

**PLAN LEGEND**

RIGHT OF WAY LINE	---
DITCH CENTERLINE	---
FENCE LINE	---
RETAINING WALL	---
GRAVEL LINE	---
GUARD RAIL LINE	---
RAILROAD TRACK LINE	
ROAD CENTERLINE	---
TREE LINE	~
STREAM LINE	---
WETLAND LINE	---
EX SANITARY LINE	---
PR SANITARY LINE	---
AB SANITARY LINE	---
EX FORCEMAIN LINE	---
PR FORCEMAIN LINE	---
AB FORCEMAIN LINE	---
EX STORM LINE	---
PR STORM LINE	---
AB STORM LINE	---
EX WATER LINE	---
PR WATER LINE	---
AB WATER LINE	---
EX GAS LINE	---
PR GAS LINE	---
AB GAS LINE	---
EX STEAM LINE	---
PR STEAM LINE	---
AB STEAM LINE	---
UG CABLE TV LINE	---
AB CABLE TV LINE	---
UG ELECTRIC LINE	---
AB ELECTRIC LINE	---
UG FIBEROPTIC LINE	---
AB FIBEROPTIC LINE	---
UG TELEPHONE LINE	---
AB TELEPHONE LINE	---
OH ELECTRIC LINE	---
OH TELEPHONE LINE	---
OH CABLE TV LINE	---

**SYMBOLS**

EX SANITARY MANHOLE	(SAN)	⊗
EX SANITARY CLEANOUT	(SAN)	⊗
EX STORM MANHOLE	(STRM)	⊗
EX STORM CATCHBASIN	(STRM)	⊗
EX. WATER MANHOLE	(W)	⊗
EX. WATER VALVE	(W)	⊗
EX. WATER HYDRANT	(W)	⊗
EX. WATER SHUTOFF	(W)	⊗
EX. WATER & GAS MH	(W&G)	⊗
EX. GAS MANHOLE	(GAS)	⊗
EX. GAS VALVE	(GAS)	⊗
EX. GAS SHUTOFF	(GAS)	⊗
EX. STEAM MANHOLE	(STEAM)	⊗
EX. TELEPHONE MANHOLE	(T)	⊗
EX. ELECTRIC MANHOLE	(E)	⊗
EX. POWERPOLE	(P)	⊗
EX. LIGHT POLE	(L)	⊗
EX. ELECTRIC VAULT	(E)	⊗
EX. ANCHOR	(A)	⊗
EX. ELECTRIC TRANSFORMER	(E)	⊗
EX. STREET LIGHT	(S)	⊗
EX. SIGNAL W/ STREET LIGHT	(S)	⊗
EX. HANDHOLE	(H.H.)	⊗
EX. HANDHOLE	(H.H.)	⊗
EX. TELEPHONE PEDESTAL	(P)	⊗
EX. WELL	(W)	⊗
BENCHMARK	(B)	⊗
FOUND CI MONUMENT	(M)	⊗
EX. SIGN	(S)	⊗
CONTROL POINT	(C)	⊗
EX DECIDUOUS TREE	(D)	⊗
EX CONIFEROUS TREE	(C)	⊗
EX. PARKING METER	(P)	⊗
EX. SOIL BORING	(SB#)	⊗

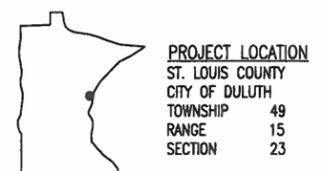
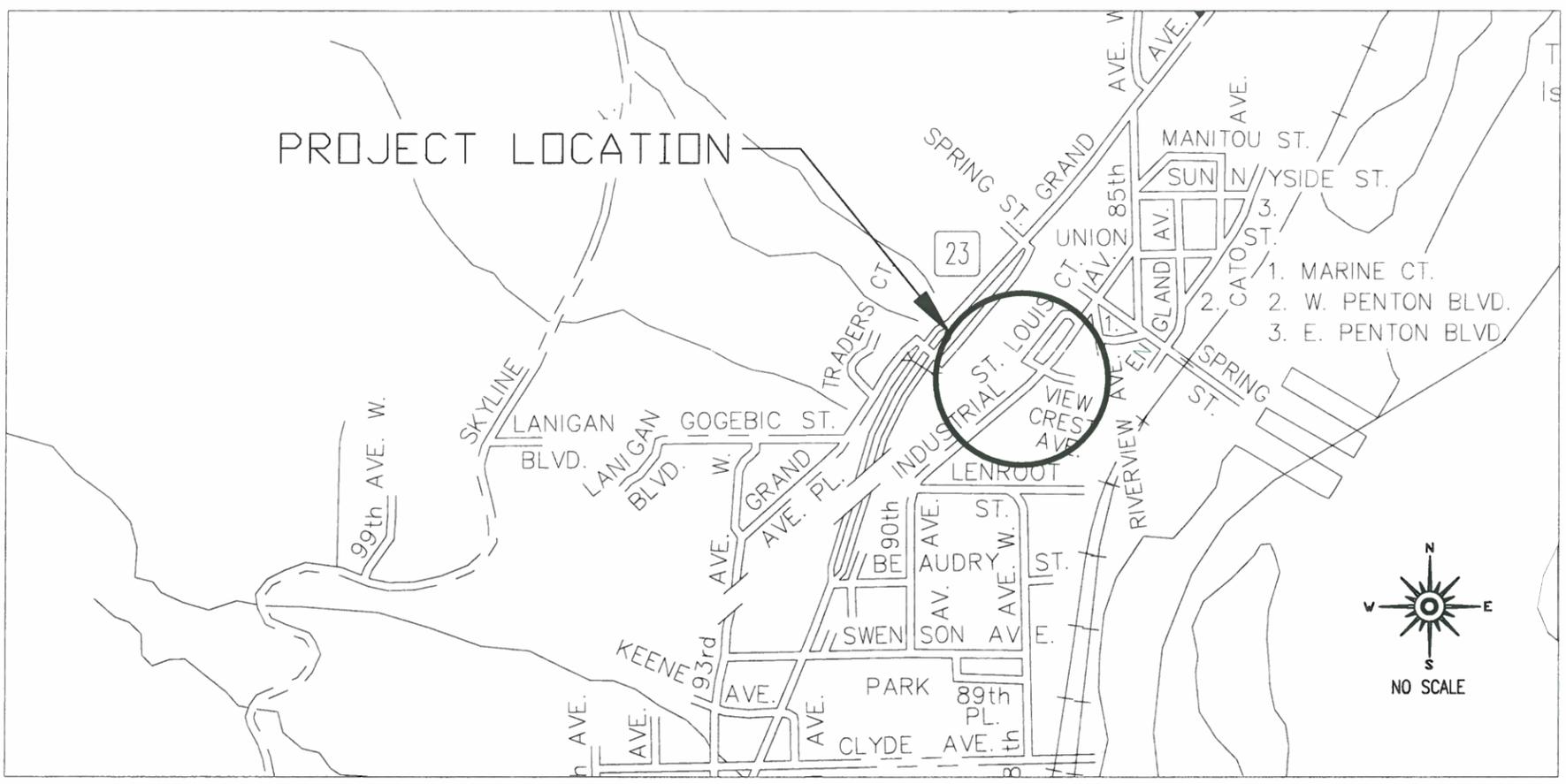
# CITY OF DULUTH

## DEPARTMENT OF PUBLIC WORKS AND UTILITIES ENGINEERING DIVISION

### CONSTRUCTION PLANS FOR:

2014 RIVERSIDE - GOGEBIC CREEK STORM SEWER AND SLOPE REPAIRS

CITY PROJECT NO. 1359



THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/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

GOVERNING SPECIFICATIONS

THE 2014 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION 'STANDARD SPECIFICATIONS FOR CONSTRUCTION' AND THE 2014 EDITION OF THE 'MATERIALS LAB SUPPLEMENTAL 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/fieldmanual/index.html>

THE 2013 EDITION OF THE CITY OF DULUTH PUBLIC WORKS AND UTILITIES DEPARTMENT STANDARD CONSTRUCTION SPECIFICATIONS AND SUPPLEMENTS OR ADDENDUMS SHALL APPLY. AVAILABLE AT: <http://www.duluthmn.gov/engineering/standard-construction-specifications/>

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	S.E.Q. & DETAILS
3	DETAILS
4	PLAN
5	PROFILE
6	GRADING PLAN & DETAIL

THIS PLAN CONTAINS 6 SHEETS

I HEREBY CERTIFY THAT THIS PLAN 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.

*Thomas M. Pfeffer* 6-20-14 22442  
 THOMAS M. PFEFFER DATE LIC. NO.

CITY APPROVAL

*Chadwick* 6/23/14  
 APPROVED CHIEF ENGINEER OF TRANSPORTATION DATE

*Chadwick* 6/23/14  
 APPROVED CHIEF ENGINEER OF UTILITIES DATE

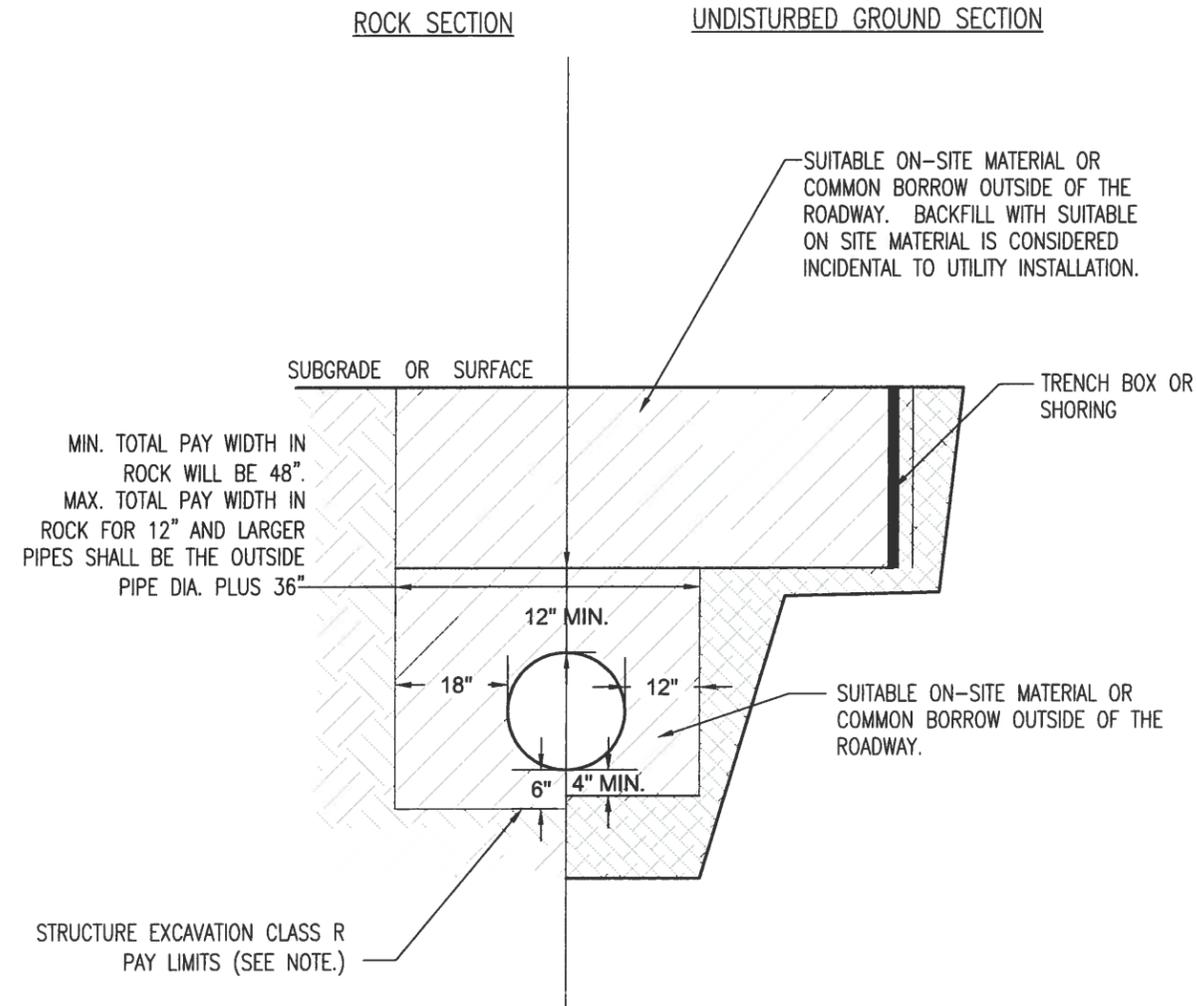
*[Signature]* 6-20-14  
 APPROVED CITY ENGINEER DATE

**STATEMENT OF ESTIMATED QUANTITIES**

NOTES	LINE NUM	SPEC NUM	DESCRIPTION	UNIT	QUANTITY
	1	2021.501	MOBILIZATION	LS	1
1	2	2101.501	CLEARNG AND GRUBBING	LS	1
11	3	2104.501	REMOVE PIPE SEWER	LF	25
	4	2104.509	REMOVE MANHOLE OR CATCH BASIN	EACH	1
9	5	2104.521	SALVAGE PIPE SEWER	LF	60
7,11	6	2104.603	ABANDON PIPE SEWER (P)	LF	90
3,12	7	2105.533	COMMON BORROW (LV)	CY	2020
7	8	2105.604	SOIL STABILIZATION GEOGRID	SY	3200
	9	2502.541	4" PERFORATED TP PIPE DRAIN	LF	60
4	10	2503.602	MIDSLOPE PIPE ANCHORS	EACH	3
2,8,13	11	2503.603	24" HDPE PIPE SEWER SDR11	LF	206
	12	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN F	LF	11.56
	13	2506.602	ANCHORED MANHOLE CONNECTION	EACH	1
	14	2506.516	CASTING ASSEMBLY	EACH	1
10	15	2506.602	CONNECT TO EXISTING MANHOLE	EACH	1
	16	2563.601	TRAFFIC CONTROL	LS	1
	17	2573.502	SILT FENCE, TYPE H.I.	LF	100
	18	2573.530	STORM DRAIN INLET PROTECTION		1
	19	2573.533	SEDIMENT CONTROL LOG TYPE STRAW	LF	400
5	20	2574.508	FERTILIZER, TYPE 1	LB	200
	21	2574.525	COMMON TOPSOIL BORROW	CY	222
	22	2575.501	SEEDING	ACRE	0.50
6	23	2575.502	SEED MIXTURE 36-311	LB	63
	24	2575.523	EROSION CONTROL BLANKET CATEGORY 3	SY	2000

NOTES:

- 1 CLEARING AND GRUBBING SHALL BE MINIMAL AMOUNT NEEDED FOR CONTRACTOR TO ACHIEVE ACCESS AND COMPLETE GRADING. INCLUDES BRUSH DEBRIS AND DOWN TREE REMOVAL, INCIDENTAL.
- 2 ITEM INCLUDES TRENCH EXCAVATION, PIPE BEDDING MATERIAL AND PIPE COVER MATERIAL.
- 3 COMMON BORROW SHALL BE FROM SOURCE APPROVED BY THE ENGINEER.
- 4 MIDSLOPE PIPE ANCHORS INCLUDES TWO ANCHORS PER EACH SET, PIPE STRAP/SADDLE, & CONNECTION HARDWARE.
- 5 FERTILIZER TYPE 1 APPLICATION RATE OF 400 LBS/ACRE.
- 6 SEED MIXTURE 36-311 APPLICATION RATE 125 LBS/ACRE.
- 7 FINAL PAYMENT BASED ON PLAN QUANTITY.
- 8 INCLUDES TRACER WIRE FROM MANHOLE TO MANHOLE.
- 9 DELIVER SALVAGED PIPE SEWER TO CITY OF DULUTH TOOL HOUSE, 105 N. 40TH AVE W.
- 10 INCLUDES ADJUSTING EXISTING CASTING ASSEMBLY TO FINAL GRADE, INCIDENTAL.
- 11 R.C.P.
- 12 COMPACTED VOLUME (CV) X 1.4 = LOOSE VOLUME (LV)
- 13 PAYMENT SHALL BE "SLOPE" LENGTH OF PIPE.



NOTES:

1. TRENCH STABILIZATION MATERIAL MAY BE USED IN AREAS AS DETERMINED BY THE ENGINEER.
2. A MIN. OF 1 CU. YD. OF STRUCTURE EXCAVATION, CLASS R, WILL BE PAID FOR EVERY 10' OF PIPE WHERE ROCK REMOVAL IS REQUIRED.
3. EXCESS EXCAVATION MATERIAL SHALL BE DISPOSED OF OFF PROJECT R.O.W. (INCIDENTAL)
4. WHERE UTILITIES ARE INSTALLED IN ROCK TRENCHES OUTSIDE OF THE ROADWAY, THE CONTRACTOR SHALL PROVIDE COMMON BORROW MATERIAL TO SUPPLEMENT SUITABLE ON SITE BACKFILL MATERIALS AS NECESSARY. COMMON BORROW MATERIAL IS INCIDENTAL TO STRUCTURE EXCAVATION, CLASS R. REFER TO SPECIFICATIONS FOR RESTRICTIONS ON COMMON BORROW MATERIALS.

HDPE SDR11 STORM SEWER BEDDING AND COVER

REVISED/APPROVED 2/1/13  
EDITED FOR PROJECT 6/18/14

CITY OF DULUTH STANDARD DETAIL  
DEPT. OF PUBLIC WORKS AND UTILITIES

NO SCALE

CERTIFIED BY: THOMAS M. PFEFFER

LIC. NO.: 22442

REVISION

2014 RIVERSIDE - GOGEBIC CREEK STORM SEWER AND SLOPE REPAIRS

DRAWN BY: JJM

SIGNATURE:

*Thomas M. Pfeffer*

DATE: 6-20-14

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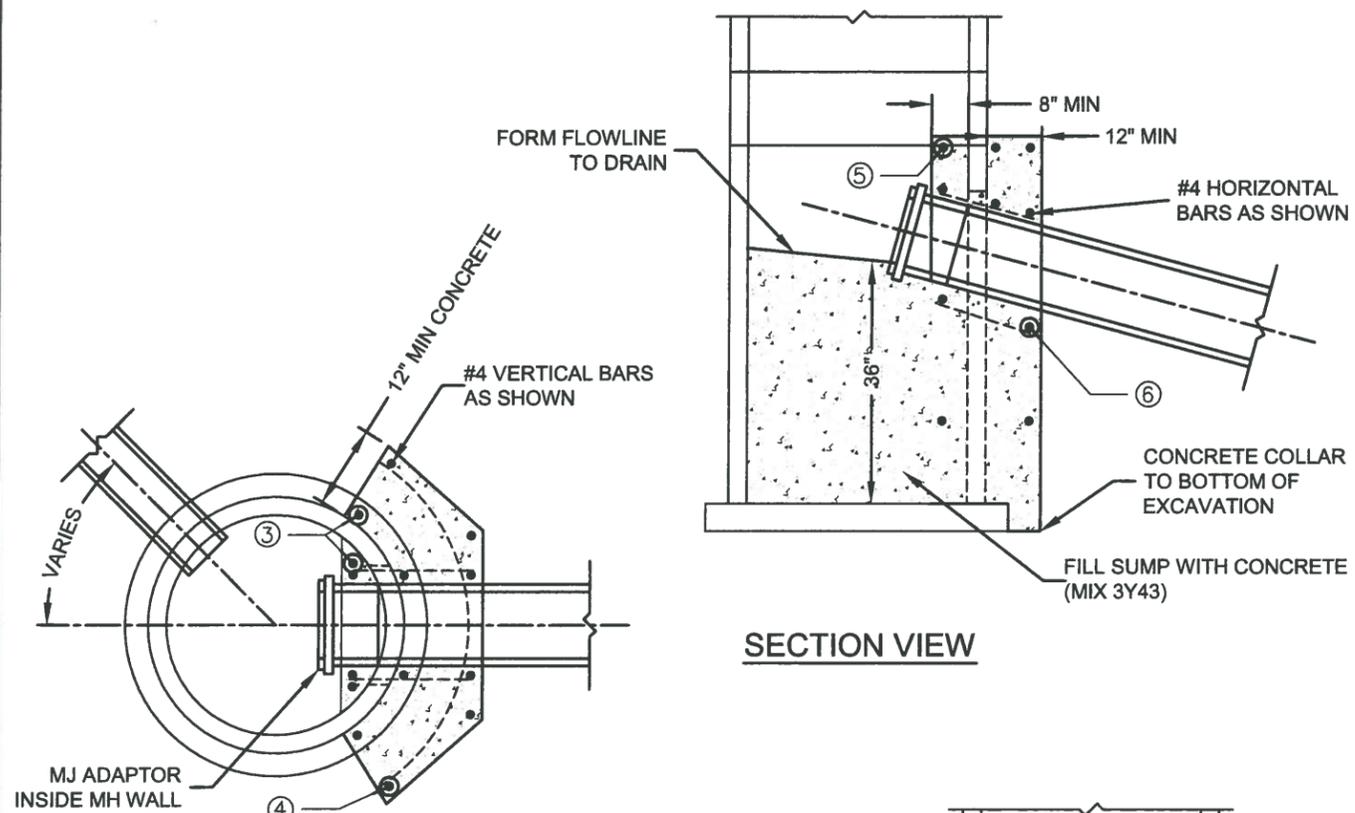
CITY OF DULUTH

S.E.Q. & DETAIL DRAWINGS

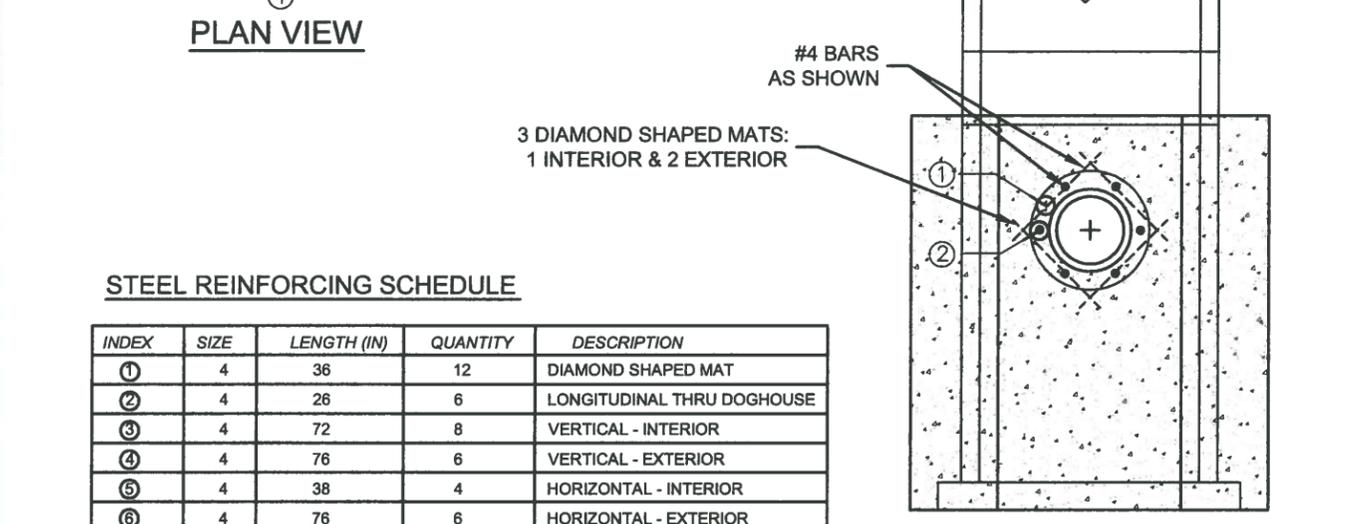
CITY PROJECT NO.: 1359

STATE AID PROJECT NO.:

SHEET NO. 2 OF 6



**SECTION VIEW**



**ELEVATION VIEW**

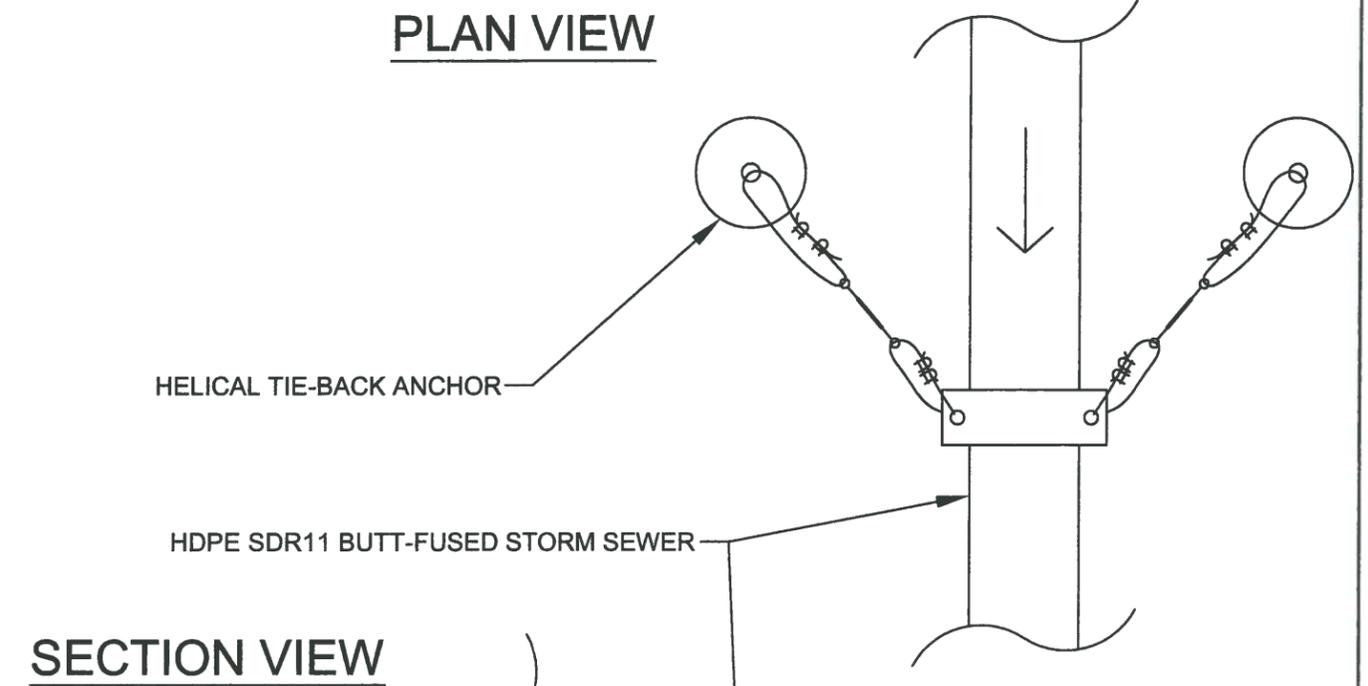
**STEEL REINFORCING SCHEDULE**

INDEX	SIZE	LENGTH (IN)	QUANTITY	DESCRIPTION
①	4	36	12	DIAMOND SHAPED MAT
②	4	26	6	LONGITUDINAL THRU DOGHOUSE
③	4	72	8	VERTICAL - INTERIOR
④	4	76	6	VERTICAL - EXTERIOR
⑤	4	38	4	HORIZONTAL - INTERIOR
⑥	4	76	6	HORIZONTAL - EXTERIOR

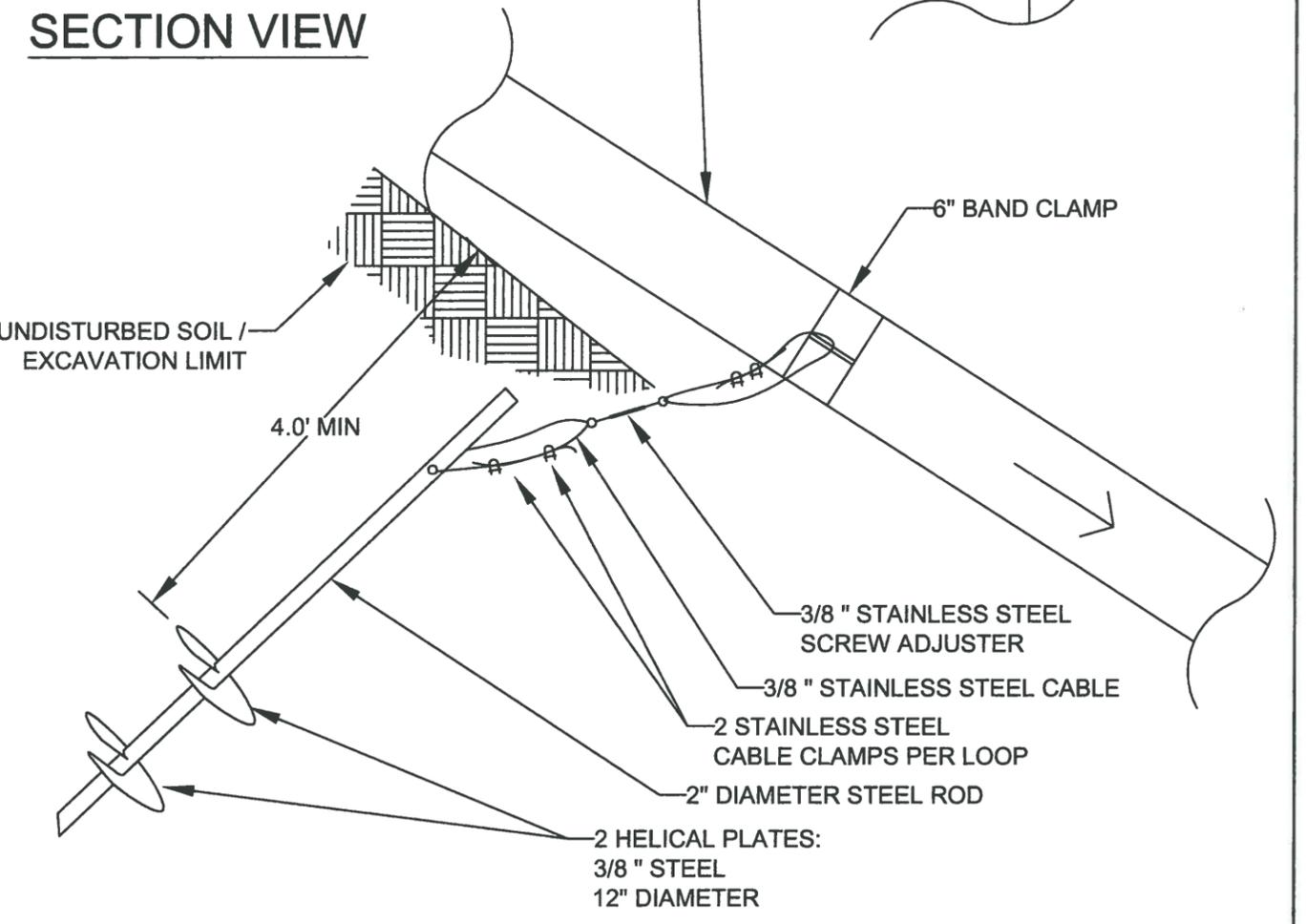
**NOTES:**  
#4 EPOXY COATED REBAR  
MAINTAIN 2" CLEARANCE

**ANCHORED MANHOLE CONNECTION**

REVISED/APPROVED 3/1/2014      CITY OF DULUTH STANDARD DETAIL  
DEPT. OF PUBLIC WORKS AND UTILITIES      NO SCALE



**PLAN VIEW**

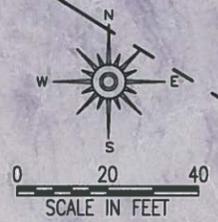
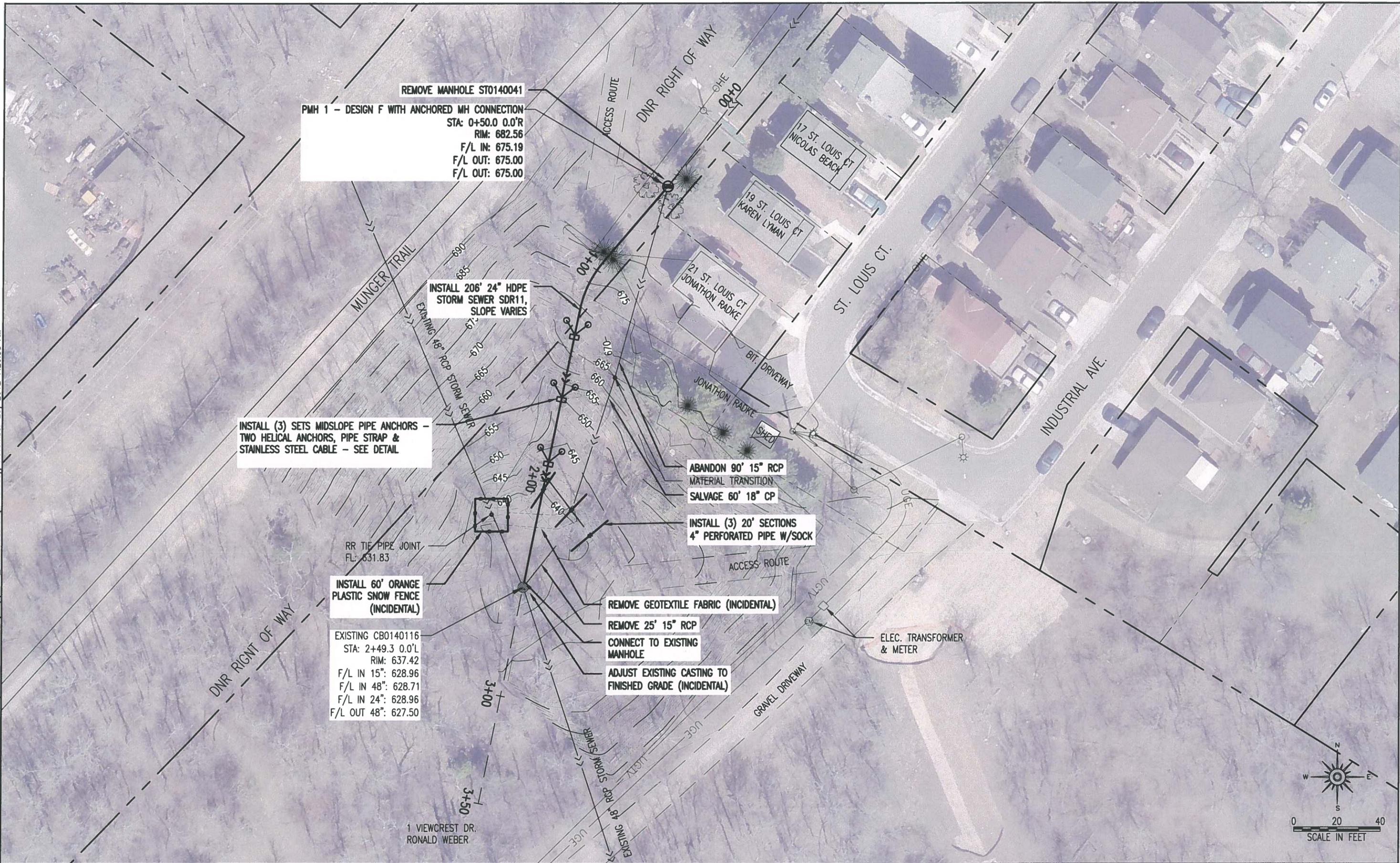


**SECTION VIEW**

**MIDSLOPE PIPE ANCHORS**

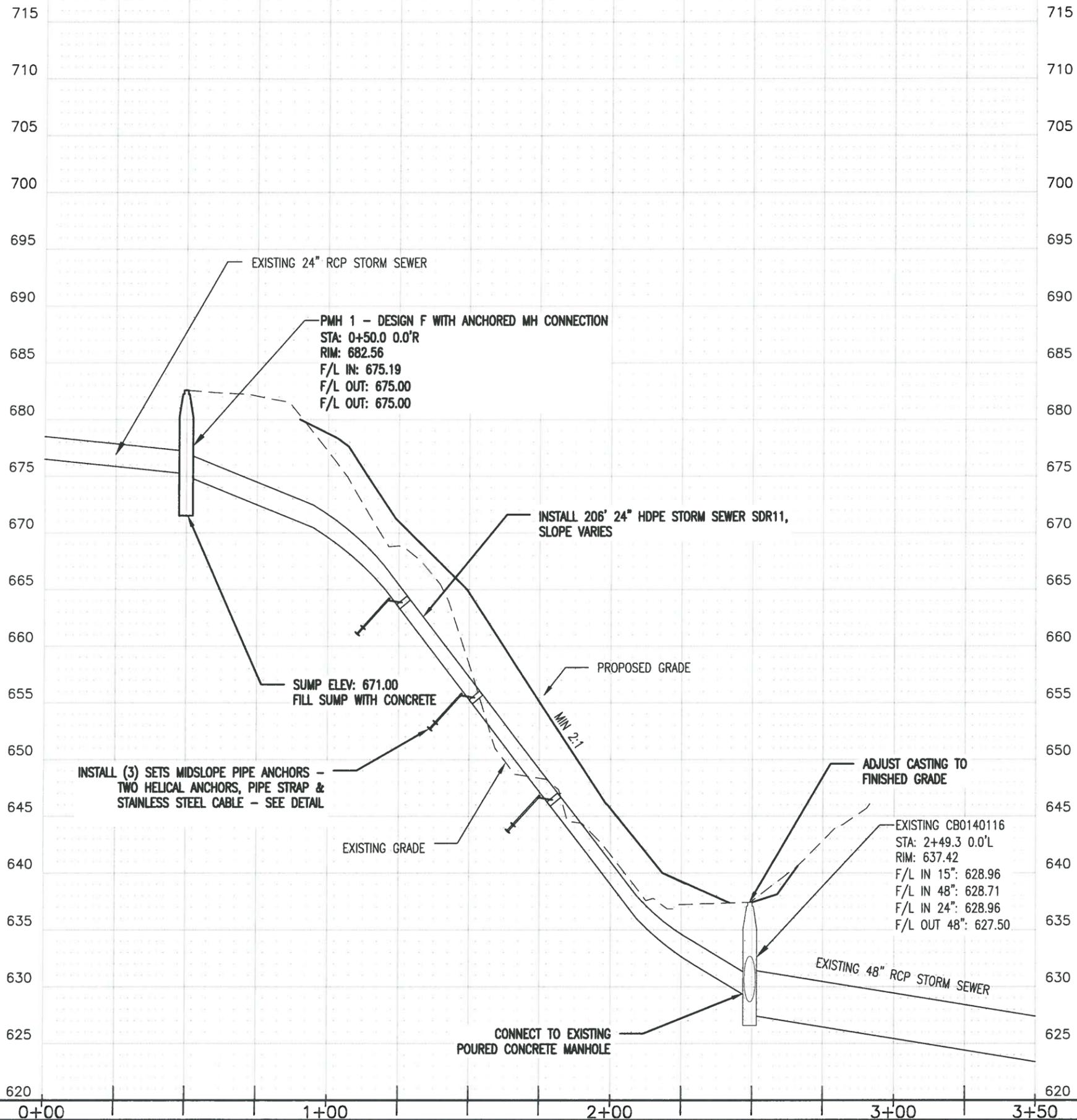
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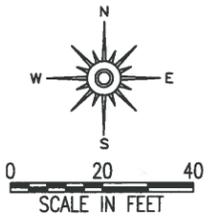
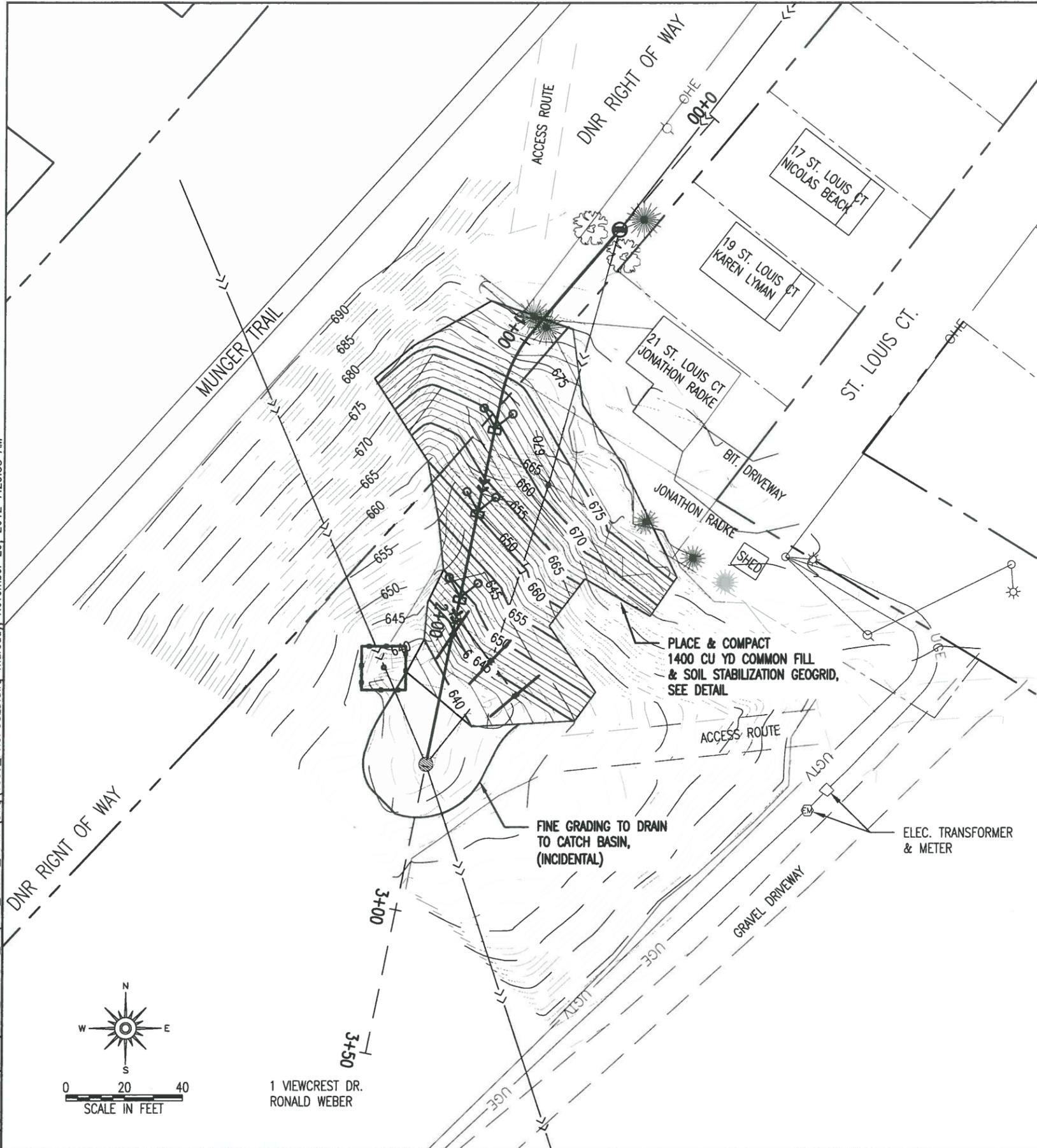
CERTIFIED BY: THOMAS M. PFEFFER	REG. NO.: 22442	REVISIONS	2014 - RIVERSIDE GOGEBIC CREEK STORM SEWER AND SLOPE REPAIRS	DRAWN BY: JJM
SIGNATURE: <i>Thomas M. Pfeffer</i>	DATE: 6-20-14		CITY OF DULUTH	PLAN
			CITY PROJECT NO.: 1359	STATE AID PROJECT NO.:
				SHEET NO. 4 OF 6

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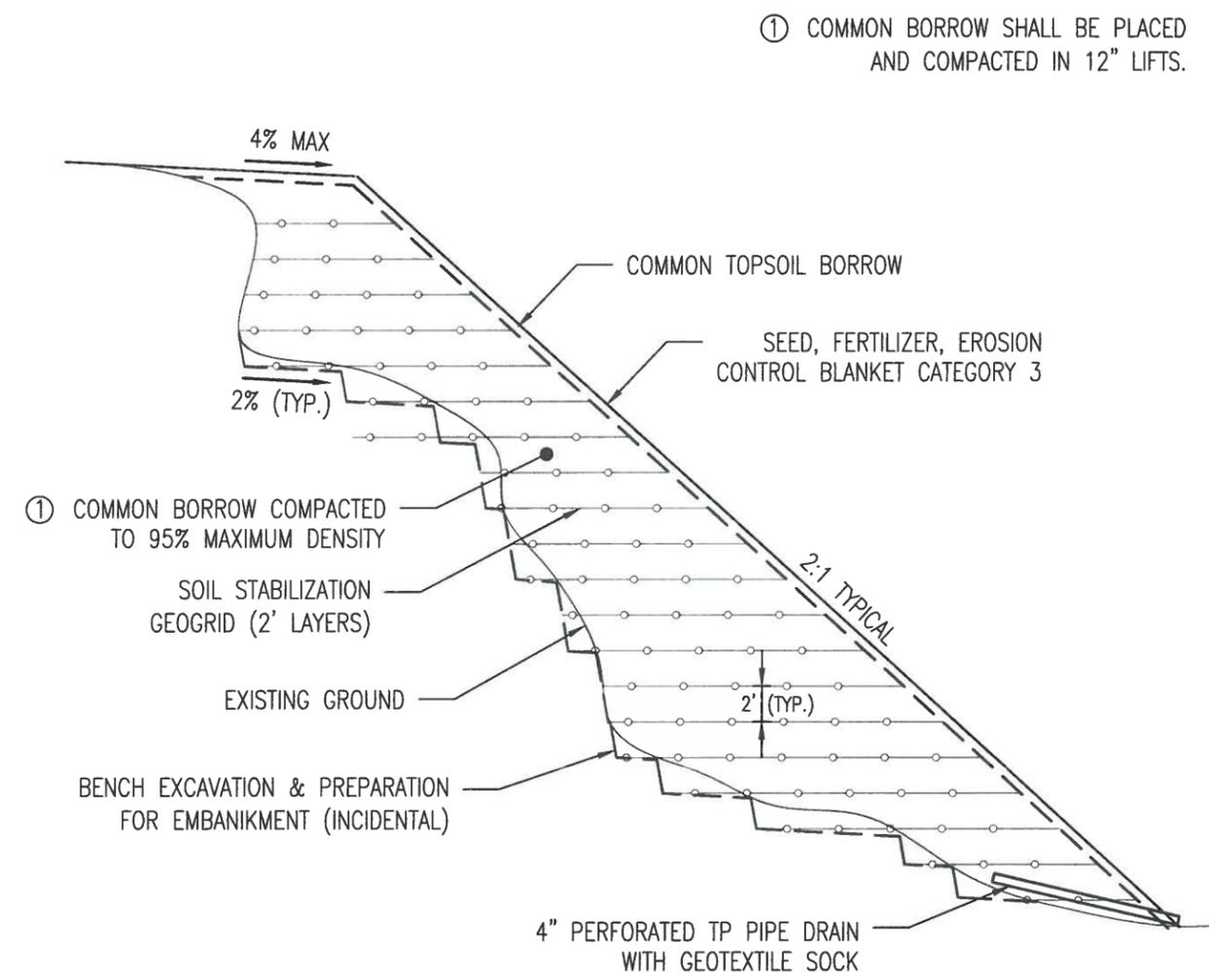


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SIGNATURE: <i>Thomas M. Pfeffer</i>	DATE: 6-20-14		CITY OF DULUTH	PROFILE
			CITY PROJECT NO.: 1359	STATE AID PROJECT NO.:
				SHEET NO. 5 OF 6

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1 VIEWCREST DR.  
RONALD WEBER



**REINFORCED SOIL SLOPE (RSS)**  
NOT TO SCALE

CERTIFIED BY: <b>THOMAS M. PFEFFER</b>	REG. NO.: <b>22442</b>	REVISIONS	<b>GOGEBIC STORM SEWER REPAIR</b>	DRAWN BY: <b>JJM</b>
SIGNATURE: <i>Thomas M. Pfeffer</i>	DATE: <b>6-20-14</b>		CITY OF DULUTH	<b>GRADING PLAN &amp; DETAIL</b>
			CITY PROJECT NO.: <b>1359</b>	STATE AID PROJECT NO.:
				SHEET NO. <b>6</b> OF <b>6</b>