

PERSIGO WASTEWATER TREATMENT PLANT FINAL CLARIFIER ADDITION CITY OF GRAND JUNCTION, COLORADO

LIST OF DRAWINGS

GENERAL

- G-1 TITLE SHEET
- G-2 ABBREVIATIONS, LEGENDS, AND SYMBOLS

CIVIL

- C-1 SITE LAYOUT AND GRADING PLAN
- C-1A CONTRACTOR SUPPLIED SURVEY DATA
- C-2 SITE YARD PIPING PLAN AND PROFILES
- C-3 FINAL CLARIFIER NO. 4 PLAN
- C-4 FINAL CLARIFIER NO. 4 SECTIONS AND DETAILS
- ~~C-5 RAS/WAS PUMP ROOM DEMOLITION PLAN~~
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- C-7 CLARIFIER SPLITTER BOX AND MH PLAN AND SECTIONS
- C-8 PIPE PENETRATION, SUPPORT AND MISCELLANEOUS DETAILS

PROCESS AND INSTRUMENTATION

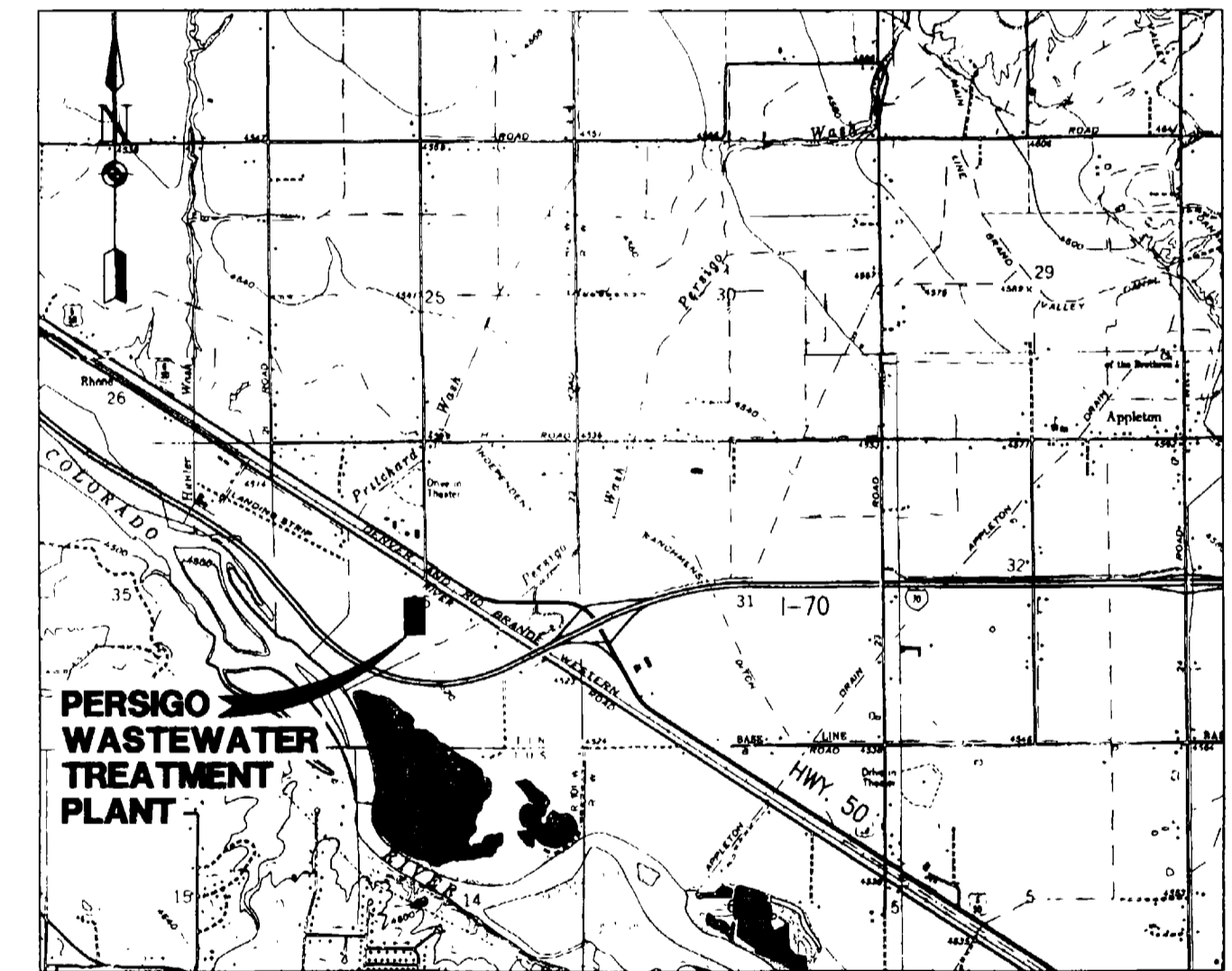
- P-1 PIPING, VALVE AND EQUIPMENT SCHEDULE AND P&ID LEGEND
- P-2 FINAL CLARIFIER P&ID
- P-3 RAS/WAS PUMP ROOM P&ID

STRUCTURAL

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- S-2 FINAL CLARIFIER NO. 4 FOUNDATION PLAN
- S-3 FINAL CLARIFIER NO. 4 WALL SECTIONS AND DETAILS
- S-4 MISCELLANEOUS DETAILS

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- E-2 ELECTRICAL SITE PLAN
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- E-4 FINAL CLARIFIER NO. 4 ELECTRICAL PLAN
- E-5 RAS/WAS PUMP ROOM ELECTRICAL PLAN
- E-6 PANEL SCHEDULES AND DETAILS
- E-7 PANEL SCHEDULES AND DETAILS



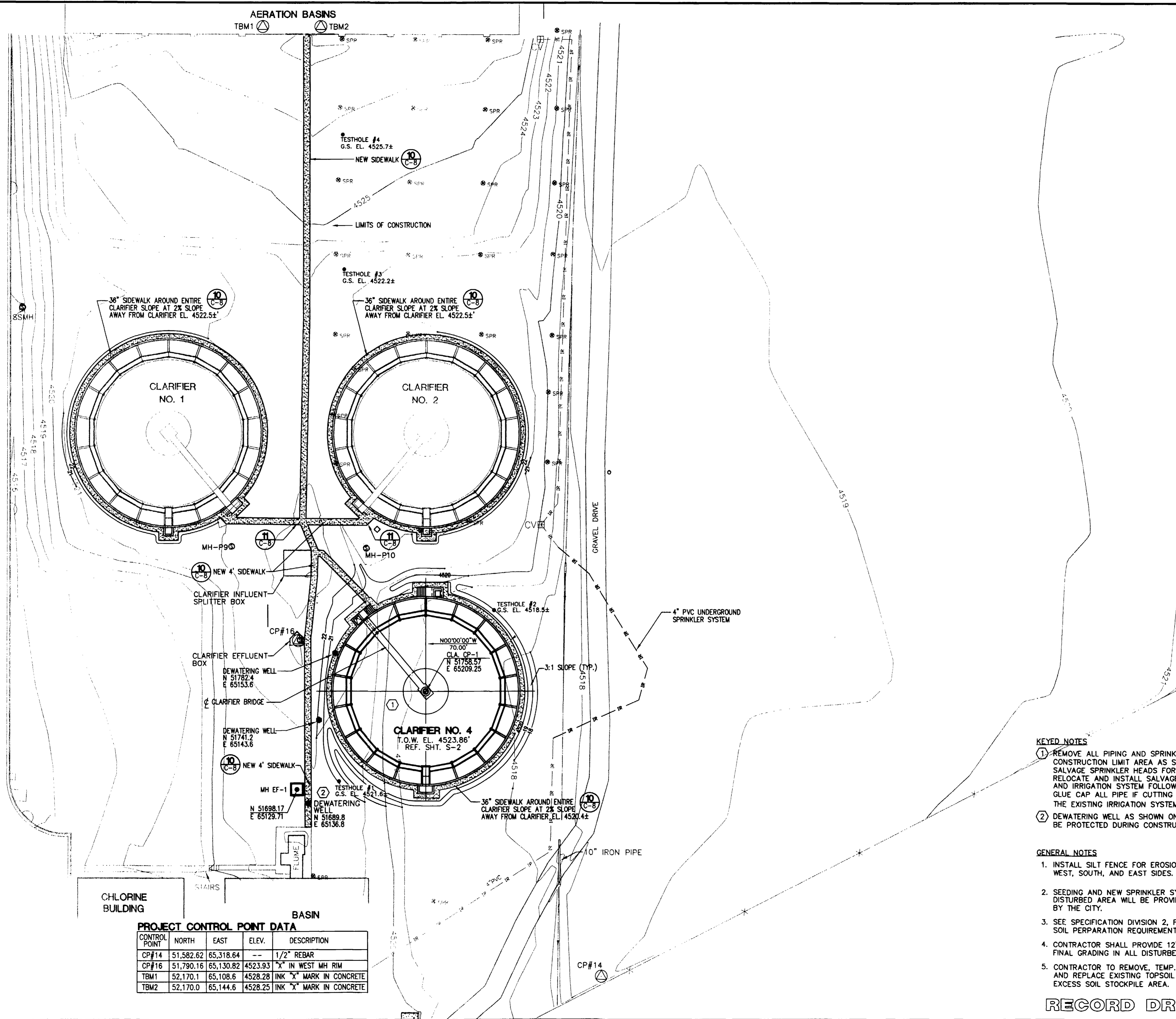
PROJECT LOCATION MAP

1" = 3000'

MAY, 2001



1726 Cole Boulevard, Suite 350
Golden, CO 80401-3213
(303) 271-9398
www.searbrown.com
PROJECT NO. 906-001



PROJECT CONTROL POINT DATA

CONTROL POINT	NORTH	EAST	ELEV.	DESCRIPTION
CP#14	51,582.62	65,318.64	--	1/2" REBAR
CP#16	51,790.16	65,130.82	4523.93	"X" IN WEST MH RIM
TBM1	52,170.1	65,108.6	4528.28	INK "X" MARK IN CONCRETE
TBM2	52,170.0	65,144.6	4528.25	INK "X" MARK IN CONCRETE

KEYED NOTES

- ① REMOVE ALL PIPING AND SPRINKLER HEADS IN THE CONSTRUCTION LIMIT AREA AS SHOWN IN THIS PLAN. SALVAGE SPRINKLER HEADS FOR CITY. CITY WILL RELOCATE AND INSTALL SALVAGED SPRINKLER HEADS AND IRRIGATION SYSTEM FOLLOWING CONSTRUCTION. GLUE CAP ALL PIPE IF CUTTING IS NEEDED FOR THE EXISTING IRRIGATION SYSTEM.
- ② DEWATERING WELL AS SHOWN ON THE DRAWINGS SHALL BE PROTECTED DURING CONSTRUCTION.

GENERAL NOTES

1. INSTALL SILT FENCE FOR EROSION CONTROL ON THE WEST, SOUTH, AND EAST SIDES.
2. SEEDING AND NEW SPRINKLER SYSTEM FOR THE DISTURBED AREA WILL BE PROVIDED BY AND INSTALLED BY THE CITY.
3. SEE SPECIFICATION DIVISION 2, FOR SITE GRADING AND SOIL PERPARATION REQUIREMENTS.
4. CONTRACTOR SHALL PROVIDE 12" OF TOPSOIL FOR FINAL GRADING IN ALL DISTURBED AREAS.
5. CONTRACTOR TO REMOVE, TEMP. STOCKPILE AND AND REPLACE EXISTING TOPSOIL ON TOP OF EXCESS SOIL STOCKPILE AREA.

RECORD DRAWING

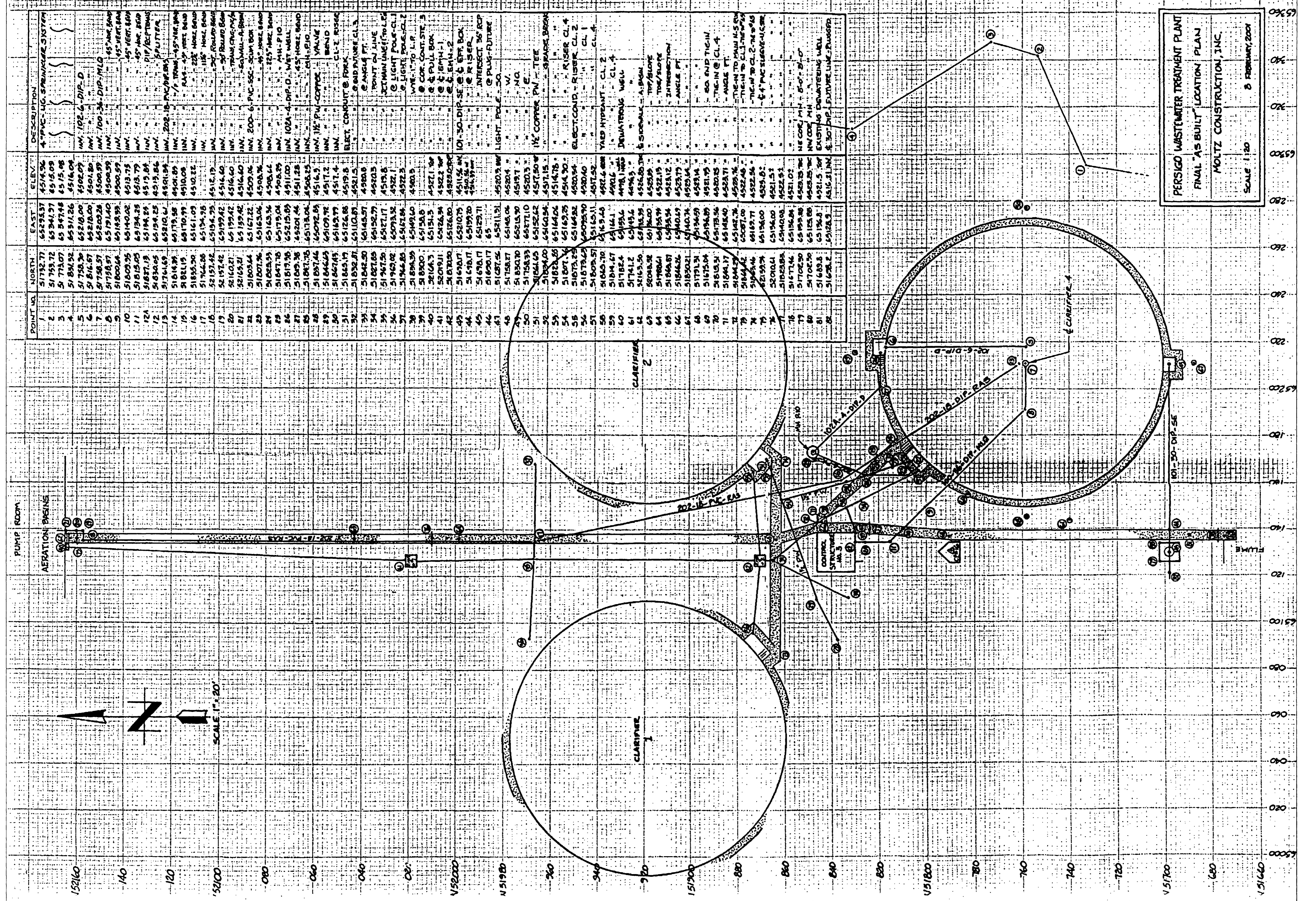
PROJECT ENGINEER/ARCHITECT	2/00	PROJECT ENGINEER/ARCHITECT	2/00
PROJECT MANAGER	2/00	PROJECT MANAGER	2/00
RECORD DRAWING	5/01	RECORD DRAWING	5/01
ISSUED FOR CONSTRUCTION	6/14/00	ISSUED FOR CONSTRUCTION	6/14/00
ISSUED FOR BIDDING	5/23/00	ISSUED FOR BIDDING	5/23/00
DATE		DATE	

PROJECT ENGINEER/ARCHITECT	2/00	PROJECT ENGINEER/ARCHITECT	2/00
PROJECT MANAGER	2/00	PROJECT MANAGER	2/00
RECORD DRAWING	5/01	RECORD DRAWING	5/01
ISSUED FOR CONSTRUCTION	6/14/00	ISSUED FOR CONSTRUCTION	6/14/00
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DATE		DATE	

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 1726 Cole Boulevard, Suite 350
 Golden, CO 80401-3213
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PROJECT: PERSIGO WASTEWATER TREATMENT PLANT
 FINAL CLARIFIER ADDITION
 TITLE OF DRAWING: SITE LAYOUT AND GRADING PLAN

PROJECT NO. **906-001**
 DRAWING NO. **C-1**



POINT NO.	NORTH	EAST	ELEV.	DESCRIPTION
1	51732.77	65293.37	4514.96	4" PVC - 10' SPRAWLER SYSTEM
2	51733.72	65294.37	4514.09	
3	51734.07	65294.98	4515.98	
4	51735.32	65295.26	4516.04	
5	51735.30	65295.00	4502.07	MM 102-6-DIP-D
6	51736.67	65295.00	4501.80	MM 100-30-DIP-MLO
7	51738.57	65295.28	4500.99	MM 100-30-DIP-MLO
8	51738.57	65295.40	4500.99	MM 100-30-DIP-MLO
9	51738.57	65295.59	4500.99	MM 100-30-DIP-MLO
10	51809.95	65193.75	4513.75	MM 100-30-DIP-MLO
11	51815.05	65193.25	4513.75	MM 100-30-DIP-MLO
12	51817.13	65193.05	4513.75	MM 100-30-DIP-MLO
13	51819.05	65193.25	4513.75	MM 100-30-DIP-MLO
14	51819.39	65193.58	4513.75	MM 100-30-DIP-MLO
15	51819.39	65193.75	4513.75	MM 100-30-DIP-MLO
16	51819.39	65193.92	4513.75	MM 100-30-DIP-MLO
17	51819.39	65194.09	4513.75	MM 100-30-DIP-MLO
18	51819.39	65194.26	4513.75	MM 100-30-DIP-MLO
19	51819.39	65194.43	4513.75	MM 100-30-DIP-MLO
20	51819.39	65194.60	4513.75	MM 100-30-DIP-MLO
21	51819.39	65194.77	4513.75	MM 100-30-DIP-MLO
22	51819.39	65194.94	4513.75	MM 100-30-DIP-MLO
23	51819.39	65195.11	4513.75	MM 100-30-DIP-MLO
24	51819.39	65195.28	4513.75	MM 100-30-DIP-MLO
25	51819.39	65195.45	4513.75	MM 100-30-DIP-MLO
26	51819.39	65195.62	4513.75	MM 100-30-DIP-MLO
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36	51819.39	65197.32	4513.75	MM 100-30-DIP-MLO
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42	51819.39	65198.34	4513.75	MM 100-30-DIP-MLO
43	51819.39	65198.51	4513.75	MM 100-30-DIP-MLO
44	51819.39	65198.68	4513.75	MM 100-30-DIP-MLO
45	51819.39	65198.85	4513.75	MM 100-30-DIP-MLO
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53	51819.39	65200.21	4513.75	MM 100-30-DIP-MLO
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63	51819.39	65201.91	4513.75	MM 100-30-DIP-MLO
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80	51819.39	65204.80	4513.75	MM 100-30-DIP-MLO
81	51819.39	65204.97	4513.75	MM 100-30-DIP-MLO
82	51819.39	65205.14	4513.75	MM 100-30-DIP-MLO

PERSIGO WASTEWATER TREATMENT PLANT
 FINAL "AS BUILT" LOCATION PLAN
 MOLTZ CONSTRUCTION, INC.
 SCALE 1"=20'
 8 FEBRUARY, 2001

SEAR-BROWN
 1726 Cole Boulevard, Suite 350
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 (303) 271-9398
 www.searbrown.com

PROJECT: PERSIGO WASTEWATER TREATMENT PLANT FINAL CLARIFIER ADDITION
 PROJECT NO. 906-001
 DRAWING NO. C-1A

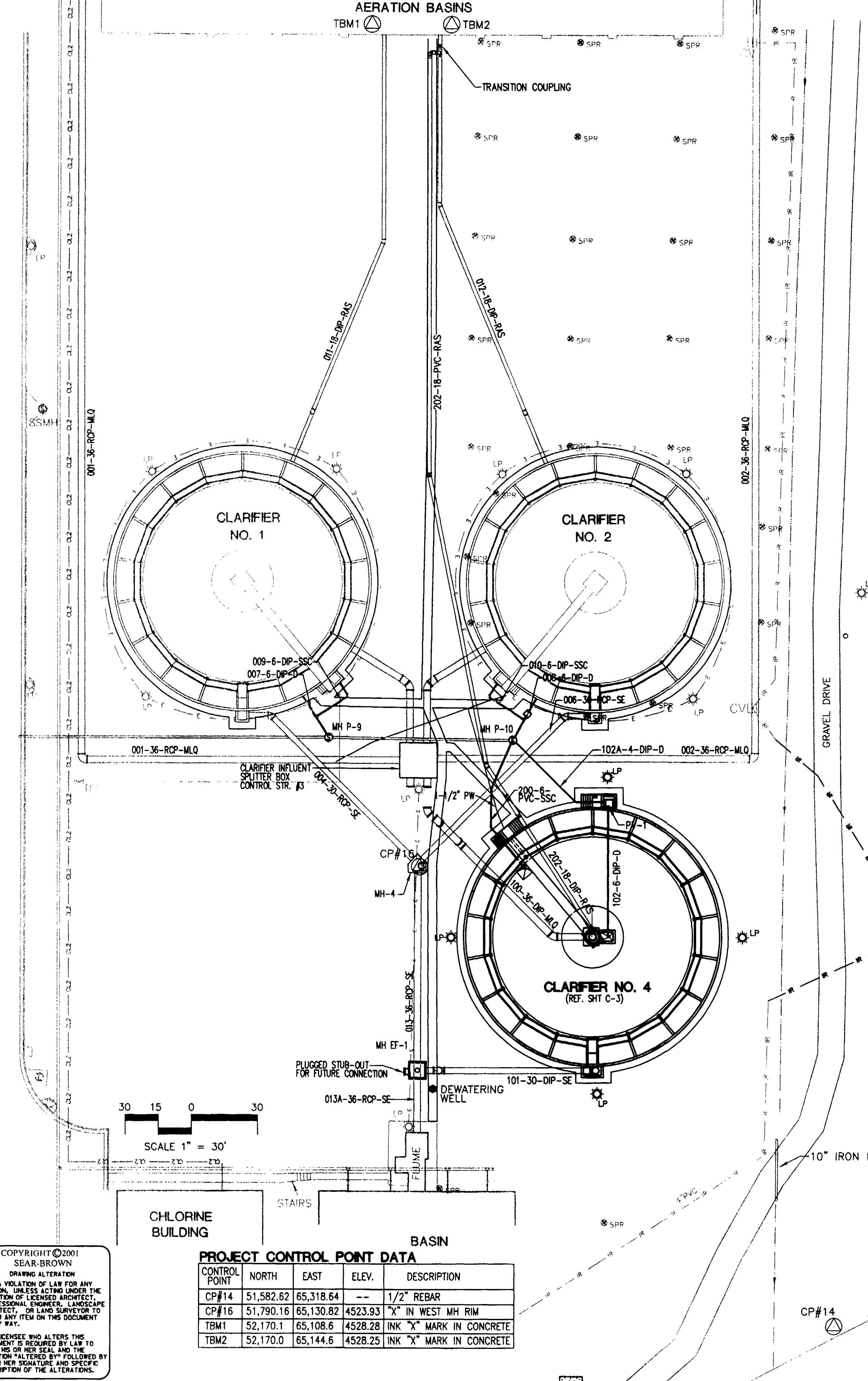
PROJECT ENGINEER/ARCHITECT: WJI
 PROJECT MANAGER: JPM
 DRAWN BY: SLH
 SCALE: NOTED
 FIRST ISSUE DATE: 6/14/00
 REVISIONS: 0
 ISSUED FOR BIDDING: 6/14/00
 ISSUED FOR CONSTRUCTION: 5/23/00
 RECORD DRAWING: 5/01
 J.P.M.: 6/14/00
 J.P.M.: 5/23/00
 DATE: BY:

NOTE: THIS DRAWING IS A SCANNED COPY OF THE ORIGINAL SUPPLIED BY MOLTZ CONSTRUCTION INC. THE TEXT INFORMATION AND POINT LOCATIONS ARE AN ACCURATE REPRESENTATION OF THE ORIGINAL, HOWEVER THIS DRAWING IS NOT TO SCALEABLE. THIS DRAWING IS PROVIDED FOR REFERENCE ONLY.

CONTRACTOR SUPPLIED SURVEY DATA

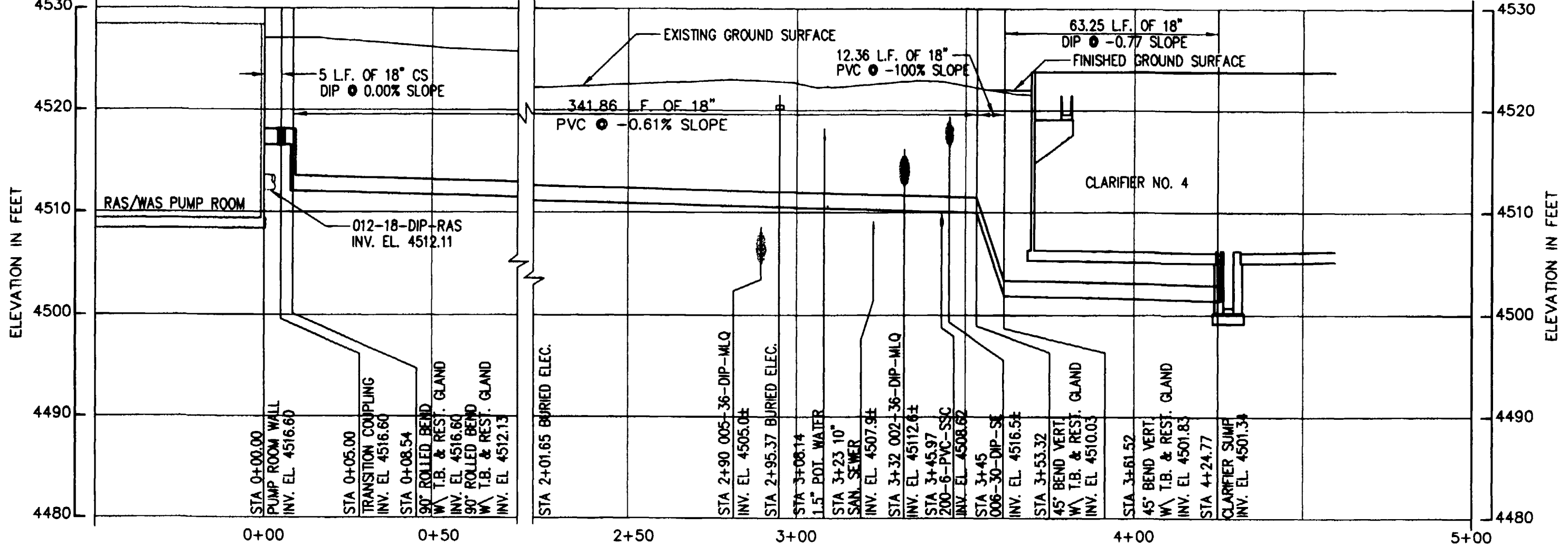
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RECORD DRAWING

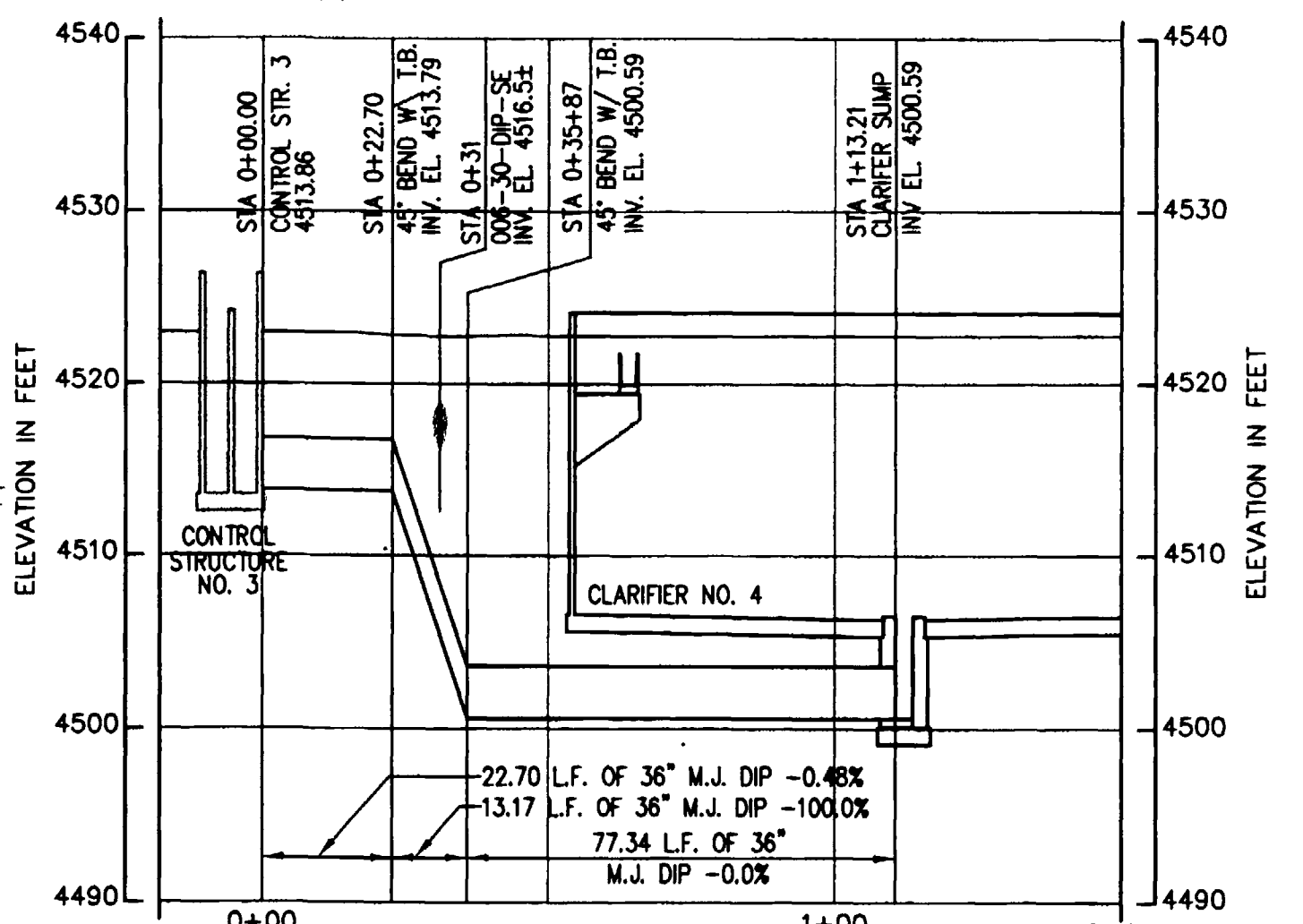


PROJECT CONTROL POINT DATA

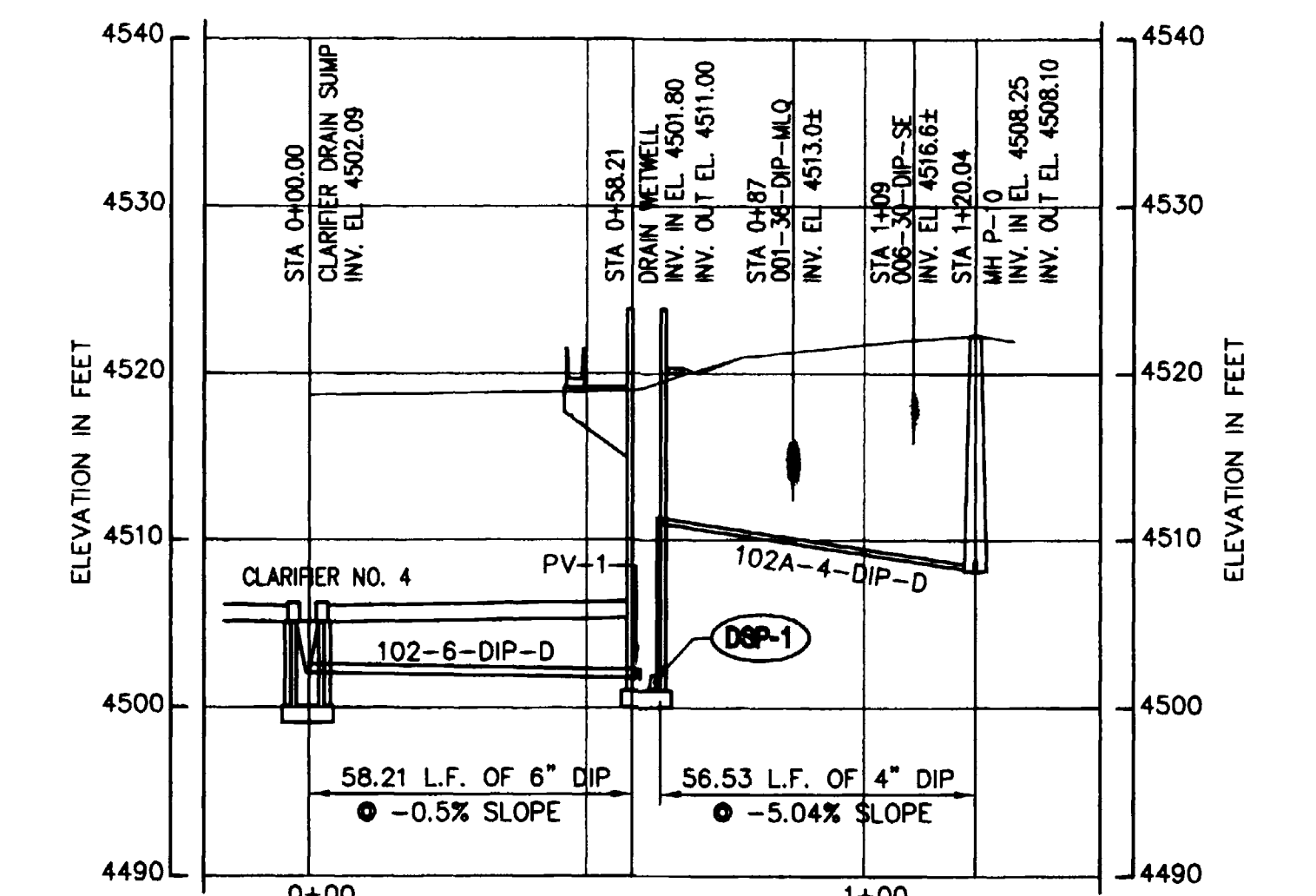
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CP#14	51,582.62	65,318.64	--	1/2" REBAR
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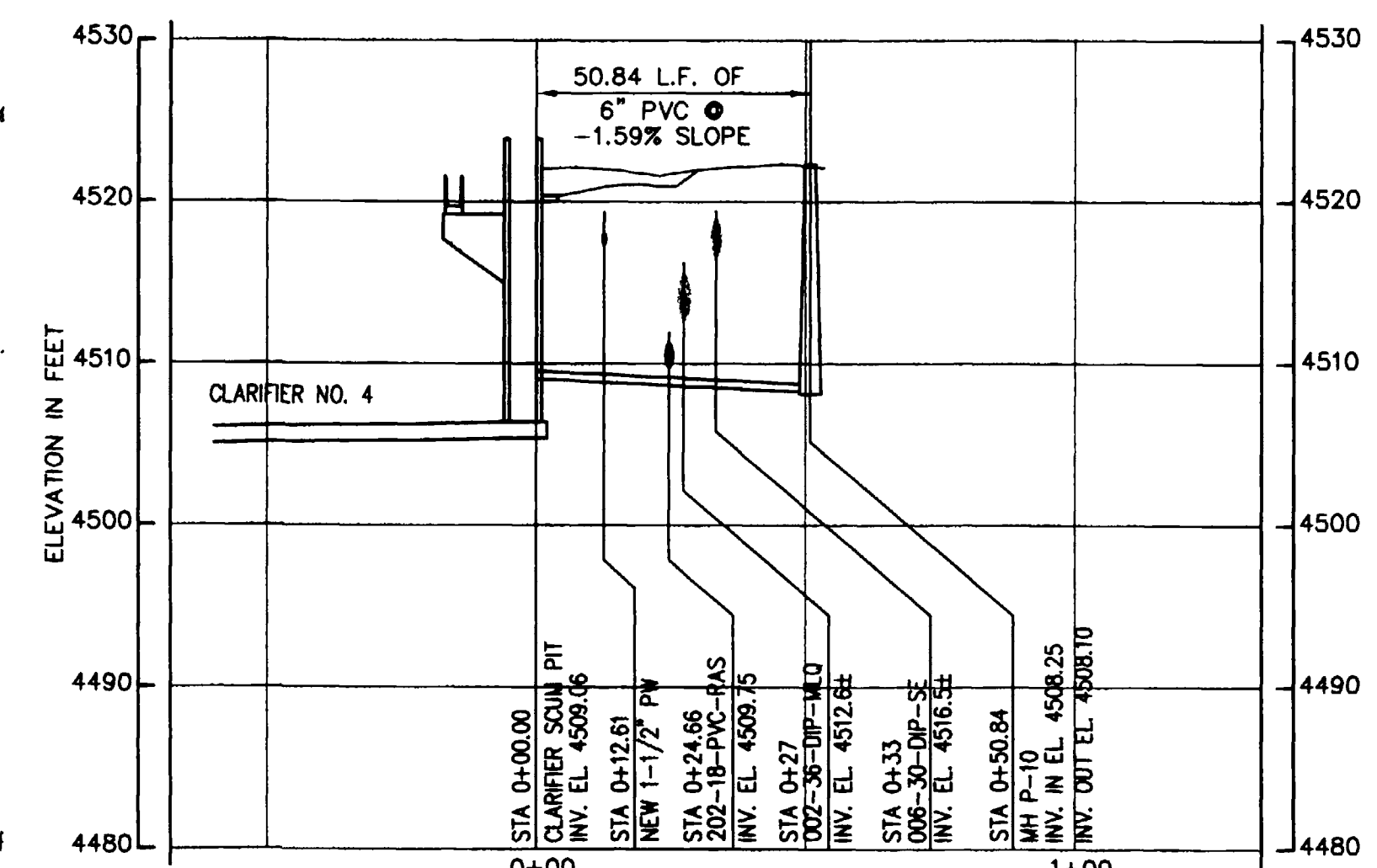
LINE 202-18-PVC-RAS
 1"=30' HORIZ.
 1"=10' VERT.



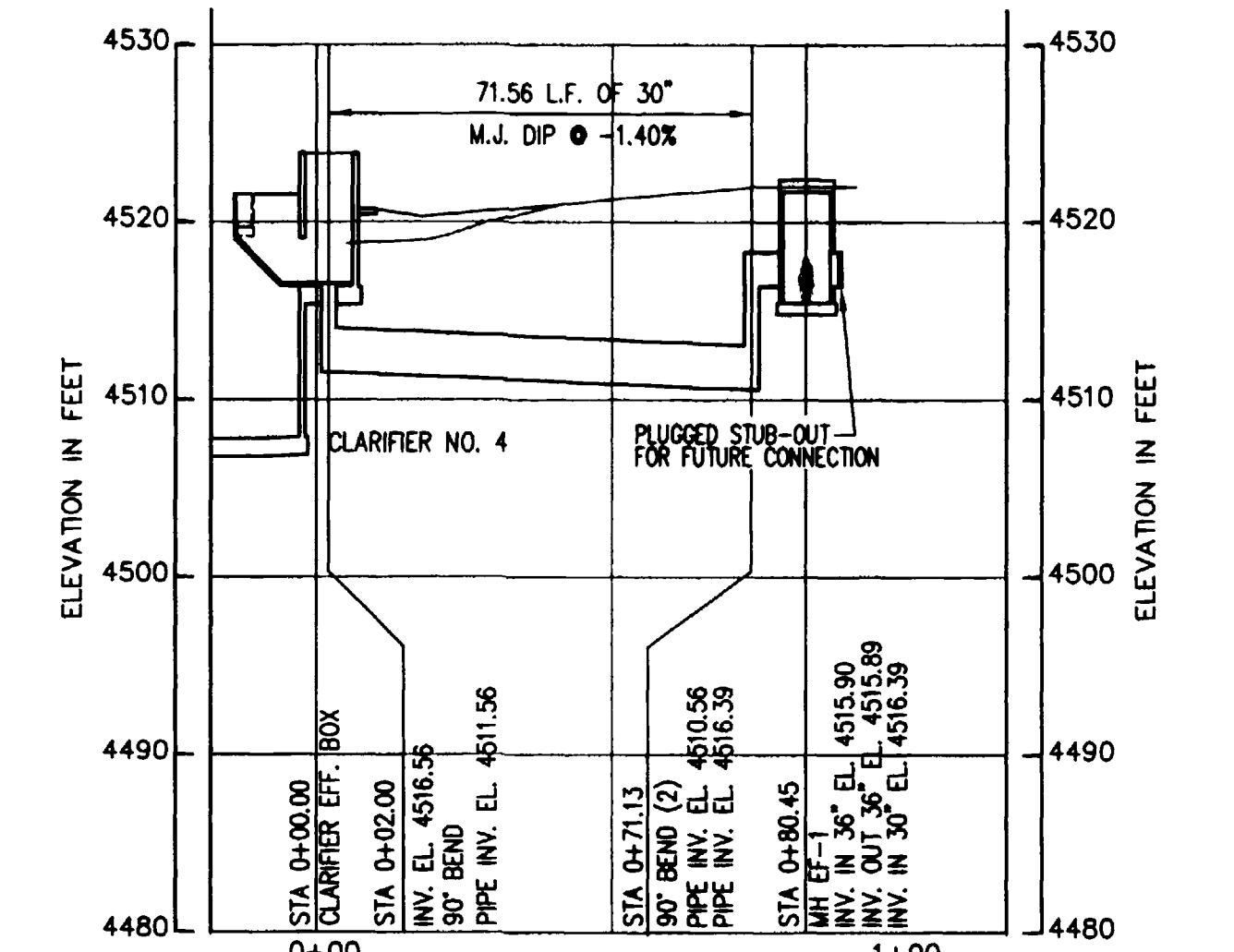
LINE 100-36-DIP-MLQ
 1"=30' HORIZ.
 1"=10' VERT.



LINE 102-6-DIP-D & 102-A-4-DIP-D
 1"=30' HORIZ.
 1"=10' VERT.



LINE 200-6-PVC-SSC
 1"=30' HORIZ.
 1"=10' VERT.



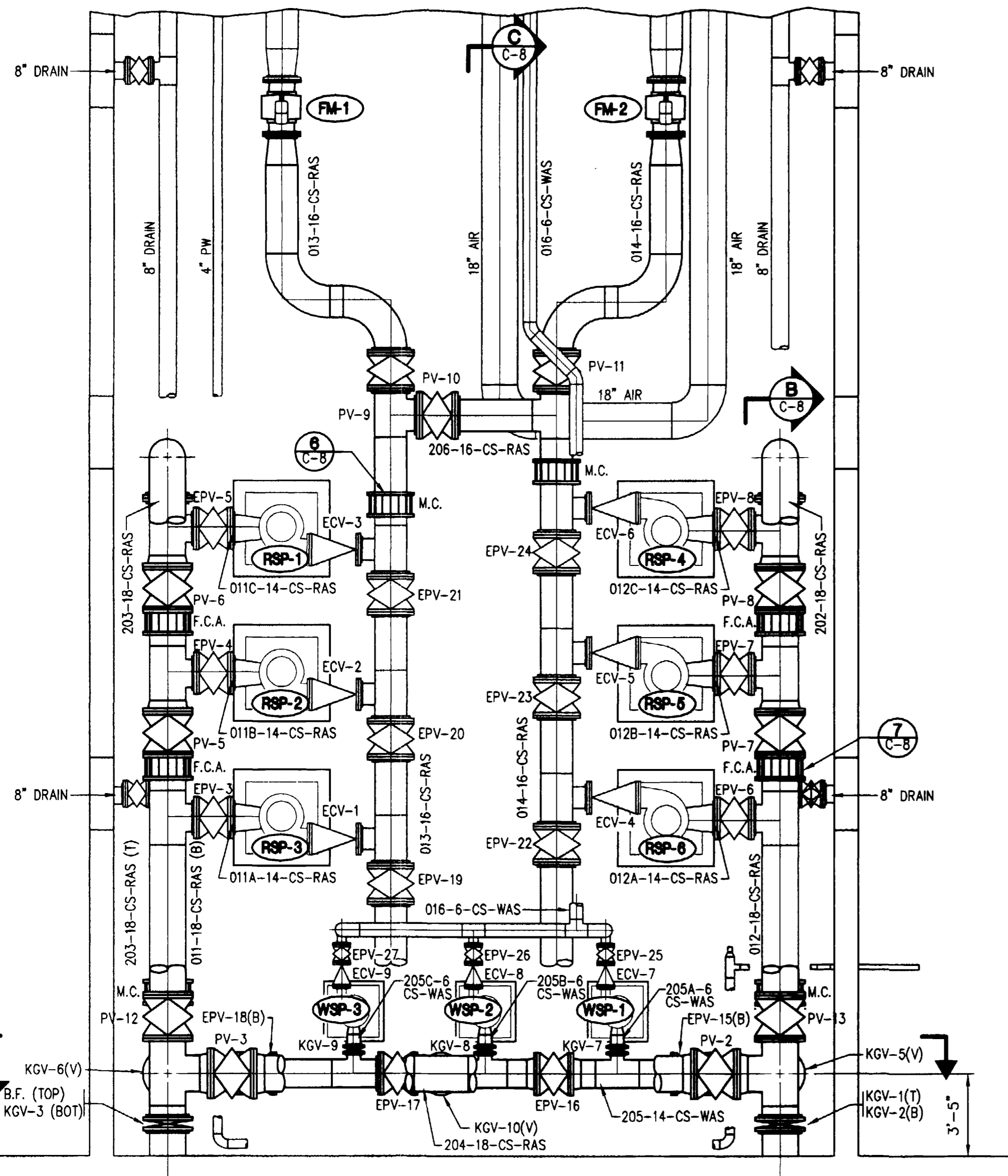
LINE 101-30-DIP-SE
 1"=30' HORIZ.
 1"=10' VERT.

GENERAL NOTES:
 1. REFERENCE DRAWING C-1A FOR COORDINATE LOCATION OF PIPING.

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 209 South Meldrum
 Ft. Collins, CO 80521-2603
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 www.searbrown.com

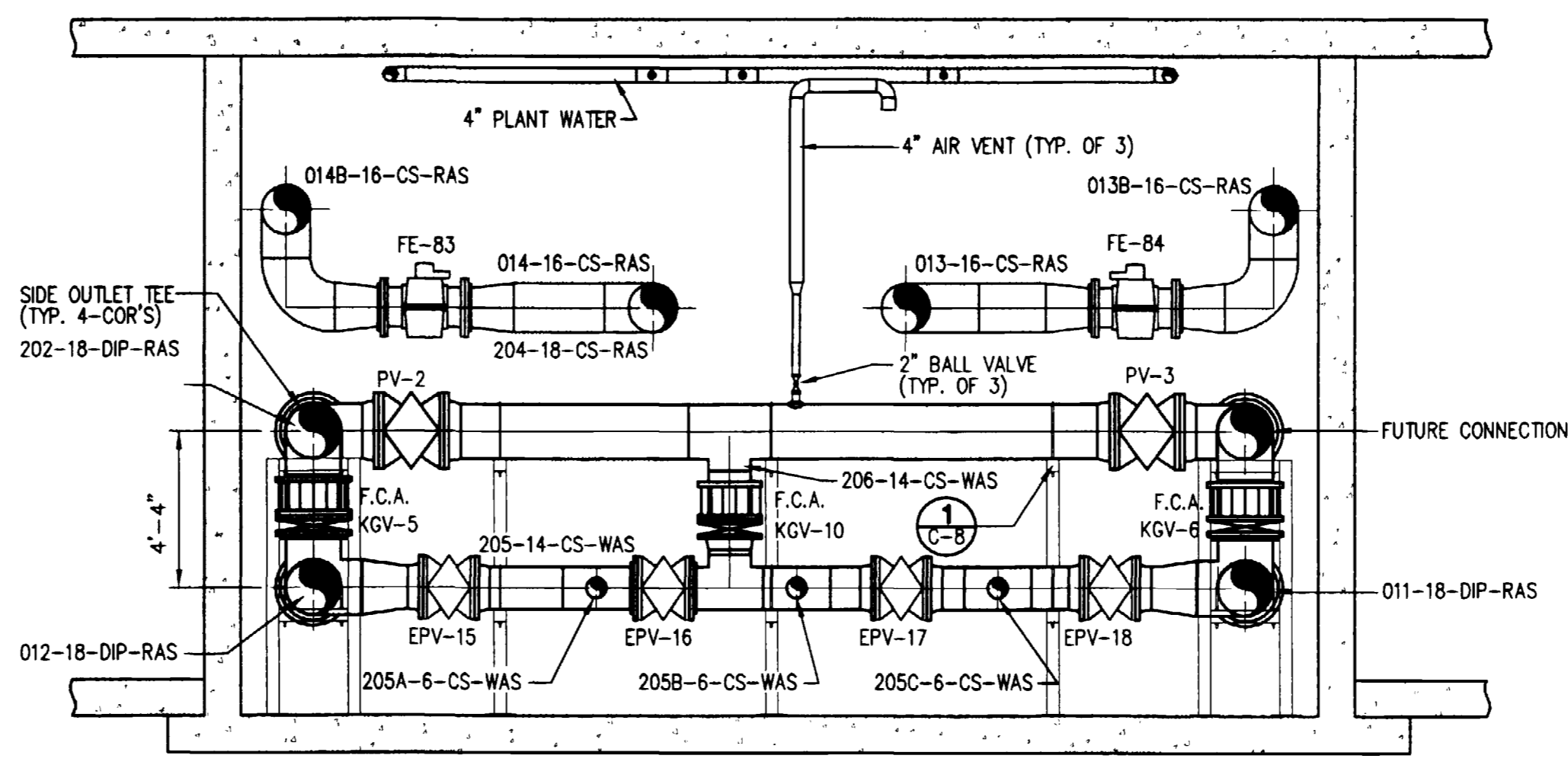
PROJECT	PROJECT NO.	PROJECT MANAGER	DATE
PERSIGO WASTEWATER TREATMENT PLANT FINAL CLARIFIER ADDITION	906-001	J.P.M.	5/01
	DRAWING NO.	C-2	RECORD DRAWING
			ISSUED FOR CONSTRUCTION
	TITLE OF DRAWING	SITE YARD PIPING PLAN AND PROFILES	ISSUED FOR BIDDING
			REVISIONS
	PROJECT	2/00	PROJECT MANAGER
DRAWN BY	2/00	SCALE	NOTED
DATE	6/14/00	DATE	6/14/00

RECORD DRAWING

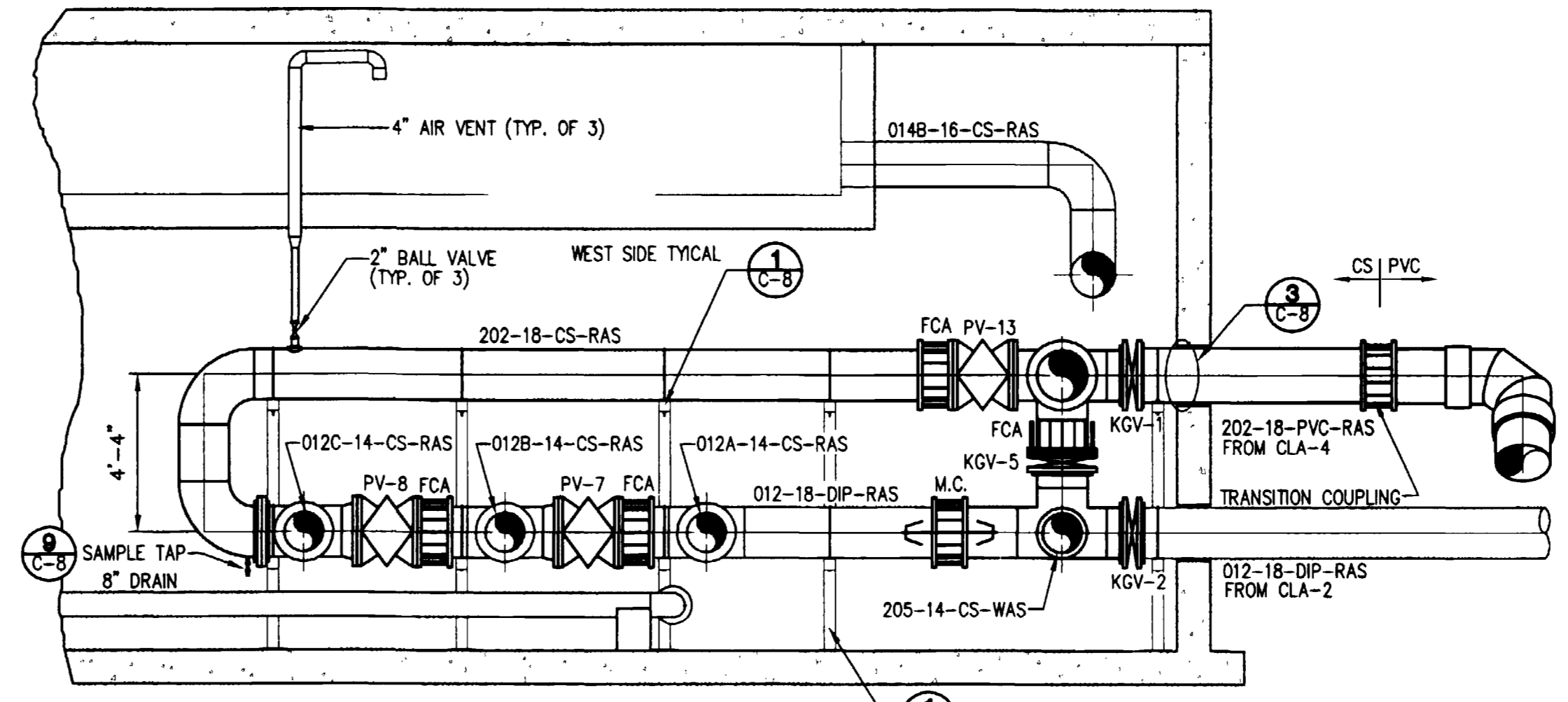


PUMP ROOM FLOOR PLAN
1/4"=1'-0"

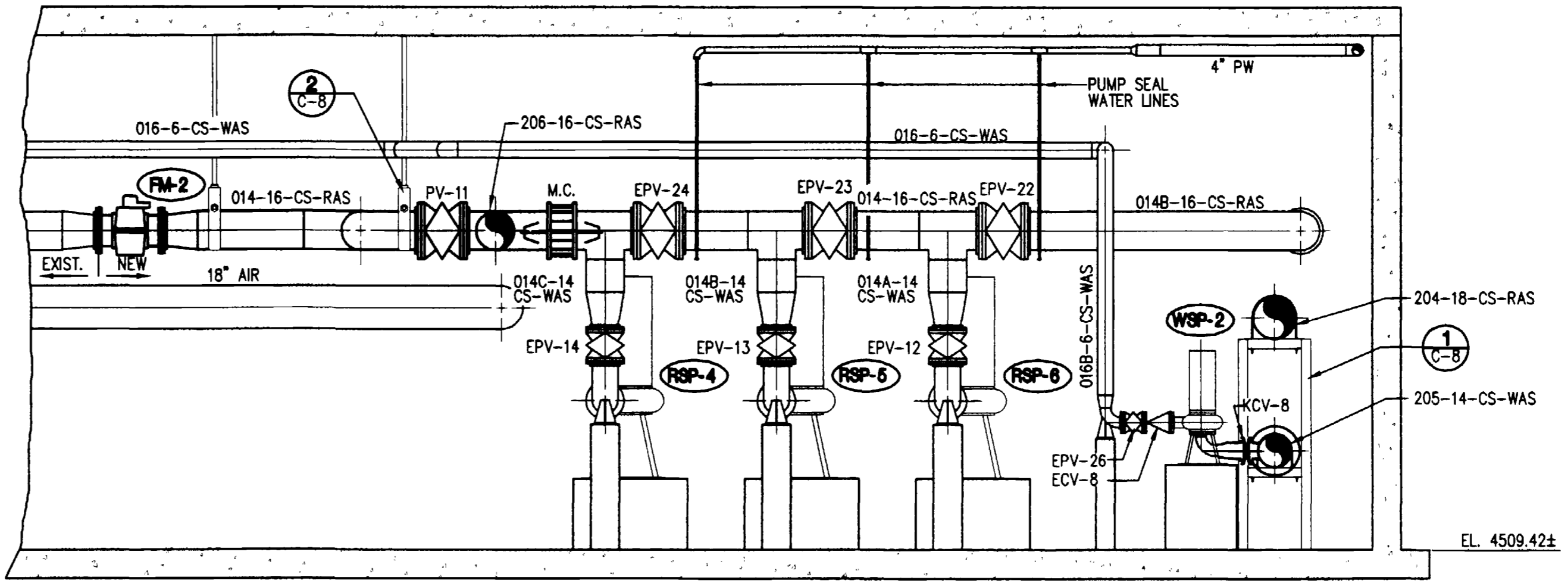
- GENERAL NOTES:**
1. INSTALL NEW FLOW METER PER MANUFACTURES RECOMMENDATIONS.
 2. INSTALL VALVES PER MANUFACTURES RECOMMENDATIONS AND PROJECT SPECIFICATIONS.
 3. REFERENCE DRAWINGS C-6A AND C-6B FOR PIPING DIMENSIONS, ELEVATIONS AND LAYOUT.



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



SECTION B
1/4"=1'-0"
WEST SIDE TYPICAL
EAST SIDE SIMILAR AND OPPOSITE HAND



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

NO.	DATE	REVISIONS	BY
6			
5			
4			
3			
2			
1			
0			

PROJECT ENGINEER/ARCHITECT	WLU	2/00
PROJECT MANAGER	JPN	2/00
DRAWN BY	SJH	2/00
SCALE	1/4"=1'-0"	
FIRST ISSUE DATE	6/14/00	
ISSUED FOR BIDDING	5/23/00	
ISSUED FOR CONSTRUCTION	6/14/00	
RECORD DRAWING	5/01	
J.P.M.	5/01	

SEAR-BROWN

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PROJECT: PERSIGO WASTEWATER TREATMENT PLANT
 FINAL CLARIFIER ADDITION

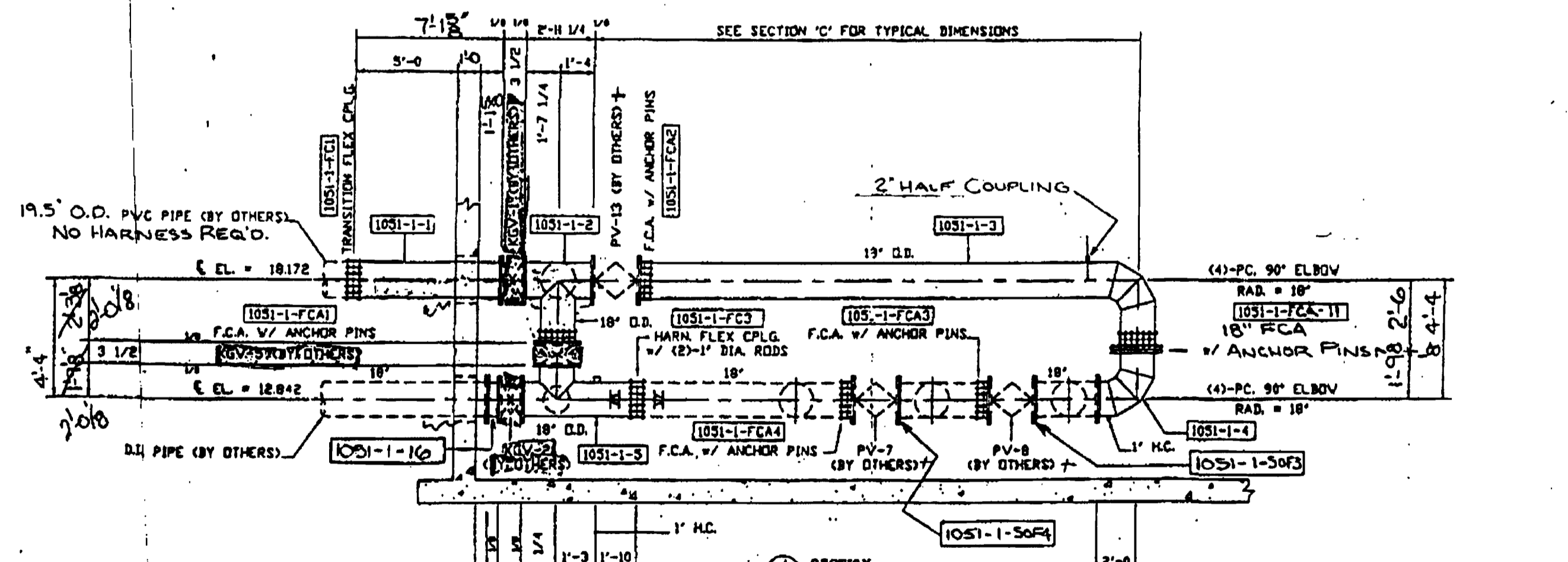
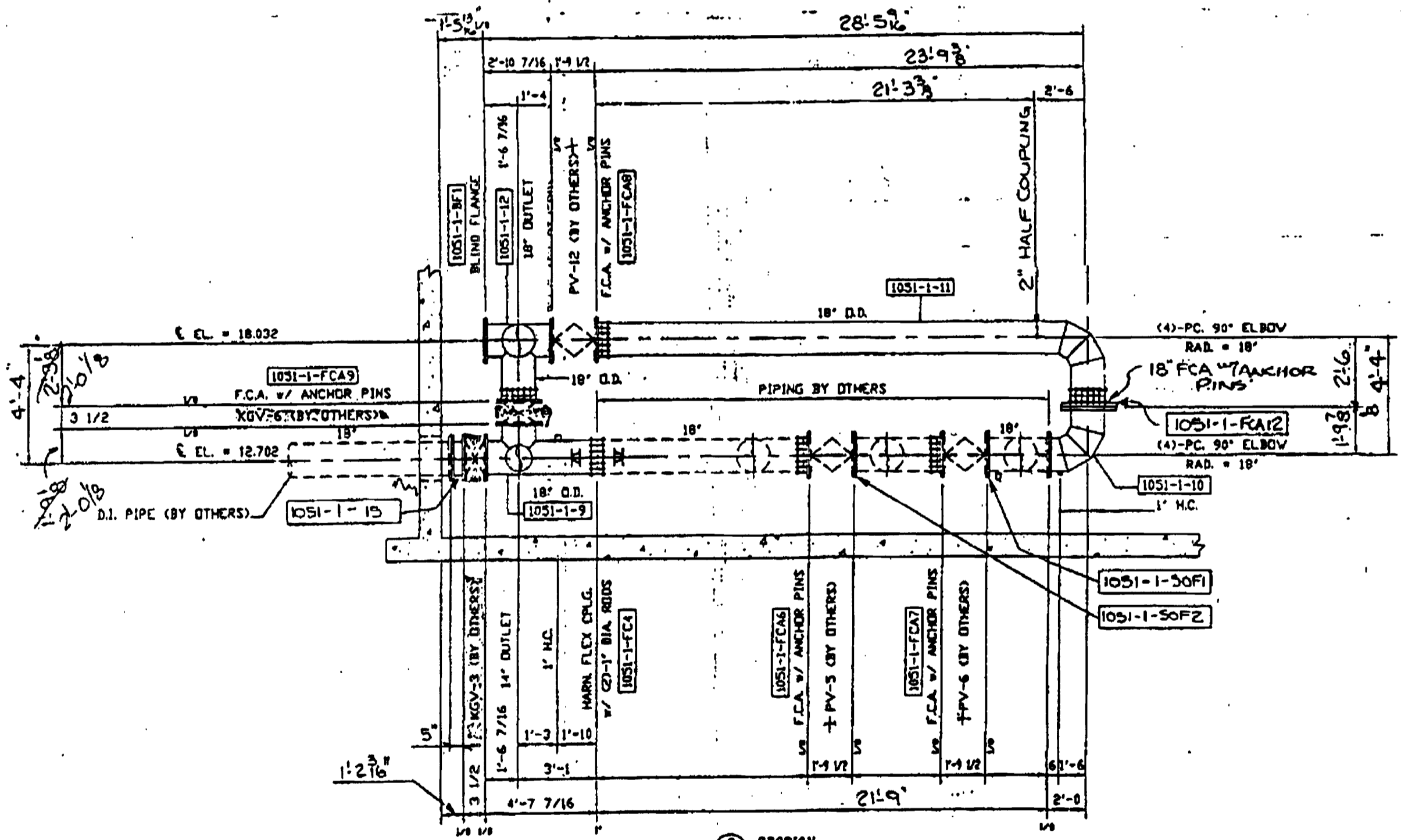
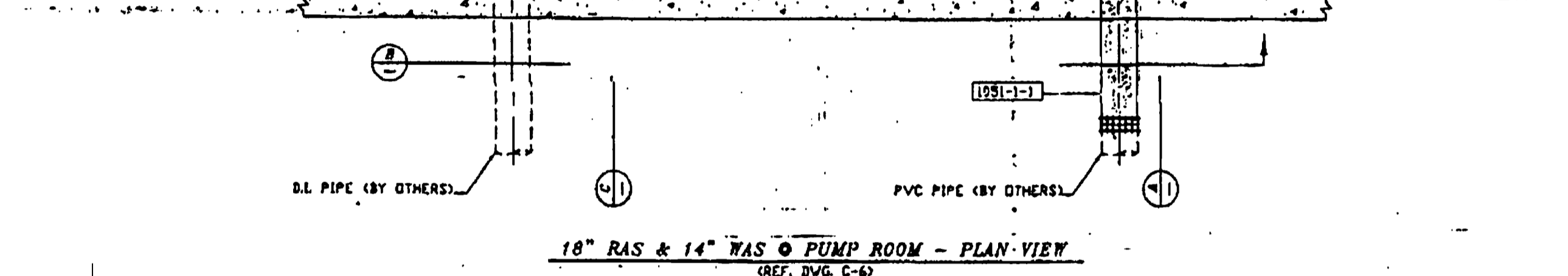
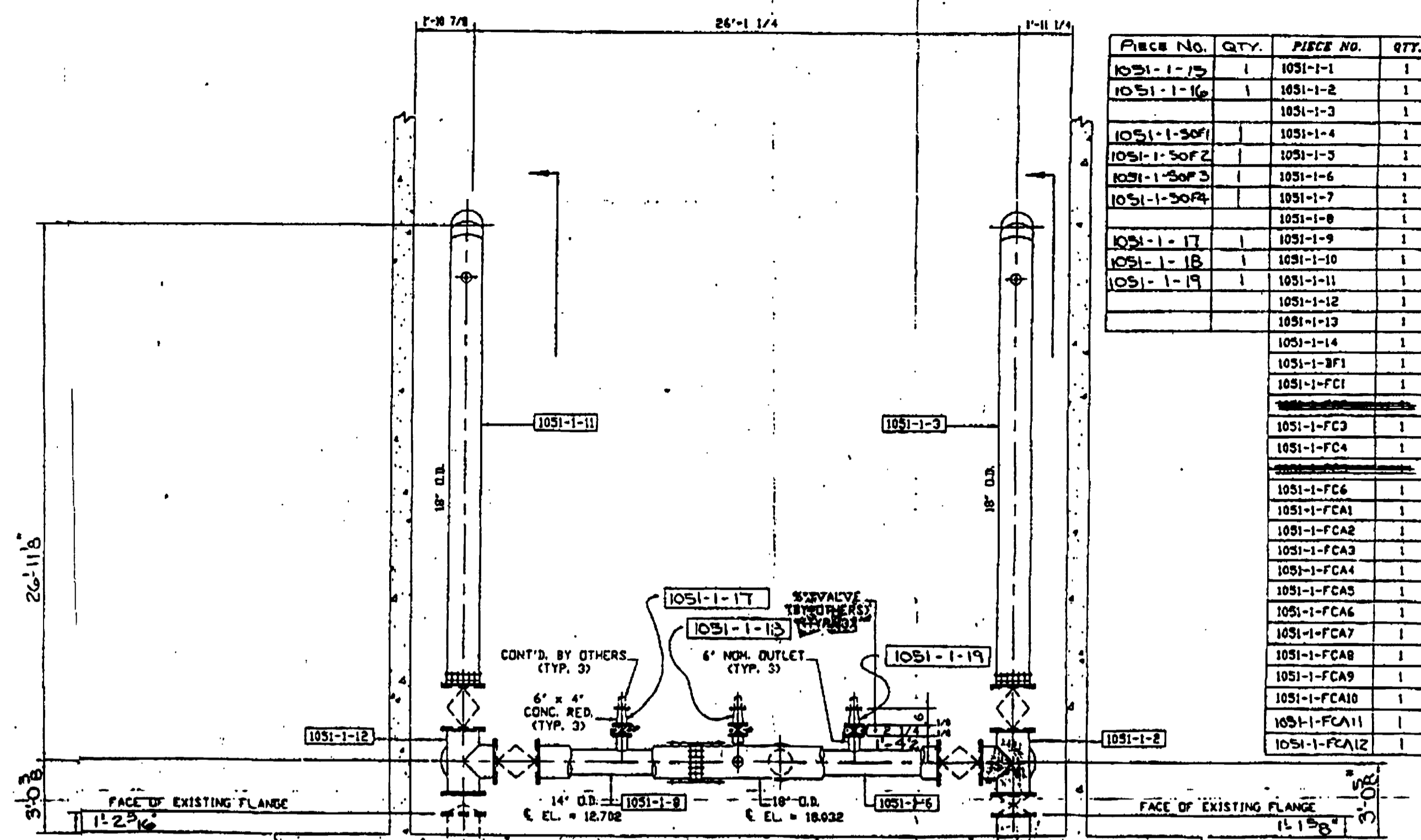
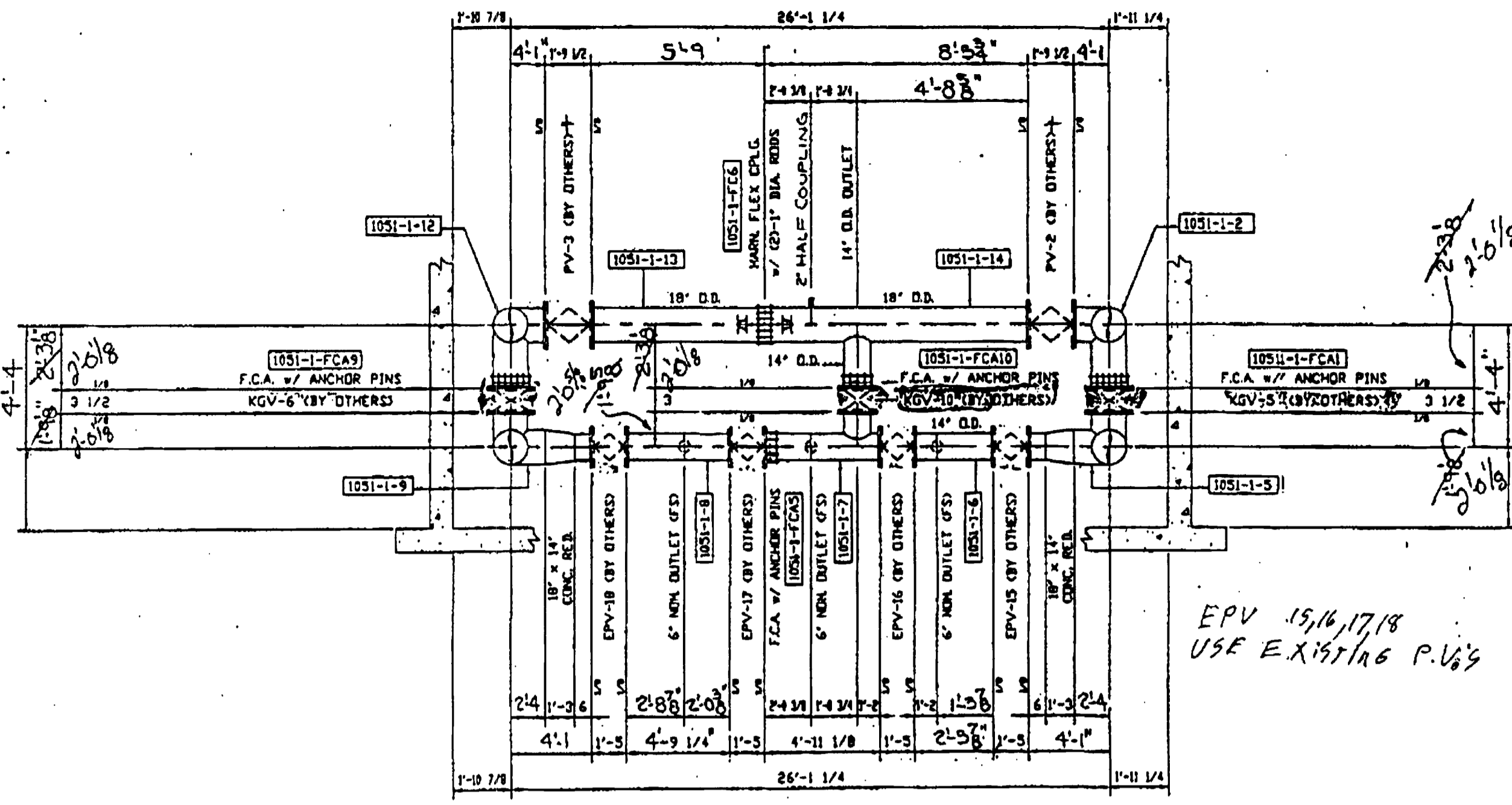
TITLE OF DRAWING: RAS/WAS PUMP ROOM PLAN AND SECTIONS

PROJECT NO. **906-001**
 DRAWING NO. **C-6**

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 DRAWING ALTERATION


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ANY LICENSEE WHO ALTERS THIS DOCUMENT IS REQUIRED BY LAW TO AFFIX HIS OR HER SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS OR HER SIGNATURE AND SPECIFIC DESCRIPTION OF THE ALTERATIONS.



PIECE NO.	QTY.	PIECE NO.	QTY.
1051-1-15	1	1051-1-1	1
1051-1-16	1	1051-1-2	1
		1051-1-3	1
1051-1-50F1		1051-1-4	1
1051-1-50F2		1051-1-5	1
1051-1-50F3		1051-1-6	1
1051-1-50F4		1051-1-7	1
		1051-1-8	1
1051-1-17	1	1051-1-9	1
1051-1-18	1	1051-1-10	1
1051-1-19	1	1051-1-11	1
		1051-1-12	1
		1051-1-13	1
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		1051-1-FC1	1
		1051-1-FC2	1
		1051-1-FC3	1
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		1051-1-FC10	1
		1051-1-FC11	1
		1051-1-FC12	1

MATERIAL SPECIFICATIONS		TEST PRESSURE: 150 PSI
FLANGE: AWWA C207 CLASS 'D' RING TYPE	FLEX CPLG: BAKER SERIES 200 (w/ HARNESS IF REQ'D)	
PIPE: AWWA C200	FLG CPLG: BAKER SERIES 602 (w/ ANCHOR PINS)	
PIPE WALL THK: 1/4"	COATING: EXPOSED = INEMEC SERIES 37-77 PRIMER (2-4 MILS)	
PLATE: ASTM A36	BURIED = AWWA C214 TAPE WRAP (80 MILS)	
FITTINGS: AWWA C208	LINING: AWWA C205 CEMENT MORTAR (5/16" THK.)	
	WELD PROCEDURE SPEC: MANUAL = WPS NO. 83-238	
	AUTOMATIC = WPS NO. SUB #10	



MID AMERICA
PIPE FABRICATION & SUPPLY CO., INC. SCAMMON, KS. 66773
PHONE: (316)-827-6121 FAX: (316)-827-6125

CONTRACTOR: MOLTZ CONSTRUCTION INC.	DRAWN BY: C. DALEY	DATE: 6-28-00	TITLE: PERSIGO WASTEWATER TREATMENT PLANT COLORADO	SCALE: NONE
ENGINEER: THE SEAR-BROWN GROUP	CHECKED BY: MILLION	SYSTEM: AS BUILT - PUMP ROOM PIPING 18" RAS & 14" WAS @ PUMP ROOM	SHEET NO. 1051-1	

PROJECT	PROJECT NO.	J.P.M.	J.P.M.
PERSIGO WASTEWATER TREATMENT PLANT	906-001	5/01	6/14/00
FINAL CLARIFIER ADDITION	DRAWING NO.	ISSUED FOR CONSTRUCTION	5/23/00
	C-6A	ISSUED FOR BIDDING	6/14/00
		REVISIONS	DATE
		BY	

PROJECT ENGINEER/ARCHITECT	PROJECT MANAGER	DRAWN BY	SCALE	FIRST ISSUE DATE
WJL	JPM		1/4"=1'-0"	6/14/00
2/00	2/00	2/00		

REVISIONS	DATE	BY
6		
5		
4		
3		
2		
1		



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PROJECT	PROJECT NO.	J.P.M.	J.P.M.
PERSIGO WASTEWATER TREATMENT PLANT	906-001	5/01	6/14/00
FINAL CLARIFIER ADDITION	DRAWING NO.	ISSUED FOR CONSTRUCTION	5/23/00
	C-6A	ISSUED FOR BIDDING	6/14/00
		REVISIONS	DATE
		BY	

PROJECT: PERSIGO WASTEWATER TREATMENT PLANT
FINAL CLARIFIER ADDITION

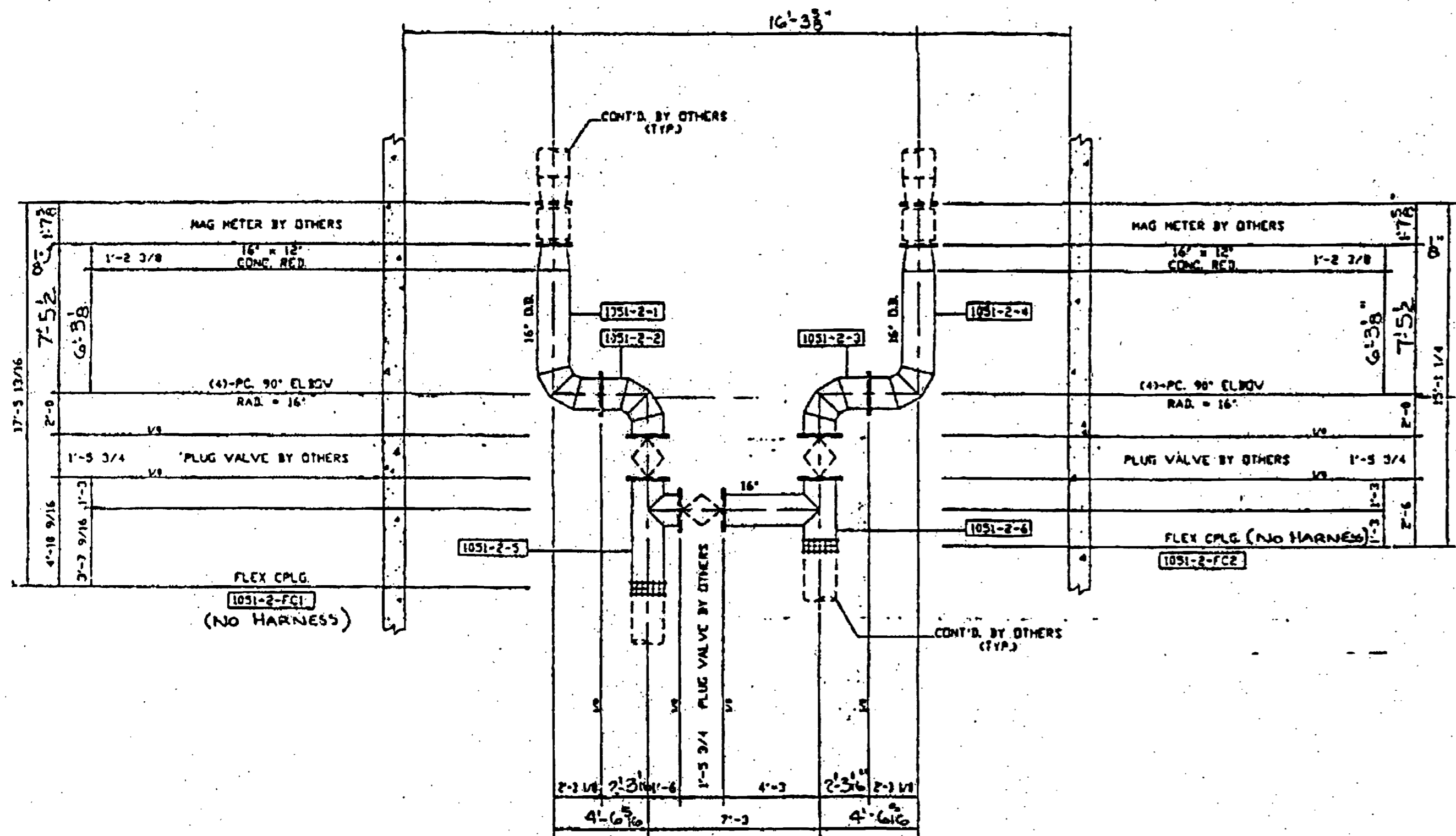
TITLE OF DRAWING: RAS/WAS PUMP ROOM PIPE DRAWINGS

PROJECT NO.: 906-001
DRAWING NO.: C-6A

RECORD DRAWING

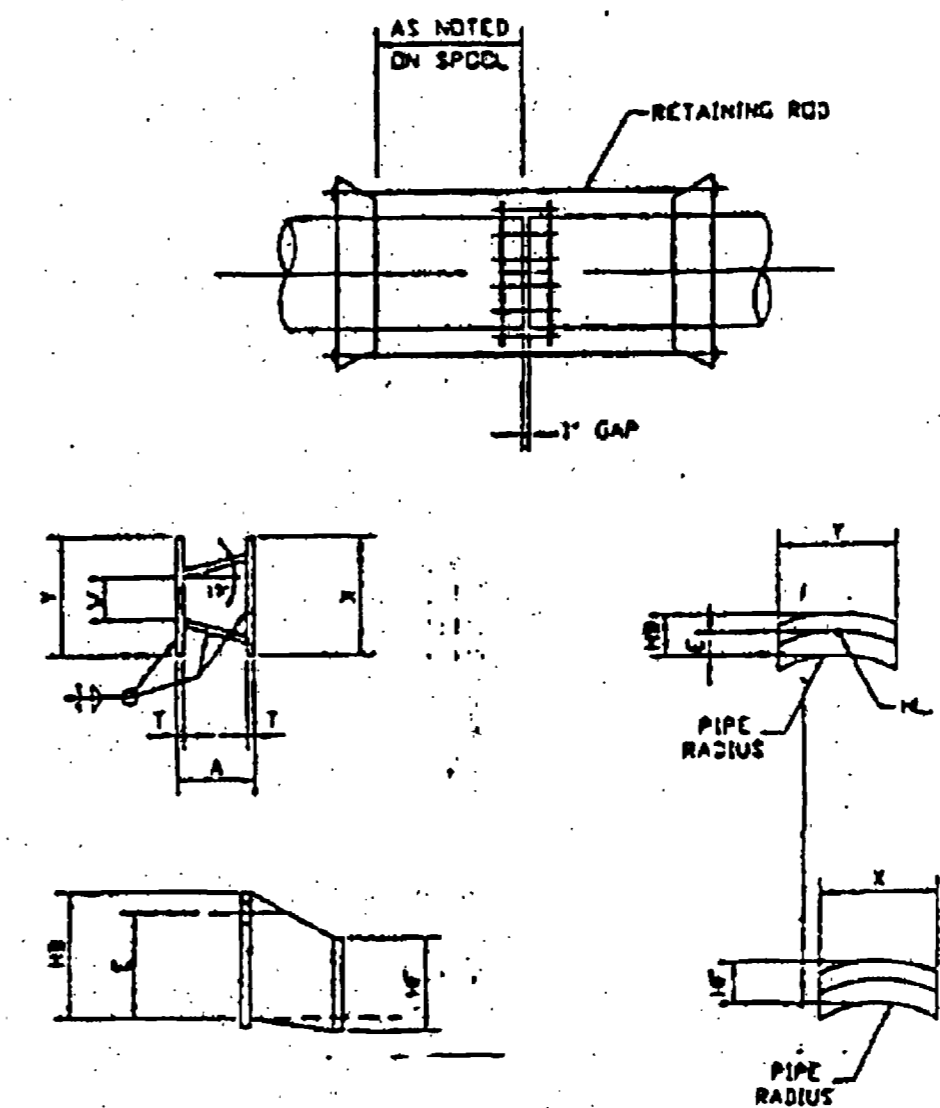
NOTE: THIS DRAWING IS A SCANNED COPY OF THE ORIGINAL SUPPLIED BY MID AMERICA PIPE FABRICATION AND SUPPLY COMPANY THE TEXT INFORMATION AND DIMENSION SHOWN ARE AN ACCURATE REPRESENTATION OF THE ORIGINAL, HOWEVER THIS DRAWING IS NOT TO SCALE. THIS DRAWING IS PROVIDED FOR REFERENCE ONLY.

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16" RAS PUMP ROOM - PLAN VIEW
(REF. BVC. C-6)

PIECE NO.	QTY.
1051-2-1	1
1051-2-2	1
1051-2-3	1
1051-2-4	1
1051-2-5	1
1051-2-6	1
1051-2-FC1	1
1051-2-FC2	1



PIPE SIZE	STUD #	T	A	Y	F	X	RB	S	HP	BL #	STUDS
16"	1	1/2	3 3/4	RING	1 3/4	RING	4 1/2	3 1/4	2	1 1/8	2

FLEX COUPLING HARNESS DETAIL
(REF. AVVA M-11 THIRD EDITION)

NOTES: (1) CONTRACTOR TO VERIFY ALL VALVES AND FLOW METERS HAVE FLANGED CONNECTIONS.
(2) CONTRACTOR TO VERIFY USE OF G.D. PIPE.
(3) CONTRACTOR TO FURNISH AND VERIFY ALL DIMENSIONS

MATERIAL SPECIFICATIONS

FLANGE: AVVA C207 CLASS 'D' RING TYPE
PIPE: AVVA C200
PIPE WALL THK: 1/4"
PLATE: ASTM A36
FITTINGS: AVVA C208

FLEX CPLG: BAKER SERIES 200 (w/ HARNESS IF REQ'D)
FLG. CPLG: BAKER SERIES 602 (w/ ANCHOR PINS)
COATING: EXPOSED = TNEEC SERIES 37-77 PRIMER (2-4 MILS)
BURIED = AVVA C214 TAPE WRAP (80 MILS)
LINING: AVVA C205 CEMENT MORTAR (5/16" THK.)
WELD PROCEDURE SPEC: MANUAL = WPS NO. 83-239
AUTOMATIC = WPS NO. SUB 810

TEST PRESSURE: 150 PSI



MID AMERICA
PIPE FABRICATION & SUPPLY CO., INC. SCAMMON, KS. 66773
PHONE: (316)-827-6181 FAX: (316)-827-6125

NOTE: All dimensions shown on this drawing reflect the project requirements as built and are not intended to be used for fabrication of pipe, fittings, or valves. It is the contractor's responsibility to verify all dimensions in field prior to fabrication, and such approval shall constitute the fabricator's dimensional measurements to MID AMERICA PIPE FAB. CO. Fabrication tolerance shall be in accordance with ASME standards.

CONTRACTOR:	MOITZ CONSTRUCTION INC.	DRAWN BY:	C. BULEY	DATE:	6-28-00	TITLE:	PERSIGO WASTEWATER TREATMENT PLANT - COLORADO	SCALE:	AS SHOWN
ENGINEER:	THE SEAR-BROWN GROUP	CHECKED BY:	MILLION	SYSTEM:	AS BUILT - PUMP ROOM PIPING / DETAILS	SHEET NO.:	C-6B		

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RECORD DRAWING

PROJECT: PERSIGO WASTEWATER TREATMENT PLANT
FINAL CLARIFIER ADDITION

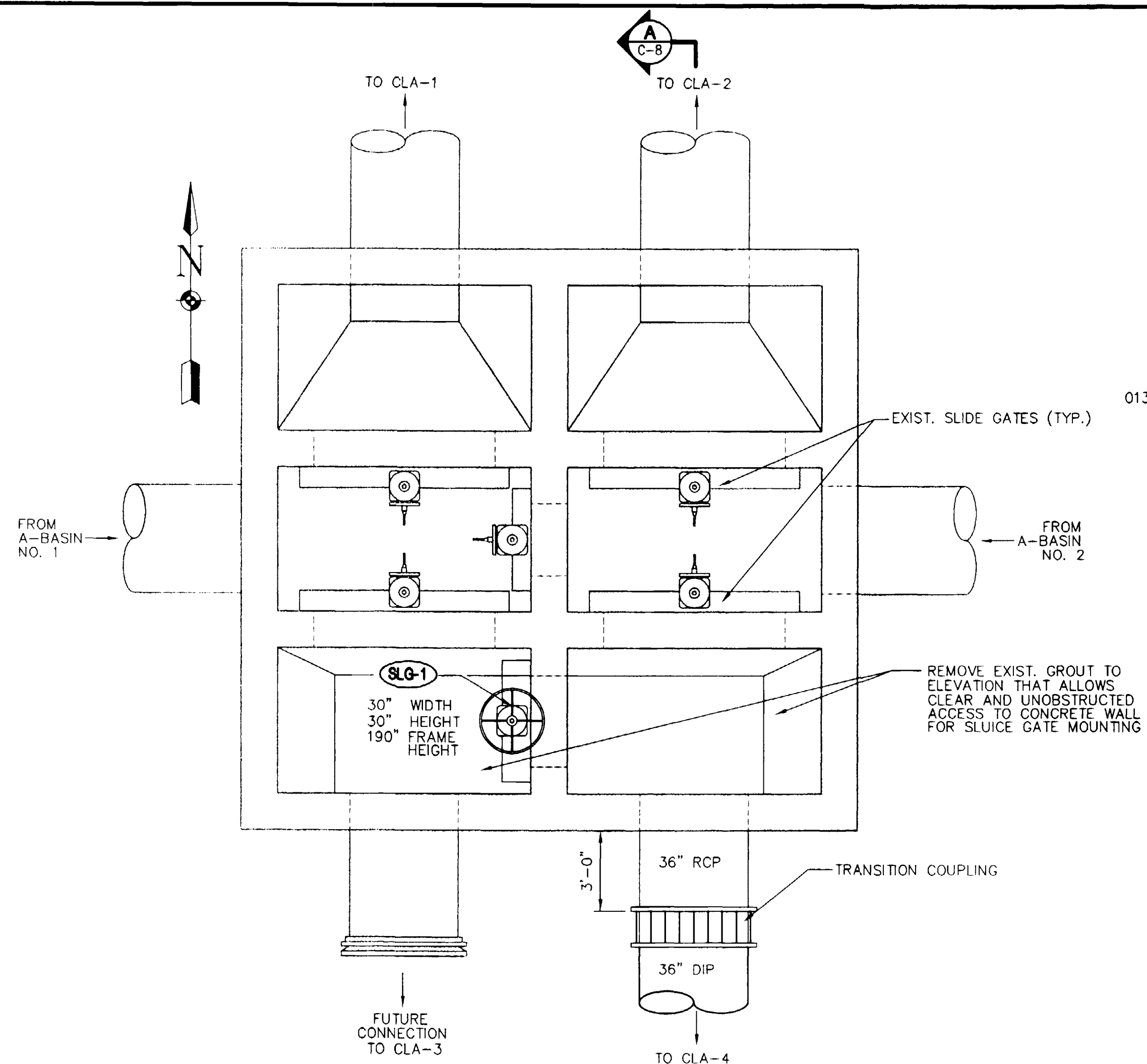
TITLE OF DRAWING: RAS/WAS PUMP ROOM PIPE DRAWINGS

PROJECT NO. 906-001
DRAWING NO. C-6B

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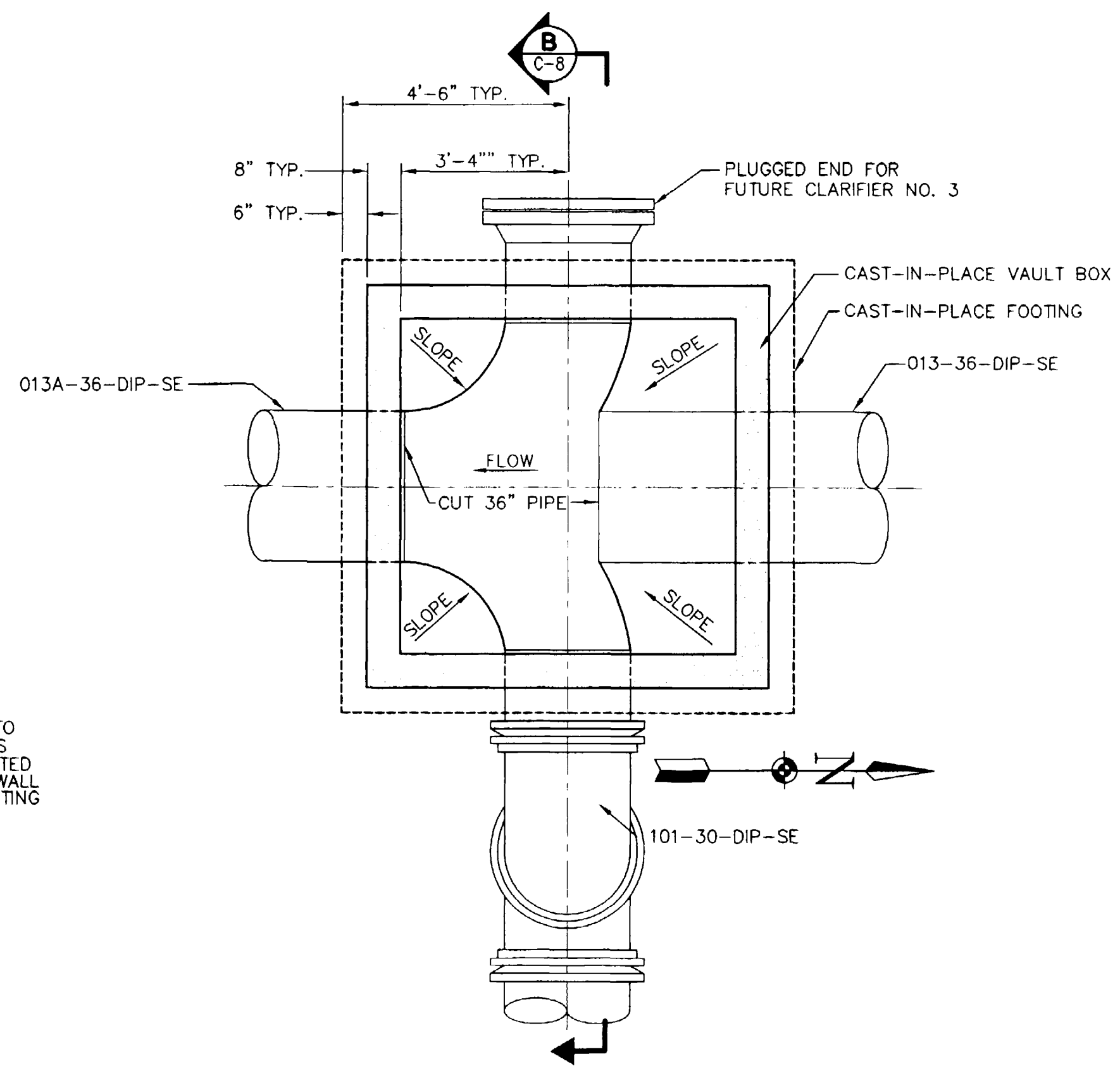
NO.	DATE	REVISIONS	BY
6			
5			
4			
3			
2	5/01	RECORD DRAWING	J.P.M.
1	6/14/00	ISSUED FOR CONSTRUCTION	J.P.M.
0	5/23/00	ISSUED FOR BIDDING	J.P.M.

PROJECT ENGINEER/ARCHITECT	2/00
PROJECT MANAGER	2/00
DRAWN BY	2/00
SCALE	1/4" = 1'-0"
FIRST ISSUE DATE	6/14/00



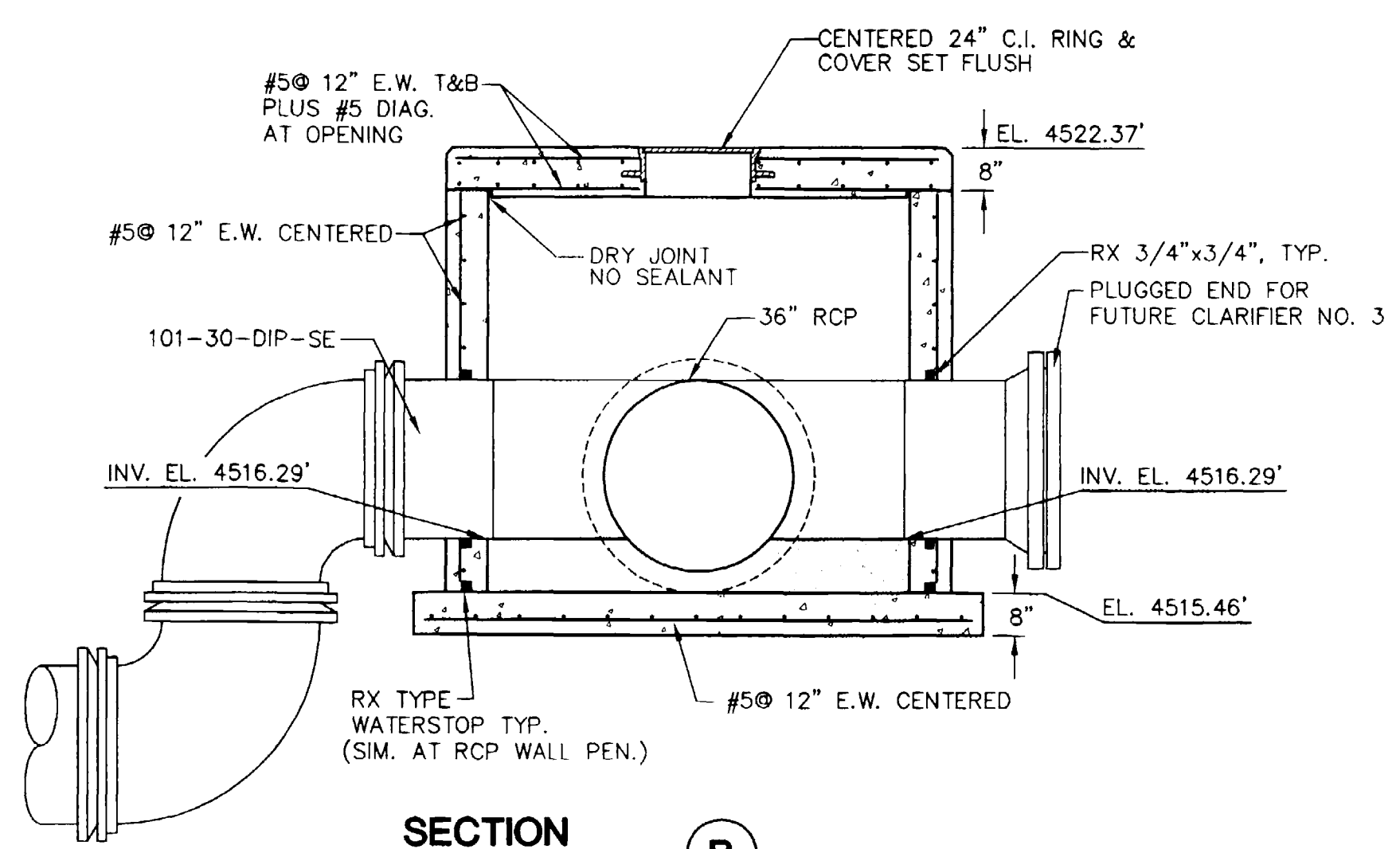
CONTROL STRUCTURE NO. 3 IMPROVEMENT PLAN

3/8" = 1'-0"



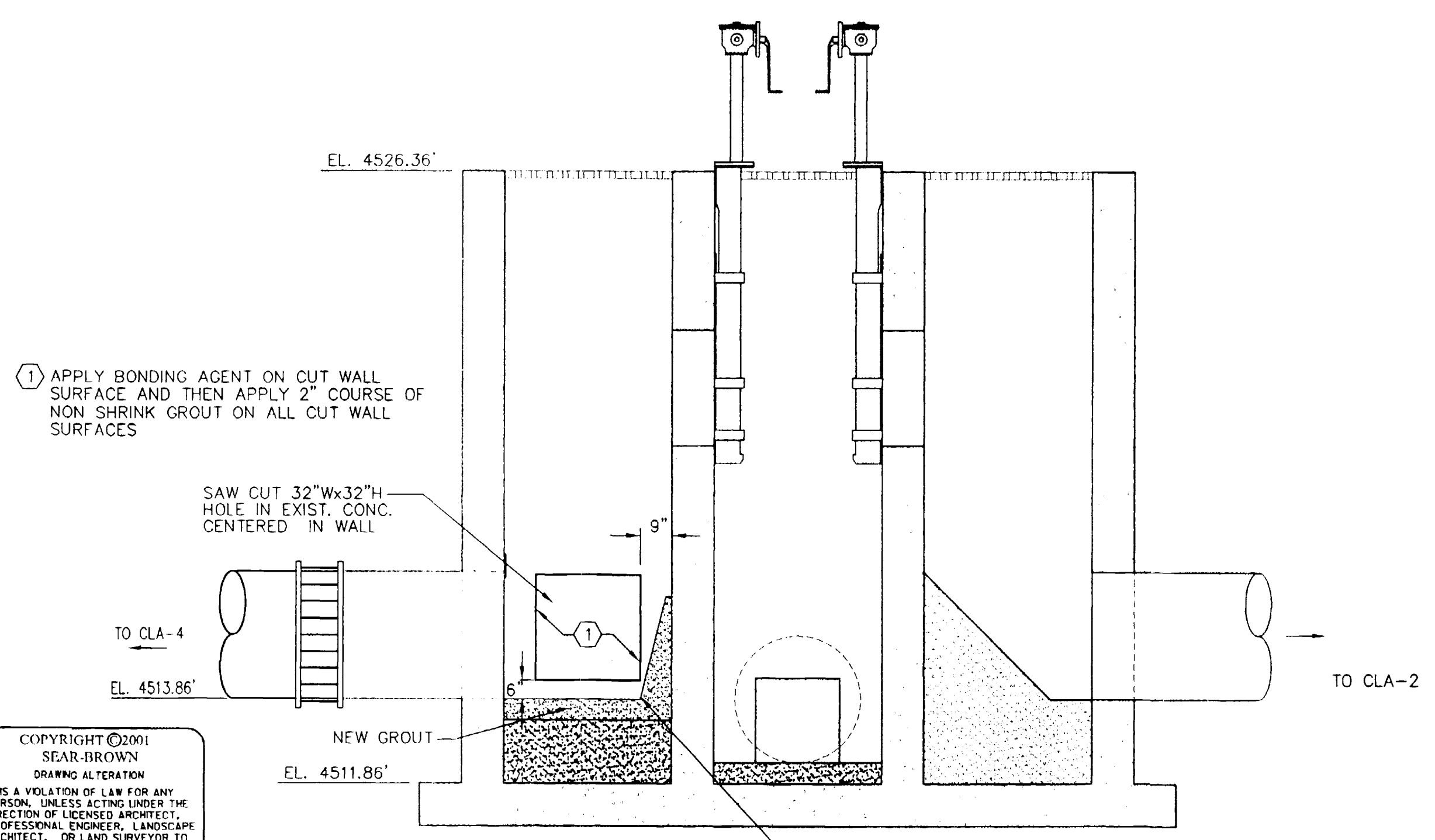
MANHOLE EF-1 BASE PLAN

N.T.S.



SECTION B

N.T.S.



SECTION A

3/8" = 1'-0"

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NO.	REVISIONS	DATE	BY
6			
5			
4			
3	RECORD DRAWINGS	5/01	J.P.M.
2	ISSUED FOR CONSTRUCTION	6/14/00	J.P.M.
1	ISSUED FOR BIDDING	5/23/00	J.P.M.
0			

PROJECT ENGINEER/ARCHITECT	2/00
PROJECT MANAGER	2/00
PROJECT MANAGER	J.P.M.
DRAWN BY	2/00
SCALE	AS SHOWN
FIRST ISSUE DATE	6/14/00

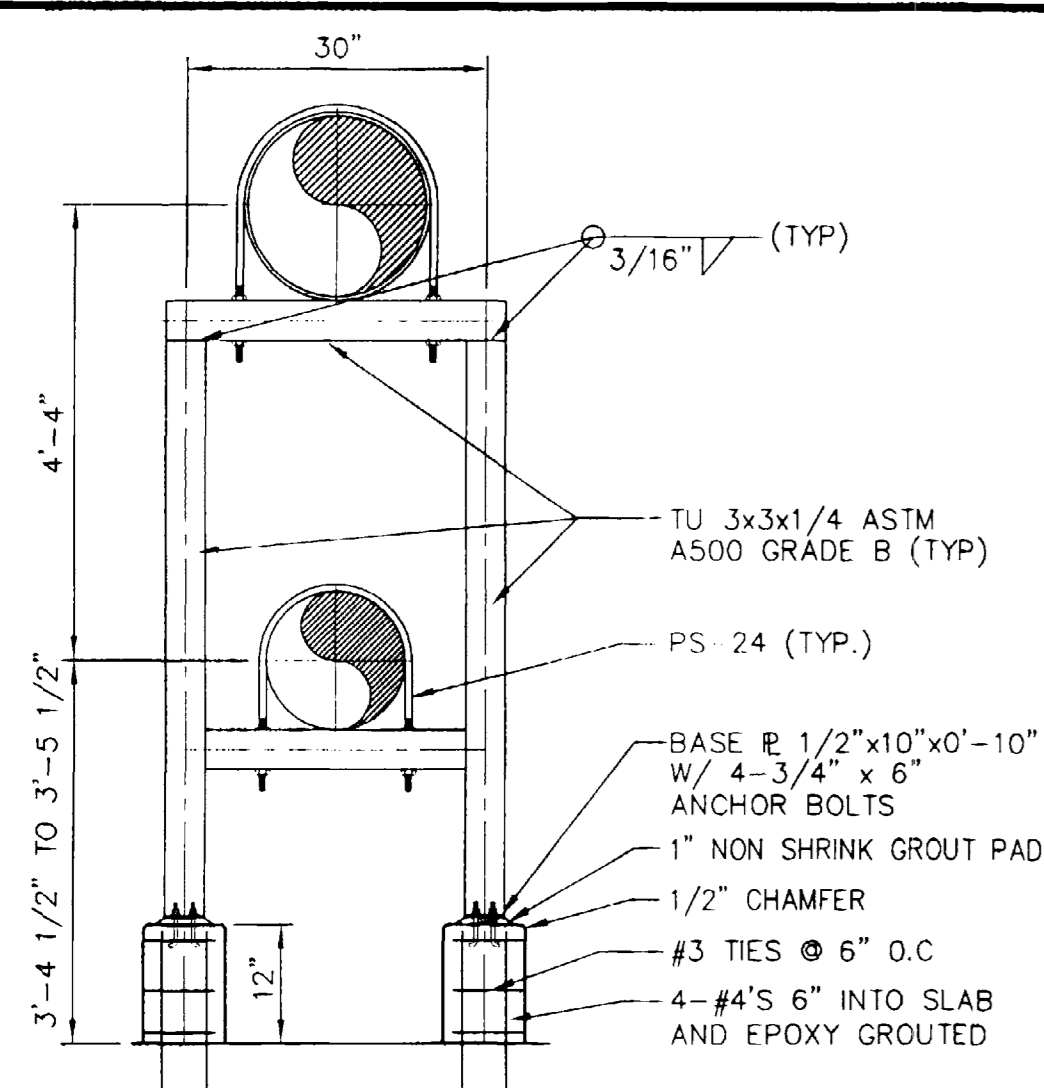
PROJECT	PERSIGO WASTEWATER TREATMENT PLANT
PROJECT	FINAL CLARIFIER ADDITION
TITLE OF DRAWING	CLARIFIER SPLITTER BOX & MH PLAN AND SECTIONS

SEAR-BROWN

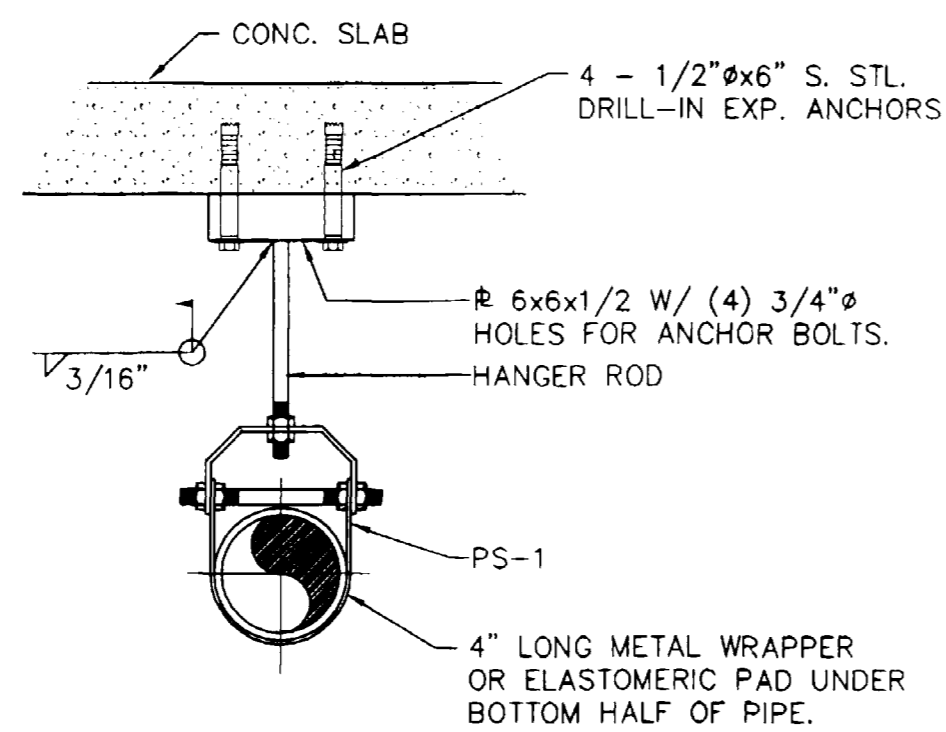
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PROJECT NO.	906-001
DRAWING NO.	C-7

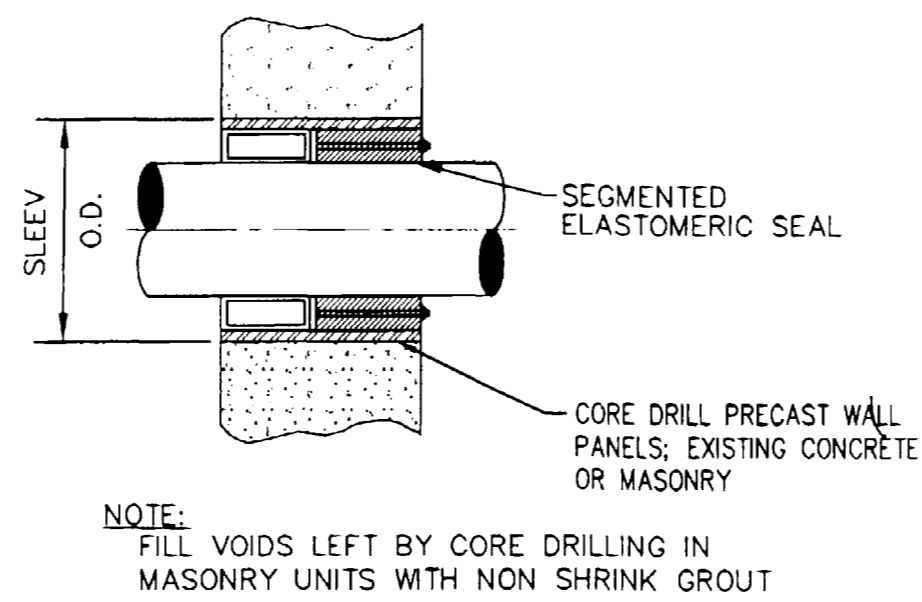
RECORD DRAWING



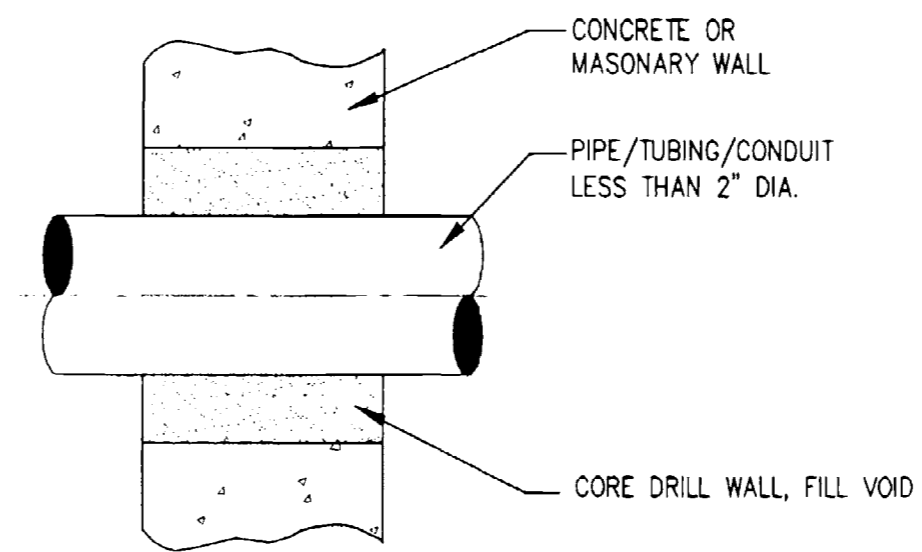
DETAIL 1
PIPE RACK



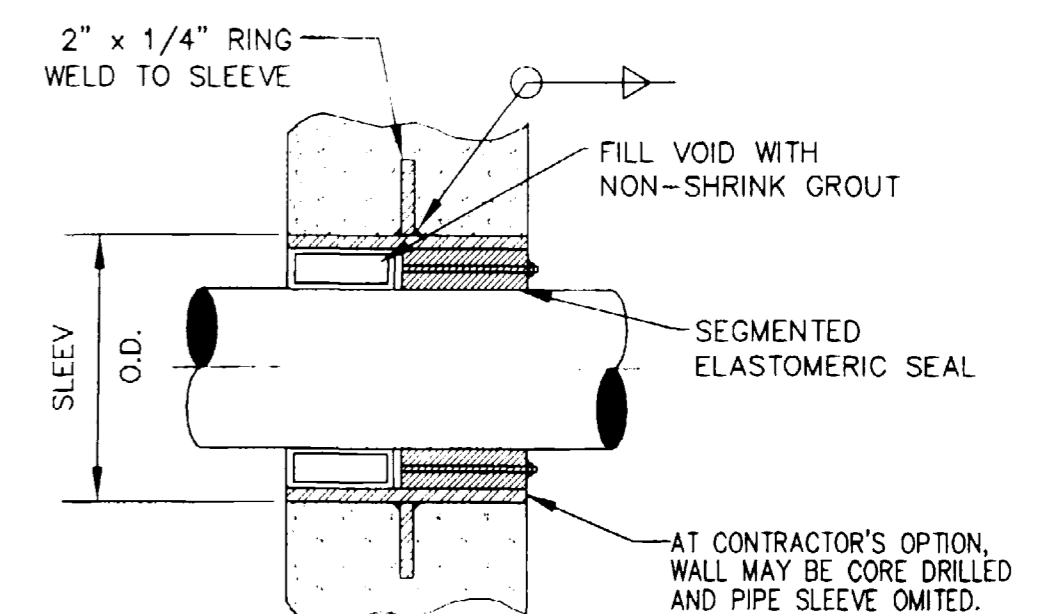
DETAIL 2
CEILING HANGER



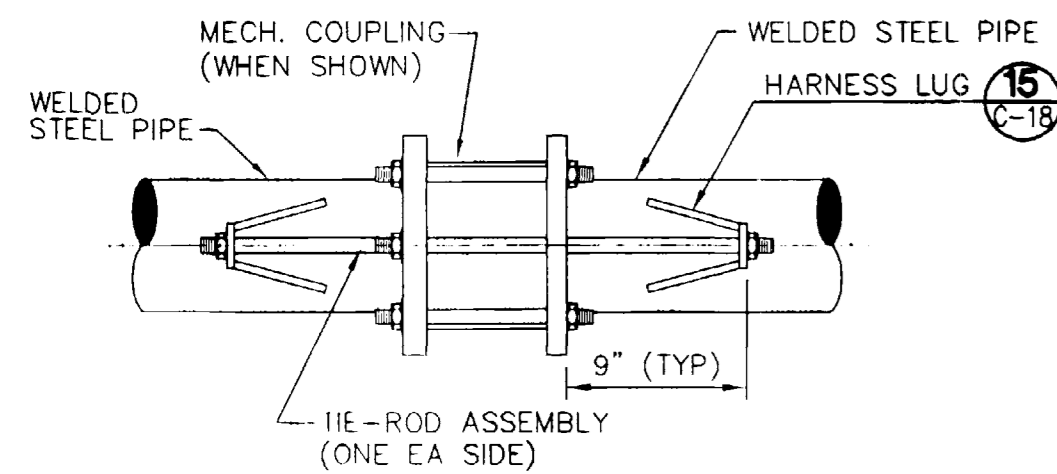
DETAIL 3
EXIST. CONCRETE OR MASONRY



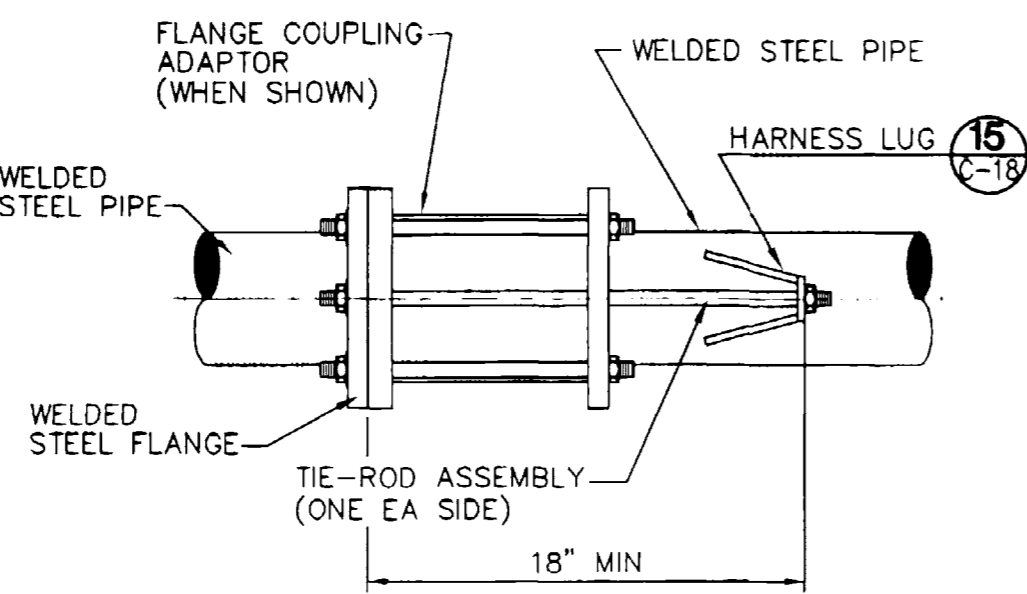
DETAIL 4
SMALL DIA. PENETRATION



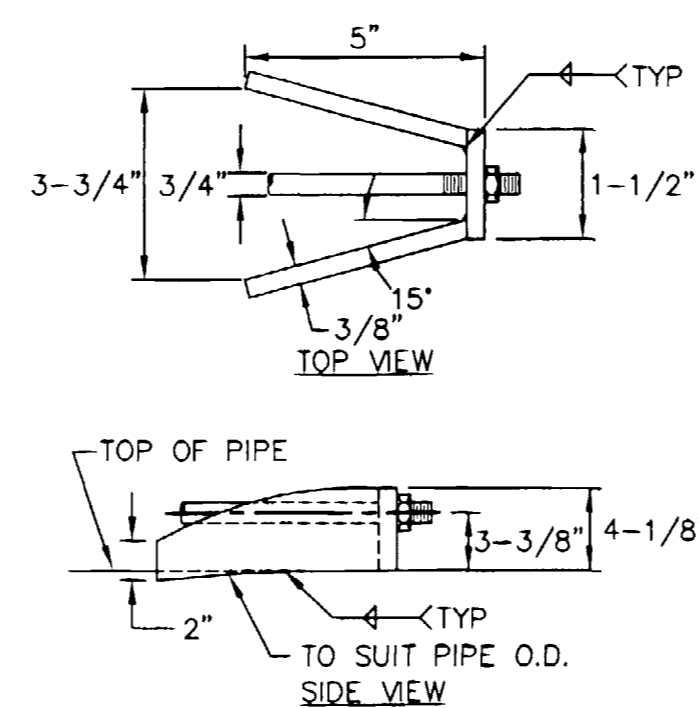
DETAIL 5
NEW WALL PENETRATION



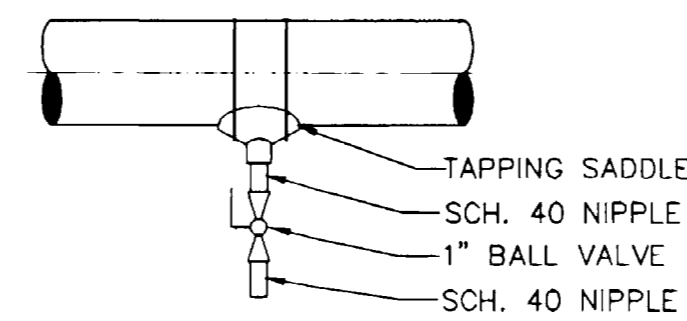
DETAIL 6
MECH. COUPLING RESTRAINT



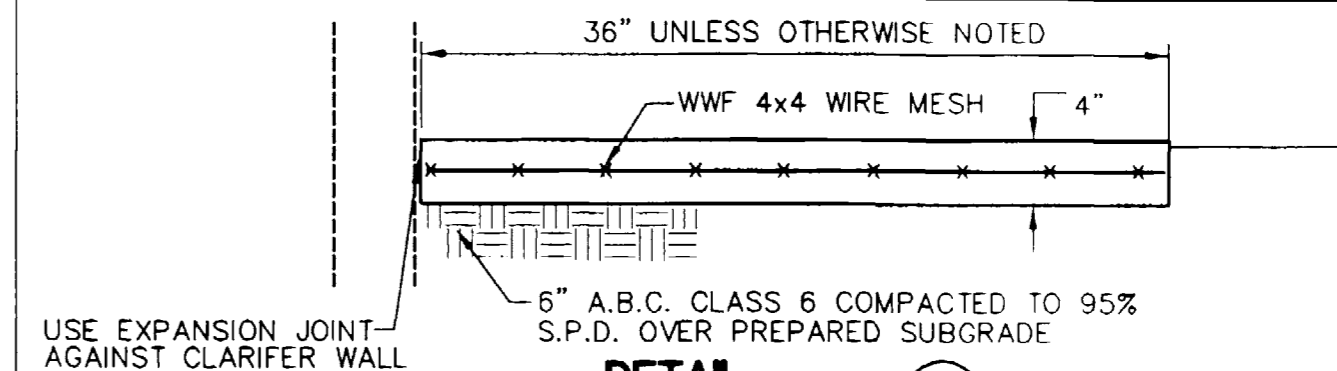
DETAIL 7
FLANGED COUPLING RESTRAINT



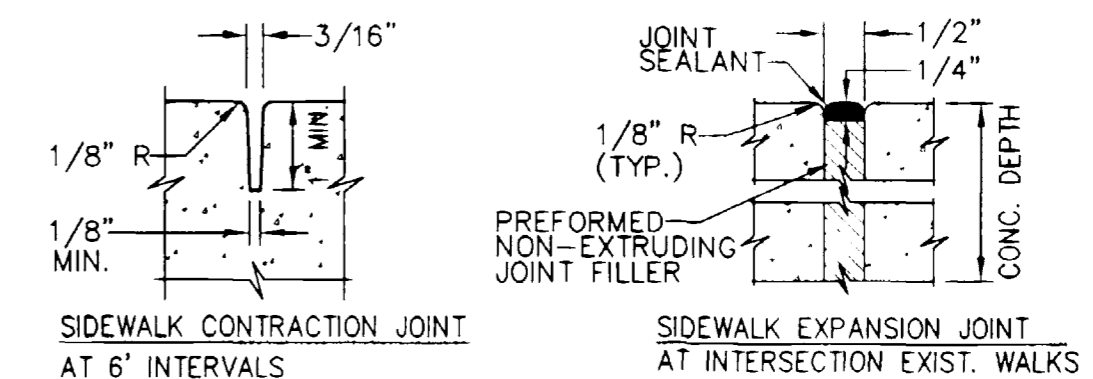
DETAIL 8
HARNESS LUG



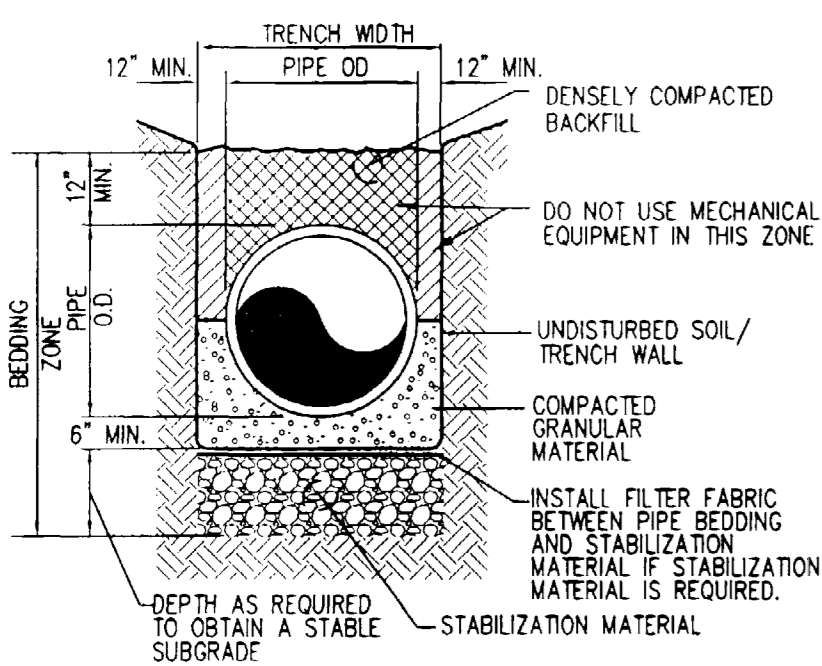
DETAIL 9
SAMPLE TAP



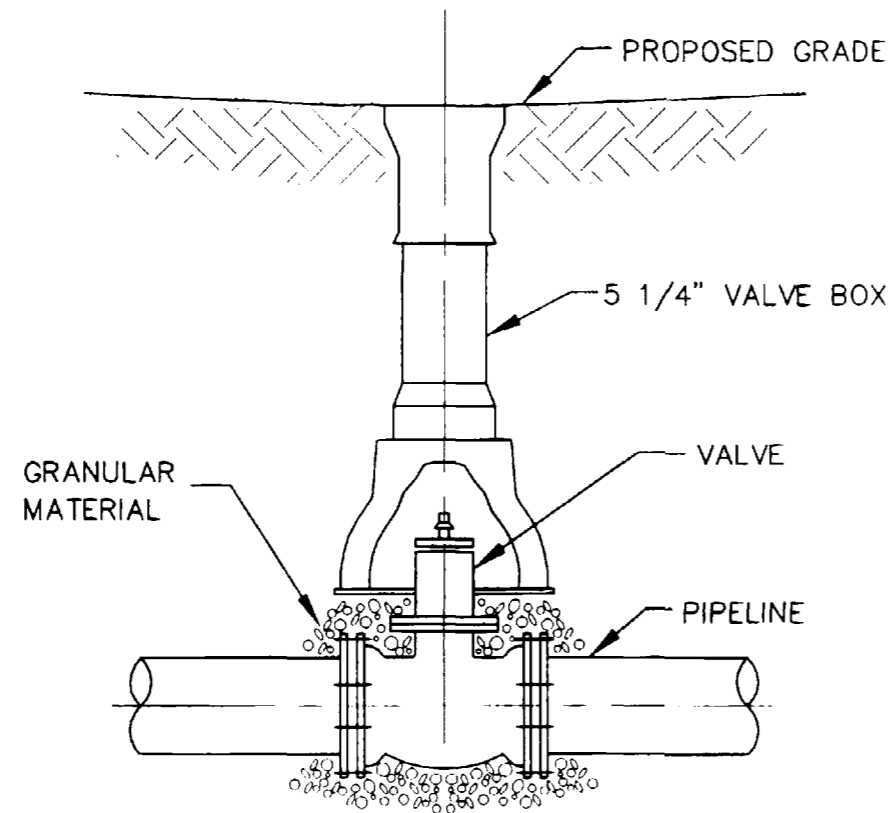
DETAIL 10
CONCRETE SIDEWALK



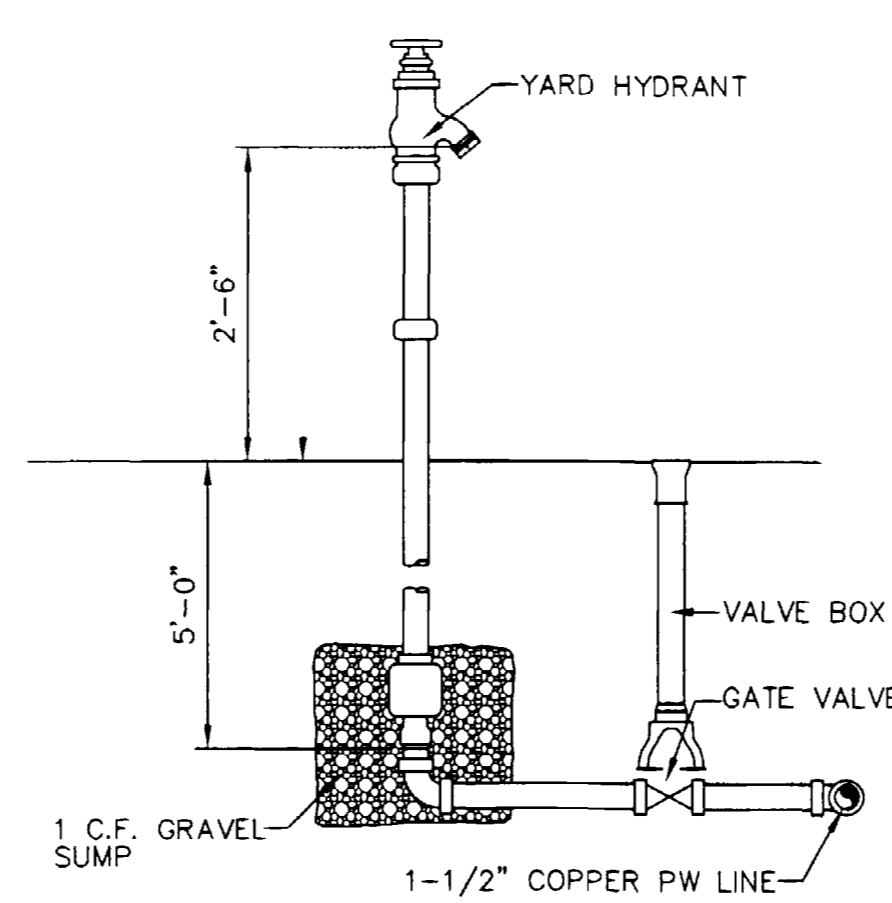
DETAIL 11
SIDEWALK JOINTS



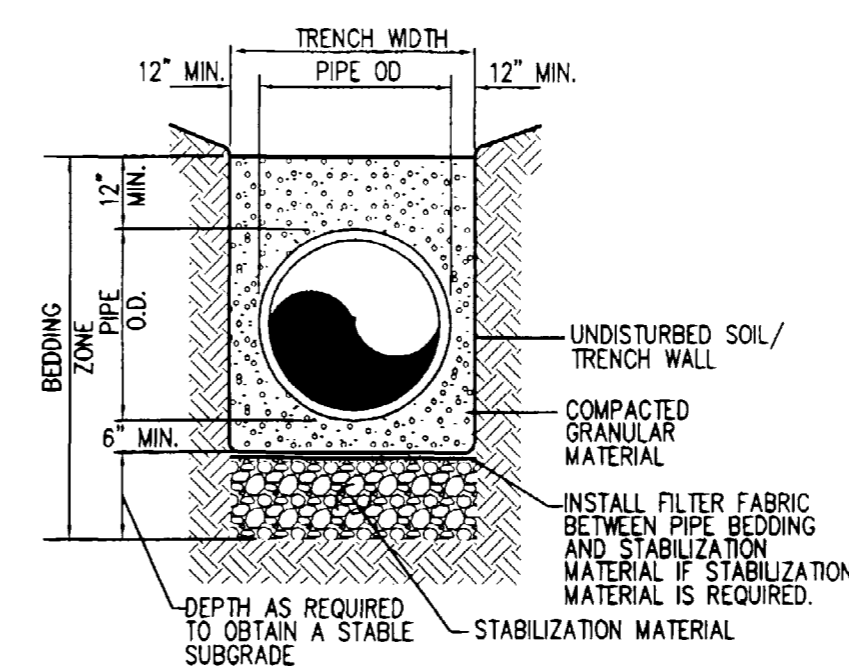
DETAIL 12
DIP PIPE BEDDING



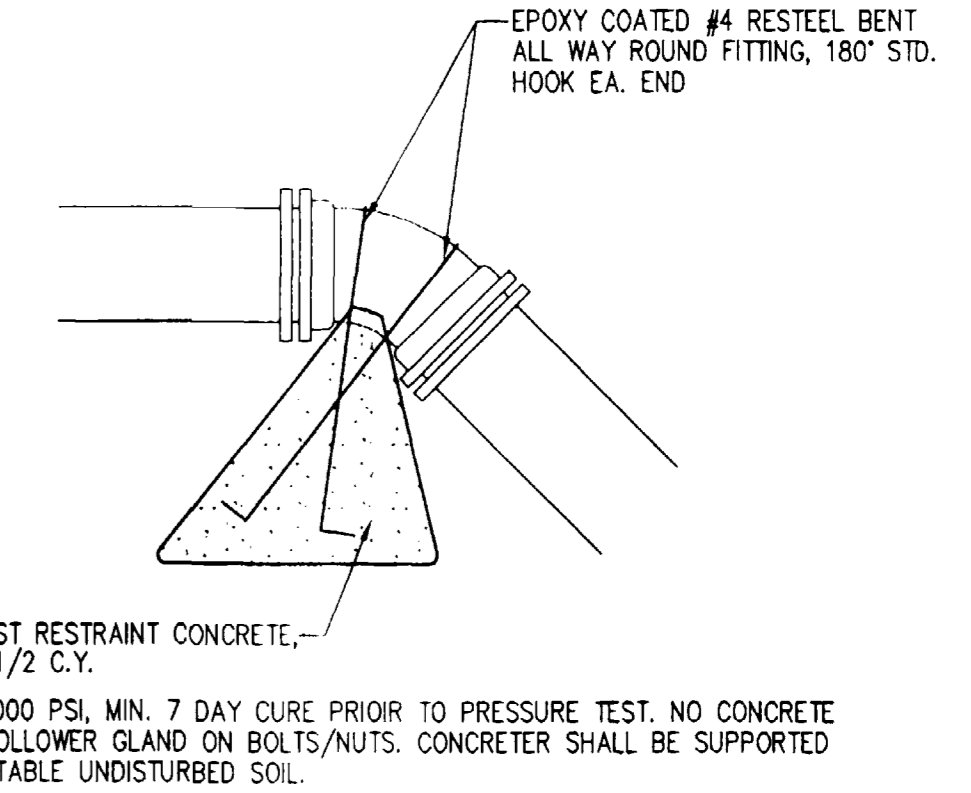
DETAIL 13
VALVE BOX



DETAIL 14
YARD HYDRANT



DETAIL 15
PVC/STEEL PIPE BEDDING



DETAIL 16
CONCRETE THRUST RESTRAINT

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NO.	REVISIONS	DATE	BY
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PROJECT ENGINEER/ARCHITECT	2/00
PROJECT MANAGER	2/00
RECORD DRAWING	5/01
ISSUED FOR CONSTRUCTION	6/14/00
ISSUED FOR BIDDING	5/23/00
FIRST ISSUE DATE	6/14/00

PROJECT NO.	906-001
DRAWING NO.	C-8

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PROJECT
PERSIGO WASTEWATER TREATMENT PLANT
FINAL CLARIFIER ADDITION
TITLE OF DRAWING
PIPE PENETRATION, SUPPORT, AND MISCELLANEOUS DETAILS

PROJECT NO.
906-001
DRAWING NO.
C-8

EQUIPMENT SCHEDULE

TAG	DESCRIPTION	LOCATION
CLA-4	CLARIFIER NO. 4 EQUIPMENT	CLARIFIER NO. 4
DPS-1	DRAIN PUMP STATION	CLARIFIER NO. 4 DRAIN WETWELL
FM-1	MAGNETIC FLOW METER	RAS/WAS PUMP ROOM REPLACE FE-90
FM-2	MAGNETIC FLOW METER	RAS/WAS PUMP ROOM REPLACE FE-95
FM-3	MAGNETIC FLOW METER	RAS/WAS PUMP ROOM REPLACE FE-89
FM-4	MAGNETIC FLOW METER	RAS/WAS PUMP ROOM REPLACE FE-91
SLG-1	SLUICE GATE	CLA. INF. SPLITTER BOX

PIPELINE SCHEDULE

LINE NO	SIZE	SPEC	SERVICE	ORIGIN	TERMINATION
NEW PIPING					
100	36	DIP	MLQ	CLA. INF SPLITTER BOX	CLA. NO. 4
101	30	DIP	SE	CLA. NO. 4	MH EF-1
102	6	DIP/PVC	DRAIN	CLA. NO. 4 DRAIN SUMP	CLA. NO. 4 WETWELL
102A	4	DIP	DRAIN	CLA. NO. 4 WETWELL	MH-P10
200	6	PVC	SSC	CLA. NO. 4 SCUM PIT	102
200A	6	DIP	SSC	CLA. NO. 4 SCUM BOX	CLA. NO. 4 SCUM PIT
202	18	DIP/PVC	RAS	CLA. NO. 4	RAS/WAS PUMP ROOM
203	18	PVC/CS	RAS	011	FUTURE CONNECTION
204	18	CS	RAS	202	203
205	14	CS	WAS	012	011
206	16	CS	RAS	013	014
206	14	CS	WAS	204	205
205A	6	CS	WAS	205	WSP-3
205B	6	CS	WAS	205	WSP-2
205C	6	CS	WAS	205	WSP-1
EXISTING PIPING					
001	36	DIP	MLQ	AER. BASIN NO. 1	CLA. INF SPLITTER BOX
002	36	DIP	MLQ	AER. BASIN NO.2	CLA. INF SPLITTER BOX
003	36	DIP	MLQ	CLA. INF SPLITTER BOX	CLARIFIER NO. 1
004	30	DIP	SE	CLA. NO. 1	CLA. EFF. BOX
005	36	DIP	MLQ	CLA. INF SPLITTER BOX	CLA. NO. 2
006	30	DIP	SE	CLA. NO. 2	CLA. EFF. BOX
007	6	DIP	DRAIN	CLA. NO. 1	MH-P9
008	6	DIP	DRAIN	CLA. NO. 2	MH-P10
009	6	DIP	SSC	CLA. NO. 1 SCUM PIT	MH-P9
009A	6	DIP	SSC	CLA. NO. 1 SCUM BOX	CLA. NO. 1 SCUM PIT
010	6	DIP	SSC	CLA. NO. 2 SCUM PIT	MH-P10
010A	6	DIP	SSC	CLA. NO. 1 SCUM BOX	CLA. NO. 1 SCUM PIT
011	18	DIP/CS	RAS	CLA. NO. 1	RAS/WAS PUMP ROOM
011A	14	CS	RAS	011	RSP-1
011B	14	CS	RAS	011	RSP-2
011C	14	CS	RAS	011	RSP-3
012	18	DIP/CS	RAS	CLA. NO. 2	RAS/WAS PUMP ROOM
012A	14	CS	RAS	012	RSP-4
012B	14	CS	RAS	012	RSP-5
012C	14	CS	RAS	012	RSP-6
013	36	DIP	SE	CLA. EFF. BOX	MH EF-1
013A	16	DIP	SE	MH EF-1	CHL. CONTACT BLDG.
014	16	CS	RAS	RAS/WAS PUMP ROOM	AER. BASIN NO.2
014A	10	CS	RAS	RSP-4	014
014B	10	CS	RAS	RSP-5	014
014C	10	CS	RAS	RSP-6	014
014D	16	CS	RAS	014	AER. BASIN NO.2
014E	16	CS	RAS	014	AER. BASIN NO. 2 TRENCH
015	16	CS	RAS	RAS/WAS PUMP ROOM	AER. BASIN NO.2
015A	10	CS	RAS	RSP-3	015
015B	10	CS	RAS	RSP-2	015
015C	10	CS	RAS	RSP-1	015
015D	16	CS	RAS	015	AER. BASIN NO. 1
015E	16	CS	RAS	015	AER. BASIN NO. 1 TRENCH
016	6	CS	WAS	RAS/WAS PUMP ROOM	DIGESTERS
016A	6	CS	WAS	WSP-1	016
016B	6	CS	WAS	WSP-2	016
016C	6	CS	WAS	WSP-3	016

VALVE SCHEDULE

TAG	LINE NO	SIZE	VALVE TYPE
NEW VALVES			
CV-1	102A	4	CHECK VALVE
KGV-1	202	18	KNIFE GATE
KGV-2	012	18	KNIFE GATE
KGV-3	011	18	KNIFE GATE
KGV-4	NOT USED		
KGV-5	012	18	KNIFE GATE
KGV-6	011	18	KNIFE GATE
KGV-7	205A	6	KNIFE GATE
KGV-8	205B	6	KNIFE GATE
KGV-9	205C	6	KNIFE GATE
KGV-10	206	14	KNIFE GATE
PV-1	102	6	PLUG VALVE
PV-2	204	18	PLUG VALVE
PV-3	204	18	PLUG VALVE
PV-5	011	18	PLUG VALVE
PV-6	011	18	PLUG VALVE
PV-7	012	18	PLUG VALVE
PV-8	012	18	PLUG VALVE
PV-9	013	16	PLUG VALVE
PV-10	014	16	PLUG VALVE
PV-11	014	16	PLUG VALVE
PV-12	203	18	PLUG VALVE
PV-13	202	18	PLUG VALVE
EXISTING VALVES			
ECV-1	013A	10	CHECK VALVE
ECV-2	013B	10	CHECK VALVE
ECV-3	013C	10	CHECK VALVE
ECV-4	014A	10	CHECK VALVE
ECV-5	014B	10	CHECK VALVE
ECV-6	014C	10	CHECK VALVE
ECV-7	016A	6	CHECK VALVE
ECV-8	016B	6	CHECK VALVE
ECV-9	016C	6	CHECK VALVE
EPV-1	007	6	PLUG VALVE
EPV-2	008	6	PLUG VALVE
EPV-3	011A	14	PLUG VALVE
EPV-4	011B	14	PLUG VALVE
EPV-5	011C	14	PLUG VALVE
EPV-6	012A	14	PLUG VALVE
EPV-7	012B	14	PLUG VALVE
EPV-8	012C	14	PLUG VALVE
EPV-9	013A	10	PLUG VALVE
EPV-10	013B	10	PLUG VALVE
EPV-11	013C	10	PLUG VALVE
EPV-12	014A	10	PLUG VALVE
EPV-13	014B	10	PLUG VALVE
EPV-14	014C	10	PLUG VALVE
EPV-15	205	14	PLUG VALVE
EPV-16	205	14	PLUG VALVE
EPV-17	205	14	PLUG VALVE
EPV-18	205	14	PLUG VALVE
EPV-19	013	16	PLUG VALVE
EPV-20	013	16	PLUG VALVE
EPV-21	013	16	PLUG VALVE
EPV-22	014	16	PLUG VALVE
EPV-23	014	16	PLUG VALVE
EPV-24	014	16	PLUG VALVE
EPV-25	016A	6	PLUG VALVE
EPV-26	016B	6	PLUG VALVE
EPV-27	015A	16	PLUG VALVE
EPV-27A	016C	6	PLUG VALVE
EPV-28	013	16	PLUG VALVE
EPV-29	014A	16	PLUG VALVE
EPV-30	014	16	PLUG VALVE

INSTRUMENT SOCIETY OF AMERICA TABLE

LETTER	FIRST LETTER(S)		SUCCEEDING LETTERS		
	PROCESS OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS(I)		ALARM		
B	BURNER FLAME		USERS CHOICE(t)	USERS CHOICE(t)	USERS CHOICE(t)
C	CONDUCTIVITY			CONTROL	
D	DENSITY (S.G.)	DIFFERENTIAL			
E	VOLTAGE		PRIMARY ELEMENT		
F	FLOW RATE	RATIO			
G	GAUGE		GLASS	GATE	
H	HAND (MANUAL)				HIGH
I	CURRENT		INDICATE		
J	POWER	SCAN			
K	TIME OR SCHEDULE			CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOTION				MIDDLE
N	USERS CHOICE(t)		USERS CHOICE(t)	USERS CHOICE(t)	USERS CHOICE(t)
O	USERS CHOICE(t)		ORIFICE		
P	PRESSURE (OR VAC.)		POINT (TEST CONN.)		
Q	QUANTITY OR EVENT(t)	INTEGRATE	INTEGRATE		
R			RECORD OR PRINT		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE(t)		MULTIVARIABLE(t)		
V	VISCOSITY			VALVE	
W	WEIGHT OR FORCE		WELL		
X	UNCLASSIFIED(t)		UNCLASSIFIED(t)	UNCLASSIFIED(t)	UNCLASSIFIED(t)
Y	USERS CHOICE(t)			RELAY OR COMP.(t)	
Z	POSITION			DRIVE ACTUATE OR UNCLASSIFIED FINAL CONTROL ELEMENT	

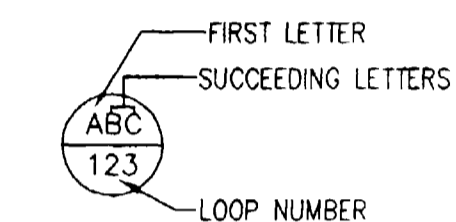
(I) WHEN USED, EXPLANATION IS SHOWN ADJACENT TO INSTRUMENT SYMBOL.

P&D SYMBOLS

- EX. PROCESS LINE
- NEW PROCESS LINE
- PNEUMATIC LINE
- - - - - DISCRETE SIGNAL
- - - - - DIGITAL SIGNAL
- - - - - ANALOG SIGNAL
- (SM) EQUIPMENT LABEL

INSTRUMENT IDENTIFICATION

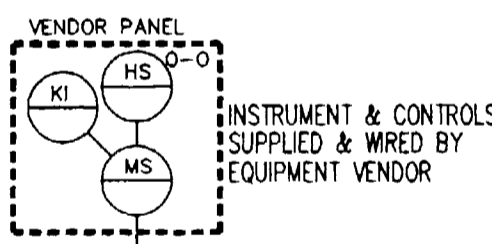
EXAMPLE SYMBOL



- I : PLC DISCRETE INPUT, 115 VAC
- AO : PLC ANALOG OUTPUT, 4 TO 20 MADC
- O : PLC DISCRETE OUTPUT, FORM C CONTACT CLOSURE

SPECIAL CASES

- (AT) ANALYTICAL TRANSMITTER ANALYZING D.O. (FIELD MOUNTED)
- (D.O.) ANALYTICAL TRANSMITTER ANALYZING D.O. (FIELD MOUNTED)
- (HOA) HAND-OFF-AUTO SELECTOR SWITCH MAINTAINED CONTACTS



CONTROL SYSTEM SYMBOLS

- (Hexagon) SYSTEM COMPUTATION/CONDITIONING
- (Square) OPERATOR INTERFACE: INDICATOR, CONTROLLER, RECORDER OR ALARM POINT
- (Diamond) CONTROL INTERLOCK
- (Circle) FIELD MOUNTED INSTRUMENT
- (Circle with 1) REAR-OF-PANEL MOUNTED INSTRUMENT 1- CONSOLE & LOCAL PANELS IDENTIFIED
- (Circle with 1) BLIND CONTROLLER RESIDING IN SYSTEM OR ON COMMUNICATIONS LINK NOT ACCESSIBLE TO OPERATOR
- (Square with X) CONTROL SYSTEM CONTROL LOGIC OR SEQUENCING-NOT ACCESSIBLE TO OPERATOR
- (Square with X) CONTROL SYSTEM CONTROL LOGIC OR SEQUENCING-ACCESSIBLE TO OPERATOR
- (Circle with 1) PANEL MOUNTED INSTRUMENT 1- CONSOLE & LOCAL PANELS IDENTIFIED
- (Circle with 1) MOTOR CONTROL CENTER MOUNTED INSTRUMENT

PIPING SERVICE

- D DRAIN
- MLQ MIXED LIQUOR
- NPW NON-POTABLE WATER
- PE PRIMARY EFFLUENT
- PW PLANT WATER
- RAS RETURN ACTIVATED SLUDGE
- SE SECONDARY EFFLUENT
- SSC SECONDARY SCUM
- WAS WASTE ACTIVATED SLUDGE

PIPING TYPES

- CS CARBON STEEL
- CPR COPPER
- DIP DUCTILE IRON PIPE
- PVC POLYVINYL CHLORIDE

PIPE LINE DEVICE SYMBOLS

- (Line with triangle) CHECK VALVE
- (Line with rectangle) KNIFE GATE VALVE
- (Line with square) SOLINOID VALVE
- (Line with diamond) ECCENTRIC PLUG VALVE
- (Line with circle) REDUCER

EQUIPMENT SYMBOLS

- (Circle with X) SLUICE GATE
- (Circle with vertical lines) DRAIN PIT PUMP

PRIMARY ELEMENT SYMBOLS

- (M) MAGNETIC FLOW METER

PROJECT	RECORD DRAWING	ISSUED FOR CONSTRUCTION	ISSUED FOR BIDDING	REVISIONS	DATE	BY
6	5	4	3	2	1	0

PROJECT ENGINEER/ARCHITECT	2/00
PROJECT MANAGER	2/00
DRAWN BY	2/00
SCALE	6/14/00
FIRST ISSUE DATE	6/14/00

PROJECT NO.	906-001
DRAWING NO.	P-1

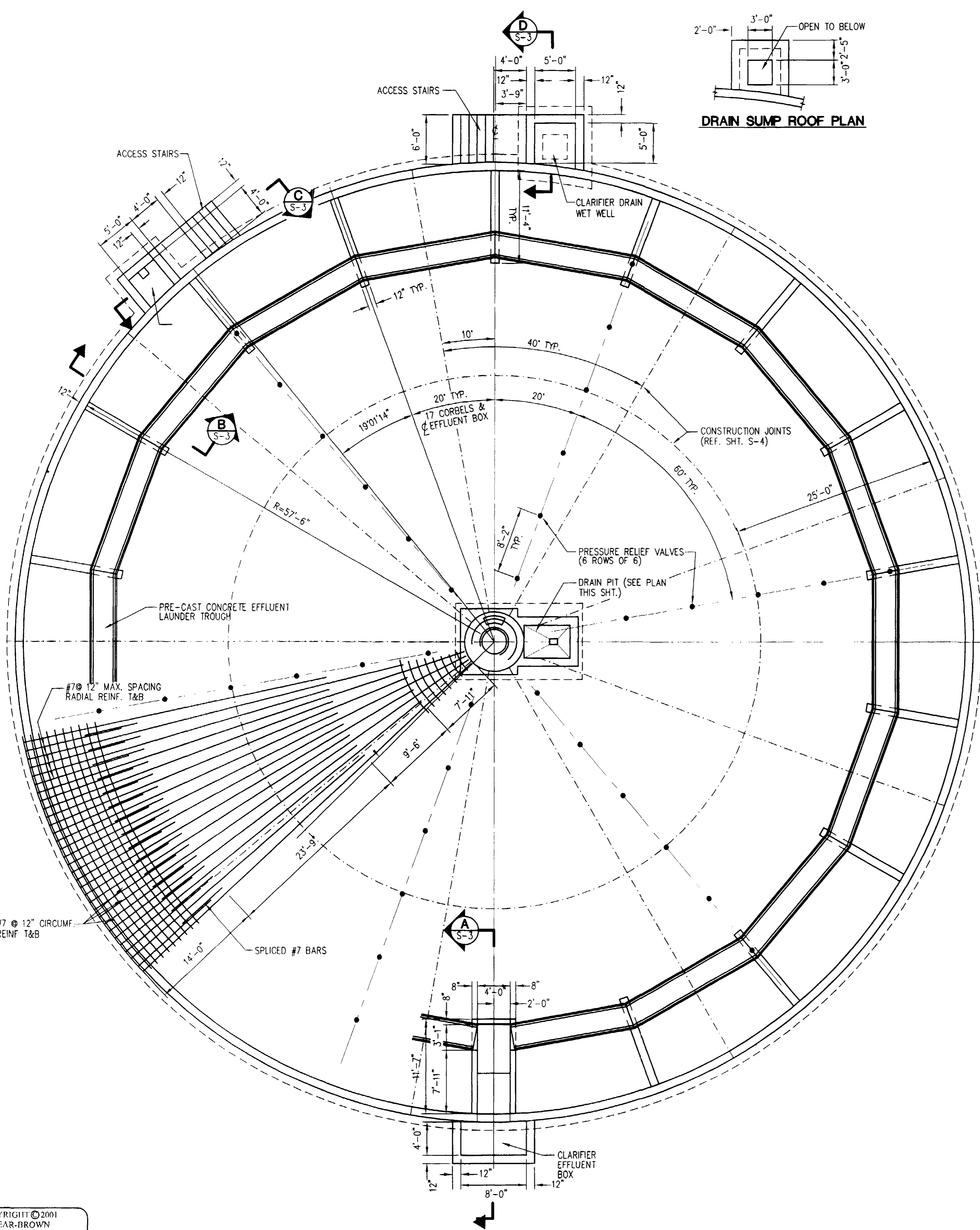
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PROJECT: PERSIGO WASTEWATER TREATMENT PLANT FINAL CLARIFIER ADDITION
 TITLE OF DRAWING: PIPING, VALVE, AND EQUIPMENT SCHEDULE AND P&ID LEGEND

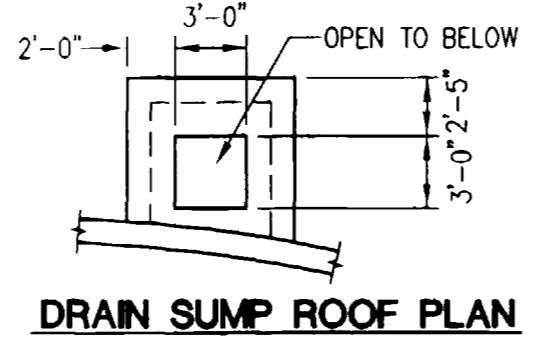
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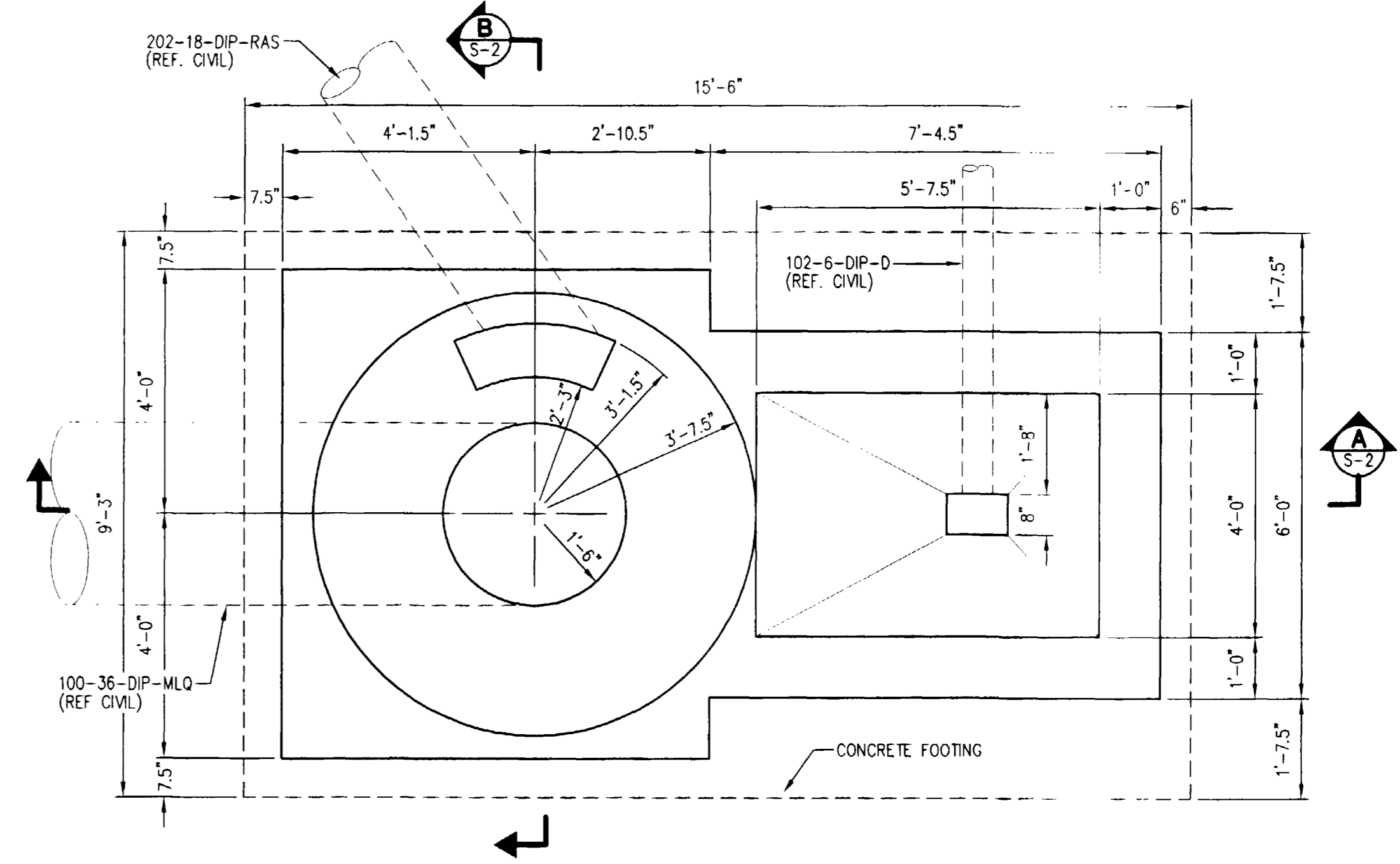
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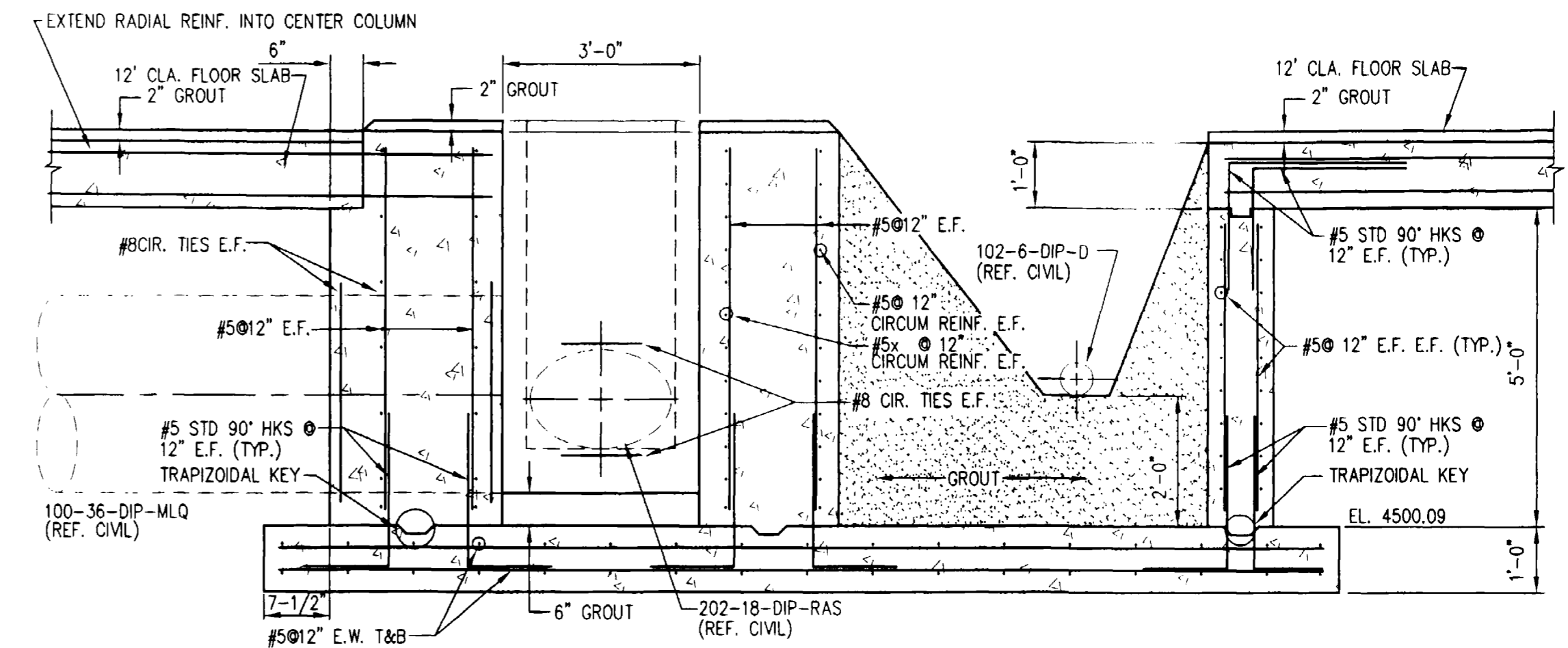
FINAL CLARIFIER PLAN
1/8" = 1'-0"



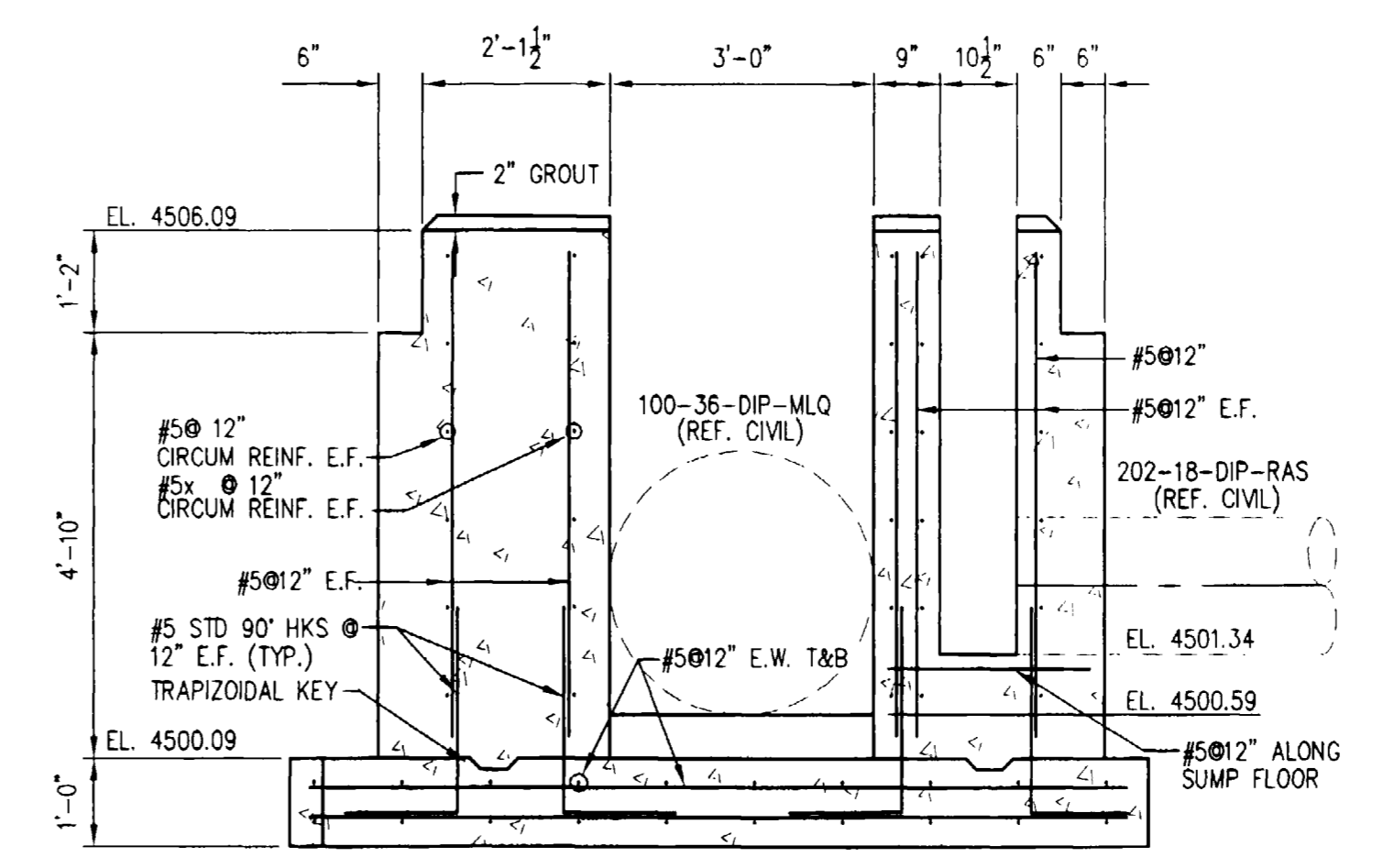
DRAIN SUMP ROOF PLAN



FINAL CLARIFIER DRAIN SUMP PLAN
1/2" = 1'-0"



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



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

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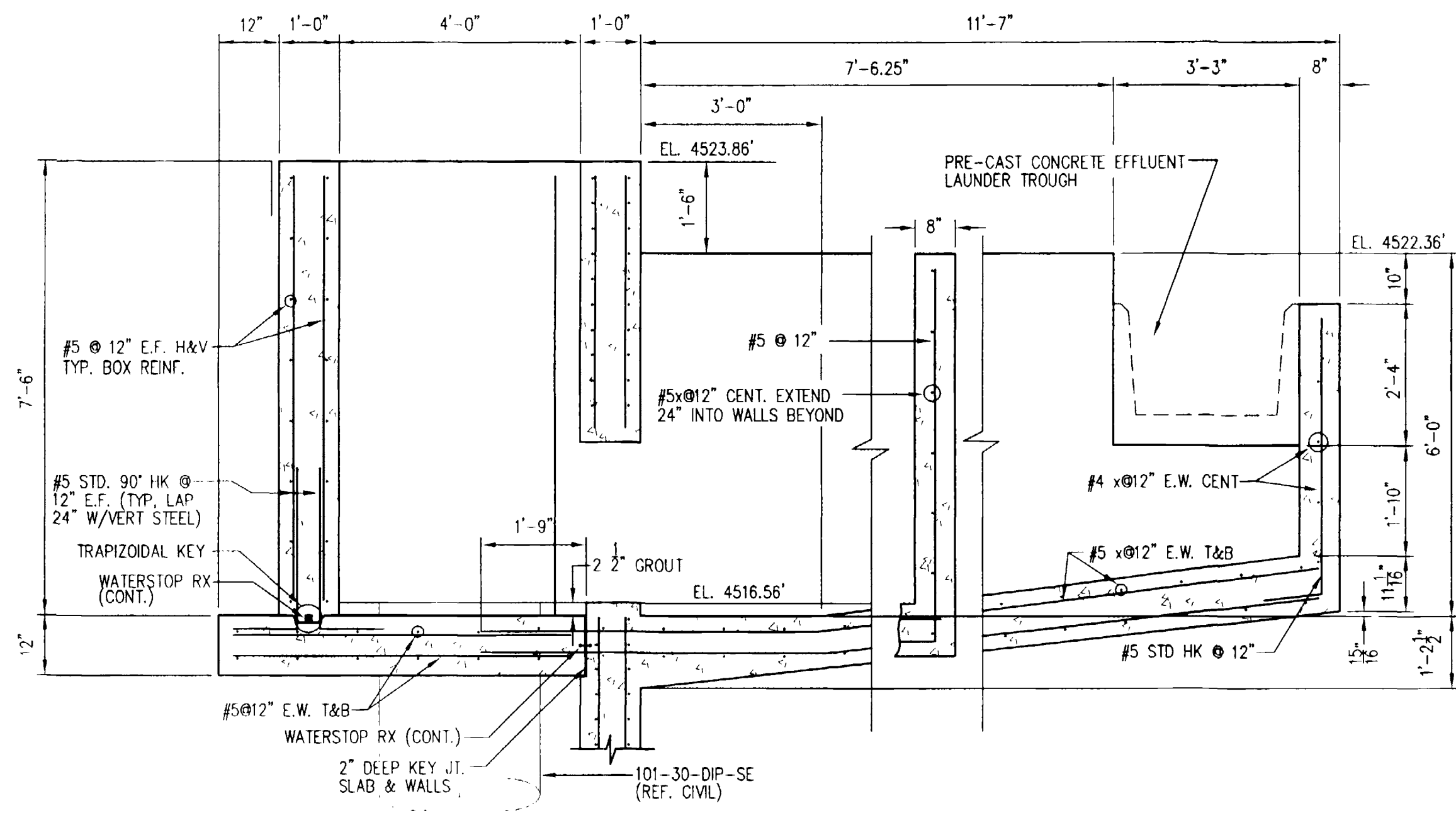
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PROJECT MANAGER	JPM	2/00
DRAWN BY	SLH	2/00
SCALE		FIRST ISSUE DATE 6/14/00
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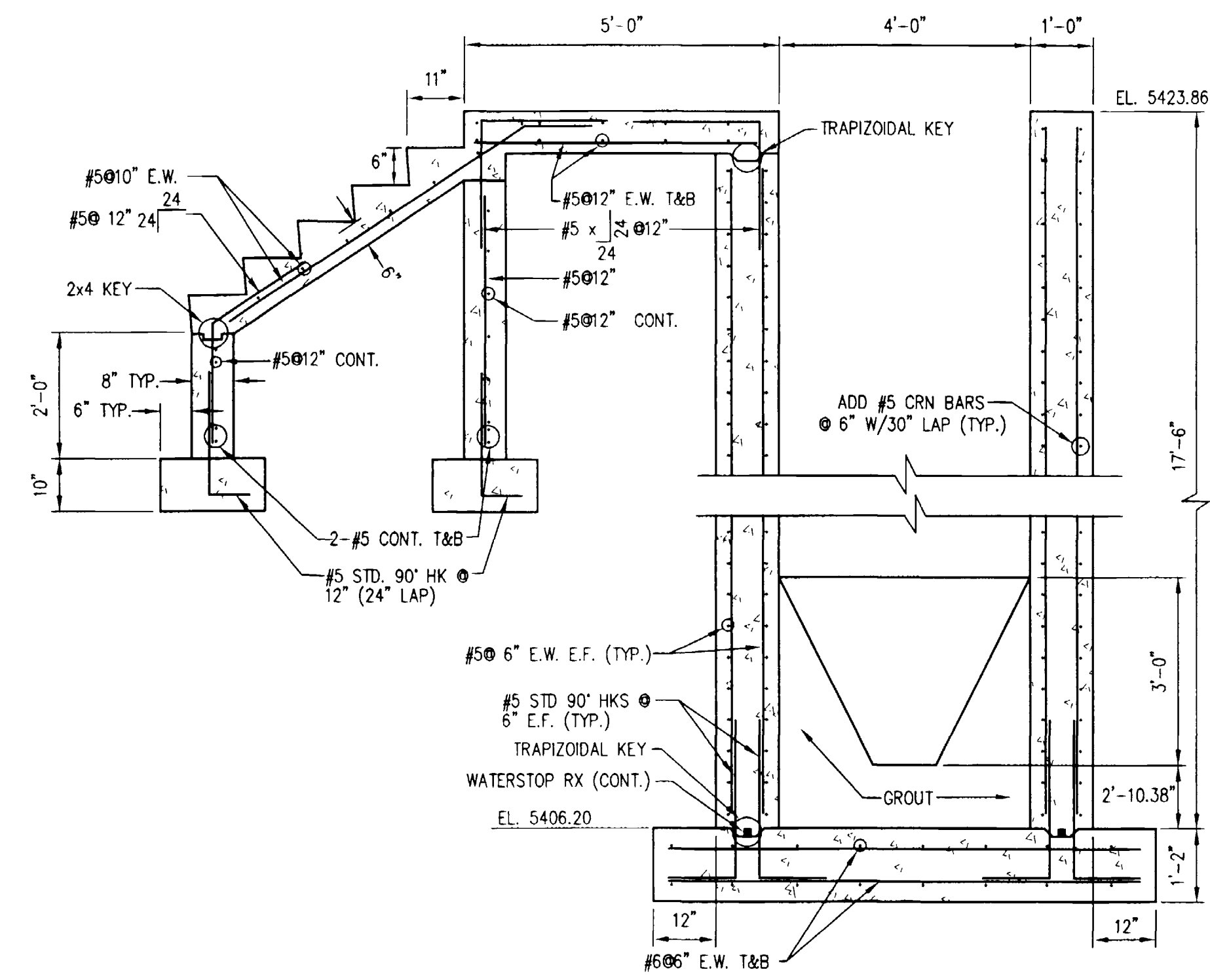
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PERSIGO WASTEWATER TREATMENT PLANT
FINAL CLARIFIER ADDITION
TITLE OF DRAWING
SOUTHEAST FINAL CLARIFIER PLAN

PROJECT NO.
906-001
DRAWING NO.
S-2

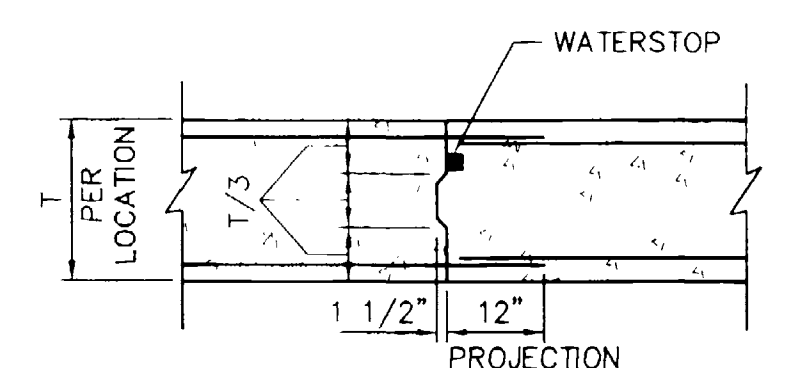
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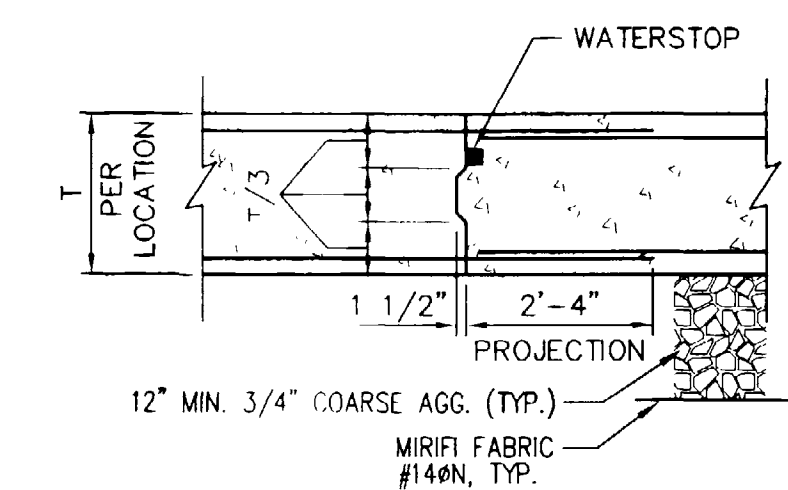
SECTION A
1/2" = 1'-0"



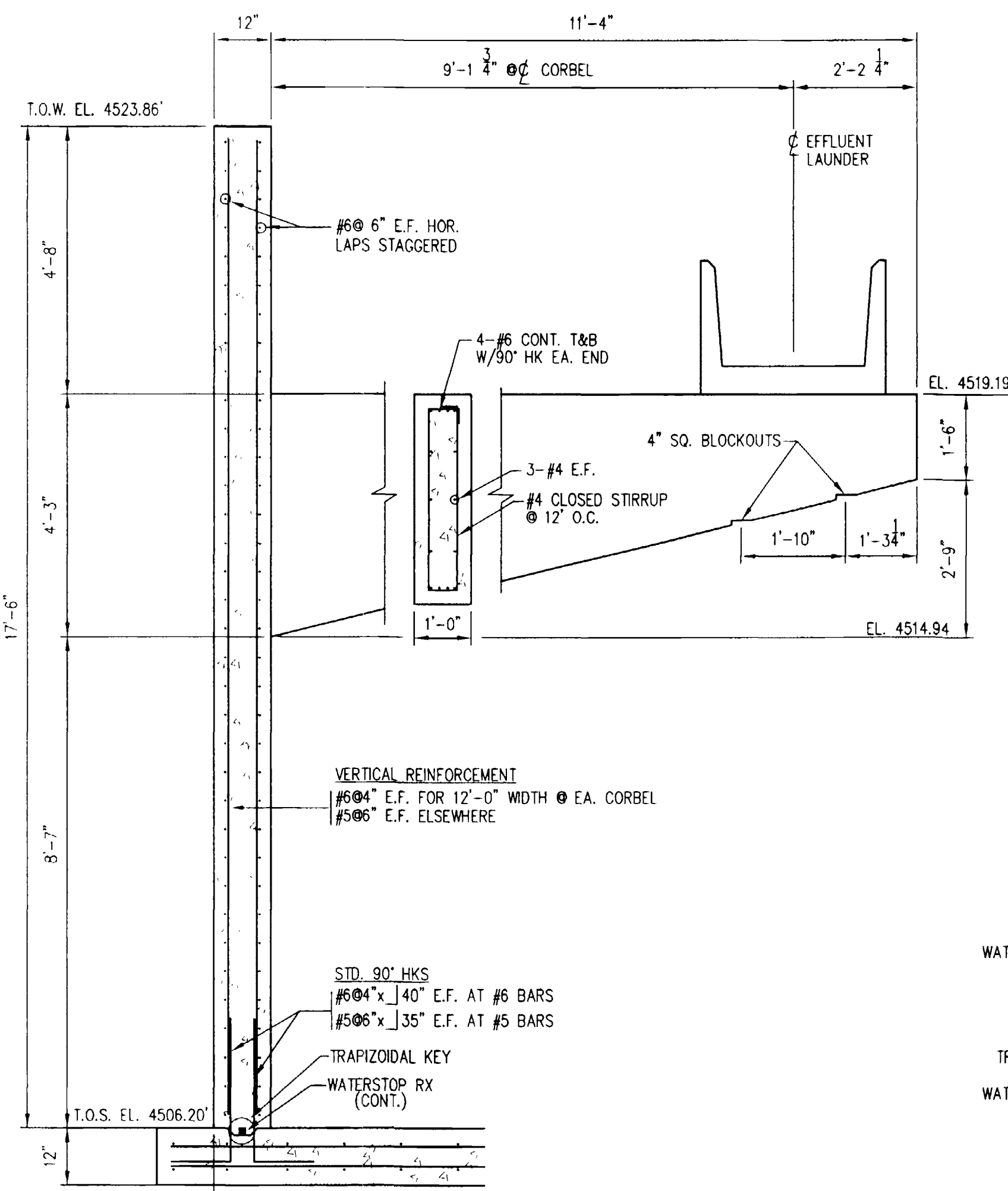
SECTION C
1/2" = 1'-0"



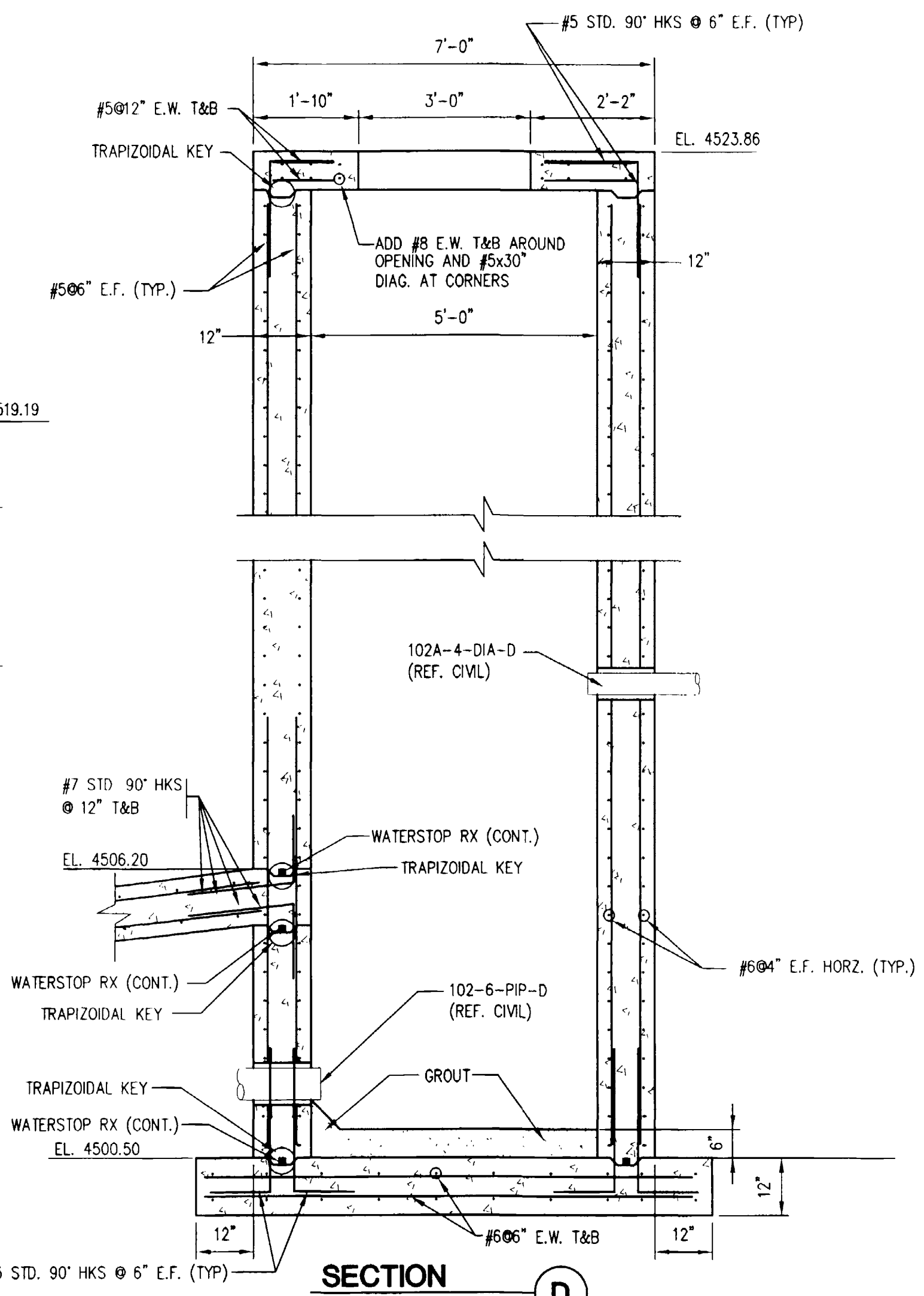
DETAIL 3
WALL TO WALL CONSTRUCTION JOINT
N.T.S.



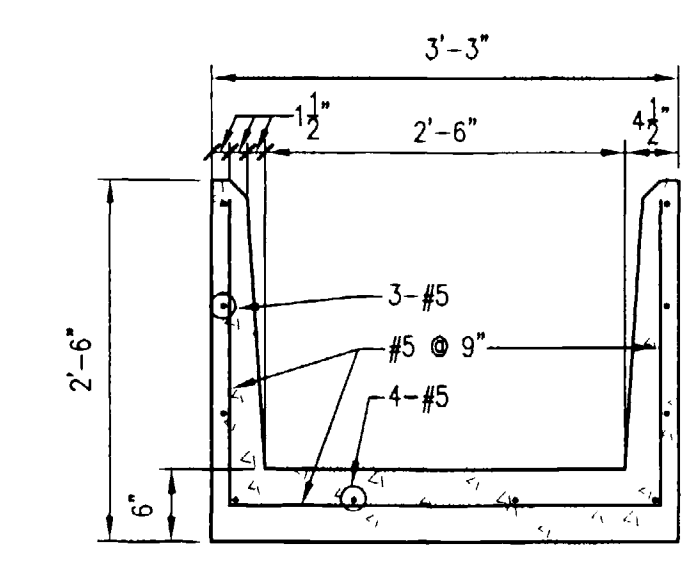
DETAIL 4
SLAB TO SLAB CONSTRUCTION JOINT
N.T.S.



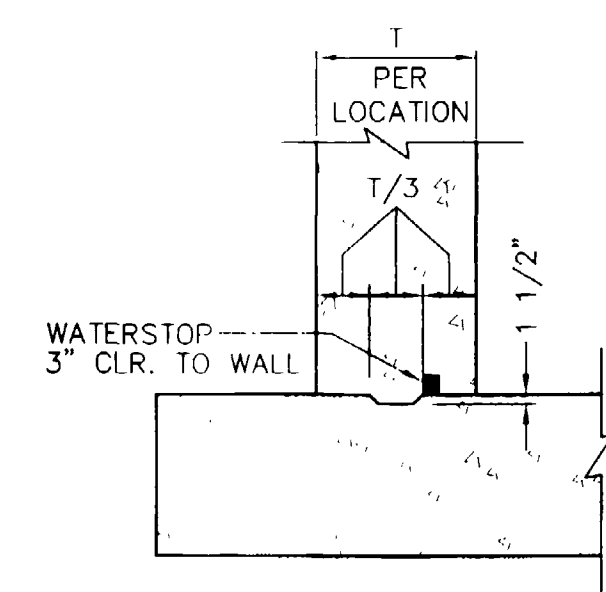
SECTION B
1/2" = 1'-0"



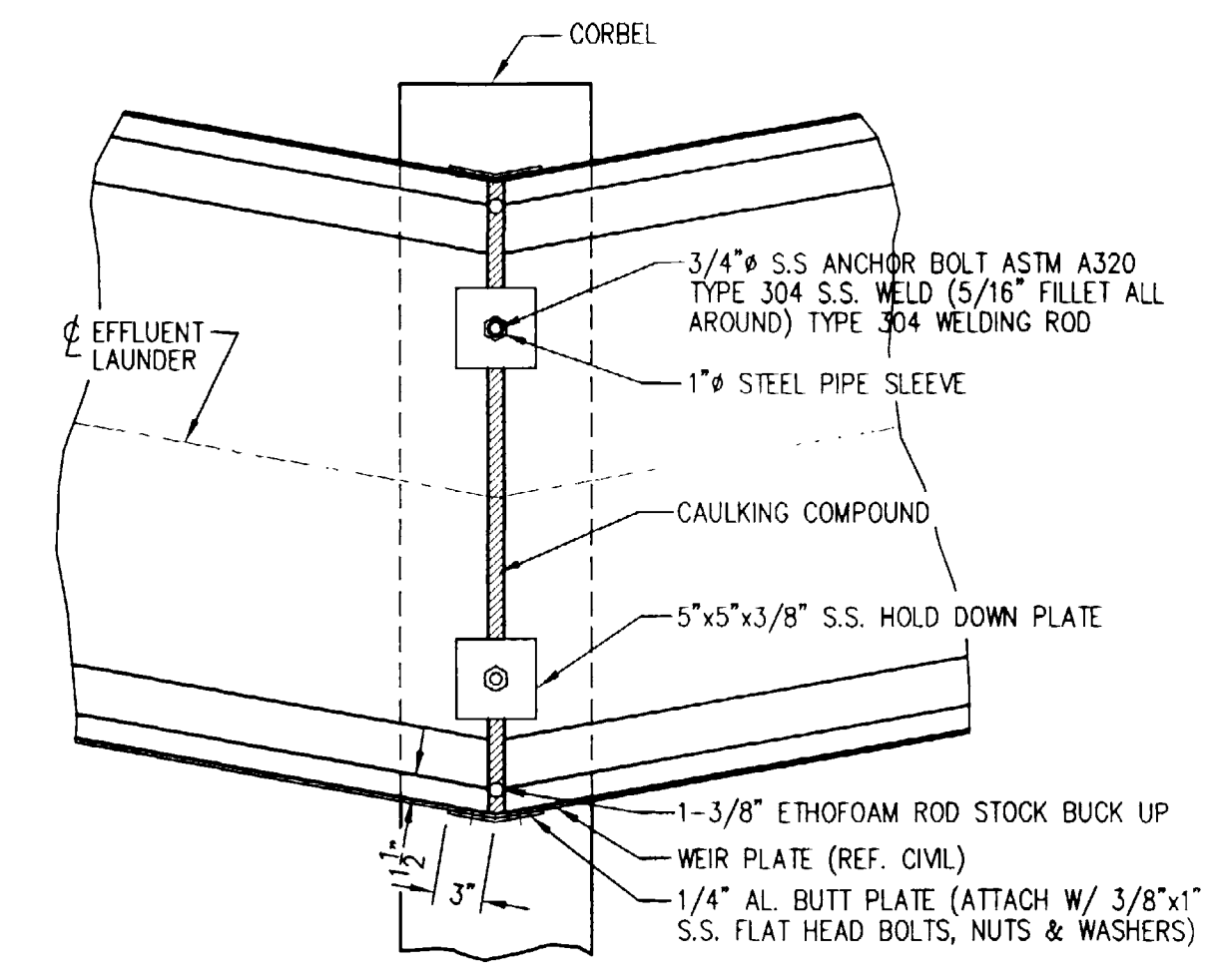
SECTION D
1/2" = 1'-0"



DETAIL 1
EFFLUENT LAUNDER TYPICAL SECTION
3/4" = 1'-0"



DETAIL 5
WALL TO SLAB CONSTRUCTION JOINT
N.T.S.



DETAIL 2
EFFLUENT LAUNDER INSTALLATION
1" = 1'-0"

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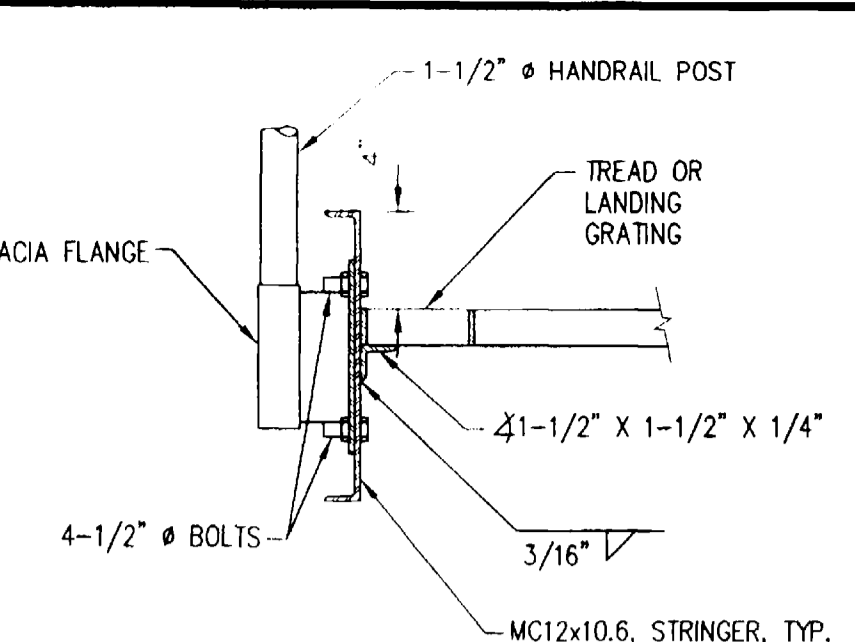
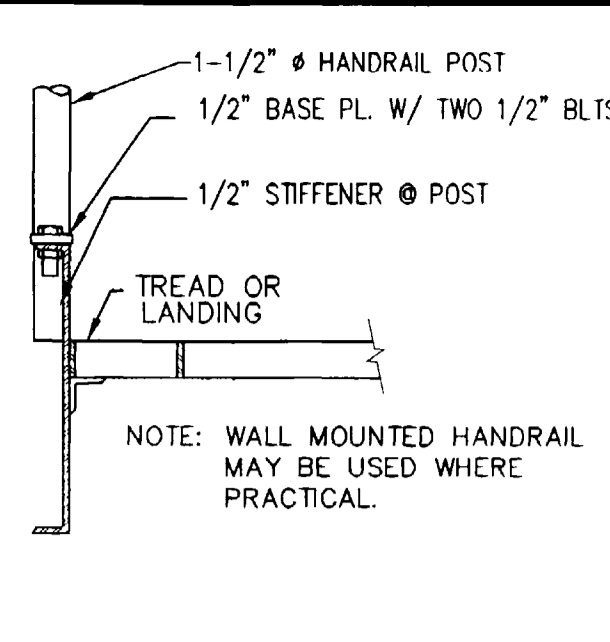
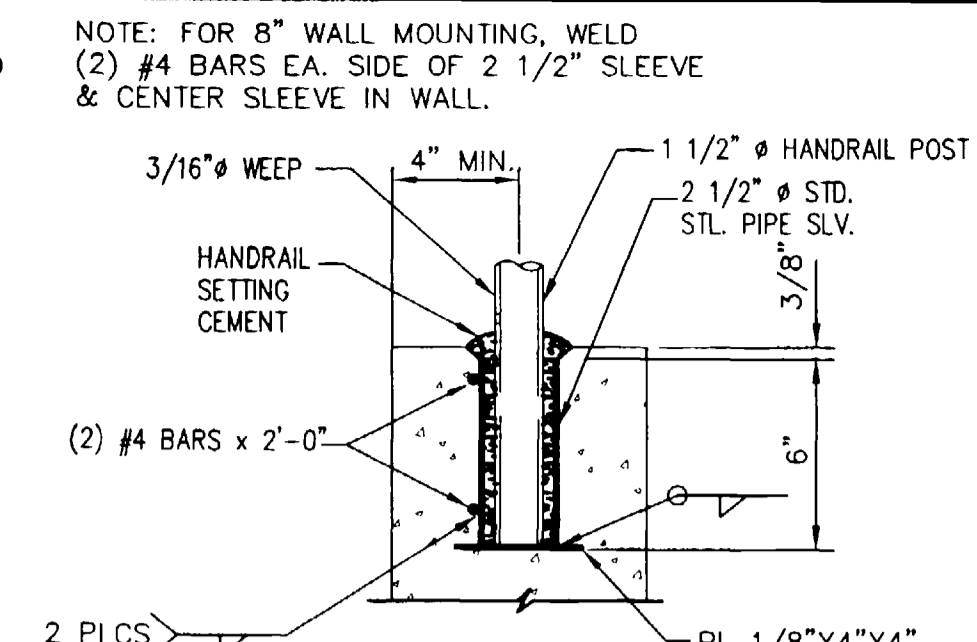
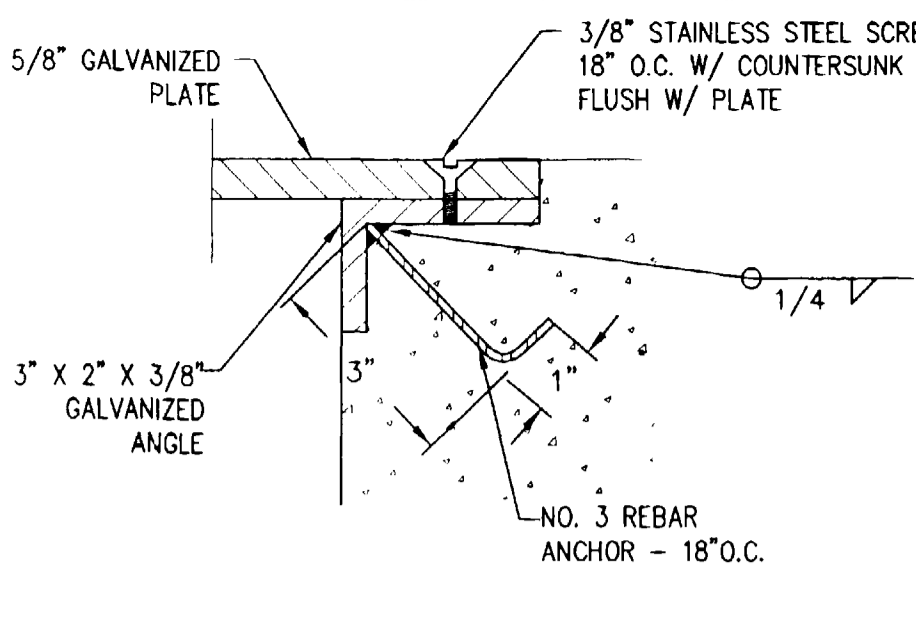
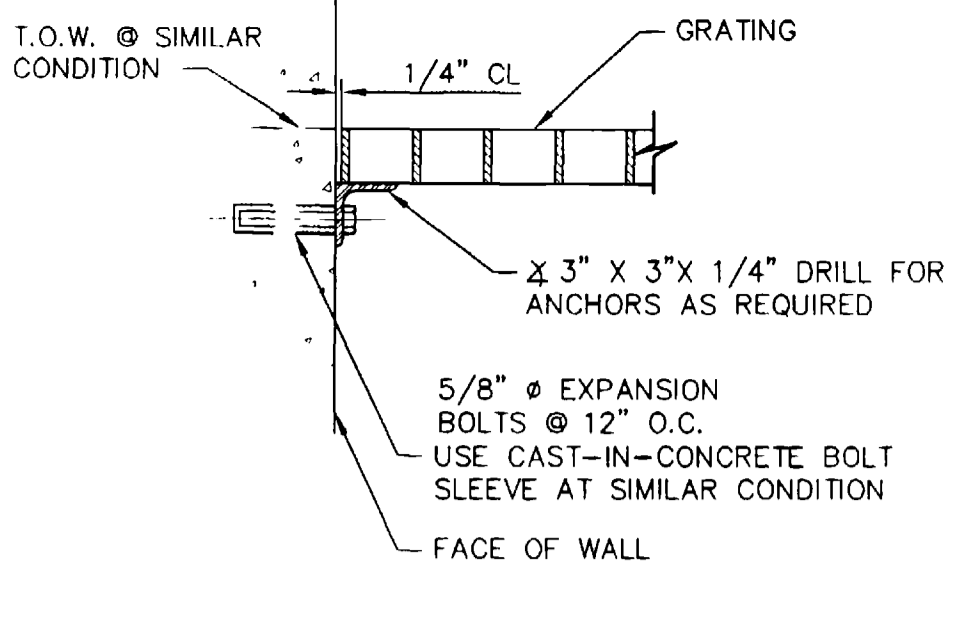
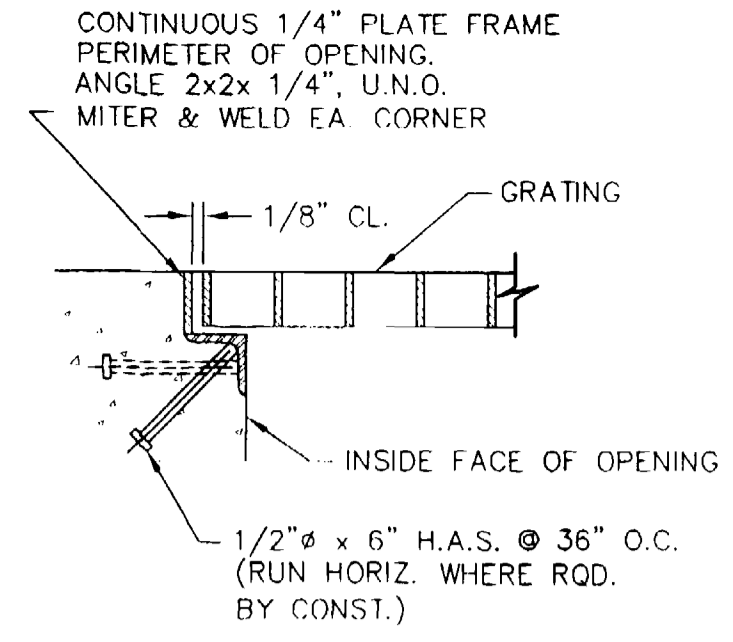
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PROJECT: PERSIGO WASTEWATER TREATMENT PLANT
FINAL CLARIFIER ADDITION
TITLE OF DRAWING: SOUTHEAST FINAL CLARIFIER WALL SECTIONS AND DETAILS

PROJECT NO. **906-001**
DRAWING NO. **S-3**



DETAIL 1
GRADING SUPPORT DETAIL
TYPICAL EMBED

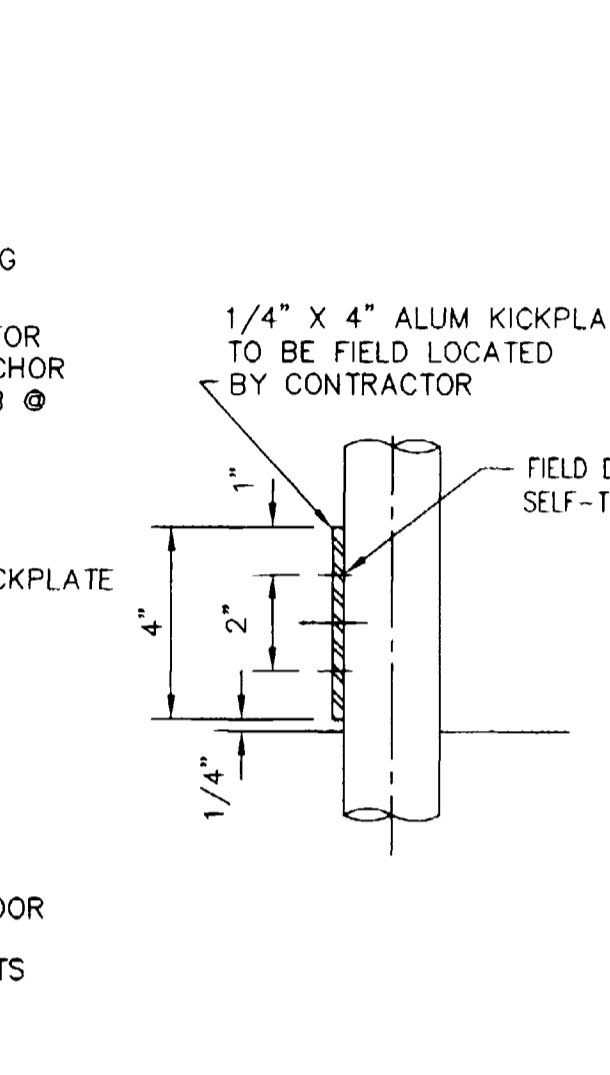
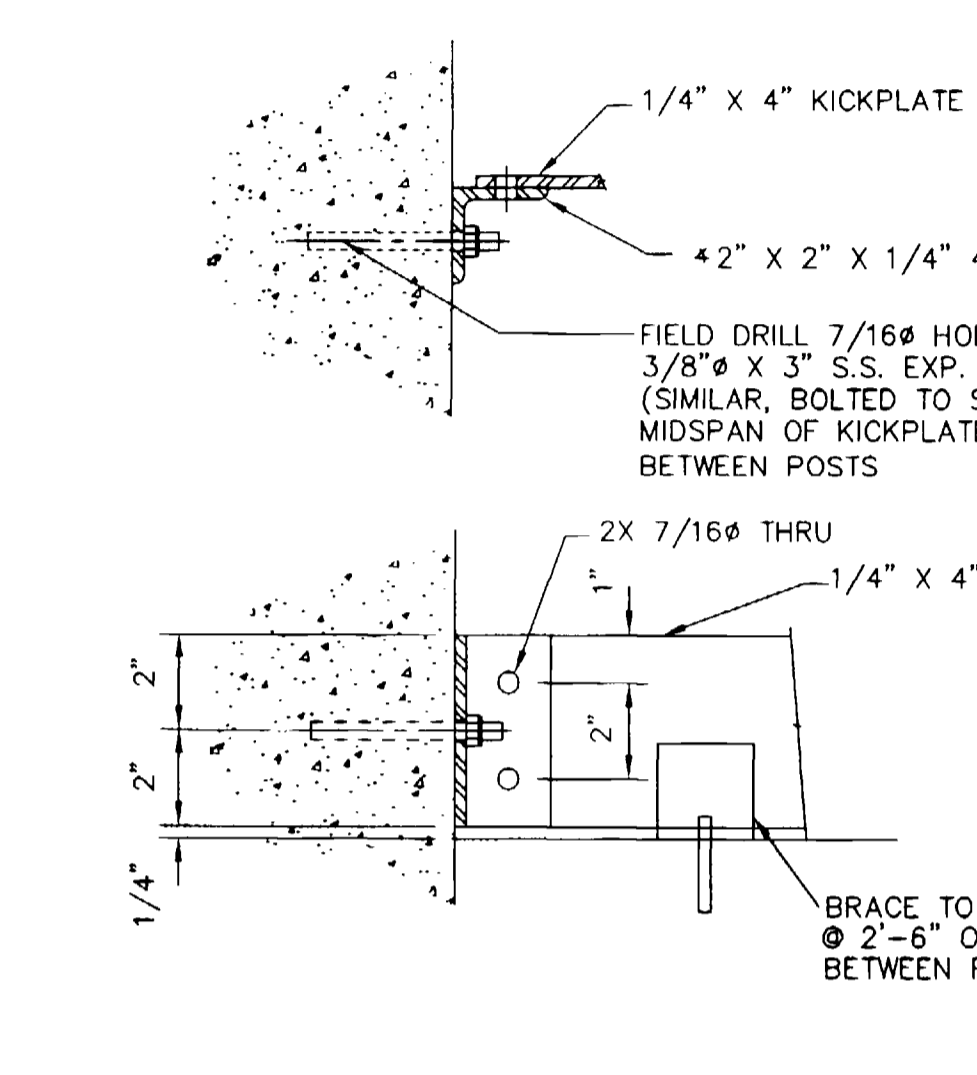
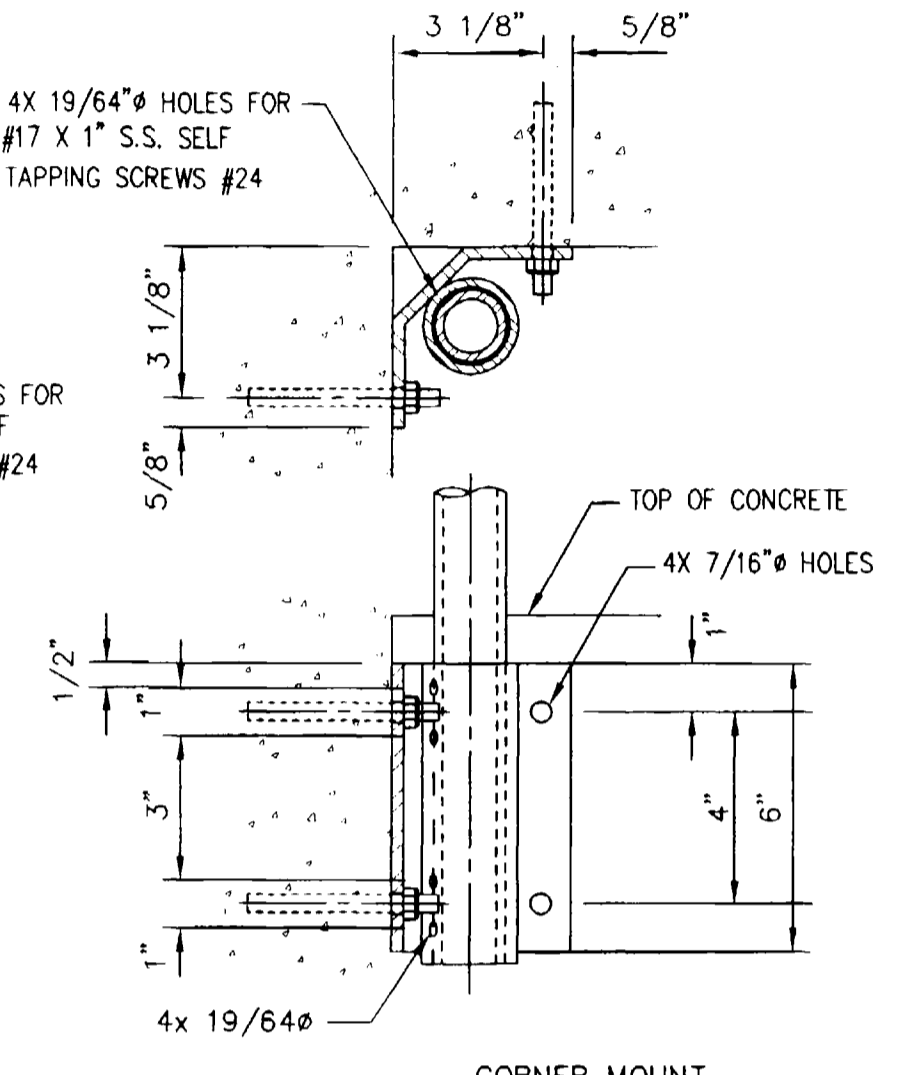
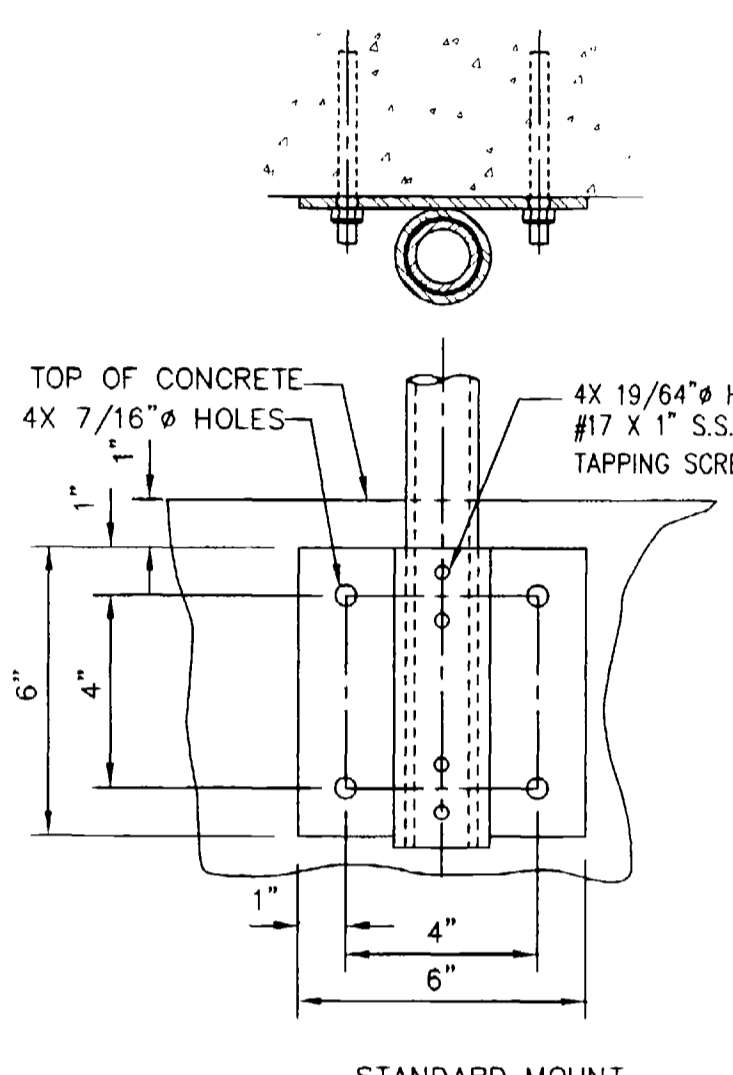
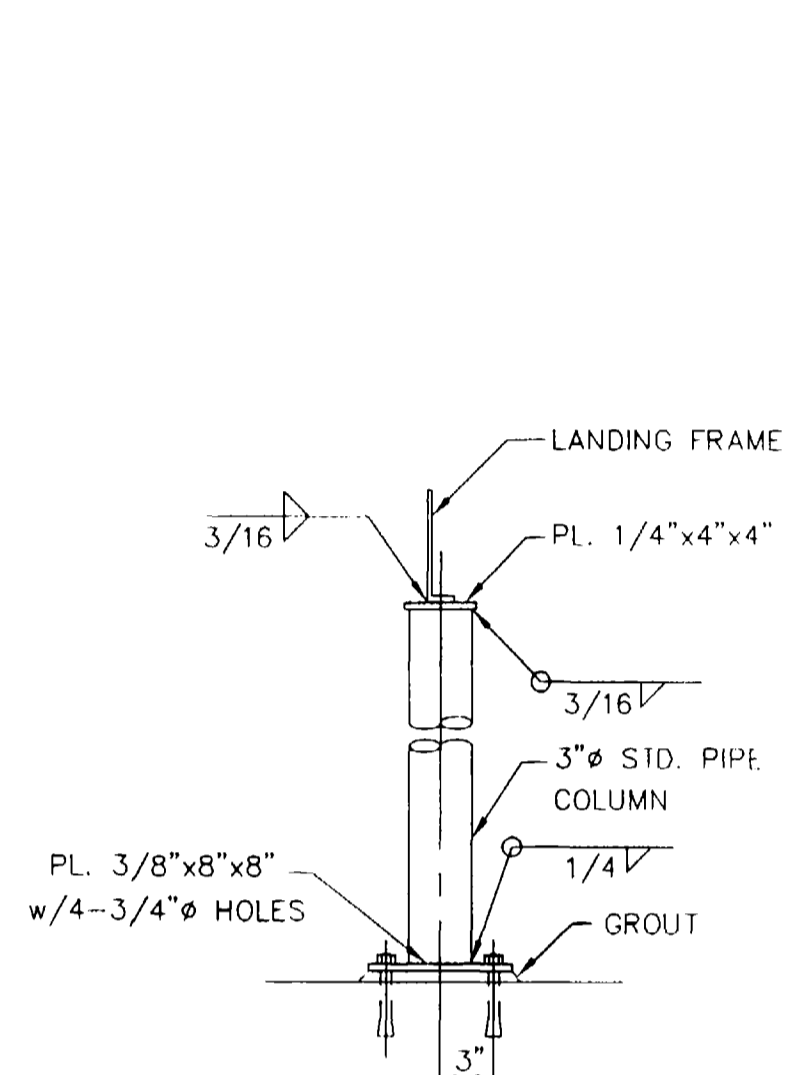
DETAIL 2
GRADING SUPPORT DETAIL
ABUTTING WALLS

DETAIL 3
CHECKERED PLATE

DETAIL 4
HANDRAIL SLEEVE
NEW CONCRETE

DETAIL 5
LANDING HANDRAIL
ADJACENT TO WALLS

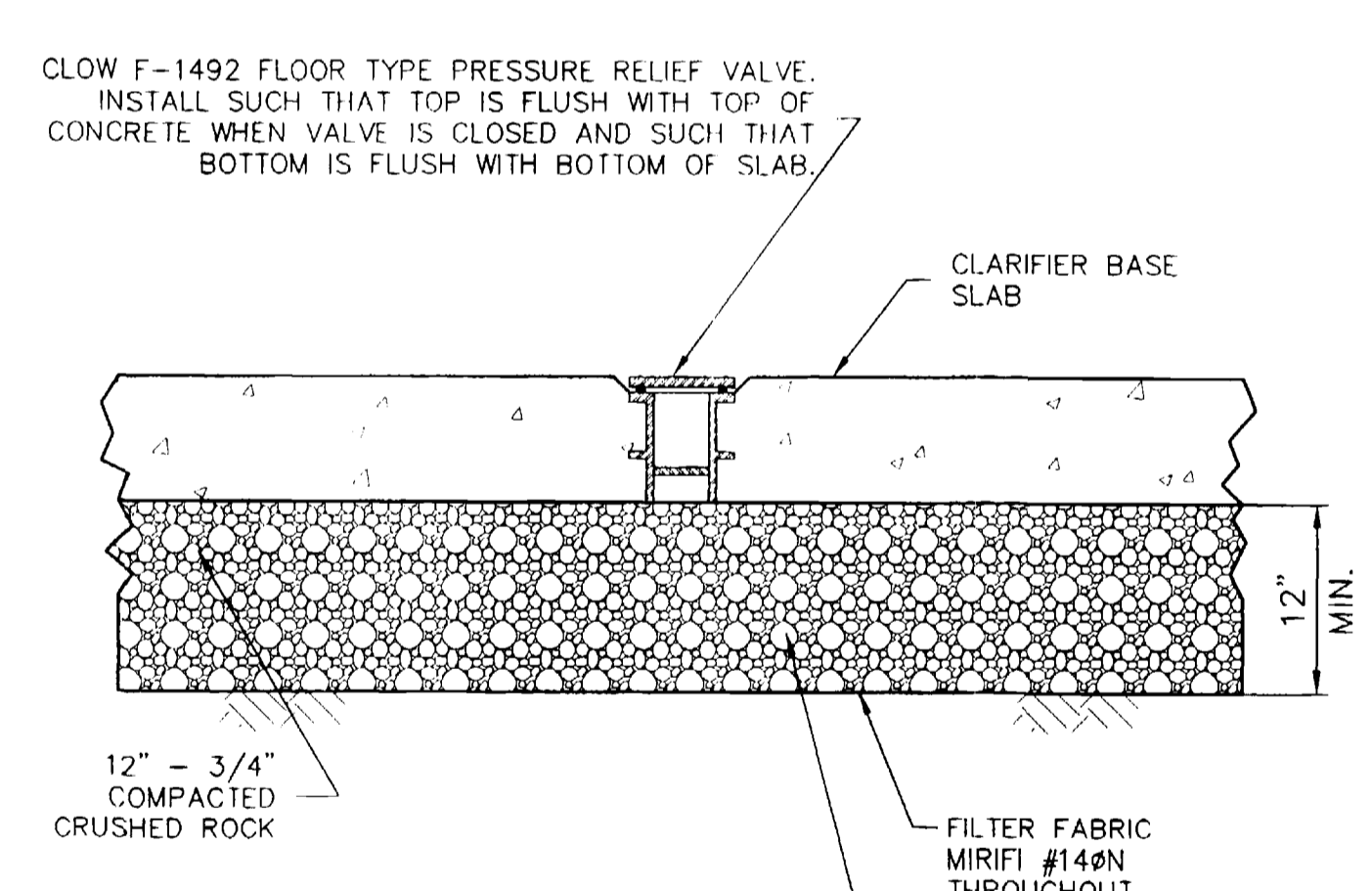
DETAIL 6
STAIR HANDRAIL



DETAIL 7
LANDING POST FRAME

DETAIL 8
HANDRAIL MOUNTING

DETAIL 9
HANDRAIL KICKPLATE



DETAIL 10
CLARIFIER RELIEF DRAIN

TABLE 1
LAP CLASS B, f_c = 4,000 psi, NORMAL WEIGHT CONCRETE

BAR SIZE	TOP BARS						OTHER BARS					
	1	2	3	4	5	6	1	2	3	4	5	6
#3	18	18	18	18	18	18	16	16	16	16	16	16
#4	26	24	24	24	24	24	20	19	19	19	19	19
#5	40	32	30	30	30	30	31	25	23	23	23	23
#6	57	45	40	36	36	36	44	35	31	28	28	28
#7	77	62	54	43	42	42	59	48	42	33	33	33
#8	102	81	71	57	51	48	78	63	55	44	39	37
#9	129	103	90	72	64	55	99	79	69	56	50	42
#10	163	131	114	92	82	65	126	101	88	70	63	50
#11	200	160	140	112	100	80	154	123	108	86	77	62

TABLE 2

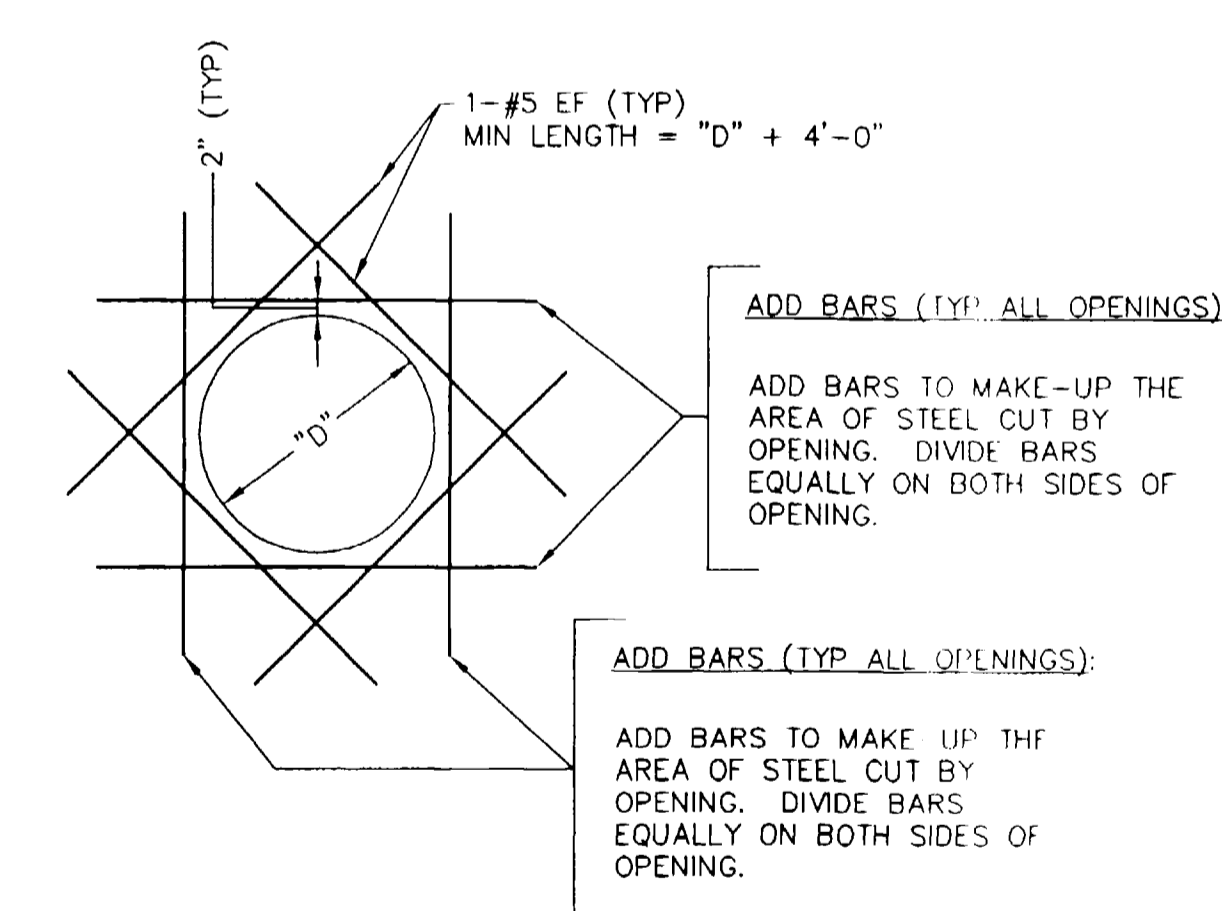
STRUCTURAL ELEMENT	CONCRETE COVER	CATEGORY, ACCORDING TO CENTER-TO-CENTER BAR SPACING			
		≤3db	>3db <4db	>4db <6db	≥6db
BEAMS, COLUMNS AND INNER LAYER OF WALLS OR SLABS	≤db	1	1	1	2
	>db	1	3	5	6
ALL OTHERS	≤db	1	1	1	2
	>db, <2db	1	3	3	4
	≥2db	1	3	5	6

- NOTES:**
- UNLESS INDICATED OTHERWISE, LAP SPLICE LENGTHS SHALL BE AS INDICATED IN TABLE 1 ABOVE.
 - CATEGORIES 1 THRU 6, WHICH DEPEND ON THE TYPE OF STRUCTURAL ELEMENT, CONCRETE COVER AND THE CENTER-TO-CENTER SPACING OF THE BARS, ARE DEFINED IN TABLE 2.
 - TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12" OF CONCRETE CAST BELOW THE BARS.
 - db - BAR DIAMETER.
 - WHEN LAPPING BARS OF DIFFERENT SIZES, THE SMALLER BARS SHALL GOVERN THE LENGTH OF LAP.

TABLE 3
CONCRETE PROTECTION FOR REINFORCEMENT (NON-PRESTRESSED, CAST IN PLACE)

SLABS AND JOISTS: TOP AND BOTTOM BARS FOR DRY CONDITIONS: #11 BARS AND SMALLER #14 AND #18 BARS	3/4" 1-1/2"
FORMED CONCRETE SURFACES EXPOSED TO EARTH, WATER, OR WEATHER, AND OVER OR IN CONTACT WITH SEWAGE AND FOR BOTTOMS BEARING ON WORK MAT, OR SLABS SUPPORTING EARTH COVER: #5 BARS AND SMALLER #6 THROUGH #18 BARS	1-1/2" 2"
BEAMS AND COLUMNS: FOR DRY CONDITIONS: STIRRUPS, SPIRALS, AND TIES PRINCIPAL REINFORCEMENT	1-1/2" 2"
EXPOSED TO EARTH, WATER, SEWAGE, OR WEATHER: STIRRUPS, SPIRALS, AND TIES PRINCIPAL REINFORCEMENT	2" 2-1/2"
WALLS: FOR DRY CONDITIONS: #11 BARS AND SMALLER #14 AND #18 BARS	3/4" 1-1/2"
FORMED CONCRETE SURFACES EXPOSED TO EARTH, WATER, SEWAGE, WEATHER, OR IN CONTACT WITH GROUND: CIRCULAR TANKS WITH RING TENSION ALL OTHERS	2" 2"
FOOTINGS AND SLABS CAST AGAINST EARTH: AT FORMED SURFACES AND BOTTOMS BEARING ON CONCRETE WORK MAT	2"
AT UNFORMED SURFACES AND BOTTOMS IN CONTACT WITH EARTH	3"
TOP OF FOOTINGS	SAME AS SLABS
OVER TOP OF PILES	2"

NOTE: UNLESS INDICATED OTHERWISE, MINIMUM CONCRETE COVER FOR REINFORCEMENT SHALL BE AS INDICATED IN TABLE 3 ABOVE.



- NOTES:**
- ADD BAR MINIMUM LENGTHS TO BE ("D" + 6'-2") WITH BARS CENTERED ON OPENING.
 - FOR OPENINGS LESS THAN 12" IN DIAMETER, THE ADD BARS ARE NOT REQUIRED IF NO REINFORCING IS CUT BY THE OPENING. HOWEVER, THE DIAGONAL BARS ARE STILL REQUIRED.
 - REINFORCE OPENINGS WITH "D" LARGER THAN 36" AS INDICATED ON THE DRAWINGS. IF NOT INDICATED, CONTACT THE ENGINEER.

CO-1 UNSLEEVED OPENING
NTS

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0	5/23/00	J.P.M.	ISSUED FOR BIDDING

PROJECT ENGINEER/ARCHITECT	2/00
PROJECT MANAGER	2/00
DRAWN BY	2/00
SCALE	FIRST ISSUE DATE
NOTED	5/14/00

PROJECT: PERSIGO WASTEWATER TREATMENT PLANT
FINAL CLARIFIER ADDITION

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PROJECT NO. 906-001
DRAWING NO. S-4

ABBREVIATIONS

A	ABAND.	ABANDON
	AB	AIR BLOWER
	AC	AIR COMPRESSOR
	A.C.	ALTERNATING CURRENT
	A/C	AIR CONDITIONING
	ACSTB	ACOUSTIC
	AD	ACCESS DOOR
	A.D.	AREA DRAIN
	AER	TANK AERATOR
	AHU	AIR HANDLING UNIT
	A.I.	AREA INLET
	AIC	AMPS INTERRUPTING
	AIR	PROCESS AIR
	AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
	AL	ALUMINUM
	ALK	ALKALINITY CHEMICAL
	ALM	ALUM
	ALT	ALTERNATE
	AMP	AMPERE
	ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
	AP	ACCESS PANEL
	APPD	APPROVED
	APPROX.	APPROXIMATE
	ARCH	ARCHITECTURAL
	ARV	AIR RELEASE VALVE
	ASB	ASBESTOS
	ASPH	ASPHALT
	ATAD	AUTOTHERMAL THERMOPHILIC AEROBIC DIGESTION
	ATC	ACOUSTICAL TILE CEILING
	AUTO	AUTOMATIC
	AVE	AVERAGE
	AV	AIR VALVE
	AWC	ACOUSTICAL WALL COVERING
	AWG	AMERICAN WIRE GAUGE
	Z	ANGLE

C (CONT.)	CJR	CIRCULAR JOINT
	CJ	CONTROL JOINT
	CKD	CHECKED
	CKT	CIRCUIT
	CLS	CHLORINE CENTER LINE
	CL	CELLING
	CLG	CAULKING
	CLOS	CLOSED
	CLR	CLEARANCE
	CLWG	CLEAR WIRE GLASS
	CMP	CORRUGATED METAL PIPE
	CMU	CONCRETE MASONRY UNITS
	CN	CENTRATE
	CNT	CENTRIFUGE
	CNV	CONVEYOR
	CNTR	COUNTER
	C.O.	CLEANOUT
	COMP	COMPRESSIBLE
	CONC	CONCRETE
	CONN	CONNECTION
	CONST	CONSTRUCTION
	C.C.	CONSTRUCTION JOINT
	CONT	CONTINUOUS
	COR	CORNER
	OPP	CORRUGATED POLYETHYLENE PIPE
	C.P.	CONTROL POINT
	CP	CHEMICAL FEED PUMP
	CPR	COPPER
	C.P.S.	CYCLES PER SECOND (HERTZ)
	C.V.	COUNTER SINK
	C/S	CARBON STEEL
	C.T.	CERAMIC TILE
	CT	CHEMICAL TANK
	CTR	CENTER
	C.Y.	CUBIC YARDS
	C.V.	CEILING VENT
	CW	CHECK VALVE
	CW	COLD WATER

E (CONT.)	EX	EXISTING
	EXP	EXPANSION PUMP
	EXPD	EXPOSED
	EXPN	EXPANSION
	EXT	EXTERIOR
	F	FAHRENHEIT
	FCA	FLANGE COUPLING ADAPTER
	FCC	FACING
	FCJ	FLOOR CONSTRUCTION JOINT
	FCV	FLOW CONTROL VALVE
	FD	FLOOR DRAIN
	FE	FINAL EFFLUENT
	FNDN	FOUNDATION
	F.E.S.	FLARED END SECTION
	F.F.	FINISH FLOOR
	FH	FIRE HYDRANT
	FIG	FIGURE
	FIN	FINISH
	FIX.	FIXTURE
	FLE	FILTER ELEMENT
	FLR	FLOOR
	FLSH	FLASHING
	FLEX	FLEXIBLE
	FLG	FLOORING
	FL	FLANGE
	FLOC	FLOCCULATOR
	F.L.	FLOW LINE
	FPM	FEET PER MINUTE
	FR	FRAME
	FRP	FIBERGLASS REINFORCED PIPE
	FT	FEET
	FTG	FOOTING
	FTW	FILTER TO WASTE
	FW	FINISHED WATER

H (CONT.)	HW	HOT WATER
	HWH	HOT WATER HEATER
	HWR	HOT WATER RETURN
	HWS	HOT WATER SERVICE
	HWC	HOT WATER CIRCULATION
	HWL	HIGH WATER LEVEL
	HYD	HYDRAULIC
	HZ	HERTZ
	I	IRON
	IC	INTERCOM
	I.D.	INSIDE DIAMETER
	I.E.	INVERT ELEVATION
	IN.	INCH
	INSUL	INSULATION
	INT	INTERIOR
	INV	INVERT
	J	JUNCTION BOX
	JB	JUNCTION BOX
	JCT	JUNCTION
	JST	JOIST
	JT	JOINT
	K	KEY
	K	KILO CIRCULAR MIL
	KCM	KNIFE GATE VALVE
	KGV	KEY LOCK
	KL	KICK PLATE
	KV	KILOVOLTS
	KVA	KILOVOLT AMPERES
	KVAR	KILOVOLT AMPERES REACTIVE
	KW	KILOWATT
	L	LABORATORY
	LAB	LABORATORY
	LAV	LAVATORY
	LBR	LUMBER
	LBS	POUNDS
	LD	LOAD
	LDG	LOADING
	LEN	LENGTH
	LN	LINEAR
	LIN	LONG LEG HORIZONTAL
	LLH	LONG LEG VERTICAL
	LLV	LONG LEG VERTICAL
	LM	LIQUID FLOW METER
	LNG	LONG
	LONG.	LONGITUDINAL
	LR	GRADE
	GR	GRIT
	GP	GRIT PUMP
	GRS	GALVANIZED RIGID STEEL CONDUIT
	GR	GRATING
	GS	GRIT SEPARATOR
	GV	GATE VALVE
	GW	GRIT WASHER
	GWB	GYPNUM WALLBOARD
	GWT	GLAZED WALL TILE
	GYP	GYPNUM

N	N	NORTH
	N.C.	NORMALLY CLOSED
	NEC	NATIONAL ELECTRICAL CODE
	NEMA	NATIONAL ELECTRICAL MFG. ASSOCIATION
	NO	NUMBER
	N.O.	NORMALLY OPEN
	NPW	NON-POTABLE WATER
	N.R.	NOT REQUIRED
	NV	NEEDLE VALVE
	O	ON CENTERS
	O.C.	ON CENTER EACH WAY
	OCW	ON CENTER EACH WAY
	OD	OUTSIDE DIAMETER
	OF	OVERFLOW
	OFF	OFFICE
	OG	OFF GAS
	OH	OVERHEAD
	OPNG	OPENING
	OPP	OPPOSITE
	OPS	OPERATIONS
	P	POLE
	P	POINT OF CURVATURE
	P.C.	POINT OF COMPOUND CURVE
	P.C.C.	POINT OF CURB RETURN
	P.C.R.	POINT OF REVERSE CURVE
	PC	PIECE
	PERF	PERFORATED
	P.E.	PLAIN END
	PH	PHASE
	PH	POINT OF INTERSECTION
	P.I.	PLATE
	PTFM	PLATFORM
	PLBG	PLUMBING
	PLG	PILING
	PLY	PLYWOOD
	PNL	PANEL
	PNV	PINCH VALVE
	POL	POLYMER
	POLY	POLYETHYLENE
	PPM	PARTS PER MILLION
	PRE.	PRELIMINARY
	PREFAB	PREFABRICATED
	PREFIN	PREFINISHED
	PROJ	PROJECT
	PRV	PRESSURE REDUCING VALVE
	PS	PRIMARY SLUDGE
	PST	PUMP STATION
	PSC	PRIMARY SCUM
	PSF	POUNDS/SQUARE FOOT
	PSI	POUNDS/SQUARE INCH
	P.T.	POINT OF TANGENCY
	PT	POINT
	PTD	PAINTED
	PTE	PRELIMINARY TREATMENT EFFLUENT
	PTN	POTENTIAL (VOLTAGE)
	PV	PLUG VALVE
	PVC	POLYVINYL-CHLORIDE
	PVMT	PAVEMENT

R (CONT.)	REF	REFERENCE
	REFR	REFRIGERATOR
	REG	REGISTER
	REINF	REINFORCEMENT
	REM	REMOVABLE
	REQD	REQUIRED
	REV	REVISIONS
	RFC	ROOFING
	RGC	RIGID GALVANIZED CONDUIT
	RGH	ROUGH
	RM	ROOM
	RPM	REVOLUTIONS PER MINUTE
	RS	RAW SEWAGE
	RSP	RETURN SLUDGE PUMP
	RSR	RISER
	RUB	RUBBER
	RVP	PRESSURE RELIEF VALVE
	RW	RAW WATER
	S	SOUTH
	S	SANITARY SEWER
	SCH	SCHEDULE
	SCR	SCREENINGS
	SCP	SCUM PUMP
	SD	SANITARY DRAIN
	S.D.	SUBDRAIN
	SE	SECONDARY EFFLUENT
	SEC	SECTION
	SEQ	SEQUENCE
	SG	SLIDE GATE
	SHLD	SHOULDER
	SHFT.	SHIFT
	SIM	SIMILAR
	SL	RAW SLUDGE
	SL	SLUICE GATE
	SMA	SURFACE MECH. MIXER
	SMT	SUBSURFACE TURBINE MIXER
	SMX	SUBSURFACE MIXER
	SN	SUPERANTANT
	SP	STATIC PRESSURE
	SPEC	SPECIFICATIONS
	SPF	SOUNDPROOF
	SPH	SPACE HEATER
	SPL	SPECIAL
	SO	SQUARE
	SS	STAINLESS STEEL
	SSC	SECONDARY SCUM STATION
	STA	STANDARD
	STD	STANDARD
	STGR	STRINGER
	STL	STEEL
	STM	STORM SEWER
	STN	STONE
	STOR	STORAGE
	STP	SLUDGE TRANSFER PUMP
	STR	STRUCTURAL
	STWY	STAIRWAY
	SFL	SUB FLOOR
	SUSP	SUSPENDED
	SW	SWITCH
	SWBD	SWITCHBOARD
	SWS	SURFACE WASH SYSTEM
	SYM	SYMMETRICAL

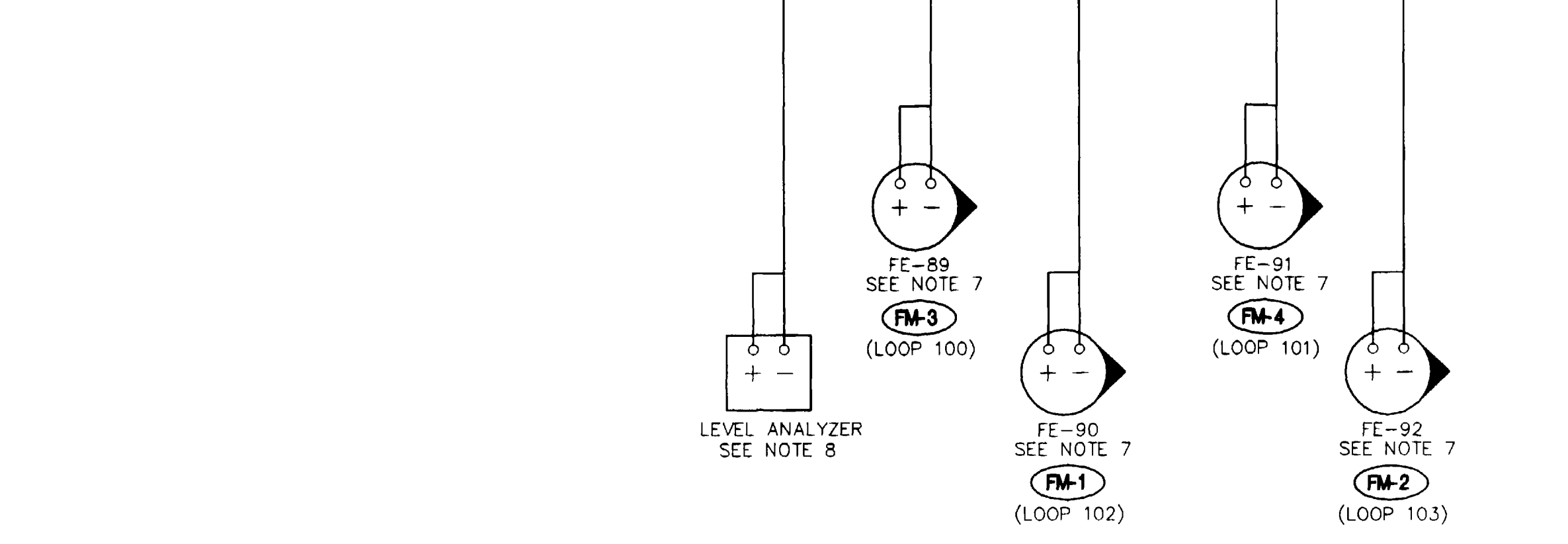
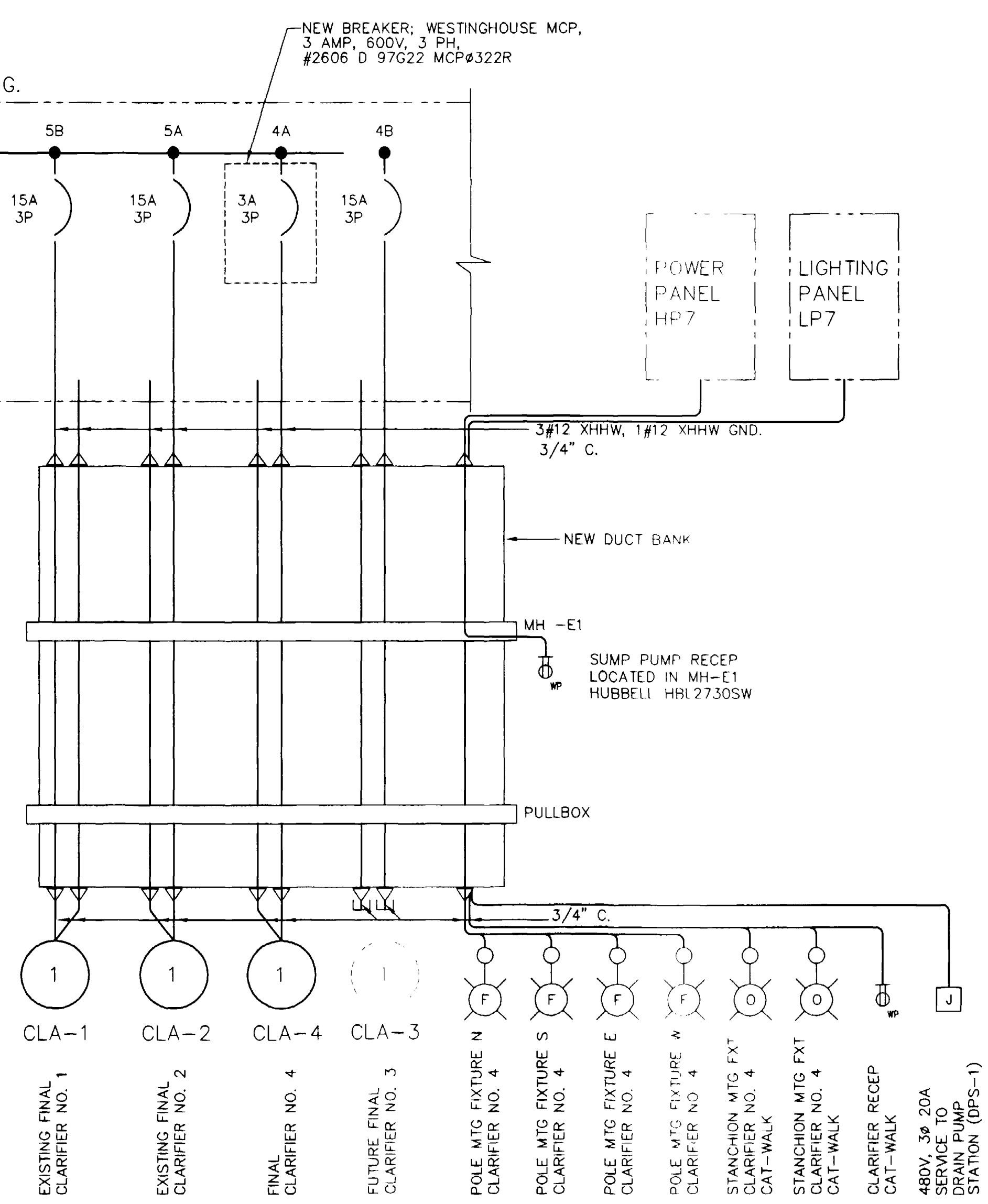
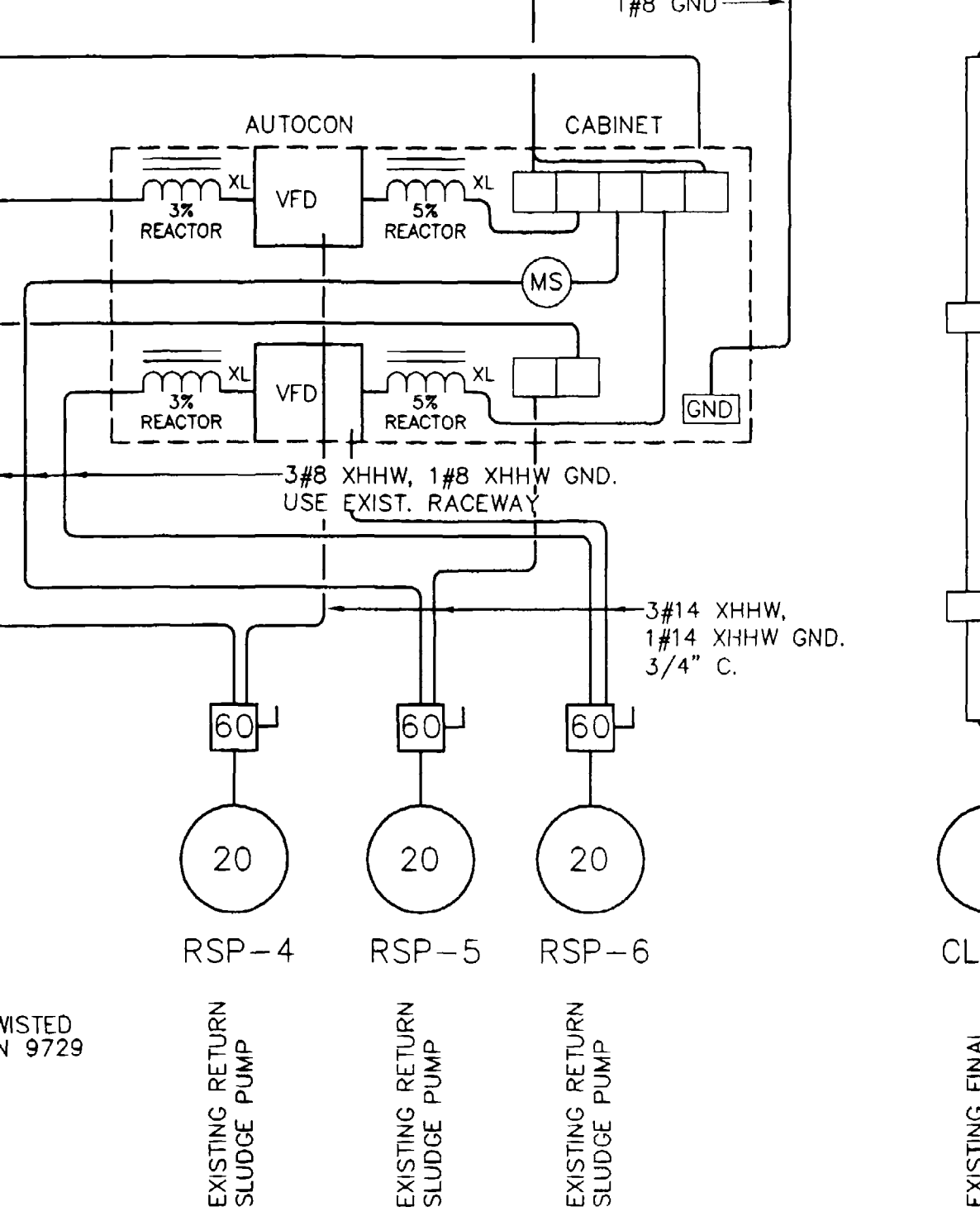
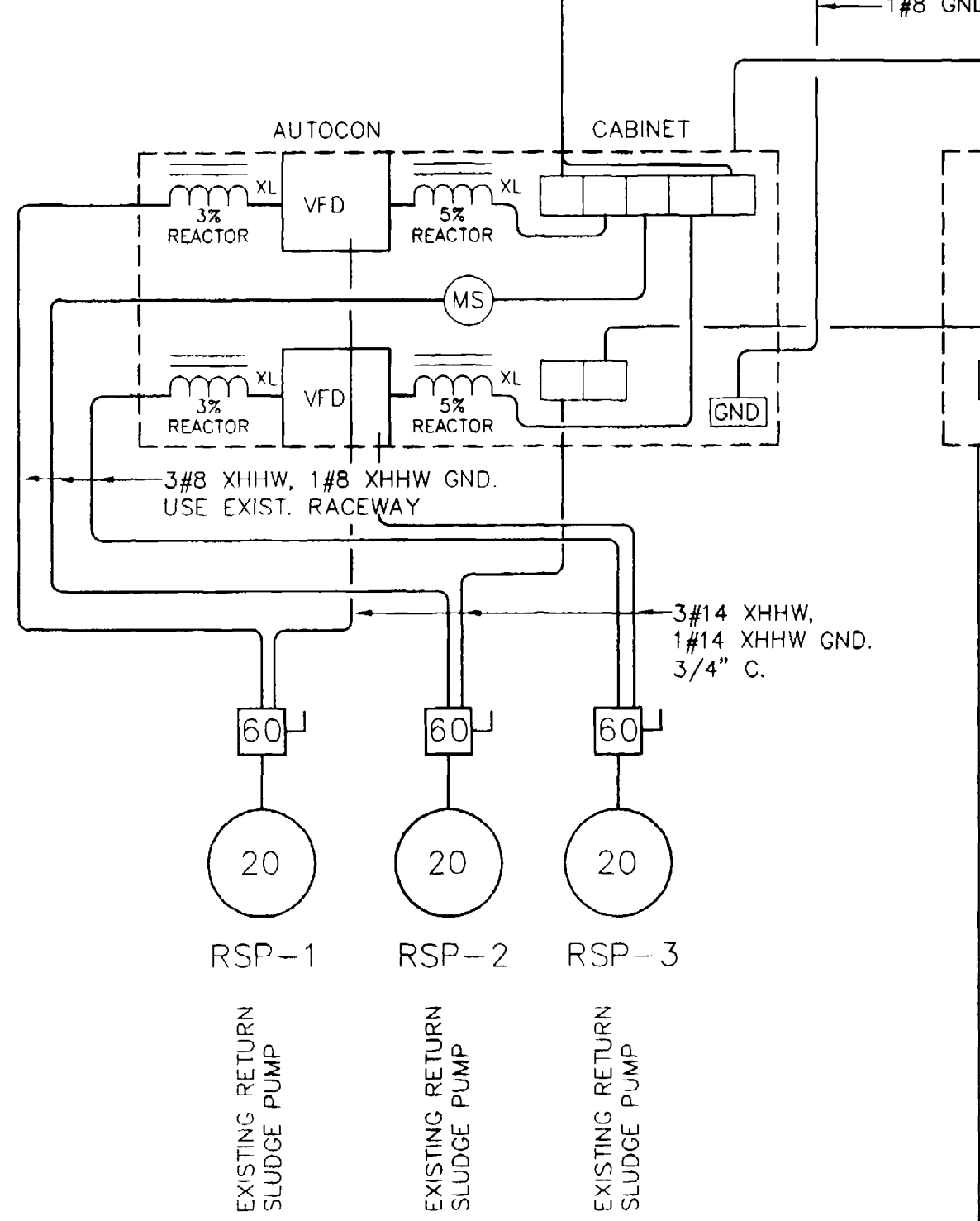
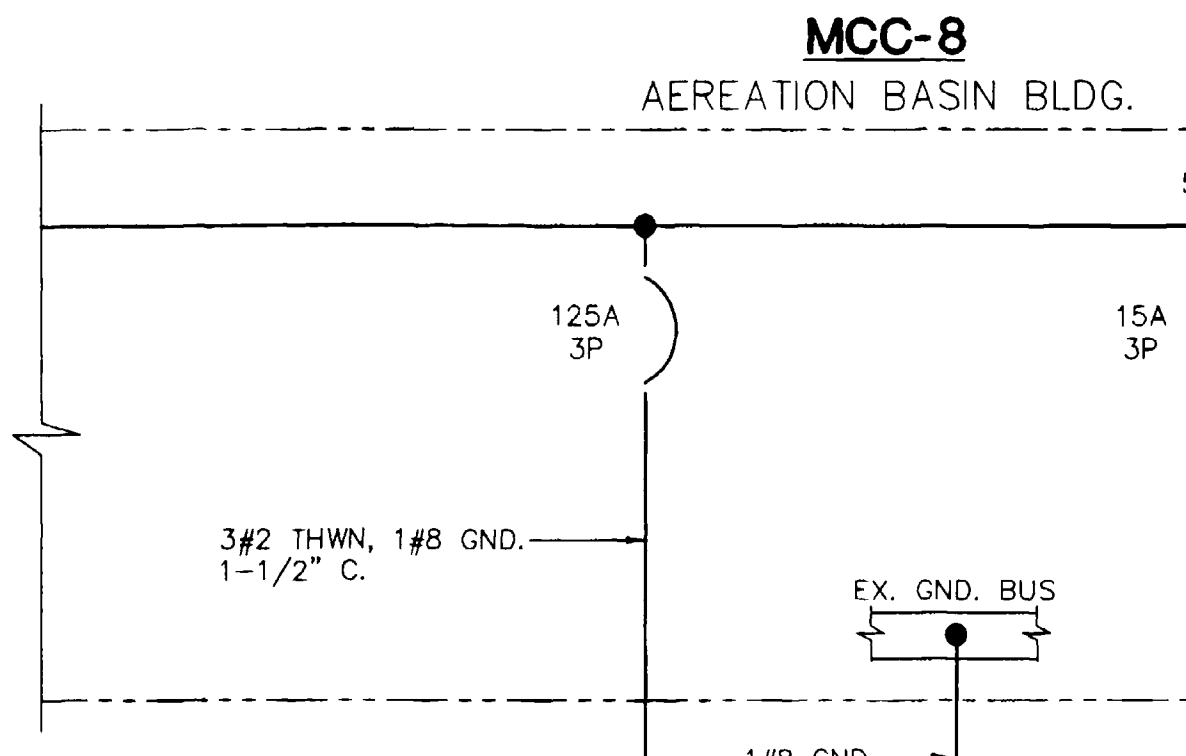
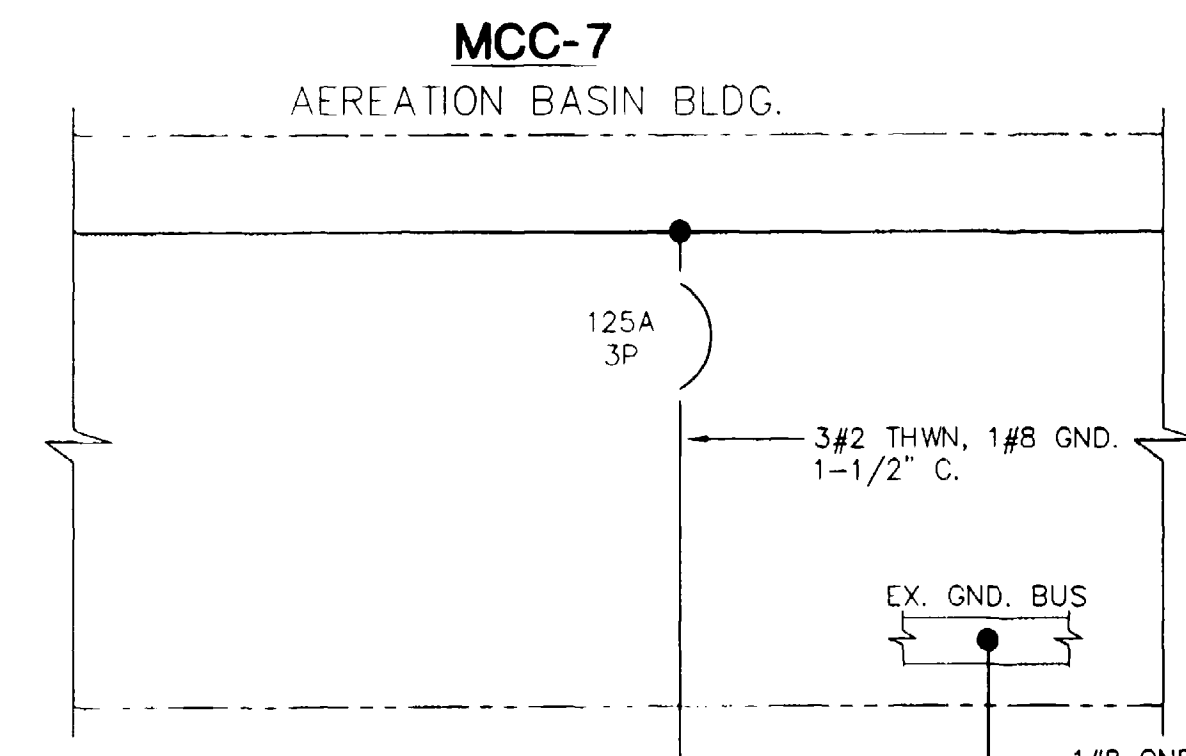
T (CONT.)	T.O.F.	TOP OF FLOOR
	TOIL	TOILET
	TOPO	TOPOGRAPHY
	T.O.P.	TOP OF PIPE
	T.O.S.	TOP OF SLAB
	T.O.W.	TOP OF WALL
	TRMT	TREATMENT
	TSC	THICKENER SCUM
	TSL	THICKENER SLUDGE
	TV	THERMOSTAT
	TV	TELESCOPE VALVE
	TYP	TYPICAL
	U	UNDERGROUND
	UG	UNDERGROUND
	UH	UNIT HEATER
	UL	UNDERWRITERS LABORATORIES
	UNEX	UNEXCAVATED
	UNFIN	UNFINISHED
	U.N.O.	UNLESS NOTED OTHERWISE
	UPC	Uninterruptible Power System
	UT	UTILITY
	UV	ULTRA-VIOLET DISINFECTIONS
	V	VOLT
	V	VITRIFIED CLAY PIPE
	VD	VAULT DOOR
	VENT.	VENTILATION
	VERT (V)	VERTICAL
	VFD	VARIABLE FREQUENCY DRIVE
	VLV	VALVE
	VOL	VOLUME
	V.P.C.	VERTICAL POINT OF CURVATURE
	V.P.I.	VERTICAL POINT OF INTERSECTION
	V.P.T.	VERTICAL POINT OF TANGENCY
	VS	VENT STACK
	VT	VINYL-TILE
	V.T.R.	VOLTAGE TRANSFORMER
	VTR	VENT THROUGH ROOF
	VVM	VERIFY WITH MFG.
	W	WEST
	W	WIRE
	WR	WITH
	W/W	WASTE ACTIVATED SLUDGE
	WD	WOOD
	W.D.	WASTE DRAIN
	WDW	WINDOW
	WF	WIDE FLANGE
	WH	WALL HYDRANT
	WHM	WATTHOUR METER
	WI	WROUGHT IRON
	WKS	WORK SHOP
	W/O	WITHOUT
	WP	WEATHER PROOF
	WPF	WATER PROOF
	WPFG	WATER PROOFING
	WSP	WATER SURFACE ELEVATION
	WT	WASTE ACTIVATED SLUDGE
	WTF	WEIGHT
	WVF	WELDED WIRE FABRIC
	WVM	WOVEN WIRE MESH
	X	TRANSFORMER
	XFMR	TRANSFORMER
	Y	YARD
	Y	YARD
	Y.D.	YARD DRAIN

B	BI	BATT INSULATION
	BDY	BOUNDARY
	BEJ	BRICK EXPANSION JOINT
	BFV	BUTTERFLY VALVE
	BIT	BITUMINOUS
	BL	BUILDING LINE
	BLDG	BUILDING
	BLC	BOILER CIRCULATION PUMP
	BLK	BLOCK
	BLR	BOILER
	BM	BEAM
	B.M.	BENCH MARK
	B.O.	BOTTOM OF
	BOT	BOTTOM
	BRCG	BRAONIC
	BRDG	BRIDGING
	BRG	BEARING
	BRK	BRICK
	BRK	BRACKET
	BS	BAR SCREEN
	BT	BENT
	BTU	BRITISH THERMAL UNIT
	BY	BALL VALVE
	BWR	BACKWASH RETURN
	BWS	BACKWASH SUPPLY
	BWW	BACKWASH WASTE
	C	COMPRESSED AIR
	CA	COMPRESSED AIR
	CB	CIRCUIT BREAKER
	CND	CONDUIT
	CAP	CAPACITY
	CC	CENTER TO CENTER
	CB	CATCH BASIN
	CEM	CEMENT
	CFM	CUBIC FEET PER MINUTE
	CHIM	CHIMNEY
	C.I.	CURB INLET
	CI	CAST IRON

D	D	DRAIN
	DC	DIRECT CURRENT
	DEG	DEGREE
	DEPR	DEPRESSION
	DEPT	DEPARTMENT
	DET	DETAIL
	DF	DRINKING FOUNTAIN
	DH	DUCT HEATER
	DIA	DIAMETER
	DIAG	DIAGONAL
	DIP	DUCTILE IRON PIPE
	DN	DOWN
	DR	DOOR
	D	DRAIN
	DS	DOWN SPOUT
	DSL	DIGESTER SLUDGE
	DV	DIAPHRAGM VALVE
	DWG	DRAWING
	DWLS	DOWELS
	E	EAST
	E	EAST
	E.A.	EACH
	E.A.	EXHAUST AIR
	EFF	EACH FACE
	EFF	EFFLUENT
	EFP	EFFLUENT FILTER PUMP
	EJ	EXPANSION JOINT
	EL.	ELEVATION
	ELEC.	ELECTRIC OR ELECTRICAL
	ENCL	ENCLOSURE
	ENT	ENTRANCE
	EQ.	EQUAL OR EQUALIZATION
	EQUIP	EQUIPMENT
	EST	ESTIMATE
	EW	EACH WAY
	EXC	EXCAVATE
	EXH	EXHAUST

G	G	GAS
	GA	GAGE OR GAUGE
	GALV	GALVANIZED
	G.B.	GRADE BREAK
	GBV	GLOBE VALVE
	G.C.O.	GROUND CLEANOUT
	GEN	GENERAL
	GFI	GROUND FAULT INTERRUPTOR
	GI	GALVANIZED IRON
	GL	GLASS
	GND	GROUND
	GPM	GALLONS PER MINUTE
	GRD	GRADE
	GR	GRIT
	GP	GRIT PUMP
	GRS	GALVANIZED RIGID STEEL CONDUIT
	GR	GRATING
	GS	GRIT SEPARATOR
	GV	GATE VALVE
	GW	GRIT WASHER
	GWB	GYPNUM WALLBOARD
	GWT	GLAZED WALL TILE
	GYP	GYPNUM
	H	HOSE BIBB
	HB	HOSE BIBB
	HCP	HEAT CIRCULATION PUMP
	HD	HEAD
	HDPE	HIGH DENSITY POLYETHYLENE
	HDR	HEADER
	HDRL	HANDRAIL
	HEX	HEAT EXCHANGER
	H.P.	HORSE POWER
	HPR	HIGH PRESSURE
	HRR	HOT WATER RETURN
	HRS	HOT WATER SUPPLY
	HORZ.	HORIZONTAL
	HP	HIGH POINT
	HT	HEIGHT
	HTG	HEATING
	HTR	HEATER
	H.W.	HEADWALL

L	LAB	LABORATORY
	LAV	LAVATORY
	LBR	LUMBER
	LBS	POUNDS
	LD	LOAD
	LDG	LOADING
	LEN	LENGTH
	LN	LINEAR
	LIN	LONG LEG HORIZONTAL
	LLH	LONG LEG VERTICAL
	LLV	LONG LEG VERTICAL
	LM	LIQUID FLOW METER
	LNG	LONG
	LONG.	LONGITUDINAL
	LR	GRADE
	LP	LONG POINT
	L.R.	LONG RADIUS
	LSG	LIQUID SLUDGE GAS
	LT	LIGHT
	LITG	LIGHTING
	LWL	LOW WATER LEVEL
	M	MACHINE
	MACH.	MACHINE
	MAS	MASONRY
	MTL	MATERIAL
	MAX	MAXIMUM
	MCJ	MASONRY CONTROL JOINT
	MECH	MECHANICAL
	MER	MECHANICAL EQUIPMENT ROOM
	MET	METAL
	MFG	MANUFACTURING
	MG	



- GENERAL NOTES:**
- ELECTRICAL CONTRACTOR SHALL PURCHASE AND INSTALL (4) FOUR 30 HP RATED VARIABLE FREQUENCY DRIVES. ASEA BROWN BOVERI VARIABLE FREQUENCY DRIVES, #601-0040-4-000B1200801B WITH (4) KEY PAD MOUNTING KITS #NPMP-01-KIT, WERE USED FOR DESIGN.
 - ELECTRICAL CONTRACTOR SHALL PURCHASE AND INSTALL (4) FOUR FILTER CHOKES, 1.2mH, IN THE VFD PRIMARY, AND (4) FOUR FILTER CHOKES, 0.8 mH, IN THE VFD SECONDARY. MTE CORPORATION FILTER CHOKES, 1.2mH, #RL-03503 IN THE VARIABLE FREQUENCY DRIVE PRIMARY, AND 0.8 mH, #RL-03502 IN THE VARIABLE FREQUENCY DRIVE SECONDARY. ABOVE MENTIONED MODELS WERE USED FOR DESIGN.
 - BELDEN 9729 SHIELDED TWISTED PAIR DATA CABLE WAS USED FOR DESIGN. TERMINATE SHIELD AT PLC. INSTRUMENT END SHALL FLOAT.
 - SQUARE D SAFETY SWITCH 60 AMP, 3 POLE, NEMA 4, W/INTERLOCK 2NO, 2NC WAS USED FOR DESIGN. CAT. NO. HU362DS-EI2.
 - ELECTRICAL CONTRACTOR SHALL PURCHASE AND INSTALL (2) TWO 400W HPS, 480V DUAL FUSE TRI-VOLT BALLAST, PHOTOCCELL, 2" ADJUSTABLE FITTER. PERIMETER POLES; HAPCO # 21-645 W/ T&B LUMINAIRE #125-06643/IES TYPE III. CATWALK POLES; 1-1/4" GRC MAST WITH APPLETON #F2-6/45' STANCHION AND #VSPAN20125 GLOBE.
 - ELECTRICAL CONTRACTOR SHALL PURCHASE AND INSTALL (1) ONE NEMA L16-30R, 480V, 3φ, 30A, RECEPTACLE IN MANHOLE E1. HUBBELL HBL2730SW RECEPTACLE, MATING PLUG, HUBBELL HBL2731SW WAS USED FOR DESIGN.
 - FLOWMETER LOCATIONS, SEE SHT. E-5. ELECTRICAL CONTRACTOR SHALL CONTRACT WITH FRONTIER CONTROLS, MR. JERRY L. BEAN, 970 870 6589, FOR MODIFICATIONS TO 30" FLOW METERS #89, AND #91 (FM-3, FM-4). REFER TO FICC QUOTE #17-129, OPTION #2, APPENDIX C OF SPECIFICATIONS.
 - LEVEL ANALYZER, REMOTE MONITORING. SEE SHT. E-7.
 - ELECTRICAL CONTRACTOR SHALL PURCHASE AND INSTALL (1) ONE TOSHIBA T2N PLC WITH RED LION VX550 OPERATOR INTERFACE TERMINAL WHICH WERE USED FOR DESIGN OR ENGINEERING APPROVED EQUAL.

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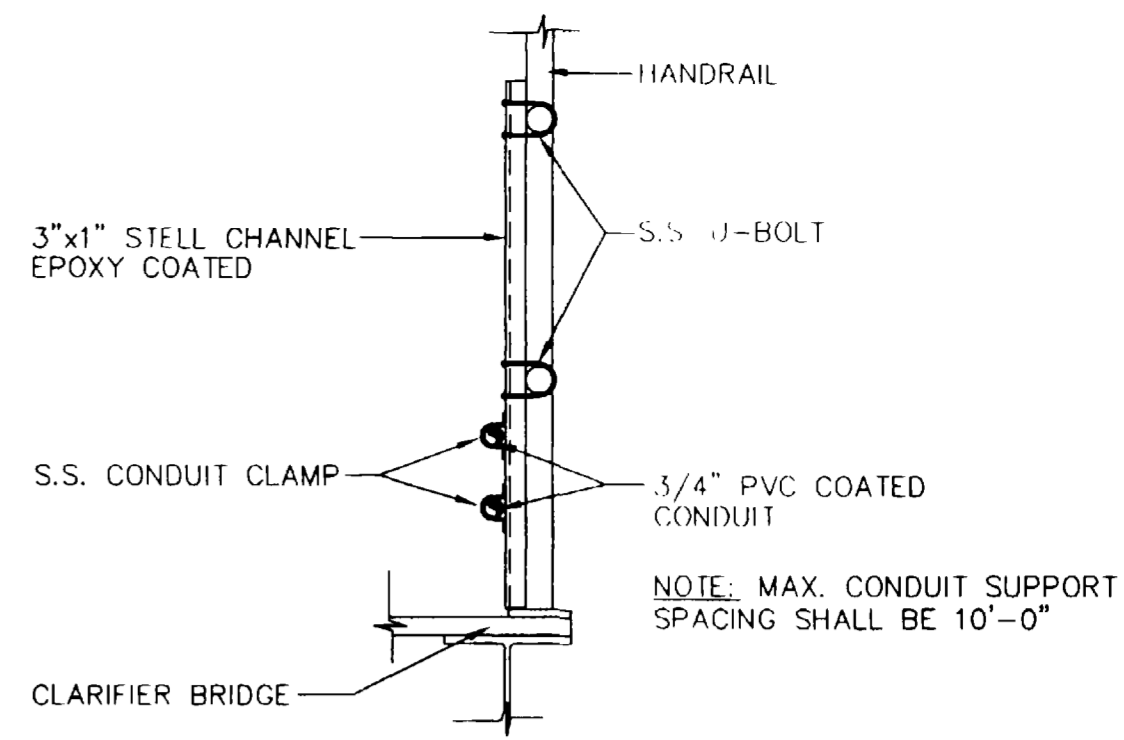
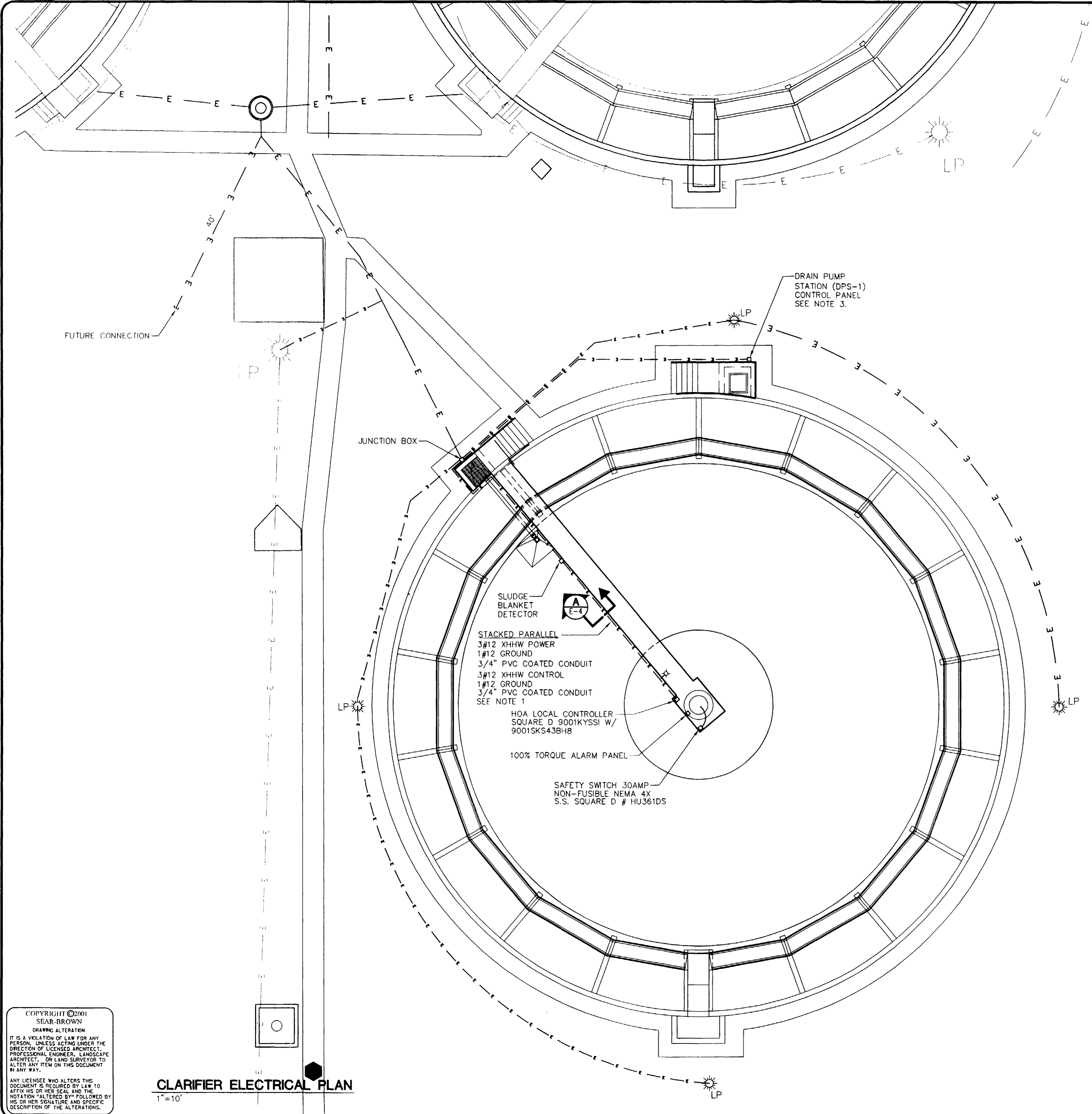
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PROJECT: PERSIGO WASTEWATER TREATMENT PLANT FINAL CLARIFIER ADDITION
TITLE OF DRAWING: ELECTRICAL ONE-LINE DIAGRAM AND POWER PLAN
PROJECT NO.: 906-001
DRAWING NO.: E-3

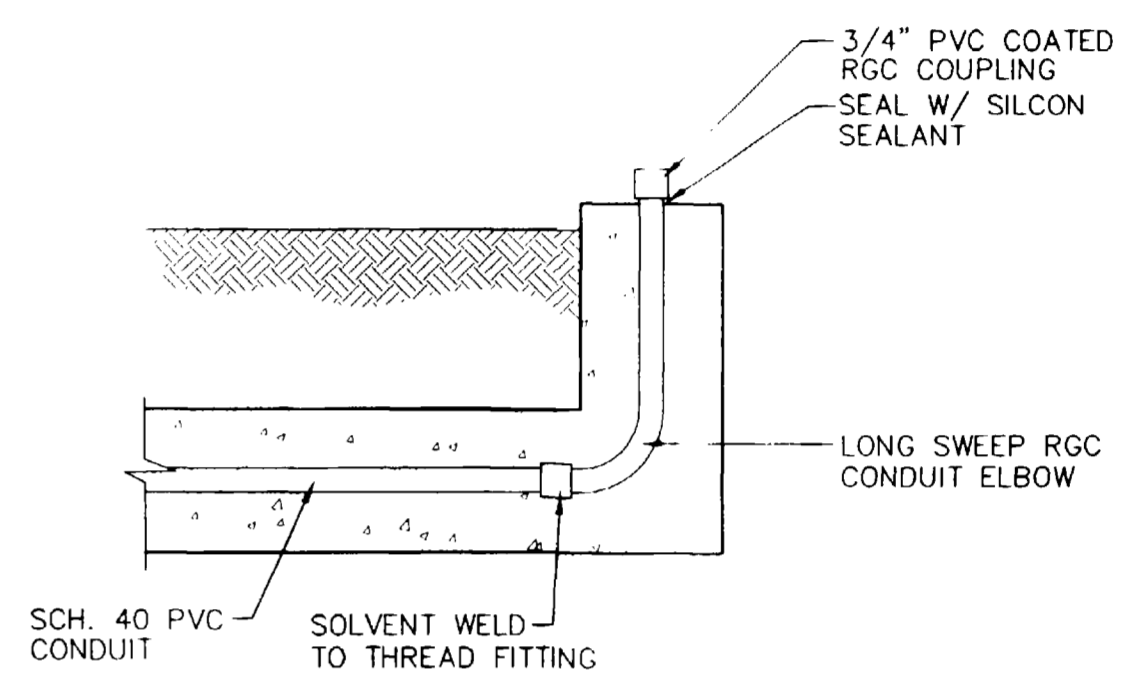
NO.	REVISIONS	DATE	BY
6			
5			
4			
3			
2	RECORD DRAWING	5/01	J.P.M.
1	ISSUED FOR CONSTRUCTION	6/14/00	J.P.M.
0	ISSUED FOR BIDDING	5/23/00	J.P.M.

PROJECT ENGINEER/ARCHITECT: WLU
PROJECT MANAGER: JPM
DRAWN BY: SHJ
SCALE: NOTED
FIRST ISSUE DATE: 2/00
DATE: 6/14/00

RECORD DRAWING



SECTION A
N.T.S.



DETAIL 1
PVC TO RGC TRANSITION
N.T.S.

GENERAL NOTES

1. ELECTRICAL CONTRACTOR SHALL INSTALL PVC COATED CONDUIT ABOVE GROUND. MAKE TRANSITION FROM PVC CONCRETE ENCASED PER DETAIL 1.
2. ROBROY PLASTI-BOND[®] COATED CONDUIT AND COUPLINGS WERE USED FOR DESIGN.
3. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH TO PROVIDE SERVICE TO ONE SUBMERSIBLE PUMP. BARNES #4SE7544HL, 3 #10, 1 #10 GND, 3/4" C PVC COATED, CONTROL STATION WITH STARTER AND HOA SWITCH CONTAINED WITHIN NEMA 4 ENCLOSURE.
4. REFER TO DRAWING E-2 FOR MOUNTING DETAILS.

NO.	DATE	BY	REVISIONS
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2	5/01	J.P.M.	RECORD DRAWING
1	6/14/00	J.P.M.	ISSUED FOR CONSTRUCTION
0	5/23/00	J.P.M.	ISSUED FOR BIDDING

PROJECT ENGINEER/ARCHITECT	WJU	2/00
PROJECT MANAGER	JPN	2/00
DRAWN BY	SLH	2/00
SCALE	NOTED	
FIRST ISSUE DATE		6/14/00

PROJECT	PERSIGO WASTEWATER TREATMENT PLANT FINAL CLARIFIER ADDITION
TITLE OF DRAWING	FINAL CLARIFIER NO. 4 ELECTRICAL PLAN

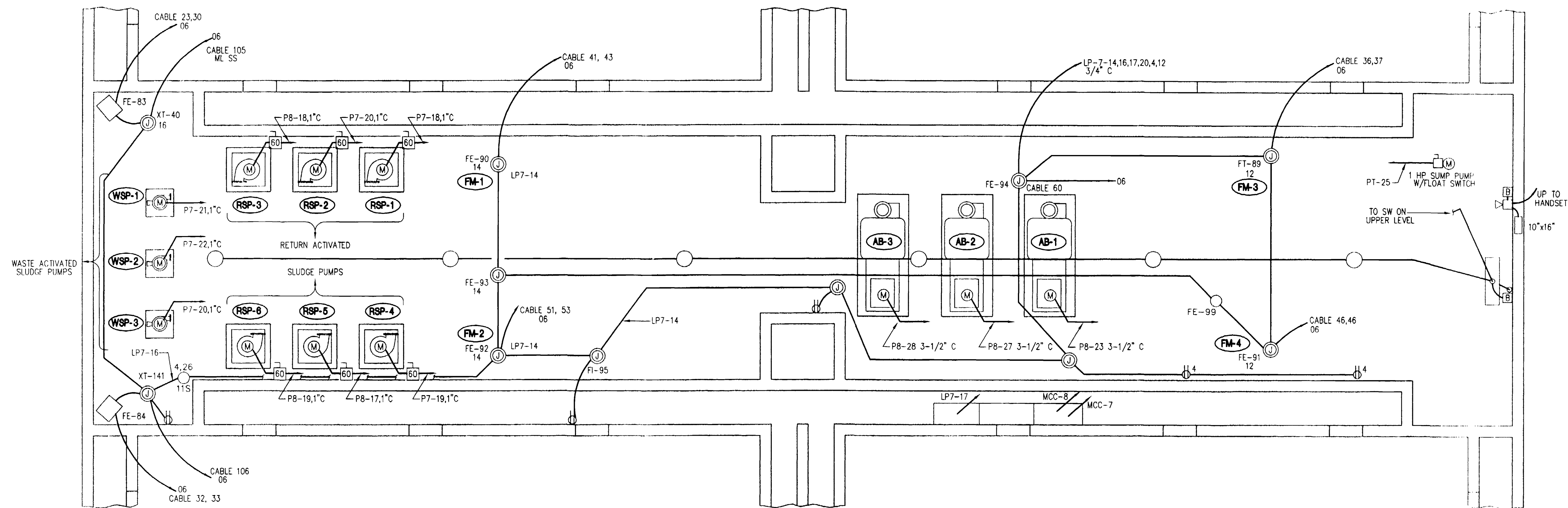
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PROJECT NO.	906-001
DRAWING NO.	E-4

RECORD DRAWING

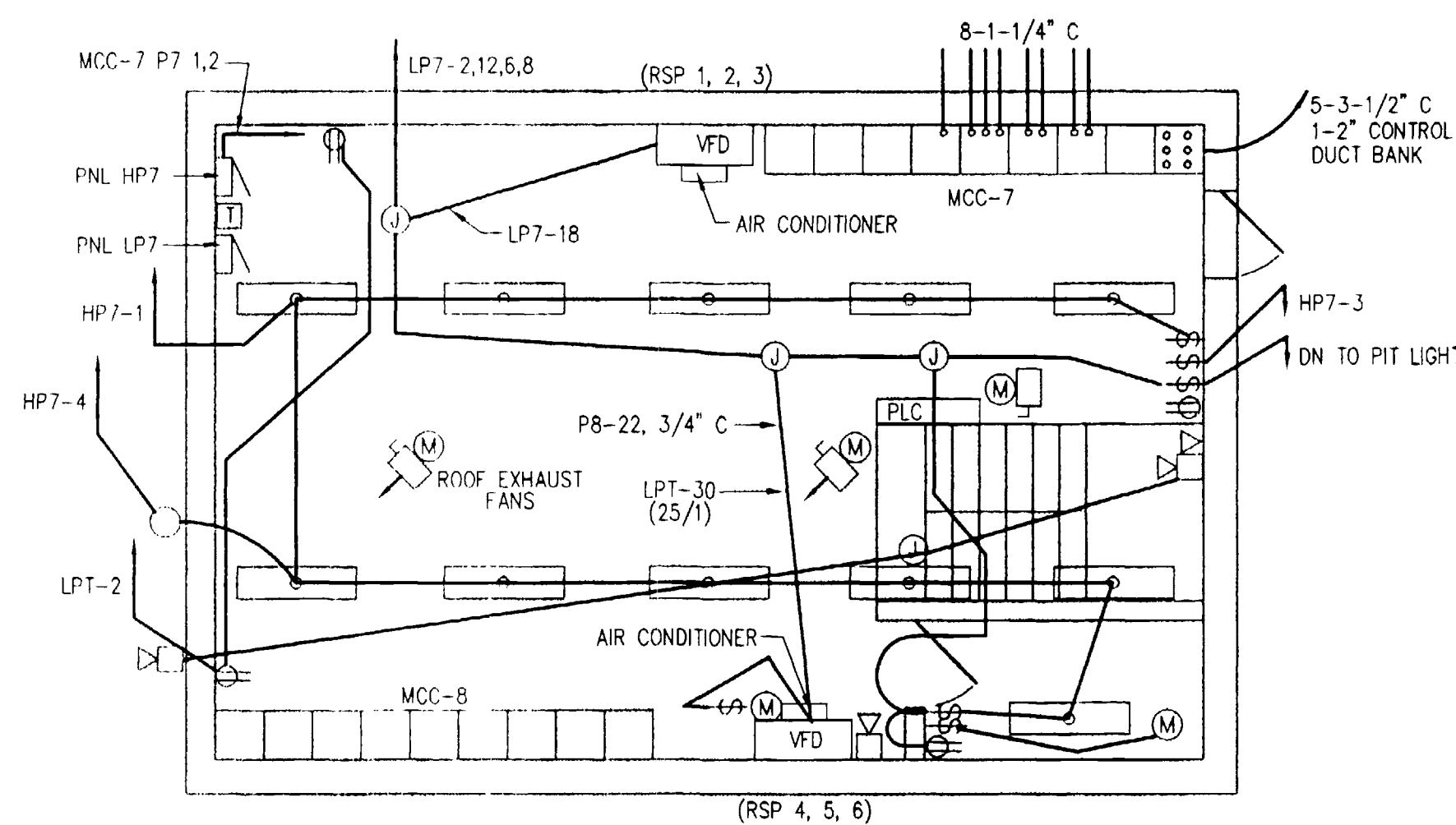
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CLARIFIER ELECTRICAL PLAN
1"=10'



RAS/WAS PUMP ROOM ELECTRICAL PLAN

3/16" = 1'-0"



MCC ROOM ELECTRICAL PLAN

3/16" = 1'-0"

GENERAL NOTES:

BRAND NAMES AND MODEL NUMBERS INDICATED WERE USED FOR DESIGN. SEE SPECIFICATIONS FOR ACCEPTABLE MANUFACTURERS FOR EQUIPMENT.

- ELECTRICAL CONTRACTOR SHALL INSTALL LOCAL DISCONNECT, SQUARE D #HU362DSE1, OR APPROVED EQUAL, 60 AMP, NEMA 4X, 3 WIRE, NON FUSIBLE SAFETY SWITCH NEAR EACH OF THE SLUDGE PUMPS, RSP-1, RSP-2, RSP-3, RSP-4, RSP-5, RSP-6. USE EXISTING CIRCUIT FEEDERS, RECONNECT MOTORS CONTROL CIRCUIT TO BE CONNECTED IN AUTOCON CABINETS ONE AND TWO.
- ELECTRICAL CONTRACTOR SHALL REPLACE THE EXISTING FLOW METERS FE-89 AND FE-91 (FM-3, FM-4). SALVAGE SPOOL PIECE TO EXISTING FLOW METERS FE-89 AND FE-91 (FM-3, FM-4). COORDINATE WITH FLOW METER VENDOR FOR REPLACING ELECTRONICS IN FM-3 AND FM-4. CONTROL POWER IS TO BE RECONNECTED FROM PANEL LP7 BREAKER 14. INSTRUMENTATION SIGNAL CABLE, BELDEN 9729 IS TO BE INSTALLED FROM THE FLOW METERS TO THE NEW PLC LOCATED NEAR MCC-7. SHIELDS SHALL BE GROUNDED AT THE PLC AND AT THE FLOW METERS. REF. SPEC. SECTION 13442 AND APPENDIX C.
- ELECTRICAL CONTRACTOR SHALL REMOVE THE FEEDER FROM THE MCC-7 125 AMP, 3 POLE BREAKER CURRENTLY FEEDING THE AUTOCON CABINET VFD. REMOVE THE EXISTING VFD INTERNAL COMPONENTS. THE EXISTING ENCLOSURE IS TO REMAIN IN SERVICE. INSTALL (2) TWO ASEA BROWN BOVERI ACS601-0040-4-000B1200801B VFD'S. PROVIDE SUPPORT BRACKETS FOR EACH VFD. (SUBCONTRACT MECHANICAL VENDOR TO PROVIDE (1) ONE ONE TON EVAPORATOR-CONDENSOR UNIT TO BE INSTALLED AND DUCTED TO THE EXISTING AUTOCON CABINET 1.) MOUNTING OF THE NEW VFD'S KEY PAD SHALL BE WITH (2) TWO ABB KEY PAD MOUNTING KIT NPMP-01-KIT.
- ELECTRICAL CONTRACTOR SHALL RECONNECT THE FEEDER FROM MCC-7 USING SQUARE D #AK5JB144 BUS BAR, AM1DL201 MOUNTING RAIL, (3) THREE AK5PA232 MOUNTING PLATE TAP-OFF, (3) THREE GV2M32-24-32 STARTERS, (3) THREE LC1D3210-120 CONTACTORS. CONNECT EACH OF THE CONTACTORS TO THE ABB VFD'S TERMINALS U1, V1, W1 WITH #8 CONDUCTORS. CONNECT EACH OF THE SLUDGE PUMP MOTORS RSP-1, RSP-2, RSP-3 TO THE RESPECTIVE TERMINALS U2, V2, W2. SEE DRAWING E-6 FOR CABINET LAYOUT. PROVIDE (4) FOUR ALLEN-BRADLEY #1492-PDM3111 TERMINAL BLOCKS.
- ELECTRICAL CONTRACTOR SHALL REMOVE THE FEEDER FROM THE MCC-8 125 AMP, 3 POLE BREAKER CURRENTLY FEEDING THE AUTOCON CABINET VFD. REMOVE THE EXISTING VFD INTERNAL COMPONENTS. THE EXISTING ENCLOSURE IS TO REMAIN IN SERVICE. INSTALL (2) TWO ASEA BROWN BOVERI ACS601-0040-4-000B1200801B VFD'S. PROVIDE SUPPORT BRACKETS FOR EACH VFD. (SUBCONTRACT MECHANICAL VENDOR TO PROVIDE (1) ONE ONE TON EVAPORATOR-CONDENSOR UNIT TO BE INSTALLED AND DUCTED TO THE EXISTING AUTOCON CABINET 2.) MOUNTING OF THE NEW VFD'S KEY PAD SHALL BE WITH (2) TWO ABB KEY PAD MOUNTING KIT NPMP-01-KIT.
- ELECTRICAL CONTRACTOR SHALL RECONNECT THE FEEDER FROM MCC-8 USING SQUARE D #AK5JB144 BUS BAR, AM1DL201 MOUNTING RAIL, (3) THREE AK5PA232 MOUNTING PLATE TAP-OFF, (3) THREE GV2M32-24-32 STARTERS, (3) THREE LC1D3210-120 CONTACTORS. CONNECT EACH OF THE CONTACTORS TO THE ABB VFD'S TERMINALS U1, V1, W1 WITH #8 CONDUCTORS. CONNECT EACH OF THE SLUDGE PUMP MOTORS RSP-4, RSP-5, RSP-6 TO THE RESPECTIVE TERMINALS U2, V2, W2. SEE DRAWING E-6 FOR CABINET LAYOUT. PROVIDE (4) FOUR ALLEN-BRADLEY #1492-PDM3111 TERMINAL BLOCKS.
- ELECTRICAL CONTRACTOR SHALL INSTALL TOSHIBA T2N PROGRAMMABLE CONTROLLER WITHIN A HOFFMAN ENCLOSURE A-24H20CLP W/A-24P20 PANEL. COOLING OF ENCLOSURE, SEE SHT E-6.

NO.	DATE	REVISIONS	BY
6			
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PROJECT ENGINEER/ARCHITECT	WJU	2/00
PROJECT MANAGER	JPM	2/00
DRAWN BY	SLH	2/00
SCALE	NOTED	
FIRST ISSUE DATE	6/14/00	
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PROJECT: PERSIGO WASTEWATER TREATMENT PLANT
FINAL CLARIFIER ADDITION

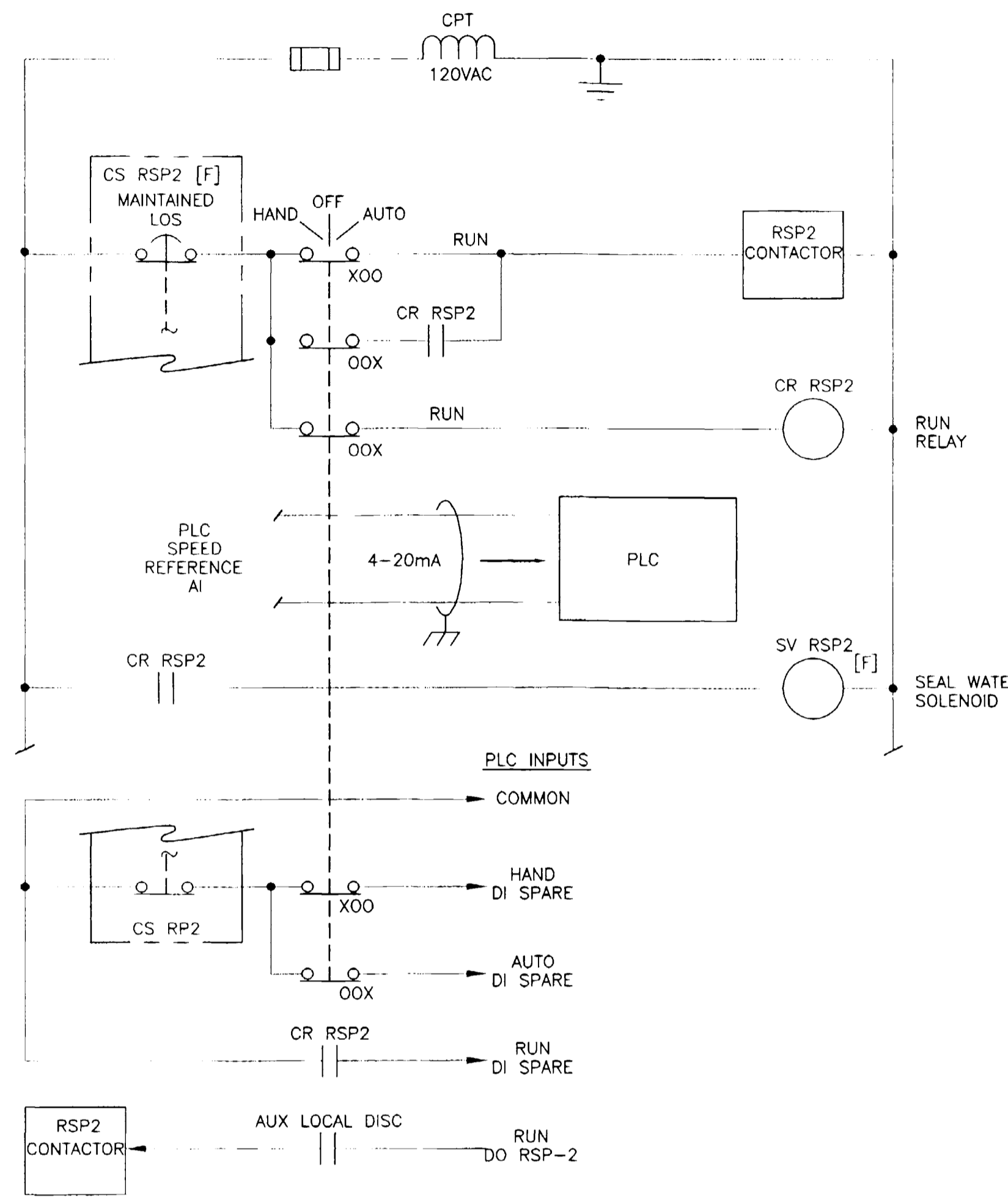
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PROJECT NO. **906-001**
DRAWING NO. **E-5**

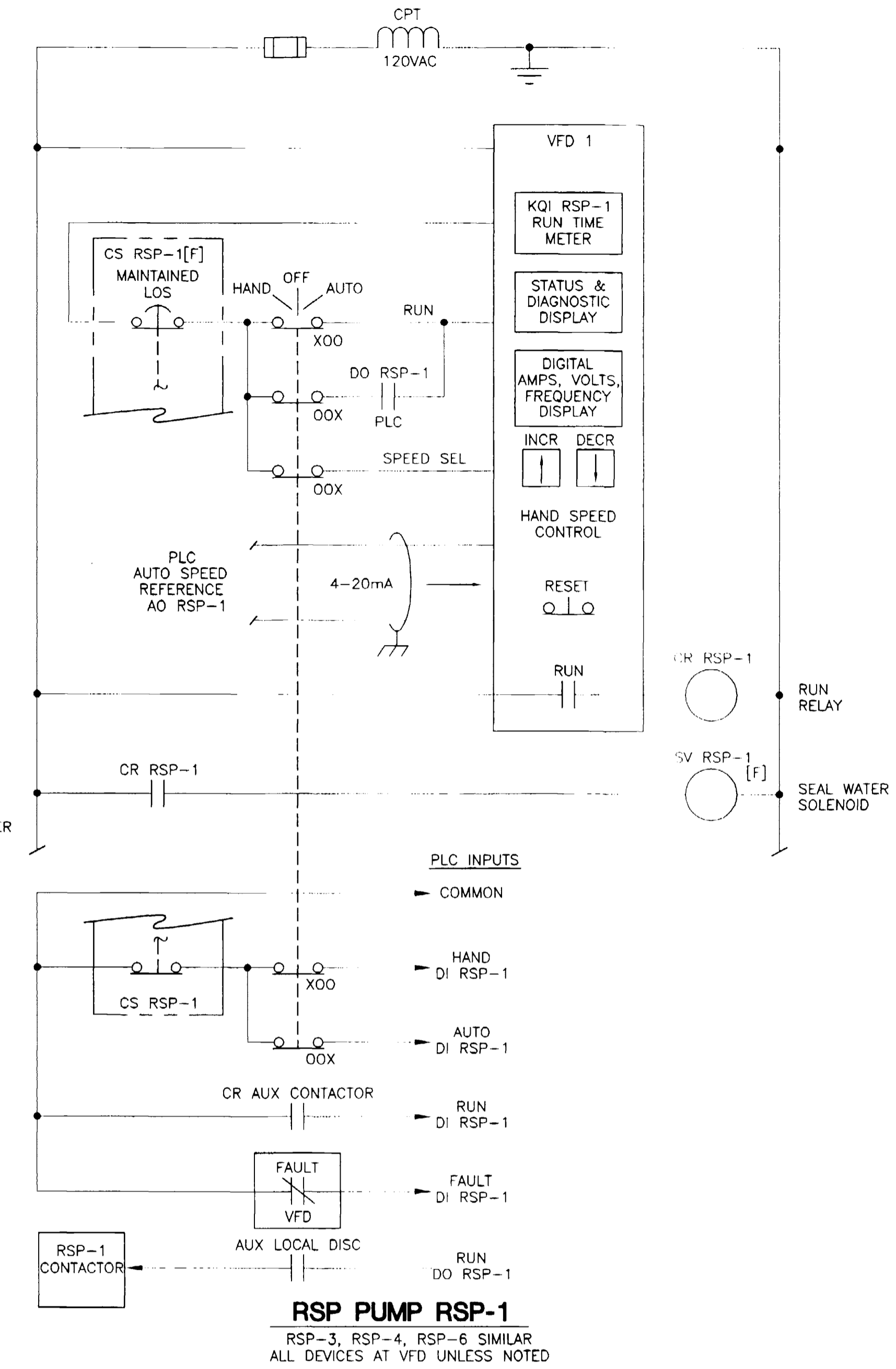
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RECORD DRAWING

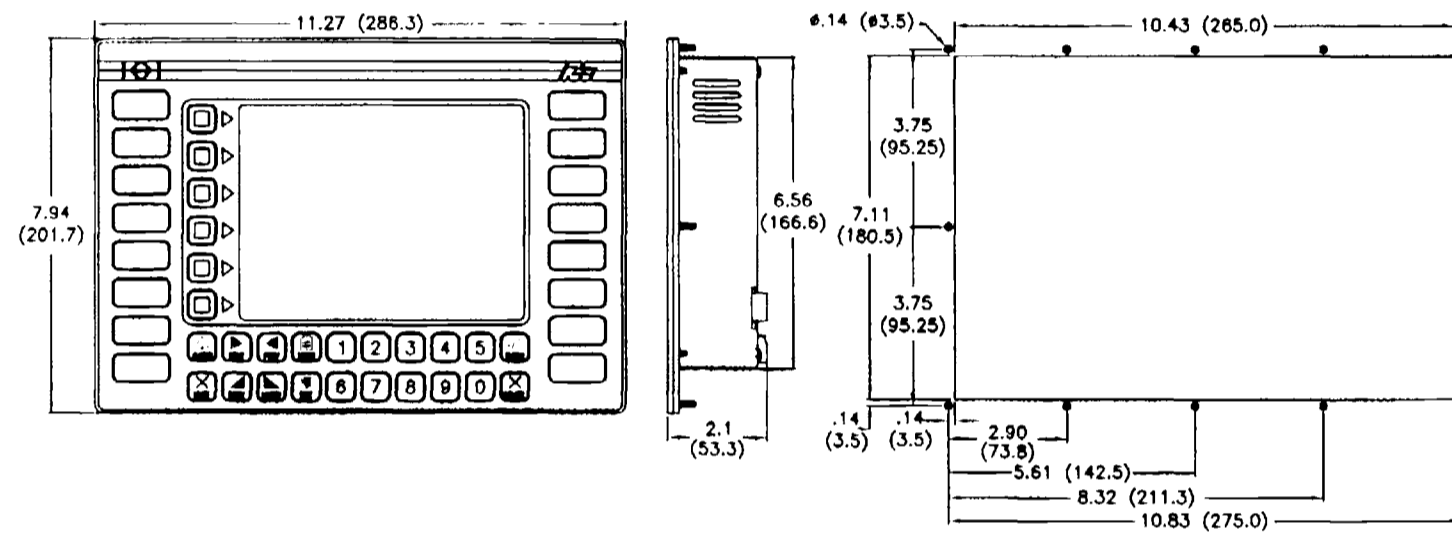
**PLC CABINET
NEMA TYPE 4 ENCLOSURE**



RAS PUMP RSP-2
RSP-5 SIMILAR
ALL DEVICES AT VFD UNLESS NOTED



RSP PUMP RSP-1
RSP-3, RSP-4, RSP-6 SIMILAR
ALL DEVICES AT VFD UNLESS NOTED



PLC OPERATOR INTERFACE

NOTES

1. RED LION CONTROLS MODEL VX-550 OPERATOR INTERFACE WAS USED FOR DESIGN.
2. TOSHIBA T2N PROGRAMMABLE CONTROLLER WAS USED FOR DESIGN.
3. PROGRAMMABLE CONTROLLER ENCLOSURE HOFFMAN A-24H2OCLP WAS USED FOR DESIGN.
4. ENCLOSURE COOLER NOREN CC250FP WAS USED FOR DESIGN.
5. ASEA BROWN BOVERI ACS601-0040-4-000B1200801B WAS USED FOR DESIGN.
6. MTE CORP. FILTER CHOKES RL-03502, RL-03503 WERE USED FOR DESIGN.
7. SQUARE D GV2M32-24-32 STARTERS WERE USED FOR DESIGN.
8. SQUARE D HOA SWITCH 9001KS43B, 9001KA1, 9001KA1, 9001KA3, 9001KY1 WERE USED FOR DESIGN.
9. SQUARE D EMERGENCY STOP SWITCH 9001SKR24RH13N WAS USED FOR DESIGN.

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				RECORD DRAWING	ISSUED FOR CONSTRUCTION	ISSUED FOR BIDDING
				5/01	6/14/00	5/31/00
				J.P.W.	J.P.W.	J.P.W.
				DATE	DATE	DATE
				BY	BY	BY

PROJECT ENGINEER/ARCHITECT	2/00
MJU	2/00
PROJECT MANAGER	
JPM	
DRAWN BY	2/00
SH	
SCALE	FIRST ISSUE DATE
NOTED	6/14/00

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Ft. Collins, CO. 80521-2603
(970) 482-5922
www.searbrown.com

PROJECT
PERSIGO WASTEWATER TREATMENT PLANT
FINAL CLARIFIER ADDITION

TITLE OF DRAWING
PANEL SCHEDULES AND DETAILS

PROJECT NO.
906-001
DRAWING NO.
E-6

RECORD DRAWING

