PROPOSED 16' SINGLE GATE

TERRACE 4 RIDGE ELEV.=726.0

TERRACE CHANNEL

DETENTION BASIN DB3
10' WIDE BERM
TOP ELEV. 726.0

PROPOSED FENCE
816 L.F.

PROJECT BOUNDARY

RIP RAP BANK STABILIZATION, TYP.

CO. RD. V64

0 50' 100'

RISER ELEVATIONS				
RISER	INTAKE SIZE	TYPE	INLET ELEV.	FLOWLINE ELEVATION
R10	6"	HICKENBOTTOM	718.50	714.50
R11	6"	HICKENBOTTOM	721.50	717.50
R12	6"	HICKENBOTTOM	723.00	720.00

PIPE ELEVATIONS					
PIPE	SIZE	TYPE	LENGTH (FT)	FLOWLINE ELEVATION	OUTLET ELEVATION
P–10	6"	DWPE	165*	714.50	696.00
P–11	6"	DWPE	130*	717.50	697.00
P–12	6"	DWPE	80*	720.00	705.00

* LENGTH DOES NOT INCLUDE THE 20' OF PVC TILE OUTLET

G:\2023\23042IDL\DRAWINGS\PLANS\10 R CAVES

FILE: GRADING.DWG

REVISION: DATE: DESCRIPTION:

ISSUED: 10-02-24 REVISED: NONE

CHKD. BY: SIP

DRAWN BY: SRB

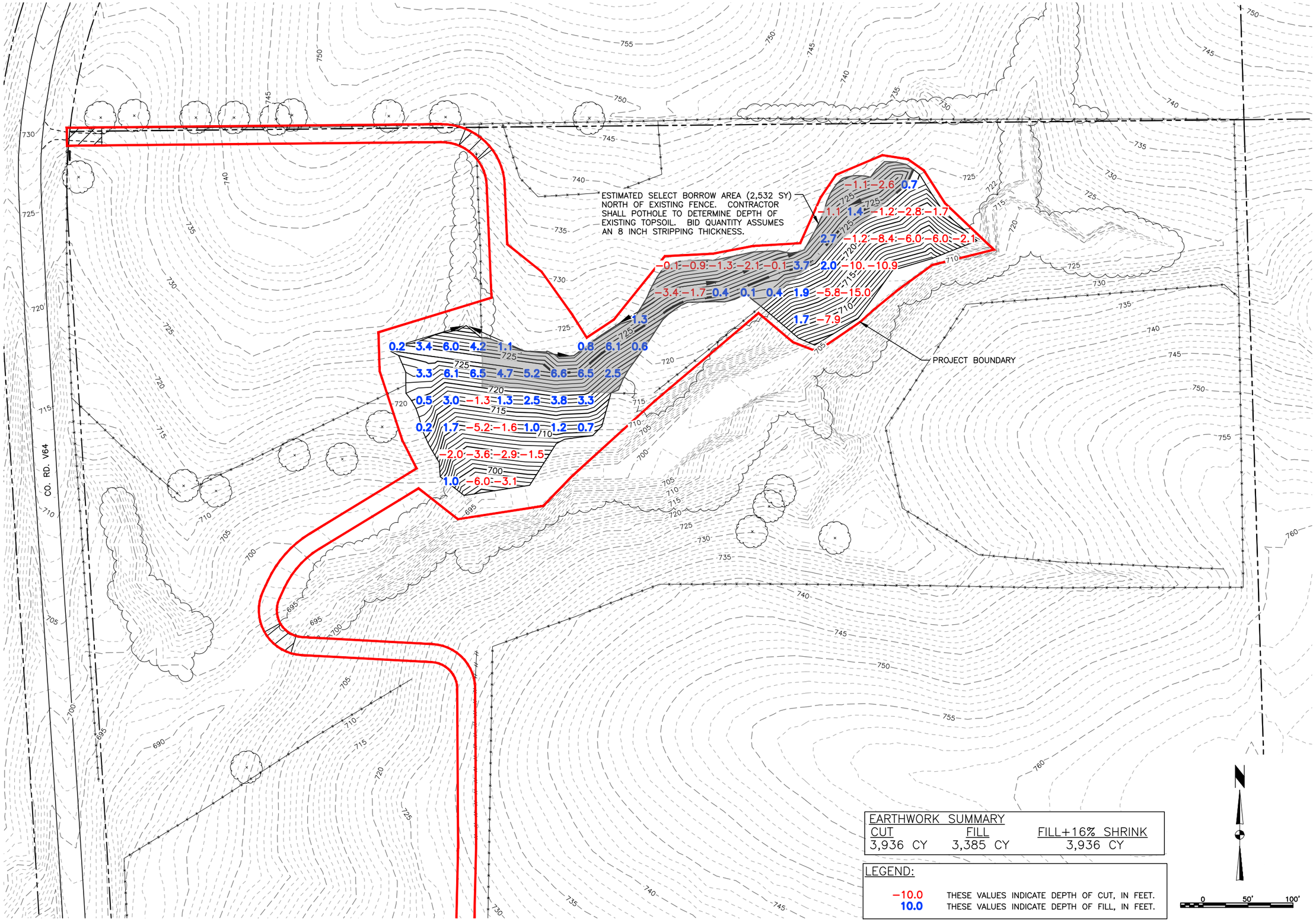
DESIGN BY: SRB

IOWA DEPARTMENT OF AGRICULTURE
AND LAND STEWARDSHIP
DIVISION OF SOIL CONSERVATION
AND WATER QUALITY
HOOVER STATE OFFICE BUILDING
1305 E. WALNUT ST, DES MOINES, IOWA 50319
(515)-281-4246

B. CAVES AND R. CAVES
AML RECLAMATION PROJECT

POST-RECLAMATION GRADING PLAN
DRAINAGE & TERRACE DESIGN PLAN
R. CAVES (IA-256)

SHEET
10 OF **24**



EARTHWORK SUMMARY		
CUT	FILL	FILL+16% SHRINK
3,936 CY	3,385 CY	3,936 CY

LEGEND:

−10.0	THESE VALUES INDICATE DEPTH OF CUT, IN FEET.
10.0	THESE VALUES INDICATE DEPTH OF FILL, IN FEET.

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FILE: CUT-FILL.DWG

REVISION:	DATE:	DESCRIPTION:

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DESIGN BY: SRB

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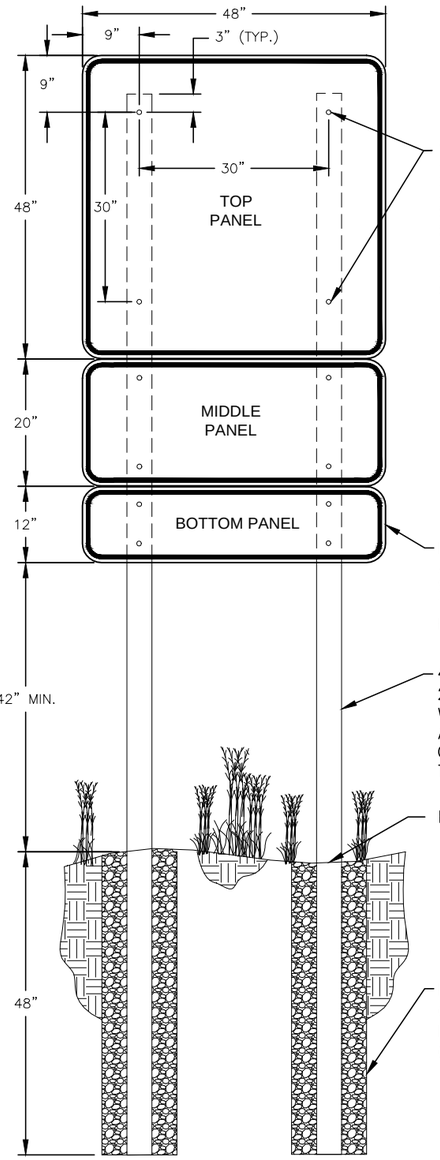
B. CAVES AND R. CAVES
AML RECLAMATION PROJECT

CUT & FILL
R. CAVES (IA-256)

SHEET
11 OF **24**



7/16" HOLES LOCATED AS SHOWN, PRE–PUNCHED BY SIGN FABRICATOR. FASTEN SIGN TO POSTS WITH 3/8" DIA. STEEL THRU–BOLT & NUT SET. SEE BOLT, WASHER, & NUT FASTENER DETAIL THIS SHEET (12 SETS REQ'D. PROVIDED AND INSTALLED BY CONTRACTOR).

BOTTOM PANEL REMOVED BY CONTRACTOR AFTER PROJECT COMPLETION. CONTRACTOR SHALL RETURN BOTTOM PANEL UNDAMAGED TO DIVISION PRIOR TO RELEASE OF RETAINAGE.

4"x6"x14' PRESSURE–TREATED POST (TYP.), 2 REQ'D. POSTS SEALED WITH THOMPSON'S WATER SEAL OR EQUAL. POSTS, SEALANT, AND INSTALLATION PROVIDED BY CONTRACTOR. SEE THRU–BOLT DETAIL THIS SHEET

EXISTING SOIL SURFACE

BACKFILL WITH CONCRETE (PREFERRED), CLEAN STONE (ACCEPTABLE), OR HAND–TAMPED EARTH IN SMALL LIFTS (SUBJECT TO ENGINEER'S APPROVAL)

TOP PANEL (4' x 4') 0.080" ALUMINUM SUBSTRATE

7/16" PRE-PUNCHED HOLE (TYP.)

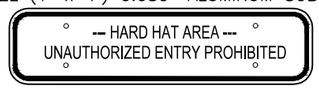
AND

TOP PANEL (4' x 4') 0.080" ALUMINUM SUBSTRATE

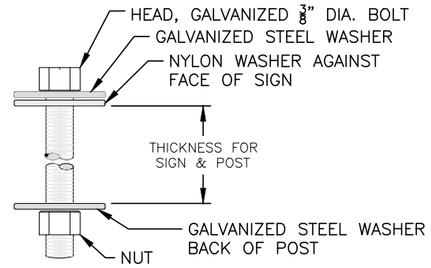
7/16" PRE-PUNCHED HOLE (TYP.)

MIDDLE PANEL (1'–8" x 4') 0.080" ALUMINUM SUBSTRATE

BOTTOM PANEL (1' x 4') 0.080" ALUMINUM SUBSTRATE



*** LETTER WIDTH = 75% OF THE LETTER HEIGHT*



BOLT, WASHER, & NUT FASTENER DETAIL
NOT TO SCALE

SIGNAGE NOTES:

1. DIVISION WILL FURNISH TOP AND BOTTOM SIGN PANELS. MIDDLE PANEL PROVIDED BY OTHERS. CONTRACTOR IS RESPONSIBLE FOR PROVIDING POSTS, HARDWARE, AND INSTALLATION FOR ALL PANELS.

2. ALL EXPOSED WOOD SHALL BE SEALED WITH THOMPSON'S WATER SEAL OR EQUAL MEETING ASTM D–4446–08.

3. ALL STEEL HARDWARE PIECES SHALL BE GALVANIZED.

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

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

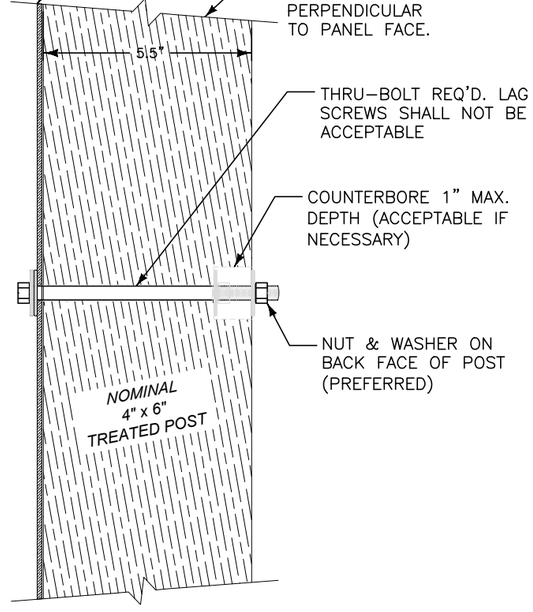
6. SECURE APPROVAL OF DIVISION AND ENGINEERS FOR SIGN LOCATION BEFORE INSTALLATION.

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

8. CONTRACTOR SHALL INSTALL SIGN POSTS USING A PLYWOOD OR OTHER SUITABLE TEMPLATE TO MAINTAIN ACCURATE POST SPACING AND ALIGNMENT DURING BACKFILLING OF THE POST HOLES. TO AVOID BENDING OF THE SIGN PANELS, POSTS SHALL NOT BE INSTALLED OR BACKFILLED WITH SIGN PANELS ATTACHED.

9. TWO (2) PROJECT SIGNS ARE REQUIRED, LOCATED AS SHOWN ON PLANS.

SIGN DETAIL
NTS



THRU–BOLT DETAIL
NOT TO SCALE

FILE: G:\2023\23042IDL\DRAWINGS\PLANS\12 DETAILS SIGN.DWG
REVISION: DATE: DESCRIPTION:

ISSUED: 10-02-24 REVISED: NONE

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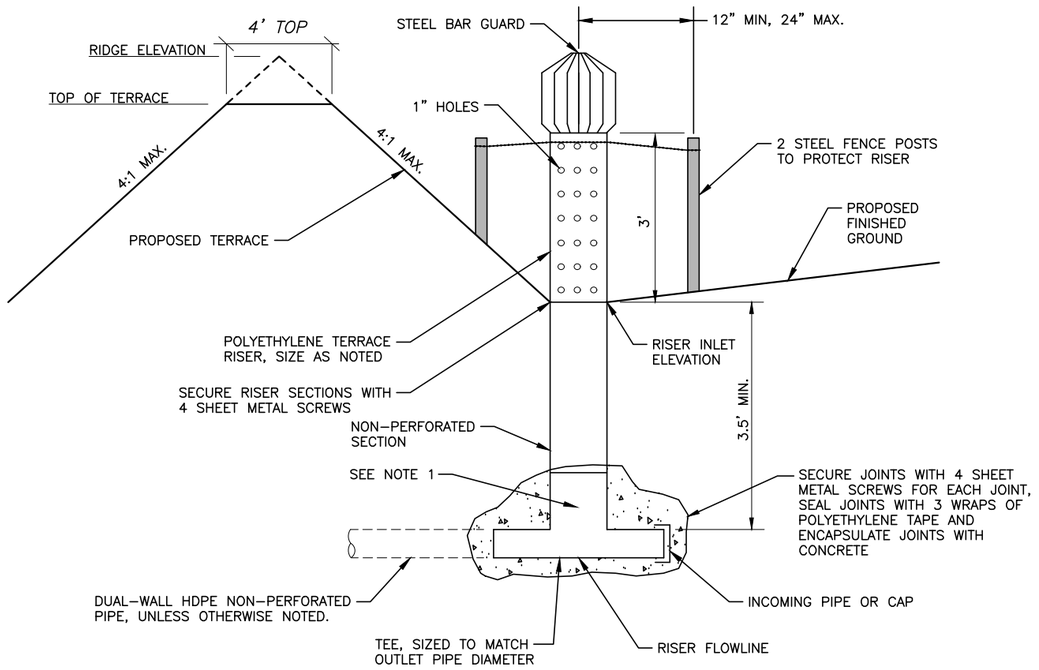
(515)-281-4246

CHKD. BY: SIP
DRAWN BY: SRB
DESIGN BY: SRB

B. CAVES AND R. CAVES AML RECLAMATION PROJECT

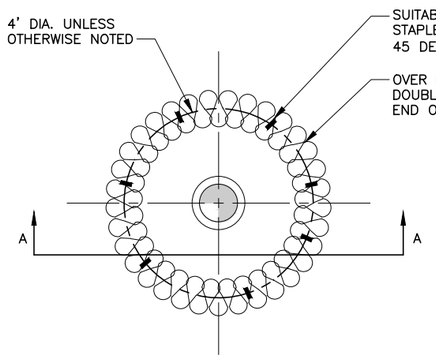
TYPICAL DETAILS PROJECT SIGNAGE

SHEET
12 OF 24

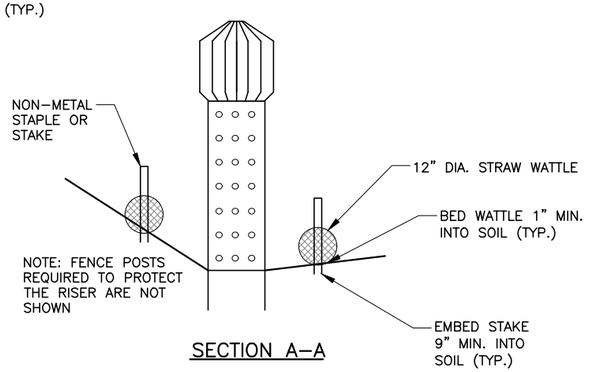


NOTE 1:
TOP OF RUN RISER SHOWN. INTERMEDIATE RISERS ALONG A TILE RUN SHALL BE CONSTRUCTED OFFSET FROM THE MAIN 8' HORIZONTALLY AND TIED INTO THE MAIN WITH A WYE.

1/13 RISER – TERRACE DETAIL
NOT TO SCALE

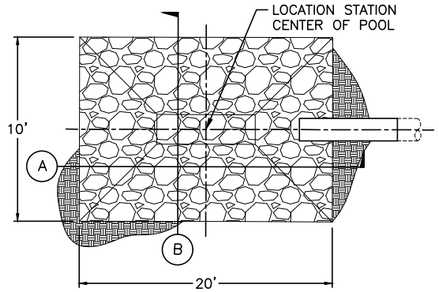


DETAIL: STRAW WATTLE PLAN VIEW

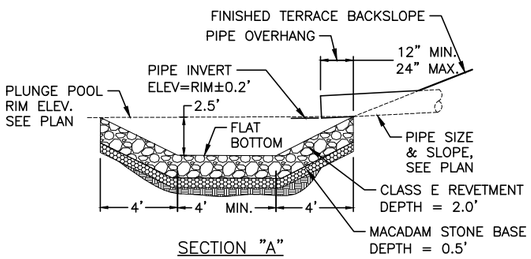


SECTION A–A

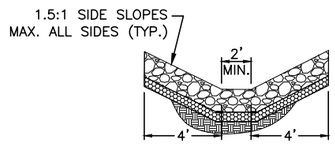
3/13 RISER – EROSION PROTECTION DETAIL
NOT TO SCALE



PLAN VIEW

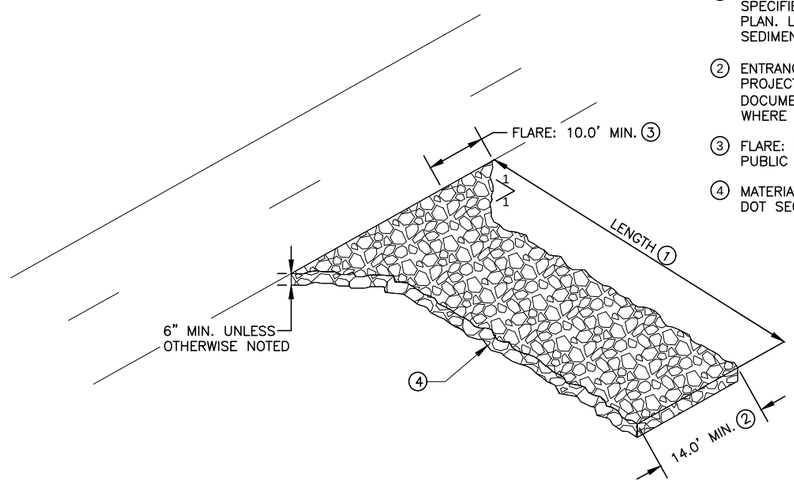


SECTION "A"



SECTION "B"

2/13 TILE OUTLET & PLUNGE POOL DETAIL
NOT TO SCALE



① ENTRANCE LENGTH: 50' MINIMUM, OR AS SPECIFIED IN CONTRACT DOCUMENTS. SEE PLAN. LENGTH MAY BE INCREASED IF SEDIMENT TRACK-OUT OCCURS

② ENTRANCE WIDTH: 14' MINIMUM FOR RURAL PROJECTS OR AS SPECIFIED IN CONTRACT DOCUMENTS. A 20' WIDTH MAY BE REQUIRED WHERE TWO-WAY TRAFFIC IS FREQUENT.

③ FLARE: CONFORM TO EX. ENTRANCE AT PUBLIC ROADWAY, IF APPLICABLE

④ MATERIAL: MACADAM STONE BASE PER IOWA DOT SECTION 4122.

4/13 STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

FILE: G:\2023\23042\DL\DRAWINGS\PLANS\13 DETAILS.DWG
REVISION: | DATE: | DESCRIPTION:

ISSUED: 10-02-24 REVISED: NONE
CHKD. BY: SIP
DRAWN BY: SRB
DESIGN BY: SRB

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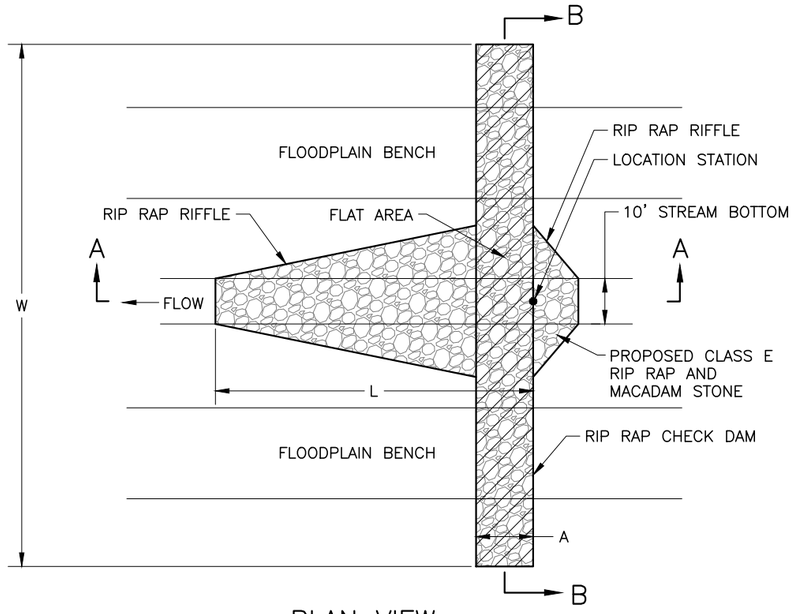
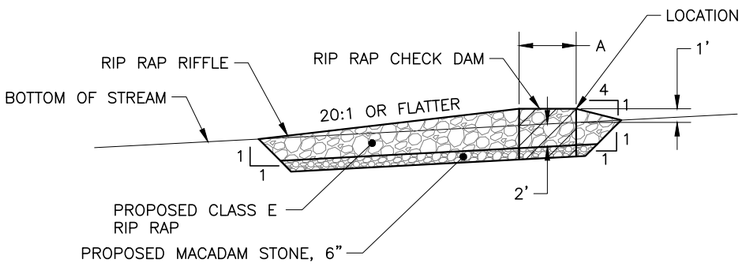
B. CAVES AND R. CAVES AML RECLAMATION PROJECT

TYPICAL DETAILS

SHEET 13 OF 24



PLAN VIEW
SCALE: N.T.S.



SECTION A–A
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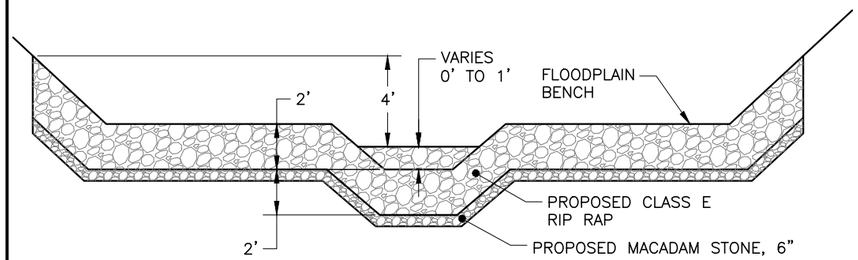
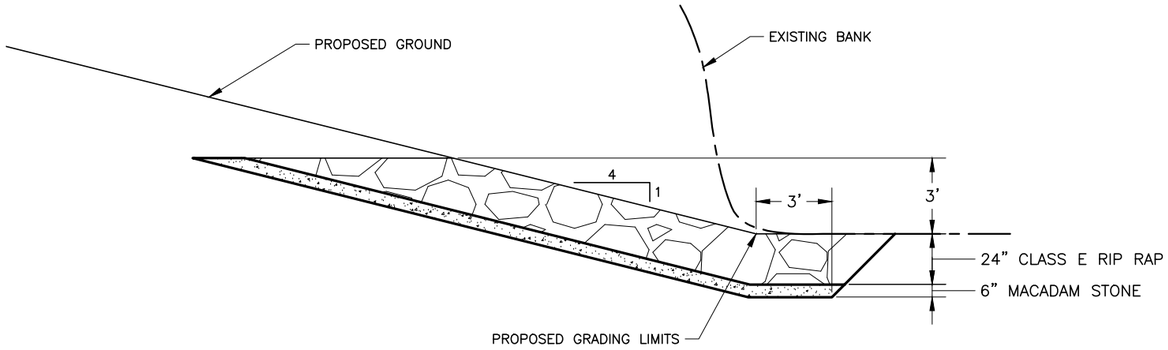
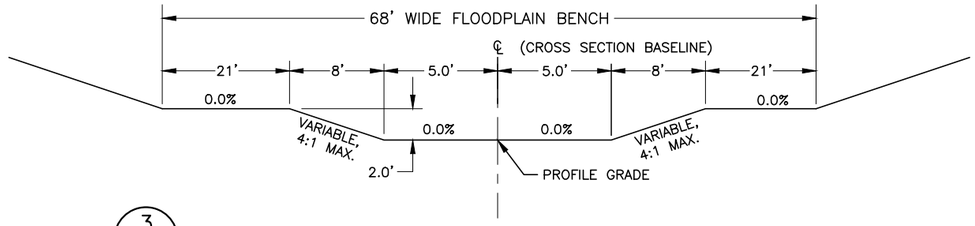


SECTION B–B
SCALE: N.T.S.

1/14 RIP RAP RIFFLE AND CHECK DAM DETAIL
NOT TO SCALE



2/14 RIP RAP BANK STABILIZATION – ROCKED TOES (R. CAVES)
NOT TO SCALE



3/14 STREAM TYPICAL SECTION (B. CAVES)
NOT TO SCALE

RIP RAP STRUCTURE DIMENSIONS							
STRUCTURE NO.	LOCATION STATION	STRUCTURE TYPE	A (FT)	W (FT)	L (FT)	CLASS E (TONS)	MACADAM (TONS)
1	7+63	CD	5	32	N/A	26	5
2	8+57	CD, R	5	87	57	180	45
3	11+18	CD, R	5	92	37	130	32
4	14+89	CD, R	5	92	37	130	32
5*	18+35	CD, R	12	92	44	220	55
6	20+46	CD, R	5	94	37	130	32
7	100+44	CD	5	44	N/A	35	7
8	105+83	CD	5	21	N/A	17	4
9	100+50	BS	N/A	N/A	N/A	160	50
10	104+50	BS	N/A	N/A	N/A	310	96

CD = CHECK DAM
R = RIFFLE
BS = BANK STABILIZATION

* CHOKE OFF THE 12' WIDE CHECK DAM WITH 12" OF EROSION STONE (70 TON) TO CREATE A LOW WATER CROSSING.

FILE: G:\2023\23042\IDL\DRAWINGS\PLANS\14 DETAILS.DWG
REVISION: DATE: DESCRIPTION:

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CHKD. BY: SIP
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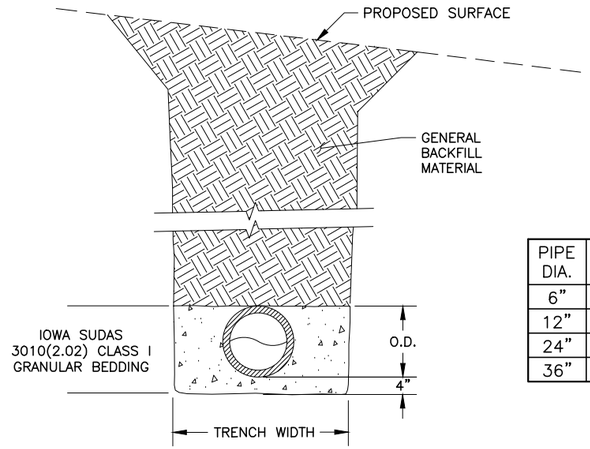
B. CAVES AND R. CAVES
AML RECLAMATION PROJECT

TYPICAL DETAILS

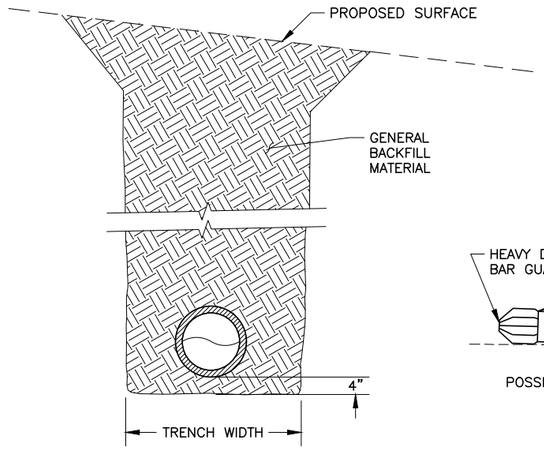
SHEET
14 OF 24



CLASS F–2 TRENCH

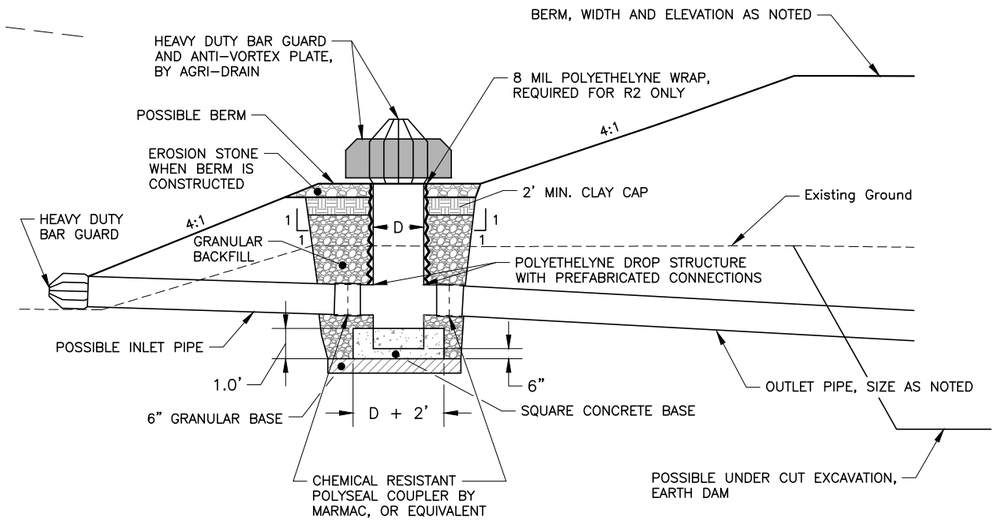
NTS

PIPE DIA.	MINIMUM TRENCH WIDTH
6"	24"
12"	30"
24"	48"
36"	54"



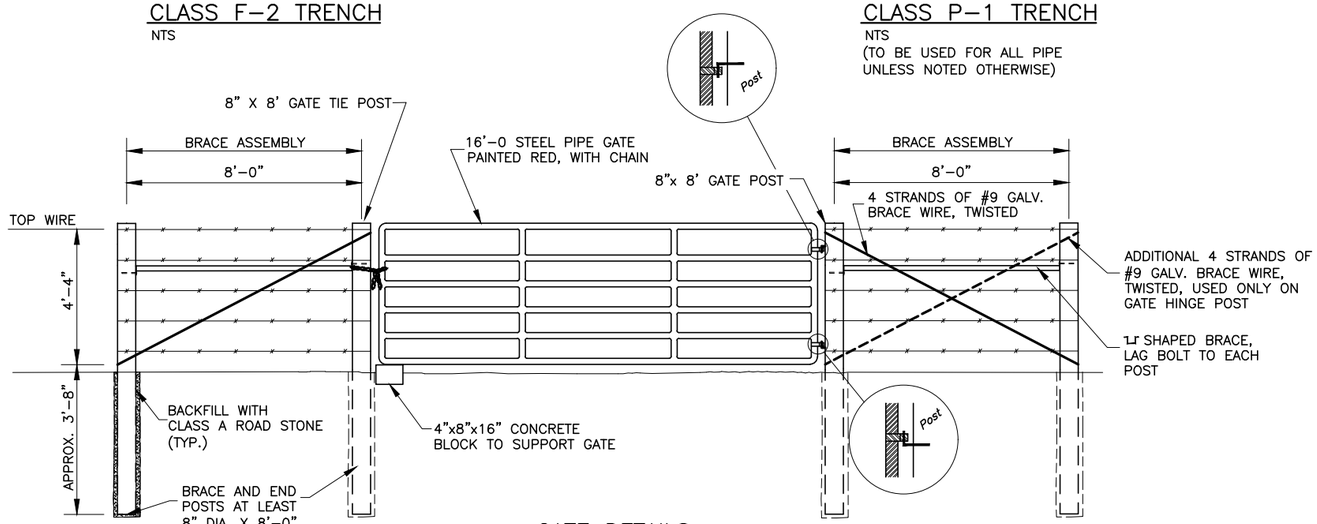
CLASS P–1 TRENCH

NTS
(TO BE USED FOR ALL PIPE UNLESS NOTED OTHERWISE)



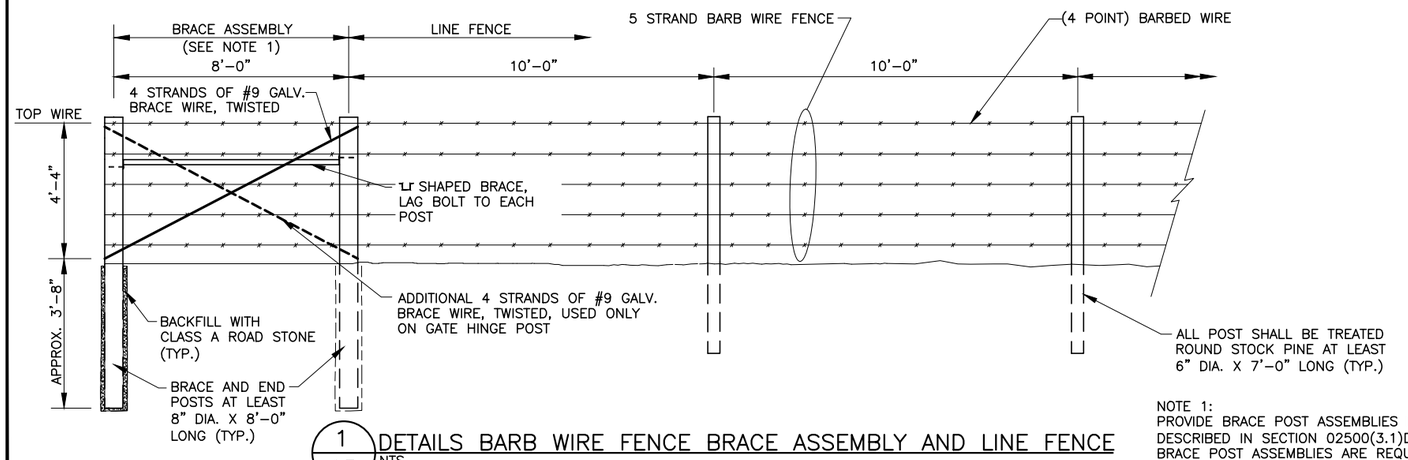
2/15 DROP INLET DETAIL (R2, R3 AND R4)

NOT TO SCALE



GATE DETAILS

(2 REQUIRED)



1/15 DETAILS BARB WIRE FENCE BRACE ASSEMBLY AND LINE FENCE

NTS

NOTE 1:
PROVIDE BRACE POST ASSEMBLIES IN LOCATIONS AS DESCRIBED IN SECTION 02500(3.1)D. APPROXIMATELY 18 BRACE POST ASSEMBLIES ARE REQUIRED FOR THIS PROJECT.

FILE: G:\2023\23042\DL\DRAWINGS\PLANS\15 DETAILS FENCE.DWG

REVISION: | DATE: | DESCRIPTION:

ISSUED: 10-02-24 REVISED: NONE

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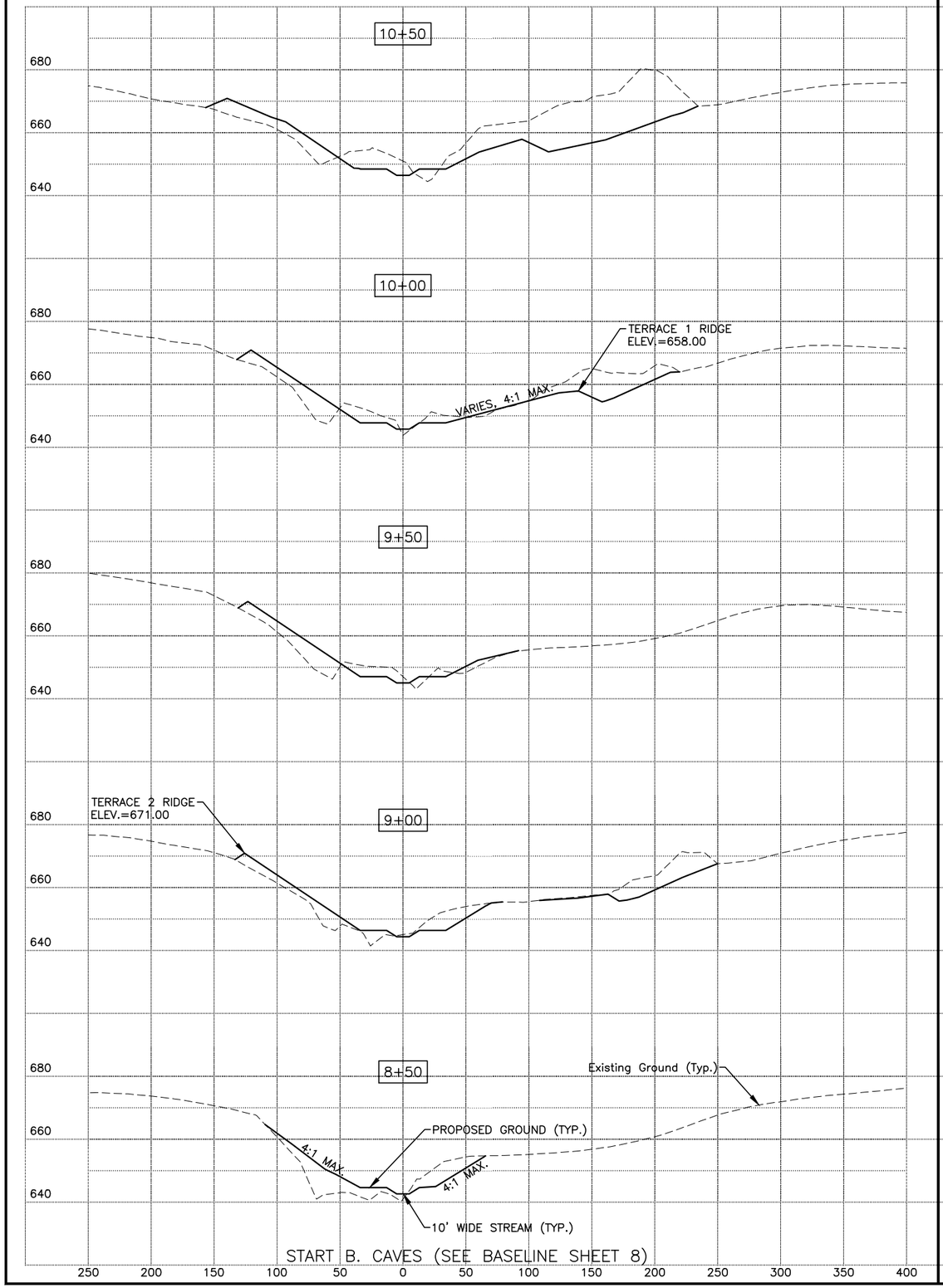
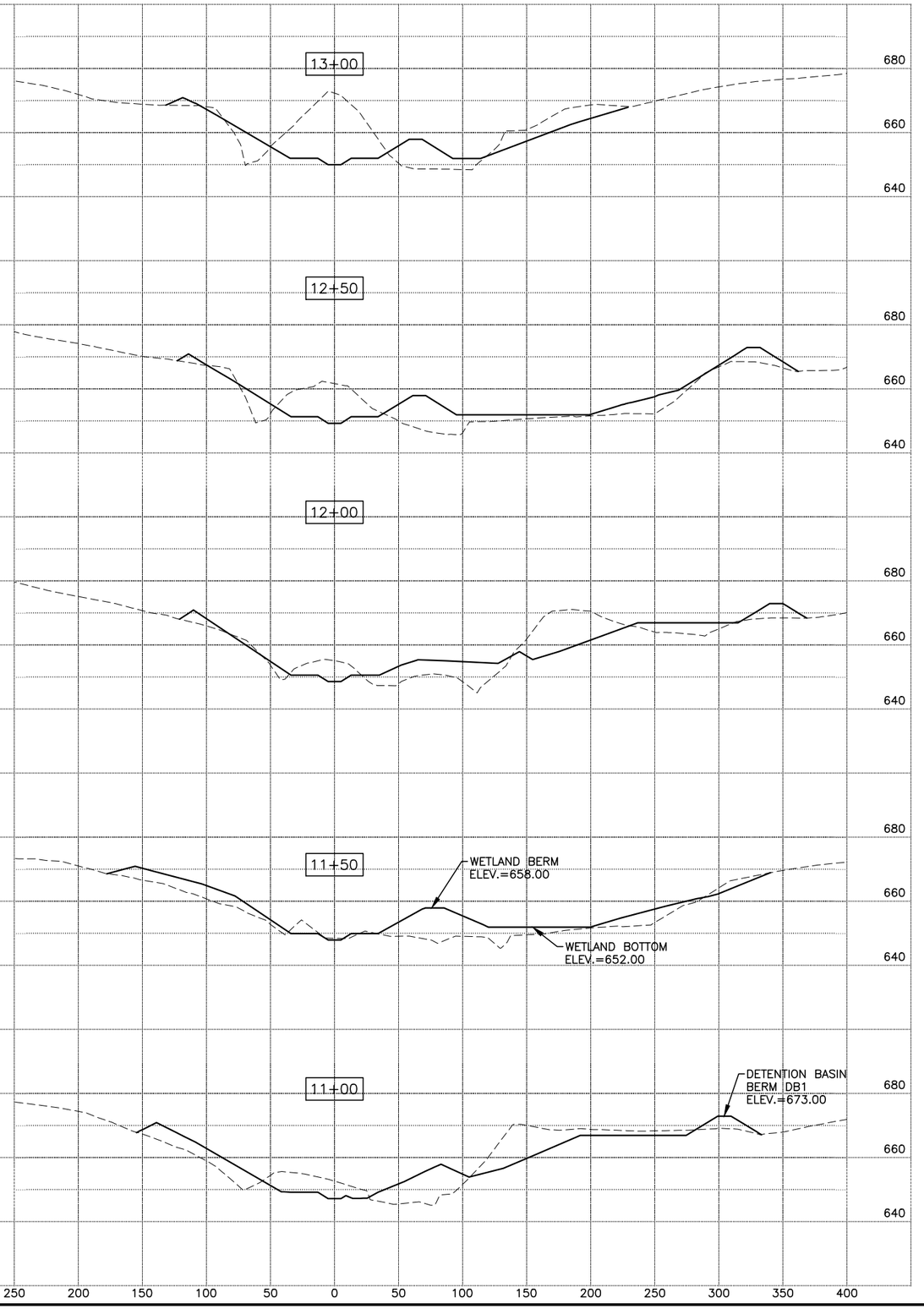
B. CAVES AND R. CAVES AML RECLAMATION PROJECT

TYPICAL DETAILS





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FILE: SECTIONS.DWG

REVISION:	DATE:	DESCRIPTION:

ISSUED: 10-02-24 REVISED: NONE

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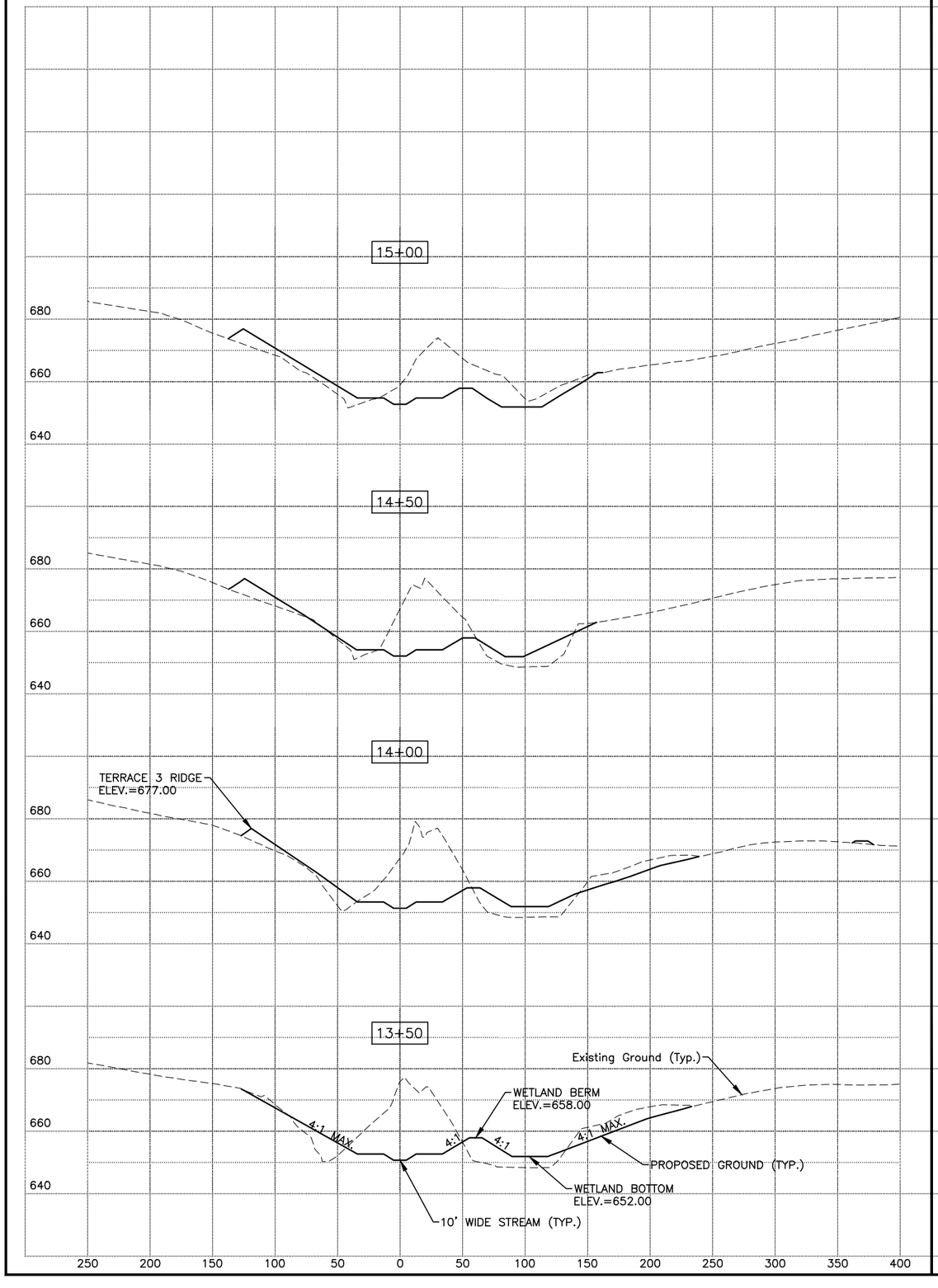
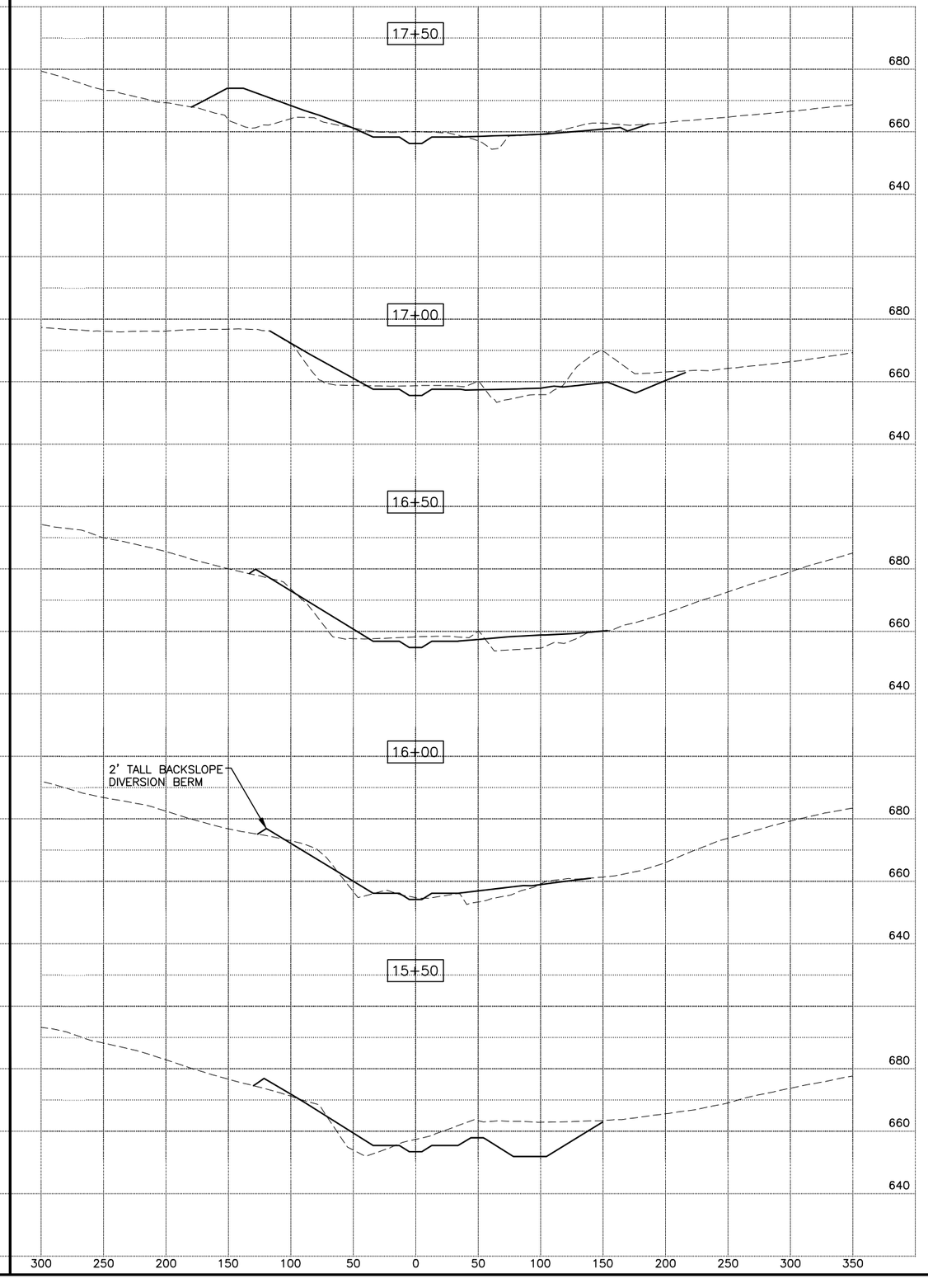
B. CAVES AND R. CAVES
AML RECLAMATION PROJECT

CROSS SECTIONS B. CAVES (IA-255)





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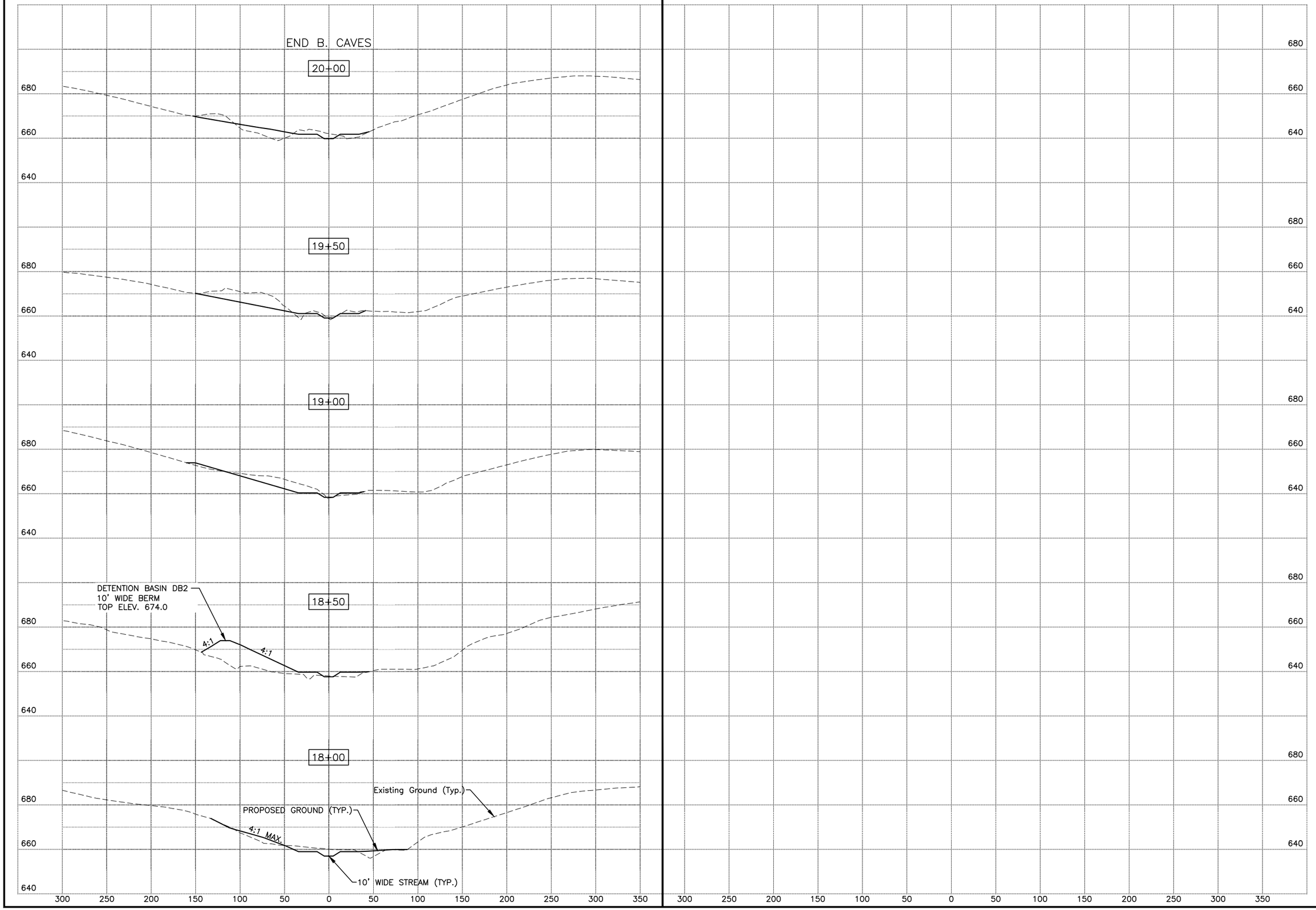
B. CAVES AND R. CAVES
AML RECLAMATION PROJECT

CROSS SECTIONS B. CAVES (IA-255)

SHEET
17 OF 24



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FILE: SECTIONS.DWG

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DESIGN BY: SRB | DRAWN BY: SRB | CHKD. BY: SIP | ISSUED: 10-02-24 | REVISED: NONE

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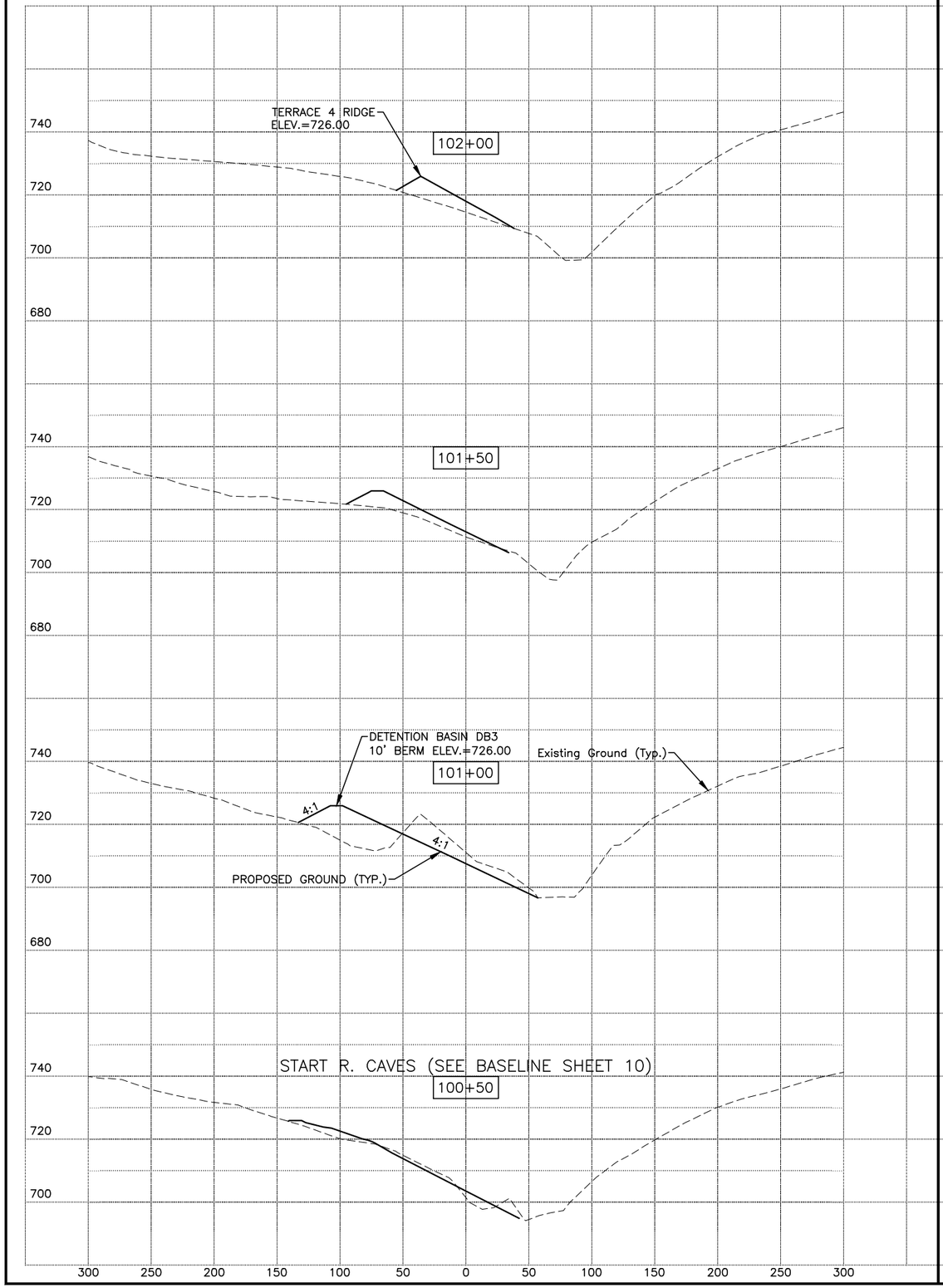
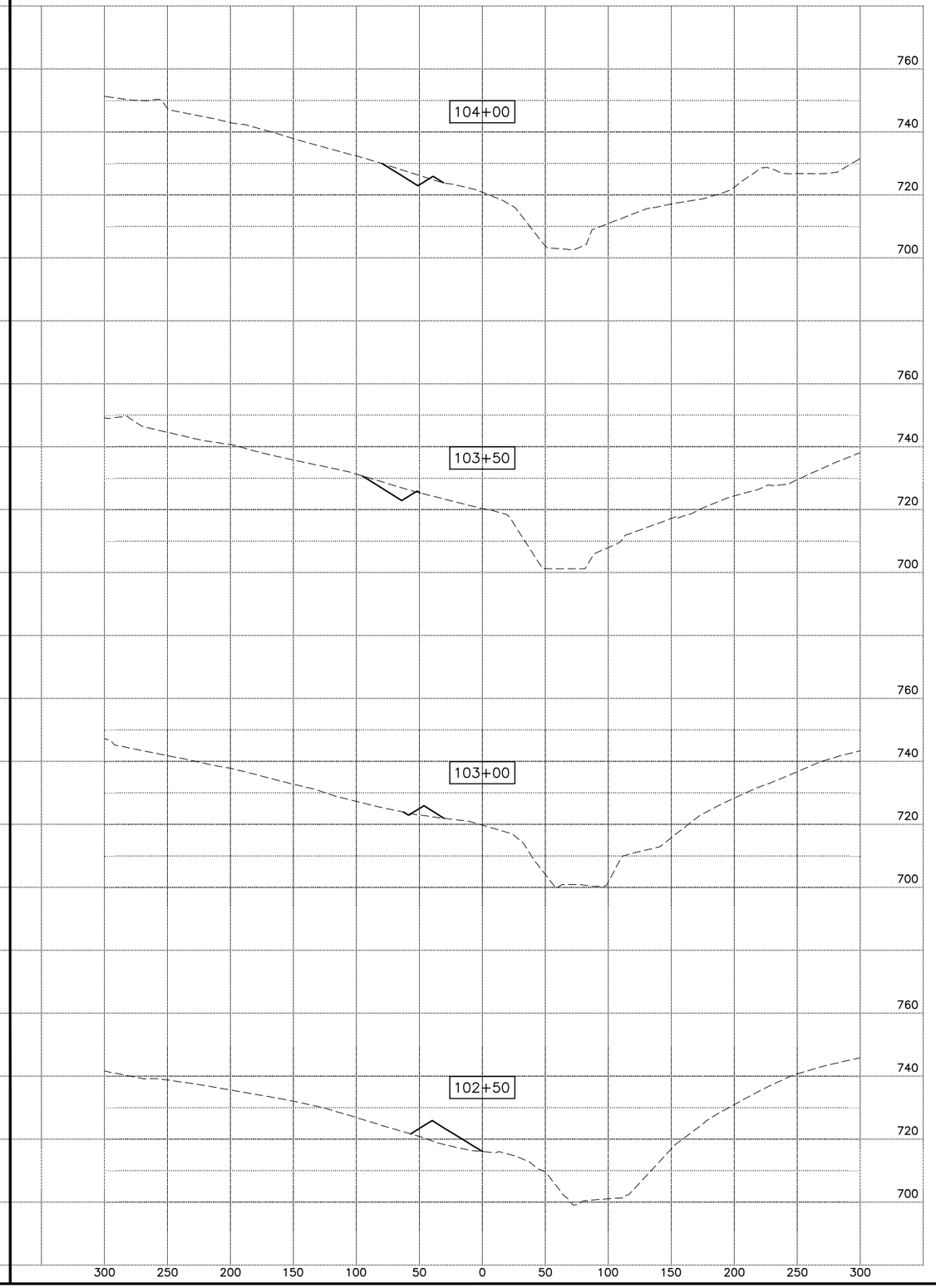
CROSS SECTIONS B. CAVES (IA-255)

SHEET
18 OF 24





G:\2023\23042IDL\DRAWINGS\PLANS\19-20 R CAVES

FILE: SECTIONS.DWG

REVISION:	DATE:	DESCRIPTION:

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1305 E. WALNUT ST, DES MOINES, IOWA 50319
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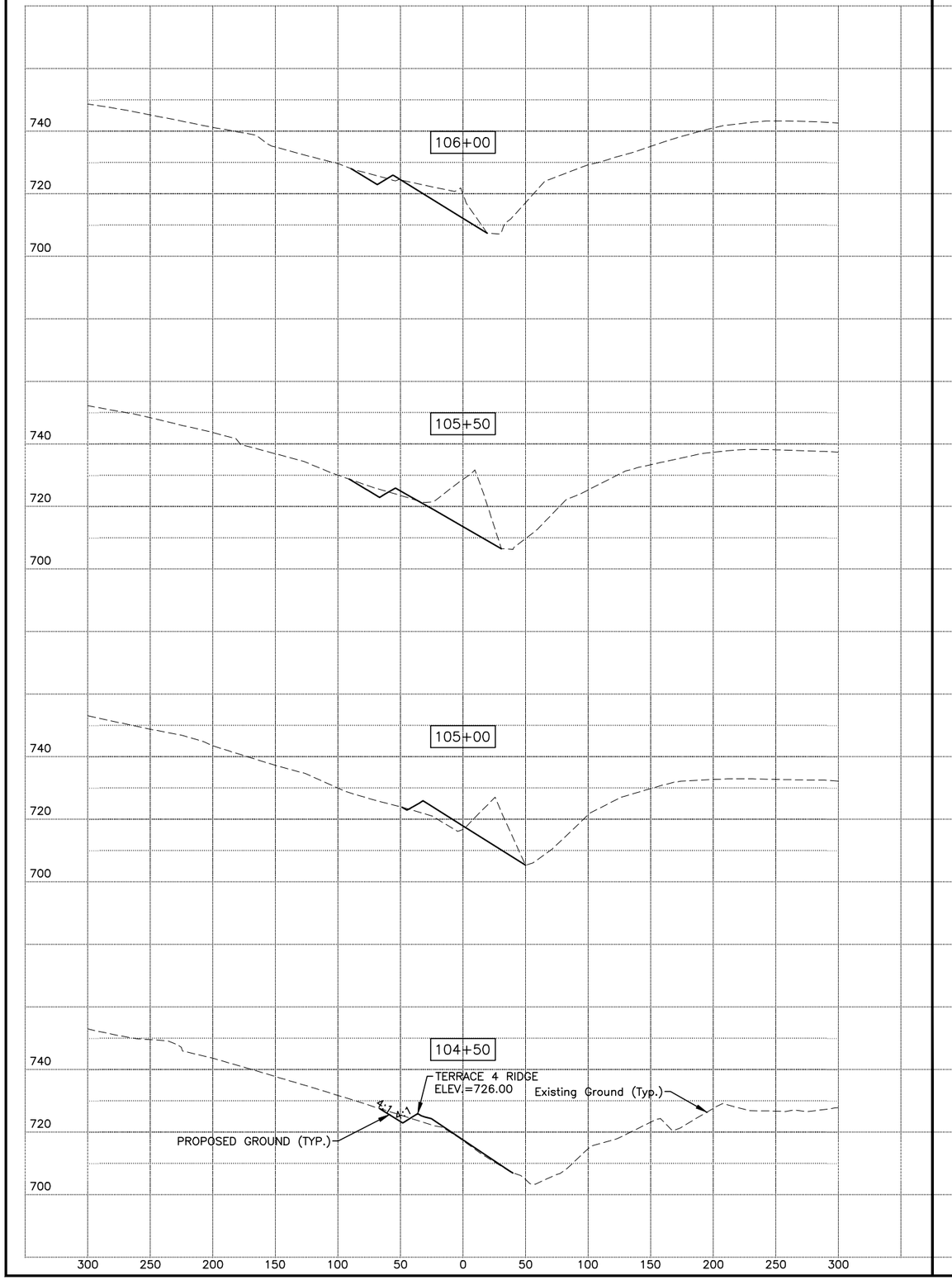
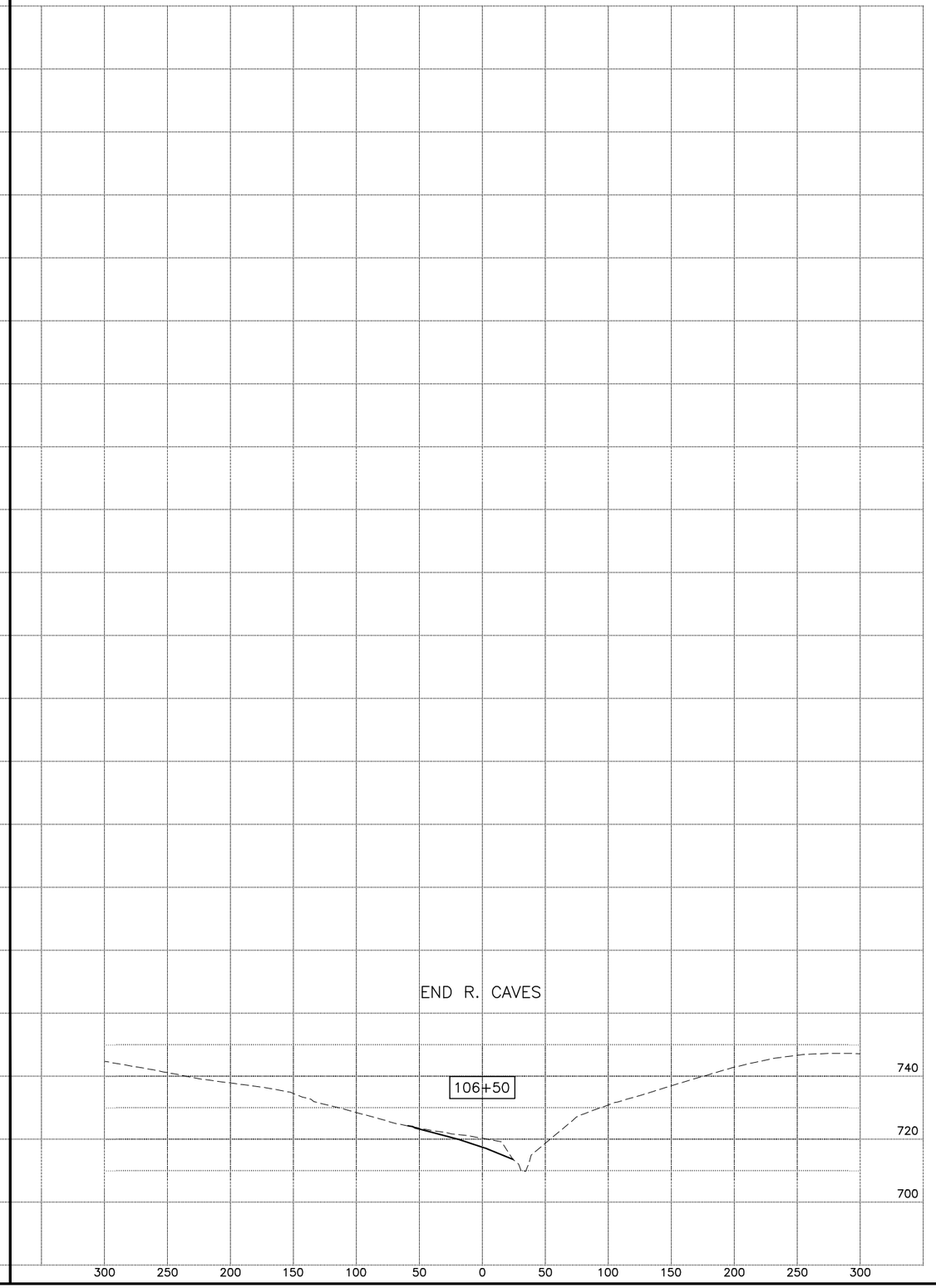
B. CAVES AND R. CAVES
AML RECLAMATION PROJECT

CROSS SECTIONS R. CAVES (IA-256)

SHEET
19 OF **24**





G:\2023\23042\DLD\DRAWINGS\PLANS\19-20 R CAVES

FILE: SECTIONS.DWG

REVISION:	DATE:	DESCRIPTION:

DESIGN BY: SRB

DRAWN BY: SRB

CHKD. BY: SIP

ISSUED: 10-02-24

REVISED: NONE

IOWA DEPARTMENT OF AGRICULTURE
AND LAND STEWARDSHIP
DIVISION OF SOIL CONSERVATION
AND WATER QUALITY
HOOVER STATE OFFICE BUILDING
1305 E. WALNUT ST, DES MOINES, IOWA 50319
(515)-281-4246

B. CAVES AND R. CAVES
AML RECLAMATION PROJECT

CROSS SECTIONS R. CAVES (IA-256)

SHEET
20 OF **24**

VERSION: 01-23-2025

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 RIP-RAP, TERRACES, AND STORM WATER BASINS.*
- *END USE OF SITE IS: LIVESTOCK PASTURE, 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:

- *10.8 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 80 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 22 FOR CONTROLS THAT WILL BE IMPLEMENTED.*

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

- *THE RECEIVING WATER IS AN UNNAMED TRIBUTARY TO THE DES MOINES RIVER.*

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

DESCRIBE TEMPORARY & PERMANENT STABILIZATION PRACTICES WITH SEQUENCE FOR IMPLEMENTATION.

1. *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.*
2. *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 OR WINTER WHEAT.*
3. *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.*
4. *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

1. *ROUGH DISKING AS DESCRIBED IN "STABILIZING PRACTICES" ABOVE WILL BE USED AS NECESSARY TO REDUCE SURFACE RUNOFF VELOCITIES AND INCREASE INFILTRATION.*
2. *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.*
3. *RIP RAP PLUNGE POOLS (STILLING BASINS) WILL BE USED AT DRAINAGE OUTLETS TO ABSORB ENERGY OF FLOWING STORM DRAINAGE.*
4. *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, RIPRAP, AND/OR OTHER ENERGY ABSORBING DEVICES OR APPROPRIATE BMPS SHALL BE USED.*

A.(2) STRUCTURAL PRACTICES CONT'D:

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

SEDIMENT CONTROL PRACTICES:

1. *STRAW WATTLES OR FILTER SOCK OR SHALLOW DITCHES ACTING AS SEDIMENT TRAPS WILL BE USED AROUND RISERS, INLETS, INTAKES, AND ALONG THE PERIMETERS OF THE SITE 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.*
2. *FILTER SOCKS OR SHALLOW TRENCHES WILL BE INSTALLED IN DRAINAGE WAYS AS NECESSARY TO TRAP SEDIMENT TRANSPORTED FROM SLOPES DURING CONSTRUCTION. IN CONCENTRATED DRAINAGES RIPRAP WILL BE INCLUDED TO SLOW FLOW VELOCITIES AND TRAP TRANSPORTED SEDIMENTS.*
3. *A LARGE STORMWATER BASIN FOLLOWED BY A WETLAND WILL BE CONSTRUCTED IN THE CENTRAL PORTION OF THE SITE AS SHOWN ON THE PLANS. AS THESE PROPOSED BASINS ARE CONSTRUCTED, THEY WILL BEGIN TO RETAIN SEDIMENT ERODED FROM THE UPLAND SLOPES. THE BASINS WILL BE CLEANED OUT JUST PRIOR TO PROJECT COMPLETION. SEDIMENT CLEANED OUT WILL BE RE-SPREAD ONTO THE LANDSCAPE. PRIOR TO CONSTRUCTION OF THE WETLANDS, TEMPORARY PRACTICES INDICATED IN ITEM 2 ABOVE WILL BE INSTALLED.*
4. *ALL PROPOSED PERMANENT WETLANDS HAVE OUTLETS PROTECTED FROM EROSION WITH EITHER TIED CONCRETE BLOCK MAT FOR SURFACE FLOWS OR PRECAST CONCRETE RISERS CONNECTED TO PIPES THAT OUTLET INTO A RIPRAP PLUNGE POOL OR OTHER STABLE LOCATION.*

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 PROPOSED PROJECT INCLUDES CONSTRUCTION OF TWO LARGE STORM WATER BASINS, ONE PERMANENT WETLAND, AND THREE TERRACES. THE PROJECT DISTURBED AREA IS 10.8 ACRES, AND THE PROPOSED PERMANENT STORMWATER PRACTICES INCLUDE 438,000 CUBIC FEET OF STORAGE, WHICH IS 40,556 CUBIC FEET OF STORAGE PER ACRE OF SITE DISTURBED. THIS IS GREATER THAN THE MINIMUM REQUIRED STORAGE OF 3,600 CUBIC FEET OF STORAGE PER ACRE OF SITE DISTURBED.

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:

N/A

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 TERRACES. MANUFACTURED PPHP DROP STRUCTURES ARE USED TO DRAIN LARGER DETENTION BASINS AND CONSTRUCTED WETLANDS ONSITE.

ii. DESCRIBE NATURAL BUFFERS AROUND SURFACE WATERS:

THE PROPOSED PROJECT INCLUDES RE-ESTABLISHING VEGETATION IN THE RIPARIAN BUFFER AREA OF PROPOSED STREAM CHANNELS AND CONSTRUCTED WETLANDS. EXISTING VEGETATION OUTSIDE THE PROJECT LIMITS WILL REMAIN TO PROVIDE A BUFFER TRANSITIONING BACK TO NON-RECLAIMED AREAS.

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, AND 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 PROJECT INCLUDES CONSTRUCTION OF TWO LARGE STORM WATER BASINS, ONE PERMANENT WETLAND, AND THREE TERRACES. ALL OF THESE STRUCTURES WILL STORE TEMPORARY STORMWATER RUNOFF, TRAPPING SEDIMENT AND REDUCING THE SUSPENDED SOLIDS OF THE EFFLUENT.

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

ALL PIPE OUTLETS WILL BE PROTECTED WITH RIP-RAP PLUNGE POOLS. THESE PLUNGE POOLS WILL DISSIPATE ENERGY AND REDUCE VELOCITIES OF THE RUNOFF. THE CENTRAL STREAM CHANNEL IN THE SITE ALSO INCLUDES FIVE RIP-RAP CHECK DAMS WHICH WILL DISSIPATE ENERGY AND HELP SETTLE OUT SEDIMENT FROM THE RUNOFF.

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:

a. *TRACKING OF SEDIMENTS OFFSITE WILL BE REDUCED BY AVOIDING VEHICLE TRAVEL ACROSS THE SITE SURFACE SOILS WHEN THEY ARE WET.*
b. *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.*
c. *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.

FILE: G:\2023\23042\DLD\DRAWINGS\PLANS\21 SWPPP DESC. DWG

REVISION:	DATE:	DESCRIPTION:

DESIGN BY: SRB
DRAWN BY: SRB
CHKD. BY: SIP
ISSUED: 10-02-24
REVISED: 1-23-2025

IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP
DIVISION OF SOIL CONSERVATION AND WATER QUALITY
HOOVER STATE OFFICE BUILDING
1305 E. WALNUT ST. DES MOINES, IOWA 50319
(515)-281-4246

B. CAVES AND R. CAVES
AML RECLAMATION PROJECT

SWPPP SUMMARY
B. CAVES (IA-255)

SHEET
21 OF 24

DEEP RIPPING OF TOPSOIL REQUIRED IN FIELD. SEE SUPPLEMENTAL SPECIFICATIONS.

RECP, TYPE 1.D
169 S.Y.

APPROVED SEDIMENT CONTROL MEASURE, 730 LF

INSTALL 10'X20' 2' THICK RIPRAP UNDERLAYED WITH 6" THICK MACADAM STONE AT PIPE OUTLET (TYP.)

INSTALL RIP RAP RIFFLE AND CHECK DAM SEE DETAIL SHEET 14

INSTALL 10'X20' 2' THICK RIPRAP UNDERLAYED WITH 6" THICK MACADAM STONE AT PIPE OUTLET

INSTALL 10'X70' 2' THICK RIPRAP UNDERLAYED WITH 6" THICK MACADAM STONE AT PIPE OUTLET

APPROVED SEDIMENT CONTROL MEASURE, 750 LF

INSTALL 10'X10'X18" EROSION STONE

RECP, TYPE 1.D
121 S.Y.

PROJECT BOUNDARY

INSTALL 12" STRAW WATTLE AS A 4' DIA. CIRCLE AROUND EACH TERRACE RISER. SEE SHEET 13, 6 REQUIRED (B. CAVES SITE)

INSTALL 10'X20' 2' THICK RIPRAP UNDERLAYED WITH 6" THICK MACADAM STONE AT PIPE OUTLET

INSTALL 12" STRAW WATTLE AROUND WETLAND & DETENTION BASIN RISERS AS 10' DIA. CIRCLES, 3 REQUIRED (B. CAVES SITE)

INSTALL 10'X10'X18" EROSION STONE

SEEDING LEGEND

- UPLAND SEEDING
- WETLAND FRINGE SEEDING (5' MIN. WIDTH AROUND WETLANDS)

0 50' 100'

FILE: G:\2023\23042IDL\DRAWINGS\PLANS\22 B CAVES SWPPP PLAN.DWG

REVISION:	DATE:	DESCRIPTION:

10-02-24 REVISED: NONE

ISSUED:

CHK'D. BY: SIP

DRAWN BY: SRB

DESIGN BY: SRB

IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP
DIVISION OF SOIL CONSERVATION AND WATER QUALITY
HOOVER STATE OFFICE BUILDING
1305 E.WALNUT ST. DES MOINES, IOWA 50319
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B. CAVES AND R. CAVES AML RECLAMATION PROJECT

B. CAVES (IA-255) SWPPP BMP MAP

SHEET 22 OF 24

VERSION: 01-23-2025

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 RIP-RAP AND TERRACES.*
- *END USE OF SITE IS: LIVESTOCK PASTURE, 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:

- *3.1 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 80 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 24 FOR CONTROLS THAT WILL BE IMPLEMENTED.*

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

- *THE RECEIVING WATER IS AN UNNAMED TRIBUTARY TO THE DES MOINES RIVER.*

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

DESCRIBE TEMPORARY & PERMANENT STABILIZATION PRACTICES WITH SEQUENCE FOR IMPLEMENTATION.

1. *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.*
2. *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 OR WINTER WHEAT.*
3. *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.*
4. *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

1. *ROUGH DISKING AS DESCRIBED IN "STABILIZING PRACTICES" ABOVE WILL BE USED AS NECESSARY TO REDUCE SURFACE RUNOFF VELOCITIES AND INCREASE INFILTRATION.*
2. *TERRACES WILL BE USED TO REDUCE SLOPE LENGTHS AND DETAIN/RETAIN STORM WATER RUNOFF. TERRACES WILL BE DRAINED WITH PERFORATED PLASTIC RISERS .*
3. *RIP RAP PLUNGE POOLS (STILLING BASINS) WILL BE USED AT DRAINAGE OUTLETS TO ABSORB ENERGY OF FLOWING STORM DRAINAGE.*
4. *RIP-RAP TOE PROTECTION AND STREAM CHECKS WILL BE PROVIDED TO PROTECT THE STABILIZED SLOPE AND EXISTING UNDISTURBED STREAM CHANNEL PARALLEL WITH THE SITE.*

A.(2) STRUCTURAL PRACTICES CONT'D:

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

SEDIMENT CONTROL PRACTICES:

1. *STRAW WATTLES OR FILTER SOCK OR SHALLOW DITCHES ACTING AS SEDIMENT TRAPS WILL BE USED AROUND RISERS, INLETS, INTAKES, AND ALONG THE PERIMETERS OF THE SITE AS NECESSARY TO PREVENT MIGRATION OF SEDIMENT INTO THOSE WATERS OUTSIDE THE PROJECT BOUNDARY.*
2. *FILTER SOCKS OR SHALLOW TRENCHES WILL BE INSTALLED IN A DRAINAGE WAYS AS NECESSARY TO TRAP SEDIMENT TRANSPORTED FROM SLOPES DURING CONSTRUCTION. IN CONCENTRATED DRAINAGES RIP-RAP WILL BE INCLUDED TO SLOW FLOW VELOCITIES AND TRAP TRANSPORTED SEDIMENTS.*

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:

N/A

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:

RIP-RAP CREEK CHECKS AND TOE PROTECTION WILL BE INSTALLED EARLY IN THE PROJECT AS GRADING COMMENCES. IN ADDITION, "APPROVED SEDIMENT CONTROL DEVICES" WILL BE INSTALLED AS SHOWN ON THE DRAWINGS OR IN LOCATIONS THAT WILL PROVIDE THE BEST POTENTIAL FOR TRAPPING SEDIMENT. "APPROVED SEDIMENT CONTROL DEVICES" INCLUDE: STRAW WATTLES, SILT FENCES, OR TEMPORARY EARTHEN SEDIMENT BERMS.

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 TERRACES.

ii. DESCRIBE NATURAL BUFFERS AROUND SURFACE WATERS:

THE EXISTING STREAM CHANNEL PARALLEL WITH THE SITE WILL BE PROTECTED WITH THE NEW SEEDING AND RIP-RAP ON THE NORTH SIDE. ON THE SOUTH SIDE, THE EXISTING STREAM BANKS WILL REMAIN VEGETATED AND UNDISTURBED.

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.

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 SITE INCLUDES THE CONSTRUCTION OF A TERRACE WHICH WILL ATTENUATE PEAK RUNOFF RATES AND REDUCE SUSPENDED SOLIDS IN THE POST-DEVELOPMENT STORM WATER FLOWS.

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

THE SITE INCLUDES RIP-RAP PLUNGE POOLS AT THE TILE OUTLETS. THE RIP-RAP WILL DISSIPATE ENERGY AND REDUCE THE VELOCITY OF THE WATER LEAVING THE SITE.

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:

a. *TRACKING OF SEDIMENTS OFFSITE WILL BE REDUCED BY AVOIDING VEHICLE TRAVEL ACROSS THE SITE SURFACE SOILS WHEN THEY ARE WET.*
b. *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.*
c. *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.

FILE: G:\2023\23042\DLDRAWINGS\PLANS\23 SWPPP DESC. DWG

REVISION:	DATE:	DESCRIPTION:

ISSUED: 10-02-24 REVISED: 1-23-2025

CHKD. BY: SIP

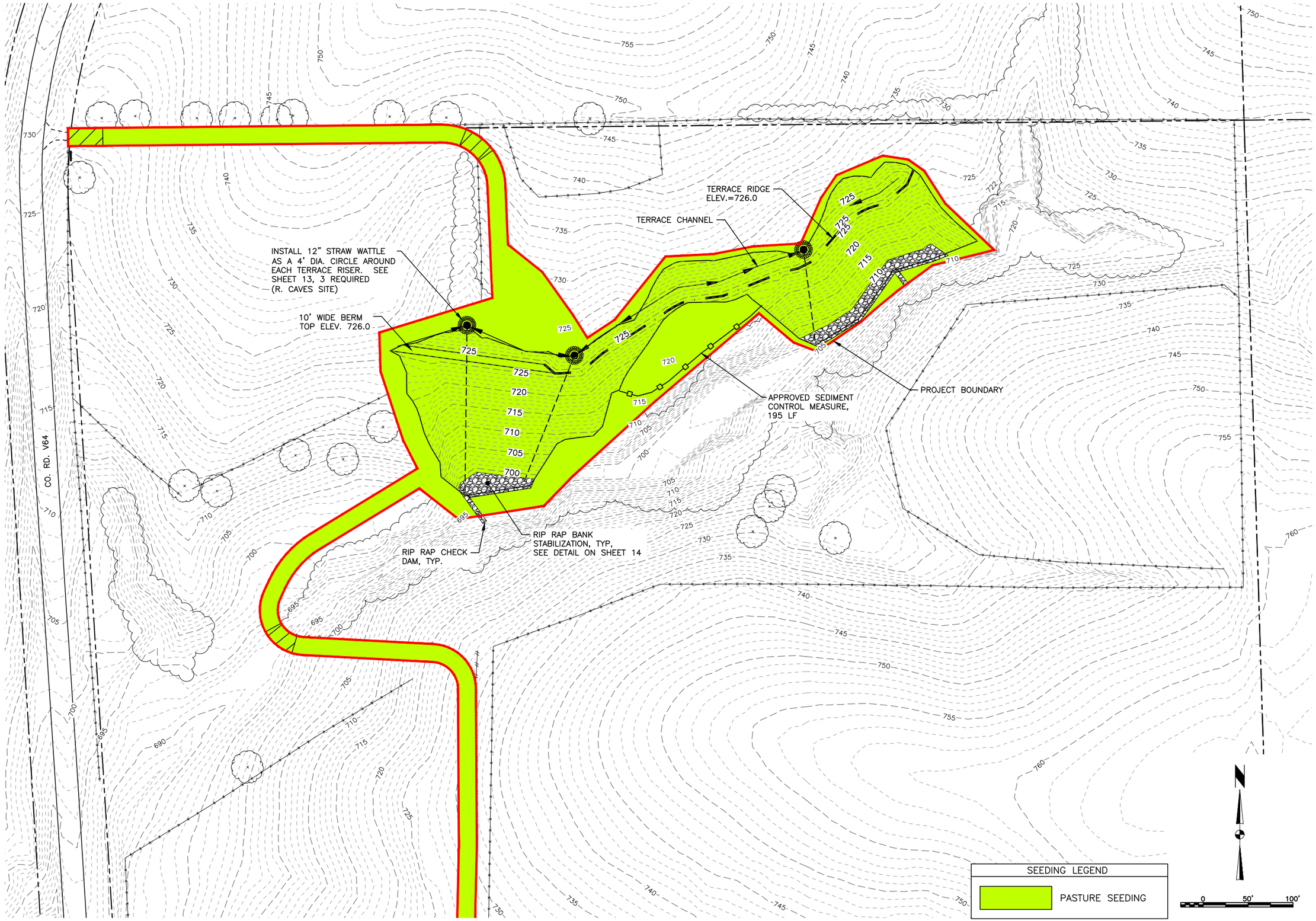
DRAWN BY: SRB

DESIGN BY: SRB

IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP
DIVISION OF SOIL CONSERVATION AND WATER QUALITY
HOOVER STATE OFFICE BUILDING
1305 E. WALNUT ST, DES MOINES, IOWA 50319
(515)-281-4246

B. CAVES AND R. CAVES AML RECLAMATION PROJECT

SWPPP SUMMARY R. CAVES (IA-256)



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FILE: PLAN.DWG

REVISION:	DATE:	DESCRIPTION:

10-02-24 REVISED: NONE

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DESIGN BY: SRB
DRAWN BY: SRB
CHK'D. BY: SIP
ISSUED:

B. CAVES AND R. CAVES
AML RECLAMATION PROJECT

R. CAVES (IA-256) SWPPP BMP MAP

SHEET
24 OF **24**