

# CITY OF DULUTH

## DEPARTMENT OF PUBLIC WORKS AND UTILITIES ENGINEERING DIVISION

### PLAN SYMBOLS

-  PROPERTY LINES
-  EXISTING CONTOUR LINES
-  TRAIL CONSTRUCTION TYPE "A" CENTER LINE OF PROPOSED 2-WAY TRAIL CORRIDOR
-  TRAIL CONSTRUCTION TYPE "A" CENTER LINE OF PROPOSED 1-WAY TRAIL CORRIDOR
-  TRAIL CONSTRUCTION TYPE "B"
-  TRAIL CONSTRUCTION TYPE "C"
-  POSSIBLE BERM OR SWITCHBERM LOCATIONS
-  BRIDGE, BOARDWALK, OR ARMORING
-  TRAIL MARKER OR OTHER SIGN LOCATION (NIC)
-  TRAIL MAP SIGN LOCATION (NIC)
-  KIOSK LOCATION (NIC)

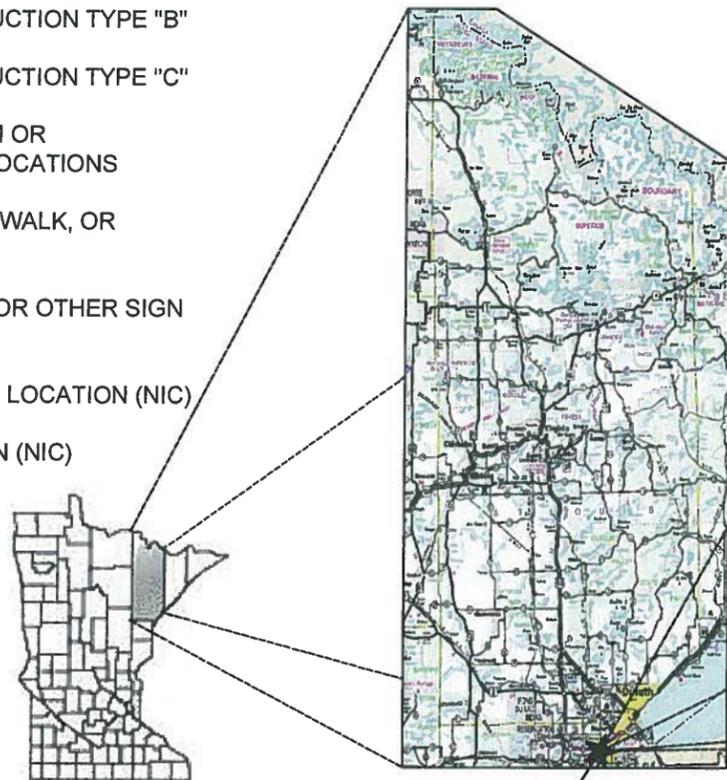
### CONSTRUCTION PLANS FOR: CITY OF DULUTH TRAVERSE TRAIL - PHASE II MISSION CREEK

CITY PROJECT NO. 1323



a chapter of  
**I M B A**  
INTERNATIONAL MOUNTAIN BICYCLING ASSOCIATION  
LOCAL SPONSORING CLUB  
www.COGGS.com

**LENGTH SUMMARY:**  
 PHASE 1 (NIC): 31,321 LF (±5.9 MILES)  
 PHASE 2 (BASE BID): 26,345 LF (±5.0 MILES)  
 PHASE 2 (ALT #1): 9,561 LF (±1.8 MILES)  
 FUTURE PHASES (NIC): 47,093 LF (±9.0 MILES)  
 GROSS LENGTH: 114,320 LF (±21.7 MILES)



PROJECT LOCATION MAP  
NOT TO SCALE



KEY PLAN  
NOT TO SCALE

**GOVERNING SPECIFICATIONS**  
 THE 2005 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.  
 AVAILABLE AT: <http://www.dot.state.mn.us/pre-letting/spec/index.html>  
 ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE MN MUTCD, INCLUDING THE FIELD MANUAL DATED JANUARY 2014.  
 AVAILABLE AT: <http://www.dot.state.mn.us/trafficeng/publ/fieldmanual2011/index.html>  
 THE 2013 EDITION OF THE CITY OF DULUTH PUBLIC WORKS AND UTILITIES DEPARTMENT STANDARD CONSTRUCTION SPECIFICATIONS AND SUPPLEMENTS OR ADDENDUMS SHALL APPLY. ARCHITECTURAL RESOURCES / COGGS / MBA TRAIL SPECIFICATION SHALL BE THE GOVERNING SPECIFICATIONS.

**INDEX**

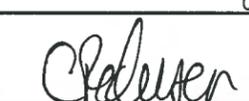
| SHEET NO. | DESCRIPTION                              |
|-----------|--|
| 1         | TITLE SHEET & INDEX MAP                  |
| 2         | TRAIL LOCATOR MAP                        |
| 3-4       | TRAIL SECTION SHEET LOCATOR MAP          |
| 5         | TYPICAL TRAIL CROSS SECTION              |
| 6         | TYPICAL TRAIL CROSS SECTIONS (TYPES A-C) |
| 7         | TRAIL ALIGNMENT DETAILS                  |
| 8         | SWPPP DETAILS                            |
| 9         | TRAIL DETAILS                            |
| 10-11     | WOOD - TRAIL FEATURE DETAILS             |
| 12-50     | TRAIL PLANS                              |

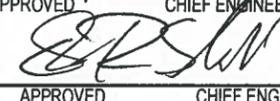
THIS PLAN CONTAINS 50 SHEETS

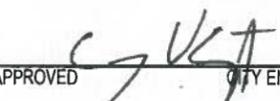
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.

JAMES M. SHOBERG  
 LANDSCAPE ARCHITECT (TYPED OR PRINTED NAME)  
  
 LANDSCAPE ARCHITECT      02/17/14      45577  
 DATE      REG. NO.

CITY APPROVAL

APPROVED:       2/11/14      DATE  
 CHIEF ENGINEER OF TRANSPORTATION

APPROVED:       2/12/14      DATE  
 CHIEF ENGINEER OF UTILITIES

APPROVED:       2/12/14      DATE  
 CITY ENGINEER



ARCHITECTURE  
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 PHONE 218-727-8481  
 FAX 218-727-8483  
 EMAIL: [archres@cpinl.com](mailto:archres@cpinl.com)



a chapter of  
**I M B A**  
INTERNATIONAL MOUNTAIN BICYCLING ASSOCIATION

### DULUTH TRAVERSE TRAIL MISSION CREEK PHASE II DULUTH, MINNESOTA

PROJECT NO.: 12-039.1  
 DATE: FEB-17-2014  
 DRAWN BY: TTP  
 REVISIONS:

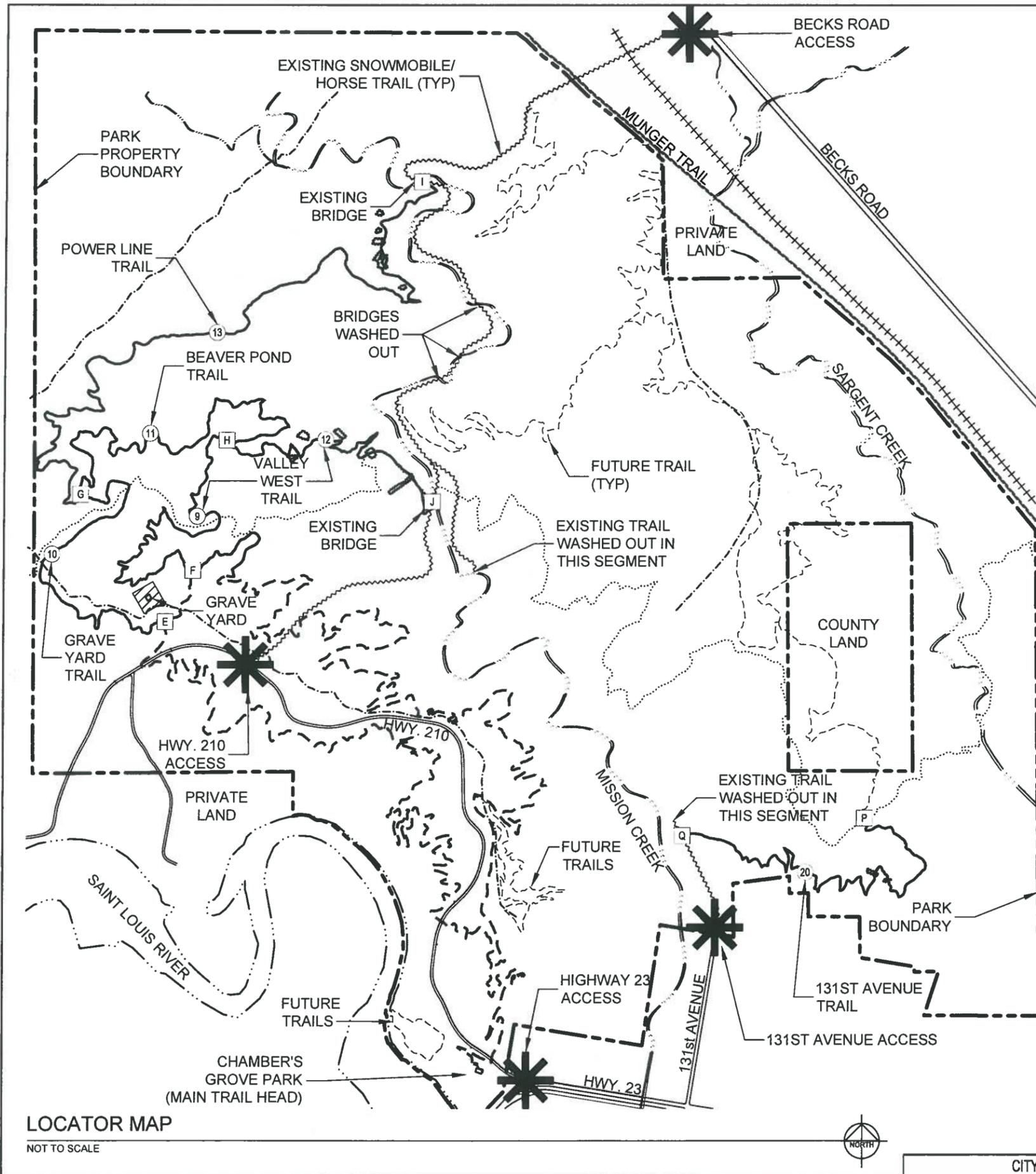
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JAMES M. SHOBERG      45577  
 LANDSCAPE ARCHITECT      REG. NO.

### COVER

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF C/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".

WARNING: LOCATION OF UNDERGROUND UTILITIES TO BE VERIFIED BY CONTRACTOR. CALL BEFORE DIGGING. GOPHER STATE ONE CALL 1-800-252-1166 REQUIRED BY LAW



**TRAIL CONSTRUCTION NOTES:**

- ALL TRAILS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS AND THE "TYPICAL TRAIL CROSS SECTION AND TRAIL CROSS SECTION TYPES "A, B & C" AS SHOWN ON SHEET 5 & 6, TRAIL ALIGNMENT PLANS 12 THROUGH 50, AND OTHER REQUIREMENTS AND DETAILS ON SHEETS 7 THROUGH 11.

**LEGEND**

|  |  |
|--|--|
|  | EXISTING ROAD                                    |
|  | EXISTING HIKING TRAIL                            |
|  | EXISTING SNOWMOBILE/HORSE TRAIL                  |
|  | CREEK  |
|  | INTERSECTION MARKER                              |
|  | TRAIL SEGMENT MARKER                             |
|  | PROPOSED TRAILS (SEGMENTS 9, 10, 11, 12, 13, 20) |
|  | FUTURE TRAILS (NOT IN CONTRACT)                  |
|  | EXISTING MOUNTAIN BIKE TRAILS (NOT IN CONTRACT)  |
|  | PARK BOUNDARY                                    |
|  | EXISTING MUNGER PAVED BIKE TRAIL                 |
|  | EXISTING ATV TRAIL                               |

**EXISTING DATA NOTES:**

EXISTING TOPOGRAPHIC INFORMATION IS BASED ON ONE FOOT INTERVAL LIDAR DATA PROVIDED BY ST LOUIS COUNTY THAT WAS FLOWN THE THE SPRING OF 2011.

ALL OTHER EXISTING CONDITIONS ARE "TRACED" FROM AERIAL PHOTOGRAPHY. THEY ARE NOT TO BE CONSIDERED ACCURATE AND ARE PROVIDED AS A CONVENIENCE TO THE CONTRACTOR.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS AND NOTIFY OWNER OF ANY DISCREPANCIES PRIOR TO COMMENCING WORK.

LANDSLIDES MAY BE ENCOUNTERED IN THE TRAIL CORRIDOR DUE TO A FLOOD THE SPRING OF 2012. KNOWN LANDSLIDES ARE IDENTIFIED AND APPROXIMATELY LOCATED IN THE PLANS. WHEN LANDSLIDES ARE ENCOUNTERED AND THE TRAIL MUST TRAVERSE THROUGH THE CONTRACTOR IS TO CONSULT WITH THE OWNER PRIOR TO CONSTRUCTION. CONSTRUCTION THROUGH LANDSLIDES IS INCLUDED IN THE CONTRACTORS UNIT BID PRICE FOR ALL TRAIL TYPES. ADDITIONAL EROSION CONTROL BEST MANAGEMENT PRACTICE (BMP) MEASURES MAY NEED TO BE IMPLEMENTED FOR LANDSLIDE AREAS AND WILL BE PAID BASED ON THE CONTRACTORS UNIT BID PRICE FOR BMP'S.

**LOCATOR MAP**  
NOT TO SCALE



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128 EAST SUPERIOR STREET  
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PHONE 218-727-4481  
FAX 218-727-8483  
EMAIL: [arches@optonline.com](mailto:arches@optonline.com)



**DULUTH TRAVERSE TRAIL MISSION CREEK PHASE II**  
DULUTH, MINNESOTA

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JAMES M. SROBERG 45577  
LANDSCAPE ARCHITECT REG. 1/12

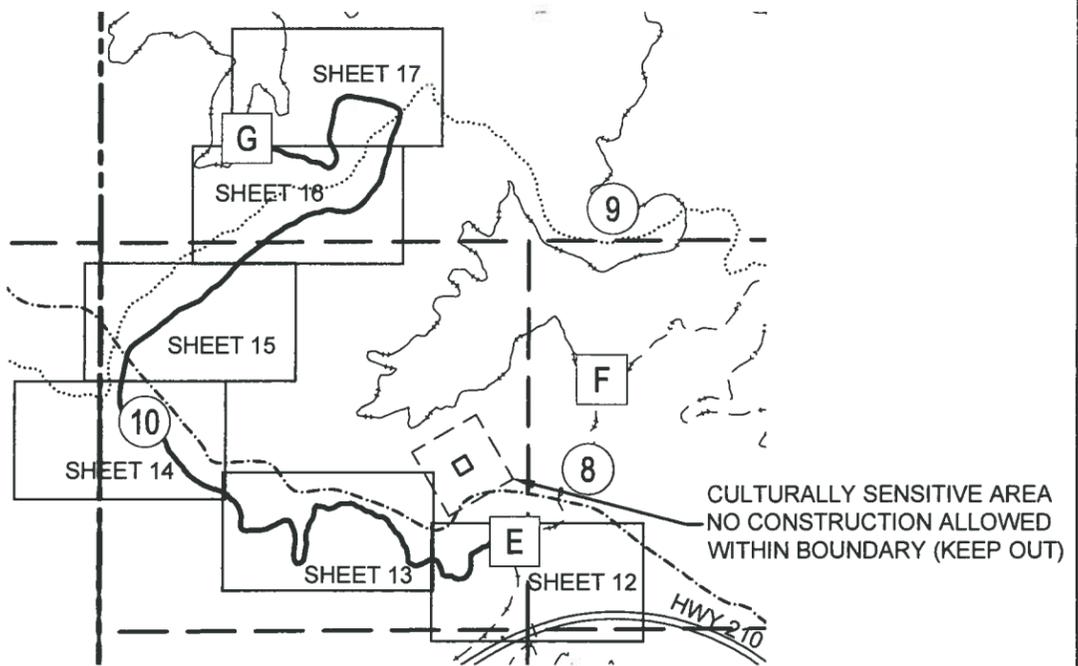
**TRAIL LOCATOR MAP**

**GRAVE YARD TRAIL PROJECT #1:**  
 TRAIL SEGMENT 10 = GREEN TRADITIONAL (2 WAY)  
 GROSS LENGTH SUMMARY: ±4,355 LF (±0.8 MILES)

| TRAIL SLOPE ANALYSIS - GRAVE YARD |              |               |             |
|-----------------------------------|--------------|---------------|-------------|
| SLOPE RANGE                       | TYPE A 0-15% | TYPE B 16-60% | TYPE C 61+% |
| LENGTH                            | 40 LF        | 4,315 LF      | 0 LF        |
| PERCENT OF TRAIL                  | 0.9%         | 99.1%         | 0.0%        |

NOTE:  
 CONTRACTOR CANNOT INVOICE FOR BOTH TRAIL CONSTRUCTION, TYPES A, B & C, AND CONSTRUCTED FEATURES OF A GIVEN LINEAR FOOT OF TRAIL.

NOTE:  
 SEE BID WORKSHEET B FOR AN ESTIMATED SUMMARY OF CONSTRUCTED FEATURE QUANTITIES.



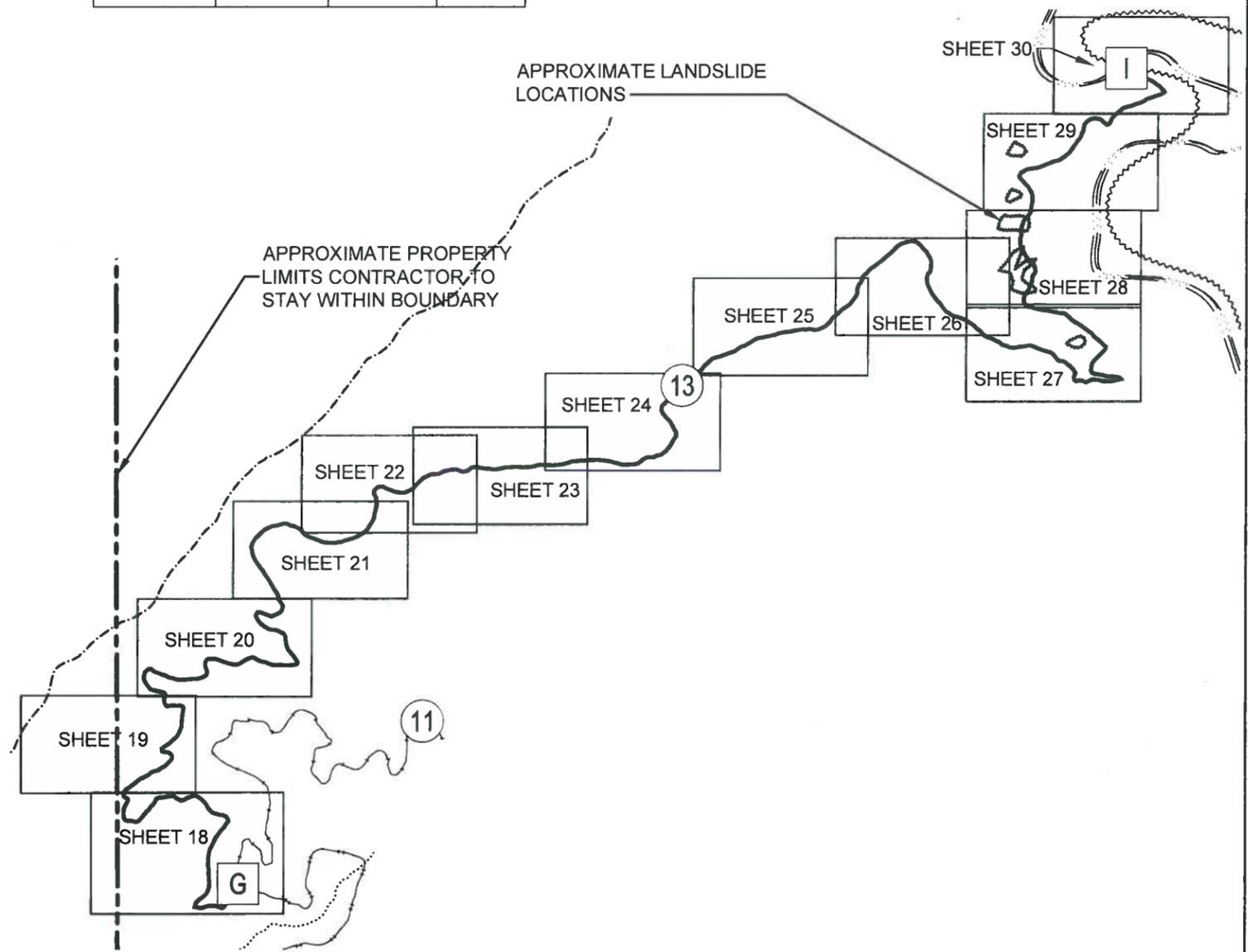
LOCATOR MAP-GRAVE YARD TRAIL(SHEETS 12-17)  
 NOT TO SCALE

**POWER LINE TRAIL PROJECT #2:**  
 TRAIL SEGMENT 13 = GREEN TRADITIONAL (2 WAY)  
 GROSS LENGTH SUMMARY: ±10,421 LF (±2.0 MILES)

| TRAIL SLOPE ANALYSIS - POWER LINE |              |               |             |
|-----------------------------------|--------------|---------------|-------------|
| SLOPE RANGE                       | TYPE A 0-15% | TYPE B 16-60% | TYPE C 61+% |
| LENGTH                            | 33 LF        | 10,388 LF     | 0 LF        |
| PERCENT OF TRAIL                  | 0.3%         | 99.7%         | 0.0%        |

NOTE:  
 CONTRACTOR CANNOT INVOICE FOR BOTH TRAIL CONSTRUCTION, TYPES A, B & C, AND CONSTRUCTED FEATURES OF A GIVEN LINEAR FOOT OF TRAIL.

NOTE:  
 SEE BID WORKSHEET B FOR AN ESTIMATED SUMMARY OF CONSTRUCTED FEATURE QUANTITIES.



LOCATOR MAP - POWER LINE TRAIL (SHEETS 18-30)  
 NOT TO SCALE



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 FAX 218-727-8483  
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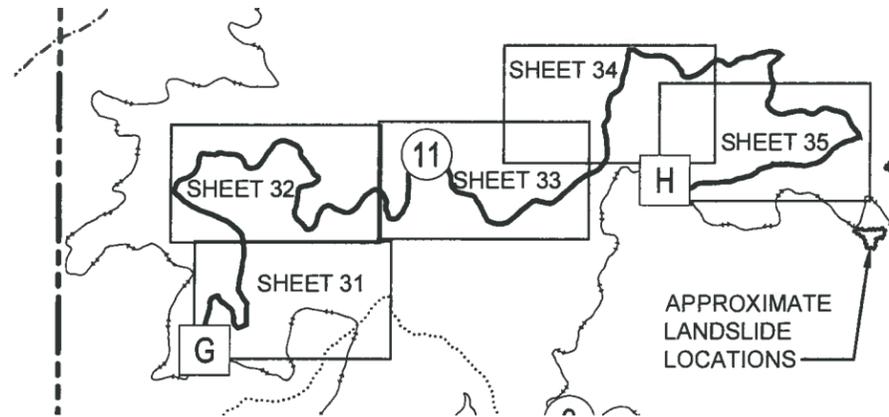


**DULUTH TRAVERSE TRAIL MISSION CREEK PHASE II**  
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 JAMES M. SROBERG 45577  
 LANDSCAPE ARCHITECT

**GRAVE YARD & POWER LINE TRAIL**



LOCATOR MAP - BEAVER POND TRAIL (SHEETS 31-35)

NOT TO SCALE

**BEAVER POND TRAIL PROJECT #3:**

TRAIL SEGMENT 11 = BLACK TRADITIONAL (1 WAY)  
 GROSS LENGTH SUMMARY: ±5,749 LF (±1.1 MILES)

**TRAIL SLOPE ANALYSIS - BEAVER POND**

| SLOPE RANGE      | TYPE A<br>0-15% | TYPE B<br>16-60% | TYPE C<br>61+% |
|------------------|-----------------|------------------|----------------|
| LENGTH           | 201 LF          | 5,548 LF         | 0 LF           |
| PERCENT OF TRAIL | 3.5%            | 96.5%            | 0.0%           |

NOTE:  
 SEE BID WORKSHEET B FOR AN ESTIMATED SUMMARY OF CONSTRUCTED FEATURE QUANTITIES.

NOTE:  
 CONTRACTOR CANNOT INVOICE FOR BOTH TRAIL CONSTRUCTION, TYPES A, B & C, AND CONSTRUCTED FEATURES OF A GIVEN LINEAR FOOT OF TRAIL.

**TRAIL SLOPE ANALYSIS - VALLEY WEST**

| SLOPE RANGE      | TYPE A<br>0-15% | TYPE B<br>16-60% | TYPE C<br>61+% |
|------------------|-----------------|------------------|----------------|
| LENGTH           | 1,422 LF        | 8,139 LF         | 0 LF           |
| PERCENT OF TRAIL | 14.9%           | 85.1%            | 0.0%           |

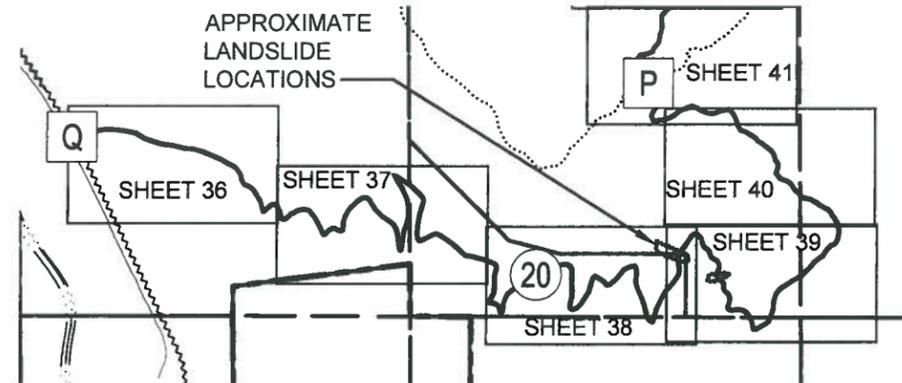
**131ST AVENUE TRAIL PROJECT #4:**  
 TRAIL SEGMENT 20 = BLUE TRADITIONAL (2 WAY)  
 GROSS LENGTH SUMMARY: ±5,780 LF (±1.1 MILES)

**TRAIL SLOPE ANALYSIS - 131ST AVENUE**

| SLOPE RANGE      | TYPE A<br>0-15% | TYPE B<br>16-60% | TYPE C<br>61+% |
|------------------|-----------------|------------------|----------------|
| LENGTH           | 233 LF          | 4,240 LF         | 1,307 LF       |
| PERCENT OF TRAIL | 4.0%            | 73.4%            | 22.6%          |

NOTE:  
 CONTRACTOR CANNOT INVOICE FOR BOTH TRAIL CONSTRUCTION, TYPES A, B & C, AND CONSTRUCTED FEATURES OF A GIVEN LINEAR FOOT OF TRAIL.

NOTE:  
 SEE BID WORKSHEET B FOR AN ESTIMATED SUMMARY OF CONSTRUCTED FEATURE QUANTITIES.



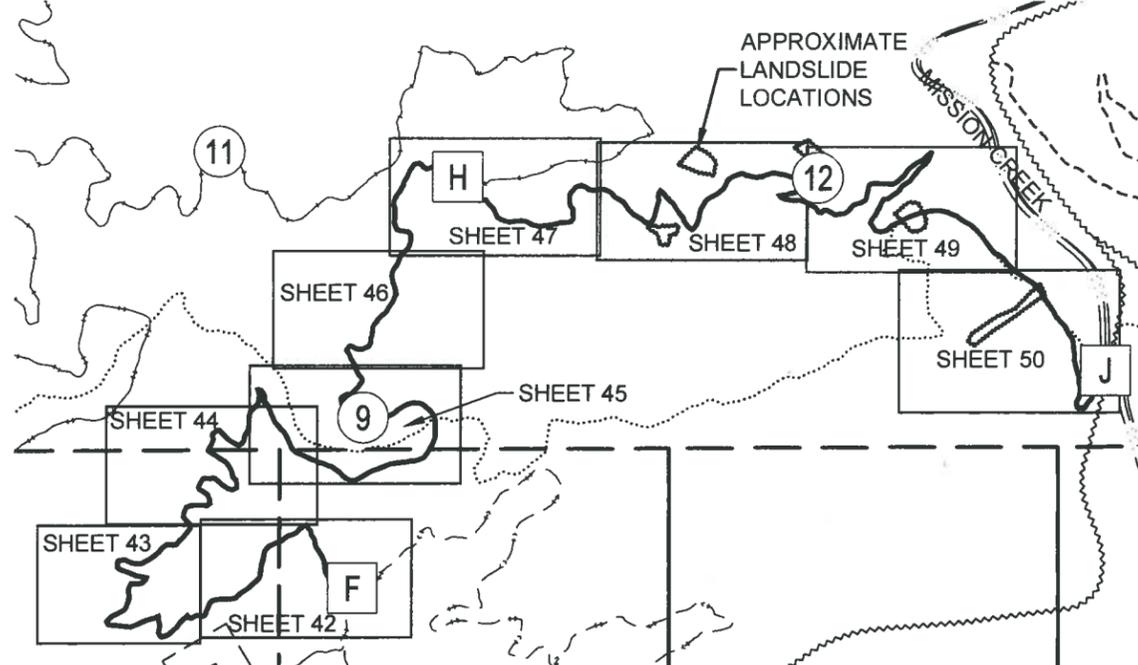
LOCATOR MAP - 131ST AVENUE TRAIL (SHEETS 36-41)

NOT TO SCALE

**VALLEY WEST TRAIL ALTERNATE #1:**  
 TRAIL SEGMENT 9 & 12 = BLUE TRADITIONAL (2 WAY)  
 GROSS LENGTH SUMMARY: ±9,561 LF (±1.8 MILES)

NOTE:  
 CONTRACTOR CANNOT INVOICE FOR BOTH TRAIL CONSTRUCTION, TYPES A, B & C, AND CONSTRUCTED FEATURES OF A GIVEN LINEAR FOOT OF TRAIL.

NOTE:  
 SEE BID WORKSHEET B FOR AN ESTIMATED SUMMARY OF CONSTRUCTED FEATURE QUANTITIES.



LOCATOR MAP - VALLEY WEST TRAIL (SHEETS 42-50)

NOT TO SCALE



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126 EAST SUPERIOR STREET  
 DULUTH, MINNESOTA 55802  
 PHONE: 218-727-8481  
 FAX: 218-727-8483  
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**DULUTH TRAVERSE TRAIL MISSION CREEK PHASE II**  
 DULUTH, MINNESOTA

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JAMES M. SPOBERG 45577  
 LANDSCAPE ARCHITECT

**BEAVER POND, 131ST AVE. & VALLEY WEST TRAILS**



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 LANDSCAPE ARCHITECT (REG. MINN.)

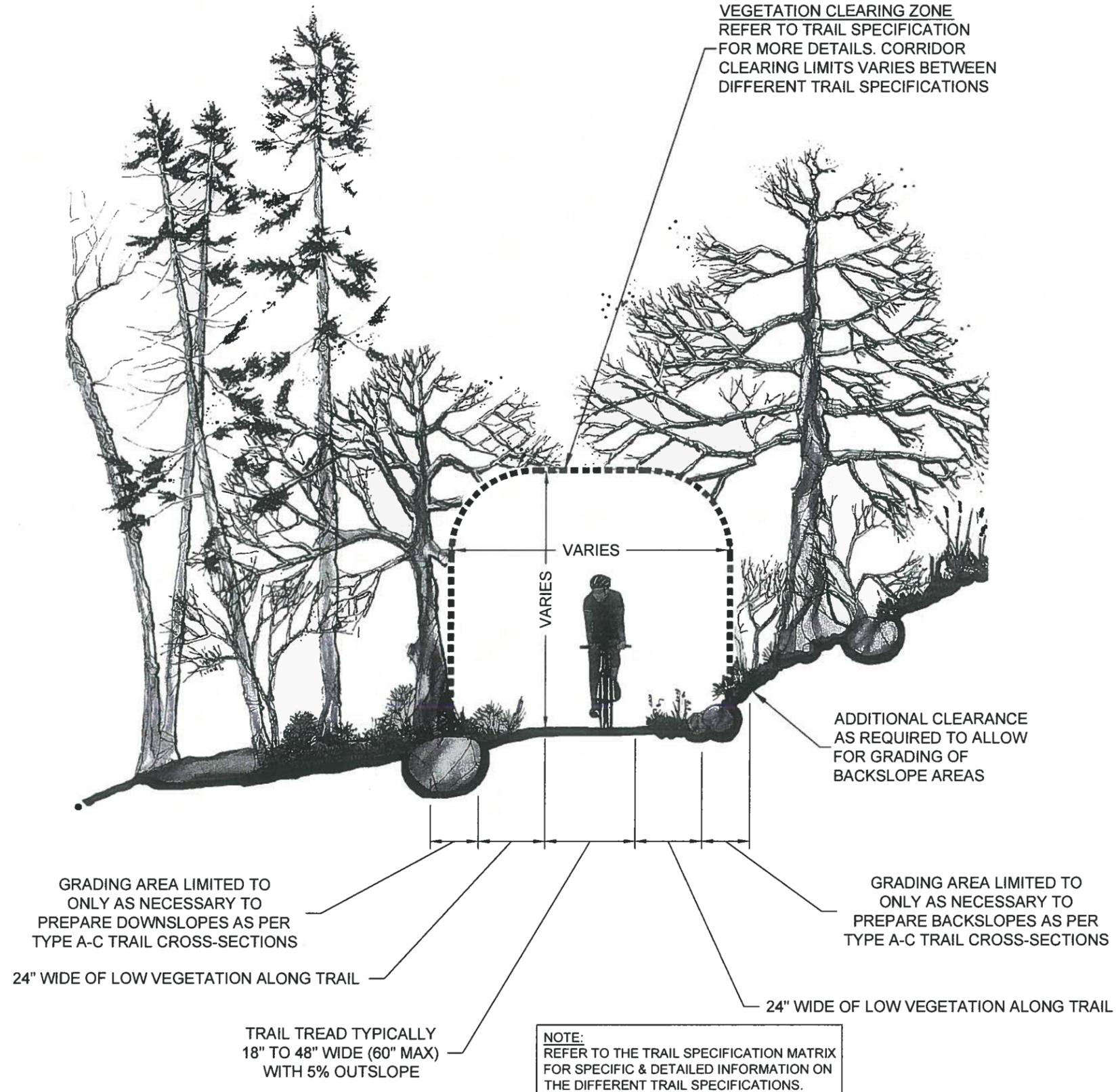
**TRAIL DETAILS**

TYPICAL TRAIL DESIGN NOTES:

1. THE GRAPHIC ON THIS SHEET ILLUSTRATES A TYPICAL TRAIL CROSS-SECTION HIGHLIGHTING TREAD AND VEGETATION CLEARANCE ZONE WIDTHS.
2. IN SELECT SITUATION THE TRAIL WIDTH MAY BE MODIFIED IN RESPONSE TO THE TERRAIN OR TO CREATE A TRAIL FEATURE.
3. SEE SPECIFICATIONS FOR FURTHER DETAILS ON TREAD AND CORRIDOR CLEARING AND TYPICAL TRAIL DESIGN CROSS-SECTIONS
4. ALL DISTURBED AREAS NOT PART OF ACTIVE TREAD TO BE SEEDED AND MULCHED WITHIN 7 DAYS OF NOT BEING WORKED. SEE (SWPPP) STORM WATER POLLUTION PREVENTION PLAN FOR DETAILS.
5. SEE SWPPP & SPECIFICATIONS FOR SEED MIX DETAILS AND NECESSARY BEST MANAGEMENT PRACTICES FOR EROSION CONTROL MEASURES.
6. AFTER COMPLETION OF ALL GRADING, THE TRAIL TREAD SHALL BE MECHANICALLY COMPACTED TO ITS SPECIFIED WIDTH USING A VIBRATORY PLATE, SHEEP'S FOOT, OR OTHER APPROVED COMPACTOR.
7. CUT BRUSH AND SLASH MUST BE DISPOSED IN AN UPLAND LOCATION AND MUST BE KEPT OUT OF STREAMS, GULLIES, SWALES, WETLANDS, AND LOW AREAS. SEE SPECIFICATIONS FOR DETAILS.
8. NO EXCAVATION OR FILL PERMITTED IN WET & LOWLAND AREAS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONSULT WITH THE OWNER PRIOR TO DOING ANY WORK WITHIN SUSPECTED WET & LOWLAND AREAS.

TRAIL BIDDING NOTES:

1. TREE REMOVAL, STUMP REMOVAL, BRUSH REMOVAL, AND LIMB TRIMMING IS INCLUDED IN THE CONTRACTOR'S UNIT BID PRICE FOR TRAIL CONSTRUCTION TYPES "A, B & C". (SEE SPECIFICATION FOR FURTHER DETAILS)
2. TRAIL TREAD GRADING AND COMPACTING IS INCLUDED IN THE CONTRACTORS UNIT BID PRICE FOR TRAIL CONSTRUCTION TYPES "A, B & C". (SEE SPECIFICATION FOR FURTHER DETAILS)
3. PUSHING ASIDE ROCKS OR FRACTURED STONE ENCOUNTERED WHILE GRADING THE TRAIL IS INCLUDED IN THE CONTRACTOR'S UNIT BID PRICE FOR TRAIL CONSTRUCTION TYPES "A, B & C". (SEE SPECIFICATIONS FOR FURTHER DETAILS)
4. GRADING THROUGH LOW SPOTS, FLATTER AREAS, EARTHEN PILES, LANDSLIDES, MISCELLANEOUS DEBRIS, AND FALLEN WOODY MATERIALS IS INCLUDED IN THE CONTRACTOR'S UNIT BID PRICE FOR TRAIL CONSTRUCTION TYPES "A, B & C". (SEE SPECIFICATIONS FOR FURTHER DETAILS)
5. ALL TURNS NOT DEFINED AS A BERM OR SWITCHBERM ARE TO BE INSLOPED TURNS AS SPECIFIED. INSLOPED TURNS ARE INCLUDED IN THE CONTRACTOR'S UNIT BID PRICE FOR TRAIL CONSTRUCTION TYPES "A, B & C". (SEE SPECIFICATIONS FOR FURTHER DETAILS)
6. GRADE REVERSALS ARE REQUIRED AT A MINIMUM EVERY 100 LF. GRADE REVERSALS ARE INCLUDED IN THE CONTRACTOR'S UNIT BID PRICE FOR TRAIL CONSTRUCTION TYPES "A, B & C". (SEE SPECIFICATIONS FOR FURTHER DETAILS)



**TYPICAL TRAIL DESIGN CROSS-SECTION**

NOT TO SCALE





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JAMES M. SPOBERG 45577  
LANDSCAPE ARCHITECT REG. 1993

**TRAIL DETAILS**

6

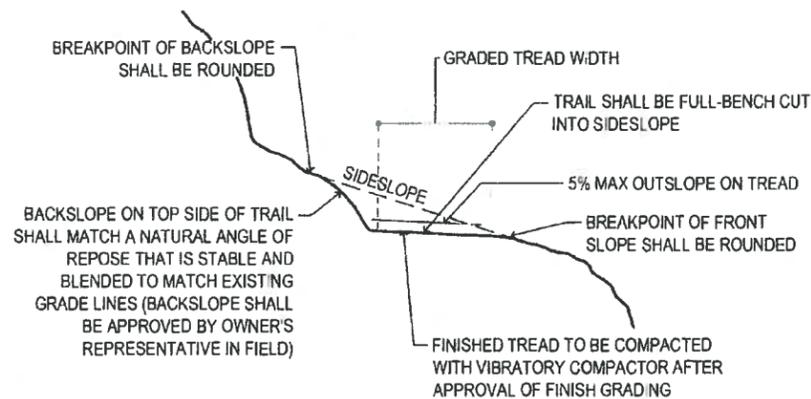
**FIELD MEASUREMENT NOTES:**

- MEASUREMENT AND PAYMENTS FOR TRAIL CONSTRUCTION TYPE IS BASED ON THE SLOPE AVERAGES AS DEPICTED IN THE TRAIL ALIGNMENT SECTION OF THIS PLAN SET AND IN THE TRAIL SLOPE ANALYSIS MAP (FOUND IN THE SPECS).
- TRAIL TYPES AND QUANTITIES ARE PROVIDED AS A CONVENIENCE TO THE CONTRACTOR. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY FIELD QUANTITIES AND NOTIFY THE OWNER OF ANY DISCREPANCIES PRIOR TO COMMENCING WORK.

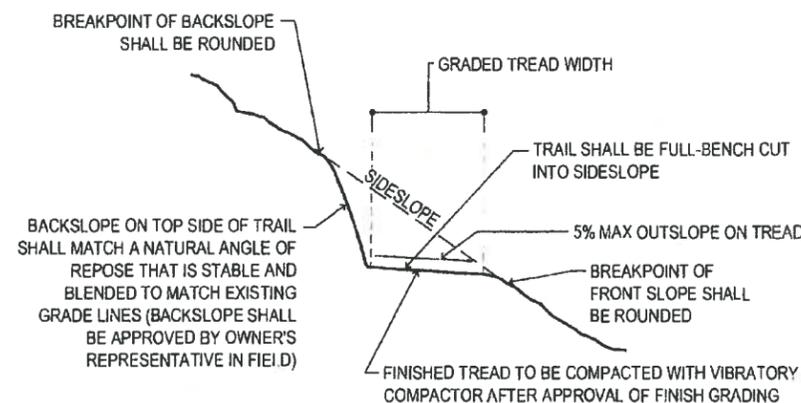
**CONSTRUCTION NOTE:**

- PARTIAL BENCH CUT IS ALLOWED WHEN DONE PROPERLY WITH A DOWNHILL RETAINING WALL AND COMPACTED BACKFILL. REFER TO PAGE 159 OF (TRAIL SOLUTIONS: IMBA'S GUIDE TO BUILDING BETTER SINGLETRACK).
- GRADING THROUGH LOW SPOTS, FLATTER AREAS, EARTHEN PILES, LANDSLIDES, MISCELLANEOUS DEBRIS, AND FALLEN WOODY MATERIALS IS INCLUDED IN THE CONTRACTOR'S UNIT BID PRICE FOR TRAIL CONSTRUCTION TYPES "A, B & C". (SEE SPECIFICATIONS FOR FURTHER DETAILS)
- CONTRACTOR IS EXPECTED TO CREATE FREQUENT GRADE REVERSALS REGARDLESS OF THE LOCAL LANDSCAPE. THIS MAY REQUIRE LOCALIZED TOPOGRAPHY MODIFICATION WHEN BUILDING THOUGH LANDSCAPES WITH LOW SLOPE ANGLES AND FLATTER AREAS SUCH AS TYPE "A" TRAIL.

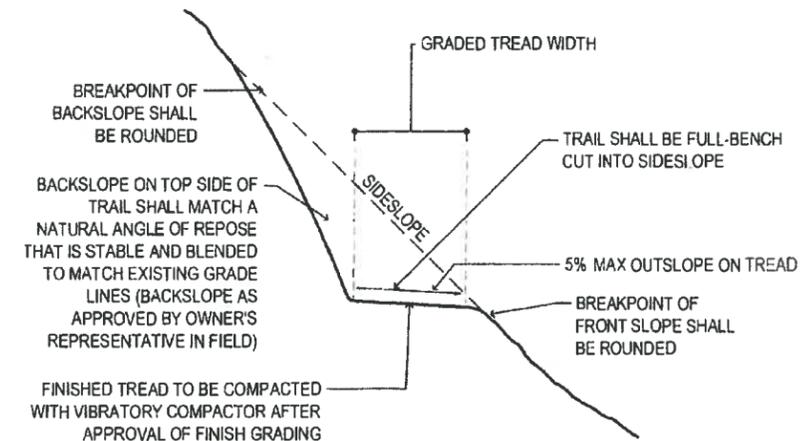
**NOTE:**  
CONTRACTOR CANNOT INVOICE FOR BOTH TRAIL CONSTRUCTION, TYPES A, B & C, AND CONSTRUCTED FEATURES OF A GIVEN LINEAR FOOT OF TRAIL.



TYPE "A" (LOW SIDESLOPE TRAIL) 3%-15% SIDESLOPE



TYPE "B" (MEDIUM SIDESLOPE TRAIL) 16%-60% SIDESLOPE



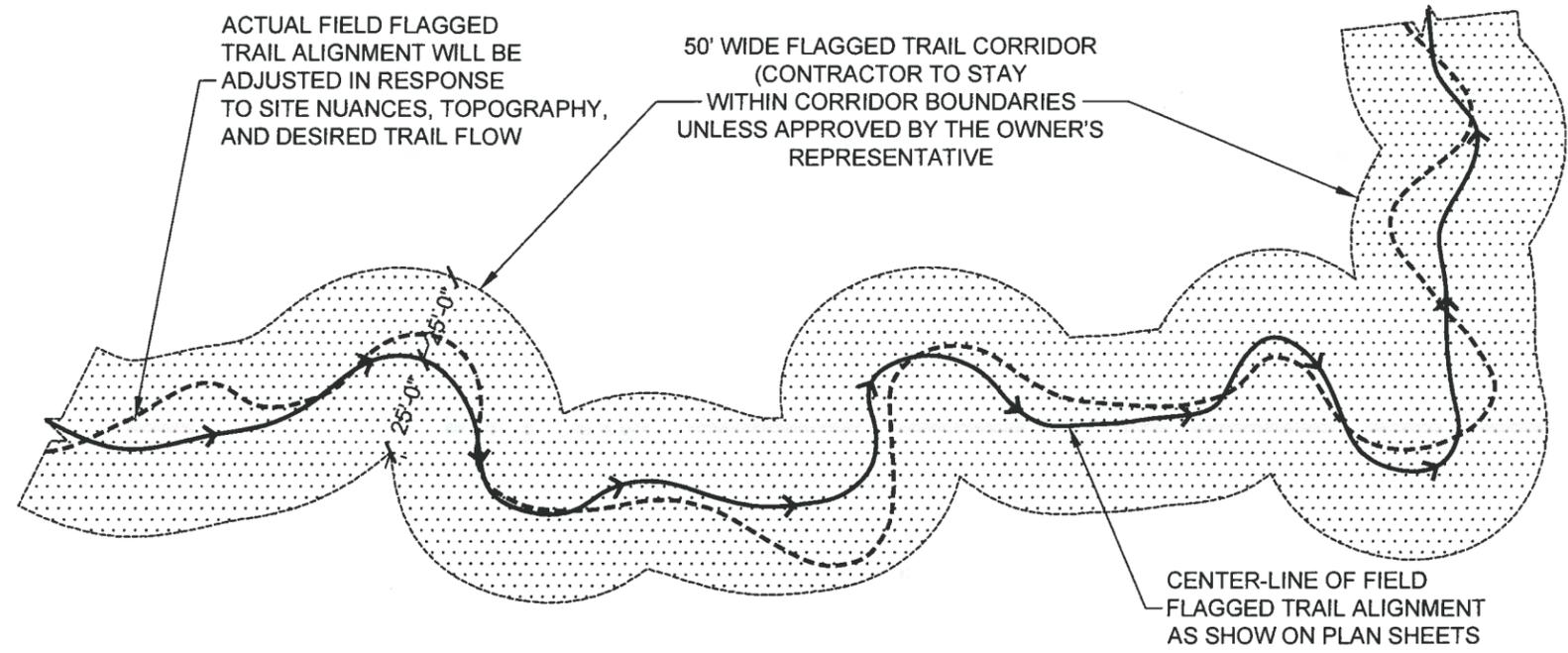
TYPE "C" (HIGH SIDESLOPE TRAIL) 61+% SIDESLOPE

**TYPICAL TRAIL CROSS-SECTIONS (A-C TRAIL TYPES)**

NOT TO SCALE

1/6

**NOTES:**  
 PLAN SHEETS 12-50 ILLUSTRATE THE CENTER OF A 50-FOOT WIDE CORRIDOR FOR TRAIL CONSTRUCTION, WHICH ARE PROVIDED TO ESTABLISH AN OVERALL TRAIL LAYOUT PLAN AND TO ESTIMATE OVERALL LINEAL FEET OF TRAIL.



**TRAIL LAYOUT AND FIELD LAYOUT REQUIREMENTS**  
 NOT TO SCALE

**Flagging:**

In this project, the centerline of a 50' wide trail corridor has been flagged by IMBA for the Owner. The plans and specifications are based on this trail corridor. Final trail design is the responsibility of the Contractor within this corridor.

Final trail design consists of a one-time 300 LF pin flagged trail segment flagged by the Contractor prior to the start of construction for each trail specification type. This project has three trail specification types, Traditional Green Bike Optimized Singletrack, Traditional Blue Bike Optimized Singletrack and Traditional Black Bike Optimized Singletrack. Final design pin flagging must reside within the approved corridor. This is to communicate design intent to the Owner for each trail specification type that is identified in the plans. Upon approval of the pin flagged segment by the Owner the contractor can proceed with project construction within the 50' corridor following the requirements of the specifications. The Owner can require an additional 300 LF section of pin flagging and approval if the results of the first effort do not meet the trail specification requirements.

Corridor is marked with pink and/or orange hanging flags. Archeologically sensitive areas have been identified in the plans and must be avoided by 100 LF in all directions. Final trail design should be at least fifty feet (50') from property boundaries unless otherwise authorized by Owner or identified in the plans.

Contractor shall mark with flagging tape all trees over six inches (6") DBH that are to be removed. Final determination on removal lies with the Owner.

The trail should have a grade reversal a minimum of every one-hundred feet (100'). Trail should follow a rolling contour alignment and abide by the Half Rule. Grades must match the trail type defined by the specifications for a specific segment.



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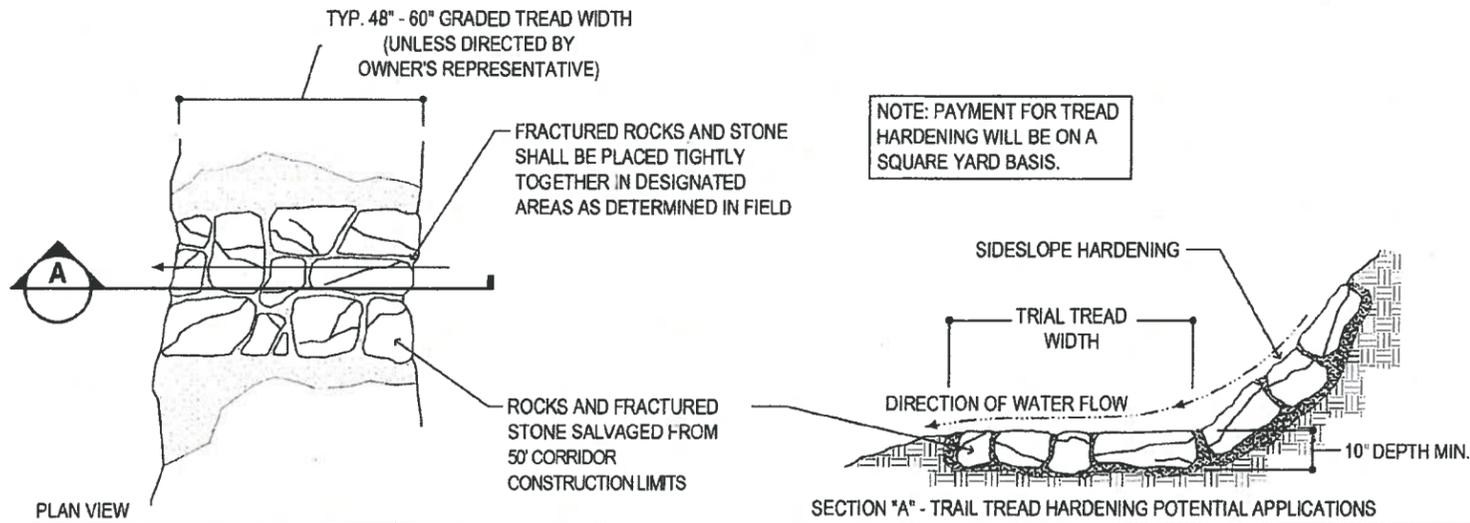
**DULUTH TRAVERSE TRAIL MISSION CREEK PHASE II**  
 DULUTH, MINNESOTA

PROJECT NO. 12-039.1  
 DATE: FEB-17-2014  
 DRAWN BY: TTP  
 REVISIONS:

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 LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.

JAMES M. SROBERG 45577  
 LANDSCAPE ARCHITECT

**TRAIL DETAILS**



EXAMPLE IMAGE OF TRAIL TREAD HARDENING

**CONSTRUCTION NOTE:**

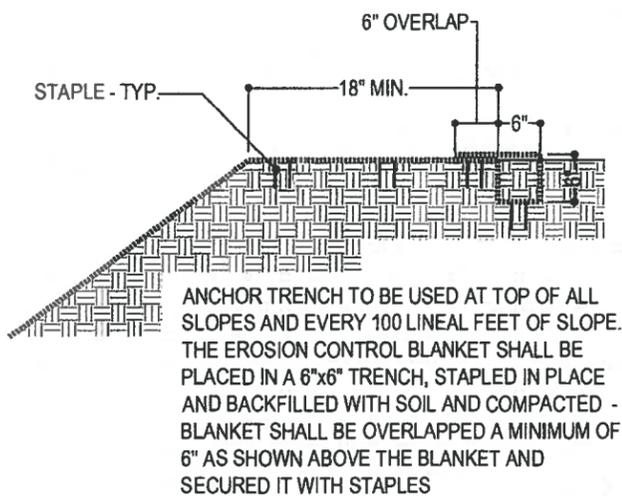
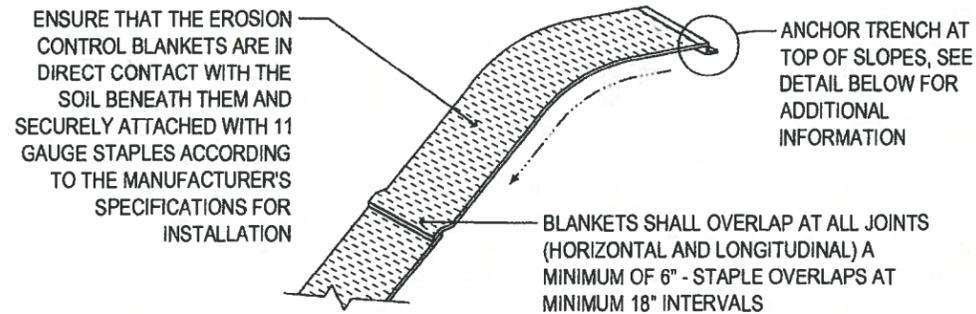
BACKFILL BEDDING MATERIAL SHALL BE 3\"/>

10\"/>

SEAMS RUNNING IN THE DIRECTION OF TRAVEL SHALL BE MINIMIZED IN BOTH LENGTH AND WIDTH. SEAM WIDTH SHALL BE MINIMIZED AND SEAM STAGGERING SHALL BE USED WHERE POSSIBLE.

**TRAIL TREAD ROCK ARMORING AND SIDESLOPE ARMORING DETAIL**

NOT TO SCALE



ANCHOR TRENCH SECTION DETAIL

**EROSION CONTROL BLANKET:**

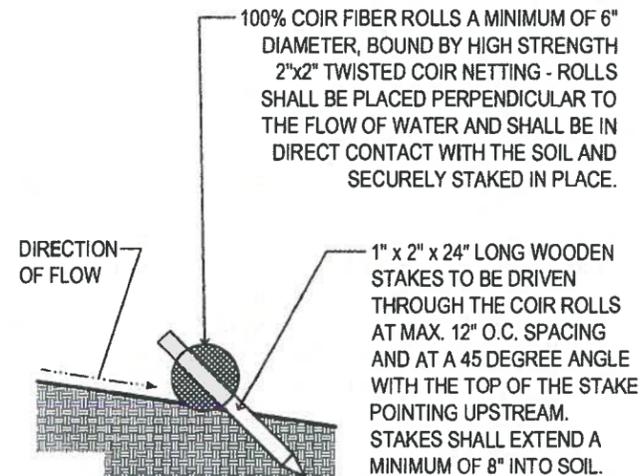
**CATEGORY 3:**  
FOR DISTURBED AREAS WITH SLOPES BETWEEN 3:1 AND 2:1, COVER WITH CATEGORY 3 EROSION CONTROL BLANKET CONSISTING OF 100% STRAW MATRIX, SUCH AS WESTERN EXCELSIOR EXCEL SS-2 WITH ALL NATURAL NETTING (OR APPROVED EQUAL) MEETING THE MnDOT SPECIFICATION SECTION 3885 REQUIREMENTS.

**CATEGORY 4:**  
FOR DISTURBED AREAS WITH 2:1 SLOPES OR OVER, COVER WITH CATEGORY 4 EROSION CONTROL BLANKET CONSISTING OF 30% COCONUT / 70% STRAW BLEND, SUCH AS WESTERN EXCELSIOR EXCEL CS-3 WITH ALL NATURAL NETTING (OR APPROVED EQUAL) MEETING THE MnDOT SPECIFICATION SECTION 3885 REQUIREMENTS.

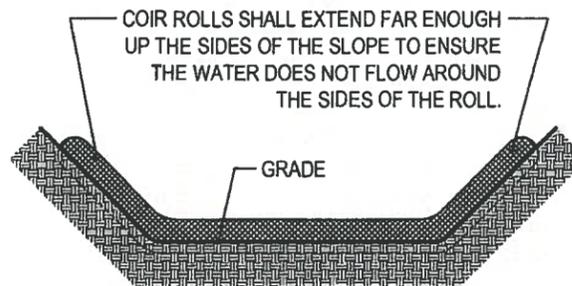
**WOOD FIBER BLANKET DETAIL**

NOT TO SCALE

2/8



CROSS-SECTION DETAIL

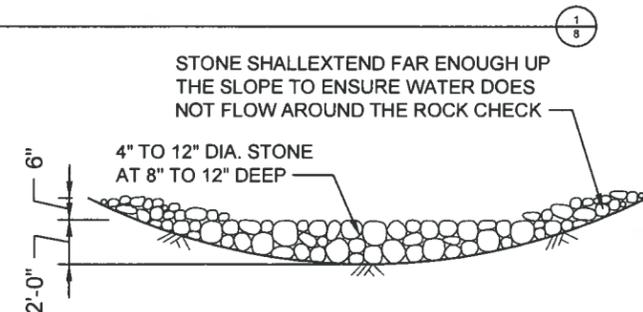


SECTION VIEW

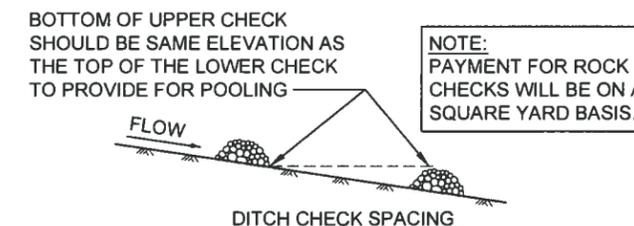
**COIR ROLL DETAIL**

NOT TO SCALE

3/8



**NOTE:**  
ROCK CHECKS TO BE USED IN AREAS OF CONCENTRATED FLOW



DITCH CHECK SPACING

**ROCK CHECK DETAIL**

NOT TO SCALE

4/8

**SEED MIX NOTE:**

USE TEMPORARY EROSION CONTROL SEED MIX AND MULCH FOR DISTURBED AREAS THAT ARE LACKING ADEQUATE DUFF COVER TO USE AS MULCH.

USE PERMANENT EROSION CONTROL SEED MIX AND EROSION CONTROL BLANKET FOR LAND SLIDE AREAS AND AREAS OF HEAVY DISTURBANCE.

SEE SWPPP FOR SEED MIX SPECIES DETAILS.



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**DULUTH TRAVERSE TRAIL MISSION CREEK PHASE II**

DULUTH, MINNESOTA

PROJECT NO.: 12-039.1

DATE: FEB-17-2014

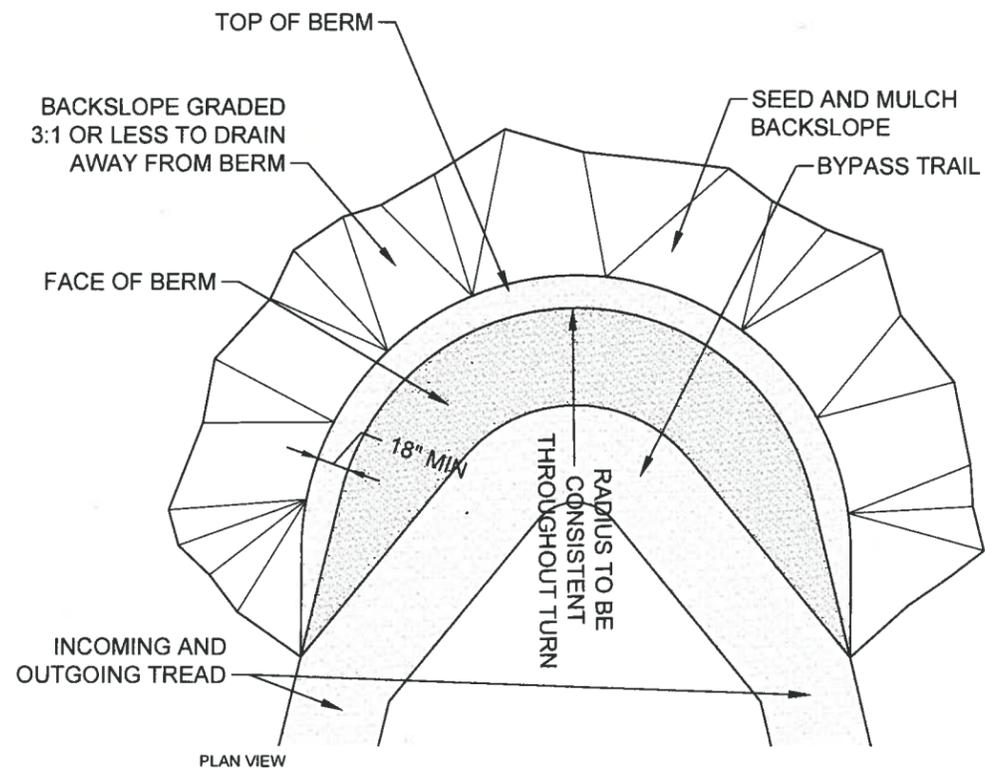
DRAWN BY: TTP

REVISIONS:

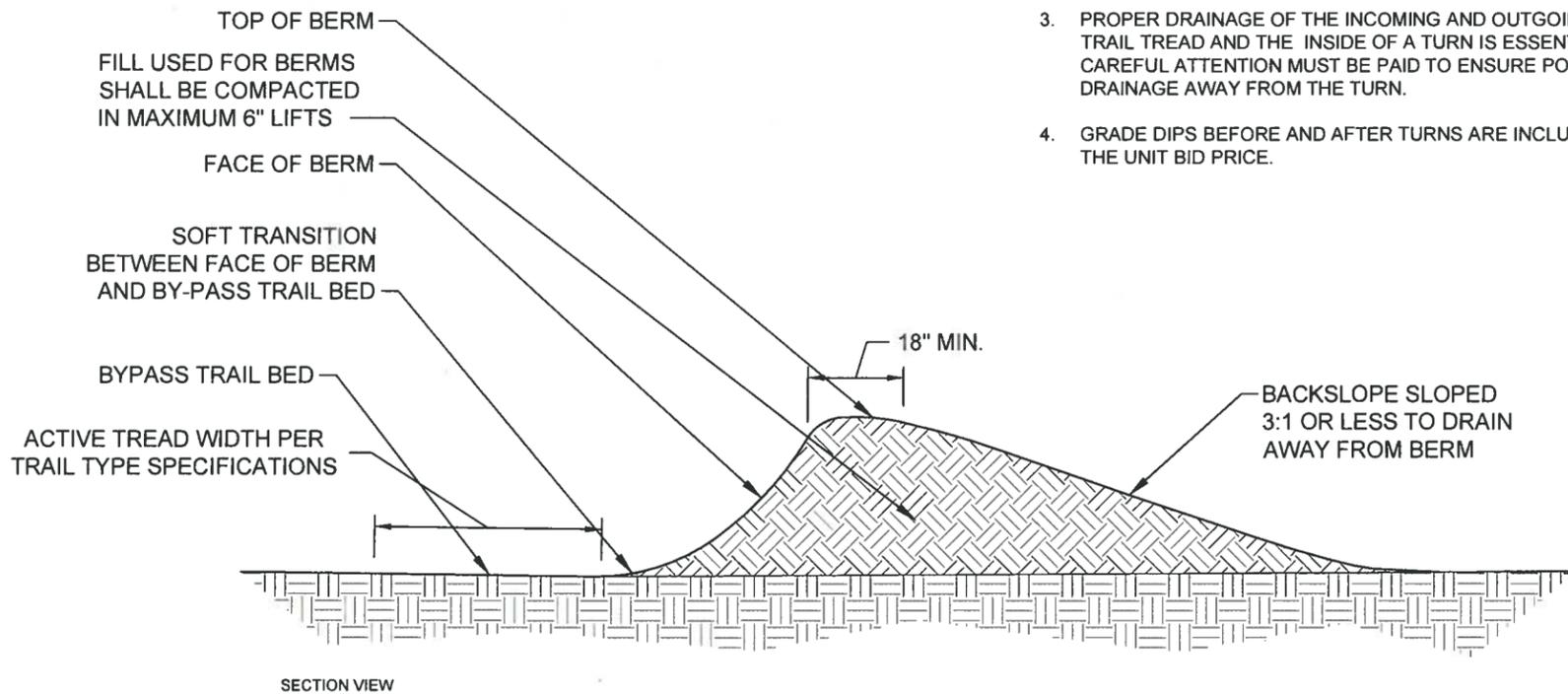
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JAMES M. SROBERG 45577  
LANDSCAPE ARCHITECT REG. 1993

**SWPPP DETAILS**



PLAN VIEW



SECTION VIEW

**PAYMENT NOTE:**

PAYMENT FOR (BERMS) WILL BE ON A LINEAL FOOT BASIS. PAYMENT FOR (SWITCHBERMS) PAYMENT WILL BE ON A PER UNIT BASIS. IN CASES WHERE TRAIL IS ROUTED WHERE AN EXISTING EMBANKMENT OR SIDE HILL IS USED FOR A TURN, NO EXTRA PAYMENT WILL BE PROVIDED.

BERM LENGTH IS MEASURED AT THE POINT ON EACH END OF THE TURN WHERE THE HEIGHT EXCEEDS 12" ABOVE THE BYPASS TRAIL GRADE.

SWITCHBERMS ARE BILLED BY THE UNIT. THE UNIT STARTS AT THE INITIATION OF THE UPHILL AND COMPLETION OF THE DOWNHILL DRAINAGE STRUCTURE.

SEED AND MULCH IF NECESSARY ARE INCLUDED IN THE UNIT BID PRICE FOR TURNS.

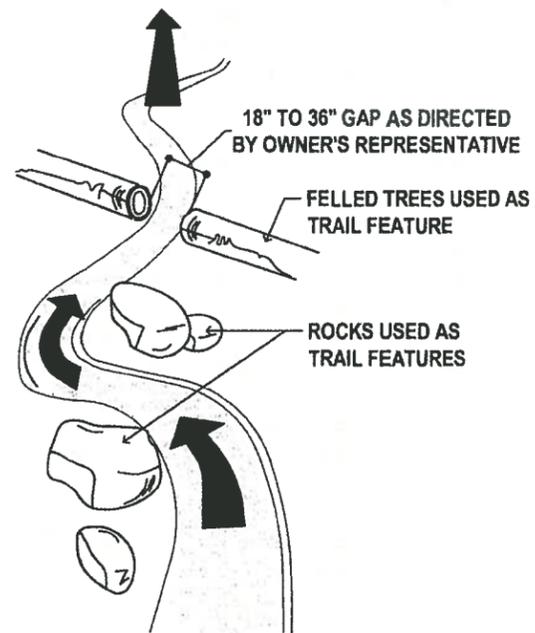
BERMED ROLLERS OR (BROLLERS) ARE DEFINED AS TILTED TREAD SURFACE THAT IS INSLOPED IN EXCESS OF THE STANDARD TREAD CROSS SLOPE OF 3%. BROLLERS DO NOT RESULT IN A CHANGE OF TRAIL DIRECTION ACROSS THE LANDSCAPE AND DO NOT CROSS THE FALL LINE. BROLLERS ARE INCLUDED IN THE CONTRACTOR'S UNIT BID PRICE FOR TRAIL CONSTRUCTION TYPES "A, B & C" AND ARE NOT CONSIDERED BERMS OR TURNS.

**NOTES:**

1. ACTUAL TURN SIZES, LENGTHS, AND RADII WILL BE BASED ON TRAIL TYPE SPECIFICATIONS FOUND IN THE TRAILS SPECIFICATION MATRIX.
2. TURNS SHALL BE BLENDED INTO THE EXISTING TOPOGRAPHIC FEATURES OF THE SITE.
3. PROPER DRAINAGE OF THE INCOMING AND OUTGOING TRAIL TREAD AND THE INSIDE OF A TURN IS ESSENTIAL. CAREFUL ATTENTION MUST BE PAID TO ENSURE POSITIVE DRAINAGE AWAY FROM THE TURN.
4. GRADE DIPS BEFORE AND AFTER TURNS ARE INCLUDED IN THE UNIT BID PRICE.

**TRAIL FEATURES PLACEMENT NOTE:**

FELLED TREES AND ROCKS ENCOUNTERED ALONG THE TRAIL SHALL, AT THE DISCRETION OF THE OWNER'S REPRESENTATIVE, CAN BE USED AS A TRAIL FEATURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLACEMENT OF FELLED TREES AND MOVEABLE ROCKS ON THE EDGE OF THE TRAIL AS DIRECTED BY THE OWNER'S REPRESENTATIVE. MOVEMENT OF ROCKS WILL BE LIMITED TO WITHIN 5 FEET OF ORIGINAL LOCATION. THIS WORK SHALL BE INCLUDED IN THE CONTRACTOR'S UNIT BID PRICE FOR TRAIL CONSTRUCTION TYPES A, B & C.



ROCKS AND FELLED TREES AS TRAIL FEATURES DETAIL

NOT TO SCALE

**GENERIC BERM & SWITCHBERM DETAIL**

NOT TO SCALE



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INTERNATIONAL MOUNTAIN BICYCLING ASSOCIATION

**DULUTH TRAVERSE TRAIL MISSION CREEK PHASE II**

DULUTH, MINNESOTA

PROJECT NO.: 12-039.1

DATE: FEB-17-2014

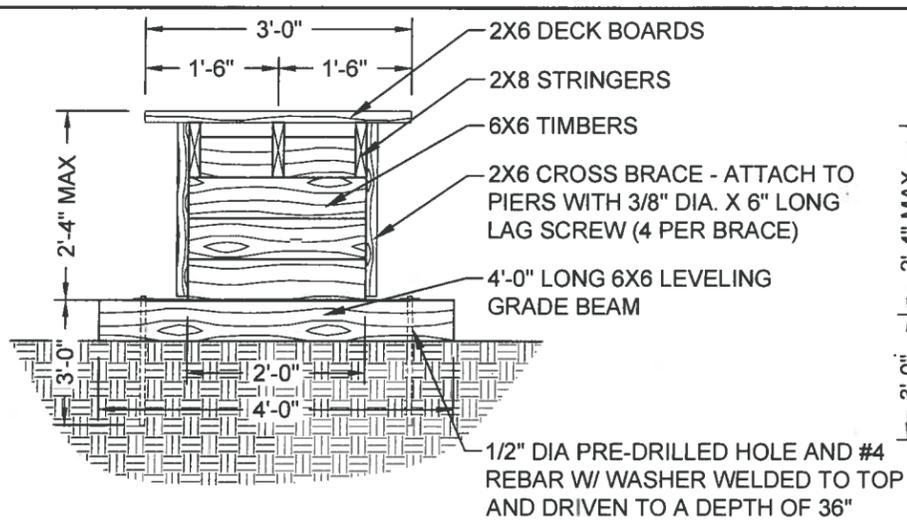
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JAMES M. SROBERG 45577  
LANDSCAPE ARCHITECT

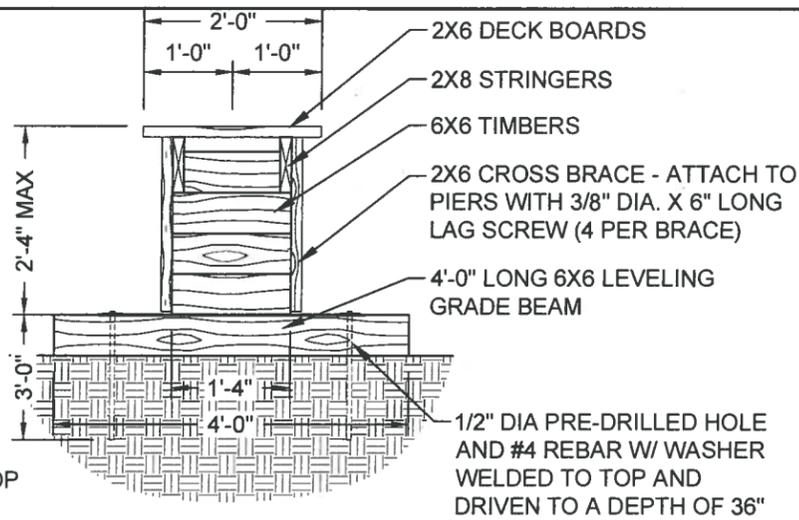
**TRAIL DETAILS**



**36" WIDE BOARDWALK**

NOT TO SCALE

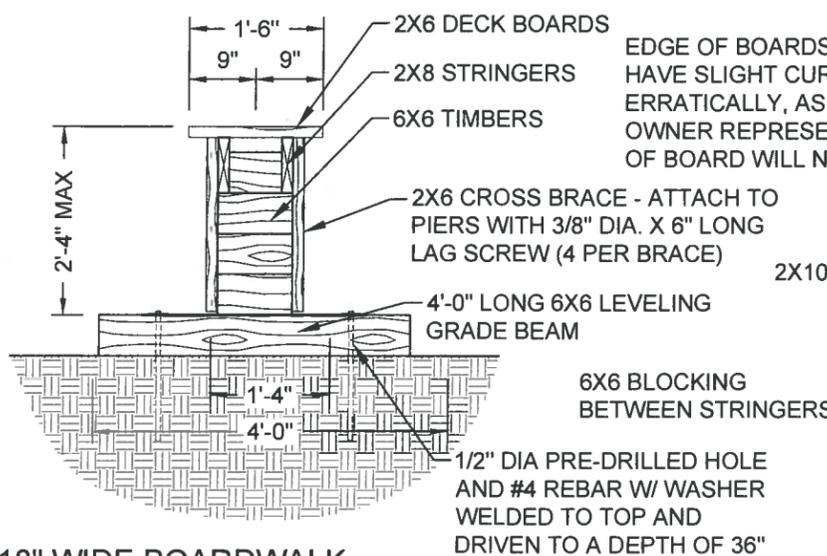
1/10



**24" WIDE BOARDWALK**

NOT TO SCALE

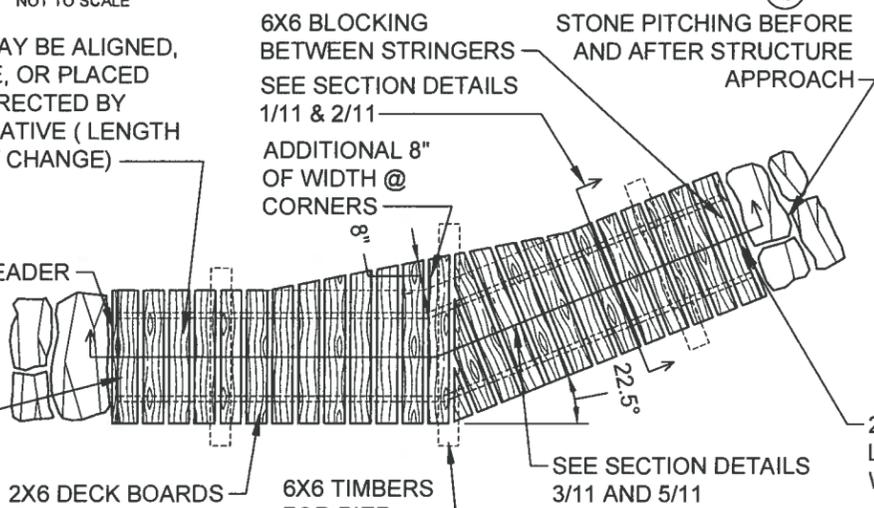
2/10



**18" WIDE BOARDWALK**

NOT TO SCALE

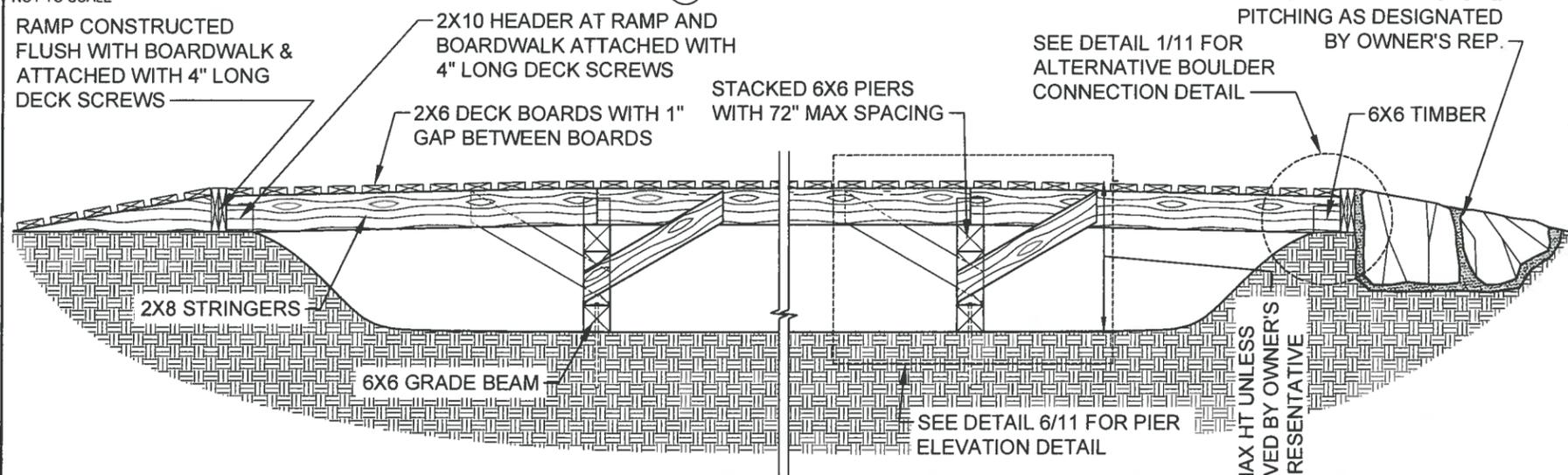
3/10



**TYPICAL PLAN DETAIL OF BRIDGE (36" WIDE SHOWN)**

NOT TO SCALE

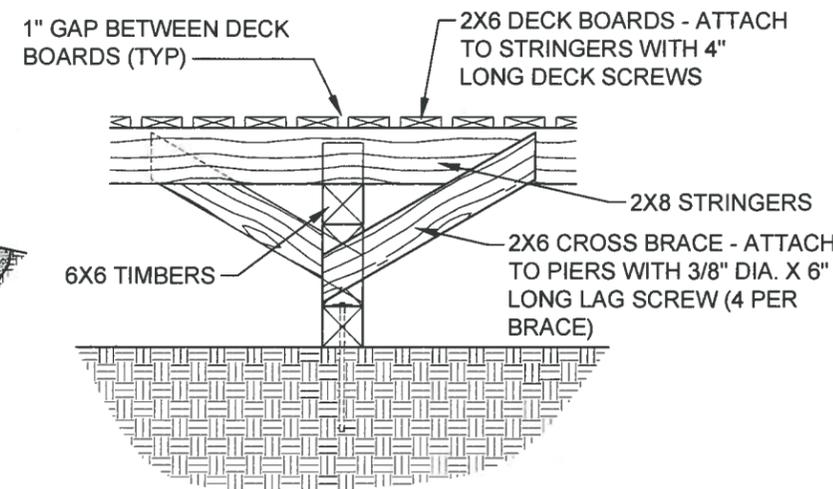
4/10



**TYPICAL ELEVATION DETAIL FOR BOARDWALK (WET AREA CROSSINGS)**

NOT TO SCALE

5/10



**TYPICAL ELEVATION @ PIER LOCATION**

NOT TO SCALE

6/10

**DETAIL NOTES:**

- LUMBER SHALL BE SIZED TO THE FULL DIMENSIONS SHOWN ON THE PLANS UNLESS NOTED OTHERWISE. ALL LUMBER SHALL BE A ROT-RESISTANT SPECIES OR TREATED ACCORDING TO THE OPTIONS INDICATED IN THE SPECIFICATIONS.
- ROT-RESISTANT TREATMENTS OTHER THAN THOSE LISTED MUST BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO BIDDING.
- LEVELING GRADE BEAMS SHALL BE SHIMMED AS NECESSARY TO MEET DESIRED PITCH OF STRUCTURE
- SELECT FASTENERS AND HARDWARE IN ACCORDANCE WITH THE SPECIFICATIONS
- SIZES, LENGTHS AND EXTENT OF ALL BOARDWALKS, ROCK HARDENED TREAD, BRIDGES AND BERMS TO BE FIELD FIT AT TIME OF CONSTRUCTION.
- BOARDWALK & BRIDGE CONSTRUCTION LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE CONTRACTOR AND SUBMITTED TO THE OWNER FOR APPROVAL.
- ALL DISTURBED AREAS NOT PART OF ACTIVE TREAD TO BE SEED AND MULCHED WITHIN 7 DAYS OF NOT BEING WORKED. SEE (SWPPP) STORM WATER POLLUTION PREVENTION PLAN FOR DETAILS.
- CUT BRUSH AND SLASH MUST BE DISPOSED IN AN UPLAND LOCATION AND MUST BE KEPT OUT OF STREAMS, GULLIES, SWALES, WET AREAS, AND LOW AREAS. SEE SPECIFICATIONS FOR DETAILS.
- NO EXCAVATION OR FILL PERMITTED IN WET AREAS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONSULT WITH THE OWNER PRIOR TO DOING ANY WORK WITHIN SUSPECTED WET AREAS.
- WOOD RAMPS OR STONE PITCHING MAY BE REQUIRED BEFORE AND AFTER BRIDGES AND BOARDWALKS. APPLICATION WILL BE DETERMINED IN THE FIELD, BY THE CONTRACTOR AND MUST BE APPROVED BY THE OWNER PRIOR TO CONSTRUCTION. PAYMENT FOR RAMPS WILL BE ADDED TO THE TOTAL LENGTH OF THE BOARDWALK AND PAYMENT FOR STONE PITCHING WILL BE PER THE UNIT BID PRICE OF ROCK ARMORING.



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**DULUTH TRAVERSE TRAIL MISSION CREEK PHASE II**  
DULUTH, MINNESOTA

PROJECT NO.: 12-039.1  
DATE: FEB-17-2014  
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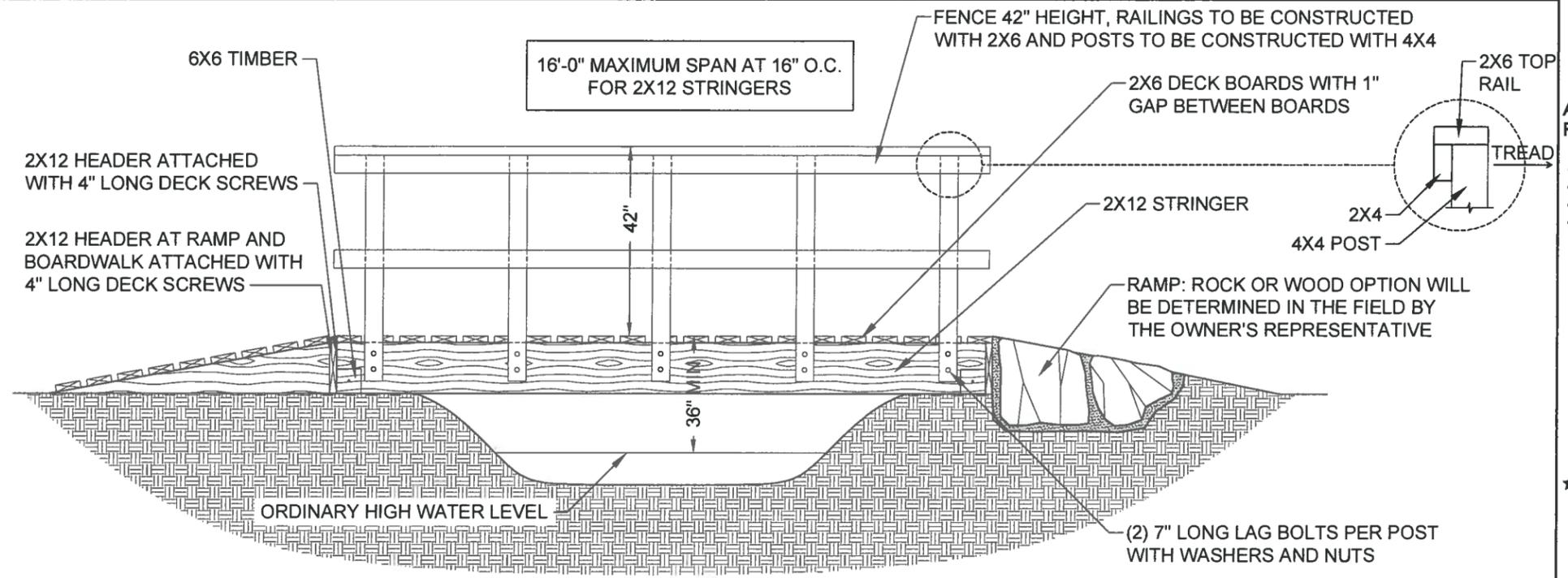
JAMES M. SPOBERG 45577  
LANDSCAPE ARCHITECT (REGISTERED)

**WOOD - TRAIL FEATURE DETAILS**

**10**

**DETAIL NOTES:**

- LUMBER SHALL BE SIZED TO THE FULL DIMENSIONS SHOWN ON THE PLANS UNLESS NOTED OTHERWISE. ALL LUMBER SHALL BE A ROT-RESISTANT SPECIES OR TREATED ACCORDING TO THE OPTIONS INDICATED IN THE SPECIFICATIONS.
- ROT-RESISTANT TREATMENTS OTHER THAN THOSE LISTED MUST BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO BIDDING.
- LEVELING GRADE BEAMS SHALL BE SHIMMED AS NECESSARY TO MEET DESIRED PITCH OF STRUCTURE
- SELECT FASTENERS AND HARDWARE IN ACCORDANCE WITH THE SPECIFICATIONS
- SIZES, LENGTHS AND EXTENT OF ALL BOARDWALKS, ROCK HARDENED TREAD, BRIDGES AND BERMS TO BE FIELD FIT AT TIME OF CONSTRUCTION.
- BOARDWALK & BRIDGE CONSTRUCTION LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE CONTRACTOR AND SUBMITTED TO THE OWNER FOR APPROVAL.
- ALL DISTURBED AREAS NOT PART OF ACTIVE TREAD TO BE SEEDED AND MULCHED WITHIN 7 DAYS OF NOT BEING WORKED. SEE (SWPPP) STORM WATER POLLUTION PREVENTION PLAN FOR DETAILS.
- CUT BRUSH AND SLASH MUST BE DISPOSED IN AN UPLAND LOCATION AND MUST BE KEPT OUT OF STREAMS, GULLIES, SWALES, WET AREAS, AND LOW AREAS. SEE SPECIFICATIONS FOR DETAILS.
- NO EXCAVATION OR FILL PERMITTED IN WET AREAS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONSULT WITH THE OWNER PRIOR TO DOING ANY WORK WITHIN SUSPECTED WET AREAS.
- WOOD RAMPS OR STONE PITCHING MAY BE REQUIRED BEFORE AND AFTER BRIDGES AND BOARDWALKS. APPLICATION WILL BE DETERMINED IN THE FIELD, BY THE CONTRACTOR AND MUST BE APPROVED BY THE OWNER PRIOR TO CONSTRUCTION. PAYMENT FOR RAMPS WILL BE ADDED TO THE TOTAL LENGTH OF THE BOARDWALK AND PAYMENT FOR STONE PITCHING WILL BE PER THE UNIT BID PRICE OF ROCK ARMORING.



**TYPICAL ELEVATION DETAIL FOR BRIDGE (CREEK CROSSINGS)**

NOT TO SCALE

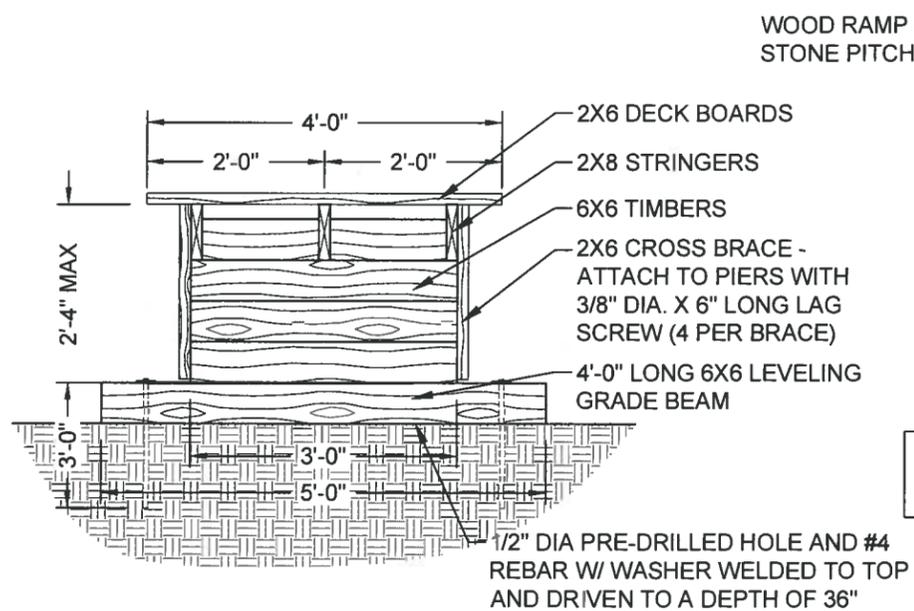
1/11

SOME BRIDGES WILL HAVE RAILINGS, SOME WILL NOT. BRIDGES WITH RAILINGS SHALL BE 6'-0" IN WIDTH SEE PLANS FOR LOCATIONS

LOOP 1/4" STAINLESS STEEL CABLE AROUND 2X12 STRINGER ON UP STREAM SIDE OF BRIDGE AND TETHERING TO TREE

DO NOT PUT TENSION IN CABLE, LAY LOOSELY ON GROUND AND LOOSELY WRAP AROUND BASE OF TREE AT GROUND LEVEL TO PREVENT GIRTLING

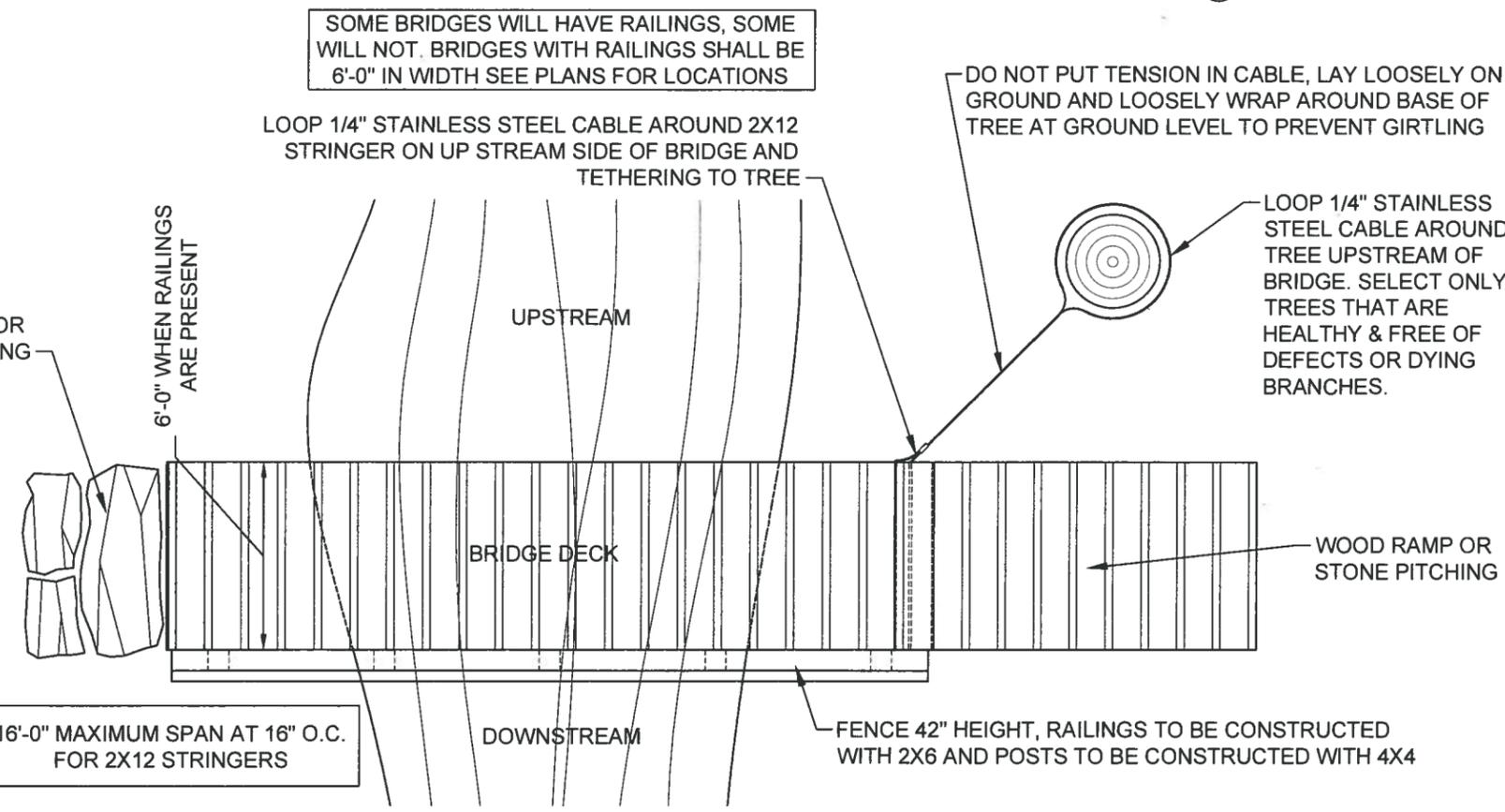
LOOP 1/4" STAINLESS STEEL CABLE AROUND TREE UPSTREAM OF BRIDGE. SELECT ONLY TREES THAT ARE HEALTHY & FREE OF DEFECTS OR DYING BRANCHES.



**48" WIDE BOARDWALK**

NOT TO SCALE

2/11



**TYPICAL PLAN DETAIL FOR BRIDGE (CREEK CROSSINGS)**

NOT TO SCALE

3/11



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**DULUTH TRAVERSE TRAIL MISSION CREEK PHASE II**

DULUTH, MINNESOTA

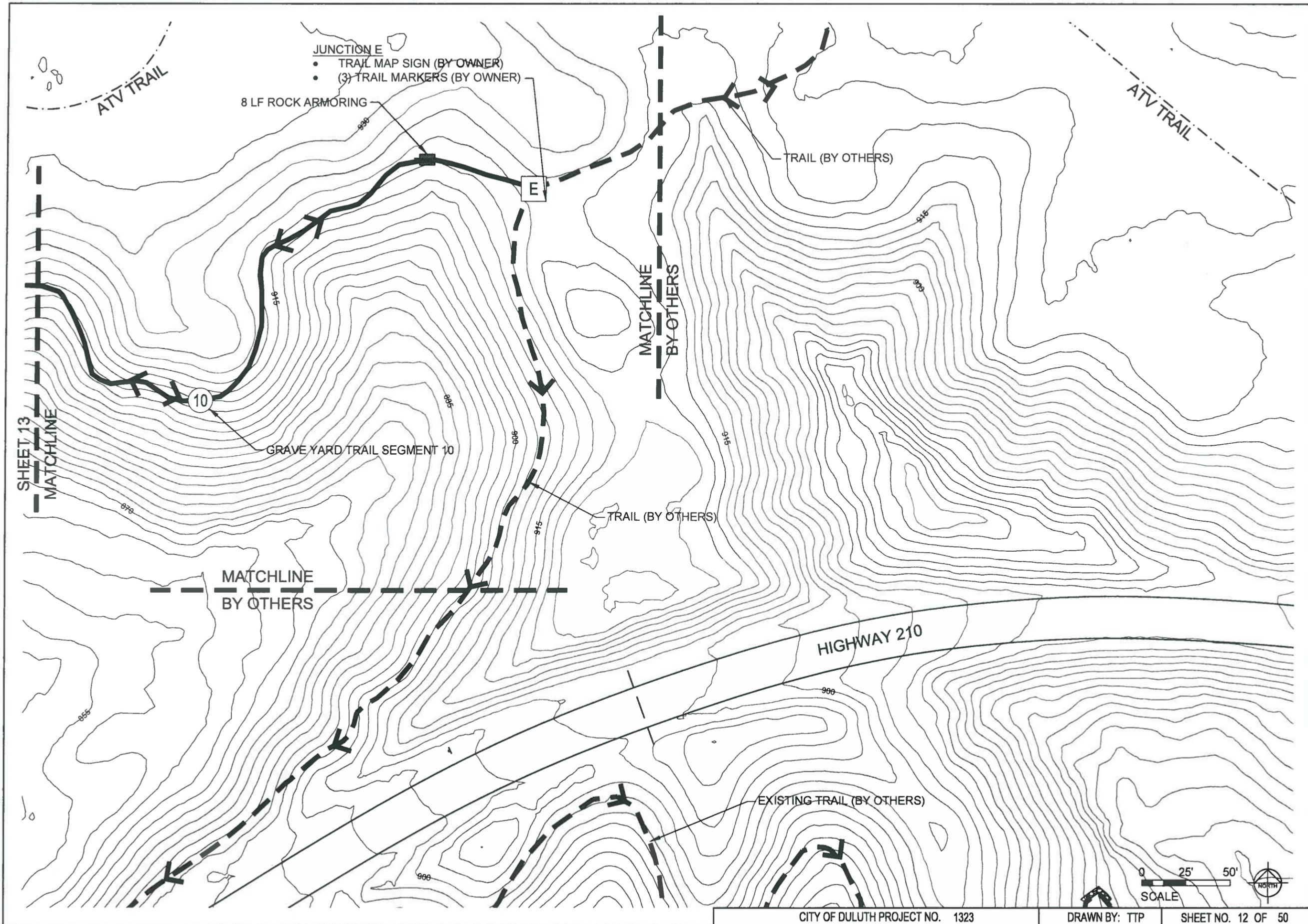
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JAMES M. SROBERG 45577  
LANDSCAPE ARCHITECT (REL. 10)

**WOOD - TRAIL FEATURE DETAILS**

**11**



SHEET 13  
MATCHLINE

MATCHLINE  
BY OTHERS

MATCHLINE  
BY OTHERS

- JUNCTION E
- TRAIL MAP SIGN (BY OWNER)
  - (3) TRAIL MARKERS (BY OWNER)

8 LF ROCK ARMORING

10

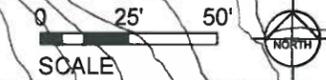
GRAVE YARD TRAIL SEGMENT 10

TRAIL (BY OTHERS)

TRAIL (BY OTHERS)

HIGHWAY 210

EXISTING TRAIL (BY OTHERS)



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**DULUTH  
TRAVERSE  
TRAIL  
MISSION CREEK  
PHASE II**

DULUTH, MINNESOTA

PROJECT NO. 12-039.1

DATE: FEB-17-2014

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JAMES M SPOBERG 45577  
LANDSCAPE ARCHITECT REG. 105

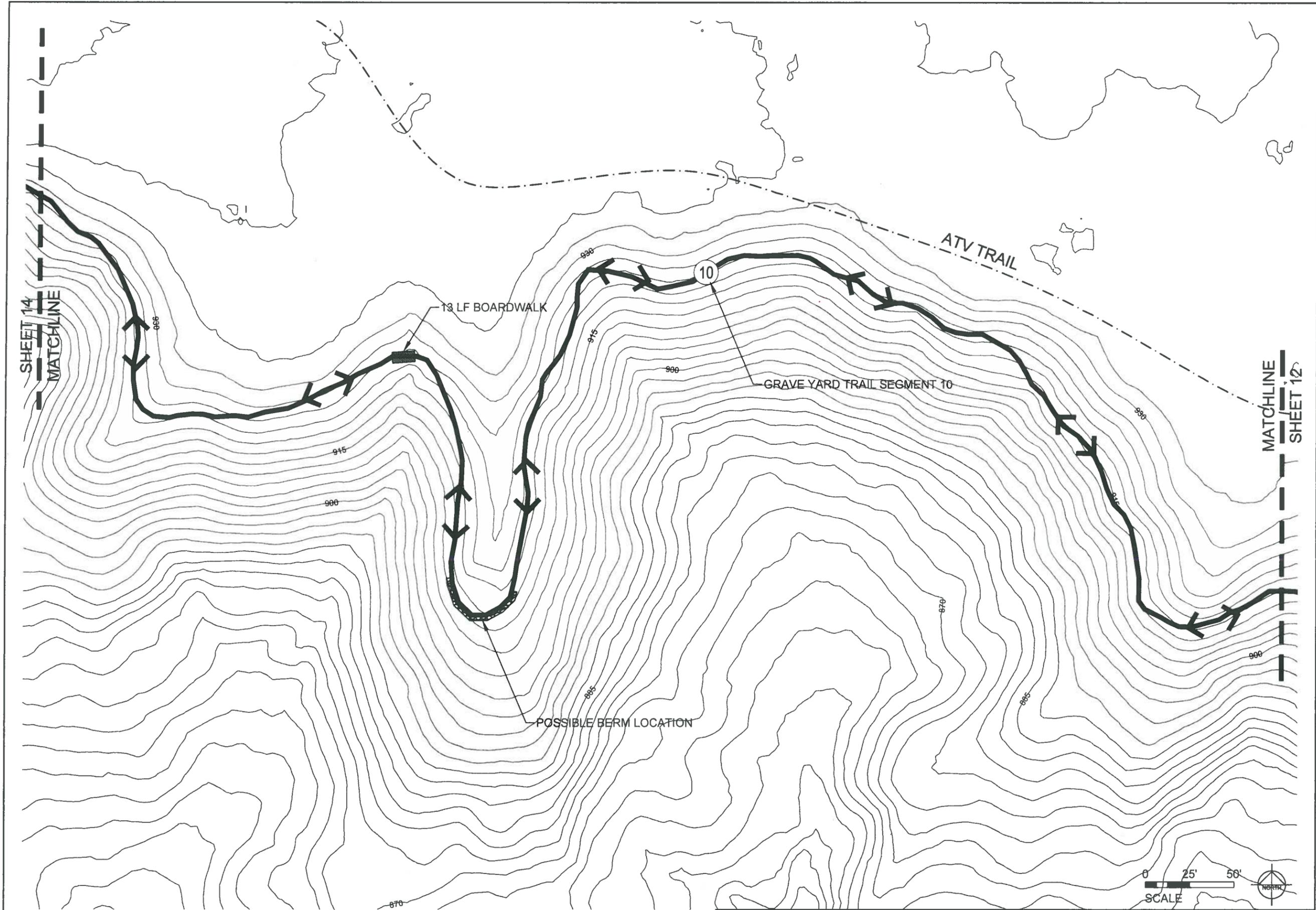
**GRAVE  
YARD TRAIL**

12

CITY OF DULUTH PROJECT NO. 1323

DRAWN BY: TTP

SHEET NO. 12 OF 50



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**DULUTH  
TRAVERSE  
TRAIL  
MISSION CREEK  
PHASE II**

DULUTH, MINNESOTA

PROJECT NO.: 12-039.1

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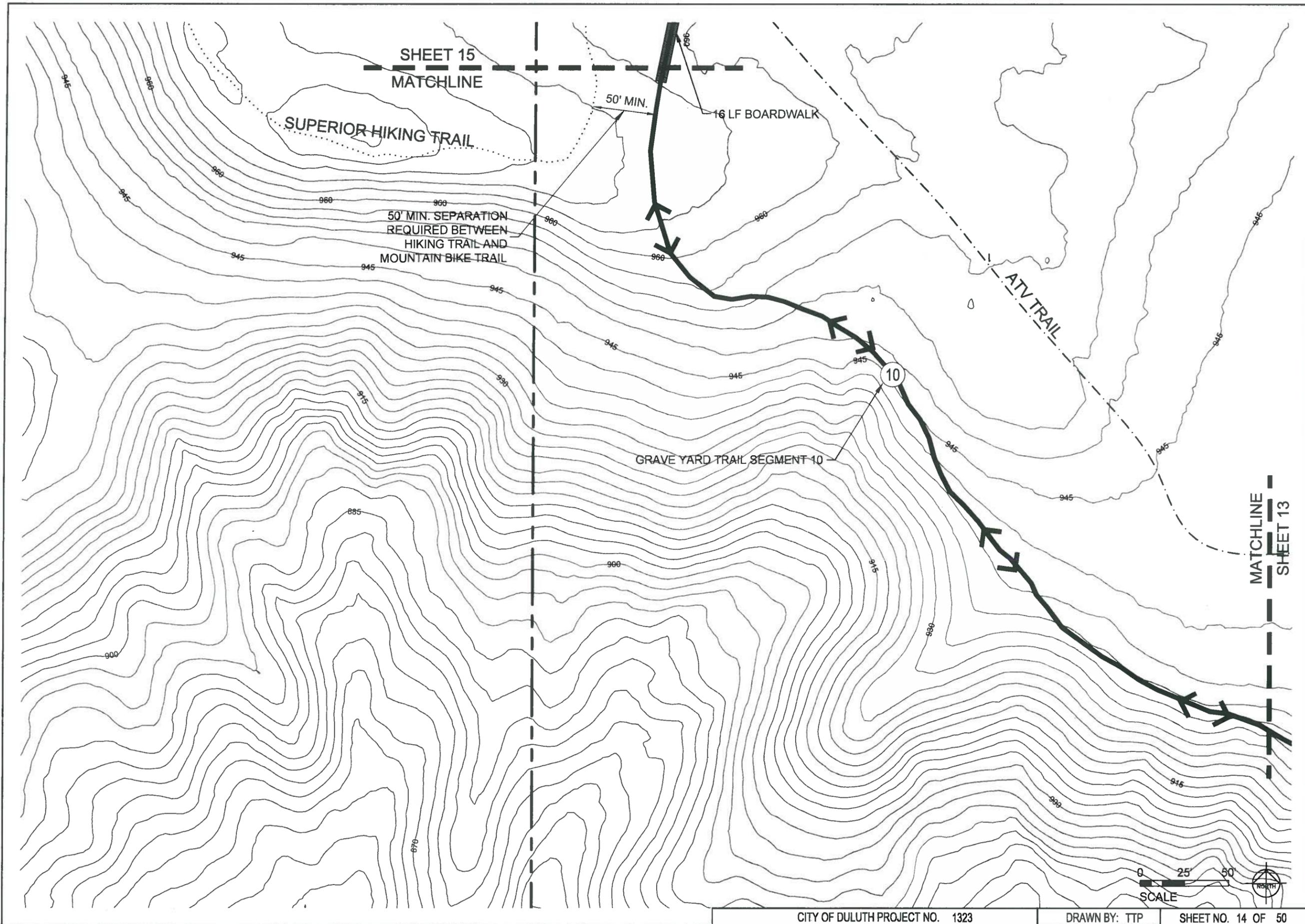
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JAMES M. SROBERG 45577  
LANDSCAPE ARCHITECT REG. M.S.

**GRAVE  
YARD TRAIL**

**13**



SHEET 15  
MATCHLINE

SUPERIOR HIKING TRAIL

50' MIN.

16 LF BOARDWALK

50' MIN. SEPARATION  
REQUIRED BETWEEN  
HIKING TRAIL AND  
MOUNTAIN BIKE TRAIL

ATV TRAIL

GRAVE YARD TRAIL SEGMENT 10

10

MATCHLINE  
SHEET 13



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TRAVERSE  
TRAIL  
MISSION CREEK  
PHASE II**  
DULUTH, MINNESOTA

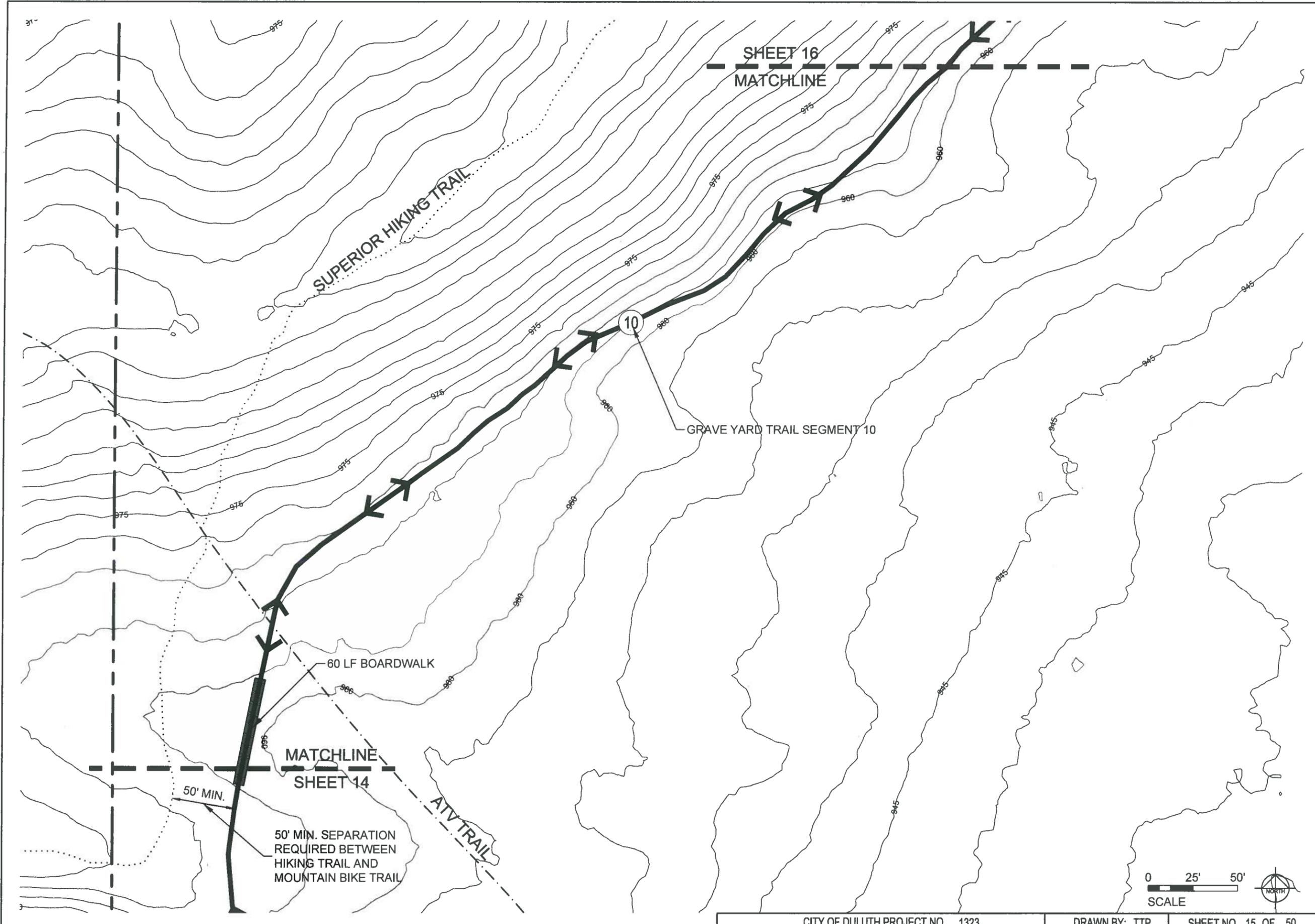
PROJECT NO: 12-039.1  
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DRAWN BY: TTP  
REVISIONS:

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JAMES M. SPICBERG 45577  
LANDSCAPE ARCHITECT REG. NO.

**GRAVE  
YARD TRAIL**

**14**



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FAX 218-727-8483  
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**DULUTH  
TRAVERSE  
TRAIL  
MISSION CREEK  
PHASE II  
DULUTH, MINNESOTA**

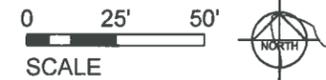
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JAMES M. SPOBERG 45577  
LANDSCAPE ARCHITECT REG. 1/25

**GRAVE  
YARD TRAIL**

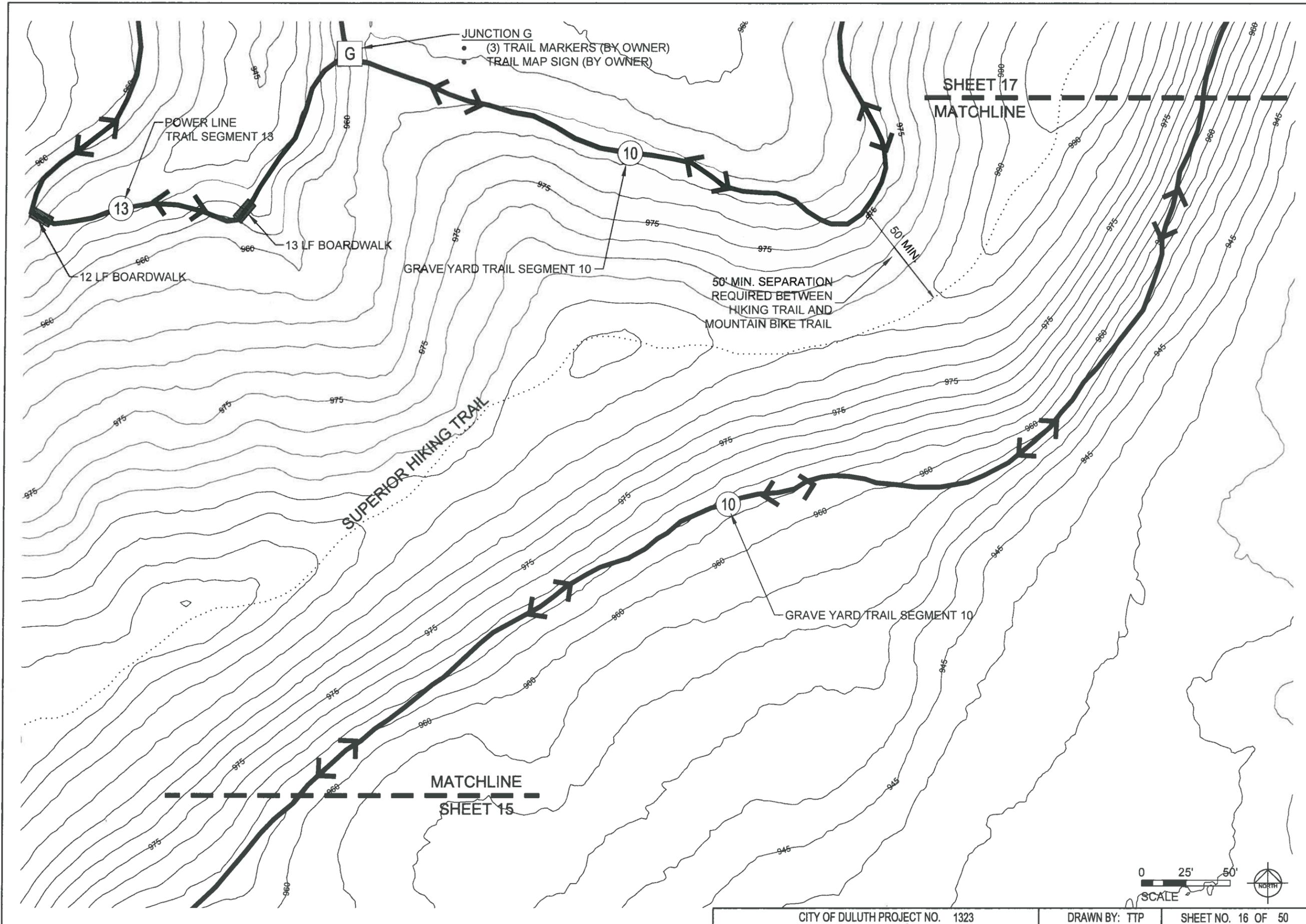
**15**



CITY OF DULUTH PROJECT NO. 1323

DRAWN BY: TTP

SHEET NO. 15 OF 50



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**DULUTH TRAVERSE TRAIL MISSION CREEK PHASE II**

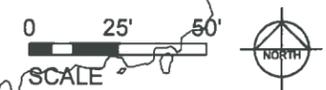
DULUTH, MINNESOTA

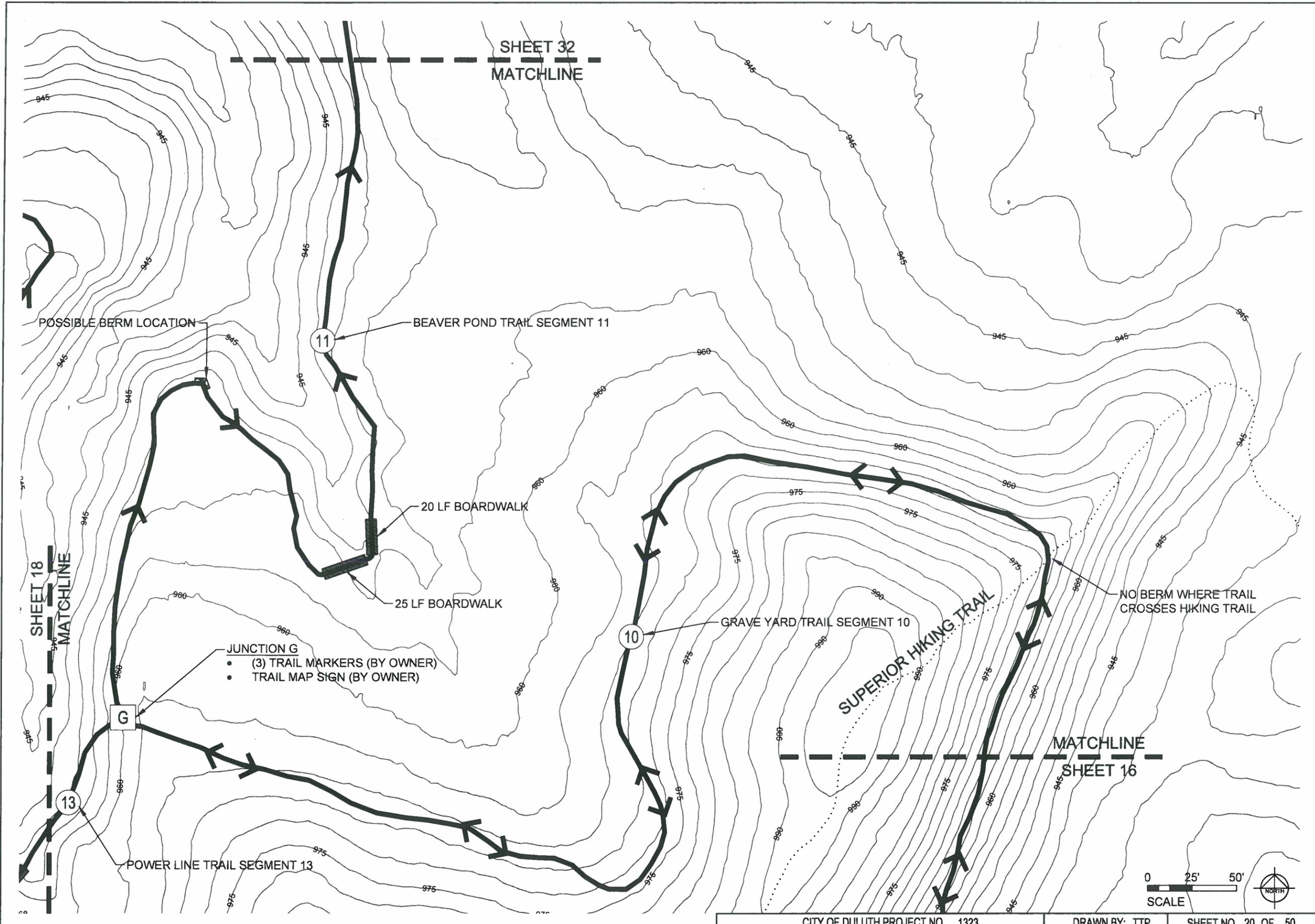
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JAMES M. SHOBERG 45577  
 LANDSCAPE ARCHITECT

**GRAVE YARD TRAIL**





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**DULUTH  
TRAVERSE  
TRAIL  
MISSION CREEK  
PHASE II**

DULUTH, MINNESOTA

PROJECT NO. 12-039.1

DATE: FEB-17-2014

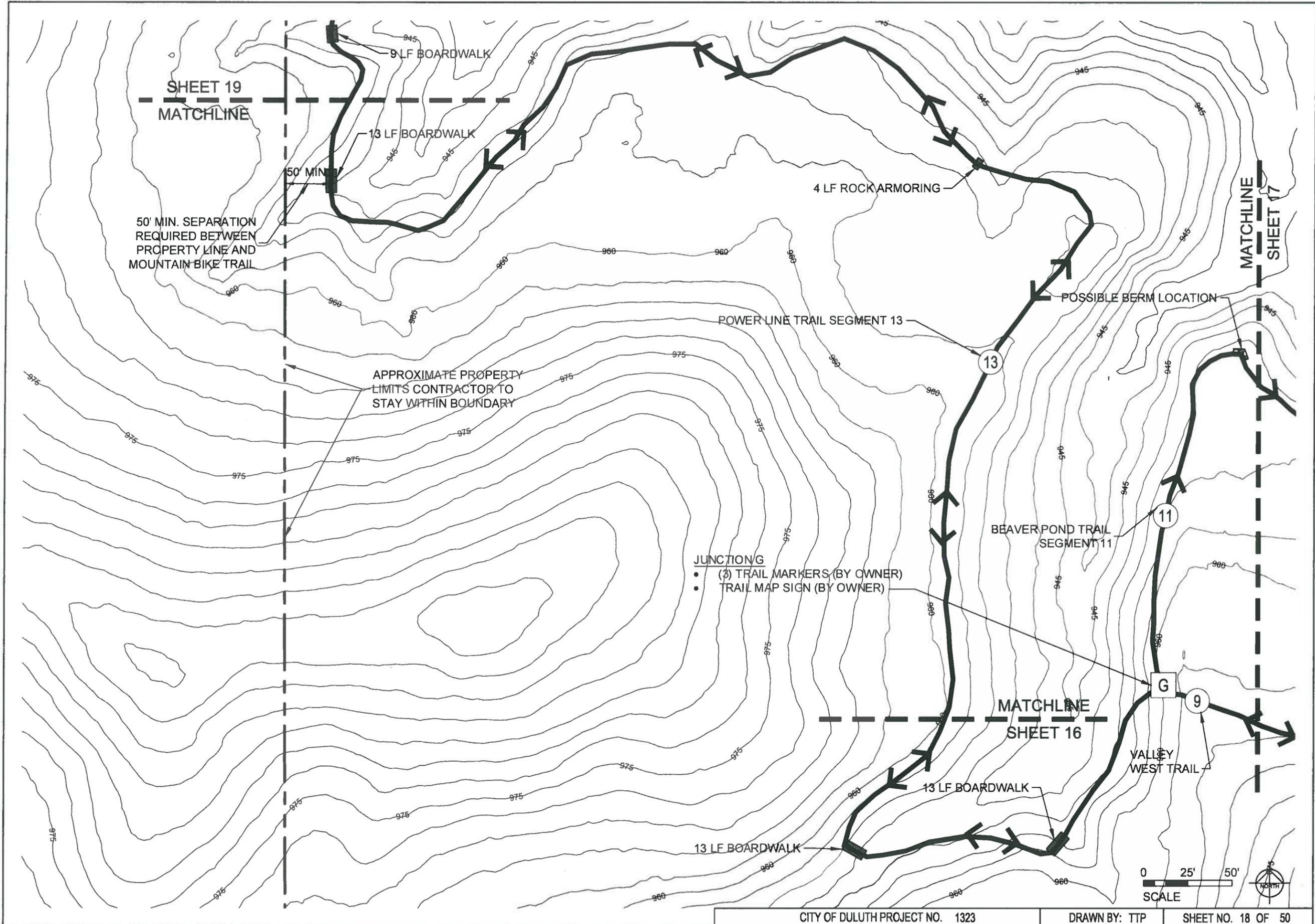
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JAMES M. SPOBERG 45577  
LANDSCAPE ARCHITECT REG. NO.

**GRAVE  
YARD TRAIL  
& BEAVER  
POND TRAIL**



SHEET 19  
MATCHLINE

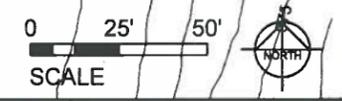
MATCHLINE  
SHEET 17

MATCHLINE  
SHEET 16

50' MIN. SEPARATION  
REQUIRED BETWEEN  
PROPERTY LINE AND  
MOUNTAIN BIKE TRAIL

APPROXIMATE PROPERTY  
LIMITS CONTRACTOR TO  
STAY WITHIN BOUNDARY

- JUNCTION G
- (3) TRAIL MARKERS (BY OWNER)
  - TRAIL MAP SIGN (BY OWNER)



- ARCHITECTURE
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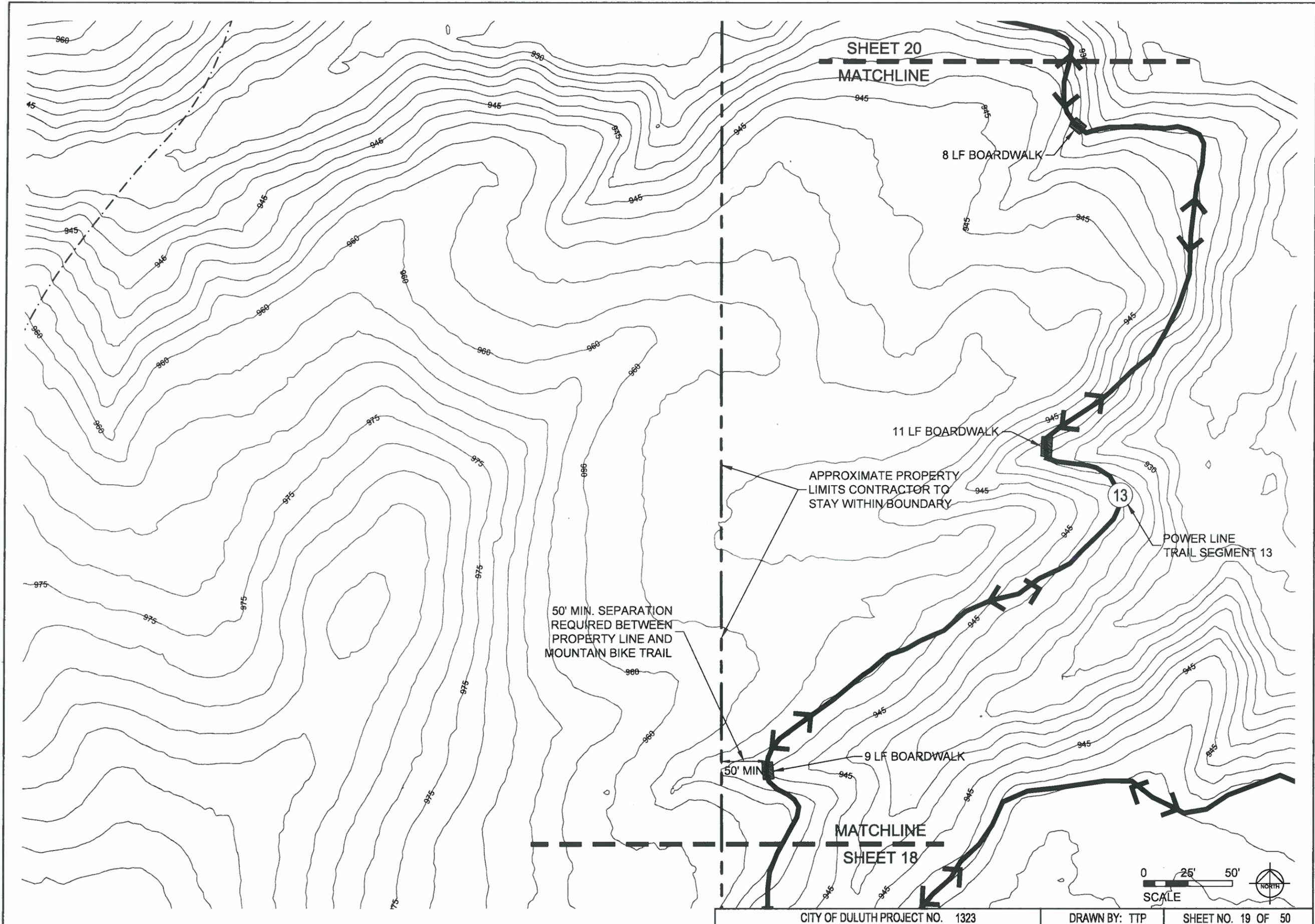
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DULUTH, MINNESOTA

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JAMES M. SROBERG 4557  
LANDSCAPE ARCHITECT

**POWER LINE  
TRAIL**



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**DULUTH  
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JAMES M. SHOBERG 45577  
LANDSCAPE ARCHITECT REG. 125

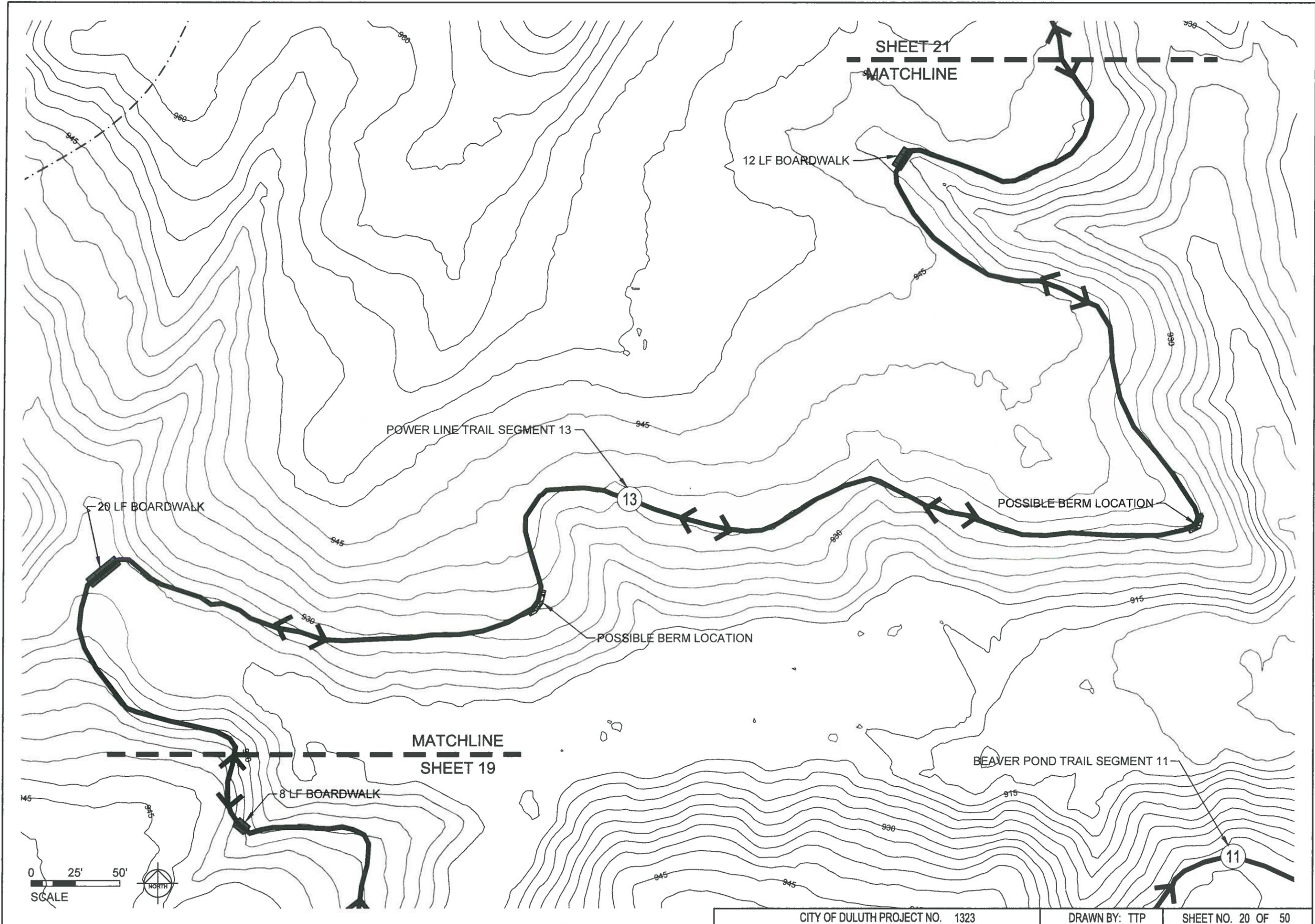
**POWER LINE  
TRAIL**

**19**

CITY OF DULUTH PROJECT NO. 1323

DRAWN BY: TTP

SHEET NO. 19 OF 50



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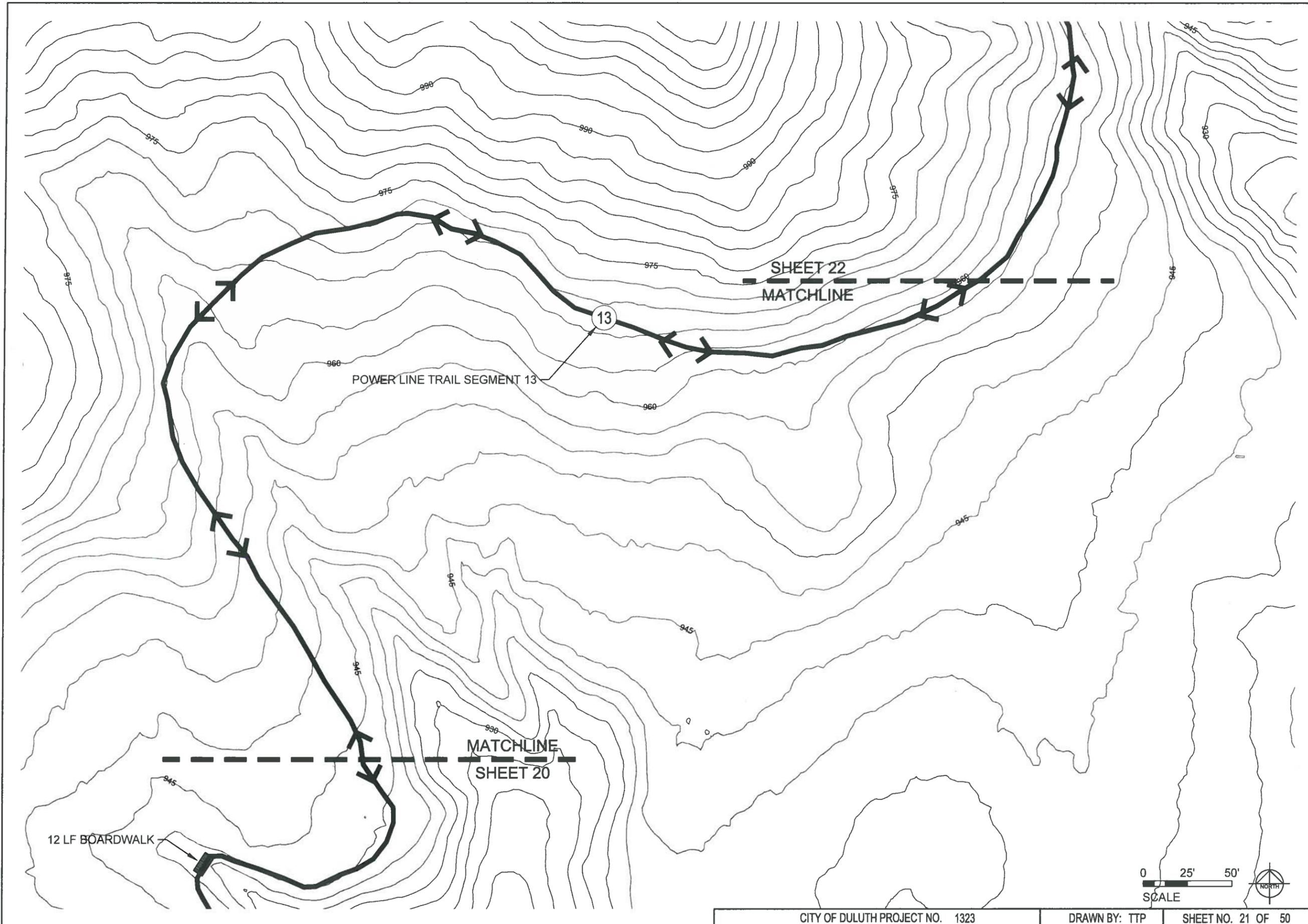
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JAMES M. SPOBERG 45577  
LANDSCAPE ARCHITECT REG. 1/25

**POWER LINE  
TRAIL**

**20**



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**DULUTH  
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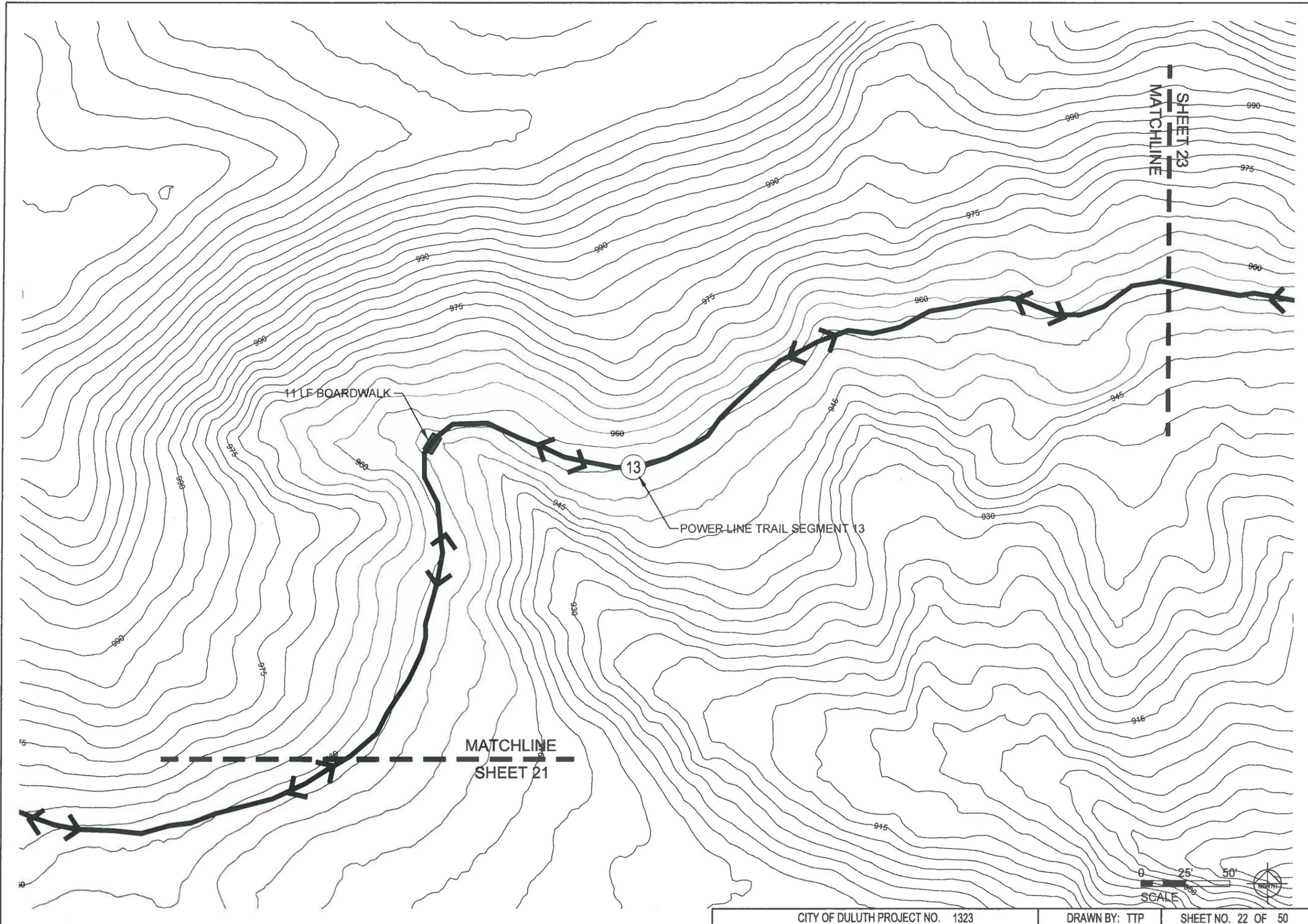
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**JAMES M. SPOBERG** 45577  
LANDSCAPE ARCHITECT REGISTERED

**POWER LINE  
TRAIL**



**21**



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**DULUTH  
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MISSION CREEK  
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DULUTH, MINNESOTA

PROJECT NO.: 12-039.1

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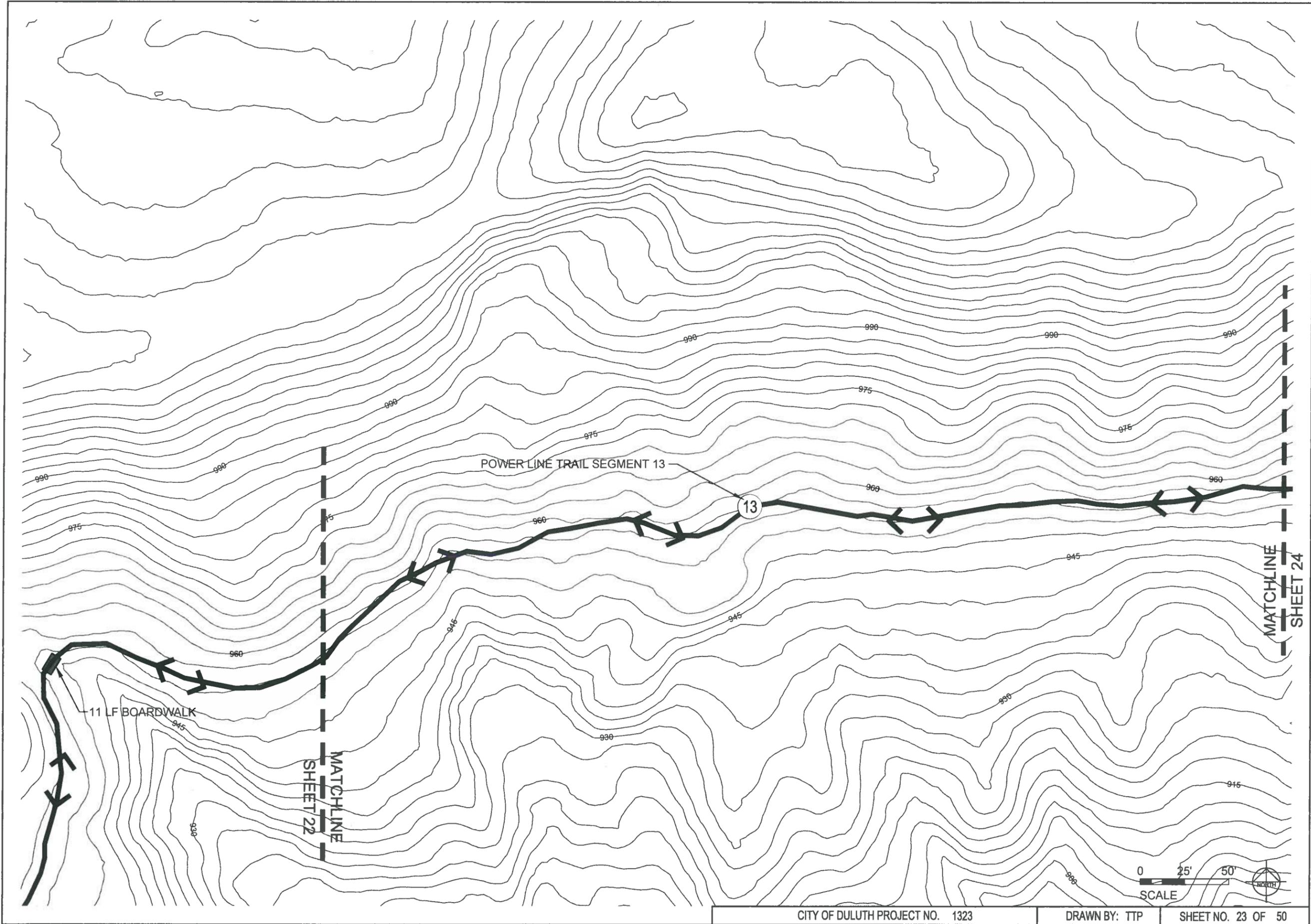
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JAMES M. SROBERG 45577  
LANDSCAPE ARCHITECT REG. #13

**POWER LINE  
TRAIL**

**22**



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PHASE II**  
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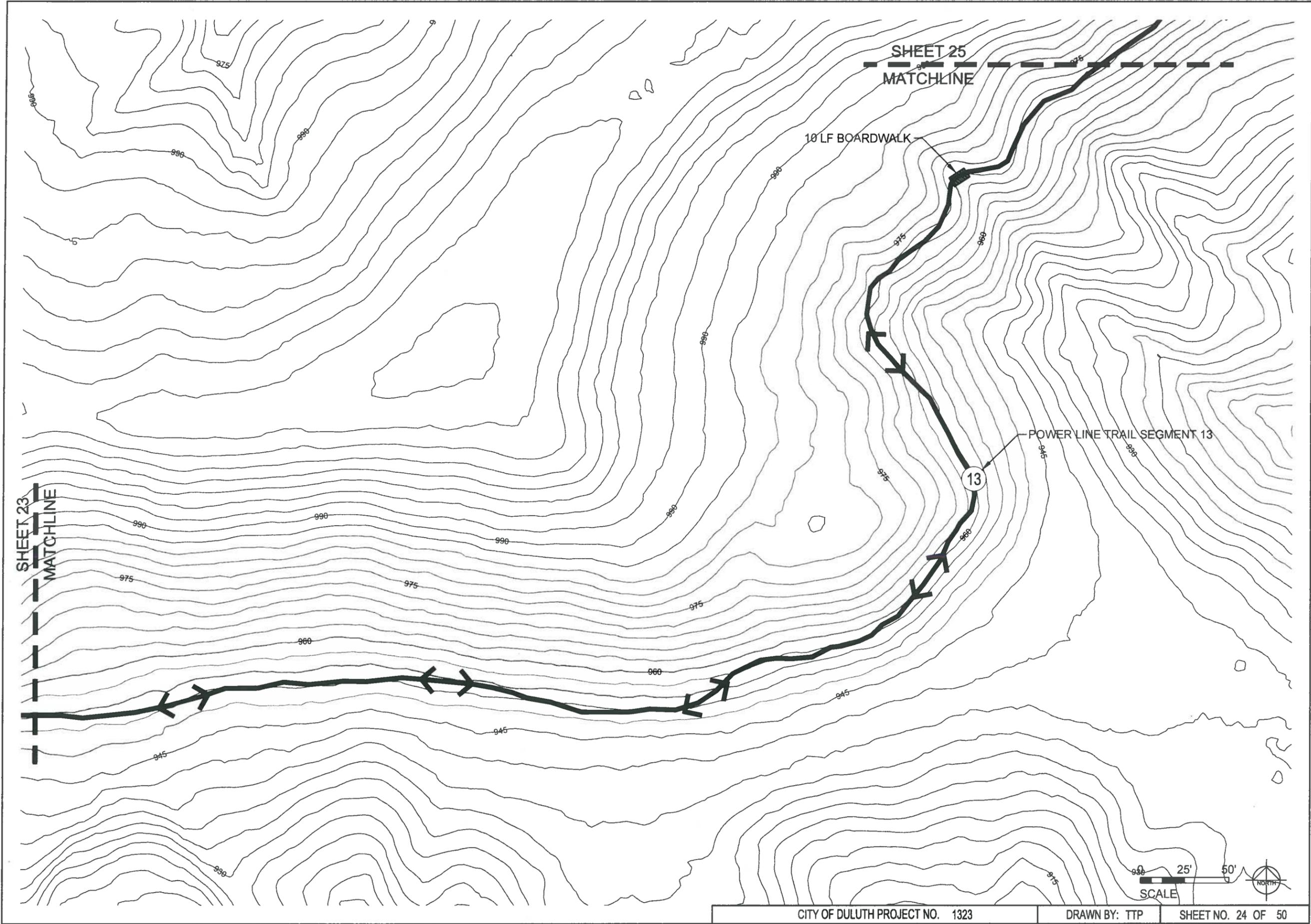
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LANDSCAPE ARCHITECT REG. NO.

**POWER LINE  
TRAIL**

**23**



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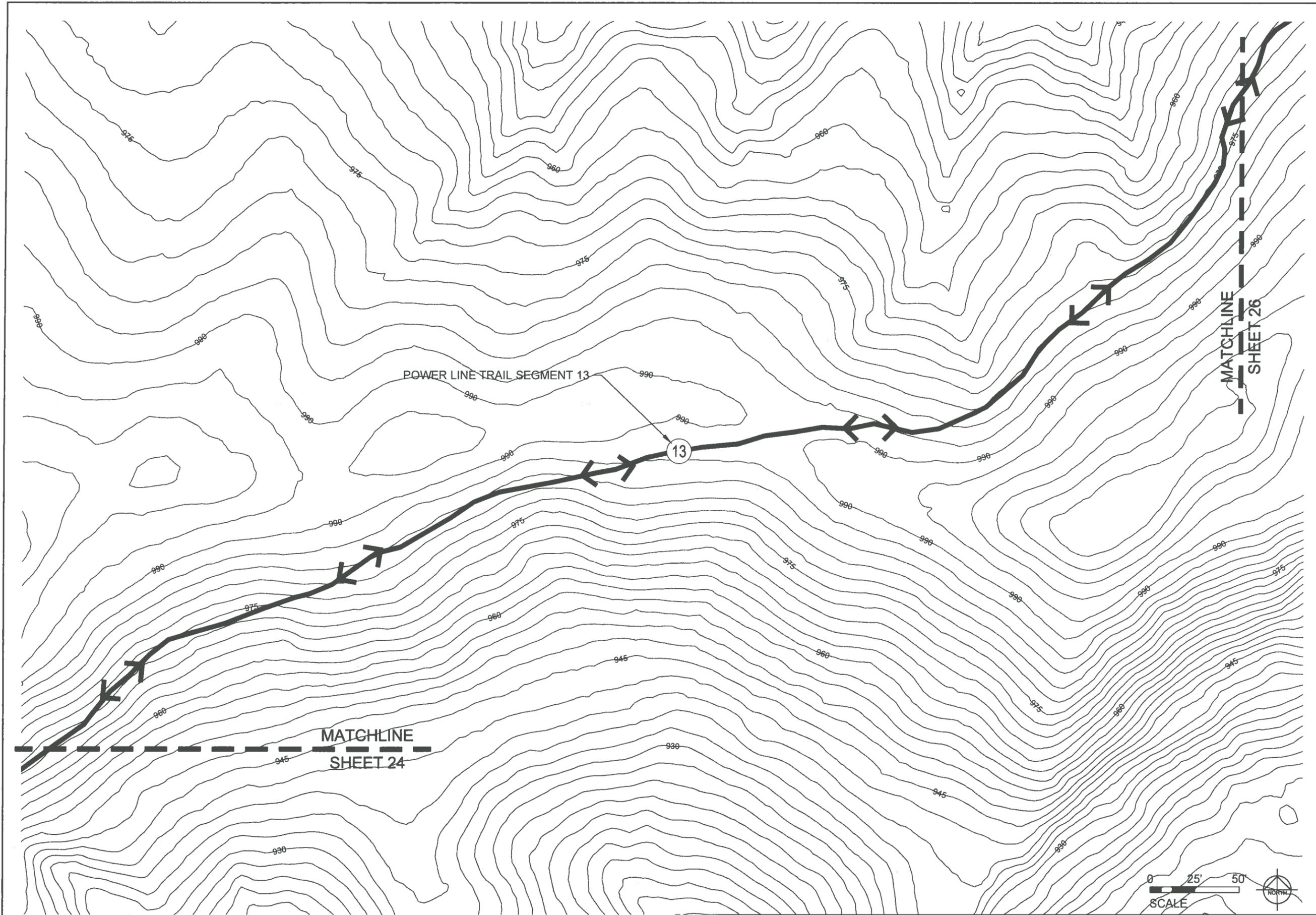
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LANDSCAPE ARCHITECT REG. 1993

**POWER LINE  
TRAIL**

**24**



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TRAIL  
MISSION CREEK  
PHASE II**  
DULUTH, MINNESOTA

PROJECT NO.: 12-039.1

DATE: FEB-17-2014

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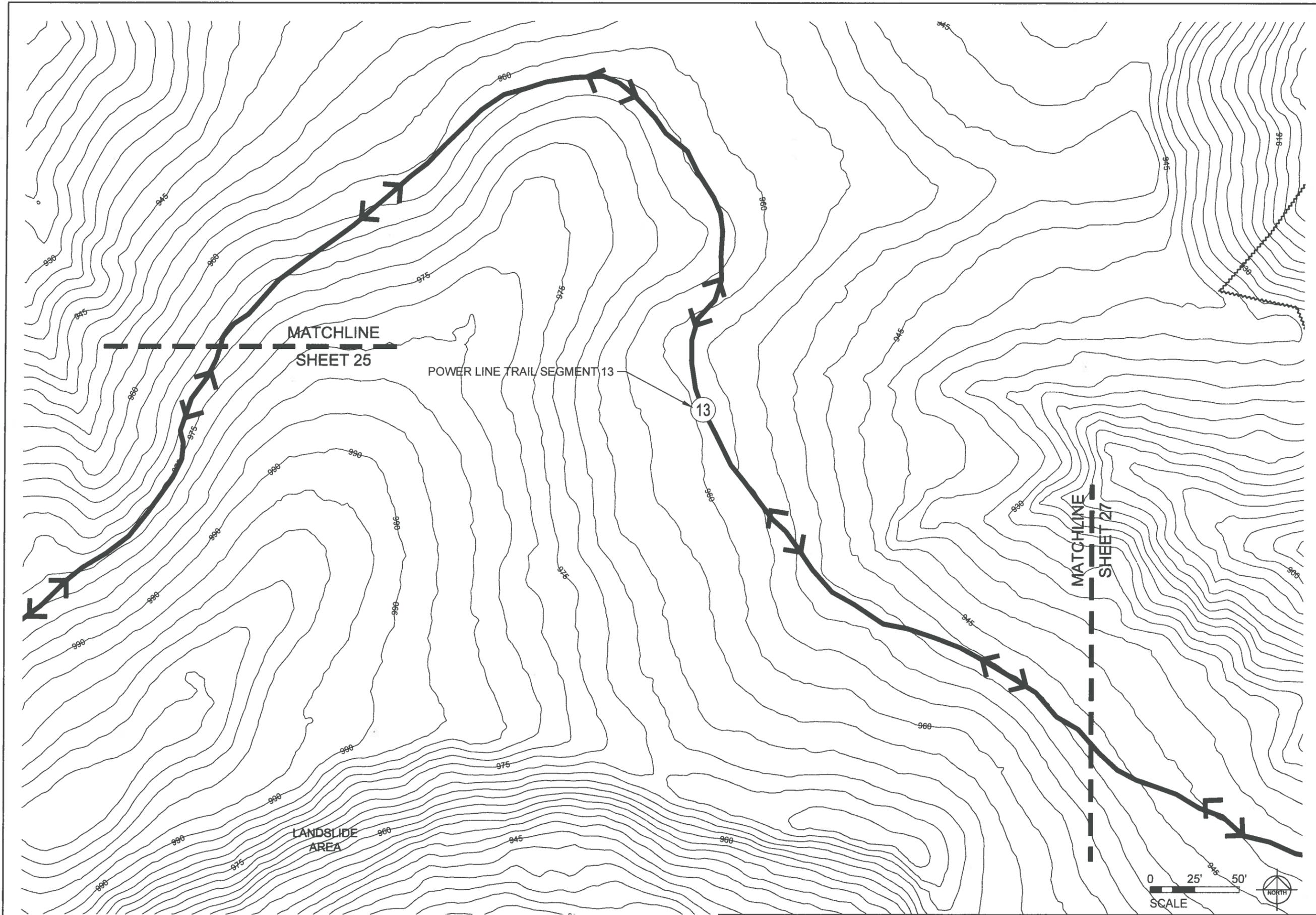
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OF THE STATE OF MINNESOTA.

JAMES M. SPOBERG 45577  
LANDSCAPE ARCHITECT (REG. 113)

**POWER LINE  
TRAIL**

**25**



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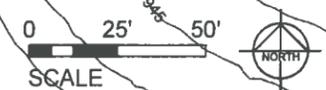
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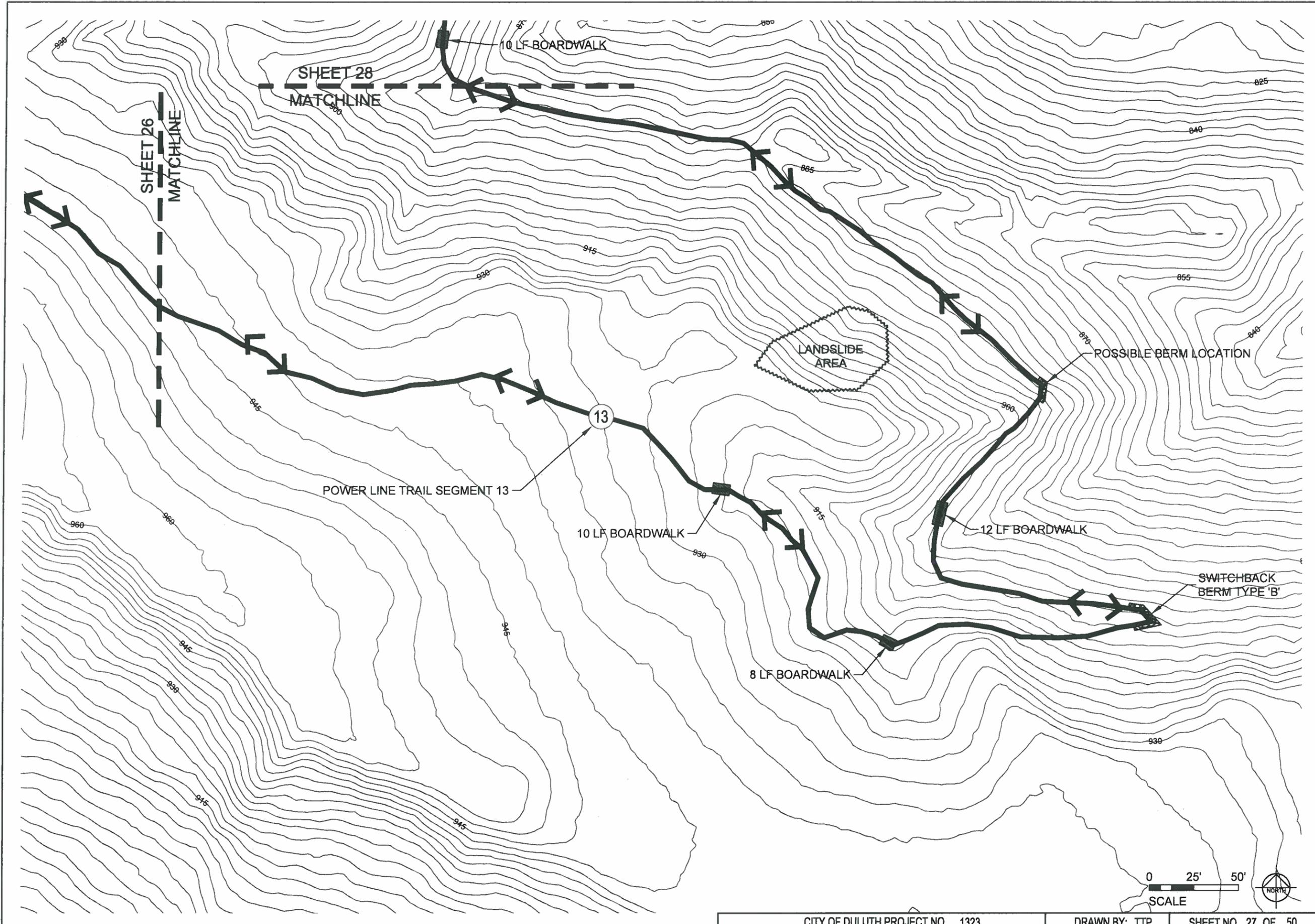
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JAMES M. SPOBERG 45577  
LANDSCAPE ARCHITECT REG. MINN.

**POWER LINE  
TRAIL**

**26**





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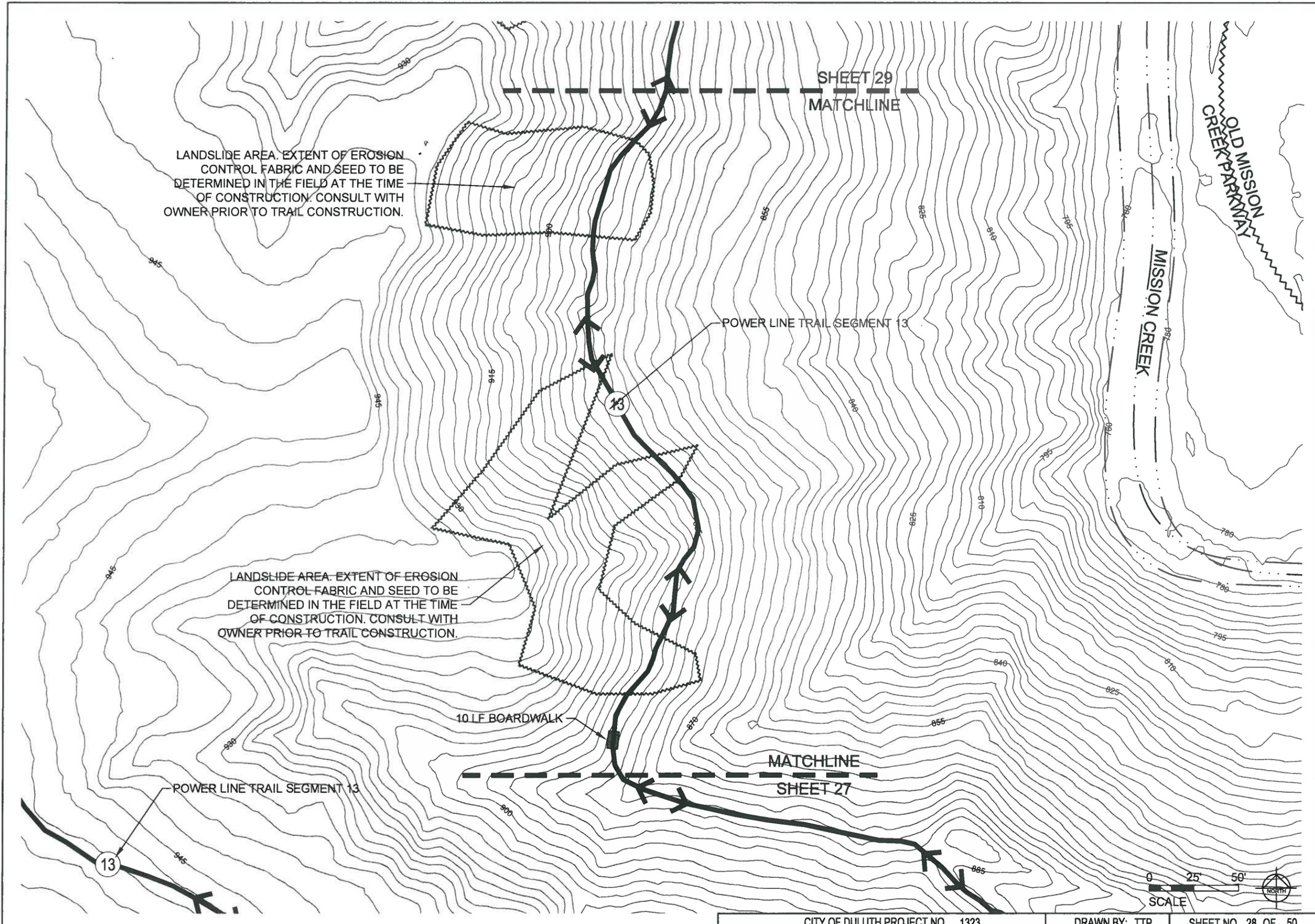
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TRAIL  
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JAMES M. SPOBERG 45577  
 LANDSCAPE ARCHITECT REG. MINN.

**POWER LINE  
TRAIL**



LANDSLIDE AREA. EXTENT OF EROSION CONTROL FABRIC AND SEED TO BE DETERMINED IN THE FIELD AT THE TIME OF CONSTRUCTION. CONSULT WITH OWNER PRIOR TO TRAIL CONSTRUCTION.

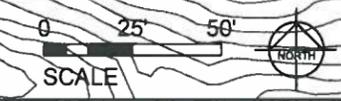
LANDSLIDE AREA. EXTENT OF EROSION CONTROL FABRIC AND SEED TO BE DETERMINED IN THE FIELD AT THE TIME OF CONSTRUCTION. CONSULT WITH OWNER PRIOR TO TRAIL CONSTRUCTION.

10 LF BOARDWALK

SHEET 29  
MATCHLINE

POWER LINE TRAIL SEGMENT 13

MATCHLINE  
SHEET 27



  
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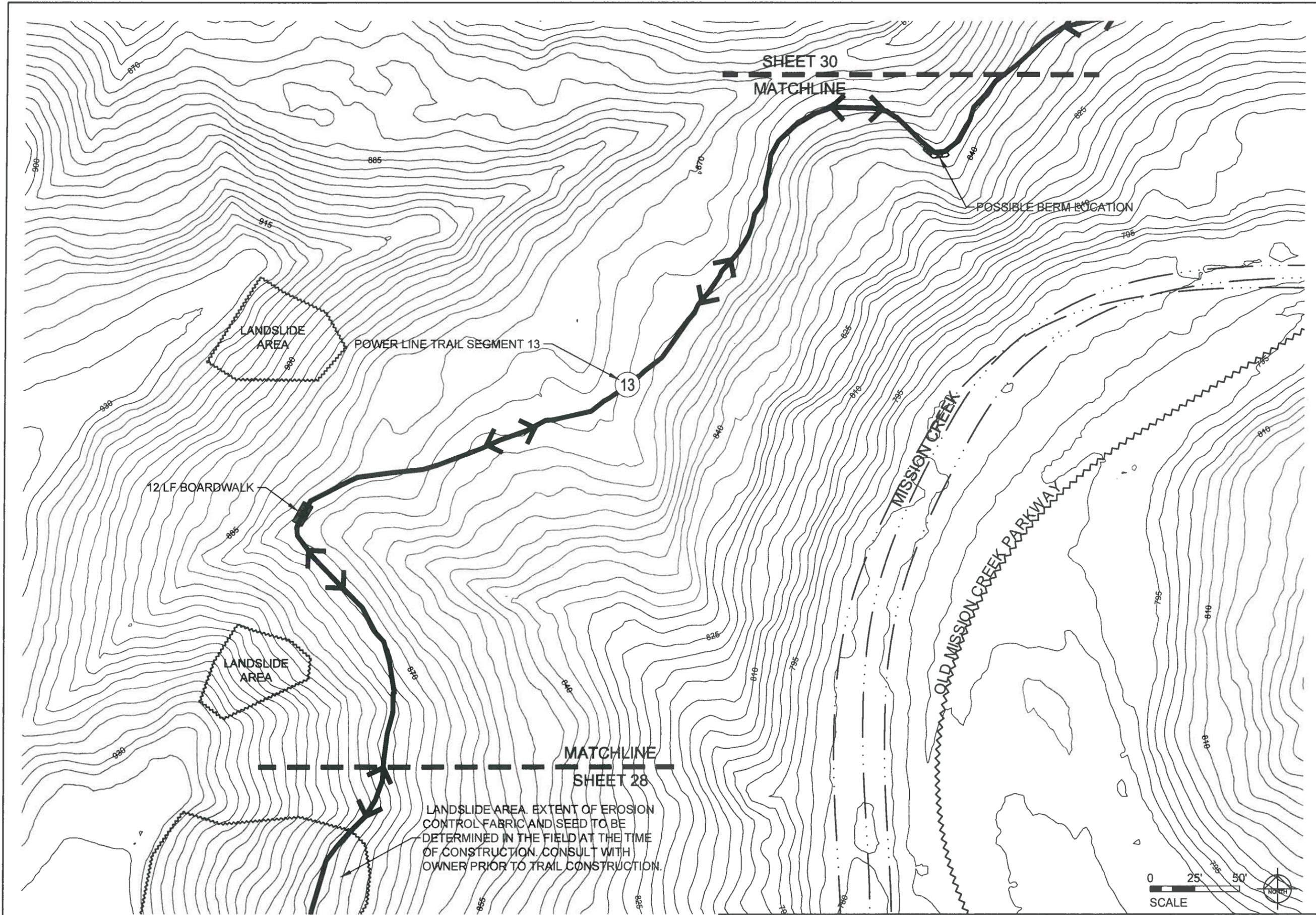
**DULUTH TRVERSE TRAIL MISSION CREEK PHASE II**  
DULUTH, MINNESOTA

|              |             |
|--------------|-------------|
| PROJECT NO.: | 12-039.1    |
| DATE:        | FEB-17-2014 |
| DRAWN BY:    | TTP         |
| REVISIONS:   |             |

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JAMES M. SPOBERG 45577  
LANDSCAPE ARCHITECT REG. NO.

**POWER LINE TRAIL**



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**DULUTH TRAVERSE TRAIL MISSION CREEK PHASE II**  
 DULUTH, MINNESOTA

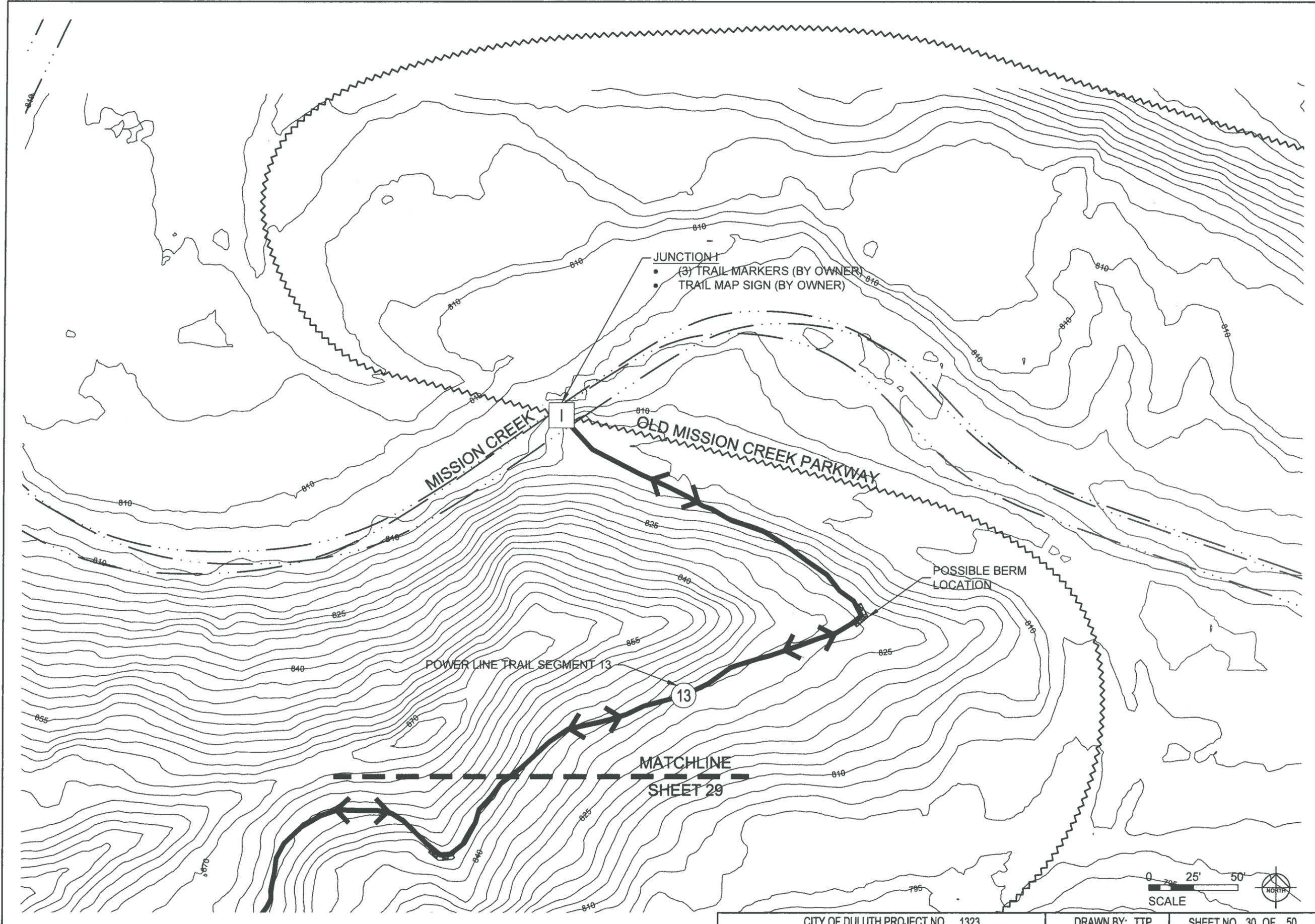
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JAMES M. SPOBERG 45577  
 LANDSCAPE ARCHITECT REG. MINN.

**POWER LINE TRAIL**

**29**



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**DULUTH  
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TRAIL  
MISSION CREEK  
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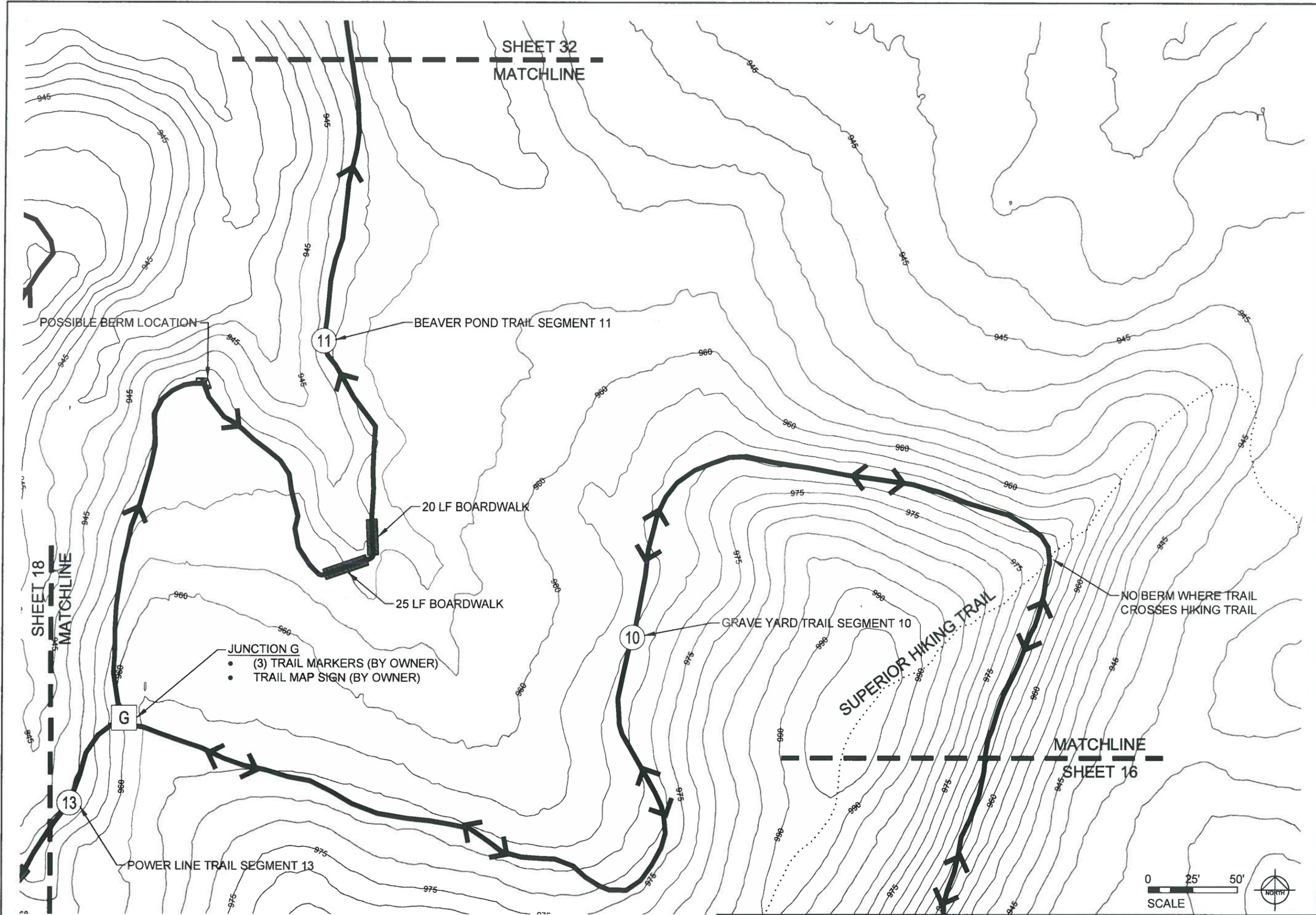
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JAMES M. SPOBERG 45577  
LANDSCAPE ARCHITECT REG. 123

**POWER LINE  
TRAIL**

**30**



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DULUTH, MINNESOTA

PROJECT NO.: 12-039.1

DATE: FEB-17-2014

DRAWN BY: TTP

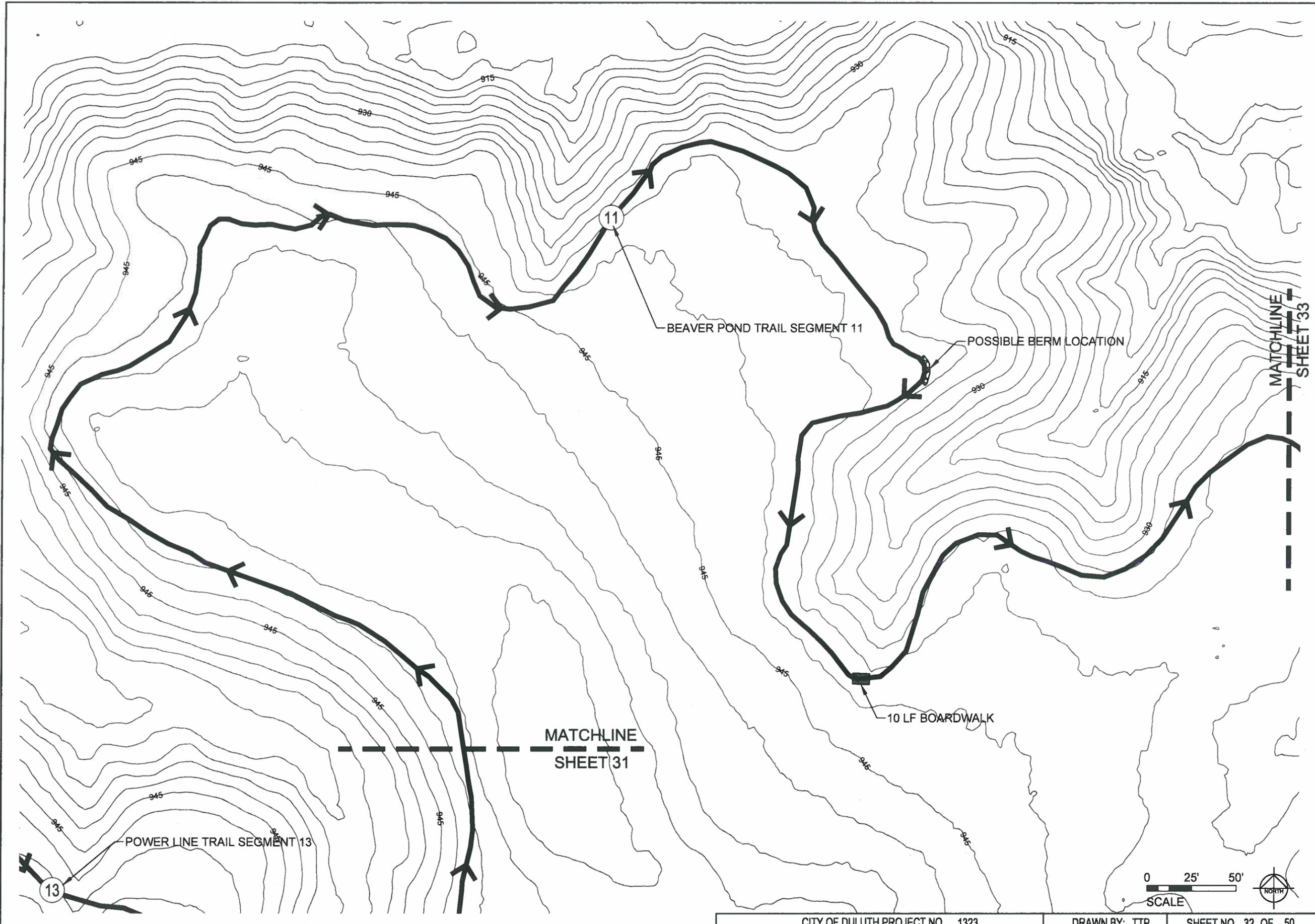
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TRAIL  
MISSION CREEK  
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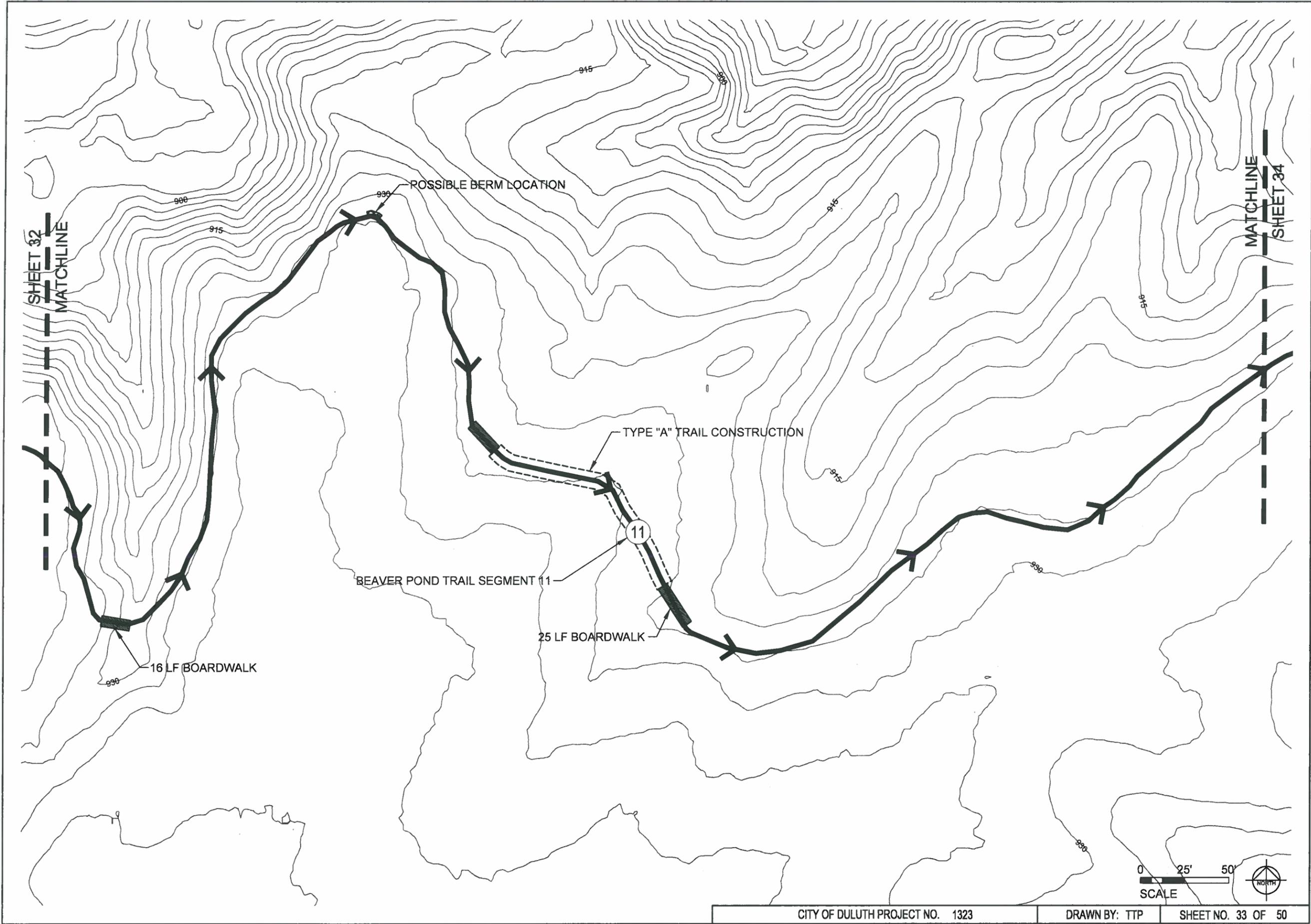
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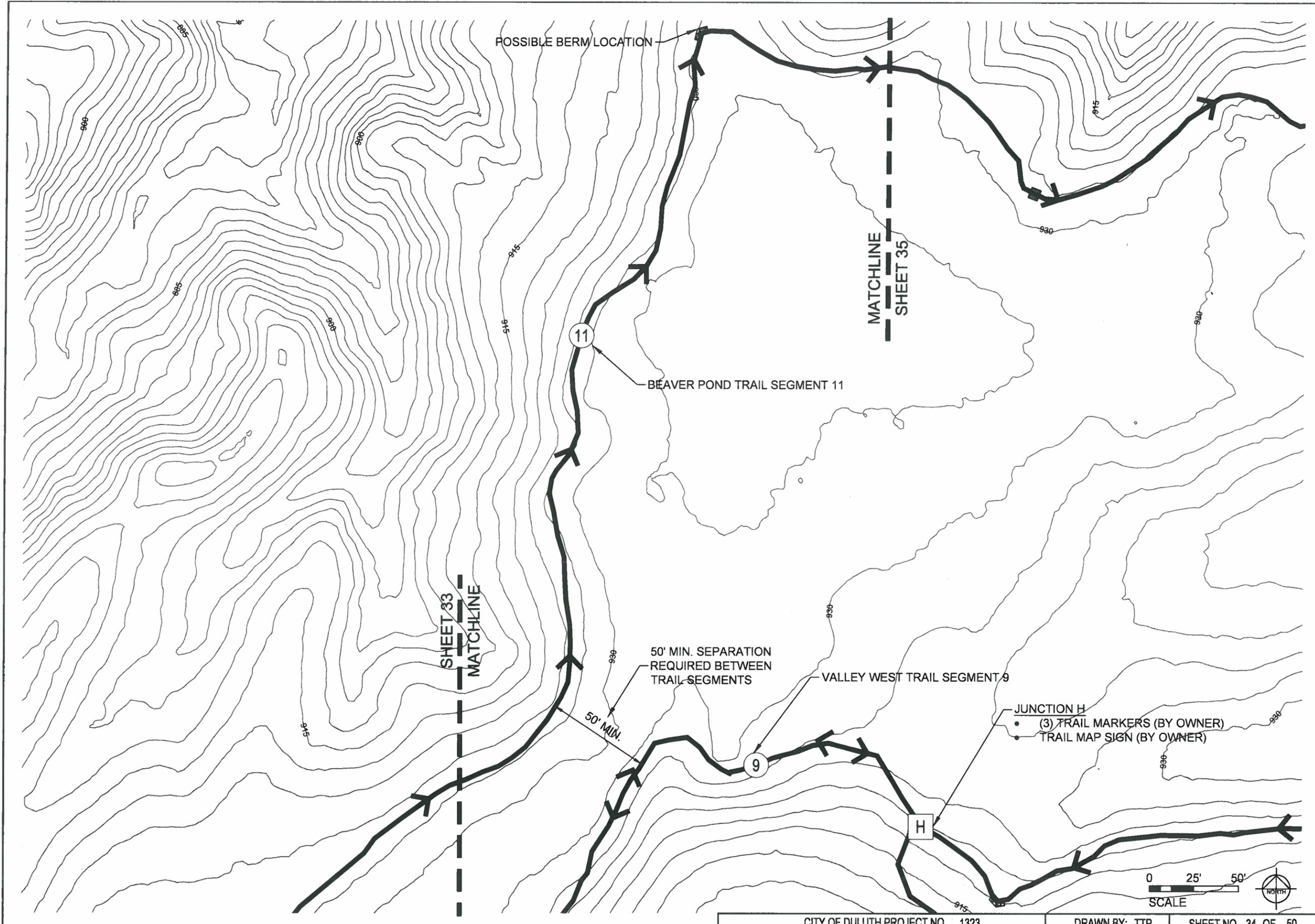
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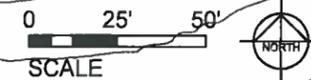
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MISSION CREEK  
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LANDSCAPE ARCHITECT REG. NO.

**BEAVER  
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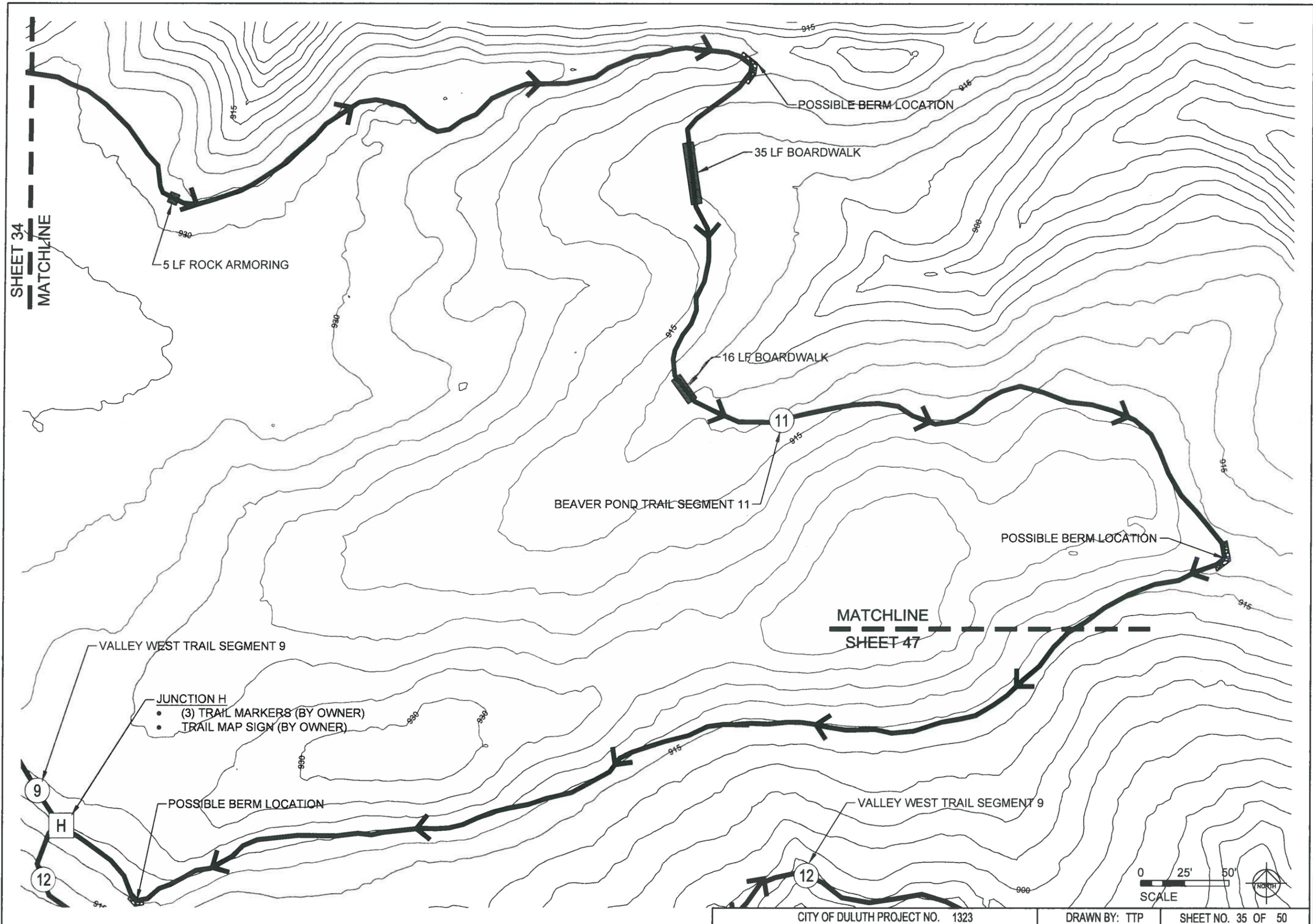


CITY OF DULUTH PROJECT NO. 1323

DRAWN BY: TTP

SHEET NO. 34 OF 50

**34**



SHEET 34  
MATCHLINE

MATCHLINE  
SHEET 47



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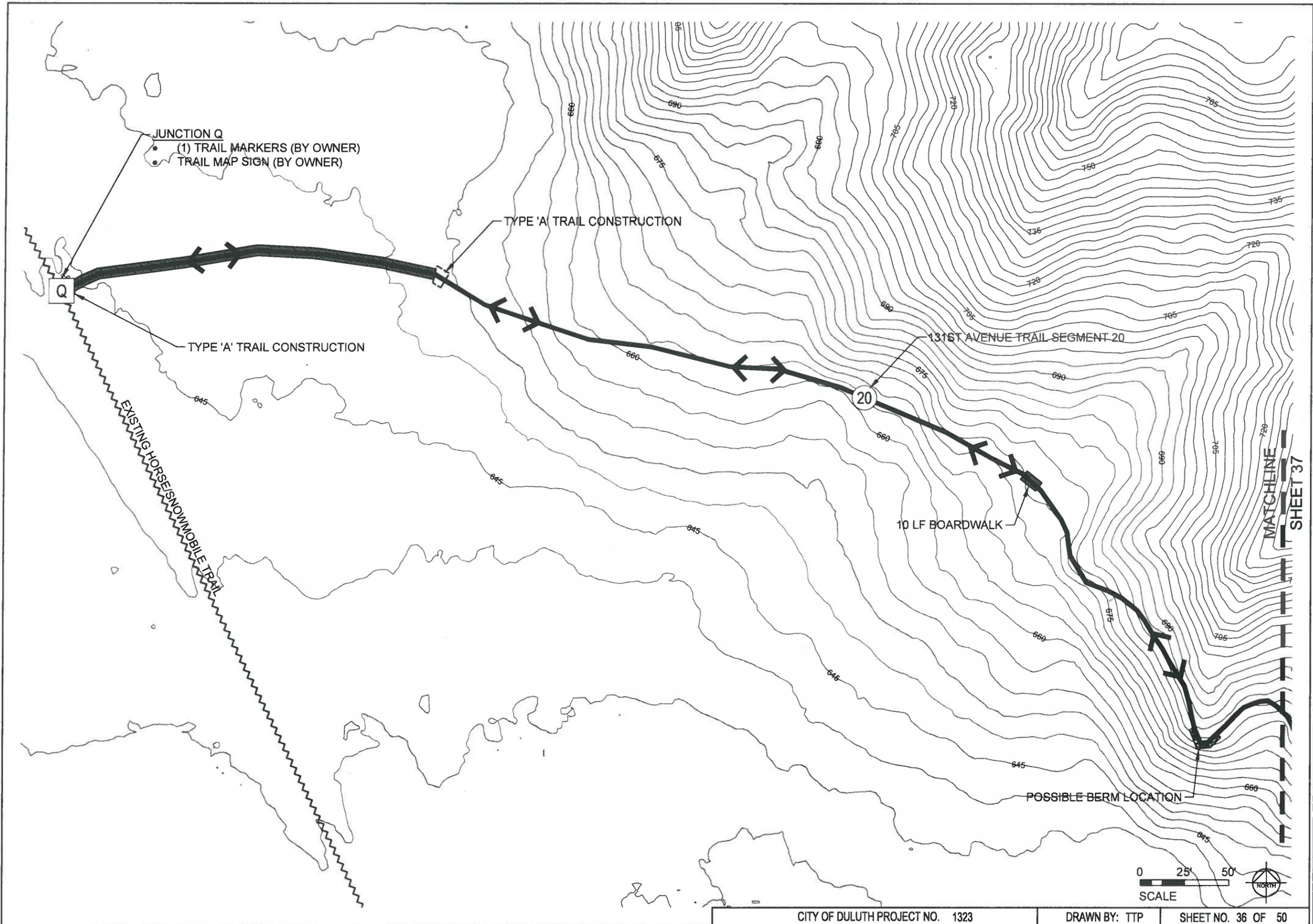
**BEAVER  
POND TRAIL**

**35**

CITY OF DULUTH PROJECT NO. 1323

DRAWN BY: TTP

SHEET NO. 35 OF 50



JUNCTION Q  
 (1) TRAIL MARKERS (BY OWNER)  
 TRAIL MAP SIGN (BY OWNER)

TYPE 'A' TRAIL CONSTRUCTION

TYPE 'A' TRAIL CONSTRUCTION

EXISTING HORSE/SNOWMOBILE TRAIL

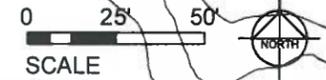
131ST AVENUE TRAIL SEGMENT 20

20

10 LF BOARDWALK

POSSIBLE BERM LOCATION

MATCHLINE  
 SHEET 37



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 TRAIL  
 MISSION CREEK  
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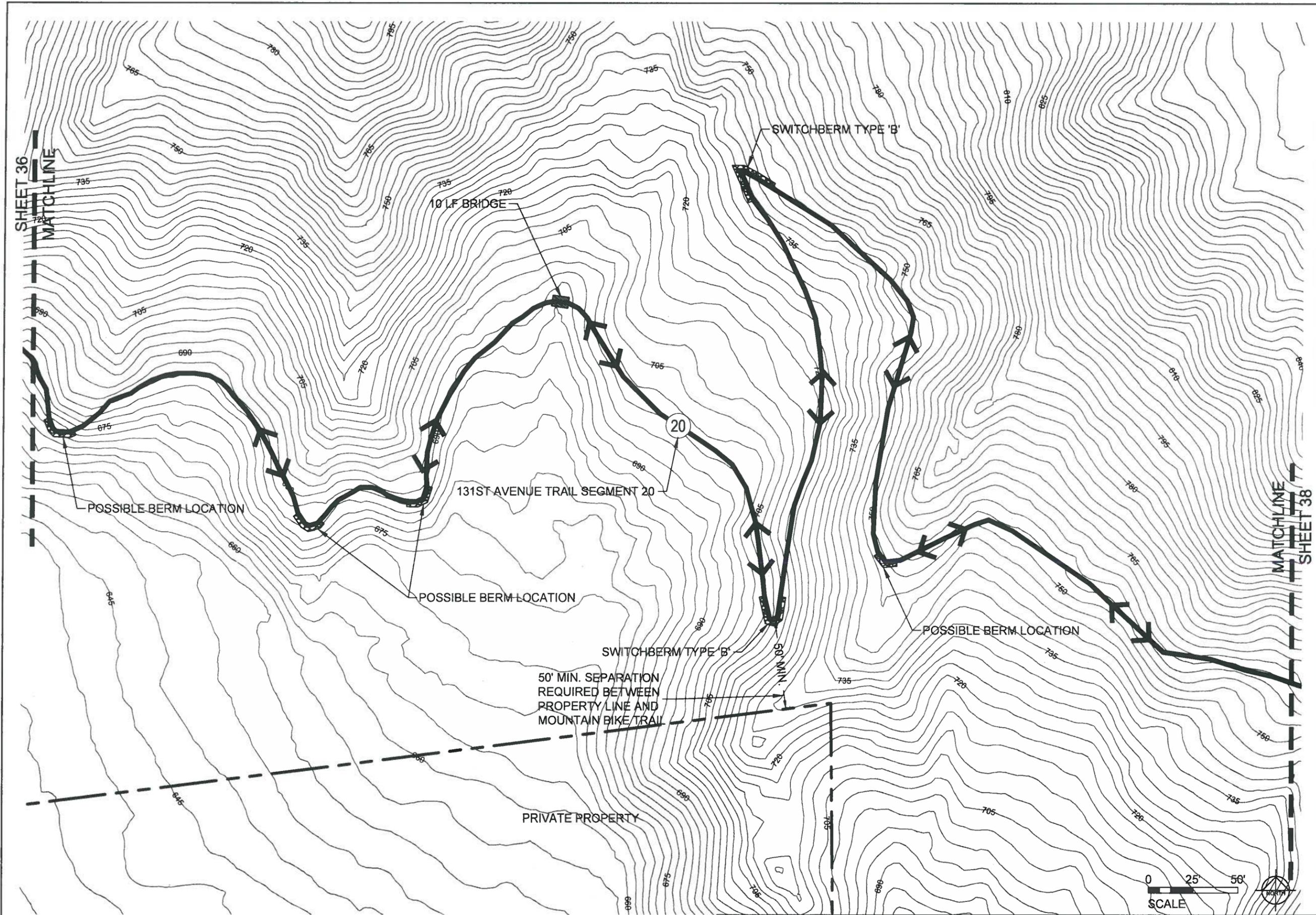
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**131ST AVE.  
 TRAIL**

**36**



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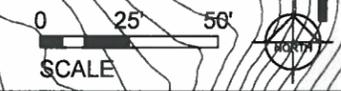
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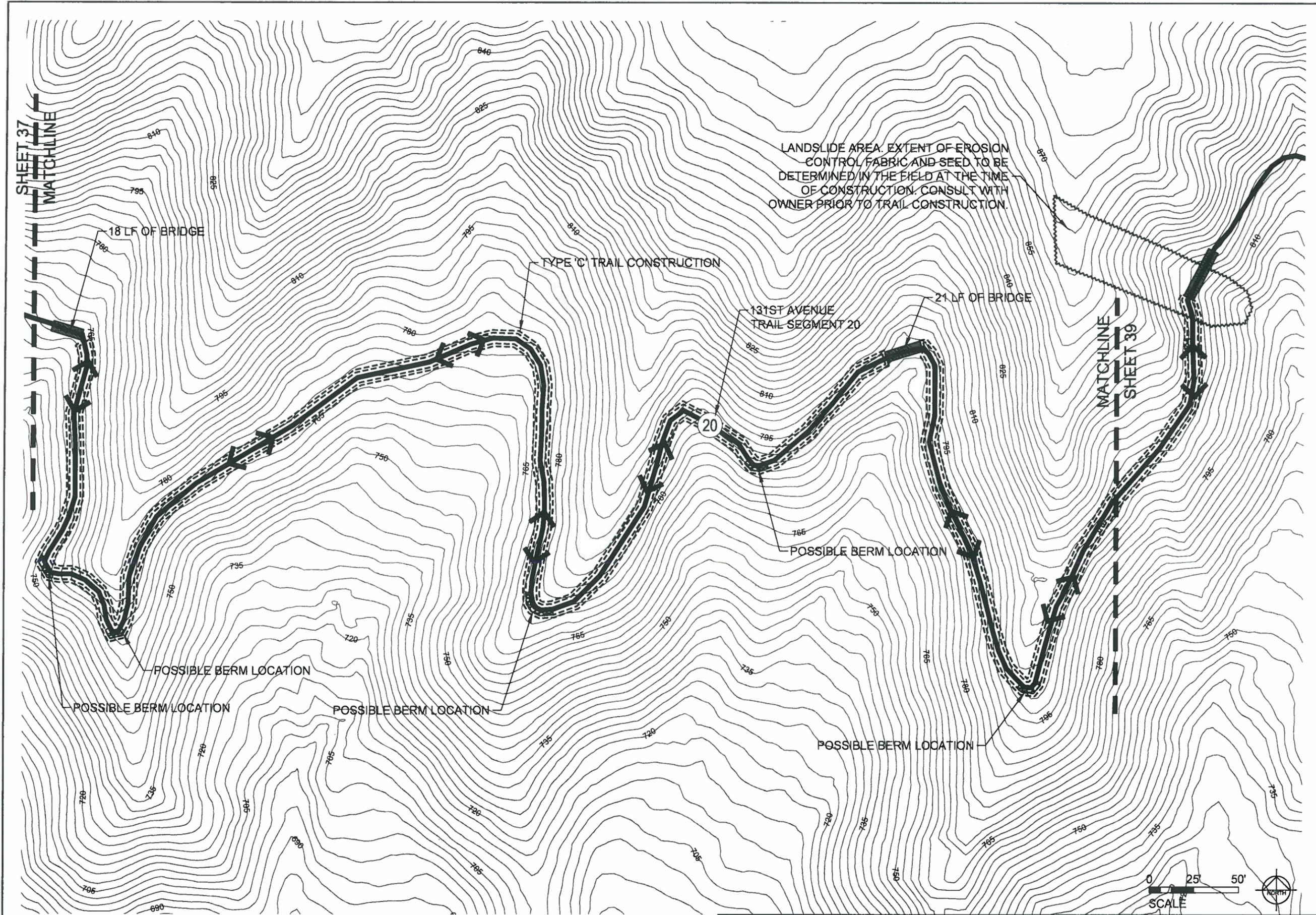
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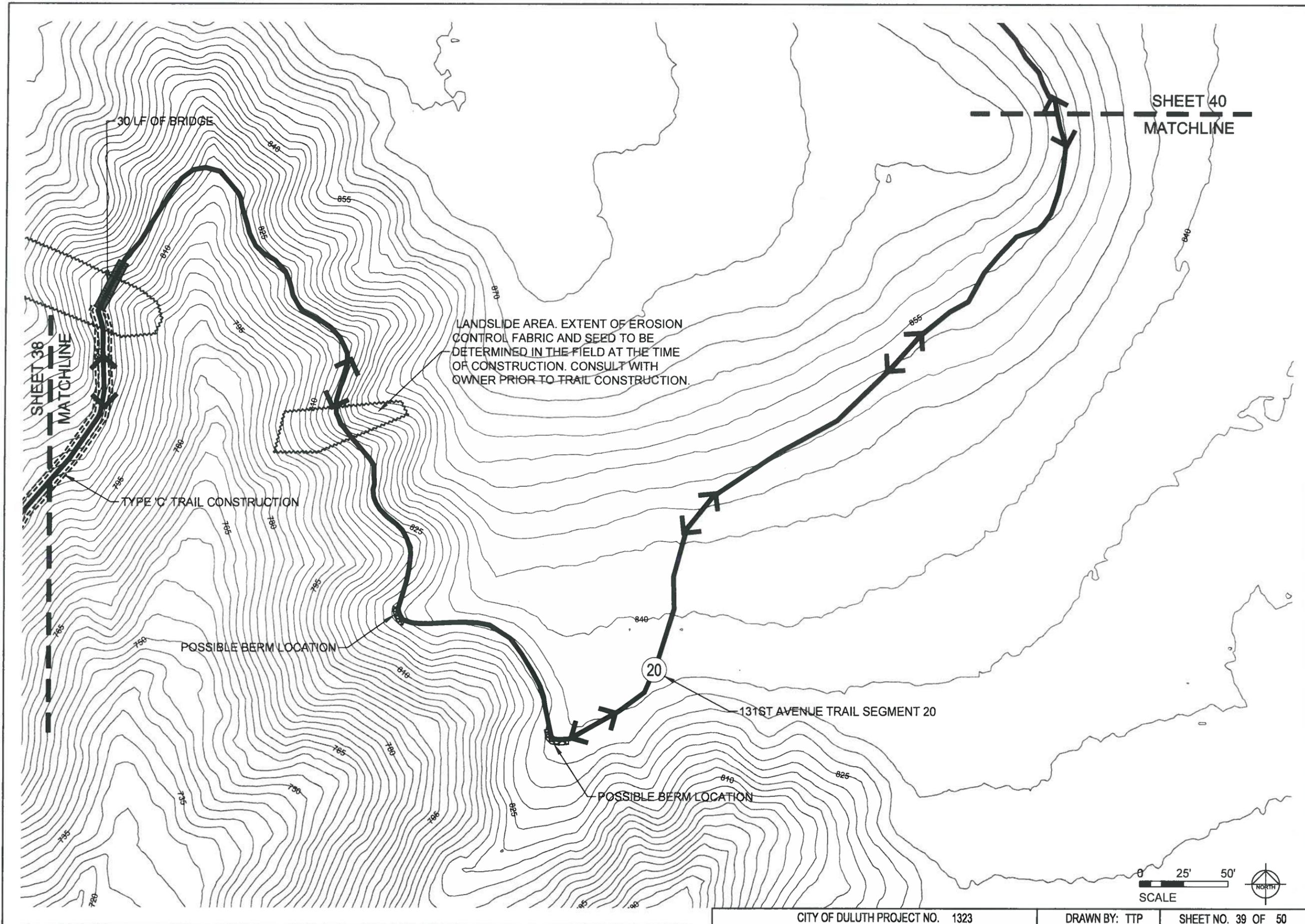


CITY OF DULUTH PROJECT NO. 1323

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SHEET NO. 38 OF 50

**38**



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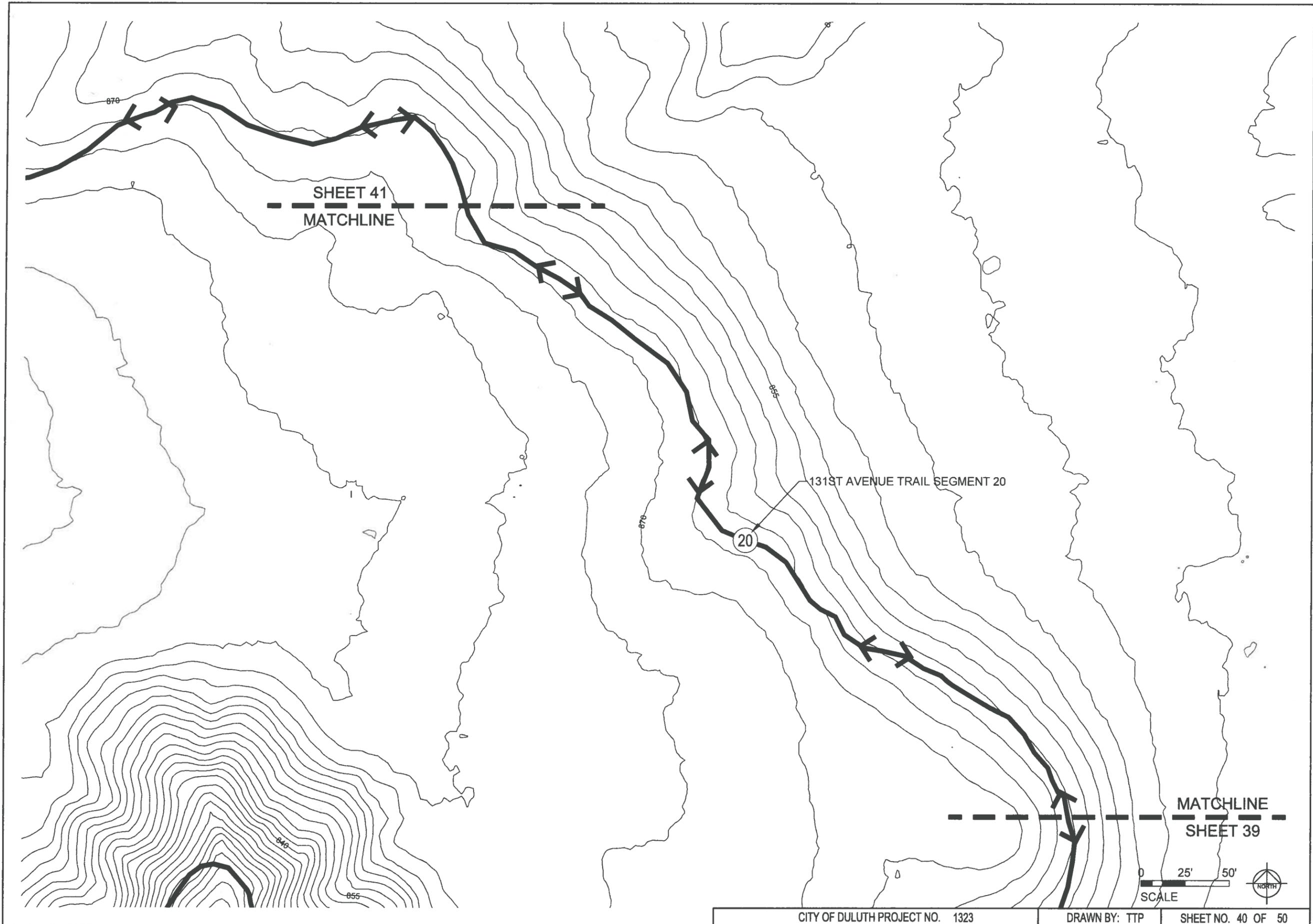
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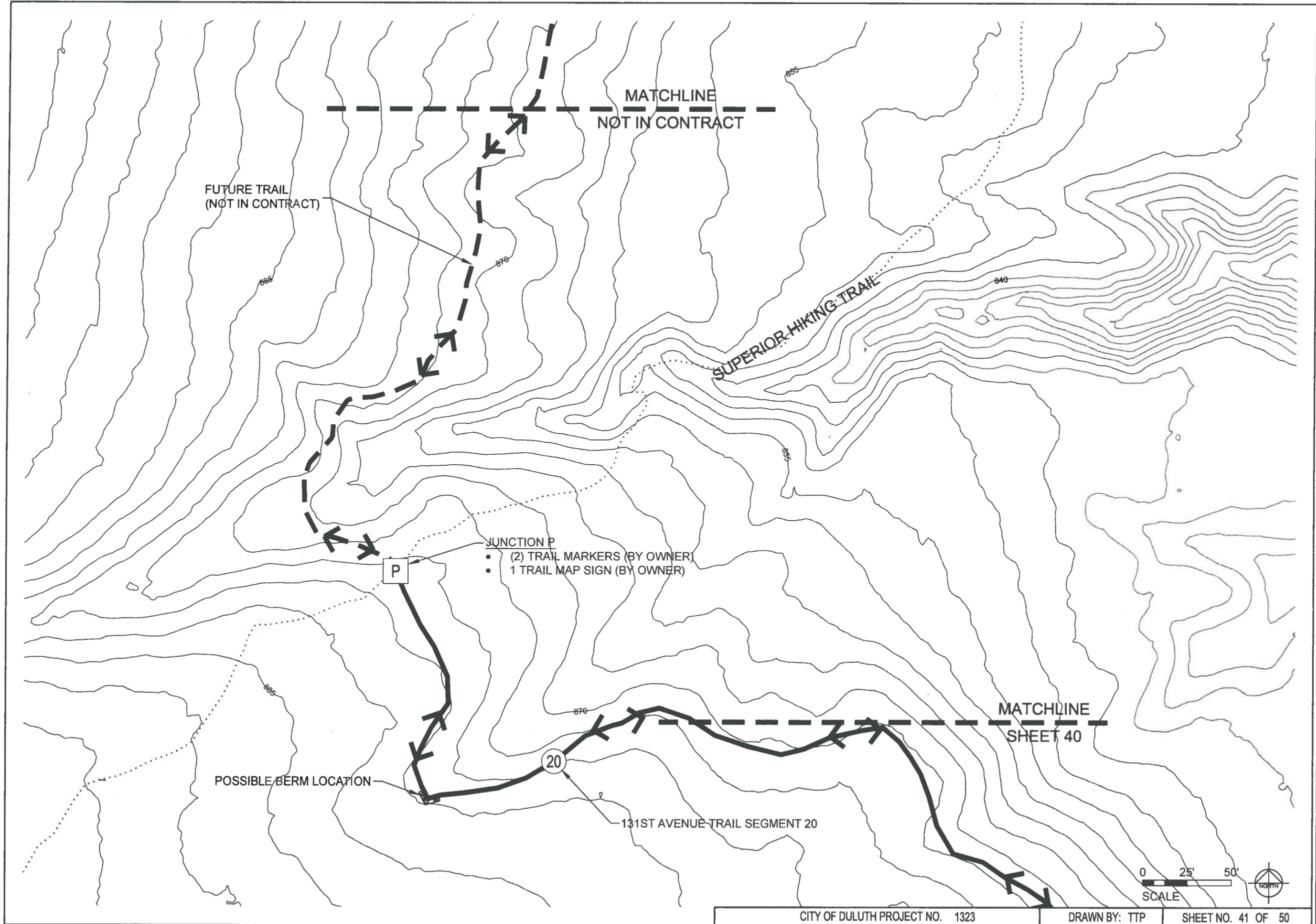
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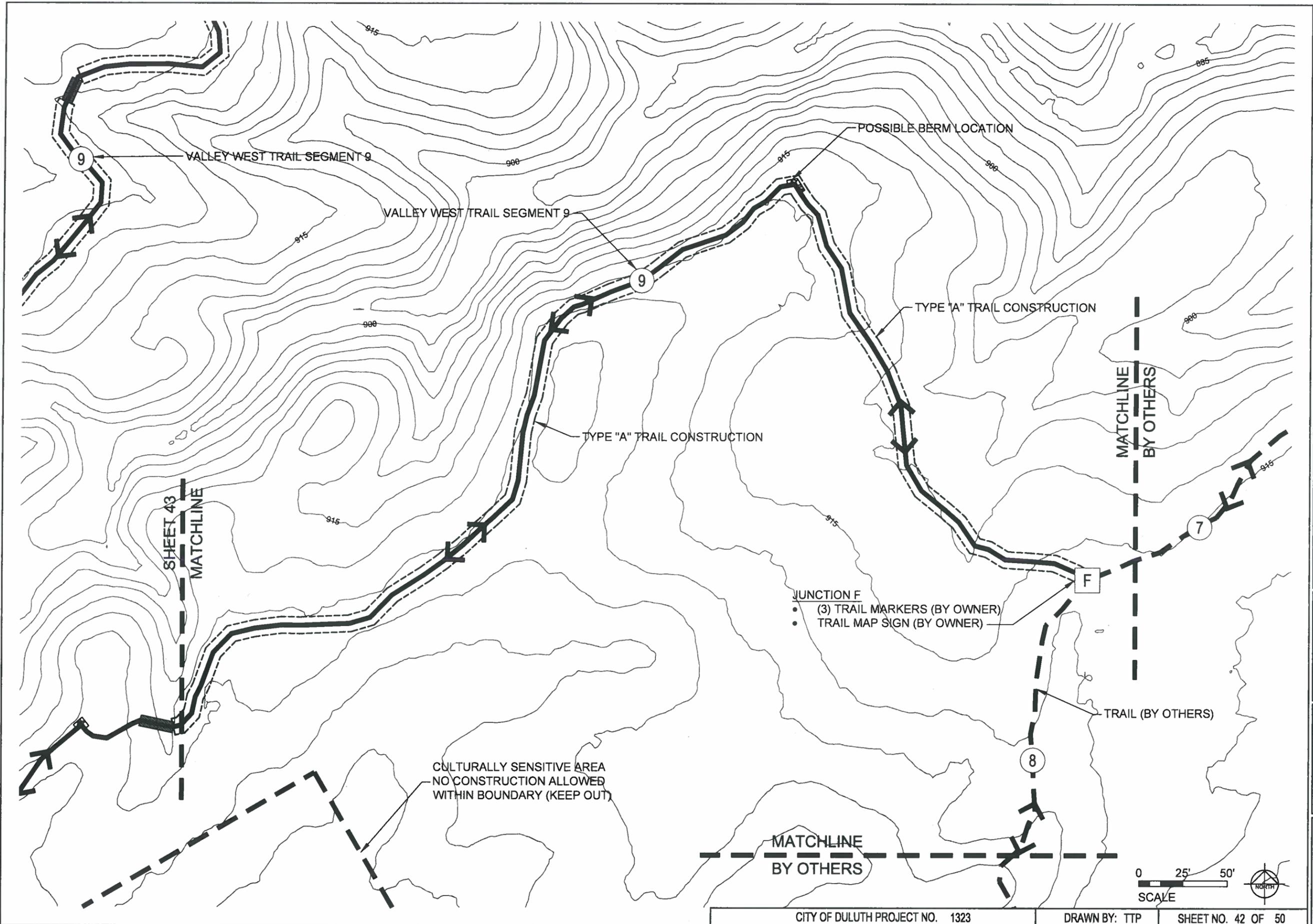
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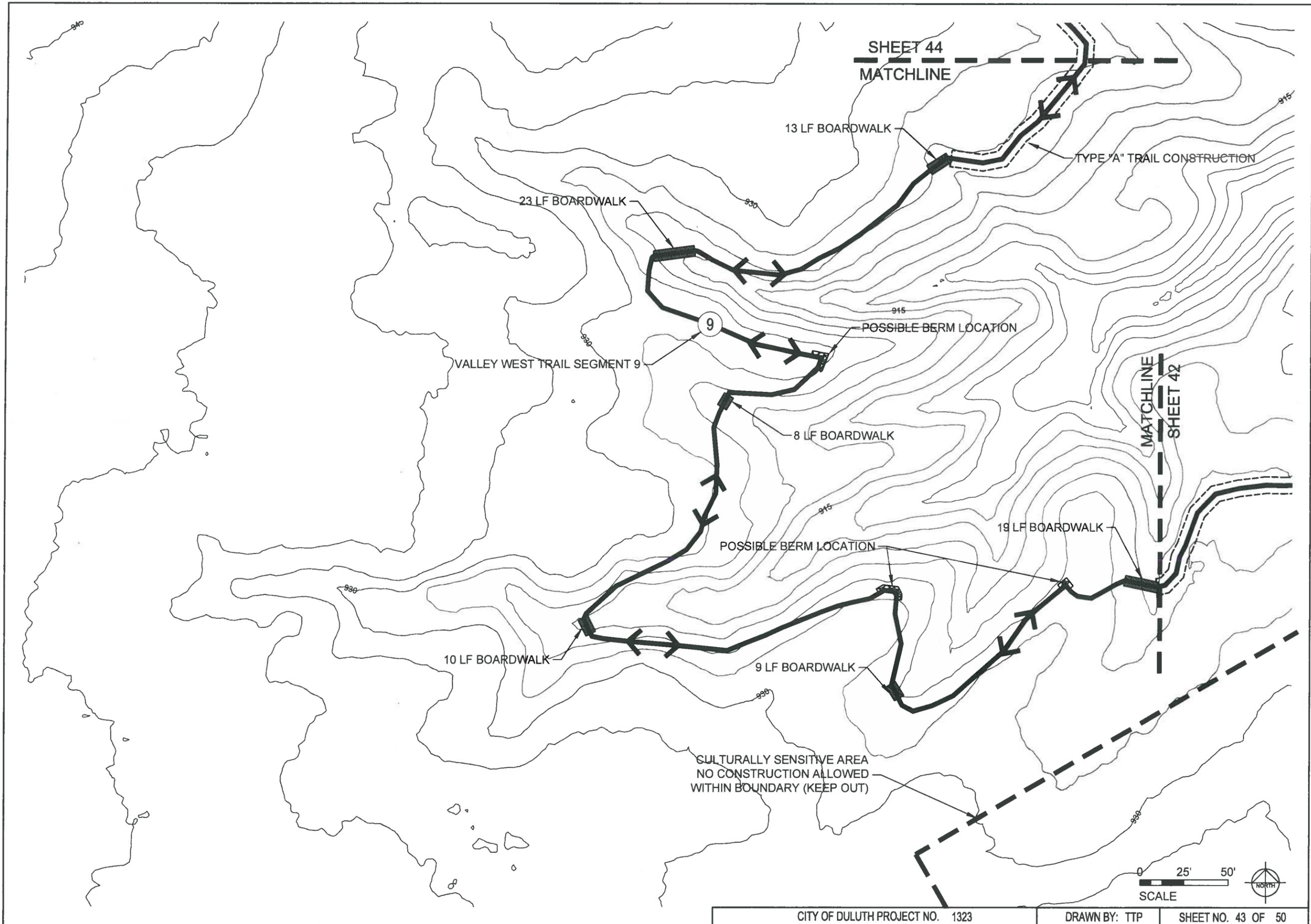
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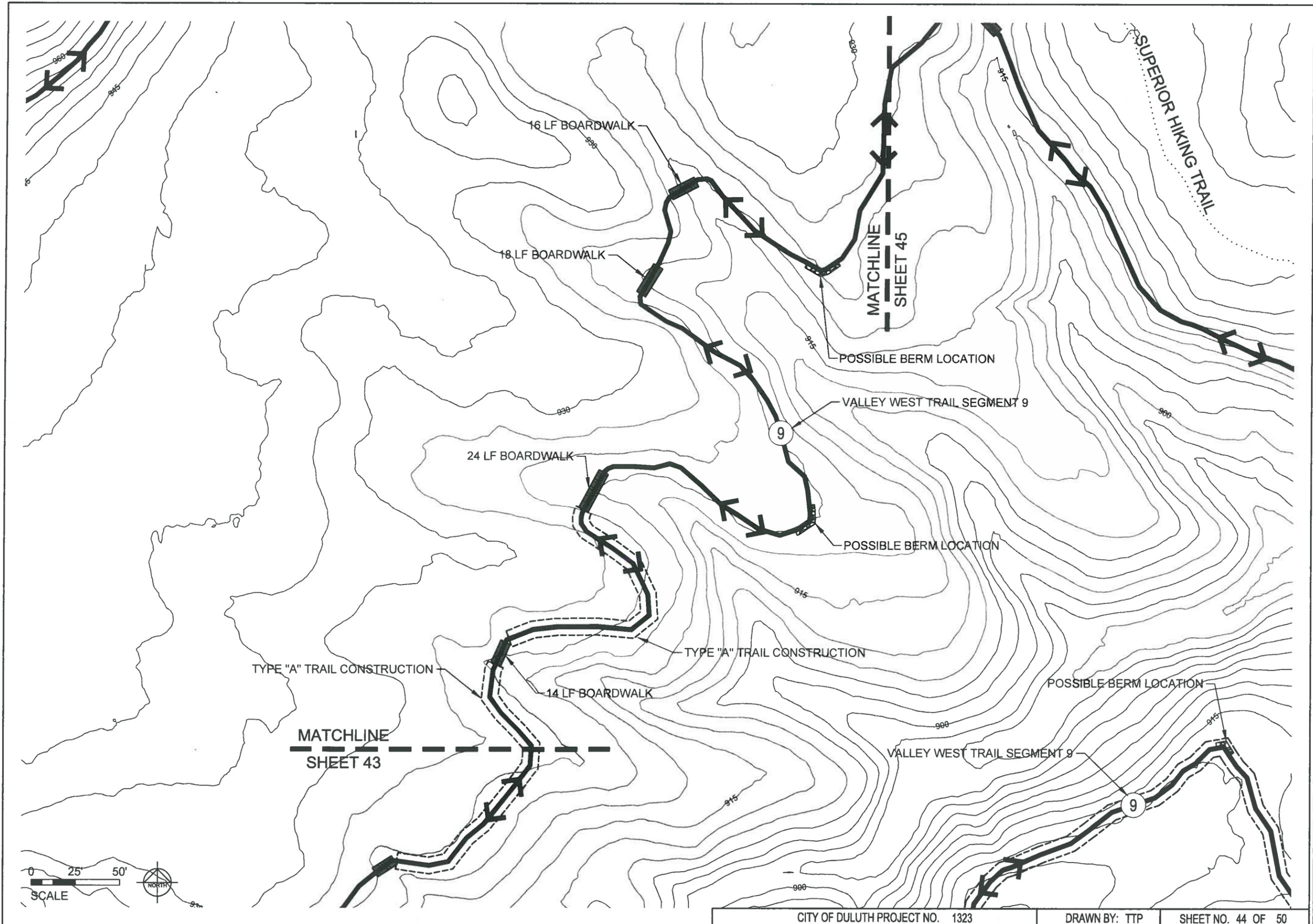
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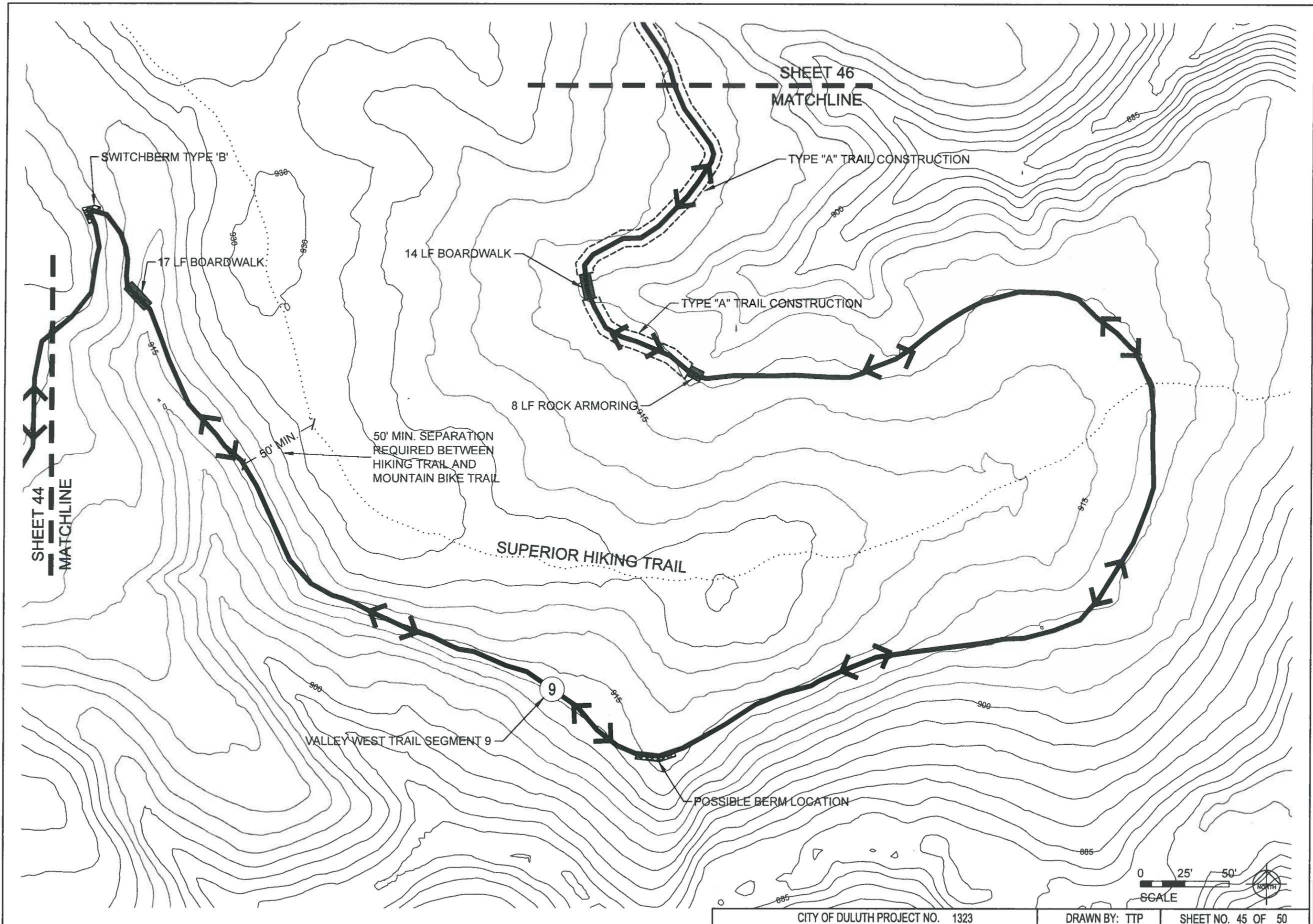
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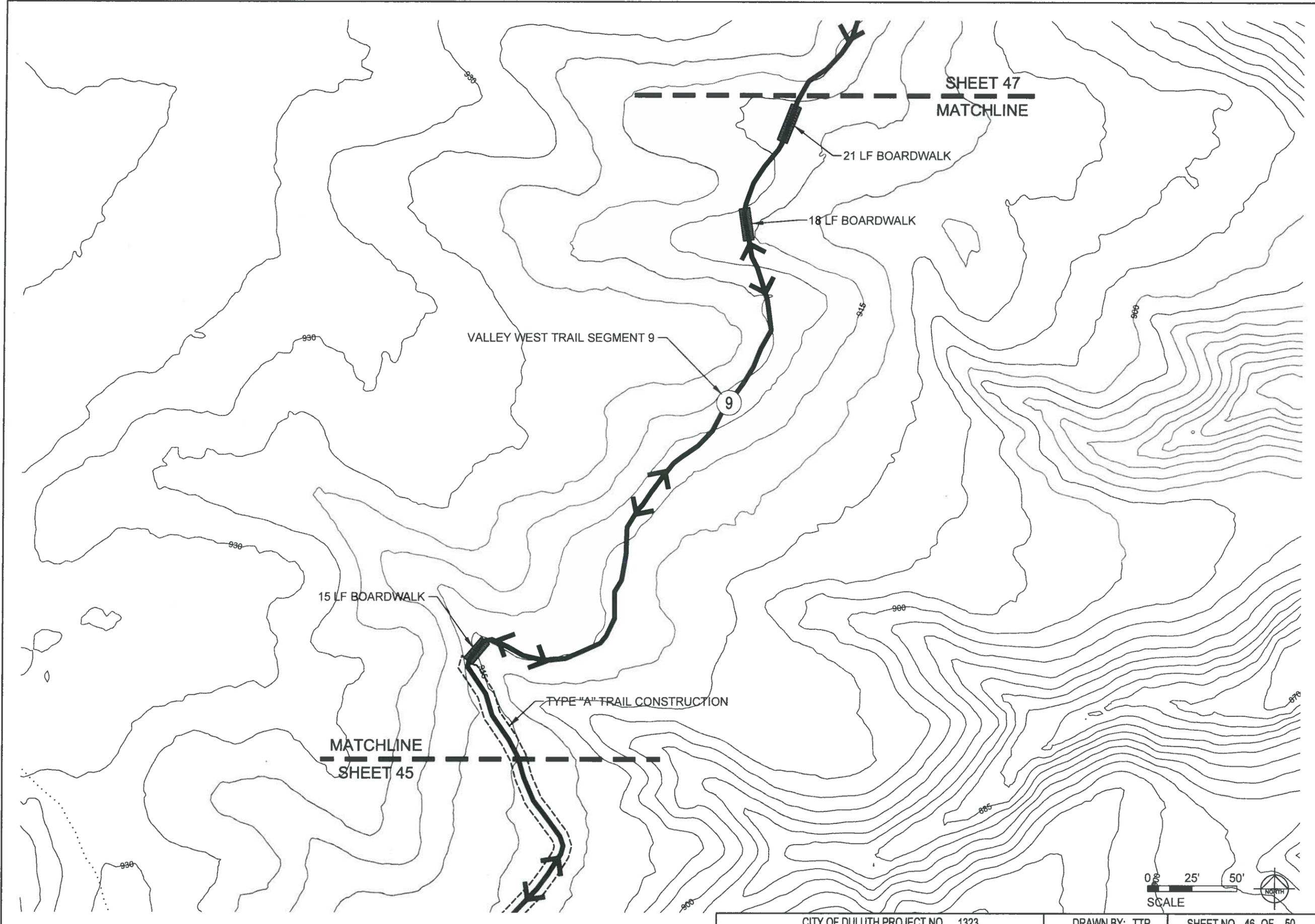
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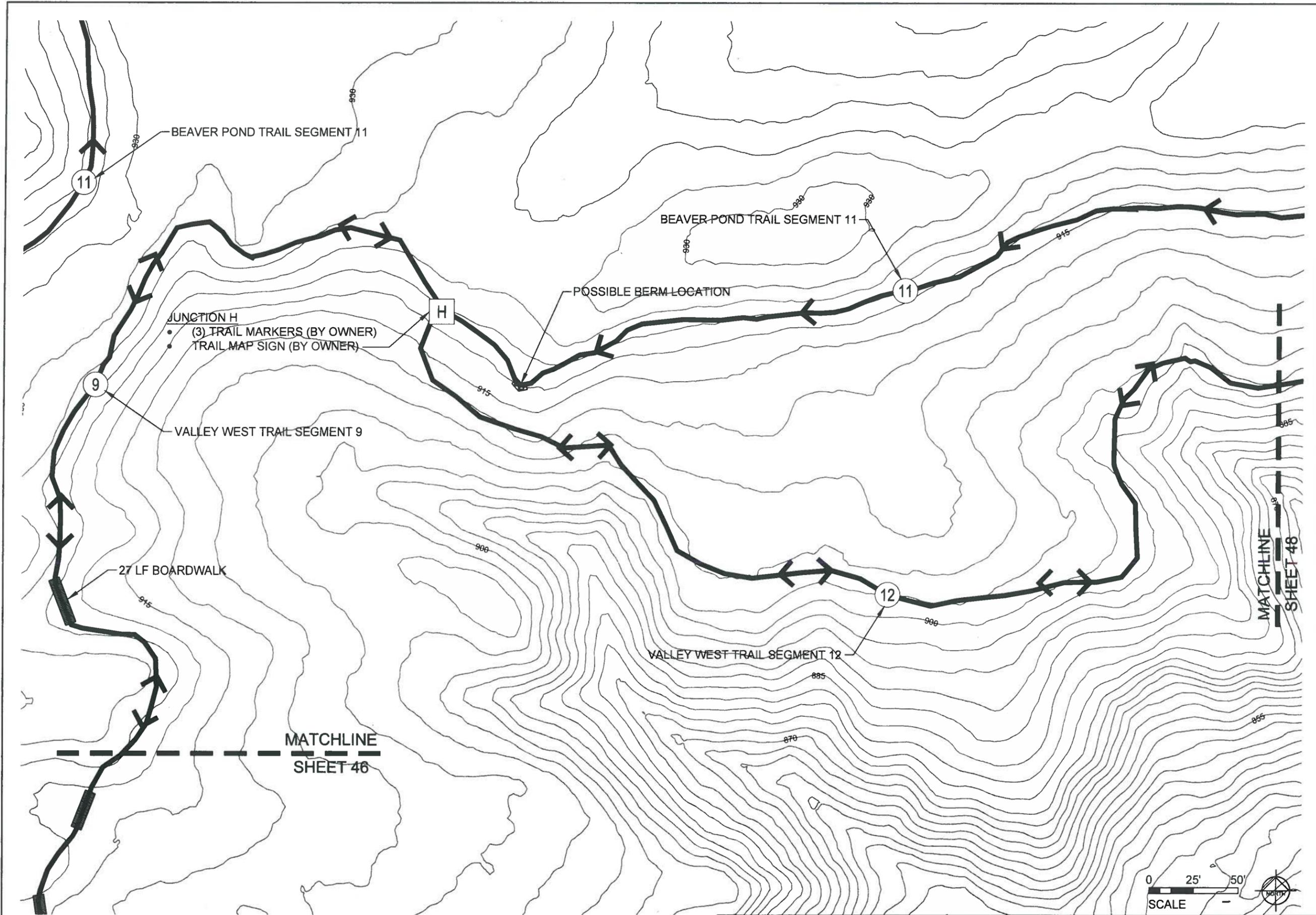
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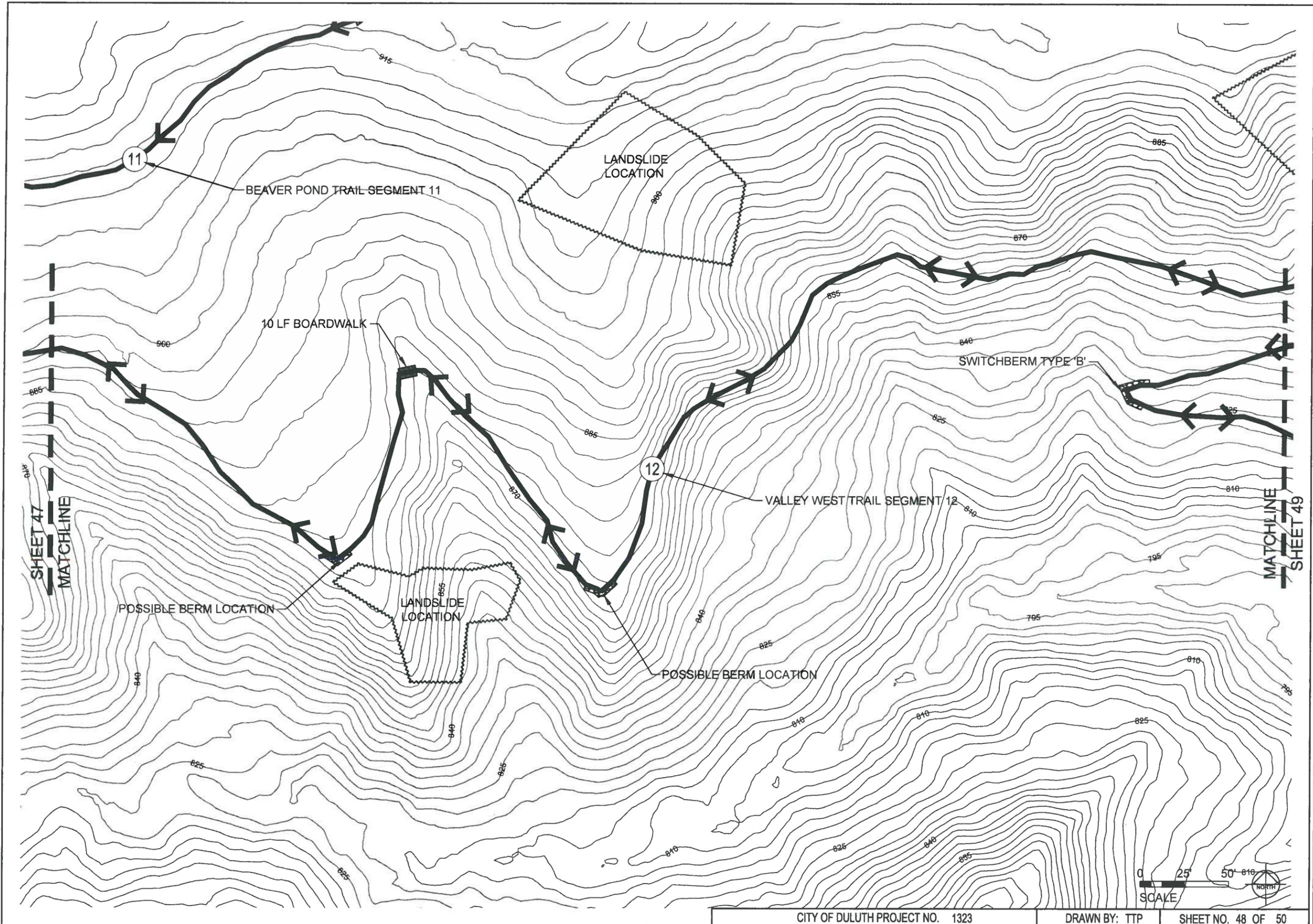
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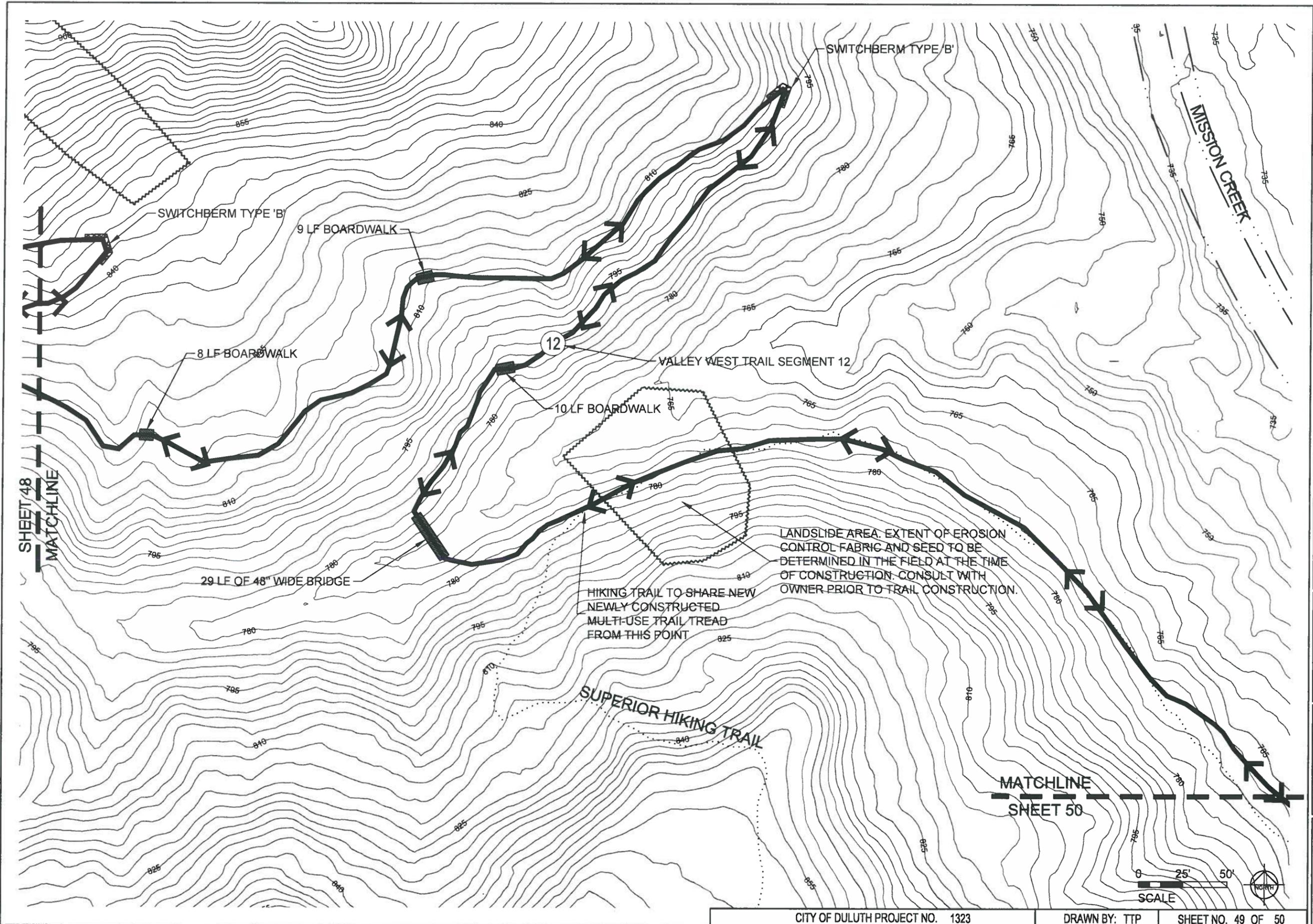
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JAMES M. SPOBERG 45577  
LANDSCAPE ARCHITECT REG. MINN.

**VALLEY  
WEST TRAIL**





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128 EAST SUPERIOR STREET  
 DULUTH, MINNESOTA 55802  
 PHONE 218-727-8481  
 FAX 218-727-8483  
 EMAIL: [arinn@cpinistnet.com](mailto:arinn@cpinistnet.com)



**DULUTH TRAVERSE TRAIL MISSION CREEK PHASE II**  
 DULUTH, MINNESOTA

PROJECT NO: 12-039.1  
 DATE: FEB-17-2014  
 DRAWN BY: TTP  
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**VALLEY WEST TRAIL**

**49**

SHEET 49

MATCHLINE

LANDSLIDE AREA. EXTENT OF EROSION CONTROL FABRIC AND SEED TO BE DETERMINED IN THE FIELD AT THE TIME OF CONSTRUCTION. CONSULT WITH OWNER PRIOR TO TRAIL CONSTRUCTION.

VALLEY WEST TRAIL SEGMENT 12

HIKING TRAIL TO SHARE NEWLY CONSTRUCTED MULTU-USE TRAIL TREAD FROM THIS POINT

33 LF BOARDWALK

SWITCHBERM TYPE 'B'

12

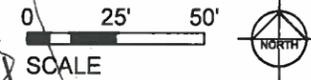
MISSION CREEK

SUPERIOR HIKING TRAIL

OLD MISSION CREEK PARKWAY

JUNCTION J

- (3) TRAIL MARKERS (BY OWNER)
- TRAIL MAP SIGN (BY OWNER)



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126 EAST SUPERIOR STREET  
DULUTH, MINNESOTA 55802  
PHONE 218-727-8481  
FAX 218-727-8483  
EMAIL: arctree@spinet.net



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50