

**Request for Proposals
City of Fargo
Conduit/Fiber Placement Project**

The City of Fargo requests proposals from qualified vendors for Conduit/fiber placement project. The City reserves the right to reject any/all Proposals or accept what is, in its judgment, the Proposal which is in the City's best interest.

Your attention is called to this RFV for additional details.

Sealed proposals must be submitted to the City of Fargo Auditor's Office, 225 4th Street North, Fargo, ND 58102 on or before 2:00 PM, Monday, July 13th, 2020 (Central Time).

Due to the 2020 Emergency Declaration Related to COVID-19, we encourage the public to deliver Requests for Proposals in the manner of one of the options listed below, by the due date stated in the proposal:

- 1) Mail to City of Fargo, Auditors office, 225 4th St N, Fargo, ND 58102 (Write your proposal name on the outside of the envelope.).
- 2) Deposit your envelope in the Drop Box located at the entrance of the City Hall employee Parking ramp, on 3rd Ave N. (Write your project name on the outside of the envelope.).

Proposals received later than the time and date specified will not be considered.

City Auditor's Office
(June 17 & 24, 2019)





Request for Proposals

FOR

Conduit/Fiber Placement Project

Proposals Due:

July 13, 2020

2:00 P.M.

City Hall

Auditors Department

225 4th St N

Fargo, ND 58102

701-241-1324

I. Overview

The City of Fargo wants to connect fiber to 3 water towers and the new landfill building location. In addition, the City is considering placing fiber to connect with the future Fargo Public School administration building.

II. Background

The City of Fargo is the most populous city in North Dakota, with a population of roughly 125,000. Over 20 different departments plan, track, and manage capital projects/purchases across a wide array of funding sources.

III. Scope of Work

The attached specifications and diagrams show the routes to establish connections to the water towers and other locations.

Below is an estimated breakdown from the diagrams of the quantities needed for the conduit and fiber.

Route #1

	Courts Plus Water Tower (WT09)
12 SM Fiber Optic Cable	500'
2" HDPE Conduit (Trace Wire Incidental)	230'
Fiber Splices	8
450 FOSC Splice Enclosure	1
Concrete Polymer Vault	2

Route #2

	30 th St and Univ Drive N Water Tower (WT05)
12 SM Fiber Optic Cable	2,500'
2" HDPE Conduit (Trace Wire Incidental)	2,200'
Fiber Splices	8
450 FOSC Splice Enclosure	1
Concrete Polymer Vault	2
24" PVC Pull Box	1

Route #3

	12 th Ave & 38 th St N Water Tower (WT04)
12 SM Fiber Optic Cable	500'
2" HDPE Conduit (Trace Wire Incidental)	230'
Fiber Splices	8
450 FOSC Splice Enclosure	0
Concrete Polymer Vault	1

Route #4

	New Landfill Building location
12 SM Fiber Optic Cable	1,800'
2" HDPE Conduit (Trace Wire Incidental)	1,235'
Fiber Splices	8
450 FOSC Splice Enclosure	1
Concrete Polymer Vault	2

**Route #5
(Alternate #1)**

	8 th Ave N (4 th St to Hawthorne Elementary School)
12 SM Fiber Optic Cable	?
2" HDPE Conduit (Trace Wire Incidental)	?
Fiber Splices	?
450 FOSC Splice Enclosure	?
Concrete Polymer Vault	?

Routes #1; #2 & #3 goes to the base of the Water Towers. For Route #4, The Landfill Office Building will not be in place until next spring. As identified in the drawing, 500' fo fiber will be coiled in the vault. When the building is built, conduit from the building will be placed to connect to the vault.

Route #5 would be to establish a fiber connection to the new Fargo Public School Administration building. We will determine in August whether this will be placed or not.

The City will provide information requested by an Offeror. Please specify additional data, if any, required from the City in your proposal.

IV. Submission Requirements

Offerors should submit the proposed costs based on the layout below. Late Proposals cannot be accepted and will be returned unopened to the Offeror.

Base Bid	Cost:
Part 1	
Courts Plus Water Tower	\$
30 th St and Univ Dr N Water Tower	\$
12 th Ave & 38 th St N Water Tower	\$
Part 1 Total:	\$
Part 2	
New Landfill Building	\$
Part 2 Total:	\$
Base Bid Total:	\$
Alternate #1	
8 th Ave S (4 th S to Hawthorn Elementary School)	\$

Offeror can add any additional information to their proposal for clarification.

V. Questions and Answers

All questions related to this Request for Proposal should be emailed to rgronneberg@cityoffargo.com.

The answers to Offeror’s questions will be compiled and posted on the same website used for downloading the RFP, either as an addendum, or as *Project Q&A*. Offerors shall bear the responsibility for checking the website for *Project Q&A*, which will only be visible if there are any questions answered. Failure to do so may result in the Offeror not receiving all clarifications necessary to present a responsive Proposal.

VI. Projected Timetable

The City reserves the right to modify the timeline if necessary.

RFP Available for Viewing	July 1, 2020
Proposals Due	2:00 PM July 13, 2020
Estimated date for Commission Approval	July 27, 2020
Work Completed	Nov. 1, 2020

VII. Summary

The City reserves the right to reject any/all Proposal(s) or accept what is, in its judgment, the Proposal which is in the City's best interest. The City further reserves the right, in the best interests of the City, to waive any technical defects or irregularities in any/all Proposal(s) submitted.

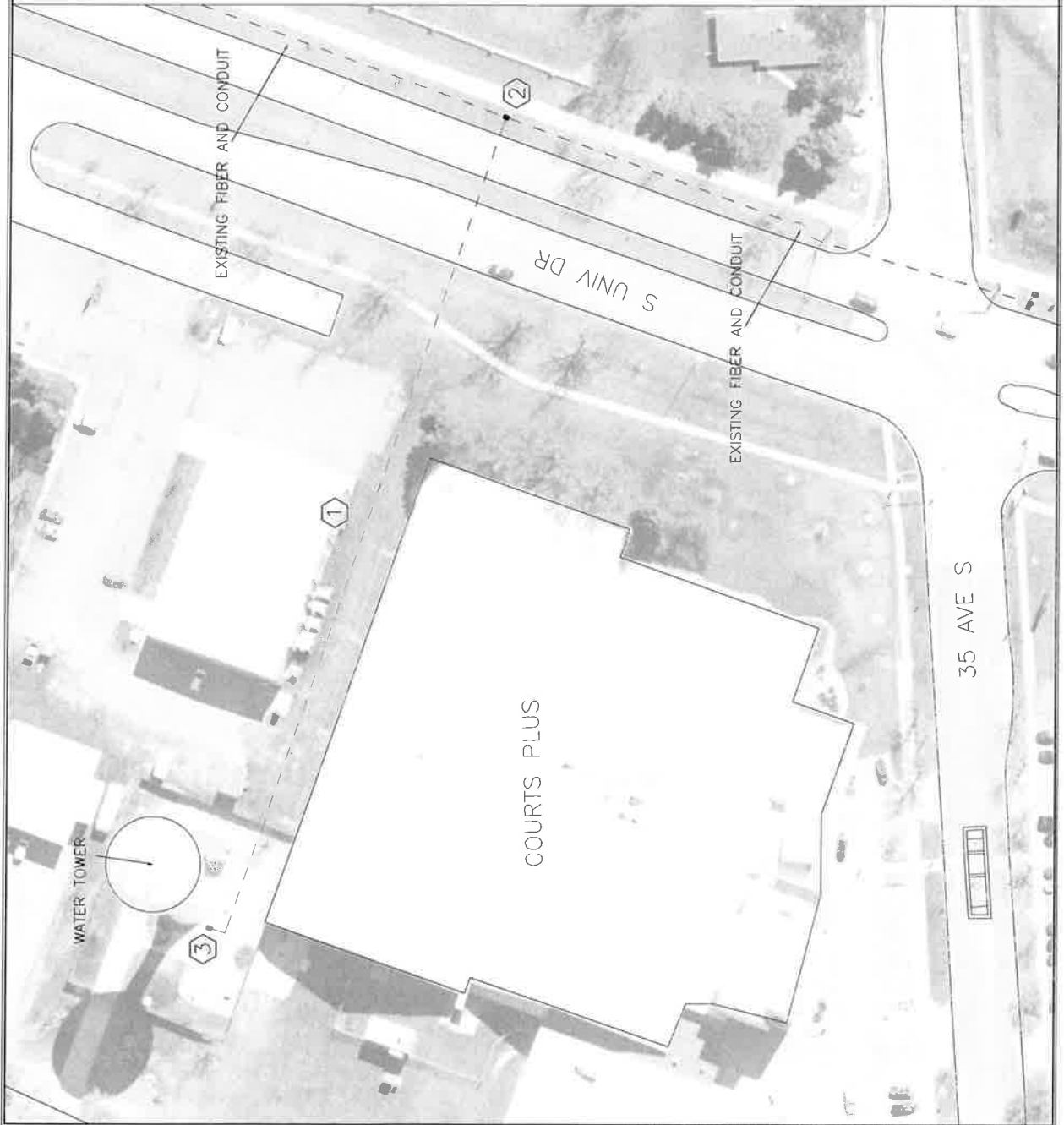
Submit Proposals in accordance with the conditions set forth. Late or faxed Proposals will not be accepted.

ATTACHMENTS

Specifications.pdf – Provides details on the conduit, vaults and fiber.

IS_Fiber_7-1-2020.pdf – Provides Routes 1 thru 4 information.

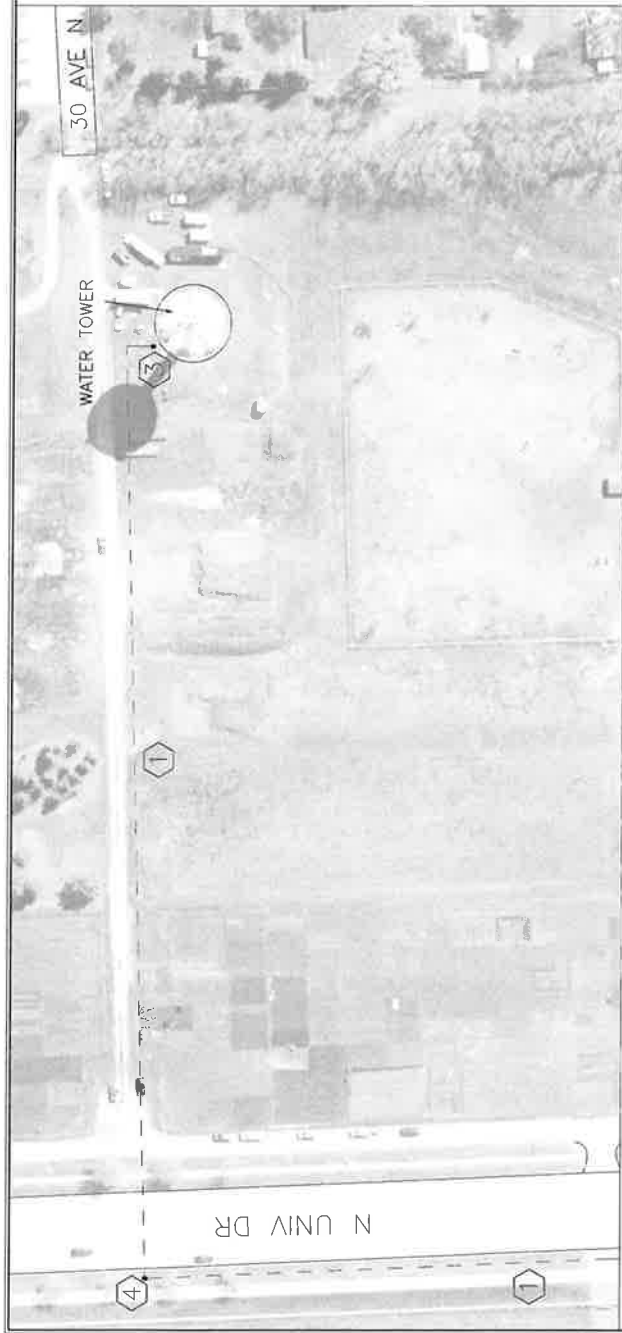
IS_Fiber_FPS-Admin.pdf – Provides route information to Fargo Public Schools.



- ① F&I NEW 2" ORANGE HDPE DUCT, 12SM FIBER AND NEW ORANGE #12 COPPER-CLAD HDPE LOCATE CABLE, APPROXIMATELY 230'
- ② F&I NEW CONCRETE POLYMER FIBER VAULT AND SPLICE ENCLOSURE. INTERCEPT EXISTING 2" CONDUIT AND AND PULL ENOUGH SLACK FROM EXISTING PULLBOXES TO SPLICE NEW FIBER TAIL INTO NEW 450 FOSSC SPLICE ENCLOSURE.
- ③ F&I NEW CONCRETE POLYMER FIBER VAULT. LEAVE 200' OF THE 12SM FIBER COILED IN VAULT.

Approximate quantities:
 -500' 12SM FIBER OPTIC CABLE
 -230' 2" HDPE CONDUIT(TRACE WIRE INCIDENTAL).
 -8EA FIBER SPLICES
 -1EA 450 FOSSC SPLICE ENCLOSURE
 -2EA CONCRETE POLYMER VAULT

REVISIONS	①	②
SEAL		
Courts Plus Water Tower		
DESIGN BY: JAR	DATE: 07/27/2020	
DRAWN BY: JAR	DATE: 07/27/2020	
CITY OF	SECTION NO.	SHEET NO.
Fargo	160	1



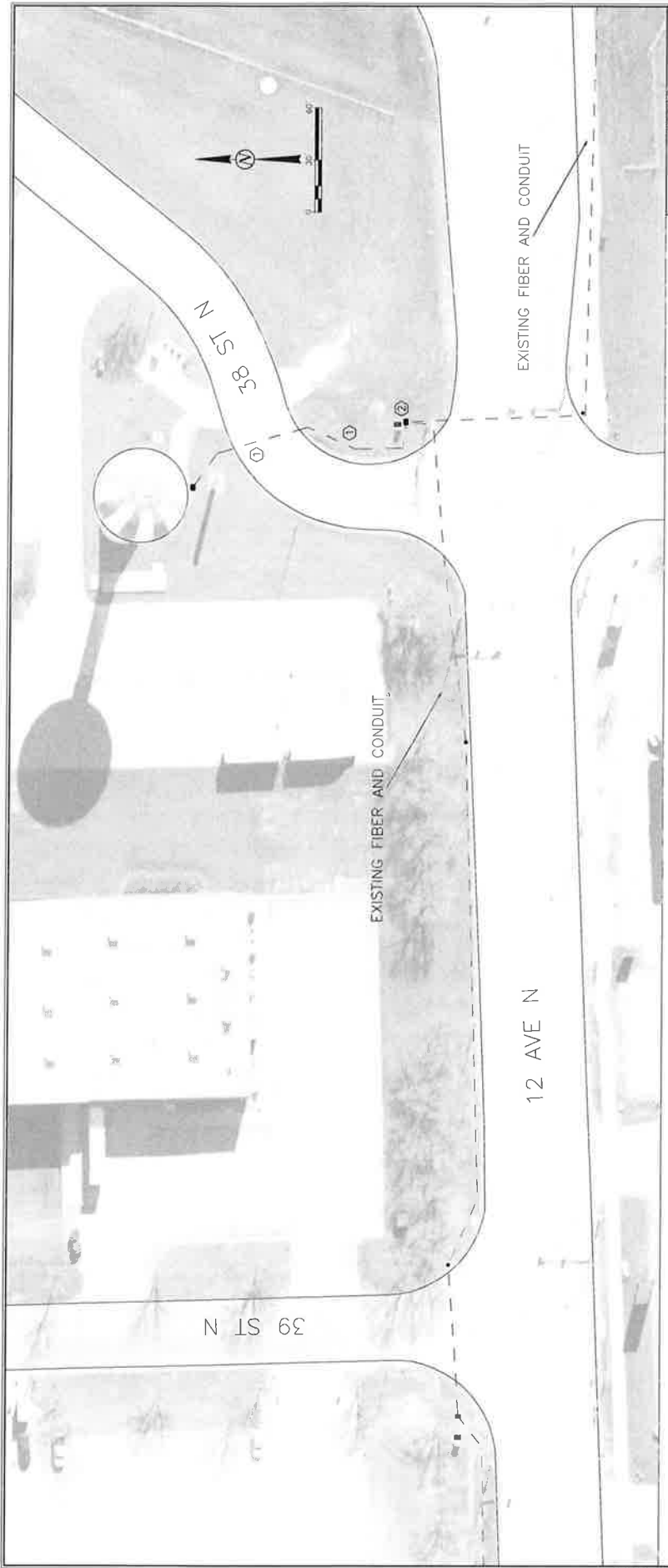
- ① F&I NEW 2" ORANGE HDPE DUCT, 12SM FIBER AND NEW ORANGE #12 COPPER-CLAD HDPE LOCATE CABLE, APPROXIMATELY 2200'
- ② F&I NEW CONCRETE POLYMER FIBER VAULT AND SPLICE ENCLOSURE. INTERCEPT EXISTING 2" CONDUIT AND AND PULL ENOUGH SLACK FROM EXISTING PULLBOXES TO SPLICE NEW FIBER TAIL INTO NEW 450 FOSC SPLICE ENCLOSURE.
- ③ F&I NEW CONCRETE POLYMER FIBER VAULT. LEAVE 200' OF THE 12SM FIBER COILED IN VAULT.
- ④ F&I NEW PVC PULL BOX, AND LEAVE 50' OF FIBER SLACK.

Approximate quantities:

- 2500' 12SM FIBER OPTIC CABLE
- 2200' 2" HDPE CONDUIT(TRACE WIRE INCIDENTAL)
- 8EA FIBER SPLICES
- 1EA 450 FOSC SPLICE ENCLOSURE
- 2EA CONCRETE POLYMER VAULTS
- 1EA 24" PVC PULL BOX



REVISIONS	
①	SEAL
30th St and Univ Dr N Water Tower	
DESIGN BY JAA	CHECKED BY NLC
DRAWN BY JAA	ONE DATE 3/20/2018
CITY OF FARGO	SECTION NO.
Fargo	SHEET NO.
	160
	2

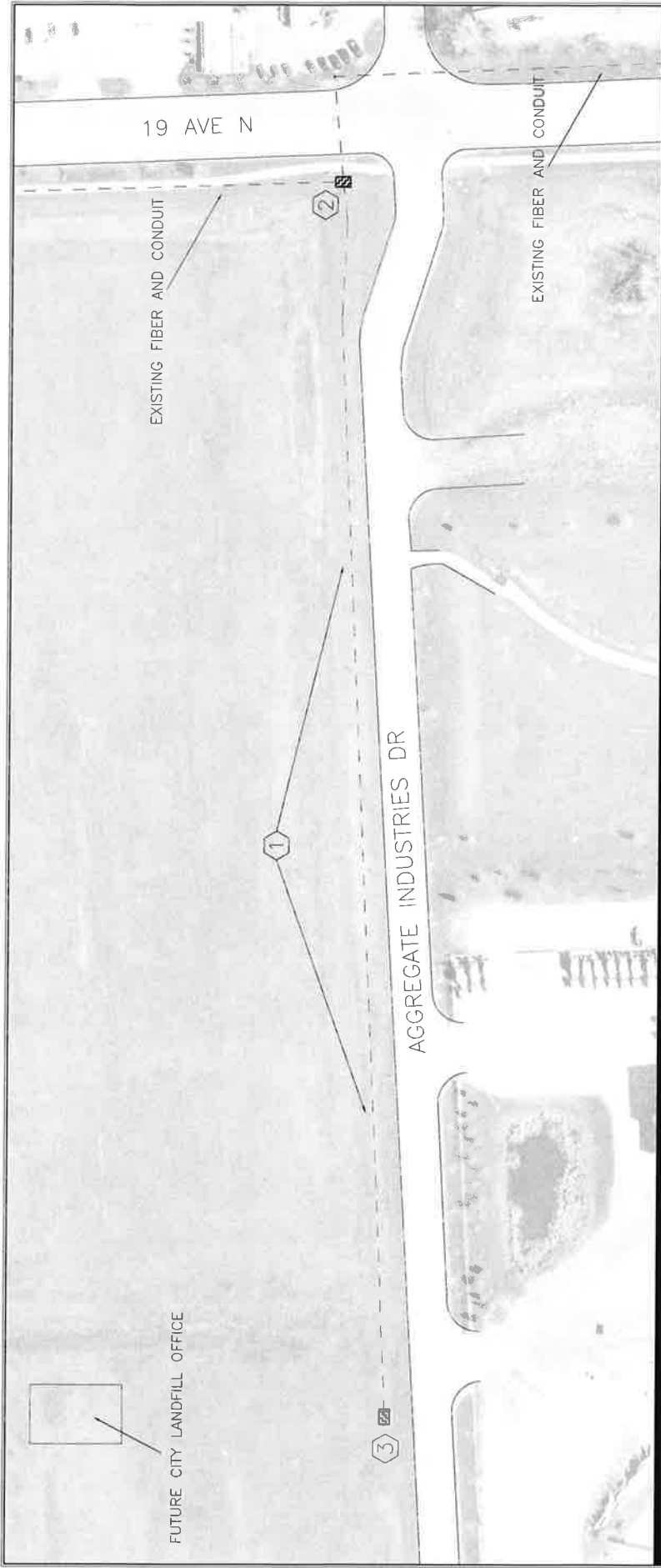


- ① F&I NEW 2" ORANGE HDPE DUCT, 12SM FIBER AND NEW ORANGE #12 COPPER-CLAD HDPE LOCATE CABLE. APPROXIMATELY 180'
- ② EXISTING CONCRETE POLYMER FIBER VAULT AND SPLICE ENCLOSURE. SPLICE 12SM TAIL INTO ENCLOSURE.
- ③ F&I NEW CONCRETE POLYMER FIBER VAULT. LEAVE 200' OF THE 12SM FIBER COILED IN VAULT.

Approximate qualities:
 -500' 12SM FIBER OPTIC CABLE
 -230' 2" HDPE CONDUIT (TRACE WIRE INCIDENTAL)
 -85A FIBER SPLICES
 -1EA CONCRETE POLYMER VAULT

DESIGN BY: JLF	CHECKED BY: MJC
DRAWN BY: JLF	DATE: 04/17/2012
Fargo	
SECTION NO.	SHEET NO.
160	3

12th Ave & 38th St, N Water Tower	
DESIGN BY: JLF	CHECKED BY: MJC
DRAWN BY: JLF	DATE: 04/17/2012
Fargo	
SECTION NO.	SHEET NO.
160	3



③	②	①
SEAL		
NEW LANDFILL FIBER		
DESIGN BY: JAE	CHECKED BY: RD	
DRAWN BY: JAE	DATE PLOT: 07/27/2020	
SECTION NO.	SHEET NO.	
	160	4

Approximate quantities:

- 1800' 12SM FIBER OPTIC CABLE
- 1235' 2" HDPE CONDUIT (TRACE WIRE INCIDENTAL)
- 8EA FIBER SPLICES
- 1EA 450 FOSC SPLICE ENCLOSURE
- 2EA CONCRETE POLYMER VAULT

① F&I NEW 2" ORANGE HDPE DUCT, 12SM FIBER AND NEW ORANGE #12 COPPER-CLAD HDPE LOCATE CABLE, APPROXIMATELY 1235'

② F&I NEW CONCRETE POLYMER FIBER VAULT AND SPLICE ENCLOSURE. INTERCEPT EXISTING 2" CONDUIT AND PULL ENOUGH SLACK FROM EXISTING PULLBOXES TO SPLICE NEW FIBER TAIL INTO NEW 450 FOSC SPLICE ENCLOSURE.

③ F&I NEW CONCRETE POLYMER FIBER VAULT. LEAVE 500' OF THE 12SM FIBER COILED IN VAULT.

INSTALL PVC BOX

1. Pull boxes shall be PVC with metal frames and covers, and shall conform to the detail included in the plans.
2. Pull boxes in landscaped areas shall have the top of the box level with the final grade and sloped to match the slope of the final grade on all 4 quadrants. Pull boxes in concrete areas shall be set with the top of the box flush with the final grade at all 4 quadrants.
3. All PVC pull boxes installed in concrete areas shall have a bell end on the bottom of the pull box to prevent frost heaving, and a
4. All conduits shall extend into pull box a MAXIMUM of 3".

Install Fiber Pull Box

1. This shall include the cost to supply and install a concrete polymer pull box. The size shall be 30" x 48" x 48" deep, with no base. The cover will be 1 3/4" thick, secured with stainless steel bolts, and have a logo of "Traffic Signals". The base and cover shall be made from a concrete polymer and sustain a minimum test load of 12,000#. Color shall be gray. Pull box shall be a PD style enclosure that has a 1-degree flare to prevent frost heave.
2. Two feet of crushed rock shall be installed for drainage below the pull box and will extend 6" beyond the outside edge of pull box. The top of box shall be at final grade and sloped to match. A 6" x 6" concrete pad shall be installed around the IT-Pull box. The concrete pad shall be 6" thick, reinforced with 6" x 6" x 10 GA welded wire fabric and shall be incidental to the price bid for IT-Pull Box. All conduit entrances shall be a minimum of 24" from top of box. All conduits shall extend into pull box a MAXIMUM of 3".

Fiber Optic Cable

1. The fiber optic cable shall be dual window single-mode fiber with a maximum attenuation of 0.4 db/km at 1310 wavelength and maximum attenuation of 0.5 db/km at 1550 wavelength and shall meet or exceed Ethernet transmission standard IEEE 802.3ae.
2. Fiber cable construction shall be loose tube gel-filled color-coding per TIA/EIA 598B standards. The Central Strength member shall contain no metallic conductors. The overall strength member shall be aramid fiber yarn or fiberglass; the inner jacket shall be black UV and moisture resistant PE with sequential meter markings.
3. The item "Communication cable" will be measured by the linear foot. The quantities measured will be paid for at the contract price and shall be full compensation for all labor, equipment, and material necessary to complete the installation of the communication cable.
4. Fiber optic cable insulation shall have a maximum tensile load of 600 lbs. for installation and 200 lbs. for in-service load. The minimum bend radius shall be 20XOD for installation and 10XOD for in-service.

Handling of Cable

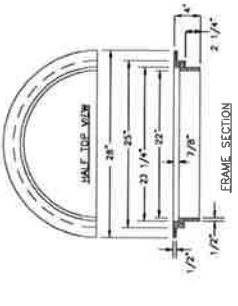
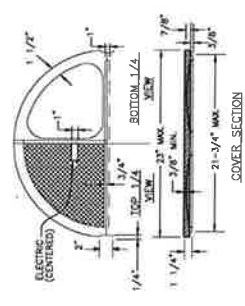
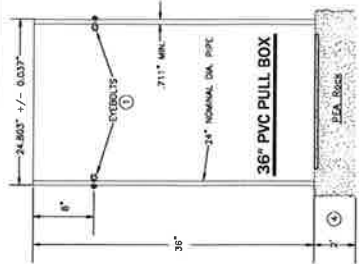
1. Cables or inner duct shall be carefully inspected by the Contractor during placement operation to be certain that the fiber optic cable and inner duct are free from damage before placement.
2. Bends of small radii and twists that might damage cable or wires shall be avoided. During the placement operation, fiber optic cable shall not be bent in a radius less than 20 times the outside diameter of the cable.
3. Care is to be exercised during the placing operation, to feed the cable into the inner duct loosely and at no tension. Equipment and construction methods shall be such as to assure compliance with this requirement. The Contractor shall furnish competent supervision at all times at the site of cable placing operations to assure compliance with this requirement.
4. Every instance of damaged cable or wire observed at any time whether prior to installation, occurring during construction, or discovered by test of observation subsequent to installation, in plant, shall be immediately called to the attention of the Engineer. The method of repair or correction of such damage shall be in accordance with the written instructions of the Engineer. The Contractor shall promptly repair such damage or make such corrections in accordance with such written instruction of the Engineer. Minor damage to the outer jacket of the cable or wire observed prior to or occurring during construction shall be repaired in accordance with RUS Splicing Standard Bulletin 1753F-401 (PC-2).
5. The Contractor shall use a break-away swivel rated for 600 lb. break load for pulling all fiber optic cables.

Miscellaneous Specifications

1. The Contractor shall include an **ORANGE** No. 12 Copper Clad Trace Wire with HDPE insulation, rated at a minimum 250 LB of breaking load, running the full length and parallel to each communication cable installed in conduits as a trace wire. This is not a separate bid item. The cost shall be included in the price bid for communication cable. The trace wire shall be labeled with the intersection address that it connects to. If the distance is too long to have a trace wire un-spliced then the Contractor may splice the trace wire with a DuraTrace connector part #3MW-01 or 3WB-01.
2. The Contractor shall provide 30' of slack cable in each pull box and 150' slack for each cable at the cabinet pull box where termination or splicing will occur or 85' of slack if the fiber cable is completely cut and is the end of the fiber. The Contractor shall remove 30' of each cable end that was used to pull cable prior to installing the required amount of slack to be left in the pull box. Contractor is required to contact the Engineer in the field to discuss all allowances left in pull boxes and what is needed for splicing before pulling in fiber and cutting it.

Fiber Optic Cable Testing

1. The Contractor shall test all terminated fibers at both ends with an OTDR tester and light meter recording the results on a City of Fargo Fiber Test Report Form and providing a computer printout from the OTDR of each fiber tested. If multi-mode fiber tests at 850 NM and 1300 NM are not within the City of Fargo standards of 5 dB loss for each ST connector at the bulkhead, 2 dB loss for each fusion splice, and 1 dB loss per 100 feet for 850 NM and 1 dB loss per 300 feet for 1300 NM of fiber being tested, then the Contractor shall repair/replace and the Contractor shall re-test the fiber with City personnel present. If single-mode fiber tests at 1310 NM and 1550 NM are not within the City of Fargo standards of 5 dB loss for each ST connector at the bulkhead, 2 dB loss for each fusion splice, 1 dB loss per 600 feet for 1310 NM and 1 dB loss per 750 feet for 1550 NM of fiber being tested, then the Contractor shall repair/replace and the Contractor shall re-test the fiber with City personnel present. All fiber shall be tested at each end. Any terminated fiber run that doesn't meet the testing tolerances specified shall be repaired/replaced by the Contractor. If any connectors or fusion splices fail the Contractor shall repair the connection, if a fiber cable is damaged or broke between connections the Contractor shall replace the entire cable between connections.
2. Single mode fiber when tested shall be allowed the following tolerances: 1 dB per 600' (1310nm), 1 dB per 750' (1550nm) of fiber, 2 dB for each fusion splice, 5 dB for each ST connector, and 5 dB for each end that is bare fiber tested.
3. All fiber optic cable that is removed shall be tested by the Contractor and documented after it is removed and placed on a wire spool. All existing fiber optic cable will be considered good and meeting City of Fargo tolerance Specifications. If the existing fiber tester doesn't fall within the tolerance of the specification, then the Contractor shall replace the fiber optic cable with a new one. The Contractor may test the existing cable before it is removed with an OTDR or light meter and provide a computer printout of the testing results to the City of Fargo, to ensure that the existing cable is good and meets specification tolerances.
4. When all terminations are complete, the City of Fargo must inspect all splices inside the TYCO FOSC enclosures before the fiber optic communication system can be put into use. Contractor must set up a time to have the cables inspected. Contractor must open splice cases and show all splices and fiber tubes inside the TYCO splice case to the Engineer in the field. All fiber tubes shall be labeled inside the splice enclosure.



INSTALLATION NOTES:

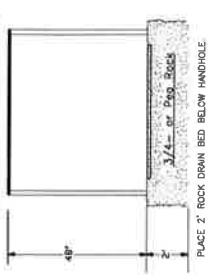
1. TWO STAINLESS GALVANIZED TYPE 2 SHOULDER EYEBOLTS, 3/8\"/>
2. PLACE COMPACTED 2\"/>
3. CONDUIT HOLES DIAMETER LOCATED IN THE BARREL SECTION ARE SIZED NO MORE THAN 1\"/>
4. AFTER HANDHOLE AND CONDUIT HOLES ARE CUT, ALL INSIDE WALLS MUST BE SMOOTH TO THE SATISFACTION OF THE ENGINEER.
5. THE P.V.C. PIPE COMPLEES WITH ASTM F6971-1.
6. ALL CONDUITS SHALL EXTEND A MAXIMUM OF 3\"/>

FRAME AND COVER CASTING

NOTE:
ALL CASTINGS ARE GRAY IRON AS PER SPEC. 3321 CLASS 35B

QUAZITE PULL BOX

30\"/>



FIBER PULLBOX DETAIL
CITY OF FARGO
ENGINEERING DEPARTMENT