CONTRACT DOCUMENTS - DRAWINGS
FOR
PROJECT NO. WPC 21-1
FY'21 WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS

ATTENDANCE AT PRE-BID CONFERENCE IS MANDATORY

PREPARED BY:
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EXPIRES 6-30-21

CLAYTON EDWARDS, P.E., DIRECTOR
WATER AND SEWER DEPARTMENT

Account Numbers: 7503382-544003
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7503392-544003
7503395-544003

Digitally signed by Clayton Edwards
Date: 2021.02.17 11:01:04 -06'00'

Note: The Drawings attached hereto as part of these Specifications are for information purposes only. The Authority makes no representation or guarantee with respect to the accuracy of any information contained in the Drawings. It is the Contractor's responsibility to verify information on the drawings to ensure the equipment installed or controlled by work performed under this Contract performs as specified herein.
GENERAL NOTES:

1. The contractor shall call their personnel and call one at 1-800-532-5543 prior to any excavation to determine location of existing utilities.

2. The contractor shall, at their expense, uncover and determine the depth of pipe lines and other utilities which, in the opinion, could interfere with the construction.

3. The City of Tulsa Engineering Services Department Standard Specifications and Standard Detail, October 2013, are hereby adopted as part of these specifications with reference to standard specifications. Said specifications will be referenced referred to as the "Standard Specifications".

4. Construction shall maintain a clean construction site at all times. Trash, scrap pallets, container remnants, bottles, etc. shall be picked up when no longer in use and deposited in trash containers.

5. Contractor shall remove and dispose of all cleared debris, brush and timber at contractor's expense.

6. All stainless steel shall be minimum Type 316 suitable for sanitary applications. Unless otherwise specifically noted otherwise, all anchor bolts, supports, brackets, fasteners and nut shall be 316 SS unless noted specifically otherwise.

7. All dimensions shown with ± shall be confirmed by the contractor according to actual field conditions or equipment requirements.

8. Dissimilar metals shall be separated by gasket to prevent galvanic corrosion.

9. Any existing news, equipment, structures or surfaces disturbed or damaged by contractor shall be repaired or replaced to original condition or better at no additional cost to the owner.

10. Contractor shall verify existing utilities in the vicinity of proposed construction prior to construction. Notify engineer of discrepancies from drawings.

11. Contractor shall confirm all dimensions with equipment suppliers prior to construction and notify engineer of discrepancies.

12. Construction staging shall be permitted by the contractor, unless specifically noted otherwise.

13. The improvements set forth in the plans shall not interfere with existing structures or related tasks required in the treatment and discharge of wastewater.

14. Topsoil (minimum 8") in the disturbed areas shall be removed, stored and replaced after construction operations. All waste soils and debris become the property of the contractor and shall be hauled offsite and disposed of properly.

15. All workmanship shall be neat, planed, squared and constructed in a professional manner.

16. All electrical construction shall be in strict accordance with all NEC and City of Tulsa Electrical Codes, Electrical, Mechanical, and Plumbing Inspections are required at both rough and final stages of the project.

17. Bypass pumping or bypass piping if utilized by contractor shall be scheduled for dry weather periods and completely operated and maintained by the contractor. The contractor is responsible for performing unattended exchanges. Bypass pumping shall be performed continuously (24/7) by the contractor when operating. Average dry weather flow is available at request from City.

18. Contractor is responsible for any backfilling required to construct foundations in dry conditions and to protect excavation sides slopes.

19. All buried construction, including but not limited to pipe and conduit, shall be photographed prior to cover. Equipment data tags shall also be photografted with equipment, if additional information, such as electric and gas lines running parallel to the project, shall be submitted.

20. Contractor shall coordinate with P.S.O. to maintain existing and establish new electric services. Refer to electrical drawings for additional requirements.

GENERAL PIPING NOTES:

P1. Lay pipe to uniform grade between indicated elevation points.

P2. Size of fittings shown on the plans shall correspond to adjacent straight run of pipe, unless otherwise indicated.

P3. All buried D.P.R., 1/2", and PVC pipe shall utilize restrained D.J. Mechanical joint fittings at all connections unless otherwise depicted on the plans specifically otherwise.

P4. All unrestrained, buried fittings such as bends, tees, wyes, etc. shall be blocked for thrust blocks as shown on standard details. Thrust block includes both gravity and pressure piping.

P5. A minimum of 10 feet of horizontal separation for parallel, bound, and 3 feet of vertical separation for lines crossing shall be maintained between water and sanitary sewer lines in accordance with Oklahoma Department of Environmental Quality.

P6. Contractor shall remove and reconstruct inverters where new connections are made to existing manholes. Work shall be paid for in other types of work.

P7. All flange coupling adapters shown on the construction drawings shall be restrained type, Neoprene series 210, or equivalent.

P8. Contractor is required to vacuum test all manholes. Dates shall be shown to city of Tulsa, Engineering Services Standards and Specifications.

P9. Exposed piping shall be painted per color code requirements and include signage/labels.
1. OPERATIONS CONTROL ROOM CONSTRUCTION: The construction will provide plant operations a two-week notice along with 30 days to relocate all equipment to temporary depot tops in the laboratory room. The city will provide computers, printers, books, paper, other wall hangings and all efforts associated with computer and control systems. The contractor will provide two men for two full shifts of 24-hour work days to help move furniture, etc., permanently installed. One day moving out of the OPERATIONS CONTROL ROOM and one day back in. Work shall be conducted within 60 calendar days. Contractor shall identify all people working in the area including management personnel. Entry doors shall remain secured by the contractor at all times. Once work is complete, contractors and employees shall have access to enter OPERATIONS BUILDING. CITY OF TULSA SPECIAL CODES AND MEASURES AS REQUIRED WILL ALSO BE ENFORCED.

2. KITCHEN/BREAK ROOM CONSTRUCTION SEQUENCING: Contractor must complete all remodel and function within 60 calendar days. During this period, the Contractor shall utilize other areas of the building as an office and temporary laboratory space in the East End of the building. During construction, Contractor shall maintain one full floor in service for plant operations at all times.

3. CONTRACTOR SHALL TAKE PRECAUTIONS AND WORK A SAFETY MEASURED DURING CONSTRUCTION TO MAINTAIN A SAFE WORK SPACE FOR ALL OPERATIONS AT ALL TIMES.

4. CONTRACTOR SHALL ENSURE ALL WORK IS PERMITTED TO DATE AND PERMITTED TO THE IMPROVEMENTS. DOCUMENT ANY DAMAGE PRIOR TO WORK AND SUBMIT PHOTOS AND DESCRIPTIONS OF EXISTING DAMAGE TO THE ENGINEER PRIOR TO WORK.
1. DEMOLISH EXISTING SCREEN WALLS. SEE PHOTO DETAILS A/F & B/F. PROTECT EXISTING HVAC EQUIPMENT & SERVICE ISLANDS. IDENTIFY EXISTING ELEC & PIGTAILS AND RELATED COMPONENTS DOWN TO ROOF DECK IN PREPARATION FOR NEW ROOF SYSTEM AND NEW INSULATION. REPAIR METAL ROOF DECK PRIOR TO NEW INSULATION & ROOFING SYSTEM AS REQUIRED.
NOTES:

1. INSTALL COMPLETE REPLACEMENT ROOFING SYSTEM INCLUDING BUT NOT LIMITED TO HIGH PRESSURE INSULATION BOARD, ROOFING MEMBRANE, TRIM, FLASHING, DRIP EDGE, CAB FLASHING. CUSTOM ROOF VENTILATION DETAILS AND NEW ROOF DRAIN TO EXISTING PIPING.

2. PROVIDE ALL NEW FLASHING, TRIM, CUSTOM MELTED CURB CORNERS, CUSTOM SCUPPERS, CUP ROSE & OTHER RELATED ROOF COMPONENTS SHALL ALL BE 26 GAUGE STAINLESS STEEL.

3. PROVIDE NEW 3" STAINLESS STEEL FASTENERS & ANCHOR BOLTS NO PLATE OR STAINLESS STEEL MATERIALS ARE PERMITTED.

4. PROVIDE BUILD UP TAPONED INSULATION PROVIDING 2" MINIMUM THICKNESS OF INSULATION ON ROOF DECK. ALL ROOF SHALL BE 1/2" PER FOOT WINDOW SLOPE. GUTTERs BUILDING SHALL BE 1/4" PER FOOT WINDOW SLOPE.

5. PROVIDE SEA 2" O.C. OR EQUAL AT REQUIRED Locations AND MOUNTING Location AS INDICATED. PROVIDE CLEAN, PRIME, PAINT, AND TOP ALL JOINTS.

6. CONTAINMENT CURB MODIFICATIONS: GRIND 1" SOFT SPOT ON BOTH SIDES OF EXISTING CONTAINMENT CURB. MFLP EXISTING CONTAINMENT CURB (SEE PHOTO A/1/5) WITH EXTRA HEAVY DUTY "SC" AND INSTALL ADHESIVE TAPE ANSI ALUMINUM METAL TO ROOF DECK INDICATING ADDITIONAL INSULATION/FoAM PILLOW (EITHER SIDE OF CURB PER MANUFACTURER'S RECOMMENDATIONS).

7. PROVIDE INTERNAL MOLDING SURFACE, WHERE SHOWN, AND COORDINATE WITH EQUIPMENT MAX 8" BETWEEN PADS.

8. SEE PLAN SHEET DETAILS FOR TYPE OF FLASHING AND COPING. ALL MELTED FLASHING, TRIM A METAL ROOF SHALL BE 24" GAUGE SHEET METAL. ALL CORNERS SHALL BE FULLY WEATHER TIGHT AND IN BOTH DIRECTIONS WINDOW. ALL LAPS SHALL BE 6" MINIMUM.

9. CALL ALL EXISTING CONSTRUCTION JOINTS AND JOINTS RETROFIT THE ROOF AND THE MELTED ROOF AS REQUIRED. SEE NOTE 8 FOR ADDITIONAL RELATED INFORMATION.

10. CLEAR AND CLEAN ALL DRAIN PIPING TO OUTLETS FOR PROPER DRAINAGE.

PLAN @ DIGESTER 3 & 4 ROOF IMPROVEMENTS (LOWER)

SCALE 3/4" = 1'-0"
1. See roof replacement notes Sheet 14.
2. Provide 24 ga. 10" minimum length soldered stainless flashing & trim. Match existing flashing style & configurations. Coordinate with roofing system as required.

Coordinate with roofing system. See note #2.

Connect to existing down spout as required (any new metal shall be 316L).

Detail:

**NOTES:**
- Coordinate with roofing system. See note #2.
- Connect to existing down spout as required (any new metal shall be 316L).
- Coordinate with existing flashing style & configurations.
- Match existing flashing style & configurations.
- Provide 24 ga. 10" minimum length soldered stainless flashing & trim.
1. REMOVE AND REPLACE TRU LOFT ROOFING MEMBRANE AND ROOF TAPERED INSULATION FOR IMPROVED DRAINAGE. REPLACE TRU LOFT ROOFING MEMBRANE AND ROOF TAPERED INSULATION AS REQUIRED TO PROVIDE FULL DRAINAGE IN THE AREA SHOWN. REPLACE THE EXISTING RAINSPOUTS AND INSULATION AT THE NEW DRAIN LOCATION TO 0'-4 1/2" TANK TO LOWER THE NEW DRAIN ELEVATION TO EXTENT POSSIBLE. PROVIDE POSITIVE GAP 6" FOOT-SLOPE MINIMUM TO EITHER NEW OR OTHER LOCAL DRAIN IN AREA SHOWN. NO FOUNDATION WILL BE ACCEPTED.

2. INSTALL A NEW 4" DIA. RIO FIT DRAIN AS INDICATED. MATCH THE EXISTING DRAIN PIPE SHOWN AS SHOWN. CONCRETE CORE DRILL ROOF SLAB AS REQUIRED AND REPAIR DRAIN PONDING AS INDIVIDUAL. VERIFY LOCATION, AND PROVIDE UP TO 40' OF 4" SCH. 40 PVC FITTING AND CONNECT TO EXISTING 4"/8" ROOF DRAIN SYSTEM NEARBY. CONNECTIONS MUST BE RIGID PIPE TO OTHER CONNECTIONS, NO FLEX RIO FITTING WILL BE ACCEPTED.

3. PROVIDE NEW DAMPER PLATE PATTERNED, HALFWAY THREADS AS SHOWN ADJACENT TO EQUIPMENT.
NOTES

1. ENCLOSURE MANUFACTURER SHALL PROVIDE ANCHOR BOLT SIZE, SPACING, AND DEPTH INTO BASE SLAB OR SLAB. MINIMUM SIZE SHALL BE M16 X 200 L/2" THICK ANCHOR BOLT. ENCLOSURE SHALL INCLUDE PANEL, CONSTRUCTION MATERIALS, ANCHOR BOLT, AND ANCHOR BOLT MOUNTING HANGERS. COMPONENTS SHALL EACH HAVE ANCHOR BOLT MOUNTING HANGERS. ENCLOSURE MATERIALS SHOULD BE 1" THICK STAINLESS STEEL.

2. PUMPS, PIPING, VALVES, AND ANY NEW TANK REQUIRED FOR MAINTENANCE OR ACCESS SHALL HAVE 2'-0" MINIMUM CLEARANCE TO ENCLOSURE.

3. SATELLITE COVER NOT BOX OR EQUAL.

4. MATERIAL CONSTRUCTION SHALL BE CORROSION RESISTANT AND BE CONSTRUCTED OF ALUMINUM, FRP, STAINLESS STEEL, OR HIGHER.

5. ENCLOSURE OPENING CLEAR SPACE IN DISTANCE SHALL BE COORDINATED WITH CUSTOMER REQUIREMENTS. ENCLOSURE INTENDED USE IS TO PROVIDE ACCESS TO EXISTING ELECTRICAL PANELS OR EQUIPMENT.

6. PROVIDE 6'-0" TOP OF DOOR OPENING ELEVATIONS ABOVE THE SLAB. ELEVATION ABOVE SLAB WILL BE TYPICAL. ELEVATION ABOVE SLAB MUST BE 0'-0" TIGHT TO CLEAR EXISTING ELECTRICAL PANELS.
NOTES:
1. ADJUST PUMP POSITION TO ALIGN PUMP IMPELLER WITH EXISTING MONORAIL, CONDENSE.
2. PREPARE & PAINT ALL NEW PIPING, VALVES & FITTINGS.
3. REUSE EXISTING PIPING TO EXTENT POSSIBLE.

EQUIPMENT SCHEDULE

<table>
<thead>
<tr>
<th>Description</th>
<th>Item</th>
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<tbody>
<tr>
<td>8&quot; FLG. VALVE</td>
<td>(a)</td>
</tr>
<tr>
<td>6&quot; CHECK VALVE</td>
<td>(b)</td>
</tr>
<tr>
<td>4&quot; V.C.A.</td>
<td>(c)</td>
</tr>
<tr>
<td>8&quot; FLG. PIPE</td>
<td>(d)</td>
</tr>
<tr>
<td>6&quot; V.C.A.</td>
<td>(e)</td>
</tr>
<tr>
<td>30&quot; INS. CONCENTRIC REDUCER</td>
<td>(f)</td>
</tr>
<tr>
<td>1&quot; FLG. PIPE</td>
<td>(g)</td>
</tr>
<tr>
<td>3&quot; D.C.A.</td>
<td>(h)</td>
</tr>
<tr>
<td>8&quot; INS. ELBOW REDUCER</td>
<td>(i)</td>
</tr>
<tr>
<td>(*) PER MANUFACTURER REQUIREMENTS</td>
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PLANT @ SPUNKY CREEK LS

SCALE 1/4 = 1'-0"
1. **Chain/Cable Holder Assy. for Pumps**

   - Scale: 1/4" = 1'-0"

   **OUTLET SCREEN DETAIL**

   - 316 SS BIRD SCREEN

2. **Detail of FRP Piping Concrete Core**

   - Scale: 1" = 1'-0"

   - Coating shall have 6" min. lap at top of slab surface with temperature per manufacturer recommendations.

   - 3/8"-316SS anchor bolts preferred, N3320 or equivalent.

   - Repair & extend corrosion resistant coating at exposed concrete. Lap coating at top of slab & under coating coating manufacturer recommendations.

   - Butterfly valve.

3. **Detail of Fiberglass Vent Pipe**

   - Scale: 1" = 1'-0"

   - Control or equal

4. **Adjustable Pipe Support Detail**

   - Scale: 1" = 1'-0"

   - 1/2" bolt stock

   - 1/2" locking nut (do not weld)

   - Standard companion flange 250# w/4 holes

   - 3/8" pipe in anchors (stirrup or wedge anchors not permitted)
DIGESTER BUILDING A LIGHTING REPLACEMENT
(BASEMENT)
(Scale: None)

DIGESTER BUILDING A LIGHTING REPLACEMENT
(UPPER FLOOR)
(Scale: None)

FURNISH AND INSTALL NEW FIXTURE AND CONNECT TO ASSIGNED CIRCUIT.

FURNISH AND INSTALL NEW FIXTURE AND CONNECT TO ASSIGNED CIRCUIT. FUTURE FIXTURE SHALL BE GOUARD HI-INT 100W 3100K LUMEN, 40 WATT ALU-58200-20-WP-NN-IN.

FURNISH EACH FIXTURE WITH GOUARD HI-INT 40W LUMEN TO MATCH LUM-443-0184-01M-00-AMAL. WITH EXISTING WIRE. ADD ALL NECESSARY MOUNTING HARDWARE (TYPICAL 12 PER SHEET).
REPLACE EACH FIXTURE WITH DLIGHT MODEL NO. 5251-V (200 LM, 20WATT) OR SIMILAR. GLASS LAMPS TO MATCH EXISTING. PROVIDE ALL HARDWARE NEEDED TO MOUNT FIXTURES (TYPICAL 2 THIS SHEET).

REPLACE EACH FIXTURE WITH DLIGHT MODEL NO. 5251-V (200 LM, 20WATT) OR SIMILAR. GLASS LAMPS TO MATCH EXISTING. PROVIDE ALL HARDWARE NEEDED TO MOUNT FIXTURES (TYPICAL 2 THIS SHEET).

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LIGHTING GENERAL NOTES:

1. COORDINATE/ADJUST FINAL LUMBIN WITH FINAL APPROVED POINT BY POINT CALCULATION.

2.每個照明單元應包含以下內容:
   - 一體化LED照明器
   - 電線
   - 連接器

3. 為每個單元提供所有必要的安裝硬件，以實現完整的照明系統。

4. 發電機應具有自己的匹配發電機。

5. 合同商應按照已批准的設計和規範安裝照明系統，並在需要時進行檢查和維護。