

## **City of Boerne**

### **General Construction Notes**

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1. Construction of all facilities to be dedicated to the public shall be performed per the requirements of the City of Boerne Standard Specifications for Public Works Construction, latest edition.
2. All responsibility for the adequacy of these infrastructure drawings remains with the engineer of records. In approving these infrastructure drawings, the City of Boerne must rely upon the adequacy of the work of the engineer of record.
3. Prior to beginning construction, the contractor shall contact the City of Boerne Development Services to schedule a pre-construction meeting.
4. The contractor is responsible for obtaining all necessary permits and approvals prior to construction.
5. The contractor shall notify City of Boerne Development Services at least 48 hours prior to beginning construction at (830) 248-1538.
6. The contractor is required to schedule all necessary inspections at least 24 hours in advance.
7. The contractor shall have available at the job site at all times the approved infrastructure drawings, including all approved revisions; the City of Boerne Standard Specifications for Public Works Construction; all necessary permits; Notice of Intent; erosion control plans; and SWPPP. It is encouraged to keep an extra copy of approved submittals on-site.
8. The contractor shall be responsible for protecting all public utilities during construction of the project.
9. The contractor shall determine the depth and location of existing underground utilities prior to excavating, trenching, or drilling and shall be required to take any precautionary measures to protect all lines shown and/or any other underground utilities not of record or not shown on the plans. The contractor shall be responsible for contacting all public agencies and franchise utilities 48 hours prior to construction (Texas 811 1-800-344-8377). The contractor may be required to expose these facilities at their own cost.
10. The contractor must contact City of Boerne Development Services immediately if any damage to existing utilities occurs. Any damage to utilities resulting from contractor's operations shall be restored at their expense.
11. The contractor shall immediately repair or replace any physical damage to private property, including, but not limited to fences, walls, pavement, grass, trees, and lawn sprinkler and irrigation system at their own cost.
12. Any discrepancies on the infrastructure drawings shall be immediately brought to the attention of the design engineer and City of Boerne Development Services before commencing work. No field changes or deviations from the infrastructure drawings are permitted without written approval from the City.
13. Stormwater management facilities shall be provided prior to site construction or clearing and be maintained during the progress of construction.

14. The contractor is responsible for site safety. All work required shall be conducted in conformance with current safety codes and standards with jurisdiction over this project.
15. The contractor shall provide the City access to City property, easements, utilities, and facilities at all times during construction.
16. The contractor is responsible for required construction surveying and staking and shall notify the City of any discrepancies prior to proceeding with any work.
17. The contractor shall verify benchmarks and datums prior to commencing construction or staking of improvements.
18. The contractor shall be responsible for protecting all survey markers including iron rods, property corners, or survey monuments within the limits of the construction site and outside the right-of-way during construction. Any survey markers disturbed during construction shall be replaced by the Contractor at their own cost.
19. All concrete shall be plant mixed meeting City specifications with a minimum of 4,000 psi at 28 days compressive strength unless otherwise specified.
20. Contractor and/or contractor's independently retained employee or structural design/geotechnical/safety/equipment consultant, if any, shall review these plans and available geotechnical information and the anticipated installation site(s) within the project work area in order to implement contractor's trench excavation safety protection systems, programs, and/or procedures for the project described in these contract documents. The contractor's implementation of these systems, programs, and/or procedures shall provide for adequate trench excavation safety protection that comply with as a minimum, OSHA standards for trench excavations, specifically, contractor and/or contractor's independently retained employee or safety consultant shall implement a trench safety program in accordance with OSHA standards governing the presence and activities of individuals working in and around trench excavation.
21. Contractor shall furnish a set of "as-built" drawings to the City of Boerne Development Services at the time of final inspection. Contractor shall give City at least two working days notice prior to final inspection.

### **Geotechnical Testing**

1. All compaction, concrete, and other required test results shall be sent to the design engineer and City directly from the testing agency.
2. Upon completion of construction, a copy of all testing reports shall be compiled and forwarded to the City of Boerne Development Services Department prior to final acceptance.
3. It is the responsibility of the developer, contractor, subcontractors, builders, geotechnical engineer, and design engineer to immediately notify the City and design engineer if the presence of groundwater within the site is evident. Upon notification, the design engineer shall respond with plan revisions for the mitigation of the groundwater issue. All construction activity impacted by the discovery of groundwater shall be suspended until the City approves the groundwater mitigation plan in writing.

### **Traffic Control**

1. Contractor shall be responsible for furnishing and installing all temporary and permanent traffic control in accordance with the minimum requirements of the latest revision of the Texas Manual on Uniform Traffic Control Devices (TMUTCD) and TXDOT Barricade and Construction Standards.
2. Contractor shall not impede traffic on existing streets, driveways, or fire lanes open to the public.
3. Contractor to provide traffic control plan to City at least 3 business days in advance of commencing work in a City right-of-way.
4. All temporary signs, barricades, warning lights and other miscellaneous traffic control measures shall be removed and original traffic control measures replaced at the end of the contractor's construction operation.

### **Erosion Control Notes**

1. All erosion control devices shall be installed prior to site disturbance and shall remain in place until final grading and paving is complete and vegetation is established with 85% coverage achieved.
2. Contractor is responsible for proper maintenance of the required erosion control devices throughout the entire construction process. Erosion controls shall be repaired or replaced as inspection deems necessary, or as directed by the owner's representative. Accumulated silt in any erosion control device shall be removed and shall be distributed on-site in a manner not contributing to additional siltation.
3. The contractor is responsible to ensure that erosion control measures and stormwater control is sufficient to mitigate off-site impacts are in place at all stages of construction.
4. The City inspector has the authority to have the contractor modify the erosion controls at the developer's expense. The developer shall be notified of these modifications prior to commencement of the modifications.
5. Construction operations shall be managed so that as much of the site as possible is left covered with topsoil and vegetation.
6. Contractor to remove grass and strip topsoil to depths encountered and stockpile topsoil to be distributed during final grading of the disturbed areas.
7. Contractor shall construct a stabilized construction entrance at all primary points of access. Contractor is responsible for ensuring that all construction traffic utilizes the stabilized construction entrances at all times for ingress/egress to the site.
8. Contractor is responsible for keeping streets and driveways adjacent to the project free from mud and debris at all times. Contractor shall clean and remove all loose material resulting from construction operations.
9. The contractor shall take all available precautions to control dust.
10. As inlets are completed, temporary sediment barriers shall be installed. Prior to final acceptance by the City of Boerne, all temporary inlet barriers shall be removed and replaced with controls to prevent sediment from entering the street ROW.

11. The contractor is required to inspect the controls and fences at weekly intervals and after significant rainfall events to ensure that they are functioning properly. The person(s) responsible for maintenance of controls and fences shall immediately make any necessary repairs to damaged areas. Silt accumulation at controls must be removed when the depth reaches six (6) inches.
12. Disturbed portions of the site must be stabilized. Stabilization practices must be initiated within 14 days in portions of the site where construction has been either temporarily or permanently ceased, unless excepted within the TPDES permit.
13. Contractor shall inspect disturbed areas, material storage areas exposed to precipitation, structural control measures, and vehicle entry and exit areas at least once every 14 calendar days and within 24 hours of a storm event of 0.5 inches or greater.
14. All temporary erosion and sedimentation controls shall be removed by the contractor at final acceptance of the project by the City of Boerne.

#### **Grading Notes**

1. Contractor is required to obtain an approved Grading Permit from the City, if applicable.
2. Contractor to ensure positive drainage at all times during construction.
3. Contractor shall protect all existing utilities which are to remain in place and undisturbed during construction.
4. Contractor shall not place any fill or waste material in the 100-year floodplain without first obtaining an approved Floodplain Development Permit.

#### **Paving Notes**

1. All construction and testing shall be performed in accordance with the City of Boerne Standard Specifications for Public Works Construction, latest edition.
2. Submittals for lime, base, prime coat, tack coat, and asphalt, as applicable, shall be approved prior to installation. Installation prior to submittal approval may require removal/replacement at the contractor's expense.
3. No earthwork, lime application, or other preparation of the subgrade for paving of streets shall be initiated without authorization from the City of Boerne Development Services. The City will authorize the subgrade work in preparation for the paving after utility trench backfill testing is complete and verified to meet City requirements.
4. The contractor is responsible for constructing all streets, crosswalks, sidewalks, driveways, and any other surface related to an "accessible route" per the Texas Accessibility Standards (TAS), latest edition. The contractor shall remove and replace any constructed or installed items not meeting the current TAS requirements at their own cost.
5. Embankment/fill material under proposed streets must be free of large stones (4" when backfill is 12" or greater in depth or 2.5" when fill is less than 12" in depth), have a plasticity index (PI) less than 20 per ASTM D4318, and be compacted to 95%.
6. Utilities must be maintained to proper line and grade during construction of the paving for this project.
7. Flexible base under roadways requires 100% compaction and must extend at least 18 inches behind the back of curb.

8. Testing of materials required for the construction of paving improvements shall be performed by a geotechnical testing company and provide opportunity to be witnessed by a City inspector. All testing must be scheduled with the City of Boerne Development Services Department.

## **Utilities**

### GENERAL

1. All construction, testing, cleaning, and disinfection shall be performed in accordance with the City of Boerne Standard Specifications for Public Works Construction, latest edition.
2. Contractor shall not operate an existing valves. The City must be present during any work completed on existing City utilities. The contractor is not permitted to complete gas work on existing City gas mains at any time.
3. The contractor must coordinate all utility tie-ins with the City. No tie-ins shall be made to the existing utility system until all test results have been provided to the City and are verified.
4. Unless the developer has received prior written permission to the contrary from the City Manager, all utilities, including but not limited to water, reclaimed water, sewer, gas, and electric utilities must be installed prior to the paving of a street or alley or portion thereof.
5. Prior to receiving bulk water, the contractor must apply for a bulk water meter. The contractor is responsible for installing a City approved backflow device.
6. All manholes in streets, valves, and blow-offs shall have concrete encasements.
7. One density test per 8-inch lift is required every 500 feet for trenches up to 12 feet in depth and every 300 feet for trenches 12 feet and deeper. Density testing must be completed for each lift. Potholing and stair stepping is not permitted.
8. All valve boxes, meter boxes, fire hydrants, manholes, etc. are required to be adjusted as required to match final grades.
9. The contractor is responsible for staking utilities prior to the final inspection to verify location, finish grade, and depth.

### WATER

10. Where the minimum nine feet separation between water and sanitary sewer lines cannot be maintained, the contractor must meet the requirements of 30 TAC 217.53(d) and 30 TAC 290.44(e).
11. All water lines shall be installed between four and six feet or as shown on the approved infrastructure drawings.
12. All water mains shall be hydrostatically tested by the contractor per City requirements.
13. Final connection to the existing water main shall not be made until the water main has been pressure tested, chlorinated, and the City of Boerne released the main for tie-in and use.
14. Tracer wire locate box shall be installed per City requirements at all water valves including fire hydrant valves and blowoffs. For grouping of valves at one general location, one locate box may be used.
15. No valves, hydrants, blowoffs, etc., shall be constructed within curbs, sidewalks, or driveways.

### SEWER

16. The contractor is responsible for ensuring no Sanitary Sewer Overflows (SSOs) occur as a result of work. Contractor shall contact the City immediately upon finding a SSO.
17. All PVC sewer pipe with over 14 feet of cover shall be extra strength, SDR 26 minimum pipe stiffness of 115 PSI from manhole to manhole.
18. All sanitary sewer manholes require chimney seals and interior/exterior coatings per City requirements.
19. After completion of construction, contractor shall clean the sewer mains and service lines and testing will be done by TV camera and observed by the City of Boerne inspector, wastewater engineering personnel, and contractor as the camera is run. Any abnormalities, such as broken pipe or misaligned joints, must be replaced by the contractor at their own expense.
20. When sewer laterals are to be connected to existing sewer mains and no stub-out has been earlier provided, the connection must be made with an approved service saddle per City requirements.
21. No testing will be performed prior to 30 days from complete installation of the sanitary sewer lines. The following sequence will be strictly adhered to: (1) mandrel test; (2) air test; (3) televising.

#### **Trees**

1. A tree removal permit is required prior to removal of any tree within the City Limits.
2. All trees not authorized to be removed must be protected to prevent damage around the root protection zone.

#### **Revegetation**

1. All slopes and areas disturbed by construction shall be graded smooth. The contractor must loosen the surface of the soil to a depth of 2 inches and remove all stones and debris over 2 inches in any dimension. The area shall be revegetated and maintained until soil is stabilized in all areas. Any area disturbed for any reason prior to final acceptance of the project shall be corrected by the contractor.
2. The contractor must construct and maintain a permanent stable protective cover (grass) for erosion and sediment control on all land surfaces exposed or disturbed by construction of the permitted project. The protective cover must be installed within 14 days after final grading of the affected land surface. A permanent stable cover must be established within 60 days of its installation.
3. 85% of disturbed areas must have vegetation established prior to acceptance by the City of Boerne.
4. Disturbed areas that are seeded or sodded shall be checked periodically to see that grass coverage is properly maintained. Disturbed areas shall be watered, fertilized, and re-seeded or re-sodded if necessary.

#### **Record Drawings**

1. Upon completion of construction, the contractor shall provide the design engineer a copy of as-built plans identifying all deviations or variations from the original plans.

2. The design engineer shall provide to the City of Boerne the "Plan of Record", signed and sealed by the design engineer.
3. The "Plan of Record" must include print line data for all gas mains and service lines.