Contract Drawings For

DES MOINES METROPOLITAN WRA

WRF DIGGER REPAIRS AND IMPROVEMENTS

Structural/Process/Electrical/Instrumentation

WRA Activity ID. 04-2022-020
Plan File No. 643-115/127
HDR Project No. 10228519
Des Moines, Iowa
ISSUED FOR BIDS
5/27/2022

THE 2022 EDITION OF THE IOWA STATEWIDE URBAN DESIGN AND SPECIFICATIONS (SUDAS) AS MODIFIED BY THE WRA SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISION TECHNICAL SPECIFICATIONS SHALL APPLY TO THIS PROJECT.
KEY NOTES:

1. NOTE EXISTING TUNNEL LOCATIONS BELOW PAVEMENT. NO CRANE PLACEMENT, OUTRIGGER, OR STORED MATERIALS ARE ALLOWED IN AREA INDICATED. AREAS EXTEND 5 FEET BEYOND EDGES OF TUNNELS BELOW. CONTRACTOR SHALL LOCATE AND MARK THIS ZONE.

2. REMOVE ALL EXISTING PRECAST JOINT SEALANT BETWEEN ALL PRECAST PANELS ABOVE GRADE. REMOVE SEALANT BETWEEN PANELS AS WELL AS PANEL TO CAST IN PLACE CONCRETE AT TOP OF PANEL. REPLACE JOINT SEALANT FOR ALL PER DETAIL 6/85U502. SEE PHOTOS ON 85U502. FULL PERIMETER OF DIGESTER.

3. REPAIR ALL EXISTING DAMAGED PRECAST PANEL JOINT CONNECTION PER DETAIL 7/85U502. SEE PHOTOS ON 85U502. FULL PERIMETER OF DIGESTER.

4. CLEAN EXTERIOR PRECAST PANELS OF ALL 6 DIGESTER TANKS ABOVE GRADE WITH PRESSURE WASH AND PROSOCO, INC. SURE KLEAN #600 IN DETERGENT MASONRY CLEANER OR EQUAL. CONDUCT TEST WASH IN AREA IN COORDINATION WITH THE OWNER FOR REVIEW PRIOR TO COMPLETING REMAINDER OF CLEANING. SEE PHOTOS ON 85U502. FULL PERIMETER OF DIGESTER.

5. EXISTING 108 INCH BURIED PIPE. NO CRANE PLACEMENT, EQUIPMENT, VEHICULAR LOADING, OR STORED MATERIALS ARE ALLOWED IN AREA INDICATED. AREA EXTENDS 5 FEET BEYOND EDGES OF PIPE BELOW. CONTRACTOR SHALL LOCATE AND MARK THIS ZONE. INSTALL CONSTRUCTION FENCING AROUND EXISTING PIPE TO PROTECT AREA FOR THE DURATION OF THE PROJECT.

6. CONCRETE CRACK INJECTION ON TOP OF EXISTING CONCRETE LIDS ON DIGESTERS 2 THROUGH 5 PER DETAIL 8/85U502 AND SEE PHOTOS ON 85U502.

7. SENSOR INSTALLATION ON CENTER DOME. SEE SHEET 85U302.

8. CONCRETE LID AND WATERSTOP REPAIRS. SEE SHEET 85U501.

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY ALL SITE INFORMATION, DIMENSIONS, AND CONDITIONS PRIOR TO STARTING WORK. EXISTING CONDITIONS SHOULD BE REFLECTED IN SUBMITTALS.

2. CONTRACTOR SHALL NOT BLOCK TRUCK SCALE OR HAULED WASTE UNLOADING LANES AT ANY TIME. IF TEMPORARY OUTAGE OF AREA IS NEEDED, IT MUST BE COORDINATED WITH THE OWNER PRIOR TO LANE CLOSURE.

3. EXISTING 85-1 IS A SECONDARY DIGESTER. DIGESTERS 85-2 THROUGH 85-6 ARE PRIMARY DIGESTERS. BORRERO INSTALLATION FOR THE PROJECT APPLIES TO PRIMARY DIGESTERS.

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4. CONTRACTOR SHALL PROVIDE HOSE PROTECTION FOR SERVICE WATER HOSE CROSS ROAD.
5. CONTRACTOR SHALL MAINTAIN ACCESS LANE AT A MINIMUM OF 20 FEET OF TRAFFIC FOR TRUCK SCALE UNLOADING AND TRAFFIC CLEARANCE.
6. SEE SPECIFICATION SECTION 01 11 20 FOR ENVIRONMENTAL CLEANUP REQUIREMENTS.

KEY NOTES:
1. APPROXIMATE WORK AREA FOR CLARIFIER REHABILITATION PROJECT (NOT IN CONTRACT), SEE SPECIFICATION SECTION 01 11 20.
2. APPROXIMATE WORK AREA FOR FLOOD IMPROVEMENTS PROJECT (NOT IN CONTRACT), SEE SPECIFICATION SECTION 01 11 20.
3. APPROXIMATE WORK AREA FOR PHOSPHORUS RECOVERY PROJECT (NOT IN CONTRACT), SEE SPECIFICATION SECTION 01 11 20.
4. CONTRACTOR SHALL CONFIRM CONSTRUCTION STAGING AND LAYDOWN AREAS WITH THE OWNER BEFORE CONSTRUCTION BEGINS. SEE SPECIFICATION SECTION 01 11 20.
5. APPROXIMATE WORK AREA FOR BLENDED SLUDGE MIXER AND ELECTRICAL ROOM EXPANSION PROJECT (NOT IN CONTRACT), SEE SPECIFICATION SECTION 01 11 20.
6. EXISTING 108 INCH BURIED PIPING. NO CRANE PLACEMENT, EQUIPMENT, VEHICULAR LOADING, OR STORED MATERIALS ARE ALLOWED IN AREA INDICATED. AREA EXTENDS 5 FEET BEYOND EDGES OF PIPE BELOW. CONTRACTOR SHALL COORDINATE FINAL LOCATION WITH OWNER AND INSTALL CONSTRUCTION FENCING AROUND EXISTING PIPE TO PROTECT AREA FOR THE DURATION OF THE PROJECT.

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EXISTING CONDITION OF DIGESTER NO. 3

EXISTING 24"Ø COLUMN W/ 36"Ø DRILLED SHAFT BELOW PILE CAP, TYP OF 8
EXISTING 36"Ø COLUMN W/ 36"Ø DRILLED SHAFT BELOW PILE CAP, TYP OF 4

EXISTING JOINT SEALANT AND BACKER ROD AROUND PERIMETER OF COLUMN SUPPORT AT PERIMETER OF TANK, TYP OF 8
EXISTING JOINT SEALANT AND BACKER ROD AROUND PERIMETER OF FOUNDATION AT CENTER SUPPORTS

PROJECT MANAGER: ADAM A. SMITH
PROCESS: WRF DIGESTER REPAIRS AND IMPROVEMENTS

SHEET NOTES:
1. ALL WORK INDICATED ON THIS SHEET IS ASSIGNED TO BID ITEM NUMBER 1.
2. CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE ANY RAINWATER, PIPE LEAKS, SEEPAGE INTO TANK THROUGHOUT CONSTRUCTION. CONTRACTOR TO PROTECT OWNER DRAIN PIPES FROM CONSTRUCTION DEBRIS INFILTRATION.
3. FIELD VERIFY DIMENSIONS.
4. DIGESTER NO. 3 IS CURRENTLY EMPTY AND CLEANED OF SLUDGE BY OWNER. TANK MAY CONTINUE TO INFLATE WITH GROUNDWATER. OWNER MAY INFILTRATE WITH GROUNDWATER.
5. ISSUE DATE: 5/27/2022

FILENAMES:
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85U101 PRIMARY DIGESTER NO. 3 FOUNDATION PLAN
5/27/2022 8:03:20 AM, RAIKEN
1. ALL WORK INDICATED ON THIS SHEET IS ASSIGNED TO SHEET NUMBER 1.

2. UTILIZE HYDRODEMO AND HAND TOOLS TO REMOVE CONCRETE TO THE LIMITS SHOWN ON PLAN AND SPECIFICATIONS. EXISTING REINFORCING BAR AND BOLTS SHALL BE REMOVED. CONCRETE REMOVED SHALL BE REPLACED IN SAME LOCATION, BUT WITH DIFFERENT CONCRETE. REMOVAL SHALL BE COMPLETE AND TO THE LIMITS SHOWN ON SHEET BUILT FROM OUTSIDE SLAB REDO.

3. IF PVC WATERSTOP REQUIRED AT ALL NEW CONSTRUCTION AREAS, THE CONTRACTOR SHALL PLACE VITON WATERSTOP SHOWN ON SHEET BUILT.

4. CONCRETE PLACEMENT SEQUENCE.

C.1.0 ALL CAST IN PLACE AND POST-INSTALLED ANCHORS SHALL NOT BE USED IN EXISTING CONCRETE UNTIL REASSEMBLY. SEE DETAIL 2 ON SHEET DRAWING 85U501.

C.2.0 CONCRETE COVER (STP AND CT/GSR) 6" TPV WATERSTOP REQUIRED AT ALL NEW CONSTRUCTION AREAS. FURNISHING OF A FUNCTIONALLY COMPLETED CONCRETE ENVELOPE AROUND PERIMETER OF TANK. IS A REQUIREMENT OF THE CONTRACTOR. CONCRETE DEPOSITED AGAINST EARTH COVER FOR REINFORCING AS FOLLOWS:

C.3.0 PROVIDE 3/4" CHAMFERS AT ALL EXPOSED EDGES.

C.4.0 REFER TO OTHER DISCIPLINE DRAWINGS PRIOR TO STARTING ON NEXT WEDGE. SHORING AND SPACING AS NEEDED. REMOVAL SHALL BE COMPLETE AND TO THE LIMITS SHOWN ON SHEET BUILT FROM OUTSIDE SLAB REDO.

REMOVING EXISTING GUARDRAILS AND REPAIR ALL CONCRETE DESTRUCTION TO MATCH AND REPAIR CONCRETE MISHANDLING CONDEMNED. CONCRETE TO BE REMOVED SHALL NOT BE USED IN EXISTING CONCRETE UNTIL REASSEMBLY. SEE DETAIL 2 ON SHEET BUILT.

C.5.0 PROVIDE 3/4" CHAMFERS AT ALL EXPOSED EDGES.

C.6.0 FIELD ADJUST REINFORCING AT OPENINGS AND REMOVAL. CONCRETE TO BE SALVAGED IN PLACE AND REUSED. IF OTHERWISE SHOWN.

C.7.0 CONTINUOUS WATER STOP SHALL BE INSTALLED AT JOINTS SUBJECT TO EXTERNAL WATER PRESSURE.

C.8.0 ABSOLUTELY NO WELDING OF REINFORCING BARS OR TORCHING TO BEND REINFORCING BARS SHALL BE ALLOWED. CONTRACTOR SHALL REQUIRE CONCRETE LID DESIGN LIVE OR DEAD LOADING. CONSTRUCTION FOR EMBEDDED ITEMS AND EXISTING CJ MOUNTING CONDITIONS. CONTRACTOR SHALL PROVIDE PROPER DOWEL REINFORCING IN SAME LOCATION, BUT WITH DIFFERENT CONCRETE. REMOVAL SHALL BE COMPLETE AND TO THE LIMITS SHOWN ON SHEET BUILT FROM OUTSIDE SLAB REDO.

C.9.0 CONTRACTOR SHALL SUBMIT A CONCRETE PLACEMENT SEQUENCE.

C.10.0 ALL CAST IN PLACE AND POST-INSTALLED ANCHORS SHOWN IN DETAILS ON SHEET 85U501. FROM APPRAISED PRICES AS TYPICAL. ANCHORS SHALL HAVE THE ICC REPORT SHOWING EQUIVALENT LOAD CAPACITY. SUMMIT AND INSTALL PER THE CC EVALUATION REPORT.

CONCRETE DETAILS ARE GENERAL AND APPLY TO SPECIFIC INDICATIONS TO THE CONTRACTOR. STRUCTURAL DETAILS UNLESS OTHERWISE NOTED PROVIDED CONCRETE COVER (STP AND CT/GSR) 6" TPV WATERSTOP REQUIRED AT ALL NEW CONSTRUCTION AREAS. FURNISHING OF A FUNCTIONALLY COMPLETED CONCRETE ENVELOPE AROUND PERIMETER OF TANK. IS A REQUIREMENT OF THE CONTRACTOR. CONCRETE DEPOSITED AGAINST EARTH COVER FOR REINFORCING AS FOLLOWS:

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EXISTING CONDITION OF DIGESTER DOME ACCESS

NOTES:
1. ORIENTATIONS OF VIEWPORTS ARE APPROXIMATE. FIELD VERIFY ORIENTATION OF VIEWPORT FOR ALL DIGESTERS.

GENERAL NOTES:
1. CONTRACTOR MUST SUBMIT PLANNED CONDUIT ROUTING TO WRA AND ENGINEER FOR APPROVAL BEFORE INSTALLATION.
2. CONTRACTOR SHALL PROTECT ALL EXISTING ITEMS ON EACH DIGESTER ROOF (MIXERS, PIPING, STAIRS, RELIEF VALVES, ETC.).
WRF DIGESTER REPAIRS AND IMPROVEMENTS

EXISTING GUARD RAIL WHERE OCCURS, SEE PLAN

SEE 85U501 FOR JOINT REPAIRS AT TOP OF WALL, DIGESTER 3 ONLY

PROVIDE PROTECTION OF ALL EXISTING DRAIN PIPES TO PREVENT INFILTRATION OF CONSTRUCTION WASTEWATER OR DEBRIS

REMOVE AND REPLACE JOINT SEALANT AND BACKER ROD AROUND PERIMETER OF COLUMN SUPPORT AT PERIMETER OF TANK, TYPICAL OF 8, DIGESTER 3 ONLY

SEE 85U302 FOR NEW SENSOR GAS DOME

PROVIDE ACCESS TO Underside of DIGESTER NO. 3 LID AS REQUIRED TO COMPLETE THE WORK

REMOVE AND REPLACE JOINT SEALANT AND BACKER ROD AROUND PERIMETER OF COLUMN SUPPORT AT CENTER SUPPORTS, DIGESTER 3 ONLY

REPAIR EMBANKMENT

GAS DOME SEE 85U302 FOR NEW SENSOR

SEE CLEANING SPECIFICATION 01 74 00 FOR REQUIREMENTS OF CLEANING DIGESTER INTERIOR DURING AND AT COMPLETION OF PROJECT

APPROX 1:4 SLOPE

EXISTING DEMACTION CENTER BUILDING WHERE OCCURS, SEE PLAN

SEE PLAN 85U301 FOR EXISTING EMERGENCY OVERFLOW EL 50.72

EXISTING DIGESTER CONTROL BUILDING WHERE OCCURS, SEE PLAN

PROJECT MANAGER
ADAM A. SMITH
BRIAN HOAGLAND
KEVIN THERNES

STRUCTURAL
ELECTRICAL & CONTROLS

WRF DIGESTER REPAIRS AND IMPROVEMENTS
DES MOINES, IA

7/1/22

3/16" = 1'-0"
85U301.dwg

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FILENAME
SCALE
DATE
ISSUE
DESCRIPTION
PROJECT NUMBER

85U301

2022

3/27/2022
ISSUED FOR BIDS

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MATCH EXISTING BOLT PATTERN

EXISTING 4" PRESSURE RELIEF VALVES

EXISTING FOAM SUPPRESSION NOZZLE AND PIPING OUTSIDE OF VIEWPORT WINDOW, SEE DETAIL 3/85U302

NOTE:
1. REMOVE WINDOW, TOP BARSTOCK FLANGE, WIPER ASSEMBLY, SUNSHIELD, AND SPRAY WASHER TANK/EQUIPMENT (IF PRESENT).
2. PROVIDE GAS TIGHT SEAL BETWEEN NEW PLATE AND EXISTING CHANNELS USING NEW EPDM GASKET (MATERIAL EPDM).
3. INSTALL LEVEL INSTRUMENTATION ON 3" SST PIPE SPOOL ON MOUNTING PLATE.
4. CONTRACTOR TO DETERMINE FINAL DIMENSIONS.
5. IF PRESENT, REMOVE FLUSHING CONNECTION FITTING AND PLUG WITH 316 SST PLUG.
6. LEVEL INSTRUMENTATION SUPPLIER TO REVIEW AND APPROVE PROPOSED MOUNTING DETAIL AND PLAN.
7. MINIMUM PLATE THICKNESS OF 3/8", OR GREATER AS RECOMMENDED BY MANUFACTURER.
8. MOUNTING PLATE, PIPE, AND FLANGE TO BE 316 SST.
9. LEVEL INSTRUMENTATION NOT SHOWN FOR CLARITY.
10. 3" 316 SST PIPE (SCH 10 OR 40).
11. 3" 316 SST 150# FLANGE.
12. 3" 316 SST FULL PORT BALL VALVE. SEE SPECIFICATION 40 05 63.
13. PHOTO OF FOAM SUPPRESSION NOZZLE SYSTEM FOR REFERENCE ONLY TO SHOW RELATIVE LOCATION OF VIEWPORT AND PROCESS PIPING.

GENERAL NOTES:
1. ALL HARDWARE, FASTENERS, AND ASSOCIATED MOUNTING EQUIPMENT SHALL BE 316 SST.
2. FIELD VERIFY ALL EXISTING INSTALLATIONS, LOCATIONS, AND DIMENSIONS PRIOR TO WORK.
3. PROVIDE GAS TIGHT SEAL BETWEEN NEW PLATE AND EXISTING CHANNELS USING NEW EPDM GASKET (MATERIAL EPDM).
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GENERAL NOTES:
1. CONTRACTOR MUST SUBMIT PLANNED CONDUIT ROUTING TO WRA AND ENGINEER FOR APPROVAL BEFORE INSTALLATION.
2. USE 2' FLEXIBLE COUPLING (HAZ-FLEX) TO CONNECT TO LEVEL INSTRUMENTATION.

NOTES:
1. SEE SPECIFICATIONS FOR LIMITATIONS ON DIGESTERS BEING OUT OF SERVICE TO INSTALL NEW LEVEL INSTRUMENTATION AND MOUNTING PLATE.

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