TMUA PROJECT NO. WPC 21-4,

FY '21 SOUTHSLOPE CAPITAL EQUIPMENT REPLACEMENTS

ATTENDANCE AT PRE-BID CONFERENCE IS MANDATORY

Prepared by:
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5300 S. Elwood Ave., Tulsa, OK 74107
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E-mail: pdenis@cityoftulsa.org

Account Number: 7503382-544003
7503383-531105

Pete Denis — Peter R. Denis, P.E. OK#25200 — 10-Feb-2021 — Date

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

Digitally signed by Clayton Edwards
Date: 2021.02.15 12:23:31 -06'00'

Clayton Edwards, P.E., Director, Water & Sewer Dept. — Date

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
Tulsa, Oklahoma 74103
(918) 596-9845

DRAWINGS

Drawing	Title
203.250.A	Hydraulic Profile & Schematic
203.250.B	Demolition Plan
203.250.C	Proposed Plan
203.250.D	Proposed Section
203.250.E	Proposed
1-A	Supplemental Information
1-B	Supplemental Information
1-C	Supplemental Information
1-D	Supplemental Information
1-E	Supplemental Information
1-F	Supplemental Information
1-G	Supplemental Information
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2-3	Pipe Hanger Details, 2 of 3
2-4	Pipe Hanger Details, 3 of 3
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5-3	Digester Dimensions (Existing)
5-4	Digester 3 Area View (Existing)
9-1	Critical Sludge Valves (Existing), 1 of 2
9-2	Critical Sludge Valves (Existing), 2 of 2

Drawing	Title
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10-2	Gas Piping and Digester Lid (Existing)
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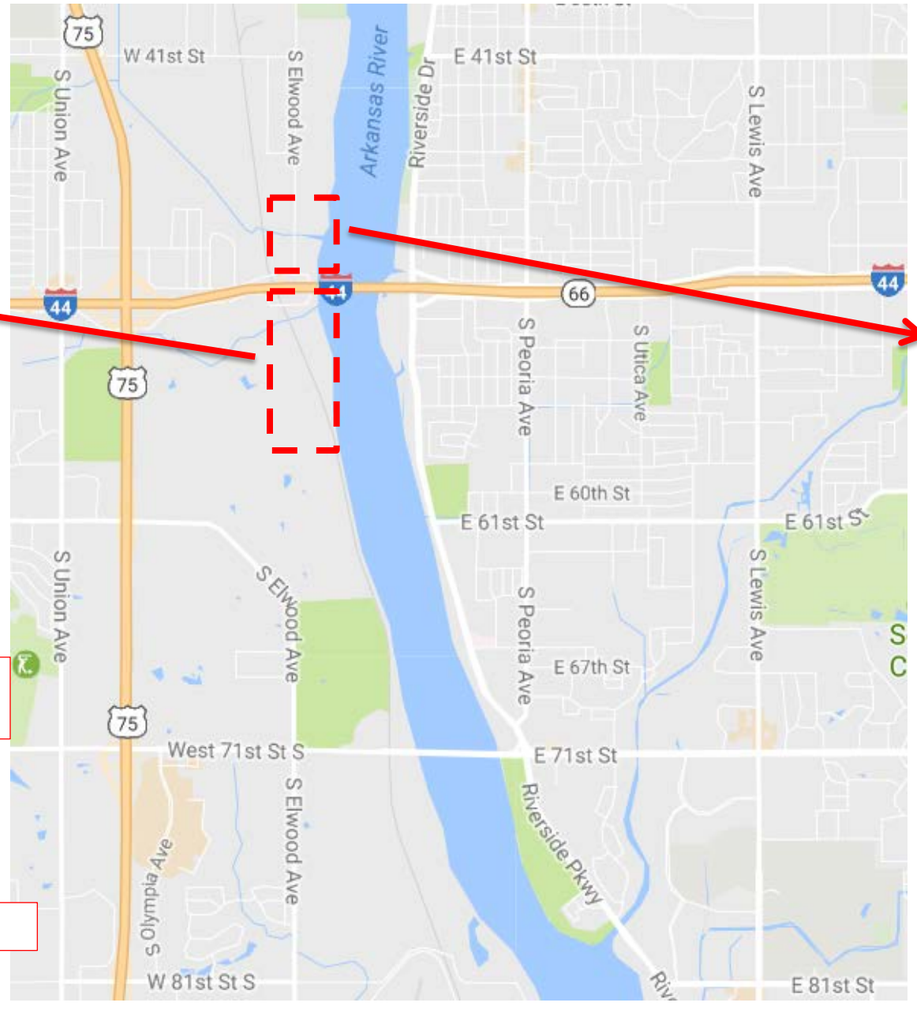
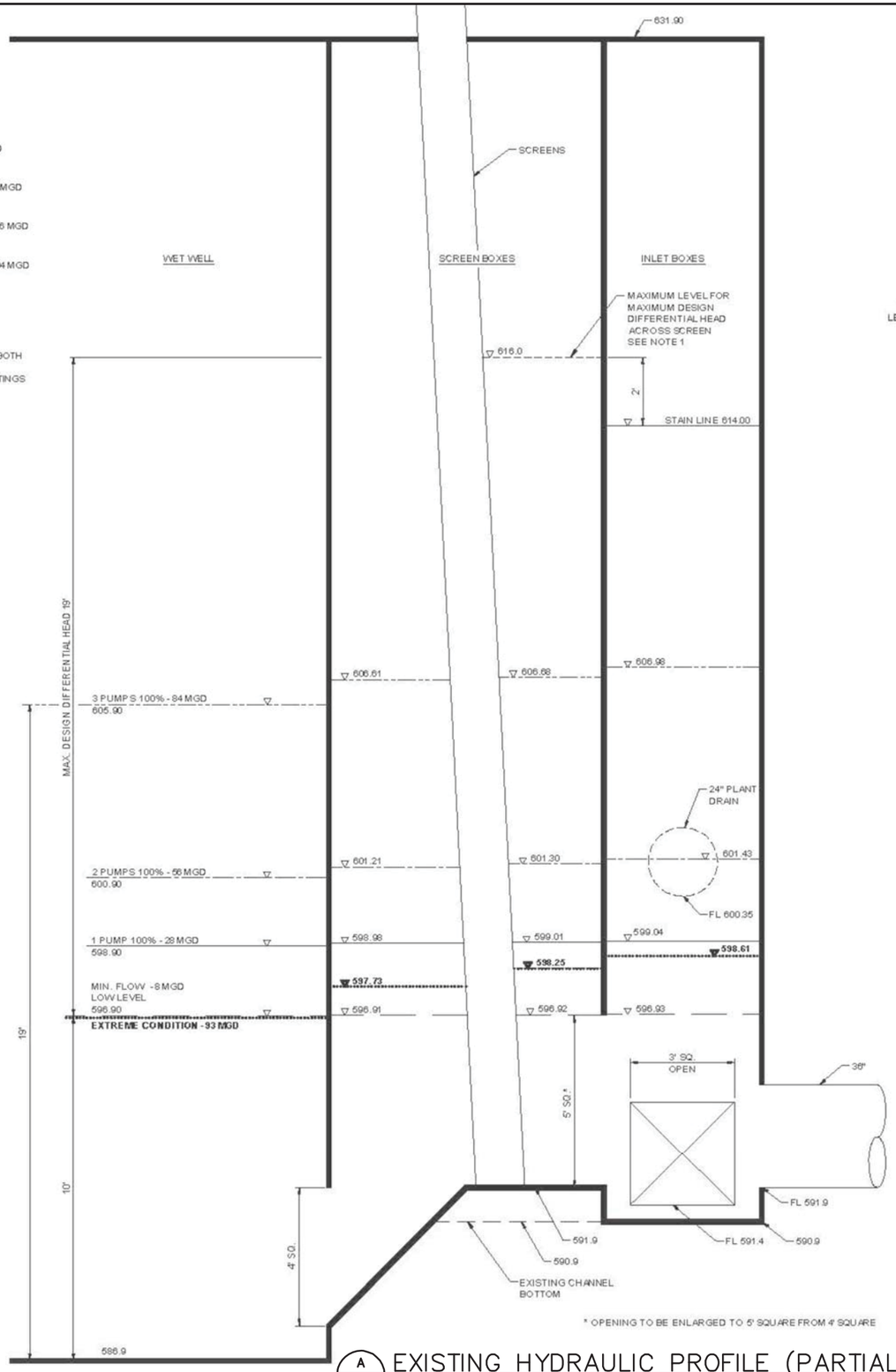
13-6	SCADA View of Proposed Scum Detecting Radar

Index of Drawings

North



Project Locations



A 1–1 EXISTING HYDRAULIC PROFILE (PARTIAL)
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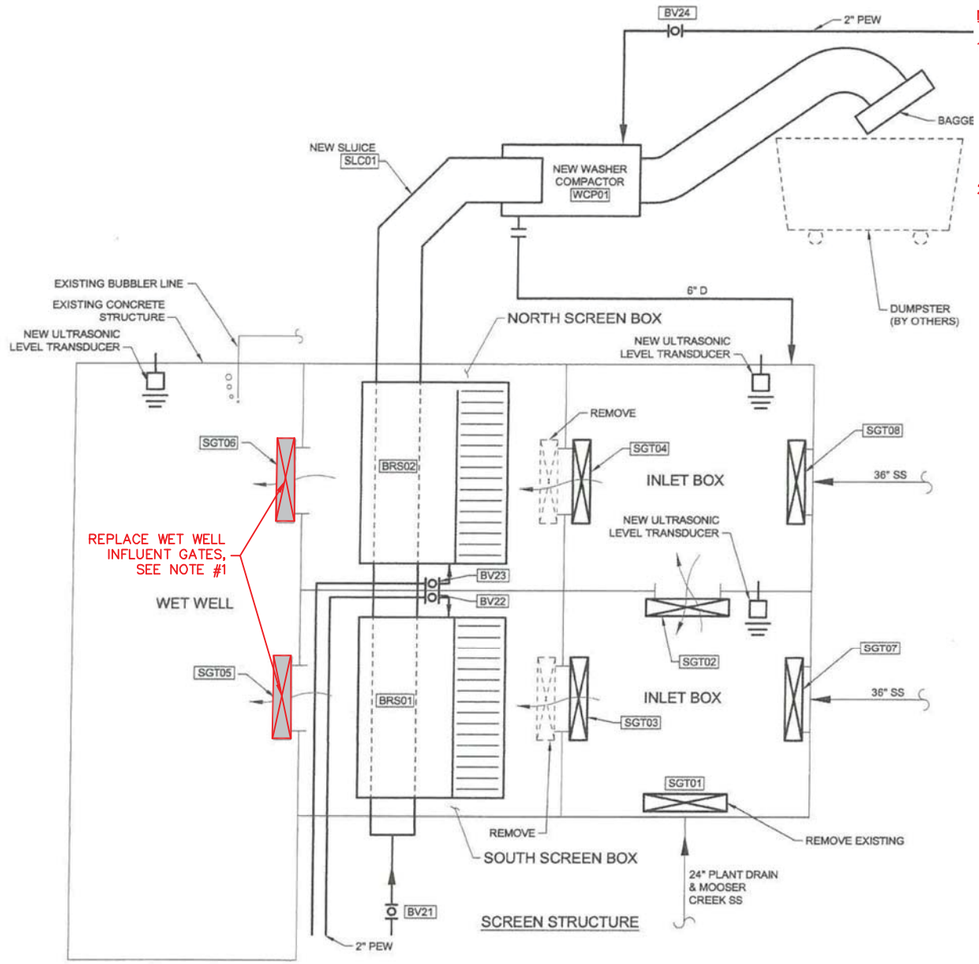

B 1–1 EXISTING PROCESS SCHEMATIC
SCALE: NTS

NOTES:

1. CONTRACTOR TO PROVIDE WRITTEN WORK PLAN ADDRESSING LIFT STATION SHUT DOWN, BYPASS PUMPING, GATE DEMOLITION AND INSTALLATION PRIOR TO SUBMISSION OF GATE EQUIPMENT SUBMITTAL.
2. BYPASS PUMPING IS REQUIRED TO COMPLETE THE PROPOSED WORK. REFER TO GATE SPECIFICATION FOR REQUIREMENTS.

REVISION	BY	DATE

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REFERENCE ORIGINAL ES–2015–08
RECORD DRAWINGS FOR ADDITIONAL DETAILS & INFORMATION

203.250.A
HYDRAULIC PROFILE & SCHEMATIC

SSWWTP HEADWORKS WET WELL
INFLUENT GATE REPLACEMENT
TMUA PROJECT WPC 21–4

CITY OF TULSA, OKLAHOMA
TULSA METROPOLITAN UTILITY AUTHORITY

PLANS AND ESTIMATES PREPARED BY: HOLLOWAY, UPDIKE + BELLEN, Inc.
806-A S. 4TH ST., BROKEN ARROW, OKLAHOMA 74012
(918)251-1177, FAX (918)251-1764

PLAN SCALE: 1"=X'	DRAWN	JME		APPROVED:
	DESIGNED	LST		
	SURVEY			
PROFILE SCALE:	FIELD MGR.			
	SECT. MGR.			
HORIZONTAL: 1"=X'	PROJ. MGR.			
VERTICAL: 1"=X'				

REGISTERED PROFESSIONAL ENGINEER
LOYD STEPHEN TOLAR
20679
2-11-2021
OKLAHOMA

FILE: DRAWING: DATE: February 5, 2021
ATLAS PAGE NO: --- SHEET 1–1 OF 4 SHEETS

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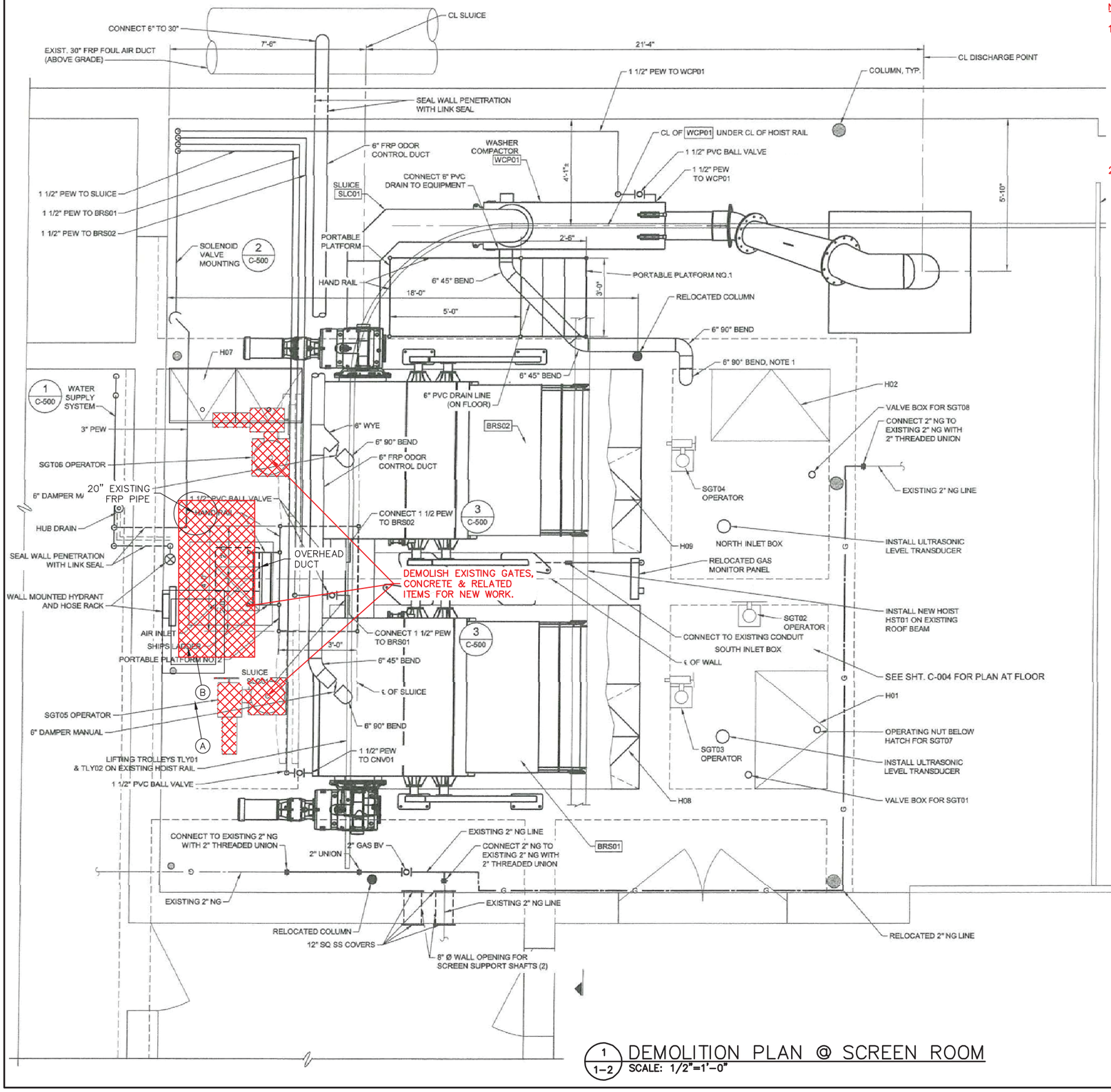

1 / 1–2 DEMOLITION PLAN @ SCREEN ROOM
SCALE: 1/2"=1'-0"

NOTES:

1. THE EXISTING CONCRETE DECK HAS BEEN X-RAYED AND THE PRESENCE OF EXISTING CONDUITS WITHIN THE PROPOSED ACCESS HATCH OPENING HAS BEEN CONFIRMED. THESE CONDUITS ARE THOUGHT TO BE ABANDONED. CONTRACTOR SHALL CHIP BACK CONCRETE TO EXPOSE THESE CONDUITS AND PROVIDE AN ELECTRICIAN TO VERIFY THAT AC VOLTAGE IS NOT PRESENT PRIOR TO SAW CUTTING FOR THE PROPOSED HATCH OPENING.
2. THE DEMOLITION PLAN ONLY SHOWS ITEMS TO BE DEMOLISHED AND PERMANENTLY REMOVED. NOTE THAT THE UPPER WORK AREA HAS VERY LIMITED SPACE FOR MOVING AND POSITIONING GATES PRIOR TO LOWERING THEM THROUGH THE PROPOSED CONCRETE DECK OPENING. CONTRACTOR SHALL ANTICIPATE REMOVING AND REINSTALLING ANCILLARY ITEMS AS REQUIRED TO FACILITATE THE WORK.

A / 1–2 PHOTO @ SCREEN ROOM
SCALE: 1/2"=1'-0"

NOTES:
1. CORE HOLE IN EXISTING CONCRETE SALB AND GROUT IN 6" DRAIN LINE DISCHARGE PIPE. CUT CONCRETE TO ALLOW 6" PIPING TO REST DIRECTLY ON FLOOR.

PORTABLE PLATFORMS:
NO. 1
PLATFORM AREA = 3'x5'
PLATFORM ABOVE FLOOR = 30"
STAIRS: 4 RISERS @ 7 1/2"
3 THREADS @ 10"
HANDRAIL: STAIRS & NORTH, SOUTH & WEST PLATFORM

NO. 2
PLATFORM AREA = 3'x4'
PLATFORM ABOVE FLOOR = 24"
STAIRS: SHIPS LADDER
HANDRAIL: LADDER & WEST PLATFORM

CONTRACTOR TO CONFIRM FIT OF EACH PLATFORM AND THERE SHALL BE NO CONFLICT WITH OTHER ITEMS. CONTRACTOR TO FABRICATE. SEE SPECIFICATIONS

B / 1–2 PHOTO @ SCREEN ROOM
SCALE: 1/2"=1'-0"

REVISION	BY	DATE

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REFERENCE ORIGINAL ES-2015-08 RECORD DRAWINGS FOR ADDITIONAL DETAILS & INFORMATION

203.250.B
DEMOLITION PLAN

SSWWTP HEADWORKS WET WELL INFLUENT GATE REPLACEMENT
TMUA PROJECT WPC 21-4

CITY OF TULSA, OKLAHOMA
TULSA METROPOLITAN UTILITY AUTHORITY

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(918)251-7777, FAX (918)251-0764

PLAN SCALE: 1"=X'	DRAWN	JME		APPROVED:
	DESIGNED	LST		
	SURVEY			
PROFILE SCALE:	FIELD MGR.			
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	PROJ. MGR.			
VERTICAL: 1"=X'				

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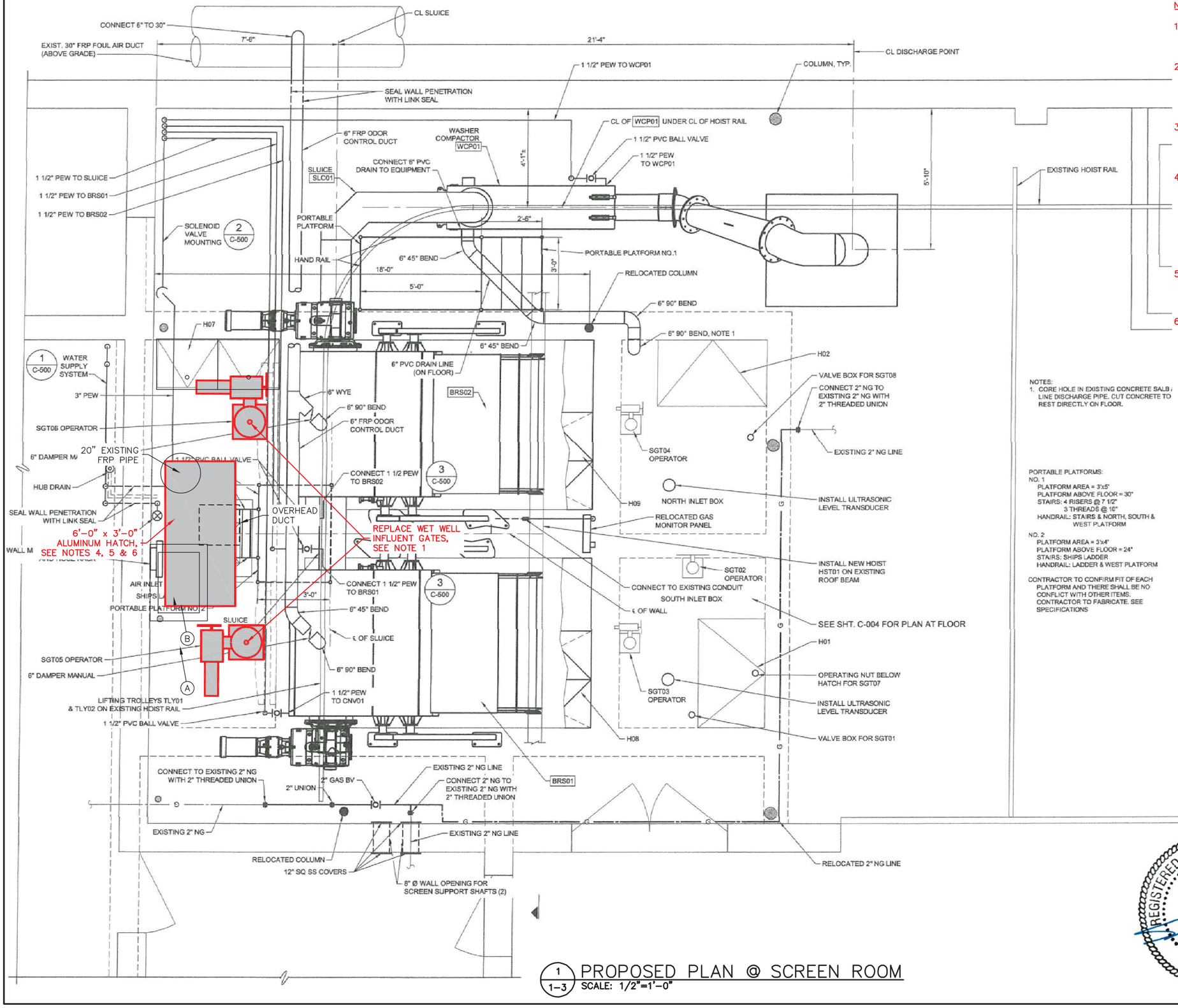

1 / 1–3 PROPOSED PLAN @ SCREEN ROOM
SCALE: 1/2"=1'–0"

NOTES:
1. CORE HOLE IN EXISTING CONCRETE SALB / LINE DISCHARGE PIPE. CUT CONCRETE TO REST DIRECTLY ON FLOOR.

PORTABLE PLATFORMS:
NO. 1
PLATFORM AREA = 3'x5'
PLATFORM ABOVE FLOOR = 30"
STAIRS: 4 RISERS @ 7 1/2"
3 THREADS @ 10"
HANDRAIL: STAIRS & NORTH, SOUTH & WEST PLATFORM

NO. 2
PLATFORM AREA = 3'x4'
PLATFORM ABOVE FLOOR = 24"
STAIRS: SHIPS LADDER
HANDRAIL: LADDER & WEST PLATFORM

CONTRACTOR TO CONFIRM FIT OF EACH PLATFORM AND THERE SHALL BE NO CONFLICT WITH OTHER ITEMS. CONTRACTOR TO FABRICATE. SEE SPECIFICATIONS

NOTES:

1. REMOVE EXISTING AND INSTALL TWO (2) NEW WET WELL INFLUENT GATES AS SHOWN. WORK INCLUDES NEW GATES, STEMS, SUPPORTS, ANCHOR BOLTS, MOTOR OPERATORS AND APPURTENANCES.
2. THE UPPER WORK AREA HAS VERY LIMITED SPACE FOR MOVING AND POSITIONING GATES PRIOR TO LOWERING THEM THROUGH THE PROPOSED CONCRETE DECK OPENING. CONTRACTOR SHALL ANTICIPATE REMOVING AND REINSTALLING ANCILLARY ITEMS AS REQUIRED TO FACILITATE THE WORK.
3. CONTRACTOR TO CONFIRM EXISTING ELECTRICAL SERVICE AND MATCH VOLTAGE FOR NEW ELECTRIC OPERATORS. CONTRACTOR SHALL INSTALL NEW CONDUIT AND WIRE BACK TO THE FIRST POINT OF TERMINATION FOR EACH OPERATOR.
4. CONTRACTOR SHALL COORDINATE FINAL LAYOUT OF HATCH WITH OWNERS REPRESENTATIVE. SLAB OPENING SHALL BE SAWCUT TO ACTUAL DIMENSIONS USING A CONCRETE CHAINSAW, OR EQUIVALENT METHOD. OVERCUTTING PAST REQUIRED HATCH DIMENSIONS USING A CIRCULAR SAW WILL NOT BE ALLOWED. EXPOSED REBAR SHALL BE GROUND BACK AND CONCRETE EDGE REPAIRED IN ACCORDANCE WITH DETAIL 2/5. CONTRACTOR SHALL NOT INSTALL HATCH UNTIL AFTER COMPLETING INSTALLATION OF BOTH NEW GATES.
5. CONTRACTOR SHALL APPLY A BITUMINOUS COATING TO THE HATCH FRAME EXTERIOR WHERE IT WILL COME IN CONTACT WITH CONCRETE PRIOR TO HATCH INSTALLATION.
6. ALUMINUM ACCESS HATCHES SHALL BE S1S (SINGLE LEAF) AND S2S (DOUBLE LEAF) SERIES ACCESS FRAMES AND COVERS AS MANUFACTURED BY HALLIDAY PRODUCTS, INC., OR APPROVED EQUAL. HATCHES SHALL MEET THE FOLLOWING REQUIREMENTS:
   - HATCHES SHALL HAVE A MINIMUM 1/4" (7MM) THICK ONE–PIECE, MILL FINISH, EXTRUDED ALUMINUM FRAME
   - DOOR PANEL SHALL BE 1/4" (7MM) ALUMINUM DIAMOND PLATE, REINFORCED TO WITHSTAND A UNIFORM LIVE LOAD OF 300 LBS. PSF.
   - DOORS SHALL OPEN TO 90 DEGREES AND AUTOMATICALLY LATCH WITH A HOLD OPEN ARM WITH ALUMINUM RELEASE HANDLE
   - HOLD OPEN ARM SHALL INCORPORATE AN ENCLOSED STAINLESS STEEL COMPRESSION SPRING ASSIST.
   - DOORS SHALL CLOSE FLUSH WITH THE FRAME AND REST ON A BUILT–IN NEOPRENE CUSHION/GASKET.
   - HATCHES SHALL HAVE FLUSH NON–REMOVABLE, NON–LOCKING, RECESSED HANDLES.
   - PROVIDE INTERIOR SAFETY GRATING WITH 300 LB/SF UNIFORM LIVE LOAD RATING
   - ALL HARDWARE SHALL BE 316 STAINLESS INCLUDING HINGES AND ALL FASTENERS
   - UNIT SHALL CARRY A LIFETIME GUARANTEE AGAINST DEFECTS IN MATERIAL AND/OR WORKMANSHIP.

REGISTERED PROFESSIONAL ENGINEER
LOYD STEPHEN TOLAR
20679
2-11-2021
OKLAHOMA

REVISION	BY	DATE

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203.250.C
PROPOSED PLAN

SSWWTP HEADWORKS WET WELL INFLUENT GATE REPLACEMENT
TMUA PROJECT WPC 21–4

CITY OF TULSA, OKLAHOMA
TULSA METROPOLITAN UTILITY AUTHORITY

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	PROJ. MGR.			
VERTICAL: 1"=X'				

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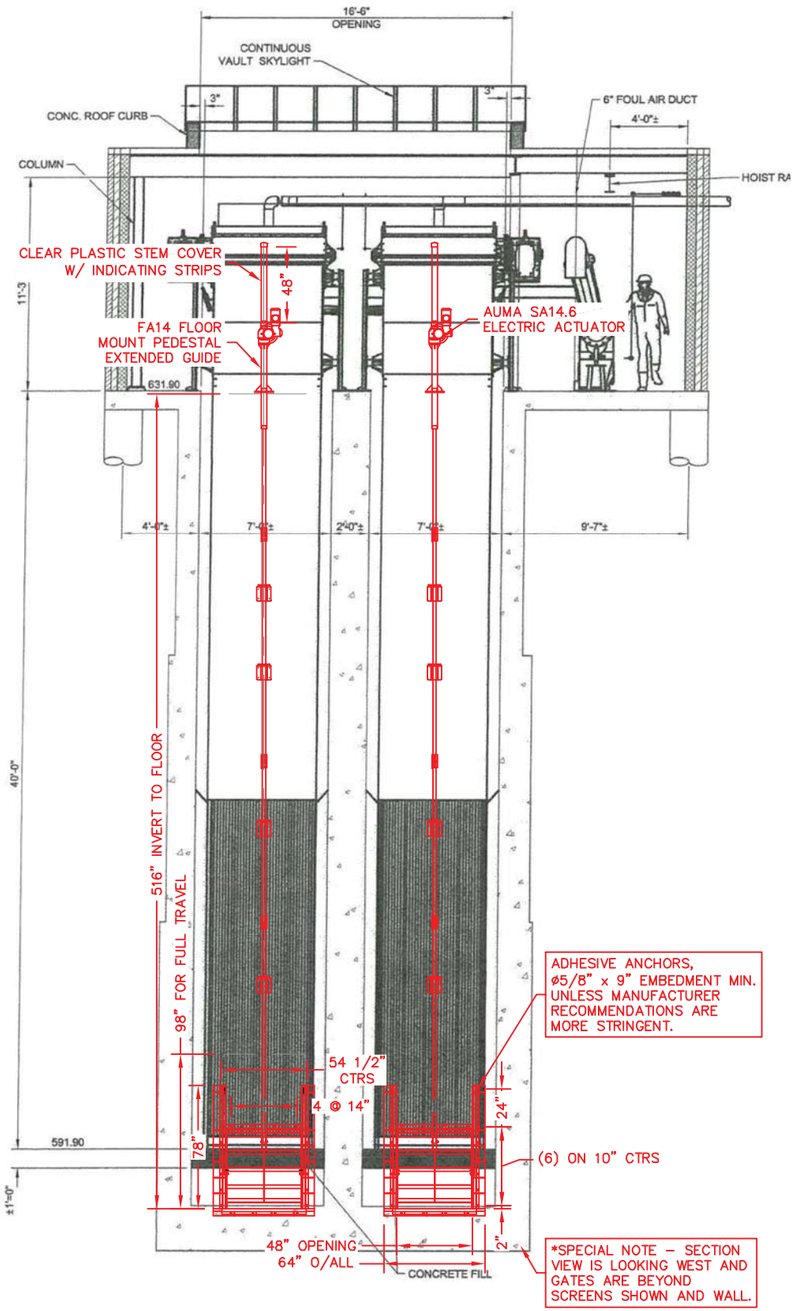
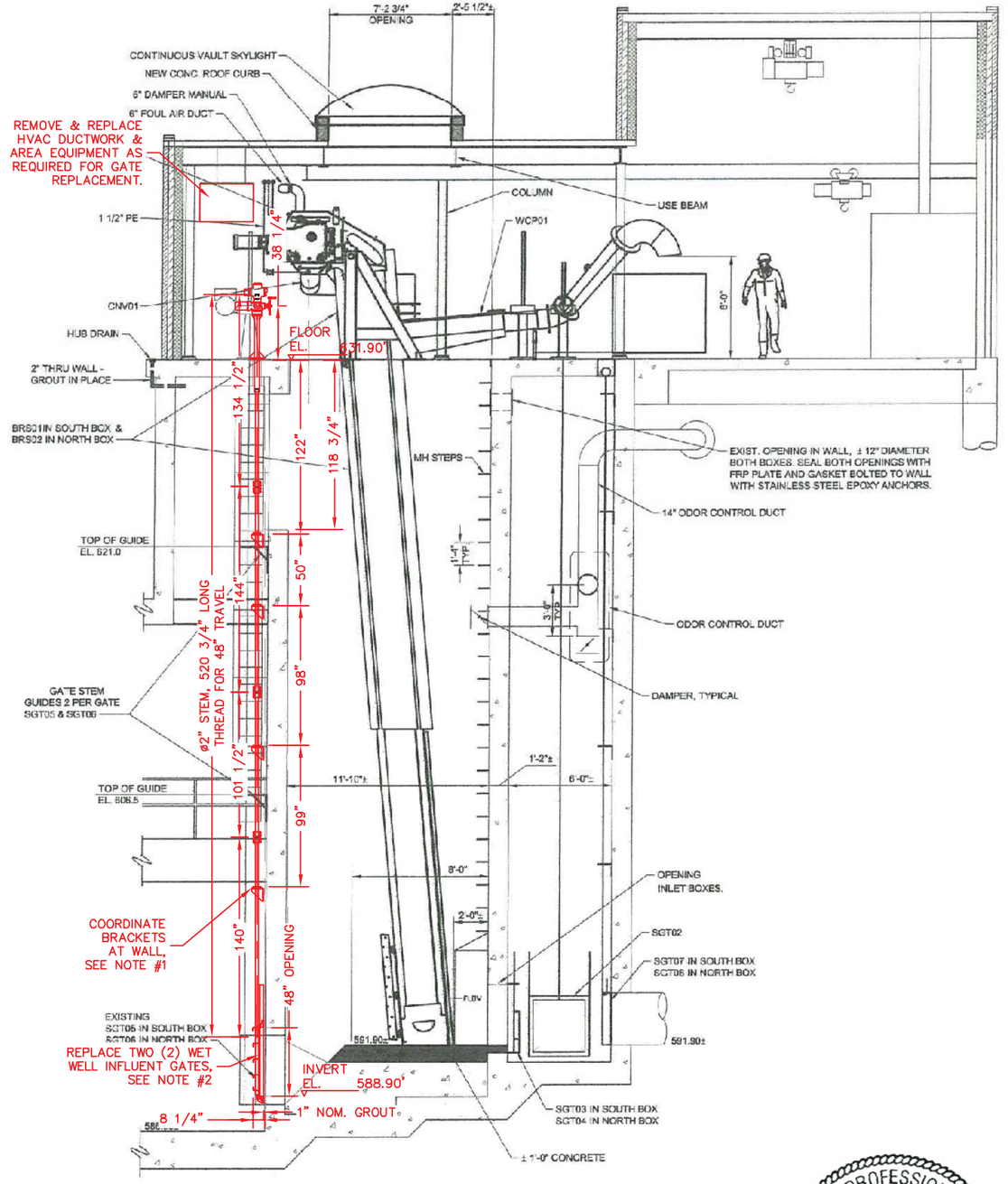


A 1–4 SECTION @ SCREEN CHANNEL
SCALE: 1/4"=1'-0"



B 1–4 SECTION @ SCREEN CHANNEL
SCALE: 1/4"=1'-0"

NOTES:

1. COORDINATE ALL COUPLINGS AND STEM SUPPORT BRACKET LOCATIONS WITH THE GATE MANUFACTURER. PREPARE SUBMITTAL DRAWINGS BASED ON ACTUAL MEASUREMENTS. NOTE THE TOP WALL OPENING AND DIMENSIONS SHOWN ON THE DRAWINGS. MANUFACTURER SHALL PROVIDE STEM DESIGNED FOR ACTUAL UNBRACED LENGTH AS SHOWN.
2. CONTRACTOR SHALL CORE DRILL NEW STEM HOLE IN EXISTING SLAB AS REQUIRED FOR NEW STEM LOCATION. HOLE AND STEM SHALL BE PLUMB WITH NEW GATE. EXISTING HOLE SHALL BE GROUTED FILLED FLUSH WITH TOP OF SLAB PRIOR TO INSTALLING NEW OPERATOR.
3. CONTRACTOR SHALL FIELD MEASURE EXISTING SCREEN SLUICE AND PROVIDE AN ELECTRIC OPERATOR THAT CAN BE INSTALLED WITHOUT INTERFERENCE WITH THE SLUICE. CONSIDER THE RISING STEM TRAVEL AS WELL.
4. ALL DIMENSIONS AND ELEVATIONS SHOWN SHALL BE CONSIDERED AS +/-. CONTRACTOR SHALL FIELD VERIFY ALL PRIOR TO CONSTRUCTION.

REVISION	BY	DATE

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203.250.D
PROPOSED SECTION

SSWWTP HEADWORKS WET WELL
INFLUENT GATE REPLACEMENT
TMUA PROJECT WPC 21-4

CITY OF TULSA, OKLAHOMA
TULSA METROPOLITAN UTILITY AUTHORITY

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	SURVEY			
PROFILE SCALE:	FIELD MGR.			
	SECT. MGR.			
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VERTICAL: 1"=X'				

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REGISTERED PROFESSIONAL ENGINEER
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2-11-2021
OKLAHOMA

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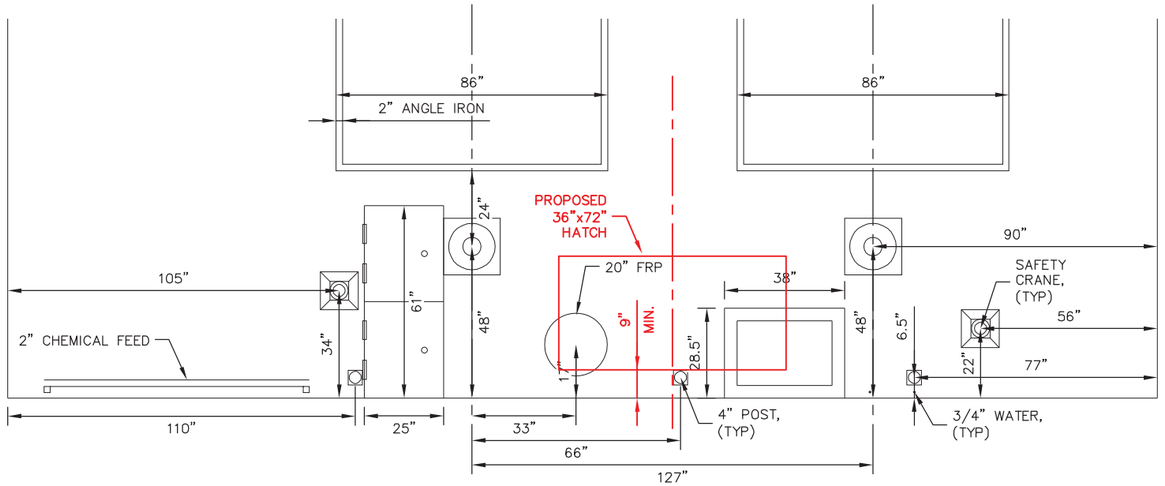
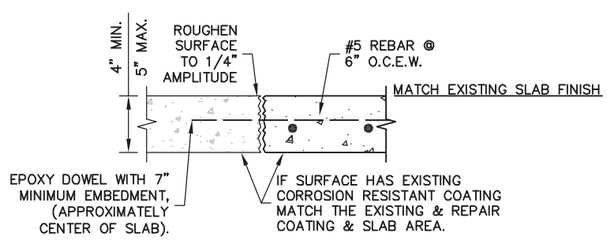


A / 1–5 PLAN @ SCREEN CHANNEL

SCALE: 1/4"=1'–0"



DETAIL NOTE:

1. FOR SLAB PANELS LESS THAN 2'x4' IN SIZE ONLY.

B / 1–5 DETAIL @ CONCRETE SLAB REPAIR

SCALE: 1 1/2" = 1'–0"

REVISION	BY	DATE

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203.250.E
PROPOSED

SSWWTP HEADWORKS WET WELL
INFLUENT GATE REPLACEMENT
TMUA PROJECT WPC 21–4

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2-11-2021
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PROFILE SCALE:	FIELD MGR.			
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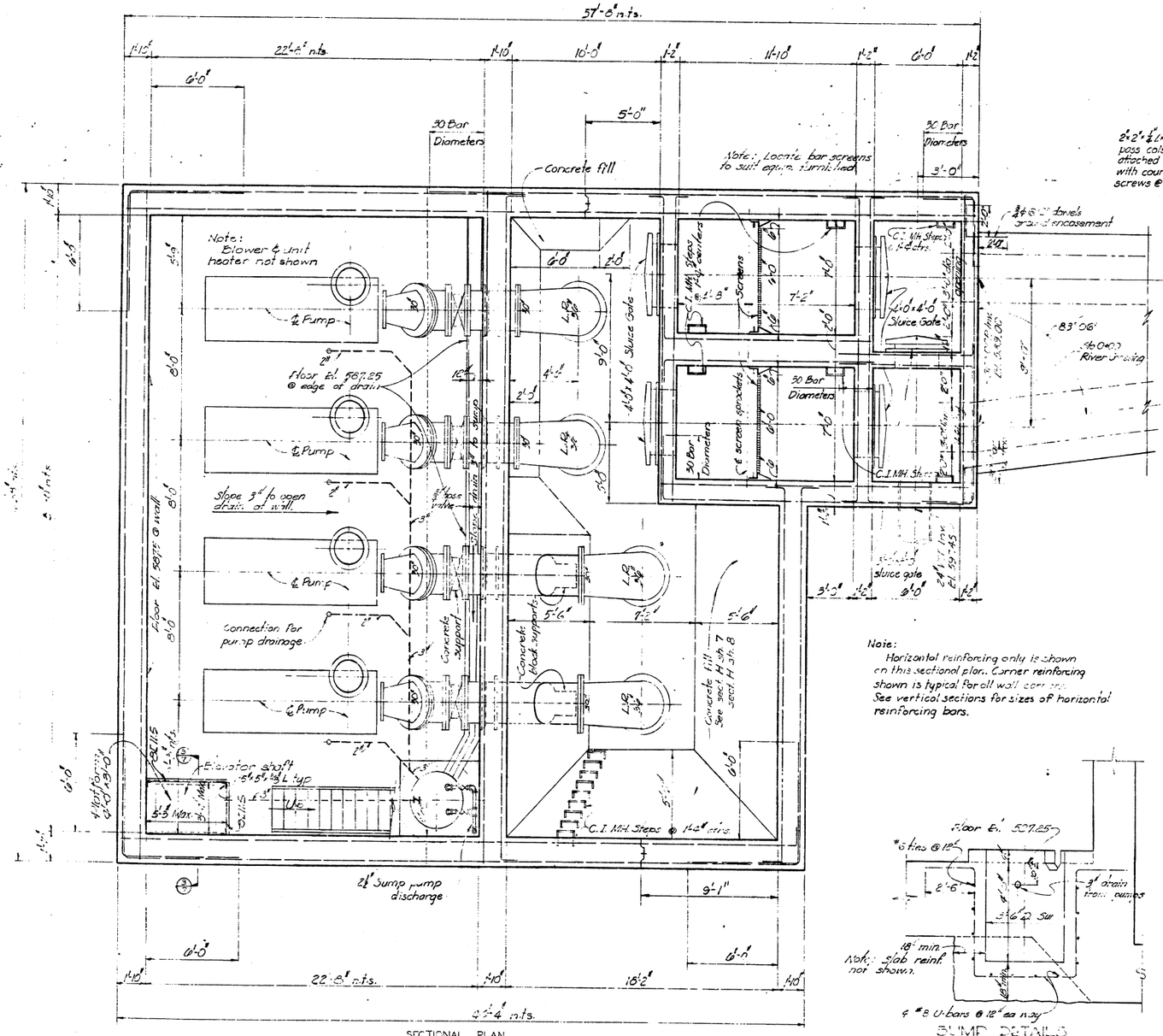
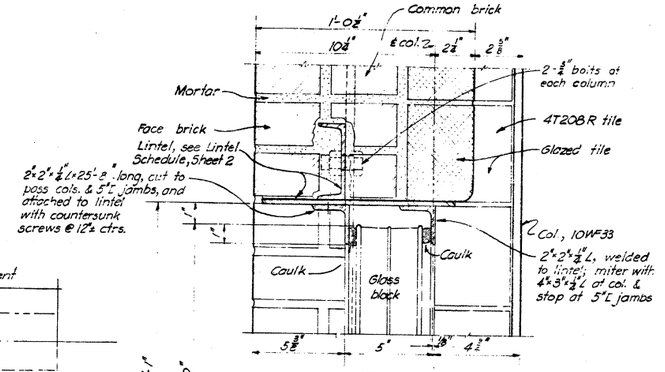


SECTIONAL PLAN
EL. 538.00
Scale 1/4"=1'-0"

Note:
Horizontal reinforcing only is shown on this sectional plan. Corner reinforcing shown is typical for all wall corners. See vertical sections for sizes of horizontal reinforcing bars.



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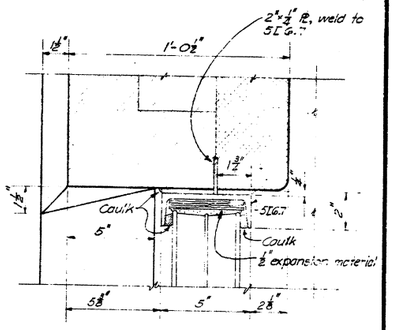
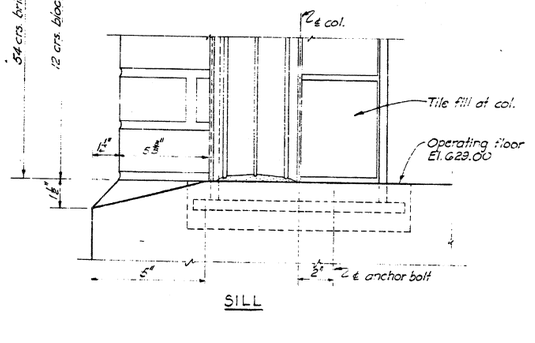


JAMB AT WALL



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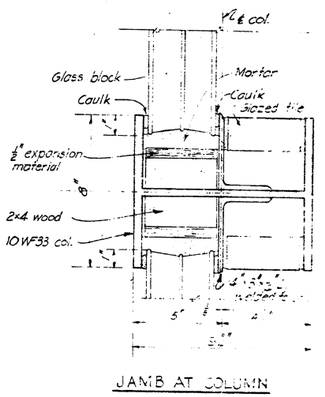
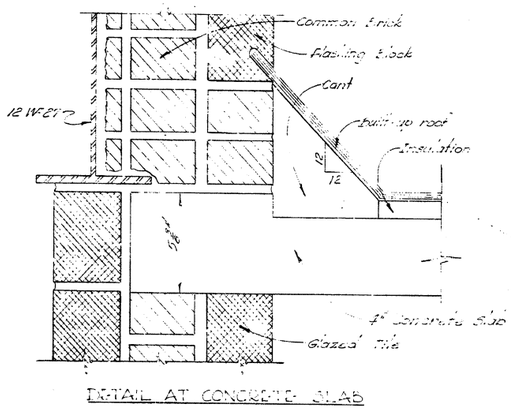


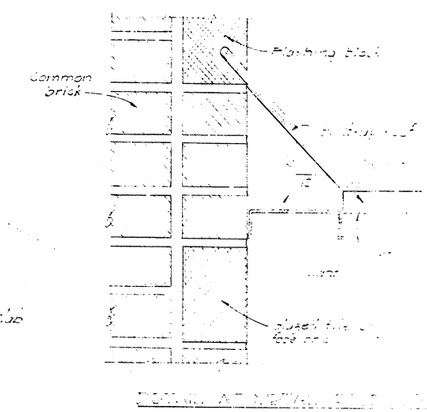
JAMB AT COLUMN

GLASS BLOCK WINDOW DETAILS
Scale: 3"=1'-0"

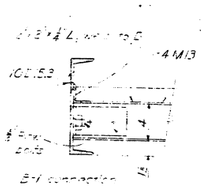
SUMP DETAILS
Scale: ¾"=1'-0"



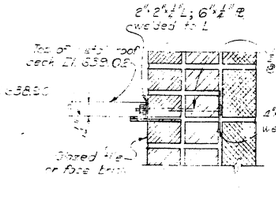
DETAIL AT CONCRETE SLAB



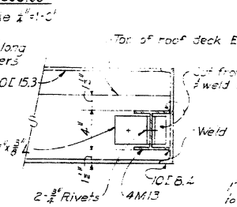
TYPICAL CANT DETAILS
Scale: 3"=1'-0"
Revised as in 4-5-57



SECTION 1-1

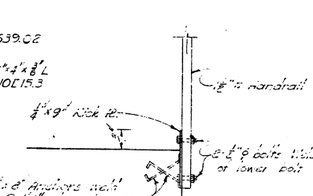


SECTION 2-2



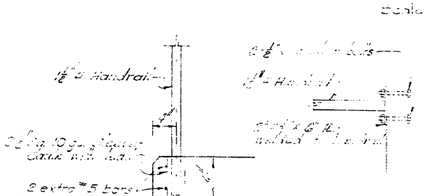
SECTION 3-3

BLOWER ROOM ROOF FRAMING DETAILS
Scale 1½"=1'-0"
(See Elec. Sh.)



HANDRAIL & KICK PLATE DETAIL

HANDRAIL ON STAIRS & LANDING



HANDRAIL IN WET WELL

TYPICAL HAND RAIL SUPPORTS
Scale: 1½"=1'-0"

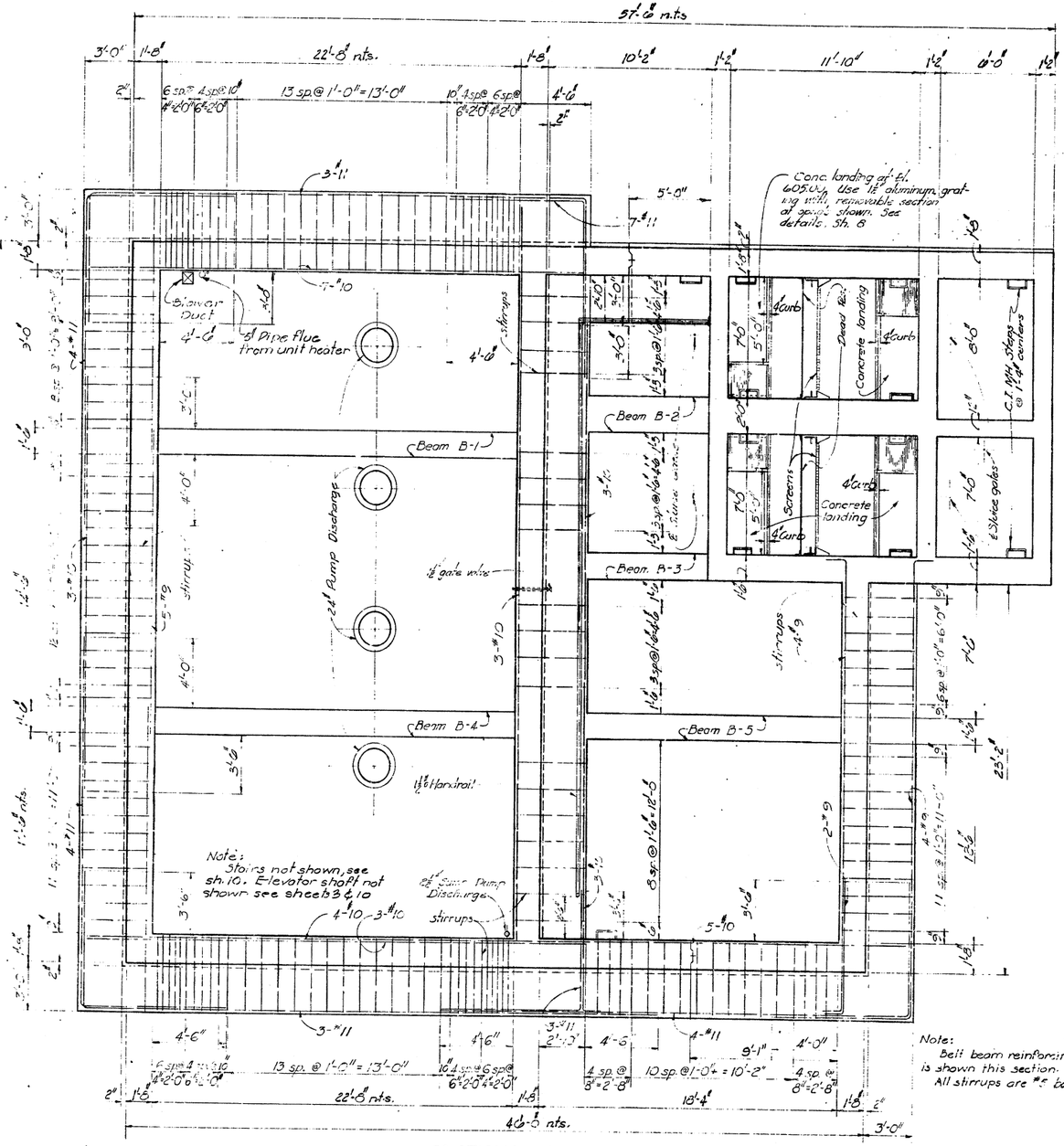
Note: Roofing, gravel stop, and plaster not shown on these sections.

CONTRACT S-53-2

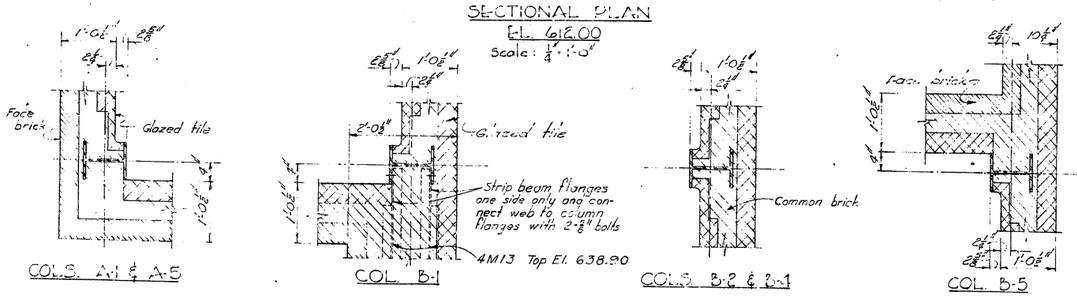
TULSA, OKLAHOMA
SEWAGE TREATMENT PLANT

MAIN SEWAGE PUMPING STATION

Supplemental Information for Bid Item 1
Reference Drawing: S-52-2, Sheet 3
WPC 21-4, Bid Item 1, Drawing 1-A

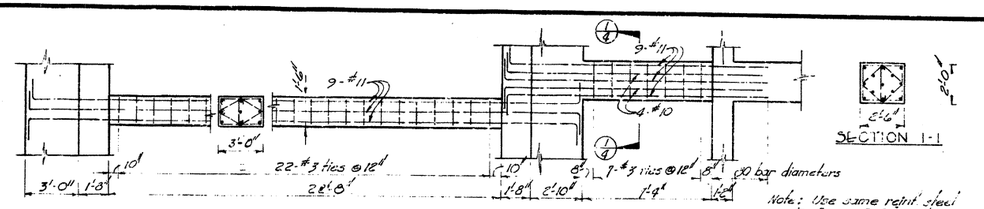


SECTIONAL PLAN
EL. 612.00
Scale: ¼" = 1'-0"

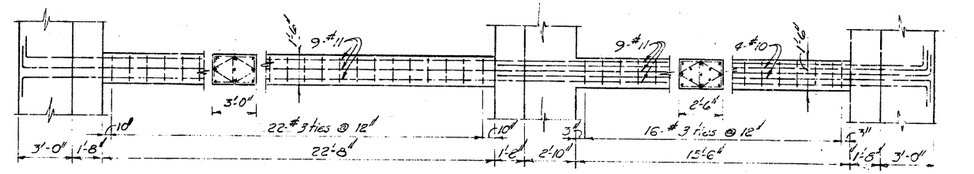


PILASTER DETAILS
Scale: ¾" = 1'-0"

Note: See details of glass block window on Sh. 3 for Cols. A-2, A-3, & A-4.

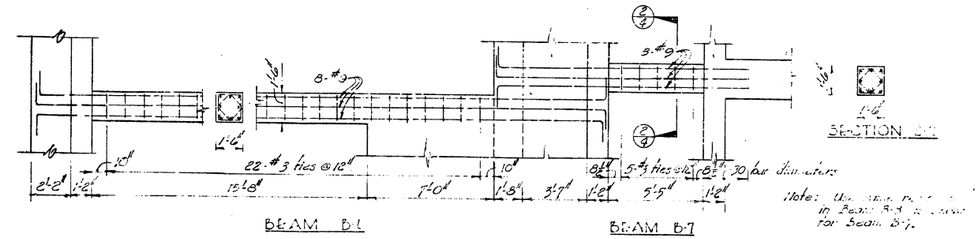


BEAM B-1 BEAM B-2

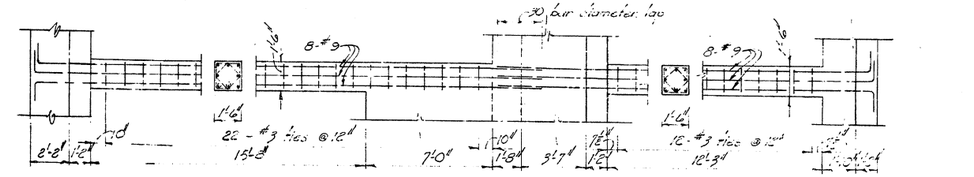


BEAM B-4 BEAM B-5

PLANS OF BEAMS AT ELEV. 601.00
Scale: ¼" = 1'-0"

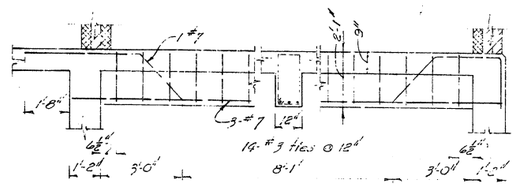


BEAM B-6 BEAM B-7

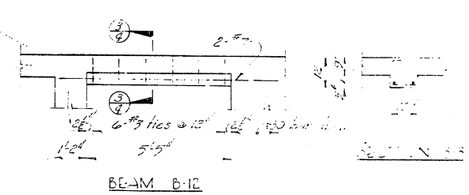


BEAM B-9 BEAM B-10

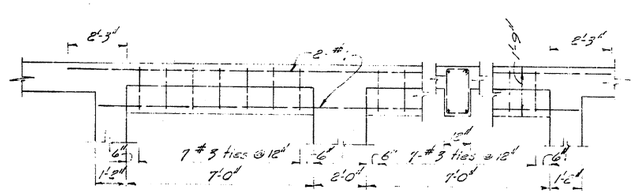
PLANS OF BEAMS AT ELEV. 615.00
Scale: ¼" = 1'-0"



BEAM B-11



BEAM B-12



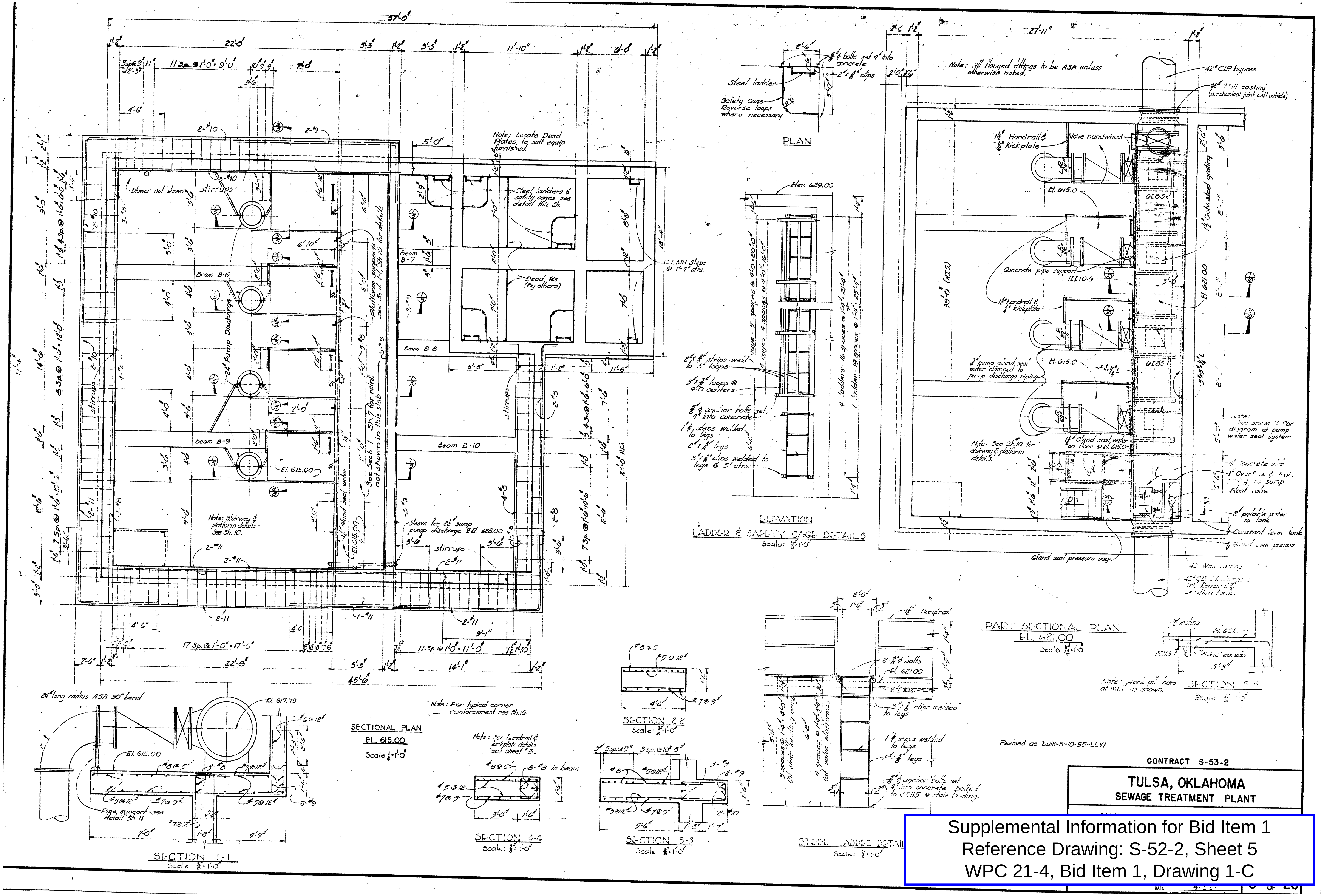
BEAM B-13

ELEVATIONS OF

CONTRACT S-53-2

TULSA, OKLAHOMA
SEWAGE TREATMENT PLANT
MAIN SEWAGE PUMPING STATION

Supplemental Information for Bid Item 1
Reference Drawing: S-52-2, Sheet 4
WPC 21-4, Bid Item 1, Drawing 1-B

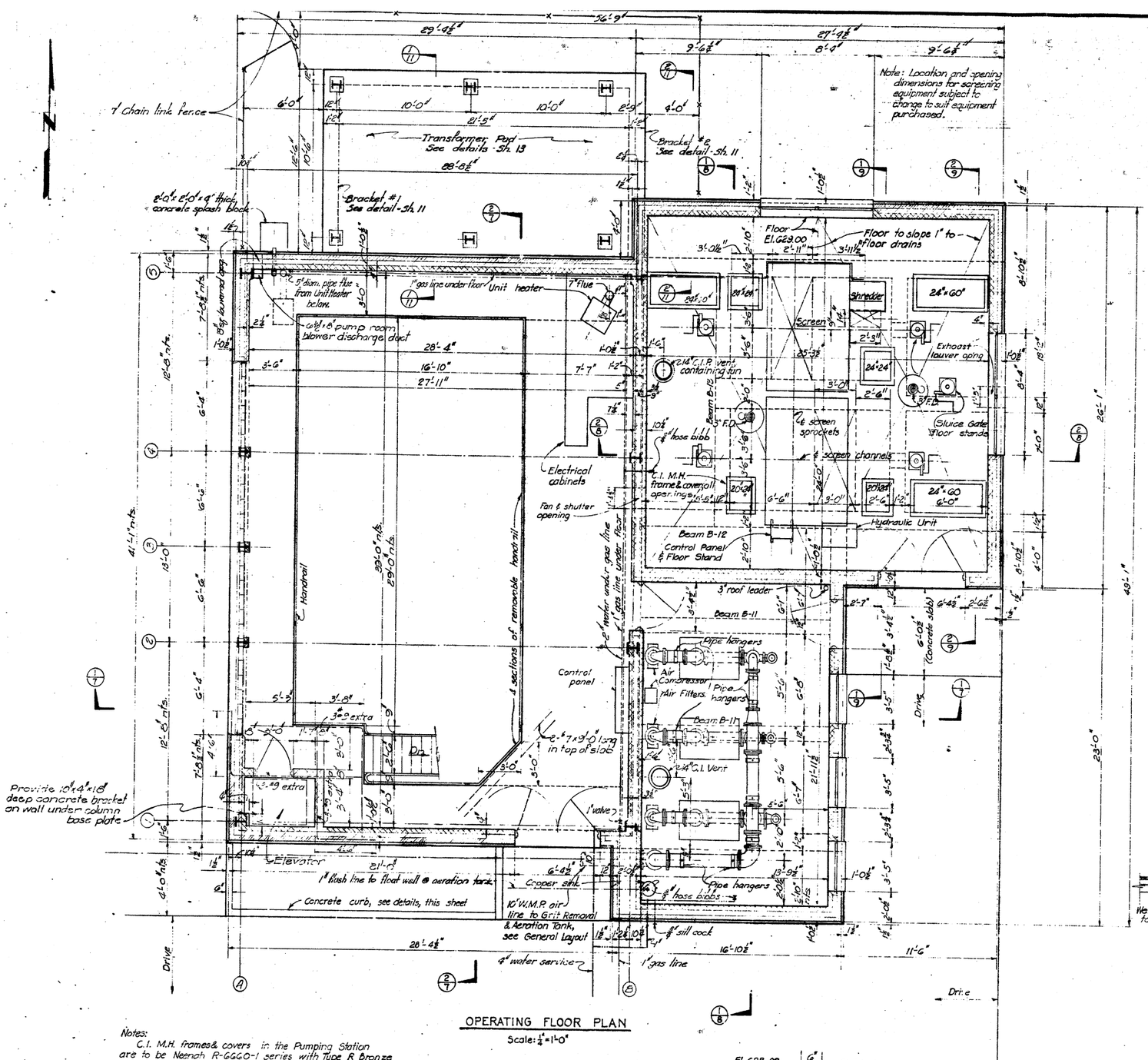


CONTRACT S-53-2

TULSA, OKLAHOMA

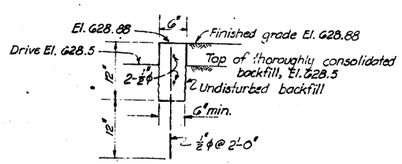
SEWAGE TREATMENT PLANT

Supplemental Information for Bid Item 1
Reference Drawing: S-52-2, Sheet 5
WPC 21-4, Bid Item 1, Drawing 1-C

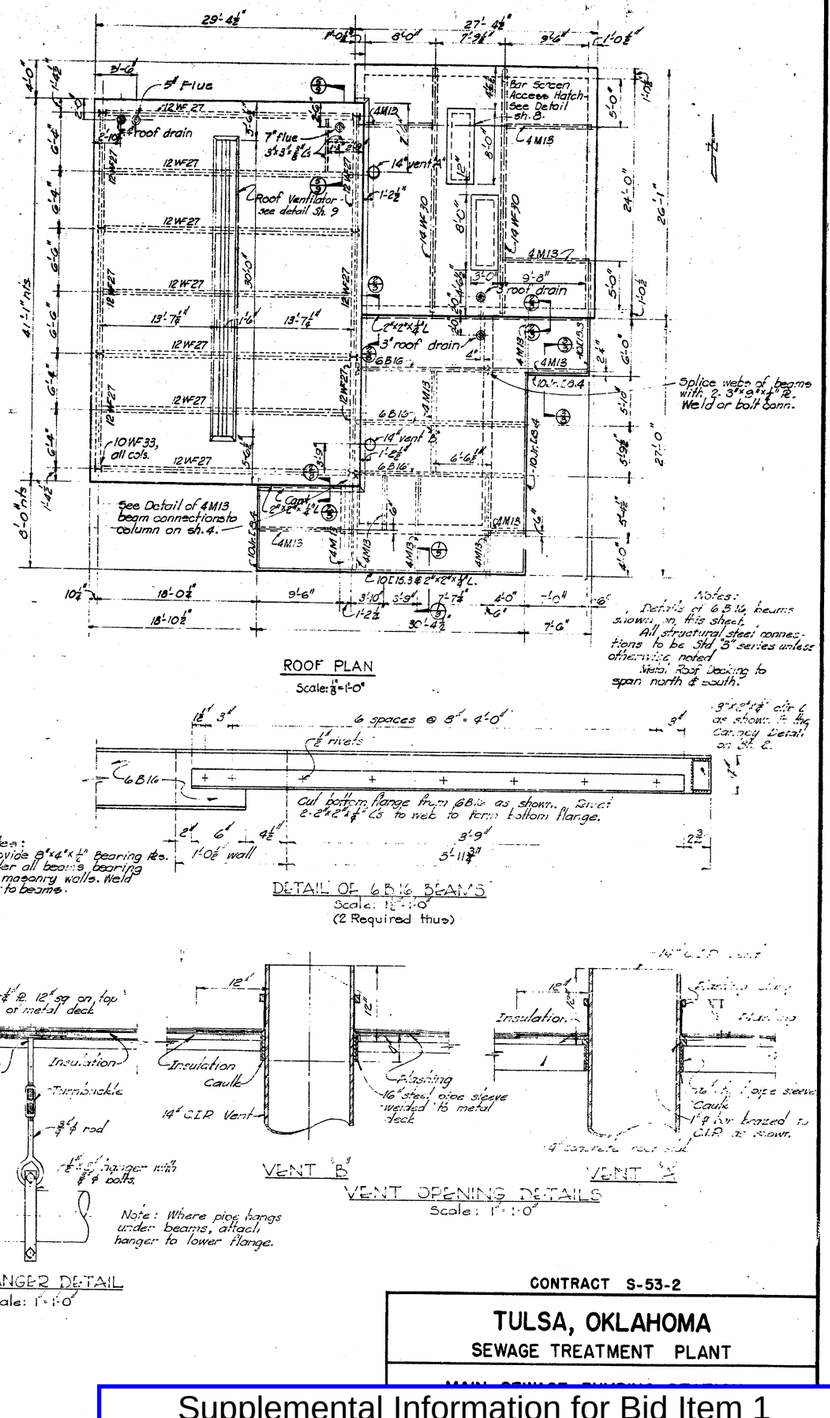


OPERATING FLOOR PLAN
Scale: 1/4"=1'-0"

Notes:
C.I. M.H. frames & covers in the Pumping Station are to be Neenah R-6660-1 series with Type R Bronze hinges, or equal; clear opening dimensions are shown on the plans.
Floor drains in the screen room are to be Josam Type V-153, or equal, and shall discharge into the wet well.
All roof drains are to be Josam Type 483, 484, or equal.
All flanged fittings to be A.S.A. Std. 125# unless otherwise noted.
The tops of all floor slabs at the walls shall be at the elevations shown on the plans.
The top surface of each slab shall be sloped 1" from the walls to the edge of a 2'-0" dia. depression at each drain, and then shall be sloped an additional 1" to the top of the floor drain.



CURB DETAILS
Scale: 3/4"=1'-0"

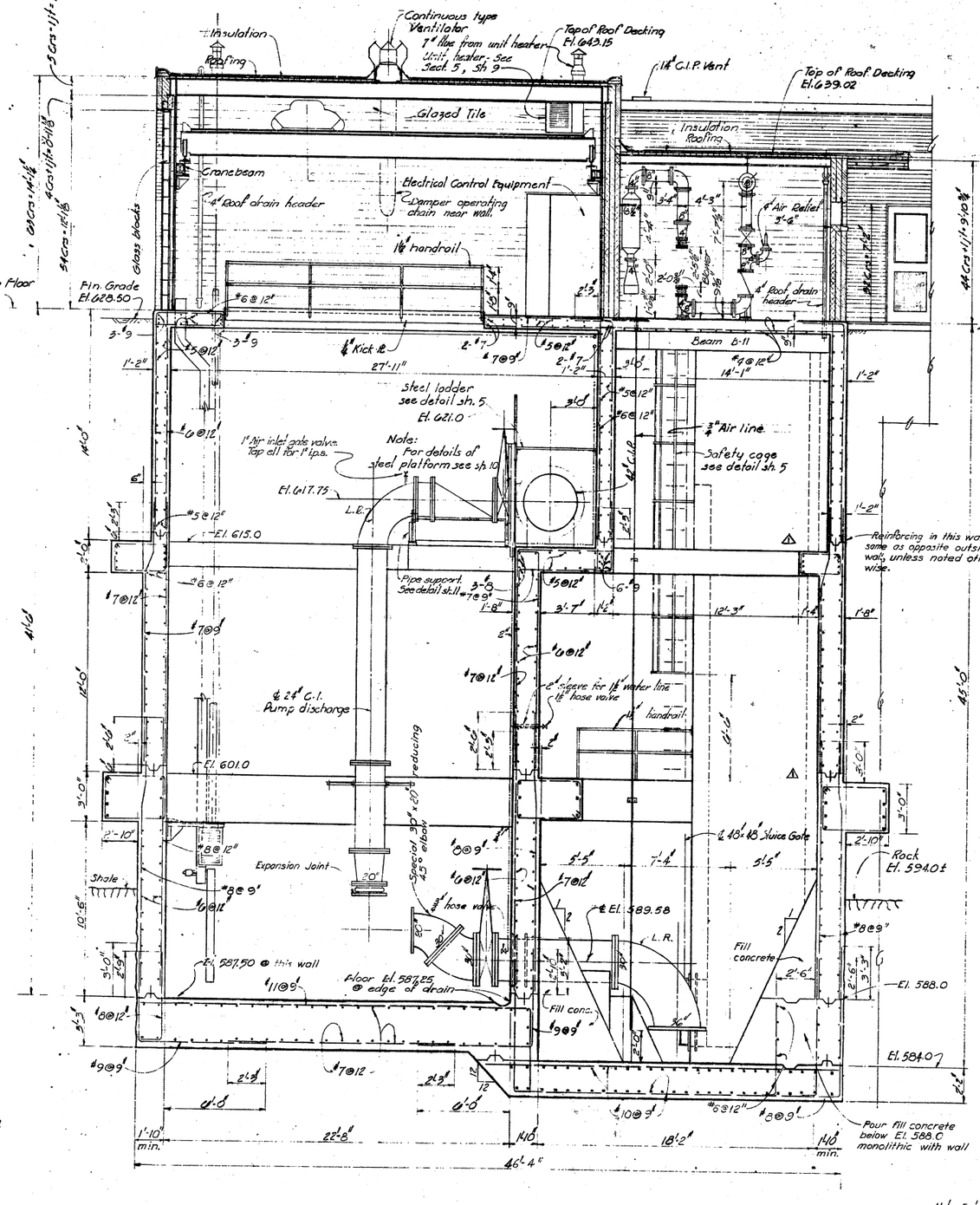


ROOF PLAN
Scale: 1/8"=1'-0"

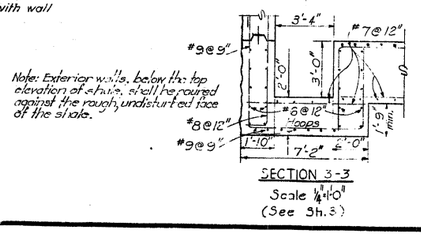
CONTRACT S-53-2

TULSA, OKLAHOMA
SEWAGE TREATMENT PLANT

Supplemental Information for Bid Item 1
Reference Drawing: S-52-2, Sheet 6
WPC 21-4, Bid Item 1, Drawing 1-D

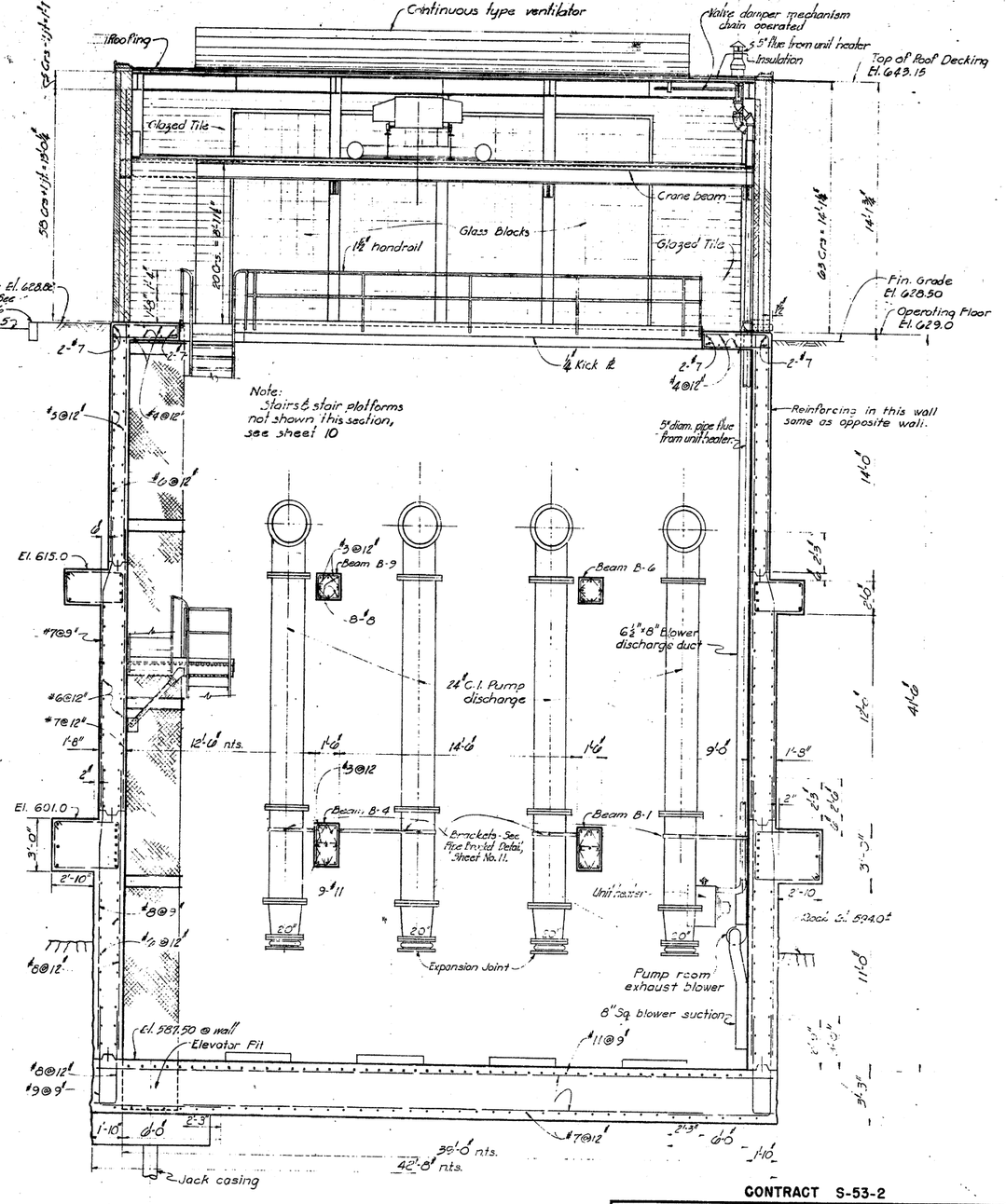


SECTION 1-1
Scale ¼"=1'-0"
(See Sh. 6)



Note: Exterior walls below the top elevation of shale, shall be poured against the rough, undisturbed face of the shale.

SECTION 3-3
Scale ¼"=1'-0"
(See Sh. 3)



SECTION 2-2
Scale ¼"=1'-0"
(See Sh. 6)

CONTRACT S-53-2

TULSA, OKLAHOMA
SEWAGE TREATMENT PLANT

Supplemental Information for Bid Item 1
Reference Drawing: S-52-2, Sheet 7
WPC 21-4, Bid Item 1, Drawing 1-E

Continuous ventilator
14" C.I. Vent
Roofing
Insulation
90° bend
10"×8"×8" Tee Reducing companion flg.
¾" hose bibb discharging into 12" copper sink to flush line
Snubber
4" Relief Valves
8"×4" Tee
¾" Air Tube
Air Filters
Louvers
Glazed Tile
12" Fan & motor operated automatic shutter, see detail sh. 11
14" C.I. Vent
Pipe support See detail, Sh. 11
14" Dresser Coupling
14" Duct Fan
Top of roof slab El. 641.88
Operating Floor El. 629.00
Beam B-11
Beam B-12
Bend alt bars up over support
Extra #4 straight bars @ 24"
Not to scale
1½" air line to grit removal & aeration tank. Support pipe @ every 10' with #2 Grinnell welded steel brackets, Fig. 39 or equal. Secure pipe to bracket with ¾" U-bolts.
Air compressor. Connect air supply to control panel in pump room. See sheet 19 for electrical connections.
Beam B-10
Beam B-8
Beam B-7
¾" Air tube
Note: For reinf. in this wall not shown here see section 2 sh. 7
1½" Handrail
Beam B-5
Beam B-3
Beam B-2
El. 601.00
Top of rock El. 594.0±
C.I. MH Steps @ 1'-4" ctrs.
3 rows of 3-#11 4-#10 shown with dog ties. All ties are #3@12"
4-#6 hook ends
1 extra #3 top both ends of beam
El. 584.00
SECTION 1-1
Scale: ¼" = 1'-0"
(See Sh. 6)

Bar Screen Access Hatch See Detail this Sh.
Top of roof slab El. 641.88
6'-0" D. hoist rings centered over ea. 24"×60" MH. See detail Sh. 11
3" Screen housing vent
14" C.I. Vent
Roofing Insulation
Glazed Tile
Screen
Floor Stands
Duct Fan
Floor Stand
Beam B-13
Operating Floor El. 629.00
For wall reinf. see Sect. 1-1, sh. 7
Dead ☐ (by others)
Note: Width of slot forms to be as wide as equipment purchased will permit.
Conc. Platforms See Detail this Sh.
Beam B-7
Note: Steel Ladders & safety cages not shown. 2'-0" south chamber 2'-6" north chamber
El. 605.00
El. 601.00
Bar Screen (furnished by others)
See outside wall for reinf.
El. 590.00
El. 584.00
6" Sluice Gate Stem
Sluice Gate
36"×36" Sluice Gate
#6@12" dowels
24" RCP Sewers - Inv. El. 589.0
Note: Use dowels beyond sluice gate openings as noted above
7'-0½" South 6'-10¾" North
4'-9⅛" South 4'-11¼" North
SECTION 2-2
Scale: ¼" = 1'-0"
(See Sh. 6)

1½" handrail - See details Sh. 3
2'-6"×9"×⅜" Clip L's 3" long bolted to wall and ∠
¼"×3"×⅜" ∠
¼" aluminum grating. Top El. 605.00
3"×2"×¼" bolted to wall
SECTION A A

Note: All steel in platforms to be galvanized, including handrail.
5"×3"×⅜" grating Thelen-Type A, or equal.
4"×3"×⅜" ∠
2"×3"×⅜" L
3½"×3½"×¼" L
⅝"×6" bolts ⅝" into concrete
See Sect. 2-2
El. 605.0
Concrete landing
Weep hole 4" pipe
SECTION B-B

PLAN
SCREEN PIT PLATFORM DETAILS
Scale: ½" = 1'-0"

6" 2'-0"×1'-0" opening 6"
#4 loops
Insulation
Metal joist
Concrete curb
Bend roof steel into curb

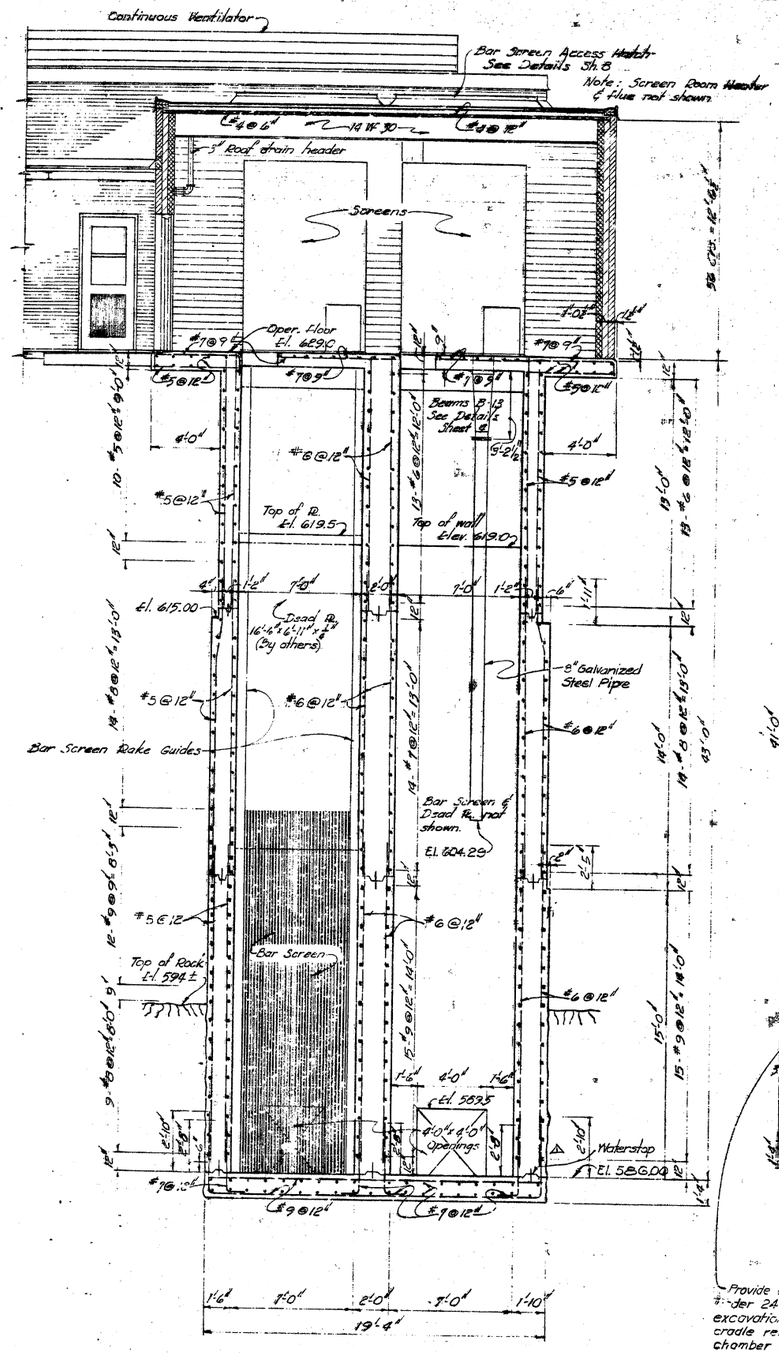
BAR SCREEN ACCESS HATCH DETAIL
Scale: ¾" = 1'-0"

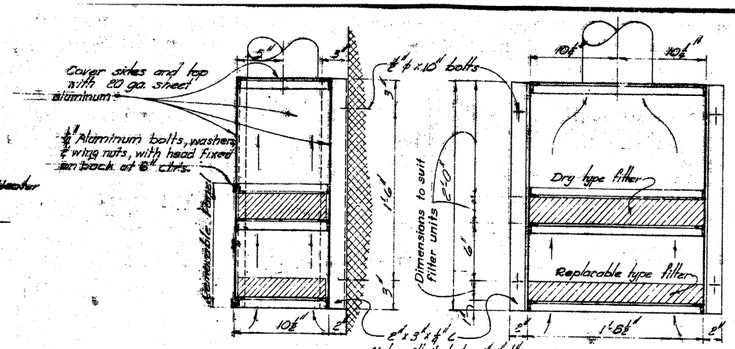
3'-1"×8'-1" cover
Weatherproof, non deteriorating, 2" thick sheet insulation attached to ¼" sheet
No. 8 ga. sheet metal cover
Note: Fabricated cover to be hot-dip galvanized.

ACCESS HATCH COVER DETAIL
Scale: 1" = 1'-0"

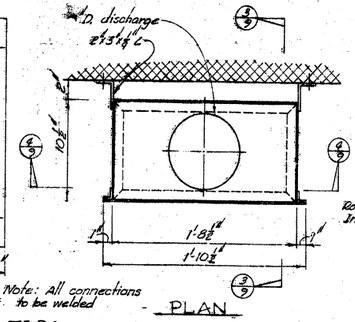
CONTRACT S-53-2
TULSA, OKLAHOMA
SEWAGE TREATMENT PLANT
MAIN SEWAGE PUMPING STATION

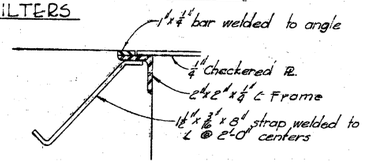
Supplemental Information for Bid Item 1
Reference Drawing: S-52-2, Sheet 8
WPC 21-4, Bid Item 1, Drawing 1-F



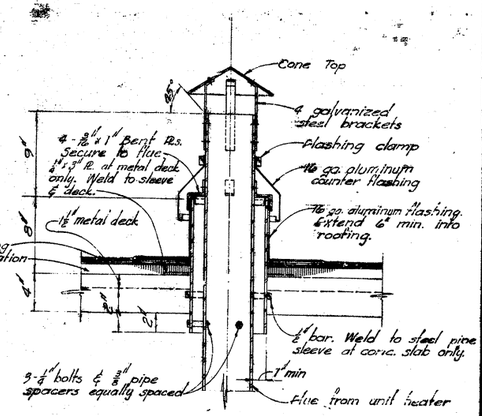


DETAILS OF AIR FILTERS
Scale: 1 1/2" = 1'-0"

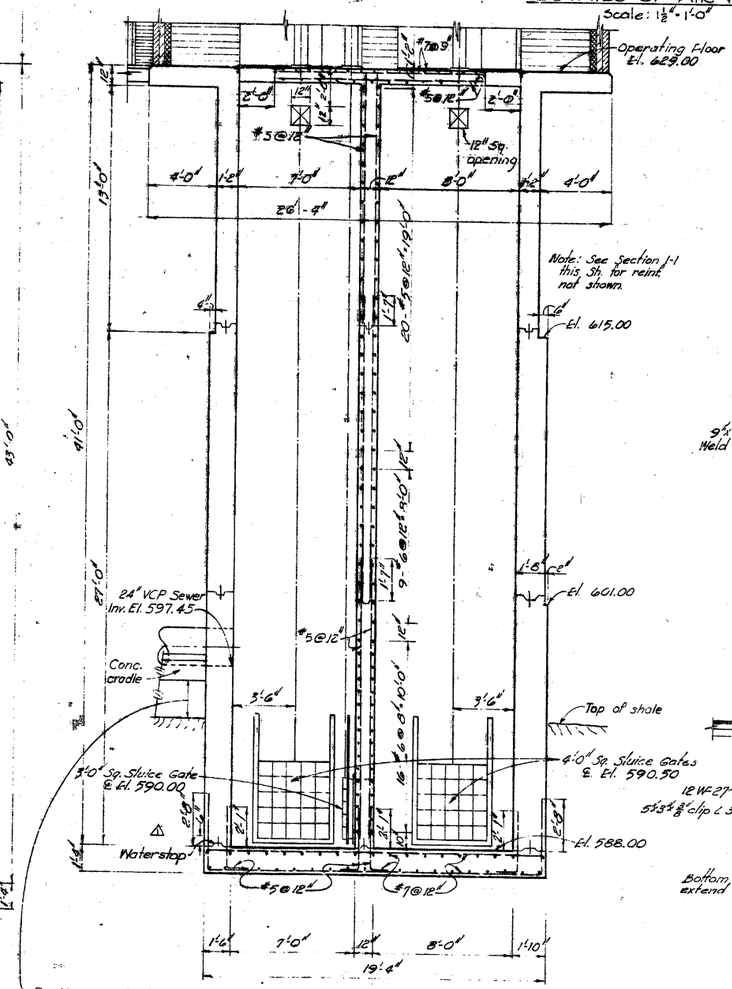


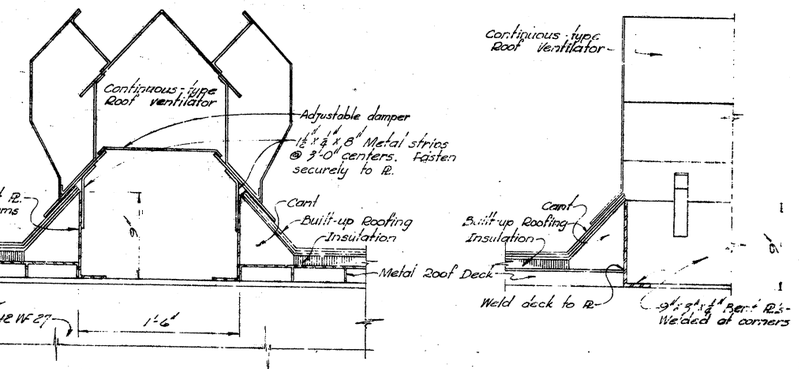


TYPICAL CHECKERED PLATE DETAIL
Scale: 3" = 1'-0"

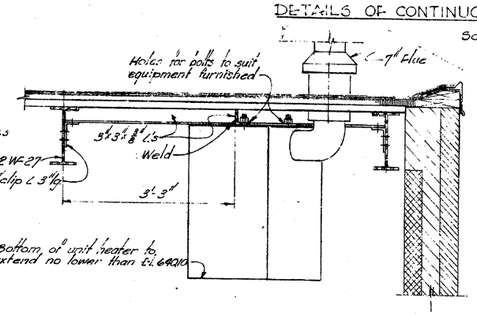


TYPICAL UNIT HEATER FLUE DETAIL
Scale: 1 1/2" = 1'-0"





DETAILS OF CONTINUOUS-TYPE ROOF VENTILATOR
Scale: 1 1/2" = 1'-0"



SECTION 5-5
Scale: 3/8" = 1'-0"
See Sh. 6

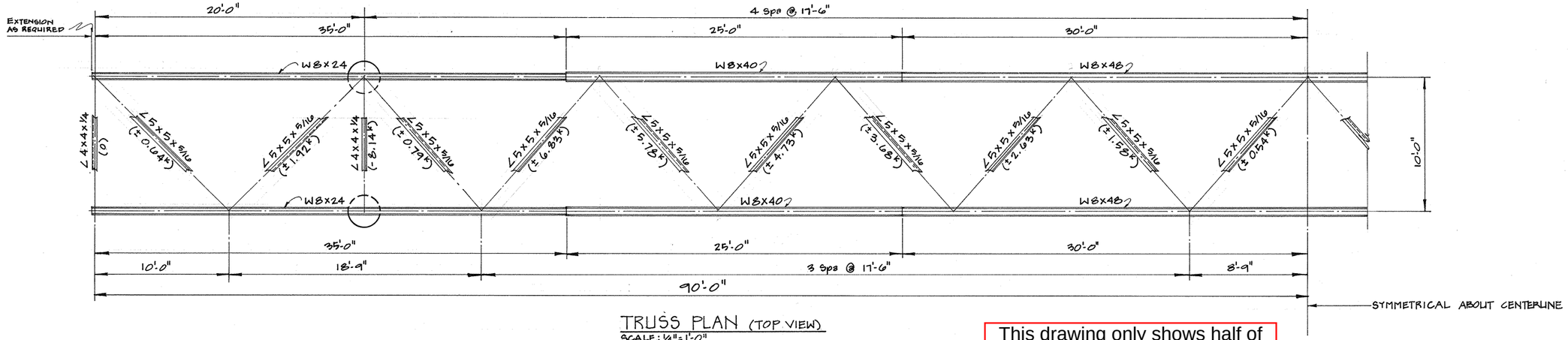
CONTRACT S-53-2

TULSA, OKLAHOMA
SEWAGE TREATMENT PLANT

MAIN SEWAGE PUMPING STATION

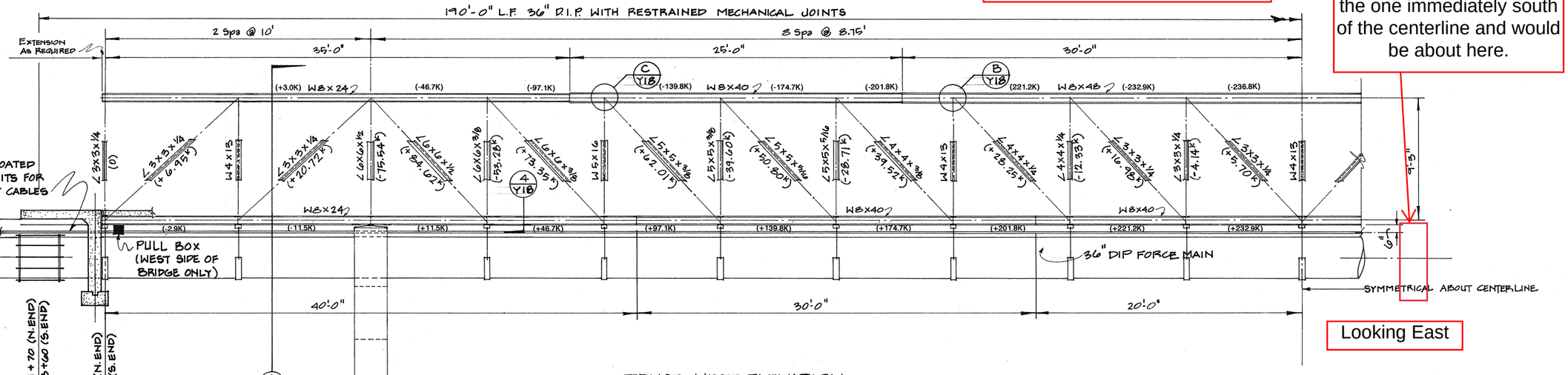
No.	Dwn.
1	TWC

Supplemental Information for Bid Item 1
Reference Drawing: S-52-2, Sheet 9
WPC 21-4, Bid Item 1, Drawing 1-G



TRUSS PLAN (TOP VIEW)
SCALE: 1/4" = 1'-0"

This drawing only shows half of the bridge because is it symmetrical about the centerline.



The broken pipe hanger is the one immediately south of the centerline and would be about here.

Looking East

TRUSS WEST ELEVATION (EAST ELEVATION OPPOSITE HAND)
SCALE: 1/4" = 1'-0"

NOTES:

1. ALL CONNECTIONS NOT DETAILED ARE TO BE DESIGNED BY THE FABRICATOR/CONTRACTOR AND APPROVED BY THE ENGINEER.
2. ALL BOLTS NOT SPECIFIED SHOULD BE A307 BOLTS. MINIMUM SIZE BOLTS TO BE 5/8" DIAMETER.
3. (+) DESIGNATES TENSION
   (-) DESIGNATES COMPRESSION
4. ALL STRUCTURAL STEEL, INCLUDING ANCHOR PLATES, BOLTS, PIPE HANGERS, PECKING, ETC. TO BE HOT DIPPED GALVANIZED AFTER FABRICATION AND PAINTED AFTER ERECTION PER SPECS.

WEST BANK LIFT STATION, FORCE MAIN, AND FLOW EQUALIZATION BASINS

FORCE MAIN BRIDGE DETAILS

"CONFORMED TO RECORD DRAWINGS"

SANITARY SEWER BOND
PROJECT NO. SA 83-19

CITY OF TULSA, OKLAHOMA

BRUTON, KNOWLES & LOVE, INC. ENGINEERS – ARCHITECTS – PLANNERS TULSA, OKLAHOMA

BLACK & VEATCH ENGINEERS – ARCHITECTS KANSAS CITY, MISSOURI

APRIL 10,1990

REVISION	BY	DATE
2 ADDED CHORD STRESSES ON WEST ELEV.	BCK	1-4-90

PLAN SCALE: 1"=

DESIGNED	RJB	
DETAILED	TGH	
CHECKED	LWL	

APPROVED:

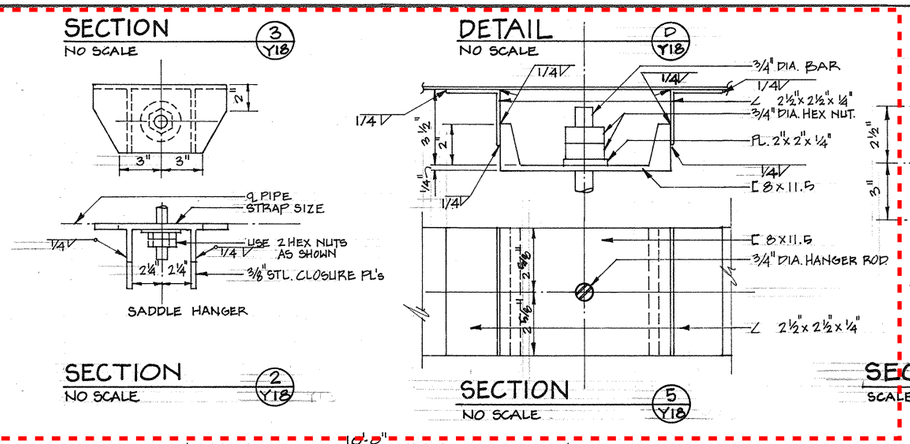
DRAWING NUMBER SA 83-19

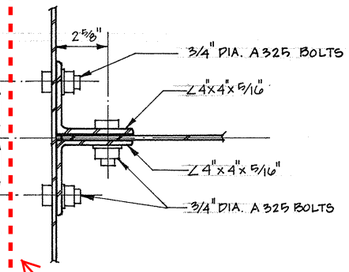
PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REORDER BY NUMBER 07548

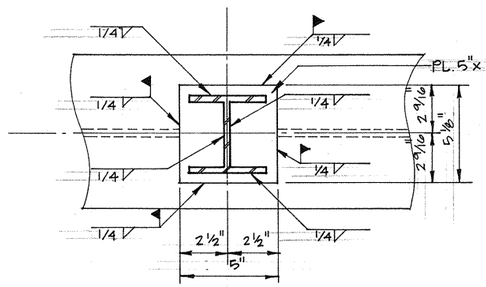
Modified from: SA 83-19, Sheet 70

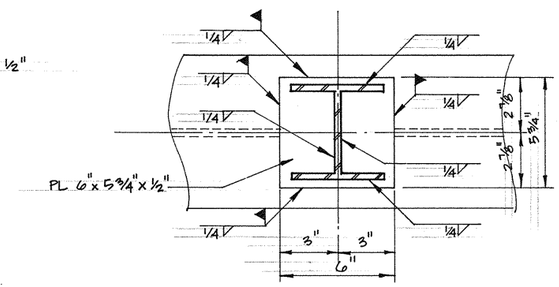
See Section 4.2.3 of Technical Specifications

Bridge over Cherry Creek
(Existing)
WPC 21-4, Bid Item 2, Drawing 2-1

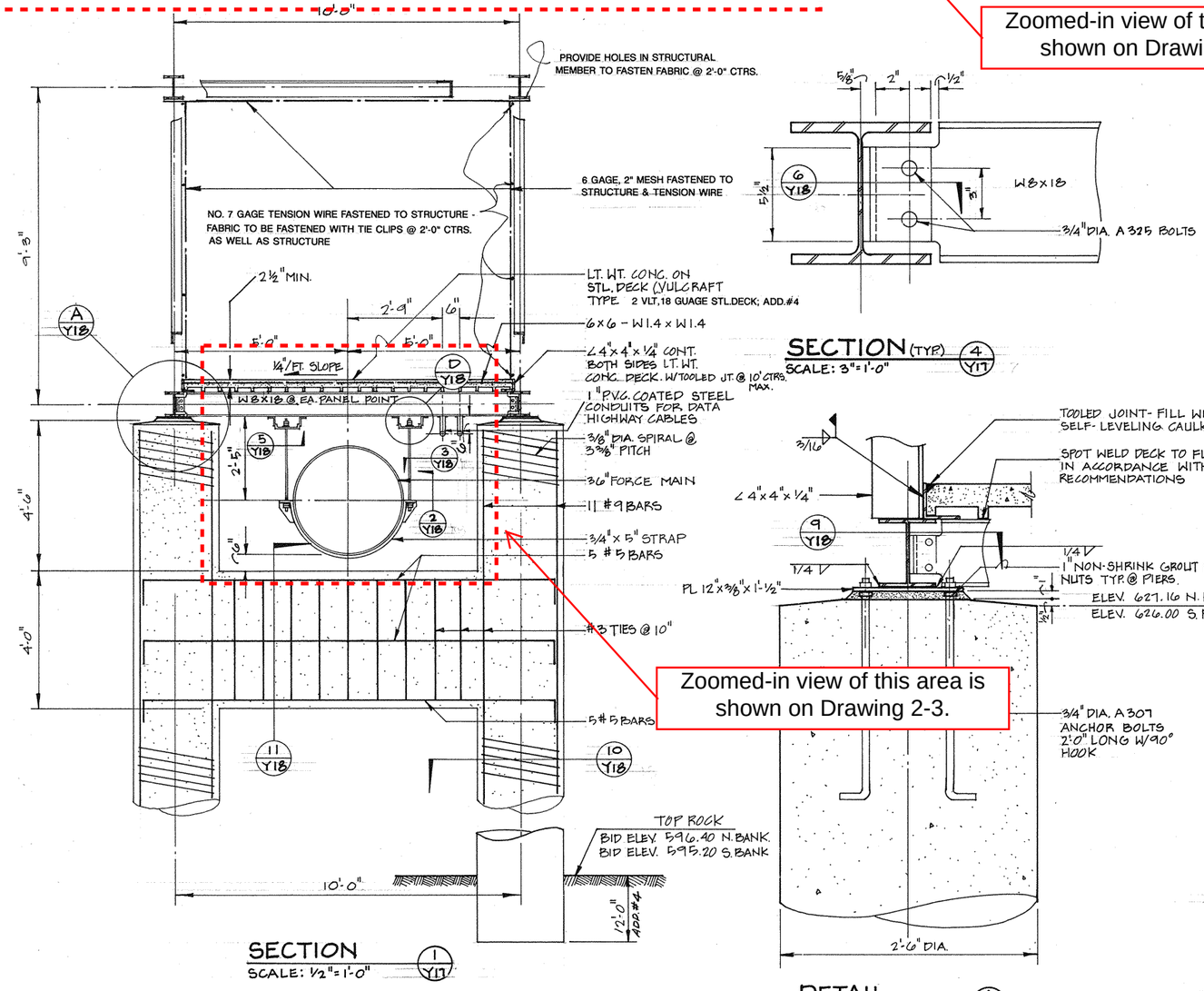


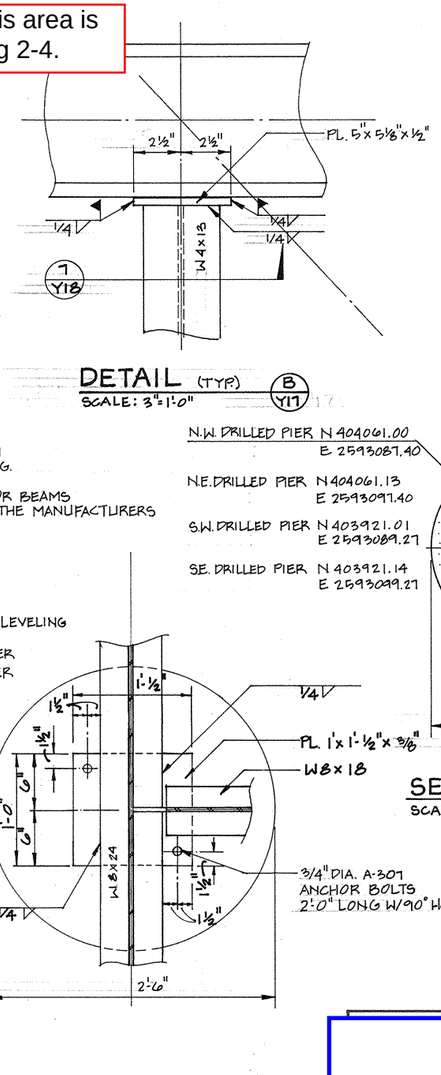


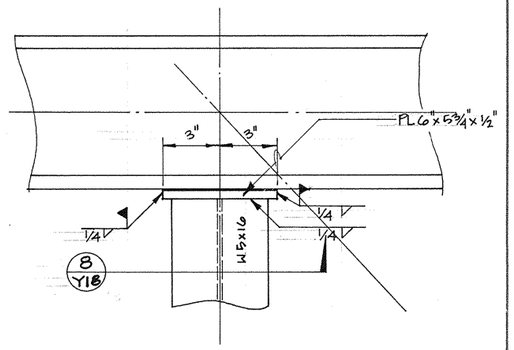


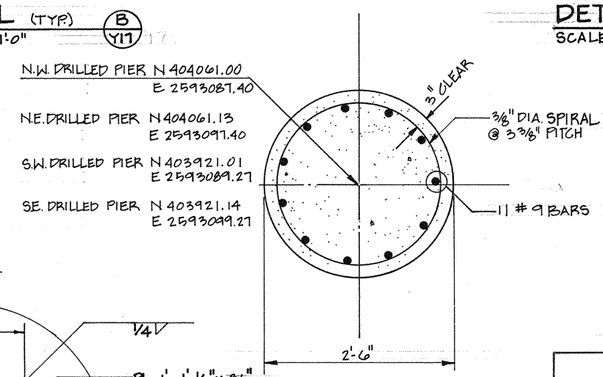


Zoomed-in view of this area is shown on Drawing 2-4.









WEST BANK LIFT STATION,
FORCE MAIN, AND
FLOW EQUALIZATION BASINS

FORCE MAIN BRIDGE DETAILS

"CONFORMED TO RECORD DRAWINGS"

SANITARY SEWER BOND
PROJECT NO. SA 83-19

CITY OF TULSA, OKLAHOMA

BRUTON, KNOWLES & LOVE, INC.
ENGINEERS - ARCHITECTS - PLANNERS
TULSA, OKLAHOMA

BLACK & VEATCH
ENGINEERS - ARCHITECTS
KANSAS CITY, MISSOURI

REVISION	BY	DATE
APRIL 10,1990		

PLAN SCALE: 1"=

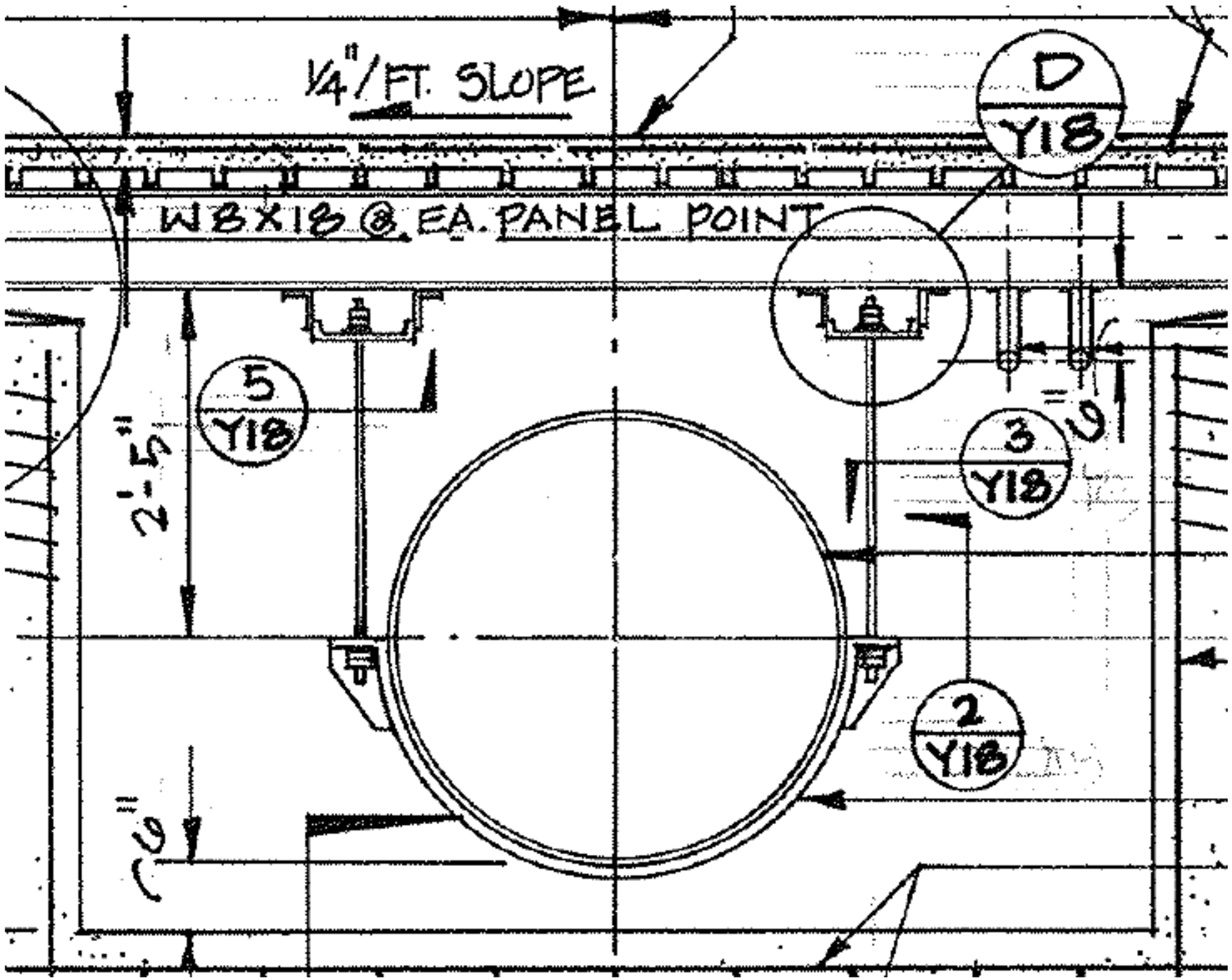
DESIGNED	RJB
DETAILED	TGH
CHECKED	LWL

APPROVED:

Pipe Hanger Details, 1 of 3
WPC 21-4, Bid Item 2, Drawing 2-2

Modified from: SA 83-19, Sheet 71

See Section 4.2.3 of Technical Specifications

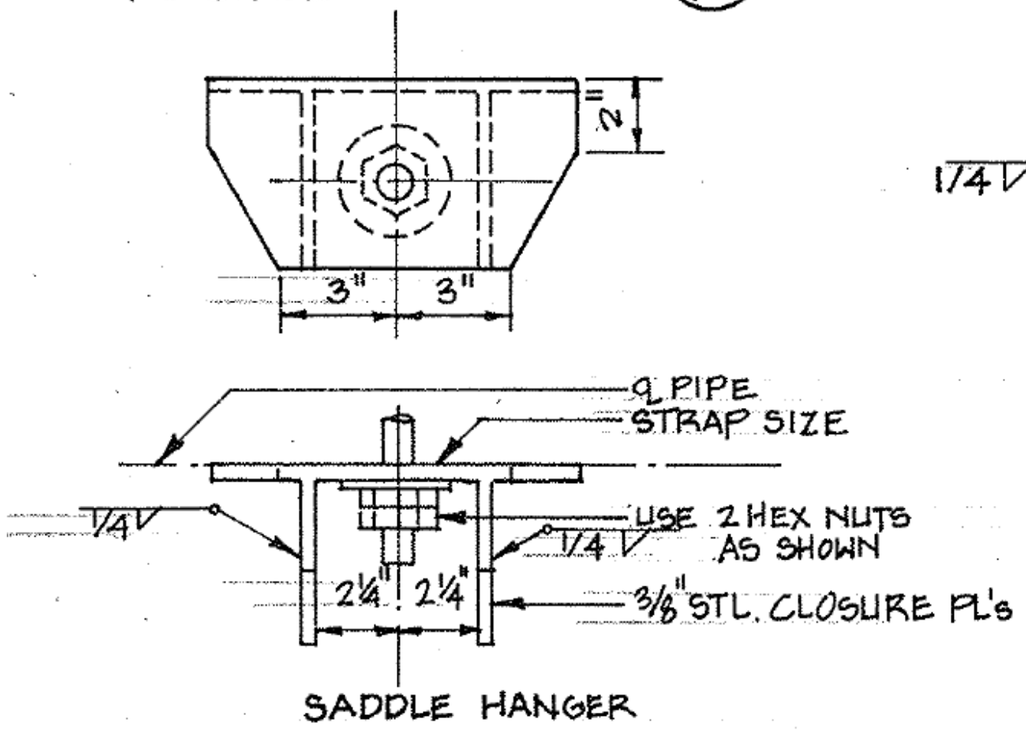


See Section 4.2.3 of Technical Specifications

Pipe Hanger Details, 2 of 3
WPC 21-4, Bid Item 2, Drawing 2-3

SECTION
NO SCALE

3 / Y18

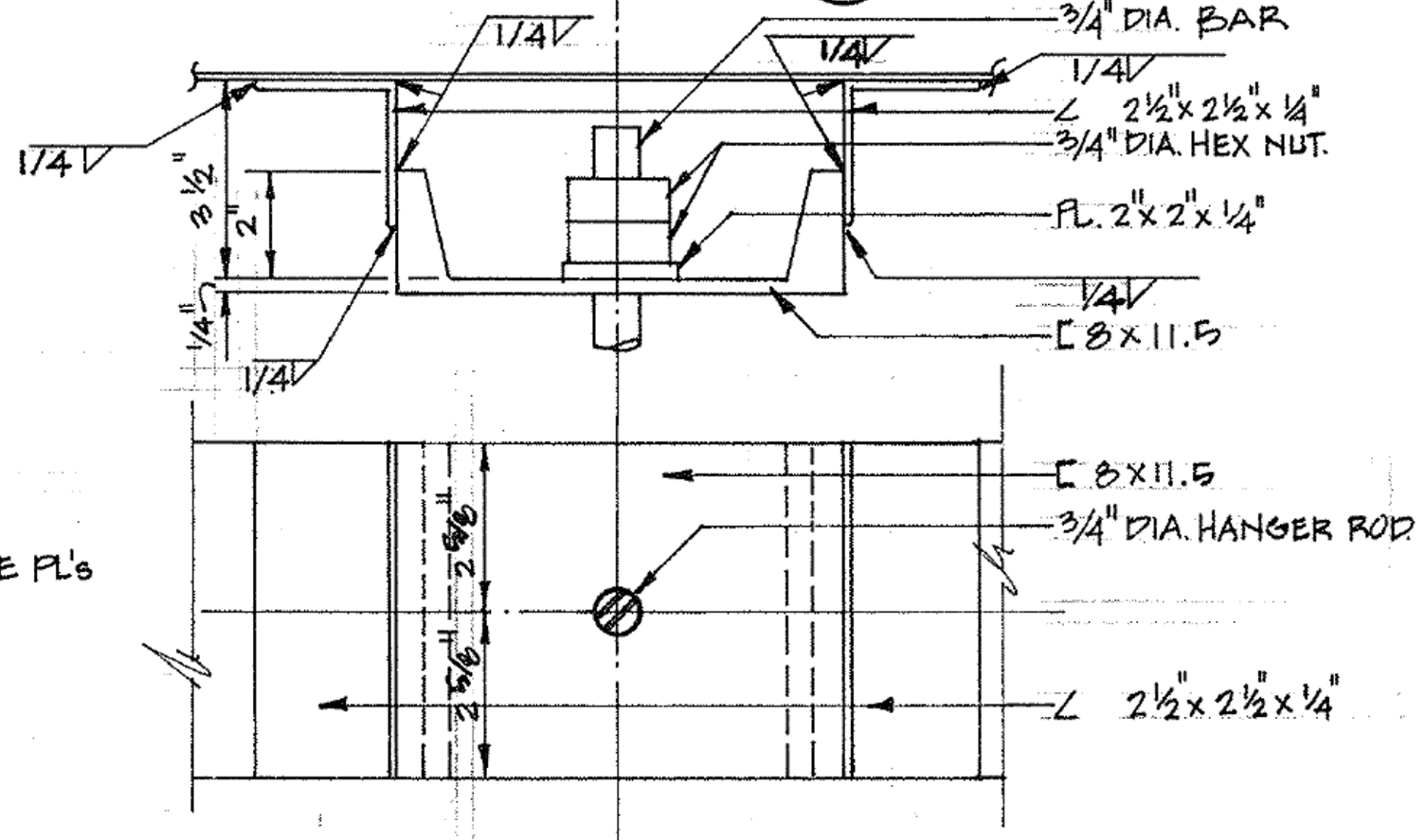


SECTION
NO SCALE

2 / Y18

DETAIL
NO SCALE

D / Y18

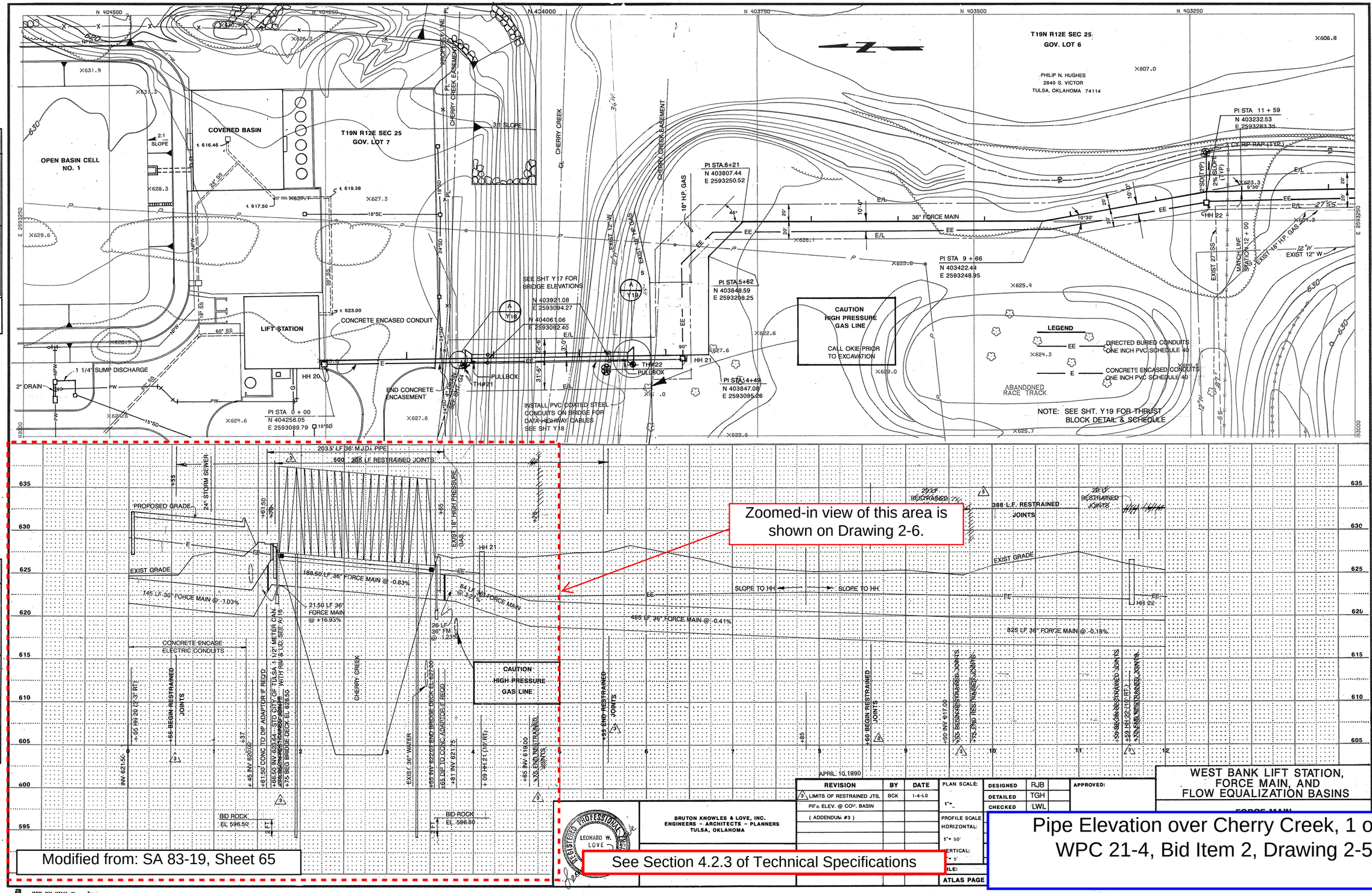


SECTION
NO SCALE

5 / Y18

See Section 4.2.3 of Technical Specifications

Pipe Hanger Details, 3 of 3
WPC 21-4, Bid Item 2, Drawing 2-4



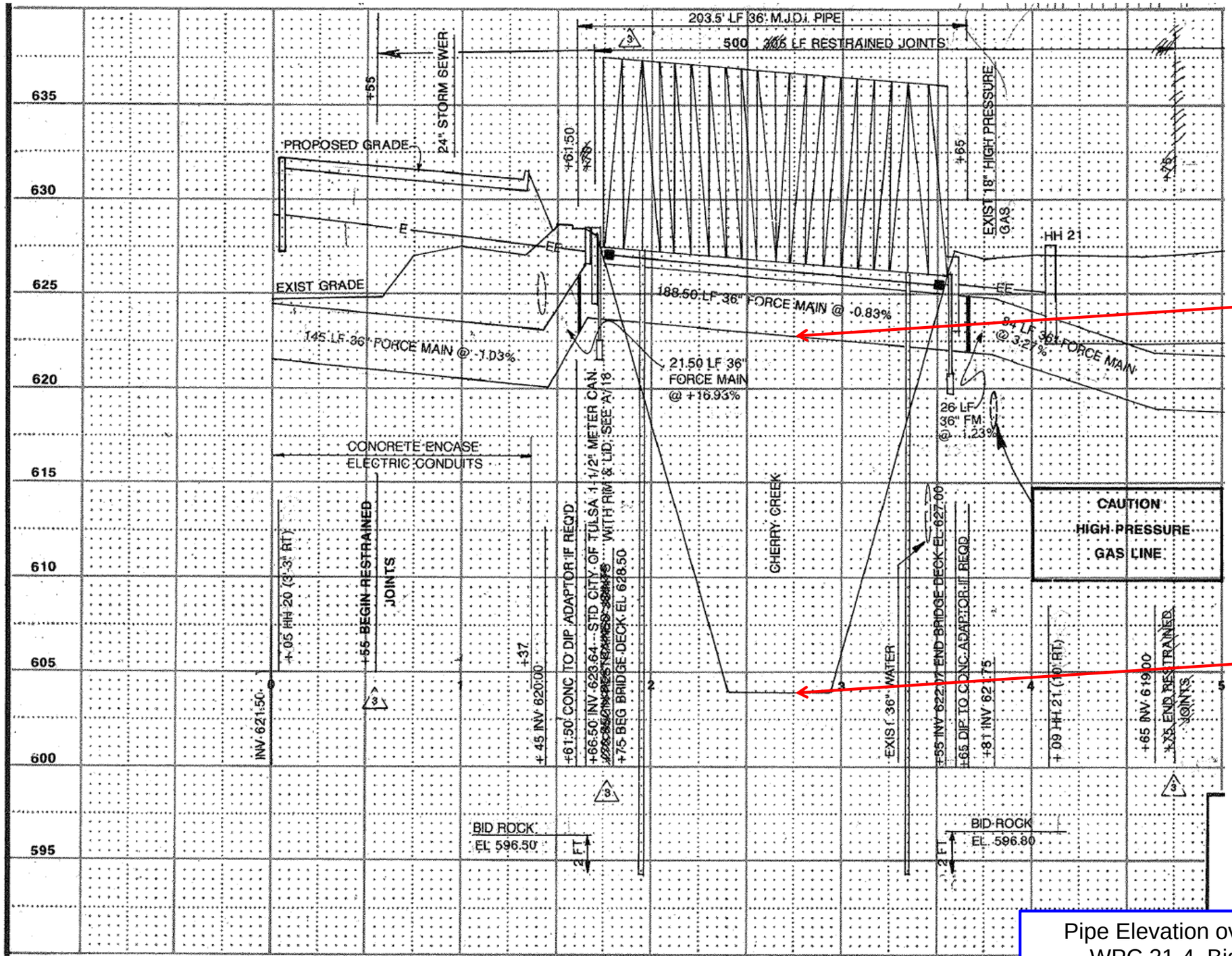
Zoomed-in view of this area is shown on Drawing 2-6.

Modified from: SA 83-19, Sheet 65

See Section 4.2.3 of Technical Specifications

Pipe Elevation over Cherry Creek, 1 of 2
WPC 21-4, Bid Item 2, Drawing 2-5

SA 83-19



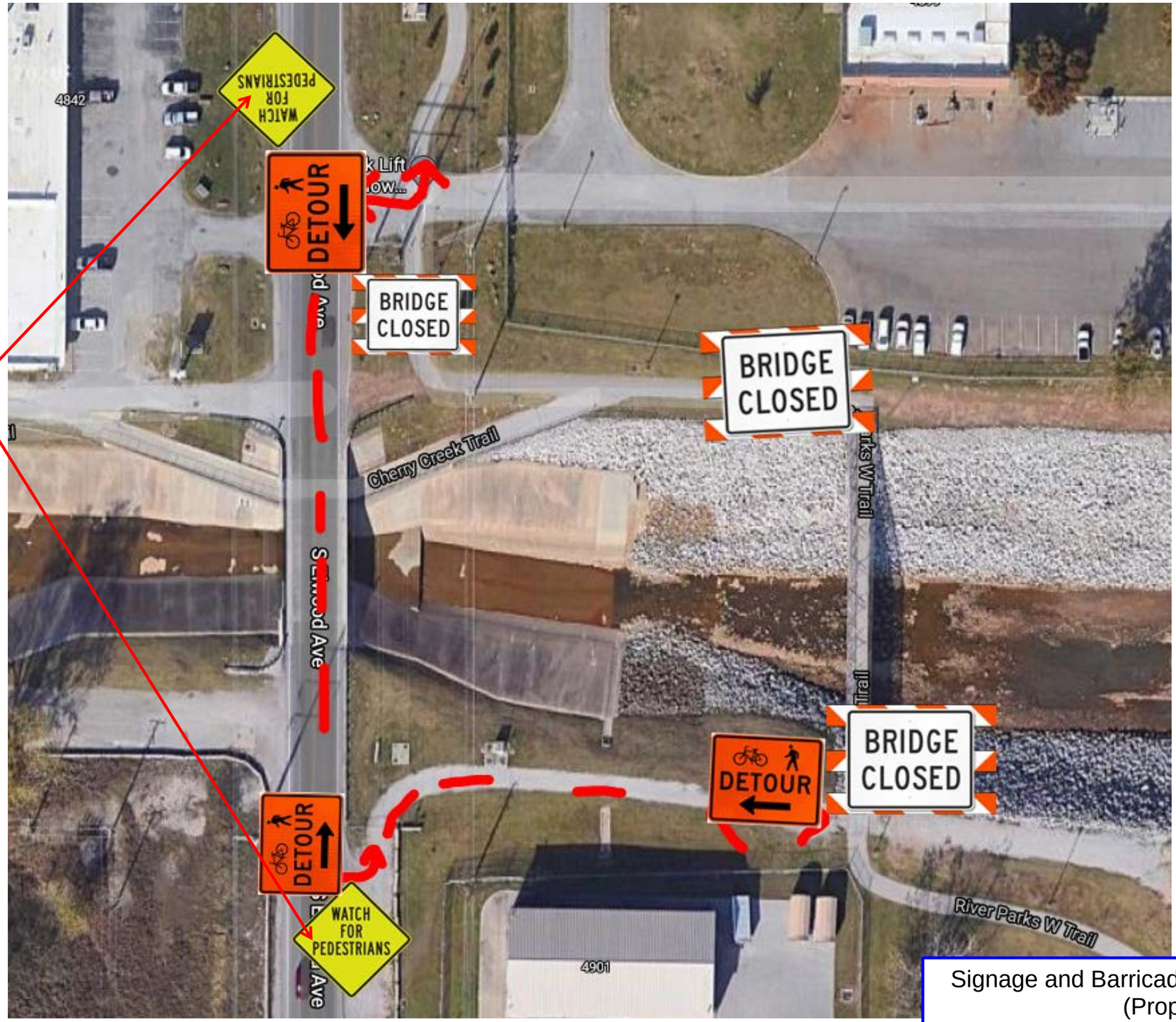
Approximate elevation of broken pipe hanger: 623 to 624 feet

Approximate elevation of creek bed: 604 feet

See Section 4.2.3 of Technical Specifications

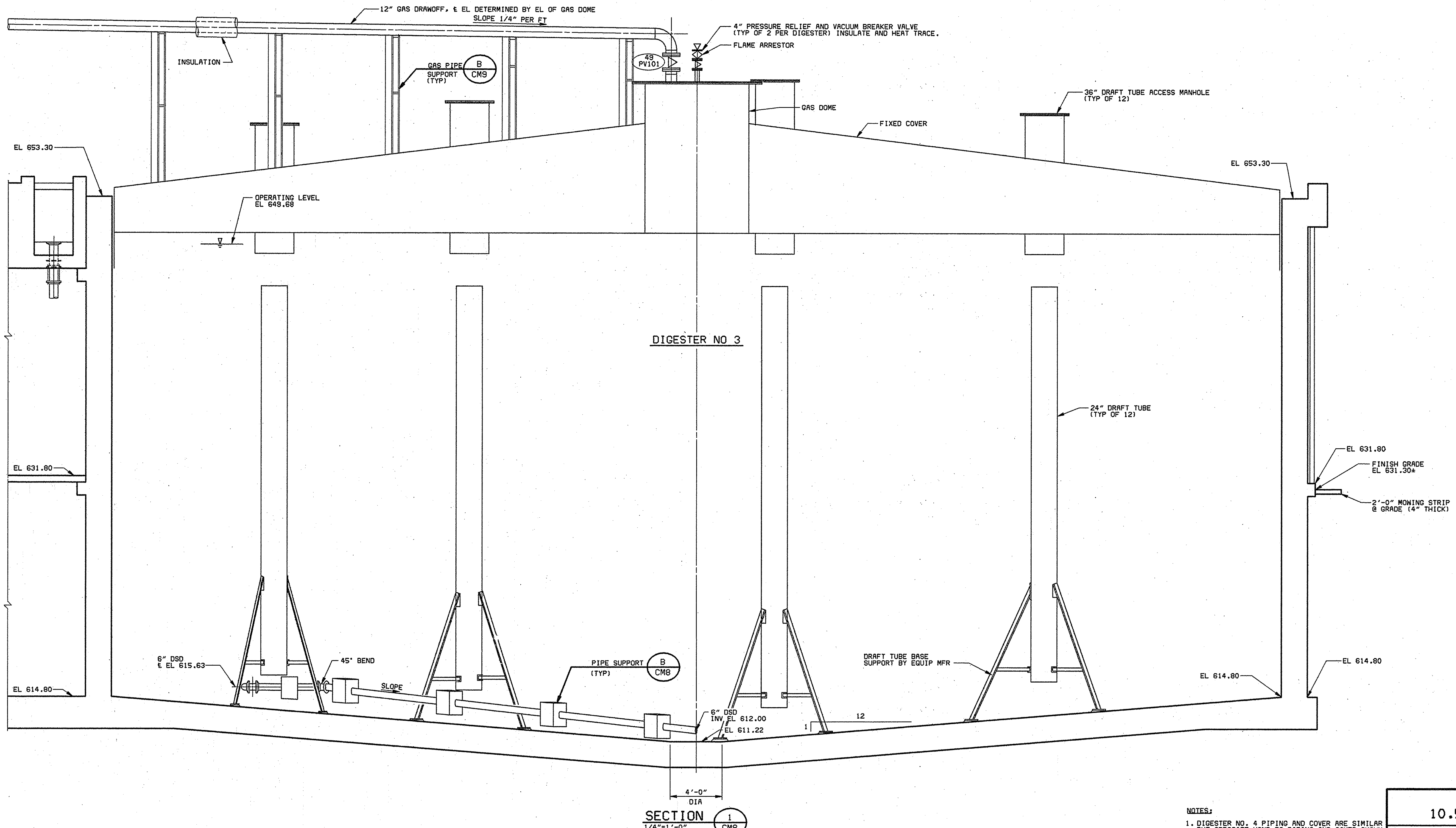
Pipe Elevation over Cherry Creek, 2 of 2
WPC 21-4, Bid Item 2, Drawing 2-6

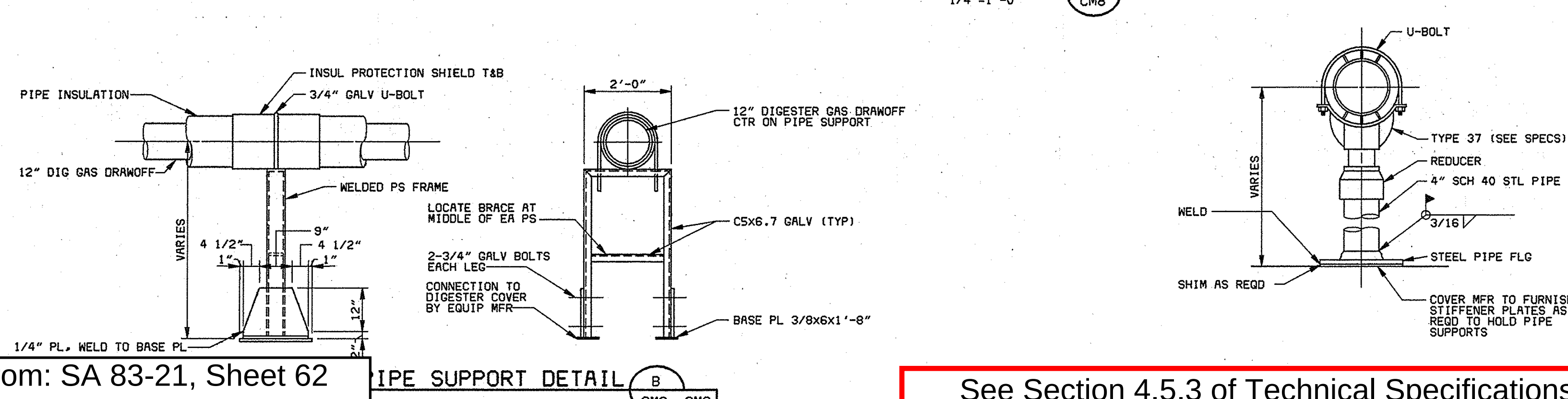
Advanced warning signs to be positioned 300 feet prior to the location where vehicles will come into contact with bikes and pedestrians.



See Section 4.2.5 of Technical Specifications

Signage and Barricades for Detour of Bridge (Proposed)
WPC 21-4, Bid Item 2, Drawing 2-7





Modified from: SA 83-21, Sheet 62

See Section 4.5.3 of Technical Specifications

NOTES:

1. DIGESTER NO. 4 PIPING AND COVER ARE SIMILAR BUT OPPOSITE HAND TO PIPING AND COVER SHOWN FOR DIGESTER NO. 3
2. 2 INCH GAS SUPPLY LINES NOT SHOWN

SOUTHSIDE WWTP
10.5 MGD IMPROVEMENTS

COGENERATION FACILITY
MECHANICAL
DIGESTER SECTION AND DETAILS

SANITARY SEWER BOND
PROJECT NO. SA 83-21

CITY OF TULSA, OKLAHOMA

BRUTON, KNOWLES & LOVE, INC.
ENGINEERS - ARCHITECTS - PLANNERS
TULSA, OKLAHOMA

BLACK & VEATCH
ENGINEERS - ARCHITECTS
KANSAS CITY, MISSOURI

REVISION	BY	DATE	PLAN SCALE:	DESIGNED	DRS	APPROVED:
CONFORMED TO	RLZ	2-94	AS NOTED	DETAILED	CRJ	
CONSTRUCTION RECORDS				CHECKED	AEH,RAR	

Digester 3, Elevation View
(Existing)
WPC 21-4, Bid Item 5, Drawing 5-1

CCG. DWG. NO: 14814-300-371-C128

03/08/95 11:00:40 VPL
03/08/95 06:31:55 ATSSK

CBG14814.VPL
FCBG14814_300_ATB.VPL

DRAWING NUMBER

DRAWING NUMBER

DRAWING NUMBER
SA 83-21

36-inch top-access hatch to be opened by Contractor (typical 11 places)

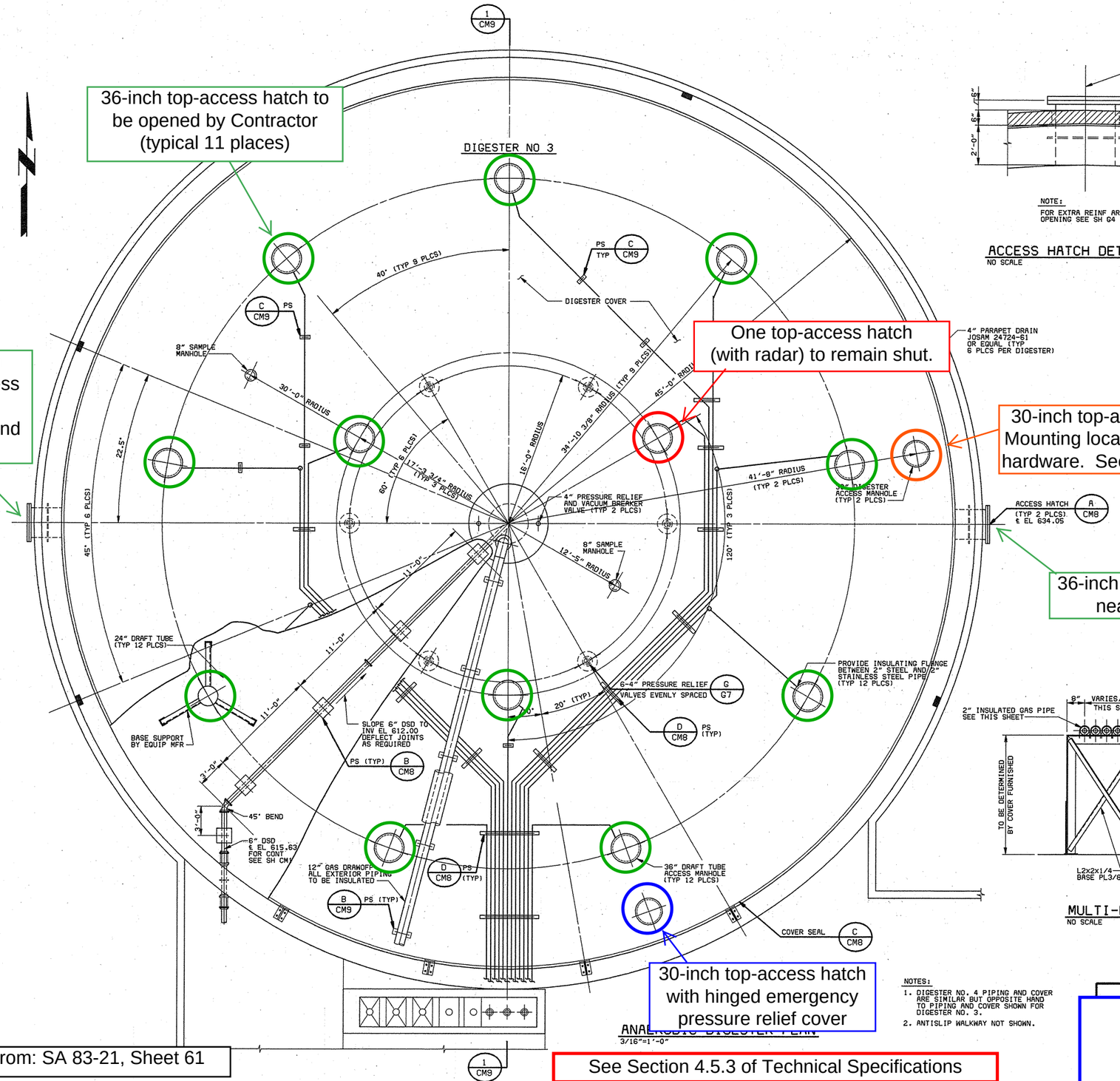
36-inch side-access hatch, near ground level

One top-access hatch (with radar) to remain shut.

30-inch top-access hatch. Mounting location for future hardware. See Bid Item 10.

36-inch side-access hatch, near ground level

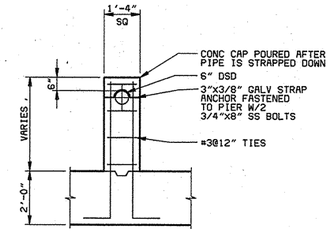
30-inch top-access hatch with hinged emergency pressure relief cover



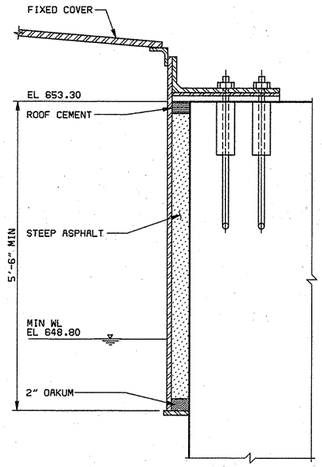
ANAEROBIC DIGESTER PLAN
3/16"=1'-0"

NOTE:
FOR EXTRA REINF AROUND OPENING SEE SH G4

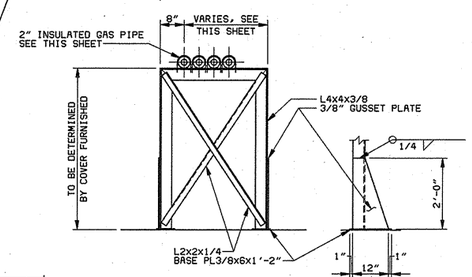
ACCESS HATCH DETAIL A CM8
NO SCALE



PIPE SUPPORT DETAIL B CM1,CM8,CM9
NO SCALE



COVER SEAL DETAIL C CM8
NO SCALE



MULTI-PIPE SUPPORT DETAIL D CM8
NO SCALE

NOTES:
1. DIGESTER NO. 4 PIPING AND COVER ARE SIMILAR BUT OPPOSITE HAND TO PIPING AND COVER SHOWN FOR DIGESTER NO. 3.
2. ANTISLIP WALKWAY NOT SHOWN.

REVISION	BY	DATE
CONFORMED TO	RLZ	2-94
CONSTRUCTION RECORDS		

SOUTHSIDE WWTP
10.5 MGD IMPROVEMENTS

COGENERATION FACILITY
MECHANICAL
DIGESTER PLAN AND DETAILS

SANITARY SEWER BOND
PROJECT NO. SA 83-21

CITY OF TULSA, OKLAHOMA

BRUTON, KNOWLES & LOVE, INC.
ENGINEERS - ARCHITECTS - PLANNERS
TULSA, OKLAHOMA

BLACK & VEATCH
ENGINEERS - ARCHITECTS
KANSAS CITY, MISSOURI

PLAN SCALE: AS NOTED

DESIGNED	DRS
DETAILED	CRJ
CHECKED	RAR,AEH

APPROVED:

CCG. DWG. NO: 14814-300-371-C129

DRAWING NUMBER
SA 83-21

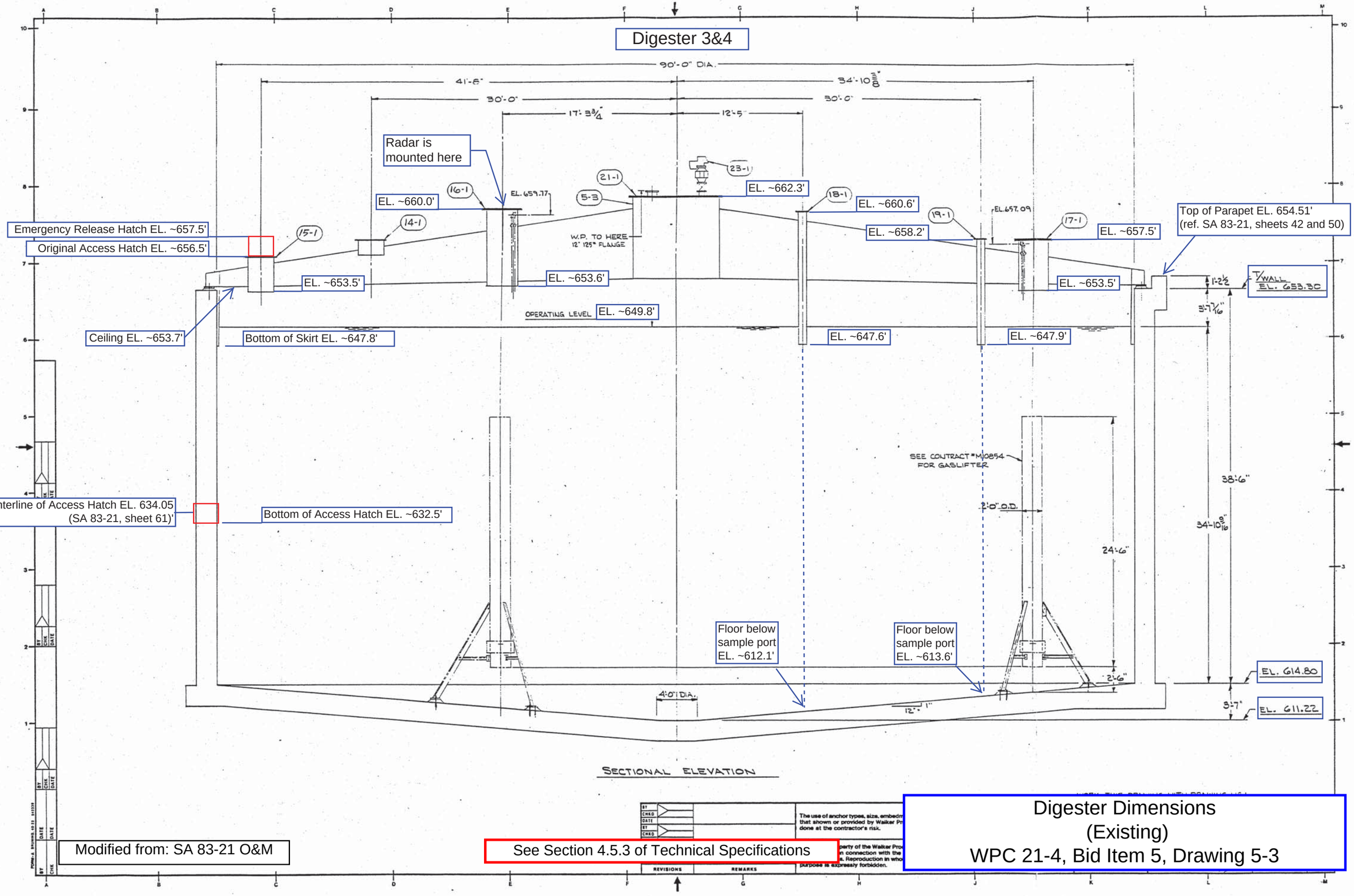
PLAN HOLD CORPORATION • IRVINE, CALIFORNIA
REORDER BY NUMBER 07545

Digester 3 Access Hatches, Plan View (Existing)
WPC 21-4, Bid Item 5, Drawing 5-2

Modified from: SA 83-21, Sheet 61

See Section 4.5.3 of Technical Specifications

Digester 3&4



Modified from: SA 83-21 O&M

See Section 4.5.3 of Technical Specifications

Digester Dimensions
(Existing)
WPC 21-4, Bid Item 5, Drawing 5-3

Location of Plant Sewer for disposal of filtrate

Location of side-access hatch near ground level (west side)

Digester 3

Location of side-access hatch near ground level (east side)

Location 6-inch PEW (Plant Effluent Water) for flushing

Modified from: WPC 16-1, Sheet 29

See Section 4.5.3 of Technical Specifications

Digester 3, Area View
(Existing)
WPC 21-4, Bid Item 5, Drawing 5-4

1) CONTRACTOR TO COORDINATE FINAL JUNCTION BOX PLACEMENT ADJACENT TO STAIRS AND DIGESTER #1 MIXING CANON. TEMPORARILY SUPPORT STAIRS AS NECESSARY AND REPAIR/REPLACE STAIR FOOTING AS REQUIRED. PROTECT ELECTRICAL DUCT BANK UNDER STAIRS AND OTHER AREA SERVICES. BACKFILL WITH ODOT AGGREGATE BASE TO 98% MODIFIED PROCTOR.
2) ALL NEW YARD PIPING IS TO BE GLASS LINED CLASS 51 DIP.
3) PROVIDE CORROSION RESISTANT COATINGS AS SPECIFIED IN SPECIFICATION SECTION 204.6 AT THE MANHOLES AND JUNCTION BOX.
4) COORDINATE AND INSTALL THE DIGESTER 1–2 COMPLEX BASEMENT WALL CONNECTION ELEVATION AND J–BOX "C" INLET PIPING ELEVATION WITH THE INTERIOR BASEMENT PIPING (PROFILE) WORK AS REQUIRED. PROVIDE SIMILAR COORDINATION AT DIGESTER 3–4 COMPLEX CONNECTION WITH MH "E".
5) CONTRACTOR TO POT HOLE EXISTING SERVICES AND DETERMINE DIGESTER COMPLEX CONNECTIONS PRIOR TO THE MANHOLE AND J–BOX SUBMITTALS. SEQUENCE OF YARD PIPING AND MANHOLE INSTALLATION FOR DIGESTER 3–4 COMPLEX SHALL START AT EXISTING MH "A" AND PLACE PIPING MANHOLES UPHILL TO DIGESTER 3–4 COMPLEX PRIOR TO DIGESTER 3–4 BASEMENT PIPE WORK. PROVIDE BYPASS PUMPING OR TEMPORARY MEASURES FOR DRAIN SYSTEM(S) AS REQUIRED.
6) REFERENCE CITY OF TULSA 2013 STANDARDS, INCLUDING STD 730

REVISION	BY	DATE

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

REFERENCE ORIGINAL SA–05–01 RECORD DRAWINGS FOR ADDITIONAL DETAILS & INFORMATION

DRAWING 203.900A
SOUTHSIDE WWTP DIGESTER COMPLEX
DRAIN REHABILITATION PLAN

WATER POLLUTION CONTROL
FY '16 NORTHSLOPE & SOUTHSLOPE
CAPITAL EQUIPMENT REPLACEMENTS
PROJECT WPC 16–1

CITY OF TULSA, OKLAHOMA
TULSA METROPOLITAN UTILITY AUTHORITY

PLANS AND ESTIMATES PREPARED BY: HOLLOWAY, UPDIKE + BELLEN, Inc. 1109-A S. 9TH ST., BROKEN ARROW, OKLAHOMA 74012 (918)251-7717, FAX (918)251-7764

PLAN SCALE: DRAWN JME APPROVED: DESIGNED LST

ATLAS PAGE NO: ——

SHEET 29 OF 33 SHEETS

Z:\Projects\2015\15TMUAWPC161\Design\PRODUCTION PLAN\203.900A DIL SITE SOUTHSIDE.dwg, 1/27/2016 11:42:32 AM

03/08/95 11:01:37 VPL
03/06/95 12:42:19 ATSSK

DIGESTER NO. 3

DIGESTER NO. 4

SLUDGE TRANSFER WETWELL

STAIRWELL

Zoomed-in view of this area is shown on Drawing 9-2.

BASEMENT FLOOR PIPING PLAN - EL 614.80
3/16"=1'-0"

SECTION
1/4"=1'-0"

CONCRETE ENCASEMENT
NO SCALE

PIG LAUNCHER DETAIL
1/2"=1'-0"

LEVEL SWITCH DETAIL
NO SCALE

DETAIL
NO SCALE

NOTES:
1. FOR CONTINUATION OF SLUDGE LINES, SEE SCHEMATIC SH CM10.
2. FOR CONTINUATION OF HWS AND HWR LINES, SEE HEATING WATER SCHEMATIC SH CM11.
3. FOR CONTINUATION OF LPDG LINES, SEE DIGESTER GAS SCHEMATIC SH CM12.

SOUTHSIDE WWTP
10.5 MGD IMPROVEMENTS

COGENERATION FACILITY
MECHANICAL
BASEMENT FLOOR PIPING PLAN

SANITARY SEWER BOND
PROJECT NO. SA 83-21

CITY OF TULSA, OKLAHOMA

BRUTON, KNOWLES & LOVE, INC.
ENGINEERS - ARCHITECTS - PLANNERS
TULSA, OKLAHOMA

BLACK & VEATCH
ENGINEERS - ARCHITECTS
KANSAS CITY, MISSOURI

REVISION	BY	DATE
CONFORMED TO	RLZ	2-94
CONSTRUCTION RECORDS		

PLAN SCALE: 3/16"=1'-0"

DESIGNED	DRS	APPROVED:
DETAILED	DWF,DLR	
CHECKED	RAR	

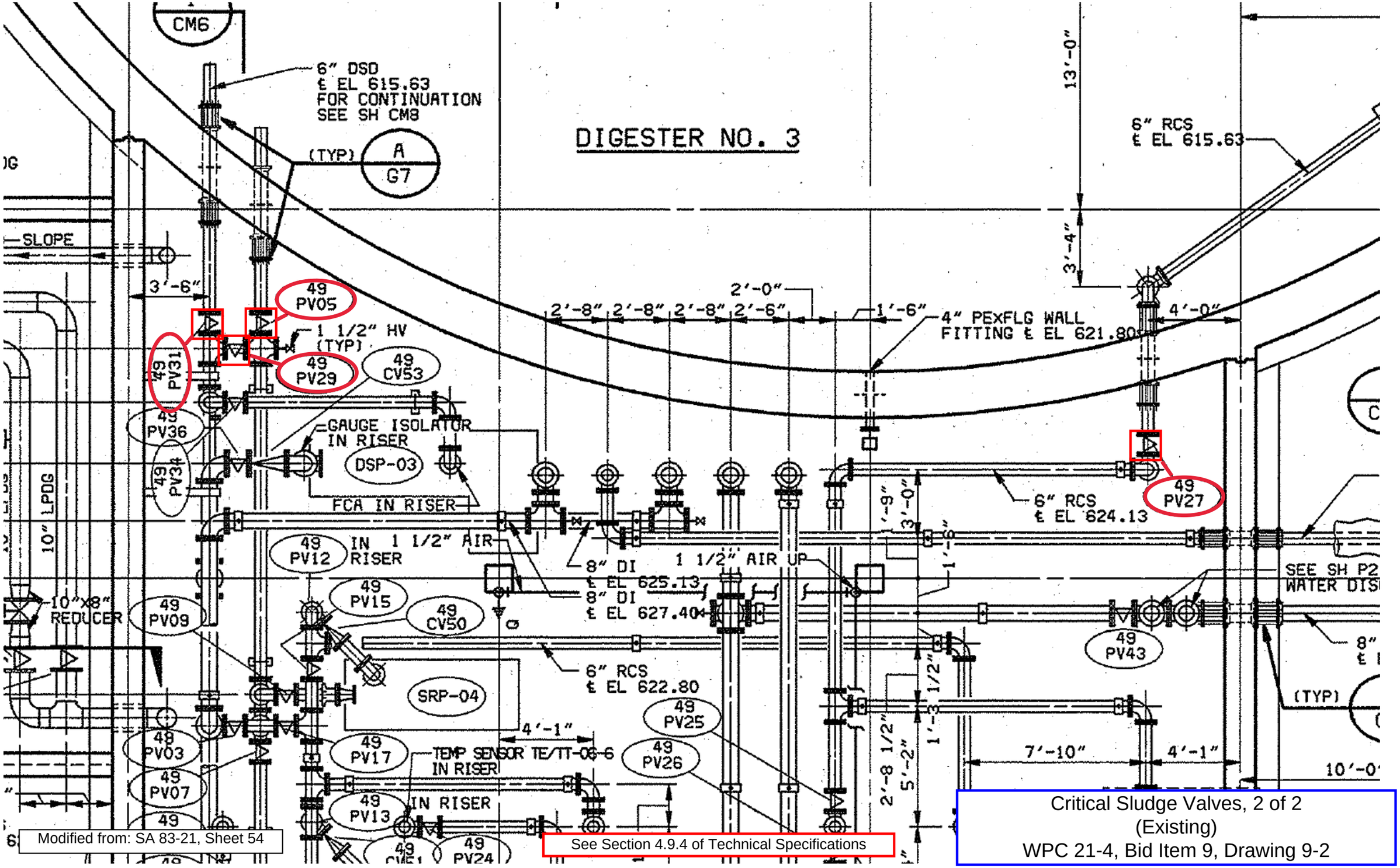
Modified from: SA 83-21, Sheet 54

See Section 4.9.4 of Technical Specifications

Critical Sludge Valves, 1 of 2
(Existing)
WPC 21-4, Bid Item 9, Drawing 9-1

CCG. DWG. NO: 14814-300-371-C120

CBG14814_VPL
FCBG14814_300_ATB_VPL

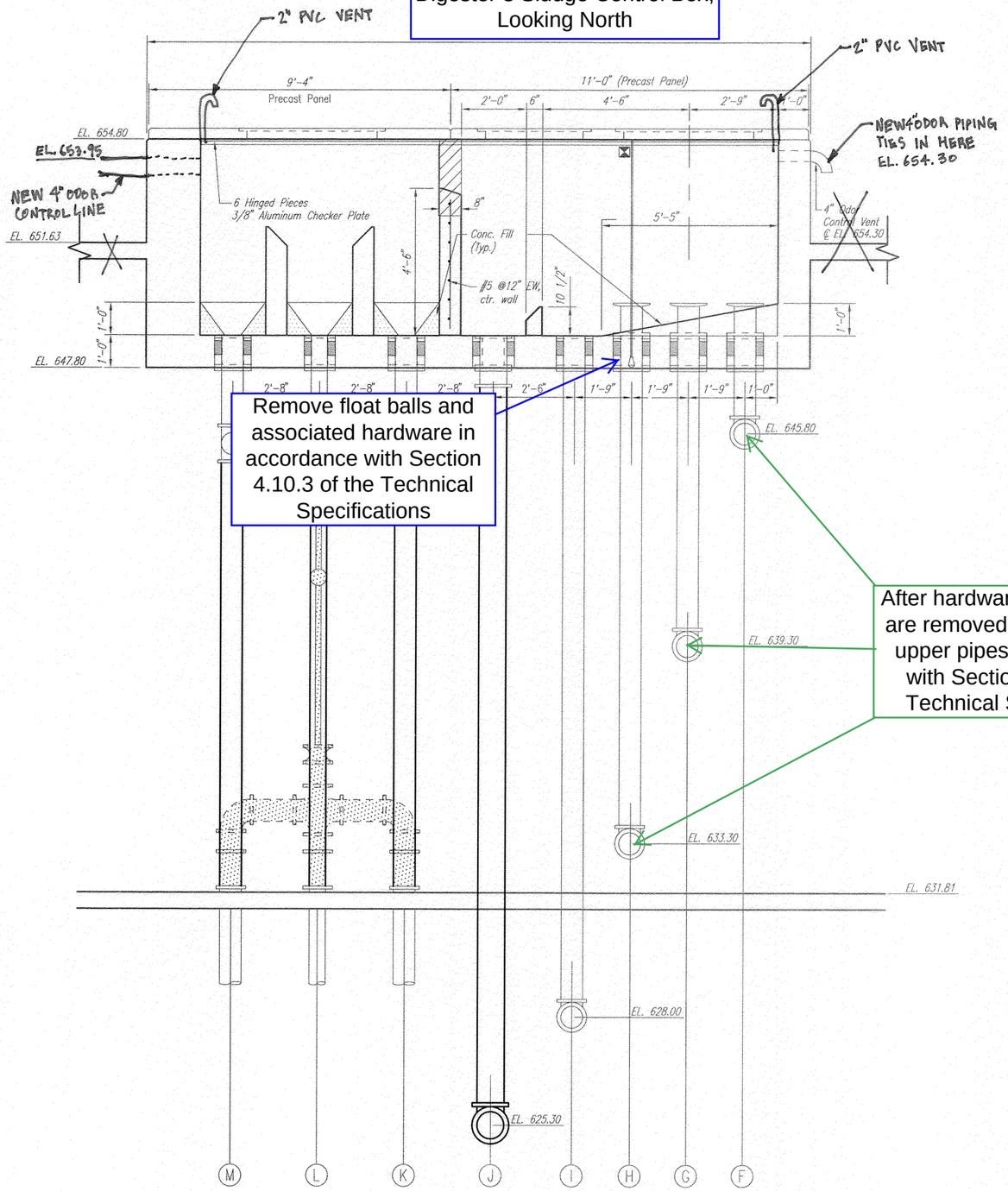


Modified from: SA 83-21, Sheet 54

See Section 4.9.4 of Technical Specifications

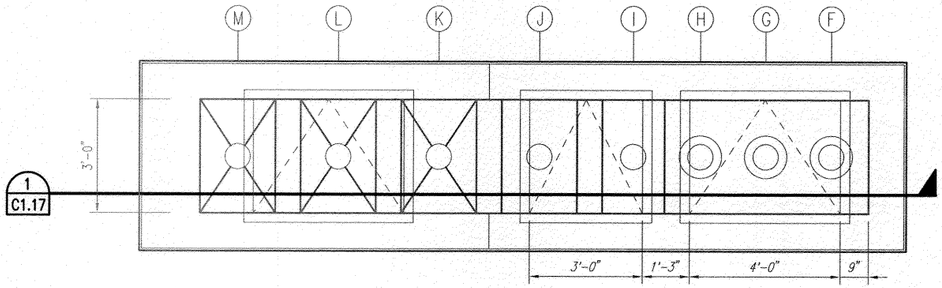
Critical Sludge Valves, 2 of 2
(Existing)
WPC 21-4, Bid Item 9, Drawing 9-2

Digester 3 Sludge Control Box, Looking North



Remove float balls and associated hardware in accordance with Section 4.10.3 of the Technical Specifications

After hardware and float balls are removed, clean three (3) upper pipes in accordance with Section 4.5.9 of the Technical Specifications



DIGESTER NO. 3 CONTROL BOX – PLAN

SCALE: 1/2" = 1'-0"

0 2 4

DIGESTER NO. 3
CONTROL BOX PIPING IMPROVEMENTS TABLE

MARK	DESCRIPTION	SIZE	REMARKS
J	OVERFLOW LINE	10"	Install 22 LF of Glass Lined DIP to Flange from New 90° Bend
K	RECIRCULATED SLUDGE	8"	Install 13 LF of Glass Lined DIP to Valve
L	THICKENED SLUDGE	6"	Install 14 LF of Glass Lined DIP to Flange
M	RECIRCULATED SLUDGE	8"	Install 13 LF of Glass Lined DIP to Valve

1 C1.17 SECTION

SCALE: 1/2" = 1'-0"

0 2 4

Modified from: SA 05-01, Contract 3, Sheet 23

NOTE:

1. ALL PROPOSED PIPE LENGTHS ARE APPROXIMATE, CONTRACTOR SHALL FIELD VERIFY BEFORE INSTALLATION.

LEGEND

DENOTES EQUIPMENT, PIPING AND STRUCTURE REMOVAL. COMPONENTS REMOVED SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR UNLESS NOTED OTHERWISE.

See Section 4.10.3 and 4.5.9 of Technical Specifications

RECORD DRAWING

THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON INFORMATION PROVIDED BY OTHERS. THE ENGINEER HAS NOT VERIFIED THE ACCURACY OF THIS INFORMATION AND SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH MAY BE INCORPORATED HEREIN AS A RESULT.

Ethan J. Edwards November 17, 2015

BEFORE YOU DIG 811 1-800-522-OKIE CALL OKIE

ADN DATE: 4/18/14

DIGESTER 3 BOX PIPING MODIFICATIONS

PROJECT NUMBER: SA 05-01 CONTRACT #3

SOUTHSIDE WWTP ANAEROBIC DIGESTER & 71st STREET SOLIDS HANDLING COMPLEX ODOR CONTROL IMPROVEMENTS

CITY OF TULSA, OKLAHOMA
ENGINEERING SERVICES DEPARTMENT

PLANS AND ESTIMATES PREPARED BY: Professional Engineering Consultants, P.A. CHEROKEE BUILDING • 4150 SOUTH 100TH EAST AVENUE, SUITE 401 TULSA, OKLAHOMA 74146 • 918-664-5400 • FAX 918-664-0200

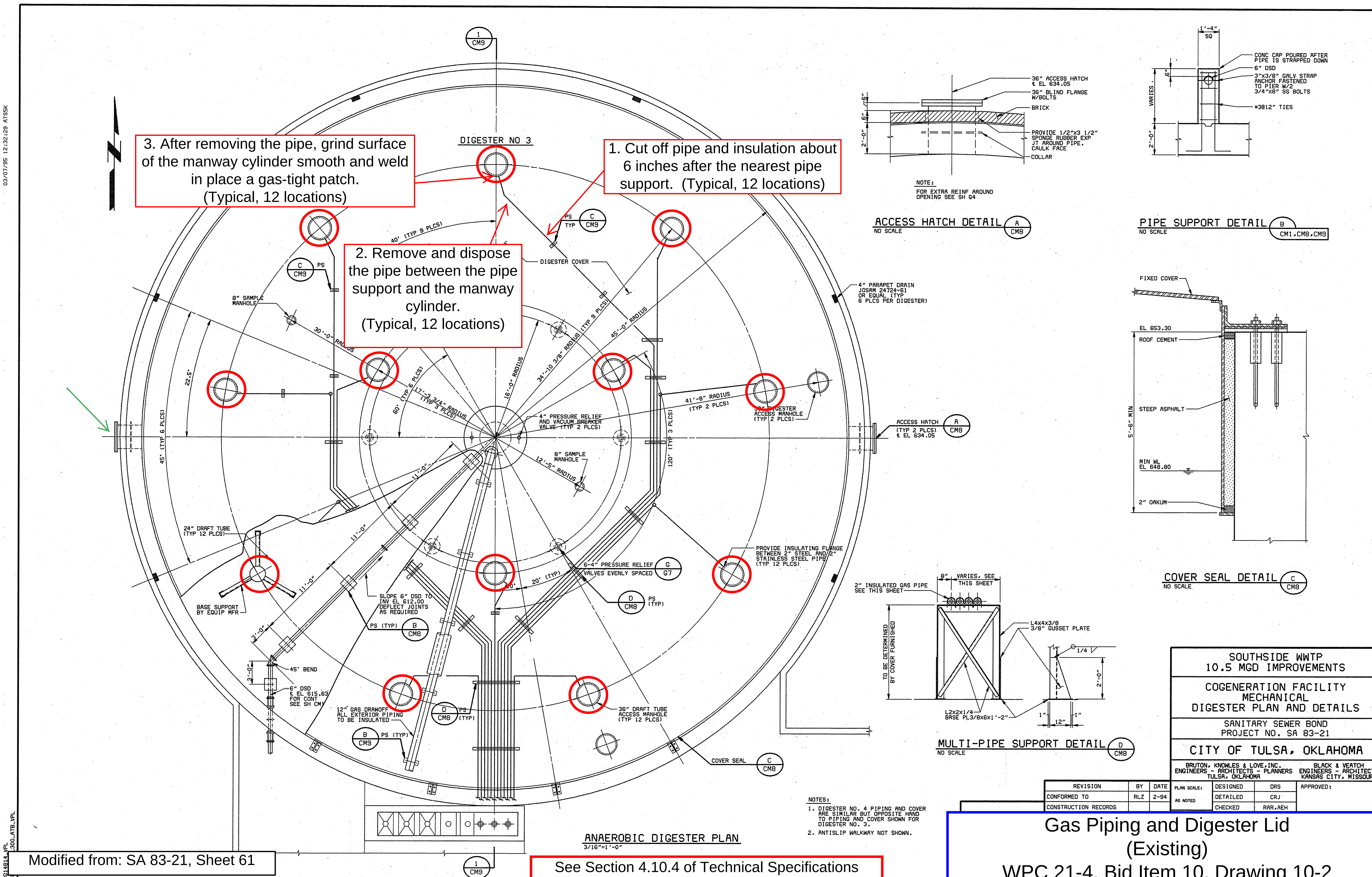
REVISION	BY	DATE

PLAN SCALE: 1" =

DRAWN	EMB	12/2013	APPROVED:
DESIGNED	ABK	12/2013	
SURVEY			

Sludge Control Box
(Existing)
WPC 21-4, Bid Item 10, Drawing 10-1

Saved: 03-11-2014 3:32:39 PM by SAC
Plot: Scale 1:1 03-12-2014 12:44:36 PM by SHERRIE GARNETT
Q:\2009\08606\011\08608-011-C-Digester 3 Box Piping Modifications Plan, Section and Details



3. After removing the pipe, grind surface of the manway cylinder smooth and weld in place a gas-tight patch. (Typical, 12 locations)

1. Cut off pipe and insulation about 6 inches after the nearest pipe support. (Typical, 12 locations)

2. Remove and dispose the pipe between the pipe support and the manway cylinder. (Typical, 12 locations)

SOUTHSIDE WWTP
10.5 MGD IMPROVEMENTS
COGENERATION FACILITY
MECHANICAL
DIGESTER PLAN AND DETAILS
SANITARY SEWER BOND
PROJECT NO. SA 83-21
CITY OF TULSA, OKLAHOMA

BRUTON, KNOWLES & LOVE, INC. ENGINEERS - ARCHITECTS - PLANNERS TULSA, OKLAHOMA
BLACK & VEATCH ENGINEERS - ARCHITECTS KANSAS CITY, MISSOURI

REVISION	BY	DATE
CONFORMED TO	RLZ	2-94
CONSTRUCTION RECORDS		

PLAN SCALE: AS NOTED	DESIGNED	DRS	APPROVED:
	DETAILED	CRJ	
	CHECKED	RAR,AEH	

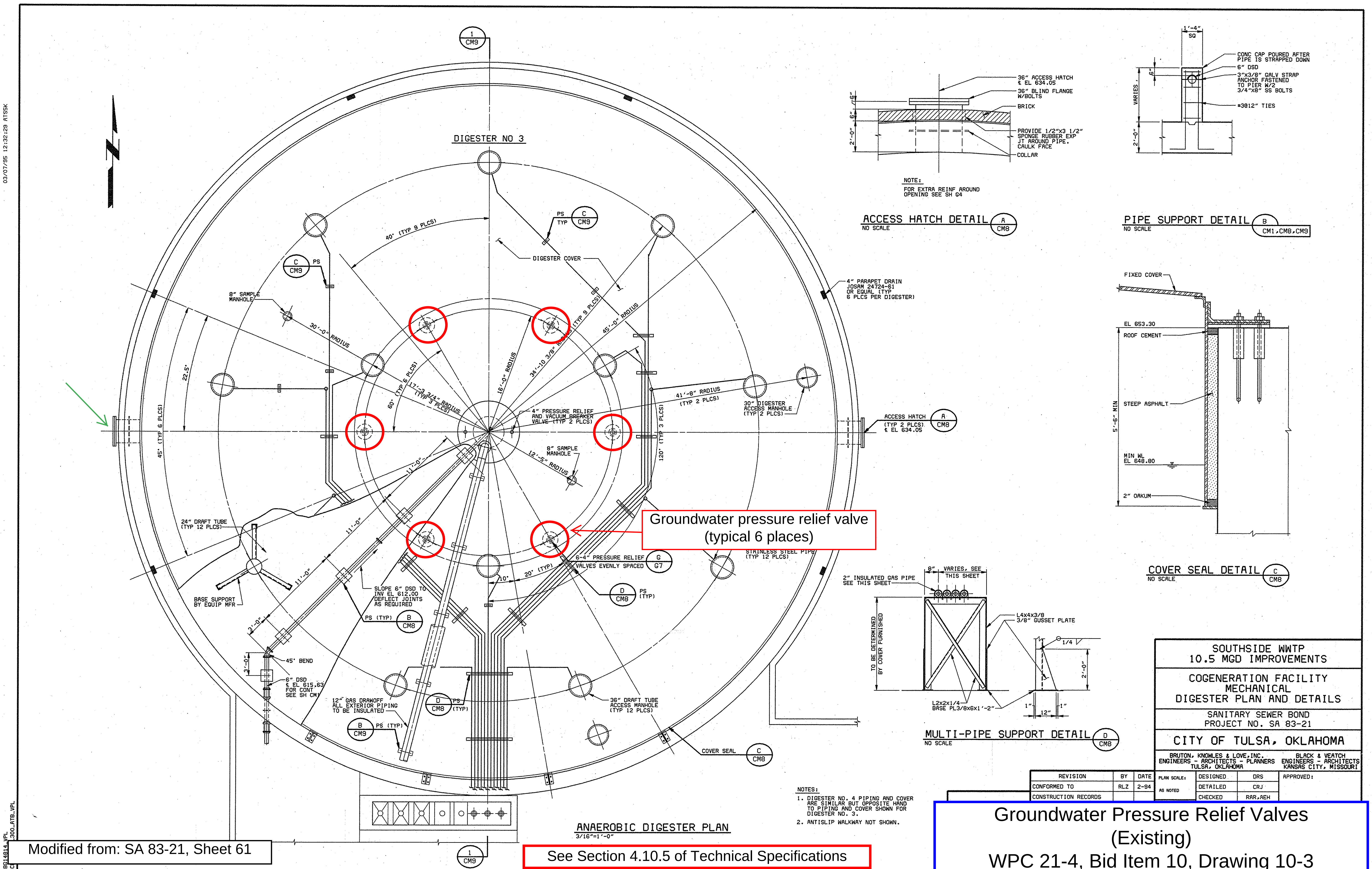
DRAWING NUMBER SA 83-21

Modified from: SA 83-21, Sheet 61

See Section 4.10.4 of Technical Specifications

Gas Piping and Digester Lid
(Existing)
WPC 21-4, Bid Item 10, Drawing 10-2

CCG. DWG. NO: 14814-300-371-C129



Modified from: SA 83-21, Sheet 61

See Section 4.10.5 of Technical Specifications

Groundwater Pressure Relief Valves
(Existing)
WPC 21-4, Bid Item 10, Drawing 10-3

03/08/95 11:01:37 VPL
03/06/95 12:42:19 ATSSK

DIGESTER NO. 3

DIGESTER NO. 4

BASEMENT FLOOR PIPING PLAN - EL 614.80
3/16"=1'-0"

SLUDGE TRANSFER WETWELL

6" DSD ℄ EL 615.63 FOR CONTINUATION SEE SH CM6

8" LPDG

SLOPE

3'-6"

49 PV05

1 1/2" HV (TYP)

49 PV31 49 PV29 49 CV53

GAUGE ISOLATOR IN RISER

49 PV36 49 PV30

DSP-03

FCA IN RISER

℄ OF PUMP

49 BP02

3/4" LPDG, SEE DIGESTER GAS SCHEM

49 PV140

10"X8" REDUCER

1 CM1

℄ OF PUMP

49 PV139

LPDG PIPING TO SLOPE UNIFORMLY TO EXIST CONDENSATE DRAIN MANHOLE FOR CONT SEE SH 75

A CM7 METER FE/FIT 14

49 PV12 IN 1 1/2" AIR RISER

8" DI ℄ EL 625.13

8" DI ℄ EL 627.40

1 1/2" AIR UP

49 PV15 49 CV50

6" RCS ℄ EL 622.80

SRP-04

49 PV03 49 PV07 49 PV10 49 PV08

49 PV17

TEMP SENSOR TE/TT-06-6 IN RISER

49 PV13 IN RISER

49 CV51 49 PV24

SRP-05

49 PV18 49 PV16

TEMP SENSOR TE/TT-06-5 IN RISER

6"HWS ℄ EL 628.50

6"HWR ℄ EL 628.50

8" DSD ℄ EL 625.40

49 PV41 49 PV14 IN RISER 49 CV52 49 PV04

SRP-06

8" SLUDGE TRANSFER ℄ EL 628.00

8" OVERFLOW ℄ EL 625.30

1 1/2" AIR

49 PV11

49 PV32

GAUGE ISOLATOR IN RISER

49 PV37

FCA IN RISER

STAIRWELL

B CM1 PIG LAUNCHER

1 CM4

A G7 (TYP)

℄ OF PUMP

6" SLUDGE TRANSFER ℄ EL 623.80

DSP-04 49 CV54

49 CV56

GAUGE ISOLATOR IN RISER

49 PV35 49 PV47 49 PV48

STP-02

49 CV55

GAUGE ISOLATOR STP-01

8" OVERFLOW ℄ EL 628.30

SP

6" SLUDGE TRANSFER ℄ EL 616.05

D CM1

49 PV44 49 PV45

A P6 SAMPLING PT (TYP OF 2)

49 PV30 49 PV33 49 PV06

49 PV42 49 PV46

TEMP SENSOR (TYP) SEE SH E33

4" PEXFLG WALL FITTING ℄ EL 621.80

49 PV28

6" RCS ℄ EL 615.63

B CM8 SUPPORT (TYP)

13'-0" (TYP)

1 CM5

1 CM6

6" RCS ℄ EL 615.63

19'-0"

13'-0"

3'-4"

4" PEXFLG WALL FITTING ℄ EL 621.80

6" RCS ℄ EL 624.13

A CM1 CONC ENCASEMENT UNDER SLAB (TYP)

6" TS ℄ EL 626.80

SEE SH P2 FOR CONNECTION OF 6" COOLING WATER DISCHARGE, 4" DRAIN, AND 3" SUMP PUMP

49 PV43

8" OVERFLOW ℄ EL 622.80

(TYP) A G7

49 PV22 SUMP

TEMP SENSOR TE/TT-06-4 IN RISER

1 CM4

7'-10"

10'-0"

2'-0" 2'-8" 2'-8" 2'-8" 2'-6" 1'-6" 4'-0"

16'-0" 16'-0" 16'-0"

1 2 3 4 5

A B C D E F G

Modified from: SA 83-21, Sheet 54

Zoomed-in view of this area is shown on Drawing 11-2.

See Section 4.11.4 of Technical Specifications

CONCRETE ENCASEMENT
NO SCALE — A CM1

#3@12"

6" TS OR 8" OVERFLOW

6" MIN CONC ENCASEMENT

SECTION
1/4"=1'-0" — 1 CM1

A — F G5 REMOVABLE HANDRAIL

E G5 FIXED HANDRAIL

EL 631.80

10" LPDG ℄ EL 628.80

CIMH STEPS SEE SPECS

NOTE:
SEE SH P3 FOR VALVE PIT DRAIN DETAIL

DETAIL
1/2"=1'-0" — B CM1

1 1/2" NPW, SEE SH P2

2" VENT VALVE

C CM1

INSULATING FLANGE

1 1/2" SHUTOFF VALVE

1 1/2" UNION

10" BF

2'-0"

10"X8" RED

10" STEEL SPOOL

PIG LAUNCHER

NOTE:
HOT DIP GALV AFTER FABRICATION

DETAIL
NO SCALE — C CM1

8"

3/4" STEEL PIPE

1/4 (TYP)

STEEL PL 1/2"X1 1/2" WIDE (TYP)

NOTE:
HOT DIP GALV AFTER FABRICATION

LEVEL SWITCH DETAIL
NO SCALE — D CM1

1/2" NONPOTABLE WATER

1/2" SHUTOFF VALVE

LEVEL SWITCH

℄ EL 617.00

3" PLUG VALVE

EXTEND PIPE TO FACE OF CONCRETE FILL

3"PEXFLG WALL FITTING

SPOOL I.D. MINUS 1/2"

NOTES:

1. FOR CONTINUATION OF SLUDGE LINES, SEE SCHEMATIC SH CM10.
2. FOR CONTINUATION OF HWS AND HWR LINES, SEE HEATING WATER SCHEMATIC SH CM11.
3. FOR CONTINUATION OF LPDG LINES, SEE DIGESTER GAS SCHEMATIC SH CM12.

SOUTHSIDE WWTP
10.5 MGD IMPROVEMENTS

COGENERATION FACILITY
MECHANICAL
BASEMENT FLOOR PIPING PLAN

SANITARY SEWER BOND
PROJECT NO. SA 83-21

CITY OF TULSA, OKLAHOMA

BRUTON, KNOWLES & LOVE, INC.
ENGINEERS - ARCHITECTS - PLANNERS
TULSA, OKLAHOMA

BLACK & VEATCH
ENGINEERS - ARCHITECTS
KANSAS CITY, MISSOURI

REVISION	BY	DATE
CONFORMED TO	RLZ	2-94
CONSTRUCTION RECORDS		

PLAN SCALE: 3/16"=1'-0"

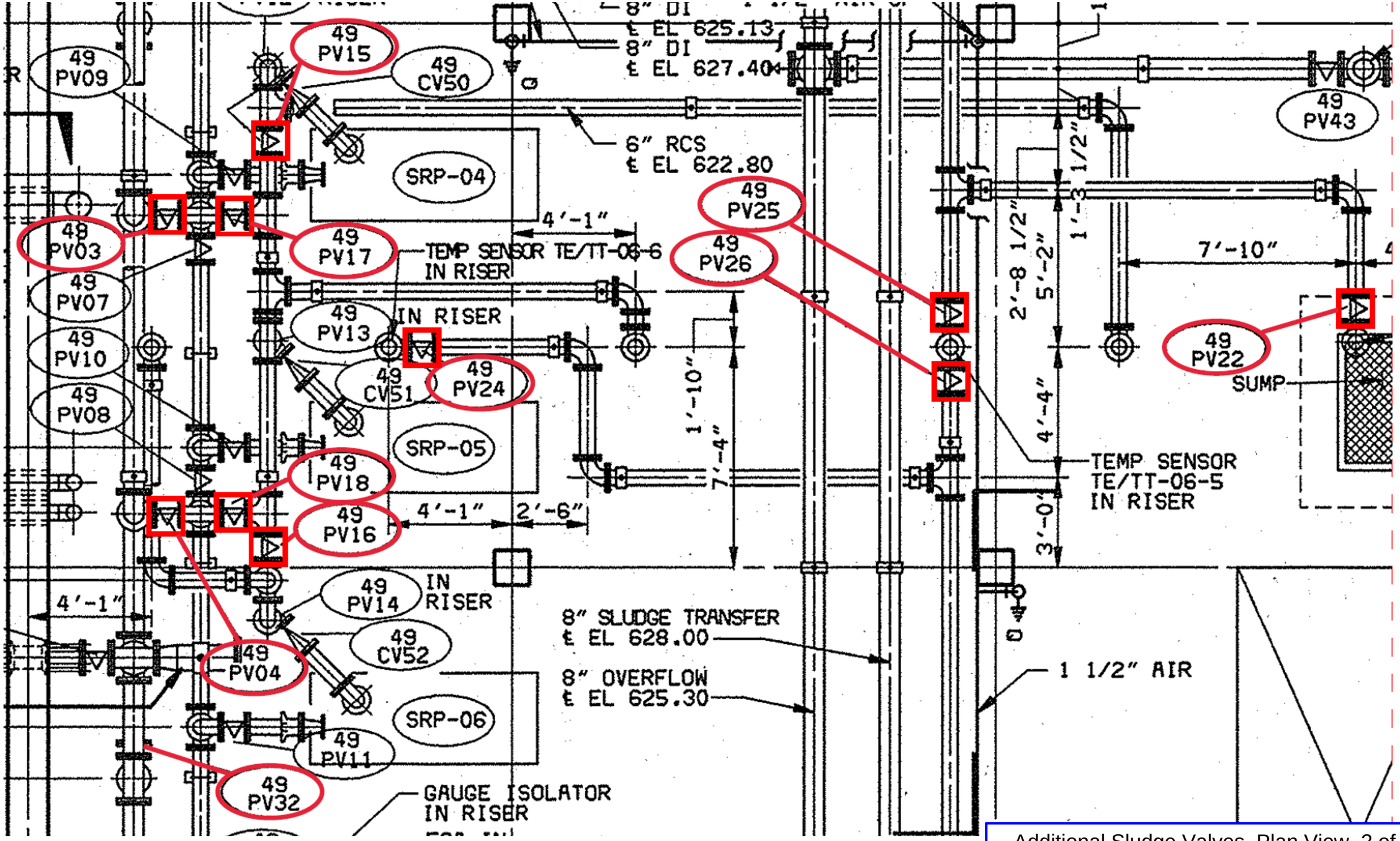
DESIGNED	DRS
DETAILED	DWF,DLR
CHECKED	RAR

APPROVED:

Additional Sludge Valves, Plan View, 1 of 2 (Existing)
WPC 21-4, Bid Item 11, Drawing 11-1

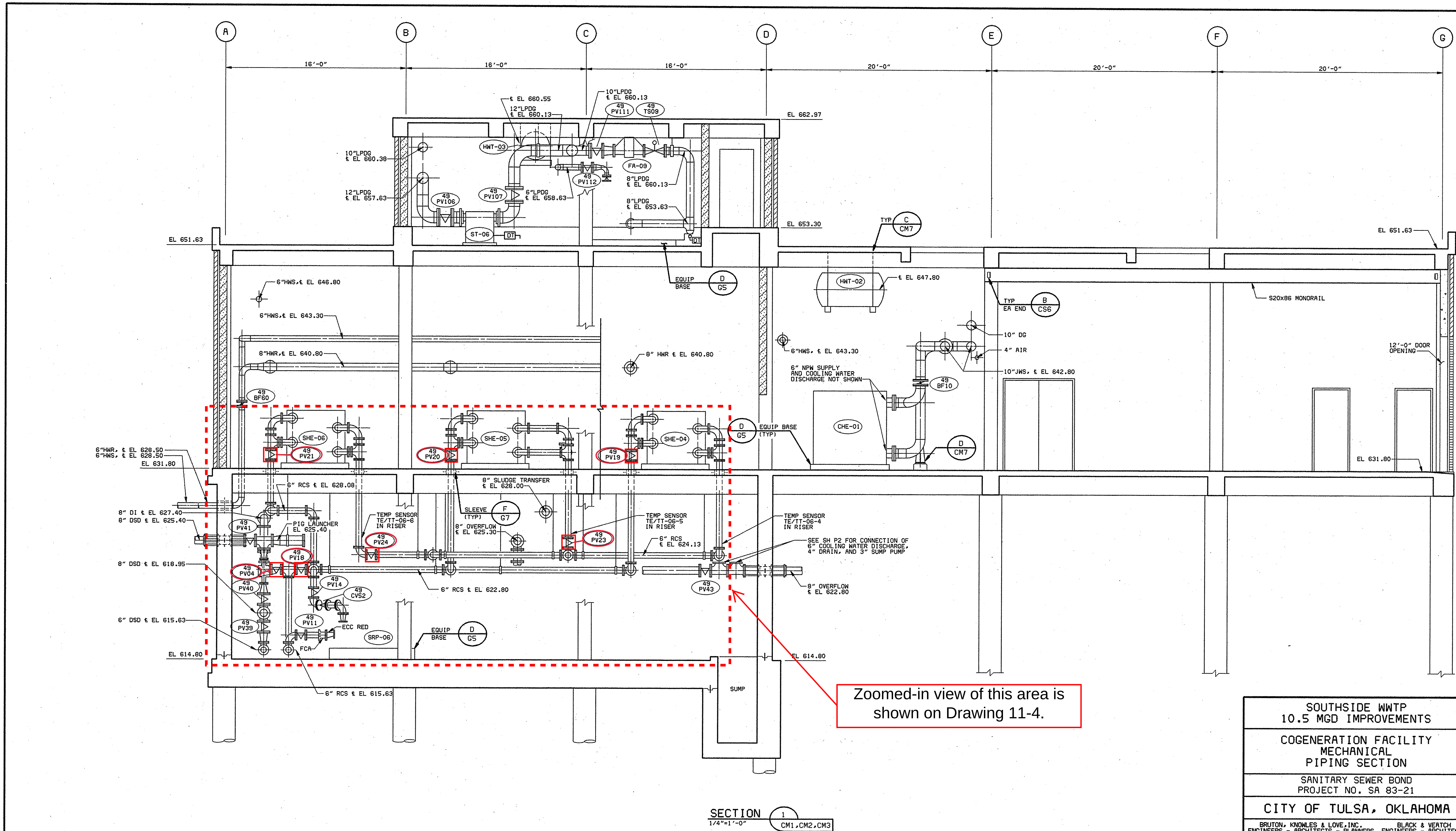
CCG. DWG. NO: 14814-300-371-C120

CBG14814_VPL
FCBG14814_300_ATB_VPL



See Section 4.11.4 of Technical Specifications

Additional Sludge Valves, Plan View, 2 of 2
(Existing)
WPC 21-4, Bid Item 11, Drawing 11-2



Zoomed-in view of this area is shown on Drawing 11-4.

SOUTHSIDE WWTP
10.5 MGD IMPROVEMENTS

COGENERATION FACILITY
MECHANICAL
PIPING SECTION

SANITARY SEWER BOND
PROJECT NO. SA 83-21

CITY OF TULSA, OKLAHOMA

BRUTON, KNOWLES & LOVE, INC. ENGINEERS – ARCHITECTS – PLANNERS TULSA, OKLAHOMA

BLACK & VEATCH ENGINEERS – ARCHITECTS KANSAS CITY, MISSOURI

REVISION	BY	DATE
CONFORMED TO	RLZ	2-94
CONSTRUCTION RECORDS		

PLAN SCALE: 1/4"=1'-0"	DESIGNED	DRS
	DETAILED	VAP
	CHECKED	RAR, AEH

APPROVED:

THIS DRAWING WAS ORIGINALLY SEALED FOR CONSTRUCTION BY RICK L. ZILA, A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF OKLAHOMA NO. 15946

DRAWING NUMBER SA 83-21

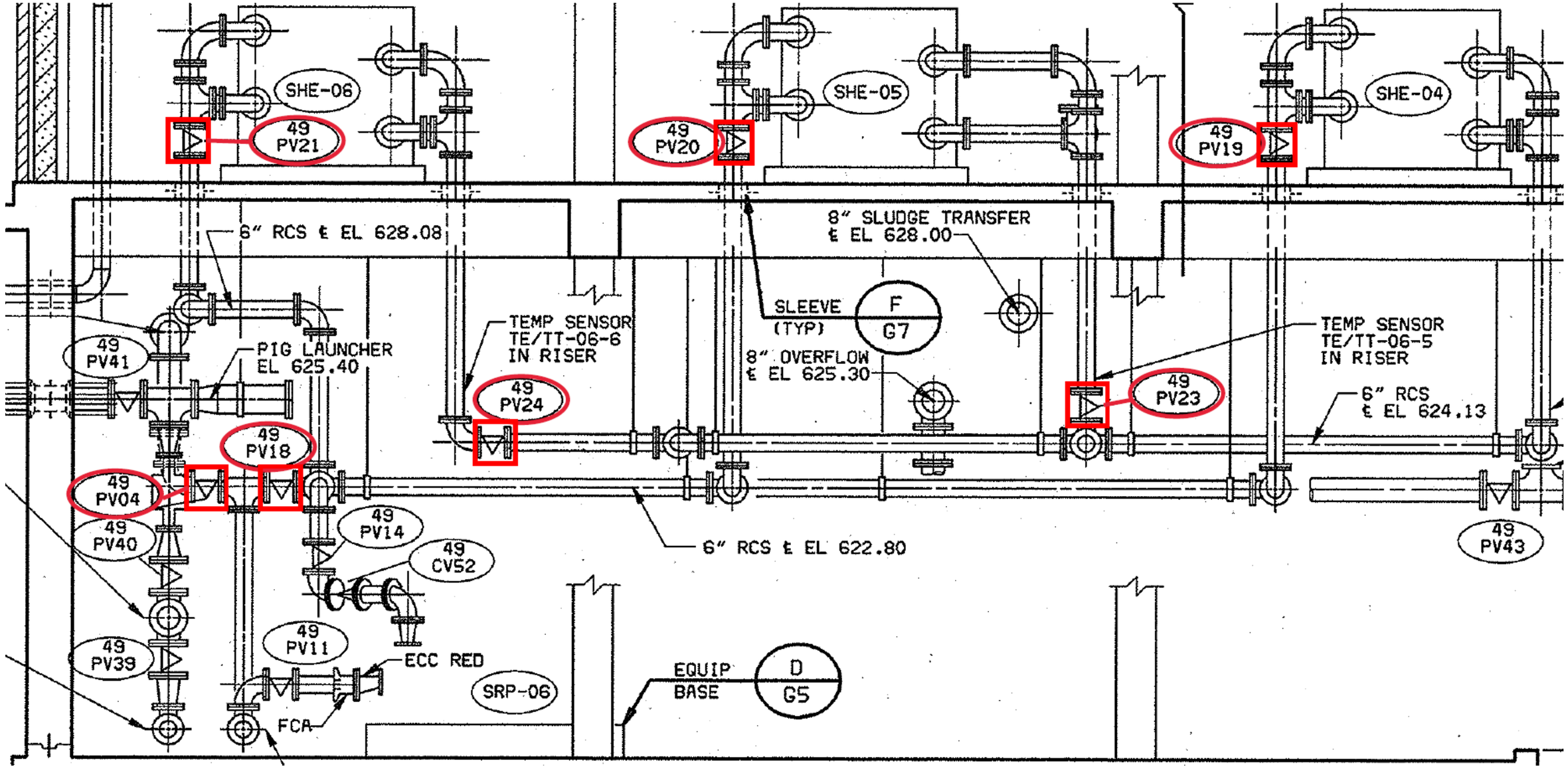
Modified from: SA 83-21, Sheet 54

See Section 4.11.4 of Technical Specifications

Additional Sludge Valves, Elevation View, 1 of 2 (Existing)

WPC 21-4, Bid Item 11, Drawing 11-3

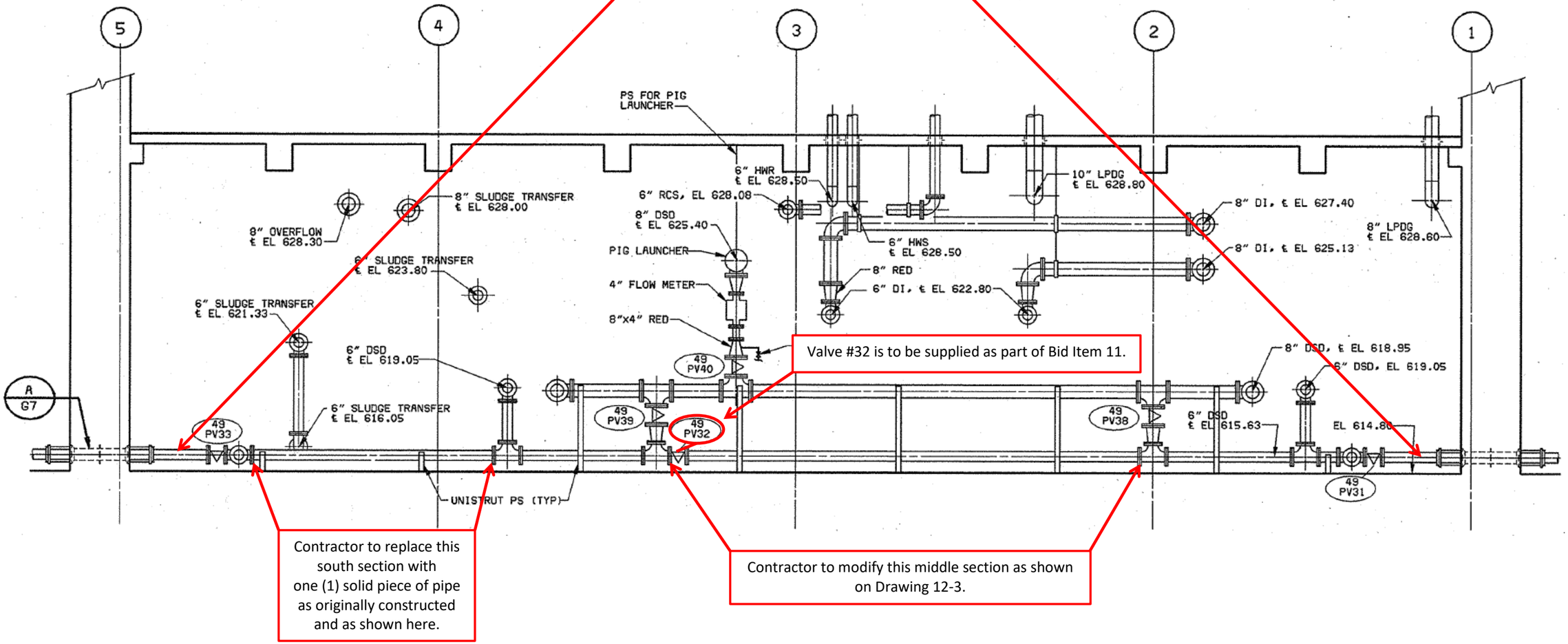
CCG. DWG. NO: 14814-300-371-C125



See Section 4.11.4 of Technical Specifications

Additional Sludge Valves, Elevation View, 2 of 2
(Existing)
WPC 21-4, Bid Item 11, Drawing 11-4

Digested Sludge Suction Manifold



Valve #32 is to be supplied as part of Bid Item 11.

Contractor to replace this south section with one (1) solid piece of pipe as originally constructed and as shown here.

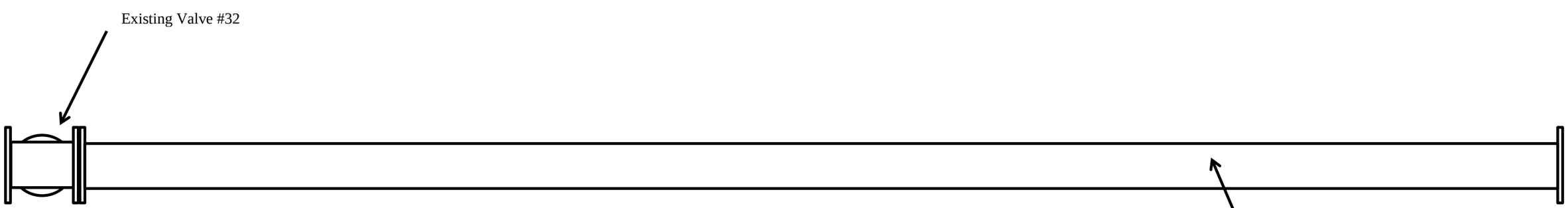
Contractor to modify this middle section as shown on Drawing 12-3.

View looking West

Modified from: SA 83-21 Sheet 59

See Section 4.12.4 of Technical Specifications

Digested Sludge Suction Manifold (Existing)
WPC 21-4, Bid Item 12, Drawing 12-1

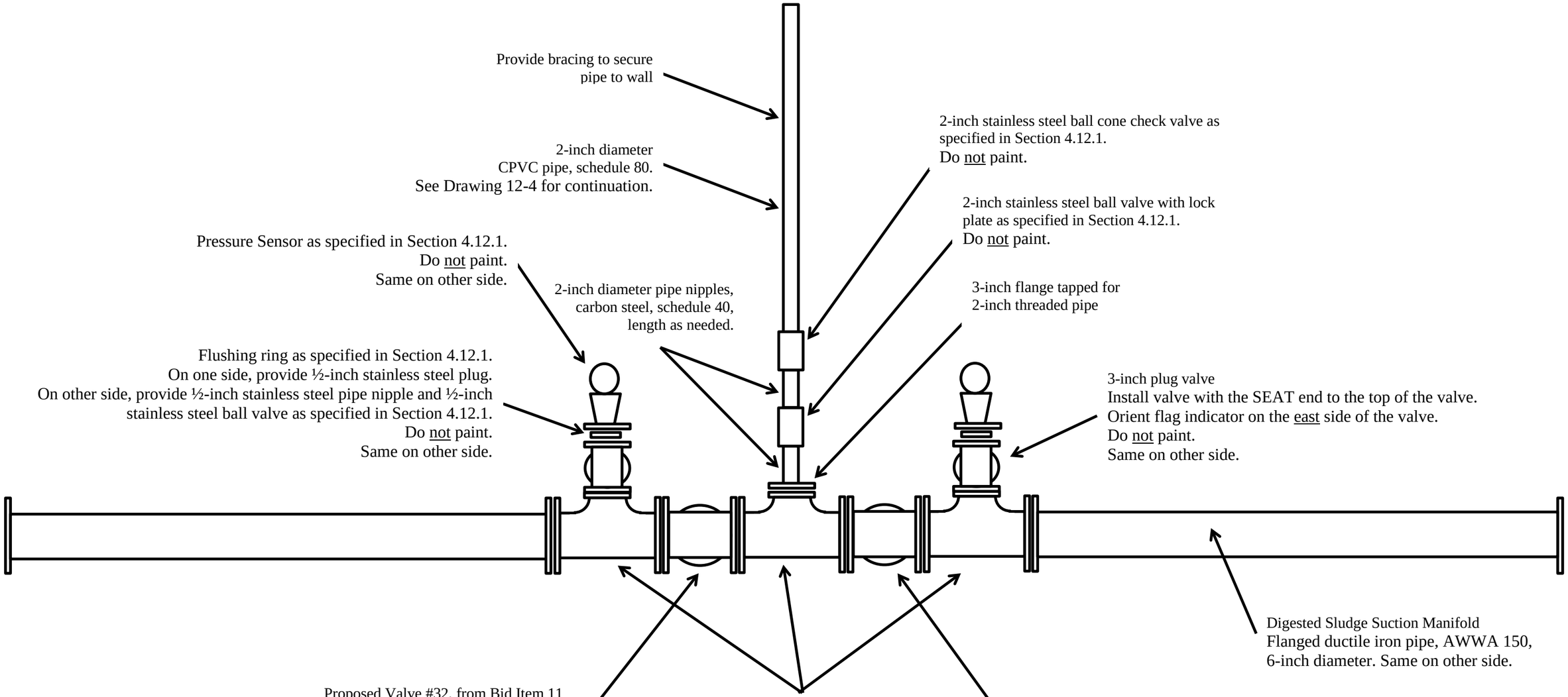


View looking West

Not to Scale

See Section 4.12.4 of Technical Specifications

Middle Section of Digested Sludge Suction Manifold (Existing)
WPC 21-4, Bid Item 12, Drawing 12-2



View looking West

Not to Scale

See Section 4.12 of Technical Specifications

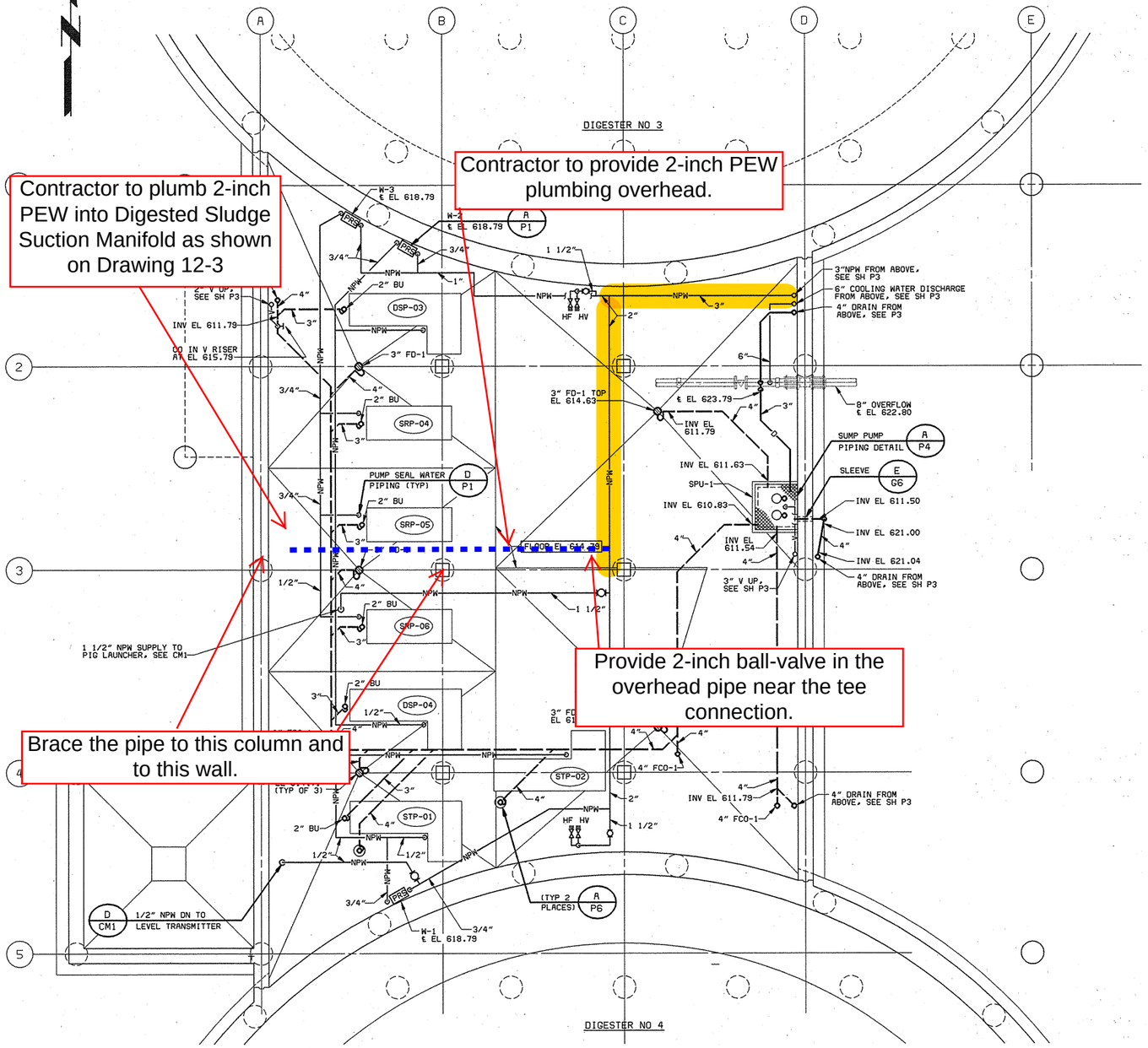
Middle Section of Digested Sludge Suction Manifold (Proposed) WPC 21-4, Bid Item 12, Drawing 12-3

Contractor to plumb 2-inch PEW into Digested Sludge Suction Manifold as shown on Drawing 12-3

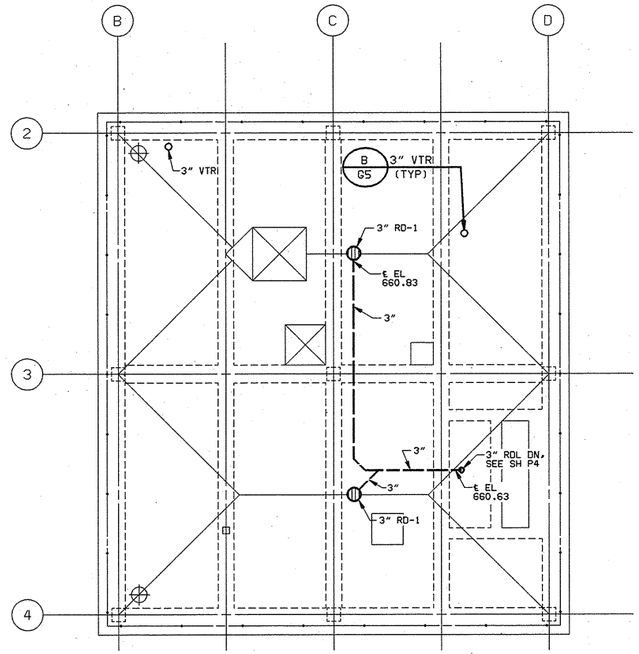
Contractor to provide 2-inch PEW plumbing overhead.

Provide 2-inch ball-valve in the overhead pipe near the tee connection.

Brace the pipe to this column and to this wall.



BASEMENT FLOOR PLAN
3/16"=1'-0"



GAS CONTROL ROOM ROOF PLAN
3/16" = 1'-0"

NOTES:
1. FOR MECHANICAL LEGEND, AND ABBREVIATIONS, SEE M1
2. FOR GENERAL PLUMBING NOTES AND SCHEDULES, SEE P1

SOUTHSIDE WWTP
10.5 MGD IMPROVEMENTS

PLUMBING
COGENERATION FACILITY
PLANS

SANITARY SEWER BOND
PROJECT NO. SA 83-21

CITY OF TULSA, OKLAHOMA

BRUTON, KNOWLES & LOVE, INC.
ENGINEERS - ARCHITECTS - PLANNERS
TULSA, OKLAHOMA

BLACK & VEATCH
ENGINEERS - ARCHITECTS
KANSAS CITY, MISSOURI

REVISION	BY	DATE
CONFORMED TO	RWC	2-94
CONSTRUCTION RECORDS		

PLAN SCALE: 3/16"=1'-0"

DESIGNED	RWC
DETAILED	GDC
CHECKED	JTK

APPROVED:

THIS DRAWI... ORIGINALLY... FOR CONSTR... GORDON RUST... FAUST, JR. ... LICENSED P... ENGINEER I... STATE OF OK... NO. 16126

DRAWING NUMBER

PLAN-HOLD CORPORATION • IRVINE, CALIFORNIA
REORDER BY NUMBER/TITLE
REVISION BOX OR PANEL ON THIS LINE

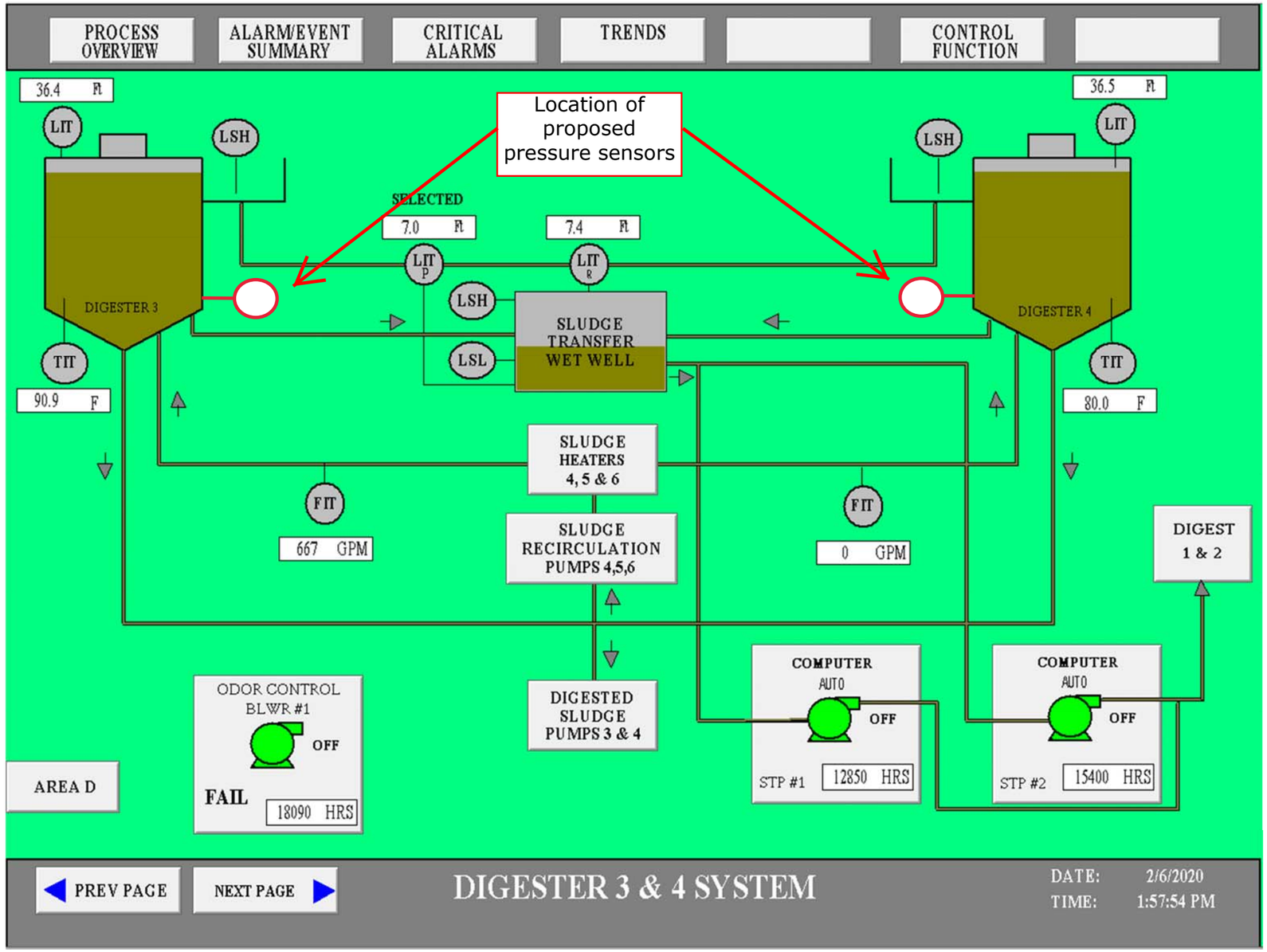
DRAWING NUMBER
SA 83-21

PLAN-HOLD CORPORATION • IRVINE, CALIFORNIA
REORDER BY NUMBER/TITLE
REVISION BOX OR PANEL ON THIS LINE

Modified from: SA 83-21, Sheet 126

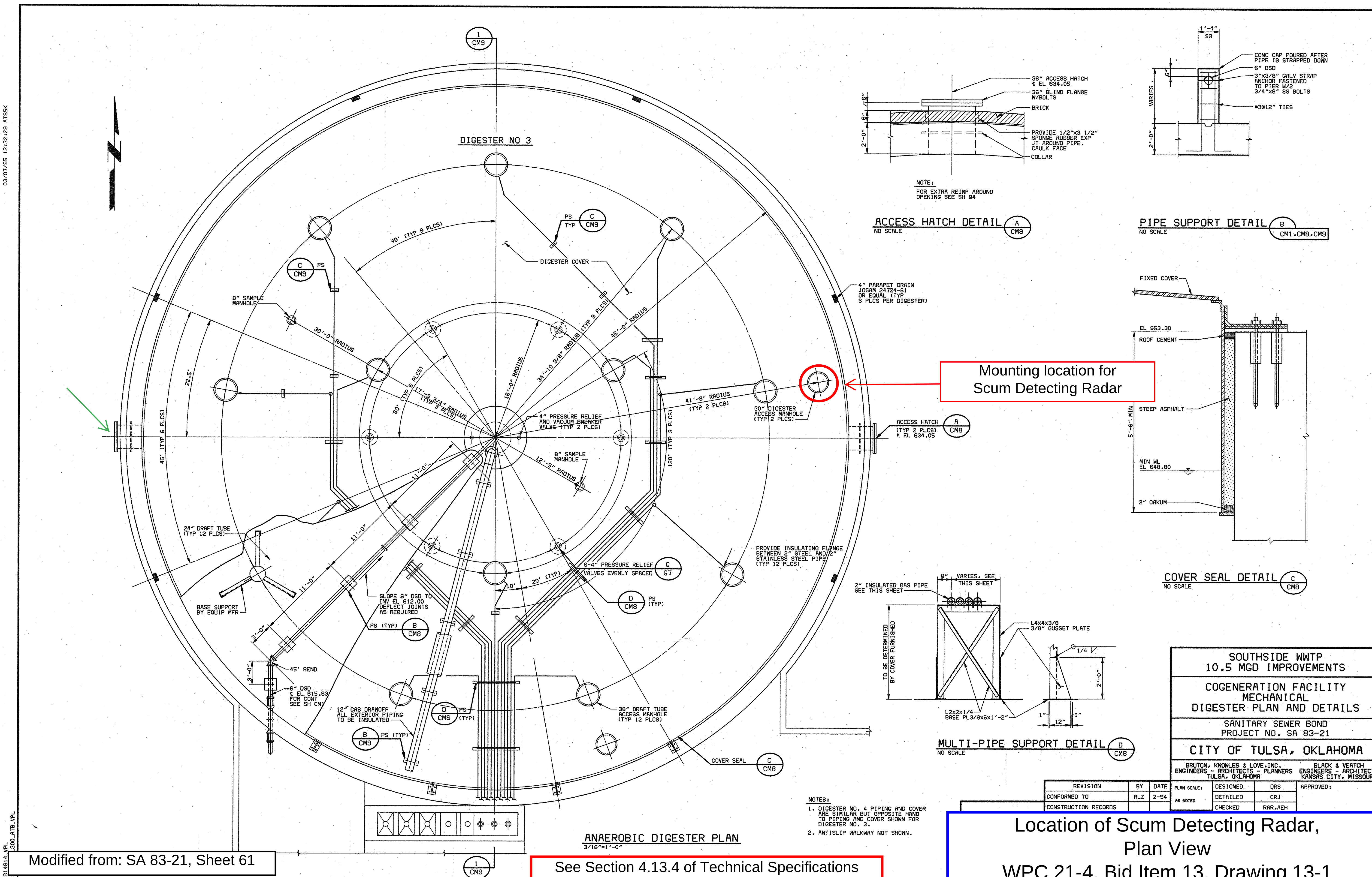
See Section 4.12.8 and 4.12.9 of Technical Specifications

PEW Plumbing Modifications, Plan View
WPC 21-4, Bid Item 12, Drawing 12-4



See Section 4.12.6 of Technical Specifications

SCADA View of Proposed Pressure Sensors
WPC 21-4, Bid Item 12, Drawing 12-5



SOUTHSIDE WWTP
10.5 MGD IMPROVEMENTS

COGENERATION FACILITY
MECHANICAL
DIGESTER PLAN AND DETAILS

SANITARY SEWER BOND
PROJECT NO. SA 83-21

CITY OF TULSA, OKLAHOMA

Modified from: SA 83-21, Sheet 61

See Section 4.13.4 of Technical Specifications

Location of Scum Detecting Radar, Plan View
WPC 21-4, Bid Item 13, Drawing 13-1

Digester 3&4

Mounting location for Scum Detecting Radar

Radar is mounted here

Emergency Release Hatch EL. ~657.5'

Original Access Hatch EL. ~656.5'

Ceiling EL. ~653.7'

Bottom of Skirt EL. ~647.8'

Centerline of Access Hatch EL. 634.05 (SA 83-21, sheet 61)'

Bottom of Access Hatch EL. ~632.5'

Floor below sample port EL. ~612.1'

Floor below sample port EL. ~613.6'

Top of Parapet EL. 654.51' (ref. SA 83-21, sheets 42 and 50)

90'-0" DIA.

41'-6"

34'-10 3/8"

30'-0"

30'-0"

17'-3 3/4"

12'-5"

EL. ~660.0'

EL. 659.77

EL. ~662.3'

EL. ~660.6'

EL. ~658.2'

EL. 657.09

EL. ~657.5'

EL. ~653.5'

EL. ~653.6'

EL. ~653.5'

OPERATING LEVEL EL. ~649.8'

EL. ~647.6'

EL. ~647.9'

W.P. TO HERE 12" 125# FLANGE

T/WALL EL. 653.30

1'-2 1/2"

3'-7 1/16"

SEE CONTRACT #M0854 FOR GASLIFTER

2'-0" O.D.

38'-6"

34'-10 9/16"

24'-6"

2'-6"

EL. 614.80

3'-7"

EL. 611.22

4'-0" DIA.

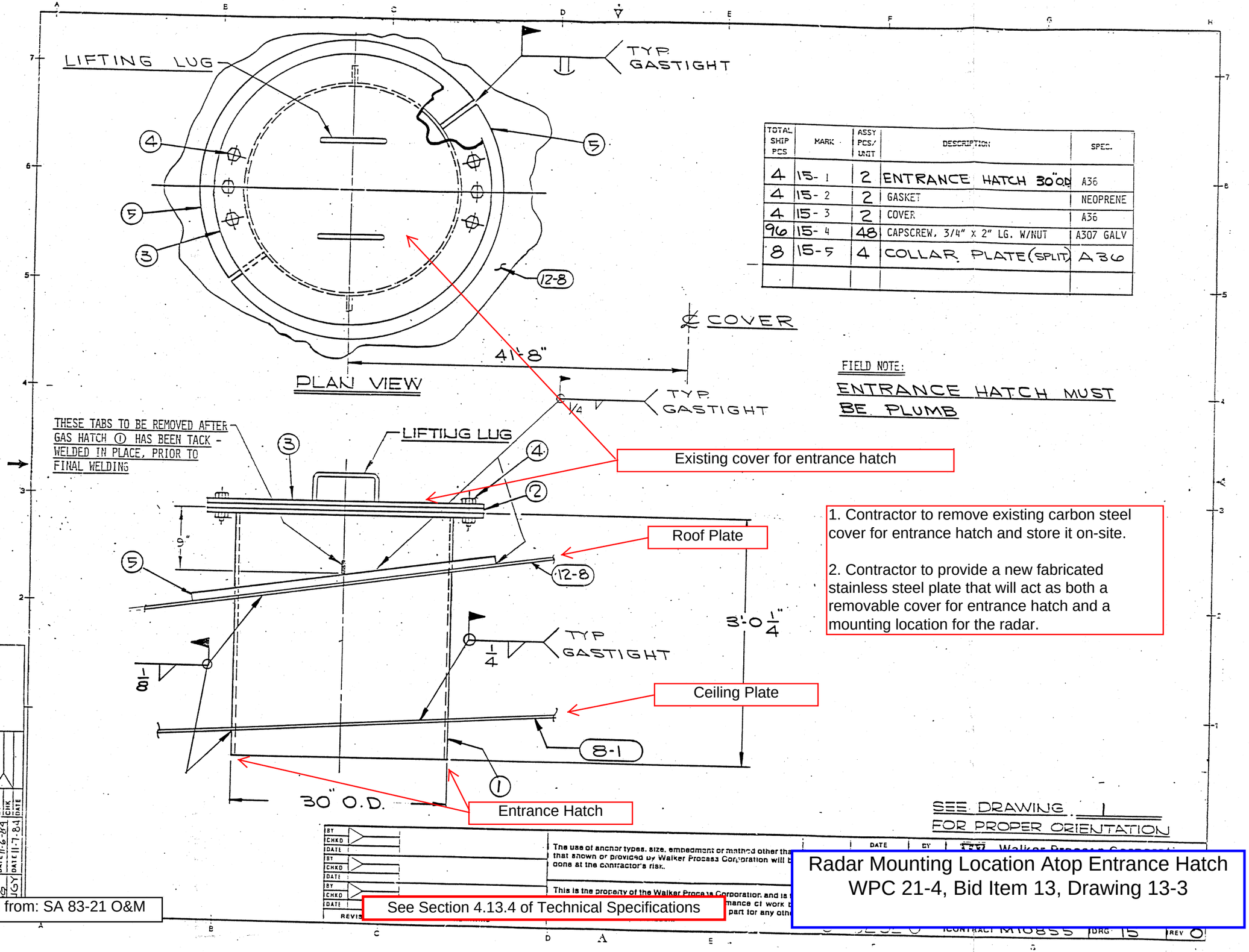
12" : 1'

SECTIONAL ELEVATION

Modified from: SA 83-21 O&M

See Section 4.13.4 of Technical Specifications

Location of Scum Detecting Radar, Elevation View
WPC 21-4, Bid Item 13, Drawing 13-2



TOTAL SHIP PCS	MARK	ASSY PCS/ UNIT	DESCRIPTION	SPEC.
4	15-1	2	ENTRANCE HATCH 30"OD	A36
4	15-2	2	GASKET	NEOPRENE
4	15-3	2	COVER	A36
96	15-4	48	CAPSCREW, 3/4" x 2" LG. W/NUT	A307 GALV
8	15-5	4	COLLAR PLATE(SPLIT)	A36

FIELD NOTE:
ENTRANCE HATCH MUST BE PLUMB

Existing cover for entrance hatch

1. Contractor to remove existing carbon steel cover for entrance hatch and store it on-site.

2. Contractor to provide a new fabricated stainless steel plate that will act as both a removable cover for entrance hatch and a mounting location for the radar.

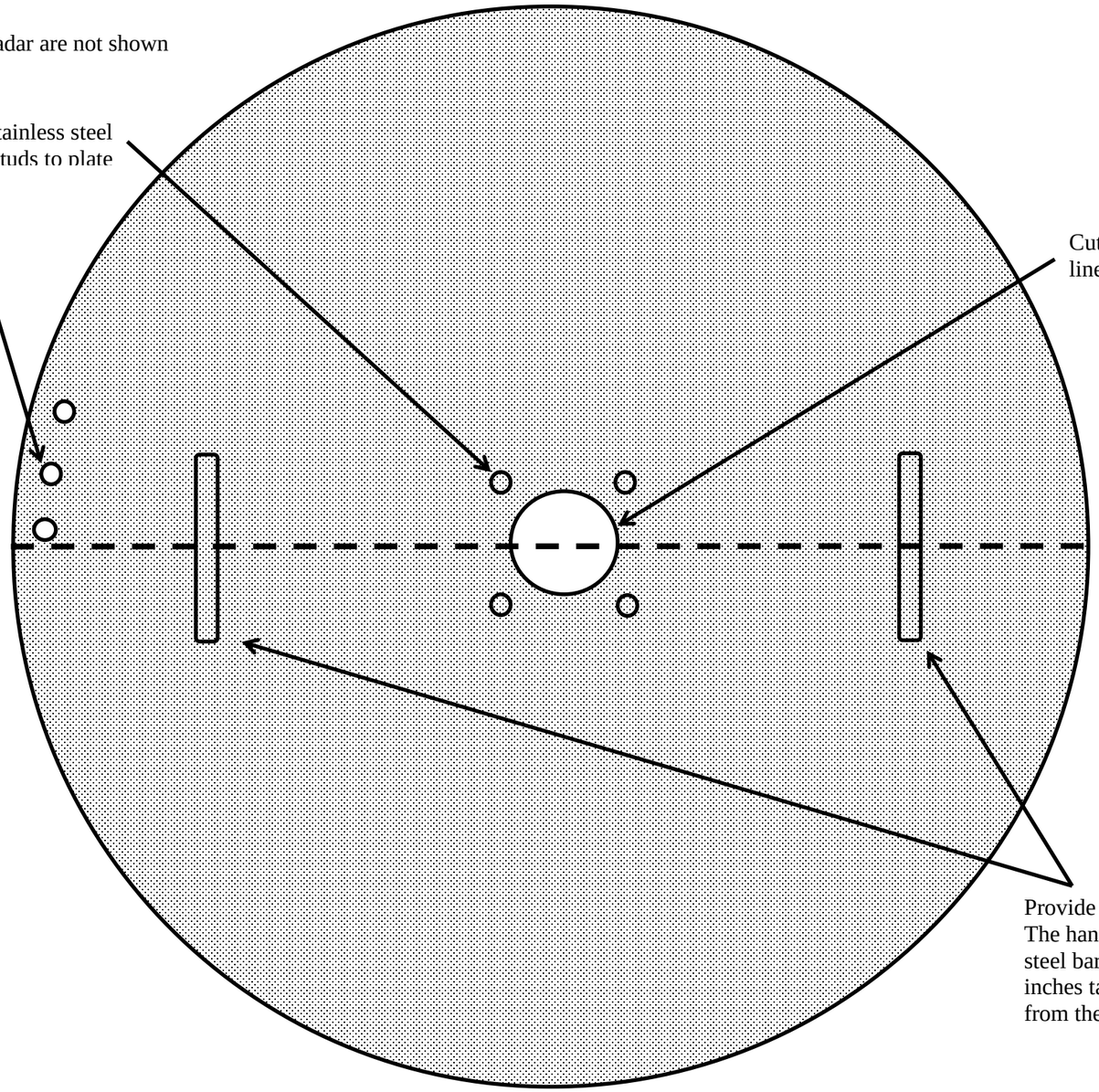
Modified from: SA 83-21 O&M

See Section 4.13.4 of Technical Specifications

Radar Mounting Location Atop Entrance Hatch
WPC 21-4, Bid Item 13, Drawing 13-3

- Contractor to fabricate custom plate made from 304 stainless steel, ¼-inch thick.
- Plate is to serve as both a removeable cover for the entrance hatch and a mounting location for the radar.

This sketch shows mounting plate only. Valve and radar are not shown

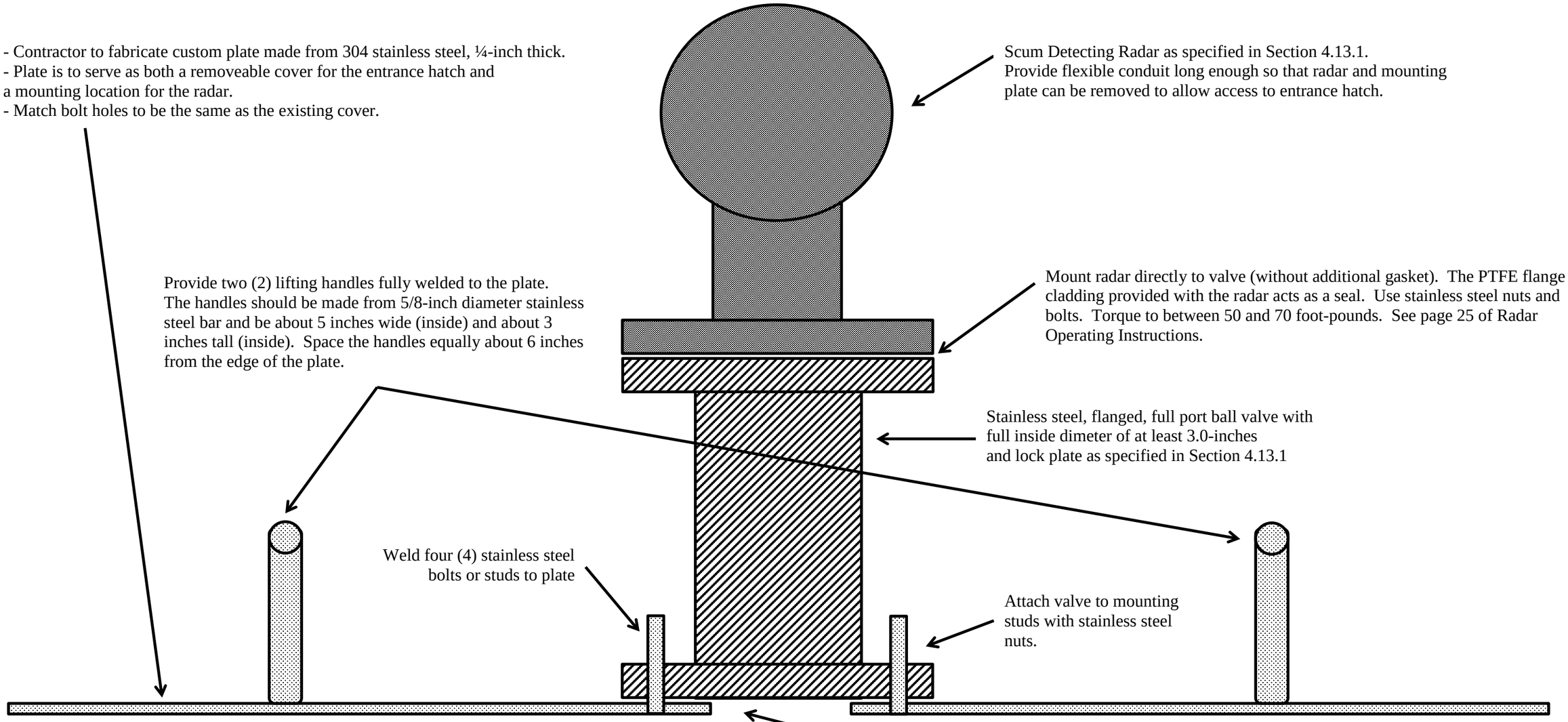


Not to Scale

See Section 4.13.4 of Technical Specifications

Mounting Plate for Radar, Plan View
(Proposed)
WPC 21-4, Bid Item 13, Drawing 13-4

- Contractor to fabricate custom plate made from 304 stainless steel, ¼-inch thick.
- Plate is to serve as both a removeable cover for the entrance hatch and a mounting location for the radar.
- Match bolt holes to be the same as the existing cover.



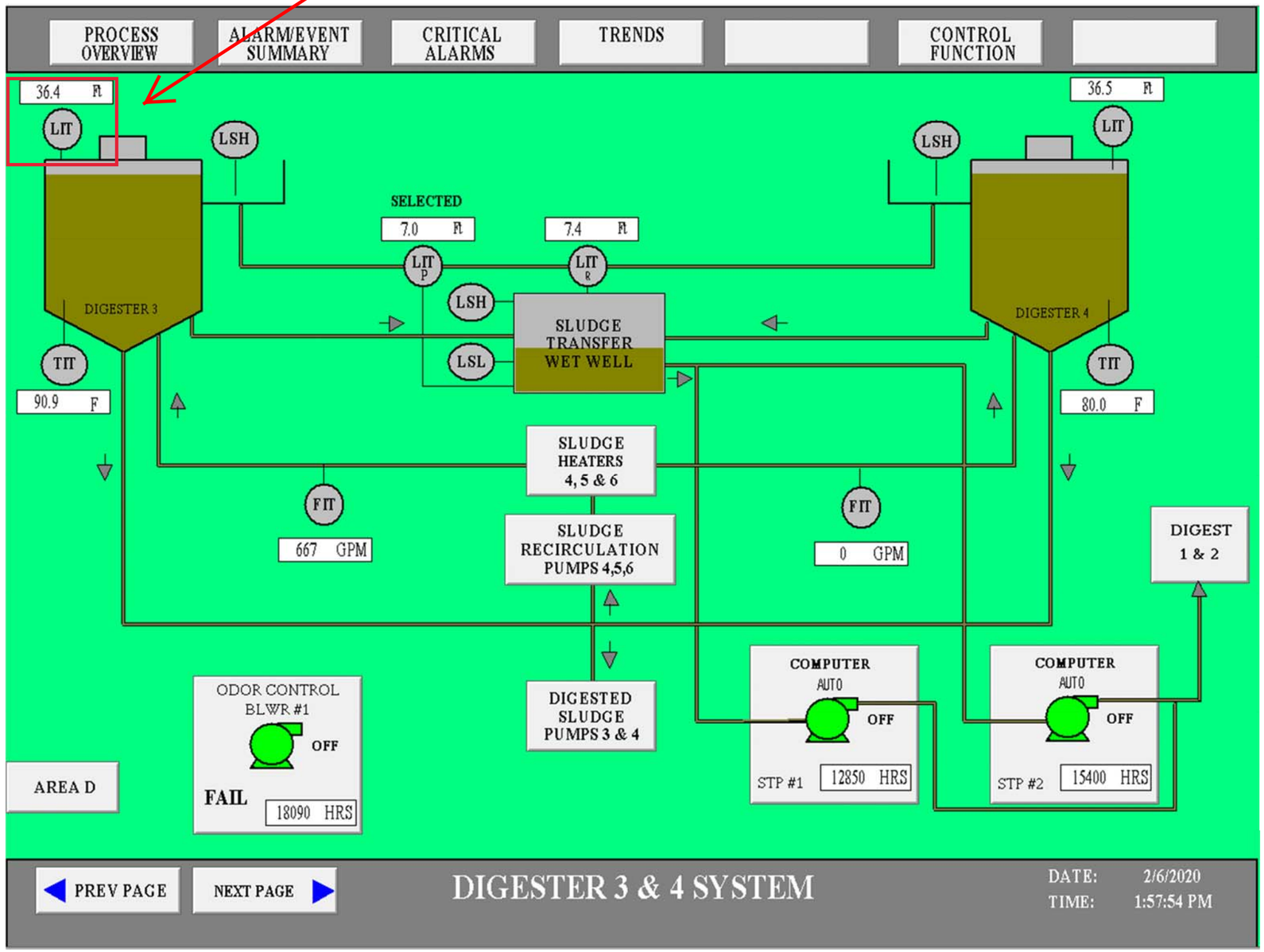
Sectional View A-A
from Drawing 13-4

Not to Scale

See Section 4.13.4 of Technical Specifications

Mounting Plate for Radar, Sectional View (Proposed)
WPC 21-4, Bid Item 13, Drawing 13-5

Location of proposed Scum Detecting Radar



See Section 4.13.6 of Technical Specifications

SCADA View of Proposed
Scum Detecting Radar
WPC 21-4, Bid Item 13, Drawing 13-6