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Addendum 3
Solicitation 26-99324
West Superior Street Reconstruction

NOTICE

This Addendum is issued to modify, explain, or correct the original drawings, specifications and/or previous addenda and is hereby made a part of the Contract Documents. Please attach this Addendum to the specification and note receipt of this Addendum on the Request for Bid.

GENERAL

1. Bidder questions are answered.
2. Responses provided to questions in the pre-bid meeting held on March 18, 2026. An attendance list was included in Addendum 2.
3. Special provisions are modified and specific signal cabinet requirements are added.
4. The Project Bid Form is revised.
5. Descriptions of changes to drawings are for reference only and provide only a general overview of changes made. It is the Contractor's responsibility to fully assess and provide the specific requirements of the Work on all Plan sheets regardless of the description of sheet change(s) provided herein. Some sheets were updated in Addendum 2 but were not described in the summary section, that has been corrected with this addendum.

DRAWINGS

1. Drawing changes to the STATEMENT OF ESTIMATED QUANTITIES are as follows:
    a. Sheet 7; Delete Sheet 7 in its entirety and replace with revised Sheet 7. Revisions to Sheet 7 are as follows:

i. Added LOWBOY Bid Item to be paid by the Hour.

b. Sheet 8; Delete Sheet 8 in its entirety and replace with revised Sheet 8. Revisions to Sheet 8 are as follows:

i. Added TEMPORARY WATER SERVICE Bid Item to be paid by the Each.

2. The previously issued Addendum 2 included updated drawing changes to the STATEMENT OF ESTIMATED QUANTITIES. No description of the changes were provided. The previous changes in Addendum 2 for the STATEMENT OF ESTIMATED QUANTITIES are as follows:
    a. Sheet 6; Delete Sheet 6 in its entirety and replace it with revised Sheet 6. Revisions to Sheet 6 are as follows:
        i. Bid Item REMOVE BITUMINOUS PAVEMENT was changed to REMOVE PAVEMENT.
3. The previously issued Addendum 2 included updated drawing changes to the TABULATIONS. No description of the changes were provided. The previous changes in Addendum 2 for the TABULATIONS are as follows:
    a. Sheets 16-24; Delete Sheets 16-24 in their entirety and replace them with revised Sheets 16-24. Revisions to Sheets 16-24 are as follows:
        i. Bid Item REMOVE BITUMINOUS PAVEMENT was changed to REMOVE PAVEMENT.
4. Drawing changes to the JOINTING DETAILS are as follows:
    a. Sheet 91; Delete Sheet 91 in its entirety and replace it with revised Sheet 91. Revisions to Sheet 91 are as follows:
        i. REMOVE WALK (PAID FOR AS “REMOVE BRICK SIDEWALK”) has been updated to say REMOVE WALK (PAID FOR AS “REMOVE SIDEWALK”).
5. Drawing changes to the SIGNAL SYSTEM plans are as follows:
    a. Sheet 499; for each cabinet pad layout, replace “INSTALL SIGNAL CONTROLLER CABINET (FURNISHED BY CITY)” with “SIGNAL CONTROLLER CABINET (F & I BY CONTRACTOR)”.
    b. Sheet 509: revise as follows:
        i. For the A notes section, revise the second line of text to read “CONTROLLER AND CABINET”
        ii. For the NOTES section in the lower right corner, delete note 2.
    c. Sheet 511; for the NOTES section in the upper left corner, delete note 2.
    d. Sheet 512; for the A notes section, revise the second line of text to read “CONTROLLER AND CABINET”.
    e. Sheet 516; for the NOTES section in the upper left corner, delete note 2.
    f. Sheet 517; for the A notes section, revise the second line of text to read “CONTROLLER AND CABINET”.
6. Drawing changes to the FIBER OPTIC SYSTEM are as follows:
    a. Sheet 670; item 1.5” NON-METALLIC CONDUIT (BORED) is revised to 1.5” NON-METALLIC CONDUIT.

SPECIFICATIONS

1. SP-13, (1505) COOPERATION BY CONTRACTORS is hereby revised as follows:
    a. The following is added to SP-13.4 City of Duluth Project:
        i. A separate contract for the City of Duluth gas utility will be occurring along 24th Avenue West above West 9th Street and will likely run concurrently with Phase 1 of this project.
        ii. A separate contract for the City of Duluth reconstruction of 24th Avenue West between West 3rd Street and West 7th Street will likely run concurrently with Phase 2 of this project.

2. SP-22, (1702) PERMITS, LICENSES, AND TAXES is hereby revised as follows:
    a. The following is added to SP-22:
        i. State of Minnesota Electrical Permits are required and shall be requested and obtained through the Department of Labor & Industry website.
        ii. The Contractor is responsible for all permits associated with the service line replacement and shall take the necessary steps to close permits when work is complete.

3. SP-28, (1806) DETERMINATION AND EXTENSION OF CONTRACT TIME is hereby revised as follows:
    a. The second paragraph of SP-28.2 D is deleted and replaced with the following:
        i. All work identified in the Plans and Special Provisions for Phase 0B shall be substantially completed by **October 30, 2026**. For Phase 0B of this project, Substantial Completion shall be deemed to include construction and installation of all Phase 0B work items, except for signal components, and re-opening the streets and pedestrian walkways to full use on paved surfaces and including temporary tie-in work to adjacent surfaces and underground facilities. The intersection of 27th Avenue W shall be set up in an all-way stop condition and items installed during Phase 0B required for the signal shall be protected prior to the installation and activation of the complete signal system. Any work required to properly sign the intersection and to protect installed work items shall be incidental. The signal system shall be installed and operational by **January 29, 2027**.
    b. The second paragraph of SP-28.2 E is deleted and replaced with the following:
        i. All work identified in the Plans and Special Provisions for Phase 1 shall be substantially completed by **November 6, 2026**. For Phase 1 of this project, Substantial Completion shall be deemed to include construction and installation of all Phase 1 work items, except for signal components, and re-opening the streets and pedestrian walkways to full use on paved surfaces and including temporary tie-in work to adjacent surfaces and underground facilities. The intersection of Piedmont Avenue shall be set up in an all-way stop condition and items installed during Phase 1 required for the signal shall be protected prior to the installation and activation of the complete signal system. Any work required to properly sign the intersection and to protect installed work items shall be incidental. The signal system shall be installed and operational by **January 29, 2027**.
    c. Add the following sentence to the third paragraph of SP-28.2 E:

i. The detour for Phase 1B may be maintained until the intersection is reopened to traffic on a final paved bituminous surface except for Port trucking, access to 16th Avenue W, and as required by the Duluth Transit Authority.

4. SP-65, (2504) TEMPORARY WATER SERVICE SYSTEM, previously replaced in Addendum 2, is hereby deleted and replaced with the revised SP-65. Revisions to SP-65 are generally as follows:
   a. Pay Item was added to address 6 inch and larger existing water services that may be in conflict with the proposed watermain elevation.
   b. Revision to Phase 0 temporary water requirements.

5. Division SP-102, (1404) MAINTENANCE OF TRAFFIC AND LOCAL ROAD CLOSURE NOTIFICATIONS is hereby added to the project Special Provisions.

6. Division SP-103, (2545) ELECTRICAL SERVICE GROUND is hereby added to the project Special Provisions.

7. SS-2, (2565) TRAFFIC CONTROL SIGNALS is hereby revised as follows:
   a. Delete SS-2.3 A (3)
   b. Replace Paragraph SS-2.4 M Contractor Provided Equipment for Traffic Control Signal Cabinets, previously modified in Addendum 2, with the following:
      i. Contractor provided equipment includes the traffic signal cabinet, actuated controller unit, all internal signal control equipment (including conflict monitor, load switches, ethernet connection equipment, modem, etc.), all required anchor rods, nuts, washers, and rubber gasketing for each cabinet, EVP phase selectors, APS central control units, and video image processors. Equipment shall be integrated into each traffic control cabinet by the Contractor.
   c. Add the following section SS-2.4 CC Controller Cabinet Complete with Internal Cabinet Equipment:

Description for Minimum Specifications for TS2 Type 1 Traffic Signal Controller Cabinet with Controller:

This specification describes for the Contractor to furnish, install, and make operational:

(1) Three (3) NEMA TS2 Type 1 traffic signal control cabinets, each with controller and Malfunction Management Unit, ready for testing by manufacturer/supplier staff and subsequent installation by the Contractor at each new and revised Traffic Control Signal System.

General Requirements:

The manufacturer shall assemble each new cabinet conforming to the latest revision of NEMA Standards Publication TS 2 Version 2.06 (R2008) with Amendment 3-2009, Traffic Controller

Assemblies with NTCIP Requirements, National Electrical Manufacturers Association, hereinafter called NEMA TS2 Standard. Where differences occur, this specification shall govern.

Provide arc flash protection within each new cabinet as needed to satisfy NFPA 70E and OSHA requirements.

Any additions, deletions or variations from the following specifications must be stated. Reason for variations and deviations must also be stated. These specifications shall be construed as minimum. Should the manufacturer's current published data or specifications exceed these, they shall furnish evidence upon request that the model to be furnished has been commercially available to the trade for a period of not less than one year.

Cabinet Manufacturer Qualifications:

The cabinet manufacturer shall be ISO 9001-2021 Registered and have been certified in the IPC "Class II" Electronics standards and training for all manufacturing staff to ensure manufacturing quality, documentation, and proper going/continuing employee training for manufacturing processes by IPC Certified Trainers. Each new cabinet shall have been in production for a minimum of 5 years and have a UL508A listing for Industrial Control Panel Enclosure.

Cabinet Design and Construction:

1. Each new cabinet shall be constructed from type 5052-H32 aluminum with a minimum thickness of 0.125 inches.

2. Each new cabinet shall be designed and manufactured with materials that will allow rigid mounting, whether intended for pole, base or pedestal mounting. The cabinet must not flex on its mount.

3. A rain channel shall be incorporated into the design of the main door opening to prevent liquids from entering the enclosure. The cabinet door opening must be a minimum of 80 percent of the front surface of the cabinet. A stiffener plate shall be welded across the inside of the main door to prevent flexing.

4. A 40-inch din rail should be incorporated, mounted on the back wall above the top shelf.

5. The top of the cabinet shall incorporate a 1-inch slope toward the rear to prevent rain accumulation.

6. All surfaces shall be free from weld flash. Welds shall be smooth, neatly formed, free from cracks, blow holes and other irregularities. All sharp edges shall be ground smooth.

7. Each new cabinet shall be supplied with anti-Graffiti coating and sufficient care shall be taken in handling to insure that scratches are minimized.

8. All seams shall be sealed with RTV sealant material on the interior of the cabinet.

9. Each new cabinet shall be supplied with a minimum of three (3) removable shelves, manufactured from 5052-H32 aluminum. Shelves shall be a minimum of 10 inches deep, with back stop to prevent items from rolling off of the back of the shelf. One Computer Drawer Shall Be included with the cabinet and mounted on the lowest shelf.

10. Shelves shall have horizontal slots at the rear and vertical slots at the front of the turned down side flange. Shelves shall be installed by first inserting the rear edge of the shelf on the cabinet rear sidewall mounting studs, then lowering the shelves on the front sidewall mounting studs. Shelves shall be held in place by a nylon tie-wrap inserted through holes on the front edge of the shelf and around the front sidewall mounting studs.

11. The front edge of the shelf shall have holes punched every 6 inches to accommodate tie-wrapping of cables/harnesses.

12. A minimum of one set of vertical "C" channels (in addition to the set for the shelves) shall be mounted on each interior wall of the cabinet for the purpose of mounting the cabinet components. The channels shall accommodate spring mounted nuts or studs. All mounting rails shall extend to within three and one-half (3.5) inches of the top and bottom of the cabinet. Sidewall rail spacing shall be 7.88 inches center-to-center. Rear wall rail spacing shall be 18.50 inches center-to-center.

13. Lifting tabs shall be mounted on either side of the cabinet to allow for the cabinet to be lifted into place. The lifting tabs shall be able to be mounted so that they extend above the cabinet for lifting, **and then rotated <u>down</u> as to not interfere with the box for the cabinet**.

14. The main door and police door-in-door shall close against a weatherproof and dust-proof, closed-cell neoprene gasket seal. The gasket material for the main door shall be a minimum of 0.250 inches thick by 1.00 inch wide. The gasket material for the police door shall be a minimum of 0.250 inches thick by 0.500 inches wide. The gaskets shall be permanently bonded to the cabinet.

15. The lower section of the cabinet door shall be equipped with a louvered air entrance. The air inlet shall be large enough to allow sufficient air flow per the rated fan capacity. Louvers must satisfy the NEMA rod entry test for 3R ventilated enclosures. A non-corrosive, vermin- and insect-proof, 12”x16” metal filter cover shall cover the removable air filter. The filter shall fit snugly against the cabinet door wall. The metal filter cover shall be secured in place by a swivel spring- loaded retaining arm. The metal filter cover shall be louvered downward such as to force any water spray towards the bottom of the cabinet.

16. The roof of the cabinet shall incorporate an exhaust plenum with a vent screen. Perforations in the vent screen shall not exceed 0.125 inches in diameter.

17. The main door on the cabinet shall be equipped with a three-point latching mechanism.

18. The handle on the main door to the cabinet shall utilize a shank of 5/8 inches minimum diameter. The handle shall include a hasp for the attachment of an optional padlock. The cabinet door handle shall rotate counter-clockwise to open.

    The handle shall not extend beyond the perimeter of the main door at any time. The lock assembly shall be positioned so that the handle shall not cause any interference with the key when opening the cabinet door.

19. The main door hinge shall be attached in such a manner that no rivets or bolts are exposed.

20. The main door shall include a mechanism capable of holding the door open at approximately 90, 125, and 150 degrees under windy conditions. Manual placement of the mechanism shall not be required by field personnel.

21. Equip the main door with a Corbin tumbler lock or exact equivalent. Minimum of two keys shall be supplied. Provide with the police door-in-door a Corbin treasury type lock or exact **equivalent and a minimum of one key for each cabinet.**

22. Four (4) three-quarter (3/4) inch galvanized anchor bolts shall be supplied with each controller cabinet to provide proper installation.

23. The cabinet flange for securing the cabinet to the anchor bolts shall not protrude outward from the bottom of the cabinet. A set of one-half (1/2) inch thick rubber mounting gaskets shall be supplied with each controller cabinet to provide proper seal between the cabinet flange and the concrete foundation.

24. Each cabinet shall be of sufficient size to accommodate all equipment. The minimum cabinet size shall be as follows:

    65”H x 44” W x 24” D (for controller cabinet).

25. Each new cabinet shall be the manufacturer's latest model and design.

Terminals and Facilities/Main Panel Design and Construction:

1. The main panel shall be constructed from 5052-H32 brushed aluminum of 0.125 inches minimum thickness and installed so as to minimize flexing when plug-in components are installed.

2. All 16-position main panels shall be provided with a mounting mechanism that allows easy access to all wiring on the rear of the panel without the removal of any cabinet shelves. Lowering or complete removal of the main panel can be accomplished without the use of hand tools.

3. The terminals and facilities shall be available as a minimum in the following configuration:

   Sixteen load switch sockets, six flash transfer relay sockets, one flasher socket, two main panel BIU racks with two BIUs, one 16 channel detector rack with one BIU, and one Type-16 MMU.

4. All load switch and flash transfer relay socket reference designators shall be silkscreen labeled on the front and rear of the main panel to match drawing designations. Socket pins shall be marked for reference on the rear of the panel.

5. A maximum of eight load switch sockets may be positioned horizontally or stacked in two rows on the main panel. Main panels requiring more than eight load switch sockets shall be mounted in two horizontal rows.

6. All load switches shall be supported by a bracket, extending at least half the length of the load switch.

7. Rack style mounting shall be provided to accommodate the required BIUs per the configuration listed above. A dual-row, 64-pin female DIN 41612 Type B connector shall be provided for each BIU rack position. Card guides shall be provided for both edges of the BIU. Terminal and facilities BIU mounting shall be an integral part of the main panel. Detector rack BIU mounting shall be an integral part of the detector rack.

8. All BIU rack connectors shall have pre-wired address pins corresponding to the requirements of the TS2 specification. The address pins shall control the BIU mode of operation. BIUs shall be capable of being interchanged with no additional programming.

9. The 16-load switch position main panel shall have all field wires contained on two rows of horizontally mounted terminal blocks. The upper row shall be wired for the pedestrian and

overlap field terminations. The lower row shall be reserved for phase one through phase eight vehicle field terminations.

10. All field output circuits shall be terminated on a non-fused barrier type terminal block with a minimum rating of 10 amps. Each terminal block position shall have two No. 10/32 screw connectors and a removable shorting bar. Each field side terminal shall be equipped with a Ilsco Terminal Lug 4-14 AL9CU, No substitutes.

11. All field output terminal blocks shall utilize spade lugs to terminate pack panel wiring. All back panel wires meant for technician servicing and modifying shall be labeled per original manufacture termination location.

12. All field input/output (I/O) terminals shall be identified by permanent alphanumerical labels. All labels shall use standard nomenclature per the NEMA TS2 specification.

13. It shall be possible to flash either the yellow or red indication on any vehicle movement and to change from one color indication to the other by use of a screwdriver.

14. Field terminal blocks shall be wired to use four positions per vehicle or overlap phase (green, yellow, red, flash). It shall not be necessary to de-buss field terminal blocks for flash programming.

15. Field terminal blocks and the screwlugs used to connect the field wiring shall be provided a clear plastic protective cover mounted on plastic standoffs to allow quick removal and access while providing electrical shock protection while working in the cabinet.

16. The main panel shall contain at least one flasher socket (silk screen labeled) capable of operating a 15-amp, 2-pole, NEMA solid-state flasher. The flasher shall be supported by a bracket, extending at least half its length.

17. One RC network shall be wired in parallel with each group of three flash-transfer relays and any other relay coils.

18. All logic-level, NEMA-controller and Malfunction Management Unit input and output terminations on the main panel shall be permanently labeled. Cabinet prints shall identify the function of each terminal position.

19. At a minimum, three 20-position terminal blocks shall be provided at the top of the main panel to provide access to the controller unit's programmable and nonprogrammable I/O. Terminal blocks for DC signal interfacing shall have a number 6-32 x 7/32 inch screw as minimum.

20. All main panel wiring shall conform to the following wire size and color:

Green/Walk load switch output	• Brown wire • 14 gauge
Yellow load switch output	• Yellow wire • 14 gauge
Red/Don't Walk load switch output	• Red wire • 14 gauge
MMU (other than AC power)	• Violet wire • 22 gauge
Controller I/O	• Blue wire • 22 gauge
AC Line (power panel to main panel)	• Black wire • 8/10 gauge
AC Line (main panel)	• Black wire • 10 gauge
AC Neutral (power panel to main panel)	• White wire • 8/10 gauge
AC Neutral (main panel)	• White wire

	• 10 gauge
Earth ground (power panel)	• Green wire • 8 gauge
Logic ground	• Gray wire • 22 gauge
Flash programming	• Orange wire Flasher Terminal • Black, Red or Yellow wire Field Terminal • 14 gauge

21. All wiring, 14 AWG and smaller, shall conform to MIL-W-16878/1, type B/N, 600V, 19-strand tinned copper. The wire shall have a minimum of 0.010 inches thick PVC insulation with clear nylon jacket and rated to 105 degrees Celsius. All 12 AWG and larger wire shall have UL listed THHN/THWN 90 degrees Celsius, 600V, 0.020 inches thick PVC insulation and clear nylon jacketed.

22. Connecting cables shall be sleeved in a braided nylon mesh or poly-jacketed. The use of exposed tie-wraps or interwoven cables is unacceptable.

23. All terminals and facilities configurations shall be provided with sufficient RS485 Port 1 SDLC communication cables to allow for the intended operation of that cabinet. Each communication cable connector shall be a 15-pin metal shell D subminiature type. The cable shall be a shielded cable suitable for RS-485 communications. Cable used for SDLC cables shall be a Belden 8104.

24. All main panels shall be pre-wired for a Type-16 Malfunction Management Unit.

25. All wiring shall be neat in appearance. All cabinet wiring shall be continuous from its point of origin to its termination point. Butt type connections/splices are not acceptable.

26. All connecting cables and wire runs shall be secured by mechanical clamps. Stick-on type clamps are not acceptable.

27. The grounding system in the cabinet shall be divided into three separate circuits (AC Neutral, Earth Ground, and Logic Ground). These ground circuits shall be separated, earth ground from the other two.

28. The main panel shall incorporate a relay to remove +24 VDC from the common side of the load switches when the intersection is placed into mechanical flash. The relay shall have a momentary pushbutton to apply power to the load switch inputs for ease of troubleshooting.

29. All pedestrian push button inputs from the field to the controller shall be opto-isolated through the BIU and operate at 12 VAC.

30. All wire (size 16 AWG or smaller) at solder joints shall be hooked or looped around the eyelet or terminal block post prior to soldering to ensure circuit integrity. Lap joint soldering is not acceptable.

31. An 80-position fuse block shall be wired to the field side of the Terminal and Facilities out puts. The fuse block shall accommodate Flashing Yellow Arrow Operations.

32. An AAPS terminal block shall be installed and wired to accommodate AAPS systems.

33. The back panel shall hinge down to allow for technicians to easily access the rear of the panel. The silk screen on the back of the panel shall be upside down to all for it to be read correctly once hinged down.

Power Panel Design and Construction:

1. The power panel shall consist of a separate module, securely fastened to the right side wall of the cabinet. The power panel shall be wired to provide the necessary filtered power to the load switches, flasher(s), and power bus assembly. It shall be manufactured from 0.090-inch, 5052-H32 aluminum with a removable plastic front cover which shall be arc flash protection rated and comply with NFPA 70E and OSHA requirements.

2. The panel shall be of such design so as to allow a technician to access the main and auxiliary breakers without removing the front cover.

3. The power panel shall house the following components:

a. A minimum of a 40-amp main breaker for the 16- position cabinet. This breaker shall supply power to the controller, MMU, signals, cabinet power supply and auxiliary panels, and a 40-

amp breaker to supply the flasher power. Breakers shall be at minimum, a thermal magnetic type, U.L. listed for HACR service, with a minimum of 10,000 amp interrupting capacity.

b. A minimum of a 15-amp auxiliary fuse. This fuse shall supply power to the fan, light and GFI utility outlet.

c. An EDCO model SHP-1250 surge arrester.

d. A 50 amp, 125 VAC radio interference line filter.

e. A SPST-NO Crydom A4890 solid state relay shall be used for the signal buss relay.

f. Neutral buss shall be a 30 position, triple stack, with mounting base as manufactured by ILSCO.

g. Grounding buss shall be a 20 position, double stack, with mounting base as manufactured by ILSCO.

h. A NEMA type 5-15R GFI utility outlet.

i. A 4-position plug-in connector for wiring to the power bus assembly.

Power Bus Assembly:

1. The power bus assembly shall be manufactured from 0.090 inch, 5052-H32 aluminum. It shall provide filtered power for the controller, malfunction management unit, cabinet power supply, and all auxiliary equipment. It shall include the SDLC Bus connecting cables wired into a surface mounted compression terminal block.

2. The Power Bus Assembly shall house the following components:

    a. Six (6) power connectors.

    b. Two terminal strips to hardwire the power connections.

    c. SDLC terminal block with six (6) pre-wired cables.

3. All cabinet equipment requiring filtered power to operate, shall be connected to the power bus assembly by a Burndy connector # SMS12PDH1, or hardwired directly to the supplied terminal blocks.

Auxiliary Cabinet Equipment:

1. Each new cabinet shall be provided with a thermostatically controlled (adjustable between 80-150 degrees Fahrenheit) ventilation fan in the top of the cabinet plenum. The fan plate shall be removable with the use of simple hand tools for serviceability. A minimum of one exhaust fan shall be provided. The fan shall be a ball bearing type fan and shall be capable of drawing a minimum of 100 cubic feet of air per minute. The Fan/Thermostat assembly shall be connected to the Power panel by means of a 4-position plug-in cable. Two thermostatically controlled heat lamps sockets shall be installed in the cabinet

2. At minimum, two light panels shall be mounted in each new cabinet to sufficiently illuminate the field terminals. The light panels shall be wired to a 15-amp ON/OFF toggle switch mounted on the power panel.

3. A resealable print pouch shall be mounted to the door of each new cabinet. The pouch shall be of sufficient size to accommodate one complete set of cabinet prints.

4. Set up each new cabinet with a spare quad outlet.

Vehicle Detection:

1. A minimum of one vehicle detector amplifier rack shall be provided in each new cabinet.

2. Each detector rack shall support up to 16 channels of loop detection (either eight 2 channel detectors or four 4 channel detectors), two 2-channel preemption devices and one BIU.

3. Each new cabinet shall contain detector interface panels for the purpose of connecting field loops and vehicle detector amplifiers. The panels shall be manufactured from FR4 G10 fiberglass, 0.062 inches thick, with a minimum of 2 oz. of copper for all traces and built to the IPC “Class II” Electronics standards

4. Spade lugs are not required for termination of loop and EVP field wire. The detector interface panel shall provide a barrier terminal strip to all for direct wire termination.

5. An 8-position interface panel shall be provided for a 16-channel rack cabinet. The interface panel shall be secured to a mounting plate and attached to the left side of the cabinet.

6. Each interface panel shall allow for the connection of sixteen independent field loops. A ground bus terminal shall be provided between each loop pair terminal to provide a termination for the loop lead-in cable ground wire.

7. Each interface panel shall provide a 10-position terminal block to terminate the field wires for up to two 2-channel preemption devices.

8. Lightning protection device mounting holes shall be provided to accommodate an Edco SRA-16C, or Edco SRA-6, or Edco LCA-6, or a varistor lightning protection device.

9. A cable consisting of 20 AWG twisted pair wires shall be provided to enable connection to and from the panel to a detector rack. The twisted pair wires shall be color coded red and white wire.

10. All termination points shall be identified by a unique number and silk screened on the panel.

11. Each detector rack shall accommodate rack mountable preemption devices such as EMTRAC or Opticom.

12. Each detector rack shall be powered by the cabinet power supply and be connected to the power bus assembly by means of Burndy connector # SMS12PDH1.

13. The card rack shall have provisions to attach a marking strip or other identification labels to identify detector modules and/or specific intersection loops.

14. No loop detector amplifier cards are required to be provided and installed by the Contractor for either signal system. Instead, the Contractor is responsible for providing, installing, and making operational all required cabinet components needed to make video detection operational for each new controller cabinet being used for both Signal Systems.

Cabinet Test Switches and Police Panel:

A test switch panel shall be mounted on the inside of the main door. The test switch panel shall provide as a minimum the following:

a. AUTO/FLASH SWITCH. When in the flash position, power shall be maintained to the controller and the intersection shall be placed in flash. The controller shall not be stop timed when in flash. If required by the plans and specifications, an optional RC network shall be provided to give the controller an external start pulse when switch is returned to the auto position. This will force the controller to initiate the start-up sequence when exiting flash.

b. STOP TIME SWITCH. When applied, the controller shall be stop timed in the current interval.

c. CONTROL EQUIPMENT POWER ON/OFF. This switch shall control the controller, MMU, and cabinet power supply AC power.

2. Momentary test push buttons for all vehicle and pedestrian inputs to the controller are not required. The TS2 controllers to be provided with the cabinet assemblies shall provide vehicular and pedestrian call inputs from its keyboard while in the standard status display.

3. The police door switch panel shall contain the following:

    a. SIGNALS ON/OFF SWITCH. In the OFF position, power shall be removed from signal heads in the intersection. The controller shall continue to operate. When in the OFF position, the MMU shall not conflict or require reset.

    b. AUTO/FLASH SWITCH. In the flash position, power shall not be removed from the controller and stop time shall be applied. If required by the plans and specifications, an optional RC network shall be provided to give the controller an external start pulse when switch is returned to the auto position. This will force the controller to initiate the start-up sequence when exiting flash.

4. All toggle type switches shall be heavy duty and rated 15 amps minimum. Single- or double-pole switches may be provided, as required.

5. Any exposed terminals or switch solder points shall be covered with a nonflexible shield to prevent accidental contact.

6. All switch functions must be permanently and clearly labeled.

7. All wire routed to the police door-in-door and test switch push button panel shall be adequately protected against damage from repetitive opening and closing of the main door.

8. All test switch panel wiring shall be connected to the main panel via a 36-pin Burndy connector #SMS36R1.

9. All wiring from the main panel to the test switch panel shall be connected to the switch panel via a 24-pin Burndy connector #SMS24R1.

Auxiliary Devices:

1. Load Switches:

    Load switches shall be solid state and shall conform to the requirements of Section 6.2 of the NEMA TS2 Standard.

    Signal load switches shall have a minimum rating of 10 amperes at 120 VAC for an incandescent lamp load.

The front of the load switch shall be provided with at least three indicators to show, at minimum, the input signal from the controller to the load switch.

Load switches shall be dedicated per phase. The use of load switches for other partial phases is not acceptable.

The full complement of load switches shall be supplied by the Contractor with each new cabinet (plus 2 spare load switches to be left in each cabinet for future use by others) to allow for maximum phase utilization for which the cabinet is designed.

2. Flashers:

   Each flasher shall be solid state and shall conform to the requirements of section 6.3 of the NEMA TS2 Standard.

   Flashing of field circuits for the purpose of intersection flash shall be accomplished by a separate flasher.

   The flasher shall be rated at 15 amperes, double pole with a nominal flash rate of 60 FPM.

3. Flash Transfer Relays:

   All flash transfer relays shall meet the requirements of Section 6.4 of the NEMA TS2 Standard.

   The coil of the flash transfer relay must be de-energized for flash operation.

   The full complement of relays shall be supplied with each new cabinet to allow for maximum phase utilization for which the cabinet is designed.

4. Malfunction Management Units:

   Each new cabinet assembly shall be supplied with a new Malfunction Management Unit (MMU) as defined by the requirements of Section 4 of the NEMA TS2 Standard.

   MMU unit shall be Reno MMU2-1600GE with Ethernet capabilities. Each new MMU unit shall be provided, installed, and made operational by the Contractor.

5. Bus Interface Units:

All Bus Interface Units (BIUs) shall meet the requirements of Section 8 of the NEMA TS2 Standard.

The full complement of Econolite Control Products, Inc. Model 160-1003-502 Bus Interface Units shall be supplied with each new cabinet to allow for maximum phase and function utilization for which the cabinet is designed.

Each Bus Interface Unit shall include power on, transmit and valid data indicators. All indicators shall be LEDs.

6. Cabinet Power Supply:

The cabinet power supply shall meet the requirements of Section 5.3.5 of the NEMA TS2 Standard.

The cabinet power supply shall provide LED indicators for the line frequency, 12 VDC, 12 VAC, and 24 VDC outputs.

The cabinet power supply shall provide (on the front panel) jack plugs for access to the +24 VDC for test purposes.

One Econolite Control Products, Inc. Model 1084-003 cabinet power supply shall be supplied with each new cabinet assembly and shall be wired directly to the Power Bus Assembly via a Burndy 12-pos #SMS12PDH1 connector.

7. Controller Unit:

Each new cabinet assembly shall be supplied with one (1) new signal controller. Each new controller unit shall be a new Econolite Cobalt TS2 Type 1 shelf mount controller with data key, Ethernet connection and EOS software.

Each new controller shall be manufacturer's most current model.

8. Fiber Connectivity:

All required Ethernet ports shall be provided to connect each traffic signal controller cabinet, controller unit, conflict monitor, video vehicular detection system to the City’s existing fiberoptic

trunk line and system, so that the City has full capability to view and monitor signal system cameras and components over their trunk fiber line at offsite facilities (such as at City Hall).

a The connection shall support 10/100/1000 Mbps Ethernet communication.

b The communications interface panel shall proxy all network requests that arrive on the fiber connection to avoid unwanted network traffic from reaching the broadband-over-power network between the communications interface panel and each traffic signal system component.

c All communications shall be to a single IP address.

d The system shall be able to provide Full HD quality video through its WAN port for use in streaming video back to any remote location.

e The maintenance port shall support DHCP to automatically assign an IP address to the user's computer.

f The communications interface panel shall provide the required connections to communicate to the traffic controller through the cabinet.

g The traffic controller connection shall support a TS2 Type 1 compatible SDLC interface.

h The traffic controller connector shall be a 15-pin female metal shell D sub-miniature type connector to support a standard NEMA TS2 or TEES SDLC cable.

i The traffic controller connection shall support a protocol interface to SDLC-capable traffic controllers (NEMA or TEES).

j The traffic controller connection shall support the NEMA TS2 SDLC protocol to include up to 64 detector outputs and 32 inputs.

k The traffic controller connection shall be able to connect to a wired input/output card, which supports wired I/O in cabinets without a SDLC-capable controller.

l It shall be possible to connect and use both SDLC communications and communication to the wired input/output card simultaneously.

m Each communications interface panel shall include two USB 2.0 ports.

n If a communications interface panel fails to start and run due to a software or operating system failure, it shall be possible to reinstall all system and application software from a USB memory stick without necessitating removal of the communications interface panel from the cabinet.

o Video recording of up to 2 cameras, or of 1 camera plus the quad view simultaneously, shall commence automatically when an appropriately configured USB memory stick is installed in either USB port.

p The Contractor is responsible for providing all required materials and electrical equipment within each new traffic signal controller cabinet (and also to the adjacent battery back-up service cabinet) and completing all required connections needed to make the fiberoptic connection between each cabinet and the City's remote facilities (via the existing City fiberoptic trunk cable) fully operational so that City has full capabilities to access each controller cabinet component listed above, all video and surveillance cameras, and the

battery back-up service equipment and view live video streaming from both the video detection system cameras and any future PTZ cameras (incidental).

Documentation:

Cabinet Intersection Wiring Diagrams. At the time of the new cabinet delivery, furnish with each new cabinet two sets of printed 11x17-inch cabinet intersection wiring diagrams and one set of .dwg CAD files for the cabinet.

Acceptance Testing:

The City reserves the right to perform its own tests on the traffic signal cabinet at any time using the owner's equipment. Should a traffic signal cabinet be found to not meet the requirements of these specifications, the vendor shall be responsible for all repairs / revisions as necessary to bring the traffic signal cabinet into conformance with these specifications within two (2) working days of written notification and at no additional cost to the Owner.

In the occurrence of a traffic signal cabinet failing the acceptance testing as defined in these specifications, the Owner will provide written notification of defect. The vendor has 24 hours to correct the defect and pass additional acceptance testing. Sending an email, hand completion of a defect notice and handing it to the vendor's field technician, or other means of written correspondence constitutes notification.

Manufacturer/Vendor Testing, Warranty and Support:

1. Testing:

   Each new controller and cabinet assembly shall be tested as a complete entity under signal load.

   Each new assembly shall be delivered with a signed document detailing the cabinet final tests performed.

   Each new cabinet shall be assembled and tested by the controller manufacturer or authorized local distributor to ensure proper component integration and operation.

2. Warranty and Support:

   New controllers and Malfunction Management Units shall be warranted by the manufacturer against mechanical and electrical defects for a period of **two (2) years** from date of shipment. The manufacturer's warranty shall be supplied in writing with the cabinet and controller. Second party extended warranties are not acceptable.

   Each new cabinet assembly and all other new components shall be warranted for a period of one year from date of shipment.

   The warranty shall provide for full repair or replacement, as determined by the Owner, of the failed item or cabinet system, including removal and installation, at no cost to the Owner. Vendor warranty service response times depend on whether or not the Owner has spare inventory of the failed item. In the event that there is an issue with either the cabinet itself, or a component for which the Owner does not maintain an inventory, response times after notification by the Owner are as follows:

   - 4 hours to have qualified service personnel on site at the intersection
   - 12 hours to have the signal safely operational, including all phases and enough detection to run the intersection phasing.
   - 2 business days to restore the signal to full original operations

   The vendor is responsible for further evaluation and diagnosis of the problem and determination of the specific cause of the problem.

   In the event of a failure of an item under warranty that the Owner has spare equipment in stock, the vendor will be notified in writing of the failure and will be responsible for all costs associated with shipping the warrantied item (from) and its replacement item (to) the Owner. The replacement items should arrive at the Owner within five (5) working days of notification.

   The Owner reserves the right to make repairs to malfunctioning cabinet and equipment that are under warranty, up to and including complete replacement of the cabinet, when in the Owner’s determination the safety of the traveling public is best served. Such repair work will not in any way void or limit the vendor’s warranty and guarantee specified above. The Owner will notify the vendor in writing of the repair. The vendor shall within five business days after notification replace, at Owner facilities, all cabinets, equipment, and supplies

used by the Owner in making repairs, with new parts meeting the requirements of this specification.

Vendor shall be available by phone or email within one (1) hour during business hours or eight (8) hours outside of business hours, 24 hours per day, 365 days per year.

Vendor shall be able to provide assistance for all cabinet-related malfunctions including, but not limited to, cabinet construction, cabinet wiring, and interaction between cabinet and internal components including signal controller, MMU, vehicle detection system, or pedestrian detection system.

Miscellaneous:

Provide and install all required new wiring, harnesses, etc. needed to make the intersection EVP detectors and indicator lights operational to the satisfaction of the Engineer.

Install, complete all cabinet programming and pluggable installation work, and turn on and make operational each traffic signal cabinet complete with actuated controller unit and all required signal control equipment described above; provide and install all additional materials required to provide a complete operating traffic signal cabinet installation (which includes, but are not limited to: bonding and grounding materials; electrical equipment, harnesses, and panels; etc.). at each intersection as applicable; install all pluggables and make all field lead connections in the traffic signal cabinet as directed by the Engineer, and provide all cabinet wiring diagrams, to make each new traffic control signal system operational.

The Contractor is responsible for all labor, materials, and controller cabinet support (**assume that at least one full day of support from cabinet supplier is included in the bid for the work at each signal system**) necessary to make the controller and cabinet operational to the satisfaction of the Engineer.

The Contractor is responsible for all testing of the conflict monitor for each new signal system. The Engineer must be present during testing, so that equipment operation can be verified at that time. The Engineer may need to coordinate having City police on-site at that time (to control traffic as needed), so provide at least 48-hour notice to the Engineer prior to completing testing work on the conflict monitor at each signal system.

The Engineer will provide the timing information for each controller unit to the Contractor, and the Contractor is responsible for providing all services necessary to have these timings entered into each controller unit to allow for the new signal systems to be placed into operation by the Contractor, to the satisfaction of the Engineer.

Contractor responsibilities as part of making each new controller and cabinet operational also includes the following work items:

- Providing and installing any necessary panels, jumpers, or harnesses in the controller cabinet to make the EVP system operational;
- Testing the operation of the EVP system in the presence of City personnel prior to acceptance of this work by the City;

- Completing all connections and jumper wiring in the controller cabinet;
- Verifying that all signal equipment is operational to the satisfaction of the Engineer;
- Completing all labeling of cables at all terminal strips as directed by the Engineer, and
- Labeling all applicable cables, conductors, racks, etc. as necessary using a permanent labeling device (handwriting of labels is NOT acceptable).

Providing, installing, and making operational a new traffic signal cabinet complete with all controller cabinet equipment as described above at each new permanent signal system will be included as part of the pay item for Item No. 2565 (TRAFFIC CONTROL SIGNAL SYSTEMS A and C), and for Item No. 2565 (REVISE SIGNAL SYSTEM B), with no direct compensation being made therefore.

d. Replace Paragraph SS-2.5 L Installation of City Provided Materials, previously modified in Addendum 2, with the following:
   i. Install the CONTRACTOR provided traffic control signal cabinets each complete with actuated controller unit and the required traffic control signal equipment.

   Provide and install additional materials and equipment for a complete operating traffic control signal cabinet installation, including:

   (1) A cabinet concrete foundation using Contractor provided anchor rods, nuts, and washers.
   (2) Bonding and grounding materials and connections
   (3) Terminating field conductor connections in each traffic control signal cabinet as directed by the Engineer to make each traffic control signal system fully operational

e. For Sections SS-2.6 B and SS-2.6 C, delete “and installing City furnished materials …” from each sentence and section.

8. SS-3, (2565) EMERGENCY VEHICLE PREEMPTION (EVP) SYSTEMS, previously modified in Addendum 2, is hereby revised as follows:
   a. The second paragraph of SS-3.2 A Contractor Provided Equipment is replaced with the following:
      i. Phase selectors (or other EVP equipment to be installed in the traffic control signal cabinet) will be installed in the CONTRACTOR provided controller cabinets by the Contractor.

b. The third paragraph of SS-3.2 A Contractor Provided Equipment is replaced with the following:
    i. Contractor provided equipment for traffic control signal cabinets includes EVP phase selectors, APS central control units, and Video image processors. Equipment shall be integrated into the CONTRACTOR provided traffic control signal cabinets by the Contractor.

9. SS-4, (2565) TRAFFIC CONTROL INTERCONNECT, previously modified in Addendum 2, is hereby revised as follows:
    a. The first paragraph of SS-4.2 (8) is replaced with the following:
        ii. Provide and install necessary miscellaneous equipment to make a complete and operating installation in accordance with the Plans and Special Provisions and include the following items in each new CONTRACTOR provided controller cabinet:

10. SZ-2 (2511) LANDSCAPE BOULDERS is hereby revised as follows:
    a. The first sentence of SZ-2.1 DESCRIPTION is replaced with the following:
        iii. This Work consists of transporting and placing boulders as indicated in the Drawings in the location and orientation directed by the Engineer.
    b. The following paragraph is added to SZ-2.1 DESCRIPTION:
        iv. This Work will also consist of loading, transporting, and placing up to two landscape boulders as indicated in the Drawings from the City of Duluth's Quarry Park: https://maps.app.goo.gl/4JzfisWcVX2Z3fFX6
    c. SZ-2.4 METHOD OF MEASUREMENT is replaced with the following:
        v. Measurement for hauling boulders will be made by the number of hours of necessary traveling time to and from the sites listed in SZ-2.1 to the project. Measurement of boulders installed will be made by each number of landscape boulders installed.
    d. The first paragraph of SZ-2.5 BASIS OF PAYMENT is replaced with the following:
        vi. The Contract Unit Price for Landscape Boulders is compensation in full for equipment, materials, and labor required to complete the Work. No payment will be made for any stockpiling, hauling, or material handling required due to the Contractor's operations.
    e. The following line is added to the schedule in SZ-2.5 BASIS OF PAYMENT:

m No.	**m**	**it**
23.610	wboy Truck	ur
11.602	ndscape Boulders	ch

BIDDER QUESTIONS AND ANSWERS

1. Is there a specification for the material requirement for the vapor barrier bid item?

SP-69 did not specify material thickness as the available products vary in thickness. Contractors will need to work with suppliers to ensure material will be able to hold up to backfilling operations. 20 mil would be considered the minimum thickness.

2. For the water vault removal bid item (9 Each) do you have any more information? The sizes, type of material construct with and what is inside the vaults? Are the vaults water infrastructure already abandoned on the inside etc.?

The water vaults are manholes containing valves. The valves are active and are being replaced as part of this project. The valves appear to have generally been installed approximately 80-100 years ago with all vaults constructed around the same time period. The City checked a random selection of the water vaults and a picture of the interior of one of them is included as part of this addendum, they all appear to be approximately 4' in diameter, made of brick or block, and approximately 8' deep.

3. In Phase 0 – is M&H Gas Station service in the proposed watermain stationing. With the existing main and proposed main in the same alignment and M&H within the replacement stationing as shown on plan sheet 212 it is difficult to determine where the service to the building is located.

The existing service for the M&H Gas Station appears to be at approximately STA 115+75 in the City's GIS system which is outside of the limits of the watermain replacement. There is not a system valve between the M&H Gas Station service and the proposed connection point. The temporary water system phasing plan has been updated to reflect the temporary water needs for the M&H Gas Station.

4. Is the existing CI watermain in phases 2 and 3 looped to allow water supply from either direction, east / west, during the construction on the proposed HDPE watermain.

The existing watermain is connected to the main on Michigan Street and 1st Street at 20th Avenue W, 21st Avenue W, 24th Avenue W, 28th Avenue W, and 29th Avenue W. It is also connected only to Michigan Street at 25th Avenue W, 26th Avenue W, and 30th Avenue W (eventually, through Helm Street and back up 29th Avenue W). The main continues past Carlton Street on W Superior Stret before connecting with the main on Grand Avenue.

5. How does the profile of the existing CI watermain compare to that of the proposed HDPE watermain. With the existing watermain on the south side of West Superior Street, all existing services that feed businesses to the north during Phases 0, 2, & 3 will potentially conflict with the new watermain. Considering SP-65.3 C. 2 states that all properties will have continuous access to water through the existing watermain, this might be difficult to achieve depending on what the existing service size is and the pipe material.

The existing water main depth was checked in several water manholes along the length of the project and found to be consistently around 7' to the top of pipe. A profile of the existing watermain and proposed watermain is included as an exhibit to Addendum 3. The locations of the 6" or greater services have been identified. The Temporary Water Service Special Provisions have also been updated to include a pay item for Temporary Water services by the Each.

6. For Phases 0, 2 and 3, are there enough existing valves to isolate sections of the construction alignment at cross streets without disrupting service to the existing businesses as shown on plan sheets 201-212 during construction of the proposed cross street watermains without the use of temporary water service.

There are system valves on the side streets prior to the next intersection on 29th Avenue W, 21st Avenue W, S 24th Avenue W, 25th Avenue W, 28th Avenue W, and S 29th Avenue W (looped to 30th Avenue W).

7. For Phases 0, 2 and 3, are there enough existing valves to isolate sections of the existing watermain between blocks on Superior Street without disrupting service to the existing businesses as shown on plan sheets 183-200. As noted above there is a potential for utility conflicts between the existing watermain segments at cross streets and the proposed watermain along the West Superior Street corridor. Since the cross streets tie into the existing CI watermain they would conflict with installation of the new main and disrupt continuous service through the existing main again as noted in SP-65.3 C. 2. This would be true for both cross-street businesses that are supplied by the existing main and business on the West Superior Street corridor. Without adequate valving there is no way to isolate and feed the previous block when installing the new cross street watermains as they will pass through the existing CI watermain ultimately taking it out of service.

There are system valves on the existing Superior Street main at 20th Avenue W, 21st Avenue W, 22nd Avenue W, 23rd Avenue W, 24th Avenue W, 25th Avenue W, 26th Avenue W, 27th Avenue W, 28th Avenue W, 29th Avenue W, 20th Avenue W, and Carlton Street. The system valve at Carlton Street is on the east side of the intersection and the next valve is at 24th Avenue W.

8. Are there any plans for the City of Duluth crews to install additional valves particularly in Phases 2 and 3 during the 2026 construction season to support use of the existing CI watermain as a temporary system.

The City does not have any plans to install additional valves to the existing system.

9. If the intent is to rely on the existing watermain for temporary service in Phases 0, 2, and 3, can a detailed sequencing narrative be provided outlining how continuous service will be maintained.

The City does not intend to provide a detailed sequencing narrative.

10. Would the city be open to detailing the exact color needed for the Finish 2 & 3 trails/bands. SEH specs "Black Ice" and "Woodland Bark" from the Cemstone color sheet. They note the color references are for design intent/reference only and that the final color shall be approved by the test panels.

It appears on the Cemstone site, the two colors from the spec require a large dosage of either powder or liquid integral coloring. Black Ice being 5lbs per 100 lb of cementitious material and the Woodland Bark being 4lbs per 100 lb of cementitious material. If the spec was amended to "require" these colors to be used, we could all know to bid the exact same colors.

Dosing and color will depend upon the concrete supplier's color manufacturer dosage instructions and available colors. Colors are expected to be dark and the City anticipates that this will require at least 4-5% of the cementitious material to be added as color. The black (finish 2) is particularly important to be dark because it is being used to aid individuals with low vision in determining where the sidewalk and bike path limits are.

11. As discussed at the prebid, we would like to be able to visit the vault infill and foundation repair areas. I think it would be good to see at least 2 of each as long as they are in similar nature and you have pictures of all of them for us to reference. If not, we should probably plan to visit them all so we can give an accurate price.

The City is attaching the structural observation reports prepared by MBJ during design for the four foundations that are expected to need building foundation repair. The City was unable to access any vaults during design, the inspections noted that the owner believed one was under the sidewalk of there was an infill area of the foundation wall that likely covered an old vault. The City will not be arranging a visit to the foundation repair or vault locations.

12. There was a question asked about replacement of existing clay tile sanitary sewer as part of the new watermain installation. If a pay item will be added to replace the existing sanitary with PVC and considering some of the cross-street sewer mains are large diameter, can you provide the flow data for these lines so we understand what will be required to bypass the sewer during replacement of the main.

The plans show a few locations with VCP lines in the profile, however reviewing our records all of them were lined in 2015 except for the eastern most line by the Duluth Gospel Tabernacle that should be below the storm crossing.

13. Have these cross street sanitary sewers been lined?

All cross street sanitary sewers were lined.

14. For the sanitary sewer service connections called out on Chart Z (plan sheet 63), are the existing sanitary sewer mains PVC lined. If so, would a LMK saddle be an acceptable alternative to a cut in sewer wye? This would maintain the integrity of the sewer main vs cutting in a wye with Fernco connections.

All of the existing services to be connected to on Chart Z have been lined except for the one at STA 112+60.5 on W Michigan Street. The City will not allow a wye on a CIPP lined sewer and will require an epoxy saddle directly to the CIPP liner. See City Standard Detail San-2A and Table 2503-2: Service Lateral Connections in City Standard 2503 Pipe Sewers – Gravity for allowed sewer service connections. The City will not accept a LMK saddle as an approved equal to the specified Predco saddle by Innovative Sewer Connections without a product submittal.

15. Can LMK saddles be used for the sanitary sewer wyes? If not, we will need sanitary sewage flow rates in the areas of the larger sanitary sewer wyes (Ie. the 12" 15" and 18" wyes).

LMK saddles are not the specified product and will not be allowed without a product submittal for review by the Chief Engineer of Utilities.

16. Watermain offsets – For the alignments that are required to go over or under existing utilities or structures such as indicated on plan sheet 188 (Miller Creek Tunnel) would the City of Duluth allow a combination of DIP pipe and MJ fittings in lieu of HDPE pipe and fabricated bends. Another vertical alignment shift is shown on sheet 191 where the proposed watermain crosses under the cross street existing utilities on N 23rd Ave W.

The City will not consider alternates to the HDPE and fabricated bends for the watermain offsets.

17. Response action plans 181 – 182 – Note 4 on these sheets state that contractor's employees must carry HAZWOPER certifications to handle the contaminated soils. Typically, with contaminated soils we have not had to carry these credentials on City of State projects. Please verify this will be a requirement of this contract.

The Contractor is not required to have HAZWOPER certifications to handle the contaminated soils. The Environmental Consultant is required to have this certification.

18. SP-47 (Exploratory Pit) – 36 Each – what are the required dimensions of the excavation associated with these pits?

There is no required dimensions for the test pits. They need to be of sufficient size to collect soils representative of either the Response Action Area depths or a lesser depth if the planned construction is not as deep as the RAP.

19. We believe the detail on Sheet 91 is labeled incorrectly for how it will be paid. Can you confirm?

The detail on Sheet 91 is labeled incorrectly and has been updated with this addendum.

20. Is the intention of SP-79 (2531) TRUNCATED DOMES to be a painted gray?

The City standard for truncated domes is to be unpainted cast iron gray. No colored domes are shown in the drawings. The City believes that there is sufficient contrast with the proposed black concrete surface to meet accessibility needs but will negotiate a change order in the event that is not the case and colored domes are needed.

21. Is the only permit we need to secure and pay for the MPCA stormwater permit? We just want to confirm that we are not including any plumbing, grading or other associated City of Duluth permits in our bid since it is a City of Duluth Project?

SP-22 (1702) PERMITS, LICENSES, AND TAXES shows what permits are required for the project. The City requires the following permits: 1) MS4 Erosion and Sediment Control Permit; 2) taking water from City hydrants; 3) blasting operations; and 4) plumbing permits for Lead Service Line Replacement work (SP-22.3). The City's Building Department will issue interior and exterior plumbing permits for a $1 fee.

PRE-BID MEETING QUESTIONS AND ANSWERS

1. Can the city elaborate on what kind of traffic will be allowed to use the Piedmont intersection during the 21-day work window referenced in the specs?

The contractor can have the intersection closed to through traffic but will need to allow the Port Authority and local traffic to 16th Avenue W to continue to use the intersection during that window. The DTA

does not expect to route buses through this intersection until W Superior Street is open to Michigan Street

2. Why is there a larger liquidated damages amount for work in the Piedmont intersection compared to other intersections and milestones?

The larger amount is necessary since delays will create significant issues for the Port Authority.

3. Will the Landscape Rocks be selected by others?

Yes, the decorative rocks will be selected, provided, and loaded by others. The City will also direct the contractor on how to orient the rocks and where to place them. The Contractor will need to transport the rocks to the site and stockpile them until they can be placed.

4. Would the City consider changing how they pay for transporting rocks to a per hour or per mile price? This might allow contractors to bid on an even playing field with some ambiguity in where the rocks are coming from (multiple pits).

The City and SEH will review the plan to pay for rocks and see if additional information can be provided. No change made during the pre-bid meeting but has been modified as part of this addendum.

5. Is there an expected standard size for the Exploratory Test Pits?

SEH to see if there is a size in the special provisions and respond via addendum.

See Addendum 2 for additional info on how this work will be paid for.

6. Do water services require a poly wrap like the proposed water main?

Services do not require wrapping but require a clay dam in the service trench for fumes.

7. Can steel or plastic panels be used for temporary pedestrian walks?

Expect an addendum that expands which materials can be used for pedestrian guardrails.

8. Where is the portable precast concrete barrier to be used on the project? Is it for pedestrians?

SEH and City to verify where barrier is shown and respond via addendum.

9. How is temp water being handled on the project?

Temp water was addressed via Addendum 2.

10. What are the incidental monuments called out on each block?

These are street survey monuments

11. For the traffic signals on 27th Ave and Piedmont Ave, can the completion date get revised to a more realistic timeline? The required equipment likely won't arrive until December.

The City will change the substantial completion at these locations via Addendum. The change allows for a later completion date for the signal but will require that the intersection be maintained as an all-way stop and that all components (anchor bolts, conduit stubs, etc.) that are installed earlier in the project are protected.

12. When describing the structure excavation for the retaining wall, the structure excavation is crossed out. Can you explain why?

See Addendum 2.

13. Can you elaborate on how you will pay for dewatering contaminated water?

See Addendum 2 for clarification on dewatering contaminated water vs clean water.

14. It looks like the Remove Bituminous item was used instead of the Remove Pavement item. However, since there is concrete under the bituminous, that also needs to be included in removals and there is not enough Remove Concrete pay item to account for this. Will this be addressed?

Expect an addendum that will revise how the pavement removal is paid for. It will likely include the use of the Remove Pavement bid item.

15. How would you like contractors to account for damage to old clay sewer pipe that could get damaged when installing utilities? It is likely some of the existing sewer line will need to be replaced.

The City and SEH will review potential options to pay for this separately from existing bid items. Expect a resolution via a future addendum.

16. Are the Class 5 and Excavation for the sidewalks included in the listed quantities?

Yes, the quantities in the plans account for the sidewalk Class 5 and excavation.

17. How long will the contractor be expected to mow the planted grass?

See Addendum 1 for an answer to this question.

18. Would it be possible to schedule an in-person visit for vaults so contractors can see them in person prior to bidding?

SEH and the City will attempt to set up a meeting if Contractors have specific vaults they would like to view. In-person visits would be as a group with details issued as an addendum.

19. Is there a discrepancy in vault fill requirements?

This discrepancy is addressed in Addendum 2.

20. Can the fiberoptic be dug in instead of drilled in?

Yes, as long it does not impact other portions of the work.

21. What is the intended purpose and location of the 1000 LF of PPCB and the 11000 LF of PPCB relocate in the plans?

This question will be answered in a future addendum.

Please acknowledge receipt of this Addendum by checking the acknowledgement box within the solicitation at www.bidexpress.com.

Posted: April 1, 2026

STATEMENT OF ESTIMATED QUANTITIES

NO.	NOTE	TAB	SHEET NO.	ITEM NO.	ITEM DESCRIPTION		UNIT	S.P. 118-109-021 PARTICIPATING (ROADWAY) ESTIMATED QUANTITIES	PARTICIPATING (STORM) ESTIMATED QUANTITIES	PARTICIPATING (GREEN INFRASTRUCTURE) ESTIMATED QUANTITIES	PARTICIPATING (LANDSCAPING) ESTIMATED QUANTITIES	PARTICIPATING (CITY) ESTIMATED QUANTITIES	NON-PARTICIPATING (CITY) ESTIMATED QUANTITIES	COMBINED PROJECT TOTAL ESTIMATED QUANTITIES
59	8		177	2104.601	REMOVE CONCRETE STRUCTURE		LUMP SUM	1						1
60	14		167	2104.601	SALVAGE MISCELLANEOUS STRUCTURES		LUMP SUM	1						1
61	6			2104.601	HAUL SALVAGED MATERIAL		LUMP SUM						1	1
62		L	40	2104.602	REMOVE WATER VAULT		EACH					9		9
63		A	14,15	2104.602	REMOVE PARKING METER POST		EACH	37						37
64		D	27	2104.618	REMOVE VAULT ROOF		SQ FT	5340						5340
65		D	27	2104.618	REMOVE VAULT ACCESS HATCH		SQ FT	128						128
66		LA1	600	2105.607	STRUCTURAL SOIL BORROW (CV)		CU YD				636			636
67			13	2106.507	COMMON EMBANKMENT (CV)		CU YD	94						94
68			13	2106.507	EXCAVATION - COMMON	(P)	CU YD	27805						27805
69			13	2106.507	EXCAVATION - ROCK		CU YD	100						100
70		C	25,26	2106.507	SELECT GRANULAR EMBANKMENT MOD 7% (CV)	(P)	CU YD	23858						23858
71				2106.601	DEWATERING		LUMP SUM	1						1
72	9			2106.602	EXPLORATORY PIT		EACH	36						36
73			13	2106.607	EXCAVATION SPECIAL		CU YD	14972						14972
74				2106.609	HAUL AND DISPOSE OF CONTAMINATED MATERIAL		TON	14170						14170
75		C	25,26	2108.504	GEOTEXTILE FABRIC TYPE 7		SQ YD	50177						50177
76		C	25,26	2112.519	SUBGRADE PREPARATION		ROAD STA	113						113
77				2123.610	LOW BOY 2		HOUR	160						160
78		C, E, F	25,26,28-30	2211.507	AGGREGATE BASE (CV) CLASS 5	(P)	CU YD	18716						18716
79		B	16-24	2232.504	MILL BITUMINOUS SURFACE (2.0")		SQ YD	180						180
80		G	31,32,33	2301.503	INTEGRANT CURB DESIGN B6		LIN FT	230						230
81		G	31,32,33	2301.503	INTEGRANT CURB DESIGN S5		LIN FT	24						24
82		E	28,29	2301.504	CONCRETE PAVEMENT 8.0"		SQ YD	436						436
83			89	2301.508	SUPPLEMENTAL REINF BARS (EPOXY COATED)		POUND	6870						6870
84	1	C	25,26	2357.506	BITUMINOUS MATERIAL FOR TACK COAT		GAL	4591						4591
85	2	C	25,26	2360.509	TYPE SP 9.5 WEARING COURSE MIXTURE (3,C)		TON	7148						7148
86	2	C	25,26	2360.509	TYPE SP 12.5 NON WEARING COURSE MIXTURE (3,B)		TON	4937						4937
87		RW	453	2401.507	STRUCTURAL CONCRETE (1G52)		CU YD	20						20
88		RW	453	2401.507	STRUCTURAL CONCRETE (3G52)		CU YD	56						56
89		RW	453	2401.508	REINFORCEMENT BARS		POUND	1270						1270
90		RW	453	2401.508	REINFORCEMENT BARS (EPOXY COATED)		POUND	5610						5610
91	5	B1	100	2401.604	REPAIR BUILDING FOUNDATION		SQ YD	135						135
92		D	27	2401.604	VAULT INFILL WALL 1		SQ YD	479						479
93			216	2411.502	CONCRETE STAIRWAY		EACH	1						1
94	3		88	2411.601	REPAIR BRICK ARCH PIPE		LUMP SUM	1						1
95				2411.602	BUS SHELTER FOUNDATION		EACH	4						4
96			216	2411.603	CONCRETE RETAINING WALL		LIN FT	64						64
97		D	27	2411.607	CONTROL DENSITY HYDRAULIC FILL		CU YD	1779						1779
98		R,S	47-50	2451.602	ANTI-SEEP COLLAR		EACH					18		18
99		RW	453	2475.503	ORNAMENTAL METAL RAILING		LIN FT	51						51
100		D	27	2481.618	WATERPROOF LINER SPECIAL 1		SQ FT	5139						5139
101	7		78	2481.618	WATERPROOF LINER SPECIAL 2		SQ FT			1456				1456
102		V	52-56	2502.503	4" PERF PVC PIPE DRAIN		LIN FT	19810						19810
103		U	51	2502.503	6" PERF TP PIPE DRAIN		LIN FT			1315				1315
104		RW	453	2502.601	DRAINAGE SYSTEM		LUMP SUM	1						1
105	10	W	57-61	2503.503	12" RC PIPE SEWER DESIGN 3006 CLASS V		LIN FT		5322					5322
106	10	W	57-61	2503.503	15" RC PIPE SEWER DESIGN 3006 CLASS V		LIN FT		1923					1923
107	10	W	57-61	2503.503	18" RC PIPE SEWER DESIGN 3006 CLASS V		LIN FT		1206					1206
108	10	W	57-61	2503.503	21" RC PIPE SEWER DESIGN 3006 CLASS V		LIN FT		721					721
109	10	W	57-61	2503.503	24" RC PIPE SEWER DESIGN 3006 CLASS IV		LIN FT		579					579
110	10	W	57-61	2503.503	27" RC PIPE SEWER DESIGN 3006 CLASS IV		LIN FT		137					137
111	10	W	57-61	2503.503	30" RC PIPE SEWER DESIGN 3006 CLASS IV		LIN FT		504					504
112	10	W	57-61	2503.503	36" RC PIPE SEWER DESIGN 3006 CLASS IV		LIN FT		861					861
113	10	W	57-61	2503.503	48" RC PIPE SEWER DESIGN 3006 CLASS IV		LIN FT		271					271
114	10	W	57-61	2503.503	28" SPAN RC PIPE-ARCH SEWER CLASS IIA		LIN FT		241					241
115	10	W	57-61	2503.503	44" SPAN RC PIPE-ARCH SEWER CLASS IIA		LIN FT		14					14
116	11	V	52-56	2503.602	CONNECT TO EXISTING STORM SEWER		EACH		35					35
117	4,11	X	62	2503.602	CONNECT TO EXISTING ROOF DRAIN LEADER		EACH	40						40
118	11,12	Z	63	2503.602	CONNECT SEWER SERVICE		EACH					10		10
119	13	Z	63	2503.602	SANITARY TRACER BOX		EACH					10		10
120		Z	63	2503.602	8"X6" PVC WYE		EACH					1		1

(P) = PLANNED QUANTITY

NOTES:

1	APPLIED AT A RATE OF 0.06 GALLONS PER SQ. YD.
2	CALCULATED AT A RATE OF 120 LBS/(SY*IN).
3	SHALL INCLUDE THE FORMING AND CONCRETE MASONRY, AS NECESSARY, FOR INSTALLATION.
4	INCLUDES AN ADDITIONAL SIX ROOF DRAIN CONNECTIONS FOR UNKNOWN LOCATIONS.
5	FOR BUILDINGS AT 1920, 1908, 1906, AND 1904 W SUPERIOR ST.
6	INCLUDES SALVAGED SIGNAL EQUIPMENT.
7	TO BE USED UNDER STORMWATER TREATMENT AREAS.
8	CANTILEVERED WALKWAY BETWEEN 1604 AND 1610 W. SUPERIOR STREET. INCLUDES REMOVAL OF J-BARRIER, FOUNDATION WALL, AND CONCRETE SUPPORT COLUMNS.
9	FOR VERIFICATION OF EXCAVATION SPECIAL LOCATIONS. LOCATIONS TO BE COORDINATED WITH ENGINEER.
10	TRACER WIRE INCIDENTAL. BLUE FOR WATER, GREEN FOR SANITARY AND STORM.
11	INCLUDES ALL NECESSARY PIPE AND FITTINGS TO MAKE CONNECTION. CONTRACTOR SHALL VERIFY SIZE AND MATERIAL PRIOR TO CONNECTION.
12	RUBBER COUPLING ADAPTOR WITH STAINLESS STEEL BANDS FOR WATER TIGHT CONNECTION.
13	LITE DUTY BOX IN GRASSY AREAS, ROADWAY BOX IN ROADWAY AREAS, CONCRETE/DRIVEWAY BOX IN BITUMINOUS AND CONCRETE DRIVEWAY AREAS. BLUE TOP FOR WATER, GREEN TOP FOR SANITARY AND STORM. FIRE HYDRANT TRACER WIRE KIT.
14	INCLUDES 2 CONCRETE LIGHT PROTECTOR STRUCTURES.

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SEH Project DULUT 171078
Drawn By JTB
Designed By REK
Checked By DRH

Rev.#	Revision Issue Description	Date
2	ADDENDUM #3.	03/31/26
1	ADDENDUM #1.	03/09/26

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.
ROSE KOPECKY, PE
DATE 01-16-2026 LICENSE NO. 56628

WEST SUPERIOR STREET RECONSTRUCTION
DULUTH, MINNESOTA S.P. 118-109-021/CITY PROJECT NO. 2104

STATEMENT OF ESTIMATED QUANTITIES

STATEMENT OF ESTIMATED QUANTITIES

NO.	NOTE	TAB	SHEET NO.	ITEM NO.	ITEM DESCRIPTION	UNIT	S.P. 118-109-021 PARTICIPATING (ROADWAY) ESTIMATED QUANTITIES	S.P. 118-109-021 PARTICIPATING (STORM) ESTIMATED QUANTITIES	S.P. 118-109-021 PARTICIPATING (GREEN INFRASTRUCTURE) ESTIMATED QUANTITIES	S.P. 118-109-021 PARTICIPATING (LANDSCAPING) ESTIMATED QUANTITIES	S.P. 118-109-021 PARTICIPATING (CITY) ESTIMATED QUANTITIES	NON-PARTICIPATING (CITY) ESTIMATED QUANTITIES	COMBINED PROJECT TOTAL ESTIMATED QUANTITIES
121		Z	63	2503.602	12"X6" PVC WYE	EACH					1		1
122		Z	63	2503.602	15"X6" PVC WYE	EACH					4		4
123		Z	63	2503.602	18"X6" PVC WYE	EACH					2		2
124	3,4	X	62	2503.603	6" HDPE PIPE SEWER	LIN FT	899						899
125	4	X	62	2503.603	8" HDPE PIPE SEWER	LIN FT	63						63
126	4	X	62	2503.603	10" HDPE PIPE SEWER	LIN FT	28						28
127	4	X	62	2503.603	12" HDPE PIPE SEWER	LIN FT	81						81
128	4	Z	63	2503.603	6" PVC SANITARY SERVICE PIPE	LIN FT					314		314
129				2504.601	TEMPORARY WATER SERVICE	LUMP SUM					1		1
130				2504.602	TEMPORARY WATER SERVICE ⚠1	EACH					7		7
131	5	R, S	47-50	2504.602	RECONNECT WATER SERVICE	EACH					85		85
132	6	M	41,42	2504.602	HYDRANT ASSEMBLY	EACH					15		15
133	6	M	41,42	2504.602	ALTERNATE HYDRANT ASSEMBLY	EACH					4		4
134	5	P	44-46	2504.602	CONNECT TO EXISTING WATER MAIN	EACH					23		23
135		M	41,42	2504.602	6" INSERTION VALVE	EACH					1		1
136		M	41,42	2504.602	20" INSERTION VALVE	EACH					1		1
137		M, S	41,42,49,50	2504.602	6" GATE VALVE AND BOX	EACH					51		51
138		M, S	41,42,49,50	2504.602	8" GATE VALVE AND BOX	EACH					12		12
139		M	41,42	2504.602	10" GATE VALVE AND BOX	EACH					1		1
140		M	41,42	2504.602	12" GATE VALVE AND BOX	EACH					4		4
141		M	41,42	2504.602	16" BUTTERFLY VALVE AND BOX	EACH					1		1
142		M	41,42	2504.602	20" BUTTERFLY VALVE AND BOX	EACH					23		23
143		M	41,42	2504.602	24" BUTTERFLY VALVE AND BOX	EACH					4		4
144		R	47,48	2504.602	6"X2" TAPPING TEE W/ELECTROFUSION SADDLE	EACH					1		1
145		R	47,48	2504.602	8"X2" TAPPING TEE W/ELECTROFUSION SADDLE	EACH					2		2
146		S	49,50	2504.602	8"X6" TAPPING TEE W/ELECTROFUSION SADDLE	EACH					3		3
147		R	47,48	2504.602	20"X2" TAPPING TEE W/ELECTROFUSION SADDLE	EACH					21		21
148		S	49,50	2504.602	20"X6" TAPPING TEE W/ELECTROFUSION SADDLE	EACH					45		45
149		N, S	43,49,50	2504.602	20"X8" TAPPING TEE W/ELECTROFUSION SADDLE	EACH					11		11
150		R	47,48	2504.602	24"X2" TAPPING TEE W/ELECTROFUSION SADDLE	EACH					9		9
151		N, S	43,49,50	2504.602	24"X6" TAPPING TEE W/ELECTROFUSION SADDLE	EACH					3		3
152		N	43	2504.602	24"X8" TAPPING TEE W/ELECTROFUSION SADDLE	EACH					1		1
153		N	43	2504.602	20"X10" HDPE MANUFACTURED TEE	EACH					1		1
154		N	43	2504.602	20"X12" HDPE MANUFACTURED TEE	EACH					3		3
155		N	43	2504.602	20"X20" HDPE MANUFACTURED TEE	EACH					1		1
156		N	43	2504.602	24"X12" HDPE MANUFACTURED TEE	EACH					1		1
157		N	43	2504.602	24"X16" HDPE MANUFACTURED TEE	EACH					1		1
158		N	43	2504.602	16" DI CAP	EACH					3		3
159		N	43	2504.602	20" DI CAP	EACH					2		2
160	1	M	41,42	2504.602	8"X6" REDUCER	EACH					10		10
161	1	M	41,42	2504.602	12"X10" REDUCER	EACH					2		2
162	1	M	41,42	2504.602	20"X16" REDUCER	EACH					2		2
163	1	M	41,42	2504.602	24"X20" REDUCER	EACH					3		3
164		R	47,48	2504.602	2" CURB STOP AND BOX	EACH					34		34
165		T	50	2504.602	PREPARE FINISHED BASEMENT FOR WATER SERVICE REPLACEMENT	EACH					1		1
166	5	T	50	2504.602	CONNECT TO EXISTING INDOOR PLUMBING	EACH					11		11
167		M, S	41-42, 49-50	2504.602	CONCRETE ENCASED VALVE BOX COLLAR	EACH					89		89
168	2		88	2504.603	24" STEEL CASING PIPE	LIN FT					20		20
169		T	50	2504.603	INDOOR PLUMBING TO RELOCATE WATER METER, PEX PIPE	LIN FT					330		330
170	4	R, T	47,48,50	2504.603	2" HDPE SDR 11 SERVICE PIPE	LIN FT					1197		1197
171	4	P, S	44-46,49,50	2504.603	6" DIPS HDPE WATER MAIN SDR 11	LIN FT					1944		1944
172	4	P, S	44-46,49,50	2504.603	8" DIPS HDPE WATER MAIN SDR 11	LIN FT					1097		1097
173	4	P	44-46	2504.603	10" DIP WATER MAIN CL52	LIN FT					6		6
174	4	P	44-46	2504.603	10" DIPS HDPE WATER MAIN SDR 11	LIN FT					97		97
175	4	P	44-46	2504.603	12" DIPS HDPE WATER MAIN SDR 11	LIN FT					239		239
176	4	P	44-46	2504.603	16" DIP WATER MAIN CL52	LIN FT					68		68
177	4	P	44-46	2504.603	16" DIPS HDPE WATER MAIN SDR 11	LIN FT					94		94
178	4	P	44-46	2504.603	20" DIPS HDPE WATER MAIN SDR 11	LIN FT					6407		6407
179	4	P	44-46	2504.603	24" DIPS HDPE WATER MAIN SDR 11	LIN FT					2429		2429
180				2504.604	3" POLYSTYRENE INSULATION	SQ YD					300		300
181	8			2504.604	VAPOR BARRIER	SQ YD					3317		3317

NOTES:

1	SEE TABULATIONS/PLAN SHEETS FOR MATERIAL TYPE
2	SHALL INCLUDE ANY JACKET OR INSULATION, AS NECESSARY, FOR INSTALLATION.
3	INCLUDES AN ADDITIONAL 90 LIN FT FOR UNKNOWN CONNECTIONS.
4	TRACER WIRE INCIDENTAL. BLUE FOR WATER, GREEN FOR SANITARY AND STORM.
5	INCLUDES ALL NECESSARY PIPE AND FITTINGS TO MAKE CONNECTION. CONTRACTOR SHALL VERIFY SIZE AND MATERIAL PRIOR TO CONNECTION.
6	INCLUDES HYDRANT, STAND PIPE, HYDRANT BASE, HYDRANT VALVE, HYDRANT VALVE BOX, 6" HDPE SDR 11 PIPE, 8"X6" MOLDED HDPE REDUCER, 8"X8" MOLDED HDPE TEE, AND TRACER WIRE.
7	FOR WRAPPING OF HDPE WATERMAIN. SEE DETAILS FOR INSTALLATION REQUIREMENTS.

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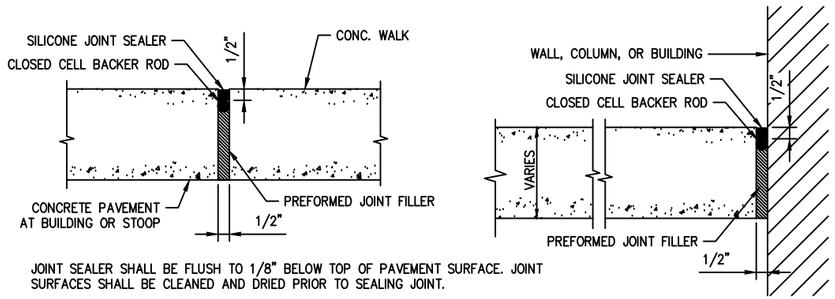
SEH Project DULUT 171078
Drawn By JTB
Designed By REK
Checked By DRH

Rev.#	Revision Issue Description	Date
1	ADDENDUM #3.	03/31/26

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.
ROSE KOPECKY, PE
DATE 01-16-2026 LICENSE NO. 56628

WEST SUPERIOR STREET RECONSTRUCTION
DULUTH, MINNESOTA S.P. 118-109-021/CITY PROJECT NO. 2104

STATEMENT OF ESTIMATED QUANTITIES

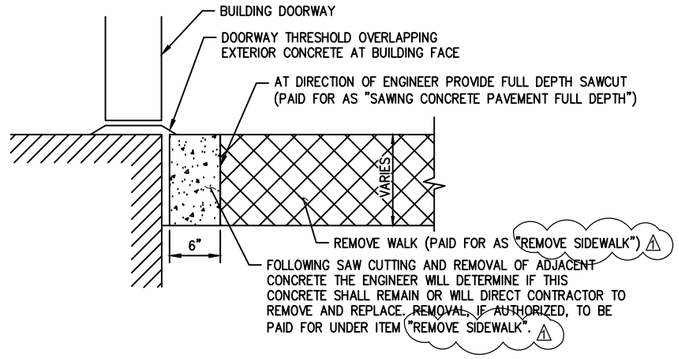


JOINT SEALER SHALL BE FLUSH TO 1/8" BELOW TOP OF PAVEMENT SURFACE. JOINT SURFACES SHALL BE CLEANED AND DRIED PRIOR TO SEALING JOINT.

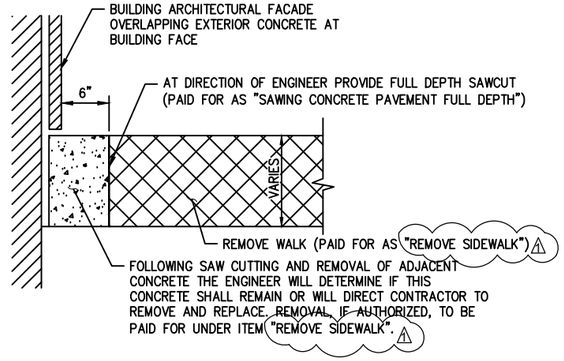
APPLIES: AT ALL BUILDINGS, WALLS, COLUMNS, STOOPS, AND CONSTRUCTION JOINTS (BACK OF CURB AND INTERFACES BETWEEN CONCRETE WALKS TYPE A AND B OR C, UNLESS OTHERWISE NOTED). SEE VAULT PLANS AND DETAILS FOR SPECIAL JOINTING REQUIREMENTS AT VAULTS.

JOINT SEALER, CLOSED CELL BACKER ROD, AND PREFORMED JOINT FILLER SHALL BE INCIDENTAL. REFER TO MNDOT APPROVED PRODUCTS LIST FOR ACCEPTABLE MATERIALS.

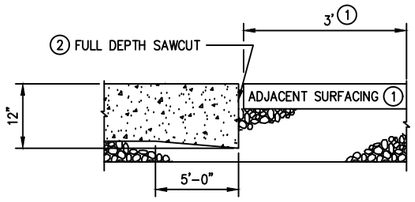
CONCRETE WALK EXPANSION JOINT (INCIDENTAL)
NOT TO SCALE



SAWING CONCRETE PAVEMENT AT THRESHOLD
NOT TO SCALE



SAWING CONCRETE PAVEMENT AT BUILDING
NOT TO SCALE



(1) WHERE BRICK IS PRESENT, THE CONTRACTOR SHALL REMOVE/REPLACE BRICK PAVEMENT AT PAVEMENT TRANSITIONS IN ACCORDANCE WITH CITY DETAIL STR-9 (INCIDENTAL).

(2) PROVIDE HOT POUR JOINT SEALER WHERE TRANSITION IS FROM NEW TO EXISTING CONCRETE PAVEMENT (INCIDENTAL).

APPLIES: AT ALL TRANSITIONS FROM NEW TO EXISTING PAVEMENTS.

PAVEMENT TRANSITION DETAIL
NOT TO SCALE

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SEH Project	DULUT 171078
Drawn By	JTB
Designed By	REK
Checked By	DRH

Rev.#	Revision Issue Description	Date
1	ADDENDUM #3.	03/31/26

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ROSE KOPECKY, PE
DATE 01-16-2026 LICENSE NO. 56628

WEST SUPERIOR STREET RECONSTRUCTION
DULUTH, MINNESOTA S.P. 118-109-021/CITY PROJECT NO. 2104

JOINTING DETAILS

SP-65 (2504) TEMPORARY WATER SERVICE SYSTEM

This work shall consist of constructing a temporary water service system for the phased construction of the water main as described in the Plans and these special provisions to provide continuous water service (except for those interruptions specifically allowed by these Special Provisions) to buildings served by the water main to be replaced. All work shall be performed in accordance with these Special Provisions and the City of Duluth Standard Specifications for water work.

The existing water main to be replaced consists of 16-inch cast iron pipe installed during the 1880s. The water main system operates under pressures ranging between 110 psi to 135 psi. The Contractor will take appropriate precautions when working with or excavating around the pipe given the age of the system and operating pressures to avoid damage to the existing system to remain.

Dedicated water services for fire protection connected to the main do not need provisions for temporary water.

Certain existing water services 6 inches in diameter or larger conflict vertically with the proposed water main alignment at the locations shown in the Plans. Where such conflicts occur and the service cannot be temporarily adjusted to avoid the proposed main, the Contractor shall provide a temporary domestic water service bypass as described herein.

Provide a minimum 48 hours' notice to City of Duluth and affected buildings prior to any service interruption. All building service interruptions shall be scheduled with the building owner and no modifications to the schedule shall be permitted without notice to the Engineer and building owner. Several buildings have water shut down restrictions, and the City reserves the ability to schedule night time shutdowns as outlined in the water main procedures for the Contractor to connect or remove the temporary water system if deemed necessary.

SP-65.1 CONTRACTOR REQUIREMENTS

A. The Contractor shall notify the Building Owner at least two weeks prior to the scheduled excavation of the temporary or permanent water service connection to coordinate and schedule the work.

B. Contractor shall expose and field-verify the location and depth of all services prior to connection.

C. If the Building Owner has elected to provide a new service connection point, the Contractor shall expose that service connection point. The Building Owner's Plumbing Contractor shall provide the new service connection point outside of the existing building foundation or vault wall. The Building Owner's Plumbing Contractor will have 24-hours to provide the new service connection point beginning at the moment when the existing building service and new service entry point(s) are fully excavated and exposed at the building foundation wall AND notification thereof has been provided to the Engineer and Building Owner.

D. The Contractor will connect the water service to the new building service connection point.

E. If the Building Owner's Plumbing Contractor fails to provide a new service connection point within the 24-hour window, the Contractor shall connect to the existing service and backfill.

F. The coordination and work required to accommodate the service upsize shall be considered incidental except where specifically stated otherwise.

G. At the locations shown in the Plans where existing water services 6 inches in diameter or larger conflict with the proposed water main, the Contractor shall verify field conditions and provide a temporary domestic water service bypass as required to maintain service during construction.

H. Temporary water service for services less than 2 inches in diameter may be adjusted in the field and is considered included in the Temporary Water Service System lump sum.

I. Temporary water service for services 6 inches in diameter or larger shall be paid for on a per-each basis as described in SP-65.4 and SP-65.5, and may include temporary jumper piping, temporary tapping of the existing main, or other approved means and methods necessary to maintain service.

SP-65.2 SHUTDOWN PROCEDURES

The following general shutdown restrictions shall apply on the project for water services to the following building uses:

1. Office / Non-Retail—Shutdown shall not be permitted between 7 am and 5 pm Monday through Friday.

2. Bars—shutdowns shall not occur during operating hours. See Table 2504-B Summary of Operating Hours. Operating hours shall be confirmed prior to shutdown.

3. Restaurants— shutdowns shall not occur during operating hours and shall not be allowed (2) hours prior to opening and (1) after closing. Table 2504-B Summary of Operating Hours. Operating hours shall be confirmed prior to shutdown.

4. Hotels—shutdowns shall occur between Midnight and 5 AM. Includes Lincoln Park Boutique, Enger Lofts, Zenith Basecamp, Duluth Press Residential Suites, and Craft District Lofts. Notice and schedule shall be provided to hotels a minimum of 2 weeks in advance.

5. Except where the restrictions above shall govern, all service connection interruptions on the project shall be limited to a maximum of 8 hours to connect the main to the temporary water service system and a maximum of 8 hours to reconnect the existing service to the permanent water system.

Where the temporary main crosses walks or roadways subject to public traffic (vehicle or pedestrian) or construction traffic during construction the Contractor shall construct traffic rated crossings using pipe manifolds, ramps and other measures subject to the approval of the Engineer to maintain traffic and protect the temporary main without restricting the temporary service flows. Pedestrian crossings must be ADA compliant and protect pedestrians against edge drop-off. Where an ADA compliant crossing cannot be installed due to existing grades or conditions, a non-ADA compliant crossing shall be installed to remove any trip hazard for and the Contractor shall be responsible for identifying and signing an alternate accessible Temporary Pedestrian Access Route. Vehicle crossings must be signed to slow traffic and painted to ensure visibility and securely fastened to prevent movement. Where temporary mains are installed adjacent to walks or roadways subject to public traffic, the main shall be securely placed (anchored) at the perimeter of the walk or roadway to prevent movement and out of the path of traffic (vehicle or pedestrian). Provide supplemental markings, ribbon, temporary fence or signage as needed to warn pedestrians of potential trip hazards. All temporary crossing work described and required shall be considered included for payment under the Temporary Water Service System pay item.

The graphical depiction of the water main service layout in the Plans is schematic and primarily serves to show the connections between the temporary water service system feed points and building services. The Contractor is responsible for the actual routing and layout of the temporary water service system to maintain water service as specified and shall be located, adjusted and/or re-located as required to complete the work or to

facilitate the Contractor's operations. Additional pipe, materials, testing and any other required work to provide the temporary water service system layout shall be considered incidental.

TABLE 2504-B SUMMARY OF OPERATING HOURS				
RESTAURANT	**BAR**	**HOURS**	**PHONE #**	**ADDRESS**
Subway		MON-FRI 9am-7pm; SAT-SUN 11am-7pm	218.481.7140	2707 W Superior St
	Zenith Basecamp		218.580.4306	2631 W Superior St
Tbonz Bar and Grill		SUN 11am-midnight; MON-SAT 11am-1am	218.727.9582	2531 W Superior St
	Wild State Cider	MON-THU 2pm-10pm; FRI-SAT 11am-10pm; SUN 11am-8pm	218.606.1151	2515 W Superior St
	Ursa Minor Brewing	SUN-THU 11am-10pm; FRI-SAT 11am-11pm	218.481.7886	2415 W Superior St, Ste B
Oasis Del Norte		MON-SAT 11am-9pm; SUN 11am-8pm	218.464.0824	2401 W Superior St
	Duluth Cider	MON-WED 4pm-10pm; THU 12pm-10pm; FRI-SAT 12pm-11pm; SUN 12pm-7pm	218.464.1111	2307 W Superior St
	Bergey's	SUN-SAT 10am-1am	218.722.5879	2232 W Superior St
Burger Paradox		MON-THU 4pm-11pm; FRI-SUN 11am-11pm	218.606.1185	2113 W Superior St
Caddy Shack		MON-TUE 10am-9pm; WED-THU 10am-11pm; FRI-SAT 10am-12am; SUN 11am-5pm	218.624.7768	2023 W Superior St
	Curly's Bar	MON-SAT 8am-2am; SUN 10am-2am	218.727.9698	2013 W Superior St
Bali Asian Cuisine		TUE-SAT 12pm-9pm; SUN 12pm-8pm; MON: Closed	218.217.4266	1931 W Superior St
The Spice & Tea Exchange		SUN-THU 11am-6pm; FRI-SAT 11am-8pm	218.514.4050	1929 W Superior St
Dovetail Café & Marketplace		MON-TUE 8am-3pm; WED-SUN 8am-8pm	218.481.7888	1917 W Superior St
OMC Smokehouse		SUN-THU 11am-9pm; FRI-SAT 11am-10pm	218.606.1611	1909 W Superior St
	Duluth Tap Exchange	SUN 11am-8pm; MON: Closed TUE-THU 4pm-10pm, FRI 2pm-12am; SAT 11am-12am;	218.391.1622	1905 W Superior St
Love Creamery		MON-THU 2pm-9pm; FRI-SUN 12pm-9pm	218.576.5639	1908 W Superior St
Hungry Hippie Tacos		SUN 11am-7pm; TUE-THU 11am-7pm; FRI-SAT 11am-8pm	218.216.6030	1801 W Superior St

SP-65.3 TEMPORARY WATER SERVICE PROCEDURE

The following procedure is a detailed sequence of steps that shall be incorporated to construct the replacement water main and provide the temporary water service system.

A. Phase 0 – Temporary Water Service System on W Michigan Street from W Superior St to M&H Gas Station:

1. Expose existing water main on W Superior Street and install 20" insertion valve W260395 at STA 96+09.79, 29.33' R as shown on sheet 152.
2. Tap existing water main a sufficient distance west of the insertion valve to avoid conflicts with a 1-inch HDPE service.
3. Construct an above ground temporary 1-inch HDPE water service inside the right-of-way or easement areas but protected from construction operations to the M&H Gas Station along W Michigan Street at approximately STA 115+00.
4. Inject chlorine for disinfection.
5. Flush and obtain disinfection sample for testing; submit passing test results to the Engineer prior to connecting services.
6. Connect existing water service to the temporary water service above ground if possible or else at the connection to the main.
7. Reconnect the water service to the existing main following the installation, testing, and completion of the permanent main shown in Phase 0.
8. Remove temporary water system from the existing main prior to beginning Phase 1.

B. Phase 1 – Temporary Water Service System on W Superior Street from N 18th Ave W to W Michigan St:

1. Construct Phase 1 Temporary Water Service System per the details and Plans.
   (i) At the SW corner of W Superior St and N 18th Ave W connect temporary water main segment to existing hydrant.
2. Inject chlorine for disinfection.
3. Flush and obtain disinfection sample for testing; submit passing test results to the Engineer prior to connecting services.
4. Connect existing water services and water mains to the temporary water service system per details and Plans.

C. Phase 1 – Construction of permanent water main on W Superior Street from N 18th Ave W to W Michigan St:

1. After the temporary water main is in service, shut down the water main on W Superior Street between N 18th Street W and N 17th Street W by closing the existing butterfly valves on the SW corner of the W Superior St and N 18th St Intersection, on N 18th Ave, and on the intersection of W Superior St and N 17th Ave W, and cut existing 20" water main east of the butterfly valve on the SW corner of the W Superior St and N 18th St Intersection for abandonment of 20" water main from N 18th Ave W to W Michigan St.
   (i) Water shut down shall not begin until 10 PM and shall not last longer than 8 hours without prior approval of the City and Engineer.
2. Install caps on the east side of the butterfly valve on the SW corner of the W Superior St and N 18th St intersection and south of the butterfly valve on N 18th Street W and install temporary thrust blocks..
3. Install 24" water main in the same trench as the existing 20" water main per Plans.

4. Disinfect and pressure test the water main on W Superior Street from N 18th Ave W to W Michigan St.
5. Flush and obtain disinfection sample for testing; submit passing test results to the Engineer prior to transferring water services and reconnecting water mains.
6. Transfer water services from the temporary water service system and from the removed water main to the permanent water main.
7. Reconnect all water mains to the permanent water main per details and Plans and
8. Remove temporary water service system from existing hydrant on N 18th Ave W prior to removal of hydrant.
9. Conclude Phase 1 water main construction as specified in the details and Plans.

D. Phases 0, 2, and 3:

1. During the construction of Phases 0, 2, and 3, the existing water main shall be used as the temporary water service system.
2. Contractor shall ensure that during the installation of the proposed water main all properties have continuous access to water through the existing water main.

SP-65.4 METHOD OF MEASUREMENT

The temporary water service bypasses for existing water services 6 inches in diameter or larger, at the locations shown in the Plans, will be measured by the each.

No separate measurement will be made for any of the individual items that constitute the temporary water service system including the temporary water service system for each phase of construction; temporary water main pipe; temporary water main service connections (including shutoffs, transition fittings, couplers, or joint restraint); hydrant connections; pedestrian or vehicle crossings; building owner coordination; water main and service disinfection or testing; removals; temporary water connection assemblies; or any other component described in these special provisions or as otherwise required to provide the complete temporary water system for the project.

SP-65.5 MEASUREMENT AND PAYMENT

Temporary water service for existing water services 6 inches in diameter or larger, where a temporary bypass is required to avoid conflict with the proposed water main, will be paid for separately by the each. Payment shall be made under Item 2504.602 – TEMPORARY WATER SERVICE, EACH.

No measurement will be made of the various items that constitute the Temporary Water Service System, but all such work shall be construed to be included in the lump sum payment under 2504.601 (TEMPORARY WATER SERVICE). Payment will be made under Item 2504.601 (TEMPORARY WATER SERVICE) at the Contract lump sum, which shall be compensation in full all labor, equipment, materials and other incidentals necessary to install, protect, maintain, and remove the temporary water service system.

Based on the lump sum Contract price for temporary water service satisfactorily installed, partial payments will be made as follows:

A. When the work to construct the temporary water service system for Phase 1 is completed, 50 percent of the amount bid for Temporary Water Service shall be paid.

B. When the permanent water main in Phase 1 has been placed in service, 100 percent of the amount bid for Temporary Water Service shall be paid.

SP-102 (1404) MAINTENANCE OF TRAFFIC AND LOCAL ROAD CLOSURE NOTIFICATIONS

The third paragraph of City of Duluth Construction Standard 1404 MAINTENANCE OF TRAFFIC AND LOCAL ROAD CLOSURE NOTIFICATIONS is deleted and replaced with the following:

Road closure notification list is maintained by the Engineer and will be provided to the Contractor at the preconstruction meeting and whenever updates are made by the City. Use the current list available when the notification is required.

SP-103 (2545) ELECTRICAL SERVICE GROUND

SP-103.1 DESCRIPTION

This Work consists of furnishing and installing grounding electrode systems on buildings where a replacement of the private water service line with HDPE pipe will disrupt the existing electrical service ground.

SP-103.2 CONSTRUCTION REQUIREMENTS

Prior to installing the electrical service ground, the Contractor shall confirm the service ground is necessary by:

1. Completing any private water service material verification required in the plan (potholing for material verification, visual verification inside buildings, etc.).

2. Confirming that the plan calls for installation of an HDPE service (not copper).

3. Confirming with the Engineer that the owner has signed the Work Agreement.

4. Reviewing the building for the presence of existing supplemental grounding of any kind. If existing grounding is found, the Contractor shall stop work and immediately notify the Engineer.

Service grounding installed unnecessarily will be subject to non-payment.

The electrical service ground shall be installed prior to replacing the lead or GRR water service.

Electrical service grounding must be installed by a licensed electrician. The electrician shall obtain and pay for a state electrical permit, perform the Work in accordance with the National Electrical Code, and coordinate with the State electrical inspector(s) for inspection(s).

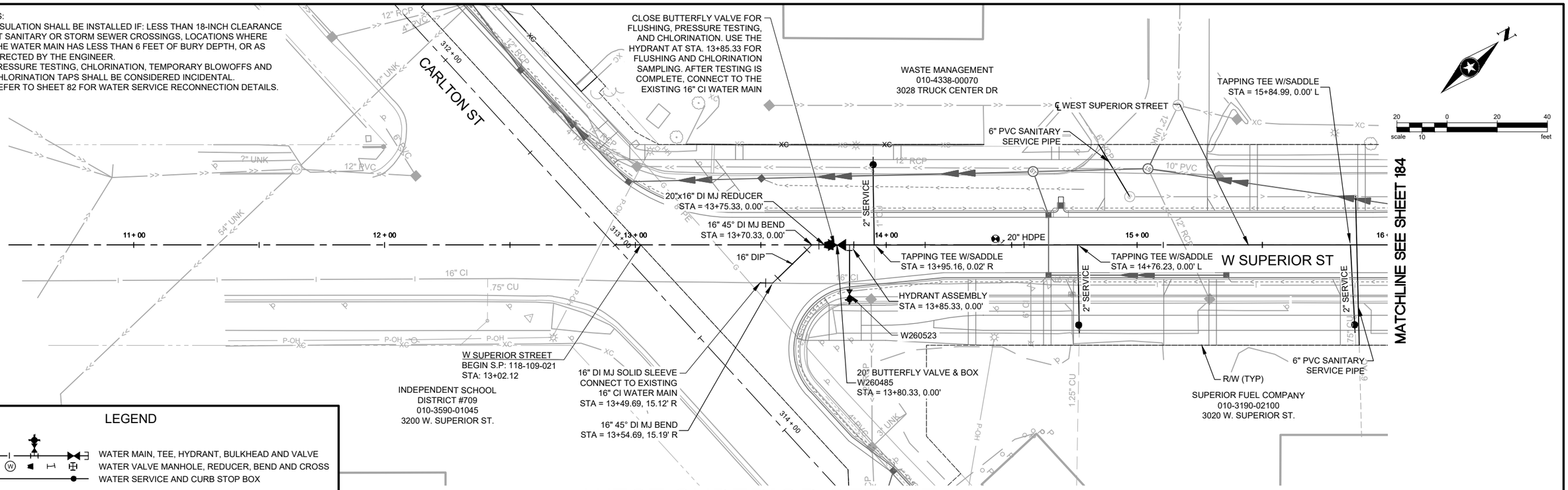
The electrical service grounding system shall consist of all necessary grounding electrode(s), grounding conductor(s), and bonding conductors to comply with all applicable electrical and plumbing codes. Contractor shall verify continuity of electrical grounding/bonding and restore bonding where required.

During the Work the Contractor shall not eliminate existing grounding or bonding without otherwise replacing such grounding or bonding to an equal or enhanced condition.

SP-103.3 MEASUREMENT AND PAYMENT

Payment for electrical service grounding shall be under item number 2545.602 ELECTRICAL SERVICE GROUND for each home where an electrical grounding system is designated, furnished, and installed and which shall be compensation in full for all labor, equipment, and materials required to complete the Work.

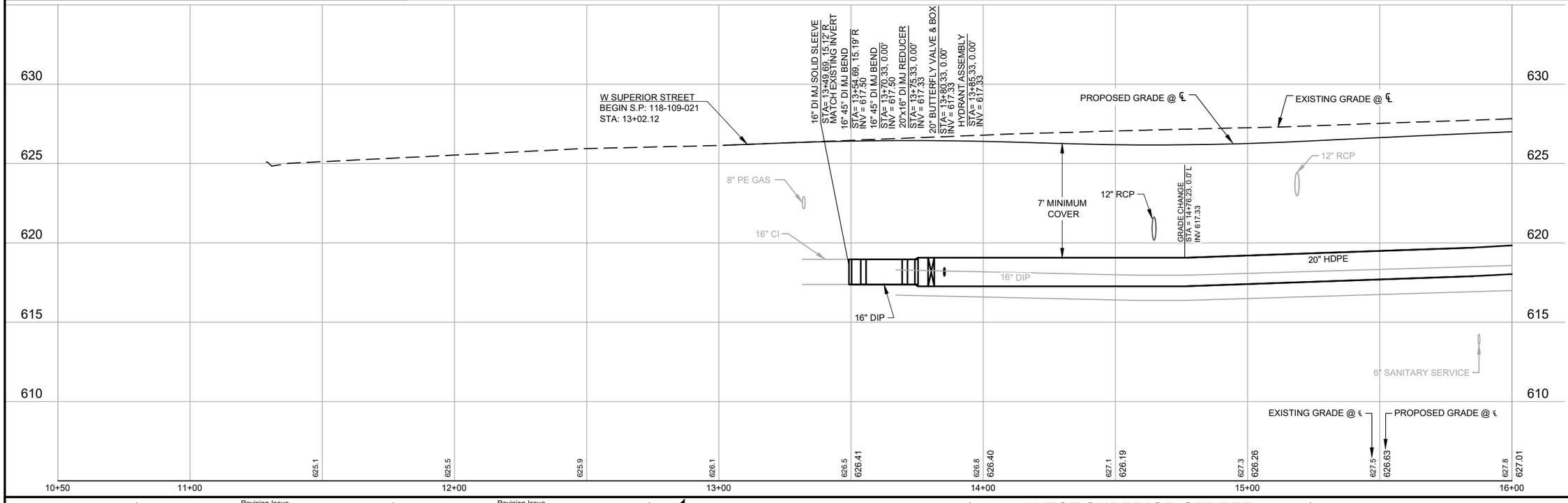
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2. PRESSURE TESTING, CHLORINATION, TEMPORARY BLOWOFFS AND CHLORINATION TAPS SHALL BE CONSIDERED INCIDENTAL.
3. REFER TO SHEET 82 FOR WATER SERVICE RECONNECTION DETAILS.



LEGEND

WATER MAIN, TEE, HYDRANT, BULKHEAD AND VALVE
WATER VALVE MANHOLE, REDUCER, BEND AND CROSS
WATER SERVICE AND CURB STOP BOX

WEST SUPERIOR STREET



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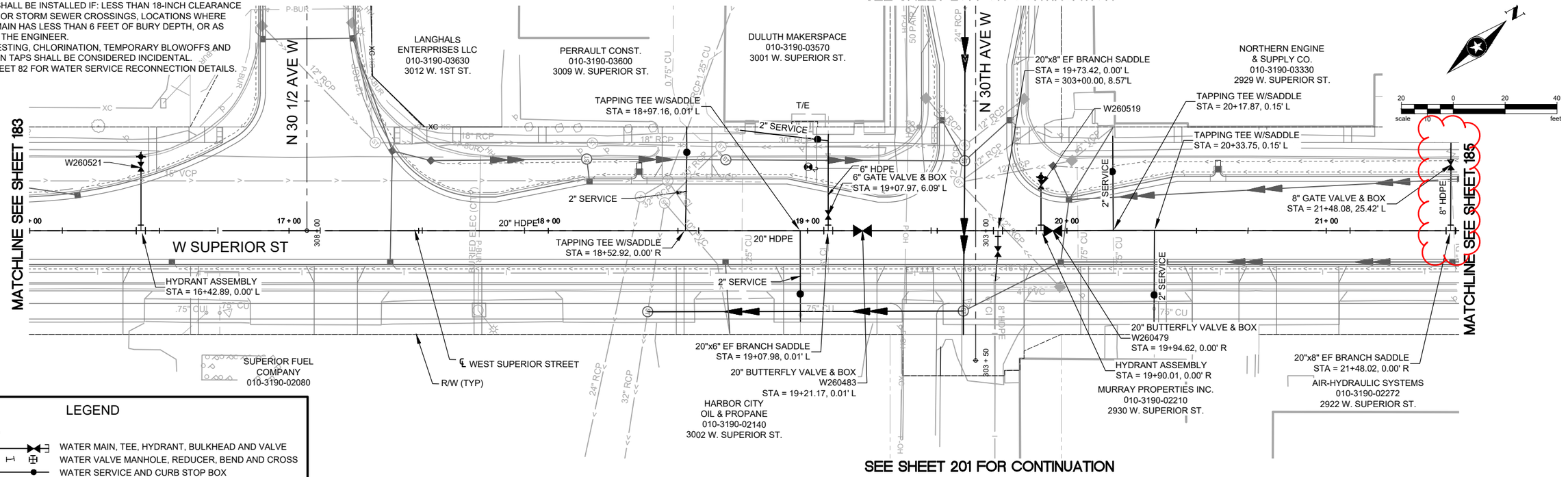
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DULUTH, MN

WATER MAIN EXHIBIT ADDENDUM 3

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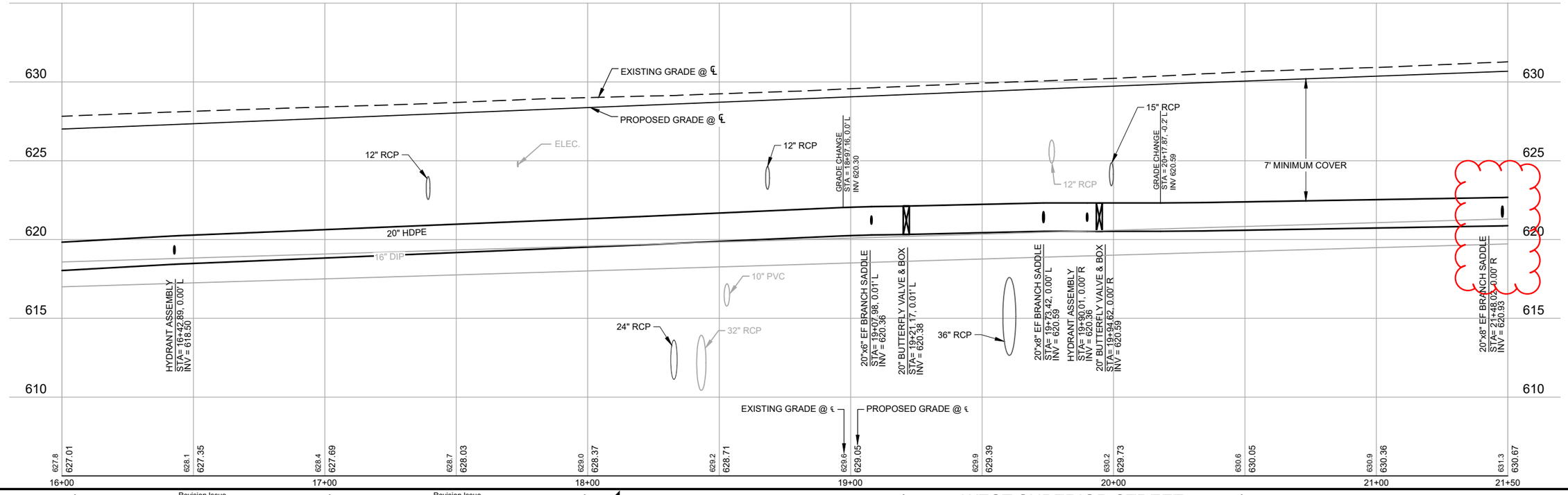
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WATER VALVE MANHOLE, REDUCER, BEND AND CROSS
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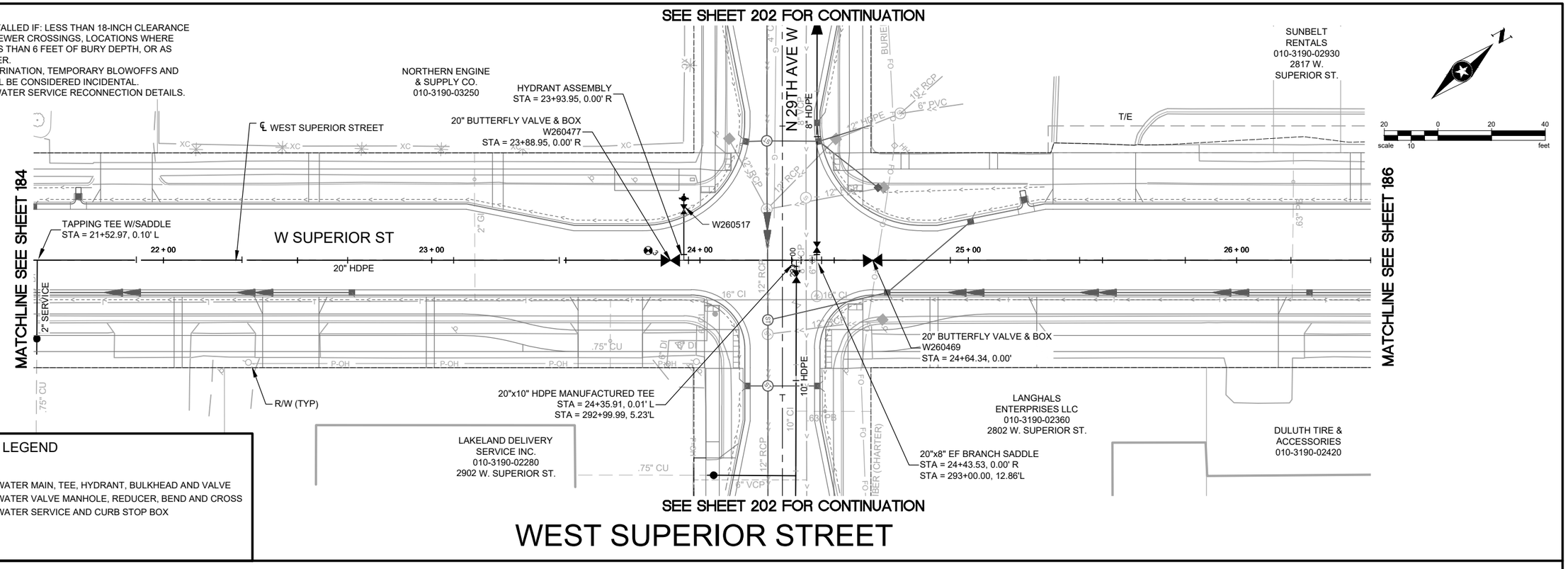
WEST SUPERIOR STREET



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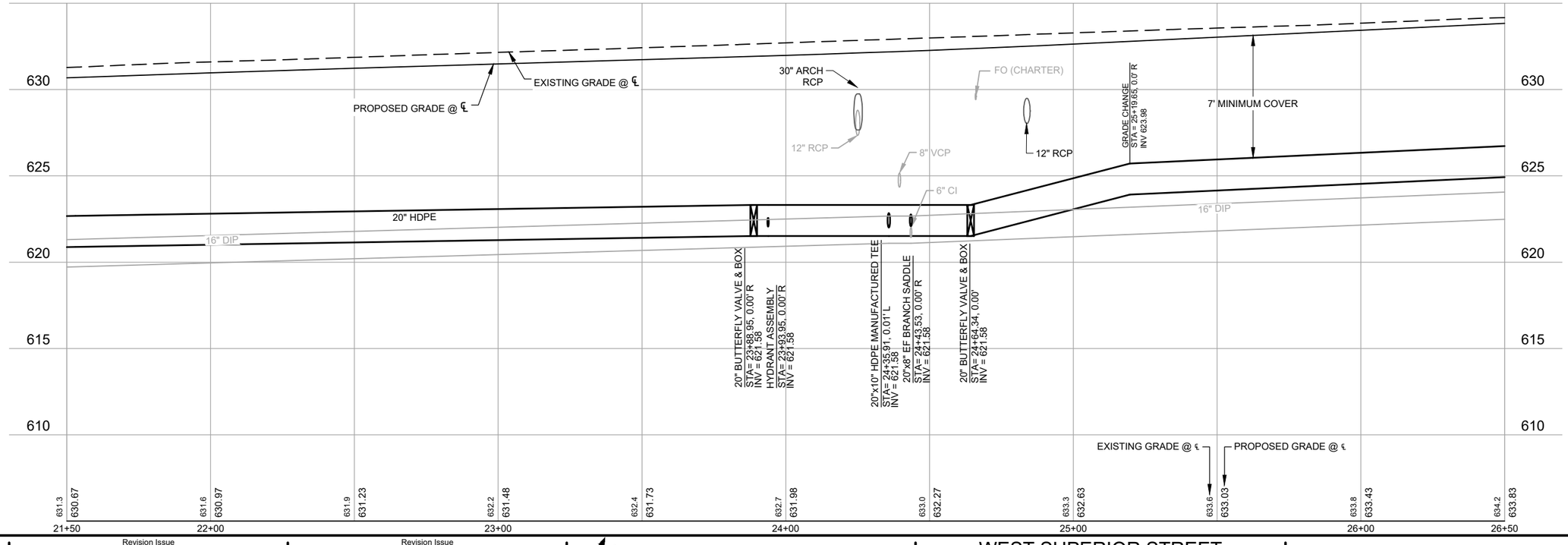
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WEST SUPERIOR STREET

LEGEND

WATER MAIN, TEE, HYDRANT, BULKHEAD AND VALVE
WATER VALVE MANHOLE, REDUCER, BEND AND CROSS
WATER SERVICE AND CURB STOP BOX

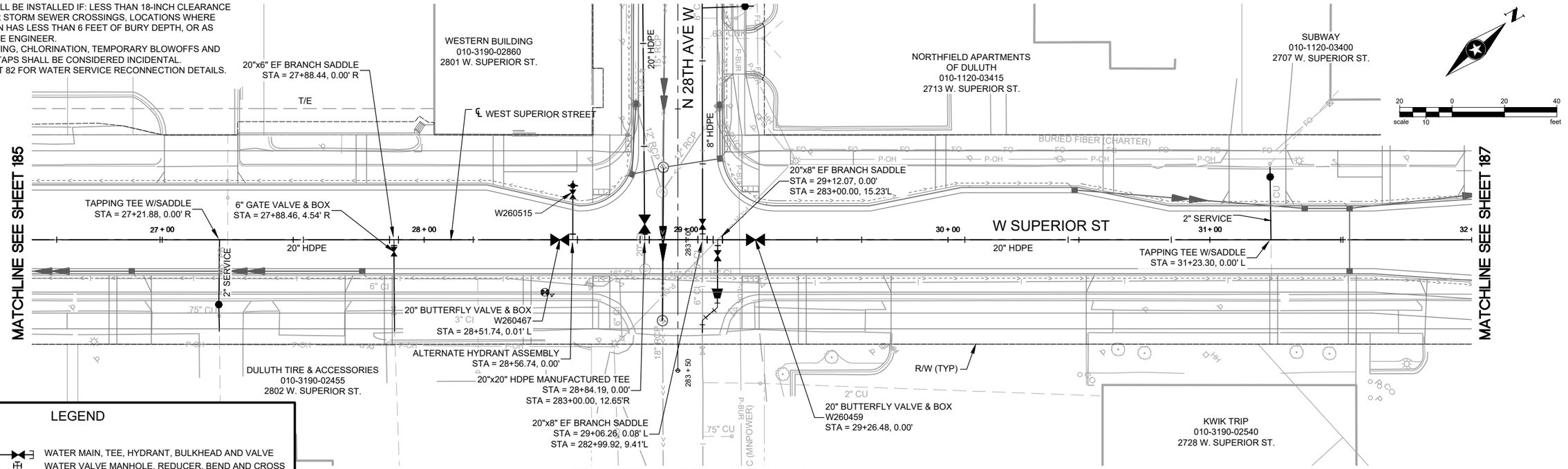


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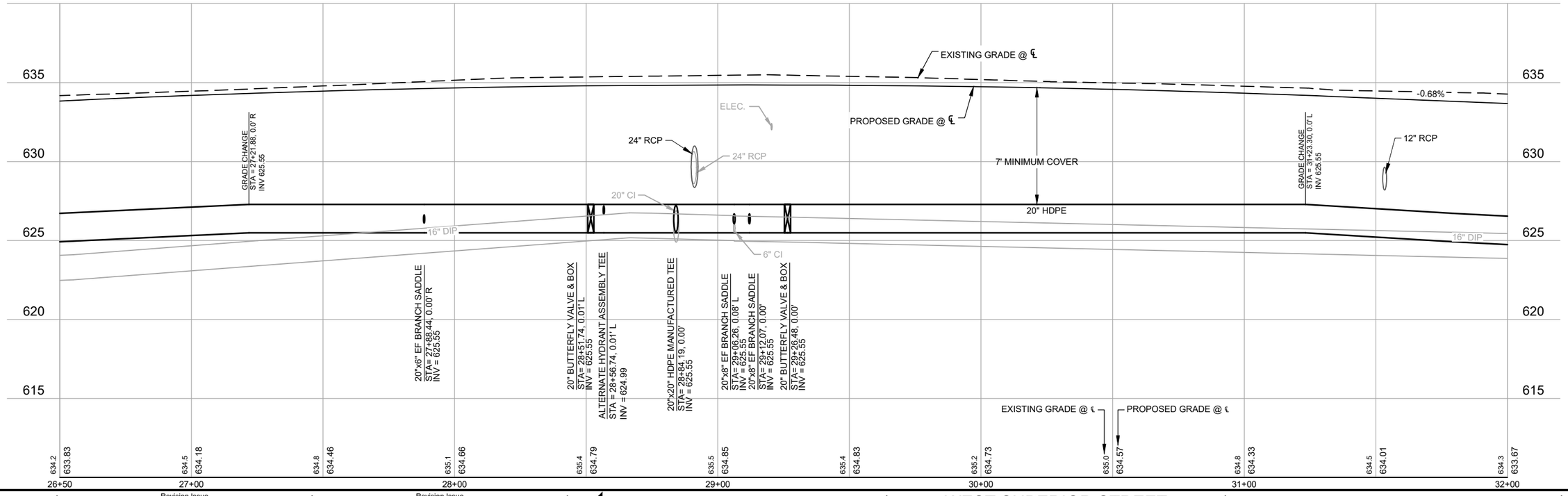
SEE SHEET 203 FOR CONTINUATION



SEE SHEET 203 FOR CONTINUATION

LEGEND

WATER MAIN, TEE, HYDRANT, BULKHEAD AND VALVE
WATER VALVE MANHOLE, REDUCER, BEND AND CROSS
WATER SERVICE AND CURB STOP BOX



WEST SUPERIOR STREET

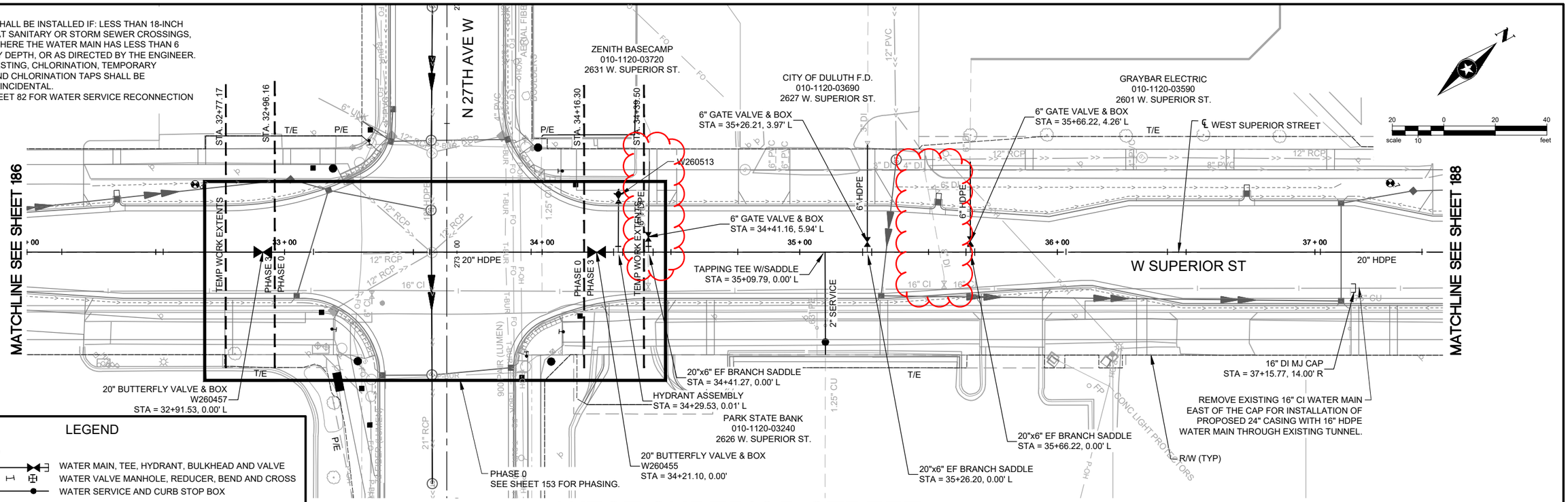
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DULUTH, MN

WATER MAIN EXHIBIT ADDENDUM 3

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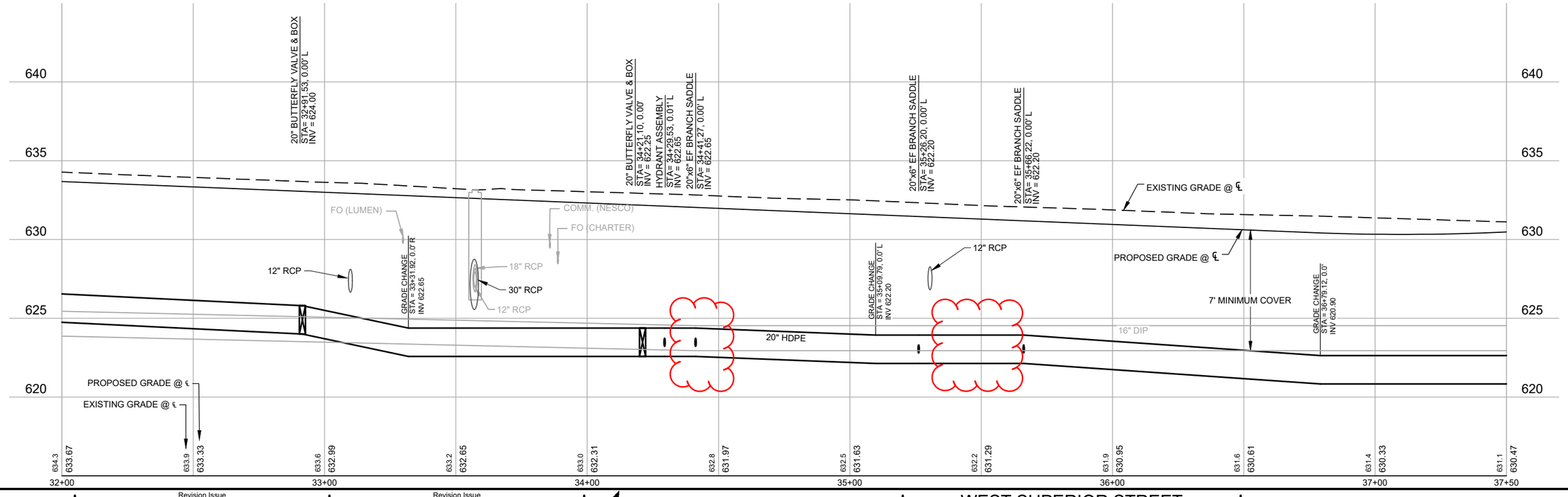
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WEST SUPERIOR STREET

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DULUTH, MN

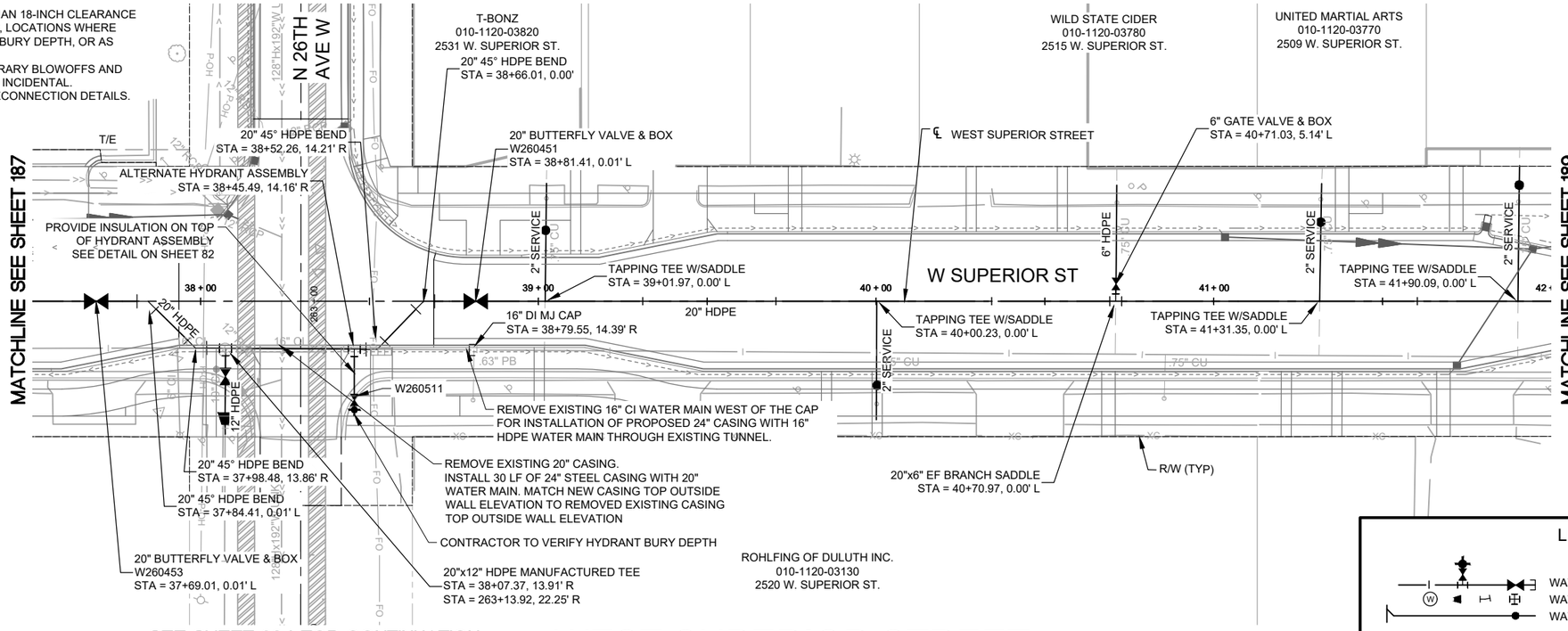
WATER MAIN EXHIBIT ADDENDUM 3

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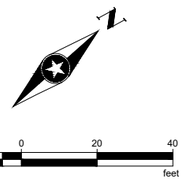
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SEE SHEET 204 FOR CONTINUATION



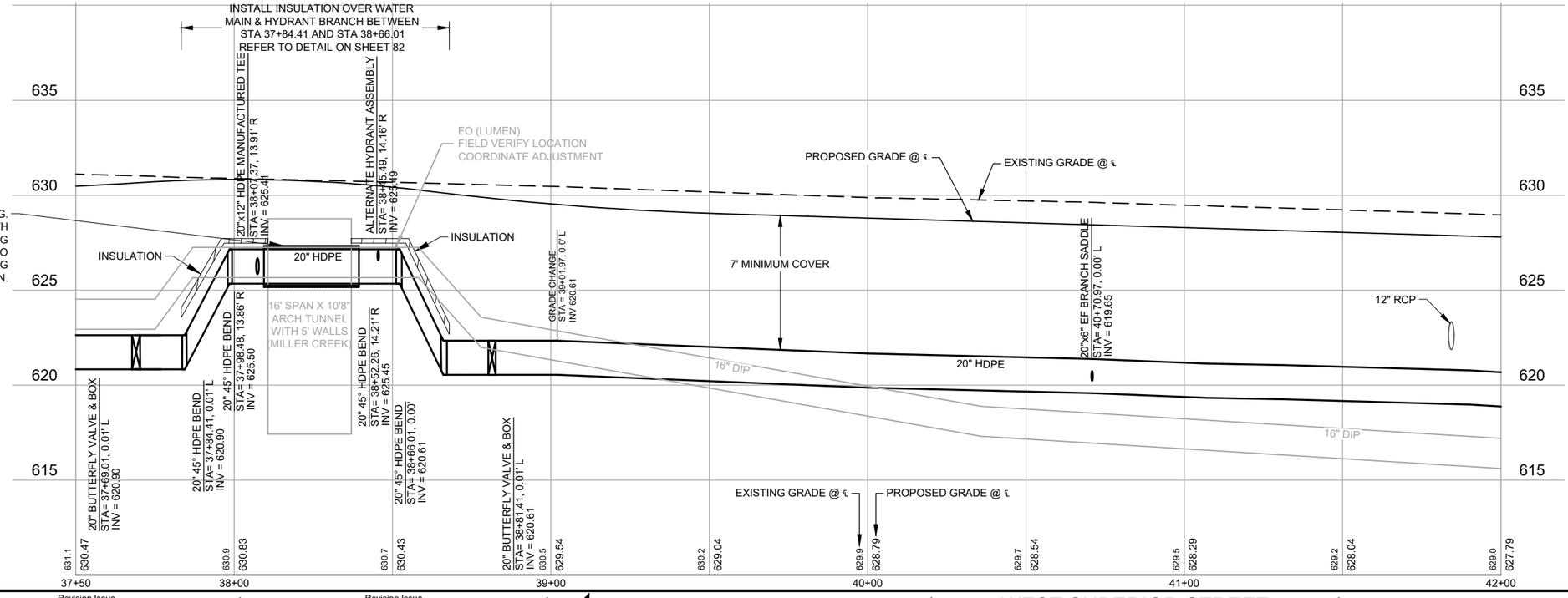
SEE SHEET 204 FOR CONTINUATION

WEST SUPERIOR STREET



LEGEND

WATER MAIN, TEE, HYDRANT, BULKHEAD AND VALVE
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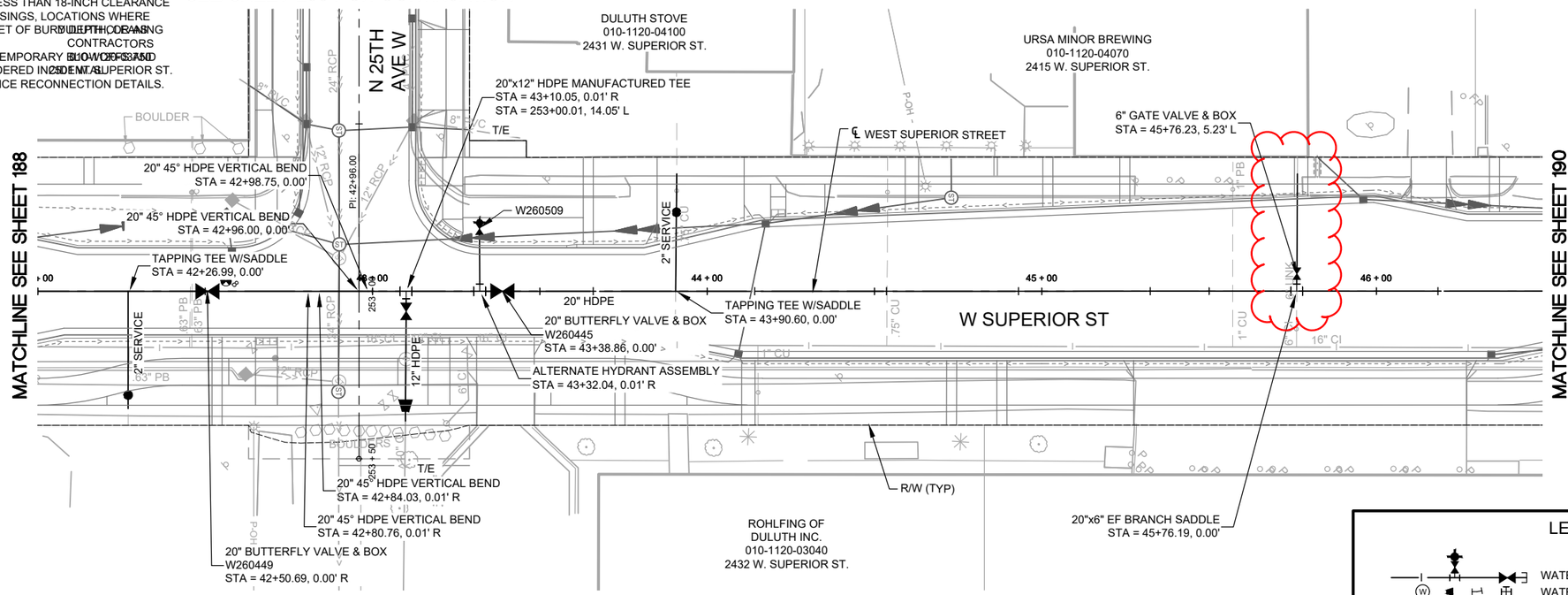


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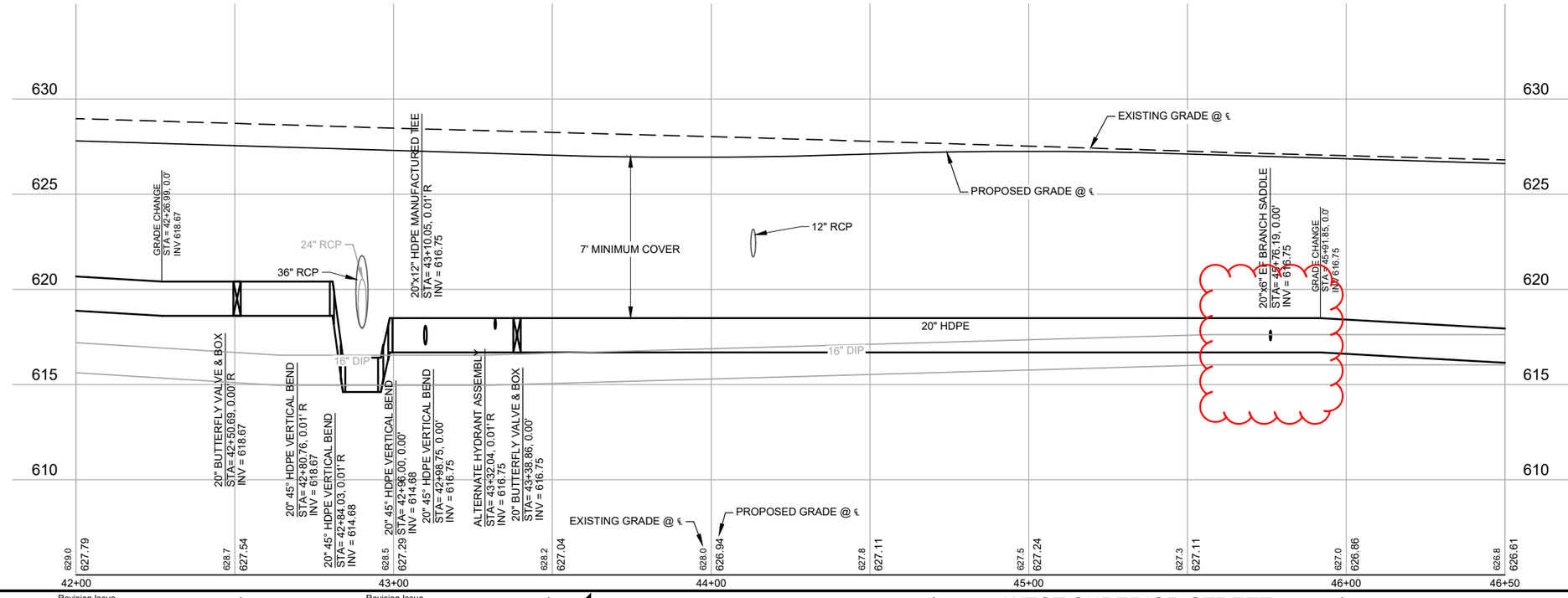
SEE SHEET 205 FOR CONTINUATION

WEST SUPERIOR STREET

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LEGEND

WATER MAIN, TEE, HYDRANT, BULKHEAD AND VALVE
WATER VALVE MANHOLE, REDUCER, BEND AND CROSS
WATER SERVICE AND CURB STOP BOX



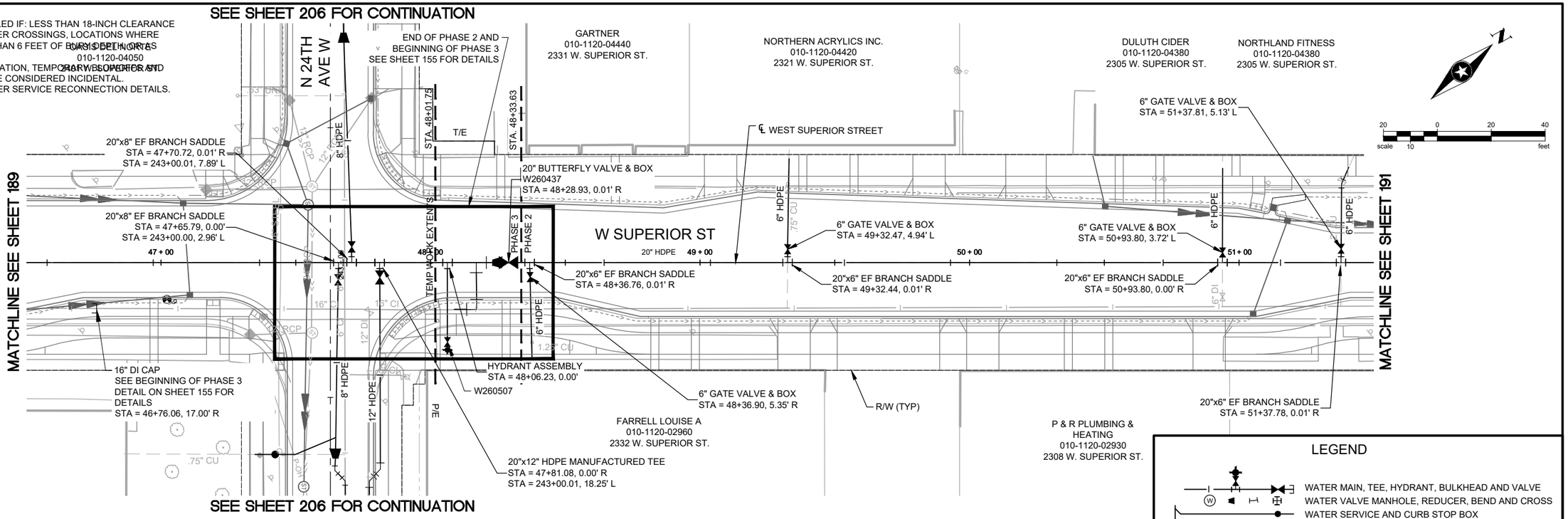
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WEST SUPERIOR STREET RECONSTRUCTION
DULUTH, MN

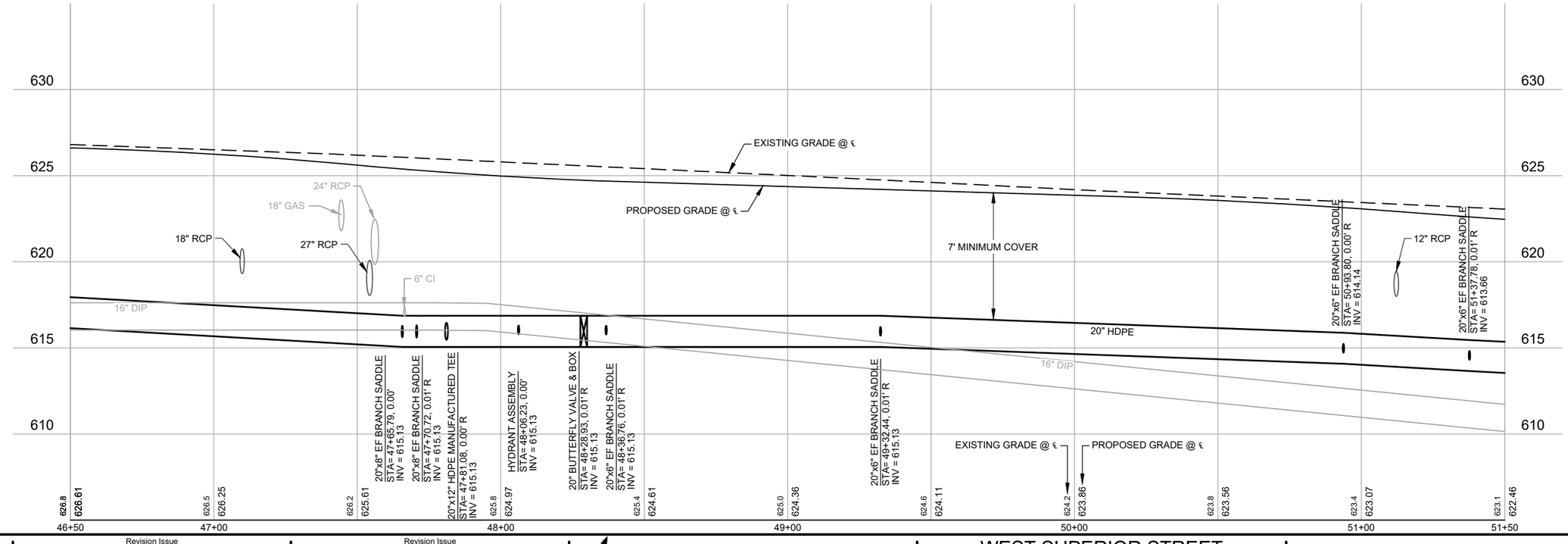
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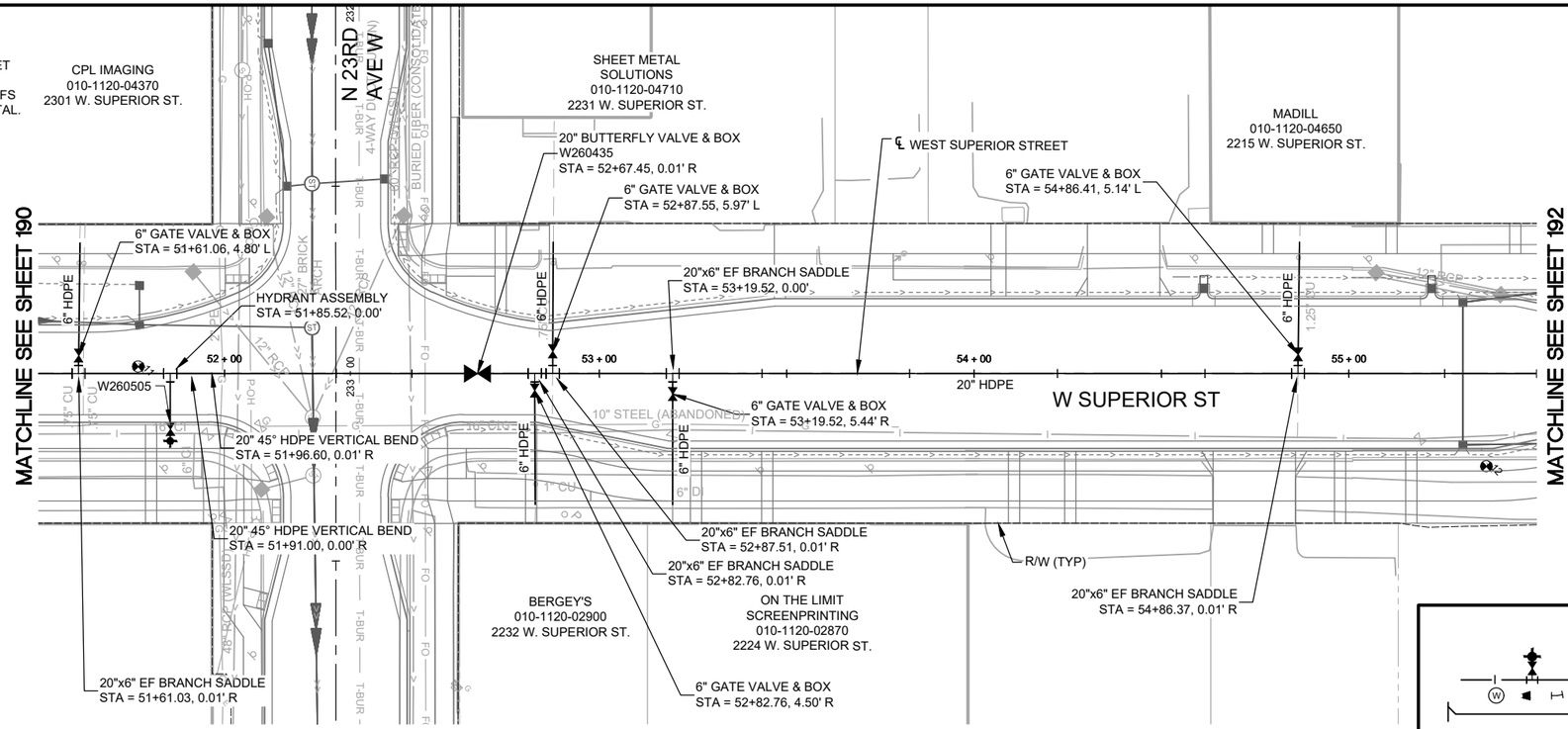
WEST SUPERIOR STREET



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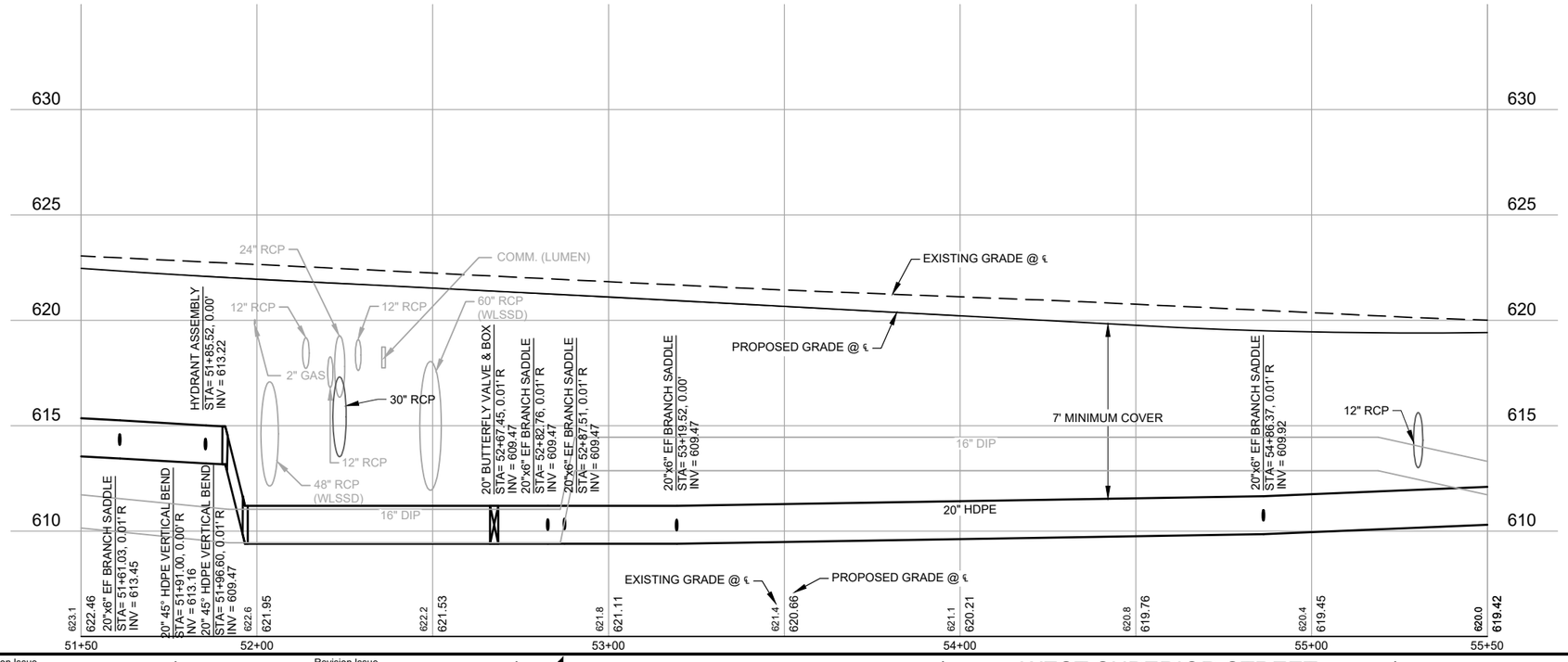
NOTES:
1. INSULATION SHALL BE INSTALLED IF: LESS THAN 18-INCH CLEARANCE AT SANITARY OR STORM SEWER CROSSINGS, LOCATIONS WHERE THE WATER MAIN HAS LESS THAN 6 FEET OF BURY DEPTH, OR AS DIRECTED BY THE ENGINEER.
2. PRESSURE TESTING, CHLORINATION, TEMPORARY BLOWOFFS AND CHLORINATION TAPS SHALL BE CONSIDERED INCIDENTAL.
3. REFER TO SHEET 82 FOR WATER SERVICE RECONNECTION DETAILS.



WEST SUPERIOR STREET

LEGEND

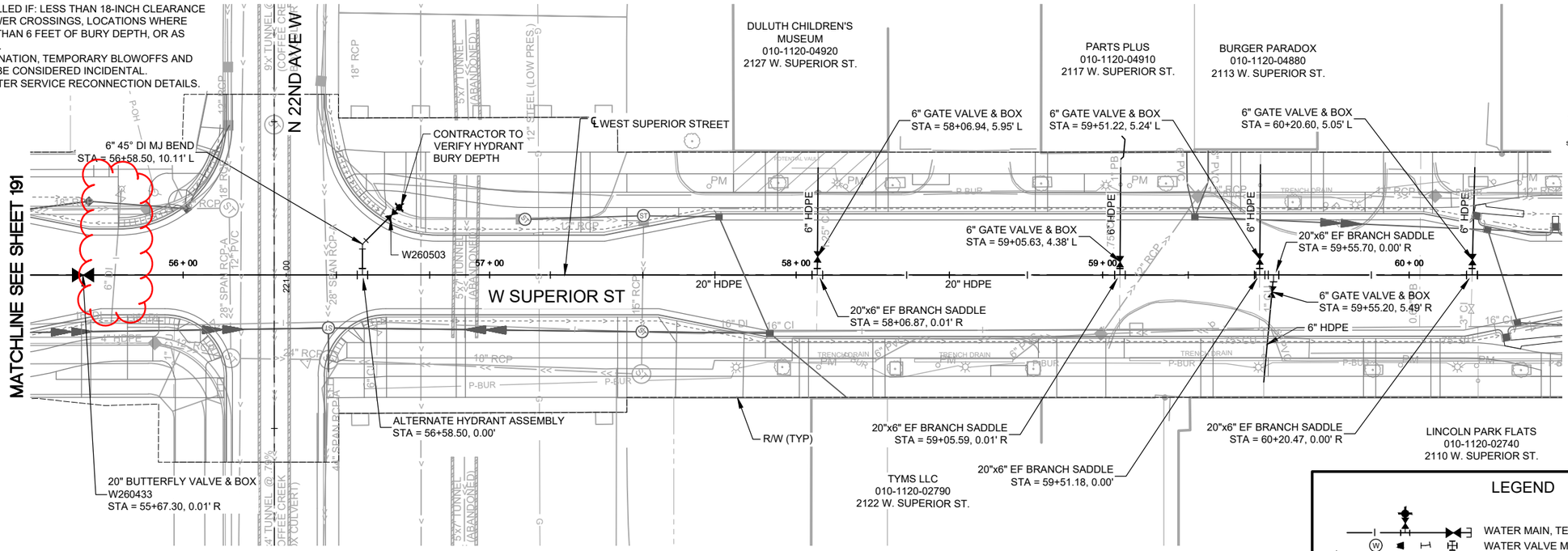
WATER MAIN, TEE, HYDRANT, BULKHEAD AND VALVE
WATER VALVE MANHOLE, REDUCER, BEND AND CROSS
WATER SERVICE AND CURB STOP BOX



SEH Project	DULUT 171078	Rev.#	Revision Issue Description	Date	Rev.#	Revision Issue Description	Date	WEST SUPERIOR STREET RECONSTRUCTION	WATER MAIN EXHIBIT ADDENDUM 3
Drawn By								DULUTH, MN	9 of 13
Designed By									
Checked By									

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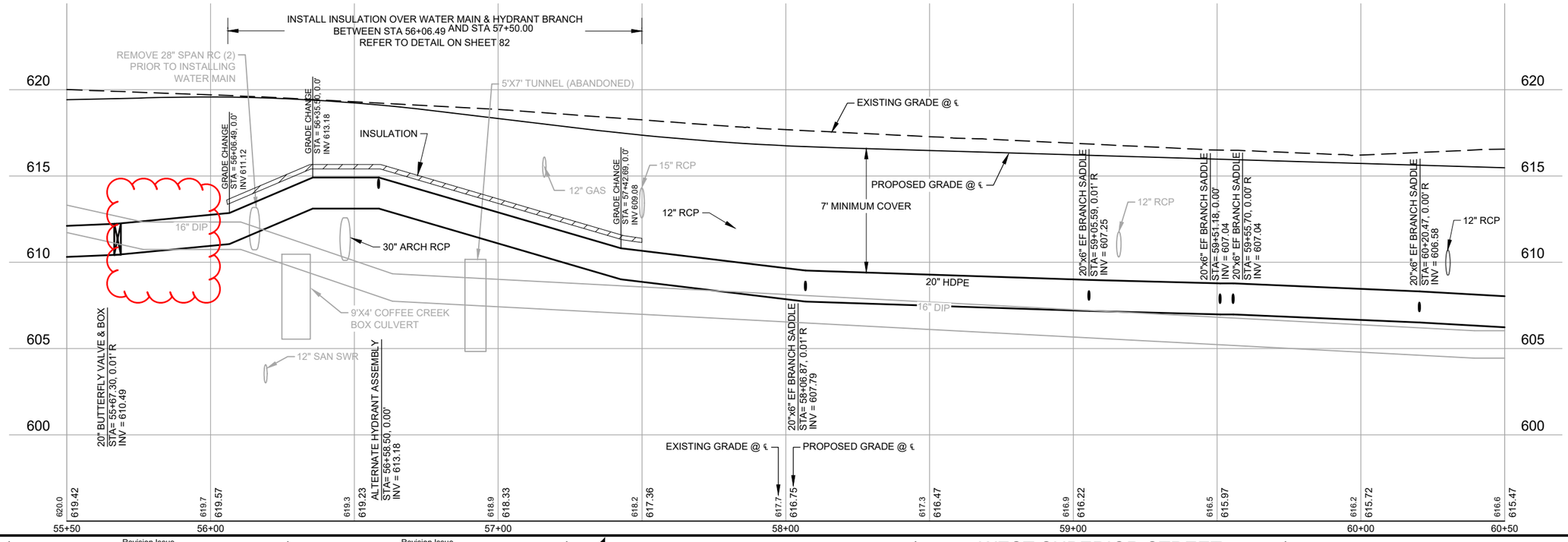
NOTES:
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3. REFER TO SHEET 82 FOR WATER SERVICE RECONNECTION DETAILS.



LEGEND

WATER MAIN, TEE, HYDRANT, BULKHEAD AND VALVE
WATER VALVE MANHOLE, REDUCER, BEND AND CROSS
WATER SERVICE AND CURB STOP BOX

WEST SUPERIOR STREET



SEH Project	DULUT 171078
Drawn By	
Designed By	
Checked By	

Rev.#	Revision Issue Description	Date

Rev.#	Revision Issue Description	Date

WEST SUPERIOR STREET RECONSTRUCTION
DULUTH, MN

WATER MAIN EXHIBIT ADDENDUM 3

10 of 13

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SEE SHEET 207 FOR CONTINUATION

SALVATION ARMY
010-1120-04850
2101 W. SUPERIOR ST.

LEE'S PIZZA
010-1120-05170
2029 W. SUPERIOR ST.

TWO LOONS GALLERY
010-1120-05160
2027 W. SUPERIOR ST.

CADDYSHACK
INDOOR GOLF
010-1120-05150
2023 W. SUPERIOR ST.

CURLEY'S BAR
010-1120-05120
2013 W. SUPERIOR ST.

℄ WEST SUPERIOR STREET

R/W (TYP)

6" GATE VALVE & BOX
STA = 60+62.55, 5.41' L

20"x8" EF BRANCH SADDLE
STA = 61+77.09, 0.00'
STA = 213+00.00, 13.74' L

20" BUTTERFLY VALVE & BOX
W260425
STA = 62+00.88, 0.00'

6" GATE VALVE & BOX
STA = 62+45.82, 5.71' L

6" GATE VALVE & BOX
STA = 62+60.24, 5.49' L

6" GATE VALVE & BOX
STA = 63+35.02, 5.26' L

20" BUTTERFLY VALVE & BOX
W260431
STA = 61+01.80, 0.01' R

HYDRANT ASSEMBLY
STA = 61+12.29, 0.00'

TAPPING TEE W/SADDLE
STA = 63+25.38, 0.00'

20"x6" EF BRANCH SADDLE
STA = 63+95.81, 0.00'

6" GATE VALVE & BOX
STA = 64+27.82, 5.71' L

20"x6" EF BRANCH SADDLE
STA = 62+73.98, 0.00'

6" GATE VALVE & BOX
STA = 63+95.81, 4.79' R

20"x6" EF BRANCH SADDLE
STA = 64+27.78, 0.00'

MATCHLINE SEE SHEET 192

MATCHLINE SEE SHEET 194

W SUPERIOR ST

20" HDPE

W260501

20"x6" EF BRANCH SADDLE
STA = 60+62.52, 0.01' R

20"x8" EF BRANCH SADDLE
STA = 61+71.58, 0.00'
STA = 213+00.00, 8.23' L

S 21ST AVE W

20"x6" EF BRANCH SADDLE
STA = 62+45.83, 0.00'

6" GATE VALVE & BOX
STA = 62+73.98, 4.42' R

20"x6" EF BRANCH SADDLE
STA = 62+60.20, 0.00'

20"x6" EF BRANCH SADDLE
STA = 63+35.09, 0.00'

ANDERSON FURNITURE
010-1120-02720
2032 W. SUPERIOR ST.

FAMILY FREEDOM
CENTER
010-1120-02710
2024 W. SUPERIOR ST.

T.B.I. RESIDENTIAL AND
COMMUNITY SERVICES
010-1120-02690
2016 W. SUPERIOR ST.

ECOLIBRIUM3
010-1120-02680
2014 W. SUPERIOR ST.

HAPPY SLEEPER
010-1120-02670
2010 W. SUPERIOR ST.

TWIN PORTS
SPAY/NEUTER
010-1120-02660
2002 W. SUPERIOR ST.

SEE SHEET 207 FOR CONTINUATION

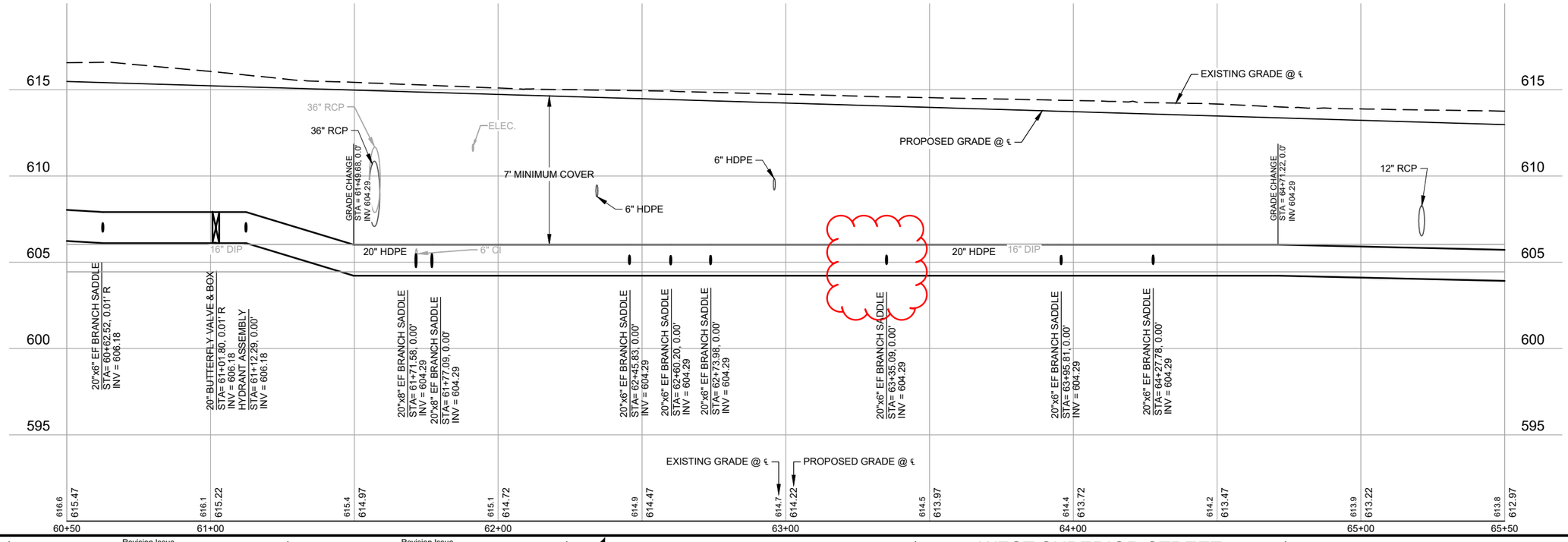
20 0 20 40
scale 10 feet

NOTES:
1. INSULATION SHALL BE INSTALLED IF: LESS THAN 18-INCH CLEARANCE AT SANITARY OR STORM SEWER CROSSINGS, LOCATIONS WHERE THE WATER MAIN HAS LESS THAN 6 FEET OF BURY DEPTH, OR AS DIRECTED BY THE ENGINEER.
2. PRESSURE TESTING, CHLORINATION, TEMPORARY BLOWOFFS AND CHLORINATION TAPS SHALL BE CONSIDERED INCIDENTAL.
3. REFER TO SHEET 82 FOR WATER SERVICE RECONNECTION DETAILS.

LEGEND

WATER MAIN, TEE, HYDRANT, BULKHEAD AND VALVE
WATER VALVE MANHOLE, REDUCER, BEND AND CROSS
WATER SERVICE AND CURB STOP BOX

WEST SUPERIOR STREET

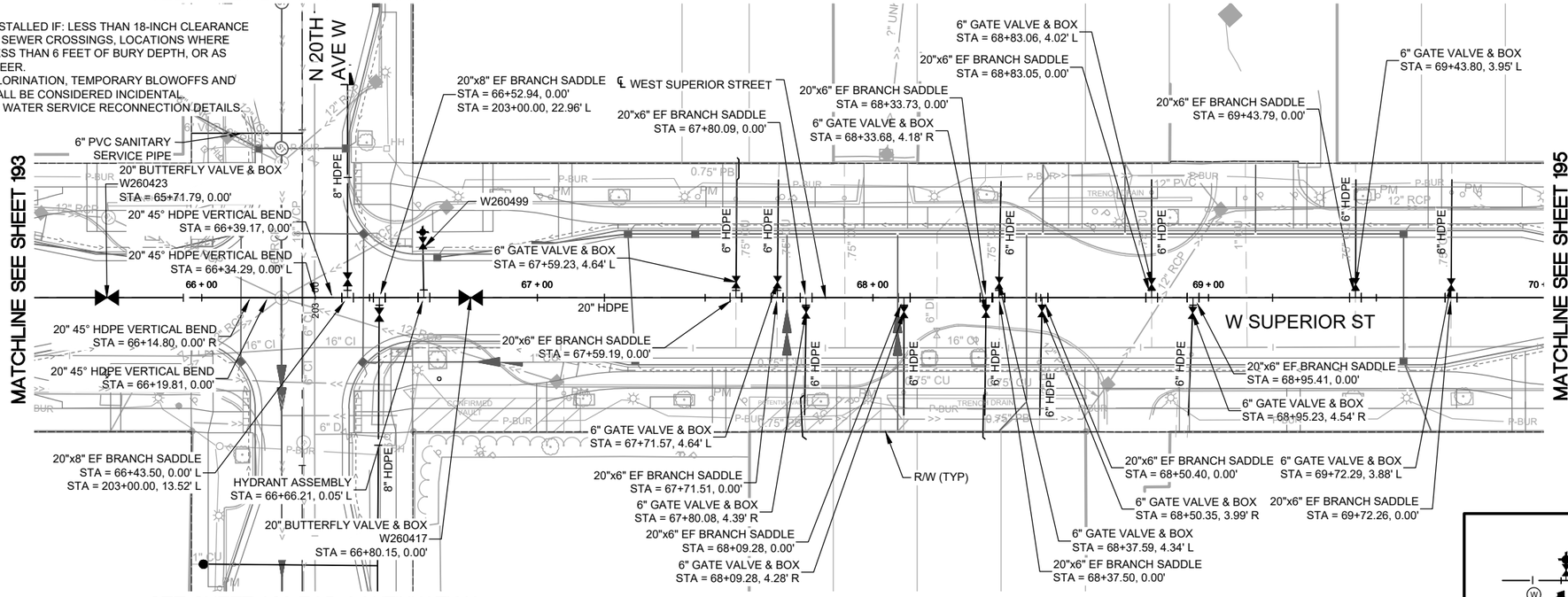


SEH Project	DULUT 171078	Rev.#	Revision Issue Description	Date	Rev.#	Revision Issue Description	Date	WEST SUPERIOR STREET RECONSTRUCTION DULUTH, MN	WATER MAIN EXHIBIT ADDENDUM 3	11 of 13
Drawn By										
Designed By										
Checked By										

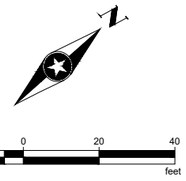
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NOTES:
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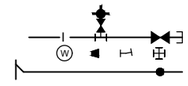
SEE SHEET 208 FOR CONTINUATION



SEE SHEET 208 FOR CONTINUATION

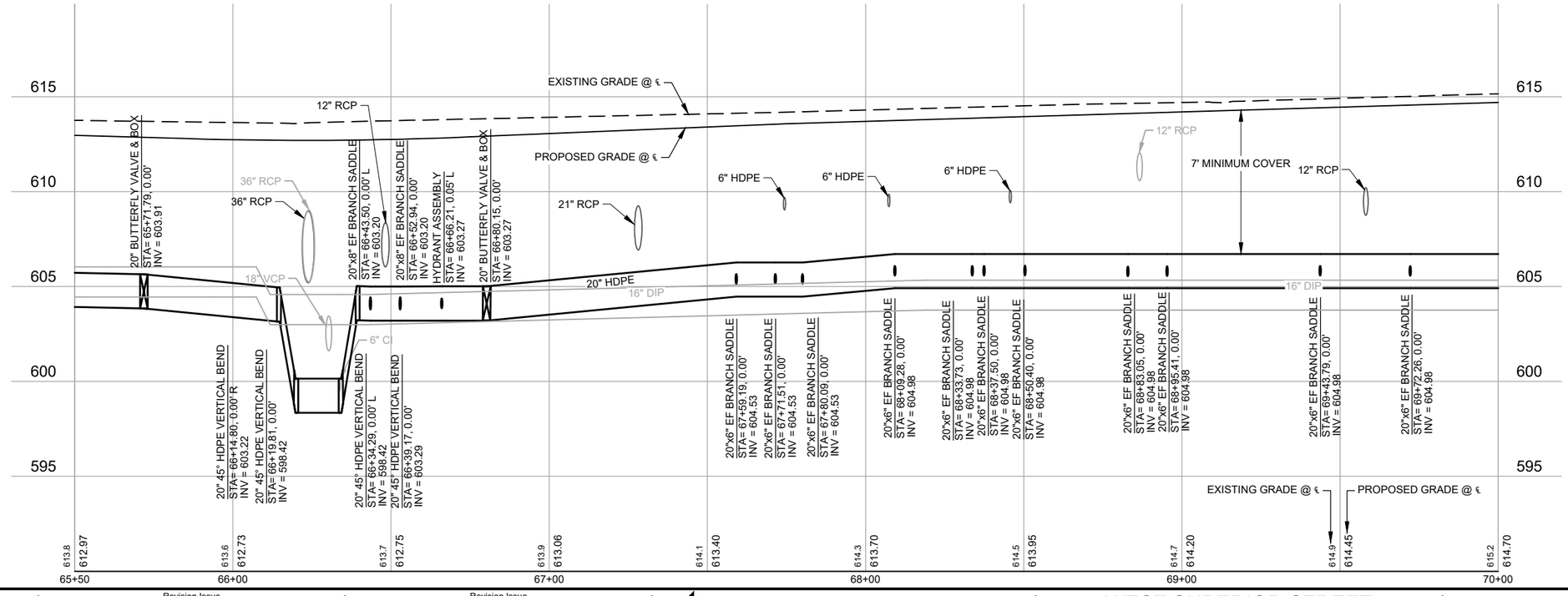


LEGEND



WATER MAIN, TEE, HYDRANT, BULKHEAD AND VALVE
WATER VALVE MANHOLE, REDUCER, BEND AND CROSS
WATER SERVICE AND CURB STOP BOX

WEST SUPERIOR STREET



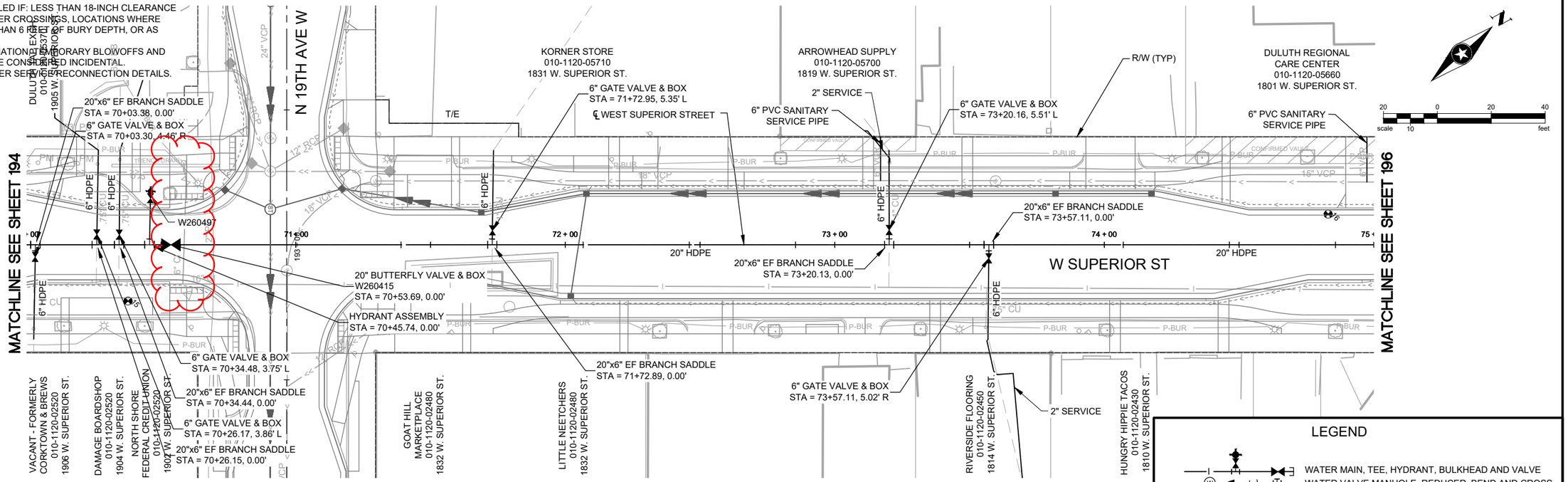
SEH Project	DULUT 171078	Rev.#	Revision Issue Description	Date	Rev.#	Revision Issue Description	Date
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WEST SUPERIOR STREET RECONSTRUCTION
DULUTH, MN

WATER MAIN EXHIBIT ADDENDUM 3

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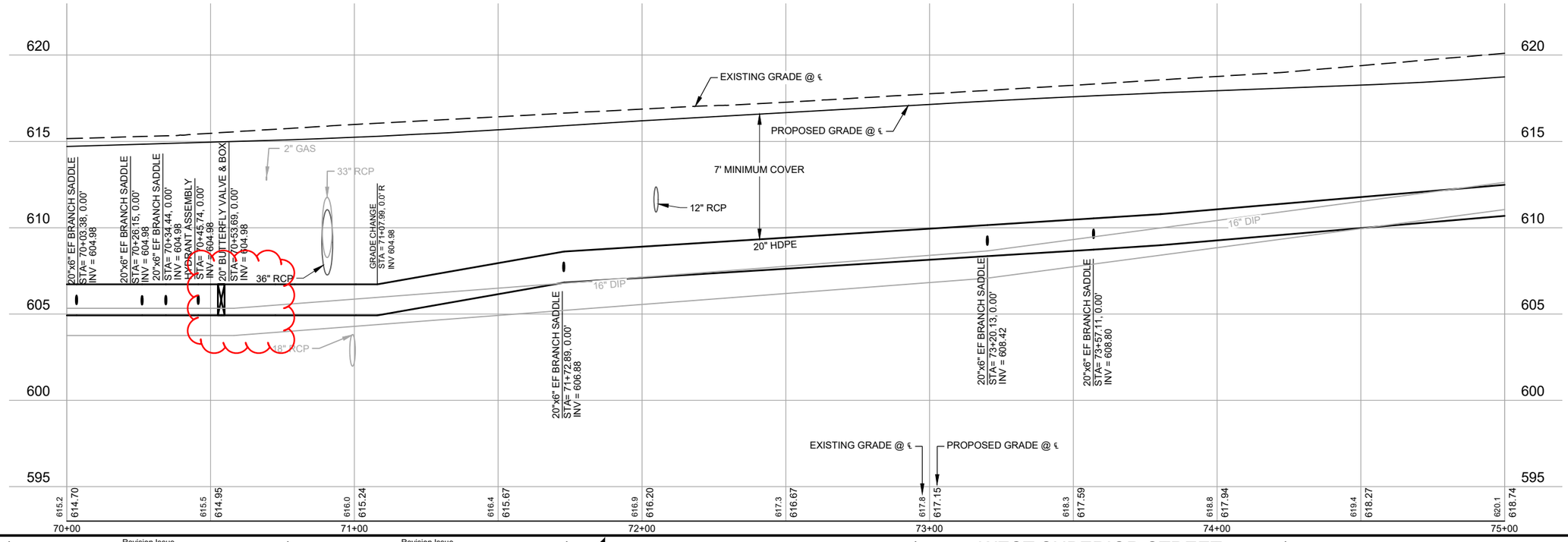
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3. REFER TO SHEET 82 FOR WATER SERVICE RECONNECTION DETAILS.



WEST SUPERIOR STREET

LEGEND

WATER MAIN, TEE, HYDRANT, BULKHEAD AND VALVE
WATER VALVE MANHOLE, REDUCER, BEND AND CROSS
WATER SERVICE AND CURB STOP BOX



SEH Project	DULUT 171078	Rev.#	Revision Issue Description	Date	Rev.#	Revision Issue Description	Date	WEST SUPERIOR STREET RECONSTRUCTION DULUTH, MN
Drawn By		.			.			**WATER MAIN EXHIBIT ADDENDUM 3**
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Checked By		.			.			

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STRUCTURAL OBSERVATION REPORT

Date: August 18, 2023

To: Short Elliot Hendrickson Inc. (SEH)
Matt Bolf, PE
mbolf@sehinc.com

Project: West Superior Street Reconstruction – Structural Evaluation
MBJ Project No.: 23.307.0

Subject Address: 1904 West Superior Street

Current Occupant: Frost River and Damage Boardshop

Date of Inspection: August 7, 2023, 10:00am

Written By: Jensen Rice

Reviewed By: Paul A. Johnson, PE

Copy to: Michele Hayes

MBJ Summary of Work Scope:

This structural inspection effort is specifically limited to the foundations of the building and adjacent underground structures. The remainder of each building's structural system will not be assessed, unless MBJ observes a notable structural condition during our foundation review. The sole purpose of this inspection, and corresponding evaluation grade (as indicated below), is to provide an assessment of this building's foundation adjacent to the planned reconstruction effort.

Please note, MBJ's observations and comments are based solely on our visual inspection of this site. Our comments apply to existing foundations when exposed to code required loading. MBJ is not familiar with the scope of the planned road construction project. We assume the roadway construction will not result in undermining the existing foundation or introduce new or increased loading to the subject building during the duration of construction.

MBJ Inspection Grades:
Building Structure Inspection Grade: D-1
Non-Building Structure Inspection Grade: N/A

Please see the following pages for additional information and specific structural observations. Additional images may exist which are not attached to this report and are available upon request.

Description of Evaluation Grades:
A: No apparent structural deficiencies of foundations or structures at grade.
B: No apparent structural deficiencies of accessible foundations or structures at grade. Not all structural elements are fully accessible.
C: Evidence of moisture intrusion including visible water stains, cracks, spalls, and similar minor deterioration (non-structural). Recommend the observed conditions be monitored. If conditions change, further review of the building envelope may be necessary. Failure to monitor and remedy building envelope (if necessary) may lead to future structural deficiencies.
D-1: Notable structural deficiencies observed. No immediate action required.

- Recommend repairs according to MBJ prototype #1

D-2: Notable structural deficiencies observed. No immediate action required.

- Recommend repairs according to MBJ prototype #2

D-3: Notable structural deficiencies observed. No immediate action required.

- Recommend repairs according to MBJ prototype #3

D-4: Notable structural deficiencies observed. No immediate action required.

- Unique repair or replacement details required.

F: Significant structural deficiencies observed. Immediate action required.

- Unique repair or replacement details required.

See document released under separate cover for explanation of repairs.

Unless noted otherwise, the front of the building refers to the side facing the street of the subject address. The left and right side of the building corresponds to observing the building from the street of the subject address. The rear of the building is the side opposite the front.

Building Foundation Structural Observations: The building is one story above grade with a full-story basement. The front foundation wall is stone. The right foundation wall is brick and provides access to the basement of the adjacent property. The left basement wall is a gypsum partition separating the basement of the adjacent property. The material between the stone joints at the front foundation wall has deteriorated significantly creating voids. Repair of the front foundation wall is recommended prior to the application of construction loads or disturbance of the soil adjacent to the front foundation wall.

Basement Moisture: Moisture was observed on the front foundation wall and evidence of prolonged intrusion was observed including staining and calcified deposits. Deficiencies associated with moisture intrusion were observed as noted above.

Additional Structural Observations: None.

Non-Building Structure Observations (includes vaults, structural sidewalks, etc.): Not applicable.

Inspection Team Members: Ben Helmer, Jensen Rice

Duration of Inspection: 1 hour

Temperature and Weather During Inspection: 76 deg F, partly cloudy.



Figure 1. Front elevation.



Figure 2. Material loss in front foundation wall.

STRUCTURAL OBSERVATION REPORT

Date: August 18, 2023

To: Short Elliot Hendrickson Inc. (SEH)
Matt Bolf, PE
mbolf@sehinc.com

Project: West Superior Street Reconstruction – Structural Evaluation
MBJ Project No.: 23.307.0

Subject Address: 1906 West Superior Street

Current Occupant: Frost River (previously Corktown)

Date of Inspection: August 7, 2023, 10:00am

Written By: Jensen Rice

Reviewed By: Paul A. Johnson, PE

Copy to: Michele Hayes

MBJ Summary of Work Scope:

This structural inspection effort is specifically limited to the foundations of the building and adjacent underground structures. The remainder of each building's structural system will not be assessed, unless MBJ observes a notable structural condition during our foundation review. The sole purpose of this inspection, and corresponding evaluation grade (as indicated below), is to provide an assessment of this building's foundation adjacent to the planned reconstruction effort.

Please note, MBJ's observations and comments are based solely on our visual inspection of this site. Our comments apply to existing foundations when exposed to code required loading. MBJ is not familiar with the scope of the planned road construction project. We assume the roadway construction will not result in undermining the existing foundation or introduce new or increased loading to the subject building during the duration of construction.

MBJ Inspection Grades:
Building Structure Inspection Grade: D-1
Non-Building Structure Inspection Grade: N/A

Please see the following pages for additional information and specific structural observations. Additional images may exist which are not attached to this report and are available upon request.

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B: No apparent structural deficiencies of accessible foundations or structures at grade. Not all structural elements are fully accessible.
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D-1: Notable structural deficiencies observed. No immediate action required.

- Recommend repairs according to MBJ prototype #1

D-2: Notable structural deficiencies observed. No immediate action required.

- Recommend repairs according to MBJ prototype #2

D-3: Notable structural deficiencies observed. No immediate action required.

- Recommend repairs according to MBJ prototype #3

D-4: Notable structural deficiencies observed. No immediate action required.

- Unique repair or replacement details required.

F: Significant structural deficiencies observed. Immediate action required.

- Unique repair or replacement details required.

See document released under separate cover for explanation of repairs.

Unless noted otherwise, the front of the building refers to the side facing the street of the subject address. The left and right side of the building corresponds to observing the building from the street of the subject address. The rear of the building is the side opposite the front.

Building Foundation Structural Observations: The building is one story above grade with a full-story basement. The front foundation wall is stone. The left foundation wall is brick and provides access to the basement of the adjacent property. The right foundation wall is brick and provides access to the basement of the adjacent property. There is a utility penetration through the front foundation wall, where a large void in the stone wall is present. Additionally, the material between the stone joints has deteriorated significantly creating voids. Repair of the front foundation wall is recommended prior to the application of construction loads or disturbance of the soil adjacent to the front foundation wall.

Basement Moisture: Moisture was observed on the front foundation wall and evidence of prolonged intrusion was observed including staining and calcified deposits. Deficiencies associated with moisture intrusion were observed as noted above.

Additional Structural Observations: None.

Non-Building Structure Observations (includes vaults, structural sidewalks, etc.): Not applicable.

Inspection Team Members: Ben Helmer, Jensen Rice

Duration of Inspection: 1 hour

Temperature and Weather During Inspection: 76 deg F, partly cloudy.



Figure 1. Front elevation.


Figure 2. Material loss in front foundation wall.

STRUCTURAL OBSERVATION REPORT

Date: August 18, 2023

To: Short Elliot Hendrickson Inc. (SEH)
Matt Bolf, PE
mbolf@sehinc.com

Project: West Superior Street Reconstruction – Structural Evaluation
MBJ Project No.: 23.307.0

Subject Address: 1908 West Superior Street

Current Occupant: Love Creamery

Date of Inspection: August 7, 2023, 10:00am

Written By: Jensen Rice

Reviewed By: Paul A. Johnson, PE

Copy to: Michele Hayes

MBJ Summary of Work Scope:

This structural inspection effort is specifically limited to the foundations of the building and adjacent underground structures. The remainder of each building's structural system will not be assessed, unless MBJ observes a notable structural condition during our foundation review. The sole purpose of this inspection, and corresponding evaluation grade (as indicated below), is to provide an assessment of this building's foundation adjacent to the planned reconstruction effort.

Please note, MBJ's observations and comments are based solely on our visual inspection of this site. Our comments apply to existing foundations when exposed to code required loading. MBJ is not familiar with the scope of the planned road construction project. We assume the roadway construction will not result in undermining the existing foundation or introduce new or increased loading to the subject building during the duration of construction.

MBJ Inspection Grades:
Building Structure Inspection Grade: D-1
Non-Building Structure Inspection Grade: N/A

Please see the following pages for additional information and specific structural observations. Additional images may exist which are not attached to this report and are available upon request.

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D-1: Notable structural deficiencies observed. No immediate action required.

- Recommend repairs according to MBJ prototype #1

D-2: Notable structural deficiencies observed. No immediate action required.

- Recommend repairs according to MBJ prototype #2

D-3: Notable structural deficiencies observed. No immediate action required.

- Recommend repairs according to MBJ prototype #3

D-4: Notable structural deficiencies observed. No immediate action required.

- Unique repair or replacement details required.

F: Significant structural deficiencies observed. Immediate action required.

- Unique repair or replacement details required.

See document released under separate cover for explanation of repairs.

Unless noted otherwise, the front of the building refers to the side facing the street of the subject address. The left and right side of the building corresponds to observing the building from the street of the subject address. The rear of the building is the side opposite the front.

Building Foundation Structural Observations: The building is one story above grade with a full-story basement. The front foundation wall is stone. The right foundation wall is stone and abuts the adjacent property. The left foundation wall is brick and provides access to the basement of the adjacent property. The material between the stone joints at the front foundation wall has deteriorated significantly creating voids. Repair of the front foundation wall is recommended prior to the application of construction loads or disturbance of the soil adjacent to the front foundation wall.

Basement Moisture: Moisture was observed on the front foundation wall and evidence of prolonged intrusion was observed including staining and calcified deposits. Deficiencies associated with moisture intrusion were observed as noted above.

Additional Structural Observations: None.

Non-Building Structure Observations (includes vaults, structural sidewalks, etc.): Not applicable.

Inspection Team Members: Ben Helmer, Jensen Rice

Duration of Inspection: 1 hour

Temperature and Weather During Inspection: 76 deg F, partly cloudy.



Figure 1. Front elevation.



Figure 2. Material loss in front foundation wall.

STRUCTURAL OBSERVATION REPORT

Date: 03/15/2024

To: Short Elliot Hendrickson Inc. (SEH)
Matt Bolf, PE
mbolf@sehinc.com

Project: West Superior Street Reconstruction – Structural Evaluation
MBJ Project No.: 23.307.0

Subject Address: 1920 West Superior Street

Current Occupant: CP Labarge Salon

Date of Inspection: February 7, 2024, 9:30am

Written By: Joshua Plys

Reviewed By: Paul A. Johnson, PE

Copy to: Michele Hayes

MBJ Summary of Work Scope:

This structural inspection effort is specifically limited to the foundations of the building and adjacent underground structures. The remainder of each building's structural system will not be assessed, unless MBJ observes a notable structural condition during our foundation review. The sole purpose of this inspection, and corresponding evaluation grade (as indicated below), is to provide an assessment of this building's foundation adjacent to the planned reconstruction effort.

Please note, MBJ's observations and comments are based solely on our visual inspection of this site. Our comments apply to existing foundations when exposed to code required loading. MBJ is not familiar with the scope of the planned road construction project. We assume the roadway construction will not result in undermining the existing foundation or introduce new or increased loading to the subject building during the duration of construction.

MBJ Inspection Grades:
Building Structure Inspection Grade: D-1
Non-Building Structure Inspection Grade: N/A

Please see the following pages for additional information and specific structural observations. Additional images may exist which are not attached to this report and are available upon request.

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D-1: Notable structural deficiencies observed. No immediate action required.
- Recommend repairs according to MBJ prototype #1

D-2: Notable structural deficiencies observed. No immediate action required.
- Recommend repairs according to MBJ prototype #2

D-3: Notable structural deficiencies observed. No immediate action required.
- Recommend repairs according to MBJ prototype #3

D-4: Notable structural deficiencies observed. No immediate action required.
- Unique repair or replacement details required.

F: Significant structural deficiencies observed. Immediate action required.
- Unique repair or replacement details required.

See document released under separate cover for explanation of repairs.

Unless noted otherwise, the front of the building refers to the side facing the street of the subject address. The left and right side of the building corresponds to observing the building from the street of the subject address. The rear of the building is the side opposite the front.

Building Foundation Structural Observations: The building is one story above grade with a full-story basement. The front foundation wall is stone with multiple openings, some of which have been infilled with loose CMU suggesting deterioration of the original wall. The integrity of the CMU infill is questionable due to the lack of mortar and uneven placement. The right foundation wall is stone and abuts the adjacent property. The left foundation wall is stone and abuts the adjacent property. Portions of the left and right foundation walls have been painted over, concealing any potential cracking from view. The rear foundation wall is stone and contains a full height CMU infill. Repair of the front foundation wall is recommended prior to the application of construction loads or disturbance of the soil adjacent to the front foundation wall.

Basement Moisture: Mostly dry.

Additional Structural Observations: None.

Non-Building Structural Observations (includes vaults, structural sidewalks, etc.): Not applicable.

Inspection Team Members: Paul Johnson, Joshua Plys

Duration of Inspection: 0.5 hour

Temperature and Weather During Inspection: 38 deg F, cloudy



Figure 1. Front Elevation.



Figure 2. Front foundation wall, loose CMU infill.

ENGINEER'S ESTIMATE - WEST SUPERIOR STREET RECONSTRUCTION (SP 118-109-021)

NO.	ITEM NO.	ITEM DESCRIPTION		UNIT	S.P. 118-109-021					NON-PARTICIPATING (CITY)	COMBINED PROJECT TOTAL
					PARTICIPATING (ROADWAY)	PARTICIPATING (STORM)	PARTICIPATING (GREEN INFRASTRUCTURE)	PARTICIPATING (LANDSCAPING)	PARTICIPATING (CITY)		
					ESTIMATED QUANTITIES	ESTIMATED QUANTITIES	ESTIMATED QUANTITIES	ESTIMATED QUANTITIES	ESTIMATED QUANTITIES	ESTIMATED QUANTITIES	ESTIMATED QUANTITIES
1	2021.501	MOBILIZATION		LUMP SUM	0.61	0.08	0.01	0.07	0.21	0.02	1
2	2011.601	AS BUILT		LUMP SUM	0.61	0.08	0.01	0.07	0.21	0.02	1
3	2016.601	PUBLIC INFORMATION MANAGEMENT		LUMP SUM	0.61	0.08	0.01	0.07	0.21	0.02	1
4	2031.601	FIELD OFFICE		LUMP SUM	0.61	0.08	0.01	0.07	0.21	0.02	1
5	2041.61	TRAINEES		HOUR	3200						3200
6	2101.502	CLEARING		TREE	37						37
7	2101.502	GRUBBING		TREE	37						37
8	2102.503	PAVEMENT MARKING REMOVAL		LIN FT	600						600
9	2102.518	PAVEMENT MARKING REMOVAL		SQ FT	192						192
10	2104.502	REMOVE SIGN		EACH	128						128
11	2104.502	REMOVE SIGN PANEL		EACH	51						51
12	2104.502	REMOVE DELINEATOR/MARKER		EACH	2						2
13	2104.502	SALVAGE SIGN		EACH	27						27
14	2104.502	REMOVE TREE GRATE AND CASTING		EACH	73						73
15	2104.502	REMOVE BOLLARDS (BIKE RACK)		EACH	7						7
16	2104.502	REMOVE HANDHOLE		EACH	21						21
17	2104.502	REMOVE LIGHT FOUNDATION		EACH	74						74
18	2104.502	REMOVE SERVICE CABINET		EACH	2						2
19	2104.502	REMOVE EQUIPMENT PAD		EACH	2						2
20	2104.502	REMOVE POLE MOUNTED CABINET		EACH	2						2
21	2104.502	REMOVE LIGHT STANDARD		EACH	3						3
22	2104.502	SALVAGE LUMINAIRE		EACH						3	3
23	2104.502	REMOVE LIGHTING UNIT		EACH	63						63
24	2104.502	SALVAGE LIGHTING UNIT		EACH	1					7	8
25	2104.502	REMOVE HYDRANT		EACH					14		14
26	2104.502	REMOVE CURB STOP AND BOX		EACH					123		123
27	2104.502	REMOVE GATE VALVE AND BOX		EACH					44		44
28	2104.502	REMOVE MANHOLE		EACH	50						50
29	2104.502	REMOVE CATCH BASIN		EACH	93						93
30	2104.502	REMOVE SIGNAL SYSTEM A		EACH	1						1
31	2104.502	REMOVE SIGNAL SYSTEM C		EACH	1						1
32	2104.502	SALVAGE VEHICULAR GATE		EACH	2						2
33	2104.502	REMOVE MISCELLANEOUS STRUCTURES		EACH	1						1
34	2104.502	SALVAGE HISTORIC MARKER		EACH	1						1
35	2104.502	REMOVE CONCRETE STEPS		EACH	1						1
36	2104.502	REMOVE UNDERGROUND TANK		EACH	1						1
37	2104.503	REMOVE UNDERGROUND WIRE		LIN FT	6400						6400
38	2104.503	SALVAGE FENCE		LIN FT	634						634
39	2104.503	REMOVE FENCE		LIN FT	65						65
40	2104.503	REMOVE RETAINING WALL		LIN FT	67						67
41	2104.503	REMOVE STREETCAR TRACKS		LIN FT	613						613
42	2104.503	REMOVE CURB AND GUTTER	(P)	LIN FT	21118						21118
43	2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)		LIN FT	1732						1732
44	2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)		LIN FT	282						282
45	2104.503	REMOVE WATER SERVICE PIPE		LIN FT					5317		5317
46	2104.503	REMOVE SANITARY SERVICE PIPE		LIN FT					428		428
47	2104.503	REMOVE SEWER PIPE (STORM)	(P)	LIN FT	9935						9935
48	2104.503	REMOVE BOX CULVERT		LIN FT	53						53
49	2104.503	REMOVE STEEL WATER MAIN		LIN FT					20		20
50	2104.503	REMOVE GAS MAIN		LIN FT						2280	2280
51	2104.503	REMOVE WATER MAIN		LIN FT					10521		10521
52	2104.504	REMOVE CONCRETE PAVEMENT	(P)	SQ YD	2692						2692
53	2104.504	REMOVE PAVEMENT	(P)	SQ YD	58129						58129
54	2104.518	REMOVE SIDEWALK		SQ FT	129779						129779
55	2104.518	REMOVE BRICK SIDEWALK		SQ FT	3956						3956
56	2104.518	REMOVE BITUMINOUS WALK		SQ FT	30381						30381
57	2104.518	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	(P)	SQ FT	8319						8319
58	2104.518	REMOVE CONCRETE DRIVEWAY PAVEMENT	(P)	SQ FT	34735						34735
59	2104.601	REMOVE CONCRETE STRUCTURE		LUMP SUM	1						1
60	2104.601	SALVAGE MISCELLANEOUS STRUCTURES		LUMP SUM	1						1
61	2104.601	HAUL SALVAGED MATERIAL		LUMP SUM						1	1
62	2104.602	REMOVE WATER VAULT		EACH					9		9
63	2104.602	REMOVE PARKING METER POST		EACH	37						37
64	2104.618	REMOVE VAULT ROOF		SQ FT	5340						5340

65	2104.618	REMOVE VAULT ACCESS HATCH		SQ FT	128						128
66	2105.607	STRUCTURAL SOIL BORROW (CV)		CU YD				636			636
67	2106.507	COMMON EMBANKMENT (CV)		CU YD	94						94
68	2106.507	EXCAVATION - COMMON	(P)	CU YD	27805						27805
69	2106.507	EXCAVATION - ROCK		CU YD	100						100
70	2106.507	SELECT GRANULAR EMBANKMENT MOD 7% (CV)	(P)	CU YD	23858						23858
71	2106.601	DEWATERING		LUMP SUM	1						1
72	2106.602	EXPLORATORY PIT		EACH	36						36
73	2106.607	EXCAVATION SPECIAL		CU YD	14972						14972
74	2106.609	HAUL AND DISPOSE OF CONTAMINATED MATERIAL		TON	14170						14170
75	2108.504	GEOTEXTILE FABRIC TYPE 7		SQ YD	50177						50177
76	2112.519	SUBGRADE PREPARATION		ROAD STA	113						113
77	2123.610	LOW BOY		HOUR	160						160
78	2211.507	AGGREGATE BASE (CV) CLASS 5	(P)	CU YD	18716						18716
79	2232.504	MILL BITUMINOUS SURFACE (2.0")		SQ YD	180						180
80	2301.503	INTEGRANT CURB DESIGN B6		LIN FT	230						230
81	2301.503	INTEGRANT CURB DESIGN S5		LIN FT	24						24
82	2301.504	CONCRETE PAVEMENT 8.0"		SQ YD	436						436
83	2301.508	SUPPLEMENTAL REINF BARS (EPOXY COATED)		POUND	6870						6870
84	2357.506	BITUMINOUS MATERIAL FOR TACK COAT		GAL	4591						4591
85	2360.509	TYPE SP 9.5 WEARING COURSE MIXTURE (3,C)		TON	7148						7148
86	2360.509	TYPE SP 12.5 NON WEARING COURSE MIXTURE (3,B)		TON	4937						4937
87	2401.507	STRUCTURAL CONCRETE (1G52)		CU YD	20						20
88	2401.507	STRUCTURAL CONCRETE (3G52)		CU YD	56						56
89	2401.508	REINFORCEMENT BARS		POUND	1270						1270
90	2401.508	REINFORCEMENT BARS (EPOXY COATED)		POUND	5610						5610
91	2401.604	REPAIR BUILDING FOUNDATION		SQ YD	135						135
92	2401.604	VAULT INFILL WALL		SQ YD	479						479
93	2411.502	CONCRETE STAIRWAY		EACH	1						1
94	2411.601	REPAIR BRICK ARCH PIPE		LUMP SUM	1						1
95	2411.602	BUS SHELTER FOUNDATION		EACH	4						4
96	2411.603	CONCRETE RETAINING WALL		LIN FT	64						64
97	2411.607	CONTROL DENSITY HYDRAULIC FILL		CU YD	1779						1779
98	2451.602	ANTI-SEEP COLLAR		EACH					18		18
99	2475.503	ORNAMENTAL METAL RAILING		LIN FT	51						51
100	2481.618	WATERPROOF LINER SPECIAL 1		SQ FT	5139						5139
101	2481.618	WATERPROOF LINER SPECIAL 2		SQ FT			1456				1456
102	2502.503	4" PERF PVC PIPE DRAIN		LIN FT	19810						19810
103	2502.503	6" PERF TP PIPE DRAIN		LIN FT			1315				1315
104	2502.601	DRAINAGE SYSTEM		LUMP SUM	1						1
105	2503.503	12" RC PIPE SEWER DESIGN 3006 CLASS V		LIN FT		5322					5322
106	2503.503	15" RC PIPE SEWER DESIGN 3006 CLASS V		LIN FT		1923					1923
107	2503.503	18" RC PIPE SEWER DESIGN 3006 CLASS V		LIN FT		1206					1206
108	2503.503	21" RC PIPE SEWER DESIGN 3006 CLASS V		LIN FT		721					721
109	2503.503	24" RC PIPE SEWER DESIGN 3006 CLASS IV		LIN FT		579					579
110	2503.503	27" RC PIPE SEWER DESIGN 3006 CLASS IV		LIN FT		137					137
111	2503.503	30" RC PIPE SEWER DESIGN 3006 CLASS IV		LIN FT		504					504
112	2503.503	36" RC PIPE SEWER DESIGN 3006 CLASS IV		LIN FT		861					861
113	2503.503	48" RC PIPE SEWER DESIGN 3006 CLASS IV		LIN FT		271					271
114	2503.503	28" SPAN RC PIPE-ARCH SEWER CLASS IIA		LIN FT		241					241
115	2503.503	44" SPAN RC PIPE-ARCH SEWER CLASS IIA		LIN FT		14					14
116	2503.602	CONNECT TO EXISTING STORM SEWER		EACH		35					35
117	2503.602	CONNECT TO EXISTING ROOF DRAIN LEADER		EACH	40						40
118	2503.602	CONNECT SEWER SERVICE		EACH					10		10
119	2503.602	SANITARY TRACER BOX		EACH					10		10
120	2503.602	8"X6" PVC WYE		EACH					1		1
121	2503.602	12"X6" PVC WYE		EACH					1		1
122	2503.602	15"X6" PVC WYE		EACH					4		4
123	2503.602	18"X6" PVC WYE		EACH					2		2
124	2503.603	6" HDPE PIPE SEWER		LIN FT	899						899
125	2503.603	8" HDPE PIPE SEWER		LIN FT	63						63
126	2503.603	10" HDPE PIPE SEWER		LIN FT	28						28
127	2503.603	12" HDPE PIPE SEWER		LIN FT	81						81
128	2503.603	6" PVC SANITARY SERVICE PIPE		LIN FT					314		314
129	2504.601	TEMPORARY WATER SERVICE		LUMP SUM					1		1
130	2504.602	TEMPORARY WATER SERVICE		EACH					7		7
131	2504.602	RECONNECT WATER SERVICE		EACH					85		85
132	2504.602	HYDRANT ASSEMBLY		EACH					15		15
133	2504.602	ALTERNATE HYDRANT ASSEMBLY		EACH					4		4
134	2504.602	CONNECT TO EXISTING WATER MAIN		EACH					23		23
135	2504.602	6" INSERTION VALVE		EACH					1		1
136	2504.602	20" INSERTION VALVE		EACH					1		1
137	2504.602	6" GATE VALVE AND BOX		EACH					51		51
138	2504.602	8" GATE VALVE AND BOX		EACH					12		12
139	2504.602	10" GATE VALVE AND BOX		EACH					1		1
140	2504.602	12" GATE VALVE AND BOX		EACH					4		4
141	2504.602	16" BUTTERFLY VALVE AND BOX		EACH					1		1

142	2504.602	20" BUTTERFLY VALVE AND BOX		EACH					23		23
143	2504.602	24" BUTTERFLY VALVE AND BOX		EACH					4		4
144	2504.602	6"X2" TAPPING TEE W/ELECTROFUSION SADDLE		EACH					1		1
145	2504.602	8"X2" TAPPING TEE W/ELECTROFUSION SADDLE		EACH					2		2
146	2504.602	8"X6" TAPPING TEE W/ELECTROFUSION SADDLE		EACH					3		3
147	2504.602	20"X2" TAPPING TEE W/ELECTROFUSION SADDLE		EACH					21		21
148	2504.602	20"X6" TAPPING TEE W/ELECTROFUSION SADDLE		EACH					45		45
149	2504.602	20"X8" TAPPING TEE W/ELECTROFUSION SADDLE		EACH					11		11
150	2504.602	24"X2" TAPPING TEE W/ELECTROFUSION SADDLE		EACH					9		9
151	2504.602	24"X6" TAPPING TEE W/ELECTROFUSION SADDLE		EACH					3		3
152	2504.602	24"X8" TAPPING TEE W/ELECTROFUSION SADDLE		EACH					1		1
153	2504.602	20"X10" HDPE MANUFACTURED TEE		EACH					1		1
154	2504.602	20"X12" HDPE MANUFACTURED TEE		EACH					3		3
155	2504.602	20"X20" HDPE MANUFACTURED TEE		EACH					1		1
156	2504.602	24"X12" HDPE MANUFACTURED TEE		EACH					1		1
157	2504.602	24"X16" HDPE MANUFACTURED TEE		EACH					1		1
158	2504.602	16" DI CAP		EACH					3		3
159	2504.602	20" DI CAP		EACH					2		2
160	2504.602	8"X6" REDUCER		EACH					10		10
161	2504.602	12"X10" REDUCER		EACH					2		2
162	2504.602	20"X16" REDUCER		EACH					2		2
163	2504.602	24"X20" REDUCER		EACH					3		3
164	2504.602	2" CURB STOP AND BOX		EACH					34		34
165	2504.602	PREPARE FINISHED BASEMENT FOR WATER SERVICE REPLACEMENT		EACH					1		1
166	2504.602	CONNECT TO EXISTING INDOOR PLUMBING		EACH					11		11
167	2504.602	CONCRETE ENCASED VALVE BOX COLLAR		EACH					89		89
168	2504.603	24" STEEL CASING PIPE		LIN FT					20		20
169	2504.603	INDOOR PLUMBING TO RELOCATE WATER METER, PEX PIPE		LIN FT					330		330
170	2504.603	2" HDPE SDR 11 SERVICE PIPE		LIN FT					1197		1197
171	2504.603	6" DIPS HDPE WATER MAIN SDR 11		LIN FT					1944		1944
172	2504.603	8" DIPS HDPE WATER MAIN SDR 11		LIN FT					1097		1097
173	2504.603	10" DIP WATER MAIN CL52		LIN FT					6		6
174	2504.603	10" DIPS HDPE WATER MAIN SDR 11		LIN FT					97		97
175	2504.603	12" DIPS HDPE WATER MAIN SDR 11		LIN FT					239		239
176	2504.603	16" DIP WATER MAIN CL52		LIN FT					68		68
177	2504.603	16" DIPS HDPE WATER MAIN SDR 11		LIN FT					94		94
178	2504.603	20" DIPS HDPE WATER MAIN SDR 11		LIN FT					6407		6407
179	2504.603	24" DIPS HDPE WATER MAIN SDR 11		LIN FT					2429		2429
180	2504.604	3" POLYSTYRENE INSULATION		SQ YD					300		300
181	2504.604	VAPOR BARRIER		SQ YD					3317		3317
182	2505.603	HP GAS TRENCH EXCAVATION		LIN FT						561	561
183	2506.502	CASTING ASSEMBLY		EACH		239	8				247
184	2506.502	ADJUST FRAME AND RING CASTING		EACH		10					10
185	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN H		EACH			6				6
186	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020		LIN FT		884.3	27.1				911
187	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 60-4020		LIN FT		306.3	5.6				312
188	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 72-4020		LIN FT		97.1	4.8				102
189	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 84-4020		LIN FT		80.8					81
190	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 96-4020		LIN FT		4					4
191	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 108-4020		LIN FT		17					17
192	2506.602	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL		EACH			18				18
193	2506.602	CONNECT TO EXISTING STRUCTURE		EACH		8					8
194	2506.602	CONCRETE ENCASED CASTING COLLAR		EACH		65					65
195	2506.603	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL		LIN FT		7.4					7
196	2511.602	LANDSCAPE BOULDERS		EACH				50			50
197	2511.603	BOULDER WALL		LIN FT				45			45
198	2519.607	LIGHTWEIGHT CELLULAR CONCRETE FILL		CU YD	410						410
199	2521.518	6" CONCRETE WALK (FINISH 1)		SQ FT	151183						151183
200	2521.518	6" CONCRETE WALK (FINISH 2) - TRAIL		SQ FT	57425						57425
201	2521.518	6" CONCRETE WALK (FINISH 3) - BANDS		SQ FT	11899						11899
202	2521.518	8" CONCRETE WALK (FINISH 1)		SQ FT	1522						1522
203	2521.518	8" CONCRETE WALK (FINISH 2) - TRAIL		SQ FT	708						708
204	2521.518	8" CONCRETE WALK (FINISH 3) - BANDS		SQ FT	39						39
205	2531.503	CONCRETE CURB AND GUTTER DESIGN B612		LIN FT	242						242
206	2531.503	CONCRETE CURB AND GUTTER DESIGN B624		LIN FT	14410						14410
207	2531.503	CONCRETE CURB AND GUTTER DESIGN B824		LIN FT	635						635
208	2531.503	CONCRETE CURB AND GUTTER DESIGN S524		LIN FT	2535						2535
209	2531.503	CONCRETE CURB AND GUTTER DESIGN R424		LIN FT	84						84
210	2531.503	CONCRETE CURB DESIGN V6		LIN FT	102						102
211	2531.603	SILL CURB TYPE B624 (SPECIAL)		LIN FT	3452						3452
212	2531.603	SILL CURB TYPE B824 (SPECIAL)		LIN FT	874						874
213	2531.603	SILL CURB TYPE B1024 (SPECIAL)		LIN FT	46						46
214	2531.504	8" CONCRETE DRIVEWAY PAVEMENT (FINISH 1)		SQ YD	4189						4189
215	2531.504	8" CONCRETE DRIVEWAY PAVEMENT (FINISH 2) - TRAIL		SQ YD	1065						1065
216	2531.618	TRUNCATED DOMES		SQ FT	2800						2800
217	2533.503	PORTABLE PRECAST CONC BARRIER DES 8337		LIN FT	1000						1000
218	2533.503	RELOCATE PORT PRECAST CONC BAR DES 8337		LIN FT	11000						11000

219	2533.601	INSTALL MISCELLANEOUS STRUCTURES		LUMP SUM	1						1
220	2540.601	BUS SHELTERS		LUMP SUM	1						1
221	2540.602	CONSTRUCT SURVEY MONUMENT		EACH	15						15
222	2540.602	INFORMATION SIGN SPECIAL		EACH	7						7
223	2540.602	INFORMATION SIGN SPECIAL 1		EACH	4						4
224	2540.602	INFORMATION SIGN SPECIAL 2		EACH	5						5
225	2540.602	INFORMATION SIGN SPECIAL 3		EACH	2						2
226	2540.602	INFORMATION SIGN SPECIAL 4		EACH	1						1
227	2540.602	INFORMATION SIGN SPECIAL 5		EACH						1	1
228	2540.602	INFORMATION SIGN SPECIAL 6		EACH	4						4
229	2540.602	PARKING KIOSK		EACH						23	23
230	2540.602	INSTALL HISTORIC MARKER		EACH	1						1
231	2540.602	BIKE LOOP		EACH				65			65
232	2540.602	WASTE RECEPTACLE		EACH				26			26
233	2540.602	BENCH TYPE SPECIAL		EACH				41			41
234	2540.602	BENCH TYPE SPECIAL 1		EACH				6			6
235	2540.603	LANDSCAPE EDGER		LIN FT				161			161
236	2540.618	STONE SPECIAL		SQ FT				141			141
237	2545.502	SERVICE CABINET		EACH	4						4
238	2545.502	EQUIPMENT PAD		EACH	3						3
239	2545.502	LIGHT FOUNDATION DESIGN E MODIFIED		EACH	193						193
240	2545.502	HANDHOLE		EACH	30						30
241	2545.502	LIGHTING UNIT TYPE SPECIAL 1		EACH	61						61
242	2545.502	LIGHTING UNIT TYPE SPECIAL 2		EACH	104						104
243	2545.502	LIGHTING UNIT TYPE SPECIAL 3		EACH	4						4
244	2545.503	0.75" NON-METALLIC CONDUIT		LIN FT	1775						1775
245	2545.503	2" NON-METALLIC CONDUIT		LIN FT	19264						19264
246	2545.503	3" NON-METALLIC CONDUIT		LIN FT	4927						4927
247	2545.503	4" NON-METALLIC CONDUIT		LIN FT	1672						1672
248	2545.503	UNDERGROUND WIRE 1/C 3/0 AWG		LIN FT	1090						1090
249	2545.503	UNDERGROUND WIRE 1/C 4 AWG		LIN FT	114737						114737
250	2545.503	UNDERGROUND WIRE 1/C 6 AWG		LIN FT	32173						32173
251	2545.503	UNDERGROUND WIRE 1/C 10 AWG		LIN FT	6075						6075
252	2545.601	21ST AVE BUS SHELTER ELECTRICAL		LUMP SUM	1						1
253	2545.601	GARFIELD AVE BUS SHELTER ELECTRICAL		LUMP SUM	1						1
254	2545.602	INSTALL LIGHTING UNIT		EACH	1						1
255	2545.602	ELECTRICAL SERVICE GROUND		EACH						11	11
256	2550.501	FIBER OPTIC SYSTEM		LUMP SUM	1						1
257	2557.602	INSTALL VEHICULAR GATE		EACH	2						2
258	2557.603	INSTALL FENCE		LIN FT	634						634
259	2563.601	TRAFFIC CONTROL SUPERVISOR		LUMP SUM	0.61	0.08	0.01	0.07	0.21	0.02	1
260	2563.601	TRAFFIC CONTROL		LUMP SUM	0.61	0.08	0.01	0.07	0.21	0.02	1
261	2563.601	ALTERNATE PEDESTRIAN ROUTE		LUMP SUM	0.61	0.08	0.01	0.07	0.21	0.02	1
262	2563.618	CONSTRUCTION SIGN SPECIAL		SQ FT	800						800
263	2564.602	INSTALL SIGN PANEL		EACH	27						27
264	2564.518	SIGN		SQ FT	561			163			724
265	2564.518	SIGN PANEL		SQ FT	300						300
266	2564.618	SIGN SPECIAL		SQ FT						140	140
267	2565.501	EMERGENCY VEHICLE PREEMPTION SYSTEM A		LUMP SUM	1						1
268	2565.501	EMERGENCY VEHICLE PREEMPTION SYSTEM C		LUMP SUM	1						1
269	2565.501	TRAFFIC CONTROL INTERCONNECT		LUMP SUM	1						1
270	2565.516	TRAFFIC CONTROL SIGNAL SYSTEM A		SYSTEM	1						1
271	2565.516	TRAFFIC CONTROL SIGNAL SYSTEM C		SYSTEM	1						1
272	2565.616	REVISE SIGNAL SYSTEM B		SYSTEM	1						1
273	2571.502	DECIDUOUS TREE 1.25" CAL CONT		EACH				249			249
274	2571.502	ORNAMENTAL TREE 1.25" CAL CONT		EACH				122			122
275	2571.502	CONIFEROUS SHRUB 2.5' SPREAD CONT		EACH				79			79
276	2571.502	DECIDUOUS SHRUB NO 5 CONT		EACH				2424			2424
277	2571.502	PERENNIAL NO 1 CONT		EACH				14168			14168
278	2573.501	STABILIZED CONSTRUCTION EXIT		LUMP SUM	0.61	0.08	0.01	0.07	0.21	0.02	1
279	2573.502	STORM DRAIN INLET PROTECTION		EACH	333						333
280	2573.503	SILT FENCE, TYPE MS		LIN FT	4245						4245
281	2574.505	SOIL BED PREPARATION		ACRE				2.9			3
282	2574.505	SUBSOILING		ACRE				2.9			3
283	2574.507	COMMON TOPSOIL BORROW		CU YD				1629			1629
284	2574.507	BOULEVARD TOPSOIL BORROW		CU YD				4547			4547
285	2574.507	LOAM TOPSOIL BORROW		CU YD				2036			2036
286	2574.507	FILTER TOPSOIL BORROW		CU YD			1796				1796
287	2575.504	ROLLED EROSION PREVENTION CATEGORY 20		SQ YD				16817			16817
288	2575.505	SEEDING		ACRE				2.9			3
289	2575.505	MOWING		ACRE				5.8			6
290	2575.505	WEED SPRAYING		ACRE				1.6			2
291	2575.506	WEED SPRAY MIXTURE		GALLON				12			12
292	2575.523	WATER		M GAL				632			632
293	2575.607	MULCH MATERIAL TYPE 6 MODIFIED		CU YD				602			602
294	2575.608	SEED NORTHERN BOULEVARD		POUND				435			435
295	2581.503	6" REMOVABLE PREFORM PAVEMENT MARKING TAPE		LIN FT	9600						9600

296	2581.603	REMOVABLE PREFORMED PLASTIC MASK (BLACK)		LIN FT	80						80
297	2582.503	4" DOUBLE SOLID LINE MULTI-COMPONENT GROUND IN (WR)		LIN FT	9771						9771
298	2582.503	4" SOLID LINE MULTI-COMPONENT GROUND IN (WR)		LIN FT	8500						8500
299	2582.503	4" BROKEN LINE MULTI-COMPONENT GROUND IN (WR)		LIN FT	53						53
300	2582.503	8" SOLID LINE MULTI-COMPONENT GROUND IN (WR)		LIN FT	150						150
301	2582.503	8" DOTTED LINE MULTI-COMPONENT GROUND IN (WR)		LIN FT	200						200
302	2582.503	12" SOLID LINE MULTI-COMPONENT GROUND IN (WR)		LIN FT	210						210
303	2582.503	24" SOLID LINE MULTI-COMPONENT GROUND IN (WR)		LIN FT	657						657
304	2582.518	PAVEMENT MESSAGE PREFORM THERMOPLASTIC GROUND IN		SQ FT	589						589
305	2582.518	CROSSWALK PREFORM THERMOPLASTIC GROUND IN		SQ FT	5433						5433
										TOTAL	

PROJECT ENGINEER: Rose Kopecky, PE (Lic. MN)

2/9/2026
DATE