

1 CONTRACTOR shall revise and submit for approval, without additional cost to the OWNER, all of
2 the affected portions of the schedule.

3
4 2. Shop drawings and samples which are not approved on the first submittal or within the
5 schedule time shall be immediately rescheduled, as well as any work which fails to pass specified
6 tests or has been rejected.

7
8 3. The Contract Times will be adjusted only for causes specified in the General Conditions.
9 In the event the CONTRACTOR requests an adjustment of the Contract times, he shall furnish
10 such justification and supporting evidence as the ENGINEER may deem necessary for a
11 determination as to whether the CONTRACTOR is entitled to an adjustment of Contract Times
12 under the provisions of the General Conditions. The ENGINEER will, after receipt of such
13 justification and supporting evidence, make findings of fact and will advise the CONTRACTOR in
14 writing thereof. If the ENGINEER finds that the CONTRACTOR is entitled to any adjustment of
15 the Contract Times the ENGINEER's determination as to the total number of days adjustment
16 shall be based upon the currently approved progress schedule and on all data relevant to the
17 adjustment. The CONTRACTOR acknowledges and agrees that actual delays in activities which,
18 according to the progress schedule, do not affect the Contract completion date shown by the
19 critical path in the network will not be the basis for an adjustment of Contract Times.

20
21 4. From time to time it may be necessary for the progress schedule and/or Contract Times
22 to be adjusted by the OWNER to reflect the effects of job conditions, weather, technical
23 difficulties, strikes, unavoidable delays on the part of the OWNER, and other unforeseeable
24 conditions which may indicate schedule and/or Contract Times adjustments. Under such
25 conditions, the ENGINEER shall direct the CONTRACTOR to reschedule the work and/or
26 Contract Time to reflect the changed conditions, and the CONTRACTOR shall revise his
27 schedule accordingly. No additional compensation shall be made to the CONTRACTOR for such
28 changes except as provided in the General Conditions. Unless otherwise directed, the
29 CONTRACTOR shall take all possible actions to minimize any extension to the Contract Times
30 and any additional cost to the OWNER.

31
32 **1.06 SHOP DRAWINGS**

33
34 The CONTRACTOR shall promptly supply to the ENGINEER for approval, shop drawings with
35 details and schedules for all items contained in the list of required Shop Drawings included at the
36 end of this Section, or for other items as may be required by the ENGINEER.

37
38 A sufficient number of copies to allow the OWNER to retain four (4) reviewed copies of all
39 drawings, schedules and brochures shall be submitted for approval. Black line prints, blue line
40 prints or reproducible transparencies are required. Blueprints (white lines on a blue background)
41 are not acceptable. Each submittal shall have the job name on it and the appropriate
42 specification section or contract drawing reference.

43
44 Shop drawings shall be numbered with the WATER COMPANY's file number ____-____-XX Rev.
45 _____. Detailed procedures for numbering will be outlined at the pre-construction meeting.

46
47 Each copy of the submittals made to the WATER COMPANY for approval shall be prepared by
48 the CONTRACTOR and shall have an identifying title stamp as follows:

49
50
51
52 **Kentucky American Water**
53 **KRS Water System Improvements – Replacement of (2) Traveling Water Screens**
54 **Specification Section _____**
55 **Shop Drawing No. ____-____-____ Rev. _____**
56

1 Submit samples to illustrate functional and aesthetic characteristics of the product, with integral
2 parts and attachment devices. Coordinate sample submittals for interfacing work.
3

4 Submit samples of finishes from the full range of manufacturer's standard colors, textures, and
5 patterns for ENGINEER's selection.
6

7 Include identification on each sample, with full project information.
8

9 Submit the number or samples specified in individual specification sections; one of which will be
10 retained by ENGINEER.
11

12 Reviewed samples which may be used in the Work are indicated in individual specification
13 sections.
14

15 **1.08 PROGRESS PAYMENTS**
16

17 The detailed arrangement for submittal of progress payments shall be discussed at the
18 preconstruction meeting. In general, progress payments shall be submitted monthly in a format
19 acceptable to the ENGINEER. The progress payment request shall be based on the approved
20 schedule of values and should provide the percentage of completion, total dollar value completed,
21 dollar value completed prior to the current payment, and the amount requested for this progress
22 payment for each line item contained in the schedule of values. Progress payment requests for
23 material and/or equipment suitably stored but not yet incorporated into the work shall be
24 accompanied by a copy of the appropriate manufacturer's invoice, shipping order, bill of lading,
25 etc. and the progress payment amount shall be the direct cost to the CONTRACTOR, or
26 subcontractor, for such material and/or equipment. Payment will not be made to the
27 CONTRACTOR if, upon inspection by the ENGINEER, it is determined that the material and/or
28 equipment does not conform to the requirements of the Contract Documents including proper
29 storage, receipt of approved shop drawings, receipt of any special guarantees, Bonds, insurance
30 coverage, any evidence of damage or imperfections, etc.
31

32 **1.09 CONTRACTOR'S DAILY REPORTS**
33

34 If requested by the ENGINEER or the Resident Project Representative, the CONTRACTOR shall
35 prepare and submit daily reports containing the following information:
36

- 37 - The number of craftsmen and hours worked of each subcontractor,
- 38 - the number of hours worked by each trade,
- 39 - the number of hours worked of each type of equipment,
- 40 - a description of work activities performed,
- 41 - a description of any material or equipment deliveries,
- 42 - description of obstructions encountered,
- 43 - temperature and weather conditions.
44

45 The daily reports shall be submitted on a daily basis, by the end of the next business day.
46

47 Information provided on the daily report shall not constitute notice of delay or any other notice
48 required by the Contract Documents. Notice shall be as required therein.
49

50 **1.10 OPERATING AND MAINTENANCE INSTRUCTION MANUALS**
51

52 Prepare complete written maintenance and operating instructions covering the equipment
53 provided under this Contract. Divide the operating instructions into basic sections according to
54 type of equipment.
55

SECTION 1500

TEMPORARY FACILITIES

PART 1 - GENERAL

1.01 WATER SUPPLY

If reasonably available, water for the purpose of this Contract will be supplied to the CONTRACTOR by the OWNER. The CONTRACTOR shall furnish and install all necessary meters, temporary piping and valves in connection with such water supply.

The OWNER reserves the right to impose limitations upon the CONTRACTOR'S use of water as the OWNER, in its sole discretion, determines may be necessary to assure it of its continued ability to meet the demands of its customers and the volumes and pressures required for fire protection. Any water required by the CONTRACTOR in excess of the quantities the OWNER provides to the CONTRACTOR must be furnished by the CONTRACTOR at his own cost.

1.02 TEMPORARY HEAT

The CONTRACTOR shall provide approved type heating apparatus with the necessary fuel in order to protect and/or dry out the work (where applicable). The stored materials and finished work shall be protected at all times from damage by the weather elements.

1.03 ELECTRICAL SUPPLY

The CONTRACTOR shall pay all fees, obtain necessary permits and have meter installed for power and light as may be required for the prosecution of his work (where applicable).

1.04 TEMPORARY LIGHTING

Special arrangements for lighting are not required for this project

1.05 BARRIERS

Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations and demolition. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing buildings. Provide protection for plant life designated to remain. Replace damaged plant life.

1.06 FENCING

Special arrangements for fencing are not required for this project

1.07 PARKING

Special arrangements for parking are not required for this project.

1.08 PROGRESS CLEANING

Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space. Broom and vacuum clean interior

SECTION 1600

PRODUCTS

PART 1 - GENERAL

1.01 PROTECTION OF MATERIAL AND EQUIPMENT

All electrical and mechanical equipment shall be stored in a warm, dry shelter with proper ventilation. Under no circumstances shall motors, electrical control equipment or any other electrical or mechanical equipment be stored under polyethylene plastic covers or tarpaulins. When space is available inside existing structures, and the OWNER approves, the CONTRACTOR will be allowed to store equipment inside them. Should such space not be available, the CONTRACTOR shall construct a shelter with a source of heat and proper ventilation as approved by the ENGINEER for the storage of equipment.

The interior of all pipe and accessories shall be kept free from dirt and foreign matter at all times.

After valves and hydrants have been inspected, the CONTRACTOR shall properly store them prior to use. In order to prevent entry of foreign material that could cause damage to the seating surfaces, the valves and hydrants shall be stored in a fully closed position unless recommended otherwise by the manufacturer. Resilient seated valves shall be stored in accordance with the manufacturer's recommendations. This may include storage with protective covers for rubber seats and in marginally open condition. Valves and hydrants should be stored indoors.

If valves must be stored outdoors, the CONTRACTOR shall protect the operating mechanism, such as gears, motor, actuators and cylinders, from weather elements. Valve ports and flanges must be protected from the weather and foreign materials. If valves are subject to freezing temperatures, all water must be removed from the valve interior and the valve closed tightly before storage, unless specifically recommended otherwise by the manufacturer. Valves shall be stored on pallets with the discs in a vertical position to prevent rainwater from accumulating on top of the disc, seeping into the valve body cavity and freezing and cracking the casting.

1.02 SERVICING EQUIPMENT

The CONTRACTOR shall check all equipment upon acceptance to determine if oil reservoirs are full and areas to be greased are properly packed with grease. The CONTRACTOR will provide the proper grease or oil for use in lubricating the required areas in the equipment. Any service to equipment while in storage, or installed pending acceptance, is the responsibility of the CONTRACTOR and shall be performed per manufacturer's requirements, industry standards or as stated specifically in the technical specifications.

1.03 MATERIAL/EQUIPMENT FURNISHED BY OWNER

Certain material and equipment will be furnished by the OWNER as noted in the Contract Documents. The CONTRACTOR's responsibility for material and/or equipment furnished by the OWNER shall begin upon the CONTRACTOR's acceptance of such material and/or equipment at the point of delivery to him. All material and equipment shall be examined and items found to be defective in manufacture and/or otherwise damaged shall be rejected by the CONTRACTOR at the time and place of delivery to him. The OWNER will thereupon repair or replace the damaged items.

After acceptance of material and/or equipment by CONTRACTOR at point of delivery to him, CONTRACTOR shall be responsible for the proper storage, handling, servicing and installation of such material and/or equipment in accordance with manufacturer's recommendations, industry

1
2 After installation of the applicable equipment has been completed and the equipment is
3 presumably ready for operation, but before it is operated by others, the representative shall
4 inspect, operate, test, and adjust the equipment. The inspection shall include but shall not be
5 limited to, the following points as applicable:
6

- 7 a. soundness (without cracked or otherwise damaged parts)
8 b. completeness in all details, as specified
9 c. correctness of setting, alignment, and relative arrangement of various parts
10 d. adequacy and correctness of packing, sealing and lubricants
11

12 The operation, testing, and adjustment shall be as required to prove that the equipment is left in
13 proper condition for satisfactory operation under the conditions specified.
14

15 On completion of his Work, the manufacturer's or supplier's representative shall submit to the
16 ENGINEER a complete signed report of the result of his inspection, operation, adjustments, and
17 tests. The report shall include detailed descriptions of the points inspected, tests and
18 adjustments made, quantitative results obtained if such are specified, and suggestions for
19 precautions to be taken to ensure proper maintenance. The report also shall include a certificate
20 that the equipment conforms to the requirements of the Contract Documents and is ready for
21 permanent operation and that nothing in the installation will render the manufacturer's warranty
22 null and void.
23

24 After the ENGINEER has reviewed the reports from the manufacturers' representatives, the
25 CONTRACTOR shall make arrangements to have the manufacturers' representatives present
26 when the mechanical performance tests are made.
27
28
29

END OF SECTION

SECTION 1650

TESTING

PART 1 - GENERAL

1.01 DESCRIPTION

This Section covers testing in accordance with the Specifications, as shown on the Drawings, and as necessary for a complete and satisfactory installation.

1.02 PIPELINES

All pipelines, valves, appurtenances, etc. installed per these Contract Documents shall be tested in the manner described by the technical specifications. Unless otherwise stated, all pipelines shall be hydrostatically tested, with no leakage, at a pressure at least equal to the maximum operating pressure of the pipeline.

1.03 WATER CONTAINING VESSELS

Prior to backfilling around water containing vessels, the CONTRACTOR shall fill said vessels with water for a period of at least 7 days in order to insure vessels are watertight. If any vessel leaks, it shall be repaired to the satisfaction of the ENGINEER and retested until no leakage occurs.

1.04 DAMPPROOFING AND PAINTING

During the application of dampproofing and painting, the CONTRACTOR shall have the manufacturer's representative check the dry mil thickness of each coating and certify to the ENGINEER in writing that the thickness is in compliance with the Specifications. If deficiencies in the dry mil thickness of any coat are found, they shall be corrected by the application of an additional coat(s) to the said deficient area. The certificate shall also state that all surfaces were properly cleaned prior to the application of dampproofing and paint, specified meetings and inspections were made, the quantity of dampproofing and paint were applied in accordance with their recommendations, and all other requirements stated in the Specifications have been satisfactorily completed.

1.05 MECHANICAL PERFORMANCE TESTS

A. General

1. As a prerequisite to the ENGINEER's issuance of the Certificate of Substantial Completion, the CONTRACTOR shall conduct initial and final performance tests as described hereafter. The CONTRACTOR shall perform all tests with his own forces and such equipment representatives and other experts (hereinafter collectively referred to as "CONTRACTOR's personnel") as may be required by the Specifications or necessary for a successful test. All operations and coordination of the tests from their beginning to their satisfactory completion as determined by the OWNER and ENGINEER shall be the complete responsibility of the CONTRACTOR.

2. The general sequencing of the testing shall be developed by the CONTRACTOR. In general the sequence should focus on the testing of individual pieces of equipment prior to testing entire systems including automatic control systems.

3. At least 5 days prior to the proposed testing, the CONTRACTOR shall submit in writing to the ENGINEER a complete outline of his proposed procedure for testing. No

1 C. Final Mechanical Performance Tests

2
3 1. Final Mechanical Performance Tests shall cover a continuous 2-week period
4 while the facility is in continuous normal operation. During the Final Mechanical
5 Performance Tests, the CONTRACTOR's personnel shall demonstrate, to the satisfaction
6 of the ENGINEER, with OWNER's personnel present, that all equipment is coordinated
7 and operating properly; that all controls, safety features, and alarms operate satisfactorily
8 in coordination with the equipment installed; and that installed equipment complies in all
9 respects mechanically and electrically with applicable Drawings and Specifications. The
10 CONTRACTOR is responsible for mechanical operation of the facilities. The OWNER
11 will be present during the entire test period to provide direction to the CONTRACTOR's
12 personnel in regards to water treatment requirements and plant production rates. Upon
13 completion of the test period, the CONTRACTOR shall be provided with a written list of
14 any operating problems, equipment malfunctions, or other deficiencies related to plant
15 operations. The CONTRACTOR must correct these deficient items and retest the
16 affected system. The retesting shall be performed for a time period sufficient to
17 demonstrate the proper operation of the system. This time period will not exceed
18 2-weeks.

19
20 2. After the CONTRACTOR receives from the ENGINEER written acceptance of the
21 Final Mechanical Performance Tests, the CONTRACTOR's responsibilities relative to
22 operation of the facility shall be terminated, and the OWNER will assume the
23 responsibility. The CONTRACTOR shall, however, remain responsible for any further
24 training or extended run-in or adjustment periods for specific pieces of equipment or
25 systems as required by the Specifications.

26
27 D. Include costs for the above tests in unit and lump sum price bid for the Project.

28
29
30 **PART 2 - PRODUCTS (Not Applicable)**

31
32
33 **PART 3 - EXECUTION (Not Applicable)**

34
35
36 **END OF SECTION**

SECTION 1700

PROJECT CLOSEOUT

PART 1 - GENERAL

1.01 TESTING OF FACILITIES

The CONTRACTOR shall produce a first-class job and all Work shall be tested under operating conditions and pressures and any leaks or malfunctions shall be repaired to the satisfaction of the ENGINEER at no additional expense to the OWNER. This provision with reference to leakage shall also apply to watertightness of buildings.

1.02 CLOSEOUT PROCEDURES

Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for ENGINEER's inspection. Provide submittals to ENGINEER that are required by governing or other authorities. Submit Application for final payment identifying total adjusted Contract sum, previous payments, and sum remaining due.

1.03 FINAL CLEANING

Execute final cleaning prior to final inspection. Clean interior and exterior glass and surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces. Clean equipment and fixtures to a sanitary condition. Clean debris from roofs, gutters, downspouts, and drainage systems. Clean site; sweep paved areas, rake clean landscape surfaces. Remove waste and surplus materials, rubbish, and construction facilities from the site.

1.04 PROJECT RECORD DOCUMENTS

Maintain on site, one set of the following record documents; record actual revisions to the Work:

1. contract drawings
2. specifications
3. addenda
4. change orders and other modifications to the Contract
5. reviewed shop drawings, product data, and samples

Store record documents separate from documents used for construction. Record information concurrent with construction progress.

Specifications: Legibly mark and record at each product section description of actual products installed, including the following:

1. manufacturer's name and product model and number
2. product substitutions or alternates utilized
3. changes made by addenda and modifications

Record Documents and Shop Drawings: Legibly mark each item to record actual construction including:

1. Measured depths of foundations in relation to finish floor datum.
2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.

SECTION 02020

DEWATERING

PART 1 - GENERAL

1.01 GENERAL

The dewatering of all areas where work must be performed under this Contract is the responsibility of the CONTRACTOR and no additional sum will be allowed for any dewatering operation, overtime, equipment rental or any other expense incurred due to the occurrence of ground water, surface water or water from possible leakage of existing buildings, structures and piping in the vicinity of the CONTRACTOR'S operations.

Should water be encountered, the CONTRACTOR shall furnish and operate suitable pumping equipment of such capacity adequate to dewater the trench or channel. The CONTRACTOR shall convey all trench or channel water to a natural drainage channel or storm sewer without causing any property damage and in strict accordance with state and/or local requirements.

Disposal of silt and debris that accumulates during construction shall be performed in strict accordance with state and/or local requirements.

1.02 PERMITS

The CONTRACTOR shall be responsible for obtaining and paying for any permits required for dewatering and disposal.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 02055

REMOVAL AND ABANDONMENT OF EXISTING FACILITIES

PART 1 GENERAL

1.01 RELATED WORK

- A. Structural Excavation, Backfill and Compaction: Section 02220.
- B. Trenching, Backfilling, and Compacting: Section 02221.
- C. Paving and Surfacing: Section 02500.
- D. Cast-In-Place Concrete: Section 03300.

1.02 SUMMARY

- A. Work Included: Work involved without intending to limit or restrict the extent of the work is outlined as follows:
 - 1. Demolition and removal of certain in-line structures and pipe.
 - 2. Plugging existing facilities.
 - 3. Filling existing facilities.
- B. Demolition work, as specified herein, is not intended to be performed as a wrecking operation but as preparatory work relative to the performance of the various construction operations of the Project.

1.03 SITE CONDITIONS

- A. Dust Control: To prevent unnecessary spread of dust during performance of demolition work, thoroughly moisten surfaces and debris as required to prevent dust being a nuisance to the public, neighbors and concurrent performance of other work on the site. Water for use in dust control shall be obtained from Contractor's own source.
- B. Protection: Exercise care during demolition and removal work to confine demolition operations to the facilities as indicated on the Drawings. The physical means and methods used for protection are at the Contractor's option. However, the Contractor will be completely responsible for replacement and restitution work of whatever nature at no expense to the Owner.
 - 1. Additionally, if public safety is endangered during the progress of the demolition work, provide adequate protective measures to protect public pedestrian and vehicular traffic on streets and walkways.
 - 2. Signs, signals and barricades used shall conform to requirements of Federal, State and local laws, rules, regulations, precautions, orders and decrees.
- C. Explosives and Blasting: Not permitted in performance of demolition work.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Materials needed or required for temporary protection in the form of barricades, fences, enclosures, etc., may be used construction materials of sound condition and reasonably

- 1 F. Capping Existing Facilities (if applicable):
 - 2
 - 3 1. Cap cut ends of water mains to be abandoned. Restrain as required and
 - 4 indicated on drawings.
 - 5 2. Close existing corporation stops on water services to be abandoned except those
 - 6 on abandoned mains.
 - 7
- 8 G. Removal and Filling Existing Valve Boxes (if applicable):
 - 9
 - 10 1. Remove top section of valve boxes indicated to be abandoned.
 - 11 2. Fill with aggregate backfill placed in layers not to exceed 6 inches in depth after
 - 12 compaction.
 - 13 a. Perform compaction by hand.
 - 14 b. Puddling or jetting compacting methods are not permitted.
 - 15
 - 16
- 17 H. Removal of Existing Fire Hydrants and Valves (if applicable):
 - 18 1. Remove hydrants and valves where indicated on Drawings.
 - 19 2. Provide caps on existing lines where hydrants and valves are removed.
 - 20 3. Remove and store hydrants and valves claimed as salvage by Owner at a
 - 21 location designated by Owner.
 - 22
- 23 I. Abandoning Existing Mains (if applicable):
 - 24
 - 25 1. Transfer services to new water main, connecting to existing service on structure
 - 26 side of existing curb stop.
 - 27 2. Close existing curb stop and remove existing curb box.
 - 28 3. Close system valves to isolate main to be abandoned.
 - 29 4. Cut, cap, and block existing main as detailed on Drawings.
 - 30 5. Reopen system valves.
 - 31 6. Valves to be operated by OWNER's employees only.
 - 32
 - 33

END OF SECTION

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PART 3: EXECUTION

3.01 ERECTION

Flame cutting of structural steel in the field of any trade may be done only as approved by the ENGINEER. Burned holes for bolted connections shall not be permitted in any case.

Welded field connections may be used in accordance with the following requirements. Such welding must be done while the member is not subject to live loads and if, in the opinion of the ENGINEER, a hazardous condition may result, shoring or other temporary supports shall be required. Metal parts to be welded shall be clean and free of all dirt, oil, grease, paint or other material detrimental to the quality of the weld. The fit of the material shall be accurate to prevent undercutting of base material.

3.02 BOLTED CONNECTIONS

High Strength bolts shall be tightened to their full pretensioning by using either the Turn-of-Nut Tightening or Direct Tension Indicator Tightening Method. Calibrated Wrench Tightening shall not be allowed.

ASTM A-307 bolts (machine bolts) shall be tightened to a snug fit.

3.03 FIELD QUALITY CONTROL

The CONTRACTOR shall make available to the ENGINEER all necessary facilities to check the work. He shall furnish mill test reports to the ENGINEER without charge, if requested. All inspections will be made by the ENGINEER at its expense.

END OF SECTION

SECTION 9900

PAINTING

PART 1: GENERAL

1.01 RELATED WORK

1.02 QUALITY ASSURANCE

A. Required Experience and Workmanship

1. All cleaning and painting work covered by this Section shall be performed by a firm having at least five (5) years successful experience in the painting field, and shall have completed at least fifteen (15) projects of similar content and design.
2. All work shall be in accordance with the requirements hereinafter specified and the applicable requirements of the latest edition of standards provided by SSPC: The Society for Protective Coatings, 40 24th Street, Sixth Floor, Pittsburgh, PA, 15222 and the American Water Works Association (AWWA) 6666 W. Quincy Avenue, Denver, CO 80235.

B. Product Labeling

Labels to include:

1. Manufacturer's name
2. Type of paint
3. Manufacturer's stock and batch number
4. Color
5. Instructions for reducing, where applicable

C. Sampling of Materials

1. Obtain test samples from material stored at project site or source of supply.
2. Select samples at random from sealed containers

1.03 SUBMITTALS

A. Product Data

1. Provide written description and catalog cuts describing each coating in the system. Information shall include; product delivery, storage, handling, application and curing instructions and limitations. Include technical data sheets to substantiate compliance with specifications.

B. Certification

1. Provide Manufacturers certification that the coatings proposed meet the specifications and are suitable for the intended use..

1 residuals, paint containers, unused paints and thinners, solvents and
2 other materials to be disposed as a result of performing the Work.

- 3
4 6. Responsibility - Comply with Laws and Regulations without supervision
5 by the ENGINEER, ENGINEER's Consultant, Resident Project
6 Representative, OWNER or any party they may be responsible for.

7
8 B. Protection of Properties

- 9
10 1. Protect process water or potable water areas from coming in unintended
11 contact with coatings, abrasives or waste materials. Cover openings to
12 these areas to keep blasting abrasive and paint materials from entering
13 the openings.
14
15 2. All permanent equipment and property shall be covered to protect it from
16 abrasive and paint damage. Restrict and control wind borne fallout of
17 residue and particulate matter from cleaning operations, and/or paint
18 from the proximity of property or vehicles.
19
20 3. Schedule and coordinate Work to avoid damage from wind borne fallout.
21 All damage to facilities, vehicles, property, etc. shall be cleaned, repaired
22 or replaced.
23

24 C. Working Times

- 25
26 1. Unless otherwise approved, no Work is to be done between sunset and
27 sunrise, local time. The times for work shall comply with Laws and
28 Regulations.
29
30 2. Night Work: Submit to ENGINEER justification for the necessity of night
31 work. If ENGINEER approves the need for night work, verify that the
32 necessary dew point, humidity, surface and air temperature requirements
33 are met. Provide proper lighting, safety or other required equipment.
34 ENGINEER may revoke approval if night work is not in the best interest
35 of OWNER.
36

37 D. Access and Rigging

38
39 Inspect all rigging attachments prior to use and regularly during use. Assume
40 responsibility for all existing and any added attachments.

41 E. Cleanliness

42
43 Work shall be performed in, or proximate to, a potable water processing facility
44 and public water supply storage. Exercise extreme care to protect public water
45 supplies. Maintain Work areas in clean and safe conditions at all times. Collect
46 debris daily and place in covered containers. Store debris and waste in
47 accordance with Laws and Regulations. Do not store in the vicinity of water
48 processing or storage facilities. Dispose of debris and waste off site in
49 accordance with Laws and Regulations.
50

51 F. Temperature and Humidity

52
53 Meet all temperature and humidity requirements of the paint manufacturer. No
54 painting shall be performed when the relative humidity is greater than or
55
56

4. Large Pipe Markers: For outside pipe diameters 6-inches and larger, provide strap-on type markers, which include stainless steel spring fasteners.

a. Letter Size and Color Field: Use gothic-style lettering with letter size and minimum color field width in accordance with the following:

Pipe Outside Diameter Inches	Color Field Minimum Width Inches	Letter Size Inches
3/4 to 1-1/4	8	1/2
1-1/2 to 2	8	3/4
2-1/2 to 6	12	1-1/4
8 to 10	24	2-1/2
Over 10	32	3-1/2

PART 2: PRODUCTS

2.01 MATERIALS

A. Paint Materials

1. Coating materials and thinners: manufactured by:

Carboline Company
 350 Hanley Industrial Court
 St. Louis, Missouri, 63144.

MAB Paints
 600 Reed Road
 Broomall, PA 19008.

Sherwin Williams Company
 101 Prospect Street NW
 Cleveland, OH 44115.

Themec Company, Inc.
 P. O. Box 1749
 Kansas City, MO 64141.

2. Substitutions: Allowed only at the time of bidding in accordance with Section 1100. Submittals of alternative systems for approval shall provide complete descriptions of the systems as to product numbers, number of coats, film thickness, etc.

B. Abrasives

Abrasives used for blast cleaning shall be those contained in the specifications of the Society for Protective Coatings (formerly Steel Structures Painting Council). Particular attention shall be given to the maximum particle size requirements. Proprietary abrasive materials (such as Black Beauty 1240 or Clemtex No. 2) may be used only upon written approval of the ENGINEER. Unless otherwise specified herein, the profile of the substrate shall achieve a 3 to 4 mil profile

1 B. Metal Substrates
2

- 3 1. Grind to remove sharp edges, weld protrusions and other protrusions.
4 Grind sharp edges to a 1/8-inch radius minimum. Completely remove
5 weld spatter.
6
7 2. Surfaces to be free from oil, grease, mud, dust, moisture, old paint, or
8 other foreign matter.
9
10 3. Prime surfaces cleaned to bare metal before any rusting takes place.
11 Cleaned surfaces shall not be allowed to stand overnight without a
12 primer coat applied. Apply primer during the same daylight period that
13 the cleaning was accomplished.
14
15 4. Feather and smooth existing coatings at edges where spot cleaning is
16 specified. Achieve proper blending of new paint to old paint. Peeling of
17 old paint is not acceptable.
18
19 5. Blow down with dry compressed air, sweep or vacuum surfaces following
20 blast cleaning operations.
21
22 6. Clean surfaces in accordance with the Surface Preparation
23 Specifications, latest edition, of the Society for Protective Coatings
24 (formerly Steel Structures Painting Council) to the following degrees as
25 specified in appendices to this specification section:
26

- 27 SSPC-SP1, Solvent Cleaning.
28 SSPC-SP2, Hand Tool Cleaning.
29 SSPC-SP3, Power Tool Cleaning.
30 SSPC-SP5, White Metal Blast Cleaning.
31 SSPC-SP6, Commercial Blast Cleaning.
32 SSPC-SP7, Brush-off Blast Cleaning.
33 SSPC-SPI0, Near-White Blast Cleaning.
34 SSPC-SP11, Power Tool Cleaning to Bare Metal.
35

36 C. Concrete and Masonry Substrates
37

38 NOT APPLICABLE
39

40 D. Wood and Drywall Substrates
41

42 NOT APPLICABLE
43
44

45 E. Previously-Painted Surfaces
46

- 47 1. Totally remove existing paint when surface is to be submerged, in a severe
48 environment, paint is less than 85% intact, brittle, eroded or has underfilm
49 rusting.
50
51 2. Surfaces which are greater than 85% intact require removal of failed coatings
52 and then spot priming. Spot priming is in addition to coats specified.
53
54 3. Remove surface contamination such as oil, grease, loose paint, mill scale,
55 dirt, foreign matter, rust, mold, mildew, mortar, efflorescence, and sealers.
56

1 3.03 COATING SCHEDULE
2

- 3 A. The coating systems to be used for each surface are listed in Appendix #1 to this
4 Specification Section
- 5
- 6 B. The types, products, number of coats, minimum dry film thickness per coat and
7 all other relevant information for each coating system to be applied under this
8 CONTRACT are listed in Appendix #2 to this Specification Section.
- 9
- 10
- 11 C. In addition to all new construction that is part of this CONTRACT and at all
12 locations where existing coatings were damaged during construction, the
13 following surfaces shall be coated under this CONTRACT:
14
- 15 1. Existing Steel Refuse Trough, as necessary
16

17
18 3.04 COATING SYSTEM APPLICATION
19

- 20 A. General
- 21
- 22 1. Apply to a dry film thickness as specified by the manufacturer, unless
23 otherwise specified herein. Allow proper curing times between re-
24 coatings. Vary color slightly between successive coats.
- 25
- 26 2. Finish coats shall be smooth, uniform in color, free of brush marks, runs,
27 laps, dry spray, overspray, holidays, missed or skipped areas. Cut sharp
28 edge of paint, without overlapping, where work joins other materials or
29 where a color change occurs.
- 30
- 31 3. Mix all paints and coatings in strict accordance with applicable portions
32 of these Specifications and the paint manufacturer's recommendations.
- 33
- 34 4. Provide air-moving equipment as necessary to adequately ventilate Work
35 areas. Exercise care when working within structures such that volatile
36 gases do not accumulate possibly resulting in an explosion or fire
37 hazard, or affecting the curing time of the paint.
- 38
- 39 6. Surfaces that have been shop primed in accordance with these
40 specifications do not require field prime coats unless recommended by
41 the coating manufacturer. Clean and prime all unprimed and abraded
42 surfaces.
- 43
- 44 7. After proper cleaning and surface preparation, brush apply primer to all
45 connection points, including weld seams, edges, rivets and other joints.
- 46
- 47 8. Roller covers shall be synthetic nap with nap thickness per the paint
48 manufacturer's recommendations.
- 49
- 50 9. Remove all spilled, splashed or splattered paint from all surfaces. Touch
51 up all damaged finishes. Leave Work areas in clean, pre-construction,
52 conditions.
53
54
55
56

Section 9900
Appendix #1

Surface	Coating System Number (See Attached Appendix for System Descriptions)	
	New Construction	Maintenance (See Note 1)
Steel (Structural, Tanks, Equipment, Panels, Etc.):		
Steel - Interior or Exterior (submerged) - NSF Std. 61 Certified	1	1
Steel - Interior (non-submerged)	2	2, 2A, 2C
Steel - Exterior (non-submerged)	3	3, 3A, 3B
Steel - Exterior (below grade)	1	1
Ductile and Cast Iron (Piping, Pumps and Valves):		
Ductile or Cast Iron - Interior or Exterior (submerged) - NSF Std. 61 Certified	1	1
Ductile or Cast Iron - Interior (exposed)	2	2, 2A, 2C
Ductile or Cast Iron - Exterior (exposed)	3	3, 3A, 3B
Ductile or Cast Iron - Interior/Exterior (below grade)	See Piping Specifications	See Piping Specifications
Ductile or Cast Iron - Interior (in galleries or valve pits)	2, 4	4
Other Metals (Galvanized Steel, Black Iron, Copper, Bronze, Aluminum):		
Interior (See Note 2 for Copper, Bronze and Aluminum)	2B	2B
Exterior (See Note 2 for Copper, Bronze and Aluminum)	3B	3B
Concrete:		
Concrete - Interior or Exterior (submerged) - NSF Std 61 Certified	5	5
Concrete - Interior (non-submerged) (See Note 2)	6	6
Concrete - Exterior (non-submerged) (See Note 2)	7	7
Concrete - Exterior (below grade)	8	8
Concrete - Floors	9	9
Concrete - Secondary Containment	10	10
Masonry:		
Masonry - Interior	6	6
Masonry - Exterior (above grade) (See Note 2)	7	7
Masonry - Exterior (below grade)	6	6
Drywall:		
Drywall - Interior	11	11
Wood:		
Wood - Interior	12	12
Wood - Exterior	13	13
Other Surfaces:		
PVC and FRP - Interior (See Note 2)	14	14
PVC and FRP - Exterior (See Note 2)	15	15

Notes:

1. Refer to Specification Section 9900, Paragraph 3.02 to determine if overcoating or complete blasting is applicable.
2. These surfaces are to be coated only when specifically required by the Contract Documents.

Section 9900
Appendix #2

Treatment Plant Coating System No. 1

Generic Description: Three-Coat Epoxy (NSF Std. 61 Certified)
Surface Preparation: SSPC-SP10

Manufacturer	Prime Coat	DFT (mils)	Second Coat	DFT (mils)	Third Coat	DFT (mils)	Minimum Total DFT (mils)
Carboline Company	Carboguard 561	3-5	Carboguard 561	4-6	Carboguard 561	4-6	11
MAB Paints	Ponamid 54 Series	3-5	Ponamid 54 Series	4-6	Ponamid 54 Series	4-6	11
Sherwin-Williams Company	Epoxide 33/34	3-5	Epoxide 33/34	4-6	Epoxide 33/34	4-6	11
Tnemec Company	Series 20 Pota-Pox	3-5	Series 20 Pota-Pox	4-6	Series 20 Pota-Pox	4-6	11

Treatment Plant Coating System No. 2

Generic Description: Three-Coat Epoxy
Surface Preparation: SSPC-SP10

Manufacturer	Prime Coat	DFT (mils)	Second Coat	DFT (mils)	Third Coat	DFT (mils)	Minimum Total DFT (mils)
Carboline Company	Carboguard 893	3-5	Carboguard 890	4-6	Carboguard 890	4-6	11
MAB Paints	Ponamid 54 Series	3-5	Plymastic 044	4-6	Plymastic 044	4-6	11
Sherwin-Williams Company	Macropoxy 646	3-5	Macropoxy 646	4-6	Macropoxy 646	4-6	11
Tnemec Company	Series 20 Pota-Pox	3-5	Series 66 Hi-Build Epoxoline	4-6	Series 66 Hi-Build Epoxoline	4-6	11

Section 9900
Appendix #2

Treatment Plant Coating System No. 3

Generic Description: Epoxy/Epoxy/Polyurethane
Surface Preparation: SSPC-SP10

Manufacturer	Prime Coat	DFT (mils)	Second Coat	DFT (mils)	Third Coat (Optional)	DFT (mils)	Minimum Total DFT (mils)
Carboline Company	Carboguard 893	3-5	Carboguard 890	3-5	Carbothane 134 HG	2-3	8
MAB Paints	Ponamid 54 Series	3-5	Ply-Tile 520 HB	3-5	Ply-Thane 890 HS	2-3	8
Sherwin-Williams Company	Macropoxy 646	3-5	Macropoxy 646	3-5	Hi-Solids Polyurethane	2-3	8
Tnemec Company	Series 20 Pota-Pox	3-5	Series 66 Hi-Build Epoxoline	3-5	Series 1075 Endura-Shield	2-3	8

SECTION 11100

SCREENING EQUIPMENT

PART 1 - GENERAL

1.01 **LATED DOCUMENTS:** Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

1.02 **SUMMARY:** This Section includes the following:

Traveling Intake Screens

Steel work for anchorage and leveling is specified in Division 5.

Finish painting is specified in Division 9.

Electrical wiring and connections are specified in Division 16.

1.03 **SUBMITTALS:** A copy of the Submittal furnished by US Filter is bound with these specifications.

1.04 **MATERIAL DELIVERY, STORAGE AND HANDLING:** KAW will receive and temporarily store screening equipment. Upon moving equipment from initial place of storage, Contractor shall subsequently store equipment in location and manner which protects against dust, moisture and physical damage. Do not under any circumstance store equipment in contact with ground surface. All equipment shall be stored and handled as instructed by the Vendor. Any damage to equipment made from improper storage, handling, or installation shall be the responsibility of the Contractor.

PART 2 - PRODUCTS

2.01 **TRAVELING SCREENING:** Will be as furnished by the Owner.

PART 3 - EXECUTION

3.01 **PREPARATION:** Coordinate installation of screening equipment indicated to be attached to or recessed into concrete or steel and furnish anchoring devices with templates, diagrams and instructions for their installation.

Coordinate delivery of anchoring devices to project site to avoid delaying progress.

3.02 **INSTALLATION:** Refer to contract drawings and shop drawings, and coordinate and fit equipment accordingly. Place sleeves, bolts and inserts as structure construction progresses.

Make equipment installation in accordance with manufacturer's written recommendations. Advise Owner / Engineer of any conflict between Contract Documents and recommendations of manufacturer, before commencing installation. For all except the simplest equipment installations, perform work by or under direct supervision of vendor's service technician.

Provide all necessary accessories for proper installation and operation of screening equipment.

SECTION 15062

PROCESS PIPING

PART I - GENERAL

1.01 RELATED DOCUMENTS:

The Drawings and general provisions of the contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to the Work specified in this Section.

1.02 DESCRIPTION OF WORK:

The extent of each type of process piping is shown on the Drawings.

Process piping consists of all piping systems which are not part of building services or otherwise specified.

1.03 RELATED WORK SPECIFIED ELSEWHERE:

Excavation, Filling and Grading, Section 02202

Foundation Drainage System, Section 02411

Sanitary Sewer System, Section 02720

Site Drainage, Section 02772

1.04 QUALITY ASSURANCE:

A. Manufacturer:

Furnish manufactured items from manufacturers which regularly produce items specified herein which have proven satisfactory in actual service.

B. Imperfections:

Irregardless of tolerances permitted by standards specified herein, the Engineer may reject pipe or appurtenances at the manufacturing plant or project site, which have cracks, chips, blisters, lack of smooth interior or exterior surface, evidence of structural weakness, porosity, joint defect, significant variation from theoretical shape, or other imperfection which might, in the opinion of the Engineer, contribute to a reduced functional capability, accelerated deterioration, or reduced structural strength.

C. Repairs:

Do not use patched or repaired pipe or appurtenances unless each individual length or element has been approved and marked for repair by the Engineer at the manufacturing plant. Repairs, other than at the manufacturing plant, are not permitted.

- 1 C. Joints and Fittings: For fittings and valves, use the joint type indicated for the
- 2 following pipe size classifications, unless otherwise specified or shown:
- 3
- 4 1. Pipe Size Less than 4 Inches: Malleable iron fittings conforming with ANSI
- 5 B16.3, Class 150 (300 PSIG cold W-O-G, non-shock working pressure),
- 6 with American Standard taper pipe thread. Use joint compound
- 7 manufacturer for specific service.
- 8
- 9 2. Pipe Size 4 Inch And Larger: Cast or ductile iron fittings and thread-on
- 10 flanges conforming with ANSI B16.1, Class 125/150. Use galvanized or
- 11 corrosion resistant bolts, and either rubber or asbestos composition gaskets
- 12 complying with manufacturer recommendation.
- 13
- 14 D. Coating: For underground pipe runs only, paint piping elements with two coats of
- 15 asphaltum using specific coating recommended by manufacturer after threading
- 16 and other operations are complete.
- 17
- 18

19 2.03 NON-METALLIC PIPING SYSTEMS:

20 Polyvinyl Chloride Pipe System Type 1 (PVC-1):

21 Use rigid Sch. 80 PVC pipe complying with ASTM D 1785 (normal impact), socket-type Sch.

22 80 PVC solvent weld fittings and adapters complying with ASTM D 2467, and solvent

23 cement for PVC plastic pipe and fittings complying with ASTM D 2564. Provide system

24 suitable for working pressures not less than 200 PSIG at 75F.

25

26

27

28 2.04 COUPLINGS:

29 A. Flexible Coupling Type 1 (FC-1):

30 Bolted sleeve type coupling utilizing plain pipe ends, and suitable for not less than

31 275 psig working pressure at 212F while permitting angular deflection of at least two

32 degrees and axial movement of at least 3/8 inch. Fabricate body of welded rolled

33 high strength steel of cylindrical shape with steel or iron followers, coupling gaskets

34 of moulded synthetic rubber, and bolts of corrosion resistant steel alloy. Provide

35 shop prime paint coating. Use couplings compatible with pipe to which connected

36 including transition from one piping system type to another.

37 Subject to compliance with requirements, manufacturers offering products which

38 may be incorporated in the work include but are not limited to, the following:

39

40

41

42 B. Dresser (Style 38)

43 C. Rockwell (Series 400)

44

45

46

47 2.05 VALVES:

48 Gate Valve Type 11 (GV-11):

49 Bronze body with threaded ends, handwheel operator, 200 pound pressure class (400 PSIG

50 cold W-O-G, non-shock working pressure), rising stem, solid disc, union bonnet and

51 capable of being repacked under pressure with valve fully open.

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C. Comply with Section 15090, Supports, Anchors, and Seals.

3.06 STERILIZATION:

Immediately prior to placing potable water lines in service, whose nominal pipe diameter exceeds 4 inches, flush such lines thoroughly and then disinfect by filling with chlorine and water solution as necessary to obtain at least a 25 ppm chlorine residual at the end of a 24 hour retention period (50 ppm minimum applied). Drain piping and refill with potable water. The Owner will then take a water sample from the piping system to determine whether contamination is present. If contamination is present, repeat sterilization process until contamination is eliminated. Do not place potable water piping in service prior to the time that sterilization has been satisfactorily completed.

END SECTION 15062

SECTION 16010

BASIC ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this and the other sections of Division 16.

SUMMARY:

This Section includes general administrative and procedural requirements for electrical installations. The following administrative and procedural requirements are included in this Section to expand the requirements specified in Division 1:

- Rough-ins.
- Electrical installations.
- Cutting and patching.

JOB CONDITIONS:

Electrical Drawings:

Drawings are largely diagrammatic and indicate the general arrangement of fixtures, equipment and other work included. Consult all other drawings of the general construction contract to establish the exact conditions and location of electrical installations.

Codes, Permits and Fees:

Give all necessary notices, obtain required permits, and pay all government taxes, fees and other costs in connection with electrical work.

Pay all charges made by the electric utility for permanent electric service to the project.

DELIVERY, STORAGE, AND HANDLING:

Deliver products to the project properly identified with names, model numbers, types, grades, compliance labels, and other information needed for identification.

1 Install access panel or doors where units are concealed behind finished surfaces. Access panels
2 and doors are specified in Division 8 Section "ACCESS DOORS" and Division 16 Section "BASIC
3 ELECTRICAL MATERIALS AND METHODS."
4

5 Install systems, materials, and equipment giving right-of-way priority to systems required to be
6 installed at a specified slope.
7

8
9 CUTTING AND PATCHING:

10
11 General: Perform cutting and patching in accordance with Division 16 Section "BASIC ELECTRICAL
12 MATERIALS AND METHODS." In addition to the requirements specified in that Section the following
13 requirements apply:
14

15 Perform cutting, fitting, and patching of electrical equipment and materials required to:
16

17 Uncover Work to provide for installation of ill-timed Work.
18

19 Remove and replace defective Work.
20

21 Remove and replace Work not conforming to requirements of the Contract Documents.
22

23 Remove samples of installed Work as specified for testing.
24

25 Install equipment and materials in existing structures.
26

27 Upon written instructions from the Engineer, uncover and restore Work to provide for
28 Engineer observation of concealed Work.
29

30 Cut, remove, and legally dispose of selected electrical equipment, components, and materials as
31 indicated, including but not limited to removal of electrical items indicated to be removed and items
32 made obsolete by the new Work.
33

34 Protect the structure, furnishings, finishes, and adjacent materials not indicated or scheduled to be
35 removed.
36

37 Provide and maintain temporary partitions or dust barriers adequate to prevent the spread of dust
38 and dirt to adjacent areas.
39

40 Protection of Installed Work: During cutting and patching operations, protect adjacent installations.
41

42 Patch finished surfaces and building components using new materials specified for the original
43 installation and experienced Installers. Installers' qualifications refer to the materials and methods
44 required for the surface and building components being patched.
45

46 Refer to Division 1 Section "DEFINITIONS AND STANDARDS" for definition of experienced
47 "Installer."
48

49 END OF SECTION
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SECTION 16050

BASIC ELECTRICAL MATERIALS AND METHODS

PART 1 - GENERAL

RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Selections, apply to this Section.

Requirements specified in Division 16 Section "Basic Electrical Requirements" apply to this Section.

SUMMARY

This Section includes limited scope general construction materials and methods for application with electrical installations as follows:

Wood grounds, nailers, blocking, fasteners, and anchorage for support of electrical materials and equipment.

Access panels and doors in walls, ceilings, and floors for access to electrical materials and equipment.

SUBMITTALS:

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

Product data for the following products:

Access panels and doors.

Shop drawings detailing fabrication and installation for metal fabrications, and supports and anchorage for electrical materials and equipment.

Coordination drawings for access panel and door locations in accordance with Division 16 Section "Basic Electrical Requirements."

Welder certificates, signed by Contractor, certifying that welders comply with requirements specified under "Quality Assurance" article of this Section.

QUALITY ASSURANCE

Installer Qualifications: Engage an experienced Installer for the installation and application access panels and doors.

Qualify welding processes and welding operators in accordance with AWS D1.1 "Structural Welding Code - Steel."

Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.

1 ACCESS DOORS:
2

3 Steel Access Doors and Frames: Factory-fabricated and assembled units, complete with attachment
4 devices and fasteners ready for installation. Joints and seams shall be continuously welded steel, with
5 welds ground smooth and flush with adjacent surfaces.
6

7 Frames: 16-gage steel, with a 1-inch-wide exposed perimeter flange for units installed in unit masonry,
8 pre-cast, or cast-in-place concrete, ceramic tile, or wood paneling.
9

10 For installation in masonry, concrete, ceramic tile, or wood paneling: 1 inch-wide-exposed
11 perimeter flange and adjustable metal masonry anchors.
12

13 Flush Panel Doors: 14-gage sheet steel, with concealed spring hinges or concealed continuous piano
14 hinge set to open 175 degrees; factory-applied prime paint.
15

16 Locking Devices: Flush, screwdriver-operated cam locks.
17
18
19

1 CONNECTORS FOR CONDUCTORS:
2

3 Provide UL-listed factory, fabricated, solderless metal connectors of sizes, ampacity ratings, materials,
4 types and classes for applications and for services indicated. Use connectors with temperature ratings
5 equal to or greater than those of the wires upon which used.
6
7

8 **PART 3 - EXECUTION**
9

10 WIRING METHOD:
11

12 Use the following wiring methods as indicated:
13

14 Wire: install all wire in raceway.
15
16
17

18 INSTALLATION OF WIRES AND CABLES
19

20 General: Install electrical cables, wires, and connectors in compliance with NEC.
21

22 Coordinate cable installation with other Work.
23

24 Pull conductors simultaneously where more than one is being installed in same raceway. Use UL listed
25 pulling compound or lubricant, where necessary.
26

27 Use pulling means including, fish tape, cable, rope, and basket weave wire/cable grips which will not
28 damage cables or raceways. Do not use rope hitches for pulling attachment to wire or cable.
29

30 Conceal all cable in finished spaces.
31

32 Install exposed cable parallel and perpendicular to surfaces or exposed structural members, and follow
33 surface contours, where possible.
34

35 Keep conductor splices to minimum.
36

37 Install splice and tap connectors which possess equivalent or better mechanical strength and insulation
38 rating than conductors being spliced.
39

40 Use splice and tap connectors which are compatible with conductor material.
41

42 Provide adequate length of conductors within electrical enclosures and train the conductors to terminal
43 points with no excess. Bundle multiple conductors, with conductors larger than no. 10 AWG cabled in
44 individual circuits. Make termination so there is no bare conductor at the terminal.
45

46 Where splices occur in manholes or other locations subject to wetness, use prefabricated waterproof
47 splice insulation system recommended by manufacturer for wet locations.
48

49 Tighten electrical connectors and terminals, including screws and bolts, in accordance with manufacturer's
50 published torque tightening values. Where manufacturer's torquing requirements are not indicated,
51 tighten connectors and terminals to comply with tightening torques specified in UL 486A and UL 486B.
52

53 FIELD QUALITY CONTROL
54

55 Prior to energizing, check installed wires and cables with megohm meter to determine insulation
56 resistance levels to assure requirements are fulfilled.
57
58

1
2 **PART 3 - EXECUTION**
3
4

5 APPLICATION:
6

7 Equipment Grounding Conductor Application: Comply with NEC Article 250 for sizes and quantities of
8 equipment grounding conductors, except where larger sizes or more conductors are indicated.
9

10 Install separate insulated equipment grounding conductors with circuit conductors for the following
11 in addition to those locations where required by Code:
12

13 Feeders and branch circuits.
14

15 Lighting circuits.
16

17 Receptacle Circuits.
18

19 Single-phase motor or appliance circuits.
20

21 Three-phase motor or appliance branch circuits.
22

23 Nonmetallic Raceways: Install an insulated equipment ground conductor in nonmetallic raceways
24 unless they are designated for telephone or data cables.
25

26 Water Heater, Heat Tracing, and Anti-Frost Heater Circuits: Install separate insulated equipment
27 ground conductor to each electric water heater, heat tracing, and surface anti-frost heating cable.
28 Bond this conductor to heater units, piping, and connected equipment and components.
29

30 Underground Conductors: Bare, stranded copper except as otherwise indicated.
31

32 Signal and Communications: For telephone, alarm, and communication systems, provide a #4
33 AWG minimum green insulated copper conductor in raceway from the grounding electrode system
34 to each terminal cabinet or central equipment location.
35

36 Separately derived systems required by NEC to be grounded shall be grounded in accordance with NEC
37 paragraph 250-26.
38

39 Metal Poles Supporting Outdoor Lighting Fixtures: Ground pole to a grounding electrode as indicated in
40 addition to separate equipment grounding conductor run with supply branch circuit.
41

42 Connections to Lightning Protection System: Bond grounding conductors or grounding conductor conduits
43 to lightning protection down conductors or grounding conductors in compliance with NFPA 78 "Lightning
44 Protection Code."
45

46 Common Ground Bonding With Lightning Protection System: Bond electric power system ground directly
47 to lightning protection system grounding conductor at closest point to electric service grounding electrode.
48 Use bonding conductor sized same as system ground conductor and installed in conduit.
49

50
51 INSTALLATION:
52

53 General: Ground electrical systems and equipment in accordance with NEC requirements except where
54 the Drawings or Specifications exceed NEC requirements.
55

56 Electrical Room Ground Bus: Size, location, and arrangement as indicated. Space 1 inch from wall and
57 support from wall 6 inches above finished floor, except as otherwise indicated.
58

1 torquing requirements are not indicated, tighten connections to comply with torque tightening values
2 specified in UL 486A and UL 486B.
3

4 Connections at Test Wells: Use compression-type connectors on conductors and make bolted- and
5 clamped-type connections between conductors and ground rods.
6

7 Compression-Type Connections: Use hydraulic compression tools to provide the correct circumferential
8 pressure for compression connectors. Use tools and dies recommended by the manufacturer of the
9 connectors. Provide embossing die code or other standard method to make a visible indication that a
10 connector has been adequately compressed on the ground conductor.
11

12 Moisture Protection: Where insulated ground conductors are connected to ground rods or ground buses,
13 insulate the entire area of the connection and seal against moisture penetration of the insulation and
14 cable.
15

16 17 OVERHEAD LINE GROUNDING: 18

19 General: Comply with ANSI C2, "National Electrical Safety Code" for "Single-Grounded Systems", using
20 two electrodes in parallel if a single electrode resistance to ground exceeds 25 ohms.
21

22 Ground Rod Connections: Use exothermic welds for underground connections and connections to rods.
23

24 Lightning Arresters: Separate arrester grounds from other ground conductors.
25

26 Secondary Neutral and Tank of Transformer: Interconnect and connect to ground.
27

28 Grounding Conductor Protection: Protect grounding conductors running on the surface of wood poles with
29 molding of a type manufactured for this purpose. Extend from grade level up to and through
30 communications and transformer spaces.
31

32 33 UNDERGROUND DISTRIBUTION SYSTEM GROUNDING: 34

35 Manholes and Handholes: Install a 3/4-inch by 10-ft. driven ground rod close to the wall and set the rod
36 depth such that 4 inches will extend above the finished floor. Where necessary, install ground rod before
37 the manhole is placed and provide a No. 1/0 bare tinned-copper conductor from the ground rod into the
38 manhole through a waterproof sleeve in the manhole wall. Protect ground rods passing through concrete
39 floor with a double wrapping of pressure-sensitive tape or heat-shrunk insulating sleeve from 2 inches
40 above to 6 inches below the concrete. Seal floor opening with waterproof nonshrink grout.
41

42 Connections at Manholes: Connect exposed metal parts, such as inserts, cable racks, pulling irons,
43 ladders, and cable shields within each manhole or handhole to the ground rod or ground conductor. Make
44 connections with minimum No. 4 AWG standard hard-drawn copper wire. Train conductors plumb or level
45 around corners and fasten to manhole walls. Connect to cable armor and cable shields by means of
46 tinned terminals soldered to the armor or shield, or as recommended by manufacturer of splicing and
47 termination kits.
48

49 Grounding System: Ground non-current-carrying metallic items associated with manholes, substations,
50 and pad-mounted equipment by connecting them to bare underground cable and grounding electrodes
51 arranged as indicated.
52

53 54 FIELD QUALITY CONTROL: 55

56 Independent Testing Organization: Arrange and pay for the services of a qualified independent electrical
57 testing organization to perform tests described below.
58

ADDENDUM NO. 1
FOR
KRS WATER SYSTEM IMPROVEMENTS
REPLACEMENT OF (2) TRAVELING WATER SCREENS

Section 1300 Paragraph 1.01E Page 01300-3 Line 44	DELETE THE FOLLOWING LANGUAGE "The taping shall be performed by a professional firm specializing in audio-video work."
Section 1600 Paragraph 1.03 Page 01600-2 Line 10	DELETE THE FOLLOWING LANGUAGE "CONTRACTOR"

KRS WATER SYSTEM IMPROVEMENTS - REPLACEMENT OF (2) TRAVELING WATER SCREENS

1-12-04

BID

PROJECT IDENTIFICATION:

KRS Water System Improvements
Replacement of (2) Traveling Water Screens

THIS BID IS SUBMITTED TO:

Kentucky American Water
Mr. Nick O. Rowe, Vice President - Operations
2300 Richmond Road
Lexington, KY 40502

1. The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with OWNER in the form included in the Contract Documents to perform and furnish all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Times indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.

2. Bidder accepts all of the terms and conditions of the Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance as stated in paragraph 15 of the Instructions to Bidders. Bidder will sign and submit the Agreement with the Bonds and other documents required by the Bidding Requirements within fifteen days after the date of OWNER's Notice of Award.

3. In submitting this Bid, Bidder represents, as more fully set forth in the Agreement:

(a) Bidder has examined copies of all the Bidding Documents and of the following Addenda (receipt of all which is hereby acknowledged):

<u>Date</u>	<u>Number</u>
2/12/04	1
_____	_____
_____	_____
_____	_____

(b) Bidder has familiarized itself with the nature and extent of the Contract Documents, Work, site, locality, and all local conditions and Laws and Regulations that in any manner may affect cost, progress, performance or furnishing of the Work.

(c) Bidder has studied carefully all reports and drawings of subsurface conditions and drawings of physical conditions which are identified in the Supplementary Conditions as provided in Paragraph 4.2 of the General Conditions, and accepts the determination set forth in Paragraph GC-4.2.2 of the General Conditions, as may be amended by the Supplemental Conditions, of the extent the technical data contained in such reports and drawings upon which Bidder is entitled to rely.

(d) Bidder has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) all such examinations, investigations, explorations, tests and studies (in addition to or to supplement those referred to in (c) above) which pertain to the subsurface or physical conditions at the site or otherwise which may affect the cost, progress, performance or furnishing of the Work as Bidder considers necessary for the performance or furnishing of the Work at the Contract Price, within the Contract Times and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of Paragraph 4.2 of

KRS WATER SYSTEM IMPROVEMENTS – REPLACEMENT OF (2) TRAVELING WATER SCREENS

1-12-04

1 the General Conditions; and no additional examinations, investigations, explorations, tests,
2 reports or similar information or data are or will be required by Bidder for such purposes.
3

4 (e) Bidder has reviewed and checked all information and data shown or indicated on the Contract
5 Documents with respect to existing Underground Facilities at or contiguous to the site and
6 assumes responsibility for the accurate location of said Underground Facilities. No additional
7 examinations, investigations, explorations, tests, reports or similar information or data in respect
8 of said Underground Facilities are or will be required by Bidder in order to perform and furnish the
9 Work at the Contract Price, within the Contract Times and in accordance with the other terms and
10 conditions of the Contract Documents, including specifically the provisions of Paragraph 4.3 of
11 the General Conditions.
12

13 (f) Bidder has correlated the results of all such observations, examinations, investigations,
14 explorations, tests, reports and studies with the terms and conditions of the Contract Documents.
15

16 (g) Bidder has given ENGINEER written notice of all conflicts, errors or discrepancies that it has
17 discovered in the Contract Documents and the written resolution thereof by ENGINEER is
18 acceptable to Bidder.
19

20 (h) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person,
21 firm or corporation and is not submitted in conformity with any agreement or rules of any group,
22 association, organization or corporation; Bidder has not directly or indirectly induced or solicited
23 any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any person,
24 firm or corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for
25 itself any advantage over any other Bidder or over OWNER.
26

27 4. Bidder will complete the Work for the price(s) shown.
28

29 Where materials are furnished by the OWNER, the prices provided herein are for installation only.
30 Otherwise the prices include furnishing and installation of materials.
31

32 **LUMP SUM CONTRACT PRICE**
33

34 Six hundred twenty-two thousand, seven hundred (\$622,739.00)
35 thirty-nine dollars and zero cents

36 All specific cash allowances are included in the price(s) set forth above. Contained in the lump sum bid is
37 the sum of fifteen thousand dollars, (\$15,000.00) associated with cost of demolition of
38 existing facilities and/or removal of existing material and/or equipment as required to complete the Work
39 in accordance with the Contract Documents. This is the net cost to Bidder for such work taking into
40 consideration estimated disposal costs or salvage values accruing to Bidder. This information is
41 necessary for OWNER's financial accounting of project costs and will not be used in the selection of the
42 successful Bidder.
43
44
45

46 5. Bidder agrees that the Work will be substantially complete within 240 calendar days after the
47 date when the Contract Times commences to run as provided in Paragraph 2.3 of the General
48 Conditions, and completed and ready for final payment within 270 calendar days after the date when
49 the Contract Times commences to run.
50

51 Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to
52 complete the Work on time.
53

54 6. The following documents are attached to and made a condition of this Bid:
55

56 (a) Required Bid Security in the form of Bid Bond.

KRS WATER SYSTEM IMPROVEMENTS - REPLACEMENT OF (2) TRAVELING WATER SCREENS

1-12-04

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(b) Evidence of Bidder's qualification to do business in the State where the project is located.

(c) Bidder's contractor's license number if required to work in the State where the project is to be constructed.

(d) Information describing the proposed alternative equipment and/or materials.

7. The terms used in this Bid which are defined in the General Conditions of the Contract Documents have the meanings assigned to them in the General Conditions.

KRS WATER SYSTEM IMPROVEMENTS - REPLACEMENT OF (2) TRAVELING WATER SCREENS

1-12-04

1 SUBMITTED on February 17, 2004.

2
3 If Bidder is:

4
5
6 An Individual

7 By _____ (SEAL)
8 (Individual's Name)

9 doing business as _____
10 Business address: _____
11 Phone No.: _____
12 _____
13 _____

14
15 A Partnership

16 By _____ (SEAL)
17 (Firm Name)

18 _____
19 (general partner)
20 Business address: _____
21 Phone No.: _____
22 _____
23 _____

24
25 A Corporation

26 By W. Rogers Company
27 (Corporation name)
Kentucky

28 (State of Incorporation)
29 By *Warren P. Rogers*
30 (Name of person authorized to sign) Warren P. Rogers
31 President
32 (Title)

33 (Corporate Seal)
34 Attest *Raymond C. Brooks*
35 Raymond C. Brooks (Secretary) / Treasurer
36

37 Business address: 649 Bizzell Drive, Lexington, Kentucky 40510
38 Phone No.: 859/231-6290
39 _____
40 _____

41
42 A Joint Venture

43 By _____
44 (Name)

45 _____
46 (Address)

47 By _____
48 (Name)

49 _____
50 (Address)

51
52 (Each joint venture must sign. The manner of signing for each individual, partnership and corporation that
53 is a party to the joint venture should be in the manner indicated above).
54

Identification of Subcontractors and Suppliers

In accordance with Section 6.8.2 of the Supplementary Conditions and paragraph 10 of the Instructions to Bidders, the identification of the following subcontractors and suppliers proposed to be used by contractor is required. This form must be completed and submitted within seven days after the date of bid opening.

I. Subcontractors

Description of Work to be Performed	Subcontractor(s)

II. Equipment/Material Suppliers

Description of Work to be Performed	*Supplier (circle or write in as applicable)

Note: If Specification provides more than one approved supplier, each has been listed. Please circle supplier to be used. If specification lists only one acceptable manufacturer/supplier, the named supplier shall be used. Where specifications do not list specific manufacturers/suppliers, write in the supplier to be used.

Note: A form like this can be included as an attachment to the Bid.

See attached bid alternate.

W. ROGERS COMPANY



CORPORATE OFFICE

649 Bizzell Drive
Lexington, KY 40510
P.O. Box 11640
Lexington, KY 40576
(859) 231-6290
Fax (859) 231-6296

Voluntary Deductive Alternate

Section: Instruction to Bidders, Part 7 – Contract Times

Deduct the sum of \$144,085.00 for starting the work between May 1, 2004 and June 1, 2004 after river levels have lowered from spring flow and continuously proceeding with the work thereafter until the scope of work defined by the bidding documents is completed.



BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we W. ROGERS COMPANY

(BIDDER), as Principal and SAFECO INSURANCE COMPANY OF AMERICA

of the City of SEATTLE, State of

WASHINGTON, a corporation existing under the laws and the State of

WASHINGTON, and authorized to transact business in KENTUCKY

as Surety, are held and firmly bound unto Kentucky American Water, 2300 Richmond Road,

Lexington, Kentucky 40502 hereinafter called the Oblige, in the sum of

TEN PERCENT (10%) OF THE AMOUNT OF THE ATTACHED PROPOSAL ***** Dollars (\$

lawful money of the United States of America, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has submitted the accompanying Bid dated FEBRUARY 17TH, 2004 for the KRS Water System Improvements - Replacement of (2) Traveling Water Screens.

NOW, THEREFORE, the condition of this Bond shall be such that if the Principal, upon due acceptance of said Bid and award of a Contract to him by the Oblige, bonds with good and sufficient surety as may be required by the Contract Documents, and furnishes the Oblige proper evidence of effectiveness of insurance coverage, respectively, within the time, in the forms and in the amounts, as appropriate, required by the Contract Documents, and enters into a Contract with the Oblige in accordance with the Contract Documents, then this Bond shall be void; otherwise, the Bond shall be and shall remain in full force and effect.

The Principal and the Surety hereby stipulate and agree that if the Principal fails to perform all conditions of this Bond, they will pay the sum of the Bond to the Oblige as fixed, liquidated damages.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its Bond shall be in no way impaired or affected by any extension of time within which the Oblige may accept such Bid; and said Surety does hereby waive notice of any such extension. It is the intention of the parties to be legally bound by this Instrument.

KRS WATER SYSTEM IMPROVEMENTS - REPLACEMENT OF (2) TRAVELING WATER SCREENS

1-12-04

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IN WITNESS WHEREOF, the above bounden parties have executed this instrument under their several seals this 17TH day of FEBRUARY, 2004, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned and representative, pursuant to authority of its governing.

ATTEST:

DATE FEBRUARY 17TH, 2004

WITNESS:



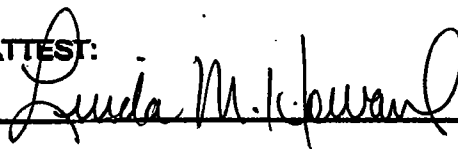
W. ROGERS COMPANY
Name of Bidder, Corporation, Firm or Individual

By Warren A. Ryan
PRESIDENT
(Title)


649 BIZZELL DR.

LEXINGTON, KY 40510
Business Address of Bidder

ATTEST:



SAFECO INSURANCE COMPANY OF AMERICA
Surety


Attorney-In-Fact

NOTE: This agreement must be properly executed and must accompany the Bid Bond as proposal security.

AGREEMENT OF SURETY

KNOW ALL MEN BY THESE PRESENTS, that we SAFECO INSURANCE COMPANY OF AMERICA

as Surety, a corporation existing under the laws of the State of WASHINGTON

and authorized to transact business in the State of KENTUCKY;

hereby agree to execute, within the time limit specified in the Contract, the Bonds, in the forms and in the

amounts required for the faithful performance and proper fulfillment of the Contract for Construction of

KRS Water System Improvements - Replacement of (2) Travelling Water Screens,

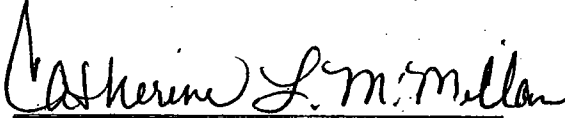
on behalf of, W. ROGERS COMPANY
(Bidder)

hereinafter called the Bidder, provided that the Notice of Award be delivered to the Bidder within the time period that Bids are subject to acceptance or within any extended period for which the Bidder agrees not to withdraw his bid; and the Surety further agrees that should the Surety, after notification of such award, omit or refuse to execute the required bonds, then the Surety shall pay to the Kentucky American Water the amount of the Bid Bond. PROVIDED THAT THE CONTRACT TERMS AND CONDITIONS; AND AVAILABILITY OF FINANCING IS MUTUALLY AGREEABLE WITH BOTH THE CONTRACTOR AND THE SURETY.

FEBRUARY 17TH, 2004
Date

SAFECO INSURANCE COMPANY OF AMERICA
Corporate Surety

(AFFIX CORPORATE SEAL)


CATHERINE L. MCMILLAN (Attorney-in-Fact)

413 NORTHSORE DR., SW
KNOXVILLE, TN 37919
Business Address



POWER
OF ATTORNEY

SAFECO INSURANCE COMPANY OF AMERICA
GENERAL INSURANCE COMPANY OF AMERICA
HOME OFFICE: SAFECO PLAZA
SEATTLE, WASHINGTON 98185

No. 12745

KNOW ALL BY THESE PRESENTS:

That SAFECO INSURANCE COMPANY OF AMERICA and GENERAL INSURANCE COMPANY OF AMERICA, each a Washington corporation, does each hereby appoint

*****THOMAS H. MCCARLEY, III; CATHERINE L. MCMILLAN; LINDA MCLAUGHLIN HOWARD; JASON E. TALLENT; Knoxville, Tennessee*****

its true and lawful attorney(s)-in-fact, with full authority to execute on its behalf fidelity and surety bonds or undertakings and other documents of a similar character issued in the course of its business, and to bind the respective company thereby.

IN WITNESS WHEREOF, SAFECO INSURANCE COMPANY OF AMERICA and GENERAL INSURANCE COMPANY OF AMERICA have each executed and attested these presents

this 9th day of April, 2003

CHRISTINE MEAD, SECRETARY

MIKE MCGAVICK, PRESIDENT

CERTIFICATE

Extract from the By-Laws of SAFECO INSURANCE COMPANY OF AMERICA
and of GENERAL INSURANCE COMPANY OF AMERICA:

"Article V, Section 13. - FIDELITY AND SURETY BONDS ... the President, any Vice President, the Secretary, and any Assistant Vice President appointed for that purpose by the officer in charge of surety operations, shall each have authority to appoint individuals as attorneys-in-fact or under other appropriate titles with authority to execute on behalf of the company fidelity and surety bonds and other documents of similar character issued by the company in the course of its business... On any instrument making or evidencing such appointment, the signatures may be affixed by facsimile. On any instrument conferring such authority or on any bond or undertaking of the company, the seal, or a facsimile thereof, may be impressed or affixed or in any other manner reproduced; provided, however, that the seal shall not be necessary to the validity of any such instrument or undertaking."

Extract from a Resolution of the Board of Directors of SAFECO INSURANCE COMPANY OF AMERICA
and of GENERAL INSURANCE COMPANY OF AMERICA adopted July 28, 1970.

"On any certificate executed by the Secretary or an assistant secretary of the Company setting out,

- (i) The provisions of Article V, Section 13 of the By-Laws, and
- (ii) A copy of the power-of-attorney appointment, executed pursuant thereto, and
- (iii) Certifying that said power-of-attorney appointment is in full force and effect,

the signature of the certifying officer may be by facsimile, and the seal of the Company may be a facsimile thereof."

I, Christine Mead, Secretary of SAFECO INSURANCE COMPANY OF AMERICA and of GENERAL INSURANCE COMPANY OF AMERICA, do hereby certify that the foregoing extracts of the By-Laws and of a Resolution of the Board of Directors of these corporations, and of a Power of Attorney issued pursuant thereto, are true and correct, and that both the By-Laws, the Resolution and the Power of Attorney are still in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the facsimile seal of said corporation

this 17th day of February, 2001.



CHRISTINE MEAD, SECRETARY

KRS WATER SYSTEM IMPROVEMENTS

BID DATE: FEBRUARY 17, 2004

02/17/04

10:21 AM

FAYETTE COUNTY, KENTUCKY

	BASE	FRINGE	TOTAL
LABORER	\$16.90		16.90
CARPENTER	\$18.85		18.85
OPERATOR	\$20.25		20.25

AVERAGE WORKFORCE

3 LABORERS	\$16.90	\$50.70
1 CARPENTERS	\$18.85	\$18.85
1 OPERATORS	\$20.25	\$20.25

5 MEN

\$89.80

\$17.96

480

AVG. PER HR
HRS PER MAN

12

5

\$43,104

WEEKS
AVG. CREW
LABOR BUDGET

\$65,000

SUPERINTENDENT

\$108,104

LABOR BUDGET

DURATION - FINAL COMPLETION
LIQUIDATED DAMAGES
BID HOLD PERIOD

270 DAYS
\$300 PER DAY
60 DAYS

DIVISION 1 GENERAL CONDITIONS

BOND (\$650,000)	1 LS		0	0	7100	7,100
BUILDERS RISK	1 LS		0	0	BY OWNER	0
FLOOD INSURANCE	1 LS		0	0	0	0
MARINE INSURANCE	1 LS		0	0	AQUARIUS	0
ASSOCIATION DUES	1 LS		0	0	1500	1,500
NET PROFITS TAX - (2.25%)	1 LS		0	0	500	500
SCHOOL BOARD TAX - (0.5% OF NET PROFITS)	1 LS		0	0	100	100
SUPERVISION	16 WKS		0	1200.00	19,200	0
ROOM & BOARD-SUPERVISOR	16 WKS		0	0	260	4,160
EXCAVATION SUPERINTENDENT	0 WKS		0	N/A	0	0
ROOM & BOARD-EXCAVATION SUPERVISOR	0 WKS		0	0	N/A	0
LODGING PREMIUMS	0 MH		0	0	0	0
KEY EMP VACATIONS	3 EA		0	720.00	2,160	0
OWNER PHOTOS	16 WKS		0	0	10	160
WRC INTERNAL PHOTOS	16 WKS		0	0	NO CHARGE	0
TEMP UTILITIES			0	0	INCLUDED	0
ELECTRIC-INSTALL	1 LS		0	0	0	0
ELECTRIC-USAGE	4 MO.		0	0	225	900
WATER	4 MO.		0	0	30	120
DRINKING WATER & ICE	8 WKS	15.00	120	0	0	0
TELEPHONE LINES-INSTALL	0 EA		0	0	N/A	0
WRC LOCAL, LD & FAX	0 MO.		0	0	N/A	0
RPR LOCAL, LD & FAX	0 MO.		0	0	N/A	0
INTERNET ACCESS - WRC	0 MO.		0	0	N/A	0
TEMP TOILETS	0 MO.		0	0	N/A	0
FIELD OFFICE SET-UP- WRC (LARGE)	1 LS	N/A	0	N/A	0	0
FIELD OFFICE FURNISHINGS	1 LS	N/A	0	N/A	0	0
FIELD OFFICE SUPPLIES	1 LS	N/A	0	N/A	0	0
FIELD OFFICE SET-UP RPR	1 LS	N/A	0	N/A	0	0
FIELD OFFICE FURNISHINGS	1 LS	N/A	0	N/A	0	0
FIELD OFFICE SUPPLIES	1 LS	N/A	0	N/A	0	0
SAFETY PROGRAM			0	0	0	0
JOBSITE VISITS	4 EA		0	0	400	1,600
EQUIPMENT	1 LS	2500.00	2,500	0	0	0
TRAINING	64 MH		0	18.00	1,152	0
PROJECT SIGN	2 EA	300.00	600	50.00	100	0
DIRECTIONAL SIGNS	1 LS	100.00	100	28.00	28	0
HOUSEKEEPING	24 MH		0	18.00	432	0
FINAL CLEAN-UP	1 LS		0	900.00	900	0
RECORD DRAWINGS	1 LS		0	200.00	200	0
LUBRICANTS	1 LS	200.00	200	100.00	100	0
OXYGEN & ACETYLENE	2 MO.	175.00	350	0	0	0
OPERATION & MAINTENANCE MANUALS	1 LS		0	200.00	200	0
MISC SUPPLIES \$2.50 PER THOUSAND	1 LS	1500.00	1,500	0	0	0
DUMPSTER	1 LS		0	0	1200	1,200
ADDITIONAL PLANS & SPECS	5 SETS	75.00	375	0	0	0
CLEAN/SWEEP ROADS	20 MH		0	18.00	360	0

KRS WATER SYSTEM IMPORVEMENTS

BID DATE: FEBRUARY 17,2004

02/17/04

10:21 AM



FLAGMAN	8 MH	0	18.00	144	0
LIQUIDATED DAMAGES/OVERTIME PREMIUMS ALLOWANCES	1 LS	0		0	N/A
		0		0	0
		0		0	0
		0		0	0
*****		*****		*****	
DIVISION SUBTOTAL		5,745		24,976	17,340

DIVISION 2

REGRADE & RESEED JOHN KELLY PROPERTY AT RIVER	1 LS	150.00	150	1200.00	1,200	0
		0	0	0	0	0
		0	0	0	0	0
		0	0	0	0	0
*****		*****		*****		*****
DIVISION SUBTOTAL		150		1,200		0

DIVISION 3

NOT USED		0		0		0
		0		0		0
		0		0		0
*****		*****		*****		*****
DIVISION SUBTOTAL		0		0		0

DIVISION 4

NOT USED		0		0		0
----------	--	---	--	---	--	---

DIVISION 5

MISCELLANEOUS METALS		0		0		0
PREFABRICATED STEEL SHROUDS TO REPLACE EXIS' INSTALLATION OF STEEL SHROUDS	1 LS	42000.00	42,000	3500.00	3,500	0
	1 LS	0	0	0	AQUARIUS	0

DIVISION 6

NOT USED		0		0		0
----------	--	---	--	---	--	---

DIVISION 7

NOT USED		0		0		0
----------	--	---	--	---	--	---

DIVISION 8

NOT USED		0		0		0
----------	--	---	--	---	--	---

DIVISION 9

9900- PAINTING	1 LS	0		0	7500	7,500
----------------	------	---	--	---	------	-------

DIVISION 10

NOT USED		0		0		0
----------	--	---	--	---	--	---

DIVISION 11

		0		0		0
--	--	---	--	---	--	---

11100- SCREENING EQUIPMENT	2 EA	BY OWNER	0	0	46817	93,634
SUBCONTRACTOR MOBILIZATION	1 EA		0	0	87472	87,472
MANUFACTURERS FIELD SERVICES	2 TRIPS		0	0	1650	3,300

KRS WATER SYSTEM IMPORVEMENTS

BID DATE: FEBRUARY 17,2004

02/17/04

10:21 AM

RENT STAGING AREA & LAUNCH RAMP FROM JOHN KE	4 MO.		0		0		0	
MOVE OLD JUNK FROM INSIDE FENCED IN STAGING A	1 LS		0		0	3000		12,000
INSTALL CRUSHED STONE ROAD FROM FENCED ARE/	500 TONS	10.00	5,000	400.00	400			0
BARGE, CRANE, TOWBOAT RENTAL FROM AQUARIUS	4 MO.		0	2.50	1,250			0
\$3,705.00 PER DAY IF REQUIRED			0		0	N/A		0
MOVE EQUIPMENT FROM KAWC SITE TO STAGING ARI	2 EA		0	1800.00	3,600			0
INSPECT/REPAIR/REPLACE GUIDE ANGLES	4 EA	375.00	1,500	400.00	1,600			0
FIRST SCREEN INSTALLATION								
FABRICATE NEW INTERMEDIATE STEEL ENCLOSURES	1 LS		0		0	DIV.5		0
FROM ELEV. 568.0 TO 595.43 - IN 5' SECTIONS			0		0			0
BOTTOM SECTION TO HAVE ACCESS PORT LIKE EXISTING			0		0			0
PUMP DOWN & REMOVE DEBRIS FROM FIRST SCREEN	1 LS		0		0	AQUARIUS		0
WILL BE DIVER WORK			0		0			0
REMOVE FIRST EXISTING SCREEN ASSEMBLY	1 LS		0		0	AQUARIUS		0
TRANSPORT BY BARGE BACK TO STAGING AREA	1 LS		0		0	AQUARIUS		0
UNLOAD FROM BARGE FOR DISPOSAL	1 LS		0	480.00	480			0
REMOVE FROM STORAGE FIRST NEW SCREEN ASSEM	1 LS		0	600.00	600			0
LOAD FIRST NEW SCREEN ON TO BARGE	1 LS		0	300.00	300			0
TRANSPORT FIRST NEW SCREEN TO INSTALLATION P	1 LS		0		0	AQUARIUS		0
FURNISH & SET FOUNDATION BOLTS	1 LS	500.00	500		0	AQUARIUS		0
PROVIDE & INSTALL GUIDE ANGLES AT INTERMEDIATE	1 LS	2000.00	2,000		0	AQUARIUS		0
DRILL HOLES IN FIBERGLASS HOUSING TO MATCH HE	1 LS		0		0	AQUARIUS		0
SEAL ALL FIBERGLASS JOINTS	1 LS		0		0	AQUARIUS		0
REPLACE EX. EMBEDDED WALL GUIDES	1 LS		0		0	AQUARIUS		0
CONNECT EX. 2" COPPER WATER LINE TO SPRAY BAR	1 LS	500.00	500	200.00	200			0
REPLACE BUBBLER LEVEL SENSING LINE	1 LS	2500.00	2,500	2400.00	2,400			0
REPLACE EX. DEFLECTOR & STEEL REFUSE TROUGH	1 LS	2000.00	2,000	2000.00	2,000			0
SECOND SCREEN INSTALLATION								
FABRICATE NEW INTERMEDIATE STEEL ENCLOSURES	1 LS		0		0	DIV.5		0
FROM ELEV. 568.0 TO 595.43 - IN 5' SECTIONS			0		0			0
PUMP DOWN & REMOVE DEBRIS FROM SECOND SCRE	1 LS		0		0	AQUARIUS		0
REMOVE SECOND EXISTING SCREEN	1 LS		0		0	AQUARIUS		0
TRANSPORT BY BARGE BACK TO STAGING AREA	1 LS		0		0	AQUARIUS		0
UNLOAD FROM BARGE FOR DISPOSAL	1 LS		0	480.00	480			0
REMOVE FROM STORAGE SECOND NEW SCREEN	1 LS		0	600.00	600			0
LOAD SECOND NEW SCREEN ON TO BARGE	1 LS		0	300.00	300			0
TRANSPORT SECOND NEW SCREEN TO INSTALLATION	1 LS		0		0	AQUARIUS		0
FURNISH & SET FOUNDATION BOLTS	1 LS	500.00	500		0	AQUARIUS		0
PROVIDE & INSTALL GUIDE ANGLES AT INTERMEDIATE	1 LS	2000.00	2,000		0	AQUARIUS		0
DRILL HOLES IN FIBERGLASS HOUSING TO MATCH HE	1 LS		0		0	AQUARIUS		0
SEAL ALL FIBERGLASS JOINTS	1 LS		0		0	AQUARIUS		0
REPLACE EX. EMBEDDED WALL GUIDES	1 LS		0		0	AQUARIUS		0
CONNECT EX. 2" COPPER WATER LINE TO SPRAY BAR	1 LS	500.00	500	200.00	200			0
REPLACE BUBBLER LEVEL SENSING LINE	1 LS	2500.00	2,500	2400.00	2,400			0
REPLACE EX. DEFLECTOR & STEEL REFUSE TROUGH	1 LS	2000.00	2,000	2000.00	2,000			0
DIVISION 12								
=====								
NOT USED								
DIVISION 13								
=====								
NOT USED								
DIVISION 14								

KRS WATER SYSTEM IMPROVEMENTS

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NOT USED			0		0	0
DIVISION 15			0		0	0
15062- PROCESS PIPING- 2" COPPER WATER LINE	2 EA	500.00	1,000	480.00	960	0
HEAT TRACE & INSULATE 2" COPPER WATER LINE	1 LS		0		0	1,500
DIVISION 16			0		0	0
ELECTRICAL BOND	1 LS		0		0	12,000
	1 LS		0		0	0
*****			0		0	0
DIVISION 4 THROUGH 16			64,500		23,270	217,406
DIVISION SUBTOTAL						

GRANDTOTALS	70,395	CHECK 70,395	49,446	CHECK 49,446	234,746	CHECK 234,746
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MATERIAL	70,395	0.18			
SALES TAX - ALL TAXABLE	4,224	0.01			
LABOR	49,446	0.13	TOTAL COST	393,654	
PAYROLL OVERHEAD @ 15% OF BASE	7,417	0.02	GEN OH'D & PROFIT	85,000	17.76%
SUBCONTRACTS	234,746	0.60			
CONSTRUCTION EQUIPMENT	27,426	0.070	TOTAL PROJECT	\$478,654	
TOTAL COST	393,654	1.00			

CONSTRUCTION EQUIPMENT

PICK-UP TRUCKS	4 MO	405.00	1,620
OFFICE TRAILERS-LARGE	MO	200.00	0
OFFICE TRAILER-SMALL	MO	100.00	0
STORAGE TRAILER RENTAL	MO	120.00	0
SMALL COMPRESSOR-160 CFM	MO	287.00	0
LARGE AIR COMP-800 CFM	MO	862.00	0
AIR TRACK DRILL	MO	1150.00	0
SELF CONTAINED HYDRAULIC DRILL	MO	9500.00	0
RUBBER TIRE BACKHOES	4 MO	1034.00	4,136
BOBCAT	MO	750.00	0
CRAWLER EXCAVATORS-40,000# (PC 200)	MO	3220.00	0
CRAWLER EXCAVATORS-55,000# (PC 220 & CAT 225)	0 MO	4025.00	0
CRAWLER EXCAVATOR -95,000 # (PC400)	MO	9500.00	0
CRAWLER LOADER-MID SIZE	MO	1839.00	0
CRAWLER CRANE 20-TON	MO		0
BOOM TRUCK (OR 22B CRANE - SAME RATE)	4 MO	1611.00	6,444
CRAWLER CRANE 30-TON (LS 98A)	MO	3137.00	0
CRAWLER CRANE 45-TON (LS 108B)	MO	3520.00	0
CRAWLER CRANE 65-TON (LS 118)	MO	6899.00	0
CRANE RENT FOR PUMPS	LS	2000.00	0
CRANE RENT FOR PRECAST CONCRETE PANELS	LS	2000.00	0
TRUCK CRANE 30-TON	MO	2876.00	0
TRUCK CRANE 65-TON (HC 138)	MO	7590.00	0
CRAWLER DOZER-SMALL SIZE	MO	1380.00	0
CRAWLER DOZER-MIDDLE SIZE	1 MO	2299.00	2,299
CRAWLER DOZER-LARGE SIZE	MO	8625.00	0
D65 KOMATSU DOZER	MO	4200.00	0
FORKLIFT-GAS POWERED	MO	190.00	0

KRS WATER SYSTEM IMPORVEMENTS

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TOW MOTER-PROPANE POWERED	MO	250.00	0
HYDRAULIC HOE-RAM	MO	2530.00	0
VOLVO ARTICULATED TRUCKS (3)	MO	12500.00	0
SHEEPSFOOT ROLLER	MO	450.00	0
RUBBER TIRE LOADER-SMALL	0 MO	2876.00	0
STRAW BLOWER	1 MO	165.00	165
TRENCH BOX	MO	400.00	0
VIBRATORY ROLLER	MO	1380.00	0
WELDER	2 MO	600.00	1,200
CHIPPER	MO	1200.00	0
TRASH PUMPS (6")	MO	1518.00	0
MANLIFT 4WD	MO	1200.00	0
GENERATOR (17 KW)	MO	900.00	0
			=====
TOTAL RENT			15,864
FUEL	1 LS		2,062
SUPERINTENDENT GASOLINE	6 MO	350.00	2,100
EQUIPMENT MAINTENANCE	1 LS	2500.00	2,500
SMALL TOOLS	1 LS	2500.00	2,500
EQUIPMENT MOVES	8 EA	300.00	2,400
PERMITS	1 LS	0.00	0
			=====
TOTAL EQUIPMENT			27,426

Estimate Total @		\$478,654
Adders:		
Second Aquarius Mobilization/Demobilization @		<u>\$87,472</u>
		\$566,126
Inducement for Alternate Acceptance @		<u>\$56,613</u>
Total (Revised Bid Price) @		\$622,739
Less Original Base Price @		<u>-\$478,654</u>
Alternate Bid Amount @	DEDUCT	<u><u>\$144,085</u></u>
Revised Contract Price after Deduct @		\$478,654