CONSTRUCTION PLANS FOR

# SOUTH BRANCH WILD RICE RIVER RESTORATION PROJECT
# SITE 1 ROCK ARCH RAPIDS
# WILD RICE WATERSHED DISTRICT

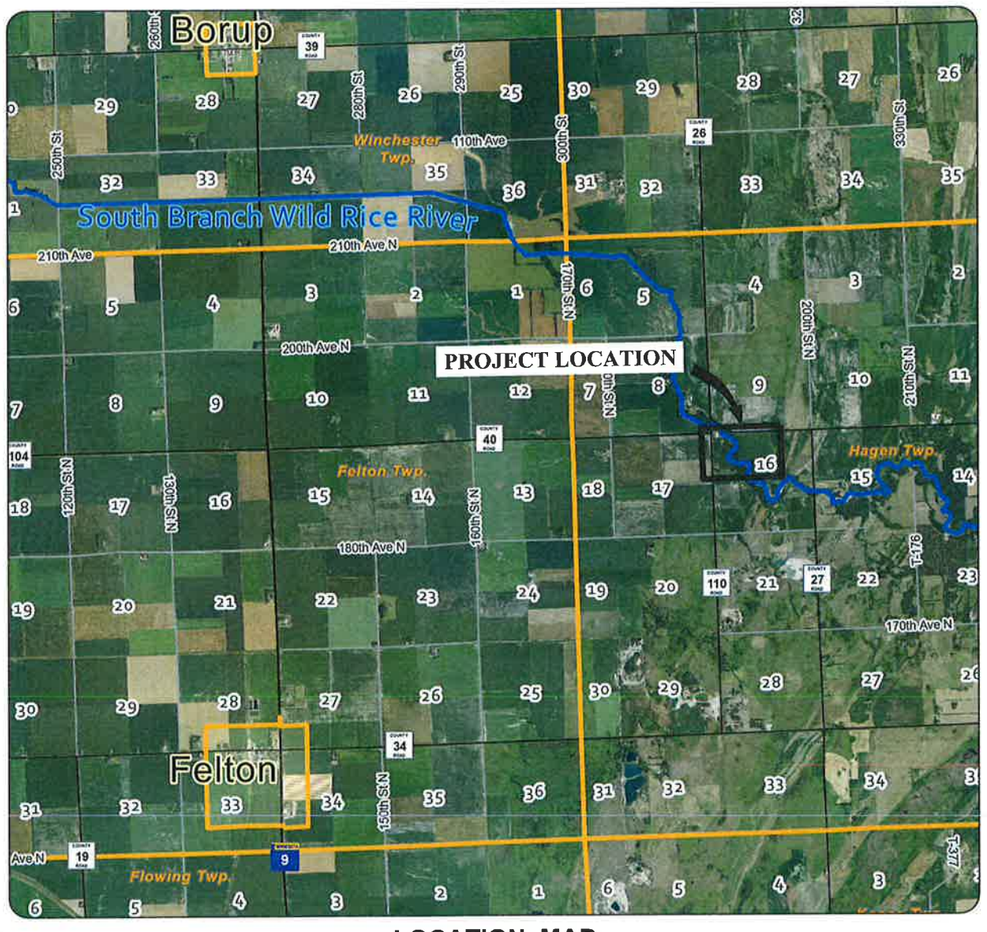
CLAY COUNTY, MINNESOTA

OCTOBER 2025

**STATE COUNTY MAP**

CLEAN WATER LAND & LEGACY AMENDMENT

THIS PROJECT IS MADE POSSIBLE IN PART BY A GRANT PROVIDED BY THE MINNESOTA BOARD OF WATER AND SOIL RESOURCES CLEAN WATER FUND, FUNDED BY THE CLEAN WATER, LAND, & LEGACY AMENDMENT.




**LOCATION MAP**

HOUSTON engineering, inc.
1401 21st AVENUE N
FARGO, ND 58102
P: 701.237.5065
T: 1.866.379.6465
www.houstoneng.com

### *GOVERNING SPECIFICATIONS:*

STANDARD SPECIFICATIONS FOR CONSTRUCTION ADOPTED BY THE MINNESOTA DEPARTMENT OF TRANSPORTATION, 2020 EDITION, STANDARD DRAWINGS CURRENTLY IN EFFECT, AND OTHER CONTRACT PROVISIONS SUBMITTED HEREIN.

**VERTICAL DATUM**
**BASED ON NAVD88**

### *UTILITY NOTE:*

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION, AS-BUILT MAPS AS PROVIDED BY MUNICIPALITIES OR UTILITY COMPANIES, AND/OR EXISTING DRAWINGS. THERE IS NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN INDICATE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. NOR IS THERE A GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MAY RESULT FROM THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UTILITIES.

### *SHEET INDEX:*



I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Erik S. Jones
License No. 41161

Date: 10-20-25

Project No. 1432-0380

GENERAL NOTES:

1. NO WORK SHALL BE COMPLETED WITHIN THE SOUTH BRANCH WILD RICE RIVER BETWEEN ICE OUT (APPROXIMATELY MARCH 15) THROUGH JUNE 15 TO ALLOW FOR FISH SPAWNING AND MIGRATION.
2. FLOATATION SILT CURTAIN SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF CONSTRUCTION.
3. CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING TO INFORM THEMSELVES AS TO ALL EXISTING CONDITIONS AND LIMITATIONS.

| ESTIMATED QUANTITIES | | | |
|---|---|---|---|
| ITEM NO. | ITEM | UNIT | QUANTITY |
| 1 | MOBILIZATION | LS | 1 |
| 2 | CLEARING & GRUBBING | LS | 1 |
| 3 | FIELD ENTRANCE AND 30" CMP EXTENSION WITH CMP BAND | LS | 1 |
| 4 | FLOATATION SILT CURTAIN | LF | 120 |
| 5 | RANDOM RIPRAP, CLASS V | CY | 3550 |
| 6 | RANDOM RIPRAP, CLASS III | CY | 450 |
| 7 | RANDOM RIPRAP, CLASS II | CY | 1200 |
| 8 | ROCK WEIR (36" TO 72" DIAMETER BOULDERS) | LF | 330 |
| 9 | ROCK BOULDERS (36" TO 72" DIAMETER) | EA | 20 |
| 10 | SEEDING AND MULCHING | LS | 1 |

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10-20-25
Date

HOUSTON engineering, inc.

| Drawn by | Date |
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| ESJ | AS SHOWN |

SOUTH BRANCH WILD RICE RIVER RESTORATION PROJECT
SITE 1 ROCK ARCH RAPIDS
WILD RICE WATERSHED DISTRICT
CLAY COUNTY, MINNESOTA

ESTIMATED QUANTITIES AND CONSTRUCTION NOTES
PROJECT NO. 1432-0380

SHEET 2

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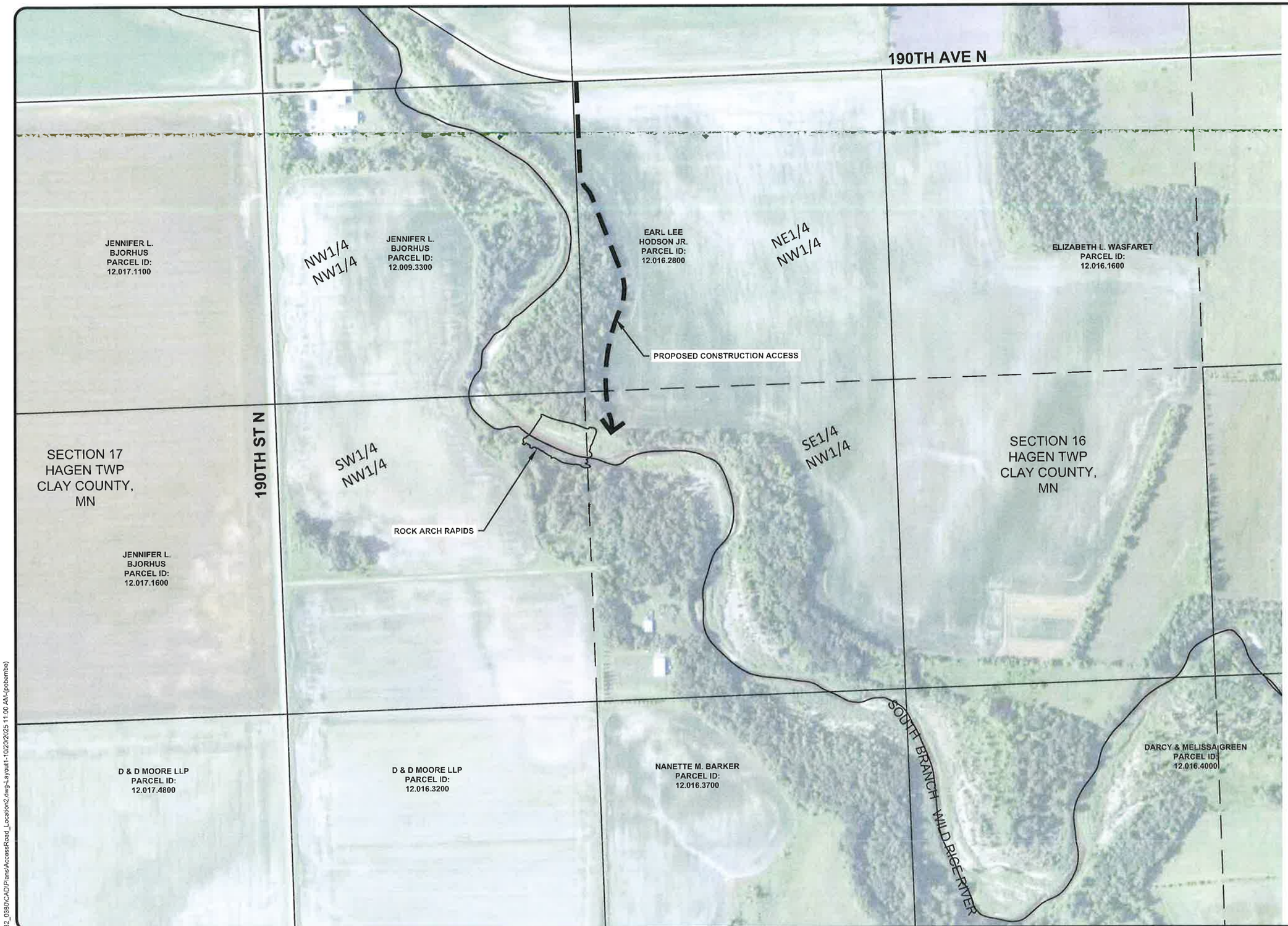


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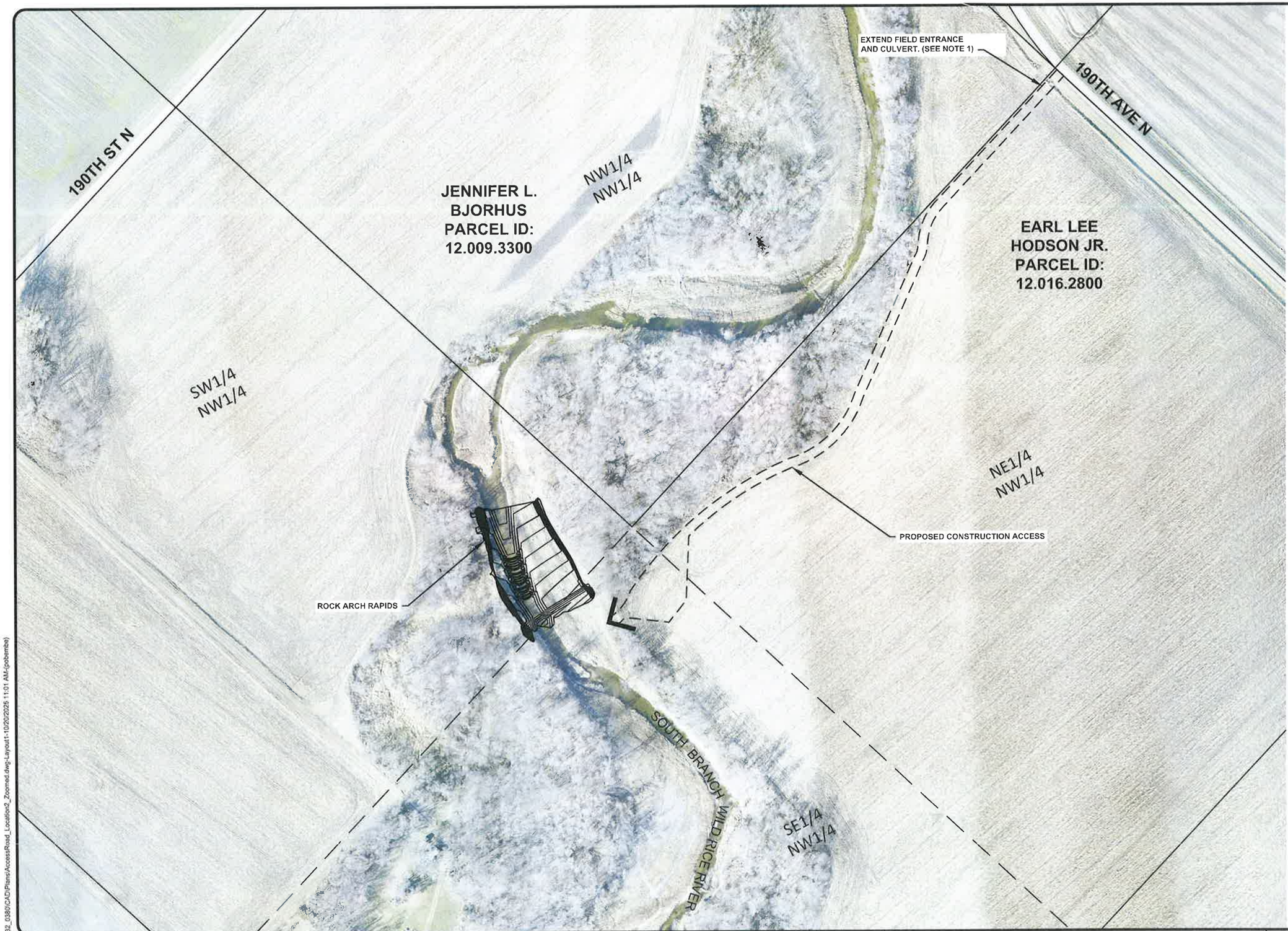
SOUTH BRANCH WILD RICE RIVER RESTORATION PROJECT
SITE 1 ROCK ARCH RAPIDS
WILD RICE WATERSHED DISTRICT
CLAY COUNTY, MINNESOTA

SITE ACCESS

PROJECT NO. 1432-0380

SHEET 3




100 0 100 200
Scale Feet

LEGEND

PROPOSED CONSTRUCTION ACCESS

NOTES:

1. CONTRACTOR TO EXTEND FIELD ENTRANCE AND 30" CMP CULVERT 30 FEET TO THE EAST CONNECTING EXISTING CULVERT TO NEW CULVERT WITH 24" LONG CMP CONNECTING BAND, MAINTAIN PROPOSED CONSTRUCTION ACCESS IN THE NE 1/4 NW 1/4 OF SECTION 16, SEE PAGE "FIELD ENTRANCE EXTENSION DETAILS" FOR ADDITIONAL INFORMATION.

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SOUTH BRANCH WILD RICE RIVER RESTORATION PROJECT
SITE 1 ROCK ARCH RAPIDS
WILD RICE WATERSHED DISTRICT
CLAY COUNTY, MINNESOTA

SITE ACCESS

PROJECT NO. 1432-0380

SHEET 4

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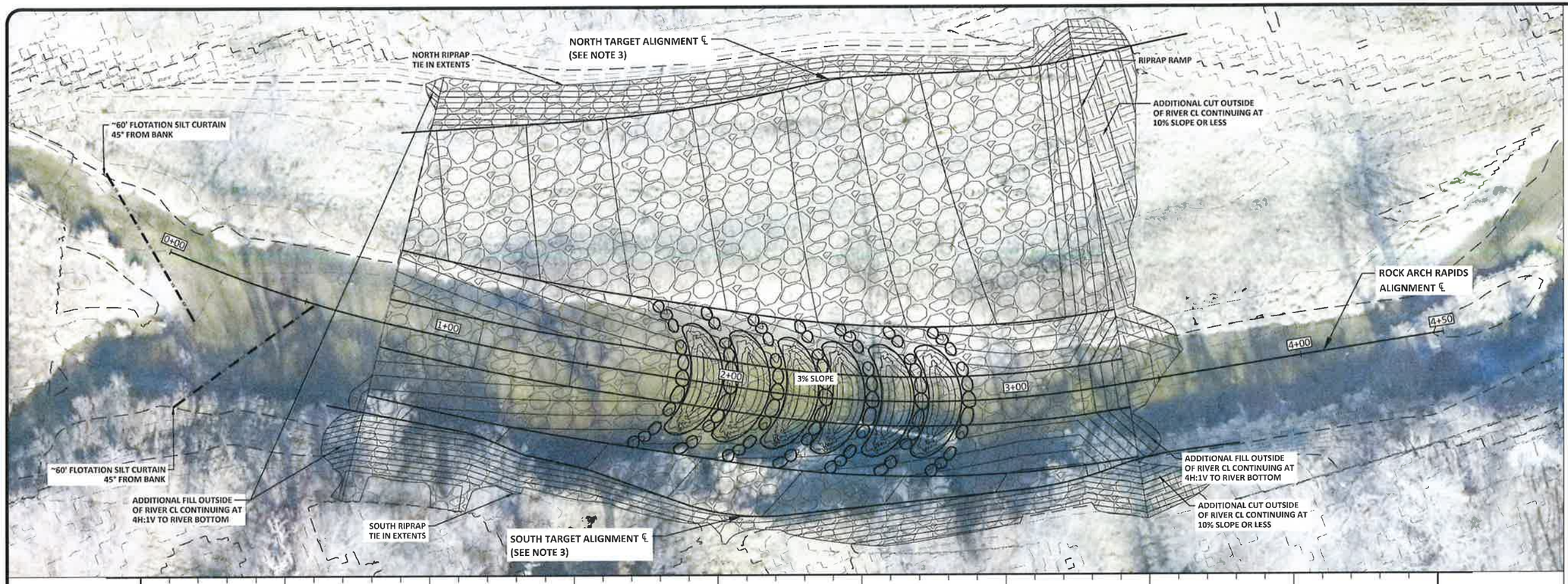


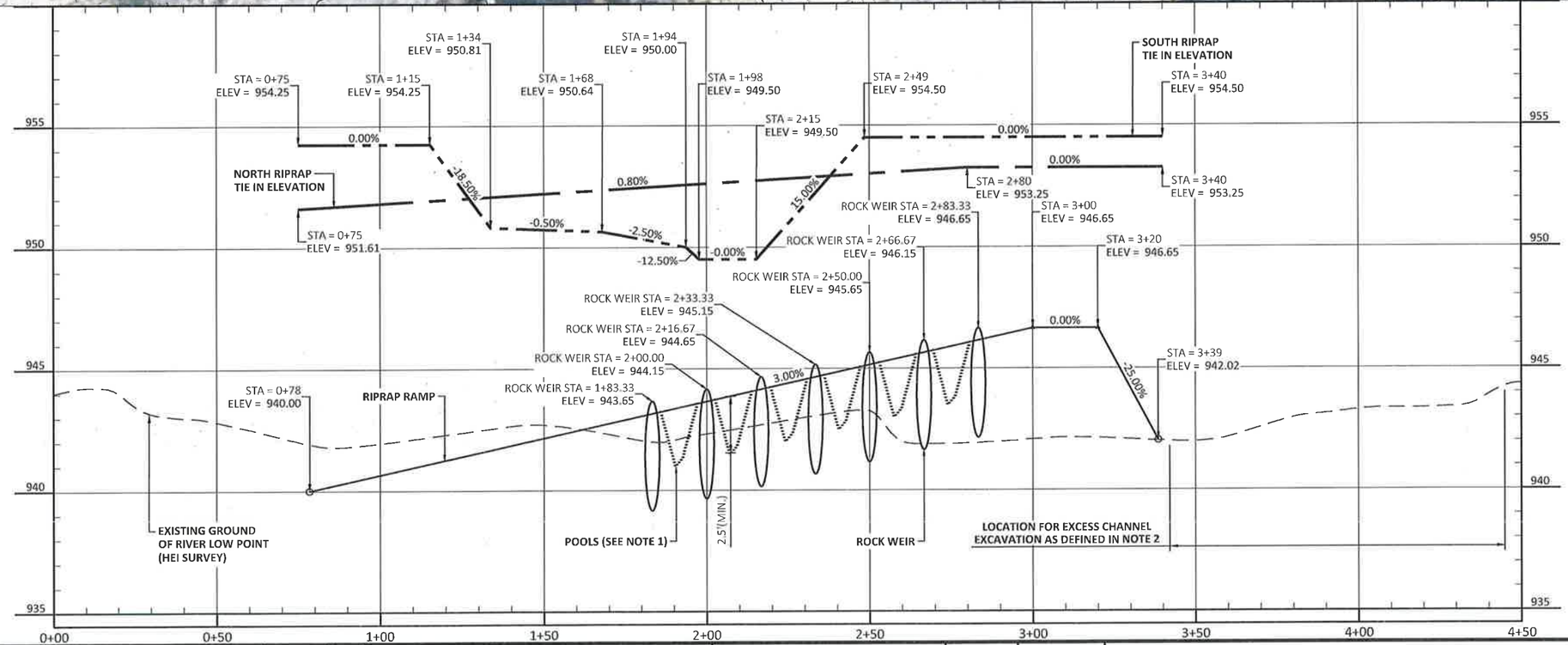


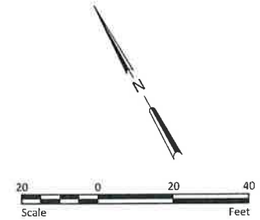


NOTES:

1. POOL DEPTH MAY VARY, FURTHER INFORMATION CAN BE FOUND IN ROCK ARCH RAPIDS DETAILS.
2. EXCESS SUBCUT MATERIAL QUANTITY MAY BE PLACED UPSTREAM OF ROCK ARCH RAPIDS. PLACED MATERIAL MUST BE SET BELOW CREST ELEVATION OF 946.65.
3. NORTH AND SOUTH TARGET ALIGNMENT INFORMATION CAN BE FOUND IN ROCK ARCH RAPIDS DETAILS.
4. DOWNSTREAM OF THE ROCK ARCH RAPIDS SHALL BE CONSTRUCTED BELOW SURROUNDING EXISTING GROUND.

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SOUTH BRANCH WILD RICE RIVER RESTORATION PROJECT
SITE 1 ROCK ARCH RAPIDS
WILD RICE WATERSHED DISTRICT
CLAY COUNTY, MINNESOTA

ROCK ARCH RAPIDS PLAN AND PROFILE
PROJECT NO. 1432-0380

SHEET 5

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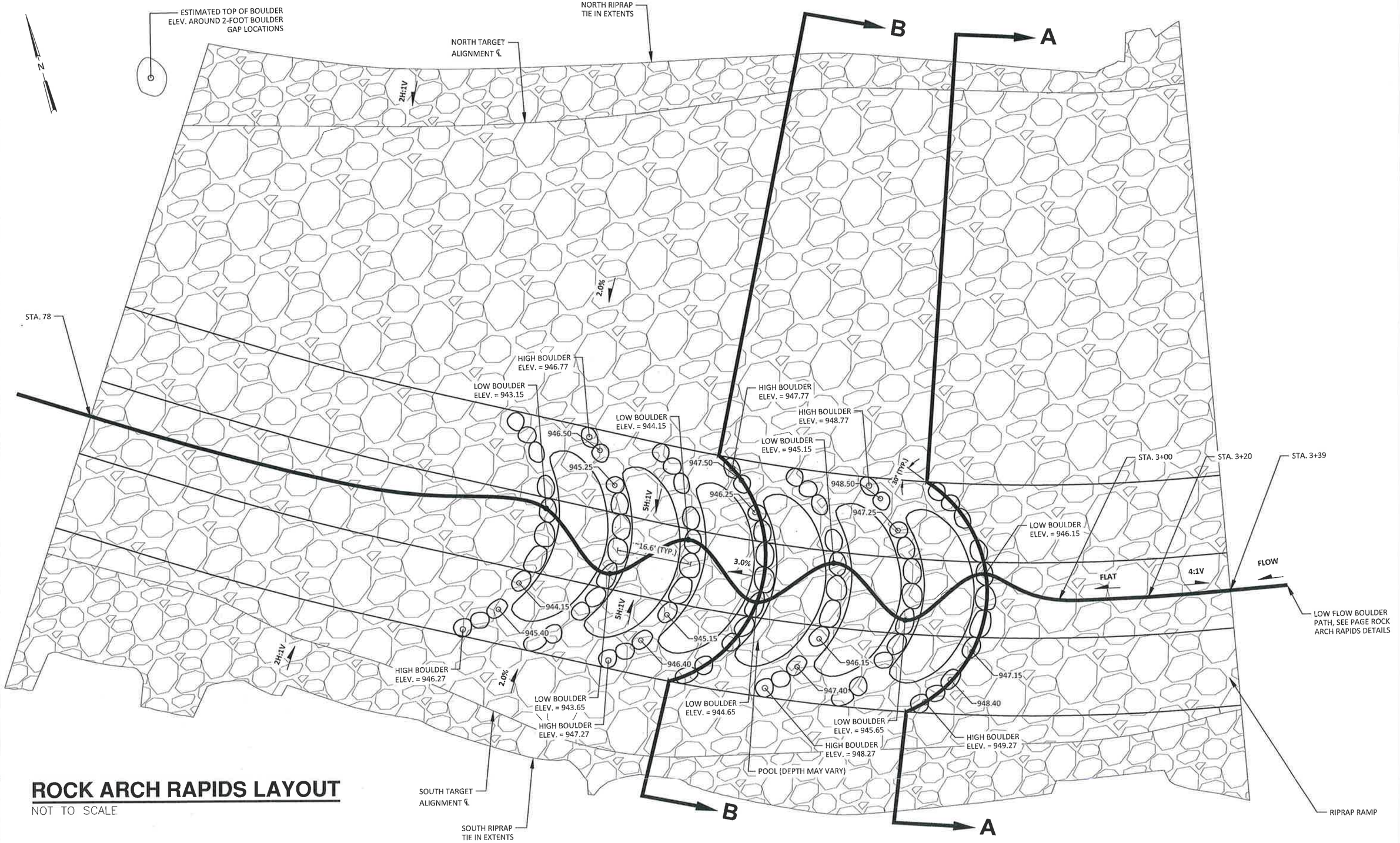


# ROCK ARCH RAPIDS LAYOUT

NOT TO SCALE

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Erik S. Jones
License No. 41161

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SOUTH BRANCH WILD RICE RIVER RESTORATION PROJECT
SITE 1 ROCK ARCH RAPIDS
WILD RICE WATERSHED DISTRICT
CLAY COUNTY, MINNESOTA

ROCK ARCH RAPIDS LAYOUT

PROJECT NO. 1432-0380

SHEET 6

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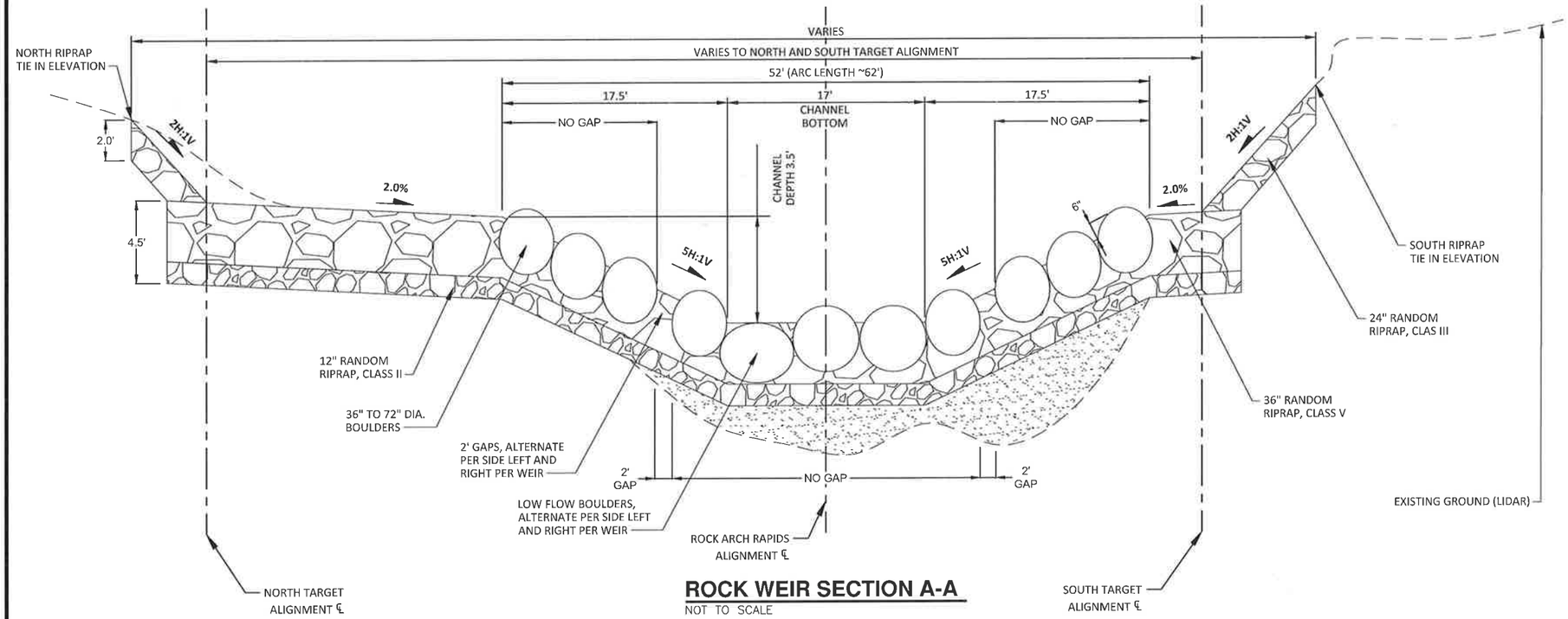
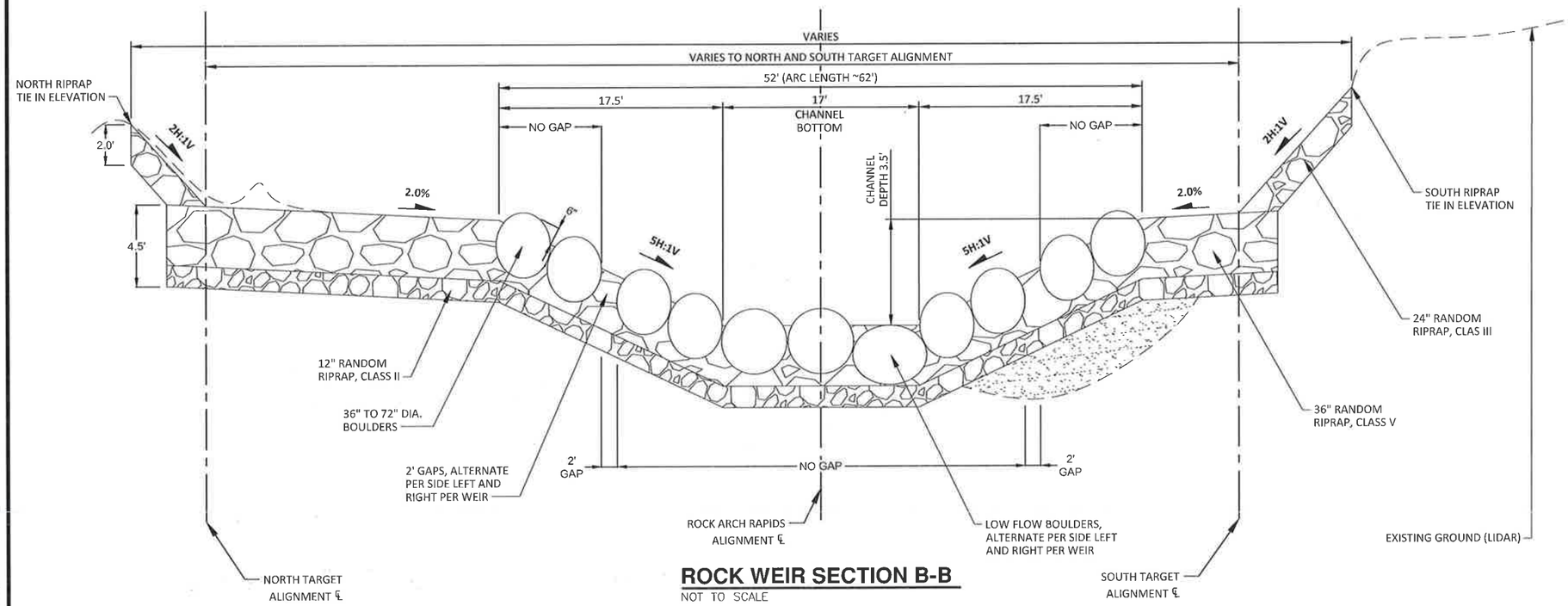



## ROCK WEIR SECTION A-A

NOT TO SCALE




## ROCK WEIR SECTION B-B

NOT TO SCALE

NOTES:

1. ADDITIONAL GRADING OUTSIDE OF NORTH AND SOUTH TARGET ALIGNMENT (RANDOM RIPRAP GRADE III) TIE IN MAY VARY, APPROXIMATE ELEVATION IS SHOWN ON ROCK ARCH RAPIDS PLAN AND PROFILE.
2. NUMBER OF BOULDERS FOR EACH ROCK-ARCH IS DEPENDENT ON SIZE AND SPACING OF BOULDERS.
3. ROCK WEIRS SHALL CONSIST OF 36" - 72" BOULDERS. TOP OF BOULDERS SHALL BE SET ABOVE RANDOM RIPRAP CLASS V AS SHOWN ON THE PROFILE TO RESULT IN WEIRS SPACED AT APPROXIMATELY 16.6' CREST TO CREST.
4. BOULDER WEIRS ARE TO BE FILLED WITH SMALLER STONE (RANDOM RIPRAP CLASS II) TO REDUCE LEAKAGE AND CREATE POOLS.
5. ADDITIONAL BOULDERS WILL BE ADDED AS SHOWN IN SHEET "BOULDER PLACEMENT" AND RANDOMLY TO ADD TO AESTHETICS AS DIRECTED BY THE ENGINEER OR REPRESENTATIVE IN THE FIELD (ESTIMATED AT 20 TOTAL ADDITIONAL BOULDERS). THE NUMBER OF ADDITIONAL BOULDERS SHALL BE MEASURED AS EACH AND PAID FOR UNDER THE BID ITEM "ROCK BOULDERS (36" TO 72" DIAMETER)".
6. ROCK WEIRS FUNCTION TO PROVIDE ADDED STABILITY TO THE RAPIDS, RESTING AREA FOR THE MIGRATION OF FISH, DIRECTING FLOW TOWARDS MID-CHANNEL (REDUCING STRESS ON BANKS) AND INCREASING SAFETY BY CREATING LOWER VELOCITIES NEAR BANKS.
7. ROCK WEIRS ARE TO BE INTEGRATED INTO THE CONSTRUCTED BANKS, THE GAPS BETWEEN BOULDERS SHALL TYPICALLY RANGE FROM 1 TO 2 FEET. CONTRACTOR SHALL PLACE BOULDERS AS DIRECTED IN THE FIELD BY THE ENGINEER OR ON-SITE REPRESENTATIVE.
8. ALL FILL MATERIAL UNDER RIPRAP RAMP TO BE EITHER GRANULAR FILL OR EXCAVATED CHANNEL MATERIAL.
9. VOIDS IN THE PLACED RIPRAP SHALL BE FILLED WITH A WELL GRADED MIX OF AGGREGATE VARYING FROM THE NO. 40 SIEVE UP TO 6 INCH STONES. THE MIX OF AGGREGATE SHOULD BE SUCH THAT IT IS NOT BLOWN OUT OF THE RIPRAP BY THE RIVERS CURRENT BUT INSTEAD FORCES FLOW OVER THE RIPRAP. EXCESS CHANNEL EXCAVATION CAN BE USED FOR FILLING VOIDS WITH ENGINEERS APPROVAL. ALL WORK ASSOCIATED WITH FILLING VOIDS IN PLACED RIPRAP, INCLUDING WELL GRADED AGGREGATE MATERIAL, SHALL BE CONSIDERED INCIDENTAL TO OTHER ITEMS AND SHALL BE COMPLETED TO THE SATISFACTION OF THE ENGINEER.
10. LOCATIONS WHERE RIPRAP BOTTOM LAYER IS ABOVE THE CHANNEL BOTTOM SHALL BE FILLED WITH SALVAGED CHANNEL EXCAVATION MATERIAL

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SOUTH BRANCH WILD RICE RIVER RESTORATION PROJECT
SITE 1 ROCK ARCH RAPIDS
WILD RICE WATERSHED DISTRICT
CLAY COUNTY, MINNESOTA

ROCK ARCH RAPIDS DETAILS

PROJECT NO. 1432-0380

SHEET 7

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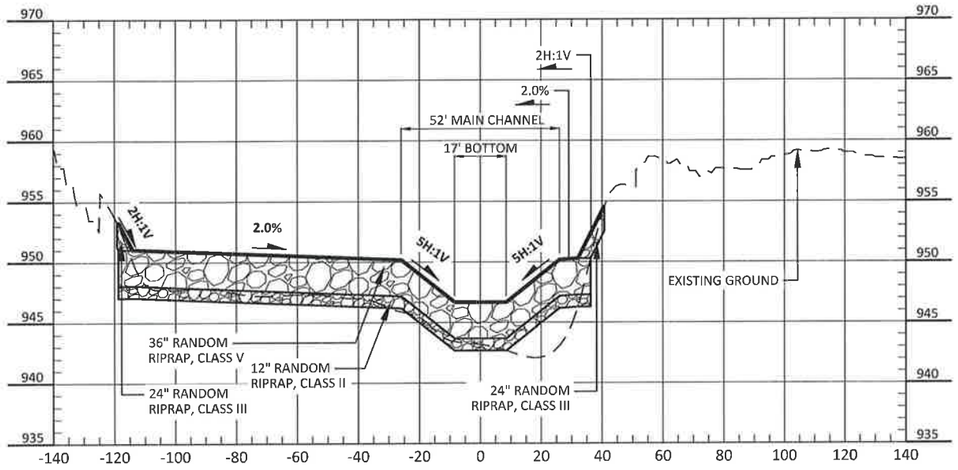


## TYPICAL RIPRAP DETAIL

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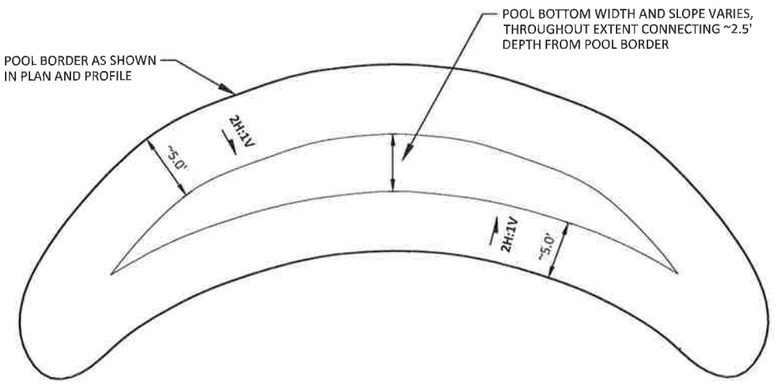


## TYPICAL POOL PLAN VIEW

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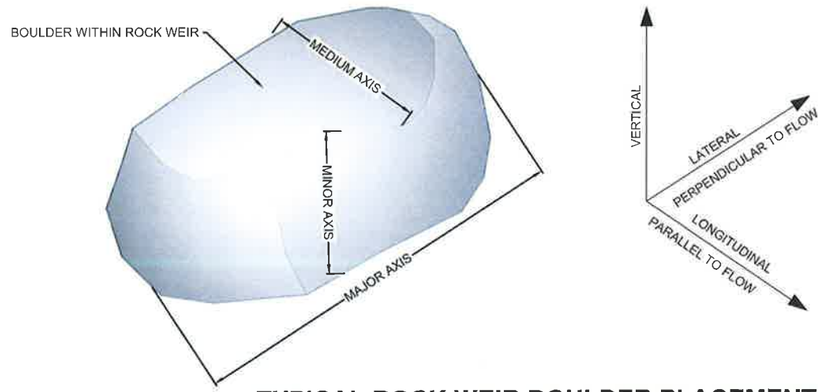
SOUTH BRANCH WILD RICE RIVER RESTORATION PROJECT
SITE 1 ROCK ARCH RAPIDS
WILD RICE WATERSHED DISTRICT
CLAY COUNTY, MINNESOTA

ROCK ARCH RAPIDS DETAILS

PROJECT NO. 1432-0380

SHEET 8




## TYPICAL ROCK WEIR BOULDER PLACEMENT

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## TYPICAL RANDOM BOULDER PLACEMENT

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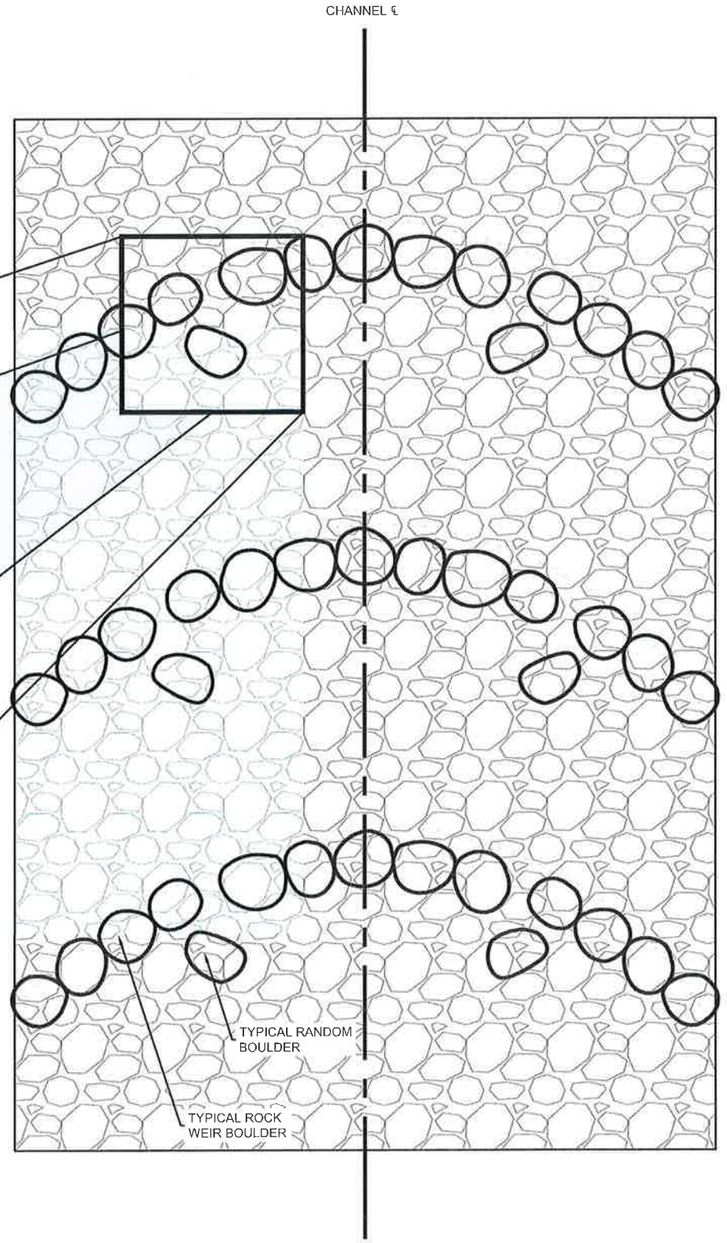


## TYPICAL ROCK ARCH RAPIDS PLAN VIEW

NOT TO SCALE

NOTES (TYPICAL ROCK WEIR BOULDER PLACEMENT):

1. BOULDERS SHALL BE PLACED SO THAT THE MAJOR AXIS (LONGEST BOULDER DIMENSION) IS PERPENDICULAR TO THE FLOW.
2. THE MAJOR AXIS OF THE BOULDER SHALL GENERALLY BE ALIGNED WITH THE ARCH SHAPE OF THE WEIR
3. THE TOP OF THE BOULDER WEIR SHALL BE THE SURFACE THAT CONTAINS THE FEWEST NUMBER OF SIGNIFICANT IRREGULARITIES. FRACTURED PORTIONS OF THE BOULDER SHALL BE ORIENTED DOWNWARD OR AS DIRECTED BY THE ENGINEER.
4. THE MINOR AND MEDIUM AXES OF THE BOULDER CAN BE PLACED ALONG EITHER THE LATERAL OR VERTICAL DIMENSION
5. THE ENGINEER OR ENGINEER'S REPRESENTATIVE SHALL HAVE THE DISCRETION TO REQUIRE THE CONTRACTOR TO ADJUST OR MOVE BOULDERS AS NECESSARY.

NOTES (TYPICAL RANDOM BOULDER PLACEMENT):

1. BOULDER PLACEMENT DOWNSTREAM OF CONSTRUCTED FISH GAPS SHALL BE APPROVED BY THE ENGINEER OR ENGINEER'S REPRESENTATIVE.
2. THE ENGINEER OR ENGINEER'S REPRESENTATIVE SHALL HAVE THE DISCRETION TO REQUIRE THE CONTRACTOR TO ADJUST OR MOVE BOULDERS AS NECESSARY.

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SOUTH BRANCH WILD RICE RIVER RESTORATION PROJECT
SITE 1 ROCK ARCH RAPIDS
WILD RICE WATERSHED DISTRICT
CLAY COUNTY, MINNESOTA

BOULDER PLACEMENT

PROJECT NO. 1432-0380

SHEET 9

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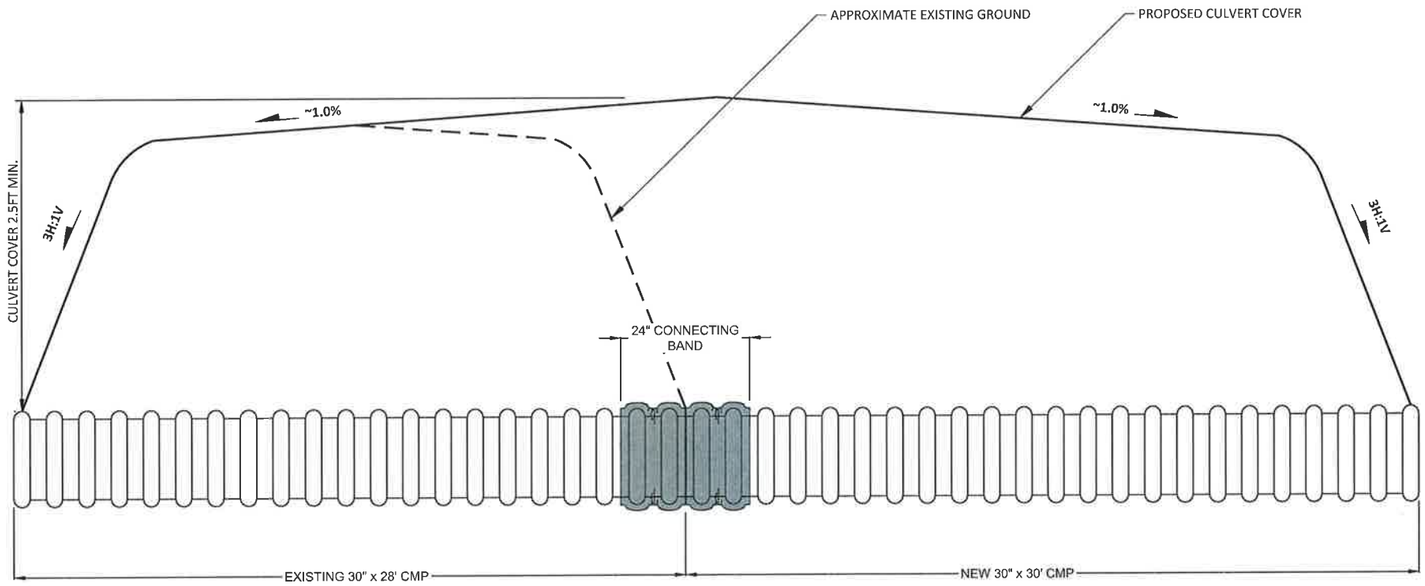
NOTES:

1. CONTRACTOR SHALL BE FAMILIAR WITH EXISTING PIPE CONDITIONS PRIOR TO INSTALLING CMP CONNECTING BAND. GEOTEXTILE FABRIC SHALL BE WRAPPED AROUND PIPE CONNECTION AFTER INSTALLING CMP CONNECTING BAND. CULVERT ITEMS INVOLVED IN CONNECTING EXISTING CULVERT TO NEW CULVERT SHALL BE CONSIDERED INCIDENTAL TO BID ITEM "FIELD ENTRANCE AND 30" CMP EXTENSION WITH CMP BAND" AND SHALL BE COMPLETED TO THE SATISFACTION OF THE ENGINEER.




## FIELD ENTRANCE EXTENSION TYPICAL SECTION

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SOUTH BRANCH WILD RICE RIVER RESTORATION PROJECT
SITE 1 ROCK ARCH RAPIDS
WILD RICE WATERSHED DISTRICT
CLAY COUNTY, MINNESOTA

FIELD ENTRANCE EXTENSION DETAILS
PROJECT NO. 1432-0380

SHEET
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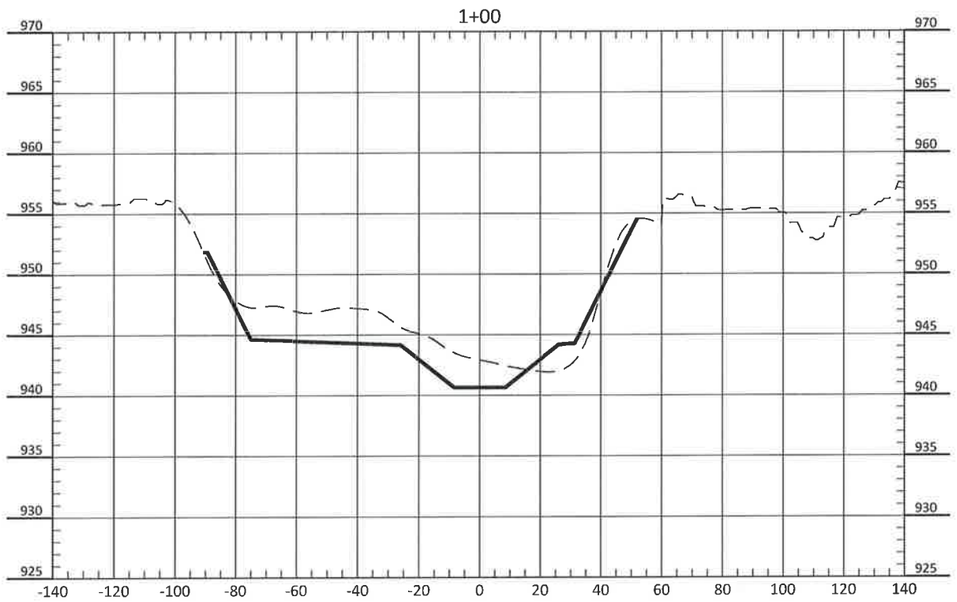


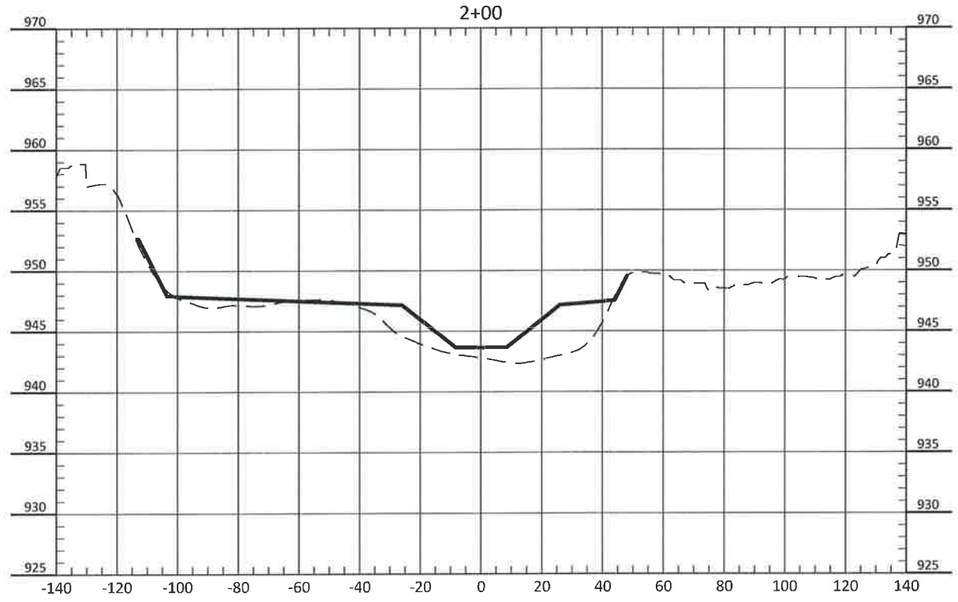


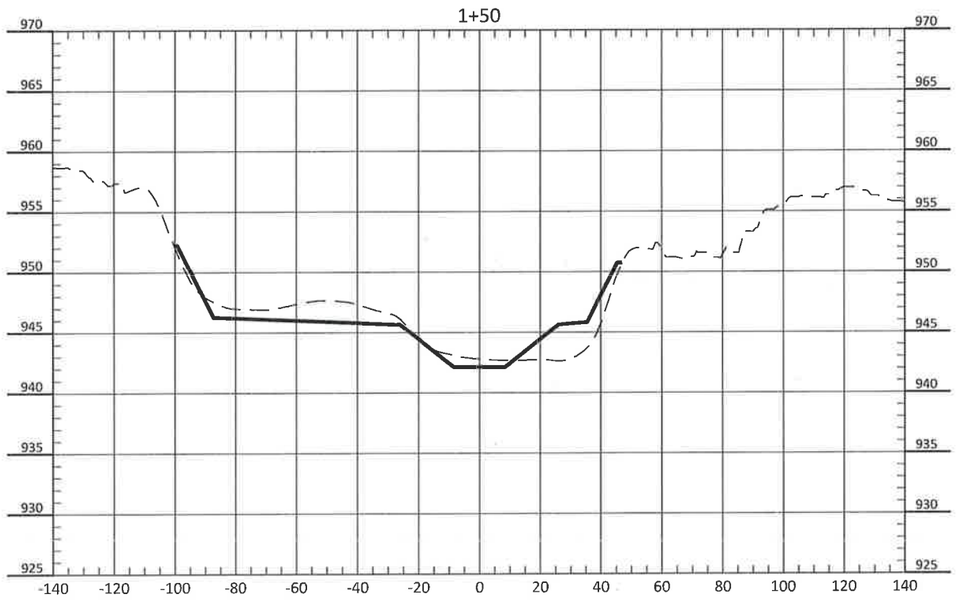


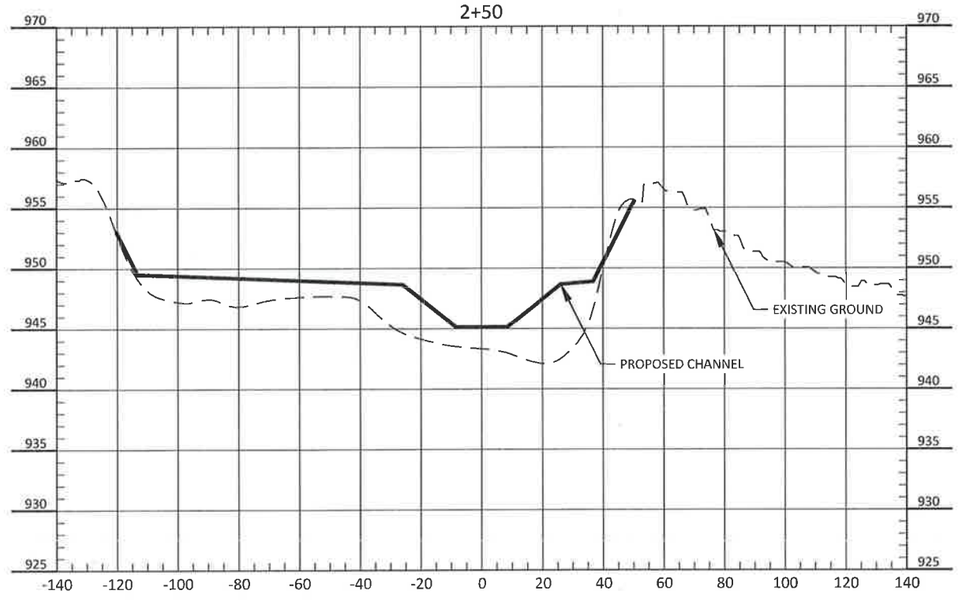


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SOUTH BRANCH WILD RICE RIVER RESTORATION PROJECT
SITE 1 ROCK ARCH RAPIDS
WILD RICE WATERSHED DISTRICT
CLAY COUNTY, MINNESOTA

CROSS SECTIONS

PROJECT NO. 1432-0380

SHEET 11

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## STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE

### PROJECT DESCRIPTION/LOCATION

SOUTH BRANCH WILD RICE RIVER RESTORATION 2 IS LOCATED WITHIN HAGEN TOWNSHIP OF CLAY COUNTY, MINNESOTA.

### THE PLANNED SCOPE OF THE PROJECT INCLUDES:

THE PROPOSED CONSTRUCTION CONSISTS OF REMEDIATING EROSION BY INSTALLING A ROCK ARCH RAPIDS.

### SPECIAL AND IMPAIRED WATERS

THESE SPECIAL AND IMPAIRED WATERS ARE LOCATED WITHIN ONE MILE OF THE PROJECT LIMITS AND RECEIVE RUNOFF FROM THE PROJECT SITE. DUE TO THE PROXIMITY OF THESE SPECIAL AND IMPAIRED WATERS THE BMPS DESCRIBED IN APPENDIX A OF THE NPDES PERMIT WILL APPLY TO ALL AREAS OF THE SITE.
IMPAIRED WATERS:
*WILD RICE RIVER, SOUTH BRANCH

### ENVIRONMENTALLY SENSITIVE AREAS

IN ADDITION TO THE LIST OF SPECIAL AND IMPAIRED WATERS THE CONTRACTOR SHALL BE AWARE THAT THERE ARE WETLANDS ADJACENT TO THE PROJECT WORK CORRIDOR AS SHOWN ON THE PLANS, NONE OF WHICH ARE LISTED AS A PROTECTED WETLAND. MINIMAL WORK WILL BE PERFORMED IN THE WETLANDS AND WORK SHALL BE PERFORMED TO MINIMIZE FILL PLACED IN THE WETLANDS.

### LONG TERM MAINTENANCE AND OPERATION

THE MINNESOTA DNR IS RESPONSIBLE FOR THE LONG TERM MAINTENANCE AND OPERATIONS OF THE PERMANENT STORMWATER SYSTEM.

### SWPPP TRAINING

THIS SWPPP WAS PREPARED BY HOUSTON ENGINEERING INC. PERSONAL THAT ARE CERTIFIED IN THE DESIGN OF CONSTRUCTION SWPPPS. COPIES OF THE CERTIFICATIONS ARE ON FILE WITH HOUSTON ENGINEERING INC. AND ARE AVAILABLE UPON REQUEST. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A CERTIFIED EROSION CONTROL SUPERVISOR THAT IS RESPONSIBLE FOR OVERSEEING THE IMPLEMENTATION OF THE SWPPP. THE CONTRACTOR MUST PROVIDE PROOF OF CERTIFICATION AT THE PRECONSTRUCTION MEETING AND WILL NOT BE ALLOWED TO COMMENCE WORK UNTIL PROOF OF CERTIFICATION HAS BEEN PROVIDED TO THE PROJECT ENGINEER.

### EROSION CONTROL SUPERVISOR INSTALLATION, INSPECTION, AND MAINTENANCE

IN ACCORDANCE WITH THE SPECIAL PROVISIONS THE CONTRACTOR WILL PROVIDE A CERTIFIED EROSION CONTROL SUPERVISOR IN GOOD STANDING WHO IS KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES. THE EROSION CONTROL SUPERVISOR IS INCIDENTAL.

THE EROSION CONTROL SUPERVISOR WILL WORK WITH THE PROJECT ENGINEER TO OVERSEE THE IMPLEMENTATION OF THE SWPPP AND THE INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS BEFORE, DURING , AND AFTER CONSTRUCTION UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA.

THE EROSION CONTROL SUPERVISOR IS RESPONSIBLE FOR COMPLYING WITH ALL THE INSPECTION AND MAINTENANCE REQUIREMENTS STATED IN THE NPDES PERMIT PART IV. F. INSPECTION OF THE ENTIRE CONSTRUCTION SITE WILL OCCUR A MINIMUM OF ONCE EVERY SEVEN DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS. THE EROSION CONTROL CONTROL SUPERVISOR WILL THOROUGHLY INSPECT ALL EROSION PREVENTION AND SEDIMENT CONTROL BMPS TO ENSURE INTEGRITY AND EFFECTIVENESS OF EACH BMP. ALL INSPECTIONS AND MAINTENANCE CONDUCTED DURING CONSTRUCTION MUST BE REPORTED IN WRITING AND THESE MUST BE RETAINED WITH THE SWPPP. INSPECTION REPORTS MUST BE SUBMITTED TO THE PROJECT ENGINEER IN A FORMAT THAT MEETS OR EXCEEDS THE PROJECT ENGINEERS EXPECTATIONS. RECORDS OF EACH INSPECTION AND MAINTENANCE ACTIVITY SHALL INCLUDE:

A. DATE AND TIME OF THE INSPECTIONS
B. NAME AND PERSONS CONDUCTING THE INSPECTIONS
C. FINDINGS OF INSPECTION, INCLUDING RECOMMENDATIONS FOR CORRECTIVE ACTIONS
D. CORRECTIVE ACTIONS TAKEN, INCLUDING DATES, TIMES, AND PARTY COMPLETING MAINTENANCE ACTIVITIES
E. DATE AND AMOUNT OF ALL RAINFALL EVENTS GREATER THAN 0.5 INCHES IN 24 HOURS
F. DOCUMENT ANY CHANGES MADE TO THE SWPPP

AMENDMENTS TO THE SWPPP APPROVED BY THE PROJECT ENGINEER MAY BE DOCUMENTED IN A JOURNAL OR RED LINED ON THE SWPPP PLAN SET SHEETS.

### ENVIRONMENTAL REVIEW

THERE ARE NO STORMWATER MITIGATION MEASURES REQUIRED AS A RESULT OF AN ENVIRONMENTAL, ARCHEOLOGICAL OR AGENCY REVIEW. ALL MITIGATION MEASURES HAVE BEEN ADDRESSED IN THIS PLAN SET.

THIS PROJECT IS NOT LOCATED IN A WELL HEAD PROTECTION AREA.

### SOIL TYPES

SOIL TYPES TYPICALLY FOUND ON THIS PROJECT ARE: TOPSOIL, SILT LOAM AND SILTY CLAY LOAM.

### LAND FEATURE CHANGES

TOTAL DISTURBED AREA: 1.1 ACRES
TOTAL EXISTING IMPERVIOUS SURFACE AREA: 0.0 ACRES
TOTAL PROPOSED IMPERVIOUS SURFACE AREA: 0.0 ACRES
TOTAL PROPOSED NET CHANGE IN IMPERVIOUS AREA: 0.0 ACRES

### PERMANENT STORM WATER TREATMENT PLAN

NET CHANGE IN IMPERVIOUS SURFACE IS UNDER 1.0 ACRE, NO PERMANENT STORMWATER TREATMENT IS REQUIRED.

### PROJECT CONTACTS

THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTATION OF THE SWPPP AND INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS BEFORE, DURING, AND AFTER CONSTRUCTION UNTIL THE NOTICE OF TERMINATION HAS BEEN FILED.

PROJECT OWNER: WILD RICE RIVER WATERSHED DISTRICT: (218) 784-5501
PROJECT ENGINEER: ERIK JONES, HOUSTON ENGINEERING INC (701) 237-5065
PROJECT CONTRACTOR: TO BE DETERMINED
SWPPP DESIGNER: ERIK JONES, HOUSTON ENGINEERING INC: (701) 237-5065

MPCA 24 HOUR EMERGENCY NOTIFICATION: 651-649-5451 OR 800-422-0798

### LOCATION OF SWPPP REQUIREMENTS

THE REQUIRED SITE SPECIFIC SWPPP ELEMENTS MAY BE LOCATED IN VARIOUS PLACES WITHIN THE PLAN SET AND SPECIFICATIONS. HOWEVER GENERAL SWPPP REQUIREMENTS WILL BE GOVERNED BY THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" (2020 EDITION) SECTION 2573 FOR STORMWATER MANAGEMENT.

LOCATION OF SWPPP REQUIREMENTS IN PROJECT PLAN:

EROSION AND SEDIMENT CONTROL DETAILS: SHEET 14&15

### GENERAL SWPPP NOTES FOR CONSTRUCTION ACTIVITIES

1. AMEND THE SWPPP WITH THE APPROVAL OF THE PROJECT ENGINEER AND DOCUMENT ANY AND ALL CHANGES TO THE SWPPP AND ASSOCIATED PLAN SHEETS IN A TIMELY MANNER. STORE THE SWPPP AND ALL AMENDMENTS ON SITE AT ALL TIMES
2. THE UNIT PRICE BID FOR ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL INCLUDE MAINTANENCE AND INSPECTION AS DETAILED IN THE EROSION CONTROL SUPERVISOR SECTION ABOVE AND GENERAL SPECIFICATIONS. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO HAVE REGULAR INSPECTIONS AS DETAILED AND BE CLEANED AND RETURNED TO MAXIMUM EFFECTIVENESS AT THE LIMITS DETAILED IN THE GENERAL REQUIREMENTS.
3. THE CONTRACTOR WILL COMPLY WITH THE REQUIREMENTS REGARDING POLLUTION PREVENTION MANAGEMENT DURING CONSTRUCTION, WHICH WILL INCLUDE, BUT NOT LIMITED TO:
   - 3.A. CONCRETE WASHOUT AREAS FOR USE BY ALL SUBCONTRACTORS AND MN/DOT PERSONNEL. LOCATION OF WASHOUT AREAS MUST BE IDENTIFIED BY SIGNAGE AND MUST BE AT LEAST 200' FROM SITE PLAN REQUIREMENT AREAS OR ENVIRONMENTALLY SENSITIVE AREAS, AND UTILIZE A LEAK-PROOF CONTAINMENT FACILITY OR IMPERMEABLE LINER THAT PREVENTS RUNOFF ONTO ADJACENT SOILS. AN ENGINEERED COLLECTION SYSTEM CAN ALSO BE USED IF IT IS APPROVED BY THE PROJECT ENGINEER.
   - 3.B. SOLID WASTE COLLECTION AND REMOVAL.
   - 3.C. SECONDARY CONTAINMENT.
   - 3.D. SECURED HAZARDOUS WASTE STORAGE CONTAINERS.
   - 3.E. CHEMICAL SPILL KITS.
   - 3.F. PORTABLE RESTROOM FACILITIES THAT ARE ANCHORED TO PREVENT TIPPING.
4. CHEMICALS MUST BE KEPT IN A SECURE STORAGE AREA WHEN NOT IN USE. CHEMICAL STORAGE CONTAINERS MUST HAVE SECONDARY CONTAINMENT WHEN BEING USED OR STORED ON THE PROJECT SITE. CHEMICAL SPILLS OF ANY KIND (OIL, FUEL, FERTILIZER, ETC.) MUST BE CLEANED UP AND REMOVED FROM THE SITE IMMEDIATELY. THE CONTRACTOR MUST HAVE A SPILL KIT ON SITE AT ALL TIMES.
5. THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS SHALL BE INSTALLED AS NECESSARY TO MINIMIZE EROSION FROM DISTURBED SURFACES AND TO CAPTURE SEDIMENT ON SITE. ALL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF ANY REMOVAL WORK AND/OR GROUND DISTURBING ACTIVITIES.
6. ESTABLISH SEDIMENT CONTROL DEVICES ON ALL DOWN GRADIENT PERIMETERS AND UPGRADIENT OF ANY BUFFER ZONES BEFORE ANY UP GRADIENT LAND DISTURBING ACTIVITIES BEGIN. MAINTAIN SEDIMENT CONTROL DEVICES UNTIL CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED.
7. LOCATE PERIMETER CONTROL ON THE CONTOUR TO CAPTURE OVERLAND, LOW- VELOCITY SHEET FLOWS DOWN GRADIENT OF ALL EXPOSED SOILS AND PRIOR TO DISCHARGING TO SURFACE WATERS. PLACE J-HOOKS AT A MAXIMUM OF 100 FOOT INTERVALS.
8. PROVIDE PERIMETER CONTROL AROUND ALL STOCKPILES. PLACE BMP A MINIMUM 5 FEET FROM THE TOE OF SLOPE WHERE FEASIBLE. DO NOT PLACE STOCKPILES IN NATURAL BUFFER AREAS, SURFACE WATERS OR STORMWATER CONVEYANCES. WHEN STOCKPILE IS LOCATED ON A STREET SEE "STOCKPILE ON STREET DETAIL" FOR REQUIREMENTS AND MEASUREMENTS WHICH DIFFER FROM A GENERAL STOCKPILE.
9. DITCH CHECKS WILL BE PLACED AS INDICATED ON THE PLANS DURING ALL PHASES OF CONSTRUCTION. TEMPORARY DITCH CHECKS WILL CONSIST OF SEDIMENT CONTROL LOGS IN FRONT OF CULVERT INLETS.
10. PROTECT STORM SEWER INLETS AT ALL TIMES WITH THE APPROPRIATE INLET PROTECTION FOR EACH SPECIFIC PHASE OF CONSTRUCTION. PROVIDE INLET PROTECTION DEVICES WITH EMERGENCY OVERFLOW CAPABILITIES. SILT FENCE PLACED IN THE INLET GRATE IS NOT AN ACCEPTABLE INLET PROTECTION BMP FOR GRADING OPERATIONS. SILT FENCE PLACED IN THE GRATE IS ONLY ALLOWED FOR SHORT INTERVALS DURING MILLING OR PAVING OPERATIONS. INLET PROTECTION DEVICES MAY NEED TO BE PLACED MULTIPLE TIMES IN THE SAME LOCATION OVER THE LIFE OF THE CONTRACT. INLET PROTECTION DEVICES WILL BE PAID FOR ONCE PER INLET REGARDLESS OF THE NUMBER OF TIMES THE BMP IS PLACED. KEEP ALL STORM SEWER INLET PROTECTION DEVICES IN GOOD FUNCTIONAL CONDITION AT ALL TIMES. REPLACE INLET PROTECTION DEVICE WITH A SUITABLE ALTERNATIVE IF THE PROJECT ENGINEER DEEMS AN INLET PROTECTION DEVICE TO BE NONFUNCTIONAL, IN POOR CONDITION, INEFFECTIVE, OR NOT APPROPRIATE FOR THE CURRENT CONSTRUCTION ACTIVITIES. THERE WILL BE NO COST TO THE OWNER FOR REPLACEMENT OF INLET PROTECTION DEVICES.
11. PLACE CONSTRUCTION EXITS, AS NECESSARY, TO PREVENT TRACKING OF SEDIMENT ONTO PAVED SURFACES BOTH ON AND OFF THE PROJECT SITE. PROVIDE CONSTRUCTION EXITS OF SUFFICIENT SIZE TO PREVENT TRACK OUT. MAINTAIN CONSTRUCTION EXITS WHEN EVIDENCE OF TRACKING IS DISCOVERED. REGULAR STREET SWEEPING IS NOT AN ACCEPTABLE ALTERNATIVE TO PROPER CONSTRUCTION EXIT INSTALLATION AND MAINTENANCE. STREET SWEEPING MAY BE USED IN CONJUNCTION WITH CONSTRUCTION EXITS FOR MORE EFFICIENT MANAGEMENT OF TRACK OUT BUT NOT AS THE MAIN BMP.
12. USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT DISCHARGE OR PLACEMENT OF BITUMINOUS GRINDINGS, CUTTINGS, MILLINGS, AND OTHER BITUMINOUS WASTES FROM AREAS OF EXISTING OR FUTURE VEGETATED SOILS AND FROM ALL WATER CONVEYANCE SYSTEMS, INCLUDING INLETS, DITCHES AND CURB FLOW LINES.
13. USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT CONCRETE DUST, PARTICLES, CONCRETE WASH OUT, AND OTHER CONCRETE WASTES FROM LEAVING PROJECT RIGHT OF WAY, DEPOSITING IN EXISTING OR FUTURE VEGETATED AREAS, AND FROM ENTERING STORMWATER CONVEYANCE SYSTEMS, INCLUDING INLETS, DITCHES AND CURB FLOW LINES. USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT SAW CUT SLURRY AND PLANING WASTE FROM LEAVING MNDOT RIGHT OF WAY AND FROM ENTERING STORMWATER CONVEYANCE SYSTEMS INCLUDING DITCHES AND CULVERTS.

| No. | Revision | Date | By |
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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Erik S. Jones
License No. 41161
10-20-25
Date

HOUSTON engineering, inc.

| Drawn by | Date |
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| PAO | 10-20-25 |
| Checked by | Scale |
| ESJ | AS SHOWN |

SOUTH BRANCH WILD RICE RIVER RESTORATION PROJECT
SITE 1 ROCK ARCH RAPIDS
WILD RICE WATERSHED DISTRICT
CLAY COUNTY, MINNESOTA

STORM WATER POLLUTION AND PREVENTION PLAN (SWPPP)
PROJECT NO. 1432-0380

SHEET 12

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## GENERAL SWPPP NOTES FOR CONSTRUCTION ACTIVITY (CONTINUED)

15. DISCHARGE TURBID OR SEDIMENT LADEN WATER TO TEMPORARY SEDIMENT BASINS, OR SEDIMENT FILTER BAG, WHENEVER FEASIBLE. IN THE EVENT THAT IT IS NOT FEASIBLE TO DISCHARGE THE SEDIMENT LADEN WATER TO A TEMPORARY SEDIMENT BASIN, THE WATER MUST BE TREATED SO THAT IT DOES NOT CAUSE A NUISANCE CONDITION IN THE RECEIVING WATERS OR TO DOWNSTREAM LANDOWNERS CLEAN OUT ALL PERMANENT STORMWATER BASINS REGARDLESS OF WHETHER USED AS TEMPORARY SEDIMENT BASINS OR TEMPORARY SEDIMENT TRAPS TO THE DESIGN CAPACITY AFTER ALL UPGRADIENT LAND DISTURBING ACTIVITY IS COMPLETED.

16. PROVIDE SCOUR PROTECTION AT ANY OUTFALL OF DEWATERING ACTIVITIES.

17. PROVIDE STABILIZATION IN ANY TRENCHES CUT FOR DEWATERING OR SITE DRAINING PURPOSES.

18. REMOVE SEDIMENT FROM THE STORMWATER SYSTEM AT THE END OF THE PROJECT.

19. PRESERVE A 50 FOOT NATURAL BUFFER OR (IF BUFFER IS INFEASIBLE) PROVIDE A REDUNDANT SEDIMENT CONTROLS WHEN A SURFACE WATER IS LOCATED WITHIN 50 FEET OF LAND DISTURBANCE STORMWATER FLOWS TO THE SURFACE WATER.

20. DITCHES AND EXPOSED SOILS MUST BE KEPT IN AN EVEN ROUGH GRADED CONDITION IN ORDER TO BE ABLE TO APPLY EROSION CONTROL MULCHES AND BLANKETS.

21. STABILIZATION FOR ALL EXPOSED SOIL AREAS, INCLUDING STOCKPILES, MUST BE INITIATED IMMEDIATELY WHEN CONSTRUCTION ACTIVITY HAS PERMANENTLY OR ETMPEORARILY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RESUME FOR A PERIOD EXCEEDING 14 CALENDAR DAYS (7 DAYS IF WITHIN 1 MILE OF AND DRAINING TO A SPECIAL OR IMPAIRED WATER). IN MANY INSTANCES, THIS WILL REQUIRE STABILIZATION TO OCCUR MORE THAN ONCE DURING ROUGH GRADING.

22. THE NORMAL WETTED PERIMETER OF ANY TEMPORARY OR PERMANENT DRAINAGE DITCH THAT DRAINS WATER FROM THE CONSTRUCTION SITE OR DIVERTS WATER AROUND THE CONSTRUCTION SITE MUST BE STABILIZED WITHIN 200 LINEAL FEET FROM THE PROPERTY EDGE OR POINT OF DISCHARGE TO ANY SURFACE WATER. STABILIZATION MUST OCCUR WITHIN 24 HOURS OF CONNECTION TO A SURFACE WATER, EXISTING GUTTER, STORM SEWER INLET, DRAINAGE DITCH, OR OTHER STORMWATER CONVEYANCE SYSTEM.

23. OUTLETS INTO SURFACE WATERS SHALL BE STABILIZED WITH ENERGY DISSIPATION WITHIN 24 HOURS OF BEING CONSTRUCTED.

24. ALL EXPOSED SOIL AREAS WILL BE STABILIZED PRIOR TO THE ONSET OF WINTER. ANY WORK STILL BEING PERFORMED WILL BE SNOW MULCHED, SEEDED, OR BLANKETED WITHIN TIME FRAMES IN THE NPDES PERMIT.

25. THE EROSION SUPERVISOR SHALL COMPLY WITH THE INSPECTION AND MAINTENANCE REQUIREMENTS OUTLINED IN THE NPDES PERMIT.

26. IF SEDIMENT DEPOSITS IN A WATER OF THE STATE, THE MATERIAL MUST BE REMOVED WITHIN 7 DAYS.

| EROSION CONTROL QUANTITIES | | | |
|---|---|---|---|
| ITEM NO. | ITEM NAME | UNIT | QUANTITY |
| 4 | SILT CURTAIN | LF | 120 |

*ADDITIONAL BMP'S WILL BE INSTALLED WHERE EVER NECESSARY IN ACCORDANCE WITH THE PROVISIONS OF THE SWPPP AND THE CONSTRUCTION SPECIFICATIONS. THE SWPPP WILL BE AMENDED AS REQUIRED WITH THE APROVAL OF THE PROJECT ENGINEER.

## SEQUENCE OF CONSTRUCTION

1. INSTALL PERIMETER SEDIMENT CONTROL BMPS SUCH AS SILT FENCES, INLET PROTECTION, SEDIMENT CONTROL LOGS, ETC. AFTER PREPARING THE INSTALLATION AREA.
2. COMPLETE CONSTRUCTION OF ROCK ARCH RAPIDS
3. SEEDING AND EROSIONS CONTROL APPLICATIONS
4. AFTER FINAL STABILIZATION REMOVE ANY AND ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMP'S

## WATER RESOURCES NOTES

THESE NOTES ALONG WITH THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE ARE INTENDED TO GIVE INFORMATION ON THE CRITICAL DRAINAGE FEATURES, NATURAL RESOURCES AND CONTRACTOR OPERATIONS THAT MAY IMPACT DRAINAGE AND NATURAL RESOURCES.

1. THE SIZE AND ELEVATION OF CULVERTS, STORM SEWER PIPES, CATCH BASINS, PONDS, INFILTRATION/FILTRATION BASINS, PERMEABLE DITCH BLOCKS AND OVERFLOW DEVICES HAVE BEEN SPECIFICALLY DESIGNED TO CONFORM TO MNDOT DESIGN STANDARDS, MINNESOTA POLLUTION CONTROL AGENCY (MPCA) AND WATERSHED DISTRICT PERMIT REQUIREMENTS. CHANGING THESE ITEMS OR THE DIRECTION OF FLOW FROM WHAT IS SHOWN ON THE PLANS MAY CAUSE PROBLEMS OFF THE PROJECT AND COULD MEAN THE PROJECT IS OUT OF COMPLIANCE WITH APPROVED DRAINAGE PERMIT. ANY CHANGES TO THE SIZE, ELEVATION OR DIRECTION OF FLOW OF THE DRAINAGE SYSTEM MUST BE APPROVED BY THE WATER RESOURCES DESIGNER.

2. ANY SUBSURFACE DRAINAGE TILES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED, REPLACED OR REROUTED, AND CONNECTED TO TH EXISTING TILE OR DRAINAGE SYSTEM TO ENSURE THAT EXISTING UPLAND DRAINAGE IS PERPETUATED. THIS SHOULD BE DONE TO THE APPROVAL AND SATISFACTION OF THE ENGINEER.

3. THE FOLLOWING WATER RELATED PERMITS APPLY TO THIS PROJECT:

3.1. MINNESOTA POLLUTION CONTROL AGENCY (MPCA), NPDES CONSTRUCTION PERMIT

REVIEW ALL PERMITS FOR ANY SPECIAL CONDITIONS THAT WILL EFFECT CONSTRUCTION OF THE PROJECT.

TEMPORARY DEWATERING ACTIVITIES MAY BE REQUIRED FOR ROADWAY CONSTRUCTION AND UTILITY WORK. THEREFORE IT IS POSSIBLE THAT A PERMIT FOR THE TEMPORARY APPROPRIATION OF WATERS OF THE STATE, NON-IRRIGATION FROM MNDNR WILL BE REQUIRED FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THIS PERMIT PRIOR TO COMMENCING DEWATERING ACTIVITIES. ALL TEMPORARY DEWATERING SHALL BE DISCHARGED TO AN APPROVED LOCATION FOR TREATMENT PRIOR TO DISCHARGE TO THE RECEIVING WATER. SUBMIT A SITE MANAGEMENT PLAN TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCING WORK.

3.2 MINNESOTA DEPARTMENT OF NATURAL RESOURCES PUBLIC WATERS PERMIT

3.3 UNITED STATES ARMY CORPS OF ENGINEERS SECTION 404 PERMIT

3.4 MINNESOTA WETLAND CONSERVATION ACT (WCA) PERMIT

| No. | Revision | Date | By |
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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota.

Erik S. Jones
License No. 41161

10-20-25
Date

HOUSTON engineering, inc.

| Drawn by | Date |
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| Checked by | Scale |
| ESJ | AS SHOWN |

SOUTH BRANCH WILD RICE RIVER RESTORATION PROJECT
SITE 1 ROCK ARCH RAPIDS
WILD RICE WATERSHED DISTRICT
CLAY COUNTY, MINNESOTA

STORM WATER POLLUTION AND PREVENTION PLAN (SWPPP)
PROJECT NO. 1432-0380

SHEET 13

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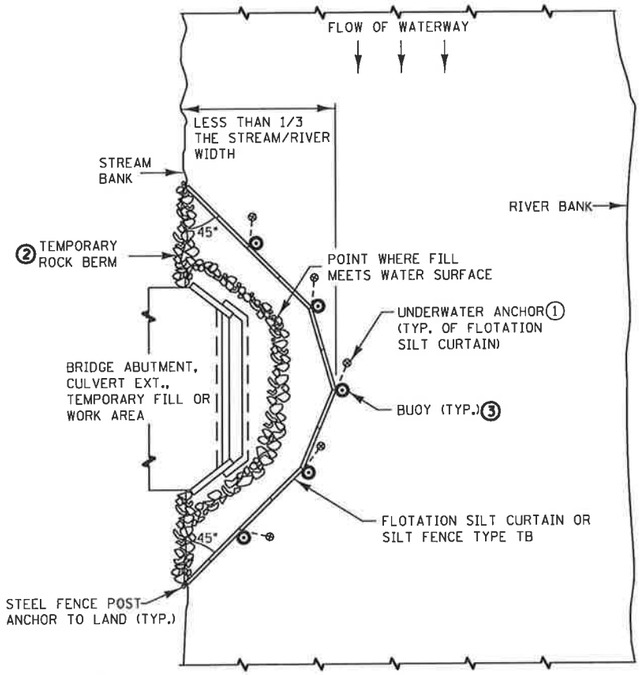
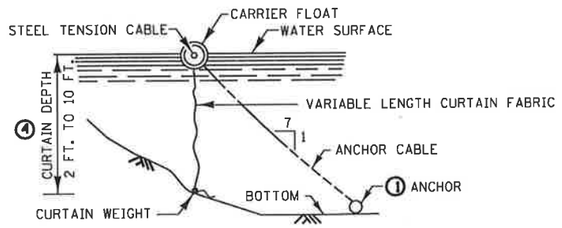
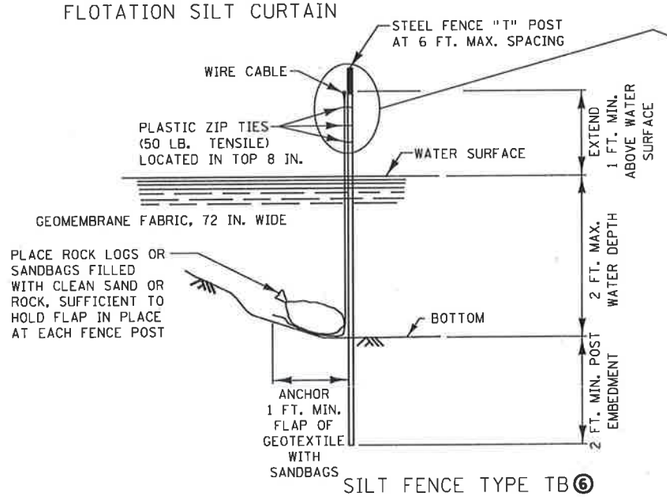


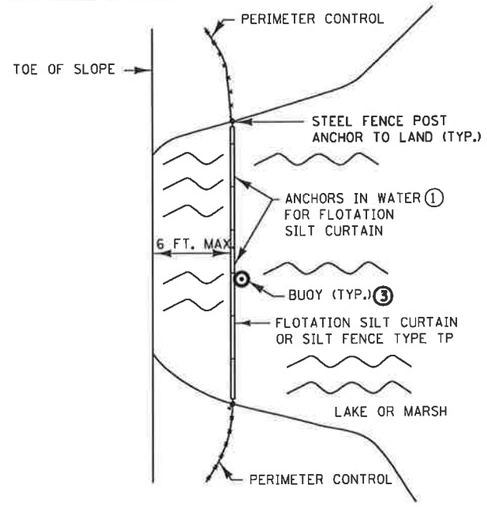

PLAN VIEW FOR STREAM ⑤



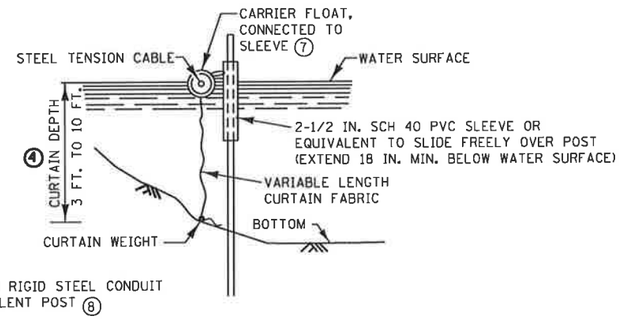

FLOTATION SILT CURTAIN



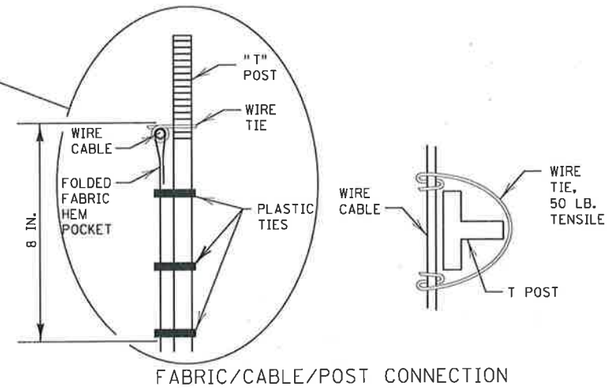

SILT FENCE TYPE TB ⑥



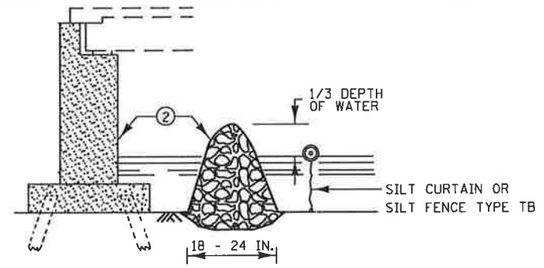

PLAN VIEW FOR LAKE OR MARSH ⑤




ALTERNATE FLOTATION SILT CURTAIN




FABRIC/CABLE/POST CONNECTION




TEMPORARY ROCK BERM
FOR SEDIMENT CONTROL

**INSTALLATION GUIDELINES**
**SILT FENCE TYPE TB**

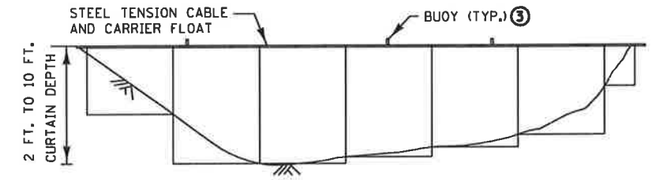
MINIMUM WATER DEPTH: 1 FT.
MAXIMUM WATER DEPTH: 3 FT.
MAXIMUM WATER VELOCITY: 5 FT./SEC.

**INSTALLATION GUIDELINES ④**
**FLOTATION SILT CURTAIN**
**TYPE: STILL WATER**

MINIMUM WATER DEPTH: 3 FT.
MAXIMUM WATER DEPTH: 10 FT.
MAXIMUM WATER VELOCITY: 2 FT./SEC.
MAXIMUM WAVE HEIGHT: 1 FT

**INSTALLATION GUIDELINES ④**
**FLOTATION SILT CURTAIN**
**TYPE: MOVING WATER**

MINIMUM WATER DEPTH: 3 FT.
MAXIMUM WATER DEPTH: 10 FT.
MAXIMUM WATER VELOCITY: 5 FT./SEC.
MAXIMUM WAVE HEIGHT: 2 FT.




FRONT VIEW FOR FLOTATION SILT CURTAIN

NOTES:

SEE SPECS. 2573, 3886, 3887 & 3893.

① FOR ANCHOR SPACING AND WEIGHT REQUIREMENTS, SEE SPEC. 2573.

② IN AREAS WHERE THE PLAN CALLS FOR RIPRAP AT A BRIDGE, CULVERT, OR SLOPE, A TEMPORARY ROCK BERM CONSTRUCTED FROM THE RIPRAP CAN BE USED TO PROVIDE ADDITIONAL PROTECTION. WHEN THE WORK IS COMPLETE THE RIPRAP CAN THEN BE MOVED TO THE PERMANENT LOCATION INDICATED IN THE PLANS. THE TEMPORARY ROCK BERM IS INCIDENTAL.

③ ON U.S. COAST GUARD OR OTHER MOTORIZED WATERWAYS, BUOYS ARE REQUIRED TO MARK THE ENDS AND SPECIAL AREAS FOR VISIBILITY. PLACE BUOYS AS REQUIRED FOR NAVIGATIONAL PURPOSES.

④ MINIMUM WATER DEPTH APPLIES TO THE DEEPEST POINT ALONG THE FLOTATION SILT CURTAIN OR SILT FENCE TYPE TB FOR DETERMINING APPLICABILITY OF FLOTATION SILT CURTAIN OR SILT FENCE TYPE TB.

⑤ SILT CURTAIN SHOULD BE REMOVED WHEN THE AREA CONTRIBUTING DIRECT RUNOFF HAS BEEN TEMPORARILY OR PERMANENTLY STABILIZED. SILT CURTAIN SHOULD ALSO BE REMOVED BEFORE WINTER IF ICE UP OR ICE FLOW IS ANTICIPATED.

⑥ EMBED POST INTO BOTTOM A MINIMUM OF 40% OF THE WATER DEPTH (INCLUDING WAVE HEIGHT), BUT IN NO CASE SHALL EMBEDMENT BE LESS THAN 2 FEET.

⑦ ANCHOR FLOAT MUST BE CONNECTED SECURELY TO SLEEVE WITH A MINIMUM TENSILE STRENGTH OF 100 LBS. CONNECTION METHOD MUST ALLOW FOR SLEEVE TO MOVE FREELY ON POST.

⑧ PROVIDE SUFFICIENT NUMBER OF POST ANCHORS TO MAINTAIN SILT CURTAIN POSITION.

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 1 OF 8

APPROVED: 2-28-2017
REVISED:

STATE DESIGN ENGINEER

# TEMPORARY SEDIMENT CONTROL
## SILT CURTAIN OR SILT FENCE TYPE TB

| No. | Revision | Date | By |
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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Erik S. Jones
License No. 41161
Date 10-20-25

HOUSTON engineering, inc.

| Drawn by | Date |
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| PAO | 10-20-25 |
| Checked by | Scale |
| ESJ | AS SHOWN |

SOUTH BRANCH WILD RICE RIVER RESTORATION PROJECT
SITE 1 ROCK ARCH RAPIDS
WILD RICE WATERSHED DISTRICT
CLAY COUNTY, MINNESOTA

EROSION CONTROL DETAILS
PROJECT NO. 1432-0380

SHEET 14

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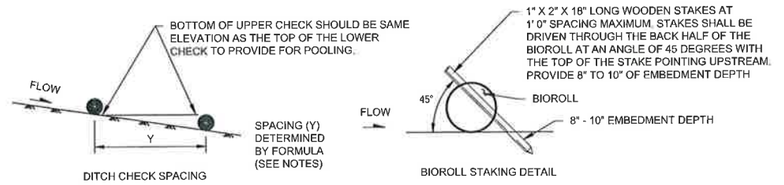
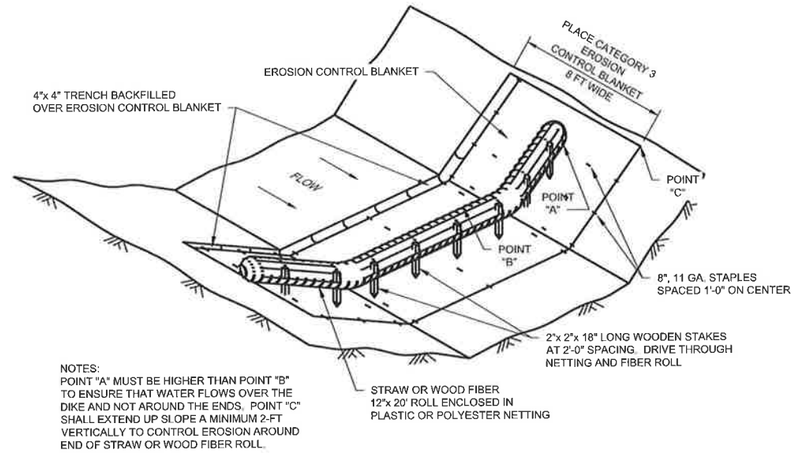
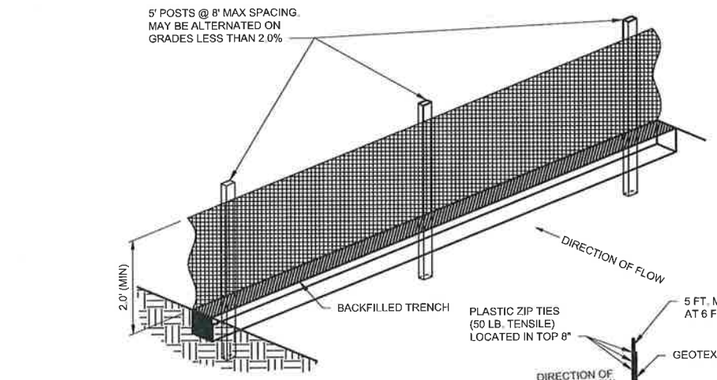



NOTES:
POINT "A" MUST BE HIGHER THAN POINT "B" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS. POINT "C" SHALL EXTEND UP SLOPE A MINIMUM 2-FT VERTICALLY TO CONTROL EROSION AROUND END OF STRAW OR WOOD FIBER ROLL.

## TEMPORARY DITCH CHECK

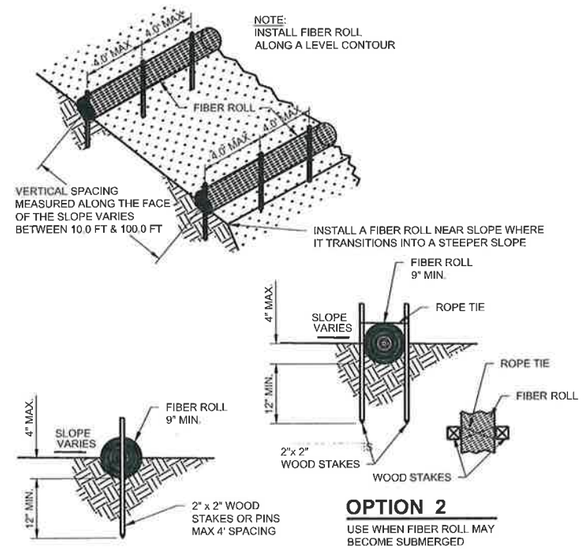
NOT TO SCALE




NOTE:
SILT FENCE TO BE STANDARD UNLESS ACTUAL SITE CONDITIONS REQUIRE HEAVY DUTY FENCE PER BMP'S OR INDICATED ON PLANS.

## SILT FENCE

NOT TO SCALE




## FIBER ROLL INSTALLATION

NOT TO SCALE

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| No. | Revision | Date | By |
|---|---|---|---|
| | | | |

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Erik S. Jones
License No. 41161
10-20-25
Date

HOUSTON engineering, inc.

| Drawn by | Date |
|---|---|
| PAO | 10-20-25 |
| Checked by | Scale |
| ESJ | AS SHOWN |

SOUTH BRANCH WILD RICE RIVER RESTORATION PROJECT
SITE 1 ROCK ARCH RAPIDS
WILD RICE WATERSHED DISTRICT
CLAY COUNTY, MINNESOTA

EROSION CONTROL DETAILS
PROJECT NO. 1432-0380

SHEET 15