





Purchasing Division
Finance Department
Room 120
411 West First Street
Duluth, Minnesota 55802

 218-730-5340
 purchasing@duluthmn.gov

Addendum 2
Solicitation 24-99198
Spirit Mountain Snowmobile Trail Construction

This addendum serves to notify all bidders of the following changes to the solicitation documents:

- Sheet 1 has been updated and is attached to this addendum.
- Sheet 6 has been updated and is attached to this addendum.
- Sheet 7 has been updated and is attached to this addendum.
- Sheets 11-15 have been updated and are attached to this addendum.
- Bid form has been updated in BidExpress and is attached to this addendum.

Please acknowledge receipt of this Addendum by checking the acknowledgement box within the www.bidexpress.com solicitation.

Posted: **February 5, 2024**

CONSTRUCTION NOTES

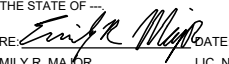
1. CLEARING OPERATIONS COMPLETED PREVIOUSLY BY OTHERS.
2. GRUBBING PAY ITEMS SHALL INCLUDE ALL LABOR AND MATERIALS ASSOCIATED WITH REMOVING ALL WOODY VEGETATION FROM THE LOWER NORDIC SKI CENTER TRAIL CORRIDORS. BRUSH AND STUMPS MAY BE CHIPPED AND DISTRIBUTED ONSITE. DISTRIBUTED MATERIAL MAY NOT EXCEED 4" DEPTH OR BE DISTRIBUTED IN WETLANDS. BRUSH AND STUMPS MAY BE BURNED AT DESIGNATED AREAS ONSITE. CONTRACTOR TO OBTAIN PRIOR CITY APPROVAL AND REQUIRED BURN PERMITS AS NECESSARY.
2. NATURAL STONE RETAINING WALL PAY ITEM SHALL INCLUDE ALL LABOR AND MATERIALS ASSOCIATED WITH CONSTRUCTING SHORT NATURAL STONE RETAINING WALLS WHERE NECESSARY TO MINIMIZE SOIL DISTURBANCES. NATURAL STONES FOR RETAINING WALLS EXIST ONSITE BUT MUST BE GATHERED AND INSTALLED BY CONTRACTOR.
3. COMMON EXCAVATION ITEM INCLUDES MATERIALS AND LABOR ASSOCIATED WITH GRADING TRAIL TO MAXIMUM CROSS SLOPE OF 5%. TRAIL CENTERLINE PROFILE IS EXPECTED TO REMAIN NEAR EXISTING GRADE WITH MINOR EXCAVATION TO CREATE THE TRAIL TYPICAL SECTION PER DETAILS. IT IS EXPECTED THAT EXCESS MATERIAL WILL BE DISTRIBUTED ONSITE, SEEDED AND STABILIZED PER THE SWPPP. STABILIZING EFFORTS FOR AREAS OF EXCESS FILL WILL BE CONSIDERED INCIDENTAL TO COMMON EXCAVATION PAY ITEM. CONTRACTOR MAY UTILIZE EXISTING OR CREATE NEW BORROW PITS WHERE APPROPRIATE TO GENERATE FILL MATERIAL. ALL DISTURBED AREAS TO BE SEEDED AND STABILIZED PER THE SWPPP. SEEDING AND STABILIZATION FOR BORROW PITS SHALL BE CONSIDERED INCIDENTAL.
4. GEOTEXTILE FABRIC ITEM TO INCLUDE LABOR AND MATERIALS ASSOCIATED WITH REINFORCING THE TRAIL OVER STORMWATER PIPING.
5. TRAIL GATE TYPE SPECIAL ITEM TO INCLUDE LABOR AND MATERIALS ASSOCIATED WITH FURNISHING AND INSTALLING SINGLE SWING GATES PER DETAILS. TRAIL GATES TO RESTRICT ALL MOTORIZED ACCESS OT THE TRAIL EXCEPT MAINTENANCE VEHICLES.
6. EROSION CONTROL BLANKET ITEM TO INCLUDE LABOR AND MATERIALS ASSOCIATED WITH STABILIZING ANY TRAIL GRADES OR BACKSLOPES GREATER THAN 1:3. STONE RETAINING WALLS MAY BE CONSTRUCTED IN LIEU OF 1:3 BACKSLOPES.
7. SEEDING ITEM SHALL INCLUDE ALL LABOR AND MATERIALS ASSOCIATED WITH STABILIZING THE TRAIL GRADE AND BACKSLOPES PER THE SWPPP. ALL DISTURBED AREAS MUST BE RE-ESTABLISHED WITH THE SPECIFIED SEED MIX.
8. STABILIZED CONSTRUCTION EXITS SHALL BE INSTALLED AT SKYLINE PARKWAY.
9. SNOWMAKING UTILITY DESIGN COMPLETED BY OTHERS. SNOW PRODUCTION UTILITIES SHOWN FOR REFERENCE ONLY.
10. WORK OUTSIDE OF WETLANDS MAY BEGIN ONCE THE CONTRACTOR HAS RECEIVED THE NOTICE TO PROCEED FROM THE CITY. WORK INSIDE THE WETLANDS IS RESTRICTED TO CLEARING ACTIVITIES ONLY UNTIL WETLAND MITIGATION PROCESS HAS BEEN COMPLETED. NO GROUND DISTURBING ACTIVITIES ARE ALLOWED UNTIL THE MITIGATION PROCESS HAS BEEN COMPLETED.
11. FERTILIZER SHALL BE APPLIED PER THE SWPPP AND INCLUDED AS INCIDENTAL.
12. OWNER RESERVES THE RIGHT TO MAKE ADJUSTMENTS TO ALIGNMENTS IN THE FIELD DURING CONSTRUCTION OF TRAILS AT THEIR DISCRETION. UNIT PRICE QUANTITY ADJUSTMENTS SHALL BE ESTABLISHED AT THE TIME OF PROPOSED ADJUSTMENTS AND AGREED UPON BY OWNER AND CONTRACTOR.
13. CULVERT LOCATIONS SHALL BE FIELD VERIFIED SO THAT CULVERTS ARE PLACED IN APPROPRIATE LOCATIONS TO PROMOTE POSITIVE DRAINAGE. LOCATIONS MUST BE APPROVED BY OWNER PRIOR TO CULVERT PLACEMENT.

STATEMENT OF ESTIMATED QUANTITIES

LINE ITEM NO.	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITIES	NOTES
1	2021.501	MOBILIZATION	LUMP SUM	1	
2	2100.601	PEDESTRIAN BRIDGE (SUPERSTRUCTURE)	LUMP SUM	1	INCLUDES PLACING OF TEMPORARY ABUTMENTS AND SALVAGED BRIDGE STRUCTURE
3	2101.505	GRUBBING	EACH	64.00	
4	2105.607	COMMON EXCAVATION	CU YD	500	
5	2105.607	COMMON BORROW (LV)	CU YD	197	
6	2112.519	SUBGRADE PREPARATION	ROAD STA	51	
7	2118.507	AGGREGATE SURFACING (CV) CLASS SPECIAL	CU YD	10	CRUSHED LIMESTONE SURFACING
8	2118.507	AGGREGATE SURFACING (CV) CLASS 5	CU YD	280	
9	2501.502	18" CS PIPE APRON	EACH	2	
10	2501.503	12" HDPE PIPE CULVERT	LIN FT	214	
11	2501.503	18" HDPE PIPE CULVERT	LIN FT	124	
12	2511.507	RANDOM RIPRAP CLASS IV	CU YD	56	
13	2540.618	NATURAL STONE RETAINING WALL	LIN FT	450	ESTIMATED 667 LF AT A NOMINAL HEIGHT OF 2 FT
14		ROCK ARMORING	SQ YD	30	
15	2563.601	TRAFFIC CONTROL	LUMP SUM	1	
16	2564.502	SIGN PANEL TYPE C	SQ FT	34	INCLUDES INSTALLATION AND SIGN POSTS. SEE SIGN SCHEDULE
17	2573.502	STORM DRAIN INLET PROTECTION	EACH	3	
18	2573.502	CULVERT END CONTROLS	EACH	16	
19	2573.503	SEDIMENT CONTROL LOG TYPE COMPOST	LIN FT	8941	
20	2573.602	ROCK DITCH CHECK	EACH	44	
21	2575.505	SEEDING	ACRE	1.53	
22	2575.508	SEED MIXTURE 36-311	POUND	51	WOODLAND EDGE NORTHEAST. APPLICATION RATE = 33.5 LBS/ACRE
23	2575.604	ROLLED EROSION PREVENTION CATEGORY 25	SQ YD	5523	PLACE ON ALL SLOPES STEEPER THAN 1:3 (33.33%)
24	2104.503	REMOVE PIPE CULVERT	LIN FT	34	REMOVAL OF EXISTING APRONS INCIDENTAL
25	2557.503	WIRE FENCE DESIGN 72-9322	LIN FT	320	

PLOT DATE: Feb 01, 2024 - 10:53pm
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NO.	DATE	BY	DESCRIPTION OF REVISIONS
1	2/2/24	ERM	REVISED SEQ TABLE

DESIGNED	ERM	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 ---- UNDER THE LAWS OF THE STATE OF ---- SIGNATURE:  DATE: 1/25/2024 NAME: EMILY R. MAJOR LIC. NO.: 52201
DRAWN	IDR	
CHECKED	ERM	



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**SPIRIT MOUNTAIN
SNOWMOBILE TRAILS
CITY OF DULUTH, MINNESOTA**

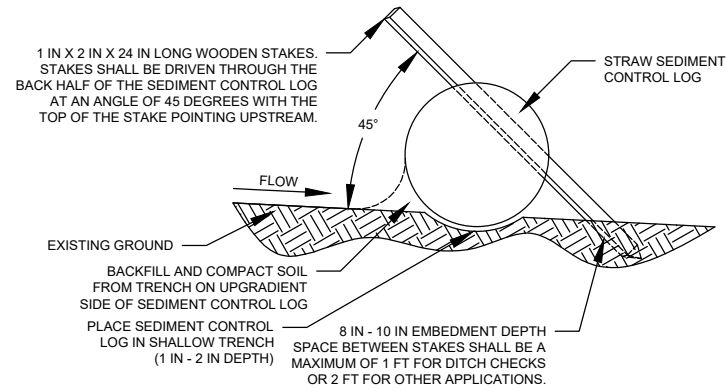
**STATEMENT OF
ESTIMATED QUANTITIES**

PROJ. NO. 20747.000
DRAWING NO. 3

SEDIMENT AND EROSION CONTROL NOTES:

THE CONTRACTOR SHALL SEQUENCE THEIR WORK AS FOLLOWS:

1. INSTALL SILT FENCE PRIOR TO GRADING OPERATIONS AND MAINTAIN THROUGHOUT CONSTRUCTION.
2. PROVIDE INTERIM INLET PROTECTION WITH SILT FENCE OR EQUIVALENT MEASURES FOR EXISTING CB'S AND/OR CULVERTS ON THE PROJECT SITE AND ANY OFF-SITE CB'S AND/OR CULVERTS RECEIVING DRAINAGE FROM THE PROJECT SITE.
3. INSTALL ROCK CONSTRUCTION ENTRANCE.
4. PROVIDE TEMPORARY COVER SEEDING ON ANY AREAS NOT WORKED FOR 21 DAYS ON FLATTER THAN 10:1 SLOPES, 14 DAYS ON 10:1 TO 3:1 SLOPES AND 7 DAYS ON STEEPER THAN 3:1 SLOPES.
5. COMPLETE GRADING OPERATIONS AND INSTALL PAVEMENTS, ESTABLISH TURF AND PROVIDE OTHER SITE IMPROVEMENTS.
6. INSTALL PERMANENT EROSION CONTROL (SODDING, SEEDING, MULCHING, EROSION CONTROL BLANKET, RIP RAP ETC.) ON ALL AREAS NOT ALREADY COMPLETED WITH FINAL TURF ESTABLISHMENT OR OTHER EROSION CONTROL.
7. REMOVE ROCK CONSTRUCTION ENTRANCE(S).
8. REMOVE SILT FENCE, ROCK CONSTRUCTION ENTRANCE AND CB INLET PROTECTION AFTER TURF IS ESTABLISHED.
9. NATURAL GROUND TRENCH, REMOVE ROCKS, OR PROTRUSIONS PRIOR TO PIPE PLACEMENT.



1 SEDIMENT CONTROL LOG DETAIL
6 NO SCALE



SALVAGED BRIDGE PHOTO

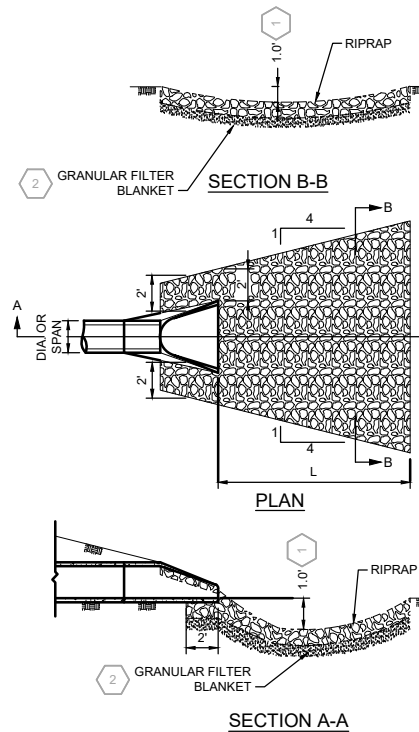


TABLE OF QUANTITIES RIPRAP AT OUTLETS

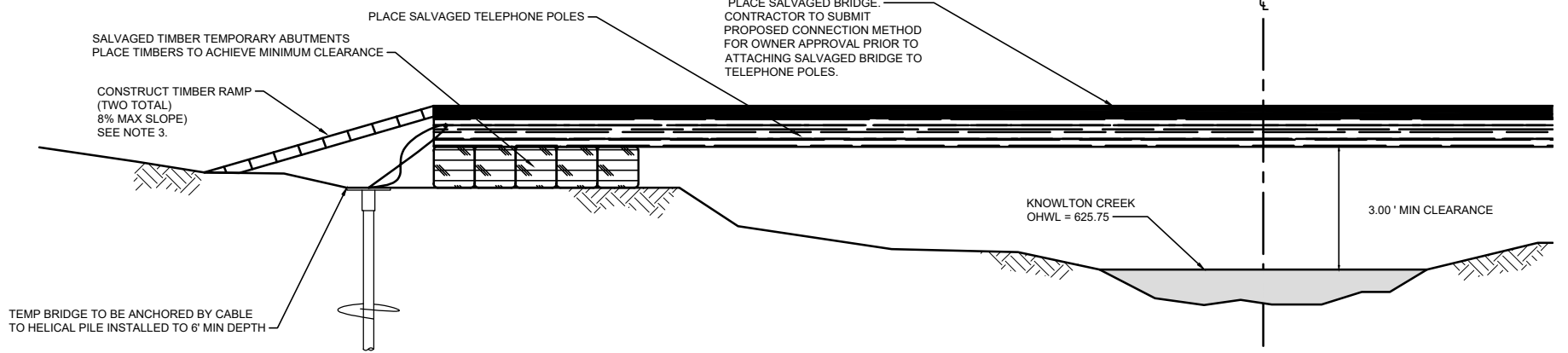
DIA OF ROUND PIPE (IN.)	L (FT.)	CLASS II d_{50} 6"		CLASS III d_{50} 9"		CLASS IV d_{50} 12"	
		12" DEPTH GRANULAR RIPRAP (CU. YDS.)	6" DEPTH GRANULAR FILTER (CU. YDS.)	18" DEPTH RIPRAP (CU. YDS.)	9" DEPTH GRANULAR FILTER (CU. YDS.)	24" DEPTH RIPRAP (CU. YDS.)	12" DEPTH GRANULAR FILTER (CU. YDS.)
12	8	2.8	1.4	4.1	2.1	5.5	2.8
15	8	2.9	1.5	4.4	2.2	5.8	2.9
18	10	3.9	2.0	5.9	3.0	7.8	3.9
21	10	4.2	2.1	6.3	3.2	8.4	4.2
24	12	5.5	2.8	8.3	4.2	11.0	5.5
27	12	5.8	2.9	8.7	4.4	11.6	5.8
30	14	7.3	3.7	10.9	5.5	14.5	7.3
36	14	9.2	4.6	13.8	6.9	18.3	9.2
42	18	10.9	5.5	16.3	8.2	21.7	10.9
48	20	12.9	6.5	19.4	9.7	25.8	12.9

TABLE OF QUANTITIES RIPRAP AT OUTLETS

SPAN OF PIPE ARCH (FT.)	L (FT.)	CLASS II d_{50} 6"		CLASS III d_{50} 9"		CLASS IV d_{50} 12"	
		12" DEPTH GRANULAR RIPRAP (CU. YDS.)	6" DEPTH GRANULAR FILTER (CU. YDS.)	18" DEPTH RIPRAP (CU. YDS.)	9" DEPTH GRANULAR FILTER (CU. YDS.)	24" DEPTH RIPRAP (CU. YDS.)	12" DEPTH GRANULAR FILTER (CU. YDS.)
22	10	3.9	2.0	5.9	3.0	7.8	3.9
28	12	5.5	2.8	8.2	4.1	10.9	5.5
36	14	7.2	3.6	10.8	5.4	14.3	7.2
43	16	9.2	4.6	13.7	6.9	18.3	9.2
51	18	10.9	5.5	16.3	8.2	21.7	10.9
58	20	12.7	6.4	19.0	9.5	25.4	12.7

- NOTES:
1. PIPE SIZES LARGER THAN THOSE SHOWN REQUIRE A SPECIAL DESIGN.
 2. REQUIREMENTS FOR RIPRAP SIZE AND THICKNESS AND GRANULAR FILTER BLANKET WILL BE DESIGNED WITH THE PLANS.
- KEY NOTES:
1. FOR PIPES GREATER THAN OR EQUAL TO 30", USE 1.5'
 2. THE CONTRACTOR, AT HIS OPTION, MAY SUBSTITUTE A GEOTEXTILE FABRIC, SPEC. 3733, FOR THE GRANULAR FILTER BLANKET UNLESS OTHERWISE SPECIFIED IN THE PLANS. THE FABRIC SHOULD COVER THE AREA OF THE RIPRAP AND EXTEND UNDER THE APRON 3FT.

2 RIPRAP AT CULVERT OUTLETS
6 NO SCALE



- CONSTRUCTION NOTES:
1. BRIDGE TO BE INSTALLED PER MN DNR TEMPORARY BRIDGE STANDARDS.
 2. CONTRACTOR UNIT PRICE TO INCLUDE TRANSPORT OF SALVAGED BRIDGE, ABUTMENT TIMBERS AND TELEPHONE POLES FROM SPIRIT MOUNTAIN MAINTENANCE GARAGE TO BRIDGE SITE, PLACEMENT OF SALVAGED TIMBERS, INSTALLATION OF HELICAL PILE ANCHOR AND CABLE TETHER, AND CONSTRUCTION AND INSTALLATION OF TWO WOODEN PLANK RAMPS ON EACH SIDE OF BRIDGE.
 3. PROPOSED WOODEN PLANK CONSTRUCTION, CONNECTION OF RAMP TO BRIDGE DECK, AND TETHER METHOD TO HELICAL PILE SHALL BE SUBMITTED TO CITY AND ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.

3 PEDESTRIAN BRIDGE (SUPERSTRUCTURE)
6 NO SCALE

PLOT DATE: Feb 02, 2024 - 11:51am
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NO.	DATE	BY	DESCRIPTION OF REVISIONS
1	2/2/24	ERM	REVISED BRIDGE DETAIL

DESIGNED	ERM	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.
DRAWN	IDR	
CHECKED	ERM	

SIGNATURE: *Emily R. Major* DATE: 1/25/2024
NAME: EMILY R. MAJOR LIC. NO.: 52201

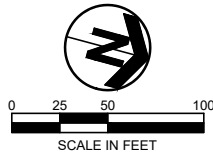
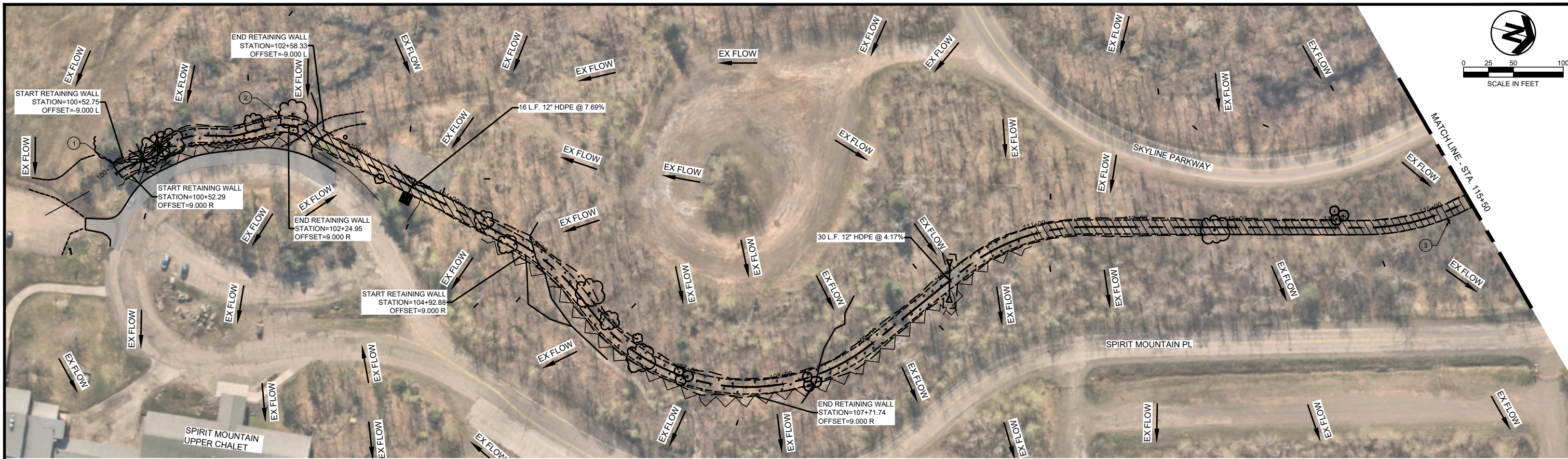


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**SPIRIT MOUNTAIN
SNOWMOBILE TRAILS
CITY OF DULUTH, MINNESOTA**

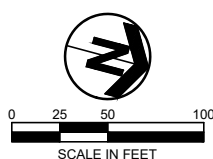
DETAILS

PROJ. NO. 20747.000
DRAWING NO. 6



UPPER CONNECTOR TRAIL

SNOWMOBILE TRAIL AREA: GRUB, GRADE, SEED AND TOPSOIL
 WETLAND
 NO WORK AREAS
 TOP DRESSING & GRADING: AGGREGATE SURFACING CL 2
 DRAINAGE FLOW DIRECTION
 SIGN TAG (SEE SIGN SCHEDULE)
 - - - - - TRAIL EDGE
 - - - - - CONSTRUCTION LIMITS
 ~~~~~ SEDIMENT CONTROL LOG TYPE COMPOST



**UPPER CONNECTOR TRAIL**

PLOT DATE: Feb 01, 2024 - 11:26pm  
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| NO. | DATE   | BY  | DESCRIPTION OF REVISIONS               |
|-----|--------|-----|----------------------------------------|
| 1   | 2/2/24 | ERM | REVISED SEDIMENT CONTROL LOG PLACEMENT |

|          |     |                                                                                                                                                                                                                                                                                                       |
|----------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DESIGNED | ERM | 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.<br>SIGNATURE: <i>Emily R. Major</i> DATE: 1/25/2024<br>NAME: EMILY R. MAJOR LIC. NO.: 52201 |
| DRAWN    | IDR |                                                                                                                                                                                                                                                                                                       |
| CHECKED  | ERM |                                                                                                                                                                                                                                                                                                       |
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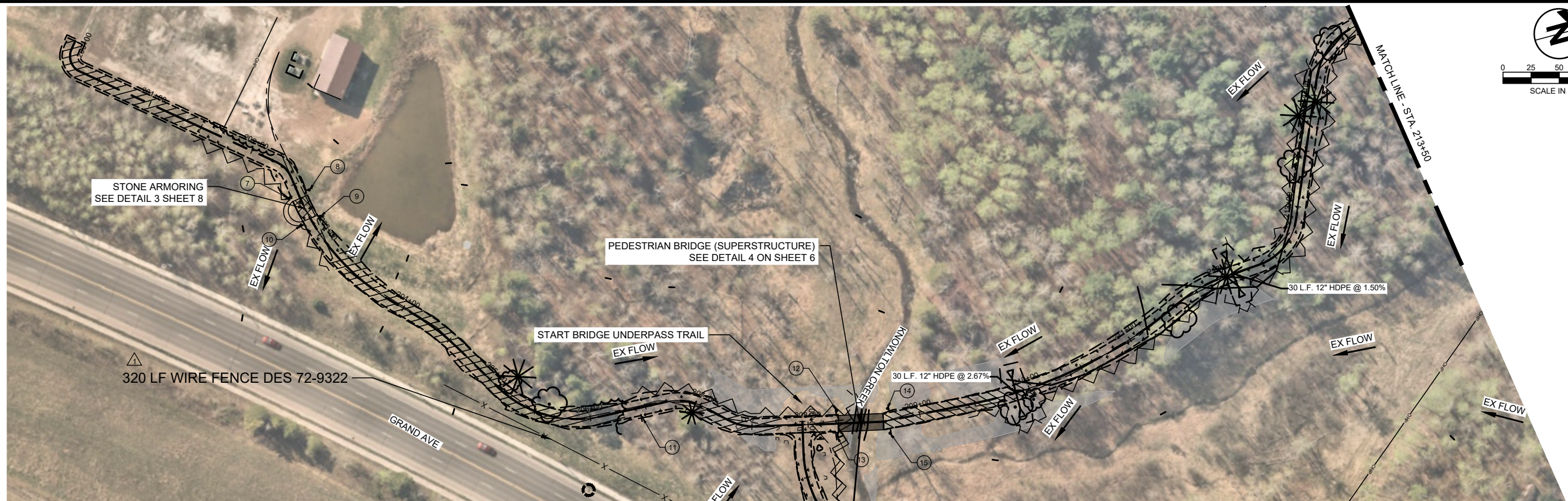
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**SPIRIT MOUNTAIN  
 SNOWMOBILE TRAILS  
 CITY OF DULUTH, MINNESOTA**

**CONSTRUCTION PLANS**

PROJ. NO. 20747.000  
 DRAWING NO. 10





SNOWMOBILE TRAIL AREA: GRUB, GRADE, SEED AND TOPSOIL
TOP DRESSING & GRADING: AGGREGATE SURFACING CL 2
WETLAND
NO WORK AREAS
EX FLOW
DRAINAGE FLOW DIRECTION
SIGN TAG (SEE SIGN SCHEDULE)
TRAIL EDGE
CONSTRUCTION LIMITS
SEDIMENT CONTROL LOG TYPE COMPOST

### LOWER CONNECTOR TRAIL

SEE SHEET 12



NOTES:  
 1. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO WHITE PINE & CEDAR TREE ROOTS. USE WOOD CHIPS FROM THE SITE TO PROTECT.

### LOWER CONNECTOR TRAIL

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| 1   | 2/2/24 | ERM | REVISED SEDIMENT CONTROL LOG PLACEMENT, ADDED FENCE NOTE |

|          |     |                                                                                                                                                                                                           |
|----------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DESIGNED | ERM | 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. |
| DRAWN    | IDR |                                                                                                                                                                                                           |
| CHECKED  | ERM | SIGNATURE: <i>Emily R. Major</i> DATE: 1/25/2024<br>NAME: EMILY R. MAJOR LIC. NO.: 52201                                                                                                                  |

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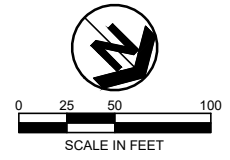
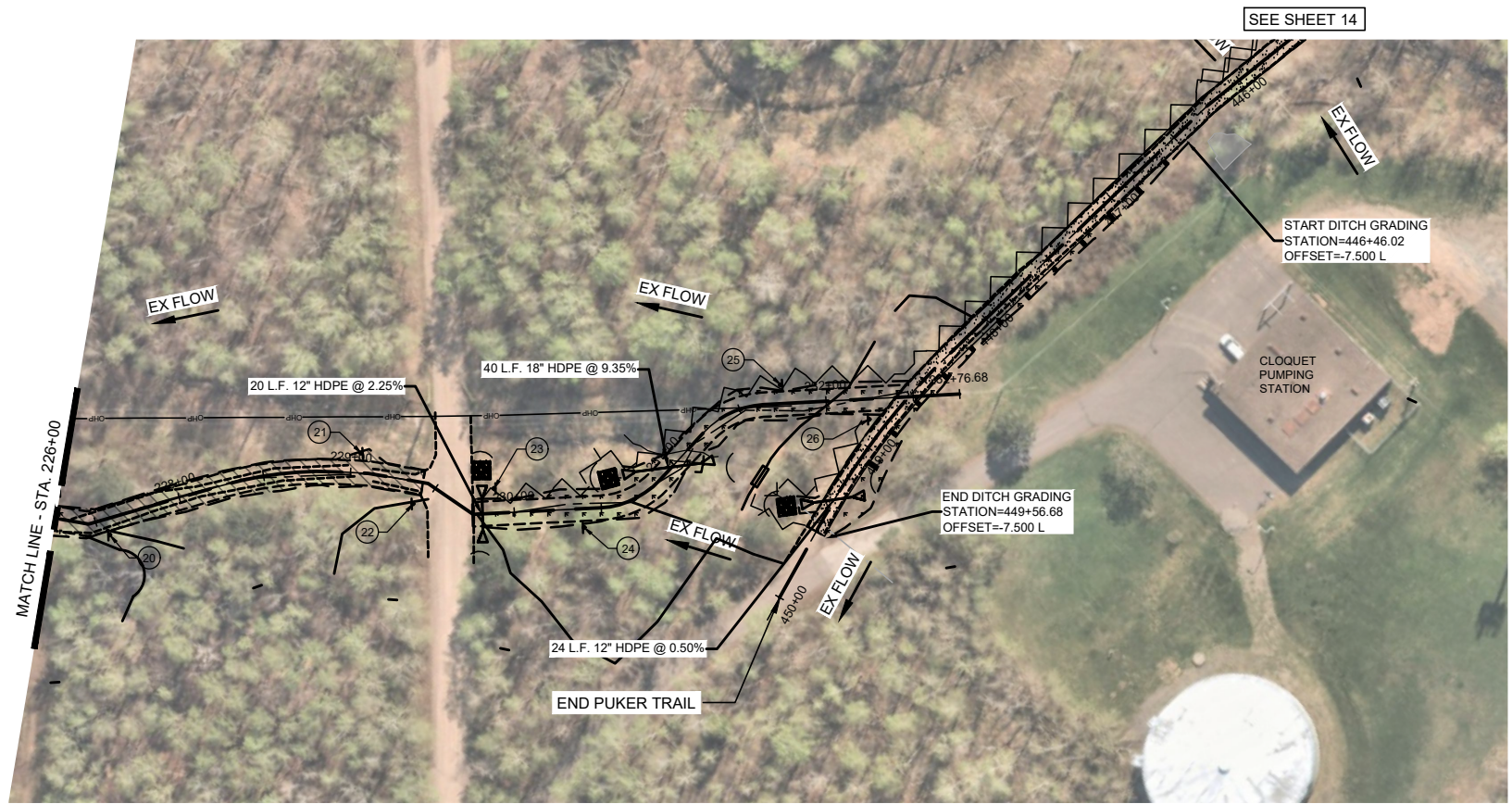
SPIRIT MOUNTAIN  
 SNOWMOBILE TRAILS  
 CITY OF DULUTH, MINNESOTA

CONSTRUCTION PLANS 2

PROJ. NO. 20747.000  
 DRAWING NO. 11



NOTES:  
 1. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO WHITE PINE & CEDAR TREE ROOTS. USE WOOD CHIPS FROM THE SITE TO PROTECT.

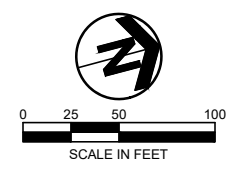
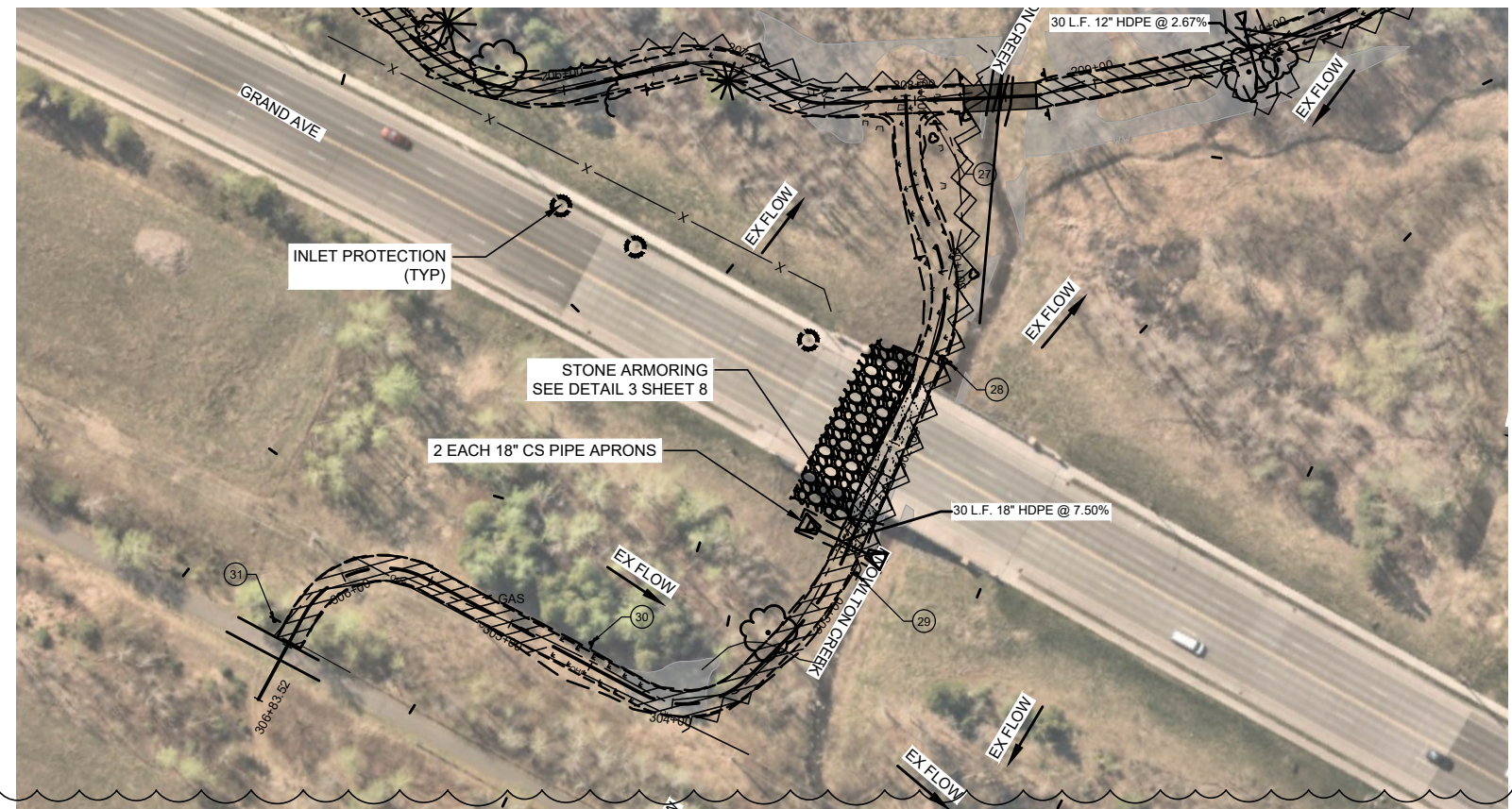


SNOWMOBILE TRAIL AREA: GRUB, GRADE, SEED AND TOPSOIL
TOP DRESSING & GRADING: AGGREGATE SURFACING CL 2
WETLAND
NO WORK AREAS
EX FLOW
DRAINAGE FLOW DIRECTION
SIGN TAG (SEE SIGN SCHEDULE)
TRAIL EDGE
CONSTRUCTION LIMITS
SEDIMENT CONTROL LOG TYPE COMPOST

LOWER CONNECTOR TRAIL

SEE SHEET 11

SEE SHEET 11



BRIDGE UNDERPASS

PLOT DATE: Feb 01, 2024 - 11:29 AM  
 FILENAME: K:\a\duluth\_City\20747000\04\_Production\01\_CAD\02\_Sheets\CONSTRUCTION PLANS.dwg

| NO. | DATE   | BY  | DESCRIPTION OF REVISIONS               |
|-----|--------|-----|----------------------------------------|
| 1   | 2/2/24 | ERM | REVISED SEDIMENT CONTROL LOG PLACEMENT |

DESIGNED: ERM  
 DRAWN: IDR  
 CHECKED: ERM  
 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.  
 SIGNATURE: *Emily R. Major* DATE: 1/25/2024  
 NAME: EMILY R. MAJOR LIC. NO.: 52201


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SPIRIT MOUNTAIN  
 SNOWMOBILE TRAILS  
 CITY OF DULUTH, MINNESOTA

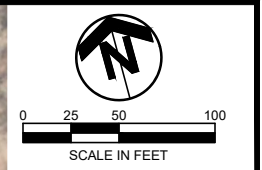
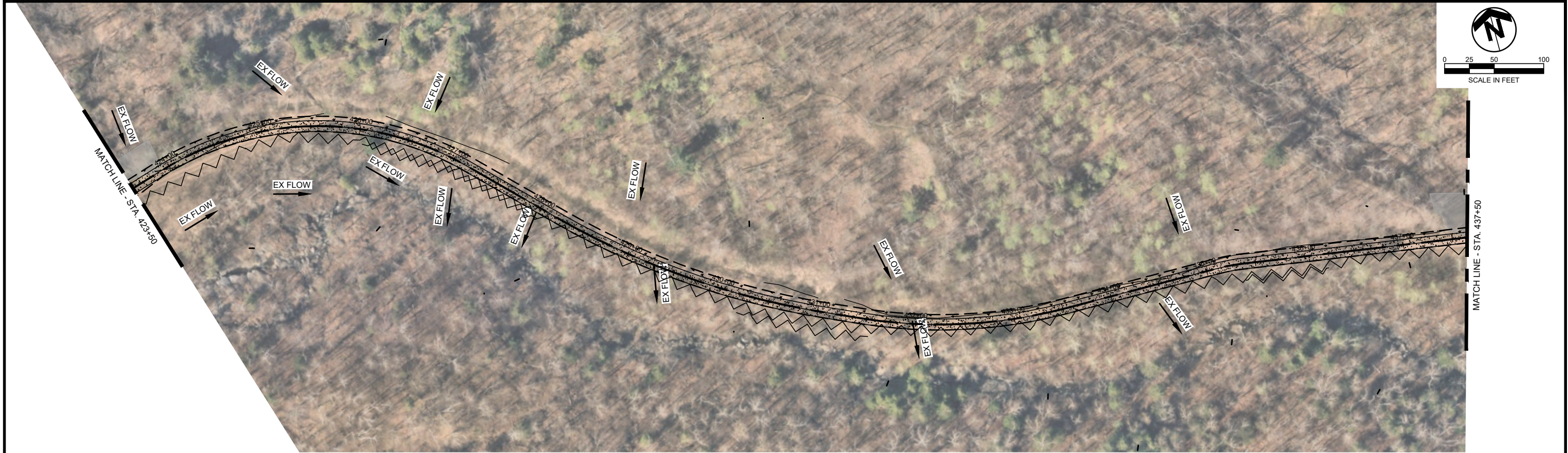
CONSTRUCTION PLANS 3

PROJ. NO. 20747.000  
 DRAWING NO. 12



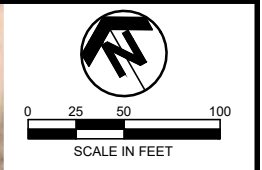
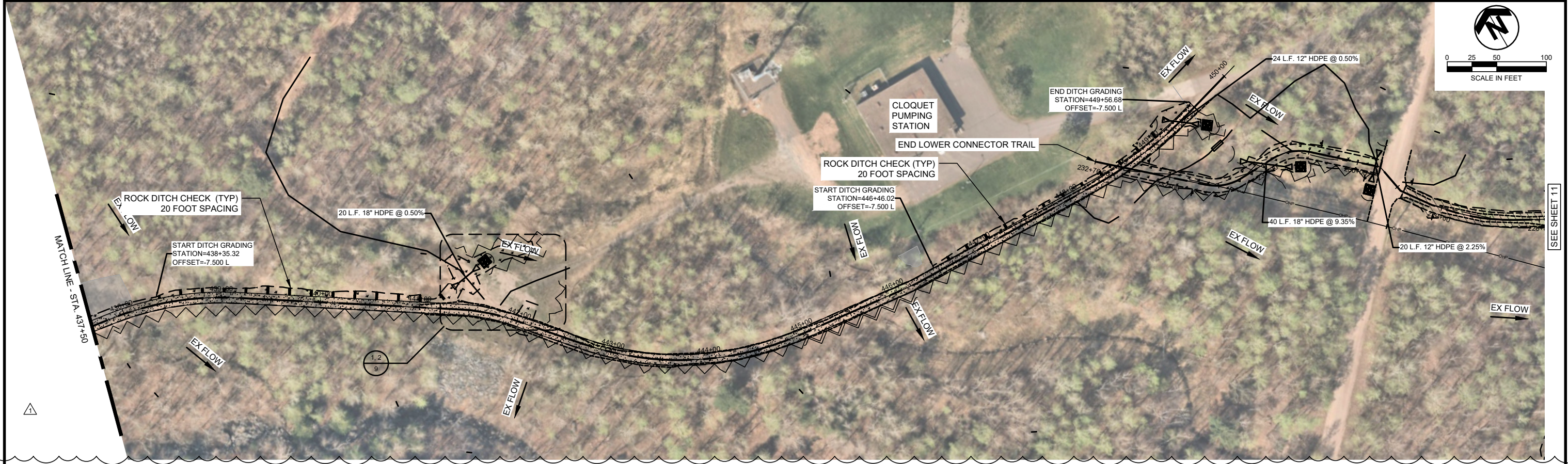






SNOWMOBILE TRAIL AREA: GRUB, GRADE, SEED AND TOPSOIL
  TOP DRESSING & GRADING: AGGREGATE SURFACING CL 2
  WETLAND
  NO WORK AREAS
  EX FLOW
  DRAINAGE FLOW DIRECTION
  SIGN TAG (SEE SIGN SCHEDULE)
  TRAIL EDGE
  CONSTRUCTION LIMITS
  SEDIMENT CONTROL LOG TYPE COMPOST

**PUKER TRAIL**



**PUKER TRAIL**

PLOT DATE: Feb 01, 2024 - 11:13:10am  
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| NO. | DATE   | BY  | DESCRIPTION OF REVISIONS               |
|-----|--------|-----|----------------------------------------|
| 1   | 2/2/24 | ERM | REVISED SEDIMENT CONTROL LOG PLACEMENT |

DESIGNED: ERM  
 DRAWN: IDR  
 CHECKED: ERM  
 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.  
 SIGNATURE: *Emily R. Major* DATE: 1/25/2024  
 NAME: EMILY R. MAJOR LIC. NO.: 52201

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SPIRIT MOUNTAIN  
 SNOWMOBILE TRAILS  
 CITY OF DULUTH, MINNESOTA

CONSTRUCTION PLANS 5

PROJ. NO. 20747.000  
 DRAWING NO. 14

SEE SHEET 11



STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE

PROJECT DESCRIPTION AND CONTACTS:

PROJECT NAME AND LOCATION: SPIRIT MOUNTAIN SNOWMOBILE TRAIL, DULUTH, MINNESOTA  
 PROJECT SCOPE: STUMP GRUBBING, TRAIL SHAPING & GRADING, BRIDGE ABUTMENT CONSTRUCTION, CULVERT INSTALLATION, AND LANDSCAPING.

| PROJECT CONTACTS                                             | NAME           | PHONE NUMBER |
|--------------------------------------------------------------|----------------|--------------|
| OWNER: CITY OF DULUTH                                        | JIM SHOBERG    | 218.730.4415 |
| CONTRACTOR'S EROSION AND SEDIMENT CONTROL SUPERVISOR         | TBD            | TBD          |
| CONTRACTOR'S EROSION AND SEDIMENT CONTROL INSTALLER          | TBD            | TBD          |
| OWNER CONSTRUCTION PROJECT MANAGER                           | TBD            | TBD          |
| CERTIFIED SWPPP DESIGNER                                     | EMILY R. MAJOR | 218.216.3142 |
| WATERSHED DISTRICT                                           | TBD            | TBD          |
| MPCA CONSTRUCTION STORMWATER COMPLIANCE (SAINT LOUIS COUNTY) | TBD            | TBD          |

CONTRACTOR CHECKLIST:

- CONTRACTOR SHALL SUPPLY THE NAME, CONTACT INFORMATION, AND TRAINING CERTIFICATES FOR THE EROSION AND SEDIMENT CONTROL SUPERVISOR AND BACKUP INDIVIDUAL. THIS INFORMATION SHALL BE KEPT WITH THE SWPPP (AMENDMENT).
- CONTRACTOR SHALL POST A COPY OF THE NPDES CONSTRUCTION STORM WATER PERMIT AT THE SITE ENTRANCE.
- CONTRACTOR SHALL INCLUDE THEIR PROPOSED AND OWNER ACCEPTED CONSTRUCTION SCHEDULE WITH THE SWPPP.
- CONTRACTOR SHALL INCLUDE A MAP(S) OF ALL OFF-SITE AREAS USED FOR THE PROJECT (BORROW AND DISPOSAL AREAS) WITH THE SWPPP.
- CONTRACTOR SHALL PREPARE A MAP(S) SHOWING LOCATIONS OF SITE ENTRANCE/EXITS AND HAUL ROUTES TO AND FROM THE PROJECT AND INCLUDE WITH THE SWPPP.
- CONTRACTOR SHALL DOCUMENT HOW RAINFALL WILL BE TRACKED IN THE SWPPP.
- CONTRACTOR SHALL DOCUMENT ALL SUBCONTRACTORS IN THE SWPPP.
- CONTRACTOR SHALL PREPARE ALL SWPPP AMENDMENTS AND THEY SHALL BE KEPT WITH THE SWPPP.
- CONTRACTOR SHALL COMPLETE ALL REQUIRED INSPECTIONS PER THE NPDES CONSTRUCTION STORM WATER PERMIT. ALL INSPECTION FORMS SHALL BE KEPT WITH THE SWPPP. INSPECTION FORMS CAN BE CONTRACTOR DEVELOPED OR MINNESOTA POLLUTION CONTROL AGENCY STANDARD FORMS.
- CONTRACTOR SHALL COMBINE ALL ITEMS INTO BINDER TO CREATE SWPPP, WHICH SHALL BE KEPT AT THE PROJECT SITE.

SWPPP SUMMARY/OVERVIEW:

THIS SWPPP HAS BEEN DEVELOPED TO ADDRESS THE REQUIREMENTS OF NPDES PERMIT MNR100001, PARTS 5-23. THIS SWPPP INCLUDES A COMBINATION OF NARRATIVE AND PLAN SHEETS THAT DESCRIBE THE TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL FOR THE PROJECT. THE NUMBERED SECTIONS BELOW CORRESPOND TO THE SAME SECTIONS OF THE NPDES PERMIT.

- FOR PROJECTS DISTURBING LESS THAN 50 ACRES AND DO NOT DISCHARGE TO AN IMPAIRED OR SPECIAL WATER, SWPPP DOES NOT NEED TO BE INCLUDED WITH PERMIT APPLICATION. PERMIT COVERAGE IS EFFECTIVE UPON APPLICATION AND COMPLETING THE PAYMENT PROCESS.
- FOR PROJECTS DISTURBING 50 ACRES OR MORE AND DISCHARGE TO AN IMPAIRED OR SPECIAL WATER WITHIN 1 MILE, SWPPP DOES NEED TO BE INCLUDED WITH PERMIT APPLICATION. PERMIT COVERAGE IS EFFECTIVE ONCE APPLICATION IS SUBMITTED, PAYMENT IS RECEIVED, AND A DETERMINATION FROM MPCA IS RECEIVED STATING THAT REVIEW OF SWPPP IS COMPLETE. REVIEW PROCESS WILL TAKE UP TO 30 DAYS.
- SEE EROSION AND SEDIMENT CONTROL PLANS AND DETAILS FOR BMPs USED TO COMPLY WITH THE REQUIREMENTS OF THE NPDES PERMIT.
- TIMING FOR INSTALLATION OF ALL EROSION PREVENTION AND SEDIMENT CONTROL BMPs:**

| AREA                                                                                                  | TIME FRAME                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| ESTABLISH SEDIMENT CONTROL DEVICES ON ALL DOWN GRADIENT PERIMETERS AND UPGRADIENT OF ANY BUFFER ZONES | ESTABLISH SEDIMENT CONTROL DEVICES ON ALL DOWN GRADIENT PERIMETERS AND UPGRADIENT OF ANY BUFFER ZONES                                      |
| REPAIR, REPLACE OR SUPPLEMENT PERIMETER CONTROL BMPs                                                  | WHEN BMP BECOMES NON FUNCTIONAL OR SEDIMENT REACHES THE HEIGHT OF THE BMP BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY.             |
| REPAIR, REPLACE OR SUPPLEMENT ALL NONFUNCTIONAL BMPs                                                  | BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY.                                                                                       |
| REPAIR, REPLACE OR SUPPLEMENT INLET PROTECTION BMPs                                                   | WHEN THEY BECOME NONFUNCTIONAL OR SEDIMENT REACHES THE HEIGHT AND/OR DEPTH OF THE BMP BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY. |
| REMOVE TRACKED SEDIMENT FROM PAVED SURFACES BOTH ON AND OFF SITE (LIGHTLY WET PRIOR TO SWEEPING)      | WITHIN 24 HOURS OF DISCOVERY                                                                                                               |
| REMOVE ALL DELTAS AND SEDIMENT DEPOSITED IN SURFACE WATERS AND RESTABILIZE                            | WITHIN 7 DAYS OF DISCOVERY                                                                                                                 |
- DESCRIPTION OF THE PERMANENT STORMWATER TREATMENT SYSTEM: NA.
- LOCATION AND TYPE OF ALL TEMPORARY AND PERMANENT EROSION PREVENTION AND SEDIMENT CONTROL BMPs ARE SHOWN ON THE EROSION AND SEDIMENT CONTROL PLANS AND DETAILS. PROCEDURES USED TO ESTABLISH ADDITIONAL BMPs HAVE BEEN IDENTIFIED IN SECTION 6 OF THIS SWPPP NARRATIVE.
- TEMPORARY SEDIMENT BASINS ARE NOT REQUIRED SINCE TOTAL DISTURBED SURFACE DRAINING TO A COMMON LOCATION IS LESS THAN 10 ACRES AND IMPAIRED RECEIVING WATER IS LOCATED MORE THAN 1 MILE AWAY.
- ESTIMATED QUANTITIES ANTICIPATED FOR ALL EROSION PREVENTION AND SEDIMENT CONTROL BMPs ARE SHOWN IN TABLE BELOW:**

| ESTIMATED QUANTITIES<br>EROSION PREVENTION AND SEDIMENT CONTROL<br>SPIRIT MOUNTAIN SNOWMOBILE TRAILS |       |                          |            |                                       |
|------------------------------------------------------------------------------------------------------|-------|--------------------------|------------|---------------------------------------|
| ITEM                                                                                                 | UNIT  | TOTAL ESTIMATED QUANTITY | MNDOT SPEC | NOTES                                 |
| RANDOM RIPRAP CLASS III                                                                              | CU YD | 63                       | 2511.507   | DOES NOT INCLUDE MAINTENANCE          |
| STORM DRAIN INLET PROTECTION                                                                         | EACH  | 3                        | 2573.502   |                                       |
| CULVERT END CONTROLS                                                                                 | EACH  | 16                       | 2573.502   |                                       |
| SEDIMENT CONTROL LOG TYPE COMPOST                                                                    | LN FT | 8941                     | 2573.503   | PLACE DOWNSLOPE OF CONSTRUCTION AREAS |
| SEEDING                                                                                              | ACRE  | 1.53                     | 2575.505   |                                       |
| SEED MIXTURE 36-311                                                                                  | POUND | 51                       | 2575.508   |                                       |
| ROLLED EROSION PREVENTION CATEGORY 25                                                                | SQ YD | 5524                     | 2575.604   | PLACE ON ALL SLOPES STEEPER THAN 1:3  |

| ESTIMATED QUANTITIES<br>EROSION PREVENTION AND SEDIMENT CONTROL<br>LOWER NORDIC SKI CENTER SKI TRAILS |       |                          |            |                                      |
|-------------------------------------------------------------------------------------------------------|-------|--------------------------|------------|--------------------------------------|
| ITEM                                                                                                  | UNIT  | TOTAL ESTIMATED QUANTITY | MNDOT SPEC | NOTES                                |
| RANDOM RIPRAP CLASS III                                                                               | CU YD | 548                      | 2511.507   | DOES NOT INCLUDE MAINTENANCE         |
| CULVERT END CONTROLS                                                                                  | EACH  | 21                       | 2573.502   |                                      |
| SEDIMENT CONTROL LOG TYPE COMPOST                                                                     | LN FT | 6079                     | 2573.503   |                                      |
| SEEDING                                                                                               | ACRE  | 5.2                      | 2575.505   |                                      |
| SEED MIXTURE 36-311                                                                                   | POUND | 175                      | 2575.508   |                                      |
| ROLLED EROSION PREVENTION CATEGORY 25                                                                 | SQ YD | 6700                     | 2575.604   | PLACE ON ALL SLOPES STEEPER THAN 1:3 |

QUANTITIES FOR INFORMATIONAL PURPOSES ONLY AS REQUIRED BY NPDES PERMIT

5.8 NUMBER OF ACRES OF IMPERVIOUS SURFACE FOR BOTH PRE- AND POST-CONSTRUCTION ARE SHOWN IN THE LAND FEATURES TABLE BELOW:

| LAND FEATURE CHANGES:                     |            |
|-------------------------------------------|------------|
| TOTAL PROJECT AREA =                      | 7.82 ACRES |
| TOTAL DISTURBED AREA =                    | 7.82 ACRES |
| TOTAL PRE CONSTRUCTION IMPERVIOUS AREA =  | 0 ACRES    |
| TOTAL POST CONSTRUCTION IMPERVIOUS AREA = | 0 ACRES    |
| TOTAL NEW IMPERVIOUS AREA =               | 0 ACRES    |

NOTES:

- DISTURBED AREA IS WHERE EXCAVATION INTO THE UNDERLYING SOIL TAKES PLACE.
  - AGGREGATE SURFACING AND SELECT GRANULAR LAYER BELOW IN PLACE PAVEMENT IS NOT THE UNDERLYING SOIL.
  - MPCA NPDES PERMIT REQUIRED IF TOTAL DISTURBED AREA EXCEEDS 1 ACRE.
  - PERMANENT STORMWATER TREATMENT IF NET CHANGE IN IMPERVIOUS SURFACE EXCEEDS 1 ACRE. NOT REQUIRED IF AN EXISTING REGIONAL POND HAS BEEN DESIGNED FOR THE DEVELOPMENT.
- SITE MAP WITH EXISTING AND FINAL GRADES, STEEP SLOPES 1:3 (V/H) OR 33.3 PERCENT OR STEEPER, IMPERVIOUS SURFACES, AND LOCATIONS OF POTENTIAL POLLUTANT-GENERATING ACTIVITIES IS SHOWN ON THE CONSTRUCTION PLANS. SEE GRAND AVENUE NORDIC CENTER SKI TRAIL SHEETS 11 - 29 AND SPIRIT MOUNTAIN SNOWMOBILE TRAIL SHEETS 10 - 14.  
SITE MAP SHOWING DRAINAGE AREA BOUNDARIES IS AVAILABLE FROM THE OWNER UPON REQUEST.  
SITE MAP WITH DIRECTIONS OF FLOW AND DISCHARGE POINTS WHERE STORMWATER IS LEAVING THE SITE OR ENTERING A SURFACE WATER IS SHOWN ON FOLLOWING SHEET.
  - SITE MAP OF ALL SURFACE WATERS, EXISTING WETLANDS, AND STORMWATER PONDS WITHIN 1 MILE (AERIAL RADIUS) FROM THE PROJECT BOUNDARY IS SHOWN ON FOLLOWING SHEET.
  - STORMWATER RUNOFF FROM THE PROJECT AREA FLOWS INTO KNOWLTON CREEK.
  - PRESERVE A 50 FOOT NATURAL BUFFER TO SURFACE WATERS PER SECTION 9.17 OF THE PERMIT. PRESERVING A 100 FOOT NATURAL BUFFER TO A SPECIAL WATER PER SECTION 23.11 OF THE PERMIT. NOT APPLICABLE.
  - INFEASIBILITY DOCUMENTATION FOR THE FOLLOWING REQUIREMENTS:**  
TEMPORARY SEDIMENT BASINS PER SECTION 14 - TEMPORARY SEDIMENT BASINS NOT REQUIRED  
- BUFFER ZONES PER SECTION 9.17 AND 23.11 - UNDISTURBED BUFFER ZONES ARE BEING MAINTAINED.
  - DESCRIPTION OF ALTERNATIVE BMPs USED IF TEMPORARY SEDIMENT BASIN PER SECTION 14 IS INFEASIBLE:** NA.
  - DOCUMENTATION OF REASONS WHY FULL VOLUME REDUCTION REQUIREMENT CANNOT BE MET:** NA.
  - MITIGATION MEASURES REQUIRED FROM PREVIOUS REVIEWS (EAW, EIS, LOCAL, ETC.):** NO ADDITIONAL MITIGATION MEASURES BEYOND THE RULES OF APPLICABLE REGULATORY AGENCIES ARE REQUIRED.
  - DESCRIPTION OF METHODS USED FOR PERMANENT COVER OF ALL EXPOSED SOIL AREAS:** ALL DISTURBED AREAS WILL BE SURFACED WITH GRAVEL OR TURF. NO SOIL WILL BE LEFT EXPOSED.
  - LOCATIONS WHERE CONSTRUCTION WILL BE PHASED TO MINIMIZE EXPOSED SOIL AREA:** CONTRACTOR SHALL PHASE WORK ACTIVITIES TO THE MAXIMUM EXTENT TO MINIMIZE EXPOSED SOIL AREA. CONTRACTOR SHALL PLACE PERMANENT SITE RESTORATION BMPs IMMEDIATELY DURING WORK ACTIVITIES, UNLESS THE AREA IS TO BE RE-DISTURBED WITHIN 14 DAYS.

**APPROXIMATE PROJECT PHASING FOR SPIRIT MOUNTAIN SNOWMOBILE TRAIL AND GRAND AVENUE NORDIC SKI TRAILS WILL BE AS FOLLOWS:**

PHASE 1 - SPRING 2024  
PLACE INLET PROTECTION AND PERIMETER CONTROL (SILT FENCE AND SEDIMENT CONTROL LOGS) DOWN GRADIENT OF THE PROPOSED DISTURBED SOIL AREA.

PHASE 2 - SPRING 2024 - SUMMER 2024  
PERFORM GRADING AND CONSTRUCT TRAILS.

PHASE 3 - SUMMER 2024  
FINAL STABILIZATION OF DISTURBED AREAS AND PLACEMENT OF GRAVEL OR TURF SURFACES.

PHASE 4 - SUMMER 2024 - FALL 2024  
SPOT STABILIZATION AS NEEDED FOR DISTURBANCES RELATED TO INSTALLATION OF LIGHTING AND SNOW MAKING EQUIPMENT (GRAND AVENUE NORDIC SKI TRAILS ONLY).

- IMPAIRED WATERS AND TMDL (CONSTRUCTION RELATED):** THIS SITE DOES NOT DISCHARGE TO ANY IMPAIRED WATERS. THE RECEIVING WATER IS KNOWLTON CREEK.  
A. IMPAIRED WATERS: NO RECEIVING WATERS WITH ANY IMPAIRMENTS.  
B. TMDL: NO RECEIVING WATERS WITH TMDL IMPAIRMENTS.
- TRAINING DOCUMENTATION: DESIGNER OF SWPPP:** EMILY R. MAJOR, PE, U OF M, CERTIFIED SWPPP DESIGNER EXPIRES MAY 31, 2025. TKDA DOCUMENTATION OF THE REQUIRED TRAINING FOR THE DESIGNER OF THE SWPPP IS AVAILABLE FROM TKDA UPON REQUEST. CONTRACTOR SHALL INCLUDE THEIR REQUIRED TRAINING DOCUMENTATION WITH THE SWPPP (AMENDMENT).
- PERSON KNOWLEDGEABLE IN EROSION PREVENTION AND SEDIMENT CONTROL AND WHO WILL OVERSEE IMPLEMENTATION OF THE SWPPP:** THE CONTRACTOR SHALL DESIGNATE ONE INDIVIDUAL, TRAINED PER THE REQUIREMENTS OF PART 21 OF THE PERMIT, TO OVERSEE IMPLEMENTATION OF THE SWPPP.
- CHEMICAL TREATMENTS:** CONTRACTOR CAN USE POLYMERS, FLOCCULANTS, OR OTHER SEDIMENTATION TREATMENT CHEMICALS IF APPLIED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICES, DOSING SPECIFICATIONS AND SEDIMENT REMOVAL DESIGN SPECIFICATIONS PROVIDED BY THE MANUFACTURER AND OWNER APPROVAL. AMEND SWPPP ACCORDINGLY IF CHEMICAL TREATMENTS ARE USED.
- LONG-TERM OPERATION AND MAINTENANCE OF THE INPLACE PERMANENT STORMWATER TREATMENT SYSTEMS:** THE OWNER IS RESPONSIBLE FOR LONG-TERM OPERATION AND MAINTENANCE OF THE INFILTRATION BASINS AND PRIVATE STORM SEWER SYSTEM. THE CITY OF DULUTH IS RESPONSIBLE FOR THE LONG-TERM OPERATION AND MAINTENANCE OF THE STORMWATER POND LOCATED AT THE GRAND AVENUE NORDIC CENTER (LOWER CHALET).
- METHODS TO MINIMIZE SOIL COMPACTION AND PRESERVE TOPSOIL:** TOPSOIL WILL BE STRIPPED, STOCKPILED, AND ULTIMATELY SPREAD OVER AREAS TO BE RESTORED.
- SITE ASSESSMENT FOR GROUNDWATER OR SOIL CONTAMINATION:** NO SOIL BORINGS WERE OBTAINED BY THE OWNER FOR THESE PROJECTS. DUE TO THE NATURE OF THE PROJECT WORK, IT IS NOT EXPECTED THAT GROUNDWATER OR SOIL CONTAMINATION WILL BE ENCOUNTERED.
- BMPs DESIGN FACTORS:** BMPs SHALL BE CAPABLE OF HANDLING TYPICAL MINNESOTA RAINFALLS RANGING FROM 0" TO 3" IN A SHORT DURATION.
- AMENDMENTS:** PERMITEES MUST AMEND THE SWPPP TO INCLUDE ADDITIONAL OR MODIFIED BMPs AS NECESSARY TO CORRECT PROBLEMS IDENTIFIED DURING INSPECTION OR ADDRESS SITUATIONS WHENEVER THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, MAINTENANCE, WEATHER OR SEASONAL CONDITIONS HAVING A SIGNIFICANT EFFECT ON THE DISCHARGE OF POLLUTANTS TO SURFACE WATERS.
- BMP SELECTION:** PERMITEES MUST SELECT, INSTALL, AND MAINTAIN THE BMPs IDENTIFIED IN THE SWPPP AND PERMIT IN AN APPROPRIATE AND FUNCTIONAL MANNER AND IN ACCORDANCE WITH RELEVANT MANUFACTURER SPECIFICATIONS AND ACCEPTED ENGINEERING PRACTICES. STORMWATER CALCULATIONS AND HYDRAULIC INFORMATION IS ON FILE WITH THE PROJECT ENGINEER AND IS AVAILABLE ON REQUEST.

SOIL CLASSIFICATION - 0.8 KM LOOP

| DESCRIPTION                                 | HYDROLOGIC SOIL GROUP | RANGE OF PARTICLES           |
|---------------------------------------------|-----------------------|------------------------------|
| BARTO, STONY-GREYSOLON-ROCK OUTCROP COMPLEX | D                     | GRAVELLY SANDY LOAM, BEDROCK |

SOIL CLASSIFICATION - 2.0 KM LOOP

| DESCRIPTION                                 | HYDROLOGIC SOIL GROUP | RANGE OF PARTICLES             |
|---------------------------------------------|-----------------------|--------------------------------|
| AHMEEK-CANOSIA-ROCK OUTCROP COMPLEX         | D                     | SILT LOAM, GRAVELLY SANDY LOAM |
| ROCK OUTCROP-MESABA-BARTO COMPLEX           | B/D                   | GRAVELLY SANDY LOAM, BEDROCK   |
| AHMEEK-ROCK OUTCROP-FLUVAQUENTS             | B/D                   | SILT LOAM, GRAVELLY SANDY LOAM |
| BARTO, STONY-GREYSOLON-ROCK OUTCROP COMPLEX | D                     | GRAVELLY SANDY LOAM, BEDROCK   |

SOIL CLASSIFICATION - UPPER CONNECTOR SNOWMOBILE TRAIL

| DESCRIPTION                         | HYDROLOGIC SOIL GROUP | RANGE OF PARTICLES             |
|-------------------------------------|-----------------------|--------------------------------|
| AHMEEK-CANOSIA-ROCK OUTCROP COMPLEX | D                     | SILT LOAM, GRAVELLY SANDY LOAM |

SOIL CLASSIFICATION - LOWER CONNECTOR SNOWMOBILE TRAIL

| DESCRIPTION                                 | HYDROLOGIC SOIL GROUP | RANGE OF PARTICLES                            |
|---------------------------------------------|-----------------------|-----------------------------------------------|
| URBAN LAND-CUTTRE-ROCK OUTCROP COMPLEX      | D                     | SILT LOAM, SILTY CLAY LOAM, CLAY              |
| URBAN LAND-AMNICON-ROCK OUTCROP COMPLEX     | D                     | SILT LOAM, SILTY CLAY LOAM, CLAY              |
| BOWSTRING AND FLUVAQUENTS, LOAMY            | A/D                   | MUCK, STRATIFIED FINE SAND TO LOAMY FINE SAND |
| AMNICON-CUTTRE COMPLEX                      | D                     | SILT LOAM, SILTY CLAY LOAM, CLAY              |
| BARTO, STONY-GREYSOLON-ROCK OUTCROP COMPLEX | D                     | GRAVELLY SANDY LOAM, BEDROCK                  |

SOIL CLASSIFICATION - BRIDGE UNDERPASS SNOWMOBILE TRAIL

| DESCRIPTION                             | HYDROLOGIC SOIL GROUP | RANGE OF PARTICLES                            |
|-----------------------------------------|-----------------------|-----------------------------------------------|
| URBAN LAND-AMNICON-ROCK OUTCROP COMPLEX | D                     | SILT LOAM, SILTY CLAY LOAM, CLAY              |
| BOWSTRING AND FLUVAQUENTS, LOAMY        | A/D                   | MUCK, STRATIFIED FINE SAND TO LOAMY FINE SAND |

SOIL CLASSIFICATION - PUKER SNOWMOBILE TRAIL

| DESCRIPTION                                 | HYDROLOGIC SOIL GROUP | RANGE OF PARTICLES             |
|---------------------------------------------|-----------------------|--------------------------------|
| AHMEEK-CANOSIA-ROCK OUTCROP COMPLEX         | D                     | SILT LOAM, GRAVELLY SANDY LOAM |
| AHMEEK-ROCK OUTCROP-FLUVAQUENTS             | D, B/D                | SILT LOAM, GRAVELLY SANDY LOAM |
| BARTO, STONY-GREYSOLON-ROCK OUTCROP COMPLEX | D                     | GRAVELLY SANDY LOAM, BEDROCK   |

8.1 EROSION PREVENTION PRACTICES:

- BEFORE WORK BEGINS, DELINEATE LOCATIONS NOT TO BE DISTURBED.
- AVOID DISTURBING STEEP SLOPES. USE TECHNIQUES SUCH AS PHASING AND STABILIZATION PRACTICES DESIGN FOR STEEP SLOPES.
- STABILIZE ALL EXPOSED SOIL AREAS, INCLUDING STOCKPILES. INITIATE STABILIZATION IMMEDIATELY WHEN ACTIVITY HAS CEASED.  
- COMPLETE NO LATER THAN 14 DAYS.  
- STABILIZATION NOT REQUIRED ON CONSTRUCTED BASE COMPONENTS OF ROADS OR SIMILAR SURFACES.  
- STABILIZATION NOT REQUIRED ON TEMPORARY STOCKPILES WITHOUT SIGNIFICANT SILT, CLAY OR ORGANIC COMPONENTS BUT MUST PROVIDE SEDIMENT CONTROLS AT BASE OF THE STOCKPILE.
- FOR DNR PUBLIC WATERS DURING SPECIFIED FISH SPAWNING TIME FRAMES, COMPLETE STABILIZATION OF ALL EXPOSED AREAS WITHIN 200 FEET OF WATERS EDGE, AND THAT DRAIN TO THESE WATERS, WITHIN 24 HOURS DURING RESTRICTION PERIOD. NOT APPLICABLE.
- STABILIZE THE NORMAL WETTED PERIMETER OF THE LAST 200 FEET OF DRAINAGE DITCHES THAT DRAIN WATER FROM THE SITE WITHIN 24 HOURS AFTER CONNECTING TO SURFACE WATER OR PROPERTY EDGE.
- DITCHES BEING USED AS A SEDIMENT CONTAINMENT SYSTEM DURING CONSTRUCTION DO NOT NEED TO BE STABILIZED.
- DO NOT USE MULCH, HYDROMULCH, TACKIFIER, POLYACRYLAMIDE OR SIMILAR PRACTICE WITHIN ANY PORTION OF THE NORMAL WETTED PERIMETER OF A DITCH WITH A CONTINUOUS SLOPE OF GREATER THAN 2 PERCENT.
- PROVIDE ENERGY DISSIPATION AT PIPE OUTLETS WITHIN 24 HOURS AFTER CONNECTION TO SURFACE WATER.
- DO NOT DISTURB MORE LAND THAN CAN BE EFFECTIVELY INSPECTED AND MAINTAINED IN ACCORDANCE WITH SECTION 11 OF THE PERMIT.

9.1 SEDIMENT CONTROL PRACTICES:

- PLACE SEDIMENT CONTROL BMPs ON ALL DOWNGRADIENT PERIMETERS OF THE SITE AND UPGRADIENT OF ANY BUFFER ZONES BEFORE ANY UPGRADIENT LAND DISTURBING ACTIVITIES BEGIN. KEEP BMPs IN PLACE UNTIL PERMANENT COVER IS ESTABLISHED.
- IF SEDIMENT CONTROLS ARE OVERLOADED, PLACE ADDITIONAL REDUNDANT SEDIMENT CONTROL BMPs TO ELIMINATE OVERLOADING. AMEND SWPPP ACCORDINGLY.
- DRAINAGE DITCHES AND SEDIMENT BASINS DESIGNED AS PART OF A SEDIMENT CONTAINMENT SYSTEM REQUIRE SEDIMENT CONTROL PRACTICES ONLY AS APPROPRIATE.
- FLOATING SILT CURTAIN PLACED IN WATER IS NOT A SEDIMENT CONTROL BMP TO SATISFY SECTION 9.2 OF PERMIT EXCEPT WHEN WORKING ON SHORELINE OR BELOW WATERLINE. NOT APPLICABLE.
- RE-INSTALL ALL SEDIMENT CONTROL BMPs ADJUSTED OR REMOVED TO ACCOMMODATE SHORT-TERM ACTIVITIES IMMEDIATELY AFTER ACTIVITY IS COMPLETE. MUST RE-INSTALL BEFORE NEXT RAIN EVENT.
- PROTECT ALL STORM DRAIN INLETS USING APPROPRIATE BMPs DURING CONSTRUCTION UNTIL UPGRADIENT PERMANENT COVER IS ESTABLISHED.
- INLET PROTECTION MAY BE REMOVED IF THERE IS A SAFETY CONCERN. DOCUMENT NEED FOR REMOVAL IN SWPPP.
- PROVIDE SILT FENCE OR OTHER EFFECTIVE CONTROLS AT BASE OF STOCKPILES ON DOWNGRADIENT PERIMETER.
- LOCATE STOCKPILES OUTSIDE OF NATURAL BUFFERS OR SURFACE WATERS INCLUDING CURB AND GUTTER UNLESS THERE IS A BYPASS IN PLACE FOR STORMWATER.
- VEHICLE TRACKING BMPs REQUIRED TO MINIMIZE THE TRACK OUT OF SEDIMENT FROM CONSTRUCTION SITE OR ONTO PAVED ROADS.
- STREET SWEEPING REQUIRED IF VEHICLE TRACKING BMPs ARE NOT ADEQUATE.
- PLACE SEDIMENT BASINS AS REQUIRED PER SECTION 14 OF PERMIT.
- IN AREAS OF SITE THAT WILL BE VEGETATED, RESTRICT VEHICLE TRAFFIC USE TO MINIMIZE SOIL COMPACTION.
- PRESERVE TOPSOIL ON THE SITE, UNLESS INFEASIBLE.
- DIRECT DISCHARGES FROM BMPs TO VEGETATED AREAS UNLESS INFEASIBLE.
- PROVIDE 50 FOOT NATURAL BUFFER TO SURFACE WATERS. IF INFEASIBLE, PROVIDE REDUNDANT PERIMETER CONTROLS (MIN 5' APART).

- DEWATERING AND BASIN DRAINING:** IF DEWATERING IS REQUIRED FOR ANY WORK, THE CONTRACTOR SHALL PREPARE A DEWATERING PLAN FOR OWNER ACCEPTANCE PRIOR TO STARTING ANY WORK ACTIVITIES. DISCHARGED WATER SHALL BE TREATED PRIOR TO ENTERING A SURFACE WATER OR LEAVING THE SITE. CONTRACTOR SHALL ACQUIRE A WATER APPROPRIATIONS PERMIT FROM THE MNDNR FOR DEWATERING EXCEEDING 10,000 GALLONS PER DAY OR A TOTAL EXCEEDING 1 MILLION GALLONS PER YEAR. DEWATERING IS NOT EXPECTED FOR UNDERGROUND UTILITY PLACEMENT.

- INSPECTIONS:** INSPECT THE ENTIRE CONSTRUCTION SITE 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. INSPECT ALL TEMPORARY AND PERMANENT WATER QUALITY MANAGEMENT, EROSION PREVENTION AND SEDIMENT CONTROL BMPs, SURFACE WATERS AND CONSTRUCTION SITE EXITS UNTIL ALL CONSTRUCTION IS COMPLETE AND THE SITE HAS UNDERGONE FINAL STABILIZATION. RECORD ALL INSPECTIONS AND MAINTENANCE ACTIVITIES IN WRITING WITHIN 24 HOURS.

12. POLLUTION PREVENTION MANAGEMENT MEASURES:

- PROVIDE A SPILL KIT AT EACH WORK LOCATION ON THE SITE. ENSURE ALL SPILLS ARE CLEANED UP IMMEDIATELY.
- STORE ALL LIQUID CHEMICALS UNDER COVER WITH SECONDARY CONTAINMENT. CREATE AND FOLLOW A WRITTEN DISPOSAL PLAN FOR ALL WASTE MATERIALS. STORE, COLLECT AND DISPOSE OF ALL SOLID WASTE.
- FUEL AND MAINTAIN VEHICLES IN A DESIGNATED CONTAINED AREA WHENEVER FEASIBLE. USE DRIP PANS OR ABSORBENT MATERIALS TO PREVENT SPILLS OR LEAKED CHEMICALS FROM DISCHARGING TO SURFACE WATER OR STORMWATER CONVEYANCES.
- PROVIDE EFFECTIVE CONTAINMENT FOR ALL LIQUID AND SOLID WASTES GENERATED BY WASHOUT OF CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS. LIQUID AND SOLID WASHOUT WASTES MUST NOT CONTACT THE GROUND. DESIGN THE CONTAINMENT SO THAT IT DOES NOT RESULT IN RUNOFF FROM THE WASHOUT OPERATIONS OR CONTAINMENT AREA.
- 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.
- USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT CONCRETE DUST, STREET SWEEPING DUST, SAWCUT SLURRY, PLANING WASTE, CONCRETE WASH OUT, AND OTHER CONCRETE WASTES FROM LEAVING MNDOT PROPERTY, DEPOSITING IN EXISTING OR FUTURE VEGETATED AREAS, AND FROM ENTERING STORMWATER CONVEYANCE SYSTEMS, INCLUDING INLETS, DITCHES AND CURB FLOW LINES.
- 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 IN ACCORDANCE WITH MINN. R. CHAPTER 7041.

PLOT DATE: Feb 01, 2024 - 10:31pm  
 FILENAME: K:\a\duluth\_City\2024\7000\04\_Production\01\_CAD\02\_Sheets\SWPPP.dwg

| NO. | DATE   | BY  | DESCRIPTION OF REVISIONS |
|-----|--------|-----|--------------------------|
| 1   | 2/2/24 | ERM | REVISED QUANTITY TABLES  |

|          |     |                                                                                                                                                                                                           |
|----------|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DESIGNED | ERM | 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. |
| DRAWN    | IDR |                                                                                                                                                                                                           |
| CHECKED  | ERM | SIGNATURE: <i>Emily R. Major</i> DATE: 1/25/2024<br>NAME: EMILY R. MAJOR LIC. NO.: 52201                                                                                                                  |

TKDA  
 11 E. Superior Street, Suite 420  
 Duluth, MN 55802  
 218.724.8578  
 tkda.com

**SPIRIT MOUNTAIN  
 SNOWMOBILE TRAILS**  
 CITY OF DULUTH, MINNESOTA

**STORMWATER POLLUTION  
 PREVENTION PLAN**

PROJ. NO.  
20747.000 & 20749.000  
 DRAWING NO.  
**SWP 1**

| ITEM NO. | MnDOT SPEC NO. | DESCRIPTION                                | UNIT        | BASE QUANTITY |
|----------|----------------|--------------------------------------------|-------------|---------------|
| 1        | 2021.501       | MOBILIZATION                               | LUMP SUM    | 1             |
| 2        | 2100.601       | PEDESTRIAN BRIDGE (SUPERSTRUCTURE)         | LUMP SUM    | 1             |
| 3        | 2101.505       | GRUBBING                                   | EACH        | 64            |
| 4        | 2105.607       | COMMON EXCAVATION                          | CUBIC YARD  | 500           |
| 5        | 2105.607       | COMMON BORROW (LV)                         | CUBIC YARD  | 197           |
| 6        | 2112.519       | SUBGRADE PREPARATION                       | ROAD STA    | 51            |
| 7        | 2118.507       | AGGREGATE SURFACING (CV) CLASS SPECIAL     | CUBIC YARD  | 10            |
| 8        | 2118.507       | AGGREGATE SURFACING (CV) CLASS 2           | CUBIC YARD  | 280           |
| 9        | 2501.502       | 18" CS PIPE APRON                          | EACH        | 2             |
| 10       | 2501.503       | 12" HDPE PIPE CULVERT                      | LINEAR FOOT | 214           |
| 11       | 2501.503       | 18" HDPE PIPE CULVERT                      | LINEAR FOOT | 124           |
| 12       | 2511.507       | RANDOM RIPRAP CLASS III                    | CUBIC YARD  | 56            |
| 13       | 2540.618       | NATURAL STONE RETAININT WALL               | LINEAR FOOT | 450           |
| 14       | N/A            | ROCK ARMORING                              | SQUARE YARD | 30            |
| 15       | 2563.601       | TRAFFIC CONTROL                            | LUMP SUM    | 1             |
| 16       | 2564.502       | SIGN PANEL TYPE C                          | SQ FT       | 34            |
| 17       | 2573.502       | STORM DRAIN INLET PROTECTION               | EACH        | 3             |
| 18       | 2573.502       | CULVERT END CONTROLS                       | EACH        | 16            |
| 19       | 2573.503       | SEDIMENT CONTROL LOG TYPE COMPOST          | LINEAR FOOT | 8941          |
| 20       | 2573.602       | ROCK DITCH CHECK                           | EACH        | 44            |
| 21       | 2575.502       | SEEDING                                    | ACRE        | 1.53          |
| 22       | 2575.508       | SEED MIXTURE 36-311 (WOODLAND EDGE NE) (P) | POUND       | 51            |
| 23       | 2575.604       | ROLLED EROSION PREVENTION CATEGORY 25      | SQUARE YARD | 5523          |
| 24       | N/A            | REMOVE PIPE CULVERT                        | LINEAR FOOT | 24            |
| 25       | N/A            | WIRE FENCE DESIGN 72-9322                  | LINEAR FOOT | 320           |