

**SECTION 200
STREETS****PART 1 GENERAL**

201 ADOPTION OF ODOT STANDARD SPECIFICATIONS: The City of Broken Arrow, Oklahoma, hereby adopts the Oklahoma Department of Transportation Standard Specifications for Highway Construction, Section 101 and Section 200 through Section 800 for use in construction of City streets and drainage structures.

202 CHANGES TO ODOT STANDARD SPECIFICATIONS: The following changes are incorporated into the ODOT Standard Specifications:

202.01 REFERENCES TO AGENCY CONTRACTING FOR THE WORK: Where references are made to ODOT as the agency contracting for the Work, the reference will be read as “City of Broken Arrow” for City of Broken Arrow contracts.

202.02 REFERENCES TO RESIDENT ENGINEER (ALL TYPES): References to Resident Engineer will be read as Construction Manager or designee for City of Broken Arrow contracts.

202.03 OTHER REFERENCES REQUIRING CLARIFICATION: If there is a reference that requires clarification and it is not covered in the Special Provisions of the Contract, the Public Infrastructure Representative or designated official will provide the Contractor with a written clarification upon request.

203 PROCEDURE FOR USING ODOT STANDARD SPECIFICATIONS IN CITY CONTRACTS:

203.01 REQUIRED ADDITIONS TO THE SPECIAL PROVISIONS: The following Statements will be added to the Special Provisions of the Contract: “The Oklahoma Department of Transportation Standard Specifications for Highway Construction, Section 200 through Section 800 are included by reference. Specifications listed in the Contract as ODOT XXX.XX Description, where XXX.XX represents a specification number, refer to the current ODOT Standard Specification with the same number. Where references are made to ODOT as the agency contracting for the Work, the reference will be read as “City of Broken Arrow” for City of Broken Arrow contracts. References to Resident Engineer will be read as Public Infrastructure Representative for City of Broken Arrow contracts.”

203.02 OPTIONAL ADDITIONS TO THE SPECIAL PROVISIONS: When an ODOT Standard Specification requires more clarification than the information in 203.01 above, the person preparing the Contract will provide additional clarification by referencing the specification by number and description and then providing the required clarification.

203.03 LISTING ODOT SPECIFICATIONS: ODOT specifications will be listed in the format ODOT XXX.XX Description where XXX.XX represents the standard specification number.

204 SPECIAL CITY REQUIREMENTS:

204.01 TESTING REQUIREMENTS:

- a. **Materials Testing:** Materials testing shall be as specified in the ODOT Standard Specifications.

- b. **Construction Testing:** Testing of completed construction shall be as specified in the ODOT Standard Specifications and Section 107 of these Specifications.

204.02 SUBGRADE:

- a. **Preparation:**
 - 1. When preparing the subgrade, all roots and plant material shall be removed and the excavation refilled with suitable backfill.
 - 2. When working the subgrade all soft, yielding, or other unsuitable materials, shall either be removed and replaced, or stabilized in place unless the design requires monolithic sections.
- b. **Stability Testing:**
 - 1. When preparing subgrades, the subgrade will be checked for stability, even though it may meet the compaction requirements.
 - 2. Refer to Section 107.09.e for compaction testing.
- c. **Correction of Unstable Subgrade:**
 - 1. A pumping subgrade shall be treated or replaced until it is stable.
 - 2. Subgrade drainage shall be considered when a subgrade pumping problem is encountered. When subgrade drainage is not installed, the Engineer shall inform the Director of Engineering and Construction, in writing, of the reasons for not installing subgrade drainage.
- d. **Testing Requirements:** See Section 107.09.

204.03 BASE:

- a. **Treated Base:** When the base consists of treating the top 8 inches or more of the subgrade, the provisions of Section 204.02 will apply.
- b. **Aggregate Base:** The use of crushed aggregate base is strongly encouraged in areas where subgrade strength is low, subsurface water conditions exist, and subgrade stability is questionable.
- c. **Base Drainage:** Where groundwater or surface water ponding present a threat to base stability a drainage system as shown in ST08 is recommended.
- d. **Additional City Testing Requirements:** See Section 107.09.
- e. **Standard Drawings:** ST03, ST04, ST08, and ST21.

204.04 CONCRETE PAVING:

- a. **Concrete Street General:**
 - 1. Concrete streets shall be constructed of Class BA1 concrete and shall be in accordance with Standard Drawings ST03 and ST05 and the Plans and Specifications.
 - 2. Curb and gutter may be placed separate of the pavement.
 - 3. Concrete shall be cured with evenly applied white curing compound across the surface.
- b. **Longitudinal Joints:**
 - 1. Longitudinal cracking joints will normally be sawed into the finished pavement to a depth of one-fourth of the pavement thickness.
 - 2. Longitudinal cracking joints shall be placed at intervals not to exceed every 12 feet. The exception to this rule is on 26-foot-wide residential streets where the curb is integral to the pavement. For this type of street, one longitudinal cracking joint down the center of the pavement is acceptable.

3. Longitudinal construction joints on residential minor and residential high density minor streets may, at the option of the design engineer, be butt type joints without a tiebar.
 4. Longitudinal construction joints on residential collector streets may, at the option of the design engineer, be butt type joints with a tiebar or keyway type without a tiebar.
 5. Longitudinal construction joints on all other streets shall be keyway type with a tiebar.
- c. **Transverse Joints:**
1. Transverse cracking joints will normally be sawed into the finished pavement to a depth of one-fourth of the pavement thickness.
 2. Transverse cracking joints shall be placed at intervals equaling two times the pavement thickness in inches converted to feet (such as, 2-inch by 6-inch = 12-inch which converts to a 12-foot spacing of transverse cracking joints) but, not to exceed every 15 feet.
 3. Transverse construction joints on residential minor and residential high density minor streets may, at the option of the design engineer, be butt type joints without a tiebar.
 4. Transverse construction joints on residential collector streets may, at the option of the design engineer, be butt type joints with a tiebar or keyway type without a tiebar.
 5. Transverse construction joints on all other streets shall be keyway type with a tiebar.
- d. **Expansion Joints:**
1. Expansion joints shall be placed at all street intersection radius and at the last joint before a cul-de-sac.
 2. Distance between expansion joints shall not exceed 105 feet.
 3. Expansion joints shall have a tiebar when the street being constructed requires a tiebar or keyway for a construction joint.
 4. Expansion joint filler shall be fiber material meeting ASTM D1751.
- e. **Joint Sealing:** All joints will be cleaned and sealed.
- f. **Additional City Testing Requirements:** See Section 107.10 and Section 107.12.
- g. **Standard Drawings:** ST03, ST07, ST09, ST11, ST12, ST13, ST14, ST15, ST16, ST18, ST19, ST20, and ST21.

204.05 CURB AND GUTTER:

- a. **Curb and Gutter General:**
1. Curb and gutter shall be constructed of Class BA1 concrete and shall be in accordance with Standard Drawings ST03, ST04, and ST05 and the Plans and Specifications.
 2. Curb and gutter may be placed separate of the pavement.
 3. Concrete shall be cured with white curing compound.
- b. **Transverse Joints:**
1. Transverse cracking joints will normally be sawed into the finished curb and gutter to a depth of one-fourth of the pavement thickness.
 2. Transverse cracking joints shall be placed at intervals equaling the spacing used for the street.
 3. Transverse construction joints on curb and gutter shall match the type of joint required for the type of street being constructed.
- c. **Expansion Joints:**
1. Expansion joints shall be placed at all street intersection radius and at the last joint before a cul-de-sac.
 2. Distance between expansion joints shall not exceed 105 feet.
 3. Expansion joints shall have a tiebar when the street being constructed requires a tiebar or keyway for a construction joint.
 4. Expansion joint filler shall be fiber material meeting ASTM D1751.

- d. **Joint Sealing:** The joints in the gutter shall be fully sealed.
- e. **Additional City Testing Requirements:** See Section 107.10.
- f. **Standard Drawings:** ST05, ST06, ST10, ST11, ST12, ST13, and ST23.

204.06 ASPHALT PAVING:

- a. **Additional City Testing Requirements:** See Section 107.09 and 107.12.
- b. **Density Requirements:** Refer to Section 107.11.f.2 for testing requirements.
- c. **Standard Drawings:** ST04, ST07, ST09, ST10, ST14, ST15, ST16, ST18, ST19, ST20, and ST21.

204.07 SIDEWALKS:

- a. **Materials:** Sidewalks shall be constructed of Class BA1 concrete.
- b. **Alignment and Drainage:** Alignment and drainage shall be as detailed in The City of Broken Arrow Land Subdivision Code. All sidewalks shall meet the requirements of the most current Americans with Disabilities Act (ADA) and the City of Broken Arrow Engineering Design Criteria Manual.
- c. **Sidewalk Base Preparation:**
 - 1. When constructing sidewalks, the subgrade shall be scarified and compacted.
 - 2. All soft and yielding or other unsuitable materials shall be removed and replaced with suitable material before construction of the sidewalk.
- d. **Finish and Joints:**
 - 1. Sidewalks shall have a non-slip broomed surface.
 - 2. Expansion joints shall be placed at all intersections with curbs and not more than 30 feet apart.
 - 3. Transverse cracking joints will normally be tooled or sawed into the finished sidewalk to a depth of 1 inch.
 - 4. Transverse cracking joints shall be placed at intervals not to exceed every 6 feet.
 - 5. Expansion joint filler shall be fiber material meeting ASTM D1751.
- e. **Additional City Testing Requirements:** See Section 107.15.
- f. **Standard Drawings:** ST06 and ST12.

204.08 STORM SEWER:

- a. **Concrete Storm Sewer Pipe Joint Seals:** Concrete storm sewer pipe will be furnished with appropriate, non-decomposable, flexible, pre-formed seal fitting inside the joint that meets the requirements of the pipe manufacturer.
- b. **Smooth Wall Corrugated Polyethylene Pipe:**
 - 1. **Authorized Use:** Smooth wall corrugated polyethylene pipe in diameters from 15 inches to 48 inches may be used in storm drainage systems in the City of Broken Arrow.
 - 2. **Materials Specification:** Smooth wall corrugated polyethylene pipe shall be manufactured from high density polyethylene HDPE virgin compounds and shall conform to AASHTO M294 (latest edition). A certificate of compliance shall be furnished, by the Contractor, for each type of polyethylene pipe used. Watertight joints capable of holding 2 psi of pressure, under hydrostatic testing, shall be required.
 - 3. **Construction Specifications:** Construction of smooth wall corrugated polyethylene pipe storm sewers shall be in accordance with the manufacturer's recommended construction specifications or the applicable ODOT specifications whichever is more restrictive.

- c. **Corrugated Polypropylene Pipe:**
 - 1. Corrugated Polypropylene Pipe (CPP), in diameters from 15 inches to 60 inches, may be used in residential storm drainage systems within the City of Broken Arrow. CPP is not permitted under other street classifications, including Arterial, Commercial, or Industrial streets, without flowable fill.
 - 2. Material Specifications: CCP shall have smooth interior and annular exterior corrugations for a double wall configuration and conform to ASTM F2881 or AASHTO M330. The bell and spigot and fittings shall be watertight according to the requirements of ASTM D3212. The gaskets shall be factory installed and protected with a wrap. The gaskets shall meet the requirements of ASTM F477.
 - 3. Construction Specifications: Construction of CPP storm sewers shall be in accordance with the manufacturer’s recommended construction specifications or the applicable ODOT specifications whichever is more restrictive.
- d. **Inlets:**
 - 1. Precast: Precast storm drain inlets and boxes may be used. When used these items will be placed on a 4-inch-thick 3,500 psi concrete working slab that extends 1 foot past the walls of the structure. Shop Drawings will be submitted and approved before any precast items are installed.
 - 2. Polyvinyl Chloride (PVC) Drainage Structures: PVC storm inlets may be used when the item meets the specifications outlined in the ODOT “Special Provisions for Polyvinyl Chloride Drainage Structures” dated 3-1-17 or latest version. Shop Drawings will be submitted and approved before any precast items are installed.
- e. **Joint Wrapping with Geotextile:** When allowed by the Land Subdivision Code and required by the Director of Engineering and Construction or Public Infrastructure Representative, the Contractor shall wrap storm sewer joints with a geotextile fabric meeting the requirements in AASHTO M288 for separation with a medium survivability level. This wrapping shall extend for 2 feet on each side of the joint, it shall make a minimum of two complete wraps around the pipe and shall be held securely in place by an approved band while the storm sewer is backfilled.
- f. **Additional City Testing Requirements:** See Section 107.08, 107.13, 107.14, and 107.15.
- g. **Standard Drawings:** ST01, ST02, and ST12.

204.09 ROADWAY STRIPING:

- a. Materials: Arterial roadway striping shall be multipolymer. Refer to the ODOT Standard Specifications for Highway Construction (latest version) for material and construction methods.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

