

TRAFFIC GENERAL CONSTRUCTION NOTES

- (C-2) Existing roadway shall remain open during construction. The contractor shall be responsible for proper barricades, lights, and signing within the limits of construction. All construction signing will be done according to standards set forth in the Manual on Uniform Traffic Control Devices, (current edition), and as shown on TCS Standard Drawings.
- (C-3) This project shall be constructed without closing traffic on cross streets. A minimum of one lane in each direction shall be maintained at all times.
- (C-155) The contractor shall be responsible for any damage he may inflict to the existing underground utilities within the project area as a result of his digging, trenching, boring, etc. Prior to digging near the utilities, the contractor shall call for a list of all underground facilities registered in the area of construction listed with the following agencies:
The "OKIE" Notification Center 811 or 1-800-522-6543 or www.callokie.com or the local County Clerk's Office.
- Depth of existing utilities shall be verified by the contractor prior to construction.

PAY QUANTITY NOTES

- (TC-25) Construction Traffic Control will be installed in a manner approved by the Engineer, in accordance with Chapter VI of the Manual on Uniform Traffic Control Devices, current edition, and applicable O.D.O.T. Standard Drawings. Price bid for this item shall be payment in full for the installation, maintenance and subsequent removal of all necessary construction traffic control devices and pavement markings required for completion of the project.
- All signs and barricades, which are shown with Type "A" Lights in the Standard Drawings shall have the corresponding light attached during non-daylight hours.
- (ITS-2) The installation of the fiber optic cable, splices, and terminations shall be the responsibility of the fiber contractor for this portion of the project. The fiber contractor shall be required to meet all specifications of the "fiber optic cable, terminations, and splicing requirements". No work on any portion of the fiber optic system shall be performed by anyone other than the fiber contractor.
- (ITS-6) The fiber optic cable shall be pulled with Mule Tape, by Neptco, Inc., or an approved equal. No greater than a 600 pound pull strength.
- (ITS-7) The installed fiber optic cable shall be OTDR tested and shall meet industry standards. Light loss as tested shall be no greater than .10 DB for the entire fiber run.
- (ITS-12) Splicing will be done by the fusion weld method and the welding process shall be specifically designed for splicing single-mode fibers in both the LVD and DVD design. Optic loss per splice shall be equal to or less than .10 DB. Optical loss for pigtail splices in the fiber termination box shall be less than or equal to .8 DB.
- (ITS-15) The contractor shall provide "as-built" documentation for all fiber optic cable routes (to/from), individual fibers, terminations, splices, final destinations, and OTDR readings.
- (ITS-22) The cost bid for this item shall include the cost of shield isolation pedestal (Reliable SIP40), the W-flange post, 2.5 lbs. ft., two fiber optic signs, tagging and identifying of each fiber optic cable and the #6 AWG ground wire run between the shield isolation pedestal and the splice point regardless of its location in a splice box, a ground box, a 332 cabinet, a communication hut, etc. Cost to include all appurtenances and material necessary to connect all splices to the shield isolation pedestal (Pedestal stake Marconi MS1342; Ground Rod Erico 6138529.) in accordance with ODOT Typical Shield Isolation Pedestal Details.
- (SP-1) Ground boxes installed in sidewalks should replace sidewalk panels that are impacted in their entirety. Price bid for ground boxes should include any concrete and reinforcement required.
- (SP-2) This project involves the installation of fiber optic cable to interconnect the Main Street traffic signals between Berry Road and Webster Avenue as well as the traffic signal on Gray Street at Webster Avenue.
- A. Pull boxes, splices points, fiber locating
1. All fiber optic ground boxes shall be GB36 (ODOT Typical GB-36 Ground Box—36" depth) polymer concrete. All splice point locations shall be in R48 (ODOT Typical R-48 Ground Box) polymer concrete ground boxes. All lids to reference City of Norman Fiber Optic Line.

PAY QUANTITY NOTES (Continued)

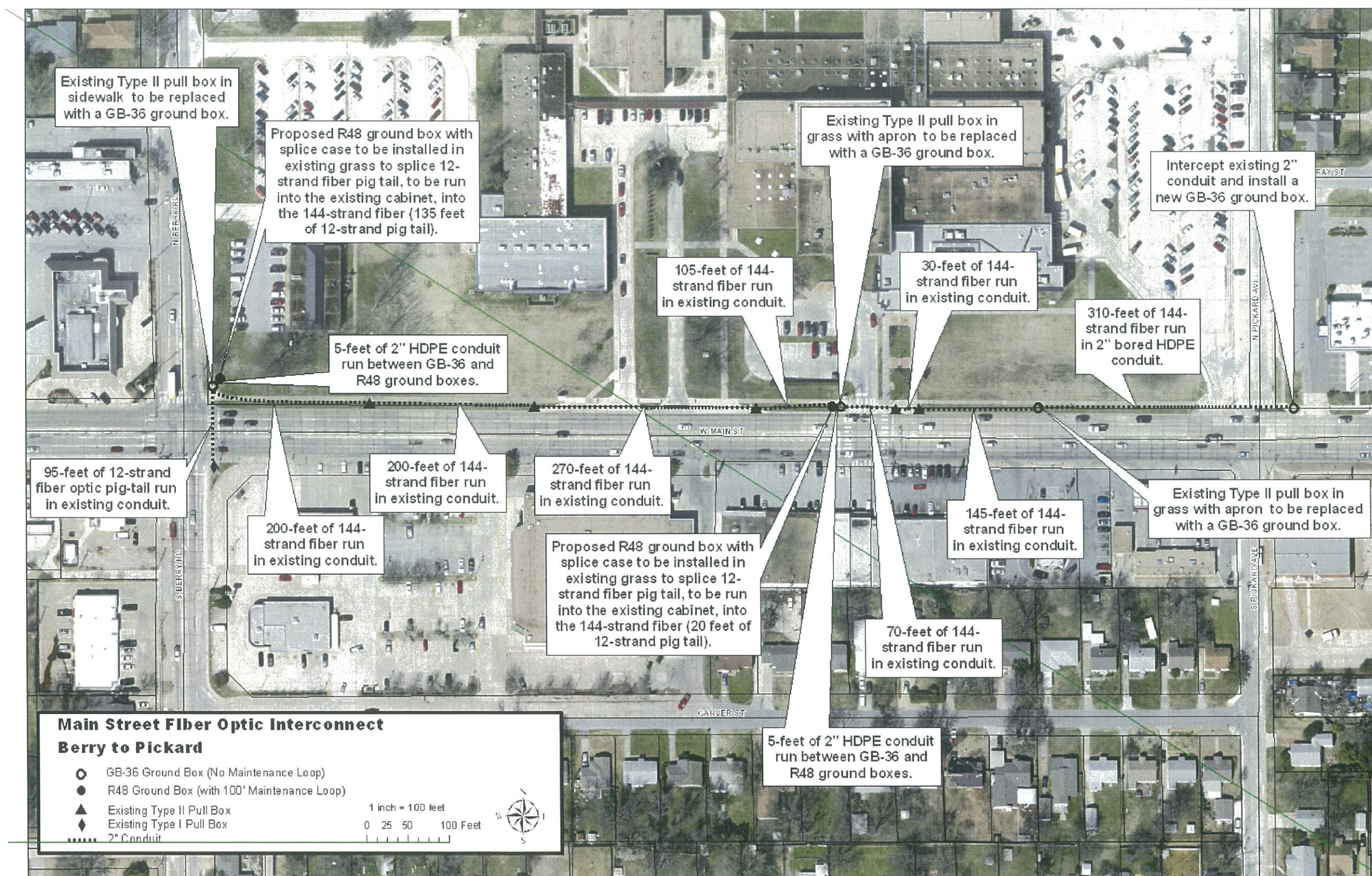
2. Pay item is for seven (7), 12 strand armored pig tails to be installed on this project to run from the signal controller cabinets near the Main Street intersections at Berry Road, Norman High School, Flood Avenue, Downtown Shopping Center, University Boulevard, and Webster Avenue as well as the Gray Street intersection with Webster Avenue to the nearest splice box at each intersection.
3. All fiber optic cable needs to be armored fiber optic cabling. Commscope Terraspeed or Corning ODOT Standard will be acceptable. The City requires No. 14 gauge, stranded copper cable be used to complete grounding and utility locate capabilities from the controller cabinet to the fiber optic cable in ground. Once attached to the armored jacket on the fiber, the utility locate capability needs to be confirmed capable for the distance of the fiber run. Shield isolation pedestals must be used to provide ease of utility locating. City of Norman Fiber Optic Signage (paid for with Pay Item "818(G) 5570 (PL) Fiber Optic Route Sign and Installation") placed along the path, as well. The City of Norman can provide information to define the shield isolation pedestals, signage, ground boxes, etc.
4. Pay item is for sixteen (16) fiber optic route signs to be placed along the route of the fiber optic cable. Placement shall be on either side of the bore of a public street and/or at each R48 ground box. Contact information on fiber optic route signs shall be City of Norman telephone numbers.
- B. Fiber—The pay quantity is for 144 strand, armored, single-mode fiber optic cable to be run from Berry Road east to Webster Avenue and then north to City Hall through the Gray Street intersection with Webster Avenue, as shown in the plans.
- C. Splice Enclosures—Splice enclosures shall be full Coyote splice enclosures.
- D. Splicing Responsibility
1. Splicing will be required in the existing R48 ground box (144 strand fiber into existing 144 strand fiber) into designated pairs of existing fiber. Diagrams will be provided, if necessary, to the selected contractor to define this.
2. Splices will be required to be done in the R48 ground box near the Main Street signal controller cabinets at Berry Road, Norman High School, Flood Avenue, Downtown Shopping Center, University Boulevard, and Webster Avenue as well as near the signal controller cabinet on Gray Street at Webster Avenue. The termination points will be in the controller cabinets. Each of these intersections will have 12 splices and 12 terminations. Terminations shall be spliced instead of polished.
- E. Patch Panel
1. Pay item is for the installation of seven (7) Corning or Commscope 24 port, SC patch panels to be mounted inside the cabinet in the Main Street cabinets at Berry Road, Norman High School, Flood Avenue, Downtown Shopping Center, University Boulevard, and Webster Avenue as well as in the cabinet at Gray Street and Webster Avenue. All 12 fibers shall terminate at each controller using SC connectors.
2. Also included in the price bid for this panel shall be the cost of seven (7) Ruggedcom RS900G-HI-2SC10 switch (10/100/1000-LX Ethernet switch w/power cord, 2-2 gigabit fiber SC 1310NM+8-100TX RJ-45 ports). This will be installed in the Main Street signal cabinets at Berry Road, Norman High School, Flood Avenue, Downtown Shopping Center, University Boulevard, and Webster Avenue as well as at Gray Street intersection with Webster Avenue in order to provide network connectivity to the signalized intersection. The Ruggedcom switches should include a 2-3' cat6 cable and two 6' SC to SC single mode fiber patch cables.
- F. Trenching and Boring
1. All trenching shall be backfilled in approximately six (6) inch layers and tamped to an approximate 95% density of the surrounding earth.
2. Any conduit bored under a roadway, paved shoulder, curb or sidewalk shall be placed in a minimum 5-inch protective sleeve. Bids should be in accordance with ODOT Marking, Taping and Connector Details.
- (SP-3) The 2-inch High Density PE pipe used on this project shall be SDR 11.
- (SP-4) Fiber should be Commscope, LightScope, outside plant, double jacket, single armored, single mode 144 strand and 12 strand fiber or Corning Altos, outside plant, double jacket, single armored, single mode 144 strand and 12 strand fiber, or approved equal.



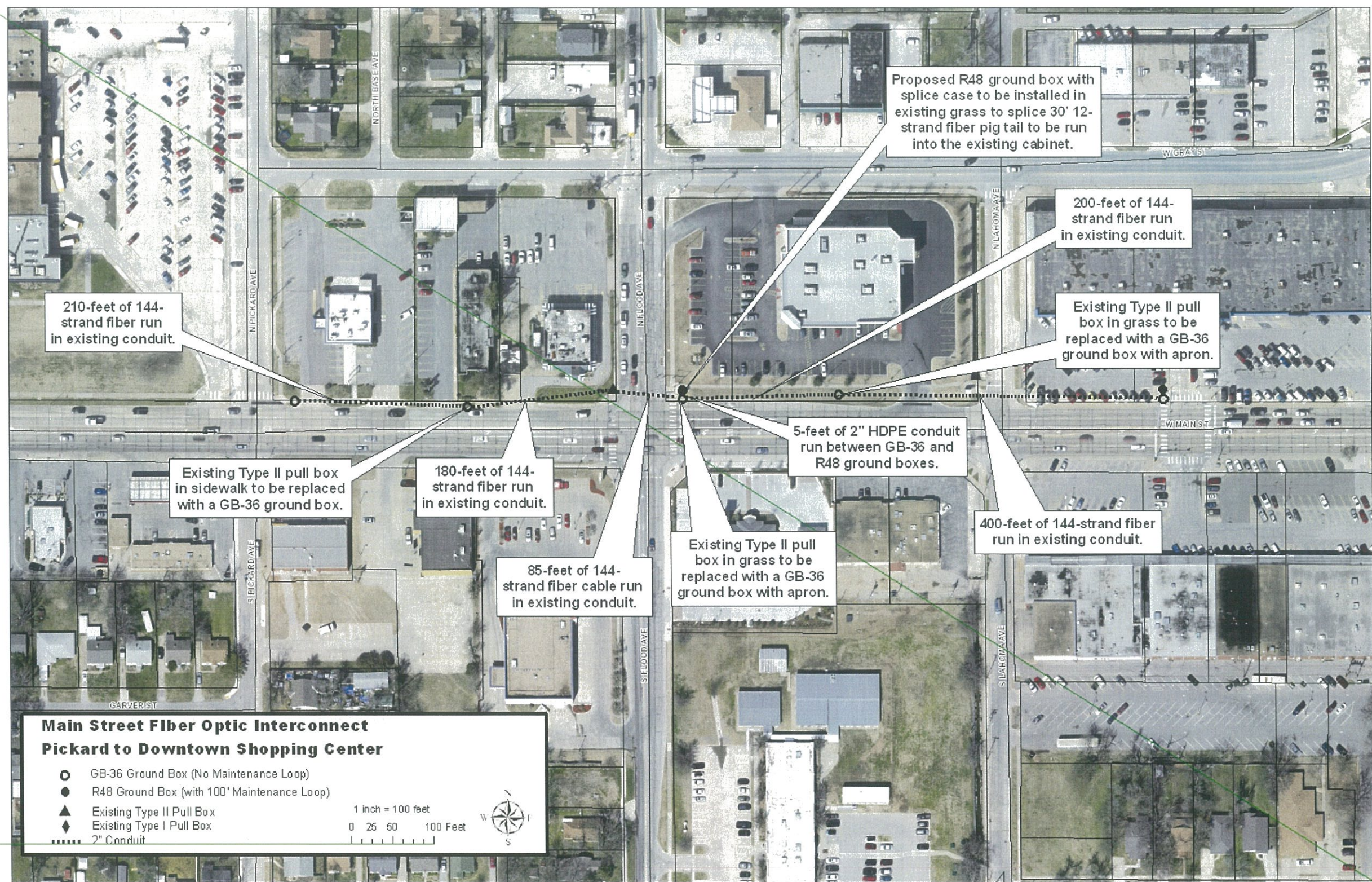
| SIGNAL/FIBER OPTIC PAY QUANTITIES | | | |
|-----------------------------------|--|--|-------|
| 0300 TRAFFIC | | MAIN STREET (BERRY ROAD to WEBSTER AVE to CITY HALL) | |
| ITEM | DESCRIPTION | UNIT | TOTAL |
| 230 (A) 2806 | SOLID SLAB SODDING | SY | 50 |
| 802 (C) 8552 | 2" HIGH DENSITY PE PIPE (BORED) (SP-3) | LF | 2,300 |
| 802 (C) 8557 | 2" HIGH DENSITY PE PIPE (TRENCHED) (SP-3) | LF | 25 |
| 803 (B) 8085 | GROUND BOX (GB36) (SP-1) | EA | 14 |
| 803 (B) 8105 | GROUND BOX (R48) (SP-1) | EA | 7 |
| 818 (A) 8710 | (SP) FIBER OPTIC CABLE, 12, SMF-28 (TP-1) (ITS-2, 6, 7, 12) (SP-2) (SP-4) | LF | 535 |
| 818 (A) 8733 | (SP) FIBER OPTIC CABLE, 144, SMF-28 (TP-1) (ITS-2, 7, 12) (SP-2) (SP-4) | LF | 5,305 |
| 818 (B) 8743 | (SP) FIBER OPTIC PATCH PANEL, 12 PORT (SP-2) | EA | 7 |
| 818 (C) 8735 | (SP) FIBER OPTIC CABLE SPLICE (ITS-12) (SP-2) | EA | 84 |
| 818 (D) 8740 | (SP) FIBER OPTIC TERMINATION (ITS-15) (SP-2) | EA | 84 |
| 818 (F) 8370 | (SP) SHIELD ISOLATION PEDESTAL (ITS-22) (SP-2) | EA | 7 |
| 818 (G) 5570 | (SP) FIBER OPTIC ROUTE SIGN AND INSTALLATION (ITS-22) (SP-2) | EA | 16 |
| 880 (J) 8905 | CONSTRUCTION TRAFFIC CONTROL (TC-25) | L SUM | 1 |

| CONSTRUCTION PAY QUANTITIES | | | |
|-----------------------------|--------------|--|-------|
| 0640 CONSTRUCTION | | MAIN STREET (BERRY ROAD to WEBSTER AVE to CITY HALL) | |
| ITEM | DESCRIPTION | UNIT | TOTAL |
| 641 1552 | MOBILIZATION | L SUM | 1 |





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