CITY OF TULSA - TULSA, OKLAHOMA
ROUTE 66 AERO
BUS RAPID TRANSIT STATIONS
LINK TULSA - FIBER OPTIC INSTALLATION
City of Tulsa Project No: 2035X001Z, Phase 1
Build Grant/LINK Fiber Optic System Improvements
GENERAL CONSTRUCTION NOTES

1. UNLESS OTHERWISE NOTED, ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE 2008 OKLAHOMA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND THE CURRENT CITY OF TULSA ENGINEERING SERVICES DEPARTMENT'S STANDARD PECISIONS AND STANDARD DETAILS AND STANDARD DRAWINGS AND CITY OF TULSA SPECIAL PROVISIONS.

2. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS GOVERNING SAFETY, HEALTH, AND SANITATION. THE CONTRACTOR OR HIS REPRESENTATIVES SHALL PROVIDE ALL SAFEGUARDS, SAFETY DEVICES AND PROTECTIVE EQUIPMENT, AND TAKE ANY OTHER NECESSARY ACTION ON HIS OWN RESPONSIBILITY OR AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR MAY BE HELD LIABLE UNDER THE PROVISIONS OF THE 2008 OKLAHOMA DEPARTMENT OF TRANSPORTATION STANDARD PECISIONS AND STANDARD DETAILS AND STANDARD DRAWINGS AND CITY OF TULSA SPECIAL PROVISIONS.

3. PAY ITEMS SHALL BE AS SPECIFIED ON THE CITY OF TULSA OR ON THE OCTD STANDARD DRAWINGS EXCEPT AS MODIFIED BY THE CONTRACT.

4. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK IN EACH AREA. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT RESULT FROM HIS FAILURE TO LOCATE AND PRESERVE ANY AND ALL UTILITIES.

5. THE LOCATIONS OF THE UTILITIES ARE SHOWN ACCORDING TO ALL AVAILABLE INFORMATION. THE CONTRACTOR SHALL NOTIFY EACH UTILITY-OWNER PRIOR TO COMMENCEMENT OF WORK TO VERIFY BOTH HORIZONTAL AND VERTICAL LOCATIONS. THE FOLLOWING IS A LIST OF UTILITY-OWNERS: AT&T; PUBLIC SERVICE COMPANY OF OKLAHOMA (AEP); OKLAHOMA NATURAL GAS (ONG); OGE; COMMUNICATIONS; McVIZION; EZSTREET; COMMUNICATIONS INC.; WILCOX VALOR TELECOMMUNICATIONS; CITY OF TULSA WATER AND SEWER; CITY OF TULSA PUBLIC WORKS; TELEVIGE; OKLAHOMA CITY TOWING AND WRECKER, OKLAHOMA CITY TOWING AND WRECKER, OKLAHOMA CITY TOWING AND WRECKER,

6. THE CONTRACTOR SHALL NOTIFY THE OFFICE OF LAND RECORDS OF ANY PROJECTIONS OF UTILITY LINES WHICH MAY NOT BE VISIBLE FROM THE WORK SITE.

7. THE CONTRACTOR SHALL TAKE REASONABLE PRECAUTIONS TO PREVENT EXCESS MISTRESS FROM INLETTING WEATHER OR OTHER SOURCES FROM ENTERING ANY TUNNEL OR WORK AREA. IF EXCESS MISTRESS DOES ENTER THE TUNNEL OR WORK AREA, THE CONTRACTOR SHALL REPAIR ANY HARMS CAUSED TO THE CONTRACTOR OR SUBCONTRACTOR AND THE ADOPTED CONSTRUCTION IS ADVERSELY AFFECTED BY THE EXCESS MISTRESS, THE CONTRACTOR SHALL REPLACE THE ADOPTED CONSTRUCTION AND SUBMITS HIS SOLE EXPENSE.

8. THE CONTRACTOR SHALL PRESERVE THE INTEGRITY OF THE CITY TULSA WATER AND SEWER UTILITIES AND ALL OTHER UTILITY STRUCTURES WITHIN THE PROJECT EXTENTS.

9. THE CONTRACTOR SHALL WORK IN COOPERATION WITH THE CITY OF TULSA TO ENSURE THAT INSTALL, MAINTAIN, AND COMPLETE ALL ROADS, SIDEWALKS, AND STREETS THAT CONFORM TO THE CITY OF TULSA WATER AND SEWER UTILITIES, AND TOWING AND WRECKER UTILITIES, AND ALL OTHER UTILITIES WITHIN THE PROJECT EXTENTS.

10. CONSTRUCTION SIGNAGE WILL BE INSTALLED IN A MANNEF OR APPROVED BY THE ENGINEER, IN ACCORDANCE WITH CHAPTER V OF THE MANUAL, MANUFACTURERS' SPECIFICATIONS, CONTROLLED PROPERTY, UTILITIES, AND RELATED ITEMS, AND STANDARD DRAWINGS. THE CONTRACTOR SHALL PROVIDE A PROPOSED TRAFFIC CONTROL PLAN FOR APPROVAL BY THE ENGINEER PRIOR TO BEGINNING WORK.

11. THE CONTRACTOR SHALL NOTIFY THE CITY OF TULSA FIELD ENGINEERING, 1915 S. 15TH ST, BULLETIN BOARD OF ALL HOURS PRIOR TO COMMENCING WORK OR PRIOR TO REMOVING WORK SIGNS.

12. ALL PUBLIC AND PRIVATE STREETS AND DRIVES BE VISIBLE AT ALL TIMES.

13. ALL TRAFFIC SIGNS AND SIGNS SHALL BE IN ACCORDANCE WITH THE 2008 OKLAHOMA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND THE CURRENT CITY OF TULSA ENGINEERING SERVICES DEPARTMENT'S STANDARD PECISIONS AND STANDARD DETAILS AND STANDARD DRAWINGS AND CITY OF TULSA SPECIAL PROVISIONS.


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GENERAL CONSTRUCTION NOTES

40  ALL CONDUIT SHALL BE HOPE CONDUIT. RIGID PVC CONDUIT (SCHEDULE 40 OR AS APPROVED) MAY BE SUBSTITUTED FOR UNDERGROUND CONDUIT RUNS UNDER 25 FEET OR AS OTHERWISE DIRECTED BY THE ENGINEER.

41  THE MINIMUM BENDING RADIUS OF HOPE CONDUIT SHALL BE THE CONDUIT MANUFACTURER'S RECOMMENDATIONS FOR MINIMUM BENDING RADIUS.

42  THE CONTRACTOR SHALL TRENCHE ALL CONDUIT WHERE EXISTING CONDITIONS ALLOW UNLESS OTHERWISE SPECIFIED ON THE PLANS. THE CONTRACTOR MAY BORE IN LIEU OF TRENCHEING AT THE CONTRACTOR'S EXPENSE.

43  BORE LENGTHS AS SHOWN ON DESIGN PLANS ARE TO BE CONSIDERED MINIMUM FOR CONSTRUCTION UNLESS OTHERWISE APPROVED BY THE ENGINEER.

44  ANY AND ALL IMPROVEMENTS SUCH AS ASPHALT OR CONCRETE PAVEMENTS, CURBS, GUTTERS, WALKS, DRAINAGE DITCHES, CULVERTS, DRAIN TILS, EMBANKMENTS, SHOVELS, TREES, GRASS, SOD, ETC., IF DAMAGED, SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITIONS (OR SETTLE) AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST TO THE COT.

45  IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR ANY EXISTING CONDUIT, CONDUCTORS, OR OTHER FACILITIES DAMAGED DURING CONSTRUCTION. ALL EXISTING INFRASTRUCTURE REMOVED OR DAMAGED BY THE CONTRACTOR SHALL BE REPLACED IN KIND BY THE CONTRACTOR, WITH NO ADDITIONAL COMPENSATION.

46  THE CONTRACTOR SHALL NOT DISTURB DESIRABLE GRASS AREAS AND DESIRABLE TREES LOTSIDE THE CONSTRUCTION LINES. THE CONTRACTOR WILL NOT BE PERMITTED TO PARK OR SERVICE VEHICLES AND EQUIPMENT OR USE THESE AREAS FOR STORAGE OF MATERIALS, STORAGE, PARKING AND SERVICE AREAS WILL BE SUBJECT TO THE APPROVAL OF THE RESIDENT CONSTRUCTION ENGINEER.

47  THE TOP SIX (6) INCHES OF THE DISTURBED AREAS SHALL BE FREE OF ROCKS AND DEBRIS AND SHALL BE FREE OF THE ESTABLISHMENT OF VEGETATION SUBJECT TO THE APPROVAL OF THE ENGINEER.

48  THE CONTRACTOR IS EXPECTED TO HAVE MATERIALS, EQUIPMENT, AND LABOR AVAILABLE ON A DAILY BASIS TO INSTALL AND MAINTAIN EDGES ON CONTROL FEATURES ON THE PROJECT. THIS MAY INCLUDE SEEDING, SITTING, ROCK DITCH CHECKS, SILT BASINS OR SILT DYES.

49  NO OPEN HOLES OR MOUNDS OF DIRT SHALL BE LEFT UNPROTECTED DURING NON-WORKING HOURS.

50  CONTRACTOR SHALL PLACE TAGS ON ALL FIBER OPTIC CABLE IDENTIFYING THE OWNER AND DIRECTION OF THE CABLE AT EACH TERMINATION POINT AND IN EVERY HANDHOLE AND SPICE VAULT. TAGS SHALL CLEARLY IDENTIFY WHERE EACH INDIVIDUAL CABLE RUN ORIGINATED AND WHERE IT ENDS (PULL BOX TO PULLBOX, PULLBOX TO CABINET, PULLBOX TO BUILD NO, ETC.) FOR FIBER INSTALLATIONS WITH JOINT CITY/OTHER AGENCY (OR ENTITY) USE WHERE THE FIBER WILL BE OWNED BY THE OTHER AGENCY (OR ENTITY), INSTALL TYPICAL IDENTIFIERS AND/OR MARKINGS FOR THAT FIBER.

51  ANY EXISTING PULL TAPE THAT IS USED AS A PULL ROPE FOR FIBER OPTIC CABLE INSTALLATION SHALL BE REPLACED IN KIND. THE COST OF ANY "PULL TAPE" REPLACEMENT SHALL BE SUBSIDIARY TO THE FIBER OPTIC CABLING INSTALLATION.

52  IN THE EVENT THIS SUSPECTED TO BE DAMAGED OR OCCURRED PRIOR TO FINAL ACCEPTANCE, CONTRACTOR SHALL PERFORM OTDR TESTING OF ALL FIBER STRANDS WITHIN SEVENTY-TWO (72) HOURS AFTER NOTICED ON AND SUBMIT A COPY OF THE OTDR TEST TO THE ENGINEER UPON COMPLETION.

53  CONTRACTOR SHALL REPLACE OR REPAIR, AS DIRECTED BY THE ENGINEER, ANY DAMAGE OCCURRING BEFORE FINAL ACCEPTANCE AT NO ADDITIONAL COST TO THE COT. THE CONTRACTOR WILL NOT BE GRANTED AN EXTENSION OF TIME FOR DELAYS CAUSED BY REPLACING OR REPAIRING THE INSTALLED CABLE.

GENERAL CONSTRUCTION NOTES

54  CONTRACTOR SHALL REPAIR OR REPLACE ANY DEFECT IN THE INSTALLED CABLE AT NO ADDITIONAL COST TO THE COT. CONSIDER A DEFECT TO BE ANY CONDITION RESULTING IN A NEGATIVE OR ADVERSE EFFECT ON CURRENT OR FUTURE OPERATIONS OF THE COMPLETED FIBER OPTIC COMMUNICATION SYSTEM AS DETERMINED BY THE ENGINEER.

55  ANY EXISTING WIRING TRunks DAMAGED DURING FIBER OPTIC CABLE INSTALLATION SHALL BE REPLACED OR REPAIRED, AS DIRECTED BY THE ENGINEER, AT NO ADDITIONAL COST TO THE COT.

56  CONTRACTOR SHALL COORDINATE WITH THE SIGNAL EQUIPMENT CONTRACTOR (PROJECT NUMBER: 2035/0022) ON INSTALLATION OF CONDUIT AND FIBER OPTIC CABLE INTO THE NEW SIGNAL CABINETS.

57  QUANTITY TABLES PROVIDED ON THE PLAN SHEETS SHOW THE APPROXIMATE FIBER DISTANCE FOR THAT SEGMENT AND DO NOT INCLUDE ANY SLACK. A DETAILED BREAKDOWN OF INFORMATION ABOUT THE SLACK MISSED FOR THE PULL BOXES IS PROVIDED IN THE PULL BOX SLACK TABLE.

58  THE PROJECT WILL BE COMPLETED IN SEQUENTIAL PHASES. SUBSTANTIAL COMPLETION OF THE PREVIOUS PHASE MUST BE AGREED UPON WITH THE ENGINEER BEFORE THE CONTRACTOR CAN MOVE ON TO THE NEXT PHASE. REFERENCE THE CONSTRUCTION PHASING SHEET FOR MORE INFORMATION.

59  BEFORE SPlicing ANY FIBER, VERIFY ALL FINAL SPIce DETAILS WITH GARY COOKMS WITH CITY OF TULSA. GARY CAN BE REACHED AT EMAIL A. GCUMMINS@TULSA.GO.

60  CONTRACTOR TO COORDINATE WITH GARY COOKMS WITH THE CITY OF TULSA (GCUMMINS@TULSA.GO) FOR EXISTING PULL BOX TIE IN LOCATIONS ALONG RIVERSIDE DR. THE PULL BOX LOCATIONS SHOWN ON THE PLAN SHEETS ARE APPROXIMATELY ONLY AND WILL NEED TO BE FIELD VERIFIED.

SITE LAYOUT NOTES

1  THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS NECESSARY FOR CONSTRUCTION ACTIVITIES.

2  THE CONTRACTOR SHALL CLEAN PL BLK ROADWAYS OF ALL CONSTRUCTION DEBRIS AS A RESULT OF CONSTRUCTION ACTIVITIES AT THE END OF EACH DAY.

3  ALL WORKMEN'S-HP AND MATERIALS SHALL BE SUBJECT TO THE INSPECTION AND APPROVAL OF THE ENGINEERING SERVICES DEPARTMENT OF THE CITY OF TULSA, OKLAHOMA.

4  UNLESS OTHERWISE NOTED, CONCRETE MATERIALS SHALL BE 4,000 PSI WITH AIR ADDED TO THE MIX AND CONFORM TO CITY OF TULSA, OKLAHOMA STANDARDS.

5  THE CONTRACTOR SHALL BE RESPONSIBLE TO DIRECTLY COORDINATE HIS WORK WITH ADJACENT PROPRITY OWNERS AND ALL OTHER CONTRACTORS WORKING ON OR ADJACENT TO SITE. REFER TO THE SPECIAL PROVISIONS AS OUTLINED IN THE PROJECT MANUAL FOR DETAILS REGARDING COORDINATION WITH OTHER CONTRACTORS AND THE CITY OF TULSA.

6  SIDEWALK PAVING SHALL CONFORM TO MINIMUM TULSA ENGINEERING SERVICES DESIGN STANDARDS, SUCH AS MINIMUM AND MAXIMUM CROSS SLOPES AND PROVIDING POSITIVE DRAINAGE.

7  THE MAXIMUM SUMP SLOPE SHALL BE 1/12 (8.33%).

GENERAL NOTES

CITY OF TULSA PROJECT NUMBER: 2035/0022 PHASE 1
BLACK GRANT - 9TH FIBER OPTIC SYSTEM APPROACHES

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**PAY ITEM NOTES**

1. All costs for removing trees (up to 6") shrubs, stumps, posts, and all other debris and/or obstructions not covered by a separate PAY item are included in the PRICE BID.

2. Construction staking shall include surveying and the furnishing, placing, and maintaining of the construction layout stakes necessary for the proper completion and inspection of the entire project.

3. Past material to become the property of the contractor and shall be removed from the site in a manner approved by the engineer.

4. Contractor shall repair any irrigation systems damaged or requiring relocation during the construction of this project to the satisfaction of the property owner and city arborist. Cost $1 will be included in the PRICE BID.

5. Erosion protection shall be placed around drainage inlet as required to prevent ingress of erosion material. Erosion protection shall be placed as necessary to prevent erosion wash to adjacent property. All erosion protection installed must be maintained by the contractor for the duration of the project. Erosion protection shall be removed at the end of the project as directed by the engineer. Cost to be included in the PRICE BID. The price includes the cost of sediment removal per the stream restoration plan.

6. The use of fly ash in concrete is prohibited.

7. Reflective sheeting on signs and barricades shall be of a cubic prismatic type and shall meet the specifications established by the Federal Highway Administration. Type IX retroreflective sheeting on traffic control devices and Type X retroreflective sheeting on signs and barricades shall be of a high-intensity type and shall meet the specifications established by the Federal Highway Administration.

8. If warning lights are to be used on traffic control devices, Type "A" "lights shall be used for warning of Unexpected Hazards, and shall not be used for determination of the traveled way. Only Type "C" warning lights shall be used for determination of the traveled way, and Type "E" lights shall not be used for any other purpose.

9. A certified arborist shall oversee all plantings and removal of trees. Contact City Arborist to accept final plantings. Contact: 918-596-2546

10. Tree grates are not acceptable per City Arborist. Concrete: Pavers are to be used as necessary around trees.

11. This PAY item shall be complete in place and shall include all pipe, standard bedding material and trench excavation, joint gaskets and all other incidentals. No additional cost will be made.

12. Price bid for this item shall be paid in full for the installation, maintenance and subsequent removal of all necessary construction traffic control required for completion of the project.

13. The cost to replace damaged sections shall be included in the PRICE BID.

14. Extension drainage structures shall be removed and cleaned of all sedimentation and debris to the right of way. Cost of clearing shall be included in the PRICE BID.

15. PAY item includes removal of all structures and obstructions within project limits not specified by other items of work.
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**QUANTITIES**

- CITY OF TULSA PROJECT NUMBER: 2020/2021/002
- BALDWIN WATKINS AND OPTIC WIRE MATERIALS
THE FOLLOWING CITY OF TULSA STANDARDS WILL BE REQUIRED

NO.  TITLE
126  STANDARD SI5 FENCE AND CONSTRUCTION ENTRANCE
304  BEDDING DETAIL - RIGID PIPE
313  VALVE BOX
314  MANHOLE STEPS
315  THRUHT BLOCKS AND TRENCH CONDITIONS
601  PULL BOX INSTALLATION
602  CONDUIT INSTALLATION
610A  352 CONTROLLER CABINET DETAIL
610C  352 CABINET WIRING DETAIL
612  CABINET GUARD DETAIL
618  BONDING DIAGRAM
701  RESIDENTIAL CONCRETE DRIVEWAY CONCRETE STREET
706  COMMERCIAL DRIVEWAY
707  COMMERCIAL DRIVEWAY
708  COMMERCIAL DRIVEWAY ASPHALT
713  PAVEMENT REMOVAL AND REPLACEMENT
714  PAVEMENT CUTS
726  ASPHALT PAVEMENT STANDARD DETAILS FOR RESIDENTIAL AND COLLECTOR STREETS
727  CONCRETE PAVEMENT STANDARD DETAILS FOR RESIDENTIAL AND COLLECTOR STREETS (1 OF 2)
729  CONCRETE PAVEMENT STANDARD DETAILS FOR RESIDENTIAL AND COLLECTOR STREETS (2 OF 2)
790  STANDARD SIDEWALK RAMP

THE FOLLOWING ODOT STANDARDS WILL BE REQUIRED

SHEET NO.  DESIGN NO.  STANDARD NAME
T501  TCS1-1-01  TRAFFIC CONTROL CONSTRUCTION NOTES
T503  TCS3-1-01  TEMPORARY TRAFFIC CONTROL ELEMENTS
T506  TCS6-1-02  CHANNELIZING DEVICES
T507  TCS7-1  ADVANCE WARNING SIGNS
T508  TCS8-1-00  CONSTRUCTION SIGNS
T509  TCS9-1-01  CONSTRUCTION SIGNS
T510  TCS10-1-00  CONSTRUCTION SIGNS
T511  TCS11-1-01  CONSTRUCTION SIGNS
T514  TCS14-1-00  CONSTRUCTION SIGNS
T519  TCS19-1-01  CONSTRUCTION SIGNS
T521  TCS21-1-02  CONSTRUCTION ZONE PAVEMENT MARKINGS
T522  TCS22-1-00  CONSTRUCTION ZONE PAVEMENT MARKINGS
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LEGEND
- PROPOSED PULL BOX/Splice Vault
- PROPOSED BORED UNDERGROUND FIBER
- PROPOSED TRENCHED UNDERGROUND FIBER
- EXISTING AERIAL FIBER
- EXISTING UNDERGROUND FIBER

SCALE: 1" = 200'

PLAN SHEET

CITY OF TULSA PROJECT NUMBER 2088662 PHASE 1
BULL CREEK N-AERIAL OPTIC SYSTEM UPGRADES

HNTB

PREPARED BY: TL 1107 11/11/99
PLANSHEET: 12" X 18"  "A"  1/7/99

SHEET 11 OF 28 SHEETS
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**Legend:**
- PULL BOX
- PROPOSED UNDERGROUND FIBER
- EXISTING UNDERGROUND FIBER
- PROPOSED BORED UNDERGROUND FIBER
- PROPOSED TRENCHED UNDERGROUND FIBER
- EXISTING AERIAL FIBER
- EXISTING UNDERGROUND FIBER

**Scale:** 1" = 200'

**PLAN SHEET**
- CITY OF CLEVELAND PROJECT NUMBER: 19110-010
- SUBMIT: 5-10 PAPER: 5-10 SCALE: 1" = 200'

**Key Map**
- PROPOSED PULL BOX
- PROPOSED UNDERGROUND FIBER
- EXISTING UNDERGROUND FIBER
- PROPOSED BORED UNDERGROUND FIBER
- PROPOSED TRENCHED UNDERGROUND FIBER
- EXISTING AERIAL FIBER
- EXISTING UNDERGROUND FIBER

**Revision:**
- DATE: 7-1-2021
- SCALE: 1" = 200'
- DRAWN
- CHECKED
- APPROVED
### PLAN NOTE
1. SLACK FOR SEGMENT 6K TO OTG HAS NOT BEEN ACCOUNTED FOR IN THE APPARENT LENGTH. ADDITIONAL LENGTH OF 200' IS RECOMMENDED.
2. COORDINATE WITH MICHAEL KOCOS AND KTTA FOR FIBER ACCESS TO BUILDING AND TERMINATIONS ON SEGMENT 6A.

### TABLE

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<th>From Splice Vault</th>
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<th>Trench Distance</th>
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<th>48 Count SM Fiber</th>
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### LEGEND
- PROPOSED PULL BOX/SPlice VAULT
- EXISTING PULL BOX
- PROPOSED BORED UNGROUND FIBER
- PROPOSED TRENCHED UNGROUND FIBER
- EXISTING AERIAL FIBER
- EXISTING UNGROUND FIBER
**Plan Note:**
CONTRACTOR TO COORDINATE WITH GARY CUMMINS OF THE CITY OF TULSA FOR EXISTING PULL BOXES IN LOCATIONS ALONG RIVERSIDE DR AND RIVERFRONT DR. LOCATION AND TOTAL LENGTH OF TRENCHING IS APPROXIMATE ONLY AND WILL NEED TO BE ADJUSTED IN THE FIELD.

**Legend:**
- PROPOSED PULL BOX/SPICE VAULT
- PROPOSED BORED UNDERGROUND FIBER
- PROPOSED TRENCHED UNDERGROUND FIBER
- EXISTING AERIAL FIBER
- EXISTING UNDERGROUND FIBER

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**PLAN NOTE:**
ALL WORK ON THIS SHEET IS PART OF BID ALTERNATIVE 1.

**LEGEND:**
- PROPOSED PULL BOX/SPlice VAULT
- PROPOSED BORED UNDERGROUND FIBER
- PROPOSED TRENCHED UNDERGROUND FIBER
- EXISTING PULL BOX
- EXISTING UNDERGROUND FIBER
- EXISTING UNDERGROUND FIBER

**KEY MAP:**
- N
- 1" = 200 SCALE

**PLAN SHEET**
- CITY OF TULSA PROJECT NUMBER: DESIGNED BY KENT BROUS
- DRAWN BY: DAVE MOORE
- APPROVED:
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<th>Trench Distance</th>
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<td>17D</td>
<td>560</td>
<td>573</td>
<td>1565</td>
<td>1134</td>
<td>0</td>
<td>0</td>
<td>268</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>17E</td>
<td>573</td>
<td>574</td>
<td>1502</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>250</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>
NOT TO SCALE

FIBER SPlicing AND CONNECTION DETAIL

NOTE:
1. MAXIMUM SPICE LOSS SHALL BE 0.1 dB.
2. NO INTERMEDIATE SPICES ALLOWED.
3. ALL SPICES SHALL BE FUSION SPICES.
4. WHEN SPICING UNDERGROUND, ONLY TUBES CONTAINING FIBERS TO BE SPICED TOGETHER SHALL RUN ACROSS BETWEEN OTHER SPICES.

CITY OF Tulsa
A New Kind of Energy
EXISTING SPlice HOLE 233.1

PROPOSED SPLICE CLOSURE

TO SPLICE 537)
96 FIBER CABLE TO
EAST ALONG 144

BEFORE SPLICING FIBER, VERIFY FINAL
SPlice DETAILS WITH GARY CUMMINS,
WITH CITY OF TULSA.

KEY

E33.2D
BIVICE IDENTIFIER

CCTV
CAMERA

CCTV
CAMERA

RTA
REAL TIME
ARRIVAL SIGN

RTA
EXISTING REAL
TIME ARRIVAL SIGN

PATCH THROUGH
FIBER OPTIC JUMPER

Fiber optic Jumper

Fiber optic pigtail

BIKE FIBER LEFT
CRIED IN SPLICE TRAY

FUSION SPLICE

PATCH PANEL MODULE

EXISTING COAX CABLE

EXISTING TWISTED
PAIR CABLE

EXISTING FIBER
OPTIC CABLE

NOTE: DASHED LINES DENOTE EXISTING
CABLE DEVICES OR ENCLOSURES.

NOTES:
1. MAXIMUM SPLICE LOSSES SHALL BE 0.1 dB.
2. NO INTERMEDIATE SPLICES ALLOWED.
3. ALL SPLICES SHALL BE FUSION SPLICES.
4. WHEN SPLICING UNDERGROUND, ONLY
TUBES CONTAINING FIBERS TO BE
SPLICED SHALL BE CUT. ALL OTHER
TUBES SHALL RUN IN/CUT BETWEEN
OTHER SPLICES.

NOT TO SCALE

Tulsa
A New Kind of Energy
PROPOSED HATCHOLE 553
PROPOSED SPICE CLOSURE

BLUE TUBE
ORANGE TUBE
GREEN TUBE
BROWN TUBE

13-FIBER CABLE TO EAST ALONG E 11th STREET TO SIGNAL

TO SPICE 552
40 FOUNT TO SOUTH ALONG S UTICA AVE

KEY

E238.2D
INVOICE IDENTIFIER

CCTV
CCTV CAMERA

EXISTING CCTV CAMERA

RTA
REAL
ARRIVAL SIGN

EXISTING REAL "ME ARRIVAL SIGN"

RTA

PATCH THROUGH FIBER OPTIC JUMPER

EXISTING FIBER OPTIC JUMPER

FIBER OPTIC PIGTAIL

FIBER LEFT COILED IN SPICE TRAY

FIBER SPLICE

FIBER SPLICE AND CONNECTION DETAIL

NOTE: DASHED LINES DENOTE EXISTING CABLES, DEVICES, OR ENCLOSURES.

NOT TO SCALE

PROPOSED 4001 Pine Avenue SW

FIBER SPLICING AND CONNECTION DETAIL

NOTE:
1. MAXIMUM SPLICE LOSS SHALL BE 0.1 DB.
2. NO INTERMEDIATE SPLICES ALLOWED.
3. ALL SPLICES SHALL BE FIBER SPLICES.
4. WHEN SPLICING UNDERGROUND, ONLY TUBES CONTAINING FIBERS TO BE SPLICED SHALL BE SECUT. ALL OTHER TUBES SHALL BE JOINT BETWEEN OTHER SPLICES.
12-FIBER CABLE TO NORTH ALONG E 21ST STREET TO SIGNAL.

PROPOSED HINCHOLE 567

PROPOSED SPLICE CLOSURE

BEFORE SPLICING FIBER, VERIFY FINAL SPLICE DETAILS WITH GARY CUMMINS WITH CITY OF TULSA.

KEY

E233.2D DEVICE IDENTIFIER

CCTV

EXISTING CCTV CAMERA

RTA

EXISTING REAL TIME ARRIVAL INDICATOR

FIBER OPTIC JUMPER

FIBER OPTIC PIGTAIL

Fusion Splice

Patch Panel Module

EXISTING COAX CABLE

EXISTING TWISTED PAIR CABLE

EXISTING FIBER OPTIC CABLE

NOTE: DASHED LINES DENOTE EXISTING CABLES, DUCTS, OR ENCLOSURES.

NOTES
1. MAXIMUM SPLICE LOSS SHALL BE 0.1 DB.
2. NO INTERMEDIATE SPLICES ALLOWED.
3. ALL SPLICES SHALL BE FUSION SPLICES.
4. WHEN SPLICING UNDERGROUND, ONLY TUBES CONTAINING FIBERS TO BE SPLICED SHALL BE CUT. ALL OTHER TUBES SHALL BE J-IN-CUT BETWEEN OTHER SPLICES.

NOT TO SCALE
FIBER SPLICING AND CONNECTION DETAIL

NOTES
1. MAXIMUM SPlice... DBS SHALL BE 0.14 L1-
2. NO INTERMEDIATE SPlicing ALLOWED.
3. ALL SPlices SHALL BE FUSION SPlicES.
4. WHEN SPLICING UNDERGROUND, ONLY TUBES CONTAINING FIBERS TO BE SPliced SHALL BE CUT. ALL OTHER TUBES SHALL BE LEFT IN PLACE BETWEEN OTHER SPlices.

BEFORE SPLICING FIBER, VERIFY FINAL SPlice DETAILS WITH GARY CUMMINS WITH CITY OF TULSA.

PROPOSED HINDOHOE 588
PROPOSED SPLICE CLOSURE

12-FIBER CABLE TO SOUTH ALONG E 1ST AVE TO SIGNAL

BLUE TUBE

TO SPlice SET
96 COUNT TO WEST ALONG E 21ST STREET

ORANGE TUBE

GREEN TUBE

BROWN TUBE

WHITE TUBE

RED TUBE

BLACK TUBE

TO SPlice SET
96 COUNT TO EAST ALONG E 21ST STREET

BLUE TUBE

ORANGE TUBE

GREEN TUBE

BROWN TUBE

WHITE TUBE

RED TUBE

BLACK TUBE

KEY
E322.0D DEVICE IDENTIFIER

CCTV CAMERA

CCTV Camera

REAL TIME ARRIVAL SIGN

RTA

EXISTING REAL TIME ARRIVAL SIGN

RTA

FIBER SPlice

FUSION SPlice

PATCH PANEL MODULE

EXISTING COAX CABLE

EXISTING TWISTED PAIR CABLE

EXISTING FIBER OPTIC CABLE

NOTE: DASHED LINES DENOTE EXISTING CABLES, DEVICES, OR ENCLOSURES.

PROJECT: 0402 Peoria Avenue 9334

NOT TO SCALE
10 FIBER CABLE TO SOUTH ALONG 8 3/4" E AVENUE TO SIGNAL

PROPOSED HINDHOLE 569

PROPOSED SPLICE CLOSURE

BEFORE SPLICING FIBER, VERIFY FINAL SPLICE DETAILS WITH GARY CUMMINS WITH CITY OF TULSA.

KEY

E229.20 DEVICE IDENTIFIER

- CCTV CAMERA

- EXISTING CCTV CAMERA

- FAIR TIME ARRIVAL SIGN

- EXISTING REAL TIME ARRIVAL SIGN

- RISER OPTIC JUMPER

- RISER OPTIC JUMPER

- RISER OPTIC JUMPER

- STRIP FIBER LEFT (CLEAN IN SPLICE TRAY)

- FUSION SPLICE

- FUSION SPLICE

- FUSION SPLICE

- EXISTING COAX CABLE

- EXISTING TWISTED PAIR CABLE

- EXISTING FIBER OR FIBER OPTIC CABLE

NOTE: DASHED LINES DENOTE EXISTING CABLES, DEVICES, OR ENCLOSURES.

NOTES
1. MAXIMUM SPLICE LOSS SHALL BE 0.1 DB.
2. NO INTERMEDIATE SPLICES ALLOWED.
3. ALL SPLICES SHALL BE FUSION SPLICES.
4. WHEN SPLICING UNDERGROUND, ONLY TUBES CONTAINING FIBERS TO BE SPliced SHALL BE CUT. ALL OTHER TUBES SHALL RUN IN OUT BETWEEN OTHER SPLICES.
EXISTING HANDHOLE 00.11

BEFORE SPLICING FIBER, VERIFY FINAL SPLICE DETAILS WITH GARY CUMMINS WITH CITY OF TULSA.

EXISTING CONDITIONS, FUTURE CONNECTIONS AND NUMBER OF SPLICES ARE ASSURED.

KEY

E238.2D  DEVICE IDENTIFIER

CCTV CAMERA

EXISTING CCTV CAMERA

REAL TIME ARRIVAL SIGN

EXISTING REAL TIME ARRIVAL SIGN

RTA

LOCK THROUGH FIBER OPTIC JUMPER

FIBER OPTIC JUMPER

FIBER OPTIC PIGTAIL

LANE FIBER LEFT CABLE IN SPLICE TRAY

REGION SPLICE

LATCH PANEL MODULE

EXISTING COAX CABLE

EXISTING TWISTED PAIR CABLE

EXISTING FIBER OR FIBER OPTIC CABLE

NOTE: DASHED LINES DENOTE EXISTING CABLES, DEPSES, OR ENCLOSED.

NOTES

1. MAXIMUM SPLICE LOSS SHALL BE 0.1 DB.
2. NO INTERMEDIATE SPLICES ALLOWED.
3. ALL SPLICES SHALL BE FUSION SPLICES.
4. WHEN SPLICING UNDERGROUND, ONLY TUBES CONTAINING FIBERS TO BE SPLICED SHALL BE CUT. ALL OTHER TUBES SHALL RUN IN-CUT BETWEEN OTHER SPLICES.

PROJECT: 300 PROGRESS AVENUE SWP

CITY OF TULSA

A New Kind of Energy.

NOT TO SCALE