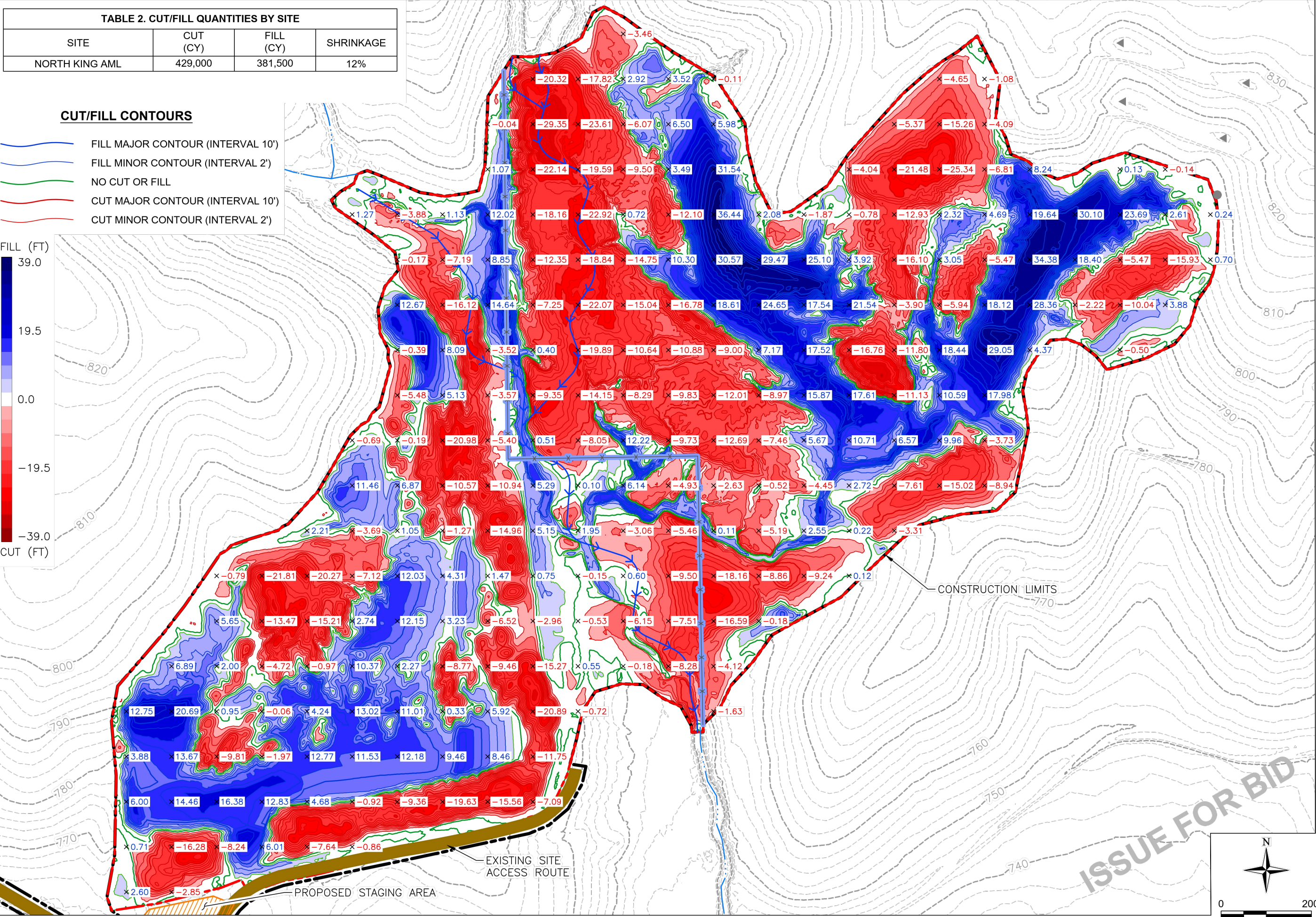


TABLE 2. CUT/FILL QUANTITIES BY SITE			
SITE	CUT (CY)	FILL (CY)	SHRINKAGE
NORTH KING AML	429,000	381,500	12%

CUT/FILL CONTOURS

- FILL MAJOR CONTOUR (INTERVAL 10')
- FILL MINOR CONTOUR (INTERVAL 2')
- NO CUT OR FILL
- CUT MAJOR CONTOUR (INTERVAL 10')
- CUT MINOR CONTOUR (INTERVAL 2')



FILE: 014-NORTHKING_7-P_CUTFILL

REVISED: 8/15/2025

ISSUED: 8/15/2025

CHKD. BY: KCW

DRAWN BY: CD

DESIGN BY: BK

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



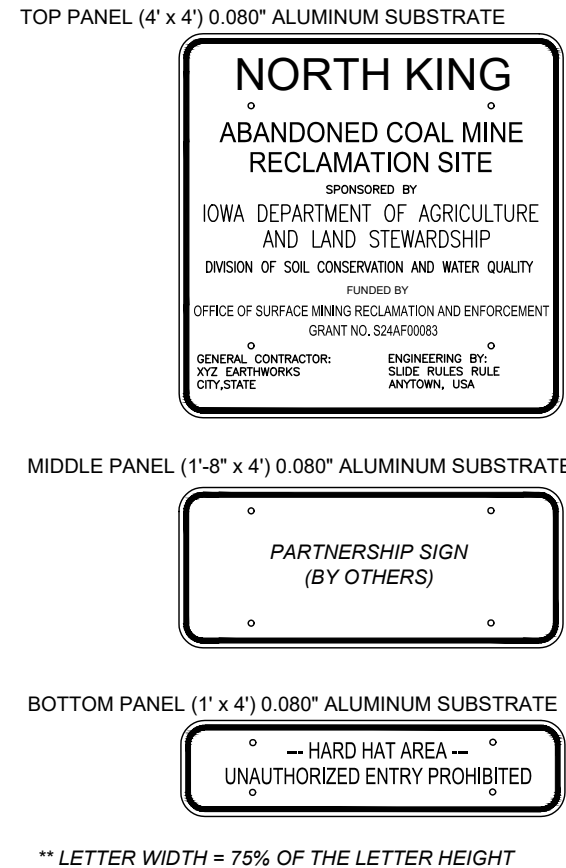
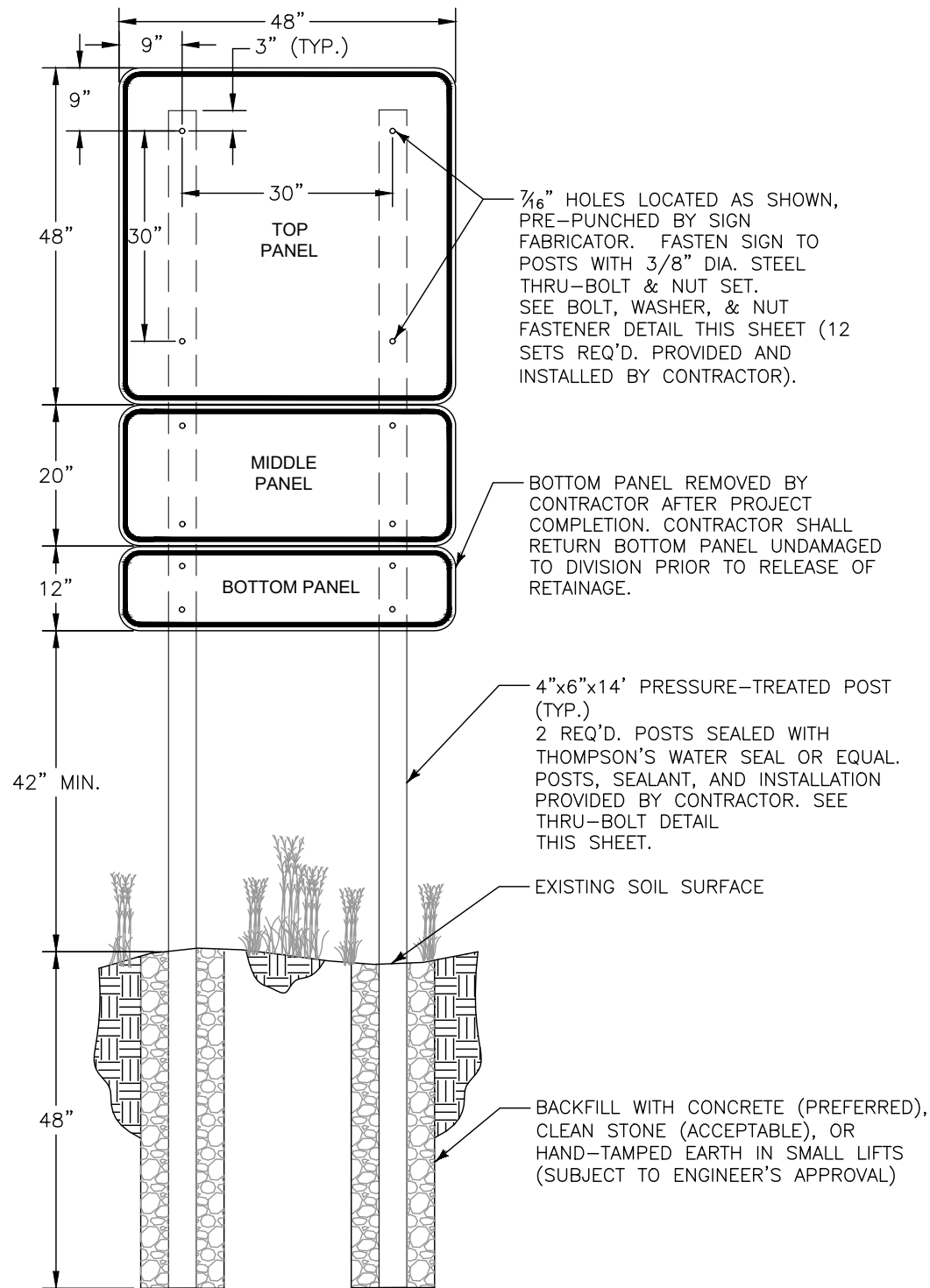
NORTH KING (IA-048)
AML RECLAMATION PROJECT

GRADING - CUT-FILL ISOMAP

TRIHYDRO CORPORATION
1252 COMMERCE DRIVE
LARAMIE, WYOMING 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729



C:\USERS\WILLIAMSON\DC\ACCDOS\TRHYDRO CORPORATION\014-NORTHKING\CAUD\PLANS\DESIGN\014-NORTHKING_B-D_SIGNAGE



** LETTER WIDTH = 75% OF THE LETTER HEIGHT

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



ISSUE FOR BID

VERSION DATE: 03-27-2025
Source: OSM Grant Sign detail

FILE: 014-NORTHKING_B-D_SIGNAGE

REVISED: 8/15/2025

ISSUED: 8/15/2025

CHKD. BY: KCW

DRAWN BY: CD

DESIGN BY: BK

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



NORTH KING (IA-048)
AML RECLAMATION PROJECT

PROJECT SIGNAGE DETAILS

SHEET
8 OF 16



TRIHYDRO CORPORATION
1252 COMMERCE DRIVE
LARAMIE, WYOMING 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

Diagram illustrating the cross-section of a wetland fringe seeding area. The diagram shows the relationship between the existing ground, the treated subgrade, and the channel depth. Key components and dimensions include:

- EXISTING GROUND**: The original ground surface on both sides of the channel.
- WETLAND FRINGE SEEDING AREA**: The total width of the area designated for seeding.
- NORMAL TO LOW FLOW CHANNEL**: The central channel area.
- 12" MIN. SEE GRADING PLAN**: The minimum depth of the channel.
- VARIES SEE GRADING PLAN**: Dimensions that vary according to the grading plan.
- TREATED SUBGRADE**: The prepared ground surface beneath the channel.
- BANKFULL BENCH**: The raised areas on either side of the channel.
- CHANNEL DEPTH VARIES, SEE GRADING PLAN**: The depth of the channel, which varies.

Diagram illustrating the cross-section of a wetland outlet structure. The structure consists of a 4.0' apron, a 15.0% slope, and a 5.0' apron. The bottom is composed of 6" compacted granular bedding (see Note 1) and 2.0' class E riprap. The total length is indicated as "LENGTH (SEE TABLE)". Flow is from the wetland on the left. Two circular markers labeled "B/9" are shown above and below the structure.

A cross-sectional diagram of a channel. The total width is labeled as 10.0' (TYP.). The channel is divided into three sections: a left side slope, a central flat bottom, and a right side slope. The side slopes are labeled 'A' and the central flat bottom is labeled 'B'. The channel is filled with a material labeled '6" GRANULAR BEDDING'. A dashed line represents the 'CHANNEL FLOWLINE'. The depth of the channel is indicated as 2.5'. The height of the granular bedding above the flowline is indicated as 0.5'.

ROCK LETDOWN MATERIAL SUMMARY						
CHANNEL	# OF STRUCTURES	[A] SLOPE (%)	[B] WIDTH (FT)	[C] LENGTH (FT)	CLASS E RIPRAP (TONS)	GRANULAR BEDDING (TONS)
MAIN CHANNEL	3	15%	30	40	552	133
NORTH CHANNEL	1	15%	30	20	103	25

WETLAND INLET MATERIAL SUMMARY					
CHANNEL	[A] SLOPE (%)	[B] WIDTH (FT)	[C] LENGTH (FT)	CLASS E RIPRAP (TONS)	GRANULAR BEDDING (TONS)
WL-1 (IN)	15%	30	40	184	45
WL-2A (IN)	5%	12	40	83	20
WL-2B (IN)	15%	12	40	83	20
WL-7 (IN)	15%	30	40	184	45

WETLAND OUTLET MATERIAL SUMMARY					
CHANNEL	[A] SLOPE (%)	[B] WIDTH (FT)	[C] LENGTH (FT)	CLASS E RIPRAP (TONS)	GRANULAR BEDDING (TONS)
WL-1 (OUT)	15%	30	40	184	45
WL-2 (OUT)	15%	20	30	100	24
WL-7 (OUT)	25%	12	16	39	10

FILE: 014-NORTHKING_9-D_ROCKDROPSTRUCTURE

CHKD. BY: KCW

RIPRAP LETDOWN AND WETLAND INLET & OUTLET DETAILS

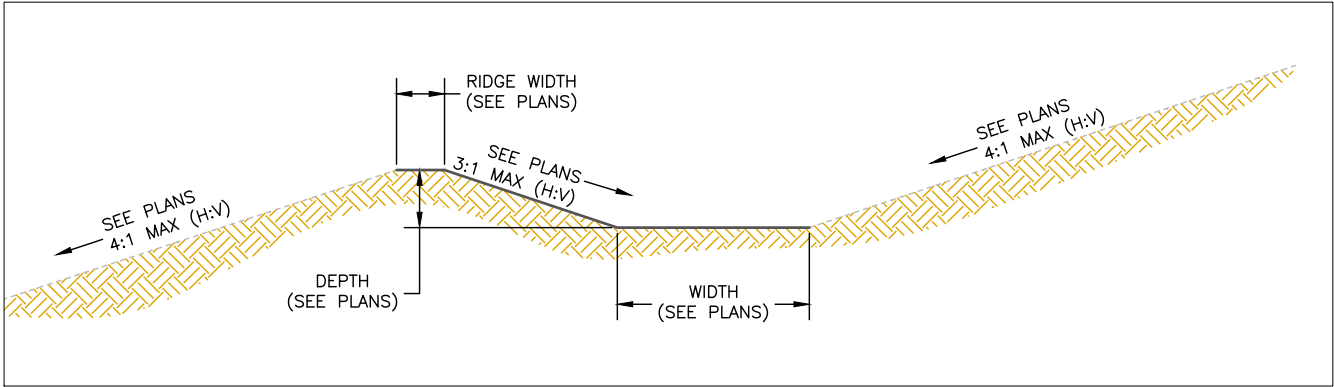


Trihydro
CORPORATION

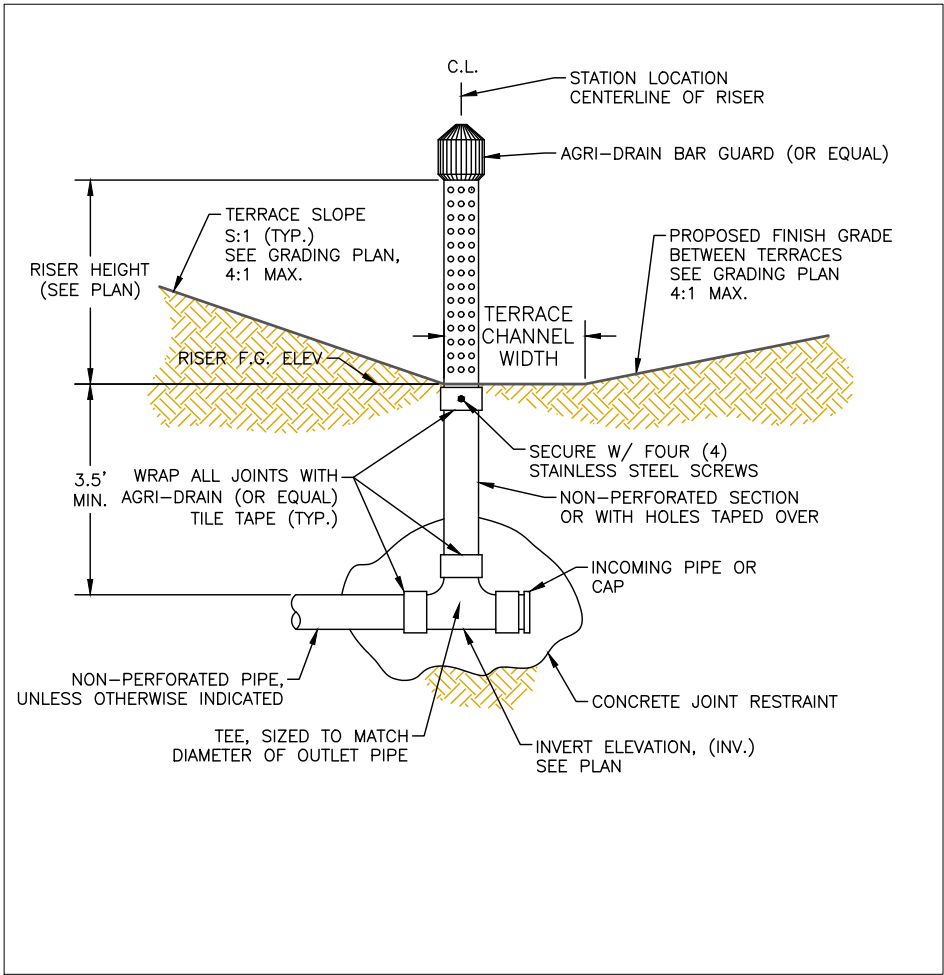
U.S. DEPARTMENT OF AGRICULTURE
AND LAND STEWARDSHIP
DIVISION OF SOIL CONSERVATION AND
WATER QUALITY
HOOVER BUILDING
1305 E WALNUT ST., DES MOINES, IA 50319
(515) 281-4246

SHEET
OF 16

C:\USERS\WILLIAMSON\DC\ACCDGCS\TRIHYDRO CORPORATION\014-NORTH KING\PROJECT FILES\PROJECTS\214-014-NORTH KING\CADD\PLANS\SET\014-NORTH KING_10-D_TERRACETILES

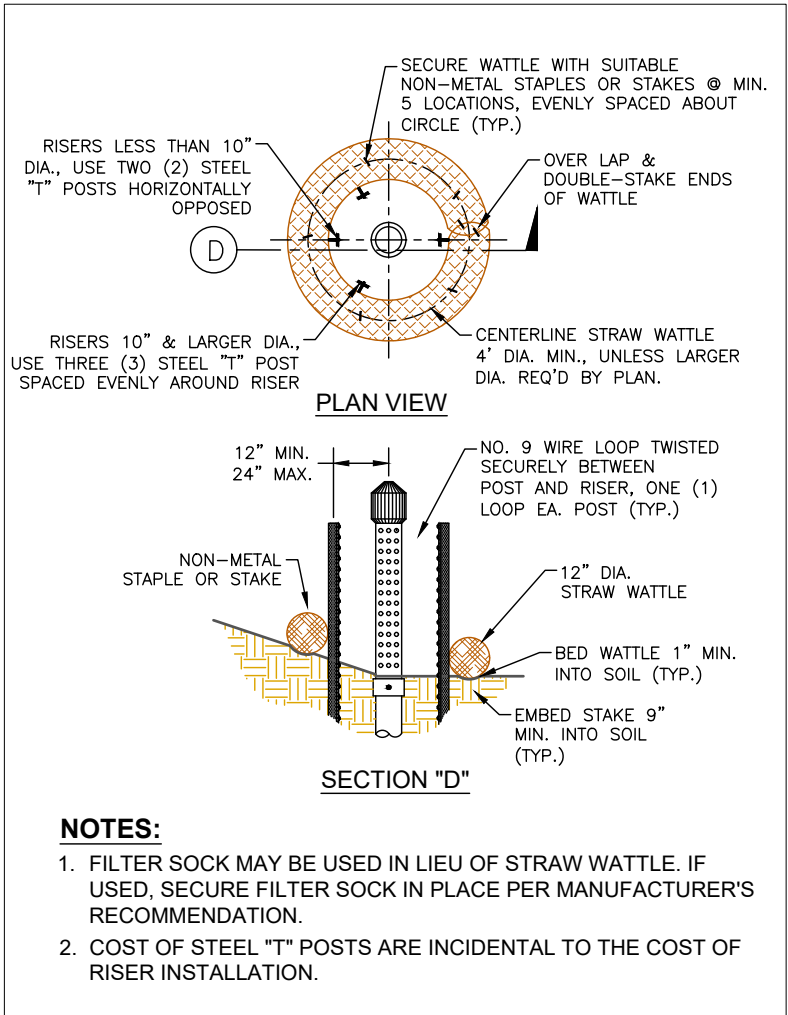


1 TYPICAL TERRACE PROFILE
SCALE: NONE



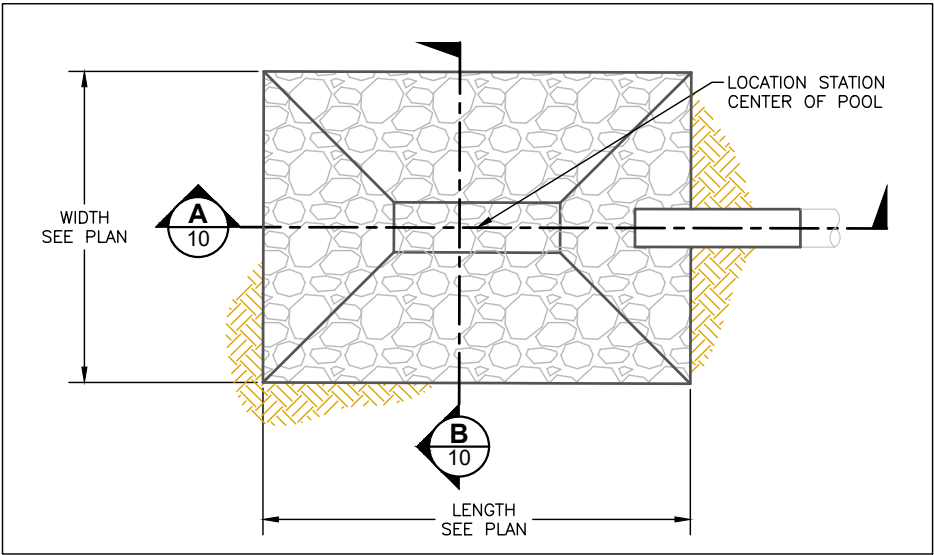
2 TYPICAL RISER PIPE IN TERRACE
SCALE: NONE

- NOTES:**
1. EROSION STONE FOR THE INLET AND OUTLET STRUCTURES SHALL CONSIST OF A CLEAN AGGREGATE THAT CONFORMS TO GRADATION NO. 3 OF THE IOWA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.

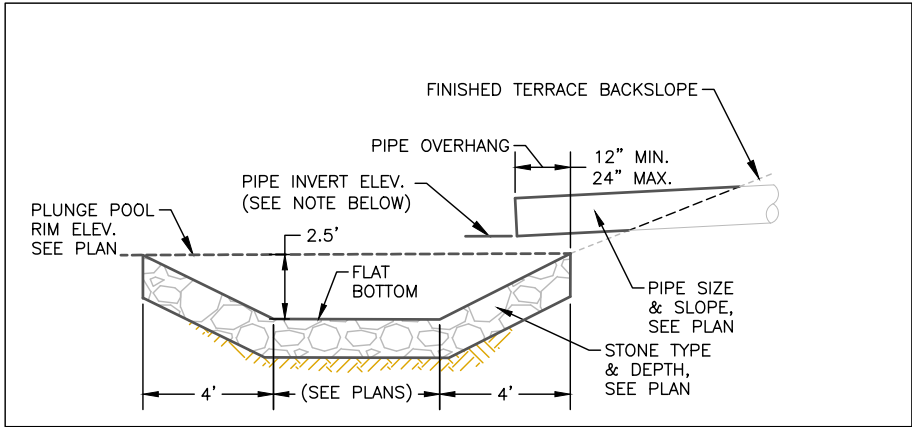


- NOTES:**
1. FILTER SOCK MAY BE USED IN LIEU OF STRAW WATTLE. IF USED, SECURE FILTER SOCK IN PLACE PER MANUFACTURER'S RECOMMENDATION.
 2. COST OF STEEL "T" POSTS ARE INCIDENTAL TO THE COST OF RISER INSTALLATION.

4 TYPICAL RISER PIPE INLET PROTECTION
SCALE: NONE

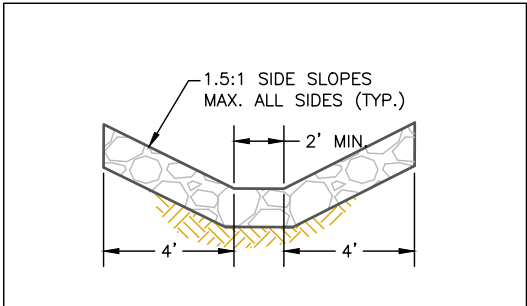


3 TYPICAL PIPE OUTLET PROTECTION
SCALE: NONE



A TYPICAL PIPE OUTLET PROTECTION - CROSS SECTION A
SCALE: NONE

- NOTES:**
1. ALL PIPES SHOULD OUTLET APPROXIMATELY 1' ABOVE RIM.
 2. ALL PIPES DRAINING INTO WETLAND POOLS MUST OUTLET AT LEAST 1' ABOVE NORMAL POOL LEVEL.



B TYPICAL PIPE OUTLET PROTECTION - CROSS SECTION B
SCALE: NONE

FILE: 014-NORTH KING_10-D_TERRACETILES

REVISED: 8/15/2025

ISSUED: 8/15/2025

CHKD. BY: KCW

DRAWN BY: CD

DESIGN BY: BK

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



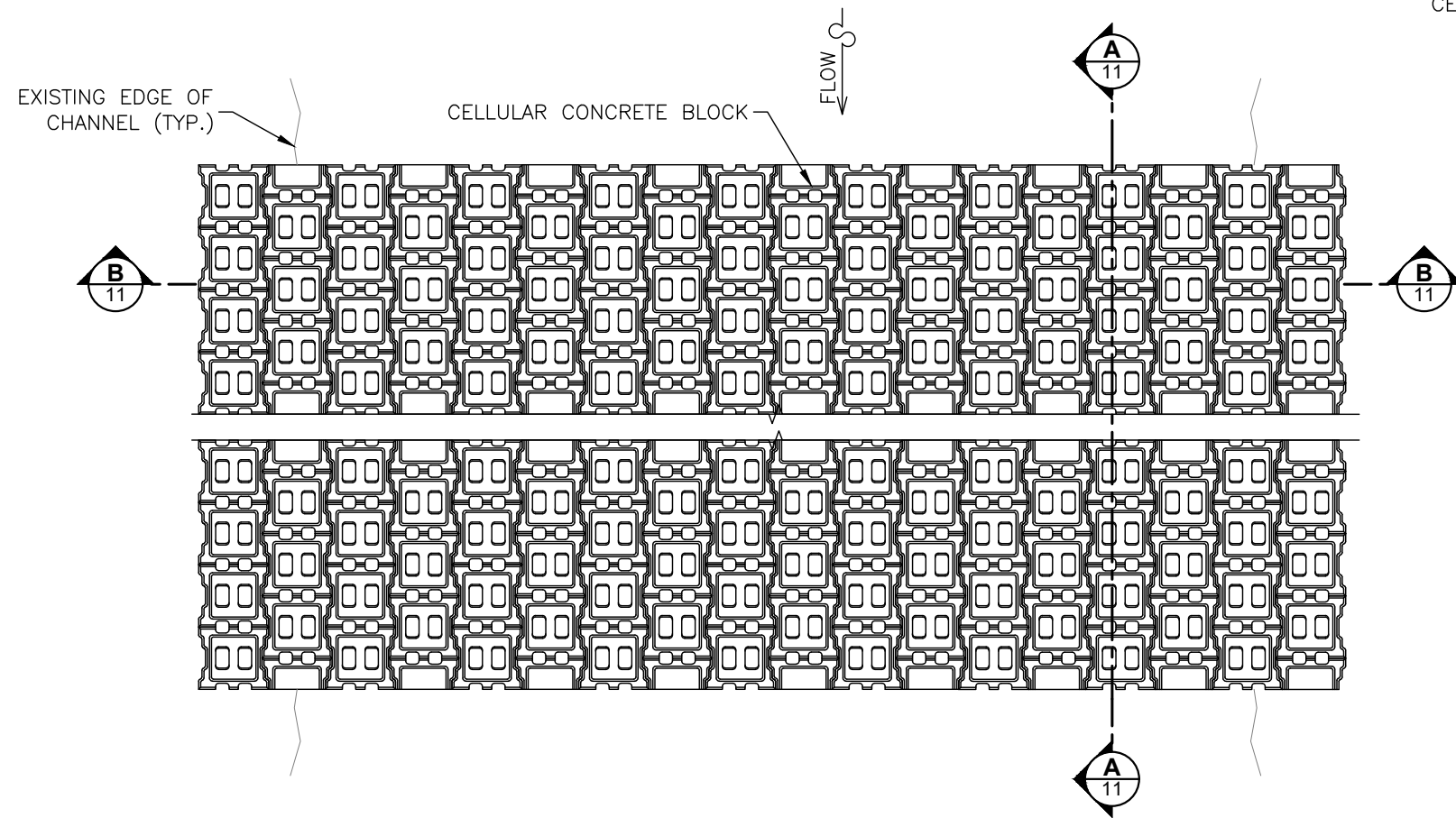
NORTH KING (IA-048)
AML RECLAMATION PROJECT

TYPICAL TERRACE DETAILS

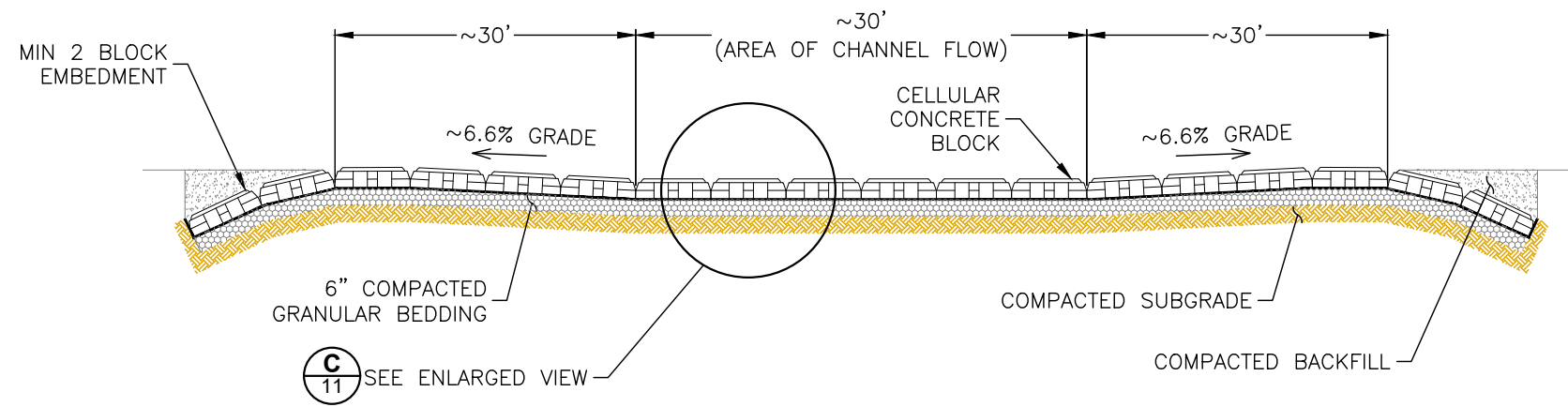
TRIHYDRO CORPORATION
1252 COMMERCE DRIVE
LARAMIE, WYOMING 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729



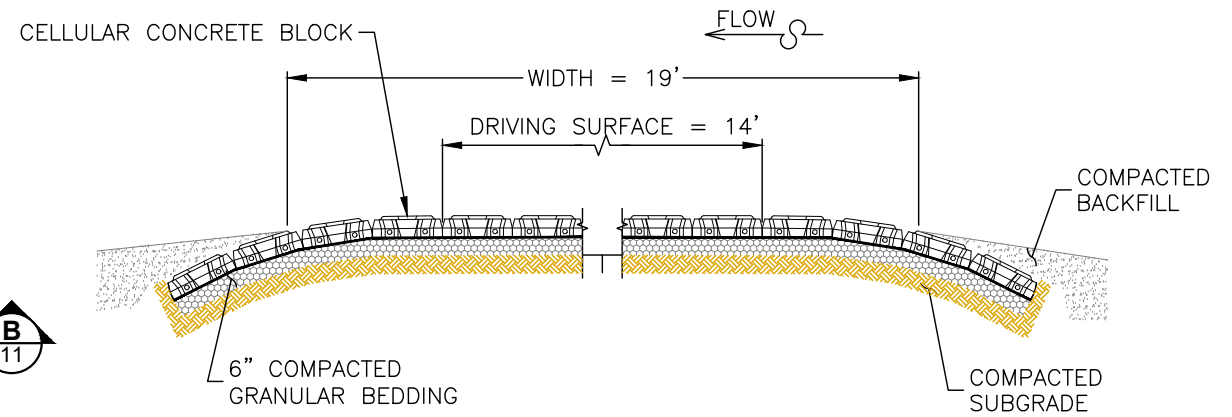
C:\USERS\WILLIAMSON\DC\ACCDOS\TRIHIDRO CORPORATION\IOWA AML\PROJECT FILES\PROJECTS\214-014-NORTH KING\014-NORTH KING_11-D_TIEDBLOCKING



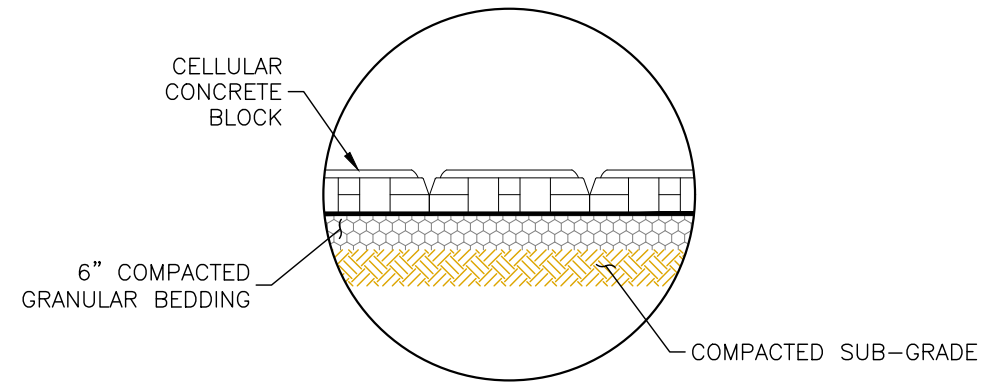
1 CELLULAR CONCRETE BLOCK LOW WATER CROSSING PLAN
SCALE: NONE



B CROSS SECTION B
SCALE: NONE



A CROSS SECTION A
SCALE: NONE



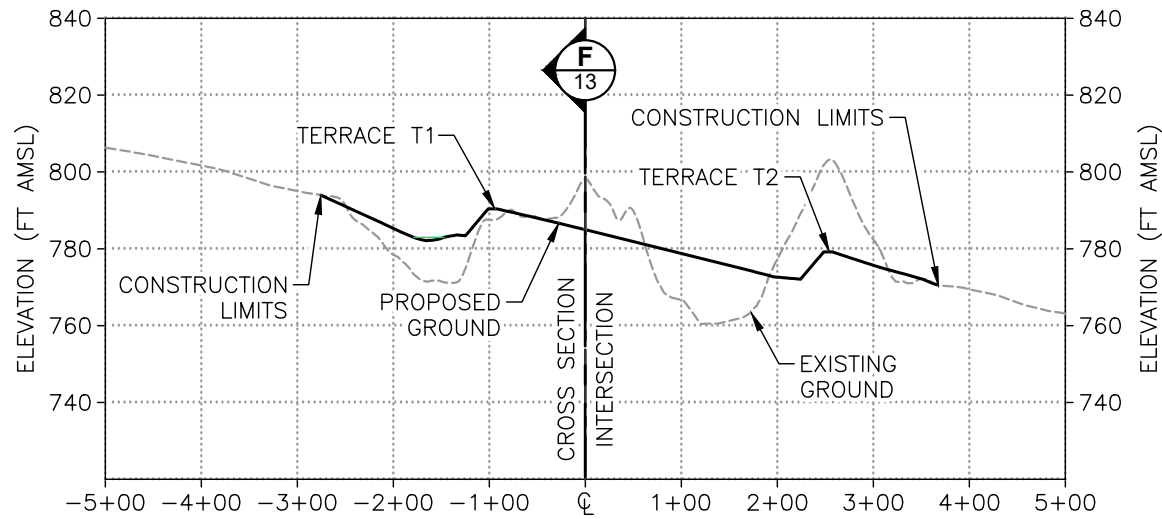
C ENLARGED VIEW
SCALE: NONE

CROSSING MATERIALS SUMMARY						
ID	DRIVING WIDTH [FT]	TOTAL WIDTH [FT]	LENGTH [FT]	TOTAL LENGTH [FT]	TIED BLOCK MAT [SF]	GRANULAR BEDDING [TONS]
TBC-1	14	29	30	100	2,933	90
TBC-2	14	29	30	100	2,933	90
TBC-3	14	29	30	100	2,933	90
TOTAL					8,800	270

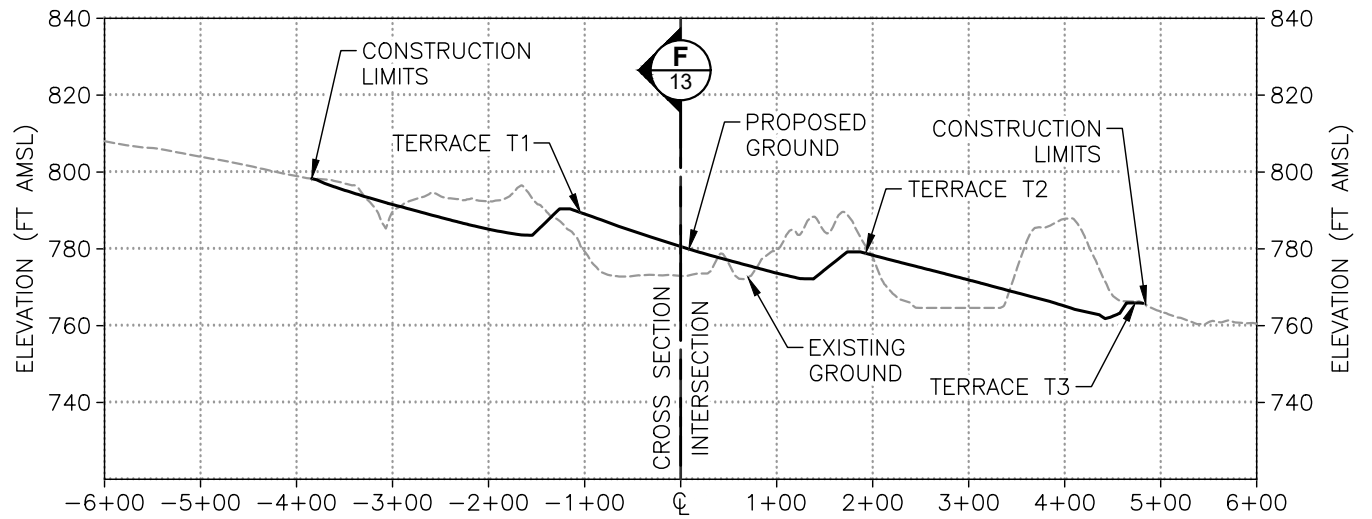
NOTES:

- CONTRACTOR TO INSTALL CONCRETE BLOCK MATS PER SPECIFICATIONS.
- PRODUCT MUST MEET THE SPECIFICATIONS OF CELLULAR CONCRETE BLOCK MAT OR APPROVED EQUIVALENT, SUBJECT TO THE APPROVAL BY THE ENGINEER AND THE DIVISION.

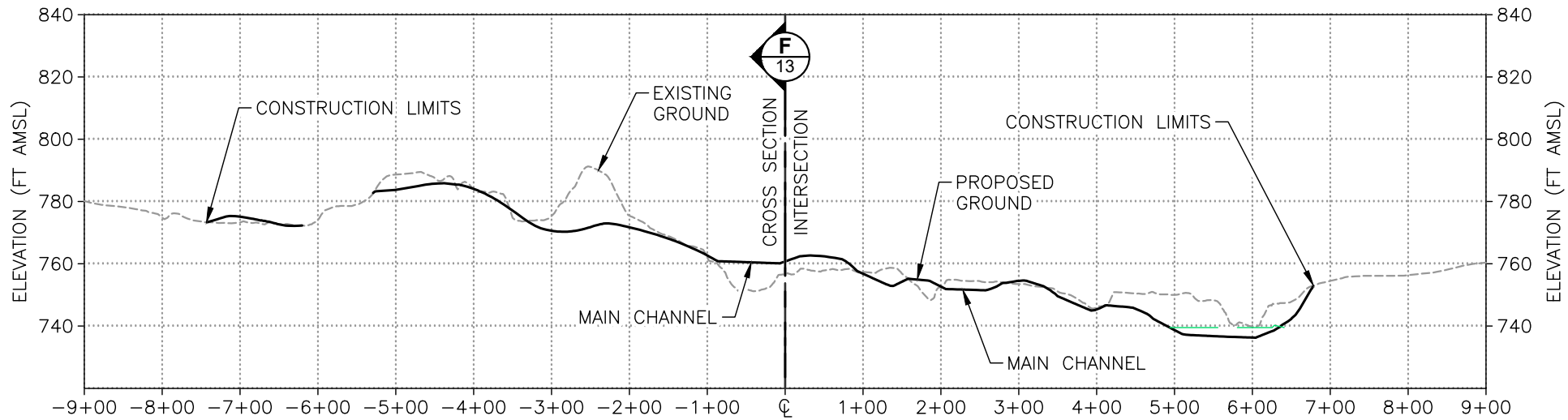
C:\USERS\KILLIANSON\DC\ACCDOS\TRIHYDRO CORPORATION\014-014_NORTHKING\FILES\PROJECTS\214-014_NORTHKING\CADD\PLANSETS\FINALDESIGN\014-NORTHKING_12-S_EW-XSEC



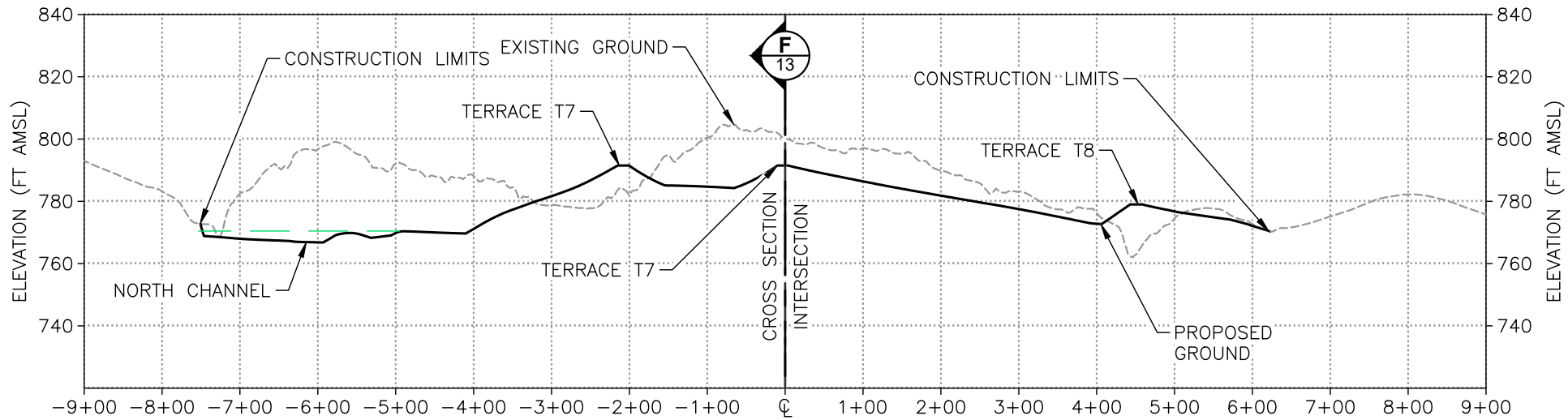
A EARTHWORK CROSS SECTION A-A
SCALE H: 1" = 200' V: 1" = 50'



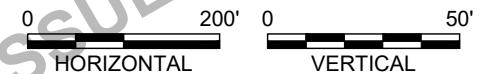
B EARTHWORK CROSS SECTION B-B
SCALE H: 1" = 200' V: 1" = 50'



C EARTHWORK CROSS SECTION C-C
SCALE H: 1" = 200' V: 1" = 50'



D EARTHWORK CROSS SECTION D-D
SCALE H: 1" = 200' V: 1" = 50'



FILE: 014-NORTHKING_12-S_EW-XSEC

REVISED: 8/15/2025

ISSUED: 8/15/2025

CHKD. BY: KCW

DRAWN BY: CD

DESIGN BY: BK

TRIHYDRO CORPORATION
1252 COMMERCE DRIVE
LARAMIE, WYOMING 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729



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



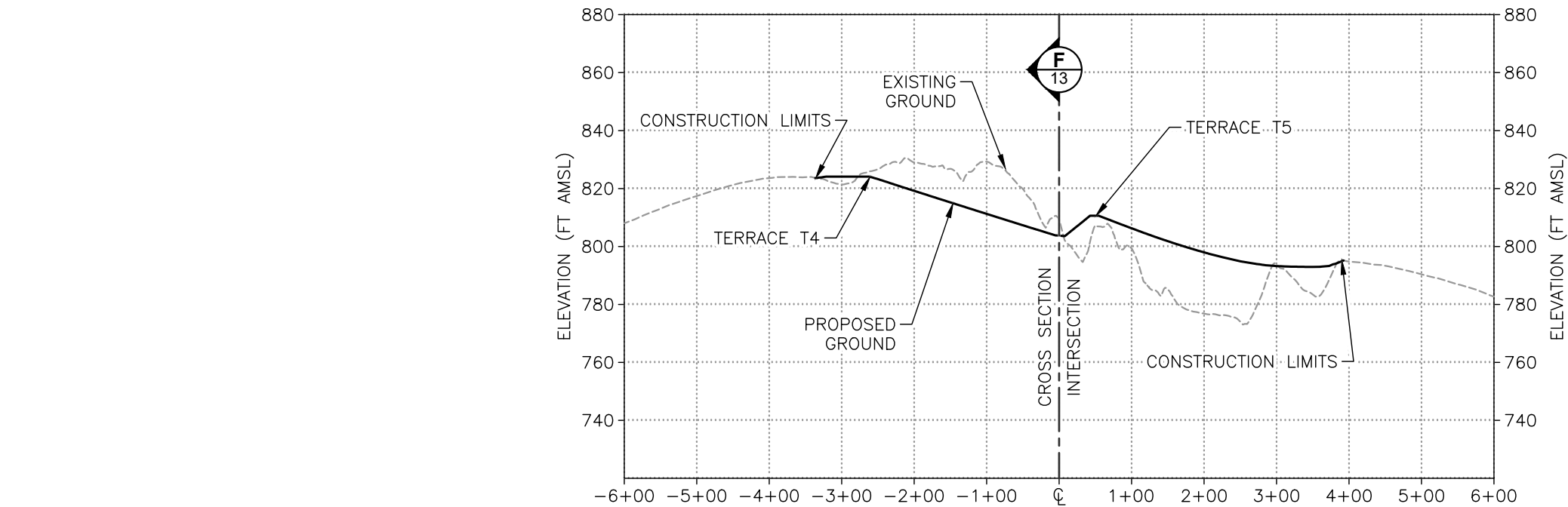
NORTH KING (IA-048)
AML RECLAMATION PROJECT

CROSS SECTIONS 1 OF 2

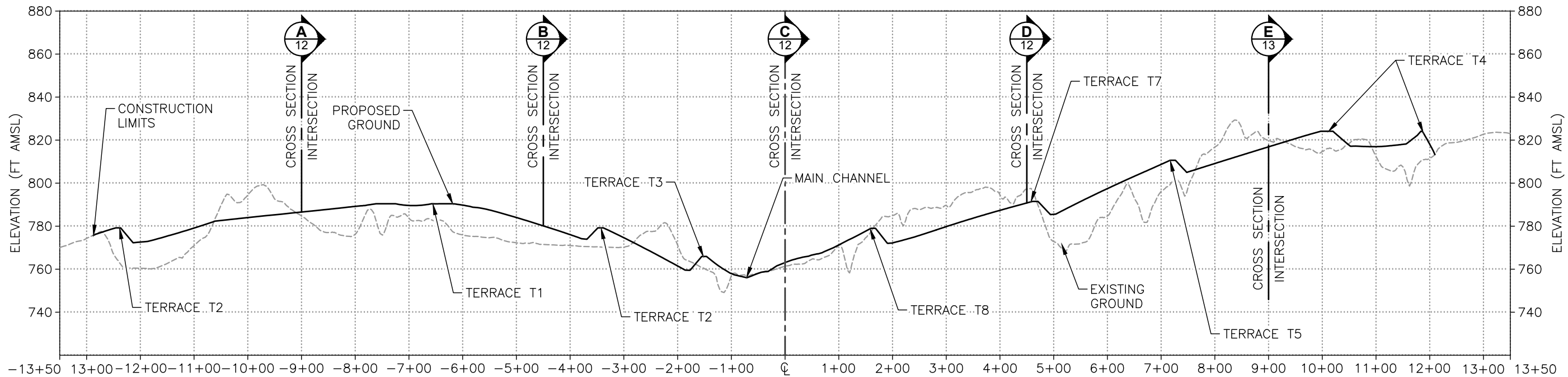
SHEET

12 OF 16

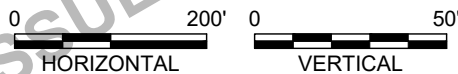
C:\USERS\WILLIAMSON\DC\ACCDOS\TRIHYDRO CORPORATION\014-NORTH KING\PROJECT FILES\PROJECTS\214-014-NORTH KING\CADD\PLANS\014-NORTH KING_12-S-EW-XSEC



E EARTHWORK CROSS SECTION E
SCALE H: 1" = 200' V: 1" = 50'



F EARTHWORK CROSS SECTION F
SCALE H: 1" = 200' V: 1" = 50'



FILE: 014-NORTH KING_12-S-EW-XSEC

REVISED: 8/15/2025

ISSUED: 8/15/2025

CHKD. BY: KCW

DRAWN BY: CD

DESIGN BY: BK

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



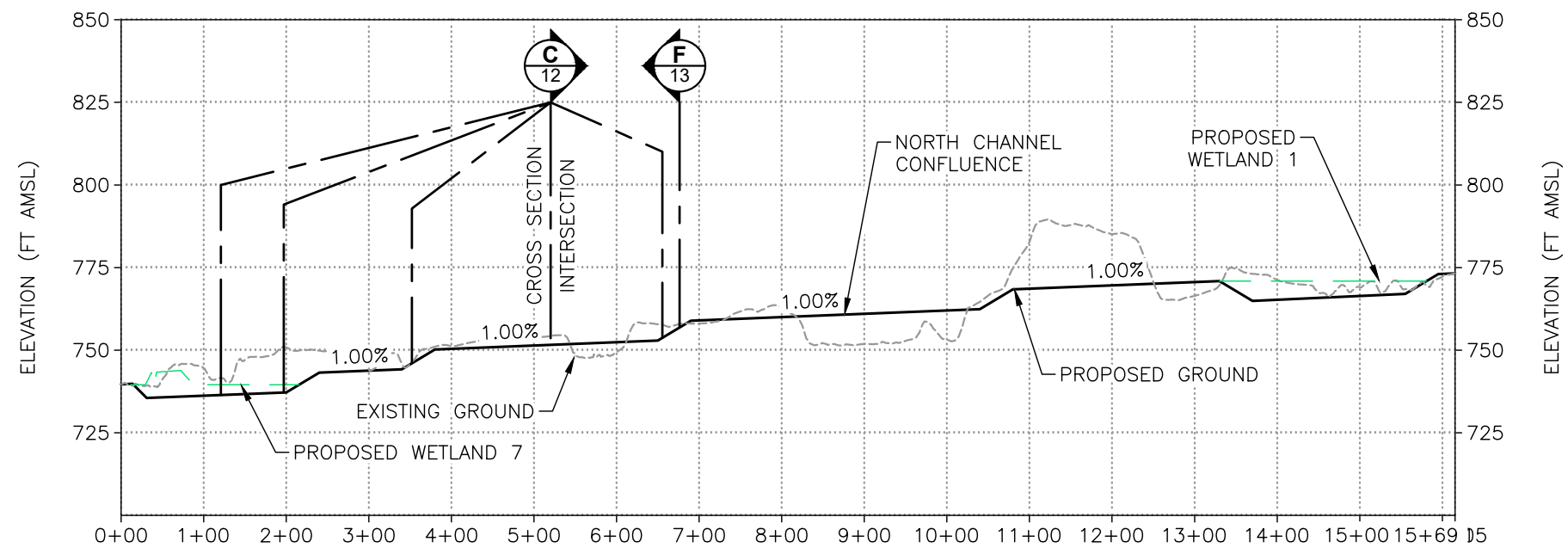
NORTH KING (IA-048)
AML RECLAMATION PROJECT

CROSS SECTIONS 2 OF 2

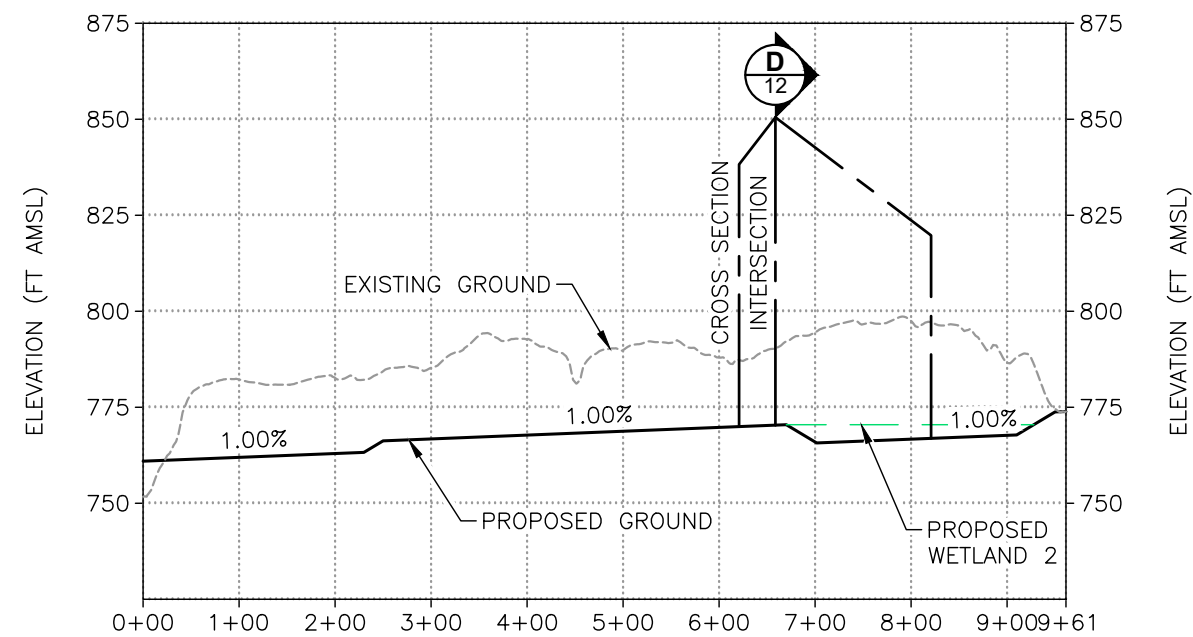


TRIHYDRO CORPORATION
1252 COMMERCE DRIVE
LARAMIE, WYOMING 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729

C:\USERS\WILLIAMSON\DC\ACCDOS\TRIHYDRO CORPORATION\014-014-NORTHKING\ADD\PLANSETS\FINALDESIGN\014-NORTHKING_14-S_CHNLPROF



A MAIN CHANNEL PROFILE
SCALE H: 1" = 200' V: 1" = 50'



B NORTH CHANNEL PROFILE
SCALE H: 1" = 200' V: 1" = 50'



FILE: 014-NORTHKING_14-S_CHNLPROF

REVISED: 8/15/2025

ISSUED: 8/15/2025

CHKD. BY: KCW

DRAWN BY: CD

DESIGN BY: BK

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



NORTH KING (IA-048)
AML RECLAMATION PROJECT

MAIN CHANNEL PROFILES

TRIHYDRO CORPORATION
1252 COMMERCE DRIVE
LARAMIE, WYOMING 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729



C:\USERS\WILLIAMSON\DC\ACCD0C5\TRIHYRO CORPORATION\IOWA AML\PROJECT FILES\PROJECTS\214-014-NORTHKING\CAD\PLANS\SET5\FINAL\DESIGN\014-NORTHKING_15-W_SWPPPNOTES

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) SUMMARY

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 NATURAL REGRADE, TERRACE AND DOWN DRAINS, AND ROCK ARMORING.
- END USE OF SITE IS: PASTURE LAND AND GRAZING
- THE ESTIMATED PROJECT TIMELINE IS: 18 MONTHS
- SITE IS LOCATED IN SECTION 22 , TOWNSHIP 74N, RANGE 17W, MAHASKA COUNTY, IOWA.

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

- 55.3 ACRES OF STRIP MINED LAND 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 0.20. THIS IS ROUGHLY EQUIVALENT TO AN SCS CURVE NUMBER OF 78 WHICH IS TYPICAL FOR WOODS-GRASS AND MEADOW 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.

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

- THIS PROJECT WILL BE COVERED BY NPDES GENERAL PERMIT NO. 2 WHICH REGULATES STORMWATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
- THIS SHEET IS INCLUDED IN THE PLANS TO SUMMARIZE THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP). PARTICULAR INFORMATION CAN BE FOUND IN THE SWPPP DOCUMENTATION, WHICH SHALL INCLUDE:
 - THE SWPPP NARRATIVE DEVELOPED BY THE ENGINEER EXPLAINING HOW GENERAL PERMIT No. 2 REQUIREMENTS WILL BE MET
 - A COPY OF THE PERMIT AUTHORIZATION
 - CONTRACTOR AND SUB-CONTRACTOR CERTIFICATION STATEMENTS
 - ANTICIPATED SEQUENCE OF CONSTRUCTION EVENTS
 - DRAWINGS SHOWING LOCATIONS OF EROSION AND SEDIMENT CONTROL PRACTICES
 - COMPLETED INSPECTION REPORTS
 - MODIFICATIONS AND REPAIR DOCUMENTATION
- THE SWPPP DOCUMENTATION SHALL BE KEPT AND MAINTAINED BY THE DIVISION IN AN ELECTRONIC FORM ACCESSIBLE TO DIVISION PERSONNEL, ENGINEER, AND CONTRACTOR AT ALL TIMES. THE ELECTRONIC SWPPP DOCUMENTATION MUST BE MADE AVAILABLE WITHIN THREE (3) HOURS OF A REQUEST FROM REGULATORY PERSONNEL.
- THE PRIME CONTRACTOR AND ALL ITS SUBCONTRACTORS SHALL CONDUCT THEIR OPERATIONS IN A MANNER WHICH MINIMIZES EROSION AND PREVENTS SEDIMENTS FROM LEAVING THE CONSTRUCTION SITE. THE PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION AND COMPLIANCE OF THE SWPPP FOR THE ENTIRE CONTRACT. THIS REponsibility SHALL BE FURTHER SHARED WITH ALL OF ITS SUB-CONTRACTORS.
- THE WORK SHALL BE DONE IN ACCORDANCE WITH THE SWPPP, THE CONTRACT DRAWINGS, AND SECTION 02120 OF THE PROJECT SPECIFICATIONS. IN THE EVENT OF CONFLICT BETWEEN THESE REQUIREMENTS AND WATER POLLUTION CONTROL LAWS, RULES OR REGULATIONS OF OTHER FEDERAL, STATE OR LOCAL AGENCIES, THE MORE RESTRICTIVE LAWS, RULES OR REGULATIONS SHALL APPLY.
- CONTRACTOR SHALL FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR THE INSTALLATION OF ALL BMPs IDENTIFIED IN THE SWPPP.

A.(2)-STRUCTURAL PRACTICES CONT'D:

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

SEDIMENT CONTROL PRACTICES:

- GRANULAR SURFACING SHALL BE INSTALLED AND MAINTAINED AT THE ENTRANCE INTO THE SITE AND ANY IDENTIFIED PARKING AREAS TO CONTROL MUD FROM BEING TRACKED FROM THE SITE. TRACKING OF SEDIMENTS OFF-SITE WILL BE REDUCED BY AVOIDING VEHICLE TRAFFIC ACROSS WET SURFACE SOILS. IF GRANULAR SURFACING AT THE SITE ENTRANCE DOES NOT EFFECTIVELY PREVENT TRACKING OF MUD FROM THE SITE, THEN VEHICLE TIRES SHALL BE MANUALLY CLEANED TO THE EXTENT PRACTICABLE. CONTRACTOR SHALL REMOVE TRACKED MUD AND SOIL FROM ADJOINING ROADWAYS.
- EXISTING VEGETATION IN AREAS NOT NEEDED FOR CONSTRUCTION SHALL BE PRESERVED.
- WHERE INDICATED ON DRAWINGS, SEDIMENT CONTROL PRACTICES SHALL BE INSTALLED AT OR ALONG THE PERIMETER OF THE CONSTRUCTION AREA PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITY.
- RISERS, INLETS, INTAKES, AND OTHER SUCH WATER-CONVEYING STRUCTURES SHALL BE PROTECTED WITH SILT FENCES, STRAW WATTLES, OR FILTER SOCK AT THE TIME OF THEIR INITIAL INSTALLATION.
- IN AREAS WHERE THE PRESENCE OF SILT FENCE, FILTER SOCK OR STRAW WATTLE WILL INTERFERE WITH CONSTRUCTION ACTIVITIES, DIVERSION DITCHES AND TEMPORARY SEDIMENT TRAPS SHALL BE UTILIZED UNTIL THE SILT FENCE OR OTHER PRACTICES CAN BE INSTALLED.
- LOCATIONS AND QUANTITIES OF BMPs SHOWN ON THE DRAWINGS ARE APPROXIMATE. ACTUAL LOCATIONS OR QUANTITIES ARE TO BE DETERMINED IN THE FIELD WITH THE APPROVAL OF THE DIVISION OR THE PROJECT ENGINEER.
- AS THE WORK PROGRESSES, ADDITIONAL EROSION CONTROL MEASURES DEEMED NECESSARY, AS DETERMINED BY THE DIVISION OR ENGINEER AFTER INVESTIGATION, SHALL BE FURNISHED, INSTALLED AND MAINTAINED BY THE CONTRACTOR.

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:

- TEMPORARY SEDIMENT BASINS (AT LEAST 3 ACRES) WILL BE CONSTRUCTED ONSITE, SEE SHEET 16 FOR LOCATIONS AND SPECIFICATIONS.

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:

- DISTURBED AREA TOTALS MORE THAN 10 ACRES.

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

- STORMWATER WILL BE COLLECTED ALONG TERRACES AND MOVED THROUGH PIPES TO TEMPORARY SEDIMENT BASINS AS SHOWN ON SHEET 16. THE INLETS OF EACH PIPE WILL HAVE STRAW WATTLE PROTECTION FOR SEDIMENT CAPTURE.

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

- OUTLET PROTECTION (ROCK ARMORING) WILL BE CONSTRUCTED AT THE ENDS OF ALL PIPES. SEE SHEET 16 FOR LOCATION AND DETAILS A, B & 3 ON SHEET 9 FOR SPECIFICATIONS.

ii. DESCRIBE NATURAL BUFFERS AROUND SURFACE WATERS:

- AN EARTHEN BERM WILL BE CONSTRUCTED ALONG THE NORTH END OF THE PROJECT SITE. SEE SHEET 16 FOR LOCATION.

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

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:

- IF CONSTRUCTION ACTIVITY IS NOT PLANNED TO OCCUR IN A DISTURBED AREA FOR AT LEAST TWENTY-ONE (21) DAYS, THE AREA SHALL BE STABILIZED AS SOON AS PRACTICABLE AND WITHIN FOURTEEN (14) DAYS FOLLOWING THE LAST DISTURBANCE (UNLESS THE GROUND IS FROZEN OR SNOW COVERED) BY SURFACE ROUGHENING, TEMPORARY SEEDING, OR OTHER APPROVED METHOD.
- EROSION CONTROL PRACTICES BY THE CONTRACTOR SHALL CONTINUE UNTIL VEGETATIVE GROUND COVER IS ESTABLISHED. AND ACCEPTED BY THE DIVISION.
- ALL AREAS DISTURBED BEYOND CONSTRUCTION LIMITS SHOWN ON THIS PLAN MUST BE SEEDED AND STABILIZED. THE SEED MIXTURE USED SHOULD INCLUDE SPECIES SIMILAR TO AND COMPATIBLE WITH THE SURROUNDING VEGETATION.

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

- SEE SHEET 16 FOR OUTLET PROTECTION (ROCK ARMORING) LOCATIONS AND SHEET 9 FOR DETAILS.

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. AREAS WHERE CONCRETE WASHOUT OCCURS SHALL BE FILLED AND STABILIZED.

- ALL CONSTRUCTION WASTES WILL BE DISPOSED OFFSITE.
- THE CONTRACTOR SHALL MAINTAIN THE CONSTRUCTION SITE FREE OF ALL WASTES INCLUDING LITTER, USED PARTS, USED OIL AND CONTAINERS, TIRES, AND ANY OTHER WASTES GENERATED BY CONSTRUCTION ACTIVITIES. CONTRACTOR DISPOSAL OF UNUSED CONSTRUCTION MATERIALS AND WASTES SHALL ALSO COMPLY WITH FEDERAL, STATE, AND LOCAL REGULATIONS.

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.

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.
- THE CONTRACTOR SHALL MAINTAIN ALL EROSION AND SEDIMENT CONTROL PRACTICES IN PROPER WORKING ORDER FOR THE DURATION OF THE CONTRACT. IF A PRACTICE IS NO LONGER NEEDED AS DETERMINED BY THE DIVISION OR ENGINEER, IT SHALL BE REMOVED.
- MAINTENANCE INCLUDES CLEANING, REPAIRING, OR REPLACING AS REQUIRED. IN GENERAL, MAINTENANCE SHALL BE PERFORMED PRIOR TO THE NEXT ANTICIPATED STORM EVENT.
- REMOVE SEDIMENT FROM ALL BMPS WHEN THEIR INSTALLED CAPACITY IS REDUCED BY FIFTY (50) PERCENT OR MORE.

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

- PER CONTRACT DOCUMENTS, IDALS-DCSWQ 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. THE CONTRACTOR SHALL IMPLEMENT ALL REVISIONS.
- SITE INSPECTION IS THE RESPONSIBILITY OF THE DIVISION WITH ASSISTANCE FROM CONTRACTOR WHEN REQUESTED; SITE INSPECTIONS SHALL BE PERFORMED BY QUALIFIED PERSONNEL. INSPECTIONS SHALL BE PERFORMED ONCE EVERY SEVEN (7) DAYS.
- ALL INSTALLED BMPs SHALL BE INSPECTED FOR CONDITION AND EFFECTIVENESS.
- SITE INSPECTION REPORTS SHALL BE PROPERLY SIGNED BY THE PERSON CONDUCTING THE INSPECTION. THE REPORT SHALL INCLUDE:
 - A) DATE, NAME AND TITLE/POSITION OF THE INSPECTOR;
 - B) WEATHER INFORMATION;
 - C) LOCATION OF SEDIMENT/POLLUTANT DISCHARGE(S);
 - D) BMPs THAT ARE NEEDED, REQUIRE MAINTENANCE, OR HAVE FAILED,
 - E) CORRECTIVE ACTIONS REQUIRED;
 - F) CHANGES/UPDATES TO THE SWPPP.

- THE FINDINGS OF EACH INSPECTION SHALL BE RECORDED AND KEPT IN AN ELECTRONIC FORMAT WITH THE ELECTRONIC SWPPP.
- COPIES OF INSPECTION REPORTS WILL BE RETAINED WITH THE SWPPP FOR THREE (3) YEARS FROM THE DATE THE PERMIT COVERAGE TERMINATES

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: 014-NORTHKING_15-W_SWPPPNOTES

REVISED: 8/15/2025

ISSUED: 8/15/2025

CHKD. BY: KCW

DRAWN BY: CD

DESIGN BY: BK

TRIHYRO CORPORATION
1282 COMMERCE DRIVE
LARAMIE, WYOMING 82070
www.trihydro.com
(P) 307/745.7474 (F) 307/745.7729



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



NORTH KING (IA-048)
AML RECLAMATION PROJECT

SWPPP NOTES


SHEET

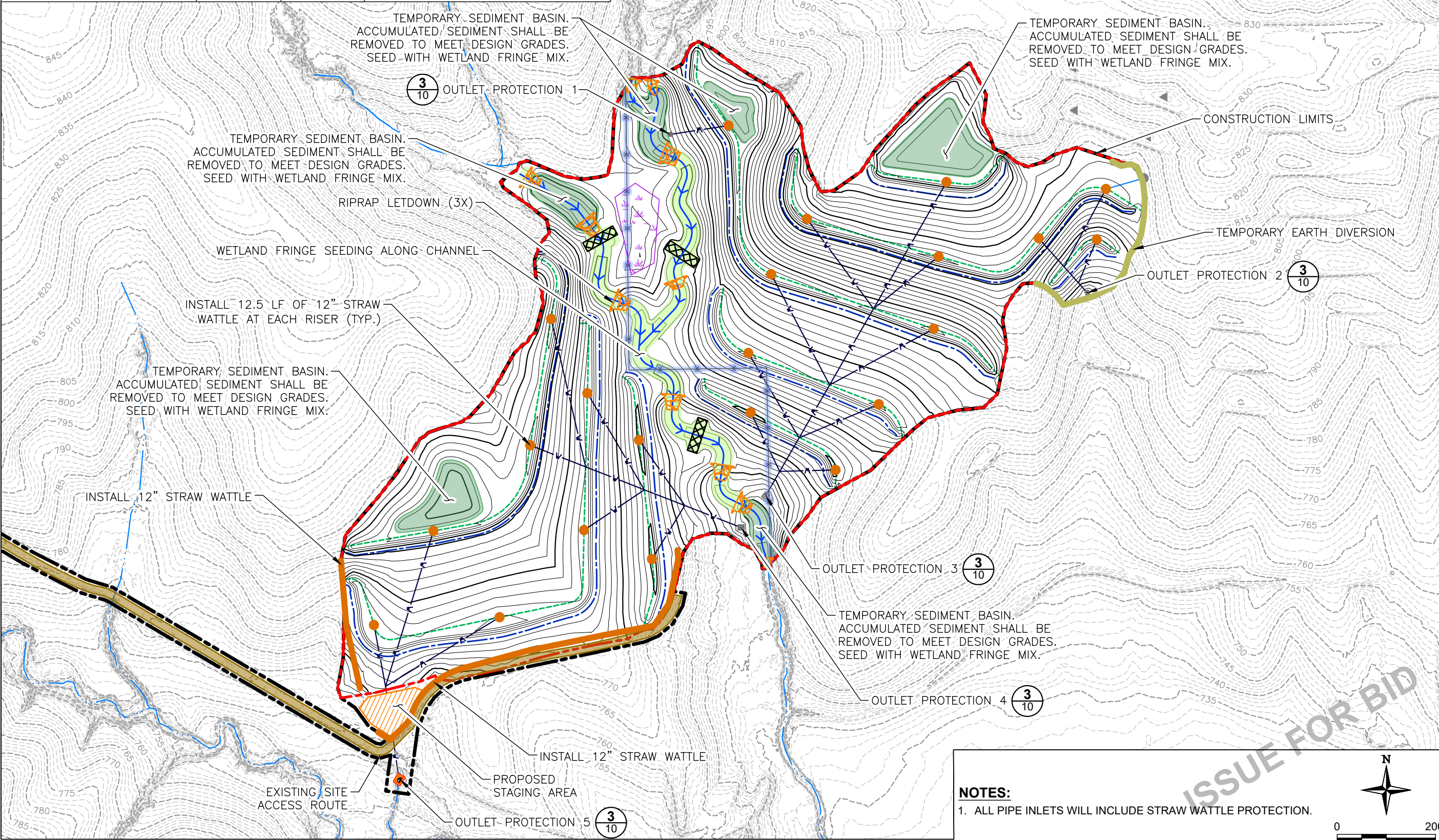
15 OF 16

C:\USERS\KILLIKSON\DC\ACDDOCS\TRIHYRO CORPORATION\014-NORTHKING\014-NORTHKING_16-W_SWPPPPLAN

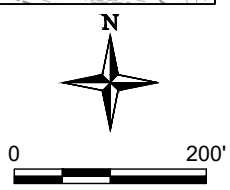
PLUNGE POOL SUMMARY					
NO.	WIDTH [FT]	LENGTH [FT]	EROSION STONE [TONS]	RIPRAP [TONS]	REMARKS
1	8	10	3	6	MIX EROSION STONE AND RIPRAP
2	15	18	8	18	MIX EROSION STONE AND RIPRAP
3	15	18	8	18	MIX EROSION STONE AND RIPRAP
4	17	19	9	22	MIX EROSION STONE AND RIPRAP
5	10	12	4	7	MIX EROSION STONE AND RIPRAP
TOTAL			32	71	

SEEDING SUMMARY	
SEED MIX	AREA [ACRES]
UPLAND SEED MIX	50.4
POLLINATOR SEED MIX	0.6
WETLAND FRINGE SEED MIX	5.7
TOTAL	56.7

 POLLINATOR SEEDING AREA



NOTES:
1. ALL PIPE INLETS WILL INCLUDE STRAW WATTLE PROTECTION.



DESIGN BY: BK	DRAWN BY: CD	CHKD. BY: KCW	ISSUED: 8/15/2025	REVISED: 8/15/2025	FILE: 014-NORTHKING_16-W_SWPPPPLAN	 Trihydro CORPORATION
						TRIHYDRO CORPORATION 1252 COMMERCE DRIVE LARAMIE, WYOMING 82070 www.trihydro.com (P) 307/745.7474 (F) 307/745.7729
IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP DIVISION OF SOIL CONSERVATION AND WATER QUALITY HOOVER BUILDING 1305 E WALNUT ST. DES MOINES, IA 50319 (515)281-4246						
NORTH KING (IA-048) AML RECLAMATION PROJECT SWPPP BMP PLAN						
SHEET 16 OF 16						