

VANDER VEER AML RECLAMATION PROJECT

BID NO. IA-134

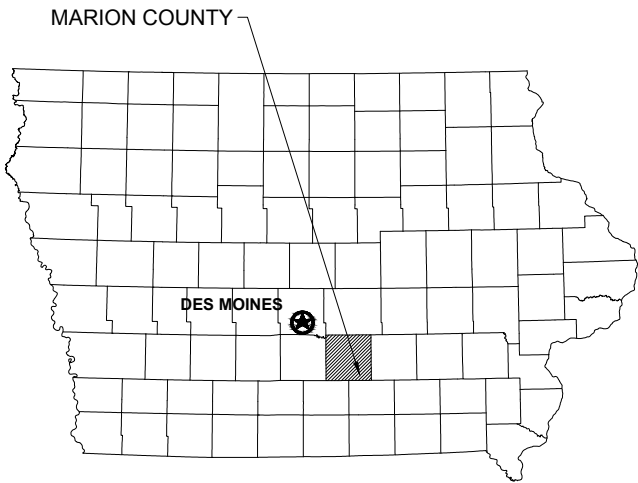
SECTION 20, TOWNSHIP 74 NORTH, RANGE 18 WEST, MARION COUNTY, IOWA

IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP

DIVISION OF SOIL CONSERVATION AND WATER QUALITY

GRANT NUMBER: S24AF00083

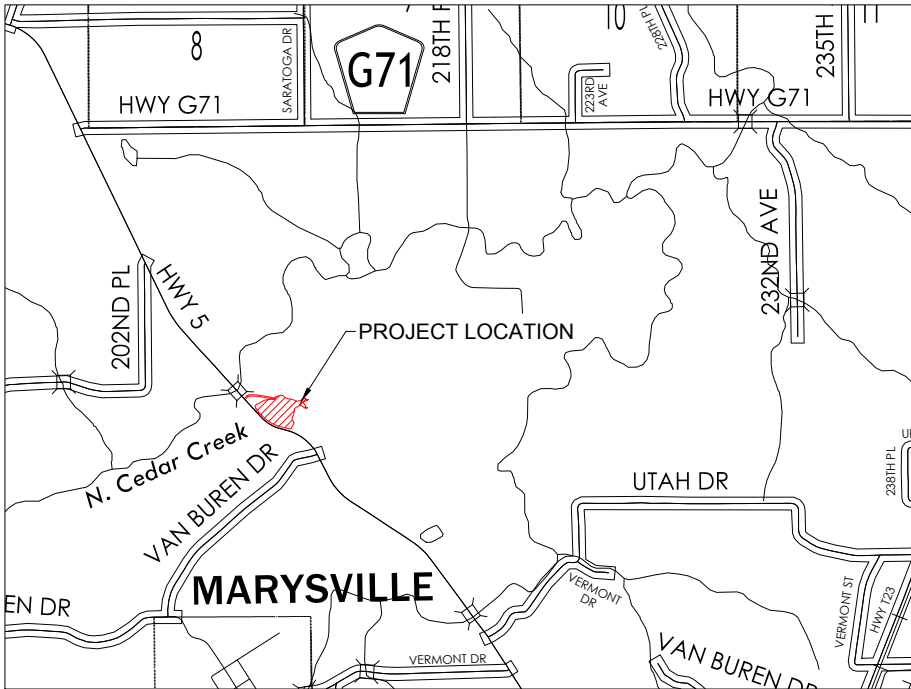
FUNDED BY:
U.S. DEPARTMENT OF THE INTERIOR
OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT



STATE OF IOWA



MARION COUNTY



LOCAL VICINITY



PREPARED FOR:
DIVISION OF SOIL CONSERVATION AND WATER QUALITY
MINES AND MINERALS BUREAU
IOWA DEPARTMENT OF AGRICULTURE & LAND STEWARDSHIP
HOOVER BUILDING
1305 EAST WALNUT STREET
DES MOINES, IOWA 50319
(515) 281-4246

ENGINEER:
SHIVE-HATTERY, INC.
4125 WESTOWN PARKWAY, SUITE 100
WEST DES MOINES, IOWA 50266
PHONE - (515) 223-8104

INDEX OF SHEETS:	
1	COVER SHEET
2	PROJECT NOTES, QUANTITIES, AND LEGEND
3	SURVEY AND TRAFFIC CONTROL
4	SITUATION PLAN - EXISTING CONDITIONS
5	GRADING PLAN
6	CUT-FILL PLAN
7-8	PROJECT DETAILS
9	DRAINAGE PLAN
10	PIPE PROFILES
11	CROSS SECTIONS PLAN
12-14	CROSS SECTIONS
15	SWPPP & SEEDING PLAN
16	SWPPP NOTES

CIVIL ENGINEER



I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT DESCRIBED BELOW 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: *Michael Otten* Date: 08-12-2025

Printed or typed name: MICHAEL M. OTTEN

License Number: 28012

My License Renewal Date is: DECEMBER 31, 2026

PAGES, SHEETS OR DIVISIONS COVERED BY THIS SEAL:
ALL SHEETS

S-H PROJECT NUMBER: 2142206240

REVISED: ---

ISSUED: 8/6/2025

CHKD. BY: LTM

GHK

DRAWN BY: MMO

DESIGN BY: ---

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



VANDER VEER AML
AML RECLAMATION PROJECT

COVER SHEET

SHIVE-HATTERY
ARCHITECTURE+ENGINEERING

4125 Westown Parkway, Suite 100 | West Des Moines, Iowa 50266
515.223.8104 | Fax: 515.223.0222 | shive-hattery.com
Iowa | Illinois | Missouri | Illinois Firm Number: 184-000214

GENERAL NOTES:

1. WORK WHICH DOES NOT CONFORM TO THE REQUIREMENTS OF THE CONTRACT WILL BE CONSIDERED UNACCEPTABLE. UNACCEPTABLE WORK, WHETHER THE RESULT OF POOR WORKMANSHIP, USE OF DEFECTIVE MATERIALS, DAMAGE THROUGH CARELESSNESS OR ANY OTHER CAUSE, FOUND TO EXIST PRIOR TO THE FINAL ACCEPTANCE OF THE WORK, SHALL BE REMOVED AND REPLACED IN AN ACCEPTABLE MANNER, AS REQUIRED BY THE OWNER AT THE CONTRACTOR'S EXPENSE.
2. CONTRACTOR IS RESPONSIBLE FOR ALL SURVEY LAYOUT AND CONTROL REQUIRED TO COMPLETE ALL WORK.
3. WORK DONE CONTRARY TO THE INSTRUCTIONS OF THE OWNER'S REPRESENTATIVE, WORK DONE BEYOND THE LINES SHOWN ON THE PLANS OR ANY EXTRA WORK DONE WITHOUT AUTHORITY WILL NOT BE PAID FOR.
4. CONTOURS AND SPOT ELEVATIONS SHOWN ARE TO FINISHED GRADE.
5. THE CONTRACTOR SHALL KEEP ALL ROADS OPEN TO THROUGH TRAFFIC AT ALL TIMES.
6. NO WORK SHALL BE PERFORMED BEYOND THE PROJECT BOUNDARY WITHOUT PRIOR AUTHORIZATION FROM THE DIVISION.
7. SOME CONTOUR LINES MAY NOT BE SHOWN FOR CLARITY.
8. BURNING OF LANDSCAPE WASTE PRODUCED IN CLEARING, GRUBBING AND CONSTRUCTION OPERATIONS SHALL BE LIMITED TO LOCATIONS LOCATED AT LEAST 1/4 MILE FROM ANY BUILDING INHABITED BY ANYONE OTHER THAN THE LANDOWNER OR TENANT CONDUCTING THE OPEN BURNING. PERMISSION IS REQUIRED TO BURN WITHIN 1/4 MILE OF INHABITED RESIDENCES. CONTRACTOR TO INSTALL TEMPORARY SIGNAGE WHEN BURNING OPERATIONS COULD AFFECT VISIBILITY ON ADJACENT ROADS - COORDINATE WITH LOCAL GOVERNING OFFICIALS.
9. SUBMIT MANUFACTURER'S CERTIFICATION AND MATERIAL DATA FOR ALL MATERIALS DELIVERED TO THE PROJECT SITE AS REQUESTED BY THE OWNERS REPRESENTATIVE.
10. THE FOLLOWING STANDARD ROAD PLANS OF THE IOWA DEPARTMENT OF TRANSPORTATION ARE INCLUDED BY REFERENCE:

MI-103 & MI-104DETAILS FOR FIELD FENCE CONSTRUCTION

EC-201EROSION CONTROL DETAILS FOR SILT FENCE
11. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEPARTMENT OF NATURAL RESOURCES (DNR) NPDES PERMIT AND STORM WATER POLLUTION PREVENTION PLAN (SWPPP) REQUIREMENTS AND REQUIRED CONTAINMENT STRUCTURES. THE DIVISION HAS OBTAINED THE DNR GENERAL PERMIT #2 FOR THE PROJECT AND A TEMPLATE SWPPP HAS BEEN PREPARED BY THE ENGINEER. THE DIVISION WILL PERFORM SWPPP INSPECTIONS, MAINTAIN, AND UPDATE THE SWPPP AS REQUIRED TO MEET ALL LOCAL, STATE, AND FEDERAL REQUIREMENTS. REFER TO THE SWPPP AND SWPPP DRAWINGS FOR ADDITIONAL INFORMATION.
12. THE DIVISION HAS RECEIVED A DETERMINATION FROM THE U.S. ARMY CORPS THAT A SECTION 404 NATIONWIDE PERMIT IS REQUIRED AND HAS BEEN OBTAINED BY THE DIVISION. DO NOT DISTURB ANY DELINEATED WETLANDS THAT ARE NOT SHOWN TO BE DISTURBED AND MITIGATED.
13. 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 APPROVAL OF THE ENGINEER OR DIVISION.
14. NEITHER SHIVE-HATTERY NOR THE DIVISION GUARANTEE THE WETLANDS TO FILL OR MAINTAIN A CONSISTENT POOL OF WATER.
15. REFERENCES TO "DIVISION" SHALL MEAN "DIVISION OF SOIL CONSERVATION & WATER QUALITY"
16. ALL IMPROVEMENTS SHOWN ON THESE PLANS SHALL COMPLY WITH THE GENERAL CONDITIONS, STANDARDS, AND SPECIFICATIONS SET FORTH IN PROJECT DOCUMENTS. SPECIFICATIONS OR STANDARDS INCORPORATED BY REFERENCE SHALL ALSO BE FOLLOWED.
17. 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.
18. REFERENCES TO PARTICULAR PRODUCTS, TRADENAMES, OR MANUFACTURERS ARE INTENDED FOR CLARITY ONLY AND DO NOT REPRESENT EXCLUSION OR ENDORSEMENT BY THE DIVISION OR THE STATE OF IOWA. EQUIVALENT PRODUCTS OR MATERIALS MAY BE SUITABLE, SUBJECT TO THE APPROVAL OF THE ENGINEER.
19. CONTRACTOR SHALL PROVIDE AT LEAST 48 HOURS NOTICE TO THE ENGINEER AND/OR DIVISION PRIOR TO COMMENCING CONSTRUCTION.

UTILITY NOTES:

1. THE LOCATIONS OF UTILITY MAINS, STRUCTURES AND SERVICE CONNECTIONS SHOWN IN THESE PLANS ARE APPROXIMATE ONLY AND WERE OBTAINED FROM RECORDS MADE AVAILABLE TO SHIVE-HATTERY, INC. THERE MAY BE OTHER EXISTING UTILITY MAINS, STRUCTURES AND SERVICE CONNECTIONS NOT KNOWN TO SHIVE-HATTERY, INC. AND NOT SHOWN ON THIS DRAWING. THE VERIFICATION OF EXISTENCE OF, AND THE DETERMINATION OF THE EXACT LOCATION OF, UTILITY MAINS, STRUCTURES AND SERVICE CONNECTIONS SHALL BE THE RESPONSIBILITY OF THE CONSTRUCTION CONTRACTOR(S).
2. IOWA CODE 480, UNDERGROUND FACILITIES INFORMATION, REQUIRES VERBAL NOTICE TO IOWA ONE-CALL 1-800-292-8989, NOT LESS THAN 48 HOURS BEFORE EXCAVATING, EXCLUDING WEEKENDS AND HOLIDAYS. THE CONTRACTOR IS RESPONSIBLE OF CONTACTING IOWA ONE-CALL.
3. THE MEANS OF THE WORK AND THE SAFETY OF THE CONTRACTOR'S EMPLOYEES ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.
4. ALL OPEN UTILITY TRENCH EXCAVATIONS SHALL BE PROTECTED.
5. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT ALL EXISTING PUBLIC AND/OR PRIVATE UTILITIES AND PUBLIC ROADWAYS, INCLUDING ANY NOT SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER IF ANY CONFLICTS WITH THE DRAWINGS OCCUR. ANY DAMAGE TO EXISTING UTILITIES AND/OR PUBLIC ROADWAYS CAUSED BY CONTRACTOR TRENCHING SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

PROJECT CONSTRUCTION NOTES:

1. REPLACE ANY PROPERTY MONUMENTS REMOVED OR DESTROYED BY CONSTRUCTION. MONUMENTS SHALL BE REPLACED IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH IN THE IOWA CODE AND SHALL BE SET BY A LAND SURVEYOR REGISTERED TO PRACTICE IN THE STATE OF IOWA. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND COMPLETED AT NO ADDITIONAL COST TO THE DIVISION.
2. ANY WORK REQUIRED TO COMPLETE THE SCOPE OF THIS PROJECT BUT NOT SPECIFICALLY CALLED OUT, SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR THE COMPLETION OF THIS WORK.
3. ALL DEBRIS AND TRASH ENCOUNTERED DURING CONSTRUCTION WITHIN THE PROJECT BOUNDARY, OR DIRECTED BY THE ENGINEER, SHALL BE PROPERLY DISPOSED OF ACCORDING TO THE PROJECT REQUIREMENTS.
4. CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION DE-WATERING THAT IS REQUIRED, EXCLUDING IMPOUNDMENT DISCHARGE, AT NO ADDITIONAL COST TO THE DIVISION.
5. REPAIR OR REPLACE DAMAGE TO EXISTING FACILITIES (TILE, UTILITIES, FENCES, ETC.) DESIGNATED TO REMAIN, AT NO ADDITIONAL EXPENSE TO THE DIVISION. ALL AREAS DISTURBED BY CONSTRUCTION, INCLUDING STAGING AREAS AND HAUL ROUTES, ARE TO BE REWORKED TO THEIR EXISTING CONDITIONS AND SEEDED AT NO ADDITIONAL COST TO THE DIVISION IF OUTSIDE OF PROJECT BOUNDARY AND NOT APPROVED BY ENGINEER.
6. CONTRACTOR SHALL PROTECT ALL TREES THAT ARE NOT DESIGNATED TO BE REMOVED OR ARE OUTSIDE OF PROJECT BOUNDARY. CONTRACTOR SHALL NOT PARK OR TRAVEL WITH ANY VEHICLE UNDER THE DRIP LINE OF A TREE TO REMAIN.
7. A SHRINKAGE FACTOR OF 12% WAS ESTIMATED FOR THIS PROJECT. THE CONTRACTOR SHALL MAKE CHANGES IN EARTHWORK AS NEEDED TO ADJUST FOR INACCURACIES INHERENT WITH ESTIMATING THE SHRINKAGE FACTOR. THESE CHANGES SHALL ONLY BE MADE AFTER CONSULTATION AND APPROVAL BY THE ENGINEER AND DIVISION. NO ADDITIONAL COMPENSATION SHALL BE GIVEN FOR ANY GRADE ADJUSTMENTS DUE TO DEVIATIONS OF SHRINKAGE FACTOR.
8. NO PONDING OF WATER WILL BE ACCEPTED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IDENTIFY ANY AREAS OF EXISTING OR PROPOSED GROUND THAT HAVE POTENTIAL TO POND WATER AND MAKE ANY ADJUSTMENTS NECESSARY TO ENSURE THAT WATER WILL POSITIVELY DRAIN. ADJUST GRADES AT PROJECT BOUNDARY TO ALLOW SMOOTH TRANSITION FROM PROPOSED GRADES TO EXISTING GRADES.
9. ALL WORK WITHIN THE PUBLIC RIGHT OF WAY SHALL BE COORDINATED WITH THE GOVERNING AUTHORITY AND SHALL BE DONE IN ACCORDANCE WITH THEIR STANDARDS.
10. NO TREES SHALL BE CLEARED BETWEEN THE DATES OF APRIL 1 TO SEPTEMBER 30.
11. CONTRACTORS WILL BE REQUIRED TO COMPLETE THE DETAILED GRADING SHOWN ON THE PLANS WITHIN THE SPECIFIED GRADING TOLERANCES. CONTRACTORS WILL BE REQUIRED TO COMPLETE SURVEY LAYOUT OF FINAL GRADES OR USE STAKE-LESS GRADING TECHNIQUES TO MEET PROPOSED GRADES AND PROJECT TOLERANCES.
12. CONTRACTOR SHALL PROVIDE THE NECESSARY TRAFFIC CONTROL SIGNAGE AND TEMPORARY FLAGGERS THROUGHOUT THE PROJECT DURATION ALONG IA HWY-5 FOR THE CONSTRUCTION ENTRANCE AND REDUCED VISIBILITY DURING BURNING OPERATIONS. REFER TO SHEET 3, SURVEY CONTROL, AND SECTION 02100 - MOBILIZATION, SITE CLEARING, AND PREPARATION IN THE SUPPLEMENTAL SPECIFICATIONS.

BID QUANTITIES:

#	ITEM DESCRIPTION	SPEC. SECTION	QUANTITY	UNITS
1	MOBILIZATION	02100	1	LS
2	SITE CLEARING AND PREPARATION	02100	12.9	ACRE
3	TRAFFIC CONTROL	02100	1	LS
4	OFF SITE WASTE DISPOSAL	02100	20	TON
5	APPROVED SEDIMENT CONTROL MEASURES - SILT FENCE	02120	1,780	LF
6	RECP, TYPE 2.B	02120	20,470	SY
7	FILTER SOCK	02120	180	LF
8	STABILIZED CONSTRUCTION ENTRANCE - GRANULAR SURFACING	02120	80	TON
9	CLASS 'E' RIPRAP	02120	140	TON
10	STONE FILTER (3" MACADAM STONE)	02120	46	TON
11	EXCAVATION	02200	87,570	CY
12	TERRACES	02300	1,981	LF
13	RISER-TERRACE (10")	02300	4	EA
14	DWPE PIPE (8")	02300	431	LF
15	PIPE OUTLET (8")	02300	4	EA
16	STRUCTURE - CONCRETE RISER (48")	02310	2	EA
17	PPHP PIPE (12")	02310	270	LF
18	WETLAND UNDERCUT AND REPLACEMENT	02400	0.7	ACRE
19	AGRICULTURAL LIME	02400	401	TON
20	MULCH, SUBGRADE (5 TONS/ACRE)	02400	13.6	ACRE
21	NITROGEN, N, WETLAND FERTILIZER (30 LBS/ACRE)	02400	21	LBS
22	SUBGRADE PREPRATION	02400	12.9	ACRE
23	SEEDBED PREPRATION	02700	12.2	ACRE
24	NITROGEN, N, SEEDING (50 LBS/ACRE)	02700	610	LBS
25	PHOSPHORUS, P, SEEDING (100 LBS/ACRE)	02700	1,220	LBS
26	POTASSIUM, K, SEEDING (160 LBS/ACRE)	02700	1,952	LBS
27	PERMANENT SEEDING, UPLAND MIX	02700	11.8	ACRE
28	PERMANENT SEEDING, WETLAND MIX	02700	0.4	ACRE
29	MULCH, SEEDING (2 TONS/ACRE)	02700	12.2	ACRE

REQUIRED CONSTRUCTION STAKING:

1. PROJECT BOUNDARY AND ACCESS ROUTE
2. RISERS, INTAKE STRUCTURES, AND PIPE OUTLETS
3. BOUNDARIES FOR UNDERCUT EXCAVATION
4. TERRACE RIDGES

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

LEGEND:

STA:45+00

711.89

--- 737 ---

--- 737 ---

740

740

PROJECT BOUNDARY

PROPOSED TERRACE RIDGELINE

EXISTING DRAINAGE DITCH OR STREAM

NO BURN RADIUS

PROPOSED RIP-RAP

PROPOSED STORM PIPE

PROPOSED STREAM

INTAKE

POWER POLE

SHEET MATCH LINE

PROPERTY LINE (APPROX)

CONTROL POINT

SILT FENCE OR APPROVED SEDIMENT CONTROL MEASURE

EXISTING WETLAND

EXISTING POND

PROPOSED POND/WETLAND

GLOSSARY OF COMMON ABBREVIATIONS:

1. PG = PROPOSED GRADE
2. EG = EXISTING GRADE
3. FG = FORM GRADE ELEVATION; THE LOWEST INLET OPENING ELEVATION FOR A RISER OR STRUCTURE TO RECEIVE WATER FROM A POND OR CHANNEL
4. IE = INVERT ELEVATION
5. HDPE = DUAL-WALL CORRUGATED HIGH DENSITY POLYETHYLENE CONDUIT (I.E. ADS N12 OR APPROVED EQUIVALENT)
6. PPHP = POLYPROPYLENE HIGH PERFORMANCE CORRUGATED DUAL-WALL PIPE (I.E. ADS HP STORM OR APPROVED EQUIVALENT)
7. RIM = ELEVATION OF A STRUCTURE LID
8. LF = LINEAL FEET
9. FL = FLOWLINE
10. HP = HIGH POINT ELEVATION, TYPICALLY IN A TERRACE FLOWLINE
11. CL = CENTERLINE
12. EX. = "EXISTING" I.E. "EXISTING CMP CULVERT"

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

DESIGN BY:MMO

DRAWN BY:GHK

CHKD. BY:LTM

ISSUED:8/6/2025

REVISED:---

S-H PROJECT NUMBER:2142206240

VANDER VEER AML
AML RECLAMATION PROJECT

PROJECT NOTES, QUANTITIES, AND LEGEND

SHIVE-HATTERY
ARCHITECTURE+ENGINEERING

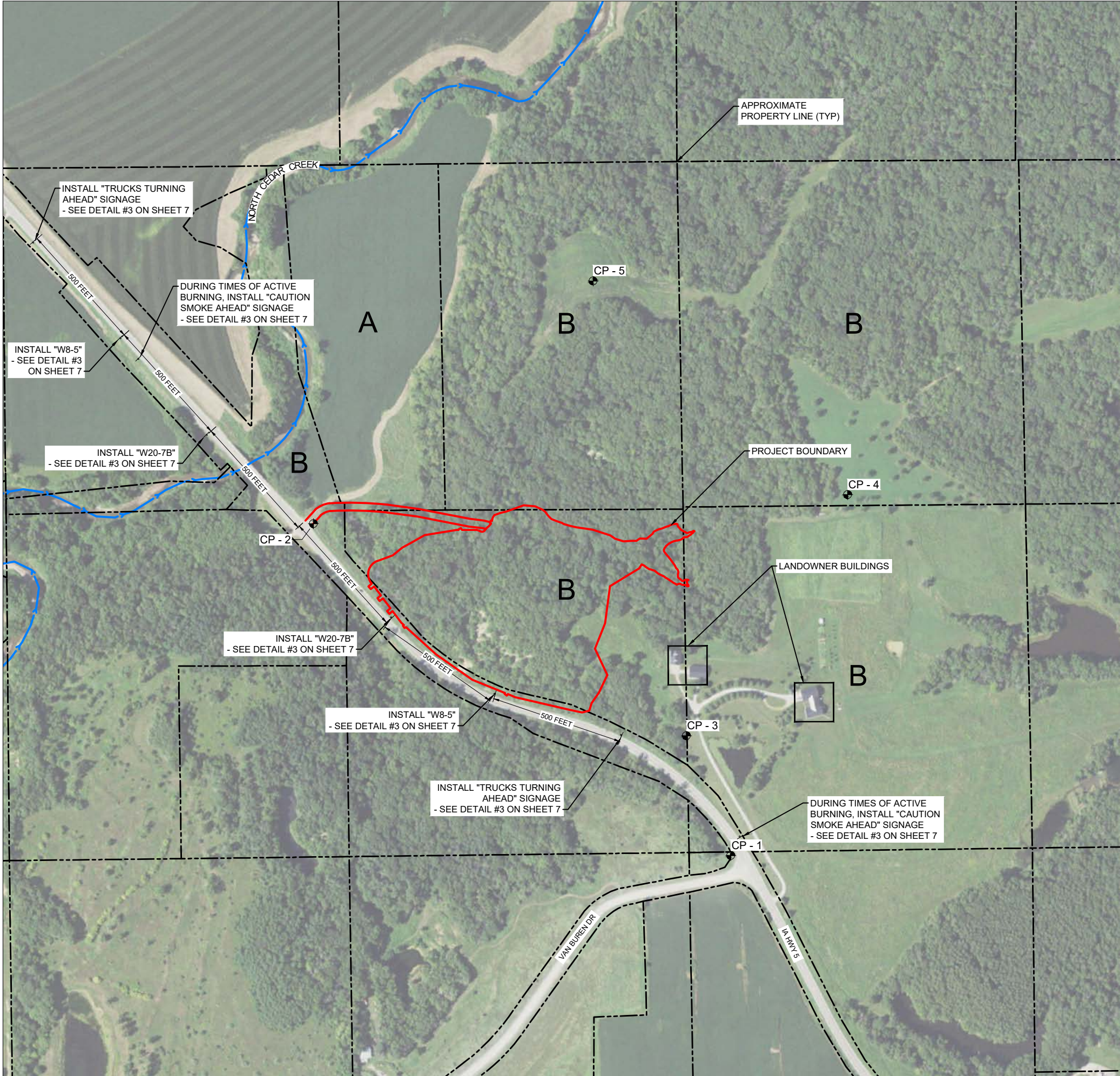
4125 Westown Parkway, Suite 100 | West Des Moines, Iowa 50266
515.223.6104 | Fax: 515.223.0622 | shive-hattery.com
Iowa | Illinois | Missouri | Illinois Firm Number: 184-000214

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

STATE OF IOWA
DEPARTMENT OF AGRICULTURE & LAND STWARDSHIP

SHEET

2 OF 16



LANDOWNER TABLE

A. BAILEY, KEITH
B. BAILEY, RYAN

NOTES:

1. BURNING OF LANDSCAPE WASTE PRODUCED IN CLEARING, GRUBBING AND CONSTRUCTION OPERATIONS SHALL BE LIMITED TO LOCATIONS LOCATED AT LEAST 1/4 MILE FROM ANY INHABITED BUILDING. COORDINATION IS REQUIRED TO BURN WITHIN 1/4 MILE OF INHABITED RESIDENCES. CONTRACTOR TO INSTALL TEMPORARY SIGNAGE WHEN BURNING OPERATIONS COULD AFFECT VISIBILITY ON ADJACENT ROADS - COORDINATE WITH LOCAL GOVERNING OFFICIALS. LANDOWNER HAS GRANTED APPROVAL TO BURN WITHIN THE 1/4 RADIUS FROM THE RESIDENCE AND BUILDINGS SHOWN ON THE PLAN. COORDINING TIMING OF BURNING EFFORTS WITH THE LANDOWNER PRIOR TO.

2. CONTRACTOR TO STAKE PROJECT BOUNDARY, DIVISION AND ENGINEER TO APPROVE LIMITS PRIOR TO COMMENCEMENT OF WORK.

3. CONTRACTOR SHALL PROVIDE THE NECESSARY TRAFFIC CONTROL SIGNAGE AND TEMPORARY FLAGGERS THROUGHOUT THE PROJECT DURATION ALONG IA HWY-5 FOR THE CONSTRUCTION ENTRANCE AND REDUCED VISIBILITY DURING BURNING OPERATIONS. REFER TO PLANS AND SUPPLEMENTAL SPECIFICATIONS.

CP - 1

N 436647.7920'
E 1792745.6390'
ELEV. = 831.154'

SET 5/8" IRON ROD WITH RED CAP

CP - 2

N 437927.1840'
E 1791135.5940'
ELEV. = 807.406'

SET 5/8" IRON ROD WITH RED CAP

CP - 3

N 437109.4670'
E 1792574.3530'
ELEV. = 841.070'

SET 5/8" IRON ROD WITH RED CAP

CP - 4

N 438039.3780'
E 1793196.3390'
ELEV. = 877.193'

SET 5/8" IRON ROD WITH RED CAP

CP - 5

N 438863.5170'
E 1792213.9500'
ELEV. = 855.564'

SET 5/8" IRON ROD WITH RED CAP

NOTE:
GROUND CONTROL AND REFERENCE TIES BY SHIVE-HATTERY, INC.

SURVEY DATUM:
HORIZONTAL - NAD83, IOWA STATE PLANES, SOUTH ZONE, US FOOT.
VERTICAL - NAVD88

0 100 200 400
SCALE IN FEET

S-H PROJECT NUMBER: 2142206240

REVISED: 8/6/2025

ISSUED: 8/6/2025

CHKD. BY: LTM

GHK

DRAWN BY:

MMO

DESIGN BY:

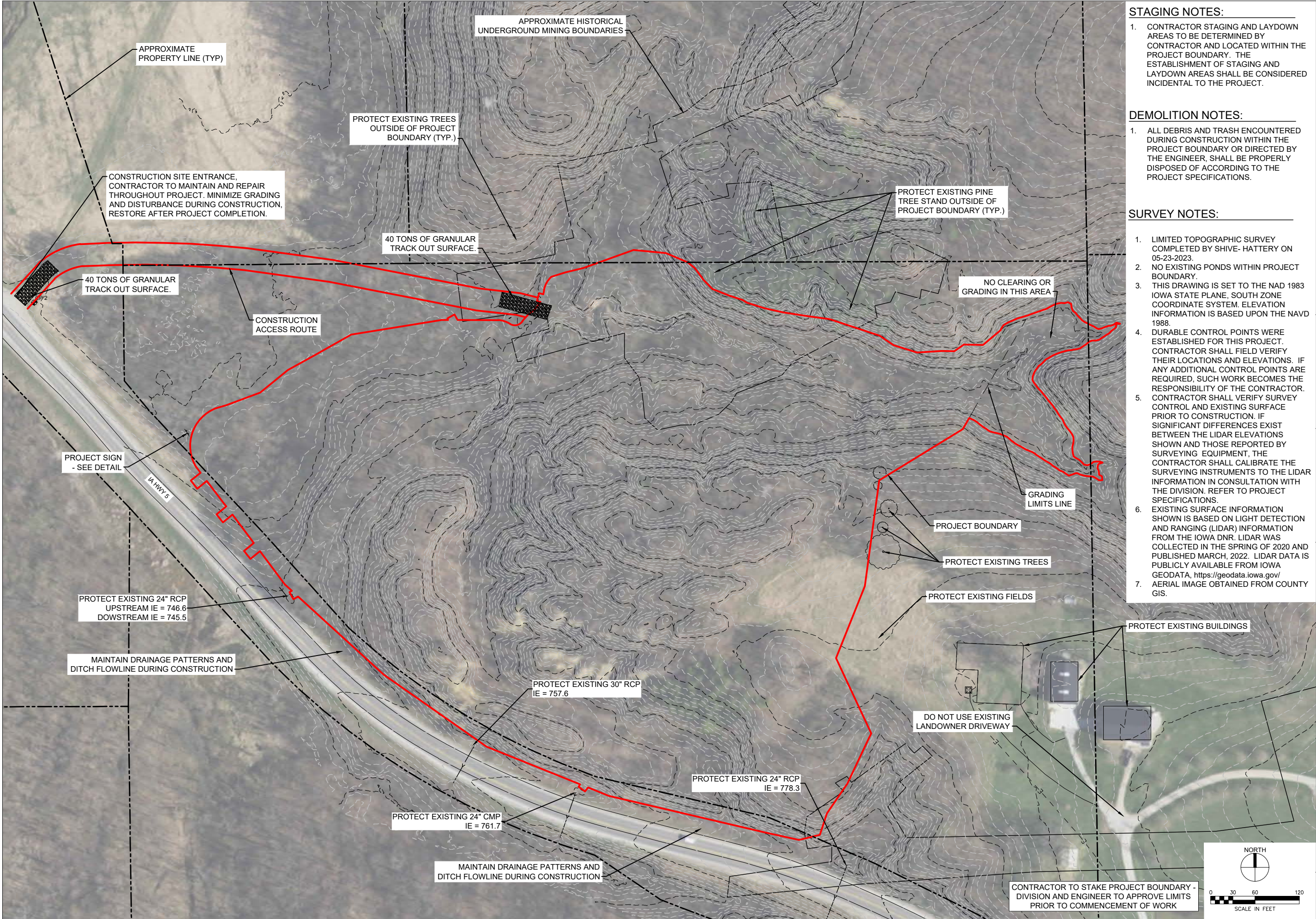
SHIVEHATTERY
ARCHITECTURE+ENGINEERING
4125 Westown Parkway, Suite 100 | West Des Moines, Iowa 50266
515.223.6104 | Fax: 515.223.0622 | shive-hattery.com
Iowa | Illinois | Missouri | Illinois Firm Number: 184-000214

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

VANDER VEER AML
AML RECLAMATION PROJECT

SURVEY AND TRAFFIC CONTROL

SHEET
3 OF 16



STAGING NOTES:

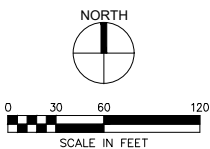
1. CONTRACTOR STAGING AND LAYDOWN AREAS TO BE DETERMINED BY CONTRACTOR AND LOCATED WITHIN THE PROJECT BOUNDARY. THE ESTABLISHMENT OF STAGING AND LAYDOWN AREAS SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.


DEMOLITION NOTES:

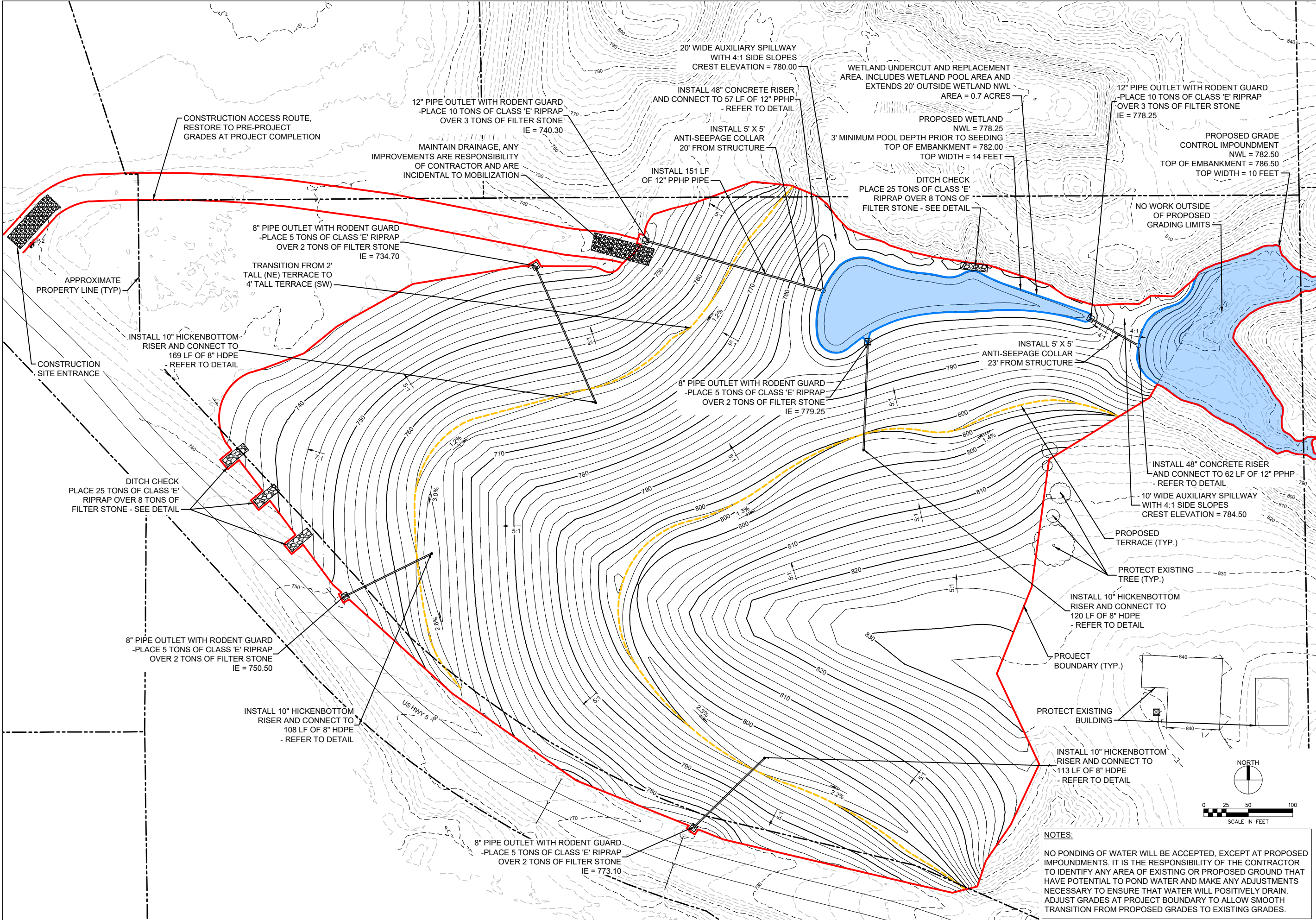
1. ALL DEBRIS AND TRASH ENCOUNTERED DURING CONSTRUCTION WITHIN THE PROJECT BOUNDARY OR DIRECTED BY THE ENGINEER, SHALL BE PROPERLY DISPOSED OF ACCORDING TO THE PROJECT SPECIFICATIONS.


SURVEY NOTES:

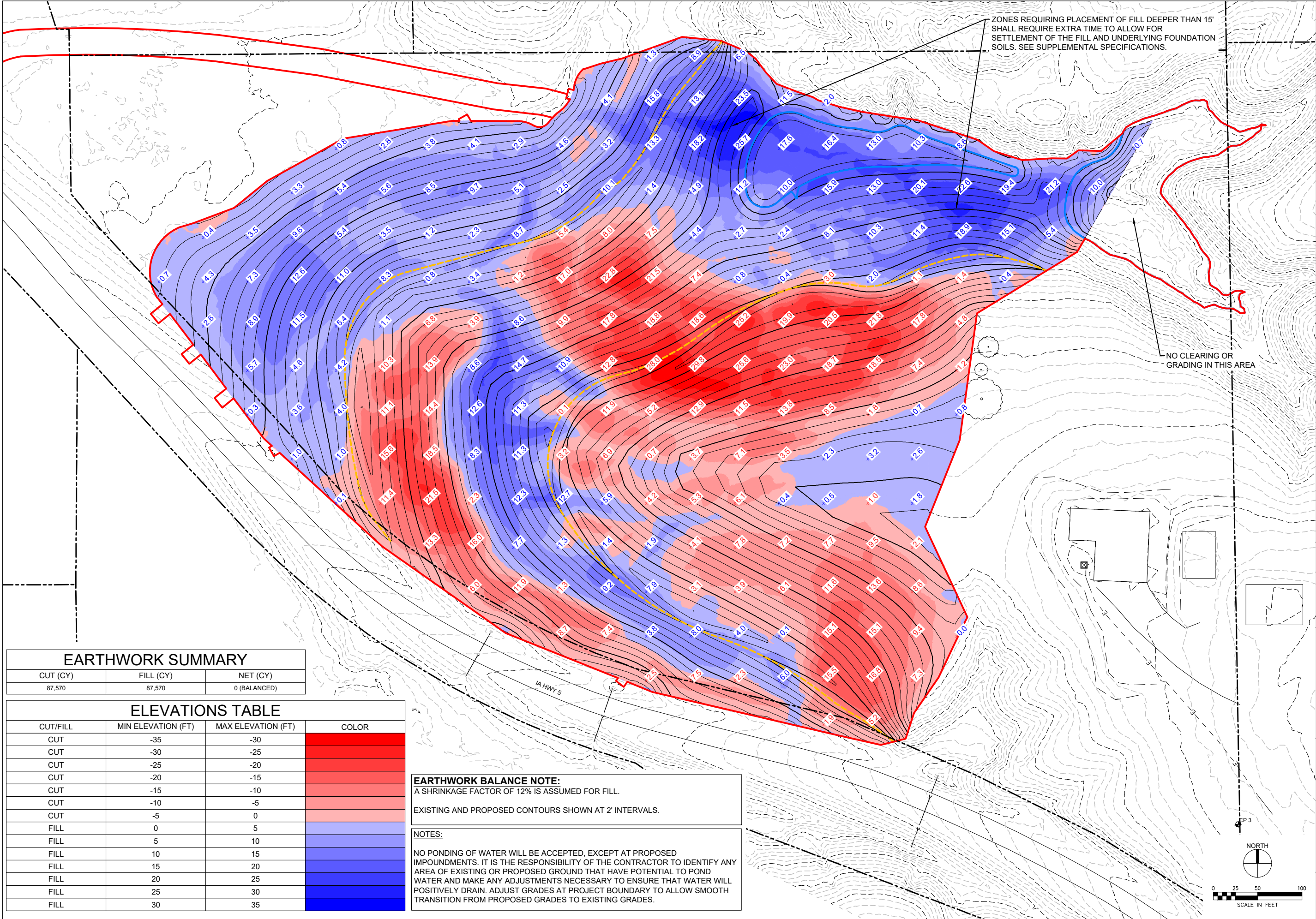
1. LIMITED TOPOGRAPHIC SURVEY COMPLETED BY SHIVE- HATTERY ON 05-23-2023.
2. NO EXISTING PONDS WITHIN PROJECT BOUNDARY.
3. THIS DRAWING IS SET TO THE NAD 1983 IOWA STATE PLANE, SOUTH ZONE COORDINATE SYSTEM. ELEVATION INFORMATION IS BASED UPON THE NAVD 1988.
4. DURABLE CONTROL POINTS WERE ESTABLISHED FOR THIS PROJECT. CONTRACTOR SHALL FIELD VERIFY THEIR LOCATIONS AND ELEVATIONS. IF ANY ADDITIONAL CONTROL POINTS ARE REQUIRED, SUCH WORK BECOMES THE RESPONSIBILITY OF THE CONTRACTOR.
5. CONTRACTOR SHALL VERIFY SURVEY CONTROL AND EXISTING SURFACE PRIOR TO CONSTRUCTION. IF SIGNIFICANT DIFFERENCES EXIST BETWEEN THE LIDAR ELEVATIONS SHOWN AND THOSE REPORTED BY SURVEYING EQUIPMENT, THE CONTRACTOR SHALL CALIBRATE THE SURVEYING INSTRUMENTS TO THE LIDAR INFORMATION IN CONSULTATION WITH THE DIVISION. REFER TO PROJECT SPECIFICATIONS.
6. EXISTING SURFACE INFORMATION SHOWN IS BASED ON LIGHT DETECTION AND RANGING (LIDAR) INFORMATION FROM THE IOWA DNR. LIDAR WAS COLLECTED IN THE SPRING OF 2020 AND PUBLISHED MARCH, 2022. LIDAR DATA IS PUBLICLY AVAILABLE FROM IOWA GEODATA, <https://geodata.iowa.gov/>
7. AERIAL IMAGE OBTAINED FROM COUNTY GIS.



DESIGN BY: MMO			DRAWN BY: GHK	CHKD. BY: LTM	ISSUED: 8/6/2025	REVISED: ----	S-H PROJECT NUMBER: 2142206240
VANDER VEER AML AML RECLAMATION PROJECT				<div></div> <div>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</div>			
SITUATION PLAN - EXISTING CONDITIONS				<div></div> <div>4125 Westown Parkway, Suite 100 West Des Moines, Iowa 50266 515.223.2310 fax: 515.223.0622 shive-hattery.com Iowa Illinois Missouri Illinois Firm Number: 184-000214</div>			
SHEET							
4 OF 16							



DESIGN BY: MMO		DRAWN BY: GHK		CHKD. BY: LTM		ISSUED: 8/6/2025		REVISED: ---		S-H PROJECT NUMBER: 2142206240	
<div>  </div>						<div> <div> <div>SHIVEHATTERY</div> <div>ARCHITECTURE+ENGINEERING</div> </div> <div> 4125 Westown Parkway, Suite 100 West Des Moines, Iowa 50266 515.223.6104 Fax: 515.223.0622 shivehattery.com Iowa Illinois Missouri Illinois Firm Number: 184-000214 </div> </div>					
<div> <div> <div>DIVISION OF SOIL CONSERVATION AND WATER QUALITY</div> <div>IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP</div> <div>HENRY A. WALLACE BUILDING</div> <div>502 E. 9th STREET, DES MOINES, IOWA 50319</div> <div>(515) 281-4246</div> </div> </div>						<div> <div>VANDER VEER AML</div> <div>AML RECLAMATION PROJECT</div> <div>GRADING PLAN</div> </div>					
SHEET						5 OF 16					



EARTHWORK SUMMARY

CUT (CY)	FILL (CY)	NET (CY)
87,570	87,570	0 (BALANCED)

ELEVATIONS TABLE

CUT/FILL	MIN ELEVATION (FT)	MAX ELEVATION (FT)	COLOR
CUT	-35	-30	
CUT	-30	-25	
CUT	-25	-20	
CUT	-20	-15	
CUT	-15	-10	
CUT	-10	-5	
CUT	-5	0	
FILL	0	5	
FILL	5	10	
FILL	10	15	
FILL	15	20	
FILL	20	25	
FILL	25	30	
FILL	30	35	

EARTHWORK BALANCE NOTE:
A SHRINKAGE FACTOR OF 12% IS ASSUMED FOR FILL.

EXISTING AND PROPOSED CONTOURS SHOWN AT 2' INTERVALS.

NOTES:

NO PONDING OF WATER WILL BE ACCEPTED, EXCEPT AT PROPOSED IMPOUNDMENTS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IDENTIFY ANY AREA OF EXISTING OR PROPOSED GROUND THAT HAVE POTENTIAL TO POND WATER AND MAKE ANY ADJUSTMENTS NECESSARY TO ENSURE THAT WATER WILL POSITIVELY DRAIN. ADJUST GRADES AT PROJECT BOUNDARY TO ALLOW SMOOTH TRANSITION FROM PROPOSED GRADES TO EXISTING GRADES.

S-H PROJECT NUMBER: 2142206240

REVISED: ---

ISSUED: 8/6/2025

CHKD. BY: LTM

DRAWN BY: GHK

DESIGN BY: MMO

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



VANDER VEER AML
AML RECLAMATION PROJECT

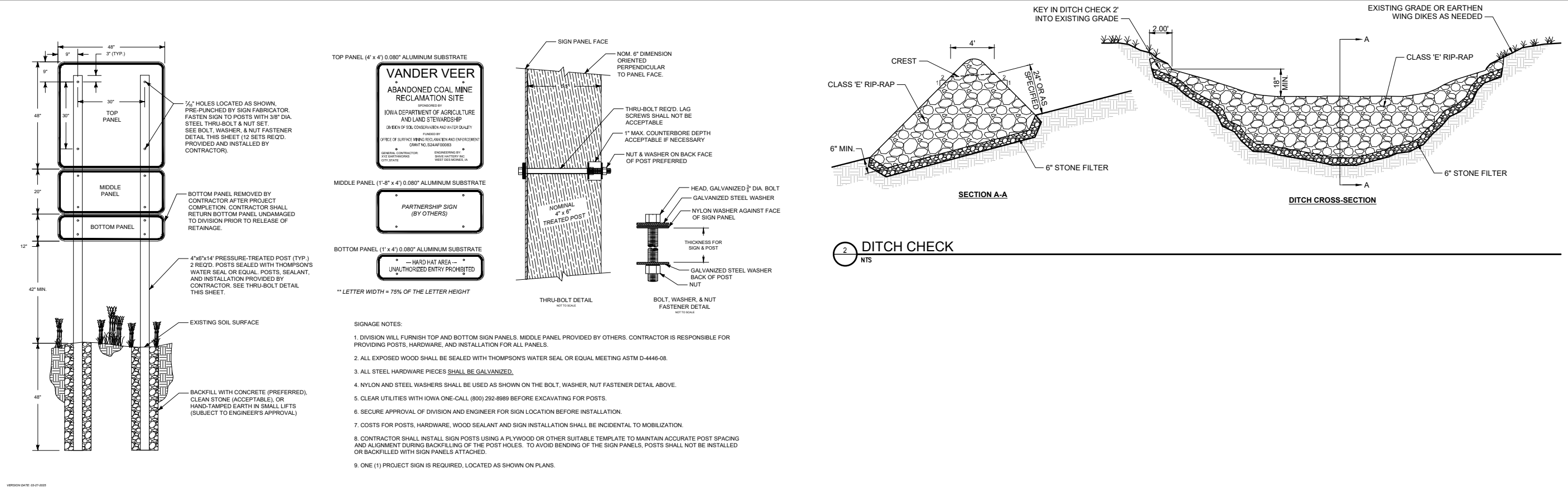
CUT-FILL PLAN

SHEET

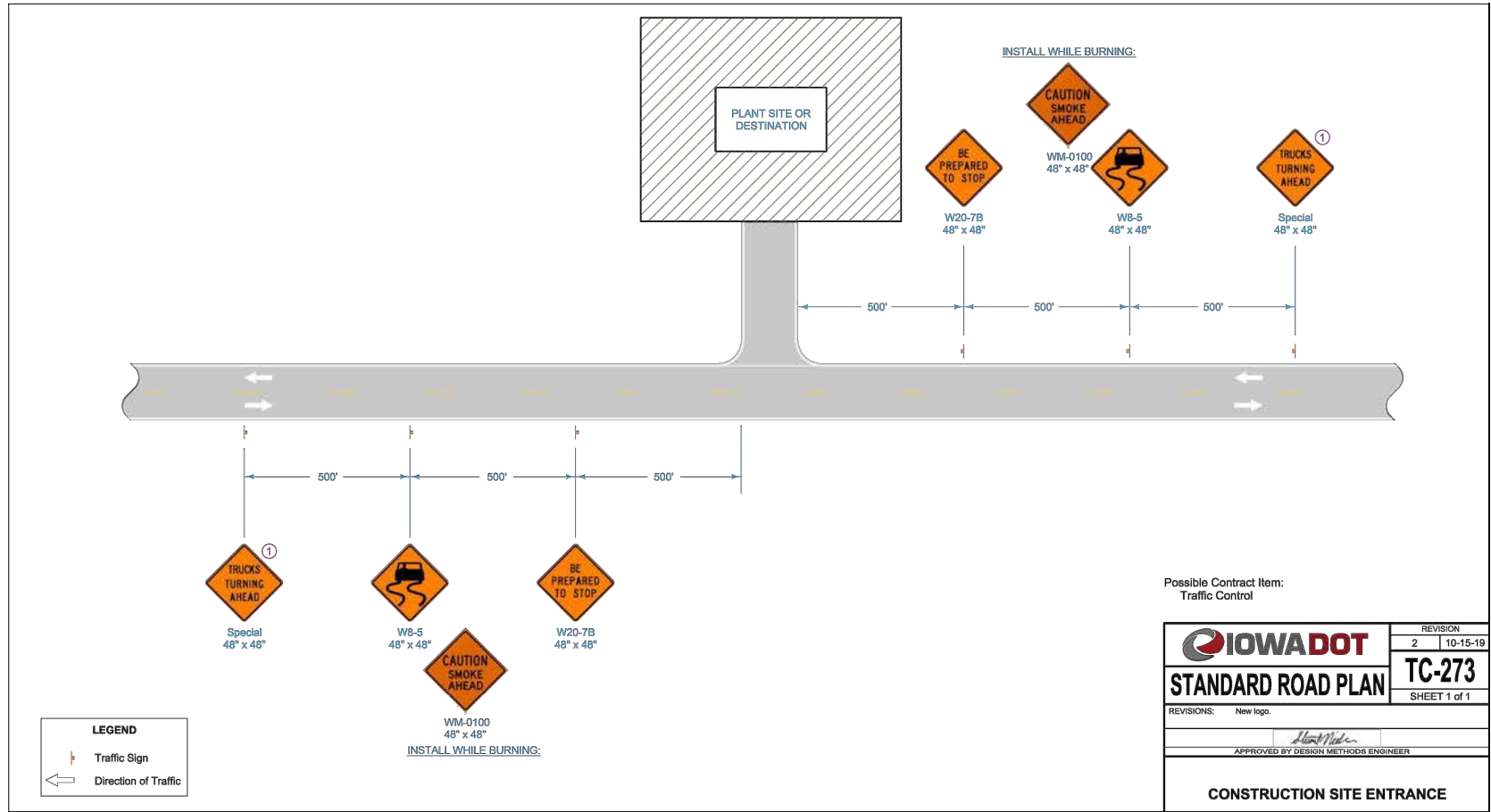
6 of 16

SHIVEHATTERY
ARCHITECTURE+ENGINEERING

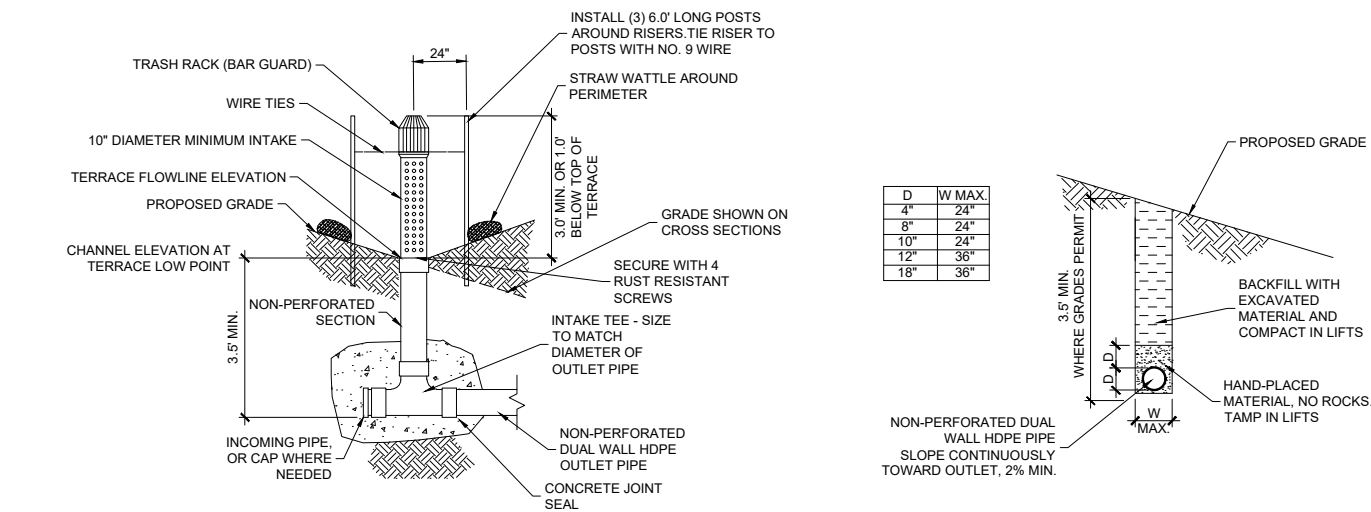
4125 Westown Parkway, Suite 100 | West Des Moines, Iowa 50266
515.223.6104 | Fax: 515.223.0622 | shivehattery.com
Iowa | Illinois | Missouri | Illinois Firm Number: 184-000214



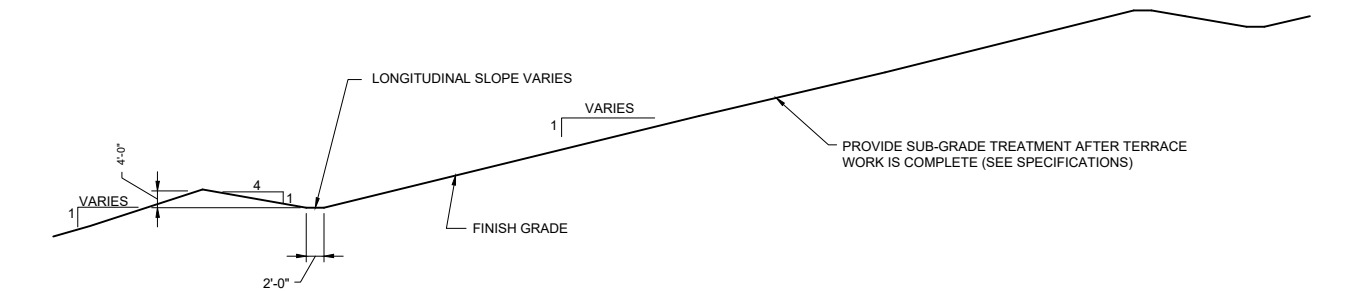
1 SIGN DETAIL



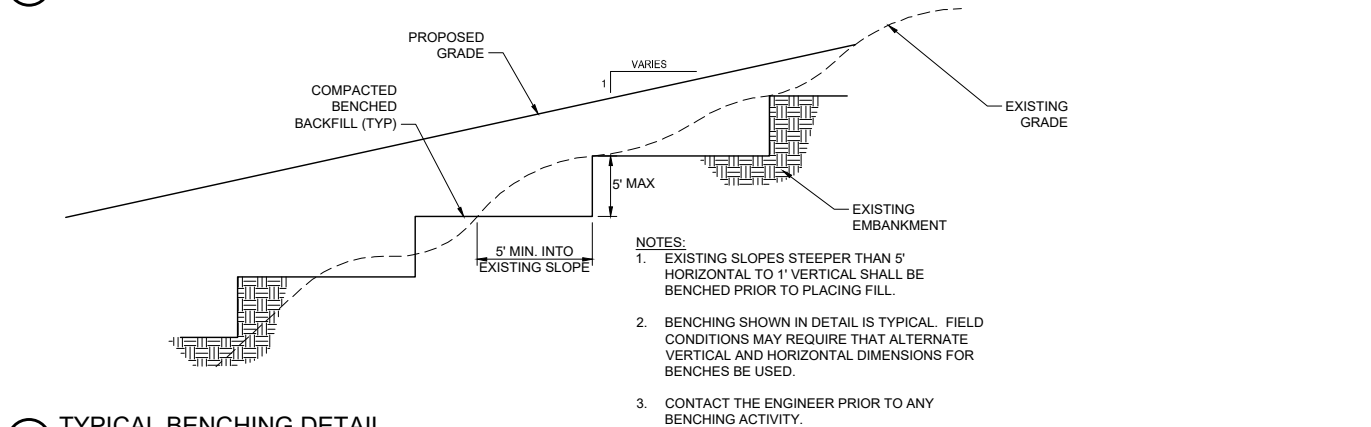
3 CONSTRUCTION SITE ENTRANCE SIGNAGE PLAN



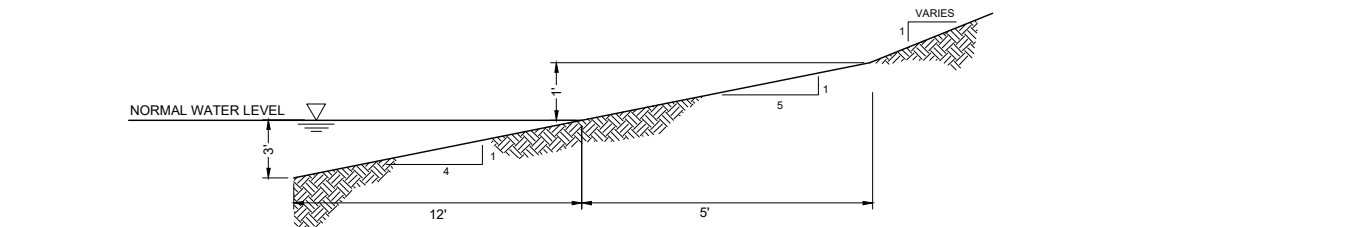
1 RISER - TERRACE
NTS



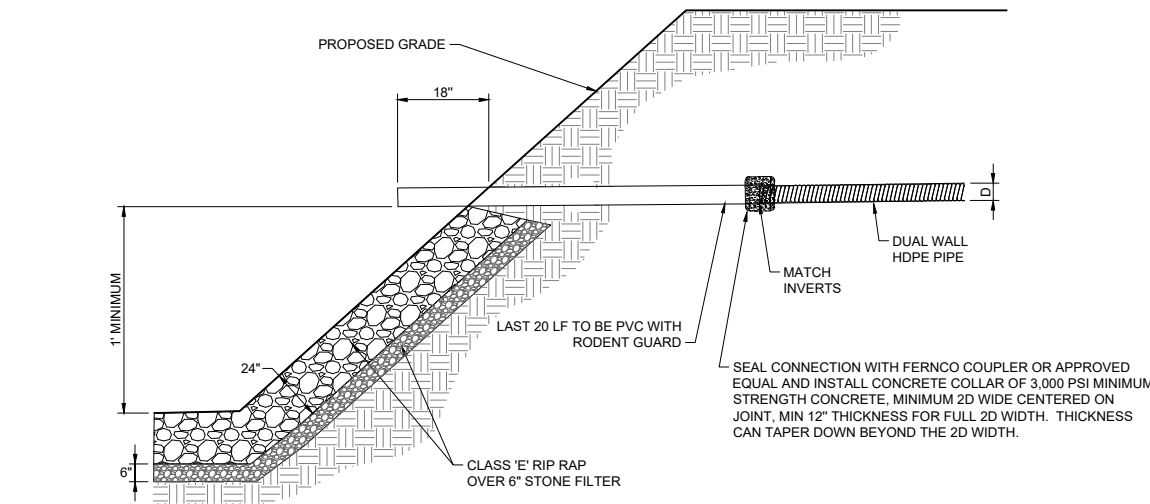
3 TERRACE - 4' HEIGHT
NTS



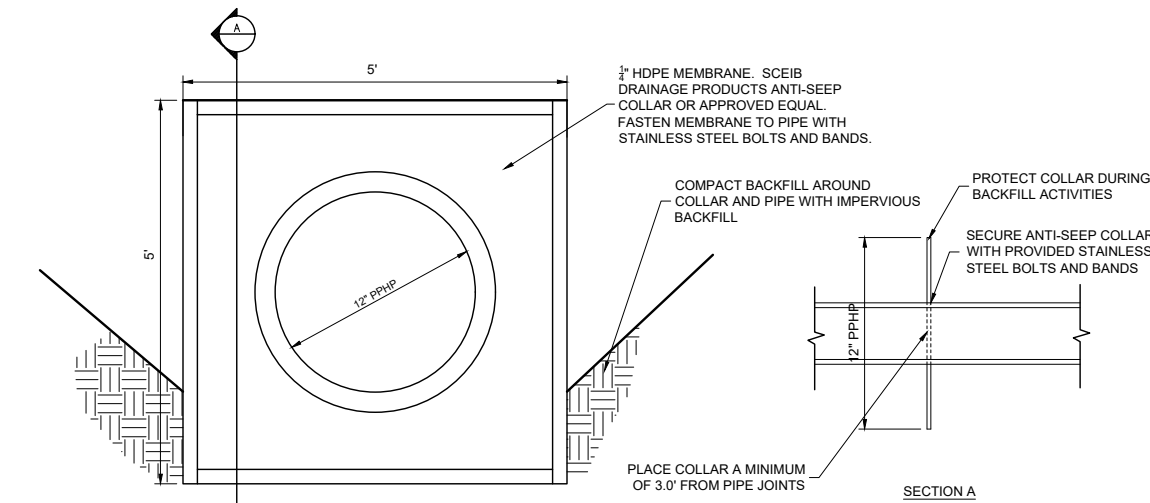
5 TYPICAL BENCHING DETAIL
NTS



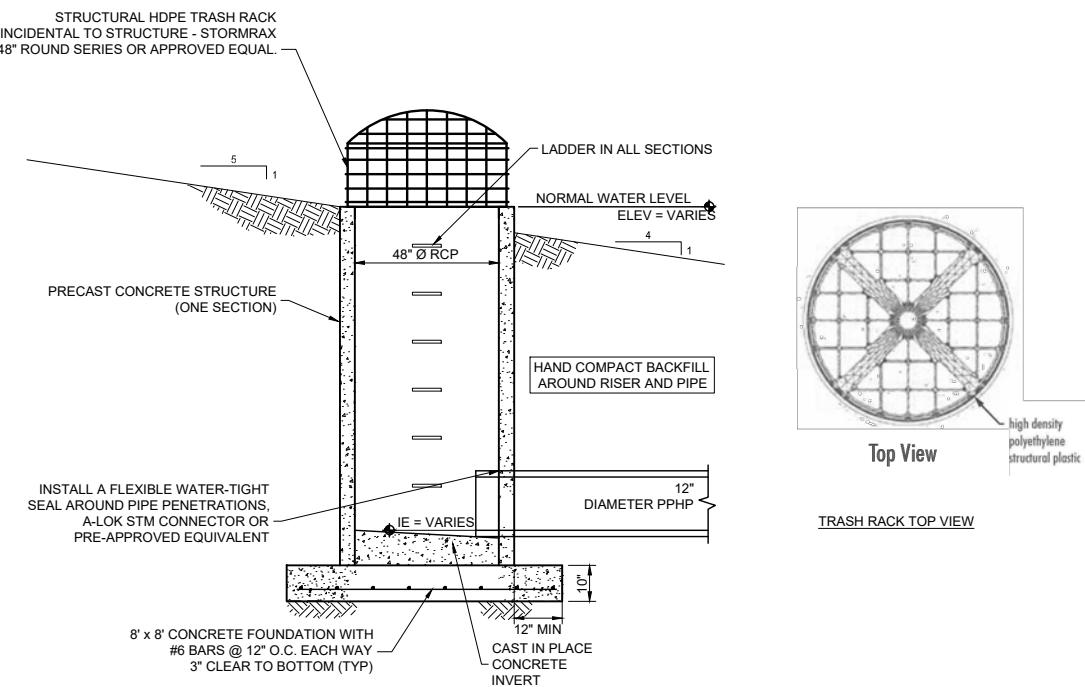
6 TYPICAL WETLAND EDGE
NTS



2 PIPE OUTLET PROTECTION
NTS



4 HDPE ANTI-SEEPAGE COLLAR
NTS



7 WATER CONTROL STRUCTURE WITH TRASH RACK
NTS

S-H PROJECT NUMBER: 2142206240

REVISED: ---

ISSUED: 8/6/2025

CHKD. BY: LTM

DRAWN BY: GHK

DESIGN BY: MMO

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



VANDER VEER AML
AML RECLAMATION PROJECT

PROJECT DETAILS

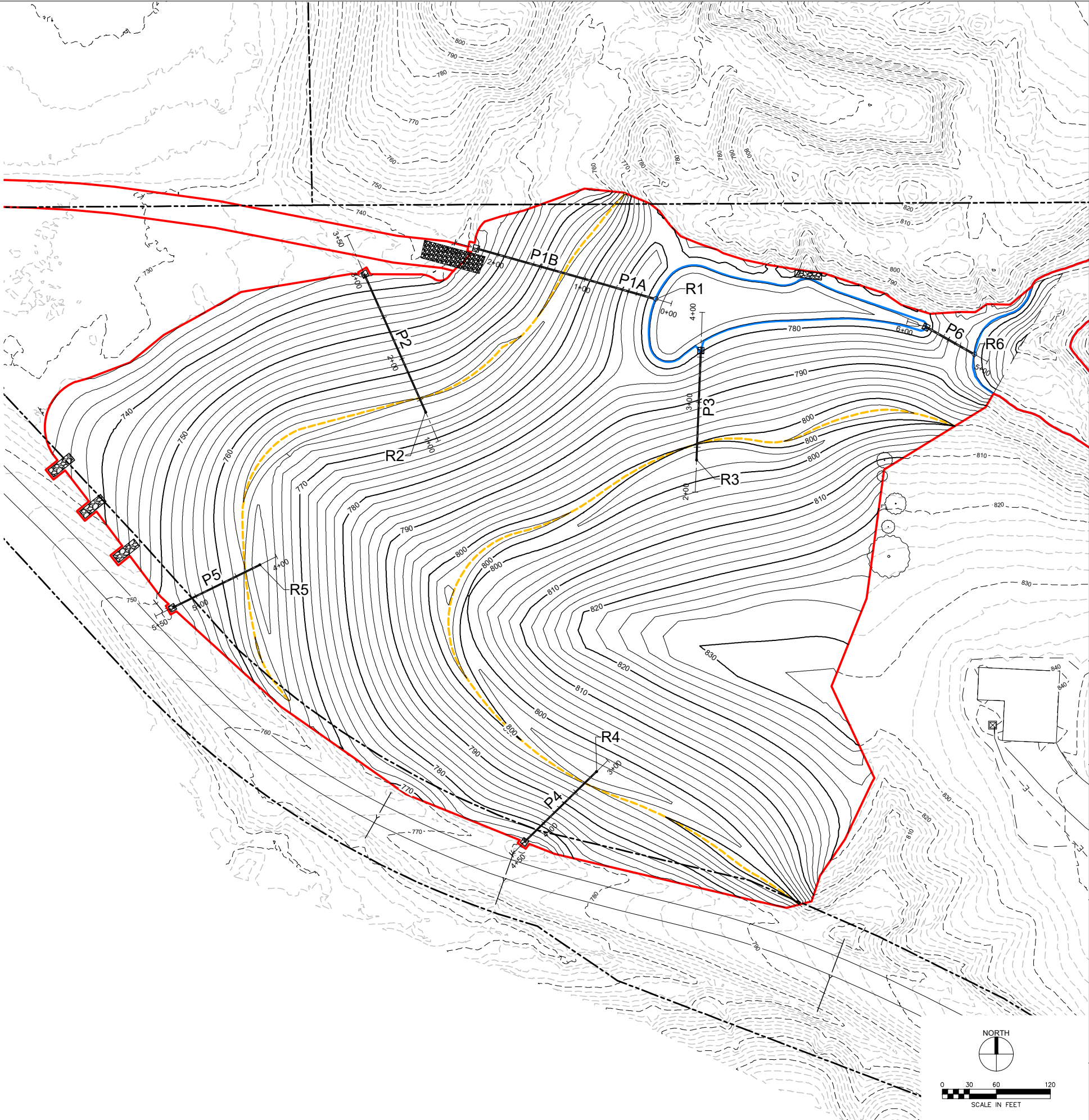
PIPES						
NO.	LENGTH (LF)	DIAMETER	MATERIAL	UPSTREAM INVERT (FT)	DOWNSTREAM INVERT (FT)	SLOPE
P1A	57	12"	PPHP	772.25	768.00	7.47%
P1B	151	12"	PPHP	768.00	740.30	18.64%
P2	169	8"	DWPE	758.00	734.70	13.88%
P3	120	8"	DWPE	792.00	779.25	10.67%
P4	113	8"	DWPE	790.00	773.10	15.11%
P5	108	8"	DWPE	756.00	750.50	5.09%
P6	62	12"	PPHP	778.75	778.25	0.81%

NOTE:
ASC = 5'X5' ANTI-SEEPAGE COLLAR - SEE DETAIL
DL = DAYLIGHT - SEE DETAIL

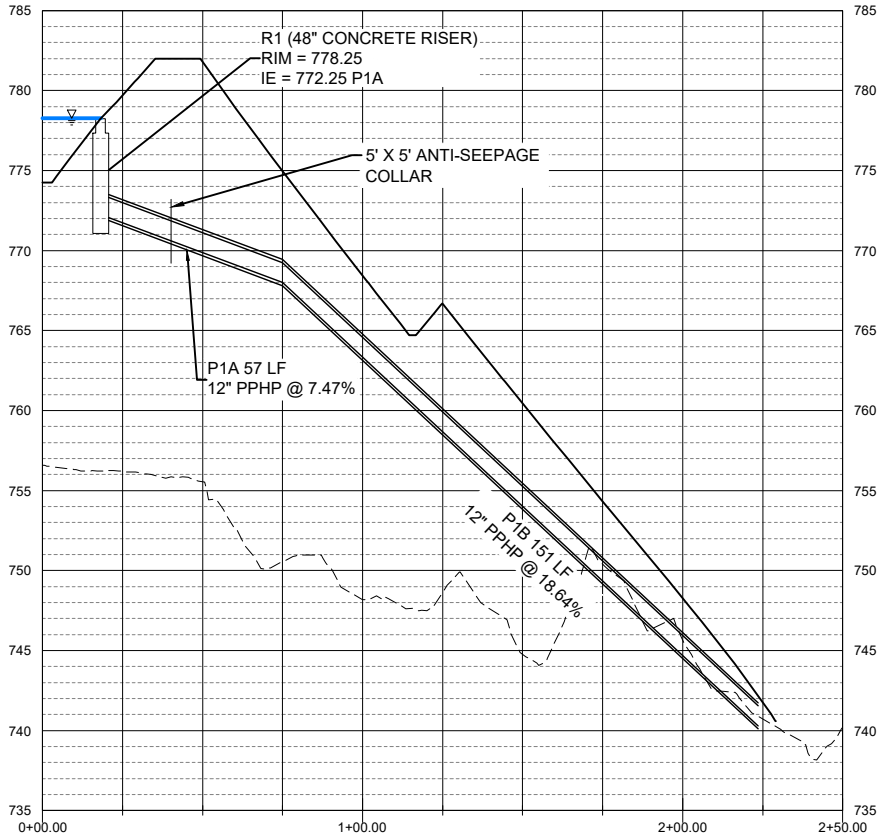
RISER INTAKES					
NO.	SIZE	TYPE	TERRACE FLOWLINE / WETLAND RIM ELEVATION	INVERT ELEV OUT	NOTES
R1	48"	CR	778.25	772.25	
R2	10"	PR	762.00	758.00	
R3	10"	PR	796.00	792.00	
R4	10"	PR	794.00	790.00	
R5	10"	PR	760.00	756.00	
R6	48"	CR	782.50	778.75	

NOTE:
PR = PLASTIC RISER (HICKENBOTTOM) - SEE DETAIL
CR = CONCRETE RISER WITH TRASH RACK - SEE DETAIL

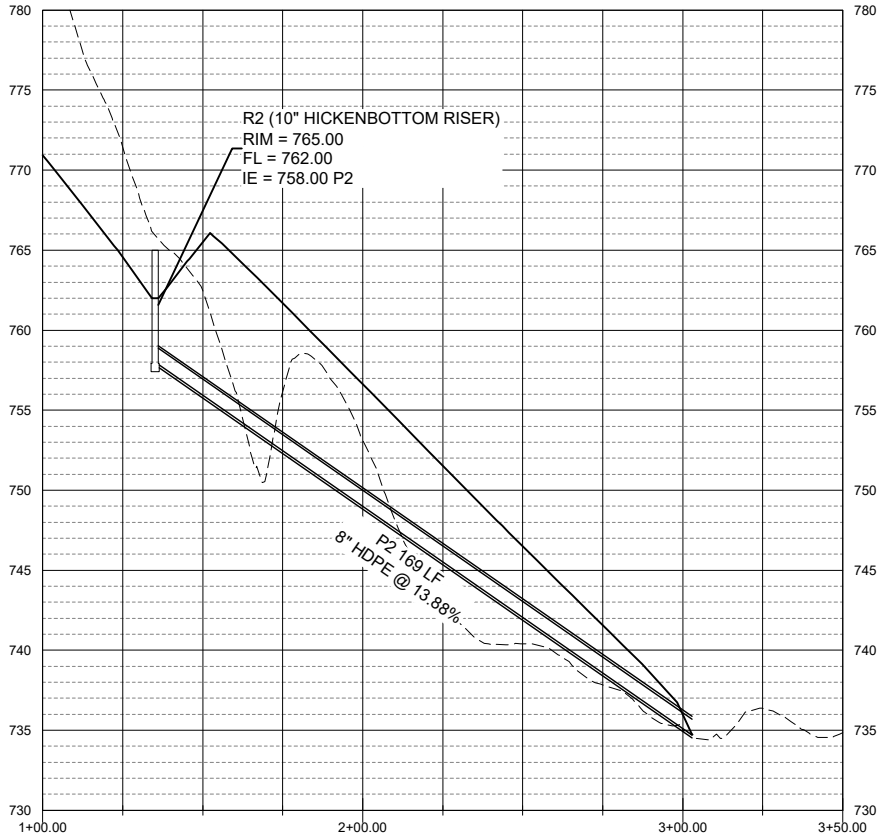
- NOTES:
- SEE DETAILS, PIPE PROFILES, AND GRADING PLANS FOR ADDITIONAL INFORMATION.
 - PIPE LENGTHS FOR PIPES LISTED WITH "DL" IN THE NOTES COLUMN INCLUDE A 20' OUTLET SECTION
 - NO PVC OUTLET SECTION REQUIRED FOR PPHP PIPES.



DESIGN BY: MMO		DRAWN BY: GHK	CHKD. BY: LTM	ISSUED: 8/6/2025	REVISED: ---	S-H PROJECT NUMBER: 2142206240
VANDER VEER AML AML RECLAMATION PROJECT			<div>SHIVEHATTERY ARCHITECTURE+ENGINEERING 4125 Westown Parkway, Suite 100 West Des Moines, Iowa 50266 515.223.6104 Fax: 515.223.0622 shivehattery.com Iowa Illinois Missouri Illinois Firm Number: 184-000214</div>			
SHEET 9 OF 16			DRAINAGE PLAN			



P1 PROFILE



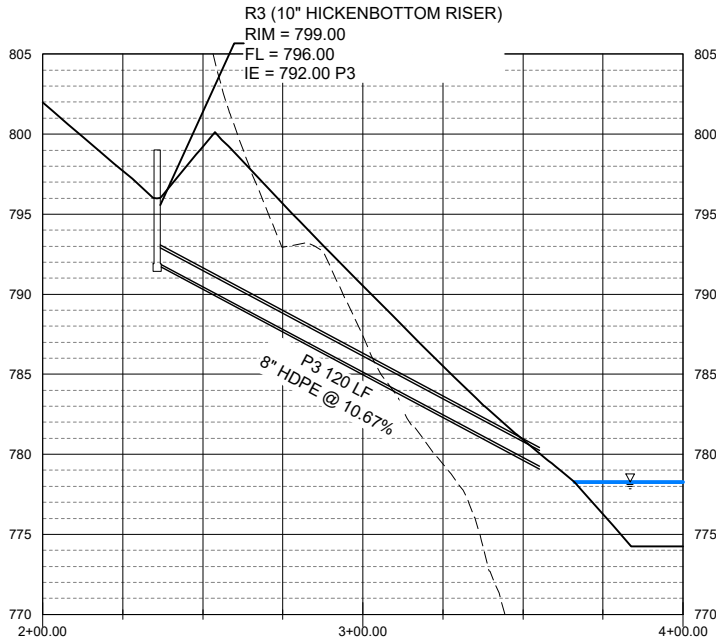
P2 PROFILE

PPHP PIPE COVER INFORMATION		
SIZE (IN)	MIN (FT)	MAX (FT)
12"	1	16

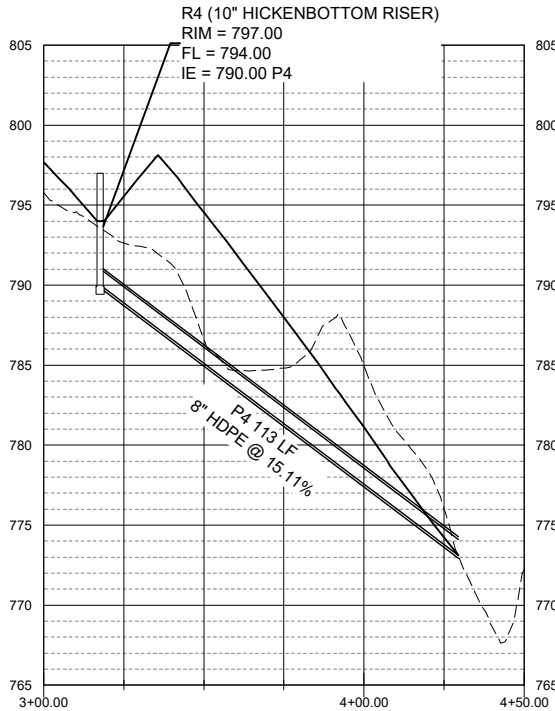
HDPE PIPE COVER INFORMATION		
SIZE (IN)	MIN (FT)	MAX (FT)
8"	1	11

NOTES:

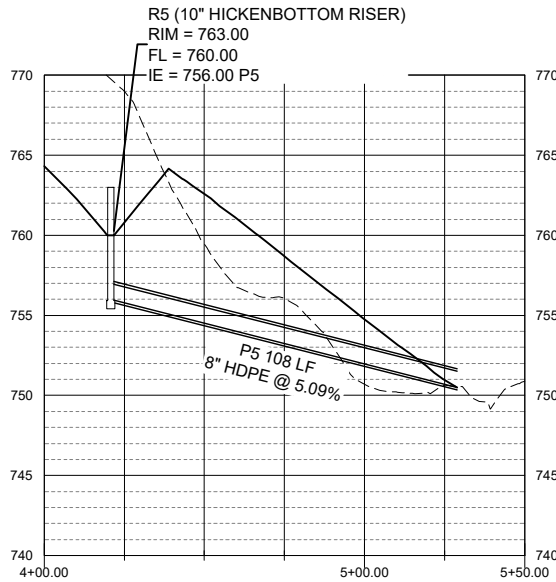
- MINIMUM PIPE SLOPE = 1.5% (EXCLUDING P6)
- WHERE PIPES ARE SHOWN TO OUTLET BELOW GRADE, CREATE 4' WIDE SWALE FROM PIPE OUTLET TO FLOWLINE OF NEAREST CHANNEL OR NORMAL WATER LEVEL OF NEAREST WETLAND.



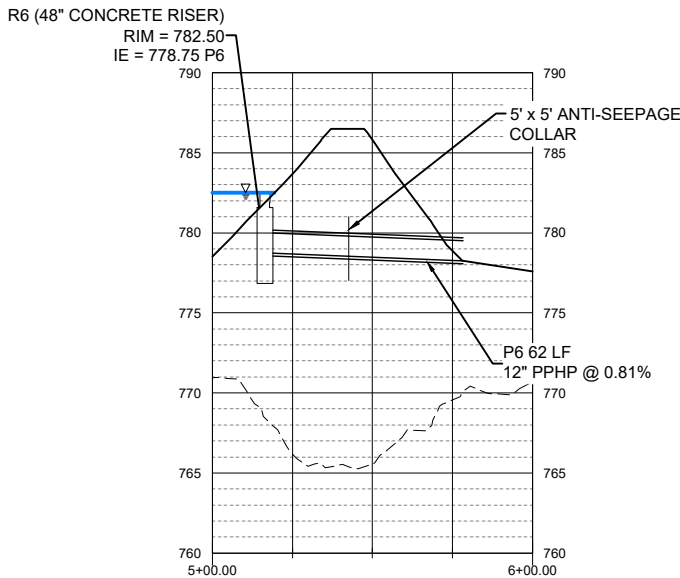
P3 PROFILE



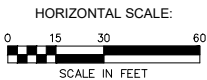
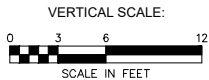
P4 PROFILE



P5 PROFILE



P6 PROFILE



S-H PROJECT NUMBER: 2142206240

REVISED: ---

ISSUED: 8/6/2025

CHKD. BY: LTM

DRAWN BY: GHK

DESIGN BY: MMO


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

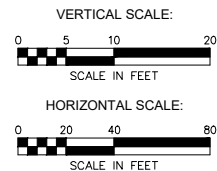
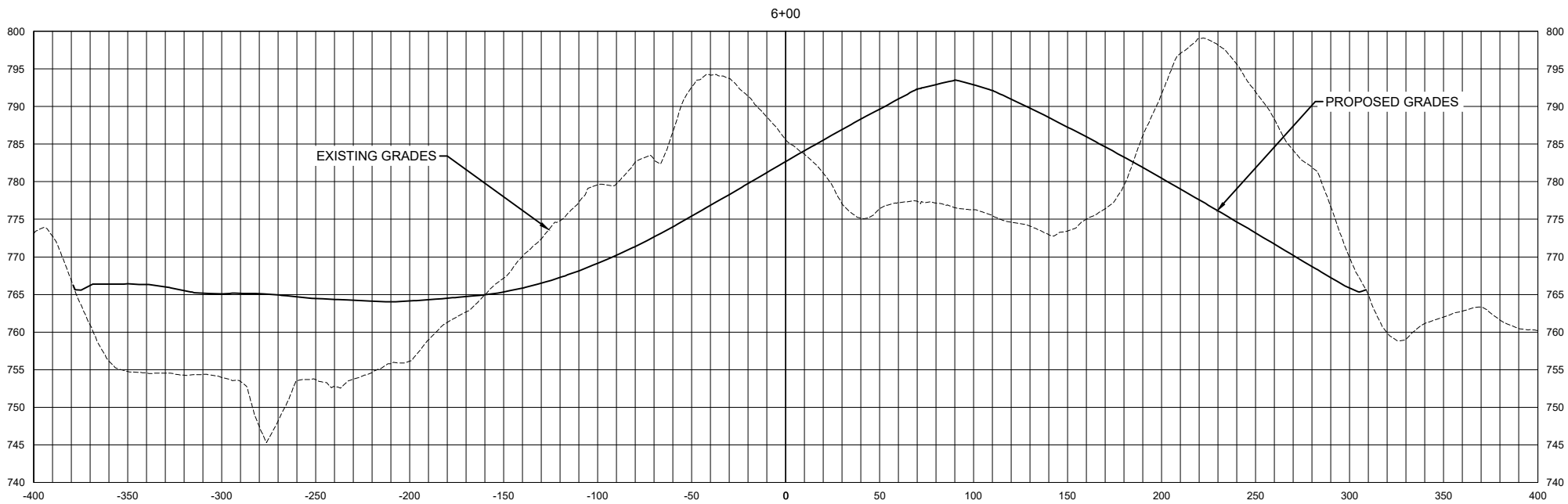
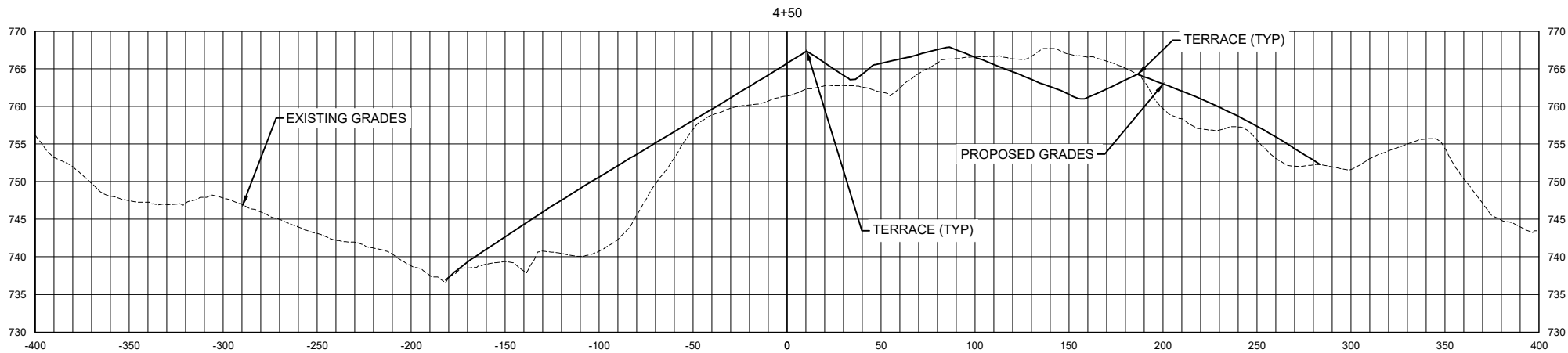
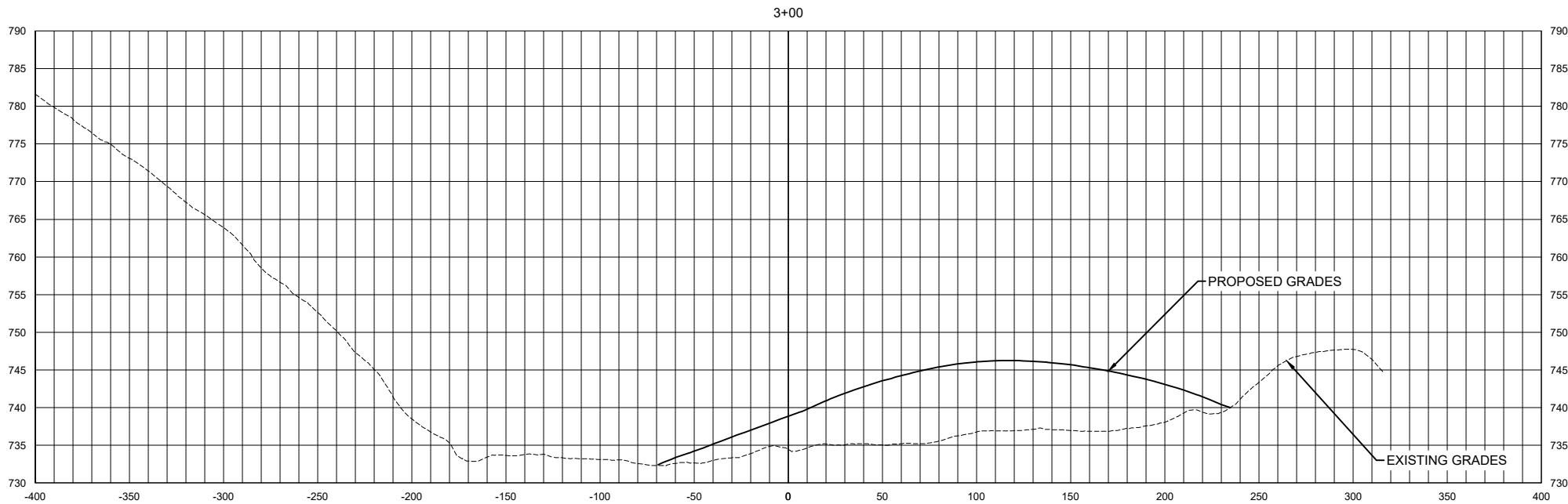


VANDER VEER AML
AML RECLAMATION PROJECT

PIPE PROFILES



DESIGN BY: MMO			DRAWN BY: GHK	CHKD. BY: LTM		ISSUED: 8/6/2025	REVISED: -----	S-H PROJECT NUMBER: 2142206240
VANDER VEER AML AML RECLAMATION PROJECT				<div><p>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</p></div>				
CROSS SECTIONS PLAN								
<div><div>SHEET</div><div>11 OF 16</div></div>								
<div><div>SHIVEHATTERY</div><div>ARCHITECTURE+ENGINEERING</div><div>4125 Westown Parkway, Suite 100 West Des Moines, Iowa 50266 515.223.8104 fax: 515.223.0622 shivehattery.com Iowa Illinois Missouri Illinois Firm Number: 184-000214</div></div>								



S-H PROJECT NUMBER: 2142206240

REVISED: ---

ISSUED: 8/6/2025

CHKD. BY: LTM

GHK

DRAWN BY:

MMO

DESIGN BY:

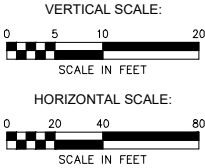
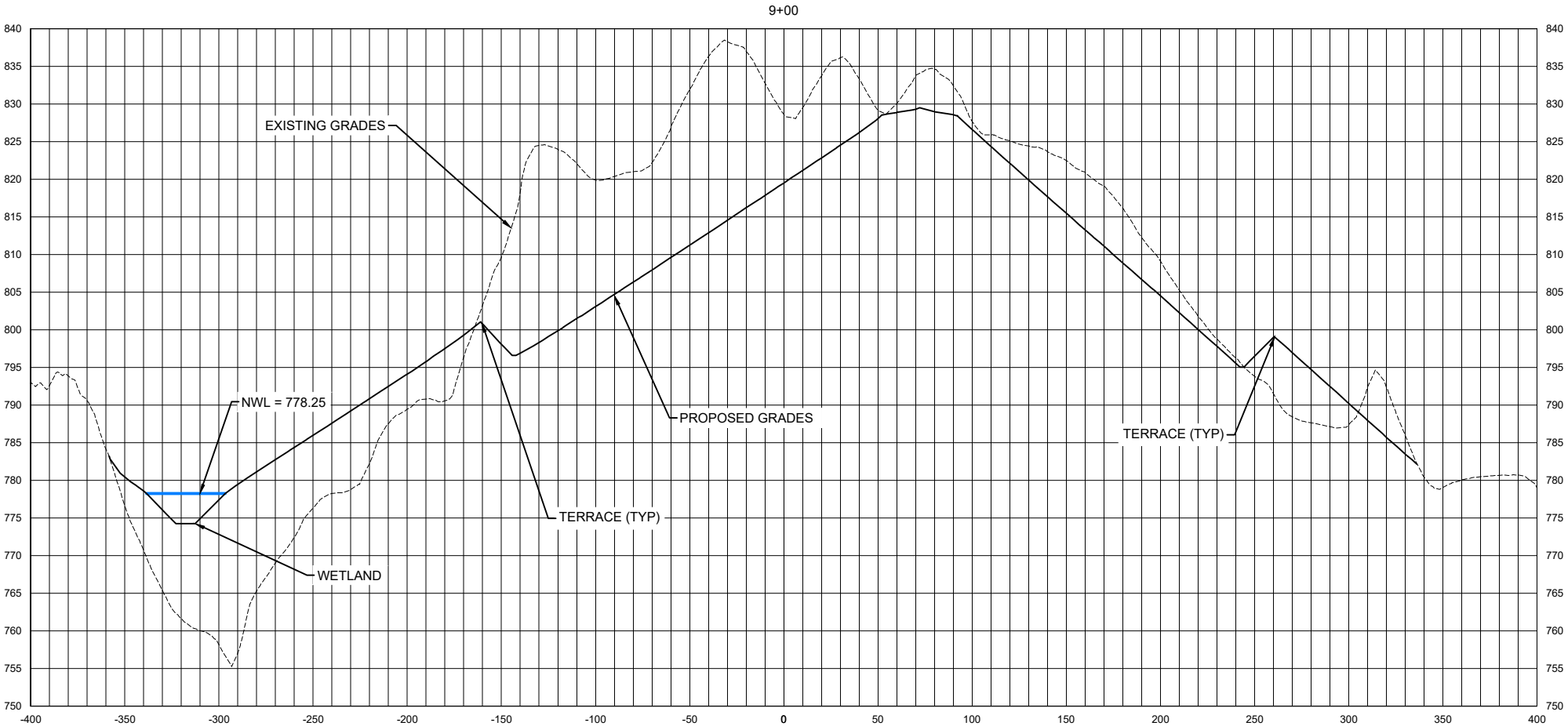
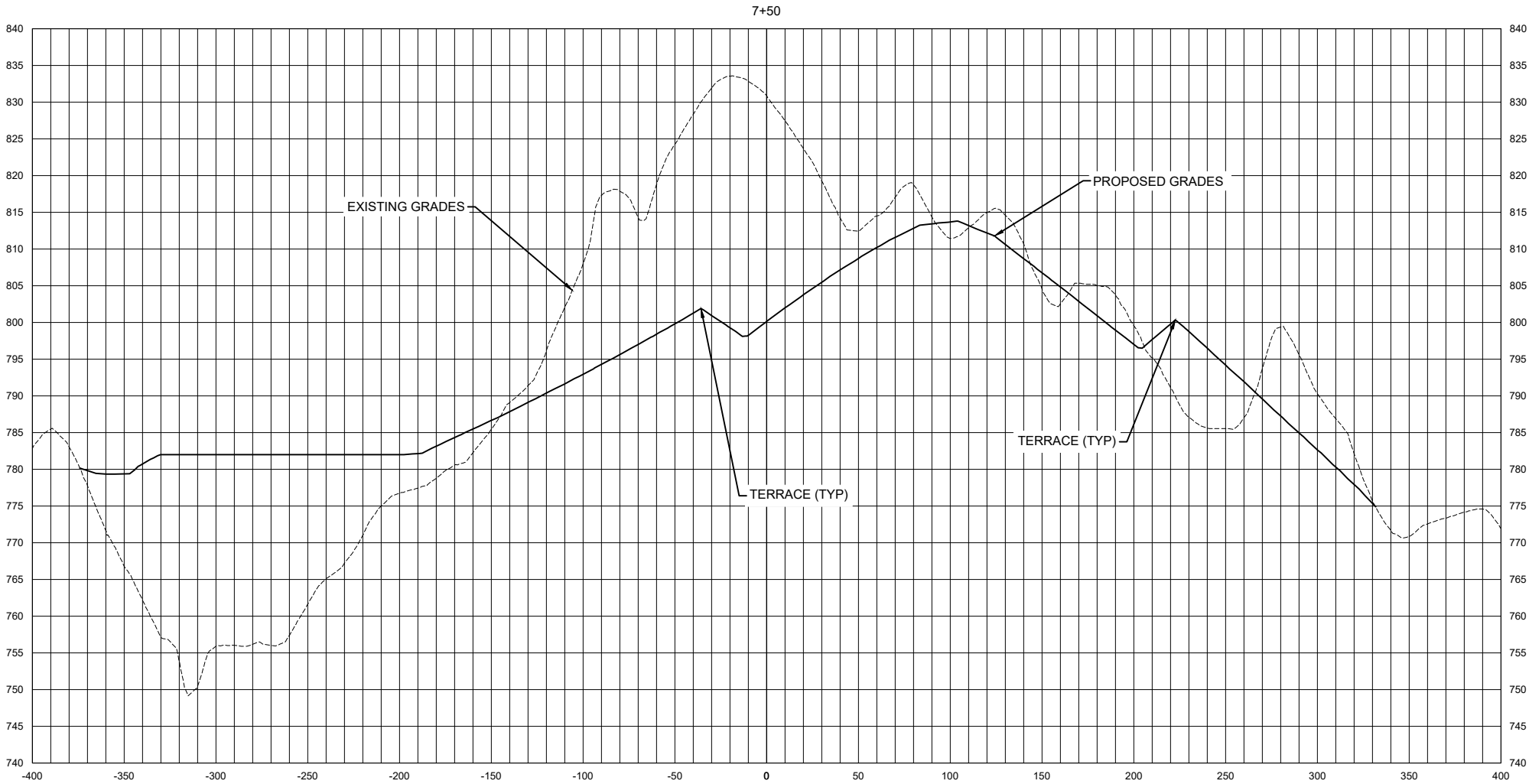
VANDER VEER AML
AML RECLAMATION PROJECT

CROSS SECTIONS

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

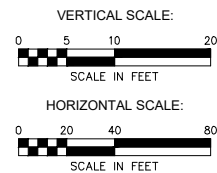
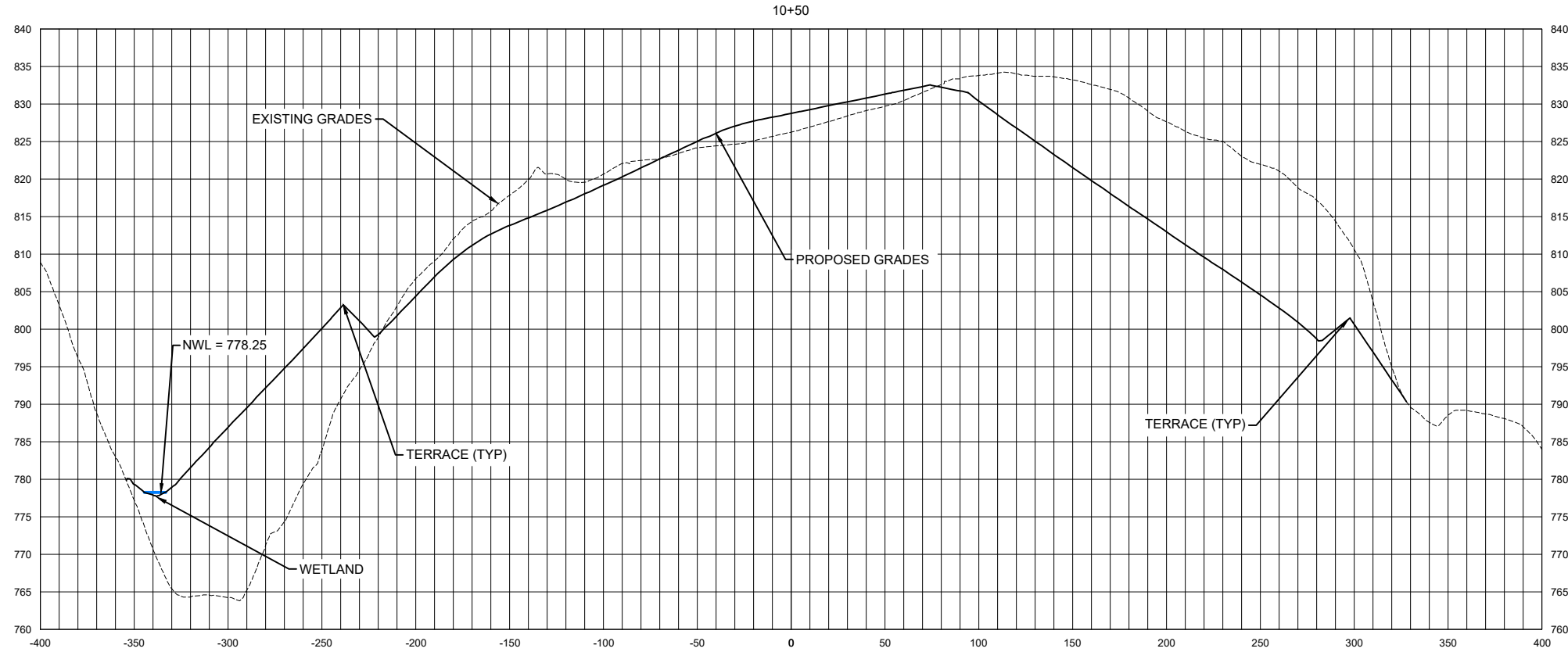
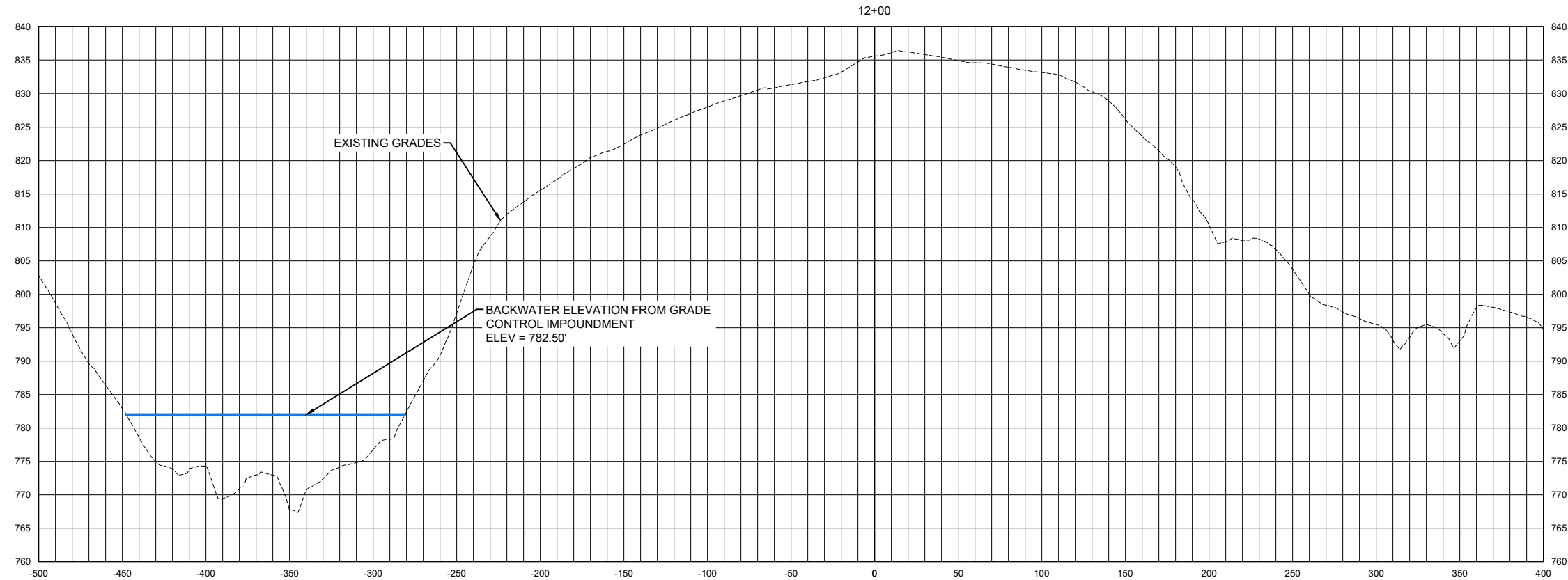


SHIVEHATTERY
ARCHITECTURE+ENGINEERING
4125 Westown Parkway, Suite 100 | West Des Moines, Iowa 50266
515.223.6104 | Fax: 515.223.0622 | shivehattery.com
Iowa | Illinois | Missouri | Illinois Firm Number: 184-000214



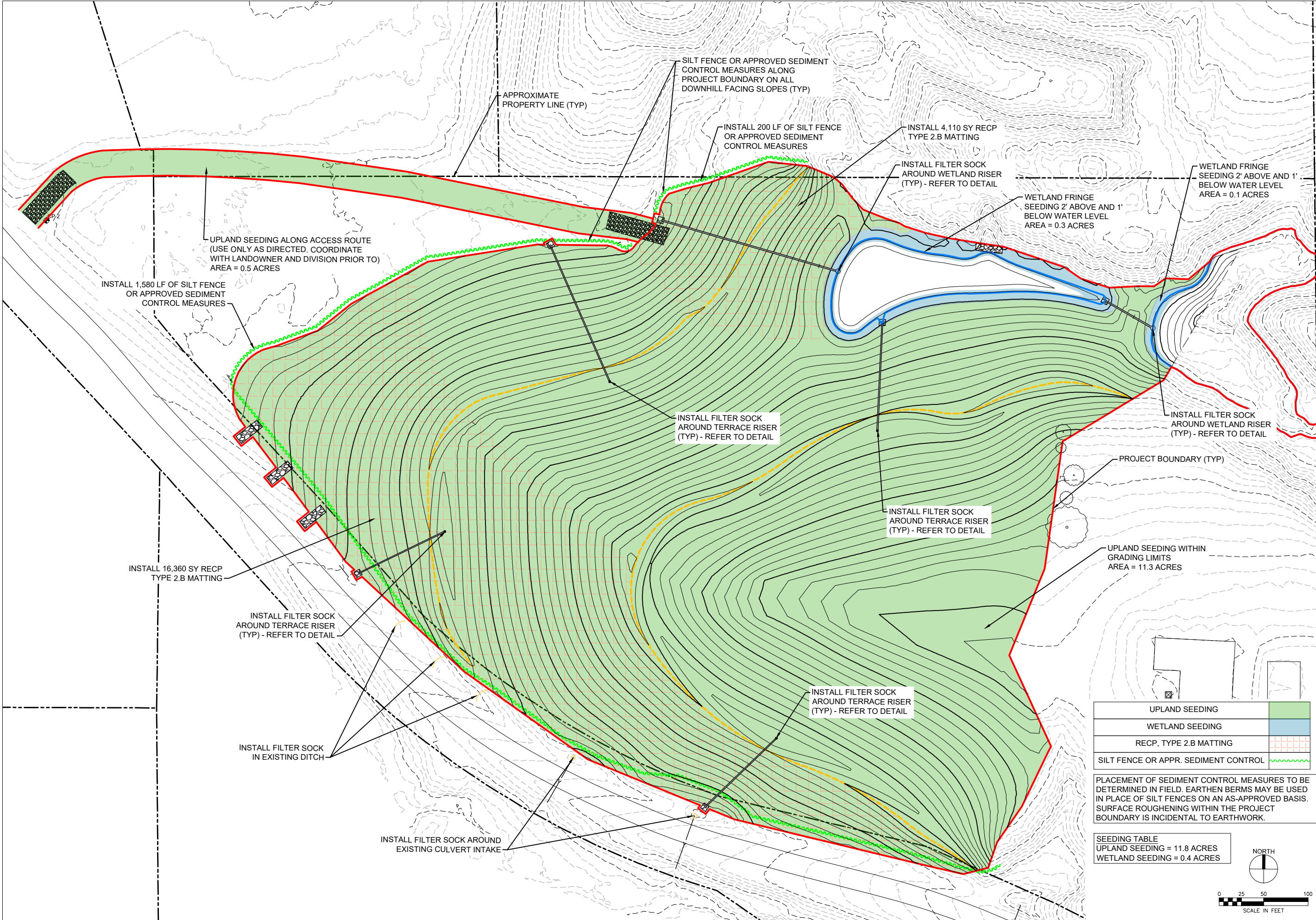
DESIGN BY: MMO	DRAWN BY: GHK	CHKD. BY: LTM	ISSUED: 8/6/2025	REVISED: ---	S-H PROJECT NUMBER: 2142206240
VANDER VEER AML AML RECLAMATION PROJECT			 DIVISION OF SOIL CONSERVATION AND WATER QUALITY IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP HENRY A. WALLACE BUILDING 502 E. 9th STREET, DES MOINES, IOWA 50319 (515) 281-4246		
SHEET 13 OF 16					

SHIVEHATTERY
ARCHITECTURE+ENGINEERING
4125 Westown Parkway, Suite 100 | West Des Moines, Iowa 50266
515.223.6104 | Fax: 515.223.0622 | shivehattery.com
Iowa | Illinois | Missouri | Illinois Firm Number: 184-000214



DESIGN BY: MMO	DRAWN BY: GHK	CHKD. BY: LTM	ISSUED: 8/6/2025	REVISED: ---	S-H PROJECT NUMBER: 2142206240
VANDER VEER AML AML RECLAMATION PROJECT			 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		
CROSS SECTIONS					
SHEET 14 OF 16					

SHIVEHATTERY
ARCHITECTURE+ENGINEERING
4125 Westown Parkway, Suite 100 | West Des Moines, Iowa 50266
515.223.8104 | Fax: 515.223.0022 | shivehattery.com
Iowa | Illinois | Missouri | Illinois Firm Number: 184-000214



DESIGN BY: MMO

DRAWN BY: GHK

CHKD. BY: LTM

ISSUED: 8/6/2025

REVISED: ---

S-H PROJECT NUMBER: 2142206240

VANDER VEER AML
AML RECLAMATION PROJECT

SWPPP & SEEDING PLAN

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

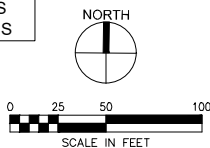
SHIVEHATTERY
ARCHITECTURE+ENGINEERING
4125 Westown Parkway, Suite 100 | West Des Moines, Iowa 50266
515.223.6104 | Fax: 515.223.0622 | shivehattery.com
Iowa | Illinois | Missouri | Illinois Firm Number: 184-000214

SHEET
15 OF 16

UPLAND SEEDING	
WETLAND SEEDING	
RECP, TYPE 2.B MATTING	
SILT FENCE OR APPR. SEDIMENT CONTROL	

PLACEMENT OF SEDIMENT CONTROL MEASURES TO BE DETERMINED IN FIELD. EARTHEN BERMS MAY BE USED IN PLACE OF SILT FENCES ON AN AS-APPROVED BASIS. SURFACE ROUGHENING WITHIN THE PROJECT BOUNDARY IS INCIDENTAL TO EARTHWORK.

SEEDING TABLE
UPLAND SEEDING = 11.8 ACRES
WETLAND SEEDING = 0.4 ACRES



STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

REFER TO: CONTENTS OF THE POLLUTION PREVENTION PLAN IN PART IV. D. OF IOWA NPDES GENERAL PERMIT NO. 2 -- EFFECTIVE MARCH 1, 2023 THROUGH FEBRUARY 29, 2028.

1. SITE DESCRIPTION

A. DESCRIBE NATURE OF CONSTRUCTION ACTIVITY:

- THE PROJECT CONSISTS OF RECLAIMING THE AML SITES DISTURBED BY PAST COAL MINING ACTIVITIES. THE MAIN OBJECTIVE OF THE AML RECLAMATION IS TO MITIGATE PRIORITY FEATURES THAT PRESENT A DANGER TO THE HEALTH AND SAFETY OF THE GENERAL PUBLIC.
- THE MAJOR PHASES OF THE PROJECT ARE TEMPORARY EROSION CONTROL; ROUGH GRADING; LIME TREATMENT OF SURFACE SOILS, FERTILIZING, MULCHING, PERMANENT SEEDING INCLUDING INSTALLATION OF PERMANENT EROSION CONTROL PRACTICES LIKE (engineer to name typical practices used).
- END USE OF SITE IS: WILDLIFE HABITAT AND/OR RECREATIONAL USE
- THE ESTIMATED PROJECT TIMELINE IS: OCTOBER 2025 TO DECEMBER 2026

B. ESTIMATE THE TOTAL AREA OF THE SITE AND THE AREA EXPECTED TO BE DISTURBED BY EXCAVATION, GRADING OR OTHER ACTIVITIES:

- 12.9 ACRES DISTURBED BY MASS GRADING.

C. ESTIMATE THE SOIL RUNOFF COEFFICIENT OF THE SITE AFTER CONSTRUCTION IS COMPLETED, AND DESCRIBE THE WATER QUALITY OF ANY EXISTING DISCHARGE FROM THE SITE.

- THE RATIONAL RUNOFF COEFFICIENT FOLLOWING THE ESTABLISHMENT OF FINAL VEGETATION IS ESTIMATED TO BE ABOUT 0.4 TO 0.5. THIS IS ROUGHLY EQUIVALENT TO AN SCS CURVE NUMBER OF 70 WHICH IS TYPICAL FOR PASTURE-GRASS VEGETATION.
- THE WATER QUALITY BEING DISCHARGED FROM THE SITE, AT PRESENT, IS IMPAIRED WITH ACIDIC PH AND HIGH DISSOLVED IRON CONCENTRATIONS WHICH ARE DERIVED FROM THE WATER'S CONTACT WITH BARE MINE SPOIL MATERIAL ON THE SITE. THIS POOR WATER QUALITY IS OFTEN INDICATED BY RUST-COLORED PRECIPITANT IN THE RECEIVING WATERS.

D. PROVIDE A SITE MAP SATISFYING REQUIREMENTS DESCRIBED IN PART IV. D.1.A.D.:

- SEE BMP PLAN SHEET 15 FOR CONTROLS THAT WILL BE IMPLEMENTED. FOR CONTROLS DURING AND IMMEDIATELY FOLLOWING CLEARING

E. PROVIDE NAME OF THE RECEIVING WATER(S) AND THE ULTIMATE RECEIVING WATERS(S).

- THE RECEIVING WATER IS AN UNNAMED TRIBUTARY TO THE NORTH CEDAR CREEK.

2. CONTROLS -- A.(1) STABILIZATION PRACTICES:

DESCRIBE TEMPORARY & PERMANENT STABILIZATION PRACTICES WITH SEQUENCE FOR IMPLEMENTATION.

- UNLESS PRECLUDED BY SNOW COVER OR FROZEN SITE CONDITIONS, AREAS TO BE GRADED AND LEFT UNDISTURBED FOR 14 OR MORE CALENDAR DAYS WILL BE ROUGH DISKED ON THE CONTOUR TO INCREASE SURFACE ROUGHNESS. ROUGH DISKING WILL BE USED EXCLUSIVELY PRIOR TO SEEDING THE FINAL VEGETATION. ROUGH DISKING IS USUALLY CONCURRENT WITH INCORPORATION OF AG LIME AND MULCH FOR THE WORK OF SUBGRADE PREPARATION.
- ONCE ALL GRADING IS COMPLETE, AND THE SOIL PH ADJUSTMENT IS ACCOMPLISHED, A PERMANENT SEEDING MIX CONSISTING OF WARM AND COOL SEASON GRASSES WILL BE PLANTED WITH AN APPROPRIATE COVER CROP OF OATS, WINTER WHEAT.
- APPROXIMATELY 2 TONS OF STRAW MULCH PER ACRE WILL BE SPREAD ACROSS THE SEEDED SOIL AND TUCKED IN WITH A TUCKING MACHINE TO PROVIDE PROTECTION FROM RAIN DROPLET IMPACT WHILE THE SEEDING BECOMES ESTABLISHED.
- THE SEEDING TYPICALLY GERMINATES WITHIN 14 DAYS & LATER PROVIDES AT LEAST 70% VEGETATIVE COVER.

A.(2) STRUCTURAL PRACTICES DESCRIBE EROSION AND SEDIMENT CONTROL PRACTICES THAT WILL USED ON THE SITE:

EROSION CONTROL PRACTICES

- ROUGH DISKING AS DESCRIBED IN "STABILIZING PRACTICES" ABOVE WILL BE USED AS NECESSARY TO REDUCE SURFACE RUNOFF VELOCITIES AND INCREASE INFILTRATION.
- TERRACES WILL BE USED TO REDUCE SLOPE LENGTHS AND DETAIN/RETAIN STORM WATER RUNOFF. TERRACES WILL BE DRAINED WITH PERFORATED PLASTIC RISERS AND CONCRETE OPEN-SIDED INTAKES.
- AT TILE DRAINAGE OUTLETS RIPRAP APRON POOLS WILL BE USED TO ABSORB ENERGY OF FLOWING STORM DRAINAGE.
- ROLLED EROSION CONTROL MATTING WILL BE INSTALLED ALONG STEEPER SLOPES TO REDUCE RILL EROSION.

A.(2) STRUCTURAL PRACTICES CONT'D:

DESCRIBE EROSION AND SEDIMENT CONTROL PRACTICES THAT WILL USED ON THE SITE:

SEDIMENT CONTROL PRACTICES:

- STRAW WATTLES OR FILTER SOCK OR SHALLOW DITCHES ACTING AS SEDIMENT TRAPS WILL BE USED ALONG THE PERIMETERS OF THE AS NECESSARY TO PREVENT MIGRATION OF SEDIMENT INTO THOSE WATERS OUTSIDE THE PROJECT BOUNDARY. PROPOSED WATERBODIES WITHIN THE PROJECT BOUNDARY MAY INCLUDE STORAGE VOLUME BELOW THE NORMAL POOL ELEVATION FOR SOME ACCUMULATED SEDIMENT.
- SILT FENCE DITCH CHECKS, FABRIC CHECKS, FILTER SOCK CHECKS OR SHALLOW TRENCHES WILL BE INSTALLED IN DRAINAGE WAYS AS NECESSARY TO TRAP SEDIMENT TRANSPORTED FROM THE SITE'S SLOPES DURING CONSTRUCTION. IN CONCENTRATED DRAINAGES RIPRAP WILL BE INCLUDED TO SLOW FLOW VELOCITIES AND TRAP TRANSPORTED SEDIMENTS.
- ONE WETLAND BASIN WILL BE CONSTRUCTED AT THE NORTHERN PORTION OF THE SITE AS SHOWN ON THE PLANS. AS THIS PROPOSED WATER BODY ARE CONSTRUCTED THEY WILL BEGIN TO RETAIN SEDIMENT ERODED FROM THE UPLAND SLOPES. THE WETLAND BASIN WILL BE CLEANED OUT JUST PRIOR TO PROJECT COMPLETION AND IT WILL BE CONVERTED INTO A PERMANENT WETLAND. SEDIMENT CLEANED OUT WILL BE RE-SPREAD ONTO THE LANDSCAPE. PRIOR TO CONSTRUCTION OF THE WETLAND A TEMPORARY PRACTICES INDICATED IN ITEM 2 ABOVE WILL BE INSTALLED.
- THE PROPOSED PERMANENT WETLAND HAS A PRECAST CONCRETE RISER CONNECTED TO PIPES THAT OUTLET INTO A RIPRAP APRON POOL.

A.(2)(a). DESCRIBE PRACTICES WHICH PROVIDE AT LEAST 3600 CUBIC FEET OF STORAGE PER [DISTURBED] ACRE FOR COMMON DRAINAGE LOCATIONS SERVING MORE THAN TEN (10) ACRES OF DISTURBED AREA:

THE GRADING LIMITS FOR THE VANDER VEER AML SITE CONTAINS 12.9 ACRES OF DISTURBED AREA IN WHOLE. OF THAT AREA, 3.6 ACRES ARE SITUATED UPHILL, OF THE PROPOSED WETLAND BASINS. PER THE DESIGN DRAWINGS, THE PLANNED WETLAND BASINS PROVIDE 81,000 CUBIC FEET OF SEDIMENT STORAGE IN TOTAL. THIS IS APPROXIMATELY 6,300 CUBIC FEET OF SEDIMENT STORAGE PER DISTURBED ACRE.

A.(2)(b). DESCRIBE PRACTICES WHICH ARE USED TO RETAIN SEDIMENT ON SITE FOR COMMON DRAINAGE LOCATIONS SERVING TEN (10) OR FEWER ACRES OF DISTURBED AREA:

DRAINAGE LOCATIONS SERVING 10 OR FEWER ACRES WILL BE PROTECTED FROM SEDIMENTATION BY SILT FENCES OR STRAW WATTLES, FABRIC CHECKS, RIPRAP CHECKS OR SMALL SEDIMENT CATCHMENTS TO ARREST OR SEDIMENT MOVEMENT FROM THE SITE.

A.(2)(c). SURFACE WATER WITHDRAWAL, SURFACE WATER BUFFERS, STORM WATER DISCHARGE INTO VEGETATED AREAS, & TOPSOIL PRESERVATION:

i. DESCRIBE OUTLETS THAT WITHDRAW WATER FROM SURFACE OF BASINS:

PERFORATED PLASTIC HICKENBOTTOM (OR EQUAL) INTAKES ARE USED TO DRAIN DRY DETENTION BASINS AND TERRACES. CONCRETE CIRCULAR STRUCTURES WITH OPEN RIM INLETS AND TRASH RACKS ARE USED TO WITHDRAW WATER FROM CONSTRUCTED WETLANDS.

ii. DESCRIBE NATURAL BUFFERS AROUND SURFACE WATERS:

TO THE EXTENT PRACTICABLE A BUFFER OF VARYING WIDTH CONSISTING OF TREES AND UNDERSTORY VEGETATION WAS LEFT UNDISTURBED BETWEEN THE PROJECT BOUNDARY AND THE NEAREST STREAM CHANNEL.

iii. REDIRECTION OF STORM WATER DISCHARGES TO AND THROUGH VEGETATED AREAS FOR INCREASED SEDIMENT REMOVAL AND OPPORTUNITY FOR INFILTRATION TO THE SOIL.

WHERE PRACTICABLE OFFSITE AND ONSITE RUNOFF FLOWS ARE DIRECTED INTO TERRACES, DETENTION BASINS OR CONSTRUCTED WETLANDS.

iv. 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.

B.(1). DESCRIBE POST-CONSTRUCTION PRACTICES THAT WILL ATTENUATE PEAK RUNOFF FLOWS AND REDUCE SUSPENED SOLIDS IN WATER FLOWS:

THE PROPOSED WETLAND WATER BODY IS ANTICIPATED TO ATTENUATE PEAK RUNOFF FLOWS AND PROVIDE OPPORTUNITY FOR SETTLEMENT OF SUSPENDED SOLID PRIOR TO RUNOFF EXITING THE PROJECT BOUNDARIES. SEE PLAN SHEETS.

B.(2). DESCRIBE TYPE AND LOCATION OF VELOCITY DISSIPATION DEVICES:

RIPRAP APRON POOLS ARE DESIGNED TO BE PLACED AT THE OUTLET OF THE TERRACE DRAIN PIPES TO ABSORB ENERGY AND REDUCE THE VELOCITY OF FLOW EXITING BURIED PIPE CONDUITS.

C.(1). WASTE DISPOSAL -- DESCRIBE HOW BUILDING MATERIALS WASTE WILL BE ADDRESSED ON THE SITE:

THIS PROJECT IS PRIMARILY A GRADING AND DRAINAGE PROJECT. BUILDING MATERIALS WASTES INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, CARDBOARD PACKAGING, PIECES OF WOOD, PLASTIC SHRINK WRAP, STEEL BANDS USED FOR PACKAGING, PIECES OF UNUSED PLASTIC PIPE OR FITTINGS, AND PORTLAND CEMENT CONCRETE WASHOUT RESIDUE. ALL CONSTRUCTION WASTES WILL BE DISPOSED OFFSITE.

C.(2). TRACKING OF SEDIMENTS -- DESCRIBE HOW VEHICLE TRACKING OF SEDIMENTS TO OFFSITE AREAS WILL BE MINIMIZED:

- TRACKING OF SEDIMENTS OFFSITE WILL BE REDUCED BY AVOIDING VEHICLE TRAVEL ACROSS THE SITE SURFACE SOILS WHEN THEY ARE WET.
- A GRAVELED ENTRANCE WILL BE INSTALLED USING 3" NOMINAL MACADAM STONE. THE INSTALLATION WILL FUNCTION TO AID IN CLEANING OFF THE TIRES OF VEHICLES LEAVING THE SITE.
- IF "a" CANNOT BE ACCOMPLISHED, AND "b" PROVES INEFFECTIVE, THEN MUD FROM VEHICLE TIRES WILL BE MANUALLY CLEANED OFF, TO THE EXTENT PRACTICABLE, BEFORE THE VEHICLE LEAVES THE SITE.

C.(3). COMPLIANCE WITH STATE OR LOCAL SANITARY WASTE DISPOSAL REGULATIONS:

POLLUTION FROM HUMAN SANITARY WASTE WILL BE PREVENTED WITH THE USE OF A PORTABLE TOILET INSTALLED ON THE SITE. THE PORTABLE TOILET WILL BE SUPPLIED AND MAINTAINED BY THE CONTRACTOR. ON TIMELY INTERVALS, HUMAN SANITARY WASTE FROM THE PORTABLE TOILET WILL BE COLLECTED AND DISPOSED OFFSITE BY A QUALIFIED PROFESSIONAL SERVICES COMPANY RETAINED BY THE CONTRACTOR. PORTABLE TOILET FACILITIES MUST BE ANCHORED TO THE SOIL SURFACE TO RESIST OVERTURNING BY WIND OR VANDALISM.

3. MAINTENANCE -- DESCRIBE MAINTENANCE AND PROTECTIVE MEASURES TO KEEP CONTROLS AND PRACTICES IN WORKING ORDER:

TO THE EXTENT PRACTICABLE, THE EFFORTS WILL BE MADE TO AVOID TRAFFIC OVER OR DAMAGE TO INSTALLED PRACTICES AND CONTROLS. IF DAMAGED, REPAIRS OR REPLACEMENTS TO BMP'S WILL BE MADE AS SOON AS POSSIBLE OR WITHIN SEVEN (7) DAYS FOLLOWING INSPECTION.

4. INSPECTIONS, REVISIONS & REPAIRS -- NOTE SPECIAL CONSIDERATIONS OR PROCEDURES, IF ANY, FOR ROUTINE WEEKLY INSPECTIONS:

PER CONTRACT DOCUMENTS, IDALS-DSCWQ IN PARTNERSHIP WITH PATHFINDERS RC&D WILL PERFORM AND DOCUMENT ALL WEEKLY INSPECTIONS FOR THIS SWPPP IN ACCORDANCE WITH PART IV.D.4.C. ELECTRONIC COPIES OF WEEKLY INSPECTIONS REPORTS WILL BE AVAILABLE UPON REQUEST. REQUIRED REVISIONS OR REPAIRS WILL BE MADE WITHIN SEVEN (7) DAYS FOLLOWING INSPECTION.

5. NON-STORMWATER DISCHARGES -- DESCRIBE PRACTICES TO PREVENT NON-STORMWATER POLLUTION:

LESS THAN 1000 GALLONS OF DIESEL FUEL AND/OR LUBRICATING OILS ARE EXPECTED TO BE ON SITE AT ANY ONE TIME. THEREFORE, RISK OF GROSS POLLUTION TO RECEIVING WATERS IS MINIMAL. IF FUEL OR OIL SPILLS OCCUR, LIQUID POLLUTANTS WILL BE CONTAINED USING SMALL BERMS MADE FROM SITE SOILS TO PREVENT TRAVEL OF POLLUTANTS TO RECEIVING WATERS. SUFFICIENT TIME WILL BE GIVEN FOR THE POLLUTANTS IN IT TO VOLATILIZE IN THE CONTAMINATED SOIL AND/OR CONTAMINATED SOIL WILL BE DISPOSED OFF-SITE.

6. ADDITIONAL REQUIREMENTS FOR STORM WATER DISCHARGE FROM INDUSTRIAL ACTIVITIES OTHER THAN CONSTRUCTION:

THERE ARE NO ADDITIONAL REQUIREMENTS BECAUSE THIS SWPPP IS FOR A "CONSTRUCTION ONLY" SITE WHERE THERE IS NO INDUSTRIAL SOURCE, OTHER THAN CONSTRUCTION, THAT IS GENERATING THE DISCHARGE.

7. IMPLEMENTATION OF CONTROLS:

THE GENERAL CONTRACTOR IDENTIFIED ON THE CONTRACT, WILL BE ULTIMATELY RESPONSIBLE FOR ALL ASPECTS OF THE PROJECT. THESE INCLUDE GRADING, PIPE INSTALLATION, AND INSTALLATION OF BMPS. AN EROSION CONTROL OR SEEDING SUBCONTRACTOR MAY BE RESPONSIBLE IN SOME SITUATIONS.

VERSION: 01-23-2025

S-H PROJECT NUMBER: 2142206240

REVISED: ---

ISSUED: 8/6/2025

CHKD. BY: LTM

DRAWN BY:

DESIGN BY:

SHEET

16 OF 16

SHIVEHATTERY
ARCHITECTURE+ENGINEERING

4125 Westown Parkway, Suite 100 | West Des Moines, Iowa 50266
515.223.6104 | Fax: 515.223.0622 | shivehattery.com
Iowa | Illinois | Missouri | Illinois Firm Number: 184-000214

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



VANDER VEER AML
AML RECLAMATION PROJECT

SWPPP NOTES