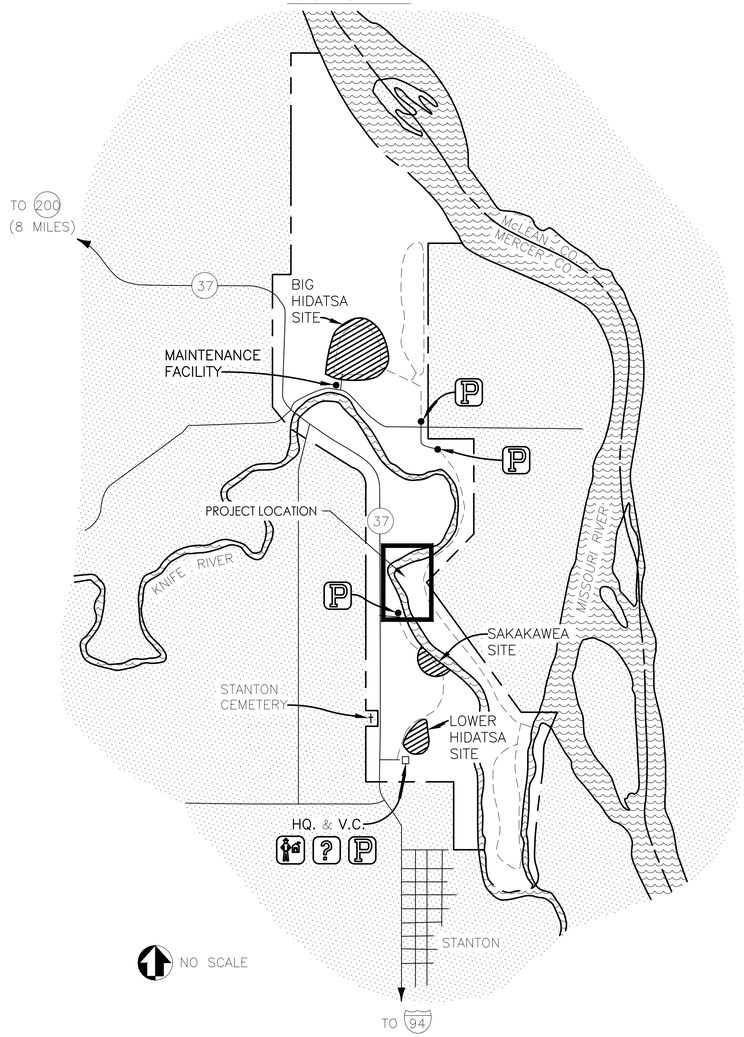
KNIFE RIVER INDIAN VILLAGES N.H.S.
KNIFE RIVER ELBEE BEND BANK STABILIZATION

PMIS NO.: 257081

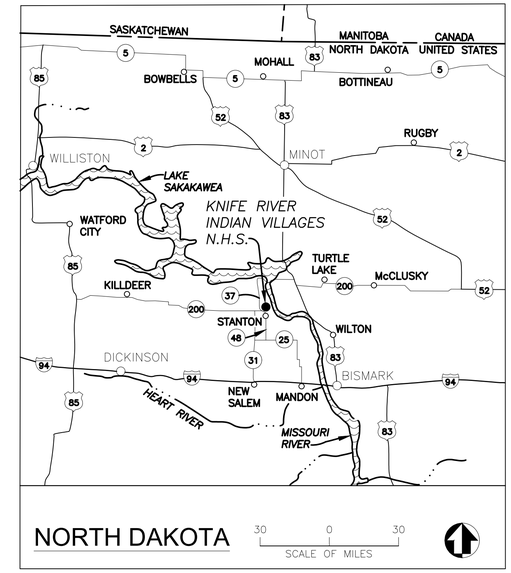
LOCATION MAP



LEGEND

- NATIONAL HISTORIC SITE BOUNDARY
- STATE LINE
- COUNTY LINE
- PAVED ROAD
- TRAIL
- CREEK OR RIVER
- V.C. VISITOR CENTER
- HQ. PARK HEADQUARTERS
- RANGER STATION
- INFORMATION CENTER
- PARKING

KNIFE RIVER INDIAN VILLAGES NATIONAL HISTORIC SITE



SHEET	SUB SHEET	TITLE OF SHEET
1	G1	COVER
2	G2	GENERAL NOTES
3	C1	EROSION CONTROL NOTES
4	V1	SITE SURVEY
5	V2	TREE SURVEY
6	C2	EROSION AND SEDIMENT CONTROL (PRE-CONSTRUCTION)
7	C3	EROSION AND SEDIMENT CONTROL (POST-CONSTRUCTION)
8	C4	OVERALL PLAN
9	C5	PLAN AND PROFILE (PROPOSED CENTERLINE)
10	C6	PLAN AND PROFILE (DRAINAGE FEATURES)
11	C7	ALIGNMENT CONTROL TABLES
12-13	C8-C9	CROSS SECTIONS
14	L1	LANDSCAPING PLAN
15-21	C10-C16	DETAILS

REGISTERED PROFESSIONAL ENGINEER
PATRICK T. PHILBIN
PE-40524
DATE 01/24/2025
NORTH DAKOTA

STANTEC CONSULTING SERVICES INC. –203723967

CIVIL ENGINEERING:
STANTEC CONSULTING SERVICES INC.
FORT COLLINS, CO

SURVEYING:
STANTEC CONSULTING SERVICES INC.
MANDAN, ND

GEOTECHNICAL & GEOTECHNICAL ENGINEERING:
US ARMY CORPS OF ENGINEERS
TERRACON CONSULTANTS INC.
STANTEC CONSULTING SERVICES INC.

WETLANDS:
US ARMY CORPS OF ENGINEERS
STANTEC CONSULTING SERVICES INC.
FORT COLLINS, CO

SURVEYING:
STANTEC CONSULTING SERVICES INC.
MANDAN, ND

Mark	Sheet	REVISION	Date	Initial

QUALITY DESIGN CERTIFICATION

- [ ] Prepared in Accordance with Design Development Title I_____ OR
- [ ] Variance from Design Development Title I Approved by Superintendent on _____ OR
- [x] Construction Drawing Not Preceded by Design Development Title I

Kris Neset — Project Manager Kris D. Neset — 1/28/2025 Date

CONSTRUCTION DRAWINGS

UNITED STATES
DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE
DENVER SERVICE CENTER

KNIFE RIVER ELBEE BEND
BANK STABILIZATION
KNIFE RIVER INDIAN VILLAGES N.H.S.

REGION MIDWEST | COUNTY MERCER | STATE NORTH DAKOTA

DRAWING NO. 468 184187
PMIS/PKG NO. KNRI 257081
SHEET 1 OF 21

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GENERAL NOTES:

1. PROJECT ACCESS MUST COMPLY WITH THE PERMIT CONDITIONS AND USE A TEMPORARY STREAM CROSSING. TYPICAL EMBANKMENT SECTIONS SHOWN ON SHEET 16 PROVIDE THE CONTRACTOR WITH A WORKING BENCH TO FACILITATE CONSTRUCTION ACTIVITIES.
2. EXISTING UTILITIES SHOWN ARE APPROXIMATE. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING UTILITY OPERATORS AND NORTH DAKOTA ONE CALL (1-800-795-0555 OR 811) AT LEAST FIVE WORKING DAYS PRIOR TO MOBILIZATION. ALL PIPELINES AND UNDERGROUND UTILITIES SHALL BE MARKED BY CONTRACTOR. CONTRACTOR SHALL MAINTAIN MARKERS DURING CONSTRUCTION. CONTRACTOR SHALL NOT ANCHOR, SPUD, OR EXCAVATE WITHIN 50 FT OF ANY PIPELINE.
3. PROJECT IS WITHIN AND ADJACENT TO CULTURAL RESOURCES AND ENVIRONMENTALLY SENSITIVE AREAS. CONTRACTOR SHALL AVOID/MINIMIZE IMPACTS TO THESE AREAS DURING THE COURSE OF WORK. OWNER RESERVES THE RIGHT TO SUSPEND WORK AT ANY TIME IF IMPACTS OCCUR UNTIL SATISFACTORY CORRECTIVE MEASURES ARE IMPLEMENTED BY CONTRACTOR. REFER TO SPECIFICATION SECTION 01 35 43 - ENVIRONMENTAL PROCEDURES FOR ADDITIONAL REQUIREMENTS, INCLUDING CONDITIONS TO AVOID IMPACTS TO WILDLIFE AND EXISTING VEGETATION.
4. CONTRACTOR SHALL BE FAMILIAR WITH AND ANTICIPATE EXISTING SOFT SOIL CONDITIONS AT THE WORK SITE. SOIL INVESTIGATION DATA WERE ACQUIRED BY STANTEC AND PRESENTED IN A GEOTECHNICAL DATA REPORT (REFER TO APPENDIX F IN SPECIFICATIONS). IN PREPARING BIDS, CONTRACTOR SHALL ANTICIPATE AVERAGE CONSTRUCTION SETTLEMENTS OF APPROXIMATELY 1.5 FT. REFER TO GRR PLACEMENT REQUIREMENTS ON THESE DRAWINGS AND IN THE SPECIFICATIONS. (REFER TO NOTE 25)
5. AERIAL PHOTOGRAPH SHOWN ON SHEET 4 IS 2024 MAXAR CNES DISTRIBUTION AIRBUS DS MADE AVAILABLE THROUGH MICROSOFT CORPORATION AERIAL.
6. CONTRACTOR SHALL TAKE PRECAUTIONS, SECURE EQUIPMENT, AND PROTECT THE WORK AGAINST ADVERSE WEATHER CONDITIONS.
7. CONTRACTOR SHALL STAKE LOCATIONS OF ALL TEMPORARY WARNING SIGNS FOR APPROVAL BY THE GOVERNMENT OR THE GOVERNMENT'S APPOINTED REPRESENTATIVE PRIOR TO INSTALLATION.
8. THE LIMITS OF ALL CONSTRUCTION SHALL BE MARKED/STAKED FOR CONCURRENCE BY THE GOVERNMENT OR THE GOVERNMENT'S APPOINTED REPRESENTATIVE PRIOR TO COMMENCING CONSTRUCTION. ADVANCE MARKING/STAKING MAY BE STAGED WITH ACTUAL PROGRESS OF WORK. REFER TO SPECIFICATION SECTION 01 32 23 - CONSTRUCTION SURVEYING FOR ADDITIONAL REQUIREMENTS.
9. CONTRACTOR SHALL OBTAIN WRITTEN NOTICE FROM THE GOVERNMENT FOR ALL ALIGNMENT CHANGES.
10. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES. DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO THE GOVERNMENT OR THE GOVERNMENT'S APPOINTED REPRESENTATIVE.
11. THERE ARE STAGING AREAS AVAILABLE ON NPS PROPERTY AS SHOWN ON PLANS. CONTRACTOR SHALL MAKE THEIR OWN ARRANGEMENTS, OBTAIN PERMISSION FROM APPLICABLE PROPERTY OWNERS, AND PAY ALL ASSOCIATED FEES FOR STAGING, FABRICATION, AND LOADING BARGES AS APPLICABLE.
12. CONTRACTOR SHALL AVOID CONSTRUCTION ACTIVITIES WITHIN THE DESIGNATED DO NOT DISTURB AREAS.
13. THE CONTRACTOR WILL NEED TO COMPLY WITH LISTED PERMITS/APPROVALS.
14. FEDERAL AND STATE PERMITS ARE REQUIRED TO PERFORM THE WORK SPECIFICATION 01 31 00 PERMITTING PROVIDES A LIST OF GOVERNMENT FURNISHED PERMITS AND POTENTIAL PERMITS. PERMIT CONDITIONS AFFECTING THE CONSTRUCTION PROCESSES HAVE BEEN INCLUDED IN APPENDIX C OF THE SPECIFICATIONS.
15. ANY DISCREPANCIES BETWEEN THESE PLANS AND THE CONSTRUCTION DOCUMENTS SHALL BE IMMEDIATELY REPORTED TO THE GOVERNMENT. ALL OTHER REGULATORY AUTHORIZATIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR. COPIES OF ANY SPECIAL PERMITS THAT ARE OBTAINED BY THE CONTRACTOR MUST BE SUBMITTED TO THE GOVERNMENT.
16. THE CONTRACTOR WILL MAKE EVERY EFFORT TO AVOID AND MINIMIZE DAMAGE TO ANY INFRASTRUCTURE, UTILITIES, AND PRIVATE PROPERTY ADJACENT TO THE PROJECT AREA. ANY DAMAGE SHALL BE REPLACED IN-KIND AND BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
17. CONTRACTOR SHALL KEEP JOB SITE FREE OF TRASH AND GARBAGE, AND SHALL IMMEDIATELY COLLECT ANY CONSTRUCTION-RELATED DEBRIS OR TRASH THAT IS IN OR DIRECTLY ADJACENT TO THE PROJECT SITE.
18. ALL SOIL EROSION CONTROL MEASURES REQUIRED BY THE EROSION CONTROL PLANS SHALL BE PERFORMED PRIOR TO GRADING OR CLEARING. ALL EROSION CONTROL DEVICES SUCH AS SILT FENCES, ETC. SHALL BE MAINTAINED IN WORKABLE CONDITIONS FOR THE LIFE OF THE PROJECT AND SHALL BE REMOVED AT THE COMPLETION OF THE PROJECT ONLY AFTER THE OWNER'S APPROVAL.
   - A. INSPECT ALL EROSION CONTROL MEASURES FOR STABILITY AND OPERATION WEEKLY OR WITHIN 24 HOURS AFTER ANY SIGNIFICANT STORM EVENT.
   - B. REMOVE SEDIMENT FROM BEHIND SILT FENCE WHEN THE DEPTH REACHES 0.5 FEET. SEDIMENT SHALL BE DISPOSED OF ON THE PROJECT ONLY IN PROTECTION AREAS OR HAULED AWAY IF NOT SUITABLE FOR FILL MATERIAL.
   - C. IF ANY EROSION CONTROL MEASURE IS FOUND TO BE UNSTABLE OR NOT FUNCTIONING PROPERLY, REPAIRS SHOULD BE DONE IMMEDIATELY TO MAINTAIN MEASURES AS DESIGNED OR AS APPROVED BY THE CONTRACTING OFFICER.
19. THE CONTRACTOR SHALL CONTROL ALL "DUST" BY PERIODIC WATERING AND SHALL PROVIDE ACCESS AT ALL TIMES FOR PROPERTY OWNERS WITHIN THE PROJECT AREA AND FOR EMERGENCY VEHICLES. ALL OPEN DITCHES AND HAZARDOUS AREAS SHALL BE CLEARLY MARKED IN ACCORDANCE WITH GOVERNING REGULATORY BODIES.
20. THE CONTRACTOR SHALL ENTER AND EXIT THE SITE VIA THE TEMPORARY CONSTRUCTION ENTRANCES AS DETAILED IN THE DRAWINGS.
21. PREVENT SPILLING OF FUELS, LUBRICANTS, COOLANTS, HYDRAULIC FLUIDS, AND ANY OTHER PETROLEUM PRODUCTS ONTO THE GROUND OR INTO SURFACE WATERS. DISPOSE OF SPENT FUELS APPROPRIATELY. AS PER LAW, THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH HAZARDOUS MATERIAL SPILLS INCLUDING REMEDIATION.
22. THE CONTRACTOR IS RESPONSIBLE FOR PROJECT SURVEY INCLUDING STREAM AND STRUCTURE LAYOUT. ALL STAKING WORK SHALL BE DONE BY A LICENSED SURVEYOR REGISTERED IN THE STATE OF NORTH DAKOTA.
23. FINISHED GRADE TOLERANCES SHALL BE AS NOTED IN THESE PLANS AND THE SPECIFICATIONS. THE CONTRACTING OFFICER MAY MAKE GRADE CHANGES AS REQUIRED IN THE FIELD WITHOUT AFFECTING BID PRICE FOR UNCLASSIFIED EXCAVATION.
24. IN-STREAM WORK SHALL BE CONSTRUCTED FROM THE UPSTREAM WORKING IN THE DOWNSTREAM DIRECTION. CONSTRUCT THE PROPOSED STREAM CHANNEL TO THE GRADE SPECIFIED.
25. NPS/MWAC WILL CONDUCT THE REQUIRED ARCHEOLOGICAL ACTIVITIES NECESSARY FOR CONSTRUCTION. MWAC WILL CONDUCT ADDITIONAL SURVEYS BEFORE CONSTRUCTION COMMENCEMENT. ALL ACTIVITIES MUST COMPLY WITH MITIGATIONS MEASURES IDENTIFIED DURING SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT COMPLIANCE.
26. THE CONTRACTOR IS REQUIRED TO OBTAIN A PERMIT FOR THE TEMPORARY CONSTRUCTION ENTRANCE FROM THE MERCER COUNTY HIGHWAY DEPARTMENT. THE COUNTY ROAD APPROACH PERMIT APPLICATION FEE IS $50. THE ROAD SUPERINTENDENT, ELROY OPP, WILL WANT THE ENTRANCE FLAGGED OR OTHERWISE MARKED BY THE CONTRACTOR AT THE TIME OF SUBMITTAL. A COPY OF THE COUNTY ROAD APPROACH PERMIT APPLICATION (PARTIALLY FILLED) IS INCLUDED IN THE CDS. WHEN READY TO SUBMIT THE CONTRACTOR CAN EMAIL THE COUNTY ROAD APPROACH PERMIT APPLICATION TO MERCERHD@WESTRIV.COM.

QUANTITY NOTES:

1. QUANTITIES ARE ESTIMATED QUANTITIES TO BE USED WHEN COMPARING BIDS AND THE RIGHT IS RESERVED BY OWNER TO INCREASE/DECREASE SUCH QUANTITIES AS MAY BE NECESSARY TO COMPLETE THE WORK AND/OR REMAIN WITHIN THE FUNDING LIMITS. REFER TO PARAGRAPH 1.41 IN SECTION 01 27 00 - DEFINITION OF CONTRACT LINE ITEMS.
2. MOBILIZATION AND DEMOBILIZATION SHALL INCLUDE ALL APPROPRIATE COSTS ASSOCIATED WITH CONSTRUCTING ALL FEATURES LISTED IN THE SPECIFICATIONS AND/OR SHOWN IN THE PLANS.

Item	Estimated Quantity	Unit
Clearing	18	AC
Mobilization/Demobilization	1	LS
Construction Surveying and Staking	1	LS
Temporary River Crossing	1	EA
Silt Fence	2000	LF
Temporary Access Road	1240	LF
Permanent Access Road	700	LF
Silt Curtain	1	EA
Oil Boom	1	EA
Temporary Rock Constuction Entrances	2	EA
Temporary Seeding	13.5	AC
Temporary Tree Protection	12	EA
Unclassified Excavation	24933	CY
Embankment Fill	7077	CY
Excess Material	19700	CY
Void-Filled Riprap	14435	CY
Bedding	1348	CY
Onsite Topsoil	6283	CY
Imported Topsoil	3874	CY
Erosion Control Blanket	1.7	AC
Erosion Control Matting	1.6	AC
Mulching	15.5	AC
Upland Seed Mix	13.9	AC
Wetland Seed Mix	1.6	AC
As-Built Survey	1	EA

ABBREVIATIONS

ABBREVIATION	DEFINITION
GRR	GRADED RIP RAP
LWA	LIGHT WEIGHT AGGREGATE
LWAC	LIGHT WEIGHT AGGREGATE CORE
LPSTP	LONGITUDINAL PEAK STONE TOE PROTECTION
MHW	MEAN HIGH WATER
MLW	MEAN LOW WATER
MWL	MEAN WATER LEVEL
NGS	NATIONAL GEODETIC SURVEY
NPS	NATIONAL PARK SERVICE
NHP	NATURAL HISTORIC PARK
NAD'83	NORTH AMERICAN DATUM OF 1983
NAVD	NORTH AMERICAN VERTICAL DATUM
NTS	NOT TO SCALE
OHWM	ORDINARY HIGH WATER MARK
PMIS	PROJECT MANAGEMENT INFORMATION SYSTEM
SAV	SUBMERGED AQUATIC VEGETATION
TBD	TO BE DETERMINED
USACE	UNITED STATES ARMY CORPS OF ENGINEERS
USGS	UNITED STATES GEOLOGIC SURVEY

CONSTRUCTION SEQUENCE:

1. THE CONTRACTOR SHALL FOLLOW THE SEQUENCE OF CONSTRUCTION IN ACCORDANCE WITH THE PLANS AND AS APPROVED BY THE CONTRACTING OFFICER.
2. THE CONTRACTOR SHALL CONDUCT STREAM WORK, INCLUDING INSTALLATION OF EMBANKMENT, GRADING, STABILIZATION MEASURES, AND SEEDING AND MULCHING, ON A SECTION OF STREAM THAT CAN BE ENTIRELY COMPLETED/STABILIZED IN A SINGLE DAY.
3. THE CONTRACTOR SHALL IDENTIFY THE PROJECT BOUNDARY, LIMITS OF DISTURBANCE, SENSITIVE AREAS, STAGING AREAS, AND CONSTRUCTION ENTRANCES WITH THE CONTRACTING OFFICER.
4. THE CONTRACTOR SHALL PREPARE STABILIZED CONSTRUCTION ENTRANCES.
5. THE CONTRACTOR SHALL MOBILIZE EQUIPMENT, MATERIALS, PREPARE STAGING AREAS, AND STOCKPILE AREAS.
6. CONSTRUCTION TRAFFIC TO BE LIMITED TO "LIMITS OF DISTURBANCE" AS INDICATED ON THE CONSTRUCTION PLANS OR AS APPROVED BY THE CONTRACTING OFFICER.
7. THE CONTRACTOR SHALL INSTALL ALL TEMPORARY CHECK DAMS, SILT FENCE, AND MULCHING AROUND ALL CONSTRUCTION AREAS INCLUDING STAGING AND STOCKPILE AREAS AS INDICATED ON THE CONSTRUCTION PLANS OR AS APPROVED BY THE CONTRACTING OFFICER.
8. THE CONTRACTOR SHALL INSTALL ALL TEMPORARY STREAM CROSSINGS.
9. IF NEEDED PUMP-AROUND OPERATION SHALL BE USED TO DIVERT FLOW DURING CONSTRUCTION. ALL EXCAVATION AND FILLING SHALL BE PERFORMED IN A MANOR THAT LIMITS SEDIMENT RELEASE DOWNSTREAM.
10. THE CONTRACTOR SHALL BEGIN CLEARING WITHIN THE LOD. THE TOP 6 INCHES OF TOPSOIL SHALL BE HARVESTED AND STOCKPILED FOR FUTURE USE. EXISTING WETLAND TOPSOIL SHALL BE STOCKPILED SEPARATELY FROM THE UPLAND TOPSOIL. IF COURSE CHANNEL BED MATERIAL IS ENCOUNTERED, THE TOP 6" SHALL BE HARVESTED AND STOCKPILED FOR USE WHEN COMPLETING LOW FLOW CHANNEL FINISHED GRADE.
11. THE CONTRACTOR SHALL BEGIN FLOODPLAIN EXCAVATION AND EMBANKMENT GRADING WORK TO FINISHED GRADE AT THE UPSTREAM END OF THE CHANNEL AS INDICATED ON THE CONSTRUCTION PLANS. THE CONTRACTOR SHALL NOT DISTURB ANY MORE FLOODPLAIN AREA LARGER AND STREAM REACH LONGER THAN CAN BE STABILIZED IN ONE DAY.
12. ONCE A SECTION OF STREAM AND FLOODPLAIN HAVE BEEN EXCAVATED TO SUB GRADES, EMBANKMENT FILL, ROCK, AND TOPSOIL SHALL BE PLACED TO ACHIEVE FINISHED GRADE. TEMPORARY/PERMANENT SEEDING, MULCHING, AND MATTING SHALL BE INSTALLED ONCE FINISHED GRADE SURFACE IS COMPLETED. TEMPORARY AND PERMANENT SEEDING MIXTURES WILL BE APPLIED AS SHOWN ON THE PLANTING PLAN. TEMPORARY SEEDING WILL BE APPLIED IN ALL AREAS SUSCEPTIBLE TO EROSION SUCH THAT GROUND COVER IS ESTABLISHED WITHIN 7 WORKING DAYS FOLLOWING COMPLETION OF ANY GRADING PHASE. PERMANENT GROUND COVER WILL BE ESTABLISHED FOR ALL DISTURBED AREAS WITHIN 15 WORKING DAYS FOLLOWING COMPLETION OF CONSTRUCTION.
13. IF EXCESSIVE SEDIMENTATION DOWNSTREAM BECOMES A CONCERN, THE CONTRACTING OFFICER MAY DIRECT THE CONTRACTOR TO INSTALL ADDITIONAL TEMPORARY CONTROL MEASURES DOWNSTREAM. THIS AREA IS TO BE MAINTAINED ON A REGULAR BASIS BY THE CONTRACTOR.
14. INSTALLATION OF EROSION CONTROL BLANKET AND MATTING ALONG WITH ALL SEEDING AND MULCHING SHALL BE COMPLETED BEFORE LEAVING THE PROJECT SITE ALONG WITH REMOVAL OF ANY TEMPORARY STREAM CROSSINGS AND TEMPORARY CHECK DAMS.
15. ALL PERMANENT SEEDING SHALL BE PERFORMED DURING THE APPROPRIATE TIME OF YEAR.
16. THE CONTRACTOR SHALL ENSURE THAT THE SITE IS FREE OF TRASH AND LEFTOVER MATERIALS PRIOR TO DEMOBILIZATION OF EQUIPMENT FROM THE SITE.

LEGEND

EXISTING

- ELECTRICAL POLE
- CTV
- BASE STATION
- CULVERT
- EXISTING KNIFE RIVER CENTERLINE
- EXISTING ROAD CENTERLINE
- EXISTING ROAD EDGES
- EXISTING SURVEY LIMITS
- EXISTING FENCE LINE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING OHWM
- EXISTING WETLANDS

PROPOSED

- PROPOSED CENTERLINES
- SHEET EXTENTS OUTLINE
- LIMITS OF DISTURBANCE
- PROPOSED STAGING BOUNDARY
- TEMPORARY OIL BOOM
- TEMPORARY SILT FENCE
- TEMPORARY SILT CURTAIN
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED OHWM
- PROPOSED CULVERTS
- PROPOSED EROSION CONTROL MATTING
- PROPOSED EROSION CONTROL BLANKET
- PROPOSED MULCHING AND SEEDING
- PROPOSED TEMPORARY ACCESS ROAD
- PROPOSED WETLANDS
- PROPOSED ROCK TOE PROTECTION
- PROPOSED LONGITUDINAL PEAK STONE
- PROPOSED SOIL RIPRAP
- PROPOSED ROCK LINED EMBANKMENT
- PROPOSED UPLAND SEEDING

A/E FIRM PRIME/CIVIL STANTEC CONSULTING SERVICES INC. DENVER, CO	DESIGNED: PTP CADD JMM TECH. REVIEW: JGG DATE: 12/13/2024	SUB SHEET NO. G2	TITLE OF SHEET KNIFE RIVER GENERAL NOTES KNIFE RIVER INDIAN VILLAGES N.H.S.

DRAWING NO. 468 / 184187
PMIS/PKG NO. 257081
SHEET 2 OF 21

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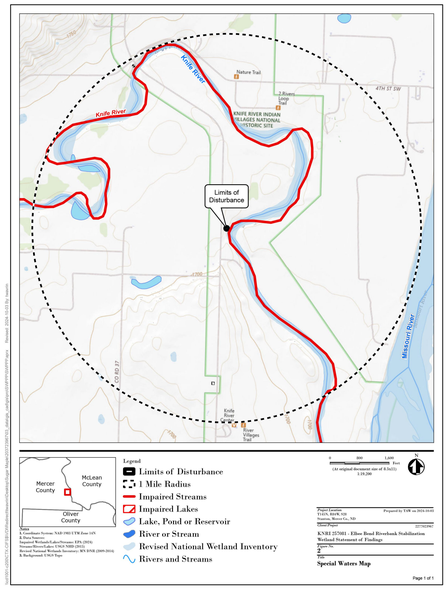
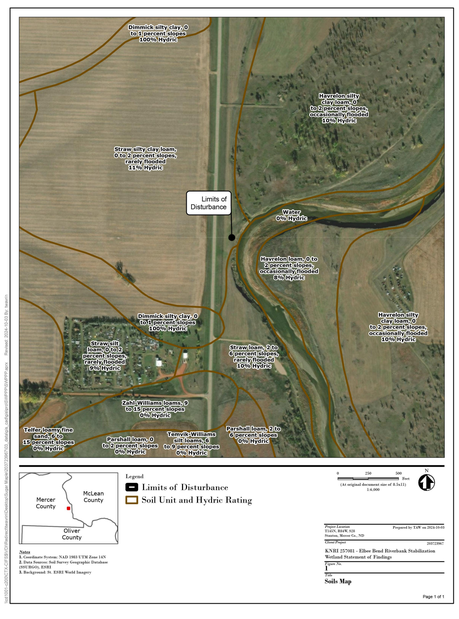
IMPAIRED WATERS MAP



SOIL MAP



PROJECT INFORMATION

PROJECT NAME: KNIFE RIVER ELBEE BEND BANK STABLIZATION
PROJECT LOCATION: MERCER COUNTY, NORTH DAKOTA
PROJECT TYPE: CULTURAL RESOURCE PROTECTION THROUGH BANK STABILIZATION
TOTAL AREA DISTURBED BY CONSTRUCTION: APPROXIMATELY 19.0 ACRES.
ESTIMATED CONSTRUCTION DATES: SUMMER 2025 - FALL 2025
CUMULATIVE IMPERVIOUS SURFACE/PERMANENT STORMWATER MANAGEMENT REQUIREMENTS:
THE PROPOSED PROJECT RESULTS IN A 0 ACRE NET CHANGE IN IMPERVIOUS SURFACE WITHIN THE LIMITS OF THE SITE.
THE SITE IS WITHIN THE FLOODPLAIN AND CHANNEL OF THE KNIFE RIVER, WHICH IS LISTED AS AN IMPAIRED WATER DUE TO E. COLI. THERE ARE CURRENT APPROVED TMDLS FOR THE WATERBODY FOR E. COLI BACTERIA.

THERE IS NO PERMANENT STORMWATER SYSTEM PROPOSED FOR THIS PROJECT. THE SITE WILL BE GRADED TO NATURAL DRAINAGE PATTERNS CONVEYING ALL WATER TO THE KNIFE RIVER CHANNEL. APPROPRIATE MEASURES WILL BE TAKEN TO REDUCE SEDIMENT LADEN WATER FROM ENTER THE MAIN CHANNEL OF THE KNIFE RIVER.

PARTY RESPONSIBLE FOR LONG TERM OPERATION AND MAINTENANCE OF THE SITE (OWNER): US NATIONAL PARKS SERVICE
CONTACT: THOMAS W. SMITH SUPERINTENDENT (PARK MANAGER)
CONTACT EMAIL: TOM_SMITH@NPS.GOV

PARTY RESPONSIBLE FOR IMPLEMENTATION OF THE SWPPP (CONTRACTOR): FUTURE CONTRACTOR
CONTRACTOR:
CONTRACTOR PHONE:
CONTRACTOR EMAIL:

CONTRACTOR SHALL PROVIDE A CHAIN OF RESPONSIBILITY WITH ALL OPERATORS ON THE SITE FOR INCORPORATION INTO THIS SWPPP DOCUMENT TO ENSURE THAT THE SWPPP WILL BE IMPLEMENTED AND STAY IN EFFECT UNTIL THE CONSTRUCTION PROJECT IS COMPLETE (THROUGH FINAL STABILIZATION AND NOT SUBMITTAL). CONTRACTOR SHALL ALSO PROVIDE DOCUMENTATION OF PERSONNEL TRAINING IN ACCORDANCE WITH THE PERMIT FOR INCORPORATION INTO THIS SWPPP DOCUMENT AS SOON AS THE PERSONNEL FOR THE PROJECT HAVE BEEN DETERMINED. CONTRACTOR IS RESPONSIBLE FOR KEEPING A FINAL SWPPP DOCUMENT, CONTAINING THE INFORMATION REQUIRED ABOVE, AT THE CONSTRUCTION SITE FOR THE DURATION OF THE PROJECT.

SWPPP DOCUMENTS

THE SWPPP IS COMPOSED OF, BUT NOT LIMITED TO, THE BELOW PROJECT DOCUMENTS. THESE DOCUMENTS SHALL BE KEPT ON THE PROJECT SITE AT ALL TIMES THROUGHOUT CONSTRUCTION. THE SWPPP SHALL BE AMENDED BY THE PERSON RESPONSIBLE TO INCLUDE ANY DOCUMENTS NECESSARY TO ENSURE ADHERENCE TO THE GENERAL PERMIT.

KNIFE RIVER ELBEE BEND CONSTRUCTION DOCUMENTS BY NPS AS BID

THE CONTRACTOR SHALL PREPARE AND IMPLEMENT A SWPPP FOR ALL CONSTRUCTION ACTIVITIES COVERED UNDER NDR11-0000. THE CONTRACTOR SHALL OBTAIN THE NECESSARY NDPDES PERMITS (NDAC CHAPTER 33.1-16-01) AND IMPLEMENT BMPS TO COMPLY WITH THE STANDARDS OF QUALITY FOR WATERS OF THE STATE (NDAC CHAPTER 33.1-16-02.1).

RECORD RETENTION - THE SWPPP, ALL CHANGES TO IT, AND INSPECTION AND MAINTENANCE RECORDS MUST BE KEPT ON-SITE DURING CONSTRUCTION; THE CONSTRUCTION DRAWINGS ARE INCORPORATED HEREIN BY REFERENCE, AND A COPY OF THE PLAN SET SHOULD BE KEPT ON-SITE WITH THE SWPPP RECORDS. THE OWNER MUST RETAIN A COPY OF THE SWPPP ALONG WITH THE FOLLOWING RECORDS FOR THREE (3) YEARS AFTER SUBMITTAL OF THE NOTICE OF TERMINATION:
1. ANY OTHER PERMITS REQUIRED FOR THE PROJECT;
2. RECORDS OF ALL INSPECTION AND MAINTENANCE CONDUCTED DURING CONSTRUCTION;
3. ALL PERMANENT OPERATIONS AND MAINTENANCE AGREEMENTS THAT HAVE BEEN IMPLEMENTED, INCLUDING ALL RIGHT OF WAY, CONTRACT, COVENANTS AND OTHER BINDING REQUIREMENTS REGARDING PERPETUAL MAINTENANCE; AND
4. ALL REQUIRED CALCULATIONS FOR DESIGN OF THE TEMPORARY AND PERMANENT STORMWATER MANAGEMENT SYSTEMS.

INSPECTIONS

THE INSPECTION LOG WILL BE COMPLETED BY THE CONTRACTOR FOR THE CONSTRUCTION SITE.
INSPECTOR(S): TBD - TRAINING DOCUMENTATION (PER SECTION 21.2 OF THE PERMIT) WILL BE INCORPORATED INTO THIS SWPPP AS SOON AS THE PERSONNEL FOR THE PROJECT HAVE BEEN DETERMINED. THE CONTRACTOR WILL MAKE CORRECTIONS OR REPAIRS REQUIRED TO COMPLY WITH THE PERMIT.

INSPECTIONS AT THE SITE WILL BE COMPLETED IN ACCORDANCE WITH THE PERMIT AS FOLLOWS:
ONCE EVERY SEVEN (7) DAYS DURING ACTIVE CONSTRUCTION AND,
WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS.

1. THE INDIVIDUAL PERFORMING INSPECTIONS MUST BE TRAINED AS REQUIRED BY SECTION 21.3 OF THE PERMIT. TRAINING DOCUMENTATION SHALL BE PROVIDED BY THE CONTRACTOR FOR INCORPORATION INTO THE SWPPP. INSPECTIONS MUST INCLUDE STABILIZED AREAS, EROSION PREVENTION AND SEDIMENT CONTROL BMPS, AND INFILTRATION AREAS. CORRECTIVE ACTIONS MUST BE IDENTIFIED AND DATE OF CORRECTION MUST BE NOTED AS IDENTIFIED IN SECTION 11.11 OF THE PERMIT. ANY OFFSITE DISCHARGE MUST BE DOCUMENTED AS IDENTIFIED IN SECTION 11.11 OF THE PERMIT. ANY AMENDMENTS TO THE SWPPP PROPOSED AS A RESULT OF THE INSPECTION MUST BE DOCUMENTED WITHIN SEVEN (7) CALENDAR DAYS. AN INSPECTION LOG IS ALSO ATTACHED; THE INSPECTION LOG AND SWPPP MUST BE KEPT ON-SITE FOR THE DURATION OF THE CONSTRUCTION PROJECT.

AT A MINIMUM, THE FOLLOWING SHALL BE COMPLETED DURING EACH INSPECTION:
-RECORD DATE AND TIME OF INSPECTION.
-RECORD RAINFALL RECORDS SINCE THE MOST RECENT INSPECTION.
-INSPECT THE SITE FOR EXCESS EROSION AND SEDIMENTATION.
-INSPECT THE SITE FOR DEBRIS, TRASH, AND SPILLS.
-INSPECT TEMPORARY EROSION AND SEDIMENTATION CONTROL DEVICES.
-INSPECT CONSTRUCTION ENTRANCES FOR SEDIMENT TRACKING ONTO PUBLIC STREETS.
-RECORD RECOMMENDED REPAIRS AND MODIFICATIONS TO EROSION AND SEDIMENT CONTROLS.
-RECOMMEND ANY NECESSARY CHANGES TO THIS SWPPP.
-RECORD REPAIRS AND MODIFICATIONS IMPLEMENTED SINCE PREVIOUS INSPECTIONS.
-INSPECT THE ADJACENT STREETS AND CURB AND GUTTER FOR SEDIMENT, LITTER, AND CONSTRUCTION DEBRIS.

THE GENERAL CONTRACTOR MUST UPDATE THE SWPPP, INCLUDING THE JOBSITE BINDER AND SITE MAPS, TO REFLECT THE PROGRESS OF CONSTRUCTION ACTIVITIES AND GENERAL CHANGES TO THE PROJECT SITE. UPDATES SHALL BE MADE DAILY TO TRACK PROGRESS WHEN ANY OF THE FOLLOWING ACTIVITIES OCCUR: BMP INSTALLATION, MODIFICATION OR REMOVAL, CONSTRUCTION ACTIVITIES (E.G. PAVING, SEWER INSTALLATION, ETC), CLEARING, GRADING, OR TEMPORARY AND PERMANENT STABILIZATION.

THE CONTRACTOR MAY UPDATE OR MODIFY THE SWPPP WITHOUT THE CONTRACTING OFFICER APPROVAL IN AN EMERGENCY SITUATION TO PREVENT SEDIMENT DISCHARGE OR PROTECT WATER QUALITY. THE CONTRACTOR IS ULTIMATELY RESPONSIBLE TO ENSURE COMPLIANCE WITH THE PERMIT AND PROTECTION OF DOWNSTREAM WATER QUALITY.

EROSION AND SEDIMENT CONTROL

PRIOR TO ANY SITE DISTURBANCE, AND AS REQUIRED AS CONSTRUCTION PROGRESSES, ANY PERMIT REQUIRED EROSION PREVENTION MEASURES AND THE SEDIMENT CONTROL DEVICES (INLET PROTECTION, CONSTRUCTION ENTRANCE, SILT FENCE, EROSION CONTROL BLANKET) SHOWN ON THE CONSTRUCTION DRAWINGS WILL BE INSTALLED AT THE SITE.

ALL EXPOSED SOIL AREAS WITHIN THE CONSTRUCTION LIMITS WILL BE STABILIZED WITHIN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY (WILL NOT RESUME FOR A PERIOD EXCEEDING 7 CALENDAR DAYS) OR PERMANENTLY CEASED. STABILIZATION WILL BE INITIATED IMMEDIATELY. EXPOSED SOIL AREAS MUST HAVE TEMPORARY EROSION PROTECTION (SLASH MULCH, EROSION CONTROL BLANKET, SEED) OR PERMANENT COVER YEAR ROUND.

CONTRACTOR SHALL IMPLEMENT APPROPRIATE CONSTRUCTION PHASING, VEGETATIVE BUFFER STRIPS, HORIZONTAL SLOPE GRADING, AND OTHER CONSTRUCTION PRACTICES THAT MINIMIZE EROSION WHEN PRACTICAL. THE NORMAL WETTED PERIMETER OF ANY TEMPORARY OR PERMANENT DRAINAGE DITCH THAT DRAINS WATER FROM A CONSTRUCTION SITE, OR DIVERTS WATER AROUND A SITE, MUST BE STABILIZED WITHIN 200 LINEAL FEET FROM THE PROPERTY EDGE, OR FROM THE POINT OF DISCHARGE TO ANY SURFACE WATER. STABILIZATION MUST BE COMPLETED WITHIN 24 HOURS OF CONNECTING TO A SURFACE WATER. PIPE OUTLETS MUST BE PROVIDED WITH TEMPORARY OR PERMANENT ENERGY DISSIPATION WITHIN 24 HOURS OF CONNECTION TO A SURFACE WATER.

SWPPP IMPLEMENTATION, PHASING, AND SEQUENCE OF CONSTRUCTION:
BMP AND EROSION CONTROL INSTALLATION SEQUENCE SHALL BE AS FOLLOWS:
1. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE AND INSTALL SILT FENCE.
2. INSTALL INLET PROTECTION AT EXISTING STORMWATER CULVERTS AND INLETS, IF APPLICABLE.
3. PREPARE TEMPORARY STORAGE, PARKING, AND PHASING AREAS.
4. CONSTRUCT AND STABILIZE DIVERSIONS AND TEMPORARY SEDIMENT TRAPS/BASINS, IF APPLICABLE.
5. PERFORM CLEARING OF THE SITE, IF APPLICABLE.
6. PERFORM MASS GRADING, ROUGH GRADE TO ESTABLISH PROPOSED DRAINAGE PATTERNS.
7. BEGIN EXCAVATION OF PERMANENT STORMWATER BASIN AREAS. SEE SEQUENCING BELOW FOR ADDITIONAL INFORMATION.
8. START CONSTRUCTION OF THE CHANNEL AND EMBANKMENT.
9. TEMPORARILY SEED WITH PURE LIVE SEED THROUGHOUT CONSTRUCTION. DISTURBED AREAS THAT WILL BE INACTIVE FOR 14 DAYS OR MORE AS REQUIRED BY NPDES OR PERMIT.

SEDIMENT CONTROL PRACTICES MUST MINIMIZE SEDIMENT FROM ENTERING SURFACE WATERS, INCLUDING CURB AND GUTTER SYSTEMS AND STORM SEWER INLETS. THE FOLLOWING MEASURES WILL BE TAKEN AS SEDIMENT CONTROL PRACTICES IN ORDER TO MINIMIZE SEDIMENTS FROM ENTERING SURFACE WATERS:
1. INSTALLATION OF SEDIMENT CONTROL PRACTICES ON ALL DOWN GRADIENT PERIMETERS PRIOR TO LAND DISTURBING ACTIVITIES.
2. SILT FENCING, BIOLOGS, OR OTHER SEDIMENT CONTROL SURROUNDING TEMPORARY SOIL STOCKPILES.
3. VEHICLE TRACKING BMP AT CONSTRUCTION SITE ENTRANCE/EXIT. STREET SWEEPING SHALL BE PERFORMED IF VEHICLE TRACKING BMPS ARE NOT ADEQUATE TO PREVENT SEDIMENT TRACKING. TRACKED SEDIMENT MUST BE REMOVED FROM ALL PAVED SURFACES BOTH ON AND OFFSITE WITHIN 24 HOURS OF DISCOVERY PER THE PERMIT.
4. STREET SWEEPING IS NOT TO BE USED AS A PRIMARY BMP FOR SEDIMENT TRACKING. IF SEDIMENT IS TRACKED OFFSITE, WORK WILL CEASE UNTIL PROPER EROSION CONTROL AND SEDIMENT CONTROL DEVICES ARE INSTALLED AND/OR BEING MAINTAINED TO PREVENT TRACKING BEYOND THE SITE'S PERIMETER (CONTAINMENT AREA). ALL STREET SWEEPING MUST BE PERFORMED UTILIZING A PICK-UP SWEEPER. IF NECESSARY WATER WILL ALSO BE USED TO CLEAN UP THE STREETS PRIOR TO BEING SWEPT TO ENSURE THEY ARE FULLY CLEANED.

THE FOLLOWING GUIDELINES WILL BE USED TO DETERMINE IF POLLUTION CONTROL DEVICES REQUIRE MAINTENANCE, REPAIR, OR REPLACEMENT:
-IF SEDIMENT CONTROL DEVICES SUCH AS SILT FENCE ARE FILLED TO 1/3 THE HEIGHT OF THE FENCE, REMOVE ALL SEDIMENT WITHIN 24 HOURS OF DETECTION OR NOTIFICATION.
-IF INLET PROTECTION DEVICES APPEAR PLUGGED WITH SEDIMENT, ARE FILLED TO 1/3 CAPACITY, OR HAVE STANDING WATER AROUND THEM, REMOVE THE SEDIMENT AND CLEAN OR REPLACE THE FILTER WITHIN 24 HOURS OF DETECTION OR NOTIFICATION.
-IF THE GRAVEL CONSTRUCTION ENTRANCE(S) ARE FILLED WITH SEDIMENT EITHER REPLACE THE ENTRANCE OR ADD ADDITIONAL GRAVEL WITH 24 HOURS OF DETECTION OR NOTIFICATION.
-IF SEDIMENT FROM THE SITE IS OBSERVED ON ADJACENT STREETS OR OTHER PROPERTIES, THE INSPECTOR SHALL IDENTIFY THE SOURCE AND DISCHARGE LOCATION OF THE SEDIMENT AND INSTRUCT TO IMPLEMENT ADDITIONAL EROSION AND SEDIMENT CONTROLS AT THOSE LOCATIONS TO PREVENT FUTURE DISCHARGES.
-IF BUILDING MATERIALS, CHEMICALS, OR GENERAL REFUSE IS BEING USED, STORED, DISPOSED OF, OR OTHERWISE MANAGED INAPPROPRIATELY, CORRECT SUCH DEFECTS WITHIN 24 HOURS OF DETECTION OR NOTIFICATION.
-IF EXCESSIVE SEDIMENTS OR DEBRIS ARE OBSERVED AT THE FLARED END SECTION OUTFALLS, THE INSPECTOR SHALL DETERMINE THE SOURCE AND DISCHARGE LOCATIONS OF SUCH MATERIALS. IF THE DISCHARGE HAS OCCURRED ON THE PROPERTY, REMOVE THE SEDIMENTS AND DEBRIS WITHIN 24 HOURS OF NOTIFICATION AND CORRECT THE SOURCE OF SUCH MATERIALS AS APPROVED BY THE CONTRACTING OFFICER.

POLLUTION PREVENTION MEASURES

SOLID WASTE:
SOLID WASTE, INCLUDING BUT NOT LIMITED TO, COLLECTED ASPHALT AND CONCRETE MILLINGS, FLOATING DEBRIS, PAPER, PLASTIC, FABRIC, CONSTRUCTION AND DEMOLITION DEBRIS AND OTHER WASTE, INCLUDING ALL TRASH ONSITE, MUST BE REGULARLY DISPOSED OF PROPERLY AND MUST COMPLY WITH ND DEQ DISPOSAL REQUIREMENTS.

HAZARDOUS MATERIALS:
HAZARDOUS MATERIALS, INCLUDING BUT NOT LIMITED TO OIL, GASOLINE, PAINT AND ANY HAZARDOUS SUBSTANCE MUST BE PROPERLY STORED INCLUDING SECONDARY CONTAINMENTS, TO PREVENT SPILLS, LEAKS OR OTHER DISCHARGE. RESTRICTED ACCESS TO STORAGE AREAS MUST BE PROVIDED TO PREVENT VANDALISM. STORAGE AND DISPOSAL OF HAZARDOUS WASTE MUST BE IN COMPLIANCE WITH ND DEQ REGULATIONS.

CONSTRUCTION EQUIPMENT/VEHICLES:
EXTERNAL WASHING OF TRUCKS AND OTHER CONSTRUCTION VEHICLES MUST BE LIMITED TO A DEFINED AREA OF THE SITE. RUNOFF MUST BE CONTAINED AND WASTE PROPERLY DISPOSED OF. NO ENGINE DEGREASING IS ALLOWED ON SITE. REASONABLE STEPS TO PREVENT THE DISCHARGE OF SPILLED OR LEAKED CHEMICALS SHALL BE TAKEN. ADEQUATE SUPPLIES MUST BE AVAILABLE AT ALL TIMES TO CLEAN UP DISCHARGED MATERIALS; CONDUCT FUELING IN A CONTAINED AREA UNLESS INFEASIBLE.

CONCRETE WASHOUT AREA:
CONCRETE WASHOUT WILL BE PERMITTED ON-SITE; CONTRACTOR SHALL FOLLOW ALL PERMIT REQUIREMENTS FOR CONCRETE WASHOUT. THE CONTRACTOR SHALL PROVIDE EFFECTIVE CONTAINMENT FOR ALL LIQUID AND SOLID WASTES GENERATED BY WASHOUT OPERATIONS. LIQUID AND SOLID WASHOUT WASTES MUST NOT CONTACT THE GROUND AND THE CONTAINMENT MUST BE DESIGNED TO PROHIBIT RUNOFF FROM THE WASHOUT OPERATIONS/AREAS. LIQUID AND SOLID WASTES MUST BE DISPOSED OF PROPERLY AND IN COMPLIANCE WITH ND DEQ RULES. A SIGN MUST BE INSTALLED ADJACENT TO EACH WASHOUT FACILITY THAT REQUIRES SITE PERSONNEL TO UTILIZE THE PROPER FACILITIES FOR CONCRETE WASHOUT AND DISPOSAL OF WASHOUT WASTES. CONTRACTOR SHALL REVISE SWPPP TO INDICATE WASHOUT LOCATION ONCE THE LOCATION HAS BEEN DETERMINED.

FERTILIZERS AND LANDSCAPE MATERIALS MUST BE UNDER COVER TO PREVENT THE DISCHARGE OF POLLUTANTS OR PROTECTED BY SIMILARLY EFFECTIVE MEANS DESIGNED TO MINIMIZE CONTACT WITH STORMWATER.

PORTABLE TOILETS MUST BE POSITIONED SO THAT THEY ARE SECURE AND WILL NOT BE TIPPED OR KNOCKED OVER. SANITARY WASTE MUST BE DISPOSED OF PROPERLY.

GENERAL SWPPP NOTES

IN THE EVENT THAT DEWATERING IS NECESSARY CONTRACTOR SHALL COMPLY WITH PERMIT SECTION 10.1 REQUIREMENTS FOR DEWATERING.

THIS SWPPP SHALL BE AMENDED BY THE CONTRACTOR IN ACCORDANCE WITH THE PERMIT AS NECESSARY TO INCLUDE ADDITIONAL REQUIREMENTS, TO CORRECT PROBLEMS IDENTIFIED, OR TO ADDRESS SITUATIONS PER SECTION 6.1 OF THE PERMIT.

SWPPP DETAILS SHOWN ON THE DRAWINGS CONSTITUTE MINIMUM REQUIREMENTS FOR STORM WATER POLLUTION PREVENTION. THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE REGULATIONS FROM AGENCY(IES) WITH JURISDICTION.

THE PROJECT WILL DISTURB MORE THAN 5 ACRES. THE PROJECT GRADING DOES NOT PROMOTE DRAINAGE TO A COMMON LOCATION, THEREFORE A TEMPORARY SEDIMENT BASIN WILL NOT BE REQUIRED. THIS SWPPP SHALL BE AMENDED BY THE CONTRACTOR IN ACCORDANCE WITH THE GENERAL PERMIT TO INCLUDE TEMPORARY SEDIMENTATION BASINS, IF THEY BECOME NECESSARY. BASINS, IF DESIGNED BY THE CONTRACTOR, SHALL ACCOMMODATE NO LESS THAN 3,600 CUBIC FEET OF LIVE STORAGE PER ACRE OF CONTRIBUTING DRAINAGE AREA. BASIN OUTLETS SHALL BE DESIGNED TO WITHDRAW WATER FROM THE SURFACE OF THE BASIN, PREVENT SHORT-CIRCUITING AND THE DISCHARGE OF FLOATING DEBRIS. BASINS SHALL HAVE A STABILIZED EMERGENCY OVERFLOW LOCATION AND BE DESIGNED TO PREVENT THE DISCHARGE OF POLLUTANTS TO THE EXTENT PRACTICAL.

FINAL STABILIZATION:
ALL PERVIOUS AREAS DISTURBED BY CONSTRUCTION AS DESIGNATED WILL RECEIVE VEGETATIVE COVER ACCORDING TO THE PLANS AND SPECIFICATIONS AND WITHIN THE SPECIFIED VEGETATIVE TIME SCHEDULE. FINAL STABILIZATION WILL OCCUR WHEN THE SITE HAS A UNIFORM VEGETATIVE COVER WITH A DENSITY OF 70% OVER THE PROJECT SITE. ALL TEMPORARY SYNTHETIC EROSION PREVENTION AND SEDIMENT CONTROL BMPS (SUCH AS SILT FENCE) MUST BE REMOVED AS PART OF THE SITE FINAL STABILIZATION. ALL SEDIMENT MUST BE CLEANED OUT OF CONVEYANCES AND TEMPORARY SEDIMENTATION BASINS IF APPLICABLE. NOTICE OF TERMINATION (NOT) MUST BE SUBMITTED WITHIN 30 DAYS OF FINAL STABILIZATION.

IMPAIRED WATERS, SPECIAL WATERS, AND WETLANDS

THIS PROJECT IS LOCATED WITHIN ONE MILE OF, AND ULTIMATELY DRAINS TO, AN IMPAIRED WATER. KNIFE RIVER IS LOCATED WITHIN THE PROJECT LIMITS AND IS LISTED AS IMPAIRED FOR RECREATIONAL USE. DISCHARGE TO AN IMPAIRED WATER REQUIRES IMPLEMENTATION OF SECTION 23.1 OF THE PERMIT AS INCORPORATED INTO THIS SWPPP DOCUMENT.

THE PROJECT SITE DISCHARGES DIRECTLY TO THE KNIFE RIVER. WETLANDS IMPACTS ARE DOCUMENTED IN THE WETLAND STATEMENT OF FINDINGS.

SITE SOILS - SITE SOILS ARE SHOWN ON THIS SHEET. THIS PROJECT IS NOT LOCATED IN A KARST AREA, BUT WITHIN ONE MILE OF AREAS PRONE TO KARST.

CERTIFICATION

IN ACCORDANCE TO SECTION D OF THE NORTH DAKOTA GENERAL PERMIT FOR AUTHORIZATION TO DISCHARGE STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER THE NPDES: THE CONTRACTOR MUST PREPARE A NOTICE OF INTENT (NOI) AND STORMWATER POLLUTION PREVENTION PLAN (SWPPP) (PART II(C)) FOR THE PROJECT. THE SWPPP MUST INCLUDE ADDITIONAL BEST MANAGEMENT PRACTICES (BMPS) AS DETAILED IN THE SECTION 401 WATER QUALITY CERTIFICATION TO ENSURE COMPLIANCE WITH WATER QUALITY STANDARDS.

A/E FIRM PRIME/CIVIL STANTEC CONSULTING SERVICES INC. DENVER, CO	DESIGNED: PTP CADD JMM TECH. REVIEW: JGG DATE: 12/13/2024	SUB SHEET NO. C1	TITLE OF SHEET KNIFE RIVER EROSION CONTROL NOTES KNIFE RIVER INDIAN VILLAGES N.H.S.	DRAWING NO. 468 184187 PMIS/PKG NO. 257081 SHEET 3 OF 21

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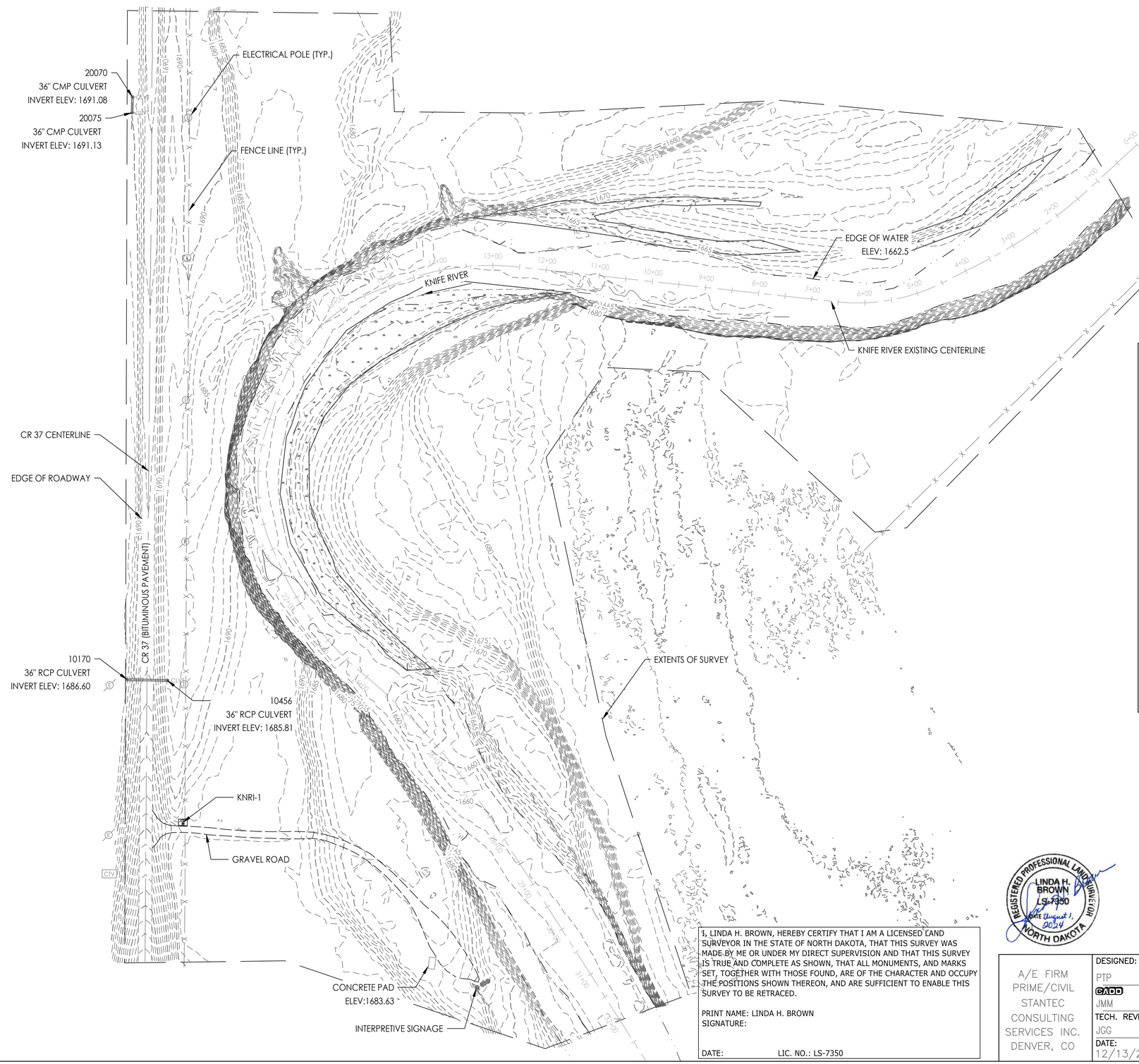
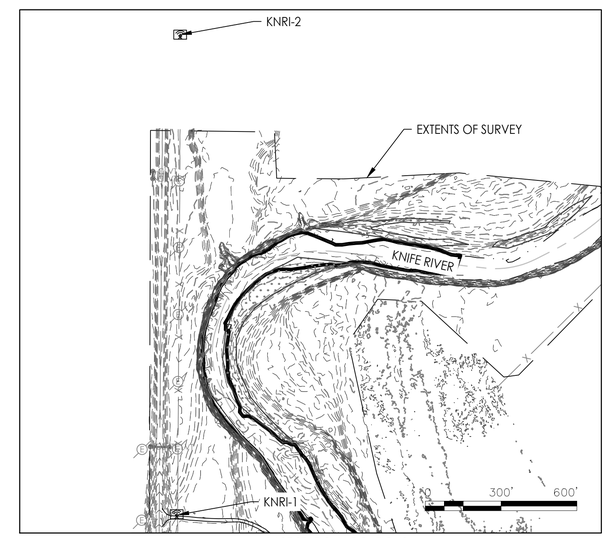


PRIMARY GPS CONTROL COORDINATES			
POINT	NORTHING	EASTING	ELEVATION
NA CRC02	596580.76	1746330.78	0 ft
NA CRC03	583684.02	1769852.76	0 ft
S-1	607185.04	1745734.91	1692.84
W403	589306.75	1762622.48	1706.12

LOCAL PROJECT GPS CONTROL COORDINATES			
POINT	NORTHING	EASTING	ELEVATION
KNRI-1	612945.16	1748544.27	1693.12
KNRI-2	614843.58	1748557.98	1691.52



BASE STATION LOCATIONS

I, LINDA H. BROWN, HEREBY CERTIFY THAT I AM A LICENSED LAND SURVEYOR IN THE STATE OF NORTH DAKOTA, THAT THIS SURVEY WAS MADE BY ME OR UNDER MY DIRECT SUPERVISION AND THAT THIS SURVEY IS TRUE AND COMPLETE AS SHOWN, THAT ALL MONUMENTS, AND MARKS SET, TOGETHER WITH THOSE FOUND, ARE OF THE CHARACTER AND OCCUPY THE POSITIONS SHOWN THEREON, AND ARE SUFFICIENT TO ENABLE THIS SURVEY TO BE RETRACED.

PRINT NAME: LINDA H. BROWN
SIGNATURE:

DATE: LIC. NO.: LS-7350

REGISTERED PROFESSIONAL LAND SURVEYOR
LINDA H. BROWN
LS-7350
DATE August 1, 2024
NORTH DAKOTA

0 100' 200'

A/E FIRM PRIME/CIVIL STANTEC CONSULTING SERVICES INC. DENVER, CO	DESIGNED: PTP CADD JMM TECH. REVIEW: JGG DATE: 12/13/2025	SUB SHEET NO. V1	TITLE OF SHEET KNIFE RIVER SITE SURVEY KNIFE RIVER INDIAN VILLAGES N.H.S.

DRAWING NO. 468
184187
PMIS/PKG NO. 257081
SHEET 4 OF 21

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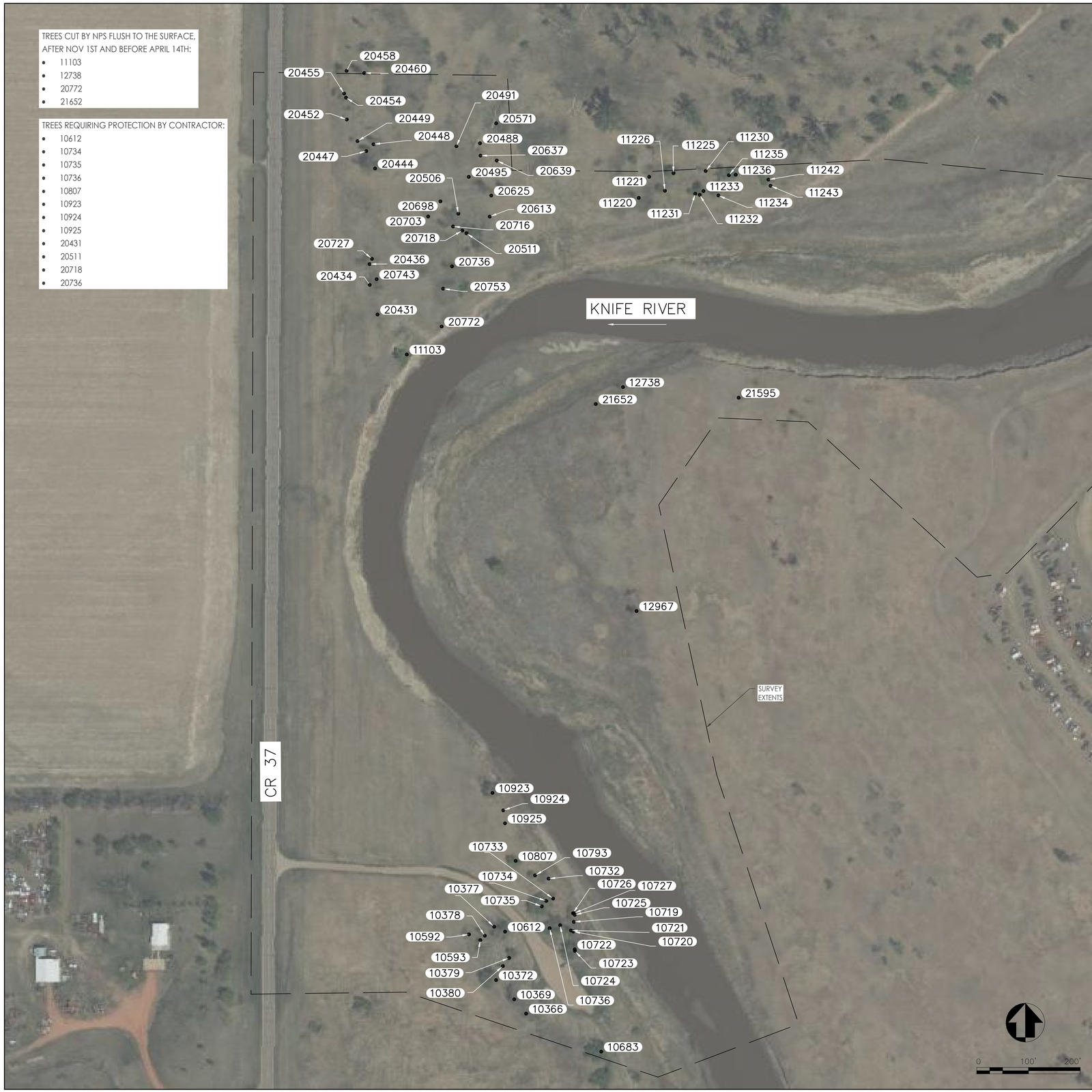

Point Number	Full Description	Species Common Name	Species Name	Easting	Northing
10366	Tree	Box Elder	Acer negundo	1748967.5080'	612644.4810'
10369	Tree	Green Ash	Fraxinus pennsylvanica	1748944.4680'	612672.2160'
10372	Tree	Box Elder & Green Ash	Acer negundo & Fraxinus pennsylvanica	1748909.4000'	612709.3970'
10377	Tree Dead	Green Ash	Fraxinus pennsylvanica	1748905.7000'	612812.5860'
10378	Tree	Box Elder	Acer negundo	1748887.5450'	612795.0460'
10379	Tree	Box Elder	Acer negundo	1748934.6020'	612752.1600'
10380	Tree	Box Elder	Acer negundo	1748922.5500'	612736.3670'
10592	Tree	Box Elder	Acer negundo	1748857.0840'	612797.6580'
10593	Tree	Box Elder	Acer negundo	1748878.9140'	612786.4590'
10612	Tree	Box Elder	Acer negundo	1748926.7440'	612802.9360'
10683	Tree	Box Elder	Acer negundo	1749112.7490'	612570.9690'
10719	Tree	Green Ash	Fraxinus pennsylvanica	1749059.6800'	612821.8080'
10720	Tree	Green Ash	Fraxinus pennsylvanica	1749058.8230'	612803.1830'
10721	Tree	Green Ash	Fraxinus pennsylvanica	1749054.1380'	612805.1960'
10722	Tree	Green Ash	Fraxinus pennsylvanica	1749061.3120'	612768.6300'
10723	Tree	Green Ash	Fraxinus pennsylvanica	1749061.9010'	612765.5280'
10724	Tree	Box Elder	Acer negundo	1749033.2330'	612815.4140'
10725	Tree	Green Ash	Fraxinus pennsylvanica	1749061.5780'	612835.4810'
10726	Tree	Green Ash	Fraxinus pennsylvanica	1749058.2080'	612838.5050'
10727	Tree	Green Ash	Fraxinus pennsylvanica	1749060.2940'	612838.6740'
10732	Tree	Box Elder	Acer negundo	1749010.8510'	612905.4270'
10733	Tree	Box Elder	Acer negundo	1749019.6310'	612866.9490'
10734	Tree	Box Elder	Acer negundo	1749006.3910'	612862.3650'
10735	Tree	Box Elder	Acer negundo	1748997.8320'	612851.9030'
10736	Tree	Box Elder	Acer negundo	1749012.9480'	612809.5460'
10793	Tree	Box Elder	Acer negundo	1748984.7180'	612911.7940'
10807	Tree	Box Elder	Acer negundo	1748947.2450'	612939.7790'
10923	Tree	Green Ash	Fraxinus pennsylvanica	1748902.3920'	613071.2240'
10924	Tree	Box Elder	Acer negundo	1748923.2210'	613037.5630'
10925	Tree Dead	Box Elder	Acer negundo	1748926.6130'	613012.4600'
11103	Tree	Box Elder	Acer negundo	1748736.6550'	613918.9920'
11220	Tree	Green Ash	Fraxinus pennsylvanica	1749185.3190'	614221.7280'
11221	Tree	Box Elder	Acer negundo	1749205.5340'	614262.4660'
11225	Tree	Box Elder	Acer negundo	1749252.3770'	614269.7460'
11226	Tree	Box Elder	Acer negundo	1749235.8800'	614235.5560'
11230	Tree	Green Ash	Fraxinus pennsylvanica	1749314.6760'	614273.7680'
11231	Tree	Box Elder	Acer negundo	1749294.5860'	614229.8390'
11232	Tree	Box Elder	Acer negundo	1749303.1000'	614227.5870'
11233	Tree	Box Elder	Acer negundo	1749310.3590'	614234.9540'
11234	Tree	Box Elder	Acer negundo	1749339.3150'	614226.3830'
11235	Tree	Box Elder	Acer negundo	1749359.5710'	614265.3890'
11236	Tree	Box Elder	Acer negundo	1749372.7380'	614266.5300'
11242	Tree	Box Elder	Acer negundo	1749435.9850'	614257.1950'
11243	Tree	Box Elder	Acer negundo	1749440.0170'	614245.1360'
12738	Tree Damaged	Box Elder	Acer negundo	1749154.8290'	613855.9240'
12967	Tree	Green Ash	Fraxinus pennsylvanica	1749180.9520'	613422.9070'
20431	Stump	Unidentified	Unidentified	1748680.0830'	613996.2210'
20434	Tree	Peach Leaf Willow	Salix amygdaloides	1748665.0120'	614053.6540'
20436	Tree	Peach Leaf Willow	Salix amygdaloides	1748664.6560'	614093.7280'
20444	Tree	Green Ash	Fraxinus pennsylvanica	1748675.3100'	614278.5940'
20447	Tree	Box Elder	Acer negundo	1748658.3910'	614312.2150'
20448	Tree	Box Elder	Acer negundo	1748672.2780'	614325.4360'
20449	Tree	Peach Leaf Willow	Salix amygdaloides	1748641.3540'	614331.5350'
20452	Stump	Unidentified	Unidentified	1748620.7580'	614373.3550'
20454	Tree	Nannyberry	Viburnum lentago	1748619.1760'	614415.6350'
20455	Tree	Peach Leaf Willow	Salix amygdaloides	1748615.5100'	614423.5630'
20458	Tree	Green Ash	Fraxinus pennsylvanica	1748620.2330'	614467.4900'
20460	Tree	Green Ash	Fraxinus pennsylvanica	1748654.3750'	614463.1840'
20488	Tree Dead	Green Ash	Fraxinus pennsylvanica	1748878.2640'	614327.3540'
20491	Tree Dead	Green Ash	Fraxinus pennsylvanica	1748832.6890'	614321.5960'
20495	Tree Dead	Green Ash	Fraxinus pennsylvanica	1748856.5750'	614262.3810'
20506	Tree	Green Ash	Fraxinus pennsylvanica	1748836.3980'	614191.2050'
20511	Tree	Green Ash	Fraxinus pennsylvanica	1748852.0750'	614153.3800'
20571	Tree Dead	Green Ash	Fraxinus pennsylvanica	1748909.4480'	614365.9280'
20613	Stump	Green Ash	Fraxinus pennsylvanica	1748897.1820'	614185.5440'
20625	Tree Dead	Green Ash	Fraxinus pennsylvanica	1748900.1040'	614226.2310'
20637	Tree Dead	Green Ash	Fraxinus pennsylvanica	1748879.2170'	614303.3670'
20639	Stump	Green Ash	Fraxinus pennsylvanica	1748910.8130'	614293.9220'
20698	Tree Dead	Green Ash	Fraxinus pennsylvanica	1748801.7400'	614214.9990'
20703	Tree Dead	Green Ash	Fraxinus pennsylvanica	1748778.0330'	614185.7350'
20716	Tree Dead	Green Ash	Fraxinus pennsylvanica	1748826.1750'	614166.4720'
20718	Tree Dead	Green Ash	Fraxinus pennsylvanica	1748843.9790'	614158.6230'
20727	Tree	Peach Leaf Willow	Salix amygdaloides	1748669.4150'	614103.8150'
20736	Tree	Green Ash	Fraxinus pennsylvanica	1748824.1870'	614089.3140'
20743	Tree Dead	Green Ash	Fraxinus pennsylvanica	1748678.3670'	614064.5450'
20753	Tree	Green Ash	Fraxinus pennsylvanica	1748806.9550'	614046.2790'
20772	Tree	Box Elder	Acer negundo	1748804.0590'	613973.0540'
21595	Tree	Box Elder	Acer negundo	1749378.3910'	613835.2600'
21652	Tree Dead	Box Elder	Acer negundo	1749102.1400'	613823.0540'

A/E FIRM
PRIME/CIVIL
STANTEC
CONSULTING
SERVICES INC.
DENVER, CO

DESIGNED: PTP
CADD: JMM
TECH. REVIEW: JGG
DATE: 12/13/2024

SUB SHEET NO. V2

TITLE OF SHEET
KNIFE RIVER
TREE SURVEY

KNIFE RIVER INDIAN VILLAGES N.H.S.

DRAWING NO. 468
184187
PMIS/PKG NO. 257081
SHEET 5 OF 21

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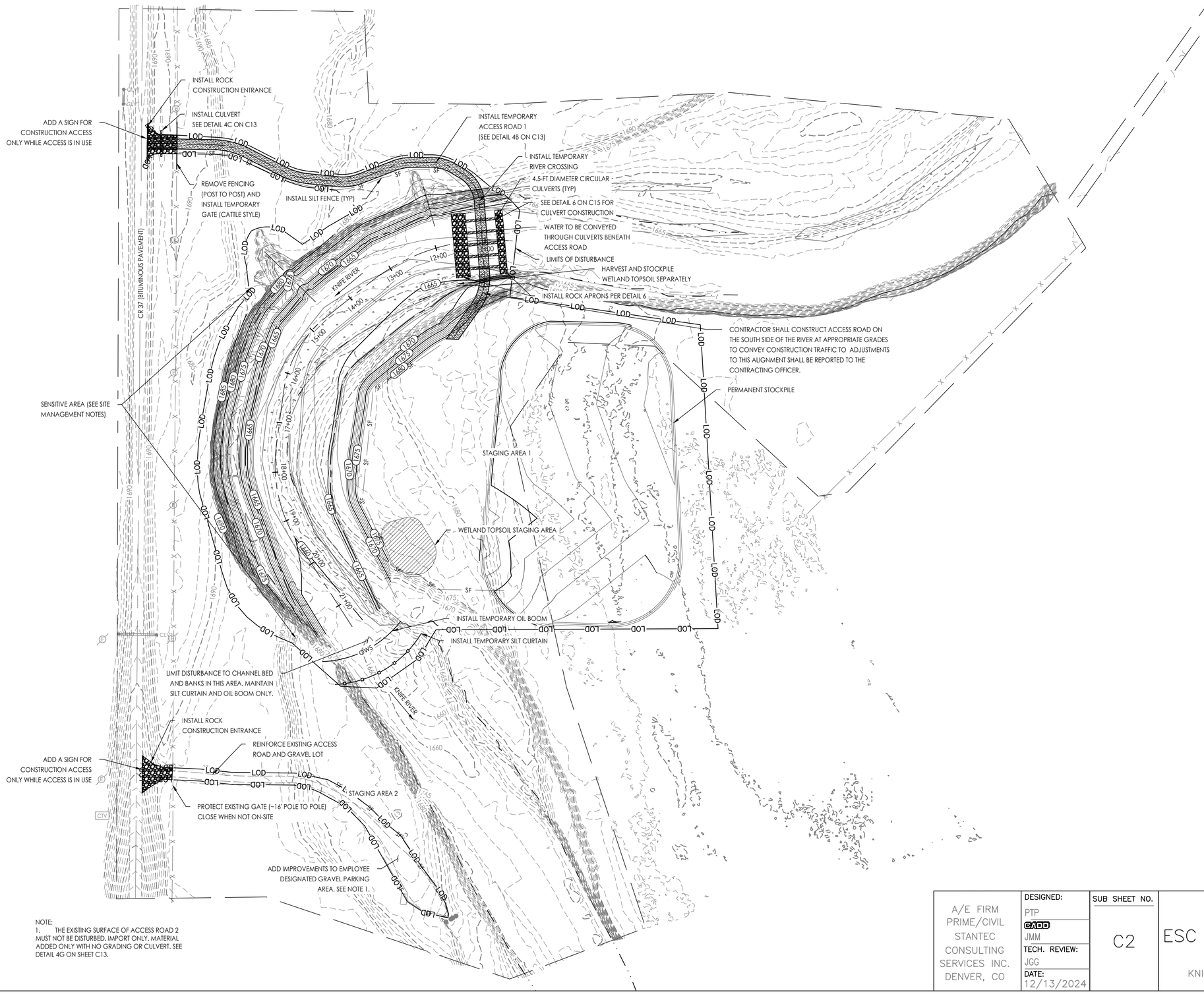

NOTE:
1. THE EXISTING SURFACE OF ACCESS ROAD 2 MUST NOT BE DISTURBED. IMPORT ONLY. MATERIAL ADDED ONLY WITH NO GRADING OR CULVERT. SEE DETAIL 4G ON SHEET C13.

EROSION CONTROL NOTES:
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND CONTROLLING ALL DRAINAGE TO AND FROM THE SITE. CONTROL OF SURFACE WATERS SHALL BE SUCH THAT EXISTING DRAINAGE PATTERNS ARE NOT DISTURBED OR ALTERED TO INCREASE THE AMOUNT AND/OR INTENSITY OF RUNOFF WATER AND SILT TO ADJACENT PRIVATE PROPERTIES, RIGHT-OF-WAYS AND EXISTING DRAINAGE STRUCTURES.
2. THE CONTRACTOR SHALL ENSURE ALL PERIMETER CONTROLS ARE IN PLACE PRIOR TO COMMENCING CONSTRUCTION. THE PROTECTION MEASURES MUST BE IN PLACE AT THE END OF EACH WORKING DAY UNTIL SITE STABILIZATION IS ACHIEVED.
3. THE CONTRACTOR SHALL ADJUST THE LIMITS OF THE PROTECTION MEASURES SHOULD THEY BE INADEQUATE TO CONTROL RUNOFF.
4. THE CONTRACTOR SHALL REMOVE SILT FROM ALL STORM DRAIN APPURTENANCES AND EROSION CONTROL DEVICES AFTER EACH RAIN.
5. THE PROTECTION MEASURES MAY BE TEMPORARILY MOVED OUT OF THE CONTRACTOR'S WAY TO FACILITATE CONSTRUCTION, PROVIDED THEY ARE REINSTALLED BEFORE THE NEXT RAINFALL EVENT OR AT THE END OF THE WORK DAY, WHICHEVER COMES FIRST.
6. THE CONTRACTOR SHALL ADVISE HIS CREW OF THE INTENT OF THE PROTECTION MEASURES PRIOR TO THE START OF CONSTRUCTION. THE CREW IS ENCOURAGED TO MONITOR THE EFFECTIVENESS OF THE SYSTEM AND ALERT THE CONTRACTOR OF ANY FAILURES OR PROBLEMS.
7. STAGING, REFUELING OF EQUIPMENT AND MATERIALS STORAGE AREAS MAY CHANGE THROUGHOUT CONSTRUCTION, AS REQUIRED. THE AREAS SHALL BE INSPECTED FREQUENTLY TO ENSURE NO SPILLED HAZARDOUS MATERIALS CONTAMINATE THE GROUND. SHOULD THIS OCCUR, THE SPILL SHALL BE CLEANED UP IMMEDIATELY. REFUELING OF EQUIPMENT AND STORAGE OF HAZARDOUS MATERIALS SHALL NOT BE LOCATED NEAR STORM DRAIN INLETS OR DRAINAGE SWALES.
8. ONCE CONSTRUCTION ACTIVITIES ARE COMPLETE SEED AND MULCH THE EFFECTED AREAS. SECURE EROSION CONTROL BLANKET/MATTING IN LOCATIONS SHOWN ON THIS SHEET.
9. DESIGNATED STAGING AREAS ARE TO BE USED FOR TEMPORARY STOCKPILES, PERMANENT SPOIL PILES AND CONSTRUCTION EQUIPMENT STORAGE.

SEDIMENT CONTROL NOTES:
1. ALL LOOSE SOIL AND DEBRIS SHALL BE REMOVED FROM THE STREET AREAS DAILY.
2. EXCEPT WHEN THE INSPECTOR DIRECTS OTHERWISE, ALL DEVICES SHOWN SHALL BE IN PLACE AT THE END OF EACH WORKING DAY OR BEFORE ANY RAIN EVENT, WHICHEVER COMES FIRST.
3. MATERIALS SHALL BE STOCKPILED AND READY TO BE PLACED IN POSITION WHEN RAIN IS FORECAST, OR WHEN THE INSPECTOR SO DIRECTS.
4. DURING CONSTRUCTION, WASHING OF TRUCKS, PAINT, EQUIPMENT OR SIMILAR ACTIVITIES SHALL OCCUR ONLY IN AREAS WHERE POLLUTED WATER AND MATERIALS CAN BE CONTAINED FOR SUBSEQUENT REMOVAL FROM THE SITE. WASH WATER SHALL NOT BE DISCHARGED TO THE STORM DRAINS, STREET, DRAINAGE DITCHES OR CREEKS. AREAS DESIGNATED FOR WASHING FUNCTIONS SHALL BE AT LEAST 100 FEET FROM ANY STORM DRAIN, WATERBODY OR SENSITIVE BIOLOGICAL RESOURCES. THE LOCATION OF THE WASHOUT AREA SHALL BE CLEARLY NOTED AT THE CONSTRUCTION SITE WITH SIGNS.

SITE MANAGEMENT
1. THE CONTRACTOR SHALL CLEAR ALL AREAS WITHIN LOD OUTSIDE OF THE OHWM AND SENSITIVE AREAS. THE TOP OF THE EXISTING BANK IS A SENSITIVE AREA. NO GRADING IN ADDITION TO WHAT IS SHOWN ON THIS PLAN NOR CLEARING SHALL BE DONE WITHOUT CONSULTATION OF THE CONTRACTING MANAGER.
2. THE FIRST 6" OF TOPSOIL SHALL BE STOCKPILED AND PRESERVED FOR REAPPLICATION UPON COMPLETION OF EARTHWORK OPERATIONS.
3. TOPSOIL SHALL BE STOCKPILED IN STAGING AREA 1.
4. TOPSOIL HARVESTED WITHIN EXISTING WETLAND AREA SHALL BE KEPT IN A SEPARATE STOCKPILE AND APPLIED TO PROPOSED WETLAND AREAS UPON COMPLETION OF EARTHWORK OPERATIONS.
5. PERMANENT SPOIL PILES SHALL BE SEEDED AND MULCHED ACCORDING TO THE LANDSCAPING PLANS.

A/E FIRM PRIME/CIVIL STANTEC CONSULTING SERVICES INC. DENVER, CO	DESIGNED: PTP CADD JMM TECH. REVIEW: JGG DATE: 12/13/2024	SUB SHEET NO. C2	TITLE OF SHEET KNIFE RIVER ESC PRE-CONSTRUCTION KNIFE RIVER INDIAN VILLAGES N.H.S.	DRAWING NO. 468 184187 PMIS/PKG NO. 257081 SHEET 6 OF 21

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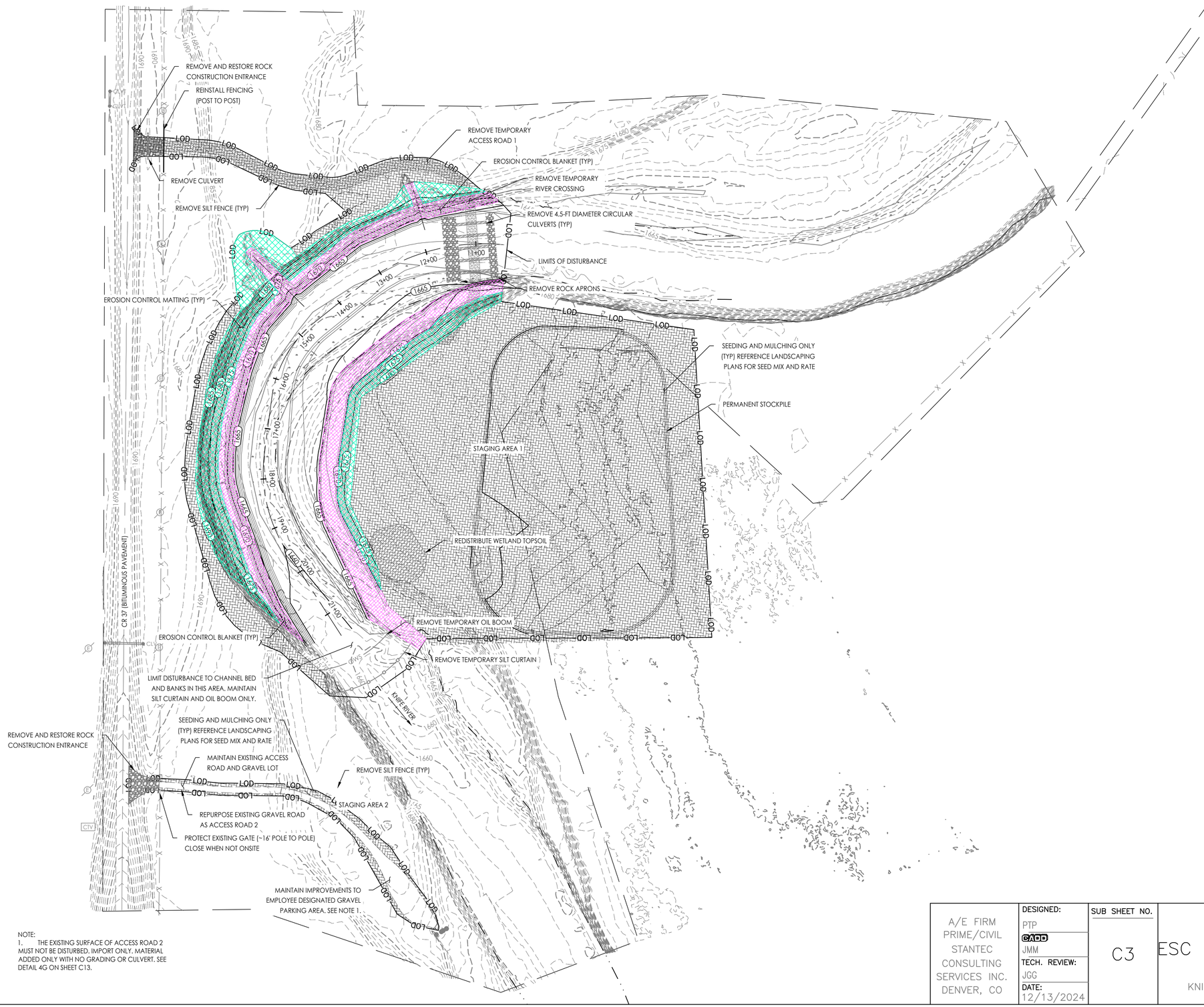

NOTE:
1. THE EXISTING SURFACE OF ACCESS ROAD 2 MUST NOT BE DISTURBED. IMPORT ONLY. MATERIAL ADDED ONLY WITH NO GRADING OR CULVERT. SEE DETAIL 4G ON SHEET C13.

EROSION CONTROL NOTES:
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND CONTROLLING ALL DRAINAGE TO AND FROM THE SITE. CONTROL OF SURFACE WATERS SHALL BE SUCH THAT EXISTING DRAINAGE PATTERNS ARE NOT DISTURBED OR ALTERED TO INCREASE THE AMOUNT AND/OR INTENSITY OF RUNOFF WATER AND SILT TO ADJACENT PRIVATE PROPERTIES, RIGHT-OF-WAYS AND EXISTING DRAINAGE STRUCTURES.
2. THE CONTRACTOR SHALL ENSURE ALL PERIMETER CONTROLS ARE IN PLACE PRIOR TO COMMENCING CONSTRUCTION. THE PROTECTION MEASURES MUST BE IN PLACE AT THE END OF EACH WORKING DAY UNTIL SITE STABILIZATION IS ACHIEVED.
3. THE CONTRACTOR SHALL ADJUST THE LIMITS OF THE PROTECTION MEASURES SHOULD THEY BE INADEQUATE TO CONTROL RUNOFF.
4. THE CONTRACTOR SHALL REMOVE SILT FROM ALL STORM DRAIN APPURTENANCES AND EROSION CONTROL DEVICES AFTER EACH RAIN.
5. THE PROTECTION MEASURES MAY BE TEMPORARILY MOVED OUT OF THE CONTRACTOR'S WAY TO FACILITATE CONSTRUCTION, PROVIDED THEY ARE REINSTALLED BEFORE THE NEXT RAINFALL EVENT OR AT THE END OF THE WORK DAY, WHICHEVER COMES FIRST.
6. THE CONTRACTOR SHALL ADVISE HIS CREW OF THE INTENT OF THE PROTECTION MEASURES PRIOR TO THE START OF CONSTRUCTION. THE CREW IS ENCOURAGED TO MONITOR THE EFFECTIVENESS OF THE SYSTEM AND ALERT THE CONTRACTOR OF ANY FAILURES OR PROBLEMS.
7. STAGING, REFUELING OF EQUIPMENT AND MATERIALS STORAGE AREAS MAY CHANGE THROUGHOUT CONSTRUCTION, AS REQUIRED. THE AREAS SHALL BE INSPECTED FREQUENTLY TO ENSURE NO SPILLED HAZARDOUS MATERIALS CONTAMINATE THE GROUND. SHOULD THIS OCCUR, THE SPILL SHALL BE CLEANED UP IMMEDIATELY. REFUELING OF EQUIPMENT AND STORAGE OF HAZARDOUS MATERIALS SHALL NOT BE LOCATED NEAR STORM DRAIN INLETS OR DRAINAGE SWALES.
8. ONCE CONSTRUCTION ACTIVITIES ARE COMPLETE SEED AND MULCH THE EFFECTED AREAS. SECURE EROSION CONTROL BLANKET/MATTING IN LOCATIONS SHOWN ON THIS SHEET.
9. DESIGNATED STAGING AREAS ARE TO BE USED FOR TEMPORARY STOCKPILES, PERMANENT SPOIL PILES AND CONSTRUCTION EQUIPMENT STORAGE.

SEDIMENT CONTROL NOTES:
1. ALL LOOSE SOIL AND DEBRIS SHALL BE REMOVED FROM THE STREET AREAS DAILY.
2. EXCEPT WHEN THE INSPECTOR DIRECTS OTHERWISE, ALL DEVICES SHOWN SHALL BE IN PLACE AT THE END OF EACH WORKING DAY OR BEFORE ANY RAIN EVENT, WHICHEVER COMES FIRST.
3. MATERIALS SHALL BE STOCKPILED AND READY TO BE PLACED IN POSITION WHEN RAIN IS FORECAST, OR WHEN THE INSPECTOR SO DIRECTS.
4. DURING CONSTRUCTION, WASHING OF TRUCKS, PAINT, EQUIPMENT OR SIMILAR ACTIVITIES SHALL OCCUR ONLY IN AREAS WHERE POLLUTED WATER AND MATERIALS CAN BE CONTAINED FOR SUBSEQUENT REMOVAL FROM THE SITE. WASH WATER SHALL NOT BE DISCHARGED TO THE STORM DRAINS, STREET, DRAINAGE DITCHES OR CREEKS. AREAS DESIGNATED FOR WASHING FUNCTIONS SHALL BE AT LEAST 100 FEET FROM ANY STORM DRAIN, WATERBODY OR SENSITIVE BIOLOGICAL RESOURCES. THE LOCATION OF THE WASHOUT AREA SHALL BE CLEARLY NOTED AT THE CONSTRUCTION SITE WITH SIGNS.

SITE MANAGEMENT
1. THE CONTRACTOR SHALL CLEAR ALL AREAS WITHIN LOD OUTSIDE OF THE OHWM AND SENSITIVE AREAS. THE TOP OF THE EXISTING BANK IS A SENSITIVE AREA. NO GRADING IN ADDITION TO WHAT IS SHOWN ON THIS PLAN NOR CLEARING SHALL BE DONE WITHOUT CONSULTATION OF THE CONTRACTING MANAGER.
2. THE FIRST 6" OF TOPSOIL SHALL BE STOCKPILED AND PRESERVED FOR REAPPLICATION UPON COMPLETION OF EARTHWORK OPERATIONS.
3. TOPSOIL SHALL BE STOCKPILED IN STAGING AREA 1.
4. TOPSOIL HARVESTED WITHIN EXISTING WETLAND AREA SHALL BE KEPT IN A SEPARATE STOCKPILE AND APPLIED TO PROPOSED WETLAND AREAS UPON COMPLETION OF EARTHWORK OPERATIONS.
5. PERMANENT SPOIL PILES SHALL BE SEEDED AND MULCHED ACCORDING TO THE LANDSCAPING PLANS.
6. AFTER TEMPORARY ACCESS ROAD REMOVAL. REMOVE CONSTRUCTION ACCESS SIGNAGE AND CONSTRUCT POST/FENCE TO MATCH EXISTING.

A/E FIRM PRIME/CIVIL STANTEC CONSULTING SERVICES INC. DENVER, CO	DESIGNED: PTP CADD JMM TECH. REVIEW: JGG DATE: 12/13/2024	SUB SHEET NO. C3	TITLE OF SHEET KNIFE RIVER ESC POST-CONSTRUCTION KNIFE RIVER INDIAN VILLAGES N.H.S.	DRAWING NO. 468 184187 PMIS/PKG NO. 257081 SHEET 7 OF 21

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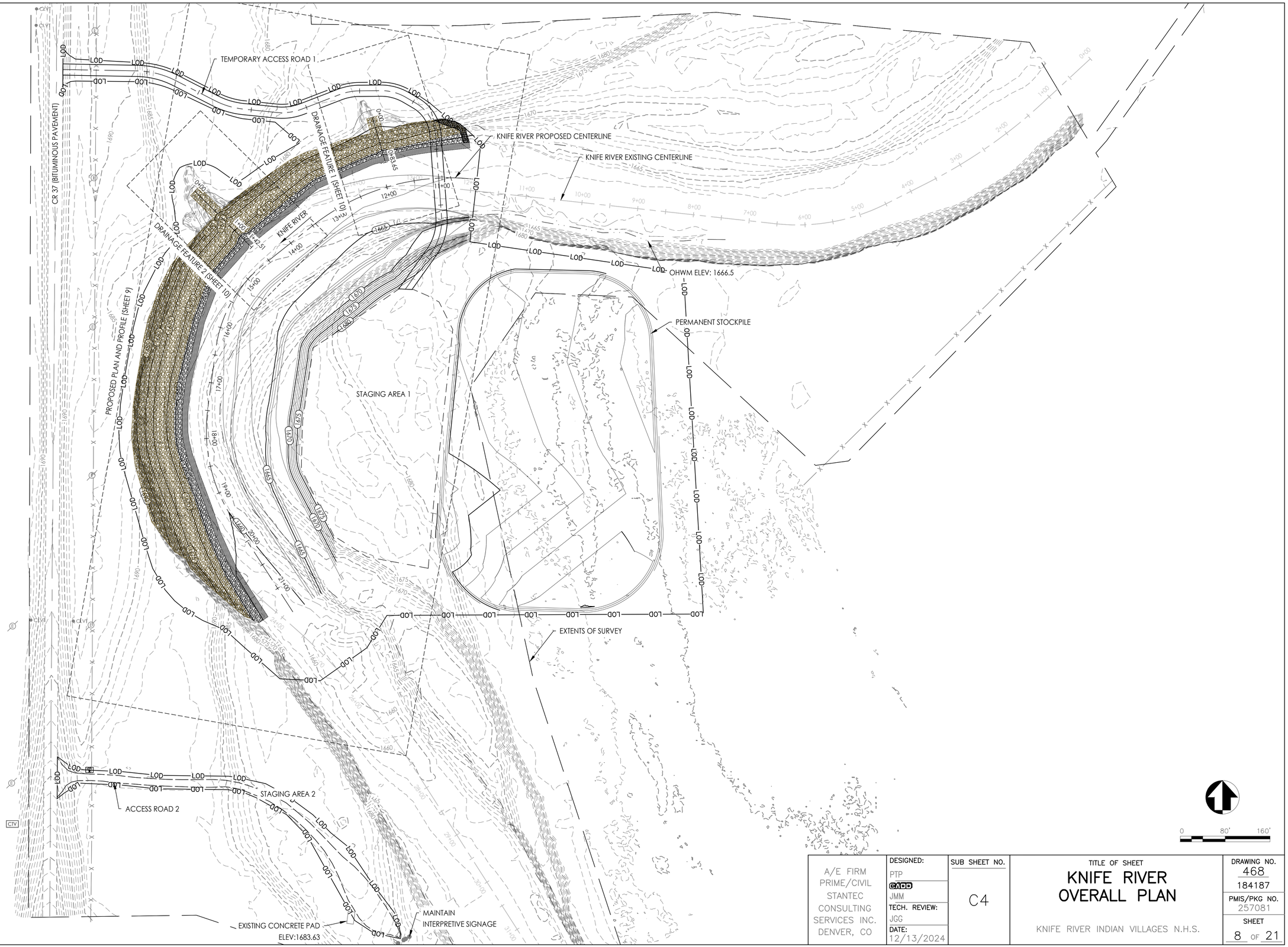

A/E FIRM PRIME/CIVIL STANTEC CONSULTING SERVICES INC. DENVER, CO	DESIGNED: PTP CADD JMM TECH. REVIEW: JGG DATE: 12/13/2024	SUB SHEET NO. C4	TITLE OF SHEET KNIFE RIVER OVERALL PLAN KNIFE RIVER INDIAN VILLAGES N.H.S.	DRAWING NO. 468 184187 PMIS/PKG NO. 257081 SHEET 8 OF 21

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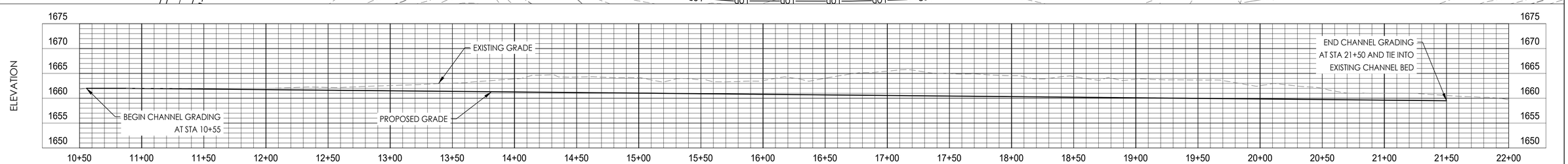
PROPOSED CHANNEL CENTERLINE
TOE OF EMBANKMENT ALIGNMENT
BURIED ROCK REFUSAL
REFERENCE DETAIL 7A
BEGIN CHANNEL GRADING
AT STA 10+55
PERMANENT
STOCKPILE
BEGIN ROCK LINED
EMBANKMENT DOWNSTREAM
OF BURIED ROCK REFUSAL
REFERENCE DETAIL 2
TRANSITION REACH BETWEEN STA 10+50 TO 12+55
PROPOSED WETLAND
STAGING AREA 1
LIMIT DISTURBANCE TO EXISTING
CHANNEL BED BETWEEN
PROPOSED TIE-IN AND LOD. AREA
TO BE USED FOR DOWNSTREAM
SEDIMENT CONTROL ONLY.
TIE-IN TO EXISTING
CHANNEL BED AND BANK
NATURAL CONTOURS
DRAINAGE FEATURE 1
EMBANKMENT CHANNEL
REFERENCE SHEET 10
END CHANNEL GRADING
AT STA 21+50
FILL DRAINAGE FEATURE 1
INSIDE BEND SECONDARY
BENCH FEATURE
TRANSITION REACH BETWEEN STA 19+25 TO 21+50
SUBSURFACE ROCKTOE PROTECTION
LONGITUDINAL PEAK STONE
TOE PROTECTION
SOIL RIPRAP
TIE-IN TO EXISTING CHANNEL
BED AND BANK NATURAL CONTOURS
INSIDE BEND PRIMARY
BENCH FEATURE
KNIFE RIVER
DRAINAGE FEATURE 2
EMBANKMENT CHANNEL
REFERENCE SHEET 10
LOW FLOW
CHANNEL
TEMPORARY ACCESS ROAD 1
FILL DRAINAGE FEATURE 2
BEGIN TAPERED EMBANKMENT
TIE-IN TO EXISTING BANK
SECURE TENSION CRACKS
AT TOP OF EXISTING CHANNEL BANK
REFERENCE DETAIL 4A
0 40' 80'



PROPOSED CHANNEL CENTERLINE
VERTICAL: 1" = 10'
HORIZONTAL: 1" = 40'

NOTE: THE PROPOSED CHANNEL PROFILE TIES INTO THE ELEVATION CAPTURED IN THE SECTION SURVEY TAKEN ON JUNE 18-20 2024

A/E FIRM PRIME/CIVIL STANTEC CONSULTING SERVICES INC. DENVER, CO	DESIGNED: PTP CADD JMM TECH. REVIEW: JGG DATE: 12/13/2024	SUB SHEET NO. C5	TITLE OF SHEET KNIFE RIVER PLAN AND PROFILE (PROPOSED CENTERLINE) KNIFE RIVER INDIAN VILLAGES N.H.S.	DRAWING NO. 468 / 184187 PMIS/PKG NO. 257081 SHEET 9 OF 21

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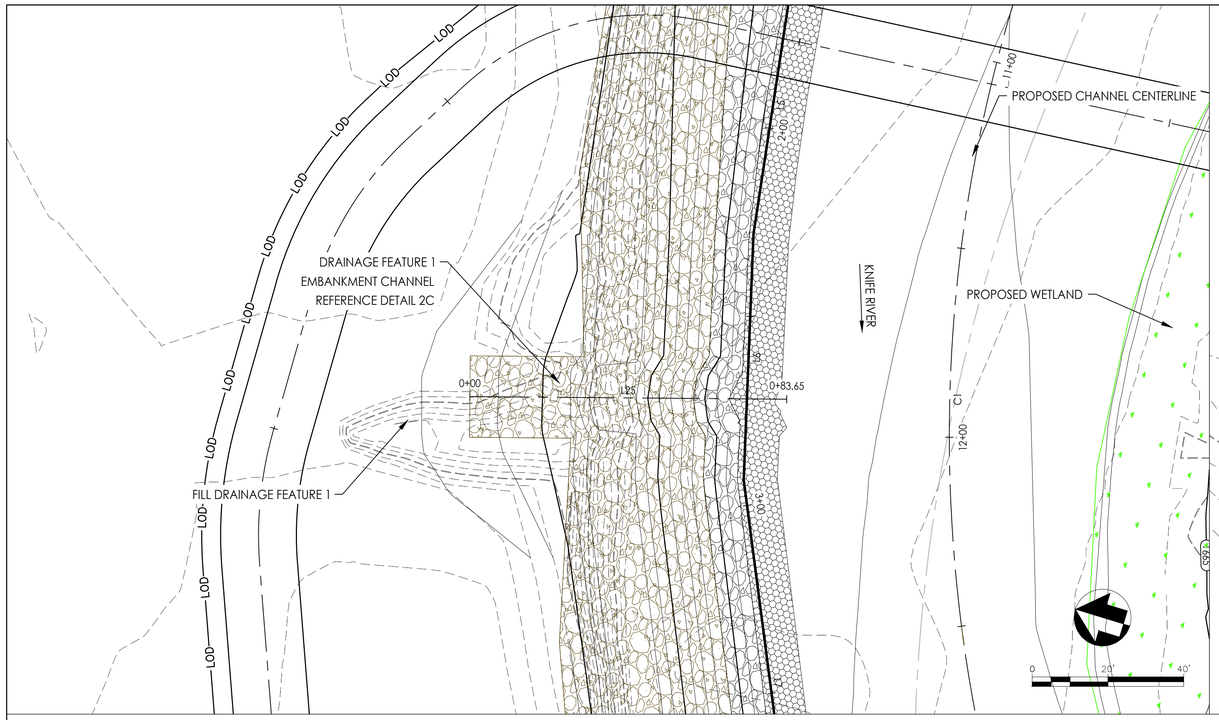
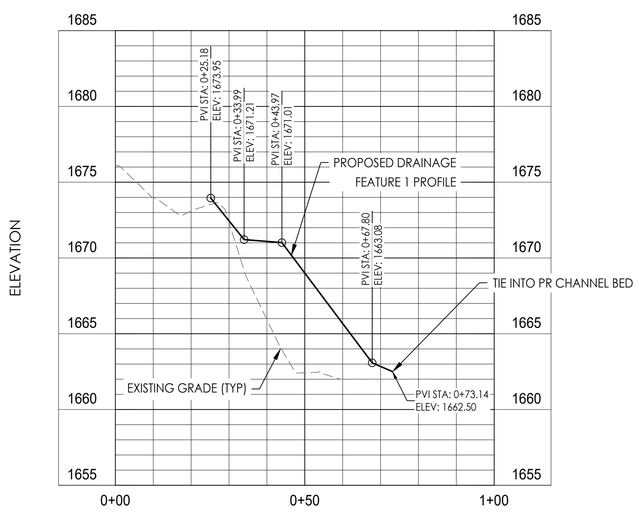
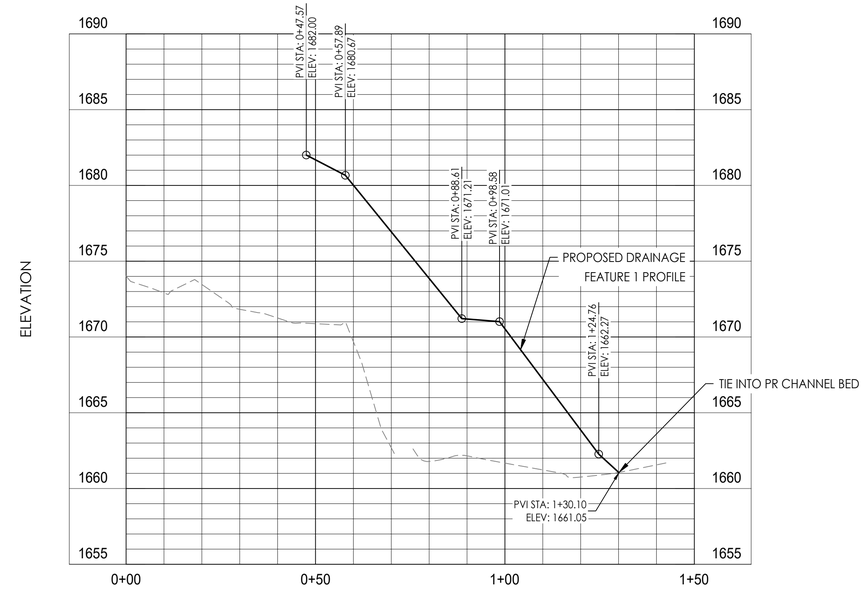
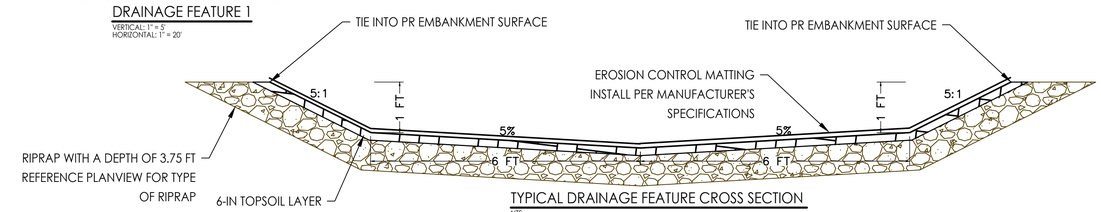




PROPOSED CENTERLINE STATION
DRAINAGE FEATURE 1
VERTICAL: 1" = 5'
HORIZONTAL: 1" = 20'



PROPOSED CENTERLINE STATION
DRAINAGE FEATURE 2
VERTICAL: 1" = 5'
HORIZONTAL: 1" = 20'



TYPICAL DRAINAGE FEATURE CROSS SECTION
NTS

A/E FIRM PRIME/CIVIL STANTEC CONSULTING SERVICES INC. DENVER, CO	DESIGNED: PTP CADD JMM TECH. REVIEW: JGG DATE: 12/13/2024	SUB SHEET NO. C6	TITLE OF SHEET KNIFE RIVER PLAN AND PROFILES (DRAINAGE FEATURES) KNIFE RIVER INDIAN VILLAGES N.H.S.	DRAWING NO. 468 184187 PMIS/PKG NO. 257081 SHEET 10 OF 21

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PROPOSED CENTERLINE

NUMBER	BEGIN	END	RADIUS	LENGTH	LINE/CHORD DIRECTION
C1	STA. 10+30.19 N = 613997.4347 E = 1749242.7578	STA. 13+49.95 N = 613916.1050 E = 1748942.5078	394.26	319.76	S74° 50' 37.66"W
L1	STA. 13+49.95 N = 613916.1050 E = 1748942.5078	STA. 14+61.81 N = 613846.6400 E = 1748854.8363		111.86	S51° 36' 32.66"W
C2	STA. 14+61.81 N = 613846.6400 E = 1748854.8363	STA. 16+38.38 N = 613696.8652 E = 1748769.7213	229.93	176.58	S29° 36' 32.34"W
L2	STA. 16+38.38 N = 613696.8652 E = 1748769.7213	STA. 17+47.38 N = 613588.8241 E = 1748755.2885		109.00	S7° 36' 32.02"W
C3	STA. 17+47.38 N = 613588.8241 E = 1748755.2885	STA. 19+50.09 N = 613395.0912 E = 1748798.6459	287.15	202.71	S12° 36' 53.69"E
L3	STA. 19+50.09 N = 613395.0912 E = 1748798.6459	STA. 21+71.62 N = 613208.9644 E = 1748918.7745		221.53	S32° 50' 19.39"E

TOE OF EMBANKMENT

NUMBER	BEGIN	END	RADIUS	LENGTH	LINE/CHORD DIRECTION
L4	STA. 1+12.39 N = 614063.4996 E = 1749226.4287	STA. 1+58.54 N = 614059.3559 E = 1749180.4639		46.15	S84° 50' 55.33"W
L5	STA. 1+58.54 N = 614059.3559 E = 1749180.4639	STA. 2+28.23 N = 614049.7480 E = 1749111.4359		69.69	S82° 04' 33.62"W
L6	STA. 2+28.23 N = 614049.7480 E = 1749111.4359	STA. 2+93.18 N = 614033.7467 E = 1749048.4929		64.95	S75° 44' 11.41"W
L7	STA. 2+93.18 N = 614033.7467 E = 1749048.4929	STA. 4+01.84 N = 613989.5817 E = 1748949.2088		108.66	S66° 01' 07.81"W
L8	STA. 4+01.84 N = 613989.5817 E = 1748949.2088	STA. 5+22.37 N = 613913.8673 E = 1748855.4368		120.52	S51° 04' 53.58"W
L9	STA. 5+22.37 N = 613913.8673 E = 1748855.4368	STA. 5+52.07 N = 613894.7850 E = 1748832.6787		29.70	S50° 01' 14.29"W
L10	STA. 5+52.07 N = 613894.7850 E = 1748832.6787	STA. 5+90.76 N = 613866.2032 E = 1748806.5959		38.69	S42° 22' 56.99"W
L11	STA. 5+90.76 N = 613866.2032 E = 1748806.5959	STA. 6+44.88 N = 613825.3865 E = 1748771.0633		54.12	S41° 02' 27.25"W
L12	STA. 6+44.88 N = 613825.3865 E = 1748771.0633	STA. 7+16.66 N = 613758.0745 E = 1748746.1363		71.78	S20° 19' 14.21"W
L13	STA. 7+16.66 N = 613758.0745 E = 1748746.1363	STA. 7+32.29 N = 613743.3079 E = 1748741.0122		15.63	S19° 08' 13.32"W
L14	STA. 7+32.29 N = 613743.3079 E = 1748741.0122	STA. 8+38.02 N = 613640.4710 E = 1748716.4460		105.73	S13° 26' 07.14"W
L15	STA. 8+38.02 N = 613640.4710 E = 1748716.4460	STA. 8+54.00 N = 613624.6516 E = 1748714.1889		15.98	S8° 07' 13.43"W
L16	STA. 8+54.00 N = 613624.6516 E = 1748714.1889	STA. 8+95.60 N = 613583.2528 E = 1748710.0166		41.61	S5° 45' 17.71"W
L17	STA. 8+95.60 N = 613583.2528 E = 1748710.0166	STA. 9+31.28 N = 613547.5794 E = 1748710.3261		35.67	S0° 29' 49.39"E
L18	STA. 9+31.28 N = 613547.5794 E = 1748710.3261	STA. 9+49.10 N = 613529.9312 E = 1748712.8318		17.83	S8° 04' 51.32"E
L19	STA. 9+49.10 N = 613529.9312 E = 1748712.8318	STA. 9+76.84 N = 613503.1275 E = 1748719.9709		27.74	S14° 54' 51.50"E
L20	STA. 9+76.84 N = 613503.1275 E = 1748719.9709	STA. 10+73.31 N = 613413.0051 E = 1748754.3681		96.46	S20° 53' 25.65"E
L21	STA. 10+73.31 N = 613413.0051 E = 1748754.3681	STA. 11+22.71 N = 613366.2645 E = 1748770.3659		49.40	S18° 53' 39.80"E
L22	STA. 11+22.71 N = 613366.2645 E = 1748770.3659	STA. 11+95.34 N = 613300.3033 E = 1748800.7766		72.63	S24° 45' 05.65"E
L23	STA. 11+95.34 N = 613300.3033 E = 1748800.7766	STA. 12+98.16 N = 613212.8727 E = 1748854.8858		102.82	S31° 45' 09.37"E
L24	STA. 12+98.16 N = 613212.8727 E = 1748854.8858	STA. 13+31.99 N = 613182.9560 E = 1748870.6820		33.83	S27° 50' 03.53"E

DRAINAGE FEATURE 1

NUMBER	BEGIN	END	RADIUS	LENGTH	LINE/CHORD DIRECTION
L25	STA. 0+00.00 N = 614109.3001 E = 1749048.9780	STA. 0+83.65 N = 614028.9197 E = 1749072.1400		83.65	S16° 04' 28.38"E

DRAINAGE FEATURE 2

NUMBER	BEGIN	END	RADIUS	LENGTH	LINE/CHORD DIRECTION
L26	STA. 0+00.00 N = 613977.4975 E = 1748732.1665	STA. 1+42.51 N = 613877.3309 E = 1748833.5295		142.51	S45° 20' 24.54"E

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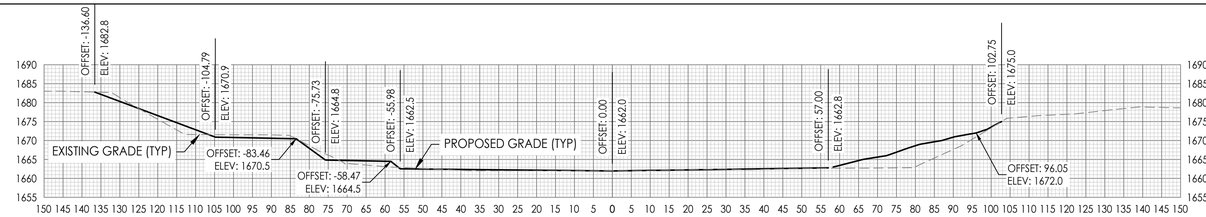
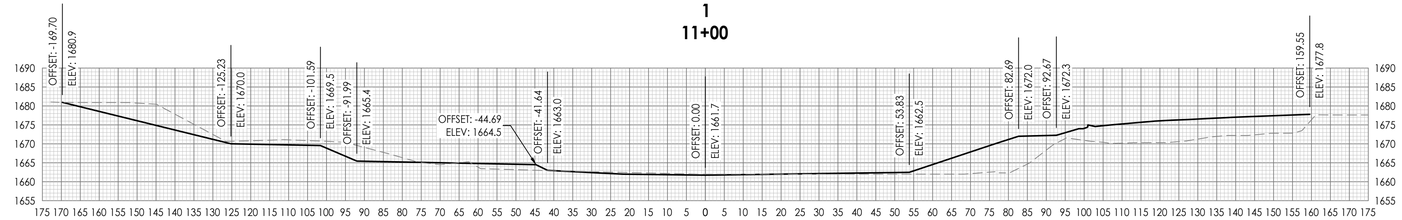
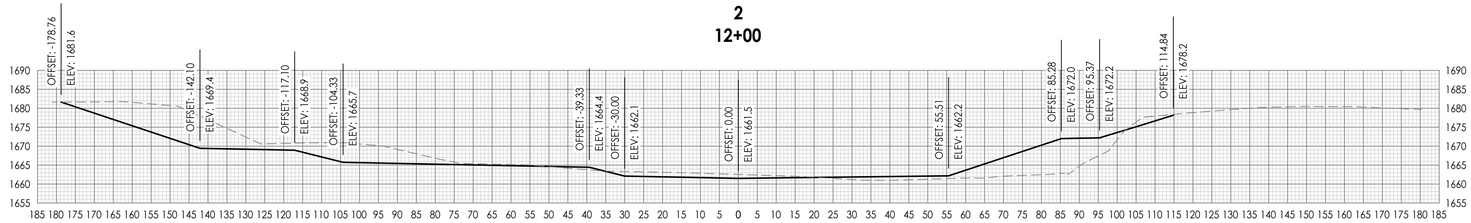


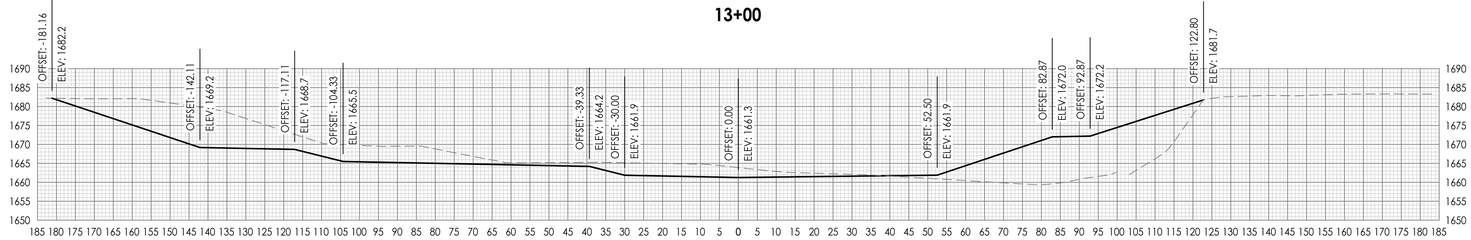
1
11+00



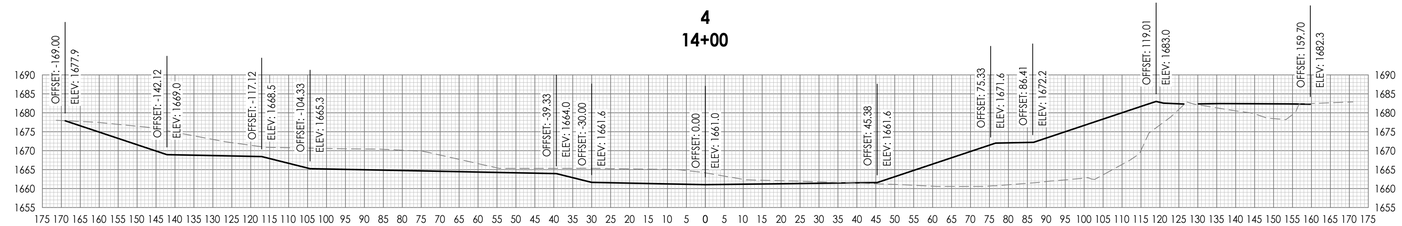
2
12+00



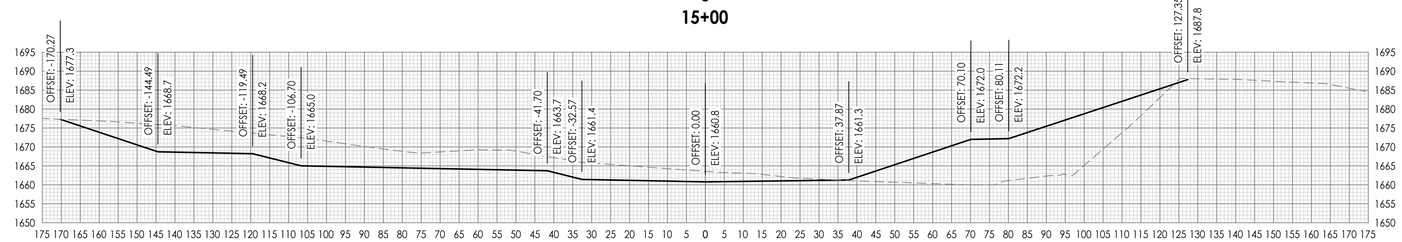
3
13+00



4
14+00



5
15+00



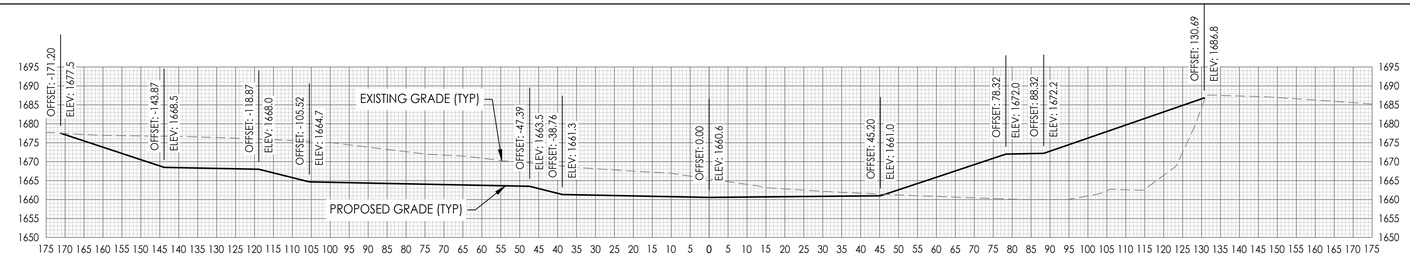
6
16+00

0 20' 40'

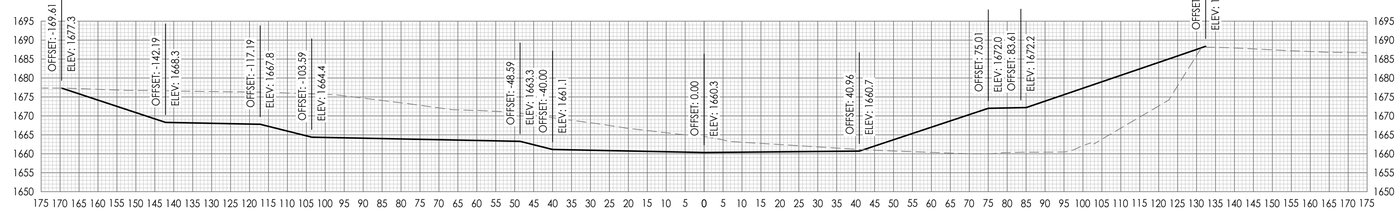
A/E FIRM PRIME/CIVIL STANTEC CONSULTING SERVICES INC. DENVER, CO	DESIGNED: PTP CADD JMM TECH. REVIEW: JGG DATE: 12/13/2024	SUB SHEET NO. C8	TITLE OF SHEET KNIFE RIVER CROSS SECTIONS STA 11+00 TO 16+00 KNIFE RIVER INDIAN VILLAGES N.H.S.

DRAWING NO. 468
184187
PMIS/PKG NO. 257081
SHEET 12 OF 21

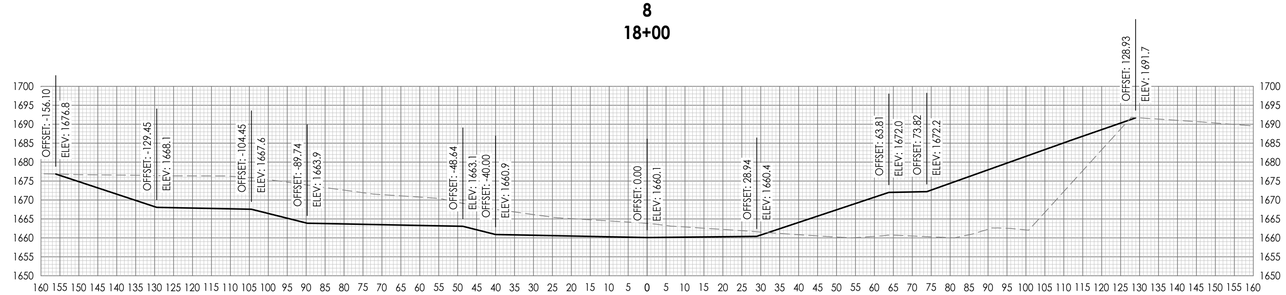
01/22/2025 13:54 SRHART R17 \\us0325-ppfss01\shared_projects\20372396\03_data\gis_cad\cad\sheet_files\Stantec_Package\09_Cross_Sections.dwg



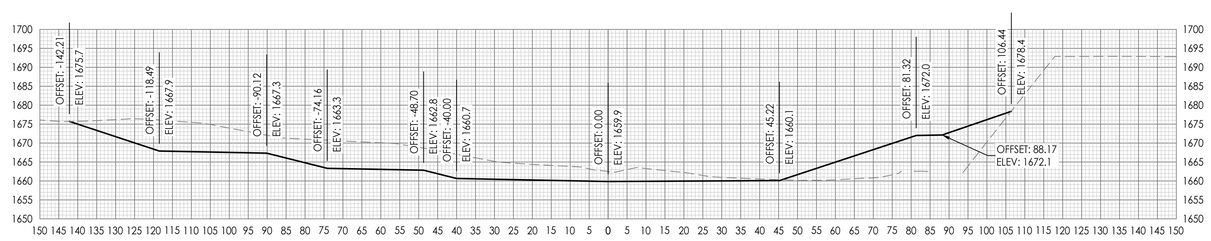
7
17+00



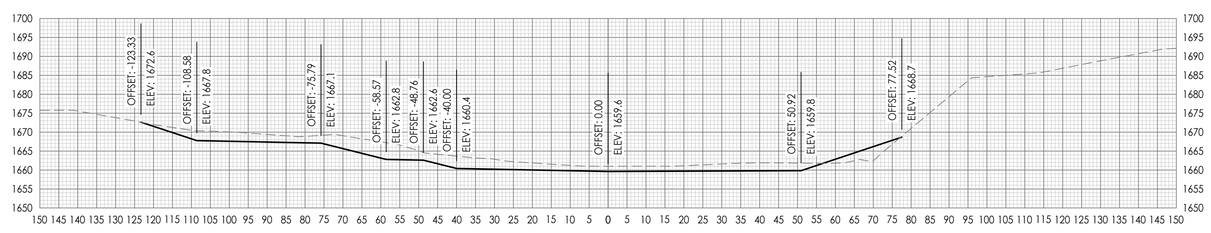
8
18+00



9
19+00



10
20+00



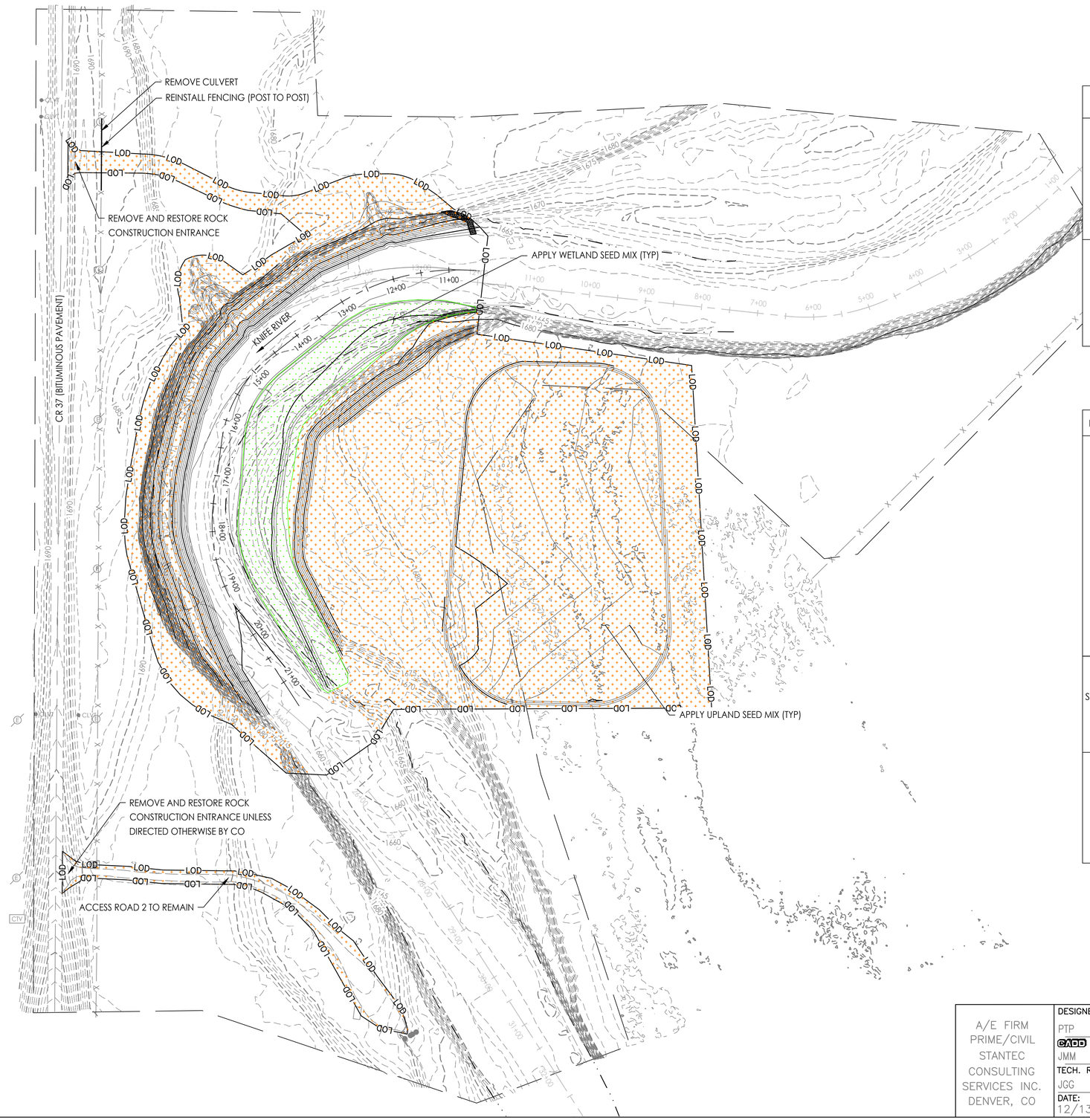
11
21+00

0 20' 40'

A/E FIRM PRIME/CIVIL STANTEC CONSULTING SERVICES INC. DENVER, CO	DESIGNED: PTP CADD JMM TECH. REVIEW: JGG DATE: 12/13/2024	SUB SHEET NO. C9	TITLE OF SHEET KNIFE RIVER CROSS SECTIONS STA 17+00 TO 21+00 KNIFE RIVER INDIAN VILLAGES N.H.S.

DRAWING NO. 468 / 184187
PMIS/PKG NO. 257081
SHEET 13 OF 21

01/22/2025 13:53 SRHART R17 \\us0325-ppfss01\shared_projects\203723967\03_data\gis_cad\cad\sheet_files\Stantec_Package\09_Cross_Sections.dwg



Upland Seed Mixture

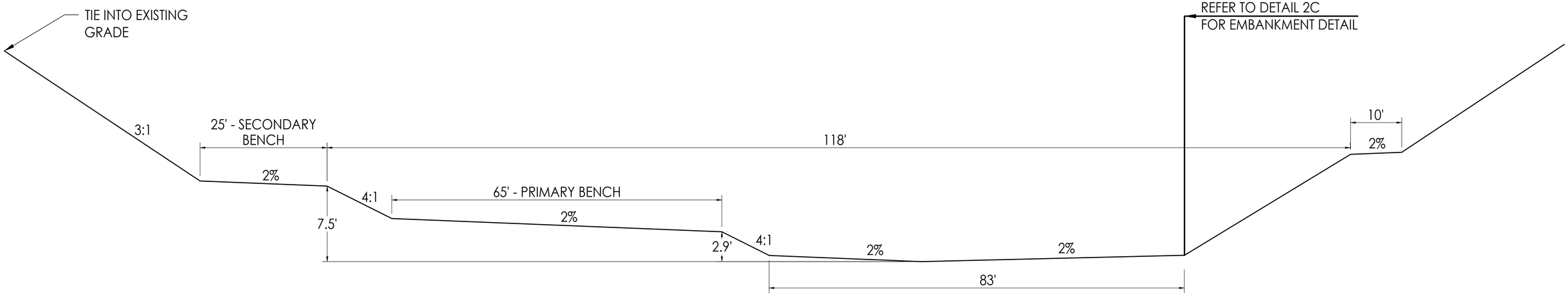
Plant Type	Common Name	Scientific Name	Rate (lbs/PLS per Acre)	% of Mix (by weight)
Grasses	Western wheatgrass	Pascopyrum smithii	2.5	21%
	Slender wheatgrass	Elymus trachycaulus	2.5	21%
	Big bluestem	Andropogon gerardii	0.75	6%
	Sideoats grama	Bouteloua curtipendula	2.5	21%
	Blue grama	Bouteloua gracilis	1	9%
	Little bluestem	Schizachyrium scoparium	0.75	6%
	Grasses Subtotal		**10**	86%
Forbs	Common milkweed	Asclepias syriaca	0.75	6%
	Whorled milkweed	Asclepias verticillata	0.5	4%
	Purple prairie clover	Dalea purpurea	0.15	1%
	Wild bergamot	Monarda fistulosa	0.1	1%
	Sneezeweed	Helenium autumnale	0.025	0%
	Blackeyed susan	Rudbeckia hirta	0.125	1%
	Forbs Subtotal		**1.65**	14%
	Upland Seed Mix Rate (lbs/PLS per Acre)		**11.65**	
	Upland Seed Mix Total (lbs)		**162.33**	

Wetland Seed Mixture

Plant Type	Common Name	Scientific Name	Rate (lbs/PLS per Acre)	% of Mix (by weight)
Grasses	Big bluestem	Andropogon gerardii	2	14%
	Canada bluejoint	Calamagrostis canadensis	0.05	0%
	Canada wildrye	Elymus canadensis	2	14%
	Virginia wildrye	Elymus virginicus	3.5	24%
	Fowl bluegrass	Poa palustris	0.25	2%
	Fowl mannagrass	Glyceria striata	0.2	1%
	Indiangrass	Sorghastrum nutans	2	14%
	Prairie cordgrass	Spartina pectinata	1.1	7%
	Rice cutgrass	Leersia oryzoides	0.25	2%
	Switchgrass	Panicum virgatum	1	7%
	American sloughgrass	Beckmannia syzigachne	0.5	3%
	American mannagrass	Glyceria grandis	0.2	1%
		Grasses Subtotal	**13.05**	88%
Sedges and Rushes	Fox Sedge	Carex vulpinoidea	0.2	1%
	Hardstem bulrush	Schoenoplectus acutus	0.1	1%
	Bottlebrush Sedge	Carex hystericina	0.15	1%
	Torrey's rush	Juncus torreyi	0.01	0%
		Sedges & Rushes Subtotal	**0.46**	3%
Forbs	Black eyed susan	Rudbeckia hirta	0.063	0%
	Swamp verbena	Verbena hastata	0.063	0%
	Prairie ironweed	Vernonia fasciculata	0.031	0%
	Sneezeweed	Helenium autumnale	0.031	
	Swamp Milkweed	Asclepias incarnata	0.063	0%
	Giant bur-reed	Sparganium eurycarpum	1	7%
		Forbs Subtotal	**1.25**	8%
	Wetland Seed Mix Total Rate (lbs/PLS per Acre)		**14.76**	
	Wetland Seed Mix Total (lbs)		**23.72**	

A/E FIRM PRIME/CIVIL STANTEC CONSULTING SERVICES INC. DENVER, CO	DESIGNED: PTP CADD JMM TECH. REVIEW: JGG DATE: 12/13/2024	SUB SHEET NO. L1	TITLE OF SHEET KNIFE RIVER LANDSCAPING PLAN KNIFE RIVER INDIAN VILLAGES N.H.S.	DRAWING NO. 468 184187 PMIS/PKG NO. 257081 SHEET 14 OF 21

01/22/2025 13:54 SRHART R17 \\us0325-ppfss01\shared_projects\203723967\03_data\gis_cad\cad\sheet_files\Stantec_Package\12 Landscaping Plans.dwg



1A 15 | 8 TYPICAL SECTION
NTS

SHTS. 8-9

NOTES:

1. DETAIL REPRESENTS A TYPICAL CROSS SECTION BETWEEN STA 12+55 TO 19+25. THE FIRST 200 FEET GRADUALLY TRANSITIONS INTO THE DIMENSIONS SHOWN ABOVE BY STA 12+55. THE FINAL 225 LF TRANSITIONS TO TIE INTO THE EXISTING CHANNEL BED AND BANKS.
2. TRANSITIONS TO TIE INTO EXISTING BANKS AND CHANNEL BED MAY REQUIRE FIELD ADJUSTMENTS TO ADAPT TO NATURAL VARIABILITY OF ACTIVE RIVERINE SYSTEMS.
3. REFERENCE THE GRADING LINES FROM THE PROPOSED SURFACE TO CONSTRUCT CHANNEL.
4. REFERENCE THE CONSTRUCTED EMBANKMENT DETAIL ON SHEET 16 FOR CLARIFICATION OF EMBANKMENT SLOPES AND MATERIAL.
5. WETLAND SEED MIX WILL BE APPLIED FROM 1662.5 UP TO 1668.5 ON LEFT. REFERENCE LANDSCAPE PLANS FOR EXACT LOCATIONS.

A/E FIRM PRIME/CIVIL STANTEC CONSULTING SERVICES INC. DENVER, CO	DESIGNED: PTP CADD JMM TECH. REVIEW: JGG DATE: 12/13/2024	SUB SHEET NO. C10	TITLE OF SHEET KNIFE RIVER DETAILS (1 OF 7) KNIFE RIVER INDIAN VILLAGES N.H.S.	DRAWING NO. 468 184187 PMIS/PKG NO. 257081 SHEET 15 OF 21

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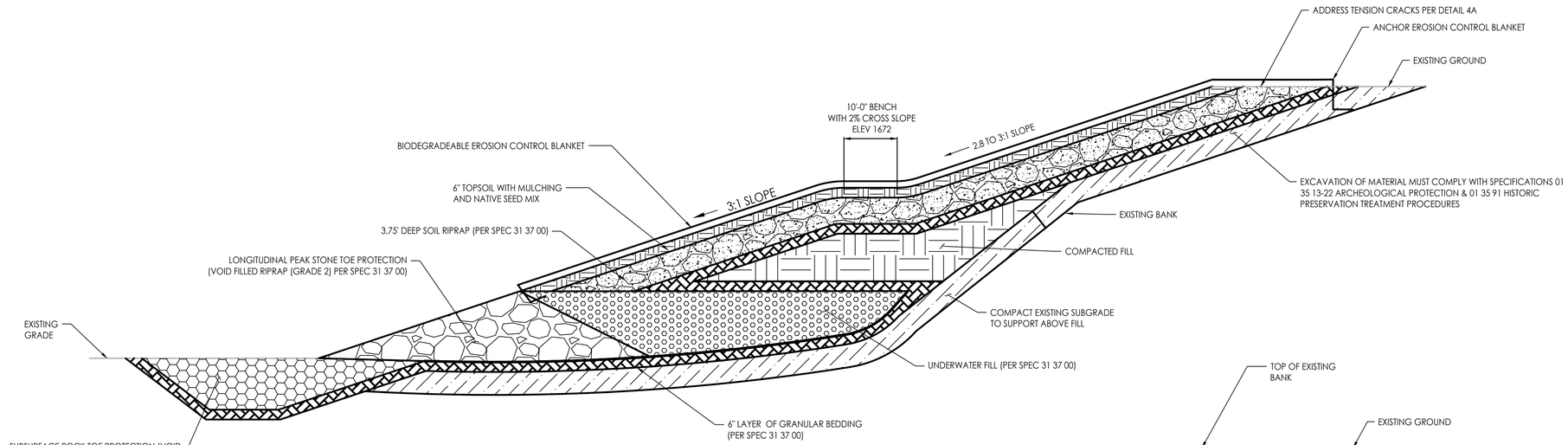
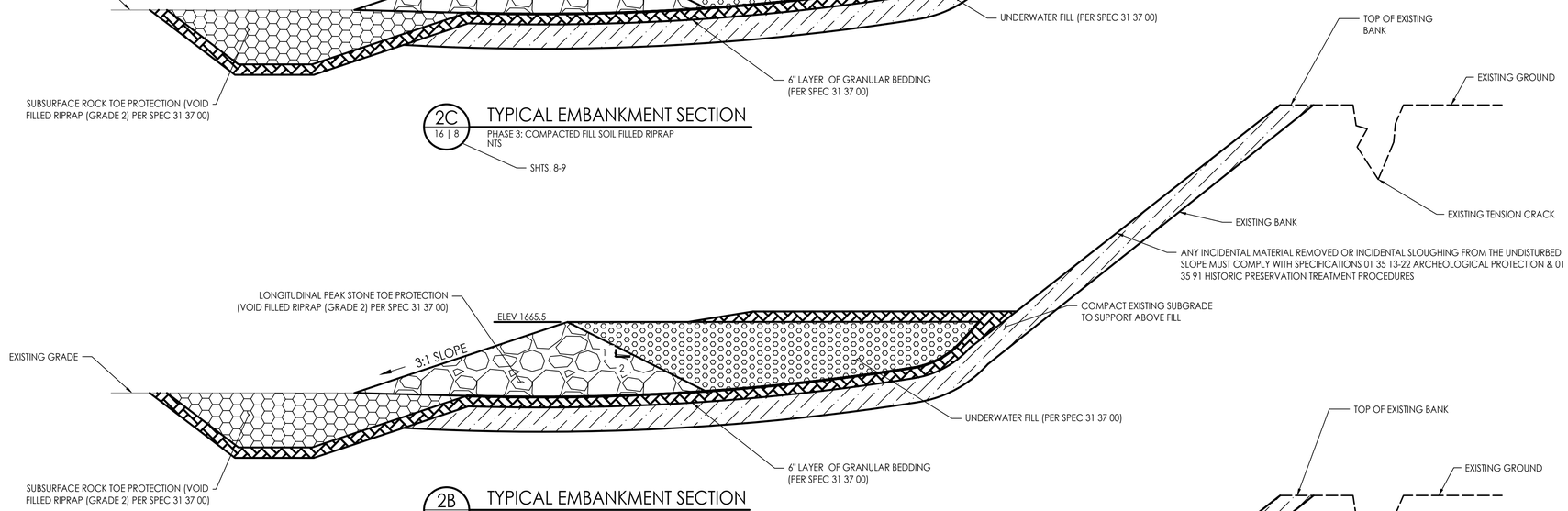
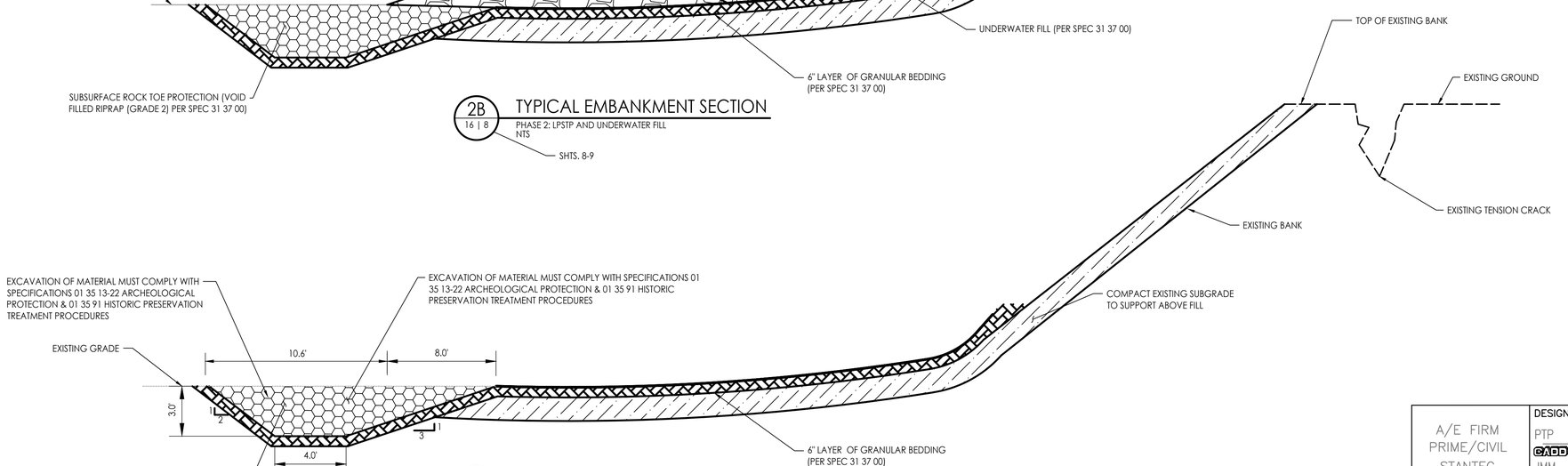


2C
16 | 8
TYPICAL EMBANKMENT SECTION
PHASE 3: COMPACTED FILL SOIL FILLED RIPRAP
NTS
SHTS. 8-9



2B
16 | 8
TYPICAL EMBANKMENT SECTION
PHASE 2: LPSTP AND UNDERWATER FILL
NTS
SHTS. 8-9



2A
16 | 8
TYPICAL EMBANKMENT SECTION
PHASE 1: FILTER STONE AND SUBSURFACE ROCK TOE
NTS
SHTS. 8-9

A/E FIRM PRIME/CIVIL STANTEC CONSULTING SERVICES INC. DENVER, CO	DESIGNED: PTP CADD JMM TECH. REVIEW: JGG DATE: 12/13/2024	SUB SHEET NO. C11	TITLE OF SHEET KNIFE RIVER DETAILS (2 OF 7) KNIFE RIVER INDIAN VILLAGES N.H.S.	DRAWING NO. 468 184187 PMIS/PKG NO. 257081 SHEET 16 OF 21

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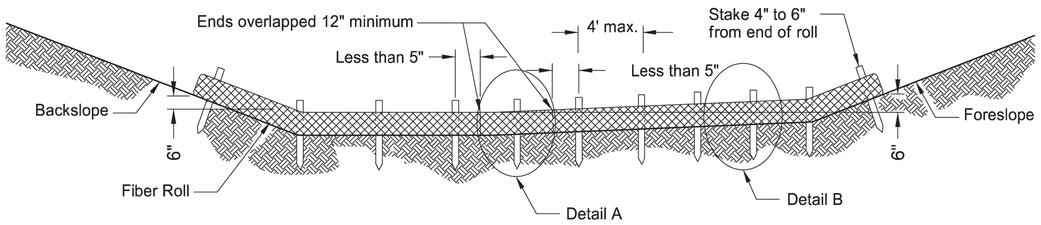
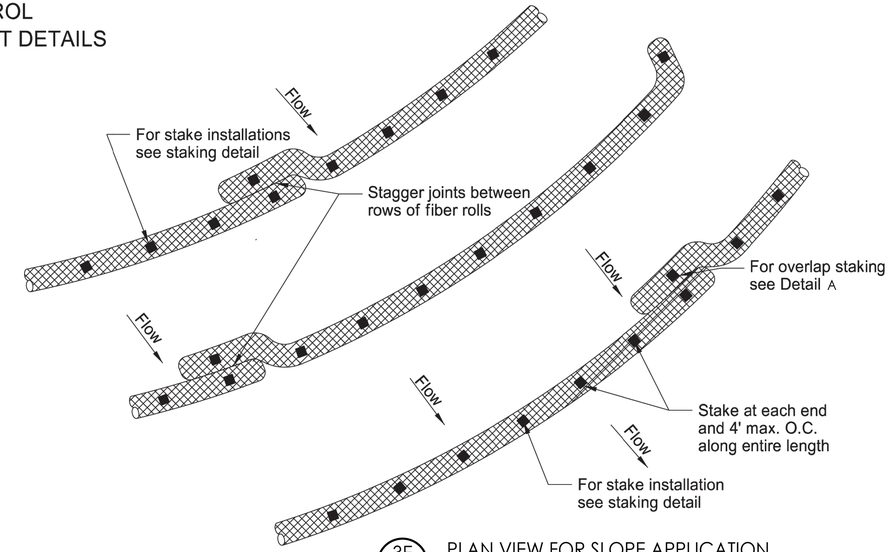
EROSION CONTROL
FIBER ROLL PLACEMENT DETAILS



3C 17 | 6 12 OR 20 INCH FIBER ROLL - DITCH BOTTOM

NTS

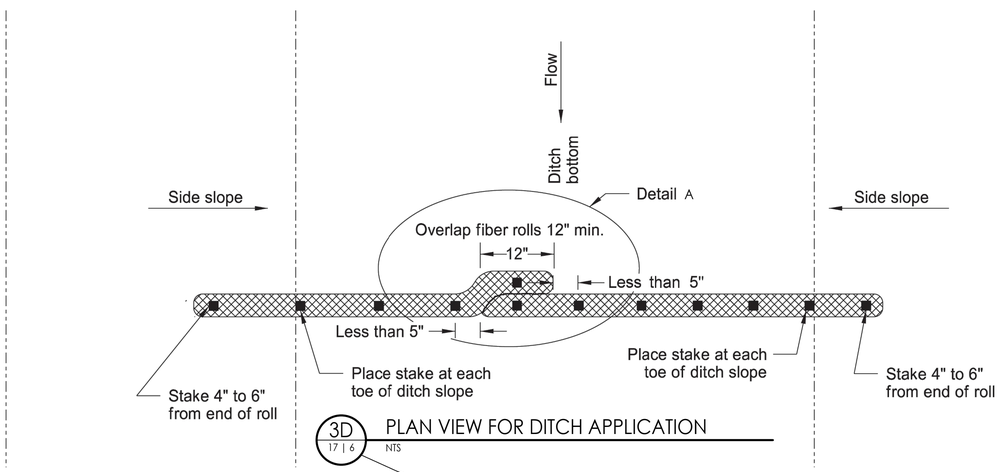
SHTS. 6-7



3E 17 | 6 PLAN VIEW FOR SLOPE APPLICATION

ENSURE FIBER ROLLS ARE PLACED ALONG THE CONTOURS OF THE SLOPE

SHTS. 6-7

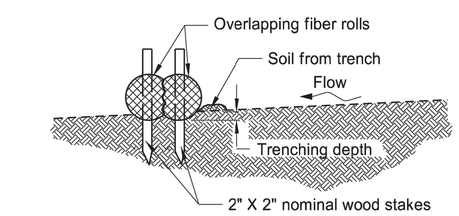


3D 17 | 6 PLAN VIEW FOR DITCH APPLICATION

NTS

SHTS. 6-7

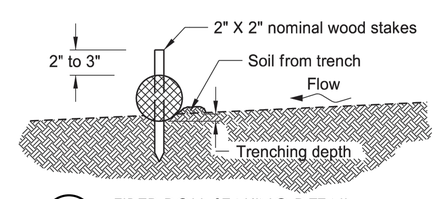
FIBER ROLL DIAMETER	NOMINAL STAKE SIZE	MINIMUM STAKE LENGTH	MINIMUM TRENCH DEPTH	MAXIMUM TRENCH DEPTH
6"	2" x 2"	18"	2"	2"
12"	2" x 2"	24"	2"	3"
20"	2" x 2"	36"	3"	5"



3A 17 | 6 FIBER ROLL OVERLAPPING STAKING DETAIL

NTS

SHTS. 6-7



3B 17 | 6 FIBER ROLL STAKING DETAIL

NTS

SHTS. 6-7

NOTE: Runoff must not be allowed to run under or around roll.

A/E FIRM PRIME/CIVIL STANTEC CONSULTING SERVICES INC. DENVER, CO	DESIGNED: PTP	SUB SHEET NO. C12	TITLE OF SHEET KNIFE RIVER DETAILS (3 OF 7)	DRAWING NO. 468
	CADD JMM			184187
	TECH. REVIEW: JGG			PMIS/PKG NO. 257081
	DATE: 12/13/2024		KNIFE RIVER INDIAN VILLAGES N.H.S.	SHEET 17 OF 21

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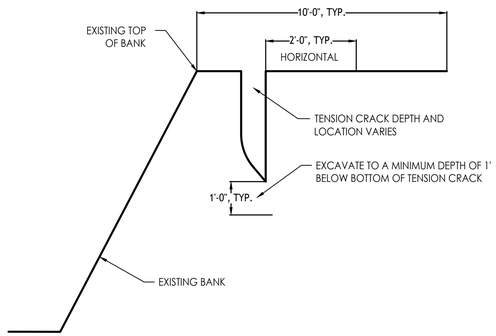
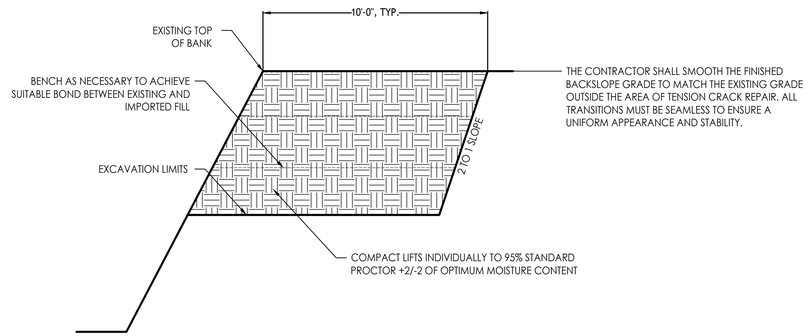
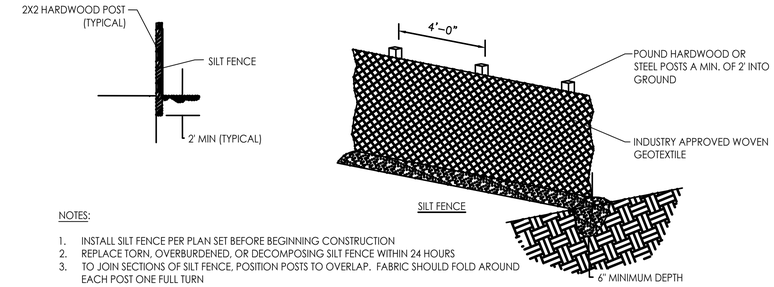
NOTE:
1. TENSION CRACKING FIELD LOCATED PRIOR TO EMBANKMENT CONSTRUCTION.
2. HORIZONTAL LIMITATIONS FOR IDENTIFYING TENSION CRACKS 10'-0" FROM TOP OF EXISTING GRADE
3. EXCAVATION LIMITS FOR TENSION CRACKS
   3.1. VERTICAL - 1' BELOW BOTTOM OF TENSION CRACK
   3.2. HORIZONTAL - 2' FROM EDGE OF TENSION CRACK

4. EXCAVATION REQUIRES COMPLIANCE WITH SPECIFICATIONS 01 35 13-22 ARCHEOLOGICAL PROTECTION & 01 35 91 HISTORIC PRESERVATION TREATMENT PROCEDURES
5. CONTRACTOR SHALL PROVIDE LIFT AND LIFT OPERATOR FOR NPS ARCHEOLOGICAL STAFF TO INSPECT TENSION CRACK REPAIR EXCAVATIONS BEFORE CONTRACTOR CAN BACKFILL. CONSTRUCTION SCHEDULE MUST IDENTIFY "TENSION CRACK REPAIRS" AS MILESTONE. CONTRACTOR MUST PROVIDE A 14-DAY NOTICE PRIOR TO COMMENSING TENSION CRACK REPAIR WORK.



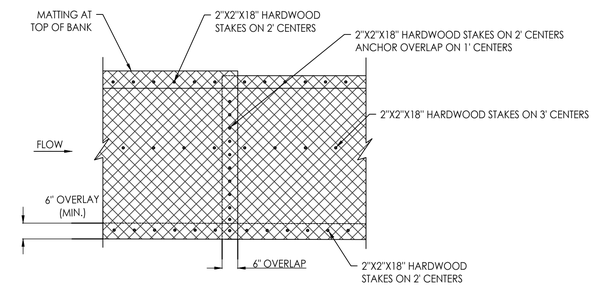


4A TENSION CRACK TREATMENT
18 | 6
NTS

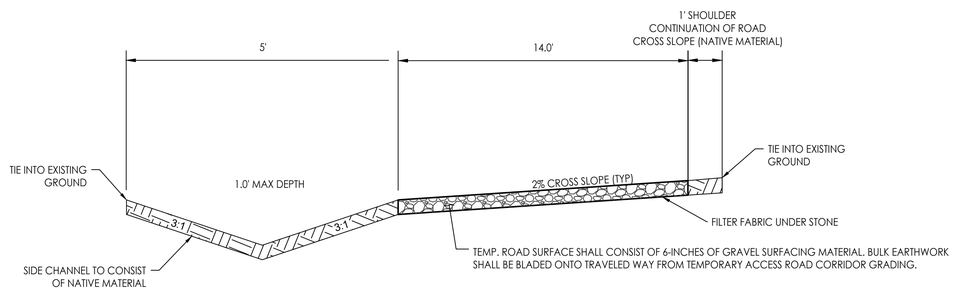


NOTES:
1. INSTALL SILT FENCE PER PLAN SET BEFORE BEGINNING CONSTRUCTION
2. REPLACE TORN, OVERBURDENED, OR DECOMPOSING SILT FENCE WITHIN 24 HOURS
3. TO JOIN SECTIONS OF SILT FENCE, POSITION POSTS TO OVERLAP. FABRIC SHOULD FOLD AROUND EACH POST ONE FULL TURN

4D SILT FENCE
18 | 6
NTS
SHTS. 6-7

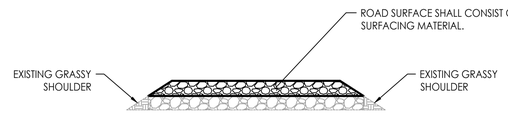


4E EROSION CONTROL MATTING AND BLANKET
18 | 6
NTS
SHTS. 6-7



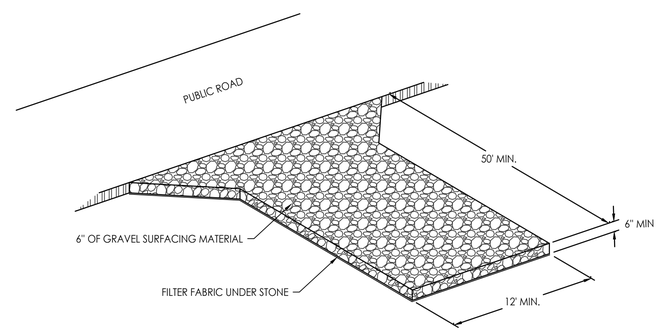
NOTES:
1. BLADING ALLOWED TO CONSTRUCT DITCHES AS SHOWN TO DRAIN TO CULVERTS.
2. EXCAVATION AND COMPACTED BACKFILL EFFORTS SHALL FOLLOW ALL NPS ROW RECOMMENDATIONS (I.E., CULTURAL, PALEONTOLOGY). IF MONITORING IS REQUIRED BY NPS PERMIT, COORDINATE ALL CULTURAL AND PALEONTOLOGICAL MATTERS WITH APPROPRIATE ON-SITE CONSULTANT OR AT MINIMUM NOTIFY THE CONTRACTING OFFICER.
3. ALL ROADWAY DISTURBANCES MUST BE INSIDE LIMITS OF DISTURBANCE.
4. FOLLOW ALL PERMIT CONDITIONS IN THE TEMPORARY CONSTRUCTION ENTRANCE PERMIT FROM THE MERCER COUNTY HIGHWAY DEPARTMENT

4B TEMPORARY ACCESS ROAD 1 SECTION
18 | 6
NTS
SHTS. 6-7



4G ACCESS ROAD 2 SECTION
18 | 6
NTS
SHTS. 6-7

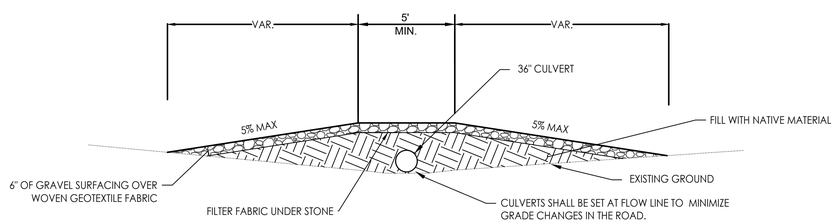
NOTES:
1. MAINTAIN EXISTING CROSS SLOPES
2. DO NOT REMOVE THE EXISTING SURFACE
3. PROPOSED AGGREGATE SURFACE MATERIAL TO COVER EXTENTS OF EXISTING AGGREGATE SURFACE
4. INCORPORATE PROPOSED AGGREGATE SURFACE MATERIAL TO THE EXISTING ROAD TO IMPROVE DRIVING SURFACE



NOTES:
1. GRADE AND REMOVE ALL VEGETATION AND OBJECTIONABLE MATERIAL FROM PROPOSED ENTRANCE AREA.
2. PROVIDE DRAINAGE TO SUITABLE OUTLET.

MAINTENANCE:
1. ROCK CONSTRUCTION ENTRANCE SHALL BE INSPECTED AFTER EACH RAINFALL EVENT.
2. MAINTAIN ROCK CONSTRUCTION ENTRANCE IN CONDITION NECESSARY TO PREVENT MUD OR SEDIMENT FROM LEAVING THE SITE.
3. IMMEDIATELY REMOVE ANY OBJECTIONABLE MATERIAL SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.

4F ROCK CONSTRUCTION ENTRANCE
18 | 6
NTS
SHTS. 6-7

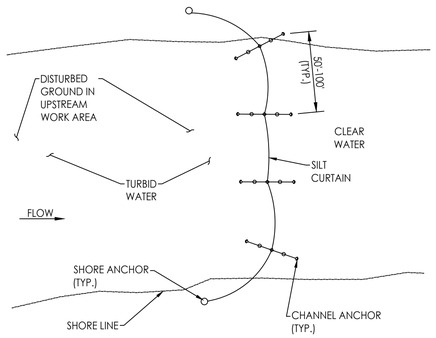


NOTES:
1. NO EXCAVATION ALLOWED FOR INSTALLATION OF CULVERTS, UNLESS PROVIDED IN WRITING FROM THE CONTRACTING OFFICER. IF EXCAVATION IS AUTHORIZED BY THE CONTRACTING OFFICER, COORDINATE WITH THE CONTRACTING OFFICER.
2. 24" MIN COVER ON ALL CULVERTS

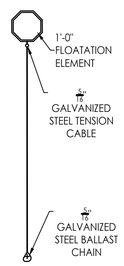
4C CULVERT CROSSING
18 | 6
NTS TEMPORARY ACCESS ROAD 1 ONLY
SHTS. 6-7

A/E FIRM PRIME/CIVIL STANTEC CONSULTING SERVICES INC. DENVER, CO	DESIGNED: PTP CADD JMM TECH. REVIEW: JGG DATE: 12/13/2024	SUB SHEET NO. C13	TITLE OF SHEET KNIFE RIVER DETAILS (4 OF 7) KNIFE RIVER INDIAN VILLAGES N.H.S.	DRAWING NO. 468 184187 PMIS/PKG NO. 257081 SHEET 18 OF 21

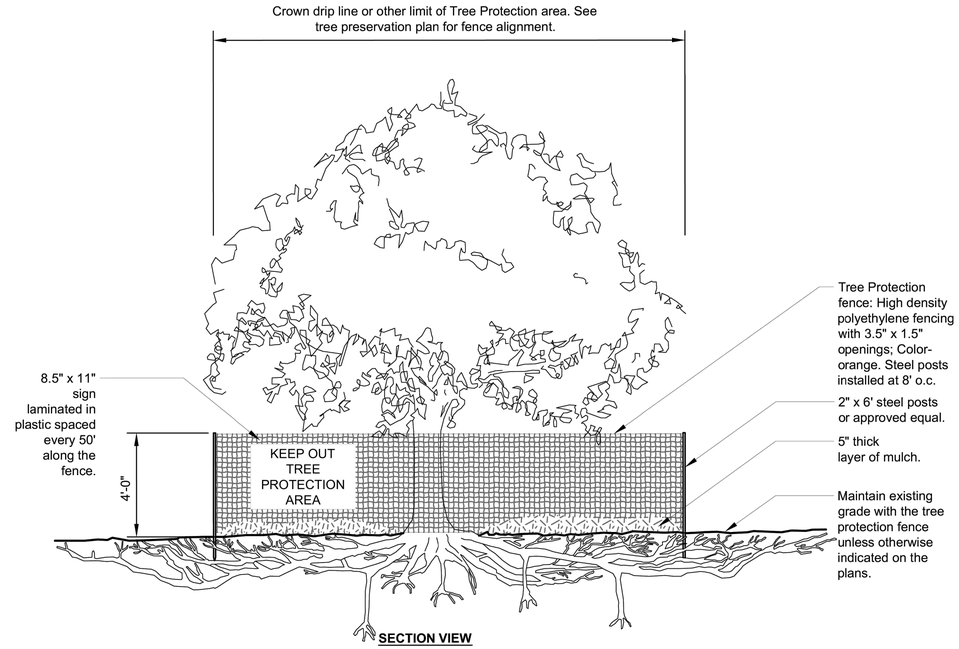
01/22/2025 13:52 SRHART R17 \\us0325-ppfss01\shared_projects\203723967\03_data\gis_cad\cad\sheet_files\Stantec_Package\11_Details.dwg



PLAN

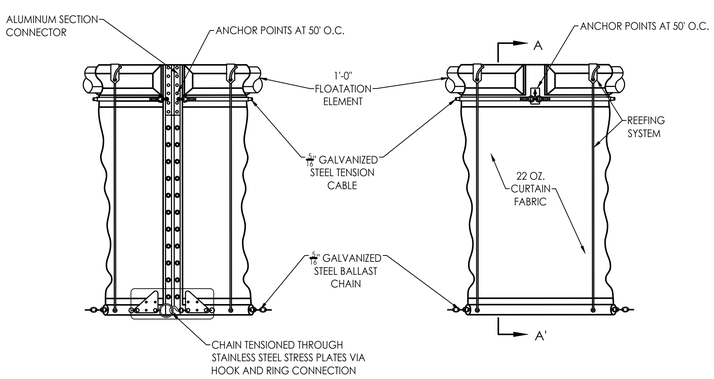


SECTION A-A'



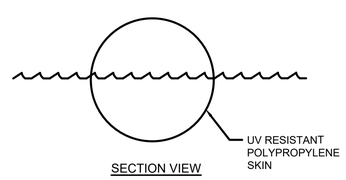
SECTION VIEW

5C 19 | 6 TREE PROTECTION
NTS
SHTS. 6-7

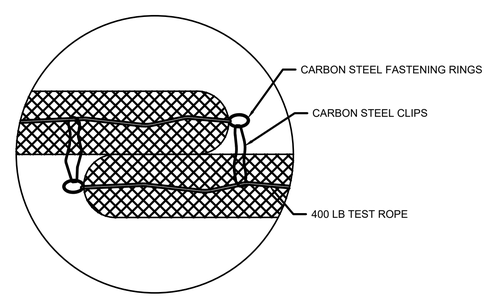


ELEVATION

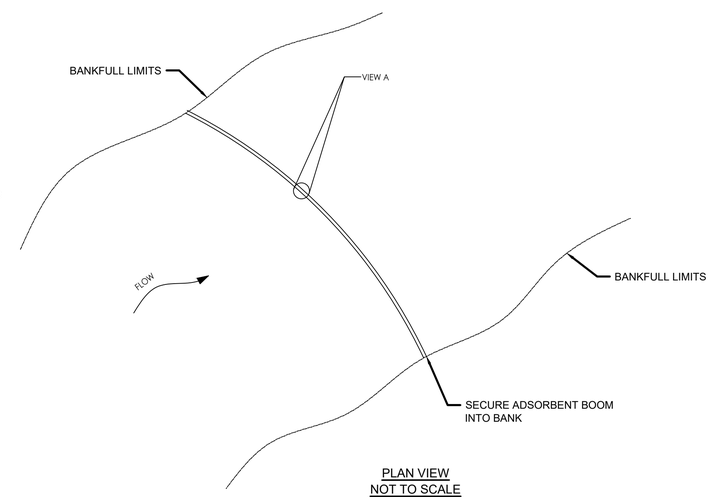
5A 19 | 6 SILT CURTAIN
NTS
SHTS. 6-7



SECTION VIEW



VIEW A



PLAN VIEW
NOT TO SCALE

NOTES:

1. ADSORBENT BOOMS FLOAT ON WATER SURFACE.
2. ATTACH 10' SECTIONS OF BOOMS AS SHOWN IN VIEW A UNTIL THE BOOM SPANS THE ENTIRE CHANNEL.
3. EACH 10' SECTION IS CAPABLE OF ABSORBING 12 GALLONS OF OIL AND OIL BASED LIQUIDS. IN EVENT OF A CONTAMINANT RELEASE MAINTAIN BOOMS TO ALLOW FOR EFFECTIVE TREATMENT.
4. DISPOSE OF ADSORBENT BOOMS IN COMPLIANCE WITH LOCAL REGULATIONS.

5B 19 | 6 OIL BOOM
NTS
SHTS. 6-7

A/E FIRM PRIME/CIVIL STANTEC CONSULTING SERVICES INC. DENVER, CO	DESIGNED: PTP CADD JMM TECH. REVIEW: JGG DATE: 12/13/2024	SUB SHEET NO. C14	TITLE OF SHEET KNIFE RIVER DETAILS (5 OF 7) KNIFE RIVER INDIAN VILLAGES N.H.S.	DRAWING NO. 468 184187 PMIS/PKG NO. 257081 SHEET 19 OF 21

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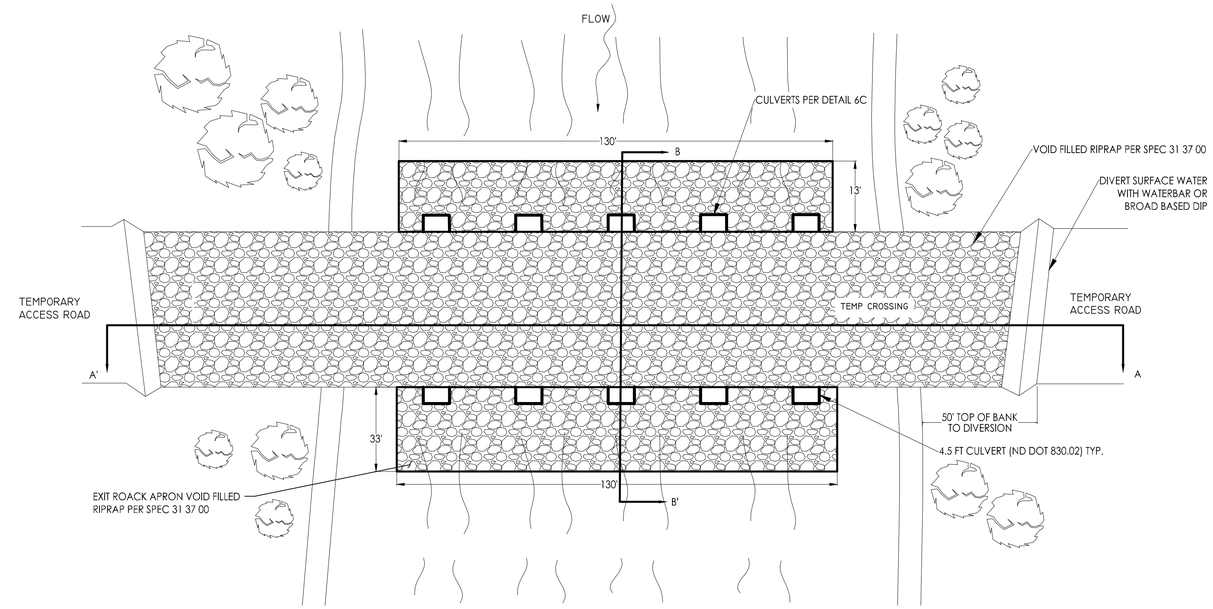


6A — TEMPORARY STREAM CROSSING

20 | 6

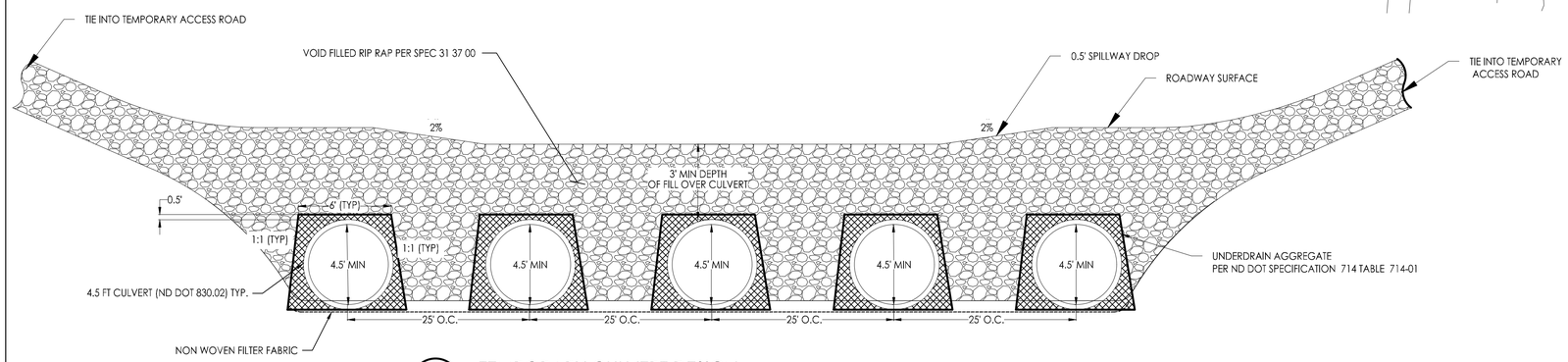
STANDARD CONSTRUCTION DETAIL - PLAN VIEW
NTS

NOTES:

1. WATERBARS AND BROAD-BASED DIPS SHALL DISCHARGE TO SEDIMENT REMOVAL FACILITY.
2. VOID FILLED RIPRAP SHALL CONFORM TO SPECIFICATION 31 37 00.
3. FOLLOW PERMIT CONDITIONS REGARDING REMOVAL OF CROSSING.
4. PROVIDE 50' STABILIZED ACCESS TO CROSSING ON BOTH SIDES OF STREAM CHANNEL.
5. PIPES SHALL EXTEND PER DETAIL 6B.
6. RUNOFF FROM THE ROADWAY SHALL BE DIVERTED OFF THE ROADWAY AND INTO A SEDIMENT REMOVAL BMP BEFORE IT REACHES THE ROCK APPROACH TO THE CROSSING.

MAINTENANCE:

1. TEMPORARY STREAM CROSSINGS SHALL BE INSPECTED ON A DAILY BASIS.
2. DAMAGED CROSSINGS SHALL BE REPAIRED WITHIN 24 HOURS OF THE INSPECTION AND BEFORE ANY SUBSEQUENT USE.
3. SEDIMENT DEPOSITS AND WOODY DEBRIES ON THE CROSSING OR ITS APPROACHES SHALL BE REMOVED WITHIN 24 HOURS OF THE INSPECTION
4. AS SOON AS THE TEMPORARY CROSSING IS NO LONGER NEEDED, IT SHALL BE REMOVED. ALL MATERIALS SHALL BE DISPOSED OF PROPERLY AND DISTURBED AREAS STABILIZED.



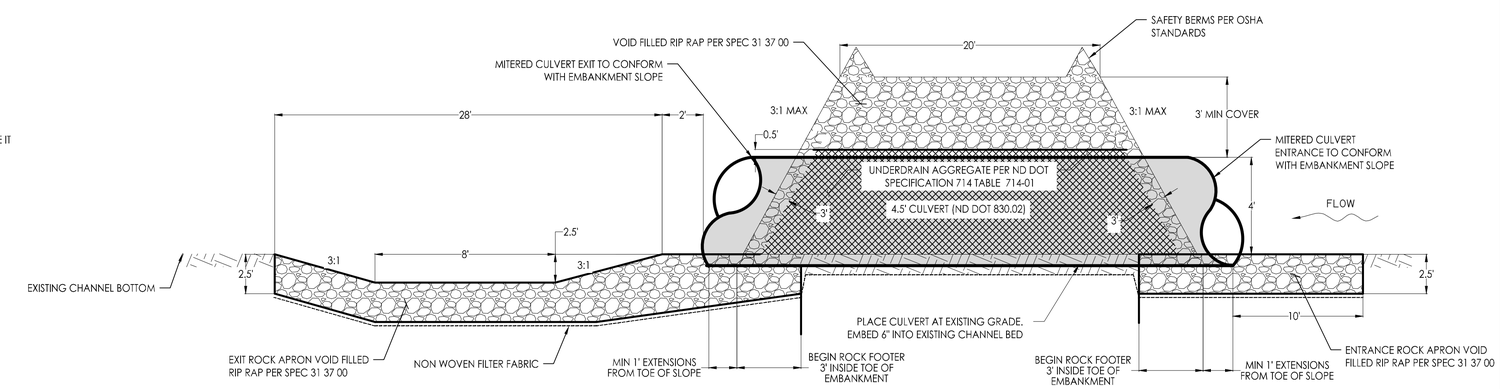
6C — TEMPORARY CULVERT DESIGN

20 | 6

XS A-A' STANDARD CONSTRUCTION DETAIL - MULTIPLE PIPES
NTS

MULTIPLE PIPES AND MULTIPLE SPAN BRIDGES AND CULVERTS WHICH MAY TEND TO COLLECT DEBRIS, CONTRIBUTE TO THE FORMATION OF ICE JAMS AND INCREASE HEAD LOSSES SHALL BE AVOIDED TO THE MAXIMUM EXTENT PRACTICABLE.

1. CULVERTS SHALL BE INSTALLED PER REQUIREMENTS SPECIFIED IN ND DOT SPEC 714
2. PROVIDE 50' STABILIZED ACCESS TO CROSSING ON BOTH SIDES OF STREAM CHANNEL.
3. PIPES SHALL BE MITRED TO THE TOE OF THE ROADWAY EMBANKMENT.
4. RUNOFF FROM THE ROADWAY SHALL BE DIVERTED OFF THE ROADWAY AND INTO A SEDIMENT REMOVAL BMP BEFORE IT REACHES THE ROCK APPROACH TO THE CROSSING.
5. FILTER FABRIC SHALL BE INSTALLED PER ND DOT STANDARD SPECIFICATION SECTION 709.



6B — TEMPORARY STREAM CROSSING

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XS B-B' STANDARD CONSTRUCTION DETAIL - PROFILE VIEW
NTS

A/E FIRM	DESIGNED:	SUB SHEET NO.	TITLE OF SHEET	DRAWING NO.
PRIME/CIVIL STANTEC CONSULTING SERVICES INC. DENVER, CO	PTP CADD JMM TECH. REVIEW: JGG DATE: 12/13/2024	C15	KNIFE RIVER DETAILS (6 OF 7) KNIFE RIVER INDIAN VILLAGES N.H.S.	468 184187 PMIS/PKG NO. 257081 SHEET 20 OF 21

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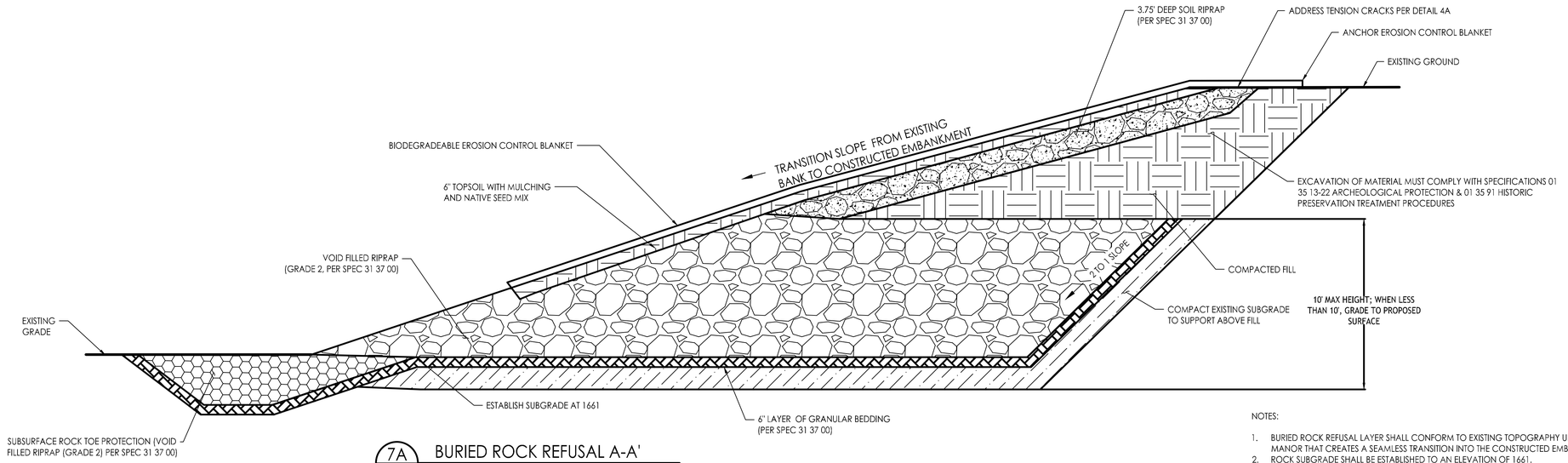


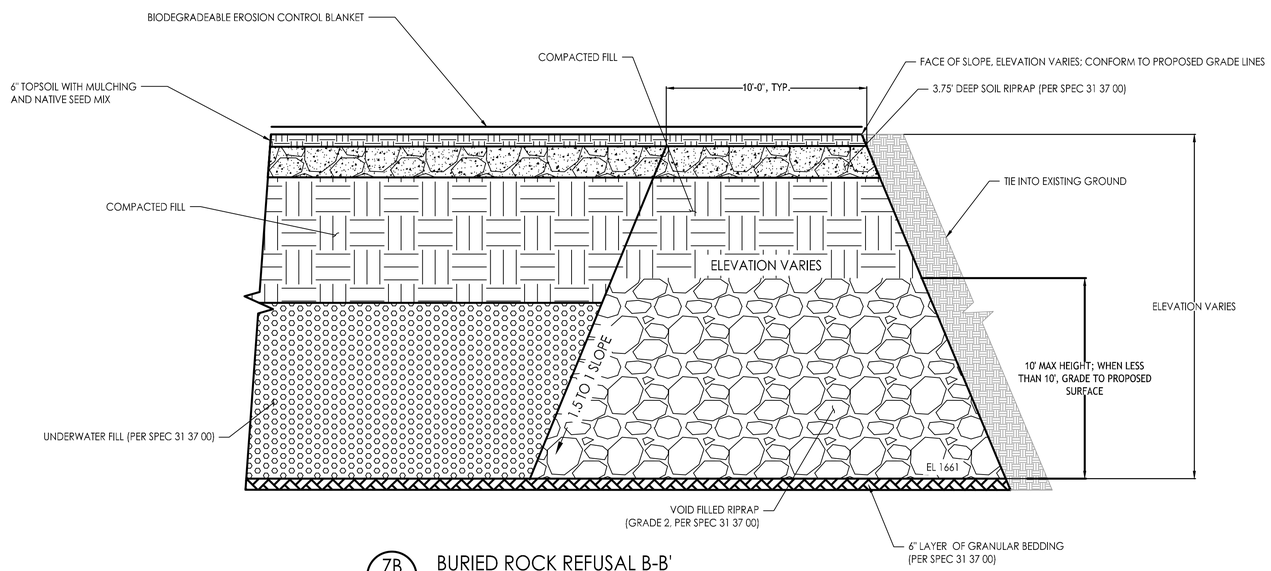
7A
21 | 9

BURIED ROCK REFUSAL A-A'

EMBANKMENT SECTION OF TRANSITION FROM EXISTING GRADE
NTS

NOTES:

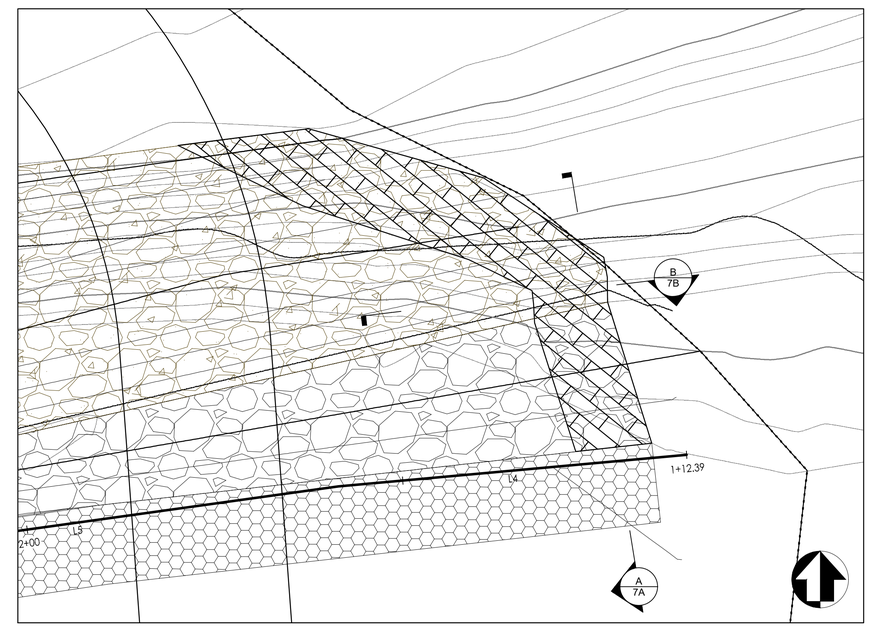
1. BURIED ROCK REFUSAL LAYER SHALL CONFORM TO EXISTING TOPOGRAPHY UPSTREAM IN A MANOR THAT CREATES A SEAMLESS TRANSITION INTO THE CONSTRUCTED EMBANKMENT.
2. ROCK SUBGRADE SHALL BE ESTABLISHED TO AN ELEVATION OF 1661.
3. THE SUBGRADE SLOPE SHALL BE EXCAVATED AT A 2:1 SLOPE EXTENDING FROM TOP OF BANK DOWN TO SUBGRADE ELEVATION.



7B
21 | 9

BURIED ROCK REFUSAL B-B'

EMBANKMENT SECTION OF TRANSITION FROM EXISTING GRADE
NTS



7C
21 | 9

BURIED ROCK REFUSAL PLAN VIEW

SCALE: 1" = 10'

A/E FIRM PRIME/CIVIL STANTEC CONSULTING SERVICES INC. DENVER, CO	DESIGNED: PTP CADD JMM TECH. REVIEW: JGG DATE: 12/13/2024	SUB SHEET NO. C16	TITLE OF SHEET KNIFE RIVER DETAILS (7 OF 7) KNIFE RIVER INDIAN VILLAGES N.H.S.	DRAWING NO. 468 184187 PMIS/PKG NO. 257081 SHEET 21 OF 21

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