

City of Wenatchee

Fiber Optic Cabling Project

Request for Quotation

LOCATION OF WORK

The work shall be performed in the City of Wenatchee, from the Wenatchee Police Station (140 S. Mission Street) to the Wenatchee Federal Building (301 Yakima Street), via Yakima Street and Chelan Avenue, and from the Wenatchee Police Station (140 S. Mission Street) to the Wenatchee Convention Center (121 N. Wenatchee Avenue) and Wenatchee Wastewater Treatment Facility (201 N. Worthen Street), via Yakima Street, Chelan Avenue and First Street.

SCOPE OF WORK

The purpose of this project is to extend one dark fiber optic line each from the Wenatchee Police Station to the Wenatchee Federal Building, Wenatchee Convention Center and the Wenatchee Wastewater Treatment Facility.

TIME FOR COMPLETION

Under a separate project, conduit is being installed to allow the completion of this project. The conduit project is expected to be completed by October 12, 2018. This project can begin once installation of the conduit is complete. The installation of fiber optic cable from the Wenatchee Police Station to the Wenatchee Federal Building will need to be completed by November 2, 2018. The installation of fiber optic cable from the Wenatchee Police Station to the Wenatchee Convention Center and the Wenatchee Wastewater Treatment Facility will need to be completed by November 16, 2018. Completion dates can be modified if the conduit project does not complete in the time expected.

HOURS OF WORK

7:00 AM to 5:00 PM, Monday through Friday, unless otherwise approved by the City.

FIBER OPTIC CABLE INSTALLATION DESCRIPTION

This work shall consist of the following:

- Installation of 24 strand single mode fiber optic cable from the Wenatchee Police Station to the Wenatchee Federal Building, 12 strand single mode fiber optic cable from the Wenatchee Police Station to the Wenatchee Convention Center and 12 strand single mode fiber optic cable from the Wenatchee Police Station to the Wenatchee Wastewater Treatment Facility, through existing conduit, for a total of 3 separate fiber optic cable lines.

- Service loops of approximately 50 feet will be included at each end of the fiber optic cable lines. Service loops of up to 10 feet will be included in pull boxes and cable vaults, when applicable.
- Termination of all strands of the single mode fiber optic cables at both ends for each of the three lines. If a network rack is available, termination will be in a rack mounted patch panel with SC UPC connectors. If a network rack is not available, termination will be in a wall mounted patch panel with SC UPC connectors. All patch panels will have the ability to be securely locked unless the rack they are mounted in can be securely locked.

FIBER OPTIC CABLE SPECIFICATIONS

Inter building single mode optical fiber backbone cabling shall be indoor/outdoor rated loose tube cable utilizing a dry water blocking system. Cable shall meet the following standards: ISO/IEC 11801; ANSI/ICEA S-87-640; Telcordia GR-20; Telcordia GR-409; ICEA S-104-696; ETL or UL OFNR (riser).

- a. Single mode optical fiber shall be Class IVa dispersion-unshifted per ANSI/EIA/TIA-492CAAB secondary coating diameter of 242 μ m. Zero dispersion wavelength shall be between 1300 nm and 1324 nm.
- b. Nominal mode field diameter shall be 9.2 μ m with a tolerance of +/- 0.5 μ m at 1310 nm.
- c. Single mode optical fiber shall meet the following performance specifications.
 - 1) Maximum Attenuation: 0.4/0.3 dB/km @ 1310/1550 nm
 - 2) Transmission distance: 1 GbE greater than 2 km @ 1310 nm
 - 3) Cutoff Wavelength: <1279 nm when measured in accordance with ANSI/EIA/TIA-455-170 or ANSI/EIA/TIA-455-80. Distance versus bandwidth shall be using a laser transmitter operating at a 1310 nm wavelength.
 - 4) Operating Temperature: -40C to +75C
 - 5) Storage Temperature: -40C to +85C

FIBER OPTIC CABLE INSTALLATION REQUIREMENTS

Fiber Optic Cable Submittal

Contractor will provide submittal of all materials for City approval.

Fiber Optic Cable Installation

Fiber optic cables shall be installed in continuous lengths without intermediate splices throughout the project.

The Contractor shall comply with the cable manufacturer's specifications and recommended procedures.

The Contractor shall protect the loops from tangling or kinking. At no time during the length of the project shall the cable's minimum bending radius specification be violated.

Fiber Optic Cable in Pull Boxes and Cable Vaults

The Contractor shall coil the cable in vertical figure eight loops, which will permit pulling slack from the vaults without introducing twist to the cable.

Fiber Optic Cable Testing

The installed optical fiber cable shall be tested for compliance with the transmission requirements of the cable and hardware manufacturer's specifications, and prescribed industry standards and practices. Results of attenuation testing shall be provided to the Owner.

QUOTE SPECIFICATIONS

The bidder will provide pricing shown for each fiber optic cable line in the following manner:

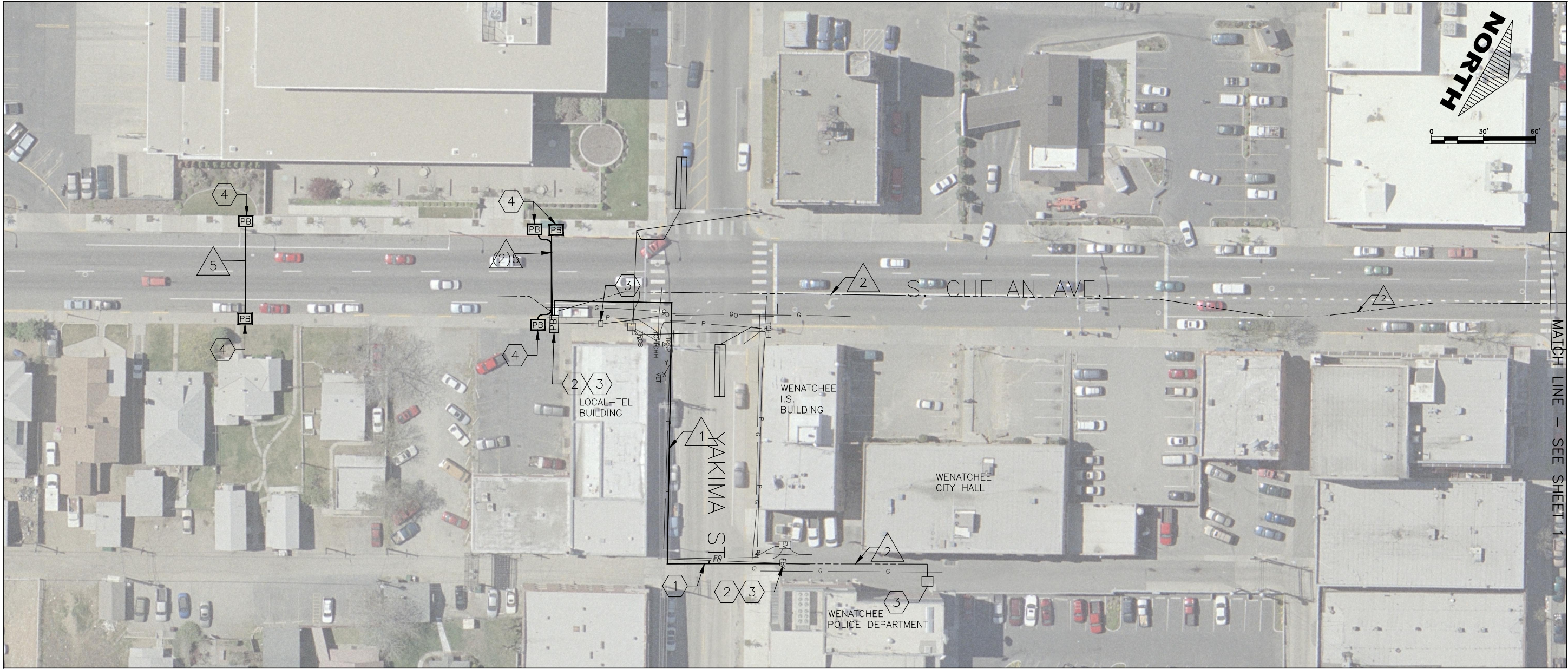
Wenatchee Federal Building fiber optic cable line
Wenatchee Convention Center fiber optic cable line
Wenatchee Wastewater Treatment fiber optic cable line
Sales Tax at 8.4%
Quote Total

A list of all materials to be used in the project shall be provided along with the quote.

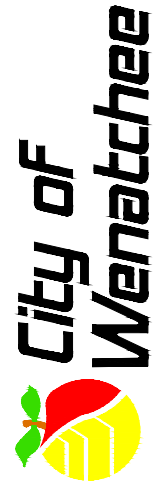
Please submit the quote by email to dcantrell@wenatcheewa.gov. The deadline for submitting a quote is September 28, 2018 by 4 PM PDT.

PLANS

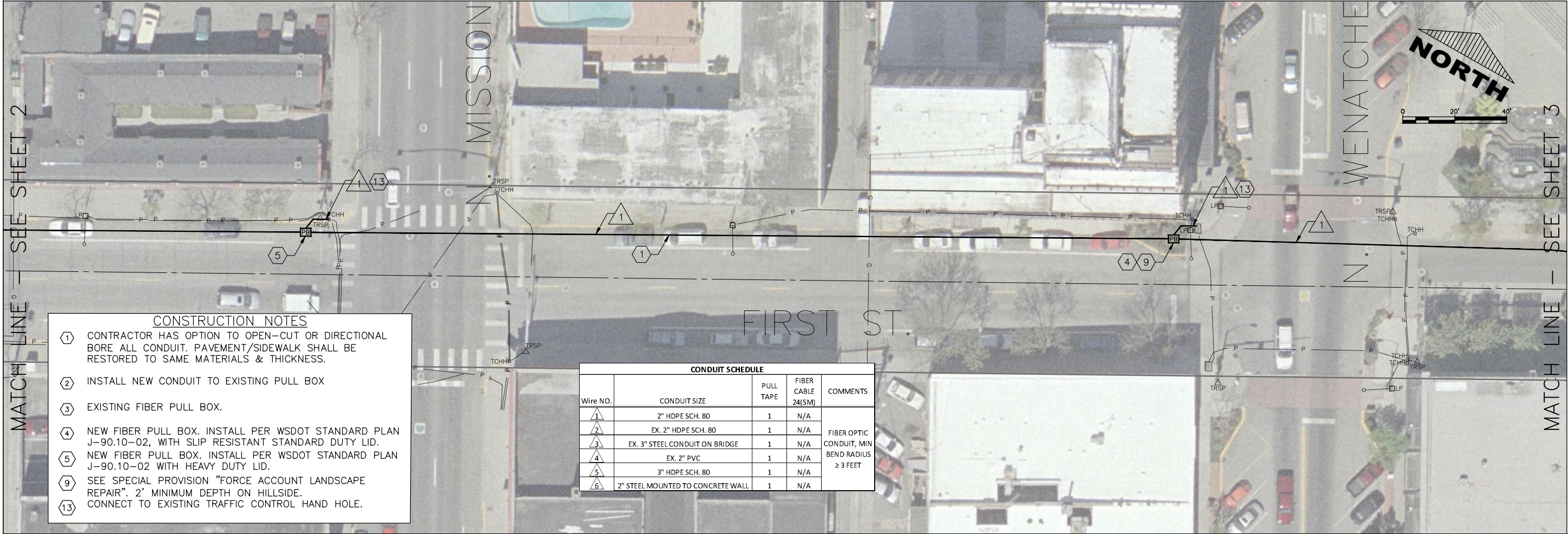
The attached plans below were part of the conduit installation project. These plans provide external routes but do not show any internal building routes. For any wiring and/or routing questions pertaining to this project please contact Kyle Schuttie at (509) 888-3698 or kschuttie@wenatcheewa.gov.



WENATCHEE FIBER OPTIC
CONNECTIONS
ITS PLAN



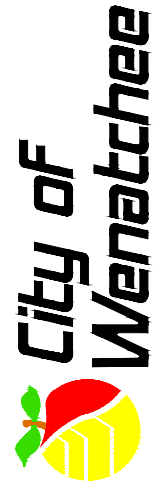
SCALE: 1" = 40'		DESIGNED BY JDS		APPROVED BY		DRAWING NAME	
DATE DRAWN 09.20.17		CHECKED JBV		DATE APPROVED		PROJECT NO.	
SHOWN AS		DRAWN BY		DATE APPROVED		DRAWING NAME	
REVISIONS		DATE DRAWN 09.20.17		CHECKED JBV		DATE APPROVED	
ITS1		SHEET 1		OF 4		PROJECT NO.	



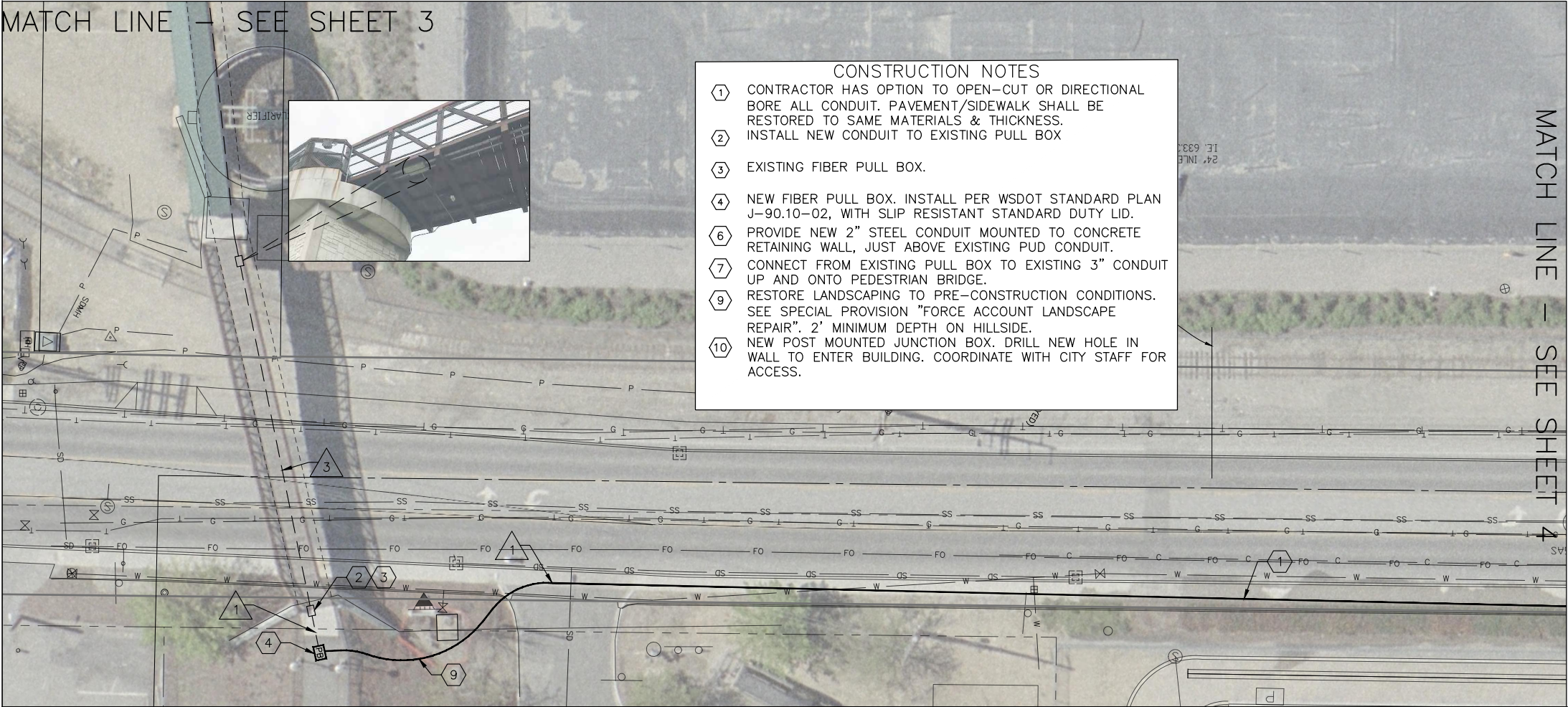
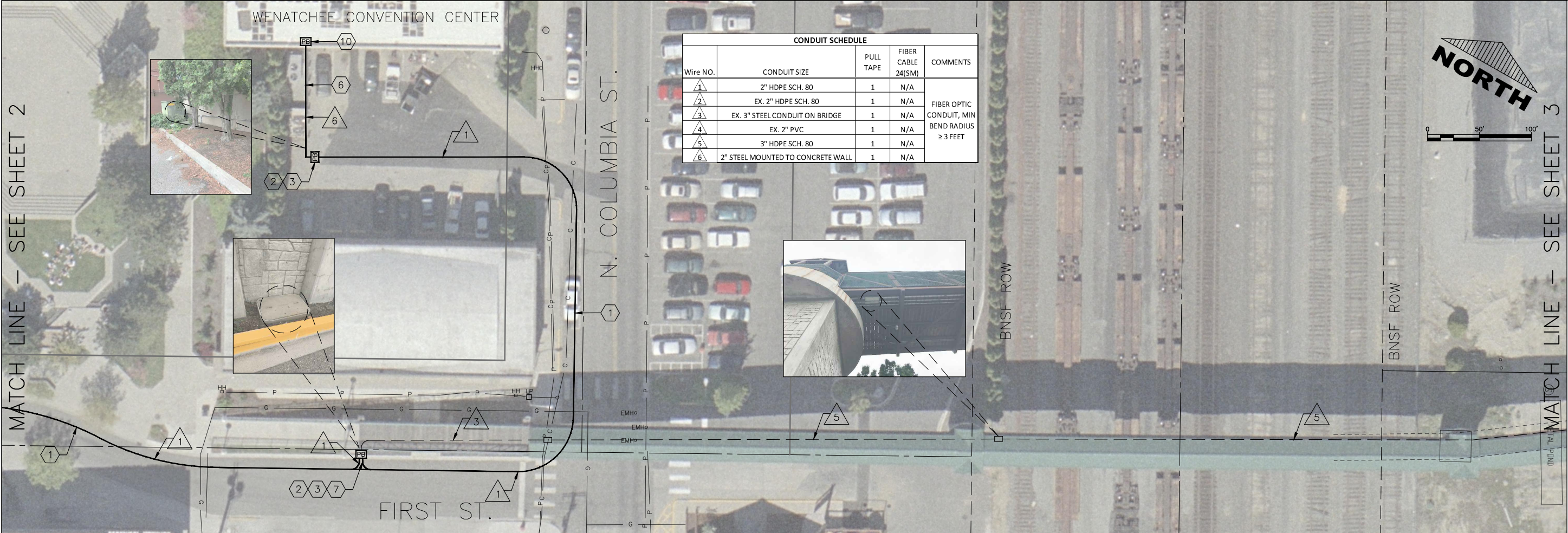
- CONSTRUCTION NOTES**
- 1 CONTRACTOR HAS OPTION TO OPEN-CUT OR DIRECTIONAL BORE ALL CONDUIT. PAVEMENT/SIDEWALK SHALL BE RESTORED TO SAME MATERIALS & THICKNESS.
 - 2 INSTALL NEW CONDUIT TO EXISTING PULL BOX
 - 3 EXISTING FIBER PULL BOX.
 - 4 NEW FIBER PULL BOX. INSTALL PER WSDOT STANDARD PLAN J-90.10-02, WITH SLIP RESISTANT STANDARD DUTY LID.
 - 5 NEW FIBER PULL BOX. INSTALL PER WSDOT STANDARD PLAN J-90.10-02 WITH HEAVY DUTY LID.
 - 9 SEE SPECIAL PROVISION "FORCE ACCOUNT LANDSCAPE REPAIR". 2' MINIMUM DEPTH ON HILLSIDE.
 - 13 CONNECT TO EXISTING TRAFFIC CONTROL HAND HOLE.

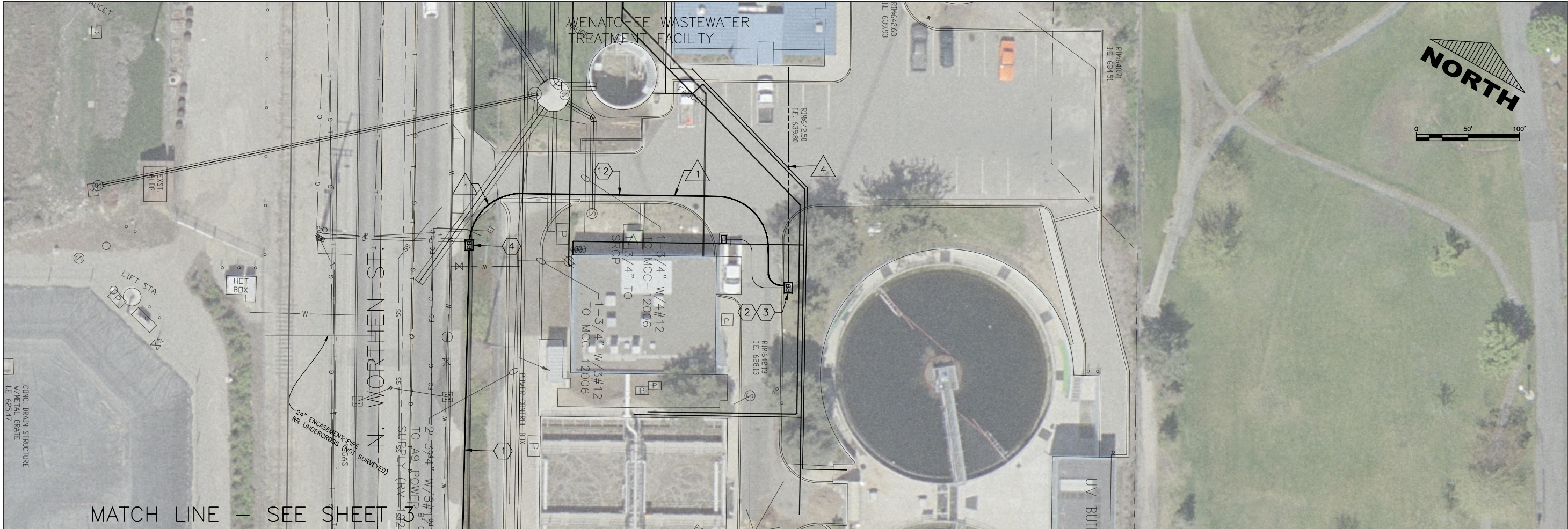
CONDUIT SCHEDULE				
Wire NO.	CONDUIT SIZE	PULL TAPE	FIBER CABLE 24(SM)	COMMENTS
1	2" HDPE SCH. 80	1	N/A	FIBER OPTIC CONDUIT, MIN BEND RADIUS ≥ 3 FEET
2	EX. 2" HDPE SCH. 80	1	N/A	
3	EX. 3" STEEL CONDUIT ON BRIDGE	1	N/A	
4	EX. 2" PVC	1	N/A	
5	3" HDPE SCH. 80	1	N/A	
6	2" STEEL MOUNTED TO CONCRETE WALL	1	N/A	

WENATCHEE FIBER OPTIC
CONNECTIONS
ITS PLAN

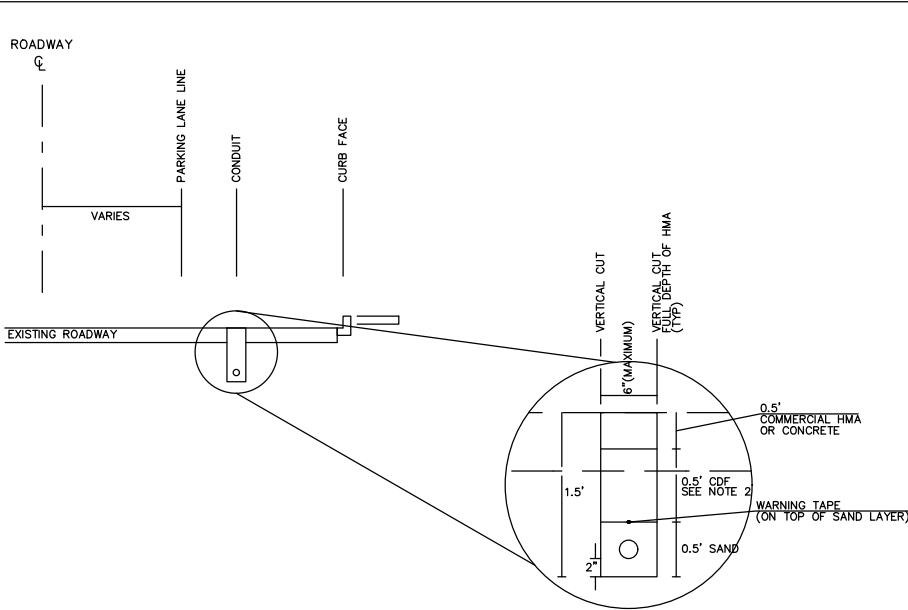
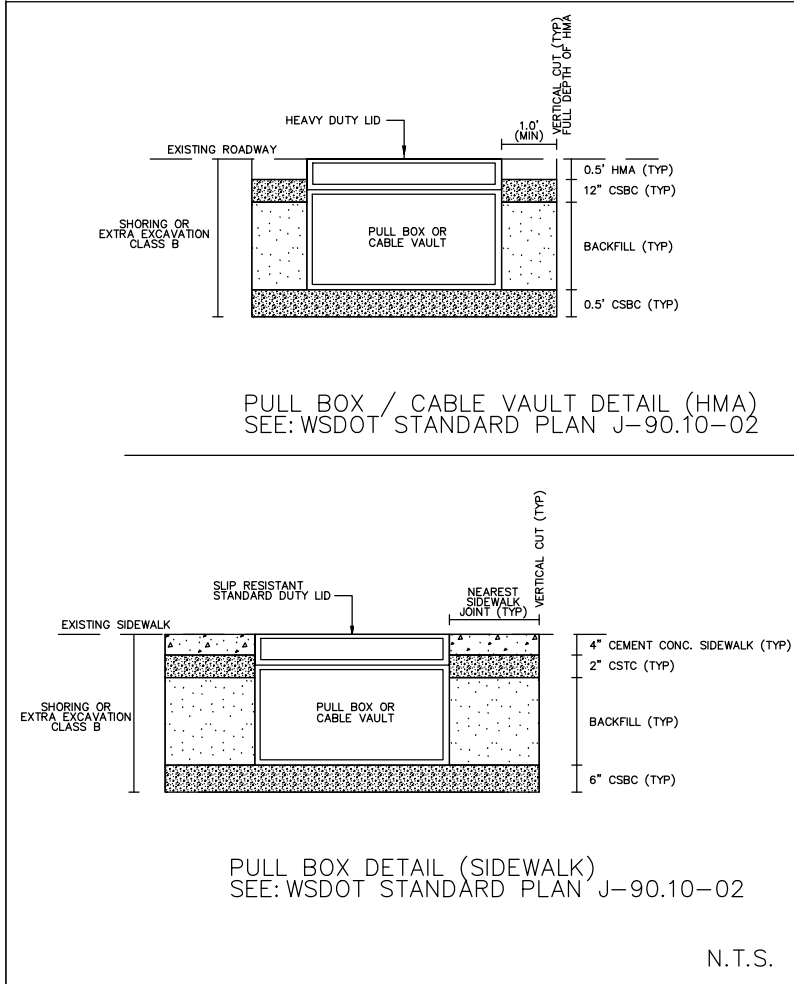
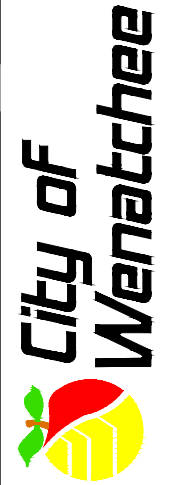


SCALE: AS SHOWN		REVISIONS	
DESIGNED JDS	DRAWN JBV	DATE DRAWN 09.20.17	CHECKED DATE APPROVED
PROJECT NO.		ITS2	
SHEET 2	OF 4	DRAWING NAME	





WENATCHEE FIBER OPTIC
CONNECTIONS
ITS PLAN



- NOTES:
- 1 OPEN CUT IN LANDSCAPED AREAS SHALL ONLY BE ALLOWED USING AN EARTH SAW.
 - 2 THE NEW CONDUIT PIPE SHALL MAINTAIN A MINIMUM 1' CLEARANCE FROM EXISTING UTILITIES. SAND SHALL BE USED AS FILL MATERIAL BETWEEN NEW CONDUIT & EX UTILITY.
 - 3 CONDUIT SHALL BE PLACED IN PARKING LANE WHEREVER POSSIBLE. ENGINEER TO APPROVE STAKED LOCATION PRIOR TO INSTALLATION.
 - 4 WARNING TAPE SHALL BE INSTALLED A MINIMUM OF 12 INCHES INTO ALL PULL BOXES AT BOTH ENDS OF TRENCH.

- CONSTRUCTION NOTES
- 1 CONTRACTOR HAS OPTION TO OPEN-CUT OR DIRECTIONAL BORE ALL CONDUIT. PAVEMENT/SIDEWALK SHALL BE RESTORED TO SAME MATERIALS & THICKNESS.
 - 2 INSTALL NEW CONDUIT TO EXISTING PULL BOX
 - 3 EXISTING FIBER PULL BOX.
 - 4 NEW FIBER PULL BOX. INSTALL PER WSDOT STANDARD PLAN J-90.10-02, WITH SLIP RESISTANT STANDARD DUTY LID.
 - 12 ALL WORK INSIDE WENATCHEE WWTP SHALL BE COORDINATED WITH CITY STAFF FOR ACCESS. NO DIRECTIONAL BORING WILL BE ALLOWED INSIDE FENCED AREA DUE TO AMOUNT OF UNDERGROUND UTILITIES.

CONDUIT SCHEDULE				
Wire NO.	CONDUIT SIZE	PULL TAPE	FIBER CABLE 24(SM)	COMMENTS
1	2" HDPE SCH. 80	1	N/A	FIBER OPTIC CONDUIT, MIN BEND RADIUS ≥ 3 FEET
2	EX. 2" HDPE SCH. 80	1	N/A	
3	EX. 3" STEEL CONDUIT ON BRIDGE	1	N/A	
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5	3" HDPE SCH. 80	1	N/A	
6	2" STEEL MOUNTED TO CONCRETE WALL	1	N/A	

REVISIONS		DATE		DRAWN		APPROVED	
AS SHOWN		09.20.17		JBS		JBS	
DESIGNED		CHECKED		DATE		APPROVED	
PROJECT NO.		ITS4		SHEET		OF	
4		4					