

## GENERAL NOTES – ALL DEVELOPMENT

CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE ENGINEERING DEPARTMENT FOR FINAL INSPECTION. PRIOR TO FINAL ACCEPTANCE, COPIES OF CONTRACTS ON APPROVED FORMS AND BONDS MUST BE SUBMITTED TO THE ENGINEERING DEPARTMENT.

1. All construction shall be done in accordance with the adopted Standard Specifications for Public Works Construction in North Central Texas (Third Edition, unless otherwise specified) "Specifications" by North Central Texas Council of Governments, P.O. Drawer COG, Arlington, Texas 76005-5888, (817) 461-3300, as amended by the City of Garland. A copy of this book may be obtained from the North Central Texas Council of Governments at the address or phone number above, or is on file in the office of the Purchasing Agent of the City of Garland, located at City Hall, Garland, Texas. A copy of City Amendments is available in the Engineering Department, located at 800 Main Street, third floor, Garland, Texas.
2. The Engineering Department is to be NOTIFIED 24 HOURS PRIOR to ANY CONSTRUCTION.
3. WORK WILL NOT BE ACCEPTED WITHOUT A PERMIT AND CITY INSPECTION OF WORK. Contact Engineering Department (972-205-3622) for right-of-way permit and for work in city right-of-way or easement. Contact Building Inspection (972-205-2300) for sidewalk and driveway permits.
4. Four-foot (4) wide sidewalks are required in single family residential zoning districts unless waived by Planning Commission. All other zoning districts require six-foot (6) sidewalks. All existing sidewalk, driveway approach and curb and gutter abutting a new development or re-development must be in compliance with current City of Garland Engineering Department Standard Details. Existing paving not in compliance shall be repaired or replaced. Connecting to an existing sidewalk to make a wider sidewalk is prohibited; longitudinal butt joints are unacceptable in sidewalk paving.
5. Sidewalk and driveway geometrics shall conform to state and federal accessibility standards.
6. Sidewalk shall be free draining; low spots that pond water are unacceptable.
7. Sidewalks shall drain towards the street curb line. The parkway must be elevated a minimum of one fourth (1/4) of an inch per foot above the top of curb. Consult the most current City of Garland Engineering Department Standard Details for additional information.
8. Sidewalk cross slope and pathway across a driveway approach shall not exceed 1.5% at time of acceptance. Existing slopes shall be no more than 2% or the maximum allowed by the Americans with Disabilities Act (ADA).
9. Longitudinal alignment and grade shall follow the street.
10. City standard ADA Sidewalk Ramps are required at driveways, alleys and street intersections.
11. Running slope of a ramp shall be equal to or less than 1:12. Slopes greater than 1:12 shall be reconstructed to comply with ADA standards.
12. Sidewalk cracks that have separated – either horizontally or vertically and do not present a tripping hazard are acceptable and replacement is not required. The affected area of sidewalks with cracks or joints that are misaligned vertically by three fourths (3/4) of an inch or more or have a horizontal separation of three fourths (3/4) of an inch or more shall be replaced.
13. All existing sidewalk containing spalled surfaces shall be replaced.
14. Tree roots protruding more than 4 inches into the sidewalk path or if tree roots prohibit proper repair of the sidewalk as outlined in notes 4-13 above, the roots shall be saw cut and removed to allow the sidewalk to be placed on proper alignment and grade.
15. Site conditions may dictate that additional driveway paving be replaced due to excessive cracking, spalling, grade adjustment to new sidewalk, curb conditions of driveway, etc...
16. All affected areas of spalled or fractured curb and gutter shall be replaced.
17. Rough grading is to be done prior to construction of utilities.
18. All paving removed shall be sawcut to a neat line and removed.

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GENERAL NOTES

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**GENERAL NOTES – (CONT.)**

19. Any undesirable materials within the City Right-of-Way (ROW) and easements shall be excavated, materials removed, and filled with compacted select fill. Undesirable materials to be removed include, but are not limited to, organic material, unstable material, or undocumented fill. All materials removed shall be disposed of according to the Health Dept. and TCEQ regulations. See note 26 for further details regarding select fill.
20. Backfill of Excavations shall be select native material compacted in maximum 8 inch lifts to a minimum of 95 percent of standard proctor density as determined by laboratory testing. This applies to:
  - a. Utility excavations above the Utility Embedment Material
  - b. Structural excavations and other Non-Utility excavations
  - c. In areas of new construction
  - d. Areas of Utility replacement and/or repair under existing streets and alleys
21. The use of cement stabilized sand or flowable fill for final backfill is restricted primarily to localized or spot repairs of utilities under paving where restoration of paving and traffic is time critical as approved by the Engineering Department.
22. All bores under existing streets or alleys shall be lined with smooth steel carrier pipes unless open cutting of the street/alley is permitted by Engineering. Ends of steel carrier pipe to be sealed with grout.
23. The City will not accept utilities until all pavement over or near same has been constructed.
24. The contractor shall adjust the tops of all manholes, valves, meter boxes, fire hydrants and other utility appurtenances to fit the finished paving and shoulders. There will be no separate pay item for this work and the cost shall be included in the price bid for other items.
25. Barrier free ramps that comply with ADA requirements will be provided at all incoming streets, alleys, and non-residential driveways. No extra pay item.
26. Any fill material within proposed or future R.O.W. or Street Easements shall be Select fill provided, placed, and compacted in accordance with TxDOT current edition of Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges Item 132. Select fill shall be capable of forming a stable embankment from the required excavation and shall be granular material that is free from vegetation or other objectionable material and shall meet the requirements of TxDOT Item 132.2 Type A. The existing subgrade shall provide a stable working platform when the soil is compacted to a density of 95% of standard proctor at optimum moisture content according to ASTM D698. The cost shall be included in the price bid for excavation.
27. Traffic routing, signal removal and placement, and all other traffic matters shall be coordinated with the Transportation Department (972-205-2430) with 48 hours notice. Contractor is responsible for all temporary traffic signal, traffic control and school signal work during construction.
28. All traffic signal and street light base locations to be field approved prior to installation.
29. The contractor shall be required to provide and maintain all necessary warning and safety devices to protect the public safety and health until all work has been completed and accepted.
30. The location of existing utilities shown on these plans are approximate unless specifically noted. It is the responsibility of the contractor to locate and verify on-site any utilities that may conflict with the construction. At least 48 hours prior to beginning construction in the vicinity of existing underground utilities, the contractor shall notify the following as applicable:
  - \* CALL TEXAS811
  - Contractor to mark area to be located with WHITE MARKER PAINT.
  - Contractor shall not begin work until all utilities have been located with marks on the ground.
31. Stabilization of disturbed areas prior to final acceptance:
  - a. Public right-of-way, easements, and common areas must be stabilized with perennial vegetation cover, fully established with 100% coverage, or other approved stabilization method. (See typical paving section – Detail Sheet No. 1)
  - b. Detention/Retention Facilities, Channels, Drainage Ways and Outfalls shall have established perennial vegetation with 100% coverage.

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32. Contractor is responsible for maintaining pedestrian access and signage as directed by the City.
33. The contractor shall be responsible for furnishing all laboratory tests necessary for testing new pavement. The testing laboratory used shall be under the management of a professional engineer licensed to practice in the State of Texas.
34. Roadways and alleys (CIP and Development) shall have a geotechnical investigation and subgrade design performed per the Technical Standards Manual (TSM) Section 9. If after the geotechnical investigation, the soil parameters and standard subgrade result in a modulus of subgrade reaction of 300 pci and all other parameters are applicable, the City's standard subgrade and pavement shown on the standard details can be specified. If not, a custom pavement design to achieve a 40-year design life will be required per the TSM.

9. All sewer mains shall be installed with polyethylene plastic tape for identification and protection purpose. Tape for sewer mains shall be green and lettered with "caution sewer line buried below". Tape shall be 4.0 mil thick and 6" wide and furnished in 1000 foot rolls. Marking tape shall be placed along the center line of pipe trench on top of normal pipe embedment, and in no case less than than 6" above top of pipe. All tape shall be Terra Tape as manufactured by Reef Industries or equal.

**GENERAL NOTES – WASTEWATER**

1. All sewer lines shall be placed in the center of streets, alleys, or easements, unless otherwise noted.
2. All sewer pipe shall be PVC SDR-26. Minimum pipe size shall be 8 inch unless specifically approved.
3. All 4 inch sewer service laterals shall be SDR-26.
4. Install sewer services 10 feet downstream from water service.
5. TV inspection (with pan/tilt cameras) will be the responsibility of the Developer/Contractor, and must be performed by an independent testing company that is regularly employed for such services. A digital copy of the TV inspection shall be made and turned over for review and approval by the Engineering Department and/or Water Utilities Department.
6. All sanitary sewer mains are to be "SDR-26 pressure pipe" at least 5 feet on either side of water mains where crossings occur within a 9' radius.
7. Contractor may use standard precast concrete manholes or cast-in-place manholes.
8. Blocking of sewer lines, deep sewer cut connections, and embedment shall conform to City of Garland standards.

**GENERAL NOTES – LIGHT POLE BASES**

Contractor shall have Engineering Inspector notify Garland Power and Light 48 hours prior to start of construction so that power to circuit may be killed out and light pole removed from base.

Existing street light bases shall be removed and new street light base, 1 1/2" PVC conduit, and new wiring installed to new base prior to removing existing curb and gutter for left turn lane.

New wire installed shall consist of 2 # 6 Cu. insulated conductors and 1 # 6 bare Cu. conductor with minimum of three feet of conductor extending out of top of new street light base or pull box. All existing/new conductor wires which are to be covered by concrete paving shall be placed in conduit in such a manner that the conduit extends a minimum of two feet beyond the edge of proposed concrete or median paving. Splicing of the conductor wires will not be permitted in the conduit, but shall be repulled so as to be continuous from street light base to street light base or junction box.

Anchor bolts and ground rods will be furnished by the City and will be picked up by the Engineering Inspector at the City Warehouse at the contractor request.

After installation of wire, Contractor shall notify Garland Power and Light Distribution Department (972-205-3449) to have street light pole re-installed. Garland Power and Light will re-energize circuit.

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LIGHT POLE BASES**

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## GENERAL NOTES – STORM SEWER

1. Reinforced concrete pipe only. (min. 21")
2. Storm sewer connections for new intercepting mains and laterals into new trunk mains shall be factory wyes for 48" and smaller pipe.
3. Joint materials permitted are as follows:
  - Ram-Neck
  - Con-Seal
  - Cement Grout
4. All headwalls shall be poured-in-place.
5. If reinforced box culvert is required, contractor shall provide shop drawings for city approval.
8. Meter boxes to be furnished and installed by developer and/or contractor shall be:
  - For 5/8" & 3/4" Meters:
    - The box shall be 18" diameter & 18" tall, with slots 3" wide & 4" tall.
    - The lid shall be 12-5/8" dia., with a lid opening of 11-3/4" dia.
  - For 1" Meters:
    - The box shall be 24" diameter & 18" tall, with slots 3" wide & 4" tall.
    - The lid shall be 20" dia., with a lid opening of 18-3/4" dia.
  - For 1-1/2" & 2" Meters:
    - The box shall be 28" diameter & 18" tall, with slots 3" wide & 4" tall.
    - The lid shall be 20" dia., with a lid opening of 18-3/4" dia.

## GENERAL NOTES – WATER

1. All water lines to have a minimum cover as follows or as required to clear other utilities:
  - Up through 8" - 4'
  - 10" - 12" - 5'
  - Over 12" - 6'
 Type K Copper - Services Min. Depth 2'
2. All water lines to be placed 6' from property line, unless otherwise noted.
3. All lines 12" or less in diameter shall be C-900 PVC DR-18.
4. Install services at center of lot or as shown on plans.
5. Services on PVC pipe shall be Mueller Ford, McDonald or Jones bronze double strap tapping saddles with outlet tapped with A.W.W.A. tapered threads. No PVC coated saddles will be allowed.
6. Service must be continuous, one piece copper, from corporation stop to meter without any splices or couplings.
7. "Squeeze Stopping" or "Crimp Stopping" is absolutely prohibited. This practice damages the copper too much and just contributes to future problems. If this practice is employed for some emergency reason, then the copper service must be replaced from corporation stop to meter.
- Base
  - The box shall be constructed from black polyethylene material with crush resistant ribbing.
  - Only one slot shall be cut out on opposite end of the box's sides.
  - A cast iron ring shall be molded to the top and secured with four (4) coated self-tapping bolts.
  - The box shall have a (2") base footing to help eliminate sinking or floating.
  - The box shall be constructed to withstand twelve hundred pound (1200 lb) of compression on a vertical crush test.
  - Meter box shall be "F" series by DFW Plastics Inc. or approved equal.
- Lid
  - The lid shall be constructed from a black polyethylene material.
  - The lid shall have "Water Meter" molded into the lid.
  - The lid shall be textured with a diamond pattern for skid resistance.
  - The lid shall sit securely and evenly inside the cast iron ring.
  - The lid shall have a spring-loaded brass locking mechanism that uses a standard brass meter box key.

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**GENERAL NOTES – WATER (CONT.)**

9. On all valves, use three piece adjustable screw type cast iron valve box covers with PVC C-900 extensions as required. The bell end of the C-900 shall be installed over the valve operating nut. Spigot end will not be allowed over the operating nut. Cast iron valve boxes and covers shall be made in the U.S.A. and conform to A.W.W.A. Permanent scoring of curbs or pavement for valve location, is required prior to final inspection. The arrow scoring is approximately 1/2" deep with a 6" high, three-sided arrow pointing directly at the valve box. The scored arrow marks are then neatly sprayed with Blue paint.
10. Fire hydrant brands acceptable to the City are Mueller Centurian A-423, Waterous Pacer WB67, Kennedy Guardian, Clow Medallion, or Fireflo-Model F-06.
11. Bonnet of fire hydrants to be painted as follows:
 

Size of Main	Color
6 inch	Flynt Aluminum Point
8 inch	Flynt Tropic Blue Enamel
10 inch or above	Flynt Safety Yellow Enamel
12. Fire hydrants must be located no less than 2'-6" nor more than 8'-0" (4'-0" in residential street) from the back of curb/drive to center of barrel or not in sidewalk location.
13. The center of the fire hydrant pumper nozzle must be no less than 15" nor more than 21" above the top of curb or finished grade.
14. Heavily Chlorinated water (3.5 mg/l or greater free Chlorine) resulting from water line sterilization shall be directed under permit to the sanitary sewer unless otherwise noted. The Contractor shall apply to the Engineering Department for a sanitary sewer discharge permit after the mandatory Chlorine retention time (usually 24 hours). The heavily Chlorinated water may be discharged to the sanitary sewer, beginning two working days after permit application.
15. Upon receipt of an acceptable bacteriological report on new water mains, the contractor shall remove all copper bleeder lines from water mains.
16. All bolts, studs and nuts used in water main fittings, valves and appurtenances shall be stainless steel on flange joints; Corten on MJ joints.
17. All fittings and valves shall be polywrapped with a minimum of 8 mils and shall be made in the U.S.A. and shall conform to A.W.W.A.
18. All PVC water main pipe with mechanical joint fittings (concrete blocking) shall be retained with:
  - a. Retainer Glands (EBBA Series 2000 PV or equal) or,
  - b. Romac GripRing Restrainer Glands (meeting the requirements of UNI-B-13-92 and designed for both ductile and C900 water pipe) or,
  - c. Ford/Uni-Flange Series 1500 "Circle Lock" Restraining Glands (FM, ASTM F 1674 and ISO-9001 certified for C-900 PVC pipe 4"-12") or,
  - d. Uni-Flange Series 1300 W/316 stainless steel. Plus standard thrust blocking. Blocking of water lines shall conform to City of Garland standards.
19. No person shall open, turn-off, interfere with, attach any hose to, or tap any water main belonging to the City unless duly authorized to do so by the City of Garland Water Department (972-205-3210).
20. Arrangements for construction water shall be made through the City of Garland Water Department (972-205-3210).
21. All water mains shall be installed with polyethylene plastic tape for identification and protection purpose. Tape for water mains shall be blue and lettered with "caution water line buried below". Tape shall be 4.0 mil thick and 6" wide and furnished in 1000 foot rolls. Marking tape shall be placed along the center line of pipe trench on top of normal pipe embedment, and in no case less than 6" above top of pipe. All tape shall be Terra Tape as manufactured by Reef Industries or equal.

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