

CONTRACT DOCUMENTS - DRAWINGS
FOR
PROJECT NO. WPC 23-1
FY'23 WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS

ATTENDANCE AT PRE-BID CONFERENCE IS MANDATORY

PREPARED BY:



HOLLOWAY, UPDIKE AND BELLEN, INC.
2001 N WILLOW AVE
BROKEN ARROW, OK 74102
918-251-0717 OFFICE
C.A. No. 219
EXPIRES 6-30-23



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

Stephen Tolar P.E., S.E. No. OK 20679

Date

3-1-2023
OKLAHOMA

ERIC LEE, DIRECTOR
WATER AND SEWER DEPARTMENT

Eric Lee, Director Water & Sewer Dept.

3-2-2023

Date

Matt Vaughan P.E., No. OK 19788

Date

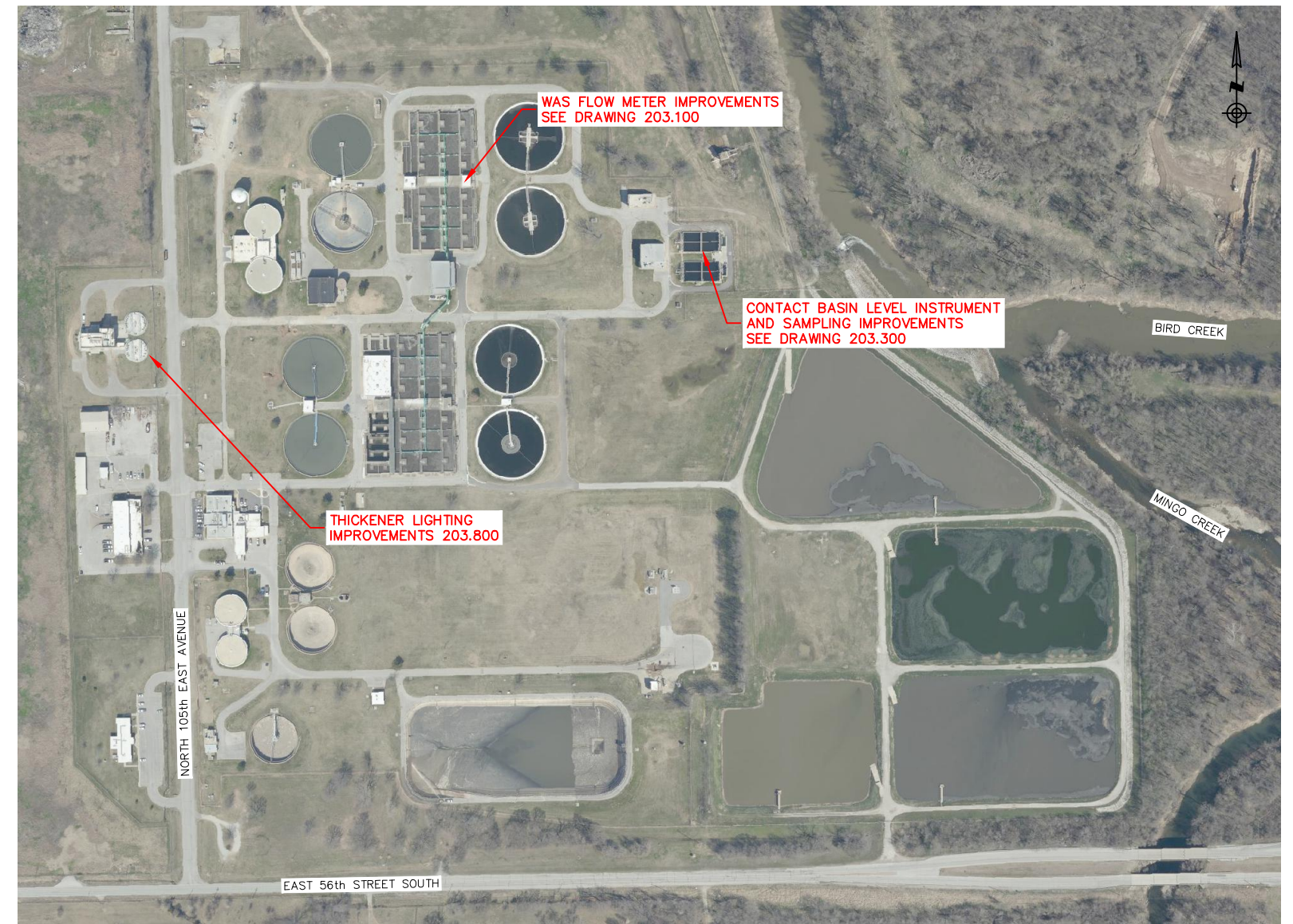
2-28-23

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 Contractors responsibility to verify information on the drawings to ensure the equipment installed or controlled by work performed under this Contract performs as specified herein.

Water and Sewer Department
175 E. 2nd Street, Suite 1400
Tulsa, Oklahoma 74103
(918) 596-9845



1 SOUTHSIDE WWTP
3 5300 S. ELWOOD AVE.




2 NORTHSIDE WWTP
3 5628 N. 105TH EAST AVE.



3 CHERRY CREEK LS
3 5628 N. 105TH EAST AVE.



REVISION	BY	DATE
BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" THIS SHEET, ADJUST SCALES ACCORDINGLY		
WATER POLLUTION CONTROL CAPITAL EQUIPMENT REPLACEMENTS TMUA PROJECT WPC 23-1		
LOCATION PLANS		
CITY OF TULSA, OKLAHOMA TULSA METROPOLITAN UTILITY AUTHORITY		
PLANS AND ESTIMATES PREPARED BY:  HOLLOWAY, UPDIKE + BELLEN, Inc. 2001 N. WILLOW AVE., BROOKHURST, OKLAHOMA 74102 (918) 258-0777, FAX (918) 258-0764		
PLAN SCALE:	DRAWN CAH DESIGNED TJR SURVEY	APPROVED:
PROFILE SCALE:	FIELD MGR. SECT. MGR. PROJ. MGR. TJR	
HORIZONTAL:		
VERTICAL:		
FILE:	DRAWING:	DATE: 2023
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1 LOWER BIRD CREEK WWTP
4 151 W. 36TH ST. N.



2 INTERCEPTOR LIFT STATION
4 8520 E. MOHAWK BLVD.

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**WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS
TMUA PROJECT WPC 23-1**

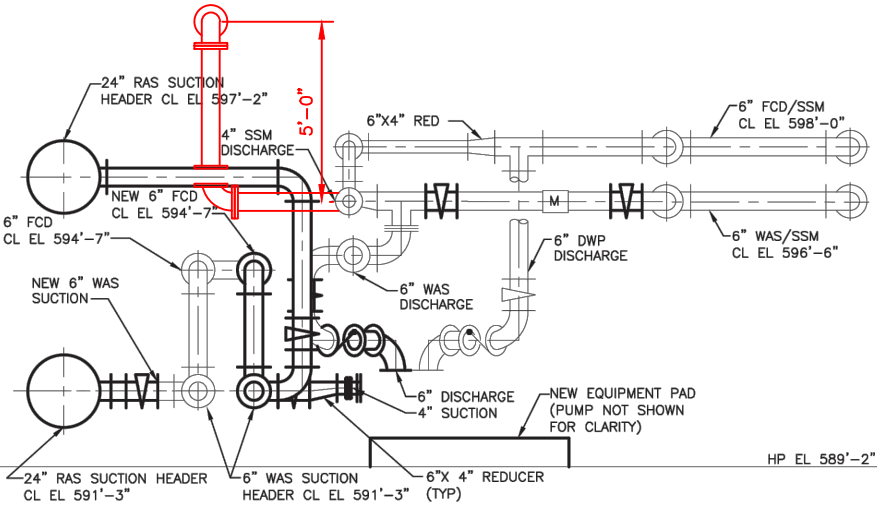
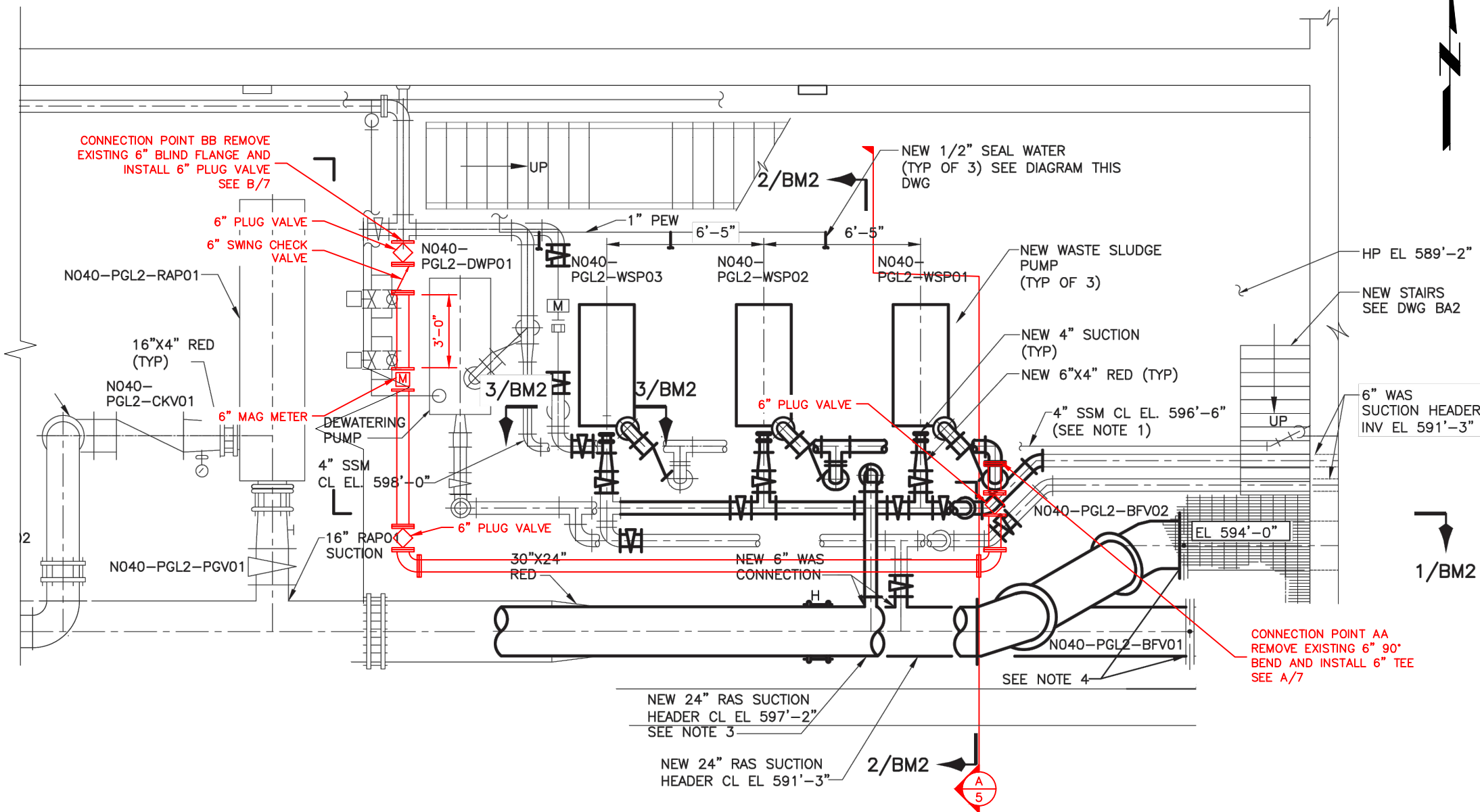
LOCATION PLANS

**CITY OF TULSA, OKLAHOMA
TULSA METROPOLITAN UTILITY AUTHORITY**

PLANS AND ESTIMATES PREPARED BY:  **HOLLOWAY, UPDIKE + BELLEN, Inc.**
2001 N. WILLOW AVE., BROKEN ARROW, OKLAHOMA 74012
918-258-0707, FAX 918-258-0764

PLAN SCALE:	DRAWN	CAH	APPROVED:
	DESIGNED	TJR	
	SURVEY		
PROFILE SCALE:	FIELD MGR.		
	SECT. MGR.		
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1 NSWWTP GALLERY 2 (NORTH) WAS METER PLAN
 5 SCALE: 3/8" = 1'-0"

A NSWWTP GALLERY 2 SECTION
 5 SCALE: 3/8" = 1'-0"

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**WATER POLLUTION CONTROL
 CAPITAL EQUIPMENT REPLACEMENTS
 TMUA PROJECT WPC 23-1**

**DRAWING 203.100.A NSWWTP WAS
 METER IMPROVEMENTS**

REFERENCE ORIGINAL ES 2003-12 PROJECT
 NITRIFILATE PHASE 2 RECORD DRAWINGS FOR
 ADDITIONAL DETAILS & INFORMATION

**CITY OF TULSA, OKLAHOMA
 TULSA METROPOLITAN UTILITY AUTHORITY**

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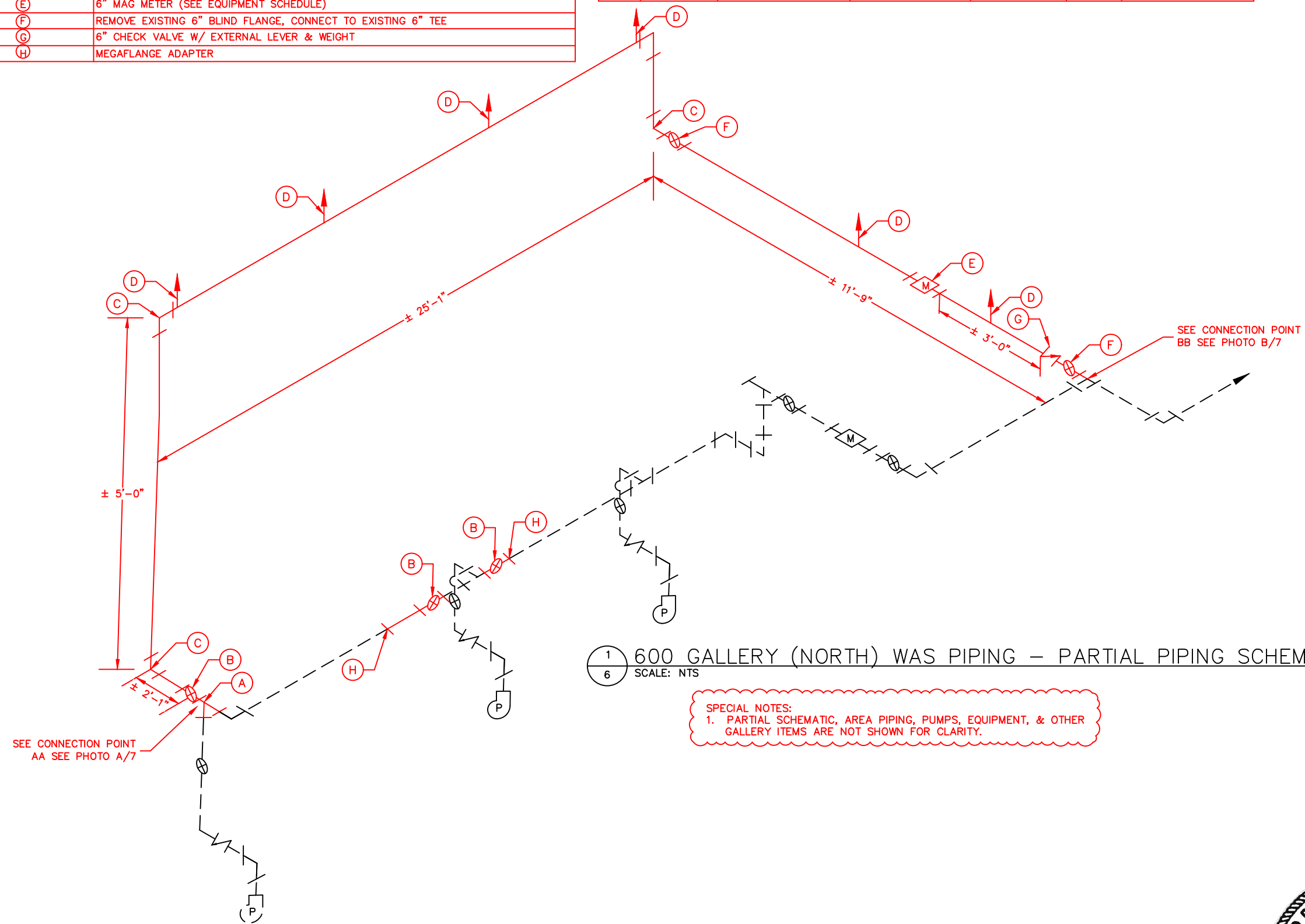


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PIPING SCHEDULE	
ID	DESCRIPTION
(A)	REMOVE EXISTING 6" 90° BEND, INSTALL 6" TEE
(B)	6" PLUG VALVE
(C)	6" 90° BEND FITTING
(D)	3/4" CEILING MOUNTED PIPE HANGERS (HDG)
(E)	6" MAG METER (SEE EQUIPMENT SCHEDULE)
(F)	REMOVE EXISTING 6" BLIND FLANGE, CONNECT TO EXISTING 6" TEE
(G)	6" CHECK VALVE W/ EXTERNAL LEVER & WEIGHT
(H)	MEGAFLANGE ADAPTER

EQUIPMENT SCHEDULE						
ID	QUANTITY	DESCRIPTION	MANUFACTURER	MODEL	SIZE	DETAILS
(E)	1	MAGNETIC FLOW METER	ENDRESS+ HAUSER, OR EQUAL	PROMAG W 400 METER, 5W4C1F, DN150 6", 5W4C1F-2DQX4/0(5W4C1F-AAILHP3D HA1KGA+EB)	6"	NEW REMOTE DISPLAY, FULLY POTTED

- NOTES:
- INSTALL NEW FLANGED DIP PIPING AS SHOWN FOR NEW 6" WAS METER INSTALLATION. CONTRACTOR MAY REUSE EXISTING DIP PIPING AND FITTINGS TO EXTENT POSSIBLE.
 - MODIFY EXISTING SPOOL PIECES AS REQUIRED TO ACCOMMODATE NEW VALVES, METER AND PIPING INSTALLATION. PROVIDE NEW DIP PIPING AS NECESSARY FOR A COMPLETE AND OPERABLE INSTALLATION.
 - REFER TO EQUIPMENT SCHEDULE AND SPECIFICATIONS FOR MAGNETIC FLOW METER REQUIREMENTS.
 - CONTRACTOR SHALL INSTALL A NEW REMOTE TRANSMITTER/FLOW DISPLAY ADJACENT TO THE EXISTING DISPLAY.
 - INSTALL NEW CONDUIT AND SENSOR CABLE FROM METER LOCATION TO REMOTE TRANSMITTER. ALL SENSOR CABLE SHALL BE NEW AND CONTINUOUS FROM METER TO DISPLAY.
 - INSTALL NEW CONDUIT AND CONTROL WIRE CIRCUITS FROM REMOTE TRANSMITTER TO LOCAL PLC. FOLLOW EXISTING CONDUIT ROUTING.
 - PROVIDE STARTUP AND INTEGRATION SERVICES TO ADD NEW WAS METER FLOW TO THE EXISTING HMI. CONFIRM METER FLOW IS ACCURATELY SCALED AND DISPLAYED ON EXISTING HMI.
 - PREPARE AND PAINT ALL NEW AND MODIFIED PIPING, FITTING AND VALVES. REFER TO SPECIFICATION SECTION 204.5 FOR REQUIREMENTS.
 - PROVIDE NEW 316SS BOLT SETS AND GASKETS FOR ALL MODIFIED PIPING.



1 600 GALLERY (NORTH) WAS PIPING – PARTIAL PIPING SCHEMATIC
6 SCALE: NTS

SPECIAL NOTES:
1. PARTIAL SCHEMATIC, AREA PIPING, PUMPS, EQUIPMENT, & OTHER GALLERY ITEMS ARE NOT SHOWN FOR CLARITY.

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WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS
TMUA PROJECT WPC 23-1

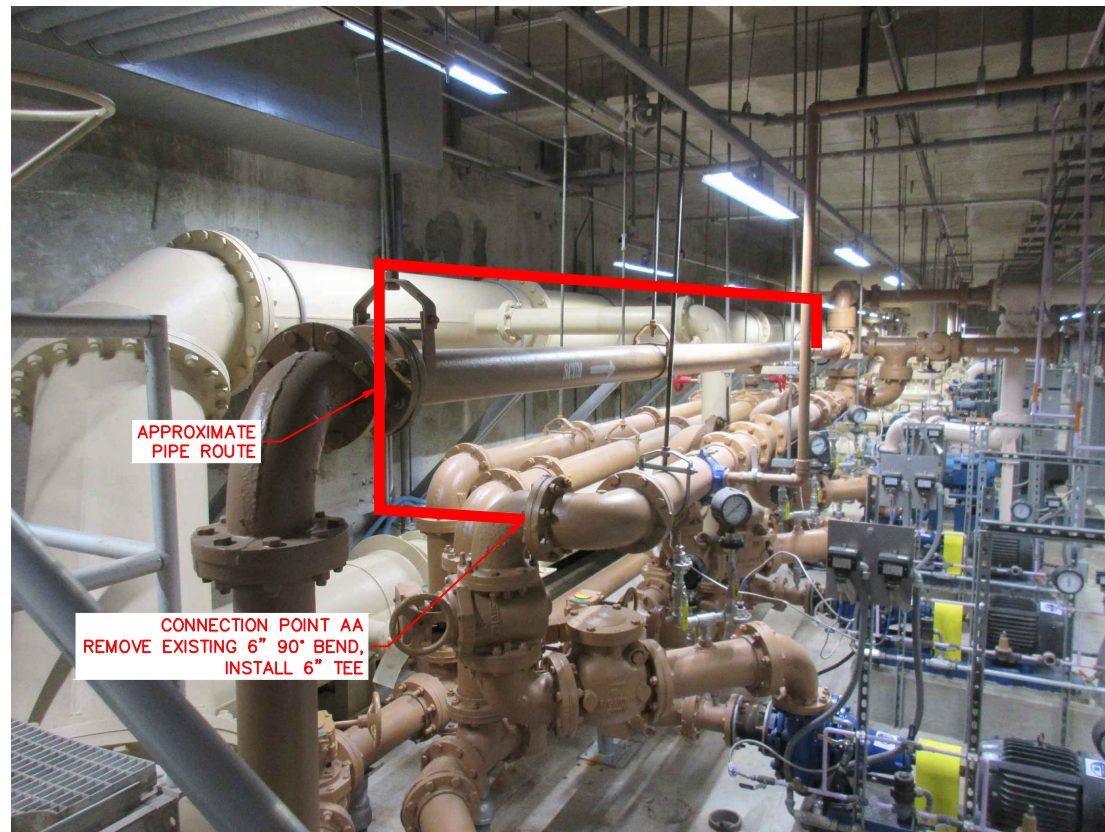
DRAWING 203.100.C
NSWWTP WAS METER IMPROVEMENTS

CITY OF TULSA, OKLAHOMA
TULSA METROPOLITAN UTILITY AUTHORITY

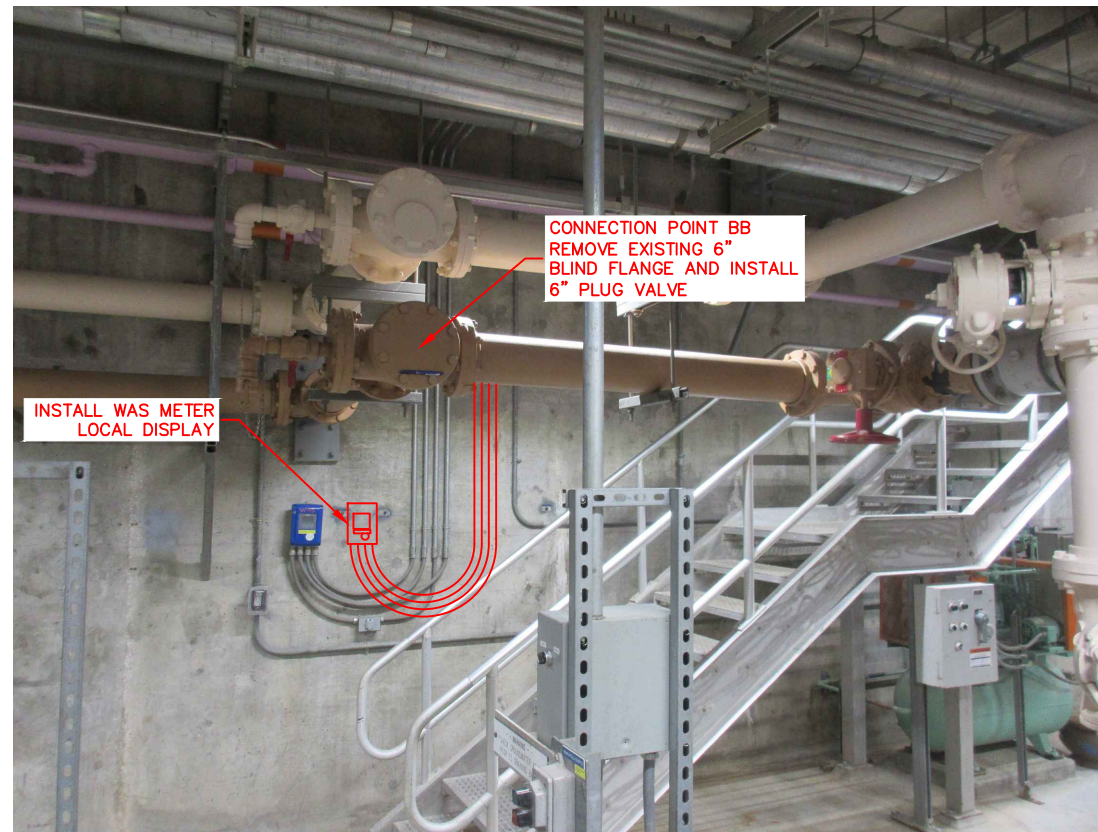
PLANS AND ESTIMATES
PREPARED BY: HOLLOWAY, UPDIKE + BELLEN, Inc.
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918-258-0770, FAX 918-258-0764

PLAN SCALE:	DRAWN	CAH	APPROVED:
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	SURVEY		
PROFILE SCALE:	FIELD MGR.		
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	PROJ. MGR.	TJR	
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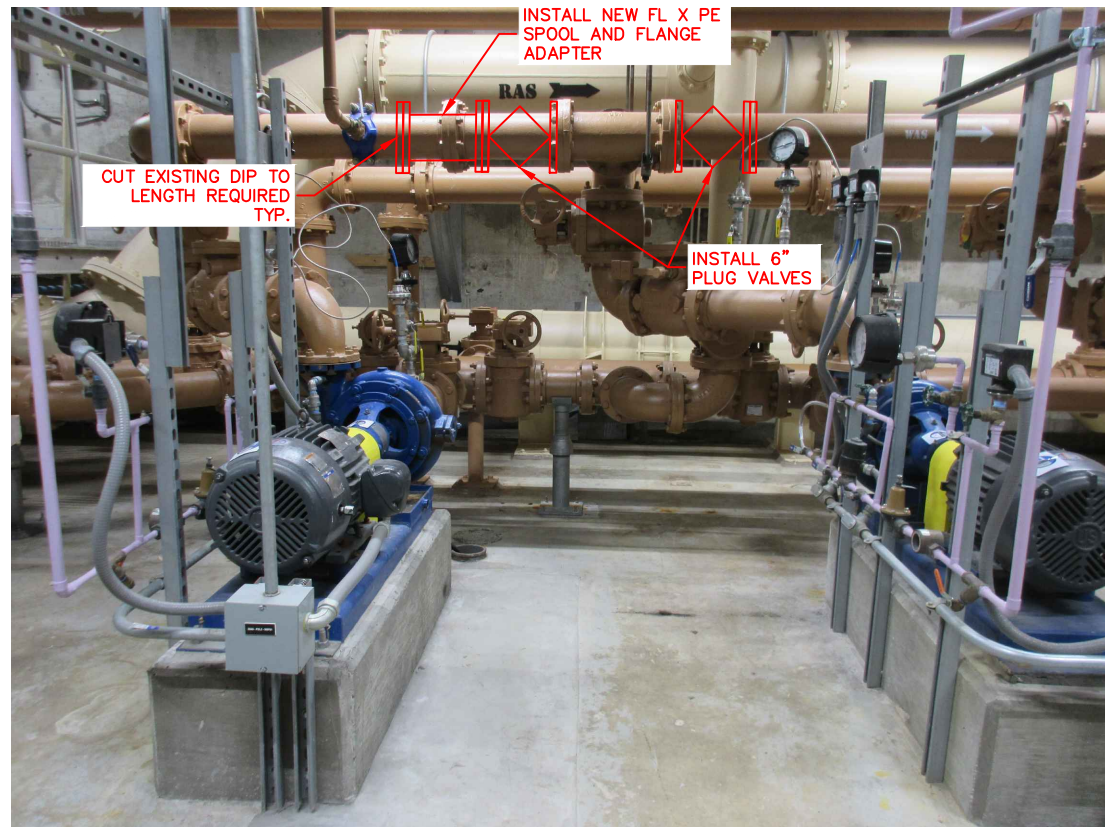




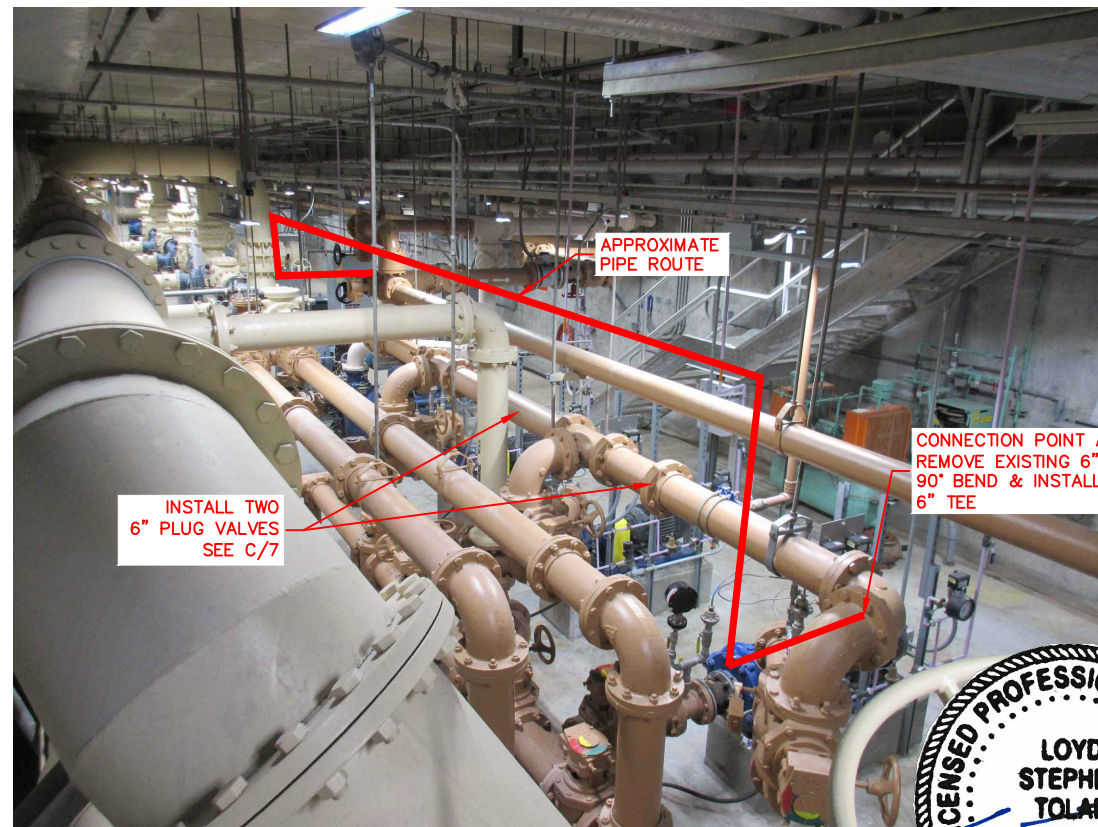
A PHOTO – CONNECTION AT WAS PUMP HEADER
 7 SCALE: NTS



B PHOTO – CONNECTION NEAR NEW WAS METER
 7 SCALE: NTS



C PHOTO – VALVE INSTALLATION AT WAS PUMPS
 7 SCALE: NTS



D PHOTO – CONNECTION AT WAS PUMP HEADER
 7 SCALE: NTS

ELECTRICAL NOTES:

1. FURNISH AND INSTALL NEW (3#12)3/4" C FROM 120 VOLT PANEL ABOVE TO NEW FLOW METER. FURNISH AND INSTALL NEW 20A/1P CIRCUIT BREAKER IN EXISTING PANEL.
2. FURNISH AND INSTALL NEW SIGNAL CABLE FROM TRANSMITTER TO EXISTING SCADA PANEL ABOVE, (2ISP16)3/4" C.

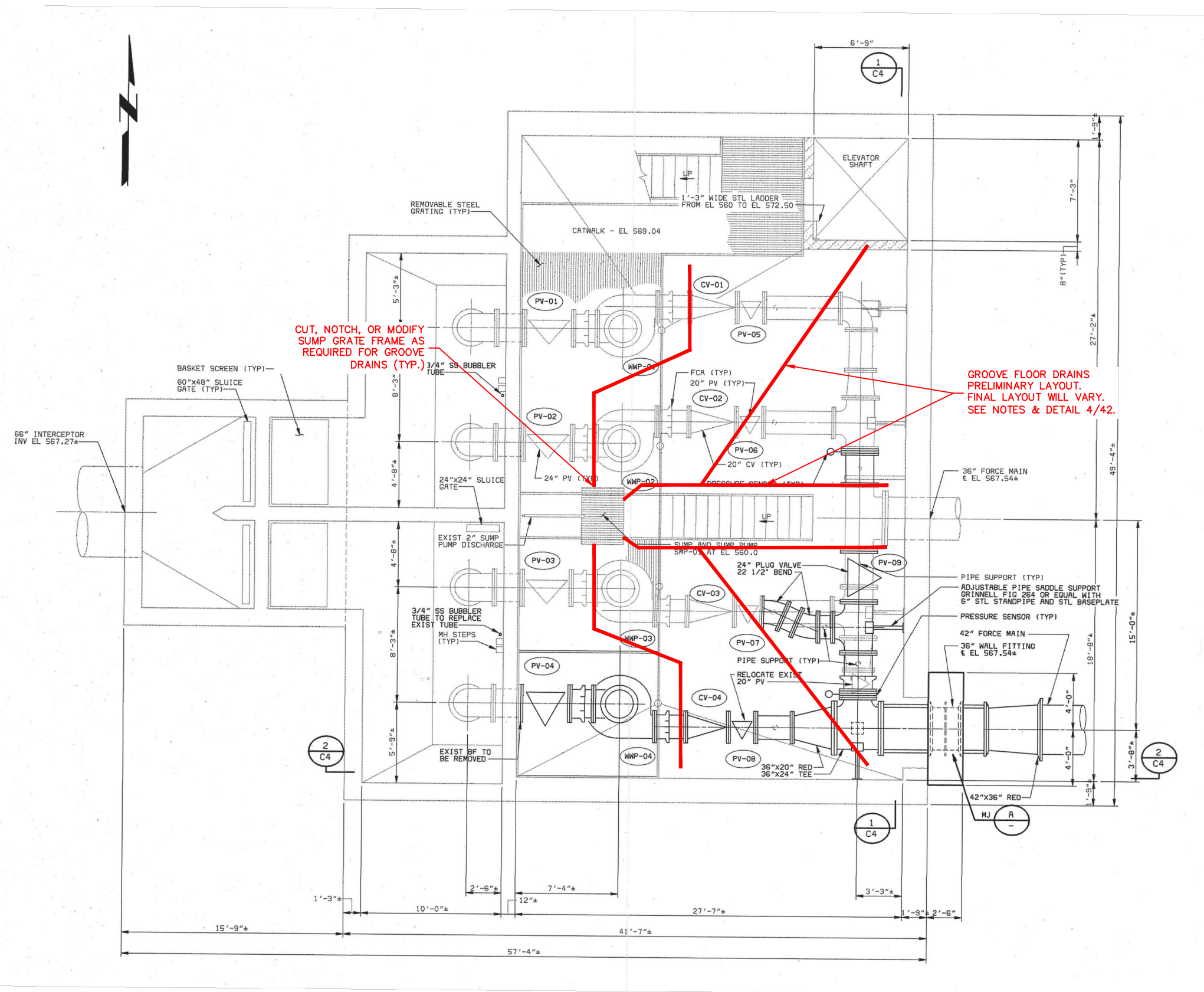
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WATER POLLUTION CONTROL CAPITAL EQUIPMENT REPLACEMENTS TMUA PROJECT WPC 23-1		
DRAWING 203.100.D NSWWTP WAS METER IMPROVEMENTS		
CITY OF TULSA, OKLAHOMA TULSA METROPOLITAN UTILITY AUTHORITY		
PLANS AND ESTIMATES PREPARED BY:		
PLAN SCALE:	DRAWN CAH DESIGNED TJR SURVEY	APPROVED:
PROFILE SCALE:	FIELD MGR. SECT. MGR. PROJ. MGR. TJR	
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FILE:	DRAWING:	DATE: 2023
ATLAS PAGE NO: ---		SHEET 7 OF 43 SHEETS



NOTES:

1. CONTRACTOR SHALL USE A LASER LEVEL AND PREPARE A SIMPLE PLAN SKETCH OF THE BASEMENT FLOOR SHOWING ELEVATIONS ON A 2' X 2' GRID. PERFORM THIS WORK AND SUBMIT DRAWING AS A PROJECT SUBMITTAL.
2. OWNER'S REPRESENTATIVE WILL REVIEW SUBMITTAL, MODIFY LAYOUT AS REQUIRED, AND COORDINATE AN ONSITE MEETING TO REVIEW WITH OWNER AND CONTRACTOR PRIOR TO WORK.
3. ALL GROOVING SHALL BE PERFORMED BY A CONCRETE GROOVING MACHINE DESIGNED FOR THAT PURPOSE.
4. GROOVE DEPTH WILL VARY BASED ON GROOVE LENGTHS. CONTRACTOR SHALL MAINTAIN FALL IN STEPPED INCREMENTS FROM START TO END. INCLUDE 20 SF OF HAND-TOOL GRINDING UP TO 3/8" IN DEPTH TO SUPPLEMENT THE DRAIN GROOVING IN AREAS AND WORK IDENTIFIED BY NOTE #1.



1 INTERCEPTOR LS BASEMENT FLOOR DRAIN PLAN
 8 SCALE: 1/4"=1'

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WATER POLLUTION CONTROL
 CAPITAL EQUIPMENT REPLACEMENTS
 TMUA PROJECT WPC 23-1

DRAWING 203.200
 INTERCEPTOR L.S. BASEMENT FLOOR
 DRAINAGE IMPROVEMENTS

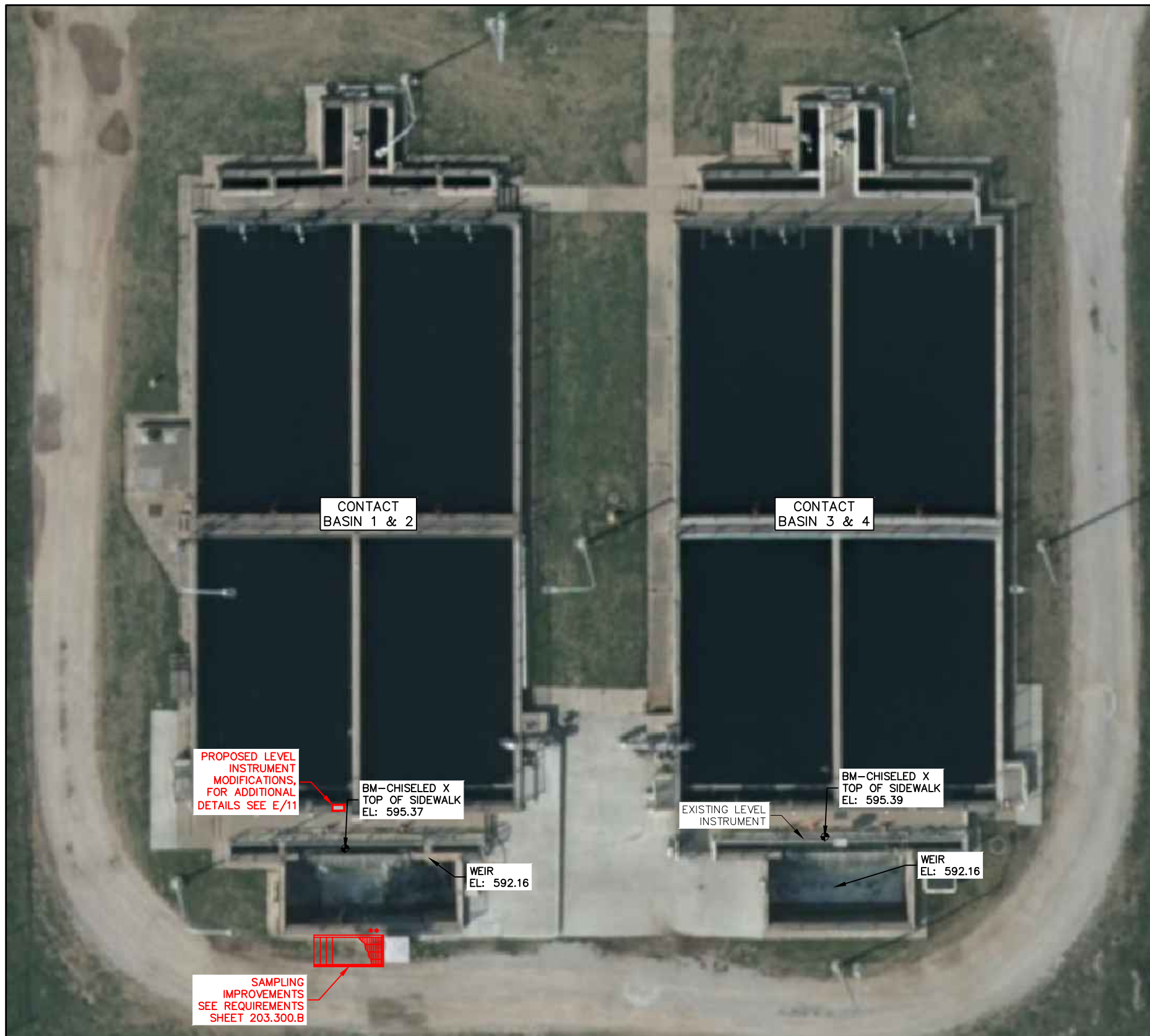
CITY OF TULSA, OKLAHOMA
 TULSA METROPOLITAN UTILITY AUTHORITY

PLANS AND ESTIMATES PREPARED BY: **HOLLOWAY, UPDIKE + BELLEN, Inc.**
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PLAN SCALE:	DRAWN: CAH	DESIGNED: TJR	SURVEY:	APPROVED:
PROFILE SCALE:	FIELD MGR.	SECT. MGR.	PROJ. MGR. TJR	
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1
9 SITE PLAN @ CHLORINE CONTACT BASINS
SCALE: 1"=10'

ADDITIVE ALTERNATE #1

REVISION	BY	DATE

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WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS
TMUA PROJECT WPC 23-1

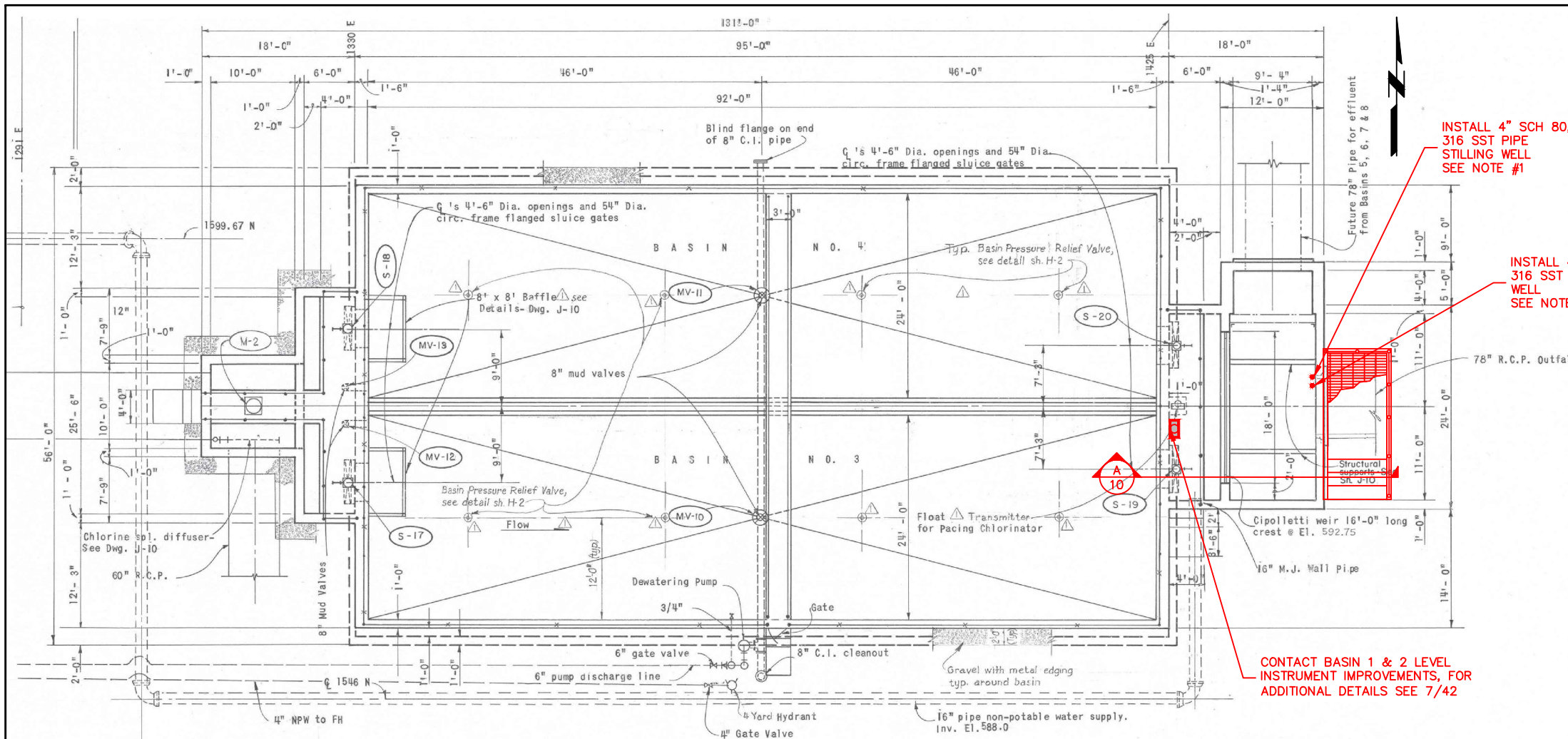
DRAWING 203.300.A
NSWWTP CONTACT BASIN LEVEL
INSTRUMENT & SAMPLING

CITY OF TULSA, OKLAHOMA
TULSA METROPOLITAN UTILITY AUTHORITY

PLANS AND ESTIMATES
PREPARED BY:  HOLLOWAY, UPDIKE + BELLEN, Inc.
2001 N. WILLOW AVE., BROCKEN ARROW, OKLAHOMA 74002
918-628-0707, FAX 918-628-0764

PLAN SCALE:	DRAWN	CAH	APPROVED:
	DESIGNED	TJR	
	SURVEY		
PROFILE SCALE:	FIELD MGR.		
	SECT. MGR.		
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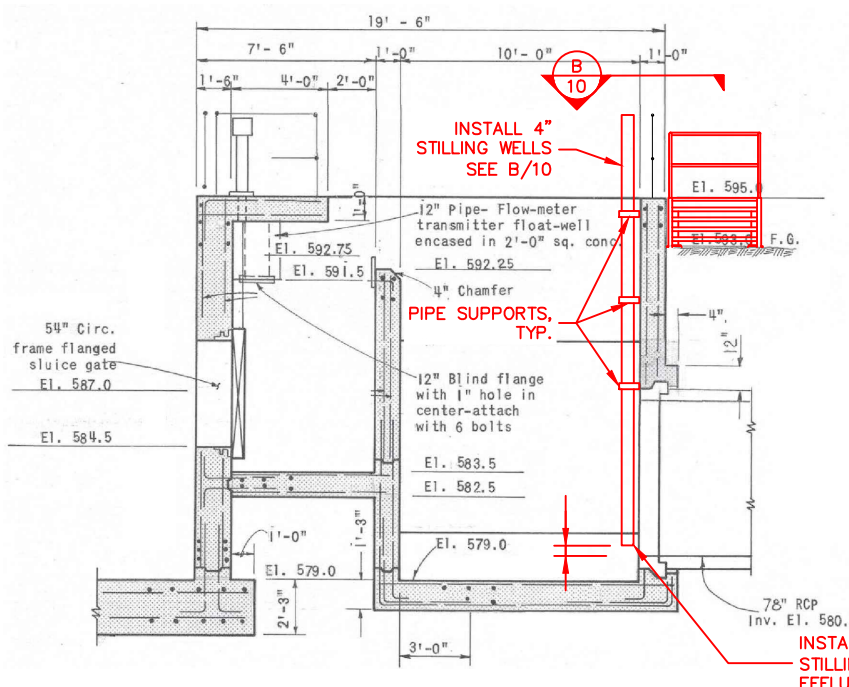
- NOTES:**
1. INSTALL NEW 4" STILLING WELL FOR PH PROBE. RELOCATE AND REINSTALL EXISTING PH PROBE. ROUTE PROBE CABLE BACK TO EXISTING TERMINATION POINT.
 2. INSTALL NEW 4" STILLING WELL FOR EXISTING AUTO-SAMPLER. INSTALL NEW 3/8" BRAIDED POLY TUBING TO BOTTOM OF WELL AND BACK TO THE EXISTING AUTO-SAMPLER.
 3. PIPE SUPPORTS SHALL BE 316 STAINLESS STEEL SADDLE CLAMP STYLE WITH TWO 5/8" ALL THREAD EPOXY ANCHOR BOLTS. PROVIDE 1/8" NEOPRENE RUBBER GASKET AROUND PIPE AT SUPPORTS.
 4. CONTRACTOR SHALL DEMOLISH AND REMOVE EXISTING PVC STILLING WELLS, BRACKETS, AND SUPPORTS ENTIRELY.

INSTALL 4" SCH 80 316 SST STILLING WELL SEE NOTE #2

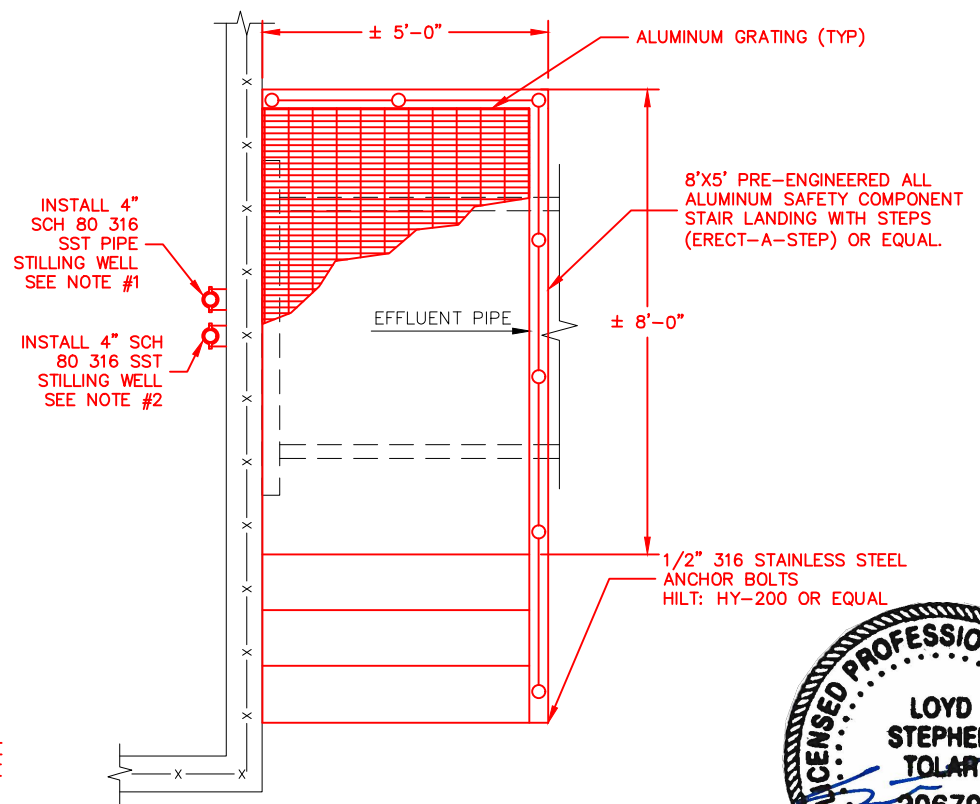
INSTALL 4" SCH 80, 316 SST PIPE STILLING WELL SEE NOTE #1

CONTACT BASIN 1 & 2 LEVEL INSTRUMENT IMPROVEMENTS, FOR ADDITIONAL DETAILS SEE 7/42

1 PLAN @ CHLORINE CONTACT BASIN
SCALE: 1/8"=1'



A SECTION @ CHLORINE CONTACT BASIN
SCALE: 1/8"=1'



INSTALL 4" SCH 80 316 SST PIPE STILLING WELL SEE NOTE #1

INSTALL 4" SCH 80 316 SST STILLING WELL SEE NOTE #2

INSTALL THE BOTTOM OF THE STILLING WELL 6" ABOVE THE EFFLUENT PIPE INVERT

B DETAIL PLAN @ STILLING WELL
SCALE: 3/8"=1'

ADDITIVE ALTERNATE #1

REVISION	BY	DATE

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WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS
TMUA PROJECT WPC 23-1

DRAWING 203.300.B
NSWWTP CONTACT BASIN LEVEL
INSTRUMENT & SAMPLING

REFERENCE ORIGINAL SA 69-7 C1
RECORD DRAWINGS FOR ADDITIONAL
DETAILS & INFORMATION

CITY OF TULSA, OKLAHOMA
TULSA METROPOLITAN UTILITY AUTHORITY

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PLAN SCALE:	DRAWN: CAH	DESIGNED: TJR	SURVEY:	APPROVED:
PROFILE SCALE:	FIELD MGR.	SECT. MGR.	PROJ. MGR. TJR	
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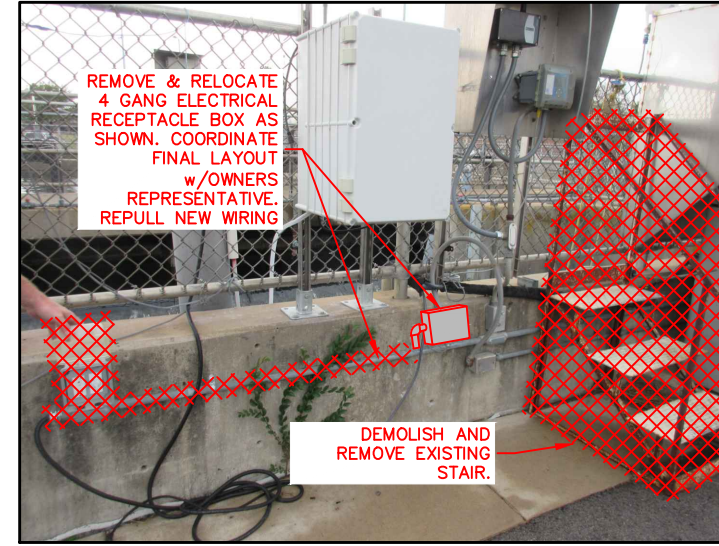




A PHOTO @ CONTACT BASIN WEIR
SCALE: NTS



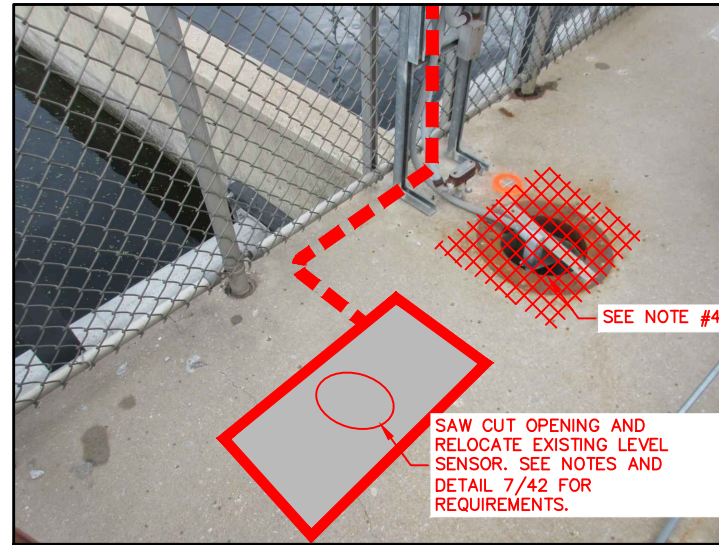
B PHOTO @ CONTACT BASIN WEIR
SCALE: NTS



C PHOTO @ CONTACT BASIN
SCALE: NTS



D PHOTO @ CONTACT BASIN 3 & 4
SCALE: NTS



E PHOTO @ CONTACT BASIN 1 & 2
SCALE: NTS

NOTES:

1. CONTRACTOR SHALL SAWCUT EXISTING CONCRETE DECK AND RELOCATE EXISTING LEVEL SENSOR. PROVIDE A COMPLETE INSTALLATION SIMILAR TO THE EXISTING OPENING AT BASINS 3 & 4 AS SHOWN IN PHOTO D/11. REFER TO DETAIL 7/42
2. INSTALL NEW CONDUIT AND PULL EXISTING SENSOR CABLE BACK TO EXISTING TERMINATION POINT.
3. NOTCH CONCRETE AND INSTALL NEW CONDUIT BELOW CONCRETE WALKWAY SURFACE. GROUT FILL FLUSH AND MATCH EXISTING CONCRETE SURFACE. INSTALLATION SHALL BE PERFORMED IN A MANNER THAT WILL PREVENT A TRIPPING HAZARD.
4. DEMOLISH DIP, DIP FLANGE, & 4" OF CONCRETE SLAB AS INDICATED. REPAIR CONCRETE SLAB WALKWAY WITH 4" OF CONCRETE MATCHING THE EXISTING WALKWAY SURFACE.

ADDITIVE ALTERNATE #1

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CAPITAL EQUIPMENT REPLACEMENTS
TMUA PROJECT WPC 23-1

DRAWING 203.300.C
NSWWTP CONTACT BASIN LEVEL
INSTRUMENT & SAMPLING

REFERENCE ORIGINAL SA 83-17
RECORD DRAWINGS FOR ADDITIONAL
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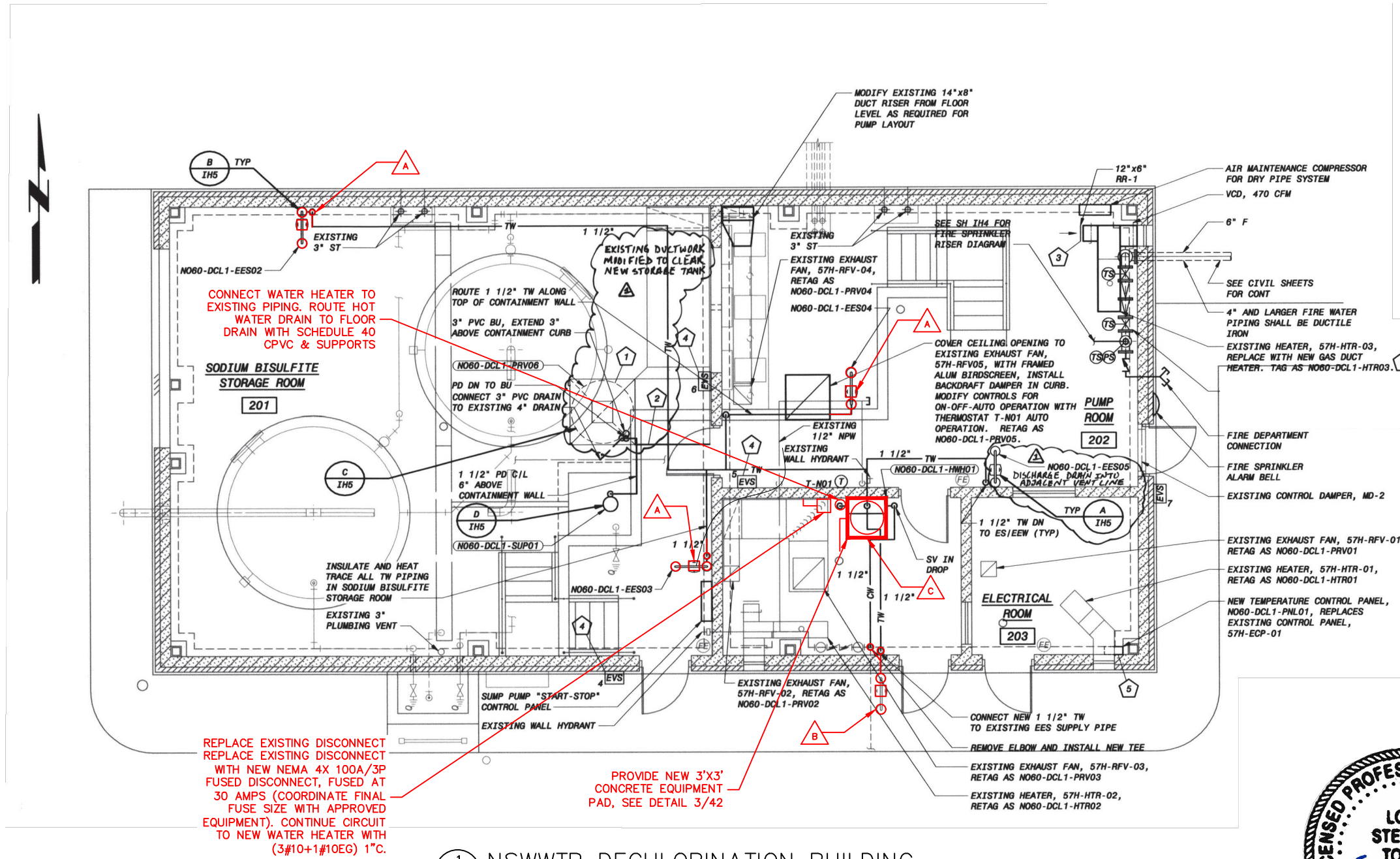


EQUIPMENT SCHEDULE				
SYMBOL	DESCRIPTION	MANUFACTURER	MODEL	DETAILS
△	COMBINATION SHOWER AND EYE WASH STATION	BRADLEY, HAWS OR EQUAL	BRADLEY S19-31400	INTERIOR, TOP SUPPLY GENERAL AREA HAND/FOOT OPERATED
△	COMBINATION SHOWER AND EYE WASH STATION	BRADLEY, HAWS OR EQUAL	BRADLEY S19-304GATL	EXTERIOR, TOP SUPPLY GENERAL AREA INSULATED, HEAT TRACE INDICATOR LIGHTS
△	EMERGENCY SAFETY SHOWER WATER HEATER SYSTEM	THERM-OMEGA TECH, OR EQUAL	ESS 389-007010-000	115 GALLON WITH TEPID WATER MIXING VALVE 85 DEGREE OUTPUT TEMP 170 DEGREE STORAGE TEMP 12 KW, 480/3/60

NOTE: SCHEDULE APPLIES TO DRAWING 203.400.A AND 203.400.B

NOTES:

- CONTRACTOR SHALL COORDINATE WORK AS REQUIRED TO KEEP EYE WASH SYSTEMS IN SERVICE TO GREATEST EXTENT POSSIBLE.
- DEMOLISH AND REMOVE EXISTING COMBINATION SAFETY SHOWER AND EYE WASH UNITS ENTIRELY.
- PROVIDE ALL PIPE AND FITTINGS REQUIRED TO MAKE NEW CONNECTIONS. MATCH EXISTING PIPE MATERIALS.
- ALL NEW COPPER PIPING SHALL BE PAINTED PRIOR TO INSULATION INSTALLATION.
- ALL NEW INTERIOR TEPID WATER PIPE SHALL BE INSULATED. MATCH EXISTING MATERIALS.
- NOTE THAT TEPID WATER PIPING AND SHOWER UNITS IN THE CHEMICAL STORAGE TANK AREAS ARE CURRENTLY HEAT TRACED. THIS IS NO LONGER REQUIRED AND THE EXISTING HEAT TRACING MAY BE REMOVED AS NECESSARY FOR NEW INSTALLATION.
- ALL NEW EXTERIOR TEPID WATER PIPING AND SHOWER UNITS SHALL BE INSULATED WITH NEW PVC JACKETED INSULATION AND NEW HEAT TRACING. RECONNECT TO EXISTING HEAT TRACE CIRCUIT.



A PHOTO - EXISTING
SCALE: NTS

ADDITIVE ALTERNATE #2

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WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS
TMUA PROJECT WPC 23-1

DRAWING 203.400.A
NSWWTP DECHLORINATION BUILDING
SHOWER/EYE WASH REPLACEMENT

REFERENCE ORIGINAL SA 05-19 CONTRACT 2
RECORD DRAWINGS FOR ADDITIONAL
DETAILS & INFORMATION

CITY OF TULSA, OKLAHOMA
TULSA METROPOLITAN UTILITY AUTHORITY

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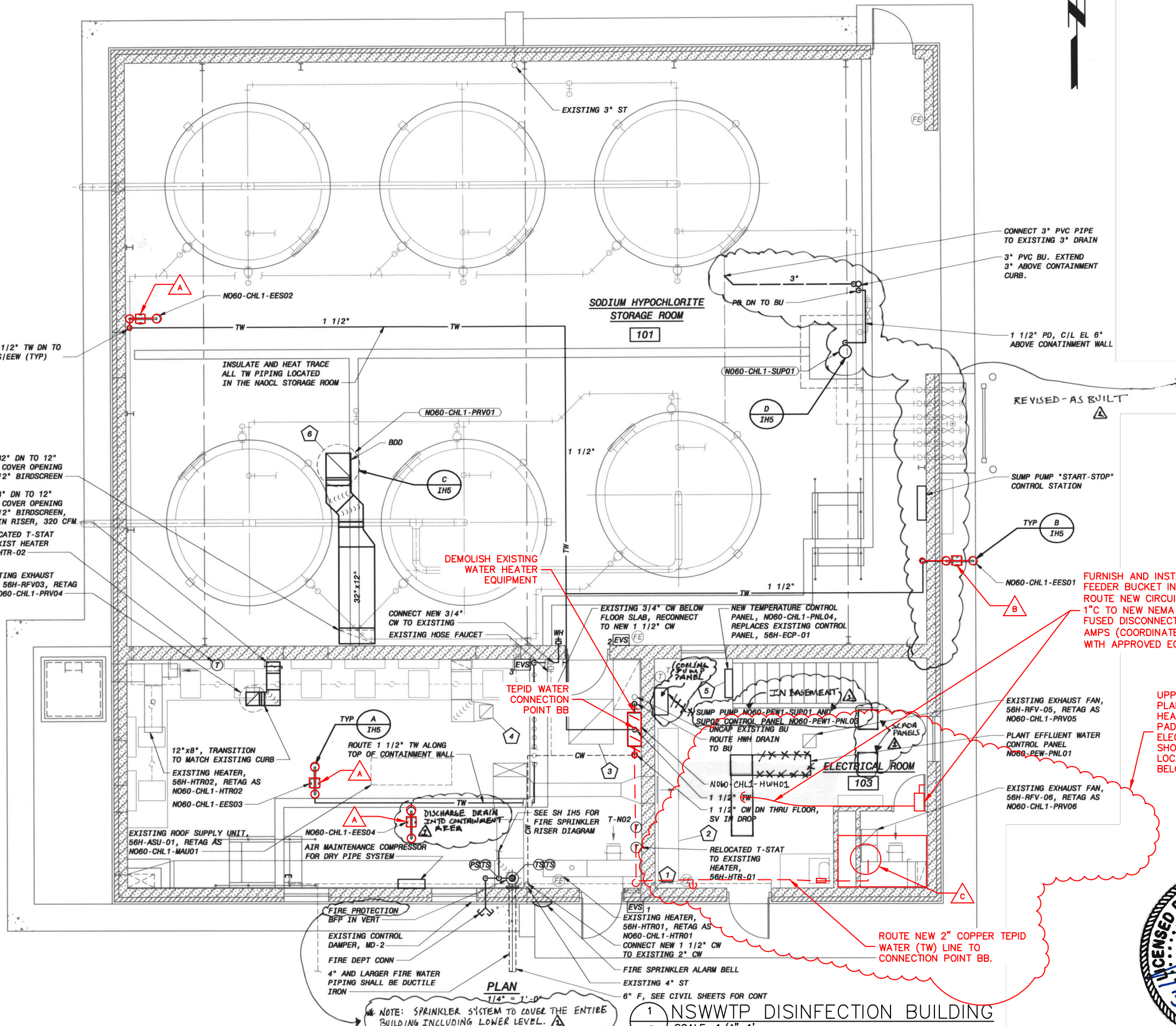
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	SECT. MGR:	
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ATLAS PAGE NO: ---		SHEET 12 OF 43 SHEETS



1 NSWWTP DECHLORINATION BUILDING
SCALE: NTS

NOTES:

1. CONTRACTOR SHALL COORDINATE WORK AS REQUIRED TO KEEP EYE WASH SYSTEMS IN SERVICE TO GREATEST EXTENT POSSIBLE.
2. DEMOLISH AND REMOVE EXISTING COMBINATION SAFETY SHOWER AND EYE WASH UNITS ENTIRELY.
3. PROVIDE ALL PIPE AND FITTINGS REQUIRED TO MAKE NEW CONNECTIONS. MATCH EXISTING PIPE MATERIALS.
4. ALL NEW COPPER PIPING SHALL BE PAINTED PRIOR TO INSULATION INSTALLATION.
5. ALL NEW INTERIOR TEPID WATER PIPE SHALL BE INSULATED. MATCH EXISTING MATERIALS.
6. NOTE THAT TEPID WATER PIPING AND SHOWER UNITS IN THE CHEMICAL STORAGE TANK AREAS ARE CURRENTLY HEAT TRACED. THIS IS NO LONGER REQUIRED AND THE EXISTING HEAT TRACING MAY BE REMOVED AS NECESSARY FOR NEW INSTALLATION.
7. ALL NEW EXTERIOR TEPID WATER PIPING AND SHOWER UNITS SHALL BE INSULATED WITH NEW PVC JACKETED INSULATION AND NEW HEAT TRACING. RECONNECT TO EXISTING HEAT TRACE CIRCUIT.



ADDITIVE ALTERNATE #2

FURNISH AND INSTALL NEW 30A/3P FEEDER BUCKET IN EXISTING MCC AND ROUTE NEW CIRCUIT (3#10+1#10EG) 1" C TO NEW NEMA 4X 100A/3P FUSED DISCONNECT, FUSED AT 30 AMPS (COORDINATE FINAL FUSE SIZE WITH APPROVED EQUIPMENT).

UPPER LEVEL FLOOR PLAN SHOWN. WATER HEATER, CONCRETE PAD, PLUMBING AND ELECTRICAL WORK SHOWN HERE ARE LOCATED IN BASEMENT BELOW.

ROUTE NEW 2" COPPER TEPID WATER (TW) LINE TO CONNECTION POINT BB.

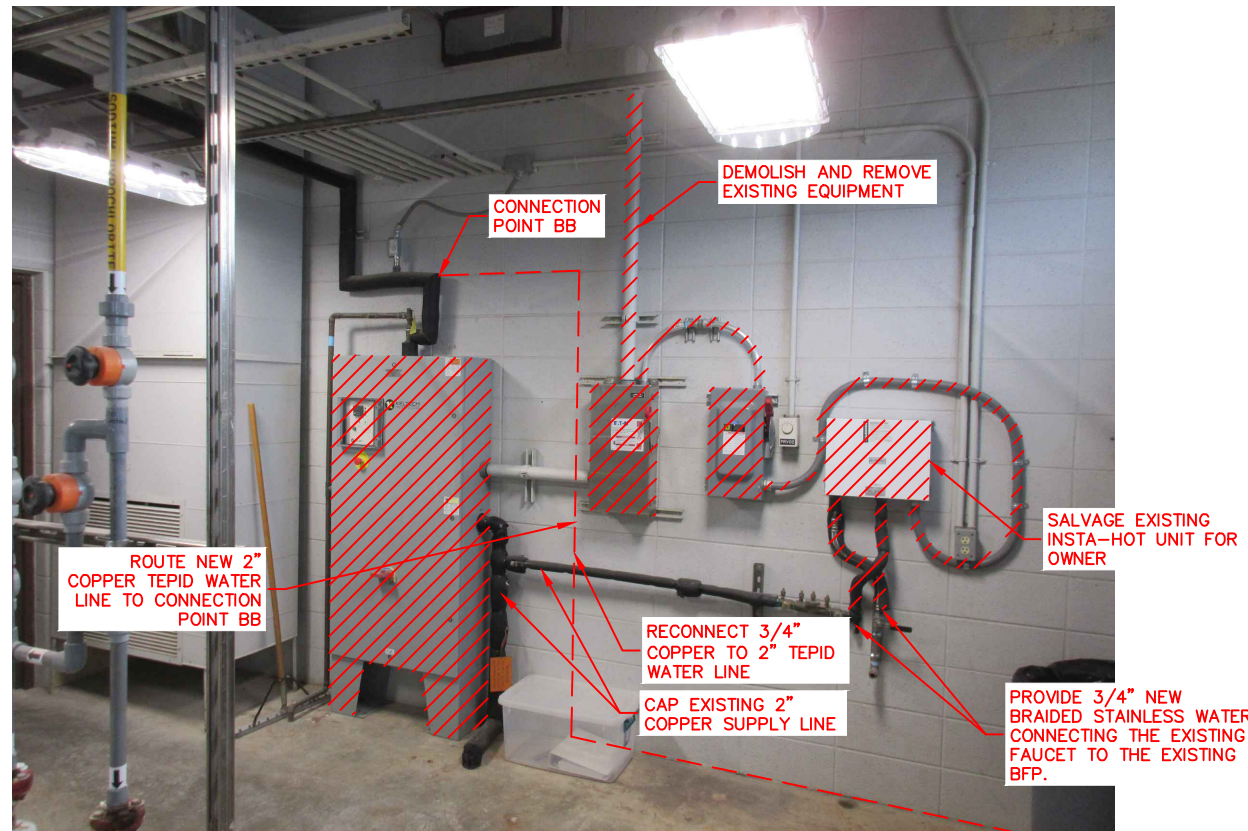
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WATER POLLUTION CONTROL CAPITAL EQUIPMENT REPLACEMENTS
 TMUA PROJECT WPC 23-1
 DRAWING 203.400.B
 NSWWTP DECHLORINATION BUILDING SHOWER/EYE WASH REPLACEMENT
 REFERENCE ORIGINAL SA 05-19 CONTRACT 2 RECORD DRAWINGS FOR ADDITIONAL DETAILS & INFORMATION
 CITY OF TULSA, OKLAHOMA
 TULSA METROPOLITAN UTILITY AUTHORITY

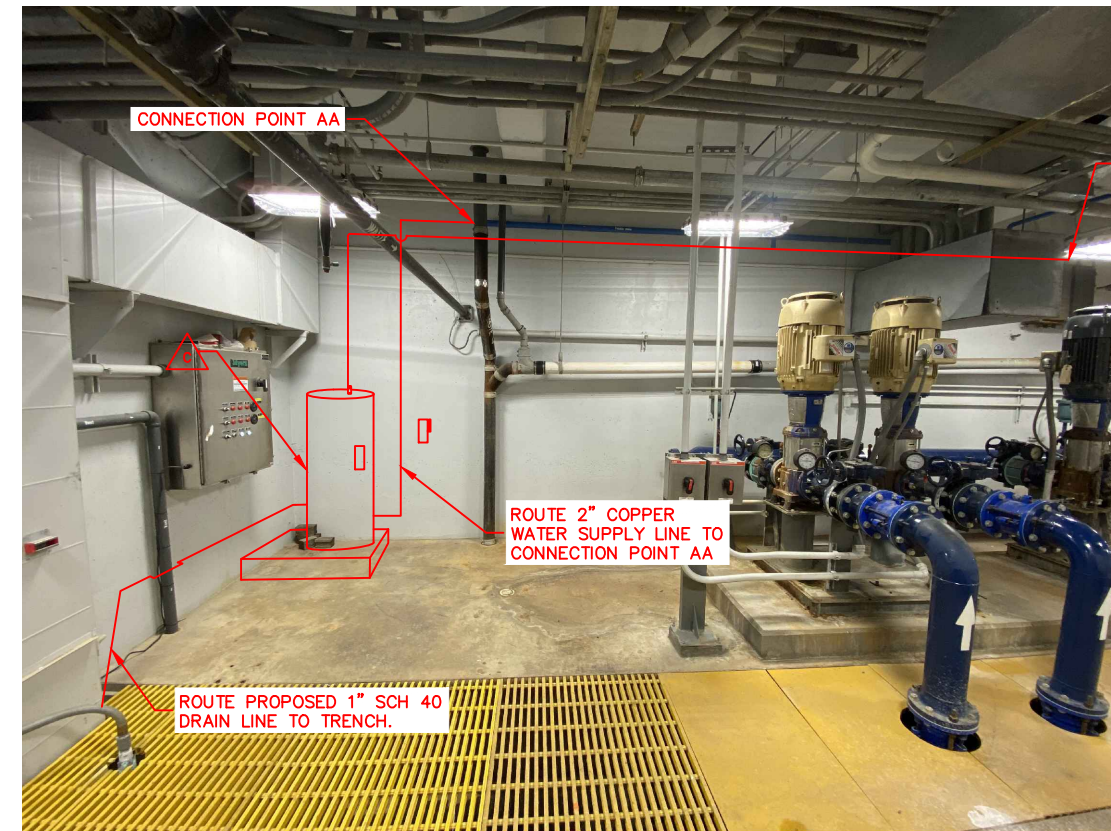
PLANS AND ESTIMATES PREPARED BY:		HOLLOWAY, UPDIKE + BELLEN, Inc. 2001 N. WILLOW AVE., BROKEN ARROW, OKLAHOMA 74002 (918)298-0770, FAX (918)298-0764	
PLAN SCALE:	DRAWN	CAH	APPROVED:
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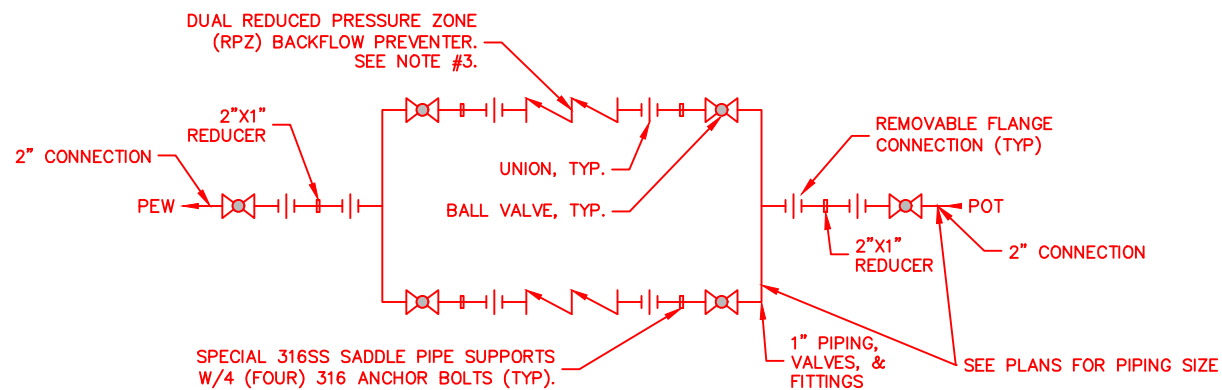
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A PHOTO – DISINFECTION BUILDING EXISTING WATER HEATER
 14 SCALE: NTS

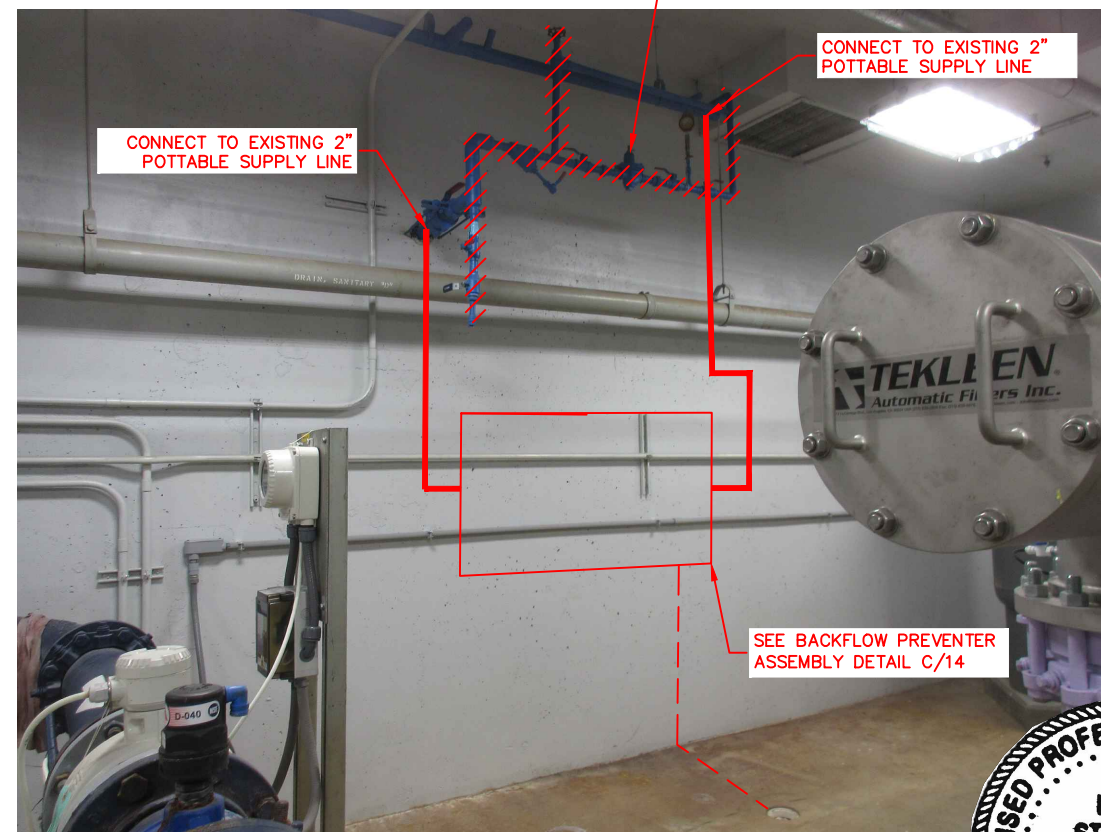


B PHOTO – DISINFECTION BUILDING BASEMENT SE CORNER
 14 SCALE: NTS



C BACKFLOW PREVENTER ASSEMBLY DETAIL
 14 SCALE: NTS
 NOTES:

1. PIPING & FITTINGS SHALL BE FULLY PAINTED COOPER. VALVES SHALL BE CONSTRUCTED OF 316 SS BODY, HANDLES & FASTENERS (NO PLATED COMPONENTS).
2. RPZ BFP SHALL BE DUAL REDUCED PRESSURE ZONE BACKFLOW PREVENTER WATTS LF909 OR EQUAL.
3. PROVIDE 316 STAINLESS STEEL UNISTRUT SYSTEM SUPPORTS. INCLUDE FOUR ANCHOR BOLT STYLE BASE PLATES, STRUT, PIPE STRAPS AND APPURTENANCES TO FASTEN PIPING TO WALL.
4. PROVIDE AND INSTALL A SHELF NEARBY FOR SPARE PARTS STORAGE, GRAINGER ADVANCE TABCO SOLID STAINLESS STEEL 24"x11-5/8"x11-5/8" MODEL WS-KD-24-GR WITH STAINLESS STEEL ANCHOR BOLTS. MOUNT ABOVE WALL HOOK ASSEMBLY. FINAL LOCATION TO BE DETERMINED BY THE OWNERS REPRESENTATIVE.
5. COMPLETELY COAT THE EXTERIOR OF THE REGULATOR AND THE BFP WITH BRONZ-GLOW HUSKY CLEAR COAT OR EQUAL (WWW.BRONZ-GLOW.COM).
6. PAINT ALL PIPING COMPLETELY AND COLOR CODE AS APPLICABLE. PROVIDE DISSIMILAR METAL SEPARATION AS REQUIRED. DO NOT PAINT STAINLESS OR POWDER COATED EQUIPMENT.



D PHOTO – DISINFECTION BUILDING BASEMENT
 14 SCALE: NTS

ADDITIVE ALTERNATE #2

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WATER POLLUTION CONTROL
 CAPITAL EQUIPMENT REPLACEMENTS
 TMUA PROJECT WPC 23-1
 DRAWING 203.400.C
 NSWWTP DECHLORINATION BUILDING
 SHOWER/EYE WASH REPLACEMENT

CITY OF TULSA, OKLAHOMA
 TULSA METROPOLITAN UTILITY AUTHORITY

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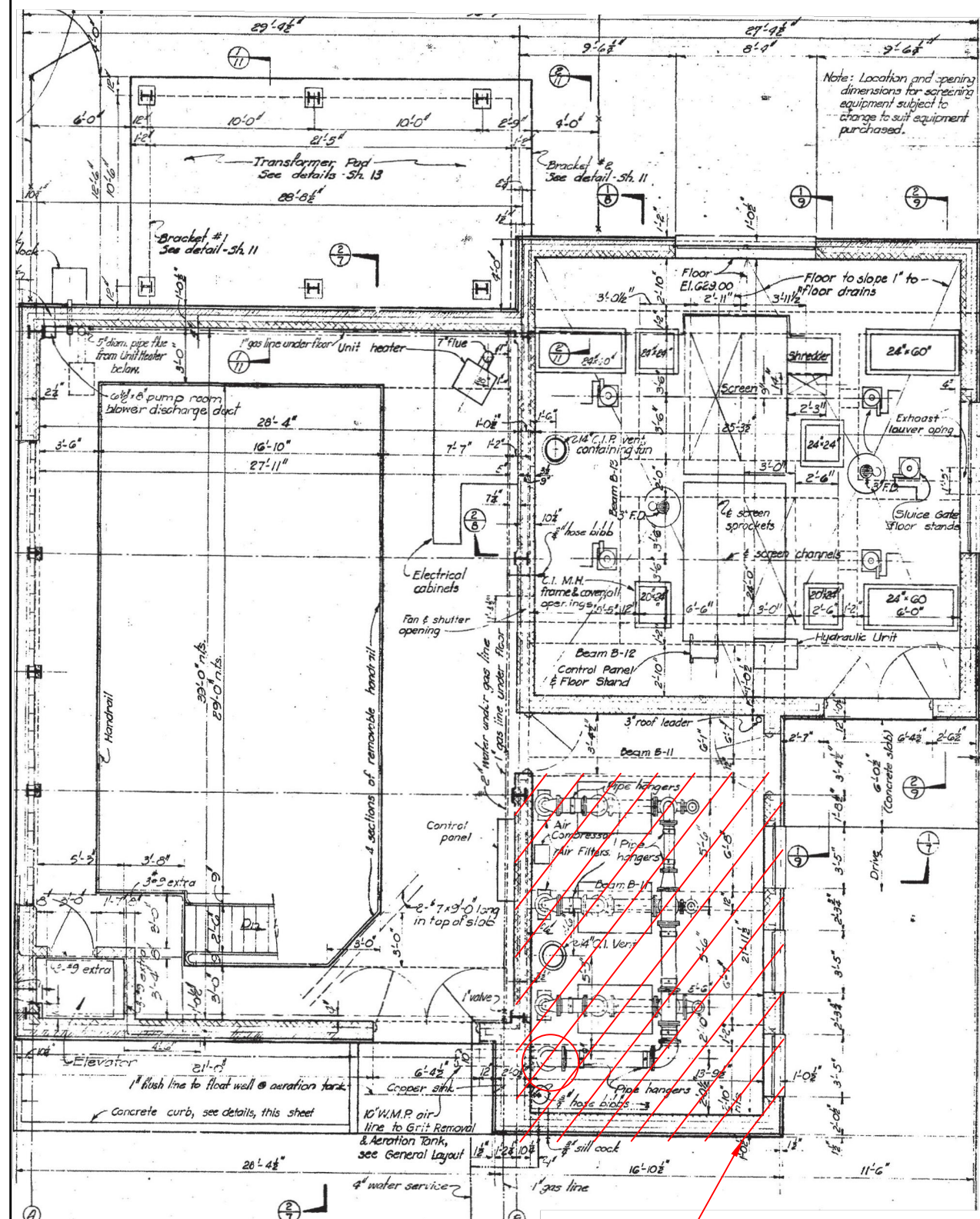
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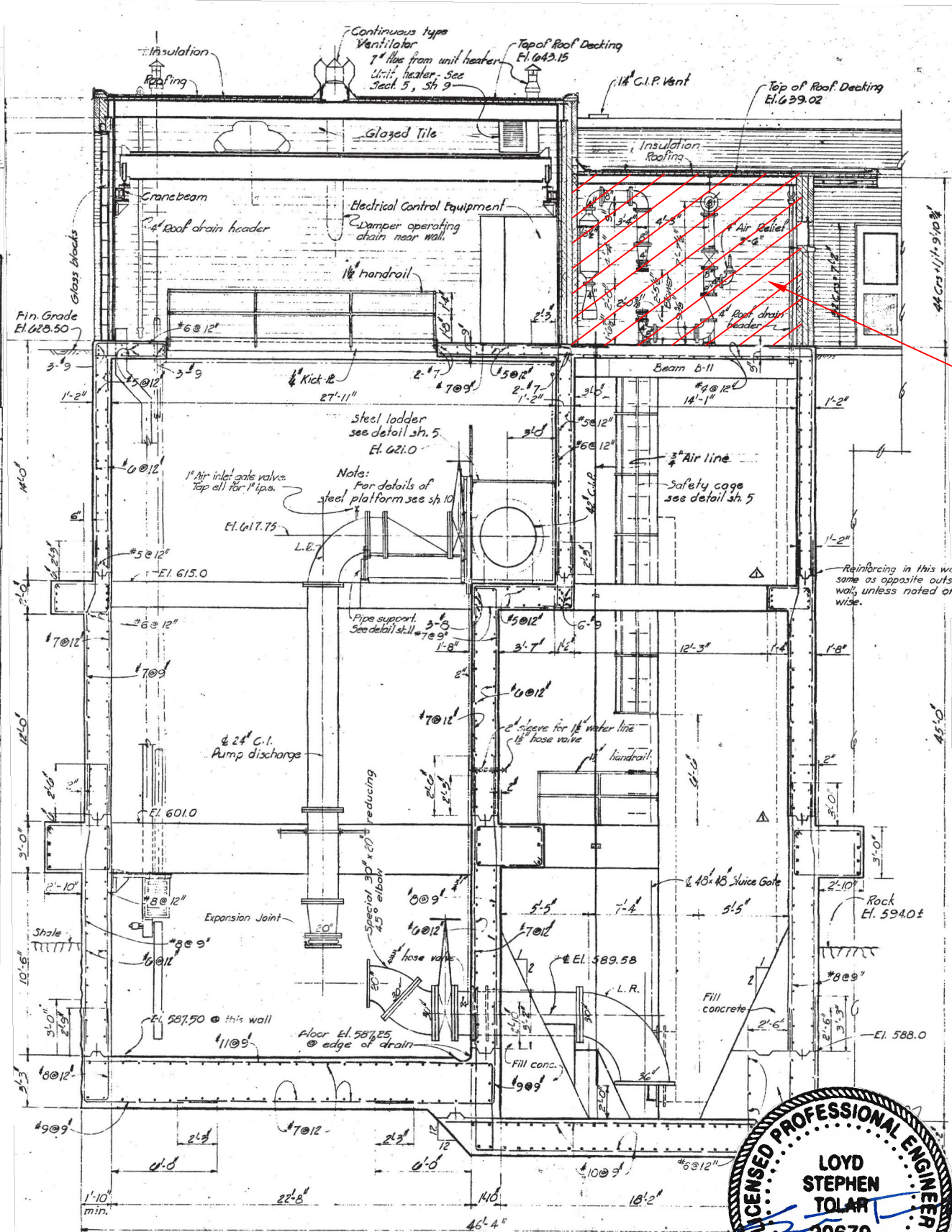
NOTES:

1. DEMOLISH ALL BLOWER EQUIPMENT INCLUDING THREE (3EA) BLOWERS, BLOWER MOTORS, SKIDS, CONCRETE PAD, CONTROL PANELS, DISCONNECTS, ABANDONED CONDUITS, PIPE, INSULATION, AND RELATED COMPONENTS. SEE PHOTO SHEET 16.

DEMOLISH EXISTING BLOWER EQUIPMENT. SEE NOTE #1 AND SHEET 16 PHOTO DETAILS FOR ADDITIONAL INFORMATION



A SSWWTP MAIN LIFT STATION FLOOR PLAN
SCALE: 1/4"=1'



B SSWWTP MAIN LIFT STATION SECTION
SCALE: 1/4"=1'



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**WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS
TMUA PROJECT WPC 23-1**

**DRAWING 203.640.A
SSWWTP WAS BLOWER DEMOLITION**

REFERENCE ORIGINAL CONTRACT S-53-2
RECORD DRAWINGS FOR ADDITIONAL
DETAILS & INFORMATION

**CITY OF TULSA, OKLAHOMA
TULSA METROPOLITAN UTILITY AUTHORITY**

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DEMOLISH INTERIOR BLOWER PIPING. INSTALL BLIND FLANGE AT PIPING & PAINT TO MATCH. INSTALL SADDLE PIPE CLAMP SUPPORT TO WALL & ABANDON PIPING SECTION INTO WET WELL.

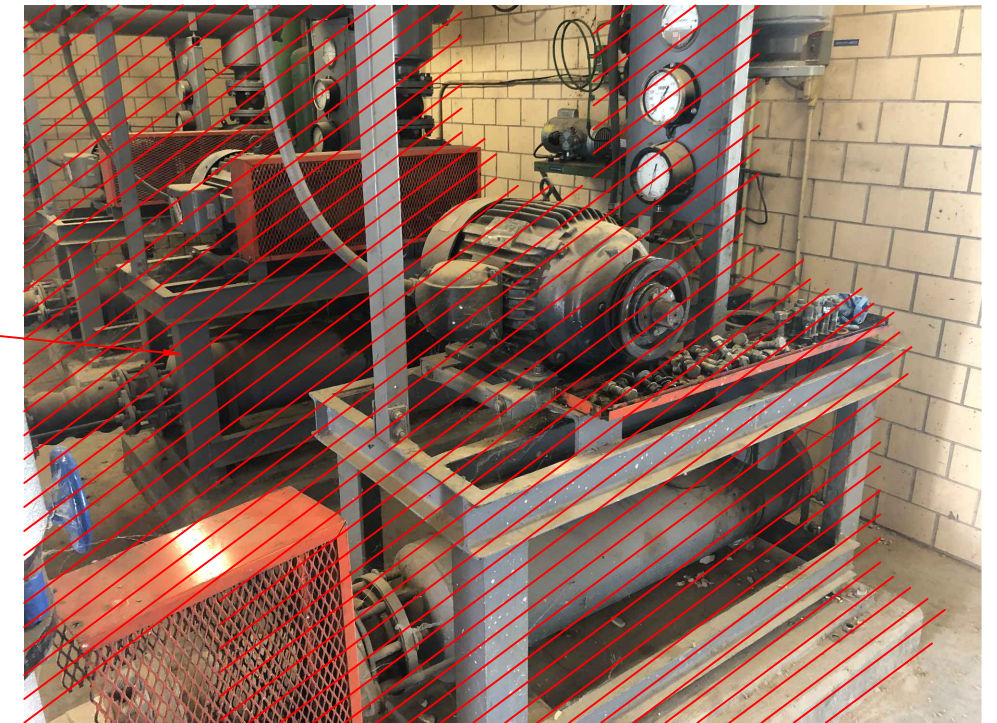


DEMOLISH EXISTING BLOWERS

DEMOLISH EXISTING CONCRETE BLOWER EQUIPMENT PADS SEE DETAIL 6/41

A PHOTO – EXISTING BLOWER ROOM (LOOKING WEST)
16 SCALE: NTS

DEMOLISH EXISTING BLOWERS



B PHOTO – EXISTING BLOWER ROOM (LOOKING WEST)
16 SCALE: NTS

DEMOLISH BLOWER EQUIPMENT COMPLETELY, INCLUDING ELECTRICAL PANELS, DISCONNECTS, AND WIRING—CONDUITS BACK TO SOURCE (MCC). COORDINATE AND REUSE THE EXISTING CONDUITS TO EXTENT POSSIBLE.



C PHOTO – EXISTING BLOWER ROOM (LOOKING SOUTH)
16 SCALE: NTS

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WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS
TMUA PROJECT WPC 23-1

DRAWING 203.640.B
SSWWTP WAS BLOWER DEMOLITION

CITY OF TULSA, OKLAHOMA
TULSA METROPOLITAN UTILITY AUTHORITY

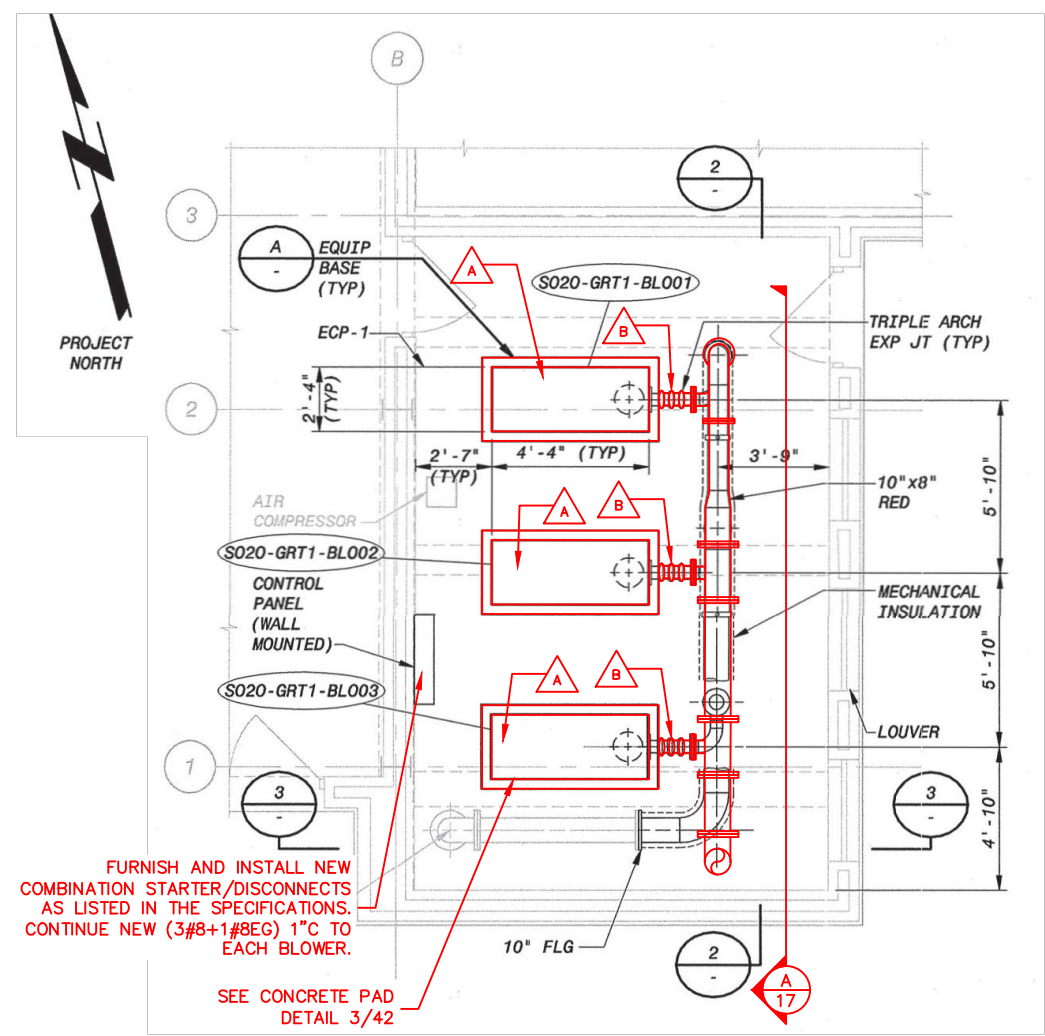
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918-258-0707, FAX 918-258-0764

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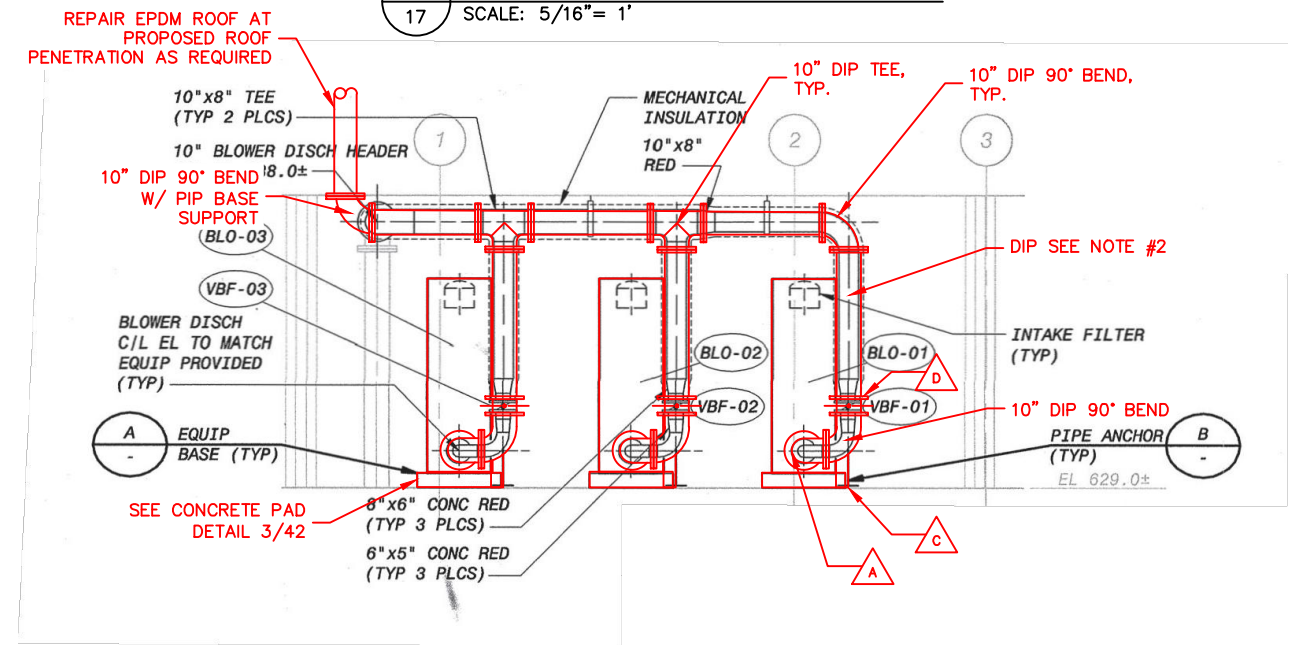
NOTES:

1. PROVIDE REMOVABLE ALUMINUM 2" INSULATION WITH 316 SST SCREW CLAMPS ON ALL THE DISCHARGE PIPING INSIDE BLOWER ROOM.
2. ALL BLOWER PIPING INSIDE THE BLOWER ROOM SHALL BE UNLINED FLANGE BY FLANGE DIP w/ UNION GASKETS. REUSE THE EXISTING PIPING TO EXTENT POSSIBLE.
3. PROVIDE NEW 316 SST 4X PANELS FOR EACH BLOWER WITH ON-OFF SWITCHES, STATUS RUN LIGHTS, RUN TIMERS, STARTER, AND A 316 SST 4X DISCONNECT.



EQUIPMENT SCHEDULE						
SYMBOL	QUANTITY	DESCRIPTION	MANUFACTURER	HP	SIZE	DETAILS
△	3	POSITIVE DISPLACEMENT BLOWER(S)	UNIVERSAL BLOWER PAC, INC./ OR EQUAL	30	500 SCFM	INCLUDING NEW EXPANSION JOINT, FILTER SILENCER, LOCAL 316 SST. - NEMA 4X DISCONNECT
△	3	RESTRAINED EXPANSION JOINT	RED VALVE OR EQUAL	N/A	10"	HDG RESTRAINT HARDWARE
△	3	BASE 90 W/ CONCRETE BASE	N/A	N/A	FOR 10" DIP	HDG STEEL W/ 316 SST ANCHOR BOLTS
△	3	BUTTERFLY VALVE	PRATT, DEZURIK, OR EQUAL	N/A	10"	EPDM GASKETS AND SEATS LOCKING LEVER OPERATOR

1 WAS BLOWER ROOM PLAN
17 SCALE: 5/16" = 1'



A WAS BLOWER ROOM SECTION
17 SCALE: 5/16" = 1'

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WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS
TMUA PROJECT WPC 23-1

DRAWING 203.640.C
SSWWTP WAS BLOWER DEMOLITION

REFERENCE ORIGINAL SOUTHSIDE WWTP ES 2002-07 CONTRACT D RECORD DRAWINGS FOR ADDITIONAL DETAILS & INFORMATION

CITY OF TULSA, OKLAHOMA
TULSA METROPOLITAN UTILITY AUTHORITY

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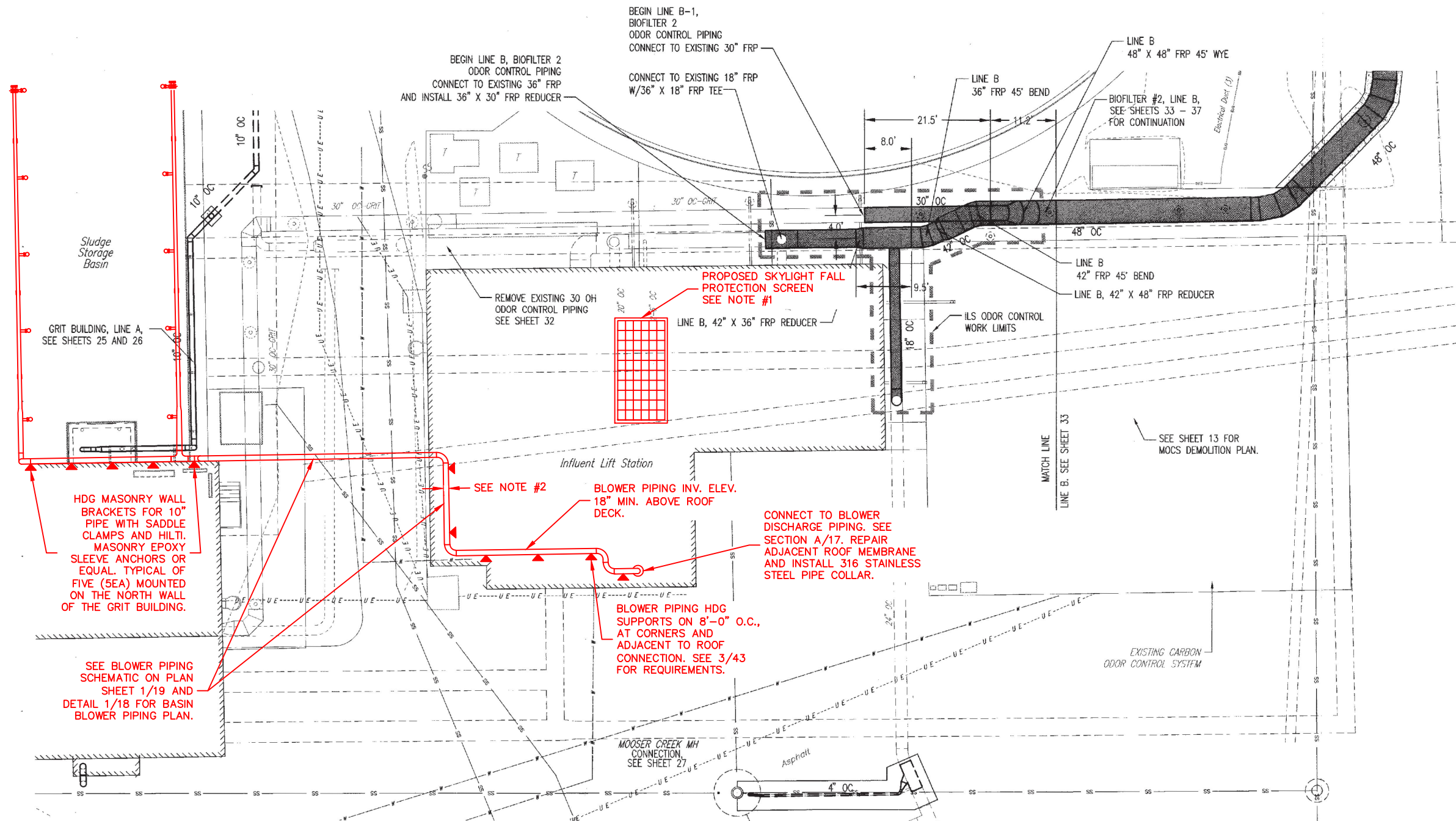
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NOTE:

1. PROVIDE SKYLIGHT FALL PROTECTION SCREEN. SCREEN SHALL BE HDG WWF WITH STAINLESS FASTENER SYSTEM. THE EXISTING SKYLIGHT IS APPROXIMATELY 9'X18' AND MANUFACTURED BY KINGSPAN/CPI DAYLIGHTING.
2. ROUTE ALL ROOF TOP AIR PIPING WITH MIN. 2'-0" CLEAR SPACE TO ROOF EDGE.



1 SSWWTP WAS BLOWER PIPING SITE PLAN (PARTICULAR)
18 SCALE: 1"=10'

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WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS
TMUA PROJECT WPC 23-1

DRAWING 203.640.D
SSWWTP WAS BLOWER PIPING SITE PLAN

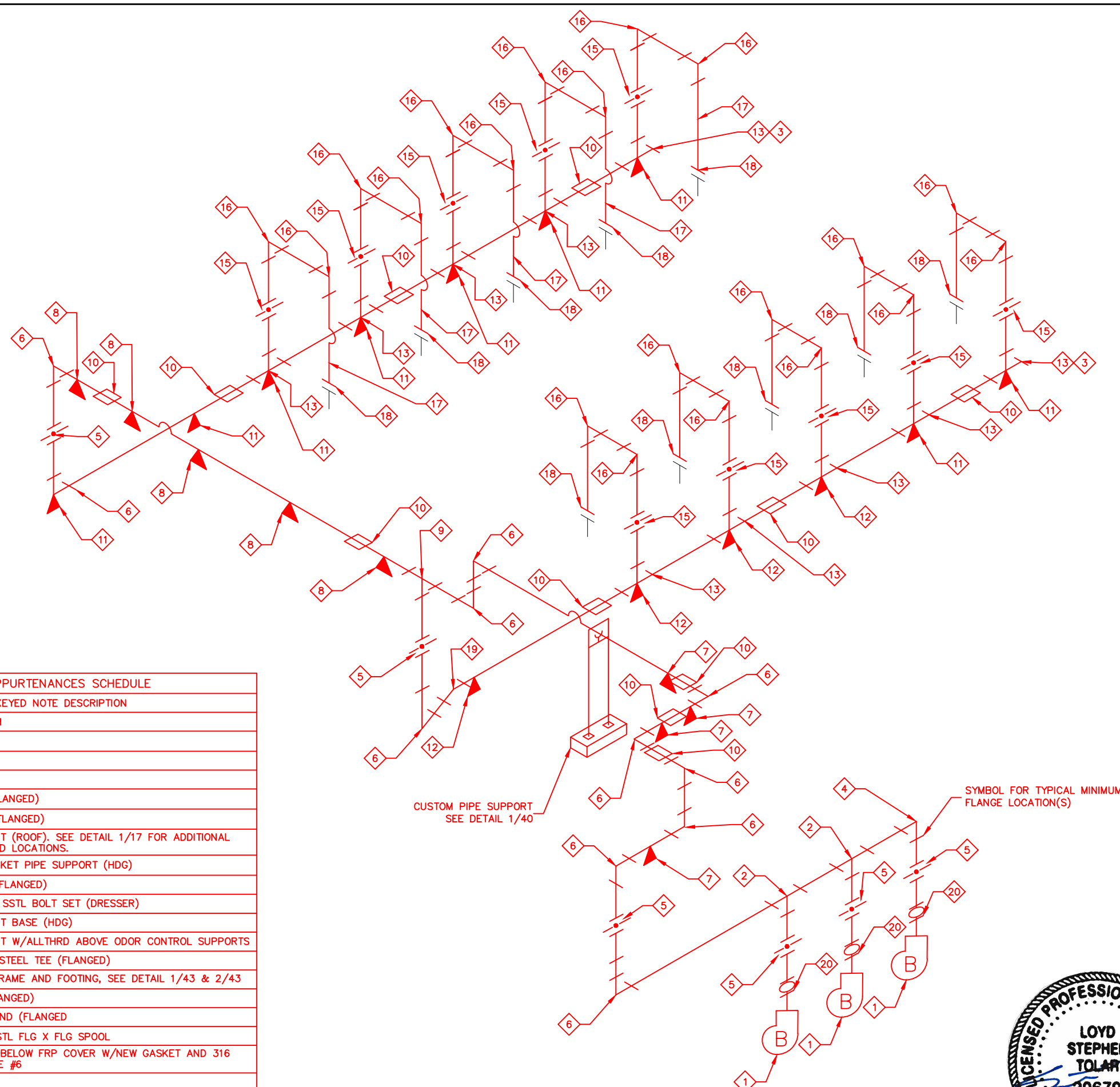
REFERENCE ORIGINAL PROJECT NO. ES 2015-05
& ES 2015-12 RECORD DRAWINGS FOR
ADDITIONAL DETAILS & INFORMATION

CITY OF TULSA, OKLAHOMA
TULSA METROPOLITAN UTILITY AUTHORITY

PLANS AND ESTIMATES
PREPARED BY: HOLLOWAY, UPDIKE + BELLEN, Inc.
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918-259-0707, FAX 918-259-0764

PLAN SCALE:	DRAWN: CAH	DESIGNED: TJR	SURVEY:	APPROVED:
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- NOTES:**
1. BLOWER PIPING SCHEMATIC HAS BEEN PROVIDED TO SHOW SCOPE OF WORK REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. REFER TO DETAILED DRAWINGS FOR ADDITIONAL REQUIREMENTS.
 2. EXTERIOR AIR PIPING SHALL BE UNLINED SCHEDULE 40 WELDED STEEL PIPE.
 3. INTERIOR PIPING IN BLOWER ROOM SHALL BE UNLINED FLANGED DIP WITH VITON GASKETS.
 4. PROVIDE AND INSTALL WELD NECK FLANGES AS SHOWN ON THE DRAWINGS OR AS REQUIRED FOR INSTALLATION OF FLANGED EQUIPMENT.
 5. PREPARE AND PAINT ALL NEW AND MODIFIED PIPING, FITTING AND VALVES. REFER TO SPECIFICATION SECTION 204.5 FOR REQUIREMENTS.
 6. ALL GASKETS FOR EXTERIOR PIPING SHALL BE EPDM, OR EQUAL RATED FOR HIGH TEMPERATURE AIR SERVICE. SEE NOTE #1 SHEET 23.
 7. OWNER RETAINS SALVAGE RIGHTS TO ALL UNUSED EQUIPMENT AND MATERIALS. ALL MATERIALS NOT CLAIMED BY OWNER SHALL BE DISPOSED OF BY CONTRACTOR.
 8. CONTRACTOR SHALL FIELD MEASURE AND COORDINATE PIPING INSTALLATION AS REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM.
 9. ALL AIR SERVICE VALVES SHALL BE RESILIENT SEAT BUTTERFLY VALVES WITH EPDM GASKETS AND SEATS, AND LOCKING LEVER OPERATORS.

PIPING AND APPURTENANCES SCHEDULE	
ID	KEYED NOTE DESCRIPTION
1	BLOWER PACKAGE SYSTEM
2	10" DIP TEE (FLG X FLG)
3	10" BLIND FLANGE
4	10" DIP 90° BEND FITTING
5	10" BUTTERFLY VALVE (FLANGED)
6	10" SCH-40 STEEL 90° (FLANGED)
7	10" SADDLE PIPE SUPPORT (ROOF). SEE DETAIL 1/17 FOR ADDITIONAL INFORMATION ON REQUIRED LOCATIONS.
8	10" MASONRY WALL BRACKET PIPE SUPPORT (HDG)
9	10" SCH-40 STEEL TEE (FLANGED)
10	10" SOLID SLEEVE W/316 SSTL BOLT SET (DRESSER)
11	10" PIPE SADDLE SUPPORT BASE (HDG)
12	10" PIPE SADDLE SUPPORT W/ALLTHRD ABOVE ODOR CONTROL SUPPORTS
13	10" X 10" X 4" SCH-40 STEEL TEE (FLANGED)
14	SPECIAL PIPE SUPPORT FRAME AND FOOTING, SEE DETAIL 1/43 & 2/43
15	4" BUTTERFLY VALVE (FLANGED)
16	4" SCH-40 STEEL 90° BEND (FLANGED)
17	4" SCH-40 STEEL 316 SSTL FLG X FLG SPOOL
18	4" CONNECTION ± 4'-0" BELOW FRP COVER W/NEW GASKET AND 316 SSTL BOLT SET. SEE NOTE #6
19	10" DIP 45° BEND FITTING
20	10" RESTRAINED EXPANSION JOINT(S)

1 SSWWTP GRIT BASIN BLOWER PIPING SCHEMATIC
19 NTS

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**WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS
TMUA PROJECT WPC 23-1**

**DRAWING 203.640.E
SSWWTP GRIT BASIN BLOWER
PIPING SCHEMATIC**

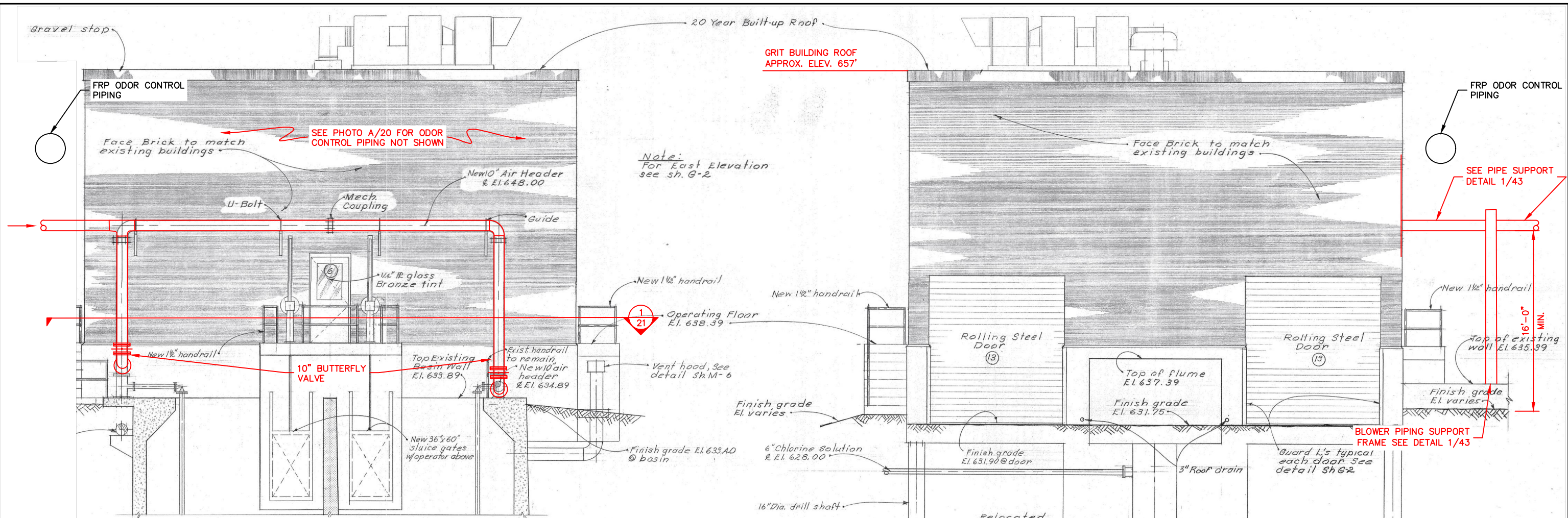
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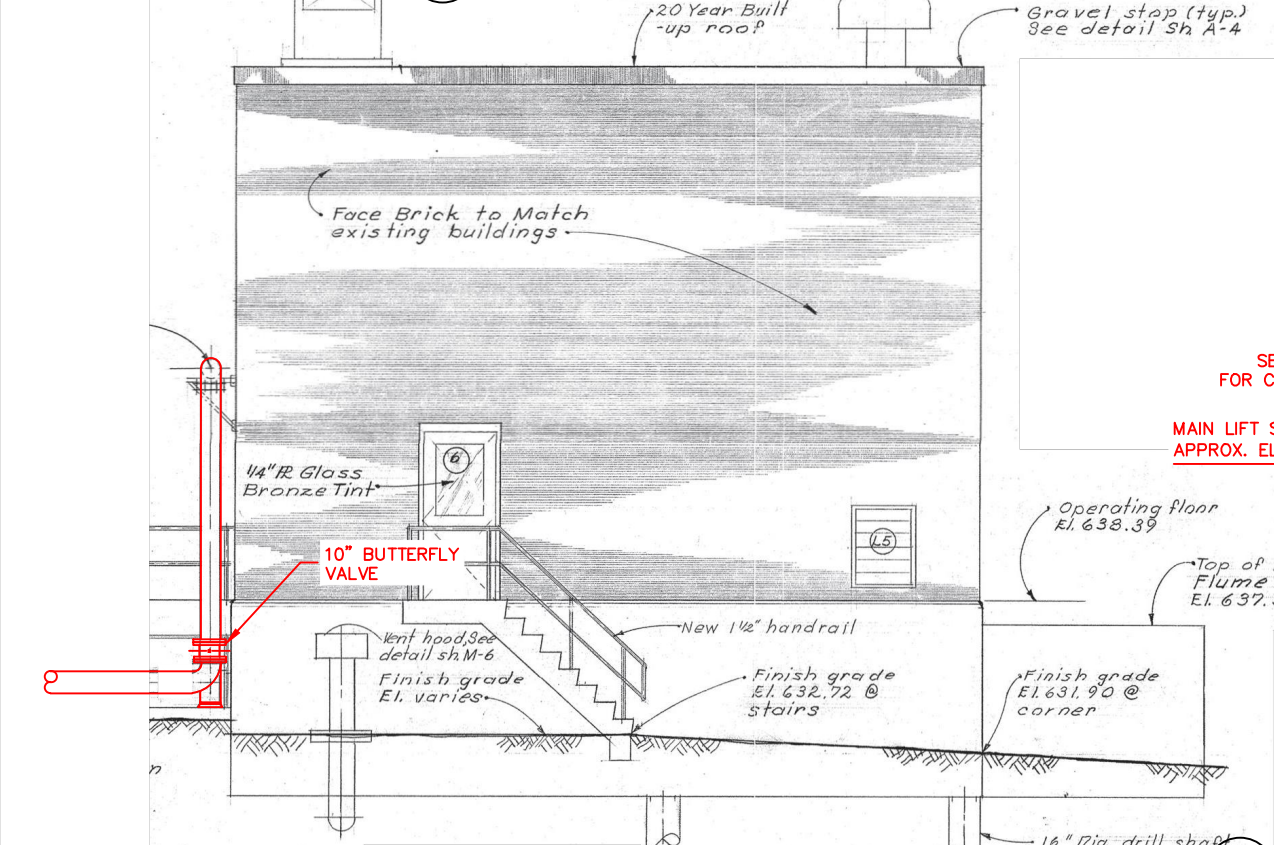
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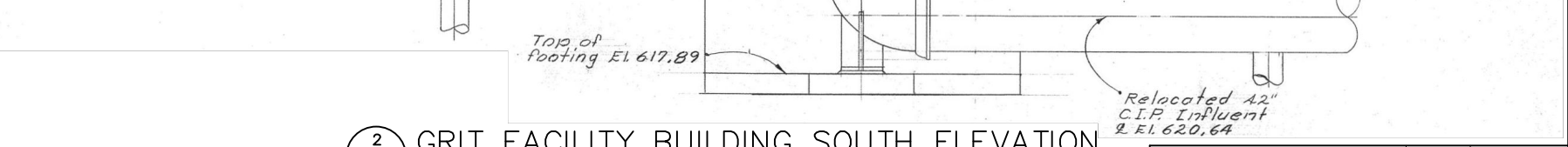
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1
20 GRIT FACILITY BUILDING NORTH ELEVATION
SCALE: 1/4"=1'



3
20 GRIT FACILITY BUILDING WEST ELEVATION
SCALE: 1/4"=1'



2
20 GRIT FACILITY BUILDING SOUTH ELEVATION
SCALE: 1/4"=1'



A
20 PHOTO - EXISTING BLOWER & ODOR CONTROL PIPING
SCALE: NTS

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WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS
TMUA PROJECT WPC 23-1

DRAWING 203.640.F
GRIT FACILITY WAS BLOWER PIPING ELEVATIONS

REFERENCE ORIGINAL PROJECT NO. ES 2015-05 & ES 2015-12 RECORD DRAWINGS FOR ADDITIONAL DETAILS & INFORMATION

CITY OF TULSA, OKLAHOMA
TULSA METROPOLITAN UTILITY AUTHORITY

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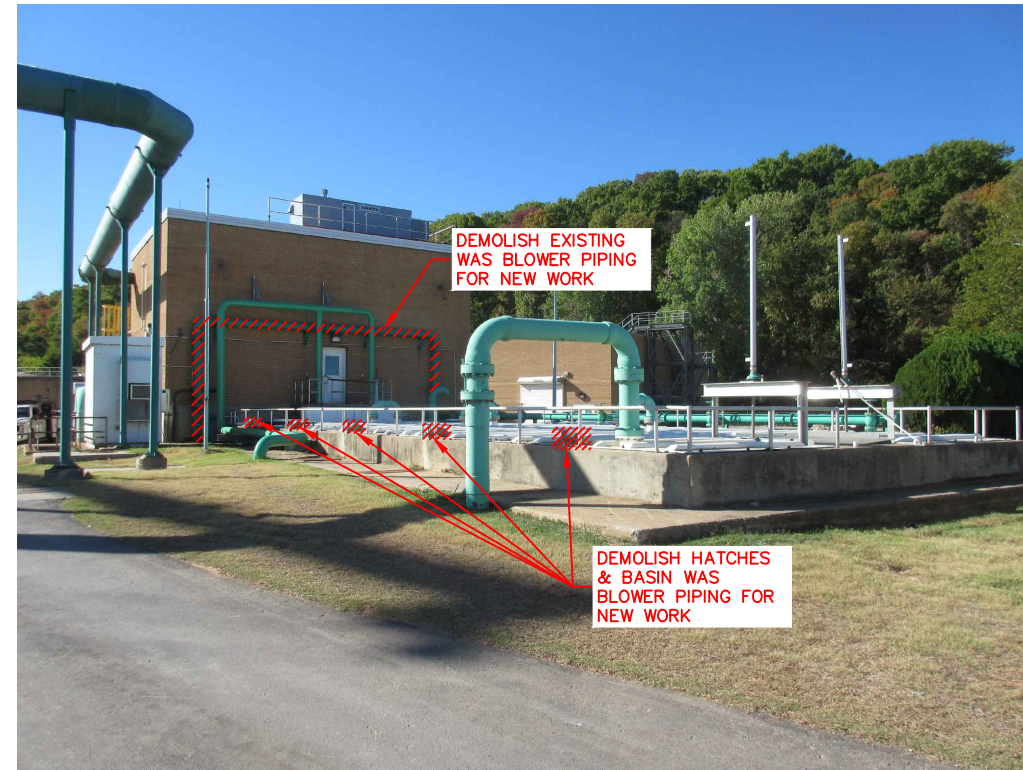


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DEMOLISH EXISTING WAS BLOWER PIPING FOR NEW WORK

PROTECT FRP ODOR CONTROL COVERS, TYP.

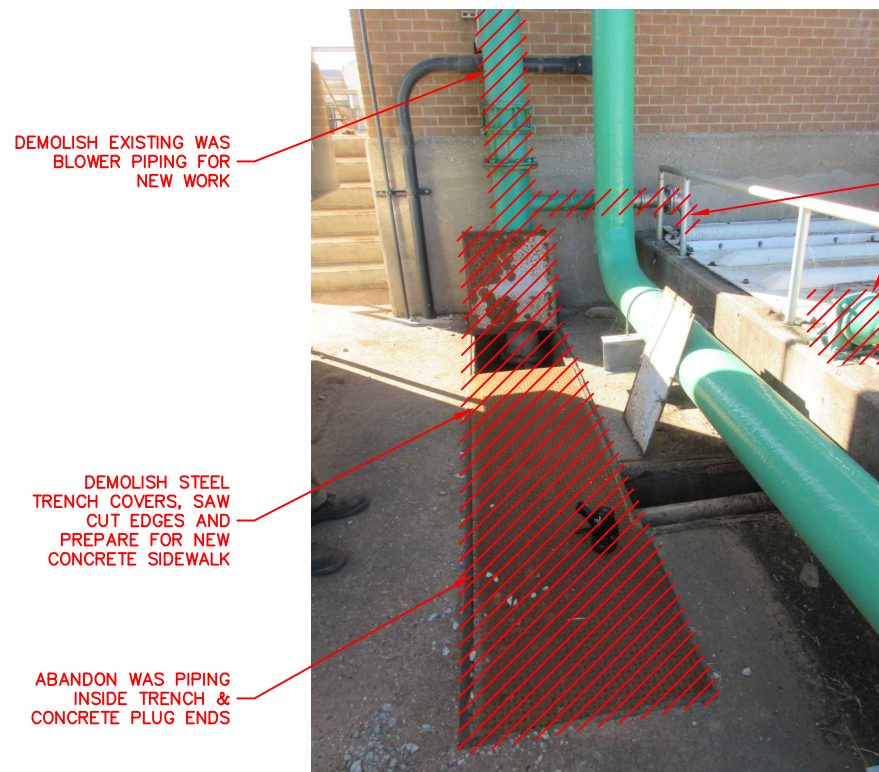


DEMOLISH EXISTING WAS BLOWER PIPING FOR NEW WORK

DEMOLISH HATCHES & BASIN WAS BLOWER PIPING FOR NEW WORK

A PHOTO — EXISTING BLOWER & ODOR CONTROL PIPING
SCALE: NTS

B PHOTO — EXISTING BLOWER & ODOR CONTROL PIPING
SCALE: NTS



DEMOLISH EXISTING WAS BLOWER PIPING FOR NEW WORK

DEMOLISH EXISTING WAS BLOWER PIPING AND COMPONENTS REPAIR CONCRETE PER DETAIL 6/41

DEMOLISH STEEL TRENCH COVERS, SAW CUT EDGES AND PREPARE FOR NEW CONCRETE SIDEWALK

ABANDON WAS PIPING INSIDE TRENCH & CONCRETE PLUG ENDS



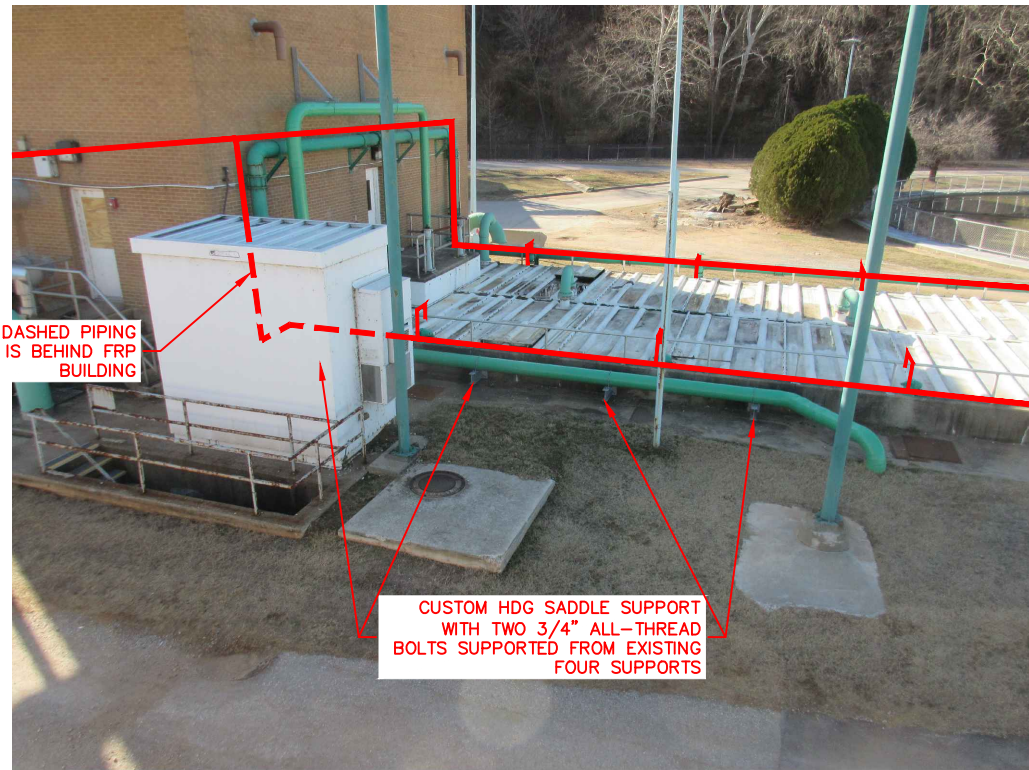
DEMOLISH EXISTING WAS BLOWER PIPING FOR NEW WORK

C PHOTO — EXISTING BLOWER & ODOR CONTROL PIPING
SCALE: NTS

D PHOTO — EXISTING BLOWER & ODOR CONTROL PIPING
SCALE: NTS



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WATER POLLUTION CONTROL CAPITAL EQUIPMENT REPLACEMENTS TMUA PROJECT WPC 23-1		
DRAWING 203.640.G GRIT FACILITY WAS BLOWER PIPING		
CITY OF TULSA, OKLAHOMA TULSA METROPOLITAN UTILITY AUTHORITY		
PLANS AND ESTIMATES PREPARED BY:		 HOLLOWAY, UPDIKE + BELLEN, Inc. <small>2001 N. WILLOW AVE., BROKEN ARROW, OKLAHOMA 74012 918-258-0770, FAX 918-258-0764</small>
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A PHOTO — EXISTING BLOWER & ODOR CONTROL PIPING
 22 SCALE: NTS



B PHOTO — EXISTING BLOWER & ODOR CONTROL PIPING
 22 SCALE: NTS

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WATER POLLUTION CONTROL
 CAPITAL EQUIPMENT REPLACEMENTS
 TMUA PROJECT WPC 23-1

DRAWING 203.640.G
 GRIT FACILITY WAS BLOWER PIPING

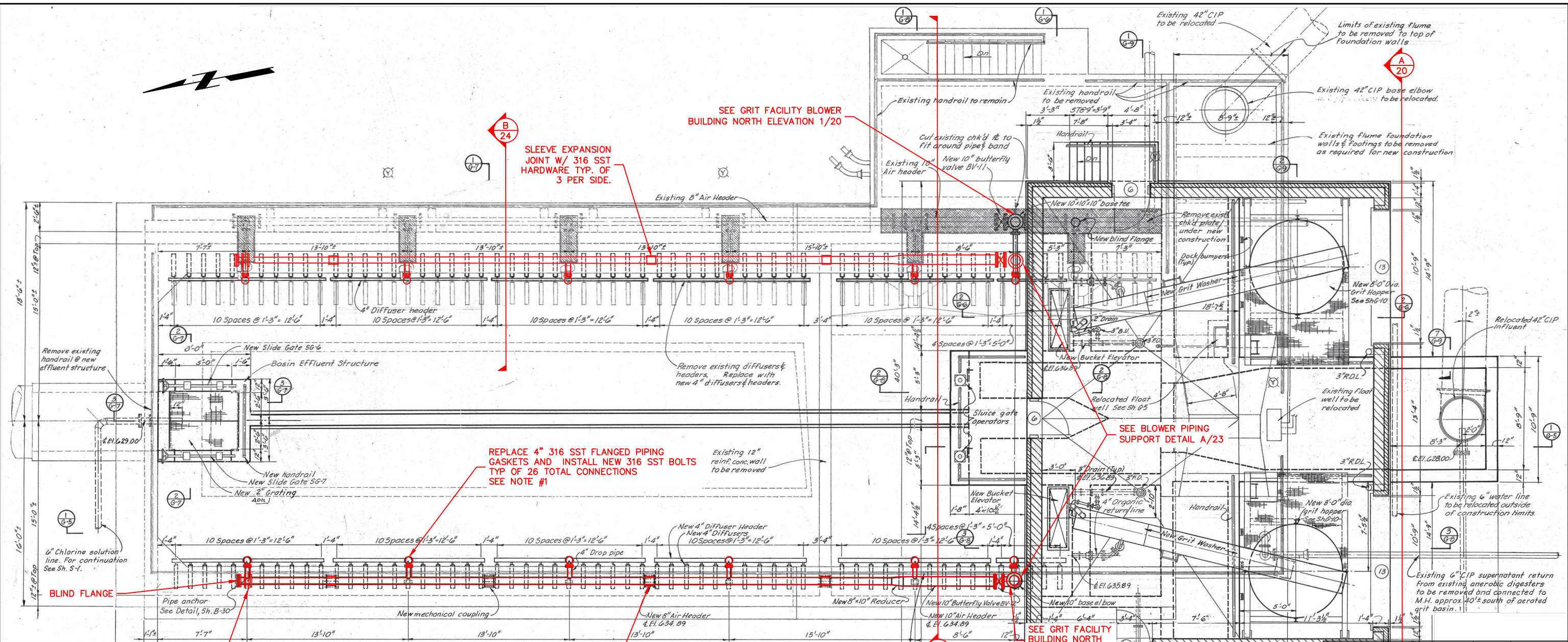
CITY OF TULSA, OKLAHOMA
 TULSA METROPOLITAN UTILITY AUTHORITY

PLANS AND ESTIMATES
 PREPARED BY: HOLLOWAY, UPDIKE + BELLEN, Inc.
 2001 N. WILLOW AVE., BROKEN ARROW, OKLAHOMA 74012
 (918) 259-0700, FAX (918) 259-0764

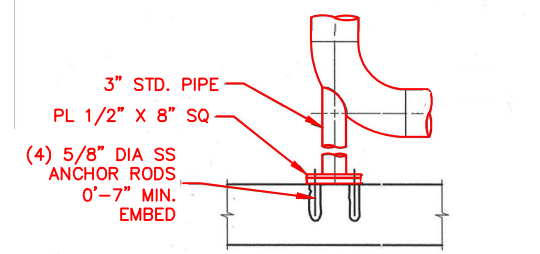
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1 SSWWTP UNTHICKENED WAS STORAGE & BASIN PLAN
 23 SCALE: 1/4"=1'

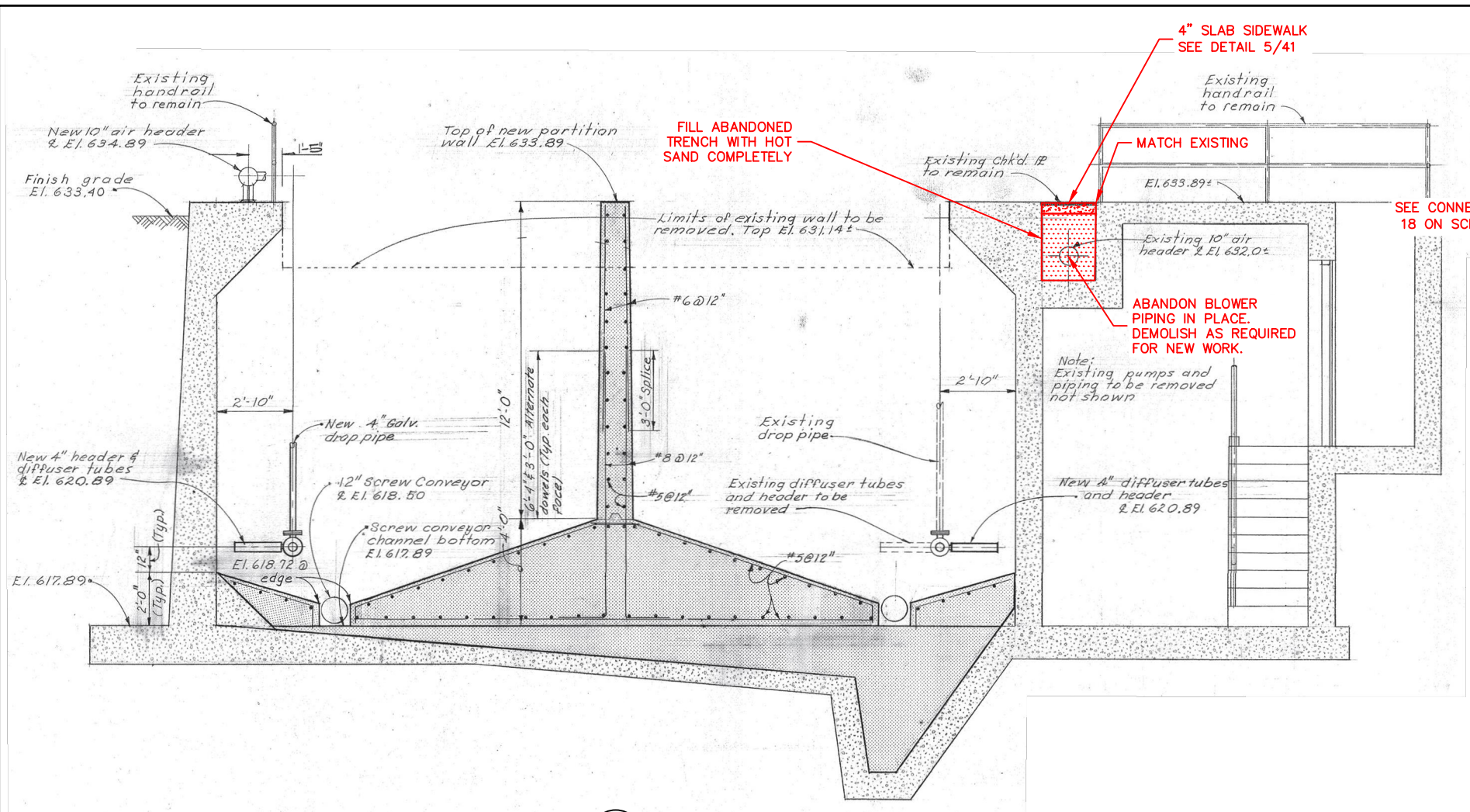


A WAS BLOWER PIPE SUPPORT AT BASE 90° BEND
 23 SCALE: NTS

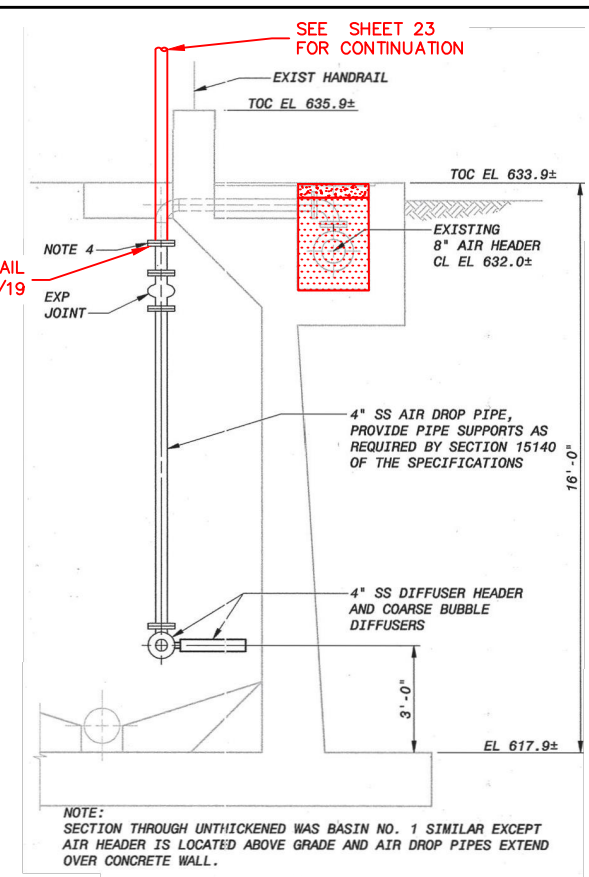
- NOTES:**
1. REMOVE AND REPLACE ALL DIFFUSER BASIN 4" PIPING INTERNAL GASKETS AND 316 SST BOLTS AT 4" FLANGE LOCATIONS. THE LOCATIONS ARE WITHIN THE BASIN AND AT 30 EA LOCATIONS.
 2. ONE BASIN AT A TIME CAN BE REMOVED FROM SERVICE FOR 12 HOURS.



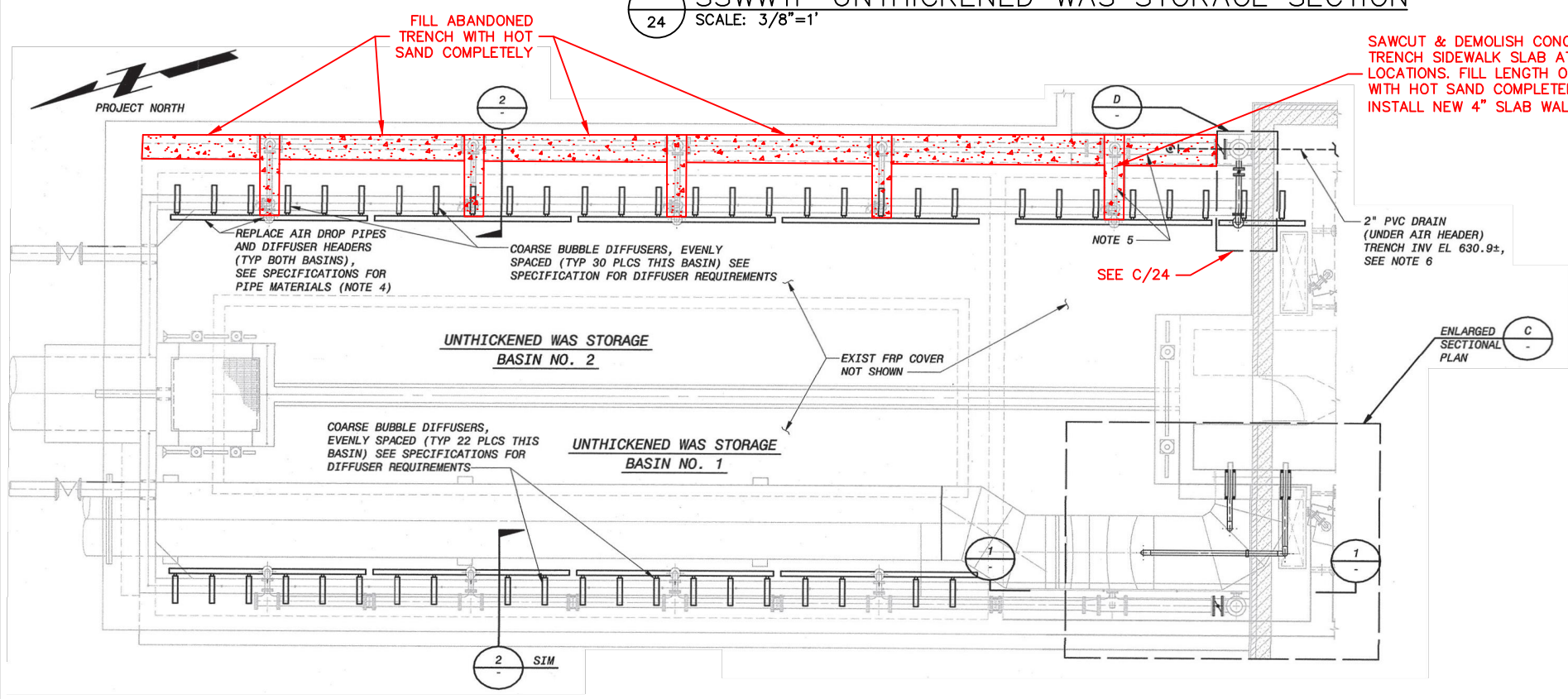
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WATER POLLUTION CONTROL CAPITAL EQUIPMENT REPLACEMENTS TMUA PROJECT WPC 23-1		
DRAWING 203.640.H SSWWTP GRIT FACILITY WAS BASIN PLAN		
REFERENCE ORIGINAL CONTRACT SA 69-2 RECORD DRAWINGS FOR ADDITIONAL DETAILS & INFORMATION		
CITY OF TULSA, OKLAHOMA TULSA METROPOLITAN UTILITY AUTHORITY		
PLANS AND ESTIMATES PREPARED BY: HOLLOWAY, UPDIKE & BELLEN, Inc. 2001 N. WILLOW AVE., BROKEN ARROW, OKLAHOMA 74002 (918) 258-0770, FAX (918) 258-0764		
PLAN SCALE:	DRAWN CAH DESIGNED TJR SURVEY	APPROVED:
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HORIZONTAL:	SECT. MGR. PROJ. MGR. TJR	
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ATLAS PAGE NO: ---		SHEET 23 OF 43 SHEETS



A SSWWTP UNTHICKENED WAS STORAGE SECTION
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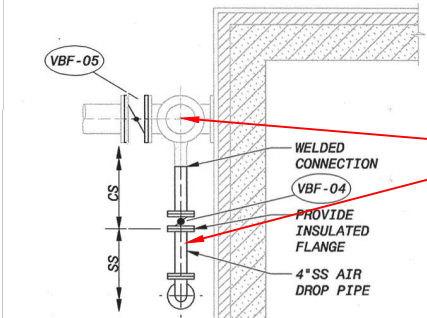


B SSWWTP UNTHICKENED WAS STORAGE SECTION
SCALE: 3/8"=1'



C SSWWTP STORAGE SECTION
SCALE: 1/4"=1'

1 SSWWTP UNTHICKENED WAS STORAGE PLAN
SCALE: 3/16"=1'



SEE PIPING SCHEMATIC DETAIL 1/19 & DEMOLISH AIR PIPING AT GRIT BUILDING WALL.

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WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS
TMUA PROJECT WPC 23-1

DRAWING 203.640.1
SSWWTP WAS BASIN SECTIONS

REFERENCE ORIGINAL SSWWTP PROJECT NO. ES 2002-07 CONTRACT D RECORD DRAWINGS FOR ADDITIONAL DETAILS & INFORMATION

CITY OF TULSA, OKLAHOMA
TULSA METROPOLITAN UTILITY AUTHORITY

PLANS AND ESTIMATES PREPARED BY: HOLLOWAY, UPDIKE + BELLEN, Inc. 3001 N. WILLOW AVE., BROKEN ARROW, OKLAHOMA 74002 (918) 259-0770, FAX (918) 259-0764

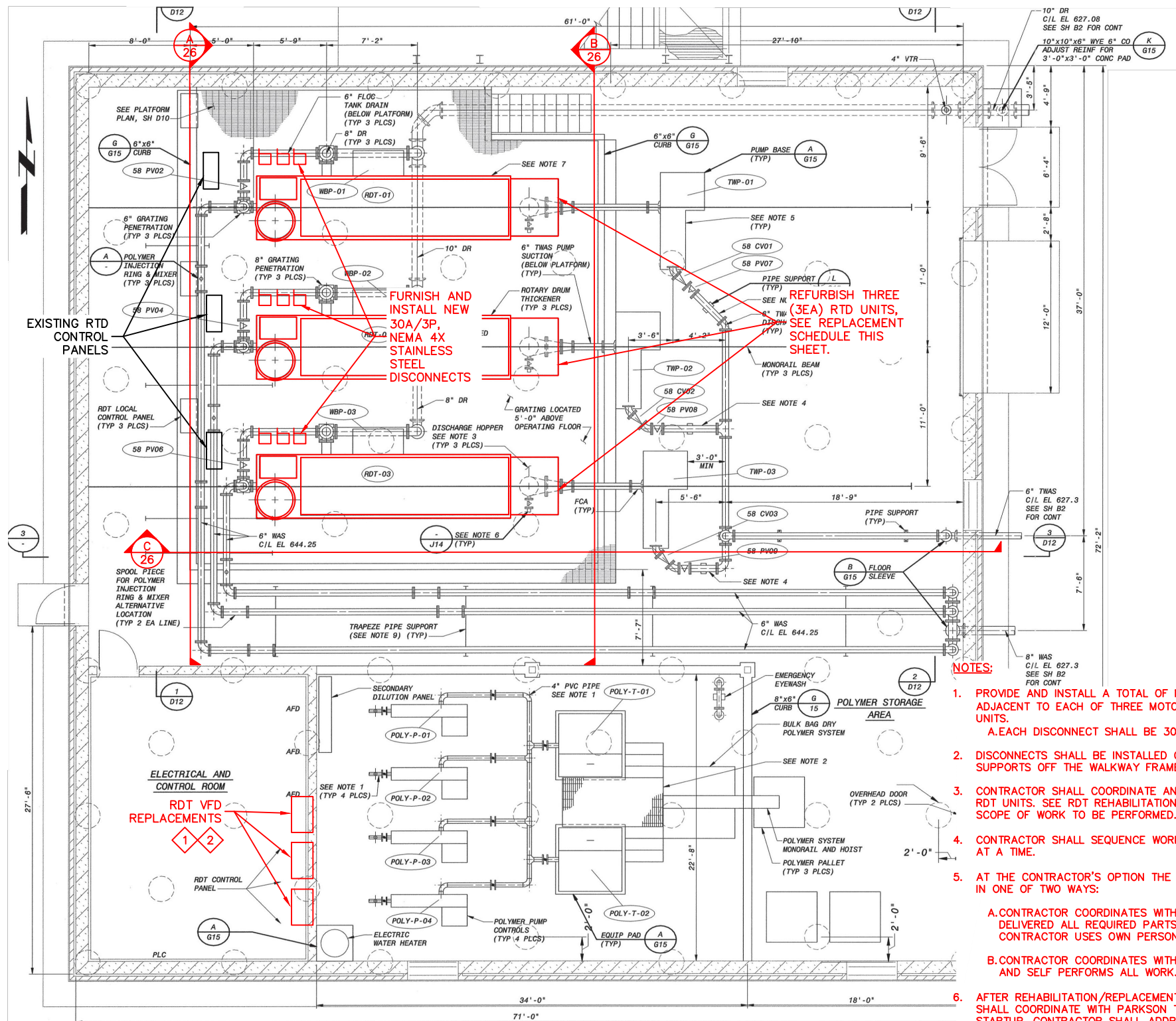
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Rotary Drum Thickener Rehabilitation Service and Parts Replacement Schedule

Parkson Thicktech Model RDT400 parts for the rehabilitation required at three (3) units

Item #	Description	Quantity
1	Drive Chain, Includes Connecting Link and Offset Link, Carbon Steel	300
2	Drive Sprocket, Carbon Steel	3
3	Driven Sprocket, Carbon Steel	3
4	Chain Tensioner	3
5	Idler Sprocket	3
6	Trunnion Wheel Kit, Includes Shaft & Wheel	18
7	Trunnion Wheel Mounting Bracket, 316sst	18
8	Stabilizer Wheel, 316sst	12
9	Booster Pump, Includes Motor	3
10	Cleaning Brush for Water Spray	3
11	Shipping Crate for Brush	3
12	Packing Seal for Spray Header	3
13	Spray Nozzles, Includes Gaskets	111
14	Spray Nozzles, Includes Gaskets	9
15	Gearmotor, 1/2 HP, Floc Drive	3
16	Gearmotor, 3 HP, Drum Drive	3
17	Wire Cloth, State 1-4, Includes Flange Bars (Cloth is the same from 2006 change out)	12
18	Misc. Hardware per Manufacturer as required for startup certification(s)	3
19	Nameplates & Labels (New replacement of the existing with updates for both equipment number and equipment description, see City of Tulsa standard requirements)	3



1 ROTARY DRUM THICKENER BUILDING
25 SCALE: NTS

NOTES:

- PROVIDE AND INSTALL A TOTAL OF NINE (9) NEW DISCONNECTS. INSTALL ONE DISCONNECT ADJACENT TO EACH OF THREE MOTORS ON EACH OF THREE ROTARY DRUM THICKENER (RDT) UNITS.
A.EACH DISCONNECT SHALL BE 30A/3P, NEMA 4X, 316 SST.
- DISCONNECTS SHALL BE INSTALLED ON 316SST UNISTRUT RACK WITH RACK MOUNT FLOOR SUPPORTS OFF THE WALKWAY FRAME.
- CONTRACTOR SHALL COORDINATE AND PROVIDE SERVICES FOR REHABILITATION OF ALL THREE RDT UNITS. SEE RDT REHABILITATION SERVICE AND PARTS REPLACEMENT SCHEDULE FOR THE SCOPE OF WORK TO BE PERFORMED.
- CONTRACTOR SHALL SEQUENCE WORK SO THAT ONLY ONE (1) RDT UNIT IS OUT OF SERVICE AT A TIME.
- AT THE CONTRACTOR'S OPTION THE REHABILITATION/REPLACEMENT WORK MAY BE PERFORMED IN ONE OF TWO WAYS:
A.CONTRACTOR COORDINATES WITH PARKSON CORPORATION TO PURCHASE AND HAVE DELIVERED ALL REQUIRED PARTS. PARKSON PROVIDES ALL REQUIRED INSTRUCTIONS. CONTRACTOR USES OWN PERSONNEL TO PERFORM ALL THE WORK.
B.CONTRACTOR COORDINATES WITH PARKSON. PARKSON PROVIDES ALL REQUIRED PARTS AND SELF PERFORMS ALL WORK.
- AFTER REHABILITATION/REPLACEMENT WORK ON EACH UNIT IS COMPLETE THE CONTRACTOR SHALL COORDINATE WITH PARKSON TO PERFORM A TECHNICAL INSPECTION PRIOR TO STARTUP. CONTRACTOR SHALL ADDRESS ANY ISSUES REQUIRING CORRECTION.
- AFTER TECHNICAL INSPECTION IS COMPLETED, CONTRACTOR SHALL COORDINATE WITH PARKSON TO PROVIDE START UP SERVICES.
- ONCE RETURNED TO SERVICE EACH RDT UNIT MUST OPERATE WITHOUT FAILURES FOR A 2-WEEK PERIOD BEFORE THE NEXT RDT IS ALLOWED TO BE TAKEN OUT OF SERVICE. CONTRACTOR SHALL INCLUDE ALL COORDINATION AND COSTS REQUIRED FOR THE MULTIPLE SITE VISITS IN THE BID.

KEYED NOTES (ADDITIVE ALTERNATE #4):

- CONTRACTOR SHALL REMOVE EXISTING AND INSTALL A TOTAL OF THREE (3) NEW MAIN UNIT DRIVE VFDs. VFDs ARE LOCATED INSIDE THE EXISTING RDT ELECTRICAL PANELS LOCATED IN THE ADJACENT ELECTRICAL ROOM.
A.EACH VFD SHALL BE 3.0 HP, 460 VOLTS/3PHASE/60 HERTZ INPUT POWER.
- CONTRACTOR SHALL REMOVE EXISTING AND INSTALL A TOTAL OF THREE (3) NEW FLOC TANK DRIVE VFDs. VFDs ARE LOCATED INSIDE THE EXISTING RDT ELECTRICAL PANELS LOCATED IN THE ADJACENT ELECTRICAL ROOM.
A.EACH VFD SHALL BE 0.5 HP, 460 VOLTS/3 PHASE/60 HERTZ INPUT POWER.

**BASE BID
RTD REHABILITATION**

**ADDITIVE ALTERNATE #4
ROTARY DRUM THICKENER
VFD IMPROVEMENTS**

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WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS
TMUA PROJECT WPC 23-1

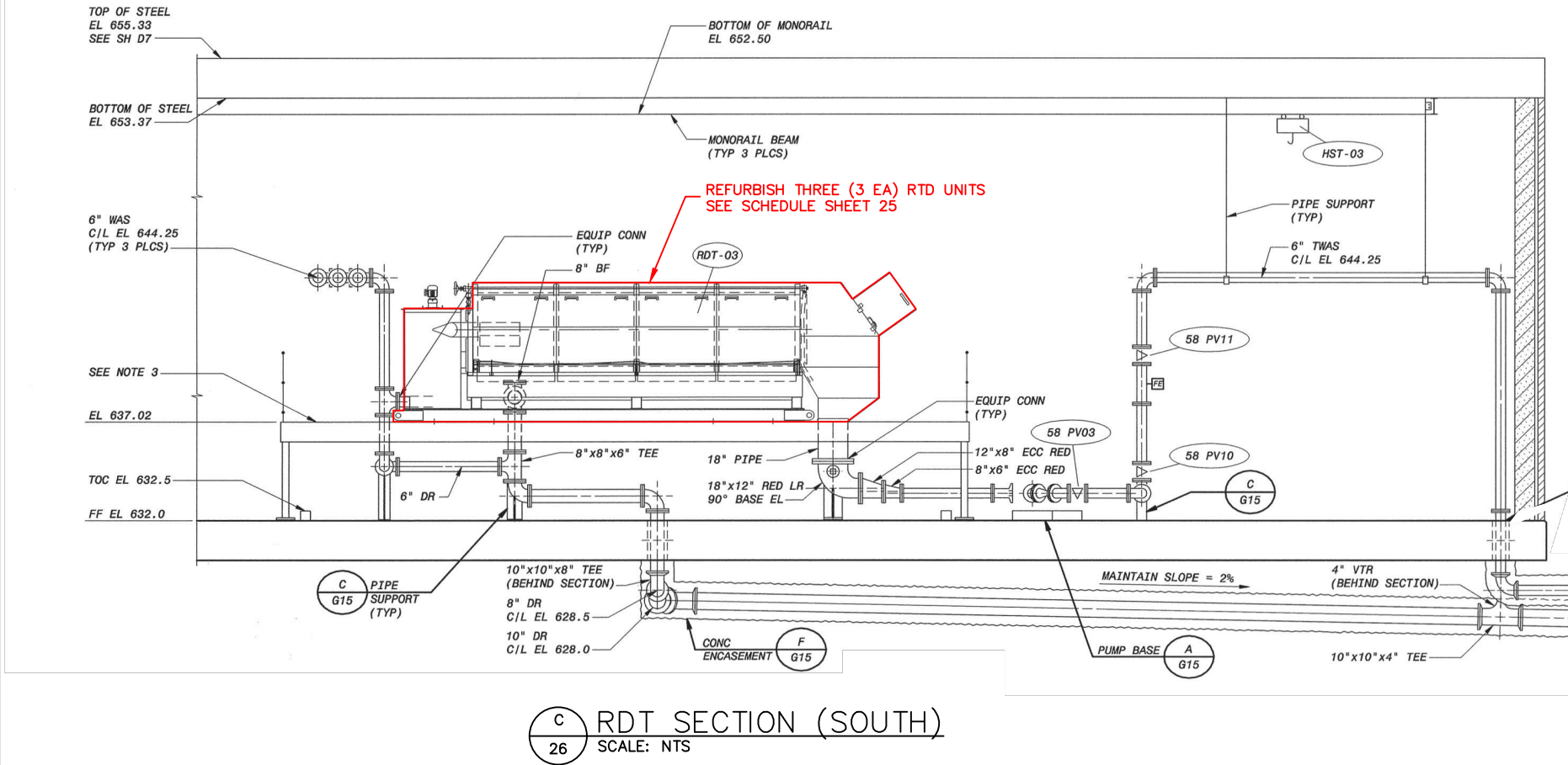
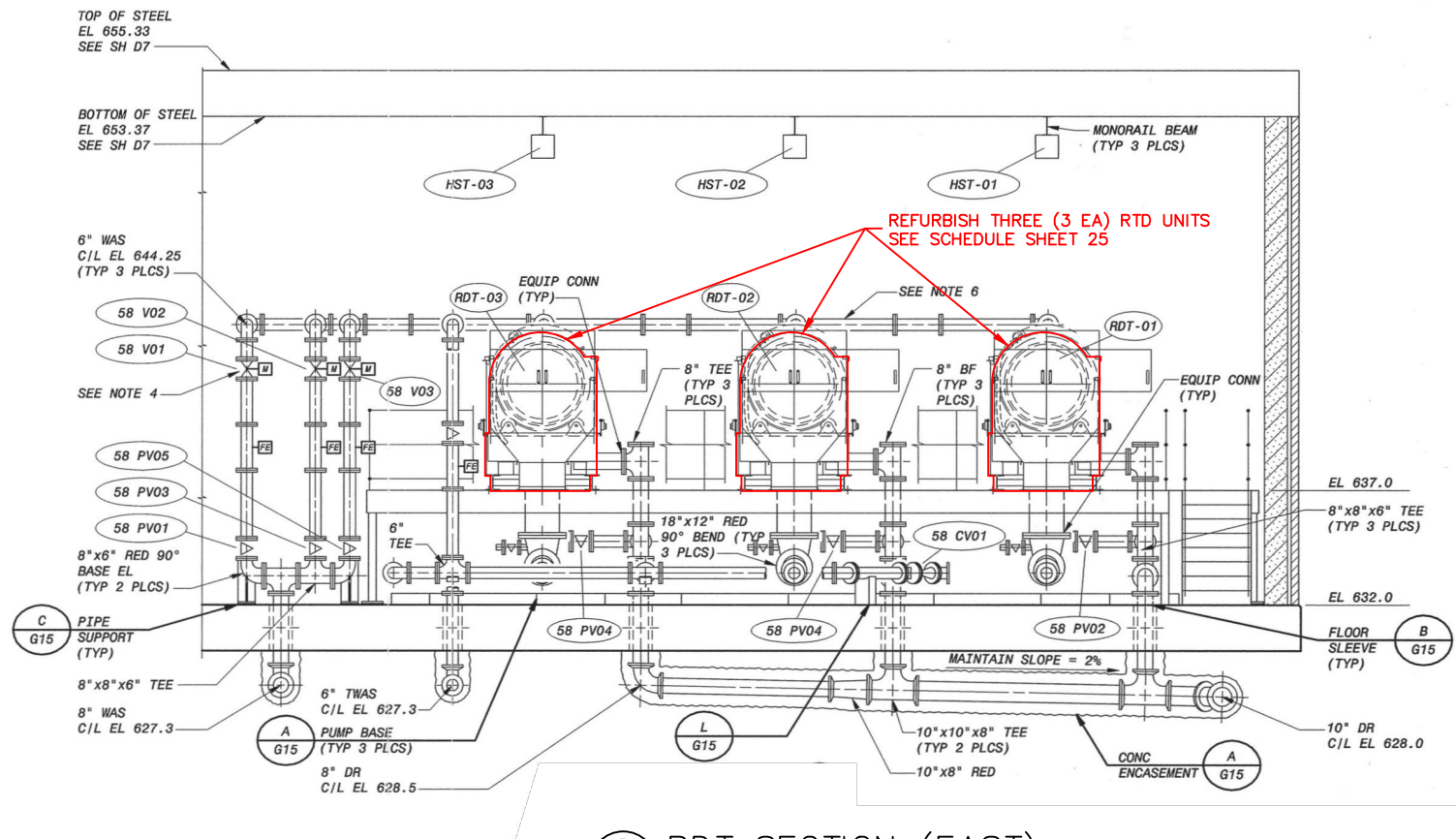
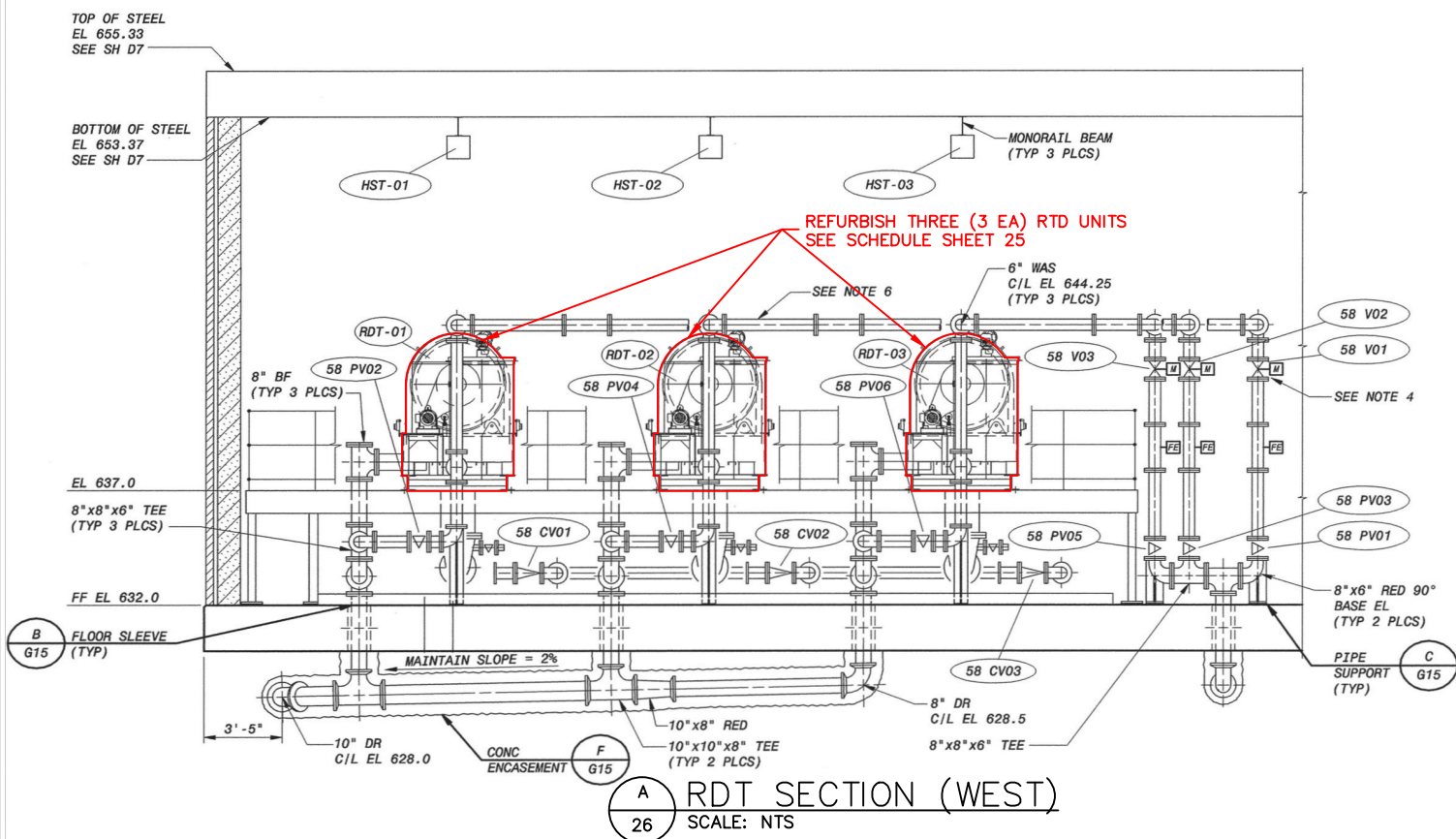
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SSWTP RTD REHABILITATION PLAN

CITY OF TULSA, OKLAHOMA
TULSA METROPOLITAN UTILITY AUTHORITY

PLANS AND ESTIMATES
PREPARED BY: **HOLLOWAY, UDDIKE + BELLEN, Inc.**
2001 N. WILLOW AVE., BROCKEN ARROW, OKLAHOMA 74002
(918)298-0770, FAX (918)298-0764

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WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS
TMUA PROJECT WPC 23-1

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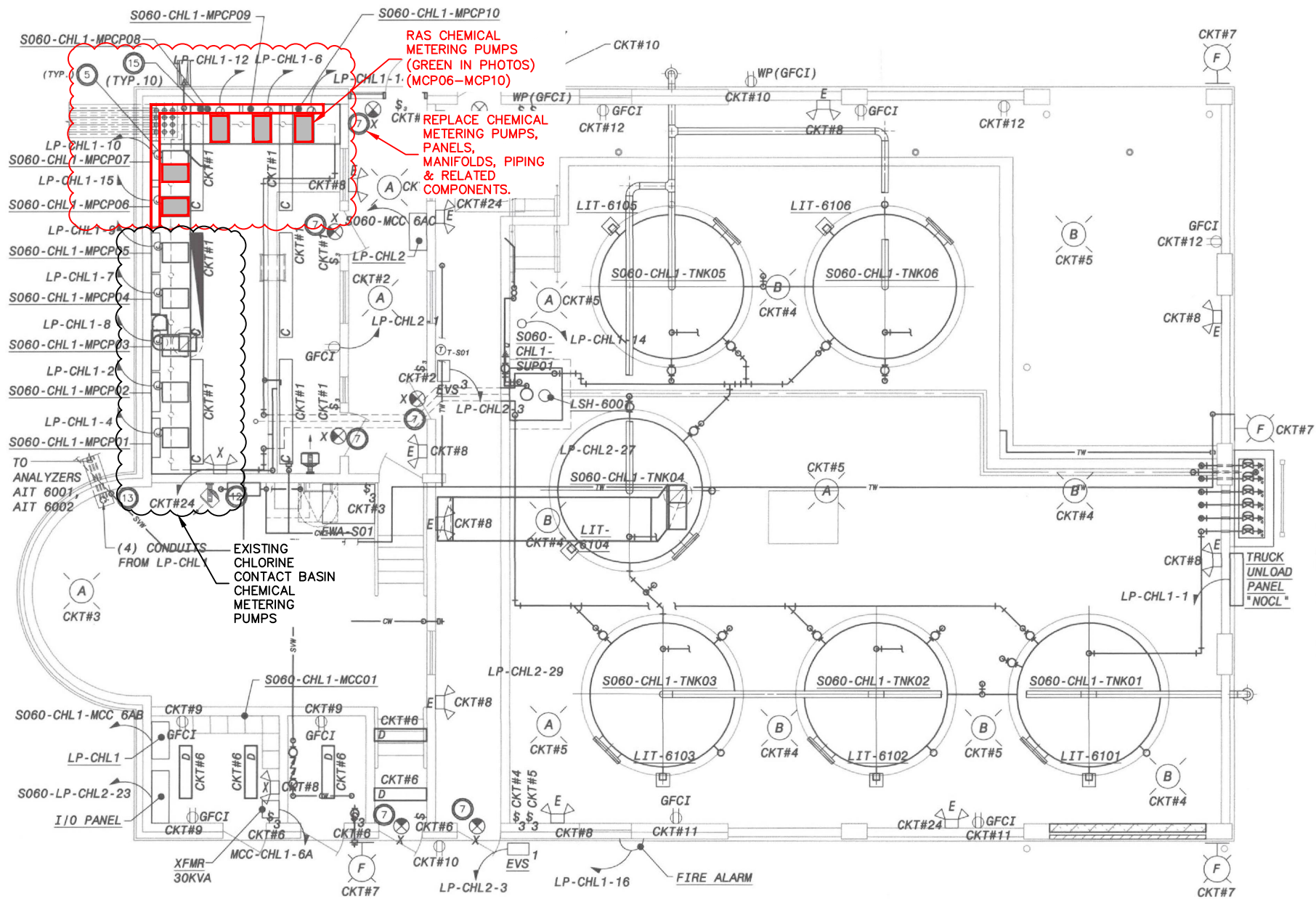
CITY OF TULSA, OKLAHOMA
TULSA METROPOLITAN UTILITY AUTHORITY

PLANS AND ESTIMATES
PREPARED BY: HOLLOWAY, UPDIKE + BELLEN, Inc.
2001 N. WILLOW AVE., BROKEN ARROW, OKLAHOMA 74002
(918) 258-0707, FAX (918) 258-0764

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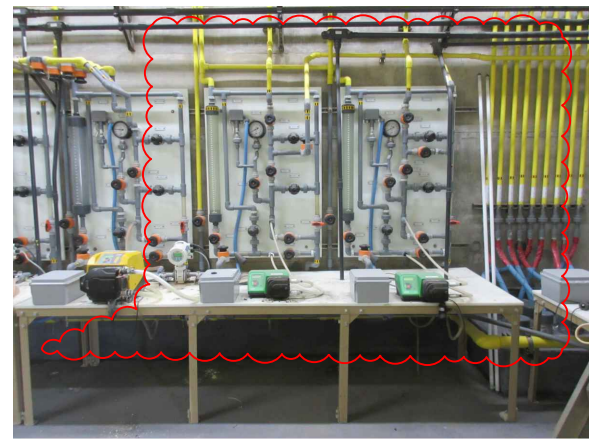


RAS CHEMICAL METERING PUMPS (GREEN IN PHOTOS) (MCP06-MCP10)
REPLACE CHEMICAL METERING PUMPS, PANELS, MANIFOLDS, PIPING & RELATED COMPONENTS.

- NOTES:**
- OWNER RETAINS SALVAGE RIGHTS TO ALL UNUSED EQUIPMENT AND MATERIALS. ALL MATERIALS NOT CLAIMED BY OWNER SHALL BE DISPOSED OF BY CONTRACTOR.
 - SODIUM HYPOCHLORITE RAS CHEMICAL METERING PUMPS MAY BE OUT OF SERVICE FOR DEMOLITION AND REPLACEMENT AT THE SAME TIME. LIMIT SYSTEM OUTAGE TO LESS THAN 3 WEEKS AND SCHEDULE AT LEAST 3 WEEKS IN ADVANCE WITH OWNER.
 - ALL VALVES SHALL BE TRUE UNION STYLE DIAPHRAGM VALVES RATED FOR SODIUM HYPOCHLORITE SERVICE. MANUFACTURER SHALL BE GEORGE FISCHER, OR EQUAL.
 - CONTRACTOR SHALL SUPPLY AND INSTALL A TOTAL OF FOUR (4) 316L TRI CLAMP FITTINGS FOR EACH PUMP INSTALLED.
 - CHEMICAL FEED BOARDS SHALL BE CUSTOM, PRE-ASSEMBLED, FACTORY-BUILT UNITS ASSEMBLED ON HDPE BACKING. MANUFACTURE SHALL BE PROMINENT FLUID CONTROLS, INC., OR EQUAL.
 - ALL PIPING SHALL BE SCHEDULE 80 CPVC.
 - ALL JOINTS SHALL BE FASTENED USING WELD-ON 724 CPVC, INDUSTRIAL GRADE, LOW VOC CEMENT. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR APPLICATION.
 - CONTRACTOR SHALL PROVIDE THE FOLLOWING SPARE PARTS:
 - A. TWO (2) 16OZ CONTAINERS OF CPVC CEMENT.
 - B. SIX (6) CPVC UNIONS OF EACH PIPE DIAMETER USED.

1 PLAN @ RAS CHEMICAL METERING PUMPS
 SCALE: NTS

NOTE: CLOUDED AREAS SHOW GENERAL EXTENTS OF PIPE & EQUIPMENT REPLACEMENT.



A PHOTO @ EXISTING
 SCALE: NTS

B PHOTO @ EXISTING
 SCALE: NTS



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**WATER POLLUTION CONTROL
 CAPITAL EQUIPMENT REPLACEMENTS
 TMUA PROJECT WPC 23-1**

**DRAWING 203.720.A
 SSWWTP SODIUM HYPOCHLORITE
 RAS CHEMICAL METERING PUMPS**

REFERENCE ORIGINAL SA 05-19
 RECORD DRAWINGS FOR ADDITIONAL
 DETAILS & INFORMATION

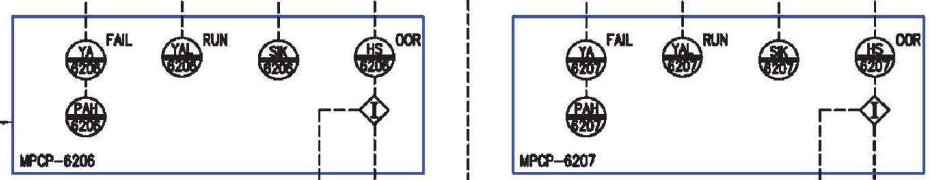
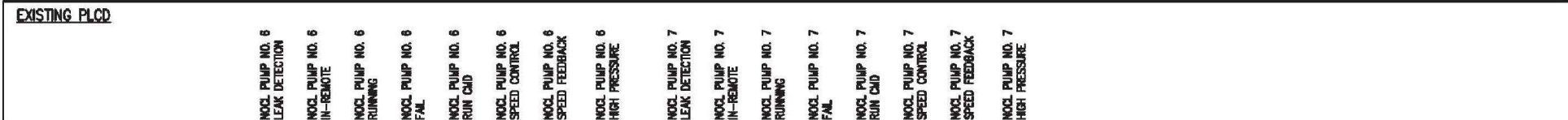
**CITY OF TULSA, OKLAHOMA
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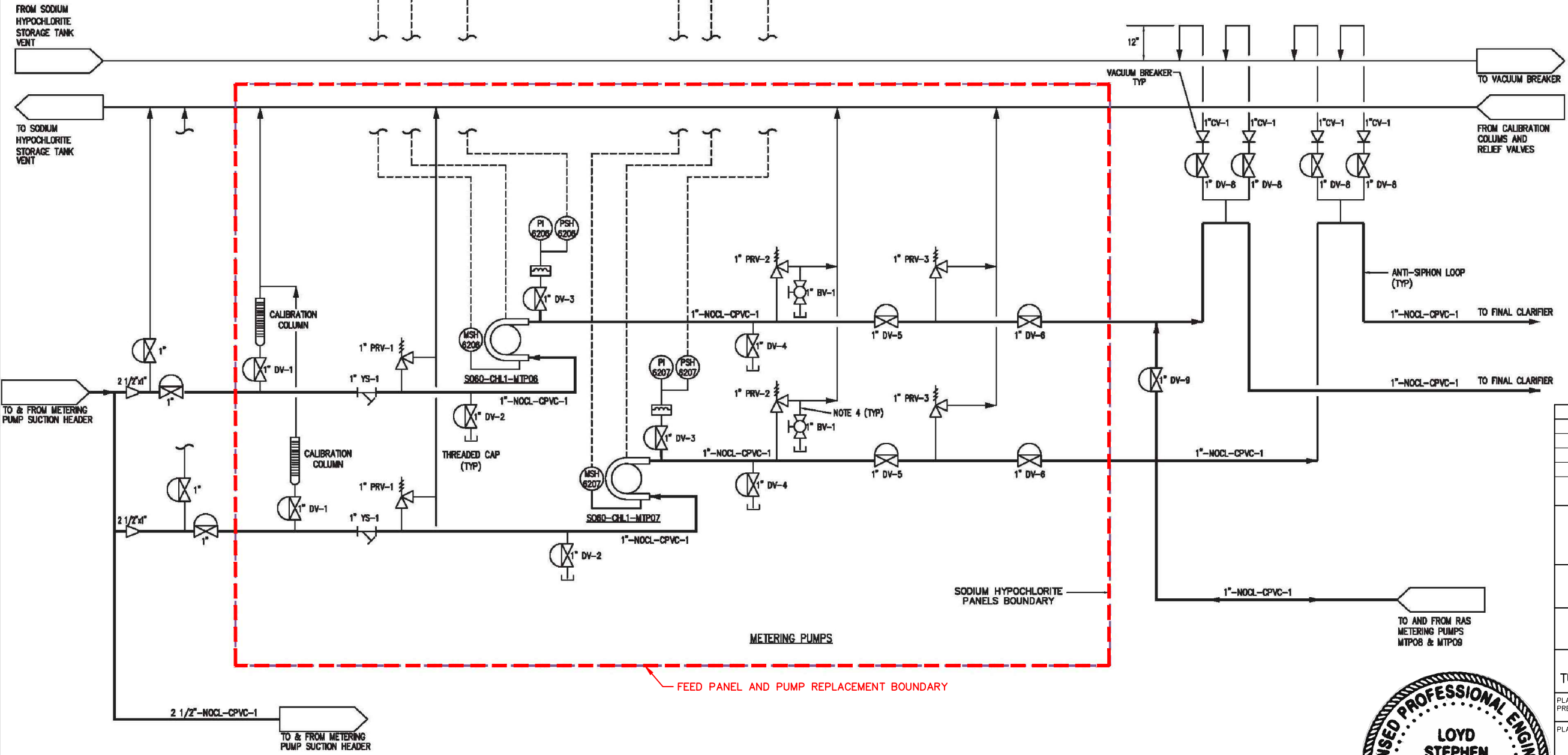
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- NOTES:**
1. SYSTEM CODE IS NOCL UNLESS OTHERWISE NOTED.
 2. SEE SITE WORK DRAWINGS FOR PIPE ROUTING AND LOCATION OF FEED POINTS.
 3. LOCAL CONTROL DEVICES, SUCH AS INDICATING LIGHTS AND SWITCHES, LOCATED ON MCCs OR AT EQUIPMENT, MAY NOT BE INDICATED ON THIS P&ID.
 4. CLEAR PVC PIPE 6" LONG WITH THREADED CAP.
 5. CONTROL PANEL IS INTEGRAL TO THE PUMP ASSEMBLY.
 6. ROUTE VENT HEADERS AT AN ELEVATION AT LEAST ONE FOOT HIGHER THAN THE TOP OF THE STORAGE TANKS.
 7. EACH VALVE NUMBER IS PREFIXED BY THE CORRESPONDING PUMP NUMBER BUT IS NOT INDICATED ON THIS DRAWING.



FEED PANEL AND PUMP REPLACEMENT BOUNDARY

P&ID
SODIUM HYPOCHLORITE METERING PUMPS
SO60-CHL1-MTP06, SO60-CHL1-MTP07

REVISION	BY	DATE

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WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS
TMUA PROJECT WPC 23-1
DRAWING 203.720.B
SSWWTP SODIUM HYPOCHLORITE
RAS CHEMICAL METERING PUMPS

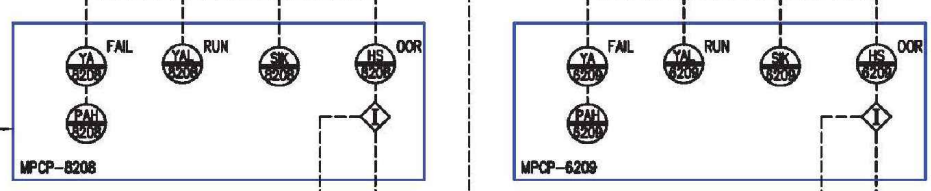
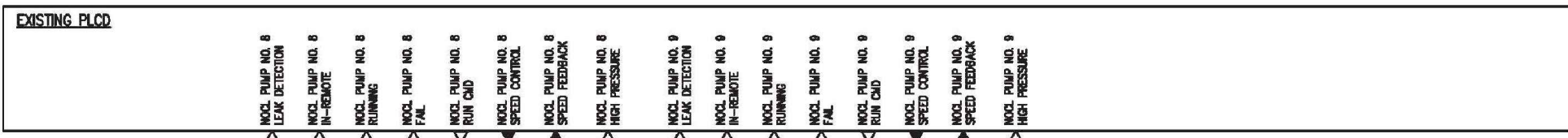
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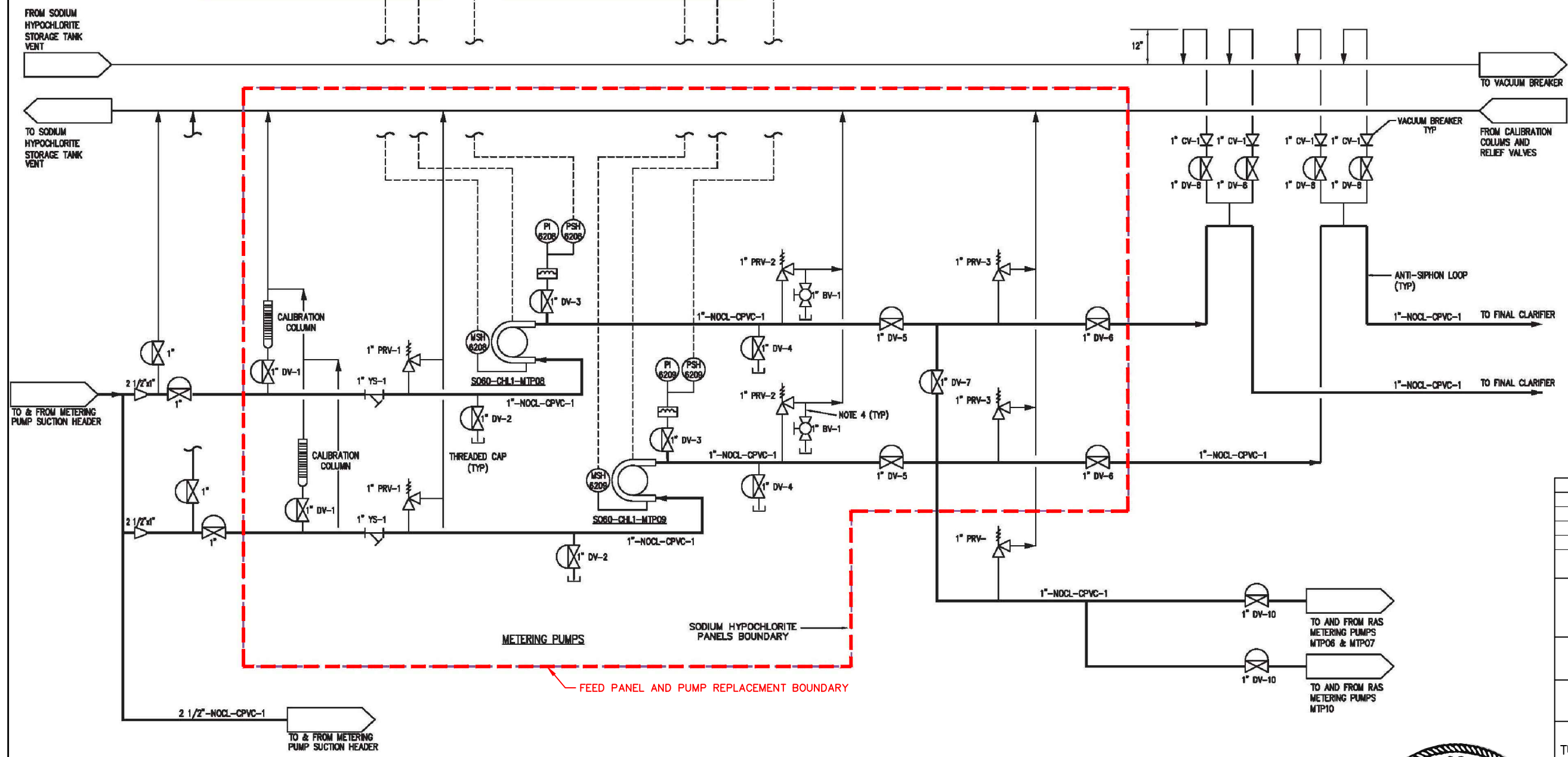
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- NOTES:**
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 2. SEE SITE WORK DRAWINGS FOR PIPE ROUTING AND LOCATION OF FEED POINTS.
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 7. EACH VALVE NUMBER IS PREFIXED BY THE CORRESPONDING PUMP NUMBER BUT IS NOT INDICATED ON THIS DRAWING.



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P&ID
SODIUM HYPOCHLORITE METERING PUMPS
SO60-CHL1-MTP08, SO60-CHL1-MTP09

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WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS
TMUA PROJECT WPC 23-1

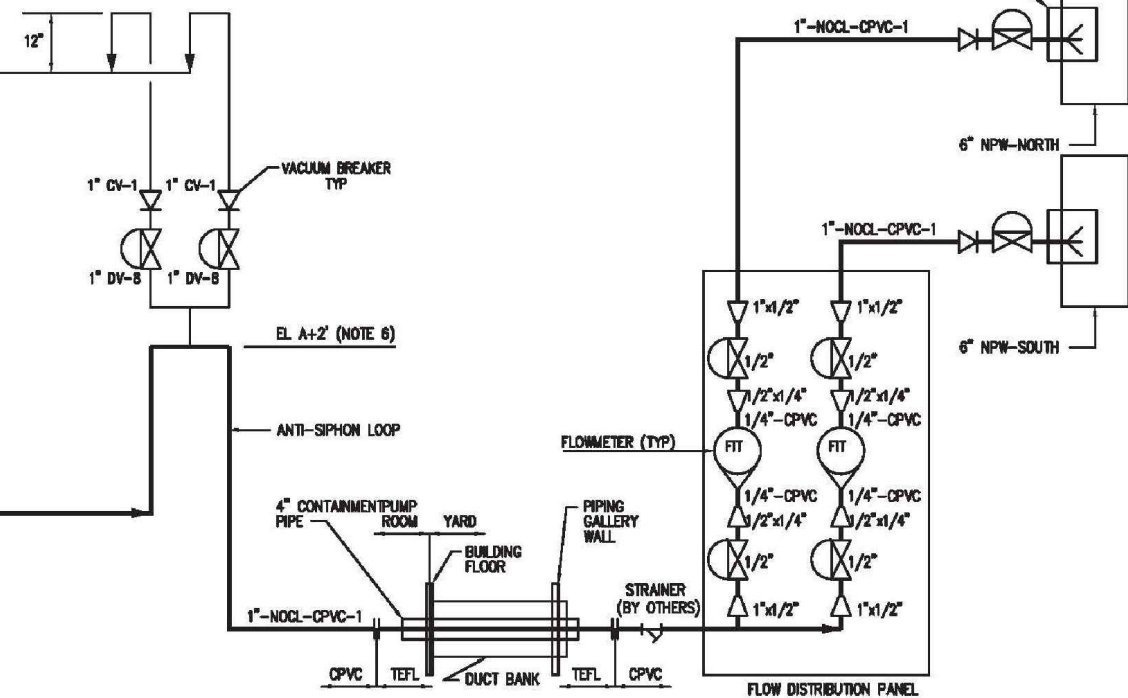
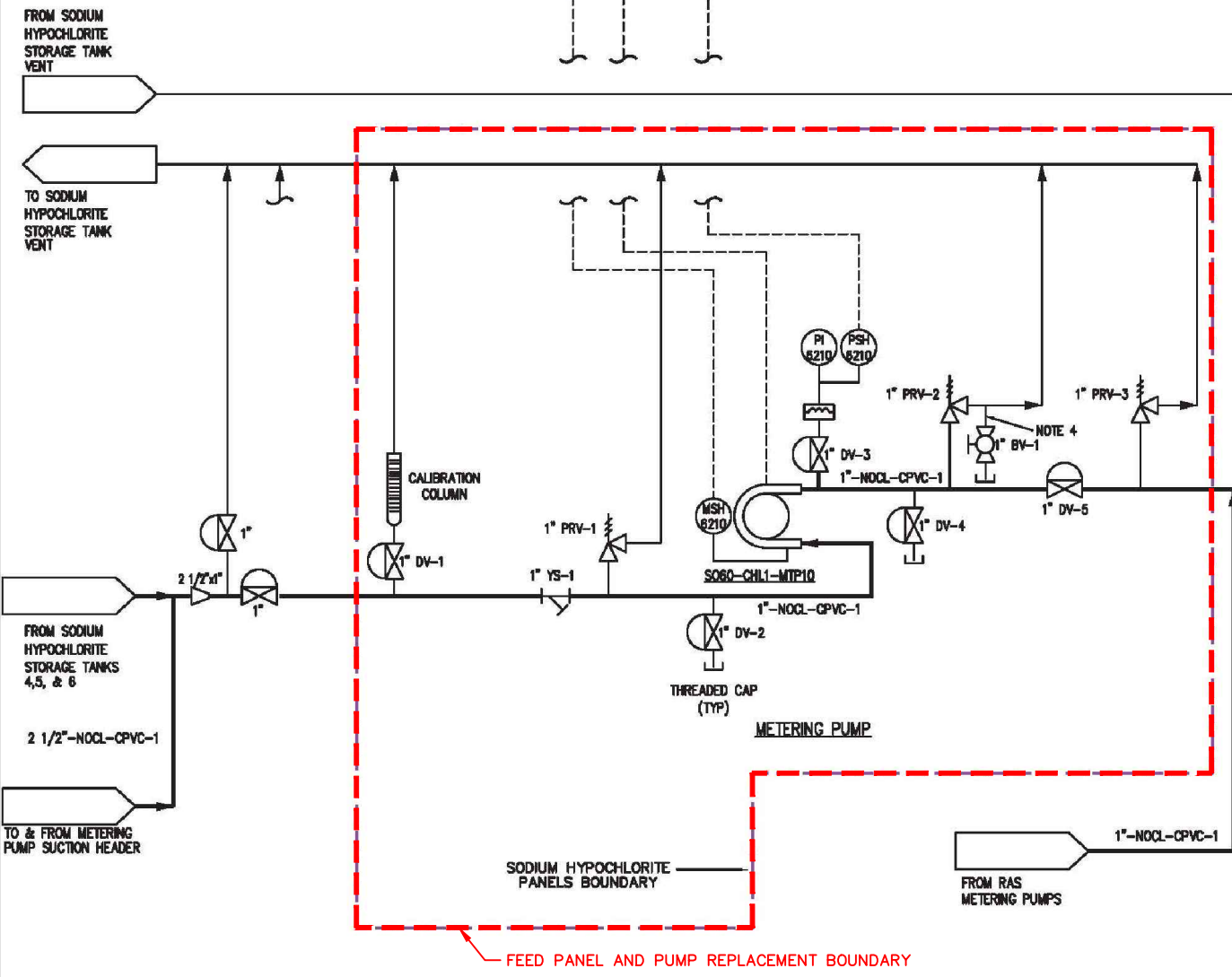
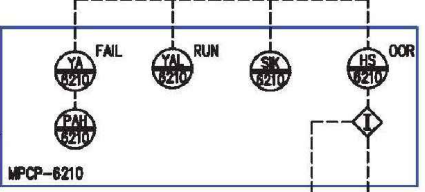
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SSWWTP SODIUM HYPOCHLORITE
RAS CHEMICAL METERING PUMPS

CITY OF TULSA, OKLAHOMA
TULSA METROPOLITAN UTILITY AUTHORITY

PLANS AND ESTIMATES
PREPARED BY: HOLLOWAY, UPDIKE + BELLEN, Inc.
200 N. WILLOW AVE., BROKEN ARROW, OKLAHOMA 74002
(918)298-0700, FAX (918)298-0764

PLAN SCALE:	DRAWN: CAH	DESIGNED: TJR	SURVEY:	APPROVED:
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- NOTES:**
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P&ID
SODIUM HYPOCHLORITE METERING PUMPS
S060-CHL1-MTP10

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WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS
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RAS CHEMICAL METERING PUMPS

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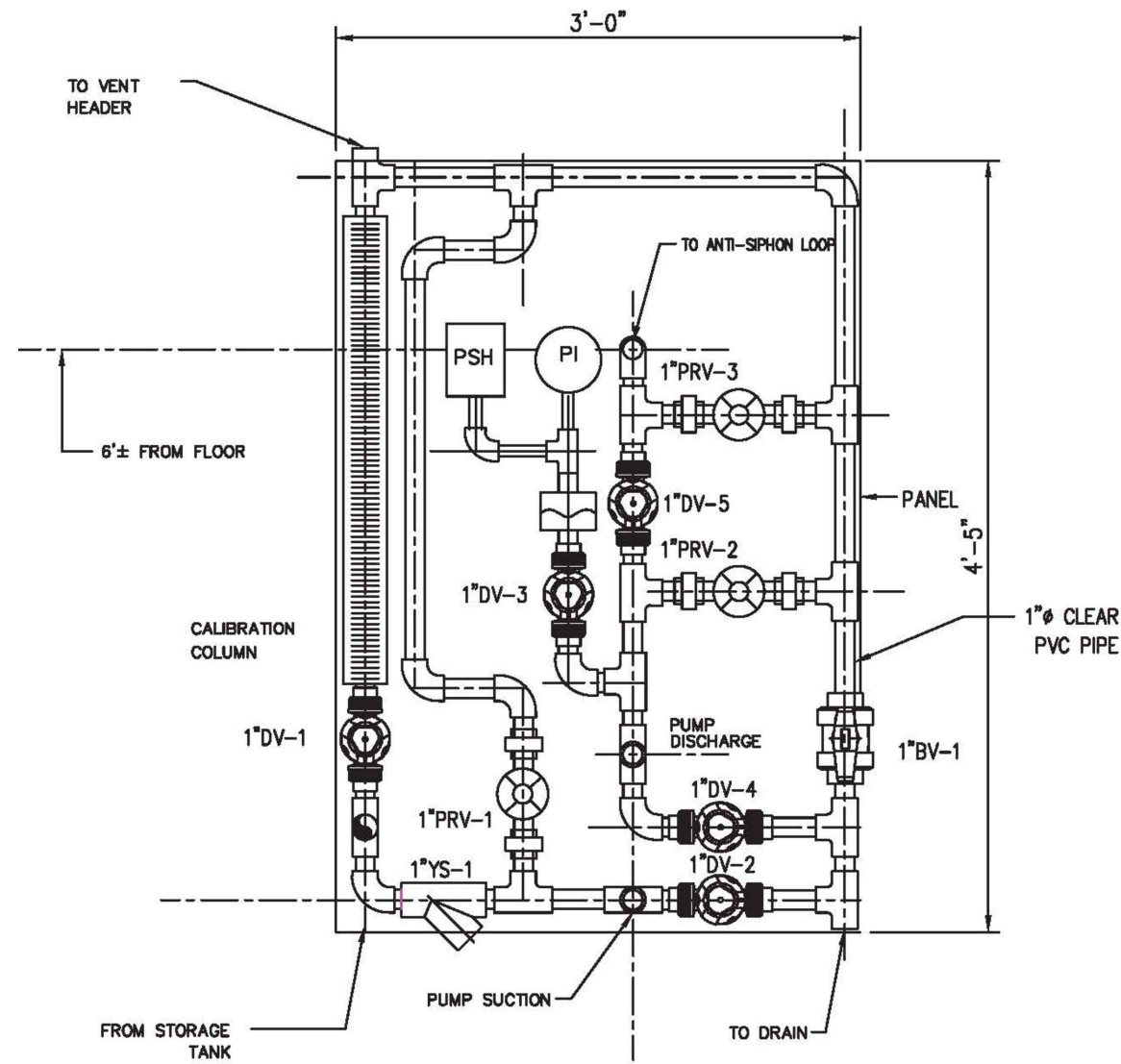
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FRONT VIEW

SODIUM HYPOCHLORITE PANEL
MTP10
NOTE: MTP10 HAS A 2"Ø CALIBRATION COLUMN

REVISION	BY	DATE

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WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS
TMUA PROJECT WPC 23-1

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SSWWTP SODIUM HYPOCHLORITE
RAS CHEMICAL METERING PUMPS

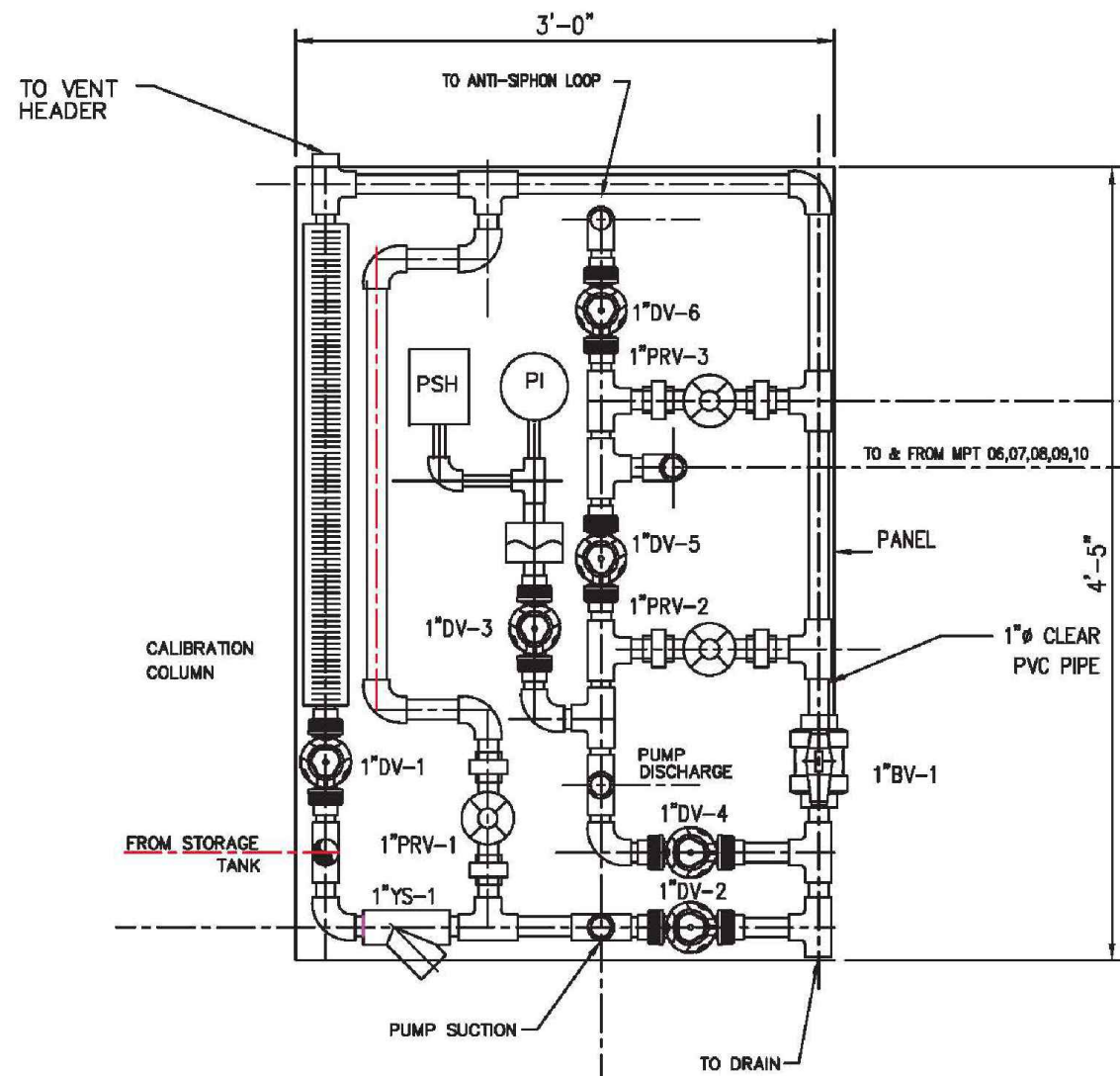
CITY OF TULSA, OKLAHOMA
TULSA METROPOLITAN UTILITY AUTHORITY

PLANS AND ESTIMATES
PREPARED BY: HOLLOWAY, UPDIKE + BELLEN, Inc.
2001 N. WILLOW AVE., BROKEN ARROW, OKLAHOMA 74002
(918) 259-0700, FAX (918) 259-0764

PLAN SCALE:	DRAWN: CAH	DESIGNED: TJR	SURVEY:	APPROVED:
PROFILE SCALE:	FIELD MGR.	SECT. MGR.	PROJ. MGR. TJR	
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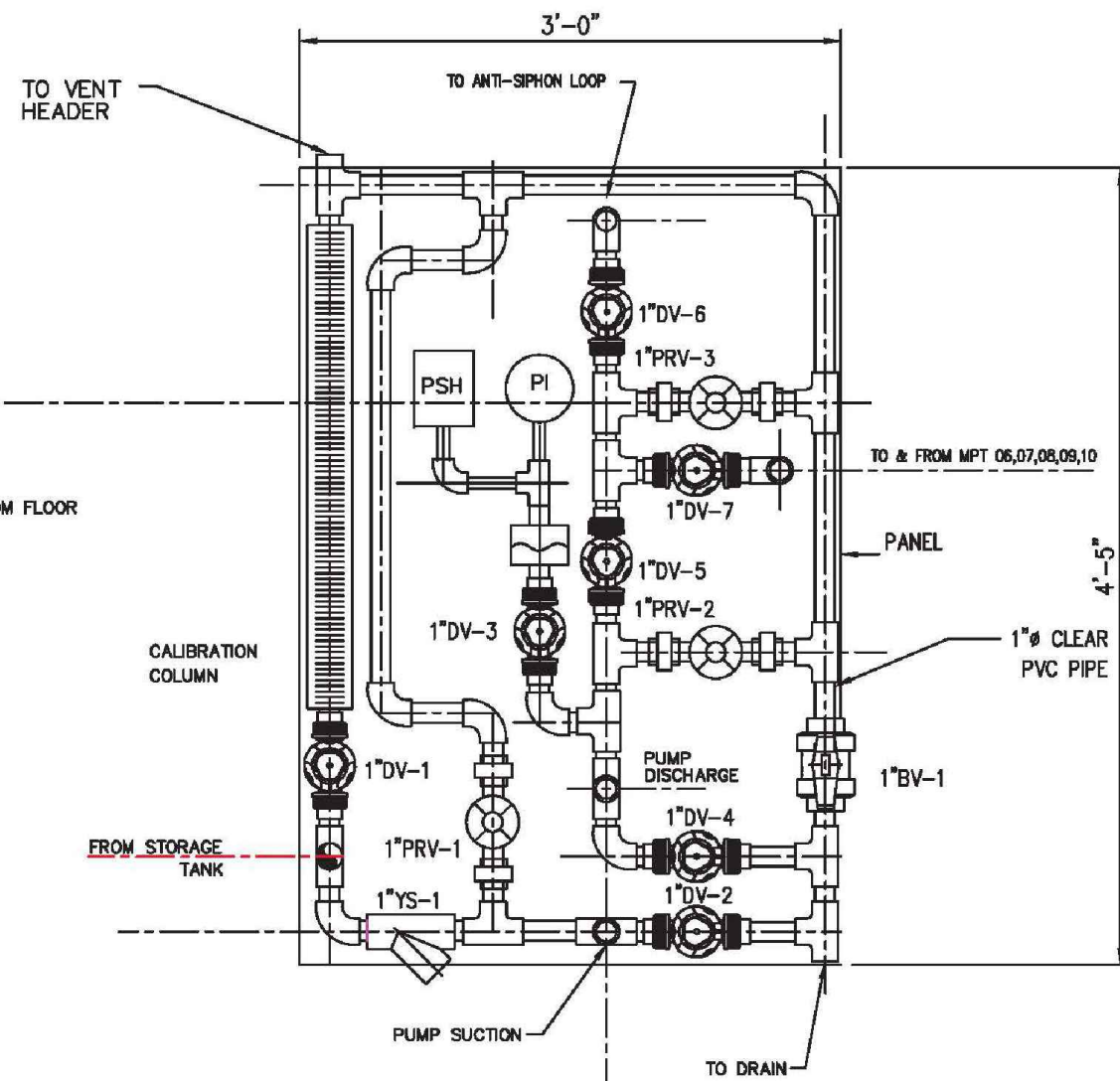


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FRONT VIEW
SCALE: 3/4"=1'-0"

SODIUM HYPOCHLORITE PANEL
MTP06 & 08



FRONT VIEW
SCALE: 3/4"=1'-0"

SODIUM HYPOCHLORITE PANEL
MTP07 & 09

EQUIPMENT LAYOUT FOR PUMPS
MTP06, MTP8 AND MTP07, MTP09
SODIUM HYPOCHLORITE PANEL

REVISION	BY	DATE

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WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS
TMUA PROJECT WPC 23-1

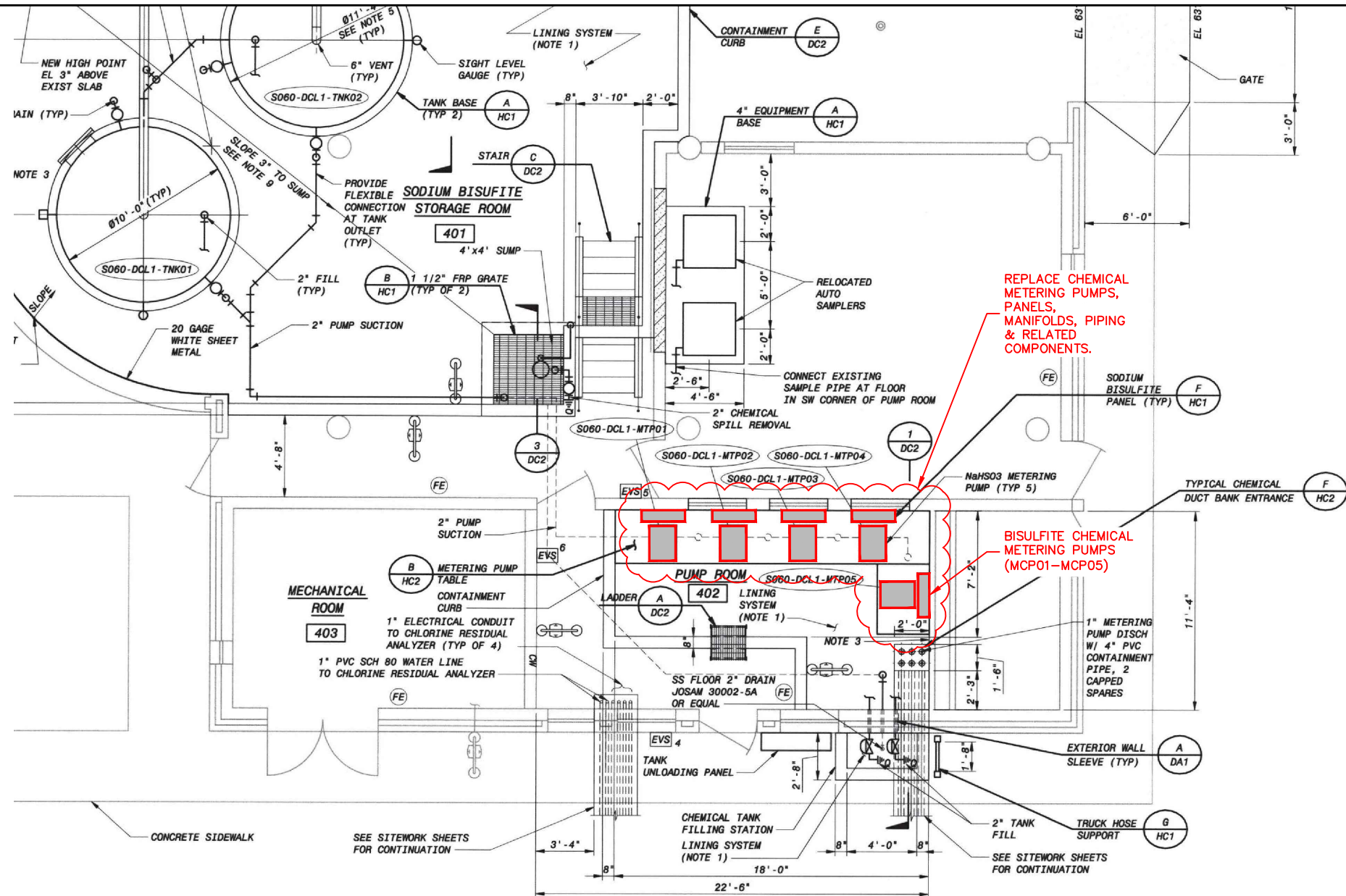
DRAWING 203.720.F
SSWWTP SODIUM HYPOCHLORITE
RAS CHEMICAL METERING PUMPS

CITY OF TULSA, OKLAHOMA
TULSA METROPOLITAN UTILITY AUTHORITY

PLANS AND ESTIMATES
PREPARED BY: HOLLOWAY, UPDIKE + BELLEN, Inc.
2001 N. WILLOW AVE., BROKEN ARROW, OKLAHOMA 74002
(918)298-0770, FAX (918)298-0764

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NOTES:

1. OWNER RETAINS SALVAGE RIGHTS TO ALL UNUSED EQUIPMENT AND MATERIALS. ALL MATERIALS NOT CLAIMED BY OWNER SHALL BE DISPOSED OF BY CONTRACTOR.
2. SODIUM BISULFATE CHEMICAL METERING PUMPS AND ASSOCIATED FEED PANELS SHALL BE DEMOLISHED AND REPLACED ONE UNIT AT A TIME. COORDINATE WORK WITH OWNER AND PROVIDE A WRITTEN WORK PLAN 4 WEEKS AHEAD OF ANY SCHEDULED OUTAGE.
3. ALL VALVES SHALL BE TRUE UNION STYLE CPVC BALL VALVES RATED FOR SODIUM BISULFITE SERVICE. MANUFACTURER SHALL BE SPEARS, OR EQUAL.
4. CONTRACTOR SHALL SUPPLY AND INSTALL A TOTAL OF FOUR (4) 316L TRI CLAMP FITTINGS FOR EACH PUMP INSTALLED.
5. CHEMICAL FEED BOARDS SHALL BE CUSTOM, PRE-ASSEMBLED, FACTORY-BUILT UNITS ASSEMBLED ON HDPE BACKING. MANUFACTURE SHALL BE PROMINENT FLUID CONTROLS, INC., OR EQUAL.
6. ALL PIPING SHALL BE SCHEDULE 80 CPVC.
7. ALL JOINTS SHALL BE FASTENED USING WELD-ON 724 CPVC, INDUSTRIAL GRADE, LOW VOC CEMENT. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR APPLICATION.
8. CONTRACTOR SHALL PROVIDE THE FOLLOWING SPARE PARTS:
 - A. TWO (2) 16OZ CONTAINERS OF CPVC CEMENT.
 - B. SIX (6) CPVC UNIONS OF EACH PIPE DIAMETER USED.

1 PLAN @ SODIUM BI-SULFITE CHEMICAL METERING PUMPS
 33 SCALE: NTS

NOTE: CLOUDED AREAS SHOW GENERAL EXTENTS OF PIPE & EQUIPMENT REPLACEMENT.



A PHOTO @ EXISTING
 33 SCALE: NTS

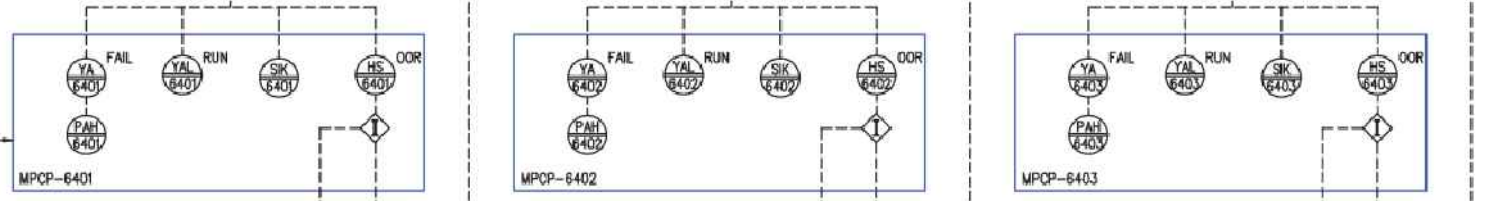
B PHOTO @ EXISTING
 33 SCALE: NTS

C PHOTO @ EXISTING
 33 SCALE: NTS

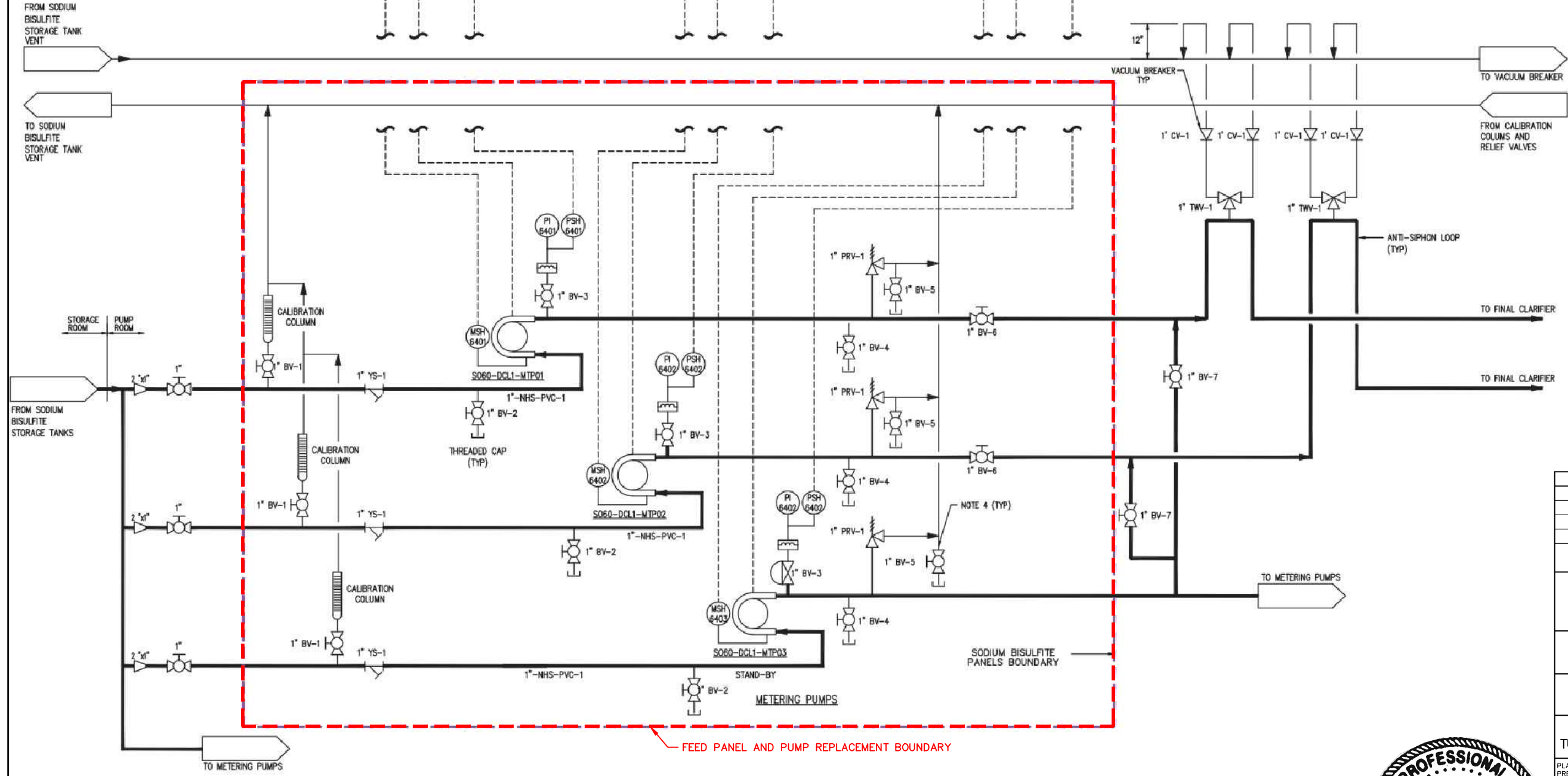
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WATER POLLUTION CONTROL CAPITAL EQUIPMENT REPLACEMENTS TMUA PROJECT WPC 23-1		
DRAWING 203.740.A SSWTP SODIUM BISULFITE CHEMICAL METERING PUMPS		
REFERENCE ORIGINAL SA 05-19 RECORD DRAWINGS FOR ADDITIONAL DETAILS & INFORMATION		
CITY OF TULSA, OKLAHOMA TULSA METROPOLITAN UTILITY AUTHORITY		
PLANS AND ESTIMATES PREPARED BY: HOLLOWAY, UPDIKE + BELLEN, Inc. <small>2001 N. WILLOW AVE., BROKEN ARROW, OKLAHOMA 74002 (918)208-0707, FAX (918)208-0764</small>		
PLAN SCALE:	DRAWN CAH DESIGNED TJR SURVEY	APPROVED:
PROFILE SCALE:	FIELD MGR.	
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- NOTES:**
1. SYSTEM CODE IS NHS UNLESS OTHERWISE NOTED.
 2. SEE SITE WORK DRAWINGS FOR PIPE ROUTING AND LOCATION OF FEED POINTS.
 3. LOCAL CONTROL DEVICES, SUCH AS INDICATING LIGHTS AND SWITCHES, LOCATED ON MCCs OR AT EQUIPMENT, MAY NOT BE INDICATED ON THIS P&ID.
 4. CLEAR PVC PIPE 6" LONG WITH THREADED CAP.
 5. CONTROL PANEL IS INTEGRAL TO THE PUMP ASSEMBLY.
 6. ROUTE VENT HEADERS AT AN ELEVATION AT LEAST ONE FOOT HIGHER THAN THE TOP OF THE STORAGE TANKS.
 7. EACH VALVE NUMBER IS PREFIXED BY THE CORRESPONDING PUMP NUMBER BUT IS NOT INDICATED ON THIS DRAWING.



P&ID
SODIUM BISULFITE METERING PUMPS
S060-DCL-MTP01, S060-DCL-MTP02, S060-DCL1-MTP03

REVISION	BY	DATE

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WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS
TMUA PROJECT WPC 23-1

DRAWING 203.740.B
SSWWTP SODIUM BISULFITE
CHEMICAL METERING PUMPS

CITY OF TULSA, OKLAHOMA
TULSA METROPOLITAN UTILITY AUTHORITY

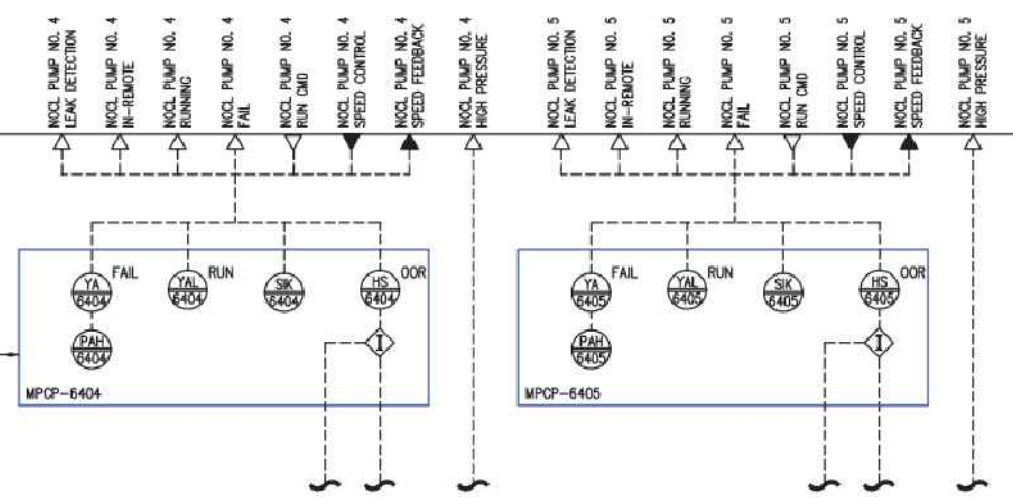
PLANS AND ESTIMATES PREPARED BY: **HOLLOWAY, UPDIKE + BELLEN, Inc.**
2001 N. WILLOW AVE., BROKEN ARROW, OKLAHOMA 74002
(918)298-0700, FAX (918)298-0764

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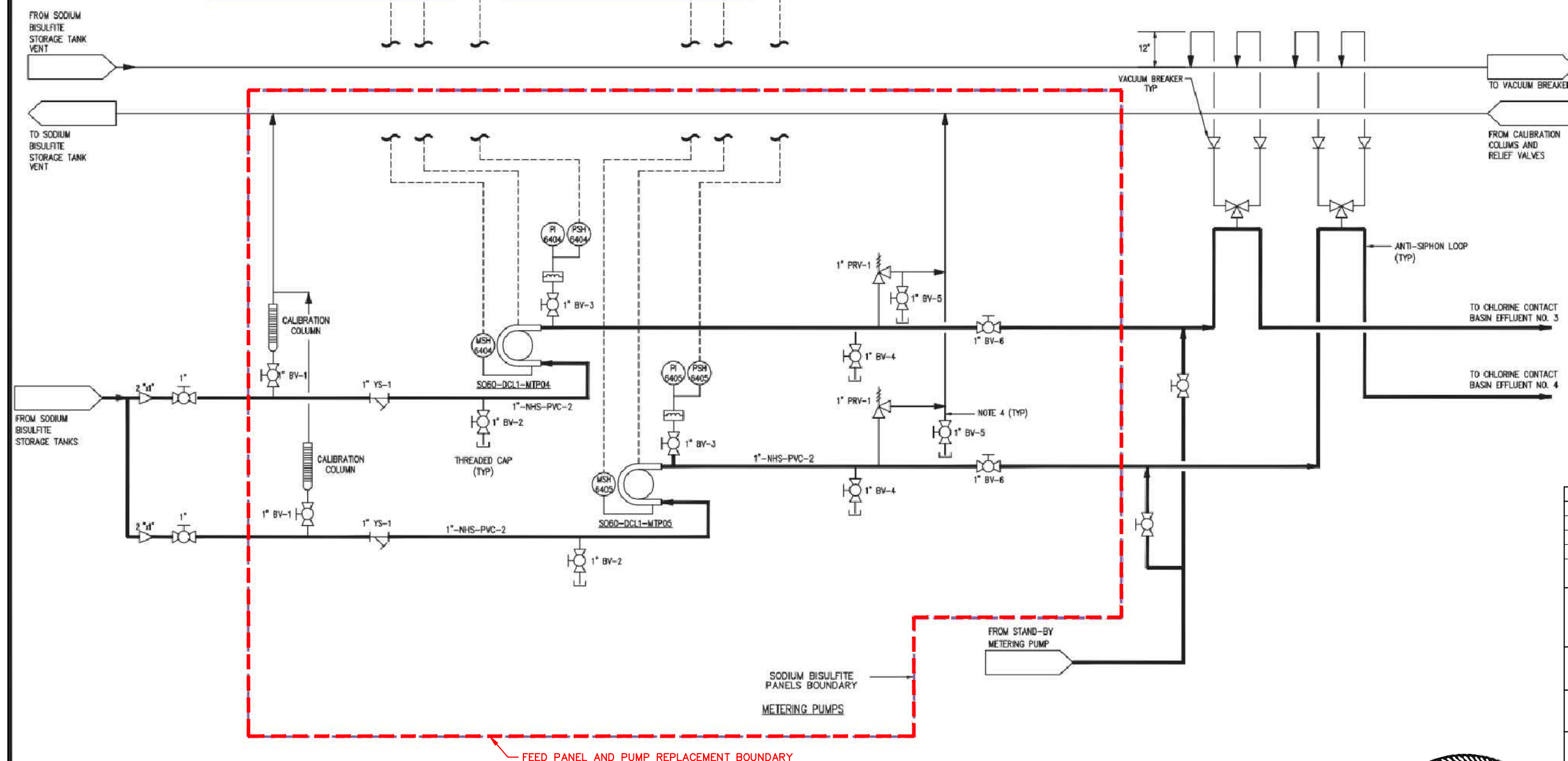
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EXISTING P&ID



NOTES:

1. SYSTEM CODE IS NHS UNLESS OTHERWISE NOTED.
2. SEE SITE WORK DRAWINGS FOR PIPE ROUTING AND LOCATION OF FEED POINTS.
3. LOCAL CONTROL DEVICES, SUCH AS INDICATING LIGHTS AND SWITCHES, LOCATED ON MCCs OR AT EQUIPMENT, MAY NOT BE INDICATED ON THIS P&ID.
4. CLEAR PVC PIPE 6" LONG WITH THREADED CAP.
5. CONTROL PANEL IS INTEGRAL TO THE PUMP ASSEMBLY.
6. ROUTE VENT HEADERS AT AN ELEVATION AT LEAST ONE FOOT HIGHER THAN THE TOP OF THE STORAGE TANKS.
7. EACH VALVE NUMBER IS PREFIXED BY THE CORRESPONDING PUMP NUMBER BUT IS NOT INDICATED ON THIS DRAWING.



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P&ID
SODIUM BISULFITE METERING PUMPS
SO60-DCL1-MTP04 AND SO60-DCL1-MTP05

REVISION	BY	DATE

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WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS
TMAU PROJECT WPC 23-1

DRAWING 203.740.C
SSWWTP SODIUM BISULFITE
CHEMICAL METERING PUMPS

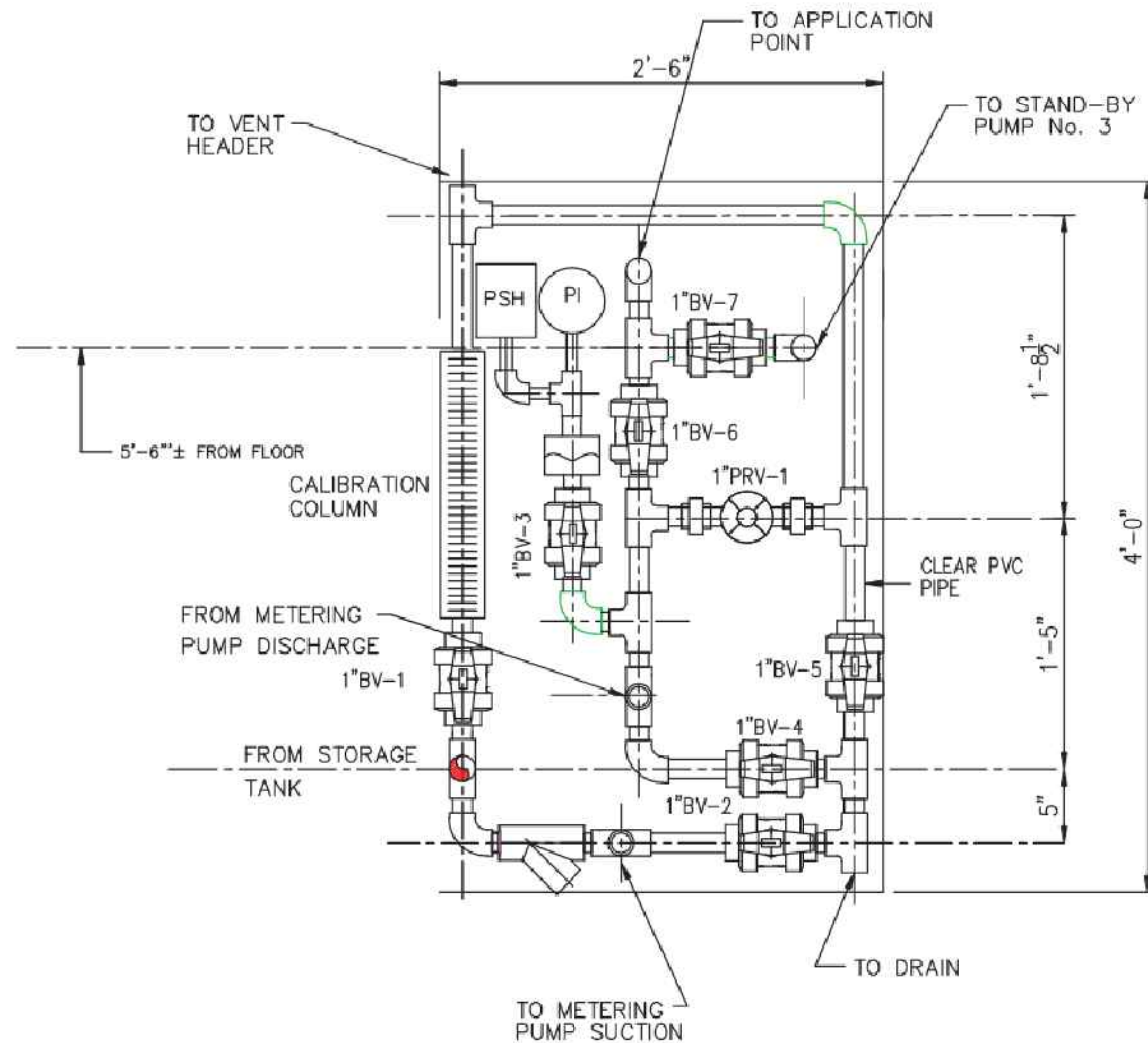
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TULSA METROPOLITAN UTILITY AUTHORITY

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918-259-0770, FAX 918-259-0764

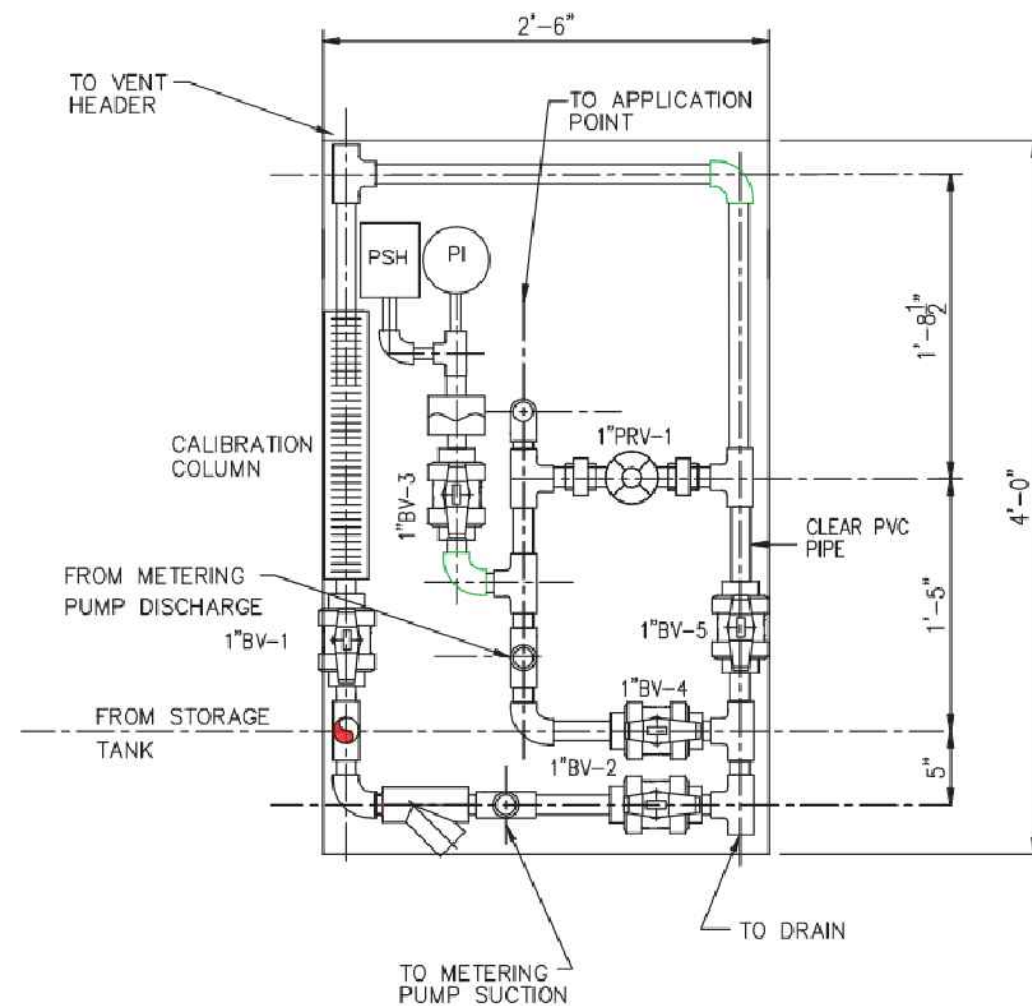
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SODIUM BISULFITE PANEL
5060-DC1-1-MTP01,02,03,04,05



SODIUM BISULFITE PANEL
5060-DC1-1-MTP03
NOTE: MPT03 HAS NO VALVE BV-6 OR 7.

EQUIPMENT LAYOUT
SODIUM BISULFITE PANEL
5060-DC1-1-MTP01,02,03,04 AND 05

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WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS
TMUA PROJECT WPC 23-1

DRAWING 203.740.D
SSWWTP SODIUM BISULFITE
CHEMICAL METERING PUMPS

CITY OF TULSA, OKLAHOMA
TULSA METROPOLITAN UTILITY AUTHORITY

PLANS AND ESTIMATES
PREPARED BY: HOLLOWAY, UPDIKE + BELLEN, Inc.
2001 N. WILLOW AVE., BROKEN ARROW, OKLAHOMA 74002
918-259-0770, FAX 918-259-0764

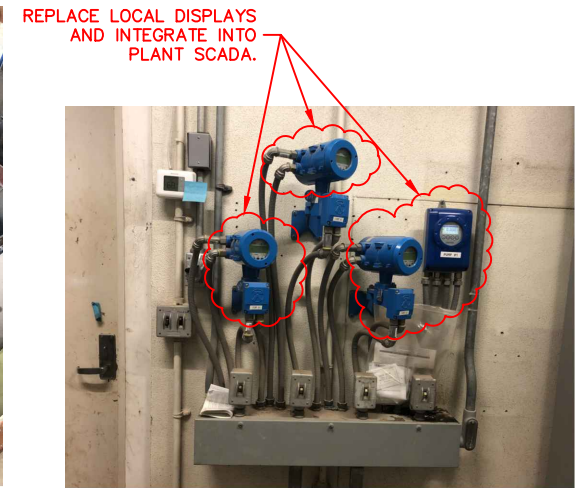
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EQUIPMENT SCHEDULE						
SYMBOL	QUANTITY	DESCRIPTION	MANUFACTURER	MODEL/STYLE	SIZE	DETAILS
◊ A	4	MAGNETIC FLOW METER	ENDRESS+HAUSER, OR EQUAL	PROMAG W 400 METER, 5W4C7F, DN750 30", 5W4C7F-4VP5/0 (5W4C7F-AAKLHP5DH W1KGA+CBE8)	30"	NEW REMOTE DISPLAYS, FULLY POTTED



B PHOTO - EXISTING
37 SCALE: NTS

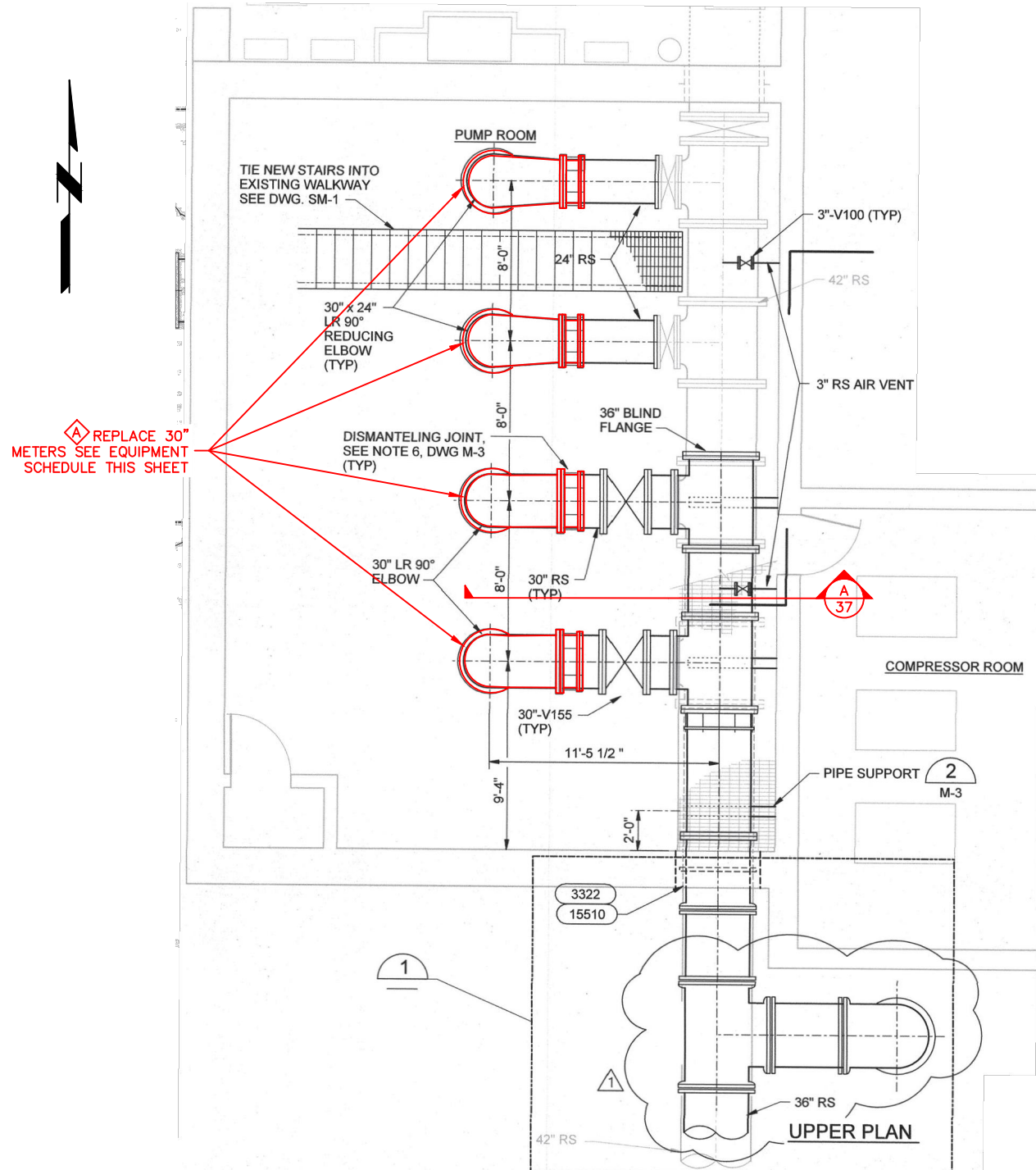


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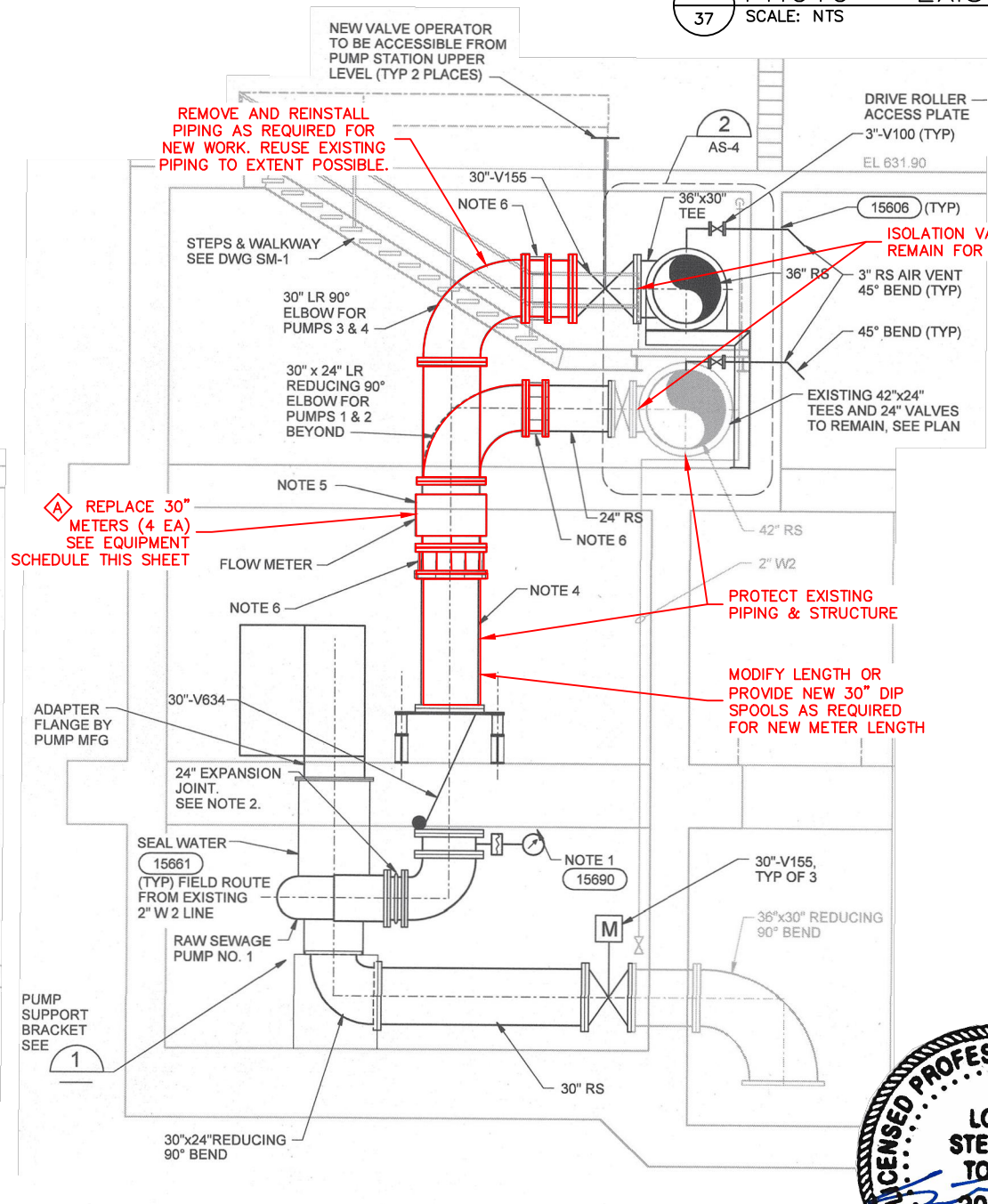
REPLACE LOCAL DISPLAYS AND INTEGRATE INTO PLANT SCADA.

NOTES:

- CONTRACTOR MAY REUSE EXISTING DIP PIPING AND FITTINGS TO EXTENT POSSIBLE. MODIFY EXISTING SPOOL PIECES AS REQUIRED TO ACCOMMODATE NEW METER LENGTH. PROVIDE NEW DIP AS NECESSARY FOR A COMPLETE AND OPERABLE INSTALLATION.
- REFER TO EQUIPMENT SCHEDULE AND SPECIFICATIONS FOR MAGNETIC FLOW METER REQUIREMENTS.
- CONTRACTOR SHALL INSTALL A NEW REMOTE TRANSMITTER/FLOW DISPLAY FOR EACH FLOW METER INSTALLED. MATCH EXISTING LOCATION AND REUSE EXISTING CONDUIT TO EXTENT POSSIBLE.
 - A. ALL SENSOR CABLE SHALL BE NEW AND CONTINUOUS FROM METER TO DISPLAY.
 - B. RE-LAND OR RE-PULL EXISTING CONTROL WIRE CIRCUITS TO LOCAL PLC.
- PROVIDE STARTUP AND INTEGRATION SERVICES TO CONFIRM METER FLOW IS ACCURATELY SCALED AND DISPLAYED ON EXISTING HMI.
- PREPARE AND PAINT ALL NEW AND MODIFIED PIPING, FITTING AND VALVES. REFER TO SPECIFICATION SECTION 204.5 FOR REQUIREMENTS.
- PROVIDE NEW 316SS BOLT SETS AND GASKETS FOR ALL MODIFIED PIPING.



1 SSWWTP MAIN LIFT STATION - UPPER LEVEL PIPING PLAN
37 SCALE: 1/4" = 1'



A SSWWTP MAIN LIFT STATION PIPING SECTION
37 SCALE: 1/4" = 1'



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**WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS
TMUA PROJECT WPC 23-1**

**DRAWING 203.760.A
SSWWTP MAIN LIFT STATION FLOW METER
REPLACEMENT**

REFERENCE ORIGINAL PROJECT ES-2001-2
RECORD DRAWINGS FOR ADDITIONAL
DETAILS & INFORMATION

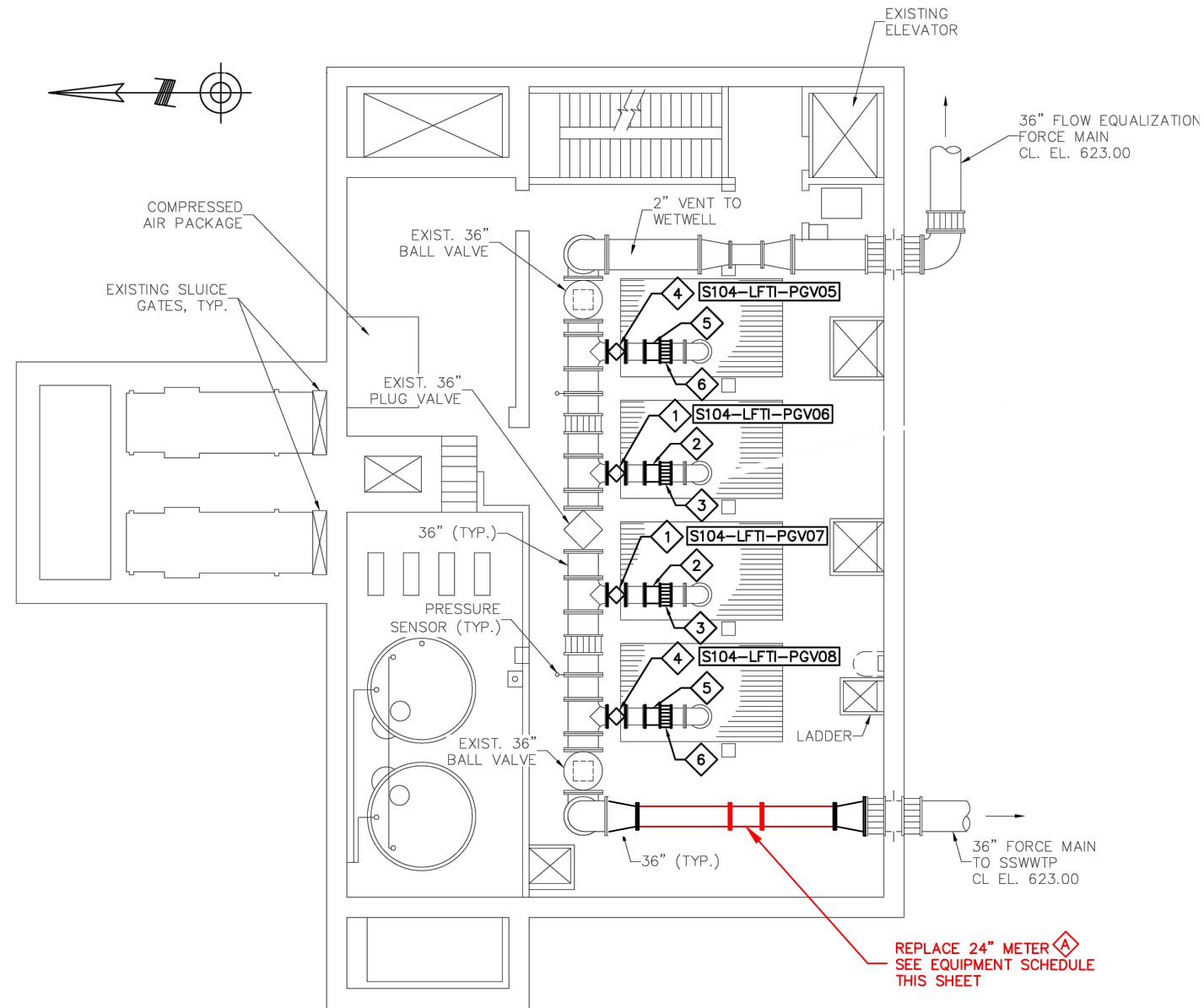
**CITY OF TULSA, OKLAHOMA
TULSA METROPOLITAN UTILITY AUTHORITY**

PLANS AND ESTIMATES
PREPARED BY: **HOLLOWAY, UPDIKE + BELLEN, Inc.**
2001 N. WILLOW AVE., BROCKTON, OKLAHOMA 74002
(918) 259-0707, FAX (918) 259-0764

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- NOTES:**
- CONTRACTOR MAY REUSE EXISTING DIP PIPING AND FITTINGS TO EXTENT POSSIBLE. MODIFY EXISTING SPOOL PIECES AS REQUIRED TO ACCOMMODATE NEW METER LENGTH. PROVIDE NEW DIP AS NECESSARY FOR A COMPLETE AND OPERABLE INSTALLATION.
 - REFER TO EQUIPMENT SCHEDULE AND SPECIFICATIONS FOR MAGNETIC FLOW METER REQUIREMENTS.
 - CONTRACTOR SHALL INSTALL A NEW REMOTE TRANSMITTER/FLOW DISPLAY. MATCH EXISTING LOCATION AND REUSE EXISTING CONDUIT TO EXTENT POSSIBLE.
 - A. ALL SENSOR CABLE SHALL BE NEW AND CONTINUOUS FROM METER TO DISPLAY.
 - B. RE-LAND OR RE-PULL EXISTING CONTROL WIRE CIRCUITS TO LOCAL PLC.
 - C. PROVIDE STARTUP AND INTEGRATION SERVICES TO CONFIRM METER FLOW IS ACCURATELY SCALED AND DISPLAYED ON EXISTING HMI.
 - PREPARE AND PAINT ALL NEW AND MODIFIED PIPING, FITTINGS AND VALVES. REFER TO SPECIFICATION SECTION 204.5 FOR REQUIREMENTS.
 - PROVIDE NEW 316SS BOLT SETS AND GASKETS FOR ALL MODIFIED PIPING.

1 INTERMEDIATE PROPOSED PIPING PLAN — EL. 613.50
 38 SCALE: 1/8" = 1'-0"

ADDITIVE ALTERNATE #3

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WATER POLLUTION CONTROL
 CAPITAL EQUIPMENT REPLACEMENTS
 TMUA PROJECT WPC 23-1

DRAWING 203.765
 CHERRY CREEK LIFT STATION METER REPLACEMENT

REFERENCE ORIGINAL PROJECT ES 2012-05
 RECORD DRAWINGS FOR ADDITIONAL DETAILS & INFORMATION

CITY OF TULSA, OKLAHOMA
 TULSA METROPOLITAN UTILITY AUTHORITY

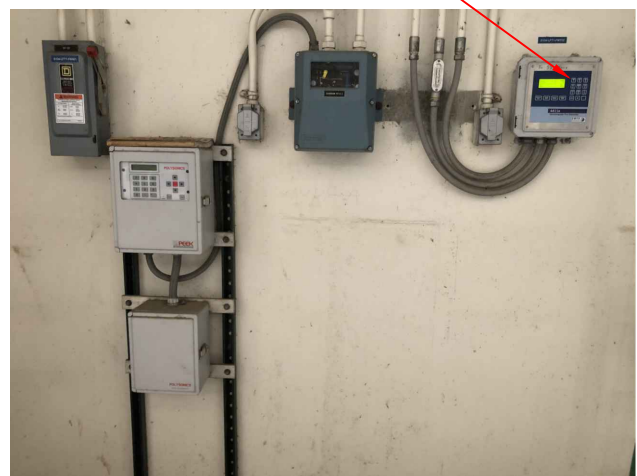
EQUIPMENT SCHEDULE						
SYMBOL	QUANTITY	DESCRIPTION	MANUFACTURER	MODEL/STYLE	SIZE	DETAILS
⬠	ONE	MAGNETIC FLOW METER	ENDRESS+ HAUSER, OR EQUAL	PROMAG W 400 METER, 5W4C6H, 24", 5W4C6H-P817/0 (5W4C6H+AAKLHP 5DHA1KGA+CBEB)	24"	NEW REMOTE DISPLAY, FULLY POTTED

REPLACE 24" METER ⬠ SEE EQUIPMENT SCHEDULE THIS SHEET



2 PHOTO — EXISTING
 38 SCALE: NTS

REPLACE LOCAL DISPLAY



3 PHOTO — EXISTING
 38 SCALE: NTS



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PLAN SCALE:	DRAWN	CAH	APPROVED:
	DESIGNED	TJR	
	SURVEY		
PROFILE SCALE:	FIELD MGR.		
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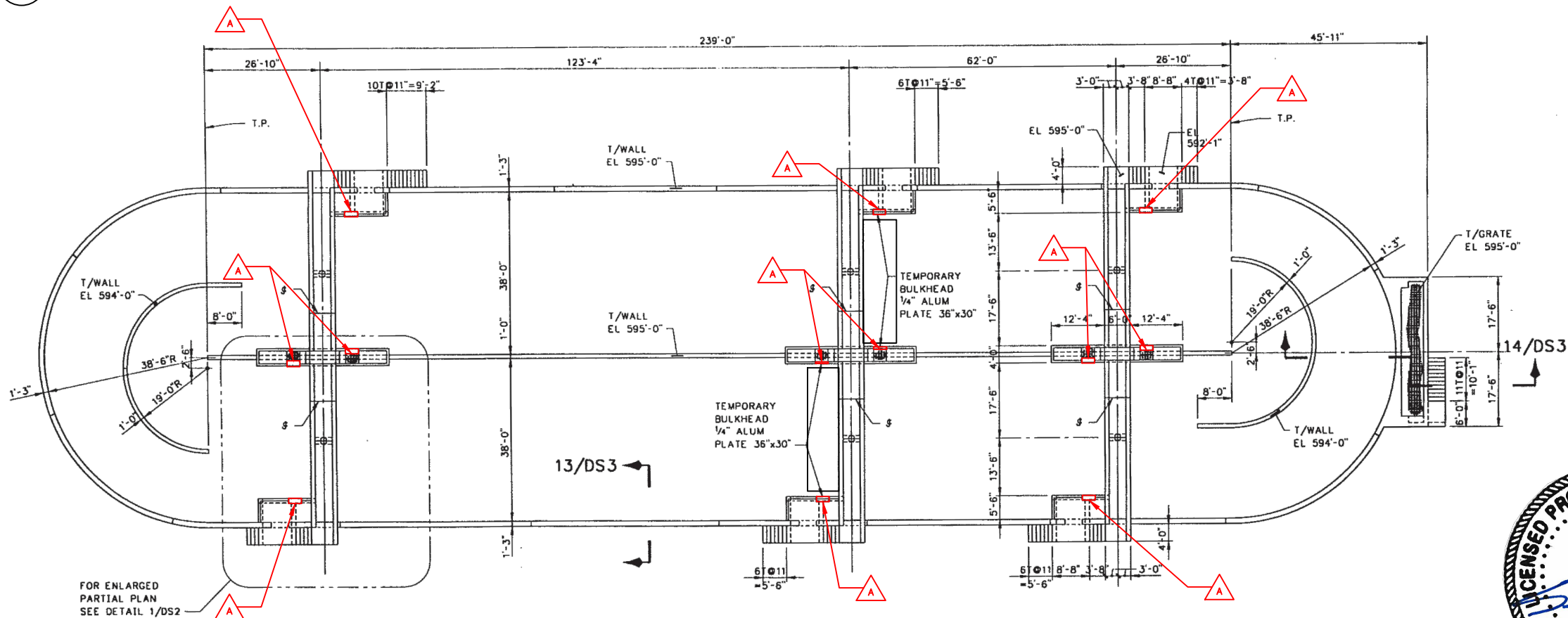


REFURBISH EXISTING SURFACE AERATOR BEARING BASE PLATES

NOTES:

1. ONLY ONE SURFACE AERATOR MAY BE OUT OF SERVICE AT A TIME. COORDINATE OUTAGES WITH WWTP STAFF AT LEAST 1 WEEK PRIOR TO START OF WORK.
2. CONTRACTOR SHALL PROTECT EXISTING BEARING, CASE AND SHAFT DURING SAND BLASTING AND COATING. COMPLETELY MASK AND PROTECT THESE ITEMS AND WAIT FOR OWNER APPROVAL BEFORE INITIATING ANY SAND BLASTING.
3. SAND BLAST BEARING PLATES TO SP-5 WHITE METAL BLAST. LEAVE 6" OF ADJACENT CONCRETE UNMASKED DURING BLASTING.
4. COAT BEARING PLATES WITH TWO COATS OF TNEC PERMA-SHIELD PL, SERIES 432. EACH COAT SHALL BE 30.0 MILS DFT FOR A TOTAL DFT OF 50 MILS MINIMUM.
5. OVERLAP COATING MINIMUM OF 6" ONTO ADJACENT CONCRETE.

1 PHOTO — EXISTING SURFACE AERATOR BEARING
38 SCALE: NTS

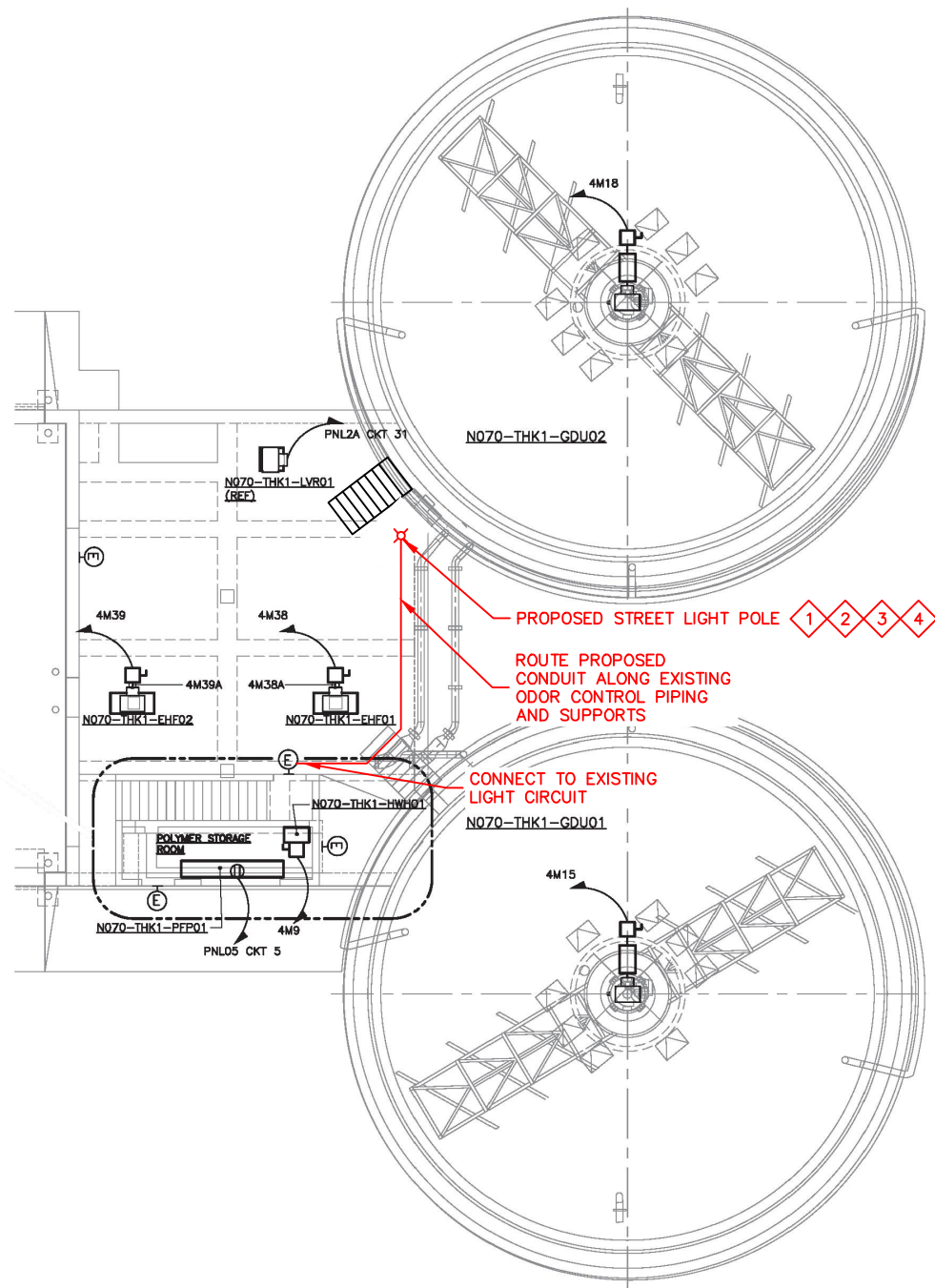


2 LBC WWTP OXIDATION DITCH PLAN
38 SCALE: NTS

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WATER POLLUTION CONTROL CAPITAL EQUIPMENT REPLACEMENTS TMUA PROJECT WPC 23-1		
DRAWING 203.780 LBCWWTP SURFACE AERATOR BEARING PLATES REHABILITATION		
REFERENCE ORIGINAL PROJECT SA 92-3 RECORD DRAWINGS FOR ADDITIONAL DETAILS & INFORMATION		
CITY OF TULSA, OKLAHOMA TULSA METROPOLITAN UTILITY AUTHORITY		
PLANS AND ESTIMATES PREPARED BY:		
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1 THICKENER FACILITY PLAN
40 SCALE: 1/8" = 1'-0"



2 PHOTO - PROPOSED LIGHT POLE LOCATION
40 NTS

NOTES:

1. FURNISH AND INSTALL (3) FLOOD LIGHTS, DIALIGHT DUROSITE, 15000 LUMENS, 140 WATTS, 100-277 VOLT, TEMPERED GLASS LENS AND ALL REQUIRED MOUNTING HARDWARE.
2. FURNISH AND INSTALL 24' HINGED POLE WITH POLYESTER POWDER COAT FINISH AND WINCH LOWERING DEVICE. POLE SHALL BE GENERAL STRUCTURES INC. MODEL PHS-5-6007-24-X, OR EQUAL.
3. CONNECT TO EXISTING LIGHT CIRCUIT AND INSTALL NEW ALUMINUM CONDUIT AND WIRE FROM EXISTING FIXTURE ALONG ODOR CONTROL PIPING AND SUPPORTS TO NEW POLE LOCATION.
4. PROVIDE AND INSTALL 1" DIAMETER HILTI HAS-B-105-HDG ANCHOR BOLTS WITH 10" MINIMUM EMBEDMENT. ADHESIVE SHALL BE HILTI HIT-HY 200-R. COORDINATE BASE PLATE LOCATION ON STRUCTURE WITH OWNERS REPRESENTATIVE PRIOR TO INSTALLATION.

REVISION	BY	DATE

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**WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS
TMUA PROJECT WPC 23-1**

**DRAWING 203.800 NSWWTP HEADWORKS
THICKENER, LIGHT POLE LIGHTING
IMPROVEMENTS**

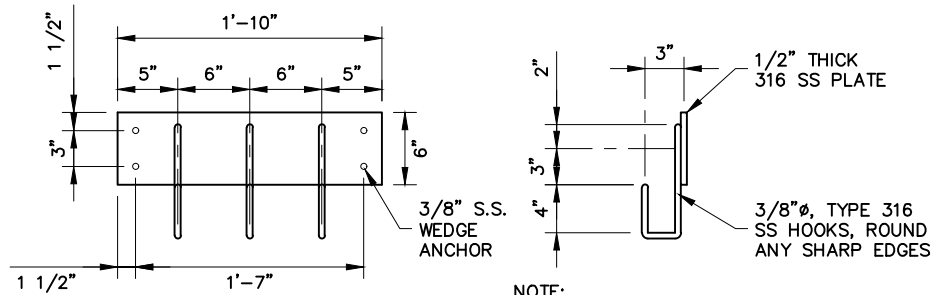
REFERENCE ORIGINAL PROJECT ES 2007-02
RECORD DRAWINGS FOR ADDITIONAL
DETAILS & INFORMATION

**CITY OF TULSA, OKLAHOMA
TULSA METROPOLITAN UTILITY AUTHORITY**

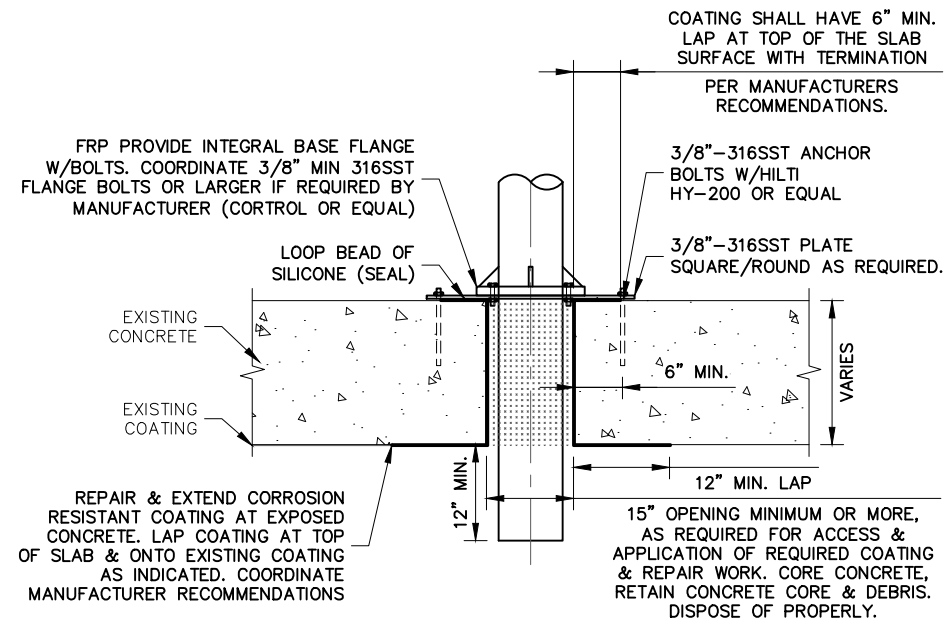
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PLAN SCALE:	DRAWN	CAH	APPROVED:
	DESIGNED	TJR	
	SURVEY		
PROFILE SCALE:	FIELD MGR.		
	SECT. MGR.		
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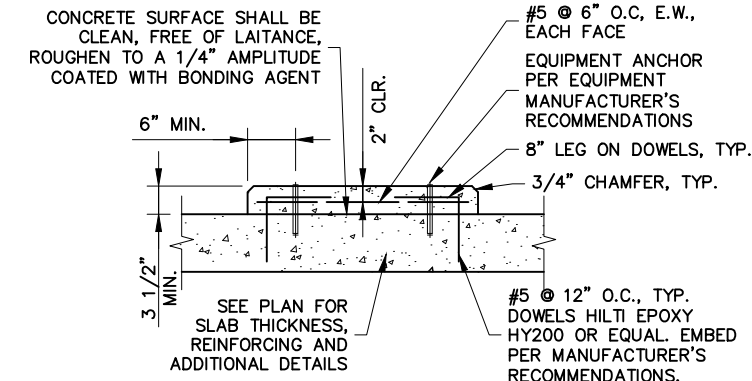




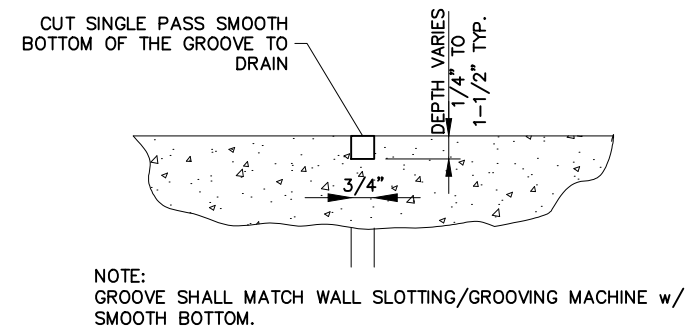
1 CHAIN/CABLE HOLDER ASSY. FOR PUMPS
SCALE: 1-1/2" = 1'-0"



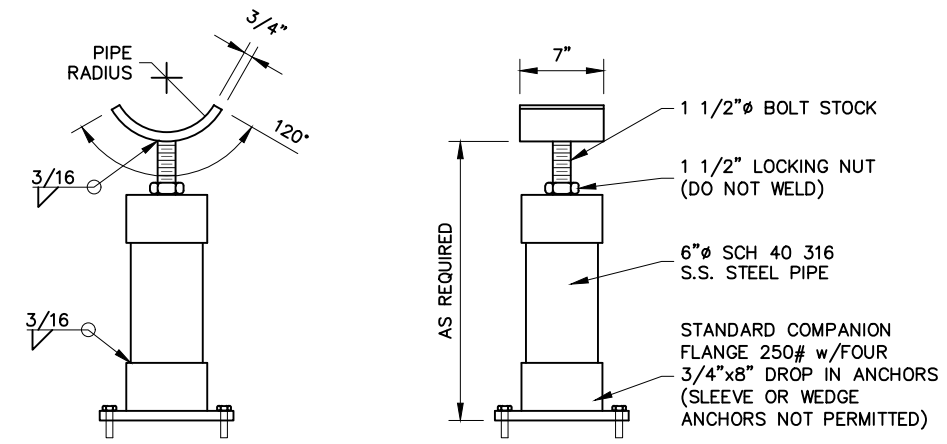
2 DETAIL @ FRP PIPING CONCRETE CORE
SCALE: 1" = 1'-0"



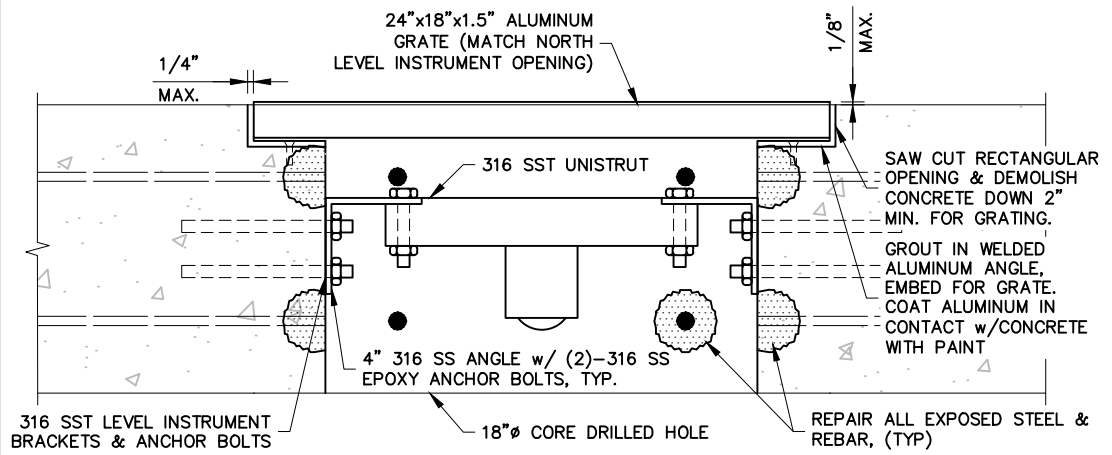
3 RAISED PAD DETAIL
SCALE: 1" = 1'-0"



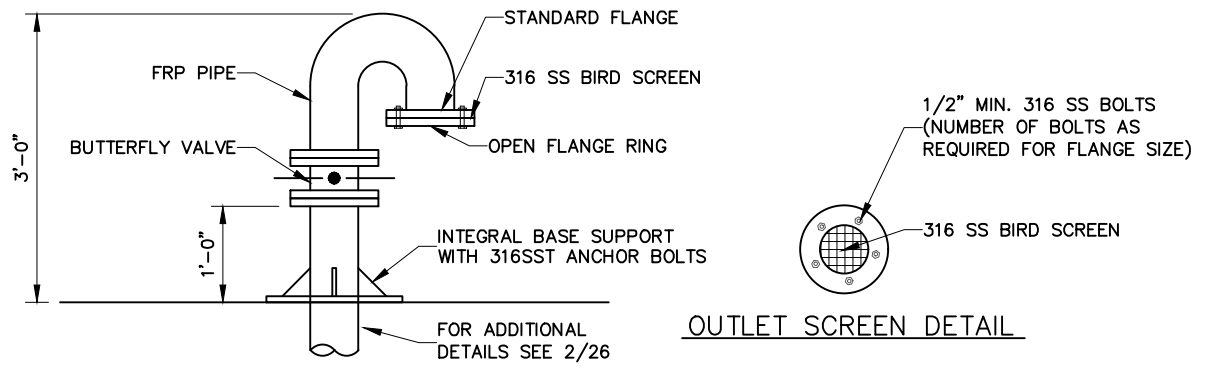
4 SPECIAL CONCRETE DRAINAGE GROOVE DETAIL
NTS



6 ADJUSTABLE PIPE SUPPORT DETAIL
SCALE: 1 1/2" = 1'-0"



7 DETAIL @ LEVEL INSTRUMENT SLAB OPENING
SCALE: 3"=1'
DETAIL NOTE: MATCH LOOK AND FUNCTION AS CONTACT BASIN 3-4, PHOTO B/21



5 DETAIL @ FIBERGLASS VENT PIPE
SCALE: 1" = 1'-0"

REVISION	BY	DATE

WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS
TMUA PROJECT WPC 23-1

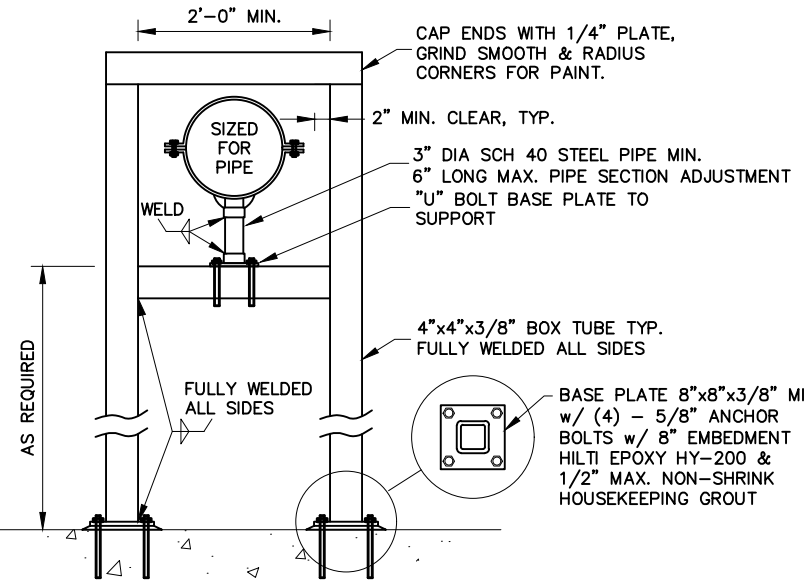
MISCELLANEOUS DETAILS

CITY OF TULSA, OKLAHOMA
TULSA METROPOLITAN UTILITY AUTHORITY

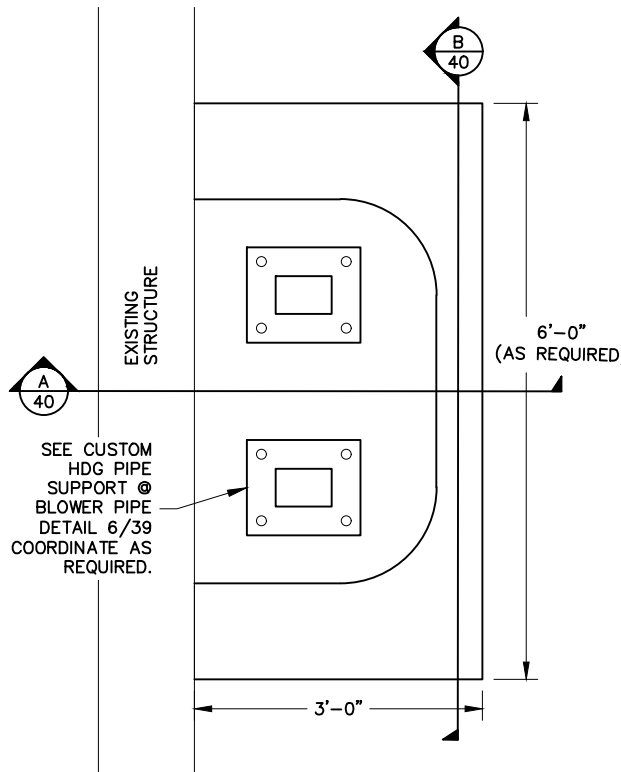
PLANS AND ESTIMATES PREPARED BY:			
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PROFILE SCALE:	FIELD MGR.	SECT. MGR.	PROJ. MGR. TJR
HORIZONTAL:			
VERTICAL:			
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ATLAS PAGE NO: ---			SHEET 42 OF 43 SHEETS



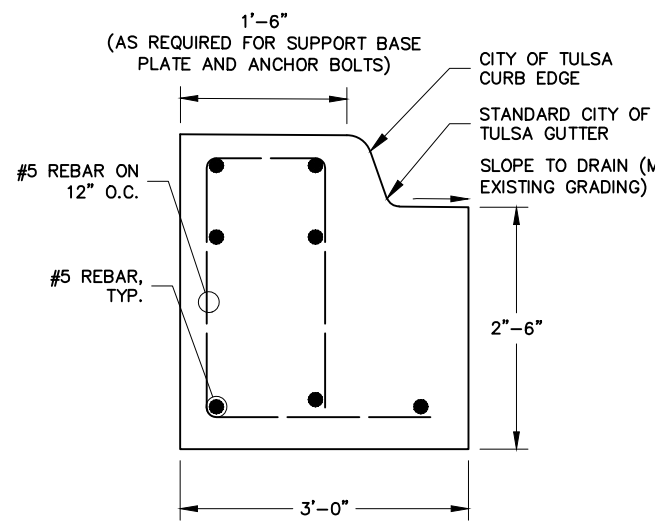
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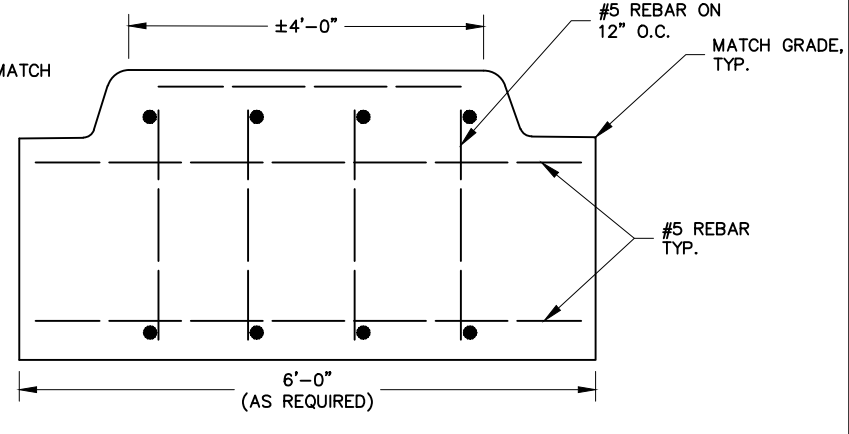
1 CUSTOM HDG PIPE SUPPORT @ BLOWER PIPE
43 SCALE: 1"=1'



PLAN VIEW

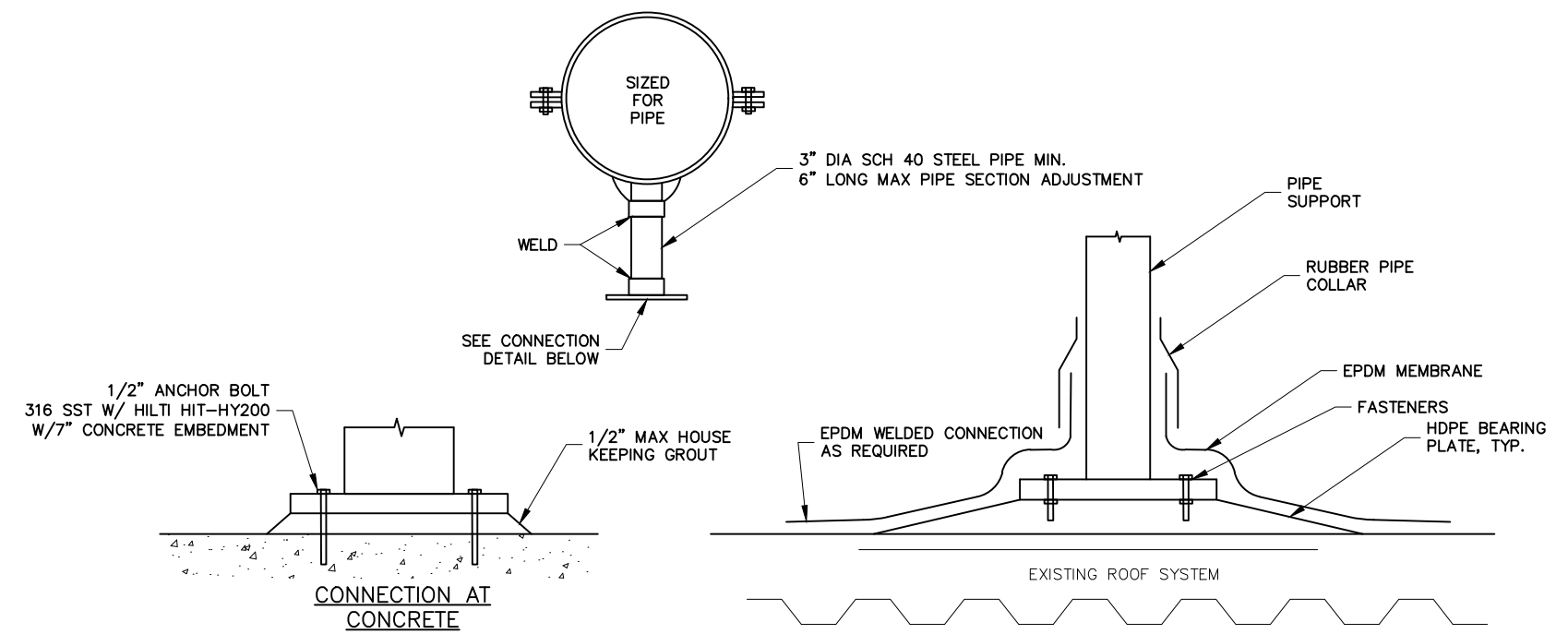


SECTION A



SECTION B

2 SPECIAL SUPPORT FRAME FOOTING
43 SCALE: 1"=1'



CONNECTION AT CONCRETE

EXISTING ROOF SYSTEM

CONNECTION AT MEMBRANE ROOF

3 HDG PIPE CLAMP SADDLE SUPPORT (MEDIUM)
43 SCALE: 1" = 1'-0"

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WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS
TMUA PROJECT WPC 23-1

MISCELLANEOUS DETAILS

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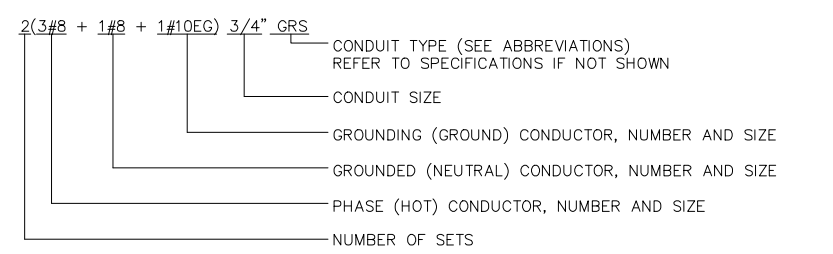
PLANS AND ESTIMATES PREPARED BY: **HOLLOWAY, UPDIKE + BELLEN, Inc.**
200 N. WILLOW AVE., BROKEN ARROW, OKLAHOMA 74002
(918) 259-0700, FAX (918) 259-0764

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ATLAS PAGE NO: ---				SHEET 43 OF 43 SHEETS



POWER, LIGHTING & SYSTEM LEGEND

	UNDER CABINET LIGHT FIXTURE		BRANCH CIRCUIT WITH PHASE, NEUTRAL, SWITCHED PHASE AND EQUIPMENT GROUNDING CONDUCTORS
	1x4 FLUORESCENT LIGHT		TELEPHONE OR DATA OUTLET, SINGLE GANG BOX
	2x4 FLUORESCENT LIGHT		3/4" PLYWOOD TELEPHONE BACKBOARD, SIZE AS NOTED, MTD. 5'-6" TO TOP
	FLUORESCENT LIGHT WITH EMERGENCY LIGHT (EL) BATTERY 1400 LUMENS MINIMUM FOR 2 LAMPS		JUNCTION BOX 42 CUBIC INCH MINIMUM CAPACITY
	2x2 FLUORESCENT LIGHT		FLOOR TELEPHONE OUTLET, CAST JUNCTION-BOX
	RECESSED LIGHT, UNLESS OTHERWISE SHOWN		WALL TELEPHONE/DATA OUTLET
	WALL MOUNTED LIGHT-MOUNTING HEIGHT AS INDICATED		DOOR SWITCH MOUNTED IN DOOR JAMB
	LED EXIT LIGHT, CEILING MOUNTED OR AS INDICATED, DARKENED AREA INDICATES FACE, ARROWS INDICATE DIRECTION OF EGRESS		DOOR BUTTON WEATHER PROOF, 50" A.F.F.
	EMERGENCY EXIT LIGHT, WALL MOUNT 7'-6" A.F.F. OR AS NOTED		DOOR BUZZER MTD 7'-0" A.F.F.
	4 FT. STRIP FLUORESCENT LIGHT		HANDHOLE OR MANHOLE, IDENTIFIER SHOWN, REFER TO HANDHOLE OR MANHOLE SCHEDULE FOR SIZE
	LIGHT SWITCH, MTD. 4'-0" A.F.F.		CIRCUIT BREAKER, TRIP RATING SHOWN, 3-POLE UNLESS NOTED
	LIGHT SWITCH, 2 POLE, MTD. 4'-0" A.F.F.		FUSE, CURRENT LIMITING, RATING AS SHOWN
	LIGHT SWITCH, 3-WAY, MTD. 4'-0" A.F.F.		TRANSFORMER, RATINGS AS SHOWN
	LIGHT SWITCH, 4-WAY, MTD. 4'-0" A.F.F.		ELECTRIC MOTOR, HORSEPOWER SHOWN
	LIGHT SWITCH WITH PILOT LIGHT, MTD. 4'-0" A.F.F.		MOTOR STARTER, SIZE AS SHOWN OR REQUIRED. FVNR UNLESS NOTED
	20 AMP DUPLEX RECEPTACLE MTD. HORIZ. 6" ABOVE COUNTER TOP UNLESS OTHERWISE SHOWN		HAND-OFF-AUTO STARTER CONTROLS
	20 AMP DUPLEX RECEPTACLE MTD. 18" A.F.F., WITH #12 GROUND WIRE, GFCI INDICATES GROUND FAULT CIRCUIT INTERRUPTER, WP INDICATES WEATHERPROOF WHILE IN USE ENCLOSURE AND COVER		VARIABLE FREQUENCY DRIVE
	SINGLE RECEPTACLE, RATINGS AS NOTED		DUCT BANK, IDENTIFIER SHOWN. REFER TO DUCT BANK SCHEDULE FOR SIZE AND CONFIGURATION.
	HP RATED TOGGLE SWITCH, 1 OR 2 POLES AS REQUIRED W/OVERLOADS		3/4" x 10' COPPER CLAD GROUND ROD
	NON-FUSED DISCONNECT SWITCH, SIZE AS NOTED		SURGE ARRESTOR
	COMBINATION DISCONNECT AND MOTOR STARTER, SIZE AS NOTED. FUSED TYPE SHOWN.		GENERATOR
	FUSED DISCONNECT SWITCH, SIZE AS NOTED		ATS
	PUSHBUTTON STATION, NEMA 4X		WEATHERHEAD
	ELECTRICAL PANEL, SURFACE MOUNTED, 5'-6" TO TOP OF ENCLOSURE		CABLE CONNECTION
	ELECTRICAL PANEL, RECESSED MOUNTED, 5'-6" TO TOP OF ENCLOSURE		KIRK KEY INTERLOCK
	EQUIPMENT CABINET SIZE AS NOTED, RECESSED MOUNTED, 5'-6" TO TOP OF ENCLOSURE		CLOSE TWO OUT OF THREE
	EQUIPMENT CABINET SIZE AS NOTED, SURFACE MOUNTED, 5'-6" TO TOP OF ENCLOSURE		INTERCEPT CONDUIT. PULL NEW FEEDER THE ENTIRE LENGTH OF CIRCUIT.
	HOME RUN TO PANEL, RECEPTACLES AND EQUIPMENT SHALL HAVE GREEN GROUND WIRE. NUMBER OF ARROWS INDICATES NUMBER OF PHASE CONDUCTORS, LETTER(S) INDICATE NAME OF PANEL, NUMBER(S) INDICATE CIRCUIT NUMBERS		DUCT BANK CIRCUIT DESIGNATION SEE DUCT BANK CONDUIT AND CABLE SCHEDULE
	EXPLOSION PROOF CONDUIT SEAL		



LINE TYPES

	FURNISH + INSTALL NEW
	EXISTING
	DEMOLISH
	AREA/PACKAGE BOUNDARY

GENERAL NOTES:

- SOME SYMBOLS OR ABBREVIATIONS MAY APPEAR ON THIS SHEET AND NOT BE UTILIZED ON THE PROJECT.

ABBREVIATIONS

A	AMP	UG	UNDER GROUND
ACU	AIR CONDITIONING UNIT	UH	UNIT HEATER
AFF	ABOVE FINISHED FLOOR	UP	UNDERGROUND PRIMARY
AHU	AIR HANDLER UNIT	US	UNDERGROUND SECONDARY
AIC	AMPS INTERRUPTING CAPACITY	VA	VOLT-AMP
AM	AMP-METER	VFD	VARIABLE FREQUENCY DRIVE
ANN	ANNUNCIATOR	VM	VOLT-METER
AP	AERIAL PRIMARY	W	WATT OR WIRE
AS	AERIAL SECONDARY	WH	WEATHER HEAD
ATS	AUTOMATIC TRANSFER SWITCH	WM	WATT METER
AUX	AUXILIARY	WP	WEATHERPROOF
BFI	BLOWN FUSE INDICATOR	W/	WITH
BKR	BREAKER	XMFR	TRANSFORMER
C	CONDUIT		
CGRS	PVC COATED GALVANIZED RIGID STEEL CIRCUIT		
CKT	CIRCUIT		
COM	COMMON		
CONT	CONTINUOUS		
CP	CONTROL PANEL		
CPT	CONTROL POWER TRANSFORMER		
CR	CONTROL RELAY		
CS	CORD SET		
CU	COEFFICIENT OF UTILIZATION		
CU	CONDENSING UNIT		
DEB	DIRECT EARTH BURIED		
EC	EMPTY OR EMBEDDED CONDUIT		
EF	EXHAUST FAN		
EG	EQUIPMENT GROUND		
EGC	EQUIPMENT GROUND CONDUCTOR		
EL	ELEVATION		
EMT	ELECTRICAL METALLIC TUBING		
ETM	ELAPSED TIME METER		
FA	FIRE ALARM		
FAP	FIRE ALARM PANEL		
FC	FAN COIL		
FLR	FLOOR		
FOC	FIBER OPTIC CABLE		
FS	FLOAT SWITCH		
FT	FEET		
FVNR	FULL VOLTAGE NON-REVERSING STARTER		
FVR	FULL VOLTAGE REVERSING STARTER		
G	GROUND		
GFCI	GROUND FAULT CIRCUIT INTERRUPTER		
GND	GROUND		
GRS	GALVANIZED RIGID STEEL		
HOA	HAND-OFF-AUTO		
HP	HORSEPOWER OR HEAT PUMP		
HR	HOUR		
JB	JUNCTION BOX		
kVA	KILOVOLT-AMPERE		
kVAR	KILOVOLT-AMPERE, REACTIVE		
kW	KILOWATT		
L	LINE (PHASE)		
LA	LIGHTNING ARRESTOR		
L.O.	LUGS ONLY		
LSI	LONG-TIME, SHORT-TIME, INSTANTANEOUS TRIP UNIT		
LV	LOW VOLTAGE		
MCB	MAIN CIRCUIT BREAKER		
MCC	MOTOR CONTROL CENTER		
MCP	MOTOR CIRCUIT PROTECTOR		
MFR	MANUFACTURER		
MIN	MINIMUM		
MLO	MAIN LUGS ONLY		
MM	MAINTENANCE MODE (ENERGY-REDUCING MAINTENANCE SWITCHING WITH LOCAL STATUS)		
MS	MOUNTED		
MTD	MANUAL TRANSFER SWITCH		
MTS	NEUTRAL		
N	NEUTRAL		
NFDS	NON-FUSED DISCONNECT SWITCH		
NTS	NOT TO SCALE		
OC	ON CENTER		
OH	OVERHEAD		
OL	OVERLOAD		
OPGP	OFFICE PRINCIPAL GROUND POINT		
PB	PUSH BUTTON		
PDSC	POWER DISTRIBUTION SERVICES CABINET		
PEC	PHOTO ELECTRIC CELL		
PF	POWER FACTOR		
PFR	POWER FAIL RELAY		
PL	PILOT LIGHT		
PMR	PHASE MONITOR RELAY		
PNL	PANEL		
PTT	PUSH-TO-TEST		
PVC	SCHEDULE 40 POLYVINYL CONDUIT		
RECPT	RECEPTACLE		
RM	ROOM		
RVAT	REDUCED VOLTAGE AUTO-TRANSFORMER STARTER		
S	SECOND		
SA	SURGE ARRESTER		
SDBC	SOFT DRAWN BARE COPPER		
SE	SERVICE ENTRANCE		
SHT	SHEET		
SN	SOLID NEUTRAL		
SS	STAINLESS STEEL		
STA	STATION		
SW	SWITCH		
TC	TIME CLOCK		
TEL	TELEPHONE		
TD	TIME DELAY		
TDD	TIME DELAY ON DE-ENERGIZATION		
TDE	TIME DELAY ON ENERGIZATION		
TYP	TYPICAL		
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR		

CONTROL SCHEMATIC LEGEND

	WIRING WITHIN PANEL
	WIRING TO FIELD DEVICE
	PUSHBUTTON SWITCH, NORMALLY OPEN
	PUSHBUTTON SWITCH, NORMALLY CLOSED
	SELECTOR SWITCH, NUMBER OF POSITIONS AND CONTACTS AS SHOWN
	RELAY CONTACT, NORMALLY OPEN
	RELAY CONTACT, NORMALLY CLOSED
	TIME DELAY CONTACT, CLOSE ON ENERGIZATION
	TIME DELAY CONTACT, OPEN ON ENERGIZATION
	TIME DELAY CONTACT, CLOSE ON DE-ENERGIZATION
	TIME DELAY CONTACT, OPEN ON DE-ENERGIZATION
	LEVEL SWITCH
	PRESSURE SWITCH
	LIMIT SWITCH CONTACT, NORMALLY OPEN
	LIMIT SWITCH CONTACT, NORMALLY CLOSED
	LIMIT SWITCH CONTACT, HELD OPEN
	LIMIT SWITCH CONTACT, HELD CLOSED
	RELAY COIL, "TR" INDICATES "TIMING RELAY"
	PILOT LIGHT; "A" INDICATES "AMBER LENS", "G" INDICATES "GREEN LENS", "R" INDICATES "RED LENS"
	SOLENOID
	ELAPSED TIME METER
	TERMINAL BLOCK
	ELECTRICAL CONNECTION
	FUSE, AMPERE RATING AS SHOWN OR REQUIRED "BFI" INDICATES "BLOWN FUSE INDICATOR" TYPE
	GROUND CONNECTION TO ENCLOSURE GROUND BAR

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ELECTRICAL LEGEND

WATER POLLUTION CONTROL CAPITAL EQUIPMENT REPLACEMENTS TMUA PROJECT WPC 23-1

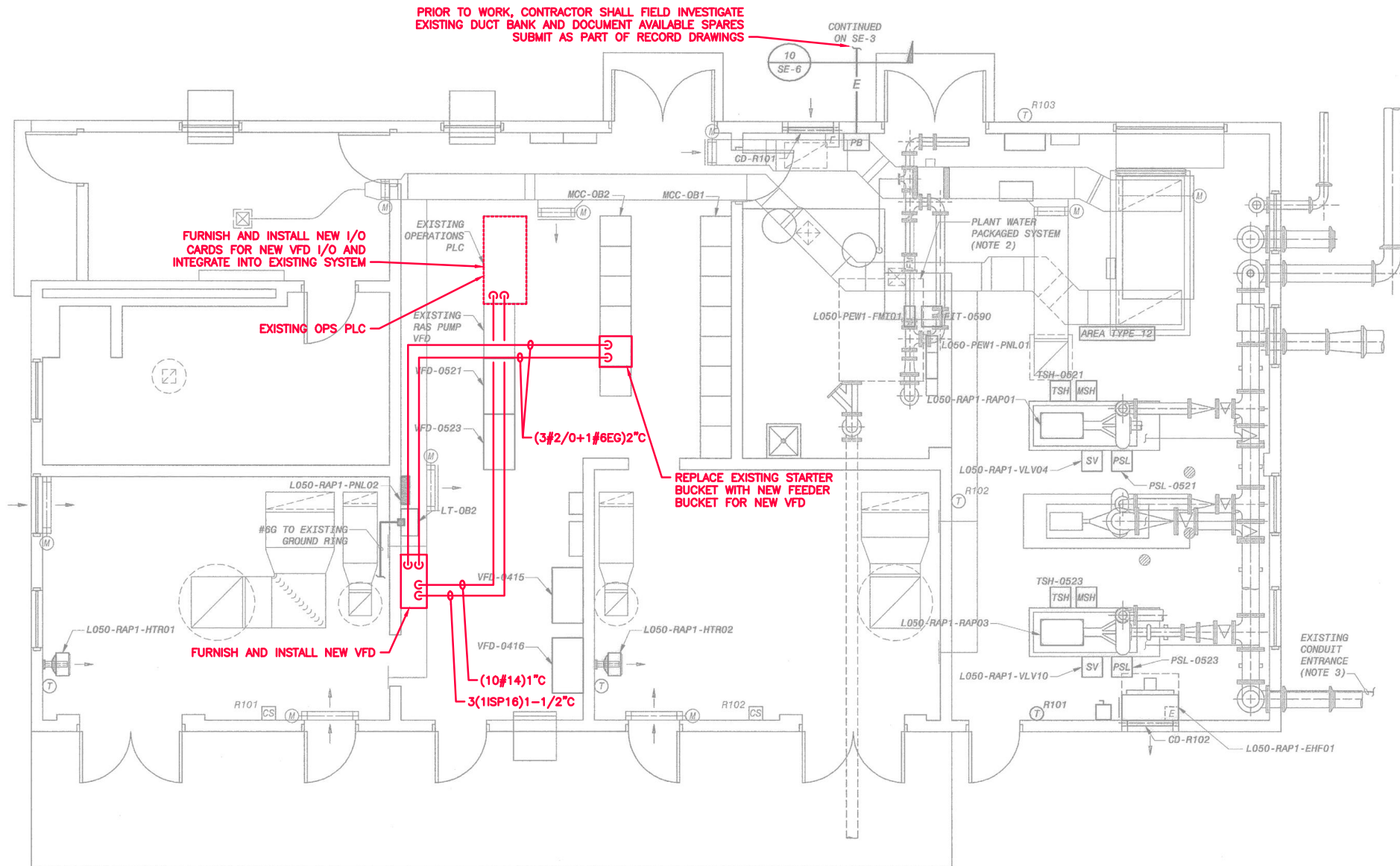
CITY OF TULSA, OKLAHOMA TULSA METROPOLITAN UTILITY AUTHORITY

PLANS AND ESTIMATES PREPARED BY: HOLLOWAY, UPDIKE + BELLEN, Inc. 200 N. WILLOW AVE., BROKEN ARROW, OKLAHOMA 74006 (918) 251-0757, FAX (918) 251-0754

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NEW I/O LIST	
DO	AERATOR START/STOP
DI	AERATOR RUNNING
DI	AERATOR IN REMOTE
DI	AERATOR FAIL
AO	AERATOR SPEED SETPOINT
AI	AERATOR SPEED FEEDBACK
DI	AERATOR POWER

1 ELECTRICAL PLAN
E4 SCALE: NONE

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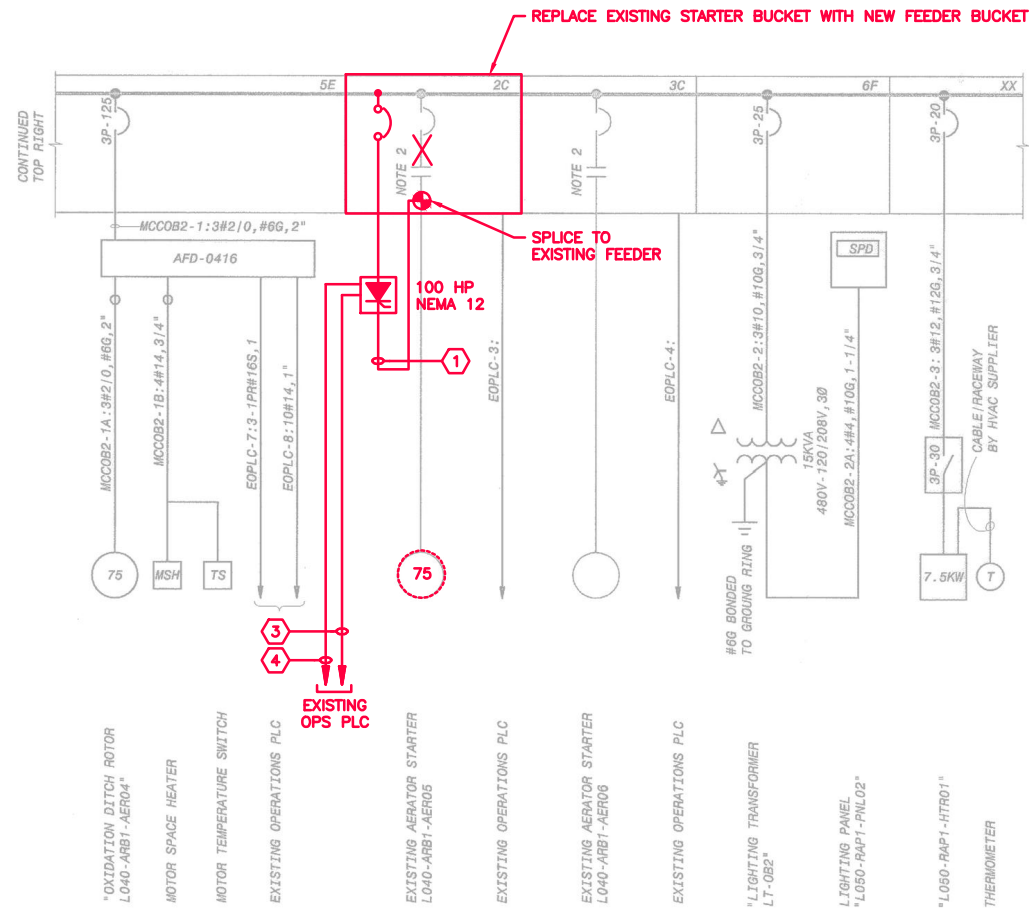
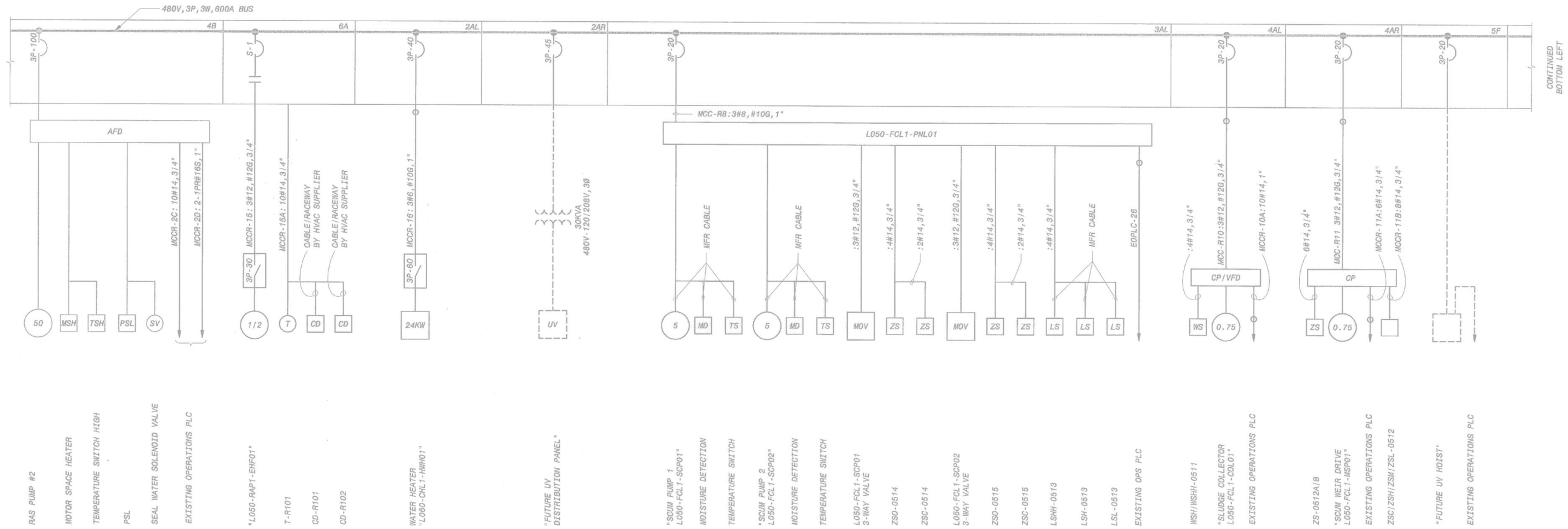
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ELECTRICAL PLAN

WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS
TMUA PROJECT WPC 23-1

CITY OF TULSA, OKLAHOMA
TULSA METROPOLITAN UTILITY AUTHORITY

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EXISTING MCC-OB2 PARTIAL ONE-LINE DIAGRAM
RETURN SLUDGE PUMP STATION

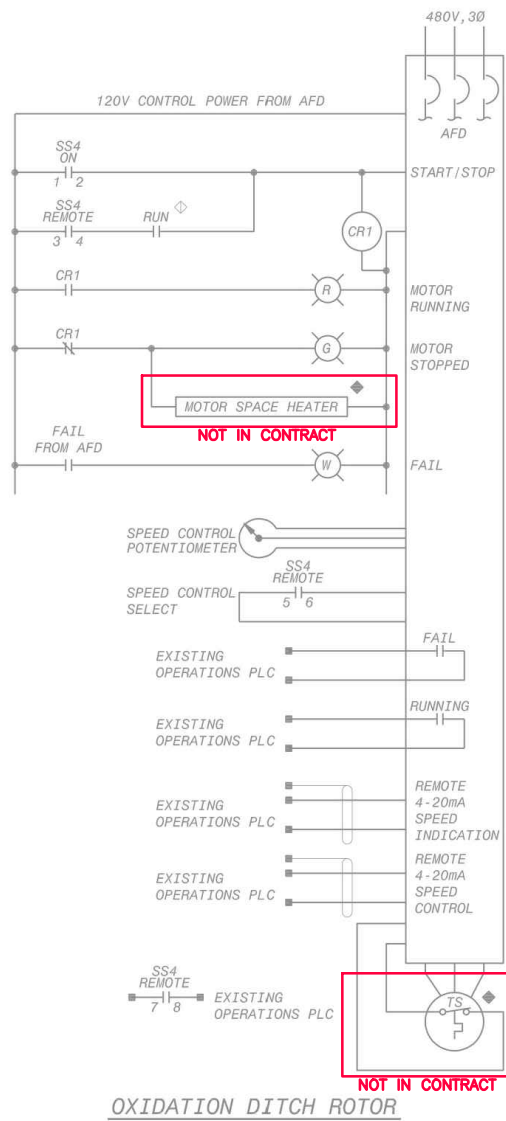
1 ELECTRICAL ONE-LINE
E5 SCALE: NONE

- CABLE LEGEND:**
- (3#2/0+1#6EG)2°C
 - NOT USED
 - 3(1SP16)1-1/2°C
 - (10#14)1°C

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DRAWING 203.880d ELECTRICAL ONE-LINE 1		
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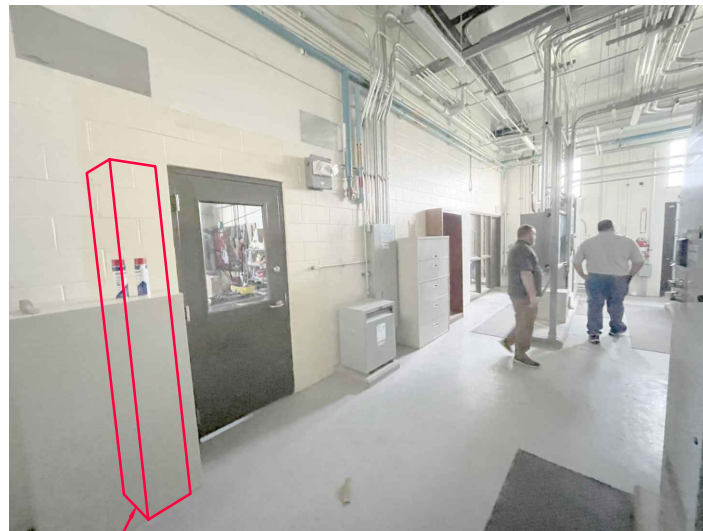


AERATOR VFD SCHEMATIC
SCALE: NONE

NOTES:

1. LENGTH VARIES WITH NUMBER OF PIPES TO BE SUPPORTED AND SPACING BETWEEN PIPES
2. HANGER RODS SHALL BE SIZED FOR LOADS AND SPACING
3. ALLOWABLE SPAN, NUMBER AND SIZE OF SUPPORT RODS AND ALLOWABLE LOADING PER MANUFACTURERS RECOMMENDATIONS
4. FOR HANGER ROD SUPPORT IN CONCRETE APPLICATIONS, USE SWIVEL CONCRETE INSERTS. FOR STEEL BEAM APPLICATIONS, USE SWIVEL BEAM CLAMPS
5. USE STAINLESS STEEL STRUT AND HARDWARE

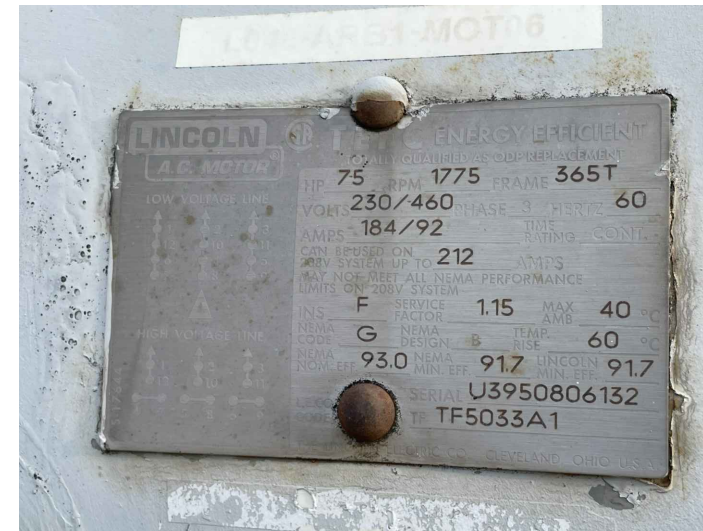
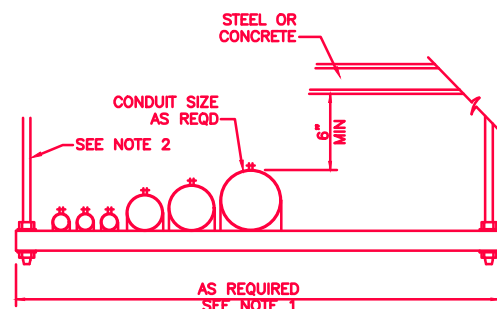
PIPE AND CONDUIT RACKING SYSTEM
SCALE: NONE



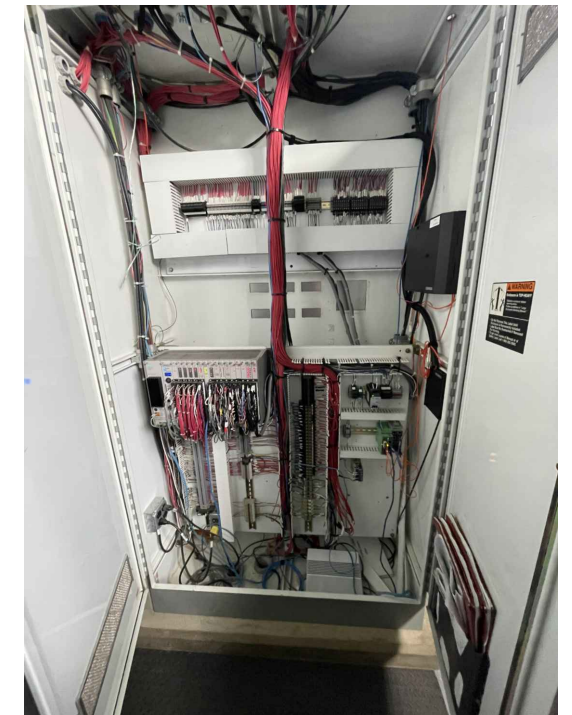
NEW VFD LOCATION
SCALE: NONE



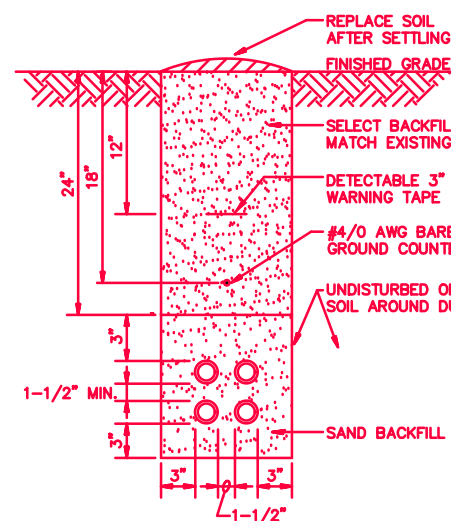
EXISTING STARTER TO BE REMOVED
SCALE: NONE



EXISTING MOTOR NAMEPLATE
SCALE: NONE



EXISTING OPS PLC
SCALE: NONE



TRENCH DETAIL
SCALE: NONE

ELECTRICAL DUCT NOTES:

1. CONTRACTOR SHALL STAKE THE DUCT INSTALLATION IN PLAN AND ELEVATION FOR NEW ELECTRICAL DUCTS TO AVOID EXISTING UTILITIES.
2. CONTRACTOR SHALL ADJUST THE DEPTH OF THE ELECTRICAL DUCTS AS REQUIRED TO MAINTAIN THE MINIMUM COVER REQUIREMENT INDICATED AND AVOID EXISTING UTILITIES.
3. SIMILAR CONSTRUCTION FOR OTHER DUCT SIZES. SEE DUCT BANK SCHEDULE FOR QUANTITY AND SIZES.
4. INSTALL DUCT CONDUIT SUPPORTS AT 5'-0" O.C. MAXIMUM SPACING (TYPICAL ALL DUCTS).
5. OFFSETS AND BENDS OVER 10 DEGREES AND ELBOWS IN PVC CONDUIT RUNS SHALL BE PVC COATED GALVANIZED RIGID STEEL CONDUIT.
6. NO PVC SHALL EMERGE FROM THE GROUND OR CONCRETE SLAB OR ENCASEMENT, PVC SHALL CONVERT TO PVC COATED GALVANIZED RIGID STEEL CONDUIT PRIOR TO ITS EMERGENCE.
7. INSTALL GROUND RODS AT ENDS OF ELECTRICAL DUCT OR CONNECT TO GROUND RING.
8. INSTALL CONDUCTORS AND CABLES AS NOTED ON DRAWING. INSTALL PULLWIRE IN ALL SPARE DUCTS.
9. MINIMUM COVER REQUIREMENT FOR DUCT BANKS UNDER ROADS, DRIVEWAYS AND PARKING LOTS SHALL BE 24".
10. MINIMUM COVER REQUIREMENTS FOR ELECTRICAL SECONDARY SERVICE DUCT BANKS SHALL BE 30".
11. MINIMUM COVER REQUIREMENTS FOR ELECTRICAL PRIMARY SERVICE DUCT BANKS SHALL BE 36".

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DRAWING 203.880e
ELECTRICAL DETAILS

WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS
TMUA PROJECT WPC 23-1

CITY OF TULSA, OKLAHOMA
TULSA METROPOLITAN UTILITY AUTHORITY

PLANS AND ESTIMATES PREPARED BY: **HOLLOWAY, UPDIKE + BELLEN, Inc.**
200 N. WILLOW AVE., BROCKTON, OKLAHOMA 74008
(918) 765-0700, FAX (918) 765-0704

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2/10/2023 3:45 PM



1 HVAC SITE PLAN
M1 SCALE: NONE



2 HVAC MAU LOCATION
M1 SCALE: NONE



3 EXISTING MAU
M1 SCALE: NONE

FURNISH AND INSTALL NEW (3#10+1#10EG)1" C FROM EXISTING DISCONNECT TO NEW EQUIPMENT

KEYED NOTES:

1. LOCATION OF WORK, DIGESTER BUILDING.
2. EXISTING DUCTWORK, SENSORS, AND CONTROLS WITHIN DIGESTER BUILDING TO REMAIN.
3. REPLACE EXISTING AAO MAKEUP AIR UNIT WITH NEW UNIT MATCHING ORIGINAL SPECIFICATIONS. RE-USE EXISTING DUCTWORK, CURB, DISCONNECT, AND GAS PIPING. FIELD VERIFY THAT NEW UNIT DIMENSIONS MATCH EXISTING UNIT AND THAT CURB ADAPTOR CAN BE RE-USED. NEW UNIT DESIGNATION AND LABELING SHALL MATCH EXISTING UNIT. PROVIDE NEW AUTOMATED LOGIC EQUIPMENT CONTROLLER. FIELD VERIFY EXISTING SYSTEM SEQUENCE OF OPERATION. FULLY INTEGRATE EXISTING HARDWARE AND INSTRUMENTATION TO REPLICATE EXISTING SYSTEM OPERATION.

REVISION	BY	DATE

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

DRAWING 203.820
MAU REPLACEMENT - HVAC PLAN

WATER POLLUTION CONTROL
CAPITAL EQUIPMENT REPLACEMENTS
TMUA PROJECT WPC 23-1

CITY OF TULSA, OKLAHOMA
TULSA METROPOLITAN UTILITY AUTHORITY

PLANS AND ESTIMATES PREPARED BY: HOLLOWAY, UPDIKE + BELLEN, Inc.
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918-259-0717, FAX 918-259-0764

PLAN SCALE:	DRAWN	CD	APPROVED:
AS SHOWN	DESIGNED	AL	
	SURVEY		
PROFILE SCALE:	FIELD MGR.		
HORIZONTAL:	SECT. MGR.		
	PROJ. MGR.		
VERTICAL:			
FILE:	DRAWING:	DATE: 10/23/2020	
ATLAS PAGE NO: ---			SHEET M1 OF 1 SHEETS

DESIGNATION	MANUFACTURER DATA		FAN DATA				COOLING DATA				HEATING DATA				ELECTRICAL DATA					
	MFR.	MODEL	SUPPLY AIR (CFM)	OUTSIDE AIR (CFM)	ESP (IN. WC)	HP	TOTAL COOLING (BTUH)	SENSIBLE COOLING (BTUH)	EAT (°F) DB WB	AMBIENT TEMP (°F)	MIN. EER	FUEL	INPUT CAPACITY	OUTPUT CAPACITY	SUPPLY PRESSURE INLET (MIN) INLET (MAX)	VOLTAGE	PHASE	FLA	MCA	MOCP
	N080-DIG1-MAU01	AAON RN-009-3-A-HA1A-3G9	3,250	3,250	0.6	2	117,730	97,120	100 76	100	13.6	NAT. GAS	292.5 MBH	234 MBH	6.0" WC 10.5" WC	480	3	22	24	30
1	UNIT SHALL HAVE MOTORIZED FRESH AIR DAMPER.																			
2	UNIT SHALL HAVE LOW AMBIENT COOLING KIT, COMPRESSOR CYCLE DELAY, AND HOT GAS BYPASS.																			
3	UNIT SHALL HAVE STAINLESS STEEL HEAT EXCHANGER AND BURNERS.																			
4	UNIT SHALL HAVE ANTI-CORROSION COATING ON CONDENSER COIL.																			
5	UNIT SHALL HAVE 4" PLEATED FILTERS WITH CLOGGED FILTER SWITCH.																			
6	UNIT SHALL HAVE VCC-X MAU CONTROLS AND ALL REQUIRED ACCESSORIES TO INTEGRATE WITH EXISTING CONTROL SYSTEM AND DUCT-MOUNTED SMOKE DETECTOR. EXISTING UNIT CONTROLS ARE WATTMASTER VCM-X, WITH 2 POSITION ECONOMIZER, S/A VFC, DIGITAL SCROLL COOLING, AND MODULATING GAS HEAT.																			

