

ATTACHMENT 1

Prepared by the
Utility Agreements and Permits Unit
(Payable)
(\$584,440.00)
(Actual Cost)

S.P. 6982-322 (T.H. 35)
Location: I-35, I-535 & US 53 in the City of
Duluth
Utility Owner: City of Duluth
MnDOT Agreement Number 1034938

UTILITY RELOCATION AGREEMENT

This Agreement Number 1034938 (Agreement) is between the State of Minnesota (State), acting through its Commissioner of Transportation, and City of Duluth, including its agents, contractors, and subcontractors (Utility Owner). This Agreement describes how the parties will mitigate the effects of a State construction project on the Utility Owner.

RECITALS

The State plans to let a contract to construct State Project Number 6982-322 (Project) on Federal Aid Interstate Highway Number 35, which is part of the National System of Interstate Highways. The Federal Highway Administration (FHWA) identifies the Project as Minnesota Project Number BLD-NHFP I350(129) in its records. The Project is located on, along and adjacent to I-35, I-535 & US 53 in the City of Duluth.

Authorized FHWA officials have approved the Project.

The Utility Owner owns and operates Natural Gas Mains and their fixtures, and related equipment (Facilities) within the limits of the publicly owned right of way. The Facilities are within the limits of the Project.

The Utility Owner must relocate the Facilities that are within the Project limits. The Utility Owner has requested reimbursement for the cost of this relocation from the State.

The State requested the Utility Owner to prepare its preliminary work under the terms of MnDOT Agreement Number 1032661.

The State will acquire temporary right of way within the limits of the Utility Owner's property rights to construct the Project.

Under Minnesota Statutes, section 161.20, subdivision 2, the State may acquire all properties necessary to construct, maintain, and improve the trunk highway system.

Under Minnesota Statutes, section 161.46, the State may reimburse the Utility Owner for the cost of relocating its Facilities.

Code of Federal Regulations, title 23, part 645, subpart A, and as amended requires a written agreement that specifies the work the Utility Owner will perform for reimbursement. This Agreement is subject to all State, federal, and other applicable laws and regulations.

AGREEMENT

I. Term/Termination

- A. *Effective Date:* This Agreement is effective on the date the State obtains all signatures required by Minnesota Statutes, section 16C.05, subdivision 2.
- B. *Commencement of Work:* Upon notice of Agreement approval, the Utility Owner must commence work according to the terms of the Notice and Order and prosecute the work according to a schedule the State's Project Engineer (Project Engineer) approves.
- C. *Expiration Date:* This Agreement will expire on the date that all obligations, excluding the Utility Owner's ongoing maintenance obligation, have been satisfactorily fulfilled.
- D. *Termination by the State:* The State may terminate this Agreement at any time, with or without cause, on 30 calendar days' written notice to the Utility Owner. Upon termination, the Utility Owner will be entitled to payment, on a pro rata basis, for satisfactorily performed services. The termination of this Agreement does not relieve the Utility Owner of its obligations under the Notice and Order.
- E. *Survival of Terms:* The following articles survive the Agreement's expiration or termination: (III) Utility Owner's Ongoing Maintenance Requirements; (V) Audits; (VI) Indemnification/Insurance; and (IX) Governing Terms.

II. Utility Owner's Duties

- A. *Relocation:* The Utility Owner must:
 - 1. Relocate its Facilities according to:
 - a. The terms of the Notice and Order;
 - b. All applicable codes;
 - c. The directions of the Project Engineer and the State's Utilities Engineer (Utilities Engineer);
 - d. The plans for the utility work, which are attached to this Agreement as Exhibit A. If any changes must be made to the plans, the Utilities

- Engineer must approve these changes in writing before the Utility Owner performs the work to qualify for reimbursement; and
- e. MnDOT's standard construction specifications.
2. Submit one copy of the State's Application for Utility Accommodation on Trunk Highway Right of Way, Form 2525 (Permit), including two copies of "proposed" sketches, for all Facilities within the trunk highway right of way to the Utilities Engineer before beginning relocation work.
 3. Coordinate its operations with the State's contractor's (Contractor) operations and notify the Project Engineer at least two days before beginning and after completing each operational phase.
 4. Stake the location and elevation of the proposed Facilities within the trunk highway right of way. The Utility Owner must not begin construction until the Project Engineer approves the location and elevation.
 5. Subcontract the portion as shown and described in Exhibit "A" of the work that the Utility Owner does not have adequate staff or equipment to perform. The Utility Owner must obtain the Utilities Engineer's written approval before subcontracting and awarding a contract for other portions of the work. If the subcontracted work costs \$10,000.00 or more, the Utility Owner must:
 - a. Enter into a written contract with the subcontractor for that work. The contractor must include or incorporate the "Audits" clause in substantially the same form as it appears in Article (V) of this Agreement; provide a detailed breakdown of the basis for compensation; and state that there will be no "penalty" or "winding up" charges for contract termination.
 - b. Provide copies of the contract to the State prior to its execution or before commencing work under an already executed "retainer-type" contract.
- Except in an emergency or for the minor completion of a phase of work, obtain the Utilities Engineer's approval for the overtime work to qualify for reimbursement.
6. Accomplish the relocation work with its own equipment. If the Utility Owner must rent any equipment at a later date, it must first obtain:
 - a. The Utilities Engineer's written approval of the equipment rental and rental rates; and

- b. The Project Engineer's approval of the equipment's proposed use.

The Utility Owner must obtain the approvals listed above before renting and using equipment to perform any other work.

7. Complete all underground installations within the proposed roadways before the Contractor begins its base work operations. If the Utility Owner must perform its work concurrently with that of the Contractor, it must coordinate with the Contractor to ensure that all work is completed to the State's satisfaction without delays. The Utility Owner must not substitute backfilling material unless specifically authorized by the Project Engineer. The Utility Owner must dispose of all rejected soil material within the highway right of way as directed by the Project Engineer. The Utility Owner must mechanically compact all material replaced in the excavation. The Utility Owner must restore all drainage and slopes to the Project Engineer's satisfaction.
8. Maintain accurate and up-to-date relocation cost records throughout the course of the Project.
9. Leave materials in place at the Project Engineer's discretion. Any materials left within the right of way after the Utility Owner completes its work will become the property of the Contractor.

B. *Compliance with Safety Regulations*

1. The Utility Owner must comply with the safety regulations contained in Minnesota Rules, part 8810.3400, subpart 5, during all construction and maintenance operations. The Utility Owner will furnish and require each flagger to carry a copy of the current edition of the State's *Field Manual*, which is Part IV of the *Minnesota Manual of Uniform Traffic Control Devices*. The Utility Owner must furnish each flagger with the required vest, hat, hand sign, flags, and any other necessary safety equipment.
2. The provisions of this Agreement do not relieve the Utility Owner of any legal responsibility or liability associated with the construction, operations, or maintenance of its Facilities.

C. *Compliance with Pollution Control Requirements*

1. The Contractor installs pollution control measures according to the National Pollution Discharge Elimination System permit (NPDES Permit). Pollution control measures include silt fences, slope stabilization measures such as

seed and mulch, and any other measures the State deems necessary to comply with the NPDES Permit. If the Utility Owner's work affects such pollution control measures, the Utility Owner must restore them to their original condition and to the Project Engineer's satisfaction. If the Utility Owner is relocating Facilities before the Contractor begins construction, the Utility Owner must work with the Project Engineer to determine if pollution control measures are necessary and how to implement them if they are.

III. Utility Owner's Ongoing Maintenance Requirements

- A. Once construction is complete, the Utility Owner must maintain the Facilities at its own expense. The Utility Owner must follow the terms of the Permit when it performs any maintenance work.
- B. The Utility Owner may open and disturb the trunk highway right of way without a permit in the case of an emergency that is dangerous to the public and requires immediate attention. Upon learning of an emergency, the Utility Owner must immediately notify the State Patrol. The Utility Owner must take all necessary and reasonable safety measures to protect the public and must cooperate fully with the State Patrol. In this event, the Utility Owner must request a permit from the proper authority no later than the working date after it begins working in the right of way.

IV. Payment

- A. *Payment*
 - 1. Exhibit B, which is attached to this Agreement, is a detailed, itemized estimate of the cost of the Utility Owner's relocation work. Actual cost includes all expenses attributable to design engineering and construction relocation work. Reimbursement will be based on the actual costs for work that conforms to Exhibit A. Betterment, increase in value, and salvage value derived from the relocated Facilities will not be included in this reimbursement.
 - 2. The State will pay the Utility Owner for the actual cost the Utility Owner incurs performing its obligations pursuant to this Agreement, in an amount not to exceed \$584,440.00, upon receiving:
 - a. Proof that the Facilities have been relocated to the Project Engineer's and Utilities Engineer's satisfaction; and
 - b. One original, signed invoice that is supported by an itemized statement of costs. An authorized representative of the Utility Owner must sign the invoice and submit the final bill to the Utilities Engineer no later than 90 days after completing the work.

3. The State's payment constitutes payment in full for all work the Utility Owner performs and for any and all damages, claims, or causes of action of any kind accruing to the Utility Owner because of the State's order to relocate the Facilities.
4. If acceptable to the Utilities Engineer, the State may process periodic progress billings of incurred cost without prior audit.
5. The Utility Owner will record its actual and indirect costs according to the Utility Owner's established accounting procedures that have been approved by the State and the FHWA's Division Engineer.

B. *Federal Reimbursement*

1. Pursuant to Code of Federal Regulations, title 23, part 645, subpart A., and as amended, the federal government may reimburse the State for a portion of the relocation cost the State pays the Utility Owner. The amount of the federal reimbursement will be determined upon the State's audit of the cost the Utility Owner claims according to the Agreement. The amount the State pays the Utility Owner for its relocation must not exceed the amount on which the federal government bases its reimbursement.
2. If the amount the State pays the Utility Owner exceeds the amount on which the federal government bases its reimbursement, the Utility Owner, upon the State's request, must immediately pay the difference to the State.

C. *Limitation on Payment*

1. The total amount the State is required to pay the Utility Owner is limited to the amount shown in Article IV.A.2.
2. If the Utility Owner deems it necessary to perform additional work not covered by this Agreement, or anticipates costs exceeding the amount in Article IV.A.2., then the Utility Owner must promptly notify the Utilities Engineer, in writing, of the nature and cause of the additional work or costs prior to performing or incurring them. Notification must include the amount of additional State funds requested and reason(s) supporting the request. The Utilities Engineer may approve the request subject to the availability and encumbrance of funds. If the Utility Owner performs additional work for which the State has not previously encumbered funds, the State is not obligated to pay for that additional work.

3. If the amount the Utility Owner requests under Article IV.C.2. does not exceed 10 percent of the amount in Article IV.A.2., the State may authorize payment of that pre-approved additional amount without amending this Agreement. The Utility Owner must receive notification from the State that the State has approved the additional work and encumbered the additional funds before beginning the additional work, or that work will be ineligible for reimbursement.
4. If the amount the Utility Owner requests exceeds 10 percent of the amount shown in Article IV.A.2., this Agreement must be amended to reflect the new cost before the State will be responsible for paying that additional cost.

V. Audits

- A. The Utility Owner's costs to relocate its Facilities according to this Agreement and the costs for any additions or alterations to these Facilities are subject to the State and federal government's examination and audit. Pursuant to Minnesota Statutes, section 16C.05, subdivision 5, the Utility Owner's accounting books, records, documents, procedures, and practices that are relevant to this Agreement are subject to Legislative or State Audit for six years after this Agreement expires.
- B. The Utility Owner must respond to requests for audit information to support claimed costs no later than 60 days after receiving the request or the State will cite all costs in question. If the Utility Owner does not respond during this 60-day period, the State will consider the audit citations accepted and will make payment accordingly.

VI. Indemnification/Insurance

- A. The Utility Owner will defend (at its own expense and to the extent Minnesota's Attorney General allows), indemnify, save, and hold the State and all of its agents and employees harmless of and from all claims, demands, actions, or causes of action. This indemnity obligation extends to any attorney's fees the State incurs due to this Agreement and the Utility Owner's performance or nonperformance under it.
- B. The Utility Owner does not waive any defense or immunity of third parties. The Utility Owner, in defending any action on behalf of the State, will be entitled to assert every defense or immunity that the State could assert in its own behalf.
- C. The Utility Owner certifies that its workers' compensation insurance coverage complies with Minnesota Statutes, section 176.181, subdivision 2. The Utility Owner's employees and agents are not considered State employees. The State is not

responsible for any claims asserted by the Utility Owner's employees, agents, subcontractors, or any third parties under the Minnesota Workers' Compensation Act.

VII. Nondiscrimination

- A. The Utility Owner will comply with the United States Department of Transportation's nondiscrimination regulations. These regulations are in the current version of the Code of Federal Regulations, title 49, part 21. The Utility Owner must incorporate these regulations by reference in all contracts.
- B. Minnesota Statutes, section 181.59 and any applicable local ordinances pertaining to civil rights and nondiscrimination are considered part of this Agreement.

VIII. Buy America Requirements

- A. All utility work must comply with the "Buy America" provisions in 23 U.S.C. 313 and 23 CFR 635.410. If the Utility Owner uses steel or iron as part of its work, and the cost of that steel or iron is more than 0.1 percent of the total relocation cost or \$2500 (whichever is greater), it must use steel or iron melted or manufactured in the United States. Materials that have been removed from the United States for any process (e.g., change of chemical content, shape, size, or finish) are not considered domestic materials.
- B. If the Utility Owner wishes to use foreign steel or iron, and the cost of that steel or iron exceeds the limits above, it must submit the "Stipulation for Use of Foreign Steel" to the Utilities Engineer and receive approval.
- C. Upon completing its work, the Utility Owner must sign and submit the State's Certificate of Compliance, which states that all iron and steel items are domestic. If any of the iron or steel items are foreign, the certification must include the waiver it received. The State will not process any invoices that do not include the signed Certificate of Compliance.

IX. Governing Terms

- A. *Data Practices:* All parties must comply with the Minnesota Government Data Practices Act (Minnesota Statutes, chapter 13) as it applies to any data that a party to this Agreement receives, collects, stores, or disseminates under it. The Act provides civil liability for failure to comply with its requirements.
- B. *Applicable Law:* Minnesota law governs the validity, interpretation, and enforcement of this Agreement. Venue for all legal proceedings arising out of this Agreement, or its breach, must be in Ramsey County, Minnesota.
- C. *Waiver:* If the State fails to enforce any provision of this Agreement, that failure does not waive the provision or the State's right to subsequently enforce it.
- D. *Merger:* This Agreement contains all negotiations and agreements between the State and the Utility Owner. No prior understanding regarding this Agreement, whether written or oral, may be used to bind either party.
- E. *Assignment:* The Utility Owner may neither assign nor transfer any rights or obligations under this Agreement without the State's consent and a fully executed assignment agreement. To be valid, the assignment agreement must be signed and approved by the same parties who signed and approved this Agreement, or their successors in office.
- F. *Amendments:* Any amendment to this Agreement must be in writing. An amendment will not be effective until the same parties who signed and approved this Agreement, or their successors in office, sign and approve the amendment.
- G. *Incorporation of Exhibits:* All exhibits attached to this Agreement are incorporated into this Agreement.

The remainder of this page was left blank intentionally.

CITY OF DULUTH

The undersigned certify that they have lawfully executed this contract on behalf of the Governmental Unit as required by applicable charter provisions, resolutions, or ordinances.

By: _____
Mayor

Date: _____

Attested: _____
City Clerk

Date: _____

Approved as to form:

By: _____
City Attorney

Date: _____

Countersigned: _____
City Auditor

Date: _____

**STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION**

State Encumbrance Verification

Individual certifies that funds have been encumbered as required by Minnesota Statutes §§ 16A.15 and 16C.05.

By: _____

Date: _____

Contract Number: _____

Order Number: _____

Department of Transportation

Recommended for Approval:

By: _____
District Engineer

Date: _____

Approved:

By: _____
Director, Office of Land Management

Date: _____

Office of Contract Management

Approved as to Form and Execution:

By: _____

Date: _____

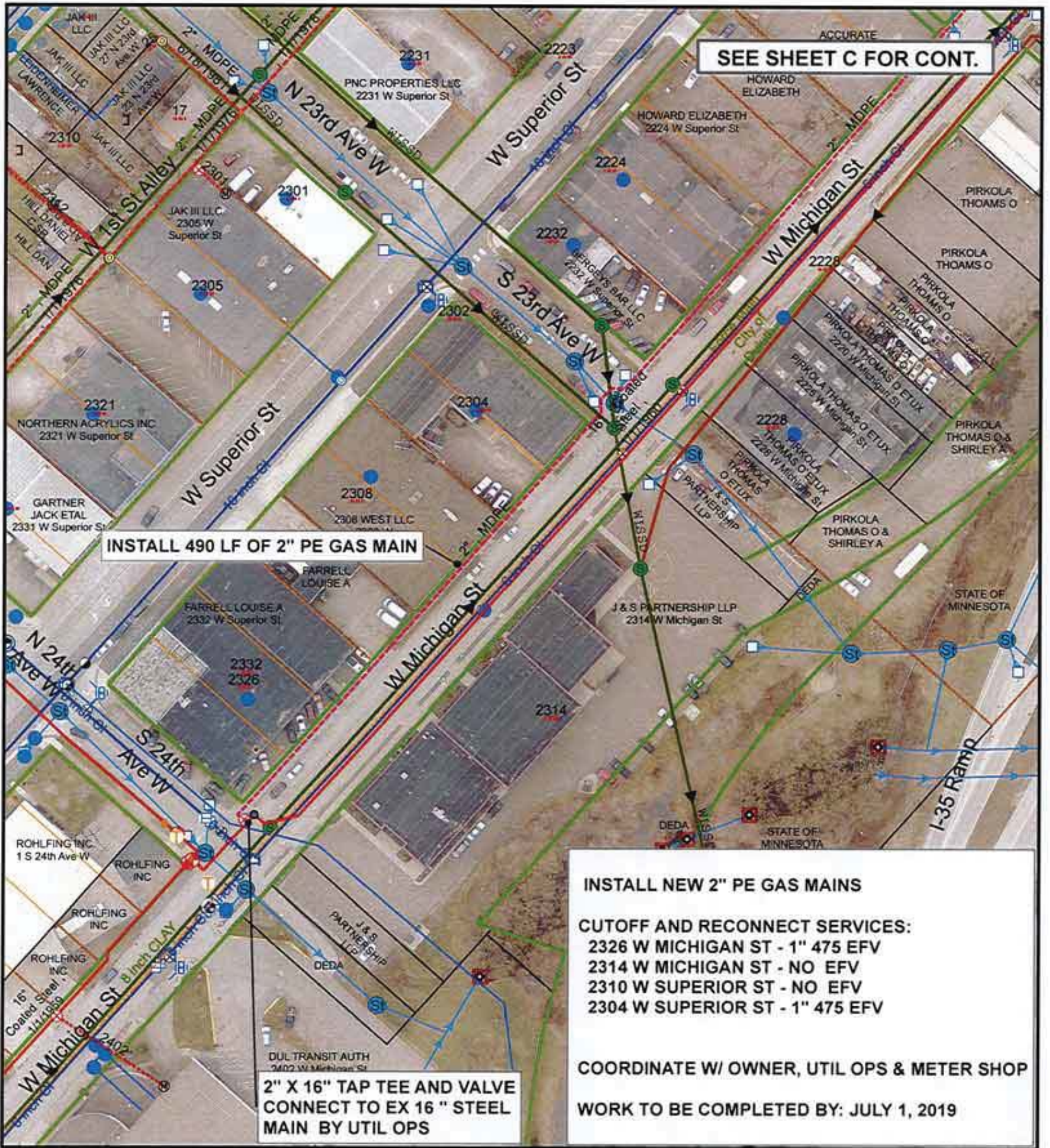
Department of Administration

By: _____

Date: _____



1810 Gas Blanket Project



DATE COMPLETED: _____ INSPECTOR: _____

1"=100'

EXCESS FLOW VALVE: NA APPL # N/A EAM # 509011 ZONE: 5

PLAN OF: INSTALL NEW 2" PE GAS MAIN

LOCATION: W MICHIGAN ST

FROM: 23RD AVE W TO: 24TH AVE W

DEPARTMENT OF PUBLIC WORKS AND UTILITIES

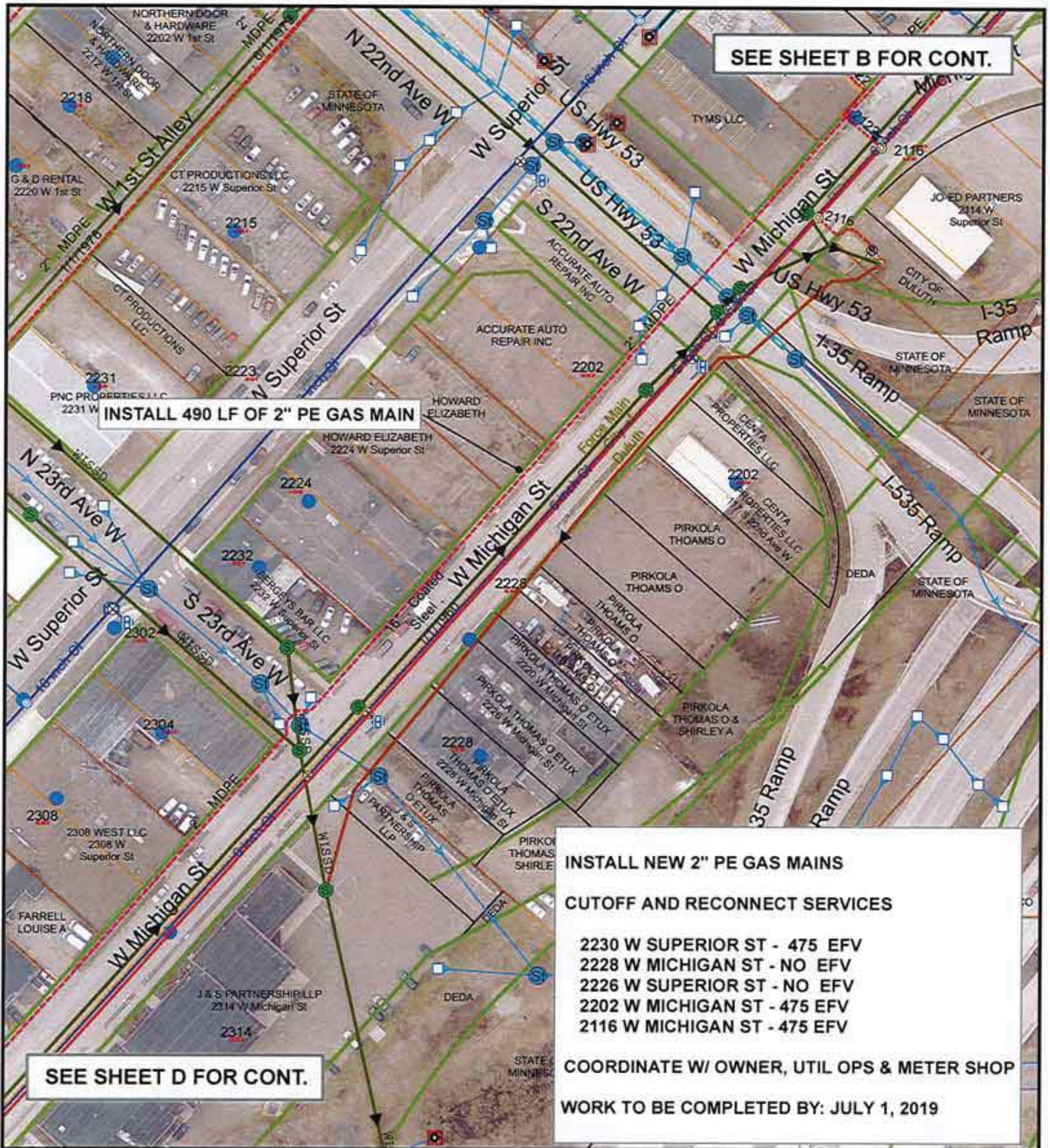
DULUTH
MINNESOTA

JOB NO: 1810-039D

DRAWN BY: MHW

DATE: 3/26/2019

1810 Gas Blanket Project



INSTALL NEW 2" PE GAS MAINS

CUTOFF AND RECONNECT SERVICES

2230 W SUPERIOR ST - 475 EFV
 2228 W MICHIGAN ST - NO EFV
 2226 W SUPERIOR ST - NO EFV
 2202 W MICHIGAN ST - 475 EFV
 2116 W MICHIGAN ST - 475 EFV

COORDINATE W/ OWNER, UTIL OPS & METER SHOP
 WORK TO BE COMPLETED BY: JULY 1, 2019

DATE COMPLETED: _____ INSPECTOR: _____



EXCESS FLOW VALVE: NA APPL #: N/A EAM #: 509011 ZONE: 5

PLAN OF: INSTALL NEW 2" PE GAS MAIN

LOCATION: W MICHIGAN ST

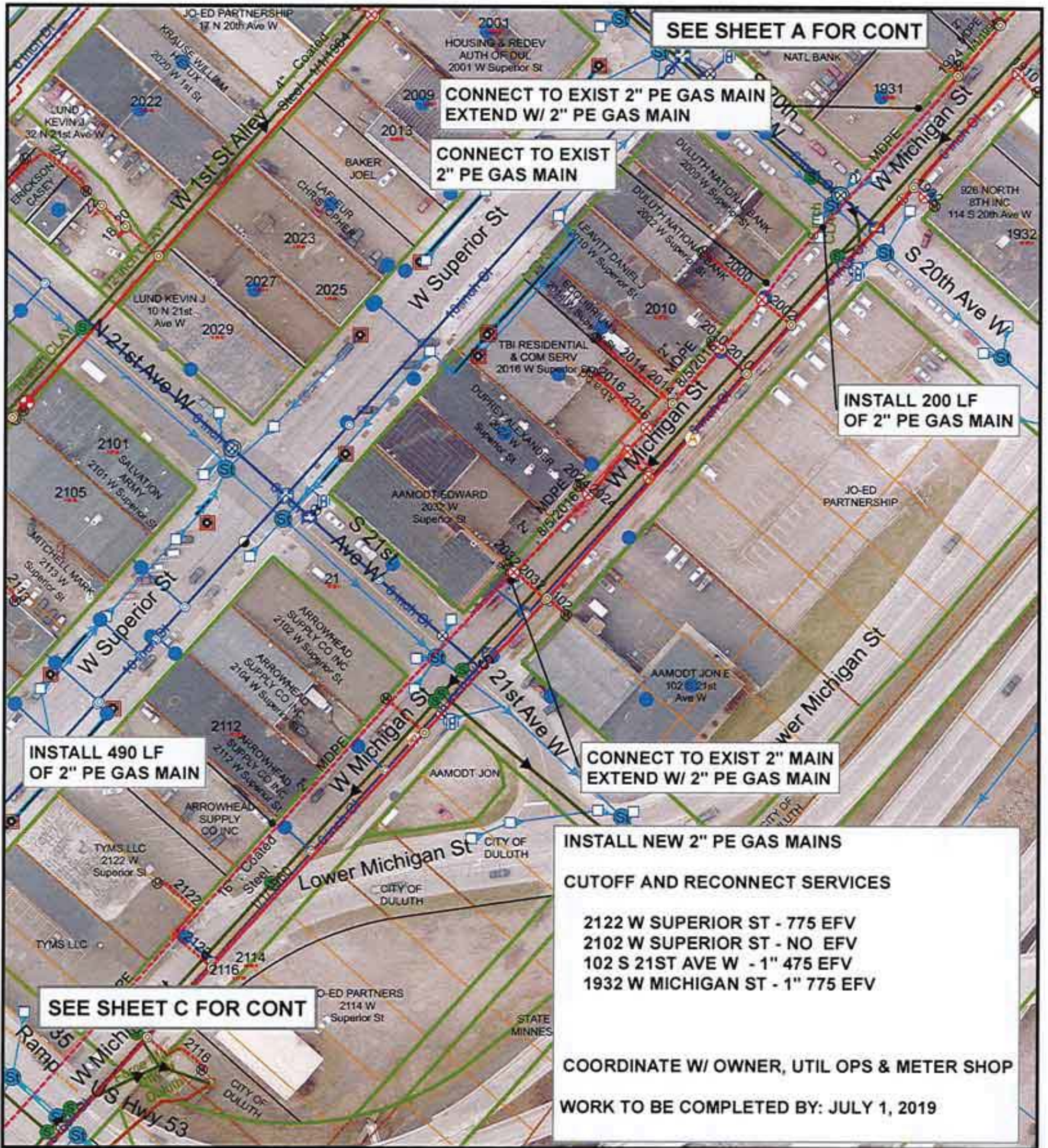
FROM: 22ND AVE W TO: 23RD AVE W

DEPARTMENT OF PUBLIC WORKS AND UTILITIES



JOB NO: 1810-039C
 DRAWN BY: MHW
 DATE: 2/13/2019

1810 Gas Blanket Project



DATE COMPLETED:

INSPECTOR:



1"=100'

EXCESS FLOW VALVE: N/A APPL #: N/A EAM #: 509011 ZONE: 5

PLAN OF: INSTALL NEW 2" PE GAS MAIN

LOCATION: W MICHIGAN ST

FROM: 20TH AVE W TO: 22ND AVE W

DEPARTMENT OF PUBLIC WORKS AND UTILITIES

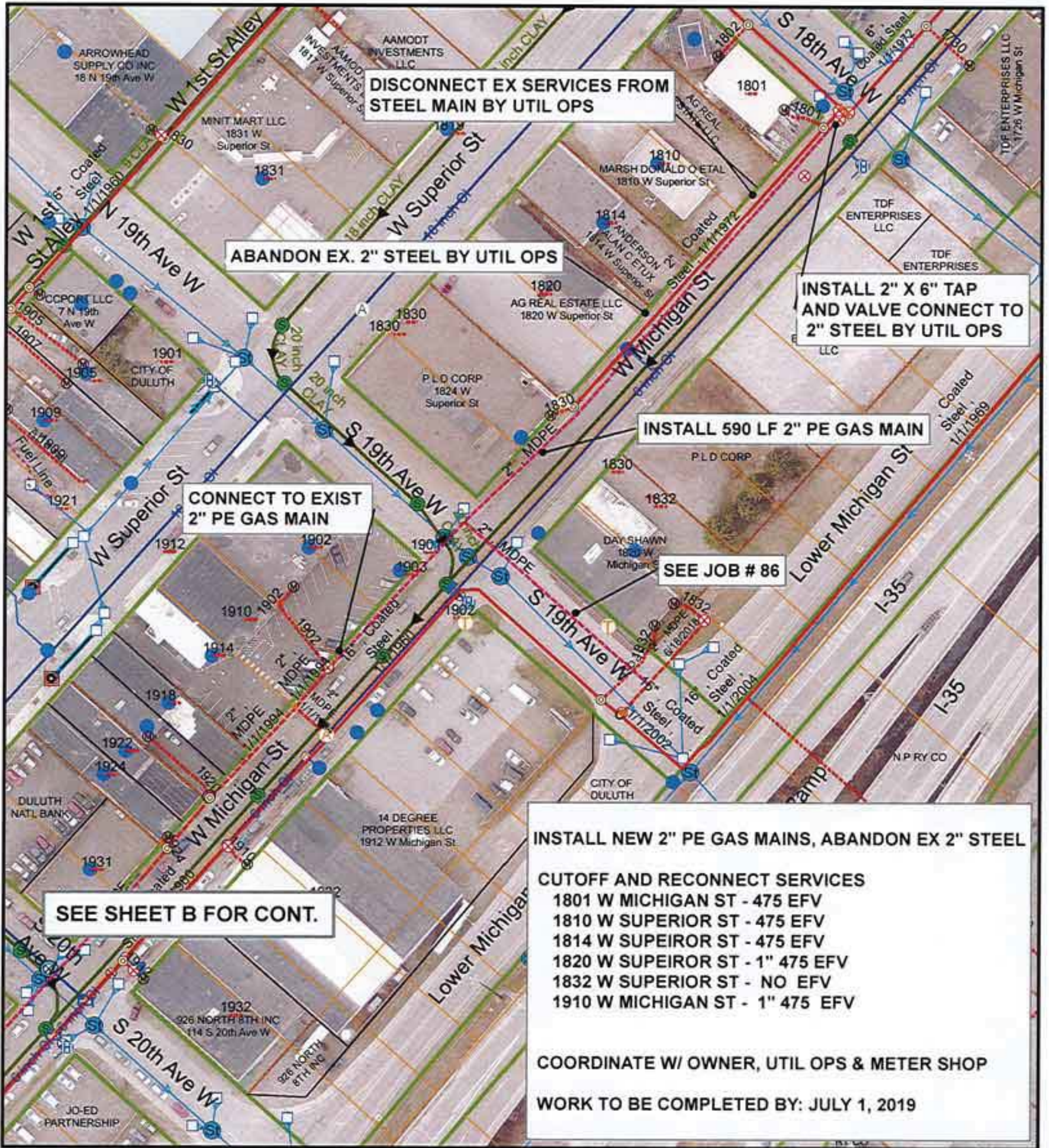


JOB NO: 1810-039B

DRAWN BY: MHW

DATE: 2/13/2019

1810 Gas Blanket Project



INSTALL NEW 2" PE GAS MAINS, ABANDON EX 2" STEEL

CUTOFF AND RECONNECT SERVICES
 1801 W MICHIGAN ST - 475 EFV
 1810 W SUPERIOR ST - 475 EFV
 1814 W SUPEIOR ST - 475 EFV
 1820 W SUPEIOR ST - 1" 475 EFV
 1832 W SUPERIOR ST - NO EFV
 1910 W MICHIGAN ST - 1" 475 EFV

COORDINATE W/ OWNER, UTIL OPS & METER SHOP
 WORK TO BE COMPLETED BY: JULY 1, 2019

DATE COMPLETED:

INSPECTOR:



EXCESS FLOW VALVE: NA APPL #: N/A EAM #: 509011 ZONE: 5
 PLAN OF: INSTALL NEW 2" PE GAS MAIN- ABANDON EX 2" STEEL
 LOCATION: W MICHIGAN ST
 FROM: 18TH AVE W TO: 20TH AVE W


 JOB NO: 1810-039A
 DRAWN BY: MHW
 DATE: 3/26/2019

DEPARTMENT OF PUBLIC WORKS AND UTILITIES

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	(S)
EX SANITARY CLEANOUT	(SC)
EX STORM MANHOLE	(S)
EX STORM CATCHBASIN	(S)
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	(G)
EX GAS VALVE	(V)
EX GAS SHUTOFF	(S)
EX STEAM MANHOLE	(S)
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	(T)
EX STREET LIGHT	(S)
EX SIGNAL W/ STREET LIGHT	(S)
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	(S)

CITY OF DULUTH

DEPARTMENT OF PUBLIC WORKS AND UTILITIES

ENGINEERING DIVISION

CONSTRUCTION PLANS FOR:

LOWER MICHIGAN ST. GAS MAIN RELOCATION

CITY PROJECT NO. 1822



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 2018 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 2019 EDITION OF THE CITY OF DULUTH PUBLIC WORKS AND UTILITIES DEPARTMENT CONSTRUCTION STANDARDS 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

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15-17	GAS MAIN PLAN AND PROFILE

THIS PLAN CONTAINS 17 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.

HOWARD D SMITH
PROJECT ENGINEER (TYPED OR PRINTED NAME)

Howard D Smith, PE 7-12-2019 46875
PROJECT ENGINEER DATE LIC. NO.

CITY APPROVAL

APPROVED: _____ CHIEF ENGINEER OF TRANSPORTATION DATE

APPROVED: _____ CHIEF ENGINEER OF UTILITIES DATE

APPROVED: _____ CITY ENGINEER DATE

CITY OF DULUTH PROJECT NO. 1822

DRAWN BY: JRL

SHEET NO. 1 OF 17

6/17/2019 10:01 AM

I:\pww\engineer\projects\1500-1999\1622_lower_michigan_gas_main_relocation\cadd\1822_seq.dwg

STATEMENT OF ESTIMATED QUANTITIES					
LINE	NOTES	SPEC NO	ITEM DESCRIPTION	UNIT	QUANTITY
1		2021.501	MOBILIZATION	EACH	1
2		2101.524	CLEARING AND GRUBBING	SQFT	550
3		2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LNFT	510
4		2104.503	REMOVE CURB & GUTTER	LNFT	31
5		2104.503	REMOVE GAS MAIN (PE)	LNFT	43
6		2104.503	REMOVE GAS MAIN (STEEL)	LNFT	42
7		2104.502	SALVAGE SIGN	EACH	1
8		2104.518	REMOVE CONCRETE WALK	SQFT	48
9		2104.504	REMOVE BITUMINOUS PAVEMENT	SQYD	415
10	1	2105.507	SELECT GRANULAR BORROW MOD 7% (CV)	CY	135
11	2	2211.509	AGGREGATE BASE CLASS 5	CY	96
12	8	2301.602	DRILL & GROUT REINF BAR (EPOXY COATED)	EACH	12
13	3	2360.509	TYPE SP 9.5 WEARING COURSE MIX (3,C)	TON	38
14	3	2360.509	TYPE SP 12.5 WEARING COURSE MIX (3,C)	TON	50
15		2505.602	CONNECT TO GAS MAIN	EACH	3
16	4	2505.602	GAS MAIN CUTOFF	EACH	4
17		2505.602	6" STEEL VALVE AND VALVE BOX	EACH	1
18		2504.602	16" STEEL CASING PIPE END SEAL (SPECIAL)	EACH	2
19		2504.603	16" STEEL CASING PIPE	LNFT	20
20		2505.603	16" STEEL GAS MAIN	LNFT	1060
21	5	2505.603	12" HDPE GAS MAIN	LNFT	240
22		2505.603	6" PE GAS MAIN	LNFT	62
23		2521.518	4" CONCRETE WALK	SQFT	32
24		2521.518	6" CONCRETE WALK	SQFT	16
25		2531.503	CONCRETE CURB & GUTTER DESIGN B624	LNFT	31
26		2531.618	TRUNCATED DOMES	EACH	8
27		2563.601	TRAFFIC CONTROL	EACH	1
28	6	2564.502	INSTALL SIGN PANEL TYPE C	EACH	1
29		2573.503	SILT FENCE, TYPE HI	LNFT	240
30		2572.503	SEDIMENT CONTROL LOG TYPE STRAW	LNFT	700
31	7	2573.503	SEDIMENT CONTROL LOG TYPE ROCK	EACH	17
32		2573.502	STORM DRAIN INLET PROTECTION	EACH	12
33		2582.503	4" SOLID LINE MULTI COMP	LNFT	30
34		2582.503	4" DBLE SOLID LINE MULTI COMP	LNFT	21
35		2582.503	24" SOLID LINE MULTI COMP	LNFT	55

NOTES	
1	FOR STREET AND TRAIL 12" SUB BASE LAYER
2	FOR STREET AND TRAIL 8 1/2" SUB BASE LAYER
3	QUANTITY BASED OFF 120 LBS/SY/IN CONVERSION FACTOR
4	THIS ITEM SHALL INCLUDE CAPPING OF ABANDONED GAS MAIN ENDS
5	12" HDPE GAS MAIN GAS MAIN INSTALLATION BY INSERTION, CASING SPACERS SHALL BE INCIDENTAL
6	INSTALL SALVAGED STOP SIGN AT 17TH AVE W. IN SIMILAR LOCATION, NOT CONFLICTING WITH GAS MAIN
7	ROCK LOGS SHALL BE A MINIMUM OF 3FT IN LEGNTH
8	INSTALL TWO REINFORCING BARS AT EXISTING TO NEW CURB AND GUTTER CONSTRUCTION

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: *Howard D. Smith, P.E.*

HOWARD D SMITH
TYPE NAME

DATE: 7-12-2019

LIC. NO.: 46875



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

LOWER MICHIGAN GAS MAIN RELOCATION

CITY PROJECT NO.: 1822

STATE AID PROJECT NO.: NA

DRAWN BY: JRL

SEQ

SHEET NO. 2 OF 17

EROSION CONTROL NOTES

1. MNDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION SHALL APPLY. ALONG WITH THE CITY OF DULUTH THE CONTRACTOR WILL BE CO-PERMITTEE FOR THE MPCA NPDES STORM WATER CONSTRUCTION PERMIT FOR THIS PROJECT - CONTRACTORS SIGNATURE ON PERMIT IS REQUIRED.
 - 1.1. SUBMIT INITIAL EROSION CONTROL (EC) SCHEDULE AT OR BEFORE THE PRECONSTRUCTION CONFERENCE.
 - 1.2. SUBMIT EC SCHEDULE ALTERATIONS/ADJUSTMENTS WEEKLY THEREAFTER FOR ENGINEER'S APPROVAL.
2. THE CONTRACTOR IS RESPONSIBLE FOR EROSION CONTROL QUALITY CONTROL (QC) ON THIS PROJECT. CONTRACTOR SHALL PHASE/SEQUENCE THE PROJECT TO MINIMIZE EXPOSURE TO EROSION. CONTRACTOR SHALL PLACE OR OTHERWISE CONSTRUCT EROSION CONTROL AND SEDIMENT CONTAINMENT DEVICES TO MINIMIZE THE RUNOFF, TRACKING, AND SEDIMENT LOSS FROM DISTURBED AREAS OF THE PROJECT SITE.
3. DISTURBED SLOPES NOT ACTIVELY WORKED SHALL BE PROTECTED FROM SOIL EROSION WITH TEMPORARY OR PERMANENT COVER WITHIN 3 DAYS OF BEING WORKED.
4. AT MINIMUM, THE FOLLOWING CONTROLS WILL BE IMPLEMENTED AT THE CONSTRUCTION SITE:
 - 4.1. EROSION CONTROL BLANKETS SHALL BE USED ON ALL SLOPES 1:3 OR STEEPER
 - 4.2. SILT FENCES SHALL BE USED IN CONJUNCTION WITH OTHER EROSION BMPS
 - 4.3. STORM INLET AND OUTLET AREAS SHALL BE CONTINUOUSLY PROTECTED WITH MNDOT APPROVED DEVICES/METHODS
 - 4.4. STABILIZED CONSTRUCTION ENTRANCE, OR REUSABLE MUD MAT SHALL BE USED IF NECESSARY TO CONTROL SEDIMENT TRACKING
 - 4.5. PERMANENT VEGETATION WILL BE ESTABLISHED RIGHT AFTER TOPSOIL IS SPREAD
 - 4.6. CONTROL ALL SITE SOLID WASTE, DEBRIS, MATERIAL STORAGE AND CONCRETE WASHOUT ON SITE. NO MIGRATION OFFSITE OR INTO DITCHES/STORM SYSTEMS PERMITTED
5. ALL SLOPES AND DITCHES SHALL BE STABILIZED PRIOR TO OPENING NEW CULVERTS OR REMOVING INLET PROTECTIONS FROM COLLECTION STRUCTURES INTO EXISTING DRAINAGE WAYS.
6. IF ANY STOCKPILE IS TO REMAIN IN PLACE FOR MORE THAN 3 DAYS SEDIMENT AND EROSION CONTROL DEVICES SHALL BE USED.
7. WATER PUMPED OR OTHERWISE DISCHARGED FROM THE SITE DURING CONSTRUCTION DEWATERING SHALL BE DIRECTED THROUGH EFFECTIVE FILTERING DEVICE(S) IN ACCORDANCE WITH MNDOT SPECIFICATION 2573. USE OF APPROVED FLOCCULANT MAY BE NECESSARY.
8. THE CONTRACTOR SHALL TAKE ALL POSSIBLE PRECAUTIONS TO PREVENT APPRECIABLE SOIL TRACKING ONTO ROADWAYS. APPRECIABLE SOIL, MUD, OR DEBRIS WASHED, TRACKED, OR DEPOSITED ONTO PAVED SURFACES SHALL BE REMOVED WITH STREET SWEEPER AND PICK-UP BROOM PRIOR TO THE END OF EACH WORK DAY.
9. STABILIZED CONSTRUCTION ENTRANCE(S) SHALL BE REMOVED AND AREA RESTORED AFTER GRADING IS COMPLETE.
10. THE CONTRACTOR QC PROGRAM SHALL ENSURE THAT A COMPETENT INDIVIDUAL SHALL INSPECT EROSION AND SEDIMENT CONTROL DEVICES WEEKLY AND AFTER EACH 0.25" RAIN EVENT. ALL NONFUNCTIONAL DEVICES SHALL BE REPAIRED/REPLACED/CLEANED. MAINTAIN WRITTEN LOG OF ALL WEEKLY AND RAIN EVENT INSPECTIONS - INCLUDE THE CORRECTIVE ACTIONS THAT WERE TAKEN.
11. THE CONTRACTOR SHALL MAINTAIN THE CAPABILITY TO IMPLEMENT RAPID STABILIZATION METHOD 4 (MNDOT 2573.4) AT ALL TIMES. INCLUDES CAT III EROSION CONTROL BLANKET (ECB) [N. AMERICAN GREEN S150 OR APPROVED EQUAL] ALONG WITH SEED MIXTURE, FERTILIZER, AND SOIL STAPLES PER 2575. THE UPGRADE END OF EACH BLANKET STRIP SHALL BE BURIED AT LEAST 6 INCHES IN A VERTICAL CHECK SLOT. STAPLES SHALL BE PLACED AT SEAMS AND THROUGHOUT THE BLANKET AT A MAXIMUM SPACING IN ALL DIRECTIONS OF 2 FEET. PAYMENT ALLOWED SHALL BE PER CONTRACT OR IN ABSENCE OF CONTRACT BID PRICE IN ACCORDANCE WITH MNDOT SPECIFICATION 2575.5
12. THE CONTRACTOR SHALL BE PROACTIVE IN THEIR APPROACH TO MINIMIZING SOIL EROSION AND SEDIMENT TRANSPORT FROM THE SITE. CURRENT TECHNOLOGY FOR WEATHER FORECASTING AND WEATHER RADAR ALLOWS FOR THE CONTRACTOR TO HAVE EROSION CONTROL BMPS INSTALLED AND FUNCTIONING FOR A RAIN EVENT. ALL CONSTRUCTION SITES SHALL BE PREPARED FOR A RAIN EVENT DURING NON-WORK TIMES, I.E. WEEK NIGHTS AND WEEKENDS.
13. AS SITE CONDITIONS CHANGE, THE WORK PROGRESSES AND WEATHER CONDITIONS VARY, THE CONTRACTOR SHALL BE REACTIVE TO THESE CHANGING VARIABLES. THEREFORE BMP INSTALLATION, CLEANING AND RELOCATION SHOULD BE ANTICIPATED IN MOST CONSTRUCTION ACTIVITIES.

CONSTRUCTION PRACTICES TO MINIMIZE STORM WATER CONTAMINATION

TO PREVENT STORM WATER CONTAMINATION FROM OCCURRING, THE FOLLOWING BMPS WILL BE IMPLEMENTED:

1. ALL AREAS THAT ARE ROUGH GRADED MUST BE KEPT IN A SMOOTH CONDITION TO ALLOW SHEET FLOW OF STORM WATER WHEREVER PRACTICAL AND ALWAYS READY FOR SURFACE APPLICATION OF DEGRADABLE OR NON-DEGRADABLE BLANKETS, MULCH, OR OTHER PROTECTIVE COVERS.
2. A STABILIZED CONSTRUCTION ENTRANCE/EXIT MAY BE CONSTRUCTED TO REDUCE VEHICLE TRACKING OF SEDIMENTS OFF THE PROJECT RIGHT OF WAY.
3. ALL SOLID WASTE MATERIALS WILL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER OR OTHER APPROVED CONTAINMENT METHOD AT THE END OF EACH DAY. ANY ALTERNATIVE TO A METAL DUMPSTER MUST BE SUBMITTED IN WRITING FOR APPROVAL BY THE PROJECT ENGINEER. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER WILL BE EMPTIED AS NECESSARY TO FUNCTION AS INTENDED FOR DEBRIS COLLECTION. NO CONSTRUCTION MATERIALS WILL BE BURIED ON-SITE. THE CONTRACTOR'S EROSION CONTROL SUPERVISOR WILL INSTRUCT ALL PERSONNEL REGARDING THE CORRECT PROCEDURE FOR DISPOSAL.
4. RECYCLABLE MATERIALS MUST BE SEPARATED ON-SITE AND SEGREGATED IN DESIGNATED CONTAINERS.
5. A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR WILL COLLECT ALL SANITARY WASTE FROM THE PORTABLE UNITS AT A RATE NECESSARY TO MAINTAIN DESIGNED FUNCTION.
6. ALL VEHICLES ON SITE WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE.
7. FERTILIZERS WILL BE STORED IN A COVERED SHED AND PARTIALLY USED BAGS WILL BE TRANSFERRED TO A SEALABLE BIN TO REDUCE THE CHANCE OF SPILLAGE.
8. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS, WHICH ARE CLEARLY LABELED.
9. SPILL KITS WILL BE INCLUDED WITH ALL FUELING SOURCES AND MAINTENANCE ACTIVITIES. SECONDARY CONTAINMENT MEASURES WILL BE INSTALLED AND MAINTAINED BY THE CONTRACTOR.
10. ANY ASPHALT SUBSTANCES USED ON SITE WILL BE APPLIED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
11. ALL PAINT CONTAINERS AND CURING COMPOUNDS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM WATER SYSTEM BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTION.
12. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEAN-UP SHALL BE READILY AVAILABLE AND BE KEPT IN AN ENCLOSED TRAILER OR SHED ON SITE. EQUIPMENT WILL INCLUDE, BUT NOT LIMITED TO, BROOMS, MOPS, DUST PANS, RAGS, GLOVES, GOGGLES, ABSORBENT (KITTY LITTER, OIL ABSORBENT BOOMS AND DIAPERS) AND BUCKETS.
13. ALL SPILLS WILL BE CONTAINED AND CLEANED UP IMMEDIATELY UPON DISCOVERY. SPILLS LARGE ENOUGH TO REACH THE STORM WATER CONVEYANCE SYSTEM WILL BE REPORTED TO THE MINNESOTA DUTY OFFICER AT 1-800-422-0798.
14. CONCRETE TRUCKS WILL NOT BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ON THE SITE UNLESS DONE IN AN ENGINEERED CONTAINMENT SYSTEM. THE ENGINEERED SYSTEM MUST INCLUDE SITE DRAWINGS FOR THE PROJECT FILE AND WRITTEN ASSURANCE THAT THE SYSTEM WILL WORK AS DESIGNED AND LEAVE NO DISCHARGE OF CONCRETE OR CONCRETE RESIDUE POTENTIAL TO ENTER WATERS OF THE STATE.
15. FORM RELEASE OIL USED FOR CONCRETE WORK MUST BE APPLIED OVER A PALLET CONTAINING ABSORBENT TO COLLECT EXCESS LIQUID. THE ABSORBENT MATERIAL WILL BE REPLACED AND PROPERLY DISPOSED OF WHEN SATURATED.
16. DISCHARGES FROM BASIN DEWATERING OPERATIONS THAT ARE TURBID OR SEDIMENT LADEN SHALL BE DISCHARGED TO TEMPORARY SEDIMENT BASINS CONSTRUCTED ON THE SITE TO PROVIDE TREATMENT PRIOR TO DISCHARGE TO A WATER OF THE STATE.

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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: *Howard D Smith* PE-

HOWARD D SMITH
TYPE NAME

DATE: 7-12-2019

LIC. NO.: 46875



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

LOWER MICHIGAN GAS MAIN RELOCATION

CITY PROJECT NO.: 1822

STATE AID PROJECT NO.: NA

DRAWN BY: JRL

SWPPP

SHEET NO. 3 OF 17

NPDES STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

- 1.1. THE PROJECT WILL CONSTRUCT 16" GAS MAIN AND PATCH BITUMINOUS STREETS INCLUDING STREET, SIDEWALK, AND TRAIL REMOVALS
- 1.2. TRENCHING FOR NEW AND RECONSTRUCTED UTILITIES
- 1.3. STEEL AND HDPE GAS MAIN INSTALLATIONS.
- 1.4. SIDEWALK, AND BITUMINOUS PAVING REPLACEMENT.
- 1.5. TURF ESTABLISHMENT.
2. THE TOTAL LAND AREA ANTICIPATED TO BE DISTURBED BY THE PROJECT (EXCLUSIVE OF BORROW AND DISPOSAL AREAS) IS 0.25 ACRES.
3. CONSTRUCTION DATES ARE ESTIMATED TO BE FROM AUGUST 2019 TO NOVEMBER 2019.
4. THE RECEIVING WATER FOR STORM WATER FROM THE PROJECT INCLUDES EXISTING STORM SEWER SYSTEMS LEADING TO LAKE SUPERIOR.
5. MNDOT AND CITY OF DULUTH MAINTENANCE IS RESPONSIBLE FOR LONG TERM OPERATION AND MAINTENANCE OF THE STORM WATER SYSTEM SERVING THE PROJECT AREA

6. CONTACTS:

OWNER & RECORDS RETENTION:
CITY OF DULUTH
ENGINEERING DEPARTMENT
211 CITY HALL
DULUTH, MN 55802
(218) 730-5200

THE CITY OF DULUTH PROJECT ENGINEER IS: HOWARD SMITH
PROJECT ENGINEER
211 CITY HALL
DULUTH, MN 55802
(218) 730-5092
hsmith@duluthmn.gov

TIMING OF BMP INSTALLATION

1. THE EROSION AND SEDIMENTATION CONTROL BMPs SHALL BE INSTALLED PRIOR TO CONSTRUCTION ACTIVITIES, AND AS NECESSARY TO MINIMIZE EROSION SEDIMENT TRANSPORT FROM DISTURBED SURFACES AND CAPTURE SEDIMENT ON SITE, AND SHALL MEET THE NPDES PERMIT PART IV CONSTRUCTION ACTIVITY REQUIREMENTS.
2. TEMPORARY PERIMETER CONTROL BMPs WILL BE INSTALLED BEFORE ANY UP GRADIENT SOIL DISTURBANCE OCCURS.
3. PERMANENT AND TEMPORARY SEDIMENT TRAPS AND BASINS (IF APPLICABLE) WILL BE CONSTRUCTED BEFORE ANY CONVEYANCE OR DEWATERING OCCURS.
4. TOPSOIL AND TEMPORARY EROSION CONTROL BMPs SHALL BE PLACED WITHIN 3 DAYS OF COMPLETION OF EMBANKMENT
5. PLACEMENT OF RIPRAP SHALL BE COMPLETED WITHIN 24 HOURS OF CULVERT PLACEMENTS AND DONE IN ONE CONTINUOUS OPERATION.
6. ONCE CONSTRUCTION ACTIVITY CEASES FOR 3 DAYS OR MORE IN AN AREA, THAT AREA WILL BE STABILIZED WITH TEMPORARY OR PERMANENT BMPs FOR EROSION.

CALCULATIONS

TOTAL DISTURBED AREA = 0.25 ACRES
POST CONSTRUCTION IMPERVIOUS AREA = 0.125 ACRES
EXISTING IMPERVIOUS AREA = 0.125 ACRES
IMPERVIOUS NET = 0 ACRES (INCREASE/DECREASE)
SOILS INFORMATION = POORLY GRADED SAND WITH SILT (SP-SM)

ABOVE DEPOSITS OF CLAY (C)

CONSTRUCTION NOTES

- CONSTRUCTION SHALL BE GOVERNED BY THE MNDOT STANDARD SPECIFICATIONS, CITY OF DULUTH STANDARD CONSTRUCTION SPECIFICATIONS AND SPECIAL PROVISIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION OF THE SWPPP AND THE INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION AND SEDIMENT CONTROL BMPs BEFORE AND DURING CONSTRUCTION.
- THE CONTRACTOR SHALL KEEP WRITTEN INSPECTION AND MAINTENANCE LOGS (INCLUDING ALL CLEAN OUT AND CORRECTIVE ACTIONS) IN ACCORDANCE WITH THIS SWPPP AND ALL PERMITS.

TMDL IMPLEMENTATION PLANS CONTAINING STORM WATER REQUIREMENTS

NO TMDL IMPLEMENTATION PLANS CURRENTLY EXIST FOR THE RECEIVING WATERS ON THIS PROJECT.

LOCATION OF SWPPP REQUIREMENTS IN PROJECT PLAN		
DESCRIPTION	TITLE	LOCATION
SUMMARY OF PERVIOUS & IMPERVIOUS	SWPPP	SHEET 4
DIRECTION OF FLOW/DRAINAGE AREA	E.C. PLAN	SHEET 6
RECEIVING SURFACE WATERS	ST LOUIS BAY	
NO DISTURBANCE AREAS & AREAS OF CONSTRUCTION	PLAN AND PROFILE	SHEETS 15-17
DRAINAGE STRUCTURES	EC PLAN	SHEET 6
DRAINAGE TABULATIONS	DRAINAGE CHART	N/A
EROSION CONTROL TABULATIONS	TABULATIONS	SHEET 2
EROSION CONTROL SHEETS	E.C. PLAN	SHEET 6
EROSION CONTROL DETAILS	E.C. DETAILS	SHEET 5
SEDIMENT CONTROL PRACTICES	SWPPP	SHEETS 3-4
FINAL STABILIZATION	TABULATION	SHEET 2
SEDIMENT BASIN (POND) TABULATIONS	N/A	
POND SHEETS (SEDIMENT BASINS)	N/A	
LOCATION OF PONDS	N/A	

SWPPP IMPLEMENTATION CONTACTS

AGENCY	PERMIT	NAME	PHONE/E-MAIL
CONTRACTOR'S EROSION CONTROL SUPERVISOR		TO BE DETERMINED	TBD
MPCA	NPDES	JIM DEXTER	(218)529-6253 james.dexter@pcs.state.mn.us
SWCD	WCA	RC BOHEIM	(218)723-4629 RC.Boheim@southstlouisswcd.org
MNDNR WATERS AREA HYDROLOGIST	N/A	PATRICIA FOWLER	(218)834-6621 patricia.fowler@dnr.state.mn.us
CORPS OF ENGINEERS	SECTION 404	DARYL WIERZBINSKI	218-834-6630 daryl.w.wierzbinski@mvp02.usa.ce.army.mil
STATE DUTY OFFICER	N/A	MPCA	800-422-0798
CITY REVIEW	N/A	TOM JOHNSON	(218) 730-5103 tajohnson@duluthmn.gov
LGU-CITY OF DULUTH	N/A	KYLE DEMING	(218)730-5580 kdeming@duluthmn.gov
CITY OF DULUTH SOLID WASTE OFFICER	N/A	KAREN O'DONNELL	(218)730-5148 kodennell@duluthmn.gov

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SIGNATURE: *Howard D Smith* P.E.

HOWARD D SMITH
TYPE NAME

DATE: 7-12-2019
LIC. NO.: 46875



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

LOWER MICHIGAN GAS MAIN RELOCATION

CITY PROJECT NO.: 1822 STATE AID PROJECT NO.: NA

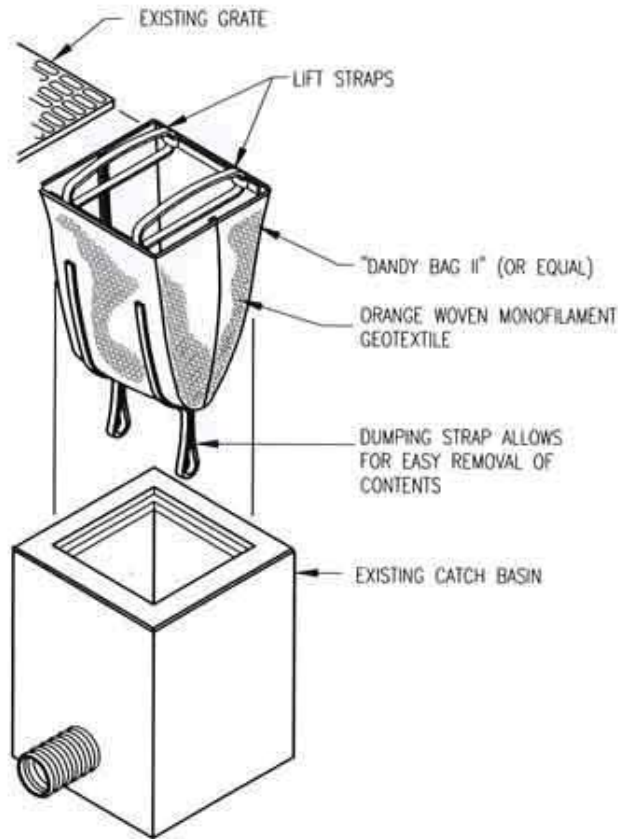
DRAWN BY: JRL

SWPPP 2

SHEET NO. 4 OF 17

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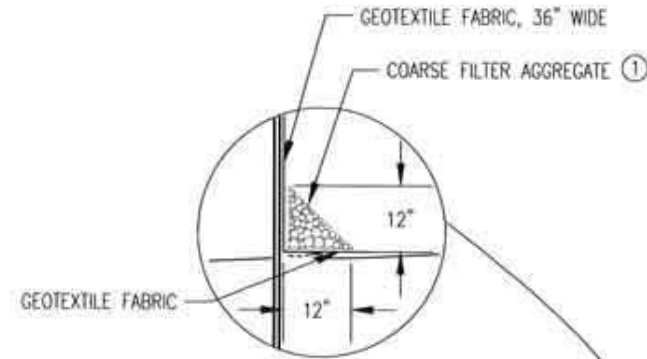
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MAINTENANCE REQUIRED: FOLLOWING EACH RUNOFF EVENT, MONITOR AND, IF NECESSARY, REMOVE ALL ACCUMULATED SEDIMENT & DEBRIS FROM THE UNIT AFTER THE HEIGHT OF THE ACCUMULATED MATERIAL REACHES 1/3 OF THE HEIGHT OF THE SEDIMENT BAG.

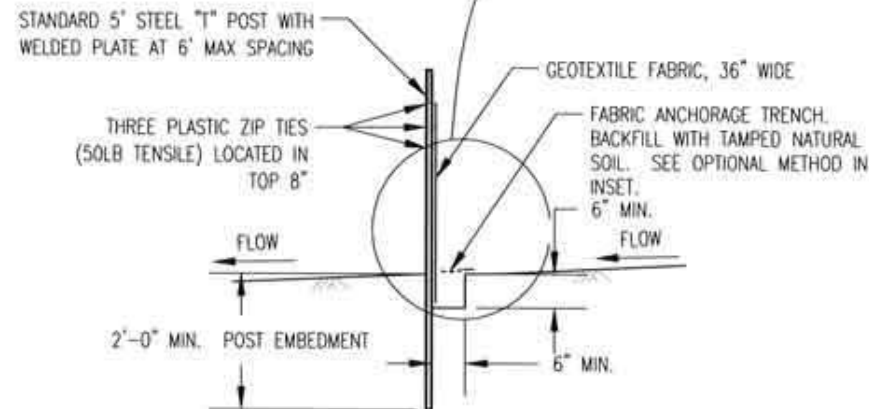
**TYPE A
INLET PROTECTION
CATCH BASIN SEDIMENT BAG INSERT TYPE DETAIL**

NO SCALE



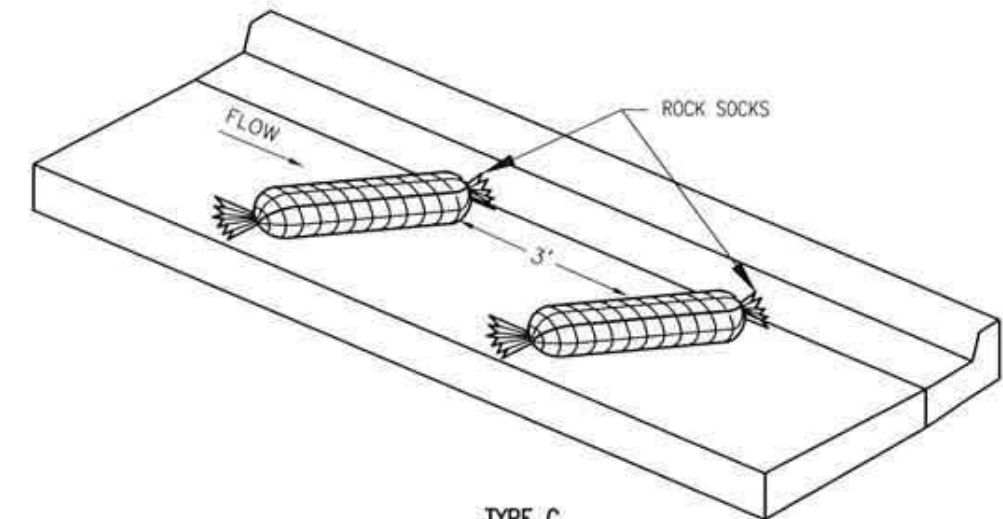
**OPTIONAL METHOD
FOR SILT FENCE, HEAVY DUTY**

NOTES:
SEE SPECS. 2573, 3149 & 3886.
① COARSE FILTER AGGREGATE (SPEC. 3149.H)
SHALL BE INCIDENTAL.



**SILT FENCE, HEAVY DUTY
(HAND INSTALLED)**

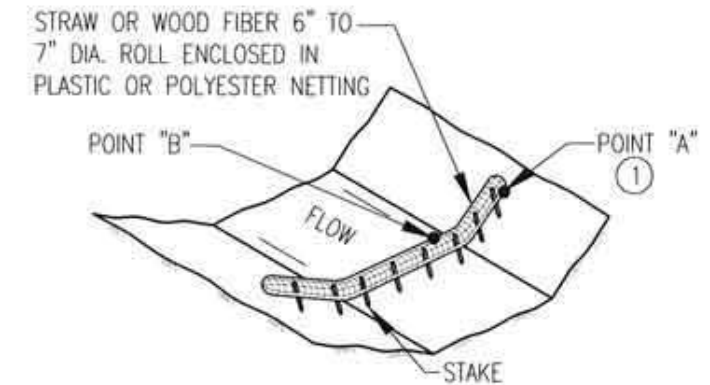
DESIGN GUIDELINES: TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 1 ACRE.



**TYPE C
GUTTER LINE ROCK CHECKS**

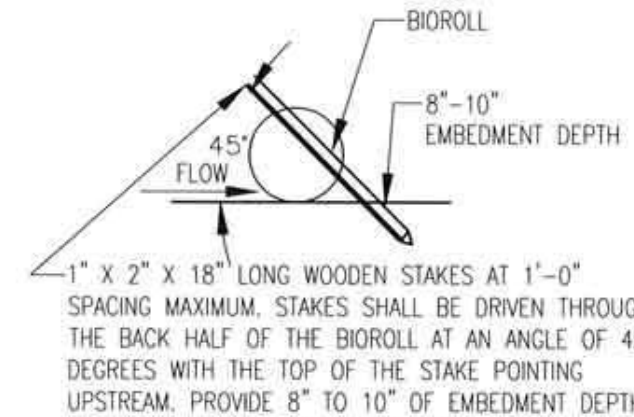
NO SCALE

NOTE: ROCK SOCKS SHALL BE CONSTRUCTED OF SUITABLE GEOFABRIC AND 3/4" ROCK



TYPE 2: BIOROLL DITCH CHECK

USE ON ROUGH GRADED AREAS



BIOROLL STAKING DETAIL

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SIGNATURE: *Howard D. Smith, P.E.*

HOWARD D. SMITH
TYPE NAME

DATE: 7-12-2019

LIC. NO.: 46875



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

LOWER MICHIGAN GAS MAIN RELOCATION

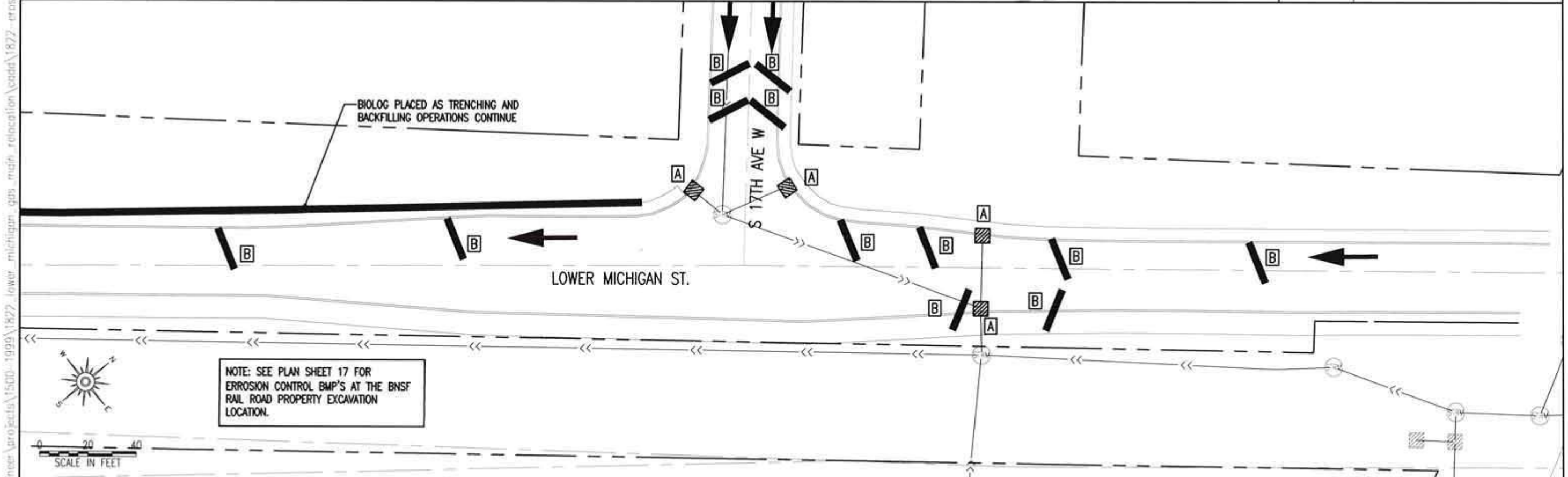
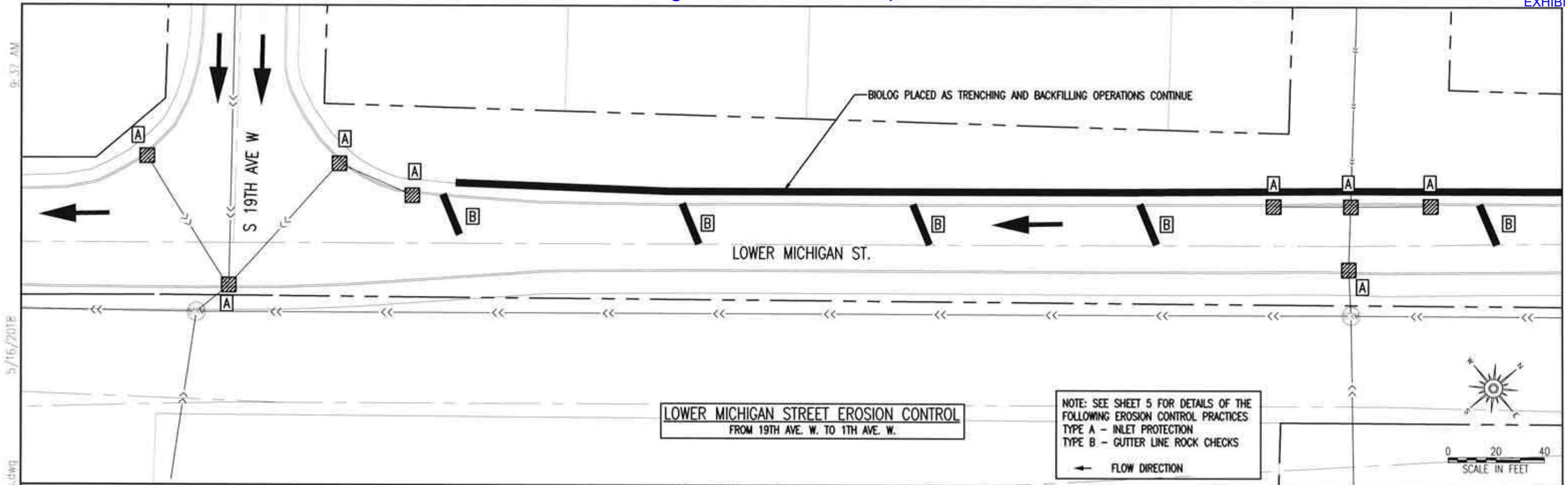
CITY PROJECT NO.: 1822


STATE AID PROJECT NO.: NA

DRAWN BY: JRL

EROSION CONTROL DETAILS

SHEET NO. 5 OF 17



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>Howard D. Smith, P.E.</i>	HOWARD D. SMITH TYPE NAME	DATE: 7-12-2019 LIC. NO.: 46875	 CITY OF DULUTH ENGINEERING DIVISION 411 W. 1ST ST. STE. 211 DULUTH, MN 55802	LOWER MICHIGAN GAS MAIN RELOCATION		DRAWN BY: JRL
				CITY PROJECT NO.: 1822	STATE AID PROJECT NO.: NA	EROSION CONTROL PLAN SHEET NO. 6 OF 17

TRAFFIC SIGN LEGEND				
ITEM	SIGN NO.	MESSAGE	SIZE	QTY
①	M4-9A (L OR R)		24" x 30"	7
②	M4-T9		24" x 30"	2
③	M4-8A		24" x 18"	2
④	M4-10 (R OR L)		18" x 48"	4
⑤	R11-2		48" x 30"	4
⑥	R11-4		48" x 30"	2
⑦	W20-1		36" x 36"	4
⑧	W20-2		48" x 48"	2
⑨	W20-3		48" x 48"	4
⑩	G20-X1		72" x 60"	2
A	SPECIAL		18" x 48"	17

TRAFFIC SIGN LEGEND				
ITEM	SIGN NO.	MESSAGE	SIZE	QTY
⑪	R9-11R		48" x 24"	1
⑫	R9-11L		48" x 24"	2
⑬	R9-9		48" x 36"	2

TRAFFIC CONTROL NOTES

1. THE CONTRACTOR SHALL SUBMIT A SCHEDULE OF SIGNING AND A TRAFFIC CONTROL PLAN FOR MAINTAINING AND PROTECTING TRAFFIC THROUGH WORK AREAS WITHIN THE CONSTRUCTION ZONES. ALL TRAFFIC CONTROL PLANS AND SIGNING SHALL CONFORM TO THE MMUTCD INCLUDING PART VI AND THE CURRENT FIELD MANUAL. THIS PLAN SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AT LEAST 10-DAYS PRIOR TO THE PRE-CONSTRUCTION CONFERENCE.
2. ALL APPROPRIATE SIGNING INSTALLED BY THE CONTRACTOR SHALL BE MAINTAINED DURING THE LIFE OF THE CONTRACT.
3. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO, AND BE PLACED IN ACCORDANCE WITH THE LATEST VERSION OF THE MINNESOTA STANDARD SIGNS MANUALS I, II, AND III, USING THE APPROPRIATE MATERIAL SPECIFICATIONS. THE CONTRACTOR SHALL PROVIDE ALL SIGNING REQUIRED, INCLUDING SIGNAGE BUT NOT ITEMIZED IN THIS TRAFFIC CONTROL PLAN.
4. MAINTENANCE OF LOCAL AND THROUGH TRAFFIC IS THE RESPONSIBILITY OF THE CONTRACTOR. PROPERTY OWNERS SHALL HAVE ACCESS AT ALL TIMES.
5. 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 CHANNELIZATION OF TRAFFIC, BUMP, DIP, LOOSE GRAVEL, ETC.. THE NUMBER AND LOCATIONS OF TRAFFIC CONTROL DEVICES SHALL BE DETERMINED BY THE SEQUENCE OF THE CONTRACTORS OPERATIONS. TRAFFIC CONTROL DEVICES MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY ENGINEER.
6. 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.
7. 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.
8. FLAGGING SHALL BE REQUIRED WHEN WORKING AT THE EDGE OF THE DRIVING LANE TO PROTECT TRAFFIC FROM CONSTRUCTION OPERATIONS. FLAGGING SHALL BE IN ACCORDANCE WITH THE PERTINENT LAYOUT SHOWN IN PART VI OF THE MMUTCD INCLUDING THE CURRENT FIELD MANUAL. FLAGGERS SHALL USE TWO-WAY RADIOS FOR COMMUNICATION IN THE EVENT THEY ARE NOT IN SIGHT OF EACH OTHER OR AT THE DIRECTION OF THE ENGINEER. ALL SUCH WORK RELATED TO FLAGGING, INCLUDING FLAGPERSONS, SHALL BE INCLUDED IN THE LUMP SUM PAYMENT FOR TRAFFIC CONTROL (2563.601).
9. THE INITIAL CONSTRUCTION SIGNING SHALL BE ERECTED PRIOR TO THE CONSTRUCTION OPERATIONS THAT WILL AFFECT THE TRAVELING PUBLIC.
10. ALL TRAFFIC CONTROL DEVICES SHALL BE REMOVED OR COVERED AS SOON AS THEY ARE NO LONGER REQUIRED OR APPROPRIATE.
11. THE CONTRACTOR SHALL FOLLOW THIS TRAFFIC CONTROL PLAN ALONG WITH SPECIFICATIONS 1404, 1710, THE SPECIAL PROVISIONS, AND THE GUIDELINES FOR TRAFFIC CONTROL TREATMENT OF LONGITUDINAL JOINTS AND EDGE DROP-OFFS IN WORK ZONES.
12. THE CONTRACTOR SHALL RECEIVE COMPENSATION FOR ALL WORK DESCRIBED HEREIN ON THE BASIS OF A LUMP SUM PAYMENT FOR TRAFFIC CONTROL (2563.601).
13. ONLY SIGNS, BARRICADES, VERTICAL PANELS, DRUM-LIKE CHANNELIZERS, AND CONES THAT MEET THE REQUIREMENTS OF "QUALITY STANDARDS FOR WORK ZONE TRAFFIC CONTROL" AS OUTLINED IN THE CURRENT FIELD MANUAL SHALL BE USED ON THIS PROJECT. WORK SHALL NOT BEGIN UNTIL A DETERMINATION HAS BEEN MADE THAT THE TRAFFIC CONTROL DEVICES MEET THE QUALITY REQUIRED IN THIS STANDARD. COMPLIANCE WITH THIS REQUIREMENT, IN ACCORDANCE WITH THE FORGOING, SHALL BE CONSIDERED INCIDENTAL WORK AND NO DIRECT COMPENSATION WILL BE MADE THEREFORE.
14. SIGNING SHALL NOT BE MOUNTED ON EXISTING SIGNS OR SIGNPOSTS. THEY SHALL BE MOUNTED ON THEIR OWN SIGN POST FURNISHED AND INSTALLED BY THE CONTRACTOR.
15. ADVANCE NOTIFICATION CLOSURE SIGNS SHALL BE INSTALLED NO LESS THAN 7 CALENDAR DAYS PRIOR TO PLANNED CLOSURE.
16. TEMPORARY FENCING FOR CHANNELIZING PEDESTRIAN ACCESS WAYS SHALL BE EITHER CHAIN LINK, PLASTIC CONSTRUCTION FENCING OR EQUIVALENT. MINIMUM FENCE HEIGHT SHALL BE 4' HIGH TEMPORARY POSTS OR SUPPORTS SHALL BE SUPPLIED EVERY 6'.
17. CROSS CITY TRAIL PEDESTRIAN TRAFFIC SHALL BE DETOURED TO THE SIDEWALKS OF MICHIGAN ST.

TRAFFIC SYMBOL LEGEND	
SYMBOL	DESCRIPTION
	TYPE III BARRICADE
	SINGLE POST SUPPORT
	FLASHING AMBER WARNING LIGHTS

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: *Howard D Smith, P.E.*

HOWARD D SMITH
TYPE NAME

DATE: 7-12-2019
LIC. NO.: 46875



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

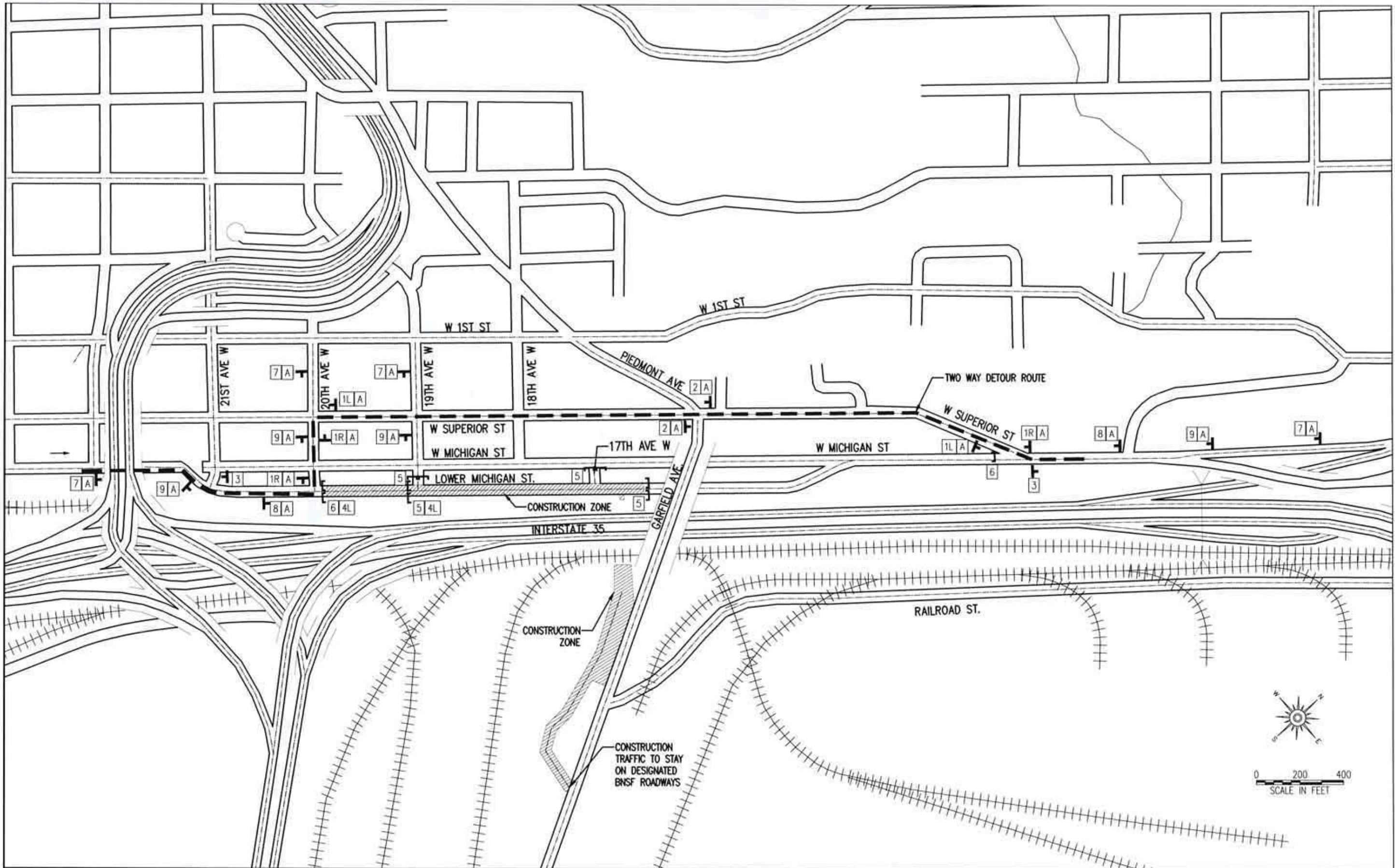
LOWER MICHIGAN GAS MAIN RELOCATION


CITY PROJECT NO.: 1822 STATE AID PROJECT NO.: NA

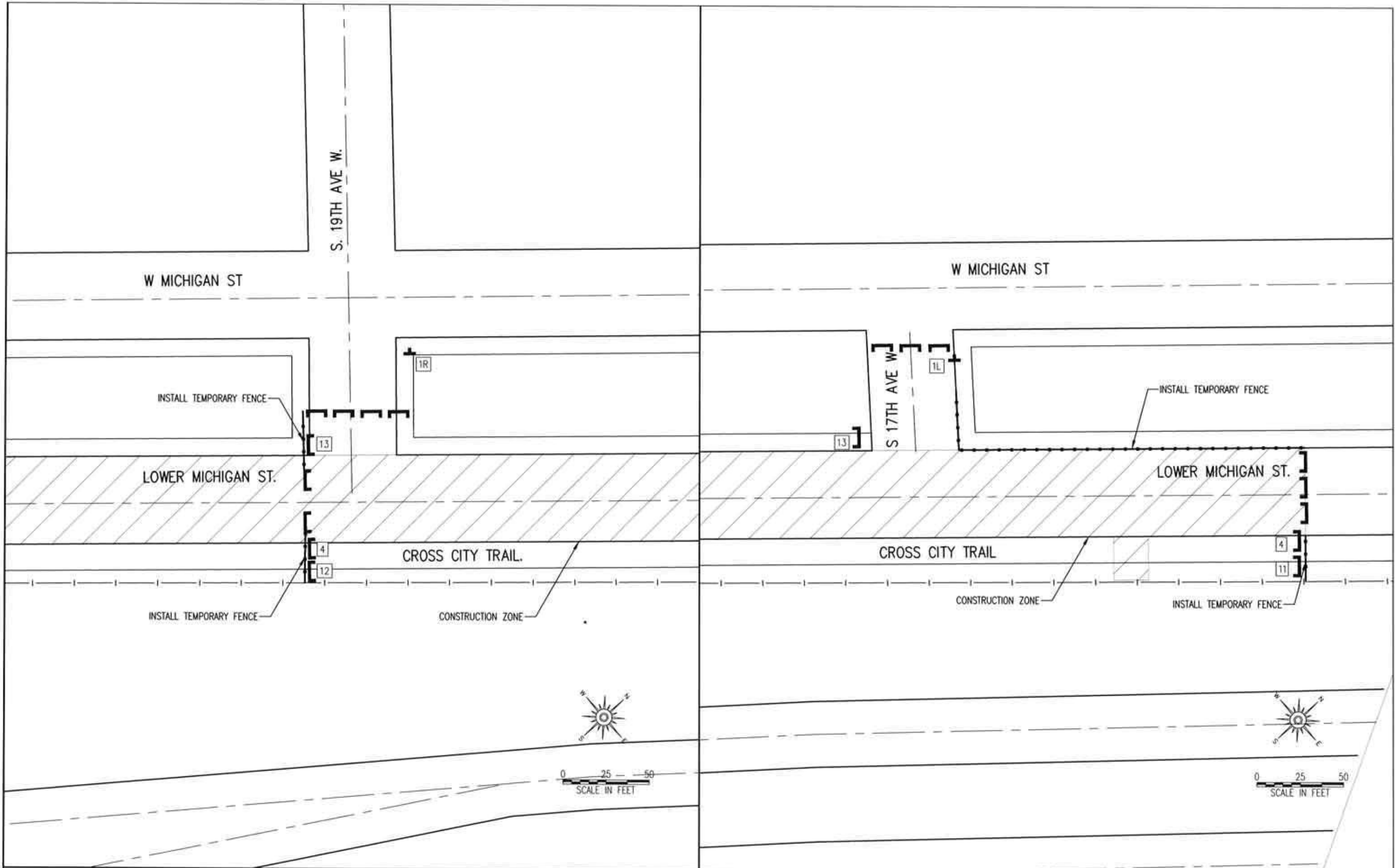
DRAWN BY: JRL

TRAFFIC CONTROL LEGEND

SHEET NO. 7 OF 17




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>Howard D. Smith, RE</i>		DATE: 7-12-2019 LIC. NO.: 46875	 CITY OF DULUTH ENGINEERING DIVISION 411 W. 1ST ST. STE. 211 DULUTH, MN 55802	LOWER MICHIGAN GAS MAIN RELOCATION CITY PROJECT NO.: 1822 STATE AID PROJECT NO.: NA	DRAWN BY: JRL TRAFFIC CONTROL PLAN SHEET NO. 8 OF 17
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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: *Howard D. Smith, P.E.*
HOWARD D. SMITH
TYPE NAME

DATE: 7-12-2019
LIC. NO.: 46875

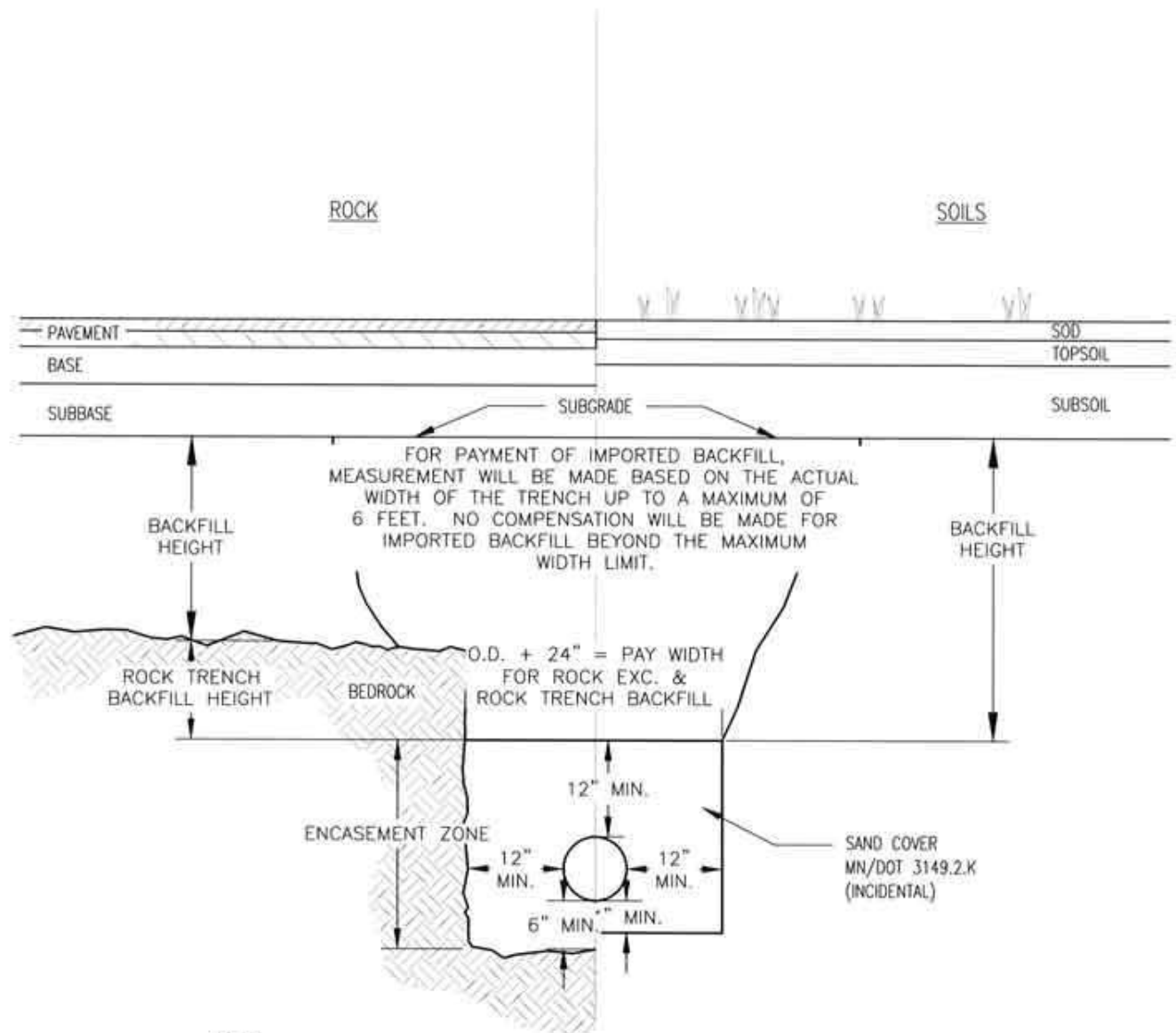
 CITY OF DULUTH
ENGINEERING DIVISION
411 W. 1ST ST. STE. 211
DULUTH, MN 55802

LOWER MICHIGAN GAS MAIN RELOCATION
CITY PROJECT NO.: 1822 STATE AID PROJECT NO.: NA

DRAWN BY: JRL
PEDESTRIAN TRAFFIC CONTROL PLAN
SHEET NO. 9 OF 17

6/17/2019 8:58 AM

E:\pww\engineer\projects\1822-1999\1822-lower_michigan_gas_main_relocation\cadd\1822-dtbl.dwg



NOTES:

1. EXCESS EXCAVATION MATERIAL SHALL BE DISPOSED OF OFF PROJECT R.O.W. (INCIDENTAL)
2. PAY WIDTH FOR ROCK EXCAVATION SHALL BE BASED ON OUTSIDE DIAMETER OF PIPE PLUS 24".
3. A MINIMUM OF 1 CUBIC YARD OF STRUCTURE EXCAVATION, CLASS R, WILL BE PAID FOR EVERY 10' OF PIPE WHERE ROCK REMOVAL IS REQUIRED.
4. TRENCH STABILIZATION BEDDING MATERIAL MAY BE USED IN AREAS AS DETERMINED BY THE ENGINEER.
5. ENCASEMENT ZONE MATERIAL SHALL BE COMPACTED TO 95% OF MAXIMUM STANDARD PROCTOR DENSITY.
6. BACKFILL SHALL BE SELECT GRADING MATERIAL FOUND ON-SITE WHEN DEEMED SUITABLE BY THE ENGINEER OR AS OTHERWISE DEFINED IN THE PROJECT SPECIAL PROVISIONS. WHEN ON-SITE MATERIAL IS NOT SUITABLE AND WHEN BACKFILL MATERIAL IS NOT SPECIFIED, IMPORTED MATERIAL MEETING MN/DOT 3149.2.D.1 GRANULAR BACKFILL SHALL BE PROVIDED. USE OF NATIVE ON-SITE MATERIAL IS INCIDENTAL.
7. COMPACT BACKFILL MATERIALS TO 100% OF MAXIMUM STANDARD PROCTOR DENSITY FOR THE UPPER 3' BELOW THE SUBGRADE, AND TO 95% OF MAXIMUM STANDARD PROCTOR DENSITY BELOW THE UPPER 3'.

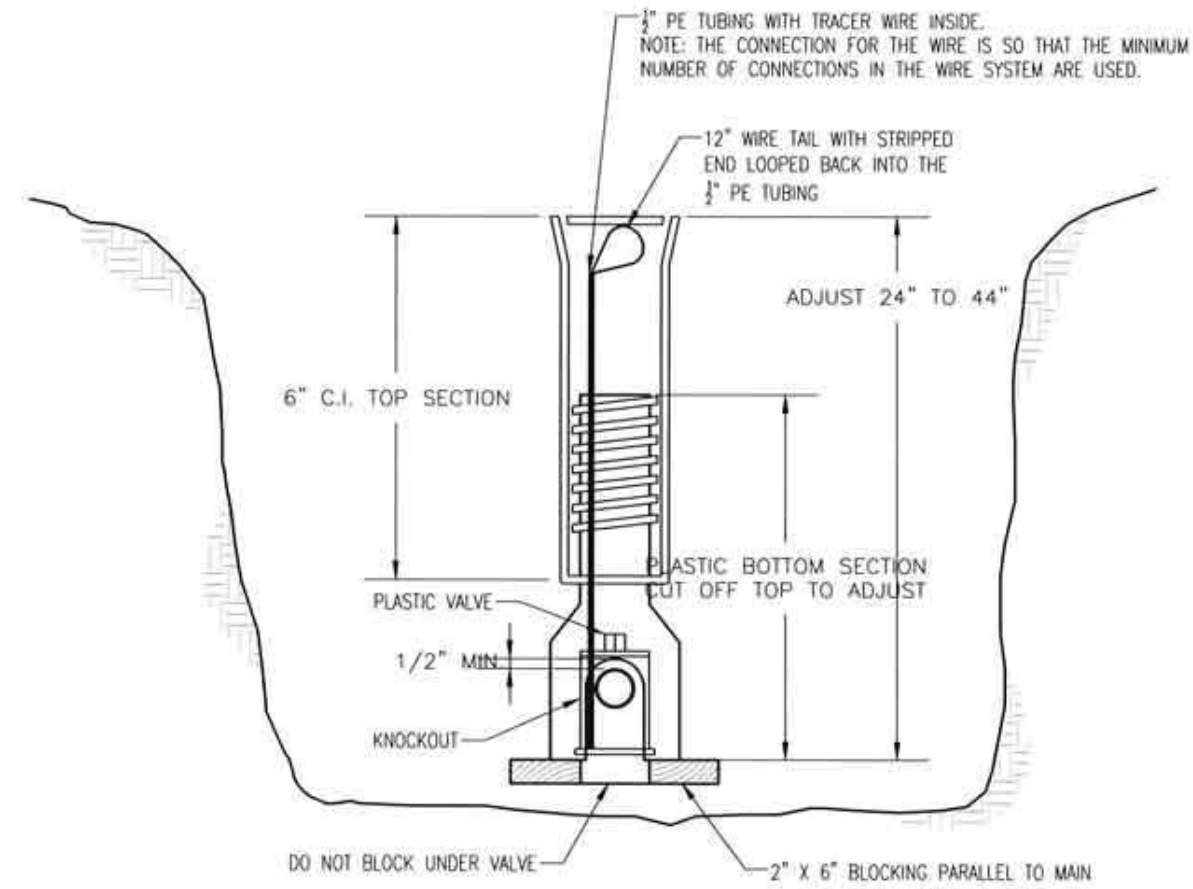
ALL STEEL & 4" AND LARGER PE GAS MAIN BEDDING

EX-2

REVISED/APPROVED 04/05/2019

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

NO SCALE



PE VALVE BOX SETTING

G-5

REVISED/APPROVED 05/01/2018

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

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.

DATE: 7-12-2019



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

LOWER MICHIGAN GAS MAIN RELOCATION

DRAWN BY: JRL

SIGNATURE: Howard D. Smith, P.E.

HOWARD D. SMITH
TYPE NAME

LIC. NO.: 46875

CITY PROJECT NO.: 1822

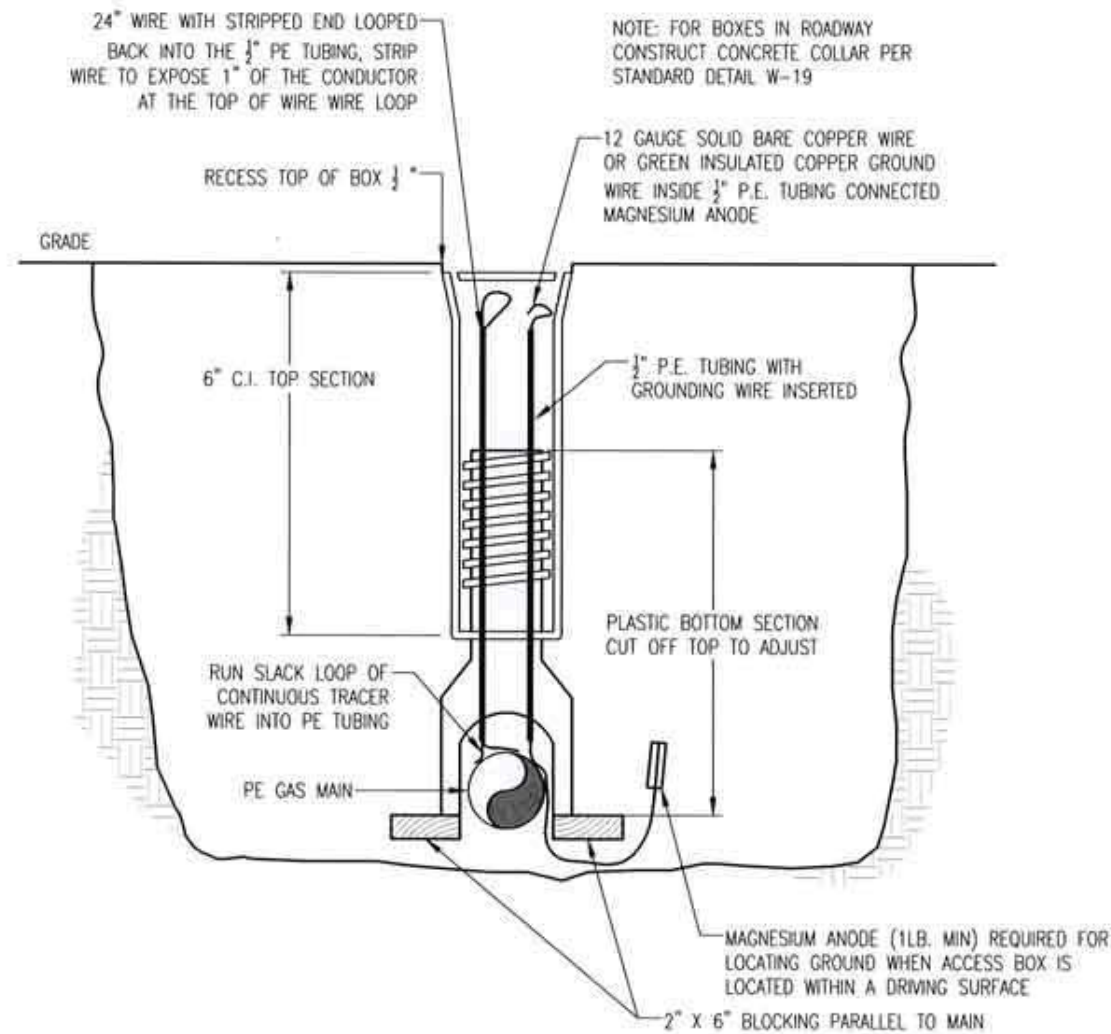
STATE AID PROJECT NO.: NA

STANDARD DETAILS

SHEET NO. 10 OF 17

6/11/2019 8:38 AM

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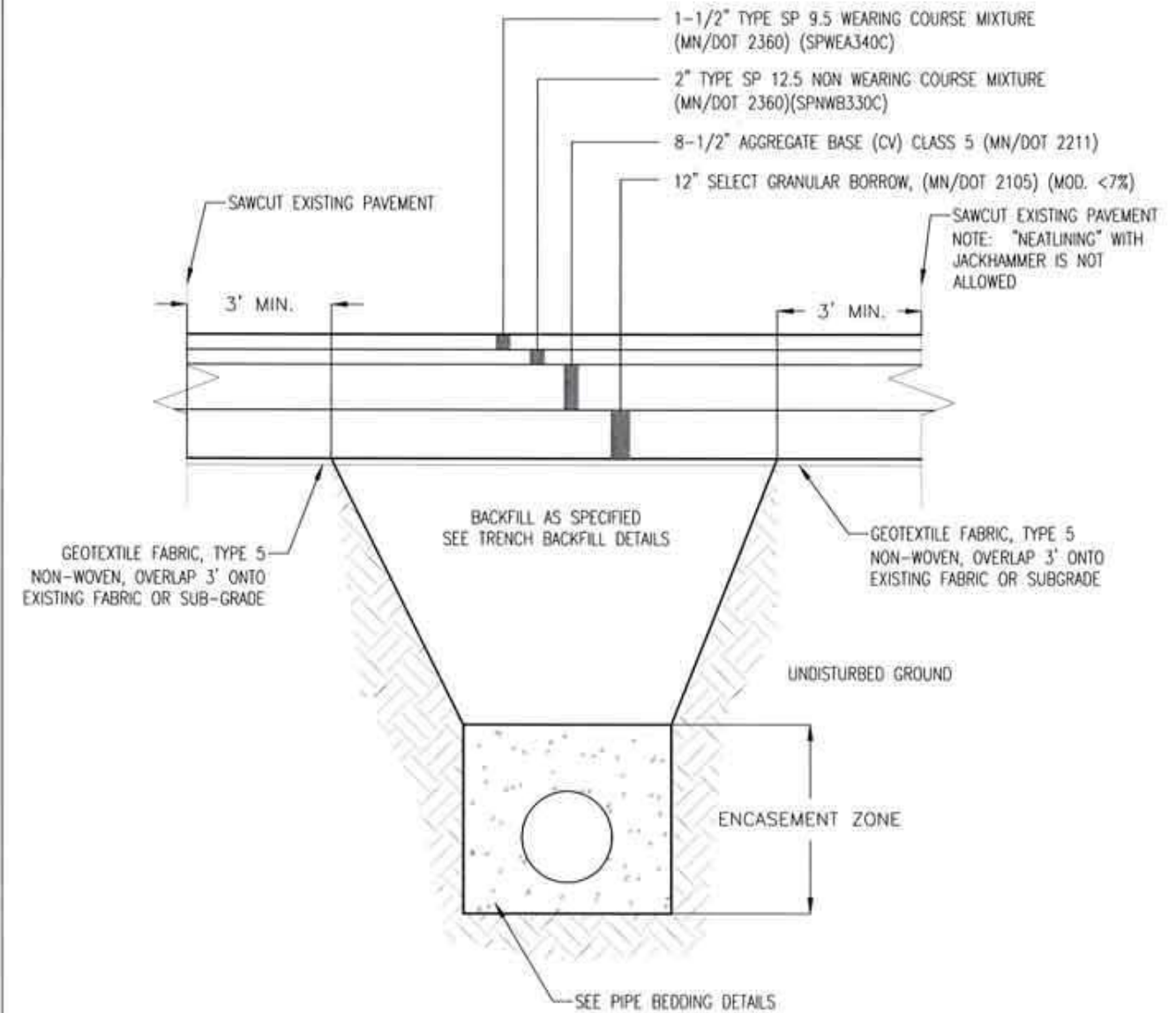
TRACER WIRE ACCESS BOX

G-6

REVISED/APPROVED 05/01/2018

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

NO SCALE



STREET RESTORATION OVER TRENCH

STR-8

REVISED/APPROVED 04/05/2019

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

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.

SIGNATURE: *Howard D. Smith* PE

HOWARD D. SMITH
TYPE NAME

DATE: 7-12-2019

LIC. NO.: 46875



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

LOWER MICHIGAN GAS MAIN RELOCATION

CITY PROJECT NO.: 1822

STATE AID PROJECT NO.: NA

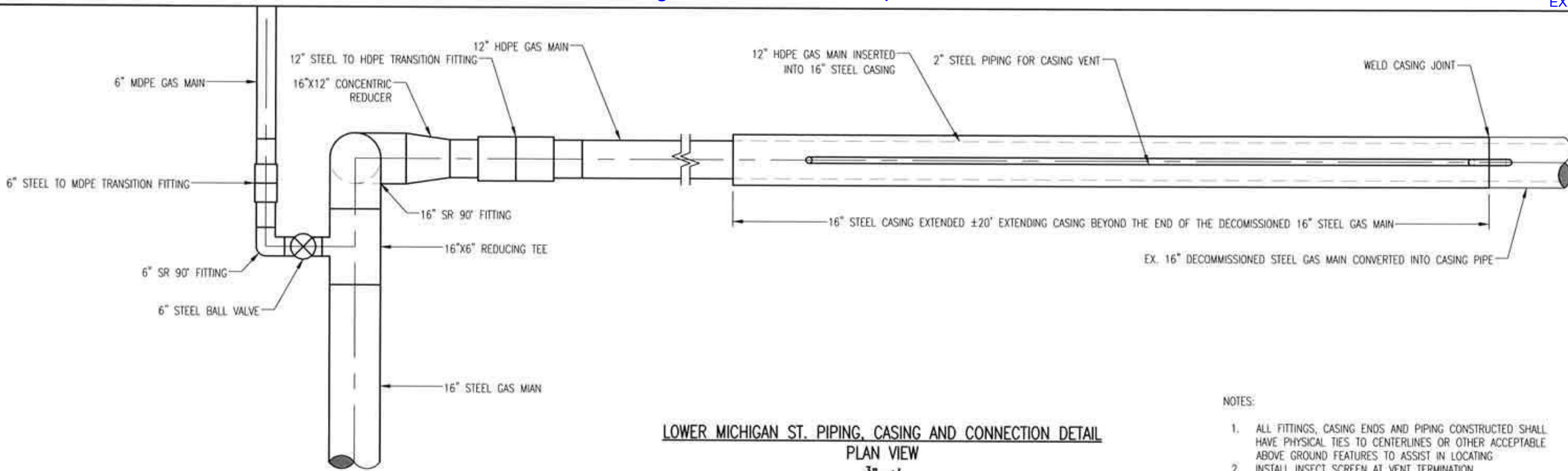
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STANDARD DETAILS 2

SHEET NO. 11 OF 17

6/17/2019 8:58 AM

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LOWER MICHIGAN ST. PIPING, CASING AND CONNECTION DETAIL

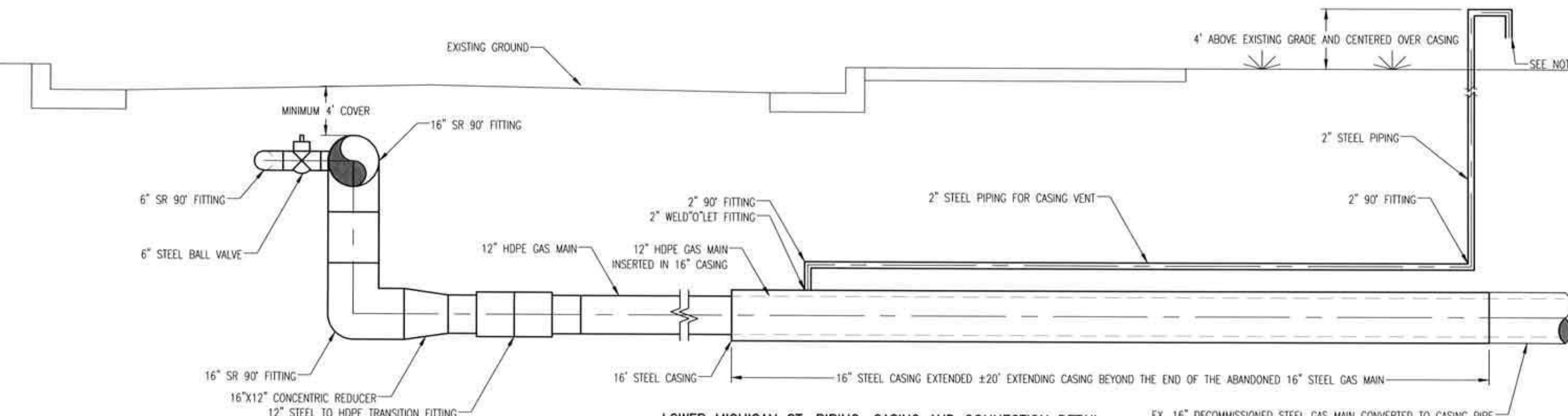
PLAN VIEW

3/8"=1'

EX. 16" DECOMMISSIONED STEEL GAS MAIN CONVERTED INTO CASING PIPE

NOTES:

1. ALL FITTINGS, CASING ENDS AND PIPING CONSTRUCTED SHALL HAVE PHYSICAL TIES TO CENTERLINES OR OTHER ACCEPTABLE ABOVE GROUND FEATURES TO ASSIST IN LOCATING
2. INSTALL INSECT SCREEN AT VENT TERMINATION



LOWER MICHIGAN ST. PIPING, CASING AND CONNECTION DETAIL

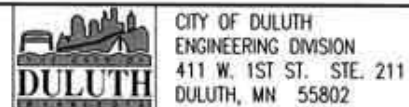
PROFILE VIEW

3/8"=1'

EX. 16" DECOMMISSIONED STEEL GAS MAIN CONVERTED TO CASING PIPE

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: *Howard D. Smith* RE
HOWARD D. SMITH
TYPE NAME

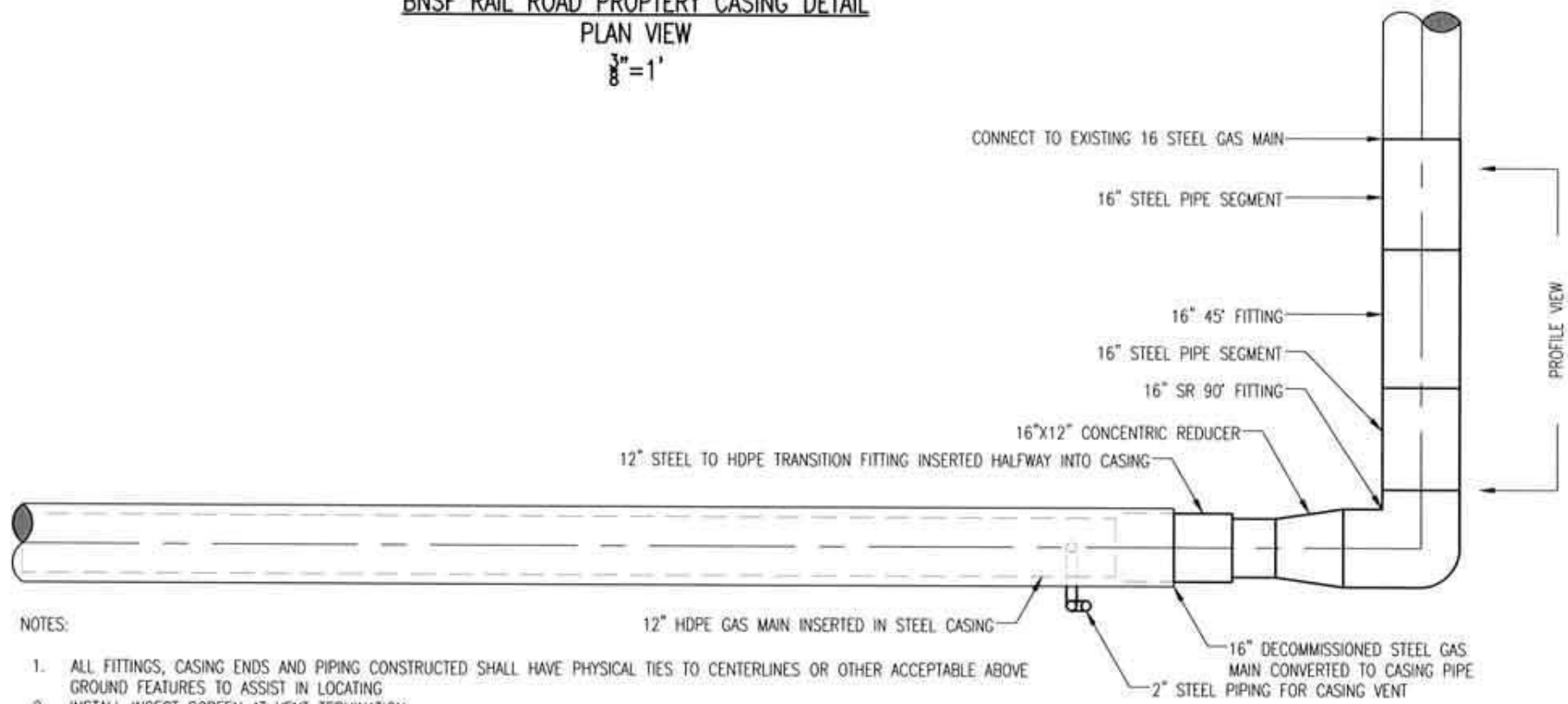
DATE: 7-12-2019
LIC. NO.: 46875



LOWER MICHIGAN GAS MAIN RELOCATION
CITY PROJECT NO.: 1822 STATE AID PROJECT NO.: NA

DRAWN BY: JRL
CONSTRUCTION DETAILS
SHEET NO. 12 OF 17

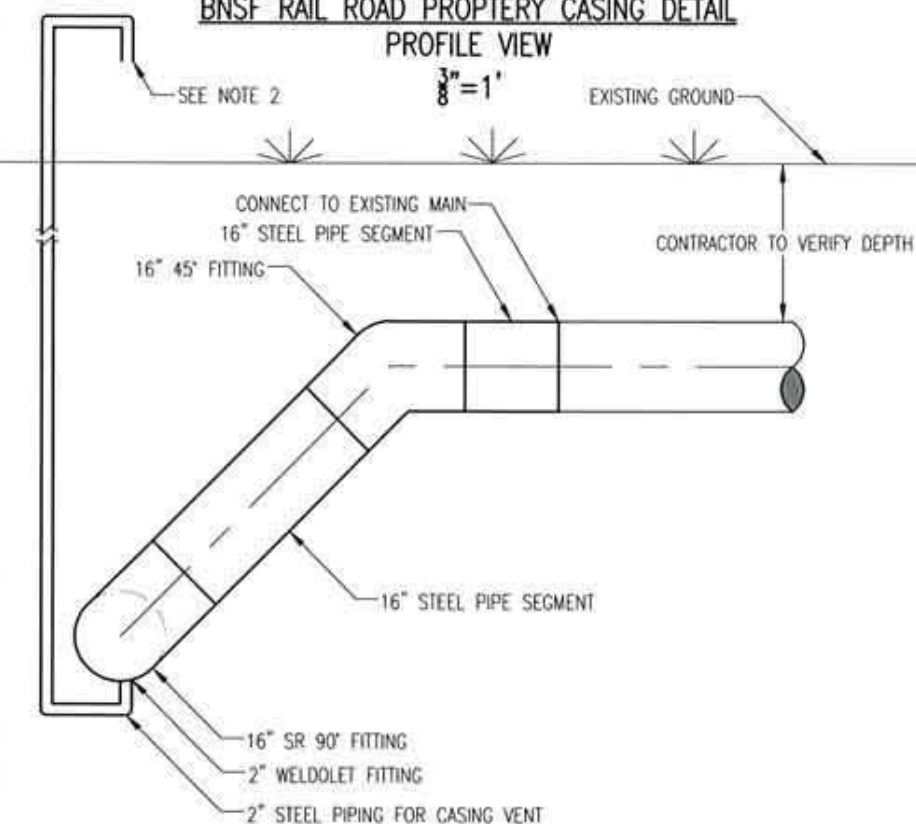
BNSF RAIL ROAD PROPERTERY CASING DETAIL
PLAN VIEW
3/8" = 1'



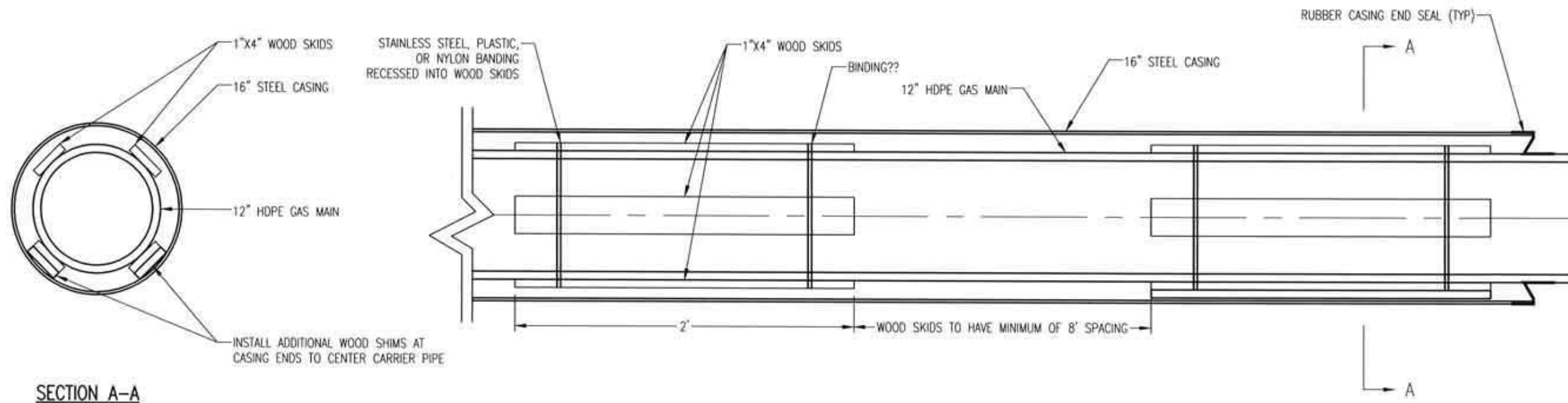
NOTES:

1. ALL FITTINGS, CASING ENDS AND PIPING CONSTRUCTED SHALL HAVE PHYSICAL TIES TO CENTERLINES OR OTHER ACCEPTABLE ABOVE GROUND FEATURES TO ASSIST IN LOCATING
2. INSTALL INSECT SCREEN AT VENT TERMINATION

BNSF RAIL ROAD PROPERTERY CASING DETAIL
PROFILE VIEW
3/8" = 1'



CASING INSERTION DETAIL
N.T.S.



SECTION A-A

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: *Howard D. Smith, P.E.*

HOWARD D. SMITH
TYPE NAME

DATE: 7-12-2019

LIC. NO.: 46875



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

LOWER MICHIGAN GAS MAIN RELOCATION

CITY PROJECT NO.:

1822

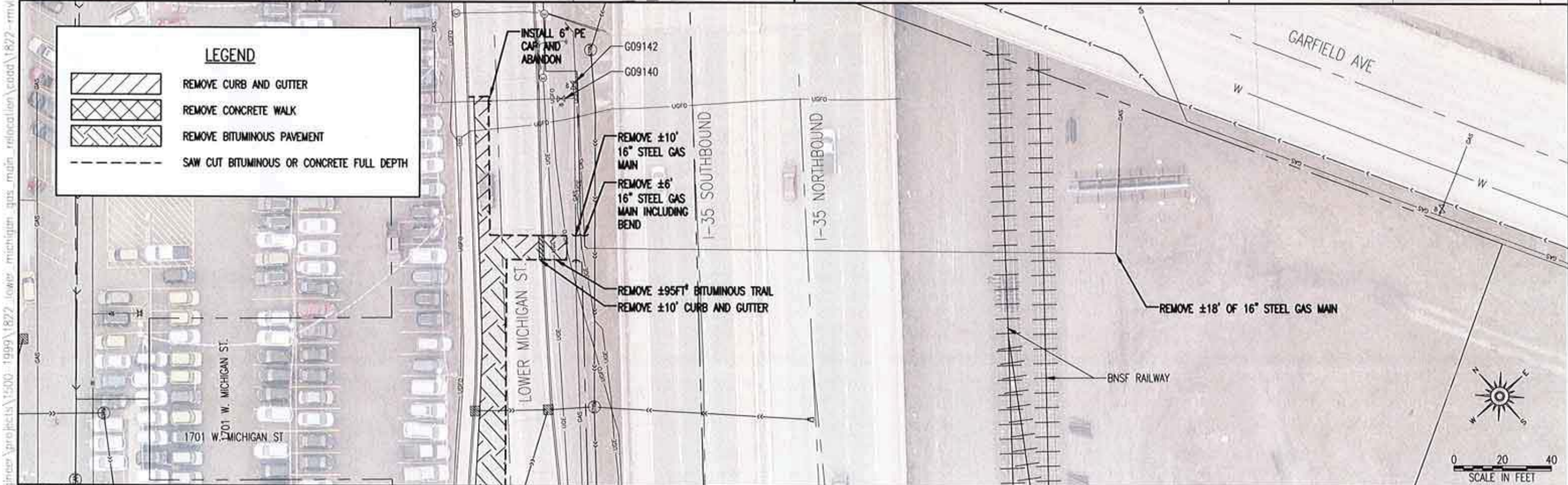
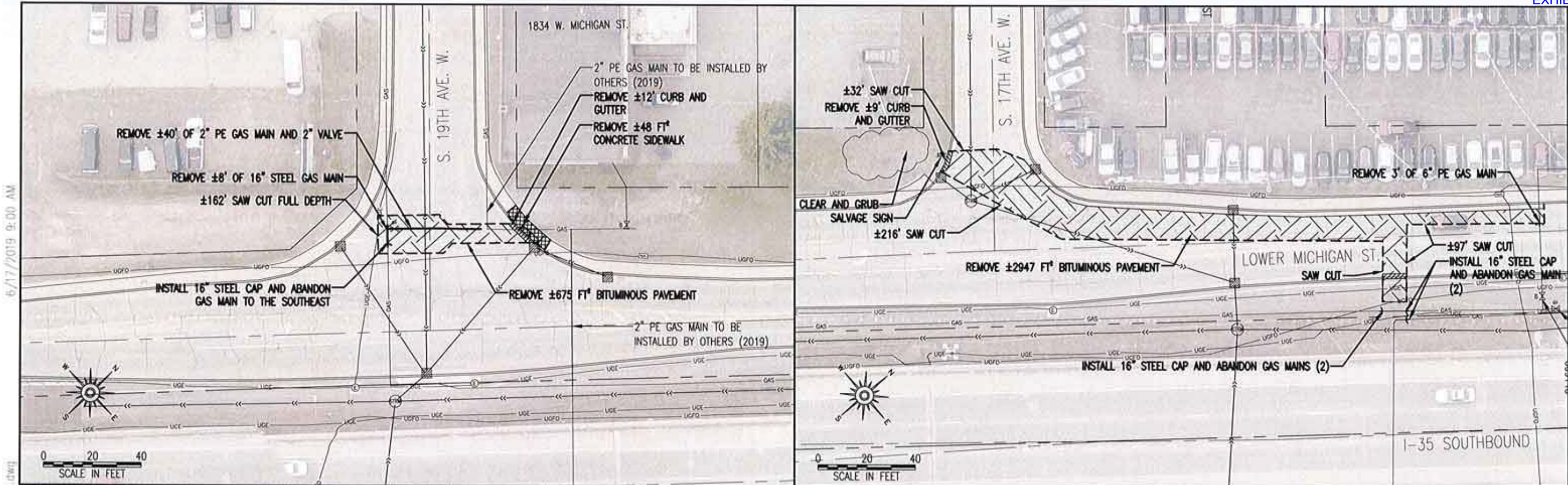
STATE AID PROJECT NO.:

NA

DRAWN BY: JRL

CONSTRUCTION DETAIL 2

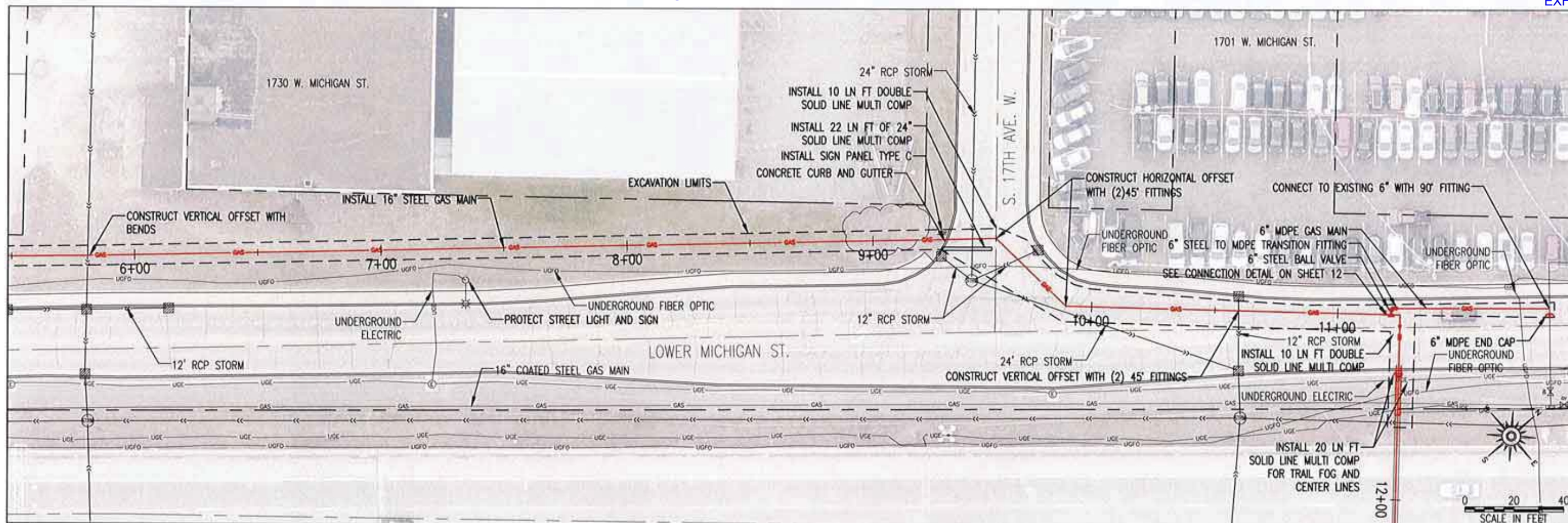
SHEET NO. 13 OF 17



LEGEND

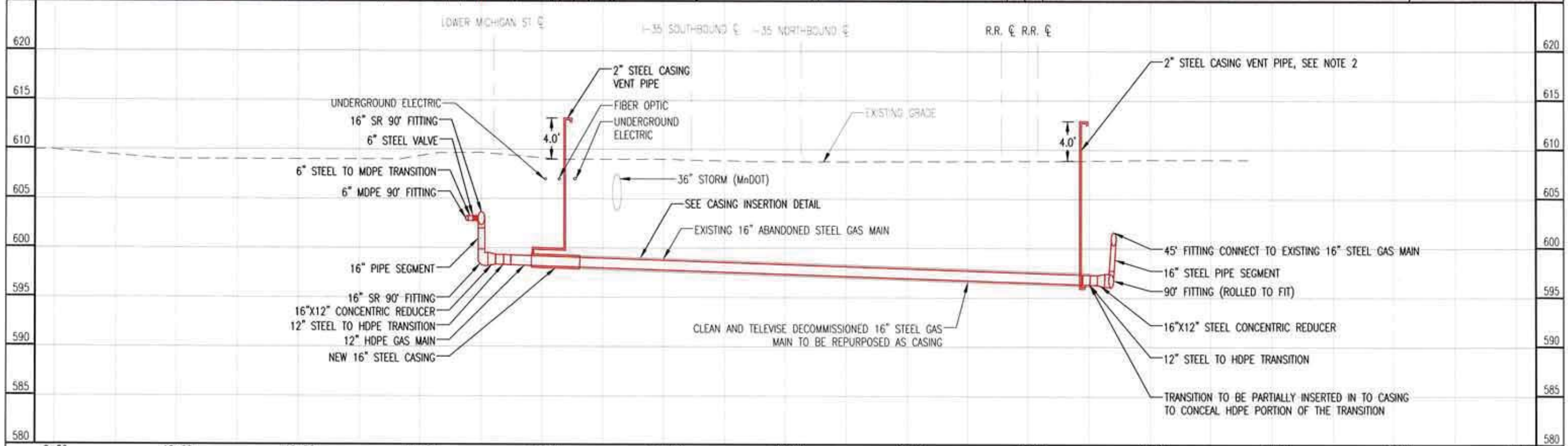
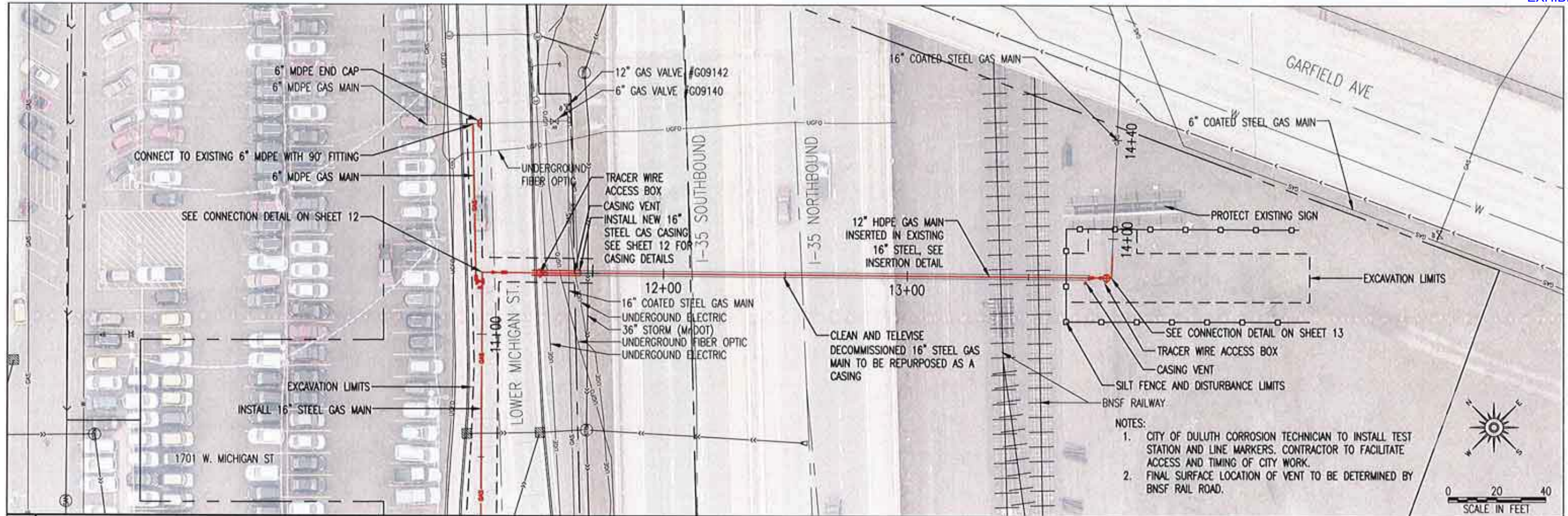
- REMOVE CURB AND GUTTER
- REMOVE CONCRETE WALK
- REMOVE BITUMINOUS PAVEMENT
- SAW CUT BITUMINOUS OR CONCRETE FULL DEPTH

<p>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.</p> <p>SIGNATURE: <i>Howard D. Smith, P.E.</i></p> <p>HOWARD D. SMITH TYPE NAME</p>	<p>DATE: 7-12-2019</p> <p>LIC. NO.: 46875</p>	<p>CITY OF DULUTH ENGINEERING DIVISION 411 W. 1ST ST. STE. 211 DULUTH, MN 55802</p>	<p>LOWER MICHIGAN GAS MAIN RELOCATION</p> <p>CITY PROJECT NO.: 1822 STATE AID PROJECT NO.: NA</p>	<p>DRAWN BY: JRL</p> <p>REMOVALS</p> <p>SHEET NO. 14 OF 17</p>
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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: <i>Howard D. Smith, P.E.</i>		DATE: 7-12-2019 LIC. NO.: 46875	CITY OF DULUTH ENGINEERING DIVISION 411 W. 1ST ST. STE. 211 DULUTH, MN 55802	LOWER MICHIGAN GAS MAIN RELOCATION CITY PROJECT NO.: 1822 STATE AID PROJECT NO.: NA	DRAWN BY: JRL GAS MAIN PLAN & PROFILE SHEET NO. 16 OF 17
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Lower Michigan 16" Gas Main Replacement



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.		DATE: 7-12-2019	CITY OF DULUTH ENGINEERING DIVISION 411 W. 1ST ST. STE. 211 DULUTH, MN 55802	LOWER MICHIGAN GAS MAIN RELOCATION		DRAWN BY: JRL
SIGNATURE: <i>Howard D. Smith</i>	HOWARD D. SMITH TYPE NAME	LIC. NO.: 46875		CITY PROJECT NO.: 1822	STATE AID PROJECT NO.: NA	12IN PE GAS MAIN PLAN & PROFILE



City of Duluth

Department of Public Works & Utilities
Engineering Division
211 City Hall · Duluth MN 55802
Phone: (218) 730-5200 Fax: (218) 730-5907

July 15, 2019

Carroll Aasen
MN/DOT Office of Land Management
395 John Ireland Blvd. – MS 678
St. Paul, MN 55155

Re: S.P. 6982-322 (T.H.35) – Twin Ports Interchange
Lower Michigan Street Gas Main Relocation
Request – Agreement to Construct

Dear Mr. Aasen:

In our ongoing coordination with the local MnDOT project staff, it has been determined that the City of Duluth's 16" steel gas main located in Lower Michigan Street needs to be relocated to accommodate the work on I-35. The work includes not only the 16" steel transmission gas main construction, but it additionally requires some preparatory gas service construction in the adjacent neighborhood to separate building gas services from the transmission main.

We request a formal agreement for reimbursement of not only the construction costs, but also reimbursement of the costs of inspection and contract administration.

In summary, the anticipated costs are as follows:

1810 Gas Blanket Project

- 1) Preparatory Gas Service and Branch Mains. This work is necessary to allow shutdown of the 16" steel transmission gas main without cutting off building services. We intend to have this work completed by Hanco Utilities under the City's annual gas "blanket" construction contract. Hanco was selected by low bid public advertisement process. The cost of the preparatory gas relocation work is \$105,682.00.

Lower Michigan 16" Gas Main Replacement

- 2) 16" Gas Transmission Main. This work includes the construction of the new transmission gas main. The City intends to hire a Contractor by public advertisement qualified low bid process to perform this work. The cost of the transmission main replacement is estimated \$395,843.00.

Construction Services

- 3) Construction Inspection and Administration. The City intends to provide construction inspection and administration services with "in-house" staff. The cost of construction inspection and administration is \$82,915.00.

The total value of this proposed agreement is \$584,440.

Please contact me at 218-730-5104 or by email at tpfeffer@duluthmn.gov to answer your questions.

Sincerely,



Tom Pfeffer
Senior Engineer

Enclosures

- Memorandum, Cost Estimate, and Work Order Plans for Preparatory Gas Service Work
- Plan and Cost Estimate for Construction of Lower Michigan Street Gas Main Relocation
- Cost Estimate Exhibit for City of Duluth Construction Inspection and Admin

Cc: Roberta Dwyer, MnDOT District 1 – Duluth
John Krsiak, MnDOT District 1 - Duluth
Eric Shaffer, City of Duluth
Project File



City of Duluth

DEPARTMENT OF PUBLIC WORKS/UTILITIES
Engineering Division • 211 City Hall
411 West First Street • Duluth MN 55802
(218) 730-5200 Fax: (218) 730-5907

NOTICE OF WORK REQUIRED

Date: July 5, 2019

Project: 1822 Lower Michigan Gas Main
Relocation

MnDOT is proposing a project with the I-35 Interchange (can of worms) in Duluth, MN that will require the City of Duluth to relocate a portion of our 16" steel gas main on Lower Michigan between Garfield Ave and 19th Ave W.

This section of steel main currently has various 2" branch mains and services that uses gas for commercial buildings. For the city to move this 16" gas main, we will be required to purge gas to air in the areas where it is currently service customers. Prior to purging, the city would install new 2" PE down alternate routes and reconnect to the new main so these customers will have gas.

Attached are the plans and routes in which the City of Duluth will install. This work will be done under the city's project 1810 Gas Blanket Project.

The estimated cost for this work is \$105,682.00 as shown in Exhibit A.

1810 Gas Blanket Project

CITY OF DULUTH ENGINEERING DIVISION

Project: Construction of 1/2" & 1" Plastic Gas Services

and 1", 2", 3", 4", and 6" High Pressure Plastic Gas Main

and related work in various locations in the City of Duluth

Contractor: HANCO UTILITIES

City of Duluth Project No. 1810

EXHIBIT A

Item No.	Spec. No.	Description	Unit	Est. Qty	Unit Price	Quantity to Date	Total Price
1	2021.501	Mobilization	LS	1	\$15,000.00	0.00	\$0.00
2	2104.501	Remove PE Gas Main	Lin Ft	150	\$6.00	0.00	\$0.00
3	2104.501	Remove Risers	Each	57	\$100.00	0.00	\$0.00
3	2104.501	Remove Steel Gas Main Less than 6"	Lin Ft	200	\$6.00	50.00	\$300.00
4	2104.501	Remove Steel Gas Main 6" & Larger	Lin Ft	100	\$6.00	0.00	\$0.00
5	2104.503	Remove Concrete Pavement (does not include sidewalk)	SY	130	\$25.00	1465.00	\$36,625.00
6	2104.505	Remove Bituminous Pavement	SY	65	\$20.00	25.00	\$500.00
7	2104.513	Saw Bituminous or Concrete Pavement Full Depth	Lin Ft	500	\$5.00	630.00	\$3,150.00
8	2105.501	Trench Box Installation and Removal	Each	10	\$10.00	0.00	\$0.00
9	2105.503	Granular Backfill (tons)	Tons	75	\$35.00	0.00	\$0.00
10	2105.503	Boulder Excavation (Trench)	Cu Yd	10	\$25.00	0.00	\$0.00
11	2211.502	Aggregate Base or Driving Surface, Class 5 (tons)	Tons	75	\$35.00	10.00	\$350.00
12	2451.601	Rock Excavation (Trench)	Cu Yd	20	\$250.00	0.00	\$0.00
13	2505.602	Televising of Sanitary or Storm Sewer Lateral	Each	10	\$125.00	0.00	\$0.00
14	2505.602	Location of Sanitary or Storm Sewer Lateral by Sonde Method	Each	2	\$75.00	0.00	\$0.00
15	2505.602	Excavation for Potholing Sanitary or Storm Sewer Lateral, 0' - 7' Deep	Each	15	\$475.00	0.00	\$0.00
16	2505.602	Excavation for Potholing Sanitary or Storm Sewer Lateral, 7' - 10' Deep	Each	4	\$375.00	0.00	\$0.00
17	2505.602	Furnish & Install 6" PE Valve & Valve Box (No Excavation)	Each	2	\$500.00	0.00	\$0.00
18	2505.602	Furnish & Install 4" PE Valve & Valve Box (No Excavation)	Each	3	\$400.00	0.00	\$0.00
19	2505.602	Furnish & Install 3" PE Valve & Valve Box (No Excavation)	Each	5	\$350.00	4.00	\$1,400.00
20	2505.602	Furnish & Install 2" PE Valve & Valve Box (No Excavation)	Each	30	\$250.00	0.00	\$0.00
21	2505.602	Furnish & Install 1" PE Valve & Valve Box (No Excavation)	Each	30	\$200.00	9.00	\$1,800.00
22	2505.602	Reconnect Existing PE Services to New Main	Each	150	\$375.00	12.00	\$4,500.00
23	2505.602	Excavation for Cut-Off of HP Gas Main or Gas Service (Department to Furnish & Install Cut-Off Materials)	Each	75	\$250.00	21.00	\$5,250.00
25	2505.602	Excavation for Connecting HP Gas Service to Gas Main or Connecting New HP Gas Main to Existing Gas Main	Each	250	\$525.00	9.00	\$4,725.00
26	2505.602	Emergency Repair of Gas Line	Each	2	\$500.00	0.00	\$0.00
29	2505.603	Furnish & Install 6" PE Gas Main with Granular Encasement	Lin Ft	100	\$30.00	0.00	\$0.00
30	2505.603	Furnish & Install 6" PE Gas Main by Horizontal Directional Drill	Lin Ft	150	\$30.00	0.00	\$0.00
31	2505.603	Furnish & Install 4" PE Gas Main	Lin Ft	250	\$20.00	0.00	\$0.00
32	2505.603	Furnish & Install 4" PE Gas Main by Horizontal Directional Drill	Lin Ft	750	\$20.00	0.00	\$0.00
33	2505.603	Furnish & Install 3" PE Gas Main	Lin Ft	850	\$12.00	0.00	\$0.00
34	2505.603	Furnish & Install 3" PE Gas Main by Horizontal Directional Drill	Lin Ft	3,000	\$20.00	0.00	\$0.00
35	2505.603	Furnish & Install 2" PE Gas Main	Lin Ft	4,000	\$10.00	0.00	\$0.00
36	2505.603	Furnish & Install 2" PE Gas Main by Horizontal Directional Drill	Lin Ft	20,000	\$20.00	1280.00	\$25,600.00
37	2505.603	Furnish & Install 1" PE Gas Main	Lin Ft	300	\$14.00	0.00	\$0.00
38	2505.603	Furnish & Install 1" PE Gas Service	Lin Ft	1,500	\$10.00	169.00	\$1,690.00
39	2505.603	Furnish & Install 1" or 1/2" PE Gas Service by Horizontal Directional Drill	Lin Ft	14,000	\$15.36	0.00	\$0.00
40	2505.603	Furnish & Install 1/2" PE Gas Service	Lin Ft	1,000	\$10.00	156.00	\$1,560.00
	2505.603	Reset 400 CFH or smaller Gas regulator	Each	50	\$150.00	0.00	\$0.00
41	2505.603	Excess Flow Valves	Each	50	\$150.00	0.00	\$0.00
	2505.603	Furnish & Install 1/2" Riser & Meter Stop	Each	50	\$300.00	0.00	\$0.00
	2505.603	Furnish & Install 1" Riser & Stop Valve	Each	5	\$449.00	0.00	\$0.00
	2505.603	Furnish & Install 2" Riser & Stop Valve	Each	2	\$675.00	0.00	\$0.00
42	2360.502	Type SP 12.5 Wearing Course Mixture (3.C)	SY/IN	300	\$35.00	75.00	\$2,625.00
43	2521.501	4" Concrete Walk (Includes Removal and 4" C-5 Base)	SF	1,250	\$18.00	100.00	\$1,800.00
44	2521.501	Concrete Driveway, Alley Apron, or Street (Includes 8" CL-5 Base)	CY	30	\$300.00	40.69	\$12,207.00
45	2531.501	Concrete Curb and Gutter Design B624 (Includes Removal)	Lin Ft	400	\$40.00	40.00	\$1,600.00
46	2540.602	Bollards	Each	60	\$750.00	0.00	\$0.00

Subtotal \$105,682.00

Lower Michigan 16" Gas Main Replacement

ENGINEER'S ESTIMATE LOWER MICHIGAN 16" GAS MAIN REPLACEMENT								
LINE	NOTES	SPEC NO	ITEM DESCRIPTION		UNIT	QUANTITY	UNIT PRICE	ITEM TOTAL
1		2021.501	MOBILIZATION		EACH	1	\$30,000.00	\$30,000.00
2		2101.524	CLEARING AND GRUBBING		SQFT	550	\$0.50	\$275.00
3		2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)		LNFT	510	\$4.50	\$2,295.00
4		2104.503	REMOVE CURB & GUTTER		LNFT	31	\$6.00	\$186.00
5		2104.503	REMOVE GAS MAIN (PE)		LNFT	43	\$5.00	\$215.00
6		2104.503	REMOVE GAS MAIN (STEEL)		LNFT	42	\$50.00	\$2,100.00
7		2104.502	SALVAGE SIGN		EACH	1	\$400.00	\$400.00
8		2104.518	REMOVE CONCRETE WALK		SQFT	48	\$2.50	\$120.00
9		2104.504	REMOVE BITUMINOUS PAVEMENT		SQYD	415	\$4.00	\$1,660.00
10	1	2105.507	SELECT GRANULAR BORROW MOD 7% (CV) (P)		CY	135	\$35.00	\$4,725.00
11	2	2211.509	AGGREGATE BASE CLASS 5		CY	96	\$40.00	\$3,840.00
12		2301.602	DRILL & GROUT REINF BAR (EPOXY COATED)		EACH	12	\$32.00	\$384.00
13	3	2360.509	TYPE SP 9.5 WEARING COURSE MIX (3,C)		TON	38	\$120.00	\$4,560.00
14	3	2360.509	TYPE SP 12.5 WEARING COURSE MIX (3,C)		TON	50	\$120.00	\$6,000.00
15		2505.602	CONNECT TO GAS MAIN		EACH	3	\$2,400.00	\$7,200.00
16	4	2505.602	GAS MAIN CUTOFF		EACH	4	\$1,000.00	\$4,000.00
17		2505.602	6" STEEL VALVE AND VALVE BOX		EACH	1	\$3,000.00	\$3,000.00
18		2504.602	16" STEEL CASING PIPE END SEAL (SPECIAL)		EACH	2	\$500.00	\$1,000.00
19		2504.603	16" STEEL CASING PIPE		LNFT	20	\$180.00	\$3,600.00
20		2505.603	16" STEEL GAS MAIN		LNFT	1060	\$225.00	\$238,500.00
21	5	2505.603	12" HDPE GAS MAIN		LNFT	240	\$90.00	\$21,600.00
22		2505.603	6" PE GAS MAIN		LNFT	62	\$75.00	\$4,650.00
23		2521.518	4" CONCRETE WALK		SQFT	32	\$10.00	\$320.00
24		2521.518	6" CONCRETE WALK		SQFT	16	\$12.00	\$192.00
25		2531.503	CONCRETE CURB & GUTTER DESIGN B624		LNFT	31	\$36.00	\$1,116.00
26		2531.618	TRUNCATED DOMES		EACH	8	\$50.00	\$400.00
27		2563.601	TRAFFIC CONTROL		EACH	1	\$7,500.00	\$7,500.00
28		2564.502	INSTALL SIGN PANEL TYPE C		EACH	1	\$250.00	\$250.00
29		2573.503	SILT FENCE, TYPE HI		LNFT	240	\$5.00	\$1,200.00
30		2572.503	SEDIMENT CONTROL LOG TYPE STRAW		LNFT	700	\$5.00	\$3,500.00
31	6	2573.503	SEDIMENT CONTROL LOG TYPE ROCK		EACH	17	\$15.00	\$255.00
32		2573.502	STORM DRAIN INLET PROTECTION		EACH	12	\$400.00	\$4,800.00
33		2582.503	4" SOLID LINE MULTI COMP		LNFT	30	\$5.00	\$150.00
34		2582.503	4" DBLE SOLID LINE MULTI COMP		LNFT	21	\$10.00	\$210.00
35		2582.503	24" SOLID LINE MULTI COMP		LNFT	55	\$20.00	\$1,100.00

10% Contingency

\$34,540.00

GRAND TOTAL:

\$395,843.00

Construction Services

AGREEMENT 1034938
EXHIBIT "B"

COST ESTIMATE PROFESSIONAL ENGINEERING SERVICES

CITY OF DULUTH - LOWER MICHIGAN STREET 16" GAS MAIN RELOCATION

MnDOT Agreement No. xxxxxxxxxx

Twin Ports Interchange Project in Duluth, MN (S.P. 6982-322)

July 15, 2019

BILLING RATE	138	125	113	100	75	70	58	125	HRS	
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CONSTRUCTION SERVICES

LABOR COSTS - CONSTRUCTION SERVICES

JOB TITLE	MGR1 /		ENG2	ENG1	TECH	CAD TECH	CLR	SURV	TOTAL HRS	TOTAL COST
	MGR2	ENG3								
Construction of Transmission Main										
PreConstruction Coord.		20			4				24	\$ 2,800
Staking		1			24				25	\$ 1,925
On-site Observation		40			600				640	\$ 50,000
Project Management		60							60	\$ 7,500
Finals Documentation		1			22				23	\$ 1,775
Record Drawings		4				24			28	\$ 2,180
Construction of Service Relocations										
On-site Observation		2	8		80				90	\$ 7,150
Project Management			8						8	\$ 900
Finals Documentation			1		4				5	\$ 413
Record Drawings			1			8			9	\$ 673
									0	\$ -
TOTAL	0	128	18	0	734	32	0	0	912	\$ 75,315

DIRECT COSTS - CONSTRUCTION SERVICES

	RATE	UNIT	# UNITS	TOTAL
Mileage	\$0.575	per mile	0	\$ -
Lodging	\$0	per day	0	\$ -
Meals	\$0	per day	0	\$ -
Computer Time	\$0	per hour	0	\$ -
CAD Computer	\$0	per hour	0	\$ -
Printing	\$0.06	per print	0	\$ -
Postage/fax	\$17	per project	0	\$ -
Staking Direct Costs	\$150	per day	4	\$ 600
Materials Testing - Subconsultant	\$7,000	per project	1	\$ 7,000
				\$ -
TOTAL CONSTRUCTION DIRECT COSTS				\$ 7,600

CONSTRUCTION SUMMARY		
LABOR	\$	75,315
DIRECT	\$	7,600
TOTAL	\$	82,915

EXHIBIT TOTAL
\$ 82,915

