Invitation to Bid (ITB)

for

# Site Grading & Utilities - 3405 W. Roosevelt Road

City of Little Rock, Arkansas

# This bid solicitation was issued by the City of Little Rock Procurement Division.

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| **Product or Service** | Site Grading & Utilities – 3405 W. Roosevelt Rd. | | |
| **Department** | Housing & Neighborhood Programs | | |
| **Release to Prospective Contractors** | 01/15/2025 | **Time** | 10:00AM |
| **Proposal Due Date** | 02/05/2025 | **Time** | 10:00AM |
| **Deadline for Vendor Questions** | 01/24/2025 | **Time** | 10:00AM |
| **Tentative Proposal Evaluation Date** | 02/05/2025 | | |
| **Mandatory Pre-Bid Discussion Meeting** | Monday, 01/27/2025 @ 2:00PM<br>3405 W. Roosevelt Rd., Little Rock, AR 72204 | | |
| **Bid Opening Teams Meeting** | Wednesday, 02/05/2025 @ 10:00AM | | |
| **Tentative Consensus Meeting** | N/A | | |

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| **Procurement Website** | Little Rock Business Portal \| City of Little Rock |

The City of Little Rock has issued this Invitation To Bid (ITB) to businesses authorized in the State of Arkansas and qualified to provide the requested service(s) outlined in this bid document.

**The City of Little Rock actively supports small, minority and/or women-owned businesses to promote growth and sustainability.**

**Bidders must submit responses to this request online at LRProcure *powered by Bonfire* on or before the designated due date and time.** Any responses received after this deadline will be considered late and returned to the Bidder without further review.

**Responses should comply with all requirements stated in this bid request**. If a conflict is found to apply to a key term (for example, quantity or type of work to be done) of this bid, the Bidder's response shall be disqualified at the City of Little Rock's sole discretion.

**The City reserves the right to revise the ITB before the proposal submission deadline.** If the City needs to make changes or revisions, an addendum will be posted on the Organization Portal. Only questions and answers in an addendum shall be considered part of the ITB.

**The City has worked hard to make sure this request is correct, but it is up to you to check everything carefully because the City and its team are not responsible if there are mistakes or missing**

**information.** The responsibility for determining the full extent of the exposure to risk and verifying all information herein shall rest solely on those parties' making proposals. The City, its representatives, and its agents shall not be responsible for any error or omission in this ITB, nor shall they be responsible for any Bidders or representatives' failure to verify the information herein and to determine the full extent of that exposure.

1. Background – City of Little Rock

Little Rock is the State Capital and the largest city in Arkansas. It was chartered in 1835 and is in the central part of the state, approximately 135 miles west of Memphis, Tennessee. The city has a population of 202,591 according to the 2020 census certified by the Arkansas State Treasurer. The 2025 operating budget revenues as approved by Ordinance No. 22079 are $338,231,579 including the General Fund revenue budget of $263,108,099.

2. Definitions

The City has made every effort to use industry-accepted terminology in this solicitation.

a) The words "must" and "shall" signify a requirement of this solicitation and that vendor's agreement to and compliance with that item is mandatory.

b) "Prospective Vendor" means a person who submits a bid in response to this solicitation.

c) "Vendor" means a person who sells or contracts to sell commodities and/or services.

d) "Responsive bid" means a bid submitted in response to this solicitation that conforms in all material respects to this ITB.

e) "Bid Submission Requirement" means a task a Prospective Vendor must complete when submitting a bid response. These requirements will be distinguished by using the term "shall" or "must" in the requirement.

f) "Requirement" means a specification that a vendor's product and/or service must perform during the term of the contract. These specifications will be distinguished by using the term "shall" or "must" in the requirement.

g) "City" means the City of Little Rock, Arkansas. When the term "City" is used herein to reference any obligation of the City under a contract that results from this solicitation.

h) Change Order" means a written order to the City authorizing an addition, deletion or revision of the work within the general scope of the contract documents or authorizing an adjustment in the contract price or contract time.

i) "Agreement" - Contract between the City and contractor regarding the project.

j) "Addenda" - Written or graphic instruments issued prior to the time of opening the bids which modify or interpret the contract documents, drawings and specifications, by additions, deletions, clarifications, or corrections.

k) "Bonds" - Bid, Performance, and Payment Bonds, and other instruments of security, furnished by the contractor and their surety in accordance with the contract documents.

l) "Notice of Award" - The written notice of the acceptance of the bid from the City to the successful vendor.

m) "Notice to Proceed" - Written communication issued by the City to the contractor authorizing them to proceed with the work and establishing the date of commencement of the work.

n) "Specifications" - A part of the contract documents consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards, and workmanship.

o) "Supplementary Conditions" - Modifications to adapt the specific requirements of the project and that may be imposed by applicable federal, state, and local laws.

p) "Work" - All labor necessary to produce the construction required by the contract documents, and all materials and equipment incorporated or to be incorporated in the project. The contractor **shall**, if required, furnish satisfactory evidence as to the kind and quality of materials.

q) "Written Notice" - Any notice to any party relative to any part of this Agreement **shall** be in writing and considered delivered and the service thereof completed, when posted by certified or registered mail to the said party or his authorized representative.

## 3. Desired Outcome

The desired outcome of this ITB is professional completion of the Site Grading & Utilities located at 3405 W. Roosevelt Rd., Little Rock, AR 72204 as indicated within this solicitation and all other supplementary documentation included herein or provided by Little Rock Housing and Neighborhood Programs Department.

## 4. Scope of Services

### 4.1 Goal

The City of Little Rock Housing and Neighborhood Programs Department is seeking proposals from qualified contractors to provide site grading services for the site preparation and utilities associated with The Little Rock Micro Village located at 3405 W. Roosevelt Rd. Little Rock, AR 72204.

Plans can be picked up from Southern Reprographics, located at 901 W. 7th St., Little Rock, AR 72201.

4.2 Terms of Award

A. This bid shall be awarded to the lowest qualified bidder(s) who meets all specified requirements, and who has the absolute capability to provide the required services. Responses to this bid solicitation will be used by the City of Little Rock to determine if the vendor has the appropriate experience, licensures, and qualifications to be considered for the work.

B. The contract term will be for 60 consecutive calendar days. Liquidated damages will occur if work is not completed within the specified time-frame,weather permitting.

C. The vendor must have a business license to operate in the State of Arkansas.

D. The City reserves the right to reject any and all bids and to waive any informality or irregularity in any bid.

E. The City of Little Rock Treasury Management Division will determine validity of all business licenses.

F. Bidder must provide a signed copy of the *Combined Certification for Contracting with the City of Little Rock* form prior to contract award.

4.3 Services Requested

The desired outcome of this ITB is professional completion of the Site Grading & Utilities located at 3405 W. Roosevelt Rd., Little Rock, AR 72204 as indicated within this solicitation and all other supplementary documentation included herein or provided by Little Rock Housing and Neighborhood Programs Department.

4.4 Minimum Qualifications

A. Statement of Vendor's Qualifications

Qualified bidders must submit a Statement of Vendor's Qualifications responding to ALL the following questions. The responses provided must be clear and comprehensive. The statement shall be submitted in the form of a PDF attachment with your bid. The bidder may provide supplemental information, if deemed necessary.

1. Name of Bidder
2. Mailing Address (if more than one office, identify primary office responsible for bid)
3. Telephone and fax numbers.
4. Email address and contact information attached.
5. Date when organization was formed.
6. If incorporated, what year did you incorporate?
7. How many years have you engaged in the contracting business under your present firm or trade name?

8. Detail the background and experience of the principal members of your organization, including the officers.
9. What are your contracts on hand? Provide a schedule of contracts and anticipated date(s) of completion.
10. Describe your firm's qualifications and character of work.
11. Have you ever failed to successfully and/or satisfactorily complete any work awarded to you?
12. Have you ever been in default on a contract? If so, where, and why?
13. For the past five (5) years have your firm had any judgements filed against it for failure to pay materials suppliers, any damages to property or any other reason under contract? If so, please provide a list of judgments and explanations, if applicable.
14. For the past five (5) years have your firm had any liens, judgements, or certificates of indebtedness for failure to pay taxes or workers' compensation insurance? If so, please provide a list of any liens, judgements, or certificate of indebtedness and explanations, if applicable.
15. Upon request, can you provide any other information that may be required by the City of Little Rock?

B. Bid Security

All city construction or demolition bids awarded that are **$50,000 or more require a Bid Bond** of 5.0 percent (%) of the total bid submission. This requirement can be satisfied by cashier's check drawn upon a bank or trust company doing business in this state of Arkansas, or by a corporate bid bond (see form at end of Scope of work). Again, the Bid Bond is not necessary if bid is less than $50,000.

To be eligible, the cashier's check or bid bond *must be received by the closing date and time for this bid solicitation* to the following address:

City of Little Rock
Attention: Procurement Division
500 West Markham Street, Suite 300
Little Rock, Arkansas 72201

4.5 General Requirements

A. All aspects of the project **must** meet current Federal ADA Regulations and Standards.

B. Vendors shall be in compliance with the requirement of Act 150 of 1965 of the State of Arkansas, effective June 3, 1965, (codified as amended at Ark. Code Ann. §§ 17-25-301 through 17-25-316), which is the current Arkansas State Licensing Law for Contractors. The vendor shall indicate on the bid form the current license number as issued by the applicable licensing entity.

C. The vendor shall agree to commence work under this contract within 10 calendar days after they receive the written "Notice to Proceed" of the City and to fully complete the project within 31 consecutive calendar days thereafter as stipulated in the specifications.

D. It is expressly agreed that Contractor is acting as an independent contractor in performing the Work described herein.

E. Arkansas State Contractor License

1. Bidders must provide a current copy of their Arkansas State Contractor License prior to the contract award.

4.6 General Requirements

SECTION 31 10 00 - SITE GRADING

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Stripping and stockpiling surface layer of topsoil and organic matter in building and traffic areas and in all cut and fill areas.

B. Removing and disposing of material unsuitable for use in controlled fill.

C. Excavating site to required subgrade for controlled fill and grading site to required slopes.

D. Placing and compacting excavated material and borrow material to required density and at required subgrade and slope for structures, pavement areas, and other controlled fills.

1.2 RELATED SECTIONS

A. Site Structure Excavation and Backfill

1.3 REFERENCES

A. ASTM D422 - Particle Size Analysis of Soils.

B. ASTM D423 - Test for Liquid Limit of Soils.

C. ASTM D424 - Test for Plastic Limit of Soils.

D. ASTM D2216 - Method of laboratory Determination of Water (Moisture) Content of Soil, Rock, and Soil Aggregate Mixtures.

E. ASTM D3017 - Moisture Content on Soil Aggregates in Place by Nuclear Methods (Shallow Depth).

F. ASTM D698 - Standard Test Method for Moisture Density, Relations of Soils, and Soil Aggregate Mixtures Using 5.5 lb. Rammer and 12" Drop.

G. ASTM D1557 - Standard Test Methods for Moisture Density Relations of Soils and Soil Aggregate Using 10 lb. Rammer and 18" Drop.

H. ASTM D1556 - Test for Density of Soil in Place by Sand Cone Method.

I. ASTM D2167 - Density of Soil in Place by Rubber Balloon Method.

J. ASTM D2922 - Density of Soil and Soil Aggregates in Place by Nuclear Method (Shallow Depth).

1.4 SITE CONDITIONS

A. Establish positive surface drainage during and following clearing and site grading proper ditching or sloping.

B. Provide erosion control measures to prevent mud and silt from flowing onto adjacent property.

C. Erect sheeting, shoring, and bracing as necessary for protection of persons, utilities, improvements, and excavations.

1.5 SCOPE

A. Subgrade preparation shall extend a minimum of 10 feet outside building limits and one foot outside pavement subgrade. The Geotechnical Engineer shall verify all quantities of undercut material removed.

B. In case of discrepancy with Geotechnical Engineer's recommendation and this specification, the Geotechnical Engineer's recommendation shall govern.

PART 2 - PRODUCTS

2.1 SUITABLE MATERIAL FOR CONTROLLED FILL

A. On site excavated soils:

1. Unified Soils Classification System Soils:

a. Class SC
b. Class GC

2. Soils having a liquid limit of less than 40.
3. Other soils approved by the Geotechnical Engineer.

B. Borrow Material:

1. Soils meeting the requirements of sub-paragraph A.1-3 of this Article.
2. Material meeting the requirements of selected material as described in Section 210 of the Arkansas State Highway Department's Standard Specifications for Highway Construction, Edition of 2003.
3. Other soils approved by the Geotechnical Engineer.

2.2 UNSUITABLE MATERIAL FOR CONTROLLED FILL

A. All areas: Organic top soils, soils containing roots, vegetable matter, or trash, and silts (ML) and clays (CH), and cobbles and fractured rock more than 3 inches in greatest dimension.
B. Soils deemed unsuitable by Geotechnical Engineer

PART 3 - EXECUTION

3.1 PREPARATION

A. Complete clearing work, removing visible unsuitable materials from site.

B. Protect bench marks, site corner pins and existing street paving from damage by equipment.

C. Stake the work:

1. Set the grade and slope stakes.
2. Mark the limits of the site grading work.

D. Before starting the excavation, establish location and extent of underground utilities occurring in work area.

E. Notify utility companies of lines which are in the way of excavation.

F. Protect existing utility lines to remain which pass through the work area.

G. Protect utility services uncovered by excavation.

H. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult utility owner immediately for directions. Cooperate with Contracting Officer and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.

I. Demolish and completely remove from site existing underground utilites indicated to be removed. Coordinate with utility companies for shut-off of services if lines are active.

3.2 EXCAVATION PROCEDURES:

A. Excavation General:

1. Strip topsoil in cut and fill areas to whatever depths encountered in a manner to prevent intermingling with underlying subsoil or other objectionable material. Remove and dispose of heavy growth of grass and surface debris from areas prior to stripping topsoil.

    a. Where trees are indicated to be left standing, stop topsoil stripping a sufficient distance to prevent damage to main root system.

2. Stockpile topsoil in storage piles in areas shown, or where directed. Construct storage piles to freely drain surface water. Cover storage piles if required to prevent wind-blown dust.
3. Remove soft or spongy material at the exposed sub-grade of cut and fill areas and replace with approved material and compact.

4. Use all suitable excavated material, as far as practicable, in the formation of controlled fills and fill slopes.
5. Keep all excavations dry by pumping or draining water from the Work.
6. In cut areas where fill is not required, proofroll the areas with a loaded tandem axle dump truck or similar equipment to aid in identifying soft areas. Remove soft soils and replace with controlled fill compacted to the same density as required for each layer of controlled fill. Scarify exposed sub-grade soils to a depth of at least 8 inches, adjust the soil mixture, and recompact to the same density as required for each layer of controlled fill.
7. Grade excavated slopes to a neat, smooth condition with no loose material or scars left on the surface.
8. Dispose of debris, excess topsoil, excess fill material and unsuitable material at an off site location secured by the contractor.

3.3 CONTROLLED FILL

A. After excavation and before fill placement, proofroll fill areas with a loaded tandem axle dump truck or similar equipment to aid in identifying soft areas. Remove soft areas and replace with controlled fill compacted to the same density as required for each layer of controlled fill.

B. Scarify cleared surface in fill areas to a depth of at least 8 inches, adjust the soil mixture, and recompact to the same density as required for each layer of controlled fill.

C. Place fill material in lifts no greater than 8 inch loose-lift uniform thickness and compact to minimum of 95% of maximum dry density at optimum moisture content as determined by the Modified Proctor Test, ASTM D1557.

1. Aerate material when too wet by manipulation with suitable equipment before compacting.
2. Add water when the soil is too dry and mix with the material before compacting.

D. Complete excavation and controlled fill to within 3 inches of finish grade in all landscape and turf areas.

3.4 FIELD QUALITY CONTROL

A. One field density test will be performed for each 2500 square feet of fill per lift. Test will be made in accordance with ASTM D1556 or ASTM D2167. ASTM D3017 may be used for up to 75% of the field density tests provided it is calibrated against one of the other methods specified.

3.5 UNCLASSIFIED EXCAVATIONS

A. All excavation under this section shall be unclassified.

3.6 TRENCH ROCK EXCAVATION

A. See Section 311010 “Rock Excavation”

B. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.

3.7 EXCAVATIONS:

A. Excavate for structures, pavements, and walks to indicated elevations and dimensions. Widen excavations to permit placing and removing concrete formwork, installing services and other construction, and for inspections. Trim subgrades to required lines and grades to leave solid base to receive other work. Any excavations or trenching that equal or exceed five (5)feet in depth shall be in accordance with the current edition of the Occupational Safety and Health Administration (OSHA) Standard for Excavation and Trenches Safety, 29 CFR 1926, Subpart P.

END OF SECTION 311000

SECTION 312333 - TRENCHING AND BACKFILLING

PART 1 - GENERAL

1.1 RELATED CONDITIONS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. In the event of conflict between the specifications and drawings, the drawings shall govern.

1.2 QUALITY ASSURANCE

A. Compaction: ASTM D698.

B. Contractor will hire an independent soils laboratory to conduct in place moisture-density tests to ensure that all work complies with this specification.

1. Notify Owner's representative at least 2 weeks prior to the anticipated date of testing.
2. Contractor will pay additional cost if work is delayed due to his failure to notify Owner's agent as specified above.

C. Comply with all aspects of “Construction Standards for Excavation” by State law and OSHA Safety and Health Standards 29 CFR 1928, subpart A, latest edition.

1.3 JOB CONDITIONS

A. Verify location and existence of all underground utilities.

1. Omission or inclusion of located utility items on drawings does not constitute nonexistence or definite location.
2. Secure and examine local utility surveyor records for available location data.

B. Protect existing utilities from damage due to any construction activity.

1. Repair all damages to utility items.

C. Avoid overloading. Keep surcharge sufficient distance back from edge of excavation to prevent slides or caving. Maintain and trim excavated materials in such a manner to be as little inconvenience as possible to public and adjoining property owners.

D. Provide full access to public and private premises, to fire hydrants, at street crossings, sidewalks and other points as designated by Engineer to prevent serious interruption of travel.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Backfill material: As approved by the City, Associated Utility Company or Civil Engineer.

1. Free of rocks, tree roots, sod or other organic matter, and frozen material.
2. Moisture content at time of placement: -1 to +3% of optimum moisture content, as specified in accordance with ASTM D698.

PART 3 - EXECUTION

3.1 GENERAL

A. Remove and dispose of materials determined by the City, Associated Utility Company or Civil Engineer to be unsuitable.

B. Trench, backfill and compact for all underground utilities.

3.2 SHORING AND BRACING

A. Contractor shall design (using a Professional Engineer registered in the State of Arkansas), install and provide as necessary to prevent cave-ins and slides, or as a protection for workmen in trenches and other excavation. Shoring and bracing shall remain in place as long as required for safety and shall be removed only as backfill is placed. Comply with all Municipal, State, and Federal requirements.

3.3 TRENCH EXCAVATION

A. Excavate trenches by open cut method to depth indicated and necessary to accommodate the work.

1. Permission may be granted for tunnel work for crossing under crosswalks, driveways or existing utility lines.

B. Open no more than 300 LF of trench at one time, or as required by the City or Civil Engineer. Failure to comply may necessitate shutdown of entire project until backfilling is performed.

C. Carry rock excavations minimum of 12" below indicated grades.

D. Avoid over-excavating below indicated grades unless required to remove unsuitable material.

E. Back-fill over-excavations in firmly compacted 8" lifts.

F. Trench size: Excavate only sufficient width to accommodate free working space.

1. Cut trench walls vertically from bottom of trench to top of pipe, conduit, or utility service.
2. Trench width at top of pipe or conduit may not exceed outside diameter of utility service by more than 18-inches or no less than 12-inches, unless otherwise specified or shown on the construction drawings.
3. Trench depth requirements measured from finished grade or paved surface shall meet the following requirements or applicable codes and ordinances, whichever is more stringent:

    a. Water mains: 36-inches to top of pipe barrel or 6-inches below frost line, established by local building official, whichever is deeper.
    b. Sanitary Sewer: Elevations and grades as indicated on the construction drawings and as specified in Section 33 30 00.
    c. Storm Sewer: Elevations and grades as indicated on the construction drawings and as specified in Section 33 40 00.
    d. Electrical Conduits: 24-inches minimum to top of conduit or as required by NEL 300-5, NEL 710-36 codes, or by local utility company requirements, whichever is deeper.
    e. TV Conduits: 24-inches minimum to top of conduit, or as required by local utility company, whichever is deeper.
    f. Telephone Conduits: 24-inches minimum to top of conduit, or as required by local utility company, whichever is deeper.
    g. Gas Mains and Service: 30-inches minimum to top of pipe, or as required by local utility company, whichever is deeper. G. Keep trenches free of water.

H. Brace and sheet trenches as soil conditions dictate. Do not remove until backfilling has progressed to a stage that no damage to piping, utility service, or conduit will result due to removal.

3.4 PREPARATION FOR PIPE LAYING

A. See drawings and specific pipe material sections for embedment requirements.

B. Place geotextile fabric as specified on the construction drawings.

C. When discrepancy exists between those requirements and these specifications, provide type of embedment which provides greatest load factor. D. Types of embedment:

1. Class A: Concrete cradle.

    a. Load factors:

        1) 2.2 - Lightly Tamped.
        2) 2.8 - Carefully tamped.
        3) 3.4 - Reinforced Concrete with p=0.4%.

2. Class 4: Concrete arch type bedding.

    a. Load factors:

        1) 2.8 - Plain Concrete.
        2) 3.4 - Reinforced Concrete with p=0.4%.
        3) 4.8 - Reinforced Concrete with p=1.0%.

3. Class B: First-class bedding.

    a. Shaped bottom with tamped backfill, or:
    b. Compacted granular bedding with tamped backfill.
    c. Load factor:

        1) 1.9 - Carefully compacted backfill.

4. Class C: Ordinary bedding.

    a. Granular bedding with tamped backfill.
    b. Load factor:

        1) 1.5 - Lightly compacted backfill.

E. Form bell holes in trenches such that only barrel of pipe is firmly supported by bedding material.

3.5 BACKFILLING

A. Do not backfill until all tests are performed on system. Test system in sections.

B. Hand or pneumatic tamp backfill around and over pipe in lifts approximately 4 to 6” loose lifts.

C. Compact to density specified, so pipe will not be damaged.

D. Exercise care in backfilling operations to avoid displacing pipe joints either horizontally or vertically and to avoid breaking pipe. E. Do not water flush for consolidation.

F. Backfill trenches to contours and elevations shown on the construction drawings.

3.6 COMPACTION

A. Compact all trench backfill in areas under paved roads, parking areas, sidewalks and other structures as directed by the City or Civil Engineer to at least 95% of Modified Proctor density or as indicated.

B. In locations where trench will not be under paved areas, compact backfill to minimum 95% of Modified Proctor density or as indicated.

C. Corrective measures for non-complying compaction:

1. Remove and re-compact deficient areas until proper compaction is obtained.
2. Continual failure areas shall be stabilized at no additional cost to owner.

3.7 QUALITY CONTROL TESTING AND INSPECTION

A. Responsibilities: Unless otherwise specified, the quality control testing and inspection will be conducted by the Contractors Construction Testing Laboratory (CTL).

B. Field testing, frequency, and methods may vary as determined by and between the Contractor and the CTL.

C. Work shall be performed by a Special Inspector-Technical I unless specified otherwise. Report of testing and inspection results shall be made upon completion of testing to Architect, Engineer, and owner.

D. Classification of Materials: Perform test for classification of materials used and encountered during construction in accordance with ASTM D 2487 and ASTM D 2488.

E. Laboratory Testing of Materials: Perform laboratory testing of materials (Proctor, Sieve Analysis, Atterberg Limits, Consolidation Test, etc.) as specified.

F. Field Density Tests:

1. Intervals not exceeding 200-feet of trench for first and every other 8-inch lift of compacted trench backfill.
2. Test Method: In-place nuclear density, ASTM D 2922 (Method B-Direct Transmission).

G. Observation and Inspection:

1. Observe and document presence of groundwater within excavations.

END OF SECTION 312333

SECTION 312500 - EROSION & SEDIMENTATION CONTROLS

PART 1 - GENERAL

1.1 RELATED CONDITIONS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. In the event of conflict between the specifications and drawings, the drawings shall govern.

1.2 DESCRIPTION OF WORK

A. This section will consist of the completion and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

B. The City approved stormwater management plan shall be a part of this document and provided to contractor by Engineer.

PART 2 - PRODUCTS

2.1 MATERIALS

A. All materials shall be as specified or meeting the specifications as outlined in Arkansas Department of Environmental Quality – "Storm Water Quality Best Management Practices for Construction Activities and the Standard Specifications for Public Works Construction."

B. All procedures and materials used for erosion control indicated in the drawings or approved by the City.

PART 3 - EXECUTION

3.1 GENERAL

A. It shall be the contractor's responsibility to use whatever means are necessary to control and limit silt and sediment leaving this site. Specifically, the contractor shall protect all public street, alleys, streams, storm drain systems and inlets from erosion deposits. The contractor shall comply with storm water pollution prevention management practices per the Arkansas Department of Environmental Quality.

B. Prior to commencing any construction, perimeter silt fence shall be installed at the locations shown on the plans and a stabilized construction entrance will be constructed per the Erosion Control Plan as applicable.

3.2 INSTALLATION

A. Grasses used to vegetate the site must be suitable for use under local climate and soil conditions. In general, hydro seeding or sodding bermuda grass is acceptable during the summer months (May 1 to August 30). Winter rye or fescue grass may be planted during times other than the summer months as a temporary measure until such time as the permanent planting can be made.

B. As inlets are completed, temporary sediment barriers and inlet protection shall be installed in accordance with the project drawings.

C. At the completion of the paving and final grading, the disturbed area(s) shall be revegetated in accordance with the plans and specifications.

D. Silt fence and inlet sediment barriers shall remain in place until revegetation has been completed.

E. 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 reseeded and resodded, if necessary.

F. If the erosion control is removed for construction and/or access purposes, the contractor shall replace it at the end of each work day.

G. Erosion protection may be added or deleted as necessary or per the City, if within right-of way.

H. If off-site soil borrow or spoil sites are used in conjunction with this project, this information shall be disclosed and shown on the Erosion Control Plan. Off-site borrow and spoil areas are considered a part of the project site and therefore shall comply with the City erosion control requirements. These areas shall be stabilized with permanent ground cover prior to final approval of the project.

I. Erosion control facilities and stabilization measures shall be provided and maintained by a qualified contractor or contractors experienced in providing said facilities and services.

J. Accumulated sediment shall be periodically removed from silt fences as required in order to maintain the effectiveness of the installation.

K. Silt fencing, when used, shall be installed in accordance with the manufacturer's recommendations and in accordance with the details on these plans.

L. Upon completion of paving and drainage construction, final lot grading and general cleanup, all on-site street parkways (the area from the back of curb to the R.O.W. line) and adjacent street parkways disturbed by the construction shall be stabilized by Sod and shall conform to City of New Orleans Parks and Parkways Standard Specifications. Stabilized parkways subsequently disturbed by utility comply contractors shall be repaired by the utility company or its contractor.

M. Off-site utility construction shall be performed in a manner consistent with the requirements of this plan relative to preventing storm water pollution. Upon completion of trench backfilling and general cleanup, and soil areas disturbed by the construction shall be promptly stabilized.

N. Upon completion of all utility and paving construction and prior to finish grading, all soil contaminated by construction operations and construction waste material shall be

removed from the site and disposed of at an appropriate authorized landfill or waste disposal facility.

O. If any contractor sees any violation of this plan by an operator or another contractor, he shall then notify the operator or contractor in violation as well as the facility operator.

P. Stabilization measures are to be inspected at a minimum once every 14 days and within 24 hours after any rainfall greater than 0.5 inches. Inspection reports shall be maintained by the contractor and made part of the plan.

Q. The contractor shall adopt appropriate construction site management practices to prevent the discharge of oils, grease, paints, gasoline, and other pollutants to the storm water system.

R. The Storm Water Pollution Prevention Plan (SWPPP) must be signed by the owner and contractor (as co-permittees) and retained on-site. The permittee shall post a notice near the main entrance of the construction site with the following information: 1) the NPDES permit number for the project or a copy of the NOI if a permit number has not been assigned; 2) the name and contact of the location contact person; 3) a brief description of the project; and 4) the location of SWPPP if the site is inactive or does not have an on-site location to store the plan.

S. The permittee is responsible for amending or updating the SWPPP as construction activities progress and site conditions change.

T. Both the owner and contractor are responsible for reviewing the rules and requirements as outlined in the Arkansas Department of Environmental Quality Notice of Coverage (NOC) for NPDES Storm Water Construction General Permit Number ARR150000.

U. Referenced tests, Material standards and specifications are the minimum requirements. The Contractor will meet the requirements and recommendations of the applicable portions of the standards listed. Where compliance with two (2) or more industry standards or requirements are specified, and the overlapping of those different or conflicting minimums for levels of quality, the most stringent requirements is intended and will be enforced. The Contractor shall notify the Owner of any conflicts that are to be resolved.

1. City Standard Specifications and Details, Current Edition.
2. Arkansas Department of Environmental Quality.
3. Arkansas State Highway and Transportation Department, latest Edition
4. American Associations of State Highway and Transportation Officials (AASHTO), Current Editions.
5. American Water Works Associations (AWWA), Current Editions.
6. American Society for Testing and Materials (ASTM), Current Edition.

V. The permittee shall retain copies of the storm water pollution prevention plans and all records and reports required for a period of at least 3 years from the date that the site is finally stabilized. This period may be extended by request of ADEQ at any time.

END OF SECTION 312500

SECTION 32 12 16 - HOT-MIXED ASPHALT PAVING

PART 1 – GENERAL

1.0 In the event of conflict between the specifications and drawings, the drawings shall govern.

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes provisions for hot-mixed asphalt paving over prepared subbase.

B. Prepared subbase is specified in another Site Grading section.

C. Proof rolling of prepared subbase is included in this Section.

D. Saw-cutting of edges of existing pavement is specified in site-clearing section.

1.3 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

B. Material Certificates signed by material producer and Contractor, certifying that each material item complies with or exceeds specified requirements.

1.4 SITE CONDITIONS

A. Weather Limitations: Apply prime and tack coats when ambient temperature is above 50 deg F (10 deg C) and when temperature has not been below 35 deg F (1 deg C) for 12 hours immediately prior to application. Do not apply when base is wet or contains an excess of moisture.

B. Construct hot-mixed asphalt surface course when atmospheric temperature is above 40 deg F (4 deg C) and when base is dry. Base course may be placed when air temperature is above 30 deg F (minus 1 deg C) and rising.

C. Grade Control: Establish and maintain required lines and elevations.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Use locally available materials and gradations that exhibit a satisfactory record of

previous installations.

B. Coarse Aggregate: Sound, angular crushed stone or crushed gravel, complying with AHTD Standard Specifications Section 303, Class 7.

C. Fine Aggregate: Sharp-edged natural sand or sand prepared from stone, gravel, or combinations thereof, complying with AHTD Standard Specification Section 407, ½ inch.

D. ACHM Binder Course:
1. Mix as described in Section 406 of the AHTD Standard Specifications.
2. The base course shall be composed of a mixture of mineral aggregate and asphalt cement in the proportions by weight for the type mixture designated

E. Asphalt Cement: Complying with AHTD Standard Specification Section 407

F. Tack Coat: Shall be applied as specified and meeting the requirements of section 401 of the AHTD Standard Specifications.

G. Herbicide Treatment complying with Environmental Protection Agency requirements. Provide granular, liquid, or wettable powder form.

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the work include, but are not limited to, the following:

a. Ciba-Geigy Corp.
b. Dow Chemical U.S.A.
c. E.I. Du Pont de Nemours & Co., Inc.
d. FMC Corp.
e. Thompson-Hayward Chemical Co.
f. U.S. Borax and Chemical Corp.

H. Lane Marking Paint: Alkyd-resin type, ready-mixed complying with AASHTO M 248, Type I.

1. Color: White.
2. Color: Blue (For Handicapped Parking Symbols).

2.2 ASPHALT-AGGREGATE MIXTURE

A. Provide plant-mixed, hot-laid asphalt-aggregate mixture complying with AHTD Standard Specification Section 407, ½ inch, Nmax = 115.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION

A. General: Remove loose material from compacted subbase surface immediately before applying herbicide treatment or prime coat.

B. Proof-roll prepared subbase surface to check for unstable areas and areas requiring additional compaction.

C. Notify Contractor of unsatisfactory conditions. Do not begin paving work until deficient subbase areas have been corrected and are ready to receive paving.

D. Herbicide Treatment: Apply chemical weed control agent in strict compliance with manufacturer's recommended dosages and application instructions. Apply to compacted, dry subbase prior to application of prime coat.

E. Tack Coat: Apply to contact surfaces of previously constructed asphalt or Portland cement concrete and surfaces abutting or projecting into hot-mixed asphalt pavement. Distribute at rate of 0.05 to 0.15 gal. per sq. yd. of surface.

F. Allow to dry until at proper condition to receive paving.

G. Exercise care in applying bituminous materials to avoid smearing of adjoining concrete surfaces. Remove and clean damaged surfaces.

3.2 PLACING TACK COATS

A. Clean the base course surface and place the coats in accordance with the requirements of section 401 of the AHTD Standard Specifications

3.3 PLACING MIX

A. General: Place hot-mixed asphalt mixture on prepared surface, spread, and strike off. Spread mixture at minimum temperature of 225 deg F (107 deg C). Place areas inaccessible to equipment by hand. Place each course to required grade, cross-section, and compacted thickness.

B. Paver Placing: Place in strips not less than 10 feet wide, unless otherwise acceptable to Contracting Officer’s representative. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Complete base course for a section before placing surface course.

C. Immediately correct surface irregularities in finish course behind paver. Remove excess material forming high spots with shovel or lute.

D. Joints: Make joints between old and new pavements, or between successive days' work, to ensure continuous bond between adjoining work. Construct joints to have same texture, density, and smoothness as other sections of hot-mixed asphalt course. Clean contact surfaces and apply tack coat.

3.4 ROLLING

A. General: Begin rolling when mixture will bear roller weight without excessive displacement.

B. Compact mixture with hot hand tampers or vibrating plate compactors in areas inaccessible to rollers.

C. Breakdown Rolling: Accomplish breakdown or initial rolling immediately following rolling of joints and outside edge. Check surface after breakdown rolling and repair displaced areas by loosening and filling, if required, with hot material.

D. Second Rolling: Follow breakdown rolling as soon as possible, while mixture is hot. Continue second rolling until mixture has been evenly compacted.

E. Finish Rolling: Perform finish rolling while mixture is still warm enough for removal of roller marks. Continue rolling until roller marks are eliminated and course has attained 95 percent laboratory density.

F. Patching: Remove and replace paving areas mixed with foreign materials and defective areas. Cut out such areas and fill with fresh, hot hot-mixed asphalt. Compact by rolling to specified surface density and smoothness.

G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.

H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.5 TRAFFIC AND LANE MARKINGS

A. Cleaning: Sweep and clean surface to eliminate loose material and dust.

B. Striping: Use chlorinated-rubber base traffic lane-marking paint, factory-mixed, quick-drying, and nonbleeding.

C. Do not apply traffic and lane marking paint until layout and placement have been verified with Architect.

D. Apply paint with mechanical equipment to produce uniform straight edges. Apply at manufacturer's recommended rates to provide minimum 12 to 15 mils dry thickness.

3.6 FIELD QUALITY CONTROL

A. General: Testing in-place hot-mixed asphalt courses for compliance with requirements for thickness and surface smoothness will be done by Contractor's testing laboratory. Repair or remove and replace unacceptable paving as directed by Contracting Officer’s representative.

B. Thickness: In-place compacted thickness tested in accordance with ASTM D 3549 will not be acceptable if exceeding following allowable variations:

1. Base Course: Plus or minus 1/2 inch.
2. Surface Course: Plus or minus 1/4 inch.

C. Surface Smoothness: Test finished surface of each hot-mixed asphalt course for smoothness, using 10-foot straightedge applied parallel with and at right angles to centerline of paved area. Surfaces will not be acceptable if exceeding the following tolerances for smoothness:

1. Base Course Surface: 1/4 inch.
2. Wearing Course Surface: 3/16 inch.
3. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch.

D. Check surface areas at intervals as directed by Contracting Officer's representative.

END OF SECTION 321216

SECTION 32 13 13 - PORTLAND CEMENT CONCRETE PAVING

PART 1 – GENERAL

1.0 In the event of conflict between the specifications and drawings, the drawings shall govern

1.1 SECTION INCLUDES

A. Preparing subgrade to receive base course materials for traffic bearing drive.

B. Place and compact base course materials for drive.

C. Concrete drive complete with reinforcement.

D. Provide testing services as specified in Division 1.

1.2 RELATED SECTIONS

A. Testing Laboratory Services

B Site Grading.

C. Sidewalks.

D. Concrete Curb and Gutter.

1.3 REFERENCES

A. ASTM C150 - Portland Cement.

B. ASTM C94 - Ready-Mixed Concrete.

C. ASTM A185 - Welded Steel Wire Fabric for Concrete Reinforcement.

D. ASTM A615 - Deformed and Plain Billet-Steel Bar for Concrete Reinforcement.

E. ASTM D1751 - Preformed Expansion Joint Filler for Concrete Paving and Structural Construction.

1.4 INSPECTION AND TESTING

A. Inspection and testing of concrete will be performed by a firm approved by the owner and paid for by the Contractor, in accordance with Section 01 45 04, 10 06.

B. Three (3) concrete test cylinders will be taken during cold weather concreting, and be cured on job site under same conditions as concrete it represents.

C. One (1) slump test will be taken for each set of test cylinders taken.

PART 2 - PRODUCTS

2.1 FILL MATERIALS

A. Gravel Base: Angular crushed natural stone; free from shale, clay and friable materials and debris.

2.2 CONCRETE MATERIALS

A. Portland Cement: ASTM C150; Normal-Type I. Materials for concrete paving shall conform to the requirements for Concrete Work.

B. Fine and Coarse Aggregates: ASTM C33.

C. Water: Clean and free from injurious amounts of oil, alkali, organic matter, or other deleterious material.

2.3 REINFORCEMENT

A. Reinforcing Steel: (60) yield strength; plain and deformed billet steel bars; ASTM A615; plain finish.

B. Welded Steel Wire Fabric: Plain type, ASTM A185; 6 x 6 W2.9 x W2.9 size.

C. Tie Wire: Minimum 16 gage annealed type, or patented system acceptable to Architect/Engineer.

2.4 FORMWORK AND ACCESSORIES

A. Formwork: Matched, tight fitting and adequately stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of concrete.

B. Joint Filler: Minimum 3/4 inch thick asphaltic impregnated fiberboard ASTM D751.

C. Concrete Curing Compound: Chlorinated rubber type; clear color; ASTM C308.

2.5 CONCRETE MIX

A. Mix and proportion to produce minimum 3500 psi concrete at 28 days or as shown on the plans, with maximum slump of 3 inches and 4 to 6 percent air entrainment.

B. Use accelerating admixtures in cold weather only when acceptable to Contracting Officer's representative. Use of admixtures shall not relax cold weather placement requirements. Do not use calcium chloride.

C. Use set-retarding admixtures during hot weather only when acceptable to Contracting Officer's representative.

PART 3 - EXECUTION

3.1 PREPARATION OF SUBGRADE

A. Ensure rough grading has brought subgrade to required elevations.

B. Fill soft spots and hollows with additional fill.

3.2 PLACEMENT OF GRAVEL FILL AND SAND CUSHION

A. Place and level gravel fill over prepared subgrade to a compacted depth indicated on drawings true to lines and levels.

B. During concrete placement, keep base sufficiently moist to prevent excessive absorption of water from freshly placed concrete.

3.3 FORMING

A. Form vertical surfaces to full depth and securely position to required lines and levels. Ensure form ties are not placed so as to pass through concrete.

B. Arrange and assemble formwork to permit easy dismantling and stripping, and to prevent damage to concrete during formwork removal.

3.4 PLACING REINFORCEMENT

A. Reinforce concrete drives. Allow for minimum 1-1/2 inch concrete cover.

B. Do not extend reinforcing through expansion and contraction joints. Provide dowelled joints through expansion and contraction joints, with one end of dowels fitted with capping sleeve to allow free movement.

3.5 FORMING EXPANSION AND CONTRACTION JOINTS

A. Place contraction joints at 15 foot interval. Where possible, make joints of curbs coincide with joints in drive.

B. Provide an expansion joint 1/2 inch in thickness, extending full depth of the concrete and with filler as herein specified, at intervals as shown on the drawings. Provide a similar joint 1/2 inch in thickness at perpendicular intersection of walkways. Also, provide an expansion joint 1 inch in thickness at such other points as may be designated by the Contracting Officer's representative.

C. Fit joints with filler of required profiles, set drives perpendicular to longitudinal axis of drives. Recess 1/4 inch below finished concrete surface.

3.6 PLACING CONCRETE

A. Place concrete, screed and wood float surfaces to a smooth and uniform finish, free of open texturing and exposed aggregate.

B. Avoid working mortar to surface.

C. Make 1/4 inch wide dummy joints as indicated on Drawings.

D. Round all edges, including edges of dummy and expansion and contraction joints, with 1/2 inch radius edging tool.

E. Where paved surfaces are adjacent to walks, make concrete curbs and gutters integral with walks. Make expansion and contraction joints of curbs coincide with walk joints. Provide dummy joint at line between walks and curbs.

F. Provide exposed surfaces of drives with broom finish.

G. Ensure finished surfaces do not vary from true lines, levels or grade by more than 1/8 inch in 10 feet when measured with straightedge.

H. Apply curing compound on finished surfaces immediately after placement. Apply in accordance with manufacturer's recommendations.

END OF SECTION 321313

SECTION 321373 - CONCRETE PAVING JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. In the event of conflict between the specifications and drawings, the drawings shall govern.

1.2 SUMMARY

A. Section Includes:

1. Cold-applied joint sealants.
2. Hot-applied joint sealants.
3. Cold-applied, fuel-resistant joint sealants.
4. Hot-applied, fuel-resistant joint sealants.
5. Joint-sealant backer materials.
6. Primers.

B. Related Requirements:

1. Section 079200 - JOINT SEALANTS for sealing non-traffic and traffic joints in locations not specified in this Section.

1.3 SUBMITTALS

A. Product Data: For each type of product.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

B. Product Testing: Test joint sealants using a qualified testing agency.

1.5 FIELD CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 40 deg F.
2. When joint substrates are wet.
3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, backing materials, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

2.2 COLD-APPLIED JOINT SEALANTS

A. Single-Component, Nonsag, Silicone Joint Sealant: ASTM D 5893/D 5893M, Type NS.

B. Single-Component, Self-Leveling, Silicone Joint Sealant: ASTM D 5893/D 5893M, Type SL.

C. Multicomponent, Nonsag, Urethane, Elastomeric Joint Sealant: ASTM C 920, Type M, Grade NS, Class 25, for Use T.

D. Single Component, Pourable, Urethane, Elastomeric Joint Sealant: ASTM C 920, Type S, Grade P, Class 25, for Use T.

E. Multicomponent, Pourable, Urethane, Elastomeric Joint Sealant: ASTM C 920, Type M, Grade P, Class 25, for Use T.

2.3 HOT-APPLIED JOINT SEALANTS

A. Hot-Applied, Single-Component Joint Sealant: ASTM D 6690, Type I.

B. Hot-Applied, Single-Component Joint Sealant: ASTM D 6690, Type I or Type II.

C. Hot-Applied, Single-Component Joint Sealant: ASTM D 6690, Type I, II, or III.

D. Hot-Applied, Single-Component Joint Sealant: ASTM D 6690, Type IV.

2.4 COLD-APPLIED, FUEL-RESISTANT JOINT SEALANTS

A. Fuel-Resistant, Single-Component, Pourable, Modified-Urethane, Elastomeric Joint Sealant: ASTM C 920, Type S, Grade P, Class 25, for Use T.

B. Fuel-Resistant, Multicomponent, Pourable, Modified-Urethane, Elastomeric Joint Sealant: ASTM C 920, Type M, Grade P, Class 12-1/2 or 25, for Use T.

2.5 HOT-APPLIED, FUEL-RESISTANT JOINT SEALANTS

A. Hot-Applied, Fuel-Resistant, Single-Component Joint Sealants: ASTM D 7116, Type I or Type II.

B. Hot-Applied, Fuel-Resistant, Single-Component Joint Sealants: ASTM D 7116, Type III.

2.6 JOINT-SEALANT BACKER MATERIALS

A. Joint-Sealant Backer Materials: Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by joint-sealant manufacturer, based on field experience and laboratory testing.

B. Round Backer Rods for Cold- and Hot-Applied Joint Sealants: ASTM D 5249, Type 1, of diameter and density required to control sealant depth and prevent bottom-side adhesion of sealant.

C. Round Backer Rods for Cold-Applied Joint Sealants: ASTM D 5249, Type 3, of diameter and density required to control joint-sealant depth and prevent bottom-side adhesion of sealant.

D. Backer Strips for Cold- and Hot-Applied Joint Sealants: ASTM D 5249; Type 2; of thickness and width required to control joint-sealant depth, prevent bottom-side adhesion of sealant, and fill remainder of joint opening under sealant.

2.7 PRIMERS

A. Primers: Product recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance. B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning of Joints: Before installing joint sealants, clean out joints immediately to comply with joint-sealant manufacturer's written instructions.

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.

B. Joint Priming: Prime joint substrates where indicated or where recommended in writing by jointsealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

3.3 INSTALLATION OF JOINT SEALANTS

A. Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated unless more stringent requirements apply.

B. Joint-Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions.

C. Install joint-sealant backings to support joint sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of joint-sealant backings.
2. Do not stretch, twist, puncture, or tear joint-sealant backings.
3. Remove absorbent joint-sealant backings that have become wet before sealant application and replace them with dry materials.

D. Install joint sealants immediately following backing installation, using proven techniques that comply with the following:

1. Place joint sealants so they fully contact joint substrates.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

E. Tooling of Nonsag Joint Sealants: Immediately after joint-sealant application and before skinning or curing begins, tool sealants according to the following requirements to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint:

1. Remove excess joint sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by joint-sealant manufacturer and that do not discolor sealants or adjacent surfaces.

F. Provide joint configuration to comply with joint-sealant manufacturer's written instructions unless otherwise indicated.

3.4 CLEANING AND PROTECTION

A. Clean off excess joint sealant as the Work progresses, by methods and with cleaning materials approved in writing by joint-sealant manufacturers.

B. Protect joint sealants, during and after curing period, from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately and replace with joint sealant so installations in repaired areas are indistinguishable from the original work.

3.5 PAVING-JOINT-SEALANT SCHEDULE

A. Joint-Sealant Application: Joints within concrete paving.

1. Joint Location:

a. Expansion and isolation joints in concrete paving.
b. Contraction joints in concrete paving.
c. Other joints as indicated.

2. Joint Sealant: Single-component, nonsag, silicone joint sealant; Single-component, self-leveling, silicone joint sealant; Multicomponent, nonsag, urethane, elastomeric joint sealant; Single component, pourable, urethane, elastomeric joint sealant; Multicomponent, pourable, urethane, elastomeric joint sealant; Hot-applied, single-component joint sealant.
3. Joint-Sealant Color: Manufacturer's standard.

B. Joint-Sealant Application: Joints within concrete paving and between concrete and asphalt paving.

1. Joint Location:

a. Joints between concrete and asphalt paving.
b. Joints between concrete curbs and asphalt paving.
c. Other joints as indicated.

2. Joint Sealant: Hot-applied, single-component joint sealant.
3. Joint-Sealant Color: Manufacturer's standard.

C. Joint-Sealant Application: Fuel-resistant joints within concrete paving.

1. Joint Location:

a. Expansion and isolation joints in concrete paving.
b. Contraction joints in concrete paving.
c. Other joints as indicated.

2. Joint Sealant: Fuel-resistant, single-component, pourable, modified-urethane, elastomeric joint sealant; Fuel-resistant, multicomponent, pourable, modified-urethane, elastomeric joint sealant; Hot-applied, fuel-resistant, single-component joint sealant.
3. Joint-Sealant Color: Manufacturer's standard.

END OF SECTION 321373

SECTION 32 16 13.10 - SIDEWALKS

PART 1 – GENERAL

1.0 In the event of conflict between the specifications and drawings, the drawings shall govern.

1.1 WORK INCLUDED

A. Providing 4 inch thick concrete sidewalks where shown on Drawings.

B. Providing 6 inch thick concrete handicap ramps where shown on Drawings.

C. Provide testing services as specified.

1.2 RELATED WORK

A. Testing Laboratory Services

B. Site Grading.

C. Structure Excavation and Backfill.

D. Concrete Work.

1.3 REFERENCE STANDARDS

A. American Society for Testing and Materials (ASTM):

1. ASTM D 1751, Specifications for Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).

1.4 SUBMITTALS

A. Concrete. Copies of certified deliverty tickets for all concrete used in the construction.

B. Field Quality Control. Copies of all test reports within 24 hours of completion of the test.

PART 2 - PRODUCTS

2.1 CONCRETE

A. General: Materials for use in sidewalk construction shall conform to the requirements for Concrete Work, and shall be 3000 psi concrete or as shown on the plans.

2.2 JOINT FILLER

A. The joint filler for all expansion joints shall be manufactured according to ASTM D 1751 and shall be elastic waterproof premolded compound that will not become soft and push out in hot weather, nor hard and brittle and chip out in cold weather. The strips shall be 1/2 inch in thickness except where shown otherwise on the Drawings; their width shall at least equal the full thickness of the slab; and their length shall at least equal the width of the slab at the joint.

2.3 FORMS

A. Forms shall be steel or 2 inch nominal thickness lumber true to proper dimensions, smooth, sufficiently braced to resist springing out of shape, and accurately set to proper lines and grades. Used forms shall be free of dirt and mortar. Cross forms shall be 1/4 inch steel of the full width and depth of the concrete work and left in place until the wearing surface has been floated and has obtained its initial set.

2.4 CURING COMPOUND

A. Liquid membrane forming curing compound conforming to AASHTO M148, Type 2, white pigmented (all-resin base).

PART 3 - EXECUTION

3.1 GRADING AND SUBGRADING

A. Prepare subgrade for walks by excavating or filling to a depth below the top of an intended pavement equal to the thickness of the finished walk and in exact conformity to the grade approved by the Contracting Officer's representative. Remove vegetable matter or material that will not compact properly and replace with suitable material. Place all fill required to bring the subgrade to the proper level in thin layers not exceeding 4 inches deep, and thoroughly ram, tamp, or roll until it has been made compact and solid. Bring subgrade to true grade in a uniformly firm condition before the placing of the concrete. Do not place concrete on the subgrade until the Contracting Officer's representative has inspected and approved both grade and condition of the subgrade.

3.2 SETTING FORMS

A. Stake forms and hold to the established lines and grades. Provide minimum one-eighth of an inch per foot fall away from structures or as shown on the Drawings.

3.3 TREATMENT

A. Wet wood forms and coat metal forms with oil, soft soap, or whitewash before depositing any material against them. Remove all mortar and dirt from forms that have been previously used.

3.4 MARKINGS

A. Cut surface of concrete walks into flags by marking with an edging tool having a radius of 1/4 inch. Make flags not longer than 6 feet on any side nor longer than the width of the sidewalk. Round the slabs on all surface edges, including the crossmarking between flags, to a radius of 1/4 inch.

3.5 JOINTS

A. Provide an expansion joint 1/2 inch in thickness, extending full depth of the concrete and with filler as herein specified, at intervals of not more than 100 feet. Provide a similar joint 1/2 inch in thickness in each walkway at intersection of walkways. Also, provide an expansion joint 1 inch in thickness at each intersection of sidewalk and street curb and at such other points as may be designated by the Contracting Officer's representative. Separate sidewalks from abutting structures by 1/2 inch expansion joints. Place expansion joints 1/2 inch in thickness extending full depth of the concrete in a square outline around each object in sidewalks, such as fire hydrants, utility poles, light standards, etc.

B. Provide contraction joints a 5 foot intervals.

3.6 PLACING CONCRETE

A. Place concrete only on a moist subgrade and not adjacent to or around utility structures until such structures have been set to the proper grade.

B. Transport from the mixer and place by such means as will not cause segregation of materials or loss of ingredients. Deposit successive batches in one layer by a continuous operation, completing individual sections to the required depth and width. Do not useconcrete that has taken its initial set. Fill forms and bring the concrete to the established grade by means of a strike board or straight edge. Thoroughly tamp concrete until the mortar is flushed to the surface sufficiently to finish and mark the surface.

C. Spade and/or vibrate the concrete so that it will flow together and completely fill all void spaces, especially along forms (including cross forms of joints) to prevent honeycombing and shall be struck off and tamped in an approved manner, until dense surface is obtained, free from porous or rough spots and at the required section and grade.

D. Use method of placing the various sections so as to produce a straight clean-cut joint between them, in order to make each section an independent unit. Do not use any concrete in excess of that needed to complete a section at the stopping of work.

E. Do not pour concrete when the temperature is below 40 degrees F., and do not place concrete on frozen subgrade. Take all necessary precautions to prevent damage to concrete from freezing, rain, storm damage, etc.

F. At all times during construction period, maintain proper drainage, by natural flow or pumping as required, so that water will drain away from excavated areas. Do not allow water to stand in any excavations, or elsewhere, to be covered by concrete. Provide and maintain in proper working order all necessary pumping and other equipment required tomaintain drainage.

3.7 FINISHING

A. After the concrete has been brought to the established grade by means of a strike board and tamped to bring the mortar to surface, float to a true even surface and finish with steel trowel. After the trowel finish has taken its initial set, brush surface lightly at right angles to center line of sidewalk with a soft bristle brush.

B. Do not apply heat to the concrete surface to hasten its hardening.

3.8 CURING AND PROTECTION

A. As soon as the concrete has hardened sufficiently to prevent damage, apply specified liquid membrane-forming curing compound in accordance with manufacturer's written instructions.

B. Protect the freshly finished concrete from hot sun and drying winds until the curing compound is applied. Do not allow the concrete surface to be damaged or pitted by raindrops. Provide and use, when necessary, sufficient tarpaulins to completely cover all sections that have been placed within the preceding twelve hours. Erect and maintain suitable barriers to protect the concrete. Repair any section damaged from traffic of other causes occurring prior to its official acceptance. Before the sidewalk is opened to traffic, remove and dispose of the covering.

3.9 FREEZING TEMPERATURE

A. If at any time during the progress of the work, the temperature is predicted to drop to 40 degrees F. within 24 hours after placement, heat the water and aggregates and take precautions to protect the work from freezing for at least seven (7) days.

END OF SECTION 321613.10

SECTION 32 16 13.20 - CONCRETE CURBS AND GUTTERS

PART 1 – GENERAL

1.0 In the event of conflict between the specifications and drawings, the drawings shall govern

1.1 WORK INCLUDED

A. Construct cast-in-place combination curb and gutter.

B. Provide testing services as specified in Section 01 45 04.10 06.

1.2 RELATED WORK

A. Testing Laboratory Services

B. Site Grading.

C. Sidewalks.

1.3 QUALITY ASSURANCE

A. Perform cast-in-place concrete in accordance with ACI 301-72.

1.4 SUBMITTALS

C. Concrete. Copies of certified deliverty tickets for all concrete used in the construction.

D. Field Quality Control. Copies of all test reports within 24 hours of completion of the test.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Ready Mixed Concrete: ASTM C94 and shall be 3000 psi concrete or as shown on the plans.

B. Curing Compound: ASTM C309, Type 2, Class B.

C. Pre-formed expansion joint fillers: ASTM D1751-78.

1. Thickness: 1/2 inch.

PART 3 - EXECUTION

3.1 SUBGRADE PREPARATION

A. Grade subgrade and compact in same manner and to same density as specified in Site Grading Section.

3.2 INSTALLATION

A. Cast-in-place Concrete:
1. See Standard Detail Drawings for Curb and Gutter, and for Handicap Ramp.
2. Prepare subgrade in accordance with Site Grading Section.
3. Set forms to line and grade.
4. Install forms over full length of curb.
5. Form contraction joints at maximum 10 feet spacing using steel templates or division plates.
6. Remove templates or plates as soon as concrete has hardened sufficiently to retain its shape.
7. Install preformed expansion joint fillers at maximum 60 feet spacing, at curb returns, and behind curb at abutment to sidewalks and other structures.
8. Place top of expansion joint material 1/4 inch below curb surface. Place concrete in position without separation of concrete materials.
10. Consolidate concrete with mechanical vibrators.
11. Round face of curbs at top with finishing tool of correct radius.
12. Finish exposed surfaces with wood float followed by light brushing with broom.
13. Apply curing material and cure for seven days.

B. Repair of surface defects.

C. Protect Completed Work.

END OF SECTION 321613.20

SECTION 321723 - PAVEMENT MARKINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. In the event of conflict between the specifications and drawings, the drawings shall govern.

1.2 SUMMARY

A. Section includes painted markings applied to concrete pavement.

1.3 SUBMITTALS

A. Product Data: For each type of product.

1. Include technical data and tested physical and performance properties.

1.4 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of the city for pavement-marking work.

1.5 FIELD CONDITIONS

A. Environmental Limitations: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 40 deg F for alkyd materials, 55 deg F for water-based materials, and not exceeding 95 deg F.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Benjamin Moore

B. Sherwin Williams

C. P.P.G. Industries

2.2 PAVEMENT-MARKING PAINT

A. Pavement-Marking Paint: Alkyd-resin type, lead and chromate free, ready mixed, complying with AASHTO M 248, Type N; colors complying with FS TT-P-1952.

1. Color: As indicated on drawings.

B. Pavement-Marking Paint: MPI #32, alkyd traffic-marking paint.

1. Color: As indicated on drawings.

C. Pavement-Marking Paint: Latex, waterborne emulsion, lead and chromate free, ready mixed, complying with FS TT-P-1952, Type II, with drying time of less than 45 minutes.

1. Color: As indicated on drawings.

D. Pavement-Marking Paint: MPI #97, latex traffic-marking paint.

1. Color: As indicated on drawings.

E. Glass Beads: AASHTO M 247, Type 1 made of 100 percent recycled glass.

1. Roundness: Minimum 75 percent true spheres by weight.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that pavement is dry and in suitable condition to begin pavement marking according to manufacturer's written instructions.

B. Proceed with pavement marking only after unsatisfactory conditions have been corrected.

3.2 PAVEMENT MARKING

A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Architect.

B. Allow paving to age for a minimum of 30 days before starting pavement marking.

C. Sweep and clean surface to eliminate loose material and dust.

D. Apply paint with mechanical equipment to produce pavement markings, of dimensions indicated, with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils.

1. Apply graphic symbols and lettering with paint-resistant, die-cut stencils, firmly secured to pavement. Mask an extended area beyond edges of each stencil to prevent paint application beyond the stencil. Apply paint so that it cannot run beneath the stencil.
2. Broadcast glass beads uniformly into wet markings at a rate of 6 lb/gal.

3.3 PROTECTING AND CLEANING

A. Protect pavement markings from damage and wear during remainder of construction period.

B. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 321723

SECTION 33 11 00 - WATER DISTRIBUTION

PART 1 GENERAL

1.0 Water Mains and Services shall be installed according to the latest specifications of Central Arkansas Water

SECTION 333000 - SANITARY SEWER GRAVITY LINES

PART 1 – GENERAL

1.0 Sanitary sewer lines, services, and manholes shall be installed according to the latest specifications of Little Rock Water Reclamation Authority.

1.1 SECTION INCLUDES

A. Providing sanitary sewer gravity lines and related appurtenances shown on the Drawings.

1.2 RELATED SECTIONS

A. Sanitary Sewer Manholes.

B. Site Concrete Work.

1.3 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. ASTM D3033 Specifications for Type PSP Poly Vinyl Chloride (PVC) Sewer Pipe and Fittings.
2. ASTM D3034 Specifications for Type PSM Poly Vinyl Chloride (PVC) Thermoplastic Sewer Pipe.

B. Little Rock Water Reclamation Authority - Specification Requirements for Sanitary Sewers (Latest Edition). Should conflicts occur between the Drawings and these Specifications, the Little Rock Water Reclamation Authority specifications will govern.

PART 2 - PRODUCTS

2.1 PIPE MATERIAL

A. Ductile Iron Pipe: Refer to Section 02616.

B. PVC Sewer Pipe: D3034 (PSMO).

1. Material: Poly vinyl chloride have cell classification of 12454-B, with minimum tensile modules of 500,000 psi, as defined in ASTM D1784.
2. Minimum wall thickness: SDR-26
3. Joints: Compression-type flexible gasketed joints with gasket confined in machine groove in spigot end of pipe.
4. Length: Manufacturer's standard length not to exceed 20 feet.

2.2 CONCRETE MORTAR

A. Mix one part Portland cement with four parts sand and add minimum quantity of water as necessary to provide workable mortar.

2.3 BEDDING AND BACKFILL MATERIALS

A. Class I Bedding Material: Angular, graded stone, 1/4 inch to 1-1/2 inch size. #57 Stone per plans.

PART 3 - EXECUTION

3.1 EXCAVATION - GENERAL

A. Excavate to line and grade shown on Drawings or as established on the site.

B. When excavation is carried below that required, fill space with concrete, approved gravel, or compacted select material.

C. Provide sheeting and shoring where necessary to protect workmen, the work, or adjacent property.

1. Leave shoring in place until backfill has proceeded to point where it can be safely removed.

D. De-water excavations before undertaking any construction therein.

1. Place concrete only upon dry, firm foundation material.
2. Lay pipe only in dry trenches or on dry bedding.

3.2 EXCAVATION - TRENCH

A. Excavate trench widths within limits established as follows for pipe size used:

| Nominal Pipe Diameter | Min. Width of Trench | Max. Width of Trench 12" Above Top of Pipe |
|---|---|---|
| 6" | 1'-6" | 2'-6" |
| 8" | 1'-8" | 2'-8" |
| 10" | 1'-10" | 2'-10" |

B. If necessary to reduce earth load on trench banks to prevent sliding and caving, cut trench banks on a slope above an elevation two feet above outside top of pipe.

C. Keep sides of excavation vertical from bottom of trench to 12 inches above top of pipe.

D. For rigid pipe not requiring bedding material under pipe, excavate trench to grade of bottom of pipe barrel so as to allow flowline of pipe to be laid at designated grade. Ensure that trench bottom is firm, dry, and free of loose material. If water is standing or flowing into trench bottom, attempt to provide dry, firm soil foundation for pipe by pumping water out of below-grade sump before over-excavating and backfilling with gravel.

E. Where granular bedding material under pipe is specified, excavate to below designated grade of pipe barrel to allow for 6" of bedding material. Grade bottom of trench approximately level across, and within 0.05 foot of designated slope of line at any point. Ensure that trench bottom is firm, dry, and free of loose material.

F. If soil in trench bottom below pipe barrel or below bedding material is mucky, or too soft to properly support the pipe, or in such condition that it cannot be properly shaped and graded, excavate to a minimum depth of 6 inches below normal subgrade elevation to firm soil and refill with Class I bedding material to the pipe subgrade elevation.

G. Where water occurs in trenches after placement of bedding material or gravel backfill, and the foundation is otherwise stable, pump water out of trench from sump below gravel so as to hold water level below bottom of pipe until joints have been placed and pipe firmly bedded in position and jointed. This Work of dewatering shall be included in the price bid for sewer line construction.

H. Do not excavate more than 100 feet ahead of pipe installation and backfill, except by permission of Engineer.

I. Direct surface runoff water away from trenches into existing drainage structures and ditches in such a manner as to prevent flooding of streets or private property.

J. Pile excavated material in a manner that will not endanger the Work and that will avoid obstructing sidewalks and driveways. Keep street drainage swales clear or make other satisfactory provision or street drainage.

K. Remove excess material and material unsuitable for backfilling from public rights of way and utility line easements.

3.3 BEDDING AND BACKFILLING SEWER LINES

A. Bedding of rigid pipe:

1. Grade trench bottom or bedding material to provide full length support of pipe barrel to designated slope of line.
2. Excavate for bells or other joint protrusions.
3. Bed ductile iron pipe using Type 2 laying condition.
4. Lay pipe as specified in this section.

5. Hand-place bedding material in trench bottom on each side of pipe using either Class I material or select material at proper moisture content.
6. Slice-in bedding material with shovels under pipe haunches to eliminate voids and provide side support.
7. Bring material up evenly on each side of pipe to centerline of pipe along full width of trench.
8. If select material is used, place material in maximum 4-inch layers and consolidate with hand tamps up to pipe centerline.

B. Bedding flexible pipe:

1. General: Refer to Standard Detail bound in Project Manual.
2. Use Class I bedding material for bedding, haunching, and initial backfill.
3. Grade bedding material to provide full length support of pipe barrel at designated slope of line.
4. Excavate for bells.
5. Place and joint pipe as specified in this section.
6. Hand place Class I material in thin layers on each side of pipe without disturbing line or grade of pipe.
7. Slice-in bedding material with shovel under pipe haunch to eliminate voids and provide side support.
8. Bring material up evenly on each side of pipe and above top of pipe a minimum of 6”.

C. Backfilling - rigid pipe:

1. Begin backfilling immediately after pipe laying and embedment.
2. Hand-place select material to a point of 12 inches above top of pipe in such manner as to minimize voids.
3. Backfill trenches not under structures or paving areas with excavated material or sub-soil up to surrounding ground surface.

    a. Do not use material of a perishable, spongy, or otherwise unsuitable nature and do not place rocks larger than 6 inches in greatest dimension within 36 inches of top of pipe.
    b. Do not place rock larger than 1-1/2 inches in greatest dimension within 12 inches of top of surrounding ground.
    c. Leave trench slightly mounded above top of pipe to allow for settlement.

4. Under structures or vehicle traffic areas, backfill trench from above top of initial backfill to top of subgrade with select material or other approved cohesive material:

    a. Place material in uniform layers of maximum 6-inch loose thickness and compact each layer up to a point of 24 inches below subgrade to a density of 90% of optimum density as determined by ASTM D1557, Modified Proctor procedures.
    b. Compact remaining 24 inches to 95% of the same optimum density.

D. Backfilling - flexible pipe:

1. Hand place select material to a point 12 inches above top of pipe in such manner as to minimize voids.
2. Continue backfilling in same manner as described above for backfilling rigid pipe.

E. Maintaining trenches:

1. Maintain top of trenches during warranty period of contract, adding material as backfill material settles.
2. Maintain road and sidewalk crossings until pavement has been placed.

3.4 LAYING PIPE

A. Placing gravity sewer lines:

1. Carefully inspect each joint of pipe before it is placed in trench, making sure no foreign material is inside pipe and that it is sound and free from cracks. Plainly mark damaged joints in such a manner that marking will not rub or wash off and remove joint from site as soon as possible.
2. Lower pipe carefully into trench in such manner that spigot and bell will not become contaminated.
3. Grade bedding material to provide full length support of pipe barrel at designated slope of line.
4. Excavate for bells.
5. If cutting of pipe is necessary, make cut straightly and smoothly without damage to pipe, removing all burrs.
6. Lay sewer pipe with bell facing up-stream.
7. Lay pipe to designated line and grade, using batter boards and topline, or laser beam grade light.
8. Do not lay pipe in water or when trench conditions or weather is unsuitable for such Work.
9. Place pipe on bedding prepared as specified in this Section.

B. Jointing push-on joint pipe:

1. Check inside of pipe barrel for cleanliness.
2. Thoroughly clean bell and spigot ends of pipe, especially the gasket seat, using wire brush as necessary.
3. Clean and insert rubber gasket in seat within bell.
4. Apply lubricant as recommended by pipe manufacturer.
5. Insert spigot end into bell of pipe to which connection is being made and force to firm contact with shoulder of bell.
6. Embed pipe and begin initial backfilling immediately after each joint has been laid and jointed.

C. At end of each day's Work, and when laying of pipe must be discontinued for an appreciable period, close open ends of pipe temporarily to prevent foreign matter and water from entering.

3.5 SEPARATION OF WATER AND SEWER LINES

A. Do not lay sewer lines closer horizontally than 10 feet from any water line.

B. Where gravity sewer lines cross water lines, lay pipe with minimum 18 inches vertical separation between pipe barrels. Lay so that a full joint of pipe is centered on water line so as to have the maximum distance between joints.

3.6 CONNECTION TO EXISTING MANHOLE

A. Do not make connection to existing manhole until other manhole and sewer lines have been completed, cleaned, tested, and approved for connection to existing manhole by the Utility or the Owner's representative.

B. Cut hole of sufficient size in wall of existing manhole to permit proper installation of proposed pipe at designated line and grade.

C. Extend pipe entirely through wall of manhole and fill opening around pipe with concrete or concrete mortar, plastering surface on both sides with concrete mortar so that no leakage will occur.

3.7 AIR TESTING

A. General: Perform air leakage test of joints of sewer mains in presence of representative of the Utility. Notify Utility 48 hours before planned time to begin testing.

B. Perform low pressure air test in accordance with ASTM C828.

C. Leakage testing by low pressure air loss:

1. Plug all pipe outlets with suitable test plugs. Brace each plug securely.
2. Pipe air supply to pipeline to be tested so that air supply may be shut off, pressure observed, and air pressure released from the pipe without entering the manhole.
3. Leave a valved branch in the supply line past the shut-off valve terminating in a 1/4" female pipe thread for installation of the test gauge.
4. Add air slowly to portion of pipe under test until test gauge reads at least 4 psig, but less than 5 psig.
5. Shut air supply valve and allow at least two minutes for internal pressure to stabilize.
6. Determine time in seconds for pressure to fall 1 psig so that pressure at the end of time of the test is at least 2.5 psig.
7. Compare observed time with minimum allowable times in the chart at the end of this section for pass/fail determination.
8. Where groundwater level is above the crown of the pipe being tested, test pressure should be increased accordingly. (0.434 psi for each foot of ground water above the crown of the pipe at its lowest point.)

D. Securely brace plugs used to close sewer pipe for the air test to prevent the unintentional release of a plug which can become a high velocity projectile. Locate gauges, air piping

manifolds, and valves at the top of the ground. Do not allow any person to enter a manhole where a plugged pipe is under pressure.

E. Repair all joints that fail air leakage tests. Retest joints that have been repaired.

F. If no separate item for sewer line testing is included in the Bid Schedule, include the cost of low pressure air testing in the price of the item of which it is a part.

3.8 FLEXIBLE PIPE DEFLECTION TESTING

A. Test PVC sewer pipe for obstruction due to excessive deflection after it has been laid and backfilled.

B. Perform test by hand-pulling a mandrel through the pipe. The maximum deflection allowable shall not exceed 5% of the pipe's internal diameter.

C. Correct all obstruction exceeding the allowed deflection.

D. Submit information to the Architect/Engineer verifying that the mandrel design configuration will detect the maximum allowable pipe deflection.

3.9 CLEANUP

A. General: Cleanup ground surface along route of sewer lines and round manholes immediately following completion of backfilling operations. Restore to original condition terrain features in all areas disturbed or damaged by the Work.

B. Smoothly grade ground surfaces disturbed by the Work, leaving tops of trenches not under pavement replacement areas slightly mounded to allow for settlement. Remove and dispose of all excess excavated materials including rocks larger than 1-1/2 inch size, trash, and unused materials. In turfed areas normally maintained by mowing, rake surface clean, spread any stockpiled top soil and organic matter, and re-seed or re-sod as necessary to restore the surface to the condition of adjacent mowed areas not disturbed by the Work.

3.10 CHART

LEAKAGE TESTING OF SEWERS BY LOW PRESSURE AIR TEST
ASTM C 828-80
(TIME PRESSURE DROP METHOD)
MINIMUM TEST TIME FOR VARIOUS PIPE SIZES

| Nominal Pipe Diameter Inches | T (time) min./100 ft. |
|---|---|
| 4 | 0.3 |
| 6 | 0.7 |

| | |
|---|---|
| 8 | 1.2 |
| 10 | 1.5 |
| 12 | 1.8 |
| 15 | 2.1 |
| 18 | 2.4 |
| 21 | 3.0 |
| 24 | 3.6 |

END OF SECTION 333000

SECTION 333000.10 - SANITARY SEWER MANHOLES

PART 1 – GENERAL

1.0 Sanitary sewer lines and services and manholes shall be installed according to the latest specifications of Little Rock Water Reclamation Authority.

1.1 WORK INCLUDED

A. Providing Sanitary Sewer Manholes.

1.2 RELATED WORK

A. Site Structure Excavation and Backfill.

B. Sanitary Sewer Gravity Lines.

C. Site Concrete Work.

1.3 REFERENCE STANDARDS

A. American Society for Testing and Materials (ASTM):

1. ASTM A48 Specifications for Gray Iron Castings.
2. ASTM C478 Specifications for Precast Reinforced Concrete Manhole Sections.

B. Little Rock Water Reclamation Authority - Specification Requirements for Sanitary Sewers (Latest Edition). Should conflicts occur between the Drawings and these Specifications, the Little Rock Water Reclamation Authority specifications will govern.

PART 2 - PRODUCTS

2.1 MANHOLE MATERIALS

A. General: Refer to Standard Detail Drawings.

B. Precast Concrete Manholes:

1. Manufacture in accordance with ASTM C-478, except that lift holes shall be cast completely through the two walls of each section for the purpose of handling and laying.
2. Concrete strength: 4,500 psi.
3. Reinforcing: Steel mesh of wires not less than 0.17 inch diameter.
4. Riser and grade rings shall be in one foot increments up to four feet in length.
5. Cone section shall be eccentric except that manholes four feet or less shall have flat slab tops.
6. Construct precast manholes with one foot section of pipe immediately below cone or top section.
7. Cutouts in bottom sections shall be appropriate for pipe being laid and shall have identifying markings to facilitate their being used in correct locations.
8. Furnish natural or artificial rubber gaskets for joints below water table.
9. No manhole steps permitted per Sherwood Wastewater.
10. Concrete for base: Refer to Section 03001.

C. Poured-in-place manholes:

1. Refer to Section 03001 for concrete requirements.
2. Concrete strength: 3,000 psi.
3. Forms shall have cut-outs to fit around sewer pipes so that forms rest upon concrete base.
4. Cone or top section shall be concentric.

D. Manhole Rings and Covers: ASTM A48.

1. Weight: Not less than 250 lbs. combined.
2. Inside diameter: 24 inches.
3. Height; 5 inches, minimum.
4. Cover shall have removal slot and pin cast into it.
5. Words "Sanitary Sewer" shall be cast in top surface of cover.

E. Manhole Steps:

1. No manhole steps permitted per Sherwood Wastewater.
.

2.2 CONCRETE MORTAR

A. Mix one part Portland cement with four parts sand and add minimum quantity of water as necessary to provide workable mortar.

2.3 BEDDING AND BACKFILL MATERIALS

A. Class I Bedding Material: Angular, graded stone, 1/4 inch to 1-1/2 inch size., #57 stone.

PART 3 - EXECUTION

A. Excavate to line and grade shown on Drawings or as established on the site.

B. When excavation is carried below that required or authorized by Engineer, fill space with concrete, or gravel drainage fill, or compacted select material.

C. Provide sheeting and shoring where necessary to protect workmen, the work, or adjacent property.

1. Leave shoring in place until backfill has proceeded to point where it can be safely removed.

D. De-water excavations before undertaking any construction therein. Place concrete only upon dry, firm foundation material.

3.2 EXCAVATION

A. Excavate for base of manholes only to that necessary to provide base of minimum required depth with sides poured against undisturbed earth. If soil foundation below base is mucky, or too soft to properly support the manhole, excavate to a minimum depth of 6 inchesbelow designated soil foundation elevation and refill with drainage fill material.

B. Excavate above base to provide minimum 24-inch space between outer surface of manhole and embankment or shoring.

3.3 INSTALLATION

A. General:

1. Refer to Section 03001 for poured-in-place concrete requirements.
2. Refer to Standard Detail Drawings.

B. Pre-cast Manholes:

1. Place concrete base allowing for construction of invert.
2. Position pre-cast sections carefully upon concrete base and raise in truly vertical plane.
3. Fill space between sewer pipe and periphery of cut-out with mortar or concrete.
4. Form concrete collar approximately 8 inches wide around pipe against outside of manhole.

5. Construct all pre-cast manholes with one-foot section immediately below cone or top section in order to lower manhole for any future change in grade.
6. Set manhole ring and cover in brick and mortar to required grade and provide concrete cap on outside perimeter.
7. Install natural or artificial rubber gaskets for joints below water table.
8. Make other joints watertight using cement grout or other approved method.

C. Poured-in-place manholes:

1. Place concrete base, allowing for construction of invert; or, place base and manhole monolithically.
2. If manhole is poured separately from base, fill cut-outs around pipe with concrete.
3. Pour concrete in forms in no more than 18-inch lifts with each layer being vibrated to achieve good bond with prior layer.
4. Set manhole ring and cover and concrete cap as required for pre-cast manholes.

D. Manhole inverts:

1. Extend pipe lines entirely through manhole to joints approximately 6 inches outside manhole except where change in direction, in pipe size, or in slope makes such construction unfeasible.
2. Do not extend pipe through manhole in manholes at upper end of line or discharging into an existing manhole.
3. In all cases, extend pipe or pipes through manhole wall so that a joint occurs approximately 6 inches outside the manhole wall.
4. Make depth of invert along line of flow approximately one-half the diameter of abutting pipe.
5. Form curves in inverts with a radius as long as feasible to facilitate flow.
6. Shape invert to approximate bottom half of pipe and brush invert surfaces smooth.
7. Slope surface of mortar fill upward from edge of invert to manhole wall.
8. Make upper half of any pipe extending inside manhole wall flush with wall.
9. Smooth rough edges with mortar.
10. Make mortar for forming invert by mixing one part portland cement and four parts sand and adding minimum quantity of water as necessary to make mortar workable.

E. Manhole steps:

1. Refer to Standard Detail Drawings.
2. Place first manhole step approximately 27 inches down from top of manhole ring.
3. Set steps horizontally and extend into wall a minimum of 4 inches.
4. Stagger steps 8 inches and set not more than 16 inches apart.

## 3.4 BACKFILL

A. Allow poured-in-place manholes to cure at least 48 hours before backfilling.

B. Make initial backfill up to 6 inches above top of sewer line using Class I bedding material, carefully working material under pipe haunches to provide side support to pipes.

C. Backfill from top of initial backfill to top of manhole or subgrade as specified for backfilling of structures in Section 02220 for the type of compaction requirement applicable.

3.5 CLEANUP

A. General: Cleanup ground surface around manholes immediately following completion of backfilling operations. Restore to original condition terrain features in all areas disturbed or damaged by the Work.

END OF SECTION 333000.10

C.

4.7 Insurance and Warranties

The vendor shall carry the following insurances throughout the term of the contract and any extension thereof. Prior to award of a resulting contract, the vendor must provide a Certificate of Insurance naming the City of Little Rock as additional insured.

Workmen's Compensation (statutory requirements)
Comprehensive General Liability – one million dollars ($1,000,000)
Personal Injury – one million dollars ($1,000,000)
Property Damage and other liabilities – one million dollars ($1,000,000)

4.8 Payment Structure

A. The vendor **shall** submit all invoicing resulting from contract purchase order to the City of Little Rock's **Accounts Payable Division**, Department of Finance, Room 315, 500 West Markham, Little Rock, AR 72201 at accountspayable@littlerock.gov. **Email invoice preferred**.

B. The contract price may be changed only by a Change Order. The value of any work covered by a Change Order or of any claim for increase or decrease in the contract price **shall** be determined by one or more of the following methods in the order of precedence listed below:

(A) Unit prices previously approved.

(B) An agreed lump sum.

4.9 Pricing

A. Any cost not identified by the successful vendor but subsequently incurred in order to achieve successful operation shall be borne by the vendor.

B. To allow time to evaluate responses, prices shall be valid for ninety (90) days following the bid opening.

C. Pricing shall include all associated costs. The City shall not be obligated to pay any costs that

are not included in the vendor's price proposal even though such cost is subsequently incurred by the vendor to provide the contracted services or equipment or to achieve the required quality of service unless agreed to in writing by the City.

D. The City should receive any discounts offered by, or available to the vendor. For term contracts the beginning date for computing discounts will be the date of invoice or the date of delivery and acceptance, whichever is later.

E. Prices quoted are to be net prices. If the vendor makes an error in extending total prices, the City may accept the lesser amount whether reflected by extension or by the correct multiple of the unit price.

F. The prices in the response have been arrived at without collusion.

G. All bid pricing shall be in United States dollars and cents.

5. Performance Metrics and Contract Management

5.1 The City seeks to collaborate with the Vendor and other stakeholders to enhance accountability and contract management, improve results, and adjust the delivery of products and/or services based on learning what works.

| Metric | Data Source | Data Frequency | Responsibility | Review Cadence |
|---|---|---|---|---|
| 1. How many days (within the required parameters of this bid) did the contractor take to complete the project? | Department Records | At Least Once Per Contract | City of Little Rock Department of Housing & Neighborhood Programs | Completion of Project |
| 2. For the duration of the project, what percentage of the time was the contractor available to receive and respond to routine phone calls? | Department Records | At Least Once Per Contract | City of Little Rock Department of Housing & Neighborhood Programs | Completion of Project |
| 3. On a scale from 1 to 10, how satisfactory was the vendor's work upon completion of the project? | Department Records | At Least Once Per Contract | City of Little Rock Department of Housing & Neighborhood Programs | Completion of Project |
| 4. Vendor Performance Report (Ad-hoc) | Vendor Performance Review Form | As Needed – At Least Once Per Contract | City of Little Rock Procurement Division | Completion of Project |

| | | | | |
|---|---|---|---|---|
| 5. Vendor Performance Review | Bonfire | Annually | City of Little Rock Procurement Division | Annually |

5.2 Contract Management

A. Communication Plan

1. To manage this contract and the goals outlined in sections herein, the City will collect performance data and regularly discuss with the selected vendors the performance metrics.

2. The monthly update meeting shall occur at an agreed-upon time and date each month. Upon mutual agreement, the parties may move this meeting if necessary to avoid scheduling conflicts, holidays, or similar occurrences. Any changes or cancellations to a meeting **shall** be communicated at least twenty-four (24) hours in advance.

5.3 Joint Ventures

A. A joint proposal submitted by two or more vendors is acceptable.

1. In the event of a joint venture, documentation must be submitted with the proposals identifying all participating business entities.

2. Prior to award, a binding agreement between the participants must be provided. The City will recognize both companies as one entity.

3. The City shall have a single point of operational contact with the entity that is formed pursuant to this provision.

4. Two companies with the same physical address or with a single point of operational contact will be considered one entity.

5. In efforts to meet the Mayor's Initiative to increase spend, it is highly recommended that any joint ventures include small, minority and/or women-owned businesses.

6. Supplemental Documentation

6.1 Pertinent supplemental documentation is available on the bid event in the supplier portal.

6.2 City of Little Rock Ordinance 20,482 § 1, 10-3-11, Sections 18.51 – 18.53: https://library.municode.com/ar/little_rock/codes/code_of_ordinances?nodeId=COOR_CH18MIPROF_ARTIIOFINPUPEOR

6.3 Act 1068 – "To Repeal The Arkansas Prevailing Wage Law; And To Provide Flexibility To Cities And Counties For Capital Construction Projects; And To Declare An Emergency:

https://www.arkleg.state.ar.us/Bills/Detail?ddBienniumSession=2017%2F2017R&measureno=sb601

7. Contract

7.1 Issuance of Contract.

A. Any resultant contract of this bid solicitation is subject to City approval processes which may include board review.

7.2 Cooperative Use

A. The City of Little Rock, as the issuing office for this solicitation, shall be the lead agency for this contract. Other governmental entities may participate in any contract resulting from this solicitation that falls under its scope of work throughout the life of the contract.

B. The vendor shall agree to offer the same pricing, terms, and conditions to participating governmental entities as outlined in this solicitation.

C. There is no obligation for any agency to purchase from the awarded contractor, nor does it guarantee any additional orders will result. However, it does allow entities at their discretion, to make use of the City of Little Rock's competitive procurement process directly from the awarded contractor. All purchases made shall be understood to be transactions between that entity and the awarded vendor.

7.3 The City of Little Rock shall not assume liability or obligation on behalf of any other governmental entity that may use any contract resulting from this solicitation. All purchases and payment transactions shall be made directly between the vendor and the requesting entity.

8. Inquiries and Submission Instructions

8.1 The responsive bid must be submitted through online bidding at **LRProcure** *powered by Bonfire*.

8.2 For any system-related questions, technical errors or help, please contact Bonfire Technical Support or using the Help Button or at **support@gobonfire.com** Mon-Fri 8:00am-8:00pm EST. For all other assistance, staff is available at (501) 371-4560. Bidder acknowledges that support may not be readily available the day of or the hours/minutes prior to a bid closing date/time.

8.3 All responsive bids will be subject to public information pursuant to the Arkansas Freedom of Information Act.

Opening Bid Teams Meeting link:

https://teams.microsoft.com/l/meetup-join/19%3ameeting_MTk5MzA4ZTAtZTRlOS00NDAxLTg2NGMtMDY1YTViODg4NDBl%40thread.v2/0?context=%7b%22Tid%22%3a%2284d336e2-3cb3-4ee8-91ca-5e4f107776ce%22%2c%22Oid%22%3a%220482e7ca-b0e2-4a95-9ca7-449438c919bf%22%7d

Terms and Conditions

All prospective Vendors who submit a proposal agree to be bound by the City of Little Rock **Standard Terms and Conditions** for Bidders and the online *Bonfire Terms & Conditions*.

**BID BOND**

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned _____

_____ as Principal, and _____ as Surety, are hereby paid and firmly bound unto City of Little Rock as owner in the penal sum of

_____ for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

Signed: This_____ day of _____, 2025.

The condition of the above obligation is such that whereas the Principal has submitted to

City of Little Rock a certain bid attached hereto and hereby made a part hereof to enter into a contract with the City for your services.

NOW, THEREFORE:

(a) If said bid **shall** be rejected, or in the alternate.

(b) If said bid **shall** be accepted and the principal **shall** execute and deliver a contract on the Form of Contract attached hereto (properly completed in accordance with said bid) and **shall** furnish a bond for his faithful performance of said contract and for the payment of all persons performing labor or furnishing materials in connection therewith, and **shall** in all other respects perform the agreement created by the acceptance of said bid, then this obligation **shall** be void, otherwise the same **shall** remain in force and effect it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder **shall** in no event exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond **shall** be in no way impaired or affected by any extension of time within which the City may accept such Bid, and said Surety does hereby waive notice of any such extension.

**IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.**

SEAL: _____

Principal

By: _____

_____

Surety

By: _____