211 N. Robinson Ave., North Tower, Suite 1300
Oklahoma City, Oklahoma 73102
P 405-840-7785
carollo.com

June 12, 2024

Mr. Andrew Mishler, PE
City of Oklahoma City
420 W. Main St., Suite 500
Oklahoma City, OK 73102

Subject: WT-0151 Ozone System Expansion/Upgrades Hefner WTP
DWSRF Project No. P40-102092-09 and P40-1020902-10
Letter of Approval PCO-033_Chemical Feed Vault Replacement

Dear Mr. Mischler:

The purpose of this letter is to provide background and the results of Carollo's (Engineer's) review of the potential change order (PCO) No. 033 for the above-referenced project. This PCO relates to the additional labor material, and equipment necessary to procure, install, test, and place into successful working operation a new cast in place concrete chemical feed vault on the existing 84-inch common filter effluent line connecting the filters to the clearwells for the purposes of feeding ammonia (liquid ammonium sulfate) and corrosion inhibitor (zinc Orthophosphate – ZOP).

As you are aware, the project included modification of the existing chemical feed vault to install a new sample pump and sample line for the purposes of monitoring free chlorine disinfection prior to ammonia addition. Unfortunately, the existing chemical feed vault and 84-inch pipe below was found to not be structurally sound because of chemical leakage from the ZOP line. As a result, temporary shoring was put in place to reinforce the vault to allow for operations but given the condition, Carollo recommended the construction of a new vault, repair of the 84-inch pipe and demolition of the existing vault.Consequently, the PCO includes the removal of the existnig shoring, demolition of the existing chemical feed vault, and repair of the 84-inch line.

We have reviewed the contractor's proposal (attached) and find it to be a reasonable proposal for the additional scope of work and recommend inclusion of this PCO in the next available change order. The proposal includes both applicable Unit Pricing available for the work with the remaining work proposed as a lump sum amount.

Sincerely,
CAROLLO ENGINEERS, INC.

Thomas O. Crowley, P.E.

Thomas O. Crowley, PE
Project Manager

AuthorInitials:tc

Enclosures: PCO33 Engineering Documents

PCO33 Response Version 2 from Contractor

cc: Mr. Dan Ethington, PE Carollo Engineers
Mr. Larry Hare, PE City of Oklahoma City

PCO 33 – Contractors Proposal

211 N. Robinson Ave., North Tower, Suite 1300
Oklahoma City, Oklahoma 73102
P 405-840-7785
carollo.com

February 8, 2024

Mr. Mitch Ralston, PE
Crossland Heavy Contractors
Jobsite Trailer
c/o Hefner Water Treatment Plant
4000 NW 108th
Oklahoma City, OK 73120

Subject: Potential Change Order (PCO-033) – Chemical Vault Feed Vault Replacement
Project WT-0151 – Ozone System Expansion/Upgrades at the Hefner Water Treatment Plant
DWSRF Project No. P040-1020902-09 and P040-1020902-10

Dear Mr. Ralston:

This potential change order addresses the following. -

1. Excavation, shoring, dewatering, and temporary piping supports as necessary to construct a new cast in place concrete chemical feed vault to replace the existing deteriorated precast concrete chemical feed vault on the existing 84-inch filtered water pipe. This will permit continued safe access to the chemical vault where ZOP, LAS, and CLS is injected prior to entering the clearwells.
2. Relocation of ¾"SA, 1-1/2"-LAS, 1-1/2"-ZOP, 4"-DRN, and 6"-CLS yard piping to connect from existing vault to new chemical feed vault. Including all temporary valves, piping necessary for sequencing.
3. Relocation of the sample pump and control panel and extension of conduit/wires and ¾" SA piping necessary to install, test, and commission sample pump with new analyzers installed as part of this project.
4. Installation, testing, and commissioning of new 1-1/2"-ZOP, 1-1/2" LAS, and 6"-CLSdi insulated piping, valves, and diffusers inside the new cast in place concrete vault.
5. Removal and salvage of existing shoring within the deteriorated chemical vault and partial demolition of the vault.
6. Removal of existing diffusers and patching of damaged areas of 84-inch pipe. Recoating of interior and exterior of existing pipe in areas of both old and new vault as specified herein.
7. Disinfection of 84-inch line following repairs.
8. Backfill, compact, replace concrete apron as necessary and provide sodding in accordance with specifications.

If the work required by this PCO requires an adjustment to contract price or contract time, please follow the requirements of Special provisions, Articles 10 and 36 which require a detailed breakdown of material, labor, equipment costs including invoices from suppliers regarding materials purchased. Breakdown of labor shall be based on classification of labor in accordance with certified payroll. See article 36 of the special provisions. All (including special tools and safety equipment, incidentals) shall be included in the 10 percent permitted markup in accordance with Article 10.

Please reach out to me if you have any questions or concerns regarding this PCO-033.

Sincerely,
CAROLLO ENGINEERS, INC.

Thomas O. Crowley, P.E.

Thomas O. Crowley, PE
Project Manager

AuthorInitials:tc

Enclosures:

Attachment A – Modifications to Contract Drawings

Attachment B – Modifications to Contract Specifications.

cc:Mr. Andrew Mishler, PE – City of Oklahoma City

Mr. Larry Hare, PE – City of Oklahoma City

Mr. Will Huggins, PE – City of Oklahoma City

Mr. Jeff Bolden – City of Oklahoma City

Mr. William Waller – City of Oklahoma City

Mr. Kwasi Duose, Carollo Engineers

Mr. Richard Taylor – Hefner WTP Inspector

Mr. Lou Scantana, PE – Carollo Engineers

Mr. Dan Ethington, PE – Carollo Engineers

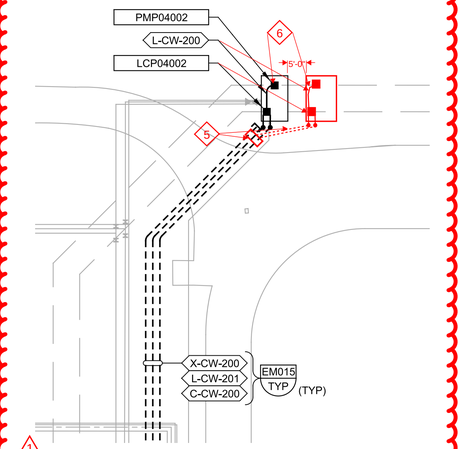
ATTACHMENT A – Modifications to Contract Drawings

GENERAL NOTES(CONT.)

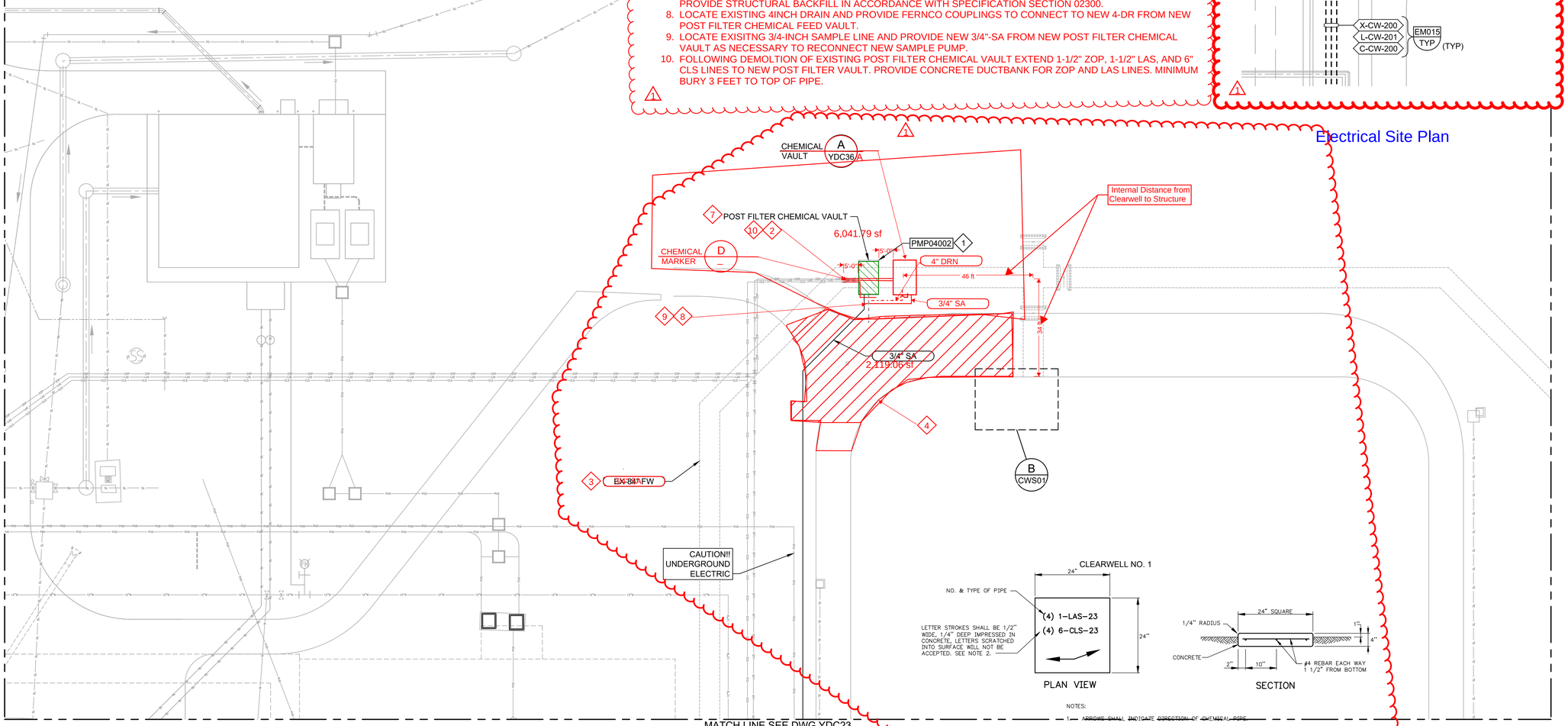
6. CLEARWELL NO. 1 WILL NEED TO BE OFFLINE TO COMPLETE THIS WORK. SEE SPECIFICATION SECTION 01140, PARAGRAPH 1.20.
7. OWNER TO OPERATE THE VALVES TO ISOLATE THE PIPELINE AND CLEARWELL. IT IS LIKELY THESE VALVES WILL LEAK AND THE CONTRACTOR WILL BE RESPONSIBLE TO CAPTURE AND DISPOSE OF AS NECESSARY TO PERFORM THE WORK.
8. CONTRACTOR TO PROVIDE DEWATERING ASSOCIATED WITH THE IMPROVEMENTS. CONTRACTOR MUST DISINFECT THE PIPELINE AND CLEARWELL ENTRANCE IN ALL LOCATIONS WHERE WORKERS ARE PRESENT.
9. CONTRACTOR SHALL PROVIDE ALL NECESSARY SAFTEY EQUIPMENT AS DIRECTED BY THE CONTRACTOR'S SAFEY OFFICER.
10. CUTTING OF THE CHEMICAL FEED LINES WILL REQUIRE A PLANT SHUTDOWN, FOLLOW THE REQUIREMENTS OF SPECIFICATION SECTION 01140 FOR WORK RESTRICTIONS.
11. ACCESS TO COMPLETE THE INTERNAL PIPE WORK IS THROUGH CLEARWELL NO. 1 THIS WILL REQUIRE A SHUTDOWN IN ACCORDANCE WITH SECTION 01140.
12. CONTRACTOR iS RESPONSIBLE TO DESIGN SHORING SYSTEM AS NECESSARY TO DEMOLISH EXISTING AND CONSTRUCT NEW VAULT. SEE SPECIFICAION SECTION 02260.
13. CONTRACTOR IS RESPONSIBLE TO RESOD ALL DISTURBED AREAS FOLLOWING COMPLETION OF THE WORK IN ACCORDANCE WITH THE SPECIAL PROVISIONS.

KEY NOTES (CONT.)

2. FIELD LOCATE EXISTING CHEMICAL FEED CONCRETE DUCTBANK CONTAINING 6-INCH CLS, 1-1/2" ZOP AND 1-1/2" LAS SCHEDULE 80 PVC PIPING, CHIP AWAY DUCTBANK AS NECESSARY. CUT IN TEMPORARY PVC BALL VALVES AND TEMPORARY PLUGS. FIELD LOCATE EXISTING 6 INCH SCH 80 PVC CHLORINE SOLUTION LINE AND PROVIDE 6-INCH BALL VALVE AND BLIND FLANGE. THIS WILL REQUIRE A PLANT SHUDOWN, REFERENCE TABLE 01140-1 FOR ALLOWABLE PLANT SHUTDOWN DURATIONS.
3. THE EXISTING 84-INCH PIPE IS AN AWWA C200 MORTAR LINED AND COATED PIPE WITH A THICKNESS OF 1/2". CONTRACTOR SHALL HAND DIG TO EXPOSE PIPE AND PROVIDE TEMPORARY SHORING AND SUPPORTS AS NECESSARY TO CONSTRUCT THE NEW VAULT AND CHEMICAL DRAIN AS INDICATED ON THE STRUCTURAL DRAWINGS.
4. LOCATE NEAREST CONSTRUCTION JOINTS ON EXISTING 6-INCH CONCRETE PAVEMENT AND SAW CUT AND REMOVE EXISTING PAVEMENT SECTIONS AS NECESSARY TO PERFORM WORK. FOLLOWING COMPLETION, PROVIDE TYPE A EXPANSION JOINT AT CONNECTION TO EXISTING PAVEMENT IN ACCORDANCE WITH DETAIL 21 ON YDC-013. PAVEMENT SECTION SHALL MATCH EXISTING.
5. LOCATE EXISTING CONDUIT AND WIRE AND DEMOLISH AS NECESSARY. INSTALL NEW 14" X14"X12" QUAZITE BOX AND SPLICE POWER AND CONTROL WIRES AS NECESSARY TO EXTEND TO NEW VAULT.
6. REMOVE EXISTING LCP AND SAMPLE PUMP FROM EXISTING VALUT. PROVIDE TEMPORARY PLUGS AS NECESSARY. REINSTALL SAMPLE PUMP, LCP, AND PROVIDE NEW CONDUIT AND WIRE TO CONNECT LCP TO SAMPLE PUMP.
7. CHIP AWAY EXISTING GROUT CAP ON 84-INCH AND FIELD MEASURE EXISTING 84-INCH PIPE AS NECESSARY TO ORDER NEW 84-INCH REPAIR SLEEVE AS INDICATED ON DRAWING YDC-36B. REMOVE TEMPORARY SHORING AND SALVAGE. DEMOLISH EXISTING POST FILTER CHEMICAL VAULT TO 4FT BELOW GRADE AND PROVIDE STRUCTURAL BACKFILL IN ACCORDANCE WITH SPECIFICATION SECTION 02300.
8. LOCATE EXISTING 4INCH DRAIN AND PROVIDE FERNCO COUPLINGS TO CONNECT TO NEW 4-DR FROM NEW POST FILTER CHEMICAL FEED VAULT.
9. LOCATE EXISITNG 3/4-INCH SAMPLE LINE AND PROVIDE NEW 3/4"-SA FROM NEW POST FILTER CHEMICAL VAULT AS NECESSARY TO RECONNECT NEW SAMPLE PUMP.
10. FOLLOWING DEMOLTION OF EXISTING POST FILTER CHEMICAL VAULT EXTEND 1-1/2" ZOP, 1-1/2" LAS, AND 6" CLS LINES TO NEW POST FILTER VAULT. PROVIDE CONCRETE DUCTBANK FOR ZOP AND LAS LINES. MINIMUM BURY 3 FEET TO TOP OF PIPE.



Electrical Site Plan



NOTES:

1. ARROWS SHALL INDICATE DIRECTION OF CHEMICAL PIPE.
2. ADJUST NUMBER AND TYPE OF PIPE AT EVERY DIRECTION CHANGE. REFER TO CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.

D CHEMICAL PIPE MARKER DETAIL
NTS

GENERAL NOTES:

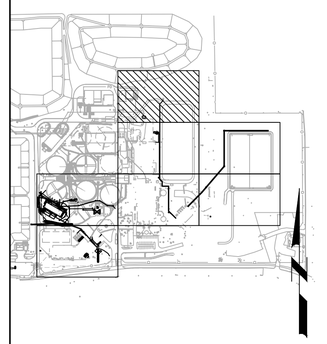
1. VERIFY ELEVATIONS OF EXISTING SANITARY SEWER AND SUBMIT LAYOUT DRAWINGS PRIOR TO ORDERING MATERIALS.
2. REFER TO SECTION 01140 FOR SEQUENCING AND WORK RESTRICTIONS.
3. ALL NEW MANHOLES TO BE INSTALLED USING DETAIL CS110/TYP UNLESS NOTED OTHERWISE.
4. FOR COORDINATE CONTROL DATA, SEE DWG YDC37.
5. SEE DWGS YDC21-YDC27 FOR PAVEMENT REPLACEMENT DRAWINGS.

X KEY NOTES:

1 PROVIDE STAINLESS STEEL SELF PRIMING JET PUMP (EBARA MODEL JEU80610T1G OR EQUAL). ANCHOR PUMP DIRECTLY TO INSIDE WALL OF CHEMICAL FEED BOX WITH IMPELLER AT A CENTERLINE ELEVATION OF 1172.50. TAP INTO EXISTING 84-INCH FILTERED WATER A MINIMUM OF 3-FEET UPSTREAM OF EXISTING LAS DIFFUSER.

811 Know what's **below.** **Call** before you dig.

KEY MAP



KEY MAP NORTH

SCALE

0 10' 20' 40'

SCALE: 1" = 20'

REV	DATE	BY	DESCRIPTION
1	2-1-24	KR	PCO-033 NEW PRIMARY CHEMICAL VAULT

CONFORMED DOCUMENTS

DESIGNED BH | DRAWN TP | CHECKED | DATE MARCH 2022

** ORIGINAL SEALED BY THOMAS O. CROWLEY MARCH 1, 2022 OK 21073 **

carollo®
CERTIFICATE OF AUTHORIZATION NO. 3907
EXPIRES JUNE 30, 2022

The City of OKLAHOMA CITY

CITY OF OKLAHOMA CITY, OKLAHOMA

PROJECT WT-0151 HEFNER WTP OZONE SYSTEM EXPANSION/UPGRADES

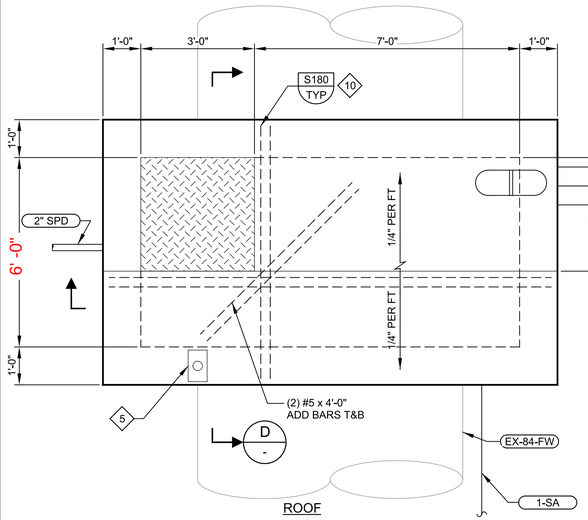
CIVIL

YARD PIPING PLAN 3

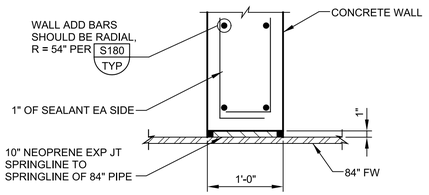
VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 10252A.10
DRAWING NO. YDC30
SHEET NO. 55 OF 357

PROJECT NO. 10252A.10 FILE NAME: 10252A10_YDC30.dwg



A PLAN
SCALE: 1/2" = 1'-0"
FILE: 10252A10_YDS102.dgn



E SECTION
SCALE: 1" = 1'-0"
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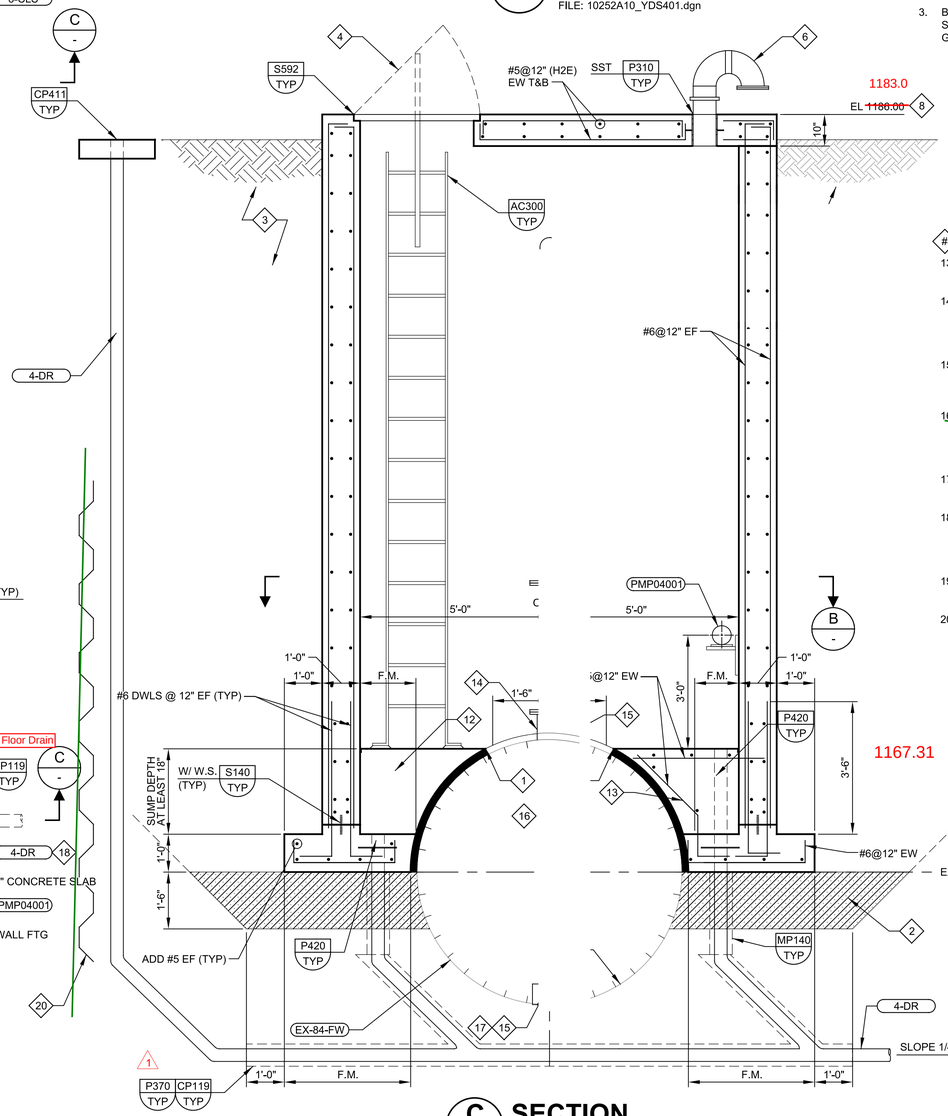

C SECTION
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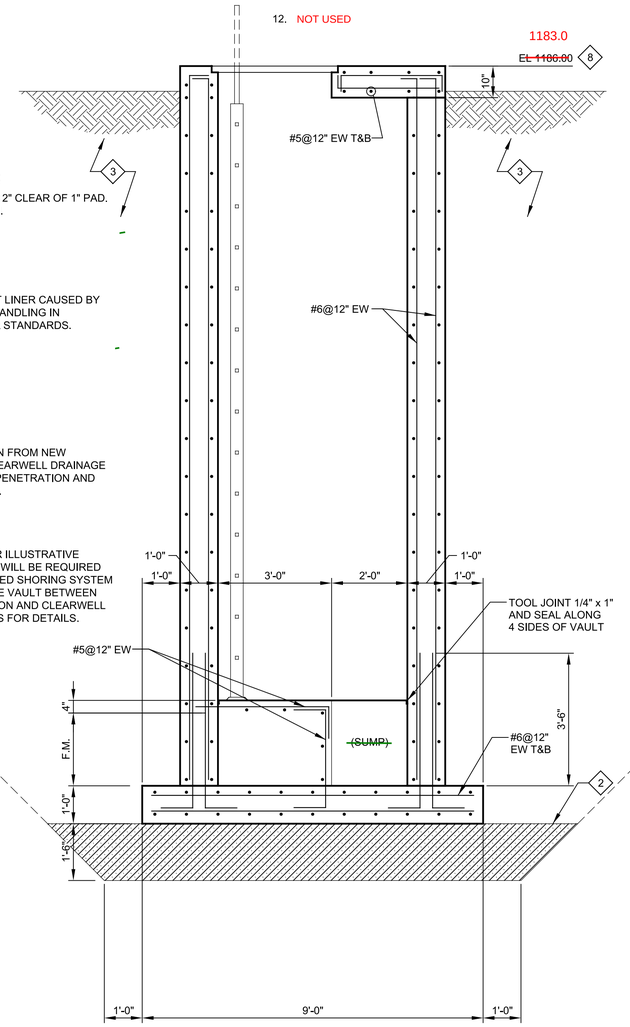

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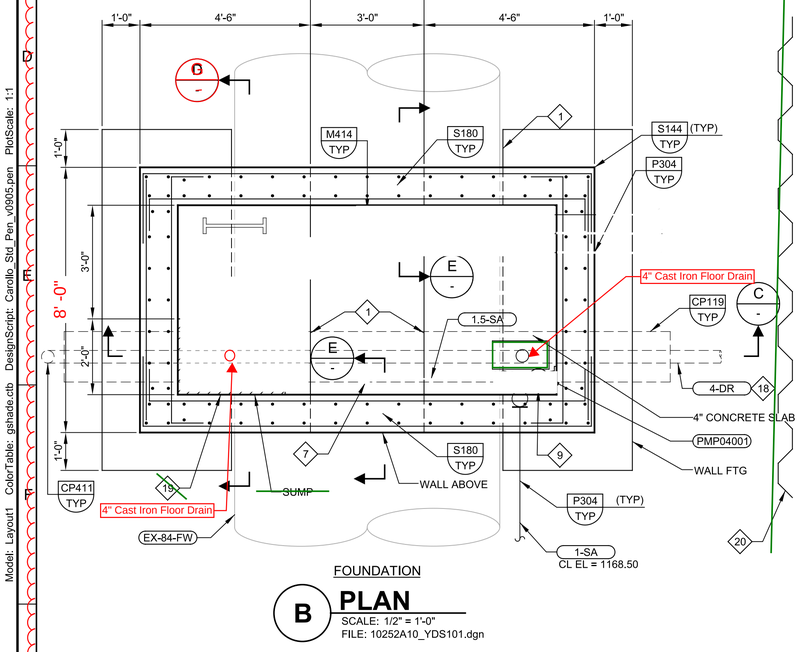
SCALE: 1/2" = 1'-0"
FILE: 10252A10_YDS301.dgn



FOUNDATION

B PLAN
SCALE: 1/2" = 1'-0"
FILE: 10252A10_YDS101.dgn

GENERAL NOTES:

1. SUPPORT CHEMICAL AND SAMPLE PIPING FROM WALL OR CEILING PER RELEVANT TYPICAL DETAILS.
2. ROOF LIVE LOAD = 150 PSF.
3. ALL EQUIPMENT TAGS ON THIS DWG ARE PRECEDED BY HFH560.

KEY NOTES:

1. PROVIDE 1" THICK NEOPRENE EXP JT BETWEEN PIPE & CONCRETE. SECURE TO PIPE WITH LIGHT COATING OF MASTIC. SEE S130 TYP FOR MAT'L & SEALANT.
2. PROVIDE FLOWABLE FILL (1/2 SACK CLSM) AROUND THE 84" PIPE AS SHOWN. EXTEND FILL ALONG THE LENGTH OF THE PIPE WITHIN THE BOX, 4'-0" BEYOND EACH SIDE OF FOOTING, AND TO THE BOTTOM.
3. BACKFILL OUTSIDE OF THE BOX SHALL BE COMPACTED STRUCTURAL BACKFILL EXTENDING TO WITHIN 2'-0" OF FINISHED GRADE. FINAL 2'-0" SHALL BE COMPACTED CLAY.

KEY NOTES (CONT'D):

13. BEND THE VERTICAL #5 SO 2" CLEAR OF 1" PAD. ADD 2 HORIZ #5 AS SHOWN.
14. NOT USED
15. REPAIR DAMAGED CEMENT LINER CAUSED BY CUTTING, WELDING, AND HANDLING IN ACCORDANCE WITH AWWA STANDARDS.
16. NOT USED
17. NOT USED
18. FILED ROUTE NEW 4" DRAIN FROM NEW MANHOLE TO EXISTING CLEARWELL DRAINAGE MANHOLE. PROVIDE P304 PENETRATION AND FLAP GATE AT DISCHARGE.
19. NOT USED
20. SHORING IS DEPICTED FOR ILLUSTRATIVE PURPOSES. CONTRACTOR WILL BE REQUIRED TO PROVIDE AN ENGINEERED SHORING SYSTEM FOR THE EAST SIDE OF THE VAULT BETWEEN THE PROPOSED EXCAVATION AND CLEARWELL NO. 1. SEE SPECIFICATIONS FOR DETAILS.

KEY NOTES (CONT'D):

4. MEDIUM-DUTY FLOOR ACCESS DOOR WITH FALL PROTECTION GRATING SYSTEM AND LADDER SAFETY POST PER SPEC. 08320.
5. PROVIDE BASE FOR PORTABLE DAVIT CRANE (DBI SALA MODEL 8516563).
6. 8" SCH 10S 316 SST VENT PIPE. PROVIDE SIZE 24 MESH SST INSECT SCREEN SANDWICHED BETWEEN FLANGES.
7. FOR SAKE OF CLARITY, NEW CHEMICAL FEED PIPING NOT SHOWN. SEE DRAWING YDC36B
8. CONFIRM EXISTING GRADE PRIOR TO CONSTRUCTION. TOP OF VAULT SHALL BE MINIMUM 6" ABOVE GRADE. RELOCATE
9. PROVIDE STAINLESS STEEL SELF PRIMING JET PUMP (EBARA MODEL JEU80610T1G OR EQUAL). ANCHOR PUMP WITH IMPELLER AT CENTERLINE ELEVATION 1172.50.
10. ADD REINF AROUND ROOF DOOR & WALL PIPE PENETRATIONS PER S180/TYP. ADD BARS OVER 7'Ø PIPE SHOULD BE RADIAL.
11. PROVIDED TEMPORARY SUPPORT FOR FILTERED WATER PIPE DURING CONSTRUCTION.
12. NOT USED

REV	DATE	BY	DESCRIPTION
1	2-1-24	KR	PC0-033 EW PRIMARY CHEMICAL VAULT

CONFORMED DOCUMENTS

DESIGNED LS
DRAWN FVG
CHECKED
DATE MARCH 2022

** ORIGINAL SEALED BY THOMAS O. CROWLEY MARCH 1, 2022 OK 21073 **

carollo®
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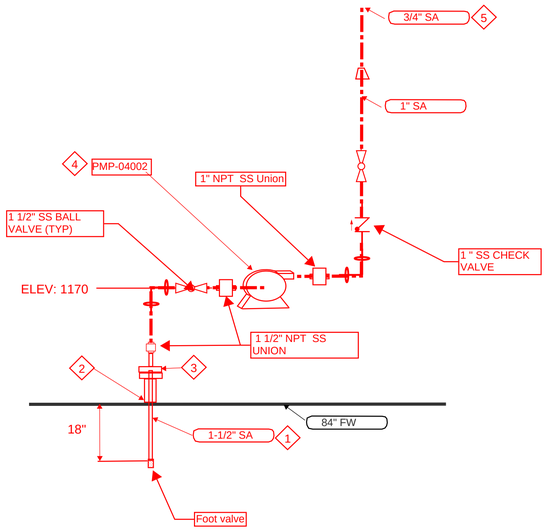
The City of OKLAHOMA CITY

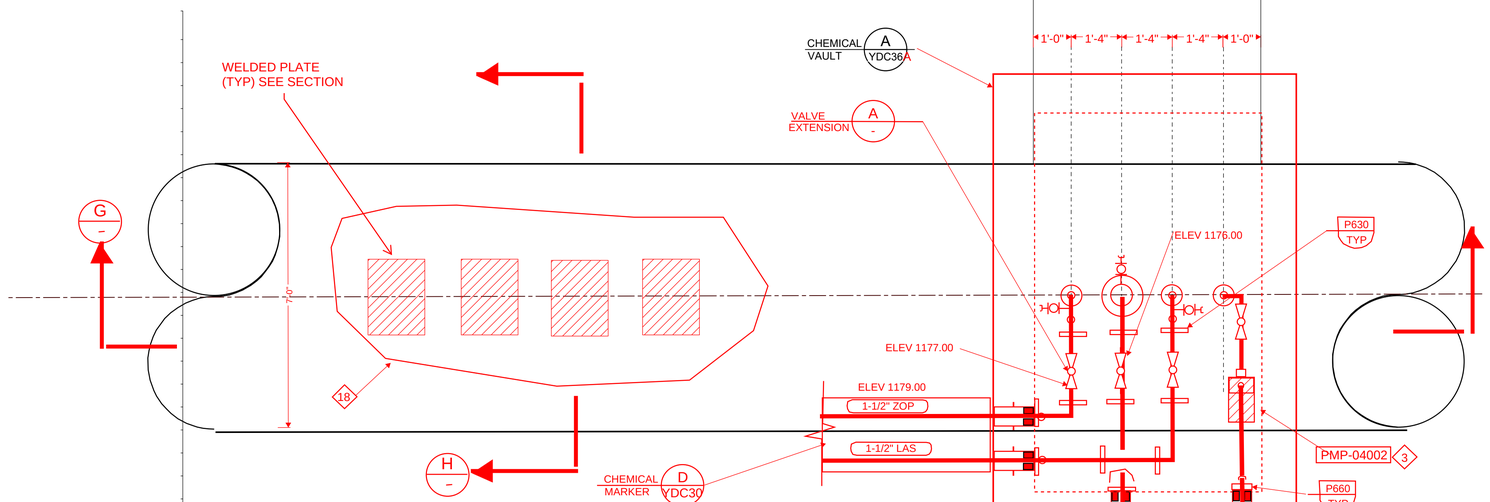
CITY OF OKLAHOMA CITY, OKLAHOMA
PROJECT WT-0151 HEFNER WTP OZONE SYSTEM EXPANSION/UPGRADES
CIVIL
NEW PRIMARY CHEMICAL FEED VAULT

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

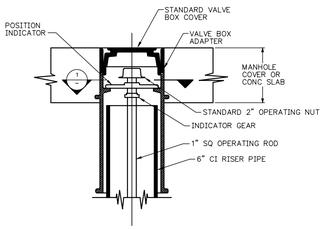
JOB NO. 10252A.10
DRAWING NO. YDC36A
SHEET NO. 61 OF ~~357~~



Sample Pump Relocation
NTS

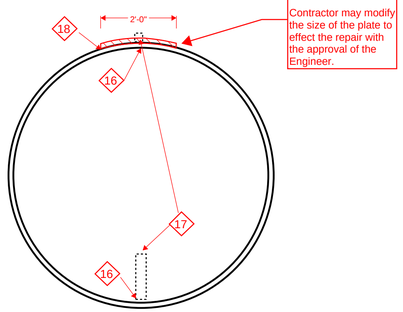


F PLAN
NTS



1 SECTION
NTS

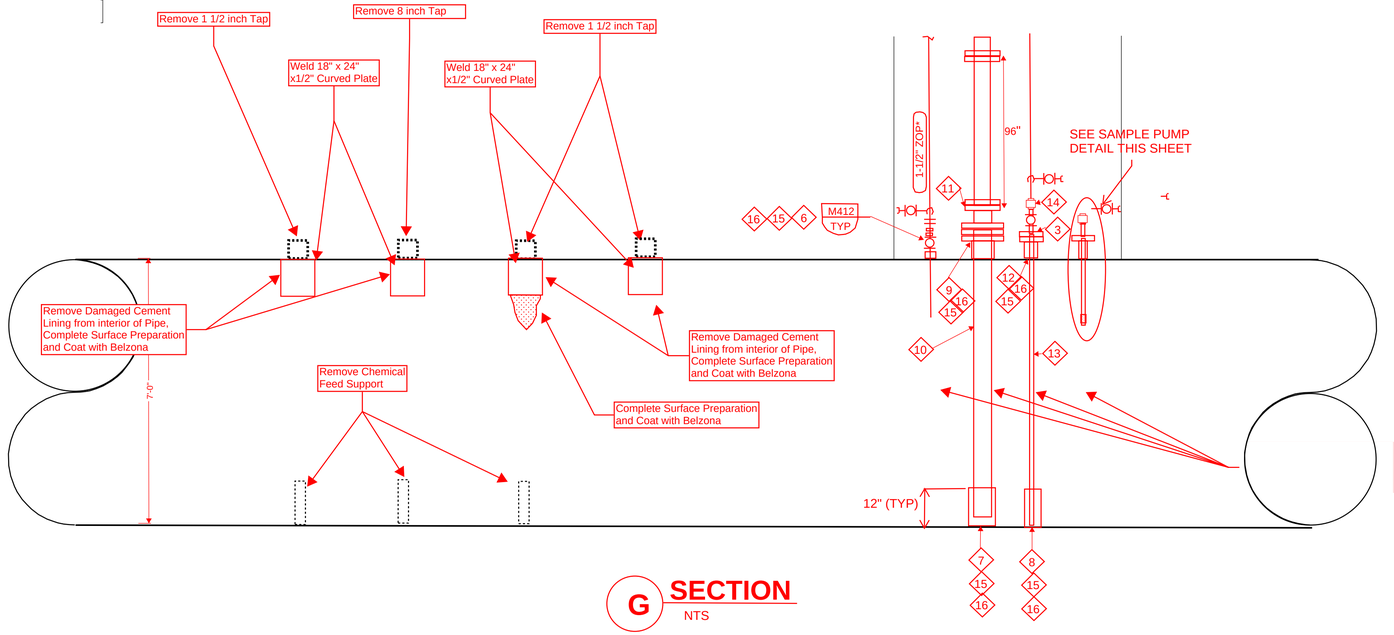
A VALVE OPERATOR EXTENSION
NTS



Weld 18" x 24" x1/2" Curved Plate

Contractor may modify the size of the plate to effect the repair with the approval of the Engineer.

H SECTION
NTS



G SECTION
NTS

1 ENTIRE SHEET

GENERAL NOTES:

1. ALL ~~XXX~~ING INSIDE VAULT SHALL BE INSULATED WITH 1-1/2" CLOSED CELL POLYURETHANE WITH PVC JACKET.
2. LABEL ALL PIPING INSIDE VAULT IN ACCORDANCE WITH SPECIFICATION SECTION 15076.

KEY NOTES: (~~XXX~~)

1. PROVIDE SCHEDULE 80 1-1/2" 316 STAINLESS STEEL FOR THE PORTIONS WITHIN THE 84-INCH FINISHED WATER LINE.
2. CHIP AWAY COATING OF EXISTING PIPE AND FIELD WELD NEW 0.5" THICK 3" CARBON STEEL OUTLET WITH ANSI B 16.5 150# FLANGE. CUT EXISTING 84" AND PROVIDE CONTINUOUS 3/8" FILLET WELD AROUND OPENING. PREPARE AND COAT FLANGE ASSEMBLY WITH ULTRA HIGH SOLIDS EPOXY EPX-M-2-PWS SYSTEM SPECIFIED IN SECTION 09960.
3. MACHINE 316 SS ANSI B16.5 150# FLANGE AND CONNECT 1-1/2" PIPING.WITH 1-1/2" X 1-1/2" FNPT THREADS.
4. RELOCATE EXISTING SAMPLE PUMP AND MOUNTING BRACKETS TO NEW VAULT AT LOCATION INDICATED. PROVIDE NEW CONDUIT AND WIRE FROM RELOCATED CONTROL PANEL.
5. MOUNT NEW SAMPLE PUMP DISCHARGE PIPING TO WALL
6. PROVIDE SAFE-T-FLO MODEL HS150-S-A-24-0-05 DIFFUSER. PROVIDE 1-1/2" TAP WITH VALVE AND HOSE CONNECTION FOR DRAINING.
7. CHIP AWAY MORTAR LINING AND CONTINUOUSLY FILLET WELD NEW 0.5 INCH 8-INCH CARBON STEEL PIPE TO EXISTING 84-INCH PIPE. PROVIDE UHMW POLYURETHANE SPACERS CONNECTED TO INTERIOR OF PIPE AND FIELD FIT TO NEW CL DIFFUSER PIPE.
8. CHIP AWAY MORTAR LINING AND CONTINUOUSLY FILLET WELD NEW 0.5 INCH 4-INCH CARBON STEEL PIPE TO EXISTING 84-INCH PIPE. PROVIDE UHMW POLYURETHANE SPACERS CONNECTED TO INTERIOR OF PIPE AND FIELD FIT TO NEW LAS DIFFUSER PIPE.
   REMOVE/CHIP AWAY COATING AND
9. CONTINUOUSLY FILLET WELD NEW 0.5 INCH 8-INCH FLAGED TAPPING BOSS TO 84-INCH PIPE.
10. PROVIDE 6-INCH FRP CLS DIFFUSER PIPE WITH 3/4" HOLES ON 6-INCH CENTERS STAGGERED 4 ROWS FACE HOLES COUNTERCURRENT TO FLOW PROVIDE WITH 8-INCH SOCKET WELDED 150# FLANGE AND CAP AT BOTTOM.
11. PROVIDE 8" FLGX6" FLG 6-INCH TRANSITION PIECE TO CONNECT TO DIFFUSER FLANGE.
12. REMOVE/CHIP AWAY COATING AND CONTINUOUSLY FILLET WELD NEW 0.5 INCH 4-INCH FLAGED TAPPING BOSS TO 84-INCH PIPE.
13. PROVIDE 1-1/2-INCH SCHEDULE 80 316SS LAS DIFFUSER PIPE WITH 5/8" HOLES DRILLED AT LOCATIONS DETERMINED BY ENGINEER. PROVIDE NPT CAP AT END.
14. 1-1/2" THREADED UNION.
15. FOR ALL PIPE WELDED TO 84-INCH PIPING, PREPARE AND COAT PIPING WITH ULTRA HIGH SOLIDS EPOXY EPX-M-2-PWS SYSTEM SPECIFIED IN SECTION 09960. FOR 84-INCH EXPOSED PIPE IN NEW VAULT BLAST EXTERIOR TO SPCC SP-05 AND APPLY EPX-M-2-PWS SYSTEM.
16. REPAIR 84-INCH MORTAR LINING AT ALL LOCATIONS WHERE DAMAGED, BLAST AND PREPARE METAL TO SPCC-10, COAT WITH 2-10MIL COATS OF BELZONA 5812/9241 DW.
17. CUT AND GRIND SMOOTH ALL LOCATIONS WHERE EXISTING TAPS ON 84-INCH PIPE IN EXISITNG CHEMICAL VAULT. PATCH INTERIOR WITH BELZONA COATING AND EXTERIOR WITH COAL TAR AS SPECIFIED HEREIN.
18. FOR EXTERIOR OF EXISTING 84-INCH PIPE DAMAGED DURING PATCHING REPAIRS, BLAST PIPE WITH AREAS OF LOOSE COATING TO SPCC-SP10, FEATHER EXISING COAL TAR COATING AND APPLY SOLVENT PER SPCC-SP01, APPLY 25 MILS OF AWWA C203 2.15, 3/32" MIN THICKNESS. FOLLOWING REPAIR OF 84-INCH COATING AND PARTIAL DEMOLITION OF VAULT, PLACE 1/4" THICK PLASTIC SHEETING OVER PIPE AND BACKFILL/COMPACT TO 97 PERCENT SP.

REV	DATE	BY	DESCRIPTION
	2-1-24	KR	PCO-033 NEW PRIMARY CHEMICAL VAULT

CONFORMED DOCUMENTS

DESIGNED BH
DRAWN TP
CHECKED
DATE MARCH 2022

** ORIGINAL SEALED BY THOMAS O. CROWLEY MARCH 1, 2022 OK 21073 **

carollo®
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EXPIRES JUNE 30, 2022

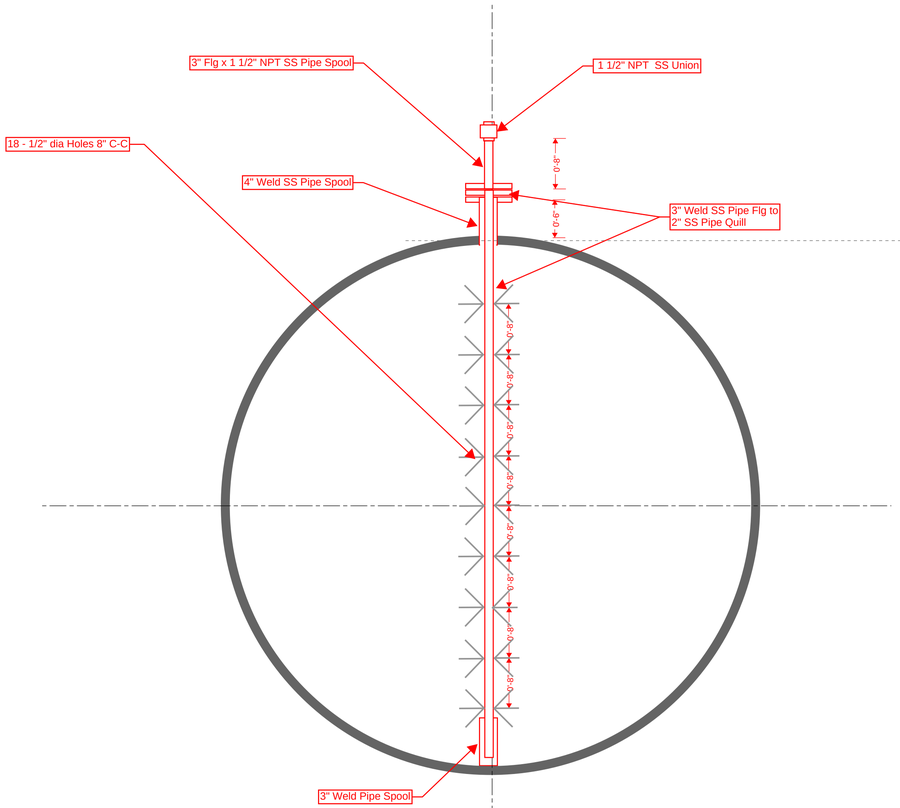
The City of OKLAHOMA CITY

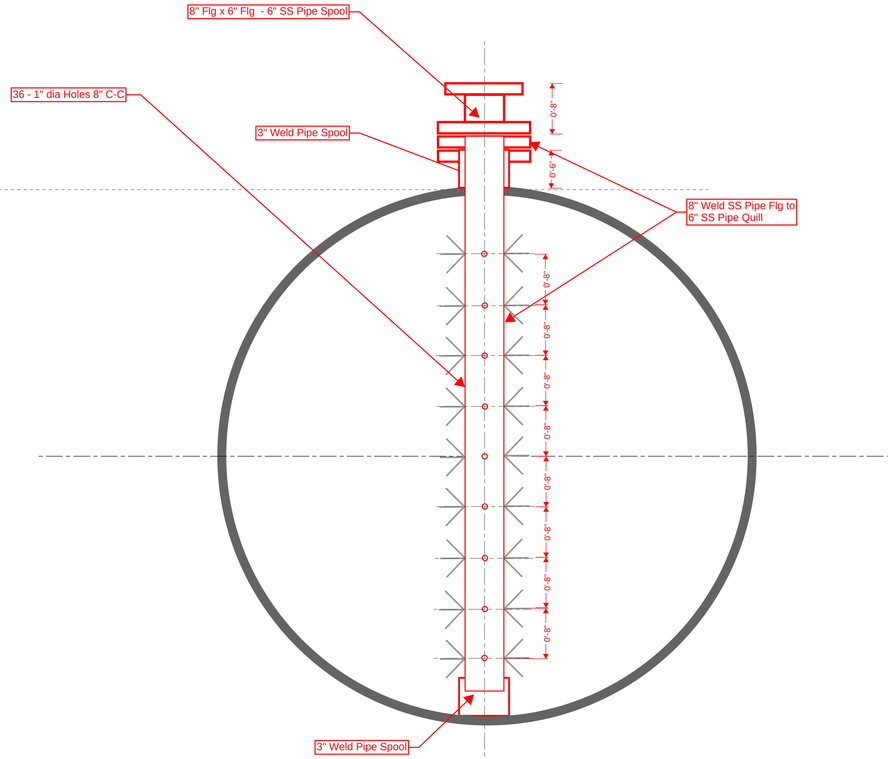
CITY OF OKLAHOMA CITY, OKLAHOMA
PROJECT WT-0151 HEFNER WTP OZONE SYSTEM EXPANSION/UPGRADES
CIVIL
COORDINATE CONTROL DATA

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

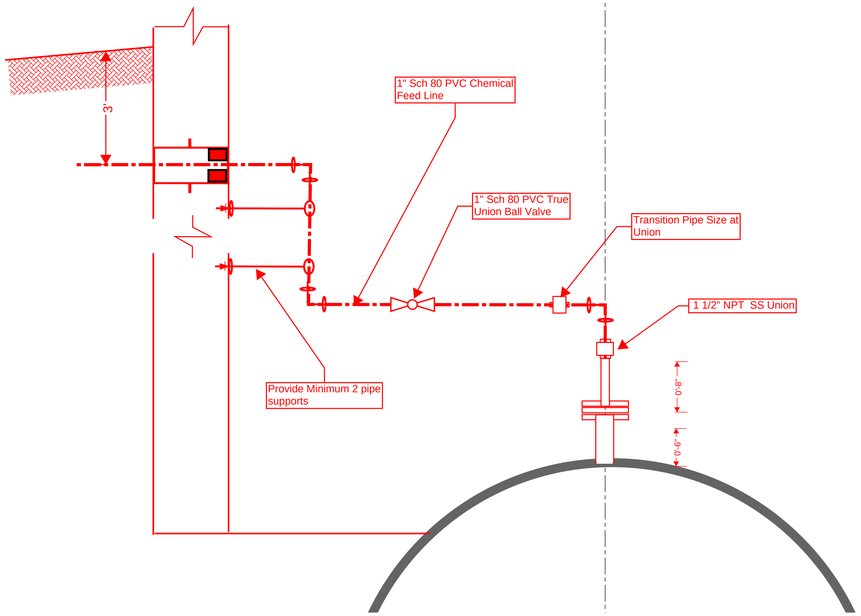
JOB NO. 10252A.10
DRAWING NO. YDC36B
SHEET NO. 2 OF 357

LAST SAVED BY: bhawes



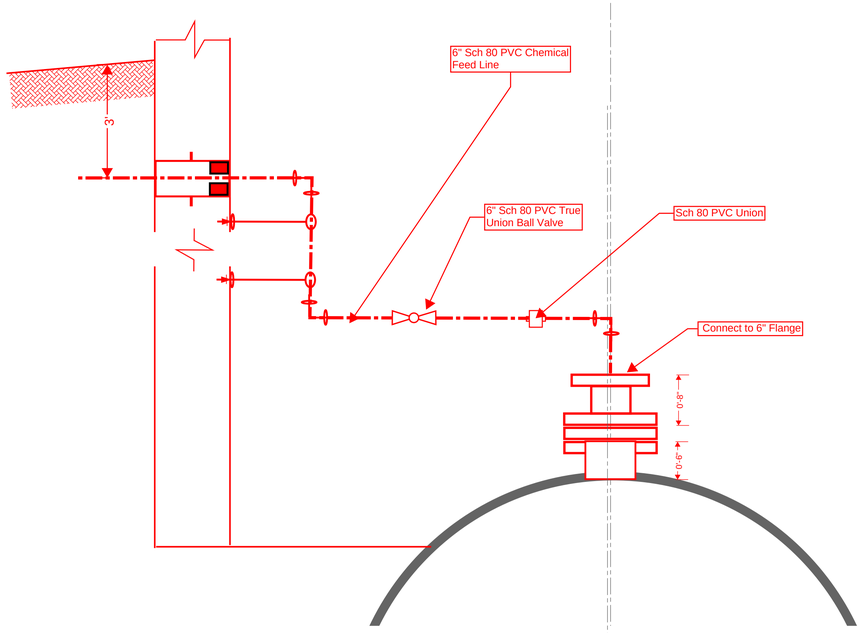


LAS Chemical Feed Quill



LAS Chemical Feed Lines

CLS Chemical Feed Quill



CLS Chemical Feed Line

Attachment B – Modifications to Contract Specifications.

May 22, 2024

Hefner Water Treatment Plant Ozone System Expansion/Upgrades
WT-0151
Potential Change Order
New Chemical Vault

To Whom It May Concern,

The following cost proposal is for work to construct a new Chemical Vault and demolish the existing per the attached documents provided by Carollo dated 2/8/2024.

Conditions of proposal:

- Hatch, walls, and roof deck to be constructed per RFI 26 response
- Drain Line and concrete fill around pipe to be installed per RFI 28 response
- Roof Vent to be installed per RFI 34 response
- Reinforcement in concrete fill around pipe to be installed per RFI 36 response
- Backfill of vault will follow RFI 40 response if required
- 6" Chlorine Diffuser to be PVC per submittal 11242C.002.1 instead of FRP
- This quote is valid with the understanding that work will begin during the summer of 2024 and be completed in the fall of 2024 with the interior pipe work of the 84" pipe to be completed in the in Winter shutdown period of 2024-2025. If work is to be completed at a different time, a price adjustment may be required.

The total lump sum requested to complete this work is $610,000.00. See below breakdown utilizing existing Unit Prices.

Bid Item	UOM	Unit Price	QTY.	Extended Price
#16: Waterproof Slurry	LF	$25.00	729	$18,225.00
#19: Select Backfill	CY	$38.00	250	$9,500.00
#21: #57 Stone	CY	$54.00	17	$918.00
#23: Concrete Paving	SY	$88.00	250	$22,000.00
#25: Sodding	SY	$7.50	650	$4,875.00
#42: Ductbank	LF	$365.00	27	$9,855.00
PCO 33: New Vault	LS	- -	1	$544,627.00
Total				**$610,000.00**

Attached is an additional breakdown of the proposal. Should you have any questions or comments please feel free to contact me at 316.208.5585.

Respectfully,

Mitch Ralston
Project Manager
Crossland Heavy Contractors, Inc.

CROSSLAND HEAVY CONTRACTORS

Hefner Water Treatment Plant Ozone System Expansion/Upgrades

Cost Breakdown

Project No. WT-0151 **Date** 5/22/2024

Entity Oklahoma City Water Utilities Trust **Contractor** Crossland Heavy Contractors

Description of Work New Chem Feed Vault

1.	a)	**Labor Total** (Refer to Attachment A)					$	122,575.02
	b)	Labor Overhead & Profit	1.a)	x	18.00%	=	$	22,063.50
2.	a)	**Material Total** (Refer to Attachment B)					$	50,096.24
	b)	Material Overhead & Profit	2.a)	x	18.00%	=	$	9,017.32
3.	a)	**Equipment Total** (Refer to Attachment C)					$	56,812.50
	b)	Equipment Overhead & Profit	3.a)	x	18.00%	=	$	10,226.25
4.	a)	**Subcontracted Work Total**					$	175,962.20
	b)	Prime Contractor Overhead on Subcontracted Work	4.a)	x	18.00%	=	$	31,673.20
5.	a)	**Workers Compensation**	1.a)	/ 100 x	$ 1.40	=	$	1,716.05
	b)	**Unemployment Insurance Contribution**	1.a)	x	3.80%	=	$	4,657.85
	c)	**Social Security Taxes**	1.a)	x	7.65%	=	$	9,376.99
	d)	**Employee Fringe Benefits**	1.a)	x	20.00%	=	$	24,515.00
6.	a)	**Subtotal Cost of Work**	1. + 2. + 3. + 4. + 5.			=	$	518,692.12
	b)	**General/Administrative**	6.a)	x	2.50%	=	$	12,967.30
	c)	**Bonds**	6.a)	x	1.00%	=	$	5,186.92
	d)	**Property Damage & Liability Insurance**	6.a)	x	1.50%	=	$	7,780.38

7.		**Total Cost of Work**	Unit Price $ 544,626.73	Quantity 1	Unit of Measure LS		**$**	**544,626.73**

Attachment A - Labor Total

Contract ID: WT-0151

Description: New Chem Feed Vault

Labor Classification	No.	Rate/Hour	Total Hours	Total for Each Labor Class
Foreman (Pipe and Carpenter)		$ 65.00	420	$ 27,300.00
Skilled Laborer		$ 38.77	996	$ 38,614.92
Operator		$ 56.00	420	$ 23,520.00
Skilled Carpenter		$ 45.81	210	$ 9,620.10
Superintendent		$ 112.00	210	$ 23,520.00
			Labor Total	$ 122,575.02

Attachment B - Material Total

Contract ID: WT-0151

Description: New Chem Feed Vault

Material Item	Unit	Contractor's Cost	Quantity	Material Amount
Grout	EA	$ 16.55	33	$ 546.15
Concrete	YD	$ 176.00	48	$ 8,448.00
Visqueen	SF	$ 0.11	1100	$ 116.39
1" Neoprene Exp Jt	SF	$ 36.00	72	$ 2,592.00
Waterstop	LF	$ 4.35	51	$ 221.61
Reinforceing Steel	TN	$ 1,666.05	4.6	$ 7,663.85
Davit Crane Base	EA	$ 1,575.14	1	$ 1,575.14
Site Pipe - Ferguson	LS	$ 6,748.33	1	$ 6,748.33
Confined Space Monitoring	LS	$ 1,629.45	1	$ 1,629.45
Demolition Safety	LS	$ 1,086.30	1	$ 1,086.30
Dewatering Pumps	LS	$ 2,715.75	1	$ 2,715.75
Pipe/Equipment Testing	LS	$ 1,194.93	1	$ 1,194.93
Formwork	LS	$ 11,670.34	1	$ 11,670.34
Misc. Metals	LS	$ 3,888.00	1	$ 3,888.00
			Material Total	$ 50,096.24

Attachment C - Equipment Total

Contract ID: WT-0151

Description: New Chem Feed Vault

Equipment Type	No.	Cost/Hour	Total Hours	Amount for Each Type
Skidsteer CAT 289D	HR	$ 46.72	60	$ 2,803.20
Loader	HR	$ 56.41	100	$ 5,641.00
Lull 10k#	HR	$ 62.15	20	$ 1,243.00
Excavator 336	HR	$ 152.65	230	$ 35,109.50
Water Pump	HR	$ 34.38	40	$ 1,375.20
Breaker	HR	$ 29.53	20.00	$ 590.60
Pump Truck	HR	$ 350.00	5	$ 1,750.00
Pump Truck Set Fee	EA	$ 100.00	3	$ 300.00
Equipment Mobilization	EA	$ 8,000.00	1	$ 8,000.00
			Equipment Total	$ 56,812.50

Attachment D - Subcontractor

Contract ID: WT-0151

Description: New Chem Feed Vault

Description - Subcontractor	Unit	Rate/Unit	Total Units	Total for Each Subcontractor
Shoring Engineering	LS	$ 5,000.00	1.00	$ 5,000.00
Dump Truck Sub	HR	$ 318.75	8.00	$ 2,550.00
Shoring Rent - United Rentals	MO	$ 22,812.30	4.00	$ 91,249.20
Vac Truck	DY	$ 2,500.00	3.00	$ 7,500.00
Rebar Tie - Texoma	TN	$ 650.00	4.60	$ 2,990.00
Saw & Seal	SY	$ 2.00	312.5	$ 625.00
Mechanical - Kuhn	LS	$ 65,548.00	1	$ 65,548.00
Instrument - Haynes	LS	$ 500.00	1	$ 500.00
			Subcontractor Total	$ 175,962.20

				Yard	$ 6,212.22

	Description	QTY	UM	UNIT PRICE	TOTAL
	6" CLS				
	YARD - PVC				
	6" PVC SCH 80 SLIP COUPLING	2	EA	$ 62.14	$ 124.28
	6" X 20' IPS SCH80 PE GRAY PVC PIPE	60	LF	$ 20.84	$ 1,250.40
	6" PVC SCH 80 SLIP 90 ELL	2	EA	$ 74.63	$ 149.26
	VALVE	1	EA	$ 1,200.00	$ 1,200.00
	6" PVC SCH 80 SLIP 45 ELL	2	EA	$ 89.68	$ 179.36
	6" PVC SCH 80 SLIP CAP	1	EA	$ 89.68	$ 89.68
					$ -
					$ -
	1" LAS				$ -
	YARD - PVC				$ -
	1" X 20' IPS SCH80 PE GRAY PVC PIPE	60	LF	$ 1.69	$ 101.40
	1" PVC SCH 80 SLIP 90 ELL	2	EA	$ 3.79	$ 7.58
	1" PVC SCH 80 SLIP 45 ELL	2	EA	$ 7.92	$ 15.84
	1" PVC SCH 80 SLIP COUPLING	2	EA	$ 4.64	$ 9.28
	1" SCH 80 PVC BALL VALVE TRU-UNION W/ SOLVENT WELD ENDS & LEVER OP	1	EA	$ 57.10	$ 57.10
	1" PVC SCH 80 CAP	1	EA	$ 7.42	$ 7.42
					$ -
					$ -
	1" ZOP				$ -
	YARD - PVC				$ -
	1" X 20' IPS SCH80 PE GRAY PVC PIPE	60	LF	$ 1.69	$ 101.40
	1" PVC SCH 80 SLIP 90 ELL	2	EA	$ 3.79	$ 7.58
	1" PVC SCH 80 SLIP 45 ELL	2	EA	$ 7.92	$ 15.84
	1" PVC SCH 80 SLIP COUPLING	2	EA	$ 4.64	$ 9.28
	1" SCH 80 PVC BALL VALVE TRU-UNION W/ SOLVENT WELD ENDS & LEVER OP	1	EA	$ 57.10	$ 57.10
	1" PVC SCH 80 CAP	1	EA	$ 7.42	$ 7.42
					$ -
					$ -
	1" SAMPLE LINE				$ -
	YARD - PVC				$ -
	1" X 20' IPS SCH80 PE GRAY PVC PIPE	60	LF	$ 1.69	$ 101.40
	1" PVC SCH 80 SLIP 90 ELL	2	EA	$ 3.79	$ 7.58
	1" PVC SCH 80 SLIP 45 ELL	2	EA	$ 7.92	$ 15.84
	1" PVC SCH 80 SLIP COUPLING	2	EA	$ 4.64	$ 9.28
	1" SCH 80 PVC BALL VALVE TRU-UNION W/ SOLVENT WELD ENDS & LEVER OP	1	EA	$ 57.10	$ 57.10
	1" PVC SCH 80 CAP	1	EA	$ 7.42	$ 7.42
					$ -
					$ -
	DRAIN - PVC				$ -
	6" X 8" PE X WC X PE WALLSLEEVE	1	EA	$ 425.04	$ 425.04
	LINK SEAL	10	EA	$ 17.68	$ 176.80
	FLOOR SINK: SIZE 4", 12" SQ TOP	1	EA	$ 1,706.25	$ 1,706.25
	4" 90 BEND	1	EA	$ 74.63	$ 74.63
					$ -
					$ -
	MISC.				$ -
	1 QT PVC CLR CLNR C65	2	EA	$ 24.19	$ 48.38
	1 QT PVC PURP PRMR P70	2	EA	$ 40.41	$ 80.82
	1 QT CPVC HVY LOW VOC CMNT GRAY	2	EA	$ 55.73	$ 111.46
					$ -
					$ -
					$ -
					$ -
					$ -
					$ -
					$ -

Mitch Ralston

From: Jason Buckner <jason.baselinemfg@gmail.com>
Sent: Friday, April 26, 2024 12:21 PM
To: Mitch Ralston
Subject: Re: Hefner - Vault Quote

Mitch, the ladder with hatch for the new vault is 3,579.00 delivered. Let me know how to proceed items currently have a 8-9 week lead times and getting worse just fyi. Halliday I'm assuming is crazy backed up obviously

Jason

On Tue, Apr 23, 2024 at 6:21 PM Mitch Ralston <mralston@heavycontractors.com> wrote:

> You can delete the sump grating and embeds fron the list.

Crossland Heavy Contractors
Mitch Ralston
Project Manager
408 NE 145th Place
Oklahoma City, OK 73013
Cell (316)208-5585

From: Jason Buckner <jason.baselinemfg@gmail.com>
Sent: Tuesday, April 23, 2024 5:42:03 PM
To: Mitch Ralston <mralston@heavycontractors.com>
Subject: Re: Hefner - Vault Quote

Yes sir will do.

Jason

On Tue, Apr 23, 2024 at 10:31 AM Mitch Ralston <mralston@heavycontractors.com> wrote:

> Jason,

Sunstate Equipment Co. - Trench Safety

Excavation Safety - Confined Space - Training - Equipment

Account Manager: Gordon Hegeman
Mobile: 405-568-0712
Email: gordon.hegeman@sunstateequip.com

Branch Location
Address: *5055 S. Eastern Avenue*
OKC, OK. 73129
Phone: *405-594-8624*

SUNSTATE Equipment Co. | TRENCH SAFETY
A Division of **Sunstate Equipment Co.**

Customer Information ***Date:*** 3/26/24

Company: CROSSLAND HEAVY CONTRACTORS
Attention: CHANCE TUCKER
Phone: 620-210-0684
email: CTUCKER@HEAVYCONTRACTORS.COM

Job Information

Job/PO Number -

Name: PCO_33_Chemical Feed Vault Replacement
Address: Hefner Water Treatment Plant
Contact: Chance Tucker
Phone: 620-210-0684

QTY	Description	Day Rate Each Day	Day Rate Total	Week Rate Each Week	Week Rate Total	Month Rate Each Month	Month Rate Total	Sales Items Each	Sales Items Total
	Depth: 24 / Length: 16 / Width: 16 / Clear Span (yes/no): YES								
1	**Fully inclusive slide rail system**	$2,275.00	**$2,275.00**	$6,805.00	**$6,805.00**	$21,000.00	**$21,000.00**		
1	**Onsite Consultation: Install Fee ($500/Day)**							$ 500.00	**$ 500.00**
1	**Site Specific Engineering (if applicable)**							$ 1,750.00	**$ 1,750.00**
1	**Freight**							$ 4,000.00	**$ 4,000.00**
	Rental Totals(Excluding Tax & Delivery):	**$2,275.00** Day		**$6,805.00** Week		**$21,000.00** Month		**Total Sales**	**$ 6,250.00**

Special Notes-

Proposed system based on information provided. Adverse site and soil conditions may affect design and engineering. Contractor responsible to de-water to depth of excavation.

We appreciate the opportunity to quote your upcoming shoring requirements and look forward to working with you on this project.

	Per Truck	# Loads	Total Frieght
Delivery:	$500.00	4	$2,000.00
Pick-up:	$500.00	4	$2,000.00
*****Frieght based on		35,000	lbs per load.

**Quote subject to any and all Applicable Taxes, Customer Protection Plan, or Fee's;

This bid is based on estimated total items and rental duration. Changes to any of these assumptions will change the total cost. This bid is subject to equipment availability at the time of order. This bid is subject to all terms and conditions of Sunstate Equipments Rental Agreement. This quote is valid for 30 days.

Kinard Painting & Sandblasting, Inc.
P.O. BOX 713 - WYNNEWOOD, OKLAHOMA 73098 - BUS./FAX (405) 665-2324

Date: 05/08/24

Ref: PCO33 – Belzona Painting & Mortar Linning Application.

Dear Sir,

Kinard painting and Sandblasting, Inc is Pleased to have the opportunity to provide to you, our quote.
For the above referenced project our proposal is as follows:

PAINT SCHEDULE: Coating requirements for various elements of the project are as noted below:.

Lake Hefner WTP Ozone PCO33	
Surface Prep & Coat using belzona on exterior repairs of existing 84" pipe. Apply mortar lining to interior repairs of 84" pipe.	**$11,725.00**
Disinfection of 84" pipe per AWWA C652-11 Method II.	**$3,000.00**

- Mortar lining materials to be provided by CHC.

We appreciate the opportunity to be of service to you and your company should you have any questions or require any additional assistance please do not hesitate to call.

Best Regards

Chris Kinard, V.P.

KUHN Mechanical

Mechanical Contractors
400 E. Central – Link 5
PO Box 1022
Ponca City, OK 74601
(800) 620-3019

Proposed Change Request

Date: 05/03/2024

Att: Mitch Ralston – Crossland Heavy Construction

Re: Hefner WTP Ozone Expansion – Chemical Feed Vault Replacement

Scope of Work: Piping/welding labor and materials to install (4) chemical lines and associated taps for the construction of new chemical feed vault. We have included the following clarifications, exclusions, and stipulations to our scope.

Clarifications: Bid amount includes the following clarifications to our scope of work.

1. **Existing Vault:**

1	Cut off (4) existing feed taps and weld patch plates to existing 84” pipe.
2	Cut off (3) existing chemical feed supports within 84" pipe.
3	Demo chemical/sample piping within vault.
4	Fabricate diffusers and diffuser supports - (1x) 6" CLS, (1x) 2" LAS
5	Remove existing sample pump for relocation (control panel by others).

2. **New Vault:**

6	ZOP Tap & Piping within vault (1-1/2" Sch 80 PVC)
	1-1/2" weldlet, cut hole
	Install SAFE-T-FLO MODEL HS150-S-A-24-0-05 injection quill.
	1.5" Tee with MHPT drain valve
	Piping and wall supports (3)
7	CLS Tap & Piping within vault (6" Sch 80 PVC)
	8" steel flange with fillet weld.
	Install 6" prefabricated injection quill.
	Install quill support at bottom of 84" pipe. Add poly spacers.
	96" Spool piece above quill
	Tee with MHPT drain valve
	Piping and wall supports (3)
	6" True Union Ball Valve
8	LAS Tap & Piping within vault (1.5" Sch 80 PVC)
	4" flange with fillet weld.
	Install 1.5" prefabricated injection quill.
	Install quill support at bottom of 84" pipe. Add poly spacers.
	Tee with MHPT drain valve
	Piping and wall supports (3)
	1" True Union Ball Valve

KUHN Mechanical

Mechanical Contractors
400 E. Central – Link 5
PO Box 1022
Ponca City, OK 74601
(800) 620-3019

9	Sample Water Tap & Piping within vault (Stainless Steel)
	3" flange with fillet weld.
	1.5" pipe with foot valve
	1.5" SS Ball Valve, Unions
	Install salvaged pump
	Reduce to 3/4"
	3/4" piping and wall supports
	Clean stainless steel piping per CGA-G4.1
	Pickle exterior welds of stainless piping
10	Insulate all chemical/sample piping with 1.5" closed cell polyurethane and pvc jacket.
11	8" Schedule 10S 316 SST Vent Pipe. Provide size 24 Mesh SST Insect screen sandwiched between flanges.

Exclusions: The following are excluded from our scope of work.
1. Coatings, epoxies, painting or priming of field installed work regardless of where specified.
2. Concrete & grout work including chipping, coring, and saw-cutting.
3. Electrical power or control wiring.
4. Control, instrumentation, and safety devices not limited to motorized valves, temperature or pressure indicators, transmitters, surge protectors, analyzers, flow meters, etc.
5. Dewatering, sediment, and erosion control.
6. Piping and appurtenances not shown in drawings.
7. Yard Piping outside of vaults.
8. Sleeves & seals.
9. Valve operator extensions.
10. Disinfection of 84” pipe.

Stipulations:
1. Proposal is dependent upon an equally acceptable and equitable contract agreement or change order.
2. Proposal is based on a 40-hour work week of 10-hours per day.
3. Project schedule shall allow for our input and sufficient working days for us to effectively perform our work.
4. Required shutdowns to be performed by GC or Owner.

Price - $ 65,548.00

***Material Sales Tax Included**
Proposal is valid for 30-days.

Thank You
Chris Rogers
Project Manager

Oil Capital Electric, LLC
37 NE 31st Street
Oklahoma City, OK 73105
Phone: (405) 840-8998 Fax: (405) 840-9120
Oklahoma License No. 1588

PCO-33 Electrical Mods PMP04002

Date: April 11, 2024
Project: Hefner Ozone WT-0151
To: Crossland Heavy Change Order:
Description: Electrical per PCO-33 Relocate LCP04002, Install Quazite Box, Extend Conduit Conductors

Material	Quantity	Cost	Total
Relocate LCP04002	1	1	$ 1.00
Disconnect/Reconnect PMP04002	1	37.5	$ 37.50
Demo Conduit back to safe location	1	75	$ 75.00
Install New Quazite Box 14x14x12	1	350	$ 350.00
Extend 1" PCS	30	15.75	$ 472.50
1" Grding Bushings	2	35.25	$ 70.50
#12 XHHW Strd Cu.	75	0.9175	$ 68.81
#14 XHHW Strd. Cu.	175	0.675	$ 118.13
1/2" X5" SS Anchor bolts	8	13.75	$ 110.00
Conductor Tags	30	5.25	$ 157.50
Splice #12 Splice #14 in Quazite box	11	6.25	$ 68.75
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -
Expendables	0.05	1529	$ 76.45
		0	**$ 1,606.14**

Labor	Hours	Rate	Total
Superintendent	4	95.5	$ 382.00
Electrician	48	68.5	$ 3,288.00
		Subtotal	**$ 3,670.00**

Equipment	Quantity	Rate	Total
Small Tools	48	5	$ 240.00
Large Tools	48	8	$ 384.00
		Subtotal	**$ 624.00**

Subcontractor			Amount
Excavation & Back Fill	1	750	$ 750.00
			$ -
		Subtotal	$ 750.00

Bond	1.00%	$	66.50	Subtotal Above	$ 6,650.14
Insurance	2.00%	$	133.00	Subtotal Left Column	$ 1,335.55
Material Taxes	8.63%	$	138.53		
Overhead	10.00%	$	665.01		
Profit	5.00%	$	332.51	**ALL Total**	**$ 7,985.69**