

**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	SAN
AB SANITARY LINE	AB-SAN
EX FORCEMAIN LINE	---
PR FORCEMAIN LINE	FM
AB FORCEMAIN LINE	AB-FM
EX STORM LINE	---
PR STORM LINE	ST
AB STORM LINE	AB-ST
EX WATER LINE	---
PR WATER LINE	W
AB WATER LINE	AB-W
EX GAS LINE	GAS
PR GAS LINE	GAS
AB GAS LINE	AB-GAS
EX STEAM LINE	---
PR STEAM LINE	AB-STEAM
UG CABLE TV LINE	UGTV
AB CABLE TV LINE	AB-CATV
UG ELECTRIC LINE	UGE
AB ELECTRIC LINE	AB-ELEC
UG FIBEROPTIC LINE	FO
AB FIBEROPTIC LINE	AB-FD
UG TELEPHONE LINE	UGT
AB TELEPHONE LINE	AB-TELE
OH ELECTRIC LINE	OHE
OH TELEPHONE LINE	OHT
OH CABLE TV LINE	OHTV

**SYMBOLS**

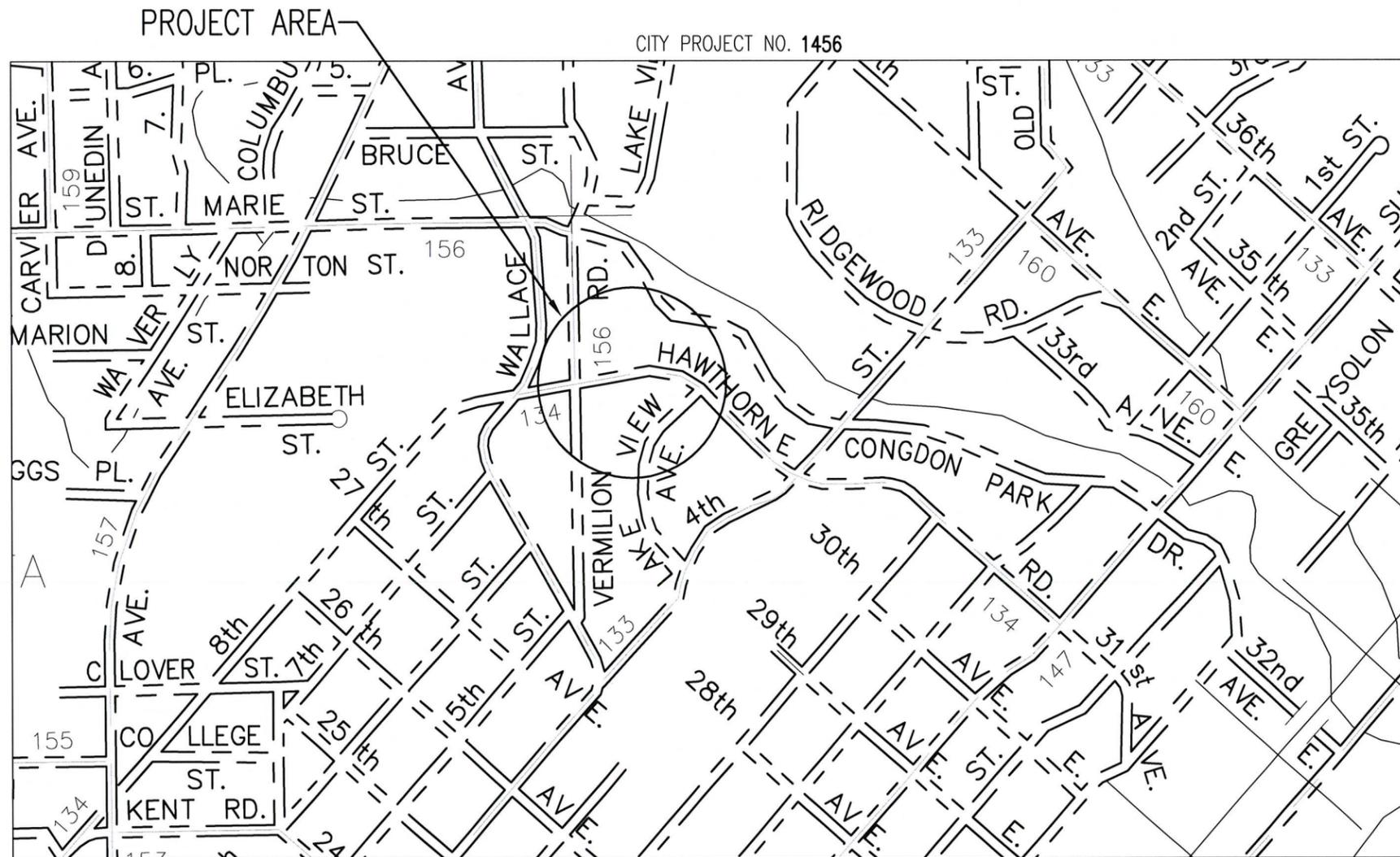
EX SANITARY MANHOLE	(SAN)
EX SANITARY CLEANOUT	(X)
EX STORM MANHOLE	(STRM)
EX STORM CATCHBASIN	(Hatched)
EX. WATER MANHOLE	(W)
EX. WATER VALVE	(V)
EX. WATER HYDRANT	(H)
EX. WATER SHUTOFF	(S)
EX. WATER & GAS MH	(W&G)
EX. GAS MANHOLE	(GAS)
EX. GAS VALVE	(V)
EX. GAS SHUTOFF	(S)
EX. STEAM MANHOLE	(STEAM)
EX. TELEPHONE MANHOLE	(T)
EX. ELECTRIC MANHOLE	(E)
EX. POWERPOLE	(P)
EX. LIGHT POLE	(L)
EX. ELECTRIC VAULT	(V)
EX. ANCHOR	(A)
EX. ELECTRIC TRANSFORMER	(ET)
EX. STREET LIGHT	(SL)
EX. SIGNAL W/ STREET LIGHT	(SSL)
EX. HANDHOLE	(H.H.)
EX. HANDHOLE	(H.H.)
EX. TELEPHONE PEDESTAL	(TP)
EX. WELL	(W)
BENCHMARK	(B)
FOUND CI MONUMENT	(M)
EX. SIGN	(S)
CONTROL POINT	(CP)
EX DECIDUOUS TREE	(DT)
EX CONIFEROUS TREE	(CT)
EX. PARKING METER	(PM)
EX. SOIL BORING	(SB)

# CITY OF DULUTH

## DEPARTMENT OF PUBLIC WORKS AND UTILITIES ENGINEERING DIVISION

CONSTRUCTION PLANS FOR:

HAWTHORNE RD (FROM VERMILION RD TO LAKEVIEW AVE) STORM SEWER & STREET REPAIRS



**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>

THE 2015 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/>

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

**INDEX**

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES & TYPICAL SECTIONS
3-7	CONSTRUCTION DETAILS
8-9	TRAFFIC CONTROL NOTES & DETAILS
10-11	PLAN & PROFILE

THIS PLAN CONTAINS 11 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 P.E.**

PROJECT ENGINEER (TYPED OR PRINTED NAME)

*Thomas M. Pfeffer* 6/29/15 22442  
PROJECT ENGINEER DATE LIC. NO.

**CITY APPROVAL**

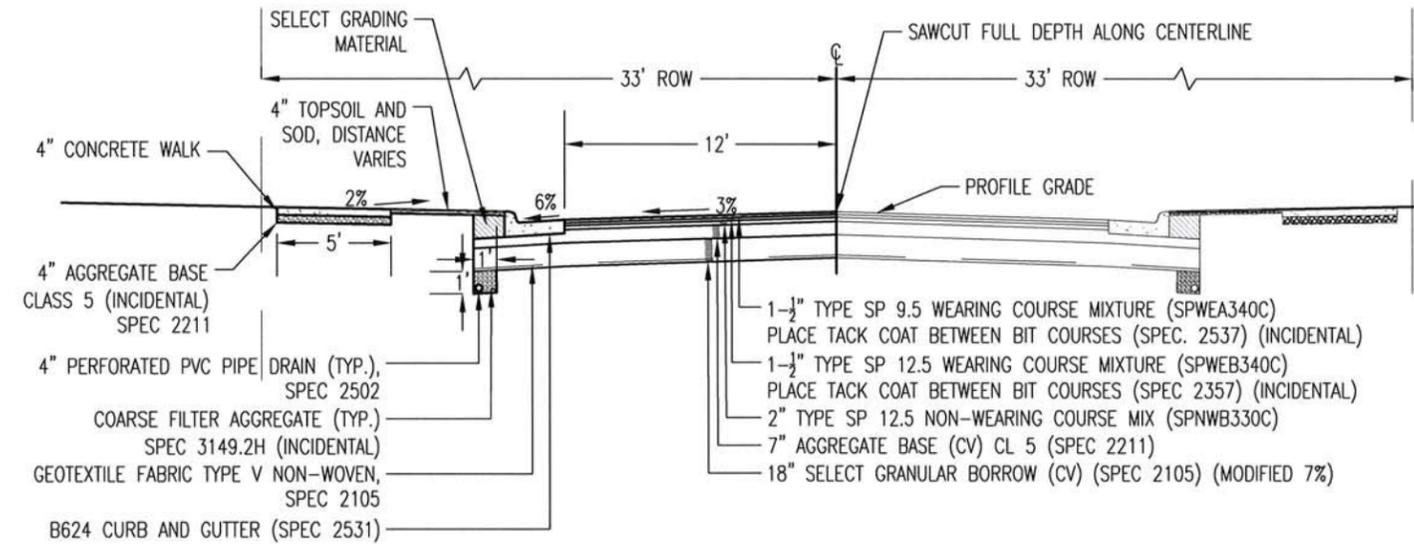
*[Signature]* 6/29/15  
APPROVED CHIEF ENGINEER OF TRANSPORTATION DATE

*[Signature]* 6/29/15  
APPROVED CHIEF ENGINEER OF UTILITIES DATE

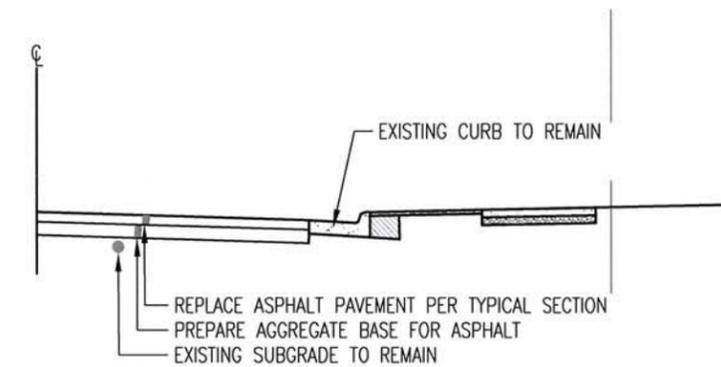
*[Signature]* 6-29-15  
APPROVED CITY ENGINEER DATE

**STATEMENT OF ESTIMATED QUANTITIES**

LINE	SPEC. NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY
1				
2	2021.501	MOBILIZATION	LS	1
3	2104.501	REMOVE CURB & GUTTER	LF	385
4	2104.501	REMOVE SEWER PIPE (STORM)	LF	338
5	2104.503	REMOVE CONCRETE SIDEWALK	SQ FT	1,886
6	2104.505	REMOVE BITUMINOUS PAVEMENT	SY	604
7	2104.509	REMOVE MANHOLE OR CATCH BASIN	EACH	5
8	2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LF	393
9	2104.521	SALVAGE CASTING ASSEMBLY	EACH	5
10	2105.501	COMMON EXCAVATION (P)	CY	444
11	2105.522	SELECT GRANULAR BORROW MOD 7% (CV) (P)	CY	359
12	2105.604	GEOTEXTILE FABRIC TYPE V (P)	SY	718
13	2211.503	AGGREGATE BASE (CV) CLASS 5 (P)	CY	140
14	2360.501	TYPE SP 9.5 WEARING COURSE MIX (3,C)	TON	61
15	2360.501	TYPE SP 12.5 WEARING COURSE MIX (3,C)	TON	61
16	2360.502	TYPE SP 12.5 NON WEAR COURSE MIX (3,C)	TON	82
17	2451.501	STRUCTURE EXCAVATION CLASS R	C Y	5
18	2451.503	GRANULAR BACKFILL (CV)	C Y	20
19	2502.541	4" PERF TP PIPE DRAIN	LF	385
20	2503.541	12" RC PIPE SEWER DES 3006 CL III	LF	50
21	2503.541	21" RC PIPE SEWER DES 3006 CL III	LF	324
22	2503.541	27" RC PIPE SEWER DES 3006 CL III	LF	36
23	2503.602	CONNECT TO EXISTING STORM SEWER	EACH	1
24	2503.602	12" CIPP LINER STORM SEWER	LF	32
25	2503.603	21" CIPP LINER STORM SEWER	LF	364
26	2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN G	LF	24
27	2506.602	INSTALL SALVAGED CASTING ASSEMBLY	EACH	5
28	2506.602	CONNECT TO EXISTING DRAINAGE STRUCTURE	EACH	2
29	2521.501	4" CONCRETE SIDEWALK	SQ FT	1,886
30	2531.501	CONCRETE CURB AND GUTTER DESIGN B624	LF	385
31	2531.507	7" CONCRETE DRIVEWAY PAVEMENT	SY	33
32	2563.601	TRAFFIC CONTROL	LS	1
33	2573.530	STORM DRAIN INLET PROTECTION	EACH	6
34	2573.533	SEDIMENT CONTROL LOG TYPE WOOD CHIP	LF	300
35	2574.508	FERTILIZER TYPE 3	POUND	31
36	2574.525	COMMON TOPSOIL BORROW	CY	50
37	2575.501	SEEDING	ACRE	0.10
38	2575.502	SEED MIXTURE 22-111	POUND	31
39	2575.523	EROSION CONTROL BLANKETS CATEGORY 3	SY	120
40	2582.502	4" DOUBLE SOLID YELLOW - EPOXY	LF	374



**ONE-HALF STREET TYPICAL SECTION  
3+75 LT TO 7+50 LT**



**PAVEMENT PATCH - NTS  
6+00 RT TO 6+50 RT  
7+25 RT TO 7+50 RT**

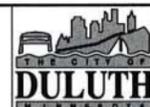
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SIGNATURE: *Thomas M. Pfeiffer*

THOMAS M. PFEFFER P.E.  
TYPE NAME

DATE: 06/19/2015

LIC. NO.: 22442



CITY OF DULUTH  
ENGINEERING DIVISION  
411 W. 1ST ST. STE. 211  
DULUTH, MN 55802

HAWTHORNE RD (FROM VERMILION RD TO LAKEVIEW AVE) STORM SEWER & STREET REPAIRS

CITY PROJECT NO.: 1456

STATE AID PROJECT NO.:

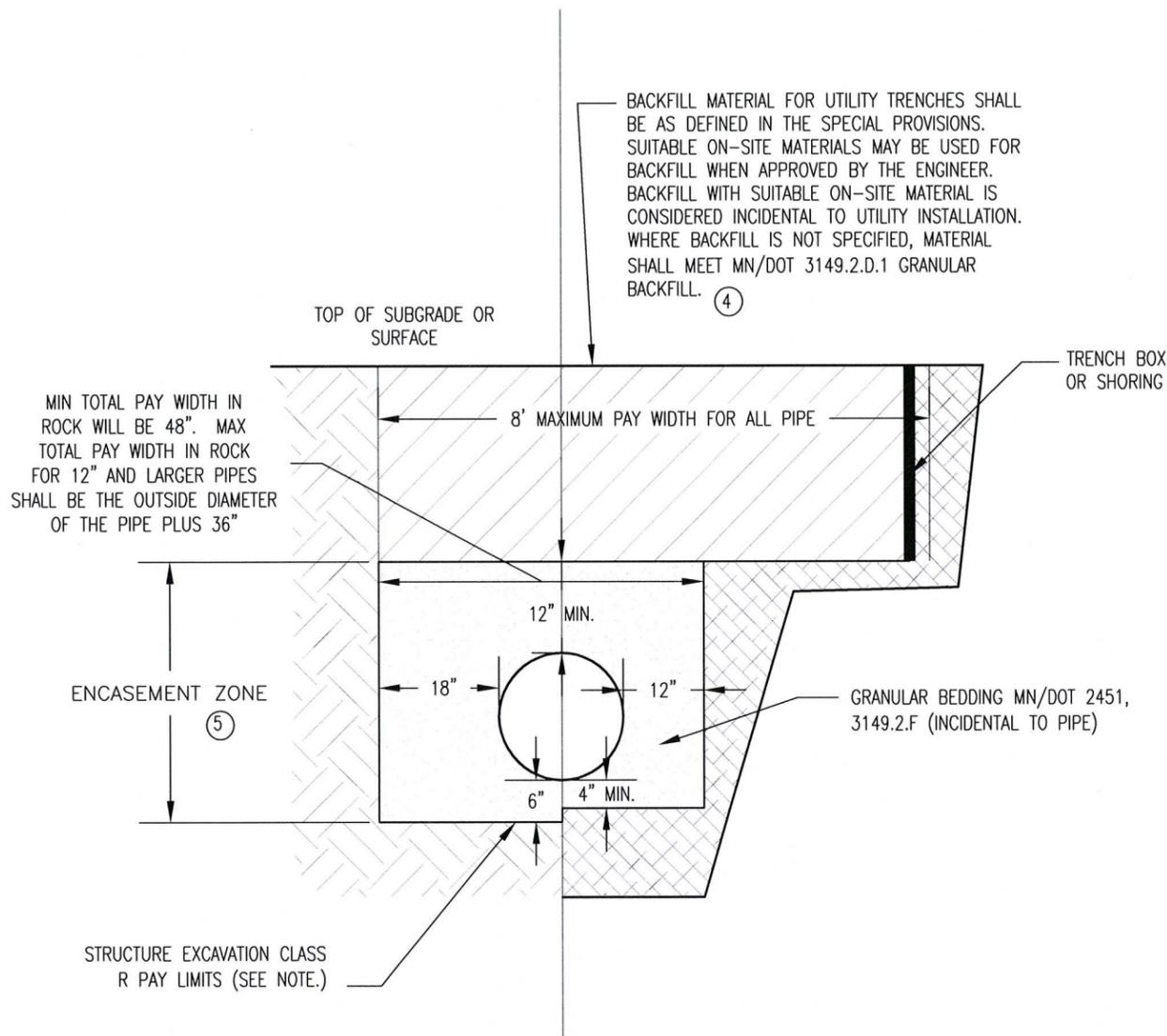
DRAWN BY: KLM

CONSTRUCTION DETAILS

SHEET NO. 2 OF 11

ROCK SECTION

UNDISTURBED GROUND SECTION



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. ABOVE THE PIPE ENCASEMENT ZONE, COMPACT BACKFILL MATERIALS TO MEET 100% OF MAXIMUM STANDARD PROCTOR DENSITY FOR THE UPPER 3' BELOW THE TOP OF SUBGRADE; AND 95% OF MAXIMUM STANDARD PROCTOR DENSITY BELOW THE UPPER 3'.
5. ENCASEMENT ZONE MATERIAL SHALL BE COMPACTED TO 95% OF MAXIMUM STANDARD PROCTOR DENSITY

CONCRETE STORM SEWER BEDDING

EX-4

REVISED/APPROVED 2/19/2015

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

NO SCALE

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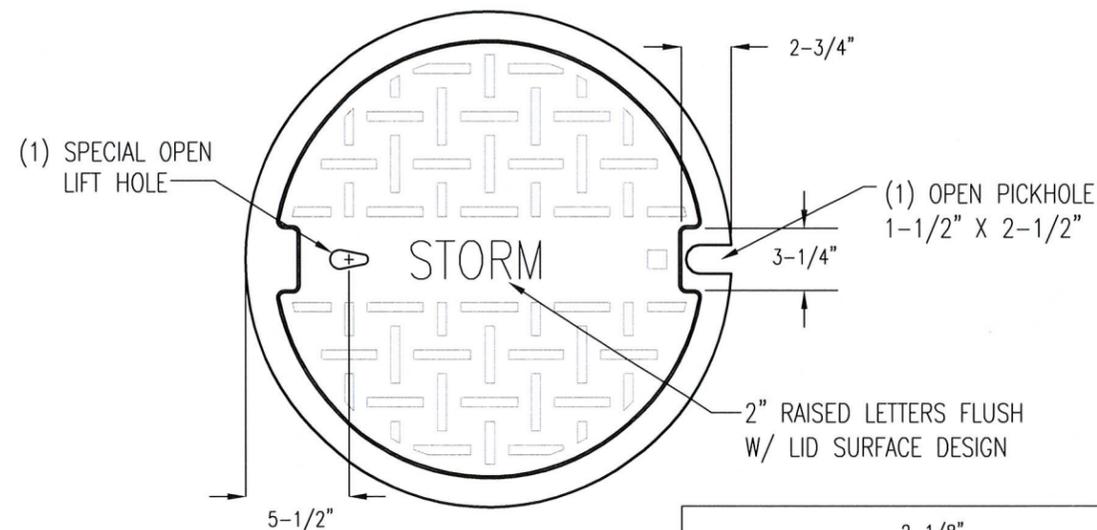
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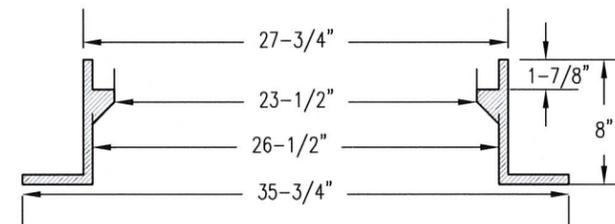
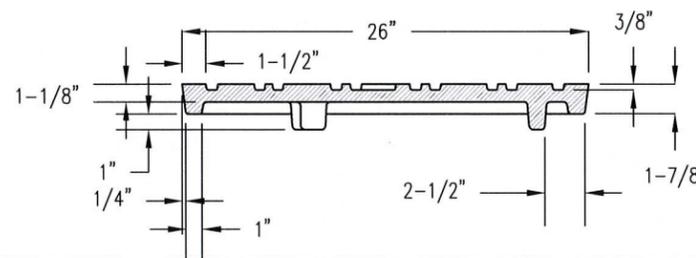
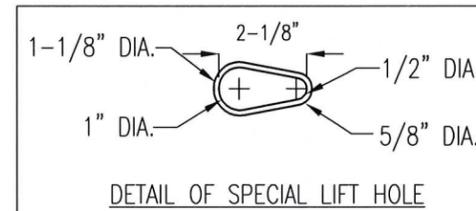
CITY OF DULUTH  
ENGINEERING DIVISION  
411 W. 1ST ST. STE. 211  
DULUTH, MN 55802

WGT. 298 LBS	MATL. GRAY IRON CLASS 35B
WGT. 122 LBS	TOT.WGT. 420 LBS. SPEC. ASTM A-48-74

NOTE: SUITABLE FOR HS25 WHEEL LOADS



NOTE: T/CAST SHALL BE .03' BELOW FINISHED PAVEMENT SURFACE.



STORM MANHOLE CASTING

STRM-1

REVIEWED/APPROVED 2/01/2013

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DEPT. OF PUBLIC WORKS AND UTILITIES

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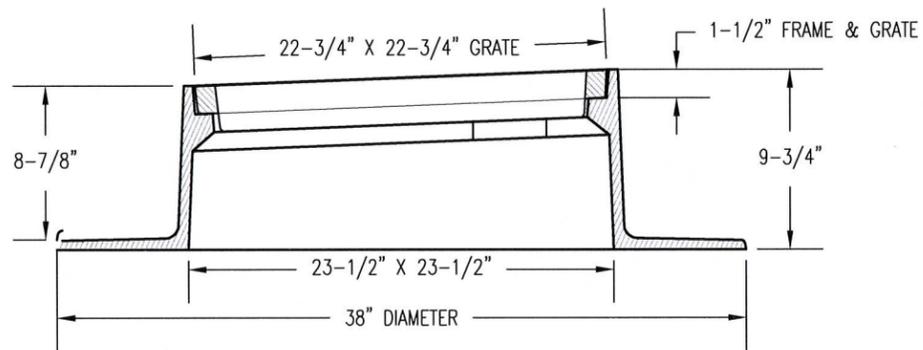
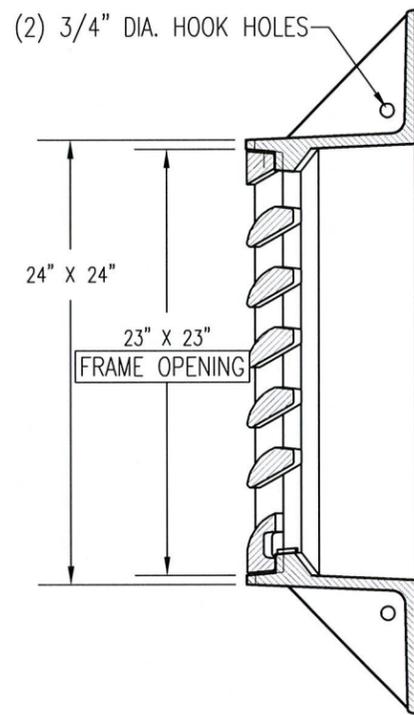
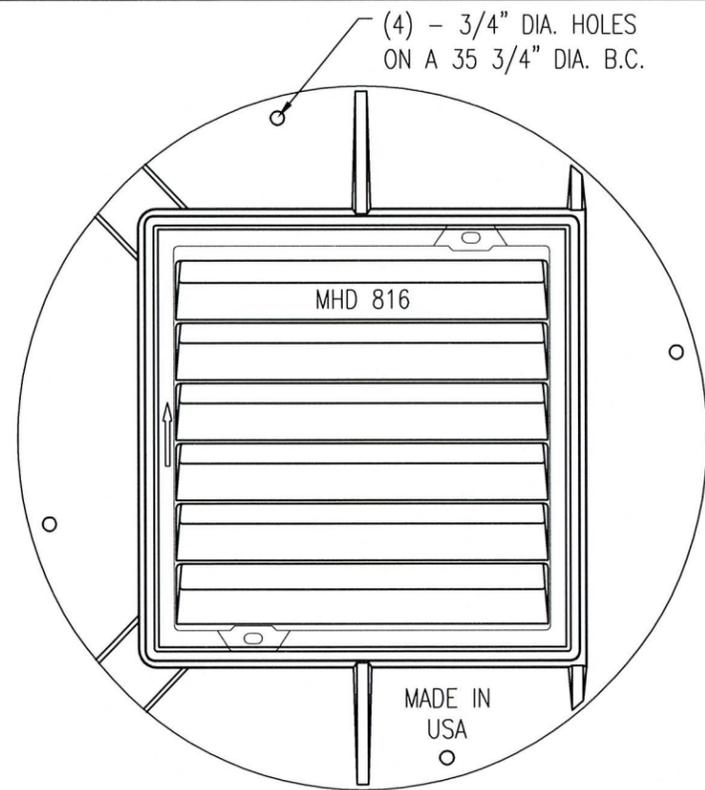
CITY PROJECT NO.: 1456

STATE AID PROJECT NO.:

DRAWN BY: KLM

CONSTRUCTION DETAILS

SHEET NO. 3 OF 11



**NOTES:**

1. COMPONENT NO'S: TOP FRAME 5005, GRATE 816 (STD PLATE 4154B).
2. MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B
3. WEIGHT: FRAME 262#; GRATE 131#
4. ALL GUTTERS UPSTREAM OF CATCH BASINS SHALL BE STAMPED, "NO DUMPING, LEADS TO LAKE" WITH A CITY SUPPLIED STAMP.

**CATCH BASIN/CURB BOX CASTINGS**

STRM-3

REVIEWED/APPROVED 2/01/2013

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

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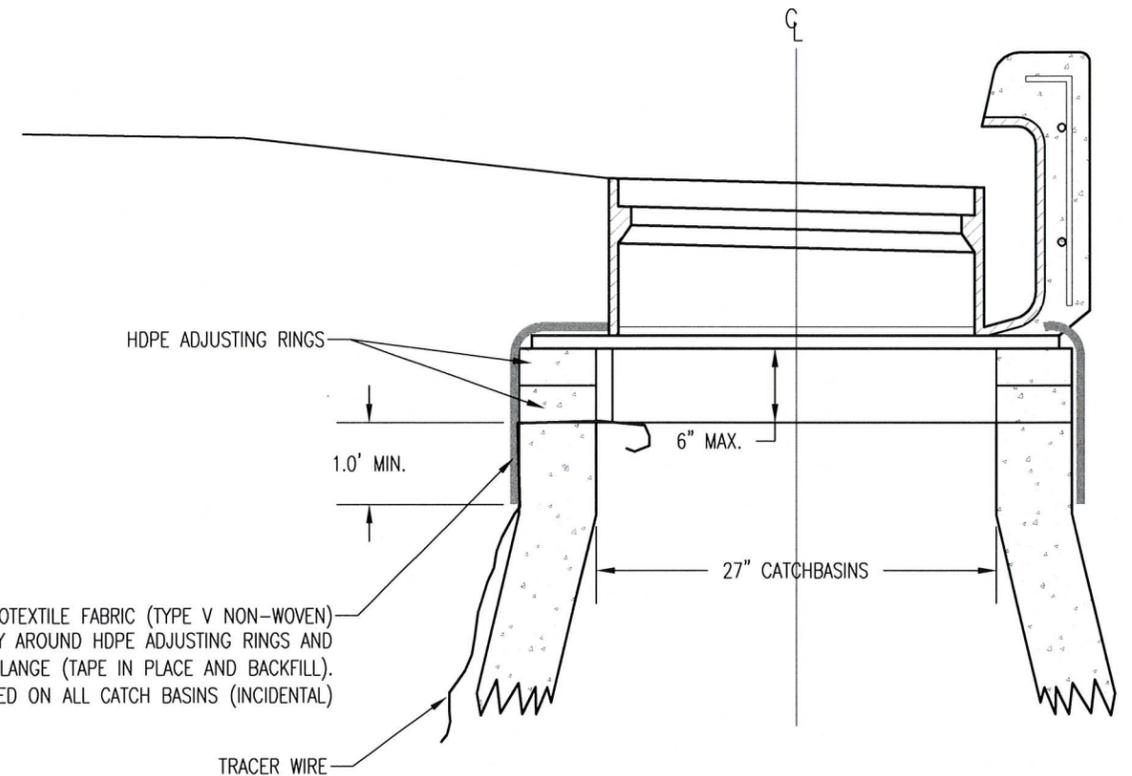
THOMAS M. PFEFFER P.E.  
TYPE NAME

DATE: 06/19/2015

LIC. NO.: 22442



CITY OF DULUTH  
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411 W. 1ST ST. STE. 211  
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**NOTE:**  
TRACER WIRE REQUIRED ON ALL PLASTIC STORM SEWER PIPES

**FABRIC WRAPPED CATCH BASIN CASTING**

STRM-4

REVIEWED/APPROVED 02/19/2015

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HAWTHORNE RD (FROM VERMILION RD TO LAKEVIEW AVE) STORM SEWER & STREET REPAIRS

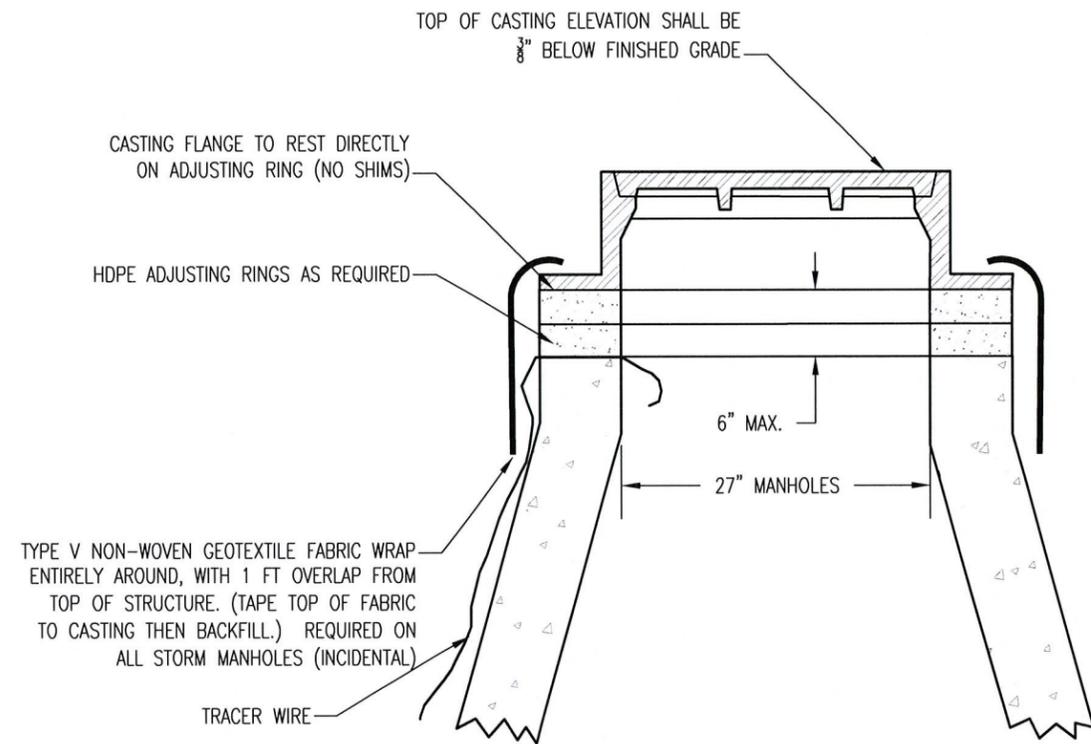
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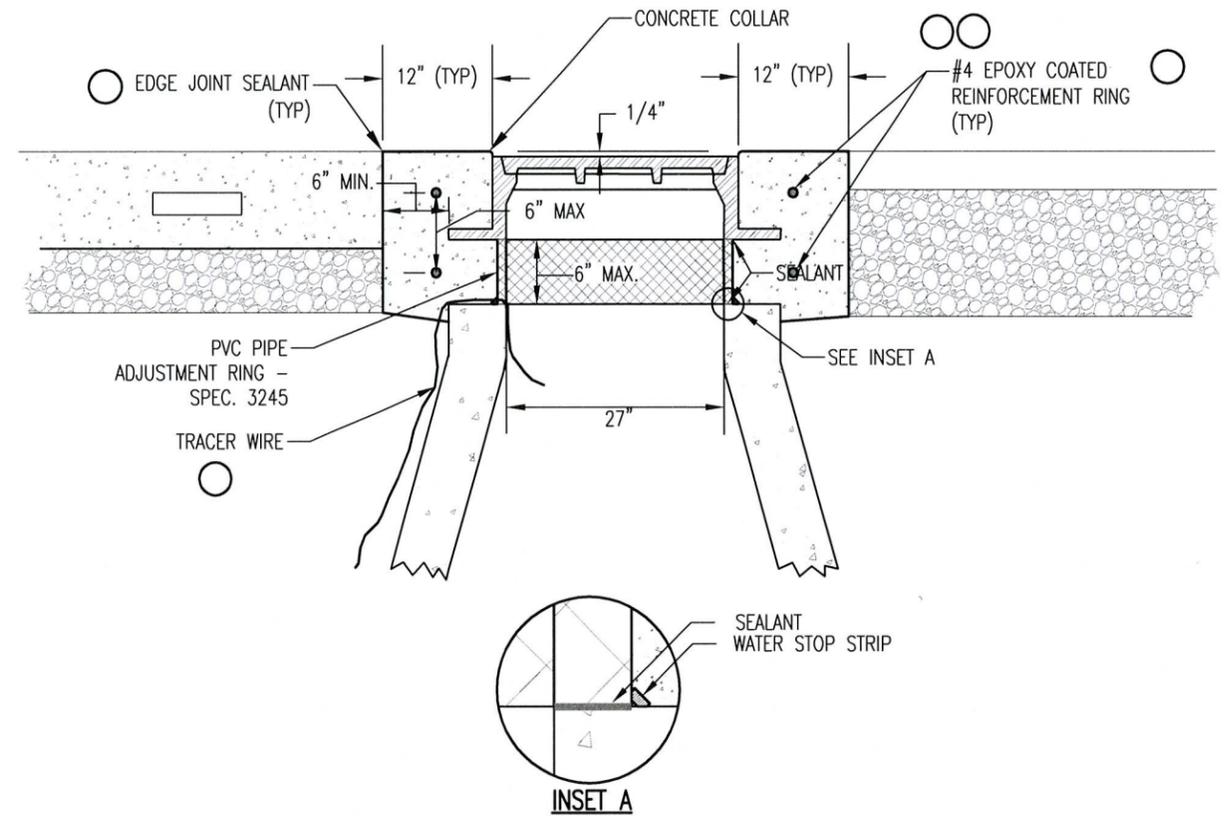
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CONSTRUCTION DETAILS

SHEET NO. 4 OF 11



NOTE:  
TRACER WIRE REQUIRED ON ALL PLASTIC STORM SEWER PIPE



NOTES:

1. CONCRETE (MIX NO. 3Y43) COLLAR TO ENCASE CASTING AND ADJUSTMENT RING.
2. TRACER WIRE, IF REQUIRED, FOR PLASTIC PIPE ON PROJECT
3. CONCRETE COLLAR SHALL BE CIRCULAR LAYOUT. PAVEMENT AND BASE SHALL BE CUT OUT WITH ROTATING CUTTING DEVICE
4. FINISH CONCRETE EDGE WITH 1/4" RADIUS. SEAL JOINT BETWEEN PAVEMENT AND COLLAR.
5. MAINTAIN 3.5" COVER ON REINFORCEMENT.

NOT TO SCALE

STORM MANHOLE NON-PAVED AREAS

STRM-5

REVIEWED/APPROVED 02/19/2015

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

NO SCALE

CONCRETE ENCASED CASTING COLLAR FOR STORM MH IN ROADWAY, WALKS, & DRIVES

STRM-5A

REVIEWED/APPROVED 02/19/2015

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

NO SCALE

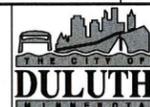
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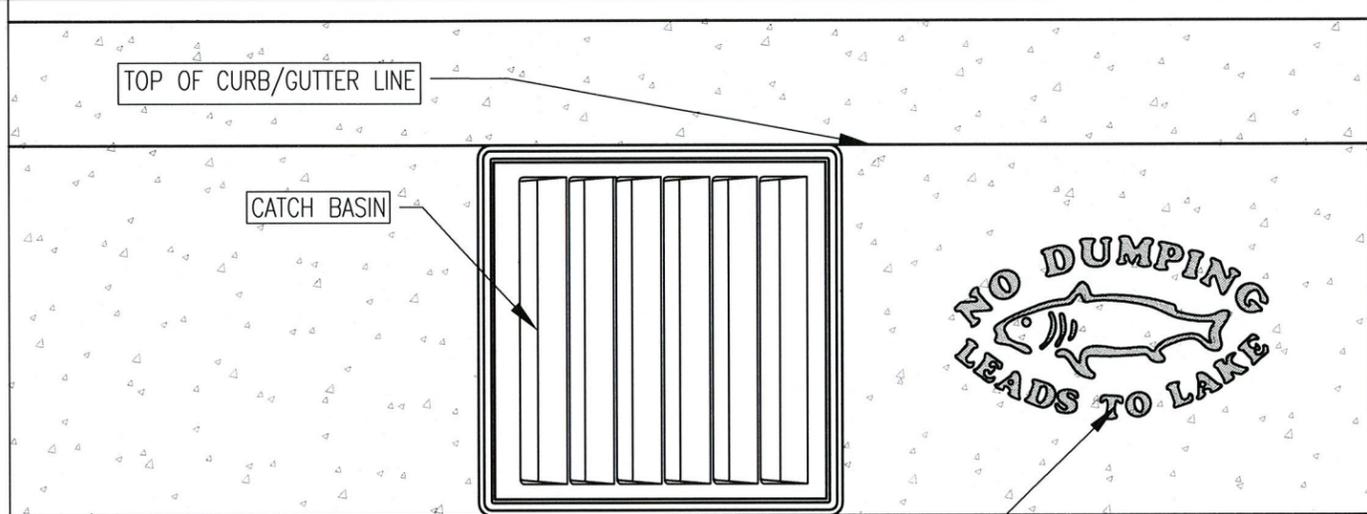
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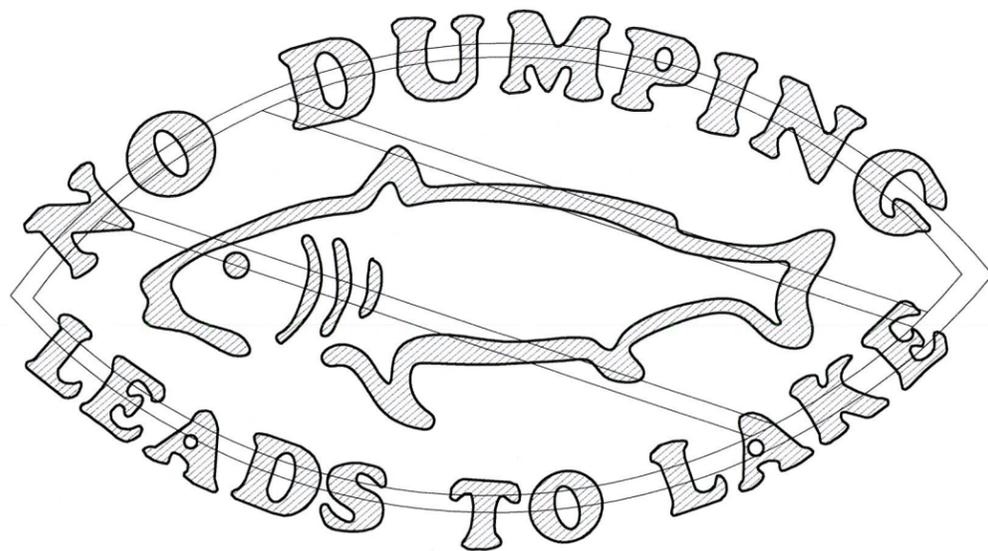
CONSTRUCTION DETAILS

SHEET NO. 5 OF 11



GUTTER STAMP TO BE PLACED A MAXIMUM OF 18" FROM CATCH BASIN GRATE ON UPHILL SIDE AND CENTERED IN GUTTER.

GUTTER STAMP TO BE OBTAINED FROM CITY OF DULUTH BY CONTRACTOR.



GUTTER STAMP

STRM-7

REVIEWED/APPROVED 2/01/2013

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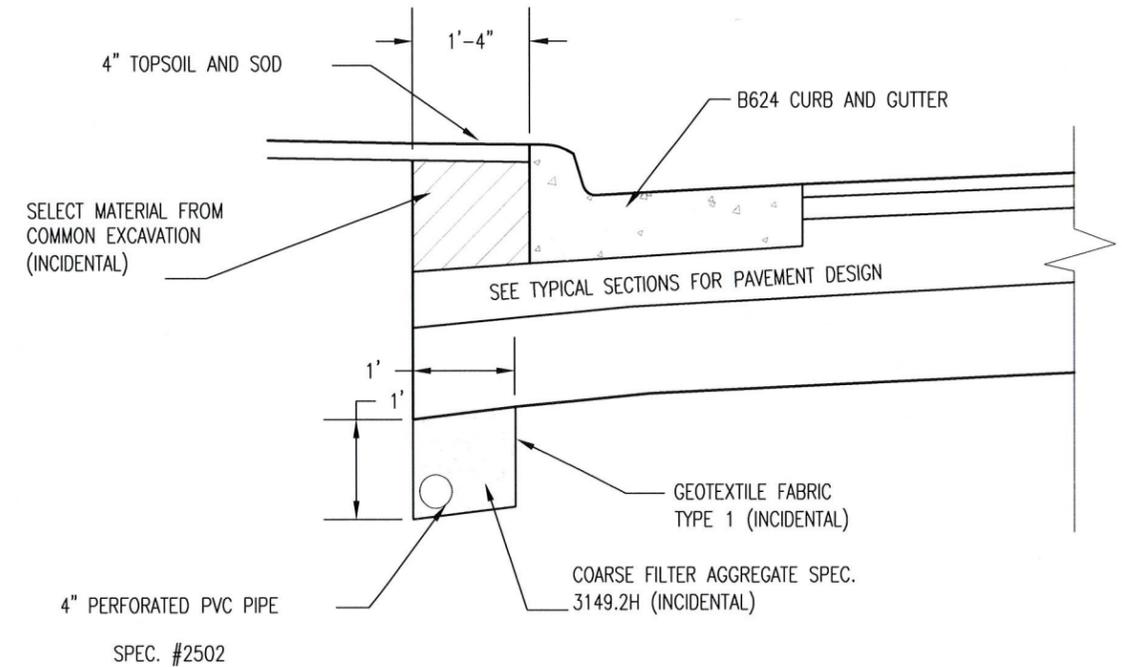
CITY PROJECT NO.: 1456

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DRAWN BY: KLM

CONSTRUCTION DETAILS

SHEET NO. 6 OF 11



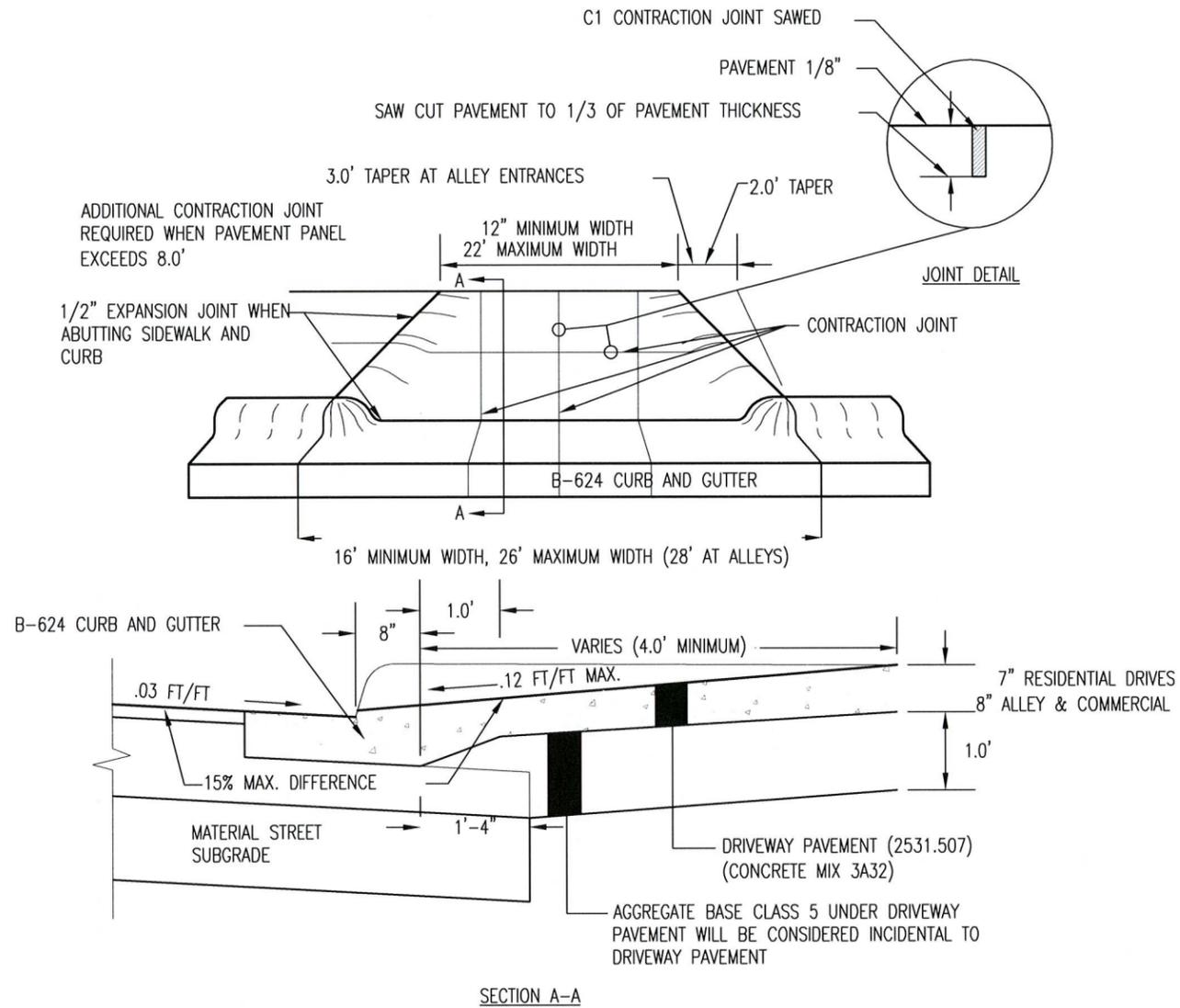
PERFORATED PIPE DETAIL

STR-1

REVIEWED/APPROVED 2/01/2013

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

NO SCALE



NOTE: THE CREST OF THE DRIVEWAY MUST BE AT LEAST 6" ABOVE GUTTER TO CONTAIN RUNOFF.

DRIVEWAY & ALLEY ENTRANCES		STR-5
REVISED/APPROVED 10/30/2013	CITY OF DULUTH STANDARD DETAIL DEPT. OF PUBLIC WORKS AND UTILITIES	NO SCALE

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HAWTHORNE RD (FROM VERMILION RD TO LAKEVIEW AVE) STORM SEWER & STREET REPAIRS

CITY PROJECT NO.: 1456

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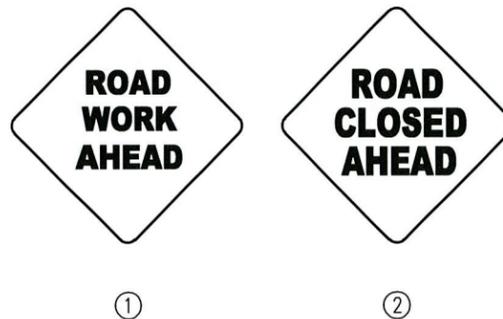
SHEET NO. 7 OF 11

I:\PW\ENGINEER\PROJECTS\2015\1456\_Hawthorne\_Road\_Storm\_Sewer\_Repair\_Drawings\1456-TRAFFIC.dwg

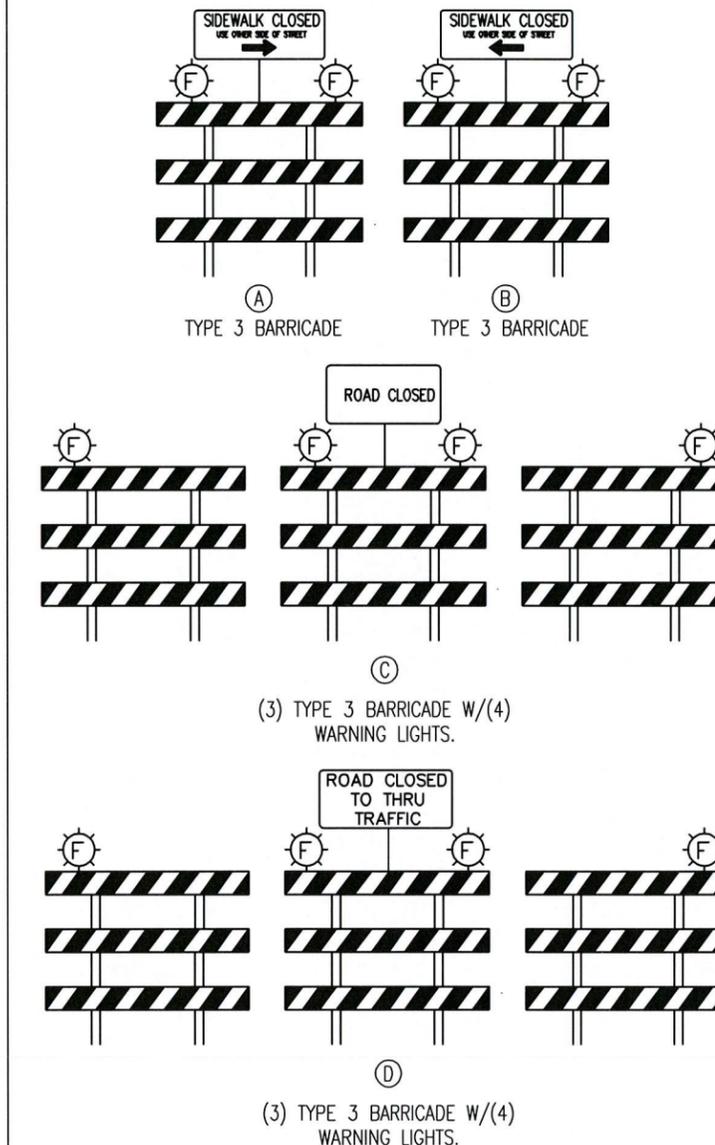
**TRAFFIC CONTROL NOTES**

1. ALL SIGNING INDICATED ON THIS TRAFFIC CONTROL PLAN, EXCEPT THOSE SIGNS WHICH ARE IN PLACE, SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. ALL APPROPRIATE SIGNING SHALL BE MAINTAINED DURING THE LIFE OF THE CONTRACT.
2. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO, AND BE PLACED IN ACCORDANCE WITH, PART VI (INCLUDING THE FIELD MANUAL DATED JANUARY 2014) OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, DATED JANUARY 2014, AND THE MINNESOTA STANDARD SIGNS MANUAL. THE CONTRACTOR SHALL PROVIDE ALL SIGNING REQUIRED BUT NOT ITEMIZED IN THIS TRAFFIC CONTROL PLAN.
3. MAINTENANCE OF TRAFFIC IS THE RESPONSIBILITY OF THE CONTRACTOR. THROUGH TRAFFIC SHALL BE MAINTAINED DURING ALL PERIODS OF CONSTRUCTION OPERATIONS. BUSINESSES AND GOVERNMENT BUILDINGS SHALL HAVE ACCESS AT ALL TIMES.
4. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY SIGNING, PLASTIC DRUMS AND BARRICADES FOR CHANNELIZATION OF TRAFFIC WITHIN THE CONSTRUCTION ZONE.
5. THE CONTRACTOR SHALL RECEIVE COMPENSATION FOR ALL WORK DESCRIBED HEREIN ON THE BASIS OF A LUMP SUM PAYMENT FOR TRAFFIC CONTROL (2563.601).
6. THE CONTRACTOR SHALL PLACE ADEQUATE PLASTIC DRUMS, WARNING SIGNS AND BARRICADES WITHIN THE CONSTRUCTION ZONE TO PROTECT VEHICULAR TRAFFIC AND PEDESTRIAN TRAFFIC FROM CONSTRUCTION OPERATIONS. ADDITIONAL SIGNING MAY INCLUDE, BUT IS NOT LIMITED TO: BUMP, DIP, LOOSE GRAVEL, ETC. THE NUMBER AND LOCATIONS OF TRAFFIC CONTROL DEVICES SHALL BE DETERMINED BY THE SEQUENCE OF THE CONTRACTOR'S OPERATIONS. TRAFFIC CONTROL DEVICES MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER.
7. ALL WARNING SIGNS ARE TO BE 48" x 48", BLACK ON ORANGE WITH HIGH INTENSITY OR "DIAMOND GRADE" RETROREFLECTIVE SHEETING. ALL BLACK ON ORANGE WORK ZONE TRAFFIC CONTROL SIGNS, ORANGE AND WHITE TYPE I, TYPE II AND TYPE III BARRICADES, DETOUR ROUTE MARKERS AND ALL OTHER RIGID SIGNS INSTALLED TO CONTROL AND DIRECT TRAFFIC DURING CONSTRUCTION OPERATIONS SHALL BE CONSTRUCTED OF HIGH INTENSITY OR "DIAMOND GRADE" RETROREFLECTIVE SHEETING.
8. THE CONTRACTOR SHALL FOLLOW THIS TRAFFIC CONTROL PLAN ALONG WITH THE SPECIAL PROVISIONS.
9. ALL TRAFFIC CONTROL DEVICES SHALL BE REMOVED OR COVERED AS SOON AS THEY ARE NO LONGER REQUIRED OR APPROPRIATE.
10. THE INITIAL CONSTRUCTION SIGNING SHALL BE ERECTED PRIOR TO BEGINNING CONSTRUCTION OPERATIONS THAT WILL AFFECT THE TRAVELING PUBLIC.
11. TYPE A (LOW INTENSITY) FLASHERS SHALL BE FURNISHED, INSTALLED AND MAINTAINED ON ALL TYPE III BARRICADES AND ADVANCED WARNING SIGNS AS DETAILED IN THIS TRAFFIC CONTROL PLAN. ADDITIONAL FLASHERS SHALL BE FURNISHED, INSTALLED AND MAINTAINED ON SIGNS, BARRICADES AND CHANNELIZERS AS NEEDED OR AS DIRECTED BY THE ENGINEER FOR TRAFFIC CONTROL THROUGH WORK ZONES WITHIN THE PROJECT LIMITS.
12. TEMPORARY LANE CLOSURES BY THE CONTRACTOR WILL BE PERMITTED DURING THOSE HOURS AND AT THOSE LOCATIONS APPROVED BY THE ENGINEER, IN ACCORDANCE WITH THE PERTINENT LAYOUTS SHOWN IN APPENDIX 'B' OF THE MMUTCD. ALL SUCH WORK RELATING TO THE CLOSURES, INCLUDING FLAGPERSONS, SHALL BE CONSTRUED TO BE INCLUDED IN THE LUMP SUM PAYMENT UNDER ITEM NO. 2563.601 (TRAFFIC CONTROL).
13. THIRD STREET SHALL REMAIN OPEN TO TRAFFIC DURING CONSTRUCTION. AGGREGATE/CRUSHED ROCK SHALL BE PLACED AS NEEDED TO MAINTAIN ADEQUATE ACCESSIBILITY. CONSTRUCTION SHALL BE STAGED TO KEEP ORIGINAL ROADWAY SURFACE INTACT AS LONG AS POSSIBLE.

**SIGN SCHEDULE**



**BARRICADE SCHEDULE**



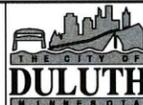
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

SIGNATURE:

THOMAS M. PFEFFER P.E.  
TYPE NAME

DATE: 06/19/2015

LIC. NO.: 22442



CITY OF DULUTH  
ENGINEERING DIVISION  
411 W. 1ST ST. STE. 211  
DULUTH, MN 55802

HAWTHORNE RD (FROM VERMILION RD TO LAKEVIEW AVE) STORM SEWER & STREET REPAIRS

CITY PROJECT NO.: 1456

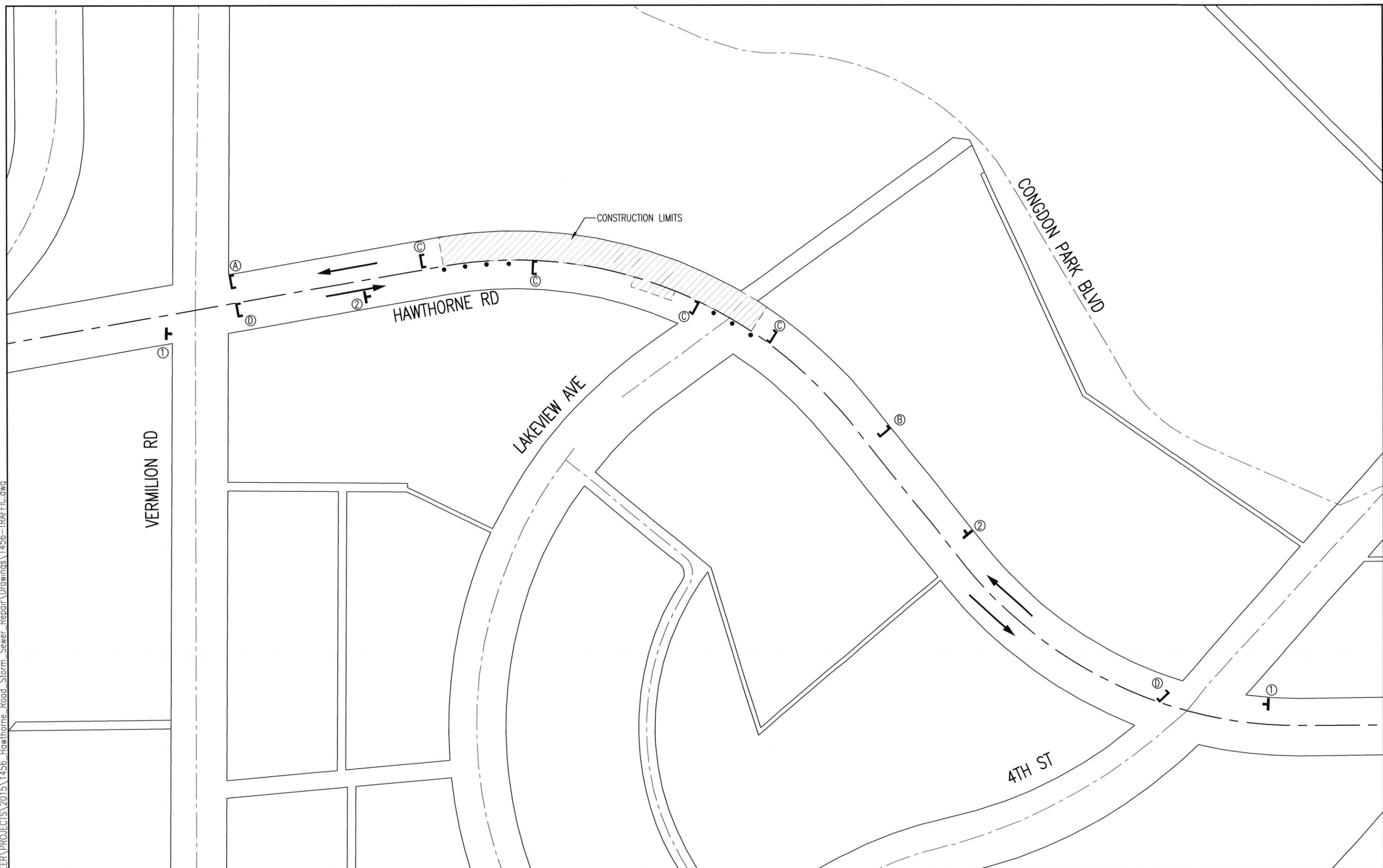
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DRAWN BY: KLM

TRAFFIC CONTROL NOTES & DETAILS

SHEET NO. 8 OF 11

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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.

SIGNATURE: *Thomas M. Pfeffer*

THOMAS M. PFEFFER P.E.  
TYPE NAME

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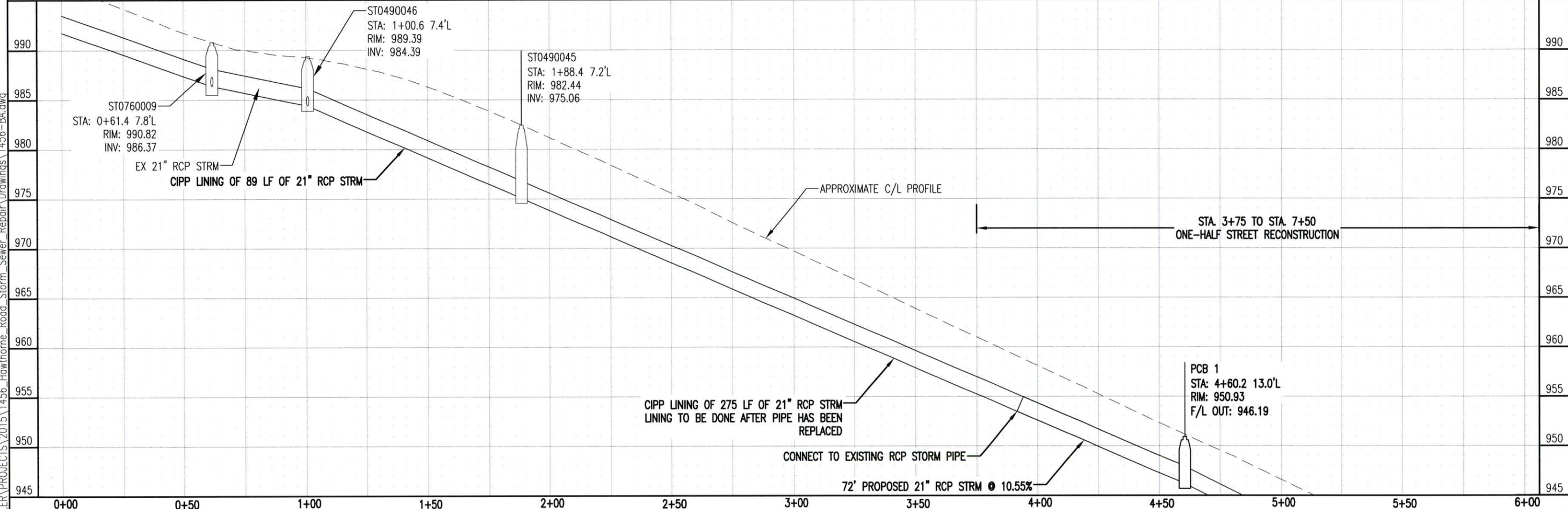
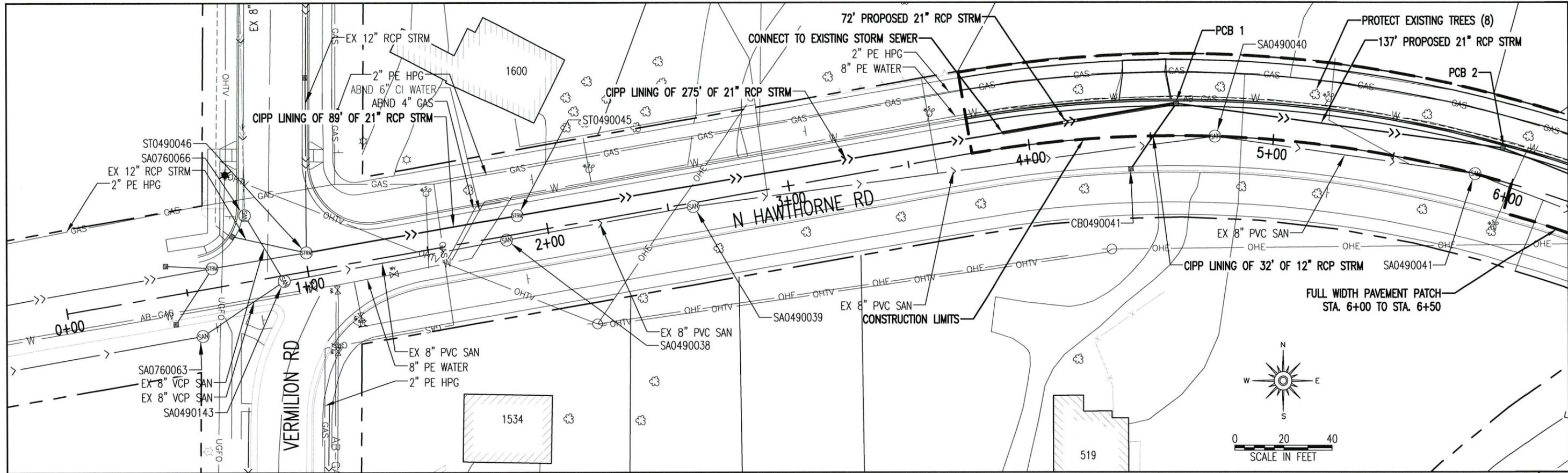
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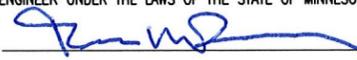
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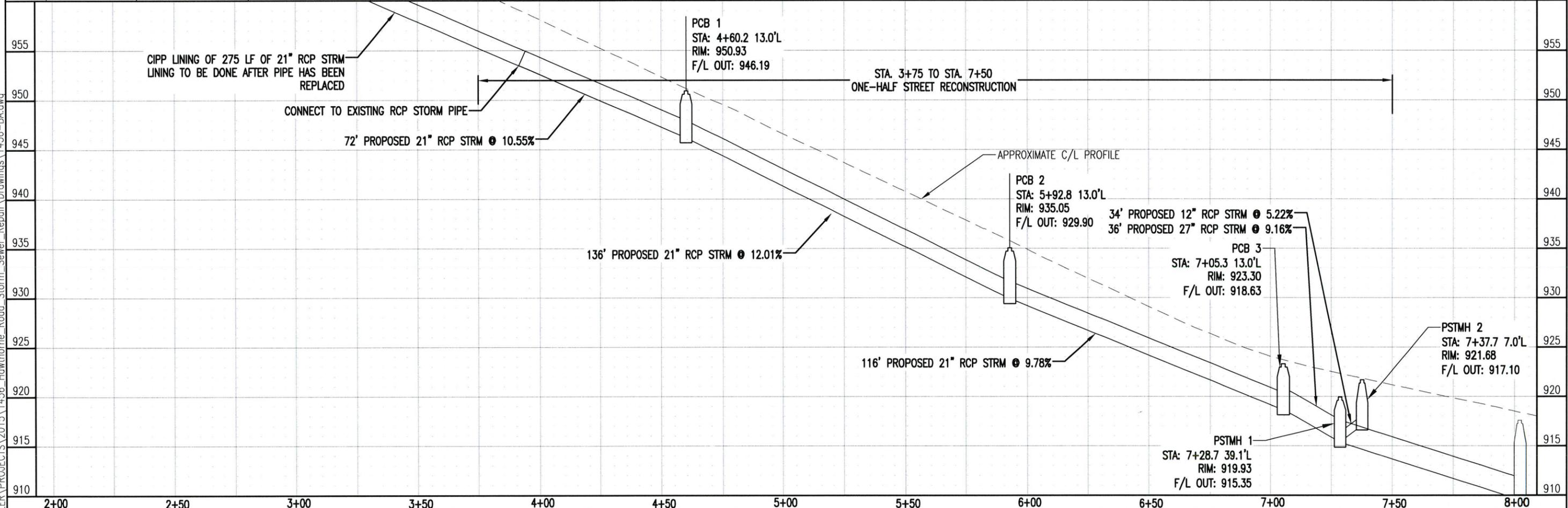
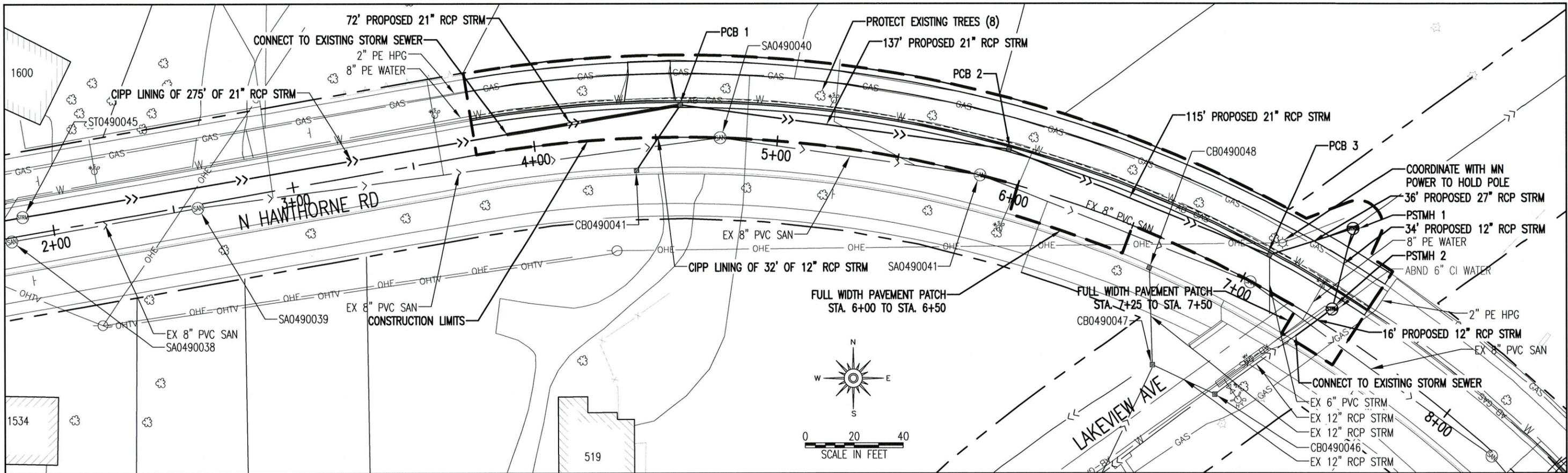
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TRAFFIC CONTROL PLAN

SHEET NO. 9 OF 11



I, PWU ENGINEER PROJECTS 2015 1456 Hawthorne Road Storm Sewer Repair Drawings 1456-BA.dwg 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. SIGNATURE: 	DATE: 06/19/2015	 CITY OF DULUTH ENGINEERING DIVISION 411 W. 1ST ST. STE. 211 DULUTH, MN 55802	HAWTHORNE RD (FROM VERMILION RD TO LAKEVIEW AVE) STORM SEWER & STREET REPAIRS		DRAWN BY: KLM	
	THOMAS M. PFEFFER P.E. TYPE NAME		LIC. NO.: 22442	CITY PROJECT NO.: 1456	STATE AID PROJECT NO.:	PLAN & PROFILE
			SHEET NO. 10 OF 11			



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. SIGNATURE: <i>Thomas M. Pfeiffer</i> THOMAS M. PFEFFER P.E. TYPE NAME	DATE: 06/19/2015	CITY OF DULUTH ENGINEERING DIVISION 411 W. 1ST ST. STE. 211 DULUTH, MN 55802	HAWTHORNE RD (FROM VERMILION RD TO LAKEVIEW AVE) STORM SEWER & STREET REPAIRS		DRAWN BY: KLM
	LIC. NO.: 22442		CITY PROJECT NO.: 1456	STATE AID PROJECT NO.:	PLAN & PROFILE SHEET NO. 11 OF 11

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