

**PROJECT MANUAL**

**VOLUME I OF II**

**DUPONT PUMP STATION AND  
BASIN IMPROVEMENTS – PHASE 2  
(CONTRACT A)**

**CONTRACT NO. W-12-026-202**



**MAYOR AND CITY COUNCIL**

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**Jerry Mitchell, Councilman**  
**Ken Smith, Councilman**  
**Chip Henderson, Vice-Chairman**  
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**November 2019**



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**DUPONT PUMP STATION AND  
BASIN IMPROVEMENTS – PHASE 2**

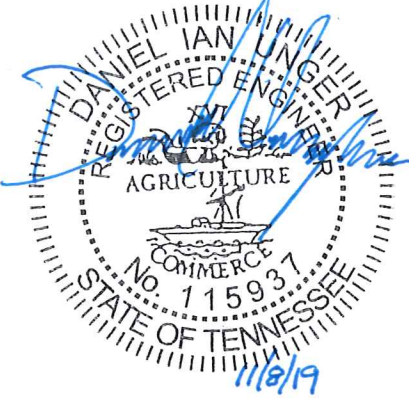
**CITY OF  
CHATTANOOGA, TENNESSEE**


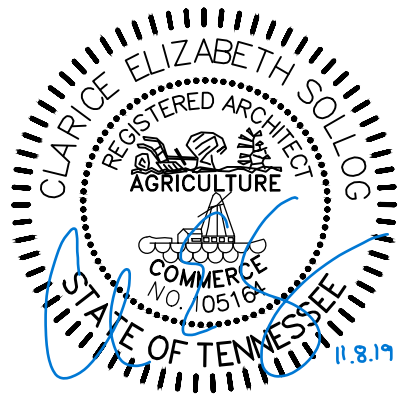

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**Project: Dupont Pump Station and Basin Improvements – Phase 2 (Contract A)**

**CDM Smith Project Number: 129699-109746**

Project Specifications	Engineer
<ul style="list-style-type: none"><li>- <b>Division 00: Procurement and Contracting Requirements</b></li><li>- <b>Division 01: General Requirements</b></li><li>- <b>Division 02: Existing Conditions</b></li><li>- <b>Section 23 07 00 Thermal Insulation and Pipe Insulation</b></li><li>- <b>Section 23 31 16 Fiberglass Ductwork and Accessories</b></li><li>- <b>Section 31 11 00 Clearing and Grubbing</b></li><li>- <b>Section 31 23 16 Rock Removal</b></li><li>- <b>Division 32: Exterior Improvements</b></li><li>- <b>Section 33 05 05 Buried Piping Insulation</b></li><li>- <b>Section 33 05 19 Ductile Iron Pipe</b></li><li>- <b>Section 33 05 60 Precast Concrete Structures</b></li><li>- <b>Section 33 32 45 Submersible Sump Pumps</b></li><li>- <b>Division 35: Waterway and Marine Construction</b></li><li>- <b>Section 40 05 00 Piping General Requirements</b></li><li>- <b>Section 40 05 13 Plastic Pipe and Fittings</b></li><li>- <b>Section 40 05 18 Ductile Iron Pipe and Fittings</b></li><li>- <b>Section 40 05 50 Valves and Appurtenances</b></li><li>- <b>Section 40 05 70 Piping Specialties</b></li><li>- <b>Section 40 05 75 Pipe Hangers and Supports</b></li><li>- <b>Section 40 41 13 Electrical Heat Tracing</b></li><li>- <b>Section 43 21 39 Submersible Solids Handling Pumps</b></li><li>- <b>Division 43: Process Gas and Liquid Handling, Purification and Storage Equipment</b></li><li>- <b>Division 44: Pollution and Waste Control Equipment</b></li></ul>	 <p>Daniel I. Unger, P.E.</p>

<ul style="list-style-type: none"> <li>- <b>Division 26: Electrical</b></li> <li>- <b>Section 33 71 19 Underground System</b></li> <li>- <b>Section 33 79 00 Grounding System</b></li> </ul>	 <p style="text-align: center;">11-08-19 Spencer J. Perry, P.E.</p>
<ul style="list-style-type: none"> <li>- <b>Section 03 30 90 Under-Slab Vapor Retarders</b></li> <li>- <b>Division 04 Masonry</b></li> <li>- <b>Division 06 Wood Plastics and Composites</b></li> <li>- <b>Division 07 Thermal and Moisture Protection</b></li> <li>- <b>Division 08 Openings</b></li> <li>- <b>Section 09 22 16 Non-Structural Metal Framing</b></li> <li>- <b>Section 09 29 00 Gypsum Board</b></li> <li>- <b>Section 09 30 13 Ceramic Tiling</b></li> <li>- <b>Section 09 91 00 Painting</b></li> <li>- <b>Section 09 91 10 Surface Preparation and Shop Prime Painting</b></li> <li>- <b>Division 10 Specialties</b></li> <li>- <b>Division 12 Furnishings</b></li> </ul>	 <p style="text-align: center;">11.8.19 Clarice E. Sollog, AIA</p>
<ul style="list-style-type: none"> <li>- <b>Division 28: Electronic Safety and Security</b></li> <li>- <b>Section 40 90 00 Instrumentation and Controls – General Provisions</b></li> <li>- <b>Section 40 90 21 Testing</b></li> <li>- <b>Section 40 91 40 Instruments</b></li> <li>- <b>Section 40 94 43 PLC Hardware and Software</b></li> <li>- <b>Section 40 95 13 Control Panels and Panel Mounted Equipment</b></li> <li>- <b>Section 40 96 45 Control Descriptions</b></li> </ul>	 <p style="text-align: center;">11/8/19 Michael J. Graham, P.E.</p>

<ul style="list-style-type: none"> <li>- <b>Division 22</b></li> <li>- <b>Section 23 00 00 HVAC</b></li> <li>- <b>Section 23 05 93 Testing, Adjusting and Balancing</b></li> </ul>	 <p style="text-align: center;">Joshua H. Meinig, P.E.</p>
<ul style="list-style-type: none"> <li>- <b>Section 03 10 00 Concrete Formwork</b></li> <li>- <b>Section 03 15 00 Concrete Joints and Joint Accessories</b></li> <li>- <b>Section 03 20 00 Concrete Reinforcement</b></li> <li>- <b>Section 03 30 00 Cast-In-Place Concrete</b></li> <li>- <b>Section 03 35 00 Concrete Finishes</b></li> <li>- <b>Section 03 60 00 Grout</b></li> <li>- <b>Division 05 Metals</b></li> <li>- <b>Section 09 97 23 Concrete Coating</b></li> </ul>	 <p style="text-align: center;">Justin S. Boggs, P.E.</p>
<ul style="list-style-type: none"> <li>- <b>Section 31 09 00 Geotechnical Instrumentation</b></li> <li>- <b>Section 31 23 00 Earthwork</b></li> <li>- <b>Section 31 23 19 Dewatering and Drainage</b></li> <li>- <b>Section 31 23 33 Trenching, Backfilling and Compaction</b></li> <li>- <b>Section 31 23 60 Drilled Micropiles</b></li> <li>- <b>Section 31 37 00 Riprap</b></li> <li>- <b>Section 31 75 01 Excavation Support and Protection</b></li> </ul>	 <p style="text-align: center;">Tastan E. Onur, P.E.</p>

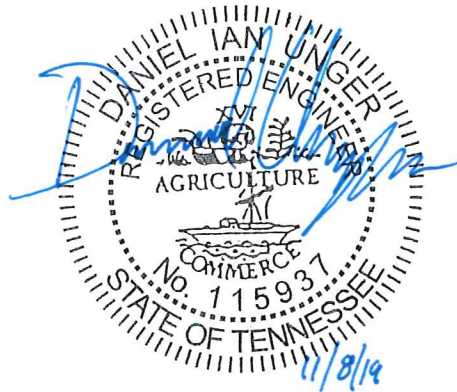
**CITY OF CHATTANOOGA  
PUBLIC WORKS DEPARTMENT  
ENGINEERING DIVISION**

**CERTIFICATION AND SEAL**

The Project Drawings and the Contract Documents and Specifications for the following contract were prepared by me or under my direct supervision, and I am a duly registered engineer under the laws of the state in which these projects are located:

**DUPONT PUMP STATION AND  
BASIN IMPROVEMENTS – PHASE 2  
(CONTRACT A)**


**CONTRACT NO. W-12-026-202**



Tennessee P.E. Number 115937

11/8/19  
(Date)

**APPROVED FOR RELEASE**

  
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William C. Payne, P.E.  
City Engineer

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**DUPONT PUMP STATION AND BASIN IMPROVEMENTS – PHASE 2  
(CONTRACT A)  
CONTRACT NUMBER W-12-026-202**

**CITY OF CHATTANOOGA, TENNESSEE**

Sealed Bids for furnishing all materials, labor, tools, equipment and appurtenances necessary for the construction of the Dupont Pump Station and Basin Improvements – Phase 2 (Contract A) will be received at the City of Chattanooga at City Hall, Purchasing Department, Suite G13, 101 East 11th Street, Chattanooga, TN 37402, until 2:00 p.m., local time, on December 10<sup>th</sup>, 2019, and then at said office publicly opened and read aloud.

A Pre-Bid Conference is scheduled for November 21<sup>st</sup> 2019 at 10:00 A.M. local time, in the Training Facility, Moccasin Bend Wastewater Treatment Plant, 455 Moccasin Bend Road, Chattanooga, TN 37405. Bidder attendance is encouraged but not mandatory.

The Project location is on Dixie Drive in Rivermont Park and immediately south of the Champions Tennis Club. The Project generally consists of constructing a diversion structure, 22 million gallon per day wet-weather pump station, electrical building, diesel generator, odor control systems for the new structures, yard piping, and related work.

The Instructions to Bidders, Bid, Contract Agreement, Drawings, Specifications and forms of Bid Bond, Performance Bond, Payment Bond and other Contract Documents may be examined at the following:

City of Chattanooga  
Purchasing Department  
101 E. 11<sup>th</sup> Street, Suite G13  
Chattanooga, TN 37402  
(423) 643-7230

CDM Smith Inc.  
651 East 4<sup>th</sup> Street, Suite 100  
Chattanooga, TN 37403  
(423) 771-4495

Ms. Marilyn Robinson, Executive Director  
Nashville Minority Business Office  
1919 Charlotte Avenue, Suite 310  
Nashville, TN 37203  
(615) 255-0432

AGC of East Tennessee  
101 West 21<sup>st</sup> Street  
Chattanooga, TN 37408  
(423) 267-1111

Copies of Contract Documents may be purchased from 8:00 am to 4:30 pm, Monday through Friday, at the office of the City of Chattanooga Purchasing Department, 101 East 11th Street, Suite G13, Chattanooga, TN 37402, phone (423) 643-7230, Fax (423) 643-7244. Cost of Contract Documents is \$100.00 per set. No part of the purchase price will be refunded.

Each Bid must be accompanied by a Bid Bond, prepared on the form of Bid Bond attached to the Contract Documents or a Surety Company's Standard Bid Bond, duly executed by the Bidder as principal and having as surety thereon a surety company licensed to do business in the State of Tennessee and listed as a certified company in the latest issue of U.S. Treasury Circular 570, in the amount of five percent of the Bid.

#### Disadvantaged Business Enterprises (DBE) Requirements

Any contract or contracts awarded by the Owner through this advertisement for bids will be funded by a State Revolving Fund (SRF) loan from the State of Tennessee. State and Federal funds will be involved in this Project and, as a result, Bidders must comply with the SRF Loan Program's Disadvantaged Business Enterprises (DBE) requirements, including contacting a minimum of 10 qualified DBE sub-contractors, professional service providers, vendors, and/or suppliers by certified mail to solicit bids. The apparent successful Bidder must submit to the Owner copies of the certified letters and return receipts prior to Contract award. Neither the State of Tennessee nor any of its departments, agencies, or employees is or will be a party to this Invitation for Bids or any resulting contract(s) awarded by the Owner.

#### Special Notice to Disadvantaged Business Enterprises (DBE) Firms

All qualified Disadvantaged Business Enterprises (DBE) firms desiring to bid as a General Contractor, sub-contractor, professional service provider, supplier, or equipment vendor are encouraged to contact Ms. Marilyn Robinson at the Nashville Minority Business Center office listed above to review bidding/contract documents. Qualified Disadvantaged Business Enterprises (DBE) firms may also contact City of Chattanooga Purchasing Department at the address above, in order to obtain a list of prospective bidding General Contractors or to obtain copies of bidding/contract documents.

#### Davis-Bacon Act and American Iron and Steel Requirements

This project is being funded by a State Revolving Fund loan on or after 2014 EPA Fiscal Year. The loan recipient must be in compliance with all applicable Davis-Bacon Act and American Iron and Steel requirements.

The allotted time for construction is 330 calendar days. Refer to Sections 00 41 00 and 01 11 00 for additional information.

No bid may be withdrawn within 120 calendar days after the scheduled time for receipt of bids.

All bidders must be licensed and shall comply with all requirements of the State of Tennessee Contractor's Licensing Act.

Visit City website at: [www.chattanooga.gov/purchasing/bidssolicitations](http://www.chattanooga.gov/purchasing/bidssolicitations) for specific contract information.

The City of Chattanooga is an Equal Opportunity Employer.

Any contract or contracts awarded under this Advertisement for Bids are expected to be funded with local funds in addition to funds indicated elsewhere.

The Owner will in no way be liable for any costs incurred by any bidder in the preparation of its Bid in response to this Invitation to Bid.

The successful Bidder for this Contract will be required to furnish a satisfactory Performance Bond and Payment Bond each in the amount of 100 percent of the Bid.

The Owner reserves the right to reject any or all Bids, to waive informalities and to readvertise.

CITY OF CHATTANOOGA, TENNESSEE

RECOMMENDED FOR APPROVAL



William C. Payne, P.E.  
City Engineer  
Department of Public Works

APPROVED



Justin C. Holland  
Administrator  
Department of Public Works

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## Implementation

The Act states:

Sec. 436. (a)(1) None of the funds made available by a State water pollution control revolving fund as authorized by title VI of the Federal Water Pollution Control Act (33 U.S.C. 1381 et seq.) or made available by a drinking water treatment revolving loan fund as authorized by section 1452 of the Safe Drinking Water Act (42 U.S.C. 300j-12) shall be used for a project for the construction, alteration, maintenance, or repair of a public water system or treatment works unless all of the iron and steel products used in the project are produced in the United States.

(2) In this section, the term “iron and steel products” means the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials.

(b) Subsection (a) shall not apply in any case or category of cases in which the Administrator of the Environmental Protection Agency (in this section referred to as the “Administrator”) finds that—

(1) applying subsection (a) would be inconsistent with the public interest;

(2) iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or

(3) inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent.

(c) If the Administrator receives a request for a waiver under this section, the Administrator shall make available to the public on an informal basis a copy of the request and information available to the Administrator concerning the request, and shall allow for informal public input on the request for at least 15 days prior to making a finding based on the request. The Administrator shall make the request and accompanying information available by electronic means, including on the official public Internet Web site of the Environmental Protection Agency.

(d) This section shall be applied in a manner consistent with United States obligations under international agreements.

(e) The Administrator may retain up to 0.25 percent of the funds appropriated in this Act for the Clean and Drinking Water State Revolving Funds for carrying out



the provisions described in subsection (a)(1) for management and oversight of the requirements of this section.

(f) This section does not apply with respect to a project if a State agency approves the engineering plans and specifications for the project, in that agency's capacity to approve such plans and specifications prior to a project requesting bids, prior to the date of the enactment of this Act.

The following questions and answers provide guidance for implementing and complying with the AIS requirements:

### **Project Coverage**

#### **1) What classes of projects are covered by the AIS requirement?**

All treatment works projects funded by a CWSRF assistance agreement, and all public water system projects funded by a DWSRF assistance agreement, from the date of enactment through the end of Federal Fiscal Year 2014, are covered. The AIS requirements apply to the entirety of the project, no matter when construction begins or ends. Additionally, the AIS requirements apply to all parts of the project, no matter the source of funding.

#### **2) Does the AIS requirement apply to nonpoint source projects or national estuary projects?**

No. Congress did not include an AIS requirement for nonpoint source and national estuary projects unless the project can also be classified as a 'treatment works' as defined by section 212 of the Clean Water Act.

#### **3) Are any projects for the construction, alteration, maintenance, or repair of a public water system or treatment works excluded from the AIS requirement?**

Any project, whether a treatment works project or a public water system project, for which engineering plans and specifications were approved by the responsible state agency prior to January 17, 2014, is excluded from the AIS requirements.

#### **4) What if the project does not have approved engineering plans and specifications but has signed an assistance agreement with a CWSRF or DWSRF program prior to January 17, 2014?**

The AIS requirements do not apply to any project for which an assistance agreement was signed prior to January 17, 2014.

**5) What if the project does not have approved engineering plans and specifications, but bids were advertised prior to January 17, 2014 and an assistance agreement was signed after January 17, 2014?**

If the project does not require approved engineering plans and specifications, the bid advertisement date will count in lieu of the approval date for purposes of the exemption in section 436(f).

**6) What if the assistance agreement that was signed prior to January 17, 2014, only funded a part of the overall project, where the remainder of the project will be funded later with another SRF loan?**

If the original assistance agreement funded any construction of the project, the date of the original assistance agreement counts for purposes of the exemption. If the original assistance agreement was only for planning and design, the date of that assistance agreement will count for purposes of the exemption only if there is a written commitment or expectation on the part of the assistance recipient to fund the remainder of the project with SRF funds.

**7) What if the assistance agreement that was signed prior to January 17, 2014, funded the first phase of a multi-phase project, where the remaining phases will be funded by SRF assistance in the future?**

In such a case, the phases of the project will be considered a single project if all construction necessary to complete the building or work, regardless of the number of contracts or assistance agreements involved, are closely related in purpose, time and place. However, there are many situations in which major construction activities are clearly undertaken in phases that are distinct in purpose, time, or place. In the case of distinct phases, projects with engineering plans and specifications approval or assistance agreements signed prior to January 17, 2014 would be excluded from AIS requirements while those approved/signed on January 17, 2014, or later would be covered by the AIS requirements.

**8) What if a project has split funding from a non-SRF source?**

Many States intend to fund projects with “split” funding, from the SRF program and from State or other programs. Based on the Act language in section 436, which requires that American iron and steel products be used in any project for the construction, alteration, maintenance, or repair of a public water system or treatment works receiving SRF funding between and including January 17, 2014 and September 30, 2014, any project that is funded in whole or in part with such funds must comply with the AIS requirement. A “project” consists of all construction necessary to complete the building or work regardless of the number of contracts or assistance agreements involved so long as all contracts and assistance agreements awarded are closely related in purpose, time and place. This precludes the intentional splitting of SRF projects into separate and smaller contracts or assistance agreements to avoid AIS coverage on some portion of a larger



project, particularly where the activities are integrally and proximately related to the whole. However, there are many situations in which major construction activities are clearly undertaken in separate phases that are distinct in purpose, time, or place, in which case, separate contracts or assistance agreement for SRF and State or other funding would carry separate requirements.

**9) What about refinancing?**

If a project began construction, financed from a non-SRF source, prior to January 17, 2014, but is refinanced through an SRF assistance agreement executed on or after January 17, 2014 and prior to October 1, 2014, AIS requirements will apply to all construction that occurs on or after January 17, 2014, through completion of construction, unless, as is likely, engineering plans and specifications were approved by a responsible state agency prior to January 17, 2014. There is no retroactive application of the AIS requirements where a refinancing occurs for a project that has completed construction prior to January 17, 2014.

**10) Do the AIS requirements apply to any other EPA programs, besides the SRF program, such as the Tribal Set-aside grants or grants to the Territories and DC?**

No, the AIS requirement only applies to funds made available by a State water pollution control revolving fund as authorized by title VI of the Federal Water Pollution Control Act (33 U.S.C. 1381 et seq.) or made available by a drinking water treatment revolving loan fund as authorized by section 1452 of the Safe Drinking Water Act (42 U.S.C. 300j-12)

**Covered Iron and Steel Products**

**11) What is an iron or steel product?**

For purposes of the CWSRF and DWSRF projects that must comply with the AIS requirement, an iron or steel product is one of the following made primarily of iron or steel that is permanently incorporated into the public water system or treatment works:

- Lined or unlined pipes or fittings;
- Manhole Covers;
- Municipal Castings (defined in more detail below);
- Hydrants;
- Tanks;
- Flanges;
- Pipe clamps and restraints;
- Valves;
- Structural steel (defined in more detail below);
- Reinforced precast concrete; and
- Construction materials (defined in more detail below).

**12) What does the term ‘primarily iron or steel’ mean?**

‘Primarily iron or steel’ places constraints on the list of products above. For one of the listed products to be considered subject to the AIS requirements, it must be made of greater than 50% iron or steel, measured by cost. The cost should be based on the material costs.

**13) Can you provide an example of how to perform a cost determination?**

For example, the iron portion of a fire hydrant would likely be the bonnet, body and shoe, and the cost then would include the pouring and casting to create those components. The other material costs would include non-iron and steel internal workings of the fire hydrant (i.e., stem, coupling, valve, seals, etc). However, the assembly of the internal workings into the hydrant body would not be included in this cost calculation. If one of the listed products is not made primarily of iron or steel, United States (US) provenance is not required. An exception to this definition is reinforced precast concrete, which is addressed in a later question.

**14) If a product is composed of more than 50% iron or steel, but is not listed in the above list of items, must the item be produced in the US? Alternatively, must the iron or steel in such a product be produced in the US?**

The answer to both question is no. Only items on the above list must be produced in the US. Additionally, the iron or steel in a non-listed item can be sourced from outside the US.

**15) What is the definition of steel?**

Steel means an alloy that includes at least 50 percent iron, between .02 and 2 percent carbon, and may include other elements. Metallic elements such as chromium, nickel, molybdenum, manganese, and silicon may be added during the melting of steel for the purpose of enhancing properties such as corrosion resistance, hardness, or strength. The definition of steel covers carbon steel, alloy steel, stainless steel, tool steel and other specialty steels.

**16) What does ‘produced in the United States’ mean?**

Production in the United States of the iron or steel products used in the project requires that all manufacturing processes, including application of coatings, must take place in the United States, with the exception of metallurgical processes involving refinement of steel additives. All manufacturing processes includes processes such as melting, refining, forming, rolling, drawing, finishing, fabricating and coating. Further, if a domestic iron and steel product is taken out of the US for any part of the manufacturing process, it becomes foreign source material. However, raw materials such as iron ore, limestone and iron and steel scrap are not covered by the AIS requirement, and the



material(s), if any, being applied as a coating are similarly not covered. Non-iron or steel components of an iron and steel product may come from non-US sources. For example, for products such as valves and hydrants, the individual non-iron and steel components do not have to be of domestic origin.

**17) Are the raw materials used in the production of iron or steel required to come from US sources?**

No. Raw materials, such as iron ore, limestone, scrap iron, and scrap steel, can come from non-US sources.

**18) If an above listed item is primarily made of iron or steel, but is only at the construction site temporarily, must such an item be produced in the US?**

No. Only the above listed products made primarily of iron or steel, permanently incorporated into the project must be produced in the US. For example trench boxes, scaffolding or equipment, which are removed from the project site upon completion of the project, are not required to be made of U.S. Iron or Steel.

**19) What is the definition of ‘municipal castings’?**

Municipal castings are cast iron or steel infrastructure products that are melted and cast. They typically provide access, protection, or housing for components incorporated into utility owned drinking water, storm water, wastewater, and surface infrastructure. They are typically made of grey or ductile iron, or steel. Examples of municipal castings are:

- Access Hatches;
- Ballast Screen;
- Benches (Iron or Steel);
- Bollards;
- Cast Bases;
- Cast Iron Hinged Hatches, Square and Rectangular;
- Cast Iron Riser Rings;
- Catch Basin Inlet;
- Cleanout/Monument Boxes;
- Construction Covers and Frames;
- Curb and Corner Guards;
- Curb Openings;
- Detectable Warning Plates;
- Downspout Shoes (Boot, Inlet);
- Drainage Grates, Frames and Curb Inlets;
- Inlets;
- Junction Boxes;
- Lampposts;
- Manhole Covers, Rings and Frames, Risers;

Meter Boxes;  
Service Boxes;  
Steel Hinged Hatches, Square and Rectangular;  
Steel Riser Rings;  
Trash receptacles;  
Tree Grates;  
Tree Guards;  
Trench Grates; and  
Valve Boxes, Covers and Risers.

**20) What is ‘structural steel’?**

Structural steel is rolled flanged shapes, having at least one dimension of their cross-section three inches or greater, which are used in the construction of bridges, buildings, ships, railroad rolling stock, and for numerous other constructional purposes. Such shapes are designated as wide-flange shapes, standard I-beams, channels, angles, tees and zees. Other shapes include H-piles, sheet piling, tie plates, cross ties, and those for other special purposes.

**21) What is a ‘construction material’ for purposes of the AIS requirement?**

Construction materials are those articles, materials, or supplies made primarily of iron and steel, that are permanently incorporated into the project, not including mechanical and/or electrical components, equipment and systems. Some of these products may overlap with what is also considered “structural steel”. This includes, but is not limited to, the following products: wire rod, bar, angles, concrete reinforcing bar, wire, wire cloth, wire rope and cables, tubing, framing, joists, trusses, fasteners (i.e., nuts and bolts), welding rods, decking, grating, railings, stairs, access ramps, fire escapes, ladders, wall panels, dome structures, roofing, ductwork, surface drains, cable hanging systems, manhole steps, fencing and fence tubing, guardrails, doors, and stationary screens.

**22) What is not considered a ‘construction material’ for purposes of the AIS requirement?**

Mechanical and electrical components, equipment and systems are not considered construction materials. Mechanical equipment is typically that which has motorized parts and/or is powered by a motor. Electrical equipment is typically any machine powered by electricity and includes components that are part of the electrical distribution system.

The following examples (including their appurtenances necessary for their intended use and operation) are NOT considered construction materials: pumps, motors, gear reducers, drives (including variable frequency drives (VFDs)), electric/pneumatic/manual accessories used to operate valves (such as electric valve actuators), mixers, gates, motorized screens (such as traveling screens), blowers/aeration equipment, compressors, meters, sensors, controls and switches, supervisory control and



data acquisition (SCADA), membrane bioreactor systems, membrane filtration systems, filters, clarifiers and clarifier mechanisms, rakes, grinders, disinfection systems, presses (including belt presses), conveyors, cranes, HVAC (excluding ductwork), water heaters, heat exchangers, generators, cabinetry and housings (such as electrical boxes/enclosures), lighting fixtures, electrical conduit, emergency life systems, metal office furniture, shelving, laboratory equipment, analytical instrumentation, and dewatering equipment.

**23) If the iron or steel is produced in the US, may other steps in the manufacturing process take place outside of the US, such as assembly?**

No. Production in the US of the iron or steel used in a listed product requires that all manufacturing processes must take place in the United States, except metallurgical processes involving refinement of steel additives.

**24) What processes must occur in the US to be compliant with the AIS requirement for reinforced precast concrete?**

While reinforced precast concrete may not be at least 50% iron or steel, in this particular case, the reinforcing bar and wire must be produced in the US and meet the same standards as for any other iron or steel product. Additionally, the casting of the concrete product must take place in the US. The cement and other raw materials used in concrete production are not required to be of domestic origin.

If the reinforced concrete is cast at the construction site, the reinforcing bar and wire are considered to be a construction material and must be produced in the US.

**Compliance**

**25) How should an assistance recipient document compliance with the AIS requirement?**

In order to ensure compliance with the AIS requirement, specific AIS contract language must be included in each contract, starting with the assistance agreement, all the way down to the purchase agreements. Sample language for assistance agreements and contracts can be found in Appendix 3 and 4.

EPA recommends the use of a step certification process, similar to one used by the Federal Highway Administration. The step certification process is a method to ensure that producers adhere to the AIS requirement and assistance recipients can verify that products comply with the AIS requirement. The process also establishes accountability and better enables States to take enforcement actions against violators.

Step certification creates a paper trail which documents the location of the manufacturing process involved with the production of steel and iron materials. A step certification is a process under which each handler (supplier, fabricator, manufacturer,

processor, etc) of the iron and steel products certifies that their step in the process was domestically performed. Each time a step in the manufacturing process takes place, the manufacturer delivers its work along with a certification of its origin. A certification can be quite simple. Typically, it includes the name of the manufacturer, the location of the manufacturing facility where the product or process took place (not its headquarters), a description of the product or item being delivered, and a signature by a manufacturer's responsible party. Attached, as Appendix 5, are sample certifications. These certifications should be collected and maintained by assistance recipients.

Alternatively, the final manufacturer that delivers the iron or steel product to the worksite, vendor, or contractor, may provide a certification asserting that all manufacturing processes occurred in the US. While this type of certification may be acceptable, it may not provide the same degree of assurance. Additional documentation may be needed if the certification is lacking important information. Step certification is the best practice.

**26) How should a State ensure assistance recipients are complying with the AIS requirement?**

In order to ensure compliance with the AIS requirement, States SRF programs must include specific AIS contract language in the assistance agreement. Sample language for assistance agreements can be found in Appendix 3.

States should also, as a best practice, conduct site visits of projects during construction and review documentation demonstrating proof of compliance which the assistance recipient has gathered.

**27) What happens if a State or EPA finds a non-compliant iron and/or steel product permanently incorporated in the project?**

If a potentially non-compliant product is identified, the State should notify the assistance recipient of the apparent unauthorized use of the non-domestic component, including a proposed corrective action, and should be given the opportunity to reply. If unauthorized use is confirmed, the State can take one or more of the following actions: request a waiver where appropriate; require the removal of the non-domestic item; or withhold payment for all or part of the project. Only EPA can issue waivers to authorize the use of a non-domestic item. EPA may use remedies available to it under the Clean Water Act, the Safe Drinking Water Act, and 40 CFR part 31 grant regulations, in the event of a violation of a grant term and condition.

It is recommended that the State work collaboratively with EPA to determine the appropriate corrective action, especially in cases where the State is the one who identifies the item in noncompliance or there is a disagreement with the assistance recipient.

If fraud, waste, abuse, or any violation of the law is suspected, the Office of Inspector General (OIG) should be contacted immediately. The OIG can be reached at 1-



888-546-8740 or [OIG\\_Hotline@epa.gov](mailto:OIG_Hotline@epa.gov). More information can be found at this website: <http://www.epa.gov/oig/hotline.htm>.

## **28) How do international trade agreements affect the implementation of the AIS requirements?**

The AIS provision applies in a manner consistent with United States obligations under international agreements. Typically, these obligations only apply to direct procurement by the entities that are signatories to such agreements. In general, SRF assistance recipients are not signatories to such agreements, so these agreements have no impact on this AIS provision. In the few instances where such an agreement applies to a municipality, that municipality is under the obligation to determine its applicability and requirements and document the actions taken to comply for the State.

### **Waiver Process**

The statute permits EPA to issue waivers for a case or category of cases where EPA finds (1) that applying these requirements would be inconsistent with the public interest; (2) iron and steel products are not produced in the US in sufficient and reasonably available quantities and of a satisfactory quality; or (3) inclusion of iron and steel products produced in the US will increase the cost of the overall project by more than 25 percent.

In order to implement the AIS requirements, EPA has developed an approach to allow for effective and efficient implementation of the waiver process to allow projects to proceed in a timely manner. The framework described below will allow States, on behalf of the assistance recipients, to apply for waivers of the AIS requirement directly to EPA Headquarters. Only waiver requests received from states will be considered. Pursuant to the Act, EPA has the responsibility to make findings as to the issuance of waivers to the AIS requirements.

### **Definitions**

The following terms are critical to the interpretation and implementation of the AIS requirements and apply to the process described in this memorandum:

**Reasonably Available Quantity:** The quantity of iron or steel products is available or will be available at the time needed and place needed, and in the proper form or specification as specified in the project plans and design.

**Satisfactory Quality:** The quality of iron or steel products, as specified in the project plans and designs.

**Assistance Recipient:** A borrower or grantee that receives funding from a State CWSRF or DWSRF program.

## Step-By-Step Waiver Process

### Application by Assistance Recipient

Each local entity that receives SRF water infrastructure financial assistance is required by section 436 of the Act to use American made iron and steel products in the construction of its project. However, the recipient may request a waiver. Until a waiver is granted by EPA, the AIS requirement stands, except as noted above with respect to municipalities covered by international agreements.

The waiver process begins with the SRF assistance recipient. In order to fulfill the AIS requirement, the assistance recipient must in good faith design the project (where applicable) and solicit bids for construction with American made iron and steel products. It is essential that the assistance recipient include the AIS terms in any request for proposals or solicitations for bids, and in all contracts (see Appendix 3 for sample construction contract language). The assistance recipient may receive a waiver at any point before, during, or after the bid process, if one or more of three conditions is met:

1. Applying the American Iron and Steel requirements of the Act would be inconsistent with the public interest;
2. Iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or
3. Inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent.

Proper and sufficient documentation must be provided by the assistance recipient. A checklist detailing the types of information required for a waiver to be processed is attached as Appendix 1.

Additionally, it is strongly encouraged that assistance recipients hold pre-bid conferences with potential bidders. A pre-bid conference can help to identify iron and steel products needed to complete the project as described in the plans and specifications that may not be available from domestic sources. It may also identify the need to seek a waiver prior to bid, and can help inform the recipient on compliance options.

In order to apply for a project waiver, the assistance recipient should email the request in the form of a Word document (.doc) to the State SRF program. It is strongly recommended that the State designate a single person for all AIS communications. The State SRF designee will review the application for the waiver and determine whether the necessary information has been included. Once the waiver application is complete, the State designee will forward the application to either of two email addresses. For CWSRF waiver requests, please send the application to: [cwsrfwaiver@epa.gov](mailto:cwsrfwaiver@epa.gov). For DWSRF waiver requests, please send the application to: [dwsrfwaiver@epa.gov](mailto:dwsrfwaiver@epa.gov).



## Evaluation by EPA

After receiving an application for waiver of the AIS requirements, EPA Headquarters will publish the request on its website for 15 days and receive informal comment. EPA Headquarters will then use the checklist in Appendix 2 to determine whether the application properly and adequately documents and justifies the statutory basis cited for the waiver – that it is quantitatively and qualitatively sufficient – and to determine whether or not to grant the waiver.

In the event that EPA finds that adequate documentation and justification has been submitted, the Administrator may grant a waiver to the assistance recipient. EPA will notify the State designee that a waiver request has been approved or denied as soon as such a decision has been made. Granting such a waiver is a three-step process:

1. Posting – After receiving an application for a waiver, EPA is required to publish the application and all material submitted with the application on EPA’s website for 15 days. During that period, the public will have the opportunity to review the request and provide informal comment to EPA. The website can be found at: [http://water.epa.gov/grants\\_funding/aisrequirement.cfm](http://water.epa.gov/grants_funding/aisrequirement.cfm)
2. Evaluation – After receiving an application for waiver of the AIS requirements, EPA Headquarters will use the checklist in Appendix 2 to determine whether the application properly and adequately documents and justifies the statutory basis cited for the waiver – that it is quantitatively and qualitatively sufficient – and to determine whether or not to grant the waiver.
3. Signature of waiver approval by the Administrator or another agency official with delegated authority – As soon as the waiver is signed and dated, EPA will notify the State SRF program, and post the signed waiver on our website. The assistance recipient should keep a copy of the signed waiver in its project files.

## Public Interest Waivers

EPA has the authority to issue public interest waivers. Evaluation of a public interest waiver request may be more complicated than that of other waiver requests so they may take more time than other waiver requests for a decision to be made. An example of a public interest waiver that might be issued could be for a community that has standardized on a particular type or manufacturer of a valve because of its performance to meet their specifications. Switching to an alternative valve may require staff to be trained on the new equipment and additional spare parts would need to be purchased and stocked, existing valves may need to be unnecessarily replaced, and portions of the system may need to be redesigned. Therefore, requiring the community to install an alternative valve would be inconsistent with public interest.

EPA also has the authority to issue a public interest waiver that covers categories of products that might apply to all projects.

EPA reserves the right to issue national waivers that may apply to particular classes of assistance recipients, particular classes of projects, or particular categories of iron or steel products. EPA may develop national or (US geographic) regional categorical waivers through the identification of similar circumstances in the detailed justifications presented to EPA in a waiver request or requests. EPA may issue a national waiver based on policy decisions regarding the public's interest or a determination that a particular item is not produced domestically in reasonably available quantities or of a sufficient quality. In such cases, EPA may determine it is necessary to issue a national waiver.

If you have any questions concerning the contents of this memorandum, you may contact us, or have your staff contact Jordan Dorfman, Attorney-Advisor, State Revolving Fund Branch, Municipal Support Division, at [dorfman.jordan@epa.gov](mailto:dorfman.jordan@epa.gov) or (202) 564-0614 or Kiri Anderer, Environmental Engineer, Infrastructure Branch, Drinking Water Protection Division, at [anderer.kirsten@epa.gov](mailto:anderer.kirsten@epa.gov) or (202) 564-3134.

Attachments

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## Appendix 1: Information Checklist for Waiver Request

The purpose of this checklist is to help ensure that all appropriate and necessary information is submitted to EPA. EPA recommends that States review this checklist carefully and provide all appropriate information to EPA. This checklist is for informational purposes only and does not need to be included as part of a waiver application.

Items	✓	Notes
<p><b>General</b></p> <ul style="list-style-type: none"> <li>• Waiver request includes the following information:               <ul style="list-style-type: none"> <li>— Description of the foreign and domestic construction materials</li> <li>— Unit of measure</li> <li>— Quantity</li> <li>— Price</li> <li>— Time of delivery or availability</li> <li>— Location of the construction project</li> <li>— Name and address of the proposed supplier</li> <li>— A detailed justification for the use of foreign construction materials</li> </ul> </li> <li>• Waiver request was submitted according to the instructions in the memorandum</li> <li>• Assistance recipient made a good faith effort to solicit bids for domestic iron and steel products, as demonstrated by language in requests for proposals, contracts, and communications with the prime contractor</li> </ul>	✓	
<p><b>Cost Waiver Requests</b></p> <ul style="list-style-type: none"> <li>• Waiver request includes the following information:               <ul style="list-style-type: none"> <li>— Comparison of overall cost of project with domestic iron and steel products to overall cost of project with foreign iron and steel products</li> <li>— Relevant excerpts from the bid documents used by the contractors to complete the comparison</li> <li>— Supporting documentation indicating that the contractor made a reasonable survey of the market, such as a description of the process for identifying suppliers and a list of contacted suppliers</li> </ul> </li> </ul>		
<p><b>Availability Waiver Requests</b></p> <ul style="list-style-type: none"> <li>• Waiver request includes the following supporting documentation necessary to demonstrate the availability, quantity, and/or quality of the materials for which the waiver is requested:               <ul style="list-style-type: none"> <li>— Supplier information or pricing information from a reasonable number of domestic suppliers indicating availability/delivery date for construction materials</li> <li>— Documentation of the assistance recipient's efforts to find available domestic sources, such as a description of the process for identifying suppliers and a list of contacted suppliers.</li> <li>— Project schedule</li> <li>— Relevant excerpts from project plans, specifications, and permits indicating the required quantity and quality of construction materials</li> </ul> </li> <li>• Waiver request includes a statement from the prime contractor and/or supplier confirming the non-availability of the domestic construction materials for which the waiver is sought</li> <li>• Has the State received other waiver requests for the materials described in this waiver request, for comparable projects?</li> </ul>		

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#### **Appendix 4: Sample Construction Contract Language**

ALL CONTRACTS MUST HAVE A CLAUSE REQUIRING COMPLIANCE WITH THE AIS REQUIREMENT. THIS IS AN EXAMPLE OF WHAT COULD BE INCLUDED IN ALL CONTRACTS IN PROJECTS THAT USE SRF FUNDS. EPA MAKES NO CLAIMS REGARDING THE LEGALITY OF THIS CLAUSE WITH RESPECT TO STATE OR LOCAL LAW:

The Contractor acknowledges to and for the benefit of the City of \_\_\_\_\_ (“Purchaser”) and the \_\_\_\_\_ (the “State”) that it understands the goods and services under this Agreement are being funded with monies made available by the Clean Water State Revolving Fund and/or Drinking Water State Revolving Fund that have statutory requirements commonly known as “American Iron and Steel,” that requires all of the iron and steel products used in the project to be produced in the United States (“American Iron and Steel Requirement”) including iron and steel products provided by the Contractor pursuant to this Agreement. The Contractor hereby represents and warrants to and for the benefit of the Purchaser and the State that (a) the Contractor has reviewed and understands the American Iron and Steel Requirement, (b) all of the iron and steel products used in the project will be and/or have been produced in the United States in a manner that complies with the American Iron and Steel Requirement, unless a waiver of the requirement is approved, and (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the American Iron and Steel Requirement, as may be requested by the Purchaser or the State. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Purchaser or State to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney’s fees) incurred by the Purchaser or State resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the State or any damages owed to the State by the Purchaser). While the Contractor has no direct contractual privity with the State, as a lender to the Purchaser for the funding of its project, the Purchaser and the Contractor agree that the State is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the State.



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## Appendix 5: Sample Certifications

The following information is provided as a sample letter of **step** certification for AIS compliance. Documentation must be provided on company letterhead.

Date

Company Name

Company Address

City, State Zip

Subject: American Iron and Steel Step Certification for Project (XXXXXXXXXXXX)

I, (company representative), certify that the (melting, bending, coating, galvanizing, cutting, etc.) process for (manufacturing or fabricating) the following products and/or materials shipped or provided for the subject project is in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.

Item, Products and/or Materials:

1. Xxxx
2. Xxxx
3. Xxxx

Such process took place at the following location:

\_\_\_\_\_

If any of the above compliance statements change while providing material to this project we will immediately notify the prime contractor and the engineer.

Signed by company representative

The following information is provided as a sample letter of certification for AIS compliance. Documentation must be provided on company letterhead.

Date

Company Name

Company Address

City, State Zip

Subject: American Iron and Steel Certification for Project (XXXXXXXXXXXX)

I, (company representative), certify that the following products and/or materials shipped/provided to the subject project are in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.

Item, Products and/or Materials:

1. Xxxx
2. Xxxx
3. Xxxx

Such process took place at the following location:

\_\_\_\_\_

If any of the above compliance statements change while providing material to this project we will immediately notify the prime contractor and the engineer.

Signed by company representative

**ARTICLE 1 – DEFINED TERMS**

- 1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:
- A. *Issuing Office* – The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered. The issuing office for this Project is City of Chattanooga Purchasing Department, 101 East 11th Street, Suite G13, Chattanooga, TN 37402.

**ARTICLE 2 – COPIES OF BIDDING DOCUMENTS**

- 2.01 Complete sets of the Bidding Documents in the number and for the deposit sum, if any, stated in the advertisement or invitation to bid may be obtained from the Issuing Office.
- 2.02 Complete sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.03 Owner and Engineer, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not authorize or confer a license for any other use.

**ARTICLE 3 – QUALIFICATIONS OF BIDDERS**

- 3.01 The minimum qualifications of a responsible Bidder include the following requirements:
- A. The Bidder shall maintain a permanent place of business. This requirement applies to the Bidder where the Bidder is a division of a corporation, or where the Bidder is 50 percent or more owned by a person, corporation or firm.
- B. The Bidder is licensed by the State of Tennessee to perform the work under this contract.
- C. The Bidder shall demonstrate adequate construction experience and sufficient equipment resources to properly perform the work under and in conformance with the Contract Documents. This evaluation will be based upon a list of completed or active projects and a list of construction equipment available to the Bidder to perform the work. The Owner may make such investigations as deemed necessary to determine the ability of the Bidder to perform the work, and the Bidder shall furnish to the Owner all such information and data for this purpose as the Owner may reasonably request. The Owner reserves the right to reject any Bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy the Owner that such Bidder is properly qualified to carry out the obligations of the Contract and to complete the Project contemplated therein. Adequate construction experience, for the purposes of this Project, shall mean meeting the experience requirements contained in technical specifications (Divisions 02, 03, 04, 05, 06, 07, 08, 09, 10, 12, 22, 23, 26, 27, 28, 31, 32, 33, 35, 40, 43, and 44).

- D. The Bidder shall demonstrate financial resources of sufficient strength to meet the obligations incident to the performance of the work covered by these Contract Documents. The ability to obtain the required Performance and Payment Bonds will not alone demonstrate adequate financial capability.
  - E. The Bidder shall demonstrate that he is familiar with the work covered by these Contract Documents.
- 3.02 To demonstrate Bidder's qualifications to perform the Work, Bidder shall submit with the Bid written evidence such as previous experience, present commitments, and such other data as may be called for below.
- A. Completion of Statement of Bidder's Qualifications, as included elsewhere in this Project Manual.
  - B. Bidder's Tennessee contractor license number and classification.
- 3.03 To demonstrate Bidder's qualifications to perform the Work, within three days of Owner's request, Bidder shall submit written evidence such as financial data and such other data as may be requested by Owner.
- 3.04 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.
- 3.05 A Bidder may be deemed as not responsible if:
- A. Bidder fails to furnish adequate information for the Owner to determine if the Bidder is qualified.
  - B. Bidder fails to furnish information, evidence, and statements of the principal owner when the Bidder is owned 50 percent or more by another firm, corporation, or person.
  - C. Bidder is in arrears on any existing contracts, interested in any litigation against the City or having defaulted on a previous contract.
  - D. Bidder fails to have access to adequate equipment.
  - E. Bidder has uncompleted work which in the judgment of the City will hinder or prevent prompt completion of additional work, if awarded.

#### **ARTICLE 4 – EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA, AND SITE**

##### **4.01 *Subsurface and Physical Conditions***

- A. The Supplementary Conditions identify:
  - 1. Those reports known to Owner of explorations and tests of subsurface conditions at or contiguous to the Site.

2. Those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).
- B. Copies of reports and drawings referenced in Paragraph 4.01.A will be made available by Owner to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the “technical data” contained therein upon which Bidder is entitled to rely as provided in Paragraph 4.02 of the General Conditions has been identified and established in Paragraph 4.02 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any “technical data” or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

#### 4.02 *Underground Facilities*

- A. Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site is based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.

#### 4.03 *Hazardous Environmental Condition*

- A. The Supplementary Conditions identify any reports and drawings known to Owner relating to a Hazardous Environmental Condition identified at the Site.
- B. Copies of reports and drawings referenced in Paragraph 4.03.A will be made available by Owner to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the “technical data” contained therein upon which Bidder is entitled to rely as provided in Paragraph 4.06 of the General Conditions has been identified and established in Paragraph 4.06 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any “technical data” or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

- 4.04 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated subsurface or physical conditions appear in Paragraphs 4.02, 4.03, and 4.04 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work, appear in Paragraph 4.06 of the General Conditions.

- 4.05 On request, Owner will provide Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies. Bidder shall comply with all applicable Laws and Regulations relative to excavation and utility locates.

- 4.06 Reference is made to Article 7 of the Supplementary Conditions for the identification of the general nature of other work that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) that relates to the Work contemplated by these Bidding Documents. On request, Owner will provide to each Bidder for examination access to or copies of contract documents (other than portions thereof related to price) for such other work.
- 4.07 It is the responsibility of each Bidder before submitting a Bid to:
- A. examine and carefully study the Bidding Documents, and the other related data identified in the Bidding Documents;
  - B. visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
  - C. become familiar with and satisfy Bidder as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work;
  - D. carefully study all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) that have been identified in Paragraph 4.02 of the Supplementary Conditions as containing reliable "technical data," and (2) reports and drawings of Hazardous Environmental Conditions, if any, at the Site that have been identified in the Paragraph 4.06 of the Supplementary Conditions as containing reliable "technical data";
  - E. consider the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents; and (3) Bidder's safety precautions and programs;
  - F. agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price(s) bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;
  - G. become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
  - H. promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder; and
  - I. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.

- 4.08 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by Engineer are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

#### **ARTICLE 5 – PRE-BID CONFERENCE**

- 5.01 A Pre-Bid Conference will be held if so indicated in the Advertisement for Bids. Oral statements may not be relied upon and will not be binding or legally effective.

#### **ARTICLE 6 – SITE AND OTHER AREAS**

- 6.01 The Site is identified in the Bidding Documents. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by Owner unless otherwise provided in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by Contractor.

#### **ARTICLE 7 – INTERPRETATIONS AND ADDENDA**

- 7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to Owner in writing. Interpretations or clarifications considered necessary by Owner in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by Owner as having received the Bidding Documents. Questions received less than ten days prior to the date for opening of Bids may not be answered. Oral and other interpretations or clarifications will be without legal effect.
- 7.02 Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by Owner or Engineer.
- 7.03 Questions and other inquiries shall be submitted to the City of Chattanooga Purchasing Department, 101 East 11th Street, Suite G13, Chattanooga, TN 37402 and shall utilize the Request for Bidder Information which follows this section.

#### **ARTICLE 8 – BID SECURITY**

- 8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of five percent of Bidder's maximum Bid price and in the form of a certified check or cashier's check, a Bid bond (on the form attached or on a surety company's standard bid bond form) issued by a surety meeting the requirements of Paragraphs 5.01 and 5.02 of the General Conditions.
- 8.02 If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within ten days after the Notice of Award, Owner may



consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. Such forfeiture shall be Owner's exclusive remedy if Bidder defaults.

- 8.03 Attorneys-in-Fact of other officers who sign bid bonds for a surety company must file with such bonds a certified copy of his power of attorney authorizing him to sign said bonds.

#### **ARTICLE 9 – CONTRACT TIMES**

- 9.01 The number of days within which, or the dates by which, the Work is to be substantially completed and ready for final payment are set forth in the Agreement.

#### **ARTICLE 10 – LIQUIDATED DAMAGES**

- 10.01 Provisions for liquidated damages are set forth in the Agreement.

#### **ARTICLE 11 – SUBSTITUTE AND “OR-EQUAL” ITEMS**

- 11.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, or those substitute or “or-equal” materials and equipment approved by Engineer and identified by Addendum. The materials and equipment described in the Bidding Documents establish a standard of required type, function and quality to be met by any proposed substitute or “or-equal” item. No item of material or equipment will be considered by Engineer as a substitute or “or-equal” unless written request for approval has been submitted by Bidder and has been received by Engineer at least 15 days prior to the date for receipt of Bids. Each such request shall conform to the requirements of Paragraph 6.05 of the General Conditions. The burden of proof of the merit of the proposed item is upon Bidder. Engineer's decision of approval or disapproval of a proposed item will be final. If Engineer approves any proposed item, such approval will be set forth in an Addendum issued to all prospective Bidders. Bidders shall not rely upon approvals made in any other manner.

#### **ARTICLE 12 – SUBCONTRACTORS, SUPPLIERS AND OTHERS**

- 12.01 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, individuals, or entities to be submitted to Owner in advance of a specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to Owner a list of all such Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, individual, or entity if requested by Owner. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute without an increase in the Bid.
- 12.02 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, individuals, or entities. Declining to make requested substitutions will not

constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to revocation of such acceptance after the Effective Date of the Agreement as provided in Paragraph 6.06 of the General Conditions.

- 12.03 Contractor shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom Contractor has reasonable objection.

### **ARTICLE 13 – PREPARATION OF BID**

- 13.01 The Bid Form is included with the Bidding Documents.
- 13.02 All blanks on the Bid Form shall be completed in ink and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each Bid item and alternate item listed therein. In the case of optional alternatives the words “No Bid,” “No Change,” or “Not Applicable” may be entered.
- 13.03 A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown.
- 13.04 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown.
- 13.05 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown.
- 13.06 A Bid by an individual shall show the Bidder’s name and official address.
- 13.07 A Bid by a joint venture shall be executed by each joint venturer in the manner indicated on the Bid Form. The official address of the joint venture shall be shown.
- 13.08 All names shall be printed in ink below the signatures.
- 13.09 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.
- 13.10 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.

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**ARTICLE 14 – BASIS OF BID; COMPARISON OF BIDS****14.01 Lump Sum and Unit Prices**

- A. Bidders shall submit a bid on a lump sum or unit price basis, as indicated on the Bid schedule, for each item of Work listed in the Bid schedule.
- B. The total of all estimated prices will be the sum of the products of the estimated quantity of each item and the corresponding unit price. The final quantities and Contract Price will be determined in accordance with Paragraph 11.03 of the General Conditions.
- C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

**14.02 Allowances**

- A. For cash allowances the various other Bid prices shall include such amounts as the Bidder deems proper for Contractor's overhead, costs, profit, and other expenses on account of cash allowances, if any, named in the Contract Documents, in accordance with Paragraph 11.02.B of the General Conditions.

**ARTICLE 15 – SUBMITTAL OF BID**

15.01 With each set of the Bidding Documents, a Bidder is furnished one separate unbound copy of the Bid Form, Bid Bond Form and the required documents listed below. The unbound copy of the Bid Form is to be completed and submitted with the Bid security along with the documents listed below. The bidder shall submit one original of all documents in the envelope.

- A. Statement of Bidders Qualifications
- B. Affidavit of No Collusion by Prime Bidder
- C. Drug-Free Workplace Affidavit
- D. Attestation Regarding Personnel Used in Contract Performance
- E. Certification By Proposed Prime or Subcontractor Regarding Equal Employment Opportunity
- F. Certification Regarding Debarment, Suspension and Other Responsibility Matters
- G. Iran Divestment Act Compliance Certification

15.02 A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the Advertisement for Bids and shall be enclosed in a sealed envelope with the "Contractor's Identification" form securely attached thereto and shall contain the Bid security and other required documents. If a Bid is sent by mail or other delivery system,

the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to the place indicated in the Advertisement for Bids.

- 15.03 The Bidder shall comply with Tennessee Code Annotated (TCA) Chapter 6 of Title 62, hereby incorporated by reference. Except for bids in an amount less than twenty five thousand dollars, the Bidder shall provide the name, license number, expiration date thereof, and license classification of the contractors applying to the bid for the prime contract and for the masonry contract where the total cost of the masonry portion of the construction project exceeds one hundred thousand dollars, materials and labor, electrical, plumbing, heating, ventilation and air conditioning contracts on the outside of the envelope containing the Bid. Only one contractor in such classification may be listed. Prime contractor bidders who are to perform the masonry portion of the construction project which exceeds one hundred thousand dollars, materials and labor, the electrical, plumbing, heating, ventilation and air conditioning shall be so designated upon the outside of the envelope. When the bid is less than twenty five thousand dollars, the name of the contractor only shall appear on the outside of the envelope containing the bid. Failure of any bidder to comply therewith shall void such bid and such bid shall not be considered.

#### **ARTICLE 16 – MODIFICATION AND WITHDRAWAL OF BID**

- 16.01 A Bid may be modified or withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.
- 16.02 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.
- 16.03 A bid may be withdrawn after the time period stated in the Advertisement for Bids after the date of the opening of the bids, provided that the Bidder has not been notified within said time period that his bid has been accepted.

#### **ARTICLE 17 – OPENING OF BIDS**

- 17.01 Bids will be opened at the time and place indicated in the Advertisement or Invitation to Bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.
- 17.02 The officer whose duty is to open them will decide when the specified time has arrived, and no bids received thereafter will be considered. No responsibility will be attached to any officer for the premature opening of a bid not properly addressed and identified. Bidders or their authorized agents are invited to be present.

### 17.03 Filing of Proposal

- A. No proposals will be considered by the City unless they are filed in sealed envelopes with the City within the time limit for receiving proposals as stated in the advertisement and shall be made on proposal forms attached to Specifications, together with the Contract Documents, Bid Bond, and Statement of Compliance with General Contractors Licensing Law and other required miscellaneous forms, all of which are to be sealed in an envelope addressed to the City of Chattanooga, Tennessee, with the completed "Contractor's Identification" form securely attached thereto.
- B. Each proposal must contain the full name and address of each person, firm or corporation interested therein. In case of a partnership, the name and address of each partner must be stated. The firm, corporation or individual name of the bidder must be signed in the space provided for the signature on the proposal blank. In case of a corporation, the title of the officer signing must be stated, and the person signing shall also state under the laws of what State the corporation was chartered and the names and titles of the officers having authority, under the by-laws, to sign contracts. The proposal shall also be attested by its Secretary. In case of a partnership or firm, the signature of at least one of the partners must follow the firm name.

17.04 Opening of Proposals. The proposals filed with the City will be opened at the time stated in the advertisement. Bidders are invited to attend the meeting at the time set for opening of proposals, at which time they should make any protests as to procedure followed in inviting bids.

## **ARTICLE 18 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE**

18.01 All Bids will remain subject to acceptance for the period of time stated in the Advertisement for Bids, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

## **ARTICLE 19 – EVALUATION OF BIDS AND AWARD OF CONTRACT**

19.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to not be responsible. Owner may also reject the Bid of any Bidder if Owner believes that it would not be in the best interest of the Project to make an award to that Bidder. Owner also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder. Nothing herein shall be deemed to limit the discretion of the City to determine whether or not a bidder not hereby disqualified is the lowest responsible bidder.

19.02 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.

19.03 In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.

- 19.04 A bid may be declared by the Owner to be non-responsive for, but not limited to, any of the following reasons:
- A. Bid contains blanks, Proposal is not complete or required accompanying documents, certifications, and statements are not included.
  - B. Bid contains modifications or alterations of the Bid Form or other Contract Documents.
  - C. Bid is a qualified or conditional bid.
  - D. Bid contains unrealistic data, erroneous data, inaccurate data, or data that cannot be documented or substantiated.
- 19.05 Bidders debarred or suspended under Chattanooga City Code, Part II, Chapter 2, Article XX (Ordinance No. 8259), or who are debarred or suspended by operation of any other applicable state or federal law or regulation, are not eligible to be contractors or subcontractors to this contract.
- 19.06 In evaluating Bidders, Owner will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions.
- 19.07 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work in accordance with the Contract Documents.
- 19.08 All Bidders are required to execute a notarized Affidavit of No Collusion by Prime Bidder, and a Bidder who fails to do so will be disqualified.
- 19.09 The Contracts will be awarded to the responsive, responsible Bidders submitting the lowest Bid complying with the conditions of the Contract Documents. Award will be made on the basis of the prices given in the Bid.
- 19.10 Conditions Precedent to Award of Contracts. The following stipulations shall all and severally be conditions precedent to the award by the City of Chattanooga of all contracts for construction, to-wit:
- A. No member of the City Council nor any officer, director or other person whose duty it is to vote for, let out, overlook or in any manner superintend this contract and who is related to said member within the third degree by either consanguinity or affinity, nor any other official who may be directly interested in this contract or work of any kind whatsoever under its direction. "Directly interested" means any contract with the official himself or with any business in which the official is the sole proprietor, a partner, or the person having the controlling interest. "Controlling interest" shall include the individual with the ownership or control of the largest number of outstanding shares owned by any single individual or corporation.

- B. It shall not be lawful for any officer, director, or other person whose duty it is to vote for, let out, overlook, or in any manner to superintend any work or any contract in which the City shall or may be interested, to be indirectly interested in any such contract unless the officer publicly acknowledges his interest and rescues himself from any of his duties which include the consideration of, voting on, letting out, overseeing, or superintending the work or contract giving rise to the conflict. "Indirectly interested" means any contract in which the officer is interested but not directly so, but includes contracts where the officer is directly interested but is the sole supplier of goods or services in a municipality or county. (See T.C.A. Section 12-4-101, et seq.)
- C. The essence of all the contracts shall be excellence of quality, integrity and durability of the completed product as specified; and the contractor hereunder shall be held responsible therefor.
- D. The contractor shall maintain and guarantee the integrity of the completed work for a full period of one year after the completion as set forth more fully in Section 4 of these General Provisions.
- E. The decisions of the Engineer, as to quality, integrity and durability of the work shall be final and conclusive as to all parties to said contract, whether it be directly by and between the contractor and said City or by and between him and another party; and said Engineer shall have full authority to condemn by written notice to contractor, or his agent or foreman on job, and shall order the removal, reconstruction and restoration of all work that in his opinion, is in any respect inferior, defective or faulty, or that shows signs of disintegration and failure, at any time before final estimate is issued and payment made therefor, or within a period of one year after the completion and acceptance thereof in writing by the City.
- F. Contractor shall remove, reconstruct and restore all such condemned work in full conformance with the specifications, and in complete compliance with the requirements of the official notice, in writing, of said Engineer relating thereto, and within the period of time designated in the notice.
- G. Should the contractor neglect, refuse, or fail to remove, reconstruct and restore all of the defective work so condemned and rejected, within the period of time, as required by said official notice, then and in event of such failure on contractor's part, whether said work was executed by contract directly with the City or by private contract directly with other parties, the City of Chattanooga will look to and require, respectively, the surety on the Performance Bond, executed by the contractor under contract directly with said City, to make good and have all such defective and condemned work removed, reconstructed and restored in complete compliance with the requirements of the official notice of said Engineer to that effect; and likewise, in the event that such work was done under private contract, as aforesaid, the City of Chattanooga will look to and require the surety on the Performance Bond executed by said contractor to make good and have all such defective and condemned work removed, reconstructed and restored in complete compliance with the requirements of the official notice of said Engineer to that effect, in each instance as the case may be.
- H. The unit price bid by the contractor for any and all work and the compensation to be paid therefore shall cover and include the cost of all materials, forms, supports, labor, work and things necessary for a complete workmanlike job, and shall also include the

cost of all services, duties and obligations of said contractor and of the corresponding surety on the Performance Bond collateral therewith as stipulated in subsections above set out, to the satisfaction and approval of the Engineer.

#### 19.11 Award of Contract.

- A. The City acting by and through the City Council will either award the contract or reject all proposals received thereon after the formal opening of proposals and evaluation of the bids.
- B. The award of the contract, if it is awarded, will be to the lowest responsible bidder whose proposal complies with the requirements of the City.
- C. Projects will be awarded only to responsible bidders, and an award will not be made in any case, until all necessary investigations have been made into the responsibility of the low bidder.
- D. If the project is funded in part by a state or federal grant, then the award may be subject to the concurrence of the granting contract agency.
- E. All references to contract include each to be awarded where multiple awards are made.

### **ARTICLE 20 – CONTRACT SECURITY AND INSURANCE**

20.01 Article 5 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it shall be accompanied by such bonds.

### **ARTICLE 21 – SIGNING OF AGREEMENT**

21.01 When Owner issues a Notice of Award to the Successful Bidder, Owner shall notify the Successful Bidder that the required number of unsigned counterparts of the Agreement along with the other Contract Documents will be available to be picked up, which are identified in the Agreement as attached thereto. Within ten days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to Owner. Within ten days thereafter, Owner shall deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings with appropriate identification.

21.02 Upon failure of the bidder to execute the required bonds or to sign the required contract within ten days after the contract is awarded, he will be considered to have abandoned his proposal and the City may annul the award. By reason of the uncertainty of market prices of materials and labor, and it being impracticable and extremely difficult to fix the amount of damages to which the City would be put by reason of said bidder's failure to execute said bonds and contract within ten days, the proposal guaranty accompanying the proposal shall be the agreed amount of damages which the City will suffer by reason of such failure on the part of the bidder and shall thereupon immediately be forfeited to the City. The filing of a proposal will be considered as an acceptance of this provision.



**ARTICLE 22 – DELETED**

**ARTICLE 23 – RETAINAGE**

23.01 Provisions concerning Contractor's rights to deposit securities in lieu of retainage are set forth in the Agreement.

**ARTICLE 24 – DELETED**

**ARTICLE 25 – DELETED**

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## Certified Disadvantaged Business Enterprises (DBE) List

Using Governor's Diversity Business Office and State DOT and CCR DBE Directories to Find Certified WBEs and MBEs

Here are the links:

<https://tn.diversitysoftware.com/FrontEnd/VendorSearchPublic.asp?TN=tn&XID=1215>

[www.osdbu.dot.gov/DBEProgram/StateDOTDBESites.cfm](http://www.osdbu.dot.gov/DBEProgram/StateDOTDBESites.cfm)

CCR can be used to search for SBA SDBs. Since the SBA SDB certification is considered acceptable under the EPA DBE Program, firms found using the following search criteria can count toward EPA MBE/WBE fair share objectives.

Access the CCR search page at [www.bpn.gov/CCRSearch/Search.aspx](http://www.bpn.gov/CCRSearch/Search.aspx)

[http://www.epa.gov/osbp/dbe\\_team.htm](http://www.epa.gov/osbp/dbe_team.htm)

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**Disadvantaged Business Enterprise (DBE) Requirements**  
for  
State Revolving Fund Loans Awarded after May 27, 2008

**GUIDANCE DOCUMENT**

**Items included in the Guidance Document:**

- **General Contract Administration Provisions Table**
- **Six Good Faith Efforts, Purpose and Definitions Table**
- **List of DBE Forms for Loans Awarded After May 27, 2008**

<b>GENERAL CONTRACT ADMINISTRATION PROVISIONS—www.epa.gov</b>			
<b>Requirement</b>	<b>Circumstance</b>	<b>Responsible Party:</b>	<b>Submitted To:</b>
A <b>Loan Recipient</b> must be notified in writing by its <b>Prime Contractor</b> prior to any termination of a <b>DBE Subcontractor</b> for convenience by the <b>Prime Contractor</b> .	Termination of a <b>DBE Subcontractor</b> for convenience by the <b>Prime Contractor</b>	<b>Prime Contractor</b>	<b>Loan Recipient</b>
A <b>Loan Recipient</b> must require its <b>Prime Contractor</b> to pay its <b>Subcontractor</b> for satisfactory performance no more than 30 days from the <b>Prime Contractor's</b> receipt of payment from the <b>Loan Recipient</b> .	<b>DBE Subcontractor's</b> satisfactory performance	<b>Loan Recipient</b> <b>Prime Contractor</b>	<b>DBE Subcontractor</b>
If a <b>DBE Subcontractor</b> fails to complete work under the subcontract for any reason, the <b>Loan Recipient</b> must require the <b>Prime Contractor</b> to employ the <b>Six Good Faith Efforts</b> (see Table below) if soliciting a replacement <b>Subcontractor</b> .	<b>DBE Subcontractor</b> fails to complete work under the subcontract for any reason and will be replaced	<b>Loan Recipient</b> <b>Prime Contractor</b>	<b>SRF Loan Program</b>
A <b>Loan Recipient</b> must require its <b>Prime Contractor</b> to employ the <b>Six Good Faith Efforts</b> (see Table below) even if the <b>Prime Contractor</b> has achieved its fair share objectives.	Employment of the <b>Six Good Faith Efforts</b>	<b>Loan Recipient</b> <b>Prime Contractor</b>	<b>SRF Loan Program</b>
Inclusion, completion, and/or transmittal of required <b>DBE Forms</b> as instructed below: <b>Loan Recipient Requirements</b> <b>Bidder Requirements</b> <b>DBE Participation/Certification Summary</b> <b>Advertisement for Bids and Publisher's Affidavit</b> 10 Certified Letters and Return Receipts to certified <b>DBEs</b> <b>Good Faith Letter</b> <b>Prime Contractor's Notice Letter</b> for EPA Form 6100-2 <b>EPA Form 6100-2</b> <b>EPA Form 6100-3</b> <b>EPA Form 6100-4</b>	---	<b>Loan Recipient</b> <b>Prime Contractor</b> <b>DBE Subcontractor</b>	See instructions below and on Forms



**Disadvantaged Business Enterprise (DBE) Requirements**  
**for**  
**State Revolving Fund Loans Awarded after May 27, 2008**

**GUIDANCE DOCUMENT**

<b>SIX GOOD FAITH EFFORTS—www.epa.gov</b>	
<b>PURPOSE</b>	The Good Faith Efforts are required methods employed by all EPA financial assistance agreement recipients to ensure that all disadvantaged business enterprises (DBEs) have the opportunity to compete for procurements funded by EPA financial assistance dollars.
<b>Definitions</b>	
<b>EFFORT 1</b>	Ensure DBEs are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities. For Indian Tribal, State and Local and Government recipients, this will include placing DBEs on solicitation lists and soliciting them whenever they are potential sources.
<b>EFFORT 2</b>	Make information on forthcoming opportunities available to DBEs and arrange time frames for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. This includes, whenever possible, posting solicitations for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date.
<b>EFFORT 3</b>	Consider in the contracting process whether firms competing for large contracts could subcontract with DBEs. For Indian Tribal, State and local Government recipients, this will include dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.
<b>EFFORT 4</b>	Encourage contracting with a consortium of DBEs when a contract is too large for one of these firms to handle individually.
<b>EFFORT 5</b>	Use the services and assistance of the Small Business Administration (SBA) and the Minority Business Development Agency of the Department of Commerce.
<b>EFFORT 6</b>	If the <b>Prime Contractor</b> awards subcontracts, require the <b>Prime Contractor</b> to take the steps in the Good Faith Efforts 1 through 5 (above) and in the <u>General Contract Administration Provisions</u> (above).

**Disadvantaged Business Enterprise (DBE) Requirements**  
for  
**State Revolving Fund Loans Awarded after May 27, 2008**

**GUIDANCE DOCUMENT**

<b>DBE FORMS FOR SRF LOANS AWARDED AFTER MAY 27, 2008—www.epa.gov</b>				
<b>Form</b>	<b>Requirement</b>	<b>Provided By:</b>	<b>Completed By:</b>	<b>Submitted To:</b>
List of certified <b>DBE</b> contractors, subcontractors, supplies vendors, equipment vendors, and service providers	Keep list with project files/information for duration of project	<b>SRF Loan Program</b>	---	---
<b>Loan Recipient's Requirements</b> regarding DBEs	Include this information sheet in the Information for Bidders section of bid documents	<b>SRF Loan Program</b>	---	To be included in the contract specifications book
<b>Bidder's Requirements</b> regarding DBEs	Include this information sheet in the Information for Bidders section of bid documents	<b>SRF Loan Program</b>	---	To be included in the contract specifications book
<b>Loan Recipient's Certification and Summary of DBE Participation</b>	To be completed and submitted with the Authority-to-Award/ Bid Package.  The SRF Loan Program must be notified of any changes, additions, or deletions to the contract during construction.	<b>SRF Loan Program</b>	<b>Loan Recipient</b>	<b>SRF Loan Program</b>
<b>Advertisement for Bids and Publisher's Affidavit</b>	<b>DBE</b> solicitation information must be included in the actual advertisement for bids.  A Publisher's Affidavit (signed, original, notarized certification of publication) denoting the actual published date of the advertisement will be submitted to the SRF Loan Program as part of the Authority-to-Award/Bid Package documents.	An example advertisement with appropriate <b>DBE</b> language is supplied to the Loan Recipient by the <b>SRF Loan Program</b>	<b>Loan Recipient</b>	A copy of the actual advertisement and a Publisher's Affidavit will be submitted to the <b>SRF Loan Program</b> as part of the Authority-to-Award/Bid Package documents
<b>10 Certified Letters and Return Receipts</b> to potential certified DBE subcontractors, supplies vendors, service providers, and/or equipment vendors	These certified letters and copies of the corresponding return mail receipts are submitted with the completed <b>Loan Recipient's DBE Participation and Certification Summary Form.</b>	<b>Prime Contractor and/or Loan Recipient</b>	<b>Loan Recipient</b>	SRF Loan Program as part of the Authority-to-Award/Bid Package documents
<b>Good Faith Letter</b>	If <b>no</b> <b>DBE</b> participation is obtained for the contract, the "Good Faith" letter must be written.	Form letter provided by the <b>SRF Loan Program</b>	<b>Loan Recipient</b>	<b>SRF Loan Program</b>

**Disadvantaged Business Enterprise (DBE) Requirements**  
for  
State Revolving Fund Loans Awarded after May 27, 2008

**GUIDANCE DOCUMENT**

<b>DBE FORMS FOR SRF LOANS AWARDED AFTER MAY 27, 2008—www.epa.gov</b>				
<b>Form</b>	<b>Requirement</b>	<b>Provided By:</b>	<b>Completed By:</b>	<b>Submitted To:</b>
<b>Prime Contractor's Notice Letter</b> for EPA Form 6100-2	The <b>Prime Contractor</b> must submit the Notice Letter to verify that Form 6100-2 was supplied to all <b>DBE Subcontractors</b> participating in the contract.	<b>SRF Loan Program</b>	<b>Prime Contractor</b>	<b>Loan Recipient</b> for inclusion in the Authority-to-Award / Bid / Proposal package
EPA Form <b>6100-2</b>	<b>Loan Recipient</b> required to have <b>Prime Contractors</b> provide form to <b>DBE Subcontractors</b>  This form gives a <b>DBE Subcontractor</b> the opportunity to describe the work the <b>DBE Subcontractor</b> received from the <b>Prime Contractor</b> , how much the <b>DBE Subcontractor</b> was paid, and any other concerns the <b>DBE Subcontractor</b> might have.	<b>Loan Recipient</b>  <b>Prime Contractors</b>	<b>DBE Subcontractors</b>	<b>EPA DBE Coordinator</b> at the conclusion of <b>DBE Subcontractor</b> participation in the project  (Address on Form)
EPA Form <b>6100-3</b>	<b>Loan Recipient</b> required to have <b>Prime Contractors</b> provide form to <b>DBE Subcontractors</b>  This form captures an intended <b>Subcontractor's</b> description of work to be performed for the <b>Prime Contractor</b> and the price of the work submitted to the <b>Prime Contractor</b> .	<b>Loan Recipient</b>	<b>Prime Contractors</b>  <b>DBE Subcontractors</b>	<b>Loan Recipient</b> for inclusion in the Authority-to-Award / Bid / Proposal package
EPA Form <b>6100-4</b>	<b>Loan Recipient</b> required to have <b>Prime Contractors</b> complete the form  This form captures the <b>Prime Contractor's</b> intended use of an identified <b>DBE Subcontractor</b> and the estimated dollar amount of the subcontract.	<b>Loan Recipient</b>	<b>Prime Contractors</b>	<b>Loan Recipient</b> for inclusion in the Authority-to-Award / Bid / Proposal package

# STATE REVOLVING FUND LOAN PROGRAM

## Loan Recipient's Requirements for Solicitation and Documentation of **Disadvantaged Business Enterprises (DBE) Participation**

A goal-oriented system has been established to promote **Disadvantaged Business Enterprises (DBE)** participation by providing construction services, professional services, supplies, and/or equipment on SRF Loan-funded water and wastewater projects. It is the Loan Recipient's responsibility to ensure that Bidders make a good faith effort during the bidding phase to solicit for subcontractor participation by **DBE** subcontractors, service professionals, suppliers, and/or equipment vendors on all SRF-funded projects.

### DEFINITIONS

**DBE - Minority Business Enterprise (MBE):** A qualified socially and economically disadvantaged minority-owned business certified by any State or Federal agency, such as the Tennessee Department of Transportation, U.S. EPA's Office of Small and Disadvantaged Business Utilization, or the U.S. Small Business Administration.

**DBE - Women's Business Enterprise (WBE):** A qualified independent business at least 51% owned by a woman or women and certified by any State or Federal agency such as the Tennessee Department of Transportation, U.S. EPA's Office of Small and Disadvantaged Business Utilization, or the U.S. Small Business Administration.

**Fair-Share Goals:** The MBE fair-share goal is 2.6% for construction and 5.2% for supplies, services, and equipment. The WBE fair share goal is 2.6% for construction and 5.2% for supplies, services, and equipment.

### INSTRUCTIONS TO LOAN RECIPIENTS

#### Pre-Bid Requirements

Loan Recipients must include the SRF Loan Program's "Bidder's Requirements for Solicitation and Documentation of **DBE** Participation on SRF-Funded Projects" information sheet in the Information for Bidders section of bid documents. Loan Recipients must also ensure that Bidders take the following affirmative steps that constitute a good-faith effort to secure **DBE** participation:

- Include certified **DBEs** on solicitation lists whenever they are potential sources,
- Divide construction contracts into subcontracts, when economically feasible, to encourage maximum participation by **DBEs**,
- Establish delivery schedules, where requirements of the work permit, that encourage participation by **DBEs**,
- Use the services and assistance of the Office of Minority Business Enterprises of the U.S. Department of Commerce, or the U.S. EPA's Office of Small and Disadvantaged Business Utilization. For assistance or information, Bidders may be referred to:

Tennessee Department of Transportation  
Small Business Development  
505 Deaderick Street, Suite 1800  
Nashville, TN 37243-0347  
(615) 741-3681  
<http://www.tdot.state.tn.us/dbedirectinternet/Vendor.aspx>

Mr. W. Clinton Smith, District Director  
U.S. Small Business Administration  
50 Vantage Way, Suite 201  
Nashville, TN 37228  
(615) 736-5881  
<http://pro-net.sba.gov/>

Ms. Jeanette L. Brown, Director  
U.S. Environmental Protection Agency  
Office of Small and Disadvantaged Business Utilization  
1200 Pennsylvania Avenue, N.W. (1230A)  
Washington, D.C. 20460  
(202) 564-4100  
<http://www.epa.gov/osdbu/>

### POST-BID REQUIREMENTS

**Whether or not DBE participation was obtained**, the Loan Recipient must complete the "**Loan Recipient's Certification and Summary**" form for every contract detailing whether or not **DBE** participation of subcontractors, professional service providers, suppliers, and/or equipment vendors was obtained. The "**Loan Recipient's Certification and Summary**" form must be submitted to the Administrative Section of the SRF Loan Program

## STATE REVOLVING FUND LOAN PROGRAM

### **Loan Recipient's Requirements for Solicitation and Documentation** **of** **Disadvantaged Business Enterprises (DBE) Participation**

prior to the award of any construction contract(s) along with the newspaper **advertisement**, a **Publisher's Affidavit**, and **return receipts** and copies of the **certified letters** that were mailed to a minimum of 10 qualified **DBEs**.

**If DBE participation was obtained**, the "Loan Recipient's Certification and Summary" form must clearly indicate whether **DBE** participation was obtained from either a subcontractor, professional service provider, supplier, and/or equipment vendor participation; identify the **DBE** firm(s) to be used; and certify that the **DBE** firm(s) is a certified **DBE**. In addition to the "Loan Recipient's Certification and Summary" form, the Loan Recipient must include in the submittal to the SRF Loan Program, copies of the **Prime Contractor's Notice Letter for EPA Form 6100-2, EPA Form 6100-3, and EPA Form 6100-4**.

**If no DBE participation was obtained**, the Loan Recipient must submit a separate letter documenting that a "**good-faith effort**" was made to secure **DBE** participation. This letter is submitted along with the above-mentioned "Loan Recipient's Certification and Summary" form, newspaper **advertisement**, **Publisher's Affidavit**, **return receipts**, and copies of the **certified letters**. The SRF Loan Program provides a template to the Loan Recipient for this letter.

*This documentation is the only form of documentation that will be accepted by the SRF Loan Program. Failure to provide the required documentation may result in a delay of the SRF Loan Program's approval of the Authority-to-Award/Bid Package, thereby delaying the award of the construction contract(s).*

The Loan Recipient should direct all inquiries regarding the SRF Loan Program's requirements for **DBE** solicitation and documentation to Dr Bagher Sami at (615) 532-0445, [bagher.sami@tn.gov](mailto:bagher.sami@tn.gov), or the following address:

Dr. Bagher Sami, Administrative Section Manager  
State Revolving Fund Loan Program  
L&C Tower, 8th Floor  
401 Church St.  
Nashville, TN 37243

# STATE REVOLVING FUND LOAN PROGRAM

## Loan Recipient's Good Faith Effort Letter for DBE Participation

**Insert on Loan Recipient's Letterhead**

### Date

Dr. Bagher Sami, Manager  
Administrative Section  
State Revolving Fund Loan Program  
L & C Tower, 8<sup>th</sup> Floor  
401 Church Street  
Nashville, Tennessee 37243

RE: Good Faith Effort – Disadvantaged Business Enterprises (DBE) Participation  
City/County/UD/Authority (?? County), Tennessee  
Loan No. SRF/CWA/CGA/DWF/DWA/DGA 200?-???  
Contract No. ????, Contract Description

Dear Dr. Sami:

This letter is to inform you that the **City/County/UD/Authority** did, in good faith, encourage Disadvantaged Business Enterprises (DBE) to participate in the above referenced project by placing a special notice to Disadvantaged Business Enterprises (DBE) firms in both the invitation to bid and the public advertisement for bids. The **City/County/UD/Authority**, through the consulting engineer, **(A/E Consulting Firm)**, sent a copy of the invitation to bid and a set of contract documents to the Office of Minority Business Enterprises. The **City/County/UD/Authority** also sent certified letters, return receipts requested, to a minimum of ten (10) DBE potential subcontractors, professional service providers, suppliers, and equipment vendors requesting DBE participation through their office, A/E, or their contractor. The consulting engineer on this project is **(Name), (Firm)**.

We have not received any DBE participation; we believe we have made a good faith effort.

If you have any questions, please don't hesitate to contact us.

Sincerely,

**(Authorized Representative Name)**

**(Authorized Representative Title)**

cc: **(A/E Consultant Name and Firm)**

# STATE REVOLVING FUND LOAN PROGRAM

## Loan Recipient's Certification and Summary

of

### **Disadvantaged Business Enterprises (DBE) Participation**

SRF Loan Recipient: \_\_\_\_\_ SRF Loan No. \_\_\_\_\_

#### INSTRUCTIONS TO SRF LOAN RECIPIENTS

The SRF Loan Recipient's Authorized Representative must clearly indicate the Contractor's **Disadvantaged Business Enterprises (DBE)** participation results by placing a check in the appropriate box below. The remainder of the form must be completed if **DBE (Minority Business Enterprise-MBE or Women's Business Enterprise -WBE)** participation was obtained. The form must be signed and dated and returned to Dr. Bagher Sami of the Administrative Section of the SRF Loan Program.

The **completed Form** must be accompanied by **copies of the certified letters** sent from the selected Bidder to a minimum of 10 qualified **DBE** potential subcontractors, supplies vendor, services provider, and/or equipment vendors, and **copies of the corresponding return mail receipts**.

The SRF Loan Program must be notified of any changes, additions, or deletions to the contract during construction.

**No, Disadvantaged Business Enterprises (DBE) participation was not obtained for this SRF-funded project.** I certify that a good-faith effort was made to solicit **DBE** participation in accordance with the four affirmative steps outlined in the SRF Loan Program's Requirements for Solicitation and Documentation of **DBE** Participation on SRF-Funded Projects. A letter documenting that a good-faith effort was made to secure **DBE** participation has been provided to the SRF Loan Program.

OR

**Yes, Disadvantaged Business Enterprises (DBE) participation was obtained for this SRF-funded project.** I certify that the **DBE** firms participating in this SRF-funded project are qualified in accordance with the SRF Loan Program's Requirements for Solicitation and Documentation of **DBE** Participation on SRF-Funded Projects. Below is a listing of firms to be utilized and the amounts of their respective participation.

1. **DBE type (circle one):**    Subcontractor,    Supplies Vendor,    Service Provider,    Equipment Vendor  
**DBE Name:** \_\_\_\_\_  
**Address:** \_\_\_\_\_  
**Subcontract Amount:**    \$ \_\_\_\_\_    MBE    \_\_\_    WBE    \_\_\_    % of Contract \$:    \_\_\_\_\_ %
  
2. **DBE type (circle one):**    Subcontractor,    Supplies Vendor,    Service Provider,    Equipment Vendor  
**DBE Name:** \_\_\_\_\_  
**Address:** \_\_\_\_\_  
**Subcontract Amount:**    \$ \_\_\_\_\_    MBE    \_\_\_    WBE    \_\_\_    % of Contract \$:    \_\_\_\_\_ %
  
3. **DBE type (circle one):**    Subcontractor,    Supplies Vendor,    Service Provider,    Equipment Vendor  
**DBE Name:** \_\_\_\_\_  
**Address:** \_\_\_\_\_  
**Subcontract Amount:**    \$ \_\_\_\_\_    MBE    \_\_\_    WBE    \_\_\_    % of Contract \$:    \_\_\_\_\_ %
  
4. **DBE type (circle one):**    Subcontractor,    Supplies Vendor,    Service Provider,    Equipment Vendor  
**DBE Name:** \_\_\_\_\_  
**Address:** \_\_\_\_\_  
**Subcontract Amount:**    \$ \_\_\_\_\_    MBE    \_\_\_    WBE    \_\_\_    % of Contract \$:    \_\_\_\_\_ %

#### PARTICIPATION SUMMARY

**Total SRF Loan Amount:**    \$ \_\_\_\_\_    **Total Construction Contract Amount:**    \$ \_\_\_\_\_  
**Total MBE Participation:**    \$ \_\_\_\_\_    **Total WBE Participation:**    \$ \_\_\_\_\_

\_\_\_\_\_  
Signature and Title of SRF Loan Recipient's Authorized Representative

\_\_\_\_\_  
Date



# STATE REVOLVING FUND LOAN PROGRAM

## **Bidder's Requirements for Solicitation and Documentation** **of** **Disadvantaged Business Enterprises (DBE) Participation**

A goal-oriented system has been established to promote **Disadvantaged Business Enterprises (DBE)** participation by providing construction services, professional services, supplies, and/or equipment on SRF Loan-funded water and wastewater projects. It is the Bidder's responsibility to make a good faith effort to secure participation by **DBE** subcontractors, professional service providers, suppliers, and/or equipment vendors.

### **DEFINITIONS**

**DBE - Minority Business Enterprise (MBE):** A qualified socially and economically disadvantaged minority-owned business certified by any State or Federal agency, such as the Tennessee Department of Transportation, U.S. EPA's Office of Small and Disadvantaged Business Utilization, or the U.S. Small Business Administration.

**DBE - Women's Business Enterprise (WBE):** A qualified independent business at least 51% owned by a woman or women and certified by any State or Federal agency such as the Tennessee Department of Transportation, U.S. EPA's Office of Small and Disadvantaged Business Utilization, or the U.S. Small Business Administration.

**Fair-Share Goals:** The MBE fair-share goal is 2.6% for construction and 5.2% for supplies, services, and equipment. The WBE fair share goal is 2.6% for construction and 5.2% for supplies, services, and equipment.

### **INSTRUCTIONS TO BIDDERS**

#### **Pre-Bid Requirements**

All Bidders must send letters by certified mail with return receipt requested to a minimum of 10 certified **DBE** subcontractors, professional service providers, suppliers, and/or equipment vendors to solicit their subcontract participation in the work. Lists of certified **DBE** firms may be obtained from various State and Federal agencies, including the following:

Tennessee Department of Transportation  
Small Business Development  
505 Deaderick Street, Suite 1800  
Nashville, TN 37243-0347  
(615) 741-3681  
<http://www.tdot.state.tn.us/dbedirectinternet/Vendor.aspx>

Mr. W. Clinton Smith, District Director  
U.S. Small Business Administration  
50 Vantage Way, Suite 201  
Nashville, TN 37228  
(615) 736-5881  
<http://pro-net.sba.gov/>

U.S. Environmental Protection Agency  
Office of Small and Disadvantaged Business Utilization  
1200 Pennsylvania Avenue, N.W. (1230A)  
Washington, D.C. 20460  
(202) 564-4100  
<http://www.epa.gov/osdbu/>

#### **Post-Bid Requirements**

**Whether or not DBE participation was obtained**, the successful Bidder (Prime Contractor) must maintain supporting documents such as certification lists, solicitation documents, letters of intent, contracts, etc., for the duration of the project.

**If DBE participation was obtained**, the apparent successful Bidder must identify to the Loan Recipient all **DBE** firms to be utilized on the contract and the respective **DBE** type--subcontractors, supplies vendors, service providers, and/or equipment vendors (see "Loan Recipient's Certification and Summary" form). Copies of the State's or Federal agency's **DBE** certification list(s) identifying that the **DBE** firms are certified minority or women's business enterprises must be provided to the Loan Recipient. In addition, copies of the **Prime Contractor's Notice Letter for EPA Form 6100-2, EPA Form 6100-3** (to be co-completed by the Prime Contractor and each DBE subcontractor), and **EPA Form 6100-4** must also be provided to the Loan Recipient prior to tentative loan award. The Prime Contractor must provide **EPA Form 6100-2** to each **DBE** utilized on the contract.

**If no DBE participation was obtained** by the apparent successful Bidder, it remains the responsibility of the Prime Contractor to provide documentation to the Loan Recipient, prior to contract award, that a good faith effort was made to obtain **DBE** participation. Copies of the **certified letters** sent to a minimum of 10 qualified **DBE** potential subcontractors, supplies vendors, service providers, and/or equipment vendors and the corresponding **return mail receipts** are the only documentation of a good-faith effort that will be acceptable to the Loan Recipient.

*Failure to provide the required certified letters, return receipts, State or Federal agency **DBE** certification list(s), **Prime Contractor's Notice Letter for EPA Form 6100-2, EPA Form 6100-3, and EPA Form 6100-4** to the Loan Recipient may delay the contract award until the required documentation has been provided to and accepted by the Loan Recipient.*



# STATE REVOLVING FUND LOAN PROGRAM

## Contractor Receipt Letter - Form 6100-2

**(Please Insert on Contractor Letterhead)**

**(Date)**

Dr. Bagher Sami, Administrative Section Manager  
State Revolving Fund Loan Program  
L & C Tower, 8<sup>th</sup> Floor  
401 Church Street  
Nashville, Tennessee 37243

RE: Receipt and Distribution of EPA Form 6100-2  
Disadvantaged Business Enterprises (DBE) Participation  
**(City/County/UD/Authority) (?? County), Tennessee**  
**Loan No. SRF/CWA/CGA/DWF/DWA/DGA 200?-???**  
**(Contract Name and/or Number), (Description)**

Dr. Sami:

This letter is to inform you that EPA Form 6100-2 was received from the **(City/County/UD/Authority)** and was then given to all DBE Subcontractors as required who are going to provide either construction, services, supplies, or equipment for this project.

If you have any questions concerning this notification, please contact us at (Phone No.; e-mail, etc.)

Sincerely,

**(Contractor's Authorized Representative)**  
**(Title)**

cc: **(Consulting Engineer for the contract)**  
**(City/County/UD/Authority's Authorized Representative)**

Submit the completed form to:

EPA DBE Coordinator  
 Small and Disadvantaged Business Program Manager  
 EPA, Region IV, Office of Policy and Management  
 61 Forsyth Street, SW  
 Atlanta, GA 30303-8960

OMB Control No: 2090-0030  
 Approved: 05/01/2008  
 Approval Expires: 01/31/2011



Environmental Protection Agency

**Disadvantaged Business Enterprise Program  
 DBE Subcontractor Participation Form**

<b>NAME OF SUBCONTRACTOR<sup>1</sup></b>	<b>PROJECT NAME</b>
<b>ADDRESS</b>	<b>CONTRACT NO.</b>
<b>TELEPHONE NO.</b>	<b>E-MAIL ADDRESS</b>
<b>PRIME CONTRACTOR NAME</b>	

Please use the space below to report any concerns regarding the above EPA-funded project (e.g., reason for termination by prime contractor, late payment, etc.).

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<b>CONTRACT ITEM NO.</b>	<b>ITEM OF WORK OR DESCRIPTION OF SERVICES RECEIVED FROM THE PRIME CONTRACTOR</b>	<b>AMOUNT SUBCONTRACTOR WAS PAID BY PRIME CONTRACTOR</b>

_____ Subcontractor Signature	_____ Title/Date
----------------------------------	---------------------

<sup>1</sup>Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.



Environmental Protection Agency

OMB Control No: 2090-0030  
Approved: 05/01/2008  
Approval Expires: 01/31/2011

## **Disadvantaged Business Enterprise Program DBE Subcontractor Participation Form**

The public reporting and recordkeeping burden for this collection of information is estimated to average fifteen (15) minutes. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed EPA DBE Subcontractor Participation Form to this address.

OMB Control No: 2090-0030  
 Approved: 05/01/2008  
 Approval Expires: 01/31/2011



Environmental Protection Agency

**Disadvantaged Business Enterprise Program  
 DBE Subcontractor Performance Form**

<b>NAME OF SUBCONTRACTOR<sup>1</sup></b>		<b>PROJECT NAME</b>	
<b>ADDRESS</b>		<b>BID/PROPOSAL NO.</b>	
<b>TELEPHONE NO.</b>		<b>E-MAIL ADDRESS</b>	
<b>PRIME CONTRACTOR NAME</b>			
CONTRACT ITEM NO.	ITEM OF WORK OR DESCRIPTION OF SERVICES BID TO PRIME CONTRACTOR	PRICE OF WORK SUBMITTED TO PRIME CONTRACTOR	
Currently certified as an MBE or WBE under EPA's DBE Program <input type="checkbox"/> Yes <input type="checkbox"/> No			
_____ Signature of Prime Contractor		_____ Date	
_____ Print Name		_____ Title	
_____ Signature of Subcontractor		_____ Date	
_____ Print Name		_____ Title	

<sup>1</sup>Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

OMB Control No: 2090-0030  
Approved: 05/01/2008  
Approval Expires: 01/31/2011



Environmental Protection Agency

**Disadvantaged Business Enterprise Program  
DBE Subcontractor Performance Form**

The public reporting and recordkeeping burden for this collection of information is estimated to average fifteen (15) minutes. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed EPA DBE Subcontractor Performance Form to this address.

OMB Control No: 2090-0030  
 Approved: 05/01/2008  
 Approval Expires: 01/31/2011



Environmental Protection Agency

**Disadvantaged Business Enterprise Program  
 DBE Subcontractor Utilization Form**

<b>BID/PROPOSAL NO.</b>	<b>PROJECT NAME</b>
<b>NAME OF PRIME BIDDER/PROPOSER</b>	<b>E-MAIL ADDRESS</b>
<b>ADDRESS</b>	
<b>TELEPHONE NO.</b>	<b>FAX NO.</b>

<b>The following subcontractors<sup>1</sup> will be used on this project:</b>			
<b>COMPANY NAME, ADDRESS, PHONE NUMBER, AND E-MAIL ADDRESS</b>	<b>TYPE OF WORK TO BE PERFORMED</b>	<b>ESTIMATED DOLLAR AMOUNT</b>	<b>CURRENTLY CERTIFIED AS AN MBE OR WBE?</b>
<p>I certify under penalty of perjury that the forgoing statements are true and correct. In the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302(c).</p>			
<p>_____                  Signature of Prime Contractor</p>		<p>_____                  Date</p>	
<p>_____                  Print Name</p>		<p>_____                  Title</p>	

<sup>1</sup>Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

OMB Control No: 2090-0030  
Approved: 05/01/2008  
Approval Expires: 01/31/2011



Environmental Protection Agency

**Disadvantaged Business Enterprise Program  
DBE Subcontractor Utilization Form**

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Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed EPA DBE Subcontractor Performance Form to this address.

TENNESSEE DEPARTMENT OF TRANSPORTATION (TDOT)

Certified Disadvantaged Business Enterprises (DBE) List

Below is the link to the Tennessee Department of Transportation (TDOT) Web Page for the Certified DBE List. This certified list is periodically updated by TDOT.

Here is the link: <http://www.tdot.state.tn.us/dbedirectinternet/Vendor.aspx>



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**DUPONT PUMP STATION AND BASIN IMPROVEMENTS – PHASE 2  
(CONTRACT A)  
CONTRACT NUMBER W-12-026-202**

**ARTICLE 1 – BID RECIPIENT**

1.01 This Bid is submitted to:

City of Chattanooga, Tennessee  
Purchasing Department  
101 E. 11<sup>th</sup> Street, Suite G13  
Chattanooga, TN 37402

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

**ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS**

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for period of time after the Bid opening as stated in the Advertisement for Bids, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

**ARTICLE 3 – BIDDER’S REPRESENTATIONS**

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged.

<u>Addendum No.</u>	<u>Addendum Date</u>
_____	_____
_____	_____
_____	_____

B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress and performance of the Work.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities)

- that have been identified in SC-4.02 as containing reliable "technical data," and (2) reports and drawings of Hazardous Environmental Conditions, if any, at the Site that have been identified in SC-4.06 as containing reliable "technical data."
- E. Bidder has considered the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents; and (3) Bidder's safety precautions and programs.
  - F. Based on the information and observations referred to in Paragraph 3.01.E above, Bidder does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
  - G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
  - H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.
  - I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.
  - J. Where this Bid Form contains the provision for a bid based on a lump sum price, the Bidder shall be responsible for having prepared its own estimate of the quantities necessary for the satisfactory completion of the Work specified in these Contract Documents and for having based the lump sum price bid on its estimate of quantities.

#### **ARTICLE 4 – BIDDER'S CERTIFICATION**

4.01 Bidder certifies that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;
2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

**ARTICLE 5 – BASIS OF BID**

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

Item No.	Description	Estimated Quantity	Unit	Unit Price	Total Price
<b>Mobilization / Demobilization</b>					
1	Furnish all products, materials, and equipment and perform all labor necessary to complete and put into operation the DuPont Pump Station and Basin Improvements (Phase 2), including all work shown on the Drawings and per the requirements provided in the Specifications		Lump Sum		\$
<b>Cash Allowances</b>					
2	Soil, Concrete and Materials Testing		Allowance		\$ 40,000
3	Construction Verification Surveying		Allowance		\$ 15,000
4	Permitting		Allowance		\$ 15,000
5	Landscape Plan Development and Landscaping		Allowance		\$ 50,000
6	Connection to Existing Waterline		Allowance		\$ 30,000
7	Power Company Allowance		Allowance		\$ 100,000
<b>Total Base Bid:</b>					<b>\$</b>

BID TOTAL, ITEMS 1 THROUGH 6, INCLUSIVE, THE AMOUNT OF \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_).

**ARTICLE 6 – TIME OF COMPLETION**

- 6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

**ARTICLE 7 – ATTACHMENTS TO THIS BID**

- 7.01 The following documents are submitted with and made a condition of this Bid:
- A. Statement of Bidders Qualifications
  - B. Affidavit of No Collusion by Prime Bidder
  - C. Drug-Free Workplace Affidavit
  - D. Iran Divestment Act Compliance Certification
  - E. Attestation Regarding Personnel Used in Contract Performance
  - F. Certification By Proposed Prime or Subcontractor Regarding Equal Employment Opportunity
  - G. Certification Regarding Debarment, Suspension and Other Responsibility Matters

**ARTICLE 8 – DEFINED TERMS**

- 8.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

**ARTICLE 9 – BID SUBMITTAL**

9.01 This Bid submitted by:

An Individual

Name (typed or printed): \_\_\_\_\_

By: \_\_\_\_\_ (SEAL)

*(Individual's signature)*

Doing business as: \_\_\_\_\_

Attest: \_\_\_\_\_

*(Notary)*

Name (typed or printed): \_\_\_\_\_

A Partnership

Partnership Name: \_\_\_\_\_ (SEAL)

By: \_\_\_\_\_

*(Signature of general partner – attach evidence of authority to sign)*

Name (typed or printed): \_\_\_\_\_

Attest: \_\_\_\_\_

*(Signature of another Partner)*

Name (typed or printed): \_\_\_\_\_

A Corporation

Corporation Name: \_\_\_\_\_ (SEAL)

State of Incorporation: \_\_\_\_\_

Type (General Business, Professional, Service, Limited Liability): \_\_\_\_\_

By: \_\_\_\_\_

*(Signature)*

Name (typed or printed): \_\_\_\_\_

Title: \_\_\_\_\_

(CORPORATE SEAL)

Attest: \_\_\_\_\_

*(Signature of Corporate Secretary)*

Name (typed or printed): \_\_\_\_\_

Date of Qualification to do business in Tennessee is \_\_\_\_\_



A Joint Venture

Name of Joint Venturer: \_\_\_\_\_

First Joint Venturer Name: \_\_\_\_\_ (SEAL)

By: \_\_\_\_\_  
(Signature of first joint venture partner)

Name (typed or printed): \_\_\_\_\_

Title: \_\_\_\_\_

Second Joint Venturer Name: \_\_\_\_\_ (SEAL)

By: \_\_\_\_\_  
(Signature of second joint venture partner)

Name (typed or printed): \_\_\_\_\_

Title: \_\_\_\_\_

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

**All Bidders shall complete the following:**

Bidder's Business address: \_\_\_\_\_  
\_\_\_\_\_

Phone: \_\_\_\_\_ Facsimile: \_\_\_\_\_

Primary Contact: \_\_\_\_\_

E-mail: \_\_\_\_\_

Submitted on \_\_\_\_\_, 201\_\_.

State Contractor License No. \_\_\_\_\_.

This document was prepared in part from material (EJCDC C-410 Suggested Bid Form for Construction Contracts) which is copyrighted as indicated below:

Copyright © 2007 National Society of Professional Engineers  
1420 King Street, Alexandria, VA 22314-2794  
(703) 684-2882  
[www.nspe.org](http://www.nspe.org)

American Council of Engineering Companies  
1015 15th Street N.W., Washington, DC 20005  
(202) 347-7474  
[www.acec.org](http://www.acec.org)

American Society of Civil Engineers  
1801 Alexander Bell Drive, Reston, VA 20191-4400  
(800) 548-2723  
[www.asce.org](http://www.asce.org)

Associated General Contractors of America  
2300 Wilson Boulevard, Suite 400, Arlington, VA 22201-3308  
(703) 548-3118  
[www.agc.org](http://www.agc.org)

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**BID BOND**

Any singular reference to Bidder, Surety, Owner or other party shall be considered plural where applicable.

BIDDER *(Name and Address)*:

SURETY *(Name and Address of Principal Place of Business)*:

OWNER *(Name and Address)*:

City of Chattanooga, Tennessee  
101 East 11th Street  
Chattanooga, Tennessee 37402

BID

Bid Due Date:  
Description *(Project Name)*: DuPont Pump Station and Basin Improvements – Phase 2 (Contract A)  
Contract # W-12-026-202

BOND

Bond Number:  
Date *(Not earlier than Bid due date)*:  
Penal sum \_\_\_\_\_ \$ \_\_\_\_\_  
(Words) (Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

**BIDDER**

**SURETY**

\_\_\_\_\_  
Bidder's Name and Corporate Seal (Seal) Surety's Name and Corporate Seal (Seal)

By: \_\_\_\_\_  
Signature

By: \_\_\_\_\_  
Signature (Attach Power of Attorney)

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

Attest: \_\_\_\_\_  
Signature

Attest: \_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

*Note: Above addresses are to be used for giving any required notice. Provide execution by any additional parties, such as joint venturers, if necessary.*

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation shall be null and void if:
  - 3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
  - 3.2 All Bids are rejected by Owner, or
  - 3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date.
7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

Statement of Bidder's Qualifications

All questions must be answered and the data given must be clear and comprehensive. This statement must be notarized. If necessary, questions may be answered on separate attached sheets. The Bidder may submit any additional information desired. Attach all additional sheets to this statement. (Sample "Project Information Form" contained at the end of this Section.)

1. Name of Bidder: \_\_\_\_\_

2. Permanent main office address and phone number: \_\_\_\_\_

\_\_\_\_\_

3. When organized: \_\_\_\_\_

4. If a Corporation, where incorporated: \_\_\_\_\_

5. How many years have you been engaged in the contracting business under your present firm or trade name? \_\_\_\_\_

6. Contracts on hand. (Complete a "Project Information Form", for each Contract on hand.)

7. General description of type of work performed by your company: \_\_\_\_\_

\_\_\_\_\_

8. Have you ever failed to complete any work awarded to you? If so, where and why? \_\_\_\_\_

\_\_\_\_\_

9. Have you ever defaulted on a contract? If so, where and why? \_\_\_\_\_

\_\_\_\_\_

10. Attach a list of the most important projects recently completed by your company which are similar in scope to this Project. (Complete a "Project Information Form", for each Project listed.)

11. Names, background and experience of the principal members of your organization, including officers:

Name	Position	Years Experience
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Statement of Bidder's Qualifications

12. The undersigned hereby authorizes and requests any person, firm, or corporation to furnish any information requested by the Owner in verification of the recitals comprising this Statement of Bidder's Qualifications.

I, \_\_\_\_\_, certify that I am \_\_\_\_\_ of the Bidder, and that the answers to the foregoing questions and statements contained therein are true and correct.

BIDDER: \_\_\_\_\_

By: \_\_\_\_\_  
*(name signed)*

\_\_\_\_\_  
*(name printed or typed)*

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Subscribed and sworn to me this \_\_\_ day of \_\_\_\_\_, 20\_\_.

NOTARY PUBLIC: \_\_\_\_\_  
*(name signed)*

\_\_\_\_\_  
*(name printed or typed)*

Commission Expires: \_\_\_\_\_  
*(Date)*

(SEAL)

Project Information Form

Project Title: \_\_\_\_\_

Project Description: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Major Subcontractors: \_\_\_\_\_  
\_\_\_\_\_

Major Suppliers: \_\_\_\_\_  
\_\_\_\_\_

Project Owner:

- Owner Name: \_\_\_\_\_
- Contact Person: \_\_\_\_\_
- Phone Number: \_\_\_\_\_

Engineer/Construction Manager:

- Company Name: \_\_\_\_\_
- Contact Person: \_\_\_\_\_
- Phone Number: \_\_\_\_\_

Contract Amount:

- Initial: \_\_\_\_\_
- Final: \_\_\_\_\_

Contract Time

- Initial: \_\_\_\_\_
- Final: \_\_\_\_\_
- Completion Date: \_\_\_\_\_

END OF SECTION



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Affidavit of No Collusion by Prime Bidder

CONTRACT NUMBER W-12-026-202
FOR THE CITY OF CHATTANOOGA

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

The undersigned, \_\_\_\_\_, having been duly sworn, deposes and states as follows:

1. I am the \_\_\_\_\_ of \_\_\_\_\_
(sole owner, a partner, president, secretary, etc.) (Name of Corporation/Partnership/Limited Partnership/Joint Venture)

which is a \_\_\_\_\_ in good standing,
(Corporation) (Proprietorship) (Partnership) (Limited Partnership) (Joint Venture)

formed under the laws of \_\_\_\_\_, hereinafter referred to as "Bidder."
(State of incorporation or formation)

2. I am authorized to make this affidavit on behalf of said Bidder, and I have personal knowledge of the matters set forth herein.

3. On \_\_\_\_\_, 20\_\_\_\_, said bidder is submitting a bid to the City of Chattanooga for the above captioned contract. This bid was prepared under my personal supervision and direction. During the preparation of the bid, I have taken affirmative steps to inquire about the circumstances of the bid preparation in general and about any contacts between or among this bidder and any other bidders or prospective bidders in particular.

4. I am aware of the Federal and State laws including without limitation, the Sherman Act (15 U.S.C. 1) and the Tennessee antitrust laws (T.C.A. 47-25-101, et seq.), which make it illegal to agree to fix or rig bids or otherwise agree to restrain competition in bidding for contracts with the City of Chattanooga. I am aware in particular that violations of the Sherman Act are federal crimes punishable by a fine of up to \$1.0 million for a corporation, and a fine of up to \$100,000 for an individual or by imprisonment not exceeding three years, or both.

5. I hereby certify and attest that the bid identified in paragraph 3 is based solely upon the independent knowledge, expertise and business judgment of the bidder acting through its officers and agents and is not the product of, nor was it prepared in connection with, any contract, combination, conspiracy, understanding or collusion between or among any other bidder or prospective bidder on said contract.

\_\_\_\_\_  
Signature

Subscribed and sworn to me this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

NOTARY PUBLIC: \_\_\_\_\_

(name signed)

(name printed or typed)

Commission Expires: \_\_\_\_\_

(Date)

(SEAL)

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Iran Divestment Act Compliance Certification

In accordance with Tennessee Code Annotated (TCA) § 12-12-101 *et. seq.*, by submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each bidder is not on the list created pursuant to TCA § 12-12-106.

SIGNATURE: \_\_\_\_\_

NAME PRINTED: \_\_\_\_\_

COMPANY: \_\_\_\_\_

DATE: \_\_\_\_\_

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Drug Free Workplace Affidavit of Prime Bidder

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

Comes the affiant after having first been duly sworn and testifies as follows:

1. My name is \_\_\_\_\_ I hold the principal office of \_\_\_\_\_ for \_\_\_\_\_.  
(Name of Principal Office) (Name of Bidding Entity)

2. \_\_\_\_\_ has submitted a bid to the \_\_\_\_\_  
(Name of Bidding Entity)  
City of Chattanooga for the construction of  
**Contract W-12-026-202**  
**DUPONT PUMP STATION AND BASIN IMPROVEMENTS – PHASE 2 (CONTRACT A)**

3. \_\_\_\_\_ employs more than five (5) employees.  
(Name of Bidding Entity)

4. In accordance with Tenn. Code Ann. §50-9-113, this is to certify that  
\_\_\_\_\_ has in effect at the time of its submission of  
(Name of Bidding Entity)  
a bid to perform the construction of the City of Chattanooga project identified above, a drug-free workplace program that complies with Title 50, Chapter 9 of the Tennessee Code.

5. This affidavit is made on personal knowledge.

\_\_\_\_\_  
Signature

Subscribed and sworn to me this \_\_\_ day of \_\_\_\_\_, 20\_\_\_.

NOTARY PUBLIC: \_\_\_\_\_  
(name signed)

\_\_\_\_\_  
(name printed or typed)

Commission Expires: \_\_\_\_\_  
(Date)

(SEAL)

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Attestation Regarding Personnel Used in Contract Performance

Project Name: DuPont Pump Station and Basin Improvements – Phase 2 (Contract A)

The Bidder/Contractor, identified below, does hereby attest, certify, warrant, and assure that the Contractor shall not knowingly utilize the services of an illegal immigrant in the performance of this Contract and shall not knowingly utilize the services of any subcontractor who will utilize the services of an illegal immigrant in the performance of this Contract.

BIDDER/CONTRACTOR: \_\_\_\_\_

By: \_\_\_\_\_

*(name signed)*

\_\_\_\_\_

*(name printed or typed)*

Title: \_\_\_\_\_

Date: \_\_\_\_\_

NOTICE: This attestation MUST be signed by an individual empowered to contractually bind the Contractor. If said individual is not the chief executive or president, this document shall attach evidence showing the individual's authority to contractually bind the Contractor.

END OF SECTION



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Contractor's Identification

(ALL BLANKS MUST BE FILLED. USE N/A AS NECESSARY)

This form shall be attached to the sealed envelope containing the Bid. All prime contractors and contractors for electrical, plumbing, and heating, ventilation, and air conditioning contracts for bids of \$25,000 or more and/or masonry items for \$100,000 or more are required to complete this form pursuant to TCA-62-6-119. Failure to provide all of this information on the sealed envelope shall be considered a non-responsive Bid and shall not be opened or shall automatically disqualify such bid.

BIDDER:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

If TaxID Number (TIN) issued, list below. Otherwise, list Owner's Social Security Number (SSN).

TaxID Number: \_\_\_\_\_

Tennessee License No.: \_\_\_\_\_

License Registration Date: \_\_\_\_\_

License Expiration Date: \_\_\_\_\_

Monetary Limit: \_\_\_\_\_

\_\_\_\_\_ (\$ \_\_\_\_\_)

Classification: \_\_\_\_\_

\_\_\_\_\_

Complete the following for all applicable Electrical, Plumbing, Masonry and Heating, Ventilation and Air Conditioning Subcontractors: Prime Contractor must fill in space below when performing Electrical, Plumbing, or Heating, Ventilation and Air Conditioning Sub-Contractor work for any bids of \$25,000 or more; and for Masonry for any bids of \$100,000 or more:

Electrical Subcontractor

Tennessee License No.: \_\_\_\_\_

License Expiration Date: \_\_\_\_\_

License Classification: \_\_\_\_\_

Plumbing Subcontractor

Tennessee License No.: \_\_\_\_\_

License Expiration Date: \_\_\_\_\_

License Classification: \_\_\_\_\_

Heating, Ventilation and Air Conditioning Subcontractor

Tennessee License No.: \_\_\_\_\_

License Expiration Date: \_\_\_\_\_

License Classification: \_\_\_\_\_

Masonry Subcontractor

Tennessee License No.: \_\_\_\_\_

License Expiration Date: \_\_\_\_\_

License Classification: \_\_\_\_\_

CITY OF CHATTANOOGA  
Purchasing Department  
101 E. 11<sup>th</sup> Street, Suite G13  
Chattanooga, Tennessee 37402

LOCATION: City Hall, Purchasing Department  
101 E. 11<sup>th</sup> Street  
Suite G13  
Chattanooga, Tennessee 37402

SEALED BID PROPOSAL FOR:

**DUPONT PUMP STATION AND BASIN IMPROVEMENTS  
- PHASE 2 (CONTRACT A)**

Contract Number: **W-12-026-202**

DATE OF BID OPENING: Thursday, \_\_\_\_\_, 20\_\_

TIME: 2:00 p.m.

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THIS AGREEMENT is by and between City of Chattanooga, Tennessee (“Owner”) and \_\_\_\_\_ (“Contractor”)

---

Owner and Contractor agree as follows:

**ARTICLE 1 – WORK**

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

DuPont Pump Station and Basin Improvements – Phase 2 (Contract A)  
Contract # W-12-026-202

**ARTICLE 2 – THE PROJECT**

2.01 The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

DuPont Pump Station and Basin Improvements – Phase 2 (Contract A)

**ARTICLE 3 – ENGINEER**

3.01 The Project has been designed by CDM Smith Inc. (Engineer), which is to act as Owner’s representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

**ARTICLE 4 – CONTRACT TIMES**

4.01 *Time of the Essence*

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Days to Achieve Substantial Completion and Final Payment*

A. The Work will be substantially completed within 260 days after the date when the Contract Times commence to run as provided in Paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions within 280 days after the date when the Contract Times commence to run.

4.03 *Liquidated Damages*

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial loss if the Work is not completed within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding

the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty), Contractor shall pay Owner \$1,000.00 for each day that expires after the time specified in Paragraph 4.02 above for Substantial Completion until the Work is substantially complete. After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by Owner, Contractor shall pay Owner \$1,000.00 for each day that expires after the time specified in Paragraph 4.02 above for completion and readiness for final payment until the Work is completed and ready for final payment.

## **ARTICLE 5 – CONTRACT PRICE**

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined pursuant to Paragraphs 5.01.A below:

A. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.

## **ARTICLE 6 – PAYMENT PROCEDURES**

6.01 *Submittal and Processing of Payments*

A. Contractor shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 *Progress Payments; Retainage*

A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the 25<sup>th</sup> day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below. All such payments will be measured by the schedule of values established as provided in Paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements.

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Engineer may determine or Owner may withhold, including but not limited to liquidated damages, in accordance with Paragraph 14.02 of the General Conditions.

a. 95 percent of Work completed (with the balance being retainage); and

b. 95 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

6.03 *Final Payment*

- A. Upon final completion and acceptance of the Work in accordance with Paragraph 14.07 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 14.07.

**ARTICLE 7 – INTEREST**

- 7.01 All moneys not paid when due as provided in Article 14 of the General Conditions shall bear interest at the rate of one half percent per annum.

**ARTICLE 8 – CONTRACTOR’S REPRESENTATIONS**

- 8.01 In order to induce Owner to enter into this Agreement, Contractor makes the following representations:

- A. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.
- B. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Contractor is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities), if any, that have been identified in Paragraph SC-4.02 of the Supplementary Conditions as containing reliable "technical data," and (2) reports and drawings of Hazardous Environmental Conditions, if any, at the Site that have been identified in Paragraph SC-4.06 of the Supplementary Conditions as containing reliable "technical data."
- E. Contractor has considered the information known to Contractor; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Contract Documents; and (3) Contractor’s safety precautions and programs.
- F. Based on the information and observations referred to in Paragraph 8.01.E above, Contractor does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.

- G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

## ARTICLE 9 – CONTRACT DOCUMENTS

### 9.01 *Contents*

- A. The Contract Documents consist of the following:
  - 1. This Agreement (pages 1 to \_\_, inclusive).
  - 2. Performance bond (pages \_\_\_\_ to \_\_\_\_, inclusive).
  - 3. Payment bond (pages \_\_\_\_ to \_\_\_\_, inclusive).
  - 4. General Conditions (pages \_\_\_\_ to \_\_\_\_, inclusive).
  - 5. Supplementary Conditions (pages \_\_\_\_ to \_\_\_\_, inclusive).
  - 6. Specifications as listed in the table of contents of the Project Manual.
  - 7. Drawings as listed on the Drawing Index, with each sheet bearing the following general title: DuPont Pump Station and Basin Improvements – Phase 2.
  - 8. Addenda (numbers \_\_\_\_ to \_\_\_\_, inclusive), incorporated herein.
  - 9. Exhibits to this Agreement (enumerated as follows):
    - a. Contractor’s Bid (pages \_\_\_\_ to \_\_\_\_, inclusive).
  - 10. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
    - a. Notice to Proceed.
    - b. Work Change Directives.
    - c. Change Orders.
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.

- D. The Contract Documents may only be amended, modified, or supplemented as provided in Paragraph 3.04 of the General Conditions.

## **ARTICLE 10 – MISCELLANEOUS**

### **10.01 Terms**

- A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

### **10.02 Assignment of Contract**

- A. No assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

### **10.03 Successors and Assigns**

- A. Owner and Contractor each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

### **10.04 Severability**

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

### **10.05 Contractor's Certifications**

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:
1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process or in the Contract execution;
  2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;



3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement. Counterparts have been delivered to Owner and Contractor. All portions of the Contract Documents have been signed or have been identified by Owner and Contractor or on their behalf.

This Agreement will be effective on \_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_, (which is the Effective Date of the Agreement).

OWNER:

CONTRACTOR

**City of Chattanooga, Tennessee**

\_\_\_\_\_

By: \_\_\_\_\_

By: \_\_\_\_\_

Title: Public Works Administrator

Title: \_\_\_\_\_

(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: \_\_\_\_\_

Attest: \_\_\_\_\_

Title: City Finance Officer

Title: \_\_\_\_\_

Address for giving notices:

Address for giving notices:

City Hall

\_\_\_\_\_

101 East 11<sup>th</sup> Street

\_\_\_\_\_

Chattanooga, Tennessee 37402

\_\_\_\_\_

**CITY FINANCE OFFICER'S CERTIFICATE**

I do hereby certify that the funds required to be paid by the City under this contract have been appropriated or a loan authorized and have been encumbered and will be available as needed for payment.

This \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_.

\_\_\_\_\_  
City Finance Officer

**CITY ATTORNEY'S APPROVAL**

This contract approved as to form and legality this the \_\_ day of \_\_\_\_\_, 20 \_\_.

\_\_\_\_\_  
City Attorney

This document was prepared in part from material (EJCDC C-520 Suggested Form of Agreement Between Owner and Contractor for Construction Contract (Stipulated Price)) which is copyrighted as indicated below:

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1420 King Street, Alexandria, VA 22314-2794  
(703) 684-2882  
[www.nspe.org](http://www.nspe.org)

American Council of Engineering Companies  
1015 15th Street N.W., Washington, DC 20005  
(202) 347-7474  
[www.acec.org](http://www.acec.org)

American Society of Civil Engineers  
1801 Alexander Bell Drive, Reston, VA 20191-4400  
(800) 548-2723  
[www.asce.org](http://www.asce.org)

Associated General Contractors of America  
2300 Wilson Boulevard, Suite 400, Arlington, VA 22201-3308  
(703) 548-3118  
[www.agc.org](http://www.agc.org)

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CONTRACTOR (name and address):

SURETY (name and address of principal place of business):

OWNER (name and address):

City of Chattanooga, Tennessee  
101 East 11<sup>th</sup> Street  
Chattanooga, TN 37402

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description (name and location): DuPont Pump Station and Basin Improvements – Basin 2 (Contract A)  
Contract # W-12-026-202

BOND

Bond Number:

Date (not earlier than the Effective Date of the Agreement of the Construction Contract):

Amount:

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

\_\_\_\_\_  
Contractor's Name and Corporate Seal (seal)

\_\_\_\_\_  
Surety's Name and Corporate Seal (seal)

By: \_\_\_\_\_  
Signature

By: \_\_\_\_\_  
Signature (attach power of attorney)

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

Attest: \_\_\_\_\_  
Signature

Attest: \_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

**Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.**

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond.

3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after Owner terminates for cause in accordance with General Conditions Paragraph 15.02.

4. Failure on the part of the Owner to comply with the notice requirement in General Conditions Paragraph 15.02 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take the following action:

5.1 Waive its right to perform and complete, to arrange for completion, or to obtain a new contractor, and with reasonable promptness under the circumstances:

5.1.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

5.1.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

6. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:

6.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

6.2 additional legal, design professional, and delay costs resulting from the Contractor's Default; and

6.3 liquidated damages caused by delayed performance or non-performance of the Contractor.

7. The Surety's liability is limited to the amount of this Bond.

8. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.

9. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

10. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit shall be applicable.

11. Notice to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

12. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

13. Definitions

13.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

13.2 Construction Contract: The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

13.3 Contractor Default: Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

13.4 Owner Default: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

13.5 Contract Documents: All the documents that comprise the agreement between the Owner and Contractor.

This document was prepared in part from material (EJCDC C-610 Performance Bond) which is copyrighted as indicated below:

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1420 King Street, Alexandria, VA 22314-2794  
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American Council of Engineering Companies  
1015 15th Street N.W., Washington, DC 20005  
(202) 347-7474  
[www.acec.org](http://www.acec.org)

American Society of Civil Engineers  
1801 Alexander Bell Drive, Reston, VA 20191-4400  
(800) 548-2723  
[www.asce.org](http://www.asce.org)

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(703) 548-3118  
[www.agc.org](http://www.agc.org)

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CONTRACTOR (name and address):

SURETY (name and address of principal place of business):

OWNER (name and address): City of Chattanooga, Tennessee  
101 East 11th Street  
Chattanooga, TN 37402

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description (name and location): DuPont Pump Station and Basin Improvements – Phase 2 (Contract A)  
Contract # W-12-026-202

BOND

Bond Number:

Date (not earlier than the Effective Date of the Agreement of the Construction Contract):

Amount:

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

\_\_\_\_\_  
Contractor's Name and Corporate Seal

\_\_\_\_\_  
Surety's Name and Corporate Seal

By: \_\_\_\_\_  
Signature

By: \_\_\_\_\_  
Signature (attach power of attorney)

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

Attest: \_\_\_\_\_  
Signature

Attest: \_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

**Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.**



1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond shall arise after the following:
  - 5.1 Claimants who do not have a direct contract with the Contractor,
    - 5.1.1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
    - 5.1.2 have sent a Claim to the Surety (at the address described in Paragraph 13).
  - 5.2 Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
  - 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
  - 7.2 Pay or arrange for payment of any undisputed amounts.
  - 7.3 The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.
8. The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction

Contract or to related subcontracts, purchase orders, and other obligations.

12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

## 16. Definitions

16.1 **Claim:** A written statement by the Claimant including at a minimum:

1. The name of the Claimant;
2. The name of the person for whom the labor was done, or materials or equipment furnished;
3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
4. A brief description of the labor, materials, or equipment furnished;
5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;

6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
7. The total amount of previous payments received by the Claimant; and
8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

16.2 **Claimant:** An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

16.3 **Construction Contract:** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

16.4 **Owner Default:** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

16.5 **Contract Documents:** All the documents that comprise the agreement between the Owner and Contractor.

17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

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Progress Payment Request

**PAY ESTIMATE NUMBER:** \_\_\_\_\_ **PERIOD: FROM** \_\_\_\_\_ **TO** \_\_\_\_\_  
**CONTRACT NUMBER:** \_\_\_\_\_ **RESOLUTION NUMBER:** \_\_\_\_\_

**PROJECT NAME:** \_\_\_\_\_

**SUBMITTED BY:** \_\_\_\_\_

According to the best of our knowledge and belief, we certify that all items and amounts shown on the face of this periodic estimate for partial payment are correct, that all work has been performed and/or materials supplied in full accordance with the requirements of the referenced contract, and/or duly authorized deviations, substitutions, alterations, and/or additions that the foregoing is a true and correct statement of the contract account up to and including the last day of the period covered by this periodic estimate and that no part of the Balance Due this payment has been received.

As per contract specification requirements we understand and agree that the approval of this progress payment shall not be construed as acceptance of any work, material, or products and shall not relieve us in any way from our responsibilities and obligations under this contract, including but not limited to, a final reconciliation of quantities and related costs.

**NET AMOUNT DUE:** \_\_\_\_\_

**CONTRACTOR:** \_\_\_\_\_  
**NAME PRINTED:** \_\_\_\_\_  
**SIGNATURE:** \_\_\_\_\_  
**TITLE:** \_\_\_\_\_  
**DATE:** \_\_\_\_\_

**APPROVALS**

I certify that the above process payment request appears to be accurate and is in general compliance with the amount of work completed during progress payment period.

**REVIEWED BY**

<b>NAME PRINTED:</b>			
<b>SIGNATURE:</b>			
<b>DATE:</b>			
<b>COMPANY:</b>	CDM Smith Inc.	CDM Smith Inc.	Jacobs Engineering Group, Inc.
<b>TITLE:</b>	RPR	Project Manager	Program Manager

**APPROVED FOR PAYMENT**

By: \_\_\_\_\_ **DATE:** \_\_\_\_\_  
**DIRECTOR OF WASTE RESOURCES DIVISION**

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# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

**ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE**

and

Issued and Published Jointly by



AMERICAN COUNCIL OF ENGINEERING COMPANIES

ASSOCIATED GENERAL CONTRACTORS OF AMERICA

AMERICAN SOCIETY OF CIVIL ENGINEERS

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**STANDARD GENERAL CONDITIONS OF THE  
CONSTRUCTION CONTRACT**

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## ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

### 1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents. After issuance, any addenda shall become a part of the specifications, as much as though fully contained therein.

1.1 Administrator—The Administrator, Director or Department Head of the Department of the City of Chattanooga under whose general administration and observation this contract is being performed.

2. *Agreement*—The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.

3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Asbestos*—Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

4.1 Award—The formal acceptance of the proposal of the lowest responsible bidder by the City Council, subject to the execution and approval of a satisfactory contract and the required bonds therefor, and following such other conditions as may be specified or otherwise required by law or the purchasing requirements of the City of Chattanooga.

5. *Bid*—The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. *Bidder*—The individual or entity who submits a Bid directly to Owner.

7. *Bidding Documents*—The Bidding Requirements and the proposed Contract Documents (including all Addenda).

8. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and the Bid Form with any supplements.

8.1 Bonds-Bid, Performance and Payment Bonds and other instruments of security to be furnished by the Contractor in accordance with the Contract Documents.

9. *Change Order*—A document recommended by Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement. The document to be executed shall be a Change Request Form (CRF) as included in these Contract Documents.

9.1 City-The City of Chattanooga, Tennessee.

9.2 City Attorney-The person duly authorized by the City to act in the capacity of City Attorney, his authorized designee, or special counsel to the City, acting severally within the scope of the particular duties entrusted to them.

10. *Claim*—A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

11. *Contract*—The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral. Whenever, in any portion of the Contract Documents, a requirement of the Contract is stated, it shall be interpreted to mean a requirement of the Contract Documents as defined herein, unless the context indicates the more restricted definition of that portion of the Contract Documents which is captioned "Contract".

12. *Contract Documents*—Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents. Whenever, in any portion of the Contract Documents, the terms "plans and specifications" or "specifications" or "contract" or words of like import appear, they shall be interpreted to mean "Contract Documents" as defined herein unless the context indicates that a more restrictive designation of a particular portion of the Contract Documents is intended.

13. *Contract Price*—The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).

14. *Contract Times*—The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any; (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.

15. *Contractor*—The individual or entity whose proposal is accepted by the Owner with whom Owner has entered into the Agreement; for performance of the work covered by and in conformance with these Contract Documents.

16. *Cost of the Work*—See Paragraph 11.01 for definition.

16.1 Designer - The individual or entity named as such in the Agreement, if a different person or entity from Engineer.

17. *Drawings*—That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined. The term Drawings shall be considered synonymous with the term Plans.

18. *Effective Date of the Agreement*—The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

19. *Engineer*—~~The individual or entity named as such in the Agreement.~~The City Engineer (or when retained by the City, an architect or engineer, with such entity being named in the Agreement) and his duly authorized assistants, observers, inspectors or administrators acting severally within the scope of the particular duties entrusted to them

20. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

21. *General Requirements*—Sections of Division 01 of the Specifications. The General Requirements are applicable to all Sections of the Specifications and to the entire Work.

22. *Hazardous Environmental Condition*—The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto.

23. *Hazardous Waste*—The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

23.1 Inspector-An authorized representative of the Engineer assigned to make necessary observations of the work performed by the Contractor.

24. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

25. *Liens*—Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

25.1 Liquidated Damages – amounts shall be as stipulated elsewhere in the Contract Documents. Liquidated damages shall apply to the Contract Times for the Project. Liquidated Damages shall be both additive and cumulative. Liquidated Damages shall end upon Substantial Completion, Completion of the Work associated with each Milestone Date, and upon final completion of the Work. Liquidated damages are not a penalty, but constitute liquidated damages for loss to the City because of increases in expenses for administration, legal counsel, accounting, engineering, construction supervision, inspection, and any other

expenses incurred directly as a result of the delay of the Contractor in completing the work. This provision for liquidated damages shall be effective between the parties ipso facto without necessity for demand or putting in default by any notice or other means than by the terms of these Contract Documents, the Contractor hereby waiving any such other notice of default and acknowledging that the Contractor shall be deemed to be in default by the mere act of his failure to complete the work within the Contract Time, or within any valid extension of such time hereunder.

26. *Milestone*—A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.
27. *Notice of Award*—The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.
28. *Notice to Proceed*—A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.
29. *Owner*—~~The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.~~ The City of Chattanooga, Tennessee. The Owner may designate an authorized representative to exercise the authority, in whole or in part, identified in these contract Documents, with such designation being identified in the Supplementary Conditions.
30. *PCBs*—Polychlorinated biphenyls.
31. *Petroleum*—Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.  
31.1 Plan or Plans—All of the drawings pertaining to the contract showing the scope and characteristics of the work or a part thereof, including such supplementary drawings as the Engineer may issue in order to elucidate other drawings or for the purpose of showing the changes in the work or for showing details not shown thereon. The term Plans shall be considered synonymous with the term Drawings.
32. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.
33. *Project*—The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.
34. *Project Manual*—The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in ~~the~~ its table(s) of contents.



35. *Radioactive Material*—Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.
36. *Resident Project Representative*—The authorized representative of Engineer who may be assigned to the Site or any part thereof.
37. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.
38. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.
39. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.
40. *Shop Drawings*—All drawings, diagrams, illustrations, brochures, schedules, specified design related submittals, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work will be fabricated or installed. Shop drawings may also mean detail drawings, working drawings, construction drawings, and engineering data.
41. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.
- 41.1 Special Provisions-The special clauses setting forth conditions or requirements peculiar to the specific Project, supplementing the General Conditions and Supplementary Conditions and taking precedence over any condition or requirements of the General Conditions and Supplementary Conditions with which they are in conflict.
42. *Specifications*—That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.
43. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site. All Subcontractors shall be deemed to be agents of the Contractor.
44. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents to provide the following: (i) the Owner full time, uninterrupted, continuous operation of the work; and (ii) all required functional, performance, and operational or startup testing has been successfully demonstrated for all components, devices, equipment, and systems to the satisfaction of the



Engineer in accordance with the requirements of the Specifications; and (iii) all required inspections and other work necessary for the Engineer to certify “substantially complete” have been completed. , so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.

44.1 Submittals – All administrative documents, Shop Drawings, Samples, product data, manufacturer’s literature, quality control documents, design related documents, record documents, contract close-out documents, and/or any other specified document prepared or assembled by or for Contractor and submitted by Contractor to the Owner and/or Engineer.

45. *Successful Bidder*—The Bidder submitting a responsive Bid to whom Owner makes an award.

46. *Supplementary Conditions*—That part of the Contract Documents which amends or supplements these General Conditions.

47. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or Subcontractor.

47.1 Surety or Sureties—The corporate body which is bound by such bonds as are required with and for the contractor, and which engages to be responsible for the entire and satisfactory fulfillment of the contract and for any and all requirements as set out in the specifications, contract or plans.

48. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

49. *Unit Price Work*—Work to be paid for on the basis of unit prices.

50. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, materials, tools, equipment, incidentals, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

51. *Work Change Directive*—A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order

following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

52. Working Day. Any day, other than a City holiday pursuant to Chattanooga City Code or Sunday, on which the approximate normal working forces of the Contractor may proceed with regular work for at least six hours toward completion of the work, unless work be suspended for causes beyond the contractor control.

## 1.02 Terminology

A. The words and terms discussed in Paragraph 1.02.B through F are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

### B. *Intent of Certain Terms or Adjectives:*

1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

2. Where the word “similar” occurs in the Contract Document, it shall have a general meaning and not be interpreted as being identical, and all details shall be worked out in relation to their location and their connection with other parts of the Work.

### C. *Day:*

1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

### D. *Defective:*

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:

- does not conform to the Contract Documents; or
- does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or

- c. has been damaged prior to Engineer's recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

E. *Furnish, Install, Perform, Provide:*

1. The word "furnish," when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
  2. The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
  3. The words "perform" or "provide," when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
  4. When "furnish," "install," "perform," or "provide" is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, "provide" is implied.
- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

## ARTICLE 2 – PRELIMINARY MATTERS

### 2.01 *Delivery of Bonds and Evidence of Insurance*

- A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor ~~and Owner~~ shall ~~each~~ deliver to the ~~Owner~~~~other~~, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which ~~Owner~~~~either of~~ ~~them~~ or any additional insured may reasonably request) which Contractor ~~is and Owner~~ ~~respectively are~~ required to purchase and maintain in accordance with Article 5.

### 2.02 *Copies of Documents*

- A. Owner ~~shall~~will furnish to Contractor up to ~~ten~~four printed or hard copies of the ~~Drawings and Project Manual~~Contract Documents and one counterpart of the executed Contract Agreement. Additional copies will be furnished upon request at the cost of reproduction.

### 2.03 *Commencement of Contract Times; Notice to Proceed*

- A. ~~The~~ Contract Times will commence to run on the ~~thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated~~ date established in the

Notice to Proceed. A Notice to Proceed may be given at any time within 30-60 days after the Effective Date of the Agreement. ~~In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.~~

#### 2.04 *Starting the Work*

- A. Contractor ~~shall may~~ start to perform the Work on the date when the Contract Times commence to run. The Contractor shall begin the work within ten days of the date of the Notice to Proceed. The Contractor shall notify the City and the Engineer two working days in advance of the date he will begin onsite operations. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

#### 2.05 *Before Starting Construction*

- A. *Preliminary Schedules:* Within 10 days after the ~~Commencement of the Contract Time~~Effective Date of the Agreement (unless otherwise specified in Section 01 32 16 – Construction Schedules of the General Requirements), Contractor shall submit to Engineer for timely review:
1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;
  2. a preliminary Schedule of Submittals; which indicates each required Submittal and the dates for submitting, time for reviewing and processing each Submittal (periodic Submittals may be listed by a common monthly date); and
  3. a preliminary Schedule of Values for all of the Work in a format acceptable to the Engineer and in accordance with the requirements specified in Section 01 32 16 – Construction Schedules of the General Requirements. which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

#### 2.06 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit instructions, receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

## 2.07 *Initial Acceptance of Schedules*

- A. ~~At least 10 days before submission of the first Application for Payment a~~ Within ten days after the preconstruction conference a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
1. The Progress Schedule will be acceptable to Engineer as being the Contractor's schedule for the if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor. The Progress Schedule may subsequently be adjusted in accordance with Paragraph 6.04 and applicable provisions of Section 01 32 16 – Construction Schedules of the General Requirements.
  2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals. The Schedule of Submittals may subsequently be adjusted in accordance with Paragraph 6.04 and applicable provisions of Section 01 32 16 – Construction Schedules of the General Requirements.
  3. Contractor's Schedule of Values will be acceptable to the Engineer as to form and substance if it is provided in accordance with the requirements specified in Section 01 32 16 – Construction Schedules of the General Requirements.~~provides a reasonable allocation of the Contract Price to component parts of the Work.~~

## ARTICLE 3 – CONTRACT DOCUMENTS; INTENT, AMENDING, REUSE

### 3.01 *Intent*

- A. The individual components of the Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that reasonably may be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the indicated result will be provided whether or not specifically called for, at no additional cost to Owner.
- C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.
- D. Each and every clause or other provision required by law to be inserted in these Contract Documents shall be deemed to be inserted herein, and they shall be read and enforced as though it were included herein, and if through mistake or otherwise, any such provision is not inserted,

or if not correctly inserted, then upon the application of either party, the Contract Documents shall forthwith be amended to make such insertion.

E. “Imperative” or “Command” type language is used in the Contract Documents. This command language refers to and is directed to the Contractor.

F. Emphasis, such as italics, underlining, bold text or quotes, may have been used throughout the Contract Documents. Use of emphasis shall not change the meaning of the term emphasized.

### 3.02 *Reference Standards*

#### A. Standards, Specifications, Codes, Laws, and Regulations

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents. Tentative specifications shall be construed as current unless otherwise noted. Where obsolete Federal Specifications have been referenced, they shall be superseded by the Federal Specification in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids).

2. No provision of any such standard, specification, manual, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3. All sections of governing standard specifications relating to measurement and payment shall not apply to the work specified herein.

### 3.03 *Reporting and Resolving Discrepancies*

#### A. *Reporting Discrepancies:*

1. *Contractor’s Review of Contract Documents Before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor discovers, or has actual knowledge of, and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.

2. *Contractor's Review of Contract Documents During Performance of Work:* If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) any standard, specification, manual, or code, or (c) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge or reasonably should have known thereof.

B. *Resolving Discrepancies:*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:
  - a. the provisions of any standard, specification, manual, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference in the Contract Documents); or
  - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).
2. In resolving inconsistencies within the Contract Documents, precedence shall be given in the following descending order:
  - a. Change Orders
  - b. Work Change Directives
  - c. Field Orders
  - d. Engineer's written interpretations and clarifications
  - e. Notice to Proceed
  - f. Addenda
  - g. Contract Agreement
  - h. Supplementary Conditions
  - i. General Conditions
  - j. Specifications



k. Drawings

1. Schedules on Drawings

2. Notes on Drawings

3. Details on Drawings

4. Large Scale Drawings

5. Small Scale Drawings

6. Dimensions given as Figures

7. Scaled Dimensions

l. Bidding Requirements

3.04 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.
- B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:
  - 1. A Field Order; or
  - ~~2. Engineer's approval of a Shop Drawing or Sample (subject to the provisions of Paragraph 6.17.D.3); or~~
  - 23. Engineer's written interpretation or clarification.

3.05 *Reuse of Documents*

- A. Contractor and any Subcontractor or Supplier shall not:
  - 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions; or
  - 2. reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.



### 3.06 *Electronic Data*

- A. Unless otherwise stated in the Supplementary Conditions, the data furnished by Owner or Engineer to Contractor, or by Contractor to Owner or Engineer, that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.
- B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.
- C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

### 3.07 *Contract Times*

- A. All Contract Times and time limits stated in the Contract Documents are of the essence of the Agreement.
- B. The Contractor shall proceed with the Work at a rate of progress which will ensure completion within the Contract Times.
- C. It is expressly understood and agreed by and between the Contractor and the Owner, that the Contract Times for the Work described herein are reasonable time, taking into consideration the average climatic and economic conditions, and other factors prevailing in the locality of the Work.
- D. If the Contractor shall fail to perform the Work required within the Contract Times, or extended Contract Times if authorized by Change Order, then the Contractor shall pay to the Owner the full amount of liquidated damages specified in the Contract Documents for each calendar day that the Contractor shall be in default after the Contract Times stipulated in the Contract Documents.

## **ARTICLE 4 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS**

### 4.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements

for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide, at his own expense and without liability to the City, for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

D. Prior to the issuance of the Notice to Proceed, the City will have obtained most of the land and rights-of-way, including easements, necessary for carrying out and for the completion of the work to be performed pursuant to these Contract Documents, unless mutually agreed or specified in the Specifications. In the event all land and rights-of-way have not been obtained as herein contemplated before construction begins, the Contractor shall begin the work upon such land and rights-of-way as the City may have previously acquired, and no claim for damages whatsoever will be allowed by reason of the delay in obtaining the remaining land and rights-of-way. Should the City be prevented or enjoined from proceeding with the work, or from authorizing its prosecution, either before or after the commencement, by reason of any litigation, or by reason of its inability to procure any lands or rights-of-way for the work, the Contractor shall not be entitled to make or assert claim for damage by reason of said delay, or to withdraw from the contract except by consent of the City; but time for completion of the work will be extended to such time as the City determines will compensate for the time lost by such delay, such determination to be set forth in writing.

#### 4.02 *Subsurface and Physical Conditions*

A. *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports ~~known to Owner~~ of explorations and tests of subsurface conditions at or contiguous to the Site that have been utilized by the Engineer in preparing the Contract Documents; and
2. those drawings ~~known to Owner~~ of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities that have been utilized by the Engineer in preparing the Contract Documents).

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

#### 4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed either:

1. is of such a nature as to establish that any "technical data" on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or
2. is of such a nature as to require a change in the Contract Documents; or
3. differs materially from that shown or indicated in the Contract Documents; or
4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *Engineer's Review:* After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner's obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer's findings and conclusions.

C. *Possible Price and Times Adjustments:*

1. The Contract Price or the Contract Times, or both, ~~will~~may be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
  - a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and

- b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:
    - a. Contractor knew or should have known of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or
    - b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or
    - c. Contractor failed to give the written notice as required by Paragraph 4.03.A.
  3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, neither Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

#### 4.04 *Underground Facilities*

##### A. General

1. The Contractor shall notify the owners of adjacent utilities when the prosecution of the work may affect the utility facilities or operation.
2. The Contractor shall perform and carry on the work so as not to interfere with or damage utility facilities in the vicinity of the work. The Contractor shall take every possible precaution to properly protect and preserve, including temporary supports and bracing where necessary, the utility facilities from damage, injury or displacement. The Contractor shall remedy all damage, injury or loss to any property caused, directly or indirectly, in whole or in part, by the Contractor, any subcontractor or any person directly or indirectly employed or engaged by the Contractor or a subcontractor or any person for whose acts the Contractor or a subcontractor is liable.
3. The City and the Engineer will not be responsible for any delay in performing the work resulting from the existence, removal or adjustment of any utility facilities. Additional costs incurred by the Contractor as a result thereof shall be borne solely by the Contractor.
4. Utility facilities, such as water mains, gas mains, storm sewers, sanitary sewers, telephone lines, power lines and buried facilities and structures in the vicinity of the work are indicated

on the drawings only to the extent such information has been made available to or discovered by the Engineer during the course of preparing the drawings. The actual locations of the utility facilities may vary from the locations shown, and there may be utility facilities existing that are not indicated on the Drawings. It is understood and agreed that there is no guarantee as to the accuracy or completeness of the utility information indicated on the drawings, and all responsibility for the accuracy or completeness thereof is expressly disclaimed. Generally, service connections are not indicated on the Drawings.

5. The Contractor shall be solely responsible for locating all existing underground facilities, including service connections, in advance of excavating, trenching or other work, by contacting the owners of the facilities or prospecting. The Contractor shall use his own information and shall not rely upon the information shown on the Drawings concerning utility facilities.
6. In the event of accidental damage to or disruption of utilities by the Contractor or any of his subcontractors or agents, the Contractor shall immediately take all necessary steps to replace any pieces of damaged equipment and all damaged materials, make all necessary repairs and restore all services to normal. The Contractor shall engage any and all required additional labor, individuals, subcontractors or other outside services which may be deemed necessary, to operate on a continuous "around-the-clock" basis until services are restored. He shall also provide and install all required equipment and materials to maintain temporary emergency services for uninterrupted use of facilities. All costs involved in making the repairs and restoring the disrupted service to normal shall be borne by the Contractor responsible for such disruption of services, and he shall be fully responsible for any and all damage claims resulting from such disruption.
7. Under no circumstances shall the Contractor or any of his subcontractors or agents disrupt or disconnect any type of facility whatsoever without first obtaining the written permission of the utility owner to do so. Request for disruption or disconnection shall state:
  - a. The location of the required disconnect and which utility is concerned.
  - b. The exact date and time at which the disconnect will be required.
  - c. The duration of the proposed disconnect or interruption.
8. Where it is necessary to temporarily interrupt services, the Contractor shall notify the utility owner, both before the interruption and again immediately before service is resumed. Before disconnecting any pipes or cables, the Contractor shall obtain permission from the owners thereof, or shall make suitable arrangements for their disconnection by the owners. Where it is necessary to temporarily interrupt house services, the Contractor shall notify the house owner or occupant, both before the interruption and again immediately before service is resumed. Should underground utilities or structures be encountered that are in minor conflict with the alignment or gradient of the proposed work, the proposed work may be adjusted by the Engineer where such adjustment is feasible and will not interfere with the operation of the proposed system. No payment will be made for these adjustments.

9. Where major conflicts in the proposed work and existing utilities or structures occur and adjustment of the new work is not feasible, then the Engineer may revise the alignment and/or grade to suit these conditions. If, in the opinion of the City, these revisions are necessary and are outside the scope of the bid items, they will be paid for as extra work.

**B.** *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data provided by others; and
2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
  - a. reviewing and checking all such information and data;
  - b. locating all Underground Facilities shown or indicated in the Contract Documents;
  - c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction; and
  - d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

**BC.** *Not Shown or Indicated:*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
2. If Engineer concludes that a change in the Contract Documents is required, a Field Order, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that caused a change as described in Paragraph A.9 of this Article 4.04. was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to



agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

- D. The dimensions and descriptions given on the Drawings for adjacent work by others, if any, (including any existing facilities or utilities previously constructed for Owner) are based on the design drawings and not as-built drawings. Prior to commencing the Work, the Contractor shall verify all as-built conditions and information whenever existing facilities or utilities may impact the Work. Failure of Contractor to so verify all as-built conditions prior to commencing the Work shall bar Contractor from later seeking additional compensation for conflicts with existing facilities or utilities.
- E. Prior to the construction or installation of any proposed facility or pipeline, the Contractor shall expose all existing utilities true to their vertical and horizontal location, within the vicinity of the Work. In order to avoid conflicts between existing and proposed facilities or utilities, the Contractor shall either relocate the existing or proposed utility on a temporary or permanent basis, or shall take whatever means necessary to protect the existing facilities or utilities during the installation of proposed utilities, as approved by the Engineer. No additional payment will be made for the relocation of existing utilities or for any work associated with the protection of existing facilities or utilities.

#### 4.05 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.
- B. Engineer may check the lines, elevations, and reference marks set by Contractor, and Contractor shall correct any errors disclosed by such check. Such a check shall not be considered as approval of Contractor's work and shall not relieve Contractor of the responsibility for accurate construction of the entire Work. Contractor shall furnish personnel to assist Engineer in checking lines and grades.
- C. The Contractor shall review the Contract Documents and the Project site to determine the presence and location of any property or rights-of-way monuments or markers, and to assess the possibility of disruption to these monuments or markers. It will be the Contractor's responsibility to flag, erect guard post, or provide offset references for the protection or the re-monumentation of these property or rights-of-way monuments or markers. In the event these monuments or markers are covered over or disturbed, it will be the Contractor's responsibility to employ a surveyor licensed in the state of that the Project is located to re-establish those monuments or markers of property or rights-of-way, which were present prior to Work on the Project.

- D. It shall be the Contractor's responsibility to verify all reference points shown on the Contract Documents prior to beginning Work on the site. This verification shall be conducted by professionally qualified personnel in a manner which will verify the accuracy of the information shown in the Contract Documents. On projects which involve the connection to, or additions to existing structures, the elevations of these existing structures shall also be verified. Any findings which differ from those shown on the Contract Documents shall be submitted in writing to the Engineer for resolution.
- E. Additional surveys necessary for the construction staking shall be performed by the Contractor, the cost of which shall be incorporated into the appropriate items of Work. On projects in which payment is classified by depth of cut, the construction staking shall be performed in a manner that will allow for the determination of cut classification.

#### 4.06 *Hazardous Environmental Condition at Site*

- A. *Reports and Drawings:* The Supplementary Conditions identify those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at the Site.
- B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
  2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
  3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.
- D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such



notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 4.06.E.

- E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered written notice to Contractor: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.
- F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may issue a Work Change Directive or Change Order as appropriate regarding said condition. ~~order the portion of the Work that is in the area affected by such condition to be deleted from the Work.~~ If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.
- G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

- I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

## ARTICLE 5 – BONDS AND INSURANCE

### 5.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment ~~becomes due~~ is made by the Owner or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.
- B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed each bond.
- C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

### 5.02 *Licensed Sureties and Insurers*

- A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized ~~in the jurisdiction in which the Project is located~~ by the State of Tennessee to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as ~~may be provided below; in the Supplementary Conditions.~~
1. Surety shall be in good standing with the Tennessee Department of Commerce and Insurance.
  2. Surety and Insurers must have an A.M. Best Financial Strength Rating of A or higher, with a Financial Size Category of X or higher.
  3. The surety shall have an underwriting limitation in Circular 570 in excess of the Contract Amount.

4. No surety will be accepted who is now in default or delinquent on any bond.

5.03 *Certificates of Insurance*

- A. Contractor shall deliver to Owner, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.
- B. ~~Owner shall deliver to Contractor, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.~~
- C. Failure of Owner to demand such certificates or other evidence of Contractor's full compliance with these insurance requirements or failure of Owner to identify a deficiency in compliance from the evidence provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.
- D. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor.
- E. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner in the Contract Documents.

5.04 *Contractor's Insurance*

- A. Contractor shall purchase and maintain such insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:
  - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
  - 2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;
  - 3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;
  - 4. claims for damages insured by ~~reasonably~~ available personal injury liability coverage which are sustained:
    - a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or

- b. by any other person for any other reason;
- 5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and
- 6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance required by this Paragraph 5.04 shall:

- 1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, be written on an occurrence basis, include as additional insureds (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;
- 2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;
- 3. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;
- 4. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);
- 5. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and
- 6. include completed operations coverage:
  - a. Such insurance shall remain in effect for two years after final payment.
  - b. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

## 5.05 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

## 5.06 *Property Insurance*

- A. Unless otherwise provided in the Supplementary Conditions, ~~Owner~~Contractor shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof ~~(subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations)~~. This insurance shall:

1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee;
2. be written on a Builder's Risk "all-risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (other than that caused by flood), and such other perils or causes of loss as may be specifically required by the Supplementary Conditions.
3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);
4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;
5. allow for partial utilization of the Work by Owner;
6. include testing and startup; and
7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other loss payee to whom a certificate of insurance has been issued.

- ~~B. Owner shall purchase and maintain such equipment breakdown insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors,~~

~~members, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee.~~

C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other loss payee to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.

~~D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.~~

~~E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under this Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.~~

#### 5.07 Waiver of Rights

A. Owner and Contractor intend that all policies purchased in accordance with Paragraphs 5.04 and 5.06 by Contractor will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or loss payees thereunder. ~~Owner and Contractor waive all rights against each other and their respective officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) under such policies for losses and damages so caused.~~ None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner/Contractor as trustee or otherwise payable under any policy so issued.

~~B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for:~~



- ~~1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and~~
  - ~~2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.~~
- ~~C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them.~~

#### 5.08 *Receipt and Application of Insurance Proceeds*

- A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner ~~as fiduciary~~ for the loss payees, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order.
- B. Owner ~~as fiduciary~~ shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner ~~as fiduciary~~ shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner ~~as fiduciary~~ shall adjust and settle the loss with the insurers. ~~and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.~~

#### 5.09 *Acceptance of Bonds and Insurance; Option to Replace*

- A. If ~~either Owner or Contractor~~ has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by ~~the other party~~ Contractor in accordance with this Article 5 on the basis of non-conformance its not complying with the Contract Documents, ~~the objecting party shall so~~ Owner will notify ~~the other party~~ Contractor in writing thereof within 10 days after receipt of the certificates (or other evidence requested) required by of the date of delivery of such certificate to Owner in accordance with Paragraph 2.01.B. ~~Owner and~~ Contractor shall ~~each~~ provide ~~to the other~~ such additional information in respect of insurance provided by Contractor as ~~the other~~ Owner may reasonably request. ~~If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required~~

~~coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.~~

B. All policies and bonds shall be subject to approval by the City Attorney. Should the City Attorney at any time in his sole discretion determine that the insurance policies and certificate provided may not be sufficient to protect the interests of the City because of the insolvency of the insurance company or otherwise, the Contractor shall replace such policies with policies meeting his approval.

#### 5.10 *Partial Utilization, Acknowledgment of Property Insurer*

A. If Owner ~~chooses~~finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

### ARTICLE 6 –CONTRACTOR’S RESPONSIBILITIES

#### 6.01 *Supervision and Superintendence*

A. Contractor shall supervise, provide quality control, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Any method of work suggested by the City or Engineer, but not specified, shall be used at the risk and responsibility of the Contractor; and the City and Engineer will assume no responsibility therefore. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances. Contractor shall also designate, in writing, a representative, hereinafter referred to as Project Manager, assigned to the Project on a full-time basis during execution of the Work who shall have the authority to act on behalf of Contractor, including executing the orders or directions of the Engineer without delay. This Superintendent and/or Project Manager shall have full authority to promptly supply products, tools, plant equipment, and labor as may be required to diligently prosecute the Work. All communications given to or received from the Superintendent and/or the Project Manager shall be binding on Contractor.



- C. If at any time during the Project the Superintendent or Project Manager leaves the Project site while Work is in progress, Engineer shall be notified and provided with the name of Contractor's representative having responsible charge.
- D. Contractor shall also designate the person responsible for Contractor's quality control while Work is in progress. Engineer shall be notified in writing prior to any change in quality control representative assignment.
- E. Prior to the Commencement of the Contract Time, Contractor shall furnish to the Owner and Engineer the names, resumes, 24 hour contact information and other relevant information associated with the Project Manager and the Superintendent that are to be assigned to this project. The Project Manager and Superintendent must be acceptable to the Owner and Engineer.

## 6.02 *Labor; Working Hours*

- A. Contractor shall provide competent, skilled, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site. Contractor shall, upon demand from the Engineer, immediately remove any manager, superintendent, foreman or workman whom the Engineer or Owner may consider incompetent or undesirable.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any City holiday pursuant to the Chattanooga City Code legal holiday without Owner's written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.
- C. Regular working hours may be Monday through Friday, excluding holidays, occurring between the hours of 7:00 AM and 6:00 PM, unless restricted otherwise. Contractor shall establish regular scheduled work times, e.g., four 10-hour days, five 8-hour days, or five 10-hour days within the hours and days allowed above. Approval for specific work outside regular scheduled work times shall be requested no less than 48 hours prior to the requested work period. Contractor shall request approval of changes in regular scheduled work times no less than one week prior to the desired change. Occasional unscheduled overtime on weekdays may be permitted provided reasonable notice is given to Engineer. Night work will not be established as a regular procedure, excluding emergencies, except with written permission. Such permission, if granted, shall be upon such terms and conditions deemed appropriate in the Engineer's sole discretion.
- D. Contractor shall pay all extra costs incurred by the Owner associated with work, outside of normal working hours, including additional support services, inspection services, testing services, utilities or other applicable costs. The cost associated with the Owner's inspection overtime will be the amounts as provided in the Supplementary Conditions per hour per individual, depending upon individuals assigned to the Project, the type of work being inspected, and the date of the invoice; i.e., allowing for salary escalation. Contractor will not be

responsible for extra costs associated with inspection overtime for work in excess of 40 hours per week when such overtime work is explicitly required by the Contract Documents.

E. Except in the case of emergencies or other unusual circumstances, no work shall be permitted on the project on Sunday or locally observed national holidays.

F. The Engineer will determine to what extent extraordinary onsite personnel work is required during Contractor's overtime work or working hours outside regular scheduled work hours.

G. During unfavorable weather, wet ground, or other unsuitable construction conditions, the Contractor shall confine his operations to work which will not be affected adversely thereby. No portion of the work shall be constructed under conditions which would affect adversely the quality or efficiency thereof, unless special means or precautions are taken by the Contractor to perform the work in a proper and satisfactory manner.

### 6.03 *Services, Materials, and Equipment*

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, quality control, testing, start-up, and completion of the Work.

B. All materials and equipment incorporated into the Work shall be as specified or, ~~and if not specified~~, shall be of good quality, ~~and~~ new ~~and unused~~, except as otherwise provided in the Contract Documents and shall be installed in an undamaged condition. All products provided on this Project shall be products currently manufactured by the manufacturer, i.e., products shall not be discontinued or out-of-date products nor shall they be of the last production run of the product. Contractor shall incorporate the previous sentence in any contract or agreement between Contractor and subcontractor or supplier supplying products provided on this Project. All special warranties and guarantees required by the ~~Specifications~~ Contract Documents shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

D. Without limiting the responsibility or liability of the Contractor pursuant to this agreement, all warranties given by manufacturers on materials or equipment incorporated in the work are hereby assigned by the Contractor to the Owner. Such assignment shall be effective upon completion of Contractor's warranty period. If requested, the Contractor shall execute formal assignments of said manufacturer's warranties to the Owner. All such warranties shall be directly enforceable by the Owner. Such assignment shall in no way affect the Contractor's responsibilities and duties during the warranty period.

- E. Wherever a stock size of manufactured item or piece of equipment is specified by its nominal size, it shall be the responsibility of the Contractor to determine the actual space requirements for setting and for entrance to the setting space and to make all necessary allowances and adjustments therefor in his work without additional cost to the City.
- F. Equipment and Construction Plant. All equipment and construction plant shall be suitable to produce the quality of work and materials required for the satisfactory completion of the work within the Contract Time and shall be satisfactory to the Engineer. The Contractor shall provide adequate and suitable equipment and construction plant to meet the requirements of the work as specified in these Contract Documents. The Contractor shall remove unsuitable equipment from the work and add to the construction plant when ordered to do so by the Engineer. The Contractor shall obtain written permission from the City prior to constructing temporary buildings or other structures on land owned or leased by the City. If a permit is granted, said buildings or other structures shall comply with all applicable regulations regarding their construction and maintenance and shall be satisfactory to the City

#### 6.04 *Progress Schedule*

- A. Contractor shall provide all resources, labor, materials, equipment, services, etc. necessary to adhere to the Progress Schedule established in accordance with Paragraph 2.07 and Section 01 32 16 – Construction Schedules of the General Requirements as it may be adjusted from time to time as provided below.
1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in and Section 01 32 16 – Construction Schedules of the General Requirements) an updated –the– Progress Schedule that will not result in changing the Contract Times and an updated Schedule of Submittals with each partial payment request, but no less than monthly. Contractor’s failure to provide acceptable updated Progress Schedule and Schedule of Submittals will delay processing of the pay request until receipt of the acceptable updated Progress Schedule and/or an updated Schedule of Submittals. Such adjustments will updates and adjustments shall comply with any provisions of Section 01 32 16 – Construction Schedules of the General Requirements applicable thereto.
  2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.
  3. Number of anticipated days associated with weather conditions, as defined in the General Requirements, shall be included on the critical path of Project Schedule.
- B. The Contractor shall implement the detailed schedule of activities to the fullest extent possible between Project Coordination Meetings.
- C. The Contractor shall prepare its daily report by 10:00 a.m. of the day following the report date. This daily report will contain, as a minimum, the weather conditions; number of workers by craft, including supervision and management personnel on site; active and inactive equipment on site; work accomplished by schedule activity item; problems; and visitors to the jobsite.

- D. If a current activity or series of activities on the overall project schedule is behind schedule and if the late status is not due to an excusable delay for which a time extension would be forthcoming, the Contractor shall attempt to reschedule the activity to be consistent with the overall Project schedule so as not to delay any of the Contract milestones. The Contractor agrees that:
1. The Contractor shall attempt to expedite the activity completion so as to have it agree with the overall progress schedule. Such measures as the Contractor may choose shall be made explicit during the Project Coordination Meeting.
  2. If, within two weeks of identification of such behind-schedule activity, the Contractor is not successful in restoring the activity to an on schedule status, the Contractor shall:
    - a. Carry out the activity with the scheduled crew on an overtime basis until the activity is complete or back on schedule.
    - b. Increase the crew size or add shifts so the activity can be completed as scheduled.
    - c. Commit to overtime or increased crew sizes for subsequent activities, or some combination of the above as deemed suitable by the Engineer.
  3. These actions shall be taken at no increase in the Contract amount.
- E. The Contractor shall maintain a current copy of all construction schedules on prominent display in the Contractor's field office at the Project site.
- F. The Contractor shall cooperate with the Owner and Engineer in all aspects of the Project scheduling system. Failure to implement the Project scheduling system or to provide specified schedules, diagrams and reports, or to implement actions to re-establish progress consistent with the overall progress schedule may be causes for withholding of payment.

#### 6.05 *Substitutes and "Or-Equals"*

- A. See Section 01 25 00 – Substitutions and Options of the General Requirements. Whenever — an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below:
1. "Or Equal" Items: If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

- ~~a. in the exercise of reasonable judgment Engineer determines that:~~
- ~~1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;~~
  - ~~2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole; and~~
  - ~~3) it has a proven record of performance and availability of responsive service.~~
- ~~b. Contractor certifies that, if approved and incorporated into the Work:~~
- ~~1) there will be no increase in cost to the Owner or increase in Contract Times; and~~
  - ~~2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.~~
- ~~2. Substitute Items:~~
- ~~a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.~~
- ~~b. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.~~
- ~~c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented by the General Requirements, and as Engineer may decide is appropriate under the circumstances.~~
- ~~d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:~~
- ~~1) shall certify that the proposed substitute item will:~~
    - ~~a) perform adequately the functions and achieve the results called for by the general design,~~
    - ~~b) be similar in substance to that specified, and~~
    - ~~e) be suited to the same use as that specified;~~
  - ~~2) will state:~~
    - ~~a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time;~~

- ~~b) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and~~
- ~~e) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;~~
- ~~3) will identify:~~
  - ~~a) all variations of the proposed substitute item from that specified, and~~
  - ~~b) available engineering, sales, maintenance, repair, and replacement services; and~~
  - ~~4) shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change.~~
- ~~B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.~~
- ~~C. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by a Change Order in the case of a substitute and an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.~~
- ~~D. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.~~
- ~~E. *Engineer's Cost Reimbursement:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.~~
- ~~F. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute or "or equal" at Contractor's expense.~~

6.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Acceptance of any Subcontractor, other person or organization by Owner shall not constitute a waiver of any right of Owner to reject defective Work. Contractor shall not be required to employ any Subcontractor, ~~Supplier,~~ or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.
- B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, ~~and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued.~~ No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.
- C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:
1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity; nor
  2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.
- D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.
- E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.
- F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade. Such arrangement shall not operate to make the



Engineer or the City an arbitrator to establish subcontract limits between Contractor and Subcontractor.

- G. All Work performed for Contractor by a Subcontractor or Supplier ~~will~~shall be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. ~~Whenever any such agreement is with a Subcontractor or Supplier who is listed as a loss payee on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.~~
- H. Owner or Engineer may furnish to any Subcontractor, Supplier or other person or organization, to the extent practicable, information about amounts paid on their behalf to Contractor in accordance with Contractor's Applications for Payment.
- I. Specialty Subcontractors: Contractor shall utilize the services of Specialty Subcontractors on those parts of the Work which is declared as specialty work in Specifications and which, under normal contracting practices, is best performed by Specialty Subcontractors, as required by the Engineer in Engineer's sole discretion, at no additional cost to the Owner. If Contractor desires to self-perform specialty work, Contractor shall submit a request to the Owner, accompanied by evidence that Contractor's own organization has successfully performed the type of work in question, is presently competent to perform the type of work, and the performance of the work by Specialty Subcontractors will result in materially increased costs or inordinate delays.
- J. The Contractor shall perform a minimum of 50 percent of the onsite labor with its own employees.

6.07 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other



professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents

#### 6.08 *Permits*

- A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction, ~~permits and licenses temporary and permanent permits and licenses, necessary and incidental to the due and lawful prosecution of the work, including all permits on any part of the Work as required by law in connection with the Work.~~ Owner ~~shall~~ will assist Contractor, when ~~required by the permitting agency necessary,~~ in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.
- B. Railway Crossings. When the work encroaches upon the right-of-way of any railway, the City will secure for the Contractor all the necessary easements or authority to enter upon such right-of-way for the prosecution and completion of the work. Contractor shall, however, take such special precaution for the safety of the work and the traveling public as may be necessary, by sheeting, bracing, and thoroughly supporting the sides of any excavation and supporting and protecting any adjacent structures. Contractor shall be bound by all requirements as stated in Supplemental Agreement between the City and railroad authority, as included in an appendix to these Contract Documents.

#### 6.09 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's responsibility to make certain that the Specifications and

Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times, or both. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

D. It is understood and agreed that the Contractor shall be familiar with and shall observe and comply with, all Federal, State, County, and City laws, codes, ordinances, regulations, orders, and decrees, including air and water pollution and noise abatement regulations, existing, or enacted subsequent to the execution of the Contract, that in any manner affect those engaged or employed in the work, or the materials or equipment used in the work, or which in any way affect the conduct of the work. The Contractor shall strictly observe all applicable laws and regulations as to public safety, health and sanitation. No pleas of misunderstanding or ignorance on the part of the Contractor will in any way serve to modify or mitigate the provisions of these Contract Documents. The Contractor and his Surety shall indemnify and save harmless the City and the Engineer and all their officers, agents, and servants against any claim or liability arising from, or based on the violation of, any such law, code, ordinance, regulation, order or decree, whether by himself, his agents or his employees.

F. Where professional engineering and/or architectural services are required in connection with any of the components required by the Contract, all Bidders and component suppliers must make certain that there is full compliance with all applicable laws of the state in which the Project is located and any other state governing professional engineering and/or architecture. The Owner and Engineer do not warrant that any entity listed as an acceptable manufacturer is or will be in compliance with such laws.

G. Any fines levied against the Owner for failure of Contractor to properly maintain required NPDES erosion and sediment control measures or any other related requirements will be deducted as set-offs from payments due Contractor.

#### 6.10 *Taxes*

A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

#### 6.11 *Use of Site and Other Areas*

##### A. *Limitation on Use of Site and Other Areas:*

1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to

any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.
  3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.
- B. *Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.
- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

#### 6.12 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site [Record Documents as specified in the Section 01 78 39 – Record Documents of the General Requirements](#) ~~one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference.~~ Upon completion of the Work, these record documents, Samples, and Shop Drawings ~~will~~ shall be delivered to Engineer for Owner.

#### 6.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve

Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all ~~necessary~~ precautions for the safety of, and shall provide the ~~necessary~~ protection to prevent pollution of or damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;
  2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
  3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.
- C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
- D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
- E. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- F. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).
- G. The property, improvements or facilities at the site shall be replaced or restored to a condition as good as when Contractor entered upon the Site. In case of failure on the part of Contractor to restore such property, or make good such damages or injury, the Owner may, after 48 hours written notice, or sooner in the case of an emergency, proceed to repair, rebuild, or otherwise

restore such property, improvements or facilities as may be deemed necessary. The cost thereof will be deducted from any monies due or which may become due Contractor under this Contract.

H. Reasonable care shall be taken during construction to avoid damage to vegetation. Ornamental shrubbery and tree branches shall be tied back, where appropriate, to minimize damage. Trees which receive damage to branches shall be trimmed of those branches to improve the appearance of the tree. Tree trunks receiving damage from equipment shall be treated with a tree dressing.

I. The Contractor shall give due notice to any controlling person, department, or public service company, prior to adjusting items to grade and shall be held strictly liable to the City if any such items are disturbed, damaged or covered up during the course of the work.

J. Fire hydrants on or adjacent to the work shall be kept accessible to the fire-fighting apparatus at all times, and no material or obstruction shall be placed within 10 feet of any hydrant. Adjacent premises must be given access, as far as practicable, and obstruction of sewer inlets, gutters and ditches will not be permitted.

K. Public Safety and Convenience

1. The Contractor shall conduct his operations in a manner that will offer the least possible obstruction and inconvenience to the public and he shall not have under construction an amount of work greater than he can prosecute properly with due regard to the rights of the public.

2. Construction operations shall be conducted in a manner that will cause as little inconvenience as possible to abutting property owners. Convenient access to driveways, houses, buildings or other facilities in the vicinity of the work shall be maintained and temporary access facilities for public roadways shall be provided and maintained in satisfactory condition.

6.14 *Safety Representative*

A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 *Hazard Communication Programs*

A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

B. The Contractor shall erect and properly maintain at all times, as required by the conditions and progress of the work, all necessary safeguards, including sufficient lights and danger signals on or near the work; he shall erect suitable railings, barricades, covers, or other protective devices about unfinished work, open trenches, holes, embankments or other hazards and obstructions; where hazards to workmen or the public exist. The Contractor shall provide, at all times, all necessary watchmen on the project, for the safety of employees, delivery personnel, and the

general public, and to diligently guard and protect all work and materials, including Owner-furnished equipment. Construction equipment shall be suitably night-marked and lighted as necessary for safety considerations. No separate payment will be made for providing lights on vehicles and equipment, signs, barricades, lights, flags, watchmen and other protective devices, and the costs thereof shall be included in the Contract Price(s).

#### 6.16 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

#### 6.17 *Shop Drawings, ~~and~~ Samples and Other Submittals*

- A. Contractor shall submit ~~Shop Drawings and Samples~~ Submittals to Engineer for review and approval in accordance with the accepted or adjusted Schedule of Submittals (as required by Paragraph 2.07). Each submittal will~~shall~~ be identified as Engineer may require.
1. *Shop Drawings:*
    - a. Submit number of copies specified in the Section 01 33 23 – Shop Drawings, Product Data and Samples of the General Requirements.
    - b. Data shown on the Shop Drawings will~~shall~~ be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.
  2. *Samples:*
    - a. Submit number of Samples specified in the Specifications.
    - b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.
- B. Where ~~a Shop Drawing or Sample~~ any Submittal is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Submittal Procedures:*
1. Before submitting each Shop Drawing or Sample, Contractor shall have:



- a. reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
  - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
  - c. determined and verified the suitability of all materials offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
  - d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
2. Each [Shop Drawing and Sample](#) submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal.
  3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawings or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

D. *Engineer's Review:*

1. Engineer will [return as incomplete or will](#) provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval [or disapproval](#) will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
2. Engineer's review and approval [or disapproval](#) will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written ~~notation~~[Field Order](#) thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

4. Review by the City or Engineer of any plan or method of work proposed by the Contractor shall not relieve the Contractor of any responsibility therefor, and such review shall not be considered as an assumption of any risk or liability by the City or Engineer, or any officer, agent, or employee thereof. The Contractor shall have no claim on account of the failure or inefficiency of any plan or method so reviewed.

E. *Resubmittal Procedures:*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

F. Excessive Submittal Resubmission: Engineer will record time required by Engineer for excessive Submittal review occasioned by Contractor's resubmission, in excess of two resubmissions of any required Submittal, caused by unverified, unchecked or unreviewed, incomplete, inaccurate or erroneous, or nonconforming Submittals. Upon receipt of Engineer's accounting of time and costs, Contractor will reimburse Owner for the charges of Engineer's review for excessive resubmissions through set-offs from the recommended Owner payments to Contractor as established in Paragraph 14.02.D. of these General Conditions.

G. In the event that Contractor provided a submittal for a previously approved item, whether such is as a substitution or in addition to the previously approved item, Contractor shall reimburse Owner for Engineer's charges for such time as may be required to perform all reviews of the substitute item, unless the change is specifically requested by the Owner.

6.18 *Continuing the Work*

- A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on representation of Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
  1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or



2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
1. observations by Engineer;
  2. recommendation by Engineer or payment by Owner of any progress or final payment;
  3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
  4. use or occupancy of the Work or any part thereof by Owner;
  5. any review and approval of a ~~Shop Drawing or Sample s~~Submittal or the issuance of a notice of acceptability by Engineer;
  6. any inspection, test, or approval by others; or
  7. any correction of defective Work by Owner.

#### 6.20 *Indemnification and Liability*

- A. It is understood and agreed that the Contractor shall be deemed and considered an independent contractor in respect to the work covered by these Contract Documents, and shall assume all risks and responsibility for casualties of every description in connection with the work, except that he shall not be held liable or responsible for delays or damage to work caused by acts of God, acts of public enemy, quarantine restrictions, general strikes throughout the trade, or freight embargoes not caused or participated in by the Contractor. The Contractor shall have charge and control of the entire work until completion and final acceptance of the work by the City. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not caused in part by any negligence or omission of a person or entity indemnified hereunder or whether liability is imposed upon such indemnified party by Laws and Regulations regardless of the negligence of any such person or entity .

- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor ~~under Paragraph 6.20.A~~ shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
1. the negligent preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
  2. negligently giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.
- D. Contractor, Subcontractors, Suppliers and others on the Project, or their sureties, shall maintain no direct action against the Engineer, their officers, employees, affiliated corporations, consultants, and subcontractors, for any claim arising out of, in connection with, or resulting from the engineering services performed. Only the Owner will be the beneficiary of any undertaking by the Engineer.
- E. Defense of Suits: In case any action in court is brought against the City or the Engineer, or any officer, agent or employee of any of them, for the failure, omission, or neglect of the Contractor to perform any of the covenants, acts, matters, or things by this contract undertaken; or for injury or damage caused by the alleged negligence of the Contractor or his subcontractors or his or their agents, or in connection with any claim based on lawful demands of subcontractors, workmen, material-men, or suppliers, the Contractor shall indemnify, defend and save harmless the City and the Engineer and their officers, agents and employees, from all losses, damages, costs, expenses (including attorneys' fees), judgments, or decrees arising out of such action.

#### 6.21 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.
- B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations,

specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

#### 6.22 Project Coordination Meetings

- A. The Contractor shall participate in Project Coordination Meetings to be held on the site monthly, or more often if conditions warrant, to establish the current state of completion and revise the schedule as necessary. The Project Coordination Meeting will be conducted by the Owner and/or the Engineer.

### **ARTICLE 7 – OTHER WORK AT THE SITE**

#### *7.01 Related Work at Site*

- A. Owner may perform other work related to the Project at the Site with Owner's employees, or through other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:
  - 1. written notice thereof will be given to Contractor prior to starting any such other work; and
  - 2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times or both that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.
- B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with

such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.

- C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

#### 7.02 *Coordination*

- A. If Owner ~~intends to contract~~s with others for the performance of other work on the [Project at the Site](#), the following will be set forth in Supplementary Conditions:
1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
  2. the specific matters to be covered by such authority and responsibility will be itemized; and
  3. the extent of such authority and responsibilities will be provided.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination [with other contractors](#).

#### 7.03 *Legal Relationships*

- A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.
- B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's wrongful actions or inactions.
- C. Contractor shall be liable to Owner and any other contractor under direct contract to Owner for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's wrongful action or inactions.

#### [7.04 Claims Between Contractors](#)

- [A. Should Contractor cause damage to the work or property of any separate contractor at the site, or should any claim arising out of Contractor's performance of the work at the site be made by any separate contractor against Contractor, Owner, Engineer, or any other person, Contractor shall promptly attempt to settle with such other contractor by agreement, or to otherwise resolve the dispute by mediation, arbitration, or at law.](#)

- B. Contractor shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold Owner, Engineer, and the officers, directors, employees, agents, and other consultants of each and any of them harmless from and against all claims, costs, losses and damages, (including, but not limited to, all fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) arising directly, indirectly or consequentially out of or resulting from any action, legal or equitable, brought by any separate contractor against Owner, Engineer, or the officers, directors, employees, agents, and other consultants of each and any of them to the extent based on a claim arising out of Contractor's performance of the Work. Should a separate contractor cause damage to the Work or property of Contractor or should the performance of work by any separate contractor at the site give rise to any other claim, Contractor shall not institute any action, legal or equitable, against Owner, Engineer, or the officers, directors, employees, agents, and other consultants of each and any of them or permit any action against any of them to be maintained and continued in its name or for its benefit in any court or before any mediator or arbitrator which seeks to impose liability on or to recover damages from Owner, Engineer, or the officers, directors, employees, agents, or other consultants of each and any of them on account of any such damage or claim.
- C. If Contractor is delayed at any time in performing or furnishing Work by any act or neglect of a separate contractor, and Owner and Contractor are unable to agree as to the extent of any adjustment in Contract Times attributable hereto, Contractor may make a claim for an extension of times in accordance with Article 12. An extension of the Contract Times shall be Contractor's exclusive remedy with respect to Owner, and/or Engineer and the officers, directors, employees, agents, or other consultants of each and any of them for any delay, disruption, interference or hindrance caused by any separate contractor. This Paragraph does not prevent recovery from Owner, Engineer, and/or Designer for activities that are their respective responsibilities.

## **ARTICLE 8 – OWNER'S RESPONSIBILITIES**

### *8.01 Communications to Contractor*

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

### *8.02 Replacement of Engineer*

- A. In case of termination of the employment of Engineer, Owner shall appoint an engineer ~~to whom Contractor makes no reasonable objection,~~ whose status under the Contract Documents shall be that of the former Engineer.

### *8.03 Furnish Data*

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

### *8.04 Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

- A. Owner's duties with respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

8.06 *Insurance*

- A. Owner's shall not have any responsibilities, ~~if any~~, with respect to purchasing and maintaining liability and property insurance ~~are set forth in Article 5~~.

8.07 *Change Orders*

- A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.09 *Limitations on Owner's Responsibilities*

- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents.

8.12 *Compliance with Safety Program*

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed pursuant to Paragraph 6.13.D.



### 8.13 Testing of Materials and Equipment

- A. The testing of materials shall be made by a competent laboratory or other person selected and paid for by the City. The Contractor shall submit samples of materials for testing as required by the Engineer. The cost of all retests made necessary by the failure of materials to conform to the requirements of these Contract Documents shall be paid by the Contractor.

## **ARTICLE 9 – ENGINEER’S STATUS DURING CONSTRUCTION**

### *9.01 Owner’s Representative*

- A. Engineer will be Owner’s representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner’s representative during construction are set forth in the Contract Documents.

### *9.02 Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor’s executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer’s efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer’s visits and observations are subject to all the limitations on Engineer’s authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer’s visits or observations of Contractor’s Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor’s means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

### *9.03 Project Representative*

- A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work, but will not be on-site at all hours the Work is in progress. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer’s consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

#### 9.04 *Authorized Variations in Work*

- A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefore as provided in Paragraph 10.05.

#### 9.05 *Rejecting Defective Work*

- A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

#### 9.06 *Shop Drawings, Change Orders and Payments*

- A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.
- B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.
- C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.
- D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

#### 9.07 *Determinations for Unit Price Work*

- A. Engineer will have authority to determine the actual quantities and classifications of Unit Price Work performed by Contractor. If Engineer exercises such authority, Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.



9.08 *Decisions on Requirements of Contract Documents and Acceptability of Work*

- A. Engineer will be the initial interpreter of the requirements of the Contract Documents and initial judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question.
- B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believes that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.
- C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.
- D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents, except that Owner shall determine whether bonds, certificates of insurance and release of liens comply with the Contract Documents.

- E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to the Resident Project Representative, if any, and assistants, if any.

#### 9.10 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Engineer has been informed pursuant to Paragraph 6.13.D.

#### 9.11 Authority of the City Engineer

- A. If the City has retained an engineer to assist the City Engineer in administering the contract, then the authority of the City Engineer shall be as specified herein. If the administration of the contract is performed by the City Engineer without having an engineer, then the authority of the City Engineer shall be as specified in this section and this Article 9.
- B. The general administration and observation of the performance and execution of the work under these Contract Documents is vested in the City Engineer. The detailed administration and observation of the performance and execution of the work is vested in the Engineer as set forth above.
- C. The City Engineer may authorize a person to act as the City Engineer's authorized representative or agent in carrying out the duties specified in these Contract Documents. The instructions of the City Engineer, or authorized representative, shall be strictly and promptly followed in every case.
- D. The City Engineer, or authorized representative, shall have authority to suspend operations at any time, without additional cost to the Owner, when the work, in the City Engineer's opinion, is not being carried out in conformity with the Drawings, Specifications, and other Contract Documents.
- E. The City Engineer, or authorized representative, may appoint Inspectors as are necessary to observe the performance of the work under these Contract Documents and the amount, character, and quality of materials supplied.

### **ARTICLE 10 – CHANGES IN THE WORK; CLAIMS**

#### 10.01 *Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

1. Owner may, in anticipation of possibly ordering an addition, deletion or revision to the Work, request Contractor to prepare a proposal of cost and times to perform Owner's contemplated changes in the Work. Contractor's written proposal shall be transmitted to the Engineer promptly, but not later than fourteen days after Contractor's receipt of Owner's written request and shall remain a firm offer for a period not less than sixty days after receipt by Engineer.
2. Contractor is not authorized to proceed on an Owner contemplated change in the Work prior to Contractor's receipt of a Change Order (or Work Change Directive) incorporating such change into the Work.
3. Owner's request for proposal or Contractor's failure to submit such proposal within the required time period will not justify a claim for an adjustment in Contract Price or Contract Time (or Milestones).
4. The Owner shall not be liable to the Contractor for any costs associated with the preparation of proposal associated with the Owner's contemplated changes in the Work.

- B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

#### 10.02 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.D.

#### 10.03 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:
1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;
  2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and
  3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of

executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

B. In signing a Change Request Form, the Owner and Contractor acknowledge and agree that:

1. The stipulated compensation (Contract Price or Contract Time, or both) set forth in the Change Order includes payment for:
  - a. the Cost of the Work covered by the Change Order,
  - b. Contractor's fee for overhead and profit,
  - c. interruption of Progress Schedules,
  - d. delay and impact, including cumulative impact, on other work under the Contract Documents, and
  - e. extended home office and jobsite overhead;
2. the Change Order constitutes full mutual accord and satisfaction for the change to the Work;
3. No reservation of rights to pursue subsequent claims on the Change Order will be made by either party; and
4. No subsequent claim or amendment of the Contract Documents will arise out of or as a result of the Change Order.

#### 10.04 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

#### 10.05 *Claims and Disputes*

- A. *Engineer's Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.

- B. *Notice:* Written notice stating the general nature of each Claim shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than ~~30-10~~ days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with written supporting data shall be delivered to the Engineer and the other party to the Contract within ~~60~~ 20 days (and monthly thereafter for continuing events) after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Times shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).
- C. *Engineer's Action:* Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:
1. deny the Claim in whole or in part;
  2. approve the Claim; or
  3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.
- D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.
- E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.
- F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

## **ARTICLE 11 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK**

### 11.01 *Cost of the Work*

- A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of

the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 11.01.B, and shall include only the following items:

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, ~~bonuses~~, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.
2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
  - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
  - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

1. Full rental cost for rented, leased, and/or owned equipment shall not exceed the rates listed in the Rental Rate Blue Book published by Equipment Watch, a unit of Penton Media, Inc., as adjusted to the regional area of the Project. The most recent published edition in effect at the commencement of the actual equipment use shall be used.
2. Rates shall apply to equipment in good working condition. Equipment not in good condition, or larger than required, may be rejected by Engineer or accepted at reduced rates.
3. Equipment in Use: Actual equipment use time documented by the Engineer shall be the basis that the equipment was on and utilized at the Project site. In addition to the leasing rate above, equipment operational costs shall be paid at the estimated operating cost, payment category (and the table below), and associated rate set forth in the Blue Book if not already included in the lease rate.

The hours of operation shall be based upon actual equipment usage to the nearest full hour, as recorded by the Engineer.

<u>Actual Usage</u>	<u>Blue Book Payment Category</u>
<u>Less than 8 hours</u>	<u>Hourly Rate</u>
<u>8 or more hours but less than 7 days</u>	<u>Daily Rate</u>
<u>7 or more days but less than 30 days</u>	<u>Weekly Rate</u>
<u>30 days or more</u>	<u>Monthly Rate</u>

4. Equipment when idle (Standby): Idle or standby equipment is equipment on-site or in transit to and from the Work site and necessary to perform the Work under the modification but not in actual use. Idle equipment time, as documented by the Engineer, shall be paid at the leasing rate determined in 11.01.A.5.c., excluding operational costs.
5. Where a breakdown occurs on any piece of equipment, payment shall cease for that equipment and any other equipment idled by the breakdown. If any part of the Work is shutdown by the Owner, standby time will be paid during non-operating hours if



diversion of equipment to other Work is not practicable. Engineer reserves the right to cease standby time payment when an extended shutdown is anticipated.

- d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
- e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
- f. Losses and damages (and related expenses) caused by damage to any of the Work that has been completed and accepted by the Owner, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D.), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee. If, however, any such loss or damage to the Work that has been accepted by Owner requires reconstruction and Contractor is placed in charge thereof, Contractor shall be paid for services, a fee proportionate to that stated in Paragraph 12.01.c.
- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as ~~telegrams~~, long distance telephone calls, telephone service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.
2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.



3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
  4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
  5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A.
- C. *Contractor's Fee:* When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.
- D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

#### 11.02 Allowances

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.
- B. *Cash Allowances:*
1. Contractor agrees that:
    - a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
    - b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.
- C. *Contingency Allowance:*
1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

### 11.03 Unit Price Work

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- ~~D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:
  - 1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
  - 2. there is no corresponding adjustment with respect to any other item of Work; and
  - 3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.~~

## ARTICLE 12 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

### 12.01 Change of Contract Price

- A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:
  - 1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or
  - 2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a ~~mutually agreed~~ lump sum value fixed by the Owner or by unit price values fixed by the Owner (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached where the method under Paragraph 12.01.B.2. is not selected by the Owner, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).

C. *Contractor's Fee*: The Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or
2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
  - a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;
  - b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent based on subcontractor's actual Cost of the Work;
  - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 12.01.C.2.a and 12.01.C.2.b is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor; except the maximum total allowable cost to Owner shall be the Cost of the Work plus a maximum collective aggregate fee for Contractor and all tiered Subcontractors of 26.8 percent.
  - d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;
  - e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
  - f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

## 12.02 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

- B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

### 12.03 Delays

- A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times ~~will~~may be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, quarantine restrictions, strikes, freight embargoes, acts of war (declared or not declared), or acts of God.
- B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor ~~shall~~may be entitled to an equitable adjustment in Contract Times, but not Contract Price, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.
- D. Owner, Engineer, and their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.
- E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.
- F. If the Progress Schedule reflects a completion date or milestone date prior to the completion date or milestone date established by the Contract Documents, this shall afford no basis to claim for delay should Contractor not complete the Work prior to the projected completion date. Should a change order be executed with a revised completion date or milestone date, the Progress Schedule shall be revised to reflect the new completion date or milestone date.

## G. Abnormal Weather Delays

1. Extensions of Contract Time: If, in accordance with this Paragraph 12.03, the basis exists for an extension of time due to delays caused by abnormal weather, then an extension of time on the basis of abnormal weather may be granted only for the number of weather delay days in excess of the number of weather days listed as the Standard Baseline below for that month.

### 2. Standard Baseline for Average Climatic Range

a. The City has reviewed weather data available from the National Oceanic and Atmospheric Administration and determined a Standard Baseline of average climatic range for the State of Tennessee.

b. The Standard Baseline shall be regarded as the normal and anticipated number of calendar days for each month during which construction activity shall be expected to be prevented and suspended by cause of adverse weather. Suspension of construction activity for the number of days each month as listed in the Standard Baseline is to be included in the work and not eligible for an extension of the contract time.

c. The Standard Baseline, in days, is as follows:

<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>
<u>10</u>	<u>10</u>	<u>10</u>	<u>10</u>	<u>11</u>	<u>8</u>
<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>
<u>11</u>	<u>7</u>	<u>9</u>	<u>8</u>	<u>9</u>	<u>12</u>

### 3. Adverse Weather and Weather Delay Days

a. Adverse weather is defined as the occurrence of one or more of the following conditions which prevents only exterior construction activity or access to the site within a 24-hour period:

1. Precipitation (rain, snow, or ice) in excess of one-tenth inch liquid measure.
2. Temperatures which do not rise above 32 degrees F by 10:00 AM.
3. Standing snow in excess of one inch.

b. Adverse weather days may include, if appropriate, “dry-out” or “mud” days when:

1. Precipitation (rain, snow, or ice) exceeds one-tenth inch liquid measure, and
2. There is a hindrance to site access or site work, such as excavation, backfill, and footings; but
3. May accumulate at a rate no greater than 1 make-up day for each day or consecutive days of rain that total 1.0 inch or more, liquid measure, unless specifically recommended otherwise by the Engineer.

c. An adverse weather day may be counted only if adverse weather prevents work on the project for 50 percent or more of the Contractor's scheduled work day, including a weekend day or holiday if the Contractor has scheduled construction activity that day.

#### 4. Documentation and Submittals

- a. Monthly submit Daily Jobsite Work Log showing which and to what extent construction activities have been affected by weather.
- b. Submit actual weather data to support a claim for the time extension obtained from nearest NOAA weather station or other independently verified source approved by the Engineer at the beginning of the Project.
- c. Maintain a rain gauge, thermometer, and clock at the jobsite. Keep daily records of precipitation, temperature, and the time of each occurrence throughout the Project.
- d. Use the Standard Baseline data provided in this section when documenting actual delays due to weather in excess of the average.
- e. Organize claim and documentation to facilitate evaluation on a basis of calendar month periods, and submit in accordance with the procedures for claims established in Article 10 of these General Conditions.

### **ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK**

#### *13.01 Notice of Defects*

- A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. Defective Work may be rejected, corrected, or accepted as provided in this Article 13.

#### *13.02 Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

#### *13.03 Tests and Inspections*

- A. Contractor is responsible for the initial and subsequent inspections of Contractor's Work to ensure that the Work conforms to the requirements of the Contract Documents. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests. Contractor shall establish an inspection program and a testing plan

acceptable to the Engineer and shall maintain complete inspection and testing records available to Engineer.

- B. Owner shall employ and pay for the services of an independent testing laboratory to perform all non-contractor inspections, tests, or approvals required by the Contract Documents except:
1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;
  2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in Paragraph 13.04.C; and
  3. as otherwise specifically provided in the Contract Documents.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.
- E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation.
- F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.
- G. Tests required by Contract Documents to be performed by Contractor and that require test certificates to be submitted to Owner or Engineer for acceptance shall be made by an independent testing laboratory or agency licensed or certified in accordance with Laws and Regulations and applicable state and local statutes. In the event state license or certification is not required testing laboratories or agencies shall meet the following applicable requirements:
1. "Recommended Requirements for Independent Laboratory Qualification", published by the American Council of Independent Laboratories.
  2. Basic requirements of ASTM E329, "Standard of Recommended Practice for Inspection and Testing Agencies for Concrete and Steel as Used in Construction" as applicable.



3. Calibrate testing equipment at reasonable intervals by devices of accuracy traceable to either the National Bureau of Standards or accepted values of natural physical constants.

13.04 *Uncovering Work*

- A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.
- B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.
- C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.
- D. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

13.05 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

B. If Owner stops Work under Paragraph 13.05.A. Contractor shall not be entitled to an extension of Contract Time or increase in Contract Price.

13.06 *Correction or Removal of Defective Work*

- A. Promptly after receipt of written notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers,



architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

C. Contractor shall promptly segregate and remove rejected products from the Site.

D. If rejected products or Work is not removed within 48 hours, the Owner will have the right and authority to stop the Work immediately and will have the right to arrange for the removal of said rejected products or Work at the cost and expense of the Contractor.

### 13.07 *Correction Period*

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions, and all to the satisfaction of the Owner:

1. repair such defective land or areas; or
2. correct such defective Work; or
3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.

B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) willshall be paid by Contractor.

C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.

D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect

to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

- E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

F. Repetitive malfunction of an equipment or product item shall be cause for replacement and an extension of the correction period to a date one year following acceptable replacement. A repetitive malfunction shall be defined as the third failure of an equipment or product item following original acceptance.

### 13.08 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and for the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount ~~will~~shall be paid by Contractor to Owner.

### 13.09 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time, as defined by the Engineer, after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct, or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.

- C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

## ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

### 14.01 *Schedule of Values*

- A. The Schedule of Values established as provided in Paragraph 2.07.A [and as modified](#) will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

### 14.02 *Progress Payments*

#### A. *Applications for Payments:*

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review [five copies of](#) an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

3. Retainage:

- a. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.
- b. No form of collateral in lieu of cash will be acceptable as retainage.
- c. Amounts retained by the Contractor from payments due to suppliers and subcontractors (expressed as a percentage) shall not exceed that being retained by the Owner.

B. *Review of Applications:*

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
  - a. the Work has progressed to the point indicated;
  - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and any other qualifications stated in the recommendation); and
  - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
  - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or
  - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
  - a. to supervise, direct, or control the Work, or
  - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
  - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
  - d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or
  - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
  
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:
  - a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
  - b. the Contract Price has been reduced by Change Orders;
  - c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or
  - d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. *Payment Becomes Due:*

1. ~~Ten~~ Thirty days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. *Reduction in Payment:*

1. Owner may refuse to make payment of the full amount recommended by Engineer because:
  - a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;

- b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
  - c. there are other items entitling Owner to a set-off against the amount recommended; or
  - d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.
2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor remedies the reasons for such action.
  3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1 and subject to interest as provided in the Agreement; if any.
4. Items entitling Owner to retain set-offs from the amount recommended, include but are not limited to:
- a. Owner compensation to Engineer at an estimated average rate as specified in the Supplementary Conditions per each extra personnel hour for labor plus expenses because of the following Contractor-caused events:
    - (1) Witnessing retesting of corrected or replaced defective Work;
    - (2) Return visits to manufacturing facilities to witness factory testing or retesting;
    - (3) Submittal reviews in excess of three reviews by Engineer for substantially the same Submittal;
    - (4) Evaluation of proposed substitutes and in making changes to Contract Documents occasioned thereby;
    - (5) Hours worked by Contractor, in excess of normal work hours as defined by Article 6.02 of the General Conditions, necessitating Engineer to work overtime;
    - (6) Return visits to the Project by Engineer for Commissioning Activities not performed on the initial visit;
  - b. Fines levied against the Owner for Contractor's performance of NPDES Erosion and Sedimentation Control Measures or other permit violations.

- c. The repair, rebuilding or restoration of property improvements or facilities by the Owner as outlined in Paragraph 6.13.
- d. Liability for liquidated damages incurred by Contractor as set forth in the Agreement.

#### E. Retainage Held as Security

1. Notwithstanding any other provision of this Contract to the contrary, in the event the City shall have reasonable grounds to suspect that:
  - (a) The Contractor or associated person has breached the Affidavit of No Collusion contained in these Contract Documents or has breached such an affidavit in any other contract which Contractor may have with City; or
  - (b) The Contractor or associated person has violated or participated in a violation of the Sherman Act (15 U.S.C. Sec. 1-2), or the Racketeer Influenced and Corrupt Organizations Act (18 U.S.C. Sec.1961-1968), or the Hobbs Act (18 U.S.C. Sec. 1951), or the mail or wire fraud statutes (18 U.S.C. Sec. 1341, 1343), the false statements statement (18 U.S.C. Sec. 1001), or other similar provision of Federal or State law in connection with this Contract or with any other contract which the Contractor or associated person has, had, or shall have with the City (including without limitation the submission of bids on such a contract);

then the City shall have the right to withhold and retain any retainage described in this section as security for any damage claim arising from such action.
2. For purposes of this section, the term "associated person" shall include (a) in the case of a corporation: the corporation, its officers, directors, shareholders, employees and agents, and its parents, subsidiaries or affiliates, whether in existence at the time of the violation or subsequently formed or acquired; (b) in the case of a partnership or joint venture: the partnership or joint venture, its general or limited partners and joint venturers, its officers, employees and agents; and (c) in the case of a sole proprietorship: the individual proprietor, and his employees and agents. Where a partner or joint venturer is a corporation, the partnership or joint venture shall have attributed to it the actions of persons attributable to the corporation under paragraph (a) of this subsection.
3. The City shall promptly notify the Contractor in writing of the exercise of its right to retain such amounts.
4. The City shall have the right to retain such funds until the City's damage claims are finally determined. The claim shall be "finally be determined" when a court of competent jurisdiction enters judgment on the merits of any claim made for damages by the City (unless City appeals that judgment, in which event, when the appeal is decided). In the event that City voluntarily waives his damage claim by written instrument signed on City's behalf, then such claim shall be "finally determined" at the time such waiver is effective. City covenants that it will commence an action for damages with respect to its damage claim as soon as



practicable after it exercises its right for retaining such amounts for the causes set forth in this paragraph.

5. In the event such a claim is finally determined in favor of City, any amount of retainage for such claim shall be applied to satisfy the judgment. Any excess of retainage hereunder over the amount of such judgment, or in the event that a damage claim is finally determined in favor of Contractor or its associated person, the amount shall be promptly paid to Contractor, together with interest, at the applicable rate for post-judgment interest set forth in T.C.A. Sec. 47-14-121, provided that interest shall not be paid upon amounts which City could have otherwise properly retained under other provisions of this Contract.

6. Any claim, dispute, or other matter arising out of or relating to City's retention of payment for a damage claim under this section shall not be subject to arbitration. The City's failure to retain all or a portion of any payment due under this Contract pursuant to this section, even if grounds for such retention exists, shall not constitute a waiver of any of City's rights under this section.

#### 14.03 *Contractor's Warranty of Title*

A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment, retainage notwithstanding, free and clear of all Liens.

B. No materials or supplies for the Work shall be purchased by Contractor or subcontractor subject to any chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller. Contractor warrants that Contractor has good title to all materials and supplies used by Contractor in the Work, free from all liens, claims or encumbrances.

#### 14.04 *Substantial Completion*

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion. Specific items of Work that must be completed prior to the Engineer's issuance of a certificate of Substantial Completion include, but are not limited to, the following:

1. Correction of all deficient Work items listed by all state, local, and other regulatory agencies or departments.

2. All submittals must be received and approved by the Engineer, including but not necessarily limited to, the following:

a. Record documents.

b. Factory test reports, where required.

c. Equipment and structure test reports.



d. Manufacturer's Certificate of Proper Installation.

e. Operating and maintenance information, instructions, manuals, documents, drawings, diagrams, and records.

f. Spare parts lists.

3. All additional warranty or insurance coverage requirements have been provided.

4. All manufacturer/vendor-provided operator training is complete and documented.

5. Other items of Work specified elsewhere as being prerequisite for Substantial Completion.

- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the tentative certificate to Owner, notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will, within said 14 days, execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.
- E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the tentative list.

#### 14.05 *Partial Utilization*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
1. Owner at any time may ~~request-direct~~ Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to ~~be ready for~~ sufficiently progressed towards its intended use ~~and substantially complete~~. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 14.04.A through D for that part of the Work.
  2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work described in Paragraph 14.05.A.1 ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
  3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
  4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

#### 14.06 *Final Inspection and Final Acceptance of the Work*

~~A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.~~

A. Upon receipt of written notice from the Contractor that all items listed for completion or correction during the inspection for substantial completion have been performed and that the work has been completed in conformity with the Contract Documents, the Engineer shall promptly examine the work, in company with the City, making additional tests and investigations as he may deem proper and using due care and judgment normally exercised in the examination of the completed work by a properly qualified and experienced professional engineer and shall satisfy himself that the Contractor's statement appears to be correct. The Engineer shall then inform the City and, when applicable, regulatory agencies that the work is, in

his opinion, complete in apparent conformity with these Contract Documents and shall schedule the final inspection.

- B. Should the Engineer consider that the work is not finally complete, he will notify the Contractor in writing, stating reasons for his determination. The Contractor shall take immediate steps to remedy the stated deficiencies and/or conditions and, after correction of the deficiencies and/or conditions, send another written notice to the Engineer certifying that the work is complete. The Engineer, in company with the City, will re-inspect the work.
- C. After the final inspection and after the submission by the Contractor items required by these Contract Documents, the Engineer shall notify the City in writing that he has examined the work and that, in his opinion, it appears to conform to these Contract Documents and therefore recommends acceptance of the work and final payment to the Contractor. It is understood and agreed that such statement by the Engineer does not in any way relieve the Contractor or his Sureties from any duties, responsibilities, and obligations under these Contract Documents.
- D. After the Engineer recommends acceptance of the work covered by these Contract Documents and final payment to the Contractor, the City will, if it concurs in the Engineer's recommendation, promptly notify the Contractor in writing that the work is accepted. If the City does not concur in the Engineer's recommendation, the City will promptly notify the Contractor in writing that it does not accept the work as complete and stating the deficiencies and/or conditions that shall be corrected or resolved before final acceptance will be made. After the deficiencies and/or conditions are corrected or resolved and the City is satisfied that the work is complete, the City will notify the Contractor in writing that the work is considered complete and final acceptance is made. The guarantee period(s), as specified in these Contract Documents, shall begin on the date the Contractor is notified by the City that final acceptance of the work is made. Final acceptance of the work by the City will not be made until the Project Record Documents, operation and maintenance data and other required items are acceptable to the City.
- E. It is understood and agreed that said notice of final acceptance or final payment by the City shall not in any way be construed to relieve the Contractor, or his Sureties from any duties, responsibilities or obligations under or in connection with these Contract Documents.

#### 14.07 *Final Payment*

##### *A. Application for Payment:*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments. Under no circumstances will Contractor's application for final payment be accepted by the Engineer until all Work required by the Contract Documents has been completed.
2. The final Application for Payment shall be accompanied (except as previously delivered) by:

- a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.6;
  - b. consent of the surety, if any, to final payment, if requested by the Engineer;
  - c. a list of all Claims against Owner that Contractor believes are unsettled;
  - d. an affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the Work have been paid or otherwise satisfied;
  - e. the final Change Request Form signed by the Contractor to close the Contract;
  - f. certificate of occupancy issued by City of Chattanooga Inspection Department, if buildings are a part of the Project;
  - g. copy of Notice of Completion which had been filed with the appropriate office at the Hamilton County Tennessee Courthouse; and
  - h. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work, if requested by the Engineer.
3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

B. *Engineer's Review of Application and Acceptance:*

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying all documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, ~~within ten days after receipt of the final Application for Payment~~, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. ~~At the same time~~ Thereupon Engineer will ~~also~~ give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment. If the Application for Payment and accompanying documentation are appropriate as to form and substance, Owner will in accordance with the applicable State or local General Law, pay Contractor the amount recommended by Engineer.

C. *Payment Becomes Due:*

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and will be paid by Owner to Contractor.

14.08 *Final Completion Delayed*

- A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 *Waiver of Claims*

- A. The making and acceptance of final payment will constitute:
  1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and
  2. a waiver of all Claims by Contractor against Owner ~~other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.~~

14.10 Labor and Material

- A. Contractor shall indemnify and save Owner harmless from all claims growing out of the lawful demands for payment by subcontractors, laborers, workmen, mechanics, material men, and furnishers of machinery and parts thereof, equipment, power tools, and all supplies, including commissary, incurred in the furtherance of the performance of this Contract. Contractor shall, at Owner's request, furnish satisfactory evidence that all obligations of the nature hereinabove designated have been paid, discharged, or waived. If Contractor fails to do so, then Owner may, after having served written notice on the said Contractor either pay unpaid bills, of which Owner has written notice, direct, or withhold from Contractor's unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to Contractor shall be resumed, in accordance with the terms

of this Contract, but in no event shall the provisions of this sentence be construed to impose any obligations upon Owner to either Contractor or to Contractor's Surety. In paying any unpaid bills of Contractor, Owner shall be deemed the agent of Contractor and any payment so made by Owner shall be considered as payment made under the Contract by Owner to Contractor and Owner shall not be liable to Contractor for any such payment made in good faith.

#### 14.11 Scope of Payment

A. The Contractor shall accept compensation provided in these Contract Documents as full payment for furnishing all labor, materials, supplies, tools, equipment, taxes, fees, contingencies, and other items necessary or convenient to the completed work and for performing all work contemplated and embraced in these Contract Documents; also for loss or damage arising from the nature of the work, or from the action of the elements, or from any unforeseen difficulties which may be encountered during the prosecution of the work until the acceptance by the City and for all risks of every description connected with the prosecution of the work; also for all expenses incurred in consequence of the suspension or discontinuance of the work as provided in these Contract Documents; and for completing the work in accordance with these Contract Documents. Neither the payment of any estimate nor of any retained percentage shall relieve the Contractor of any obligation to make good any defective work or material or of any provisions of these Contract Documents.

B. No compensation will be made in any case for loss of anticipated profits.

### **ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION**

#### *15.01 Owner May Suspend Work*

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor ~~shall~~ may be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

B. The City shall have the authority to suspend the work wholly or in part, for such period as may be necessary, due to unsuitable weather, such other conditions as are considered unfavorable for the suitable prosecution of the work; or due to the failure on the part of the Contractor to carry out orders given, supply sufficient skilled workmen, supply suitable material, prosecute the work satisfactorily and in a workmanlike manner, make prompt payments to Subcontractors or for labor, materials, or equipment, or to perform any obligations or requirements of these Contract Documents. The Contractor shall immediately comply with the written order of the City to suspend the work wholly or in part. The suspended work shall be resumed when conditions are favorable and methods are corrected, as ordered or approved in writing by the City.

C. In the event that a suspension of the work is ordered by the City under Paragraph B above, the Contractor shall, at his expense, do all the work necessary to secure the work and the area affected by the work and to protect all previously completed work as specified herein or as



directed by the City. The suspension of the work by the City shall not relieve the Contractor of any duties, obligations, or responsibilities set forth in these Contract Documents. In the event the Contractor fails to secure and protect the work and area as specified or as ordered, the City will perform, or cause to be performed, all work considered necessary, and the cost thereof will be deducted from monies due or to become due the Contractor under the terms of these Contract Documents.

15.02 *Owner May Terminate for Cause*

A. The occurrence of any one or more of the following events will justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);
2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;
3. Contractor's repeated disregard of the authority of Engineer; ~~or~~
4. Contractor's violation in any substantial way of any provisions of the Contract Documents;
5. If Contractor abandons the Work, or sublets this Contract or any part thereof, without the previous written consent of Owner, or if the Contract or any claim thereunder shall be assigned by Contractor otherwise than as herein specified;
6. Contractor is adjudged bankrupt or insolvent;
7. Contractor makes a general assignment for the benefit of creditors;
8. A trustee or receiver is appointed for Contractor or for any of Contractor's property;
9. Contractor files a petition to take advantage of any debtor's relief act, or to reorganize under the bankruptcy or applicable laws;
10. Contractor repeatedly fails to make prompt payments to subcontractors or material suppliers for labor, materials or equipment, or
- 11 The payment of any compensation, irrespective of its character or form, or the giving of any gratuity, or the granting of any valuable favor, directly or indirectly, by the Contractor to any authorized representative of the City or Engineer.

B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor, unless Contractor otherwise cures the deficiency in accordance with Paragraph 15.02.D.:

1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the

full extent they could be used by Contractor (without liability to Contractor for trespass or conversion);

2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere; and
  3. complete the Work as Owner may deem expedient.
- C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph, Owner shall not be required to obtain the lowest price for the Work performed.
- D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.
- E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.

~~F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B and 15.02.C.~~

### 15.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate or discontinue, in whole or in part, the Contract. In such case, Contractor shall be paid for (without duplication of any items):
1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, ~~including fair and reasonable sums for overhead and profit on such Work;~~
  2. direct expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, ~~plus fair and reasonable sums for overhead and profit on such expenses;~~



3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; ~~and~~
  4. reasonable expenses directly attributable to termination; ~~and-~~
  5. ten percent overhead and profit for those costs agreed to in Paragraphs 15.03.A.1 through 15.03.A.4 above.
- B. Contractor shall submit within 30 calendar days after receipt of notice of termination a written statement setting forth its proposal for an adjustment to the Contract Price to include only the incurred costs described in this clause. Owner shall review, analyze, and verify such proposal and negotiate an equitable amount and the Contract may be modified accordingly.
- C. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

#### 15.04 Contractor May Stop Work or Terminate

- A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.
- C. Except as allowed in Paragraph A above, the Contractor shall not suspend the work and shall not remove any equipment, tools, supplies, materials, or other items without the written permission of the City.

## ARTICLE 16 – DISPUTE RESOLUTION

### 16.01 Methods and Procedures

- A. ~~Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration~~

~~Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.~~

~~B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.~~

~~C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:~~

- ~~1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions; or~~
- ~~2. agrees with the other party to submit the Claim to another dispute resolution process; or~~
- ~~3. gives written notice to the other party of the intent to submit the Claim to a court of competent jurisdiction.~~

## ARTICLE 17 – MISCELLANEOUS

### 17.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended; or
2. delivered at or sent by registered or certified mail, postage prepaid, or by facsimile transmission and followed by written confirmation, to the last business address known to the giver of the notice.

B. All notices required of Contractor shall be performed in writing to the appropriate entity.

C. Electronic mail and messages will not be recognized as a written notice.

D. If the Contractor does not notify the Owner in accordance with Paragraph 10.05 of the belief that a field order, work by other contractors or the Owner, or subsurface, latent, or unusual unknown conditions entitles the Contractor to a Change Order, no consideration for time or money will be given the Contractor.

### 17.02 *Computation of Times*

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

### 17.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

### 17.04 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

### 17.05 *Controlling Law*

~~A. This Contract is to be governed by the law of the state in which the Project is located~~

A. Each and every provision of this Agreement shall be construed in accordance with and governed by Tennessee law. The parties acknowledge that this Contract is executed in Hamilton County, Tennessee and that the Contract is to be performed in Hamilton County, Tennessee. Each party hereby consents to the Hamilton Superior Court's sole jurisdiction over any dispute which arises as a result of the execution or performance of this Agreement, and each party hereby waives any and all objections to venue in the Hamilton Superior Court.

### 17.06 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

### 17.07 *Addresses*

A. Both the address given in the Bid form upon which this Agreement is founded, and Contractor's office at or near the site of the Work are hereby designated as places to either of which notices, letters, and other communications to Contractor shall be certified, mailed, or delivered. The delivering at the above named place, or depositing in a postpaid wrapper directed to the first-named place, in any post office box regularly maintained by the post office department, of any notice, letter or other communication to Contractor shall be deemed sufficient service thereof upon date of such delivery or mailing. The first-named address may be changed at any time by an instrument in writing, executed by Contractor, and delivered to and acknowledged by the Owner and Engineer. Nothing herein contained shall be deemed to preclude or render inoperative the service of any notice, letter, or other communication upon Contractor personally.

## 17.08 Forms and Record

- A. The form of all Submittals, notices, change orders and other documents permitted or required to be used or transmitted under the Contract Documents shall be determined by the Engineer.
- B. Contractor shall maintain throughout the term of the Contract, complete and accurate records of all Contractor's costs which relate to the work performed, including the extra work, under the terms of the Contract. The Owner, or its authorized representative, shall have the right at any reasonable time to examine and audit the original records.
- C. Records to be maintained and retained by Contractor shall include, but not be limited to:
1. Payroll records accounting for total time distribution of Contractor's employees working full or part time on the work;
  2. Cancelled payroll checks or signed receipts for payroll payments in cash;
  3. Invoices for purchases, receiving and issuing documents, and all other unit inventory records for Contractor's stores, stock, or capital items;
  4. Paid invoices and cancelled checks for materials purchase, subcontractors, and any other third parties' charges;
  5. Original estimate and change order estimate files and detailed worksheets;
  6. All project-related correspondence; and
  7. Subcontractor and supplier change order files (including detailed documentation covering negotiated settlements).
- D. Owner shall also have the right to audit: any other supporting evidence necessary to substantiate charges related to this agreement (both direct and indirect costs, including overhead allocations as they may apply to costs associated with this agreement); and any records necessary to permit evaluation and verification of Contractor compliance with contract requirements and compliance with provisions for pricing change orders, payments, or claims submitted by Contractor or any payees thereof. Contractor shall also be required to include the right to audit provision in the contracts (including those of a lump-sum nature) of all subcontractors, insurance agents, or any other business entity providing goods and services.

## 17.09 Assignment

- A. Contractor shall not assign, sell, transfer or otherwise dispose of the whole or any part of this Contract or any monies due or to become due hereunder without written consent of the Owner. In case Contractor assigns all or any part of any monies due or to become due under this Contract, the instrument of assignment shall contain a clause substantially to the effect that it is agreed that the right of the assignee in and to any monies due or to become due to Contractor shall be subject to prior liens of all persons, firms and corporations for services rendered or materials supplied for the performance of the Work called for under this Contract.

#### 17.10 Use of Work by City

- A. Prior to substantial completion, the City may use any completed or substantially completed portions of the work, provided that such use will not substantially affect the Contractor's rights and obligations under the contract. It is understood and agreed that said use shall not constitute an acceptance of any such portions of the work.
- B. The City, or another Contractor under contract to the City, shall have the right to enter the premises for the purpose of doing work not covered by these Contract Documents. This provision shall not be construed as relieving the Contractor of the sole responsibility for the care and protection of the work, or the restoration of any damaged work except such as may be caused by agents, employees, or other contractors of the City.

#### 17.11 Inspection by Public Agencies

- A. Authorized representatives of the Environmental Protection Agency, Department of the Interior, Tennessee Department of Public Health, and other governmental agencies having jurisdiction over the work or any part thereof shall have access to the work and any records relevant to the prosecution and progress of the work. The Contractor shall provide proper facilities for such access and inspection.

#### 17.12 Hindrances and Delays

- A. The Contractor expressly agrees that the construction period named in these Contract Documents includes allowance for all hindrances and delays incident to the work. It is understood and agreed that no claim shall be made by the Contractor for hindrances or delays from any cause during the progress of the work, except as provided otherwise under the terms of these Contract Documents.

#### 17.13 Losses from Natural Causes

- A. It is understood and agreed that all loss or damage arising out of the nature of the work, or from the action of the elements, or from floods or overflows, or from ground water, or from seepage, or from any unusual obstruction or difficulty, or from any other natural or existing circumstance either known or unforeseen, which may be encountered in the prosecution of the work, shall be sustained and borne by the Contractor at his own cost and expense.

#### 17.14 New Job Opportunities

- A. The Contractor shall, to the maximum extent practicable, follow hiring and employment practices that will insure the availability of new job opportunities for unemployed and underemployed persons. The Contractor shall insert, or cause to be inserted, a similar provision in each contract with Subcontractors or Suppliers.

#### 17.15 No Waiver of Legal Rights

- A. Neither the inspection by the City or Engineer or any of their officials, employees, or agents, nor any order by the City or Engineer for payment of money, or any payment for, or acceptance of, the whole or any part of the work by the City or Engineer, nor any extension of time, nor any

possession taken by the City or its employees, shall operate as a waiver of any provision of these Contract Documents, or of any power herein reserved to the City, or any right to damages herein provided, nor shall any waiver of any breach in this Contract be held to be a waiver of any other or subsequent breach.

B. Any waiver of any provisions of these Contract Documents shall be specific, shall apply only to the specified item or matter concerned and shall not apply to other similar or dissimilar items or matters.

#### 17.16 Sewage, Surface, Subsurface and Flood Flows

A. The Contractor shall furnish all necessary equipment, materials and labor, at his expense, for handling, passing and disposing of all sewage, seepage, surface, subsurface and flood flows encountered at any time during the prosecution of the work. It is understood and agreed that the Contractor shall bear all risks associated with said flows; shall indemnify the City and the Engineer from any liabilities resulting from said flows; and shall not make any claim for additional compensation for delays or damage resulting from said flows. The manner of providing for these flows shall be satisfactory to the Engineer and in conformance with all applicable laws and regulations.

#### 17.17 Maintenance of Existing Traffic

A. Satisfactory facilities shall be provided by the Contractor for maintaining public access and travel, and every effort shall be made to reduce any necessary inconveniences to a minimum.

END OF SECTION

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These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract, EJCDC C-700 (2007 Edition, with City of Chattanooga Modifications 07-30-13). All provisions which are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added thereto.

The provisions in this Section of the Specifications shall govern in the event of any conflict between this Section and the General Conditions.

SC-1.01      *Definitions*

SC-1.01.A. Add the following after Paragraph 1,

- 1.1      *Agency* – The Federal or state agency providing partial or full financing for this project. The Project is financed in whole or in part by a State of Tennessee Department of Environment and Conservation Federally Assisted State Revolving Loan Fund.

SC-1.01.A.3.      Add the following language to the end of Paragraph 1.01.A.3:

The Application for Payment form to be used on this Project is as included as Section 00 62 76, as supported by additional documentation as may be requested by the Owner or Engineer. The Agency must approve all Applications for Payment before payment is made.

SC-1.01.A.9, Change "... and Owner and authorizes ..." to "... and Owner and Agency and authorizes ..."

SC-1.01.A.9.      Add the following language to the end of Paragraph 1.01.A.9:

The Change Order form to be used on this Project is as included in these Contract Documents. Agency approval is required before Change Orders are effective.

SC-1.01.A.53,      Change "... by Owner upon recommendation ..." to "... by Owner and Agency upon recommendation ..."

SC-2.06      *Preconstruction Conference*

SC-2.06.A, first sentence, Change "... Engineer, and others ..." to "... Engineer, Agency and others ..."

SC-4.02      *Subsurface and Physical Conditions*

SC-4.02      Add the following new paragraphs immediately after Paragraph 4.02.B:



- C. No reports of explorations and tests of subsurface conditions at or contiguous to the Site.
- D. No drawings of physical conditions relating to existing surface or subsurface structures at the Site have been used by the Engineer in preparing the Contract Documents.

SC-4.06 *Hazardous Environmental Conditions*

SC-4.06 Delete Paragraphs 4.06.A and 4.06.B in their entirety and insert the following:

- A. No reports or drawings related to Hazardous Environmental Conditions at the Site are known to Owner.
- B. Not Used.

SC-5.03 *Certificates of Insurance*

SC-5.03, following Paragraph E, add the following,

- F. Copies of endorsements showing that each additional insured identified herein have been added to the policies as an additional insured shall be attached to each of the certificates.
- G. Each insurance certificate for all coverages other than Worker's Compensation Insurance must show that a waiver of rights of recovery against any of the insured or the additional insured is in effect.
- H. Certificate for Worker's Compensation and Employer's Liability coverage must indicate inclusion or exclusion for any proprietor, partner, executive officer or member.

SC-5.04 *Contractor's Insurance*

SC-5.04.B.1, There are no other additional insureds other than the Owner and Engineer.

SC-5.04.C, following Paragraph 5.04.B.6.b, Add,

- C. The limits of liability for the insurance required by paragraph 5.04.B.2 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:
  - 1. Worker's compensation, disability benefits and other similar employee benefit acts, and damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees as provided in Paragraphs 5.04.A.1 and 5.04.A.2 of the General Conditions:
    - a. Workers Compensation: Statutory limits
    - b. Employer's Liability, Each Accident: \$1,000,000

- c. Employer's Liability, Each Employee: \$1,000,000
  - d. Employer's Liability, Disease – Policy Limit: \$1,000,000
2. Contractor's General Liability Insurance under paragraphs 5.04.A.3 through 5.04.A.5 of the General Conditions shall provide the following minimum limits and conditions:
- a. Each Occurrence: \$1,000,000.
  - b. Damage to Rented Premises (each occurrence) \$100,000.
  - c. Medical Expenses (any one person) \$5,000.
  - d. Personal and Advertising Injury: \$1,000,000.
  - e. General Aggregate: \$2,000,000.
  - f. Products-Completed Operations Aggregate: \$2,000,000.
  - g. Explosion, collapse, and underground coverage shall be included with such indicated on the insurance certificate under General Liability.
  - h. The general aggregate policy limits must be designated to the Project.
  - i. Contractual Liability coverage, as required under Paragraph 5.04.B.3 must be indicated on the insurance certificate under General Liability.
3. Automobile Liability under Paragraph 5.04.A.6 of the General Conditions, providing for Combined Single Limit (each accident) for all owned, hired, and non-owned vehicles: \$1,000,000.
4. Provide Excess Liability or Umbrella Liability insurance providing protection for at least the hazards insured under the primary liability policies with the following limits:
- a. General Aggregate: \$5,000,000.
  - b. Each Occurrence: \$5,000,000.

SC-5.06 *Property Insurance*

SC-5.06, Delete Paragraph A and all its sub-paragraphs in their entirety and replace with the following,

A. Installation Floater Insurance

1. Contractor shall provide Installation Floater Insurance that shall protect the Contractor, the City, and the Engineer from all insurable risks of physical loss or damage to materials, products and equipment, while in warehouses or storage areas, during installation, during testing, and after the work is

completed. It shall be of the "all risks" type, with coverages designed for the circumstances which may occur in the particular work under these Contract Documents.

2. The coverage shall be for an amount not less than the full amount of the contract plus the aggregate value of the City-furnished equipment, products and materials to be erected or installed by the Contractor.
3. Installation floater insurance shall provide for losses, to be payable to the Contractor and the City as their interests may appear and shall contain a waiver of subrogation rights against the insured parties.
4. Certificates of insurance covering installation floater insurance shall quote the insuring agreement and all exclusions as they appear in the policy; or in lieu of certificates, copies of the complete policy may be submitted.

SC-6.02 *Labor; Working Hours*

SC-6.02 Add the following subparagraph 6.02.D.1:

1. Overtime rates apply for work defined in labor laws as constituting overtime labor for hourly workers. Rate will be applied at 1.5 times the base hourly rate.

SC-6.13 *Safety and Protection*

SC-6.13 Delete the second sentence of Paragraph 6.13.C.

SC-9.03 *Project Representative*

SC-9.03 Add the following new paragraphs immediately after Paragraph 9.03.A:

- B. The Resident Project Representative (RPR) will be Engineer's employee or agent at the Site, will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding RPR's actions. RPR's dealings in matters pertaining to the Work in general shall be with Engineer and Contractor. RPR's dealings with Subcontractors shall be only through or with the full knowledge and approval of Contractor. The RPR shall:
  1. *Schedules:* Review the progress schedule, schedule of Shop Drawing and Sample submittals, and schedule of values prepared by Contractor and consult with Engineer concerning acceptability.
  2. *Conferences and Meetings:* Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences and other project-related meetings, and prepare and circulate copies of minutes thereof.
  3. *Liaison:*

- a. Serve as Engineer's liaison with Contractor, working principally through Contractor's authorized representative, assist in providing information regarding the intent of the Contract Documents.
  - b. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-Site operations.
  - c. Assist in obtaining from Owner additional details or information, when required for proper execution of the Work.
4. *Interpretation of Contract Documents:* Report to Engineer when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by Engineer.
5. *Shop Drawings and Samples:*
- a. Record date of receipt of Samples and approved Shop Drawings.
  - b. Receive Samples which are furnished at the Site by Contractor, and notify Engineer of availability of Samples for examination.
6. *Modifications:* Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report such suggestions, together with RPR's recommendations, to Engineer. Transmit to Contractor in writing decisions as issued by Engineer.
7. *Review of Work and Rejection of Defective Work:*
- a. Conduct on-Site observations of Contractor's work in progress to assist Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.
  - b. Report to Engineer whenever RPR believes that any part of Contractor's work in progress will not produce a completed Project that conforms generally to the Contract Documents or will imperil the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise Engineer of that part of work in progress that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.
8. *Inspections, Tests, and System Startups:*
- a. Verify that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate Owner's personnel, and that Contractor maintains adequate records thereof.

- b. Observe, record, and report to Engineer appropriate details relative to the test procedures and systems start-ups.
9. *Records:*
- a. Record names, addresses, fax numbers, e-mail addresses, web site locations, and telephone numbers of all Contractors, Subcontractors, and major Suppliers of materials and equipment.
  - b. Maintain records for use in preparing Project documentation.
10. *Reports:*
- a. Furnish to Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the progress schedule and schedule of Shop Drawing and Sample submittals.
  - b. Draft and recommend to Engineer proposed Change Orders, Work Change Directives, and Field Orders. Obtain backup material from Contractor.
  - c. Immediately notify Engineer of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, damage to property by fire or other causes, or the discovery of any Hazardous Environmental Condition.
11. *Payment Requests:* Review Applications for Payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to Engineer, noting particularly the relationship of the payment requested to the schedule of values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.
12. *Certificates, Operation and Maintenance Manuals:* During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the Specifications to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to Engineer for review and forwarding to Owner prior to payment for that part of the Work.
13. *Completion:*
- a. Participate in a Substantial Completion inspection, assist in the determination of Substantial Completion and the preparation of lists of items to be completed or corrected.
  - b. Participate in a final inspection in the company of Engineer, Owner, and Contractor and prepare a final list of items to be completed and deficiencies to be remedied.

- c. Observe whether all items on the final list have been completed or corrected and make recommendations to Engineer concerning acceptance and issuance of the Notice of Acceptability of the Work.

C. The RPR shall not:

1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).
2. Exceed limitations of Engineer's authority as set forth in the Contract Documents.
3. Undertake any of the responsibilities of Contractor, Subcontractors, Suppliers, or Contractor's superintendent.
4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of Contractor's work unless such advice or directions are specifically required by the Contract Documents.
5. Advise on, issue directions regarding, or assume control over safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.
6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.
7. Accept Shop Drawing or Sample submittals from anyone other than Contractor.
8. Authorize Owner to occupy the Project in whole or in part.

SC-10.01 *Authorized Changes in the Work*

SC-10.01.A, first sentence, Change "... Owner may, at any time ..." to "... Owner may, subject to written approval by the Agency, at any time ..."

SC-14.02 *Progress Payments*

SC-14.02.A.4. Add the following new Paragraph after Paragraph 14.02.A.3:

4. The Application for Payment form to be used on this Project is EJCDC No. C-620. The Agency must approve all Applications for Payment before payment is made.

SC-14.02.C.1. Delete Paragraph 14.02.C.1 in its entirety and insert the following in its place:

1. The Application for Payment with Engineer's recommendations will be presented to the Owner and Agency for consideration. If both the Owner and Agency find the Application for Payment acceptable, the recommended amount less any reduction under the provisions of Paragraph 14.02.D will become due 30 days after the

Application for Payment is presented to the Owner, and the Owner will make payment to the Contractor.

SC-14.02.D.1.c, delete "or"

SC-14.02.D.1.d, change "... 15.02.A." to "... 15.02.A; or"

SC-14.02.D.1, following Paragraph d., Add

"e. the Contractor's performance or furnishing of the Work is inconsistent with funding Agency requirements."

SC-14.02.D.4.e After paragraph 14.02.D. 4.d, add the following:

5. The following rates will apply for the additional services performed by the Engineer on behalf of the Owner:

<u>Labor Grade</u>	<u>Rate</u>
Vice President or Technical Advisor	\$250
Associate	\$210
Principal	\$190
Senior Professional	
Grade 8	\$190
Grade 7	\$180
Grade 6	\$170
Grade 5	\$160
Grade 4	\$150
Junior Professional	
Grade 3	\$140
Grade 2	\$125
Resident Project Representative	\$100
Technician	\$90
CAD	\$115
Clerical	\$90
Contract Administrator	\$95

SC-14.04 Substantial Completion

SC-14.04.B, first sentence, change "... Owner, Contractor ..." to "... Owner, Agency, Contractor ..."

SC-Article 18, Add Article 18 as follows,

## **ARTICLE 18 -FEDERAL REQUIREMENTS**

### 18.01 Agency Not a Party

A. This Contract is expected to be funded in part with funds provided by Agency. Neither Agency, nor any of its departments, entities, or employees is a party to this Contract.

#### 18.02 Contract Approval

- A. Owner and Contractor will furnish Owner's attorney such evidence as required so that Owner's attorney can complete and execute the following "Certificate of Owner's Attorney" (Exhibit GC-A) before Owner submits the executed Contract Documents to Agency for approval.
- B. Concurrence by Agency in the award of the Contract is required before the Contract is effective.

#### 18.03 Conflict of Interest

- A. Contractor may not knowingly contract with a supplier or manufacturer if the individual or entity who prepared the plans and specifications has a corporate or financial affiliation with the supplier or manufacturer.
- B. Owner's officers, employees, or agents shall not engage in the award or administration of this Contract if a conflict of interest, real or apparent, would be involved. Such a conflict would arise when: (i) the employee, officer or agent; (ii) any member of their immediate family; (iii) their partner or (iv) an organization that employs, or is about to employ, any of the above, has a financial interest in Contractor. Owner's officers, employees, or agents shall neither solicit nor accept gratuities, favors or anything of monetary value from Contractor or subcontractors.

#### 18.04 Gratuities

- A. If Owner finds after a notice and hearing that Contractor, or any of Contractor's agents or representatives, offered or gave gratuities (in the form of entertainment, gifts, or otherwise) to any official, employee, or agent of Owner or Agency in an attempt to secure this Contract or favorable treatment in awarding, amending, or making any determinations related to the performance of this Contract, Owner may, by written notice to Contractor, terminate this Contract. Owner may also pursue other rights and remedies that the law or this Contract provides. However, the existence of the facts on which Owner bases such findings shall be an issue and may be reviewed in proceedings under the dispute resolution provisions of this Contract.
- B. In the event this Contract is terminated as provided in paragraph 18.04.A, Owner may pursue the same remedies against Contractor as it could pursue in the event of a breach of this Contract by Contractor. As a penalty, in addition to any other damages to which it may be entitled by law, Owner may pursue exemplary damages in an amount (as determined by Owner) which shall not be less than three nor more than ten times the costs Contractor incurs in providing any such gratuities to any such officer or employee.

#### 18.05 Audit and Access to Records

- A. For all negotiated contracts and negotiated modifications (except those of \$10,000 or less), Owner, Agency, the Comptroller General, or any of their duly authorized representatives, shall have access to any books, documents,



papers, and records of the Contractor, which are pertinent to the Contract, for the purpose of making audits, examinations, excerpts and transcriptions. Contractor shall maintain all required records for three years after final payment is made and all other pending matters are closed.

#### 18.06 Small, Minority and Women's Businesses

- A. If Contractor intends to let any subcontracts for a portion of the work, Contractor shall take affirmative steps to assure that small, minority and women's businesses are used when possible as sources of supplies, equipment, construction, and services. Affirmative steps shall consist of: (1) including qualified small, minority and women's businesses on solicitation lists; (2) assuring that small, minority and women's businesses are solicited whenever they are potential sources; (3) dividing total requirements when economically feasible, into small tasks or quantities to permit maximum participation of small, minority, and women's businesses; (4) establishing delivery schedules, where the requirements of the work permit, which will encourage participation by small, minority and women's businesses; (5) using the services and assistance of the Small Business Administration and the Minority Business Development Agency of the U.S. Department of Commerce; (6) requiring each party to a subcontract to take the affirmative steps of this section; and (7) Contractor is encouraged to procure goods and services from labor surplus area firms.

#### 18.07 Anti-Kickback

- A. Contractor shall comply with the Copeland Anti-Kickback Act (18 USC 874 and 40 USC 276c) as supplemented by Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Buildings or Public Works Financed in Whole or in Part by Loans or Grants of the United States"). The Act provides that Contractor or subcontractor shall be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public facilities, to give up any part of the compensation to which they are otherwise entitled. Owner shall report all suspected or reported violations to Agency.

#### 18.08 Clean Air and Pollution Control Acts

- A. If this Contract exceeds \$100,000, Contractor shall comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 USC 7401 *et seq.*) and the Federal Water Pollution Control Act as amended (33 USC 1251 *et seq.*). Contractor will report violations to the Agency and the Regional Office of the EPA.

#### 18.09 State Energy Policy

- A. Contractor shall comply with the Energy Policy and Conservation Act (P.L. 94-163). Mandatory standards and policies relating to energy efficiency, contained in any applicable State Energy Conservation Plan, shall be utilized.

### 18.10 Equal Opportunity Requirements

- A. If this Contract exceeds \$10,000, Contractor shall comply with Executive Order 11246, "Equal Employment Opportunity," as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and as supplemented by regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."
- B. Contractor's compliance with Executive Order 11246 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative active obligations required by the Standard Federal Equal Employment Opportunity Construction Contract Specifications, as set forth in 41 CFR Part 60-4 and its efforts to meet the goals established for the geographical area where the Contract is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the Contract, and in each trade, and Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting Contractor's goals shall be a violation of the Contract, the Executive Order, and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.
- C. Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the Contract resulting from this solicitation. The notification shall list the name, address, and telephone number of the subcontractor; employer identification number; estimated dollar amount of subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the Contract is to be performed.

### 18.11 Restrictions on Lobbying

- A. Contractor and each subcontractor shall comply with Restrictions on Lobbying (Public Law 101-121, Section 319) as supplemented by applicable Agency regulations. This Law applies to the recipients of contracts and subcontracts that exceed \$100,000 at any tier under a Federal loan that exceeds \$150,000 or a Federal grant that exceeds \$100,000. If applicable, Contractor must complete a certification form on lobbying activities related to a specific Federal loan or grant that is a funding source for this Contract. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 USC 1352. Each tier shall disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Certifications and disclosures are forwarded from tier to tier up to the Owner. Necessary certification and disclosure forms shall be provided by Owner.

## 18.12 Environmental Requirements

- A. When constructing a project involving trenching and/or other related earth excavations, Contractor shall comply with the following environmental constraints:
1. Wetlands – When disposing of excess, spoil, or other construction materials on public or private property, Contractor shall not fill in or otherwise convert wetlands.
  2. Floodplains – When disposing of excess, spoil, or other construction materials on public or private property, Contractor shall not fill in or otherwise convert 100 year floodplain areas delineated on the latest Federal Emergency Management Agency Floodplain Maps, or other appropriate maps, i.e., alluvial soils on NRCS Soil Survey Maps.
  3. Historic Preservation – Any excavation by Contractor that uncovers a historical or archaeological artifact shall be immediately reported to Owner and a representative of Agency. Construction shall be temporarily halted pending the notification process and further directions issued by Agency after consultation with the State Historic Preservation Officer (SHPO).
  4. Endangered Species – Contractor shall comply with the Endangered Species Act, which provides for the protection of endangered and/or threatened species and critical habitat. Should any evidence of the presence of endangered and/or threatened species or their critical habitat be brought to the attention of Contractor, Contractor will immediately report this evidence to Owner and a representative of Agency. Construction shall be temporarily halted pending the notification process and further directions issued by Agency after consultation with the U.S. Fish and Wildlife Service.

## 18.13 Davis-Bacon Wage Rates

- A. As stated elsewhere in these Contract Documents, the minimum wages to be paid to various classes of laborers and mechanics employed under this Contract are governed by the Davis-Bacon Act.
- B. Certain applicable wage rates are contained in General Decisions included elsewhere in these Contract Documents.
- C. In the event there are classifications of laborers and mechanics which are listed in more than one General Decision, the higher wage shall prevail.
- D. In the event there are classifications of laborers and mechanics which are not listed in the General Decisions, the Bidder/Contractor shall contact the United States Department of Labor at 866-487-9243 for information related to appropriate wage rates beyond those contained in the General Decisions.

END OF SECTION

**CERTIFICATION BY PROPOSED PRIME OR SUBCONTRACTOR REGARDING  
EQUAL EMPLOYMENT OPPORTUNITY**

---

**Name of Prime Contractor**

**Project Number**

**INSTRUCTIONS**

This certification is required pursuant to Executive Order 11246, Part II, Section 203 (b), 30 F.R. 12319-25). Any bidder or prospective contractor, or any of their proposed subcontractors, shall state as an initial part of the bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause; and, if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicated that the prime or subcontractor has not filed a compliance report due under applicable instruction, such contractor shall be required to submit a compliance report.

---

**CONTRACTOR'S CERTIFICATION**

**Contractor's Name:** \_\_\_\_\_

**Address:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

1. Bidder has participated in a previous contract or subcontract subject to the Equal Opportunity Clause. Yes  No
2. Compliance Reports were required to be filed in connection with such contract or subcontract. Yes  No

If yes, state what reports were filed and with what agency.

\_\_\_\_\_

3. Bidder has filed all compliance reports due under applicable instructions, including SF-100. Yes  No
4. If answer to Item 3 is NO, please explain in detail on reverse side of this certification.

---

Certification - The information above is true and complete to the best of my knowledge and belief. (A willfully false statement is punishable by law-U.S. Code, Title 18, Section 1001.)

---

**Name and title of signer (Please type)**

---

**Signature**

---

**Date**

# U.S. Environmental Protection Agency

## CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS

The prospective participant certifies to the best of its knowledge and belief that it and its principals:

- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- (b) Have not within a three year period preceding this proposal been convicted of or had a civil judgement rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statues or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- (c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and
- (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Sec. 1001, a false statement may result in a fine of up to \$10,000 or imprisonment for up to 5 years, or both.

---

Typed Name & Title of Authorized Representative

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Signature of Authorized Representative

Date

I am unable to certify to the above statements. My explanation is attached.

## RETAINAGE

### **TCA 66-34-104. Retention of portion of contract price in escrow — Applicability — Mandatory compliance. —**

(a) Whenever, in any contract for the improvement of real property, a certain amount or percentage of the contract price is retained, that retained amount shall be deposited in a separate, interest bearing, escrow account with a third party.

(b) As of the time of the deposit of the retained funds, the funds shall become the sole and separate property of the prime contractor or remote contractor to whom they are owed, subject to the rights of the person withholding the retainage in the event the prime contractor or remote contractor otherwise entitled to the funds defaults on or does not complete its contract.

(c) Upon satisfactory completion of the contract, to be evidenced by a written release by the owner or prime contractor owing the retainage, all funds accumulated in the escrow account together with all interest on the account shall be paid immediately to the prime contractor or remote contractor to whom the funds and interest are owed.

(d) In the event the owner or prime contractor, as applicable, fails or refuses to execute the release provided for in subsection (c), then the prime contractor or remote contractor, as applicable, may seek any remedy in a court of proper jurisdiction and the person holding the fund as escrow agent shall bear no liability for the nonpayment of the fund to the prime contractor or remote contractor; provided, however, that all claims, demands, disputes, controversies, and differences that may arise between the owner, prime contractor or prime contractors, and remote contractor or remote contractors regarding the funds may be, upon written agreement of all parties concerned, settled by arbitration conducted pursuant to the Tennessee Uniform Arbitration Act, compiled in title 4, chapter 5, part 3, or the Federal Arbitration Act, 9 U.S.C. § 1, et seq., as may be applicable.

(e) In contracts to which the state or any department, board or agency of the state, including the University of Tennessee, is a party, interest shall be paid on the retained amounts at the same rate interest is paid on the funds of local governments participating in the local government investment pool established pursuant to § 9-4-704, for the contract period.

(f) The provisions of this section shall be applicable to the state, any department, board or agency of the state, including the University of Tennessee, and all counties and municipalities and all departments, boards or agencies of the counties and municipalities, including all school and education boards, and any other subdivision of the state.

(g) This section shall be applicable to all prime contracts and all subcontracts thereunder for the improvement of real property when the contract amount of such prime contract is five hundred thousand dollars (\$500,000) or greater, notwithstanding the amount of such subcontracts.

(h) Compliance with this section shall be mandatory, and may not be waived by contract.

[Acts 1975, ch. 345, §§ 1-4; T.C.A., §§ 64-1148 — 64-1151; Acts 1985, ch. 340, §§ 1, 2; 1986, ch. 551, § 9; 2007, ch. 189, § 43; 2007, ch. 201, §§ 1, 2; T.C.A. § 66-11-144; Acts 2008, ch. 804, §§ 1, 2.]

## RETAINAGE

### **TCA 66-34-203. Withholding of payment or retainage by owner. —**

Nothing in this chapter shall prevent the owner from reasonably withholding payment or a portion of a payment to the contractor; provided, that such withholding is in accordance with the provisions of the written contract between the owner and the contractor. The owner may also withhold a reasonable amount of retainage as specified in the written contract between the owner and the contractor; provided, however, that the retainage amount may not exceed five percent (5%) of the amount of the contract.

[Acts 1991, ch. 45, § 1; 2007, ch. 201, § 4.]

### **66-34-103. Withholding of retainage — Violations — Penalties. —**

(a) All construction contracts on any project in this state, both public and private, may provide for the withholding of retainage; provided, however, that the retainage amount may not exceed five percent (5%) of the amount of the contract.

(b) The owner, whether public or private, shall release and pay all retainages for work completed pursuant to the terms of any contract to the prime contractor within ninety (90) days after completion of the work or within ninety (90) days after substantial completion of the project for work completed, whichever occurs first. As used in this subsection (b), work completed shall be construed to mean the completion of the scope of the work and all terms and conditions covered by the contract under which the retainage is being held. The prime contractor shall pay all retainages due any subcontractor within ten (10) days after receipt of the retainages from the owner. Any subcontractor receiving the retainage from the prime contractor shall pay to any subsubcontractor or material supplier all retainages due the subsubcontractor or material supplier within ten (10) days after receipt of the retainages.

(c) Any default in the making of the payments shall be subject to those remedies provided in this part.

(d) In the event that an owner or prime contractor withholds retainage that is for the use and benefit of the prime contractor or its subcontractors pursuant to § 66-34-104(a) and (b), neither the prime contractor nor any of its subcontractors shall be required to deposit additional retained funds into an escrow account in accordance with § 66-34-104(a) and (b).

(e) (1) It is an offense for a person, firm or corporation to fail to comply with subsection (a) or (b) or § 66-34-104(a).

(2) (A) A violation of this subsection (e) is a Class A misdemeanor, subject to a fine only of three thousand dollars (\$3,000).

(B) Each day a person, firm or corporation fails to comply with subsection (a) or (b) or § 66-34-104(a) is a separate violation of this subsection (e).

(C) Until the violation of this subsection (e) is remediated by compliance, the punishment for each violation shall be consecutive to all other such violations.

[Acts 2007, ch. 201, § 3; 2008, ch. 804, § 3.]

# EMPLOYEE RIGHTS UNDER THE DAVIS-BACON ACT

## FOR LABORERS AND MECHANICS EMPLOYED ON FEDERAL OR FEDERALLY ASSISTED CONSTRUCTION PROJECTS

THE UNITED STATES DEPARTMENT OF LABOR WAGE AND HOUR DIVISION

### PREVAILING WAGES

You must be paid not less than the wage rate listed in the Davis-Bacon Wage Decision posted with this Notice for the work you perform.

### OVERTIME

You must be paid not less than one and one-half times your basic rate of pay for all hours worked over 40 in a work week. There are few exceptions.

### ENFORCEMENT

Contract payments can be withheld to ensure workers receive wages and overtime pay due, and liquidated damages may apply if overtime pay requirements are not met. Davis-Bacon contract clauses allow contract termination and debarment of contractors from future federal contracts for up to three years. A contractor who falsifies certified payroll records or induces wage kickbacks may be subject to civil or criminal prosecution, fines and/or imprisonment.

### APPRENTICES

Apprentice rates apply only to apprentices properly registered under approved Federal or State apprenticeship programs.

### PROPER PAY

If you do not receive proper pay, or require further information on the applicable wages, contact the Contracting Officer listed below:

or contact the U.S. Department of Labor's Wage and Hour Division.



For additional information:

**1-866-4-USWAGE**  
(1-866-487-9243) TTY: 1-877-889-5627



**WWW.WAGEHOUR.DOL.GOV**



# DERECHOS DEL EMPLEADO BAJO LA LEY DAVIS-BACON

## PARA OBREROS Y MECÁNICOS EMPLEADOS EN PROYECTOS DE CONSTRUCCIÓN FEDERAL O CON ASISTENCIA FEDERAL

LA SECCIÓN DE HORAS Y SUELDOS DEL DEPARTAMENTO DE TRABAJO DE EEUU

### **SALARIOS PREVALECIENTES**

No se le puede pagar menos de la tasa de pago indicada en la Decisión de Salarios Davis-Bacon fijada con este Aviso para el trabajo que Ud. desempeña.

### **SOBRETIEMPO**

Se le ha de pagar no menos de tiempo y medio de su tasa básica de pago por todas las horas trabajadas en exceso de 40 en una semana laboral. Existen pocas excepciones.

### **CUMPLIMIENTO**

Se pueden retener pagos por contratos para asegurarse que los obreros reciban los salarios y el pago de sobretiempo debidos, y se podría aplicar daños y perjuicios si no se cumple con las exigencias del pago de sobretiempo. Las cláusulas contractuales de Davis-Bacon permiten la terminación y exclusión de contratistas para efectuar futuros contratos federales hasta tres años. El contratista que falsifique los registros certificados de las nóminas de pago o induzca devoluciones de salarios puede ser sujeto a procesamiento civil o criminal, multas y/o encarcelamiento.

### **APRENDICES**

Las tasas de aprendices sólo se aplican a aprendices correctamente inscritos bajo programas federales o estatales aprobados.

### **PAGO APROPIADO**

Si Ud. no recibe el pago apropiado, o precisa de información adicional sobre los salarios aplicables, póngase en contacto con el Contratista Oficial que aparece abajo:

o póngase en contacto con la Sección de Horas y Sueldos del Departamento de Trabajo de EEUU.



Para obtener información adicional:

**1-866-4-USWAGE**

(1-866-487-9243) TTY: 1-877-889-5627



**WWW.WAGEHOUR.DOL.GOV**

# Project Wage Rate Sheet

U.S. Department of Housing and Urban Development  
Office of Labor Relations

PROJECT NAME:			WAGE DECISION NUMBER/MODIFICATION NUMBER:			
PROJECT NUMBER:			PROJECT COUNTY:			
WORK CLASSIFICATION	BASIC HOURLY RATE (BHR)	FRINGE BENEFITS	TOTAL HOURLY WAGE RATE	LABORERS FRINGE BENEFITS:		\$ TOTAL WAGE
				GROUP #	BHR	
Bricklayers			\$			\$
Carpenters			\$			\$
Cement Masons			\$			\$
Drywall Hangers			\$			\$
Electricians			\$			\$
Iron Workers			\$			\$
Painters			\$	OPERATORS FRINGE BENEFITS:		\$ TOTAL WAGE
				GROUP #	BHR	
Plumbers			\$			\$
Roofers			\$			\$
Sheet Metal Workers			\$			\$
Soft Floor Layers			\$			\$
Tapers			\$			\$
Tile Setters			\$	TRUCK DRIVERS FRINGE BENEFITS:		\$ TOTAL WAGE
				GROUP #	BHR	
OTHER CLASSIFICATIONS						
			\$			\$
			\$			\$
			\$			\$
<b>ADDITIONAL CLASSIFICATIONS (HUD Form 4230-A)</b>						
WORK CLASSIFICATION	BASIC HOURLY RATE	FRINGE BENEFITS	TOTAL HOURLY WAGE RATE	DATE OF HUD SUBMISSION TO DOL	DATE OF DOL APPROVAL	
			\$			
			\$			
			\$			
			\$			

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General Decision Number: TN180146 06/01/2018 TN146

Superseded General Decision Number: TN20170146

State: Tennessee

Construction Type: Heavy  
Including Water and Sewer Line Construction

Counties: Hamilton and Sequatchie Counties in Tennessee.

HEAVY CONSTRUCTION PROJECTS (including sewer/water construction).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.35 for calendar year 2018 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.35 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2018. The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at [www.dol.gov/whd/govcontracts](http://www.dol.gov/whd/govcontracts).

Modification Number	Publication Date
0	01/05/2018
1	02/09/2018
2	06/01/2018

\* ELEC0175-012 06/01/2018

Hamilton County

	Rates	Fringes
ELECTRICIAN.....	\$ 31.59	14.5%+7.35
-----		
ELEC0429-008 06/01/2017		

Sequatchie County

	Rates	Fringes
Electrician.....	\$ 25.94	5%+11.25
-----		
ENGI0917-022 05/01/2017		

Rates Fringes

## Operating Engineers:

Bulldozer and Crane.....	\$ 28.26	10.10
Forklift.....	\$ 25.97	10.10

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LABO0846-001 05/01/2017

	Rates	Fringes
LABORER: Common or General.....	\$ 15.20	5.65

-----  
SUTN2009-144 12/02/2009

	Rates	Fringes
LABORER: Flagger.....	\$ 8.73	0.00
LABORER: Pipelayer.....	\$ 11.68	0.00
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 16.82	0.00
OPERATOR: Loader.....	\$ 13.50	0.00
TRUCK DRIVER: Dump Truck.....	\$ 10.76	0.00

-----  
WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at [www.dol.gov/whd/govcontracts](http://www.dol.gov/whd/govcontracts).

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

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The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the

cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

#### Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

#### Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

#### Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of

each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION



General Decision Number: TN180089 06/01/2018 TN89

Superseded General Decision Number: TN20170089

State: Tennessee

Construction Type: Building

County: Hamilton County in Tennessee.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.35 for calendar year 2018 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.35 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2018. The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at [www.dol.gov/whd/govcontracts](http://www.dol.gov/whd/govcontracts).

Modification Number	Publication Date
0	01/05/2018
1	02/09/2018
2	04/27/2018
3	06/01/2018

BOIL0454-001 03/01/2018

	Rates	Fringes
Boilermaker.....	\$ 30.07	21.61

CARP0074-003 05/01/2017

	Rates	Fringes
CARPENTER (Including Form Work (Excluding Acoustical Ceiling Installation).....	\$ 20.80	11.26

\* ELEC0175-010 06/01/2018

	Rates	Fringes
ELECTRICIAN.....	\$ 31.59	14.5%+7.35

ENGI0917-019 05/01/2017

	Rates	Fringes
OPERATOR: Power Equipment		
Crane.....	\$ 28.26	10.10
Forklift.....	\$ 25.97	10.10
Grader/Blade.....	\$ 25.97	10.10

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IRON0704-006 05/01/2017

	Rates	Fringes
IRONWORKER, STRUCTURAL AND REINFORCING.....		
	\$ 26.71	14.76

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PLUM0043-004 07/01/2017

	Rates	Fringes
PIPEFITTER (Including HVAC Pipe Installation).....		
	\$ 29.32	10.83

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PLUM0043-005 07/01/2017

	Rates	Fringes
PLUMBER (Excluding HVAC Pipe Installation).....		
	\$ 29.32	10.83

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SHEE0005-009 06/01/2017

	Rates	Fringes
SHEET METAL WORKER (Including Metal Building Erector(Metal Siding/Wall Panels), HVAC Duct Installation and Metal Roof Installation).....		
	\$ 25.09	11.83

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SUTN2009-087 09/21/2009

	Rates	Fringes
BRICKLAYER.....	\$ 20.00	0.80
CARPENTER (Acoustical Ceiling Installation Only).....	\$ 17.43	2.25
CEMENT MASON/CONCRETE FINISHER....	\$ 17.55	1.57
LABORER: Common or General.....	\$ 11.47	5.12
LABORER: Landscape.....	\$ 10.67	0.89
LABORER: Mason Tender - Brick....	\$ 10.00	0.80
LABORER: Roof Tearoff.....	\$ 9.75	0.49
OPERATOR:		
Backhoe/Excavator/Trackhoe.....	\$ 18.90	7.53

OPERATOR: Bobcat/Skid Steer/Skid Loader.....	\$ 17.53	0.00
OPERATOR: Bulldozer.....	\$ 18.90	7.53
OPERATOR: Mechanic.....	\$ 18.66	3.39
OPERATOR: Paver (Asphalt, Aggregate, and Concrete).....	\$ 13.50	0.00
OPERATOR: Roller.....	\$ 13.98	0.00
PAINTER: Spray.....	\$ 14.30	0.00
ROOFER: Built up Roof.....	\$ 12.74	0.00
ROOFER: Rubber Roof.....	\$ 15.73	0.00
ROOFER: Single Ply Roof.....	\$ 16.50	0.32
TILE FINISHER.....	\$ 10.00	0.74
TRUCK DRIVER: Dump Truck.....	\$ 12.56	0.00
TRUCK DRIVER: Material Truck....	\$ 16.50	1.95
TRUCK DRIVER: Pickup Truck.....	\$ 11.70	3.92

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at [www.dol.gov/whd/govcontracts](http://www.dol.gov/whd/govcontracts).

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

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The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

#### Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

#### Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

#### Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage

determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

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# STATE REVOLVING FUND LOAN PROGRAM

## Bidder's Requirements

### Davis-Bacon Act Wage Determination

**The Loan Recipient must ensure the bidder is in compliance with the Davis-Bacon Act as outlined below. Additionally, ten (10) days prior to the scheduled bid opening date, the wage rates need to be checked to ensure they have not changed.**

The Davis-Bacon Act as amended, requires that each contract over \$2,000 to which the United States or the District of Columbia is a party for the construction, alteration, or repair of public buildings or public works shall contain a clause setting forth the minimum wages to be paid to various classes of laborers and mechanics employed under the contract. Under the provisions of the Act, contractors or their subcontractors are to pay workers employed directly upon the site of the work no less than the locally prevailing wages and fringe benefits paid on projects of a similar character. The Davis-Bacon Act directs the Secretary of Labor to determine such local prevailing wage rates.

The **wage determination** (including any additional **classifications** and **wage rates** conformed) **and** a Davis-Bacon poster (WH-1321) **must be posted on the work site at all times** by the contractor and its subcontractors in a prominent and accessible place where it can be easily seen. The WH-1321 poster **may be obtained at no charge** from offices of the Wage and Hour Division.

With each **pay estimate** submitted, the contractors **must submit** a certification stating that workers have been paid the current prevailing wage rates for each classification according to the Davis-Bacon wage rate schedule currently in effect for this project.

### Wage Determinations

A "wage determination" is the listing of wage rates and fringe benefit rates for each classification of laborers and mechanics which the Administrator of the Wage and Hour Division of the U.S. Department of Labor has determined to be prevailing in a given area for a particular type of construction (e.g., building, heavy, highway, or residential).

### Extensions of Wage Determinations

When a general wage determination has not been awarded within 90 days after bid opening, the head of the contracting/assisting agency may request an extension of the 90 day period from the Wage and Hour Administrator. When, due to unavoidable circumstances, a project wage determination expires before award but after bid opening, the head of the contracting/assisting agency may request an extension of the expiration date of the project wage determination in the bid specifications instead of issuing a new wage determination.

Extension requests should be supported by a written finding including a brief statement of the factual support, that extension of the expiration date of the determination is necessary and proper in the public interest to prevent injustice or undue hardship or to avoid serious impairment in the conduct of Government business.

The Administrator of the Wage and Hour Division of the U.S. Department of Labor will either grant or deny the request for an extension after consideration of all the circumstances, including an examination to determine if the previously issued rates remain prevailing. If a request for the extension of a project wage determination is denied, a new wage determination will be issued to replace an expired project wage determination.

Additional information concerning the Davis-Bacon Act and current wage rate determinations can be obtained at the following sites: [www.gpo.gov/davisbacon/referencemat.html](http://www.gpo.gov/davisbacon/referencemat.html) and [www.wdol.gov/](http://www.wdol.gov/).



# STATE REVOLVING FUND LOAN PROGRAM

## Wage Rate Requirements Under FY 2010 Appropriations

### 3. Contract and Subcontract provisions.

(a) The Recipient shall insure that the subrecipient(s) shall insert in full in any contract in excess of \$2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a treatment work under the CWSRF or a construction project under the DWSRF financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in § 5.1 or the FY 2010 appropriation, the following clauses:

(1) Minimum wages.

(i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

Subrecipients may obtain wage determinations from the U.S. Department of Labor's web site, [www.dol.gov](http://www.dol.gov).

(ii)(A) The subrecipient(s), on behalf of EPA, shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The State award official shall approve a request for an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

## STATE REVOLVING FUND LOAN PROGRAM

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the subrecipient(s) agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), documentation of the action taken and the request, including the local wage determination shall be sent by the subrecipient (s) to the State award official. The State award official will transmit the request, to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210 and to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification request within 30 days of receipt and so advise the State award official or will notify the State award official within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the subrecipient(s) do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the award official shall refer the request and the local wage determination, including the views of all interested parties and the recommendation of the State award official, to the Administrator for determination. The request shall be sent to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt of the request and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(2) Withholding. The subrecipient(s), shall upon written request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the (Agency) may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records.

## STATE REVOLVING FUND LOAN PROGRAM

(i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the subrecipient, that is, the entity that receives the sub-grant or loan from the State capitalization grant recipient. Such documentation shall be available on request of the State recipient or EPA. As to each payroll copy received, the subrecipient shall provide written confirmation in a form satisfactory to the State indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the subrecipient(s) for transmission to the State or EPA if requested by EPA, the State, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the subrecipient(s).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under § 5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or

## STATE REVOLVING FUND LOAN PROGRAM

indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the State, EPA or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency or State may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and trainees--

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency

## STATE REVOLVING FUND LOAN PROGRAM

recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

(5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

(6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the EPA determines may be appropriate, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for

the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(7) Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and Subrecipient(s), State, EPA, the U.S. Department of Labor, or the employees or their representatives.

## STATE REVOLVING FUND LOAN PROGRAM

(10) Certification of eligibility.

(i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

### **4. Contract Provision for Contracts in Excess of \$100,000.**

(a) Contract Work Hours and Safety Standards Act. The subrecipient shall insert the following clauses set forth in paragraphs (a)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Item 3, above or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such

laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (a)(1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (a)(1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (a)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The subrecipient, upon written request of the EPA Award Official or an authorized representative of the Department of Labor, shall withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (a)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (a)(1) through (4) of this section.

## STATE REVOLVING FUND LOAN PROGRAM

(b) In addition to the clauses contained in Item 3, above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the Subrecipient shall insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Subrecipient shall insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the (write the name of agency) and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

# STATE REVOLVING FUND LOAN PROGRAM

## Loan Recipient's Requirements

### Davis-Bacon Act Wage Determination

**The Loan Recipient must ensure the bidder is in compliance with the Davis-Bacon Act as outlined below. Additionally, ten (10) days prior to the scheduled bid opening date, the wage rates need to be checked to ensure they have not changed.**

The Davis-Bacon Act as amended, requires that each contract over \$2,000 to which the United States or the District of Columbia is a party for the construction, alteration, or repair of public buildings or public works shall contain a clause setting forth the minimum wages to be paid to various classes of laborers and mechanics employed under the contract. Under the provisions of the Act, contractors or their subcontractors are to pay workers employed directly upon the site of the work no less than the locally prevailing wages and fringe benefits paid on projects of a similar character. The Davis-Bacon Act directs the Secretary of Labor to determine such local prevailing wage rates.

**The specifications must** incorporate a clause stating that the current Davis-Bacon wage rate is required (with the Davis-Bacon links and information).

The Bid Advertisement **must include** a clause that the **Davis-Bacon wage rates** are a requirement. (Refer to the ADVERTISEMENT FOR BIDS EXAMPLE – DBE, ARRA)

If modifications to the existing **wage rates** occur **ten (10) days** prior to the Bid Opening Date, the Loan Recipient **must** incorporate the proper **wage rates** into the plans and specifications by Addendum. All Bidders **must** be informed that this addendum **must** be incorporated into the plans and specifications that they have received.

However, if these modifications occur **less than ten (10) days** prior to the Bid Opening Date, these modifications **shall be effective unless** the agency **finds** that there is not a reasonable time still available before the Bid Opening to notify bidders of the modifications. (A report of this **finding** shall be inserted in the contract file.)

The **wage determination** (including any additional **classifications** and **wage rates** conformed) **and** a Davis-Bacon poster (WH-1321) **must be posted on the work site at all times** by the contractor and its subcontractors in a prominent and accessible place where it can be easily seen. The WH-1321 poster **may be obtained at no charge** from offices of the Wage and Hour Division.

With each **pay estimate** submitted, the contractors **must** certify that workers have been paid the current prevailing wage rates for each classification according to the Davis-Bacon wage rate schedule currently in effect for this project.

The loan recipients **must keep a file** in which all documentation **must be filed** for the current classifications and wage rates (under the Davis-Bacon Act) for the construction of their projects. This file must be kept for three (3) years after the project is completed and **will** be subject to audit by the State of Tennessee and the Environmental Protection Agency (EPA).

### Wage Determinations

A "wage determination" is the listing of wage rates and fringe benefit rates for each classification of laborers and mechanics which the Administrator of the Wage and Hour Division of the U.S. Department of Labor has determined to be prevailing in a given area for a particular type of construction (e.g., building, heavy, highway, or residential).



# STATE REVOLVING FUND LOAN PROGRAM

## Extensions of Wage Determinations

When a general wage determination has not been awarded within 90 days after bid opening, the head of the contracting/assisting agency may request an extension of the 90 day period from the Wage and Hour Administrator. When, due to unavoidable circumstances, a project wage determination expires before award but after bid opening, the head of the contracting/assisting agency may request an extension of the expiration date of the project wage determination in the bid specifications instead of issuing a new wage determination.

Extension requests should be supported by a written finding including a brief statement of the factual support, that extension of the expiration date of the determination is necessary and proper in the public interest to prevent injustice or undue hardship or to avoid serious impairment in the conduct of Government business.

The Administrator of the Wage and Hour Division of the U.S. Department of Labor will either grant or deny the request for an extension after consideration of all the circumstances, including an examination to determine if the previously issued rates remain prevailing. If a request for the extension of a project wage determination is denied, a new wage determination will be issued to replace an expired project wage determination.

Additional information concerning the Davis-Bacon Act and current wage rate determinations can be obtained at the following sites: [www.gpo.gov/davisbacon/referencemat.html](http://www.gpo.gov/davisbacon/referencemat.html) and [www.wdol.gov/](http://www.wdol.gov/).

## **Wage Rate Requirements Under FY 2010 Appropriations**

### **3. Contract and Subcontract provisions.**

(a) The Recipient shall insure that the subrecipient(s) shall insert in full in any contract in excess of \$2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a treatment work under the CWSRF or a construction project under the DWSRF financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in § 5.1 or the FY 2010 appropriation, the following clauses:

(1) Minimum wages.

(i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in §

## STATE REVOLVING FUND LOAN PROGRAM

5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

Subrecipients may obtain wage determinations from the U.S. Department of Labor's web site, [www.dol.gov](http://www.dol.gov).

(ii)(A) The subrecipient(s), on behalf of EPA, shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The State award official shall approve a request for an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the subrecipient(s) agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), documentation of the action taken and the request, including the local wage determination shall be sent by the subrecipient (s) to the State award official. The State award official will transmit the request, to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210 and to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification request within 30 days of receipt and so advise the State award official or will notify the State award official within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the subrecipient(s) do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the award official shall refer the request and the local wage determination, including the views of all interested parties and the recommendation of the State award official, to the Administrator for determination. The request shall be sent to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt of the request and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the

## STATE REVOLVING FUND LOAN PROGRAM

contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(2) Withholding. The subrecipient(s), shall upon written request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the (Agency) may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the subrecipient, that is, the entity that receives the sub-grant or loan from the State capitalization grant recipient. Such documentation shall be available on request of the State recipient or EPA. As to each payroll copy received, the subrecipient shall provide written confirmation in a form satisfactory to the State indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g.,

## STATE REVOLVING FUND LOAN PROGRAM

the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the subrecipient(s) for transmission to the State or EPA if requested by EPA, the State, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the subrecipient(s).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under § 5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the State, EPA or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency or State may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and trainees--

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or

## STATE REVOLVING FUND LOAN PROGRAM

with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

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(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

(5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

(6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the EPA determines may be appropriate, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(7) Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and Subrecipient(s), State, EPA, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility.

(i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

### **4. Contract Provision for Contracts in Excess of \$100,000.**

(a) Contract Work Hours and Safety Standards Act. The subrecipient shall insert the following clauses set forth in paragraphs (a)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Item 3, above or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such

laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

## STATE REVOLVING FUND LOAN PROGRAM

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (a)(1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (a)(1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (a)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The subrecipient, upon written request of the EPA Award Official or an authorized representative of the Department of Labor, shall withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (a)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (a)(1) through (4) of this section.

(b) In addition to the clauses contained in Item 3, above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the Subrecipient shall insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Subrecipient shall insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the (write the name of agency) and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

# STATE REVOLVING FUND LOAN PROGRAM

## Loan Recipient's and Contractor's Guidance

**FY2010 and After**

### Tracking and Reporting

For tracking and reporting purposes, the **Loan Recipient** is responsible for the following:

- Ensuring that the Contractor is in compliance with the Davis Bacon provisions of ARRA
- The loan recipients **must keep a file** in which all documentation **must be stored** for the current classifications and wage rates (under the Davis-Bacon Act) for the construction of their projects. This file must be kept for three (3) years after the project is completed and **will** be subject to audit by the State of Tennessee and the Environmental Protection Agency (EPA).
- Any additional tracking and reporting requirements from EPA

For tracking and reporting purposes, the **Contractor** is responsible for the following:

- Achieving and maintaining compliance with the Davis Bacon provisions of ARRA
- Submitting with each **pay estimate** a certification stating that workers have been paid the current prevailing wage rates for each classification according to the Davis-Bacon wage rate schedule currently in effect for this project
- Any additional tracking and reporting requirements from EPA

**Please contact Dr. Bagher Sami, Administrative Section Manager for the SRF Loan Program, at 615-532-0501 or [bagher.sami@tn.gov](mailto:bagher.sami@tn.gov) to obtain details.**



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# NOTICE

THIS ENTITY IS A RECIPIENT OF **STATE AND FEDERAL** FUNDS. IF YOU HAVE KNOWLEDGE OF ANY ACTIVITY WHICH YOU CONSIDER TO BE ILLEGAL, IMPROPER, OR WASTEFUL, PLEASE CALL THE STATE COMPTROLLER'S TOLL-FREE HOTLINE:

**1-800-232-5454**



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**CONSTRUCTION ACTIVITY – STORM WATER DISCHARGES  
NOTICE OF INTENT (NOI)**

<b>Site Name:</b>	<b>Existing Tracking No.</b>
Street Address or Location:	Start date:
Site Description:	Estimated end date:
County(ies):	Latitude:
	Longitude:
	Acres Disturbed:

Does a topographic map show dotted or solid blue lines  and/or wetlands  on or adjacent to the construction site?  
 If wetlands are located on-site and may be impacted, attach wetlands delineation report.  
 If an Aquatic Resource Alteration Permit has been obtained for this site, what is the permit number? ARAP permit No.:

Receiving waters:

Attach the SWPPP with the NOI  SWPPP Attached      Attach a site location map  Map Attached

**Site Owner/Developer:** (person, company, or legal entity that has operational or design control over construction plans and specifications)

Site Owner/Developer Contact: (individual responsible for site)	Title or Position:		
Mailing Address:	City:	State:	Zip:
Phone: ( )	E-mail:		

Optional Contact:	Title or Position:		
Address:	City:	State:	Zip:
Phone: ( )	E-mail:		

**Owner/Developer Certification** (must be signed by president, vice-president or equivalent, or ranking elected official)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner/Developer name; print or type	Signature	Date
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**Contractor(s) Certification** (must be signed by president, vice-president or equivalent, or ranking elected official)

I certify under penalty of law that I have reviewed this document, any attachments, and the SWPPP referenced above. Based on my inquiry of the construction site owner/developer identified above, and/or my inquiry of the person directly responsible for assembling this NOI, I believe the information submitted is accurate. I am aware that this NOI, if approved, makes the above-described construction activity subject to NPDES permit number TNR100000, and that certain of my activities on-site are thereby regulated. I am aware that there are significant penalties, including the possibility of fine and imprisonment for knowing violations, and for failure to comply with these permit requirements.

Primary contractor name and address; print or type	Signature	Date
Other contractor name and address; print or type	Signature	Date
Other contractor name and address; print or type	Signature	Date

**OFFICIAL STATE USE ONLY**

Received Date	Reviewer	Field Office	Permit Number <b>TNR</b>	High Quality Water
Fcc(s)	T & E Aquatic Fauna		Impaired Receiving Stream	Notice of Coverage Date



## CONSTRUCTION ACTIVITY – STORM WATER DISCHARGES NOTICE OF INTENT (NOI) - INSTRUCTIONS

**Purpose of this form** A completed notice of intent (NOI) must be submitted to obtain coverage under the Tennessee General NPDES Permit for Discharges of Storm Water Associated with Construction Activity. **Requesting coverage under this permit means that an applicant has obtained and examined a copy of this permit, and thereby acknowledges applicant's claim of ability to be in compliance with permit terms and conditions.** This permit is required for storm water discharge(s) from construction activities including clearing, grading, filling and excavating (including borrow pits) of one or more acres of land. This form should be submitted at least 30 days prior to the commencement of land disturbing activities, or no later than 48 hours prior to when a new operator assumes operational control over site specifications or commences work at the site.

**Permit fee** (see table below) must accompany the NOI and is based on total acreage to be disturbed by an entire project, including any associated construction support activities (e.g. equipment staging yards, material storage areas, excavated material disposal areas, borrow or waste sites). There is no fee for sites less than 1 acre.

Acres Disturbed	Fee	Acres Disturbed	Fee	Acres Disturbed	Fee
= or > 500 acres	\$7,500	= or > 75 < 100 acres	\$2,000	= or > 20 < 30 acres	\$ 500
= or > 250 < 500 acres	\$5,000	= or > 50 < 75 acres	\$1,000	= or > 10 < 20 acres	\$ 400
= or > 150 < 250 acres	\$4,000	= or > 40 < 50 acres	\$ 750	= or > 5 < 10 acres	\$ 300
= or > 100 < 150 acres	\$3,000	= or > 30 < 40 acres	\$ 600	= or > 1 < 5 acres	\$ 250

**Who must submit the NOI form?** The NOI form must be signed by the “operator(s)” of the construction site. Operators will most likely include the developer of the site, and the primary contractor(s). “Operator” means any party associated with the construction project that meets either of the following two criteria: (1) the party has design or operational control over project specifications (including the ability to make modifications in specifications); or (2) the party has day-to-day operational control of those activities at a project site which are necessary to ensure compliance with the storm water pollution prevention plan (SWPPP) or other permit conditions (e.g., they are authorized to direct workers at the site to carry out activities identified in the storm water pollution prevention plan or comply with other permit conditions). If a contractor has not been identified at the time the NOI is submitted by the developer, the contractor(s) must sign an NOI for the project in order to obtain authorization under this permit. The contractor must include the NPDES permit number that is already assigned to the site, along with the name of the construction project and its location.

**Notice of Coverage** The division will review the NOI for completeness and accuracy and prepare a notice of coverage (NOC). Storm water discharge from the construction site is authorized as of the effective date of the NOC.

**Complete the form** Type or print clearly, using ink and not markers or pencil. Answer each item or enter “NA,” for not applicable, if a particular item does not fit the circumstances or characteristics of your construction site or activity. If you need additional space, attach a separate piece of paper to the NOI form. **The NOI will be considered incomplete without a map and the SWPPP.**

**Describe and locate the project** Use the legal or official name of the construction site. If a construction site lacks street name or route number, give the most accurate geographic information available to describe the location (reference to adjacent highways, roads and structures; e.g. intersection of state highways 70 and 100). Latitude and longitude (expressed in decimal degrees) of the center of the site can be located on USGS quadrangle maps. The quadrangle maps can be obtained at 1-800-USA-MAPS, or at the Census Bureau world wide web site: <http://www.census.gov/cgi-bin/gazetteer>. Attach a copy of a portion of a 7.5 minute quad map, showing location of site, with boundaries at least one mile outside the site boundaries. Provide estimated starting date of clearing activities and completion date of the project, and an estimate of the number of acres of the site on which soil will be disturbed, including borrow areas, fill areas and stockpiles. For linear projects give location at each end of the construction area.

**Give name of the receiving waters** Trace the route of storm water runoff from the construction site and determine the name of the river(s), stream(s), creek(s), wetland(s), lake(s) or any other water course(s) into which the storm water runoff drains. Note that the receiving water course may or may not be located on the construction site. If the first water body receiving construction site runoff is unnamed (“unnamed tributary”), determine the name of the water body which the unnamed tributary enters.

**ARAP permit may be required** **If your work will disturb or cause alterations of a stream or wetland, you must obtain an appropriate Aquatic Resource Alteration Permit (ARAP).** If you have a question about the ARAP program or permits, contact your local Environmental Field Office (EFO).

**Submitting the form and obtaining more information** Note that this form must be signed by the company President, Vice-President, or a ranking elected official in the case of a municipality, for details see permit subpart 2.5. For more information, contact your local EFO at the toll-free number 1-888-891-8332 (TDEC). Submit the completed NOI form (keep a copy for your records) to the appropriate EFO for the county(ies) where the construction activity is located, addressed to **Attention: Storm Water NOI Processing.**

EFO	Street Address	Zip Code	EFO	Street Address	Zip Code
Memphis	2510 Mt. Moriah Road STE E-645	38115-1520	Cookeville	1221 South Willow Ave.	38506
Jackson	1625 Hollywood Drive	38305	Chattanooga	540 McCallie Avenue STE 550	37402-2013
Nashville	711 R S Gass Boulevard	37243	Knoxville	3711 Middlebrook Pike	37921
Columbia	2484 Park Plus Drive	38401	Johnson City	2305 Silverdale Road	37601





**NOTICE OF TERMINATION (NOT) – STORM WATER DISCHARGES  
CONSTRUCTION ACTIVITY**

This form is required to be submitted when requesting termination of coverage from the General NPDES Permit for Discharges of Storm Water Associated with Construction Activities. The purpose of this form is to notify the Tennessee Department of Environment and Conservation that you, as a permitted operator of storm water discharges from a construction activity, no longer have responsibilities related to erosion and sediment controls at the construction site. Submission of this form shall in no way relieve the permittee of permit obligations required prior to submission of this form. Please submit this form to the local Division of Water Pollution Control, Environmental Field Office (EFO) address (see table below), and marked “**Storm Water Notice of Termination**”. For more information, contact your local EFO at the toll-free number 1-888-891-8332 (TDEC). **Type or print clearly, using ink and not markers or pencil.**

<b>Site Name:</b>		<b>Tracking No.</b>	
Street Address or Location:			
Site Description:			
<b>Site Owner/Developer:</b> (person, company, or legal entity that has operational or design control over construction plans and specifications)			
Site Owner/Developer Contact: (individual responsible for site)		Title or Position:	
Mailing Address:	City:	State:	Zip:
Phone: (     )	E-mail:		

**Check the reason for termination of permit coverage:**

<input type="checkbox"/>	Storm water discharge associated with construction activity is no longer occurring and the area previously under construction has been restabilized (i.e., termination of initial permittee coverage). Explain:
<input type="checkbox"/>	You are no longer the operator of the facility/site (i.e., termination of primary or secondary permittee coverage). Name of Permittee requesting termination of coverage: Explain:

**Certification and Signature** (must be signed by president, vice-president or equivalent, or ranking elected official)

I certify under penalty of law that either: (a) all storm water discharges associated with construction activity from the portion of the identified facility where I was an operator have ceased or have been eliminated or (b) I am no longer an operator at the construction site. I understand that by submitting this notice of termination, I am no longer authorized to discharge storm water associated with construction activity under this general permit, and that discharging pollutants in storm water associated with construction activity to waters of the United States is unlawful under the Clean Water Act where the discharge is not authorized by a NPDES permit. I also understand that the submittal of this notice of termination does not release an operator from liability for any violations of this permit or the Clean Water Act.

For the purposes of this certification, elimination of storm water discharges associated with construction activity means that all disturbed soils at the portion of the construction site where the operator had control have been finally stabilized and temporary erosion and sediment control measures have been removed or will be removed at an appropriate time to insure final stabilization is maintained, or that all storm water discharges associated with construction activities from the identified site that are authorized by a NPDES general permit have otherwise been eliminated from the portion of the construction site where the operator had control.

Operator name; print or type	Signature	Date
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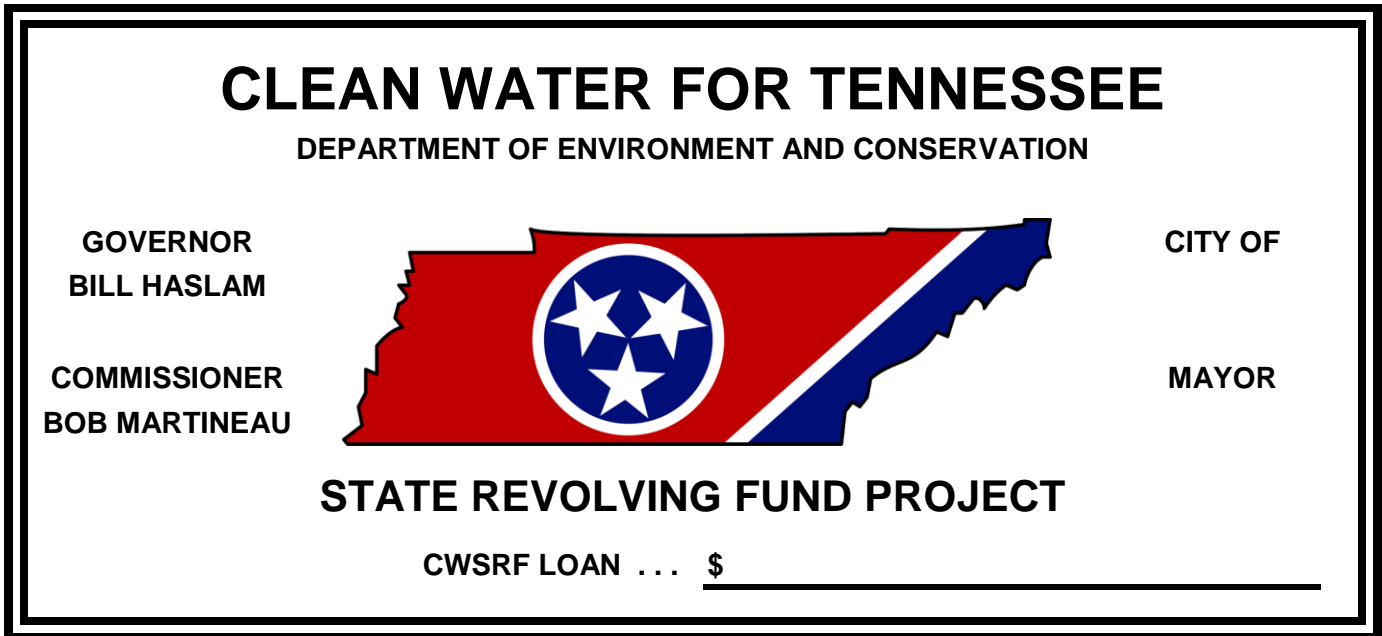
EFO	Street Address	Zip Code	EFO	Street Address	Zip Code
Memphis	2510 Mt. Moriah Road STE E-645	38115-1520	Cookeville	1221 South Willow Ave.	38506
Jackson	1625 Hollywood Drive	38305	Chattanooga	540 McCallie Avenue STE 550	37402-2013
Nashville	711 R S Gass Boulevard	37243	Knoxville	3711 Middlebrook Pike	37921
Columbia	2484 Park Plus Drive	38401	Johnson City	2305 Silverdale Road	37601

# CLEAN WATER STATE REVOLVING FUND

## IDENTIFICATION SIGN

All plans and specifications for each project approved shall contain provisions for requiring the general contractor to provide identification signs. The signs shall conform to the following basic features:

1. The following diagram shall be used as a design:



2. The sign shall be a 4'0" X 8'0" sheet of exterior grade plywood and shall be built so as to remain erected during the entire construction phase of the project.
3. The background of both sides shall be white. The lettering shall be black and shall be large enough to take advantage of the full size of the plywood. The stars shall be white set on a blue field and surrounded by a white ring placed inside a state map in red with a stripe of white and blue on the right side. The sign shall be bordered by a one-inch blue stripe.

Revised: JANUARY 20, 2011

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Equal Employment Opportunities Specifications

Following is the standard language which must be incorporated into all solicitations for offers and bids on all construction contracts or subcontracts in excess of \$10,000 to be performed in designated geographical areas:

"Minority" includes:

- a. Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
- b. Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
- c. Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
- d. American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

END OF SECTION



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Equal Employment Opportunity Clause

The City of Chattanooga is an equal opportunity employer and during the performance of this contract, the Contractor agrees to abide by the equal opportunity goals of the City of Chattanooga as follows:

1. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
2. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.
3. The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
4. In all construction contracts or subcontracts in excess of \$10,000 to be performed for the City of Chattanooga, any Contractor and/or subcontractor is further required to file in duplicate within ten (10) days of being notified that it is the lowest responsible bidder, an affirmative action plan with the EEO Director of the City of Chattanooga. This plan shall state the Contractor's goals for minority and women utilization as a percentage of the work force on this Project.
5. This Plan or any attachments thereto shall further provide a list of employees annotated by job function, race and sex who are expected to be utilized on this Project. This plan or attachment thereto shall further describe the methods by which the Contractor or subcontractor will utilize to make good faith efforts at providing employment opportunities for minorities and women.
6. The Contractor will include the portion of the sentence immediately preceding Paragraph 1 and the provisions of Paragraphs 1 through 6 in every subcontract so that such provisions will be requested of each subcontractor. The Contractor agrees to notify the City of Chattanooga of any subcontractor who refuses or fails to comply with these equal opportunity provisions. Any failure or refusal to comply with these provisions by the Contractor and/or subcontractor shall be a breach of this contract.

END OF SECTION

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Contract Name: \_\_\_\_\_

Contract Number: \_\_\_\_\_

## **ESCROW AGREEMENT**

THIS AGREEMENT is entered into this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by and between the CITY OF CHATTANOOGA (“Project Owner”), \_\_\_\_\_ (“Contractor”), and SUNTRUST BANK, a Georgia state banking corporation (“Bank”) as escrow agent.

### **WITNESSETH:**

WHEREAS, Project Owner and Contractor entered into a construction contract dated \_\_\_\_\_ (the “Contract”). The Contract provides that five percent (5%) of progress payments made under the Contract will be withheld as retainage (“Retainage”) from the total of progress payments made by Project Owner to Contractor; and

WHEREAS, pursuant to T.C.A. § 66-34-104 (the “Statute”), the amount withheld as Retainage is to be deposited in a separate escrow account maintained with a third party, at which time the funds pass out of the control of the Property Owner and shall become the sole and separate property of the Contractor, subject to the terms of this Escrow Agreement; and

WHEREAS, Project Owner and Contractor desire that all Retainage withheld under the Contract, be deposited in an interest bearing escrow account pursuant to and in compliance with the Statute; and

WHEREAS, Bank has agreed to accept the Retainage and cause it to be placed in an interest bearing escrow account and to act as escrow agent for said account.

NOW, THEREFORE, in consideration of the premises and mutual covenants and promises hereinafter set forth, it is agreed as follows:

1. In accordance with the requirements of the Statute, Project Owner shall deposit and the Bank shall hold in an interest bearing escrow account, Account No. \_\_\_\_\_ (“Escrow Account”) all Retainage held pursuant to the Contract.

2. All Retainage withheld from payments to Contractor by Project Owner under the Contract, from this date forward, be deposited in said Escrow Account.

3. The Bank, as escrow agent, shall hold and maintain the Retainage in the Escrow Account until the Bank is presented with a release signed by Project Owner and Contractor, a form of which is attached hereto as Exhibit A, authorizing the disbursement of all or a portion of the funds held on deposit in the Escrow Account plus any accrued interest to Contractor; provided that notwithstanding this Section 3, the Bank may comply with the order of any court of applicable jurisdiction which affects the payment of all or any portion of the funds in the Escrow Account.

The account will use Contractor's tax identification number, and Contractor will furnish the Escrow Agent with a W-9 form for this purpose.

4. In the event of any dispute between the parties resulting in adverse demands being made in connection with this deposit in Escrow, or in the event that any of the parties hereto do not agree as to the disposition of the funds in the Escrow Account, the parties hereto agree that the Bank shall be released of any further obligation under this Agreement by tendering the funds maintained in the Escrow Account into a court of competent jurisdiction in an action in the nature of an interpleader, and the Bank shall have the right to recover its reasonable attorney fees and costs from Project Owner and Contractor, each of whom shall be jointly and severally liable therefor.

5. The Contractor hereto agrees to indemnify and hold Bank harmless from any loss, damages, or liabilities of any kind whatsoever, whether foreseen or unforeseen, whether direct or indirect arising out of or in connection with this Agreement, the Escrow Account and the funds contained therein, or the performance of the Bank's obligations hereunder, except liability resulting from Bank's gross negligence or willful misconduct. The Bank may rely upon the signatures of any correspondence from either or both of Project Owner and/or Contractor as being the authentic signatures of the Project Owner or Contractor or, if the Project Owner or Contractor are not natural persons, of persons duly authorized to act on behalf of the Project Owner or Contractor.

6. The Bank shall not be bound by any modification, amendment, termination, cancellation, rescission or supersession of this Escrow Agreement unless the same shall be in writing and signed by all of the other parties hereto and, hereunder are effected thereby, unless it shall have given prior written consent thereto.

7. The Project Owner and Contractor agree, jointly and severally, to reimburse the Bank for any all costs, damages, expenses or claims, including attorney's fees, which Bank may incur or sustain as a result of or arising out of this Escrow Agreement or Bank's duties relating thereto (except for Bank's willful misconduct or negligence) and will pay them ON DEMAND; and the Bank is hereby given a lien upon, and security interest in, the property deposited in the Escrow Account, to secure Bank's rights to payment or reimbursement.

8. The Bank agrees to provide a statement of the Escrow Account each month to the Project Owner during the term of this Escrow Agreement.

9. The Bank shall receive **no fee** in connection with its rendering of services as escrow agent pursuant to the terms of this Escrow Agreement.

10. The Project Owner and Contractor acknowledge that subject to the rights of Contractor to the Retainage, the Bank maintains a security interest and lien against the Escrow Account and funds contained therein.

11. The Contractor agrees that the Project Owner is not responsible to Contractor for any loss of the Retainage that occurs should Bank be placed in receivership, be taken over by its regulators or otherwise be subject to financial failure.

12. This Escrow Agreement may be executed in three or more counterparts, each of which will be deemed to be an original agreement, but all of which will constitute one and the same document. A counterpart executed by a party and transmitted by facsimile to the other parties will have the same effect as delivery of the original counterpart.

13. This Agreement shall be construed in accordance with the laws of the State of Tennessee without regard to its conflict of law principles.

ENTERED INTO as of the date first above written.

**CONTRACTOR:**

\_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

**PROJECT OWNER:**

**CITY OF CHATTANOOGA**

By: \_\_\_\_\_

Title: \_\_\_\_\_

**BANK:**

**SUNTRUST BANK**

By: \_\_\_\_\_

Title: \_\_\_\_\_

Contract Name: \_\_\_\_\_

Contract Number: \_\_\_\_\_

**EXHIBIT A**

**RELEASE**

The undersigned, City of Chattanooga, as the Project Owner pursuant to a Construction Contract with \_\_\_\_\_ (“Contractor”) dated \_\_\_\_\_ (the “Contract”) hereby certifies that Contractor fully and completely finished all work required of Contractor pursuant to such Contract, except work which may be required pursuant to any guaranty or warranty contained in such Contract, and the undersigned hereby authorizes SunTrust Bank (“Bank”) to release \_\_\_\_\_ (\$\_\_\_\_\_) paid as retainage pursuant to that certain Escrow Agreement between and among the undersigned, City of Chattanooga (“Project Owner”), Contractor, and Bank, and dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, which agreement is specifically incorporated herein by reference.

This release is executed for the sole purpose of releasing the amounts held in escrow as aforesaid and specifically does not, and shall not, be construed to release or otherwise affect any claims or rights which Project Owner has or may have against Contractor pursuant to said contract or the work performed thereunder.

Attest:

**PROJECT OWNER:**

**CITY OF CHATTANOOGA**

\_\_\_\_\_  
Secretary

By: \_\_\_\_\_  
Title: \_\_\_\_\_

STATE OF \_\_\_\_\_  
COUNTY OF \_\_\_\_\_

Affiant makes oath that the above is true, as sworn before me, a Notary Public, this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

(SEAL)

\_\_\_\_\_  
Notary Public  
My Commission Expires: \_\_\_\_\_

**APPROVED BY CONTRACTOR:**

\_\_\_\_\_  
By: \_\_\_\_\_  
Title: \_\_\_\_\_



Reference Contract # \_\_\_\_\_

Contract Name: \_\_\_\_\_

### **CORPORATE RESOLUTION**

BE IT RESOLVED, that \_\_\_\_\_, a Tennessee Corporation, hereby authorized and empowers the following Officers:

\_\_\_\_\_

to make, execute and deliver, in behalf of the corporation, unto the CITY OF CHATTANOOGA ("CITY"), its ATTORNEY-IN-FACT, with full power and authority to substitute certain retained funds for securities and take custody of and negotiate said securities at any time and to any extent necessary to cause the contract to be fulfilled. Pursuant to Tenn. Code Ann. § 12-4-108, SUNTRUST BANK shall oversee the safekeeping, custodial care and servicing of securities to the extent necessary to effectuate the purposes of the applicable state law.

BE IT ALSO RESOLVED, that the foregoing resolutions and the authority granted the individuals herein named, shall continue until canceled by delivery to and receipt by CITY, of written notice by a duly authorized representative of the corporation canceling any or all of the foregoing resolutions.

IN WITNESS WHEREOF, I have executed my name as Secretary this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

BY: \_\_\_\_\_

TITLE: \_\_\_\_\_

Reference Contract # \_\_\_\_\_

Contract Name: \_\_\_\_\_

### LIMITED POWER OF ATTORNEY

Be it known that the undersigned CONTRACTOR \_\_\_\_\_ of the County of \_\_\_\_\_, State of \_\_\_\_\_ hereby makes and appoints the CITY of CHATTANOOGA ("CITY") its true and lawful attorney for specific and limited purposes necessary to empower CITY to substitute certain retained funds for securities consistent with Tenn. Code Ann. § 12-4-108(c) and take custody of the securities and to negotiate said securities at any time and to any extent necessary to cause the contract to be fulfilled in accordance with its provisions.

CITY shall purchase said securities issued by SUNTRUST BANK consistent with CITY's power to enter into a trust agreement with said bank as set forth in Tenn. Code Ann. § 12-4-108(i).

CITY shall perform all acts under this Limited Power of Attorney consistent with the requirements set forth in Tenn. Code Ann. § 12-4-108.

This Limited Power of Attorney is effective upon execution and shall remain in effect until such time of completion of the contract and satisfaction of any statutory obligations with respect thereto.

Signed this \_\_\_\_\_ day of \_\_\_\_\_,  
\_\_\_\_\_

Signature \_\_\_\_\_

Title \_\_\_\_\_

Contract Name: \_\_\_\_\_

Contract Number: \_\_\_\_\_

## New Retainage Escrow Account Set-up Form - Suntrust

(1) Legal Business Name: \_\_\_\_\_

(2) Business Address: \_\_\_\_\_

(3) TIN (Tax Identification No): \_\_\_\_\_

(4) Contact Name: \_\_\_\_\_

Telephone: \_\_\_\_\_

Email: \_\_\_\_\_

(5) Authorized Signer's Name & Title for Retainage Account:

\_\_\_\_\_

(6) Owner's Names with Titles and Percentages:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(7) Please provide a copy of the following document that applies:

Corporation      Articles of Incorporation

LLC                Operating Agreement & Articles of Organization

Partnership      Partnership Agreement

CITY OF CHATTANOOGA  
 DEPARTMENT OF PUBLIC WORKS  
 ENGINEERING DIVISION  
 1250 Market Street, Suite 2100  
 Chattanooga, TN 37402  
 PHONE: (423) 757-5117 | FAX: (423) 757-0586



CR# \_\_\_\_\_  
 Date Issued: \_\_\_\_\_  
 PO#: \_\_\_\_\_

### CHANGE REQUEST FORM (CRF)

City Contract No. \_\_\_\_\_  
 Project Name: \_\_\_\_\_  
 Engineer: \_\_\_\_\_  
 Contractor: \_\_\_\_\_

Requested By: \_\_\_\_\_  
 Drawing: \_\_\_\_\_  
 Problem Desc: \_\_\_\_\_

Revised Scope Description/Details

<b>Contractor Acknowledgement:</b> No Change in Contract Amount is required.                      A Change in Contract Amount is required: _____ days No Change in Contract Time is required.                      A Change in Contract Time is required: _____	
_____ Architect / Engineer / Inspector / RPR	_____ Contractor
Change in Contract Amount is within the Contingency Amount authorized under Resolution No. _____  Yes            No _____  _____ Engineer / Architect Project Manager	<p style="text-align: center;"><b>Proceed with Execution</b></p> Yes            No _____  _____ City Project Manager



**CHANGE REQUEST FORM (CRF)**

**City Contract No.** \_\_\_\_\_

**Project Name:** \_\_\_\_\_

**Engineer:** \_\_\_\_\_

**Contractor:** \_\_\_\_\_

**Requested By:** \_\_\_\_\_

**Drawing:** \_\_\_\_\_

**Problem Desc:** \_\_\_\_\_

**Revised Scope Description/Details**

Item No.	Description	Unit	Qty	Unit Price	Item Total
<b>ADD</b>					
<b>DEDUCT</b>					
<b>TOTAL</b>					

**Contractor Acknowledgement:**

No Change in Contract Amount is required.

A Change in Contract Amount is required: \_\_\_\_\_ days

No Change in Contract Time is required.

A Change in Contract Time is required: \_\_\_\_\_

\_\_\_\_\_ Architect / Engineer / Inspector / RPR

\_\_\_\_\_ Contractor

**Change in Contract Amount is within the Contingency  
 Amount authorized under Resolution No. \_\_\_\_\_**

Yes          No \_\_\_\_\_

\_\_\_\_\_ **Engineer / Architect Project Manager**

**Proceed with Execution**

Yes          No \_\_\_\_\_

\_\_\_\_\_ **City Project Manager**

## PART 1 GENERAL

### 1.01 DESCRIPTION

- A. The work to be performed under this Contract shall consist of furnishing all labor, materials, tools, equipment and incidentals to complete the work required on the Drawings and specified herein. The work includes, but is not limited to, the following:
1. Civil / site work including clearing, grading, and landscaping.
  2. Construction of a 22 million gallon per day (firm capacity) wet-weather pump station.
  3. Construction of a new diversion structure.
  4. Construction of a standby generator with an automatic transfer switch to provide emergency power to the new diversion structure and new wet-weather pump station in case of a power failure.
  5. Installation of an odor control system for the new diversion structure and wet-weather pump station.
  6. Associated electrical and instrumentation components.
- B. All work described above shall be performed as shown on the Drawings and as specified.

### 1.02 PROJECT LOCATION

- A. The equipment and materials to be furnished will be installed at the locations shown on the Drawings.

### 1.03 QUANTITIES

- A. The Owner reserves the right to alter the quantities of work to be performed or to extend or shorten the improvements at any time when and as found necessary, and the Contractor shall perform the work as altered, increased or decreased. Payment for such increased or decreased quantity will be made in accordance with the Instructions to Bidders. No allowance will be made for any change in anticipated profits nor shall such changes be considered as waiving or invalidating any conditions or provisions of the Contract and Bond.

### 1.04 PARTIAL OWNER OCCUPANCY

- A. The existing facilities to which these improvements are being made will continue operation during the period of construction. There shall not be any interruption in

service. The Contractor is responsible for fines assessed due to Contractor's activities.

END OF SECTION

## PART 1 GENERAL

### 1.01 SITE CONDITIONS

- A. Several areas of construction under this contract must be coordinated with the Pump Station operation and accomplished in a logical order to maintain the process flow through the Wet Weather Pump Station to allow construction to be completed within the time allowed by Contract Documents. The existing DuPont Pump Station will be maintained in continuous operation by the Owner during the entire construction period.
- B. When access through construction areas must be disrupted, provide alternate acceptable access for the plant operators or other contractors.
- C. Coordinate the activities in the interface or common areas with other contractors and the operators. Submit to the Engineer a description and schedule as to how the common areas will be utilized, recognizing the required coordination with other contractors and the plant operators.
- D. Various interconnections within the scope of work will depend on the closure of various valves and gates. Many of these valves and gates are old and may not seal properly. Coordinate with the Owner and Engineer to request any such closure and provide any corrective measure of temporary facilities necessary to attain the shut off needed to perform the work without interrupting operations.
- E. Various interconnections within the scope of work may require temporary partial power shutdown. Make every effort necessary to minimize the shutdown time and coordinate with the Owner and/or utility authorities prior to attempting any such power shutdown.
- F. When the work requires an existing facility to be taken out of operation, temporarily or permanently, notify the Engineer and plant operators two weeks in advance. Mandatory shutdown and switchover meetings between the Contractor, Owner and Engineer shall be held to review each outage request prior to approval of any outage. The outage request shall include a complete description of work involved, the equipment affected, date and times, duration of outage and include a list of required materials, parts, etc. and that these are on the project site(s).
- G. Where water is required in large quantity for preoperational testing or other use, purchase it from the Tennessee American Water Company. Pay all fees and water usage charges.
- H. During Start Up Testing, make available the manpower, equipment and manufacturer's representatives required to make any necessary adjustments and training.
- I. In addition to the project schedule requirements listed in Section 01 32 16, the Contractor shall develop a detailed description of the complete sequence of construction. The sequence shall be submitted to the Engineer and Owner for review and approval thirty (30) days following the execution of the Contract Agreement.



## 1.02 GENERAL OPERATING REQUIREMENTS, CONSTRAINTS, AND CONSTRUCTION REQUIREMENTS

### A. Access to Site, Roadways, and Parking Areas

1. An unobstructed traffic route through the site shall be maintained at all times for the Owner's operations and maintenance personnel and equipment. Parking for personal vehicles of construction personnel shall be restricted to approved areas.
2. The Contractor shall provide temporary measures to protect the existing pavement by filling over with earthen material or supplying other measures acceptable to the Engineer. The Contractor shall repair any damage to existing paved surfaces that occurs during the construction period. Any areas disturbed along the shoulders of the access roads and interior roads and elsewhere shall be repaired, graded, seeded, etc. as necessary to match pre-existing conditions.
3. The Contractor shall not undertake the restoration/construction of new roadway (paved, gravel, or asphalt overlay) shown on the Contract Drawings, until all other work improvements has been completed.

### B. Personnel Access

1. Owner's personnel shall have access to all areas which remain in operation throughout the construction period. The Contractor shall locate stored material, dispose of construction debris and trash, provide temporary walkways, provide temporary lighting, and other such work as directed by the Engineer to maintain personnel access to areas in operation. Access and adequate parking areas for Owner personnel must be maintained throughout construction.

### C. Plumbing Facilities

1. Unless otherwise allowed by the Engineer, sanitary facilities in the existing structures shall be operational at all times for plant operating personnel. All other building plumbing systems such as roof and floor drains, pumping, etc., shall be maintained for all structures.

### D. Building Heating and Ventilating

1. Building heating and ventilating for the existing plant structures shall be in service for the entire construction period. Additional temporary heating and ventilation shall be provided as required to maintain facilities under construction adequately heated and vented. The temperatures to be maintained in any areas occupied by plant operating personnel shall be at least 65°F.

### E. Power, Light and Communications Systems (General)

1. Electric power, lighting service and communications systems shall be maintained in uninterrupted operation in all areas which remain in operation. Individual units may be disconnected as required for replacement, but service shall be available

at all times including periods when plant elements are out of service. Shutdown of electrical facilities shall be limited to not more than five (5) hours. The Owner may allow longer outages under conditions determined by the Owner by making use of the existing and/or temporary engine-generator. All costs associated with operation of the engine-generators shall be paid by the Contractor. The Electrical Subcontractor shall coordinate shutdowns required with the Contractor to minimize the total number of shutdowns required to complete construction. Owner's phone service shall be maintained in continuous operation during construction. All power shutdowns and switchovers shall be requested in writing to the Engineer for approval. No shutdown shall compromise Owner operations. Shutdowns shall be limited to the constraints specified herein and as indicated on the drawings. When required by Owner, the Contractor shall restore power and operations during any shutdown in order to maintain pumping requirements.

#### F. Draining Process Pipes and Conduits (General)

1. The contents of all pipes and conduits to be removed, replaced or relocated (or dewatered for a specific purpose) shall be transferred to a suitable facility in a manner approved by the Owner through hoses or piping, or by using pumps if hydraulic conditions so require them. The Contractor shall provide the pumps, piping and hoses at no additional cost to the Owner. No uncontrolled spillage of a pipe or conduit shall be permitted.

#### G. Potable Water System

1. Potable water service shall be maintained in continuous service at all times during construction except for short term interruptions required for tie-ins. Shutdown of the potable water system shall be fully planned and coordinated with the Owner and shall be limited to not more than two (2) hours. Any existing fire hydrants within the site shall be operational at all times.

#### H. Sump Pumps and Sumps

1. All existing sumps shall be maintained in an operable condition with either existing pumps or temporary pumps. Interim piping, power and controls shall be provided as required by the staged construction sequence.

#### I. Seal Water and Service Water Piping

1. A supply of service and seal water and the necessary connections to existing equipment shall be maintained during construction. Interim piping shall be provided as required.

### 1.03 SPECIFIC CONSTRUCTION CONSTRAINTS

- A. The following is a list of constraints to consider in developing the overall plan of construction. This list is not intended to release the Contractor from the responsibility to coordinate the work in any manner which will ensure uninterrupted operation of the Wet Weather Pump Station and project completion within the time allowed. The following

areas are not necessarily listed in their required sequence of construction. A suggested sequence within each area, where necessary, is included.

- B. Currently, the existing 30" force main and 36" gravity sewer shown are located on the south side of the site. The Existing force main and gravity sewer flow from east to west. Both pipelines shall be in service at all times or flows will need to be bypassed. It is anticipated that the following bypass instances will be required (However, more or less instances may be required depending on the Contractor's actual sequence of construction):
- a. Connection of proposed 30" force main to existing 30" force main. Bypass pumping is not required, but a 30" temporary HDPE bypass connection may be necessary depending on the amount of time the 30" force main is to be out of service.
  - b. Installation of Manhole MH-A. (Maximum bypass flow = 30 mgd)
  - c. Installation of 30" force main aerial crossing and associated connections. Bypass pumping is not required, but a 30" temporary HDPE bypass connection may be necessary depending on the amount of time the 30" force main is to be out of service.
  - d. Installation of 42" Gravity Sewer Line West of the proposed aerial crossing will conflict with existing 18" Gravity Sewer. (Maximum bypass flow = 4 mgd)
  - e. Installation of Manhole M-7 (replacement of S11K005). (Maximum bypass flow = 4 mgd)
- C. The Contractor is to install all new structures and equipment to the extent possible without disrupting operations listed in paragraph B above. At a minimum, this includes:
- a. Diversion Structure
  - b. Wet Weather Pump Station.
  - c. Carbon Adsorber and Odor Control Systems.
  - d. Electrical Building
  - e. Generator.
- D. Once all structures, equipment, and piping associated with the items listed in paragraph C, including any related plumbing, electrical, and instrumentation equipment, are complete, tested, and ready to be put into service, the Contractor shall notify the Owner and Engineer to schedule a coordination meeting where the sequence of connection to existing structures will be reviewed and discussed.
- E. The Contractor shall follow the Rivermont Park service level requirements:
- a. Maintain Emergency Access at all times to the Champions Tennis Club and boat launch area.
  - b. Construct a golf cart path loop at the west side gate of the Tennis Facility and maintain the golf cart path at all times.
  - c. Provide Golf Cart Shuttle Services per the minimum number of carts determined by Tournament size. Carts shall seat a minimum number of 6 passengers. A ratio of 3:1 carts shall have the ability to transport a wheelchair, walkers, or other medical devices required by guest.
  - d. Services shall be provided from one hour prior to start time each day and

- conclude 30 mins. After completion of last match of the day.
- e. Golf carts shall pickup tournament participants and guest at the front of the Main Restroom Facility at Rivermont Park and drop off at the west side gate of the Tennis Facility, and return riders back to the Main Restroom.
  - f. Contractor shall be responsible for coordinating Tournament size with Orlando Lourenco at 423-870-4406 or [olourenco@chattanooga.gov](mailto:olourenco@chattanooga.gov) on the Thursday afternoon of the week prior to the event.
  - g. Attachment A contains a tentative Champions Tennis Club Calendar.

Tournament Size	Participant Level	Days	Golf Cart Shuttle Services Minimum No. Carts	Expected Number of Events in each Tournament Size per Year
Local Play	Weekly	Mon.-Thurs.	0	Weekly
Small	75 or less	Sat.-Sun.	0	8-10
Medium	76-250	Fri.-Sun.	4	8-10
Large	251-400	Fri.-Sun.	6	2-4
Grand	401-600	Fri.-Sun.	10	4-5

- F. Any specific work not listed above that is required for the completion of the project shall be included in the Contractor's proposed scheduled and coordinated with the Owner and Engineer.

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION (NOT USED)

END OF SECTION

Attachment A  
Tentative Champions Tennis Club Calendar

# **2019 CHAMPIONS CALENDAR**

## **TENTATIVE**

<b>JUNE 27</b>	<b>JTT</b>
<b>JUNE 29 – JULY 2</b>	<b>NATIONAL LEVEL 2</b>
<b>JULY 6 – 7</b>	<b>MIXED</b>
<b>JULY 11</b>	<b>JTT</b>
<b>JULY 13 – 14</b>	<b>MIXED</b>
<b>JULY 18</b>	<b>JTT</b>
<b>JULY 20 – 21</b>	<b>MIXED</b>
<b>JULY 26 – 30</b>	<b>USTA NATIONAL BOYS 18'S</b>
<b>AUGUST 23 – 25</b>	<b>USTA TN MIXED DOUBLES</b>
<b>SEPTEMBER 6</b>	<b>SOUTHERN CUP 12'S</b>
<b>SEPTEMBER 13</b>	<b>SOUTHERN CUP 14,16,18'S</b>
<b>SEPTEMBER 19 – 20</b>	<b>HAMILTON COUNTY SCHOOLS</b>
<b>SEPTEMBER 23 – 24</b>	<b>ISC</b>
<b>SEPTEMBER 30 – OCTOBER 1</b>	<b>SEATAC</b>
<b>OCTOBER 18</b>	<b>JOHN STRANG</b>
<b>OCTOBER 25</b>	<b>ICY HOT</b>
<b>NOVEMBER 8</b>	<b>TENNESSEE STATE OPEN</b>

## **2020 CHAMPIONS CALENDAR**

**MARCH 27 – 28, 2020**

**DECOTURF HIGH SCHOOL**

**APRIL 16 – 19, 2020**

**SOUTHERN CONFERENCE**

**APRIL 21 – 25, 2020**

**AAC**

**MAY 1 & 4, 2020**

**DISTRICT – ERIC STILES**

## **2021 CHAMPIONS CALENDAR**

**APRIL 15 – 17, 2021**

**AAC**

**APRIL 21 – 24, 2021**

**AAC**

## **2022 CHAMPIONS CALENDAR**

**APRIL 28 – MAY 1, 2022**

**SOUTHERN CONFERENCE**

<u>DATE</u>	<u>FY 2018 - 19 CHAMPIONS CLUB EVENTS</u>	<u>DAYS</u>	<u>PARTICIPANTS</u>	<u>VISITORS</u>	<u>TOTAL</u>	<u>IMPACT</u>
30-Jun	USTA NATIONAL 16'S & 18'S	4	229	458	1832	183200
24-Aug	TENNESSEE STATE MIXED	3	475	713	2139	213900
7-Sep	SOUTHERN CUP 12'S	3	54	162	486	48600
14-Sep	SOUTHERN CUP 14,16, 18'S	3	183	549	1647	164700
22-Sep	TENNIS ON CAMPUS	3	250	500	1500	150000
19-Oct	JOHN STRANG / MCCALLIE TOURNAMENT	3	306	612	1836	183600
30-Sep	USTA TENNESSEE HISPANIC	1	50	100	100	10000
26-Oct	BAYLOR SOUTHERN ICY HOT	3	237	474	1422	142200
9-Nov	TENNESSEE STATE OPEN	4	221	442	1768	176800
17-Nov	SOUTHERN FAST FOUR	3	30	60	180	18000
10-Feb	USTA NATIONAL 12'S & 14'S	3	98	196	588	58800
23-Feb	UTC VS CITADEL	1	30	60	60	6000
3-Mar	TENNIS ON CAMPUS	3	250	500	1500	150000
10-Mar	UTC VS JACKSONVILLE STATE	1	30	60	60	6000
16-Mar	DECOTURF NATIONAL HIGH SCHOOL	3	555	1110	3330	333000
11-Apr	UTC VS SAMFORD	1	30	60	60	6000
14-Apr	UTC VS UNCG	1	30	60	60	6000
19-Apr	SOUHERN CONFERENCE	4	288	576	2304	230400
1-Jun	TENNESSEE JUNIOR QUALIFYING	5	414	828	4140	414000
15-Jun	USTA TENNESSEE LEAGUE TENNIS	3	595	893	2679	267900
24-Jun	SOUTHERN 10 AND UNDER	2	54	162	324	32400



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## PART 1 GENERAL

### 1.01 PLANT

- A. Furnish material and equipment which will be efficient, appropriate and large enough to secure a satisfactory quality of work and a rate of progress which will ensure the completion of the work within the Contract Time. If at any time such material or equipment appears to be inefficient, inappropriate or insufficient for securing the quality of work required or for producing the rate of progress aforesaid, Engineer may order the Contractor to increase the efficiency, change the character or increase the material and equipment and the Contractor shall conform to such order. Failure of the Engineer to give such order shall in no way relieve the Contractor of his obligations to secure the quality of the work and rate of progress required.

### 1.02 PRIVATE LAND

- A. Do not enter or occupy private land outside of easements, except by permission of the land owner.

### 1.03 PIPE LOCATIONS

- A. Locate pipelines substantially as indicated on the Drawings. The Engineer reserves the right to make such modifications in locations as may be found desirable to avoid interference with existing structures or for other reasons. Where fittings are noted on the Drawings, such notation is for the Contractor's convenience and does not relieve him from laying and jointing different or additional items where required.

### 1.04 OPEN EXCAVATIONS

- A. Adequately safeguard all open excavations by providing temporary barricades, caution signs, lights and other means to prevent accidents to persons and damage to property. Provide suitable and safe bridges and other crossings for accommodating travel by pedestrians and workmen. Remove bridges provided for access during construction when no longer required. The length or size of excavation will be controlled by the particular surrounding conditions, but shall always be confined to the limits prescribed by the Engineer. If the excavation becomes a hazard, or if it excessively restricts traffic at any point, the Engineer may require special construction procedures such as limiting the length of the open trench, prohibiting stacking excavated material in the street and requiring that the trench shall not remain open overnight.
- B. Take precautions to prevent injury to the public due to open trenches. Provide adequate light at all trenches, excavated material, equipment, or other obstacles which could be dangerous to the public at night.

## 1.05 TEST PITS

- A. Excavate test pits, at the direction of the Engineer, to locate underground pipelines or structures in advance of the construction. Backfill test pits immediately after their purpose has been satisfied and restore and maintain the surface in a manner satisfactory to the Engineer.

## 1.06 MAINTENANCE OF TRAFFIC

- A. Unless permission to close a street is received in writing from the proper authority, place all excavated material so that vehicular and pedestrian traffic may be maintained at all times. If the construction operations cause traffic hazards, repair the road surface, provide temporary ways, erect wheel guards or fences, or take other measures for safety satisfactory to the Engineer.
- B. Detours around construction will be subject to the approval of the Owner and the Engineer. Where detours are permitted, provide all necessary barricades and signs as required to divert the flow of traffic. Expedite construction operations while traffic is detoured. Periods when traffic is being detoured will be strictly controlled by the Owner.
- C. Take precautions to prevent injury to the public due to open trenches. Night watchmen may be required where special hazards exist, or police protection provided for traffic while work is in progress. Be fully responsible for damage or injuries whether or not police protection has been provided.

## 1.07 CARE AND PROTECTION OF PROPERTY

- A. Be responsible for the preservation of all public and private property and use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work on the part of the Contractor, restore such property to a condition similar or equal to that existing before the damage was done, or make good the damage in other manner acceptable to the Engineer.

## 1.08 PROTECTION AND RELOCATION OF EXISTING STRUCTURES AND UTILITIES

- A. Assume full responsibility for the protection of all buildings, structures, and utilities, public or private, including poles, signs, services to buildings, utilities in the street, gas pipes, water pipes, hydrants, sewers, drains and electric and telephone cables, whether or not they are shown on the Drawings. Carefully support and protect all such structures and utilities from injury of any kind. Immediately repair any damage resulting from the construction operations.
- B. Assistance will be given the Contractor in determining the location of existing services. The Contractor, however, shall bear full responsibility for obtaining all locations of underground structures and utilities (including existing water services, drain lines and sewers). Maintain services to buildings and pay costs or charges resulting from damage thereto.

- C. Notify all utility companies in writing at least 72 hours (excluding Saturdays, Sundays and Legal holidays) before excavating in any public way. Also notify Tennessee 811, telephone 811 or 1-800-351-1111 at least 72 hours prior to start of work.
- D. If, in the opinion of the Engineer, permanent relocation of a utility owned by the City of Chattanooga is required, the Engineer or Owner may direct the Contractor, in writing, to perform the work. Work so ordered will be paid for at the Contract unit prices, if applicable, or as extra work under Article 11 of the Supplementary Conditions. If relocation of a privately owned utility is required, the Contractor will notify the Utility to perform the work as expeditiously as possible. Cooperate with the City of Chattanooga and Utility. No claim for delay will be allowed due to such relocation.
- E. Coordinate the removal and replacement of traffic loops and signals, if required for the performance of the work, at no additional cost to the Owner.

## 1.09 WATER FOR CONSTRUCTION PURPOSES

- A. Contractor shall coordinate with Tennessee American Water for water billing meters and water usage permits.

## 1.10 MAINTENANCE OF FLOW

- A. Provide for the flow of sewers, drains and water courses interrupted during the progress of the work, and immediately cart away and remove all offensive matter. Discuss the entire procedure of maintaining existing flow with the Engineer well in advance of the interruption of any flow.

## 1.11 COOPERATION WITHIN THIS CONTRACT

- A. All firms or persons authorized to perform any work under this Contract shall cooperate with Contractor and Subcontractors or trades and assist in incorporating the work of other trades where necessary or required.
- B. Cutting and patching, drilling and fitting shall be carried out where required by the trade or subcontractor having jurisdiction, unless otherwise indicated herein or directed by the Engineer.

## 1.12 CLEANUP AND DISPOSAL OF EXCESS MATERIAL

- A. During the course of the work, keep the site of operations as clean and neat as possible. Dispose of all residue resulting from the construction work and, at the conclusion of the work, remove and haul away any surplus excavation, broken pavement, lumber, equipment, temporary structures and any other refuse remaining from the construction operations and leave the entire site of the work in a neat and orderly condition.
- B. In order to prevent environmental pollution arising from the construction activities related to the performance of this Contract, comply with all applicable Federal, State and local laws and regulations concerning waste material disposal, as well as the specific requirements stated in this Section and in other related sections.

- C. Disposal of excess excavated material in wetlands, stream corridors and plains is strictly prohibited even if the permission of the property owner is obtained. Any violation of this restriction by the Contractor or any person employed by him will be brought to the immediate attention of the responsible regulatory agencies, with a request that appropriate action be taken against the offending parties. The Contractor will be required to remove the fill and restore the area impacted at no increase in the Contract Price.

END OF SECTION

## PART 1 GENERAL

### 1.01 INSTALLATION OF EQUIPMENT

- A. Special care shall be taken to ensure proper alignment of all equipment with particular reference to the pumps and electric drives. The units shall be carefully aligned on their foundations by qualified millwrights after their sole plates have been shimmed to true alignment at the anchor bolts. The anchor bolts shall be set in place and the nuts tightened against the shims. After the foundation alignments have been approved by the Engineer, the bedplates or wing feet of the equipment shall be securely bolted in place. The alignment of equipment shall be further checked after securing to the foundations, and after conformation of all alignments, the sole plates shall be finally grouted in place. The Contractor shall be responsible for the exact alignment of equipment with associated piping and under no circumstances, will "pipe springing" be allowed.
- B. All wedges, shims, filling pieces, keys, packing, grout, or other materials necessary to properly align, level and secure apparatus in place shall be furnished by the Contractor. All parts intended to be plumb or level must be proven exactly so. Perform all grinding necessary to bring parts to proper bearing after erection.

### 1.02 SLEEVES AND OPENINGS

- A. Provide all openings, channels, chases, etc., in new construction and furnish and install anchor bolts and other items to be embedded in concrete, as required to complete the work under this Contract. Perform all cutting, coring and rough and finish patching required in existing construction for the work of all trades as provided in Section 01 73 29.
- B. Subcontractors shall furnish all sleeves, inserts, hangers, anchor bolts, etc., required for the execution of their work. It shall be their responsibility before the work of the Contractor is begun to furnish him with the above items and with templates, drawings or written information covering chases, openings, etc., which they require and to follow up the work of the Contractor as it progresses, making sure that their drawings and written instructions are carried out. Failing to do this, they shall be responsible for the cost of any corrective measures which may be required to provide necessary openings, etc. If the Contractor fails to carry out the directions given him, covering details and locations of openings, etc., he shall be responsible for any cutting and refinishing required to make the necessary corrections. In no case shall beams, lintels, or other structural members be cut without the approval of the Engineer.

### 1.03 SUBMITTALS

- A. Submit to the Engineer in accordance with Section 01 33 23, a valve schedule as specified in Paragraph 1.05.

#### 1.04 GREASE OIL AND FUEL

- A. All grease, oil and fuel required for testing of equipment shall be furnished with the respective equipment. The Owner shall be furnished with a year's supply of required lubricants including grease and oil of the type recommended by the manufacturer with each item of equipment supplied under Divisions 26, 35, 40, 43, 44 and 46.

#### 1.05 TOOLS

- A. Special tools (including grease guns or other lubricating devices) which may be necessary for the adjustment, operation and maintenance of any equipment shall be furnished with the respective equipment.
- B. Tools shall be furnished in heavy steel tool boxes complete with lock and duplicate keys.

#### 1.06 PIPE MARKING

- A. Pipe marking is included in Division 33, but it shall be the Contractor's responsibility to assist, as required by the Engineer, in identifying pipe contents, direction of flow and all else required for proper marking of pipe.

#### 1.07 VALVE IDENTIFICATION

- A. The Contractor shall prepare a valve schedule for all valves required for the work showing a number, the location, type, function, and normal operating position, for each valve. The schedule shall be submitted, in accordance with Section 01 33 23, to the Engineer for approval not less than 120 days prior to start-up.
- B. The Contractor shall furnish tags for all valves required for the work. Valve tags shall be 2-in diameter, 19 gauge, brass or plastic, with brass hooks suitable for attaching the tag to the valve operator. Tags shall be stamped or etched with the valve number and the information on the valve schedule coded in a system provided by the Owner. Submit two samples of the type of tag proposed and the manufacturer's standard color chart and letter styles to the Engineer for approval.
- C. The Contractor shall install valve tags on all valves required for the Work.

#### 1.08 NOISE LIMITATIONS

- A. All equipment to be furnished under this Contract, unless specified otherwise in the technical specifications, shall be designed to ensure that the sound pressure level does not exceed 85 decibels over a frequency range of 37.8 to 9600 cycles per second at a distance of 3-ft from any portion of the equipment, under any load condition, when tested using standard equipment and methods. Noise levels shall include the noise from the motor. Mufflers or external baffles shall not be acceptable for the purpose of reducing noise. Data on noise levels shall be included with the shop drawing submittal.

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## 1.09 SPARE PARTS

- A. Where spare parts are specified in the technical sections, furnish all spare parts recommended by the manufacturer or system supplier for one year of service. In addition, furnish all spare parts itemized in each Section.
- B. Collect and store all spare parts in an area to be designated by the Engineer. Furnish the Engineer with an inventory listing all spare parts, the equipment they are associated with, the name and address of the supplier and the delivered cost of each item. Copies of actual invoices for each item shall be furnished with the inventory to substantiate the delivery cost.
- C. Spare parts shall be packed in cartons, properly labeled with indelible markings with complete descriptive information including manufacturer, part number, part name and equipment for which the part is to be used and shall be properly treated for one year of storage.

## 1.10 WEATHER PROTECTION

- A. In the event of inclement weather, the Contractor and subcontractors shall protect the Work and materials from damage or injury from the weather. If, in the opinion of the Engineer, any portion of the Work or materials has been damaged by reason of failure on the part of the Contractor or subcontractors to so protect the Work, such Work and materials shall be removed and replaced with new materials and Work to the satisfaction of the Engineer.

END OF SECTION



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## PART 1 GENERAL

### 1.01 PARTIAL OCCUPANCY BY OWNER

- A. Whenever, in the opinion of the Engineer, any section or portion of the work or any structure is in suitable condition, it may be put into use upon the written order of the Engineer and such usage will not be held in any way as an acceptance of said work or structure, or any part thereof, or as a waiver of any of the provisions of these Specifications and the Contract. Pending final completion and acceptance of the Work, all necessary repairs and replacements, due to defective materials or workmanship or operations of the Contractor, for any section of the work so put into use shall be performed by the Contractor at Contractor's own expense.

END OF SECTION

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## PART 1 GENERAL

### 1.01 SCOPE

- A. The Bid lists each item of the Project for which payment will be made. No payment will be made for any items other than those listed in the Bid.
- B. Required items of work and incidentals necessary for the satisfactory completion of the work which are not specifically listed in the Bid, and which are not specified in this section to be measured or to be included in one of the items listed in the Bid, shall be considered as incidental to the work. All costs thereof, including Contractor's overhead costs and profit, shall be considered as included in the lump sum or unit prices bid for the various Bid items. The Contractor shall prepare the Bid accordingly.
- C. Work includes furnishing all plant, labor, equipment, tools and materials, which are not furnished by the Owner and performing all operations required to complete the work satisfactorily, in place, as specified and as indicated on the Drawings and Specifications.

### 1.02 DESCRIPTIONS

- A. Measurement of an item of work will be by the unit indicated in the Bid.
- B. Final payment quantities shall be determined from the documented field measurements. The precision of final payment quantities shall match the precision shown for that item in the Bid.
- C. Payment will include all necessary and incidental related work not specified to be included in any other item of work listed in the Bid.
- D. Unless otherwise stated in individual sections of the Specifications or in the Bid, no separate payment will be made for any item of work, materials, parts, equipment, supplies or related items required to perform and complete the work. The costs for all such items required shall be included in the price bid for item of which it is a part.
- E. Payment will be made by extending unit prices multiplied by quantities provided and then summing the extended prices to reflect actual work. Such price and payment shall constitute full compensation to the Contractor for furnishing all plant, labor, equipment, tools and materials not furnished by the Owner and for performing all operations required to provide to the Owner the entire Project, complete in place, as specified and as indicated on the Drawings.
- F. "Products" shall mean materials or equipment permanently incorporated into the work.

### 1.03 GENERAL

- A. No separate payment shall be made for clearing and constructing access roads to sewers.
- B. The cost of moving and reestablishing landscape features, including labor and materials, shall be included in the unit price bid for the item to which it pertains.
- C. No separate payment shall be made for the cost incurred to repair damaged property. This includes concrete or asphalt driveways, except where payment is authorized for Same Trench Sewer Replacement.
- D. Construction Along Highways, Streets and Roadways: No separate payment shall be made for traffic control or maintaining highways, streets, roadways and driveways.
- E. No additional payment will be made for replacement of defective materials.
- F. All costs related to the implementation of the easement and permit stipulations shall be included in the unit price bid for the item to which it pertains.
- G. No separate payment will be made for clean-up. Any cost for labor, materials and equipment required for clean-up shall be included in the unit price bid for the item to which it pertains.
- H. No separate or additional payment will be made for any special or unique method, means, techniques or equipment necessary for the Contractor's compliance with these Specifications, regulatory requirements, permits, laws or regulations which govern this Project.
- I. No separate payment will be made for by-pass pumping.

### 1.04 EROSION AND SEDIMENTATION CONTROL

- A. No separate payment shall be made for temporary and/or permanent erosion and sedimentation controls or replacement of landscaping disturbed by inspection, replacement or rehabilitation activities. All temporary and/or permanent erosion and sedimentation control costs shall be included in the unit price bid for the item to which it pertains.
- B. No payment will be made for any portion of the Project for which temporary erosion and sedimentation controls are not properly maintained.

### 1.05 SEWER INSTALLATION AND REPLACEMENT

- A. Existing Utilities and Obstructions
  - 1. Horizontal Conflict: Payments for conflicts with existing utilities shall be made only where additional manholes and/or additional lengths of pipe are approved by the Engineer. Said payment shall be made at the unit prices in the Bid. No

other payment will be made for any delay or extra cost encountered by the Contractor due to protection, avoidance or relocation of existing utilities, mains or services or changing the horizontal alignment of the sewer.

2. Vertical Conflict: Where authorized by the Engineer, payment for additional depth of cut required to avoid vertical conflicts shall be made at the unit prices bid for gravity sewer. No payment will be made for relocation of existing utilities.
- B. Location and Grade: No separate payment shall be made for survey work performed by or for the Contractor in the establishment of reference points, bench marks, limits of right-of-way or easement, including their restoration, as well as centerline or baseline points.
- C. Trench Excavation: No separate payment will be made for trench excavation. All costs shall be included in the unit price bid for the item to which it pertains at the appropriate depth.
- D. Sheeting, Bracing and Shoring: No separate payment will be made for providing any sheeting, bracing and shoring.
- E. Rock Excavation: No separate payment will be made for rock excavation. The cost of such work and all associated costs shall be included in the unit price for the item to which it pertains.
- F. Dewatering Excavations: All costs of equipment, labor and materials required for dewatering shall be included in the price bid for the item to which it pertains.
- G. Trench Stabilization
1. No payment for trench stabilization shall be authorized until after the trench has been dewatered. If the pipe is installed in an inadequately prepared trench bottom, the Engineer shall notify the Contractor in writing of the deficiency and will not authorize payment for that portion of that length of pipe which was improperly installed.
  2. Payment for trench stabilization shall be made on the basis of the amount authorized and the unit price bid for Trench Stabilization. Payment shall include all costs for the removal and disposal of the unsuitable material and replacement with crushed stone. No additional payment will be made for material required for specified bedding.
  3. Payment for filter fabric shall be at the unit price bid for Filter Fabric under trench stabilization. Payment shall include all costs for the placement of filter fabric.
- H. Bedding and Haunching

1. The unit price bid for pipe for gravity sewer shall include excavation of the trench to the depth below the pipe necessary to provide specified bedding and to lay the sewer to grade.
  2. No additional payment will be made for additional trench depth.
  3. No separate payment will be made for material used to provide specified bedding. The cost of all bedding materials shall be included in the unit price bid for the item to which it relates, except for trench stabilization.
  4. No additional payment will be made for improved bedding required to compensate for over excavation of the trench.
- I. Initial Backfill
1. No separate payment shall be made for initial backfill.
  2. No separate payment shall be made for drying out the initial backfill material in order to meet the compaction requirements.
  3. No separate payment shall be made for the adding of moisture to the initial backfill materials in order to meet the compaction requirements.
  4. No separate payment shall be made for providing select material if the insitu material cannot meet the compaction requirements.
- J. Final Backfilling
1. No additional payment will be made for additional material when excavated materials are used.
  2. No separate payment shall be made for drying out the final backfill material in order to meet the compaction requirements.
  3. No separate payment shall be made for the adding of moisture to the final backfill materials in order to meet the compaction requirements.
  4. No additional payment will be made for providing select material if the insitu material cannot meet the compaction requirements.
- K. Additional Material: No separate payment will be made for additional earth or fill materials imported to the Project site.
- L. No separate payment shall be made for detection tape or tracing wire.
- M. No payment will be made for cutting and beveling pipe.
- N. Concrete Encasement: Payment for concrete encasement shall be at the unit price in the bid.

## 1.06 PRECAST CONCRETE MANHOLE REPLACEMENT

- A. Measurement for payment at the unit price for manholes shall be made on a unit quantity basis.
- B. Payment for precast concrete manhole replacement shall include all penetrations for influent and effluent pipelines regardless of diameter.
- C. No separate or additional payment will be made for testing, bedding, connecting pipes to manholes, constructing invert, plugging abandoned pipes, risers or frame and cover.

## 1.07 CASH ALLOWANCES

- A. General
  - 1. The Contractor shall include in the Bid Total all allowances stated in the Contract Documents. These allowances shall cover the net cost of the services provided by a firm selected by the Owner. The Contractor's handling costs, labor, overhead, profit and other expenses contemplated for the original allowance shall be included in the items to which they pertain and not in allowances.
  - 2. No payment will be made for nonproductive time on the part of testing personnel due to the Contractor's failure to properly coordinate testing activities with the work schedule or the Contractor's problems with maintaining equipment in good working condition. The Contractor shall make all necessary excavations and shall supply any samples of materials necessary for conducting compaction, density tests, concrete tests, cured-in-place pipe samples and any other samples required for testing.
  - 3. No payment shall be provided for services that fail to verify required results.
- B. Should the net cost be more or less than the specified amount of the allowance, the Contract will be adjusted accordingly by change order. The amount of change order will not recognize any changes in handling costs at the site, labor, overhead, profit and other expenses caused by the adjustment to the allowance.
- C. Documentation
  - 1. Submit copies of the invoices with each periodic payment request from the firm providing the services.
  - 2. Submit results of services provided which verify required results.
- D. Schedule of Cash Allowances
  - 1. Soil, Concrete and Materials Testing: Allow the amount provided in the Bid for the services of a geotechnical engineering firm and testing laboratory to verify soils conditions including trench excavation and backfill, and similar issues and



for the testing of concrete cylinders for poured in place concrete and testing physical properties of manhole lining materials.

2. Construction Verification Surveying
  - a. Allow the amount provided in the Bid for construction surveying by an independent surveying firm, selected by the Owner, to perform horizontal and vertical alignment checks at the discretion of the Engineer.
  - b. This allowance is solely for the use of the Engineer for verification of the Contractor's reference points, centerlines and work performed. The presence of this cash allowance in no way relieves the Contractor of the responsibility of installing reference points, centerlines, temporary bench marks or verifying that the work has been performed accurately.
3. Permitting: The Contractor will be reimbursed for the actual costs to acquire building permits for the project. This includes the overall permit for the general contractor as well as permits for the various subcontractors. Payment shall be limited to amount reflected in receipts from the Building Department, without any Contractor mark-up.
4. Landscape Plan Development and Landscaping: The Contractor will be reimbursed for the actual costs to prepare a landscape plan and to implement that plan. Landscape planting design shall be performed by a landscape architect registered in Tennessee and shall be in accordance with the Owner's Landscape Ordinance and Section 32 90 10. Contractor will be required to meet with the Engineer and Owner twice, once to discuss landscape criteria and a second time to review the Contractor's proposed landscaping plan. Cost for these two meetings shall be included in the Contractor's base bid separate from this allowance item.
5. Connection to Existing Water Line: The Contractor will be reimbursed for the actual costs to locate and connect to the existing water line. Costs should include all piping, valves, couplings, etc.
6. Power Company Allowance: The Contractor will be reimbursed for the actual cost of EPB's scope to supply new service to the project. EPB will supply all materials and labor for primary conduit and wire, trenching, and transformer (including concrete pad).

END OF SECTION

## PART 1 GENERAL

### 1.01 SCOPE

- A. This section outlines the restrictions and requirements for substitutions, product and manufacturer options, and construction method options.

### 1.02 DEFINITIONS

- A. For the purposes of these Contract Documents, a “substitute item” shall be defined as one of the following:
  - 1. A product or manufacturer offered as a replacement to a specified product or manufacturer.
  - 2. A product or manufacturer offered in addition to a specified product or manufacturer.
- B. For the purposes of these Contract Documents, a “substitute construction method” shall be defined as one of the following:
  - 1. A mean, method, technique, sequence or procedure of construction offered as a replacement for a specified mean, method, technique, sequence or procedure of construction.
  - 2. A mean, method, technique, sequence or procedure of construction offered in addition to a specified mean, method, technique, sequence or procedure of construction.

### 1.03 GENERAL

- A. An item or construction method, which is offered where no specific product, manufacturer, mean, method, technique, sequence or procedure of construction is specified or shown on the Drawings, shall not be considered a substitute and shall be at the option of the Contractor, subject to the provisions in the Contract Documents for that item or construction method.
- B. For products specified only by a referenced standard, the Contractor may select any product by any manufacturer, which meets the requirements of the Specifications, unless indicated otherwise in the Contract Documents.
- C. If the manufacturer is named on the Drawings or in the Specifications as an acceptable manufacturer, products of that manufacturer meeting all requirements of the Specifications and Drawings are acceptable.
- D. Whenever the Engineer's design is based on a specific product of a particular manufacturer, that manufacturer will be shown on the Drawings and/or listed first in the list of approved manufacturers in the Specifications. Any Bidder intending to

furnish products of other than the first listed manufacturer, or furnish substitute items, shall:

1. Verify that the item being furnished will fit in the space allowed, perform the same functions and have the same capabilities as the item specified,
2. Include in its Bid the cost of all accessory items which may be required by the other listed substitute product,
3. Include the cost of any architectural, structural, mechanical, piping, electrical or other modifications required, and
4. Include the cost of required additional work by the Engineer, if any, to accommodate the item.

#### 1.04 APPROVALS

- A. Approval, of a substitution as an acceptable manufacturer, of the Engineer is dependent on determination that the product offered is essentially equal in function, performance, quality of manufacture, ease of maintenance, reliability, service life and other criteria to that on which the design is based; and will require no major modifications to structures, electrical systems, control systems or piping systems.

#### 1.05 SUBSTITUTIONS AND OPTIONS

##### A. After Notice to Proceed

1. Substitute items will be considered only if the term "equal to" precedes the names of acceptable manufacturers in the Specification.
2. Where items are specified by referenced standard or specified as indicated in Article 1.03, Paragraph A above, such items shall be submitted to the Engineer for review.
3. The Contractor shall submit shop drawings on the substitute item for the Engineer's review in accordance with Section 01 33 23.
4. No substitutions will be considered for the manufacturers listed in the Bid.

##### B. Prior to Opening of Bids

1. No consideration or approvals will be made for products specified by a referenced standard, or specified as indicated in Article 1.03, Paragraph A, above. Such consideration may occur only after the Notice to Proceed.
2. No consideration or approvals will be made for products being offered where the term "equal to" precedes the name of an approved product. Such substitution consideration may occur only after the Notice to Proceed.

3. If the term “or equal” follows the names of acceptable manufacturers, then other manufacturers desiring approval as an acceptable manufacturer may submit the product information to the Engineer for approval during the bidding phase, as indicated below. With the exception of where the phrase “no substitutions” is associated with a list of manufacturers, where a list of acceptable manufacturers is not preceded by the phrase “equal to”, the list of acceptable manufacturers shall be considered as having the phrase “or equal” following the list, and the list being subject to the “or equal” provisions of this section.
4. The manufacturer shall include the following items in its “or equal” submittal:
  - a. Descriptive literature including information on materials used, minimum design standards, standard design features, manufacturing processes and facilities, and similar information which will indicate experience and expertise in the manufacture of the product being evaluated.
  - b. Performance specifications applicable to the manufacturer's standard design which indicates the level of performance to be expected from the product.
  - c. A complete set of submittal drawings of similar products which have been completed and placed into operation.
  - d. A list of existing installations of products similar in type and size, information required to satisfy specified experience requirements, or a copy of the bond to be submitted in lieu of experience.
  - e. Evidence of technical ability of the manufacturer to design and manufacture products meeting Project requirements.
  - f. Evidence submitted shall include, as a minimum, descriptions of engineering and manufacturing staff capabilities.
  - g. A copy of the manufacturer's most recent annual business report. Include a statement comparing the present net worth of the manufacturer in comparison to the total value of all products proposed to be furnished. Net worth must exceed the total value of all products proposed.
  - h. A complete description of field service capabilities, including the location of field service facilities which would serve the proposed facility and the number and qualifications of personnel working from that location.
  - i. A complete list of all requirements of the Drawings and Specifications with which the manufacturer cannot conform, including reasons why alternate features are considered equivalent.
  - j. If descriptive literature or drawings illustrate standard products with design features or materials not in compliance with Project requirements, then these exceptions must be specifically listed. Failure to do so will indicate intent by the manufacturer to modify design features and alter materials to meet Project requirements.
  - k. Where additional information is submitted to supplement the submittal, all changes to the list of exceptions shall be specifically noted.
  - l. All other information necessary to fully evaluate the product for consideration.
5. This “or equal” submittal shall reach the Engineer no later than 14 days prior to the Bid date. Submittals which do not include a complete list of exceptions to Project requirements, or the statement “No exceptions to the Specifications will be taken”, will automatically be rejected by the Engineer. Manufacturers will be

advised of approval or rejection in writing no later than 10 days prior to the Bid date. Rejected submittals may be supplemented with additional information and resubmitted no later than five days prior to the Bid date. Manufacturers making supplementary submittals will be advised of approval or rejection in writing no later than two days prior to the Bid date.

6. Bids based on products which have not received the approval of the Engineer may be determined non-responsive by the Owner and rejected.

END OF SECTION

## PART 1 GENERAL

### 1.01 SCOPE

- A. The work under this Section includes preparation and submittal of a schedule of values.

### 1.02 GENERAL

- A. Timing of Submittal: Submit to the Engineer, a schedule of values allocated to the various portions of the work, within 10 days after Notice to Proceed. The first progress payment will not be made until the next pay cycle following the Engineer's approval of the Contractor's values.
- B. Supporting Data: Upon request of the Engineer, support the values with data which will substantiate their correctness.
- C. Use of Schedule: The schedule of values, unless objected to by the Engineer, shall be used only as a basis of the Contractor's Application for Payment.

### 1.03 FORM AND CONTENT OF SCHEDULE OF VALUES

- A. Form and Identification
  - 1. Type schedule on 8-1/2 x 11-inch white paper.
  - 2. Contractor's standard forms and automated printout may be used.
  - 3. Identify schedule with:
    - a. Title of Project and location
    - b. Engineer
    - c. Name and address of Contractor
    - d. Contract designation
    - e. Date of submission
- B. Schedule shall list the installed value of the component parts of the work in sufficient detail to serve as a basis for computing values for progress payments during construction. Breakdown shall be by structure, then by CSI Format, for ease of field verification of quantities completed in each structure.
- C. Format
  - 1. Follow the Table of Contents of the Contract Documents as the format for listing the component items.
  - 2. Identify each item with the number and title of the respective major section of the Specifications.

- D. For each major line item list sub-values of major products or operations under the item.
- E. For the Various Portions of the Work:
  - 1. Each item shall include a directly proportional amount of the Contractor's overhead and profit.
  - 2. For items on which progress payments will be requested for stored materials, break down the value into:
    - a. The cost of the materials, delivered and unloaded, with taxes paid.
    - b. The total installed value, including Contractor's overhead and profit, less item a. above.
- F. The sum of all values listed in the schedule shall equal the Bid Total.
- G. The value of the work associated with conducting the Operating Test Period shall be provided for the Project.

END OF SECTION

## PART 1 GENERAL

### 1.01 SCOPE

- A. Work under this Section includes all scheduling and administering of pre-construction and progress meetings as herein specified and necessary for the proper and complete performance of this work.
- B. Scheduling and Administration by Engineer:
  - 1. Prepare agenda.
  - 2. Make physical arrangements for the meetings.
  - 3. Preside at meetings.
  - 4. Record minutes and include significant proceedings and decisions.
  - 5. Distribute copies of the minutes to participants.

### 1.02 PRECONSTRUCTION CONFERENCE

- A. The Engineer shall schedule the preconstruction conference prior to the issuance of the Notice to Proceed.
- B. Representatives of the following parties are to be in attendance at the meeting:
  - 1. Owner.
  - 2. Engineer.
  - 3. Contractor and superintendent.
  - 4. Major subcontractors.
  - 5. Representatives of governmental or regulatory agencies when appropriate.
- C. The agenda for the preconstruction conference shall consist of the following as a minimum:
  - 1. Distribute and discuss a list of major subcontractors and a tentative construction schedule.
  - 2. Critical work sequencing.
  - 3. Designation of responsible personnel and emergency telephone numbers.
  - 4. Processing of field decisions and change orders.



5. Adequacy of distribution of Contract Documents.
6. Schedule and submittal of shop drawings, product data and samples.
7. Pay request format, submittal cutoff date, pay date and retainage.
8. Procedures for maintaining record documents.
9. Use of premises, including office and storage areas and Owner's requirements.
10. Major equipment deliveries and priorities.
11. Safety and first aid procedures.
12. Security procedures.
13. Housekeeping procedures.
14. Work hours.

### 1.03 PROJECT COORDINATION MEETINGS

- A. Schedule regular monthly meetings as directed by the Engineer.
- B. Hold called meetings as the progress of the work dictates.
- C. The meetings shall be held at the location indicated by the Engineer.
- D. Representatives of the following parties are to be in attendance at the meetings:
  1. Engineer.
  2. Contractor and superintendent.
  3. Major subcontractors as pertinent to the agenda.
  4. Owner's representative as appropriate.
  5. Representatives of governmental or other regulatory agencies as appropriate.
- E. The minimum agenda for progress meetings shall consist of the following:
  1. Review and approve minutes of previous meetings.
  2. Review work progress since last meeting.
  3. Note field observations, problems and decisions.
  4. Identify problems which impede planned progress.
  5. Review off-site fabrication problems.

6. Review Contractor's corrective measures and procedures to regain plan schedule.
7. Review Contractor's revision to the construction schedule as outlined in the Supplementary Conditions.
8. Review submittal schedule; expedite as required to maintain schedule.
9. Maintenance of quality and work standards.
10. Review changes proposed by Owner for their effect on the construction schedule and completion date.
11. Complete other current business.

END OF SECTION

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## PART 1 GENERAL

### 1.01 SCOPE

- A. The work under this Section includes preparing, furnishing, distributing, and periodic updating of the construction schedules as specified herein.
- B. The purpose of the schedule is to demonstrate that the Contractor can complete the overall Project within the Contract Time and meet all required interim milestones.

### 1.02 SUBMITTALS

- A. Overall Project Schedule (OPS)
  - 1. Submit the schedule within 10 days after date of the Notice to Proceed.
  - 2. The Engineer will review the schedule and return it within 10 days after receipt.
  - 3. If required, resubmit within 10 days after receipt of a returned copy.
- B. Near Term Schedule (NTS)
  - 1. Submit the first Near Term Schedule within 10 days of the Notice to Proceed.
  - 2. The Engineer will review the schedule and return it within 10 days after receipt.
- C. Submit an update of the OPS and NTS with each progress payment request.
- D. Submit the number of copies required by the Contractor, plus four copies to be retained by the Engineer.

### 1.03 APPROVAL

- A. Approval of the Contractor's detailed construction program and revisions thereto shall in no way relieve the Contractor of any of Contractor's duties and obligations under the Contract. Approval is limited to the format of the schedule and does not in any way indicate approval of, or concurrence with, the Contractor's means, methods and ability to carry out the work.

### 1.04 OVERALL PROJECT SCHEDULE (OPS)

- A. The Contractor shall submit to the Owner for approval a detailed Overall Project Schedule of the Contractor's proposed operations for the duration of the Project. The OPS shall be in the form of a Gantt/bar chart.
- B. Gantt/Bar Chart Schedule

1. Each activity with a duration of five or more days shall be identified by a separate bar. Activities with a duration of more than 20 days shall be sub-divided into separate activities.
2. The schedule shall include activities for shop drawing preparation and review, fabrication, delivery, and installation of major or critical path materials and equipment items.
3. The schedule shall show the proposed start and completion date for each activity. A separate listing of activity start and stop dates and working day requirements shall be provided unless the information is shown in text form on the Gantt/bar chart.
4. The schedule shall identify the Notice to Proceed date, the Contract Completion date, major milestone dates, and a critical path.
5. The schedule shall be printed on a maximum 11 x 17-inch size paper. If the OPS needs to be shown on multiple sheets, a simplified, one page, summary bar chart showing the entire Project shall be provided.
6. The schedule shall have a horizontal time scale based on calendar days and shall identify the Monday of each week.
7. The schedule shall show the precedence relationship for each activity.

## 1.05 NEAR TERM SCHEDULE (NTS)

- A. The Contractor shall develop and refine a detailed Near Term Schedule showing the day to day activities with committed completion dates which must be performed during the upcoming 30 day period. The detailed schedule shall represent the Contractor's best approach to the Work which must be accomplished to maintain progress consistent with the Overall Project Schedule.
- B. The Near Term Schedule shall be in the form of Gantt/bar chart and shall include a written narrative description of all activities to be performed and describe corrective action to be taken for items that are behind schedule.

## 1.06 UPDATING

- A. Show all changes occurring since previous submission of the updated schedule.
- B. Indicate progress of each activity and show actual completion dates.
- C. The Contractor shall be prepared to provide a narrative report at the Project Coordination Meetings. The report shall include the following:
  1. A description of the overall Project status and comparison to the OPS.
  2. Identify activities which are behind schedule and describe corrective action to be taken.

3. A description of changes or revisions to the Project and their effect on the OPS.
4. A description of the Near Term Schedule of the activities to be completed during the next 30 days. The report shall include a description of all activities requiring participation by the Engineer and/or Owner.

END OF SECTION

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## PART 1 GENERAL

### 1.01 SCOPE

- A. The Contractor shall furnish all equipment and labor materials required to provide the Owner with digital construction videos and photographs of the Project. The requirements of this section are independent of and in addition to the requirements in Division 31 of the Specifications.
- B. Photo and video files shall become the property of the Owner and none of the videos or photographs shall be published without express permission of the Owner.

### 1.02 PRE- AND POST-CONSTRUCTION VIDEOS AND PHOTOGRAPHS

- A. Prior to the beginning of any work, the Contractor shall take videos and photographs of the work area to record existing conditions.
- B. Following completion of the work, another set of videos and photographs shall be made showing the same areas and features as in the pre-construction videos and photographs.
- C. All conditions which might later be subject to disagreement shall be shown in sufficient detail to provide a basis for decisions.

### 1.03 FILE FORMAT, MEDIA AND SUBMITTALS

- A. Photographs shall be in "jpg" format.
- B. Videos shall be in a format viewable by Microsoft Windows Media Player or Apple QuickTime Player. Audio narration is desirable.
- C. Files shall be named such that what is being viewed is self evident.
- D. Files shall be submitted on a compact disk (CD) or a digital video disk (DVD). If submitted on DVD, disk shall be recorded in "Minus R" format.
- E. The pre-construction videos and photographs shall be submitted to the Engineer within 25 calendar days after the date of receipt by the Contractor of Notice to Proceed. Post-construction videos and photographs shall be provided prior to final acceptance of the Project.

END OF SECTION



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## PART 1 GENERAL

### 1.01 SCOPE

- A. The work under this Section includes submittal to the Engineer of shop drawings, product data and samples required by the various Sections of these Specifications.
- B. Submittal Contents: The submittal contents required are specified in each Section.
- C. Definitions: Submittals are categorized as follows:
  - 1. Shop Drawings
    - a. Shop drawings shall include technical data, drawings, diagrams, procedure and methodology, performance curves, schedules, templates, patterns, test reports, calculations, instructions, measurements and similar information as applicable to the specific item for which the shop drawing is prepared.
    - b. Provide newly-prepared information, on bond sheets, with graphic information at accurate scale (except as otherwise indicated) or appropriate number of prints hereof, with name or preparer (firm name) indicated. The Contract Drawings shall not be traced or reproduced by any method for use as or in lieu of detail shop drawings. Show dimensions and note dimensions that are based on field measurement. Identify materials and products in the work shown. Indicate compliance with standards and special coordination requirements. Do not allow shop drawings to be used in connection with the Work without appropriate final "Action" markings by the Engineer.
    - c. Drawings shall be presented in a clear and thorough manner. Details shall be identified by reference to sheet and detail, Specification Section, schedule or room numbers shown on the Contract Drawings.
    - d. Minimum assembly drawings sheet size shall be 24 x 36-inches.
    - e. Minimum detail sheet size shall be 8-1/2 x 11-inches.
    - f. Minimum Scale:
      - 1) Assembly Drawings Sheet, Scale: 1-inch = 30 feet.
      - 2) Detail Sheet, Scale: 1/4-inch = 1 foot.
  - 2. Product Data
    - a. Product data includes standard printed information on materials, products and systems, not specially prepared for this Project, other than the designation of selections from among available choices printed therein.
    - b. Collect required data into one submittal for each unit of work or system, and mark each copy to show which choices and options are applicable to the Project. Include manufacturer's standard printed recommendations for application and use, compliance with standards, application of labels and seals, notation of field measurements which have been checked and special coordination requirements.

3. Samples
  - a. Samples include both fabricated and un-fabricated physical examples of materials, products and units of work, both as complete units and as smaller portions of units of work, either for limited visual inspection or, where indicated, for more detailed testing and analysis.
  - b. Provide units identical with final condition of proposed materials or products for the work. Include "range" samples, not less than three units, where unavoidable variations must be expected, and describe or identify variations between units of each set. Provide full set of optional samples where the Engineer's selection is required. Prepare samples to match the Engineer's sample where indicated. Include information with each sample to show generic description, source or product name and manufacturer, limitations and compliance with standards. Samples are submitted for review and confirmation of color, pattern, texture and "kind" by the Engineer. Engineer will note "test" samples, except as otherwise indicated, for other requirements, which are the exclusive responsibility of the Contractor.
  
4. Miscellaneous submittals related directly to the work (non-administrative) include warranties, maintenance agreements, workmanship bonds, project photographs, survey data and reports, physical work records, statements of applicability, quality testing and certifying reports, copies of industry standards, record drawings, field measurement data, operating and maintenance materials, overrun stock, security/protection/safety keys and similar information, devices and materials applicable to the work but not processed as shop drawings, product data or samples.

## 1.02 SPECIFIC CATEGORY REQUIREMENTS

- A. General: Except as otherwise indicated in the individual work sections, comply with general requirements specified herein for each indicated category of submittal. Submittals shall contain:
  1. The date of submittal and the dates of any previous submittals.
  2. The Project title.
  3. Numerical submittal numbers, starting with 1.0, 2.0, etc. Revisions to be numbered 1.1, 1.2, etc.
  4. The Names of:
    - a. Contractor
    - b. Supplier
    - c. Manufacturer
  5. Identification of the product, with the Specification Section number, permanent equipment tag numbers and applicable Drawing No.
  6. Field dimensions, clearly identified as such.
  7. Relation to adjacent or critical features of the work or materials.

8. Applicable standards, such as ASTM or Federal Specification numbers.
9. Notification to the Engineer in writing, at time of submissions, of any deviations on the submittals from requirements of the Contract Documents.
10. Identification of revisions on resubmittals.
11. An 8 x 3-inch blank space for Contractor and Engineer stamps.
12. Contractor's stamp, initialed or signed, certifying to review of submittal, verification of products, field measurements and field construction criteria and coordination of the information within the submittal with requirements of the work and of Contract Documents.
13. Submittal sheets or Drawings showing more than the particular item under consideration shall have all but the pertinent description of the item for which review is requested crossed out.

### 1.03 ROUTING OF SUBMITTALS

- A. Submittals and routine correspondence shall be routed as follows:
  1. Supplier to Contractor (through representative if applicable)
  2. Contractor to Engineer
  3. Engineer to Contractor and Owner
  4. Contractor to Supplier

## PART 2 PRODUCTS

### 2.01 SHOP DRAWINGS

- A. Unless otherwise specifically directed by the Engineer, make all shop drawings accurately to a scale sufficiently large to show all pertinent features of the item and its method of connection to the work.
- B. Submit three hard copies of all shop assembly drawings larger than 11 x 17-inches. Additional copies shall be made available upon request.
- C. Submit all shop drawings, 11 x 17-inches and smaller, in the form of six hard copies.
- D. One reproducible for all submittals larger than 11 x 17-inches and no more than three prints of other submittals will be returned to the Contractor.

## 2.02 MANUFACTURER'S LITERATURE

- A. Where content of submitted literature from manufacturers includes data not pertinent to this submittal, clearly indicate which portion of the contents is being submitted for the Engineer's review.
- B. Submit the number of copies which are required to be returned (not to exceed three) plus three copies which will be retained by the Engineer.

## 2.03 SAMPLES

- A. Samples shall illustrate materials, equipment or workmanship and established standards by which completed work is judged.
- B. Unless otherwise specifically directed by the Engineer, all samples shall be of the precise article proposed to be furnished.
- C. Submit all samples in the quantity which is required to be returned plus one sample which will be retained by the Engineer.

## 2.04 COLORS

- A. Unless the precise color and pattern is specifically described in the Contract Documents, wherever a choice of color or pattern is available in a specified product, submit accurate color charts and pattern charts to the Engineer for review and selection.
- B. Unless all available colors and patterns have identical costs and identical wearing capabilities, and are identically suited to the installation, completely describe the relative costs and capabilities of each.

# PART 3 EXECUTION

## 3.01 CONTRACTOR'S COORDINATION OF SUBMITTALS

- A. Prior to submittal for the Engineer's review, the Contractor shall use all means necessary to fully coordinate all material, including the following procedures:
  - 1. Determine and verify all field dimensions and conditions, catalog numbers and similar data.
  - 2. Coordinate as required with all trades and all public agencies involved.
  - 3. Submit a written statement of review and compliance with the requirements of all applicable technical Specifications as well as the requirements of this Section.
  - 4. Clearly indicate in a letter or memorandum on the manufacturer's or fabricator's letterhead, all deviations from the Contract Documents.

- B. Each and every copy of the shop drawings and data shall bear the Contractor's stamp showing that they have been so checked. Shop drawings submitted to the Engineer without the Contractor's stamp will be returned to the Contractor for conformance with this requirement.
- C. The Owner may backcharge the Contractor for costs associated with having to review a particular shop drawing, product data or sample more than two times to receive a "No Exceptions Taken" mark.
- D. Grouping of Submittals
  - 1. Unless otherwise specifically permitted by the Engineer, make all submittals in groups containing all associated items.
  - 2. No review will be given to partial submittals of shop drawings for items which interconnect and/or are interdependent. It is the Contractor's responsibility to assemble the shop drawings for all such interconnecting and/or interdependent items, check them and then make one submittal to the Engineer along with Contractor's comments as to compliance, non-compliance or features requiring special attention.
- E. Schedule of Submittals
  - 1. Within 30 days of Contract award and prior to any shop drawing submittal, the Contractor shall submit a schedule showing the estimated date of submittal and the desired approval date for each shop drawing anticipated. A reasonable period shall be scheduled for review and comments. Time lost due to unacceptable submittals shall be the Contractor's responsibility and some time allowance for resubmittal shall be provided. The schedule shall provide for submittal of items which relate to one another to be submitted concurrently.

### 3.02 TIMING OF SUBMITTALS

- A. Make all submittals far enough in advance of scheduled dates for installation to provide all required time for reviews, for securing necessary approvals, for possible revision and resubmittal, and for placing orders and securing delivery.
- B. In scheduling, allow sufficient time for the Engineer's review following the receipt of the submittal.

### 3.03 REVIEWED SHOP DRAWINGS

- A. Engineer Review
  - 1. Allow a minimum of 30 days for the Engineer's initial processing of each submittal requiring review and response, except allow longer periods where processing must be delayed for coordination with subsequent submittals. The Engineer will advise the Contractor promptly when it is determined that a submittal being processed must be delayed for coordination. Allow a minimum of two weeks for reprocessing each submittal. Advise the Engineer on each submittal as to whether processing time is critical to progress of the work, and

therefore the work would be expedited if processing time could be foreshortened.

2. Acceptable submittals will be marked "No Exceptions Taken". A minimum of three copies will be retained by the Engineer for Engineer's and the Owner's use and the remaining copies will be returned to the Contractor.
  3. Submittals requiring minor corrections before the product is acceptable will be marked "Make Corrections Noted". The Contractor may order, fabricate and ship the items included in the submittals, provided the indicated corrections are made. Drawings must be resubmitted for review and marked "No Exceptions Taken" prior to installation or use of products.
  4. Submittals marked "Amend and Resubmit" must be revised to reflect required changes and the initial review procedure repeated.
  5. The "Rejected - See Remarks" notation is used to indicate products which are not acceptable. Upon return of a submittal so marked, the Contractor shall repeat the initial review procedure utilizing acceptable products.
  6. Only two copies of items marked "Amend and Resubmit" and "Rejected - See Remarks" will be reviewed and marked. One copy will be retained by the Engineer and the other copy with all remaining unmarked copies will be returned to the Contractor for resubmittal.
- B. No work or products shall be installed without a drawing or submittal bearing the "No Exceptions Taken" notation. The Contractor shall maintain at the job site a complete set of shop drawings bearing the Engineer's stamp.
- C. Substitutions: In the event the Contractor obtains the Engineer's approval for the use of products other than those which are listed first in the Contract Documents, the Contractor shall, at the Contractor's own expense and using methods approved by the Engineer, make any changes to structures, piping and electrical work that may be necessary to accommodate these products.
- D. Use of the "No Exceptions Taken" notation on shop drawings or other submittals is general and shall not relieve the Contractor of the responsibility of furnishing products of the proper dimension, size, quality, quantity, materials and all performance characteristics, to efficiently perform the requirements and intent of the Contract Documents. The Engineer's review shall not relieve the Contractor of responsibility for errors of any kind on the shop drawings. Review is intended only to assure conformance with the design concept of the Project and compliance with the information given in the Contract Documents. The Contractor is responsible for dimensions to be confirmed and correlated at the job site. The Contractor is also responsible for information that pertains solely to the fabrication processes or to the technique of construction and for the coordination of the work of all trades.

### 3.04 RESUBMISSION REQUIREMENTS

- A. Shop Drawings
  - 1. Revise initial Drawings as required and resubmit as specified for initial submittal, with the resubmittal number shown.
  - 2. Indicate on Drawings all changes which have been made other than those requested by the Engineer.
- B. Project Data and Samples: Resubmit new data and samples as specified for initial submittal, with the resubmittal number shown.

END OF SECTION



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## PART 1 GENERAL

### 1.01 SCOPE OF WORK

- A. Furnish all labor, materials and equipment and perform all work required for the prevention of environmental pollution in conformance with applicable laws and regulations, during and as the result of construction operations under this Contract. For the purpose of this Section, environmental pollution is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to man; or degrade the utility of the environment for aesthetic and/or recreational purposes.
- B. The control of environmental pollution requires consideration of air, water and land, and involves management of noise and solid waste, as well as other pollutants.
- C. Schedule and conduct all work in a manner that will minimize the erosion of soils in the area of the work. Provide erosion control measures such as diversion channels, sedimentation or filtration systems, berms, staked hay bales, seeding, mulching or other special surface treatments as are required to prevent silting and muddying of streams, rivers, impoundments, lakes, etc. All erosion control measures shall be in place in an area prior to construction activity in that area. Specific requirements for erosion and sedimentation controls are specified in Section 01 57 13.
- D. This Section is intended to ensure that construction is achieved with a minimum of disturbance to the existing ecological balance between a water resource and its surroundings. These are general guidelines. It is the Contractor's responsibility to determine the specific construction techniques to meet these guidelines.
- E. All phases of sedimentation and erosion control shall comply with and be subject to the approval of the Tennessee Department of Environmental Health.

### 1.02 APPLICABLE REGULATIONS

- A. Comply with all applicable Federal, State and local laws and regulations concerning environmental pollution control and abatement.

### 1.03 NOTIFICATIONS

- A. The Engineer will notify the Contractor in writing of any non-compliance with the foregoing provisions or of any environmentally objectionable acts and corrective action to be taken. State or local agencies responsible for verification of certain aspects of the environmental protection requirements shall notify the Contractor in writing, through the Engineer, of any non-compliance with State or local requirements. After receipt of such notice from the Engineer or from the regulatory agency through the Engineer, immediately take corrective action. Such notice, when delivered to the Contractor or his authorized representative at the site of the work, shall be deemed sufficient for the purpose. If the Contractor fails or refuses to comply

promptly, the Owner may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for excess costs or damages by the Contractor unless it is later determined that the Contractor was in compliance.

## 1.04 IMPLEMENTATION

- A. Prior to commencement of the work, meet with the Engineer and Owner or Owner's representative to develop mutual understandings relative to compliance with these provisions and administration of the environmental pollution control program.
- B. Remove temporary environmental control features, when approved by the Engineer and incorporate permanent control features into the project at the earliest practicable time.

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION

### 3.01 EROSION CONTROL

- A. Provide positive means of erosion control such as shallow ditches around construction to carry off surface water. Erosion control measures, such as siltation basins, hay check dams, mulching, jute netting and other equivalent techniques, shall be used as appropriate. Flow of surface water into excavated areas shall be prevented. Ditches around construction area shall also be used to carry away water resulting from dewatering of excavated areas. At the completion of the work, ditches shall be backfilled and the ground surface restored to original condition.

### 3.02 PROTECTION OF STREAMS AND SURFACE WATERS

- A. Take all precautions to prevent, or reduce to a minimum, any damage to any stream or surface water from pollution by debris, sediment or other material, or from the manipulation of equipment and/or materials in or near such streams. Water that has been used for washing or processing, that contains oils or sediments that will reduce the quality of the water in the stream, shall not be directly returned to the stream. Divert such waters through a settling basin or filter before being directed into streams or surface waters.
- B. Do not discharge water from dewatering operations directly into any live or intermittent stream, channel, wetlands, surface water or any storm sewer. Water from dewatering operations shall be treated by filtration, settling basins, or other approved method to reduce the amount of sediment contained in the water to allowable levels.
- C. Take all preventative measures to avoid spillage of petroleum products and other pollutants. In the event of any spillage, prompt remedial action shall be taken in accordance with a contingency action approved by the Tennessee Department of

Environmental Health. Submit two copies of approved contingency plans to the Engineer.

- D. Water being flushed from structures or pipelines after disinfection, with a Cl<sub>2</sub> residue exceeding standards set forth by the Tennessee Department of Environmental Health for the classification for the adjacent stream shall be treated with a dechlorination solution, in a method approved by the Engineer, prior to discharge.

### 3.03 PROTECTION OF LAND RESOURCES

- A. Restore land resources within the project boundaries and outside the limits of permanent work to a condition, after completion of construction that will appear to be natural and not detract from the appearance of the project. Confine all construction activities to areas shown on the Drawings.
- B. Outside of areas requiring earthwork for the construction of the new facilities, do not deface, injure, or destroy trees or shrubs, nor remove or cut them without prior approval. No ropes, cables, or guys shall be fastened to or attached to any existing nearby trees for anchorage unless specifically authorized by the Engineer. Where such special emergency use is permitted, first wrap the trunk with a sufficient thickness of burlap or rags over which softwood cleats shall be tied before any rope, cable, or wire is placed. The Contractor shall in any event be responsible for any damage resulting from such use.
- C. Before beginning operations near them, protect trees that may possibly be defaced, bruised, injured, or otherwise damaged by the construction equipment, dumping or other operations, by placing boards, planks, or poles around them. Monuments and markers shall be protected similarly.
- D. Any trees or other landscape features scarred or damaged by the Contractor's equipment or operations shall be restored as nearly as possible to their original condition. The Engineer will decide the method of restoration to be used and whether damaged trees shall be treated and healed or removed and disposed of.
  - 1. All scars made on trees by equipment, construction operations, or by the removal of limbs larger than 1-in in diameter shall be coated as soon as possible with an approved tree wound dressing. All trimming or pruning shall be performed in an approved manner by experienced workmen with saws or pruning shears. Tree trimming with axes will not be permitted.
  - 2. Climbing ropes shall be used where necessary for safety. Trees that are to remain, either within or outside established clearing limits, that are subsequently damaged by the Contractor and are beyond saving in the opinion of the Engineer, shall be immediately removed and replaced.
- E. The locations of the Contractor's storage and other construction buildings required temporarily in the performance of the work, shall be cleared portions of the job site or areas to be cleared as shown on the Drawings and approved by the Engineer and shall not be within wetlands or floodplains. The preservation of the landscape shall be an imperative consideration in the selection of all sites and in the construction of

buildings. Drawings showing storage facilities shall be submitted for approval of the Engineer.

- F. If the Contractor proposes to construct temporary roads or embankments and excavations for plant and/or work areas, he shall submit the following for approval at least ten days prior to scheduled start of such temporary work.
1. A layout of all temporary roads, excavations, embankments and drainage to be constructed within the work area.
  2. Details of temporary road construction.
  3. Drawings and cross sections of proposed embankments and their foundations, including a description of proposed materials.
  4. A landscaping drawing showing the proposed restoration of the area. Indicate the proposed removal of any trees and shrubs outside the limits of existing clearing area. Indicate locations of guard posts or barriers required to control vehicular traffic and protect trees and shrubs to be maintained undamaged. The Drawing shall provide for the obliteration of construction scars as such and shall provide for a natural appearing final condition of the area. Modification of the Contractor's approved drawings shall be made only with the written approval of the Engineer. No unauthorized road construction, excavation or embankment construction including disposal areas will be permitted.
- G. Remove all signs of temporary construction facilities such as haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess of waste materials, or any other vestiges of construction as directed by the Engineer. It is anticipated that excavation, filling and plowing of roadways will be required to restore the area to near natural conditions which will permit the growth of vegetation thereon. The disturbed areas shall be prepared and seeded as described in Section 32 92 19, or as approved by the Engineer.
- H. All debris and excess material will be disposed of outside wetland or floodplain areas in an environmentally sound manner.

### 3.04 PROTECTION OF AIR QUALITY

- A. Burning - The use of burning at the project site for the disposal of refuse and debris will not be permitted.
- B. Dust Control - Maintain all excavations, embankment, stockpiles, access roads, plant sites, waste areas, borrow areas and all other work areas within or without the project boundaries free from dust which could cause the standards for air pollution to be exceeded and which would cause a hazard or nuisance to others. See Section 01 56 16.
- C. An approved method of stabilization consisting of sprinkling or other similar methods will be permitted to control dust. The use of petroleum products is prohibited. The use of chlorides may be permitted with approval from the Engineer.

- D. Sprinkling, to be approved, must be repeated at such intervals as to keep all parts of the disturbed area at least damp at all times, and the Contractor shall have sufficient competent equipment on the job to accomplish this. Dust control shall be performed as the work proceeds and whenever a dust nuisance or hazard occurs, as determined by the Engineer.

### 3.05 NOISE CONTROL

- A. Make every effort to minimize noises caused by the construction operations. Equipment shall be equipped with silencers or mufflers designed to operate with the least possible noise in compliance with Federal and State regulations.

### 3.06 MAINTENANCE OF POLLUTION CONTROL FACILITIES DURING CONSTRUCTION

- A. Maintain all facilities constructed for pollution control as long as the operations creating the particular pollutant are being carried out or until the material concerned has become stabilized to the extent that pollution is no longer being created.

END OF SECTION

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## PART 1 GENERAL

### 1.01 SCOPE

- A. Permits and Responsibilities: The Contractor shall, without additional expense to the Owner, be responsible for obtaining all necessary licenses and permits, including building permits, and for complying with any applicable federal, state, county and municipal laws, codes and regulations, in connection with the prosecution of the work.
- B. The Contractor shall take proper safety and health precautions to protect the work, the workers, the public and the property of others.
- C. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the work, except for any completed unit of construction thereof which may heretofore have been accepted.

END OF SECTION



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## PART 1 GENERAL

### 1.01 DESCRIPTION

- A. Whenever reference is made to conforming to the standards of any technical society, organization, body, code or standard, it shall be construed to mean the latest standard, code, specification or tentative specification adopted and published at the time of advertisement for bids. This shall include the furnishing of materials, testing of materials, fabrication and installation practices. In those cases where the Contractor's quality standards establish more stringent quality requirements, the more stringent requirement shall prevail. Such standards are made a part hereof to the extent which is indicated or intended.
- B. The inclusion of an organization under one category does not preclude that organization's standards from applying to another category.
- C. In addition, all work shall comply with the applicable requirements of local codes, utilities and other authorities having jurisdiction.
- D. All material and equipment, for which a UL Standard, an AGA or NSF approval or an ASME requirement is established, shall be so approved and labeled or stamped. The label or stamp shall be conspicuous and not covered, painted, or otherwise obscured from visual inspection.
- E. The standards which apply to this Project are not necessarily restricted to those organizations which are listed in Article 1.02.

### 1.02 STANDARD ORGANIZATIONS

#### A. Piping and Valves

ACPA	American Concrete Pipe Association
ANSI	American National Standards Institute
API	American Petroleum Institute
ASME	American Society of Mechanical Engineers
AWWA	American Water Works Association
CISPI	Cast Iron Soil Pipe Institute
DIPRA	Ductile Iron Pipe Research Association
FCI	Fluid Controls Institute
MSS	Manufacturers Standardization Society
NCPI	National Clay Pipe Institute
NSF	National Sanitation Foundation
PPI	Plastic Pipe Institute
Uni-Bell	PVC Pipe Association

## B. Materials

AASHTO	American Association of State Highway and Transportation Officials
ANSI	American National Standards Institute
ASTM	American Society for Testing and Materials

## C. Painting and Surface Preparation

NACE	National Association of Corrosion Engineers
SSPC	Steel Structures Painting Council

## D. Electrical and Instrumentation

AEIC	Association of Edison Illuminating Companies
AIEE	American Institute of Electrical Engineers
EIA	Electronic Industries Association
ICEA	Insulated Cable Engineers Association
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronic Engineers
IES	Illuminating Engineering Society
IPC	Institute of Printed Circuits
IPCEA	Insulated Power Cable Engineers Association
ISA	The Instrumentation, Systems, and Automation Society
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
REA	Rural Electrification Administration
TIA	Telecommunications Industries Association
UL	Underwriter's Laboratories
VRCI	Variable Resistive Components Institute

## E. Aluminum

AA	Aluminum Association
AAMA	American Architectural Manufacturers Association

## F. Steel and Concrete

ACI	American Concrete Institute
AISC	American Institute of Steel Construction, Inc.
AISI	American Iron and Steel Institute
CRSI	Concrete Reinforcing Steel Institute
NRMA	National Ready-Mix Association
PCA	Portland Cement Association
PCI	Prestressed Concrete Institute

## G. Welding

ASME	American Society of Mechanical Engineers
AWS	American Welding Society

## H. Government and Technical Organizations

AIA	American Institute of Architects
APHA	American Public Health Association
APWA	American Public Works Association
ASA	American Standards Association
ASAE	American Society of Agricultural Engineers
ASCE	American Society of Civil Engineers
ASQC	American Society of Quality Control
ASSE	American Society of Sanitary Engineers
CFR	Code of Federal Regulations
CSI	Construction Specifications Institute
EDA	Economic Development Administration
EPA	Environmental Protection Agency
FCC	Federal Communications Commission
FmHA	Farmers Home Administration
FS	Federal Specifications
IAI	International Association of Identification
ISEA	Industrial Safety Equipment Association
ISO	International Organization for Standardization
ITE	Institute of Traffic Engineers
NBFU	National Board of Fire Underwriters
(NFPA)	National Fluid Power Association
NBS	National Bureau of Standards
NISO	National Information Standards Organization
OSHA	Occupational Safety and Health Administration
SI	Salt Institute
SPI	The Society of the Plastics Industry, Inc.
USDC	United States Department of Commerce
WEF	Water Environment Federation

## I. General Building Construction

AHA	American Hardboard Association
AHAM	Association of Home Appliance Manufacturers
AITC	American Institute of Timber Construction
APA	American Parquet Association, Inc.
APA	American Plywood Association
BHMA	Builders Hardware Manufacturers Association
BIFMA	Business and Institutional Furniture Manufacturers Association
DHI	Door and Hardware Institute
FM	Factory Mutual Fire Insurance Company
HPMA	Hardwood Plywood Manufacturers Association
HTI	Hand Tools Institute
IBC	International Building Code
IME	Institute of Makers of Explosives
ISANTA	International Staple, Nail and Tool Association
ISDSI	Insulated Steel Door Systems Institute
IWS	Insect Screening Weavers Association
MBMA	Metal Building Manufacturers Association
NAAMM	National Association of Architectural Metal Manufacturers

NAGDM	National Association of Garage Door Manufacturers
NCCLS	National Committee for Clinical Laboratory Standards
NFPA	National Fire Protection Association
NFSA	National Fertilizer Solutions Association
NKCA	National Kitchen Cabinet Association
NWMA	National Woodwork Manufacturers Association
NWWDA	National Wood Window and Door Association
RMA	Rubber Manufacturers Association
SBC	SBCC Standard Building Code
SDI	Steel Door Institute
SIA	Scaffold Industry Association
SMA	Screen Manufacturers Association
SPRI	Single-Ply Roofing Institute
TCA	Tile Council of America
UBC	Uniform Building Code

J. Roadways

AREA	American Railway Engineering Association
DOT	Tennessee Department of Transportation

K. Plumbing

AGA	American Gas Association
NSF	National Sanitation Foundation
PDI	Plumbing Drainage Institute
SPC	SBCC Standard Plumbing Code

L. Refrigeration, Heating, and Air Conditioning

AMCA	Air Movement and Control Association
ARI	American Refrigeration Institute
ASHRAE	American Society of Heating, Refrigeration, and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
CGA	Compressed Gas Association
CTI	Cooling Tower Institute
HEI	Heat Exchange Institute
IIAR	International Institute of Ammonia Refrigeration
NB	National Board of Boilers and Pressure Vessel Inspectors
PFMA	Power Fan Manufacturers Association
SAE	Society of Automotive Engineers
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SMC	SBCC Standard Mechanical Code
TEMA	Tubular Exchangers Manufacturers Association

M. Equipment

AFBMA	Anti-Friction Bearing Manufacturers Association, Inc.
AGMA	American Gear Manufacturers Association
ALI	Automotive Lift Institute

CEMA	Conveyor Equipment Manufacturers Association
CMAA	Crane Manufacturers Association of America
DEMA	Diesel Engine Manufacturers Association
MMA	Monorail Manufacturers Association
OPEI	Outdoor Power Equipment Institute, Inc.
PTI	Power Tool Institute, Inc.
RIA	Robotic Industries Association
SAMA	Scientific Apparatus Makers Association

### 1.03 SYMBOLS

- A. Symbols and material legends shall be as scheduled on the Drawings.

END OF SECTION

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## PART 1 GENERAL

### 1.01 SCOPE

- A. The work under this Section defines the minimum scope of services to be provided by the Contractor during installation, start-up, operating test period, and operator training using factory representatives of the manufacturers of the equipment provided.
- B. Furnish all labor, materials, tools, equipment, and services for the cleaning up or preparation of all equipment which is required in conjunction with the instruction work to be performed for the Owner's personnel.
- C. Perform additional instruction of the Owner's personnel for any and all items of work that are incomplete at the time initial instruction sessions are scheduled.
- D. Although such work may not be explicitly specifically indicated elsewhere, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation, and to provide instructions upon the functions of that installation.
- E. Provide instruction for all equipment and systems for which operating and maintenance data is required.
- F. Instruction sessions may be combined to some extent between several pieces of similar equipment within the same training session, but only if that combination is defined in the Contractor's instruction program submittal and approved by the Engineer.
- G. One instruction session for each major type of equipment will be required. The Contractor shall anticipate that up to ten of the Owner's employees will participate in any particular instruction session, and shall be prepared to provide the required number of handouts, manuals, and tools for each session.

### 1.02 QUALIFICATION

- A. Qualification of the manufacturer's representatives for installation, start-up, and operator training purposes shall be appropriate for the equipment being installed. Manufacturer's representatives shall be subject to the approval of the Engineer. Where equipment has significant process complexity, furnish the services of engineering personnel knowledgeable in the process involved and the function of the equipment.
- B. References in various equipment sections of the terms "factory representative" or "field representative" shall mean an employee of the equipment manufacturer who is completely knowledgeable of the manufacturing, installation, operation and maintenance of the equipment. A sales representative does not qualify, unless it is documented that they have been specifically trained by the Manufacturer. Any field or factory representative not an active employee of the manufacturer must provide documentation from the manufacturer stating that the individual, by name, has been



formally trained in the installation, operation and maintenance of the equipment and is authorized to make the required certification to perform the required services.

### 1.03 SUBMITTALS

- A. No later than one hundred twenty days prior to scheduled Substantial Completion of the Work, the Contractor shall submit a list of proposed instruction sessions for the entire Project. This list shall be organized by Specification Section and its contents will be subject to the approval of the Engineer and Owner.
- B. After approval of the list of the proposed instruction sessions and no later than sixty days prior to the scheduled Substantial Completion of the Work, submit course outlines and training material for each of the approved instruction sessions. Outlines shall be organized by Specification Section, and their contents shall be subject to the approval of the Engineer.
- C. After approval of the program content, the Contractor shall submit a proposed schedule for each of the approved instruction sessions which are to be organized by Specification Section, and the scheduled dates will be subject to the approval of the Engineer.
- D. Submit a separate instruction request/report (form attached) for each system or type of equipment, subject to the Owner's approval of availability of personnel.
  - 1. Submit request/report with preliminary information indicated, to the Engineer at least two weeks prior to first instruction period.
  - 2. After each instruction session, submit three copies of the completed report to the Engineer.

### 1.04 COORDINATION

- A. Do not begin instructions until component assembly or system has been tested as specified in Section 01 75 16 and is in satisfactory operating condition.
- B. Prior to instruction sessions, assemble instructional aids, tools, test equipment, and "Final" copies of Operations and Maintenance Manuals.
- C. All instruction sessions shall be planned and scheduled such that the Owner's participants will utilize copies of the Project Operations and Maintenance Manuals which will have been previously provided. These copies are in addition to the quantities which have to be provided to the Owner under Section 01 78 23. The use of draft copies of these manuals will be acceptable.
- D. The Contractor shall schedule and coordinate the visits of factory representatives during installation, start-up and operator training in accordance with the requirements of Section 01 75 16 of these Specifications.
- E. The Contractor shall notify the Engineer 72 hours prior to any impending visit by factory representatives so that the Engineer can be present.

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## 1.05 INSTALLATION, START-UP AND TESTING SERVICES

- A. The Contractor shall furnish the services of a factory representative to provide the Pre-Start-Up Maintenance, Installation, Inspection, Functional Testing, and Operational Testing in accordance with Section 01 75 16 and the equipment sections of these Specifications.

## 1.06 OPERATOR TRAINING SERVICES

- A. Provide all instruction as required to ensure understanding of all operating and maintenance procedures by the Owner designated personnel.
- B. Instruct Owner's personnel in operation and maintenance of equipment and systems. Provide all necessary instruction to satisfaction of the Owner.
- C. Training sessions shall be scheduled at the convenience of the Owner, and may have to be scheduled outside of the Contractor's normal working hours.
- D. Explain use of Operating and Maintenance Manuals.
- E. Tour building areas involved and identify:
  - 1. Maintenance and access points.
  - 2. Control locations and control equipment.
- F. Explain Operating Sequences
  - 1. Identify location and show operation of switches, valves, etc., used to start, stop, and adjust systems.
  - 2. Explain use of flow diagrams, operating sequences, diagrams, etc.
  - 3. Demonstrate operation through complete cycle(s) and full range of operation in all modes, including testing and adjusting relevant to operation
- G. Explain use of control equipment, including temperature settings, switch modes, available adjustments, reading of gauges, and functions that must be serviced only by authorized factory representative.
- H. Explain Trouble Shooting Procedures
  - 1. Demonstrate commonly occurring problems.
  - 2. Note procedures which must be performed by factory personnel.
- I. Explain Maintenance Procedures and Requirements
  - 1. Point out items requiring periodic maintenance.

2. Demonstrate typical preventive maintenance procedures and recommend typical maintenance intervals.
  3. Demonstrate other commonly occurring maintenance procedures not part of preventive maintenance program.
  4. Identify maintenance materials to be used.
- J. Furnish all tools and/or test equipment required for proper instruction of the Owner's personnel. Tools and/or test equipment shall be distributed in "sets" with each two participants having a "set" to work with and retain upon completion of the instruction. Each participant shall sign for their tools at the start of the instruction session, and copies of the assignment documents shall be provided to the Construction Manager by the Contractor.
- K. Thirty-day operating period after start-up: The manufacturers' representative for each piece of equipment shall return to the Project site 30 days after successful completion of the operating test to review the equipment performance, correct any equipment problems, and conduct follow-up operation and maintenance classes as required by the Owner. This follow-up trip is required in addition to the specified services of manufacturer's representative prior to and during equipment start-up. At this time, if there are no equipment problems, each manufacturer shall certify to the Owner in writing that his equipment is fully operational and capable of meeting operating requirements. If the certification is accepted by the Engineer and Owner, the warranty period for that piece of equipment shall be considered to have begun as of the start-up date. If the equipment is operating incorrectly, the factory representative will make no certification to the Owner until the problems are corrected and the equipment demonstrates a successful 30 days operating period. At the conclusion of that period, the warranty start date will be decided upon by the Owner.
- L. Six-month operating period after start-up: The manufacturer's representative for each piece of equipment shall return to the Project site six months after the successful completion of the operating test to review the equipment performance, correct any equipment problems, and conduct follow-up operation and maintenance classes as required by the Owner. This follow-up trip is required in addition to the specified services of manufacturer's representative prior to and during equipment start-up. At the time of this trip, if there are no equipment problems, each manufacturer shall certify to the Owner in writing that his equipment is fully operational and capable of meeting operating requirements. If the equipment is operating incorrectly, the service representative will make no certification to the Owner until the problems are corrected and the equipment demonstrates a successful 30-day operating period after problems are corrected.

## 1.07 DOCUMENTATION

- A. The Contractor shall provide for the services of an experienced professional audio-visual firm to record on digital video all operators instruction(s), training sessions, and seminar(s), both initial and follow-up sessions. Videos shall incorporate professionally produced graphic elements and other animation to ensure the trainings are compelling and dynamic. Video shall be edited to fit an educational/training format using cutaways and other techniques to reinforce the trainer's dialogue and

message. The audio-video firm shall have the appropriate technical resources on staff to edit the videos consistent with the engineering aspects appropriate to the specified equipment. Equipment vendors shall provide drawings and/or other visual aids in electronic format to the audio-video firm. Video quality will be equivalent to that provided by the firms of Cool New Media (James Cool 404-702-5743) or approved equal. The Contractor shall fully inform all subcontractors, suppliers, and manufacturers of the requirement prior to award of any subcontracts. To the greatest extent possible, the training sessions and corresponding videos shall be conducted and documented individually by equipment type.

- B. The Contractor shall obtain from all manufacturers an electronic file of all operation and training information and training presentation materials in searchable Adobe Acrobat Portable Document Format (PDF). The PDF file(s) shall be fully indexed using the Table of Contents, searchable with thumbnails generated. File(s) shall be identified by specification section. All documents shall be scanned at 300dpi or greater utilizing optical character recognition (OCR) software. All text in the document must be text selectable with the exception of pages which are in their entirety drawings or diagrams. Word searches of the PDF document must function successfully. PDF files that fail to comply with the indexing and searchable features described above will not be acceptable.
- C. Contractor shall submit a draft copy of the video in DVD minus R format to the Engineer for review prior to making copies of the training sessions. Tape will be reviewed for sound, lighting, and tape quality.
- D. Once approved, Contractor shall provide the Owner six copies of the video for each occasion and/or each piece of equipment. The video shall be properly labeled and logged as per its contents. Contractor shall provide the video along with a release from the manufacturer authorizing unlimited use of the videos by the Owner.
- E. Compact disk copies shall be in the DVD(-R) format.
- F. At the completion of each training session, the training session will be certified by representatives from the Manufacturer, Contractor, Owner and Engineer. A training attendance roster for each session identifying all participants shall be delivered by the Contractor to the Engineer.

END OF SECTION

EQUIPMENT AND SYSTEMS INSTRUCTION REPORT

PROJECT: \_\_\_\_\_

SYSTEM OR EQUIPMENT: \_\_\_\_\_

CONTRACTOR NAME: \_\_\_\_\_ CONTRACT NO. \_\_\_\_\_

SPECIFICATION SECTION

NOTE: The Contractor's Representative must maintain and complete this report during instruction.

\_\_\_\_\_

PRELIMINARY INFORMATION

1. To be completed by the Contractor:

A. Proposed dates for instruction period: From \_\_\_\_\_ To \_\_\_\_\_

B. Name of Representative Instructor: \_\_\_\_\_

C. Approximate number of hours of training required: \_\_\_\_\_

2. To be completed by the Owner:

A. Owner's Designated Personnel to receive instruction: (Identify supervisor, if required).

- |          |           |
|----------|-----------|
| 1) _____ | 6) _____  |
| 2) _____ | 7) _____  |
| 3) _____ | 8) _____  |
| 4) _____ | 9) _____  |
| 5) _____ | 10) _____ |

B. Training Session Location: \_\_\_\_\_  
\_\_\_\_\_

-----

RECORD INFORMATION (To be Completed after Instruction Session)

Instructor's Signature: \_\_\_\_\_ Date Instruction Completed: \_\_\_\_\_

Construction Managers Signature: \_\_\_\_\_

Owner's Signature: \_\_\_\_\_

SPECIAL CONSIDERATIONS/NOTES:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## PART 1 GENERAL

### 1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required and perform tightness testing of cast in place reinforced concrete liquid retaining structures listed herein and all retesting until the structures meet the requirements specified herein.

### 1.02 RELATED WORK

- A. Concrete joints and joint accessories are included in Section 03 15 00.
- B. Cast in place concrete is included in Section 03 30 00.
- C. Waterproofing and dampproofing are included in Division 07.
- D. Slide gates and weir gates are included in Section 35 20 17.
- E. Valves are included in Section 40 05 50.

### 1.03 SUBMITTALS

- A. Submit for each structure, in accordance with Section 01 33 23, a detailed plan and schedule which shows the method of filling and disposal of water.
- B. Submit, in accordance with Section 01 33 23, a completed Tightness Test Report (Figure A, appended at the end of this Section) of each test for each structure.

### 1.04 REFERENCE STANDARDS

- A. American Concrete Institute (ACI)
  - 1. ACI 350.1-01 - Tightness Testing of Environmental Engineering Concrete Structures and Commentary.
- B. Where reference is made to the above standard, the revision in effect at the time of bid opening shall apply.

### 1.05 PROJECT / SITE REQUIREMENTS

- A. Coordinate timing and procedures for obtaining water for testing, structure testing, and water disposal with the Engineer a minimum of 30 days in advance of the actual testing.
- B. Water Source and Disposal

1. Water for testing shall be provided by the Contractor and coordinated through Tennessee American Water.
2. Test water shall be disposed of by the Contractor in an approved manner. Water shall not be disposed of by discharging it onto the ground surface of public or private land.

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION

### 3.01 GENERAL

- A. The tightness testing of cast in place reinforced concrete liquid retaining structures shall conform to ACI 350.1-01 and as specified herein.
- B. Perform tightness tests prior to waterproofing and dampproofing and prior to placing backfill around the structure in order to permit observation and detection of leakage points.

### 3.02 PREPARATION

- A. Remove all dirt, mud and debris from the structure prior to initiating tightness tests. The floor and sumps shall be flushed with water to provide a clean surface, ready for testing.
- B. Inlet and outlet pipes not required to be operational for the tests shall be temporarily sealed or bulkheaded prior to testing.
- C. Confirm that all sluice gates, valves, slide gates, and watertight access doors are completely closed. Repair and reset seals if necessary. All sluice gates, valves, slide gates, and watertight access doors shall be tested for leakage in accordance with the requirements of the respective Sections as part of the preparation for final tightness testing under this Section. Estimates of gate, valve, and door leakage will not be allowed as adjustments to the measured structure leakage.

### 3.03 EXAMINATION

- A. Inspect the structure to be tested for potential leakage paths including cracks, voids, honeycombs, and unsealed joints and repair such paths as directed by the Engineer, at no additional cost to the Owner.

### 3.04 TESTING PROCEDURES

- A. Conditions of Testing
  1. Do not begin filling of reinforced concrete structure until all concrete elements of the structure have attained the specified design strength, but not less than 14 days after all concrete elements have been placed.

## Tightness Testing of Liquid Retaining Structures

2. Filling of reinforced concrete structure shall not exceed a rate of 4-ft in 24 hours.
3. Fill reinforced concrete structure to the maximum operating water surface level and maintain the water at that level for at least 72 hours prior to beginning tightness tests to minimize water absorption by the concrete during testing.
4. Test only a single structure at a time. Concurrent testing of contiguous or adjacent structures will not be allowed. For the purpose of tightness testing a single structure is any tank, wet well, basin, cell, compartment, filter, channel or similar construction which may be isolated by gates, valves, stop logs, or the like such that it may be full of liquid when adjacent construction is empty.

## B. Testing Procedures

1. Duration of the test shall not be less than the time required to produce a drop in the water surface of 1/2-in based on the calculated maximum allowable leakage rate or 3 days, whichever is greater.
2. Measure water surface elevations at 24 hour intervals. Measure water surface elevations at the same four locations 90 degrees apart. Record water temperature 18-in below the water surface when taking the first and last sets of measurements. The methods used to determine the amount of precipitation or evaporation shall be approved by the Engineer.
3. The percentage of water volume loss shall be computed based on the measured change in water surface elevation, the area of the horizontal water surface, the initial water volume and any correction for precipitation or evaporation where applicable.

## C. Reports

1. Notify the Engineer of the scheduling of tests 30 working days prior to the tests. The Engineer may monitor any tightness testing performed on the structures.
2. Submit a completed Tightness Test Report on the form appended to this Section for each structure tested.

### 3.05 ACCEPTANCE

- A. The following conditions shall be considered as NOT meeting the criteria for acceptance regardless of the actual loss of water volume from the structure.
  1. Groundwater seeping or flowing into the structure through floors, walls, or wall-floor joints.
  2. Structures which exhibit seeping or flowing water from joints, cracks, voids, honeycombs, or from beneath the foundation.
  3. Damp spots on concrete surfaces.



- B. The tightness of concrete tanks and structures shall be considered acceptable when the conditions of Paragraph 3.05 A are not present and when loss of water volume is within the criteria listed below:
1. For unlined (or partially lined) reinforced concrete tanks, loss of volume not exceeding 0.10 percent in 24 hours (HST-100).
  2. For reinforced concrete tanks with fully lined walls, loss of volume not exceeding 0.05 percent in 24 hours (HST-050).
  3. For completely lined tanks, no measurable loss of volume (HST-NML).

### 3.06 REPAIRS AND RETESTING

- A. Structures failing the tightness test and not exhibiting visible leakage may be retested after an additional stabilization period of 7 days. Structures failing this second test shall be repaired at no additional cost to the Owner prior to further testing.
- B. Repaired structures shall be retested. Repairs and retesting shall be conducted at no additional cost to the Owner and shall be continued and repeated until the structure meets all requirements specified herein.

### 3.07 SCHEDULE

- A. The following structures shall be tested for tightness:
1. Diversion Structure
  2. Wet-Weather Pump Station

END OF SECTION

FIGURE A  
TIGHTNESS TEST REPORT

PROJECT \_\_\_\_\_ SUBMITTED BY \_\_\_\_\_  
STRUCTURE\* \_\_\_\_\_ TEST DATES \_\_\_\_\_

Allowable loss of water volume \_\_\_\_\_ percent in 24 hrs.

Measured loss of water volume \_\_\_\_\_ percent in 24 hrs. (From D below)

TEST READINGS

Water temperature at start \_\_\_\_\_ degrees F

Water temperature at end \_\_\_\_\_ degrees F

Water Surface Elevation

	Date	Time	Location 1	Location 2	Location 3	Location 4	Initials
1.	_____	_____	_____	_____	_____	_____	_____
2.	_____	_____	_____	_____	_____	_____	_____
3.	_____	_____	_____	_____	_____	_____	_____
4.	_____	_____	_____	_____	_____	_____	_____
5.	_____	_____	_____	_____	_____	_____	_____
Change in level		_____	_____	_____	_____	_____	_____
A.	Average change in level			_____			
B.	Correction for precipitation/evaporation			_____			
C.	Corrected change in level = CL =			_____			
D.	Measured percent water loss in 24 hrs. = $\frac{(CL) \times (\text{surface area}) \times (100)}{(\text{initial water volume}) (\text{number of test days})}$						

Notes and field observations\*\*

\* Attach a sketch showing a plan of the structure and measurement locations.

\*\* Place date and initials at the beginning of each entry.

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## PART 1 GENERAL

### 1.01 SCOPE OF WORK

- A. Provide a competent field services technician of the manufacturers of all equipment furnished under Divisions 23, 26, 28, 40, 43, 44, and 46 to supervise installation, adjustment, initial operation and testing, performance testing, final acceptance testing and startup of the equipment.
- B. Perform specified equipment field performance tests, final acceptance tests and startup services.

### 1.02 RELATED WORK

- A. Operation and Maintenance Data is included in Section 01 78 23.
- B. Performance and acceptance testing and startup requirements are included in the respective sections of Divisions 23, 26, 28, 40, 43, 44, and 46.

### 1.03 SUBMITTALS

- A. Submit name, address and resume of proposed field services technicians at least 30 days in advance of the need for such services.
- B. Submit, in accordance with Section 01 33 23, detailed testing procedures for shop tests, field performance tests and final acceptance tests as specified in the various equipment sections. Submittals shall include the following:
  - 1. Test procedures shall be submitted at least 30 days in advance of the proposed test dates and shall include at least the following information:
    - a. Name, classification, model and serial number of equipment to be tested, including reference to specifications section number and title.
    - b. Testing schedule of proposed dates and times for testing.
    - c. Summary of power, lighting, chemical, water, sludge, gas, etc., needs and identification of who will provide them.
    - d. Outline specific assignment of the responsibilities of the Contractor and manufacturers' factory representatives or field service personnel.
    - e. Detailed description of step-by-step testing requirements, with reference to appropriate standardized testing procedures and laboratory analyses by established technical organizations (e.g., ASTM, WPCF Standard Methods, etc.).
    - f. Samples of forms to be used to collect and record test data and to present tabulated test results.
  - 2. Copies of test reports upon completion of specified shop, performance and acceptance tests. Test reports shall incorporate the information provided in the

test procedures submittals and modified to reflect actual conduct of the tests and the following additional information:

- a. Copy of all test data sheets and results of lab analyses.
  - b. Summary comparison of specified test and performance requirements vs actual test results.
  - c. Should actual test results fail to meet specified test and performance requirements, describe action to be taken prior to re-testing the equipment.
3. Copies of the manufacturer's field service technician's report summarizing the results of his/her initial inspection, operation, adjustment and pre-tests. The report shall include detailed descriptions and tabulations of the points inspected, tests and adjustments made, quantitative results obtained, suggestions for precautions to be taken to ensure proper maintenance, and the equipment supplier's Certificate of Installation in the format specified herein.

#### 1.04 REFERENCE STANDARDS

- A. American Water Works Association (AWWA)
  1. AWWA C653 - Disinfection for Water Treatment Plants.
- B. ASTM International
- C. Water Environment Federation (WEF)
- D. Standard Methods for the Examination of Water and Wastewater (Latest Revision)
- E. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

#### 1.05 QUALITY ASSURANCE

- A. Field service technicians shall be competent and experienced in the proper installation, adjustment, operation, testing and startup of the equipment and systems being installed.
- B. Manufacturers' sales and marketing personnel will not be accepted as field service technicians unless they can prove their qualifications.

### PART 2 PRODUCTS (NOT USED)

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## PART 3 EXECUTION

### 3.01 PRELIMINARY REQUIREMENTS

- A. After installation of the equipment has been completed and the equipment is presumably ready for operation, before it is operated by others, the manufacturer's field service technician shall inspect, operate, test and adjust the equipment. The inspection shall include at least the following points where applicable:
  - 1. Soundness (without crack or otherwise damaged parts).
  - 2. Completeness in all details, as specified and required.
  - 3. Correctness of setting, alignment and relative arrangement of various parts.
  - 4. Adequacy and correctness of packing, sealing and lubricants.
- B. The operation, testing and adjustment shall be as required to prove that the equipment has been left in proper condition for satisfactory operation under the conditions specified.
- C. Upon completion of this work, the manufacturer's field service technician shall submit a signed report of the results of his/her inspection, operation, adjustments and tests.

### 3.02 WITNESS REQUIREMENTS

- A. Shop tests or factory tests may be witnessed by the Owner and/or Owner's representatives, as required by the various equipment specifications.
- B. Field performance and acceptance tests shall be performed in the presence of the Owner, the Owner's designed personnel and/or Owner's representatives.

### 3.03 STARTUP AND ACCEPTANCE OF THE TREATMENT PLANT AND RELATED SYSTEMS

- A. General Requirements
  - 1. Successfully execute the step-by-step procedure of startup, normal operation, shutdown, and performance demonstration specified herein.
  - 2. The startup and performance demonstration shall be successfully executed prior to Substantial Completion and acceptance by the Owner of the facility and its related systems.
  - 3. All performance tests and inspections shall be scheduled at least 10 working days in advance or as otherwise specified with the Owner and the Engineer. All performance tests and inspections shall be conducted during the work week of Monday through Friday, unless otherwise specified.

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## B. Preparation for Startup

1. Upon completion of the facility and all its related systems, all channels, basins and tanks shall be flushed with potable water and hydraulically checked for leaks, cracks, and defects in accordance with Section 01 45 25. They shall also be disinfected in accordance with AWWA C653.
2. All mechanical and electrical equipment shall be checked to ensure that it is in good working order and properly connected. Preliminary run-ins of the various pumps, compressors, and other remaining equipment shall be made. All systems shall be cleaned and purged as required. All sumps, tanks, basins, chambers, pump wells and pipelines which are hydraulically checked shall be drained and returned to their original condition once the water testing is complete.
3. All instruments and controls shall be calibrated through their full range. All other adjustments required for proper operation of all instrumentation and control equipment shall be made.
4. Perform all other tasks needed for preparing and conditioning the facility for proper operation.
5. No testing or equipment operation shall take place until it has been verified by the Engineer that all specified safety equipment has been installed and is in good working order.
6. No testing or equipment operation shall take place until it has been verified by the Engineer that all lubricants, tools, maintenance equipment, spare parts and approved equipment operation and maintenance manuals have been furnished as specified.

## C. Facilities Startup

1. Startup period shall not begin until all new treatment facilities and equipment have been tested as specified and are ready for operation. The Owner shall receive spare parts, safety equipment, tools and maintenance equipment, lubricants, approved operation and maintenance data and the specified operation and maintenance instruction prior to the startup with raw water. All valve tagging shall also be complete prior to this startup.
2. Demonstrate a seven consecutive 24-hour day period of successful operation of the facility as a prerequisite of Substantial Completion and Acceptance.
3. In the event of failure to demonstrate satisfactory performance of the facility on the first or any subsequent attempt, all necessary alterations, adjustments, repairs and replacements shall be made. When the facility is again ready for operation, it shall be brought on line and a new test shall be started. This procedure shall be repeated as often as necessary until the facility has operated continuously to the satisfaction of the Owner and Engineer, for the specified duration.

4. The Owner will furnish all operating personnel (other than vendor's or subcontractor's service personnel) needed to operate equipment during the final test period; however, said personnel will perform their duties under Contractor's direct supervision. Until performance tests are completed and units and systems are accepted by the Owner as substantially complete, the Contractor shall be fully responsible for the operation and maintenance of all new facilities.
5. The Owner will provide all necessary chemicals and electricity. However, the Contractor shall provide all necessary personnel of the various construction trades, i.e., electricians, plumbers, etc., and field service personnel of the major equipment suppliers on an 8 hour per day basis at the facilities and on a 24 hour per day basis locally during the startup period. Major equipment suppliers shall include, but not be limited to, the following:
  - a. Instrumentation and Control Equipment
  - b. All Pumping Equipment
  - c. Generator Equipment
  - d. HVAC
  - e. Conveyance Systems
6. Do not, at any time, allow the facility to be operated in a manner which subjects equipment to conditions that are more severe than the maximum allowable operating conditions for which the equipment was designed.

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EQUIPMENT SUPPLIER'S CERTIFICATE OF INSTALLATION

Owner \_\_\_\_\_

Project \_\_\_\_\_

Contract No. \_\_\_\_\_

EQUIPMENT SPECIFICATION SECTION \_\_\_\_\_

EQUIPMENT DESCRIPTION \_\_\_\_\_

I \_\_\_\_\_, Authorized representative  
of  
(Print Name)

\_\_\_\_\_  
(Print Manufacturer's Name)

hereby CERTIFY that \_\_\_\_\_  
(Print equipment name and model with serial no.)

\_\_\_\_\_ installed for the subject project has (have) been installed in a satisfactory manner, has (have) been tested and adjusted, and is (are) ready for final acceptance testing and operation on:

Date \_\_\_\_\_

Time \_\_\_\_\_

CERTIFIED BY: \_\_\_\_\_  
(Signature of Manufacturer's Representative)

Date: \_\_\_\_\_

END OF SECTION

## PART 1 GENERAL

### 1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required and test and clean all new pipelines installed under this Contract as specified herein.

### 1.02 RELATED WORK

- A. Buried pipelines are included in Division 33.
- B. Above grade and exposed pipelines are included in Division 40.

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION

### 3.01 GENERAL

- A. Furnish all necessary equipment and labor for cleaning and testing the pipelines. The procedures and methods shall be approved by the Engineer.
- B. Make any taps and furnish all necessary caps, plugs, etc., as required in conjunction with testing pipelines. Furnish a test pump, gauges and any other equipment required in conjunction with carrying out the hydrostatic tests.

### 3.02 CLEANING PIPELINES

- A. As pipe laying progresses and at the conclusion of the work thoroughly clean all new pipelines by flushing with water or other means to remove all dirt, stones, pieces of wood or other material which may have entered during the construction period. If, after this cleaning, obstructions remain, they shall be removed.

### 3.03 TESTING GRAVITY PIPELINES

- A. All gravity pipelines shall be tested for leakage by an infiltration or exfiltration test. Buried piping shall be tested by an infiltration test if the groundwater is more than 2-ft above the crown of the pipe for the full length of the section to be tested. Air testing may be used in lieu of an exfiltration test subject to approval of the Engineer.
- B. Exfiltration Test
  - 1. Leakage tests by exfiltration shall be made by creating a head in the pipeline to be tested by filling the line and either a manhole or temporary riser on one end of the line with water. The length of pipe to be tested shall be such that the head over the crown at the upstream end is not less than 2-ft and the head over

the downstream crown is not more than 6-ft. The pipe shall be plugged by pneumatic bags or mechanical plugs in such a manner that the air can be released from the pipe while it is being filled with water. Before any measurements are made, the pipe shall be kept full of water long enough to allow absorption and the escape of any trapped air to take place. Following this, a test period of at least one hour shall begin. Provisions shall be made for measuring the amount of water required to maintain the water at a constant level during the test period.

2. If any joint shows an appreciable amount of leakage, the jointing material shall be removed and the joint repaired. If any pipe is defective, it shall be removed and replaced. If the quantity of water required to maintain a constant head in the pipe does not exceed 1.9 gallons per inch of diameter per day per 100-ft of pipe and if all the leakage is not confined to a few joints, workmanship shall be considered satisfactory.

C. Infiltration Test

1. Pipe shall be tested for infiltration after the backfill has been placed and the ground water allowed to return to normal elevation. The length of line to be tested shall be not less than the length between adjacent manholes and not more than the total length of each size of pipe. The allowable infiltration shall be 1.9 gallons per inch of diameter per day per 100-ft of pipe in each section tested. There shall be no gushing or spurting leaks.
2. If an inspection of the completed pipeline or any part thereof shows pipes or joints which allow noticeable infiltration of water, the defective work or material shall be replaced or repaired as directed.
3. Rates of infiltration shall be determined by means of V-notch weirs, pipe spigots, or by plugs in the end of the pipe installed in an approved manner and at such times and locations as may be directed by the Engineer.

D. When the pipeline to be tested is reinforced concrete pipe, the allowable leakage in the above tests shall be 4.7 gallons per inch of diameter per 100-ft of pipe.

E. Low Pressure Air Test

1. Low-pressure air tests shall be made with equipment specifically designed and manufactured for the purpose of testing pipelines using low-pressure air. The equipment shall be provided with an air regulator valve or air safety valve so set that the internal air pressure in the pipeline cannot exceed 8 psig. Pneumatic plugs shall have a sealing length equal to or greater than the diameter of the pipe to be tested. All air used shall pass through a single control panel.
2. Install plugs at manholes. Brace plugs securely as required for safety and allow no one in the manholes while pressurizing the line or during the test.
3. Low-pressure air shall be introduced into the sealed line until the internal air pressure reaches 4 psig. The internal air pressure in the sealed line shall not be

allowed to exceed 8 psig. At least 2 minutes shall be allowed for the air pressure to stabilize in the section under test. After the stabilization period, the low-pressure air supply hose shall be quickly disconnected from the control panel. The time required in minutes for the pressure in the section under test to decrease from 3.5 to 2.5 psig shall not be less than that shown in applicable ASTM references.

4. If the pipe section does not pass the air test, sectionalize the section tested to determine the location of the leak. Once the leak has been located, repair and retest.

### 3.04 TESTING PRESSURE PIPELINES

- A. All pressure pipelines shall be pressure and leakage tested. Pipelines shall be subjected to a hydrostatic pressure of 50 percent above the normal operating pressure and this pressure maintained for at least 10 minutes. The leakage test shall be conducted at the maximum operating pressure as determined by the Engineer, and this pressure shall be maintained for at least two hours. The test pump and water supply shall be arranged to allow accurate measurement of the water required to maintain the test pressure. Where applicable, hydrant branch gate valves shall remain open during this test. The amount of leakage which will be permitted shall be in accordance with AWWA C600.

END OF SECTION

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## PART 1 GENERAL

### 1.01 SCOPE

- A. This Section includes testing which the Owner may require, beyond that testing required of the manufacturer, to determine if materials provided for the Project meet the requirements of these Specifications.
- B. This work also includes all testing required by the Owner to verify work performed by the Contractor is in accordance with the requirements of these Specifications, i.e., concrete strength and slump testing, soil compaction, etc.
- C. This work does not include materials testing required in various sections of these Specifications to be performed by the manufacturer, e.g., testing of pipe.
- D. The testing laboratory or laboratories will be selected by the Owner. The testing laboratory or laboratories will work for the Owner.

### 1.02 PAYMENT FOR TESTING SERVICES

- A. The cost of testing services required by the Contract to be provided by the Contractor shall be paid for by the Owner through the CASH ALLOWANCE (e.g., concrete testing, soil compaction, and asphalt testing).
- B. The cost of additional testing services not specifically required in the Specifications, but requested by the Owner or Engineer, shall be paid for by the Owner through the CASH ALLOWANCE.
- C. The cost of material testing described in various sections of these Specifications or as required in referenced standards to be provided by a material manufacturer, shall be included in the price bid for that item and shall not be paid for by the Owner.
- D. The cost of retesting any item that fails to meet the requirements of these Specifications shall be paid for by the Contractor. Retesting shall be performed by the testing laboratory working for the Owner.

### 1.03 LABORATORY DUTIES

- A. Cooperate with the Owner, Engineer and Contractor.
- B. Provide qualified personnel promptly on notice.
- C. Perform specified inspections, sampling and testing of materials.
  - 1. Comply with specified standards, ASTM, other recognized authorities, and as specified.
  - 2. Ascertain compliance with requirements of the Contract Documents.

- D. Promptly notify the Engineer and Contractor of irregularities or deficiencies of work which are observed during performance of services.
- E. Promptly submit three copies (two copies to the Engineer and one copy to the Contractor) of report of inspections and tests in addition to those additional copies required by the Contractor with the following information included:
  - 1. Date issued
  - 2. Project title and number
  - 3. Testing laboratory name and address
  - 4. Name and signature of inspector
  - 5. Date of inspection or sampling
  - 6. Record of temperature and weather
  - 7. Date of test
  - 8. Identification of product and Specification section
  - 9. Location of Project
  - 10. Type of inspection or test
  - 11. Results of test
  - 12. Observations regarding compliance with the Contract Documents
- F. Perform additional services as required.
- G. The laboratory is not authorized to release, revoke, alter or enlarge on requirements of the Contract Documents, or approve or accept any portion of the work.

#### 1.04 CONTRACTOR RESPONSIBILITIES

- A. Cooperate with laboratory personnel, provide access to work and/or comply with manufacturer's requirements.
- B. Provide to the laboratory, representative samples, in required quantities, of materials to be tested.
- C. Furnish copies of mill test reports.
- D. Furnish required labor and facilities to:
  - 1. Provide access to work to be tested;
  - 2. Obtain and handle samples at the site;

3. Facilitate inspections and tests;
  4. Build or furnish a holding box for concrete cylinders or other samples as required by the laboratory.
- E. Notify the laboratory sufficiently in advance of operation to allow for the assignment of personnel and schedules of tests.
- F. Laboratory Tests: Where such inspection and testing are to be conducted by an independent laboratory agency, the sample(s) shall be selected by such laboratory or agency, or the Engineer, and shipped to the laboratory by the Contractor at Contractor's expense.
- G. Copies of all correspondence between the Contractor and testing agencies shall be provided to the Engineer.

#### 1.05 QUALITY ASSURANCE

- A. Testing shall be in accordance with all pertinent codes and regulations and with procedures and requirements of the American Society for Testing and Materials (ASTM).

#### 1.06 PRODUCT HANDLING

- A. Promptly process and distribute all required copies of test reports and related instructions to insure all necessary retesting or replacement of materials with the least possible delay in the progress of the work.

#### 1.07 FURNISHING MATERIALS

- A. The Contractor shall be responsible for furnishing all materials necessary for testing.

#### 1.08 CODE COMPLIANCE TESTING

- A. Inspections and tests required by codes or ordinances or by a plan approval authority, and made by a legally constituted authority, shall be the responsibility of, and shall be paid for by the Contractor, unless otherwise provided in the Contract Documents.

#### 1.09 CONTRACTOR'S CONVENIENCE TESTING

- A. Inspection or testing performed exclusively for the Contractor's convenience shall be the sole responsibility of the Contractor.

#### 1.10 SCHEDULES FOR TESTING

- A. Establishing Schedule



1. The Contractor shall, by advance discussion with the testing laboratory selected by the Owner, determine the time required for the laboratory to perform its tests and to issue each of its findings, and make all arrangements for the testing laboratory to be on site to provide the required testing.
  2. Provide all required time within the construction schedule.
- B. When changes of construction schedule are necessary during construction, coordinate all such changes of schedule with the testing laboratory as required.
- C. When the testing laboratory is ready to test according to the determined schedule but is prevented from testing or taking specimens due to incompleteness of the work, all extra costs for testing attributable to the delay will be back-charged to the Contractor and shall not be borne by the Owner.

### 1.11 TAKING SPECIMENS

- A. Unless otherwise provided in the Contract Documents, all specimens and samples for tests will be taken by the testing laboratory or the Engineer.

### 1.12 TRANSPORTING SAMPLES

- A. The Contractor shall be responsible for transporting all samples, except those taken by testing laboratory personnel, to the testing laboratory.

END OF SECTION

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## PART 1 GENERAL

### 1.01 SCOPE

- A. This Section defines the overall requirements for Special Inspections as required in Section 1704 of the International Building Code (IBC) and any state or local amendments.
- B. Special Inspections are in addition to the typical municipal inspections required by the local building department that are specified in IBC Section 109, any specific inspections required in other Sections of these Specifications, any inspections and testing performed by the Contractor and any specific structural observation as may be required by IBC Section 1709.
- C. General provisions of the Contract, including General and Supplementary Conditions, other Division 1 Specification Sections and Drawings, apply to this Section.
- D. This Specification does not include material testing requirements as required in various Sections of these Specifications and as identified in Section 01 45 29 of these Specifications.

### 1.02 PURPOSE

- A. Special Inspection services are required in accordance with the 2012 IBC, Chapter 17.
- B. Special Inspections are required to ensure that those components shown on the contract documents, critical to the integrity of the structure, are being properly interpreted and construction is in compliance with the requirements specified or indicated. These inspections do not relieve the Contractor of their responsibility to comply with the all components of the Contract document requirements.
- C. Inspections, tests and related actions specified are not intended to limit the Contractor's quality control procedures that facilitate compliance with Contract document requirements.
- D. Requirements for the Contractor to provide quality control services required by the Engineer, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

### 1.03 DEFINITIONS

- A. Periodic Special Inspection – as denoted in the Schedule of Special Inspections, periodic special inspection consists of the part-time or intermittent observation of work requiring special inspection by an approved Special Inspector(s) who is present in the area where the work has been or is being performed and at the completion of work. The frequency of inspection for each component shall be 50% unless defined in the Specifications.

- B. Continuous Special Inspection – as denoted in the Schedule of Special Inspections, continuous special inspection consists of the full-time observation of work requiring special inspection by an approved special inspector who is continuously present in the area where the work is being performed.
- C. Registered Design Professional in Responsible Charge – licensed professional engineer identified on the Statement of Special Inspection and employed by Engineer or Owner.

#### 1.04 REFERENCES

- A. Refer to referenced Building Code and local amendments in this Specification.
- B. Special Inspection Plan (following this section).

#### 1.05 PAYMENT OF SERVICES

- A. The Owner or an agent of the Owner shall pay for special inspection services specified to be performed by independent agencies.
- B. The Owner or an agent to the Owner shall engage the Special Inspector(s) and submit to the Building Official a list of the individuals, approved agencies or firms intended to be retained for conducting special inspections.

#### 1.06 COORDINATION

- A. The Contractor shall coordinate the sequence of activities to accommodate required services with a minimum of delay. In addition, the Contractor, Special Inspector and each testing agency shall coordinate activities to avoid the necessity of removing and replacing construction to accommodate special inspections and tests.
  - 1. The Contractor shall schedule the times for special inspections at least seven days in advance of all tests, sample taking and similar activities.
  - 2. If the Special Inspector is prevented or delayed from inspecting, testing or taking specimens due to the incompleteness of the work or improper scheduling, the Contractor shall be back-charged all costs attributed to the delay or incompleteness of the work, and costs shall not be borne by the Owner or the Engineer.
- B. Interim Reports: The Special Inspector shall submit certified interim reports to the Contractor, Registered Design Professional in Responsible Charge and to the Building Official. Frequency of interim report submittals shall be as denoted in the Statement of Special Inspections. The reports shall include, as a minimum, a summary or description of the inspections and tests performed for that period, with locations; daily reports for that period; discrepancy reports including a list of unresolved items and parties notified.
- C. Discrepancy Notices: For each discrepancy or nonconforming item, the Special Inspector shall submit a discrepancy notice to the Engineer, Owner and Contractor

and shall include a copy in the interim report for that period. The discrepancy notice shall contain a description and exact location, a reference to applicable Drawing and/or Specifications, resolution or corrective action taken and the date.

- D. Final Report: The Special Inspector shall submit a signed Final Report of Special Inspections documenting and stating that all required special inspections were fulfilled and recorded. The final report shall include all discrepancy notices including corrections of any discrepancies noted in the inspections which have been corrected. The final report shall be submitted to the Building Official, the Owner, the Contractor, and the Registered Design Professional in Responsible Charge at the conclusion of the Project.
- E. Daily Reports of each inspection, test or similar service shall be prepared by the Special Inspector.
- F. The Contractor shall submit a Statement of Responsibility where required.
- G. The Contractor shall submit Fabricator's Certificates of Compliance for approved fabricators.

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION

### 3.01 STATEMENT OF SPECIAL INSPECTIONS

- A. At time of permit application, the Registered Design Professional in Responsible Charge shall submit the attached Statement of Special Inspections to the local Building Official having jurisdiction.
- B. The Statement of Special Inspections shall use a format acceptable to the local Building Official having jurisdiction. In lieu of any approved format, the form included in the Special Inspection Plan (following this section) shall be used.
- C. The Schedule of Special Inspections, the Requirements for Seismic Resistance and the Requirements for Wind Resistance shall be included with the Statement of Special Inspections.

### 3.02 SCHEDULE OF SPECIAL INSPECTIONS

- A. The Schedule of Special Inspections will be included in the Special Inspections Plan and will include a complete list of materials and work requiring Special Inspection.
- B. The special inspections to be performed and the frequency to perform them (periodic or continuous) will be included in the Schedule of Special Inspections.
- C. The Special Inspector shall maintain the Schedule of Special Inspections during the duration of construction and reflect any changes.

### 3.03 SPECIAL INSPECTOR'S REQUIREMENTS AND RESPONSIBILITIES

- A. Special Inspectors shall notify Contractor personnel of their presence and responsibilities at the jobsite.
- B. The Special Inspector is responsible for inspecting construction of the structural systems for the purpose of verifying compliance with the Building Code and the contract documents according to the Special Inspection Plan. The interpretations of the Contract documents will be provided by the appropriate engineer of record. The Special Inspector is responsible to the Building Official, the Registered Design Professional in Responsible Charge, and the Owner.
- C. The Special Inspector engaged to perform inspections and sampling of materials shall cooperate with the engineering design professionals and Contractor in performance of their duties, and shall provide qualified personnel to perform required inspections.
- D. The Special Inspector shall report any discrepancies (irregularities, non-conformances or deficiencies) observed in the work to the immediate attention of the Contractor for correction. All discrepancies shall be recorded on a Discrepancy Notice report similar to the attached form. The special inspector shall maintain and assign unique numbers to each notice. If any such discrepancy is not resolved in a timely manner to conform to the Contract documents, or is soon to be incorporated into the work, the Engineer shall be notified immediately of the discrepancy.
- E. The Special Inspector is not authorized to release, revoke, alter or enlarge requirements of the Contract documents, or approve or accept any portion of the work.
- F. The Special Inspector is not authorized to design any modifications, repairs or changes from the information contained on the Contract documents.
- G. The Special Inspector shall not perform any duties of the Contractor.
- H. The Special Inspector shall be responsible to prepare written inspection reports for each inspection visit. These reports shall be organized in a daily format and submitted with the interim report on a timely basis as noted in the Special Inspection Plan.
- I. The Special Inspector(s) shall keep records of all inspections and shall maintain copies of all required forms at the Project site.

### 3.04 CONTRACTOR RESPONSIBILITIES

- A. The Contractor is responsible to ensure that the special inspector is present for all work requiring special inspection. Any work that requires special inspection and is performed without the special inspector being present is subject to being demolished and reconstructed.

- B. The Contractor shall notify the Special Inspector sufficiently in advance of operations to permit assignment of personnel and scheduling of tests.
- C. The Contractor shall provide to the Special Inspector, a copy of or direct access to the construction documents.
- D. The Contractor shall retain special inspection records on-site to be readily available for review.
- E. The Contractor shall cooperate with Special Inspector and provide safe access to the work to be inspected.
- F. Submit Fabricator's Certificates of Compliance for approved fabricators.
- G. The Contractor shall cooperate with each Special Inspector performing required inspections and provide reasonable auxiliary services as requested. Auxiliary services required include, but are not limited to:
  - 1. Providing access to the work and furnishing incidental labor and facilities necessary to facilitate inspections and tests to assist the special inspector in performing tests/inspections.
  - 2. Providing storage space for the special inspector's exclusive use, such as for storing and curing concrete test samples and delivery of samples to testing laboratories.
  - 3. Providing the Special Inspector with access to all approved submittals.
  - 4. Providing security and protection of samples and test equipment at the Project site.
  - 5. Provide samples of materials to be tested in required quantities.
- H. Each Contractor responsible for the construction or fabrication of a system or component described in the Schedule of Special Inspection must submit a written Statement of Responsibility to the Building Official, Registered Design Professional and the Owner (or owner's agent) where required by the Statement of Special Inspections, prior to the commencement of work on the system or component. The Contractor's Statement of Responsibility shall include:
  - 1. Acknowledgement of awareness of the special requirements contained in the statement of special inspections.
  - 2. Acknowledgement that control will be exercised to obtain conformance with the construction documents approved by the building official.
  - 3. Procedures to exercising control within the contractor's organization, the method and frequency of reporting and the distribution of the reports.
  - 4. Identification and qualification of the person(s) exercising such control and their positions in the organization.

### 3.05 REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE RESPONSIBILITIES

- A. Shall prepare the Special Inspection Plan with the assistance of the Structural Engineer of Record.
- B. Shall submit the Statement of Special Inspections which shall include the Schedule of Special Inspections to the Building Official. These documents are to be submitted with the permit application.
- C. Shall perform the duties of the Owner, where engaged as the Owner's Agent.
- D. Shall approve qualified Special Inspectors/Inspection Agencies submitted by the special inspection agency or firm.
- E. Shall respond to identified field discrepancies.

### 3.06 OWNER'S RESPONSIBILITIES

- A. The Owner or an agent of the Owner is responsible for funding special inspection services.
- B. Owner or an agent of the Owner shall ensure that the scope of work and duties of the Special Inspector as outlined in the Statement of Special Inspection are not compromised.
- C. Owner or an agent of the Owner shall submit a list of qualified individuals, qualified agencies or firms to be retained for conducting the intended special inspections to the Registered Design Professional in Responsible Charge and Building Official.

### 3.07 REPAIR AND PROTECTION

- A. Upon completion of inspection, testing, sample-taking and similar services, repair damaged construction and restore substrates and finishes to eliminate deficiencies, including deficiencies in visual qualities of exposed finishes.
- B. Protect construction exposed by or for quality control service activities, and protect repaired construction.
- C. Repair and protection is the Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing or similar services.

### 3.08 SPECIAL INSPECTOR'S SCOPE OF WORK

- A. See Special Inspection Plan following this section (Attachment A) for Special Inspector's scope of work.

END OF SECTION

**CONTRACTOR'S STATEMENT OF RESPONSIBILITY**

Each contractor responsible for the construction or fabrication of a main wind or seismic force-resisting system, designated seismic system or wind or seismic-resisting component listed in the Statement of Special Inspections, Requirements for Seismic or Wind Resistance, must submit a Statement of Responsibility.

**PROJECT:** \_\_\_\_\_

**CONTRACTOR'S NAME:** \_\_\_\_\_

**ADDRESS:** \_\_\_\_\_

**LICENSE NO.:** \_\_\_\_\_

Description of building systems and components included in Statement of Responsibility:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**CONTRACTOR'S ACKNOWLEDGEMENT OF SPECIAL REQUIREMENTS**

I hereby acknowledge that I have received, read, and understand the Statement of Special Inspections and Special Inspection Plan.

I hereby acknowledge that control will be exercised to obtain conformance with the Special Inspection Plan and the approved construction documents.

\_\_\_\_\_  
Name and Title (type or print)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**CONTRACTOR'S PROVISIONS FOR QUALITY CONTROL**

Procedures for exercising control within the contractor's organization, the method and frequency of reporting and distribution of reports is attached to this Statement.

Identification and qualifications of the person(s) exercising such control and their position(s) in the organization are attached to this Statement.



**FABRICATOR’S CERTIFICATE OF COMPLIANCE**

Each approved fabricator that is exempt from Special Inspection of shop fabrication and implementation procedures per section 1704.2 of the International Building Code must submit *Fabricator’s Certificate of Compliance* at the completion of fabrication.

**PROJECT:** \_\_\_\_\_

**FABRICATOR’S NAME:** \_\_\_\_\_

**ADDRESS:** \_\_\_\_\_

**CERTIFICATION OR APPROVAL AGENCY:** \_\_\_\_\_

**CERTIFICATION NUMBER:** \_\_\_\_\_

**DATE OF LAST AUDIT OR APPROVAL:** \_\_\_\_\_

Description of structural members and assemblies that have been fabricated:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I hereby certify that items described above were fabricated in strict accordance with the approved construction documents.

\_\_\_\_\_  
Name and Title (type or print)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

Attach copies of fabricator’s certification or building code evaluation service report and fabricator’s quality control manual.

## ATTACHMENT A

# Special Inspection Plan

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## DuPont Pump Station and Basin Improvements – Phase 2 Chattanooga, Tennessee

September 2019

### Table of Contents:

- Special Inspection Requirements (Pages 1-12)
- Statement of Special Inspections (Pages 13-15)
- Schedule of Special Inspections (Pages 16-26)
- Report Forms (Pages 27-30)
- Checklists (Pages 31-34)

## 1.0 SPECIAL INSPECTION REQUIREMENTS

### 1.01 OVERVIEW

- A. Special Inspection services are required in accordance with the 2012 IBC, Chapter 17.
- B. This Special Inspection Plan defines the overall requirements for Special Inspections as required in Section 1704 of the International Building Code (IBC) and any State or local amendments.
- C. Special Inspections are in addition to the municipal inspections required by the local building department specified in IBC Section 109, any specific inspections required in other Standards, and any specific structural observations as required by the IBC Section 1709.
- D. Special Inspections are required to ensure that those components shown on the contract documents, critical to the integrity of the structure, are being properly interpreted and construction is in compliance with the requirements specified or indicated. These special inspections do not relieve the Contractor of their responsibility to comply with the all components of the Contract document requirements.
- E. Special inspections, tests and related actions specified herein are not intended to limit the Contractor's quality control procedures that facilitate compliance with Contract document requirements.
- F. Requirements for the Contractor to provide quality control services required by the Engineer, Owner, or authorities having jurisdiction are not limited by provisions of this Special Inspection Plan.
- G. The Special Inspection process is also in addition to the inspections and testing performed by the Contractor.

### 1.02 DEFINITIONS

- A. Periodic Special Inspection – as denoted in the Schedule of Special Inspections, periodic special inspection consists of the part-time or intermittent observation of work requiring special inspection by an approved Special Inspector(s) who is present in the area where the work has been or is being performed and at the completion of work. The frequency of inspection for each structural component shall be at least 50% of the total unless defined otherwise in this Special Inspection Plan.
- B. Continuous Special Inspection – as denoted in the Schedule of Special Inspections, continuous special inspection consists of the full-time observation of work requiring special inspection by an approved Special Inspector who is continuously present in the area where the work is being performed.

- C. Registered Design Professional in Responsible Charge – licensed professional engineer identified in the Statement of Special Inspection and employed by Engineer or Owner.

### 1.03 SUBMITTALS

- A. Statement of Qualifications: The Special Inspector(s) shall submit a detailed statement of his qualifications to the Registered Design Professional in Responsible Charge demonstrating compliance with the requirements of this Special Inspection Plan.
- B. Special Inspector(s): Names and qualifications of the Special Inspector(s) and Special Inspector's representatives shall be submitted for review and approval to the Owner, the Building Official having jurisdiction, and the Registered Design Professional in Responsible Charge. As used herein, the term Special Inspector includes the authorized representative, unless otherwise indicated. Insofar as possible, the Special Inspector shall not be changed throughout the duration of the Project.
- C. Daily Reports of each inspection, test or similar service shall be prepared and submitted with various reports by the special inspector(s). An example of a daily report is included herein.
- D. Interim Reports: The Special Inspector shall submit certified interim reports to the Contractor, Registered Design Professional in Responsible Charge and to the Building Official. Frequency of interim report submittals shall be as denoted in the Statement of Special Inspections. The reports shall include, as a minimum, a summary or description of the inspections and tests performed for that period, with locations; daily reports for that period; discrepancy reports including a list of unresolved items and parties notified. An example of an interim report is included herein.
- E. Discrepancy Notices: For each discrepancy or nonconforming item, the Special Inspector shall submit a discrepancy notice to the Engineer, Owner and Contractor and shall include a copy in the interim report for that period. The discrepancy notice shall contain as a minimum, a description and exact location, a reference to applicable Drawing and/or Specifications, resolution or corrective action taken and the date.
- F. Final Report: The Special Inspector shall submit a stamped and signed Final Report of Special Inspections documenting and stating that all required special inspections were fulfilled and recorded. The final report shall include as a minimum, a summary sheet similar to the form included in this Special Inspection Plan, all interim reports (including associated daily reports), the completed Schedule of Special Inspections, and discrepancy notices including corrections of any discrepancies noted in the inspections which have been corrected. The final report shall be submitted to the Building Official, the Owner, the Contractor, and the Registered Design Professional in Responsible Charge at the conclusion of the project. Each Special Inspector corresponding to an agent number in the Schedule of Special Inspections will be required to submit a Final Report. The special inspection program will not be considered complete until forms from all agents have been submitted and received. An example of a final report is included herein.

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## 2.0 SPECIAL INSPECTORS

### 2.01 SCHEDULE OF SPECIAL INSPECTIONS

- A. The Schedule of Special Inspections includes:
  - 1. A complete list of materials and work requiring Special Inspection.
  - 2. The special inspections to be performed and the frequency to perform them (periodic or continuous).
  - 3. Inspector qualifications, qualified individuals, agencies or firms recommended to be retained for conducting such inspections. Each special inspector or agencies shall be written at the end of the schedule. The number next to the individual, firm or agency shall be listed in the schedule under the column heading “agent” for the special inspection that individual, firm or agency performs. In cases where more than one special inspector is assigned to a given task, the numbers of each would be listed.
  - 4. In cases where multiple structures are included within a project, more than one Schedule of Special Inspections could be developed.
- B. The Special Inspector shall maintain the Schedule of Special Inspections during the duration of construction and reflect any changes.
- C. The Schedule of Special Inspections for this Project is included in this Special Inspection Plan.

### 2.02 SPECIAL INSPECTOR’S REQUIREMENTS AND RESPONSIBILITIES

- A. Special Inspector shall review the approved (signed and sealed) plans and specifications for special inspection requirements.
- B. Special Inspector shall review the Special Inspection Plan including the Statement of Special Inspection and the Schedule of Special Inspections.
- C. Special Inspector shall notify Contractor personnel of their presence and responsibilities at the jobsite.
- D. The Special Inspector is responsible for inspecting construction of the structural systems for the purpose of verifying compliance with the IBC Code and the Contract documents according to the Statement and Schedule of Special Inspections. The interpretations of the Contract documents will be provided by the Registered Design Professional in Responsible Charge.
- E. The Special Inspector shall meet the applicable qualifications set forth in Article 2.03 of this Special Inspection Plan.

Special Inspection and Testing – Special Inspection Plan

- F. The Special Inspector engaged to perform inspections and sampling of materials shall cooperate with the engineering design professionals and Contractor in performance of their duties, and shall provide qualified personnel to perform required inspections.
- G. The Special Inspector shall be responsible to prepare and submit certified interim reports. Frequency of interim report submittals shall be as denoted in the Statement of Special Inspections. The reports shall include as a minimum, a summary or description of the inspections and tests performed for that period, with locations; daily reports for that period; discrepancy reports including a list of unresolved items and parties notified.
- H. The Special Inspector shall report any discrepancies (irregularities, non-conformances or deficiencies) observed in the work to the immediate attention of the Contractor for correction. All discrepancies shall be recorded on a Discrepancy Notice report similar to the attached form. The special inspector shall maintain and assign unique numbers to each notice. If any such discrepancy is not resolved in a timely manner to conform to the Contract documents, or is soon to be incorporated into the work, the Registered Design Professional in Responsible Charge shall be notified immediately of the discrepancy.
- I. The Special Inspector is not authorized to release, revoke, alter or enlarge requirements of the Contract documents, or approve or accept any portion of the work.
- J. The Special Inspector is not authorized to design any modifications, repairs or changes from the information contained on the Contract documents.
- K. The Special Inspector shall not perform any duties of the Contractor.
- L. The Special Inspector shall be responsible to prepare written daily inspection reports for each inspection visit. These reports shall be organized in a daily format and submitted with the interim report on a timely basis as noted in the Statement of Special Inspections.
- M. The Special Inspector shall maintain the Statement and Schedule of Special Inspection forms during the course of construction and reflect any changes. Changes in names of Special Inspectors, changes in building materials or completed inspections shall be so noted. For completed inspections, the special inspector shall initial and date the “date completed” box in the Schedule of Special Inspections as the inspection activities are completed.
- N. The Special Inspector(s) shall keep records of all inspections.
- O. The Special Inspector shall be responsible to prepare, stamp, sign and submit a signed Final Report of Special Inspections documenting and stating that all required special inspections were fulfilled and recorded. The final report shall include a summary sheet similar to the form included in this Special Inspection Plan, all interim reports (including associated daily reports), the completed Schedule of Special Inspections, and discrepancy notices including corrections of any discrepancies noted in the inspections which have been corrected. The final report shall be submitted to

the Building Official, the Owner, the Contractor and the Registered Design Professional in Responsible Charge at the conclusion of the project.

- P. The Special Inspector shall maintain copies of all required forms at the Project site.

## 2.03 SPECIAL INSPECTOR QUALIFICATIONS

- A. Qualification for Service Agencies: Special Inspection service agencies shall be accredited by the IAS Special Inspection Agency Accreditation Program. Independent testing laboratories, shall be prequalified as complying with “Recommended Requirements for Independent Laboratory Qualification” by the American Council of Independent Laboratories, accredited by a program recognized by the National Cooperation for Laboratory Accreditation, and which specialize in the types of inspections and tests to be performed.
  - 1. Each independent special inspection agency engaged on the Project shall be authorized by authorities having jurisdiction to operate in the state in which the Project is located.
- B. Special Inspector(s) shall comply with the special inspection, testing and reporting requirements of building codes and structural tests and special inspections established in the Contract documents.
- C. All references to Professional Engineer (PE) qualifications shall include being currently licensed in the Project state and the scope of special inspection is within area of expertise (structural, mechanical, electrical, civil, geotechnical) as observed by the State Boards of Professional Registration.
- D. An inspector who does not meet the minimum qualifications for special inspector may be allowed to perform “Special Inspection” at the discretion of the agency’s responsible professional engineer, provided each of the following conditions are met:
  - 1. Individual is working under direct and continuous supervision of a fully qualified special inspector.
  - 2. Individual has at least 10 years of direct inspection experience and is working under direct and periodic supervision of a fully qualified PE to perform the specific special inspection.
  - 3. Individual is specifically approved by the Building Official and the Registered Design Professional in Responsible Charge.
- E. Soils: The special inspector shall meet one of the following qualifications to inspect and test placement and compaction of soils:
  - 1. Current ICC certification in soils inspection and a minimum of five years of experience related directly to soils testing and inspection; or
  - 2. PE in geotechnical engineering and a minimum of five years of direct experience in site preparation, fill placement and compaction type construction; or

3. NICET II or III (geotechnical /construction or construction material testing/soils), a minimum of five years or experience related directly to soils testing and inspection and under the direct supervision of a P.E. in geotechnical engineering.
- F. Pier and Pile Foundation Construction: The special inspector shall meet the following qualifications:
1. Current ICC certification in reinforced concrete inspection in addition to one of the following:
    - a. PE and a minimum of five years of direct experience in pier and pile foundation construction including load tests; or
    - b. NICET III or IV (geotechnical/construction or construction material testing/soils), and a minimum of five years or experience to observe installation only (load tests excluded); or
    - c. NICET CT Certified Engineering Technologist and a minimum of five years of experience to observe installation only (load tests excluded).
- G. Reinforced Concrete Construction: The special inspector shall meet the following qualifications to inspect reinforced concrete construction:
1. Current ICC certification in reinforced concrete inspection and a minimum of two years of experience; or
  2. PE and a minimum of three years of direct experience in reinforced concrete construction; or
  3. National Institute for Certification of Engineering Technicians (NICET) Level II or III certification in reinforced concrete construction and three years of experience; or
  4. ACI Concrete Construction Special Inspector and a minimum of five years of direct experience in reinforced concrete construction.
- H. Post-Installed Structural Anchors in Concrete: The special inspector shall meet the following qualifications to inspect post-installed structural anchors in concrete:
1. Current ICC certification in reinforced concrete inspection and a minimum of two years of direct experience in post-installed anchor construction, or
  2. PE and a minimum of one year of direct experience in post-installed anchor design or construction,
- I. Structural Steel Fabricators: The special inspector shall meet the following qualifications:
1. Current International Code Council (ICC) certification in structural steel inspection and a minimum of one year of experience structural steel construction; or



2. American Welding Society (AWS) Certified Weld Inspector (CWI) and a minimum of one year of direct experience in structural steel construction.
- J. Structural Steel, Welding and Bolting Construction: The special inspector shall meet the following qualifications:
1. Welding: Current ICC certification as a structural steel and welding special inspector and a minimum of one year experience or AWS Certified Welding Inspector (CWI) and a minimum of one year experience.
  2. Bolting: Current ICC certification as a structural steel and bolting special inspector and a minimum of one year experience or PE with a minimum of one year of direct experience in structural steel bolted construction.
  3. Structural Steel: PE and a minimum of three years of direct experience in structural steel construction or current ICC certification as a structural steel and bolting special inspector and a minimum of one year experience.
- K. Seismic and Wind Resistant Systems and Components: The special inspector shall meet all the following qualifications:
1. PE and a minimum of two years of direct experience.

## 2.04 MINIMUM CHECKLIST FOR SPECIAL INSPECTOR

- A. General: Review approved plans and specifications for special inspection requirements. Comply with special inspection requirements of the enforcing jurisdiction. Notify the Contractor of deviations from approved plans and specifications. If the deviations are uncorrected, notify the Registered Design Professional in Responsible Charge and the Building Official. Submit reports as defined in related sections of this document.
- B. Checklists: Refer to checklists included herein and the descriptions below. The checklists are provided as a guide – other checklists may be used provided approval is obtained from the Registered Design Professional in Responsible Charge.
- C. Soils Special Inspection
1. Verify that the subgrade has been approved by the geotechnical and that the subgrade has not been disturbed by inclement weather during the time between inspection and concrete placement.
  2. Verify that the aggregate below the footings has been properly placed and compacted.
  3. Verify that the retaining wall backfill has been properly placed.
- D. Reinforced Concrete Special Inspector
1. Concrete Quality: Verify that individual batch tickets indicate delivery of the approved mix as specified. Verify time limits of mixing, total water added, and

proper consistency and workability for placement. Determine the required type, quantity and frequency of tests to be performed on fresh and hardened concrete. Observe sampling of concrete, field testing of fresh concrete and making of test specimens. Provide or arrange for proper specimen identification, site storage and protection, and transportation to the testing laboratory. Provide or arrange for communication of field-testing results to the architect or engineer of record and to the Building Official.

2. **Concrete Reinforcement:** Verify that reinforcing steels are of the type, grade and size specified and are in conformance with acceptable quality standards. Ensure that reinforcing steel is free of oil, dirt and rust and that steel is properly coated and/or sheathed as specified. Verify that reinforcing steels are located within acceptable tolerances and are adequately supported and secured to prevent displacement during concrete placement. Verify that minimum concrete cover is provided. Verify that placement of reinforcing steel (or ducts) complies with required spacing, profile and quantity requirements, as indicated by both the approved plans and installation drawings. Verify that hooks, bends, ties, stirrups and supplemental reinforcement are fabricated and placed as specified. Verify that required lap lengths, stagger and offsets are provided. Verify proper installation of approved mechanical connections per the manufacturer's instruction and/or evaluation reports. Ensure that all welds of reinforcing steel and other weldments are as specified and have been inspected and approved by an approved welding inspector.
3. **Formwork, Joints and Embeds:** Verify that formwork will provide concrete elements of the specified size and shape. Verify that the location and preparation of construction joints are in accordance with the approved plans, specifications and building code requirements. Verify that the type, quantity, size, spacing and location of embedded items are as specified.
4. **Concrete Placement, Protection and Curing:** Verify acceptable conditions of the place of deposit before the concrete is placed. Verify that methods of conveying and depositing concrete avoid contamination and segregation of the mix. Verify that concrete is being properly consolidated during placement. Verify that concrete is protected from temperature extremes, and determine that proper curing is initiated.

E. **Pre-stressed Concrete Special Inspector**

1. **Concrete Quality:** Verify that individual batch tickets indicate delivery of the approved mix as specified. Verify time limits of mixing, total water added, and proper consistency and workability for placement. Determine the required type, quantity and frequency of tests to be performed on fresh and hardened concrete. Observe sampling of concrete, field testing of fresh concrete and making of test specimens. Provide or arrange for proper specimen identification, site storage and protection, and transportation to the testing laboratory. Provide or arrange for communication of field testing results to the architect or engineer of record and to the Building Official.
2. **Concrete Reinforcement:** Verify that reinforcing steel and tendons are of the type, grade and size specified and are in conformance with acceptable quality

standards. Verify that the reinforcing steel and tendon system are fabricated in conformance with acceptable quality standards. Verify that the condition of tendons at the time of concrete placement are free of oil, dirt and excessive rust, and are properly coated and/or sheathed as specified. Verify that reinforcing steel and tendons are located within specified tolerances, and are adequately supported and secured to prevent displacement during concrete placement. Verify that minimum concrete cover is provided. Verify that placement of reinforcing steel and tendons (or ducts) comply with spacing, profile and quantity requirements, as indicated by the installation drawings and approved plans. Verify that hooks, bends, ties, stirrups and supplemental reinforcement are fabricated and placed as specified. Verify that required lap lengths, stagger and offsets are provided. Verify proper installation of approved mechanical connections per the manufacturer's instructions and/or evaluation reports. Verify that welds have been inspected and approved as specified. Verify that prestressed rock and soil anchors are fabricated and installed as specified.

3. Pre-stressing and Grouting: Verify that the required concrete strength has been attained prior to transferring prestressing forces. Verify proper equipment calibration. Verify that proper stressing (or tensioning) sequences are used, proper jacking forces are applied, and acceptable elongations are attained and recorded. Verify that tendons and anchorages are properly sealed or otherwise protected as specified. Verify that ducts including inlets and outlets are of the required size, are mortar-tight and are located correctly. Verify that proper grout materials, strength and grouting pressures are used as specified.
4. Formwork, Joints and Embedments: Verify that formwork will provide concrete elements of the specified size and shape. Verify that the location and preparation of construction joints are in accordance with the approved plans, specifications, and applicable codes and standards. Verify that the type, quantity, size, spacing, condition and location of embedded items are as specified.
5. Concrete Placement, Protection and Curing: Verify acceptable condition of the place of deposit before the concrete is placed. Verify that methods of conveying and depositing concrete avoid contamination, segregation of the mix, and displacement of reinforcement, embedments and forms. Verify that concrete is being properly consolidated during placement. Verify that concrete is protected from ambient temperature extremes during placement and curing. Verify that concrete is being cured as specified by approved plans, specifications and applicable codes.

#### F. Structural Steel and Bolting Special Inspector

1. Material Sampling, Testing and Verification: Verify that the steel shapes and bolts are of the type, size, grade and condition specified on the approved plans and specifications. Verify the required type, quantity, location and frequency of tests to be performed, and witness preparation of properly identified test material samples on all materials. Provide or arrange for documentation and transportation of samples to the laboratory. Verify that required testing is performed on materials as required by applicable standards and specifications.

2. High-Strength Bolting: Verify correct type, size and location of bolts and bolt holes, nuts and washers for type of connection specified on approved plans and specifications. Verify protected storage of bolts, nuts and washers as required by applicable standards and specifications. Verify that faying surfaces at connections utilizing high-strength bolts are in compliance with applicable standards. Observe or conduct bolt tension verification tests on required high-strength bolt assemblies. Identify and verify joint type and installation of bolt assemblies per approved plans and specifications. Verify use of the approved method and sequence of bolt tightening.
3. Steel Framing Observation: Verify that structural steel frame orientation, details and frame member sizes are in accordance with approved plans and specifications. Verify that column base plates are the designed configuration, have correct sized holes and proper clearance for grouting. Verify grout placement and sampling. Verify that base plates are securely seated and fastened in accordance with applicable plans and specifications.

G. Structural Welding Special Inspector

1. Material Sampling, Testing and Verification: Verify that the steel shapes, base metals, filler metals and gases are of the type, size, grade and condition specified on the approved plans, specifications and Welding Procedures Specifications. Verify the required type, quantity, location and frequency of tests to be performed, and witness preparation of properly identified test material samples on all materials. Provide or arrange for documentation and transportation of samples to the testing laboratory. Verify that required destructive testing is performed on materials as required by applicable standards and specifications. Verify that required nondestructive examinations are performed as required by applicable standards and specifications.
2. Structural, Reinforcing and Sheet Steel Welding: Verify that the welding equipment and process has the capability to produce the specified welds. Insure that welding equipment is calibrated and appropriate for use with the welding process. Verify and/or witness qualification of welders, welding operators and tackers for conformance with American Welding Society standards and specifications. Verify that welders are qualified to perform the specified work. Verify that the proposed welding procedure for structural steel, reinforcing steel and sheet metal is a standard prequalified procedure, or has been properly qualified and approved. Verify that welding processes, sequences and procedures are followed in accordance with approved Welding Procedures Specifications. Review approved plans and specifications for weld types and locations. Verify that filler materials are stored and handled in accordance with manufacturer and Project Specifications. Verify that base metal to be welded is properly prepared and oriented. Verify that weldments have proper joint geometry and have backing and start/runoff tabs where required. Inspect to ensure that weld and structural steel repairs are performed in accordance with approved procedures. Verify that fabricated elements are within permissible tolerances. Verify that welds have the specified length and effective throat. Verify that the weld profile meets applicable shape, size and quality requirements.

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### 3.0 CONTRACTORS, OWNERS, AND REGISTERED DESIGN PROFESSIONALS IN RESPONSIBLE CHARGE

#### 3.01 CONTRACTOR RESPONSIBILITIES

- A. The Contractor is responsible to ensure that the special inspector is present for all work requiring special inspection. Any work that requires special inspection and is performed without the special inspector being present is subject to being demolished and reconstructed.
- B. The Contractor shall notify the Special Inspector sufficiently in advance of operations to permit assignment of personnel and scheduling of tests. A minimum of 48 hours notice is required.
- C. The Contractor shall provide to the Special Inspector, a copy of or direct access to the construction documents.
- D. The Contractor shall retain special inspection records on-site to be readily available for review.
- E. The Contractor shall cooperate with Special Inspector and provide safe access to the work to be inspected.
- F. The Contractor shall cooperate with each Special Inspector performing required inspections and provide reasonable auxiliary services as requested. Auxiliary services required include, but are not limited to:
  - 1. Providing access to the work and furnishing incidental labor and facilities necessary to facilitate inspections and tests to assist the special inspector in performing tests/inspections.
  - 2. Providing storage space for the special inspector's exclusive use, such as for storing and curing concrete test samples and delivery of samples to testing laboratories.
  - 3. Providing security and protection of samples and test equipment at the Project site.
  - 4. Providing the Special Inspector with access to all approved submittals.
  - 5. Provide samples of materials to be tested in required quantities.
- G. Each Contractor responsible for the construction or fabrication of a system or component described in the Schedule of Special Inspection must submit a written Statement of Responsibility to the Building Official, Registered Design Professional and the Owner (or owner's agent) where required by the Statement of Special Inspections, prior to the commencement of work on the system or component. The Contractor's Statement of Responsibility shall include:

1. Acknowledgement of awareness of the special requirements contained in the statement of special inspections.
  2. Acknowledgement that control will be exercised to obtain conformance with the construction documents approved by the Building Official.
  3. Procedures to exercising control within the contractor's organization, the method and frequency of reporting and the distribution of the reports.
  4. Identification and qualification of the person(s) exercising such control and their positions in the organization.
- H. The Contractor shall coordinate the sequence of activities to accommodate required services with a minimum of delay. In addition, the Contractor, Special Inspector and each testing agency shall coordinate activities to avoid the necessity of removing and replacing construction to accommodate special inspections and tests.
1. The Contractor shall schedule the times for special inspections at least two days in advance of all tests, sample taking and similar activities.
  2. If the Special Inspector is prevented or delayed from inspecting, testing or taking specimens due to the incompleteness of the work or improper scheduling, the Contractor shall be back-charged all costs attributed to the delay or incompleteness of the work, and costs shall not be borne by the Owner or the Engineer.

### 3.02 REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE RESPONSIBILITIES

- A. Shall prepare the Special Inspection Plan including the Statement of Special Inspections and the Schedule of Special Inspections with the assistance of the Structural Engineer of Record.
- B. Shall submit the Statement of Special Inspections and the Schedule of Special Inspections to the Building Official. These documents are to be submitted with the permit application.
- C. Shall perform the duties of the Owner, where engaged as the Owner's Agent.
- D. Shall approve qualified Special Inspectors/Inspection Agencies submitted by the special inspection agency or firm.
- E. Shall respond to identified field discrepancies.

### 3.03 OWNER'S RESPONSIBILITIES

- A. The Owner or an agent of the Owner is responsible for funding special inspection services.

- B. Owner or an agent of the Owner shall ensure that the scope of work and duties of the Special Inspector as outlined in the Statement of Special Inspection are not compromised.
- C. Owner or an agent of the Owner shall submit for approval a list of qualified individuals, qualified agencies or firms to be retained for conducting the intended special inspections to the Registered Design Professional in Responsible Charge and Building Official.

## STATEMENT OF SPECIAL INSPECTIONS

PROJECT: \_\_\_\_\_

LOCATION: \_\_\_\_\_

PERMIT APPLICANT: \_\_\_\_\_

APPLICANT'S ADDRESS: \_\_\_\_\_

STRUCTURAL ENGINEER OF RECORD: \_\_\_\_\_

REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE: \_\_\_\_\_

This Statement of Special Inspections is submitted in accordance with Section 1704 of the 2012 International Building Code. It includes a *Schedule of Special Inspection Services* applicable to the above-referenced Project as well as the identity of the individuals, agencies, or firms intended to be retained for conducting these inspections. If applicable, it includes *Requirements for Seismic Resistance* and/or *Requirements for Wind Resistance*.

Are *Requirements for Seismic Resistance* included in the *Statement of Special Inspections*?  Yes  No

Are *Requirements for Wind Resistance* included in the *Statement of Special Inspections*?  Yes  No

The Special Inspector(s) shall keep records of all inspections and shall furnish interim inspection reports to the Building Official and to the Registered Design Professional in Responsible Charge at a frequency shown below. Discrepancies shall be brought to the immediate attention of the Contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the Building Official and the Registered Design Professional in Responsible Charge prior to completion of that phase of work. A *Final Report of Special Inspections* documenting required special inspections and corrections of any discrepancies noted in the inspections shall be submitted to the Building Official and the Registered Design Professional in Responsible Charge at the conclusion of the project.

Frequency of interim report submittals to the Registered Design Professional in Responsible Charge:

\_\_\_ Weekly      \_\_\_ Bi-Weekly      \_\_\_ Monthly      Other; specify: \_\_\_\_\_

Frequency of interim report submittals to the Building Official:

\_\_\_ Monthly      \_\_\_ Bi-Monthly      \_\_\_ Upon Completion      Other; specify: \_\_\_\_\_

The Special Inspection program does not relieve the Contractor of the responsibility to comply with the Contract Documents. Jobsite safety and means and methods of construction are solely the responsibility of the Contractor.



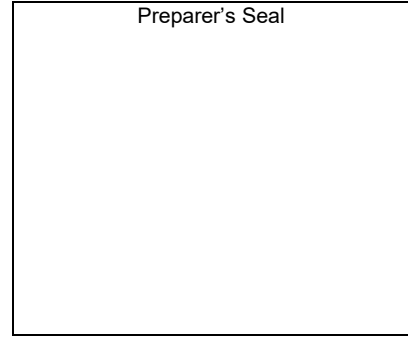
Statement of Special Inspections Prepared by:  
\_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

Building Official's Acceptance:  
\_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

Permit Number \_\_\_\_\_



**Statement of Special Inspections  
Requirements for Seismic Resistance**

See the Schedule of Special Inspections for inspection and testing requirements

**Seismic Design Category:** \_\_\_\_\_

**Statement of Special Inspection for Seismic Resistance Required (Yes/No):** \_\_\_\_\_

**Description of seismic force-resisting system subject to special inspection and testing for seismic resistance:**

(Required for Seismic Design Categories C, D, E or F)

**Description of designated seismic systems and additional systems and components subject to special inspection and testing for seismic resistance:**

(Required for architectural, electrical and mechanical systems and their components that require design in accordance with IBC Section 1621, have a component importance factor, *I<sub>p</sub>*, greater than one and are in Seismic Design Categories D, E or F. Also required for additional systems and components listed in IBC Section 1705.3 in Seismic Design Categories C, D, E or F.)

**Description of additional seismic components and anchorage requiring special inspections and testing:**

(Required for systems noted in IBC Section 1705.3.1.3 & 4 in seismic Design Categories C, D, E or F.)

**Statement of Responsibility:**

Each contractor responsible for the construction or fabrication of a system or component described above must submit a Statement of Responsibility.

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**Statement of Special Inspections  
Requirements for Wind Resistance**

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See the Schedule of Special Inspections for inspection and testing requirements

**Basic Wind Speed (3 second gust):** \_\_\_\_ m.p.h.

**Wind Exposure Category:** \_\_\_\_\_

**Statement of Special Inspection for Wind Resistance Required (Yes/No):** \_\_\_\_\_

(Required in wind exposure Category B, where the basic wind speed is 120 miles per hour or greater.

Required in wind exposure Category C or D, where the basic wind speed is 110 miles per hour or greater)

**Description of main wind force-resisting system subject to special inspection for wind resistance:**

**Description of wind force-resisting components subject to special inspection for wind resistance:**

**Statement of Responsibility:**

Each contractor responsible for the construction or fabrication of a system or component described above must submit a Statement of Responsibility.

SCHEDULE OF SPECIAL INSPECTION					
MATERIAL / ACTIVITY	SERVICE	APPLICABLE TO THIS PROJECT			
		Y/N	EXTENT	AGENT **	DATE COMPLETED
<b>1704.2 Inspection of Fabricators</b>					
Verify fabrication/quality control procedures.	In-plant review	Y	Periodic		
<b>1704.3 Steel, Stainless Steel and Aluminum Construction</b>					
Material verification of high-strength bolts, nuts, and washers	Review material markings and certificates of compliance	Y	Periodic		
Inspection of high-strength bolting:	Field inspection				
a. Bearing-type connections		Y	Periodic		
b. Pre-tensioned or slip-critical					
1) Turn-of-nut with matching markings		Y	Periodic		
2) Direct tension indicator		Y	Periodic		
3) Twist-off bolt		Y	Periodic		
4) Turn-of-nut without matching markings		Y	Continuous		
5) Calibrated wrench		Y	Continuous		
Material verification of structural steel					
a. Identification markings	Field inspection	Y	Periodic		
b. Certified mill tests	Review submittals	Y	Each submittal		
Weld filler materials	Review certificate of compliance and field verification	Y	Periodic and each submittal		
Structural steel welding:	Shop and field inspection				
a. Complete and partial penetration groove welds		Y	Continuous		
b. Multi-pass fillet welds		Y	Continuous		
c. Single-pass fillet welds > 5/16"		Y	Continuous		
d. Single-pass fillet welds ≤ 5/16"		Y	Periodic		
e. Floor and deck welds		Y	Periodic		
Reinforcing steel welding:	Shop and field inspection				
a. Verification of weldability of steel other than ASTM A 706		Y	Periodic		
b. Reinforcing steel-resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special concrete shear walls, and shear reinforcement		Y	Continuous		
c. Shear reinforcement		Y	Continuous		
d. Other reinforcing steel		Y	Periodic		
Inspection of steel, stainless steel and aluminum frame joint details for compliance with approved construction documents.	Field inspection				

## Special Inspection and Testing – Special Inspection Plan

SCHEDULE OF SPECIAL INSPECTION					
MATERIAL / ACTIVITY	SERVICE	APPLICABLE TO THIS PROJECT			
		Y/N	EXTENT	AGENT **	DATE COMPLETED
a. Details such as bracing & stiffening		Y	Periodic		
b. Member locations		Y	Periodic		
c. Application of joint details at each connection		Y	Periodic		
Inspection of metal deck , placement and attachment	Field inspection	Y	Periodic		
<b>1704.4 Concrete Construction</b>					
Inspection of reinforcing steel including installation	Field inspection	Y	Periodic		
Inspection of prestressing steel installation	In-plant or field review	Y	Periodic		
Inspection of prestressed concrete	In-plant or field review	Y			
a. Application of prestressing force		Y	Continuous		
b. Grouting of bonded prestressing tendons in the seismic-force-resisting system		Y	Continuous		
Inspection of cast-in-place anchor rods prior to and during placement of concrete	Field inspection	Y	Continuous		
Inspection of post-installed anchor rods to verify the hole drilling method is in accordance with manufacturer's printed installation instructions, hole location, hole diameter and depth, hole cleaning in accordance with manufacturer's printed installation instructions, anchor type, anchor diameter and length, anchor embedment, adhesive identification and expiration date, adhesive installation in accordance with manufacturer's printed installation instructions, edge distances(s), anchor spacing(s), concrete type, concrete compressive strength, age of concrete, concrete thickness and installation torque.	Field Inspection	Y	Continuous		
The special inspector must verify the initial installations of each type and size of anchor by construction personnel on site. Subsequent installations of the same type and size of anchor, by the same construction personnel is permitted to be performed in the absence of the special inspector. Any change in the anchor product being installed or the personnel performing the installation must require an initial inspection. For ongoing installations over an extended period of time, the special inspector must make regular inspections to confirm correct handling and installation the product.	Field Inspection	Y	Periodic		
Verification of required design mix	Review submittals	Y	Periodic		
Verify fresh concrete sampling	Field testing	Y	Continuous		
Verify fresh concrete slump, air content and concrete temperature at the time fresh concrete is sampled to make specimens for strength tests	Field testing	Y	Continuous		
Inspection of concrete and shotcrete placement for proper application techniques	Field review	Y	Continuous		

## Special Inspection and Testing – Special Inspection Plan

SCHEDULE OF SPECIAL INSPECTION					
MATERIAL / ACTIVITY	SERVICE	APPLICABLE TO THIS PROJECT			
		Y/N	EXTENT	AGENT **	DATE COMPLETED
Concrete curing operations	Field review	Y	Periodic		
Erection of precast concrete members	Field review	Y	Periodic		
Evaluation of concrete strength	Field testing and review of laboratory reports	Y	Periodic		
Verification of in-situ concrete strength, prior to stressing of tendons	Review field testing and laboratory reports	Y	Periodic		
Inspection of formwork for shape, lines, location and dimensions	Field inspection	Y	Periodic		
<b>1704.5 Masonry Construction</b>					
Verify proportions of site prepared mortar, grout and prestressing grout for bonded tendons.	Field and submittal review	Y	Periodic		
Verify construction of mortar joints.	Field inspection	Y	Periodic		
Verify location of reinforcement and connectors, and placement of prestressing tendons and anchorages.	Field inspection	Y	Periodic		
Verify prestressing technique	Field inspection	Y	Periodic		
Verify size and location of structural masonry elements.	Field and submittal review	Y	Periodic		
Verify type, size, and location of anchors, including details of anchorage of masonry to structural members, frames, or other construction	Field inspection	Y	Level 1 - Periodic Level 2 - Continuous		
Verify size, grade, and type of reinforcement	Field inspection	Y	Periodic		
Verify welding of reinforcing bars.	Field inspection	Y	Continuous		
Verify protection of masonry during hot/cold weather.	Field inspection	Y	Periodic		
Verify grout space is clean prior to grouting.	Field inspection	Y	Continuous		
Verify grout placement complies with code and construction document provisions	Field inspection	Y	Continuous		
Observe preparation of grout specimens, mortar specimens, and/or prisms.	Field inspection	Y	Continuous		
Verify compliance with required testing provisions of construction documents and the approved submittals.	Field inspection	Y	Periodic		
Verify grade and size of prestressing tendons and anchorages.	Field inspection	Y	Periodic		
Verify proper grouting of prestressing tendons.	Field inspection	Y	Continuous		
Verify application and measurement of prestressing force	Field inspection	Y	Continuous		
<b>1704.6 Wood Construction</b>					
Inspection of the fabrication process of wood structural elements and assemblies in accordance with Section 1704.2	In-plant review	N	Periodic		

## Special Inspection and Testing – Special Inspection Plan

SCHEDULE OF SPECIAL INSPECTION					
MATERIAL / ACTIVITY	SERVICE	APPLICABLE TO THIS PROJECT			
		Y/N	EXTENT	AGENT **	DATE COMPLETED
For high-load diaphragms, verification of grade and thickness of structural panel sheathing.	Field inspection	N	Periodic		
For high-load diaphragms, verify nominal size of framing members at adjoining panel edges, nail or staple diameter and length, number of fastener lines, and that spacing between fasteners in each line and at edge margins agrees with approved bldg. plans.	Field inspection	N	Periodic		
<b>1704.7 Soils</b>					
Verify materials below shallow foundations are adequate to achieve the design bearing capacity.	Field inspection	Y	Periodic		
Verify excavations are extended to proper depth and have reached proper material.	Field inspection	Y	Periodic		
Perform classification and testing of controlled fill materials	Field inspection	Y	Periodic		
Verify site preparation complies with approved soils report.	Field inspection	Y	Continuous		
Verify use of proper materials, densities, and lift thicknesses during placement and compaction of controlled fill	Field inspection	Y	Continuous		
Prior to placement of controlled fill, observe subgrade and verify that site has been prepared properly	Field inspection	Y	Continuous		
Verify dry-density of compacted fill complies with approved soils report	Review field testing	Y	Continuous		
<b>1704.8 Pile Foundations</b>					
Verify pile materials, sizes and lengths comply with requirements.	Field inspection and submittal review	N	Continuous		
Verify capacities of test piles and results of additional load tests, as required.	Field inspection and submittal review	N	Continuous		
Observe pile driving operations and maintain complete and accurate records for each pile	Field inspection and submittal review. Submittal to the bldg. official of the results of pile load tests.	N	Continuous		
Verify placement locations and plumbness, confirm type and size of hammer, record number of blows per foot of penetration, verify required penetrations to achieve design capacity, record tip and butt elevations, and document any pile damage.	Field inspection and submittal review	N	Continuous		
For steel piles, perform additional inspections per Section 1704.3	See Section 1704.3	N	See Section 1704.3		
For concrete piles and concrete-filled piles, perform additional inspections per Section 1704.4	See Section 1704.4	N	See Section 1704.4		
For specialty piles, perform additional inspections as determined by the registered design professional in responsible charge.	Field inspection	N	Periodic or Continuous		
For augered uncased piles and caisson piles,	See Section 1704.9	N	See Section		

## Special Inspection and Testing – Special Inspection Plan

SCHEDULE OF SPECIAL INSPECTION					
MATERIAL / ACTIVITY	SERVICE	APPLICABLE TO THIS PROJECT			
		Y/N	EXTENT	AGENT **	DATE COMPLETED
perform inspections per Section 1704.9.			1704.9		
<b>1704.9 Pier Foundations</b>					
Observe drilling operations and verify that complete and accurate records are maintained for each pier.	Field inspection and submittal review	N	Continuous		
Verify placement locations and plumbness, confirm pier diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable), and adequate end bearing strata capacity.	Field inspection and submittal review	N	Continuous		
For concrete piers, perform additional inspections per Section 1704.4	See Section 1704.4	N	See Section 1704.4		
For masonry piers, perform additional inspections per Section 1704.5	See Section 1704.5	N	See Section 1704.5		
<b>1704.10 Sprayed Fire-resistant Materials</b>					
Verify surface condition preparation of structural members	Field inspection	Y	Periodic		
Verify application of sprayed fire-resistant materials	Field inspection	Y	Periodic		
Verify average thickness of sprayed fire-resistant materials applied to structural members	Field inspection	Y	Periodic		
Verify density of the sprayed fire-resistant material complies with approved fire-resistant design.	Field inspection and submittal review	Y	Periodic		
Verify the cohesive/adhesive bond strength of the cured sprayed fire-resistant material	Field inspection and submittal review	Y	Per IBC section 1704.11.5		
<b>1704.11 Mastic and Intumescent Fire-Resistant Coatings</b>					
Inspect mastic and intumescent fire-resistant coatings applied to structural elements and decks, in accordance with AWCI 12-B	Field inspection	Y	Periodic		
<b>1704.12 Exterior Insulation and Finish Systems (EIFS)</b>					
Inspect EIFS applications	Field inspection	Y	Periodic		
<b>1704.13 Special Cases</b>					
Inspection of ladders including anchorages	Field inspection	Y	Periodic		
Inspection of aluminum handrail and anchorages	Field inspection	Y	Periodic		
Inspection of fence posts anchorages	Field inspection	Y	Periodic		
Inspection of PVC, TPER, HR and retrofit waterstops	Field inspection	Y	Periodic		
Inspection of aluminum grating installation	Field inspection	Y	Periodic		
Inspection of pre-engineered wood truss anchorage, permanent bridging, diaphragm shear transfer connections and associated framing	Field inspection	Y	Periodic		

## Special Inspection and Testing – Special Inspection Plan

SCHEDULE OF SPECIAL INSPECTION					
MATERIAL / ACTIVITY	SERVICE	APPLICABLE TO THIS PROJECT			
		Y/N	EXTENT	AGENT **	DATE COMPLETED
Inspection of pre-engineered cold-formed steel truss anchorage, permanent bridging, diaphragm shear transfer connections and associated framing	Field inspection	Y	Periodic		
<b>1704.14 Smoke Control Systems</b>					
Leakage testing and recording of device locations prior to concealment	Field testing	Y	Periodic		
Prior to occupancy and after sufficient completion, pressure difference testing, flow measurements, and detection and control verification	Field testing	Y	Periodic		
<b>1707.2 Structural Steel Special Inspections for Seismic Resistance</b>					
Continuous inspection of structural welding in accordance with AISC 341, Seismic Provisions	Shop and field inspection	Y	Continuous		
<b>1707.3 Structural Wood Special Inspections for Seismic Resistance</b>					
Inspection of field gluing operations of elements of the seismic-force resisting system	Field inspection	N	Continuous		
Inspection of nailing, bolting, anchoring and other fastening of components with the seismic-force-resisting system	Shop and field inspection	N	Periodic		
<b>1707.4 Cold-formed Steel Framing Special Inspections for Seismic Resistance</b>					
Inspection during welding operations of elements of the seismic-force-resisting system	Shop and field inspection	N	Periodic		
Inspections for screw attachment, bolting, anchoring and other fastening of components within the seismic-force-resisting system	Shop and field inspection	N	Periodic		
<b>1707.5 Pier Foundations Special Inspections for Seismic Resistance</b>					
Inspection during placement of reinforcing	Field inspection	Y	Periodic		
Inspection during placement of concrete	Field inspection	Y	Continuous		
<b>1707.6 Storage Racks and Access Floors Special Inspections for Seismic Resistance</b>					
Inspection during the anchorage of access floors and storage racks 8 feet or greater in height	Field inspection	N	Periodic		
<b>1707.7 Architectural Components Special Inspections for Seismic Resistance</b>					
Inspection during the erection and fastening of exterior cladding and interior and exterior veneer	Field inspection	Y	Periodic		
Inspection during the erection and fastening of interior and exterior non load bearing walls	Field inspection	Y	Periodic		
<b>1707.8 Mechanical and Electrical Components Special Inspections for Seismic Resistance</b>					
Inspection during the anchorage of electrical equipment for emergency or standby power systems	Field inspection	Y	Periodic		



## Special Inspection and Testing – Special Inspection Plan

SCHEDULE OF SPECIAL INSPECTION					
MATERIAL / ACTIVITY	SERVICE	APPLICABLE TO THIS PROJECT			
		Y/N	EXTENT	AGENT **	DATE COMPLETED
Inspection during the anchorage of other electrical equipment	Field inspection	Y	Periodic		
Inspection during installation of piping systems intended to carry flammable, combustible, or highly toxic contents and their associated mechanical units	Field inspection	Y	Periodic		
Inspection during the installation of HVAC ductwork that will contain hazardous materials	Field inspection	Y	Periodic		
Inspection during the installation of vibration isolated systems	Field inspection	Y	Periodic		
<b>1707.9 Designated Seismic System Verification</b>					
Inspect and verify that the component label, anchorage or mounting conforms to the certificate of compliance in accordance with 1708.5	Field inspection	Y	Periodic		
<b>1707.10 Seismic Isolation System</b>					
Inspection during the fabrication and installation of isolator units and energy dissipation devices used as part of the seismic isolation system	Shop and field inspection	Y	Periodic		
<b>1708.1 Masonry Testing and Verification for Seismic Resistance</b>					
Certificates of compliance used in masonry construction	Review submittals	Y	Each submittal		
Verification of $f_m$ and $f_{ACC}$ prior to construction	Review submittals and field testing	Y	Periodic		
Verification of $f_m$ and $f_{ACC}$ every 5,000 SF during construction	Review submittals and field testing	Y	Periodic		
Verification of proportions of materials in mortar and grout as delivered to the site.	Field review	Y	Periodic		
<b>1708.3 Reinforcing and Prestressing Steel Testing for Seismic Resistance</b>					
Review certified mill test reports	Field review	Y	Each submittal		
Verify reinforcing steel weldability	Review testing reports	Y	Each submittal		
<b>1708.4 Structural Steel Testing for Seismic Resistance</b>					
Test in accordance with the quality assurance requirements of AISC 341, Seismic Provisions	Shop and field testing	Y	Each occurrence		
Ultrasonically test for discontinuities behind and adjacent to welds with base metal thicker than 1.5 inches where subject to through-thickness weld shrinkage strains	Shop and field testing	Y	Each occurrence		
<b>1708.5 Seismic Qualification of Mechanical and Electrical Equipment</b>					
Review certificate of compliance for designated seismic system components	Certificate of compliance review	Y	Each submittal		
<b>1708.5 Seismically Isolated Structures</b>					

Special Inspection and Testing – Special Inspection Plan

SCHEDULE OF SPECIAL INSPECTION					
MATERIAL / ACTIVITY	SERVICE	APPLICABLE TO THIS PROJECT			
		Y/N	EXTENT	AGENT **	DATE COMPLETED
Test seismic isolation system in accordance with ASCE 7 Section 17.8	Prototype testing	N	Per ASCE 7		

Special Inspection and Testing – Special Inspection Plan

INSPECTION/TESTING AGENTS	FIRM	ADDRESS	TELEPHONE NO.
1.	TBD		
2.	TBD		
3.	TBD		
4.	TBD		
5.	TBD		
<i>Notes: 1. The inspection and testing agent(s) shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official prior to commencing work.</i>			
<i>2. The qualifications of the Special Inspector(s) and/or testing agencies shall be subject to the approval of the Building Official and the Design Professional.</i>			
<i>3. (**) The list of Special Inspectors may be submitted as a separate document, if noted as "TBD" above.</i>			
<b>Encircle "Yes" or "No" as appropriate and date this document below:</b>			
Are Requirements for Seismic Resistance included in the Statement of Special Inspections?			<b>Yes</b>
Are Requirements for Wind Resistance included in the Statement of Special Inspections?			<b>No</b>
Date:			

# Special Inspection Daily Report

**Project Name:** \_\_\_\_\_ **Project Number:** \_\_\_\_\_

**Project Address:** \_\_\_\_\_ **Weather/Temp:** \_\_\_\_\_

**Structure/Area:** \_\_\_\_\_ **Discrepancy Notice #:** \_\_\_\_\_

<b>Report Details</b>	<p>Inspection Type: <input type="checkbox"/> Continuous <input type="checkbox"/> Periodic</p> <p>Inspection Date with Start and Ending Time(s): _____</p> <p>Material/Activity: <input type="checkbox"/> Steel Construction <input type="checkbox"/> Concrete Construction <input type="checkbox"/> Soils <input type="checkbox"/> Pile Foundations  <input type="checkbox"/> Sprayed Fire-Resistant Materials <input type="checkbox"/> Mastic and Intumescent Fire-Resistant Coatings <input type="checkbox"/> Special  <input type="checkbox"/> Other _____</p> <p>Description of Inspections Made:</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>List of Tests Made: <input type="checkbox"/> Concrete Cylinders <input type="checkbox"/> In-situ concrete strength <input type="checkbox"/> Bearing Capacity  <input type="checkbox"/> Pile Capacity <input type="checkbox"/> Other _____</p> <p>List of Items Requiring Corrections, Corrections of Previously Listed Items and Previously Listed Uncorrected Items.</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>Comments:</p> <p>_____</p> <p>_____</p>
<b>Certification</b>	<p>To the best of my knowledge, work inspected was in accordance with the approved design Drawings and Specifications, except as noted above.</p> <p>Name of Testing Agency: _____</p> <p>Inspector Name (Printed): _____</p> <p>Signature: _____ Date: _____</p> <p>Certification: _____ Number: _____</p> <p>Note: One copy of this report shall remain at job site with the contractor for review upon request.</p>

# Special Inspection Interim Report

Project Name: \_\_\_\_\_ Project Number: \_\_\_\_\_

Project Address: \_\_\_\_\_ Weather/Temp: \_\_\_\_\_

Structure/Area: \_\_\_\_\_ Discrepancy Notice #: \_\_\_\_\_

<b>Report Details</b>	<p>Inspection Type: <input type="checkbox"/> Continuous <input type="checkbox"/> Periodic</p> <p>Inspection Date(s) with Start and Ending Time(s): _____</p> <p>_____</p> <p>Material/Activity: <input type="checkbox"/> Steel Construction <input type="checkbox"/> Concrete Construction <input type="checkbox"/> Soils <input type="checkbox"/> Pile Foundations  <input type="checkbox"/> Sprayed Fire-Resistant Materials <input type="checkbox"/> Mastic and Intumescent Fire-Resistant Coatings <input type="checkbox"/> Special  <input type="checkbox"/> Other _____</p> <p>Description of Inspections Made:</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>List of Tests Made: <input type="checkbox"/> Concrete Cylinders <input type="checkbox"/> In-situ concrete strength <input type="checkbox"/> Bearing Capacity  <input type="checkbox"/> Pile Capacity <input type="checkbox"/> Other _____</p> <p>List of Items Requiring Corrections, Corrections of Previously Listed Items and Previously Listed Uncorrected Items.</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>Comments:</p> <p>_____</p> <p>_____</p>
	<p>To the best of my knowledge, work inspected was in accordance with the approved design Drawings and Specifications, except as noted above.</p> <p>Name of Testing Agency: _____</p> <p>Inspector Name (Printed): _____</p> <p>Signature: _____ Date: _____</p> <p>Certification: _____ Number: _____</p> <p>Note: One copy of this report shall remain at job site with the contractor for review upon request.</p>

# Special Inspection Discrepancy Notice

Project Name: \_\_\_\_\_ Project Number: \_\_\_\_\_

Project Address: \_\_\_\_\_ Weather/Temp: \_\_\_\_\_

Structure/Area: \_\_\_\_\_ Discrepancy Notice #: \_\_\_\_\_

<b>Report Details</b>	<p>Notice delivered to: <input type="checkbox"/> Contractor <input type="checkbox"/> Engineer/Architect <input type="checkbox"/> Owner</p> <p>Inspection Type: <input type="checkbox"/> Continuous <input type="checkbox"/> Periodic</p> <p>Material/Activity: <input type="checkbox"/> Steel Construction <input type="checkbox"/> Concrete Construction <input type="checkbox"/> Soils <input type="checkbox"/> Pile Foundations  <input type="checkbox"/> Sprayed Fire-Resistant Materials <input type="checkbox"/> Mastic and Intumescent Fire-Resistant Coatings <input type="checkbox"/> Special  <input type="checkbox"/> Other _____</p> <p>Description of Inspections Made:</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>Make the following corrections and secure inspection approval prior to proceeding with this phase of the work:</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
	<p>Name of Testing Agency: _____</p> <p>Inspector Name (Printed): _____</p> <p>Signature: _____ Date: _____</p> <p>Certification: _____ Number: _____</p> <p>Note: One copy of this report shall remain at job site with the contractor for review upon request.</p>

# Special Inspection Final Report

**PROJECT:** \_\_\_\_\_

**LOCATION:** \_\_\_\_\_

**PERMIT APPLICANT:** \_\_\_\_\_

**APPLICANT'S ADDRESS:** \_\_\_\_\_

\_\_\_\_\_

To the best of my information, knowledge, and belief, which are based upon observations or diligent supervision of our inspection services for the above-referenced Project, I hereby state that the special inspections or testing required for this Project, and designated for this Agent in the *Schedule of Special Inspection Services*, have been completed in accordance with the Contract Documents.

The Special Inspection program does not relieve the Contractor of the responsibility to comply with the Contract Documents. Jobsite safety and means and methods of construction are solely the responsibility of the Contractor.

Interim reports submitted prior to this final report and numbered \_\_\_\_\_ to \_\_\_\_\_ form a basis for, and are to be considered an integral part of this final report. The following discrepancies that were outstanding since the last interim report dated \_\_\_\_\_ have been corrected:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*(Attach 8 1/2" x 11" continuation sheet(s) if required to complete the description of corrections)*

**Prepared By:**

Preparer's Seal

\_\_\_\_\_  
Special Inspection Agent/Firm

\_\_\_\_\_  
Type or print name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

# Concrete Inspection Checklist

Inspector: \_\_\_\_\_ Firm: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Project Name: \_\_\_\_\_ Project Number: \_\_\_\_\_

Project Location: \_\_\_\_\_ Weather/Temp: \_\_\_\_\_

Structure/Area: \_\_\_\_\_

Applicable Code/Details:  IBC \_\_\_\_\_  Special Inspections  Seismic Design Category: \_\_\_\_\_

<b>Reinf Placement</b>	<p><b>Material Storage:</b> <input type="checkbox"/> Adequate <input type="checkbox"/> Unsuitable</p> <p><b>Rebar:</b> <input type="checkbox"/> ASTM A615 <input type="checkbox"/> ASTM A185/ASTM A82 (WWR) <input type="checkbox"/> Other _____</p> <p><input type="checkbox"/> Clean of Debris <input type="checkbox"/> Concrete Cover <input type="checkbox"/> Size, spacing, location and laps match approved SD's</p> <p><b>Chairs &amp; Spacers:</b> <input type="checkbox"/> Bare Metal <input type="checkbox"/> Plastic covered <input type="checkbox"/> Galvanized <input type="checkbox"/> Other _____</p> <p><b>Mechanical Couplers:</b> <input type="checkbox"/> Splices staggered <input type="checkbox"/> Locations as shown on the Drawings <input type="checkbox"/> N/A</p> <p><b>Formwork:</b> <input type="checkbox"/> Leakage prevented <input type="checkbox"/> Shape, location &amp; dims (tolerances per ACI 117 &amp; spec)</p> <p>Rebar Reference Document/Details: _____</p>
<b>Pre-Concrete Pour</b>	<p><input type="checkbox"/> Truck Accepted <input type="checkbox"/> Truck Rejected - Reason: _____</p> <p><b>Batch Ticket:</b> <input type="checkbox"/> Mix # _____ <input type="checkbox"/> Strength _____ psi <input type="checkbox"/> Coarse aggregate # _____</p> <p><input type="checkbox"/> Water amount _____ gallons /CY <input type="checkbox"/> Withholding Water _____ gallons <input type="checkbox"/> Slump _____ in.</p> <p><input type="checkbox"/> Admixtures _____</p> <p><b>Tests:</b> <input type="checkbox"/> Slump Test (ASTM C143) <input type="checkbox"/> Air Content Test (ASTM C173/C231) <input type="checkbox"/> Cylinder Test (ASTM C31)</p> <p><input type="checkbox"/> Concrete samples taken at end of hose <input type="checkbox"/> # of samples _____</p> <p><b>Mixing Time:</b> <input type="checkbox"/> 90 min (temp&lt;85°F) <input type="checkbox"/> 75 min (temp≤90°F) <input type="checkbox"/> 60 min (temp&gt;90°F)</p> <p><b>Hot Weather</b> (90°F to 100°F): <input type="checkbox"/> Steps taken to lower temperature of concrete ingredients</p> <p><b>Cold Weather</b> (&lt; 40°F): <input type="checkbox"/> Concrete temp 70°F to 80°F <input type="checkbox"/> Reinf/Forms/Fillers/Ground is frost-free</p> <p><input type="checkbox"/> 3 days: maintain conc temp of 70°F <input type="checkbox"/> 5 days: maintain conc temp of 50°F</p> <p><b>Construction Joints:</b> <input type="checkbox"/> Locations per Drawings <input type="checkbox"/> Point of minimum shear (Beams/Elevated Slabs)</p> <p><b>Waterstops:</b> <input type="checkbox"/> Type _____ <input type="checkbox"/> Correct locations <input type="checkbox"/> Proper splices (no laps) <input type="checkbox"/> Centered on joint</p> <p><input type="checkbox"/> Continuous around corners and intersections <input type="checkbox"/> Heat fused welding PVC splices (no adhesives)</p> <p><input type="checkbox"/> Adhesive Splicing of HR <input type="checkbox"/> Free of Holes <input type="checkbox"/> Tied-Off to formwork/reinforcement @ 12" o.c.</p> <p><input type="checkbox"/> Retro-fit set in bed of epoxy w/ sst batten bars and ¼"Φ sst anchors @ 6" o.c.</p> <p><b>Form Releasing Agent:</b> <input type="checkbox"/> Sealtight Duoguard by W.R. Meadows <input type="checkbox"/> Other _____</p> <p><b>Vapor Barriers:</b> <input type="checkbox"/> 6 mil w/ ½" holes <input type="checkbox"/> 10 mil <input type="checkbox"/> 15 mil <input type="checkbox"/> Overlaped Joints by 6" and Seam Tape</p> <p><input type="checkbox"/> Penetrations sealed <input type="checkbox"/> Damaged Areas left unrepaired</p>



<b>Concrete Pour</b>	<b>Application:</b> <input type="checkbox"/> No Cold Joints <input type="checkbox"/> Distance dropped: ____ ft (Max = 10'-0" Group 1, 4'-0" Group II) <b>Dropping on a waterstop:</b> Distance Dropped: ____ inches (Max = 6") <input type="checkbox"/> Internal vibrating equipment used (Form Vibrators not acceptable) <b>Cast against old concrete:</b> <input type="checkbox"/> Cleaned <input type="checkbox"/> Hydro Blasted <input type="checkbox"/> Sand Blasted <input type="checkbox"/> Epoxy Bonding Agent <b>Concrete Temperature:</b> <input type="checkbox"/> Acceptable _____ <input type="checkbox"/> Unacceptable _____ Reference Document/Details: _____
<b>Post-Concrete Pour</b>	<b>Control Joints:</b> <input type="checkbox"/> Early Entry Saw used (i.e. Soff-Cutt) <input type="checkbox"/> Joints cut immediately after final trowel <b>Tolerances:</b> <input type="checkbox"/> Deviation from Slope or Plane of Columns/Walls – Class _____ surface <b>Removable taper ties:</b> <input type="checkbox"/> X-Plug <input type="checkbox"/> Preformed neoprene tapered plug <input type="checkbox"/> N/A <b>Form removal:</b> <input type="checkbox"/> 1 day (Columns) <input type="checkbox"/> 1.5 days (Walls) <input type="checkbox"/> 7 days (Beams and Slabs) <b>Reshoring:</b> <input type="checkbox"/> 14 days (Slabs, Beams) <input type="checkbox"/> N/A <b>Curing:</b> <input type="checkbox"/> Ponding/Immersion <input type="checkbox"/> Fog Spraying/Sprinkling <input type="checkbox"/> Pervious Sheeting <input type="checkbox"/> Impervious Sheeting <input type="checkbox"/> Curing Blankets <input type="checkbox"/> Curing Compound Applied <b>Finishes:</b> <input type="checkbox"/> Rough Form <input type="checkbox"/> Smooth Form <input type="checkbox"/> Rubbed "Stone" <input type="checkbox"/> Brushed <input type="checkbox"/> Troweled <input type="checkbox"/> Broom Reference Document/Details: _____

Notes: \_\_\_\_\_

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# Anchor Installation Checklist

Inspector: \_\_\_\_\_ Firm: \_\_\_\_\_ Date: \_\_\_\_\_

Project Name: \_\_\_\_\_ Project Number: \_\_\_\_\_

Project Location: \_\_\_\_\_ Weather/Temp: \_\_\_\_\_

Structure/Area: \_\_\_\_\_

Applicable Code/Details:  IBC \_\_\_\_\_  Special Inspections  Seismic Design Category: \_\_\_\_\_

<b>Pre-Inspection</b>	Anchor Manufacturer: <input type="checkbox"/> Hilti <input type="checkbox"/> Simpson <input type="checkbox"/> Powers <input type="checkbox"/> Other _____ Anchor Type: <input type="checkbox"/> Expansion <input type="checkbox"/> Adhesive <input type="checkbox"/> Undercut <input type="checkbox"/> Other _____ Adhesive Gel Time: <input type="checkbox"/> 3 min <input type="checkbox"/> 4 min <input type="checkbox"/> 5 min <input type="checkbox"/> 6 min <input type="checkbox"/> 20 min <input type="checkbox"/> 30 min <input type="checkbox"/> Other _____ Adhesive Cure Time: <input type="checkbox"/> 30 min <input type="checkbox"/> 40 min <input type="checkbox"/> 50 min <input type="checkbox"/> 60 min <input type="checkbox"/> 8 hrs <input type="checkbox"/> 12 hrs <input type="checkbox"/> Other ____ Product Name: _____ Rod Material: <input type="checkbox"/> ASTM A193 (GR. B8M) <input type="checkbox"/> ASTM F1554 <input type="checkbox"/> ASTM A153 <input type="checkbox"/> Other _____ Diameter: <input type="checkbox"/> 1/4" <input type="checkbox"/> 3/8" <input type="checkbox"/> 1/2" <input type="checkbox"/> 5/8" <input type="checkbox"/> 3/4" <input type="checkbox"/> 7/8" <input type="checkbox"/> 1" <input type="checkbox"/> Other _____ Base Material: <input type="checkbox"/> CMU <input type="checkbox"/> CIP Concrete <input type="checkbox"/> Grout <input type="checkbox"/> Other _____ Base Material Thickness: _____ Anchor Length: _____ Design Embedment: _____ Design Projection: _____ Design Anchor Spacing (min): _____ Design Edge Distance (min): _____
<b>Observations</b>	Hole Preparation: <input type="checkbox"/> Compressed Air <input type="checkbox"/> Hand Pump <input type="checkbox"/> Wire Brush <input type="checkbox"/> Other _____ Hole Condition: <input type="checkbox"/> Dry <input type="checkbox"/> Water Saturated <input type="checkbox"/> Fully Submerged <input type="checkbox"/> Other _____ Anchor Condition: <input type="checkbox"/> Debris on rod(s) <input type="checkbox"/> Oil on Rod(s) <input type="checkbox"/> Unsuitable Storage (dirty, wet, etc) Total # of Anchors Observed: _____ Installation per Manufacturer’s Instructions: <input type="checkbox"/> Yes <input type="checkbox"/> No (Provide Details Below) Correct Projection Length : <input type="checkbox"/> All Anchors <input type="checkbox"/> Some Anchors (Provide Details) <input type="checkbox"/> No Anchors Correct Anchor Spacing: <input type="checkbox"/> All Anchors <input type="checkbox"/> Some Anchors (Provide Details) <input type="checkbox"/> No Anchors Correct Edge Distance: <input type="checkbox"/> All Anchors <input type="checkbox"/> Some Anchors (Provide Details) <input type="checkbox"/> No Anchors Load applied <u>after</u> cure time: <input type="checkbox"/> All Anchors <input type="checkbox"/> Some Anchors <input type="checkbox"/> No Anchors <input type="checkbox"/> Unknown

General Observations: \_\_\_\_\_

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Additional Notes: \_\_\_\_\_

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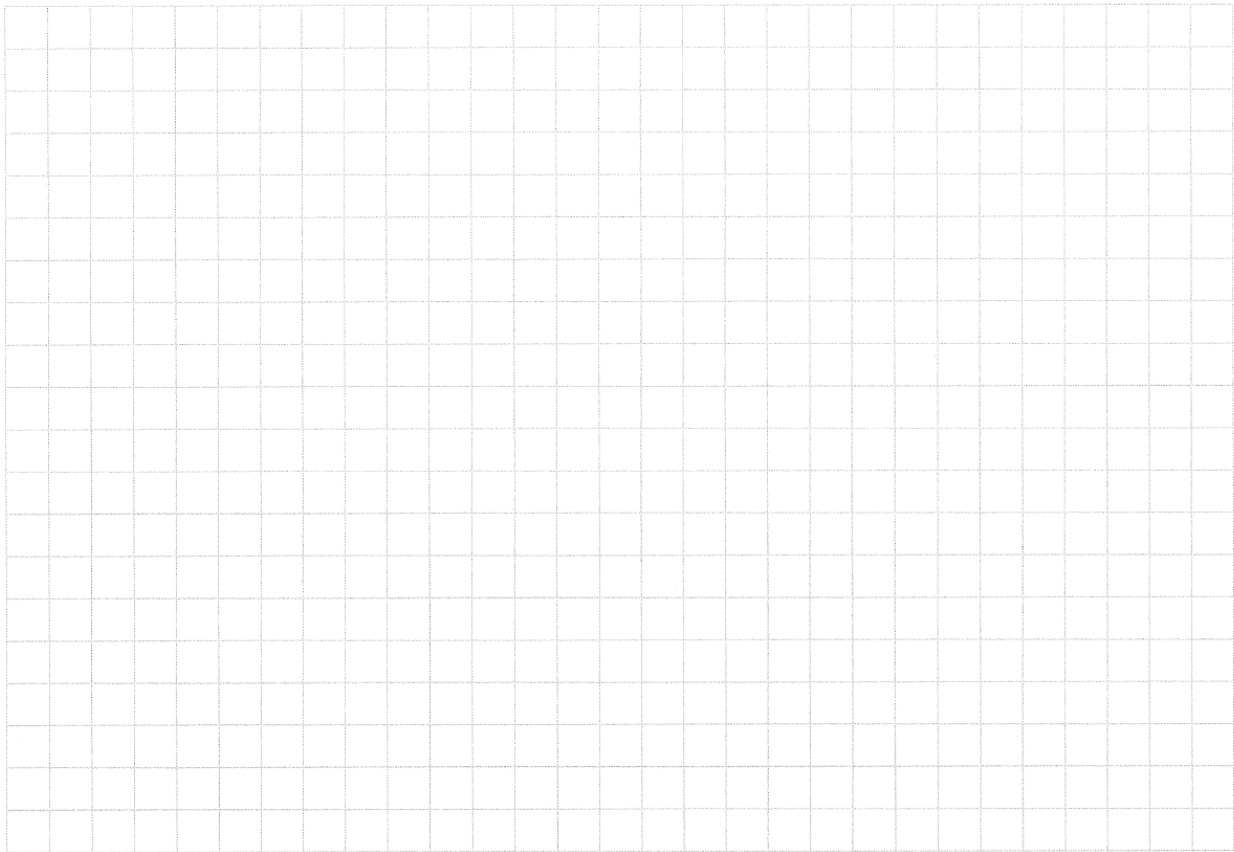
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Sketch:



## PART 1 GENERAL

### 1.01 SCOPE

- A. Temporary facilities required for this work include, but are not necessarily limited to:
  - 1. Temporary utilities such as water and electricity.
  - 2. First aid facilities.
  - 3. Sanitary facilities.
  - 4. Potable water.
  - 5. Temporary enclosures and construction facilities.

### 1.02 GENERAL

- A. First aid facilities, sanitary facilities and potable water shall be available on the Project site on the first day that any activities are conducted on site. The other facilities shall be provided as the schedule of the Project warrants.
- B. Maintenance: Use all means necessary to maintain temporary facilities in proper and safe condition throughout progress of the work. In the event of loss or damage, immediately make all repairs and replacements necessary, at no additional cost to the Owner.
- C. Removal: Remove all such temporary facilities and controls as rapidly as progress of the work will permit.

### 1.03 TEMPORARY UTILITIES

- A. General
  - 1. Provide and pay all costs for all water, electricity and other utilities required for the performance of the work.
  - 2. Pay all costs for temporary utilities until Project completion.
  - 3. Costs for temporary utilities shall include all power, water and the like necessary for testing equipment as required by the Contract Documents.
- B. Temporary Water: Provide all necessary temporary piping, back flow preventers, meters and upon completion of the work, remove all such temporary facilities. Coordinate with Tennessee American Water to acquire billing meter and usage permit.
- C. Temporary Electricity

1. Provide all necessary wiring for the Contractor's use.
2. Furnish, locate and install area distribution boxes such that the individual trades may use, their own construction type extension cords to obtain adequate power, and artificial lighting at all points where required by inspectors and for safety.

#### 1.04 FIRST AID FACILITIES

- A. The Contractor shall provide a suitable first aid station, equipped with all facilities and medical supplies necessary to administer emergency first aid treatment. The Contractor shall have standing arrangements for the removal and hospital treatment of any injured person. All first aid facilities and emergency ambulance service shall be made available by the Contractor to the Owner and the Engineer's personnel.

#### 1.05 SANITARY FACILITIES

- A. Prior to starting the work, the Contractor shall furnish, for use of Contractor's personnel on the job, all necessary toilet facilities which shall be secluded from public observation. These facilities shall be either chemical toilets or shall be connected to the Owner's sanitary sewer system. All facilities, regardless of type, shall be kept in a clean and sanitary condition and shall comply with the requirements and regulations of the area in which the work is performed. Adequacy of these facilities will be subject to the Engineer's review and maintenance of same must be satisfactory to the Engineer at all times.

#### 1.06 POTABLE WATER

- A. The Contractor shall be responsible for furnishing a supply of potable drinking water for employees, subcontractors, inspectors, engineers and the Owner who are associated with the work.

#### 1.07 ENCLOSURES AND CONSTRUCTION FACILITIES

- A. Furnish, install and maintain for the duration of construction, all required scaffolds, tarpaulins, canopies, steps, bridges, platforms and other temporary construction necessary for proper completion of the work in compliance with all pertinent safety and other regulations.

#### 1.08 PARKING FACILITIES

- A. Parking facilities for the Contractor's and Contractor's subcontractors' personnel shall be the Contractor's responsibility. The storage and work facilities provided by the Owner will not be used for parking by the Contractor's or subcontractor's personnel.

END OF SECTION

## PART 1 GENERAL

### 1.01 SCOPE

- A. This Section covers furnishing, maintaining, and operating a temporary bypass pumping system during construction. The Contractor shall furnish all materials, labor, equipment, power, maintenance, etc., to implement a temporary pumping and control system for the purpose of diverting the existing flow around the work area.
- B. Design and installation of these systems shall be the Contractor's responsibility subject to Engineer's approval as specified.

### 1.02 GENERAL

- A. The design, installation and operation of the temporary pumping system shall be the Contractor's responsibility. The Contractor shall provide at least five references of projects of a similar size and complexity as this Project performed by his company within the past three years where bypass pumping was implemented. The bypass system shall meet the requirements of all codes and regulatory agencies having jurisdiction.

### 1.03 SUBMITTALS

- A. The Contractor shall prepare a specific, detailed description of the proposed pumping system(s) required for each location and submit it along with previous bypass pumping project references within one month following Notice to Proceed.
- B. The Contractor shall submit detailed plans and descriptions outlining all provisions and precautions to be taken by the Contractor regarding the handling of existing wastewater flows in accordance with the submittal section. This plan must be specific and complete, including such items as schedules, locations, elevations, capacities of equipment, pump and drive control selection and design, materials and all other incidental items necessary and/or required to insure proper protection of the facilities. The plan shall include but not be limited to details of the following:
  - 1. Staging areas for pumps.
  - 2. Sewer or structure plugging method and types of plugs.
  - 3. Number, size, material, location and method of installation of suction piping.
  - 4. Number, size, material, method of installation and location of installation of discharge piping.
  - 5. Bypass pump sizes, capacity, and number of each size to be on site and power requirements.

6. Calculations of static lift, friction losses, and flow velocity (pump curves showing pump operating range shall be submitted).
7. Standby power provisions.
8. Thrust and restraint block sizes and locations if applicable.
9. Any temporary pipe supports and anchoring required.
10. Design plans and access provisions to bypass pumping and generator fueling locations indicated on the Drawings.
11. Calculations for selection of bypass pumping pipe size.
12. Schedule for installation and maintenance of bypass pumping lines.
13. Continuous monitoring, operating and emergency response plan.

## PART 2 PRODUCTS

### 2.01 DESIGN AND PERFORMANCE REQUIREMENTS

- A. Bypass pumping systems shall have sufficient capacity to pump the flows noted in Section 01 12 16. The Contractor shall provide all pumps of adequate size to handle the flow events and temporary piping to ensure that the total flow can be safely diverted around the work area.
- B. Contractor shall have adequate standby equipment available onsite and ready for immediate operation and use in the event of an emergency or breakdown.
- C. The design, installation and operation of the temporary pumping system shall be the Contractor's responsibility. The bypass system shall meet the requirements of all codes and regulatory agencies having jurisdiction.
- D. The Contractor shall provide all necessary means to safely convey the sewage past the work area. The Contractor will not be permitted to stop or impede the main flows under any circumstances.
- E. The Contractor shall maintain sewer flow around the work area in a manner that will not cause surcharging of sewers, damage to sewers and that will protect public and private property from damage and flooding.
- F. The Contractor shall protect water resources wetlands and other natural resources.
- G. The Contractor shall provide standby power to all electric pumping units in the event of power loss.

## 2.02 EQUIPMENT

- A. All pumps used shall be fully automatic self-priming units that do not require the use of foot-valves or vacuum pumps in the priming system. The pumps may be electric or diesel powered. All pumps used must be constructed to handle low flow events for long periods of time to accommodate the cyclical nature of wastewater flows.
- B. The Contractor shall provide the necessary stop/start and variable speed controls for each pump. The motor controls shall use a PLC based level control system with a submersible level transducer to initiate start and stop signals to the motor controls.
- C. Discharge piping systems shall be constructed of restrained joint type piping. Joints shall allow no leakage. Standard aluminum irrigation piping is not acceptable.

## PART 3 EXECUTION

### 3.01 FIELD QUALITY CONTROL AND MAINTENANCE

- A. The Contractor shall perform leakage and pressure tests of the bypass pumping discharge piping prior to actual operation.
- B. The Contractor shall inspect the bypass pumping system every two hours to ensure that the system is working correctly.
- C. The Contractor shall ensure that the temporary pumping system is properly maintained and that a responsible operator shall be on hand at all times when pumps are operating.
- D. The Contractor shall submit a plan for the replacement of malfunctioning equipment.
- E. Spare parts for pumps and piping shall be kept on site as required.
- F. Adequate hoisting equipment for each pump and accessories shall be maintained on the site.

### 3.02 INSTALLATION AND OPERATION

- A. The Contractor shall install the bypass pipelines to minimize any disturbance to existing utilities and shall obtain approval of the pipeline locations from the Owner and the Engineer. Routing of bypass pipelines shall not impede traffic flow.
- B. The Contractor shall protect the temporary pumping station and piping from damage during construction.
- C. Contractor shall provide all fuel and power for the temporary pumping facility. Contractor shall make arrangements for a power meter and pay all associated fees should power electrical power be required.

END OF SECTION



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## PART 1 GENERAL

### 1.01 SCOPE

- A. Limit blowing dust caused by construction operations by applying water or employing other appropriate means or methods to maintain dust control, subject to the approval of the Owner. As a minimum, this may require the use of a water wagon twice a day to suppress dusty conditions.

### 1.02 PROTECTION OF ADJACENT PROPERTY

- A. The Bidders shall visit the site and note the buildings, landscaping, roads, parking areas and other facilities near the work site that may be damaged by their operations. The Contractor shall make adequate provision to fully protect the surrounding area and will be held fully responsible for all damages resulting from Contractor's operations.
- B. Protect all existing facilities (indoors or out) from damage by dust, fumes, spray or spills (indoors or out). Protect motors, bearings, electrical gear, instrumentation and building or other surfaces from dirt, dust, welding fumes, paint spray, spills or droppings causing wear, corrosion, malfunction, failure or defacement by enclosure, sprinkling or other dust palliatives, masking and covering, exhausting or containment.

END OF SECTION

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## PART 1 GENERAL

### 1.01 BARRICADES, LIGHTS AND SIGNALS

- A. The Contractor shall furnish and erect such barricades, fences, lights and danger signals and shall provide such other precautionary measures for the protection of persons or property and of the work as necessary. Barricades shall be painted in a color that will be visible at night. From sunset to sunrise, the Contractor shall furnish and maintain at least one light at each barricade and sufficient numbers of barricades shall be erected to keep vehicles from being driven on or into any work under construction.
- B. The Contractor will be held responsible for all damage to the work due to failure of barricades, signs and lights and whenever evidence is found of such damage, the Contractor shall immediately remove the damaged portion and replace it at Contractor's cost and expense. The Contractor's responsibility for the maintenance of barricades, signs and lights shall not cease until the Project has been accepted by the Owner.

END OF SECTION

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## PART 1 GENERAL

### 1.01 SCOPE

- A. The work specified in this Section consists of providing and maintaining temporary and permanent erosion and sedimentation controls as shown on the Drawings. This Section also specifies the subsequent removal of temporary erosion and sedimentation controls.
- B. Temporary and permanent erosion and sedimentation controls include grassing and mulching of disturbed areas and structural barriers at those locations which will ensure that erosion during construction will be maintained within acceptable limits. Acceptable limits are as established by the Tennessee Water Quality Control Act of 1977, as amended, Section 402 of the Federal Clean Water Act, and applicable codes, ordinances, rules, regulations and laws of local and municipal authorities having jurisdiction. For installation and maintenance guidance, refer to the Tennessee Erosion and Sediment Control Handbook, latest edition.
- C. Land disturbance activity shall not commence until the Land Disturbance Permit and all required stream crossing permits have been issued.
- D. Land disturbance permit shall be obtained and paid for by the Contractor.

### 1.02 SUBMITTALS

- A. Submit product data in accordance with the requirements of Section 01 33 23 of these Specifications.
- B. Prior to any construction activity, the Contractor shall submit, for the Engineer's approval, a schedule for the accomplishment of temporary and permanent erosion and sedimentation control work. No work shall be started until the erosion and sedimentation control schedule and methods of operation have been approved by the Engineer.

### 1.03 QUALITY ASSURANCE

- A. The temporary and permanent erosion and sedimentation control measures shown on the Drawings are minimum requirements. Any additional erosion and sedimentation control measures required by the Contractor's means, methods, techniques and sequence of operation will be installed by the Contractor at no additional cost to the Owner.
- B. Perform all work under this Section in accordance with all pertinent rules and regulations including, but not necessarily limited to, those stated in these Specifications. Where provisions of pertinent rules and regulations conflict with these Specifications, the more stringent provisions shall govern.

- C. Provide all materials and promptly take all actions necessary to achieve effective erosion and sedimentation control in accordance with the Tennessee Water Quality Control Act of 1977, as amended, local ordinances, other permits, local enforcing agency guidelines and these Specifications.
- D. Basic Principles
1. Coordinate the land disturbance activities to fit the topography, soil types and conditions.
  2. Minimize the disturbed area and the duration of exposure to erosive elements.
  3. Provide temporary or permanent stabilization to disturbed areas immediately after rough grading is complete.
  4. Safely convey run-off from the site to a stable outlet to prevent flooding and damage to downstream facilities resulting from increased runoff from the site.
  5. Retain sediment on-site that was generated on-site.
  6. Minimize encroachment upon watercourses.
- E. Implementation
1. The Contractor is solely responsible for the control of erosion within the Project site and the prevention of sedimentation from leaving the Project site or entering waterways.
  2. The Contractor shall install temporary and permanent erosion and sedimentation controls which will ensure that runoff from the disturbed area of the Project site shall pass through a filter system before exiting the Project site.
  3. The Contractor shall provide temporary and permanent erosion and sedimentation control measures to prevent silt and sediment from entering the waterways. The Contractor will obtain a Land Disturbance Permit that allows encroachments on the 60-foot vegetative buffer in specific areas. The Contractor shall exercise extreme care during land disturbance operations within the 60-foot vegetative buffer to prevent degradation of the stream.
  4. The Contractor shall limit land disturbance activity to those areas shown on the Drawings.
  5. The Contractor shall maintain erosion and sedimentation control measures within disturbed areas on the entire site at no additional cost to the Owner until the acceptance of the Project. Maintenance shall include mulching, re-seeding, clean-out of sediment barriers and sediment ponds, replacement of washed-out or undermined rip rap and erosion control materials, to the satisfaction of the Engineer.

6. All fines imposed for improper erosion and sedimentation control shall be paid by the Contractor.
7. The Contractor shall use all means necessary to control dust on and near the work and all off-site borrow areas, in accordance to the Tennessee Erosion and Sediment Control Handbook, latest edition. The Contractor should thoroughly moisten all surfaces as required to prevent dust from being a nuisance to the public, neighbors and concurrent performance of work on the site.

## PART 2 PRODUCTS

### 2.01 SEDIMENT BARRIERS

#### A. Silt Fence

1. Type A silt fence shall meet the requirements of Tennessee Erosion and Sediment Control Handbook, latest edition. Posts shall be 4 feet in length and can either be made of steel, soft wood or oak. Steel posts shall be 1.3lb./ft. minimum. Soft wood post shall be 3" diameter or 2" x 4". Oak posts shall be 1.5" x 1.5". Fasteners for wood posts shall be wire staples or nails. Wire staples are to have a minimum 17 gauge, 3/4" crown width, and a 1/2" leg length. Nails are to have a minimum 14 gauge, 3/4" button head, and a 1" length.
2. Type C silt fence is a combination of Type A silt fence fabric with woven wire reinforcement. Type C silt fence woven wire reinforcement shall meet the requirements of Tennessee Erosion and Sediment Control Handbook, latest edition. Posts shall be 4 feet in length and shall be made of steel. Steel posts shall be 1.3lb./ft. minimum.
3. Silt fence fabric shall meet the requirements of the Tennessee Erosion and Sediment Control Handbook, latest edition.

### 2.02 STORM DRAIN INLET PROTECTION

- A. Silt Fence Inlet Protection: Type C Silt fence supported by steel posts shall be used. See Silt Fence this Part.
- B. Baffle Box Inlet Protection:
  1. Shall be constructed of 2" x 4" boards spaced a maximum of 1 inch apart or of plywood with weep holes 2 inches in diameter.
  2. Gravel: 1/2 to 3/4 inch gravel (#57 washed stone).
  3. Type C filter fabric wrapping: See Silt Fence this Part.
- C. Block and Gravel Inlet Protection
  1. Concrete Masonry Block.



2. Gravel: 1/2 to 3/4 inch gravel (#57 washed stone).
  3. Hardware cloth or comparable wire mesh with 1/2 inch openings.
- D. Gravel Drop Protection
1. Gravel: 1/2 to 3/4 inch gravel (#57 washed stone).
- E. Sod Inlet Protection
1. 1' wide strips of sod. See Tennessee Erosion and Sediment Control Handbook, Section 7.10 – Sod for correct placement and planting schedules.

## 2.03 CHECK DAMS

### A. Stone Check Dams

1. Stone check dams shall be constructed of graded size 2-10 inch stone.
2. The geotextile shall be in accordance with AASHTO M288 Section 7.3, Separation Requirements, Table 3.

### B. Rock Check Dams

1. Stone sizing: The stone size shall be determined by the design criteria established in the Rip Rap section - Tennessee Erosion and Sediment Control Handbook, latest edition. The rock dam can be faced with smaller stone on the upstream side for additional filtering effect.
2. Geotextile: Geotextiles shall be used as a separator between the graded stone, the soil base, and the abutments. The geotextile shall be specified in accordance with AASHTO M288 Section 7.5, Permanent Erosion Control Recommendations.

## 2.04 CONSTRUCTION EXIT

- A. Stone: Use sound, tough, durable stone resistant to the action of air and water. Slabby or shaley pieces will not be acceptable. Aggregate size shall be TDOT #1 or #2 stone (1.5 to 3.5-inch stone).
- B. Geotextile: The geotextile underliner must be placed the full length and width of the entrance. Geotextile selection shall be based on AASHTO M288-98 specification:
1. For subgrades with a CBR greater than or equal to 3 or shear strength greater than 90 kPa, geotextile must meet requirements of section AASHTO M288 Section 7.3, Separation Requirements.
  2. For subgrades with a CBR between 1 and 3 or sheer strength between 30 and 90 kPa, geotextile must meet requirements of AASHTO M288 Section 7.4, Stabilization Requirements.

## 2.05 RIP RAP

- A. Stone Rip Rap: Use sound, tough, durable stones resistant to the action of air and water. Slabby or shaley pieces will not be acceptable. Sizes are shown in the Drawings for each design requiring rip rap construction. The following classifications shall be used in the construction of slope or channels as shown on the Drawings:
1. Graded Rip Rap - durable, dense, specifically selected and graded, quarried stone, placed to prevent erosion. Sizes shall be in accordance to the Tennessee Erosion and Sediment Control Handbook, latest edition.
  2. Filter Bedding Stone - stone generally less than 6 inches in size, that may be placed under graded rip rap stone in a layer or combination of layers, designed and installed in such a manner as to prevent loss of underlying soil or finer materials because of moving water. Sizes shall be in accordance to the Tennessee Erosion and Sediment Control Handbook, latest edition.
  3. Surge Stone - a quarry run ungraded, unscreened material which may or may not have fines.

## 2.06 GABIONS

- A. Gabions shall be large, multi-celled, rectangular wire mesh boxes filled with 4 to 8-inch size pieces of stone to prevent erosion, scour or sloughing of an embankment. Gabions shall have the following features:
1. Hexagonal mesh pattern, which under stress will deform but not break.
  2. Triple twist, which will make the mesh non-raveling.
  3. Reinforcing wires woven into each corner, which will increase the strength at the stress points and help the gabion retain its shape during and after filling.
  4. A diaphragm securely attached to the base, which will prevent the shifting of the stone and at the same time, reinforce the gabion.
- B. The wire mesh shall have an opening of approximately 3 x 4-inches and shall be a minimum 12 gauge. Wire mesh shall be galvanized.
- C. Gabion baskets shall be 12 feet long x 3 feet high with four cells.
- D. Geotextile: Geotextiles shall be used behind all gabion structures. Geotextiles shall be in accordance with AASHTO M288 Section 7.5, Permanent Erosion Control Requirements.

## 2.07 POLYACRYLAMIDE (PAM)

- A. Polyacrylamide (PAM) additives are permissible as a supplement to existing Best Management Practices and are not to be relied on as the only method for erosion control.

- B. If the Contractor intends to use PAM additives, they shall provide adequate documentation and testing to show the polymer type and dosing has been matched to the soil type found in the work area. Testing and documentation shall be prepared by the manufacturer of the polymer or other licensed soil professional.
- C. PAM products include, but are not limited to, additives to the soil, hydro-seeder, treated mat, treated checks dams, bars or logs. Due to the different nature of products, manufacturer's directions shall be provided to the Engineer prior to their use. Toxicology reports shall be supplied with all submittal data prior to use.
- D. PAM products shall conform to the following guidelines:
1. Only the anionic form of PAM shall be used. Cationic PAM is toxic and shall NOT be used.
  2. PAM and PAM mixtures shall be environmentally benign, harmless to fish, wildlife, and plants. PAM and PAM mixtures shall be noncombustible.
  3. Anionic PAM, in pure form, shall have less than or equal to 0.05% acrylamide monomer by weight, as established by the Food and Drug Administration and the Environmental Protection Agency.
  4. To maintain less than or equal to 0.05% of acrylamide monomer, the maximum application rate of PAM, in pure form, shall not exceed 200 pounds/acre/year. Do not over apply PAM. Excessive application of PAM can lower infiltration rate or suspend solids in water, rather than promoting settling.
  5. Users of anionic PAM shall obtain and follow all Material Safety Data Sheet requirements and manufacturer's recommendations.
  6. Additives such as fertilizers, solubility promoters or inhibitors, etc. to PAM shall be non-toxic.
  7. The manufacturer or supplier shall provide written application methods for PAM and PAM mixtures. The application method shall insure uniform coverage to the target and avoid drift to non-target areas including waters of the state. The manufacturer or supplier shall also provide written instructions to insure proper safety, storage, and mixing of the product.
  8. Gel bars or logs of anionic PAM mixtures may be used in ditch systems. This application shall meet the same testing requirement as anionic PAM emulsions and powders.
  9. To prevent exceeding the acrylamide monomer limit in the event of a spill, the anionic PAM in pure form shall not exceed 200 pounds/batch at 0.05% acrylamide monomer (AMD) or 400 pounds/batch at 0.025% AMD.

## 2.08 EROSION CONTROL MATTING AND BLANKETS

- A. All blanket and matting materials shall be in accordance to the Tennessee Erosion and Sediment Control Handbook, latest edition.
- B. Temporary Erosion Control Blankets: Use in concentrated flow areas, all slopes steeper than 3:1 and with a height of ten feet or greater, and cuts and fills within stream buffers, shall be stabilized with the appropriate erosion control matting or blankets.
1. Straw blankets: Shall consist of weed-free straw from agricultural crops formed into a blanket. Blankets shall have a top side of photodegradable plastic mesh with a maximum mesh size of 5/16 x 5/16 inch sewn to the straw with biodegradable thread that is appropriate for slopes. The blanket shall have a minimum thickness of 3/8 inch and minimum dry weight of 0.5 pounds per square yard.
  2. Excelsior blankets: Shall consist of curled wood excelsior (80% of fibers are six inches or longer) formed into a blanket. The blanket shall have clear markings indicating the top side of the blanket and be smolder resistant. Blankets shall have photodegradable plastic mesh having a maximum mesh size of 1- 1/2 1/2 x 3 inches. The blanket shall have a minimum thickness of 1/4 of an inch and a minimum dry weight of 0.8 pounds per square yard. Slopes require excelsior matting with the top side of the blanket covered in the plastic mesh, and for waterways, both sides of the blanket require plastic mesh.
  3. Coconut fiber blankets: Shall consist of 100% coconut fiber formed into a blanket. The minimum thickness of the blanket shall be 1/4 of an inch with a minimum dry weight of 0.5 pounds per square yard. Blankets shall have photodegradable plastic mesh, with a maximum mesh size of 5/8 x 5/8 inch and sewn to the fiber with a breakdown resistant synthetic yarn. Plastic mesh is required on both sides of the blanket if used in waterways. A maximum of two inches is allowable for the stitch pattern and row spacing.
  4. Wood fiber blankets: Shall consist of reprocessed wood fibers that does not possess or contain any growth or germination inhibiting factors. The blanket shall have a photodegradable plastic mesh, with a maximum mesh size of 5/8 x 3/4 inch, securely bonded to the top of the mat. The blanket shall have a minimum dry weight of 0.35 pounds per square yard. A maximum of two inches is allowable for the stitch pattern and row spacing. This practice shall be applied only to slopes.
  5. Jute Mesh: To be applied to slopes. Jute mesh with a 48-inch width shall show between 76 and 80 warpings and a one yard length shall show between 39 to 43 weftings. The woven mesh shall be at least 45 inches wide. Yarn shall have a unit weight of at least 0.9 pounds per square yard, but not more than 1.5 pounds per square yard.

C. Permanent Matting: Use in concentrated flow areas, all slopes steeper than 3:1 and with a height of ten feet or greater, and cuts and fills within stream buffers, shall be stabilized with the appropriate erosion control matting or blankets.

1. Permanent matting shall consist of a lofty web of mechanically or melt bonded polymer nettings, monofilaments or fibers which are entangled to form a strong and dimensionally stable matrix. Polymer welding, thermal or polymer fusion, or the placement of fibers between two high strength, bi-axially oriented nets bound securely together by parallel lock stitching with polyolefin, nylon or polyester threads are all appropriate bonding methods. Mats shall maintain their shape before, during, and after installation, under dry or water saturated conditions. Mats must be stabilized against ultraviolet degradation and shall be inert to chemicals normally encountered in a natural soil environment.
2. The mat shall conform to the following physical properties:

<u>Property</u>	<u>Minimum Value</u>
Thickness	0.5 inch
Weight	0.6 PSY
Roll Width	38 inches
Tensile Strength	
Length (50% elongation)	15 lbs./in.
Length (ultimate)	20 lbs./in.
Width (50% elongation)	5 lbs./in.
Width (ultimate)	10 lbs./in.
(ASTM D 1682-6" strip)	
Ultraviolet Stability	80%
(1,000 hrs. in an Atlas ARC Weatherometer, ASTM G 23, Type D in accordance with ASTM D 822)	

D. Stapling and Anchoring Materials:

1. Temporary Blankets: Staples shall be used to anchor temporary blankets. U-shaped wire (11 gauge or greater) staples with legs at least 6 inches in length and a crown of one inch or appropriate biodegradable staples can be used. Staples shall be of sufficient thickness for soil penetration without undue distortion.
2. Permanent Matting: Sound wood stakes, 1 x 3 inches stock sawn in a triangular shape, shall be used. Depending on the compaction of the soil, select stakes with a length from 12 to 18 inches. U-shaped staples shall be 11 gauge steel or greater, with legs at a minimum of 8 inches length with a 2 inch crown.

## 2.09 CHANNEL STABILIZATION

- A. Vegetated Lining: Vegetated lining shall be designed to resist erosion when the channel is flowing at the 25-year frequency discharge. Temporary erosion control blankets or sod shall be used on all channels and concentrated flow areas to aid in the establishment of the vegetated lining. If a vegetated lining is desired in a channel with velocities between 5- 10 ft./sec., permanent soil reinforcement matting shall be used.
- B. Rock Rip- Rap Lining: Rock rip rap shall be designed to resist displacement when the channel is flowing at the 25-year frequency discharge. Rock rip rap lining should be used when channel velocities are between 5 and 10 ft./sec.
- C. Concrete Lining
  - 1. Concrete shall be constructed in accordance with the plan and details in the Drawings.
  - 2. A separation geotextile should be placed under concrete linings to prevent undermining in the event of stress cracks due to settlement of the base material. Geotextiles shall be in accordance with AASHTO M288 Section 7.5, Permanent Erosion Control Requirements.

## 2.10 DOWNDRAIN STRUCTURES

- A. Temporary Downdrain:
  - 1. Pipe: Design the slope drain using heavy-duty, flexible materials such as non-perforated, corrugated plastic pipe or specially designed flexible tubing. Use reinforced, hold-down grommets or stakes to anchor the pipe at intervals not to exceed 10 feet with the outlet end securely fastened in place. The pipe must extend beyond the toe of the slope.
  - 2. Filter Ring: A stone filter ring shall be placed at the inlet for added sediment filtering capacity.
  - 3. Storm Drain Outlet Protection: Rock rip rap shall be placed at the outlet for energy dissipation. A Tee outlet, flared end section, or other suitable device may be used in conjunction with the rip rap for additional protection.
- B. Permanent Downdrain:
  - 1. Pipe: Design the slope drain using heavy-duty, flexible materials such as non-perforated, corrugated plastic or steel pipe or specially designed flexible tubing. Use reinforced, hold-down grommets or stakes to anchor the pipe at intervals not to exceed 10 feet with the outlet end securely fastened in place. The pipe must extend beyond the toe of the slope.

2. Paved Flume: The paved flume may have a parabolic, rectangular or trapezoidal cross-section and shall consist of reinforced concrete or asphalt paving.
3. Filter Ring: A stone filter ring shall be placed at the inlet for added sediment filtering capacity.
4. Storm Drain Outlet Protection: Rock rip rap shall be placed at the outlet for energy dissipation. A Tee outlet, flared end section, or other suitable device may be used in conjunction with the rip rap for additional protection.

## 2.11 FILTER RING

### A. Stone sizing:

1. When utilized at inlets with diameters less than 12 inches, the filter ring shall be constructed of TDOT Class A-3 stone no smaller than 2-6 inches (15 - 30 lbs.).
2. When utilized at pipes with diameters greater than 12 inches, the filter ring shall be constructed of TDOT Class A-1 stone no smaller than 2-15 inches (50 - 100 lbs.).
3. For added sediment filtering capabilities the upstream side of the rip- rap can be faced with TDOT #57 stone, minimum stone size of  $\frac{3}{4}$  inch.

## 2.12 TEMPORARY SEDIMENT BASIN

- ### A. Temporary Sediment Basins shall be constructed in accordance with the plan and details shown in the Drawings.

## 2.13 TEMPORARY STREAM CROSSING

- ### A. Temporary Stream Crossing shall be constructed in accordance with the plan and details shown in the Drawings. Temporary crossings shall not be used on streams with drainage areas greater than one square mile and shall be constructed as a culvert crossing, as shown in the Drawings.

## 2.14 STORM DRAIN OUTLET PROTECTION

- ### A. Stone size: Stone size as indicated for each outlet in the Storm Drain Outlet Protection detail shown in the Drawings.
- ### B. Geotextile: Geotextiles shall be used as a separator between the graded stone, the soil base, and the abutments. The geotextile shall be specified in accordance with AASHTO M288-96 Section 7.5, Permanent Erosion Control Recommendations.
- ### C. Stone quality: Select stone for rip rap from field stone or quarry stone. The stone should be hard, angular, and highly weather-resistant. The specific gravity of the individual stones should be at least 2.5.

## 2.15 GRADIENT TREATMENT

- A. Contour Furrow: Contour furrows may be used for slopes which are 3:1 (H:V) or less.
- B. Serrated Slope: A serrated slope may be used for slopes which are 2:1 (H:V) or less.
- C. Stepped Slope: Graded areas steeper than 3:1 (H:V), which will not be mowed, should preferably have a stepped slope.
- D. Terraced Slope: Should be used on most slopes which are longer than those allowed for other methods.

## 2.16 TEMPORARY MULCHING

- A. Dry straw or hay: Shall be applied at a depth of 2 to 4 inches providing complete soil coverage. Material shall be clean, seed-free cereal hay or straw.
- B. Wood waste (chips, sawdust or bark): Shall be applied at a depth of 2 to 3 inches. Organic material from the clearing stage of development should remain on site, be chipped, and applied as mulch.
- C. Mulch Binder: Mulch on slopes exceeding 3 (horizontal) to 1 (vertical) shall be held in place by the use of a mulch binder, as approved by the Engineer. The mulch binder shall be non toxic to plant and animal life and shall be approved by the Engineer.

## 2.17 TEMPORARY GRASSING

- A. Grassing materials shall meet the requirements of the Tennessee Erosion and Sediment Control Handbook, latest edition, section that includes "Disturbed Area Stabilization (With Temporary Vegetation)".
- B. Seed rate, fertilization, lime application and other requirements shall be provided as shown on the Drawings.
- C. Water: Water shall be free of excess and harmful chemicals, organisms and substances which may be harmful to plant growth or obnoxious to traffic. Salt or brackish water shall not be used. Water shall be furnished by the Contractor.

## 2.18 PERMANENT GRASSING AND SODDING

- A. As specified elsewhere in these Specifications.

## 2.19 TURBIDITY CURTAIN

- A. Barriers shall be a bright color (yellow or "international" orange are recommended) that will attract the attention of nearby boaters.
- B. The curtain fabric shall meet the following minimum requirements:



PHYSICAL PROPERTY	REQUIREMENT
THICKNESS, MILS	45
WEIGHT/OZ.SQ.YD:	
TYPE I	18
TYPE II	18 OR 22
TYPE III	22
GRAB TENSILE STRENGTH, LBS.	300
UV INHIBITOR	MUST BE INCLUDED

- C. Seams in the fabric shall be vulcanized, welded, or sewn, and shall develop the full strength of the fabric.
- D. Flotation devices shall be flexible, buoyant units, contained in an individual flotation sleeve or collar attached to the curtain. Buoyancy provided by the flotation units shall be sufficient to support the weight of the curtain and maintain a freeboard of at least 3 inches above the water surface.
- E. Load lines shall be fabricated into the bottom of all floating turbidity curtains. When installing in moving waters, load lines shall also be fabricated into the top of the fabric. The top load line shall consist of woven webbing or vinyl-sheathed steel cable, and shall have a break strength in excess of 10,000 pounds. The supplemental (bottom) load line shall consist of a chain incorporated into the bottom hem of the curtain, with sufficient weight to serve as ballast to hold the curtain in a vertical position. Additional anchorage shall be provided as necessary. The load lines shall have suitable connecting devices which develop the full breaking strength for connecting to load lines in adjacent sections for calm water installation.
- F. External anchors may consist of wooden or metal stakes (2- x 4-inch or 2.5-inch minimum diameter wood, or 1.33 pounds/linear foot steel) when installing in calm waters; when installing in moving waters, bottom anchors must be used.
- G. Bottom anchors shall be sufficient to hold the curtain in the same position relative to the bottom of the watercourse, without interfering with the action of the curtain. The anchor may dig into the bottom (grappling hook, plow or fluke-type), or may be weighted (mushroom type), and shall be attached to a floating anchor buoy via an anchor line. The anchor line shall run from the buoy to the top load line of the curtain. When installing in moving waters, these lines shall contain enough slack to allow the buoy and curtain to float freely with tidal changes without pulling the buoy or curtain down, and shall be checked regularly to make sure they do not become entangled with debris. As previously noted, anchor spacing will vary with current velocity and potential wind and wave action; manufacturer's recommendations should be followed.

## 2.20 SEDIMENT TRAPS

- A. The area under the embankment should be cleared, grubbed, and stripped of any vegetation and root mat.

- B. Fill material for the embankment should be free of roots or other woody vegetation, organic material, large stones, and other objectionable material.

## PART 3 EXECUTION

### 3.01 GENERAL

- A. Temporary and permanent erosion and sedimentation control measures shall prevent erosion and prevent sediment from exiting the site. If, in the opinion of the Engineer, the Contractor's temporary erosion and sedimentation control measures are inadequate, the Contractor shall provide additional maintenance for existing measures or additional devices to control erosion and sedimentation on the site at no additional cost to the Owner.
- B. All erosion and sedimentation control devices and structures shall be inspected by Contractor or Personnel qualified in stormwater best management practices implementation at least once a week and within 24 hours of the end of a storm that is 0.5 inches or greater. Any device or structure found to be damaged will be repaired or replaced by the end of the day.
- C. All erosion and sedimentation control measures and devices shall be constructed and maintained as indicated on the Drawings or specified herein until adequate permanent disturbed area stabilization has been provided and accepted by the Engineer. Once adequate permanent stabilization has been provided and accepted by the Engineer, all temporary erosion and sedimentation control structures and devices shall be removed.

### 3.02 INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENT CONTROLS

- A. Sediment Barriers
  - 1. Sediment barriers shall include, but are not necessarily limited to silt fences and any device which prevents sediment from exiting the disturbed area.
  - 2. Sediment barriers shall not be used in any flowing stream, creek or river.
  - 3. Sediment barriers shall be installed as shown on the Drawings and as directed by the Engineer.
  - 4. Along stream buffers and other sensitive areas, two rows of Type C silt fence or one row of Type C silt fence backed by hay bales shall be used.
  - 5. Sediment barriers shall be maintained to ensure the depth of impounded sediment is no more than one-half of the original height of the barrier or as directed by the Engineer. Torn, damaged, destroyed or washed-out barriers shall be repaired, reinforced or replaced with new material and installed as shown on the Drawings and as directed by the Engineer.

6. Sediment Barrier Removal
  - a. Sediment barrier shall be removed once the disturbed area has been stabilized with a permanent vegetative cover and the sediment barrier is no longer required as directed by the Engineer.
  - b. Accumulated sediment shall be removed from the barrier and spread over the site.
  - c. All non-biodegradable parts of the barrier shall be disposed of properly.
  - d. The disturbed area created by barrier removal shall be permanently stabilized.

B. Storm Drain Inlet Protection

1. Inlet Sediment Traps shall include, but are not necessarily limited to, Silt Fence Inlet Protection, Baffle Box, Block and Gravel Inlet Protection, Gravel Inlet Protection, Sod Inlet Protection and any device which traps sediment and prevents it from exiting the disturbed area.
2. Inlet Sediment Traps shall be installed as shown on the Drawings and as directed by the Engineer.
3. For each Inlet Sediment Traps type the following installation guidelines shall be used:
  - a. Silt Fence Inlet Protection: Type C silt fence supported by steel posts shall be used. The stakes shall be spaced evenly around the perimeter of the inlet a maximum of 3 feet apart, and securely driven into the ground, approximately 18 inches deep. The fabric shall be entrenched 12 inches and backfilled with crushed stone or compacted soil. Fabric and wire shall be securely fastened to the posts, and fabric ends must be overlapped a minimum of 18 inches or wrapped together around a post to provide a continuous fabric barrier around the inlet.
  - b. Baffle Box: The baffle box shall be constructed of 2" x 4" boards spaced a maximum of 1 inch apart or of plywood with weep holes 2 inches in diameter. The weep holes shall be placed approximately 6 inches on center vertically and horizontally. Gravel shall be placed outside the box, all around the inlet, to a depth of 2 to 4 inches. The entire box is wrapped in Type C filter fabric that shall be entrenched 12 inches and backfilled.
  - c. Block and Gravel Inlet Protection: One block is placed on each side of the structure on its side in the bottom row to allow pool drainage. The foundation should be excavated at least 2 inches below the crest of the storm drain. The bottom row of blocks are is placed against the edge of the storm drain for lateral support and to avoid washouts when overflow occurs. If needed, lateral support may be given to subsequent rows by placing 2" x 4" wood studs through block openings. Hardware cloth or comparable wire mesh with 1/2 inch openings shall be fitted over all block openings to hold gravel in place. Clean gravel should be placed 2 inches below the top of the block on a 2:1 slope or flatter and smoothed to an even grade.
  - d. Gravel Inlet Protection: Stone and gravel are used to trap sediment. The slope toward the inlet shall be no steeper than 3:1. A minimum 1 foot wide level stone area shall be left between the structure and around the

inlet to prevent gravel from entering the inlet. On the slope toward the inlet, stone 3 inches in diameter and larger should be used. On the slope away from the inlet, 1/2 to 3/4 inch gravel (#57 washed stone) should be used at a minimum thickness of 1 foot.

- e. Sod Inlet Protection: The sod shall be placed to form a turf mat covering the soil for a distance of 4 feet from each side of the inlet structure. Sod strips shall be staggered so that adjacent strip ends are not aligned.
4. The trap shall be inspected daily and after each rain and repairs made as needed. Sediment shall be removed when the sediment has accumulated to one-half the height of the trap. Sediment shall be removed from curb inlet protection immediately. For excavated inlet sediment traps, sediment shall be removed when one-half of the sediment storage capacity has been lost to sediment accumulation. Sod inlet protection shall be maintained as specified for Permanent Sodding.
  5. Sediment Barrier Removal
    - a. Sediment barrier shall be removed once the disturbed area has been stabilized with a permanent vegetative cover and the sediment barrier is no longer required as directed by the Engineer.
    - b. Accumulated sediment shall be removed from the barrier and removed from the site.
    - c. All non-biodegradable parts of the barrier shall be disposed of properly.
    - d. The disturbed area created by barrier removal shall be permanently stabilized.
- C. Check and Rock Dams
1. Check and rock dams shall not be used in any flowing stream, creek or river.
  2. Check and rock dams shall be installed as shown on the Drawings and as directed by the Engineer.
  3. Stone check dams: Mechanical or hand placement shall be required to insure complete coverage of entire width of ditch or swale and that center of dam is lower than edges.
  4. Rock dams: Mechanical or hand placement will be required to insure that the rock dam extends completely across the channel and securely ties into both channel banks. The center of the dam must be no less than six inches lower than the lowest side, to serve as a type of weir. Gabions can be installed to serve as rock filter dams, but should follow recommended sizing and installation specifications. Refer to Gabions in this specification.
  5. Height: The center of the check dam must be at least 9 inches lower than outer edges. Dam height should be 2 feet maximum measured to center of check dam.
  6. Side Slopes: Side slopes shall be 2:1 or flatter.

7. Spacing: Two or more check dams in series shall be used for drainage areas greater than one acre. Maximum spacing between dams should be such that the toe of the upstream dam is at the same elevation as the top of the downstream dam.
8. A geotextile should be used as a separator between the graded stone and the soil base and abutments. The geotextile shall be placed immediately adjacent to the subgrade without any voids and extend five feet beyond the downstream toe of the dam to prevent scour.
9. Check and rock dams shall be maintained to ensure the depth of impounded sediment is no more than one-half of the original height of the check dam or as directed by the Engineer. Damaged, destroyed or washed-out check dams shall be repaired, reinforced or replaced with new material and installed as shown on the Drawings and as directed by the Engineer.
10. Check and Rock Dams removal
  - a. Check and rock dams shall be removed once the disturbed area has been stabilized with a permanent vegetative cover and the sediment barrier is no longer required as directed by the Engineer.
  - b. Accumulated sediment shall be removed from the check and rock dams when it reaches a depth of one-half of the original height of the dam and removed from the site.
  - c. All non-biodegradable parts of the barrier shall be disposed of properly.
  - d. The disturbed area created by check or rock dam removal shall be permanently stabilized.

D. Construction Exit

1. Construction exit(s) shall be placed as shown on the Drawings and as directed by the Engineer. A construction exit shall be located at any point traffic will be leaving a disturbed area to a public right-of-way, street, alley, sidewalk or parking area.
2. Placement of Construction Exit Material: The ground surface upon which the construction exit material is to be placed shall be prepared to a smooth condition free from obstructions, depressions or debris. The geotextile underliner shall be placed to provide a minimum number of overlaps and a minimum width of one foot of overlap at each joint. The stone shall be placed with its top elevation conforming to the surrounding roadway elevations. The stone shall be dropped no more than three feet during construction.
3. Construction Exit Maintenance: The Contractor shall regularly maintain the exit with the top dressing of stone to prevent tracking or flow of soil onto public rights-of-way and paved surfaces as directed by the Engineer. This shall require periodic top dressing with 1.5-3.5 inch stone, as conditions demand.
4. Construction Exit Removal: Construction exit(s) shall be removed and properly disposed of when the disturbed area has been properly stabilized, the tracking

or flow of soil onto public rights-of-way or paved surfaces has ceased and as directed by the Engineer.

E. Rip Rap

1. Rip rap shall be placed as shown on the Drawings and as directed by the Engineer. Rip rap shall be placed at all points where natural vegetation is disturbed on the banks of streams or drainage ditches. Compact backfill and place rip rap to prevent subsequent settlement and erosion. This requirement applies equally to construction along side a stream or drainage ditch as well as crossing a stream or drainage ditch.
2. When trenching across a stream or drainage ditch, place rip rap over the entire disturbed area upstream and downstream of the trench excavation. Place rip rap across creek bottom, across creek banks and extend rip rap placement five feet beyond the top of each creek bank.
3. Preparation of Foundations: The ground surface upon which the rip rap is to be placed shall be brought to the correct lines and grades before placement is commenced. Where filling of depressions is required, the new material shall be compacted with hand or mechanical tampers. Unless at creek banks or otherwise shown or specified, rip rap shall begin in a toe ditch constructed in original ground around the toe of the fill or the cut slope. The toe ditch shall be two feet deep in original ground, and the side next to the fill or cut shall have that same slope. After the rip rap is placed, the toe ditch shall be backfilled and the excess dirt spread neatly within the construction easement or on the site.
4. Placement of Plastic Filter Fabric
  - a. Plastic filter fabric shall be placed under all rip rap unless shown or specified otherwise.
  - b. Filter fabric shall not be placed under rip rap on stream or drainage ditch crossings.
  - c. The surface to receive filter fabric shall be prepared to a smooth condition free from obstructions, depressions and debris. The filter fabric shall be installed with the long dimension running up the slope and shall be placed to provide a minimum number of overlaps. The fabric shall be placed to provide a minimum width of one foot of overlap at each joint. The fabric shall be placed so that the upstream strip overlaps the downstream strip. The fabric shall be anchored in place with securing pins of the type recommended by the fabric manufacturer. Pins shall be placed on or within 3-inches of the centerline of the overlap. The fabric shall be placed loosely to avoid stretching and tearing during placement of the stone. The fabric shall be protected at all times during construction from clogging due to clay, silts, chemicals or other contaminants. Contaminated fabric or fabric damaged during installation or during placement of rip rap shall be removed and replaced with uncontaminated and undamaged fabric at no additional cost to the Owner.
5. Placement of Rip Rap: Rip rap shall be placed on a 6-inch layer of soil, crushed stone or sand overlaying the filter fabric. Rip rap shall be placed with

its top elevation conforming with the finished grade or the natural existing slope of the stream bank and stream bottom. The stone shall be dropped no more than three feet during construction.

- a. Stone Rip Rap: Stone rip rap shall be placed to provide a uniform surface to the thickness shown on the Drawings. The thickness tolerance for the course shall be -3-inches and +6-inches.

#### F. Gabions

1. Where, in the opinion of the Engineer, the slope of the banks of the stream is too steep to support rip rap, gabions shall be provided, in lieu of rip rap.
2. Gabions shall be assembled according to the manufacturer's recommendations. Laterally adjoining gabions shall be wired together by vertical edges. Vertically adjoining gabions shall be wired together along the front and back edges. Rip rap size for gabion construction shall be large enough not to fall out of gabions, but small enough to form three layers. Gabions shall be placed over a 6-inch layer of soil, crushed stone or sand overlaying a filter fabric.

#### G. Polyacrylamide (PAM)

1. Application rates shall conform to manufacturer's guidelines for application.
2. Maintenance will consist of reapplying anionic PAM to disturbed areas including high use traffic areas which interfere in the performance of this practice.

#### H. Erosion Control Matting and Blankets

1. Erosion Control Matting and Blankets be placed as shown on the Drawings and as directed by the Engineer.
2. After the site has been shaped and graded to the approved design, prepare a friable seedbed relatively free from clods and rocks more than one inch in diameter, and any foreign material that will prevent contact of the soil stabilization mat with the soil surface. Surface must be smooth to ensure proper contact of blankets or matting to the soil surface. If necessary, redirect any runoff from the ditch or slope during installation.
3. Follow manufacturer's recommendations and follow details as shown on the Drawings for laying and stapling.
4. All erosion control blankets and matting should be inspected periodically following installation, particularly after rainstorms to check for erosion and undermining. Any dislocation or failure should be repaired immediately. If washouts or breakage occurs, reinstall the material after repairing damage to the slope or ditch. Continue to monitor these areas until they become permanently stabilized.

#### I. Channel Stabilization

1. Where needed, all trees, brush, stumps and other objectionable materials shall be removed so they will not interfere with the construction or proper functioning of the channel.
2. Where possible, trees will be left standing, and stumps will not be removed.
3. Excavation shall be at the locations and grades shown on the Drawings. The lining shall not compromise the capacity of the channel, e.g. the emergency spillway shall be over-excavated so that the lining will be flush with the slope surface.
4. The geotextile shall be placed on a smooth graded surface. The geotextile shall be placed in such a manner that it will not excessively stretch or tear upon placement of the overlying materials. Care should be taken to place the geotextile in intimate contact with the soil such that no void spaces exist between the underlying soil and the geotextile.
5. Construction plans will specifically detail the location and handling of spoils. Spoil material resulting from clearing, grubbing and channel excavation shall be disposed of in a manner which will:
  - a. not cause an increase in flood stage,
  - b. minimize overbank wash,
  - c. not cause an adverse effect on the environmental integrity of the area,
  - d. provide for the free flow of water between the channel and flood plain unless the valley routing and water surface profile are based on continuous dikes being installed,
  - e. leave the right-of-way in the best condition feasible, and
  - f. improve the aesthetic appearance of the site to the extent feasible.
6. Channel linings shall be established or installed immediately after construction or as soon as weather conditions permit.
7. Structures shall be installed according to lines and grades shown on the plan. The foundation for structures shall be cleared of all undesirable materials prior to the installation of the structures.
8. Materials used in construction shall be of permanency commensurate with the design frequency and life expectancy of the facility.
9. Earthfill, when used as a part of the structures, shall be placed according to the installation requirements for sediment basin embankments.
10. Construction operations shall be carried out in such a manner that erosion and air and water pollution will be minimized. State and local laws concerning pollution abatement shall be complied with.
11. Vegetation shall be established on all disturbed areas immediately after construction. If weather conditions cause a delay in establishing vegetation, the area shall be mulched in accordance with the standard for mulching.



12. All temporary access roads or travelways shall be appropriately closed to exclude traffic.
13. Trees and other fallen natural vegetation not causing a deterrent to stream flow should be left for the purpose of habitat.

J. Downdrain Structures

1. Place slope drains on undisturbed soil or well compacted fill at locations and elevations shown on the Drawings.
2. Slightly slope the section of pipe under the dike toward its outlet.
3. Hand tamp the soil under and around the entrance section in lifts not to exceed 6 inches.
4. Ensure that fill over the drain at the top of the slope has minimum dimensions of 1.5 ft. depth, 4 ft. top width, and 3:1 side slopes.
5. Ensure that all slope drain connections are watertight.
6. Ensure that all fill material is well-compacted. Securely fasten the exposed section of the drain with grommets or stakes spaced no more than 10 feet apart.
7. Place the drain slightly diagonally across the slope, extending the drain beyond the toe of the slope. Curve the outlet uphill and adequately protect the outlet from erosion.
8. If the drain is conveying sediment-laden runoff, direct all flows into a sediment trap or sediment basin.
9. Make the settled, compacted dike ridge no less than one foot above the top of the pipe at every point.
10. Immediately stabilize all disturbed areas following construction.
11. Install Storm Drain Outlet Protection as specified in this Part.
12. Maintenance: Inspect the slope drain and supporting diversion after every rainfall and promptly make necessary repairs. When the protected area has been permanently stabilized and the permanent stormwater disposal system is fully functional, temporary measures may be removed, materials disposed of properly, and all disturbed areas stabilized appropriately.

K. Filter Ring

1. Filter Rings be placed as shown on the Drawings and as directed by the Engineer.

2. The filter ring shall be constructed at a height no less than two feet from grade.
3. Mechanical or hand placement of stone shall be required to uniformly surround the structure to be supplemented. Refer to Rip Rap, within this specification, for rock rip rap specifications.
4. When utilized below a storm drain outlet, it shall be placed such that it does not create a condition causing water to back-up into the storm drain and inhibit the function of the storm drain system.
5. Maintenance: The filter ring must be kept clear of trash and debris. This will require continuous monitoring and maintenance, which includes sediment removal when one-half full. Structures are temporary and should be removed when the land-disturbing project has been stabilized.

L. Temporary Sediment Basin

1. Site Preparation: Areas under the embankment and under structural works shall be cleared, grubbed, and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed and disposed of by approved methods. In order to facilitate clean-out or restoration, the pool area (measured at the top of the pipe spillway) will be cleared of all brush and trees.
2. Cut-off Trench: A cut-off trench will be excavated along the centerline of earth fill embankments. The minimum depth shall be 2 feet. The cut-off trench shall extend up both abutments to the riser crest elevation. The minimum bottom width shall be 4 feet, but wide enough to permit operation of compaction equipment. The side slopes shall be no steeper than 1:1. Compaction requirements shall be the same as those for the embankment. The trench shall be drained during the backfilling and compaction operations.
3. Embankment: The fill material shall be taken from approved areas shown on the Drawings. It shall be clean mineral soil free of roots, woody vegetation, oversized stones, rocks or other objectionable material. Relatively pervious materials such as sand or gravel (Unified Soil Classes GW, GP, SW & SP) shall be placed in the downstream section of the embankment. Areas on which fills are to be placed shall be scarified prior to placement of fill. The fill material shall contain sufficient moisture so that it can be formed by hand into a ball without crumbling. If water can be squeezed out of the ball, it is too wet for proper compaction. Fill material shall be placed in six-inch to eight-inch thick continuous layers over the entire length of the fill. Compaction shall be obtained by routing and hauling the construction equipment over the fill so that the entire surface of the fill is traversed by at least one wheel or tread track of the equipment or by the use of a compactor. The embankment shall be constructed to an elevation 5 percent higher than the design height to allow for settlement.
4. Principal Spillway: The riser shall be securely attached to the pipe or pipe stub by welding the full circumference making a watertight structural connection. The pipe stub must be attached to the riser at the same percent (angle) of

grade as the outlet conduit. The connection between the riser and the riser base shall be watertight. All connections between pipe sections must be achieved by approved watertight band assemblies. The pipe and riser shall be placed on a firm, smooth foundation of impervious soil as the embankment is constructed. Breaching the embankment is unacceptable. Pervious materials such as sand, gravel, or crushed stone shall not be used as backfill around the pipe or anti-seep collar. The fill material around the pipe spillway shall be placed in four inch layers and compacted under and around the pipe to at least the same density as the adjacent embankment. Care must be taken not to raise the pipe from firm contact with its foundation when compacting under the pipe haunches. A minimum depth of two feet of hand compacted backfill shall be placed over the pipe spillway before crossing it with construction equipment.

5. **Emergency Spillway:** The emergency spillway shall be installed in undisturbed ground. The achievement of planned elevations, grades, design width, entrance and exit channel slopes are critical to the successful operation of the emergency spillway and must be constructed within a tolerance of  $\pm 0.2$  feet. If the emergency spillway requires erosion protection other than vegetation, the lining shall not compromise the capacity of the emergency spillway, e.g. the emergency spillway shall be over-excavated so that the lining will be flush with the slope surface.
6. **Vegetative Treatment:** Stabilize the embankment and all other disturbed areas in accordance with the appropriate permanent vegetative measure, see Specification 32 92 19 Loaming and Seeding, immediately following construction. In no case shall the embankment remain unstabilized for more than seven days.
7. **Erosion and Pollution Control:** Construction operations will be carried out in such a manner that erosion and water pollution will be minimized. State and local law concerning pollution abatement shall be complied with.
8. **Maintenance:** Repair all damages caused by soil erosion or construction equipment at or before the end of each working day. Sediment shall be removed from the basin when it reaches the specified distance below the top of the riser. Sediment shall not enter adjacent streams or drainage ways during sediment removal or disposal. The sediment shall not be deposited downstream from the embankment, adjacent to a stream or floodplain.
9. **Final Disposal:** When temporary structures have served their intended purpose and the contributing drainage area has been properly stabilized, the embankment and resulting sediment deposits are to be leveled or otherwise disposed of in accordance with approved sediment control plan. The proposed use of a sediment basin site will often dictate final disposition of the basin and any sediment contained therein. If the site is scheduled for future construction, then the embankment and trapped sediment must be removed, safely disposed of, and backfilled with a structural fill. When the basin area is to remain open space, the pond may be pumped dry, graded and backfilled.

#### M. Temporary Stream Crossing

1. All Crossings:
  - a. Clearing of the stream bed and banks shall be kept to a minimum.
  - b. All surface water from the construction site shall be diverted onto undisturbed areas adjoining the stream. Line unstable stream banks with rip rap or otherwise appropriately stabilize them.
  - c. The structure shall be removed as soon as it is no longer necessary for Project construction.
  - d. Upon removal of the structure, the stream shall immediately be restored to its original cross-section and properly stabilized.
  
2. Temporary Bridge Crossing:
  - a. The temporary bridge shall be constructed at or above bank elevation to prevent the entrapment of floating materials and debris.
  - b. Abutments shall be placed parallel to and on stable banks.
  - c. Bridges shall be constructed to span the entire channel. If the channel width exceeds eight feet (as measured from the tops of the banks), a footing, pier or bridge support may be constructed within the waterway.
  - d. Bridges shall be securely anchored at only one end using steel cable or chain. Large trees, large boulders, or driven steel anchors can serve as anchors.
  
3. Temporary Culvert Crossing:
  - a. The invert elevation of the culvert shall be installed on the natural streambed grade.
  - b. The culvert(s) shall extend a minimum of one foot beyond the upstream and downstream toe of the aggregate placed around the culvert. In no case shall the culvert exceed 40 feet in length.
  - c. The culvert(s) shall be covered with a minimum of one foot of aggregate. If multiple culverts are used, they shall be separated by a minimum of 12 inches of compacted aggregate fill.
  
4. Maintenance: The structure shall be inspected after every rainfall and at least once a week, whether it has rained or not, and all damages repaired immediately. The structure shall be removed immediately after construction is finished, and the streambed and banks must be stabilized.

N. Storm Drain Outlet Protection

1. Ensure that the subgrade for the filter and rip rap follows the required lines and grades shown in the plan. Compact any fill required in the subgrade to the density of the surrounding undisturbed material. Low areas in the subgrade on undisturbed soil may also be filled by increasing the rip rap thickness.
2. The rip rap and gravel filter must conform to the specified grading limits shown in the plans.
3. Geotextile must meet design requirements and be properly protected from punching or tearing during installation. Repair any damage by removing the rip rap and placing another piece of filter fabric over the damaged area. All

connecting joints should overlap a minimum of 1 foot. If the damage is extensive, replace the entire filter fabric.

4. Rip rap may be placed by equipment, but take care to avoid damaging the filter.
5. The minimum thickness of the rip rap should be 1.5 times the maximum stone diameter.
6. Construct the apron on zero grade with no overfall at the end. Make the top of the rip rap at the downstream end level with the receiving area or slightly below it.
7. Ensure that the apron is properly aligned with the receiving stream and preferably straight throughout its length. If a curve is needed to fit site conditions, place it in the upper section of the apron.
8. Immediately after construction, stabilize all disturbed areas with vegetation.
9. Filter: Install a filter to prevent soil movement through the openings in the rip rap. The filter should consist of a graded gravel layer or a synthetic filter cloth.
10. Maintenance: Inspect rip rap outlet structures after heavy rains to see if any erosion around or below the rip rap has taken place or if stones have been dislodged. Immediately make all needed repairs to prevent further damage.

#### O. Gradient Treatment

1. Contour Furrow: The maximum distance between furrows should be 40 feet, and the maximum slope length should be 200 feet. Refer to the Tennessee Erosion and Sediment Control Handbook, latest edition for detailed example of a contour furrow.
2. Serrated Slope: Bladed equipment will be needed to make numerous passes along a slope, beginning at the top and working downward. The maximum slope length should be 100 feet. Refer to the Tennessee Erosion and Sediment Control Handbook, latest edition for detailed example of a serrated slope.
3. Stepped Slope: Construct stepped slope as shown in the detailed example in the Tennessee Erosion and Sediment Control Handbook, latest edition. Steps should be wide enough to work with standard earth moving equipment. Preferably the horizontal distance should be at least 1.5 times the vertical cut distance. Slightly grade the horizontal bench inwards (e.g. back towards the top of slope). Do not make individual vertical cuts more than 24 inches high in soft materials or more than 36 inches high in rocky materials.
4. Terraced Slope: Designed drainage channels are located in the slope at regular intervals and have a regular cross-section including slope and depth requirements. Locate intersecting channels to convey storm water to the bottom of the slope. The maximum slope height between terraces shall be 30 feet for cut slopes and 25 feet for fill slopes. Terrace widths should be at least

6 feet wide. Refer to the Tennessee Erosion and Sediment Control Handbook, latest edition for detailed example of a terraced slope.

5. Seeding: Roughened areas shall be seeded and mulched as soon as possible to obtain optimum seed germination and seeding growth. Refer to Specifications for temporary mulching, vegetation in this Specification and permanent vegetation in Section 32 92 19, Loaming and Seeding.

P. Temporary Mulching

1. When mulch is used without seeding, mulch shall be applied to provide full coverage of the exposed area. Mulch shall be applied as follows:
  - a. Dry straw or hay mulch and wood chips shall be applied uniformly by hand or by mechanical equipment.
  - b. If the area will eventually be covered with perennial vegetation, 20-30 pounds of nitrogen per acre in addition to the normal amount shall be applied to offset the uptake of nitrogen caused by the decomposition of the organic mulches.
  - c. Apply mulch binder on exposed areas, where indicated on the Drawings or as instructed by the Engineer.
2. Anchoring Mulch:
  - a. Straw or hay mulch can be pressed into the soil with a disk harrow with the disk set straight or with a special "packer disk." Disks may be smooth or serrated and should be 20 inches or more in diameter and 8 to 12 inches apart. The edges of the disk should be dull enough not to cut the mulch but to press it into the soil leaving much of it in an erect position.
  - b. Straw or hay mulch shall be anchored immediately after application.
  - c. Straw or hay mulch spread with special blower-type equipment may be anchored with emulsified asphalt (Grade AE-5 or SS-1). The asphalt emulsion shall be sprayed onto the mulch as it is ejected from the machine. Use 100 gallons of emulsified asphalt and 100 gallons of water per ton of mulch.
  - d. For straw or hay mulch, plastic mesh or netting with mesh no larger than one inch by one inch shall be installed according to manufacturer's specifications.
  - e. Netting of the appropriate size shall be used to anchor wood waste. Openings of the netting shall not be larger than the average size of the wood waste chips.

Q. Temporary Grassing

1. Seed Bed Preparation:
  - a. When a hydraulic seeder is used, seedbed preparation is not required.
  - b. When using conventional or hand seeding, seedbed preparation is not required if the soil material is loose and not sealed by rainfall.
  - c. When soil has been sealed by rainfall or consists of smooth cut slopes, the soil shall be pitted, trenched or otherwise scarified to provide a place for seed to lodge and germinate.

2. Select a grass or grass-legume mixture suitable to the area and season of the year.
3. Seed shall be applied uniformly by hand, cyclone seeder, drill, culti-packer-seeder, or hydraulic seeder (slurry including seed and fertilizer). Drill or cultipacker seeders should normally place seed one-quarter to one-half inch deep. Appropriate depth of planting is ten times the seed diameter.
4. Soil should be "raked" lightly to cover seed with soil if seeded by hand.
5. Irrigation: During times of drought, water shall be applied at a rate not causing runoff and erosion. The soil shall be thoroughly wetted to a depth that will insure germination of the seed. Subsequent applications should be made when needed.
6. Temporary Stabilization: Temporary stabilization shall be provided as shown on the Drawings and conforming to these Specifications to control erosion on the site. Temporary stabilization shall be provided to any area which will not receive permanent stabilization within the next 7 calendar days.

R. Permanent Grassing and Sodding

1. Refer to Section 32 92 19, Loaming and Seeding, for installation and maintenance.
2. Permanent Stabilization:
  - a. Permanent stabilization shall be provided as shown on the Drawings and conforming to these Specifications to control erosion on the site. Permanent stabilization shall be provided to all areas of land disturbance within seven calendar days of the completion of land disturbance for any area greater than 0.25 acre.
  - b. Grass or sod removed or damaged in residential areas shall be replanted with the same variety within seven calendar days of the completion of work in any area.
  - c. Where permanent stabilization cannot be immediately established because of an inappropriate season, the Contractor shall provide temporary stabilization. The Contractor shall return to the site at the appropriate season to provide permanent stabilization in areas that received only temporary stabilization.

S. Turbidity Curtains

1. Installation:
  - a. In calm waters, such as lakes and ponds, set the curtain end stakes or anchor points (using anchor buoys if bottom anchors are employed), then tow out the curtain in the furled condition and attach it to these stakes or anchor points. Following this, any additional stakes or buoyed anchors required to maintain the desired location of the curtain shall be set, and these anchor points made fast to the curtain. Only then shall the furling lines be loosened to let the curtain skirt drop.

- b. In rivers or in other moving water, set all the curtain anchor points. Care must be taken, prior to putting the furled curtain into the water, to ensure that anchor points are of sufficient holding power to retain the curtain under the existing current conditions. Anchor buoys shall be employed on all anchors to prevent the current from submerging the flotation at the anchor points. If the moving water into which the curtain is being installed is tidal and will subject the curtain to currents in both directions as the tide changes, provide anchors on both sides of the curtain. Once the anchors are secure, the furled curtain shall be secured first to the anchor point that is farthest upstream, then attached sequentially to each downstream anchor point in turn until the entire curtain is in position. At this point, and before unfurling, the "lay" of the curtain shall be assessed and any necessary adjustments made to the anchors. Finally, when the location is ascertained to be as desired, the furling lines shall be loosened to allow the skirt to drop.
        - c. Attach anchor lines to the flotation device, not to the bottom of the curtain.
2. Removal:
  - a. Protect the silt curtain skirt from damage by furling the curtain before it is removed from the water.
  - b. The site selected to bring the curtain ashore should be free of sharp rocks, broken cement, debris, etc., so as to minimize damage when hauling the curtain over the area.
  - c. If the curtain has a deep skirt and no furling system, it shall be protected by running a small boat with a crew installing furling lines along its length
3. Maintenance:
  - a. The Contractor is responsible for maintenance of the turbidity curtain for the duration of the Project in order to ensure the continuous protection of the watercourse.
  - b. Should repairs to the geotextile fabric become necessary, there are repair kits available from the manufacturer, and their instructions shall be followed to ensure the adequacy of the repair.
  - c. When the curtain is no longer required, as determined by the Engineer, the curtain and related components shall be removed in such a manner as to minimize turbidity. Remaining sediment shall be sufficiently settled before removing the curtain. Sediment shall be removed and the original depth (or plan elevation) restored. Any spoils shall be taken to an upland area and be stabilized.

## T. Sediment Traps

1. Installation:
  - a. The embankment should be compacted in 6-inch layers by traversing with construction equipment.
  - b. All cut and fill slopes should be 2:1 or less (except for excavated, wet storage area which may be at a maximum 1:1. grade).
  - c. Construction operations should be carried out in such a manner that erosion during construction of the structure is minimized.



- d. The earthen embankment should be seeded with temporary or permanent seeding immediately after installation.
2. Removal: The structure should be removed, and the area stabilized when the upslope drainage area has been stabilized.
  3. Maintenance:
    - a. Sediment should be removed, and the trap restored to its original dimensions when the sediment has accumulated to one half the design volume of the wet storage. Sediment removal from the basin should be deposited in a suitable area and in such a manner that it will not erode and cause sedimentation problems.
    - b. Maintenance needs identified in inspections or by other means should be accomplished before the next storm event if possible, but in no case more than seven days after the need is identified.

### 3.03 CLEAN-UP

- A. Dispose of all excess erosion and sedimentation control materials in a manner satisfactory to the Engineer.
- B. All temporary erosion control measures shall be removed after final stabilization of the site has occurred, unless otherwise noted on the Drawings or instructed by the Engineer.
- C. Final clean-up shall be performed in accordance with the requirements of Section 01 74 00 of these Specifications.

END OF SECTION

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## PART 1 GENERAL

### 1.01 DESCRIPTION

- A. The work covered in this section consists of implementing best management practices (BMPs) to prevent and minimize erosion and resultant sedimentation in all disturbed areas during and after construction. The Contractor shall furnish all material, labor and equipment necessary for the proper installation, maintenance, monitoring, reporting and removal (where applicable) of erosion prevention and control measures and to cause compliance with the General NPDES Permit for Discharges of Storm Water Associated with Construction Activities: Permit No. TNR100000.
- B. Related Work:
1. Erosion and Sediment Control – Section 01 57 13
  2. Loaming, Seeding and Mulching – Section 32 92 19
  3. Storm Water Pollution Prevention Plan (SWPPP)

### 1.02 SUBMITTALS

- A. The following submittals shall be made in accordance with the requirements of this Section and of the NPDES Permit as applicable:
1. Notice of Intent (NOI)
  2. Credentials of Certified Personnel
    - a. Prior to construction activities, the Contractor shall submit to the Owner in writing the name(s) of the Contractor's designated Certified Personnel and shall provide credentials indicating that the named Certified Person has completed an appropriate erosion and sediment courses that fulfills the requirements of the NPDES Permit.
    - b. The Owner reserves the right to reject any candidate it deems unqualified for the position and, furthermore, may require the Contractor to replace an unqualified individual with a suitable substitute at anytime throughout the life of the Project, at no additional cost to the Owner.
  3. Inspection Checklists and Reports
  4. Monitoring Reports
  5. Notice of Termination (NOT)
- B. Shop drawings and product data for materials furnished under the ES&PC Plan and this Section shall be submitted to the Owner in conformance with the requirements of

Section 01 33 23 (Shop Drawings, Product Data and Samples) of these Specifications.

### 1.03 REFERENCES

- A. Contractor shall be familiar with the following referenced documents. These documents shall be complied with as applicable.
1. General NPDES Permit for Discharges of Storm Water Associated with Construction Activities: Permit No. TNR100000.
  2. Tennessee Erosion and Sediment Control Handbook (latest edition).
  3. State of Tennessee Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition.
  4. Local Issuing Authority's Soil Erosion and Sedimentation Control Ordinances.
  5. SWPPP as required by the NPDES Permit.
- B. The General NPDES Permit for Discharges of Storm Water Associated with Construction Activities: Permit No. TNR100000 is incorporated into these Specifications by reference. A copy of the permit may be downloaded from the Tennessee Department of Environment & Conservation's website:

<http://www.state.tn.us/environment/permits/conststrm.shtml>

### 1.04 DEFINITIONS

- A. Design Professional: For the purpose of this Section the term Design Professional is synonymous with consulting engineer, licensed professional, designer, and consultant used in permits, laws, rules, regulations, ordinances and other soil erosion and sediment control references. For the purposes of this Specification the Owner may at any time during the Project provide direction. This direction shall be considered equivalent to direction from the Design Professional.
- B. Engineer: For the purposes of this Section the term Engineer refers to a person or representative for the Owner performing construction oversight and managing construction activities and inspections.
- C. Contractor: For the purposes of this Section the term Contractor is synonymous with General Contractor, Discharger, Operator, Primary Permittee and Permittee (permit holder) as used in permits, laws, rules, regulations, ordinances, and other soil erosion and sediment control references.
- D. Certified Personnel or Certified Person: For the purposes of this Section, the terms Certified Personnel and Certified Person mean a person who has successfully completed an erosion and sediment controls short course eligible for continuing education units, or an equivalent course approved by Tennessee Department of Environment & Conservation.

- E. Other Definitions: Definitions as listed in the NPDES Permit shall apply in this Section.

## 1.05 REGULATORY COMPLIANCE

- A. Land disturbance activities are not authorized to begin until after all required erosion and sediment control permits are obtained from the United States, the State of Tennessee, and/or Local Issuing Authority. The Contractor is the operator, and therefore a Co-Primary Permittee, under the provisions of the NPDES Permit. As such, Contractor will be required to sign certain certifications as described in the NPDES Permit. Contractor shall comply with requirements specified in the Contract Documents or by the Owner. Contractor shall also comply with all other laws, rules, regulations, ordinances and requirements concerning soil erosion and sediment control established in the United States, the State of Tennessee, and/or Local Issuing Authority. The following documents and the documents referenced therein define the regulatory requirements for this Section.
1. NPDES Permit: The Tennessee General NPDES Permit for Discharges of Storm Water Associated with Construction Activities: Permit No. TNR100000 governs land disturbance or construction activities of one acre or more. On applicable sites, the Contractor is responsible for complying with terms and conditions of this permit.
  2. "Tennessee Erosion and Sediment Control Handbook", latest edition: Contractor shall follow Practices and Standards of the Tennessee Erosion and Sediment Control Handbook.
- B. The Contractor is responsible for any applicable fees associated with NPDES Permit.
- C. Fines resulting from non-compliance with the NPDES permit shall be paid by the Contractor at no additional expense to the Owner.

## PART 2 PRODUCTS

- A. As specified in the SWPPP, Section 01 57 13, and Section 32 92 19.

## PART 3 EXECUTION

### 3.01 NOTICE OF INTENT (NOI)

- A. The NOI shall be signed by the Contractor as Co-Primary Permittee in accordance with the Signatory Requirements of the NPDES Permit and returned to the Owner for submission to EPD. A copy of the NOI may be downloaded from the Tennessee Department of Environment & Conservation's website:

<http://www.state.tn.us/environment/permits/conststrm.shtml>

- B. The NOI must be submitted in accordance with the NPDES Permit prior to the start of construction activities. The Contractor may not start construction activities until written authorization from Tennessee Department of Environment & Conservation is received in the form of a letter of coverage under the terms and conditions of the NPDES Permit.

### 3.02 INSTALLATION

- A. Erosion control measures shall be installed as shown on the Contract Drawings and in accordance with Section 01 57 13: Erosion and Sediment Control, and Section 32 92 19: Loaming and Seeding.
- B. Rainfall and storm water monitoring equipment shall be installed as identified in the SWPPP and/or as shown on the Contract Drawings.

### 3.03 INSPECTIONS AND REPORTING

- A. The Engineer who prepared the SWPPP shall inspect the installation of the erosion control measures within one week after initial construction activities begin. The Engineer shall notify the Primary Permittee of any deficiencies. The Contractor must correct all deficiencies within two business days of receipt of the Engineer's inspection report.
- B. The Contractor will designate a Certified Person who shall perform all inspections required by the NPDES Permit and this Specification.
- C. Reports
  - 1. All inspections shall be summarized in a report. A sample inspection checklist is included at the end of this Section for the Contractor's reference and/or use.
  - 2. Reports shall identify any deficiencies and incidents of non-compliance, major observations relating to the SWPPP, and any revisions or amendments to the SWPPP. Where incidents of non-compliance are not identified within the report, the report shall contain a certification that the facility is in compliance with the SWPPP and the NPDES Permit.
  - 3. All inspection reports shall contain a summary of the inspection, the name and signature of the Certified Person making the inspection, and the date of the inspection.
  - 4. All inspection reports shall be submitted to the Owner or the Engineer on a weekly basis for review and retention. The Owner may withhold payments to the Contractor if such reports are not submitted in a timely manner.
  - 5. All reports shall contain signed certification statements as required by the NPDES Permit.
  - 6. Inspection documentation will be maintained on site and made available upon request. Inspection reports must be submitted to the Tennessee Department of

Environment & Conservation within 10 days of the request. Permittees discharging into impaired or high-quality waters are required to use the inspection form provided in Appendix C of the NPDES Permit.

### 3.04 MAINTENANCE

- A. Erosion and sediment controls as described in these Contract Documents shall be maintained in good working condition throughout the life of the project. Any part of the erosion and sediment control components found to be damaged or defective shall be promptly repaired or replaced.
- B. After completion of area surfacing, and with the approval of Owner or Engineer, the Contractor shall remove and dispose off-site all temporary erosion control measures and shall restore the ground to its original condition.

### 3.05 MONITORING AND REPORTING

- A. The Contractor shall monitor and record daily (once each twenty-four-hour period) rainfall data in accordance with the SWPPP and the NPDES Permit. Rainfall measurements shall be made at the same time each day.
  - 1. The following information shall be recorded for each daily rainfall measurement:
    - a. Project name and number
    - b. Contractor's Certified Person
    - c. Date and time
    - d. Reading and name of person taking reading
- B. The Owner reserves the right to use its own resources to duplicate monitoring and verify the work required by the Contractor in this Section.

### 3.06 NOTICE OF TERMINATION (NOT)

- A. When all construction activities have ceased, final stabilization has been implemented by the Contractor, and the site is in compliance with the NPDES permit, the Contractor shall provide a written statement to the Owner that the site is in compliance with the NPDES permit and that Contractor is prepared to sign and submit the Notice of Termination. The Owner shall make the final submittal of the Notice of Termination (NOT) to Tennessee Department of Environment & Conservation. A copy of the NOT may be downloaded from the Tennessee Department of Environment & Conservation website:

<http://www.state.tn.us/environment/permits/conststrm.shtml>

END OF SECTION

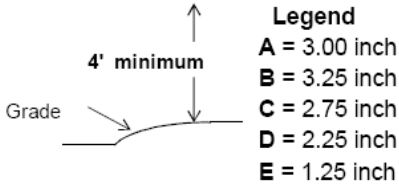
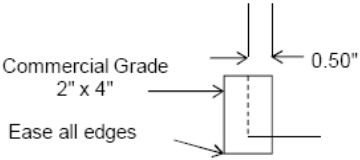
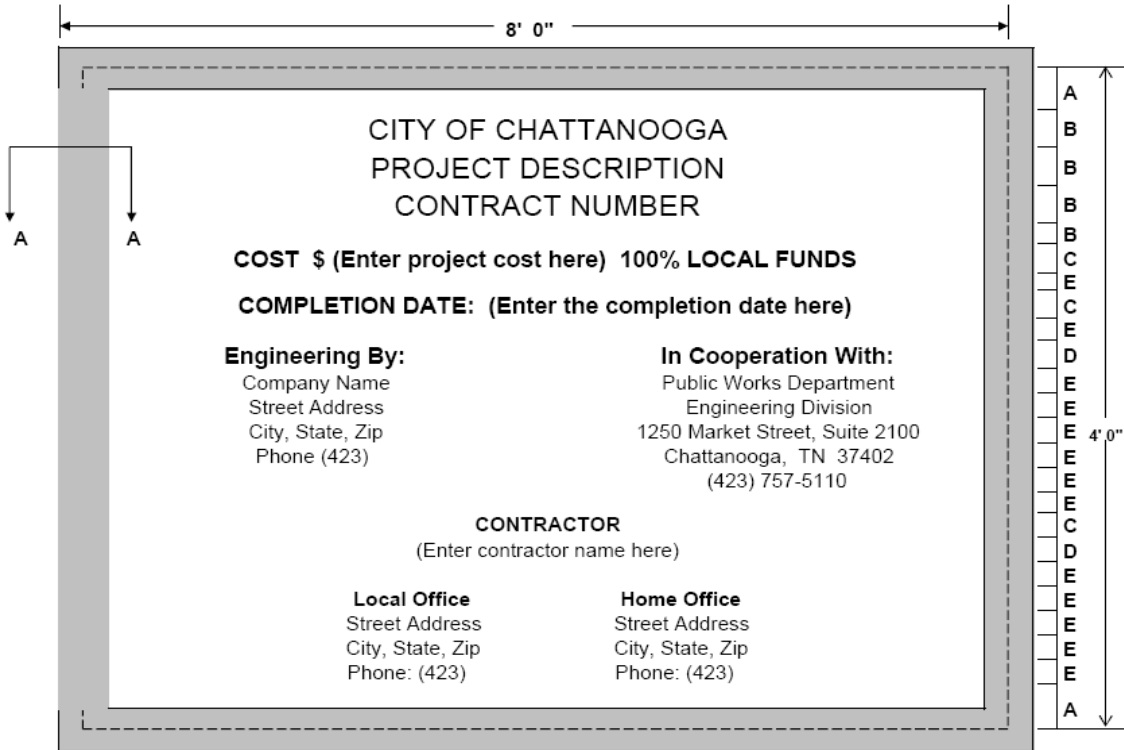
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PART 1 GENERAL

1.01 SCOPE

The Contractor shall erect two signs identifying the construction project at locations to be designated by the Engineer. The sign shall be substantially in accordance with the drawing below and shall be made of oil base paint on 3/4-inch exterior plywood and maintained in good conditions until completion of the work defined under these Contract Documents. The Contractor shall submit a layout of the sign for approval by the Engineer.

No separate payment will be made for the signs. Payment shall be included in the unit or lump sum prices bid for other sections of work.



Notes:

1. Sign to be 3/4-inch-thick exterior grade plywood.
2. Provide adequate supports to keep sign above prevailing grade to permit public viewing.
3. Edge, trim, and letters shall be dark blue; background shall be white.

END OF SECTION



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## PART 1 GENERAL

### 1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required and install pipe penetration assemblies at all floor and wall penetrations as shown on the Drawings. This Section covers materials for the various pipe penetration configurations. Generally, penetration details are called out on the Drawings and referenced on the detail sheets. Where penetrations are required and not called out, it shall be assumed the most conservative penetration detail shown on the detail sheets shall be utilized as appropriate for the piping type, the wall or floor construction and the rating of the wall or floor penetrated.

### 1.02 SUBMITTALS

- A. Submit manufacturers' literature, installation instructions, and where applicable, fire rating and certified test results of the various components on all items to be furnished in accordance with Section 01 33 23.

## PART 2 PRODUCTS

### 2.01 PIPE SLEEVES

- A. Unless otherwise shown all pipe sleeves shall be Schedule 40 galvanized steel pipe conforming to ASTM A53. Where indicated, provide a 2-in minimum circumferential water stop welded to exterior of sleeve at its midpoint. Ends of sleeves shall be cut and ground smooth and shall be flush with the wall or ceiling and extend 2-in above finished floors. Sleeves to be sealed with mechanical seals shall be sized in accordance with the seal manufacturer's recommendations. Sleeves to be sealed by caulking and sleeves for insulated piping shall be sized as required.
- B. Where shown on Drawings for new concrete walls only and for up to 20-inch pipe diameter, install molded non-metallic high-density polyethylene sleeves (HDPE) with integral hollow, molded water-stop ring four inches larger than the outside diameter of the sleeve itself. Sleeve shall have end caps for forming and reinforcing ribs, and shall be domestically manufactured. Sleeves shall be Century-Line as manufactured by Pipeline Seal & Insulator, Inc., Houston, TX, or equal.
- C. Where shown on Drawings for new concrete walls only and for pipe diameters 20 to 60 inches, install molded HDPE modular interlocking discs to make the width of the wall. Discs shall be corrugated to prevent water migration between sleeve and concrete. Discs shall be domestically manufactured, Cell-Cast as manufactured by Pipeline Seal & Insulator, Inc., Houston, TX, or equal.

## 2.02 WALL CASTINGS

- A. Unless otherwise shown, wall castings shall be ductile iron conforming to ANSI/AWWA A21.51/C151, thickness Class 53, diameter as required. Flanges and/or mechanical joint bells shall be drilled and tapped for studs where flush with the wall. Castings shall be provided with a 2-in minimum circumferential flange/ waterstop integrally cast with or welded to the casting, located as follows: for castings set flush with walls located at the center of the overall length of the casting; for castings which extend through wall located within the middle third of the wall.

## 2.03 SEALING MATERIALS

- A. Mechanical seals shall consist of rubber links shaped to continuously fill the annular space between the pipe and the wall opening or sleeve. Link pressure plates shall be molded of glass reinforced nylon. Hardware shall be mild steel with a 60,000 psi minimum tensile strength and 2-part Zinc Dichromate coating per ASTM B-633 and Organic Coating, tested in accordance with ASTM B-117 to pass a 1,500-hour salt spray test. Type 316 Stainless Steel hardware shall be used in chemical areas, for submerged service and for penetrations in tanks containing sludge or wastewater. Links shall be colored throughout elastomer for positive material identification. Each link shall have permanent identification of the size and manufacturer's name molded into the pressure plate and sealing element. Completed sealing system shall be duty pressure rated for 20 psig differential pressure. Link material shall be EPDM for all services except fire rated assemblies, fire rated seals shall use silicone link material. Mechanical seals shall be PSI-Thunderline/ Link-Seal as manufactured by Pipeline Seal & Insulator, Inc., Houston, TX, or pre-approved equal.
- B. Sealant shall be a two-part foamed silicone elastomer by Dow Corning Co., Product No. 3-6548 silicone R.T.V.; 3M brand fire barrier products caulk C.P. 25 and 3M brand moldable putty MP+; or Flame-Safe fire stop systems FS-900 by Rectorseal. Sealant bead configuration, depth and width shall be in accordance with manufacturer's recommendations.

## 2.04 MISCELLANEOUS MATERIALS

- A. Bonding compound shall be Sikadur Hi-Mod epoxy by Sika Corp.; Euco 452 by Euclid Chemical Corp.; Master Builders Company or equal.
- B. Non-shrink grout shall be Masterflow 713 by Master Builders Co.; Euco NS by Euclid Chemical Co.; Five Star Grout by U.S. Grout Corp. or equal.
- C. Escutcheons plates shall be chrome plated or stainless steel as manufactured by Kohler, American Standard, or equal.

## PART 3 EXECUTION

### 3.01 INSTALLATION

- A. Assemble and install components of pipe penetration assemblies as detailed on the Drawings.

END OF SECTION

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## PART 1 GENERAL

### 1.01 SCOPE

- A. These general equipment stipulations apply, in general, to all equipment and piping. They supplement the detailed equipment Specifications, but in case of conflict, the detailed equipment Specifications shall govern.

### 1.02 COORDINATION

- A. The Contractor shall assume full responsibility for the coordination of the installation of all equipment, materials and products furnished under these Contract Documents. The Contractor shall be completely responsible for verification that all structures, piping and equipment components furnished by the Contractor and/or subcontractors and suppliers are compatible. The Contractor shall start-up each equipment system and shall make all necessary alterations. All such alterations shall be made at the Contractor's expense.

### 1.03 UNIT RESPONSIBILITY

- A. Equipment manufacturers assigned unit responsibility for systems comprised of several components shall be responsible for furnishing a complete system in accordance with the requirements of these Specifications. The manufacturer shall be responsible for all coordination between component manufacturers and shall provide all submittals, installation and start-up services and certifications on the system as a unit.

### 1.04 ADAPTATION AND LOCATION OF EQUIPMENT

- A. No responsibility for alteration of a planned structure to accommodate other types of equipment will be assumed by the Owner. Equipment which requires alteration of the structures will be considered only if the Contractor assumes all responsibility for making and coordinating all necessary alterations. All such alterations shall be made at the Contractor's expense.
- B. The Contractor shall install the work in such manner that the equipment, piping, vents, conduit, panels, ductwork and appurtenances be as neatly installed with adequate space for maintenance and passage of personnel.

### 1.05 EQUIPMENT WARRANTY

- A. The Contractor shall warrant all equipment against faulty or inadequate design, improper assembly or erection, defective materials, breakage or other failure. The warranty period shall be defined in Section 01 78 36 of these Specifications.

## 1.06 WORKMANSHIP AND MATERIALS

- A. All equipment shall be designed, fabricated and assembled in accordance with the most modern engineering and shop practice. Individual parts shall be manufactured to standard sizes and gauges so that repair parts, furnished at any time, can be installed in the field. Like parts of duplicate units shall be interchangeable. Equipment shall be new and shall not have been in service at any time prior to delivery, except as required by tests.
- B. Materials shall be suitable for service conditions. Iron castings shall be tough, close grained, gray iron free from blowholes, flaws or excessive shrinkage and shall conform to ASTM A 48, Class 30 minimum. Plugging of defective castings shall not be permitted. Castings shall be annealed to remove internal stresses prior to machining and shall have the mark number and heat number cast on them.
- C. Except where otherwise specified, structural and miscellaneous fabricated steel used in items of equipment shall conform to the Standards of the American Institute of Steel Construction. All structural members shall be considered as subject to shock or vibratory loads.
- D. All replaceable or expendable elements such as filters, screens, drive belts, fuses and lamps shall be easily accessible and replaceable without need of dismantling equipment or piping. All such items shall be of a standard type that is readily available from multiple suppliers.
- E. Threaded openings for drains or vents in pump volutes, compressor or fan scrolls, air receivers, and heat exchangers which are plugged during normal operation shall be provided with stainless steel plugs.
- F. All equipment delivered to the Project site shall include detailed installation instructions and a parts list.

## 1.07 EQUIPMENT SPECIFICATIONS

- A. The use of singular or plural terminology in the Specifications is not intended to define the number of units required to fulfill Contract requirements. Bidders must consult the Drawings and Specifications to determine how many units of a particular piece of equipment are required. This does not relieve the Contractor of the responsibility to provide all equipment specified when multiple units are specifically required in the Specifications.

## 1.08 SEAL WATER REQUIREMENTS

- A. Where seal water is provided for flushing of mechanical shaft sleeves or sealing of shaft seal packing, provide equipment with drip pans fitted with drains to contain the leakage and convey it to the nearest suitable floor drain. Route drain piping to minimize obstructions to the movement of personnel. Seal water and drain piping may not be shown on the Contract Drawings, however no additional payment will be made for the performance of this work.

## 1.09 OPERATING FLUIDS AND GASES

- A. All operating fluids and gases recommended by the manufacturer and required for operation of the equipment shall be provided in sufficient quantity by the Contractor to fill all equipment and to replace all fluids and gases consumed during testing and start-up.

## 1.10 LUBRICATION AND LUBRICATION FITTINGS

- A. Equipment shall be adequately lubricated by systems which require attention no more frequently than weekly during continuous operation. Lubrication systems shall not require attention during start-up or shutdown and shall not waste lubricants.
- B. Lubricants of the type recommended by the equipment manufacturer shall be provided in sufficient quantity by the Contractor to fill all lubricant reservoirs and to replace all lubricants consumed during testing, start-up and initial operation. The Contractor shall provide sufficient quantities of manufacturer-approved lubricants to lubricate all equipment for one year of normal service before final acceptance of the equipment will be made by the Owner.
- C. Where special run-in oil or storage lubricants are used, they shall be flushed out and replaced with the required service lubricant by the Contractor.
- D. Tag each piece of equipment with a cloth tag showing proper type lubricant, period between lubrications, date of lubrication and worker's initials. Have space for 10 lubrication notations.
- E. Except for rotating shaft couplings, all lubrication fittings shall be brought to the outside of all equipment so that they are readily accessible from the outside without the necessity of removing covers, plates, housings or guards. Fittings shall be accessible from safe, permanent platforms or walk areas. Fittings shall be of the bull-neck, check type for use with a portable high-pressure grease gun. Connection from a remote fitting to the point of use shall be with minimum 3/16-inch stainless steel tubing, securely mounted parallel to equipment lines and protected where exposed to damage.

## 1.11 SAFETY GUARDS

- A. All belt or chain drives, fan blades, couplings and other moving or rotating parts shall be covered on all sides by a safety guard. Safety guards shall be fabricated from 16 USS gauge or heavier galvanized or aluminum-clad sheet steel or 1/2-inch mesh galvanized expanded metal. Expanded metal safety guards shall be banded to eliminate sharp edges. Each guard shall be designed for easy installation and removal. All necessary supports and accessories shall be provided for each guard. Supports and accessories, including bolts, shall be galvanized. All safety guards in outdoor locations shall be designed to prevent the entrance of rain and dripping water. All safety guards shall comply with OSHA General Industry Standards, Part 1910, Subpart O, Machinery and Machine Guarding. Provide tachometer access on shaft ends.



## 1.12 EQUIPMENT BASES

- A. Where shown on the Drawings, equipment shall be installed on a raised, reinforced concrete base. The base shall be a minimum of 4-inches in height and shall extend beyond the equipment baseplate approximately 2-inches on all sides.
- B. The Engineer shall be consulted concerning electrical conduit locations prior to pouring the concrete base.
- C. Unless otherwise specified, a cast iron or welded steel baseplate shall be provided for each pump, compressor and any other item of equipment which is to be installed on a concrete base. Each unit and drive assembly shall be supported on a single baseplate of neat design. Baseplates shall have pads for anchoring all components and adequate grout holes. Baseplates for pumps shall have a raised lip all around and a threaded drain connection. Baseplates shall be anchored to the concrete base with suitable anchor bolts and the space beneath filled with epoxy or non-shrink grout as specified in the grouting section.
- D. Centrifugal blower bases shall be installed in accordance with manufacturer's recommendations. Unless manufacturer instructions direct otherwise, blower bases shall be set on resilient pads and not hard bolted to the concrete pad. Where anchor bolts are utilized, threaded embedments or adhesive or expansion anchor studs shall be used with two nuts locked with a minimum 1/8-inch gap between nut and base frame.
- E. On direct coupled equipment, motor and driven equipment shall be doweled to a common base with a minimum of two dowels each.

## 1.13 ALIGNMENT OF MOTORS AND EQUIPMENT

- A. In every case where a drive motor is connected to a driven piece of equipment by a flexible coupling, the coupling halves shall be disconnected and the alignment between the motor and the equipment checked and corrected. Machinery shall first be properly aligned and leveled by means of steel wedges and shims or jacking screws near anchor bolts. Anchor bolts shall be tightened against the shims on wedges or jacking screws and the equipment shall again be checked for level and alignment before placing grout. Wedges shall not be placed between machined surfaces.
- B. In general, checking and correcting the alignment shall follow the procedures set up in the Standards of the Hydraulic Institute, Instructions for Installation, Operation, and Maintenance of Centrifugal Pumps. Equipment shall be properly leveled and brought into angular and parallel alignment.
- C. Equipment shall be installed in such a way that no strain is transmitted to the equipment by piping systems or adjacent equipment.
- D. Alignment shall be performed in the manufacturer's shop between drivers and driven equipment. After installation, a laser alignment shall be performed in the field by an independent testing laboratory acceptable to the Engineer and retained by the

Contractor. The laser alignment shall be performed in the presence of a qualified manufacturer's field representative. The laser alignment system shall be either a combined laser emitter and laser target detector or separate units for the emitter and detector.

- E. The driven equipment shall be operated under load for at least 90 minutes prior to performing the field alignment. Alignment tolerance values shall be as recommended by the driven equipment manufacturer or as specified in the equipment specification section. Alignment procedures shall comply with the equipment manufacturer's recommendations. Alignment shall be rechecked after equipment has operated under load for a minimum of 24 hours.
- F. Either shims or factory installed adjusting bolts shall be used to level the equipment and correct a soft foot condition.
- G. Shims shall meet the following Specifications:
  - 1. Commercially die-cut.
  - 2. Made of corrosion and crush resistant stainless steel, which is dimensionally stable when subjected to high compression over long periods of time.
  - 3. Consistent over the whole shim area, without seams or folds from bending.
  - 4. Clean, free from burrs, bumps, nicks, and dents of any kind.
  - 5. Size numbers or trademarks etched into the shim, not printed or stamped.
  - 6. The smallest commercial shim that will fit around the hold-down bolt without binding shall be used.
  - 7. The overall shim pack shall not exceed a total of three shims.
  - 8. Shims shall rest on bare metal, not paint or other coatings.
  - 9. Both driver and driven machines shall contain a minimum 0.125-inch shim ( $\pm 0.0003$  inch) between all machine feet and mounting base, excluding alignment shims.
  - 10. All shims shall be selected from the proper size pre-cut series (A, B, C, D, etc.) to match the machine mounting bolt size and to maximize coverage of the machine footprint being supported. Multiple or oversized shims shall be used where the area of the machine footprint is 150 percent or greater than the proper size pre-cut series shim footprint.
- H. Both a shop and a field alignment report shall be submitted and shall contain the following information:
  - 1. Alignment tolerances used.
  - 2. Soft foot.

3. Vertical angularity (pitch) at the coupling point.
4. Vertical offset at the coupling point.
5. Correct soft foot at all feet of both driver and driven machines. Actual allowable uncorrected soft foot measured at any machine foot shall be less than a maximum of 0.002 inch of required shim. This includes soft foot caused by angled foot or base conditions.
6. Horizontal angularity (yaw) at the coupling point.
7. Horizontal offset at the coupling point.

## 1.14 GROUTING

- A. A special epoxy, non-shrink, or sand-cement grout shall be used in the placement of all pump, motor and equipment baseplates or bedplates, column baseplates, other miscellaneous baseplates and other grouting applications as shown on the Drawings.

## 1.15 WELDING AND BRAZING

- A. All welds shall be sound and free from embedded scale and slag. All butt welds shall be continuous, and where exposed to view, shall be ground smooth. All continuous welds shall be gas and liquid-tight. Welds in piping shall have full penetration and shall be smooth on the inside of the pipe. Intermittent welds shall have an effective length of at least 2-inches and shall be spaced not more than 6-inches apart.
- B. All welding of steel and aluminum, including materials, welding techniques, general safety practices, appearance and quality of welds, and methods of correcting defective work, shall conform to the latest requirements of AWS Specifications. Structural steel welding shall conform to the requirements of the AWS Structural Welding Code. The general recommendations and requirements of the AWS Structural Welding Code shall also apply to welded aluminum structures. The welding process and welding operators shall meet qualification tests and welding performance tests in accordance with the latest provisions of ASME Boiler and Pressure Vessel Code, Section IX, Welding and Brazing Qualifications. Welding process and qualification procedures for welding of pipe shall conform to the latest requirements of ANSI B31.1, Section 327, Welding, and Section 328, Brazing and Soldering. All welding qualification tests shall be witnessed by the Engineer, except as provided herein. All costs associated with the qualification or testing of welders and welding operators shall be borne by the Contractor.
- C. Welding of stainless steels shall be performed by the MIG or TIG process, in accordance with ASME and AWS recommendations. After welding is completed, the welds shall be ground smooth, where required, and all welds shall be pickled and passivated such that the weld will be no less corrosion resistant than the base metal welded.
- D. Reports certifying that the welding procedures, welders and welding operators that the Contractor intends to use meet the requirements specified above. These reports shall

be submitted to the Engineer prior to beginning the work. In the case of welder qualifications for shop welding and for carbon steel field welding, welders presenting certified qualification papers validated within the preceding 6-month period will not be required to take the qualification tests. In the case of field welding of stainless steel or aluminum, all welders shall be required to take the qualification tests regardless of past experience or availability of certified qualification papers.

- E. Field welding practices shall conform to OSHA construction standards, Part 1926, Subpart J, Welding and Cutting. Shop welding practices shall conform to OSHA General Industry Standards, Part 1910, Subpart Q, Welding, Cutting, and Brazing.
- F. Welding electrodes for structural steel shall conform to the standard recommendations of the AISC. Welding electrodes for stainless steel shall conform to applicable AWS Specifications and shall be as recommended by "Welded Austenitic Chromium-Nickel Stainless Steels, Techniques and Properties", published by the International Nickel Company, New York, New York. Welding electrodes for aluminum shall conform to applicable AWS Specifications.
- G. Each welder and welding operator must identify all welds with welder's assigned symbol.
- H. Welders performing unsatisfactory work shall be removed from the welding process.
- I. The Owner may inspect any weld by radiographic or other means. Welds not in accordance with the requirements specified herein shall be repaired or replaced at the Contractor's expense. Excessive porosity, nonmetallic inclusions, lack of fusion, incomplete penetration and cracking shall constitute grounds for rejection of welds.

## 1.16 ERECTION AND SETTING

- A. In the erection and setting of all fabricated equipment, the Contractor shall exercise care to ensure that each item of equipment is adequately supported so as not to bend or distort under its own weight until adequate foundation support and anchorage are provided. Where lifting lugs, angles or clips are provided on equipment, they shall be used in erecting and setting the equipment. Erection and setting of equipment and structural steel shall conform to the requirements of OSHA Construction Standards, Part 1926, Subpart R, Steel Erection, Subpart H, Material Handling, Storage, Use, and Disposal, and Subpart N, Cranes, Derricks, Hoists, and Conveyors. Erection of structural steel shall conform to the latest requirements of the AISC Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings.
- B. During placement and prior to any grouting or connection of adjacent piping, the equipment shall be leveled and aligned true to level, plumb, alignment and grade with all parts bearing or fitting the structure or equipment accurately and securely. It shall not be permitted to cock out of alignment, nor shall the Contractor redrill, reshape or force fit any fabricated items. Connections of process piping to mechanical equipment nozzles/fittings shall be brought into alignment, one to the other. When joints are made up, there shall be no force exerted on the equipment connection.
- C. The Contractor shall take all measurements necessary to properly fit Contractor's work in the field, and Contractor shall be governed by and responsible for these

measurements and the proper working out of all details. The Contractor shall be responsible for the correct fitting of all work in the field and the accurate placement of all anchor bolts installed by Contractor.

- D. The Contractor shall bring all parts to be erected or assembled into close contact. Before assembly, all surfaces to be in contact with each other shall be thoroughly cleaned. Drift pins may be used only for bringing members into position, never to enlarge or distort holes. Torching or burning of holes or cutting of fabricated items to correct misalignment or shop errors shall not be permitted. Enlargement of holes necessary to make field connections shall be done only with the Engineer's approval by reaming with twist drills and in a manner acceptable to Engineer.
- E. All equipment shall be furnished with suitable eyebolt lifting lugs or lifting angles to facilitate handling.
- F. All flanged piping connections shall be "Two-Holed" such that the two upper-most flange bolt holes are horizontal.

### 1.17 SPECIAL TOOLS AND ACCESSORIES

- A. Equipment requiring periodic repair and adjustment shall be furnished complete with all special tools, instruments and accessories required for proper maintenance. Special tools and accessories shall include those tools and accessories not normally available in an industrial hardware or mill supply house. Equipment requiring special devices for lifting or handling shall be furnished complete with those devices.

### 1.18 SHOP PRIMING AND PAINTING

- A. All equipment shop priming and painting, including surface preparation, workmanship and materials, shall be as specified in Section 09 91 00 of these Specifications.

### 1.19 FIELD PRIMING

- A. All iron and carbon steel surfaces not specified to be galvanized or shop primed and all ferrous or nonferrous surfaces specified to be field primed and painted shall be coated in the field with one or more coats of primer in accordance with the requirements of Section 09 91 00 of these Specifications

### 1.20 FIELD PAINTING

- A. Except for interior surfaces of vessels and enclosed equipment not specified to be field painted, all ferrous and nonferrous surfaces of equipment which have received one or more coats of shop or field applied primer shall be field painted after installation in accordance with the requirements of Section 09 91 00 of these Specifications.

### 1.21 GALVANIZING

- A. All galvanizing shall be done by the hot-dip process after fabrication in conformity with requirements of ASTM A 123, Grade 100; ASTM A 153, ASTM A 384 and ASTM A

385. Articles to be galvanized shall be pickled before galvanizing. Articles to be painted shall not be quenched.

- B. Where galvanized bolts are specified or required by the Drawings, zinc plated bolts will be acceptable provided zinc plating conforms to ASTM B 633, Type II.
- C. Areas of galvanizing damaged at the factory by welding or burning or otherwise damaged shall be thoroughly stripped and cleaned and recoated with zinc to the required thickness by the hot dip process. Areas of galvanizing damaged in the field during transportation, handling or installation shall be stripped, cleaned, and recoated with zinc to the required thickness in accordance with ASTM A 780, Annex A3.
- D. Galvanized articles shall be free from uncoated spots, blisters, flux, black spots, dross, projections and other defects not consistent with acceptable galvanizing practice.
- E. Zinc and cadmium plating shall be subject to visual examination to determine uniformity of coating. The Engineer may require that the coating uniformity be tested in accordance with ASTM A 239 or ASTM E 376.

## 1.22 VIBRATION TESTING

- A. Unless specified otherwise in the Specifications, each pump or blower having a rated power of 50 HP, or greater, shall be tested in the field for acceptable vibration levels. Vibration testing shall be performed by an experienced, factory-trained and authorized vibration analysis expert (not a sales representative) retained by the Contractor for this work. Each unit shall be tested separately without duplicate equipment running. All field testing shall be done in the presence of the Engineer. The Engineer shall be furnished with four certified copies of vibration test data for each test performed. For vertical turbine pumps, acceptable motor vibration, measured with the motor mounted on the pump, uncoupled, shall not exceed 1/3 of the Hydraulic Institute standard for the pump. Motor site vibration tests shall be performed with all piping and appurtenances connected to the pump, but with the motor mechanically uncoupled from the pump. Vertical turbine pumps and motors shall be tested on-site, with readings taken at both the upper motor bearing housing and at the pump discharge head/motor pedestal top mounting plate. All tests specified below shall be performed and recorded at both locations for vertical turbine pumps. For constant speed systems, these vibration tests shall be performed with the pump coupled to the motor and at rated speed and flow.
- B. Where specified in the Specifications, equipment which is assembled and tested on the manufacturer's floor shall also be checked triaxially for vibration by the manufacturer. The results of these tests, along with location of vibration check points, shall be submitted to the Engineer. All readings shall be made on an X-Y recorder with appropriate scales indicated and an explanation thereon of any recordings exceeding specified limits. The field tests shall include substantiation of the manufacturer's test data. Include in the vibration testing data the support condition of the equipment and a photo of the equipment mounted for vibration testing.

- C. For systems with variable speed drives, tests shall be conducted at various speeds between maximum and minimum speed, and at two speeds equally-spaced between minimum and maximum. Variable speed vertical pumps shall be tested at the full speed design condition, and then vibration shall be recorded as speed is slowly reduced to the minimum design speed to identify any peaks within the speed range. For systems with two-speed drives, tests shall be conducted at both speeds. For systems with constant-speed drives, tests shall be conducted under various loading conditions as determined by the Engineer.
- D. Rotating equipment shall be tested for vibration in the field after installation by the following method. Equipment, complete with drive systems, in place at the job site, shall not vibrate more than the values allowed herein, unless otherwise specified in the detailed equipment specifications. All field tests shall be running tests with the equipment operating on the product for which it is intended or a substitute acceptable to the Engineer. The term displacement, as used herein, shall mean total peak-to-peak movement of vibrating equipment, in mils; velocity shall mean the peak velocity or speed of the vibrating equipment, in inches per second; acceleration shall mean the maximum acceleration which occurs during the vibration cycle, measured in Gs. Displacement and velocity shall be measured by a meter equal to IRD Balancing Vibration Analyzer Model 258, or Bently-Nevada Model TK-8. Acceleration shall be measured by suitable equipment equal to IRD Mechanalysis, Bently-Nevada, subject to approval of the Engineer. Frequency of vibration, in cycles per minute (cpm), shall be determined when vibration exceeds specified levels or as otherwise necessary. Vibration shall be measured on the bearing housing, unless other locations are deemed necessary by the vibration analysis expert and Engineer.
- E. For all equipment tested, vibration shall be checked in the radial and axial directions. For pumps, vibration shall not exceed that permitted by the Hydraulic Institute.
- F. Critical speeds of all rotating equipment shall meet the following:
1. For stiff shaft designs, the first critical speed of the rotating equipment shall be at least 25 percent above the maximum design operating speed.
  2. For flexible shaft designs, critical speeds shall be at least 2 percent above or below normal design operating speeds.
- G. The Contractor shall be responsible for unit and system assembly vibration testing and their results, which shall be within the specified limits. Copies of test results shall be submitted to the Engineer for review. Should the vibration field test results exceed shop test results or the limits specified herein, the Contractor shall correct the deficiencies within 30 days. After corrections have been completed, the vibration testing shall be rerun and the results resubmitted to the Engineer for review.

## 1.23 HYDRAULIC SYSTEMS

- A. All pipes, tubes and hoses for hydraulic fluid shall be securely restrained against movement. All tubing and hoses shall be routed, shielded and supported such that rubbing or abrasion of the jacket shall not occur.

- B. All hydraulic fluid reservoirs for hydraulic power packs shall be equipped with a low level shut-off mechanism which shall stop operation of the power pack when the level of fluid in the reservoir reaches a predetermined low level. Reservoirs shall have a sight glass or tube allowing visual inspection of level and lubricant appearance.
- C. All hydraulic systems shall be equipped with an alarm to notify the operator of system malfunction.

## 1.24 NOISE CRITERIA

- A. Unless otherwise specified, noise levels for all operating equipment shall not exceed 90 dB at 5 feet from the equipment when measured on the A scale of a calibrated sound level meter at slow response.
- B. Noise criteria shall be met without the use of special external barriers or enclosures.

## 1.25 IDENTIFICATION OF PIPING AND EQUIPMENT

- A. General: All equipment and piping specified to be painted shall be color coded as specified in Section 09 91 00 of these Specifications.
- B. Equipment: All major items of equipment shall have an identification nameplate and dataplate.
  - 1. Nameplates: The Contractor shall submit a suitable list of all items of major equipment to the Engineer, who will furnish the Contractor with an identification numbering system. The nameplates shall be of Type 304 stainless steel, No. 6 finish, and not less than No. 16 gauge with indented stamped lettering. Nameplates shall be attached to equipment bases in easily visible and accessible locations. Nameplates shall be fastened in a permanent manner, arranged not to damage the equipment, with not less than four stainless steel fasteners.
  - 2. Dataplates: Each item of mechanical equipment shall be provided with a stainless steel dataplate. Separate dataplates shall be provided for motors, engines and driven equipment. Dataplates shall include the following minimum information:
    - a. Name of equipment (from equipment specifications)
    - b. Manufacturer
    - c. Model designation
    - d. Serial number
    - e. Rated horsepower
    - f. Service factor
    - g. Electrical and insulation data
    - h. Speed (rpm)
    - i. Capacity and head (discharge pressure)
    - j. Net weight
    - k. Lettering shall be upper case, block style in size and spacing to suit the nameplate. The identification nameplates shall not be painted.



- C. Valves: All valves shall be identified with a round stainless steel disc, approximately 1-1/2-inches in diameter and not less than No. 14 gauge, coated with a clear lacquer. Discs shall be fastened to valves in a permanent manner; attachment by chain to handwheels or other operators shall not be acceptable. Discs shall be stamped using indented numerals and/or letters with a valve number corresponding to its identification number in the valve schedule to be included in the operation and maintenance manual.
- D. All pushbutton stations, switches, motor controllers, transmitters and other control equipment shall have identification nameplates of the engraved, laminated plastic type affixed to or adjacent to the switch, pushbutton station, etc.
- E. All manufacturer's nameplates, identification nameplates and ASME code plates located on areas of equipment to be insulated shall be removed and reattached on uninsulated areas in a manner acceptable to the Engineer.

## 1.26 SAFETY SIGNS

- A. Permanent safety signs shall be furnished and installed on all mechanical and electrical equipment where a hazard may exist. Signs shall be made in accordance with current OSHA requirements and shall be suitable for exterior use. Mounting details shall be in accordance with manufacturer's recommendations; location in accordance with governing agency regulations. Fasteners shall be stainless steel.
- B. Safety signs shall be approximately 10-inches high by 14-inches wide, colored yellow and black on minimum 0.080-inch aluminum stock.
- C. Safety signs shall be furnished and will include, but not be limited to, the following:
  1. The following sign shall be affixed to all equipment which may be started automatically from a remote location:

**CAUTION**

**THIS EQUIPMENT MAY START AUTOMATICALLY BY REMOTE CONTROL**

2. The following sign shall be affixed to all electrical equipment or instrument panels, as applicable:

**CAUTION - SHOCK HAZARD**

**THIS EQUIPMENT IS POWERED BY MULTIPLE SOURCES  
CONTACTS MAY BE ENERGIZED AFTER LOCAL POWER IS DISCONNECTED**

3. The following sign shall be provided at all areas where oxygen or flammable materials are stored or used (colored red, white and black):

**DANGER**

**NO SMOKING, MATCHES, OR OPEN FLAMES**

4. The following sign shall be affixed to all entrance hatches or access manways on covered tanks and vessels:

CAUTION  
OXYGEN DEFICIENT OR TOXIC CONDITIONS MAY EXIST  
FOLLOW PRESCRIBED PROCEDURES BEFORE ENTRY

5. The following sign shall be provided at all compressor vents and equipment blowoffs:

CAUTION  
LOUD BLOWDOWN MAY OCCUR WITHOUT WARNING

6. All chemical or hazardous material storage tanks containing flammable, toxic, reactive and otherwise unstable materials, or materials representing a personnel safety hazard shall be labeled in accordance with NFPA 704. Signage shall be applied to the tank exterior at all four architectural elevations (N, S, E & W) as well as the filling station. The NFPA signs shall have the color-coded diamonds and shall indicate the actual chemical name and emergency response info.

END OF SECTION

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## PART 1 GENERAL

### 1.01 SCOPE OF WORK

- A. This Section specifies the general requirements for the delivery handling, storage and protection for all items required in the construction of the work. Specific requirements, if any, are specified with the related item.

### 1.02 TRANSPORTATION AND DELIVERY

- A. Transport and handle items in accordance with manufacturer's instructions.
- B. Schedule delivery to reduce long term on-site storage prior to installation and/or operation. Under no circumstances shall equipment be delivered to the site more than one month prior to installation without written authorization from the Engineer.
- C. Coordinate delivery with installation to ensure minimum holding time for items that are hazardous, flammable, easily damaged or sensitive to deterioration.
- D. Deliver products to the site in manufacturer's original sealed containers or other packing systems, complete with instructions for handling, storing, unpacking, protecting and installing.
- E. All items delivered to the site shall be unloaded and placed in a manner which will not hamper the Contractor's normal construction operation or those of subcontractors and other contractors and will not interfere with the flow of necessary traffic.
- F. Provide necessary equipment and personnel to unload all items delivered to the site.
- G. Promptly inspect shipment to assure that products comply with requirements, quantities are correct, and items are undamaged. For items furnished by others (i.e., Owner, other Contractors), perform inspection in the presence of the Engineer. Notify Engineer verbally, and in writing, of any problems.
- H. If any item has been damaged, such damage shall be repaired at no additional cost to the Owner.

### 1.03 STORAGE AND PROTECTION

- A. Store and protect products in accordance with the manufacturer's instructions, with seals and labels intact and legible. Storage instruction shall be studied by the Contractor and reviewed with the Engineer by him/her. Instruction shall be carefully followed and a written record of this kept by the Contractor. Arrange storage to permit access for inspection.
- B. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.

- C. Cement and lime shall be stored under a roof and off the ground and shall be kept completely dry at all times. All structural, miscellaneous and reinforcing steel shall be stored off the ground or otherwise to prevent accumulations of dirt or grease and in a position to prevent accumulations of standing water and to minimize rusting. Beams shall be stored with the webs vertical. Precast concrete shall be handled and stored in a manner to prevent accumulations of dirt, standing water, staining, chipping or cracking. Brick, block and similar masonry products shall be handled and stored in a manner to reduce breakage, cracking and spalling to a minimum.
- D. All mechanical and electrical equipment and instruments subject to corrosive damage by the atmosphere if stored outdoors (even though covered by canvas) shall be stored in a weathertight building to prevent injury. The building may be a temporary structure on the site or elsewhere, but it must be satisfactory to the Engineer. Building shall be provided with adequate ventilation to prevent condensation. Maintain temperature and humidity within range required by manufacturer.
1. All equipment shall be stored fully lubricated with oil, grease and other lubricants unless otherwise instructed by the manufacturer.
  2. Moving parts shall be rotated a minimum of once weekly to ensure proper lubrication and to avoid metal-to-metal "welding". Upon installation of the equipment, the Contractor shall start the equipment, at least half load, once weekly for an adequate period of time to ensure that the equipment does not deteriorate from lack of use.
  3. Lubricants shall be changed upon completion of installation and as frequently as required thereafter during the period between installation and acceptance. New lubricants shall be put into the equipment at the time of acceptance.
  4. Prior to acceptance of the equipment, the Contractor shall have the manufacturer inspect the equipment and certify that its condition has not been detrimentally affected by the long storage period. Such certifications by the manufacturer shall be deemed to mean that the equipment is judged by the manufacturer to be in a condition equal to that of equipment that has been shipped, installed, tested and accepted in a minimum time period. As such, the manufacturer will guaranty the equipment equally in both instances. If such a certification is not given, the equipment shall be judged to be defective. It shall be removed and replaced at the Contractor's expense.
- E. All paint and other coating products shall be stored in areas protected from the weather. Follow all storage requirements set forth by the paint and coating manufacturers.

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION (NOT USED)

END OF SECTION

## PART 1 GENERAL

### 1.01 SCOPE

- A. Construction staking shall include all of the surveying work required to layout the work and control the location of the finished Project. The Contractor shall have the full responsibility for constructing the Project to the correct horizontal and vertical alignment, as shown on the Drawings, as specified, or as ordered by the Engineer. The Contractor shall assume all costs associated with rectifying work constructed in the wrong location.
- B. From the information shown on the Drawings and the information to be provided as indicated under Project Conditions below, the Contractor shall:
  - 1. Be responsible for setting reference points and/or offsets, establishment of baselines, and all other layout, staking, and all other surveying required for the construction of the Project.
  - 2. Safeguard all reference points, stakes, grade marks, horizontal and vertical control points, and shall bear the cost of re-establishing same if disturbed.
  - 3. Stake out the permanent and temporary easements or the limits of construction to ensure that the work is not deviating from the indicated limits.
  - 4. Be responsible for all damage done to reference points, baselines, center lines and temporary bench marks, and shall be responsible for the cost of re-establishment of reference points, baselines, center lines and temporary bench marks as a result of the operations.
- C. Baselines shall be defined as the line to which the location of the work is referenced, i.e., edge of pavement, road centerline, property line, right-of-way or survey line.
- D. Record Drawing surveys shall be performed in accordance with Section 01 78 39 of these Specifications.

### 1.02 PROJECT CONDITIONS

- A. The Drawings provide the location and/or coordinates of principal components of the Project. The alignment of some components of the Project may be indicated in the Specifications. The Engineer may order changes to the location of some of the components of the Project or provide clarification to questions regarding the correct alignment.
- B. The survey points, control points, and baseline to be provided to the Contractor shall be limited to only that information which can be found on the Project site by the Contractor.

### 1.03 QUALITY ASSURANCE

- A. The Contractor shall furnish documentation, prepared by a surveyor currently registered in the State in which the Project is located, confirming that staking is being done to the horizontal and vertical alignment shown in the Contract Documents. This requires that the Contractor hire, at the Contractor's own expense, a currently registered surveyor, acceptable to the Owner, to provide ongoing construction staking or confirmation of such.
- B. Any deviations from the Drawings shall be confirmed by the Engineer prior to construction of that portion of the Project.
- C. Construction Surveying Cash Allowance
  - 1. This cash allowance is solely for the use of the Engineer for verification of the Contractor's reference points, centerlines and work performed and is not to be used by the Contractor to provide cut sheets.
  - 2. The presence of this cash allowance in no way relieves the Contractor of the responsibility of installing reference points, centerlines, temporary bench marks, verifying that the work has been performed accurately, and all other work covered by this Section.

### 1.04 SITE WORK

- A. Staking Precision: The precision of construction staking shall match the precision of a component's location indicated on the Drawings. Staking of utilities shall be done in accordance with generally accepted practice for the type of utility.
- B. Written certification, by a licensed surveyor, that structure base grade and structure corner locations match the locations shown on the Drawings is required prior to beginning construction of the structure.
- C. Paved Surfaces: The Contractor shall establish a reference point for establishing and verifying the paving subgrade and finished grade elevations. Any variance with plan grades shall be identified by the Contractor and confirmed by the Engineer prior to constructing the base.

### 1.05 FORCE MAINS AND ACCESSORIES

- A. Staking Precision: The precision of construction staking required shall be that which the correct location of the main can be established for construction and verified by the Engineer. Where the location of components of the main, e.g. fittings, valves, road crossings and are not dimensioned, the establishment of the location of these components shall be based upon scaling these locations from the Drawings with relation to readily identifiable land marks, e.g., survey reference points, power poles, manholes, etc.

**B. Reference Points**

1. Reference points shall be placed, at or no more than three feet, from the outside of the construction easement or right-of-way. The location of the reference points shall be recorded in a log with a copy provided to the Engineer for use, prior to verifying reference point locations. Distances shall be accurately measured to 0.01 foot.
2. The Contractor shall give the Engineer reasonable notice that reference points are set. The reference point locations must be verified by the Engineer prior to commencing clearing and grubbing operations.

**1.06 SEWERS AND ACCESSORIES**

A. Staking Precision: The precision of construction staking shall be no less than 1:10,000. Horizontal distances shall be measured with a precision no less than 0.01 feet, and horizontal angles measured with a precision of no less than 10 seconds.

**B. Reference Points**

1. The surveyor shall obtain the coordinates on each manhole and provide this information to the Engineer.
2. Reference points shall be placed, at or no more than three feet, from the outside of the construction easement or right-of-way. The location of the reference points shall be recorded in a log with a copy provided to the Engineer for use prior to his verifying reference point locations. Distances between reference points and the manhole centerlines shall be accurately measured to the nearest 0.01 foot.
3. The Contractor shall give the Engineer reasonable notice that reference points are set. The reference point locations must be verified by the Engineer prior to commencing clearing and grubbing operations.

END OF SECTION



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## PART 1 GENERAL

### 1.01 SCOPE

- A. The work under this Section includes, but is not necessarily limited to, cutting and patching work as indicated on the Drawings, herein specified and as necessary for proper and complete performance of the work.
- B. Requirements for cutting and patching may be described in various sections of these Specifications.
- C. Execute cutting, including excavating and filling, or patching of work required to:
  - 1. Make several parts fit properly.
  - 2. Uncover work to provide for installation of ill-timed work.
  - 3. Remove and replace defective work.
  - 4. Remove and replace work not conforming to requirements of the Contract Documents.
  - 5. Remove samples of the installed work as specified for testing.
  - 6. Install specified work in existing construction.
- D. In addition, upon written instruction of the Engineer:
  - 1. Uncover work to provide for the Engineer's observation of covered work.
  - 2. Remove samples of the installed materials for testing.
  - 3. Remove work to provide for alteration of existing work.
- E. Protection of Work:
  - 1. Do not endanger any work by cutting or altering the work or any part of it.
  - 2. Do not cut or alter the work of another contractor without written consent of the Engineer.

### 1.02 SUBMITTALS

- A. Prior to cutting which affects the structural safety of the Project or the work of another contractor, submit a written notice to the Engineer requesting consent to proceed with cutting. The notice shall include:
  - 1. Identification of Specific Project Items (e.g., pipe ID or manhole ID).

2. Description of defective work.
  3. Necessity for cutting.
  4. Effect on other work or on the structural integrity of the Project.
  5. Description of the proposed work including:
    - a. Scope of cutting and patching;
    - b. Subcontractor and trades to execute work;
    - c. Products proposed to be used;
    - d. Extent of refinishing.
  6. Alternatives to cutting and patching.
  7. Designation of party responsible for the cost of cutting and patching.
- B. Cost Estimate: Prior to cutting and patching performed on instruction of the Engineer, submit a cost estimate.
- C. Should conditions of the work or the schedule necessitate alternative materials or methods, submit a written recommendation to the Engineer that includes:
1. Compelling conditions for alternative materials or methods;
  2. Recommended alternative materials or methods;
  3. Submittals as required for substitutions.
- D. Uncovered Work: Submit written notice to the Engineer designating the time the work will be uncovered for the Engineer's observation.

### 1.03 PAYMENT FOR COST

- A. Contractor's Costs: Costs caused by ill-timed or defective work or work not conforming to the Contract Documents, including costs for additional services of the Engineer, shall be paid by the Contractor.
- B. Owner's Costs: Cost of work done as the result of the Engineer's/Owner's instructions, which is not shown on the Drawings or specified, other than defective or non-conforming work, will be paid for by the Owner.

## PART 2 PRODUCTS

### 2.01 MATERIALS

- A. All products and materials shall conform to the requirements of the Specifications for the type of work being performed, except where no products are specified in these Specifications for the item being replaced; then the products and materials shall be of an equivalent type, quality, thickness and width of the item removed.

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## PART 3 EXECUTION

### 3.01 INSPECTION

- A. Inspect existing conditions of the work including elements subject to movement or damage during cutting and patching, or excavating and backfilling.
- B. After uncovering work, inspect conditions affecting the installation of new products.

### 3.02 PREPARATION

- A. Provide shoring, bracing and support as required to maintain structural integrity of the Project.
- B. Provide protection for other portions of the Project and provide protection from the elements.

### 3.03 PERFORMANCE

- A. Execute fitting and adjustments of products to provide finished installation that complies with specified tolerances and finishes.
- B. Execute cutting and demolition by means that will prevent damage to other work and will provide proper surfaces to receive installation of repairs and new work.
- C. Execute excavating and backfilling as specified in Section 31 75 01 or Section 31 23 33 of these Specifications.
- D. Restore work which has been cut or removed and install new products to provide completed work in accordance with the requirements of the Contract Documents.
- E. Refinish entire surfaces as necessary to provide an even finish. Continuous surfaces shall be refinished to the nearest intersection and assemblies shall be entirely refinished.

END OF SECTION

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## PART 1 GENERAL

### 1.01 SCOPE

- A. This Section covers the general cleaning which the Contractor shall be required to perform both during construction and before final acceptance of the Project unless otherwise shown on the Drawings or specified elsewhere in these Specifications.

### 1.02 QUALITY ASSURANCE

- A. Daily, and more often if necessary, conduct inspections verifying that requirements of cleanliness are being met.
- B. In addition to the standards described in this Section, comply with all pertinent requirements of governmental agencies having jurisdiction.

### 1.03 CLEANING MATERIALS AND EQUIPMENT

- A. Provide all required personnel, equipment and materials needed to maintain the specified standard of cleanliness.
- B. Use only the cleaning materials, methods and equipment which are compatible with the surface being cleaned, as recommended by the manufacturer of the material or as approved by the Engineer.

### 1.04 PROGRESS CLEANING

- A. General
  - 1. Do not allow the accumulation of scrap, debris, waste material and other items not required for construction of this work.
  - 2. At least each week, and more often if necessary, completely remove all scrap, debris and waste material from the job site.
  - 3. Provide adequate storage for all items awaiting removal from the job site, observing all requirements for fire protection and protection of the environment.
- B. Site
  - 1. Daily, and more often if necessary, inspect the site and pick up all scrap, debris and waste material. Remove all such items to the place designated for their storage.
  - 2. Restack materials stored on site weekly.
  - 3. At all times maintain the site in a neat and orderly condition which meets the approval of the Engineer.

### C. Structures

1. Weekly, and more often if necessary, inspect the structures and pick up all scrap, debris and waste material. Remove all such items to the place designated for their storage.
2. Weekly, and more often if necessary, sweep all interior spaces clean. "Clean", for the purpose of this subparagraph, shall be interpreted as meaning free from dust and other material capable of being removed by using a hand-held broom.
3. As required preparatory to installation of successive materials, clean the structures or pertinent portions as recommended by the manufacturer of the successive material.
4. Following the installation of finish floor materials, clean the finish floor daily. "Clean", for the purpose of this paragraph, shall be interpreted as meaning free from all foreign material which, in the opinion of the Engineer, may be injurious to the finish floor material.
5. Schedule cleaning operation so that dust and other contaminants resulting from cleaning operations will not fall on wet, recently painted surfaces.

## 1.05 FINAL CLEANING

- A. Definitions: Unless otherwise specifically specified, "clean" for the purpose of this Article shall be interpreted as the level of cleanliness generally provided by commercial building maintenance subcontractors using commercial quality building maintenance equipment and materials.
- B. General: Prior to completion of the work, remove from the job site all tools, surplus materials, equipment, scrap, debris and waste. Conduct final progress cleaning as described in 1.04 above.
- C. Site: Unless otherwise specifically directed by the Engineer, hose down all paved areas on the site and all public sidewalks directly adjacent to the site; rake clean other surfaces of the grounds. Completely remove all resultant debris.
- D. Structures
  1. Remove all traces of soil, waste material, splashed material, and other foreign matter to provide a uniform degree of exterior cleanliness. Visually inspect all exterior surfaces and remove all traces of soil, waste material, and other foreign matter. Remove all traces of splashed materials from adjacent surfaces. If required to achieve a uniform degree of exterior cleanliness, hose down the exterior of the structure. In the event of stubborn stains not removable with water, the Engineer may require light sandblasting or other cleaning at no additional cost to the Owner.

2. Visually inspect all interior surfaces and remove all traces of soil, waste material, smudges and other foreign matter. Remove all paint droppings, spots, stains and dirt from finished surfaces.
  3. Clean all glass inside and outside.
  4. Polish all surfaces requiring the routine application of buffed polish. Provide and apply polish as recommended by the manufacturer of the material being polished.
- E. Post-Construction Cleanup: All evidence of temporary construction facilities, haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess or waste materials, or any other evidence of construction, shall be removed as directed by the Engineer.
- F. Restoration of Landscape Damage: Any landscape feature damaged by the Contractor shall be restored as nearly as possible to or better than its original condition at the Contractor's expense. Restoration shall be performed to the satisfaction of the Engineer.
- G. Timing: Schedule final cleaning as approved by the Engineer to enable the Owner to accept the Project.

## 1.06 CLEANING DURING OWNER'S OCCUPANCY

- A. Should the Owner occupy the work or any portion thereof prior to its completion by the Contractor and acceptance by the Owner, responsibilities for interim and final cleaning of the occupied spaces shall be as determined by the Engineer in accordance with the Supplementary Conditions of the Contract Documents.

## 1.07 DISPOSAL OF WASTE

- A. Except for items or materials to be salvaged, recycled, or otherwise reused, and except for options available below for vegetative waste generated by clearing and grubbing operations, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
- B. Except as otherwise specified, do not allow waste materials that are to be disposed of to accumulate on-site.
- C. Remove and transport waste in a manner that will prevent spillage on adjacent surfaces and areas.
- D. Vegetative waste generated by clearing and grubbing operations may be disposed of by mulching. Timber within the areas cleared shall become the property of the Contractor. The Contractor may cut, trim, hew, saw or otherwise dress felled timber within the limits of the work area, provided all timber and all waste materials are disposed of as specified. All residual matter from mulching operations shall be removed from the Project site as waste in accordance with the provisions of this section of the Specifications.



- E. Waste removed from the Project site shall be disposed of in sites permitted by the Tennessee Department of Environment and Conservation (TDEC) for the acceptance of type of waste being disposed in accordance with Rules of TDEC Solid Waste Management, including Chapter 0400-11-01. Landfill types include:
1. Class I Landfills - municipal solid waste, household waste, shredded/waste tires;
  2. Class II Landfills - industrial waste;
  3. Class III Landfills - farming wastes, landscaping and land clearing wastes;
  4. Class IV Landfills - construction and demolition waste.
- F. Exceptions to Paragraph E are as follows:
1. Certain other wastes (such as medical/infectious waste, dead animals, sludges, pesticides wastes, hazardous wastes, asbestos) require special waste approval prior to disposal. See the TDEC Environmental Permitting Handbook for more information.
  2. Hazardous waste shall be disposed of in accordance with Rules of TDEC Solid Waste Management, including but not limited to Chapter 0400-12-01 and the rules and regulations of the United States Environment Protection Agency (EPA).
  3. Asbestos-containing waste shall also be handled and disposed in accordance with TCA 68-201-101 et seq, Rules of the Tennessee Department of Health, and TDEC Bureau of Environmental Health Services, Division of Air Pollution, including Chapter 1200-3-11-.02 and 40 CFR 61.
  4. Excess earth material and excess excavated rock material may be placed on sites for which the Contractor provides to the Owner a signed affidavit from the property owner that the placement of such material is acceptable to the property owner. The Contractor and property owner shall be responsible for all permitting of such disposal.
- G. No waste shall be placed at a transfer station facility.
- H. The Contractor shall maintain records related to all waste removed from the Project site so as to allow the Owner or the Engineer to readily determine the following:
1. Date waste removed from Project site.
  2. Name of hauler (company and driver) transporting such waste.
  3. General description of waste transported.
  4. "Truck tickets" indicating the waste disposal site and amount of waste disposed therein.

END OF SECTION

## PART 1 GENERAL

### 1.01 SCOPE

- A. The work under this Section includes, but is not necessarily limited to, the provision of all labor and material required to perform installation inspection and start-up of all equipment and mechanical systems installed under this Contract.
- B. The work defined under this Section includes providing the services of a trained factory representative in accordance with the requirements of Section 01 43 33 of these Specifications.
- C. Certification of start-up and full testing shall be performed by the manufacturer using the services of a factory representative trained in this type service.
- D. Unless otherwise specified, the Contractor shall furnish all labor, materials, water, air, oil, power, fuel, chemicals, test equipment and other items required to conduct the field tests, including any retests.
- E. The cost of all field testing shall be included in the Contract Price and no separate payment will be made.

### 1.02 COORDINATION

- A. The Contractor shall not proceed with any functional test or operating test until the operation and maintenance manuals for the equipment have been submitted and been designated "No Exceptions Taken." The Contractor shall coordinate all activities required for starting of systems including the visits by the factory representatives, particularly where an equipment item's operation is dependent on the operation of other equipment. Prior to calling the factory representative, the Contractor shall ensure that all necessary related equipment, structures, piping and electrical work is complete. Any required revisits to the site by the factory representative shall be provided by the Contractor.

### 1.03 PRE START-UP MAINTENANCE

- A. After installation and prior to start-up, all grease-lubricated joints, shaft couplings and bearings shall be flushed out and re-greased. All oil reservoirs and sumps shall be completely drained and flushed and refilled with the proper lubricant. All operating fluid and gas reservoirs shall be filled with the proper fluid and gases. Screens and filters shall be checked for contamination and replaced if necessary. Belt drives shall be checked, and tension adjusted, as needed. The equipment shall then be tagged, signed and dated, indicating that the equipment has been properly lubricated and prepared for start-up.

## 1.04 INSTALLATION INSPECTION

- A. Prior to energizing any piece of equipment or performing a functional test, a factory representative of the equipment manufacturer shall inspect the installation of the equipment. The factory representative shall determine if the equipment has been installed in accordance with the manufacturer's recommendations, pre-start-up maintenance has been performed, and is ready for start-up and the initiation of the functional test.
- B. Should the installation inspection indicate that the equipment has been improperly installed or prepared for start-up, the Contractor shall provide such modifications or adjustments as required for the equipment to operate properly.
- C. The factory representative shall certify that the equipment has been installed in accordance with the Drawings, Specifications, and the manufacturer's recommendations and that the equipment is ready for start-up and functional testing to be performed.

## 1.05 FUNCTIONAL TEST

- A. Following the installation inspection by factory representative, perform a functional test on each piece of equipment. The functional test shall consist of operation of the equipment on a normal duty cycle for a sufficient period of time to determine satisfactory operation. Time required for functional testing shall be as specified in the equipment specifications or a minimum one continuous eight-hour period, whichever is longer. To the maximum extent practical, exercise the full capabilities of all equipment including remote operation, instrumented control schemes, alternate modes of operation and emergency operation. Equipment shall be checked for any abnormal noise or vibration as part of the functional test, and any observed abnormal conditions corrected prior to certification.
- B. Should the results of the functional test indicate that the equipment has failed to perform in accordance with the Specifications, the Contractor shall make, at no additional cost to the Owner, all modifications or adjustments as required for satisfactory operation, including replacement of any or all components, if necessary. Following the modifications or adjustments, the Contractor shall repeat the functional test. This procedure shall be repeated until the results of the test indicate that the equipment has satisfied the requirements of the applicable Specification Section.
- C. After the functional test is completed, each manufacturer shall certify, in writing, that tests were made in accordance with the Specifications and the manufacturer's recommendations, that the functional tests and start-up operation have been satisfactory, and that the equipment is fully operational and capable of meeting operating requirements.

## 1.06 OPERATING TEST PERIOD

- A. Following the functional test, the Contractor shall place each system into service and undergo an operational test under normal service conditions. The minimum time for

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the operating test period for each system shall be 30 consecutive days, excluding time that the equipment is taken out of service.

- B. Where required in the equipment specifications, process performance testing shall be performed during the operating test period in accordance with the requirements of the equipment specifications. The Contractor shall provide all materials and labor, including the services of a factory representative, necessary to perform the performance testing.
- C. The test period shall commence upon the initiation of operation of all systems and shall end after the successful operation of the equipment for the minimum time required.
- D. The Contractor shall repair and make all modifications required due to mechanical failure of the equipment during the operating test period. Should the equipment fail to meet the performance testing requirements, a factory representative shall evaluate the equipment and determine the cause of the process failure. The Contractor shall make all modifications recommended by the manufacturer.

## 1.07 CERTIFICATION

- A. Upon completion of start up, the Contractor shall provide written Installation and Start-Up Report from all equipment manufacturers' factory representatives. Report shall address the equipment installation's compliance with manufacturer's requirements and note any problems noted that may affect the warranty, operation or longevity of the equipment. Written certification shall indicate that tests were made in accordance with the manufacturer's recommendations, that the test and start-up operation has been satisfactory completed and that the equipment is fully operational under design requirements. Written certification shall be filed with the Engineer on the manufacturer's stationary.

*(Manufacturer's Installation and Start-up Report Follows)*

## Manufacturer's Installation and Start-up Report

<b><u>GENERAL INFORMATION:</u></b>			
Owner: _____	Contractor: _____		
Facility: _____	System: _____		
Location: _____	Specification Number: _____		
Tag: _____			
<b><u>MANUFACTURER:</u></b>			
Manufacturer Name: _____			
Address: _____			
City/State/Zip: _____			
Phone Number: _____		Fax Number: _____	
E-Mail: _____			
Manufacturer's Representative: _____			

- |  |                            |                            |                              |
|--|----------------------------|----------------------------|------------------------------|
| 1. Required safety equipment available?  | Y <input type="checkbox"/> | N <input type="checkbox"/> | N/A <input type="checkbox"/> |
| 2. Are equipment tags correct and attached to equipment?                       | Y <input type="checkbox"/> | N <input type="checkbox"/> | N/A <input type="checkbox"/> |
| 3. Are rotating equipment safety guards in place and secure?                   | Y <input type="checkbox"/> | N <input type="checkbox"/> | N/A <input type="checkbox"/> |
| 4. Shaft and couplings aligned?  | Y <input type="checkbox"/> | N <input type="checkbox"/> | N/A <input type="checkbox"/> |
| 5. Have belt drives been aligned?  | Y <input type="checkbox"/> | N <input type="checkbox"/> | N/A <input type="checkbox"/> |
| 6. Bearings lubricated?  | Y <input type="checkbox"/> | N <input type="checkbox"/> | N/A <input type="checkbox"/> |
| 7. Oil reservoirs filled with proper lubricant?                                | Y <input type="checkbox"/> | N <input type="checkbox"/> | N/A <input type="checkbox"/> |
| 8. Rotation verified?  | Y <input type="checkbox"/> | N <input type="checkbox"/> | N/A <input type="checkbox"/> |
| 9. Is equipment level?   | Y <input type="checkbox"/> | N <input type="checkbox"/> | N/A <input type="checkbox"/> |
| 10. Equipment anchored properly?   | Y <input type="checkbox"/> | N <input type="checkbox"/> | N/A <input type="checkbox"/> |
| 11. Equipment grouted properly?  | Y <input type="checkbox"/> | N <input type="checkbox"/> | N/A <input type="checkbox"/> |
| 12. Required utilities available?  | Y <input type="checkbox"/> | N <input type="checkbox"/> | N/A <input type="checkbox"/> |
| 13. Nozzles free from loads?   | Y <input type="checkbox"/> | N <input type="checkbox"/> | N/A <input type="checkbox"/> |
| 14. Are required pressure and temperature gauges and sensors installed?        | Y <input type="checkbox"/> | N <input type="checkbox"/> | N/A <input type="checkbox"/> |
| 15. Have any shipping coatings/sealants been removed?                          | Y <input type="checkbox"/> | N <input type="checkbox"/> | N/A <input type="checkbox"/> |
| 16. Does any paint/coating damage need to be repaired?                         | Y <input type="checkbox"/> | N <input type="checkbox"/> | N/A <input type="checkbox"/> |
| 17. Have moving parts been checked for proper running clearance?               | Y <input type="checkbox"/> | N <input type="checkbox"/> | N/A <input type="checkbox"/> |
| 18. Is there any observed leakage of lubricants or fluids from equipment?      | Y <input type="checkbox"/> | N <input type="checkbox"/> | N/A <input type="checkbox"/> |
| 19. Are all electrical power connections made and properly torqued?            | Y <input type="checkbox"/> | N <input type="checkbox"/> | N/A <input type="checkbox"/> |
| 20. Are electrical overloads properly set?                                     | Y <input type="checkbox"/> | N <input type="checkbox"/> | N/A <input type="checkbox"/> |
| 21. Are current transformers properly wired for polarity?                      | Y <input type="checkbox"/> | N <input type="checkbox"/> | N/A <input type="checkbox"/> |
| 22. Are control enclosures per the specified NEMA classification and material? | Y <input type="checkbox"/> | N <input type="checkbox"/> | N/A <input type="checkbox"/> |

Starting of Systems

- 23. Are instrumentation connections terminated? Y  N  N/A
- 24. Are signal cable shield leads grounded in accordance with Manufacturer's recommendations? Y  N  N/A
- 25. Are required spare parts on-site, inventoried and properly stored? Y  N  N/A
- 26. Are Operations and Maintenance Manuals on-site and complete? Y  N  N/A
- 27. Are all installation requirements of the O&M Manuals performed? Y  N  N/A
- 28. Does equipment have a record of maintenance and exercise as recommended by the manufacturer during storage? Y  N  N/A
- 29. Are there any observed installation issues that impact the equipment warranty? Y  N  N/A

Additional items noted during installation inspection by Manufacturer's Start-up Representative:

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I certify as an authorized Factory Representative, that the equipment is installed in accordance with the Manufacturer's recommendations, and is ready for start-up and initial operation.

Factory Representative: \_\_\_\_\_  
 Representing: \_\_\_\_\_  
 Mailing Address: \_\_\_\_\_  
 \_\_\_\_\_  
 Phone Number: \_\_\_\_\_  
 E-mail Address: \_\_\_\_\_

Date: \_\_\_\_\_  
 (If employed by other than the Manufacturer)

**START-UP REPORT:**

- 1. Does equipment operate and perform in accordance with the specification? Y  N  N/A
- 2. Have all specified modes of operation been tested and verified? Y  N  N/A
- 3. Do all system indicators, readouts, controls and operator interfaces operate? Y  N  N/A
- 4. Have variable speed units been tested throughout the available speed range? Y  N  N/A
- 5. Have multi-speed motors been tested on all available speeds? Y  N  N/A
- 6. Did equipment exhibit any abnormal vibration during operation? Y  N  N/A
- 7. Did equipment exhibit any abnormal noise during operation? Y  N  N/A
- 8. Are bearings operating at normal temperature? Y  N  N/A
- 9. Do bearings display any roughness in operation? Y  N  N/A
- 10. Prior to start-up, or during initial operation, was any leakage of lubricant observed? Y  N  N/A
- 11. Was any leakage of process fluids observed during start-up? Y  N  N/A
- 12. Has operation of equipment protective systems been verified? Y  N  N/A
- 13. Is the equipment ready to place into operation? Y  N  N/A

Additional items noted during start-up by Manufacturer's Start-up Representative:

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I certify as an authorized Factory Representative, that the equipment has been properly started up in accordance with the Manufacturer's recommendations, and is ready for initial operation.

Factory Representative: \_\_\_\_\_

Date: \_\_\_\_\_

END OF SECTION

## PART 1 GENERAL

### 1.01 SCOPE

- A. The Contractor shall provide five copies of a complete and comprehensive reference manual (Operating and Maintenance Manual) containing operating and maintenance data to enable operators and plant engineers to correctly operate, service and maintain all equipment and accessories covered by the Specifications and Drawings. The data contained in the manual shall explain and illustrate clearly and simply all principles and theory of operation, operating instructions, maintenance procedures, calibration procedures and safety precautions and procedures for the equipment involved.
- B. No separate payment will be made for the Operating and Maintenance Manual and the cost of said manual shall be included in the Contract Price.

### 1.02 SUBMITTAL SCHEDULE

- A. The Contractor shall submit, for the Engineer's approval, three preliminary drafts of proposed formats and outlines of contents of manuals within 60 calendar days after the Notice to Proceed. The Engineer will notify the Contractor, in writing, of any deficiencies in the manual and will return one copy of the manual for completion and/or correction.
- B. Submit three preliminary copies of manuals before the work covered by the Contract Documents is 40 percent complete. The Contractor must also submit three copies of the manual in digital format as specified below. The Engineer will notify the Contractor, in writing, of any deficiencies in the manual and will return one copy of the manual for completion and/or correction.
- C. Resubmissions: Clearly identify each correction or change made. The resubmission shall be accompanied by a letter listing all comments made by the Engineer and the actions or response by the manufacturer or vendor to each comment. Where the Engineers comment applies to multiple areas of the initial submittal the response shall address all areas. The response letter shall also address where supplemental information has been provided and where it is located within the resubmission.
- D. Before the work covered by the Contract Documents is 70 percent complete, the Contractor must submit six final copies of the revised and completed manual, complete in detail as specified below. The Contractor must also submit five copies of the manual in digital format as specified below.
- E. Digital Copies of Manuals: Operations and Maintenance Manuals shall be provided by the Contractor in digital format concurrently with both the preliminary and final hard copy submissions. Materials available in digital format shall be furnished in accordance with the following:
  - 1. All textual data shall be provided as an electronic file in searchable Adobe Acrobat Portable Document Format (PDF). The PDF file(s) shall be fully indexed using the



Table of Contents, searchable with thumbnails generated. File(s) shall be identified by utilization of a "twelve dot three" convention (XXXXXX.XX.YY.pdf) where X is the eight-digit number corresponding to the specification section, and YY is an identification number. All documents shall be scanned at 300dpi or greater utilizing optical character recognition (OCR) software. All text in the document must be text selectable with the exception of pages which are in their entirety drawings or diagrams. Word searches of the PDF document must function successfully. PDF files that fail to comply with the indexing and searchable features described above will not be acceptable. All drawing data shall be provided in digital format compatible with AutoCAD Version as designated by the Engineer.

2. Materials not available in original digital format (available only in paper format) shall be scanned as noted above into a PDF format and cleaned to remove smudges, fingerprints, artifacts, and other extraneous marks. All notes, version stamps, etc. shall be preserved. Color maps shall be scanned in not less than the number of colors of the document or 16 colors, whichever is greater. Color photographs shall be saved in not less than 256 colors. Black and white or monochrome scans (non-text) shall not be less than 16 gray scale levels. Color maps, color photographs, and black and white and gray scale photograph files shall be saved as GIF or JPG files, compatible with Adobe Photoshop Version 4.0. Documents shall be scanned in the existing color format of the document, i.e. color documents shall be scanned in color, and black and white or monochrome in gray scale.
3. After the documents are in correct digital format, they shall be furnished to the Engineer as a 120 mm, 680mb, 74-minute CD ROM. All media transmittals shall be accompanied by a detailed paper printout of the files on the media. This printout shall consist of a file name, file size, date of creation, submittal number, and a brief but accurate description of the file. Files shall not be transmitted electronically. Five copies of the CD for each Operation and Maintenance Manual shall be provided to the Engineer.
4. Electronic copy of O&M manuals shall be attached to the corresponding entry in Primavera Contract Manager.

### 1.03 SUBMITTAL FORMAT

- A. Each hard copy of the manual shall be assembled in one or more loose leaf binders, each with title page, typed table of contents, typed list of tables, typed list of figures, and heavy section dividers with reinforced holes and numbered plastic index tabs. Binders shall be uniform for all manuals and shall be 3-ring, hardback type, with transparent vinyl pocket front cover suitable for inserting identifying cover and with a transparent vinyl pocket on the spine for label. All data shall be punched for binding. Composition and printing shall be arranged so that punching does not obliterate any data. The cover and binding edge of each manual shall have the project title, specification section number and title, and manual title printed thereon, all as approved by the Engineer.
- B. All copies of shop drawings, figures and diagrams shall be reduced to either 8-1/2 x 11-inches or to 11-inches in the vertical dimension and as near as practical to

17-inches in the horizontal dimensions. Such sheets shall be folded to 8-1/2 x 11-inches. The manual and other data shall be printed on first quality paper, 8-1/2 x 11-inch size with standard 3-hole punching. Binders shall be labeled Vol. 1 of "X", Vol. 2 of "X", etc., where "X" is the total number of volumes in the set where more than one is required. The table of contents for the entire set, identified by volume number, shall appear in each binder. Text, figures and drawings shall be clearly legible and suitable for dry process reproductions.

- C. Each submittal shall have a cover sheet that includes the following information:
1. The date of submittal and the dates of any previous submittals.
  2. The Project title.
  3. Submittal numbering shall be in accordance with Section 01 31 29 of these Specifications.
  4. The names of:
    - a. Contractor
    - b. Supplier
    - c. Manufacturer
  5. Identification of the product, with the Specification section number, permanent equipment tag numbers and applicable Drawing No.
- D. The Engineer will not recommend final acceptance of the Work until the Operating and Maintenance Manual is complete and satisfactory to Engineer.

#### 1.04 CONTENTS OF OPERATING AND MAINTENANCE MANUAL

- A. Each manual shall include a title page which includes all information specified in Article 1.03, paragraph C of this Section. In addition, the title page shall include manufacturer's address, phone number, facsimile number, and contact; manufacturer's equipment name and model number; supplier's address, phone number, facsimile number, and contact.
- B. Each manual shall include a table of contents identifying the location of each item listed below, for each component supplied. For items not applicable to a component, the table of contents shall list N/A for the page number.
- C. For all equipment, the Contractor shall furnish a complete, detailed listing of all equipment, components and accessories showing component name, manufacturer, model number and quantity information shall be furnished for each component as outlined below:
1. A summary page shall be provided for each piece of equipment detailing the following information:
    - a. Equipment Number
    - b. Equipment Description
    - c. Serial Number
    - d. Model Number

- e. Manufacturer
    - 1) Address
    - 2) Phone
    - 3) Representative
  - f. Supplier
    - 1) Address
    - 2) Phone
    - 3) Representative
  - g. Local Service Provider
    - 1) Address
    - 2) Phone
    - 3) Representative
  - h. Location of Equipment
  - i. Equipment Design Criteria
    - 1) HP
    - 2) Flow Rate, etc.
  - j. Performance Data
  - k. Normal Operating Characteristics
  - l. Limiting Conditions
2. Detailed disassembly, overhaul and reassembly, installation, alignment, adjustment and checking instructions.
  3. Detailed operating instructions for start-up, calibration, routine and normal operation, regulation and control, safety, shutdown and emergency conditions. Detailed list of settings for relays, pressure switches, temperature switches, level switches, thermostats, alarms, relief valves, rupture discs, etc.
  4. Detailed preventative maintenance procedures and schedules, including detailed lubrication instructions and schedules, identification of required lubricants and operating fluids (description, specification and trade name of at least two manufacturers), and diagrams illustrating lubrication points.
  5. Detailed guide to equipment and/or process “troubleshooting”.
  6. Detailed parts lists identified by title, materials of construction, manufacturer's part number, list of recommended spare parts identified as specified above, current cost list for recommended spare parts, predicted life of parts subject to wear, and an exploded or concise cut-away view of each equipment assembly. The manufacturer's part numbers must match those used for the spare parts, documentation, identification, and turn-over. Should no spare parts be required, state in the Table of Contents that “No spare parts are required”.
  7. Electrical and instrumentation schematics, including motor control centers, control panels, wiring diagrams, instrument panels and analyzer panels. All panels must have as-built schematics inside them at contract close-out.
  8. List of all special tools supplied and description of their use. Special tools include any tool not normally available in an industrial hardware or mill supply house. Should no special tools be required, state in the Table of Contents that “No special tools are required”.

9. List of names and addresses of nearest service centers for parts, overhaul and service.
10. Procedures for storing, handling and disposing of any chemicals or products used with the equipment or system.
11. For equipment and systems, also provide the following:
  - a. Control and wiring diagrams provided by the controls manufacturer.
  - b. Sequence of operations by the controls manufacturer.
  - c. Charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
12. The supplier's operation and maintenance information will address the particular equipment furnished, with specific details on operation and maintenance practices. General data is not acceptable. Information contained in the manual which is not appropriate to the Project shall be marked out and noted as "N/A".

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION (NOT USED)

**SAMPLE COVER PAGE**

**COMPLETE PROJECT TITLE**

LOCATION OF PROJECT

**OPERATING and MAINTENANCE DATA**

FOR SUBMITTAL NUMBER (AS LISTED IN PCM)

**TITLE OF SUBMITTAL**

**CONTRACTOR:** (Name only Required)

**SUPPLIER:** (Name only required)

**MANUFACTURER:** (Name only Required)

**SPECIFICATION SECTION:**

**EQUIPMENT TAG NUMBER:**

**DRAWING NUMBER:**

**DATE OF SUBMISSION**

**SAMPLE TITLE PAGE**

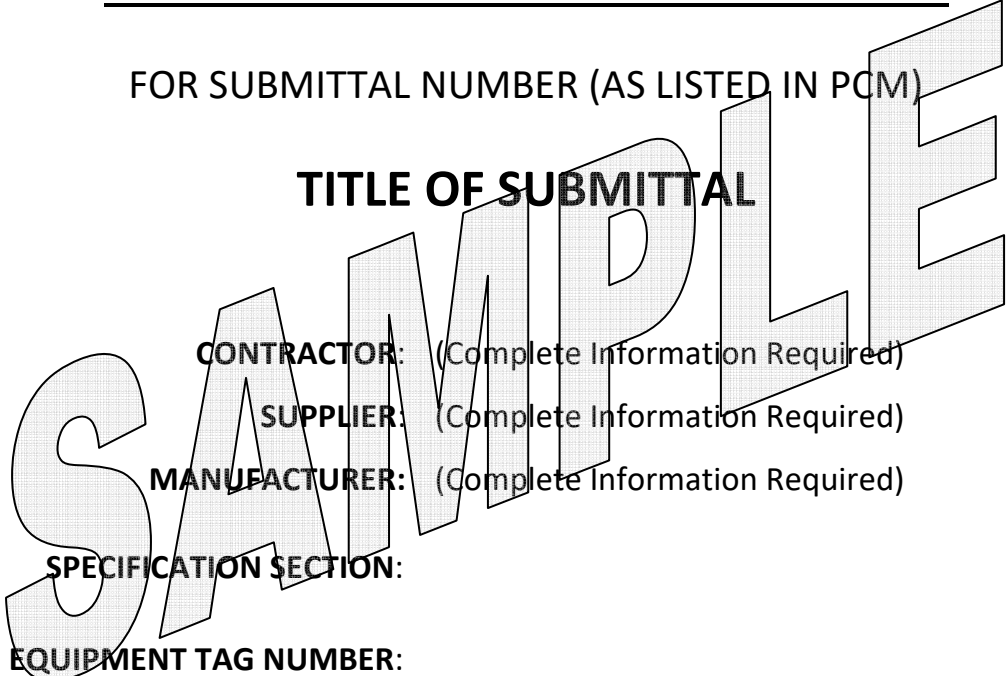
**COMPLETE PROJECT TITLE**

LOCATION OF PROJECT

**OPERATING and MAINTENANCE DATA**

FOR SUBMITTAL NUMBER (AS LISTED IN PCM)

**TITLE OF SUBMITTAL**



**CONTRACTOR:** (Complete Information Required)

**SUPPLIER:** (Complete Information Required)

**MANUFACTURER:** (Complete Information Required)

**SPECIFICATION SECTION:**

**EQUIPMENT TAG NUMBER:**

**DRAWING NUMBER:**

**DATE OF SUBMISSION**

**SAMPLE MANUAL REVIEW CHECK LIST****FINAL COPIES / PRELIMINARY COPIES  
OPERATION AND MAINTENANCE MANUAL CHECK LIST****PROJECT NUMBER:****PROJECT NAME:****SECTION:**

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**SECTION Requirements**

- 1.03 - A \_\_\_ 3 ring loose leaf binder with transparent covers on binder and cover
- 1.03 - A \_\_\_ Title Page, Table of Contents, Section dividers and List of tables & figures
- 1.03 - B \_\_\_ Drawings and figures shall be legible and 11" in the vertical dimension
- 1.03 - C \_\_\_ Cover Page including: Date of Submittal & any previous submissions, Project & Manual Title, Names of Contractor, Supplier, Manufacturer, Spec. Section, Equip. Tag Number & Drawing No
- 1.04 - A \_\_\_ Title Page: All cover page information & manufacturers and suppliers address, phone & fax number and contact person; manufacturer's equipment name and model number
- 1.04 - B \_\_\_ Table of Contents identifying the location of each item listed
- 1.04 - C.1 \_\_\_ Provide equipment function, operating char., performance data, limiting cond. and pump curves
- 1.04 - C.2 \_\_\_ Detailed disassembly, overhaul, reassemble, installation, alignment, adjusting & checking Instructions
- 1.04 - C.3 \_\_\_ Operating instructions for start up, calibration, normal operation, shutdown, etc.
- 1.04 - C.3 \_\_\_ List of settings for relays, pressure switch, temperature switch, level switch and alarms
- 1.04 - C.4 \_\_\_ Preventive maintenance procedures and diagrams illustrating lubrication points
- 1.04 - C.5 \_\_\_ Troubleshooting Guide
- 1.04 - C.6 \_\_\_ Detailed parts list, manufacturer's part number and exploded view
- 1.04 - C.6 \_\_\_ List of recommended spare parts and predicted life of parts subject to wear
- 1.04 - C.7 \_\_\_ Electrical and instrumentation schematics
- 1.04 - C.8 \_\_\_ Special tools list
- 1.04 - C.9 \_\_\_ Closest service centers, Contact person name and addresses
- 1.04 - C.10 \_\_\_ Procedure for storing, handling and disposing of any chemicals used
- 1.04 - C.11 \_\_\_ Equip & Systems provide Control & Wiring Diag., Sequence of Operations, Charts of tag numbers, location & function of each valve
- 1.04 - C.12 \_\_\_ Suppliers O&M information will address the particular equipment furnished, with specific details on operation and maintenance practices

**Remarks:**  

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END OF SECTION

## PART 1 GENERAL

### 1.01 PROJECT MAINTENANCE AND WARRANTY

- A. Maintain and keep in good repair the work covered by these Drawings and Specifications until acceptance by the Owner.
- B. Specific requirements for warranties for the work and products and installations that are specified to be warranted are included in the individual Sections of these specifications. Refer to individual Sections for specific content requirements.
- C. Submit written warranties to the Owner prior to the date fixed by the Engineer for Substantial Completion. If the Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the work, or a designated portion of the work, submit written warranties upon request of the Owner.
- D. At Final Completion, compile two copies of each required warranty and bond properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.
- E. Where required, the Contractor shall supply evidence, satisfactory to the Engineer, that the Contractor can obtain manufacturers' certifications as to the Contractor's installation of equipment.
- F. The Contractor shall warrant for a period of one year from the date of Owner's written final acceptance of the Project, as defined in the Contract Documents, that the completed work is free from all defects due to faulty products or workmanship and the Contractor shall promptly make such corrections as may be necessary by reason of such defects. The Owner will give notice of observed defects with reasonable promptness. In the event that the Contractor should fail to make such repairs, adjustments or other work that may be made necessary by such defects, the Owner may do so and charge the Contractor the cost thereby incurred. The Performance Bond shall remain in full force and effect throughout the warranty period.
- G. The Contractor shall not be obligated to make replacements which become necessary because of ordinary wear and tear, or as a result of improper operation or maintenance, or as a result of improper work or damage by another Contractor or the Owner, or to perform any work which is normally performed by a maintenance crew during operation.
- H. In the event of multiple failures of major consequences prior to the expiration of the one-year warranty described above, the affected unit shall be disassembled, inspected and modified or replaced as necessary to prevent further occurrences. All related components which may have been damaged or rendered non-serviceable as a consequence of the failure shall be replaced. A new 12-month warranty against defective or deficient design, workmanship, and materials shall commence on the day



that the item is reassembled and placed back into operation. As used herein, multiple failure shall be interpreted to mean two or more successive failures of the same kind in the same item or failures of the same kind in two or more items. Major failures may include, but are not limited to, cracked or broken housings, piping, or vessels, excessive deflections, bent or broken shafts, broken or chipped gear teeth, premature bearing failure, excessive wear or excessive leakage around seals. Failures which are directly and clearly traceable to operator abuse, such as operations in conflict with published operating procedures or improper maintenance, such as substitution of unauthorized replacement parts, use of incorrect lubricants or chemicals, flagrant over- or under-lubrication and using maintenance procedures not conforming with published maintenance instructions, shall be exempted from the scope of the one year warranty. Should multiple failures occur in a given item, all products of the same size and type shall be disassembled, inspected, modified or replaced as necessary and rewarranted for one year.

- I. The Contractor shall, at Contractor's own expense, furnish all labor, materials, tools and equipment required and shall make such repairs and removals and shall perform such work or reconstruction as may be made necessary by any structural or functional defect or failure resulting from neglect, faulty workmanship or faulty materials, in any part of the work performed by the Contractor. Such repair shall also include refilling of trenches, excavations or embankments which show settlement or erosion after backfilling or placement.
- J. Except as noted on the Drawings or as specified, all structures such as embankments and fences shall be returned to their original condition prior to the completion of the Contract. Any and all damage to any facility not designated for removal, resulting from the Contractor's operations, shall be promptly repaired by the Contractor at no cost to the Owner.
- K. The Contractor shall be responsible for all road and entrance reconstruction and repairs and maintenance of same for a period of one year from the date of final acceptance. In the event the repairs and maintenance are not made immediately, and it becomes necessary for the owner of the road to make such repairs, the Contractor shall reimburse the owner of the road for the cost of such repairs.
- L. In the event the Contractor fails to proceed to remedy the defects upon notification within 15 days of the date of such notice, the Owner reserves the right to cause the required materials to be procured and the work to be done, as described in the Drawings and Specifications, and to hold the Contractor and the sureties on Contractor's bond liable for the cost and expense thereof.
- M. Notice to Contractor for repairs and reconstruction will be made in the form of a registered letter addressed to the Contractor at Contractor's home office.
- N. Neither the foregoing paragraphs nor any provision in the Contract Documents, nor any special guarantee time limit implies any limitation of the Contractor's liability within the law of the place of construction.

END OF SECTION

## PART 1 GENERAL

### 1.01 SCOPE

- A. The work under this Section includes, but is not necessarily limited to, the compiling, maintaining, recording and submitting of Project record documents as herein specified.
- B. Record documents include, but are not limited to:
  - 1. Drawings;
  - 2. Specifications;
  - 3. Change orders and other modifications to the Contract;
  - 4. Engineer field orders or written instructions, including Requests for Information (RFI) and Clarification Memorandums;
  - 5. Reviewed shop drawings, product data and samples;
  - 6. Test records.
- C. The Contractor shall maintain on the Project site throughout the Contract Time an up to date set of Record Drawings.

### 1.02 MAINTENANCE OF DOCUMENTS AND SAMPLES

- A. Storage
  - 1. Store documents and samples in the Contractor's field office, apart from documents used for construction.
  - 2. Provide files and racks for storage of documents.
  - 3. Provide locked cabinet or secure storage space for storage of samples.
- B. File documents and samples in accordance with format of these Specifications.
- C. Maintenance
  - 1. Maintain documents in a clean, dry, legible condition and in good order.
  - 2. Do not use record documents for construction purposes.
  - 3. Maintain at the site for the Owner one copy of all record documents.
- D. Make documents and samples available at all times for inspection by Engineer.

- E. Failure to maintain the Record Documents in a satisfactory manner may be cause for withholding of a certificate for payment.

### 1.03 QUALITY ASSURANCE

- A. Unless noted otherwise, Record Drawings shall provide dimensions, distances and coordinates to the nearest 0.1 foot.
- B. Unless noted otherwise, Record Drawings shall provide elevations to the nearest 0.01 foot for all pertinent items constructed by the Contractor.
- C. For sanitary sewer construction, the Contractor shall employ a currently registered surveyor to prepare the Record Drawings from a post-construction, field run survey. The Record Drawings shall provide elevations to the nearest 0.01 foot for all manhole inverts, manhole frames and other pertinent items constructed by the Contractor. The Record Drawings shall provide dimensions, distances, and coordinates to the nearest 0.01 foot and horizontal angles to the nearest 10 seconds.

### 1.04 RECORDING

- A. Label each document "Project Record" in neat, large printed letters.
- B. Recording
  - 1. Record information concurrently with construction progress.
  - 2. Do not conceal any work until required information is recorded.

### 1.05 RECORD DRAWINGS

- A. Record Drawings shall be reproducible, shall have a title block indicating that the drawings are Record Drawings, the name of the company preparing the Record Drawings, and the date the Record Drawings were prepared.
- B. Legibly mark drawings to record actual construction, including:
  - 1. All Construction
    - a. Changes of dimension and detail.
    - b. Changes made by RFI, field order, clarification memorandums or by change order.
    - c. Details not on original Drawings.
  - 2. Site Improvements, Including Underground Utilities
    - a. Horizontal and vertical locations of all exposed and underground utilities and appurtenances, both new facilities constructed and those utilities encountered, referenced to permanent surface improvements.
    - b. Location of and dimensions of roadways and parking areas, providing dimensions to back of curb when present.

- c. The locations shall be referenced to at least two easily identifiable, permanent landmarks (e.g., power poles, valve markers, etc.) or benchmarks.
3. Structures
    - a. Depths of various elements of foundation in relation to finish first floor datum or top of wall.
    - b. Location of internal and buried utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.

## 1.06 SPECIFICATIONS

- A. Legibly mark each section to record:
  1. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed.
  2. Changes made by RFI, field order, clarification memorandums, or by change order.

## 1.07 SUBMITTAL

- A. At contract closeout, deliver Record Documents to the Engineer for the Owner.
- B. Accompany submittal with transmittal letter, in duplicate, containing:
  1. Date
  2. Project title and number
  3. Contractor's name and address
  4. Title and number of each record document
  5. Signature of Contractor or Contractor's authorized representative

END OF SECTION

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