MD

DRAWN BY: PC

DESIGN BY: DRT

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VANDERBEEK-LANGSTRAAT
 AML RECLAMATION PROJECT

COVER SHEET

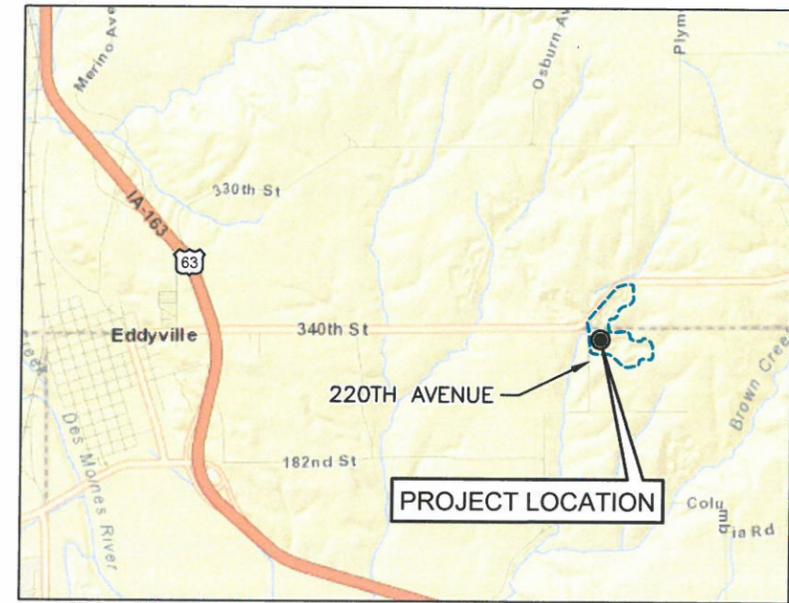
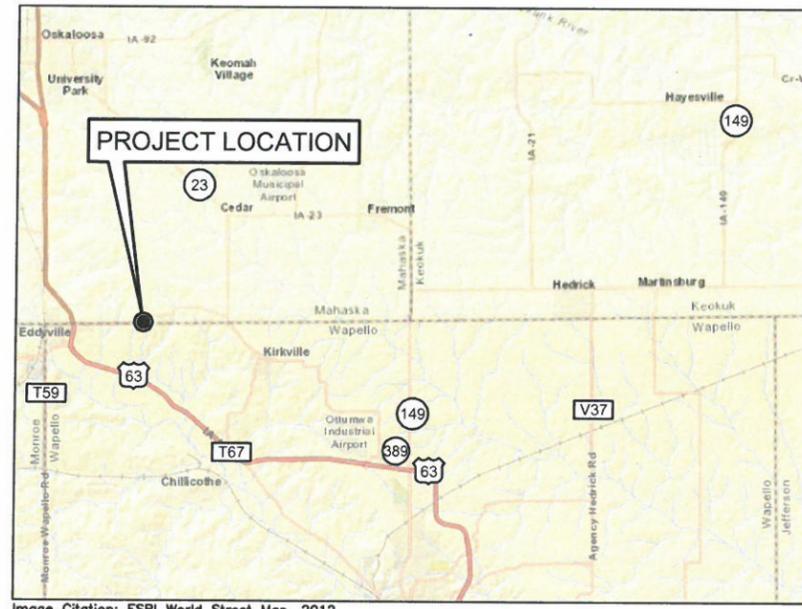
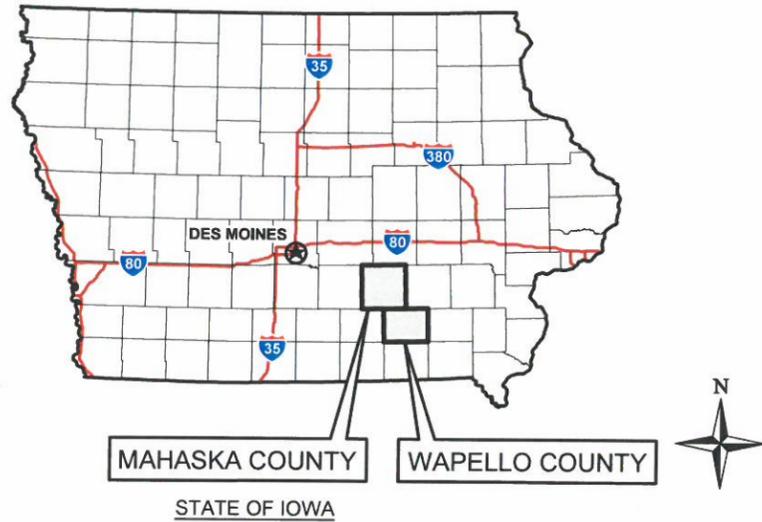
SHEET
1 OF **21**

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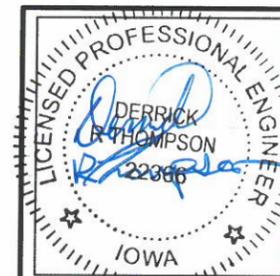
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I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa

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SHEET
1 OF 21

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GENERAL NOTES:

- 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.
- 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.
- REFERENCES TO PARTICULAR PRODUCTS, TRADENAMES, OR MANUFACTURERS IS INTENDED FOR CLARITY ONLY AND NOT TO REPRESENT EXCLUSION OR ENDORSEMENT BY THE STATE OF IOWA. EQUIVALENT PRODUCTS OR MATERIALS MAY BE SUITABLE, SUBJECT TO THE APPROVAL OF THE ENGINEER.
- THE CONTRACTOR SHALL NOT DISTURB AREAS OUTSIDE THE CONSTRUCTION LIMITS. THE CONTRACTOR SHALL RECLAIM OR REPAIR ALL DISTURBANCES CREATED OUTSIDE THE CONSTRUCTION LIMITS BY THE CONTRACTOR'S EMPLOYEES OR SUBCONTRACTORS AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL USE A SINGLE ACCESS TO THE SITE LOCATED OFF OF 220TH AVENUE (AS INDICATED ON THE PLANS) FOR ALL EQUIPMENT, PERSONNEL, AND MATERIALS TRANSPORTATION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO THE ACCESS ROAD CAUSED BY THE CONTRACTOR. IF ANY NEW ACCESS OR HAUL ROADS ARE REQUIRED TO COMPLETE THE WORK, THEY SHALL FIRST BE APPROVED IN WRITING BY THE ENGINEER OR DIVISION, AND SHALL BE RECLAIMED ACCORDING TO THE SPECIFICATIONS AT THE COMPLETION OF THE PROJECT.
- ALL TRASH AND DEBRIS GENERATED BY THE CONTRACTOR SHALL BE DISPOSED OF IN A LICENSED AND PERMITTED OFF-SITE LANDFILL. TRASH SHALL NOT BE BURIED ON-SITE.
- EXISTING SITE TOPOGRAPHY WAS DEVELOPED USING ELEVATION DATA FROM THE STATE OF IOWA'S LIGHT DETECTION AND RANGING (LIDAR) PROGRAM, AND SUPPLEMENTED BY AN ADDITIONAL SURVEY COMPLETED BY SHIVE-HATTERY IN MAY 2014. THE DRAWINGS DO NOT PURPORT TO SHOW ALL OBJECTS EXISTING ON, ABOVE, OR AROUND THE SITE.

SAFETY NOTE:

THIS PROJECT REQUIRES CONSTRUCTION WORK IN THE VICINITY OF HISTORIC MINE SITES, HIGHWALLS, AND WATER BODIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INVESTIGATING THE SITE CONDITIONS AND SCHEDULING THEIR EQUIPMENT, OPERATIONS, PERSONNEL, AND SAFETY PROCEDURES TO PREVENT ACCIDENTS AND INJURIES. THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE OSHA REGULATIONS.

SPECIAL NOTE:

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

ESTIMATED QUANTITIES				
ITEM NO.	ITEM	SPEC SECTION	ESTIMATED QUANTITY	UNIT
1	MOBILIZATION	2100	1	LS
2	SITE CLEARING & PREPARATION	2100	38	ACRE
3	OFF-SITE WASTE DISPOSAL	2100	350	TON
4	IMPOUNDMENT DISCHARGE	2110	1	LS
5	SILT FENCES - INSTALLATION	2120	1,732	LF
6	WATTLES-INSTALLATION	2120	750	LF
7	EXCAVATION	2220	318,750	CY
8	FINISH GRADING	2220	46	ACRE
9	UNDERCUT EXCAVATION, EARTH DAM	2220	260	CY
10	PIPES - (60-INCH)	2300	1	EACH
11	FILTER FABRIC	2300	665	SY
12	RIP RAP (CLASS E)	2300	950	TON
13	EROSION STONE	2300	42	TON
14	GRANULAR BEDDING	2300	65	TON
15	CONCRETE WEIR	2300	1	LS
16	CELLULAR CONCRETE BLOCK	2300	750	SF
17	AG LIME, SUBGRADE	2400	920	TON
18	MULCH, SUBGRADE, 5 TONS/AC	2400	46	ACRE
19	WETLAND AND MAIN CHANNELS N1 AND S1 FERTILIZER	2400	66	POUND
20	WETLAND UNDERCUT & REPLACEMENT	2400	1	ACRE
21	MAIN CHANNELS N1 AND S1 UNDERCUT AND REPLACEMENT	2400	1.2	ACRE
22	FIELD FENCE	2500	3,035	LF
23	AG LIME, SEEDING, 3 TONS ECCE/AC	2700	138	TON
24	NITROGEN (N)	2700	2,300	POUND
25	PHOSPHOROUS (P)	2700	2,760	POUND
26	POTASSIUM (K)	2700	3,680	POUND
27	INTERIM SEEDING	2700	46	ACRE
28	MULCH, SEEDING, 2 TONS/AC	2700	46	ACRE

UTILITY NOTES:

- THE CONTRACTOR SHALL CALL 800-292-8989 OR 811 PRIOR TO INTRUSIVE ACTIVITIES TO LOCATE ON-SITE UTILITIES. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UTILITIES. THE ENGINEER DOES NOT MAKE ANY REPRESENTATIONS AS TO EXISTENCE OR NON-EXISTENCE OF UTILITIES WITHIN THE PROJECT AREA.
- CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES AND PUBLIC ROADWAYS, INCLUDING ANY NOT SHOWN ON THESE DRAWINGS. ANY DAMAGE TO EXISTING UTILITIES AND STREETS CAUSED BY TRENCHING AND GRADING OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

CONSTRUCTION NOTES:

- THE CONTRACTOR SHALL NOT REMOVE OR DESTROY ANY SURVEY MONUMENTS WITHOUT PRIOR WRITTEN PERMISSION FROM THE ENGINEER.
- THE SITE GRADING PLAN INCORPORATES LANDFORM GRADING TECHNIQUES. THIS APPROACH RESULTS IN VARIED TERRAIN WITH MULTIPLE CHANNELS AND SUBRIDGES. THE CONTRACTOR IS REQUIRED TO CONSTRUCT THE RECLAMATION SURFACE AS DEPICTED ON THE PLANS. SITE GRADING SHALL BE COMPLETED TO ± 0.3 FEET OF DESIGN ELEVATIONS. THE CONTRACTOR SHALL PROVIDE A GRADE CHECKER FOR SLOPE STAKING AND OFFSETS. THE USE OF GPS MACHINE MOUNTED GRADE CONTROL EQUIPMENT FOR FINISH GRADING IS RECOMMENDED.
- PROPOSED CONTOURS AND GRADES DEPICT THE TOP OF THE FINISH GRADE.
- IN AREAS WHERE PROPOSED GRADING DAYLIGHTS TO EXISTING GROUND, THE CONTRACTOR SHALL CONSTRUCT A SMOOTH TRANSITION BOTH VERTICALLY AND HORIZONTALLY.
- REPLACEMENT OF THE UNDERSIZED CULVERT UNDER 220TH AVENUE WILL BE PAID FOR THROUGH A PARTNERSHIP WITH THE WAPELLO COUNTY SECONDARY ROAD DEPARTMENT. THE CONTRACTOR WILL COVER A FIXED MATERIAL COST FOR THE PIPE (ITEM 10) PER THIS CONTRACT AS INDICATED ON THE SCHEDULE OF PRICES FOUND IN THE CONSTRUCTION SPECIFICATIONS GENERAL REQUIREMENTS.

CROSS SECTION NOTE (APPLIES TO SHEETS 16 THROUGH 19):

SURFACES SHOWN BELOW THE CURRENT PIT WATER LEVEL ARE APPROXIMATE AND MAY NOT REPRESENT ACTUAL CONDITIONS. PIT BOTTOM ELEVATIONS WERE APPROXIMATED DURING A BATHYMETRIC SURVEY IN MAY 2014.

EXISTING	
	CONTROL POINT AND DESIGNATION
	SURFACE WATER SAMPLE LOCATION AND DESIGNATION
	INTERSTATE HIGHWAY AND DESIGNATION
	US HIGHWAY AND DESIGNATION
	STATE HIGHWAY AND DESIGNATION
	COUNTY ROAD AND DESIGNATION
	TELEPHONE PEDESTAL
	DRAINAGE SYSTEM CULVERT
	SURFACE CONTOURS (2' INTERVAL, 10' INDEX)
	FENCE
	COUNTY LINE
	OVERHEAD ELECTRIC
	APPROXIMATE WATER LEVEL
	DRAINAGE
	DIRT ROAD
	DELINEATED WETLAND (JUNE 15, 2014)
	POND

LEGEND

PROPOSED	
	FENCE DISTURBANCE (TO BE REINSTALLED)
	FENCE DISTURBANCE (NOT REINSTALLED)
	CONSTRUCTION LIMITS
	CONTOURS (2' INTERVAL, 10' INDEX)
	CHANNEL
	PILOT CHANNEL CENTERLINE
	STRAW WATTLE
	SILT FENCE
	BURN LIMIT RADIUS
	GRADE CONTROL STRUCTURE
	WETLAND AREA
	LOW WATER CROSSING
	PROPOSED STAGING AREA
	RIPRAP LINED CHANNEL

ABBREVIATIONS

AMSL	ABOVE MEAN SEA LEVEL	MAX.	MAXIMUM
℄	CENTER LINE	MIN.	MINIMUM
CY	CUBIC YARDS	NAD	NORTH AMERICAN DATUM
∅	DIAMETER	NAVD	NORTH AMERICAN VERTICAL DATUM
ECCE	EFFECTIVE CALCIUM CARBONATE EQUIVALENT	NO.	NUMBER
FT.	FEET	OC	ON CENTER
H:V	HORIZONTAL TO VERTICAL	SF	SQUARE FEET
LF	LINEAR FEET	SWPPP	STORM WATER POLLUTION PREVENTION PLAN
LiDAR	LIGHT DETECTION AND RANGING	SY	SQUARE YARDS
LS	LUMP SUM	TYP.	TYPICAL
		WS ELEV.	WATER SURFACE ELEVATION

FILE: 21A-VLNOTES201304

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ISSUED:

MD

CHKD. BY:

PC

DRAWN BY:

DRT

DESIGN BY:

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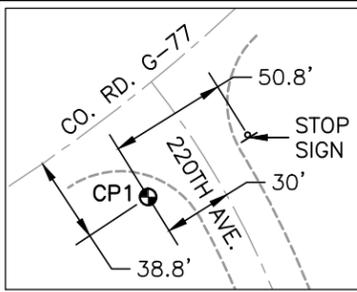


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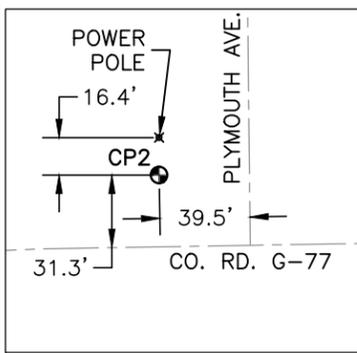


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AML RECLAMATION PROJECT

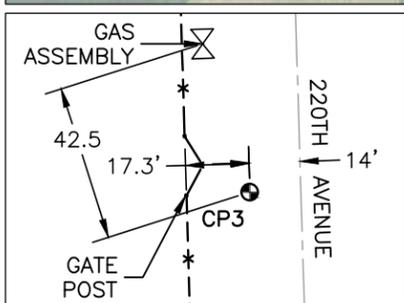
PROJECT NOTES, LEGEND,
AND QUANTITIES



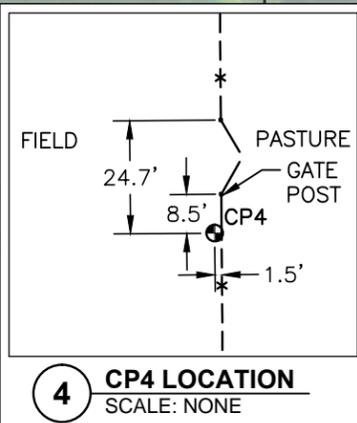
1 CP1 LOCATION
SCALE: NONE



2 CP2 LOCATION
SCALE: NONE



3 CP3 LOCATION
SCALE: NONE



4 CP4 LOCATION
SCALE: NONE

CONTROL POINT TABLE				
POINT ID.	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP1	424614.45	1892780.86	747.31	SET 5/8" REBAR WITH RED CAP
CP2	425860.84	1894126.89	774.11	
CP3	423077.74	1892890.67	773.09	
CP4	423436.14	1894823.46	812.36	

NOTES:
 1. HORIZONTAL DATUM: NAD83 IOWA STATE PLANE, SOUTH ZONE, US FOOT; VERTICAL DATUM: NAVD88
 2. PROPERTY LINES ARE APPROXIMATE

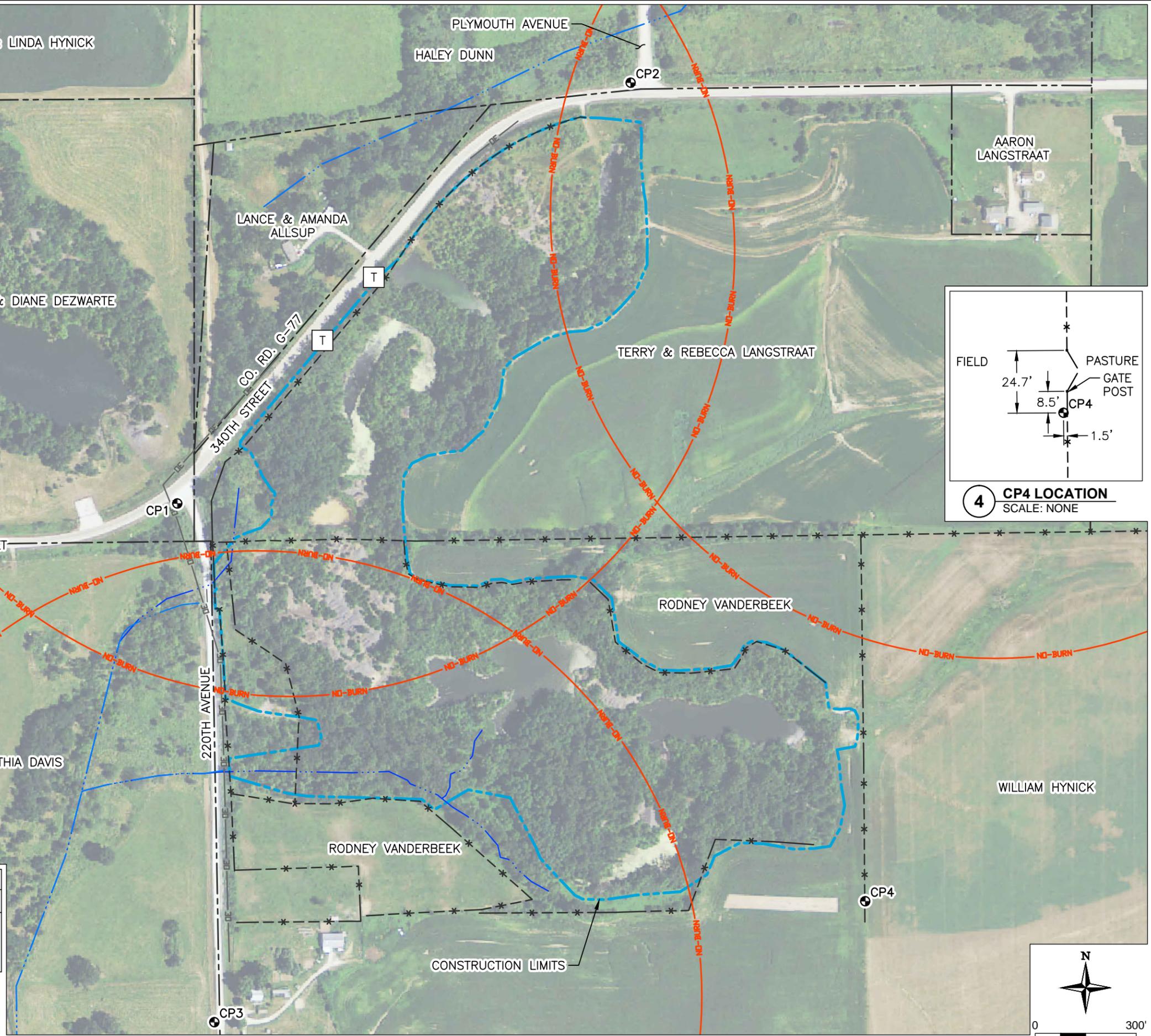


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VANDERBEEK-LANGSTRAAT
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 PRE-RECLAMATION PLAN - NO-BURN
 RADII AND SURVEY CONTROL

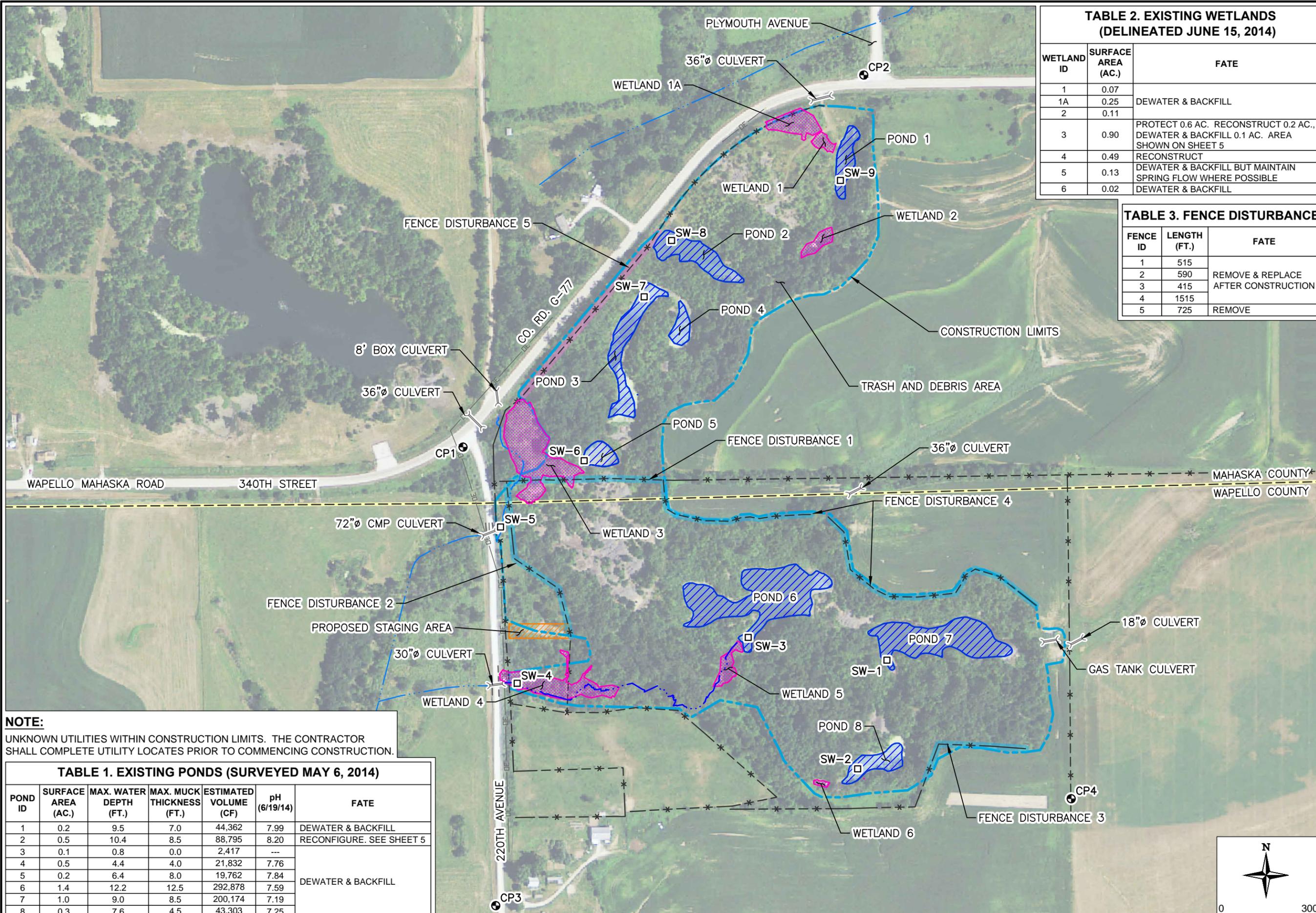


TABLE 2. EXISTING WETLANDS (DELINEATED JUNE 15, 2014)

WETLAND ID	SURFACE AREA (AC.)	FATE
1	0.07	DEWATER & BACKFILL
1A	0.25	
2	0.11	
3	0.90	PROTECT 0.6 AC. RECONSTRUCT 0.2 AC., DEWATER & BACKFILL 0.1 AC. AREA SHOWN ON SHEET 5
4	0.49	RECONSTRUCT
5	0.13	DEWATER & BACKFILL BUT MAINTAIN SPRING FLOW WHERE POSSIBLE
6	0.02	DEWATER & BACKFILL

TABLE 3. FENCE DISTURBANCE

FENCE ID	LENGTH (FT.)	FATE
1	515	REMOVE & REPLACE AFTER CONSTRUCTION
2	590	
3	415	
4	1515	REMOVE
5	725	

NOTE:
UNKNOWN UTILITIES WITHIN CONSTRUCTION LIMITS. THE CONTRACTOR SHALL COMPLETE UTILITY LOCATES PRIOR TO COMMENCING CONSTRUCTION.

TABLE 1. EXISTING PONDS (SURVEYED MAY 6, 2014)

POND ID	SURFACE AREA (AC.)	MAX. WATER DEPTH (FT.)	MAX. MUCK THICKNESS (FT.)	ESTIMATED VOLUME (CF)	pH (6/19/14)	FATE
1	0.2	9.5	7.0	44,362	7.99	DEWATER & BACKFILL
2	0.5	10.4	8.5	88,795	8.20	RECONFIGURE. SEE SHEET 5
3	0.1	0.8	0.0	2,417	---	DEWATER & BACKFILL
4	0.5	4.4	4.0	21,832	7.76	
5	0.2	6.4	8.0	19,762	7.84	
6	1.4	12.2	12.5	292,878	7.59	
7	1.0	9.0	8.5	200,174	7.19	
8	0.3	7.6	4.5	43,303	7.25	

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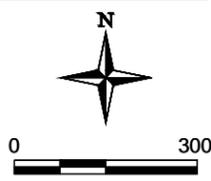
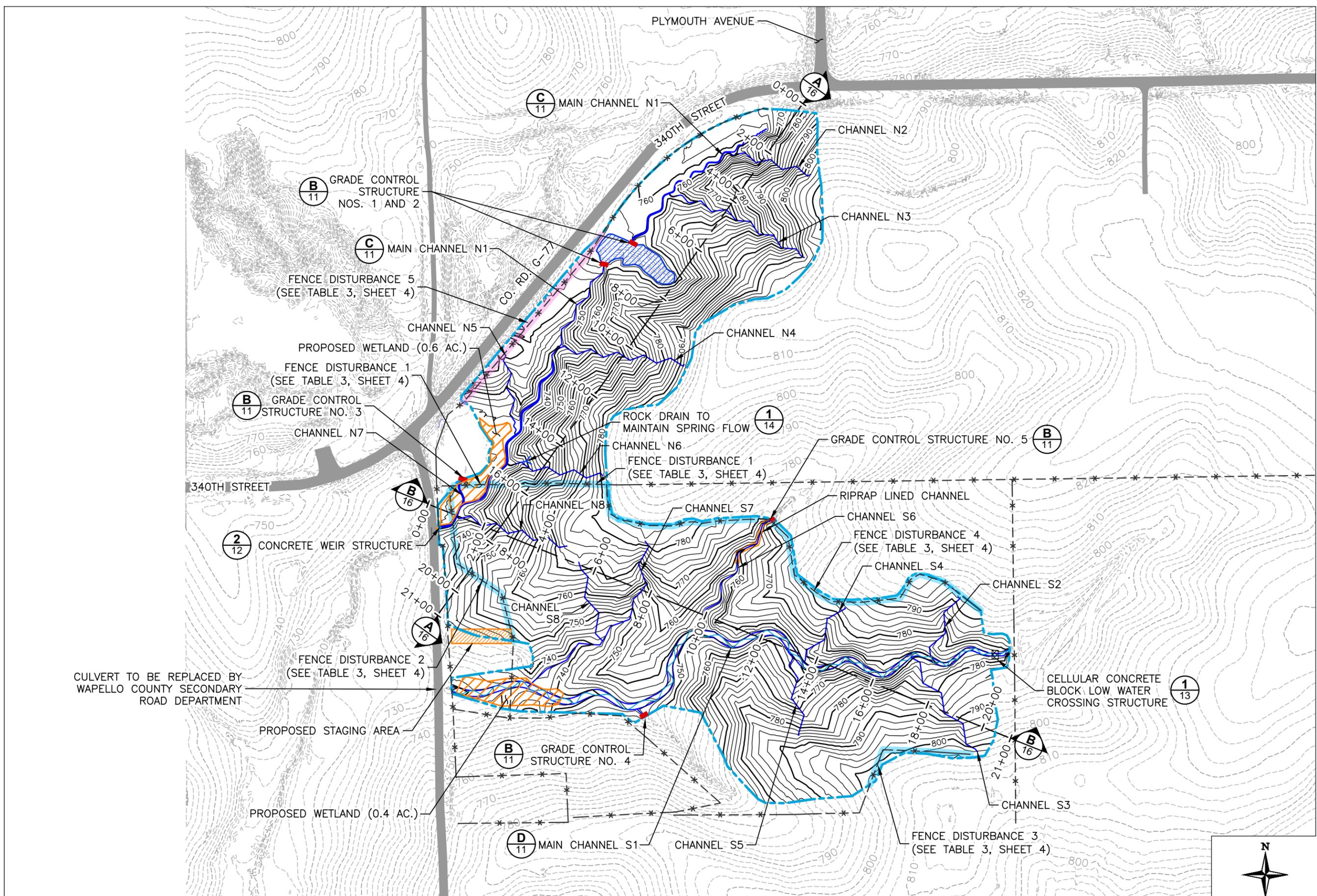


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PRE-RECLAMATION PLAN - CLEARING AND SITE PREPARATION

Image Citation: National Agriculture Imagery Program (NAIP) Colored Orthophoto, Wapello County, Iowa, 2011



FILE: 21A-VL-GRADING201506

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SHEET

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GRADING PLAN

5 OF 21