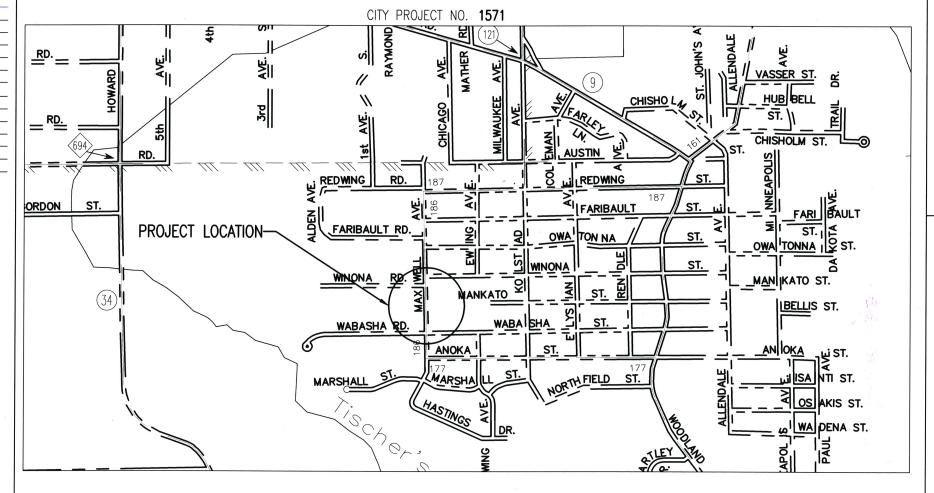
PLAN LEGEND RIGHT OF WAY LINE DITCH CENTERLINE FENCE LINE RETAINING WALL GRAVEL LINE GUARD RAIL LINE ROAD CENTERLINE TREE LINE STREAM LINE WETLAND LINE EX SANITARY LINE PR SANITARY LINE AB SANITARY LINE EX FORCEMAIN LINE PR FORCEMAIN LINE AB FORCEMAIN LINE EX STORM LINE PR STORM LINE AB STORM LINE EX WATER LINE PR WATER LINE AB WATER LINE EX GAS LINE PR GAS LINE AB GAS LINE EX STEAM LINE EX 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 EX SANITARY CLEANOUT STRM EX STORM MANHOLE EX STORM CATCHBASIN EX. WATER MANHOLE EX. WATER VALVE EX. WATER HYDRANT EX. WATER SHUTOFF W&G EX. WATER & GAS MH EX. GAS MANHOLE EX. GAS VALVE EX. GAS SHUTOFF EX. STEAM MANHOLE EX. TELEPHONE MANHOLE EX. ELECTRIC MANHOLE (E)EX. POWERPOLE EX. LIGHT POLE EX. ELECTRIC VAULT EX. ANCHOR EX. ELECTRIC TRANSFORMER EX. STREET LIGHT O EX. SIGNAL W/ STREET LIGHT EX. HANDHOLÉ H.H. EX. HANDHOLE EX. TELEPHONE PEDESTAL EX. WELL BENCHMARK FOUND CI MONUMENT EX. SIGN CONTROL POINT EX DECIDUOUS TREE EX CONIFEROUS TREE EX. PARKING METER SB#: ?? EX. SOIL BORING

CITY OF DULUTH

DEPARTMENT OF PUBLIC WORKS AND UTILITIES ENGINEERING DIVISION

CONSTRUCTION PLANS FOR:

MAXWELL ST. WATERMAIN EXTENSION (2016)



WARNING:

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 UTITLITY DATA".

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

ST. LOUIS COUNTY CITY OF DULUTH SE 1 OF NE 1 SEC. 3 T50N R14V

PROJECT LOCATION

CITY OF DULUTH PROJECT NO. 1571

GOVERNING SPECIFICATIONS

THE 2016 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

THE 2016 EDITION OF THE CITY OF DULUTH PUBLIC WORKS AND UTILITIES DEPARTMENT CONSTRUCTION STANDARDS AND SUPPLEMENTS OR ADDENDUMS SHAL APPLY.

AVAILABLE AT:

http://www.duluthmn.gov/engineering/standard-construction-specifications/

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<u>INDEX</u>

SHEET NO. **DESCRIPTION** TITLE SHEET STATEMENT OF ESTIMATED QUANTITIES 3-5 CONSTRUCTION DETAILS CONNECTION DETAIL

PLAN & PROFILE

THIS PLAN CONTAINS 7 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.

DRAWN BY: KLM

SHEET NO. 1 OF 7

	STATEMENT OF ESTIMATED QUANTITIES					
LINE	NOTES	SPEC NO	DESCRIPTION	UNIT	QUANTITY	
1		2021.501	MOBILIZATION	LUMP SUM	1.00	
2	1	2504.601	CONNECT TO EXISTING WATER MAIN	LUMP SUM	1.00	
3		2504.602	6" GATE VALVE AND BOX	EACH	1	
4		2504.602	1" CURB STOP AND BOX	EACH	1	
5		2504.602	6"x 1" TAPPING TEE W/ ELECTROFUSION SADDLE	EACH	1	
6		2504.602	WATER TRACER BOX	EACH	1	
7	2	2504.602	HYDRANT ASSEMBLY	EACH	1	
8		2504.603	1" HDPE SDR 11 SERVICE PIPE	LIN FT	7	
9		2504.603	6" DIPS HDPE WATER MAIN SDR11 (HORIZONTAL DIRECTIONAL DRILLED)	LIN FT	210	
10	3	2563.601	TRAFFIC CONTROL	LUMP SUM	1.00	
11		2573.509	STORM DRAIN INLET PROTECTION	EACH	4	
12		2573.533	SEDIMENT CONTROL LOG TYPE STRAW	LIN FT	100	

NOTES:	
1	INCLUDES EXCAVATION BACKFILL, AND ALL RESTORATION OF PAVEMENT AT EXISTING
	MAIN CONNECTION
2	INCLUDES EXCAVATION BACKFILL, AND ALL RESTORATION OF ACCESS PIT AND
	HYDRANT ASSEMBLY LOCATION
3	ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE MN MUTCD,
	INCLUDING THE FIELD MANUAL DATED FEBRUARY 2015.

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

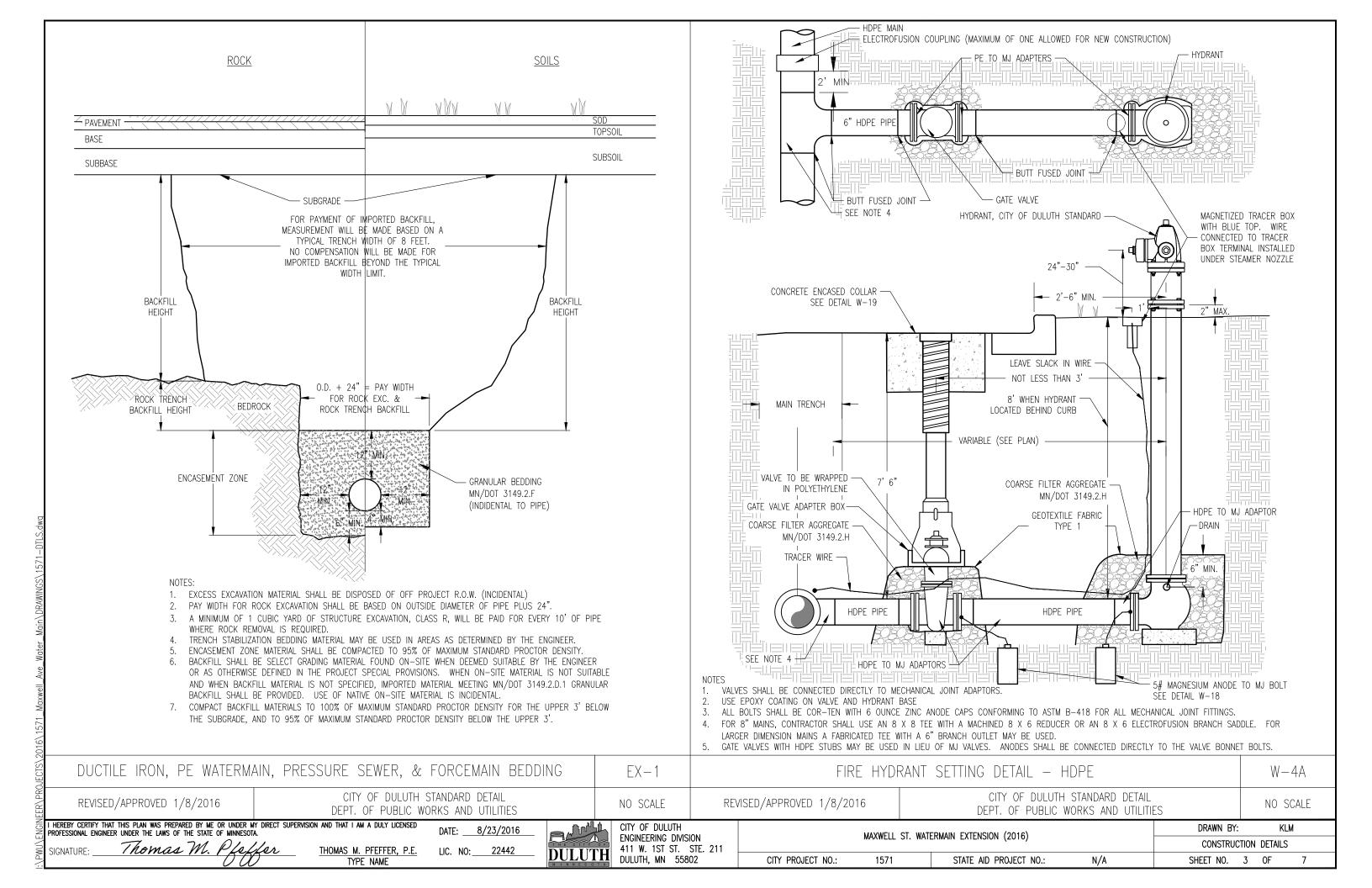
THOMAS M. PFEFFER, P.E.
TYPE NAME

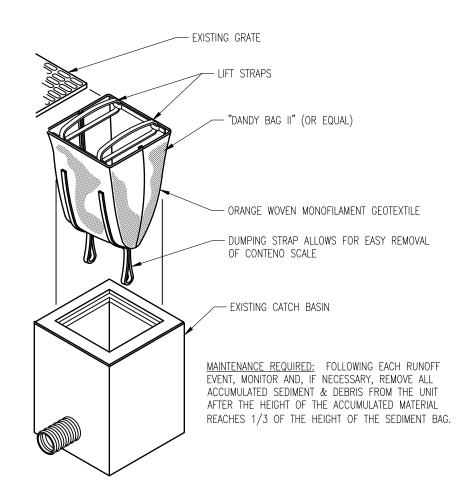
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CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
DULUTH, MN 55802

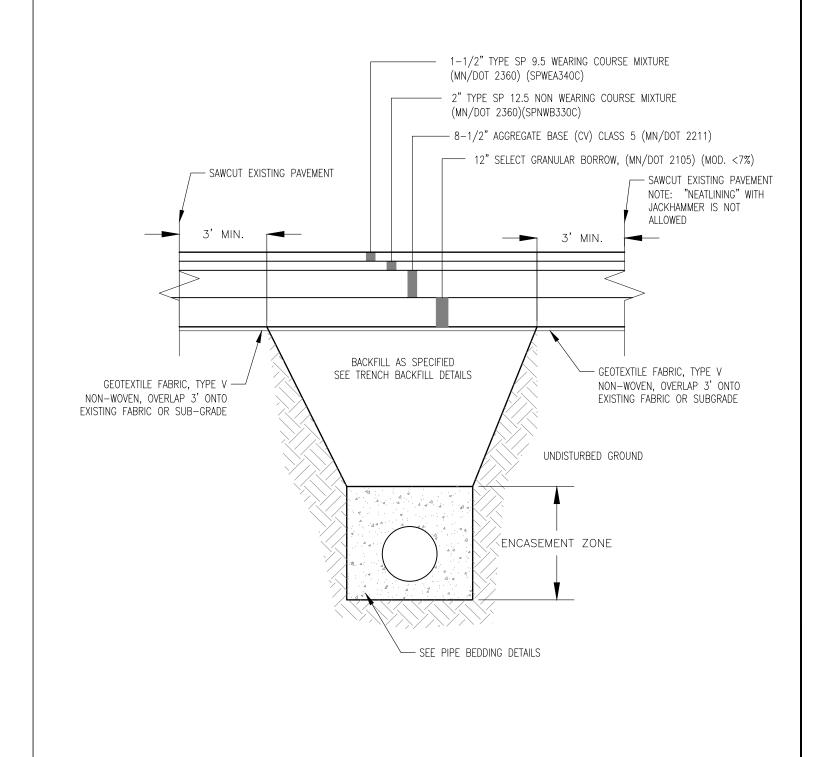
DRAWN BY: KLM MAXWELL ST. WATERMAIN EXTENSION (2016) STATEMENT OF ESTIMATED QUANTITIES SHEET NO. 2 OF N/A CITY PROJECT NO .: STATE AID PROJECT NO.: 1571





TYPE A INLET PROTECTION CATCH BASIN SEDIMENT BAG INSERT TYPE DETAIL

NO SCALE



STORM DRAIN INLET PROTECTION

NO SCALE

STREET RESTORATION OVER TRENCH

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

NO SCALE

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Thomas M. Pfeffer

THOMAS M. PFEFFER, P.E.
TYPE NAME

DATE: <u>8/23/2016</u>
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DULUTH

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

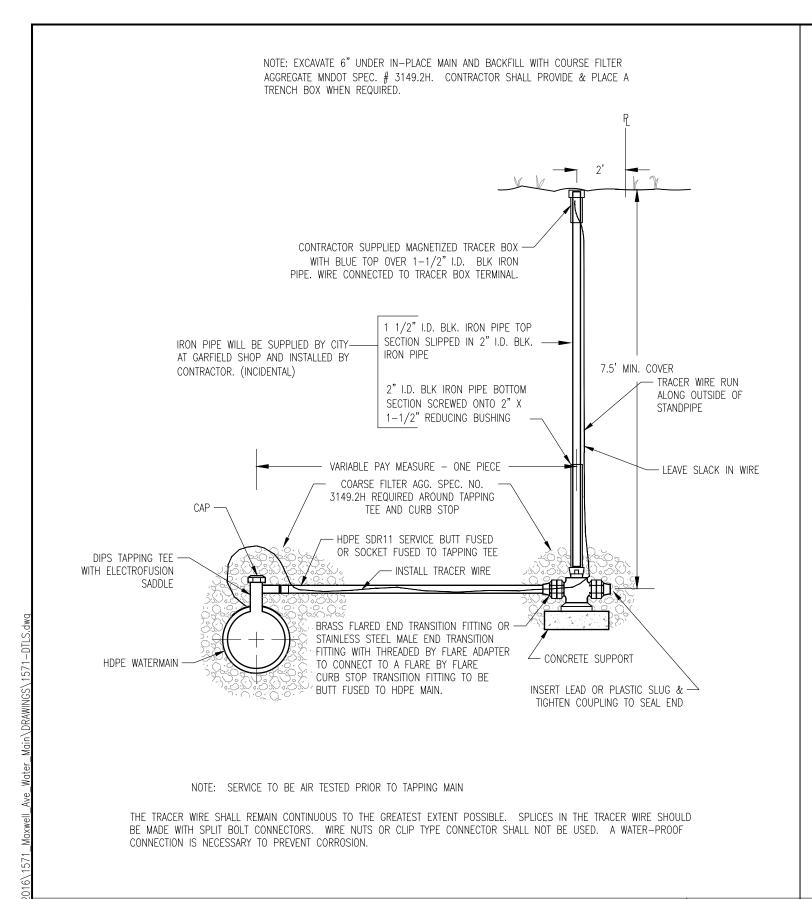
MAXWELL ST. WATERMAIN EXTENSION (2016)

CITY PROJECT NO.: 1571 STATE AID PROJECT NO.: N/A

DRAWN BY: KLM

CONSTRUCTION DETAILS

SHEET NO. 4 OF 7



FINISHED PAVEMENT SURFACE CONCRETE ENCASED COLLAR -SEE DETAIL W-19 MAGNETIZED TRACER BOX WITH BLUE TOP. WIRE CONNECTED TO TRACER BOX TERMINAL. TRACER LOCATED DIRECTLY ABOVE PIPE WITHIN 2' OF VALVE BOX. 7'-6" - LEAVE SLACK IN WIRE GATE VALVE ADAPTER BOX-VALVE TO BE WRAPPED -IN POLYETHYLENE NOTE: THE CONNECTION FOR THE WIRE IS -SO THAT THE MINIMUM NO. OF CONNECTIONS GEOTEXTILE FABRIC TYPE 1 IN THE WIRE SYSTEM ARE USED. COARSE FILTER AGGREGATE TRACER WIRE MN/DOT 3149.2.H HDPE PIPE HDPE PIPE HDPE TO MJ ADAPTERS 5# MAGNESIUM ANODE FÄSTENED TO MJ BOLT SEE DETAIL W-18 CONCRETE BLOCKING TO SUPPORT THE VALVE BOX AS SHOWN IN DETAIL W-17

SET CASTING .03' BELOW

NOTES

- 1. VALVES SHALL BE CONNECTED DIRECTLY TO HDPE WITH HDPE TO MECHANICAL JOINT ADAPTERS.
- 2. USE EPOXY COATING ON EXTERIOR OF VALVES.
- 3. ALL BOLTS SHALL BE COR-TEN WITH 6 OUNCE ZINC ANODE CAPS CONFORMING TO ASTM B-418 FOR ALL MECHANICAL JOINT FITTINGS.
- 4. FOR OPEN CUT PIPE INSTALLATIONS, ELECTROFUSION COUPLINGS ARE NOT ALLOWED FOR CONNECTION OF HDPE TO MJ ADAPTERS. FOR DIRECTIONAL DRILLED INSTALLATIONS, ONE ELECTROFUSION COUPLING MAY BE USED PER VALVE.
- 5. GATE VALVES WITH HDPE STUBS MAY BE USED IN LIEU OF MJ VALVES. ANODE SHALL BE CONNECTED DIRECTLY TO THE VALVE BONNET BOLTS.

TYPICAL HDPE WATER SERVICE - 1", 1-1/4", AND 2"

W-5A

WATER VALVE BOX — HDPE MAIN

W-17A

REVISED/APPROVED 1/8/2016

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

NO SCALE REVISED/APPROVED 1/8/2016

016

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

N/A

NO SCALE

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.

L ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Thomas M. Pleffer

DATE: <u>8/23/2016</u>

THOMAS M. PFEFFER, P.E. LIC. NO: <u>22442</u>

TYPE NAME

- DULUTH

CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
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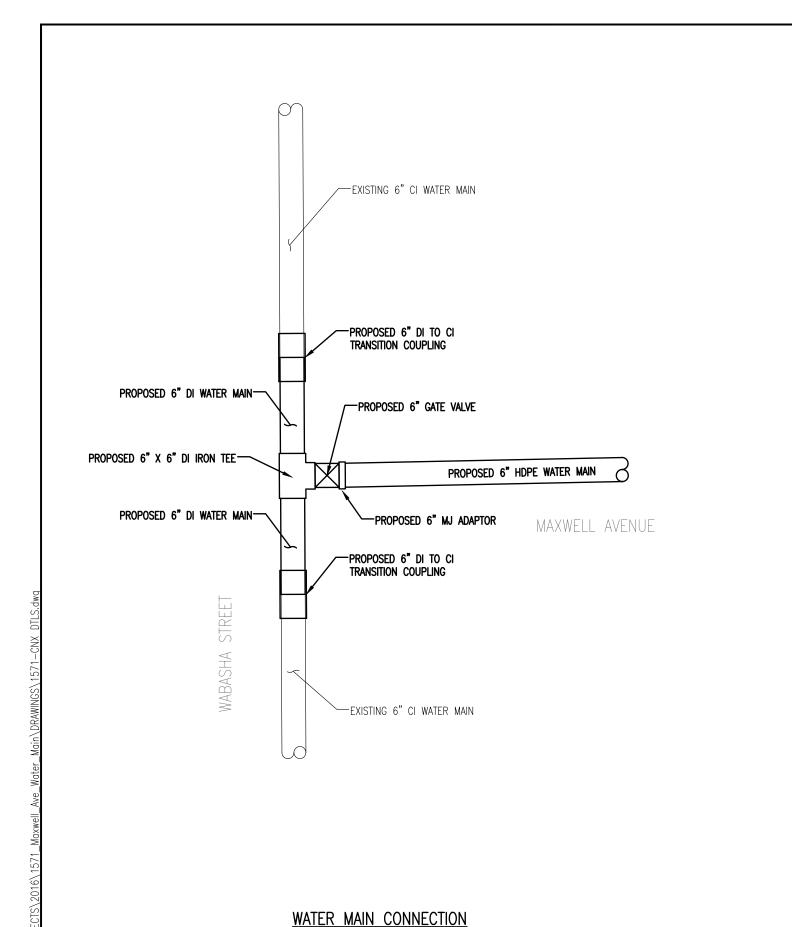
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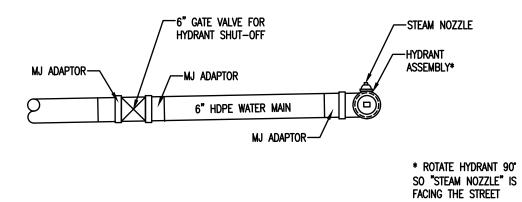
CITY PROJECT NO.: 1571 STATE AID PROJECT NO.:

DRAWN BY: KLM

CONSTRUCTION DETAILS

SHEET NO. 5 OF 7





HYDRANT FITTINGS NTS LAYOUT DETAIL

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THOMAS M. PFEFFER, P.E. TYPE NAME

NTS LAYOUT DETAIL

DATE: 8/23/2016 LIC. NO: 22442

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

DRAWN BY: KLMMAXWELL ST. WATERMAIN EXTENSION (2016) CONNECTION DETAIL SHEET NO. 6 OF CITY PROJECT NO.: 1571 STATE AID PROJECT NO.: N/A

