

CITY OF TAMPA, FLORIDA



PLANS

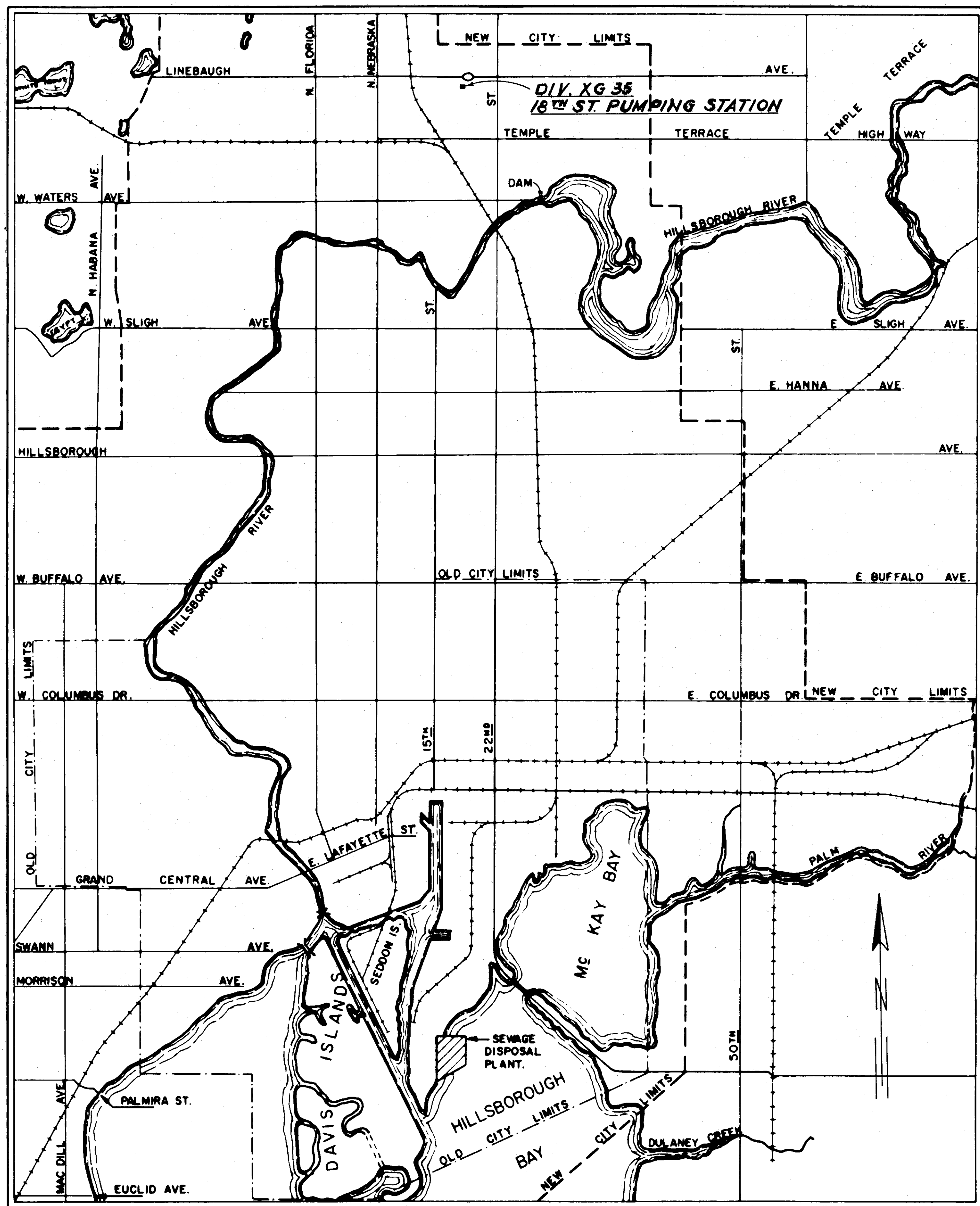
FOR THE CONSTRUCTION OF

SEWAGE DISPOSAL SYSTEM

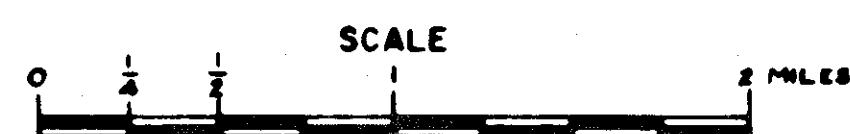
DIV. XG 35-18TH. STREET PUMPING STATION

GREELEY AND HANSEN - ENGINEERS

220 SOUTH STATE STREET - CHICAGO 4, ILLINOIS
6TH FLOOR, CITY HALL - TAMPA, FLORIDA



LOCATION PLAN



GREELEY AND HANSEN
ENGINEERS
CHICAGO, ILL.

INDEX

DIVISION XG35

SHEET
NO.

- XG35-1 LOCATION PLAN AND INDEX
- XG35-2 EQUIPMENT
- XG35-3 STRUCTURAL
- XG35-4 EQUIPMENT AND STRUCTURAL
- XG35-5 ELECTRICAL

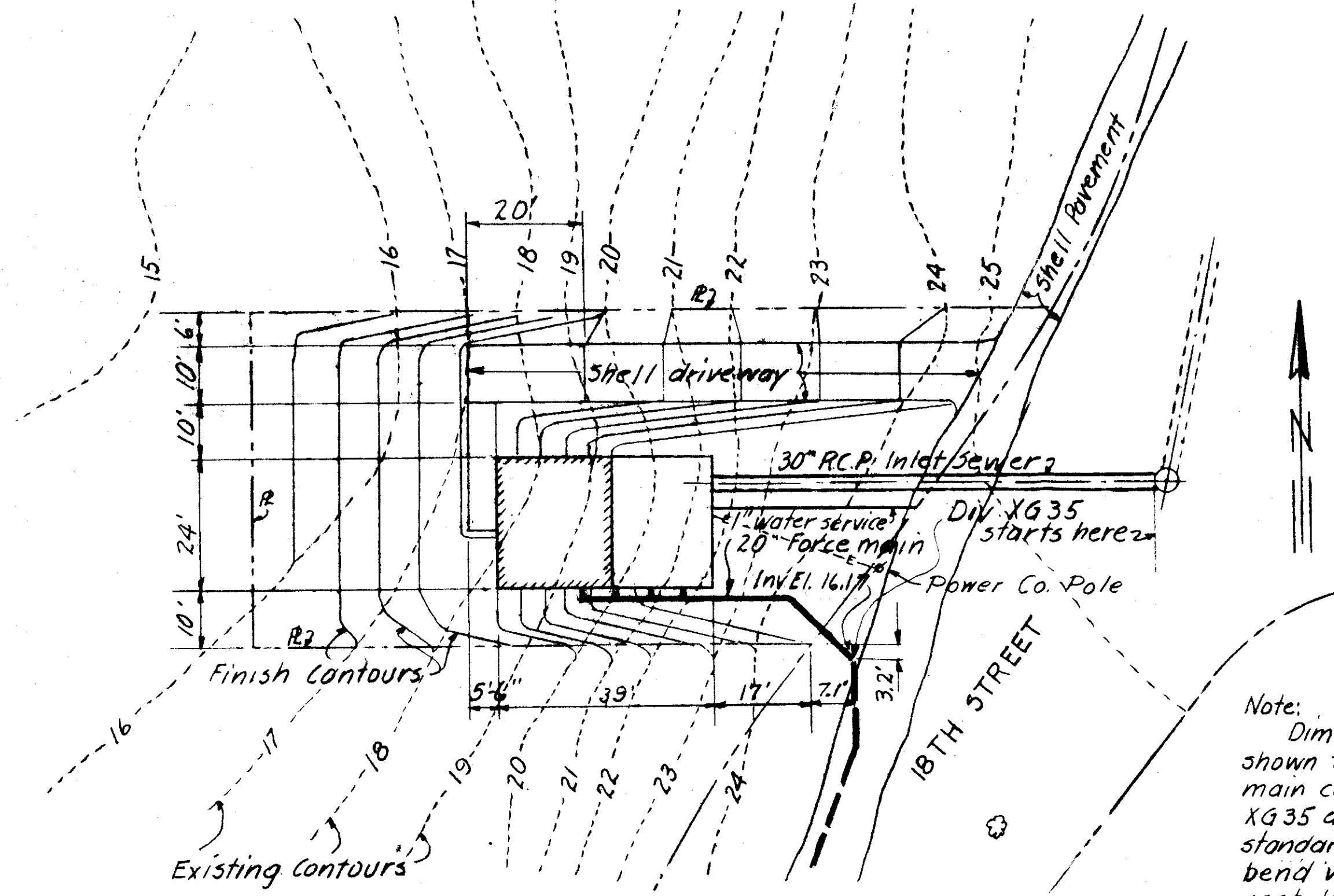
NOTES

1. All elevations are referred to City Datum, which is 0.65 feet above the Mean Low Water Datum of the US Engineers and is 0.15 feet below the Mean Sea Level Datum of the USC & GS
2. Existing utilities, buildings ground elevations and other features are shown according to the best information available. The contractor shall verify all conditions and dimensions affecting his work.



CITY OF TAMPA, FLORIDA SEWAGE DISPOSAL SYSTEM DIVISION XG35	
LOCATION PLAN AND INDEX	
GREELEY AND HANSEN, ENGINEERS BY <i>Paul E. Langdon</i> SUPT, BUREAU OF SANITARY SEWERS	SHEET 1 OF 5

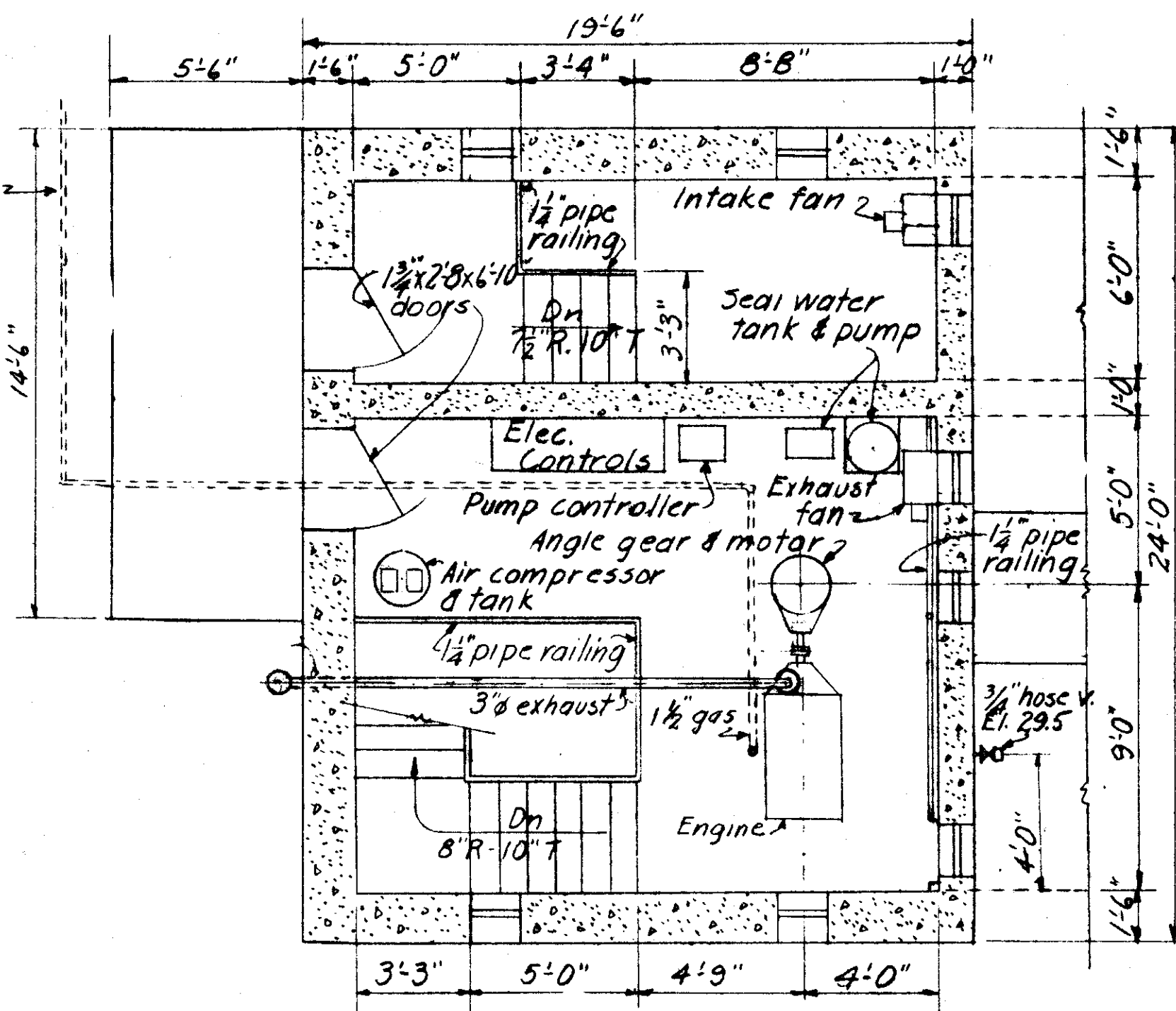
67-6



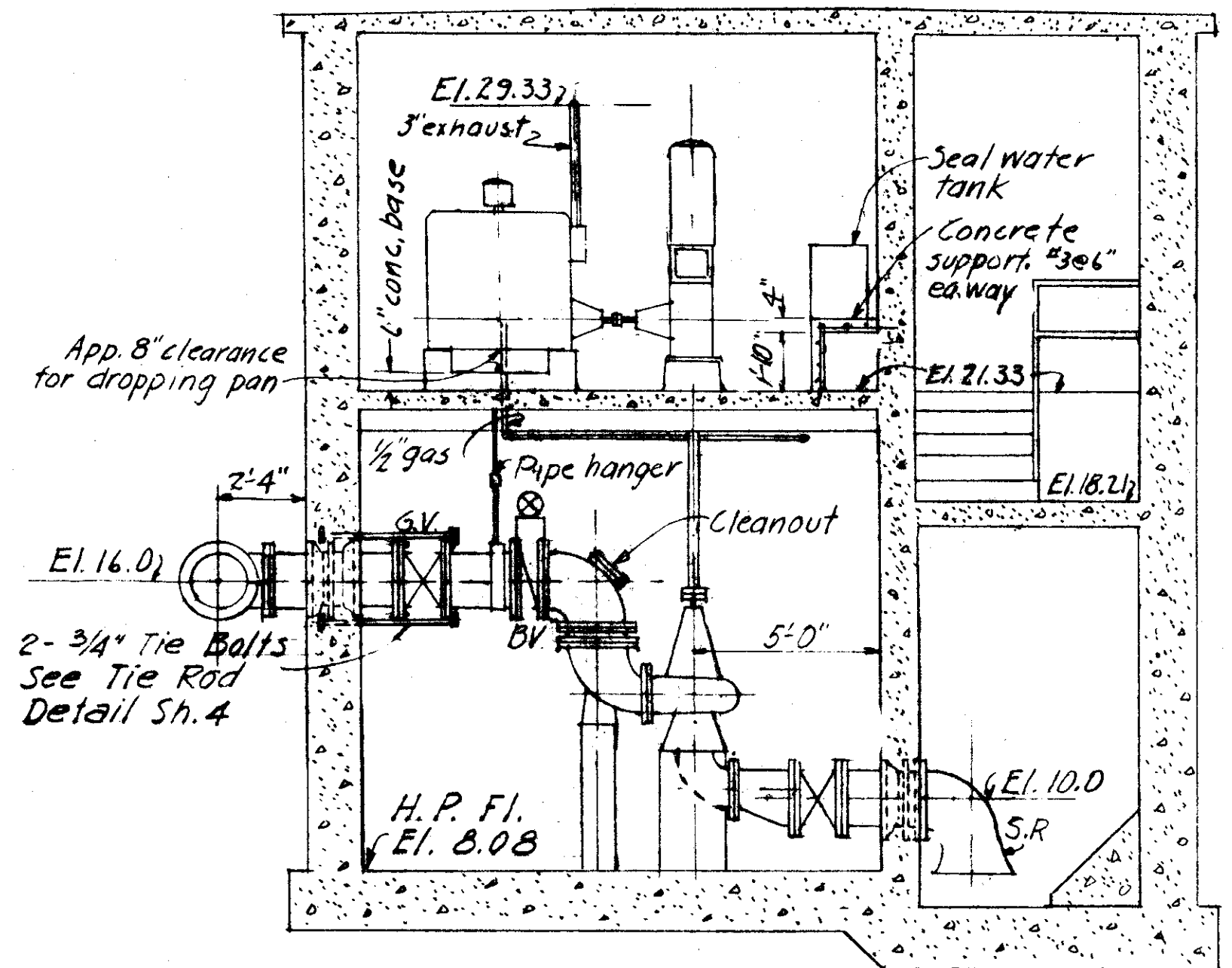
SITE PLAN
SCALE 1"=20'

Note: Dimensions and elevation shown for the end of the force main constructed under Div. XG35 are for the P.I. of a standard 45° B & S bend. The bend will be furnished and installed under another Division.

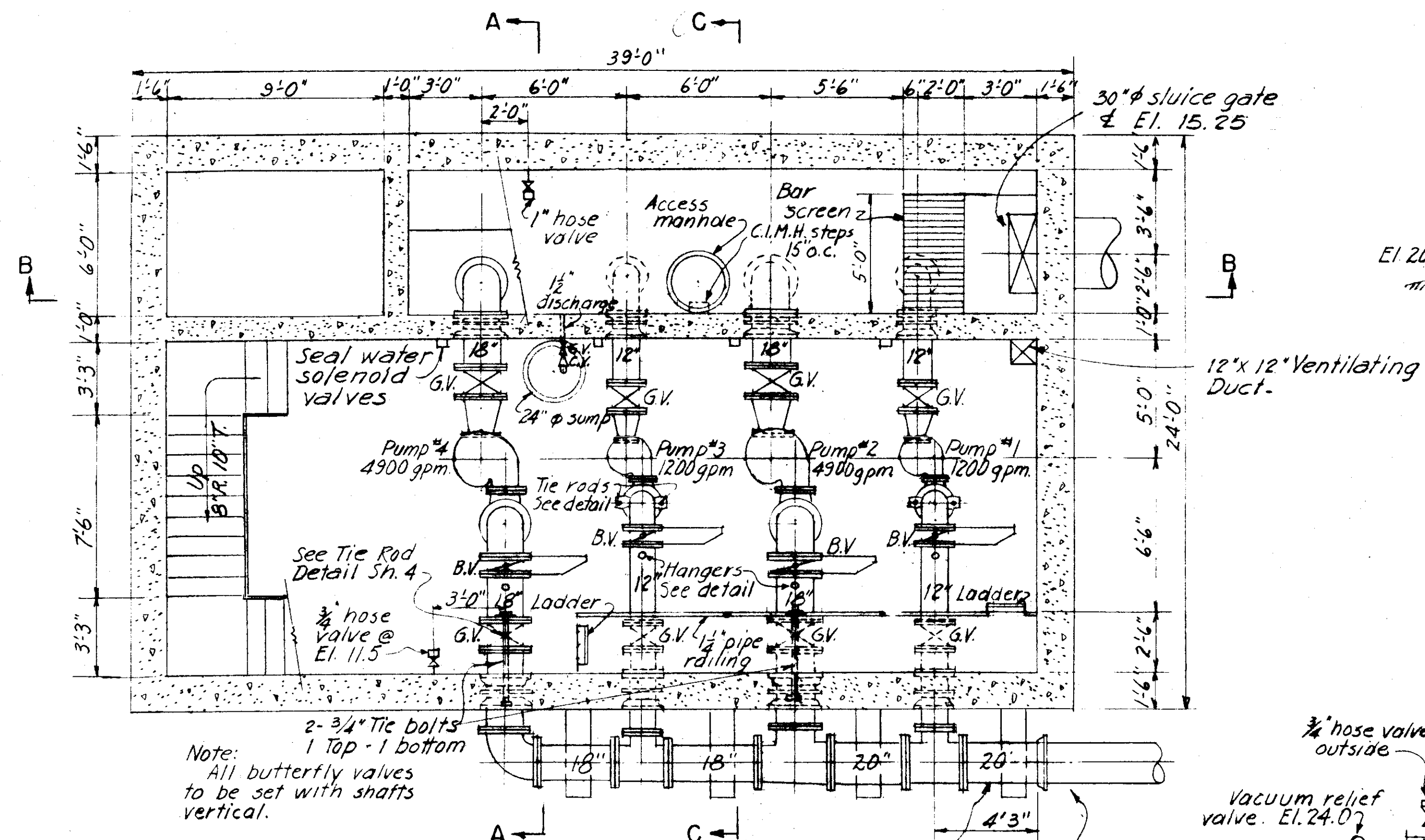
Note: Gas line from storage tank to engine will be furnished and installed by City. Contractor to provide sleeves thru wall and floor as directed.



SECTIONAL PLAN AT ELEV. 30.0
SCALE 1/4"=1'-0"

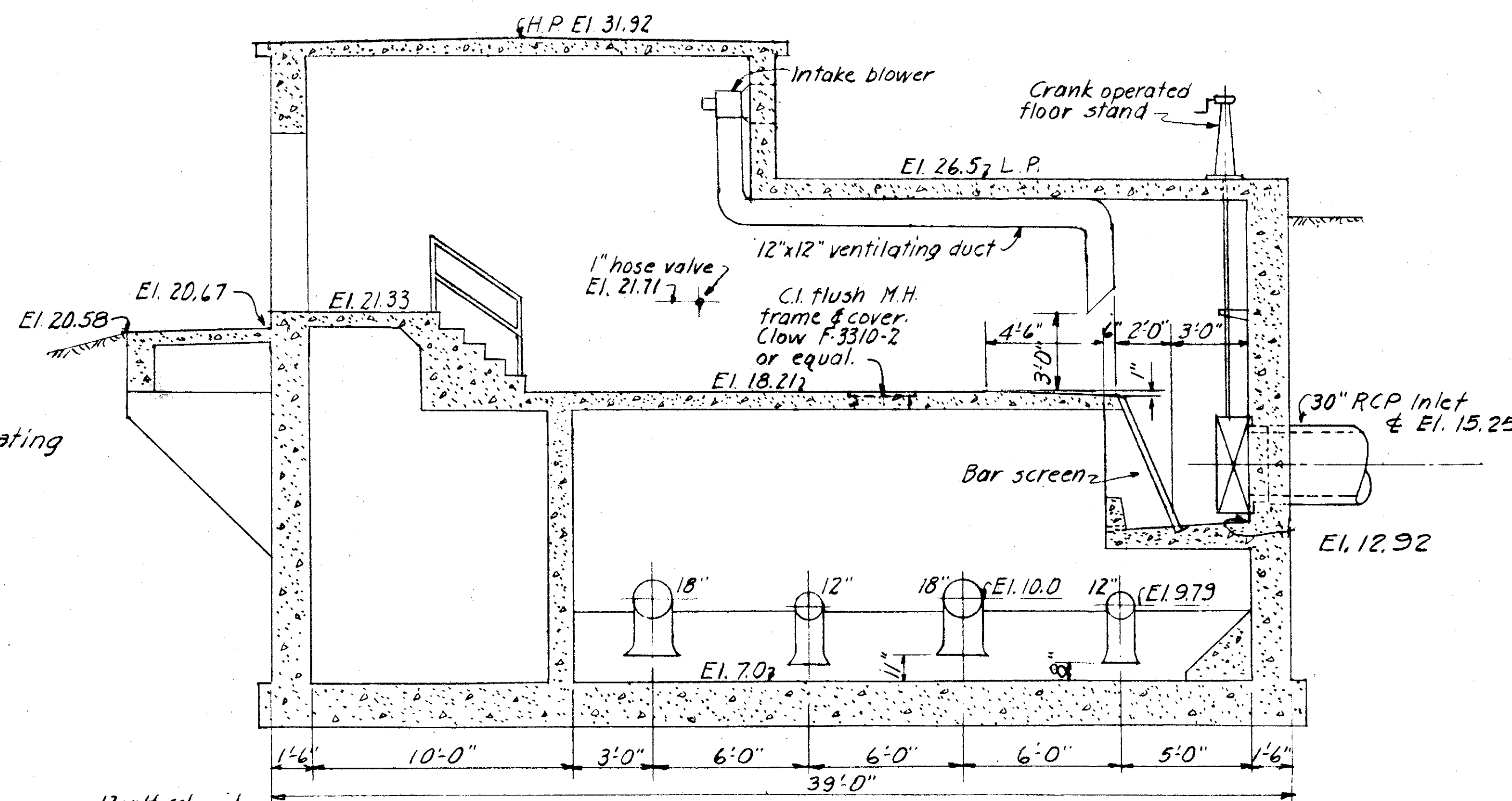


SECTION A
SCALE 1/4"=1'-0"

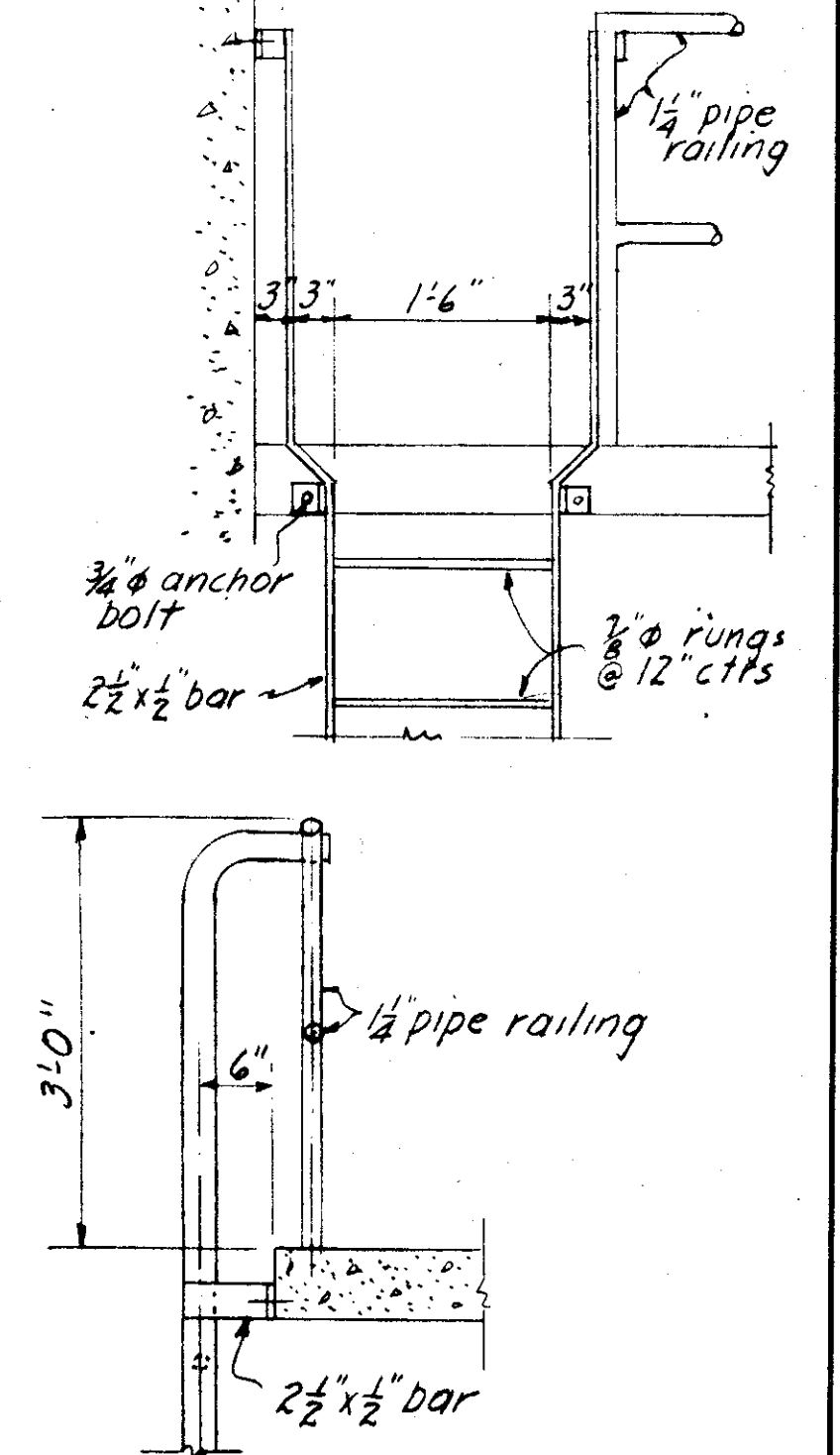


SECTIONAL PLAN AT ELEV. 20.0
SCALE 1/4"=1'-0"

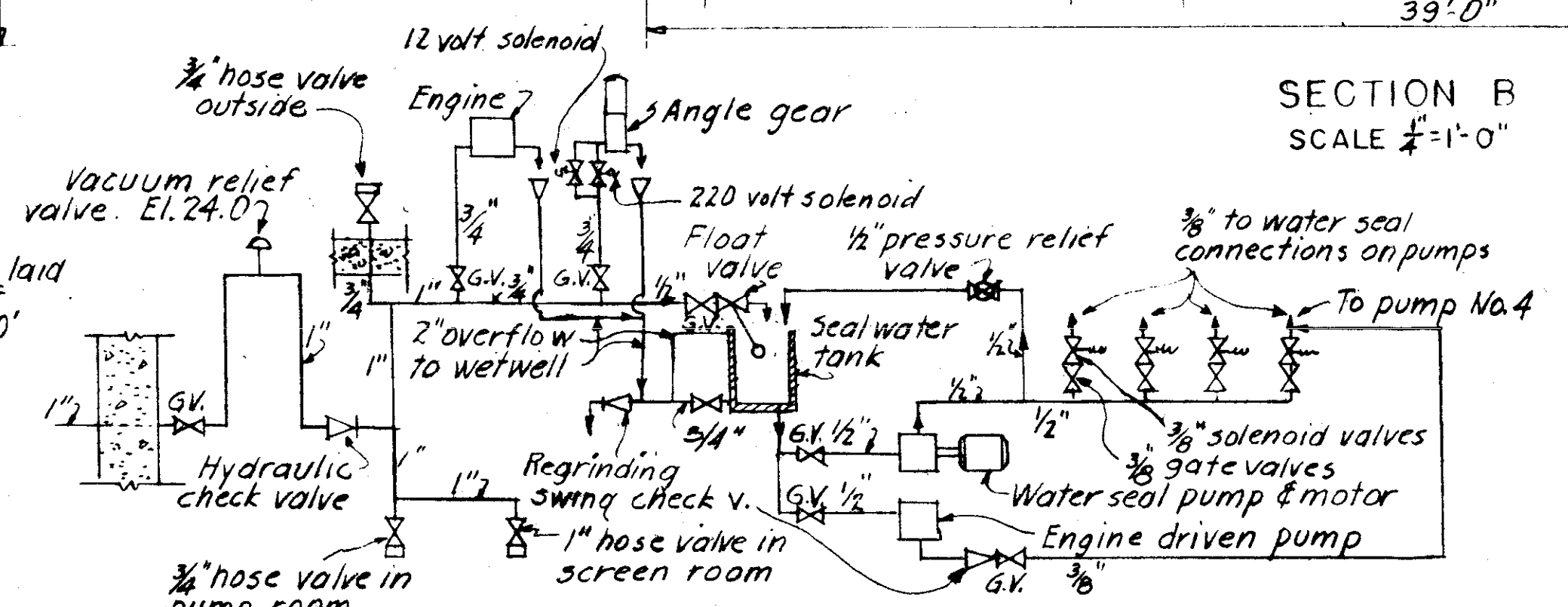
Note: All butterfly valves to be set with shafts vertical.



SECTION B
SCALE 1/4"=1'-0"



LADDER DETAIL
SCALE 1/4"=1'-0"



WATER PIPING DIAGRAM
NO SCALE

SEWER LINE LOCATION
C-13-B

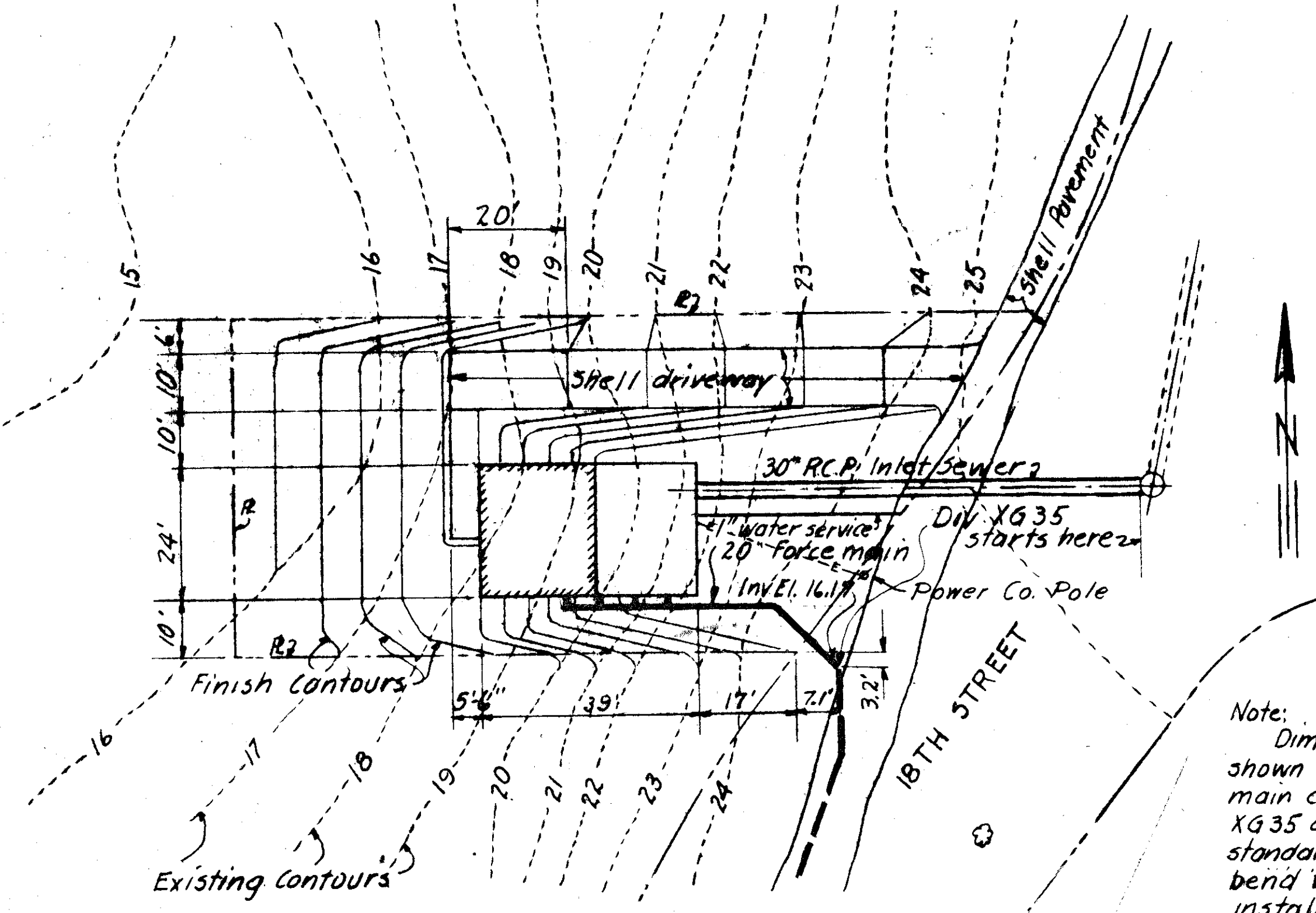
CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
DIV. XG35 18TH STREET PUMPING STATION

EQUIPMENT

DES. JBV
DR. JBV
CKD. REF. PBD
DATE: MAY, 1957

SCALE
0 10 20 30 40 50 FT. 1/4"=1'-0"

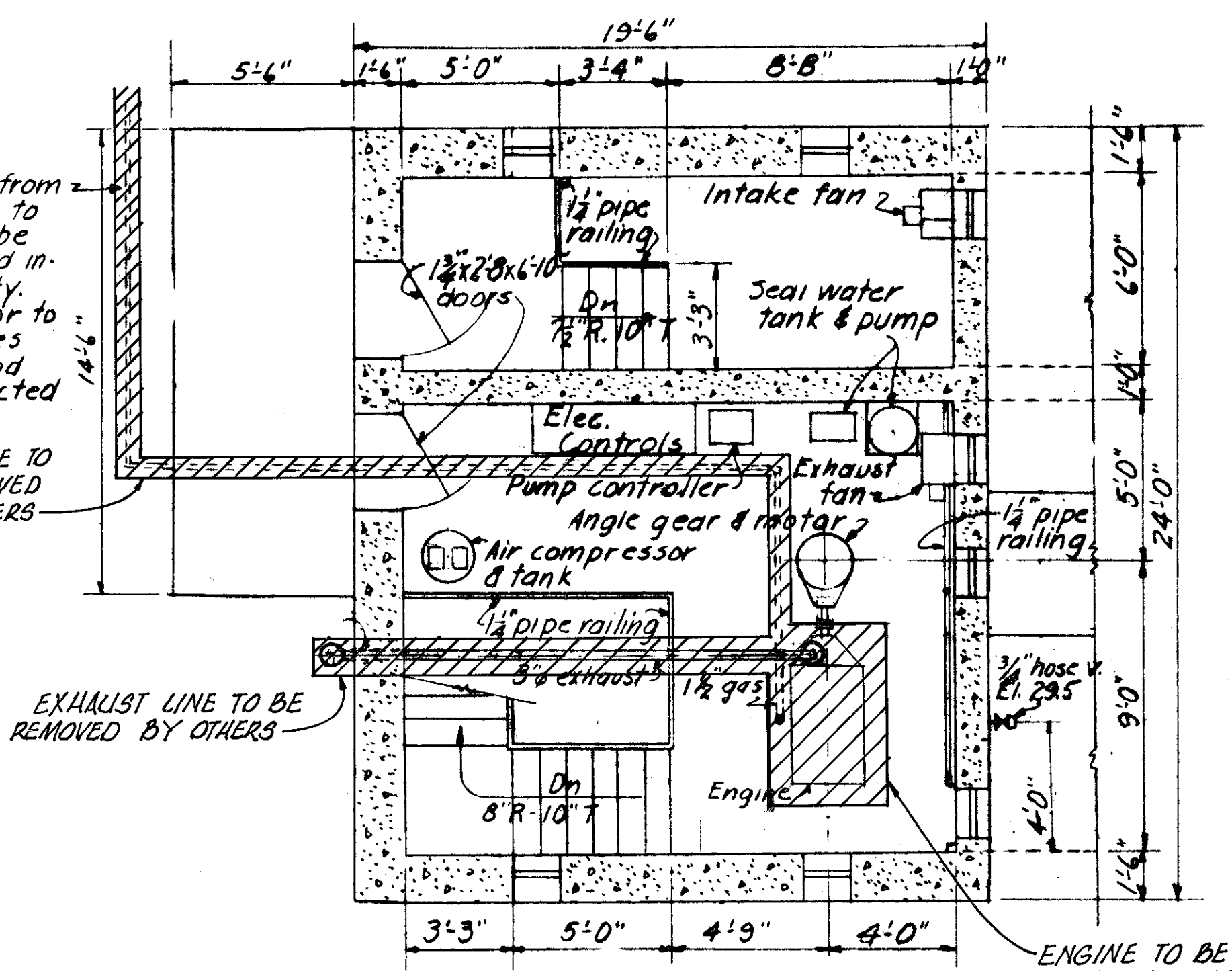
SHEET
XG35-2
OF 5



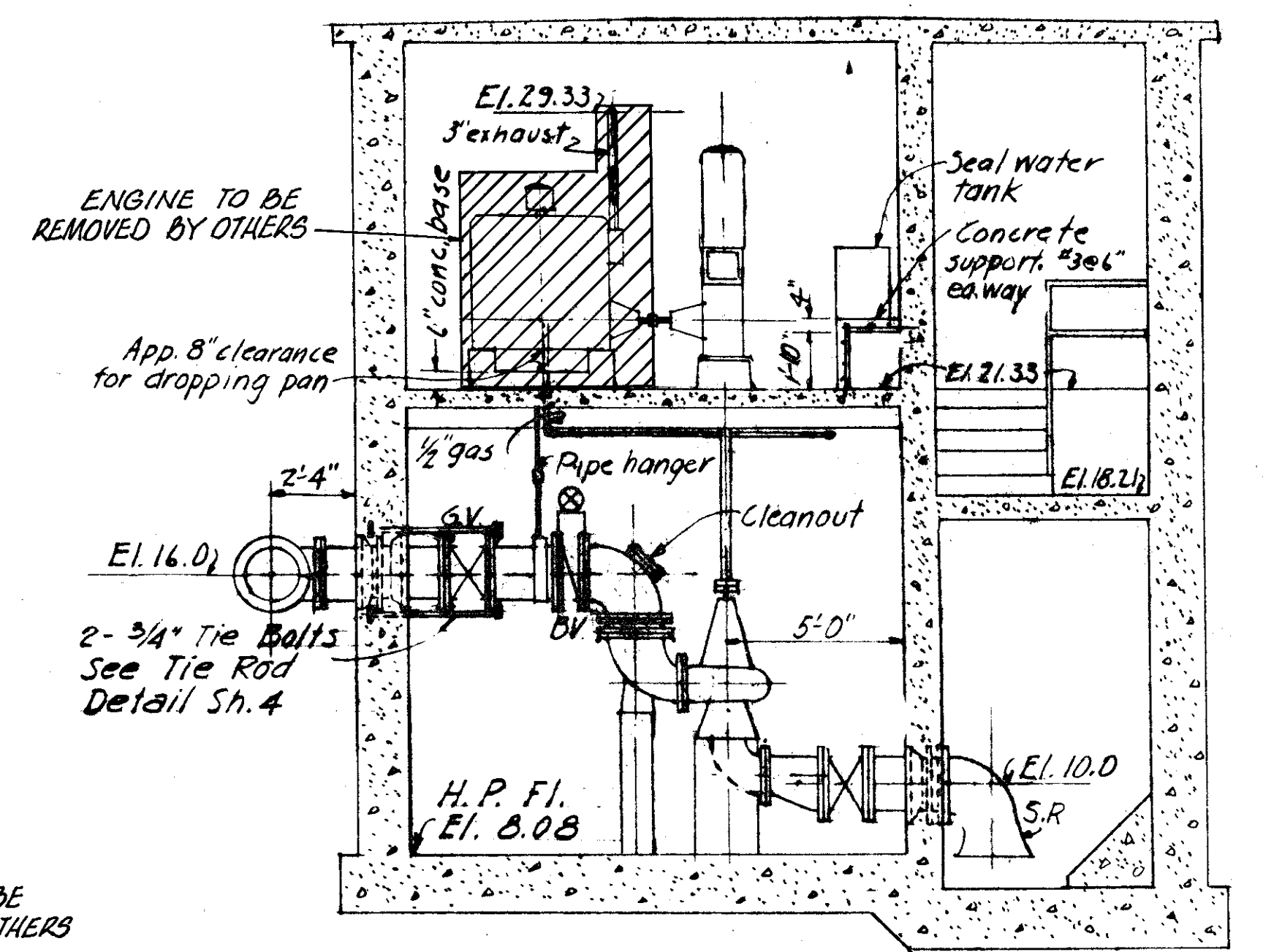
SITE PLAN
SCALE 1"=20"

Note: Dimensions and elevation shown for the end of the force main constructed under Div. XG35 are for the P.I. of a standard 45° B.S. bend. The bend will be furnished and installed under another Division.

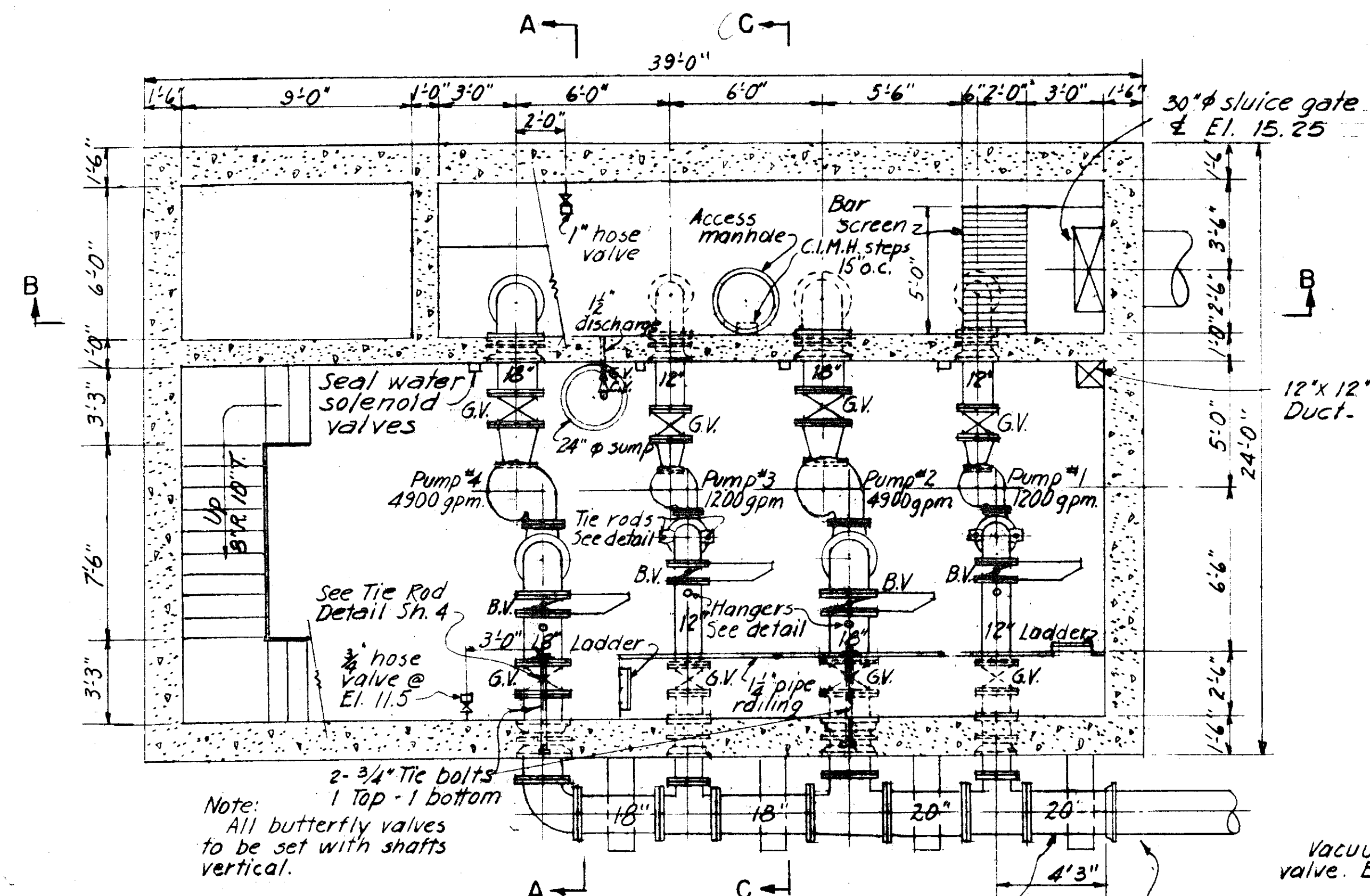
Note: Gas line from storage tank to engine will be furnished and installed by City. Contractor to provide sleeves thru wall and floor as directed.



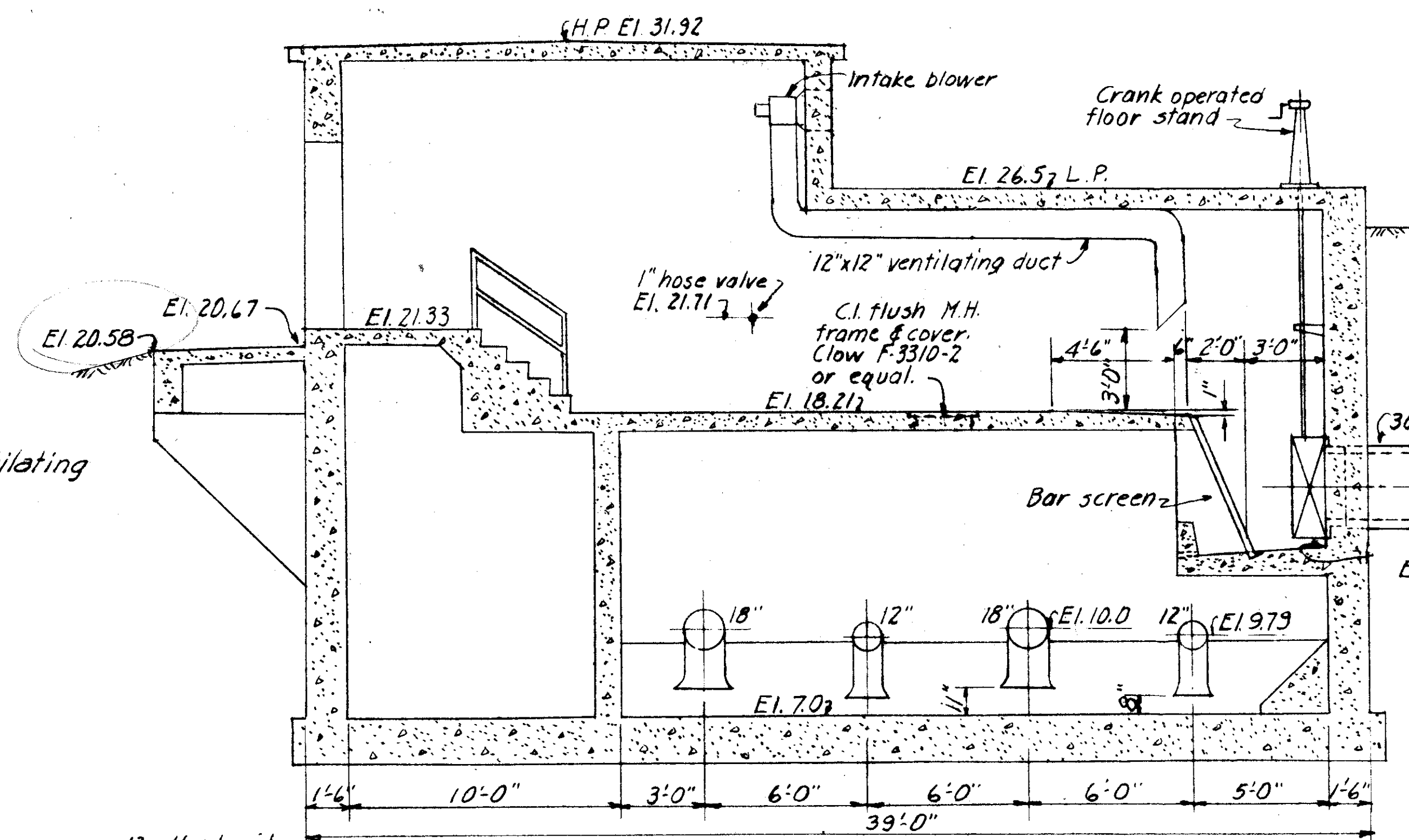
SECTIONAL PLAN AT ELEV. 30.0
SCALE 1/4"=1'-0"



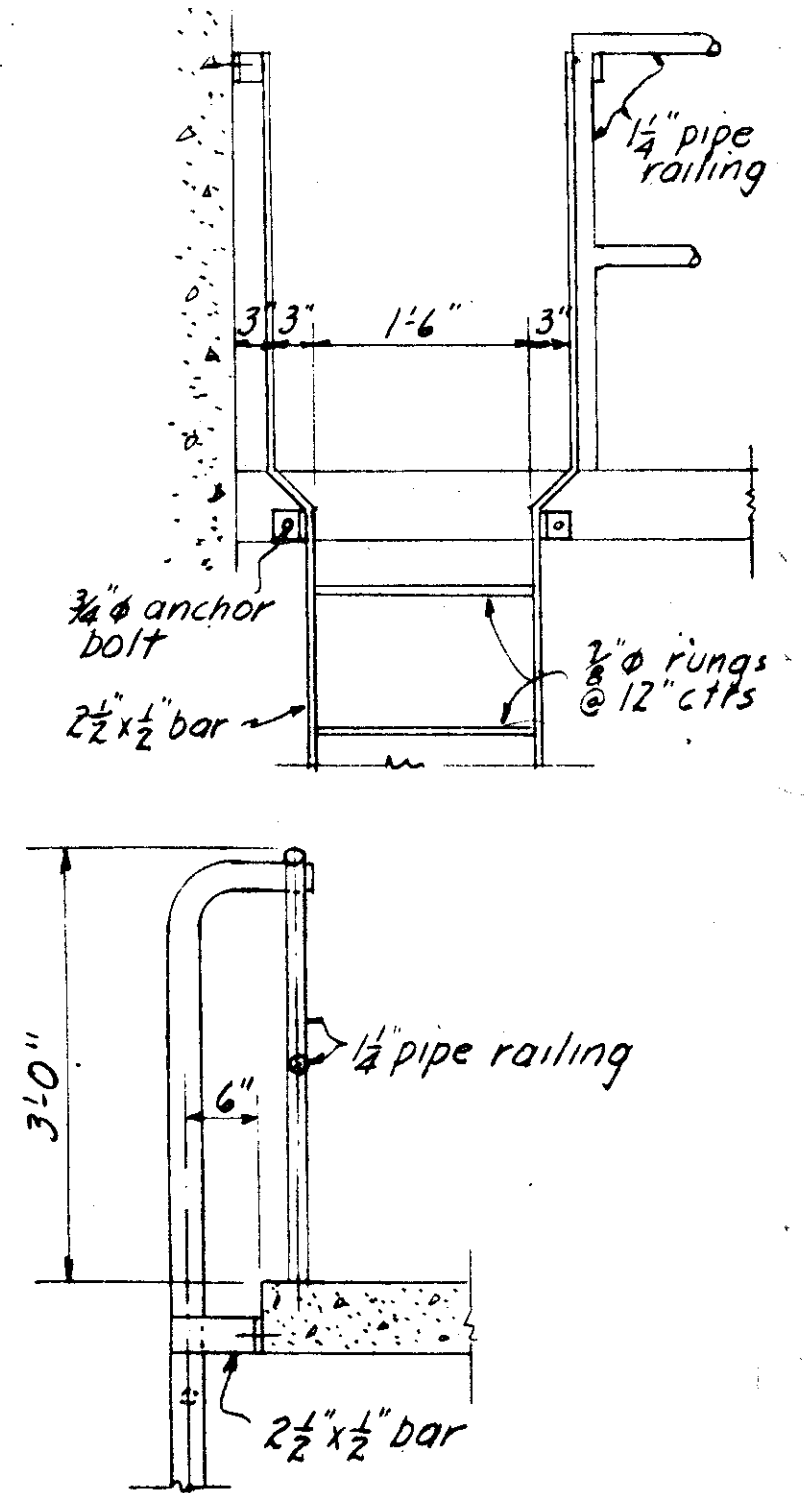
SECTION A
SCALE 1/4"=1'-0"



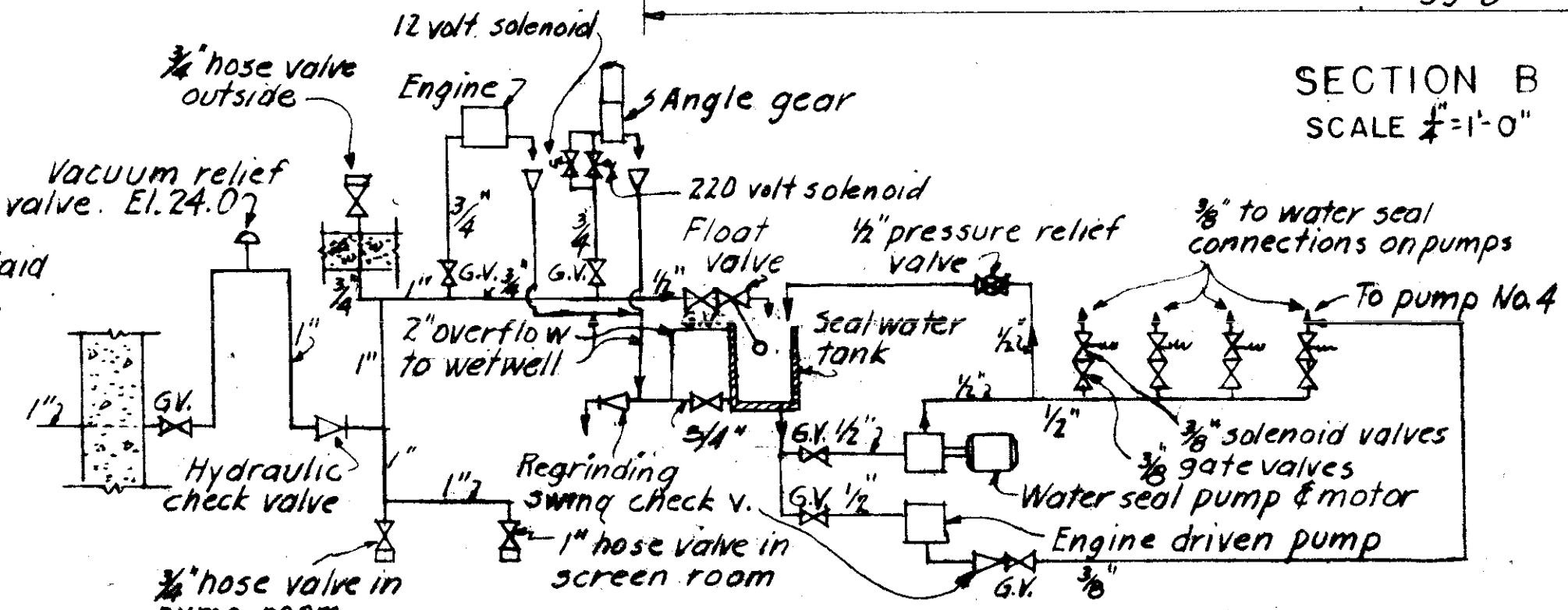
SECTIONAL PLAN AT ELEV. 20.0
SCALE 1/4"=1'-0"



SECTION B
SCALE 1/4"=1'-0"



LADDER DETAIL
SCALE 1/4"=1'-0"



WATER PIPING DIAGRAM
NO SCALE

SEWER LINE LOCATION
SEC. MAP NO. LINE NO.
C-13-8

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
DIV. XG35 18TH STREET PUMPING STATION

EQUIPMENT

DES. JBV	SCALE 1"=20'	SHEET
DR. JBV	10 0 10 20 30 40 50 FT	XG35-2
CKD. REF. PBD	1 0 1 2 3 4 5 6 7 8 9 10 11 12	OF 5
DATE: MAY, 1957	DATE: 5/1/57	

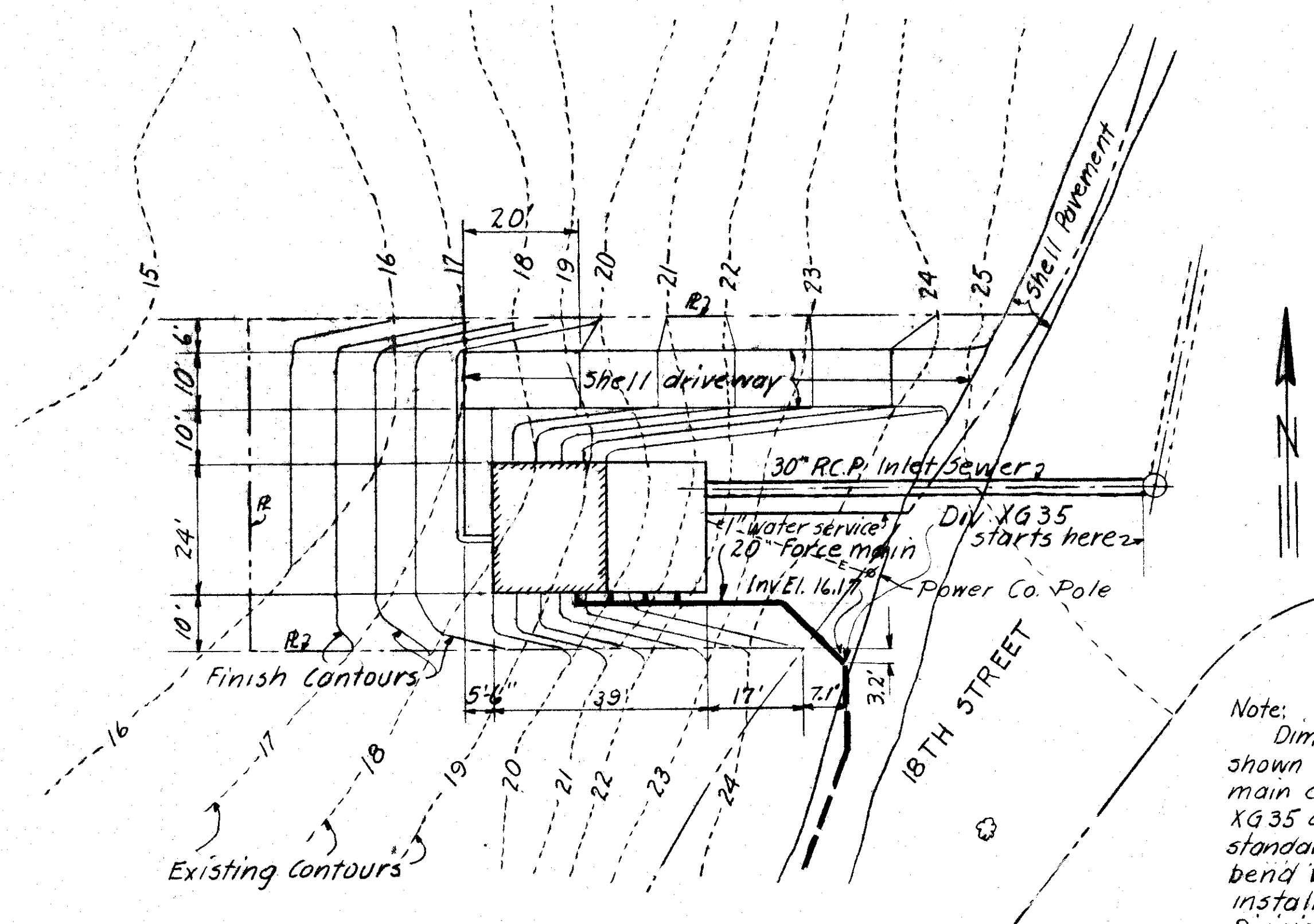
GREELEY AND HANSEN
ENGINEERS
CHICAGO, ILL.

APPROVED BY
ELTON G. SMITH, P.E.
CHIEF ENGINEER FLA. #19872
DEPARTMENT OF SANITARY SEWERS

J.W. SILLIMAN, P.E. DIRECTOR
DEPARTMENT OF SANITARY SEWERS

REVISED
MARCH 1977

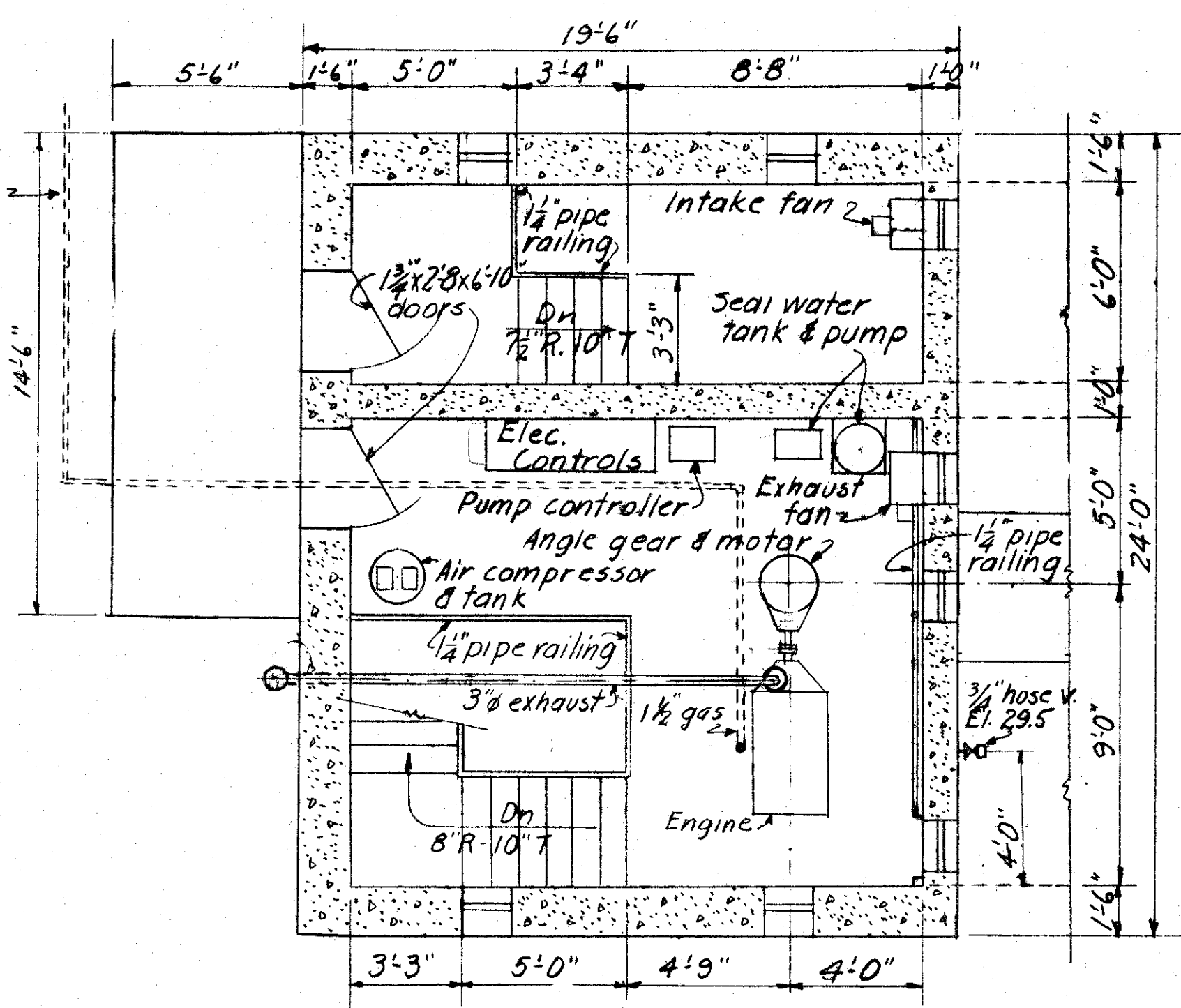
84-92



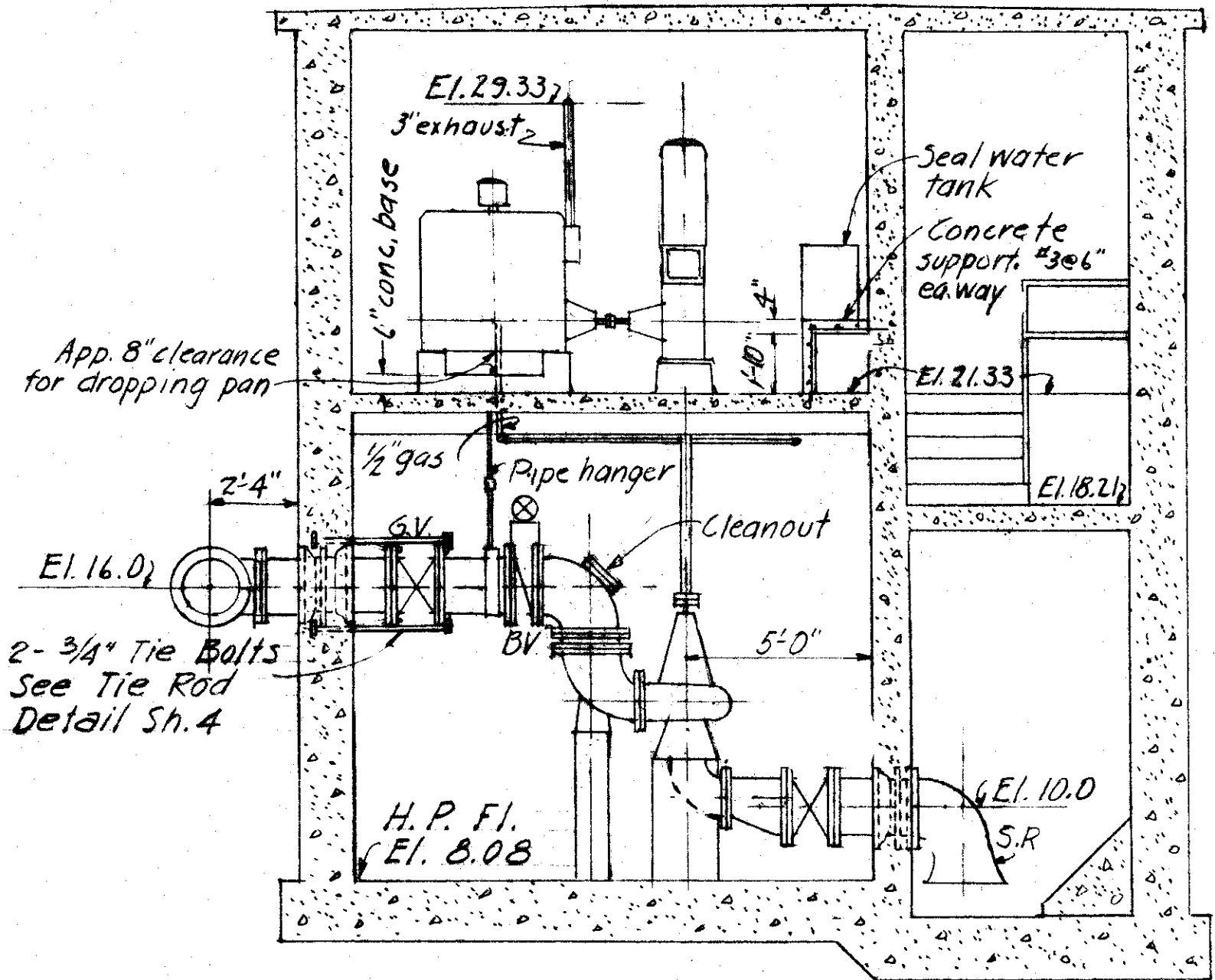
SITE PLAN
SCALE 1"=20'

Note:
Dimensions and elevation shown for the end of the force main constructed under Div. XG35 are for the P.I. of a standard 45° B & S bend. The bend will be furnished and installed under another Division.

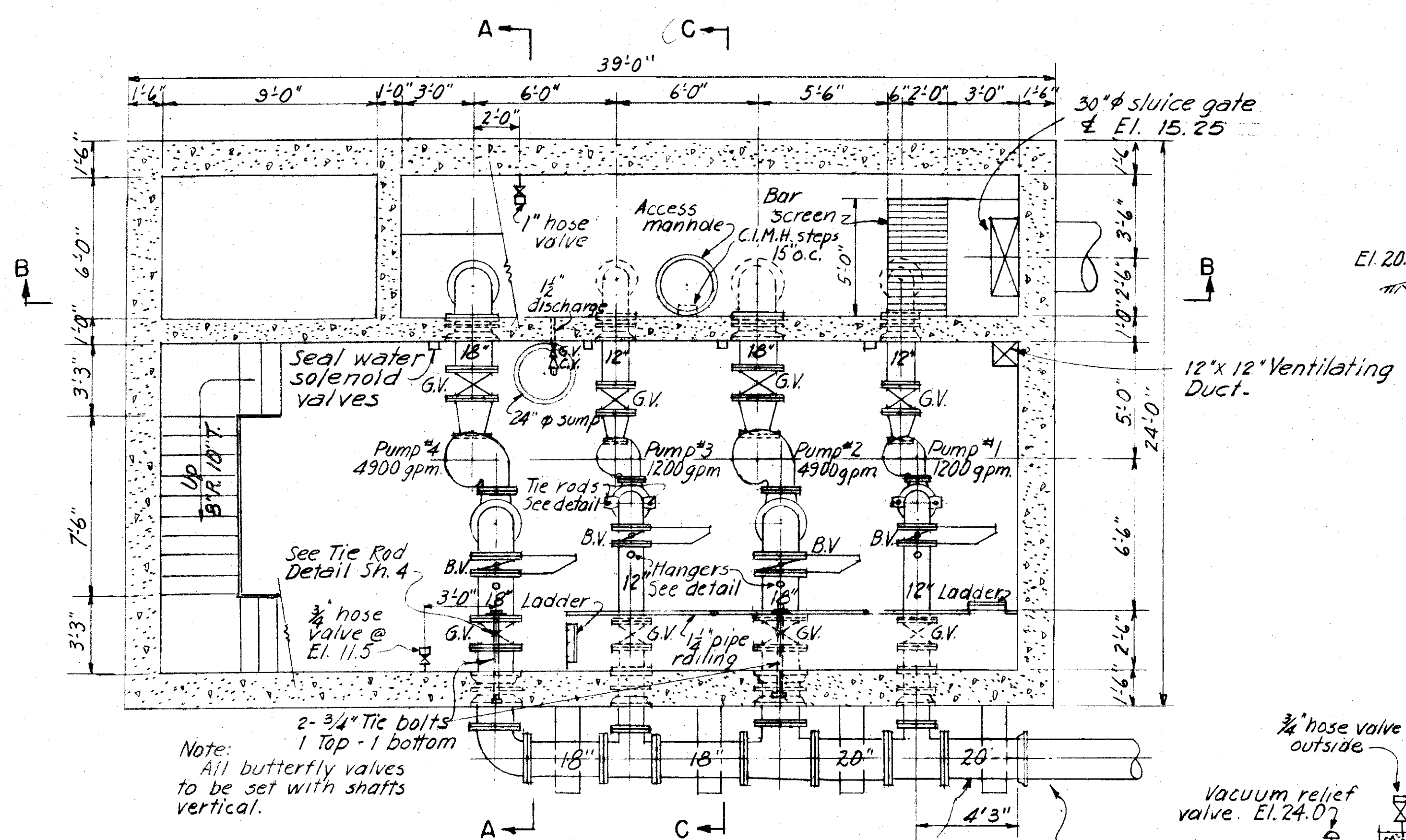
Note:
Gas line from storage tank to engine will be furnished and installed by City. Contractor to provide sleeves thru wall and floor as directed.



SECTIONAL PLAN AT ELEV. 30.0
SCALE 1/4"=1'-0"

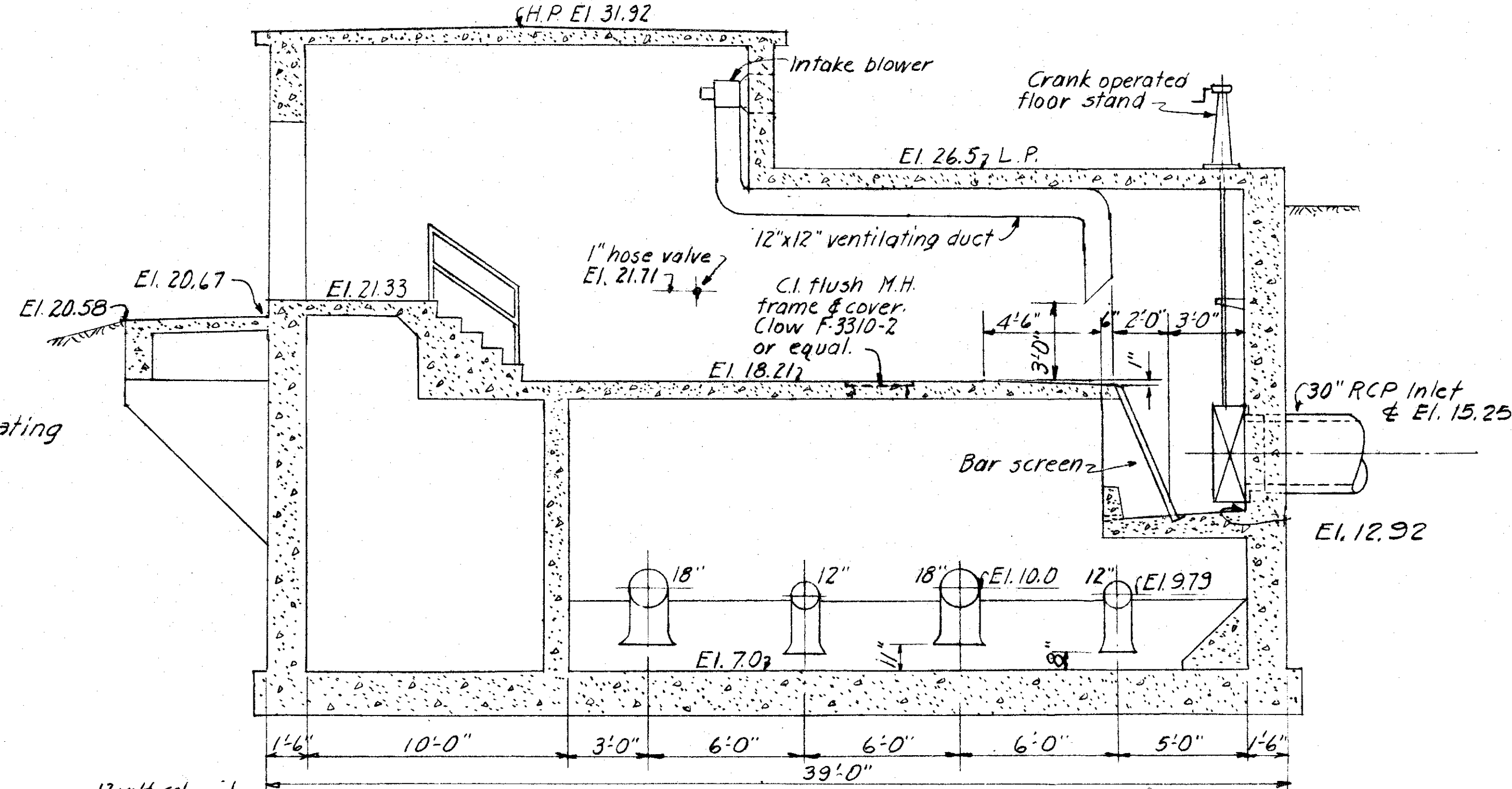


SECTION A
SCALE 1/4"=1'-0"

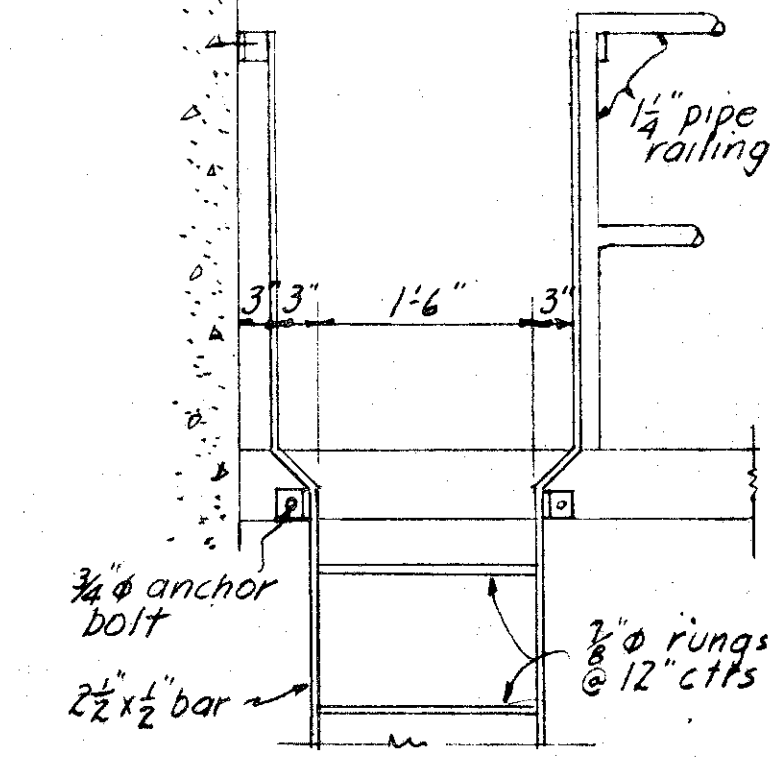


SECTIONAL PLAN AT ELEV. 20.0
SCALE 1/4"=1'-0"

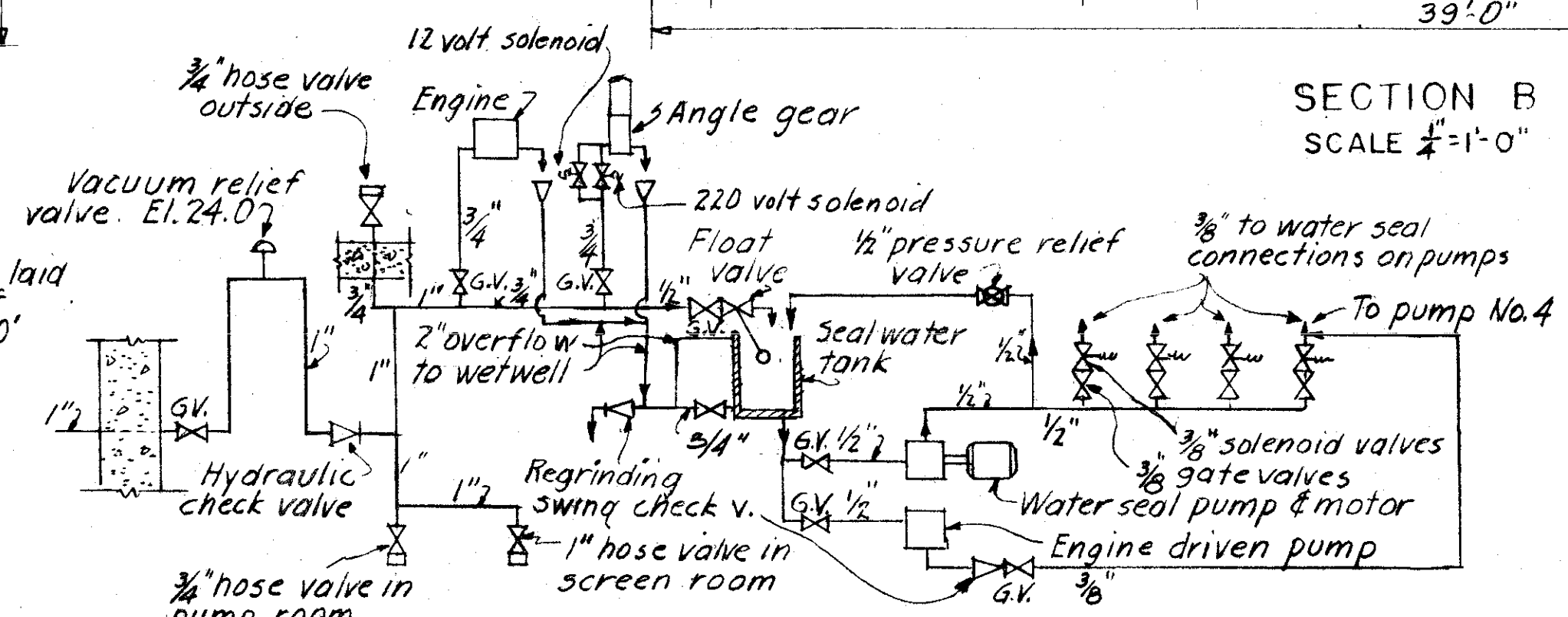
Note:
2-3/4" Tie bolts
1 top - 1 bottom
All butterfly valves to be set with shafts vertical.



SECTION B
SCALE 1/4"=1'-0"



LADDER DETAIL
SCALE 3/4"=1'-0"



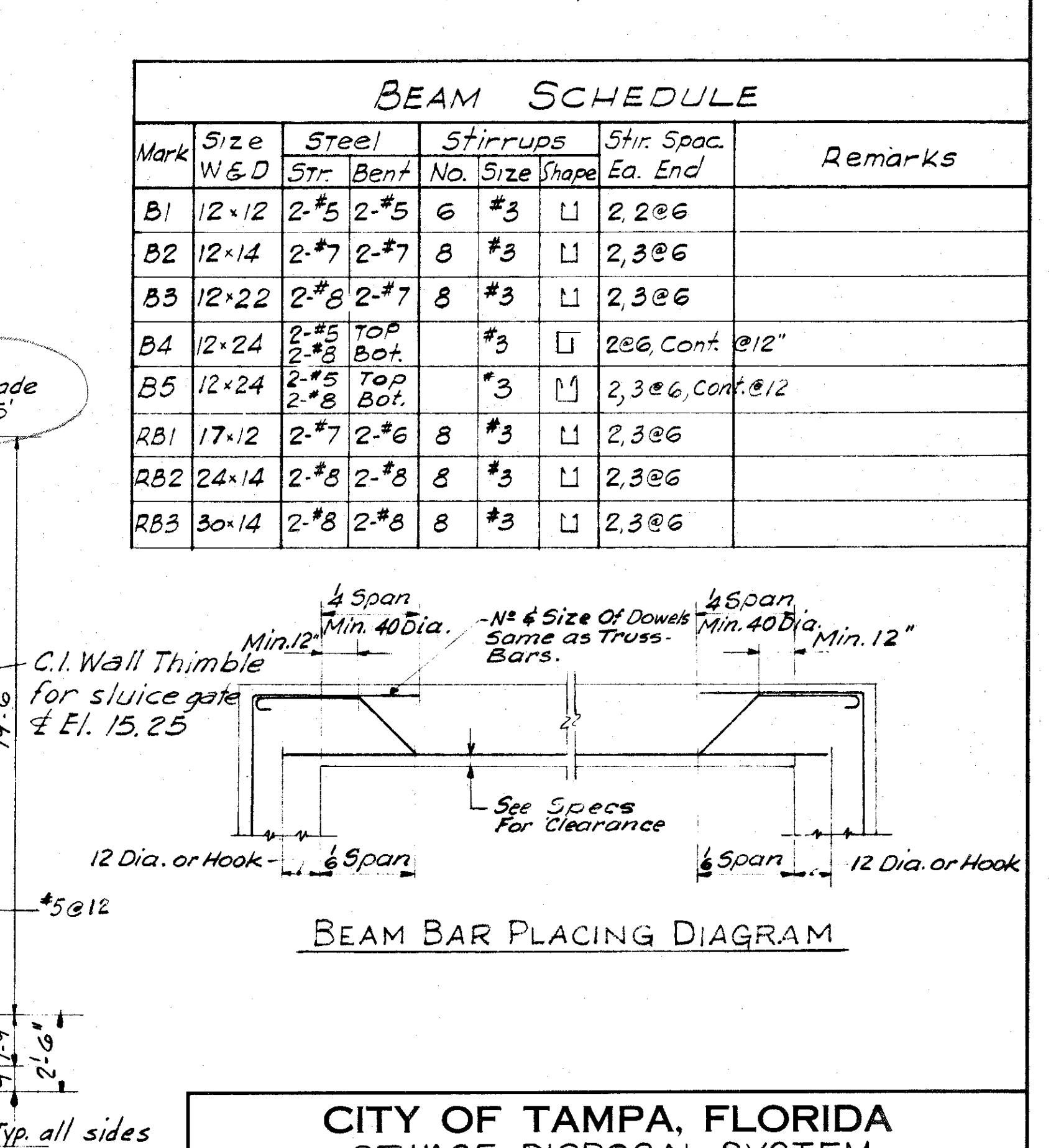
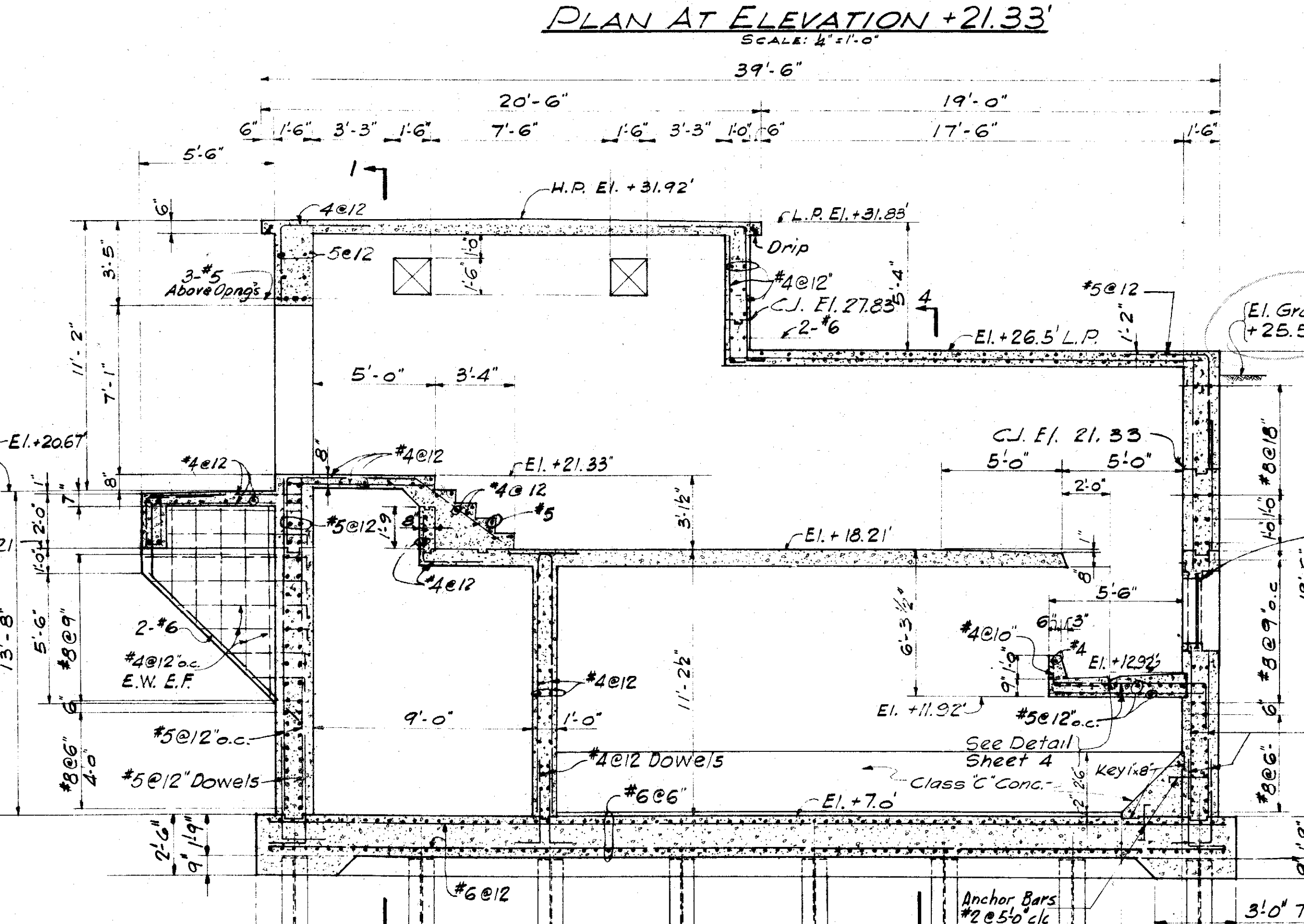
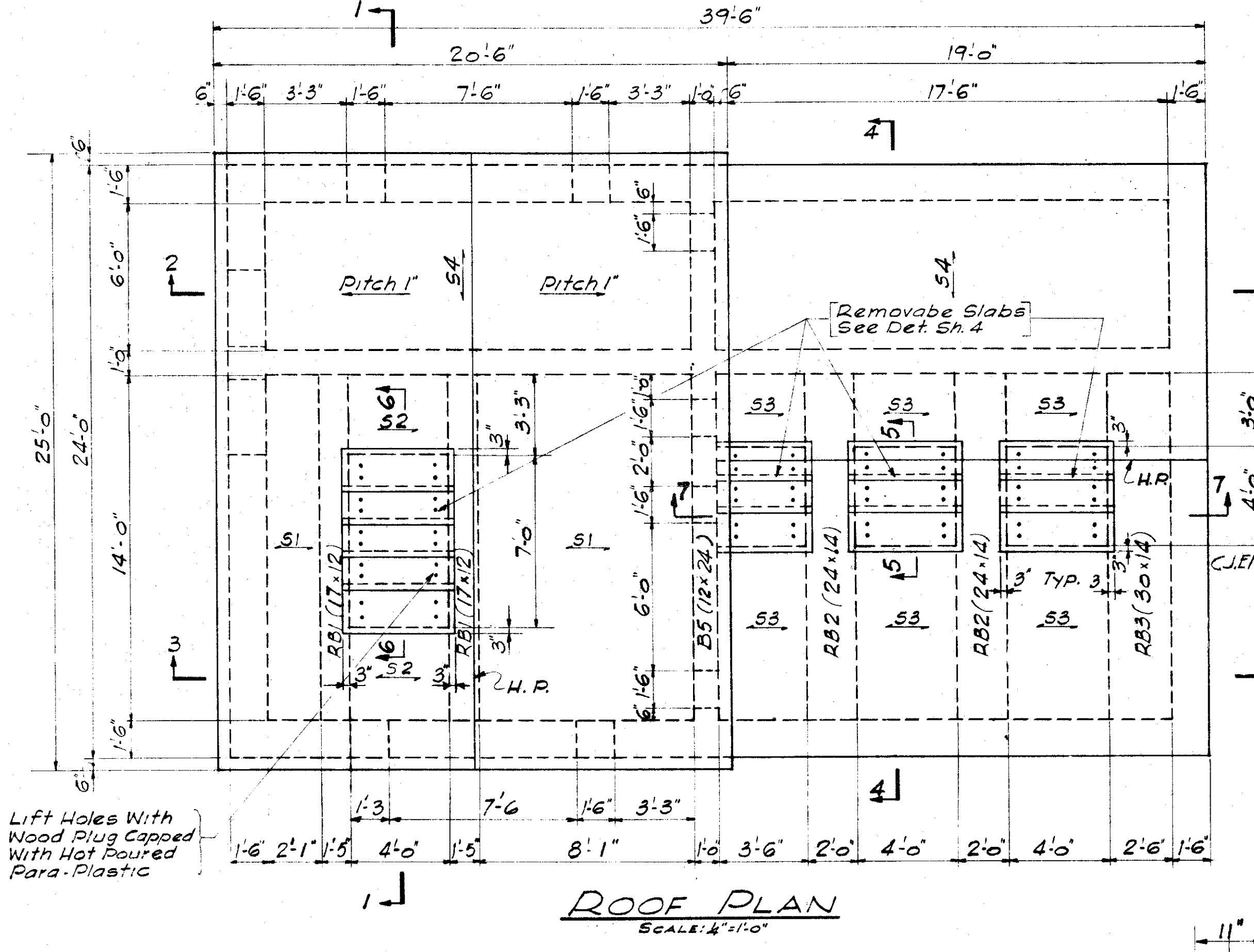
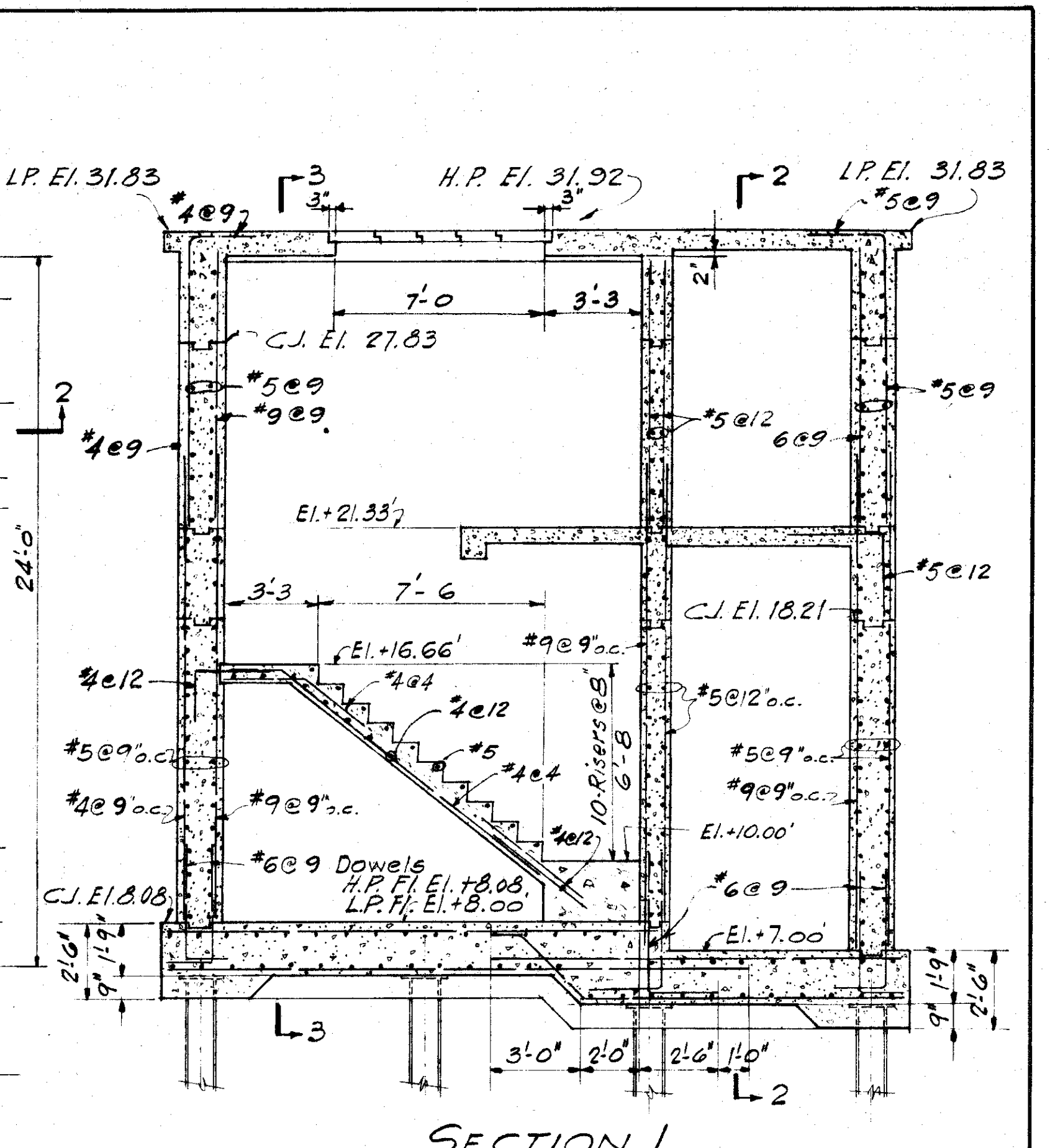
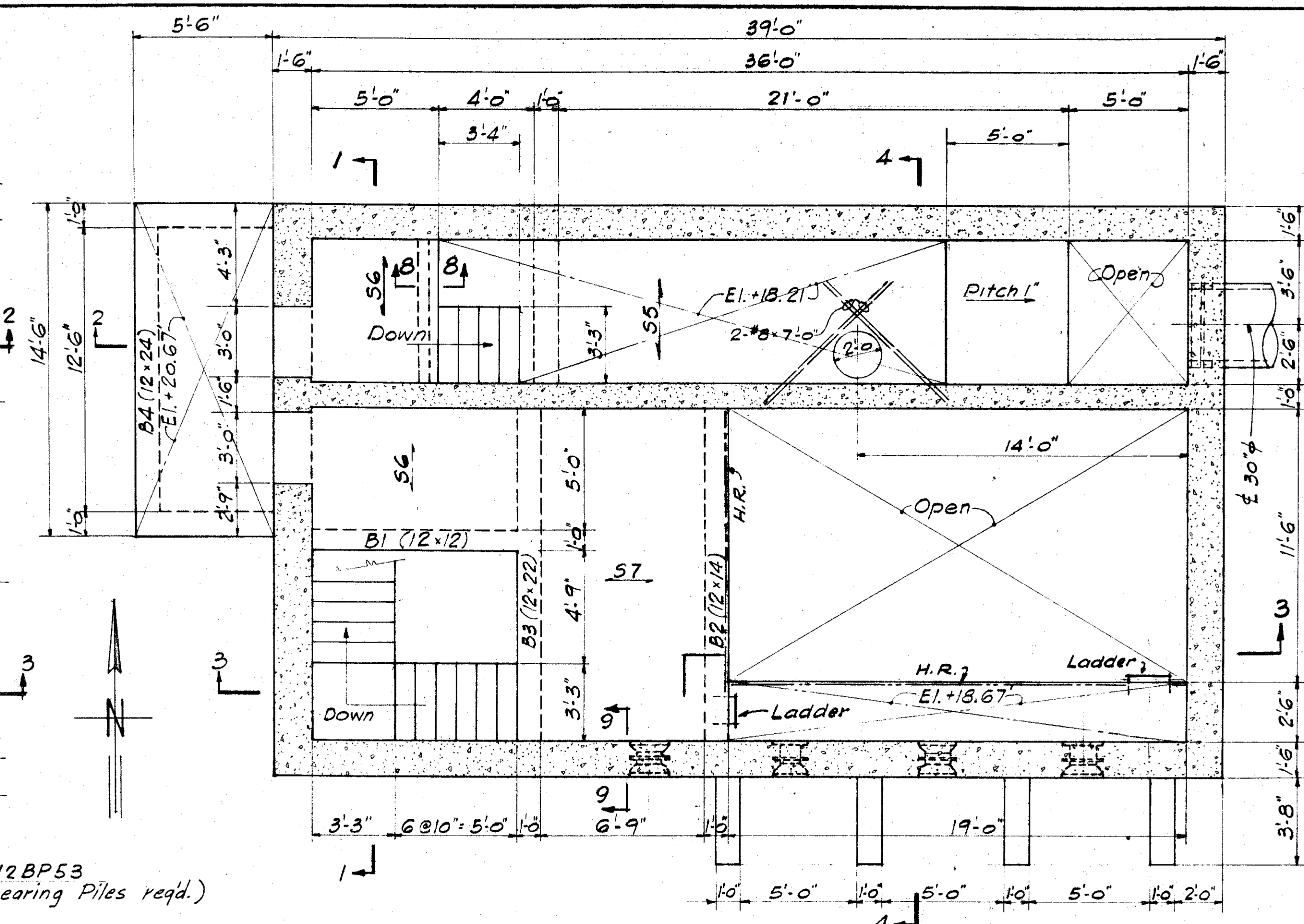
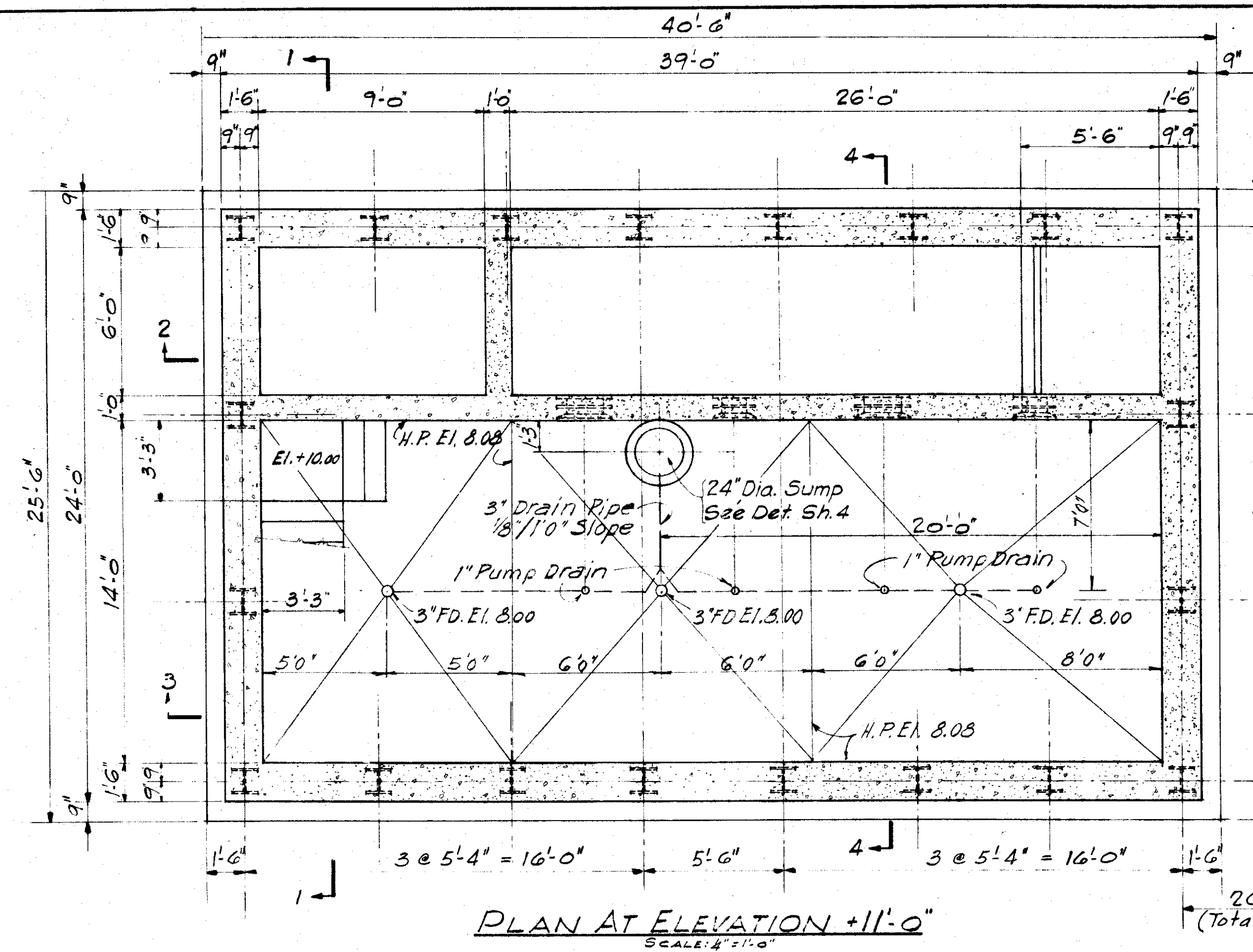
WATER PIPING DIAGRAM
NO SCALE

SEWER LINE LOCATION	
SEC. MAP No.	LINE No.
C-13-8	

CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
DIV. XG35 18TH STREET PUMPING STATION

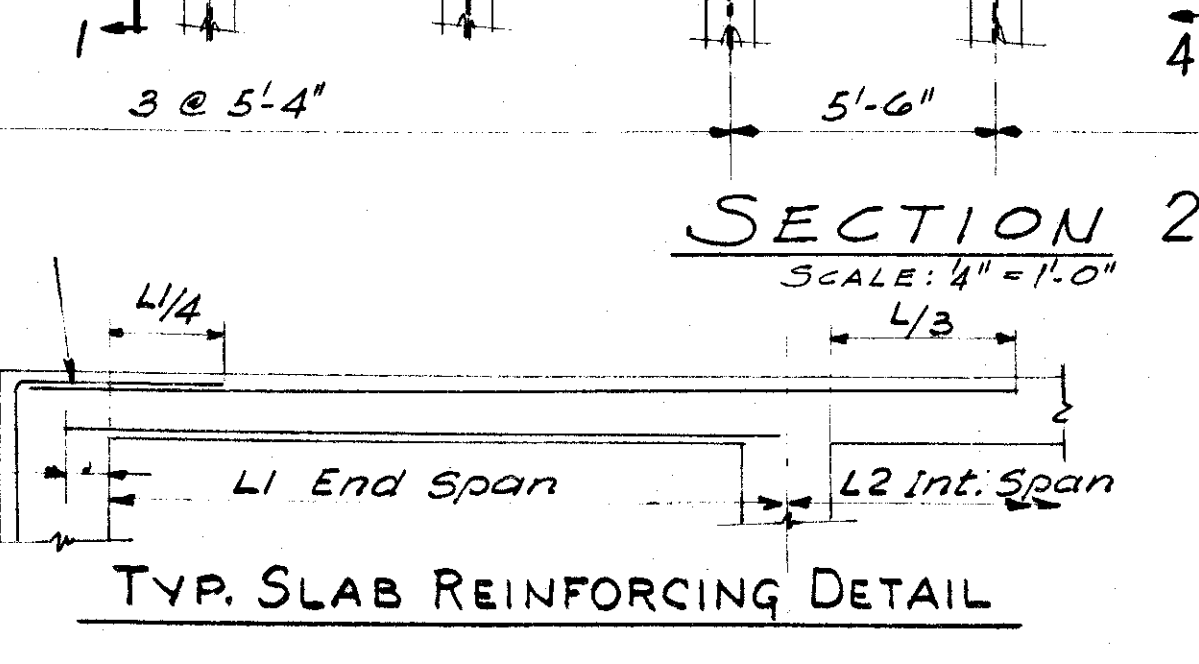
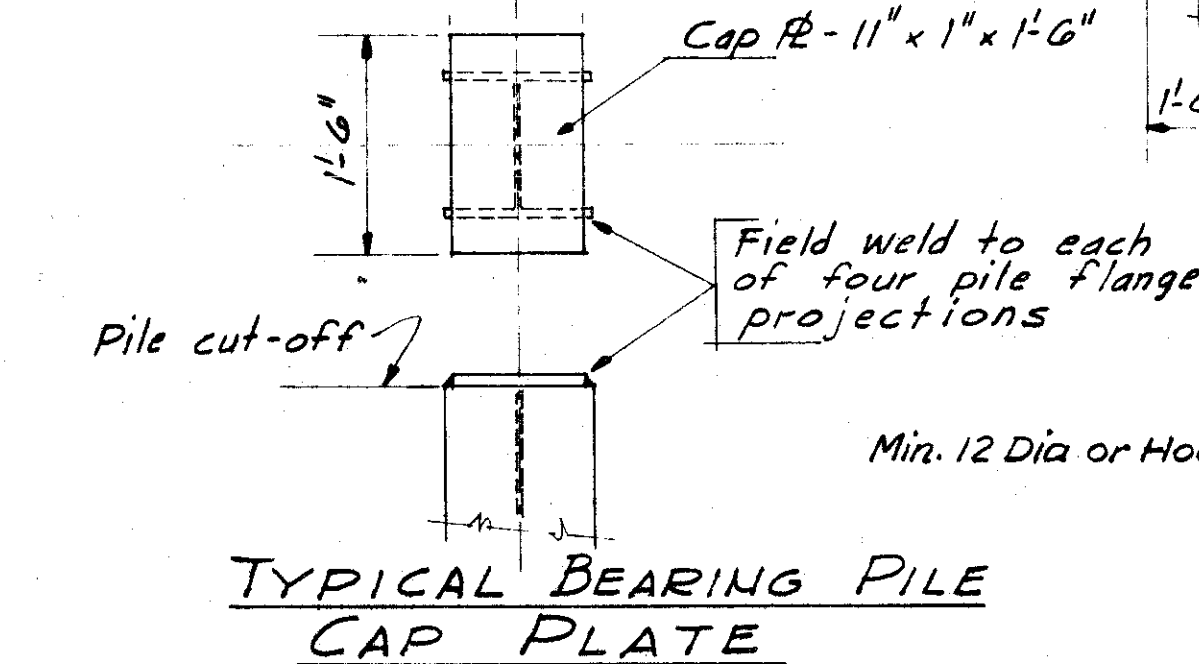
EQUIPMENT

DES. JBV	SCALE 1"=20'	SHEET
DR. JBV	10 0 10 20 30 40 50 FT	XG35-2
CHKD. REF/PBD	1 0 1 2 3 4 5 6 7 8 9 10 11 FT 1/4"=1'-0"	OF 5
DATE: MAY, 1957	1 0 1 2 3 FT 3/4"=1'-0"	



BEAM SCHEDULE						
Mark	Size	Steel	Stirrups	Stir. Spac.	Remarks	
	WxH	Str. Bent	No. Size Shape	Ea. End		
B1	12x12	2-#5	2-#5	6 #3	2	2 @ 6"
B2	12x14	2-#7	2-#7	8 #3	2	2, 3 @ 6"
B3	12x22	2-#8	2-#7	8 #3	2	2, 3 @ 6"
B4	12x24	2-#5 TOP	2-#8 BOT.	#3	2	2 @ 6" Cont. @ 12"
B5	12x24	2-#5 TOP	2-#8 BOT.	#3	2	2, 3 @ 6" Cont. @ 12"
RB1	17x12	2-#7	2-#6	8 #3	2	2, 3 @ 6"
RB2	24x14	2-#8	2-#8	8 #3	2	2, 3 @ 6"
RB3	30x14	2-#8	2-#8	8 #3	2	2, 3 @ 6"

SLAB SCHEDULE				
Mark	Depth	Main Reinf.	Temp. Reinf.	Remarks
S1	Varies	5 @ 6" Top & Bot.	4 @ 12" Bot.	
S2	Varies	5 @ 6" Top & Bot.	4 @ 12" Bot.	Top Bars From S1
S3	Varies	5 @ 12" Top & Bot.	4 @ 12" Bot.	Top Bars - Continuous
S4	Varies	5 @ 12" Top & Bot.	4 @ 12" Bot.	Top Bars Extend Into Adj. Slab
S5	9"	5 @ 12" Top & Bot.	4 @ 12" Bot.	
S6	8"	5 @ 12" Top & Bot.	4 @ 12" Bot.	Top Bars - Cont.
S7	8"	5 @ 12" Top & Bot.	4 @ 12" Bot.	



NOTE:
Piles To Be - 12 BP 53
Pile Cut - Off:
a) North Group of 10 Piles - El. + 5.2'
b) South Group of 10 Piles - El. + 6.2'

GREELEY AND HANSEN
ENGINEERS
CHICAGO, ILL.

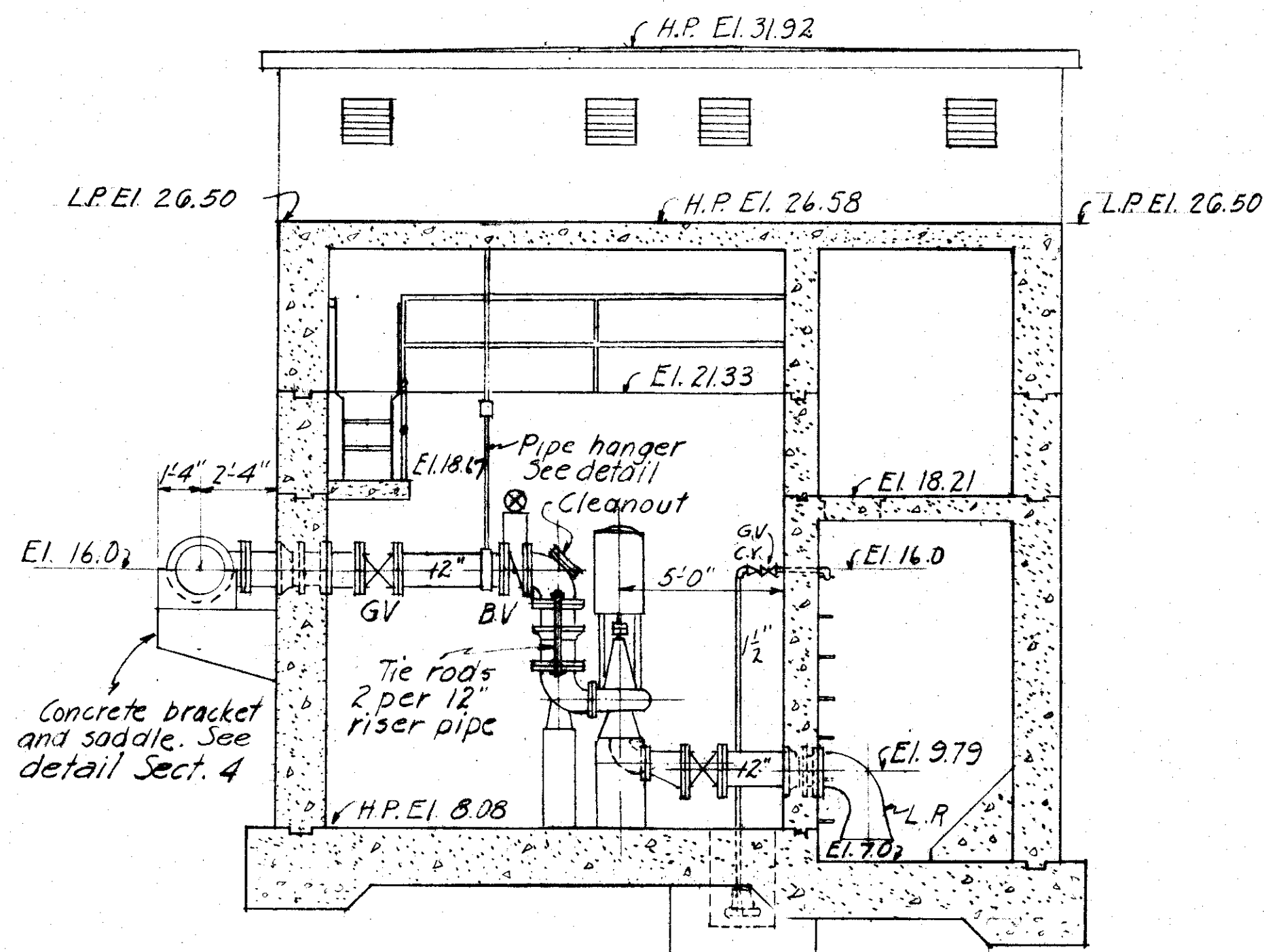
CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
DIV. XG35 18TH STREET PUMPING STATION

STRUCTURAL

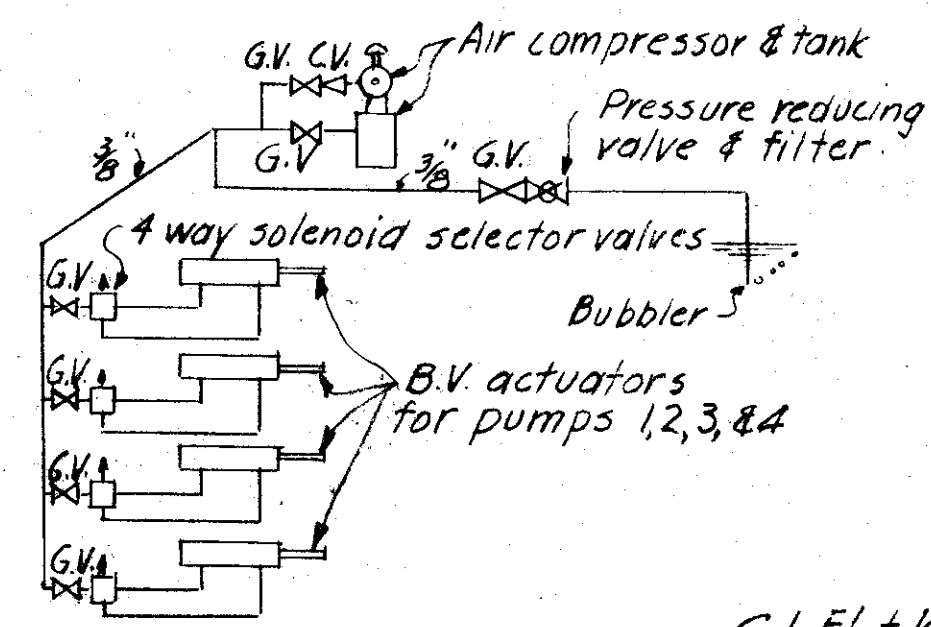
DES. J.M.
DR. H.M.
CKD. M.K.
DATE: MAY, 1957

SCALE
1" = 1'-0"

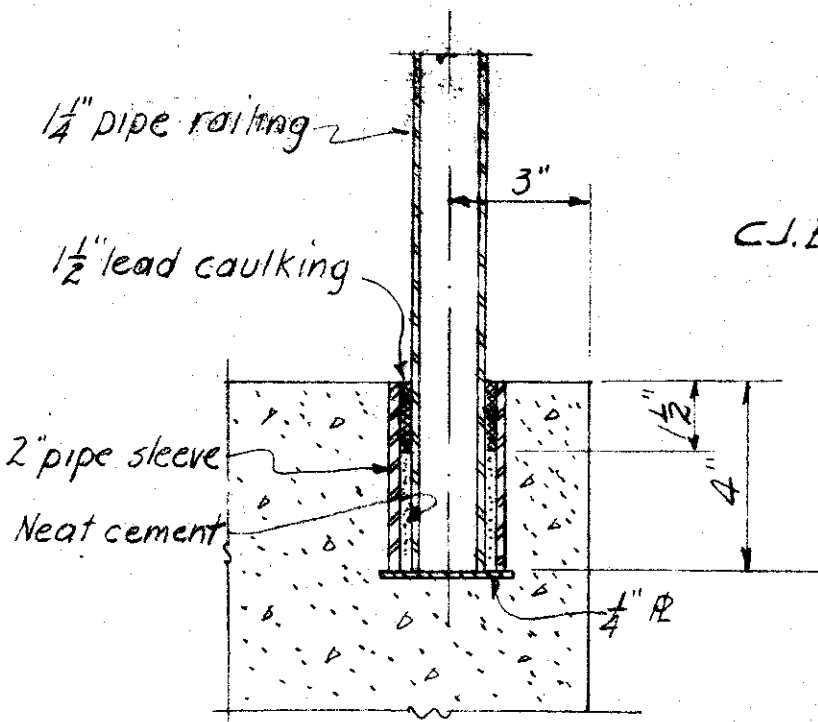
SHEET
XG35-3
OF 5



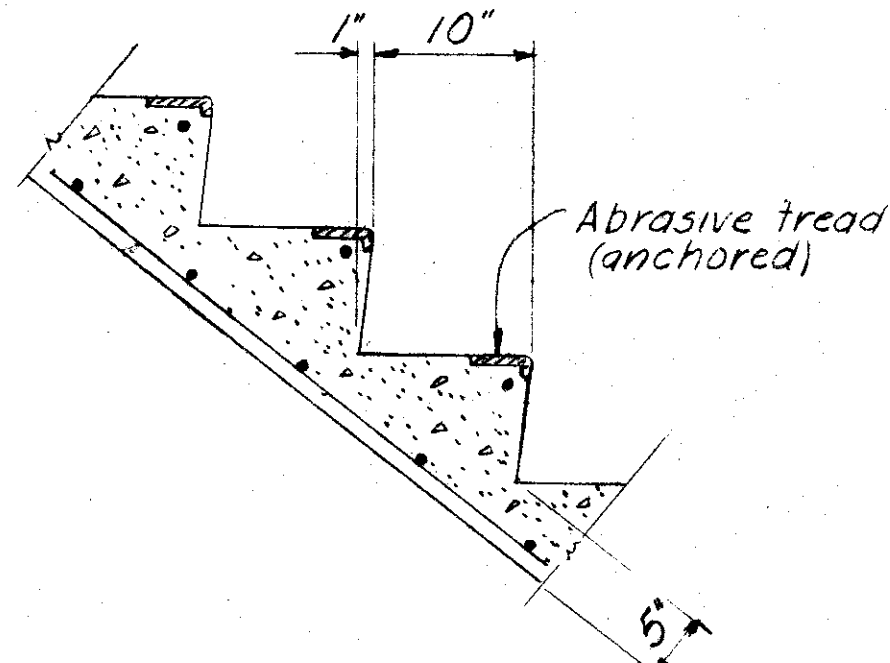
SECTION C
SCALE: 1/4" = 1'-0"



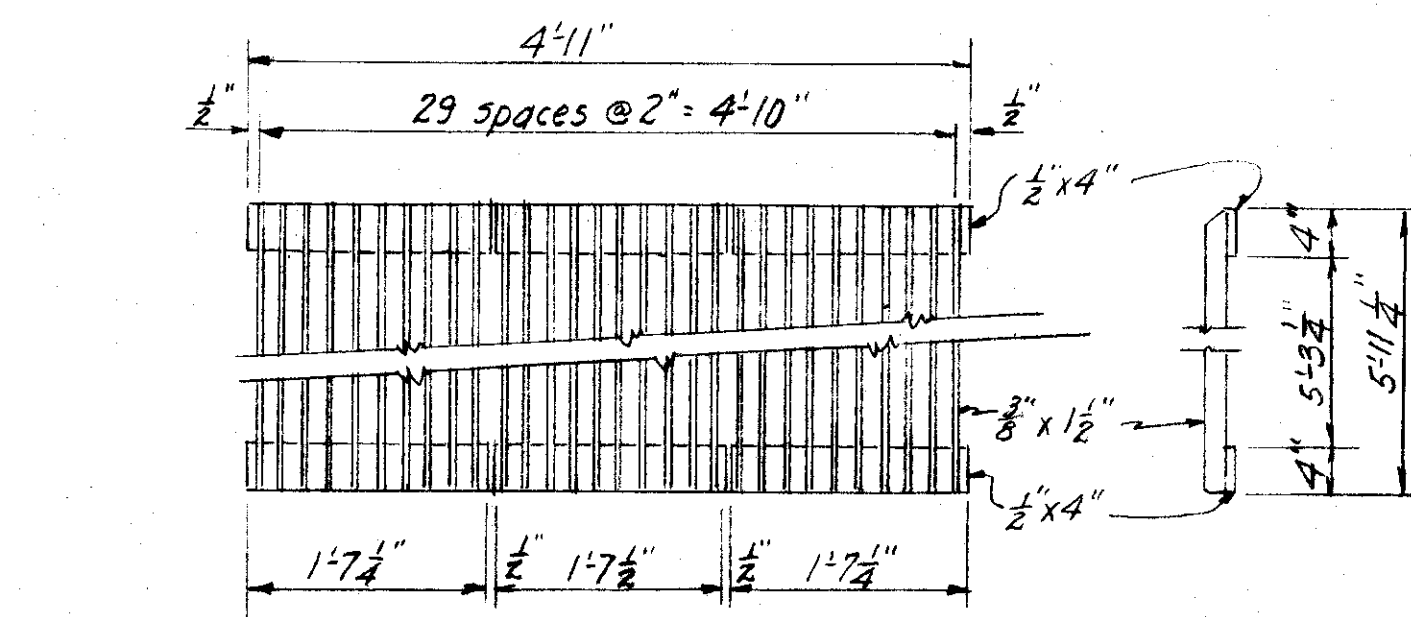
AIR PIPING DIAGRAM
NO SCALE



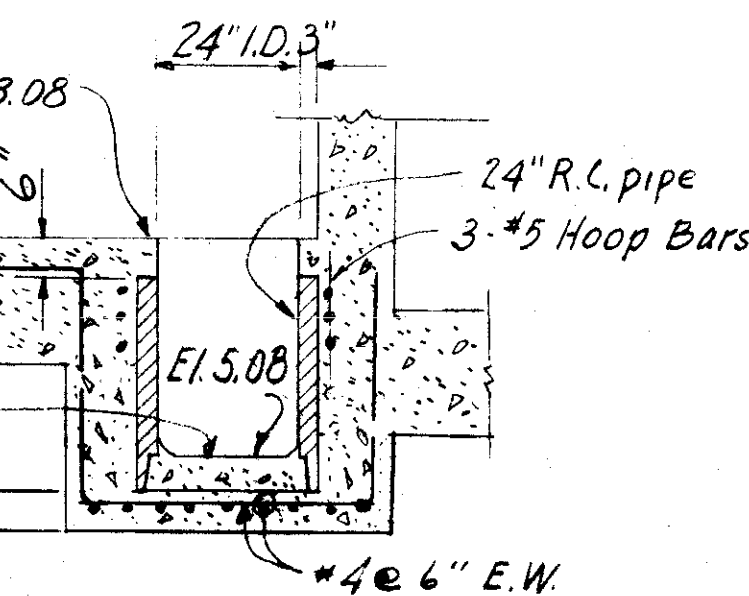
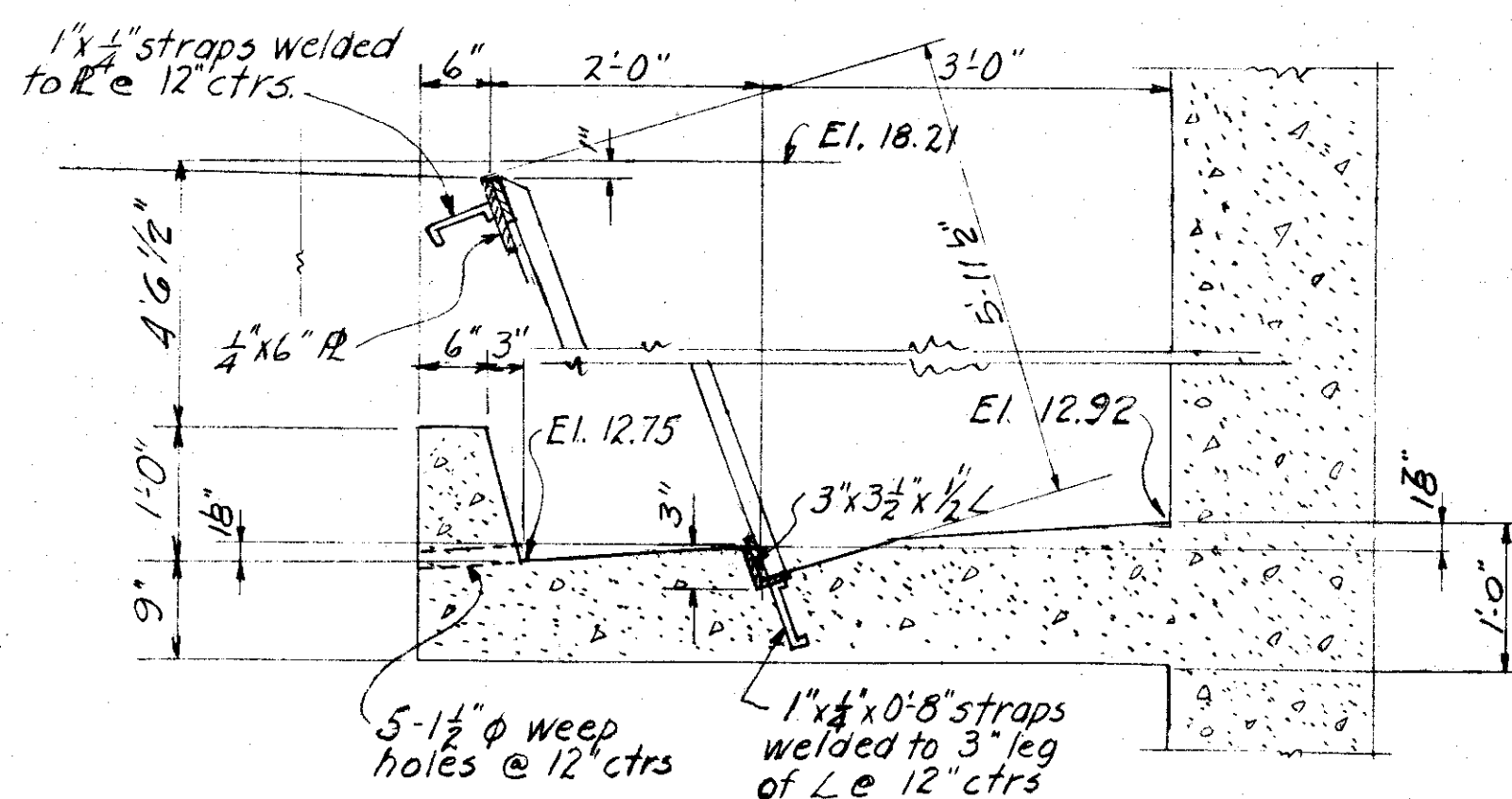
RAILING SUPPORT DETAIL
SCALE: 3" = 1'-0"



STAIR DETAIL
SCALE: 1" = 1'-0"

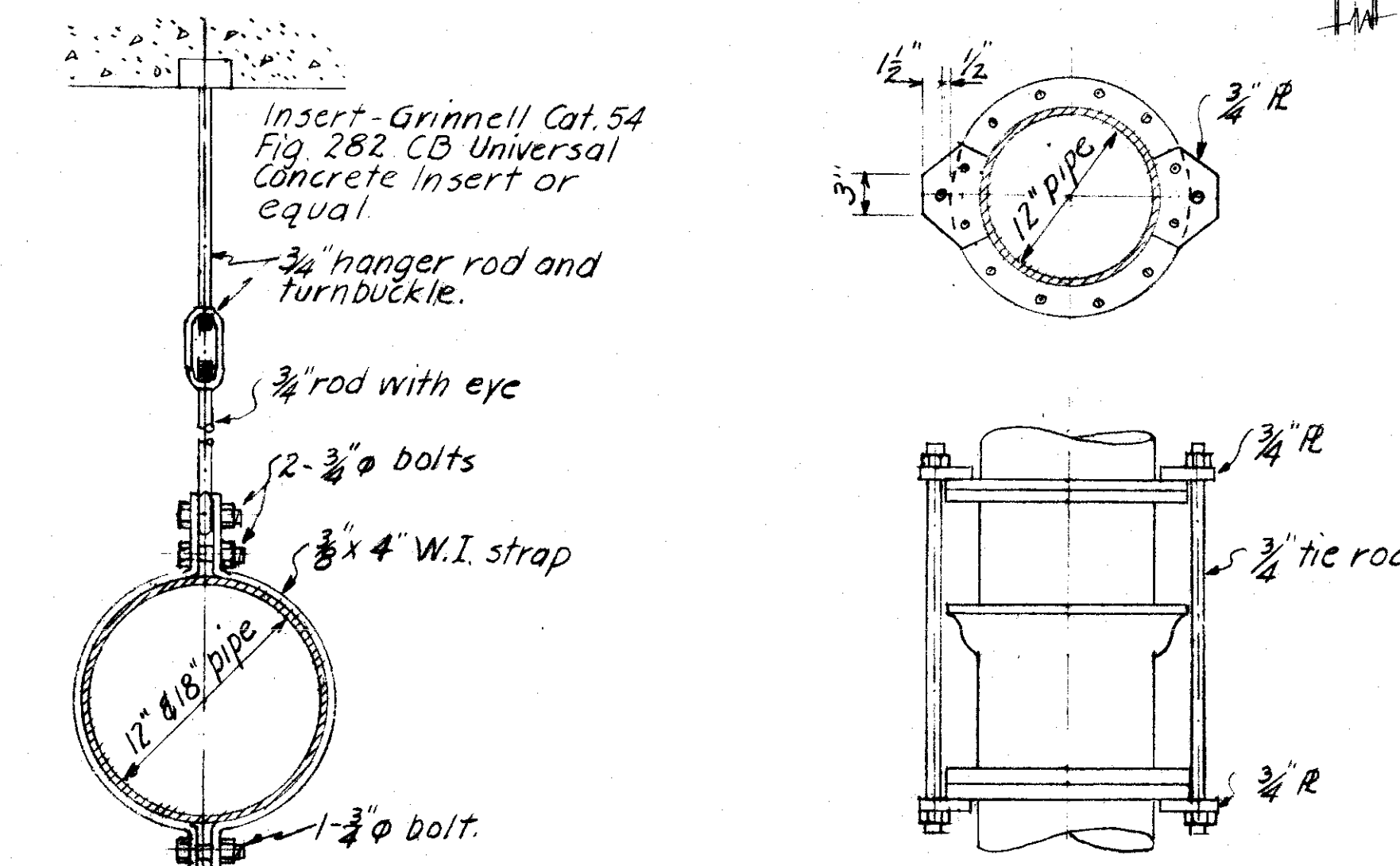


DETAIL OF BAR SCREEN AND SUPPORT
SCALE: 3/8" = 1'-0"

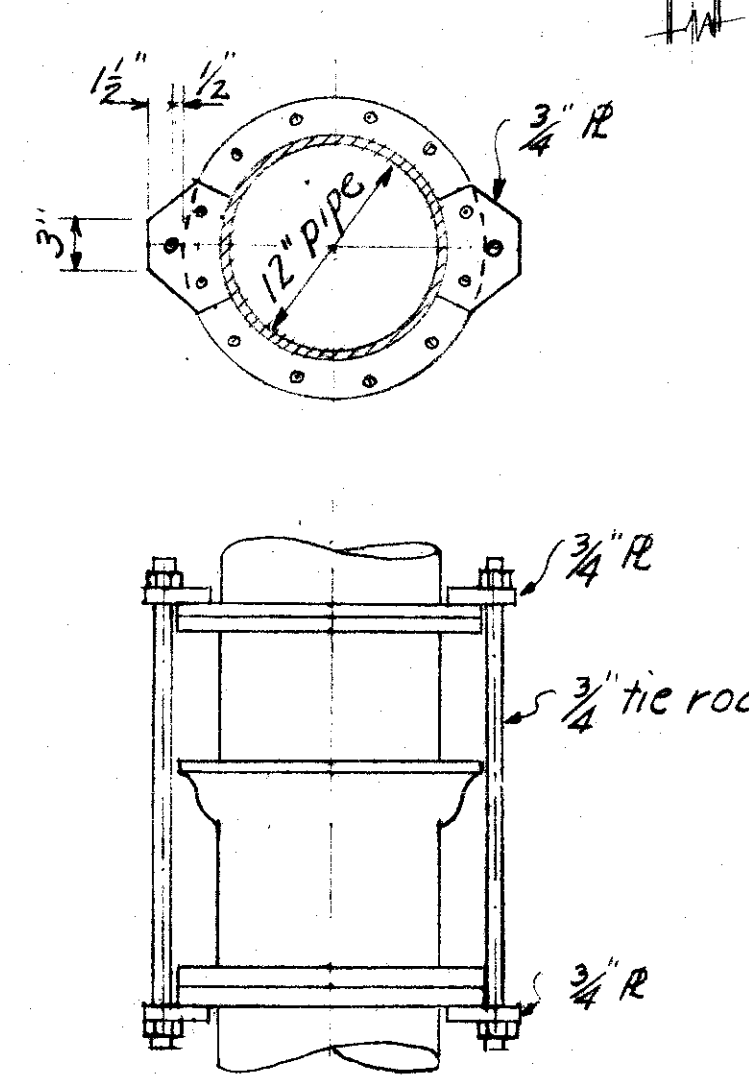


SUMP DETAIL
SCALE: 3/8" = 1'-0"

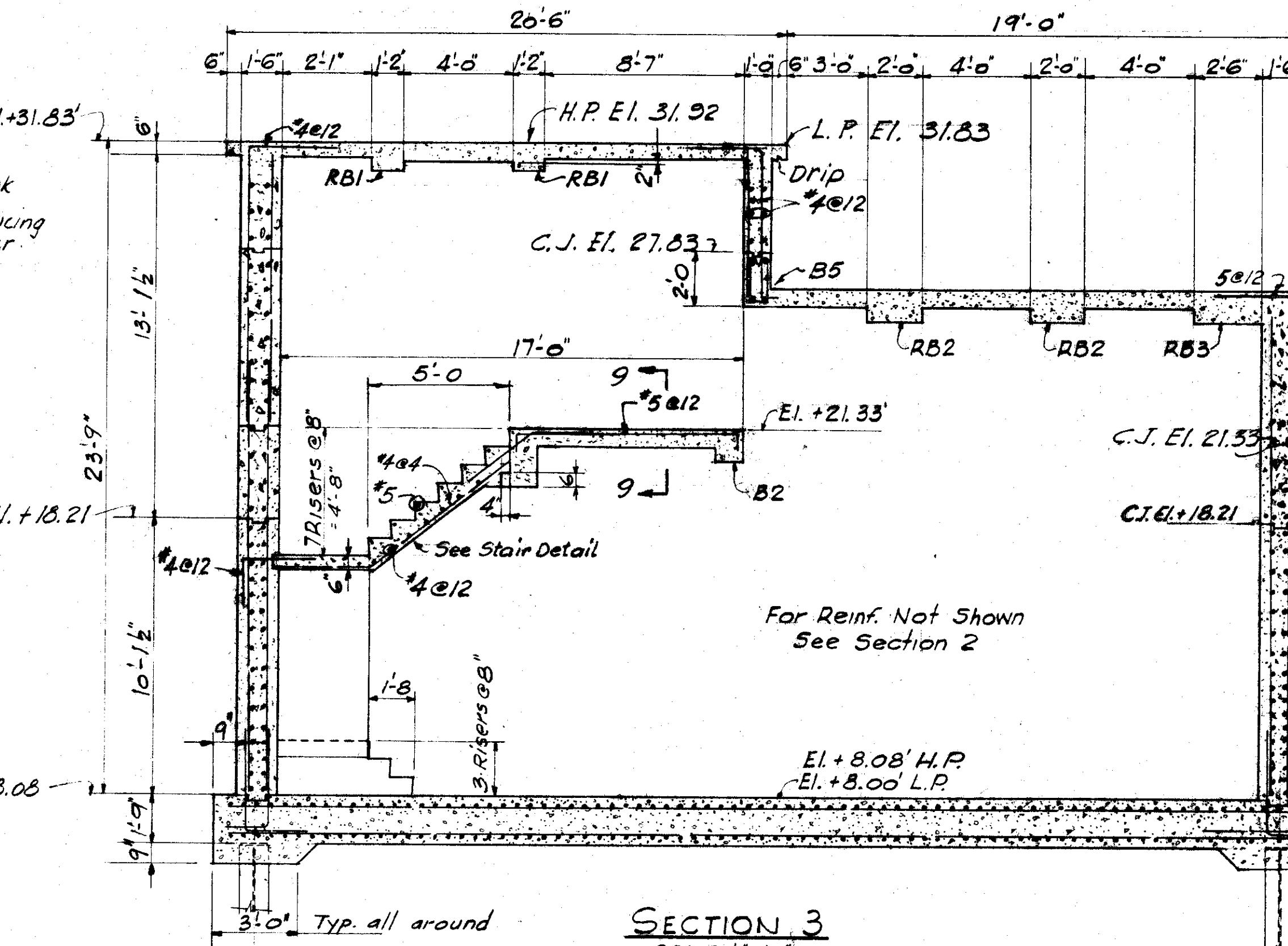
GREELEY AND HANSEN
ENGINEERS
CHICAGO, ILL.



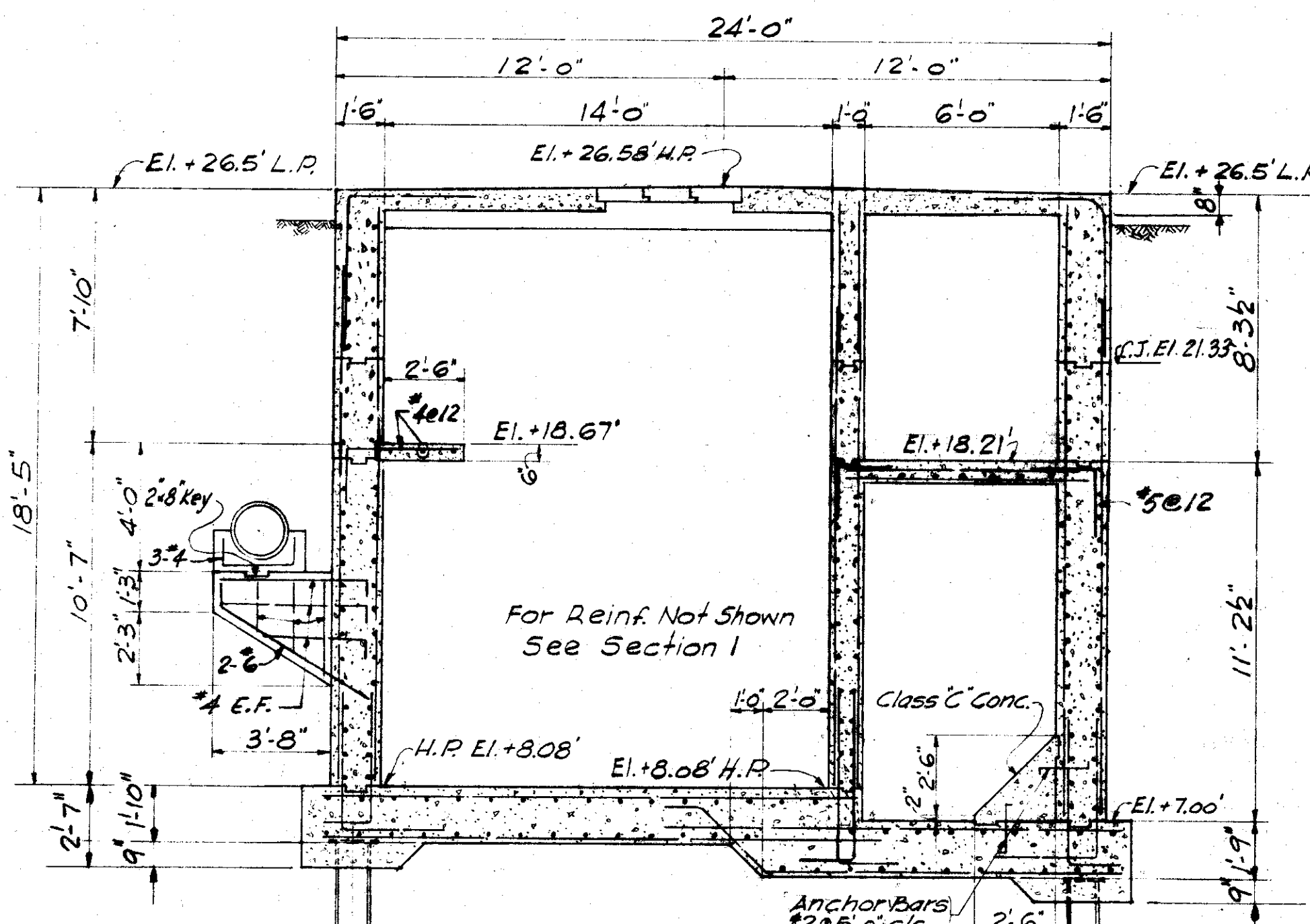
PIPE HANGER DETAIL
SCALE: 1" = 1'-0"



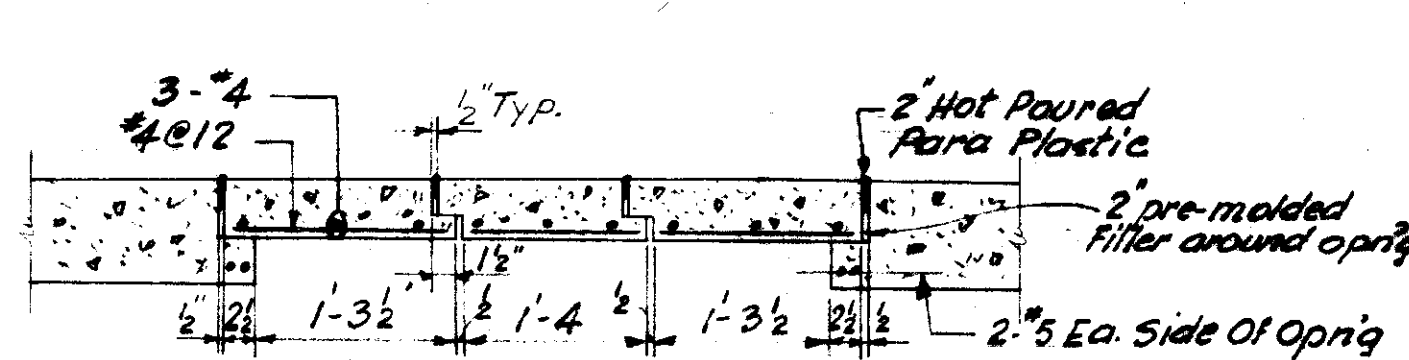
TIE ROD DETAIL
SCALE: 1" = 1'-0"



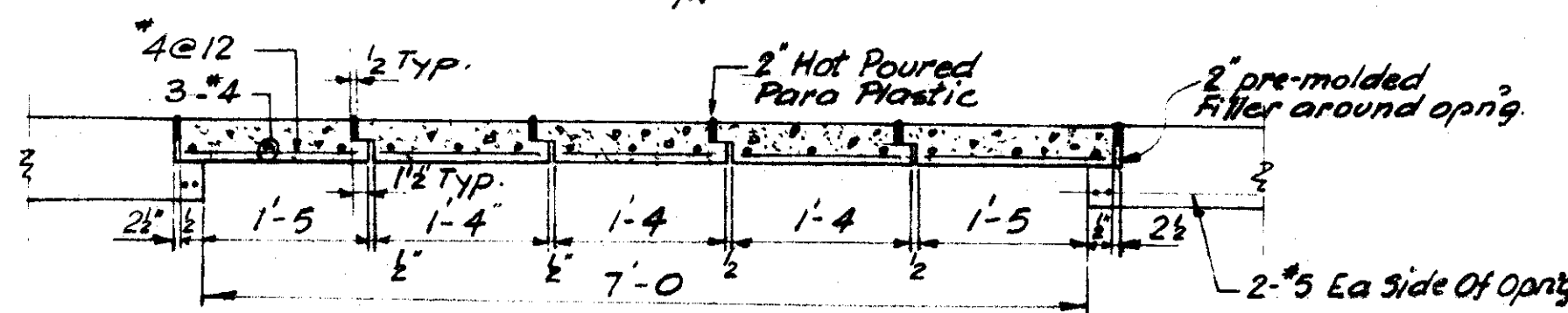
SECTION 3
SCALE: 1/4" = 1'-0"



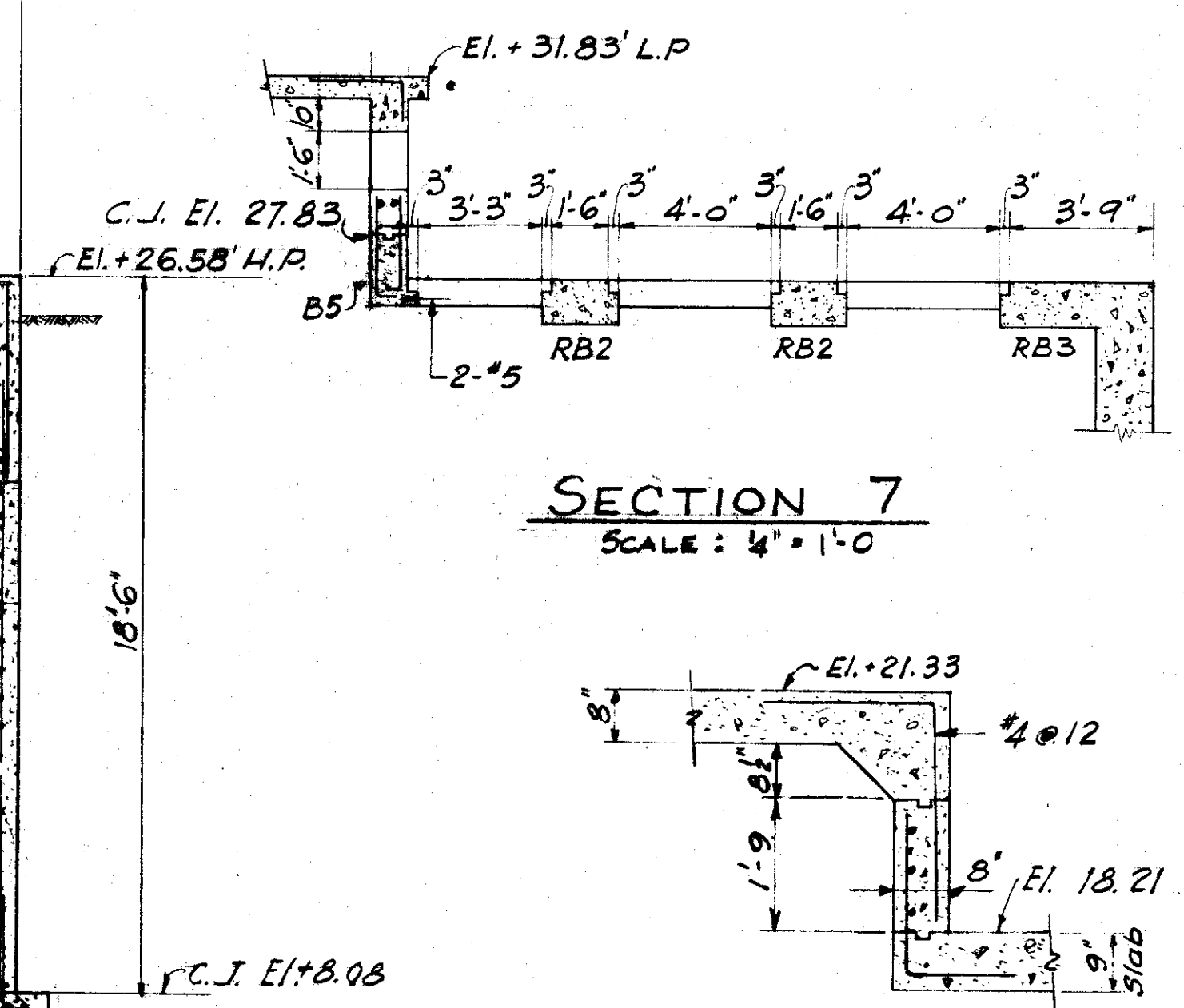
SECTION 4
SCALE: 1/4" = 1'-0"



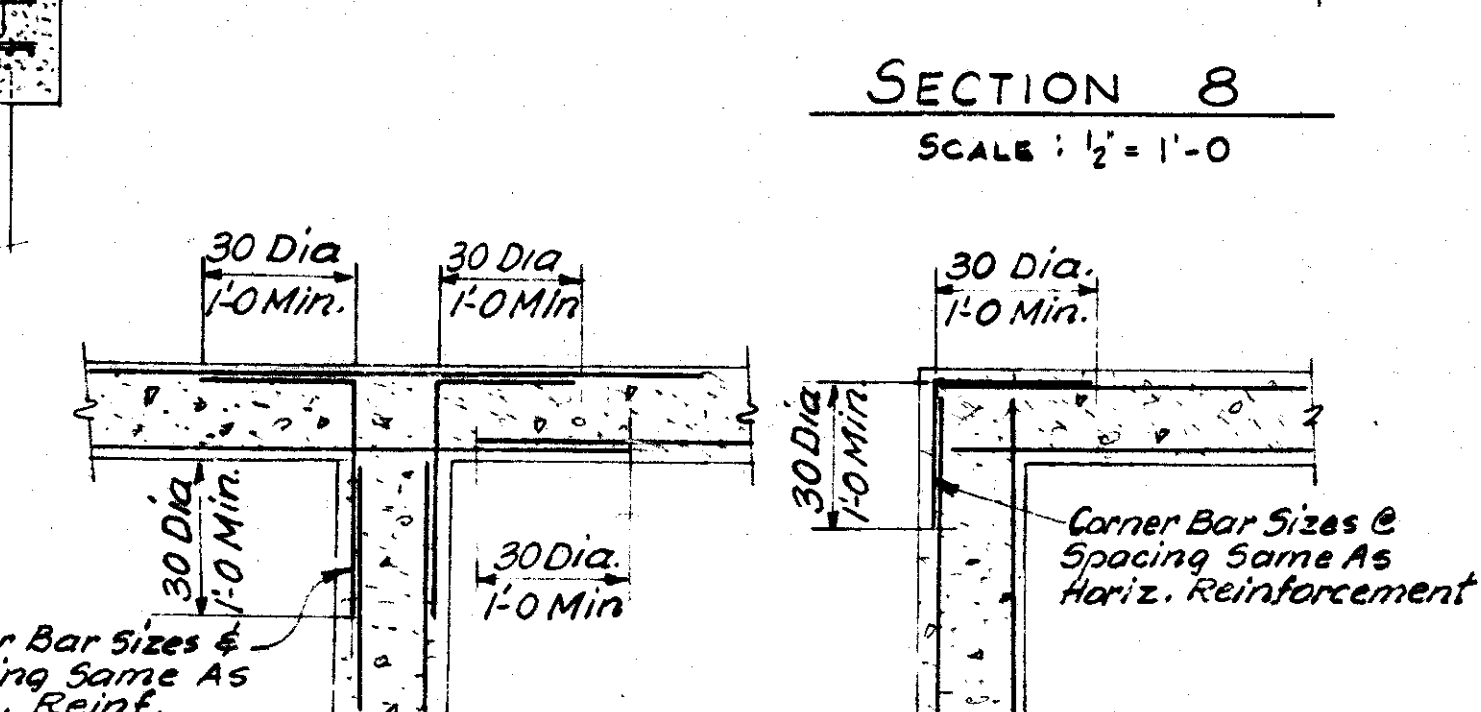
SECTION 5
SCALE: 3/4" = 1'-0"



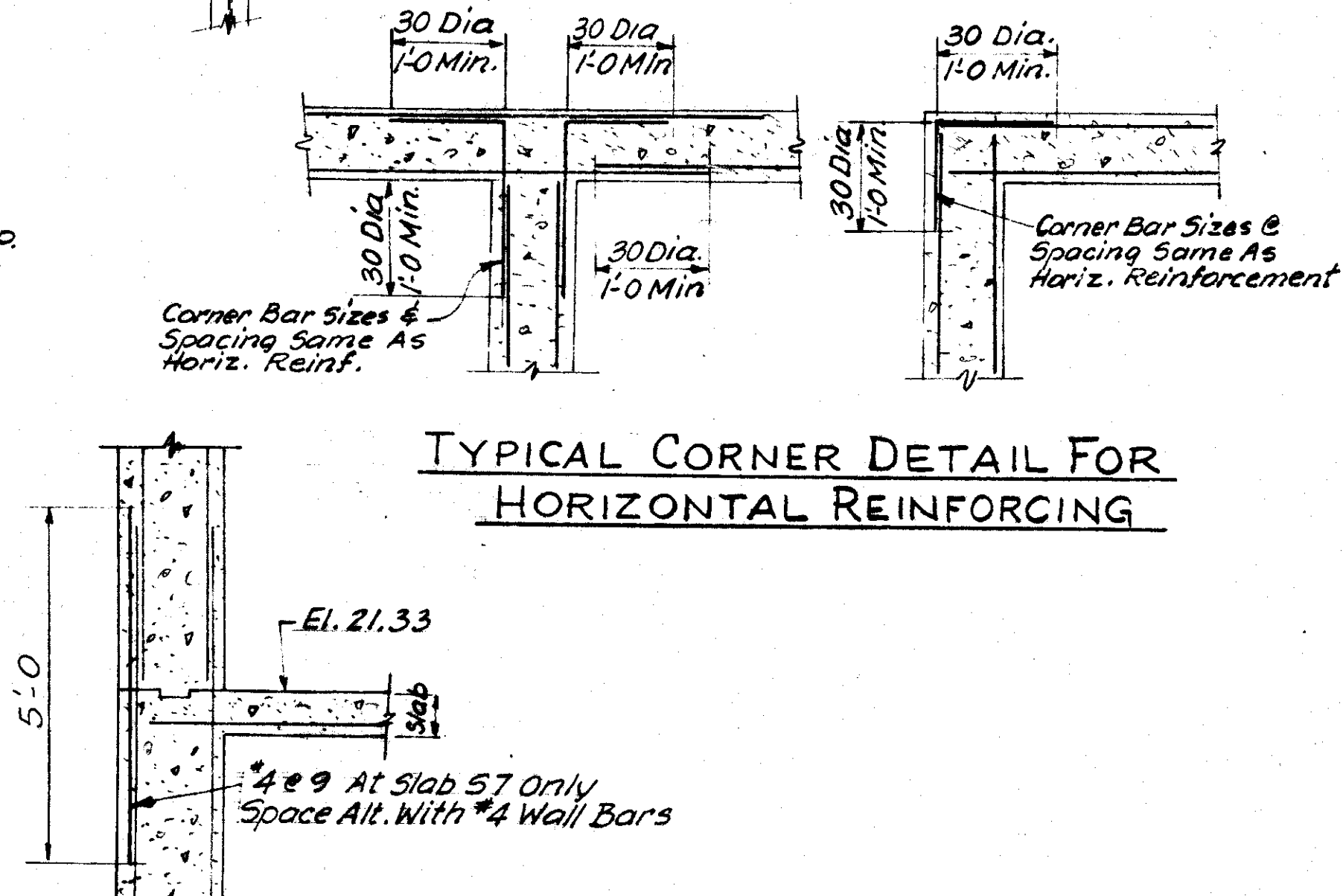
SECTION 6
SCALE: 3/4" = 1'-0"



SECTION 7
SCALE: 1/4" = 1'-0"



SECTION 8
SCALE: 1/2" = 1'-0"



TYPICAL CORNER DETAIL FOR
HORIZONTAL REINFORCING

SECTION 9
SCALE: 1/2" = 1'-0"

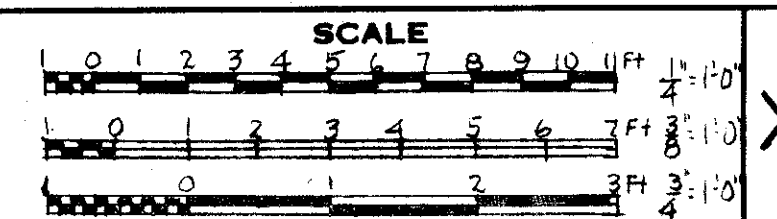
GENERAL NOTES

All reinforcing bars shall be lapped at least 30 bar diameters at splices and around corners.
All keys are 2" x 4" unless otherwise shown.
Structure is figured stable for high water at El. +20.67
Live loads:
Floors and roofs — 150 * /a'
Steel H - Piles are figured for a capacity of 62 tons at refusal.
Approximate average pile penetration is 35 feet.
All openings in walls at location of wall castings shall be reinforced with diagonal bars - 4 ways, each face. Bars to be same size as main steel at location.

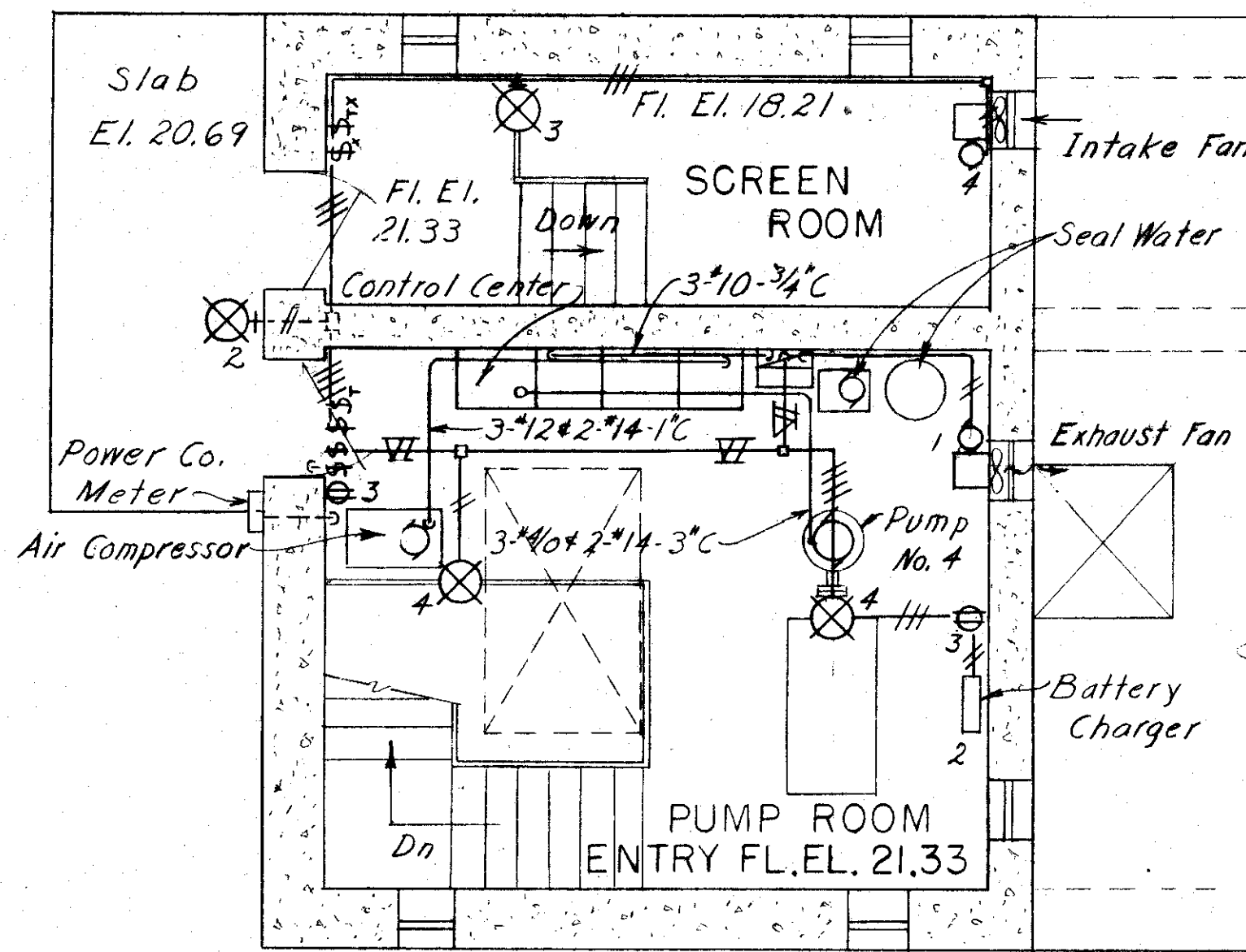
CITY OF TAMPA, FLORIDA
SEWAGE DISPOSAL SYSTEM
DIV. XG35 18TH STREET PUMPING STATION

EQUIPMENT AND STRUCTURAL

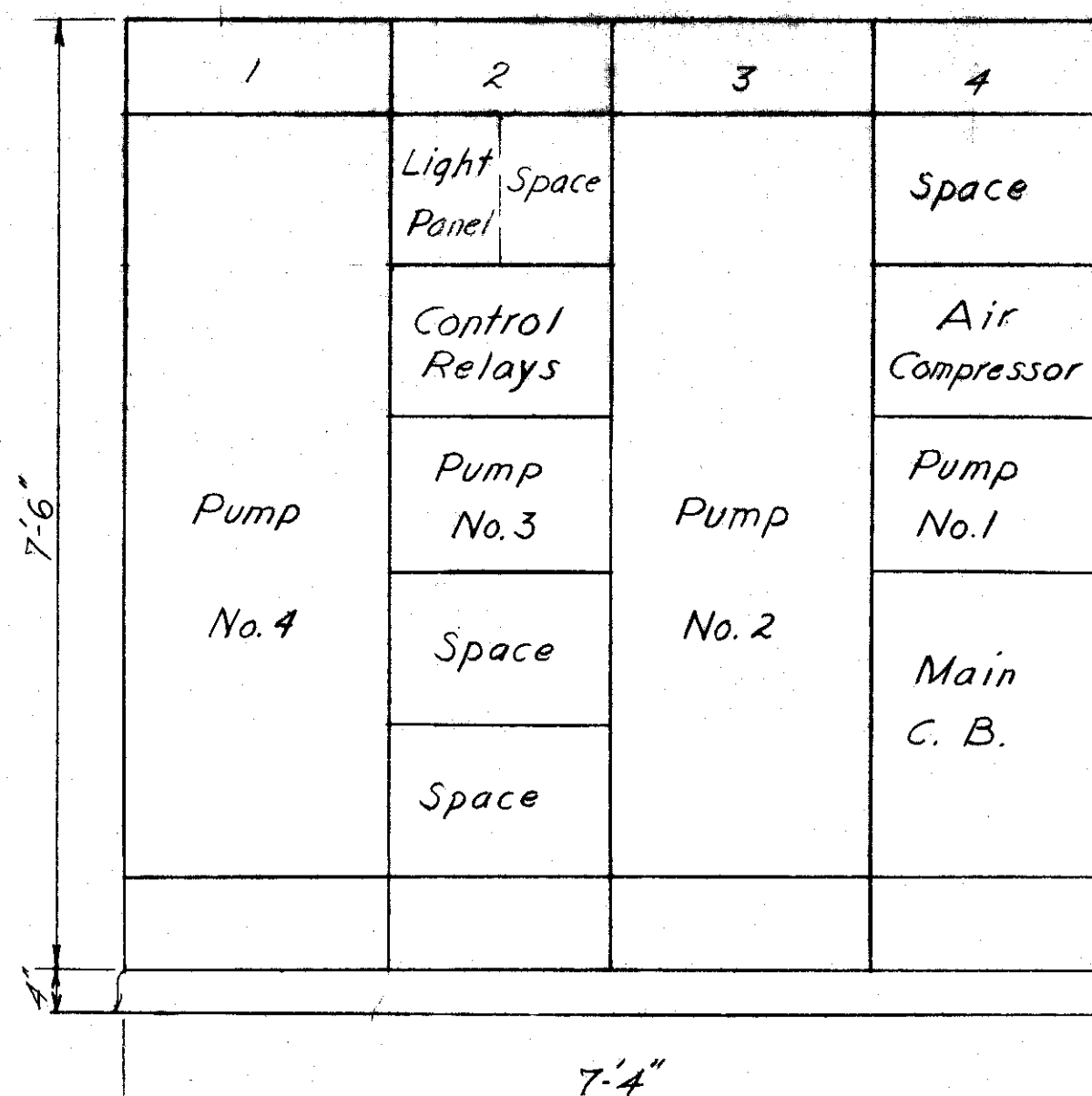
DES. JBV, JMI
DR. JBV, HM
CHKD. REF. PDD, MK
DATE:
MAY, 1957



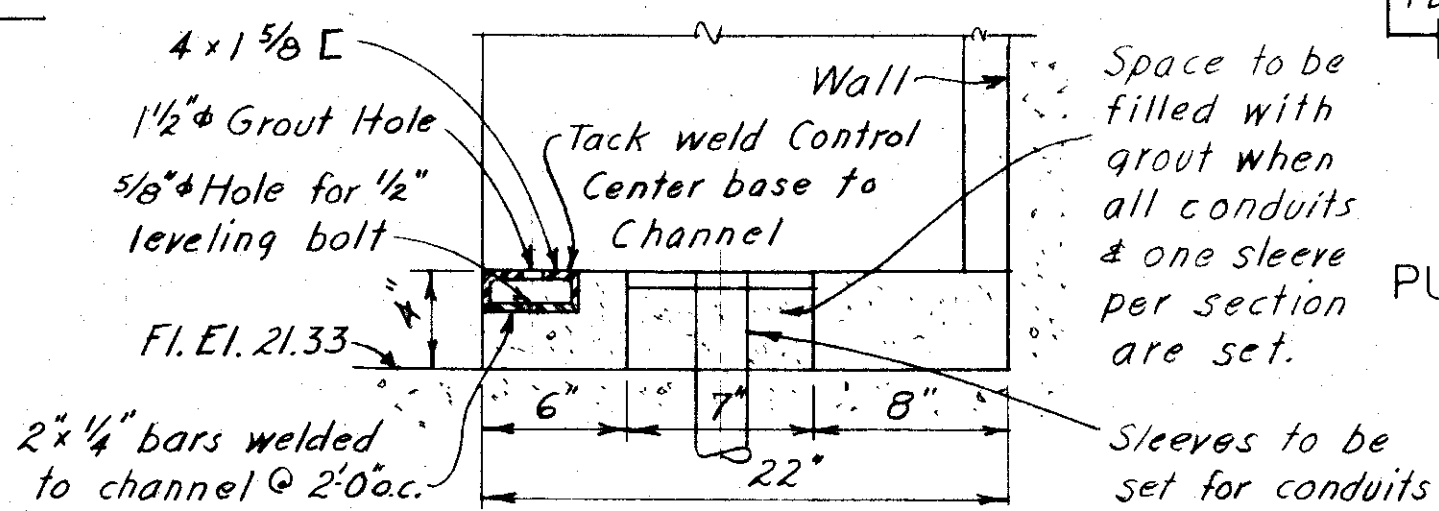
SHEET
XG35-4
OF 5



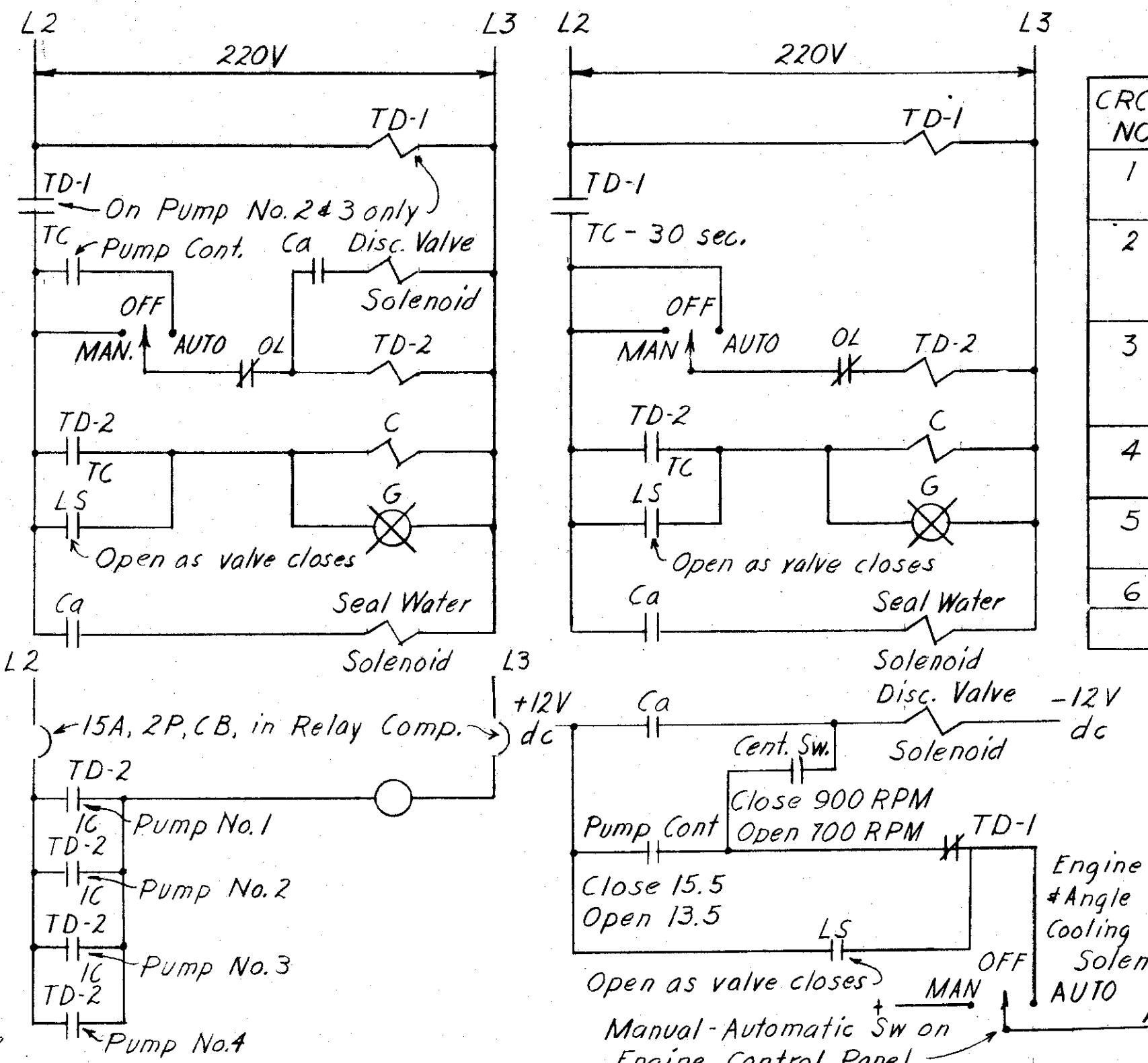
PLAN EL. 21.33



POWER CONTROL CENTER ELEVATION NOT TO SCALE



CONTROL CENTER BASE DETAIL NOT TO SCALE



CONTROL DIAGRAMS

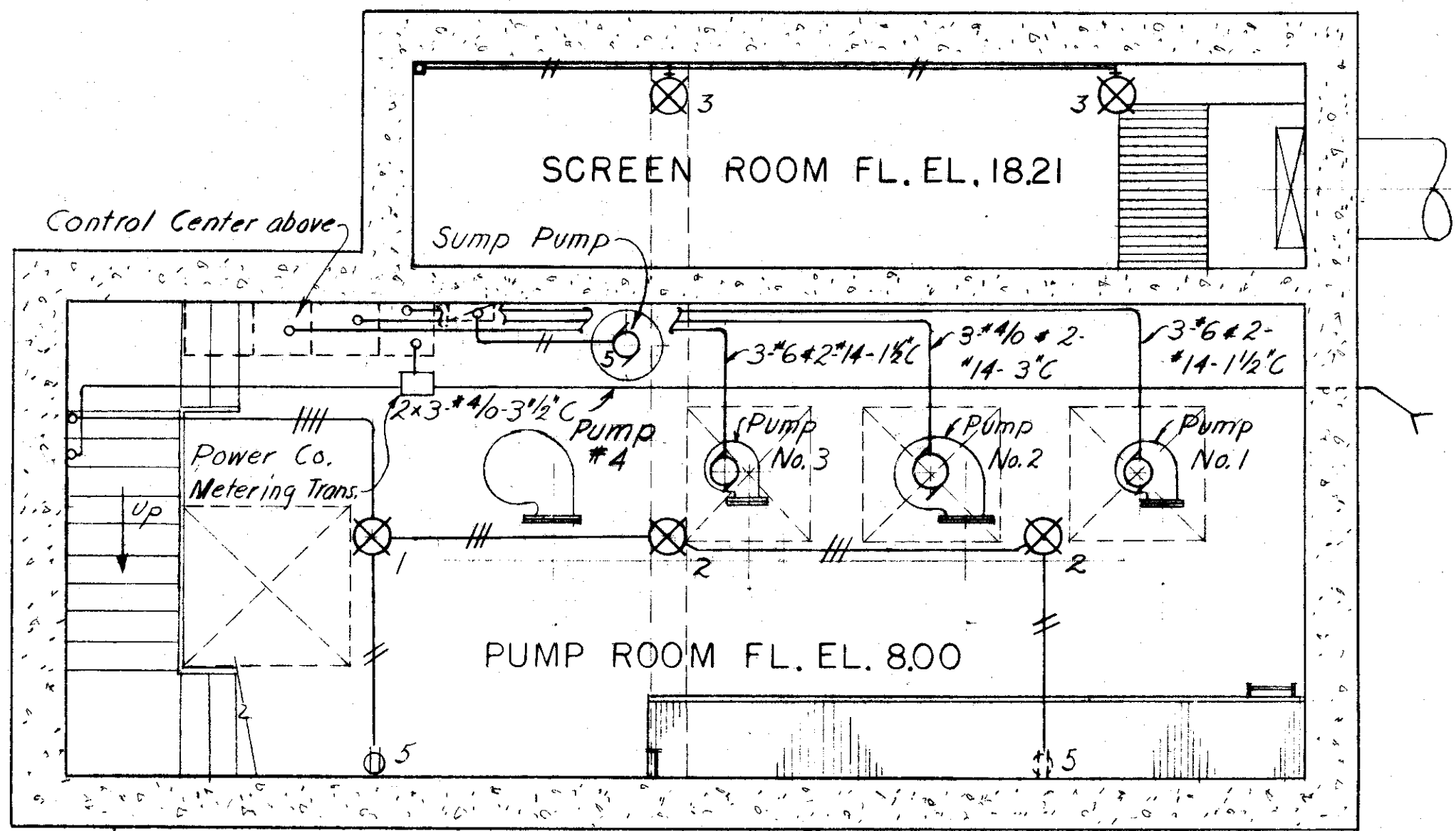
PUMP MOTORS NO. 1, 2, & 3 PUMP MOTOR NO. 4 NO SCALE

LIGHTING CIRCUIT SCHEDULE

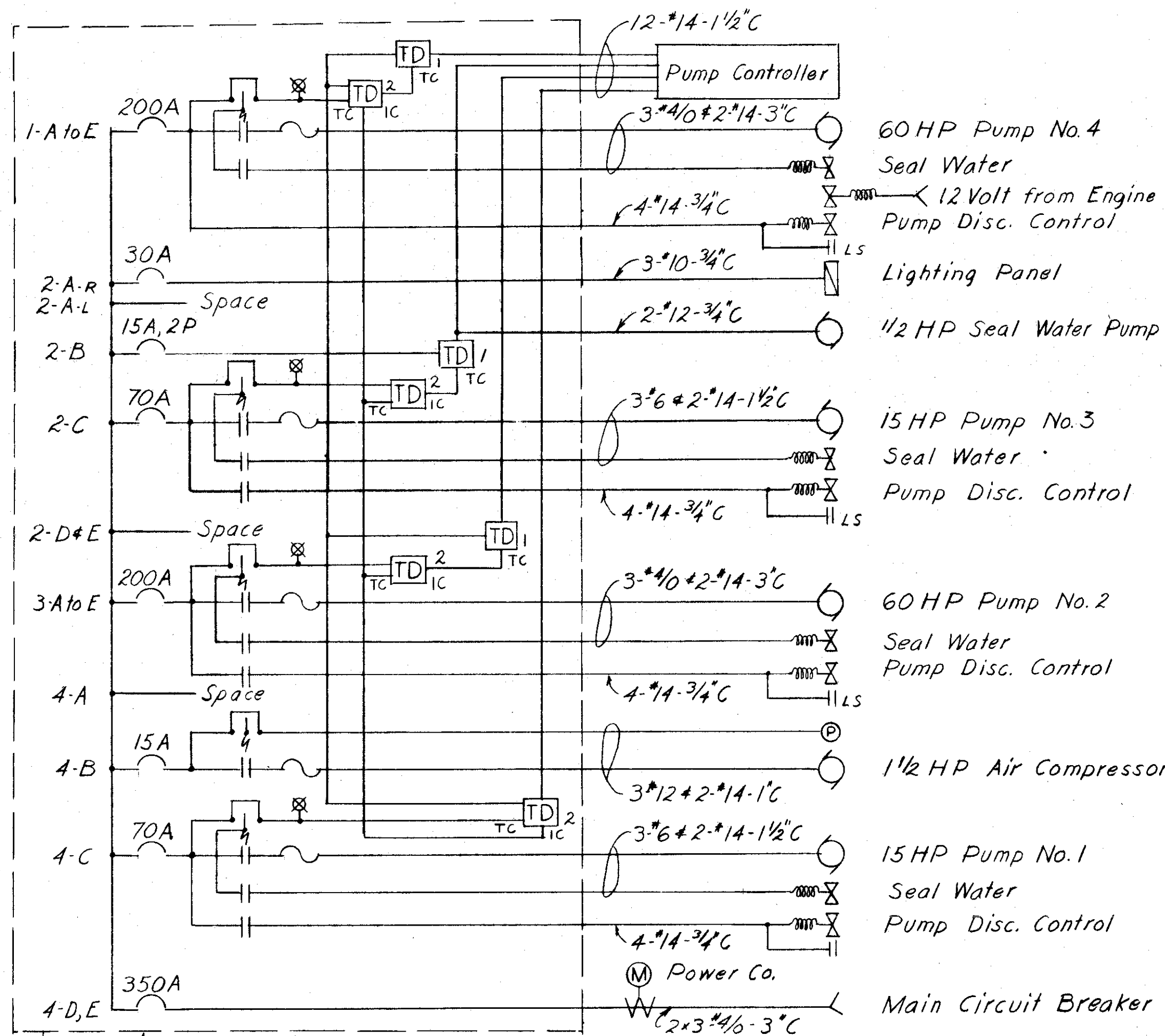
CRCT NO	LOCATION	FLOOR ELEV.	MGT HGT	FIXTURE TYPE	LIGHTS MOTORS	R _E C	TOTAL WATTS	REMARKS	
1	Pump Room Entry	21.33	—	—	1/3 HP	—	—	Exhaust Fan	
2	Pump Room West	8.00	8'-0"	B-1	1-300	—	900	Battery Charger	
	Pump Room East	8.00	8'-0"	B-1	2-300	—	—		
	Entrance	20.69	7'-9"	H-1	1-150	—	950		
3	Screen Room Entry	21.33	7'-0"	B-2	1-200	—	—	Intake Fan	
	Screen Room	18.21	6'-0"	B-2	2-200	—	—		
4	Pump Room Entry	21.33	3'-6"	—	—	2	960		
5	Screen Room	18.21	—	—	1/3 HP	—	—	Sump Pump	
	Pump Room Entry	21.33	8'-0"	B-1	2-300	—	1200		
6	Pump Room	8.00	—	—	1/3 HP	—	—	Sump Pump	
	"	8.00	3'-6"	—	—	2	960		
TOTAL WATTS							4970		

LIGHTING FIXTURE SCHEDULE

TYPE	NO OF UNITS	DESCRIPTION
B-1	5	Benjamin 'Turnlox' pendent fixture with RLM dome reflector - Catalog No. 7644
B-2	3	Benjamin explosion-proof bracket fixture for 200W lamp, with symmetrical angle reflector, without guard & tapped for 3/4" conduit - Catalog No. 7565-BX.
H-1	1	Holophane outdoor bracket fixture for 150W lamp, with asymmetric light distribution along the mounting surface - Catalog No. 415



PLAN EL. 8.00

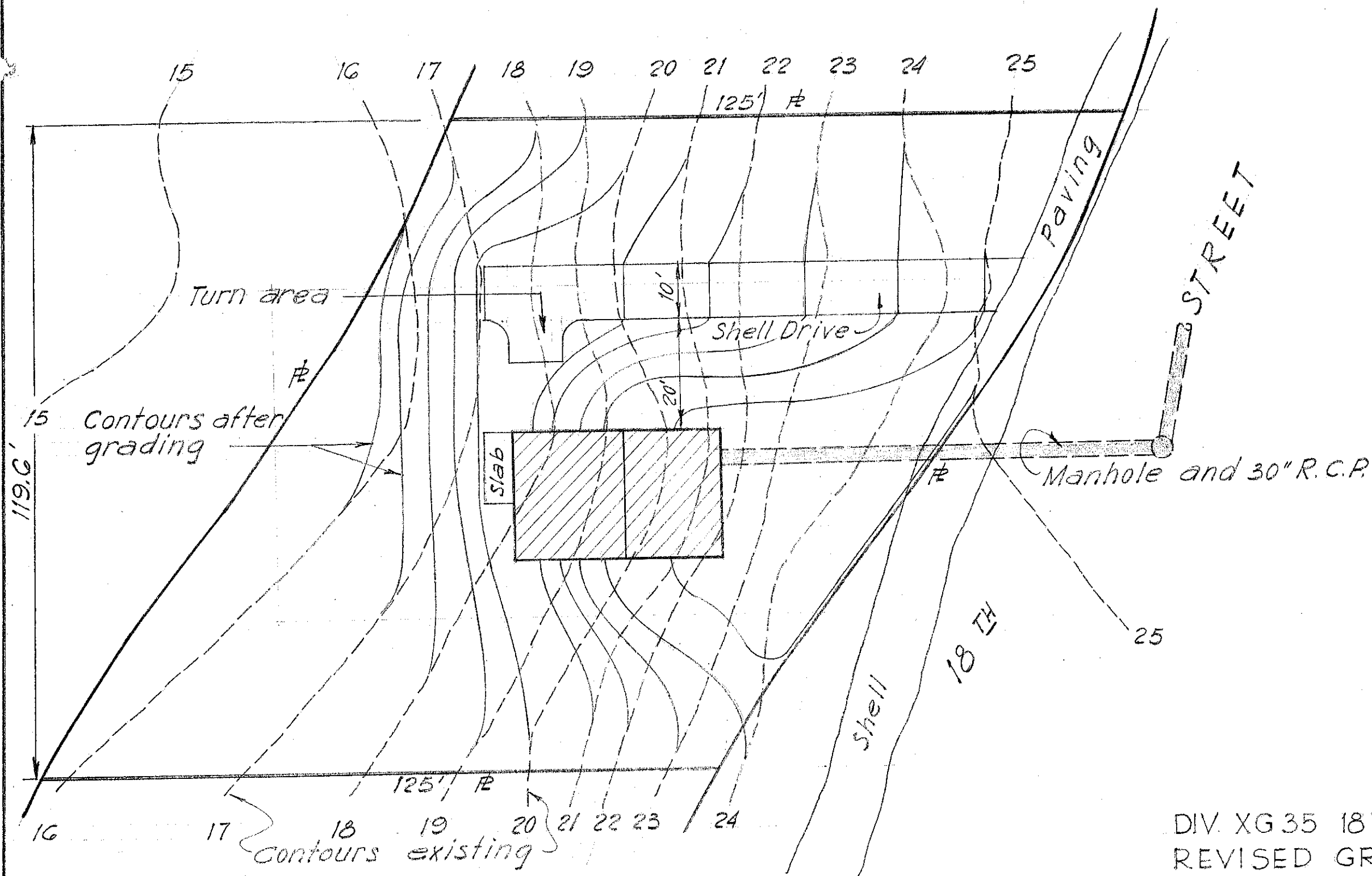


POWER LINE DIAGRAM 220 VOLTS - 3 PHASE - 60 CYCLES NO SCALE

- LEGEND
- 15A Trip rating in Amperes
 - Air Circuit Breaker
 - Contact (Normally open)
 - Manual-Off-Automatic switch
 - Operating Coil
 - Relay or solenoid winding
 - Thermal overload element
 - TD Time delay relay
 - T.C. Time close contact
 - I.C. Instantaneous close contact
 - Run indicate light - Green
 - Induction motor
 - Float switch
 - LS Limit switch
 - Solenoid valve
 - Pressure switch
 - T.D. Time Delay
 - C Contactor
 - ⊗ Ceiling type lighting fixture
 - + Bracket type lighting fixture
 - Exposed conduit
 - Concealed conduit
 - Cross lines indicate number of #12 wires in conduit
 - Junction box
 - Single pole, single throw switch
 - Switch with thermal overload
 - 2-Pole receptacle
 - Lighting Panel
 - Explosion-proof

NOTE: All equipment in Screen Room area to be explosion proof (Suitable for use in Class I, Group D atmospheres.)

CITY OF TAMPA, FLORIDA		
SEWAGE DISPOSAL SYSTEM		
DIV. XG35 18TH STREET PUMPING STATION		
ELECTRICAL		
DES. CDL DR. RK CKD. CDL DATE: MAY 1957	SCALE 1/4" = 1'-0"	SHEET XG35-5 OF 5

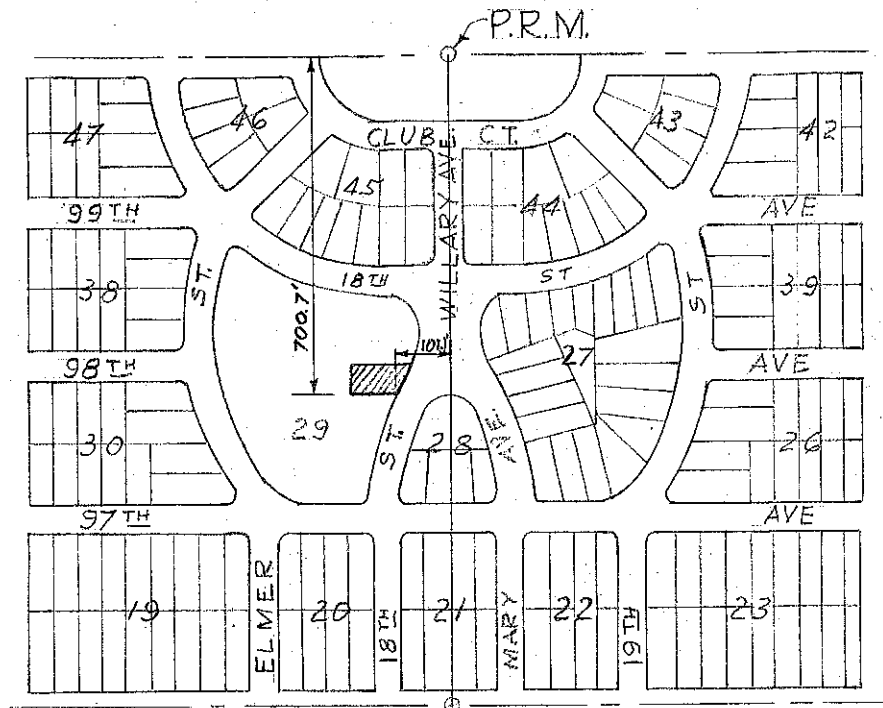
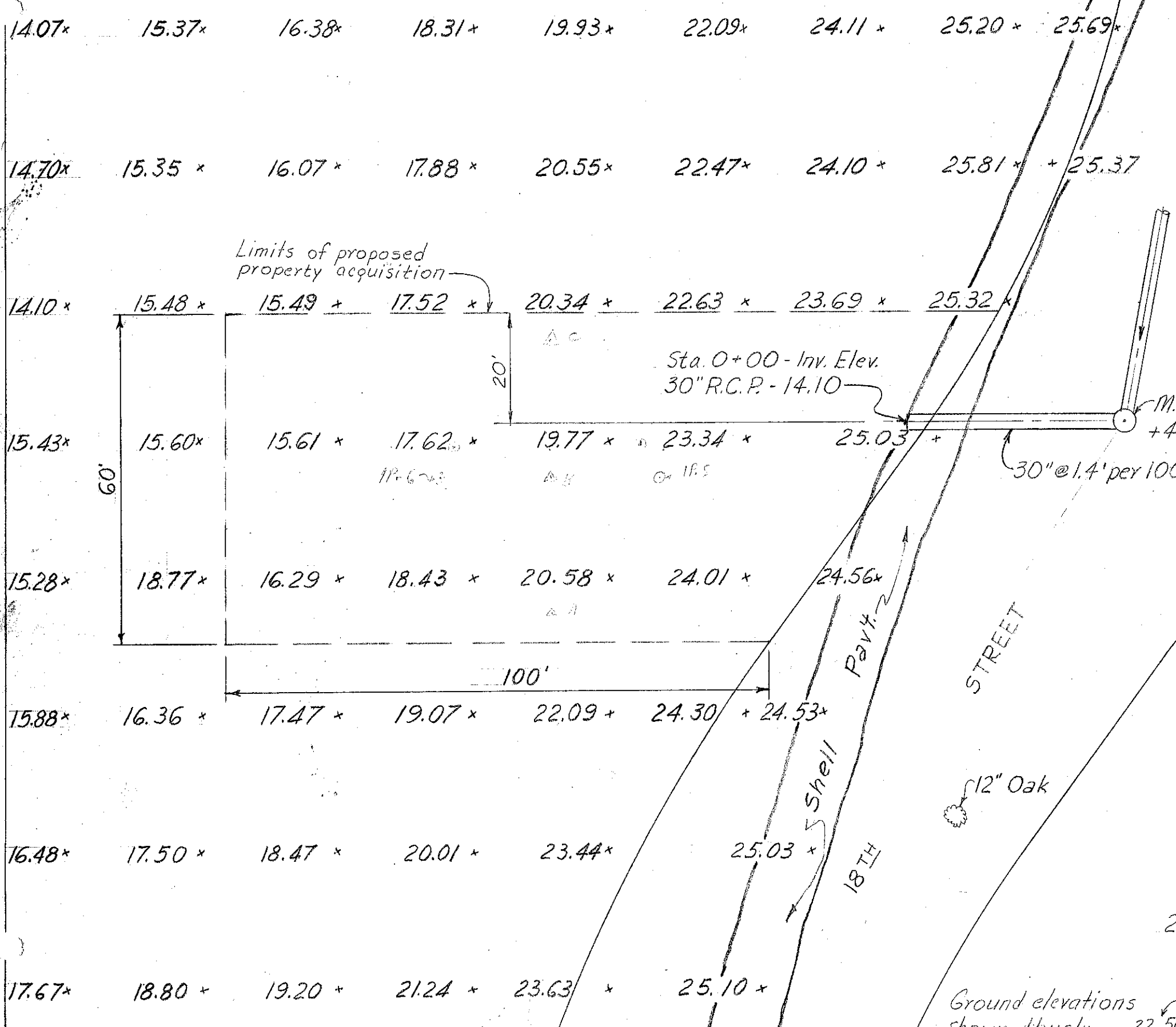


SITE PLAN
SCALE 1" = 20'

DIV. XG 35 18TH ST. PUMPING STA.
REVISED GRADING PLAN, TO
SUPERSEDE PLAN XG 35-2 OF
MAY, 1957
DR: E.C.A.
CKD: R.E.F.
APR. 1958
REF. DWGS: XG 35-2 & PSR X-13 (REV) NO. L-13

SEC. INDEX

NOTE: Dimensions are not shown to prevent confusion, scaled distances will suffice for required accuracy.



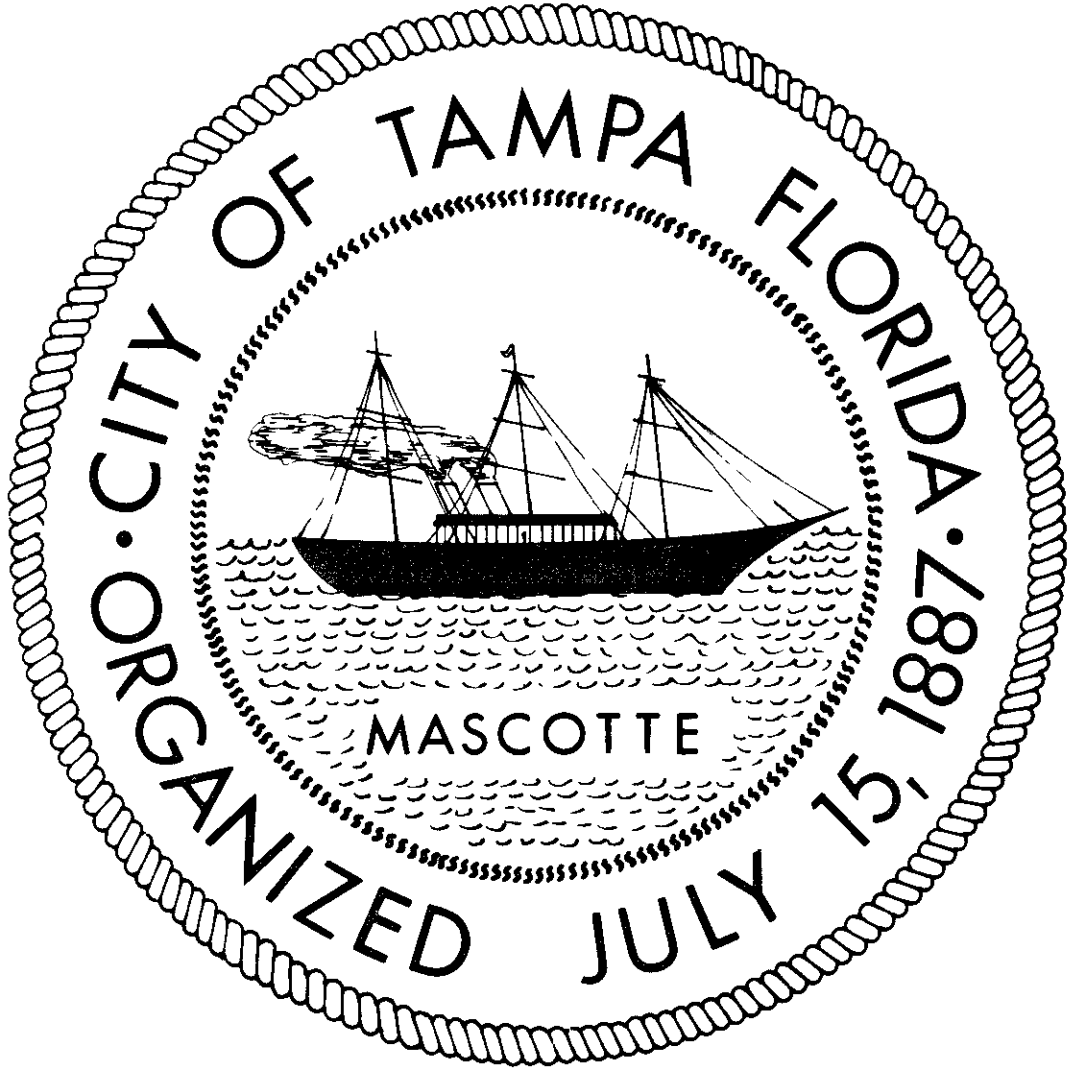
SEC. INDEX
NO. L-13

TAMPA FLORIDA
18TH ST. PUMPING STATION
SITE PLAN

Scale: 1" = 20'

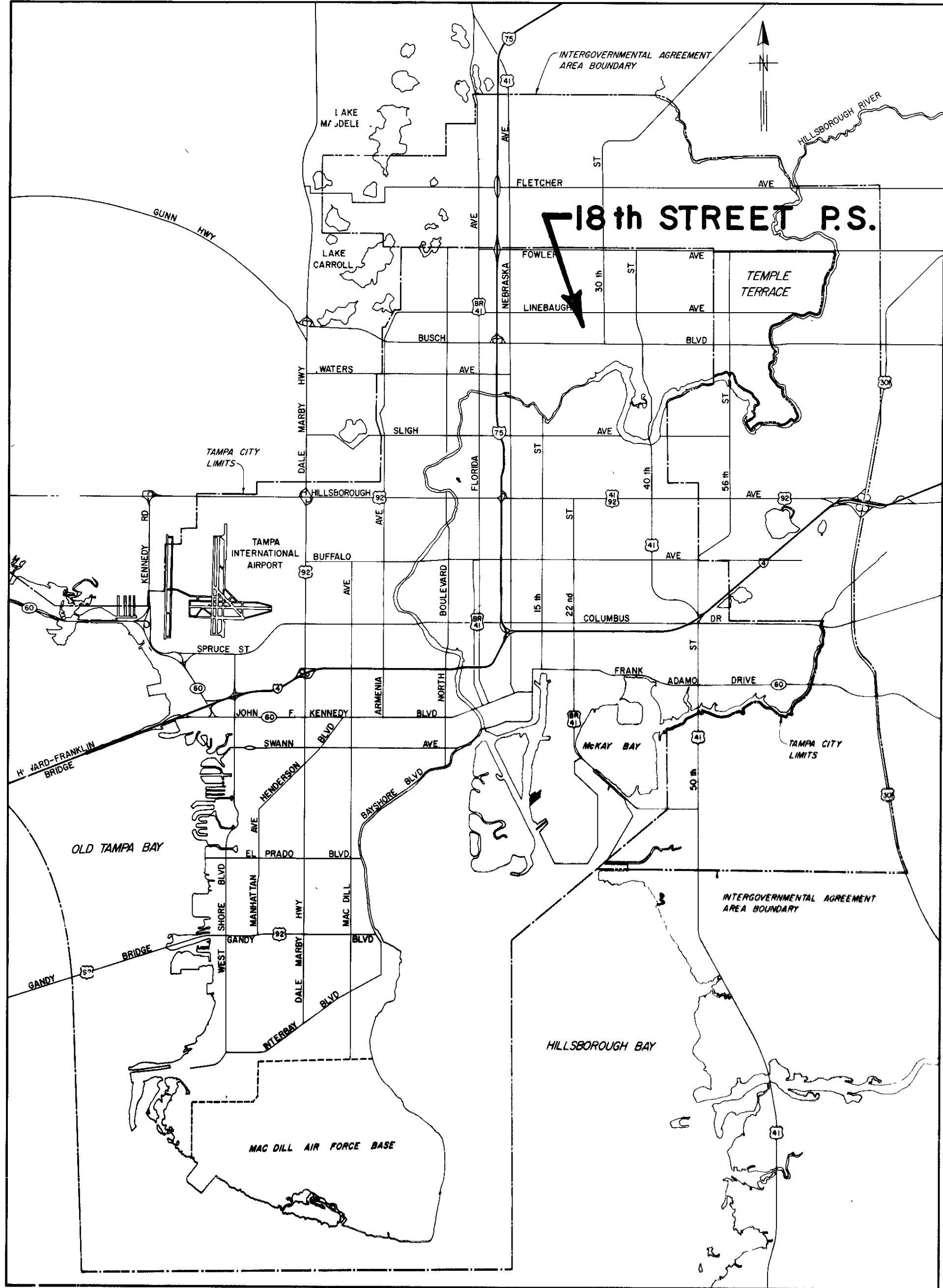
Dec. 1956 **357-044** J.M.R.

CITY OF TAMPA



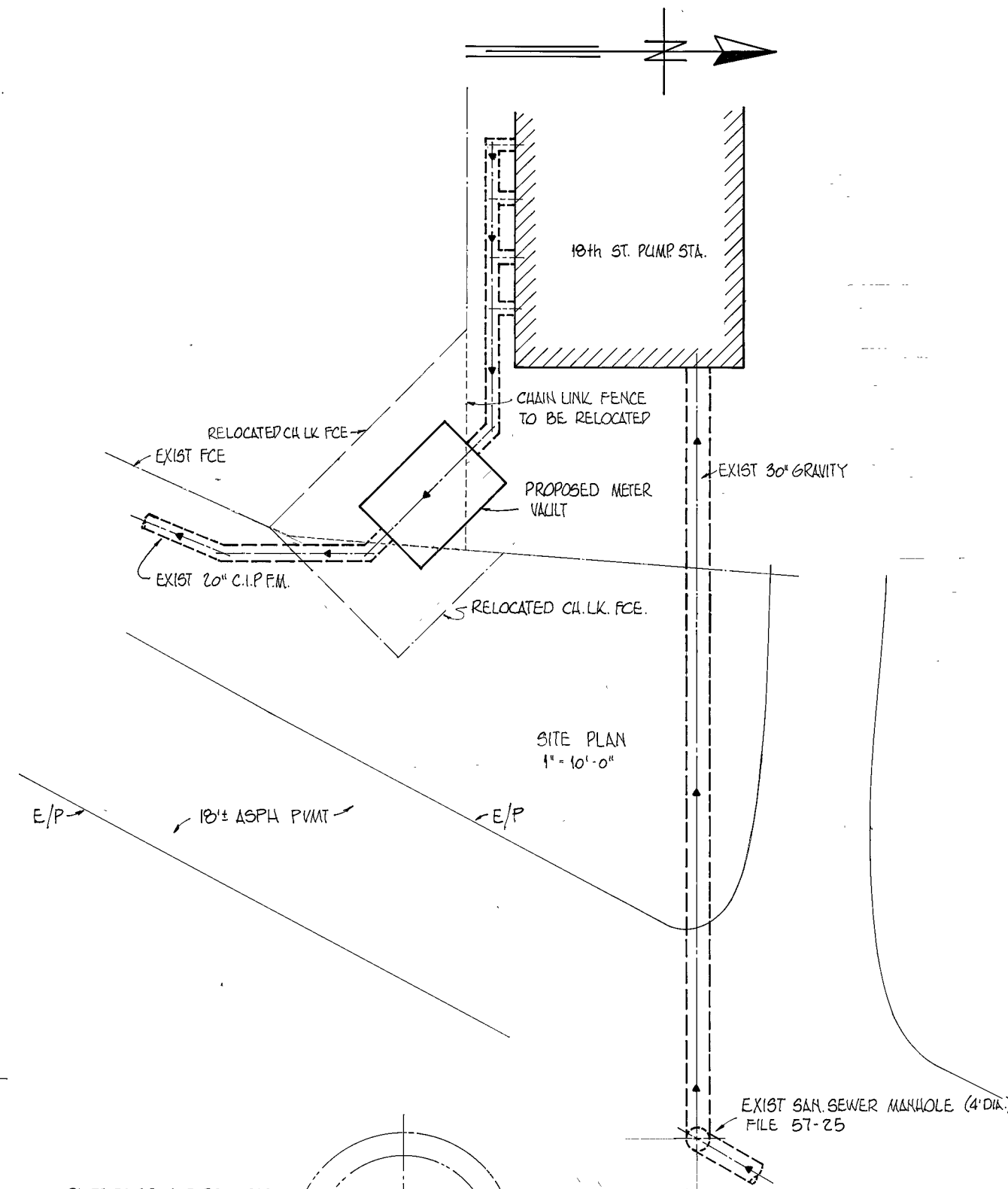
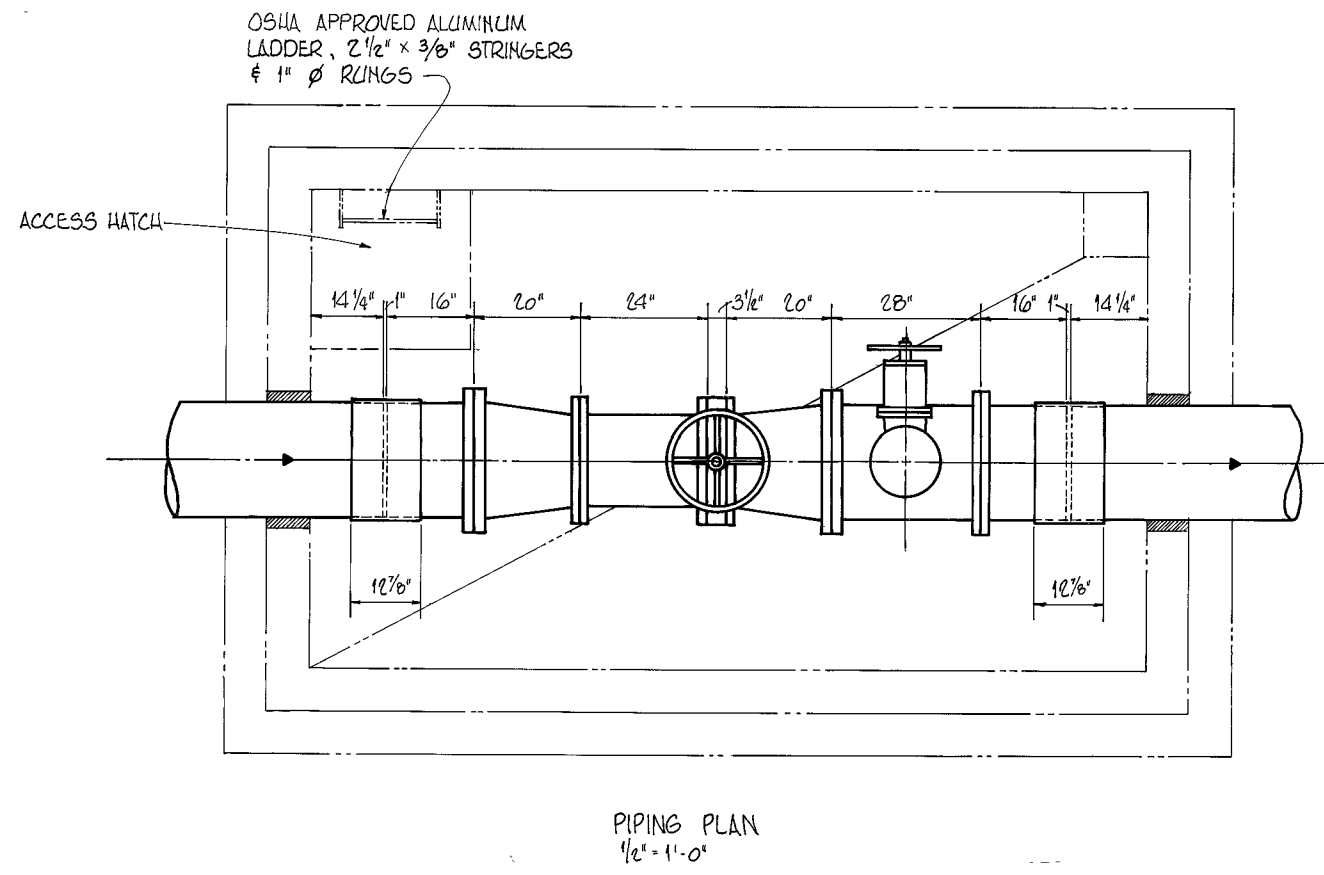
DEPARTMENT OF SANITARY SEWERS SEWAGE DISPOSAL SYSTEM PLANS

FOR THE CONSTRUCTION OF 18TH STREET PUMPING STATION REHABILITATION

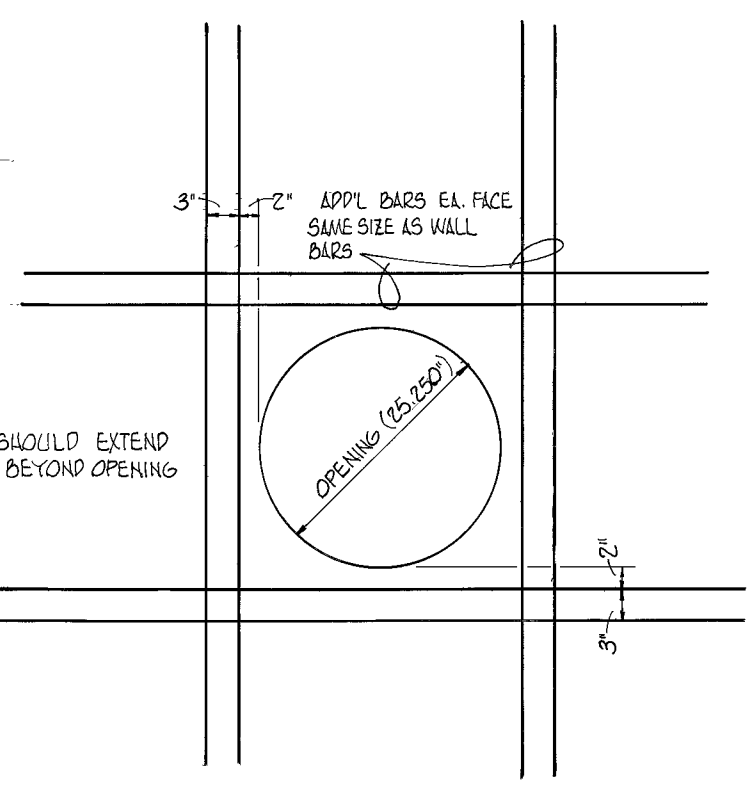
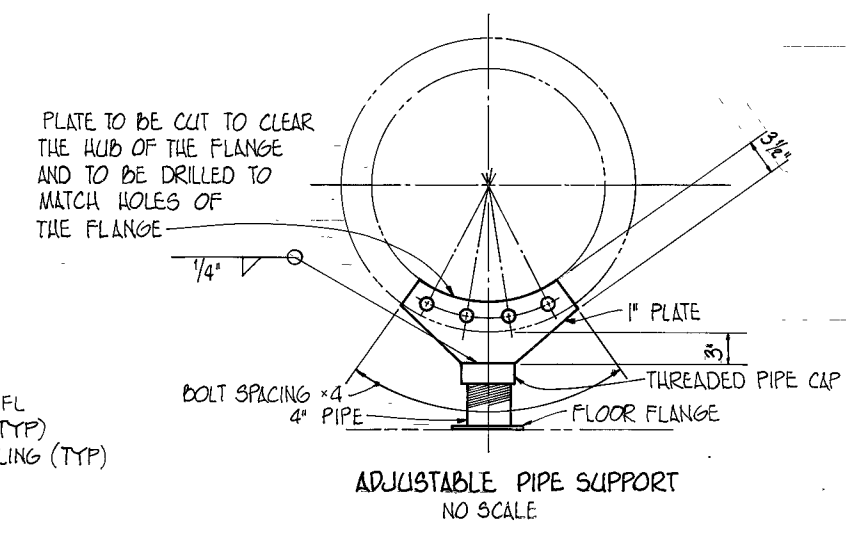
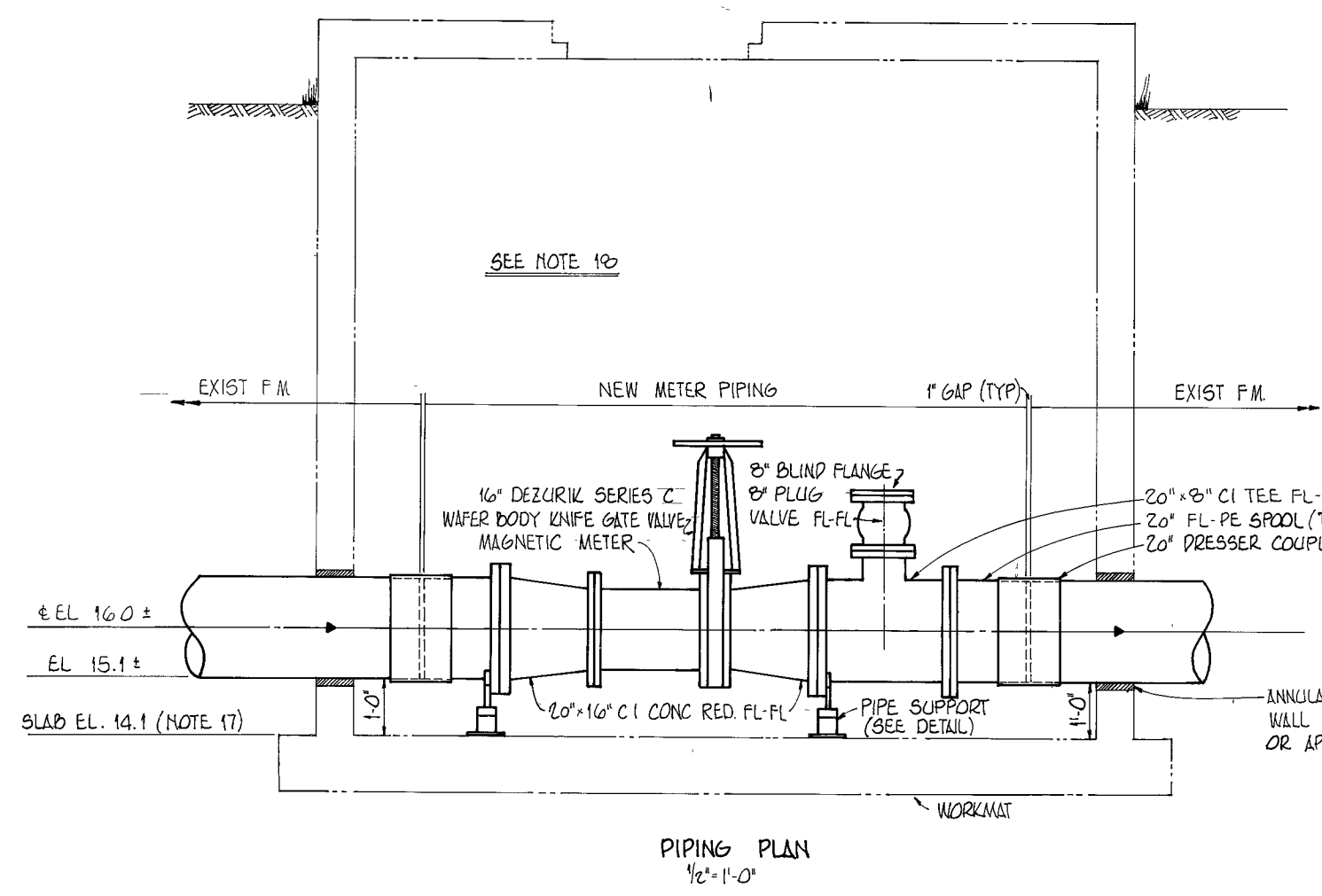


LOCATION MAP

 ELTON G. SMITH, P.E. 19872 CHIEF ENGINEER DEPARTMENT of SANITARY SEWERS	DES: RLM	APPROVED BY J.W. SILLIMAN, P.E., DIRECTOR DEPARTMENT of SANITARY SEWERS	NO	DATE	REVISIONS	SCALE 1" = 1.5 Miles	DEPARTMENT of SANITARY SEWERS CITY of TAMPA, FLORIDA RENEWAL & REPLACEMENT SEWAGE DISPOSAL SYSTEM	TITLE & LOCATION MAP	SHEET A OF
	DRN: DEP		1						
	CKD: JSM		2						
	DATE		3						
			4						
			5						



- Foundation shall bear on min 3000 p.s.f. undisturbed soil. Compaction shall be required for any condition not meeting the above bearing capacity.
- For compacted backfill and workmat see specifications.
- Backfill shall not be placed against any wall until forms have been stripped from adjacent slab or unless walls have been properly braced, and in no case sooner than 14 days after placing of slab concrete.
- For compressive strength of concrete see specifications.
- Exposed corners shall have 3/4" chamfer and re-entrant corners shall have 3/4" flat unless otherwise noted.
- The use of construction joints at locations not shown on drawings requires approval by the engineer.
- All reinforcing shall be detailed according to the "Manual of Standard Practice for Detailing Reinforced Concrete Structures" (ACI Standard 318-65).
- Concrete cover for reinforcing bars:
 - Concrete deposited directly against soil and footings (bottom, sides & ends) - 3"
 - Elsewhere - 2"
- All reinforcing shall lap 32 bar dia. unless otherwise shown or noted.
- The actual placement of Reinforcing shall be as shown on the approved shop drawings.
- All structural steel shall be detailed, fabricated and erected in accordance with latest A.I.S.C. specifications.
- Structural steel shall conform to A.S.T.M. A36, electrodes for welding shall be E70.
- All details and sections shown on drawings are intended to be typical and shall be construed to apply to any similar situation elsewhere.
- The valve vault location may have to be adjusted slightly in the field so that the force main pipe bells do not interfere with the vault walls. The contractor will be required to field verify this.
- The contractor shall make provisions to adequately support the force main in a manner suitable to the engineer during construction.
- The vault ladder shall be fabricated and installed as per the approved shop drawings and must be O.S.H.A. approved.
- The vault slab el. should be set so there is 1.0' clearance between the floor slab and the bottom of the force main.
- City to provide: 16" knife gate valve, 16" magnetic meter, 16" x 20" conc reducers, 20" x 8" tee, 20" FL-PE spools, 20" dresser couplings, 8" plug valve, 8" blind flange, gaskets, flanged spool to be left in vault, and all bolts necessary to assemble the piping except for the bolts used in the two adjustable pipe supports. Bolts should be 1 1/2" x 6" hex head machine bolts (#7 N.C.) w/nuts & washers.
- See specifications for painting schedule for pump station, meter vault, piping, etc.



BOLT SCHEDULE (SUPPLIED BY CITY EXCEPT AS NOTED)		
BOLT	QUANTITY	DESIGNATION
METER VAULT		
1 1/2" x 5" (w/NUTS)	60*	FOR 20" FLANGES
1 1/2" x 4 1/2" (w/NUTS)	16	FOR 16" FLANGE
1" x 2 1/4" (w/o NUTS)	12	TOP 6 HOLES EACH SIDE OF KNIFE GATE VALVE
1" x 2 1/2" (w/o NUTS)	20	BOTTOM 10 HOLES EACH SIDE OF KNIFE GATE VALVE
3/4" x 3 1/2" (w/NUTS)	16	FOR 8" FLANGES
PUMPING STATION		
1 1/2" x 2 3/4" (w/o NUTS)	80	LOWER HOLES IN 18" KNIFE GATE VALVES
1 1/2" x 2 1/2" (w/o NUTS)	48	18" KNIFE GATE VALVES - BLIND HOLES
1 1/2" x 2 3/4" (w/o NUTS)	8	18" PLUG CHECK VALVE - UPPER BLIND HOLES
3/4" x 2 1/2" (w/o NUTS)	8	18" PLUG CHECK VALVE - LOWER BLIND HOLES
1 1/2" x 2 3/4" (w/NUTS)	80	KNIFE GATE VALVE - LOWER HOLES

THE REMAINING BOLTS WILL BE SALVAGED FROM THE EXISTING VALVING.

* CONTRACTOR SHALL PROVIDE 8-1 1/2" x 6" BOLTS w/NUTS TO BOLT PIPE SUPPORT STANDS TO 20" FLANGES WHERE SHOWN ON PLANS, AND TURN IN 8-1 1/2" x 5" BOLTS w/NUTS TO THE CITY'S INSPECTOR.

DRAWING 44-132-20917

ELTON G. SMITH, P.E. #19872
CHIEF ENGINEER
DEPARTMENT OF SANITARY SEWERS

DES: RLM
DRN: KMS
CKD: JWM
DATE: JULY, 77

APPROVED BY
J.W. SILLIMAN, P.E. DIRECTOR
DEPARTMENT OF SANITARY SEWERS

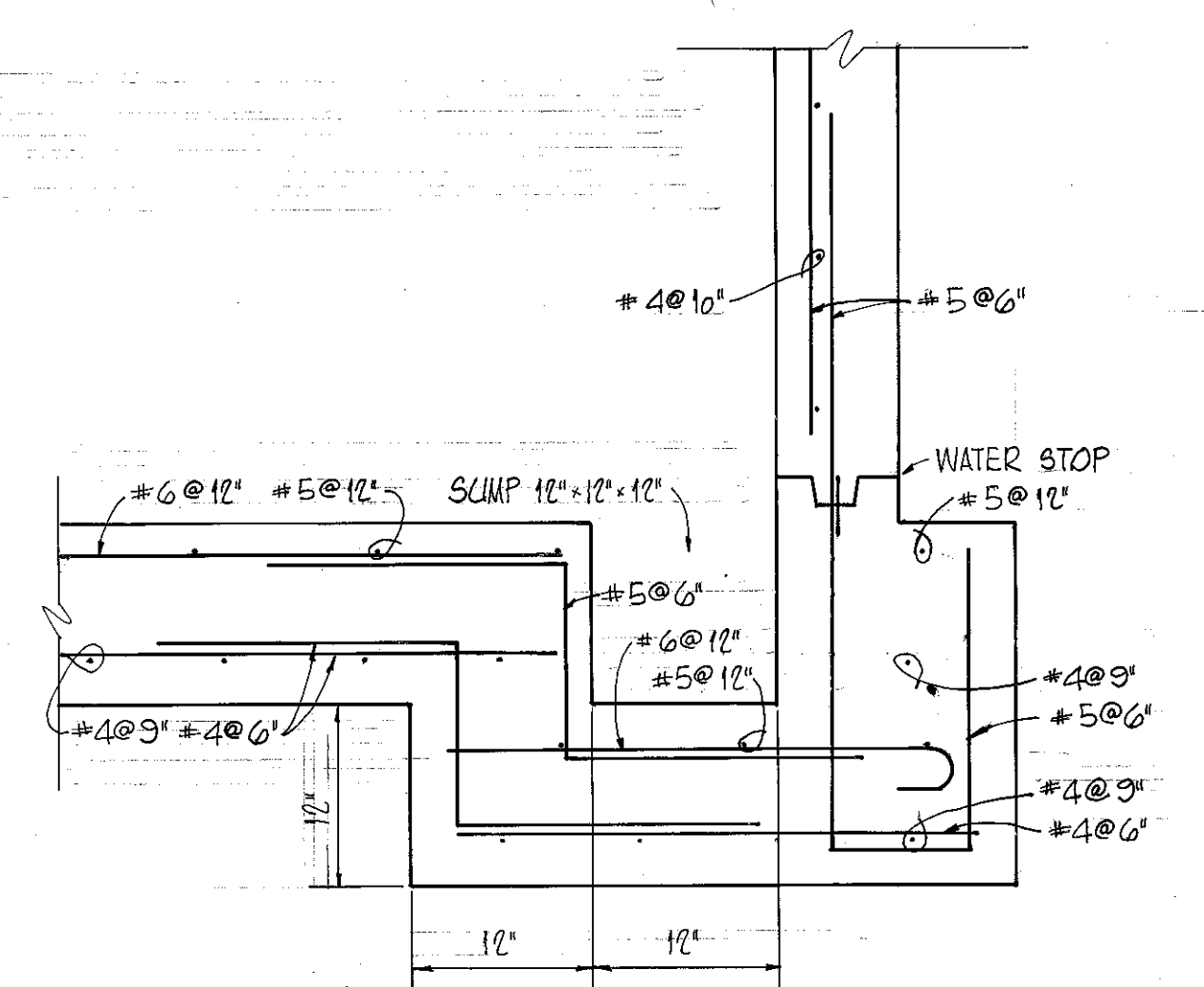
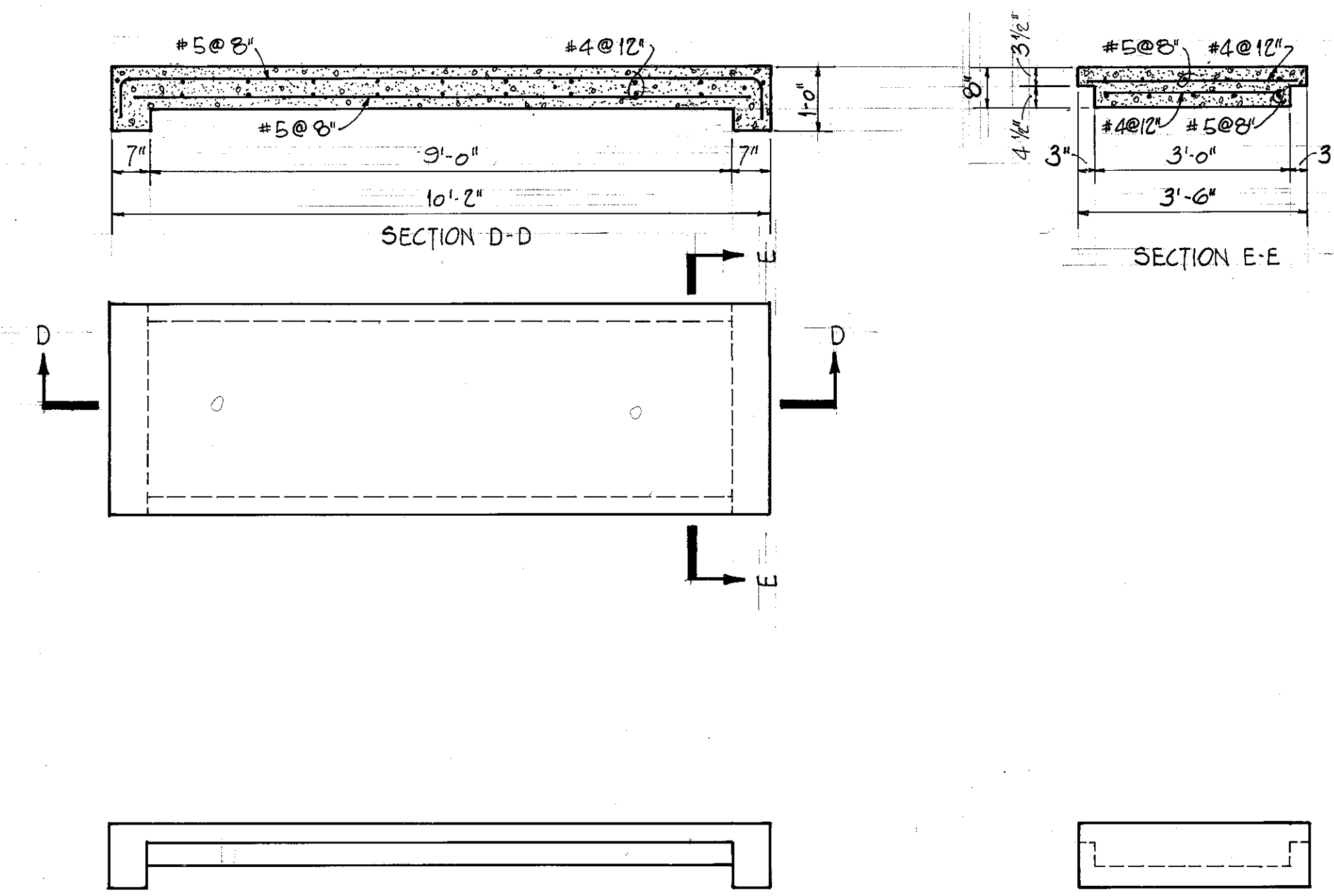
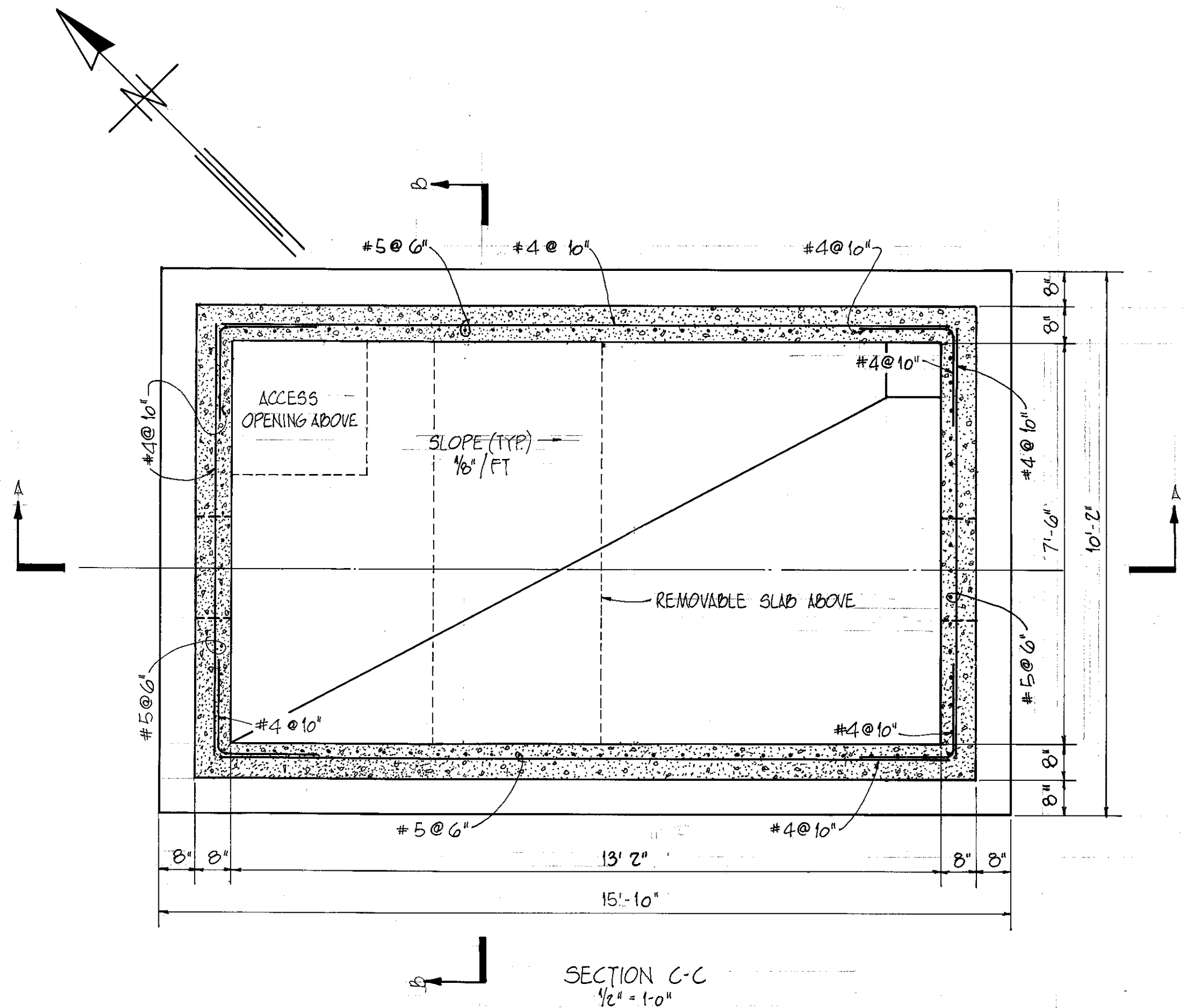
No.	DATE	REVISIONS
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SCALE
AS SHOWN

DEPARTMENT OF SANITARY SEWERS
CITY OF TAMPA, FLORIDA

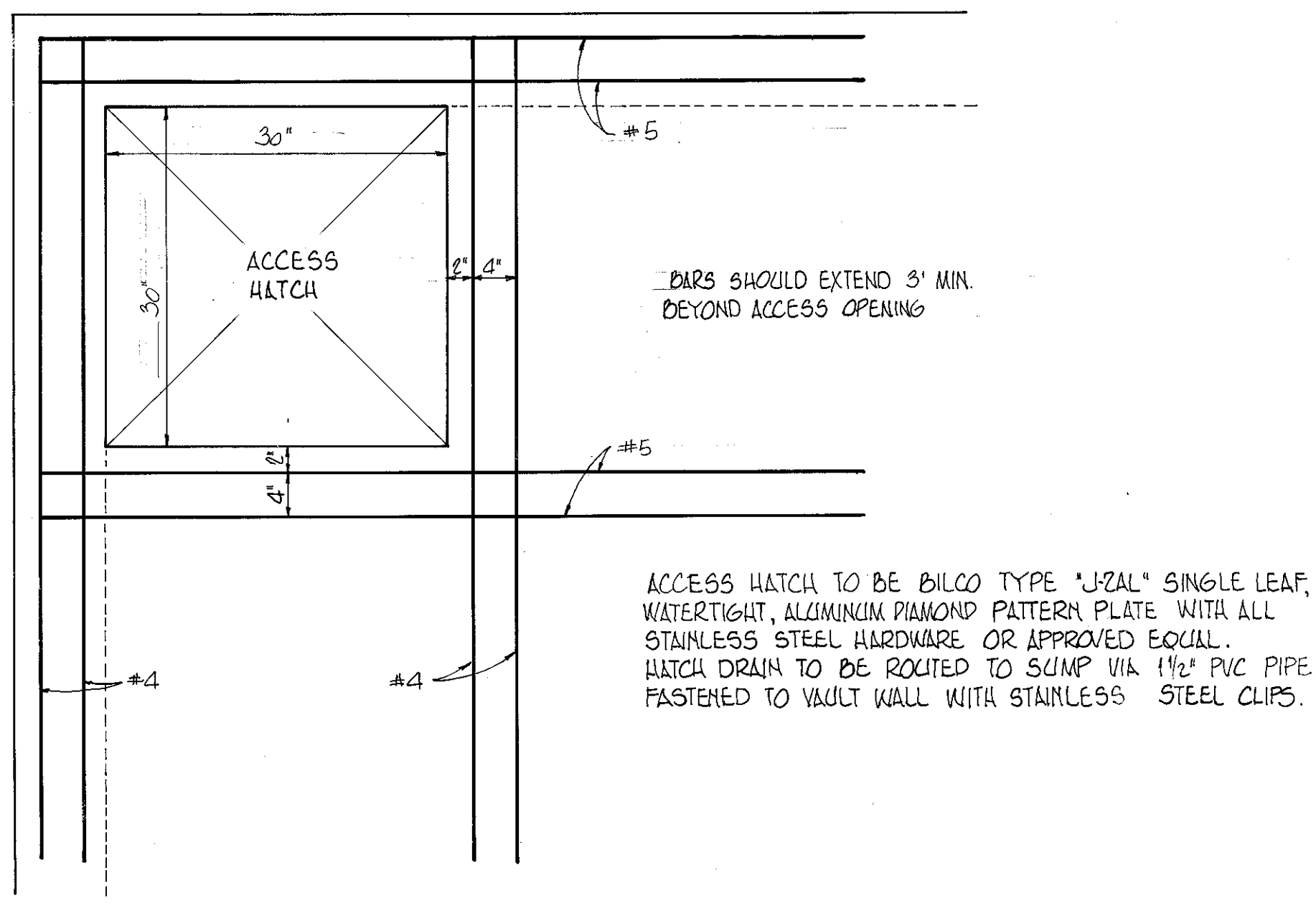
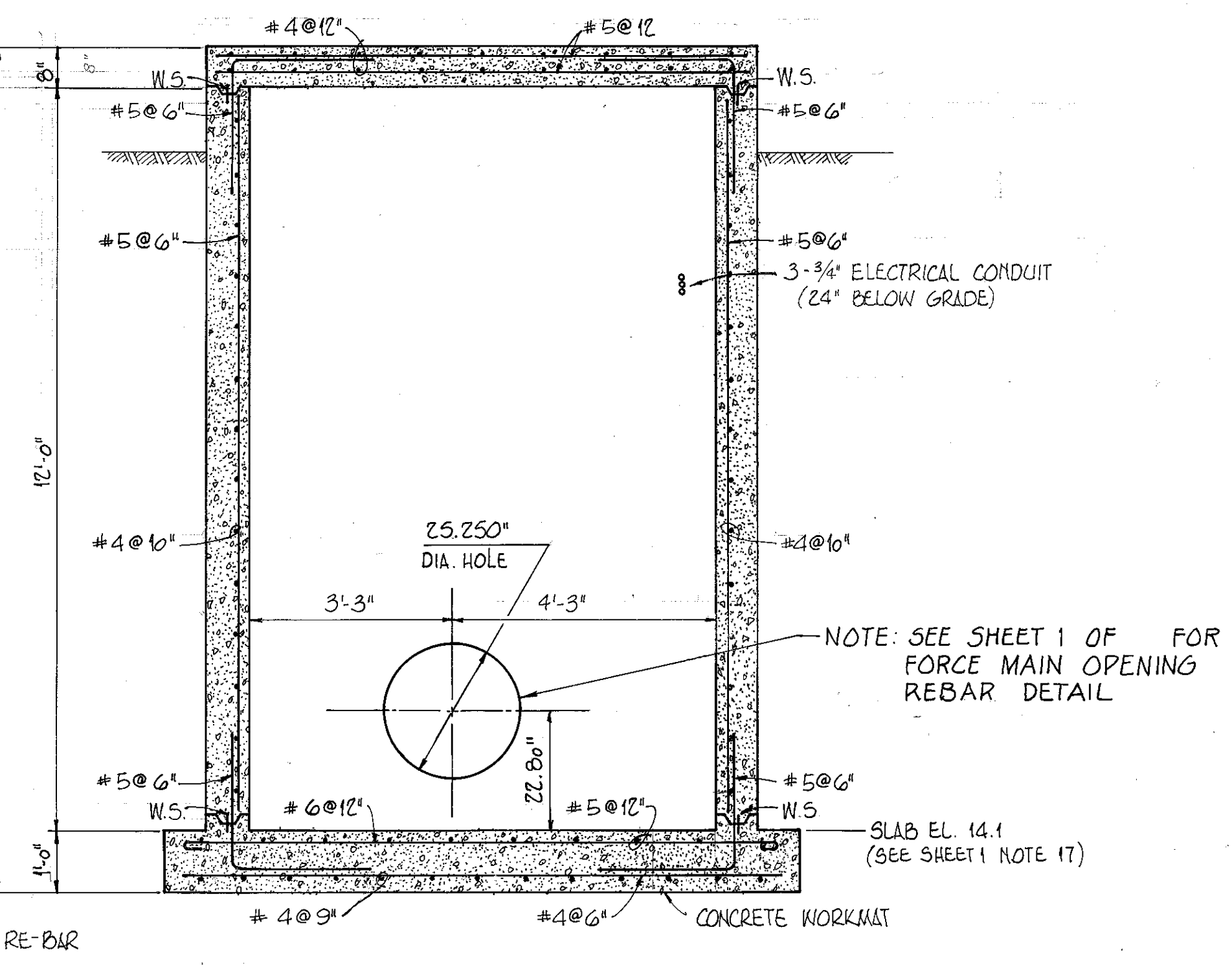
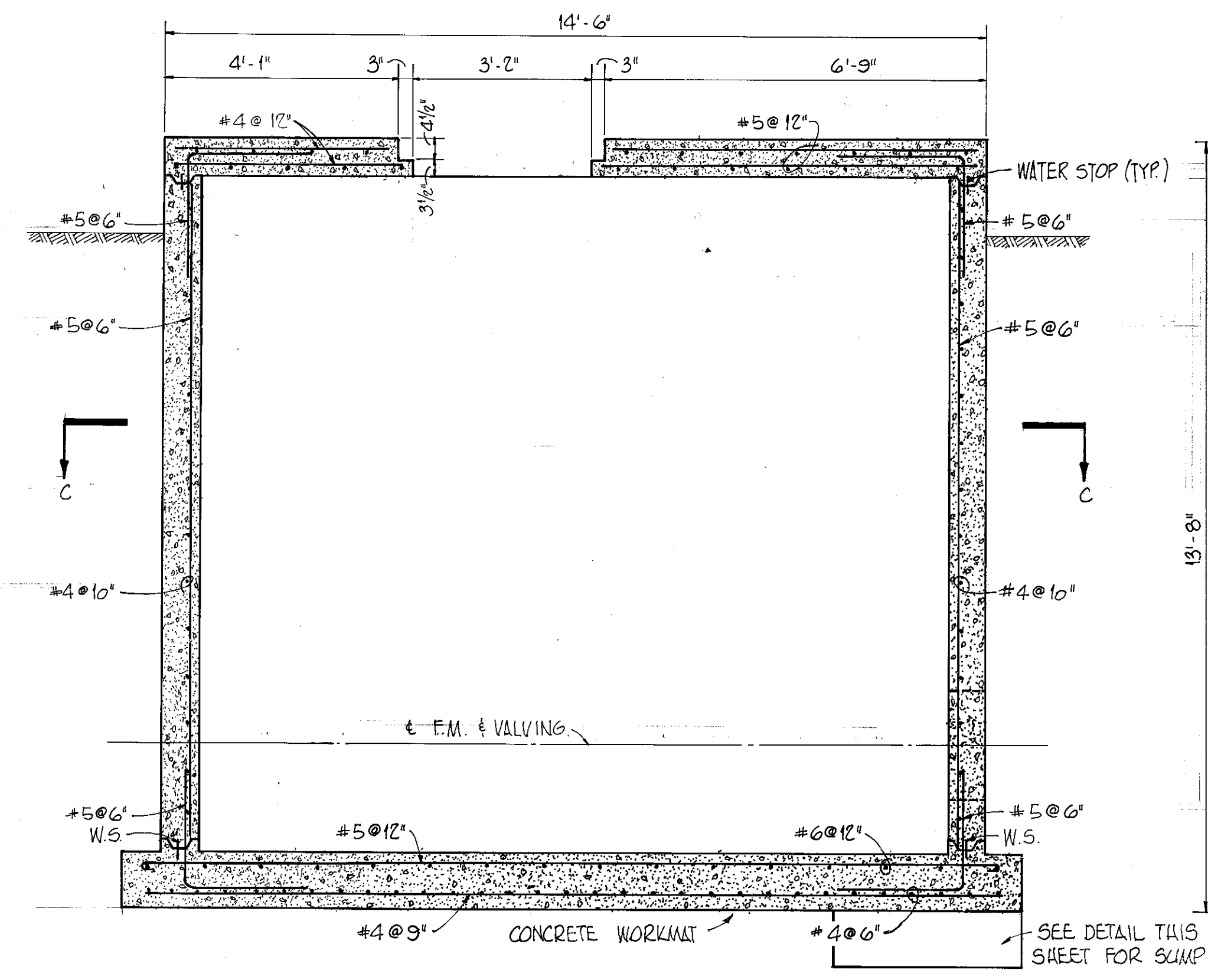
18th ST. PUMPING STATION MAGNETIC METER
VAULT DETAILS

SHEET
1
OF 7



REMOVABLE TOP SLAB DETAILS
1/2" = 1'-0"

RE-BAR DETAIL FOR SLUMP
NO SCALE



SECTION A-A
1/2" = 1'-0"

SECTION B-B
1/2" = 1'-0"

RE-BAR DETAIL FOR ACCESS
NO SCALE

DRAWING 44-132-28917

ELTON G. SMITH, P.E. #19872
CHIEF ENGINEER
DEPARTMENT OF SANITARY SEWERS

DES: RLM
DRN: LMS
CKD: [Signature]
DATE: 7-77

APPROVED BY
[Signature]
J.W. SILLIMAN, P.E., DIRECTOR
DEPARTMENT OF SANITARY SEWERS

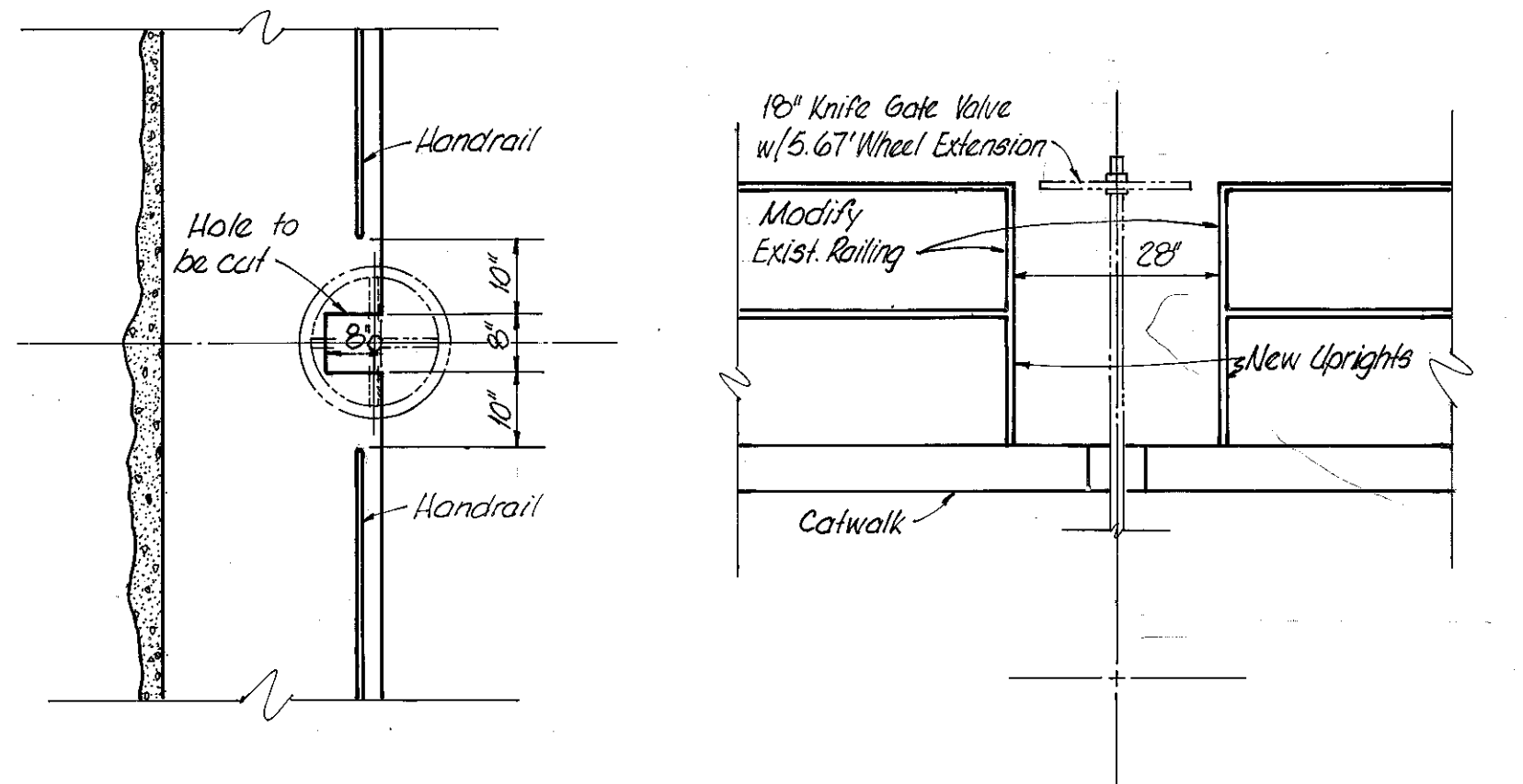
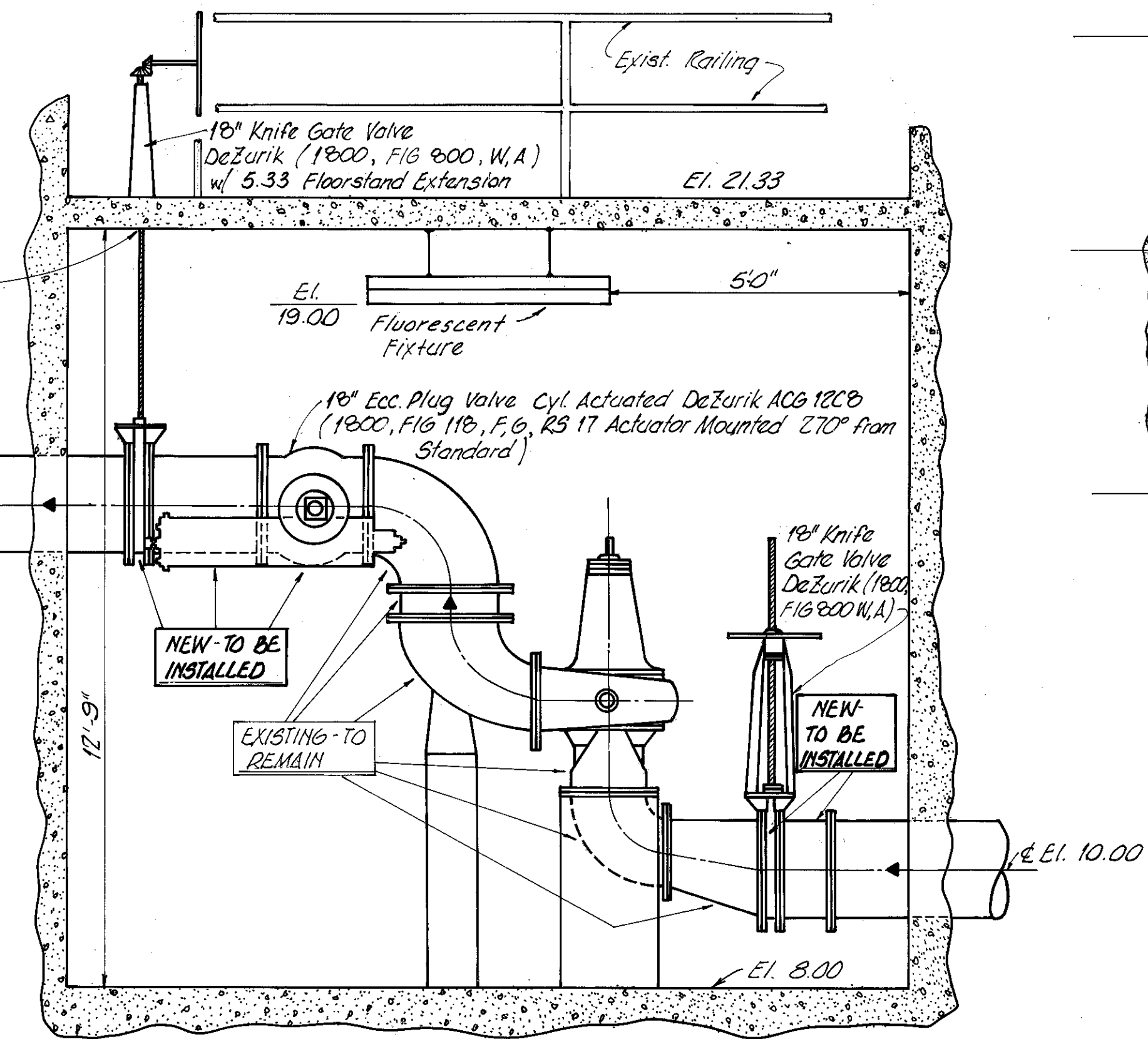
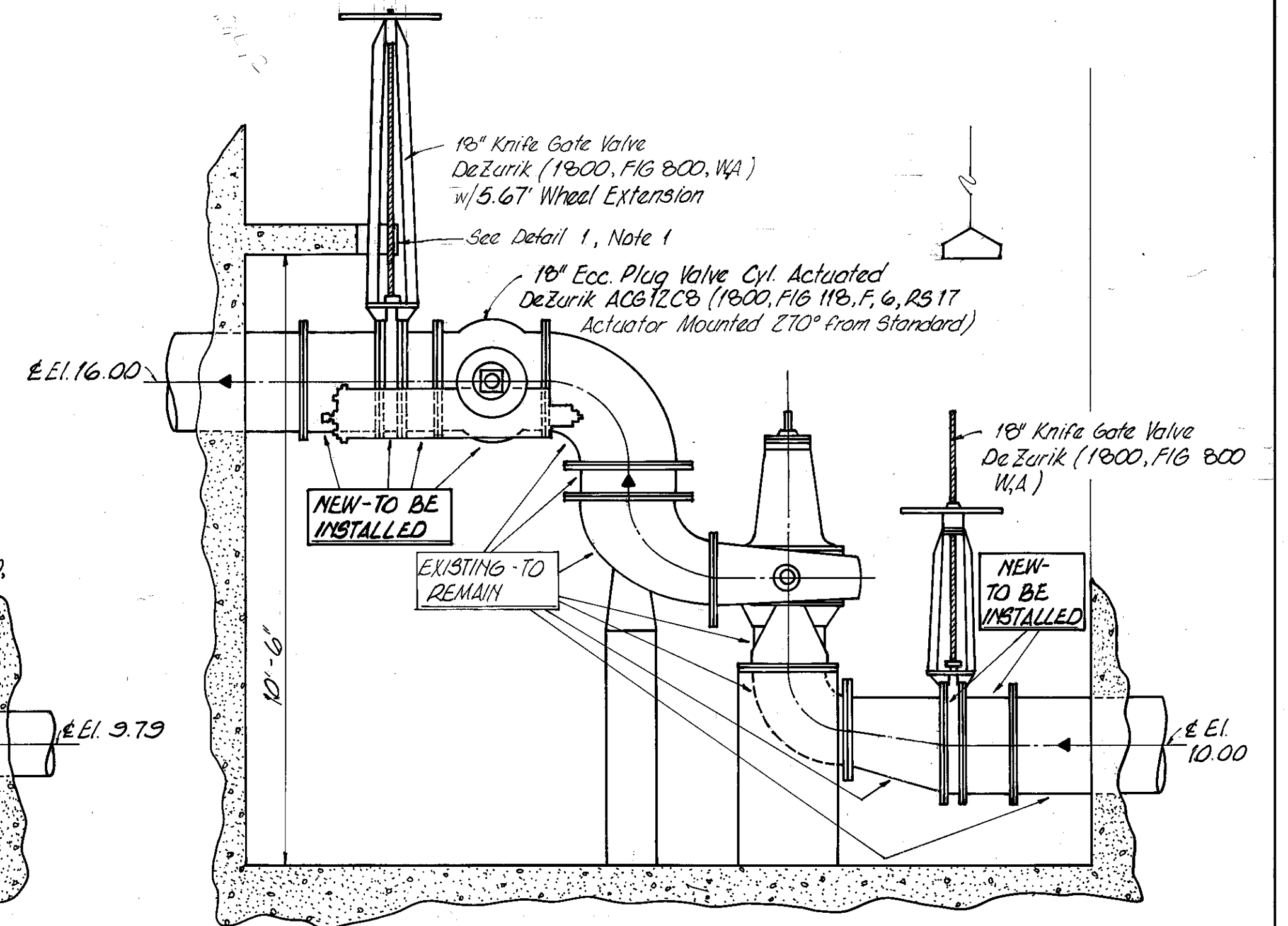
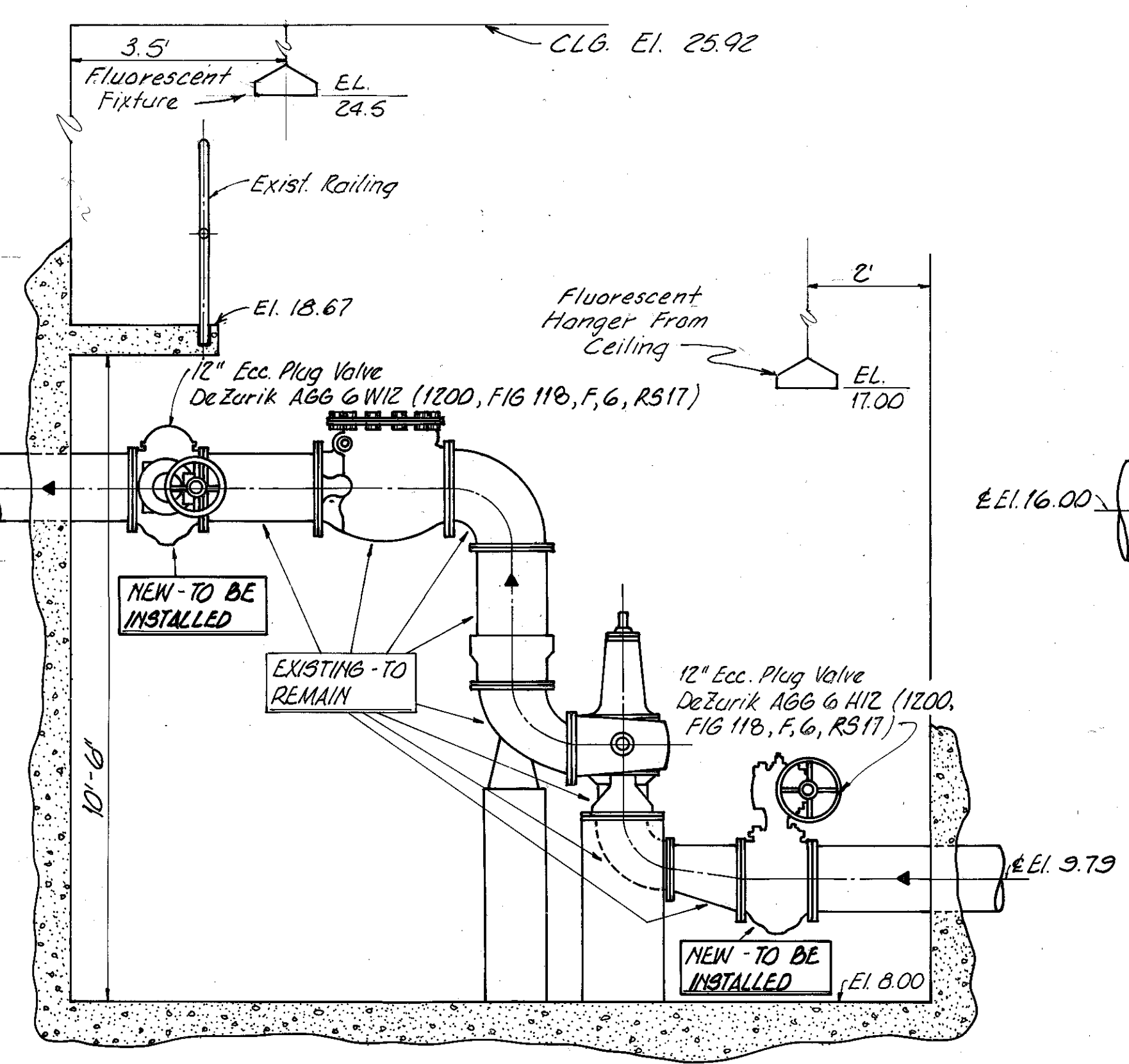
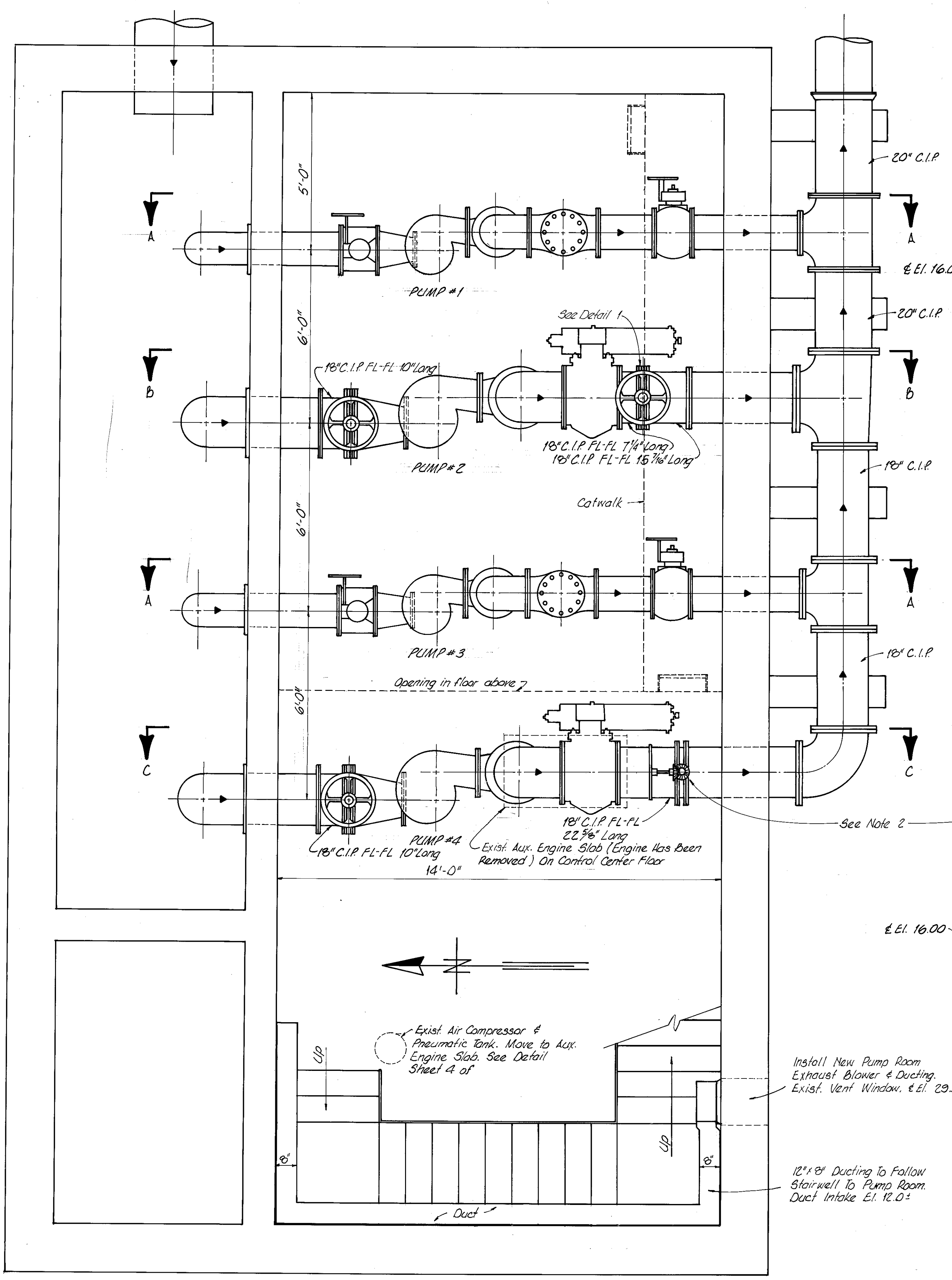
No.	DATE	REVISIONS
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SCALE
AS SHOWN

DEPARTMENT of SANITARY SEWERS
CITY of TAMPA, FLORIDA

18th ST. PUMPING STATION MAGNETIC
METER VAULT DETAILS

SHEET
2
OF 7



- NOTES
- PART OF CONCRETE CATWALK & RAILING TO BE REMOVED TO ALLOW NEW KNIFE GATE VALVE TO BE INSTALLED AND OPERATED.
 - HOLE IN FLOOR TO BE 6" DIA. TO ALLOW STEM OF KNIFE GATE VALVE TO BE INSERTED FROM BELOW.
 - CITY TO SUPPLY ALL NEW VALVES, SPOOLS & BOLTS EXCEPT AS NOTED IN BOLT LIST. (SEE SHEET 1)
 - PUMP ROOM EXHAUST BLOWER SHALL DELIVER 1100 CFM AT 1" STATIC PRESSURE W/G MIN. THE BLOWER & DUCTING SHALL REQUIRE APPROVAL VIA SHOP DRAWINGS.
 - SEE PLAN VIEW FOR LOCATION OF SPOOLS.

ELTON G. SMITH, P.E.
CHIEF ENGINEER
DEPARTMENT OF SANITARY SEWERS

DES: ATC
DRN: BMS
CKD: JWS
DATE: MARCH 1977

APPROVED BY
J.W. SILLIMAN, P.E., DIRECTOR
DEPARTMENT OF SANITARY SEWERS

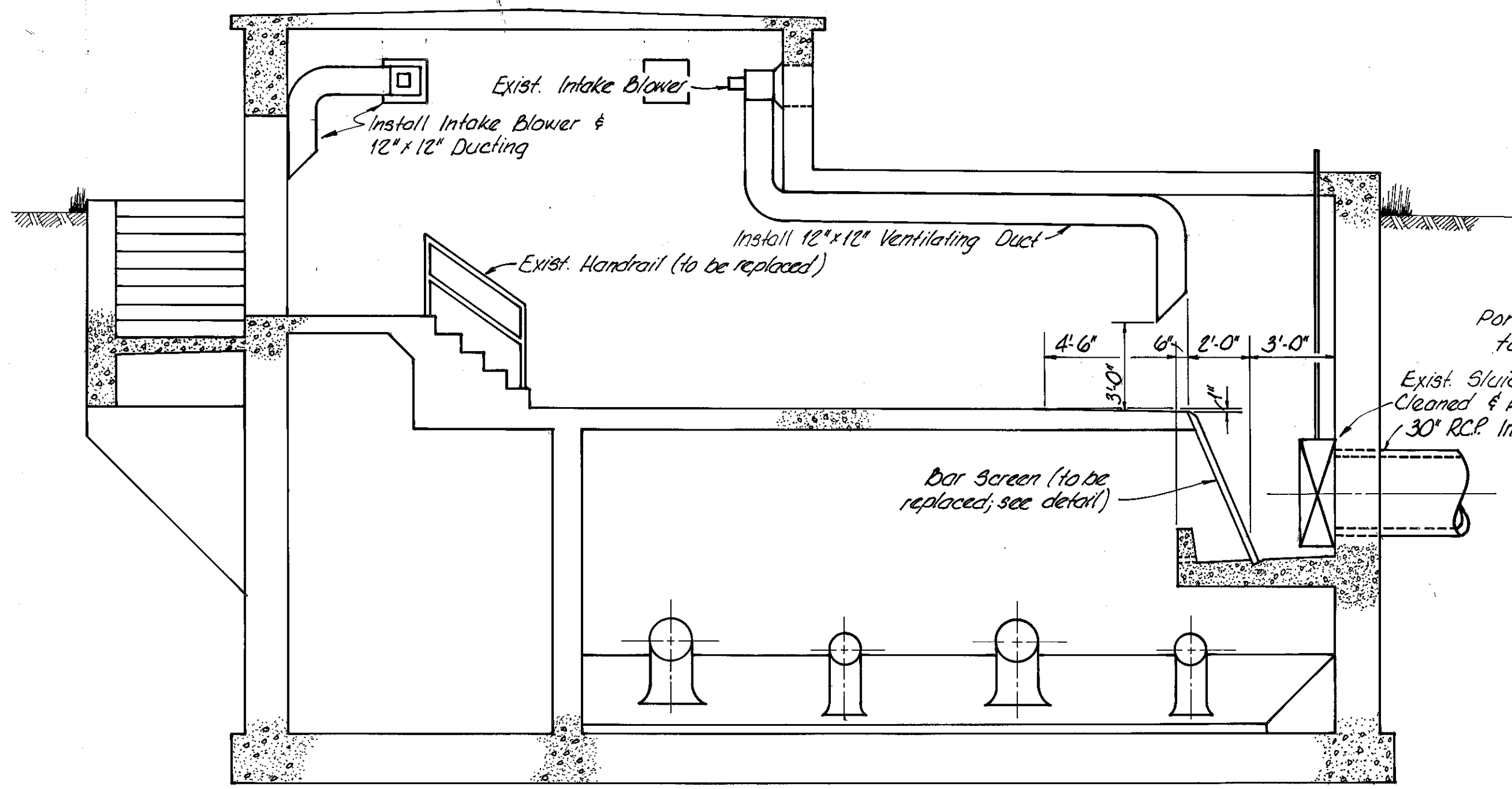
No.	DATE	REVISIONS
1		
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SCALE
1/2" = 1'-0"

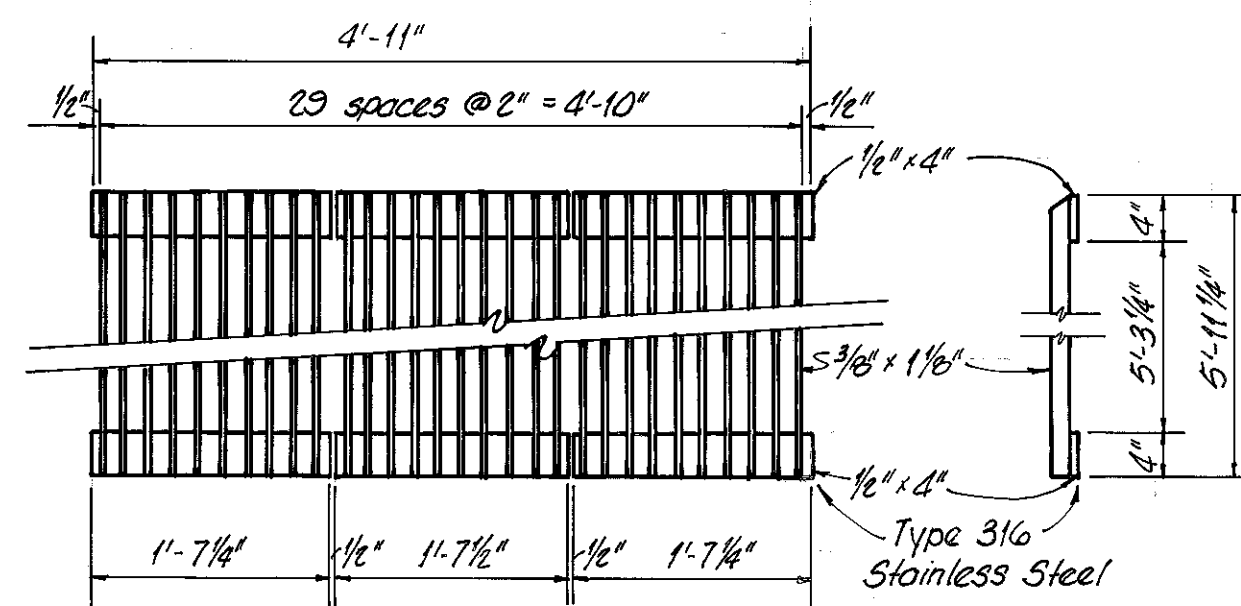
DEPARTMENT of SANITARY SEWERS
CITY of TAMPA, FLORIDA

18th ST. PUMPING STATION
REHABILITATION DETAILS

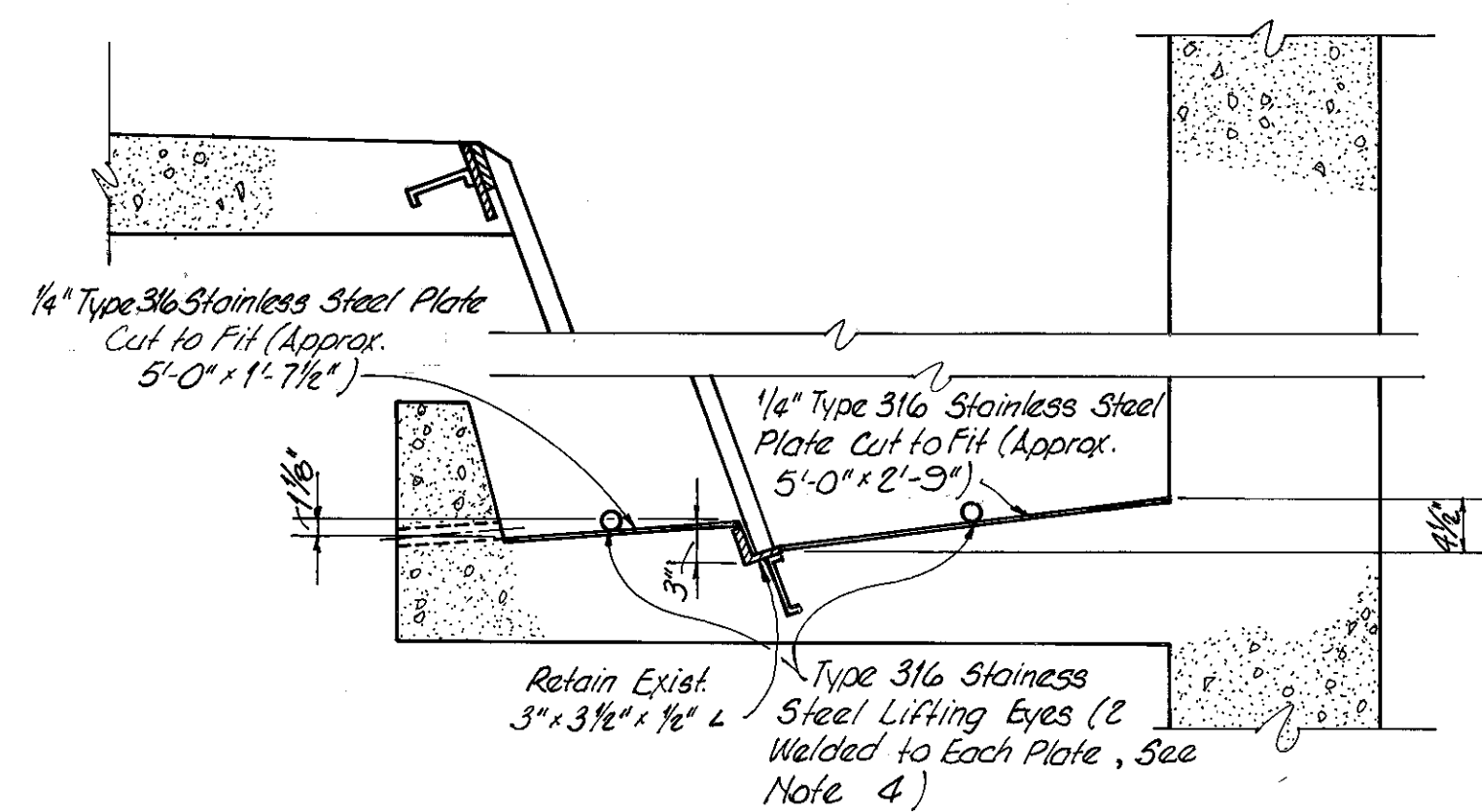
SHEET
3
OF 7



SECTION A-A
1/4" = 1'-0"



BAR SCREEN
3/4" = 1'-0"



BAR SCREEN CHANNEL
1" = 1'-0"

Portable Electric Sluice Gate Operator
to be Supplied By Contractor

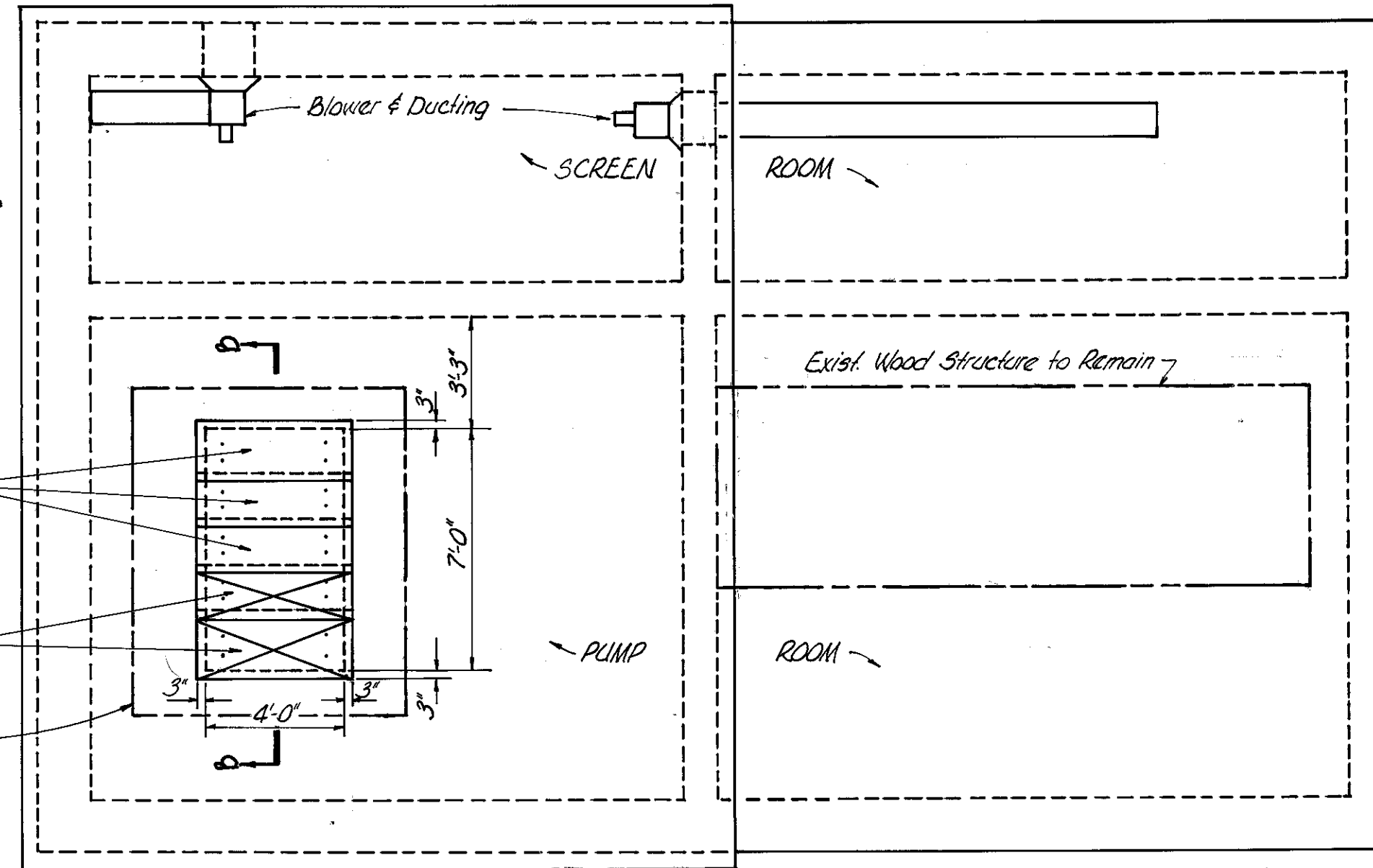
Exist. Sluice Gate to be
Cleaned & Re-Lubricated
/ 30" RCP Inlet

Bar Screen (to be
replaced; see detail)

Exist. Removable
Slabs

Install Removable Slabs
As Per Section B-B
Below

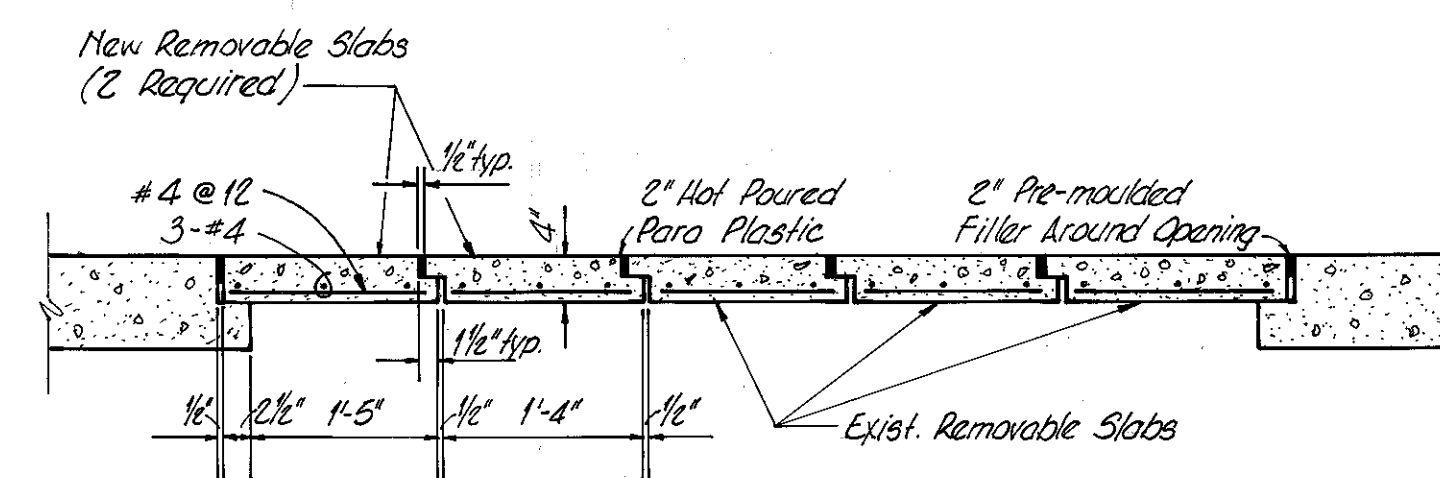
Exist. Wood Structure And
Vent Fan To Be Removed



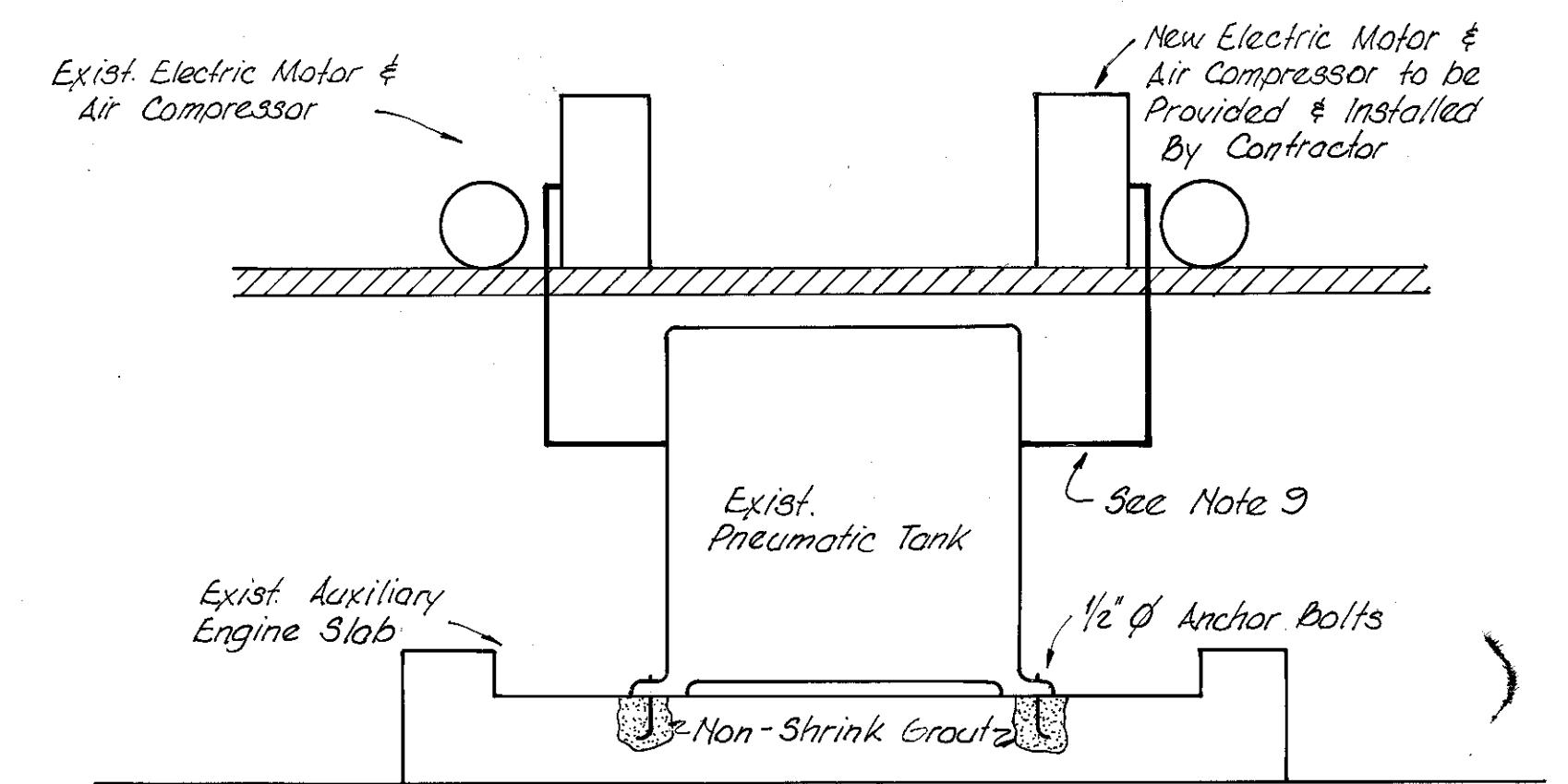
ROOF PLAN
1/4" = 1'-0"

NOTES

1. WET WELL DOOR AND FRAME TO BE REPLACED; SEE SPECS.
2. CONTROL ROOM DOOR FRAME TO BE REPLACED; SEE SPECS.
3. ALL WET WELL WINDOW LOUVERS ARE TO BE WIRE BRUSHED AND CLEANED OR REPLACED IF DEEMED NECESSARY BY THE ENGINEER.
4. THE STAINLESS STEEL PLATES SHOWN ON THE BAR SCREEN CHANNEL DETAIL (THIS SHEET) SHALL HAVE TWO STAINLESS STEEL LIFTING LUGS WELDED TO EACH. THE LIFTING EYES SHALL BE 2" IN DIA. AND MADE OF 1/2" DIA. STOCK. SHOP DWGS. SHALL BE APPROVED PRIOR TO FABRICATION.
5. THE EXISTING BAR SCREEN CHANNEL SHALL BE BUILT UP TO THE DIMENSIONS SHOWN IN THE DETAIL (THIS SHEET) AFTER THE REINFORCING BARS HAVE BEEN THOROUGHLY CLEANED AND RECONDITIONED.
6. THE BARSCREEN SHALL BE AS PER THE APPROVED SHOP DRAWINGS.
7. WET WELL INTAKE BLOWER SHALL DELIVER 1100 CFM AT 1" STATIC PRESSURE W.G. MIN. THE BLOWER & DUCTING SHALL REQUIRE APPROVAL VIA SHOP DRAWINGS.
8. AN ELECTRICALLY OPERATED PORTABLE SLUICE GATE OPERATOR & STAND IS TO BE FURNISHED BY THE CONTRACTOR AS PART OF THIS CONTRACT. SEE THE SPECIFICATIONS FOR FURTHER DETAILS.
9. EXISTING COMPRESSED AIR LINES TO BE RE-ROUTED AND RECONNECTED.

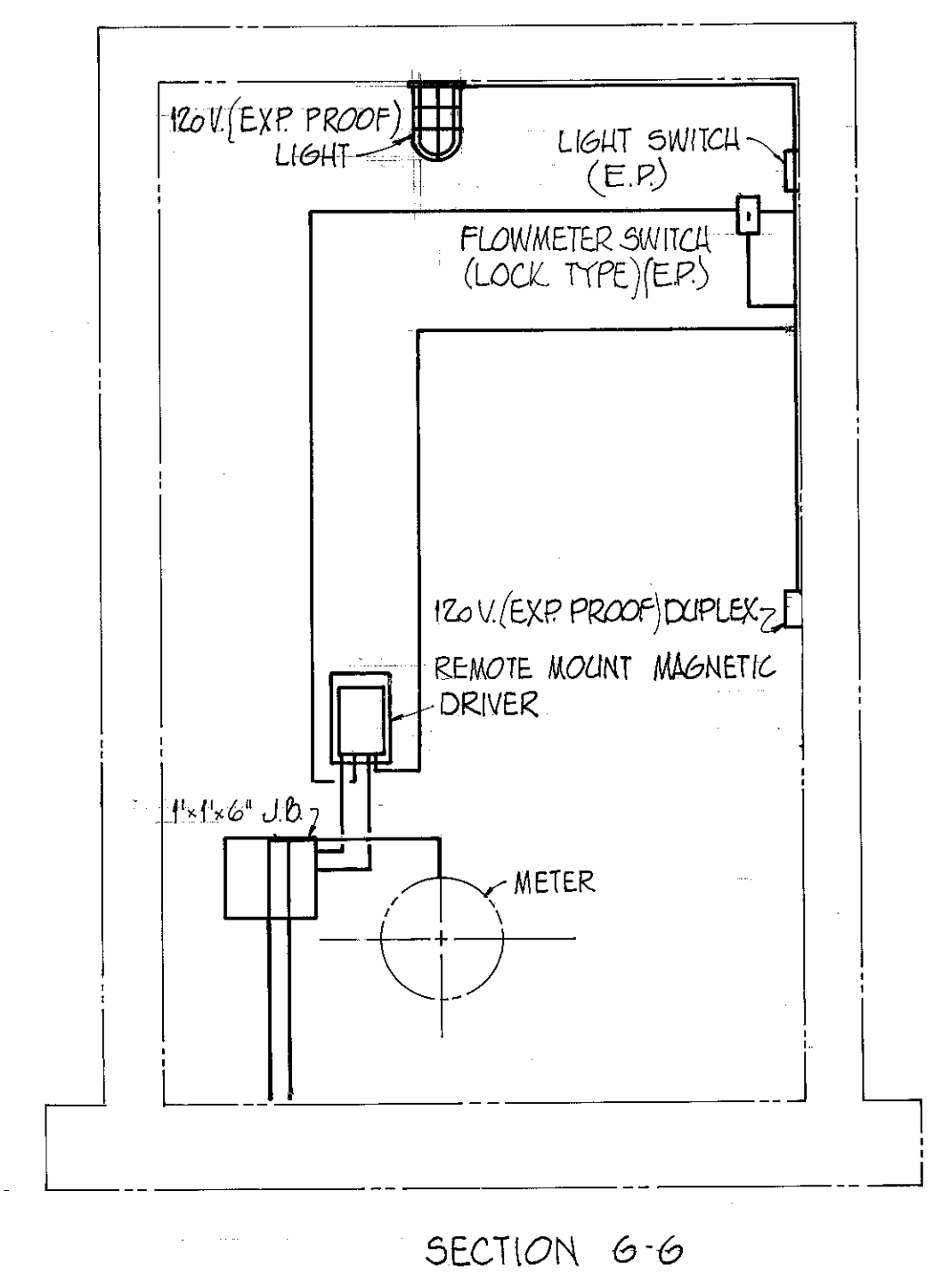
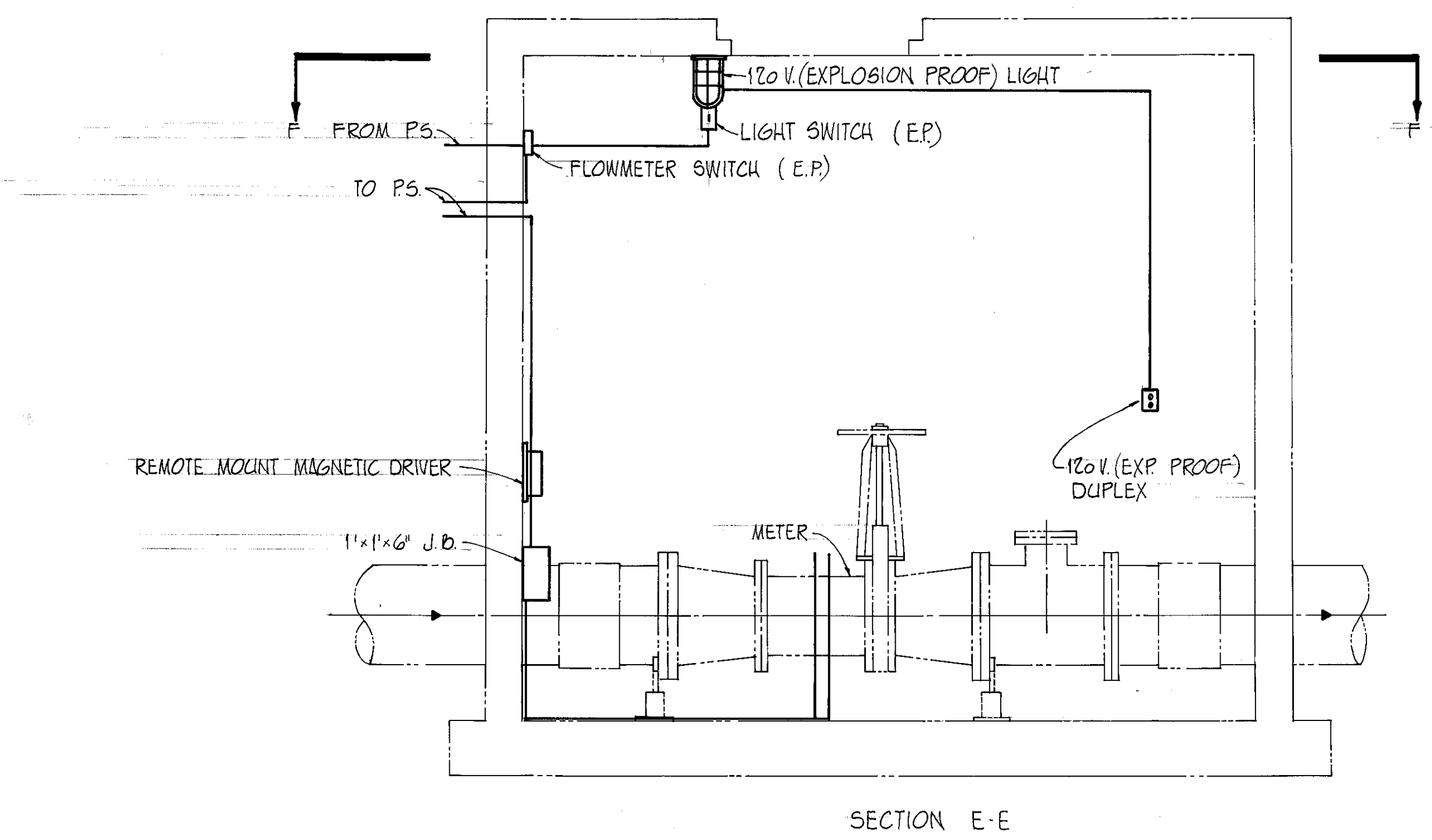
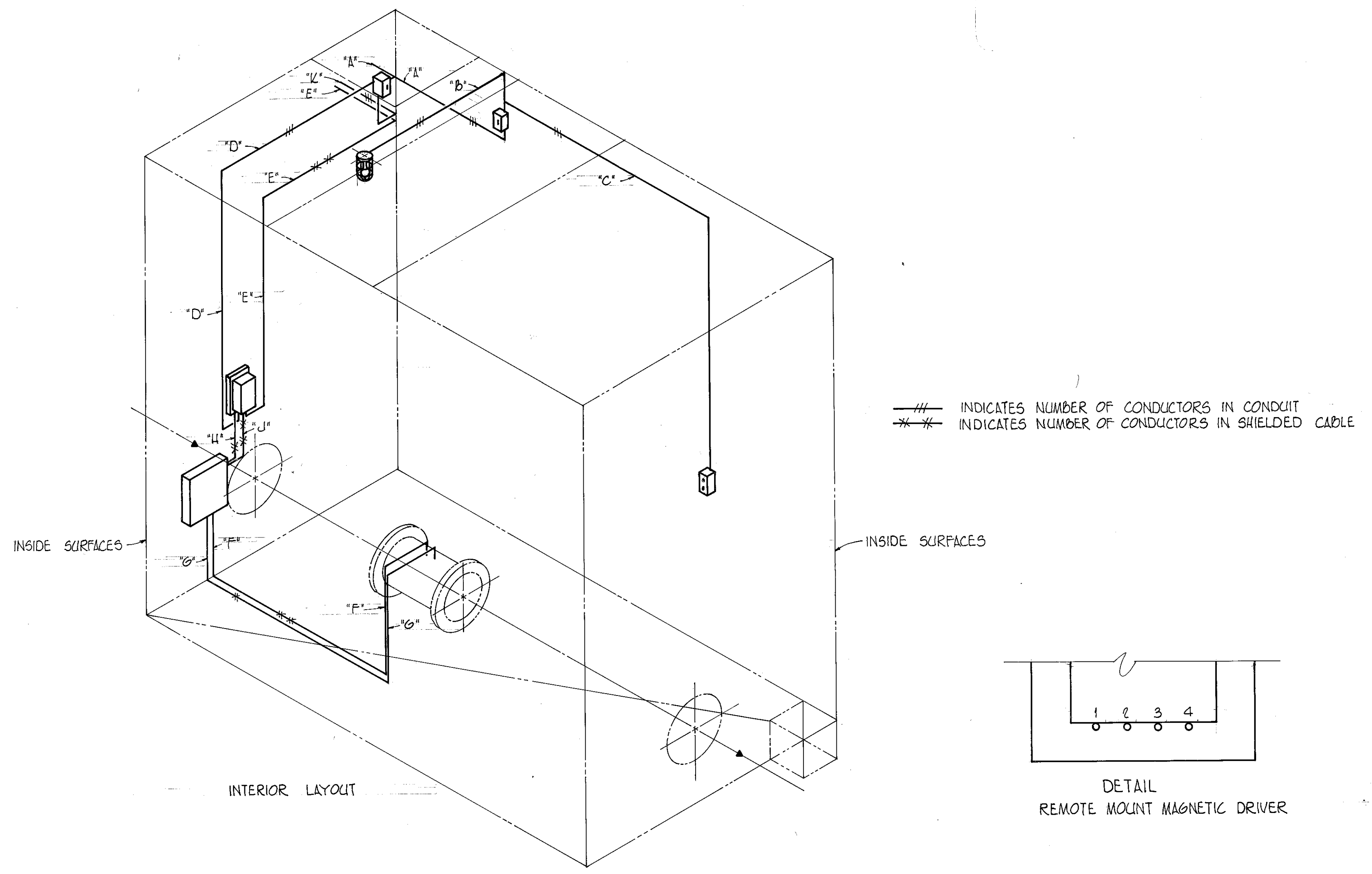
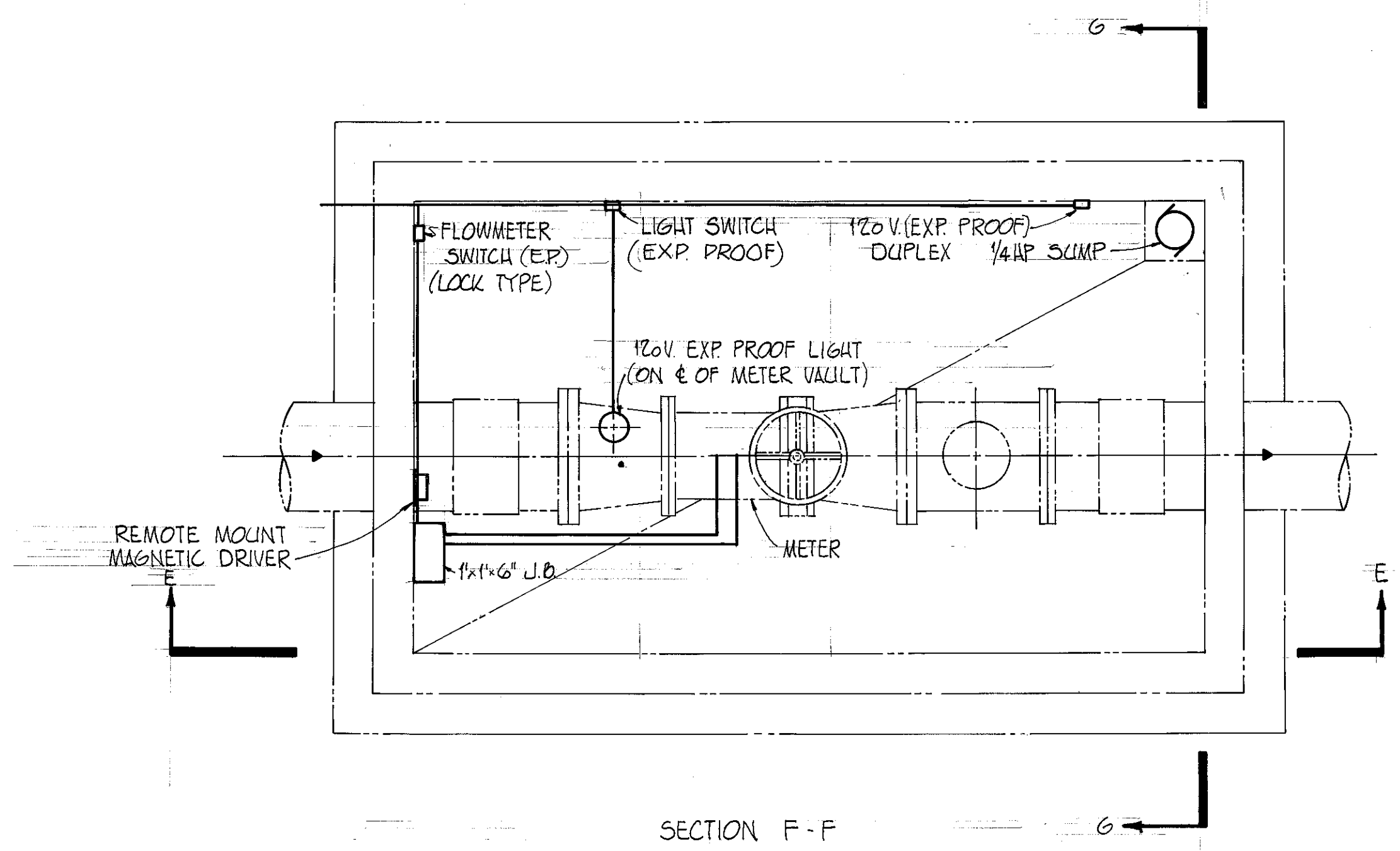


SECTION B-B



REVISED AIR COMPRESSOR AND PNEUMATIC
TANK LAYOUT
NO SCALE

No.	DATE	REVISIONS
1		
2		
3		
4		
5		



FLOWMETER CONDUITS				
#	CONDUCTOR	SIZE	FROM	TO
"A"	4 - # 16 THW	3/4"	PUMP STA.	FLOW METER SWITCH & LIGHT SWITCH
"B"	3 - # 16 THW	1/2"	LIGHT SWITCH	LIGHT
"C"	"	"	"	DUPLEX
"D"	"	3/4"	FLOW METER SWITCH	MAGNETIC DRIVER (2)
"E"	*	"	MAGNETIC DRIVER (4)	PUMP STA.
"F"	"	1/2"	METER	J.B.
"G"	1-2W SHIELD (SUP)	"	"	"
"H"	Δ 1-2W SHIELD (SUP)	"	J.B.	MAGNETIC DRIVER (1)
"J"	Δ 2-2W SHIELD (SUP)	"	"	" (3)
"K"	3 - # 16 THW	3/4"	FLOW METER SWITCH	PUMP STA.

Δ * 2-2W SHIELD (SUP)
3-#16 THW

W.D. 7697

DRAWING 44-132-28917

Elton G. Smith
ELTON G. SMITH, P.E.
CHIEF ENGINEER, FLA # 19872
DEPARTMENT OF SANITARY SEWERS

DES: RGH
DRN: LMS
CKD: XBT
DATE: MAY 1977

APPROVED BY
J.W. Silliman
J.W. SILLIMAN, P.E., DIRECTOR
DEPARTMENT OF SANITARY SEWERS

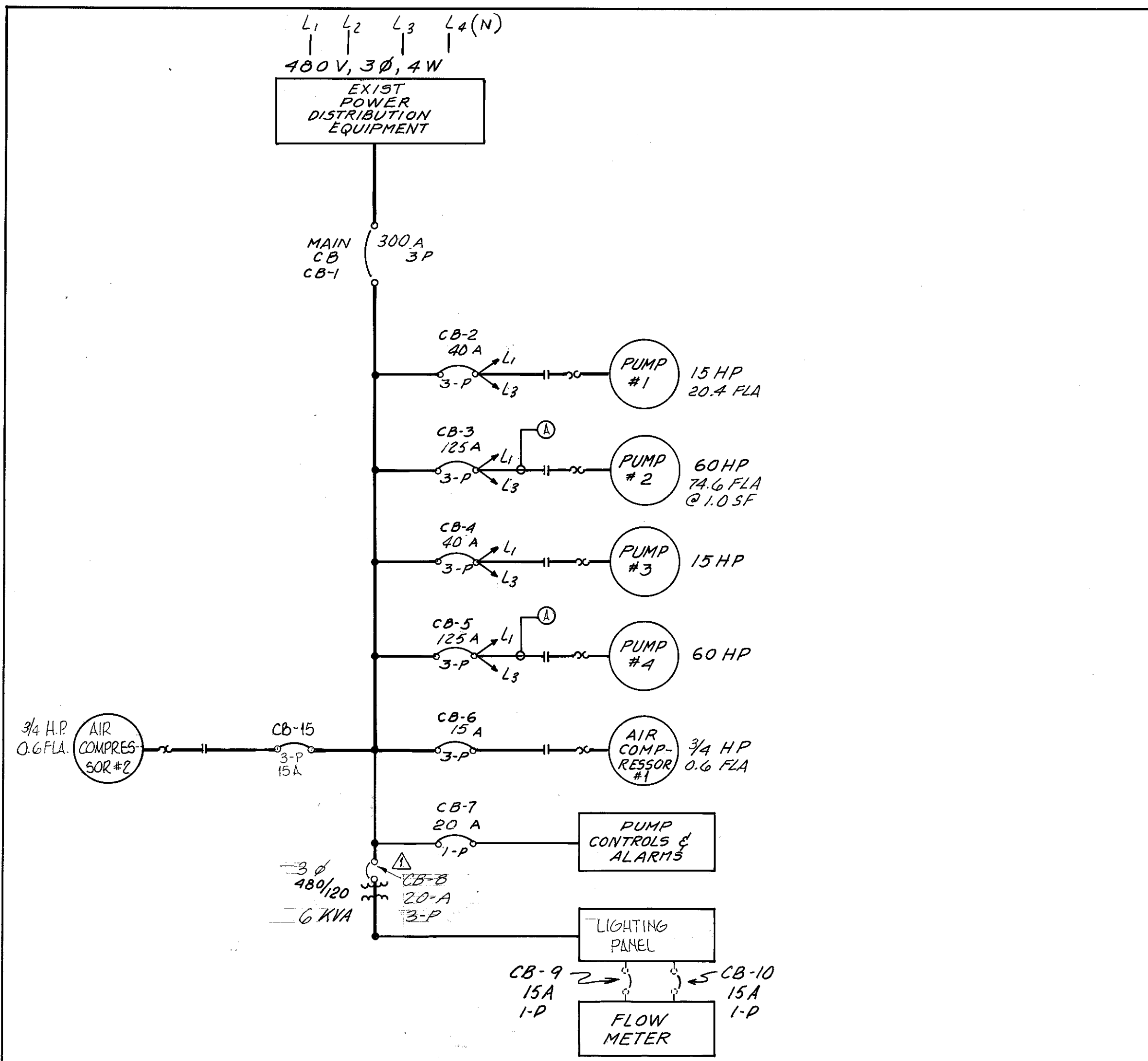
NO	DATE	REVISIONS
1	1-18-78	Flowmeter Conduits RGH
2		
3		
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5		

SCALE
NO SCALE

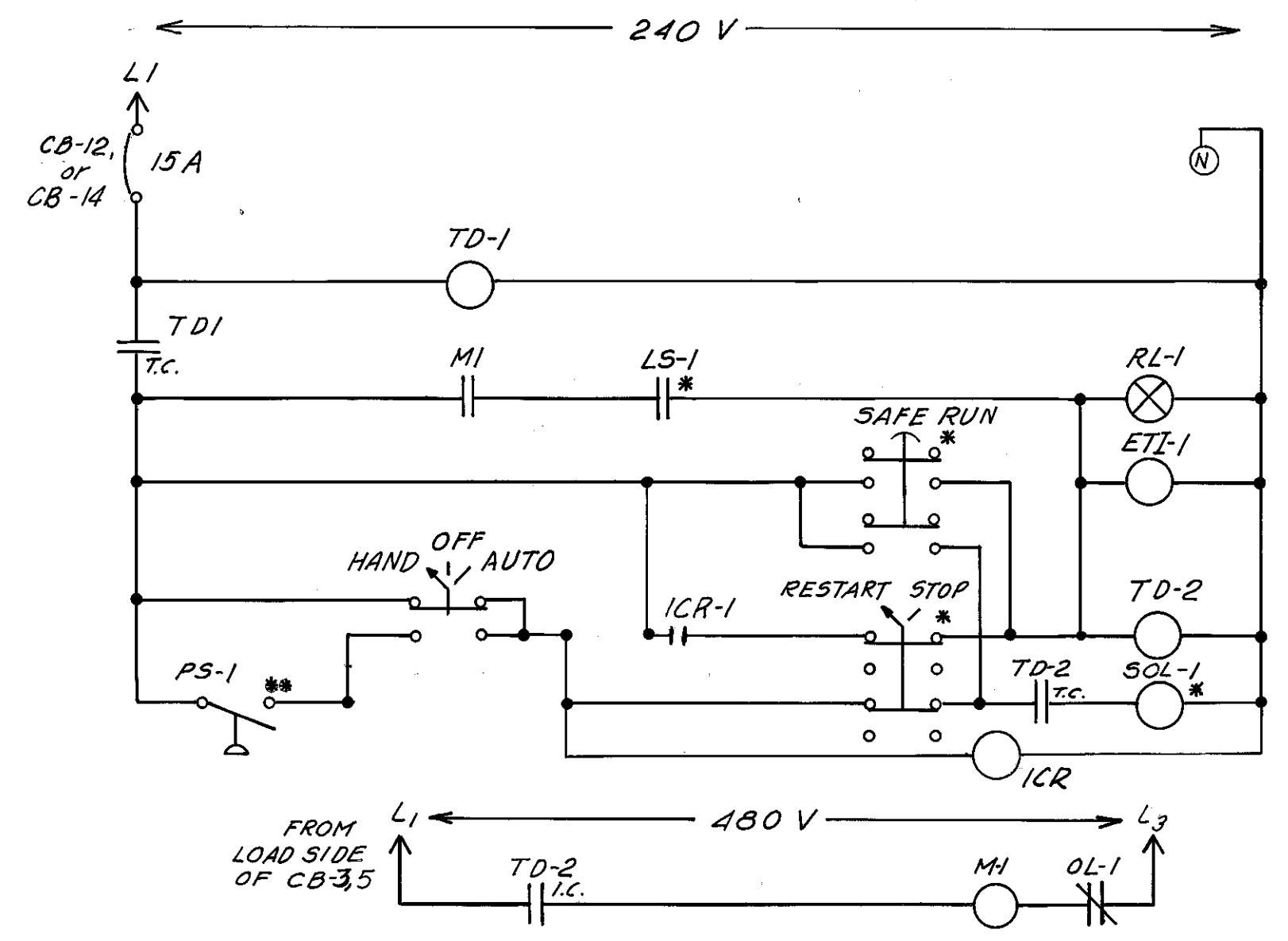
DEPARTMENT of SANITARY SEWERS
CITY of TAMPA, FLORIDA
ELECTRICAL

18th ST. PUMPING STATION
METER VAULT

SHEET
5
OF 7

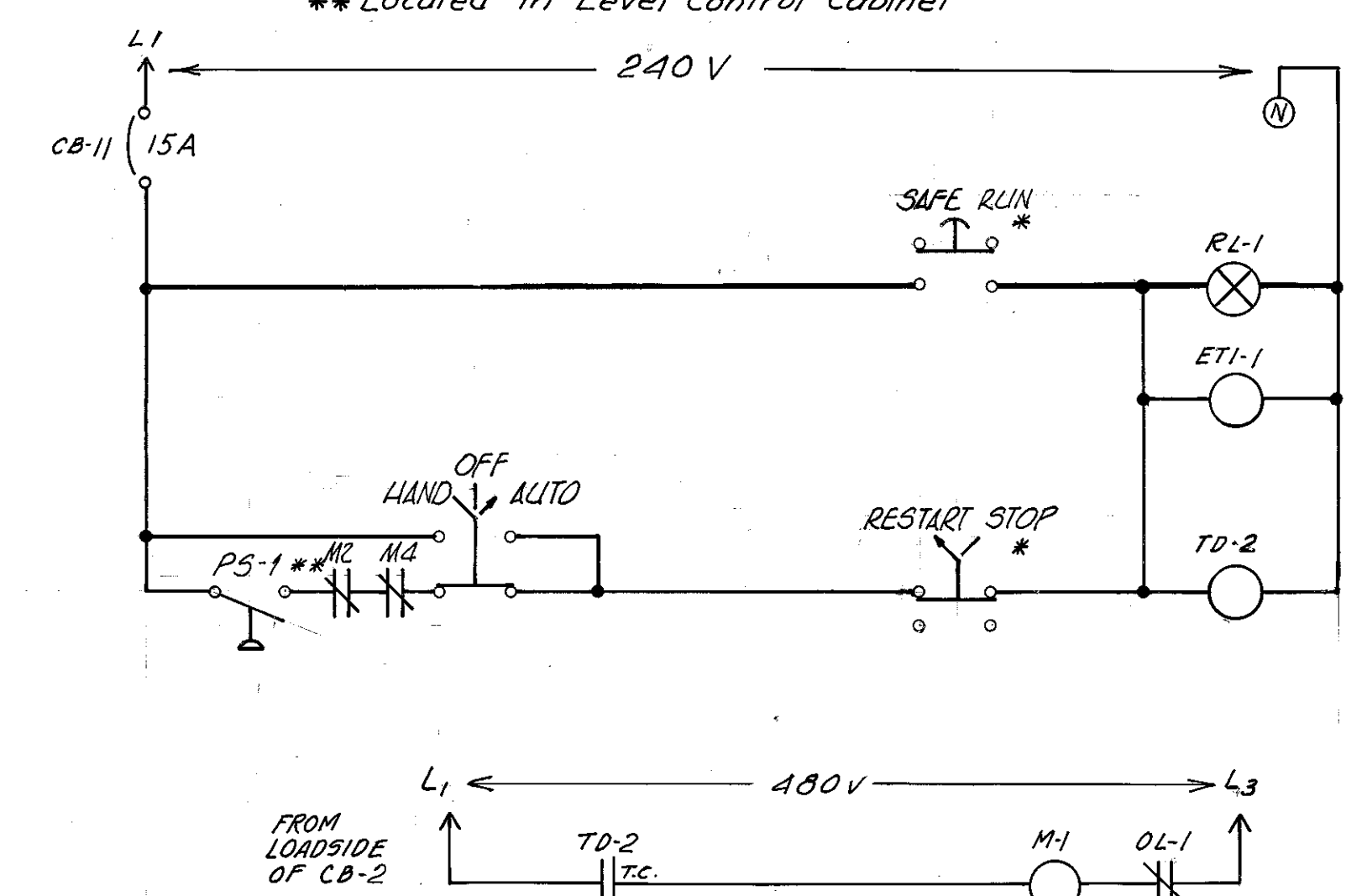


ONE LINE DIAGRAM

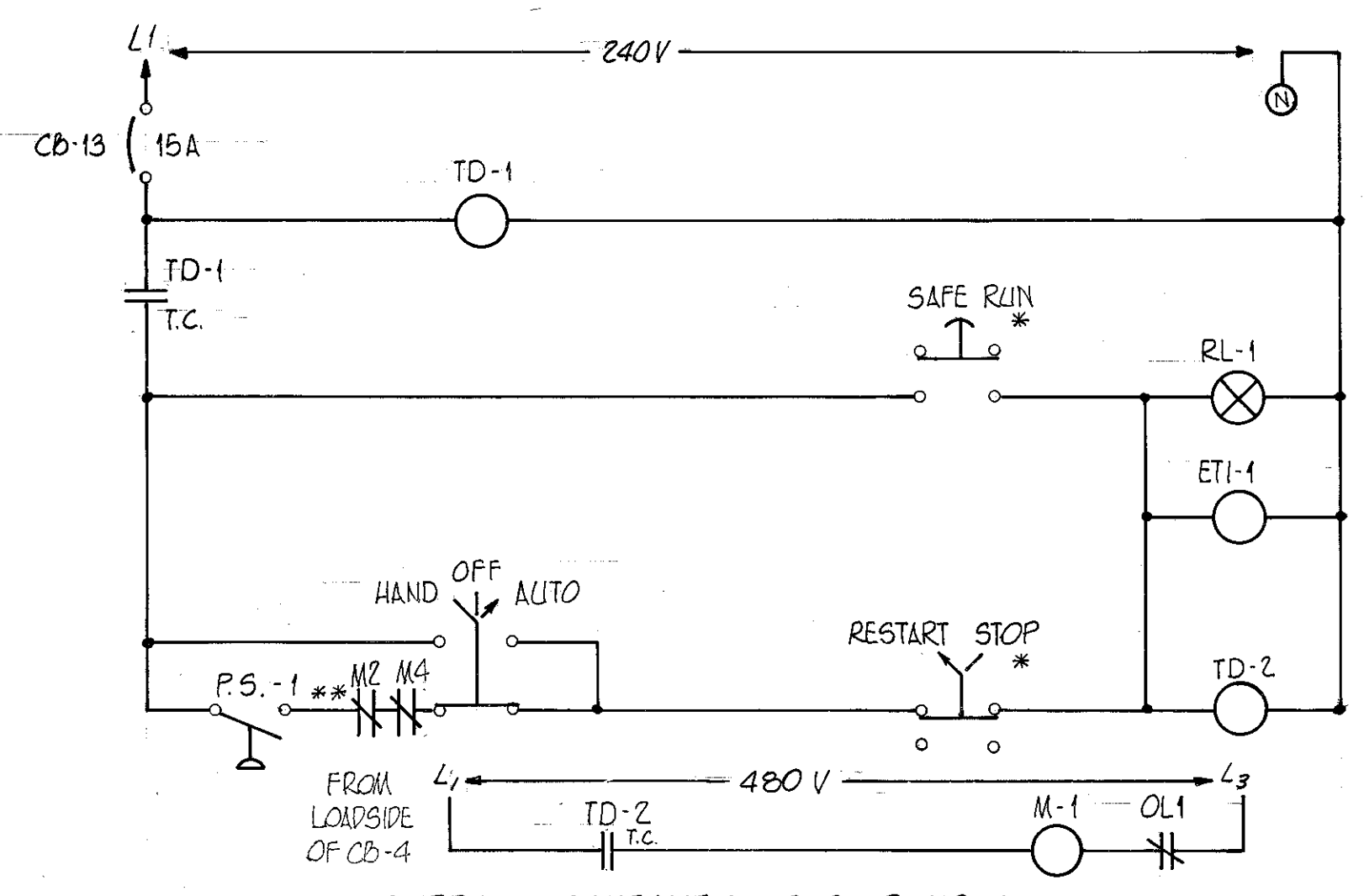


CONTROL SCHEMATIC FOR PUMPS #2,4

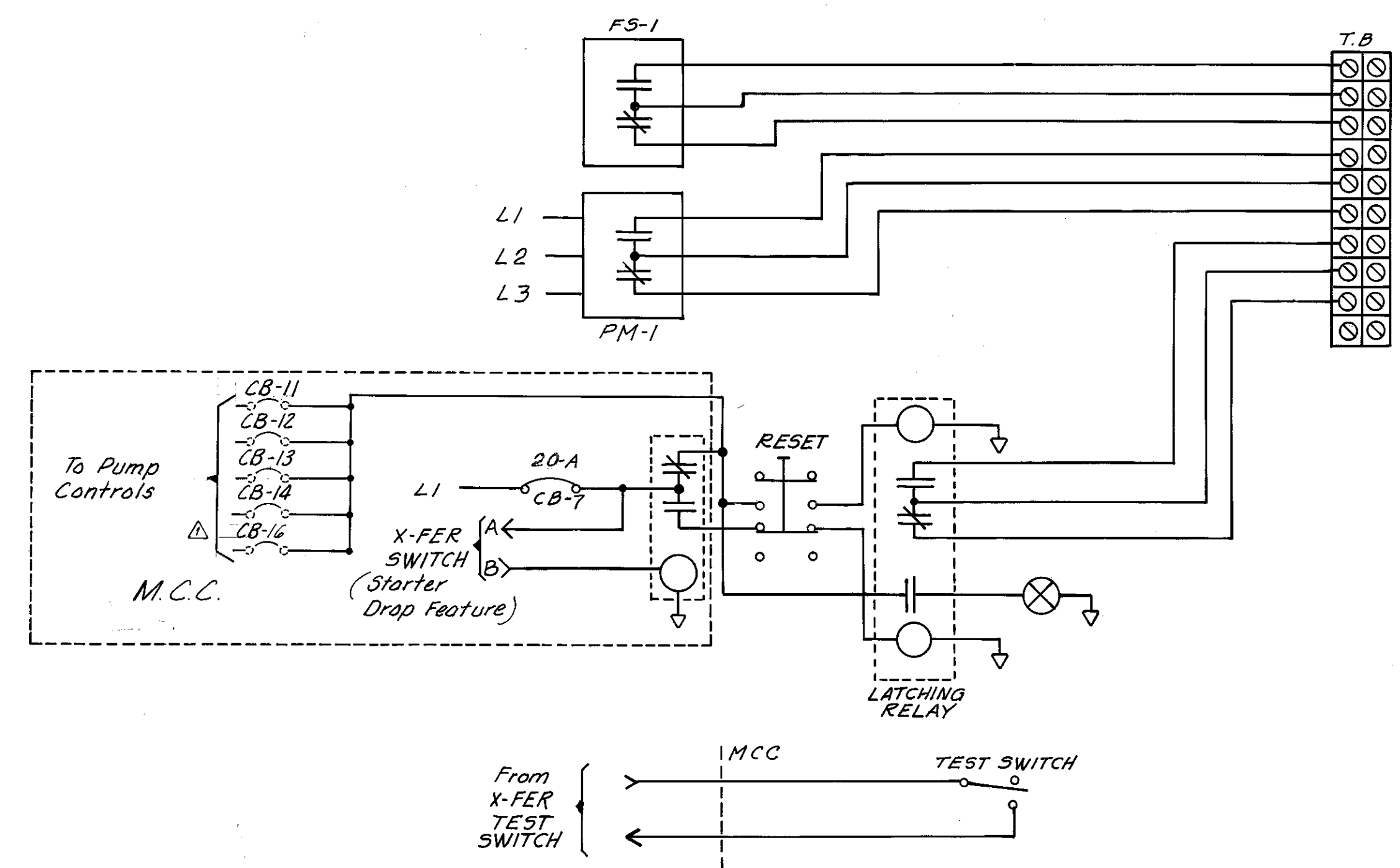
* Located in Dry Well
** Located in Level Control Cabinet



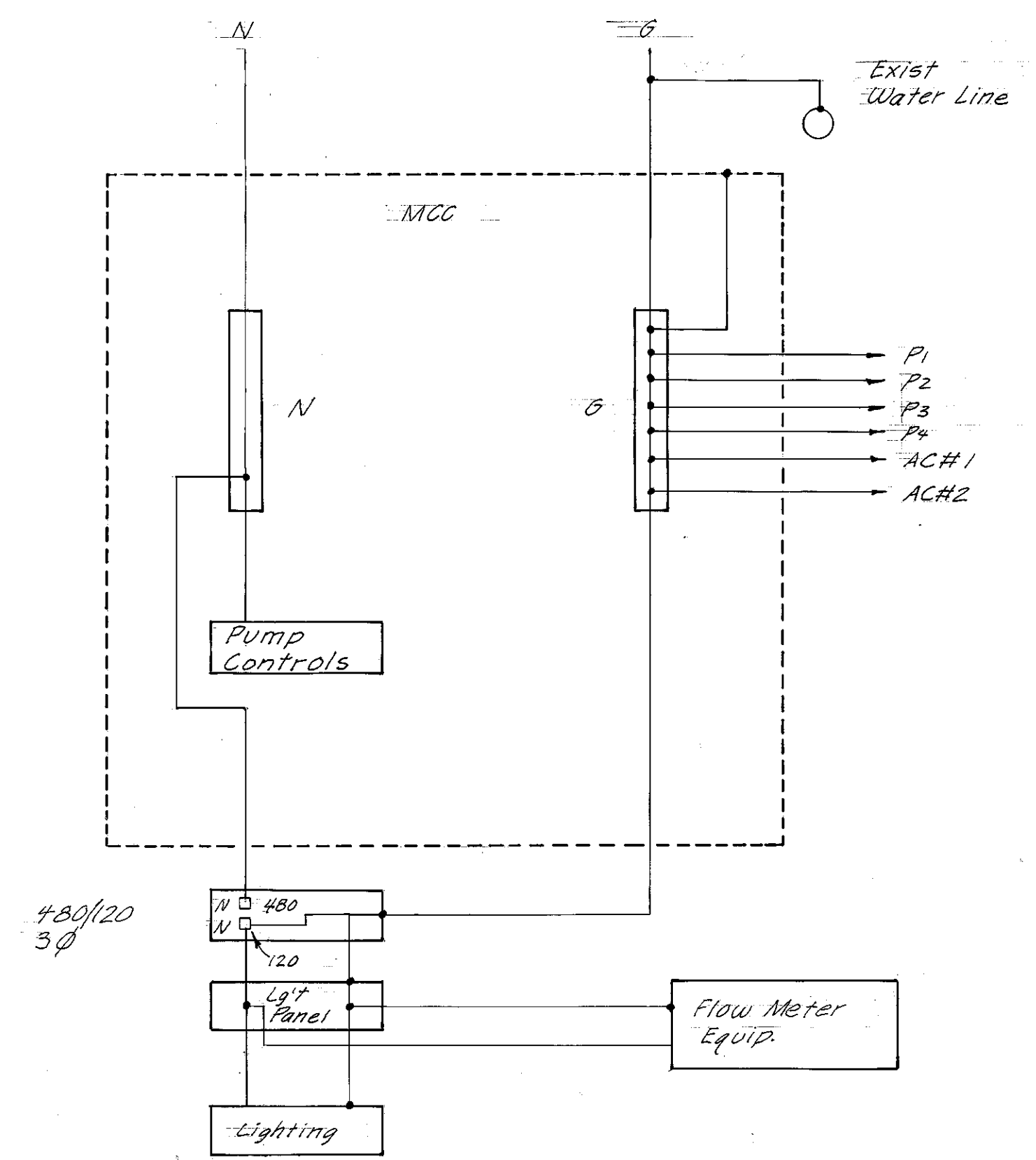
CONTROL SCHEMATIC FOR PUMP #1



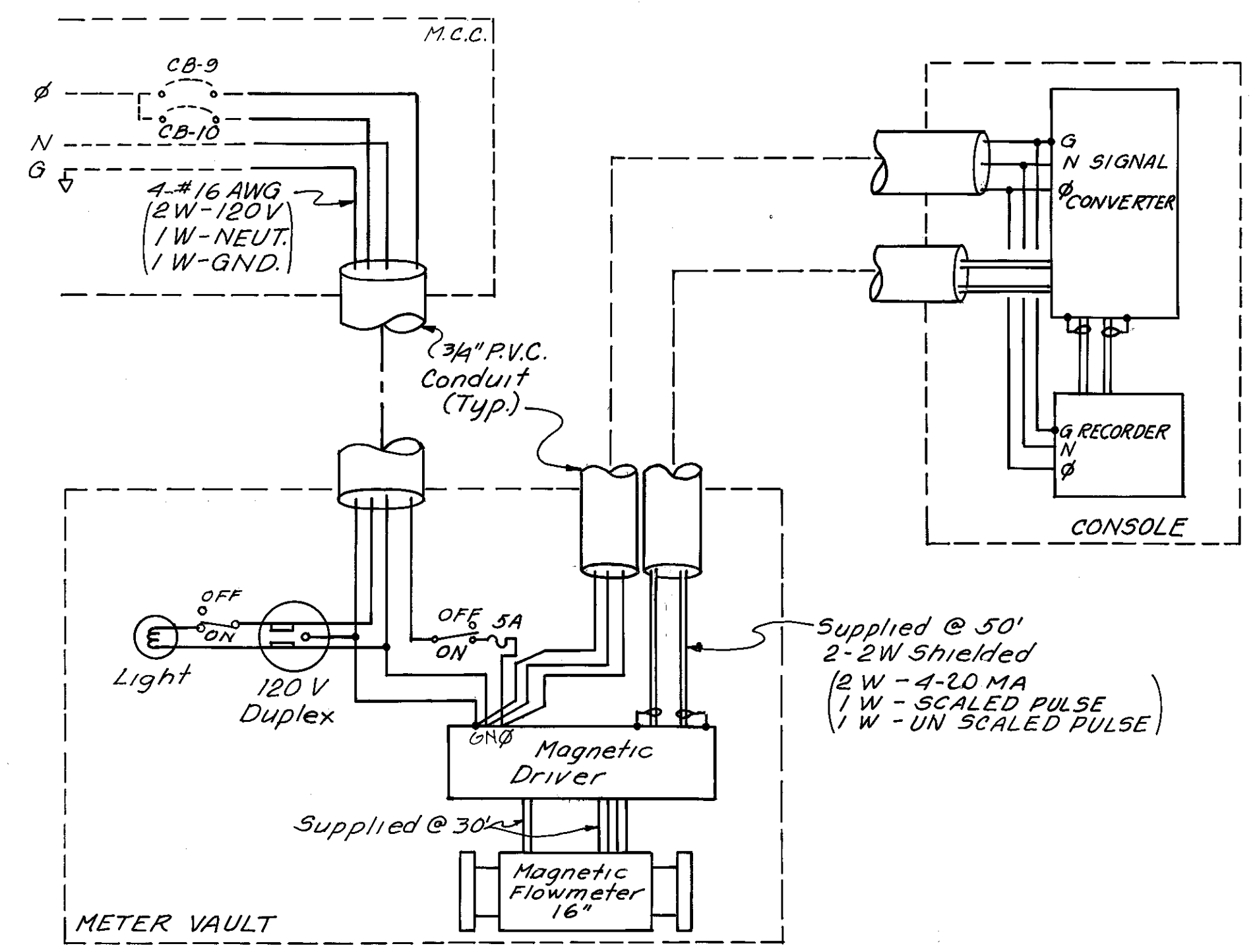
CONTROL SCHEMATIC FOR PUMP #3



PUMP CONTROL POWER AND ALARMS



NEUTRAL & GROUND DIAGRAM



FLOWMETER SCHEMATIC

W.O. 7697

BRUNNEN 44-132-28917

ELTON G. SMITH, P.E.
CHIEF ENGINEER
DEPARTMENT OF SANITARY SEWERS

DES: RGH
DRN: E.R./KUS
CKD: J.F.D.
DATE: 3-77

APPROVED BY
J.W. SILLIMAN, P.E., DIRECTOR
DEPARTMENT OF SANITARY SEWERS

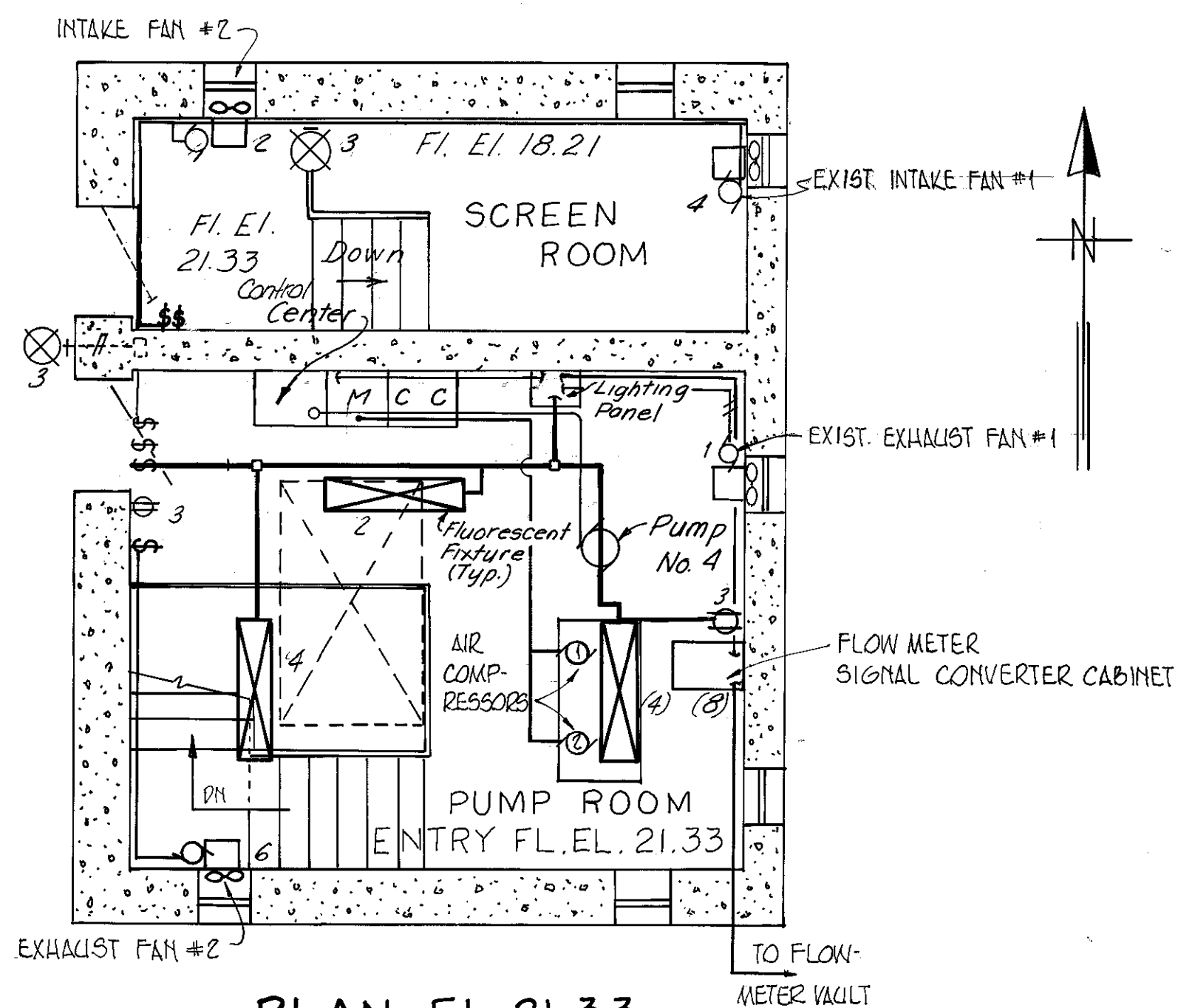
NO.	DATE	REVISIONS
1	1-18-78	Misc. Electrical Revisions RGH
2		
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SCALE
AS SHOWN

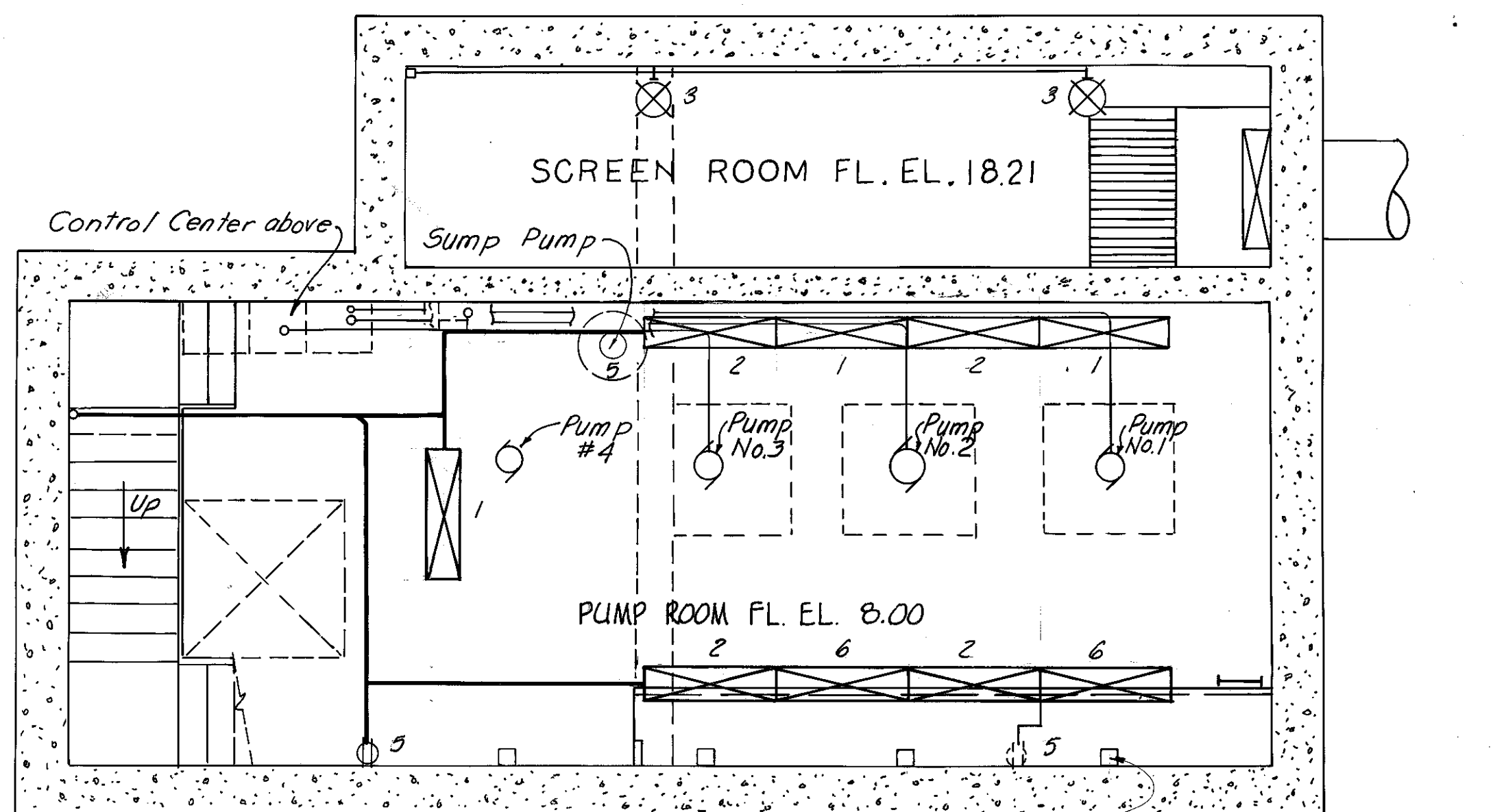
DEPARTMENT of SANITARY SEWERS
CITY of TAMPA, FLORIDA
ELECTRICAL

18TH STREET PUMPING STATION
REHABILITATION DETAILS

SHEET
6
OF 7



PLAN EL. 21.33
Scale 1/4" = 1'-0"



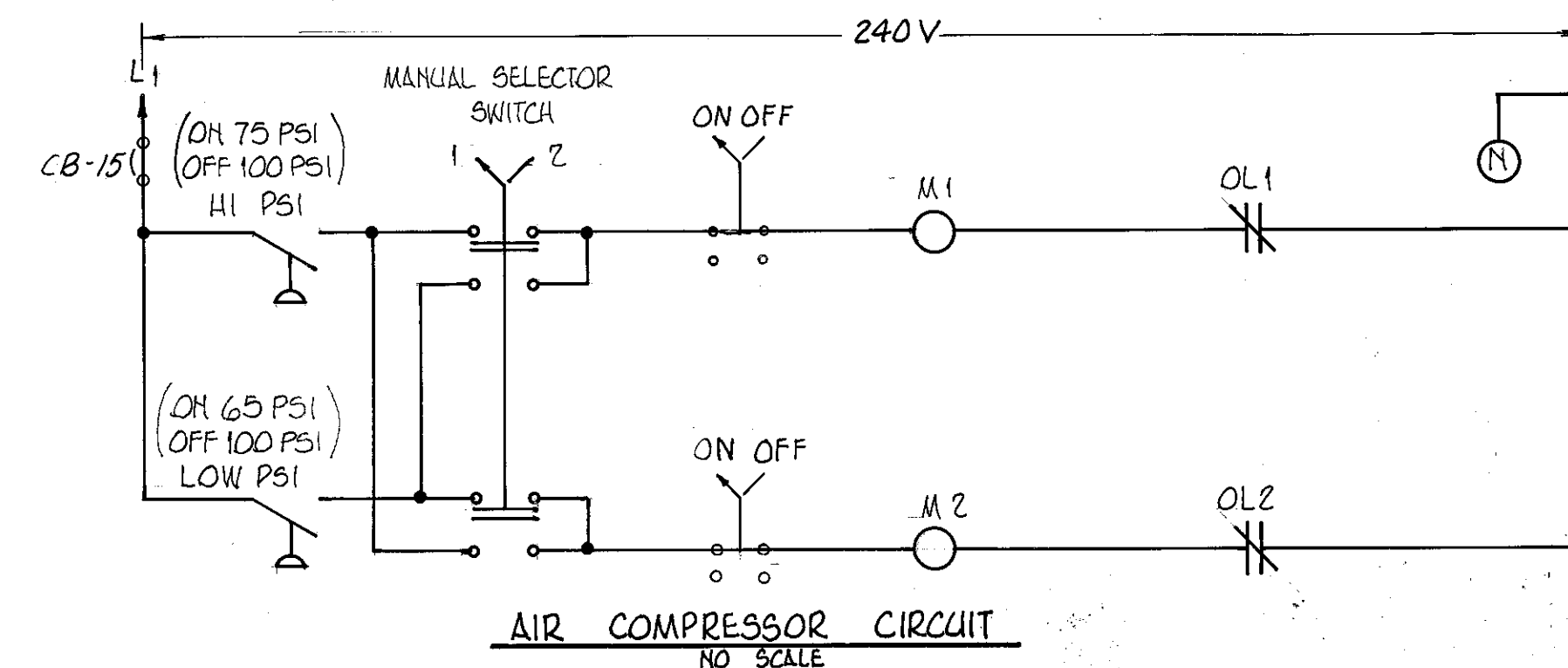
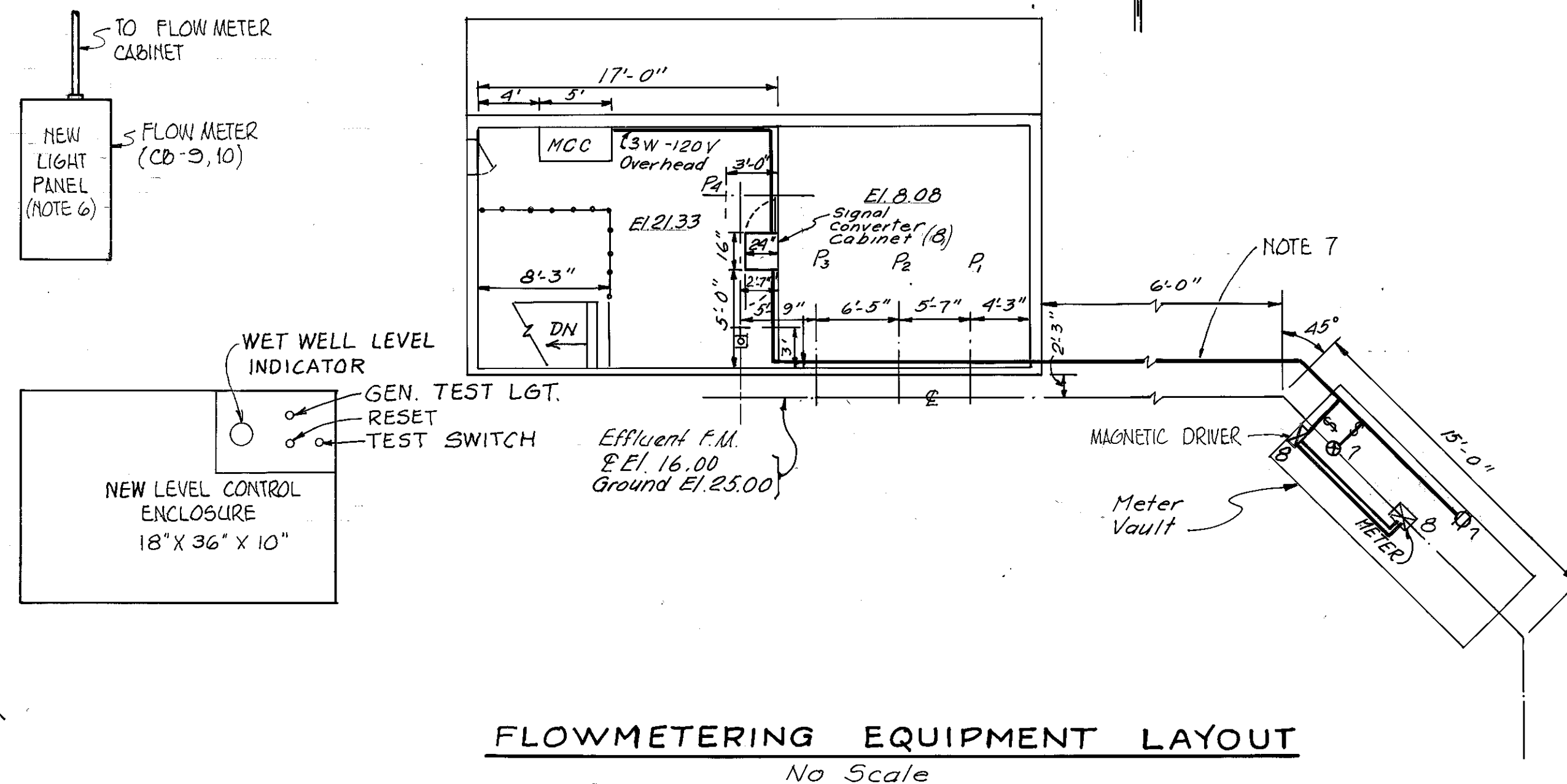
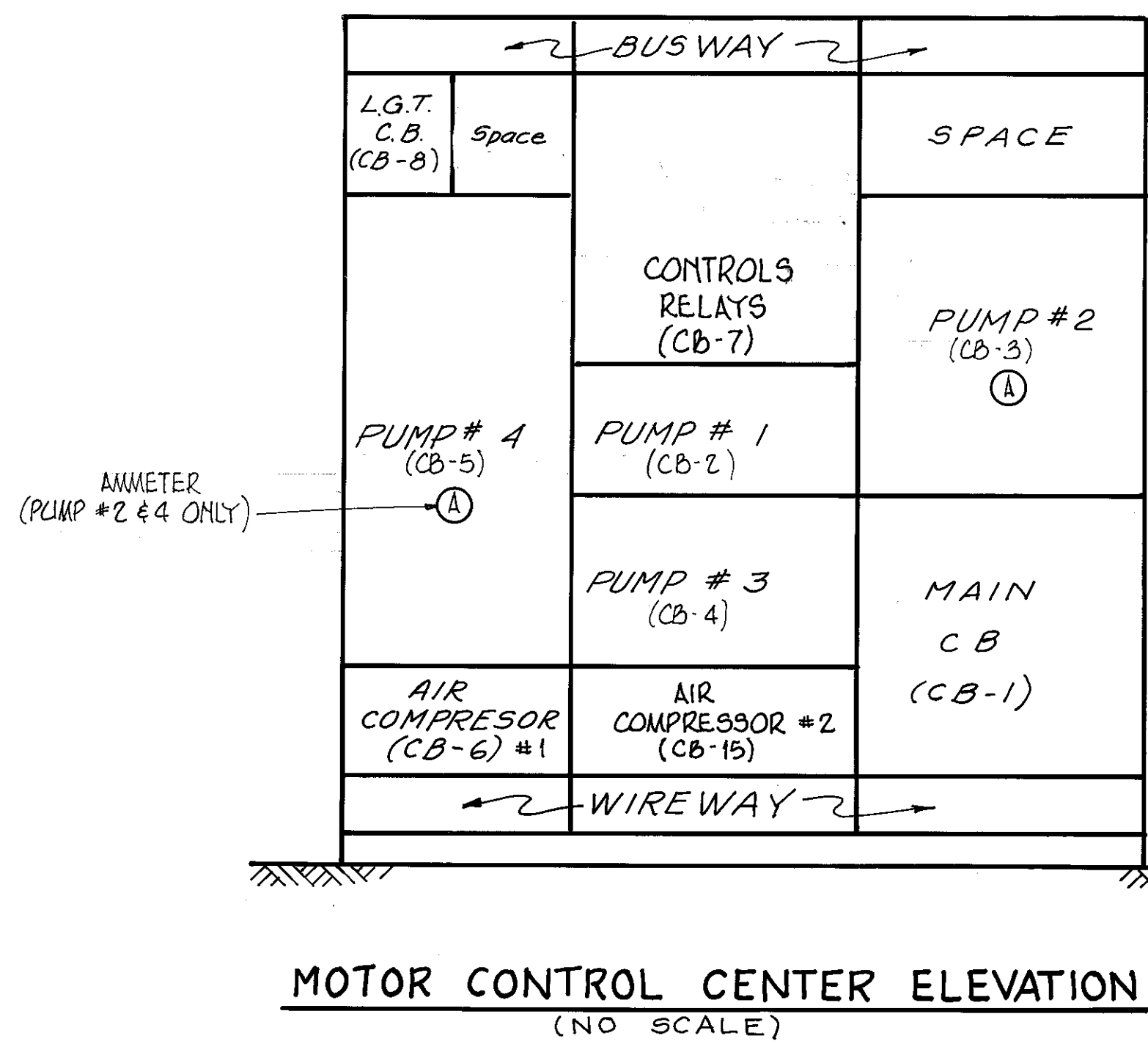
PLAN EL. 8.00
LIGHTING LAYOUT
(Scale: 1/4" = 1'-0")

LIGHTING CIRCUIT SCHEDULE								
CKT. NO.	LOCATION	FLOOR EL.	MTG. HGT.	FIX. TYPE	LIGHTS & MOTORS	RECP.	TOTAL WATTS	REMARKS
1	PUMP ROOM ENTRY EAST	21.33 8.00	17.00 19.00	F-1	3-100		550	* EXHAUST FAN #1 HI-LEVEL LIGHT
2	PUMP ROOM EAST SCREEN ROOM ENTRY	8.00 21.33 21.33	17.00 28.50	F-1	4-100 1-100 1/2 H.P.		875	LO-LEVEL LIGHT INTAKE FAN #2 (NOTE 5)
3	SCREEN ROOM ENTRY PUMP ROOM ENTRY ENTRANCE	21.33 18.21 21.33 20.69	7'-0" 6'-0" 3'-6" 7'-9"	B-1 - H-1	1-200 2-200 1-200	2	1100	* NOTE 2 * *
4	SCREEN ROOM PUMP ROOM ENTRY	18.21 21.33	- 28.50	F-1	1/3 HP 2-100		450	* INTAKE FAN #1 (NOTE 2) HI-LEVEL LIGHT
5	PUMP ROOM	8.00	- 3'-6"	-	1/3 HP	2	550	* SUMP PUMP *
6	PUMP ROOM EAST ENTRY	8.00 21.33	24.50	F-1	2-100 1/2 H.P.		575	HI-LEVEL LIGHT NEW EXHAUST FAN #2 (NOTE 4)
7	METER VAULT	-	- 4'-0"	A-1	1-100	1	250	(SUMP PUMP)
8	METER VAULT PUMP ROOM ENTRY	- 21.33	-	-	-		(1000)	MAGNETIC FLOWMETER SIGNAL CONVERTER

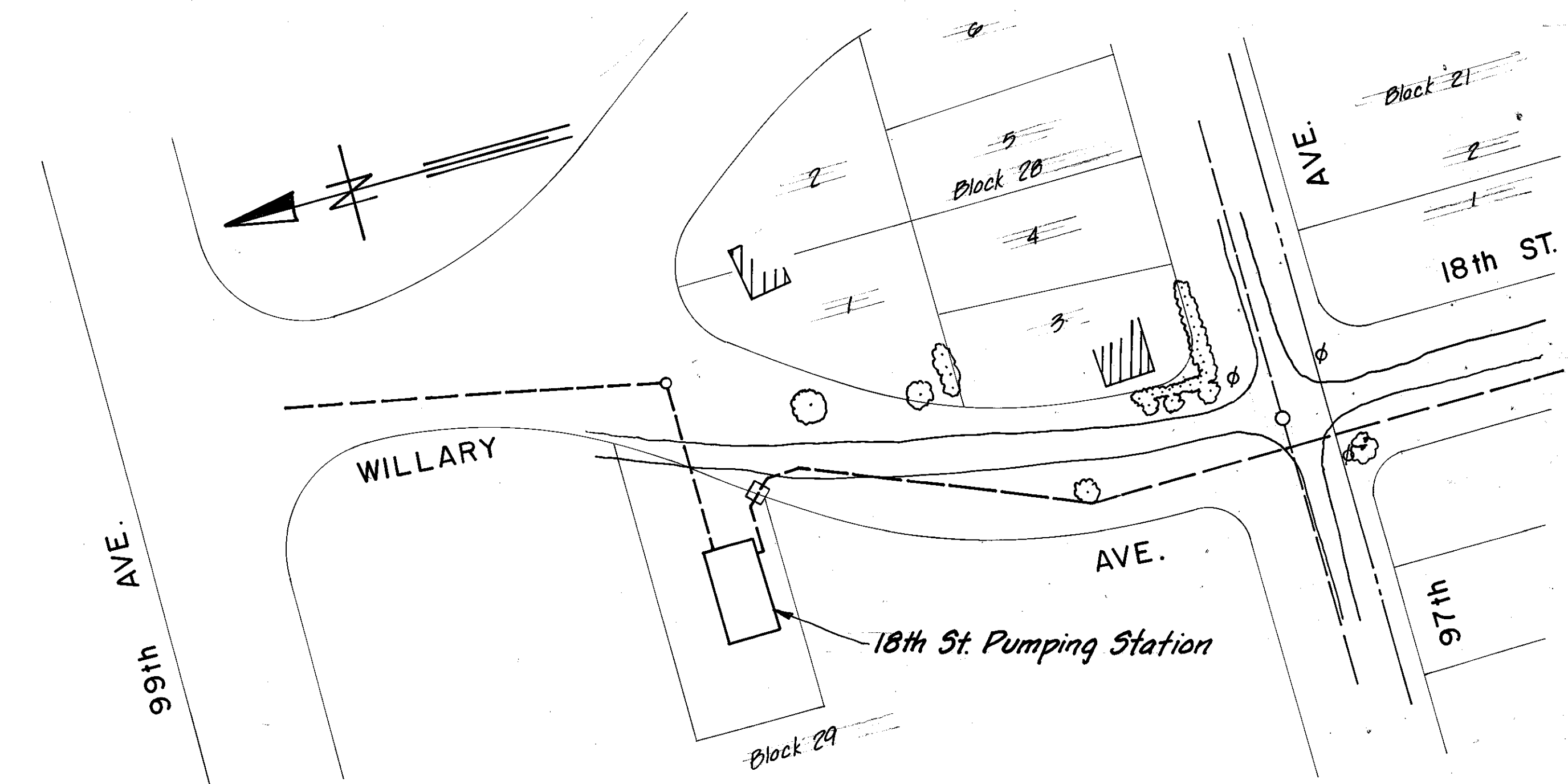
5350 - TOTAL WATTS

* - EXISTING TO REMAIN

- LIGHTING IN PUMP ROOM SHALL BE ARRANGED SUCH THAT LOW-LEVEL LIGHTING (CKT #2) SHALL BE SWITCHED SEPARATELY THAN REMAINING HI-LEVEL LIGHTING FOR ENERGY CONSERVATION.
- EXIST CIRCUITRY IN SCREEN ROOM TO REMAIN; FIXTURES SHALL BE BRUSHED AND CLEANED; ALL WIRING TO BE REPLACED (SEE NOTE 5)
- REMOTE SAFE-START-STOP-RUN SWITCHES TO BE LOCATED ON SOUTH WALL OF DRY WELL NEAR RESPECTIVE PUMP MOTORS.
- NEW EXHAUST FAN #2 TO BE SWITCHED W/ HI-LEVEL LIGHTING (CKT #6)
- NEW INTAKE FAN #2 IN WET WELL IS ONLY NEW FIXTURE. PROVIDE EXPLOSION-PROOF SWITCH & GALL. CONDUIT & PROPER CONDUCTORS
- INSTALL NEW LIGHTING PANEL & CB'S
- CONDUIT TO BE BURIED 24" MIN.

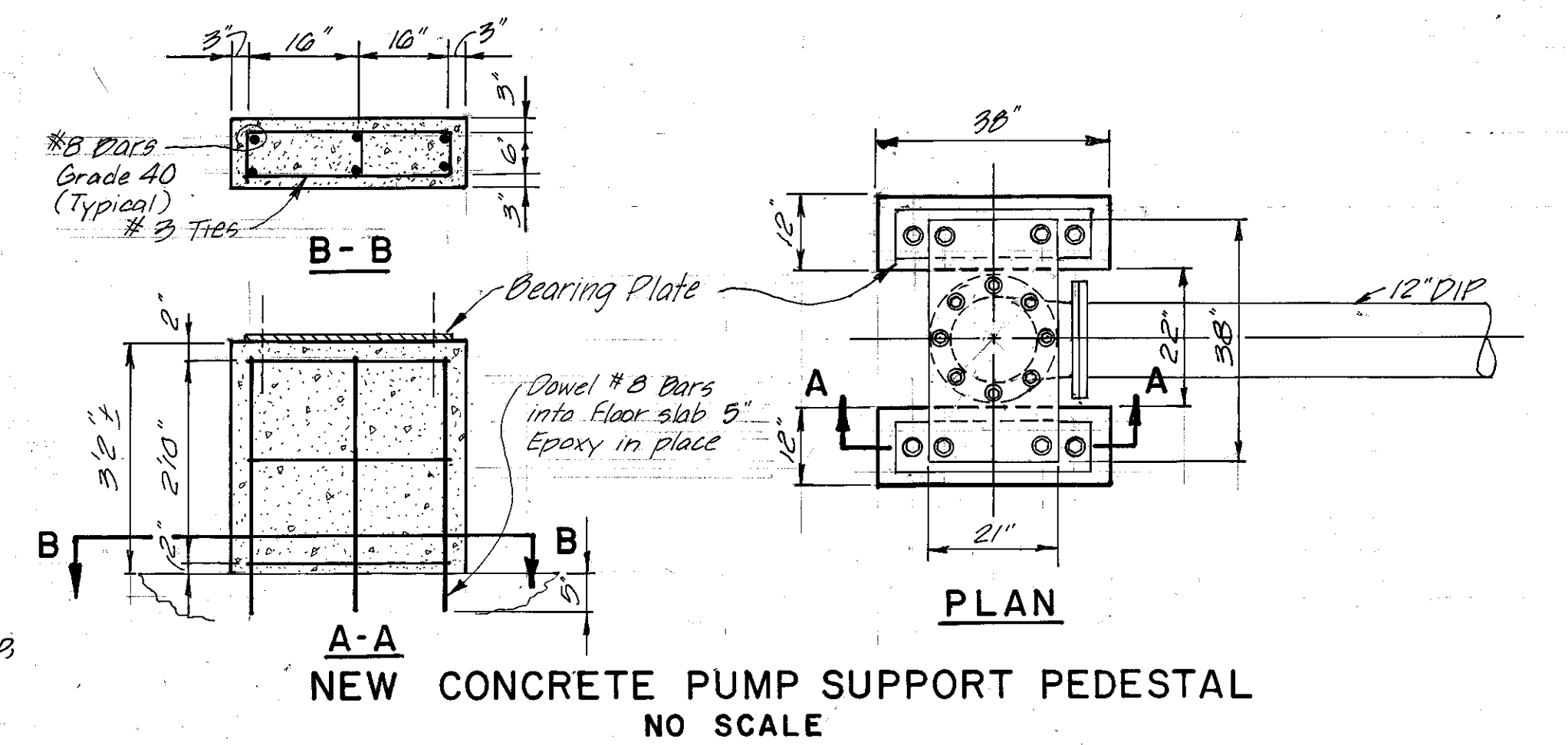


W.O. 7697

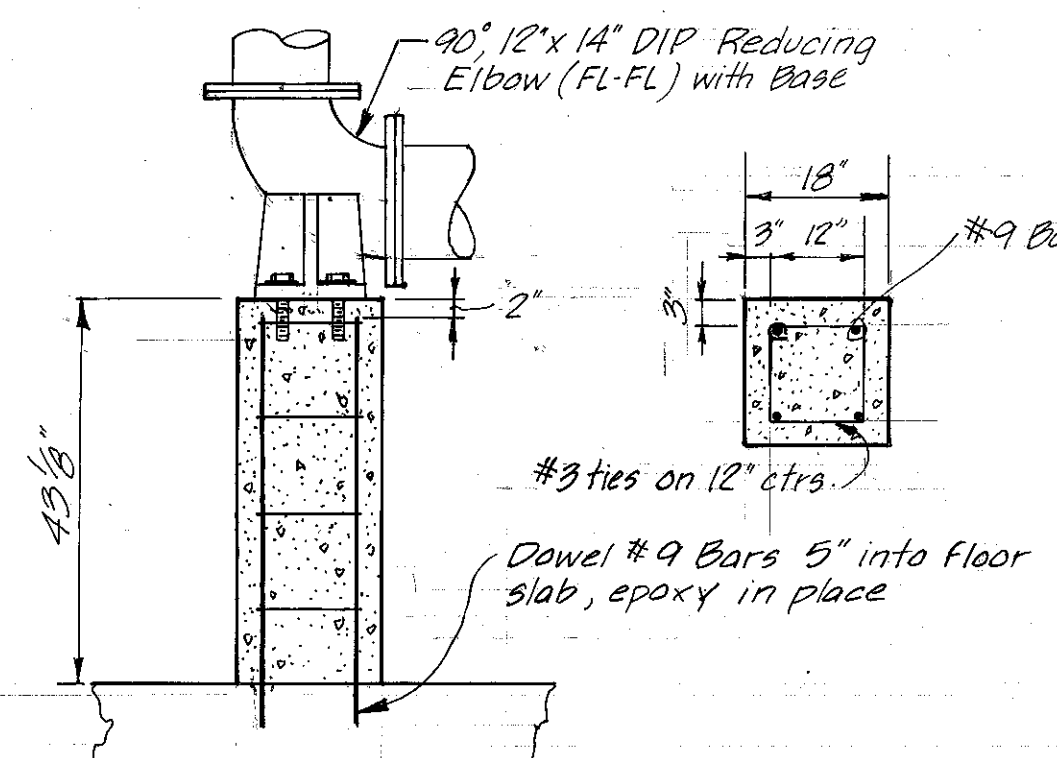


SITE PLAN
SCALE 1" = 10'-0"

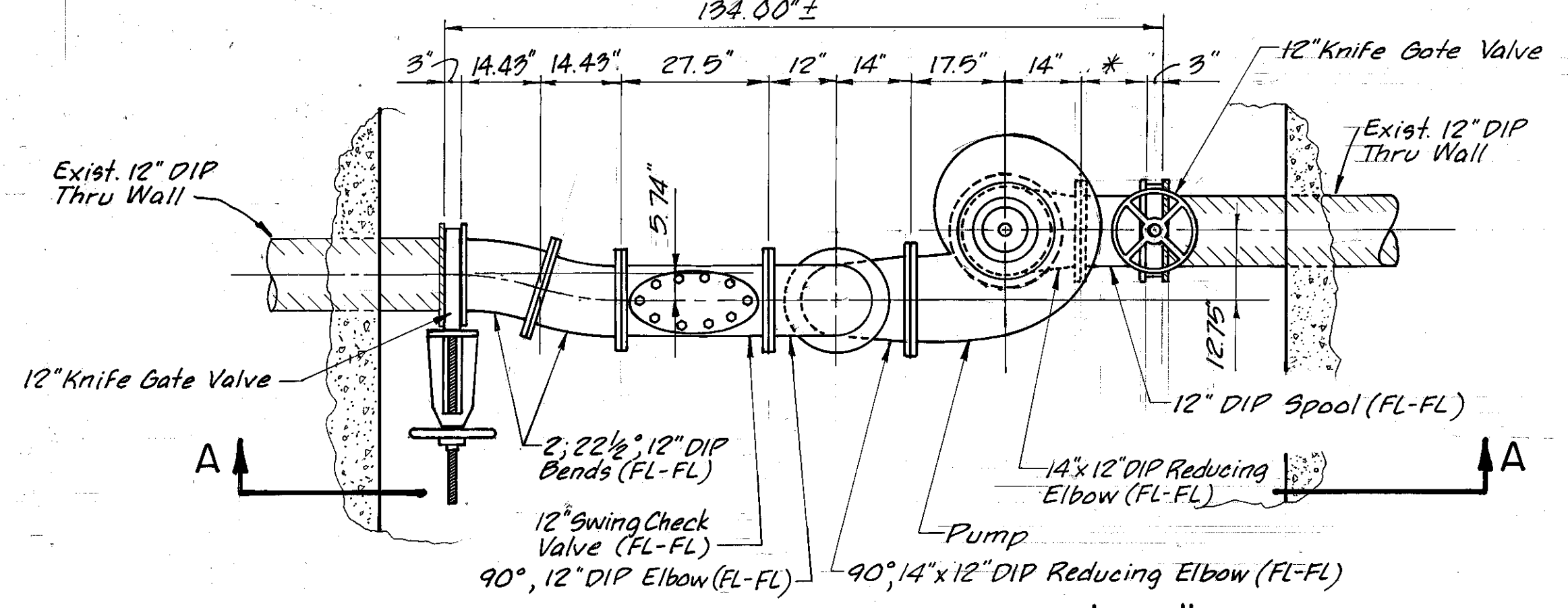
- Note:**
1. Pump, Pump Motor and Bearing Plates shall be delivered to project site by the City. All other materials, labor, and equipment required for performing contract work shall be provided by Contractor.
 2. Contractor shall field verify all dimensions prior to ordering materials to assure fit of piping arrangement.
 3. All pipe and fittings shall be Ductile Iron, Class 52.
 4. D.S.S. will provide shut down of sewage flow to permit Contractor to install new valves. P.S. shutdown and installation of valves to be performed between 2:00 AM and 5:00 AM.
 5. Etch and clean concrete slab in area of new pedestals, prior to installation.
 6. The Contractor is responsible for installing, balancing, and alignment of motor on pump. D.S.S. personnel will hook-up electrical service to motor and other associated electrical requirements.
 7. Pump and Pump Motor shall be Fairbanks Morse, Model # 5710, 40 hp, 14" Pump, with Impeller L 14A1A (860 RPM)



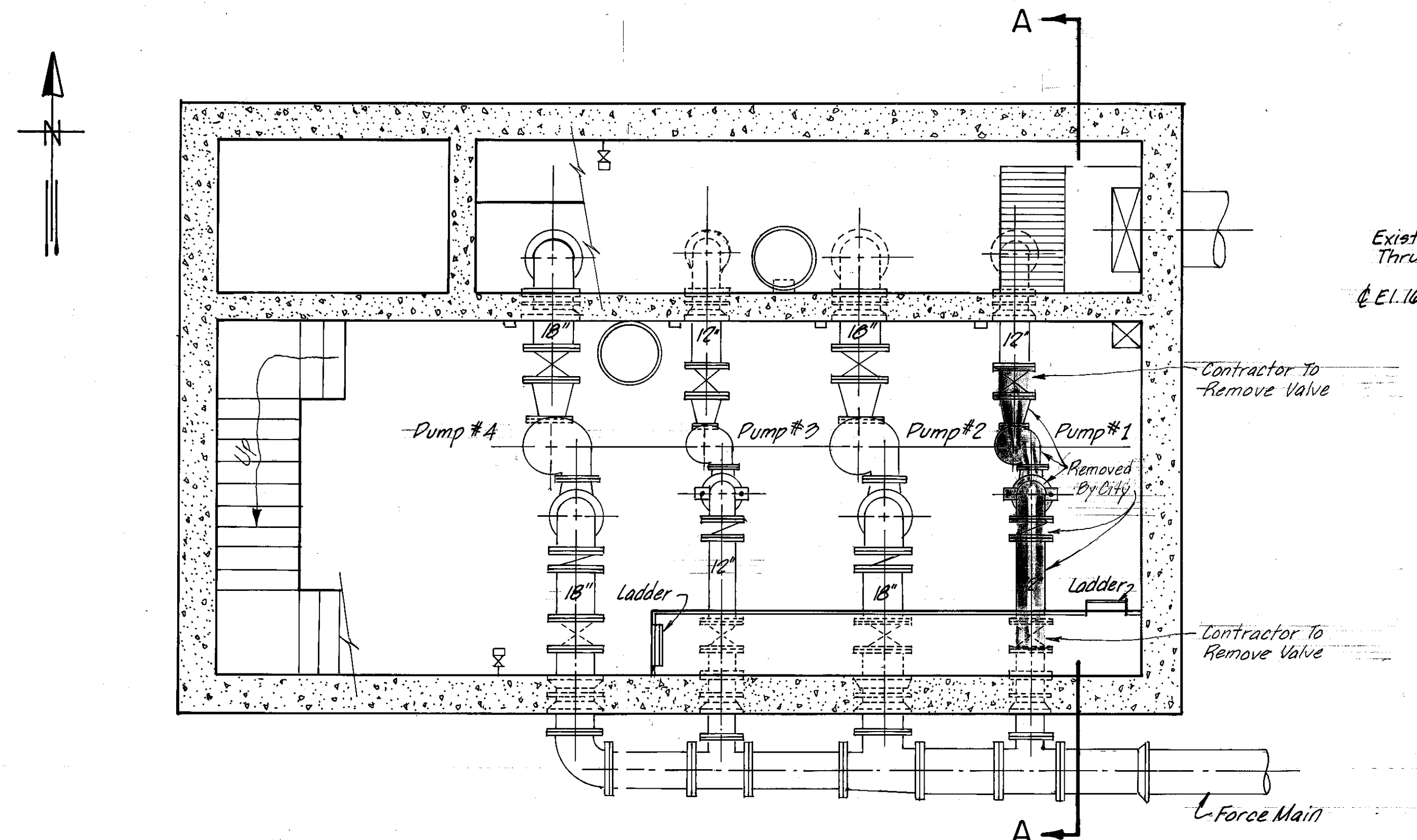
NEW CONCRETE PUMP SUPPORT PEDESTAL
NO SCALE



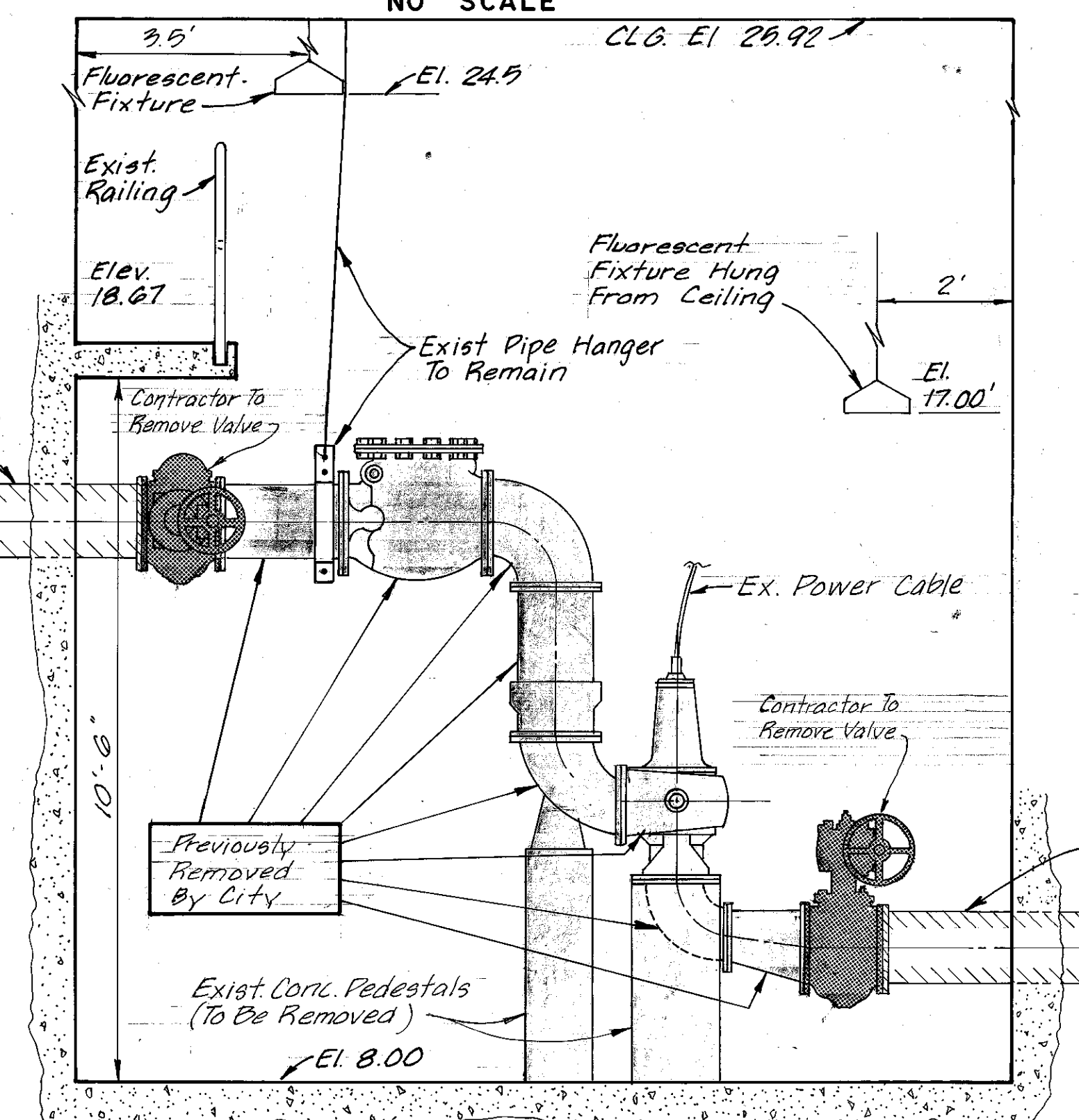
SUPPORT FOR REDUCING ELBOW WITH BASE
NO SCALE



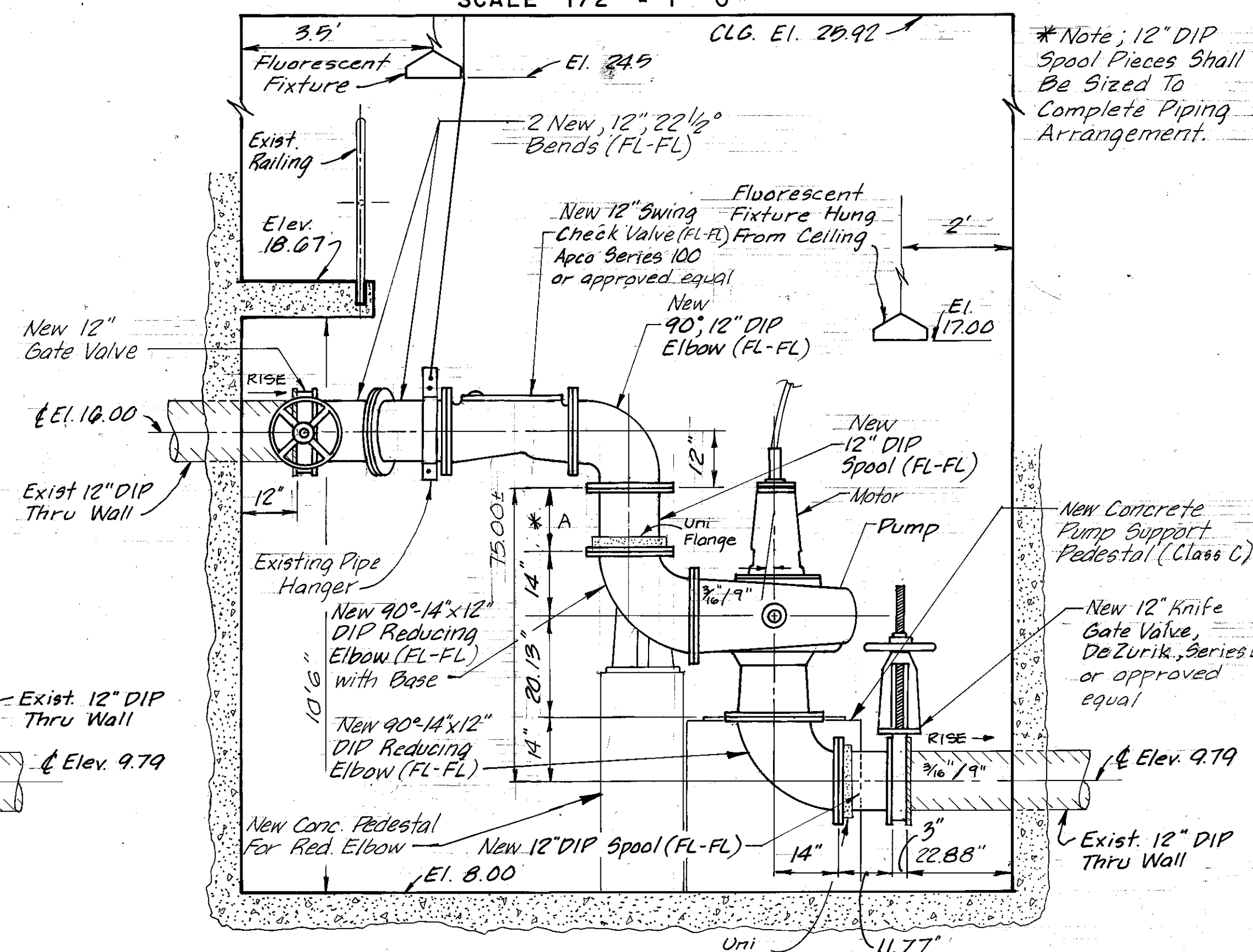
PART PLAN @ ELEV. 17'-5"
SCALE 1/2" = 1'-0"



SECTIONAL PLAN @ ELEV. 20'-0"
SCALE 1/4" = 1'-0"



SECTION A-A (EXISTING)
PUMP I
SCALE 1/2" = 1'-0"



SECTION A-A (PROPOSED)
PUMP I
SCALE 1/2" = 1'-0"

ELEVATION	A	B
	14 3/8"	X
	14 3/8"	X
	14 3/8"	12 1/8"

AS BUILT

Ralph L. Metcalf, II
RALPH L. METCALF, II, P.E. # 23041
CHIEF ENGINEER
DEPARTMENT OF SANITARY SEWERS

DES: D.Y.S.
DRN: D.E.P.
CKD: *MC*
DATE: 6/84

APPROVED BY
Elton G. Smith
ELTON G. SMITH, P.E.
DIRECTOR
DEPARTMENT OF SANITARY SEWERS

No.	DATE	REVISIONS
1	9/26/84	Change Notes For Bid.
2	12/12/84	Add Note 7, Change Note 4.
3	1/66	AS-BUILT PER INSPRT PRINTS
4		
5		

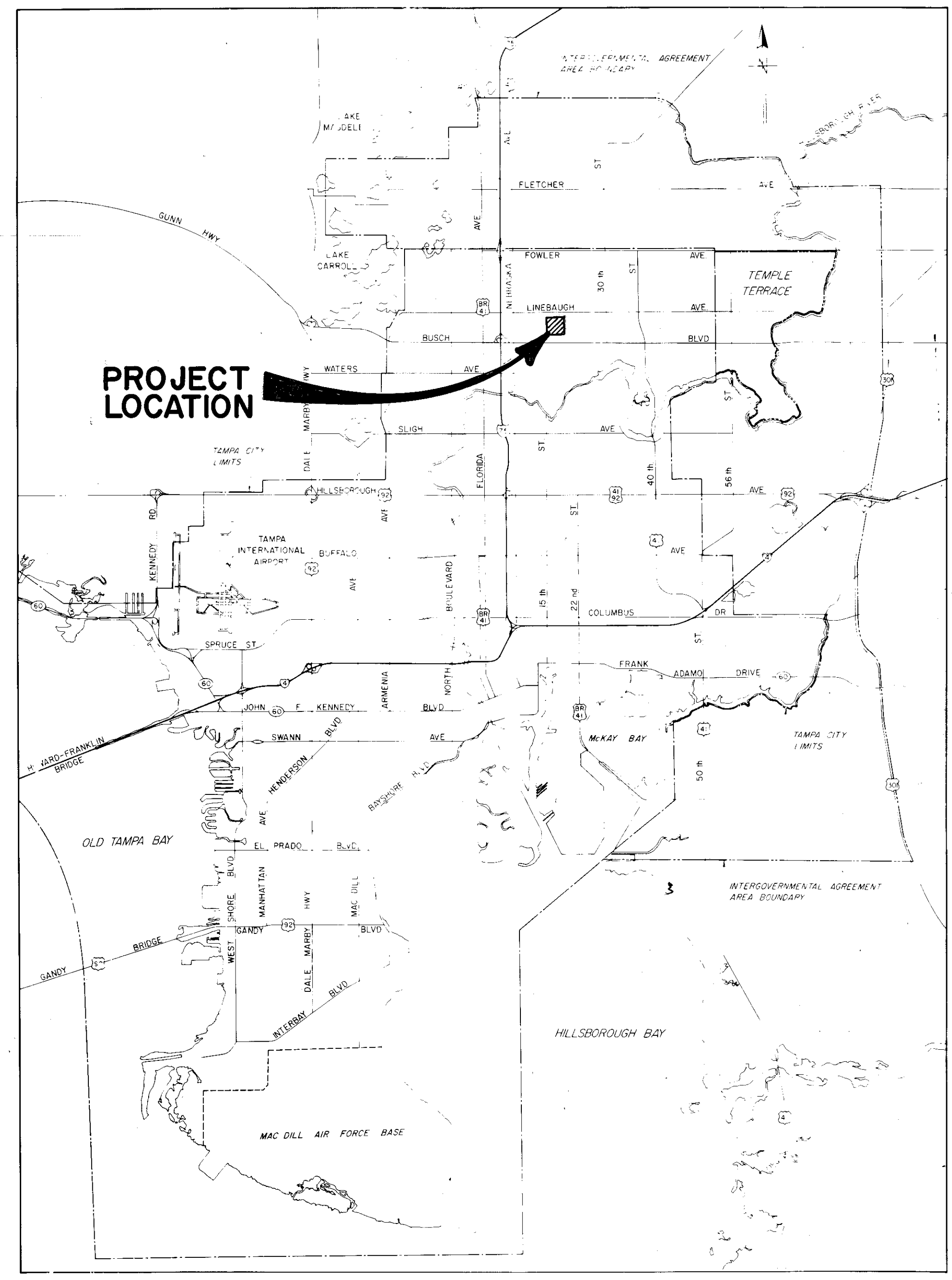
SCALE
AS SHOWN

DEPARTMENT of SANITARY SEWERS
CITY of TAMPA, FLORIDA

18th ST. PUMPING STATION
PUMP REPLACEMENT & PIPING
REHABILITATION

SHEET

CITY OF TAMPA



LOCATION MAP

DEPARTMENT of SANITARY SEWERS SEWAGE DISPOSAL SYSTEM PLANS

FOR THE REHABILITATION OF

18th. ST. PUMPING STATION PUMPS NO.2 AND NO.3

Andrew T. Cronberg
ANDREW T. CRONBERG, P.E. # 32560
CHIEF ENGINEER
DEPARTMENT of SANITARY SEWERS

DES. A.H.
DRN. E.R.
CKD. A.H.
DATE 2/86

APPROVED BY
Jack P. Moriss
JACK P. MORISS, P.E.
DIRECTOR
DEPARTMENT of SANITARY SEWERS

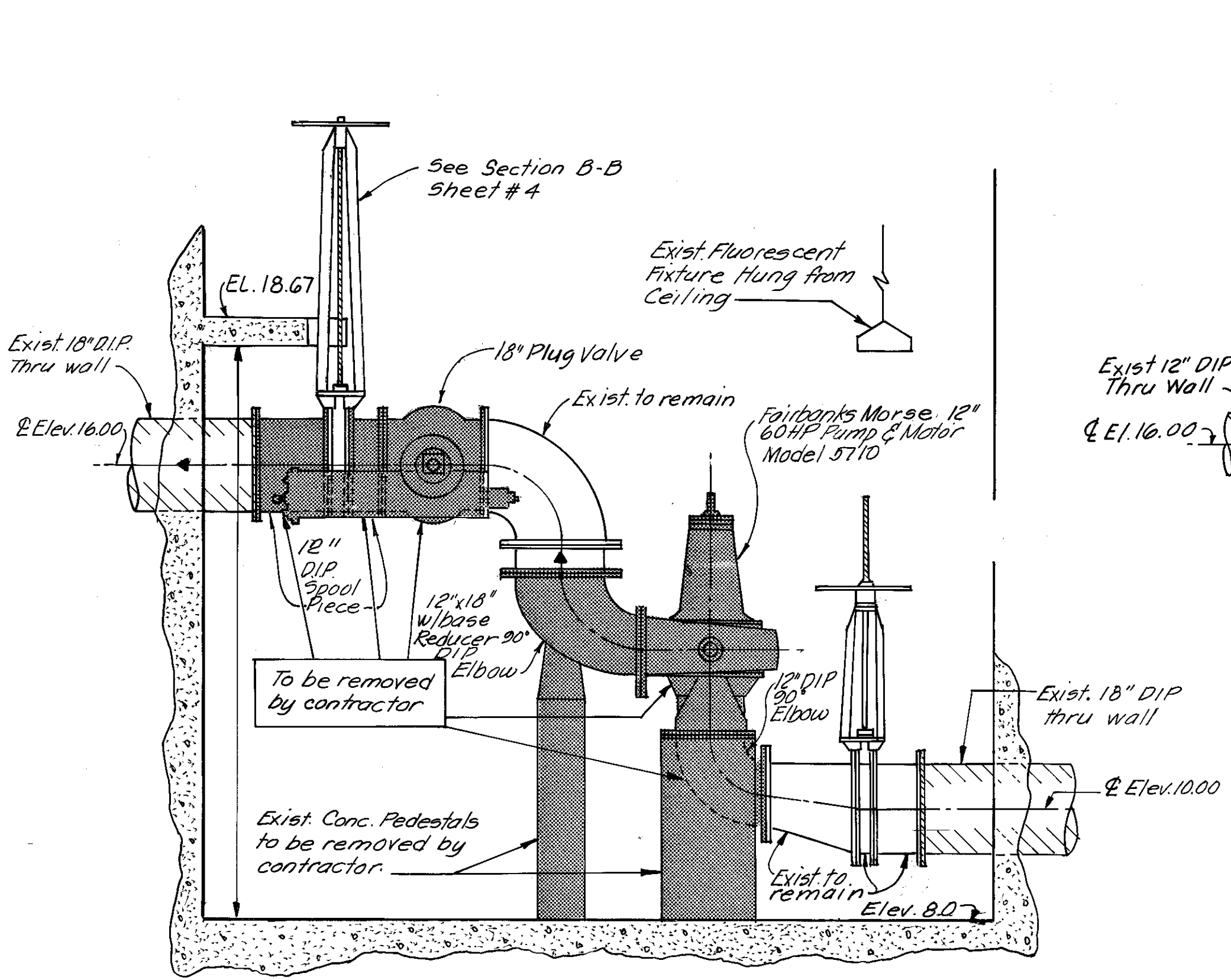
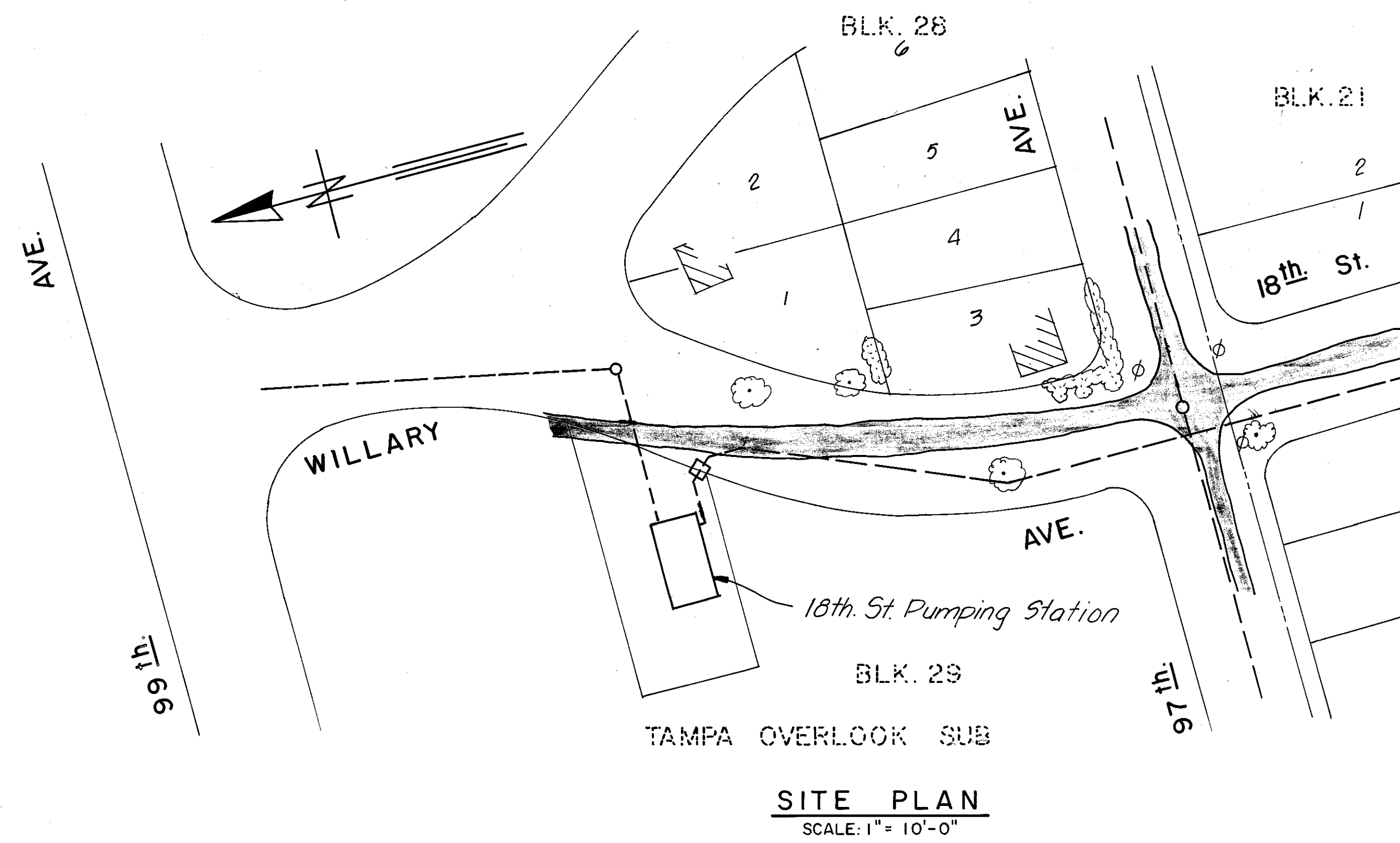
NO	DATE	REVISIONS
1		
2		
3		
4		
5		

SCALE
1" = approximately 1/2 miles

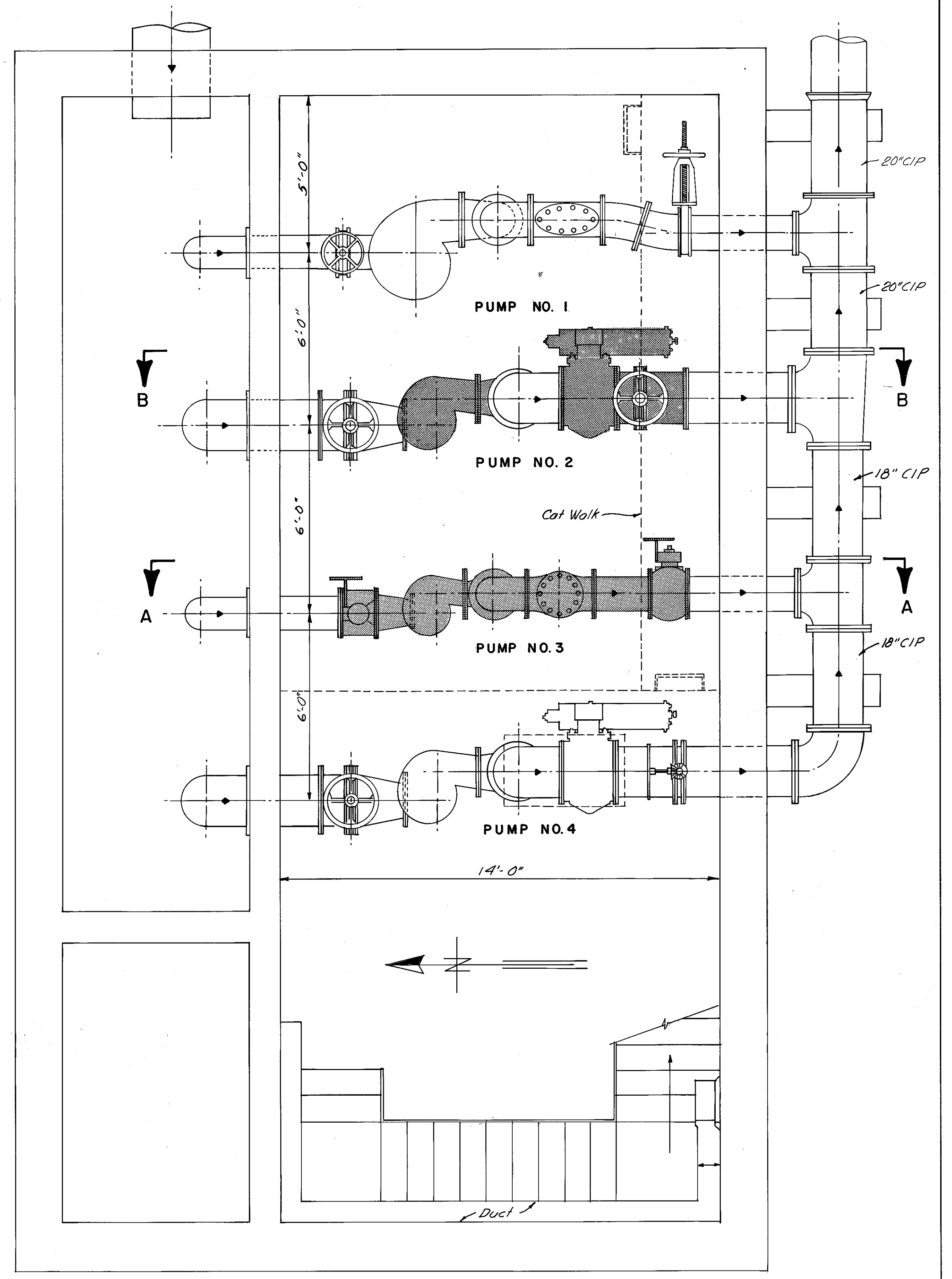
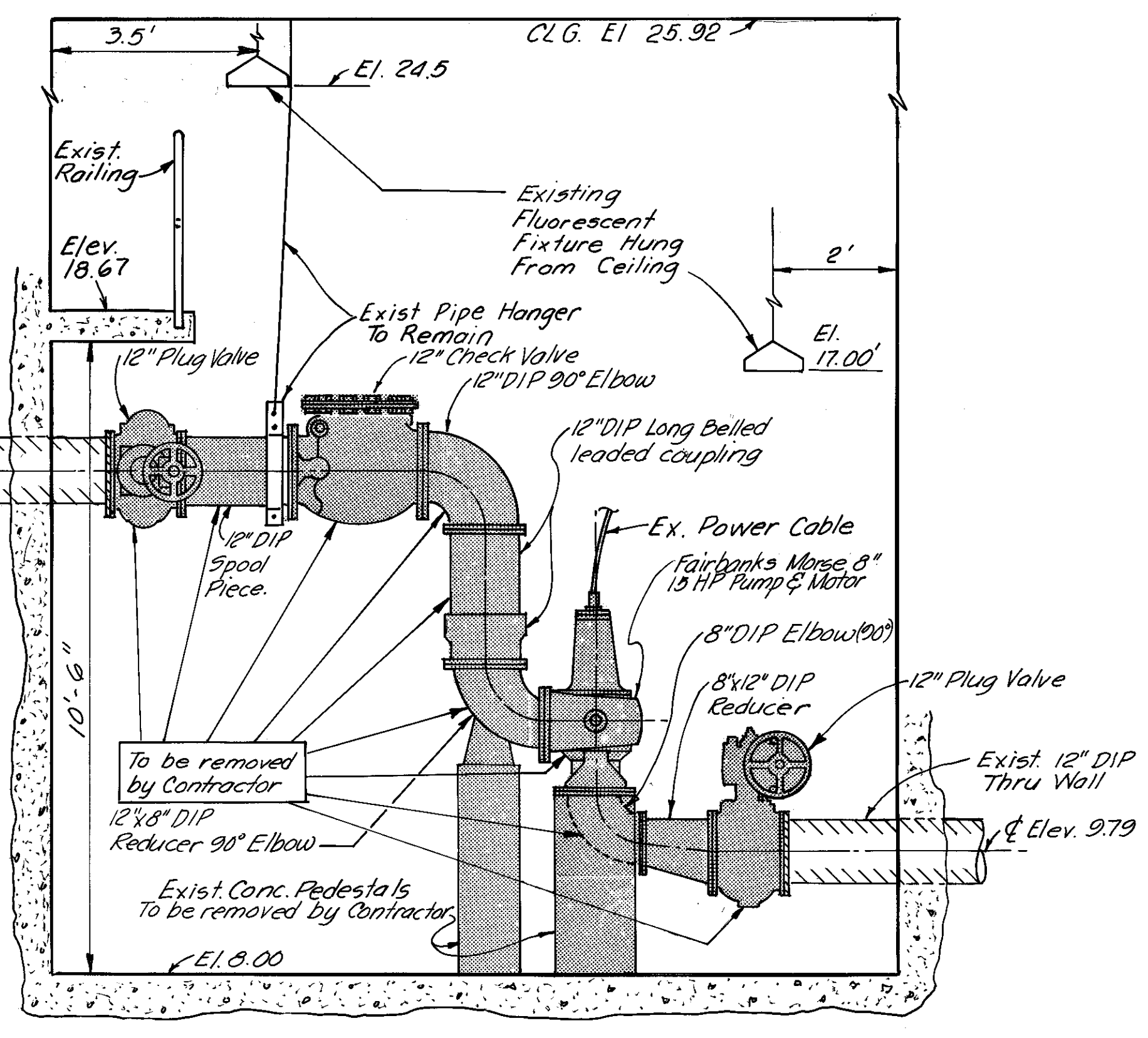
DEPARTMENT of SANITARY SEWERS
CITY of TAMPA, FLORIDA
RENEWAL & REPLACEMENT
SEWAGE DISPOSAL SYSTEM

TITLE SHEET & LOCATION MAP

SHEET
1
OF 6



NOTE: Equipment to be removed by Contractor is indicated by shaded areas.



DES: A. H.
DRN: E. R.
CKD: A.H.
DATE: 2/80

ANDREW T. CRONBERG, P.E. # 32560
CHIEF ENGINEER
DEPARTMENT OF SANITARY SEWERS

APPROVED BY

JACK P. MORRIS, P. E.
DIRECTOR
DEPARTMENT OF SANITARY SEWERS

No.	DATE	REVISIONS
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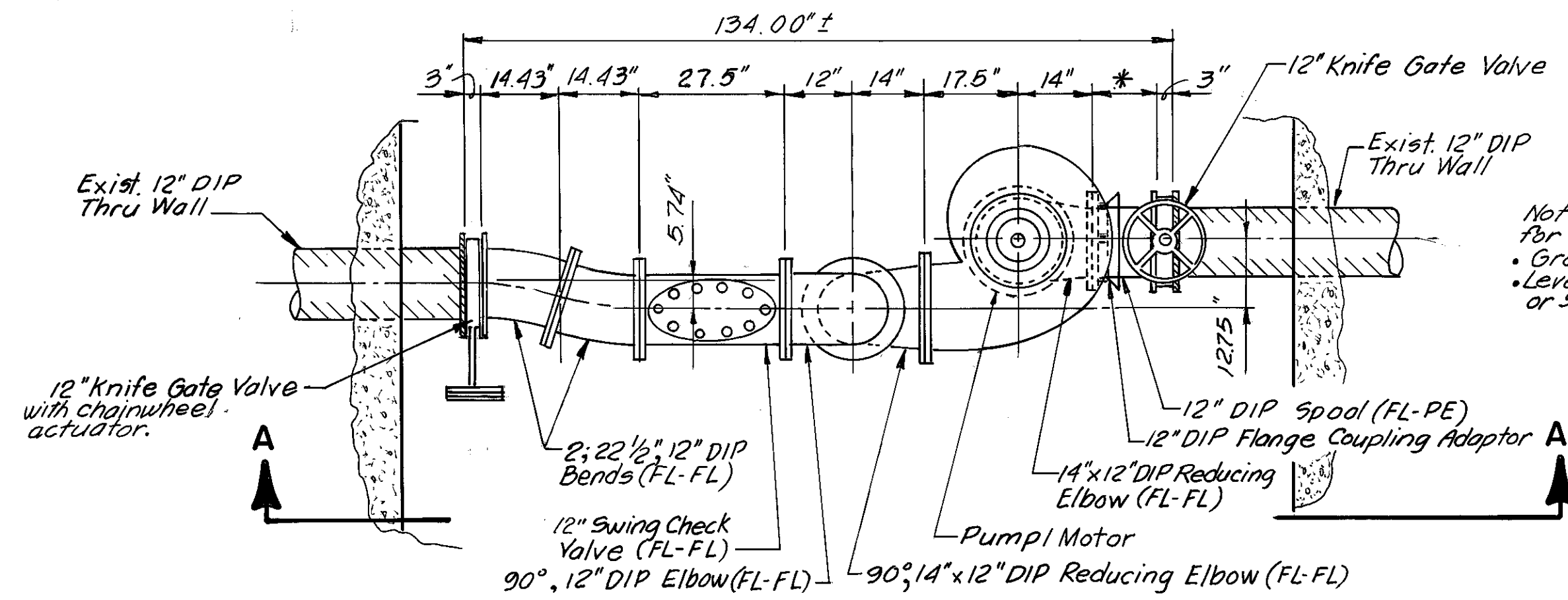
SCALE
AS SHOWN

DEPARTMENT OF SANITARY SEWERS
CITY OF TAMPA, FLORIDA
RENEWAL & REPLACEMENT
SEWAGE DISPOSAL SYSTEM

18th. ST. PUMPING STATION
PUMPS NO.2 AND NO.3 REHABILITATION

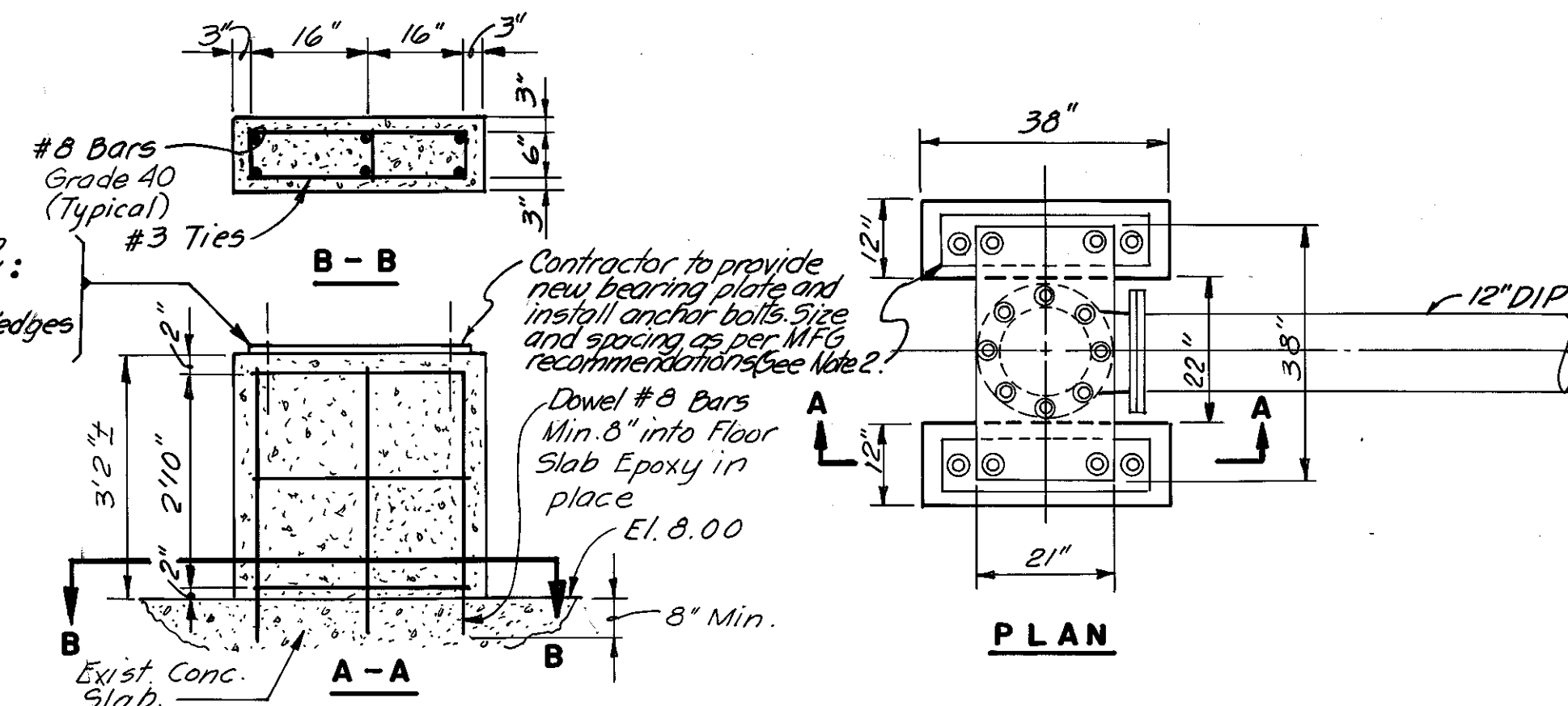
SHEET
2
OF 6

84-12k



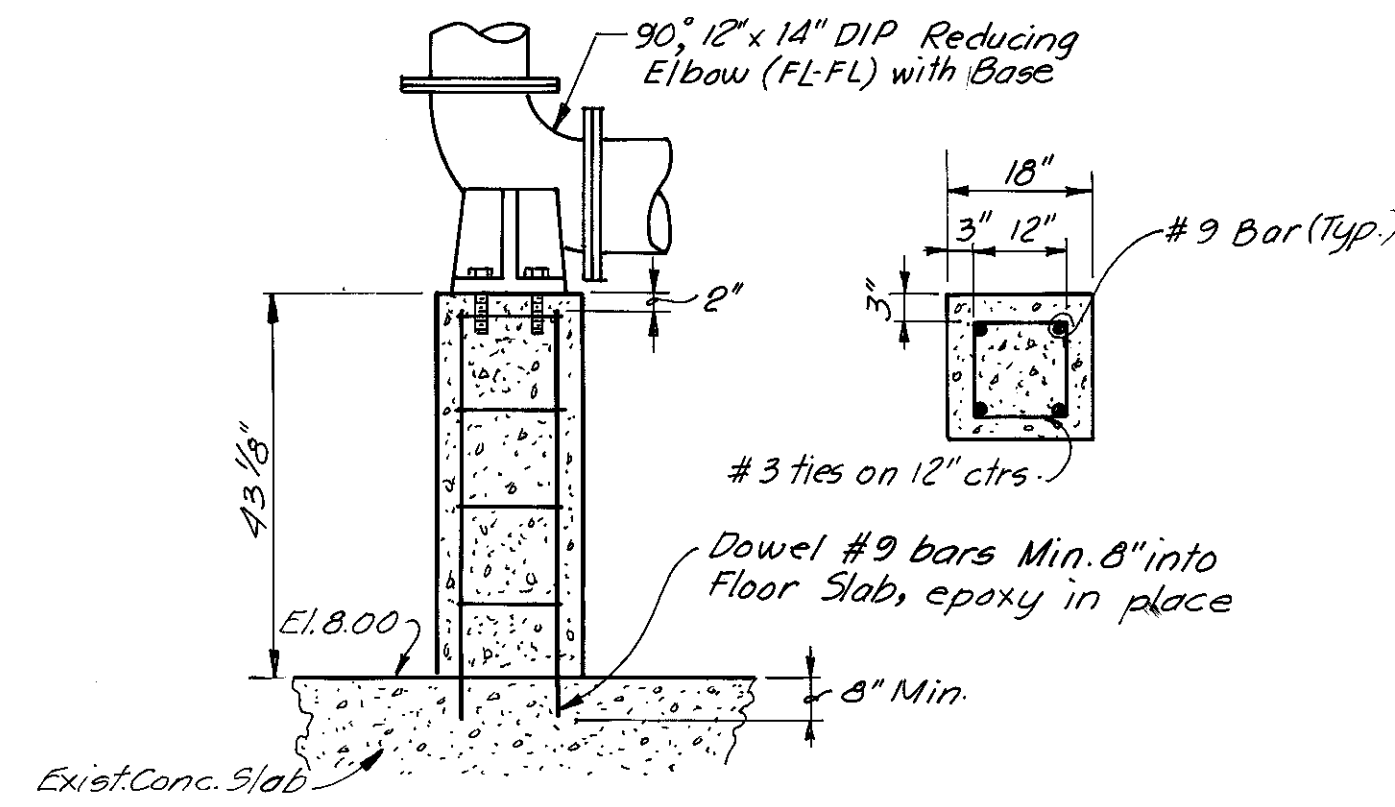
PART PLAN (TOP OF PUMP NO. 3)

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



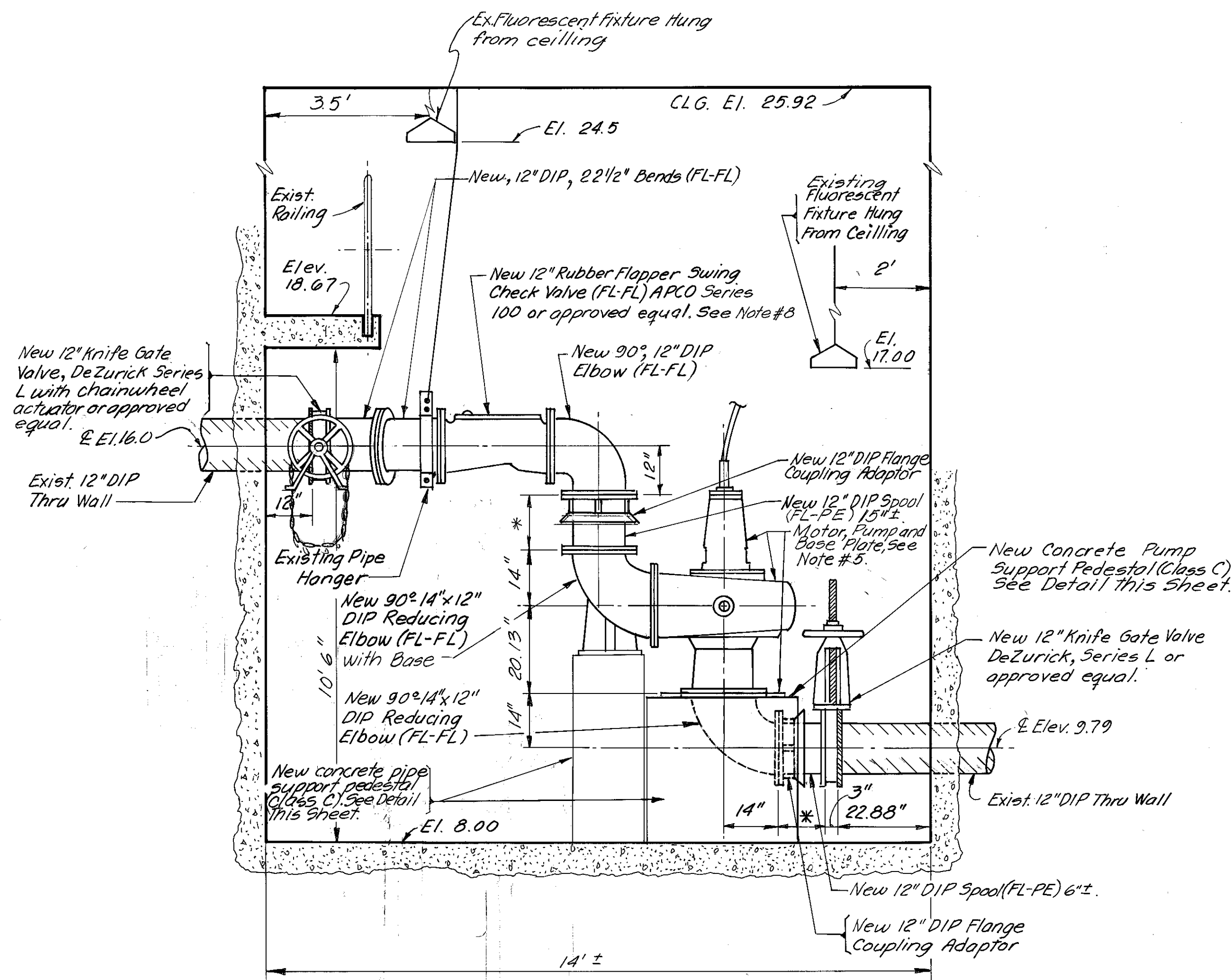
NEW CONCRETE PUMP SUPPORT PEDESTAL

NOT TO SCALE



NEW CONCRETE PIPE SUPPORT PEDESTAL

NOT TO SCALE



SECTION A-A (PROPOSED)

PUMP NO. 3

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

* NOTE: 12" DIP (FL-PE) Spool Pieces shall be sized to complete Piping Arrangement.

NOTES

1. The Contractor shall field verify all dimensions prior to ordering materials to assure proper fit of piping arrangement.
2. The contractor is responsible for installing, leveling and aligning Motors and Pumps. Procedures for installation, as outlined in the Hydraulic Institute Standards, most current edition, shall be adhered to.
3. All pipe and fittings shall be ductile iron, Class 52. With the exception of the rubber flapper swing check valves (See note 8).
4. All DIP pipe and fittings shall be connected with integrally cast flanges as shown with the exception of the two flange coupling adaptors. No substitutions.
5. A Fairbanks Morse, Model # 5710, 40 HP, 14" pump and motor, with impeller L14A1A (360 RPM), shall be delivered to the project site by the City. All other materials, labor and equipment required for performing contract work shall be provided by the contractor. The pumping station mechanical maintenance Division at Hookers Point AWTP shall be contacted Min. 2 weeks prior to required delivery date.
6. D.S. will provide shut down of sewage flow to permit contractor to install new valves. P.S. shut down and valve installation to be coordinated with Pumping Station Mechanical Maintenance Division at Hookers Point AWTP Min. 48 hrs. in advance.
7. ETCH and clean concrete slab in area of new pedestals, prior to installation.
8. Each rubber flapper swing check valve shall have a heavily constructed cast iron body and cover. The body shall be long pattern design (No water), with integrally cast-on end flanges. The flapper shall be Buna-N having an "O" ring seating edge and be internally reinforced with steel.
9. Remaining valves and fittings for pumps # 2 & 3 shall be cleaned and painted according to specifications.
10. Modifications to hand rail and all Exist. hand rail in dry pit, Approx. 60', are to be cleaned and painted according to specifications.
11. Contractor is responsible for removal and replacement of Exist. timber access cover over the dry pit and shall make provisions for lowering Pumps and other Equip. into the dry pit. (See Detail E, sheet 6 for location of timber access cover).
12. Contractor shall have full use of Exist. hoist in Dry Pit. (2 ton capacity)

ELECTRICAL NOTES

1. New Pump #2 motor shall be connected to existing wiring. Replace overload heaters if required. (See specifications for further details)
2. Pump #3 to be changed from 15HP to 40HP. Contractor shall remove old wiring and controls and replace them as detailed in specifications.

Andrew J. Cronberg
 ANDREW T. CRONBERG, P.E. # 32560
 CHIEF ENGINEER
 DEPARTMENT OF SANITARY SEWERS

DES: A. H.
 DRN: E. R.
 CKD: A. H.
 DATE: 2/18/80

APPROVED BY
 Jack P. Morris
 JACK P. MORRIS, P.E.
 DIRECTOR
 DEPARTMENT OF SANITARY SEWERS

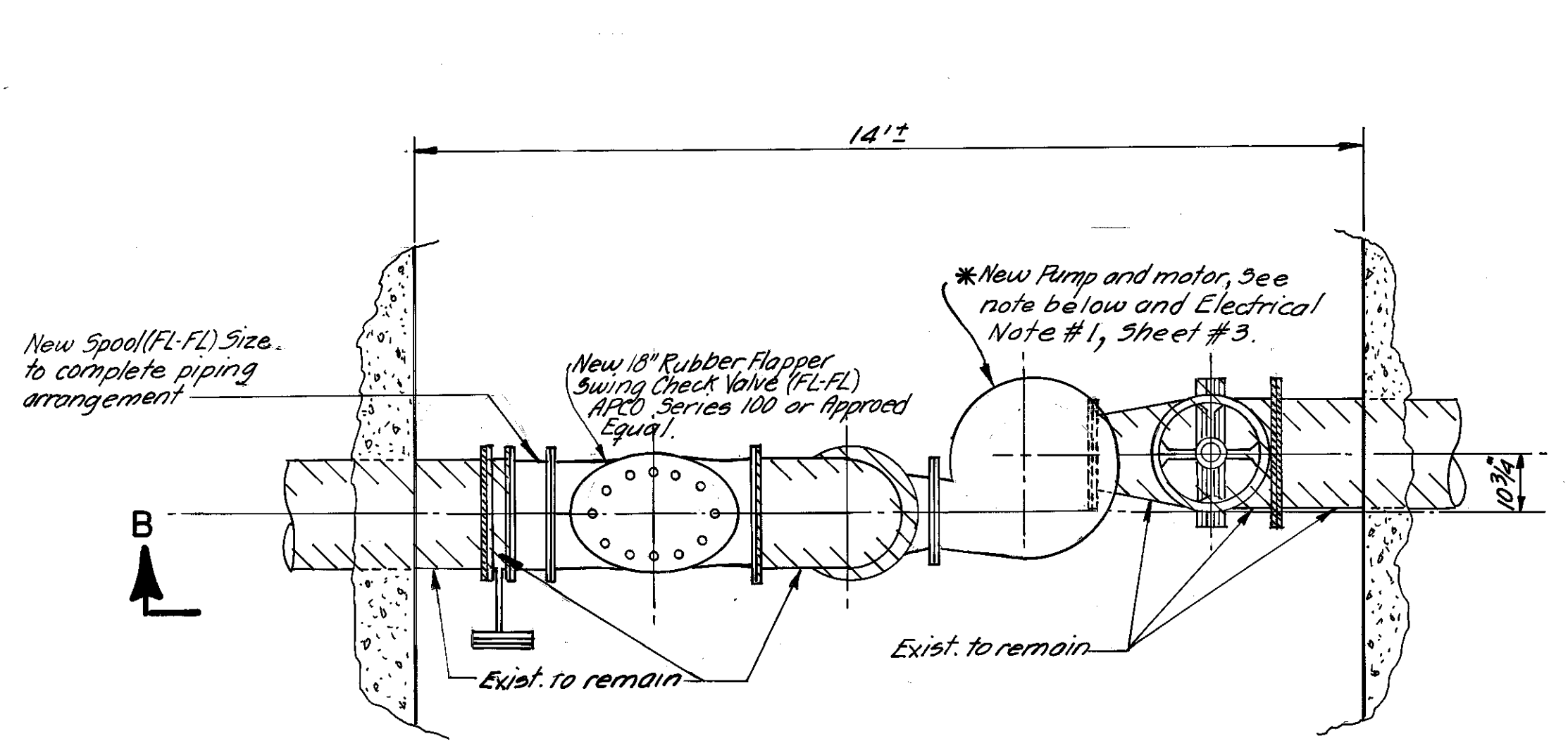
No.	DATE	REVISIONS
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SCALE
 AS SHOWN

DEPARTMENT of SANITARY SEWERS
 CITY of TAMPA, FLORIDA
 RENEWAL & REPLACEMENT
 SEWAGE DISPOSAL SYSTEM

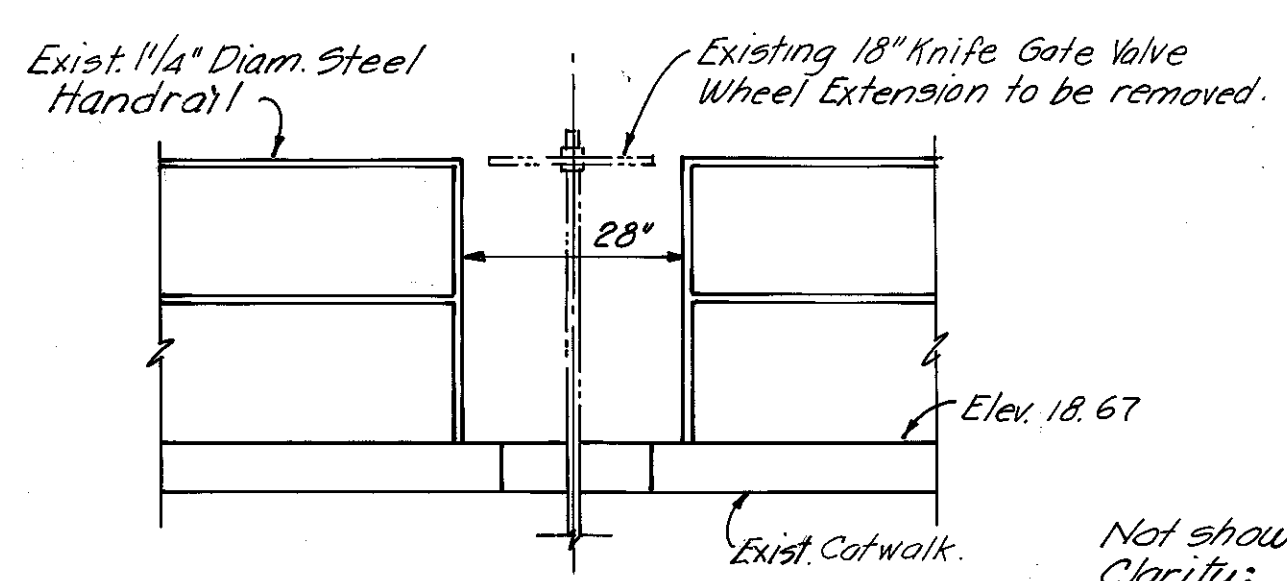
18th. ST. PUMPING STATION
 PUMP NO. 3 REHABILITATION

SHEET
3
 OF 6

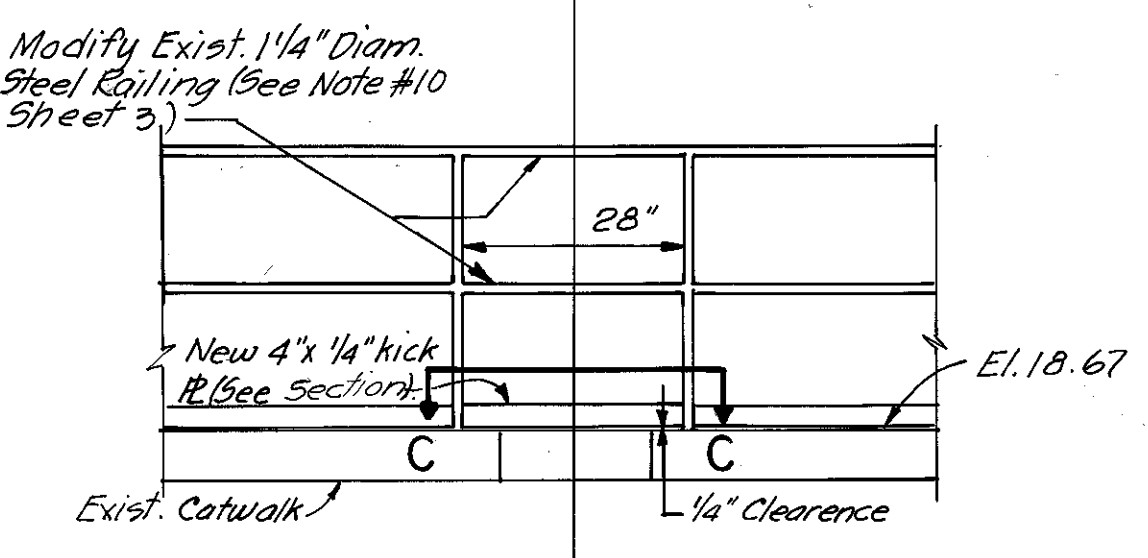


PART PLAN (TOP OF PUMP NO. 2)
SCALE: 1/2" = 1'-0"

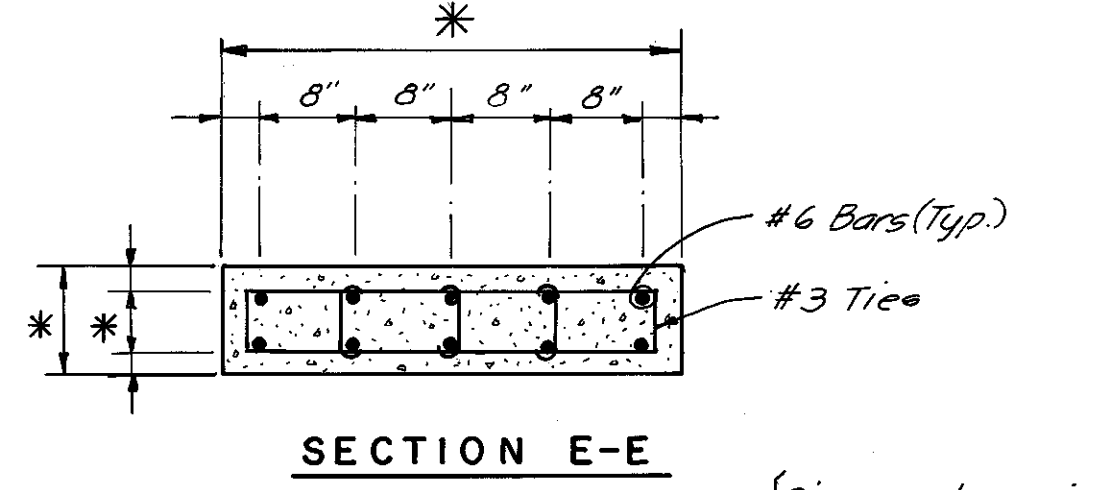
* New 60HP Pump and motor to operate at 4900± GPM. against 33.5± FT. TDH. Min. pump EFF. 75%
See Specifications for further Detail.



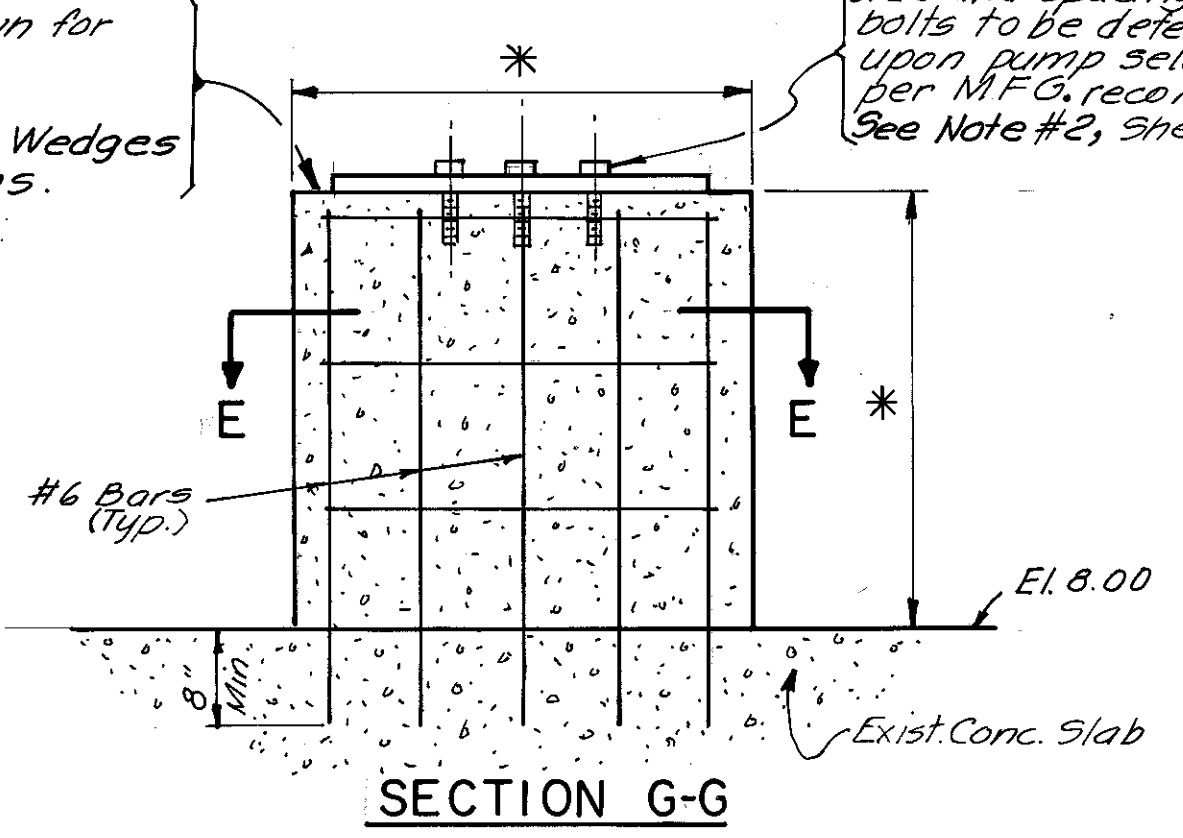
DETAIL "A"
PUMP # 2 EXISTING CATWALK
NOT TO SCALE



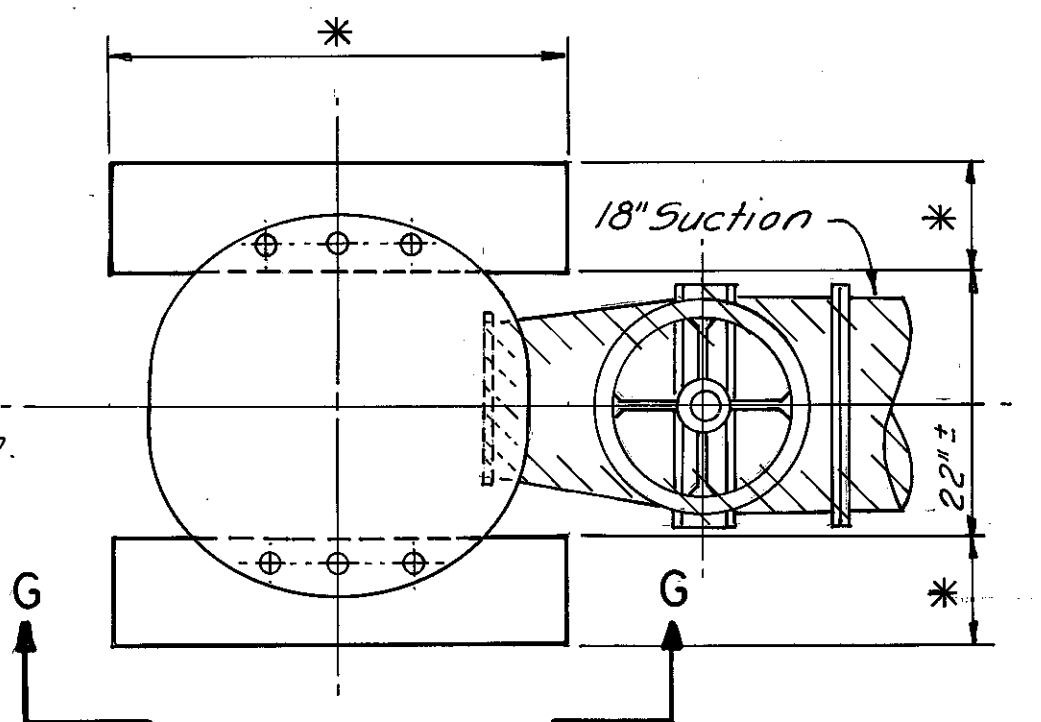
DETAIL "B"
PUMP # 2 CATWALK MODIFICATION
NOT TO SCALE



SECTION E-E

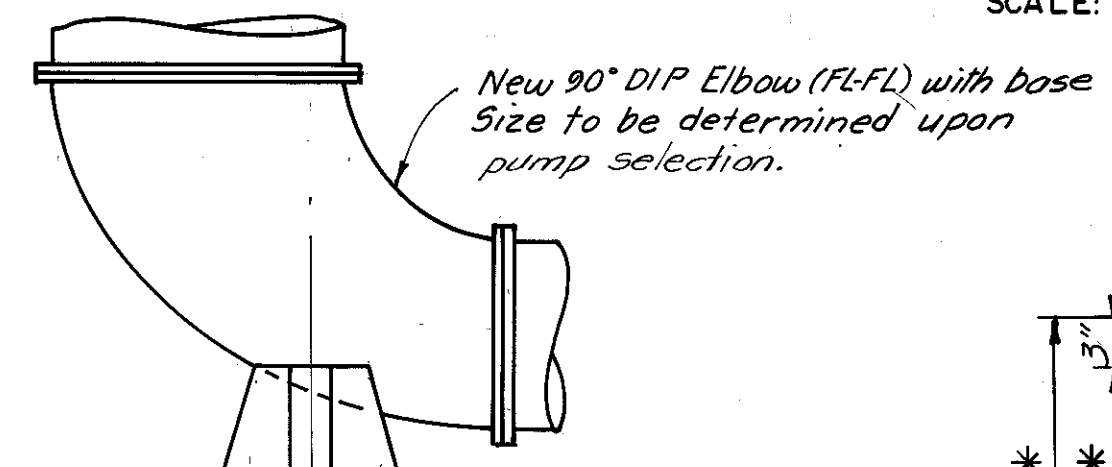


SECTION G-G

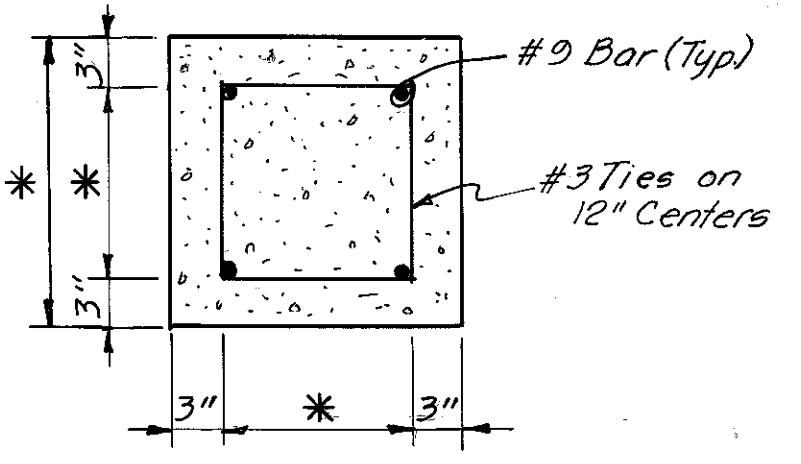


PLAN

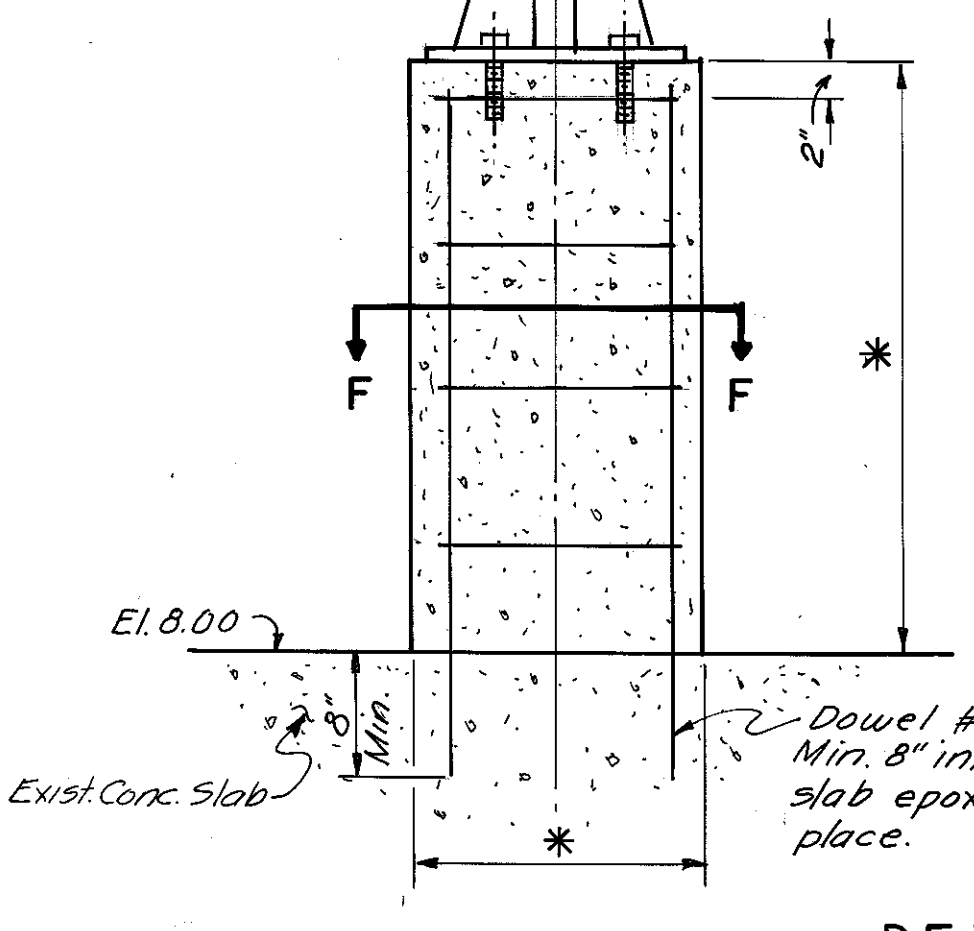
DETAIL # 2
NEW CONCRETE PUMP SUPPORT PEDESTAL
SCALE: 3/4" = 1'-0"



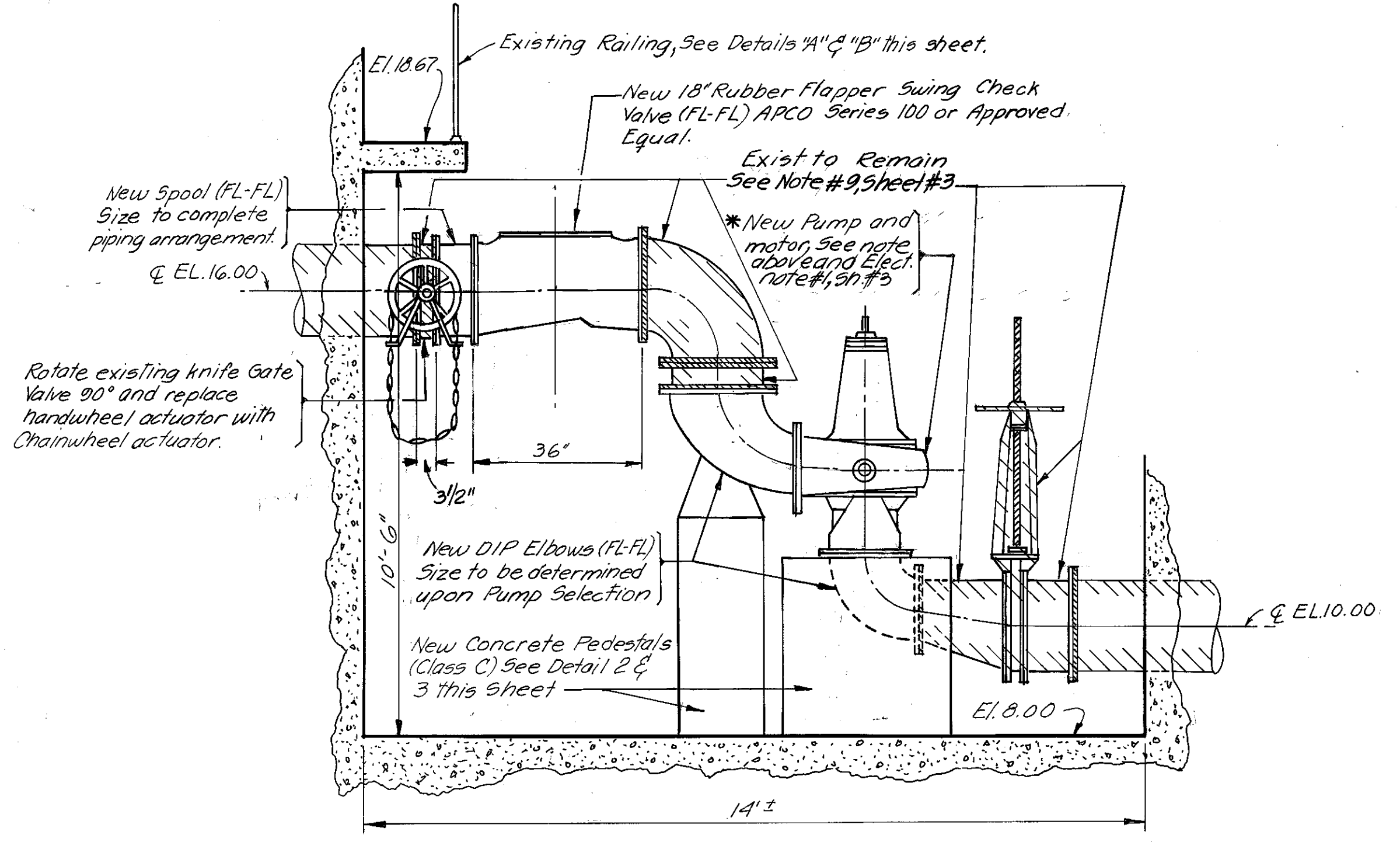
New 90° DIP Elbow (FL-FL) with base
Size to be determined upon pump selection.



SECTION F-F



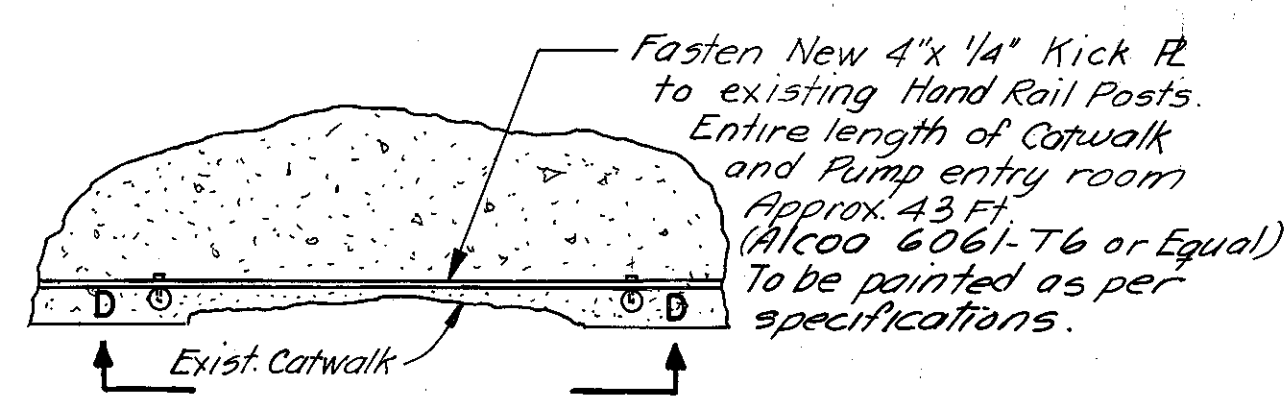
DETAIL # 3
NEW CONCRETE PIPE SUPPORT PEDESTAL
SCALE: 3/4" = 1'-0"



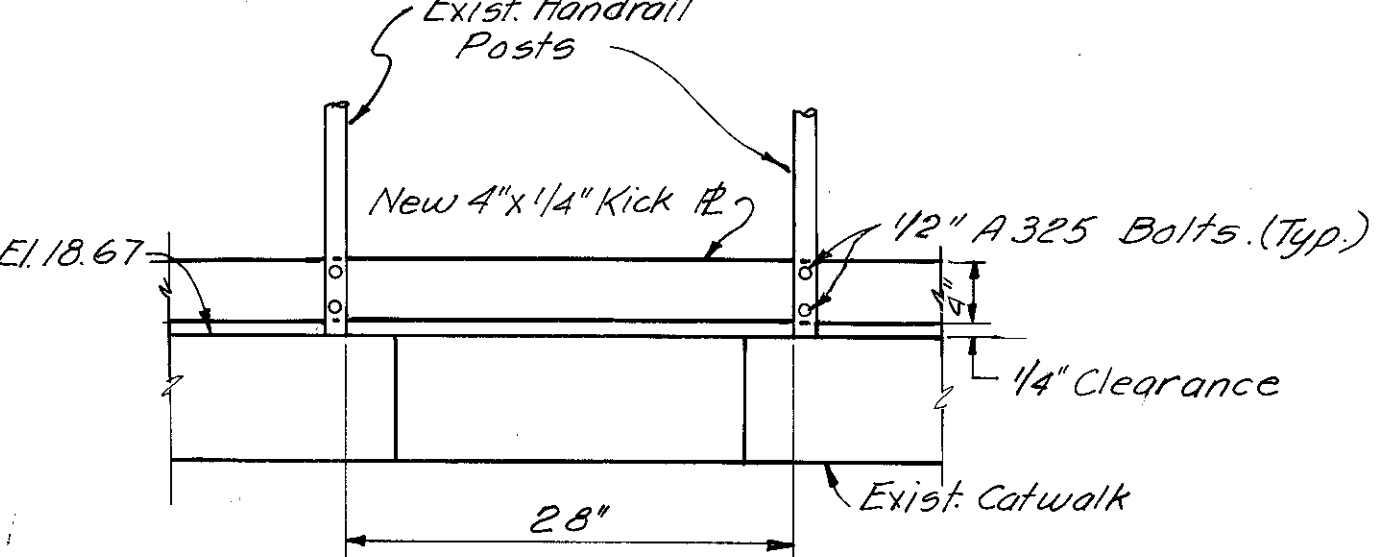
SECTION B-B (PROPOSED)
PUMP NO. 2

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

NOTE: Alternate Piping Arrangements may be submitted for approval to accommodate the dimensions of alternate Pumps.



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



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

NOTES

* Dimensions are to be determined upon Pump Selection and must be approved by the engineer prior to construction. If pedestal redesign is required, it will be performed by the D.S.S. design engineer.

Andrew T. Cronberg
ANDREW T. CRONBERG, P.E. #32560
CHIEF ENGINEER
DEPARTMENT OF SANITARY SEWERS

DES: A. H.
DRN: E. R.
CKD: A. H.
DATE: 2/80

APPROVED BY
Jack P. Morris
JACK P. MORRIS, P.E.
DIRECTOR
DEPARTMENT OF SANITARY SEWERS

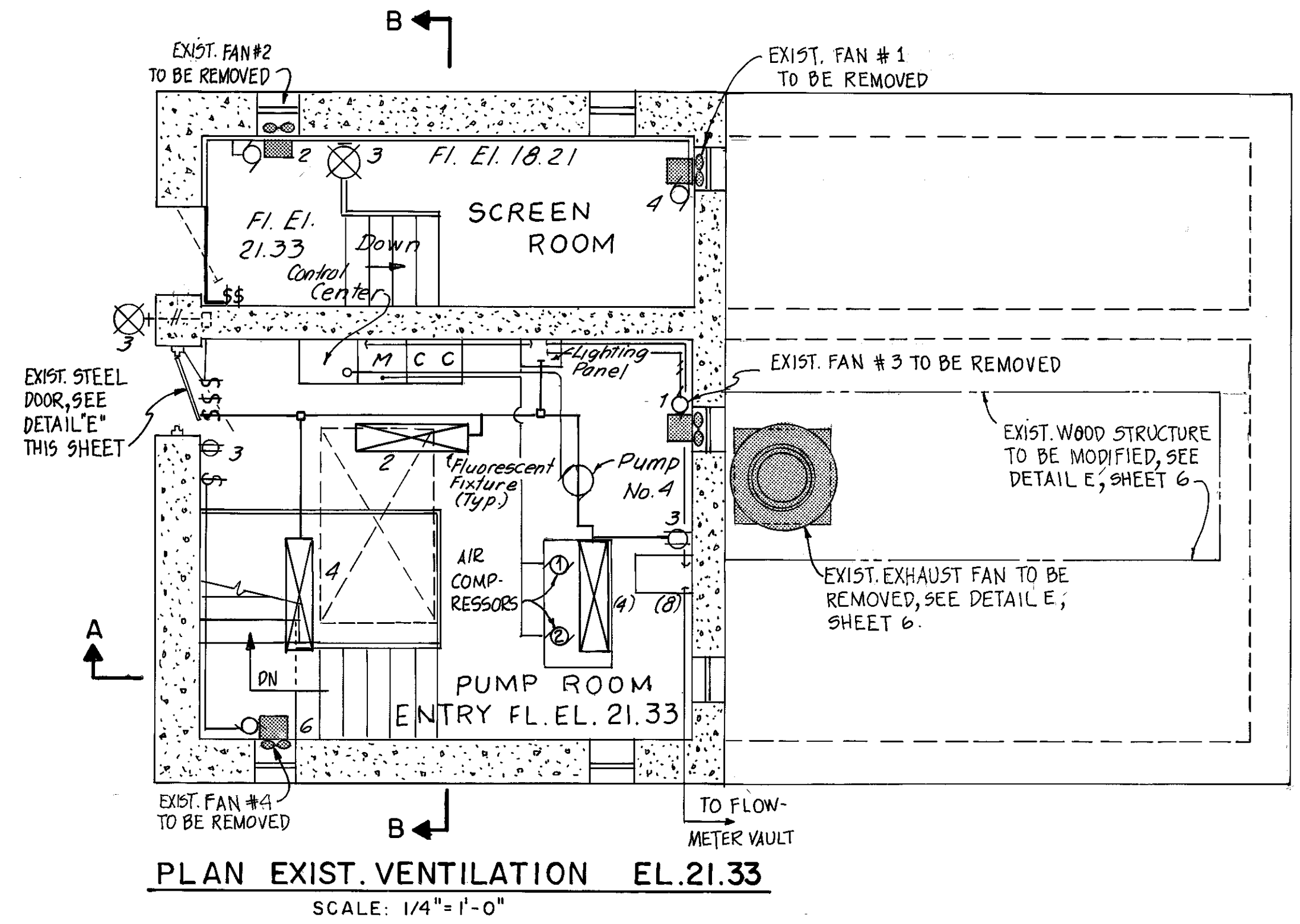
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SCALE
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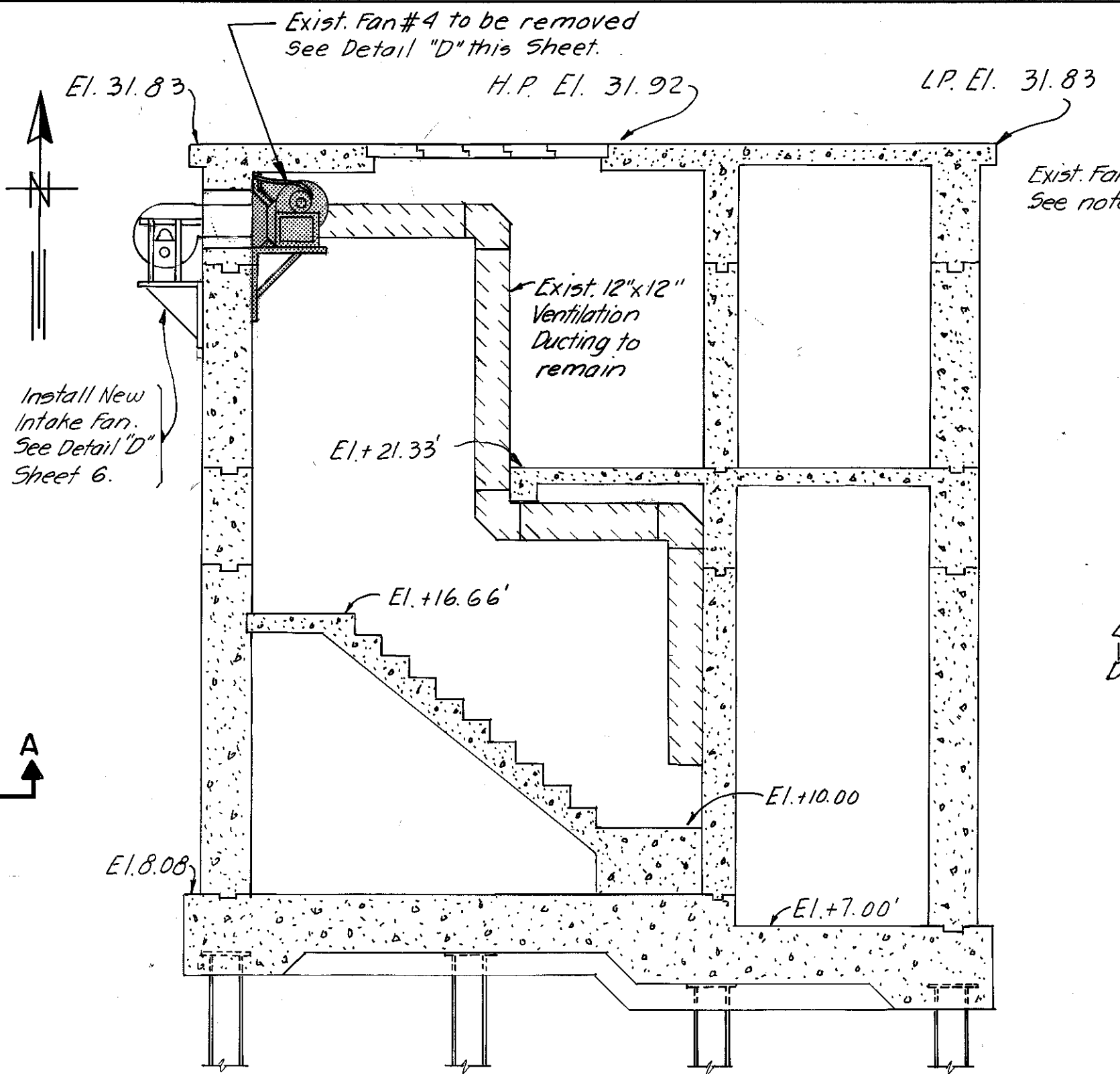
DEPARTMENT of SANITARY SEWERS
CITY of TAMPA, FLORIDA
RENEWAL & REPLACEMENT
SEWAGE DISPOSAL SYSTEM

18th. ST. PUMPING STATION
PUMP NO. 2 REHABILITATION

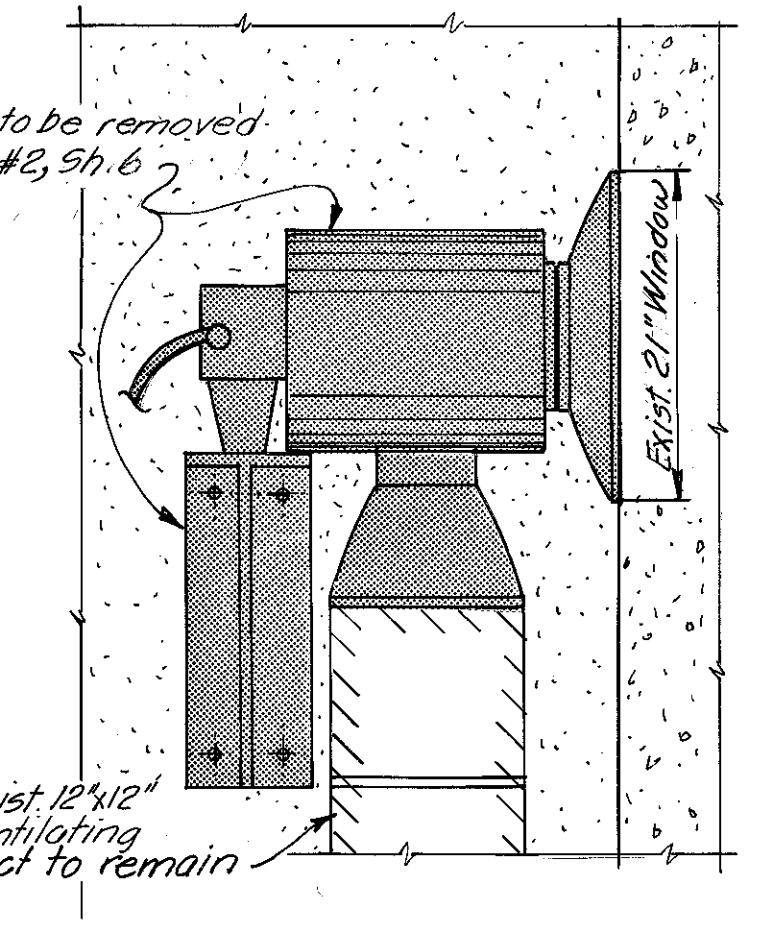
SHEET
4
OF 6



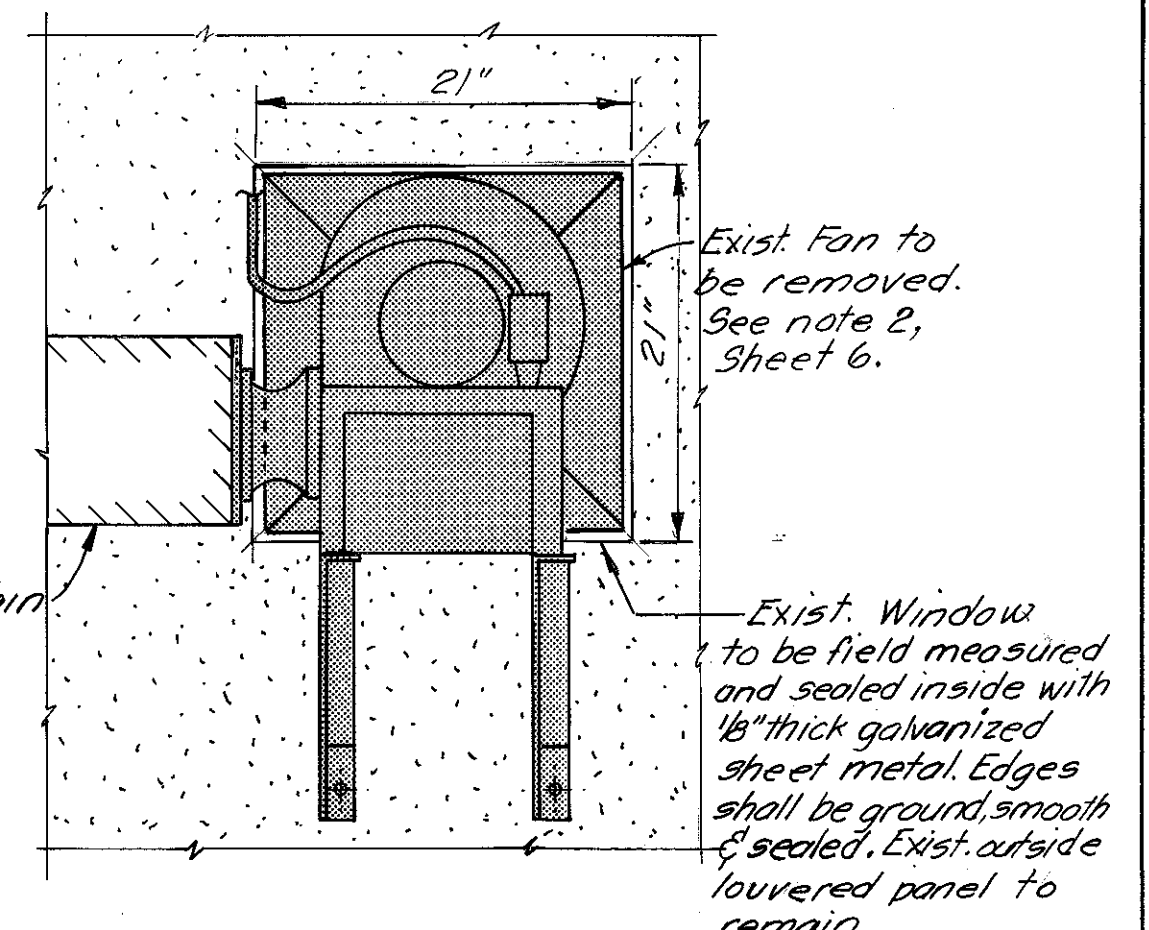
PLAN EXIST. VENTILATION EL. 21.33
SCALE: 1/4"=1'-0"



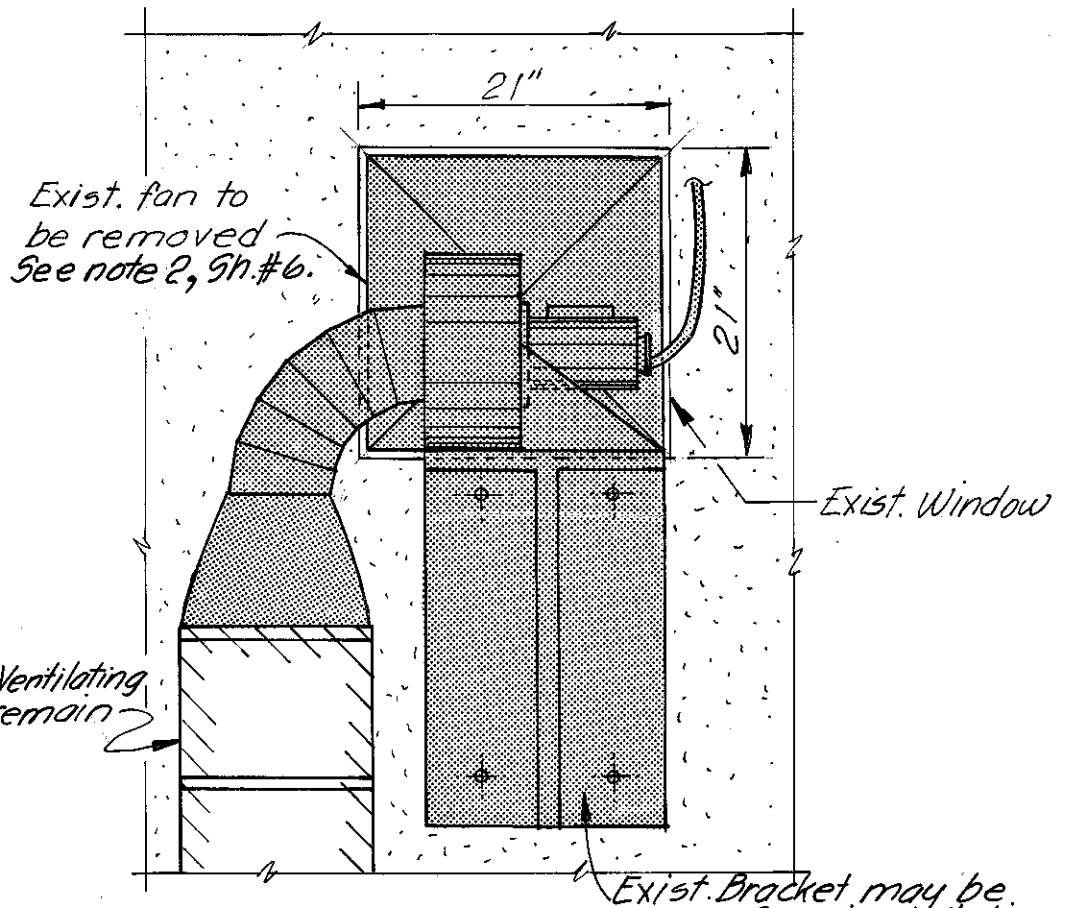
SECTION B-B
DRY PIT VENTILATION
EXISTING / PROPOSED
SCALE: 1/4"=1'-0"



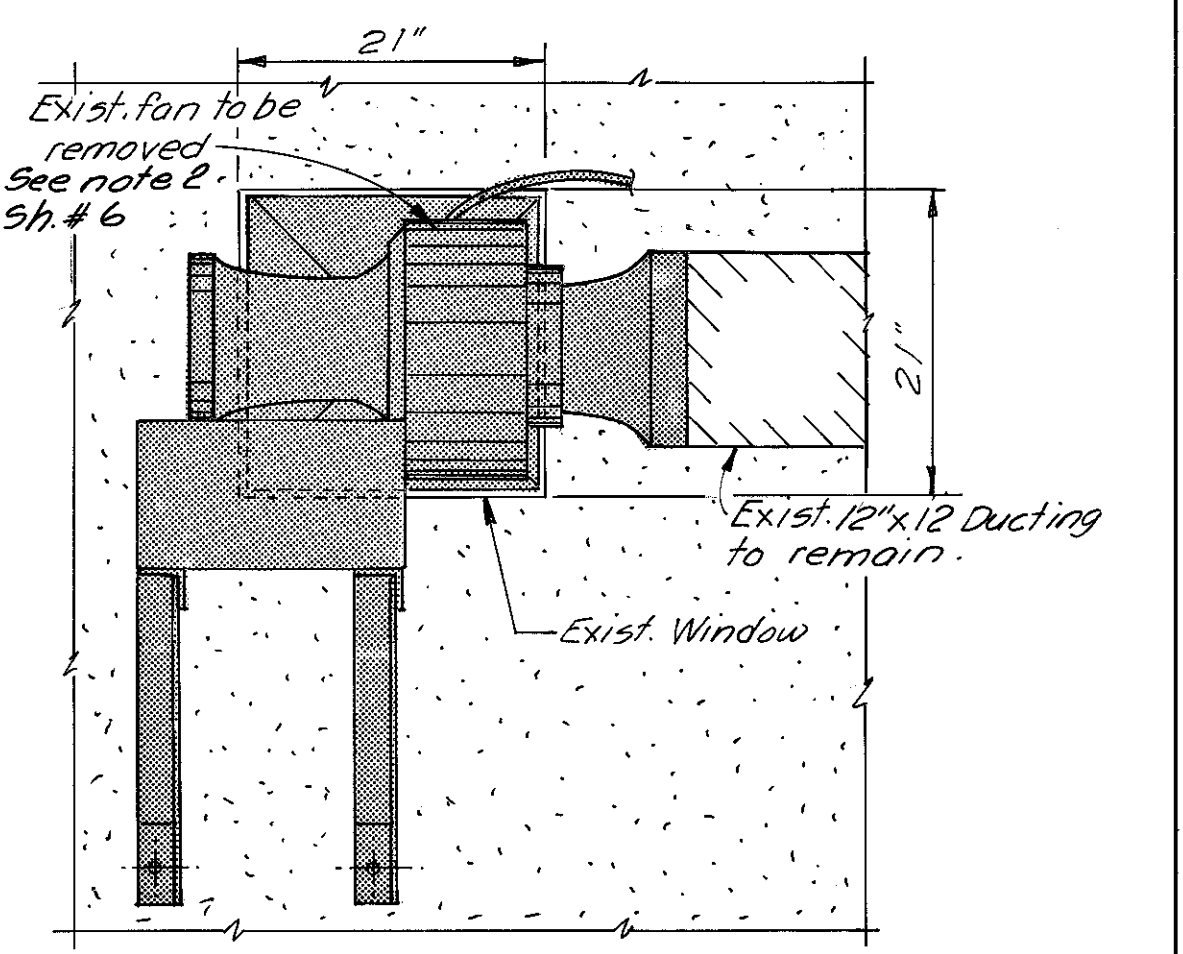
DETAIL "A"
EXISTING FAN # 1
NOT TO SCALE



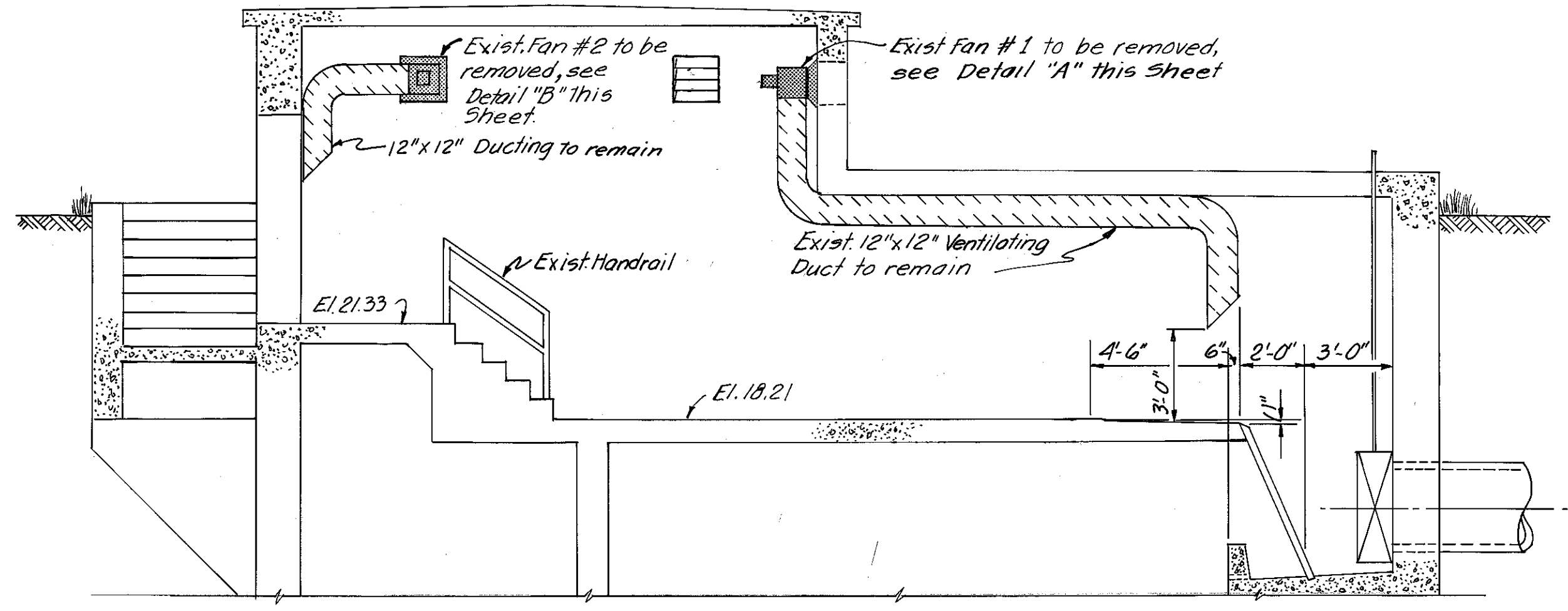
DETAIL "B"
EXISTING FAN # 2
NOT TO SCALE



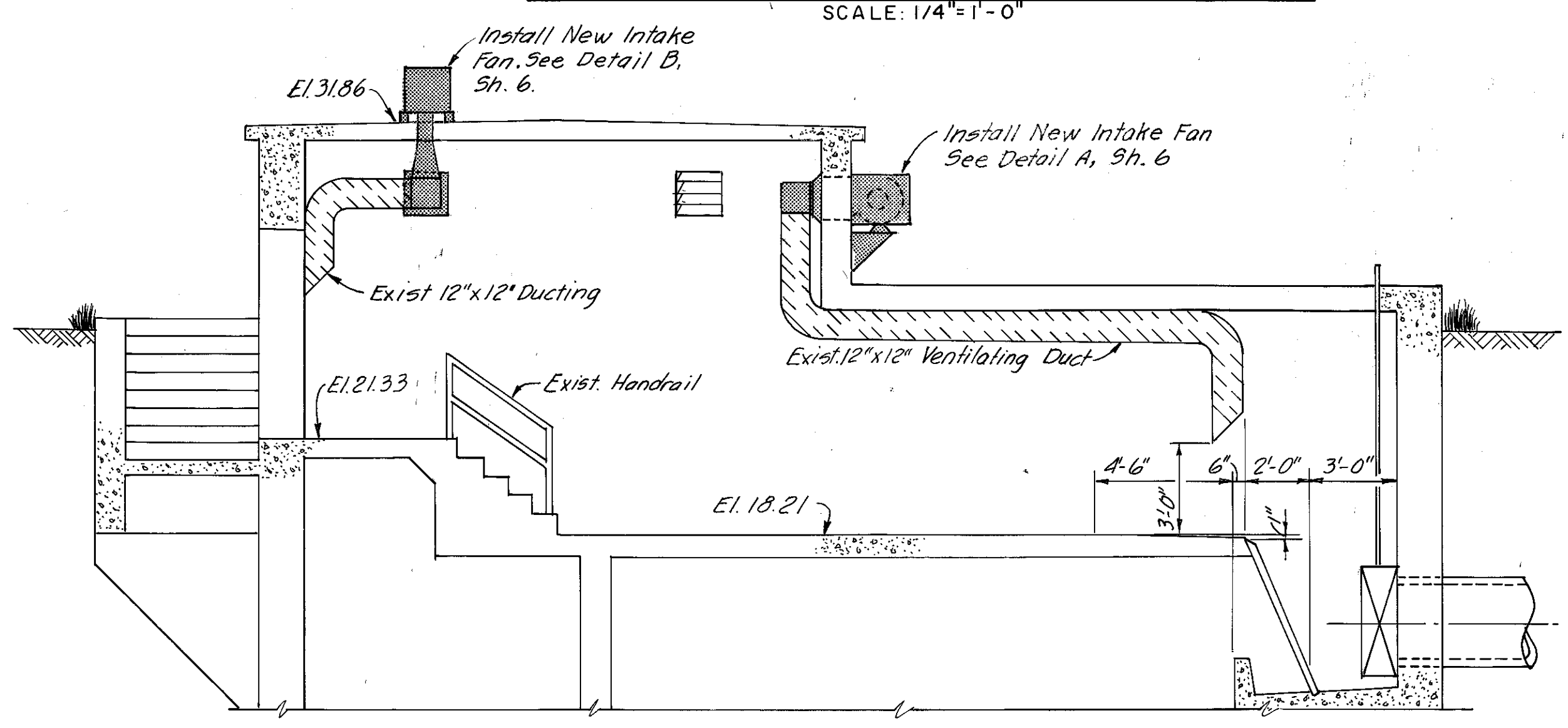
DETAIL "C"
EXISTING FAN # 3
NOT TO SCALE



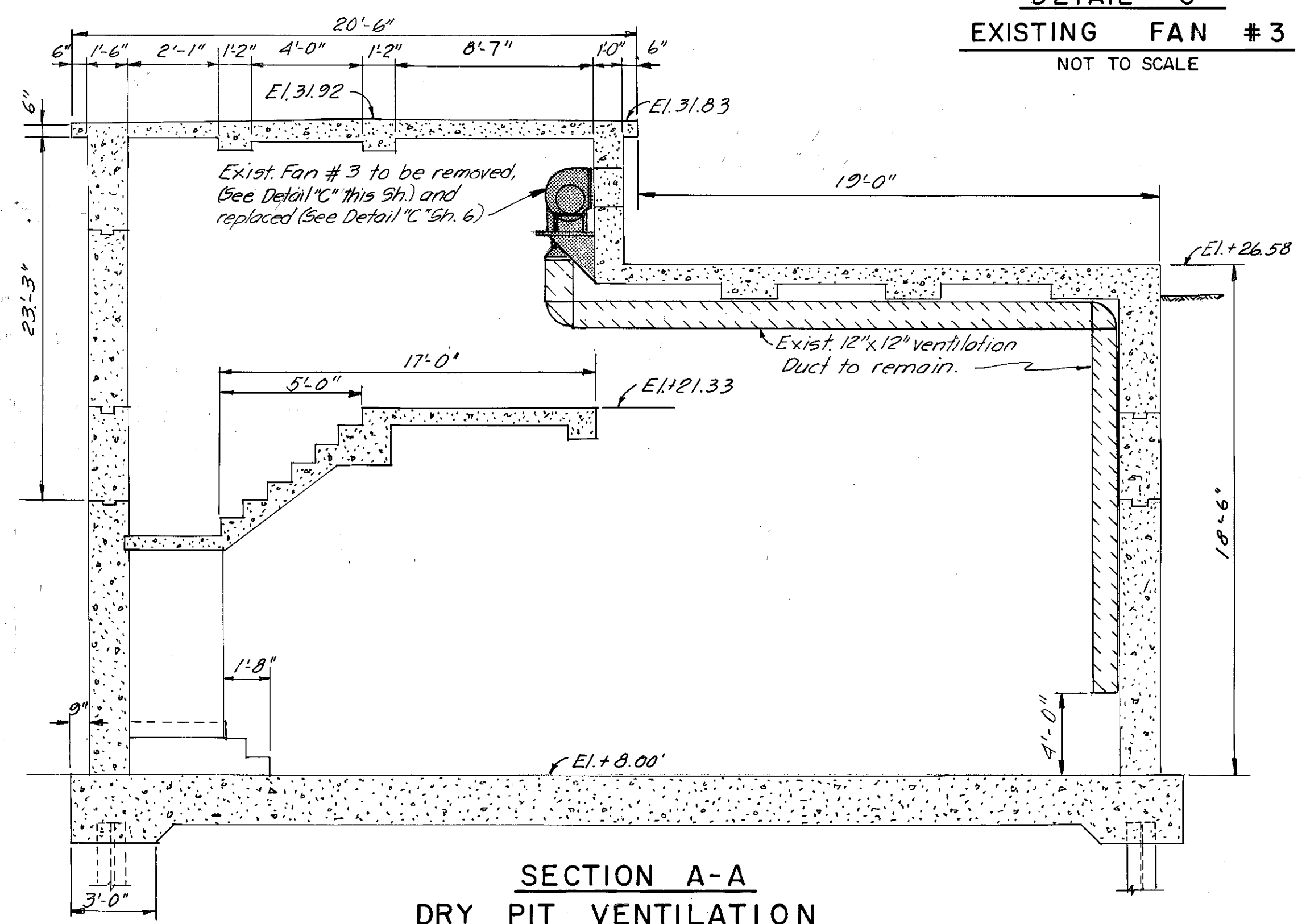
DETAIL "D"
EXISTING FAN # 4
NOT TO SCALE



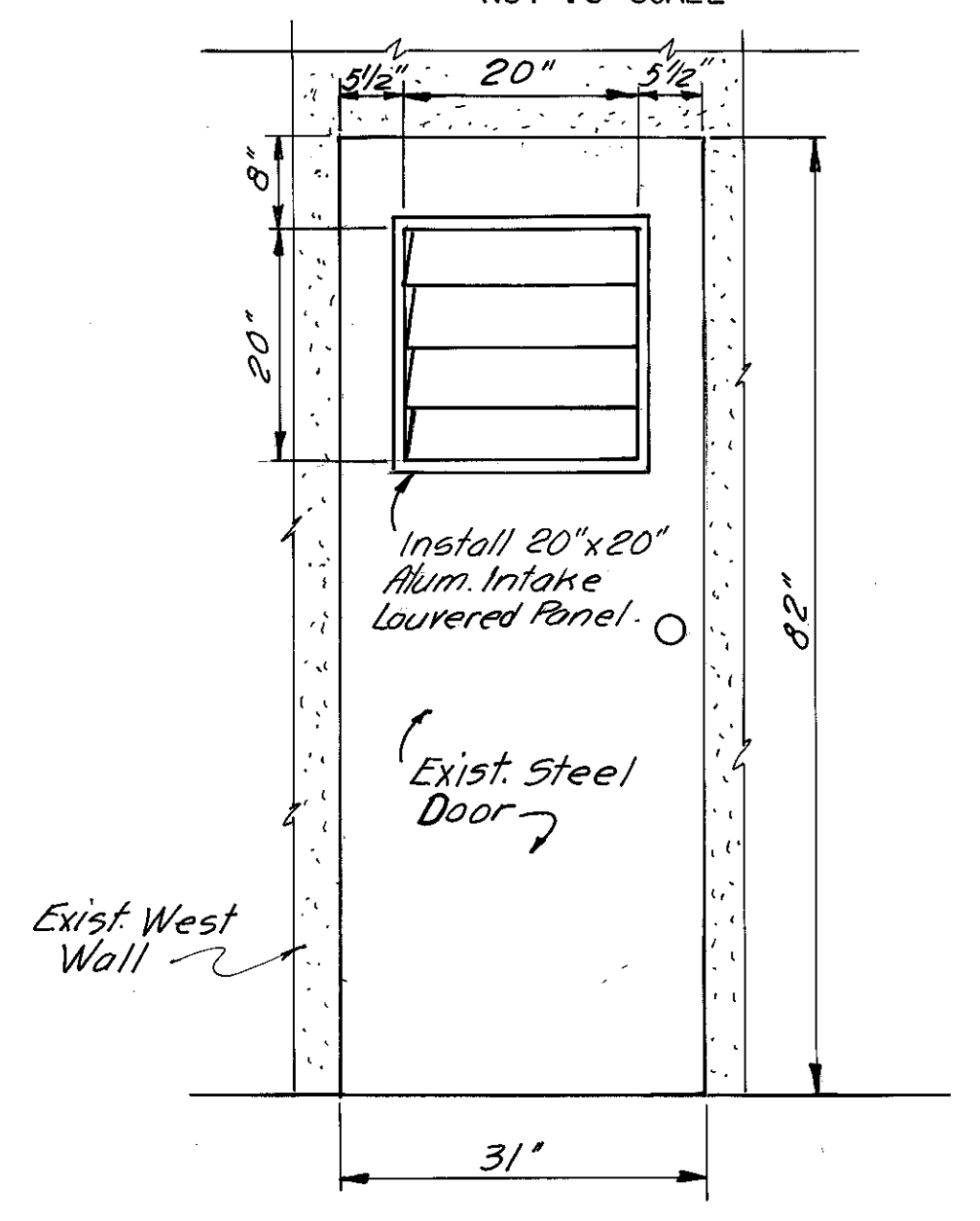
PROFILE EXIST. SCREEN ROOM VENTILATION
SCALE: 1/4"=1'-0"



PROFILE PROPOSED SCREEN ROOM VENTILATION MODIFICATIONS
SCALE: 1/4"=1'-0"

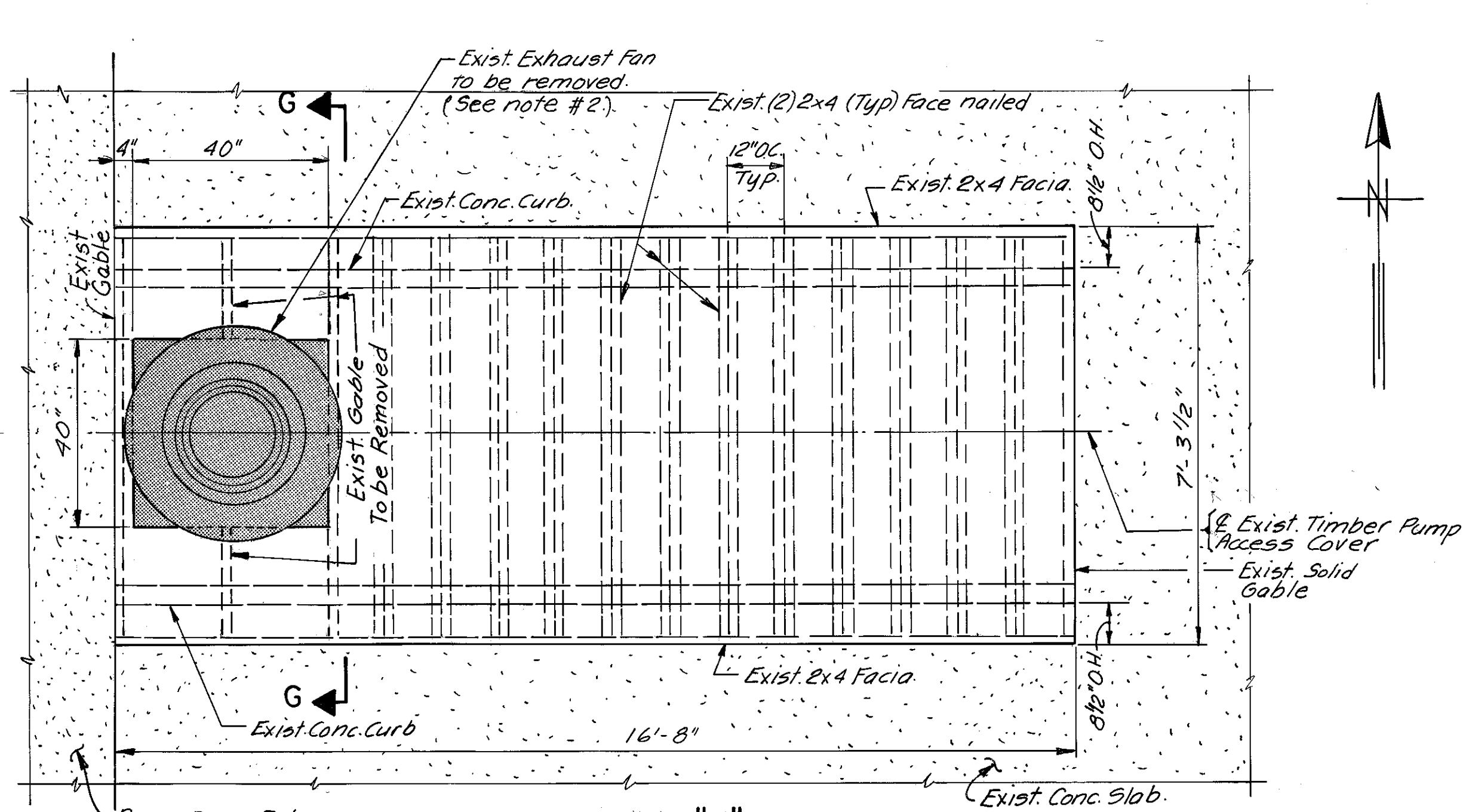


SECTION A-A
DRY PIT VENTILATION
EXISTING / PROPOSED
SCALE: 1/4"=1'-0"

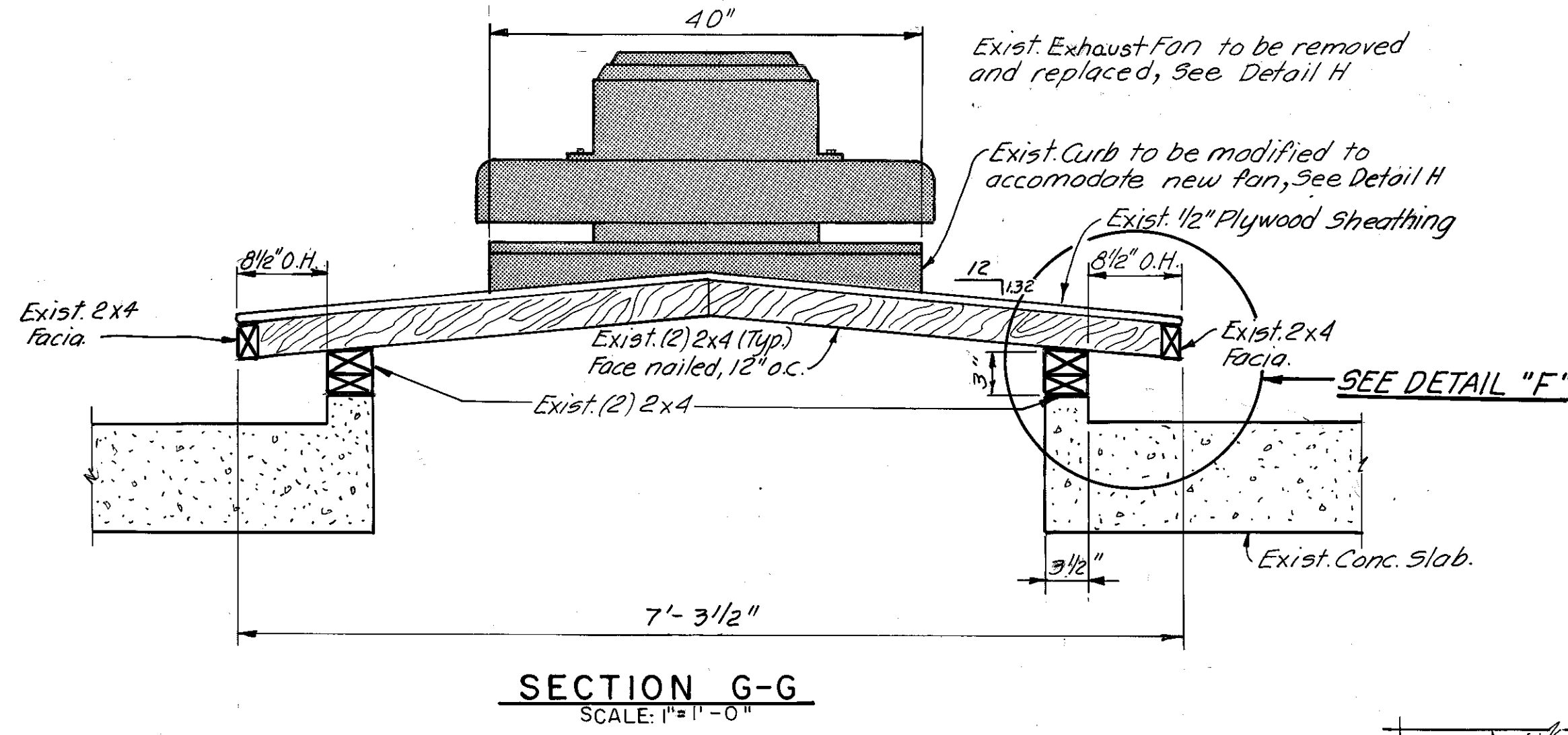


DETAIL "E"
SCALE: 3/4"=1'-0"

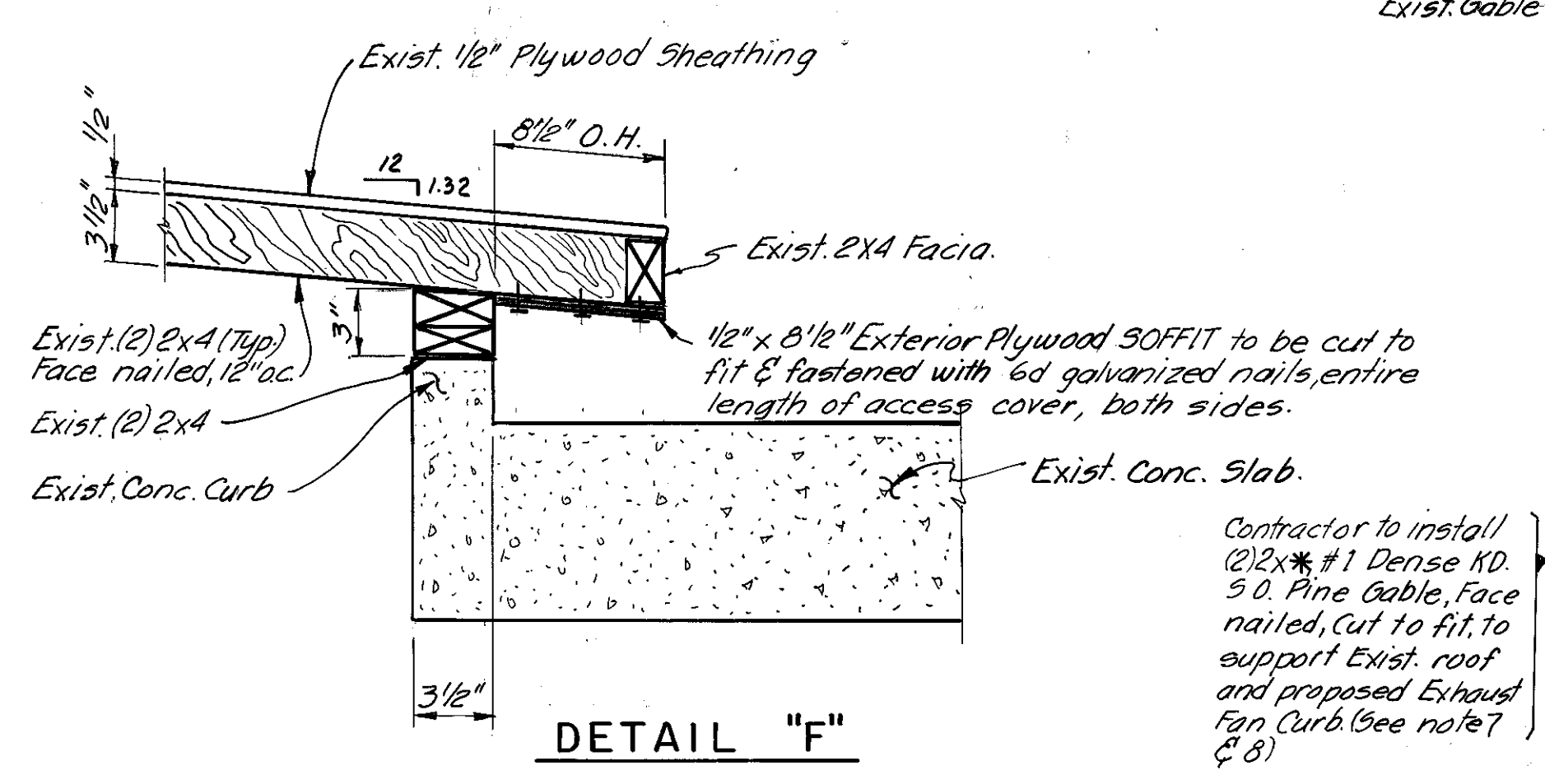
 ANDREW T. CRONBERG, P.E. # 32566 CHIEF ENGINEER DEPARTMENT OF SANITARY SEWERS	DES: A. H.	APPROVED BY	NO. DATE REVISIONS 1 2 3 4 5	SCALE AS SHOWN	DEPARTMENT of SANITARY SEWERS CITY of TAMPA, FLORIDA RENEWAL & REPLACEMENT SEWAGE DISPOSAL SYSTEM	18th. ST. PUMPING STATION VENTILATION REHABILITATION	SHEET 5 OF 6
	DRN: E. R.	JACK P. MORRIS, P. E.					
	CKD: A. H.	DIRECTOR					
	DATE: 2/86	DEPARTMENT of SANITARY SEWERS					



DETAIL "E"
EXIST. TIMBER PUMP ACCESS COVER & EXHAUST VENTILATION
 SCALE: 1/2"=1'-0"

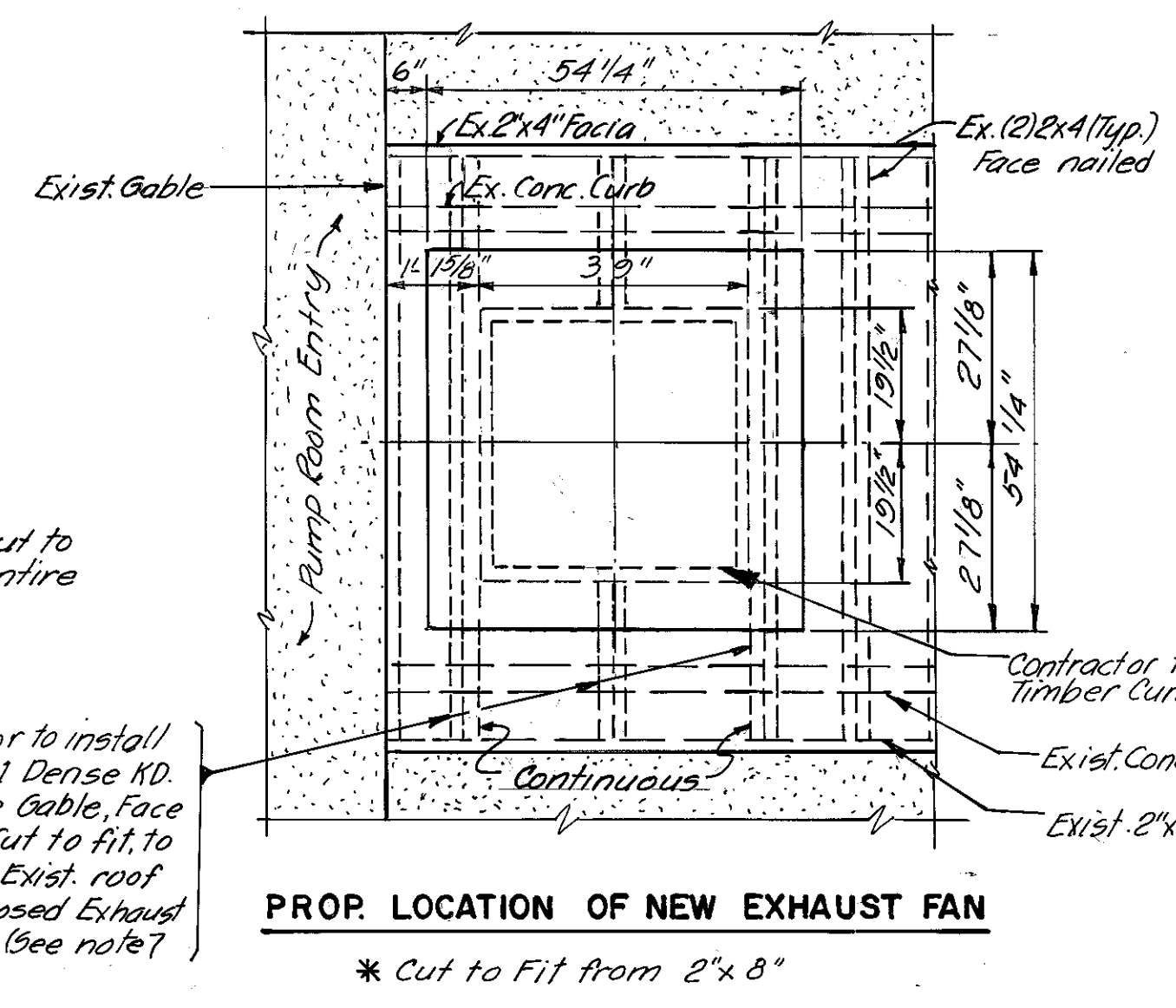


SECTION G-G
 SCALE: 1"=1'-0"

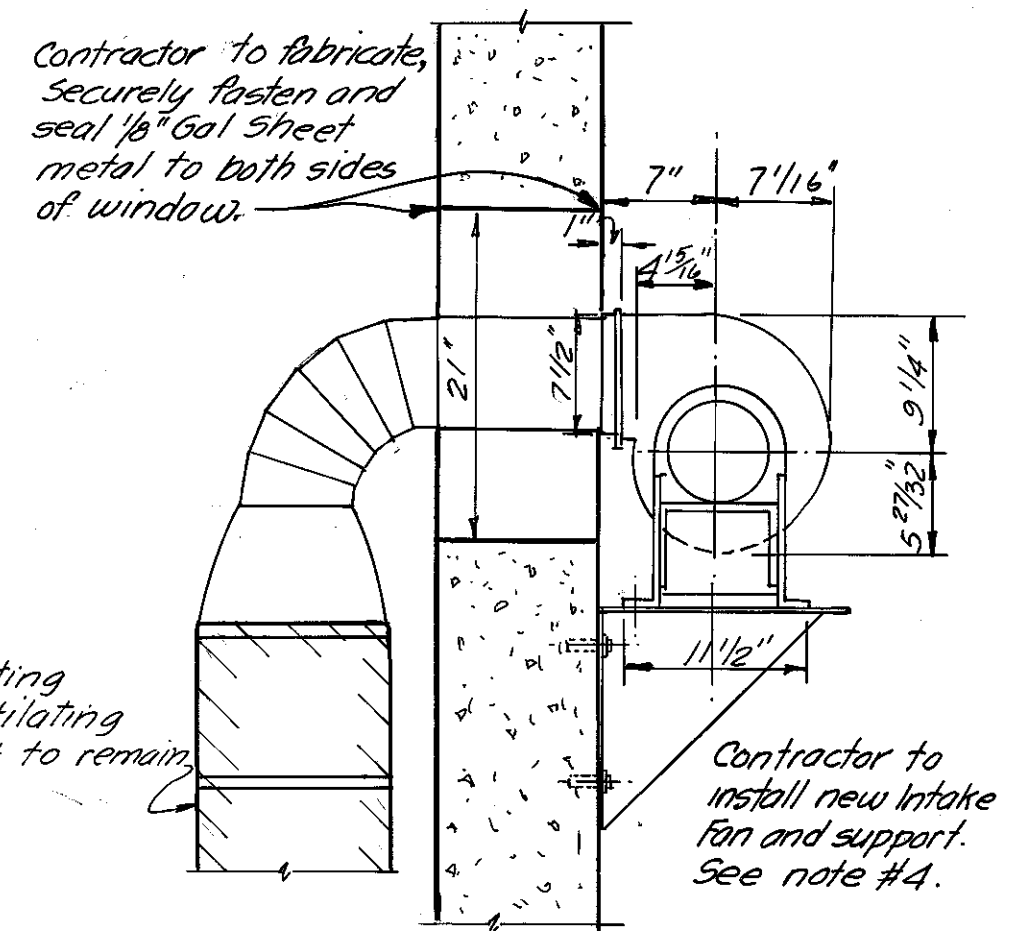


DETAIL "F"

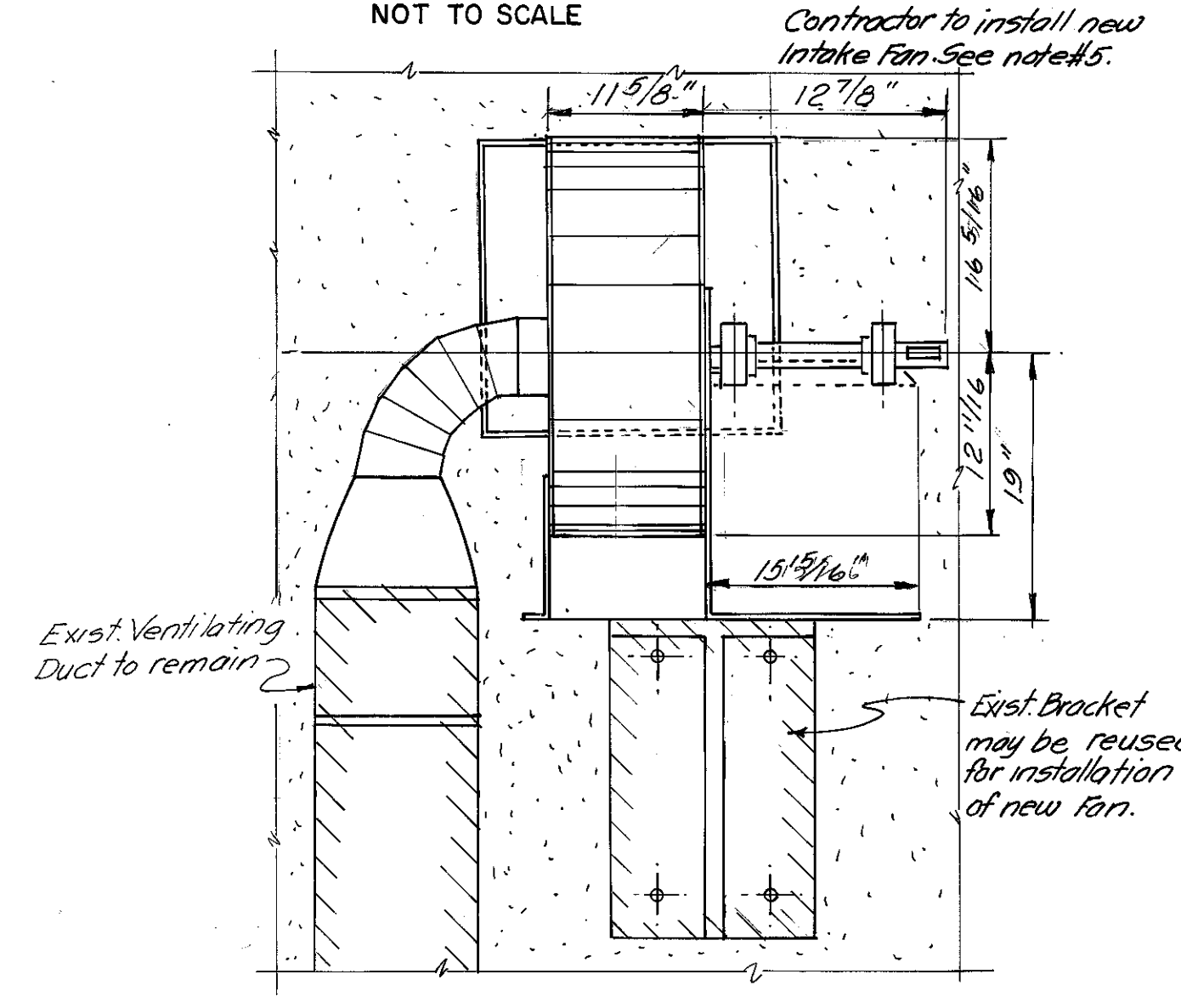
Contractor to install (2) 2x#1 Dense KD. 50. Pine Gable, face nailed, cut to fit to support exist. roof and proposed Exhaust Fan Curb (See note 7 & 8)



PROP. LOCATION OF NEW EXHAUST FAN
 * Cut to Fit from 2' x 8"

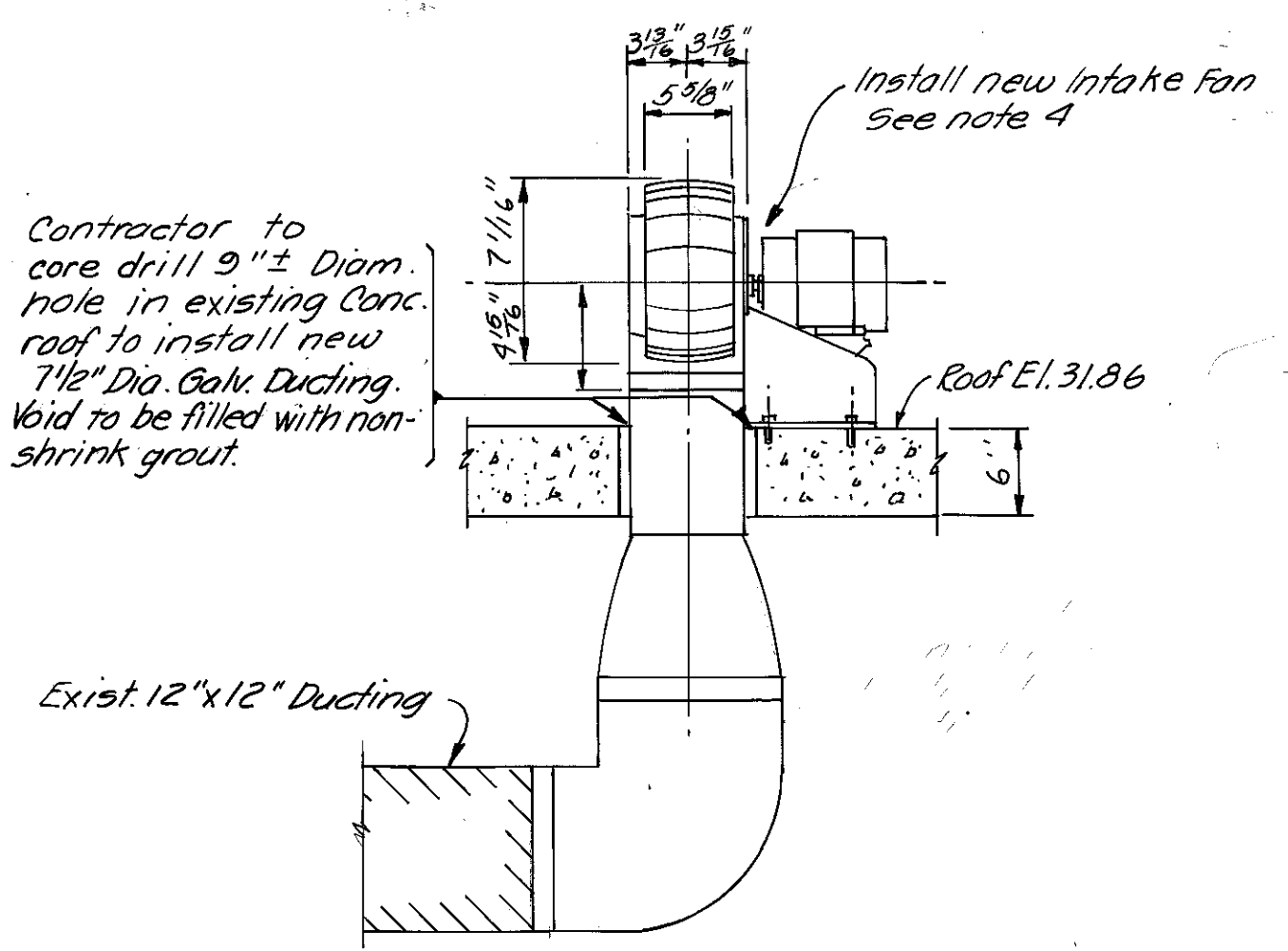


DETAIL "A"
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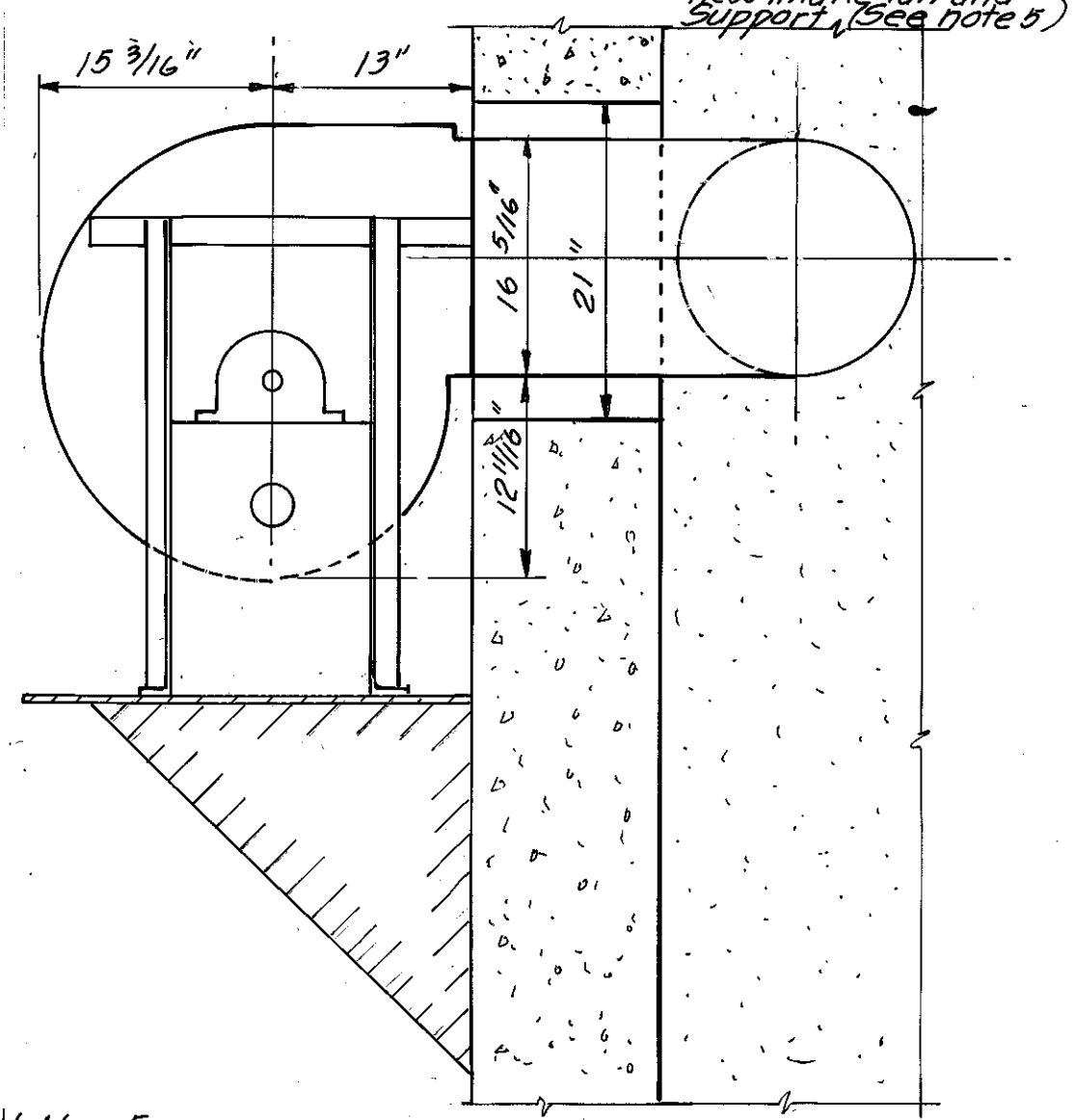


DETAIL "C"
 NOT TO SCALE

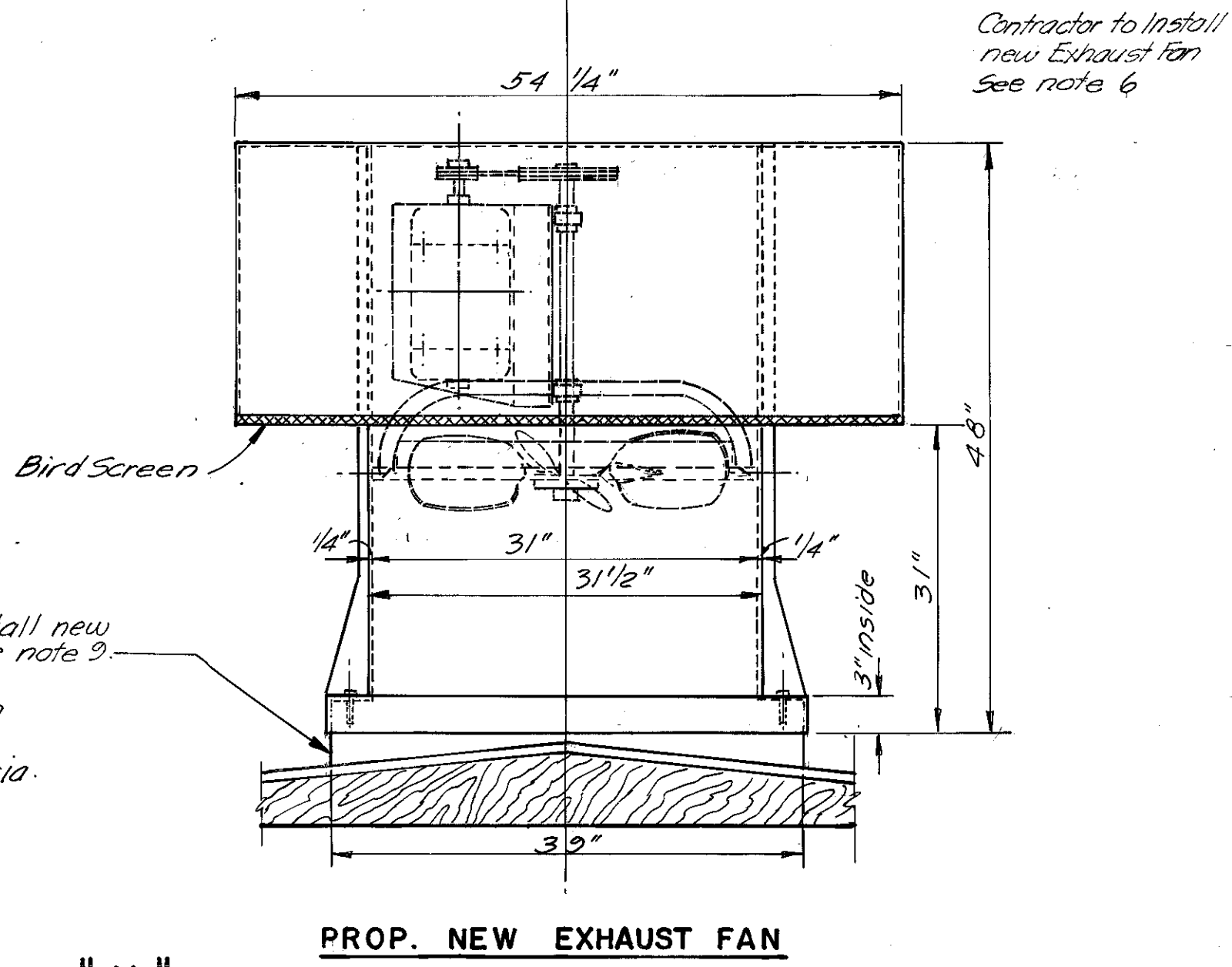
NOTES: Contractor to connect New Fans & Ducting to existing ducting. Proposed weather cover on fans No. 1, 2 & 4 not shown for clarity.



DETAIL "B"
 NOT TO SCALE



DETAIL "D"
 NOT TO SCALE



PROP. NEW EXHAUST FAN

DETAIL "H"
 NOT TO SCALE

NOTES

- All dimensions affecting installation of new ventilation equipment shall be field verified by contractor.
- Remove the existing fans and deliver all to Hookers Point AWTP, Electrical Department. All holes shall be filled with non-shrink grout and painted to match exist.
- All existing louvered window panels shall be wire brushed and cleaned.
- Screen room Intake Fans shall be Buffalo Forge size "E" baby vent sets or approved Equiv. Each unit to be direct connected to a 1/4 HP, 1140 RPM, 115 V, 1 φ, 60 HZ, TEFC, Type 48 Frame High efficiency motor with a Min. 0.8 power factor as manufactured by U.S. Motors or approved equivalent. Included shall be a weather cover and Bisonite "M" coating on all interior and exterior parts of the unit, excluding the motor. Unit Rating: 460 CFM, 3/8" 5. P., 1140 RPM, 1/6 Motor HP at 0.075"/FT³. Support brackets are to be painted to match exist. wall color. See specifications for further details.
- Pump entry room Intake fans shall be Buffalo Forge size 300 Typ "BL" or approved equivalent. Fan #3 to be arrangement 9 with Belt Guard and fan #4 to be arrangement 10 with weather cover over motor and drive. Each unit to be coated with Bisonite "M" on all exterior and interior parts excluding the V-Belt drive motor and belt guard. Motor shall be 208V, 3 φ, 60 Hz, 1 HP, 1800 RPM TEFC Type 143T frame and have Min. 0.9 efficiency with Min. 0.8 power factor as manufactured by U.S. Motors or approved equivalent. Contractor seal all voids around new ducting in windows. See specifications for further details.
- Exhaust fan shall be Buffalo Forge Size 24" style "H" Sky Vent or approved equivalent. Unit to be complete with Mushroom Exhaust Hood, 24" D-53 Aero-prop fan with steel wheel. Entire interior to be coated with Bisonite "M" (Fan & Exhaust stack). Exterior to be coated with outdoor protection "Spraycor" and shall include matching roof curb for peaked roof design. The motor shall be 115V, 1 φ, 60 HZ, 1/3 HP, 1140 RPM, TEAO Type, 56 frame with V-Belt drive and shall have Min. 0.9 efficiency and 0.8 power factor and shall be manufactured by U.S. Motors or approved Equiv. Unit Rating: 5,113 CFM at free delivery, 795 RPM, 1/3 Motor HP, 0.075"/FT³. See specifications for further details.
- Replace 1/2" exterior plywood sheathing & paint to match existing as necessary. Plywood shall be fastened with 6d. Galv. nails 6" oc. edges and 12" oc. intermediate.
- The gables shall be face nailed with 16d Galv. nails.
- Install new timber curb for new exhaust fan per MFG. recommendations. Use of angles and bolts may be required. Curb design must be approved by the design engineer prior to construction.

ELECTRICAL NOTES:

- The screen room fan controls will remain the same. The existing conduits and wiring shall be extended to the new fan locations and connected to the new fans. For details see specifications.
- The dry well existing fan conduits, wiring and controls shall be removed and delivered to H.P. AWTP Electrical Sections. New controls with associated wiring and conduits shall be installed per specifications.
- Replace existing lighting transformer per specifications.
- All conduits shall be supported by clampbacks as manufactured by Appleton.
- All electrical work shall be performed within latest NEC and City of Tampa codes and only UL approved components and materials shall be used within this contract.

ANDREW T. CRONBERG, P.E. # 52360
 CHIEF ENGINEER
 DEPARTMENT OF SANITARY SEWERS

DES: A. H.
 DRN: E. R.
 CKD:
 DATE:

APPROVED BY
 JACK P. MORRIS, P.E.
 DIRECTOR
 DEPARTMENT OF SANITARY SEWERS

NO	DATE	REVISIONS
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SCALE
 AS SHOWN

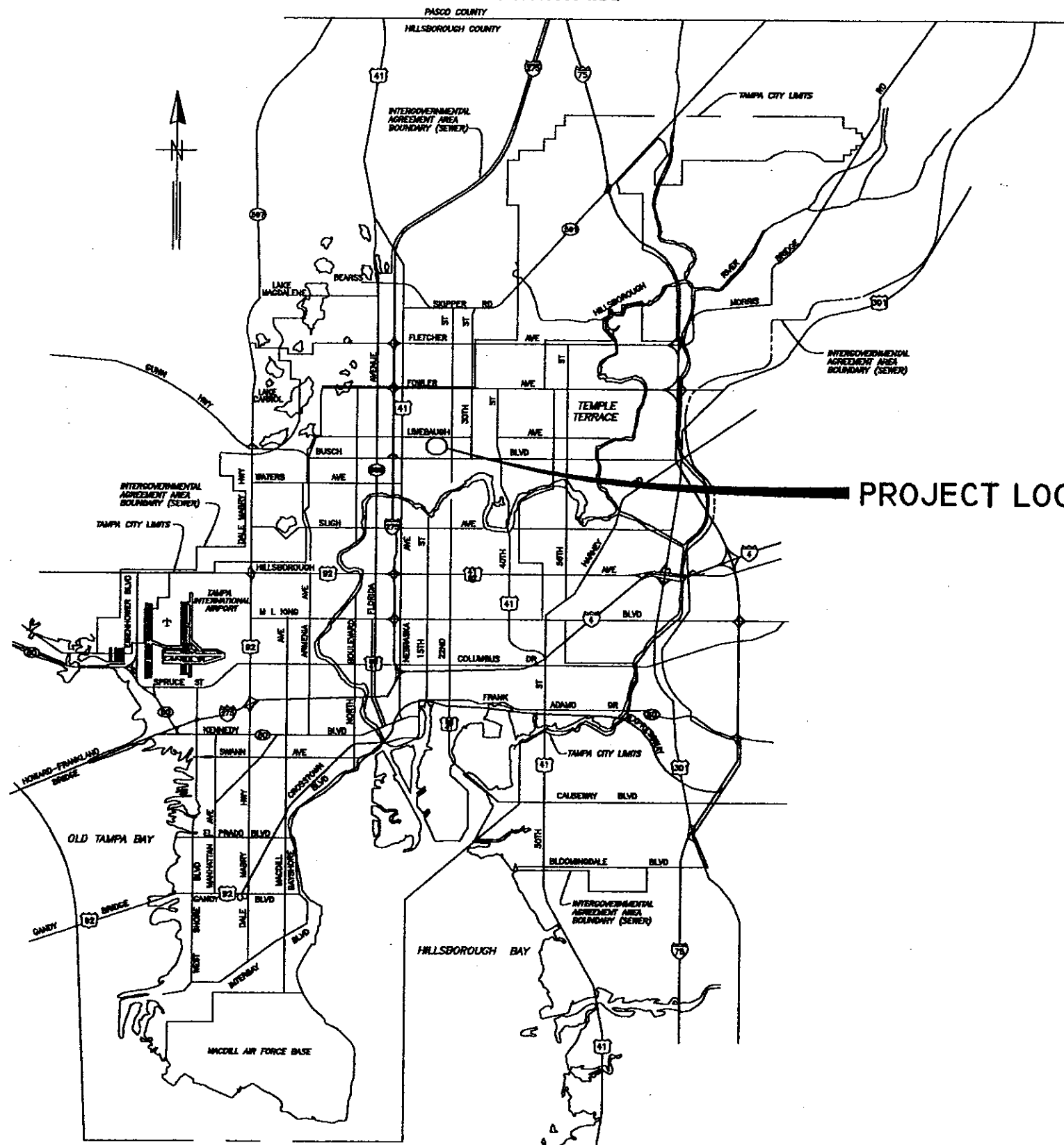
DEPARTMENT OF SANITARY SEWERS
 CITY OF TAMPA, FLORIDA
 RENEWAL & REPLACEMENT
 SEWAGE DISPOSAL SYSTEM

18th. ST. PUMPING STATION
 VENTILATION REHABILITATION

SHEET
6
 OF 6

B49-01

LOCATION MAP



CITY of TAMPA



PROJECT LOCATION

DEPARTMENT OF SANITARY SEWERS

PLANS FOR

18TH STREET PUMPING STATION
REHABILITATION

CONTRACT 7-00

Roman D. Korchak
ROMAN D KORCHAK, PE #42626
ELECTRICAL SECTION HEAD
DEPARTMENT OF SANITARY SEWERS

Henry Dorzback
HENRY DORZBACK, P.E. #39449
CHIEF ENGINEER
DEPARTMENT OF SANITARY SEWERS

Ralph L. Metcalf II
RALPH L. METCALF II, P.E.
DIRECTOR
DEPARTMENT OF SANITARY SEWERS

DES: C.L.	No.	DATE	REVISIONS
DRN: BB	3		
CKD: DA	2		
DATE: 2/20	1		

CITY of TAMPA
DEPARTMENT OF SANITARY SEWERS
SANITARY SEWERS DIVISION

COVER SHEET

W.O. 5759
SHEET
1
OF 37

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LEGEND

EX SEWERS	UP to 36" & SMALLER	36" & LARGER
EX FORCE MAIN		
EX SAN SEWER & MANHOLES		
EX STORM SEWER & MANHOLES		
PROP SEWERS		
PROP FORCE MAIN		
PROP SANITARY SEWER & MANHOLES		
PROP STORM SEWER & MANHOLES		
OTHER FEATURES		
RIGHT of WAY LINE		
EDGE of PAVEMENT		
WATER LINE		
GAS LINE		
ELECTRICAL CABLE or DUCT		
TELEPHONE CABLE or DUCT		
TV CABLE		
VALVE		
HYDRANT		
CATCH BASIN, GRATE		
POWER POLE		
TELEPHONE POLE		
GUY POLE		
GUY WIRE		

VALVE VAULT	
WATER METER	
ELECTRICAL MANHOLE or VAULT	
TELEPHONE MANHOLE or VAULT	
TRAFFIC BOX or VAULT	
BUILDING LIMIT	
PROPERTY OWNERSHIP	
FENCE	
CONIFER	
PALM	
OAK	
OTHER	
SHRUB	
HEDGE	
RAILROAD TRACKS	
IRON PIPE	
CONCRETE MONUMENT	
OPEN DITCHES	
EXISTING WYE	
PROPOSED WYE	
CLEAN OUT	

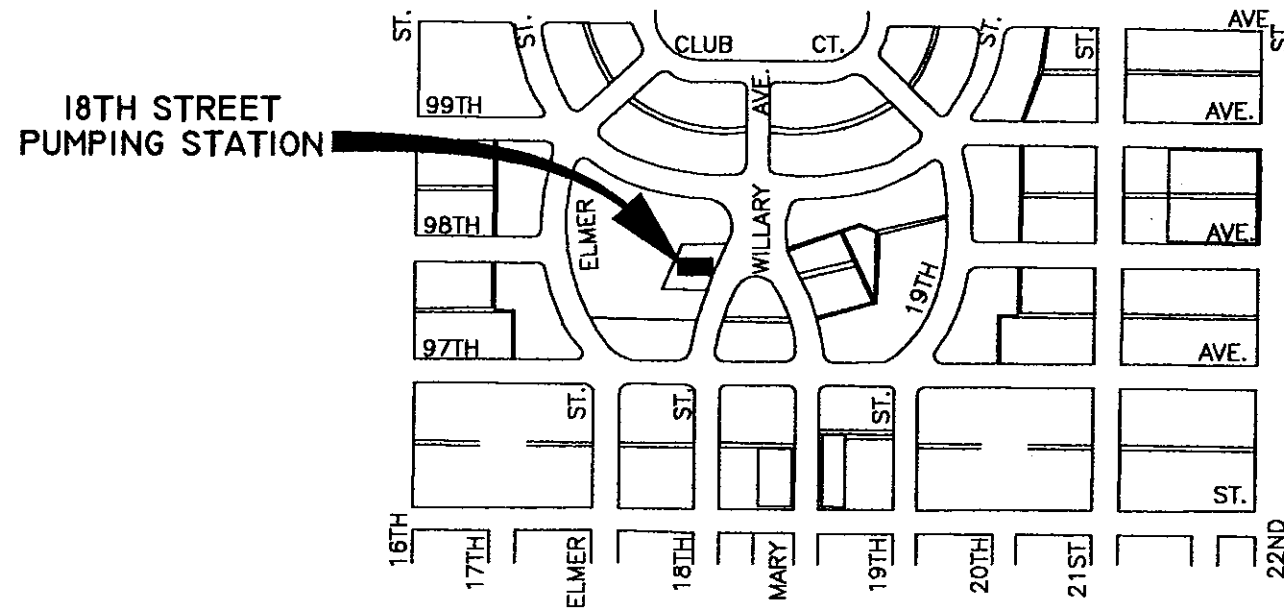
ABBREVIATIONS

TOP of PIPE	TP	DUCTILE IRON PIPE	DIP
INVERT ELEVATION	IE or INV EL	REINFORCED CONCRETE PIPE	RCP
RIGHT of WAY	R/W	CONCRETE PIPE	CP
MANHOLE	MH or M	APPROXIMATE LOCATION	AL
POLYVINYL CHLORIDE PIPE	PVCP	BENCH MARK	BM
VITRIFIED CLAY PIPE	VCP	POINT of INTERSECTION	PI
ADVANCED DRAINAGE SYSTEM	ADS		

INDEX

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20	MISCELLANEOUS DETAILS
21	MISCELLANEOUS DETAILS
22	PEDESTAL DETAILS
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E2/25	ELECTRICAL - PROPOSED ONE-LINE DIAGRAM
E3/26	ELECTRICAL - EXISTING NORTH ELEVATION
E4/27	ELECTRICAL - EXISTING WEST ELEVATION
E5/28	ELECTRICAL - MCC LINE-UP
E6/29	ELECTRICAL - WET WELL LEVEL CONTROLS
E7/30	ELECTRICAL - PUMP CONTROL LOGIC
E8/31	ELECTRICAL - PUMP CONTROL LOGIC - PANEL LAYOUT
E9/32	ELECTRICAL - PROP INTERCONNECT DIAGRAM - PUMPS 1 & 2
E10/33	ELECTRICAL - PROP INTERCONNECT DIAGRAM
	SEWAGE PUMP 3 & BLOWERS
E11/34	ELECTRICAL - PROPOSED PLAN VIEW
E12/35	ELECTRICAL - PROPOSED EAST ELEVATION
E13/36	ELECTRICAL - PROPOSED WEST ELEVATION
E14/37	ELECTRICAL - PROPOSED WET WELL LIGHTING - N. ELEVATION

PROJECT MAP



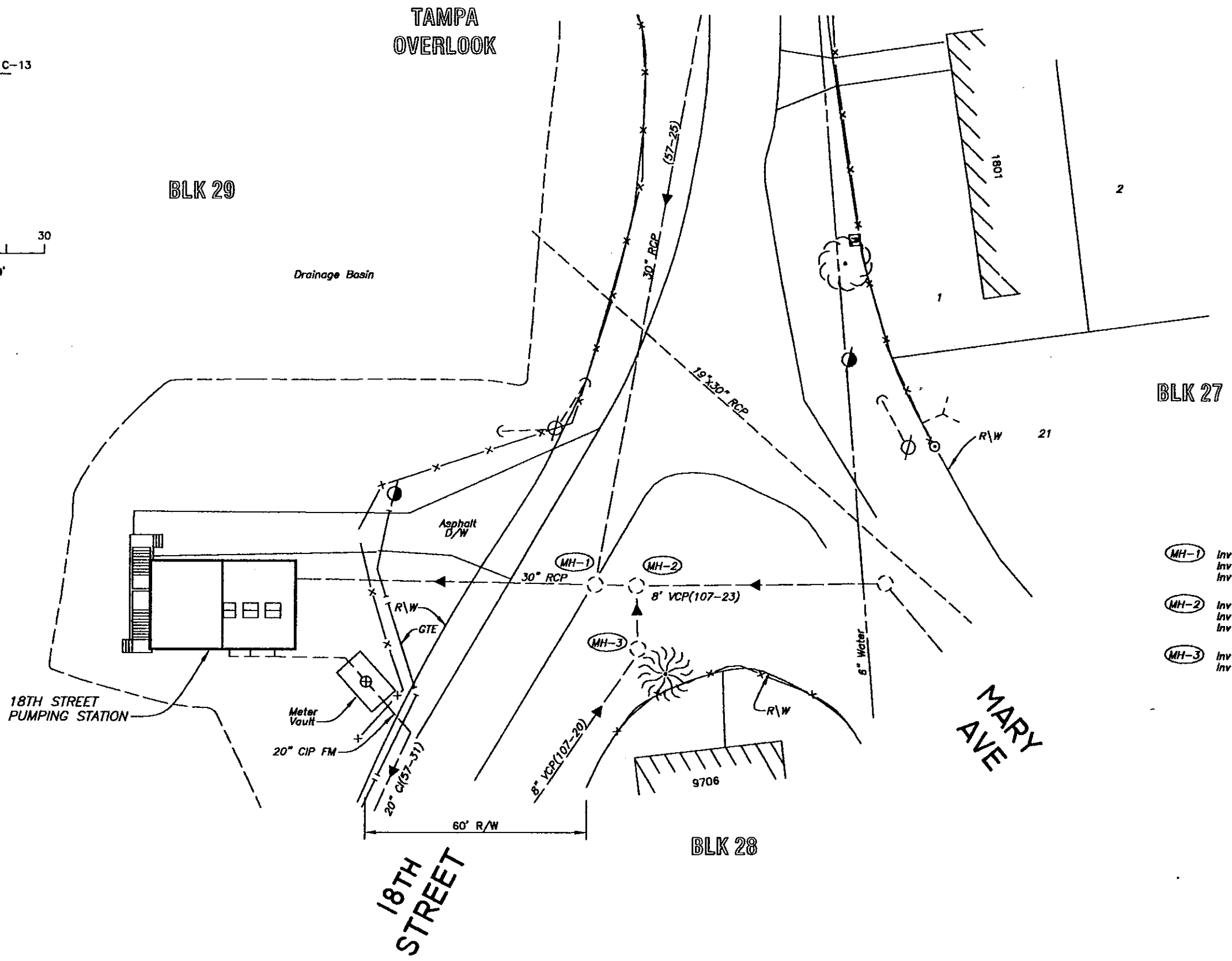
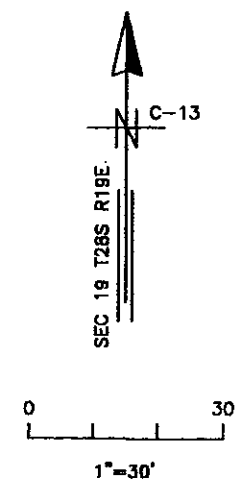
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 DRN: BB
 CKD: AH
 DATE: 2-20

CITY of TAMPA
 DEPARTMENT OF SANITARY SEWERS
 SANITARY SEWERS DIVISION

18TH STREET PUMPING STATION REHABILITATION
 LEGEND, INDEX, & PROJECT MAP



- (MH-1) Inv El 30" RCP 13.89(W)
Inv El 30" RCP 13.91(N)
Inv El 8" VCP 15.37(E)
- (MH-2) Inv El 8" VCP 15.60(W)
Inv El 8" VCP 15.61(S)
Inv El 8" VCP 18.90(E)
- (MH-3) Inv El 8" VCP 15.75(W)
Inv El 8" VCP 15.76(S)

30

pa\5759-aite

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DATE: 2/20

CITY of TAMPA
DEPARTMENT OF SANITARY SEWERS
SANITARY SEWERS DIVISION

18TH STREET PUMPING STATION REHABILITATION
SITE PLAN

W.O. 5759
SHEET
3
OF 37

Demolition Notes

- 1) The Contractor shall submit shop drawings of the proposed by-pass arrangement prior to starting construction. Sewer service must be maintained during construction. See specifications for flow information and additional requirements
- 2) The existing force main has an in-line valve, 12"x18" tee, and 12" bypass valve located in the meter vault adjacent to the station. This assembly can be used to connect the bypass pumps to the force main and isolate the portion of pipe between the meter vault and the pumping station.
- 3) All equipment, piping, structures, etc. indicated for removal shall be removed and either delivered to the Howard F. Curren Treatment Plant or properly disposed by the Contractor. In general, all items constructed of metal shall remain the property of the City and shall be delivered to the treatment plant.
- 4) The existing concrete pump pedestals and supports shall be removed flush with the existing concrete floor. Areas of the existing floor that are disturbed by the removal of the concrete and that will remain exposed after the installation of the new equipment shall be made smooth. All rebar or anchor bolts within these areas shall be ground back a minimum of 1-inch and the hole filled with grout.
- 5) Corroded concrete within the wet well shall be removed to provide a sound concrete surface. Pitted and deteriorated concrete surfaces shall be leveled with cementitious repair mortar, Sika Top 122, Sika Top 123, or approved equal. Surfaces shall be finished to suit the installation of the proposed PVC liner and shall be performed as recommended by the liner manufacturer.
- 6) Corroded or loose portions of the existing concrete fillet around the circumference of the bottom corner of the wet well shall be removed to sound concrete. The fillet shall be reconstructed using "Class D" concrete. A concrete bonding agent shall be applied to the existing concrete to bond the new concrete to the old concrete.
- 7) The existing 12-inch spool pieces and accompanying wall sleeves shall be removed through the existing concrete walls. The openings in the wall shall be enlarged and adjusted as required to accommodate the proposed piping.
- 8) The existing 18-inch spool pieces for the No. 4 pump shall be removed and the existing wall sleeves cut or ground back 1-inch from the face of the wall. The openings shall be filled with non-shrink grout and finished smooth with the face of the wall.
- 9) The existing 18-inch check valve for the No. 4 pump shall be reused for the either the No. 1 pump or the No. 3 pump discharge.
- 10) Openings/holes in the mezzanine floor created from the removal of existing equipment and that will not be reused for the proposed equipment shall be filled with grout.

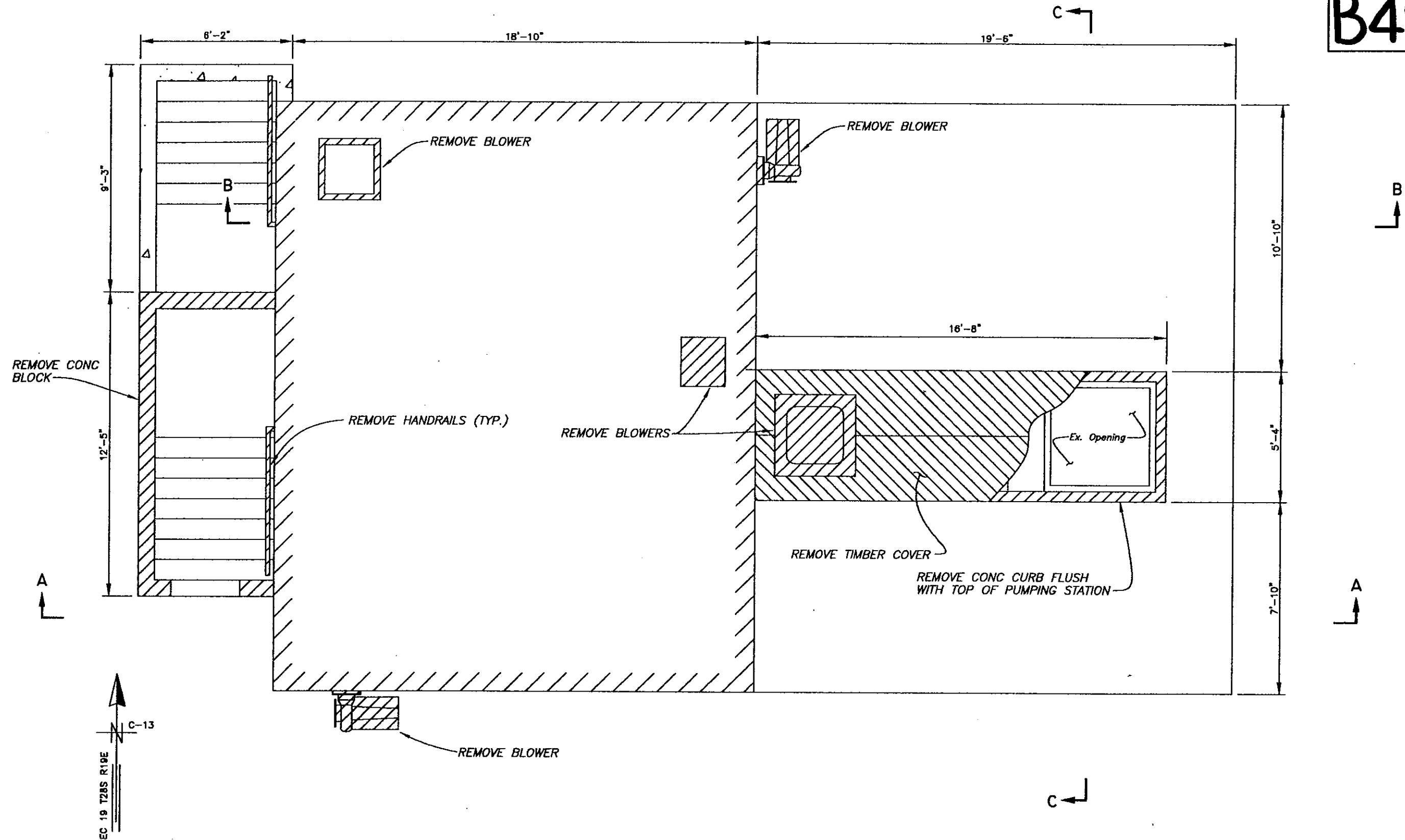
Proposed-Construction Notes

- 1) The Contractor is responsible for obtaining all field measurements and verifying the locations, elevations, and dimensions of all existing piping, structures, equipment, and other features affecting the work prior to submitting shop drawings or starting construction.
- 2) All concrete, unless otherwise specified, shall be Class "B" 4000 psi compressive strength.
- 3) Steel reinforcing shall be detailed in accordance with the latest "ACI Manual of Standard Practice for Detailing Reinforced Concrete Structures". The actual placement of reinforcing shall be shown on the shop drawings. All laps and splices shall be at least 32 bar diameters or 24-inches.
- 4) Backfill shall be compacted in 8-inch layers to 95% maximum dry density of the modified Proctor in conformance with AASHTO T-180, method A.

- 5) Discharge and suction piping shall be constructed of Class 53 DIP and shall be lined in accordance with the Contract Specifications.
- 6) All pipe, fittings, valves, and equipment shall be coated in accordance with the Contract Specifications.
- 7) All bolts, washers, nuts, screws, hinges, brackets, etc. shall be constructed of 316 stainless steel.
- 8) The Contractor shall be responsible for ensuring that the pumps are installed in a level position and the pump and the motor are properly aligned. Pumps shall be installed in accordance with the Hydraulic Institute Standards. Pumps shall be tested in accordance with the Contract Specifications.
- 9) Pump anchor bolts shall be 316 stainless steel. Size and alignment shall be as recommended by the pump manufacturer.
- 10) Proposed air ducts for the wet well shall be constructed of fiberglass reinforced plastic (FRP). All ducts will be supported and anchored in accordance with the manufacturer's recommendations. Hangers and supports shall be constructed of either FRP or 316 stainless steel. The Contractor shall submit shop drawings for the ducts, layout, and the supports and hangers.
- 11) The Contractor shall furnish all materials required to connect the proposed FRP fans to the existing 12"x12" aluminum ducts. Additional ductwork, if required, shall be constructed of aluminum or FRP.
- 12) Access covers shall be U.S. Foundry or approved equal. Access covers shall have stainless steel hardware and shall be rated for a live load of 150 psf. The direction in which the covers open shall correspond to the location of the hinges shown on the plans. The aluminum access covers shall close flush with the frame and shall rest on a built-in neoprene gasket. The access covers for the openings over the pump room shall also be equipped with recessed stainless steel bolts for securing the cover in the closed position. All aluminum surfaces that contact concrete shall be coated with two coats of coal tar epoxy. The Contractor shall submit shop drawings detailing the installation and configuration of the access covers.
- 13) The aluminum access covers for the existing openings over the pump room shall be custom fabricated to suit the dimensions of the openings. The existing openings were constructed with a 3"x3" recessed lip around the perimeter of the opening. In order for the covers to match flush with the top slab of the pumping station, the cover shall be equipped with a 3"x3" aluminum square tube frame. The frame shall be used to fill the lip area and support the covers. The Contractor shall submit shop drawings of the covers, aluminum framing, and method for installing and anchoring the covers in the existing openings.
- 15) The existing stainless steel bar screen shall be modified to match the new dimensions of the inlet chamber. All surfaces of the bar screen shall be made smooth to prevent damage to the proposed PVC liner.
- 16) An FRP ring shall be provided to anchor the PVC liner around the circumference of the inlet pipe opening. The ring shall be a minimum of 1/4-inch thick and 1-1/2-inches wide. The ring shall be anchored to the existing concrete in the same manner as the batten strips shown in the "PVC Liner Anchorage Detail".
- 17) Hardware used to anchor and connect the handrails shall be constructed of 316 stainless steel. Contractor shall submit shop drawings for the fabrication, layout, and installation of the handrails. Surfaces of the handrails in contact with concrete shall be coated with 2-coats of coal tar epoxy applied to the aluminum surface.
- 18) FRP fans connected to the wet well shall be equipped with an aluminum or FRP hood to prevent rain from entering the fan.

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No.	DATE	REVISIONS	No.	DATE	REVISIONS	DES: CL	CITY of TAMPA DEPARTMENT OF SANITARY SEWERS SANITARY SEWERS DIVISION	18TH STREET PUMPING STATION REHABILITATION NOTES	W.O. 5759
3			6			DRN: BK			SHEET
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1			4			DATE: 2/3/00			OF 37



 CROSS-HATCHED AREAS INDICATE EXISTING EQUIPMENT, STRUCTURES, AND PIPING TO BE REMOVED.

EXISTING PLAN VIEW @ EL 32.0
Scale 1/4" = 1'

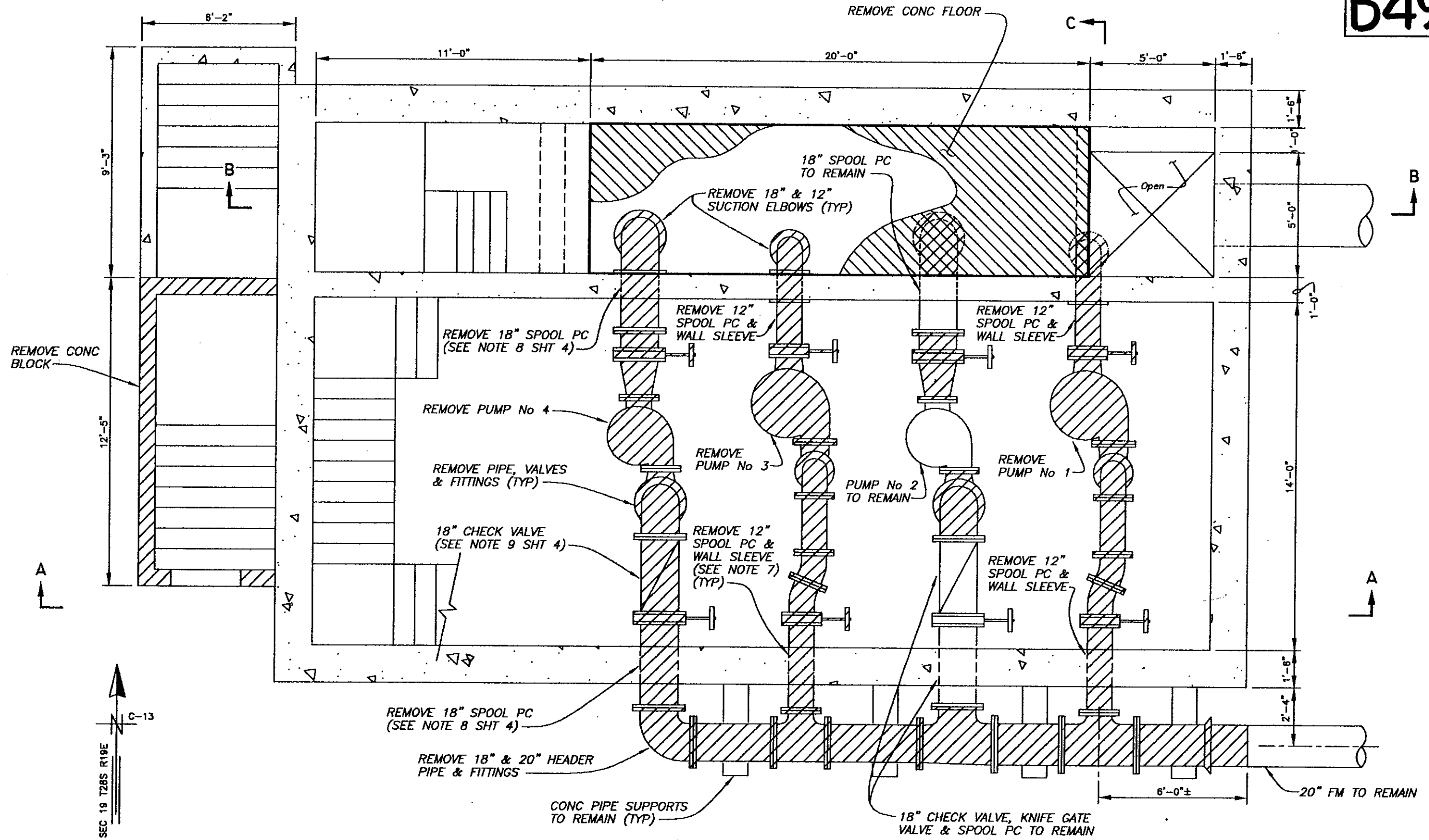
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CKD: *AK*
DATE: *2-2-00*

CITY of TAMPA
DEPARTMENT OF SANITARY SEWERS
SANITARY SEWERS DIVISION

18TH STREET PUMPING STATION REHABILITATION
DEMOLITION - PLAN VIEW @ EL 32.0

pa\5759-demo 1/4"



CROSS-HATCHED AREAS INDICATE EXISTING EQUIPMENT, STRUCTURES, AND PIPING TO BE REMOVED.

EXISTING PLAN VIEW @ EL 20.0
Scale 1/4" = 1'

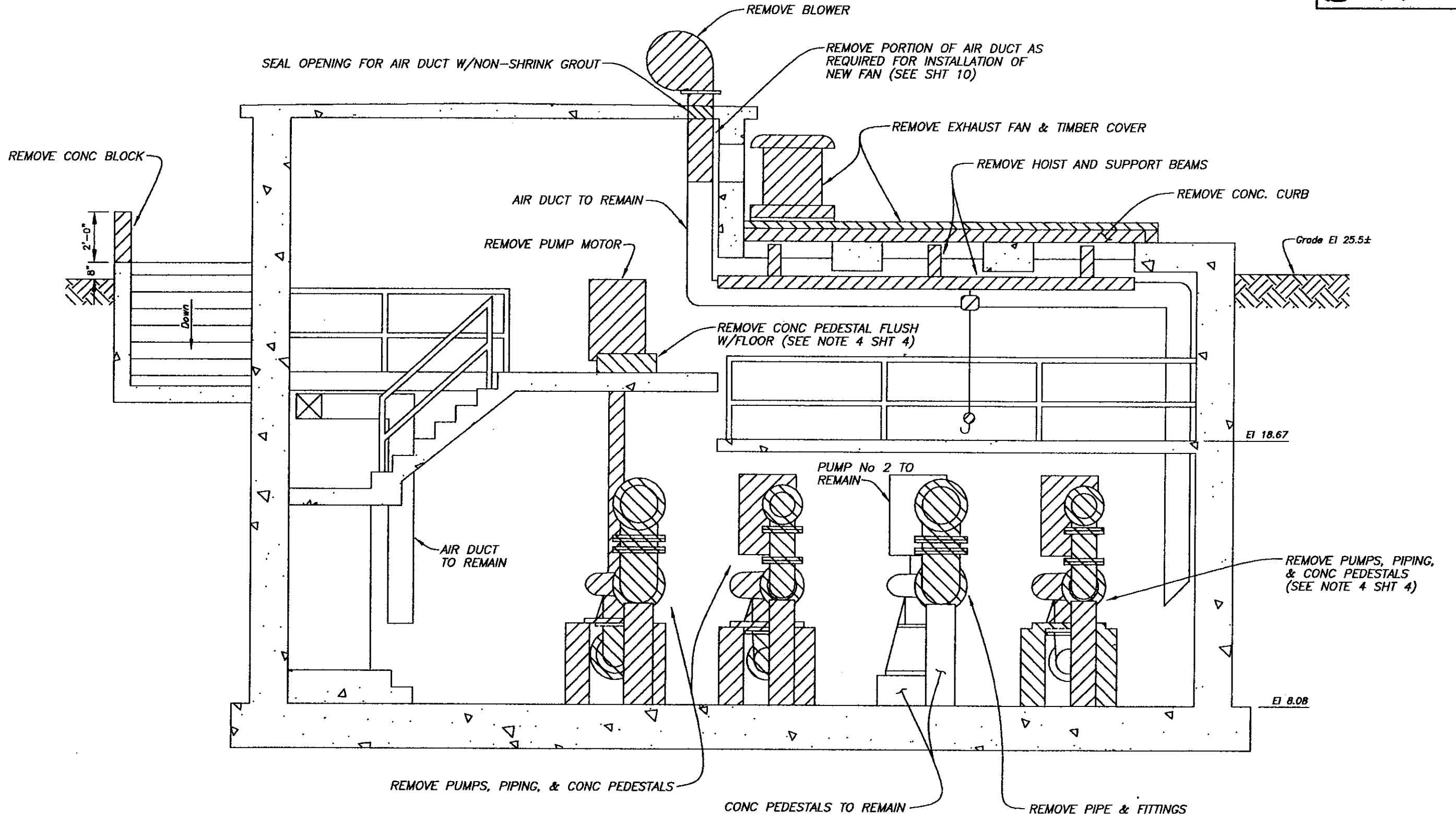
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DATE: 2/20

CITY of TAMPA
DEPARTMENT OF SANITARY SEWERS
SANITARY SEWERS DIVISION

18TH STREET PUMPING STATION REHABILITATION
DEMOLITION - PLAN VIEW @ EL 20.0

pa\5759-demo



 CROSS-HATCHED AREAS INDICATE EXISTING EQUIPMENT, STRUCTURES, AND PIPING TO BE REMOVED.

EXISTING SECTION A-A

Scale 1/4" = 1'

ps\5759-demo

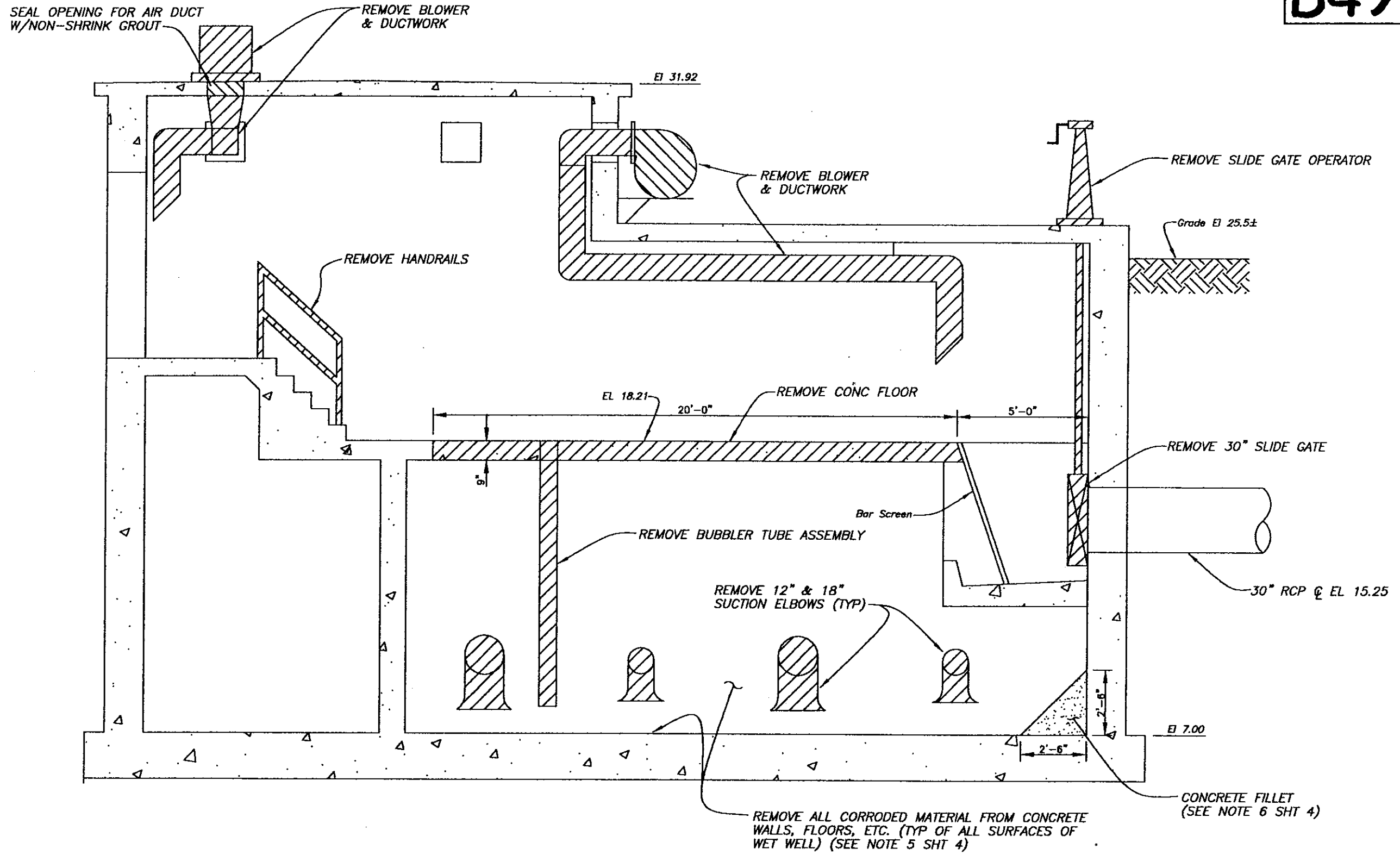
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CITY of TAMPA
 DEPARTMENT OF SANITARY SEWERS
 SANITARY SEWERS DIVISION

**18TH STREET PUMPING STATION REHABILITATION
 DEMOLITION - SECTION A-A**

W.O. 5759
 SHEET
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 OF 37



 CROSS-HATCHED AREAS INDICATE EXISTING EQUIPMENT, STRUCTURES, AND PIPING TO BE REMOVED.

EXISTING SECTION B-B
Scale 1/4" = 1'

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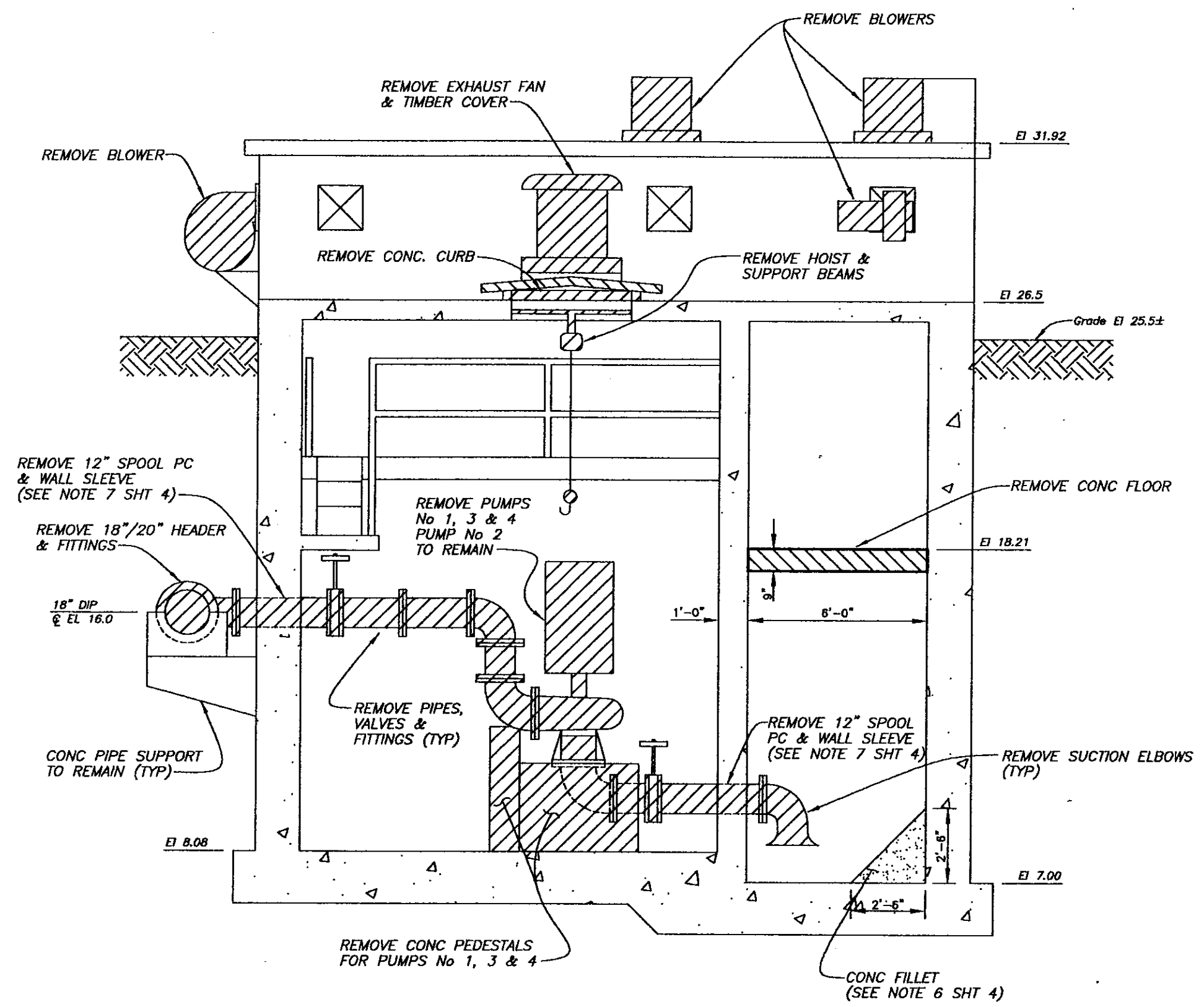
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CITY of TAMPA
DEPARTMENT OF SANITARY SEWERS
SANITARY SEWERS DIVISION

**18TH STREET PUMPING STATION REHABILITATION
DEMOLITION - SECTION B-B**

1/4"

ps\5759-demo



 CROSS-HATCHED AREAS INDICATE EXISTING EQUIPMENT, STRUCTURES, AND PIPING TO BE REMOVED.

EXISTING SECTION C-C
Scale 1/4" = 1'

1/4"

ps\5759--demo

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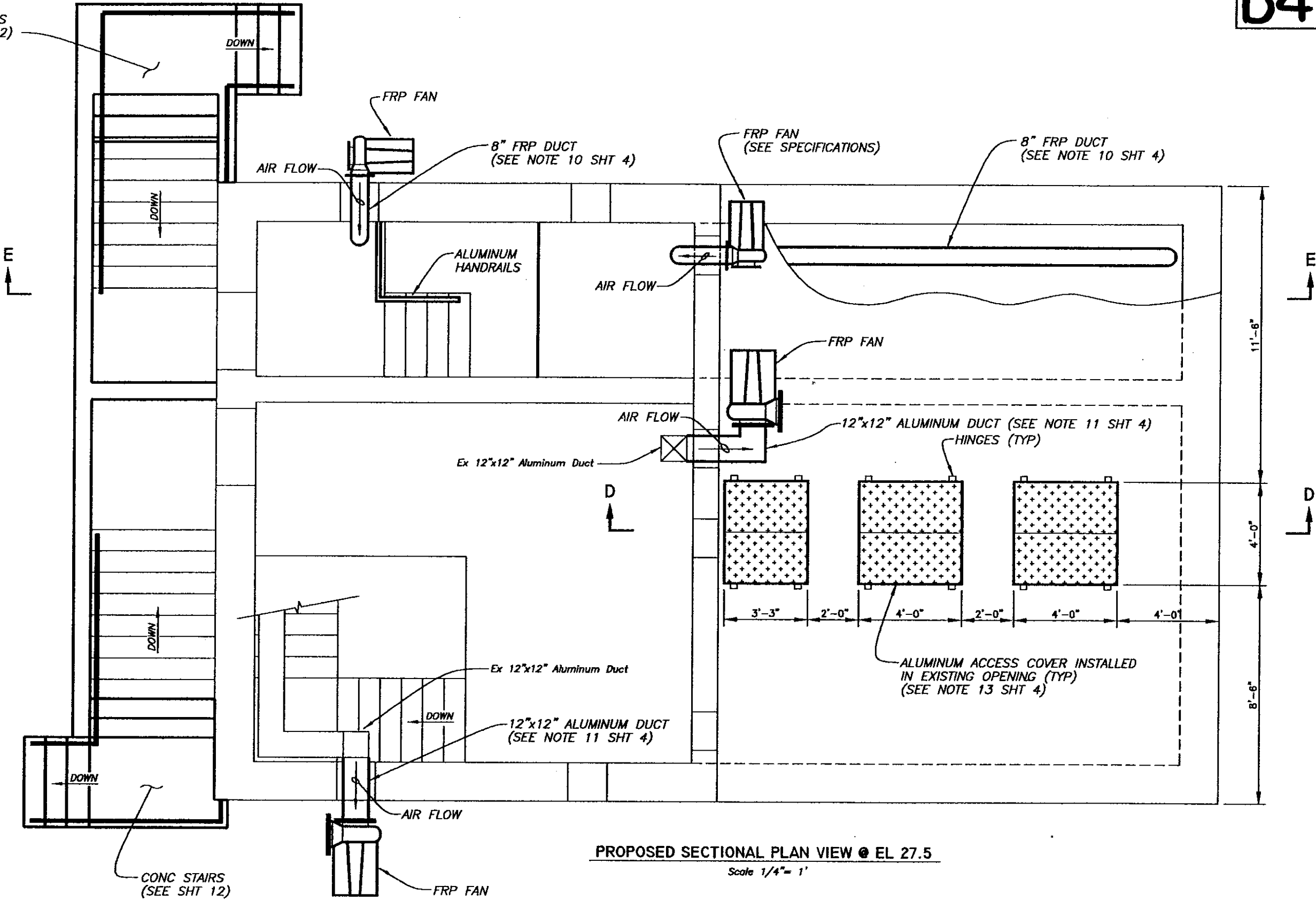
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CITY of TAMPA
DEPARTMENT OF SANITARY SEWERS
SANITARY SEWERS DIVISION

18TH STREET PUMPING STATION REHABILITATION
DEMOLITION - SECTION C-C & NOTES

CONC STAIRS
(SEE SHT 12)

SEC 19 T285 R19E
C-13



PROPOSED SECTIONAL PLAN VIEW @ EL 27.5

Scale 1/4" = 1'

1/4"

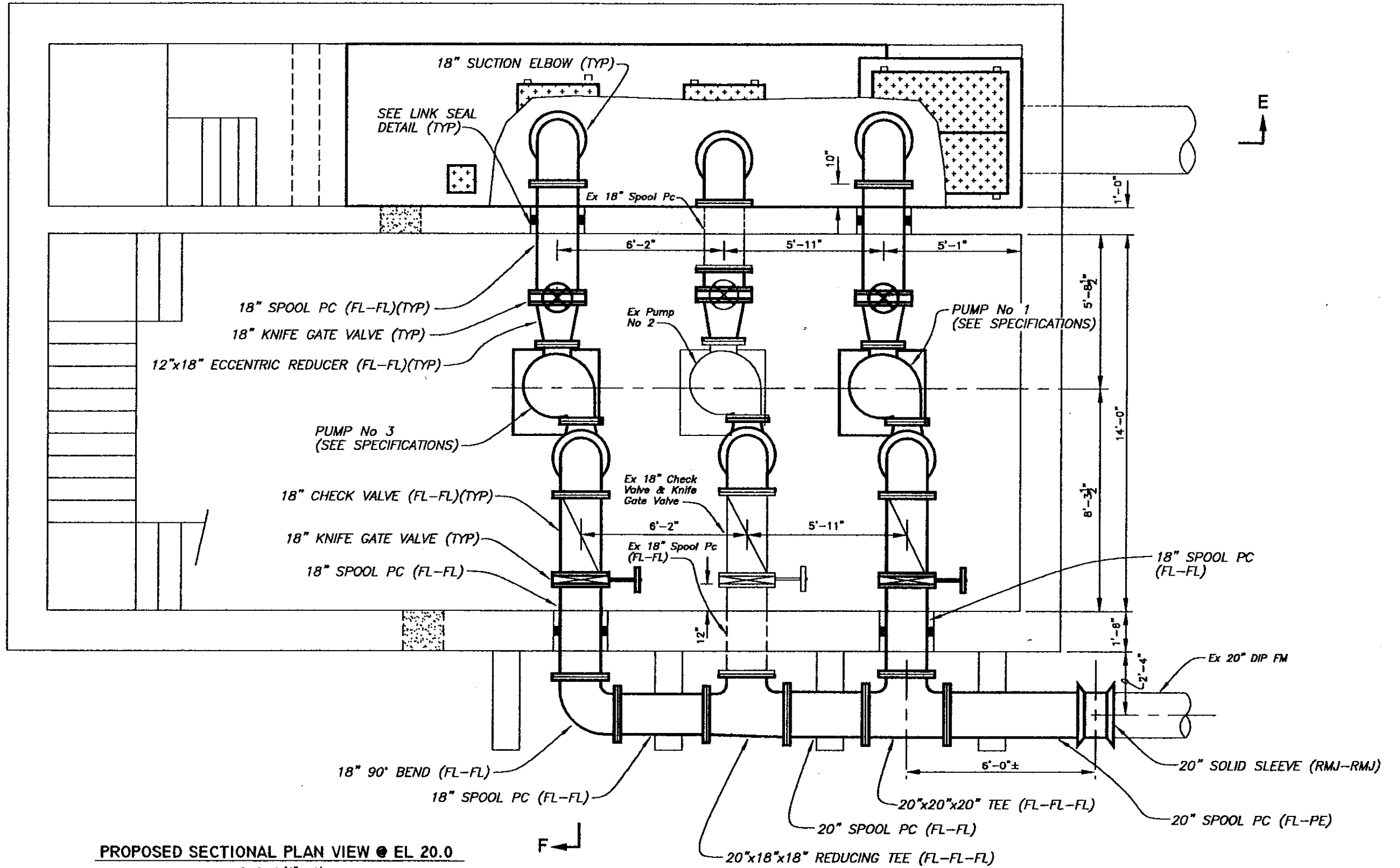
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CITY of TAMPA
DEPARTMENT OF SANITARY SEWERS
SANITARY SEWERS DIVISION

18TH STREET PUMPING STATION REHABILITATION
PROPOSED SECTIONAL PLAN VIEW



PROPOSED SECTIONAL PLAN VIEW @ EL 20.0

Scale 1/4" = 1'

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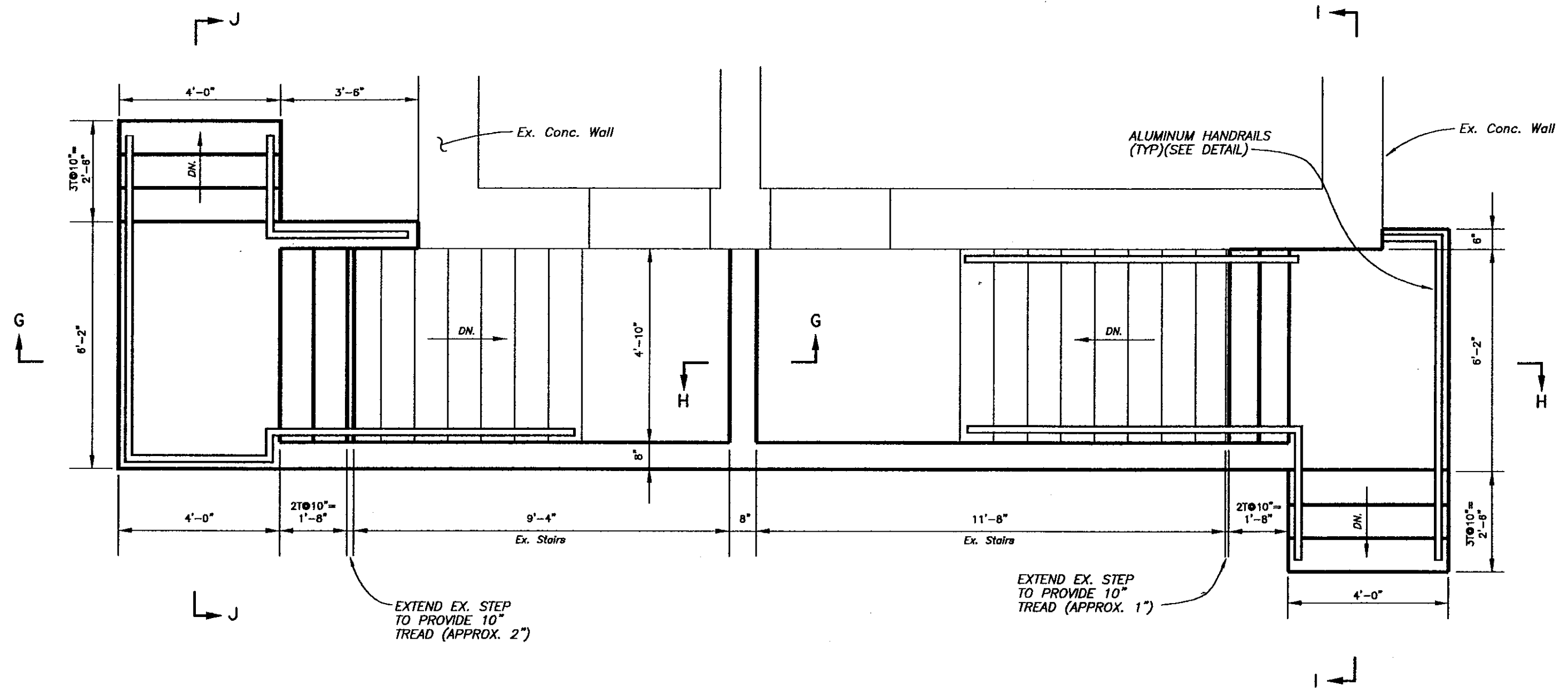
CITY of TAMPA
 DEPARTMENT OF SANITARY SEWERS
 SANITARY SEWERS DIVISION

18TH STREET PUMPING STATION REHABILITATION
 PROPOSED SECTIONAL PLAN VIEW

1/4"

ps\5759-plan

C-13
SEC 19 T28S R19E



PROPOSED PARTIAL PLAN VIEW - STAIRS
Scale 3/8" = 1'-0"

3/8"

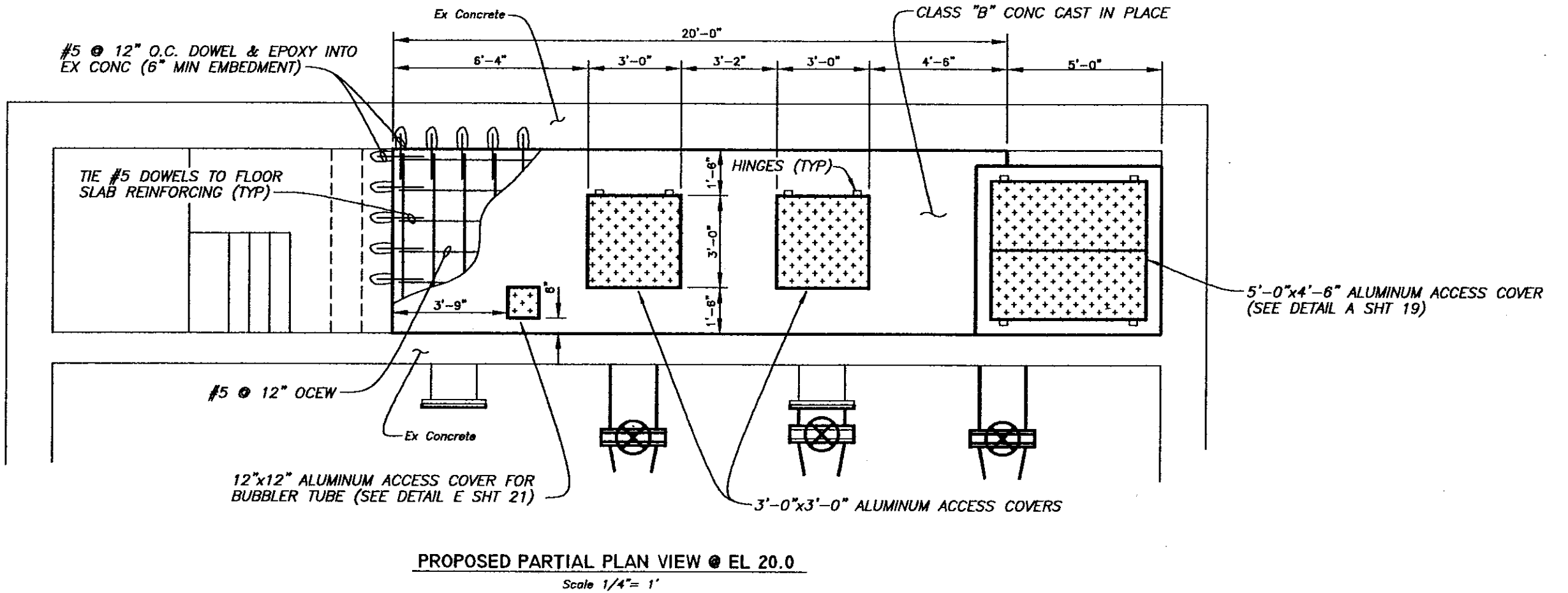
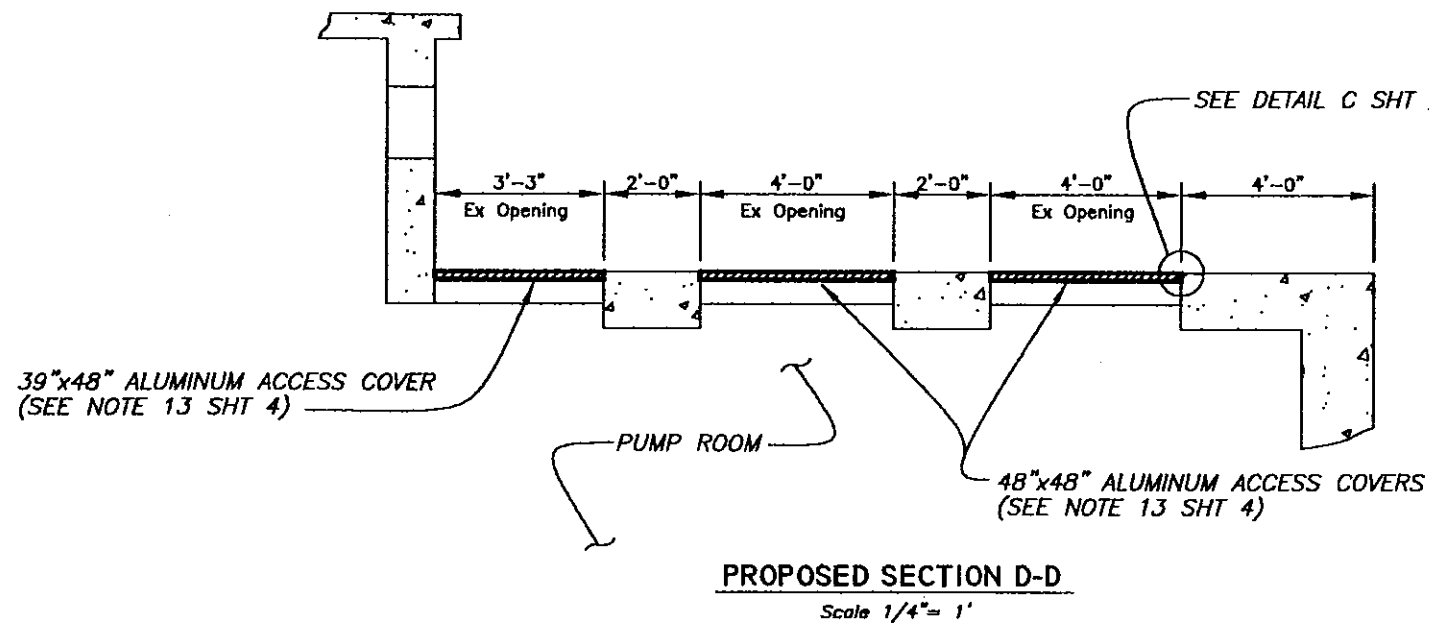
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CITY of TAMPA
DEPARTMENT OF SANITARY SEWERS
SANITARY SEWERS DIVISION

18TH STREET PUMPING STATION REHABILITATION
PROPOSED PARTIAL PLAN VIEW



1/4"

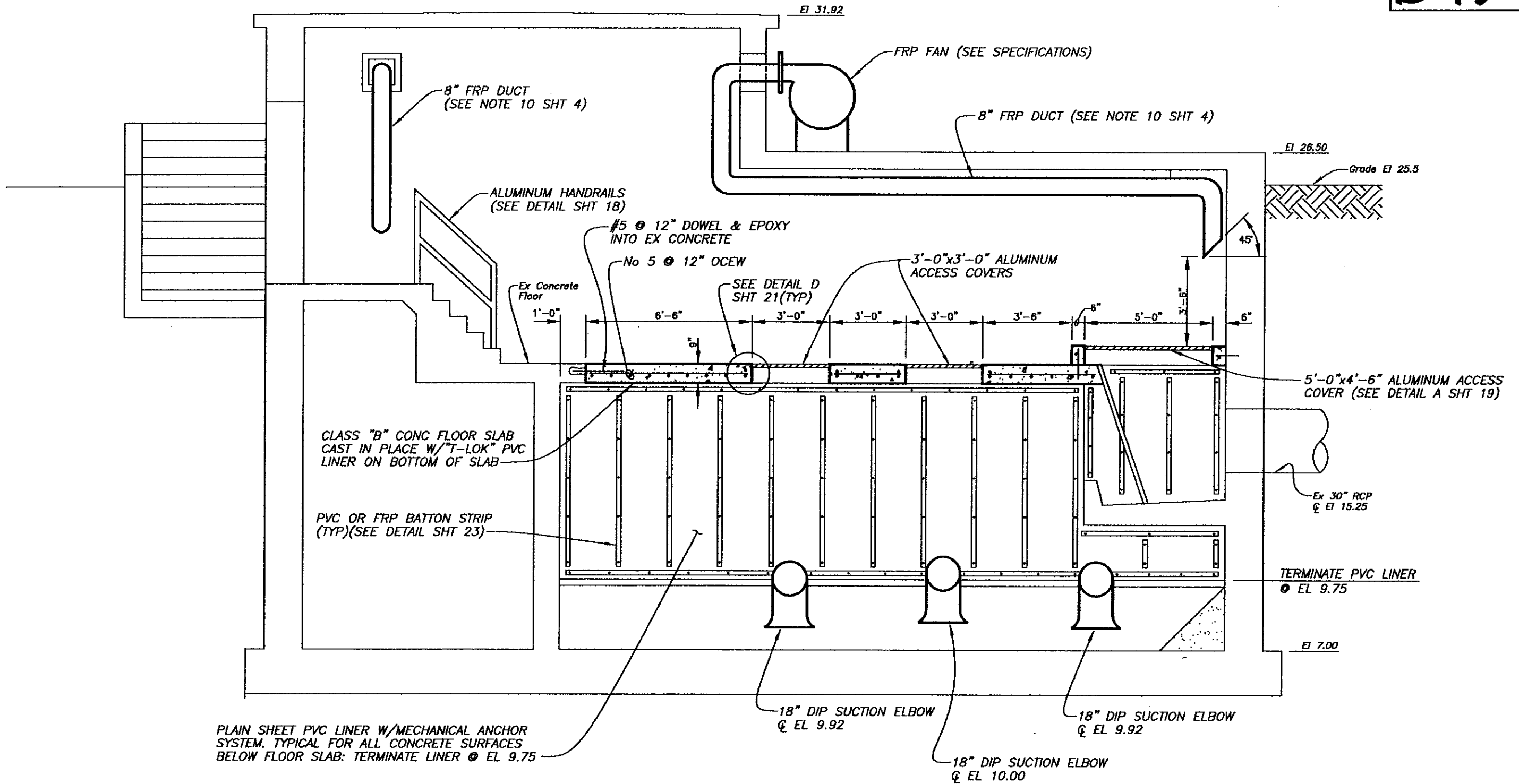
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DEPARTMENT OF SANITARY SEWERS
SANITARY SEWERS DIVISION

18TH STREET PUMPING STATION REHABILITATION
PROPOSED PLAN VIEW & SECTION D-D



PROPOSED SECTION E-E

Scale 1/4" = 1'

1/4"

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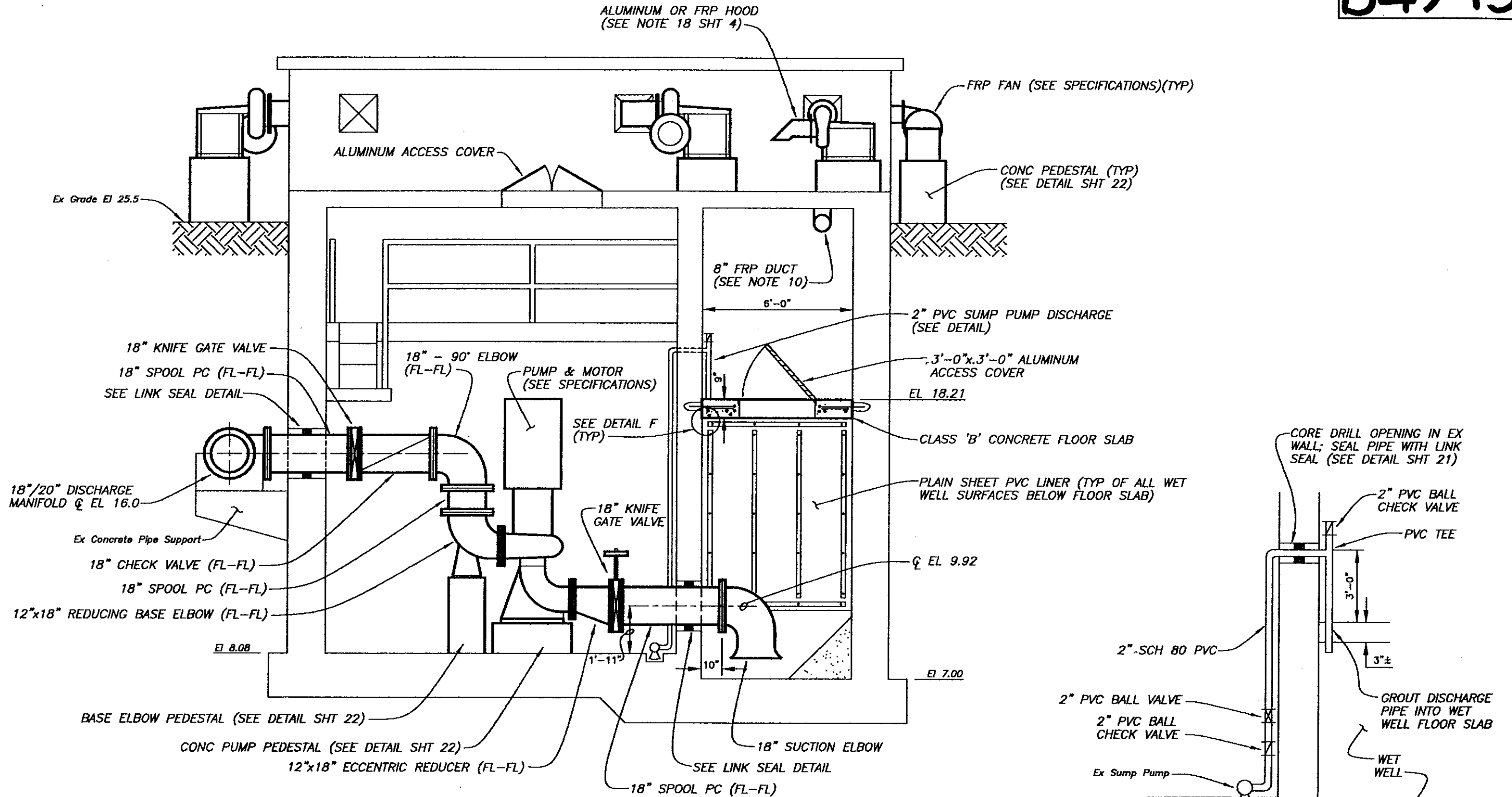
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18TH STREET PUMPING STATION REHABILITATION
PROPOSED SECTION E-E

W.O. 5759
 SHEET
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PROPOSED SECTION F-F

Scale 1/4" = 1'

SUMP PUMP DISCHARGE

Not To Scale

1/4"

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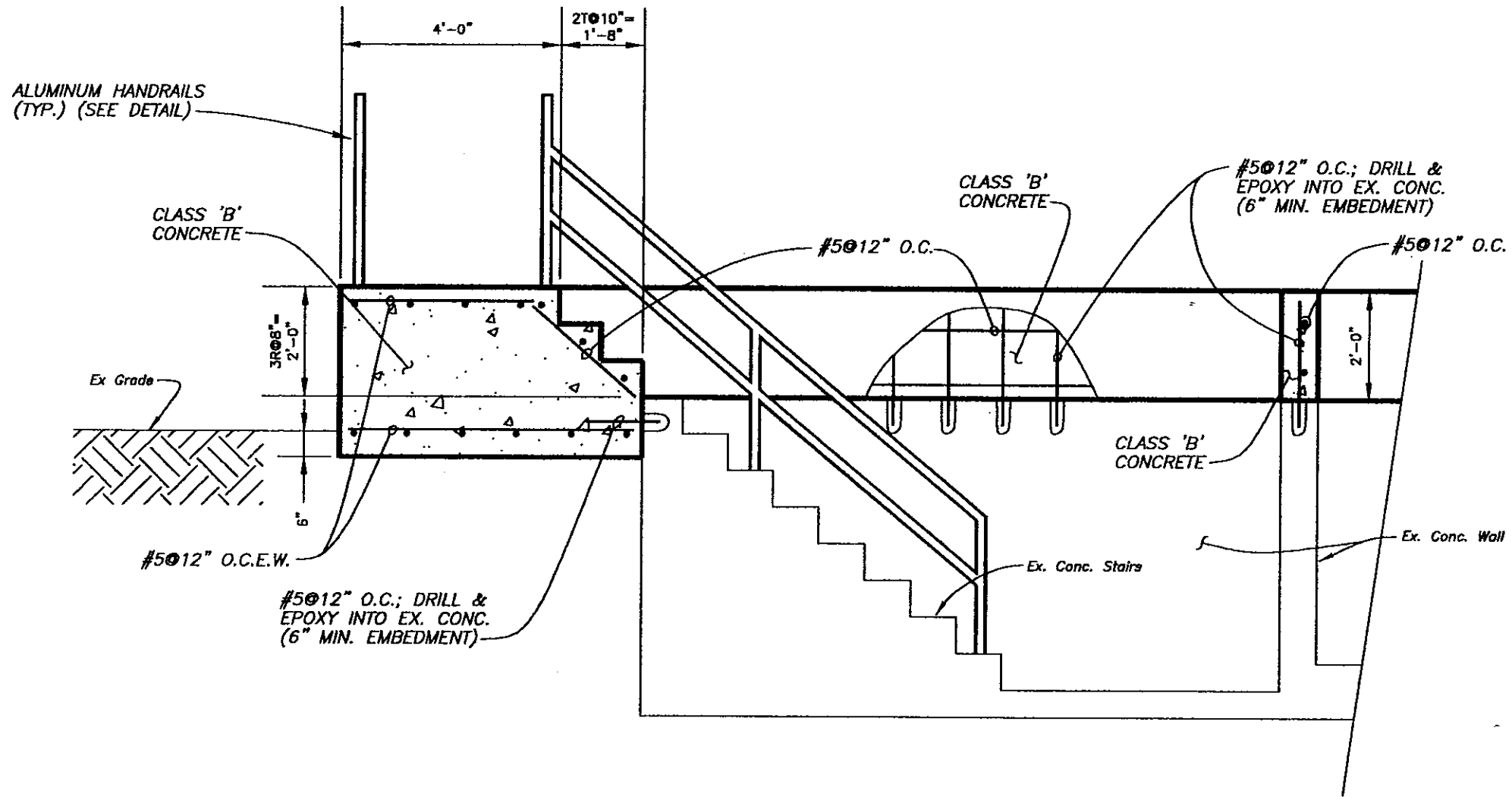
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 DEPARTMENT OF SANITARY SEWERS
 SANITARY SEWERS DIVISION

18TH STREET PUMPING STATION REHABILITATION
PROPOSED SECTION F-F

W.O. 5759
 SHEET
15
 OF 37



PROPOSED SECTION H-H

Scale 3/8" = 1'-0"

3/8"

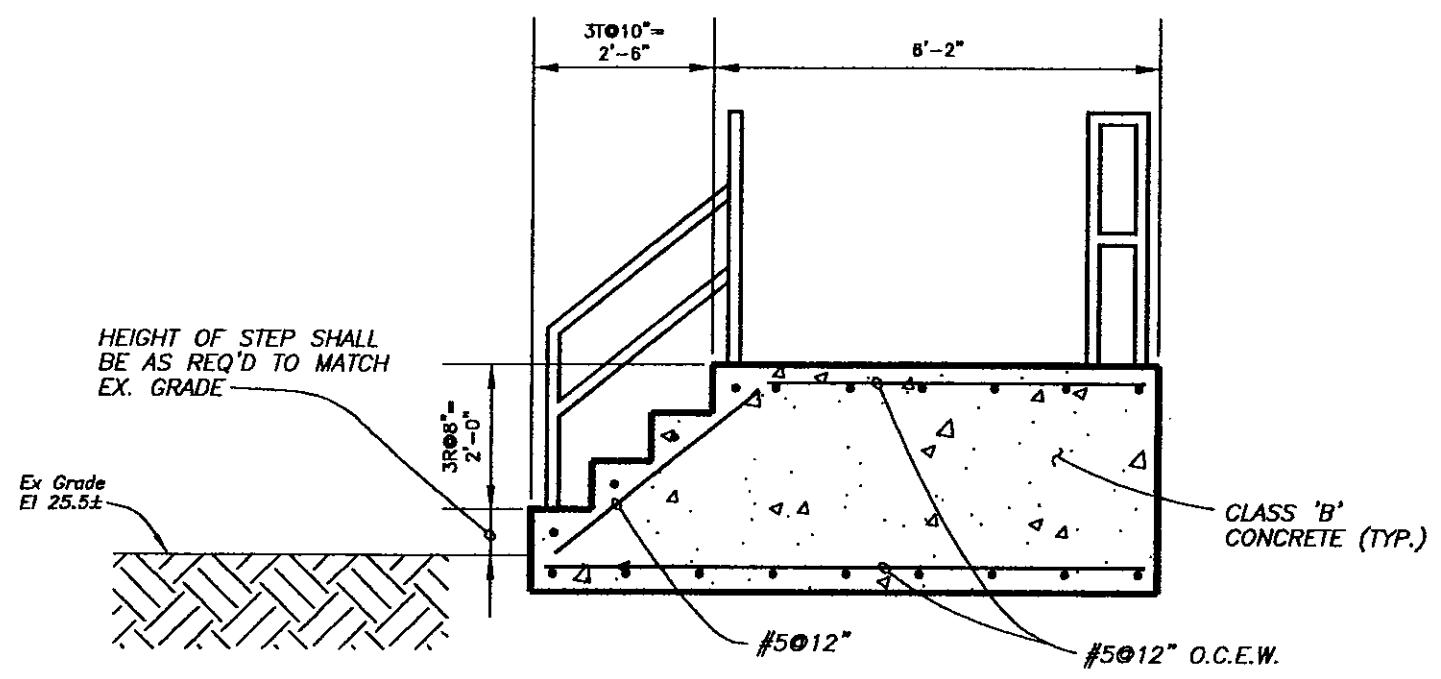
ps\5759-stairs

No.	DATE	REVISIONS	No.	DATE	REVISIONS
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2			5		
1			4		

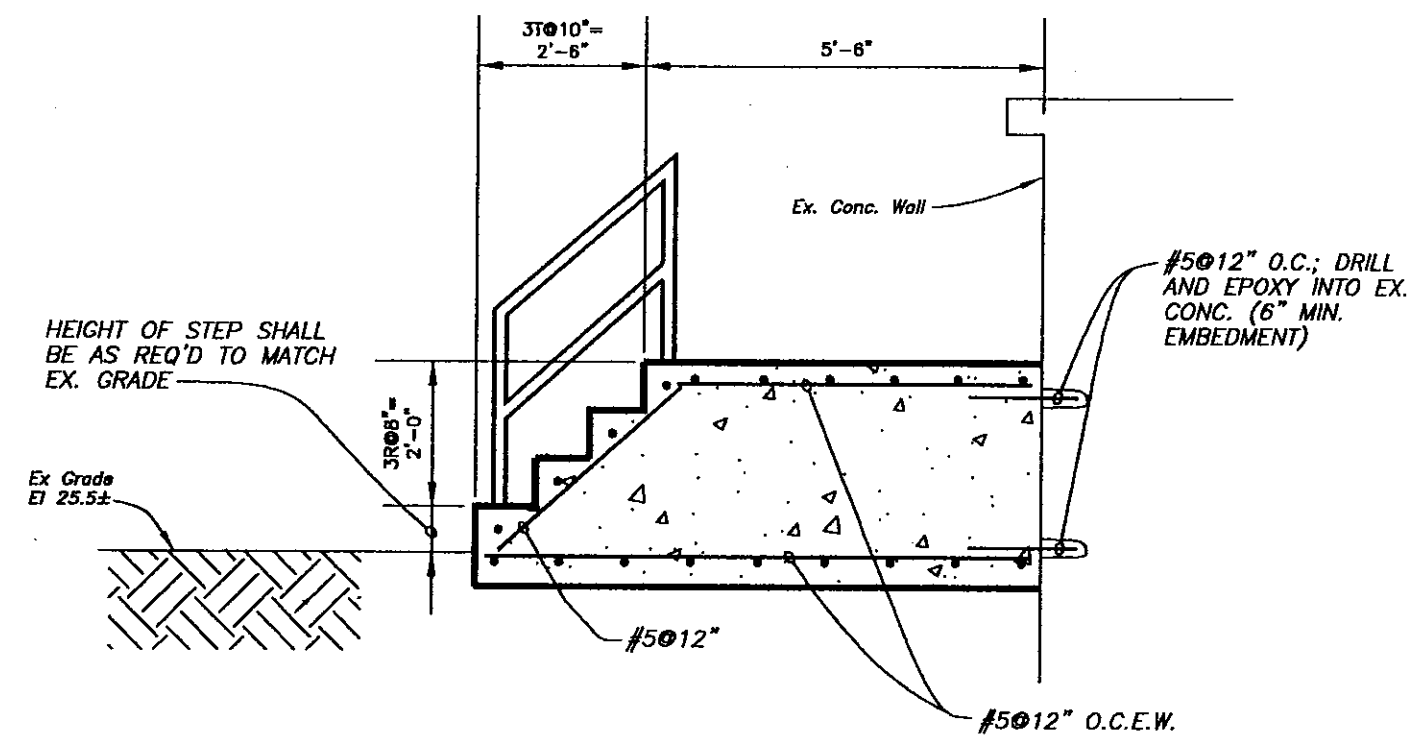
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 DRN: CL
 CKD: *[Signature]*
 DATE: 2/20

CITY of TAMPA
 DEPARTMENT OF SANITARY SEWERS
 SANITARY SEWERS DIVISION

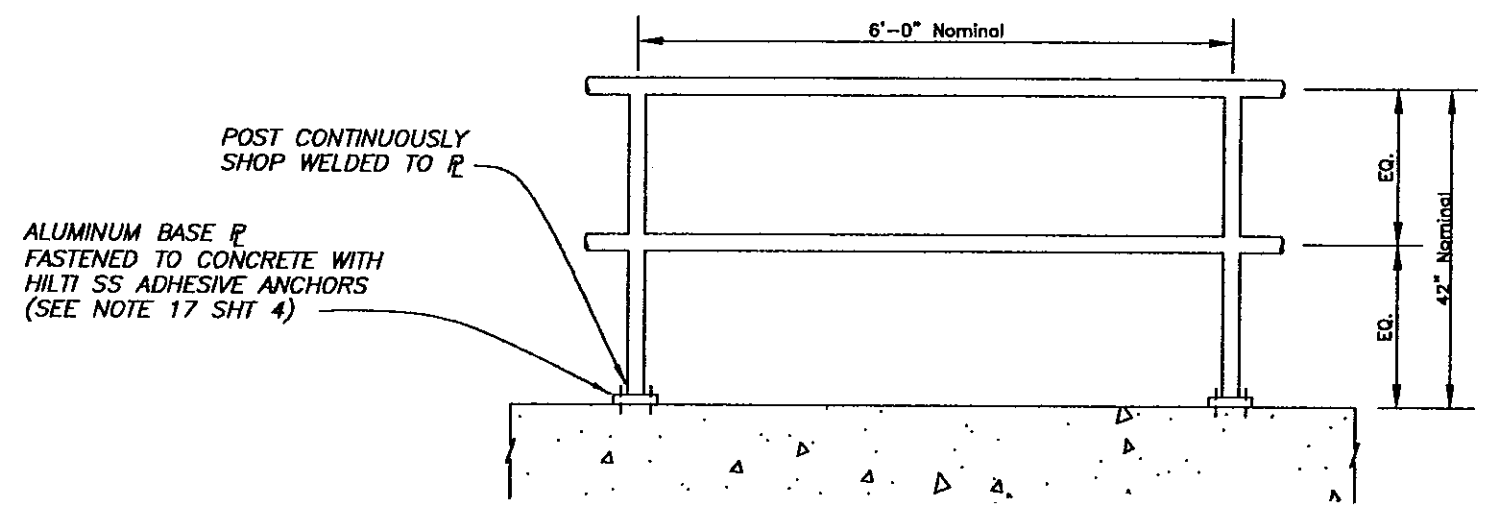
18TH STREET PUMPING STATION REHABILITATION
 PROPOSED SECTION H-H



PROPOSED SECTION I-I
Scale 3/8" = 1'-0"

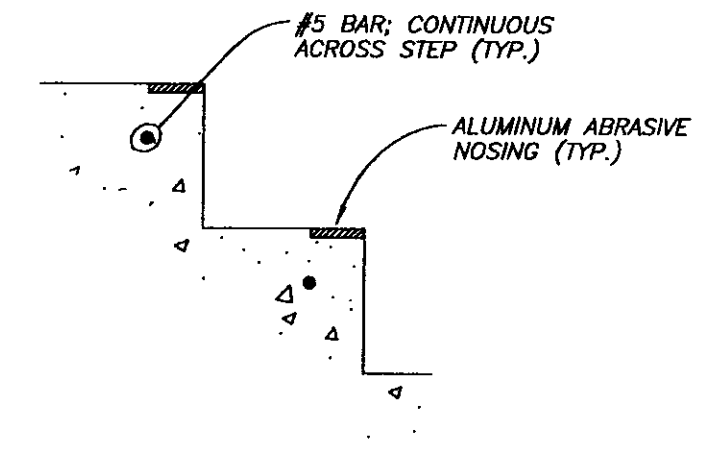


PROPOSED SECTION J-J
Scale 3/8" = 1'-0"



* HANDRAIL HEIGHT ON STAIRS SHALL BE 30"

TYPICAL HANDRAIL
Scale 3/8" = 1'-0"



TYPICAL STEP DETAIL
Not To Scale

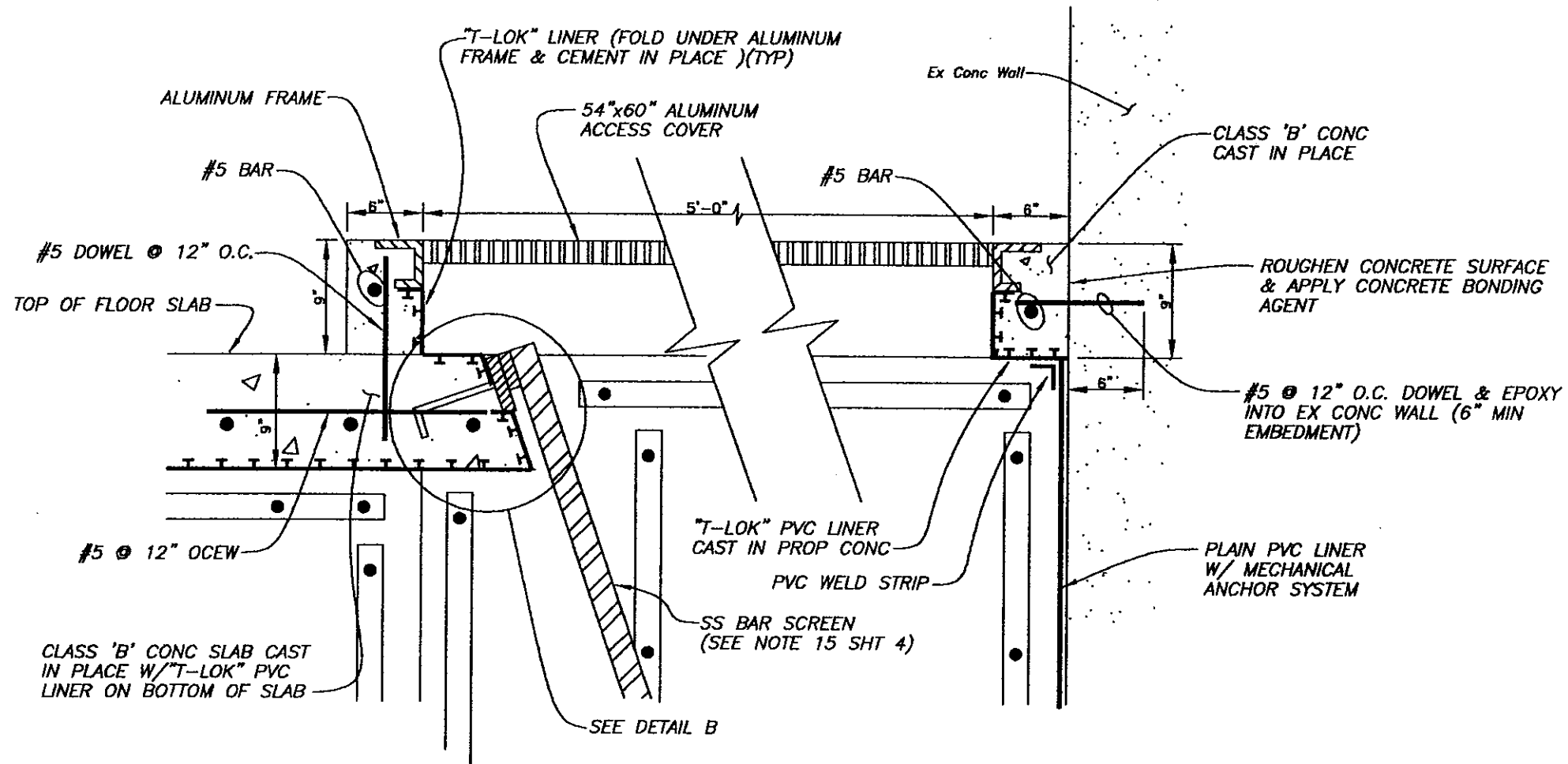
ps\5759-stairs

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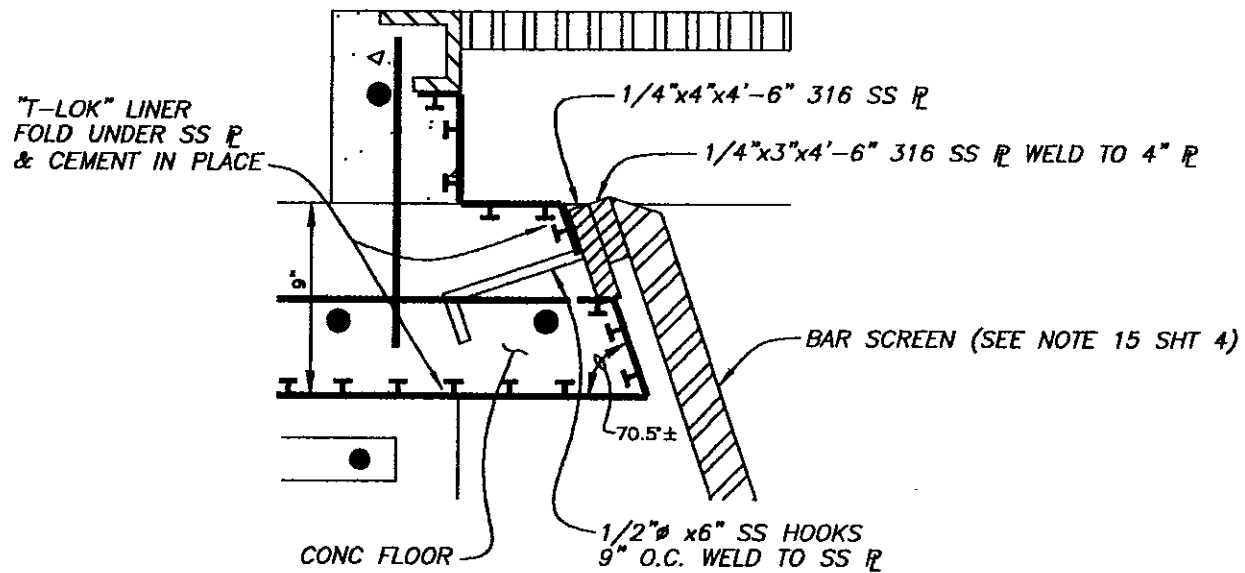
DES: CL
DRN: CL
CKD: **AK**
DATE: 2-20

CITY of TAMPA
DEPARTMENT OF SANITARY SEWERS
SANITARY SEWERS DIVISION

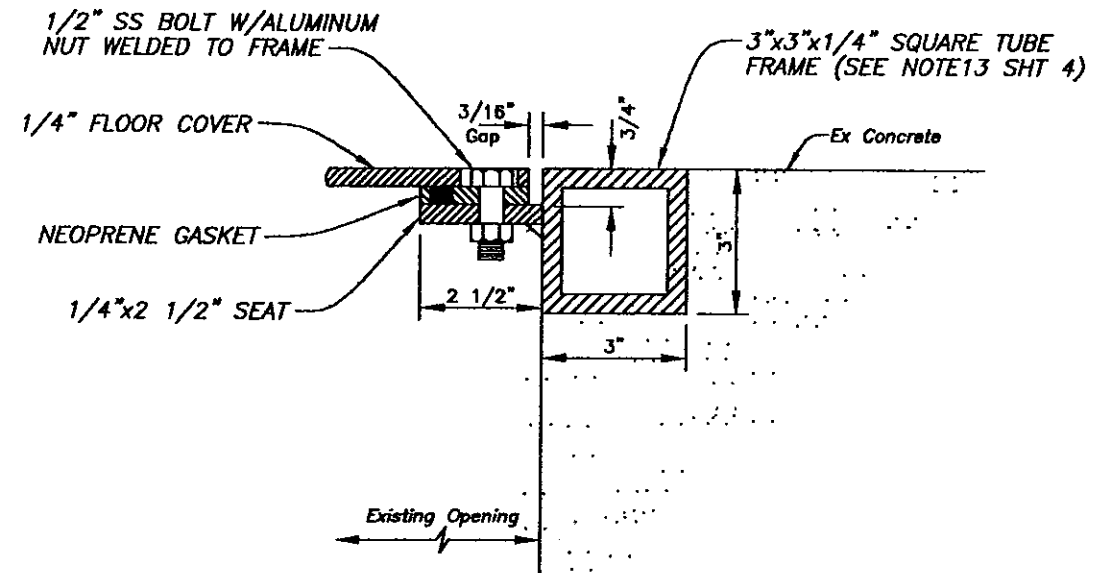
18TH STREET PUMPING STATION REHABILITATION
PROPOSED SECTIONS & DETAILS



SECTION L-L
Scale 2" = 1'-0"



DETAIL B
Not To Scale



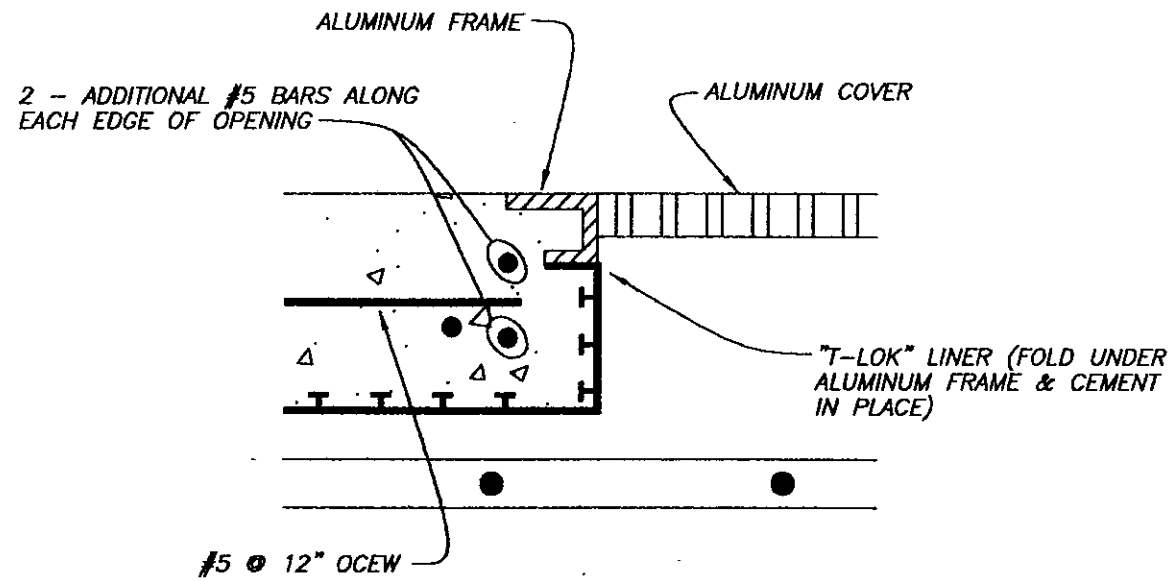
DETAIL C
Not To Scale

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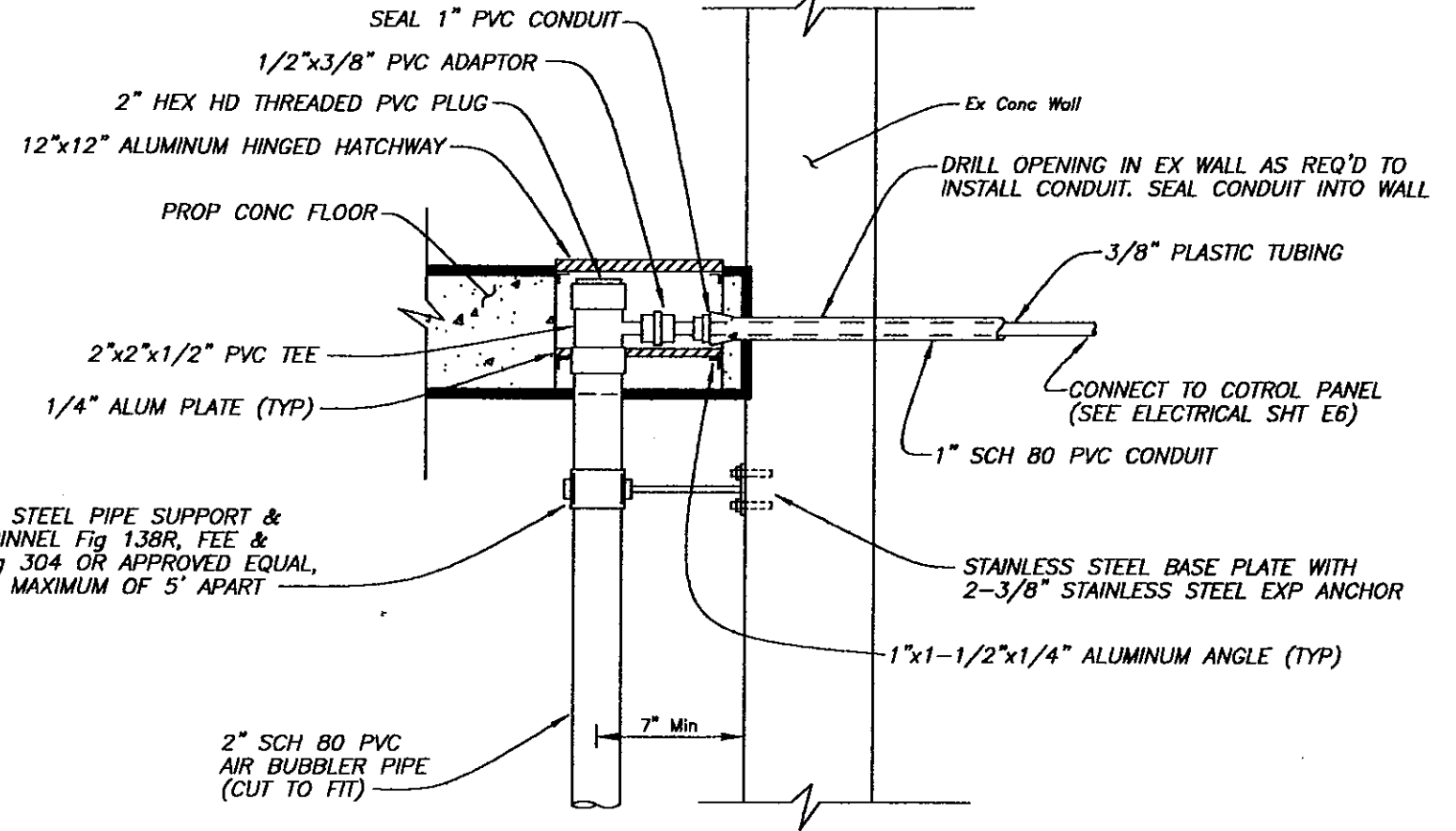
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DATE: 2-3-00

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DEPARTMENT OF SANITARY SEWERS
SANITARY SEWERS DIVISION

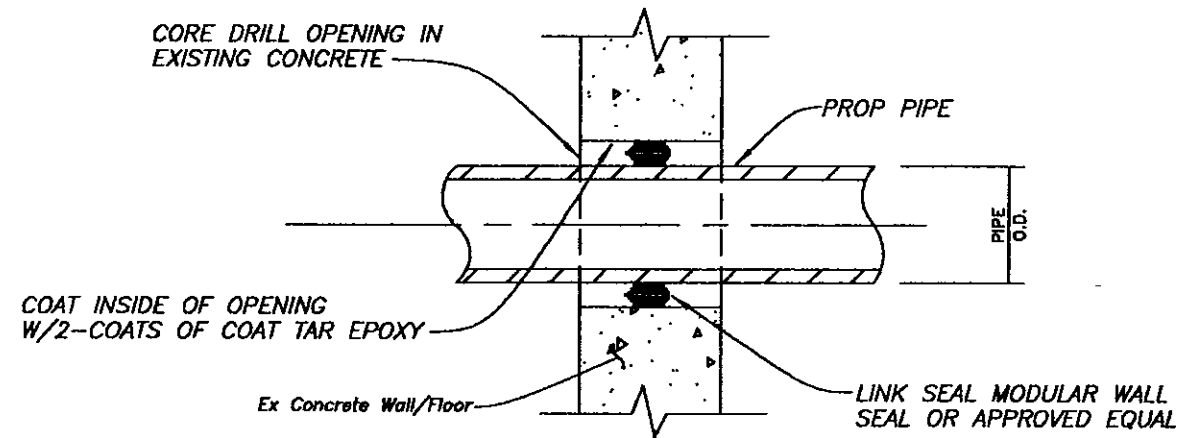
18TH STREET PUMPING STATION REHABILITATION
MISCELLANEOUS DETAILS



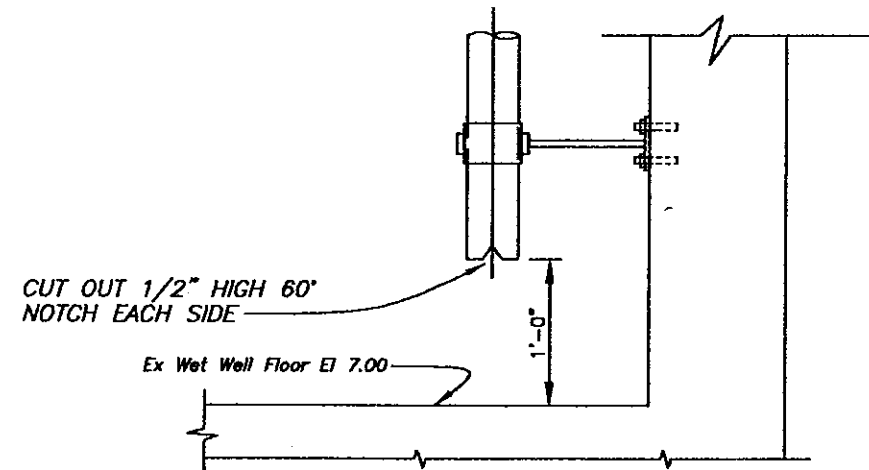
DETAIL D
Not To Scale



DETAIL E
Not To Scale



LINK SEAL DETAIL
Not To Scale



1/2"

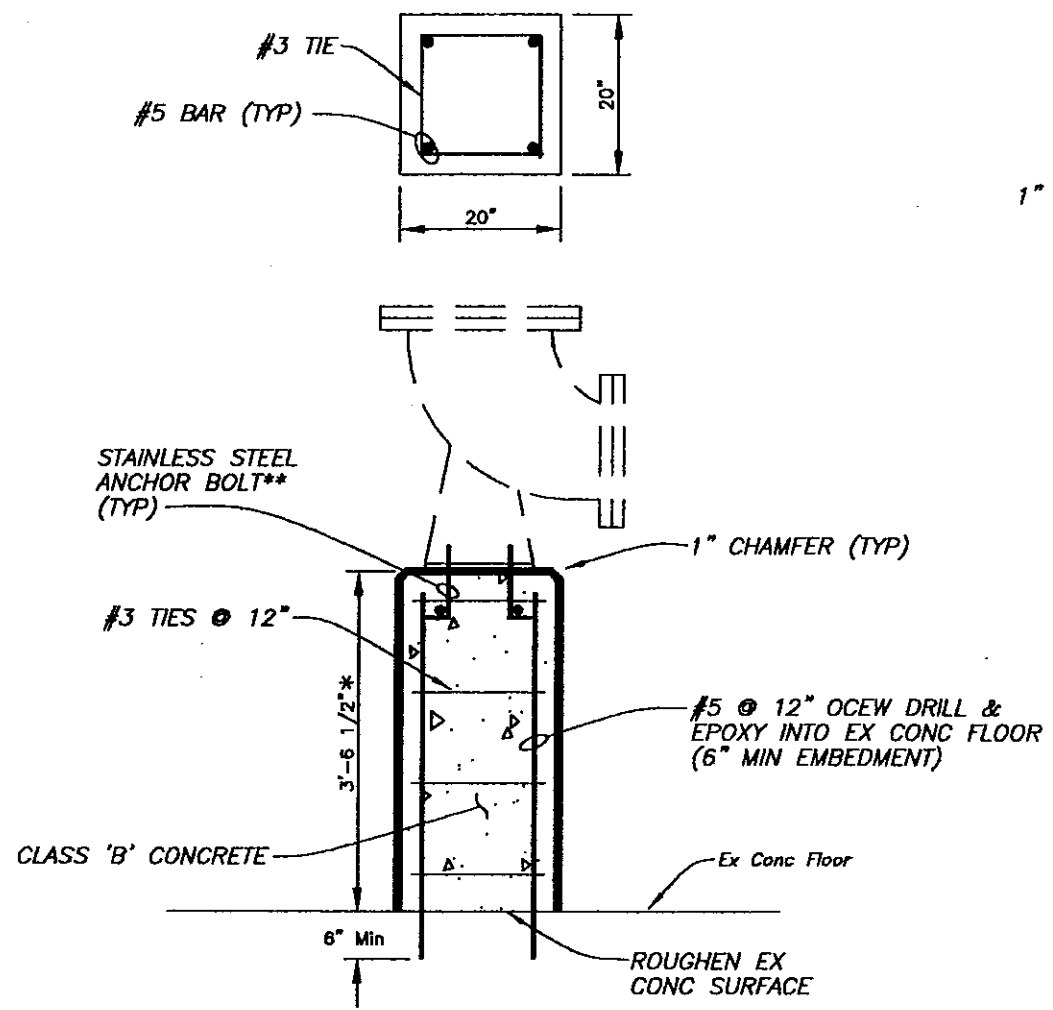
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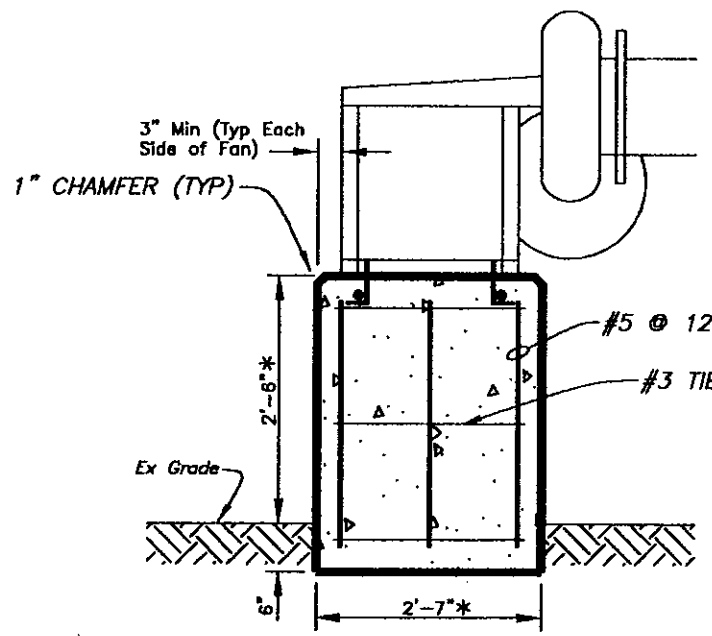
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CKD: *AK*
DATE: *2-3-00*

CITY of TAMPA
DEPARTMENT OF SANITARY SEWERS
SANITARY SEWERS DIVISION

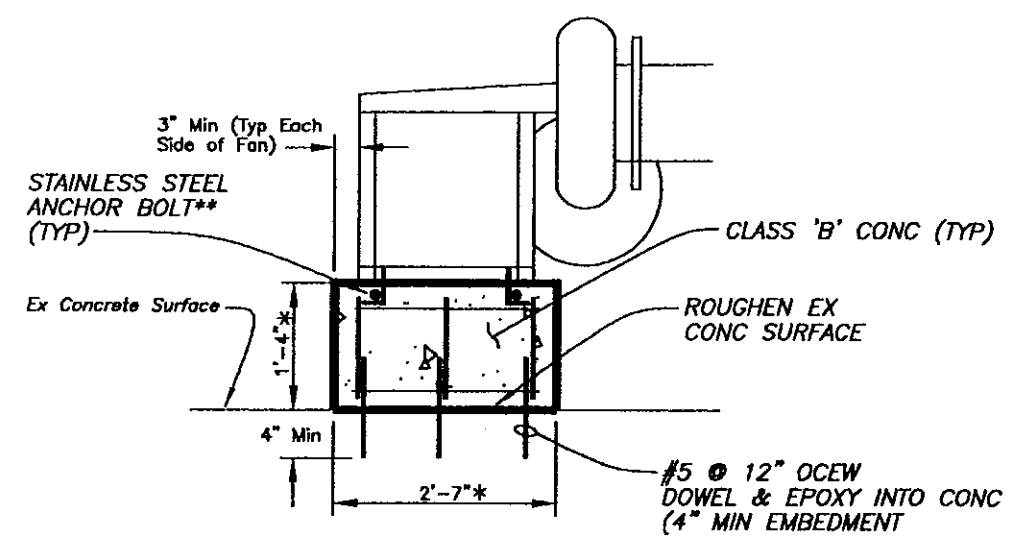
18TH STREET PUMPING STATION REHABILITATION
MISCELLANEOUS DETAILS



BASE ELBOW PEDESTAL DETAIL
Scale 1/2" = 1'



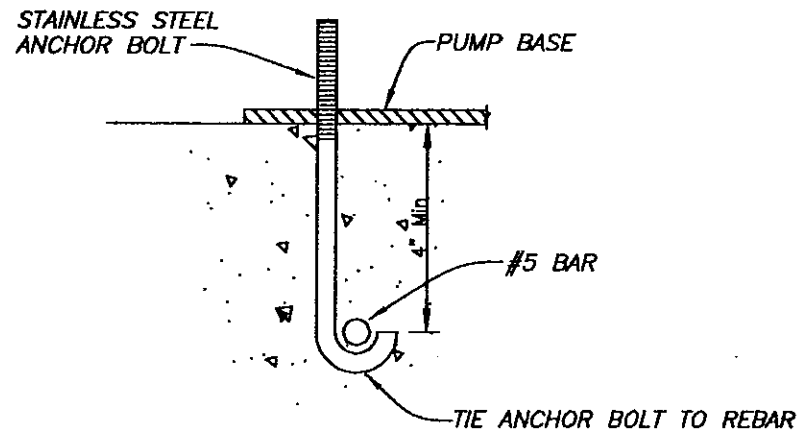
FOR INSTALLATIONS ON SOIL



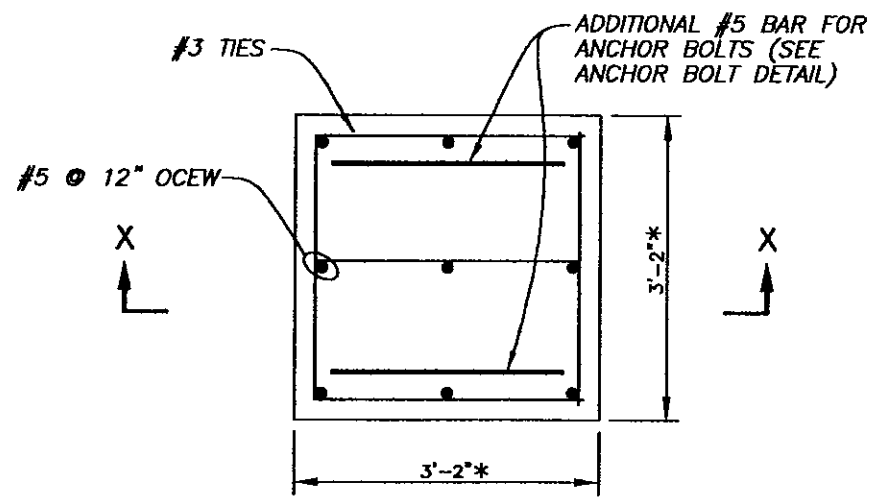
FOR INSTALLATIONS ON CONCRETE

FAN PEDESTAL DETAIL
Scale 1/2" = 1'

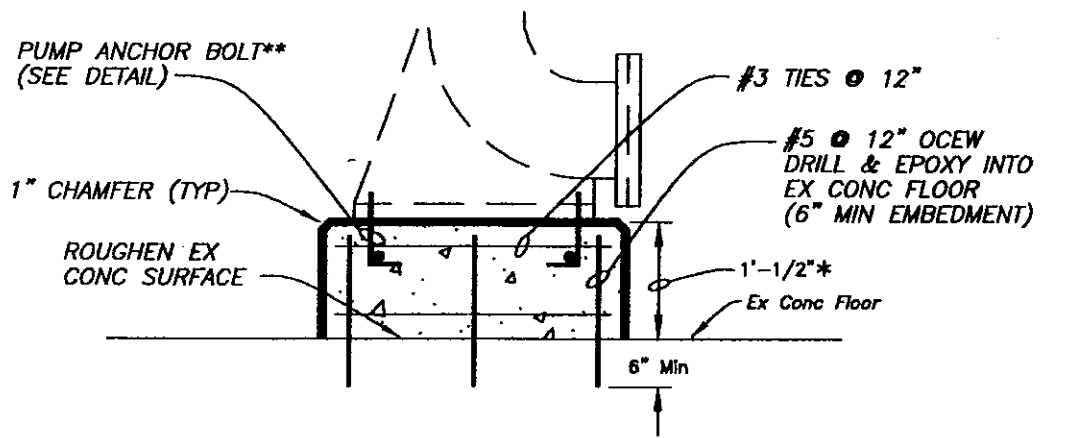
* DIMENSIONS ARE APPROXIMATE; ACTUAL DIMENSIONS MAY VARY BASED ON FINAL SELECTION OF EQUIPMENT AND FIELD CONDITIONS.
** SIZE AND ALIGNMENT OF ANCHOR BOLTS SHALL BE AS RECOMMENDED BY THE MANUFACTURER.



PUMP ANCHOR BOLT DETAIL
Not To Scale



PLAN VIEW



SECTION X-X

PUMP PEDESTAL DETAIL
Scale 1/2" = 1'

1/2"

ps\5759-details

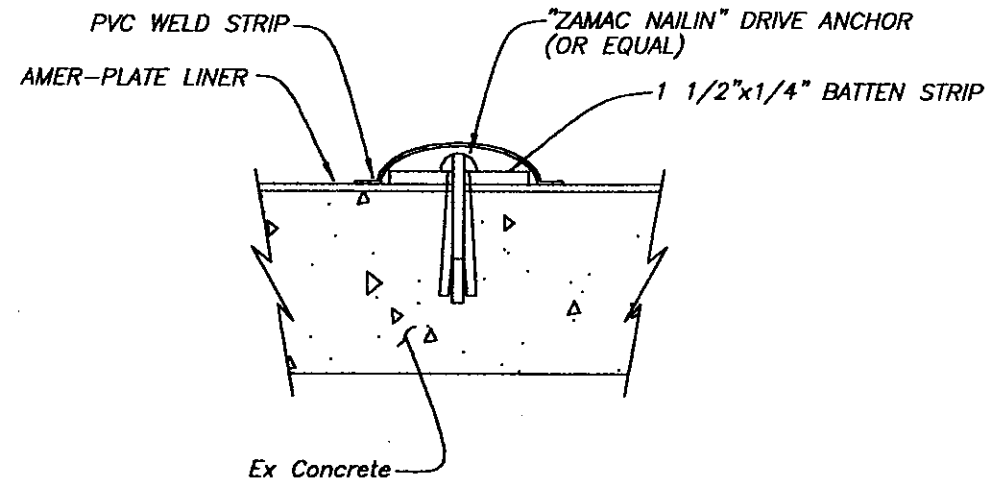
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CKD: AH
DATE: 2-3-00

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DEPARTMENT OF SANITARY SEWERS
SANITARY SEWERS DIVISION

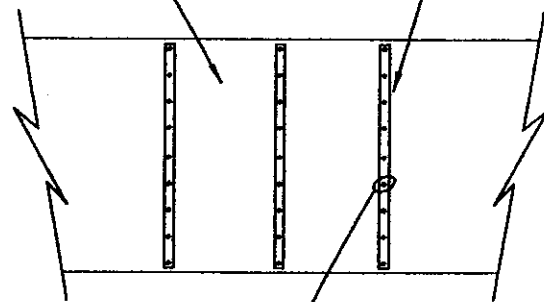
18TH STREET PUMPING STATION REHABILITATION
PEDESTAL DETAILS

W.O. 5759
SHEET
22
of 37



AMER-PLATE PVC LINER INSTALLED OVER LEVELLED CONCRETE (CEMENTED w/19Y ADHESIVE SYSTEM)

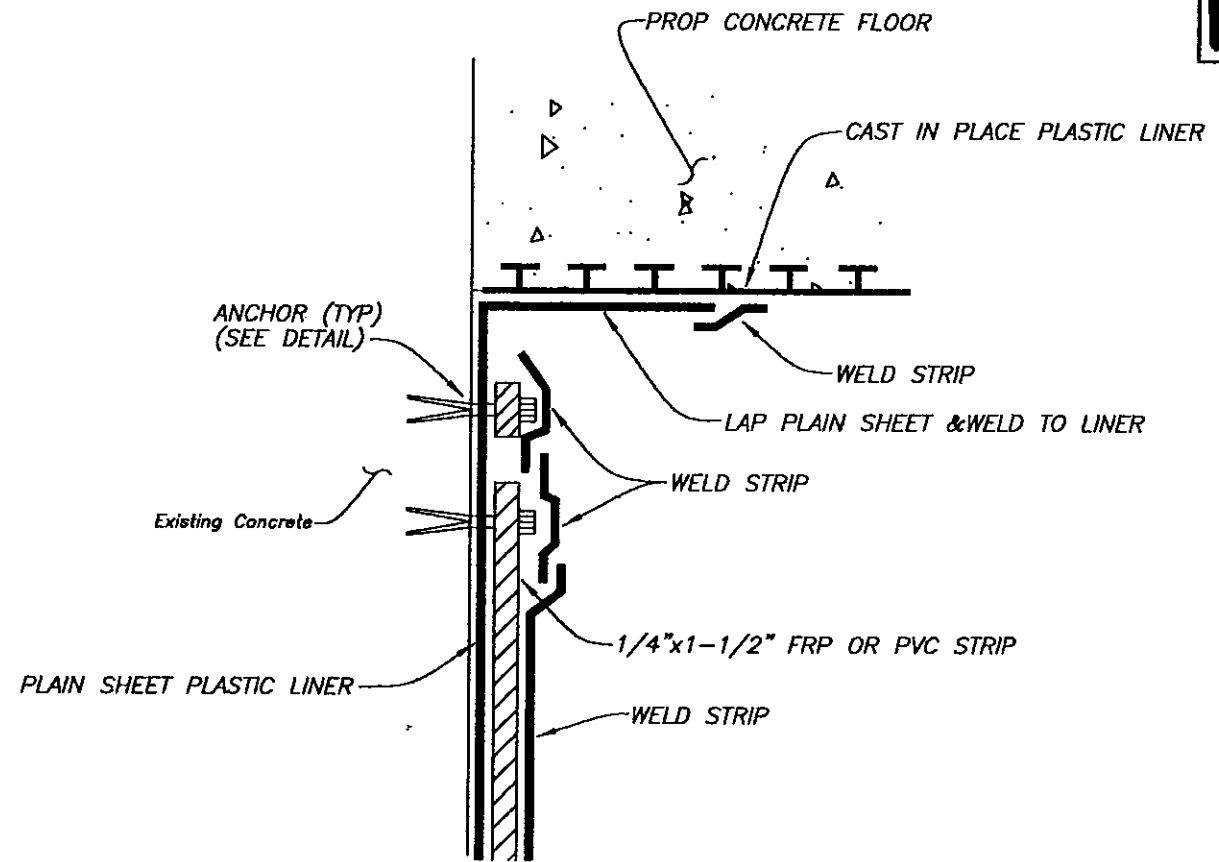
1 1/2" WIDE x 1/4" THICK PVC OR FRP BATTEN STRIP @ NO GREATER THAN 2'-0" OC. COVER BATTEN WITH ADDITIONAL PVC WELD STRIP. (WELD STRIP NOT SHOWN)



1/4"x2" NAIL DRIVE ANCHOR w/ZINC ALLOY BODY AND 304 SS NAIL. (ZAMAC NAILIN BY RAWL OR EQUAL) @ NO GREATER THAN 12" OC.

TYPICAL PVC LINER ANCHORAGE DETAILS

Not To Scale



LINER INSTALLATION FOR CORNER DETAIL F

Not To Scale

NOTES

- 1) Proposed liner shall be 3/32" thick "Amer-Plate" plain sheet liner as manufactured by Ameron or approved equal. Installation of liner and concrete surface preparation shall be performed in strict conformance with the manufacturer's instructions for "Installing Plain Sheet Ameri-Plate" unless otherwise approved by the City of Tampa, Sanitary Sewer Design Division.
- 2) FRP or PVC strips 1/4" x 1-1/2" shall be installed as shown on the drawings to support the Ameri-Plate liner.
- 3) Anchors shall be "ZAMAC NAILIN" drive anchors or equal. Drive anchors shall be installed no greater than 12" o.c. and in strict conformance with the Manufacturer's Specifications.
- 4) All FRP or PVC strips and drive anchors shall be welded over with Ameri-Plate liner to prevent entry of water and gases.
- 5) The PVC liner installation shall consist of the following:
 - a) Remove coatings, dirt and debris and all unsound concrete.
 - b) If necessary, level concrete surface with an approved cementitious mortar repair (Sitkatop 122, or approved equal).
 - c) Bond PVC liner to concrete surface with the 19Y adhesive system (by Ameron) or approved equal.
 - d) Mechanically fasten PVC liner with anchoring system.
 - e) Install weld strips and perform all other required welding.
- 6) The proposed PVC liner and associated materials necessary for its placement shall be installed in strict accordance with manufacturer's recommendations.

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 CKD: A.H.
 DATE: 2-3-60

CITY of TAMPA
 DEPARTMENT OF SANITARY SEWERS
 SANITARY SEWERS DIVISION

18TH STREET PUMPING STATION REHABILITATION
T-LOK DETAILS

1/2"

ps\5759-details

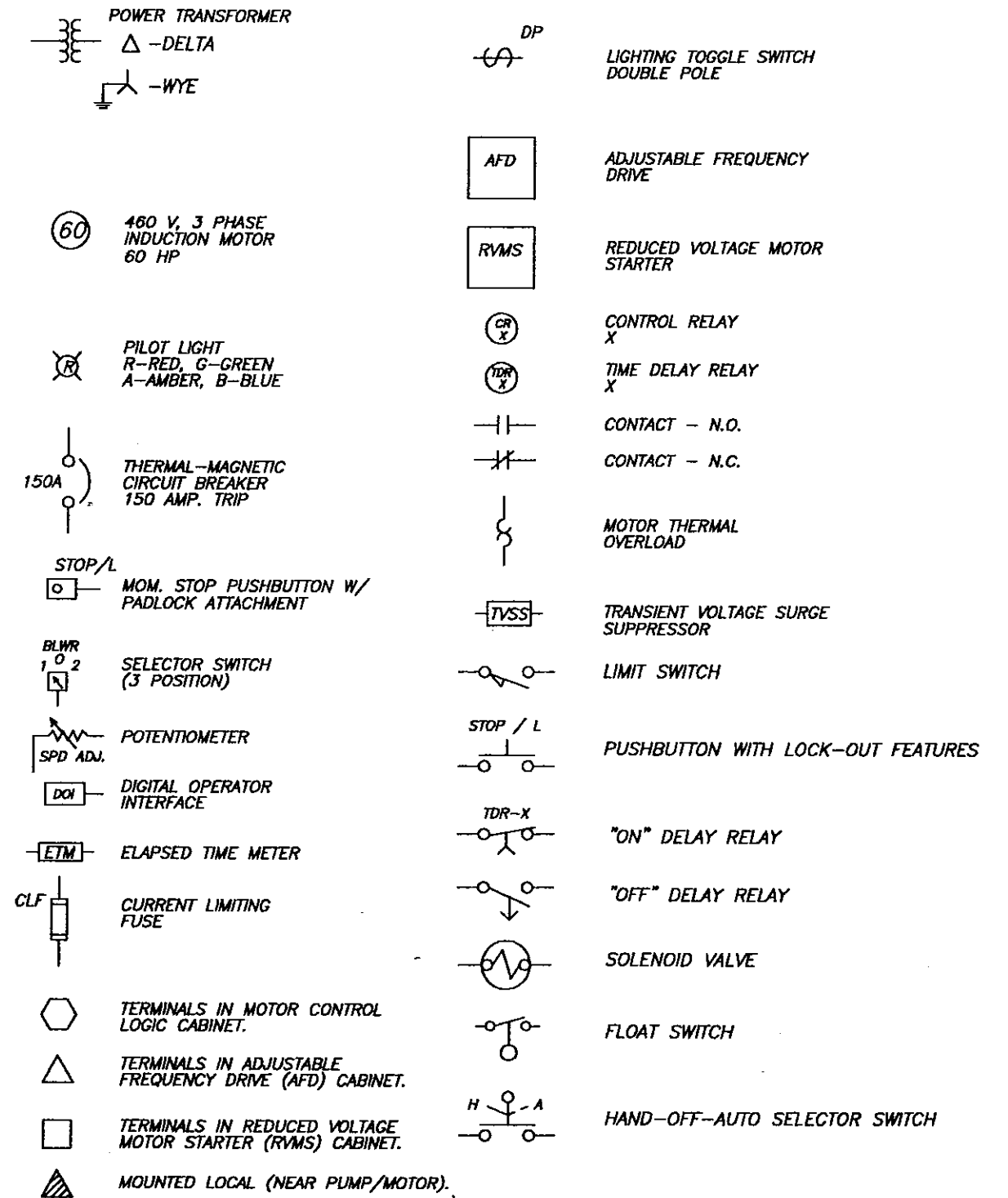
NOTES:

1. Disconnect and remove the existing motors for sewage pumps No.1, No.3, and No.4 and all associated conduits, conductors and hardware. Sewage pump and motor No.2 shall be reused with the conduits and conductors modified as shown, specified, and required. Prepare facilities for the installation of the new pumps and motors.
2. Disconnect and remove the existing wet well level controller, ventilation controls, ventilation blower motors, and flow meter enclosure. Restore walls, concrete, etc to original finish.
3. Disconnect and remove from the Motor Control Center (MCC) all existing sewage pump controls as shown on the Drawings, and required. Mark "Spare" any unused cubicles.
4. Provide and install new motors and accessories for sewage pumps No.1 and No.3 as shown, specified, and required. Make modifications to the sewage pump No.2 conduits, conductors and controls as shown, specified, and required.
5. Provide and install into the existing MCC, new pump control logic, wet well level controls, and bubbler system as shown, specified and required.
6. Provide and install for the sewage pumps No.1 and No.2, two (2) new 96-Ampere rated Adjustable Frequency Drives (AFD) and associated bypass and control equipment as shown, specified, and required. Bolt feeder conductors to the existing MCC horizontal bus, and extend the conductors to the AFD enclosures through the proposed conduits as shown, specified, and required.
7. Provide and install into the existing MCC, a new solid-state 96-Ampere rated Reduced Voltage Motor Starter (RVMS) with bypass contactor and associated control equipment as shown, specified, and required for the proposed sewage pump No.3.
8. Provide and install into the existing MCC, a 15-Ampere circuit breaker with external operator as shown, specified, and required to feed the proposed Blower Panel.
9. Provide and install the proposed Blower Panel, blower motors, safety switches, and associated equipment as shown, specified and required for the new ventilation system.
10. Remove the existing wet well lighting and provide and install explosion-proof fluorescent lighting into the wet well area as shown, specified, and required. The existing branch circuit from the lighting panel may be reused. Provide and install a new weatherproof toggle switch with extra pole for ventilation control and conduit seal as shown, specified, and required. NEC Article 500 must be followed for the wet well area- Class I, Division 1, Group D.
11. Carefully remove the flow meter electronics package from the existing flow meter enclosure, and relocate it to the south wall as shown and required. Provide and install all equipment needed to make the instrument operable in the new location.

12. Provide and install conduits and conductors to the existing SCADA RTU as shown, specified, and required. Final RTU connections will be made by DSS Instrumentation Personnel.
13. Provide and install all necessary control, interlock, and instrumentation conduits, conductors, and grounding as shown, specified, and required.
14. Provide and install all necessary power conduits, conductors, and grounding systems as shown, specified, and required. An aluminum channel erector system shall be used to mount and support the enclosures, boxes, conduits, and other equipment
15. Perform a harmonic analysis of the new drive equipment and provide a detailed report as specified .
16. All electrical work shall be performed in accordance with the 1996 (or most current version adopted by the State of Florida) National Electrical Code (NEC) and Chapter 5 of the City of Tampa Code.
17. All electrical components shall be U.L. listed and as specified, or as approved by the Engineer.

B49-24

LEGEND



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DES: R.K.
DRN: R.K.
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CITY of TAMPA
DEPARTMENT OF SANITARY SEWERS
SANITARY SEWERS DIVISION

18TH STREET PUMPING STATION REHABILITATION
ELECTRICAL
NOTES AND LEGENDS

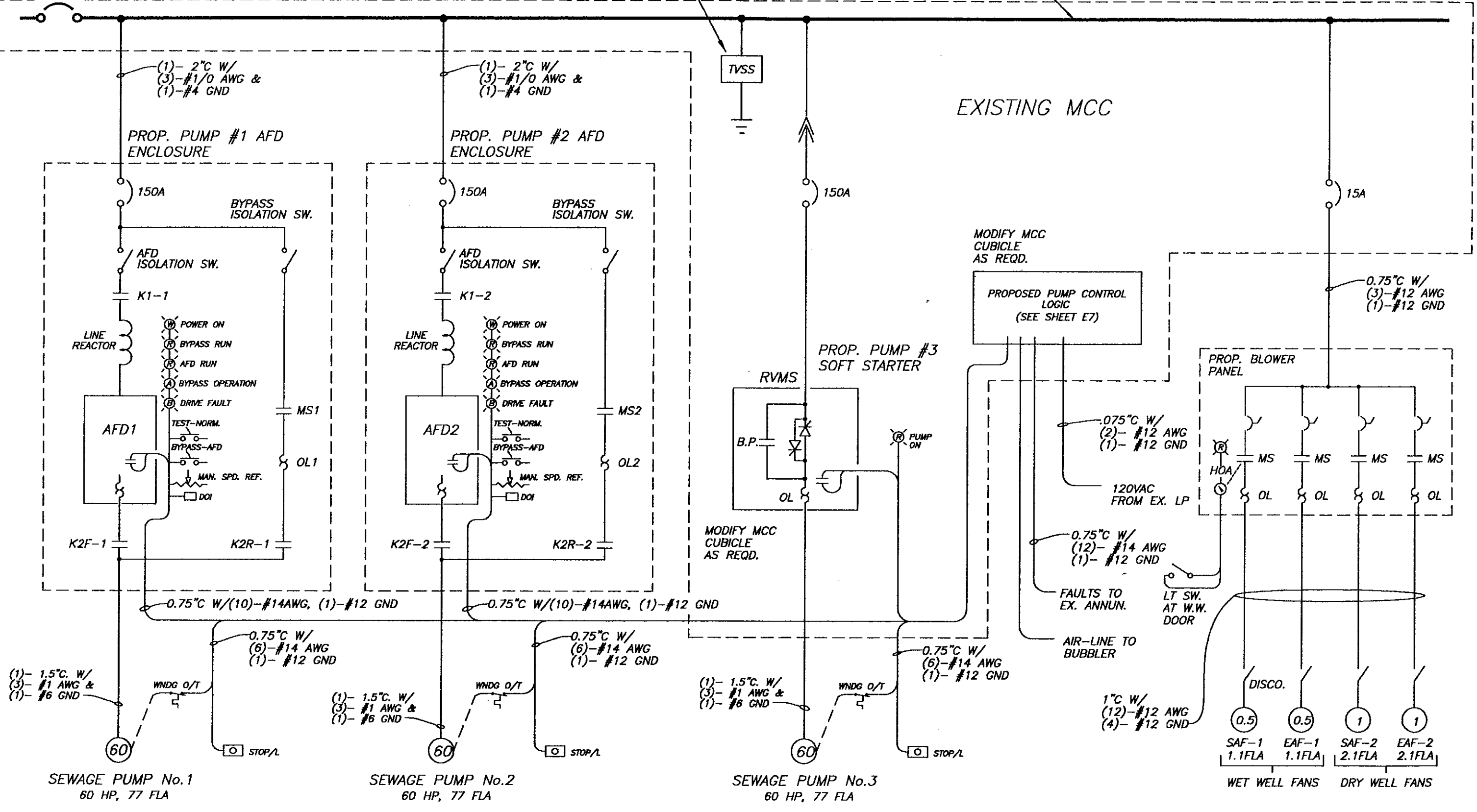
W.O. 5759
SHEET
E1/24
OF 37

EXISTING MAIN C.B. 300A

480V, 3PH, 600A HORIZONTAL BUS

PROP.

EXISTING MCC



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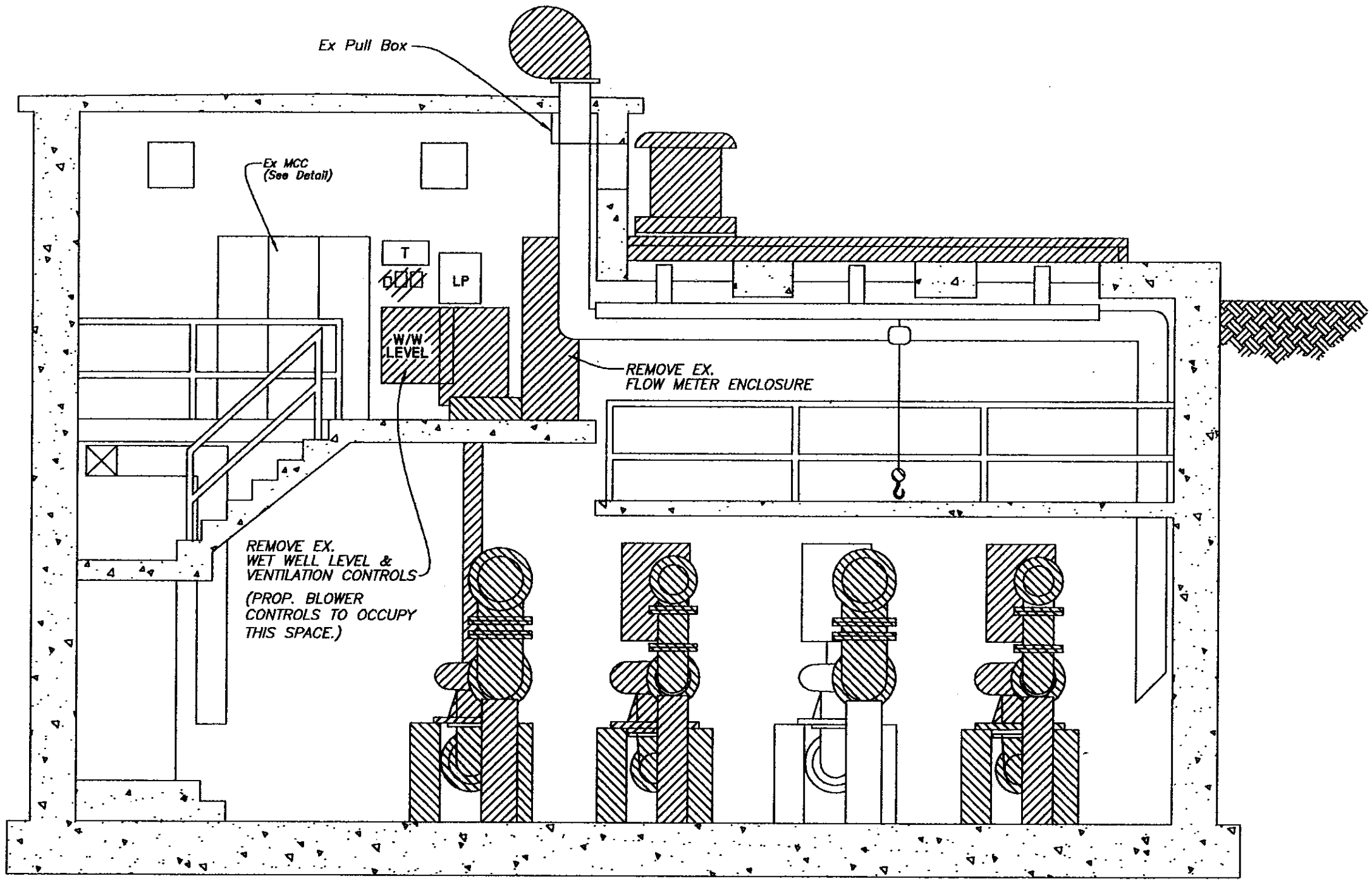
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CITY of TAMPA
DEPARTMENT OF SANITARY SEWERS
SANITARY SEWERS DIVISION

18TH STREET PUMPING STATION REHABILITATION
ELECTRICAL
PROPOSED ONE-LINE DIAGRAM

W.O. 5759
SHEET
E2\25
OF 37



EXISTING NORTH ELEVATION

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

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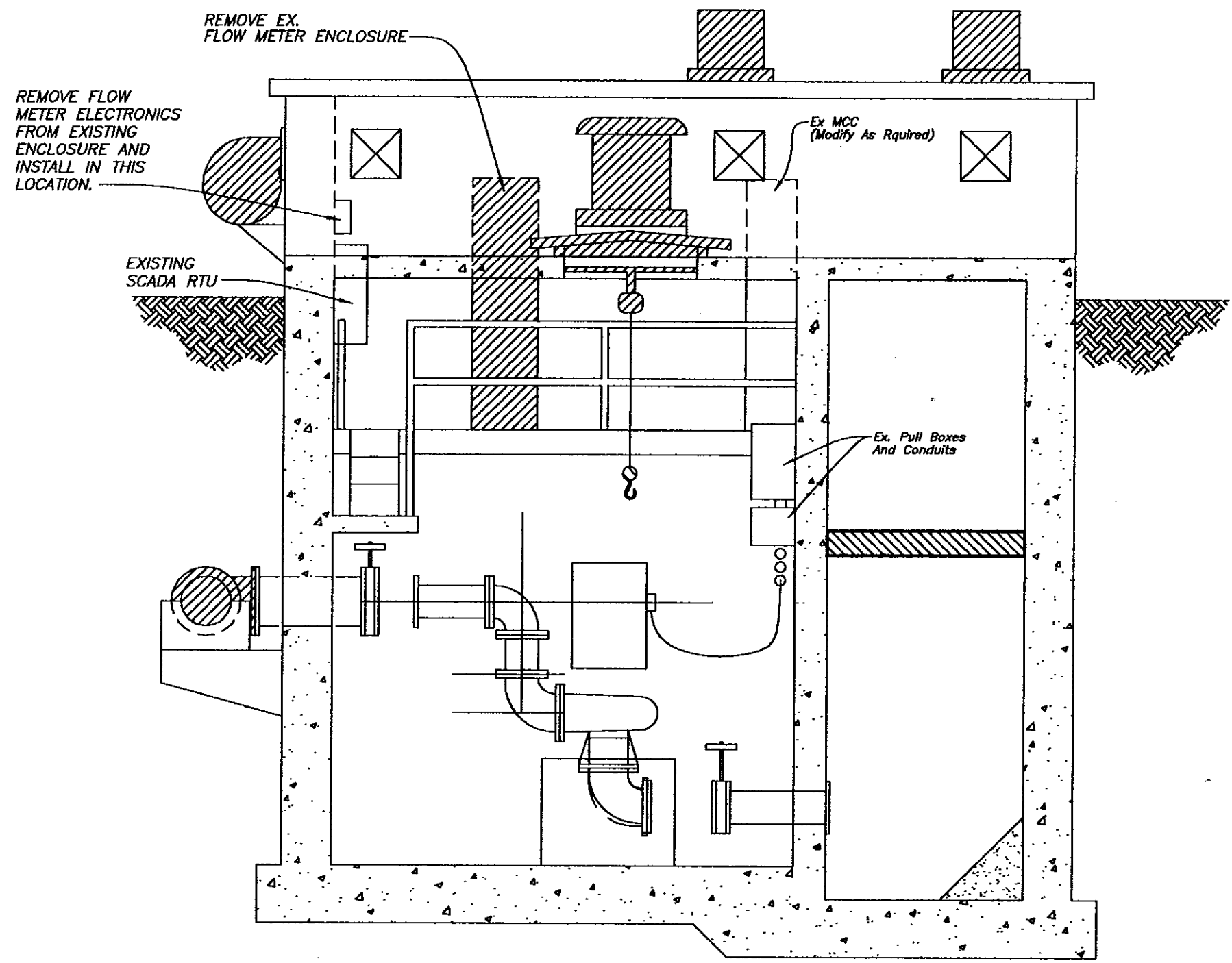
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CITY of TAMPA
 DEPARTMENT OF SANITARY SEWERS
 SANITARY SEWERS DIVISION

18TH STREET PUMPING STATION REHABILITATION
 ELECTRICAL
 EXISTING NORTH ELEVATION

W.O. 5759
 SHEET
E3\26
 OF 37



EXISTING WEST ELEVATION

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

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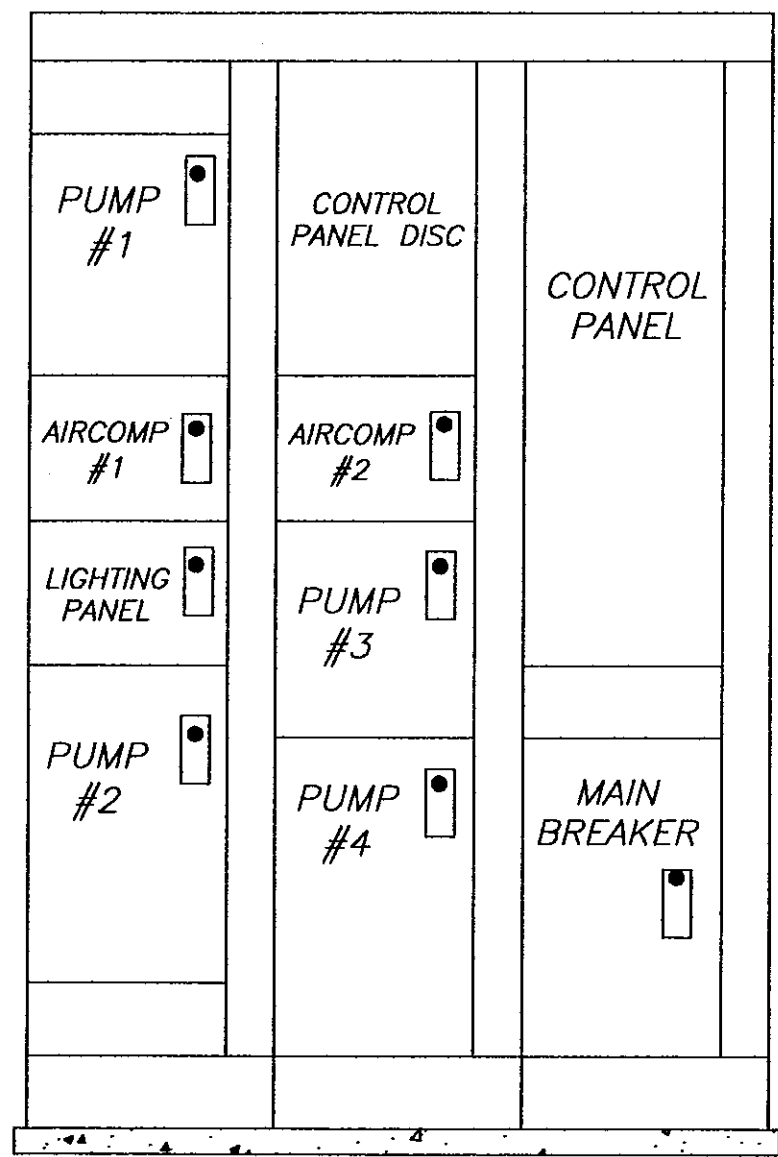
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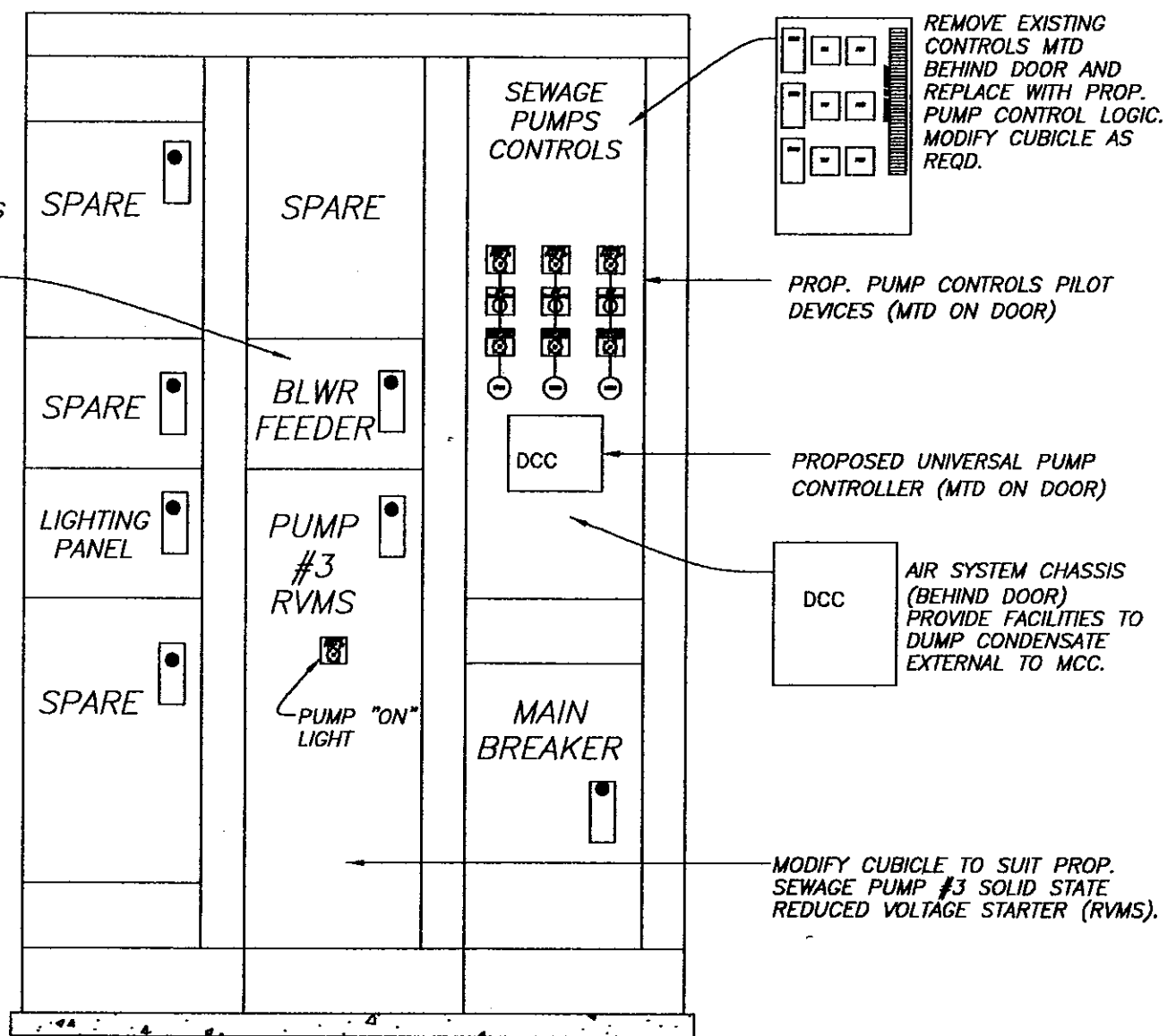
CITY of TAMPA
 DEPARTMENT OF SANITARY SEWERS
 SANITARY SEWERS DIVISION

**18TH STREET PUMPING STATION
 REHABILITATION
 ELECTRICAL EXISTING WEST ELEVATION**

W.O. 5759
 SHEET
E4/27
 OF 37



EXISTING MOTOR CONTROL CENTER (MCC)
(EXISTING LAYOUT)



EX. MCC- PROPOSED MODIFICATIONS

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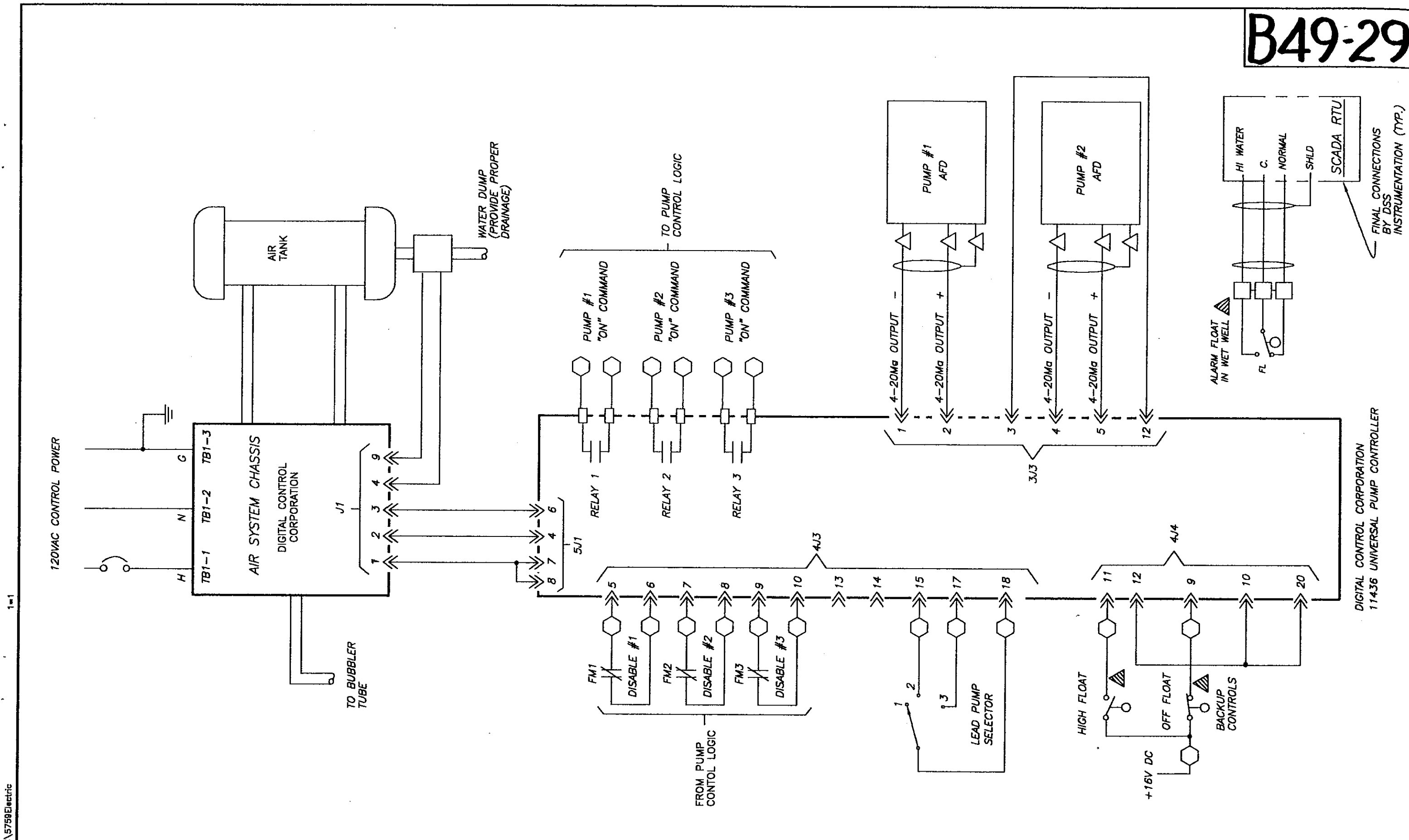
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CITY of TAMPA
DEPARTMENT OF SANITARY SEWERS
SANITARY SEWERS DIVISION

18TH STREET PUMPING STATION REHABILITATION
ELECTRICAL
MCC LINE-UP

W.O. 5759
SHEET
E5/28
OF 37

B49-29



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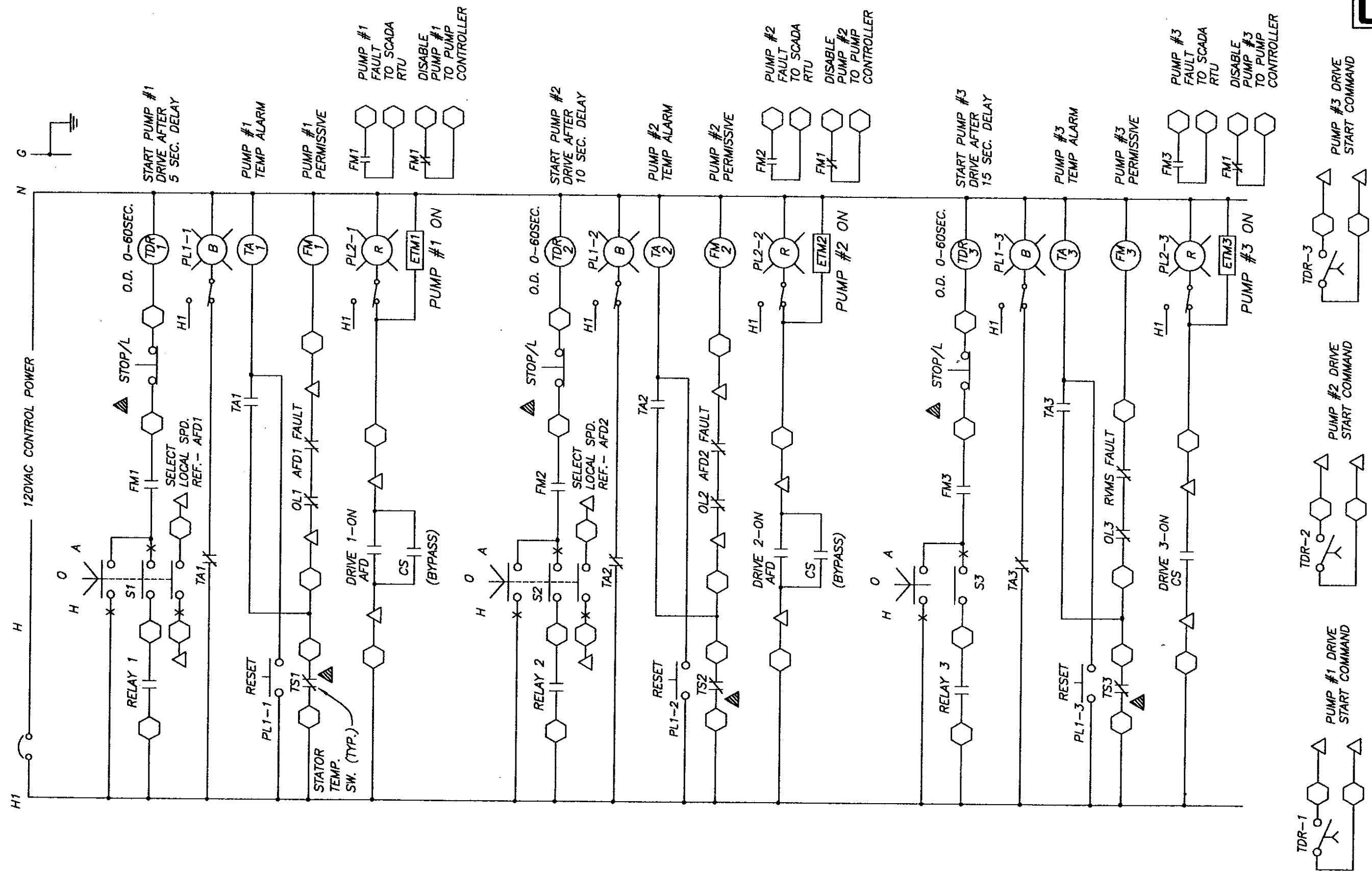
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CITY of TAMPA
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 SANITARY SEWERS DIVISION

18TH STREET PUMPING STATION REHABILITATION
ELECTRICAL
WET WELL LEVEL CONTROLS

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 SHEET
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 OF 37



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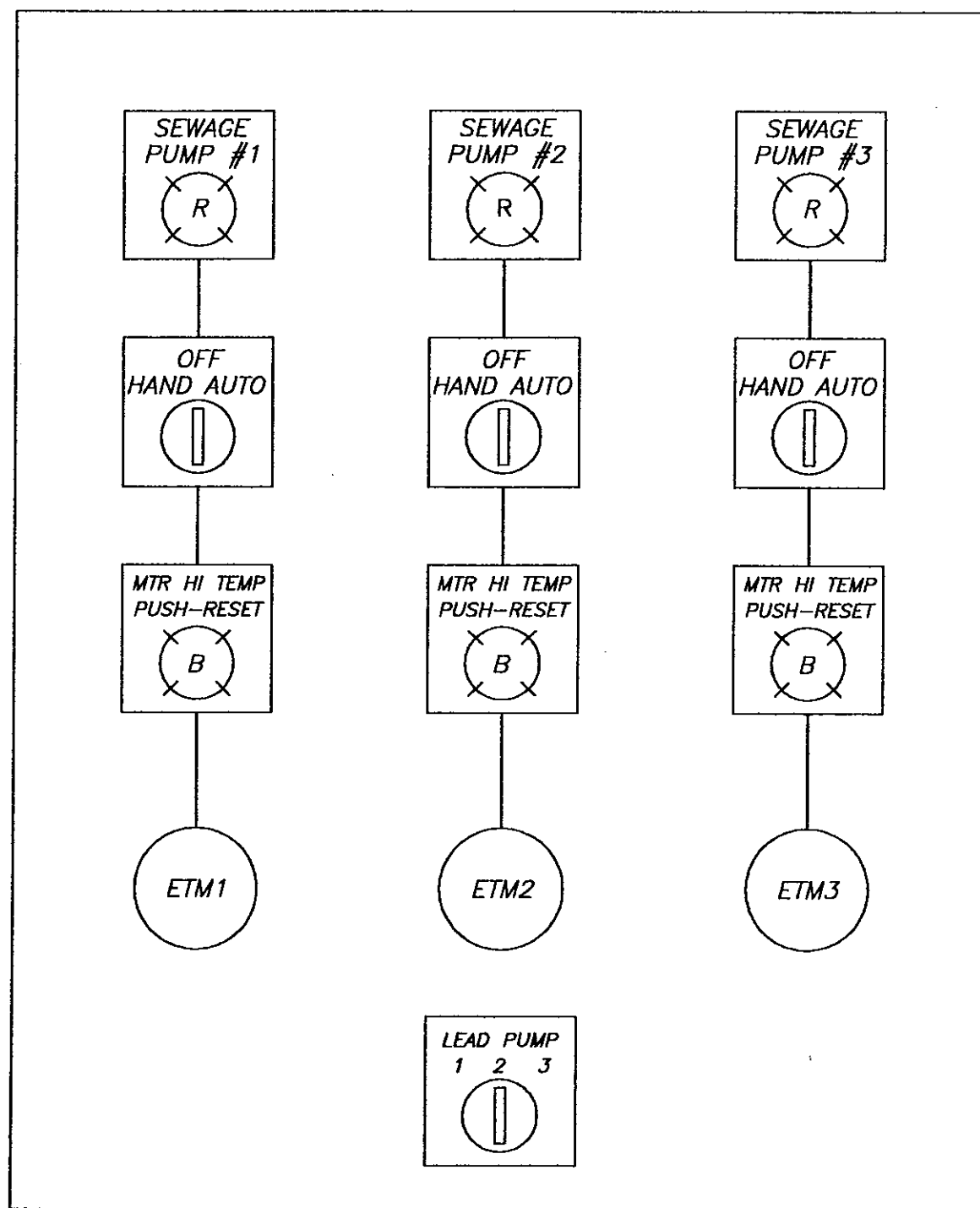
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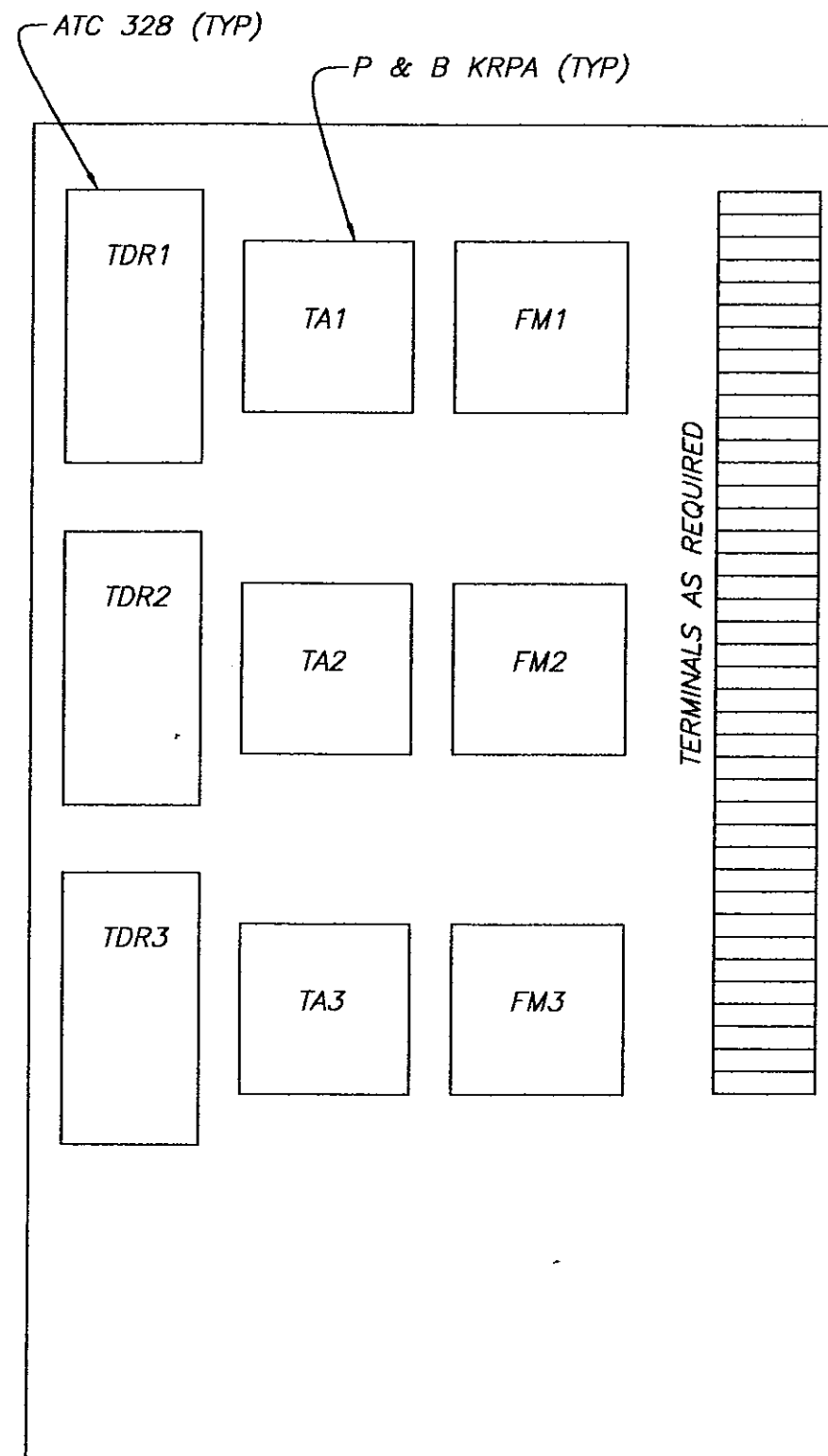
CITY of TAMPA
 DEPARTMENT OF SANITARY SEWERS
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18TH STREET PUMPING STATION REHABILITATION
 ELECTRICAL
 PUMP CONTROL LOGIC

W.O. 5759
 SHEET
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 OF 37



EXISTING MCC FRONT DOOR- PROP. PUMP CONTROL PILOT DEVICES



PROP. PUMP CONTROL SUB-PANEL
(BEHIND PILOT DEVICES AT LEFT)

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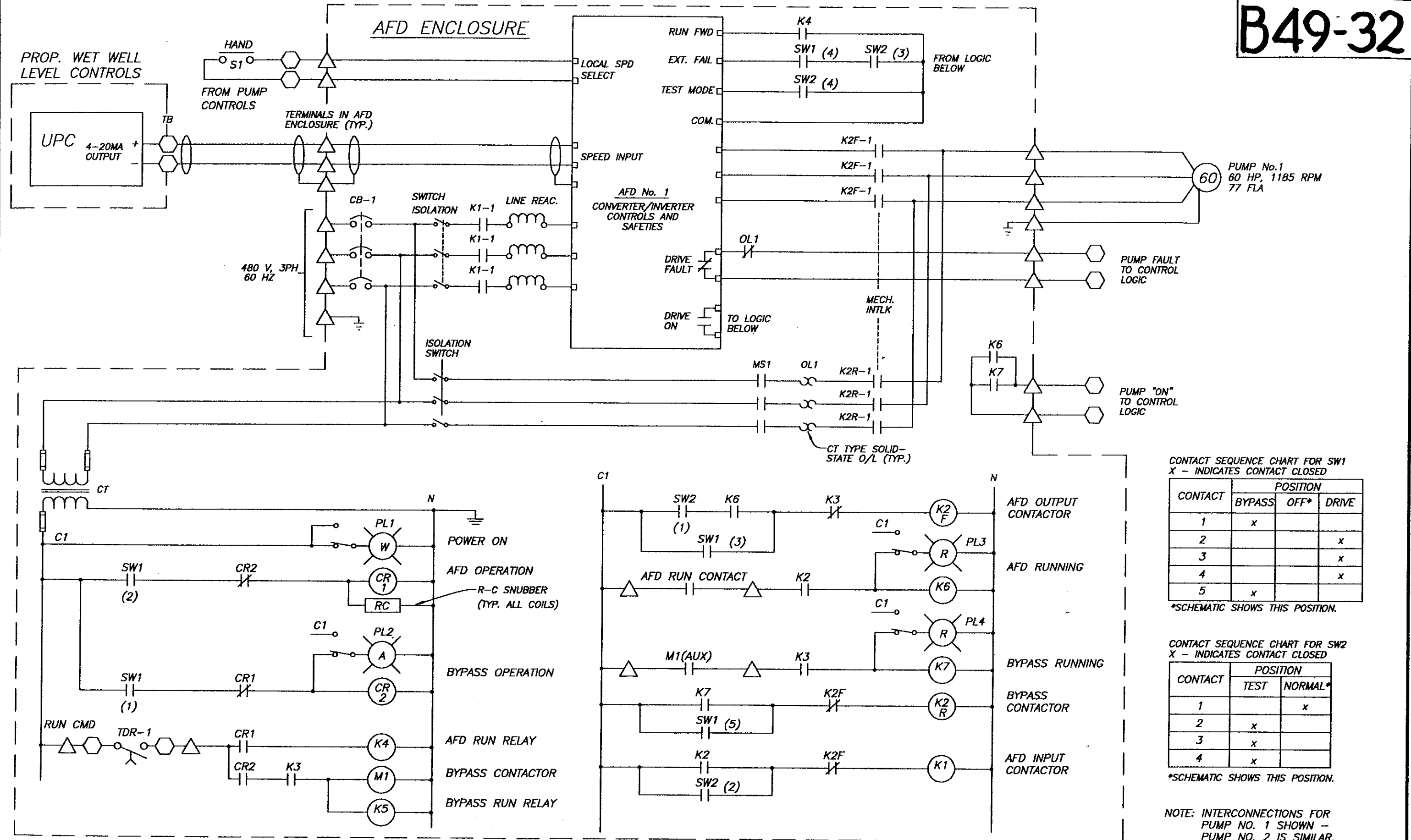
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CITY of TAMPA
DEPARTMENT OF SANITARY SEWERS
SANITARY SEWERS DIVISION

18TH STREET PUMPING STATION REHABILITATION
ELECTRICAL
PUMP CONTROL LOGIC- PANEL LAYOUT

W.O. 5759
SHEET
E8/31
OF 37



CONTACT SEQUENCE CHART FOR SW1
X - INDICATES CONTACT CLOSED

CONTACT	POSITION		
	BYPASS	OFF*	DRIVE
1	x		
2			x
3			x
4			x
5	x		

*SCHEMATIC SHOWS THIS POSITION.

CONTACT SEQUENCE CHART FOR SW2
X - INDICATES CONTACT CLOSED

CONTACT	POSITION	
	TEST	NORMAL*
1		x
2	x	
3	x	
4	x	

*SCHEMATIC SHOWS THIS POSITION.

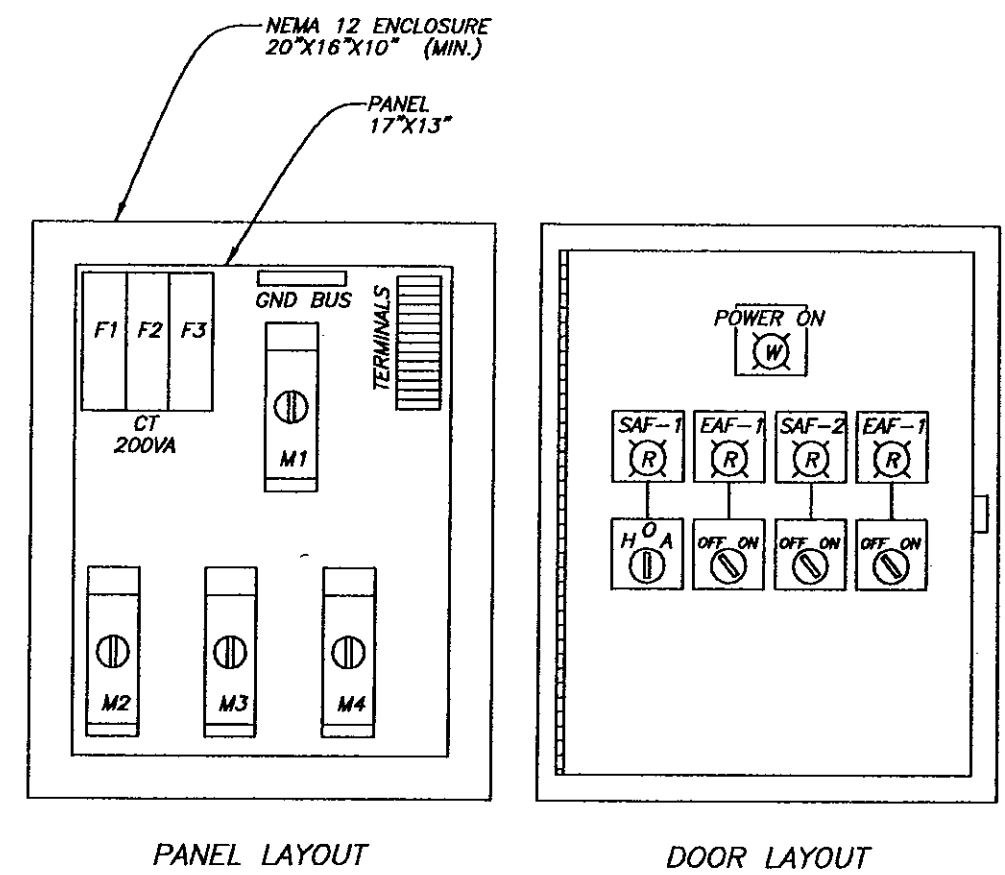
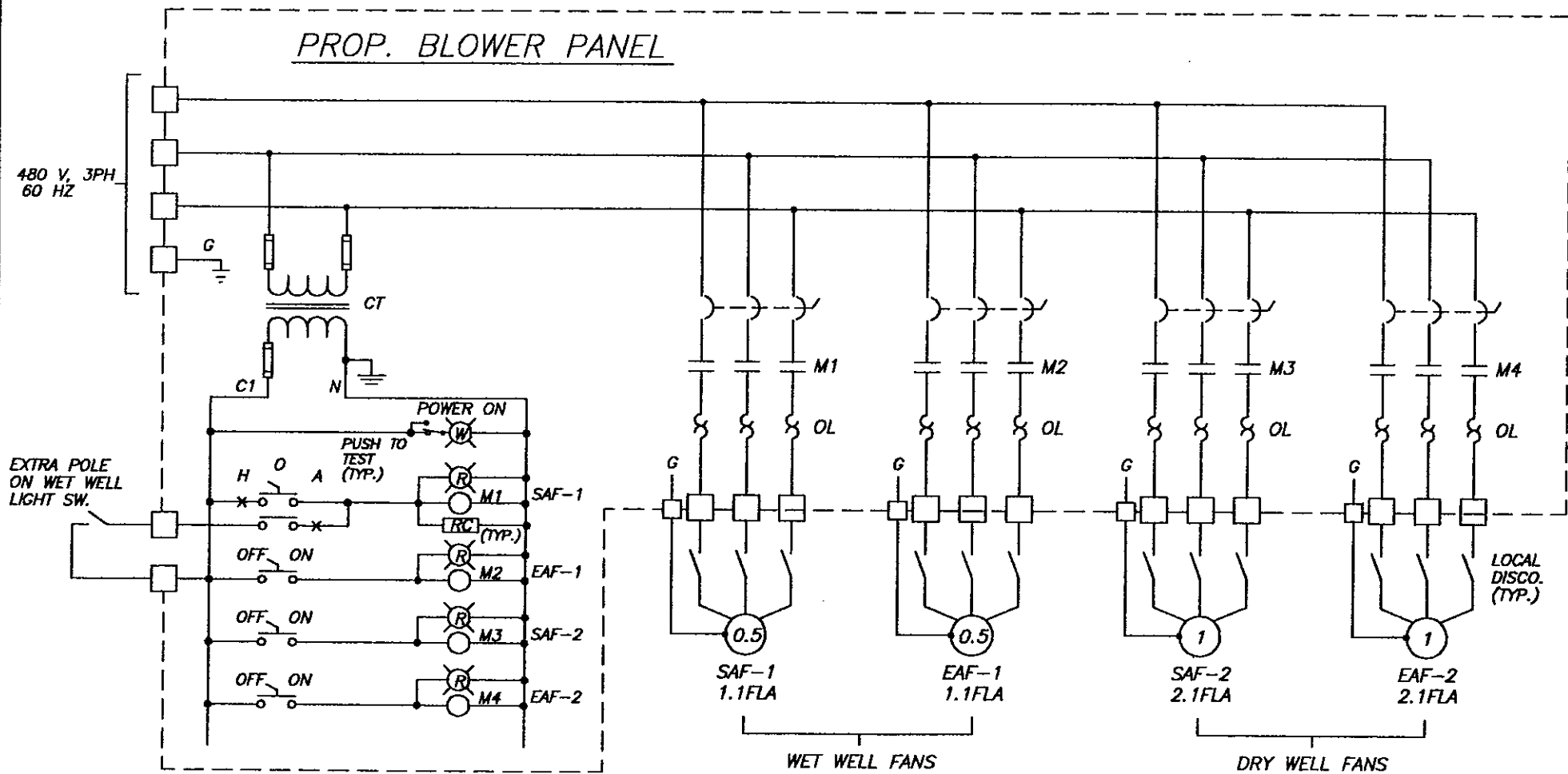
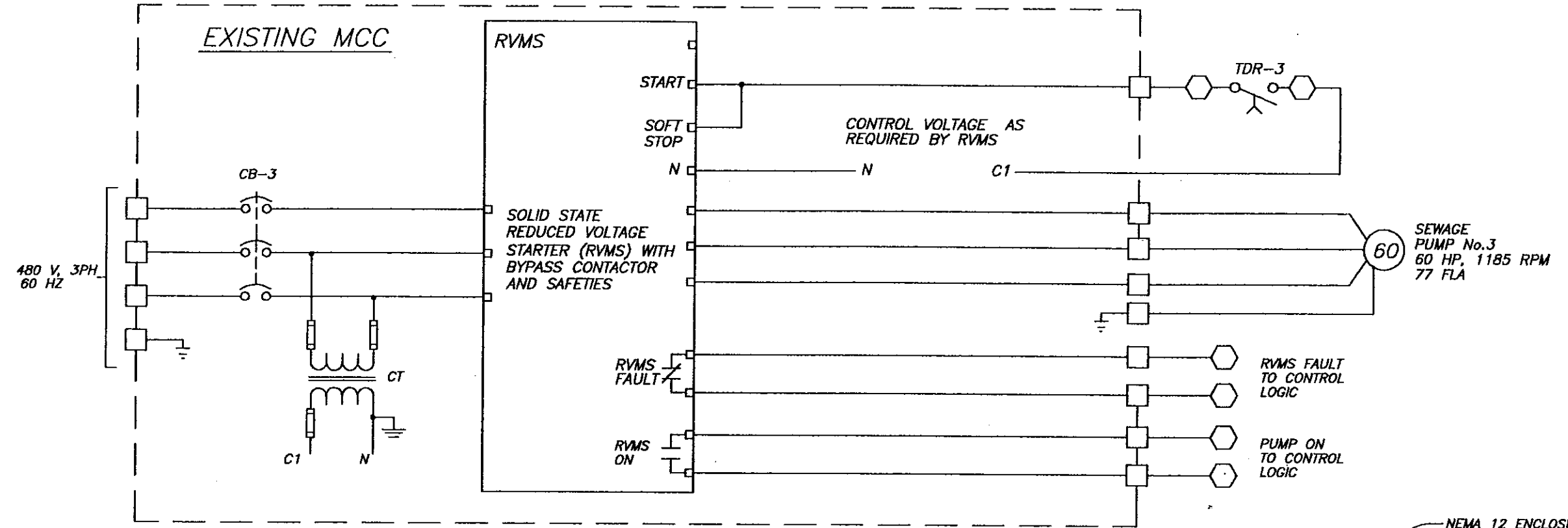
NOTE: INTERCONNECTIONS FOR PUMP NO. 1 SHOWN - PUMP NO. 2 IS SIMILAR.

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DEPARTMENT OF SANITARY SEWERS
SANITARY SEWERS DIVISION

18TH STREET PUMPING STATION REHABILITATION
ELECTRICAL SHEET (PROP. INTERCONNECTION DIAGRAM)
PUMPS 1 & 2



BLOWER PANEL ENCLOSURE DETAILS

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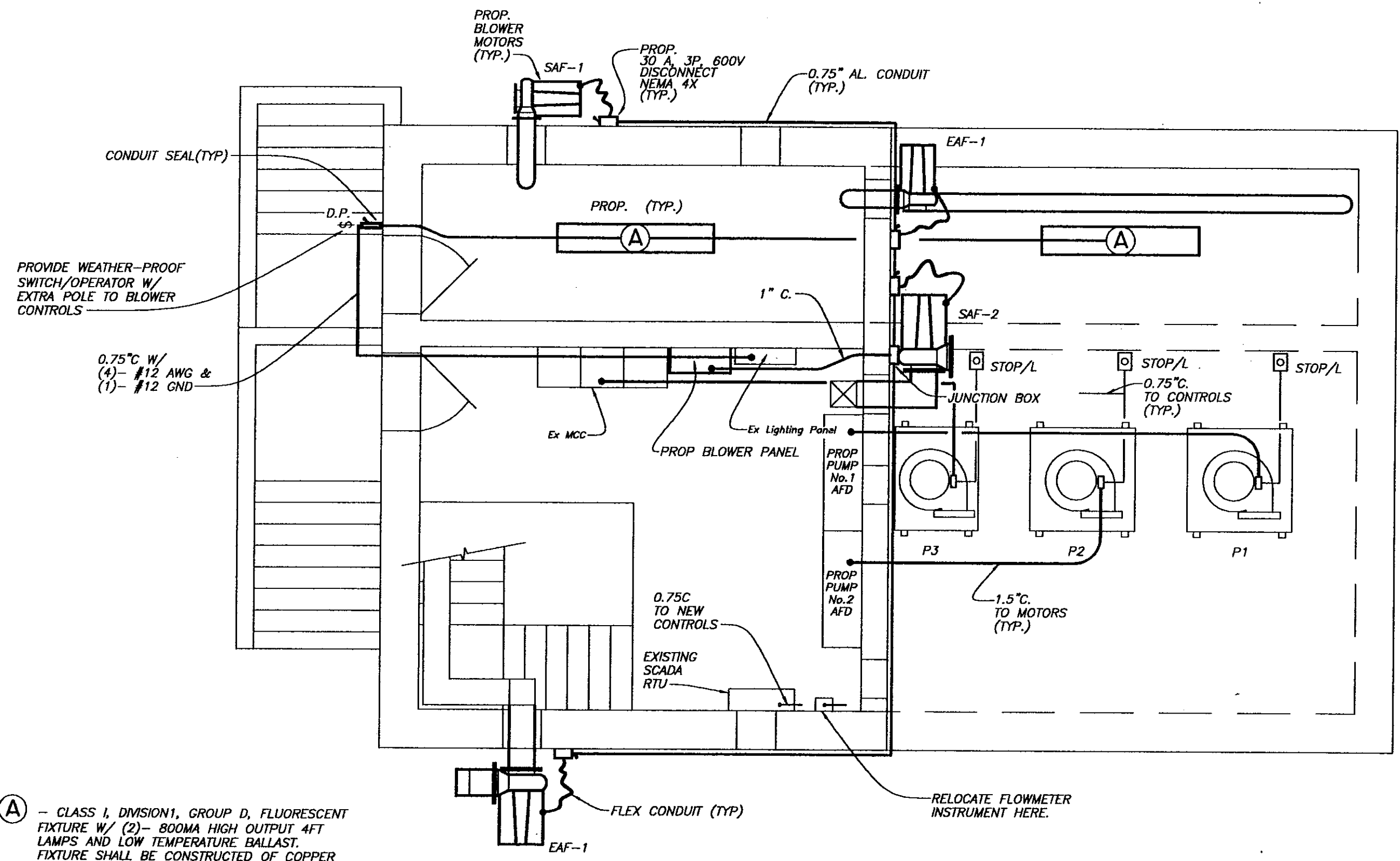
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CITY of TAMPA
DEPARTMENT OF SANITARY SEWERS
SANITARY SEWERS DIVISION

18TH STREET PUMPING STATION REHABILITATION
ELECTRICAL SHEET (PROP. INTERCONNECTION DIAGRAM)
SEWAGE PUMP 3 AND BLOWERS

W.O. 5759
SHEET
E10\33
OF 37



(A) - CLASS I, DIVISION 1, GROUP D, FLUORESCENT FIXTURE W/ (2)- 800MA HIGH OUTPUT 4FT LAMPS AND LOW TEMPERATURE BALLAST. FIXTURE SHALL BE CONSTRUCTED OF COPPER FREE ALUMINUM ALLOY AND STAINLESS STEEL HARDWARE. 120VAC OPERATION W/ T6 TEMPERATURE CODE. BASIS OF DESIGN--- R-A-L XP800-4-2L-A.

PROPOSED PLAN VIEW

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

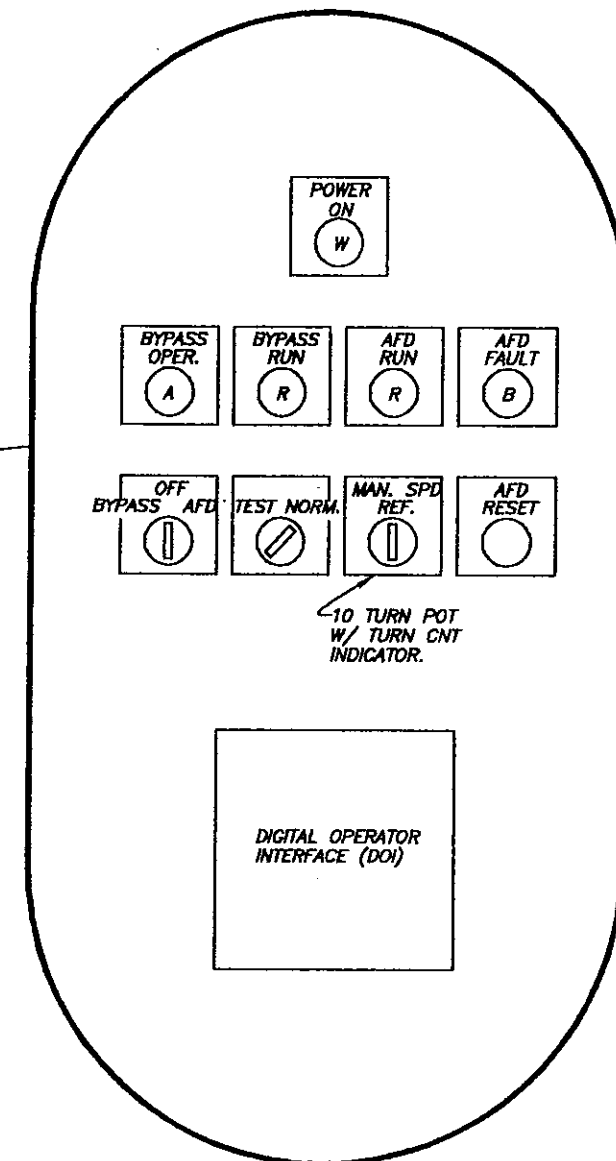
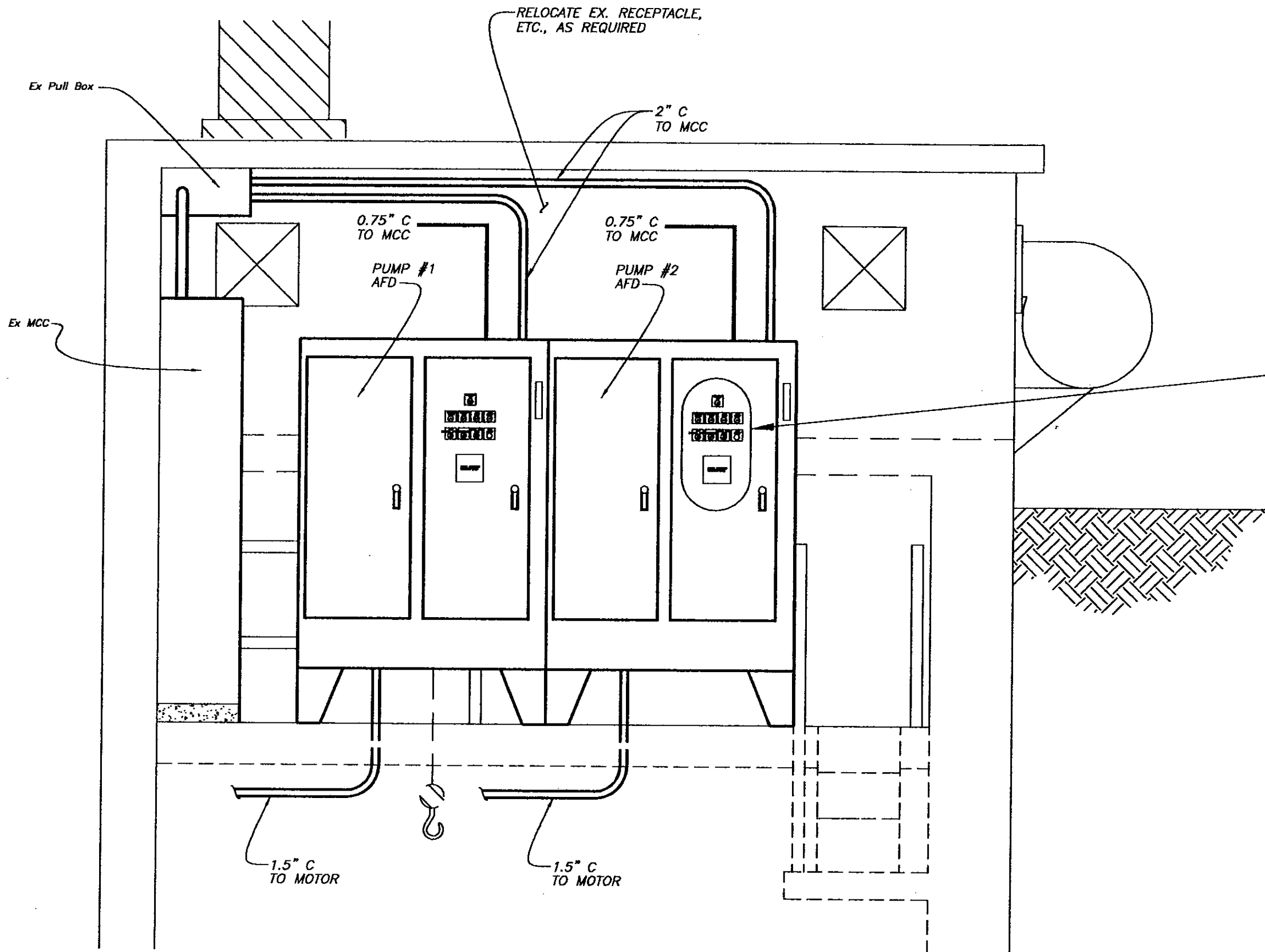
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CITY of TAMPA
 DEPARTMENT OF SANITARY SEWERS
 SANITARY SEWERS DIVISION

18TH STREET PUMPING STATION REHABILITATION
 ELECTRICAL
 PROPOSED PLAN VIEW

c:\DWG\PS\5759Electric 1=1



PROPOSED EAST ELEVATION

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

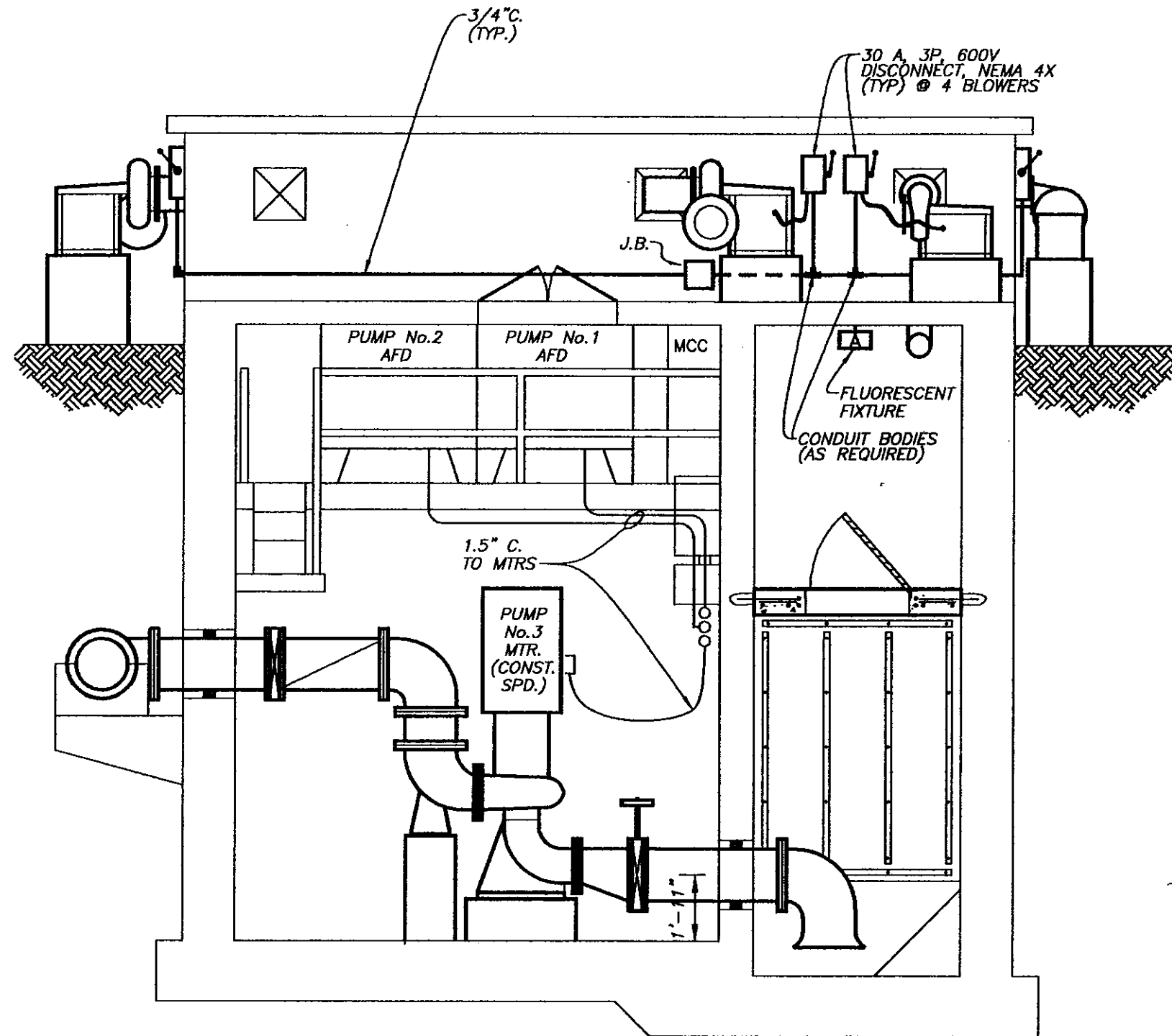
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DES: R.K.
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CITY of TAMPA
DEPARTMENT OF SANITARY SEWERS
SANITARY SEWERS DIVISION

18TH STREET PUMPING STATION REHABILITATION
ELECTRICAL
PROPOSED EAST ELEVATION

W.O. 5759
SHEET
E12\35
OF 37



PROPOSED WEST ELEVATION

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

C:\DWG\PS\5759Electric 1=1

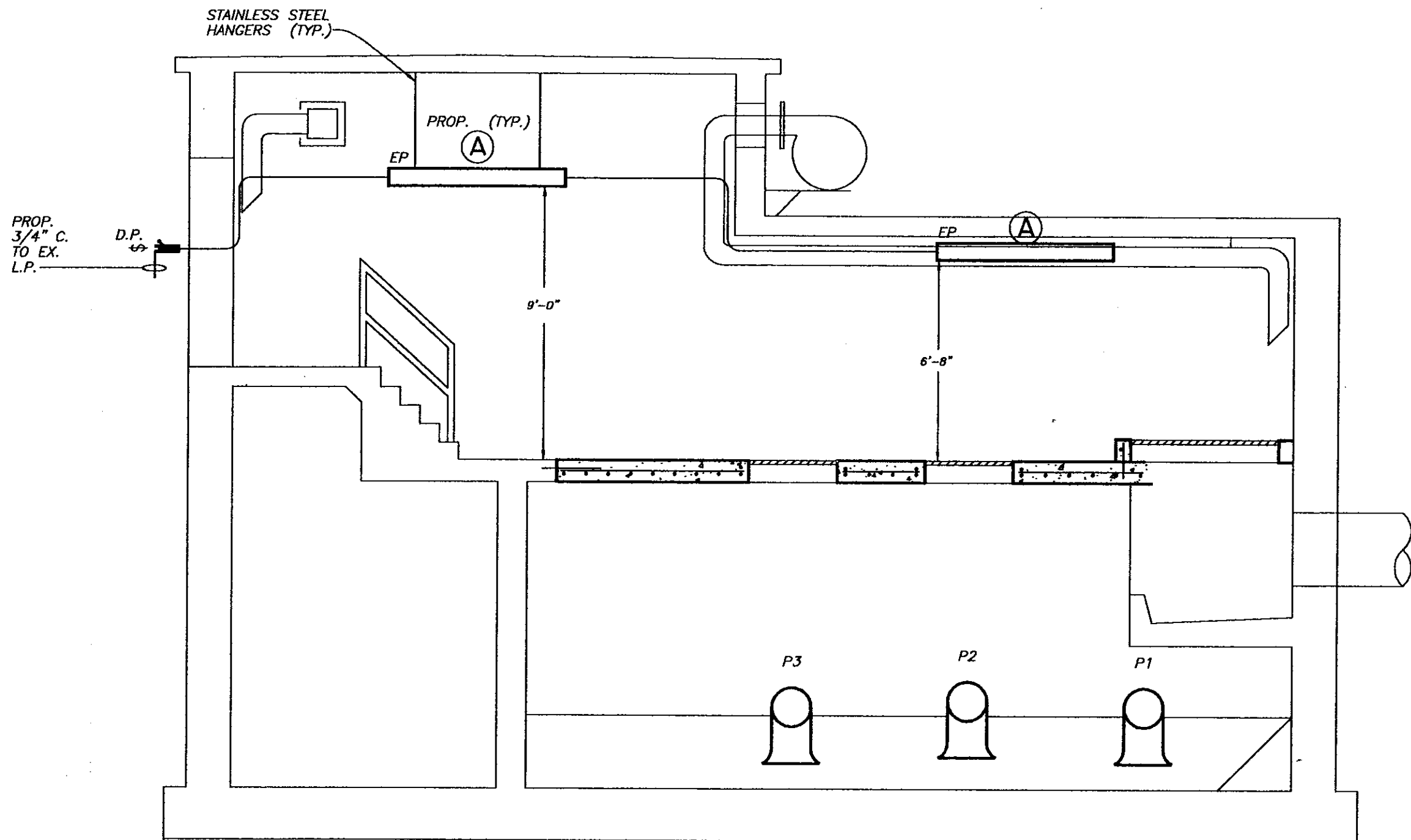
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2			5		
1			4		

DES: R.K.
 DRN: *BB*
 CKD:
 DATE:

CITY of TAMPA
 DEPARTMENT OF SANITARY SEWERS
 SANITARY SEWERS DIVISION

**18TH STREET PUMPING STATION
 REHABILITATION
 ELECTRICAL PROPODED WEST ELEVATION**

W.O. 5759
 SHEET
E13/36
 of 37



PROP. WET WELL LIGHTING--NORTH ELEVATION

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

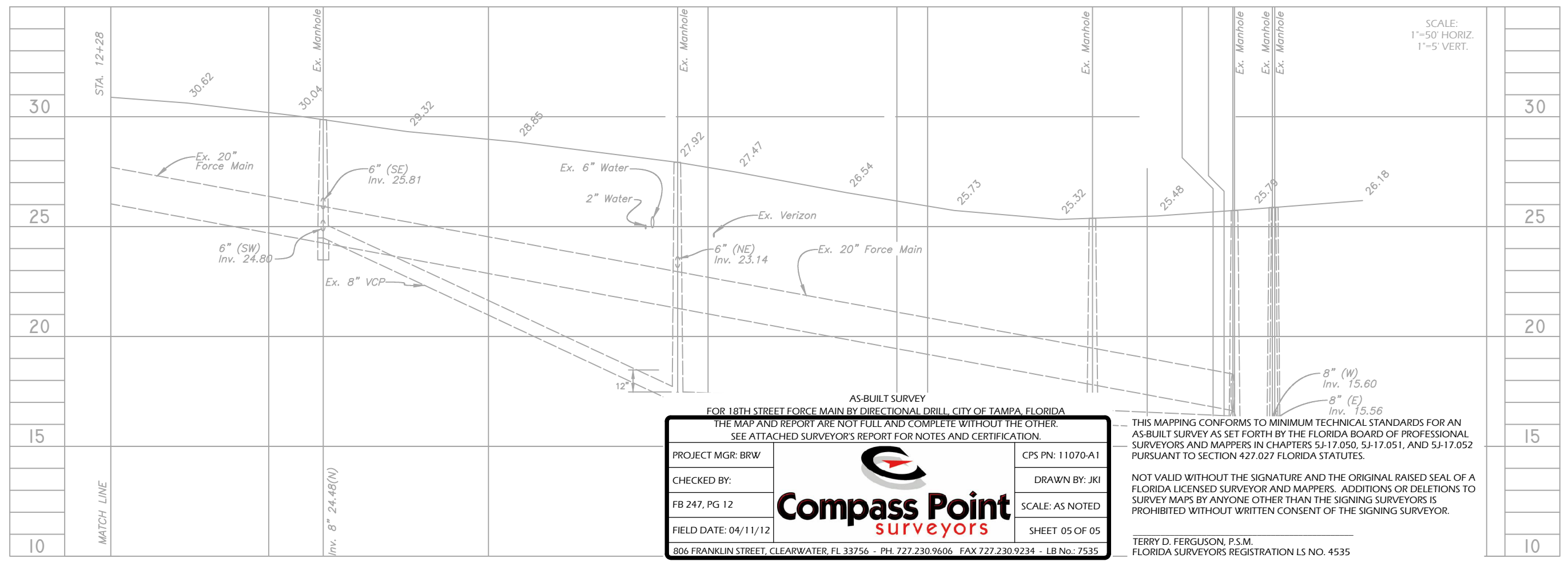
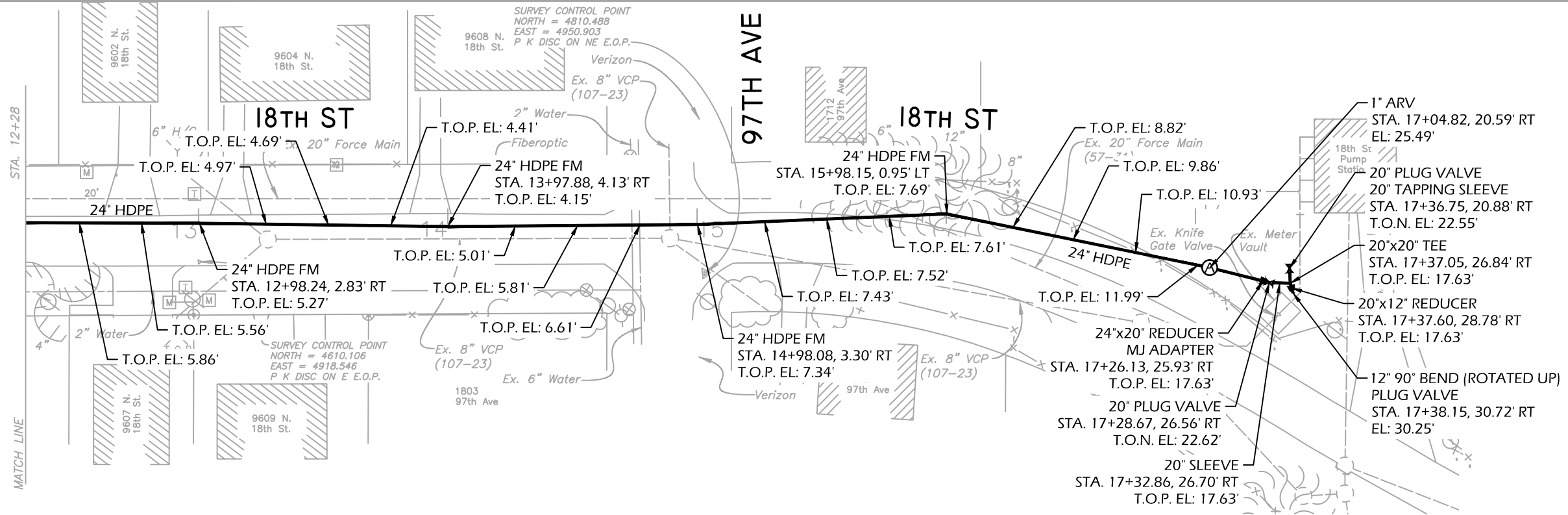
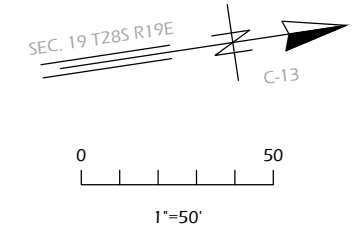
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No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1			4		

DES: R.K.
 DRN: BB
 CKD:
 DATE:

CITY of TAMPA
 DEPARTMENT OF SANITARY SEWERS
 SANITARY SEWERS DIVISION

18TH STREET PUMPING STATION REHABILITATION
 ELECTRICAL
 PROP. WET WELL LIGHTING- N. ELEVATION



AS-BUILT SURVEY
FOR 18TH STREET FORCE MAIN BY DIRECTIONAL DRILL, CITY OF TAMPA, FLORIDA

THE MAP AND REPORT ARE NOT FULL AND COMPLETE WITHOUT THE OTHER.
SEE ATTACHED SURVEYOR'S REPORT FOR NOTES AND CERTIFICATION.

PROJECT MGR: BRW		CPS PN: 11070-A1
CHECKED BY:		DRAWN BY: JKI
FB 247, PG 12	Compass Point surveyors	SCALE: AS NOTED
FIELD DATE: 04/11/12		SHEET 05 OF 05
806 FRANKLIN STREET, CLEARWATER, FL 33756 - PH. 727.230.9606 FAX 727.230.9234 - LB No.: 7535		

THIS MAPPING CONFORMS TO MINIMUM TECHNICAL STANDARDS FOR AN AS-BUILT SURVEY AS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTERS 5J-17.050, 5J-17.051, AND 5J-17.052 PURSUANT TO SECTION 427.027 FLORIDA STATUTES.

NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPERS. ADDITIONS OR DELETIONS TO SURVEY MAPS BY ANYONE OTHER THAN THE SIGNING SURVEYORS IS PROHIBITED WITHOUT WRITTEN CONSENT OF THE SIGNING SURVEYOR.

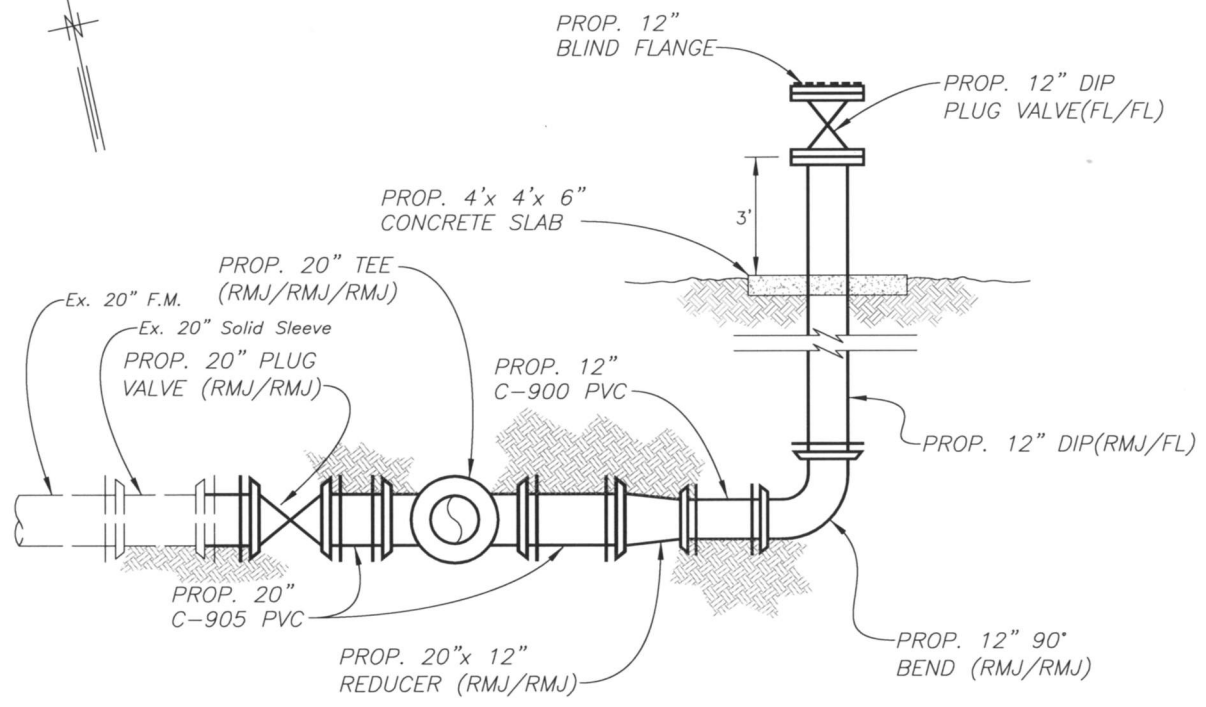
TERRY D. FERGUSON, P.S.M.
FLORIDA SURVEYORS REGISTRATION LS NO. 4535

P:\PRODUCTION\Projects\2011\11070-City of Tampa-18th Street Force Main (Hillsborough)\dwg\AS-BUILT\11070AB-3.dwg - 06/29/2012 10:25:45 AM

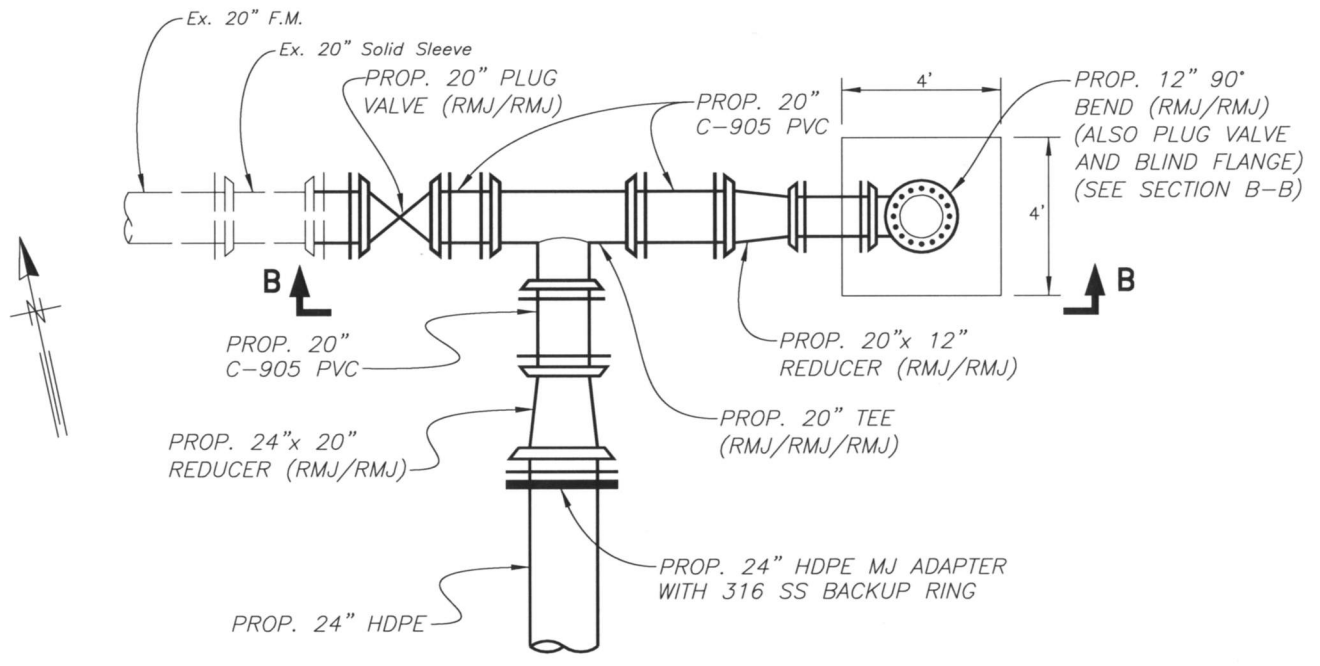
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3		
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DES: RJ	
DRN: <i>BB</i>	
CKD:	
DATE:	

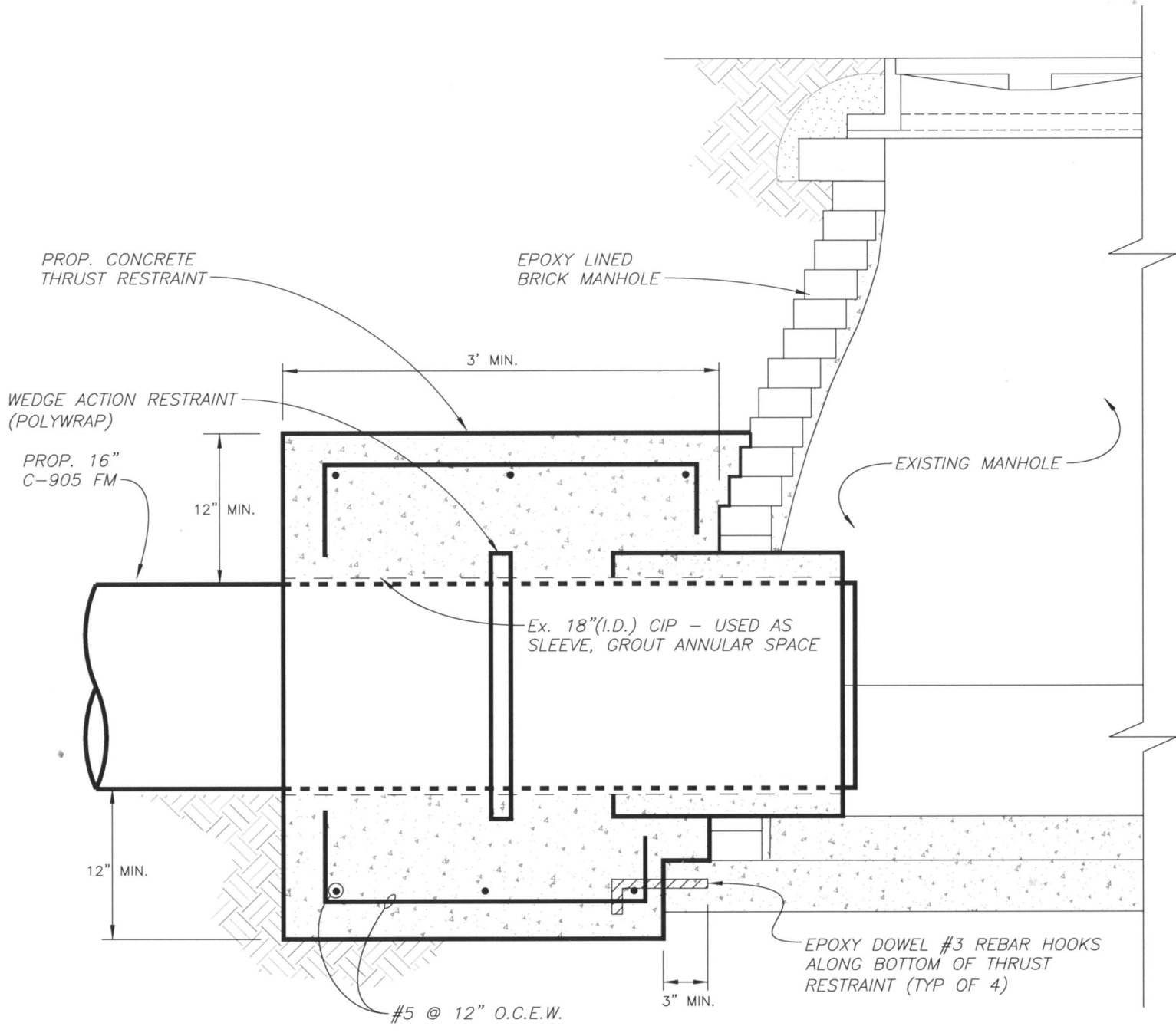
CITY of TAMPA WASTEWATER DEPARTMENT	18TH STREET FORCE MAIN BY DIRECTIONAL BORE PLAN AND PROFILE SHEET - 18TH ST.	W.O. 5507 SHEET 6
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SECTION B-B
N.T.S.



BYPASS DETAIL
N.T.S.



SECTION A/7
N.T.S.

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JACINTO CARLOS FERRAS, P.E. #49454 DESIGN DIVISION HEAD WASTEWATER DEPARTMENT	No.	DATE	REVISIONS	DES: RJ	CITY of TAMPA WASTEWATER DEPARTMENT	18TH STREET FORCE MAIN BY DIRECTIONAL BORE BYPASS AND THRUST RESTRAINT DETAILS	W.O. 5507
	3			DRN: RJ/BB			SHEET
	2			CKD: JF			8
	1			DATE: 5/18/11			