

General Notes

Division 01 – General Requirements

General:

1. The Contractor shall be responsible for locating all utilities, whether public or private, prior to excavation. The information and data shown with respect to existing underground facilities at or contiguous to the site is approximate and based on information furnished by the owners of such underground facilities or on physical appurtenances observed in the field. The City and Engineer shall not be responsible for the accuracy or completeness of any such information or data. The Contractor shall have full responsibility for reviewing and checking all such information or data, for locating all underground facilities, for coordination of the work with the owners of such underground facilities during construction and for the safety and protection thereof and repairing any damage thereto resulting from the Work. This Work shall be considered as a subsidiary item of Work, the cost of which shall be included in the price bid in the Proposal for various bid items. The Contractor shall notify any affected owners (utility companies) or agencies in writing at least 48 hours prior to construction.
 - a. Notify TEXAS 811 (*1-800-DIG-TESS or www.texas811.org*) to locate existing utilities prior to construction.
 - b. Caution! Buried electric lines may exist along this project. Contact electrical providers 48 hours prior to excavation :
 - *Company Representative XXX-XXX-XXXX*
 - *Company Representative XXX-XXX-XXXX*
 - *Company Representative XXX-XXX-XXXX*
 - c. Caution! Buried gas lines may exist along this project. Contact *{gas company}* 48 hours prior to excavation, and within two (2) hours of encountering a gas line (*Representative's Name: XXX-XXX-XXXX*)
 - d. Caution! Buried communication cables may exist along this project. Contact communication companies 48 hours prior to excavation:
 - *Company Representative XXX-XXX-XXXX*
 - *Company Representative XXX-XXX-XXXX*
 - *Company Representative XXX-XXX-XXXX*
 - e. Caution! When doing work within 200 feet of any signalized intersection, the Contractor shall notify Traffic Management Division of City of Fort Worth T/PW, 72 hours prior to excavation (*Representative's Name: XXX-XXX-XXXX*). The Contractor shall protect existing signal hardware, ground boxes, detection loops, and underground conduit at signalized intersections. Any damages at signalized intersections shall be replaced at the expense of the Contractor. The Contractor shall contact the City at 817-392-8100 to perform conduit line locates at signalized intersections 72 hours prior to commencing work at the intersection.
 - f. The Contractor shall notify the City of Fort Worth Project Manager 48 hours prior to the start of any excavation (*Project Manager's Name: XXX-XXX-XXXX*)
2. Contractor's personnel shall have identifying clothing, hats or badges at all times which identify the Contractor's name, logo or company.
3. Protect concrete curb and gutter, driveways, and sidewalks that are not designated for removal. Removal and replacement of these items shall be as designated in the drawings.

Division 32 – Exterior Improvements

General:

1. At locations where the curb and gutter are to be replaced, the Contractor shall assume all responsibility for the re-establishment of existing street and gutter grades. Establishment of grades shall be considered as a subsidiary item of Work, the cost of which shall be included in the price bid in the Proposal for various bid items.
2. All driveways, which are open cut, shall have at least a temporary driving surface at the end of each day. The temporary surface shall be considered as a subsidiary item of Work. The cost of which shall be included in the price bid in the Proposal for various bid items.

Bike Lanes and Shared Pavement Markings:

1. Proposed bike lanes should maintain a minimum effective width of 4 feet (measured from edge of gutter to center of stripe).
2. Bicycle pavement markings should be located 20 feet from the curb return, stop bar, or cross walk (whichever is applicable) unless denoted otherwise in the drawings.
3. Combined width of bike lane and on-street parking should not be less than 13 feet.
4. If travel lane is greater than 14 feet wide, shared pavement markings shall be placed 4 feet from face of curb or edge of on-street parking (whichever is applicable).
5. If travel lane is less than or equal to 14 feet wide, shared pavement markings shall be placed in the middle of the travel lane.
3. Bike lane symbol, arrow, and shared pavement markings should be repeated at the beginning of each intersection.
4. On uninterrupted sections of roadway, bike lane symbol and arrow should not be spaced more than 330 feet apart and shared pavement markings should not be spaced more than 250 feet apart.
5. Bike lane symbol, arrow, and shared pavement markings should not be placed at private driveways or public intersections.
6. Bike lane striping should be 4 inches solid white, hot-applied thermoplastic unless specified otherwise in the drawings. All other bike lane pavement markings shall also be white, hot applied thermoplastic unless otherwise specified in the drawings.
7. All dimensions are from face of curb and are to center of the pavement marking.
8. Shared pavement markings should not be used on facilities with a posted speed greater than 35 mph.

Sidewalks and Curb Ramps:

1. The curb ramp standard details are intended to show typical layouts for the construction of the curb ramps. The information shown on the standard details meet the requirements shown in the “2012 Texas Accessibility Standards” (TAS) and the “2010 ADA Standards for Accessible Design” by the Department of Justice.
2. City of Fort Worth Standard Details are only intended to indicate pay limits for each type of ramp, the Engineer is responsible for the development and design of the sidewalk and curb ramp layout, including actual dimensions and slope percentages.
3. The Contractor may not make changes to the sidewalk and curb ramp layout without approval of the City. The Contractor may propose changes to the sidewalk and curb ramp layout due to field conditions, but any proposed changes must be approved by the City.
4. Curb ramp running slopes shall not be steeper than 8.3% (12:1). Adjust curb ramp length or grade of approach sidewalks as directed by the City.
5. Curb ramp flare slopes shall not be steeper than 10% (10:1) as measured along back of curb.
6. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
7. The minimum width of sidewalks and curb ramps shall be 4 feet.

8. Landings shall be provided at the top of curb ramps. The landing clear length shall be 5 feet minimum from the end of ramp. The landing clear width shall be at least as wide as the curb ramp, excluding flares. The landing shall have a maximum slope of 2% in any direction.
9. In alterations where there is no landing at the top of the curb ramp, curb ramp flares shall be provided and shall not be steeper than 8.3% (12:1).
10. Where turning is required, maneuvering space at the top and bottom of curb ramps shall be 5 feet by 5 feet minimum. The space at the bottom shall be wholly contained within the crosswalk markings and shall not project into vehicular traffic lanes.
11. Curb ramps with returned curbs may be used only where pedestrians would normally walk across the ramp, either because the adjacent surface is planting or other non-walking surface or because the side approach is substantially obstructed.
12. Where curb ramps are provided, crosswalk markings shall be required and ramps shall be aligned with the crosswalk.
13. Counter slopes of adjoining gutters and road surfaces immediately adjacent to the curb ramp shall not be steeper than 5% (20:1) in any direction.

Division 33 - Utilities

General:

1. For utility work within utility easements, once pipe or appurtenances have been installed or rehabilitated, immediately commence temporary surface restoration. Complete surface restoration to the owner's satisfaction within seven (7) days of work finishing on-site. Failure to maintain surface restoration, as noted above, may result in suspension of work until restoration is complete.
2. Existing vertical deflections and pipe slopes shown on the drawings are approximate and have not been field verified, unless otherwise noted. Rim elevations, flow lines, and horizontal locations of existing manholes were determined from field survey. If field conditions vary from those shown on drawings Contractor shall notify City.
3. Maintain all existing water and sewer connections to customers in working order at all times, except for brief interruptions in service for water and sewer services to be reinstated. In no case shall services be allowed to remain out of service overnight.
4. Establish and maintain a trench safety system in accordance with the excavation safety plan and Federal, State or local safety requirements.
5. Provide and follow approved Confined Space Entry Program in accordance with OSHA requirements. Confined Spaces shall include manholes and all other confined spaces in accordance with OSHA's Permit required for Confined Spaces.
6. Only City prequalified Contractors, by appropriate Water Department work category, shall be allowed to adjust valve boxes, manholes, ring & covers, etc.

Water:

1. Provide thrust restraint by means of restraining joints at fittings and concrete blocking. When specifically indicated on the Drawings, provide thrust restraint at designated joints beyond the fittings. Each method shall be capable of thrust restraint independent of the other system. The Contractor shall refer to City Standard Details for area required to install concrete blocking.
2. All ductile iron mechanical joint fittings shall be restrained to pipe using retainer glands.
3. Proposed water mains shall have a minimum cover of 48-inches cover above the top of pipe, unless shown otherwise on the drawings or details.
4. All water services shall be installed above storm sewers, except where shown otherwise in the drawings.
5. Elevation adjustment at connections may be made with bends, offsets, or joint deflections. Joint deflections shall not exceed fifty percent (50%) of manufacturer's recommendations.
6. Temporary pressure plugs required for sequencing of construction and testing of proposed water lines shall be considered subsidiary to the work and shall be included in the price bid in the Proposal for various bid items.

Sanitary Sewer:

1. Verify that all connections to the sanitary sewer system are for sanitary sewer only. Notify City of any discovered illicit connections.
2. The Contractor shall be liable for all damages to properties, homes, and basements from backup, which may result during the installation of new pipe and/or abandonment of existing pipe. The Contractor will be allowed to open clean outs where available. The Contractor will be responsible for all clean up associated with opening clean outs.
3. For all sanitary sewer service connections at manholes, provide a hydraulic slide in accordance with the details.

Storm Drain:

1. Maintain the existing storm drainage system until the proposed system is in service. In no case should the Contractor leave the existing storm drain out of service whereby runoff would cause damage to adjacent property.
2. Construct all drainage improvements from the downstream end to the upstream end to allow continued storm drain service. If the Contractor proposes to construct the system otherwise, the Contractor shall submit a sequencing plan to the City for approval.
3. Take appropriate measures to preserve wildlife in accordance with applicable federal, state and local guidelines.

Division 34 - Transportation

General:

1. Prior to activating traffic signals with new or revised signal timing, the contractor should e-mail Aziz Rahman, Sr. Professional Engineer, at Aziz.Rahman@fortworthtexas.gov (and copy Kassem Elkhailil, Professional Engineer, at Kassem.ElKhalil@fortworthtexas.gov) at least three (3) weeks in advance to schedule that.
2. If new cabinets and controllers are being installed and the controllers need to be programmed and tested by City Forces; the contractor should deliver them to the City of Fort Worth, Signal Shop at 5001 James Ave., at least three (3) weeks in advance to schedule that.
3. Unless there is a compelling reason, a new traffic signal will be put on flash on Thursdays and working colors the following Tuesday.
4. Switching from old traffic signal to a new one, this should be done on Tuesdays only.
5. Notify Traffic Management Division (817-392-7738) Project Representative at least 24-hours in advance of all concrete pours. Inspector must be present when concrete is placed on the project site.
6. **If applicable**, equipment supplied by the City will be available for pick up from the Transportation/Public Works (T/PW) Warehouse at 5001 James Avenue and/or the Village Creek Pole Yard (5000 MLK Freeway). The Project Representative must authorize all equipment pickups.
7. Design consultant shall submit electronic file in CAD format as well as PDF (11" X 17") of final signed and sealed plans to the City.
8. Contractor shall provide a 5-year manufacturer warranty on APS systems. The warranty documentation shall include the start date (when material is delivered to job site) and the end date of the warranty and the serial number of the equipment.

Traffic Signals:

1. The City will not provide traffic signal cabinet or traffic signal controller to the Contractor. The cost for these items must be included in the City project budget, or for all privately funded projects, the cost must be included in the bid package for purchase from the vendor.
2. The Contractor shall provide all materials needed to construct a fully operational traffic signal as called out for in the plans and specifications.
3. All existing signal equipment shall remain in place and operating until new equipment is in place and ready to operate.
4. The Contractor is responsible for hauling and properly disposing of salvaged material from the job site to a disposal site of their choosing. The Contractor will not be allowed to drop off salvaged materials at the City yards.

Foundations:

1. Dimensions shown on plans for locations of signal foundations, conduit, and other items may vary in order to meet local conditions. All locations of foundations, conduit, and ground boxes shall be approved by the Traffic Signal Inspector or the City Engineer.
2. Contractor shall contact the City traffic signal inspector prior to pouring cabinet foundation to be sure that template and bolt patterns are correct for type of cabinet being supplied. Foundation shall be installed per City Specification and City Detail.
3. Pier Foundations shall be poured together in one piece.
4. No signal poles shall be placed on foundations prior to five (5) calendar days following pouring of concrete.
5. Contractor shall clean up and remove all loose material resulting from construction operations each day prior to the work is being suspended.
6. Controller cabinet concrete apron shall be subsidiary to the bid item for the controller cabinet foundation. Cabinet foundation and apron shall be poured together in one piece.

Controller and Cabinet:

1. Contractor shall install controller cabinet and connect all associated field wiring.
2. City will install signal timing and program controller.

Conduit:

1. A continuous grounded system shall be provided in PVC conduit by running 1-#8 bare copper wire in conduit between foundations and grounding at each foundation ground rod.
2. All conduits shall be Schedule 80 PVC.
3. Electrical service shall be installed per City Specifications and City Detail in separate 2" conduit from the meter to the signal cabinet.

Signal Heads:

1. All signal heads shall be McCain™, Econolite™, or approved equivalent style and dimensions.
2. All signal heads shall be covered with burlap or other approved material from the time of installation until the signal is placed in operation.
3. All signal head attachments shall be designed such that the wiring to each signal head shall pass from the mast arm through a rain tight connector to the signal head bracing or attachment hardware to the signal head. A small amount of exposed signal cable shall form a drip loop.
4. All LED signal indications shall be General Electric (GE) Gelcore™ or equivalent and shall meet the latest ITE standards.
5. Signal heads (all displays) and pedestrian Walk and Don't Walk heads with countdown displays shall have LED inserts.
6. Clam-Shell mounting assemblies shall be used for pedestrian indications.

7. All LED signals shall be of the incandescent appearance.
8. All signal heads shall have black aluminum, louvered, single piece back plates compatible with McCain™, Econolite™, or approved equivalent signal head housings.

Traffic Signs and Pavement Markings:

1. All traffic signs and mounting hardware shown on the plans will be furnished and installed by the contractor including the metro street name signs. The contractor shall provide a detail sheet for the metro street name signs with block numbers to the City for approval prior to fabrication and installation.
2. Existing stop signs and posts will be removed by the contractor upon, or before, the signal turn-on.

Detection System:

1. The Contractor shall furnish and install the Iteris™ Vantage Vector Hybrid Detection System and cable.
2. The Contractor shall install, aim and program all detectors as per City Standard Specifications and City Details.
3. The Contractor shall refer to and City Standard Details and project plans for detection zones placement.

Emergency Vehicle Preemption Equipment (EVP):

1. The Contractor shall furnish and install the Opticom™ EVP (detectors, cable, and discriminator units).
2. The Contractor shall install the EVP detectors on the mast arm as shown on the plans and appropriate City Detail, and run one continuous EVP cable from the detector to the cabinet. Installation of the EVP system will be paid for per bid item.

Accessible Pedestrian Signal (APS):

1. APS units with audible message shall be installed on all TxDOT locations or at the direction of the City Engineer.
2. APS units shall comply with the latest version of the Texas Manual on Uniform Traffic Control Devices (TMUTCD).
3. APS units shall be installed per City Standard Specification and City Detail.

Battery Backup:

1. If called out for in the plans, battery backup units supplied shall comply with the City Standard Specifications. Installation shall be completed per City Standard Specifications and City Detail.

Traffic Control:

1. The Contractor shall submit a Work Schedule, Traffic Control Plan, and acquire a Development Permit from Development Department, at 200 Texas Street. Contact Chuck McLure (817-392-7219).
2. The Contractor shall be responsible for the safety of pedestrians and motorists in the area of the traffic signal construction site.
3. Roads and streets shall be kept open to traffic at all times. Contractor shall arrange construction so as to close only one lane of a roadway at a time.
4. All construction operations shall be conducted to provide minimal interference to traffic. All traffic signal equipment installations shall be arranged so as to permit continuous movement of traffic in all directions at all times.
5. Contractor shall be responsible for any signage necessary during construction.
6. Unless otherwise noted, it is the contractor's responsibility to ensure that signal indications and timing are adjusted and maintained to ensure safety in work zone at all times.
7. Any traffic signal modifications during construction are subsidiary to traffic control plan (TCP) pay item.
8. Any traffic signal modifications should be in compliance with the latest version of the Texas Manual on Uniform Traffic Control Devices (TMUTCD) and the City of Fort Worth Standards.
9. The contractor shall submit any proposed traffic signal modifications to the Traffic Signal Section for their approval ten (10) days prior to any changes.

Electric Service:

1. Install the required electric services and obtain an electrical service permit in each instance, cost of which will be paid by the Contractor.
2. The electrical service shall be 100 amps with 120/240 voltage branch circuit and shall comply with City Standard Specifications and City Details as applicable per plans.

Luminaires:

1. The City will not furnish luminaire material to the contractor. The Contractor shall furnish and install LED luminaires for traffic signals in accordance with the latest City Standard Specifications, City Details, and plans.
2. All new streetlight pole types shall match those of the surrounding area of Fort Worth for which they are being installed in. Contact the City Traffic Management, Street Light Section at (817) 392-7738 for direction on light pole types allowed areas. The same poles shall be consistently used throughout subdivisions.