

2007 WATER SYSTEM IMPROVEMENTS

MONROE COUNTY WATER DISTRICT

CONTRACT I - PHASE IX - WATER TREATMENT PLANT

MARK WILLIAMS - CHAIRMAN

JOHN THOMPSON - SECRETARY

DR. KENNETH CRABTREE - COMMISSIONER

MIKE EMBERTON - COMMISSIONER

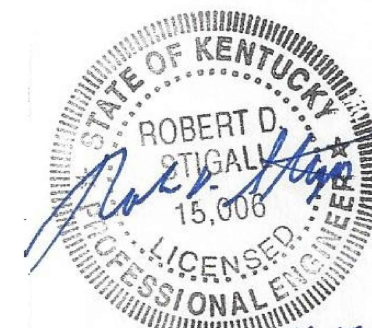
JOHNNY MILLER - COMMISSIONER

RICK ROSS - MANAGER

STIGALL ENGINEERING ASSOCIATES, INC.
CONSULTING ENGINEERS

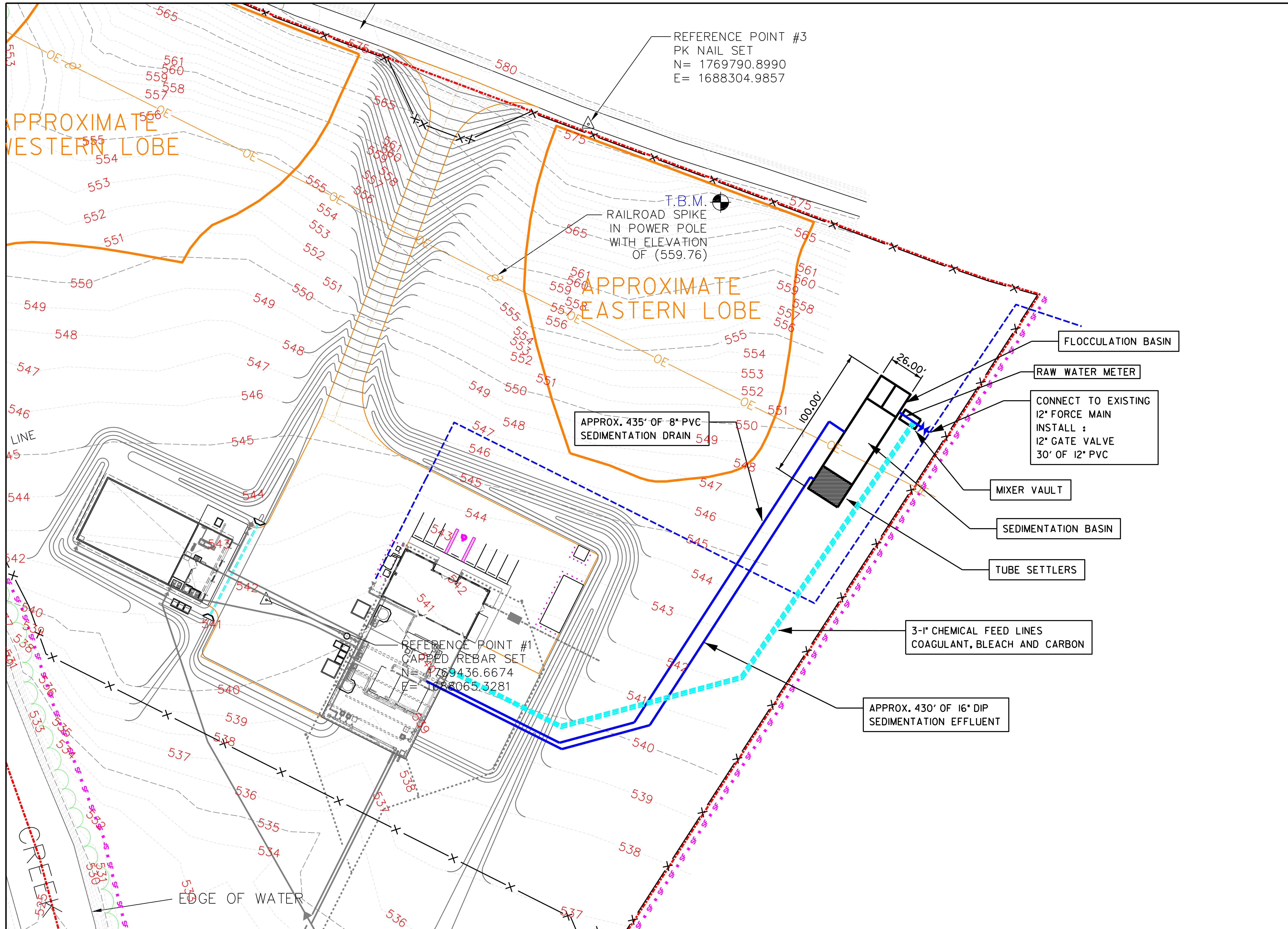
4117 HILLSBORO PIKE - SUITE 206
NASHVILLE, TENNESSEE 37215

APRIL 2018



PROJECT NO. 0323

CHANGE ORDER #8



REFERENCE POINT #3
 PK NAIL SET
 N= 1769790.8990
 E= 1688304.9857

T.B.M.
 RAILROAD SPIKE
 IN POWER POLE
 WITH ELEVATION
 OF (559.76)

APPROX. 435' OF 8" PVC
 SEDIMENTATION DRAIN

REFERENCE POINT #1
 CAPPED REBAR SET
 N= 1769436.6674
 E= 1688065.3281

FLOCCULATION BASIN

RAW WATER METER

CONNECT TO EXISTING
 12" FORCE MAIN
 INSTALL :
 12" GATE VALVE
 30' OF 12" PVC

MIXER VAULT

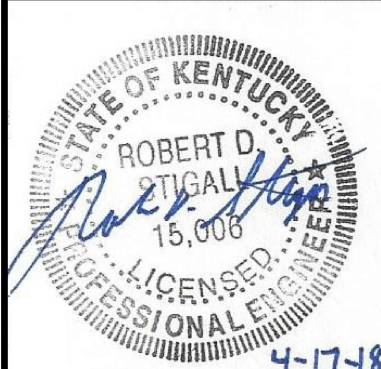
SEDIMENTATION BASIN

TUBE SETTLERS

3-1" CHEMICAL FEED LINES
 COAGULANT, BLEACH AND CARBON

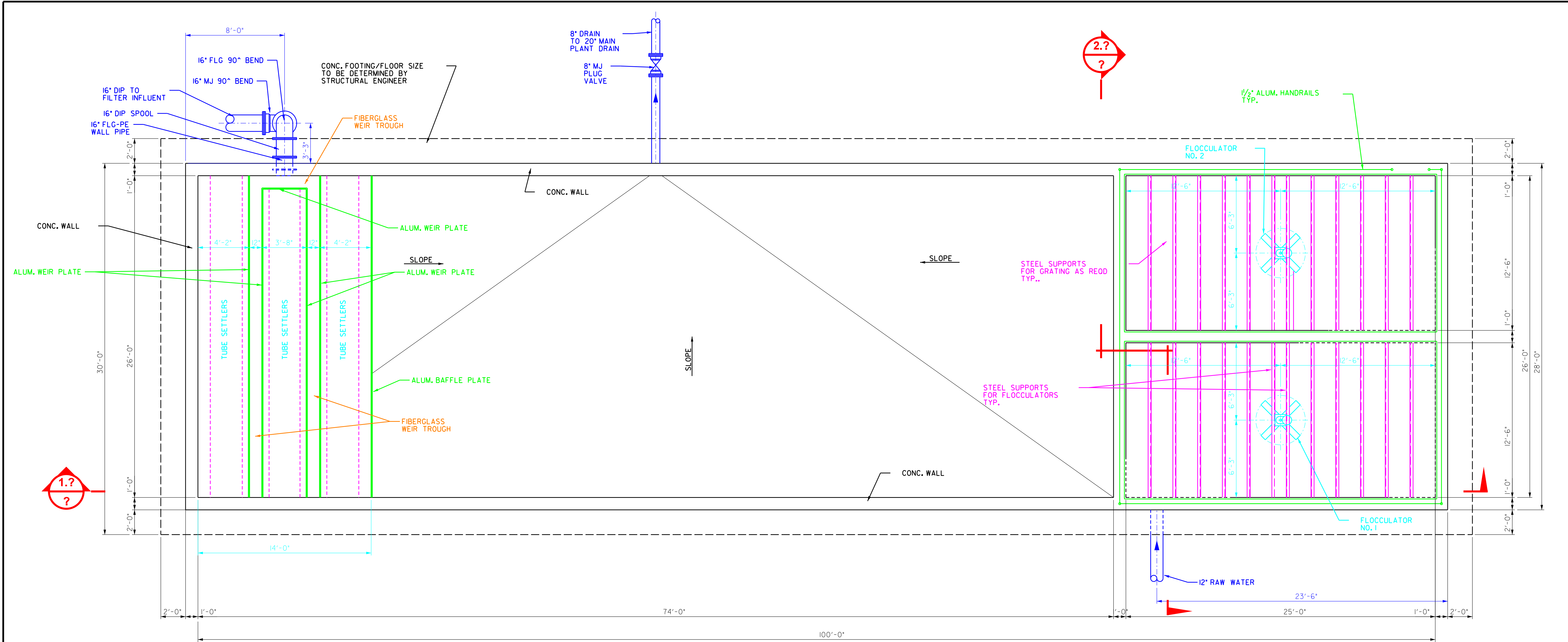
APPROX. 430' OF 16" DIP
 SEDIMENTATION EFFLUENT

CHANGE ORDER #	DESCRIPTION	DATE	BY
1.			

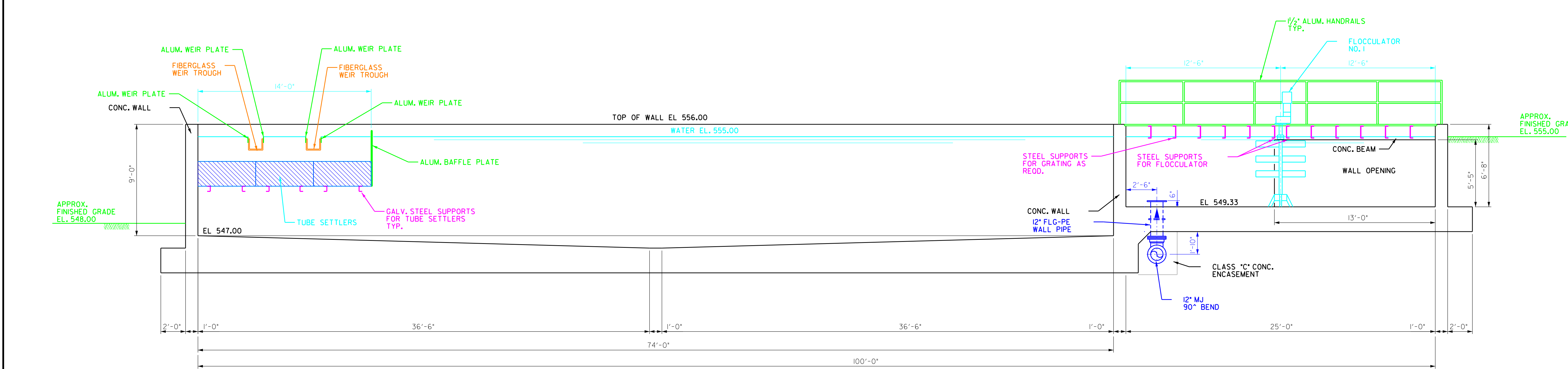


2007 WATER SYSTEM IMPROVEMENTS
MONROE COUNTY WATER DISTRICT
 CONTRACT I-PHASE IX-WATER TREATMENT PLANT
SITE PLAN

DESIGNED:	RDS
DRAWN:	RLP
CHECKED:	RDS
APPROVED:	RDS
DATE:	APRIL 2018
SCALE:	AS SHOWN



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



SECTION
1/4" = 1'-0" 1.?

STIGALL ENGINEERING ASSOCIATES, INC.
 411 WALSHBORO AVE., SUITE 206
 NASHVILLE, TENNESSEE 37219
 TELEPHONE: (615) 482-7515
 FACSIMILE: (615) 482-7517

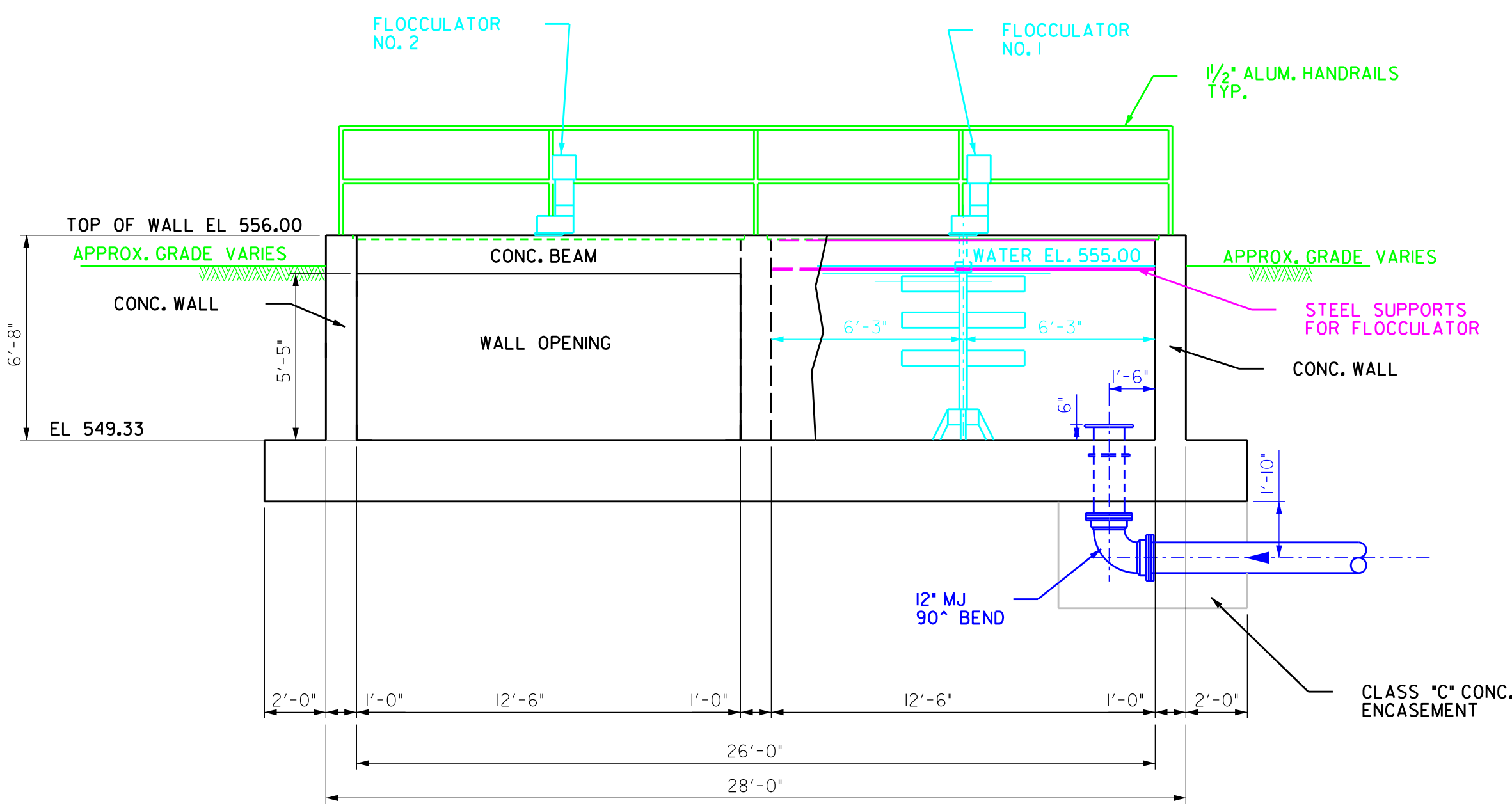
NO.	DATE	DESCRIPTION	BY
1.			

REVISIONS

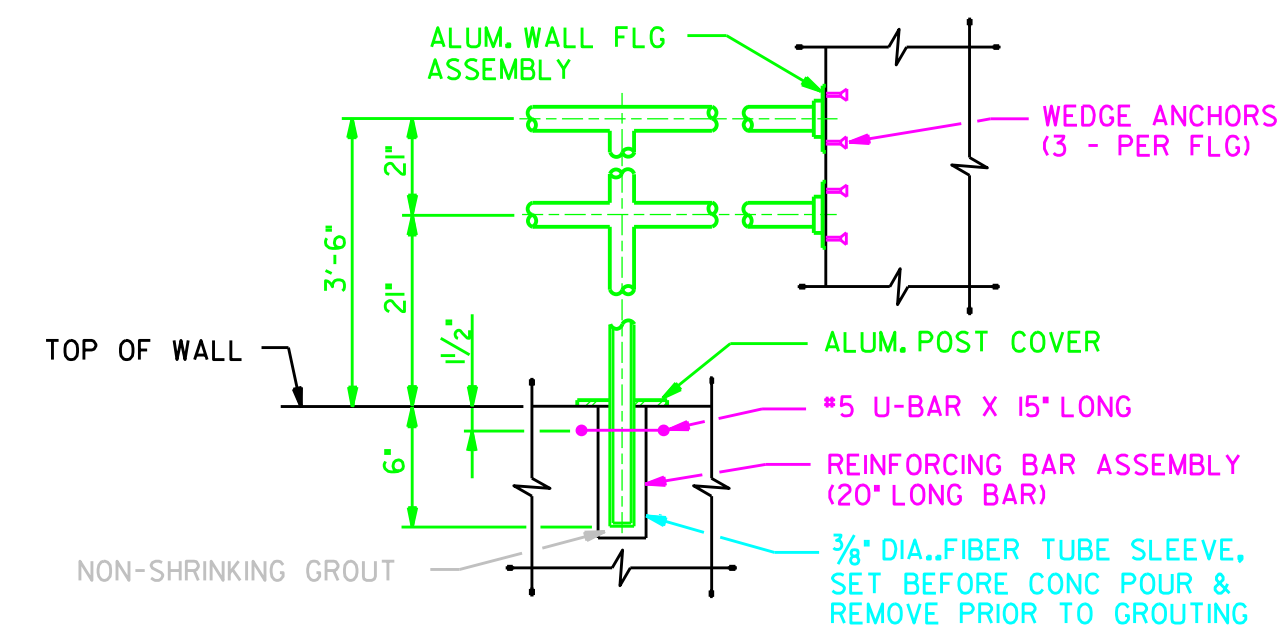
STATE OF KENTUCKY
 ROBERT D. STIGALL
 15,000
 LICENSED PROFESSIONAL ENGINEER
 4-7-78

**2007 WATER SYSTEM IMPROVEMENTS
 MONROE COUNTY WATER DISTRICT
 CONTRACT I-PHASE IX-WATER TREATMENT PLANT
 FLOCCULATOR/SEDIMENTATION BASIN**

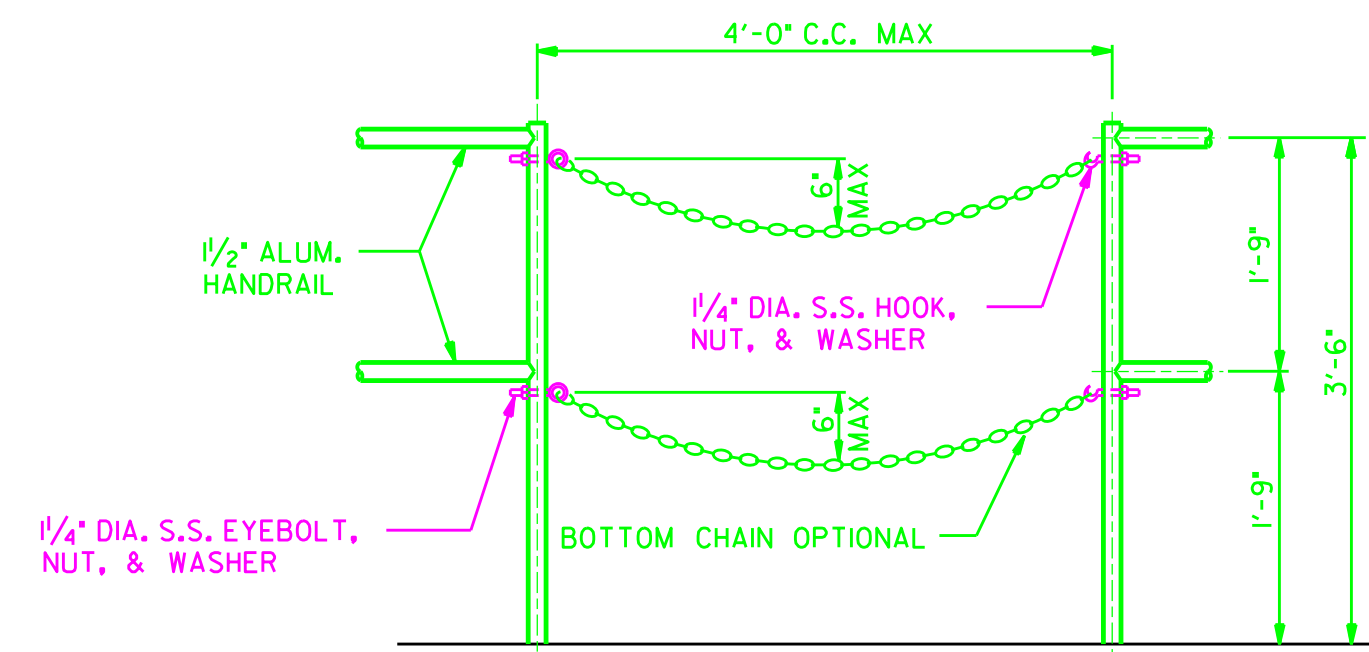
DESIGNED:	RDS
DRAWN:	RLP
CHECKED:	RDS
APPROVED:	RDS
DATE:	APRIL 2018
SCALE:	AS SHOWN
SHEET NO.	3 of 4
SEA PROJECT NO.	0323



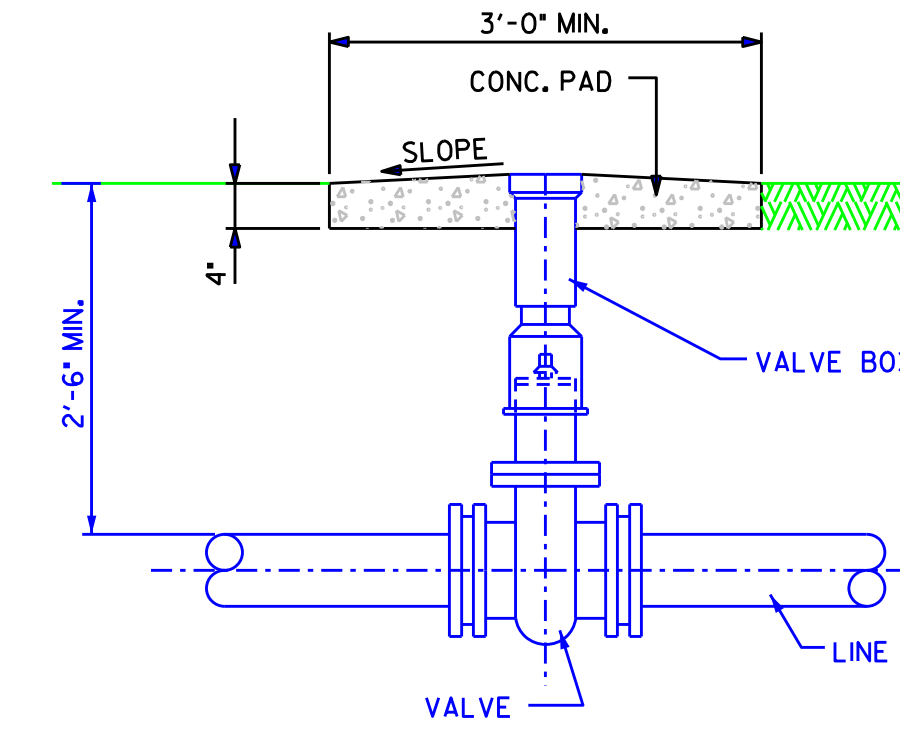
SECTION 2.?
 1/4" = 1'-0" ?



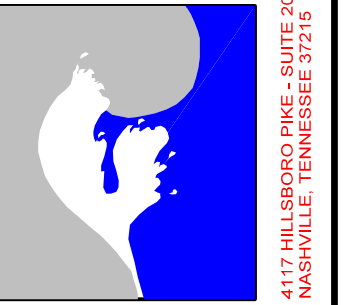
IMBEDDED HANDRAIL MOUNTING DETAIL
 NO SCALE



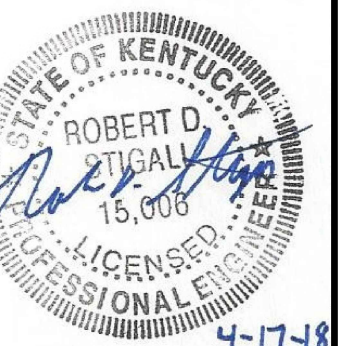
CHAIN HANDRAIL GATE DETAIL
 NO SCALE



TYPICAL VALVE SETTING DETAIL
 NO SCALE

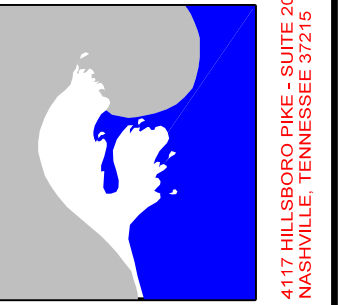


NO.	DATE	DESCRIPTION	BY
1.			
4/11/18			RLP
CHANGE ORDER #8			

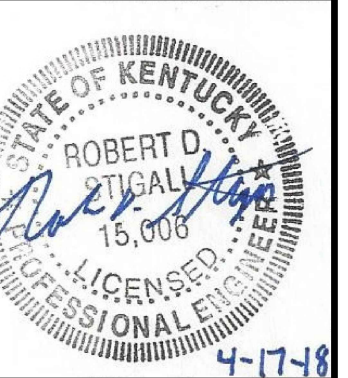


2007 WATER SYSTEM IMPROVEMENTS
MONROE COUNTY WATER DISTRICT
 CONTRACT I-PHASE IX-WATER TREATMENT PLANT
FLOCCULATOR/SEDIMENTATION BASIN

DESIGNED:	RDS
DRAWN:	RLP
CHECKED:	RDS
APPROVED:	RDS
DATE:	APRIL 2018
SCALE:	AS SHOWN

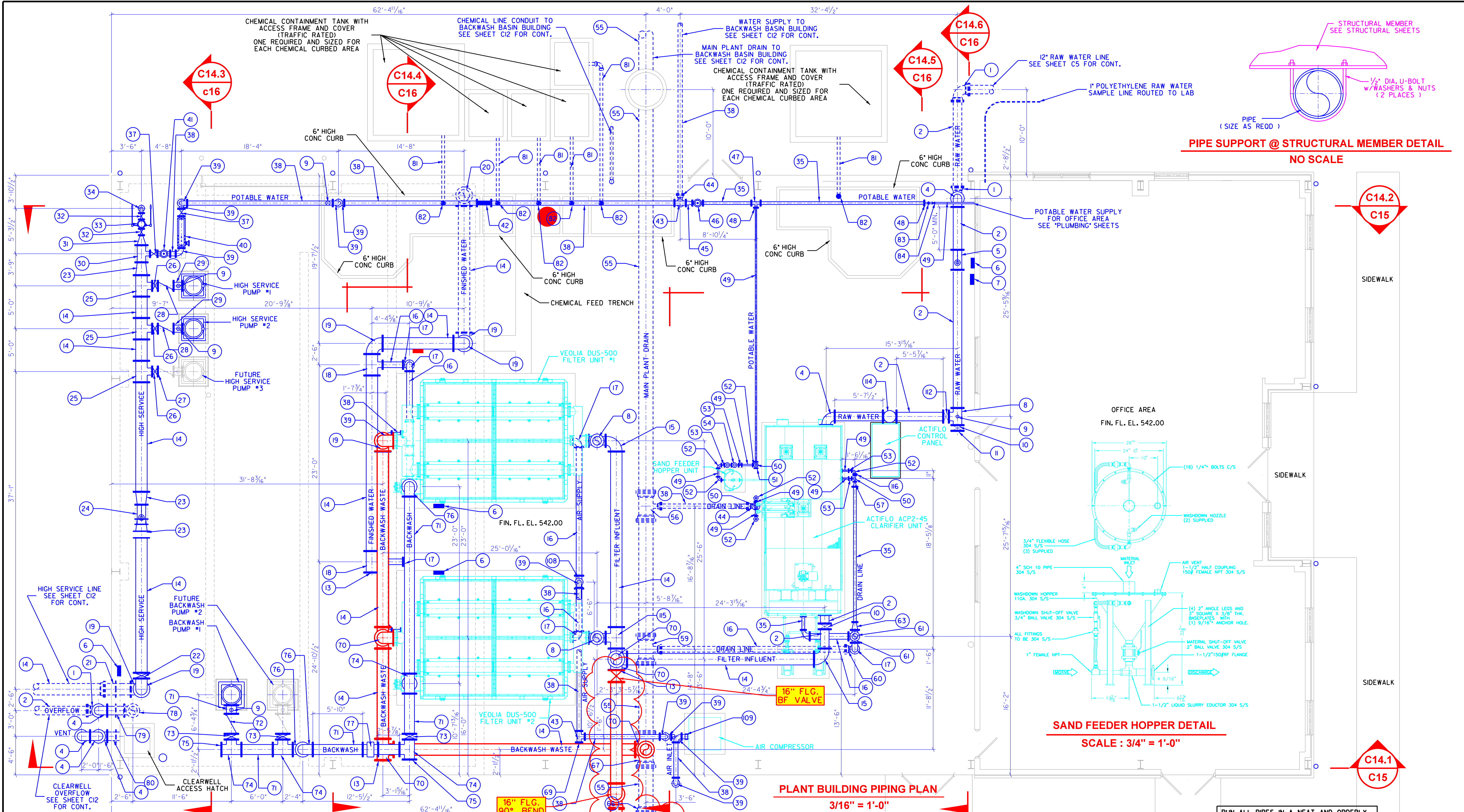


NO.	DESCRIPTION	DATE	BY
1.	CHANGED PIPING LEGEND ITEM 49 TO SCH. 40 STEEL	9/20/15	RLP
2.	MODIFIED PIPING LEGEND, RAW WATER & BACKWASH PIPING	7/8/16	RLP
3.	REPLACED ACTIFLO AND FILTER UNITS, MODIFIED PIPING	10/22/16	RLP
4.	CHANGE ORDER #7	3/27/18	RLP
5.	CHANGE ORDER #8	4/12/18	RLP



**2007 WATER SYSTEM IMPROVEMENTS
 MONROE COUNTY WATER DISTRICT
 CONTRACT I-PHASE IX-WATER TREATMENT PLANT
 PLANT BLDG PIPING PLAN**

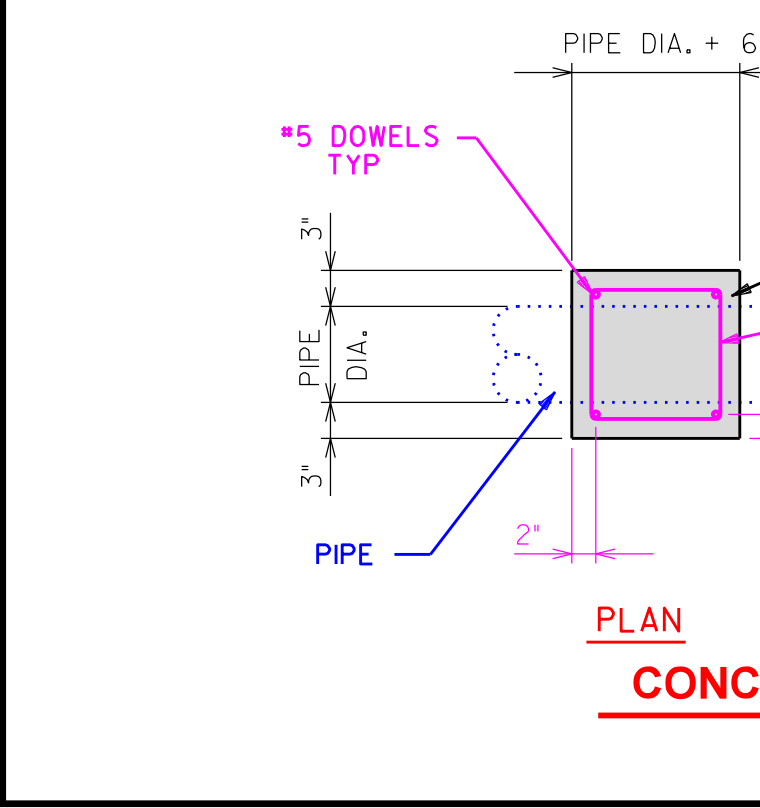
DESIGNED	RDS
DRAWN	RLP
CHECKED	RDS
APPROVED	RDS
DATE:	JULY 2015
SCALE:	AS SHOWN
SHEET NO.	C14
SEA PROJECT NO.	0323



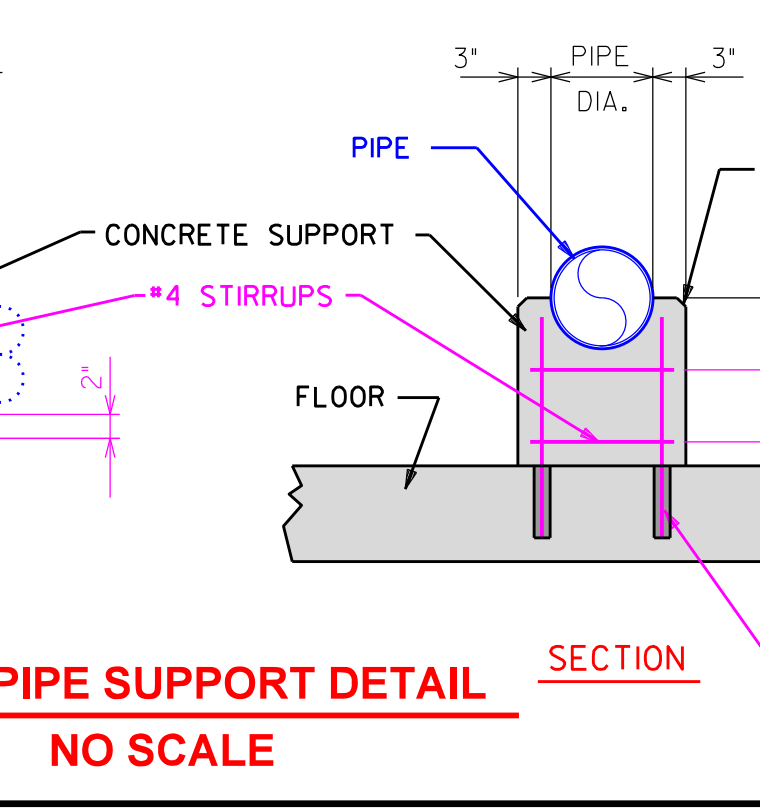
PIPING LEGEND

1 12" MJ 90° BEND	28 10" FLG CHECK VALVE	55 20" DIP PIPE (LENGTH AS REQD)	82 FLOOR DRAIN (SIZE AS REQD)
2 12" DIP PIPE (LENGTH AS REQD)	29 10" DIP PIPE (LENGTH AS REQD)	56 20"x6" MJ TEE	83 2" THREADED UNION
3 12" IN-LINE STATIC MIXER	30 12"x6" FLG TEE	57 4"x2" FLG REDUCER	84 2" THREADED BALL VALVE
4 12" FLG 90° BEND	31 12"x4" FLG REDUCER	58 2" FLG 45° BEND	85 16" FLG-WALL PIPE
5 12" FLG MAG FLOWMETER	32 4" FLG GATE VALVE	59 20"x8" MJ TEE	86 6" FLG-WALL PIPE
6 TURBIDIMETER	33 4" FLG SURGE VALVE	60 8" MJ 90° BEND	87 16"x6" FLG TEE
7 pH MONITOR	34 4" FLG 90° BEND	61 8" FLG TEE	88 2" THREADED 90° BEND
8 12" FLG TEE	35 4" DIP PIPE (LENGTH AS REQD)	62 8"x4" FLG REDUCING 90° BEND	89 6"x4" MJ TEE
9 AIR & VACUUM RELEASE VALVE	36 4" FLG-FLG WALL PIPE	63 8"x4" FLG REDUCER	90 8" FLG-PE WALL PIPE
10 12" FLG BUTTERFLY VALVE	37 6" FLG GATE VALVE	64 4"x2" FLG TEE	91 8" MJ GATE VALVE
11 12" BLIND FLANGE	38 6" DIP PIPE (LENGTH AS REQD)	65 4"x2" FLG REDUCING 90° BEND	92 8" MJ TEE
12 16"x12" FLG CROSS	39 6" FLG 90° BEND	66 20" MJ FLG	93 4" PVC CONDUIT
13 16" BLIND FLANGE	40 6" FLG BACKFLOW PREVENTER	67 20"x16" MJ TEE	94 20" MJ-PE WALL PIPE
14 16" DIP PIPE (LENGTH AS REQD)	41 6" FLG PRESSURE REDUCING VALVE	68 20"x6" FLG TEE	95 6"x4" MJ TEE
15 16"x12" FLG REDUCING 90° BEND	42 6" FLG FLEXIBLE PIPE	69 6" BLIND FLANGE	96 6" MJ GATE VALVE
16 8" DIP PIPE (LENGTH AS REQD)	43 6" FLG TEE	70 16" FLG TEE	97 4 1/2" HYDRANT
17 8" FLG 90° BEND	44 6" MJ 90° BEND	71 14" DIP PIPE (LENGTH AS REQD)	98 4" MJ 90° BEND
18 16"x8" FLG TEE	45 6"x4" FLG REDUCER	72 14" FLG CHECK VALVE	99 2" FLG PRESSURE REDUCING VALVE
19 16" FLG 90° BEND	46 4" FLG PRESSURE REDUCING VALVE	73 14" FLG BUTTERFLY VALVE	100 2" TAPPED FLANGE ADAPTOR
20 16" FLG 90° FLARE	47 4" FLG TEE	74 14" FLG TEE	101 3" FLG 90° BEND
21 16" FLG-PE WALL PIPE	48 4" FLANGE WITH 2" TAP	75 14" BLIND FLANGE	102 3" DIP PIPE (LENGTH AS REQD)
22 16" FLG BUTTERFLY VALVE	49 1 1/2" SCH 40 STEEL (LENGTH AS REQD)	76 14" FLG 90° BEND	103 VALVE BOX
23 16"x12" FLG REDUCER	50 2" FLG TEE	77 14" FLG MAG FLOWMETER	104 4" INJECTION CONNECTION
24 12" FLG MAG METER	51 2" BLIND FLANGE	78 12" FLG 90° FLARE	105 4" ADJUSTABLE INLINE MIXER
25 16"x10" FLG TEE	52 2" FLG 90° BEND	79 12" FLG-FLG WALL PIPE	106 4"x3" FLG REDUCER
26 10" FLG BUTTERFLY VALVE	53 2" FLG GATE VALVE	80 12" FLG-PE WALL PIPE	107 HOSE BIBB
27 10" BLIND FLANGE	54 2" FLG BACKFLOW PREVENTER	81 4" PVC DRAIN LINE (LENGTH AS REQD)	108 6"x6" FLG TEE

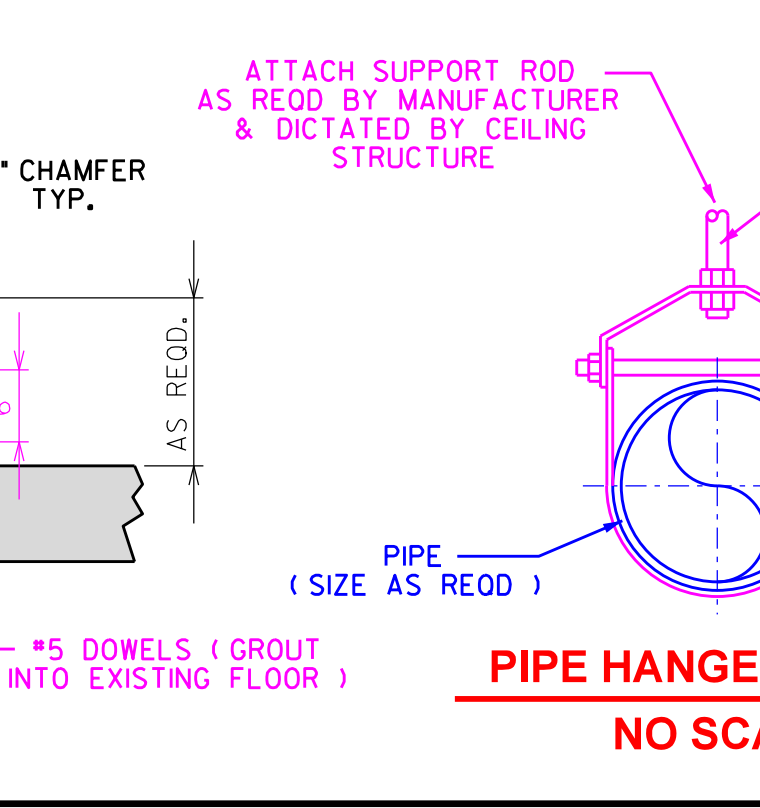
PLANT BUILDING PIPING PLAN
 3/16" = 1'-0"



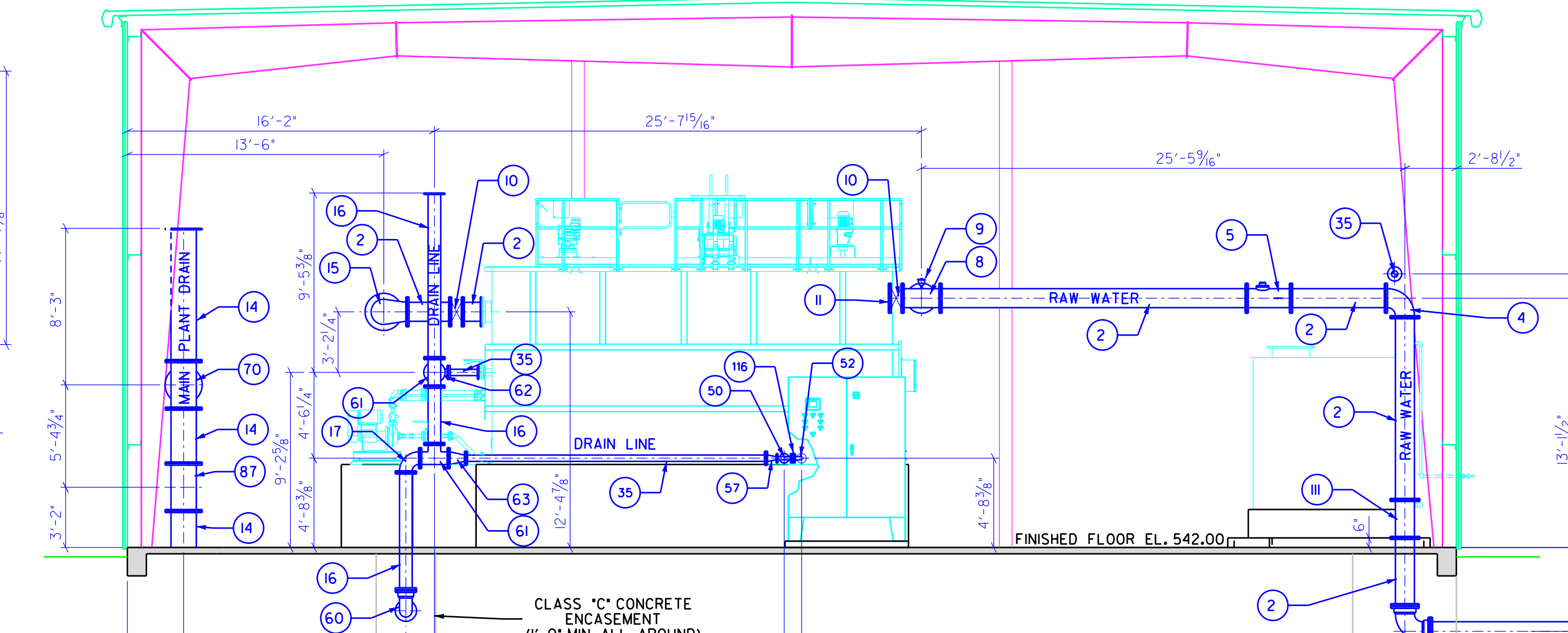
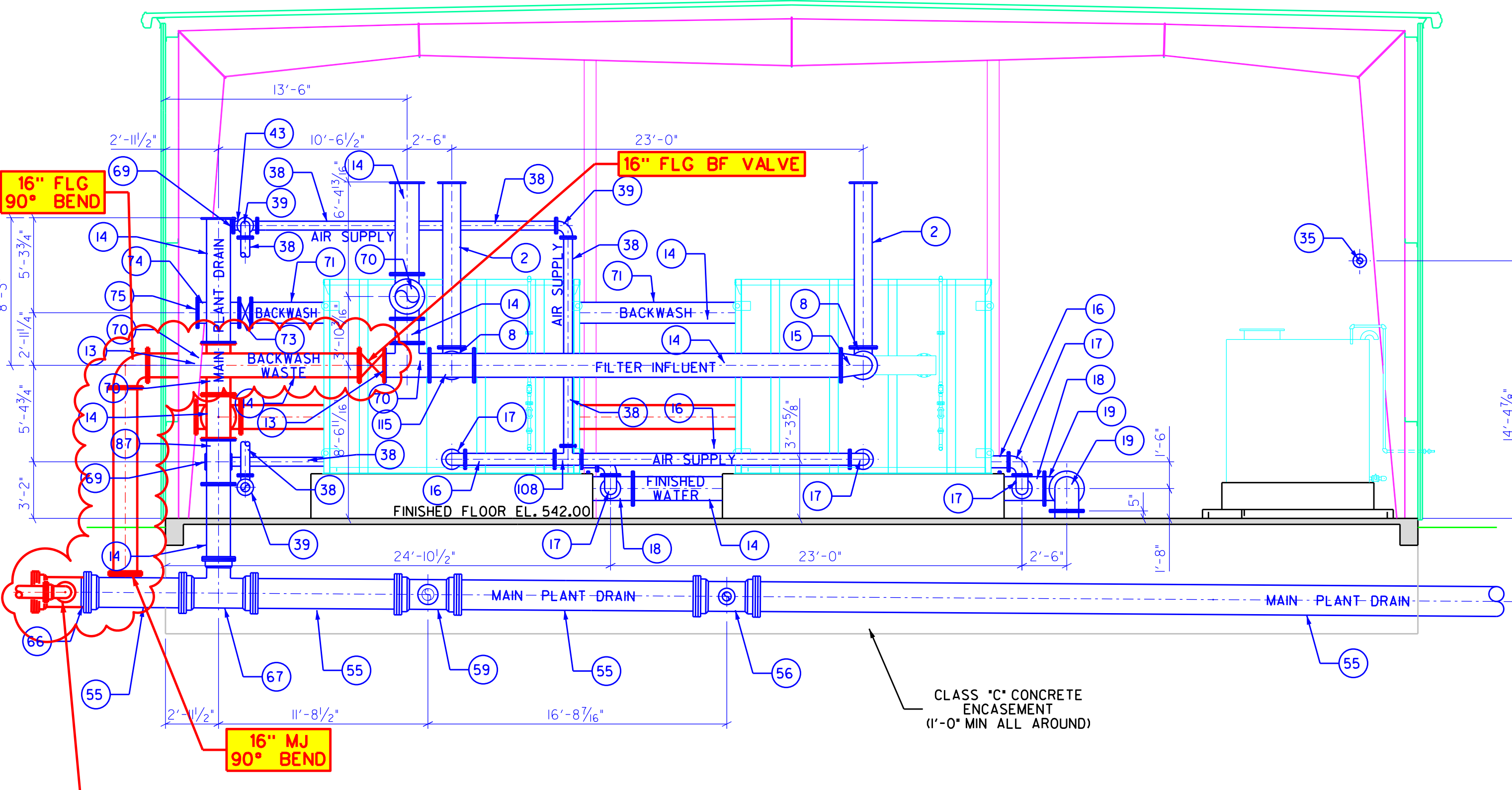
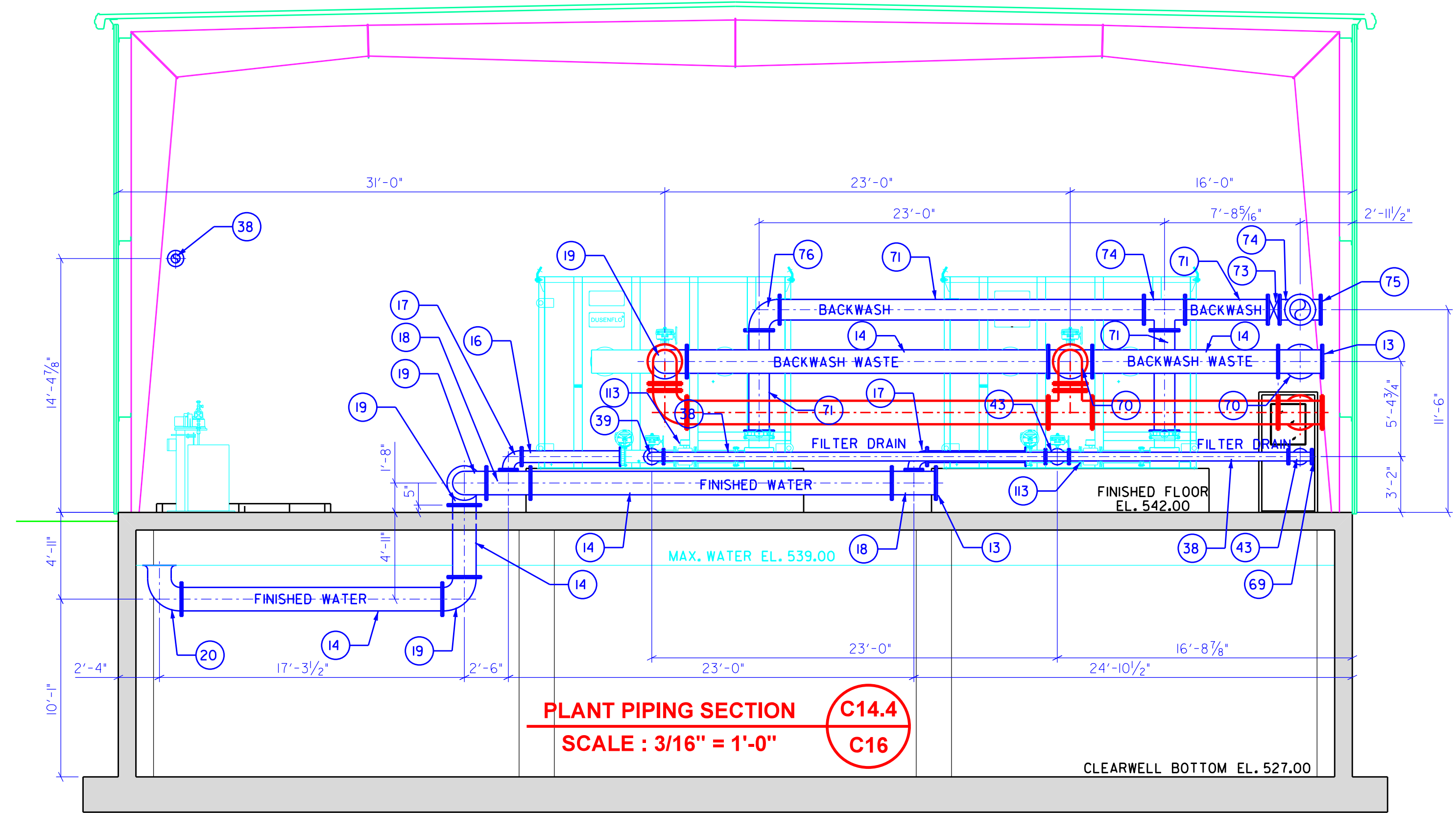
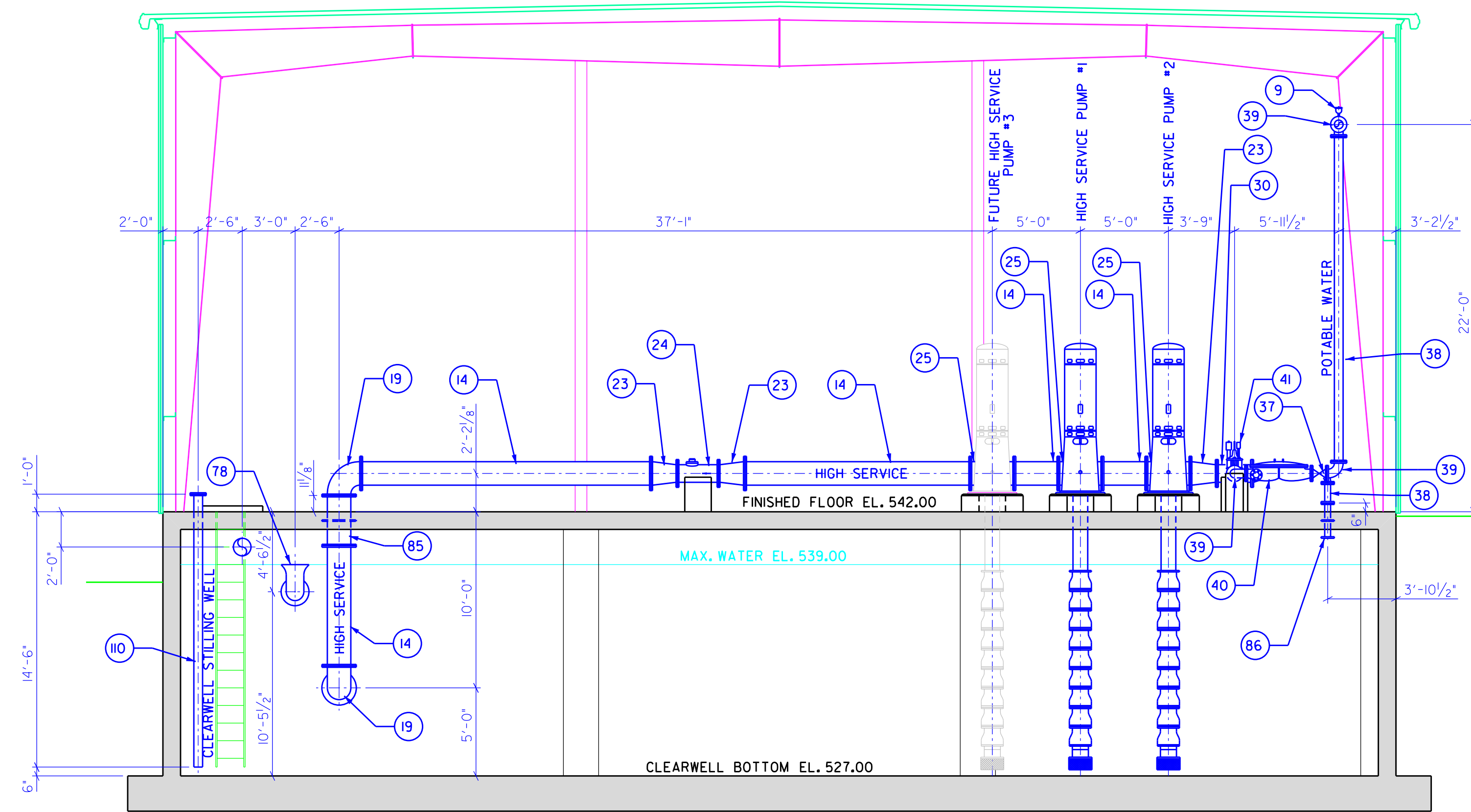
SAND FEEDER HOPPER DETAIL
 SCALE: 3/4" = 1'-0"



PIPE HANGER DETAIL
 NO SCALE



RUN ALL PIPES IN A NEAT AND ORDERLY FASHION AS NOT TO DETRACT FROM THE APPEARANCE OF THE PLANT. ALSO RUN ALL CHEMICAL, CONTROL AIR, ETC. LINES IN TRENCH WHERE POSSIBLE.



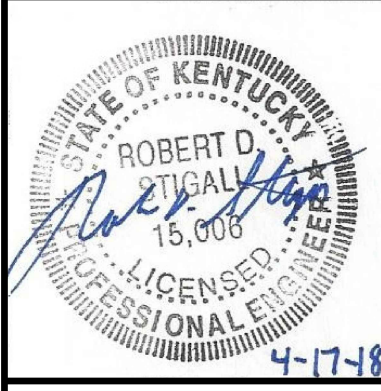
PIPING LEGEND

1	12" MI 90° BEND	28	10" FLG CHECK VALVE	55	20" DIP PIPE (LENGTH AS REQD)	82	FLOOR DRAIN (SIZE AS REQD)	109	EXPANSION JOINT
2	12" DIP PIPE (LENGTH AS REQD)	29	10" DIP PIPE (LENGTH AS REQD)	56	20" MI TEE	83	2" THREADED UNION	110	6" PERFORATED PVC STILLING WELL
3	12" IN-LINE STATIC MIXER	30	12" MI TEE	57	4" X 2" FLG REDUCER	84	2" THREADED BALL VALVE	111	12" FLG PIPING INSERTION PROBE
4	12" FLG 90° BEND	31	12" MI FLG REDUCER	58	2" FLG 45° BEND	85	16" FLG WALL PIPE	112	12" FLG INLET FLOW BUTTERFLY VALVE
5	12" FLG MAG FLOWMETER	32	4" FLG GATE VALVE	59	20" MI TEE	86	6" FLG FLG WALL PIPE	113	8" FLG MAG FLOWMETER
6	TURBIDIMETER	33	4" FLG SURGE VALVE	60	8" MI 90° BEND	87	16" X 6" FLG TEE	114	12" FLG IN-LINE RAPID MIXER
7	pH MONITOR	34	4" FLG 90° BEND	61	8" FLG TEE	88	2" THREADED 90° BEND	115	16" X 12" FLG TEE
8	12" FLG TEE	35	4" DIP PIPE (LENGTH AS REQD)	62	8" X 4" FLG REDUCING 90° BEND	89	8" FLG 90° FLARE	116	2" FLANGE FILLER
9	AIR & VACUUM RELEASE VALVE	36	4" FLG FLG WALL PIPE	63	8" X 4" FLG REDUCER	90	8" FLG PE WALL PIPE	117	2" FLG FLEXIBLE PIPE (LENGTH AS REQD)
10	12" FLG BUTTERFLY VALVE	37	6" FLG GATE VALVE	64	4" X 2" FLG TEE	91	8" MI GATE VALVE		
11	12" BLIND FLANGE	38	6" DIP PIPE (LENGTH AS REQD)	65	4" X 2" FLG REDUCING 90° BEND	92	8" MI TEE		
12	16" X 12" FLG CROSS	39	6" FLG 90° BEND	66	20" MI PLUS	93	4" PVC CONDUIT		
13	16" BLIND FLANGE	40	6" FLG BACKFLOW PREVENTER	67	20" X 16" MI TEE	94	20" MI PE WALL PIPE		
14	16" DIP PIPE (LENGTH AS REQD)	41	6" FLG PRESSURE REDUCING VALVE	68	20" X 6" FLG TEE	95	6" X 4" MI TEE		
15	16" X 12" FLG REDUCING 90° BEND	42	6" FLG FLEXIBLE PIPE	69	6" BLIND FLANGE	96	6" MI GATE VALVE		
16	8" DIP PIPE (LENGTH AS REQD)	43	6" FLG TEE	70	16" FLG TEE	97	4 1/2" WROBANT		
17	8" FLG 90° BEND	44	6" MI 90° BEND	71	14" DIP PIPE (LENGTH AS REQD)	98	4" MI 90° BEND		
18	16" X 8" FLG TEE	45	6" X 4" FLG REDUCER	72	14" FLG CHECK VALVE	99	2" FLG PRESSURE REDUCING VALVE		
19	16" FLG 90° BEND	46	4" FLG PRESSURE REDUCING VALVE	73	14" FLG BUTTERFLY VALVE	100	2" TAPPED FLANGE ADAPTOR		
20	16" FLG 90° FLARE	47	4" FLG TEE	74	14" FLG TEE	101	3" FLG 90° BEND		
21	16" FLG PE WALL PIPE	48	4" FLANGE WITH 2" TAP	75	14" BLIND FLANGE	102	3" DIP PIPE (LENGTH AS REQD)		
22	16" FLG BUTTERFLY VALVE	49	1. 2" SCH 40 STEEL (LENGTH AS REQD)	76	14" FLG 90° BEND	103	VALVE BOX		
23	16" X 12" FLG REDUCER	50	2" FLG TEE	77	14" FLG MAG FLOWMETER	104	4" INJECTION CONNECTION		
24	12" FLG MAG METER	51	2" BLIND FLANGE	78	12" FLG 90° FLARE	105	4" ADJUSTABLE IN-LINE MIXER		
25	16" X 10" FLG TEE	52	2" FLG 90° BEND	79	12" FLG FLG WALL PIPE	106	4" X 3" FLG REDUCER		
26	10" FLG BUTTERFLY VALVE	53	2" FLG GATE VALVE	80	12" FLG PE WALL PIPE	107	HOSE BIBB		
27	10" BLIND FLANGE	54	2" FLG BACKFLOW PREVENTER	81	4" PVC DRAIN LINE (LENGTH AS REQD)	108	8" X 4" FLG TEE		

CONNECT NEW 8" PVC DRAIN TO EXISTING 20" MAIN PLANT DRAIN INSTALL: 20" X 8" MJ TEE 8" MJ 90° BEND

RUN ALL PIPES IN A NEAT AND ORDERLY FASHION AS NOT TO DETRACT FROM THE APPEARANCE OF THE PLANT. ALSO RUN ALL CHEMICAL CONTROL AIR, ETC. LINES IN TRENCH WHERE POSSIBLE.

NO.	DESCRIPTION	DATE	BY
1.	CHANGED PIPING LEGEND ITEM 49 TO SCH. 40 STEEL	9/20/15	R.P.
2.	MODIFIED PIPING LEGEND, RAW WATER & BACKWASH PIPING	7/8/16	R.P.
3.	REPLACED ACTED AND FILTER UNITS, MODIFIED PIPING	10/22/16	R.P.
4.	REPLACED ACTED AND FILTER UNITS, MODIFIED PIPING	3/22/18	R.P.
5.	CHANGE ORDER #7	4/12/18	R.P.
6.	CHANGE ORDER #8	4/12/18	R.P.



2007 WATER SYSTEM IMPROVEMENTS
MONROE COUNTY WATER DISTRICT
CONTRACT I-PHASE IX-WATER TREATMENT PLANT
PLANT BLDG PIPING SECTIONS

DESIGNED:	RDS
DRAWN:	RLP
CHECKED:	RDS
APPROVED:	RDS
DATE:	JULY 2015
SCALE:	AS SHOWN
SHEET NO.:	C16
SEA PROJECT NO.:	0323