MANATEE COUNTY, FLA.

SANITARY SEWERAGE PROJECT

PART D

SECTION III-MASTER LIFT STATION 1D & SECTION IV - FORCE MAIN 1D

RUSSELL & AXON

ENGINEERS - PLANNERS - ARCHITECTS

DAYTONA BEACH, FLA. ST. LOUIS, MO.

INDEX

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	22	FORCE MAIN 1D
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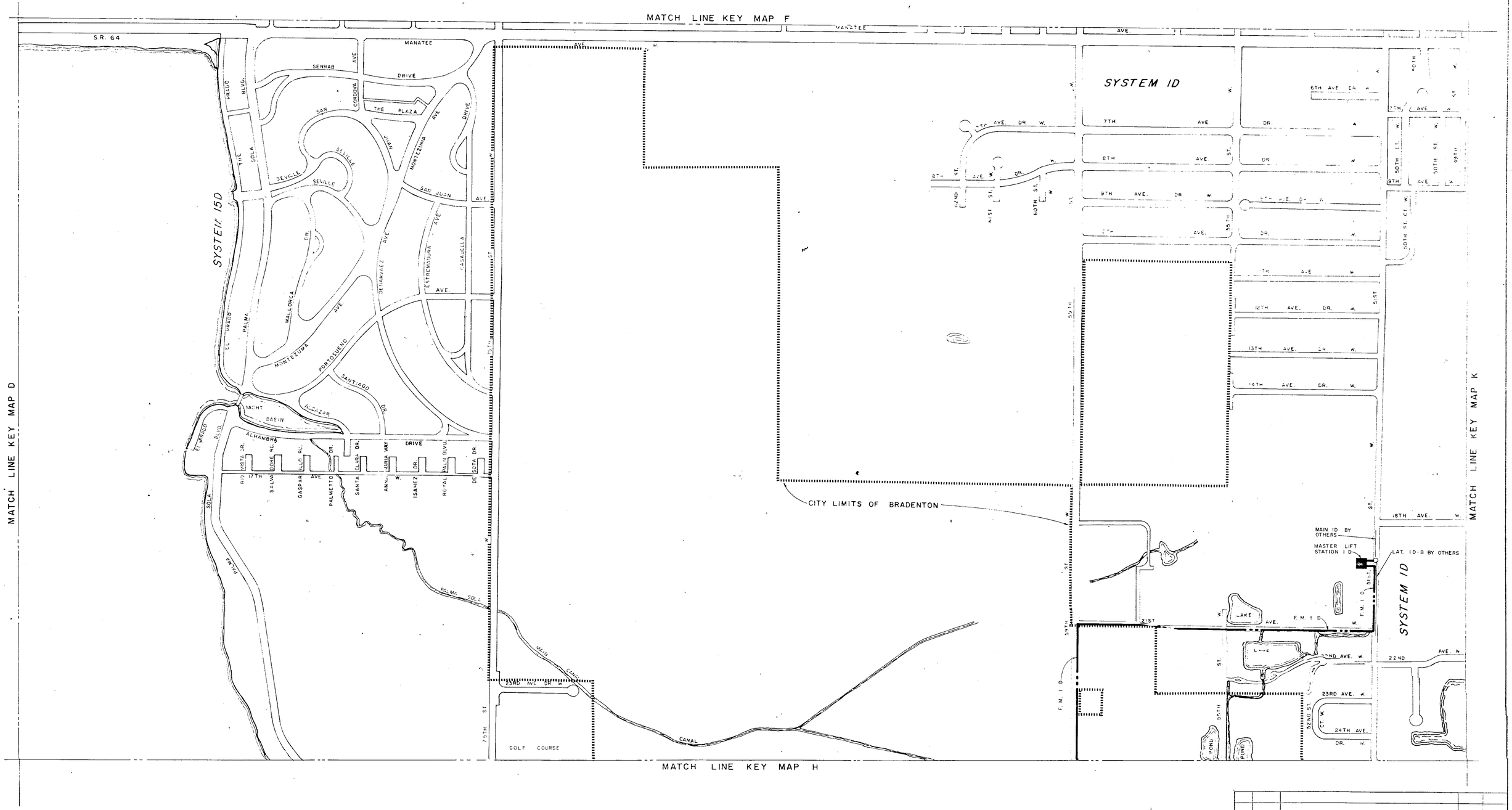
RECORD DRAWING
DATE 2-26-97 RM
CK LKN

JOHN W. CUMMING CERTIFICATE No. 9522 STATE OF FLORIDA REGISTERED ENGINEER

MANATEE COUNTY, FLORIDA
SANITARY SEWERAGE PROJECT
PART D
SECTION III-MASTER LIFT STATION 1
SECTION IV-FORCE MAIN 1D
PROJECT NO. 6681-8b
SHEET NO. 1 OF 23

T 274

PART D SECTION III 18-05



400' 0' 400' 800'

GRAPHIC SCALE

RECORD DRAWING
DATE 2-76 BY PJM
CK. WKN 18-05

NO.	DATE	DESCRIPTION	BY	CKD.

REVISIONS

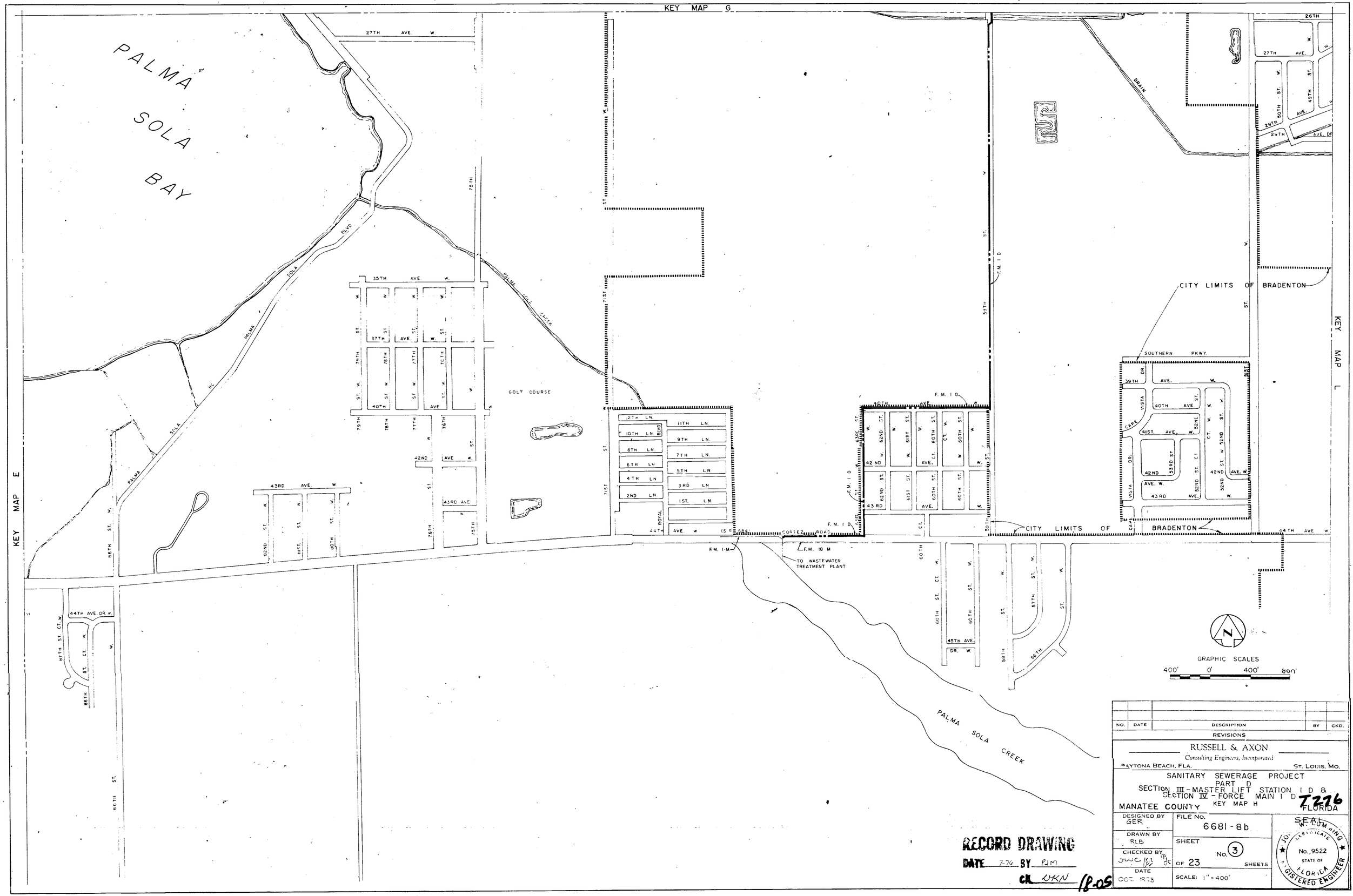
RUSSELL & AXON
Consulting Engineers, Incorporated
DAYTONA BEACH, FLA. ST. LOUIS, MO.

SANITARY SEWERAGE PROJECT
PART D
SECTION III - MASTER LIFT STATION I D &
SECTION IV - FORCE MAIN I D
KEY MAP G
MANATEE COUNTY FLORIDA

T27S

DESIGNED BY GER	FILE No. 6681 - 8b	
DRAWN BY RLB	SHEET No. 2 OF 23 SHEETS	
CHECKED BY JWC		
DATE OCT. 1973	SCALE: 1" = 400'	

REGISTERED PROFESSIONAL ENGINEER CERTIFICATE No 9522 STATE OF FLORIDA



RECORD DRAWING
DATE 7-76 BY PJM
CK NKN 18-05

NO.	DATE	DESCRIPTION	BY	CKD.

REVISIONS

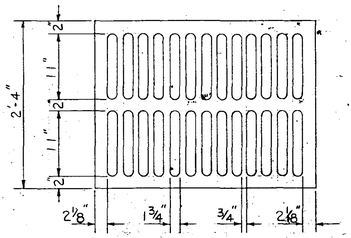
RUSSELL & AXON
Consulting Engineers, Incorporated
DAYTONA BEACH, FLA. ST. LOUIS, MO.

SANITARY SEWERAGE PROJECT
PART D
SECTION III - MASTER LIFT STATION I D &
SECTION IV - FORCE MAIN I D
MANATEE COUNTY KEY MAP H FLORIDA

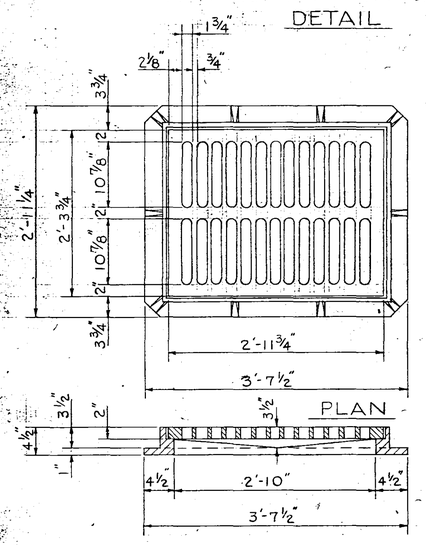
T276

DESIGNED BY GER	FILE No. 6681-8b	SEAL
DRAWN BY RLB	SHEET No. 3 OF 23 SHEETS	W. F. CUMMING CERTIFICATE No. 9522 STATE OF FLORIDA REGISTERED ENGINEER
CHECKED BY JWC/RJ TB JC		
DATE OCT. 1973	SCALE: 1" = 400'	

OCE-ELLIOTT, INC., PGH., PA. REORDER 13936

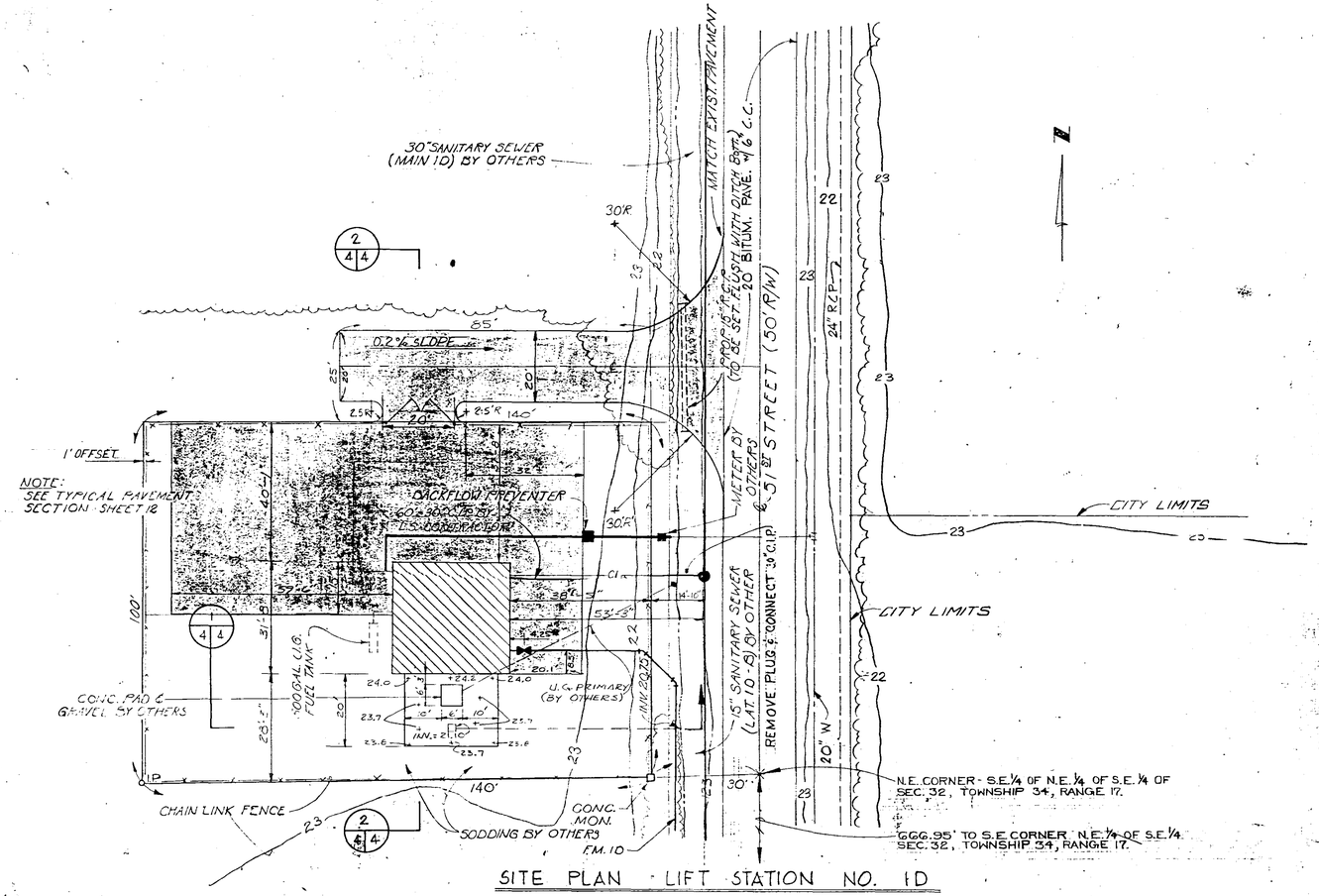


DETAIL



PLAN

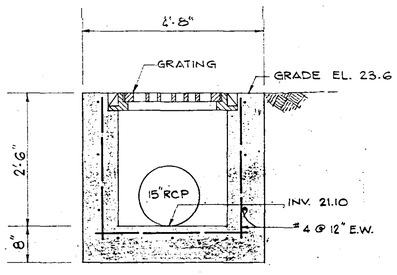
SECTION



SITE PLAN - LIFT STATION NO. 1D

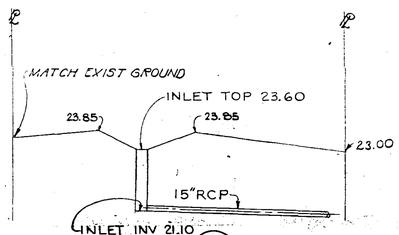
SCALE: 1" = 20'-0"

RECORD DRAWING
DATE 7-76 BY P.J.M.
CK. WKN

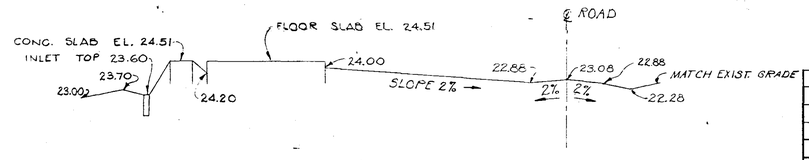


SECTION
DITCH BOTTOM INLET

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



SECTION 1/4|4



SECTION 2/4|4

NOTE:
REVISED AS PER CONTRACTOR'S FIELD MEASUREMENTS

WKN 18-05

NO.	DATE	DESCRIPTION	BY	CKD.
	7-76	RECORD DRAWING	P.J.M.	WJ
2	10-25-74	IN ACCORDANCE TO C.O.	RWB GER	WJ
1	5-23-74	RELOCATED L.S. #1D PER ADDENDUM #2	CGZ D.E.C.	JWC

REVISIONS

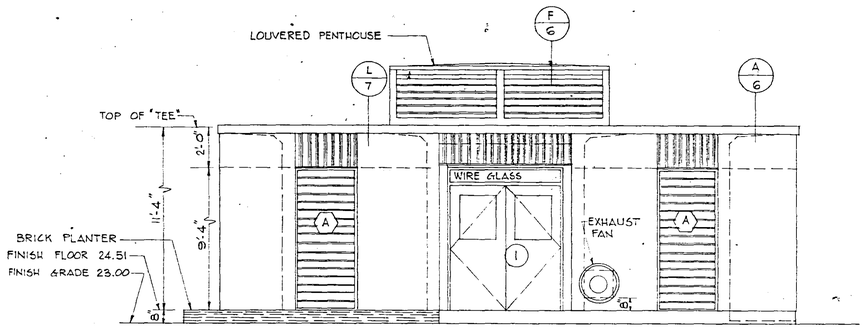
RUSSELL & AXON
Engineers — Planners — Architects
DAYTONA BEACH, FLORIDA

SANITARY SEWERAGE PROJECT
PART D
SECTION III — MASTER LIFT STATION 1 D
SITE PLAN
MANATEE COUNTY FLORIDA

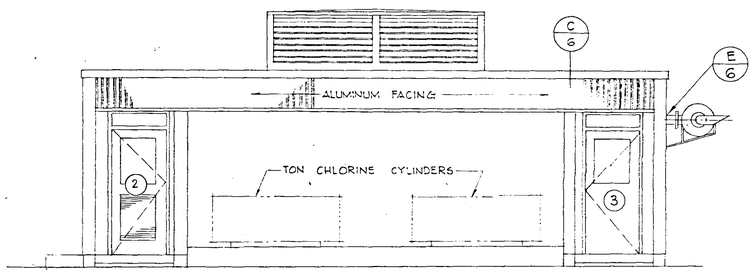
DESIGNED BY GER	FILE No. 6681-8b	JOHN E. SEWARING CERTIFICATE No. 9522 STATE OF FLORIDA REGISTERED ENGINEER
DRAWN BY RLB RWO	SHEET No. 4 OF 23 SHEETS	
CHECKED BY JWC		
DATE OCT. 1973	SCALE: AS SHOWN	

T-377

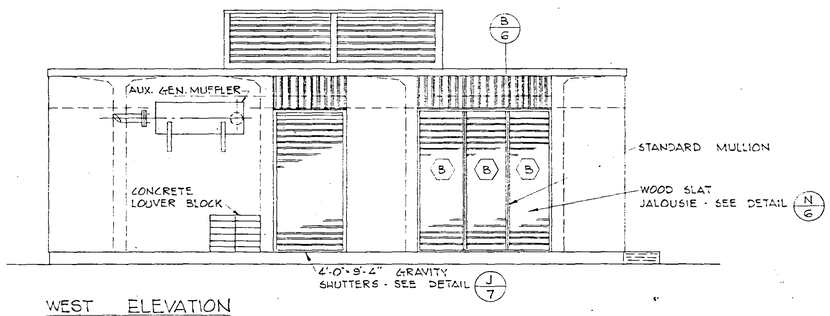
OCE-ELLIOTT, INC., PGH., PA. REORDER 13936



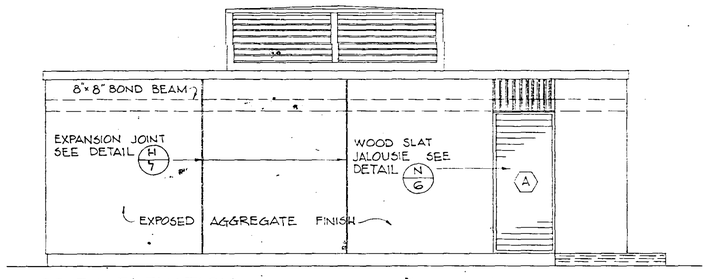
EAST ELEVATION
SCALE: 1/4"=1'-0"



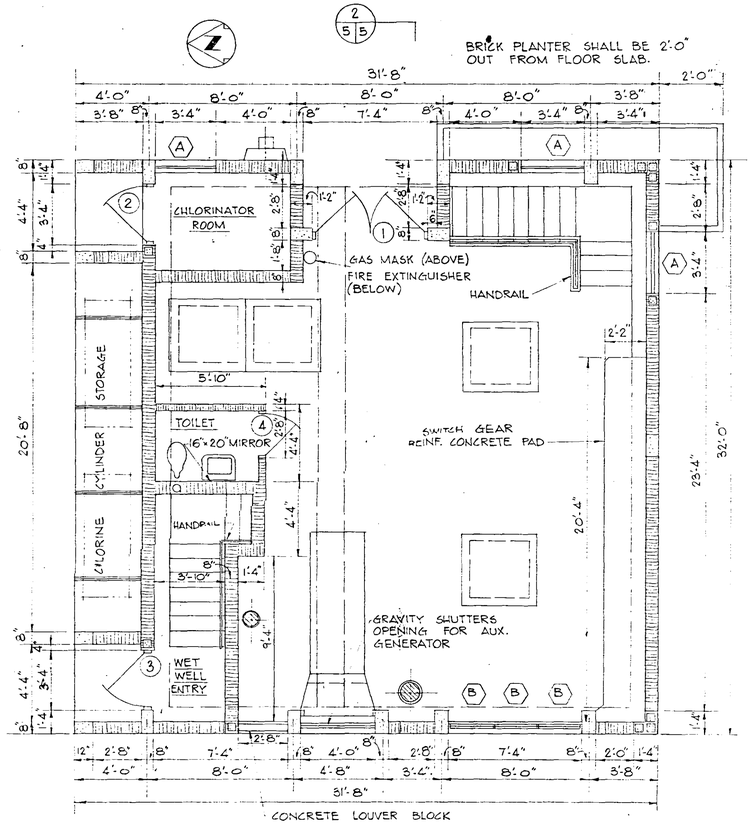
NORTH ELEVATION
SCALE: 1/4"= 1'-0"



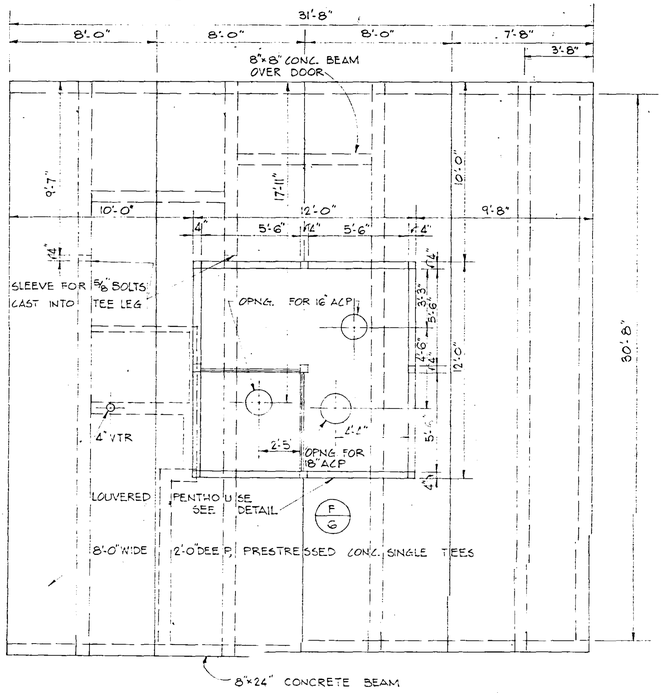
WEST ELEVATION
SCALE 1/4"=1'-0"



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



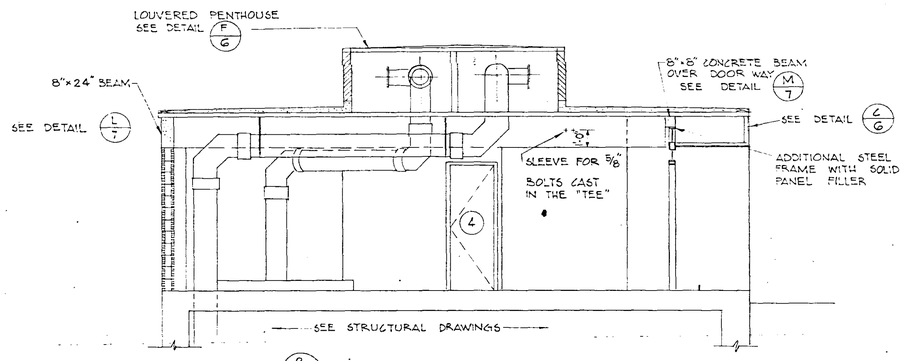
FLOOR PLAN
SCALE: 1/4"=1'-0"



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

NOTE:
ALL COLUMNS ARE 8"x16" UNLESS OTHERWISE NOTED. SEE STRUCTURAL DRAWINGS FOR REINFORCING.

CELLS OF CONCRETE MASONRY UNITS SHOWN SHALL HAVE 1 #4 IN CENTER (DOWEL DOWN INTO CONCRETE) & BE FILLED W/ GROUT.



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

RECORD DRAWING
DATE 7-76 BY P.J.M.
CK

RECORD DRAWING
DATE 7-76 BY PJM
CK DKN

NO.	DATE	DESCRIPTION	BY	CKD.
	7-76	RECORD DRAWING.	P.J.M.	

REVISIONS

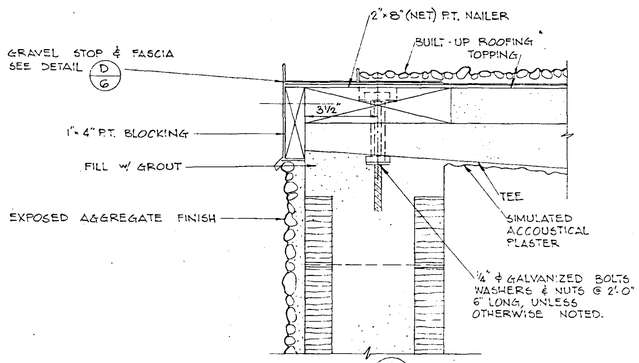
RUSSELL & AXON
Engineers — Planners — Architects
DAYTONA BEACH, FLORIDA

SANITARY SEWERAGE PROJECT
PART D
SECTION III - MASTER LIFT STATION I D
ARCH.- FLOOR PLAN, ELEVATIONS, & SECTION
MANATEE COUNTY FLORIDA

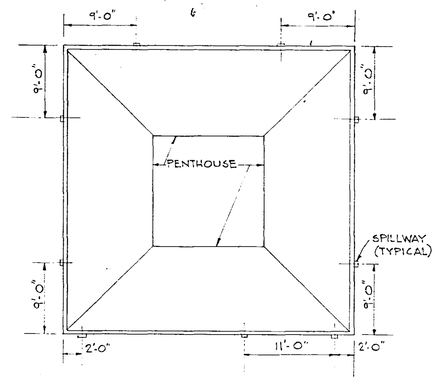
DESIGNED BY ROV/GER	FILE No. 6681 - 8b	SEAL: JOHN W. CUMMING, CERTIFICATE No. 9522, STATE OF FLORIDA, REGISTERED ENGINEER
DRAWN BY RLB	SHEET No. 5 OF 23 SHEETS	
CHECKED BY JWC		
DATE OCT. 1973	SCALE: AS SHOWN	

T278

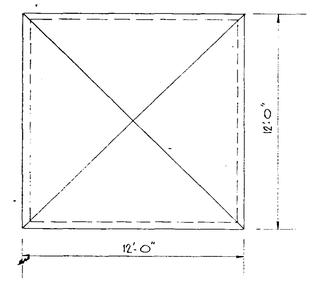
OCE-ELLIOTT, INC., PGH., PA. REORDER 13936



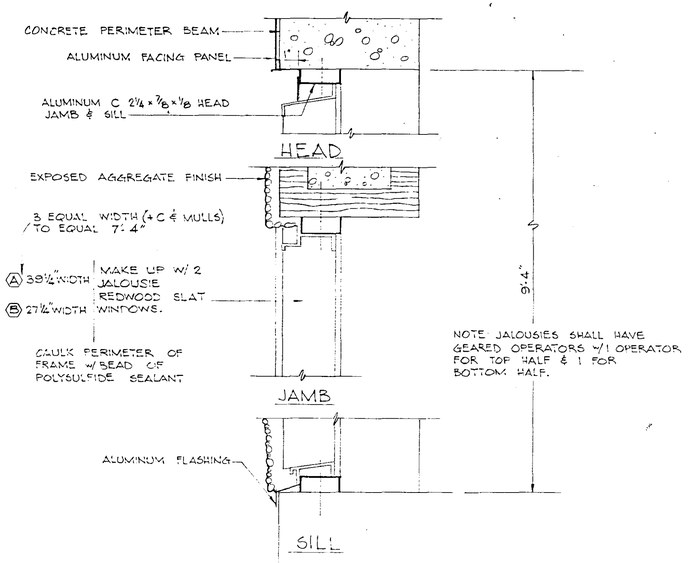
DETAIL A/G
SCALE: 3"=1'-0"



SPILLWAY LOCATIONS
SCALE: 1/8" = 1'-0"



PENTHOUSE ROOF PLAN
SCALE: 1/4" = 1'-0"



WINDOW DETAILS N/G
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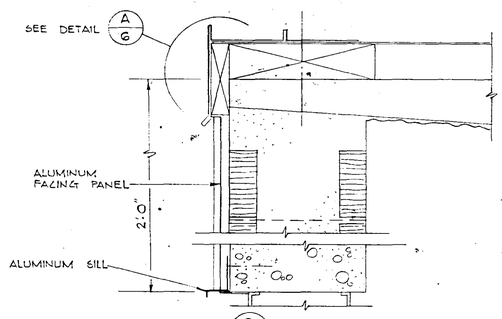
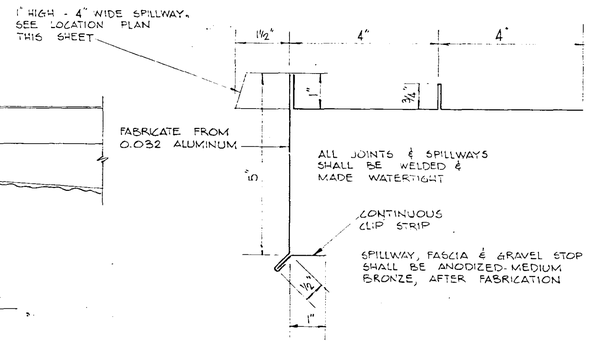
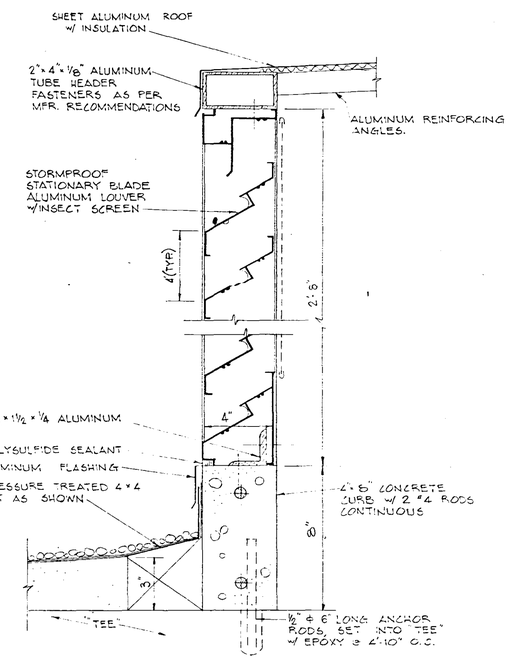


DETAIL B/G
SCALE: 3"=1'-0"



DETAIL D/G
GRAVEL STOP - SPILLWAY & FASCIA
SCALE: HALF SIZE



PENTOUSE LOUVER F/G
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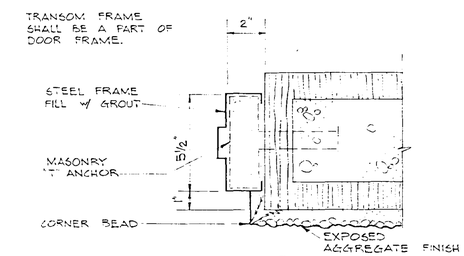

DETAIL G/G
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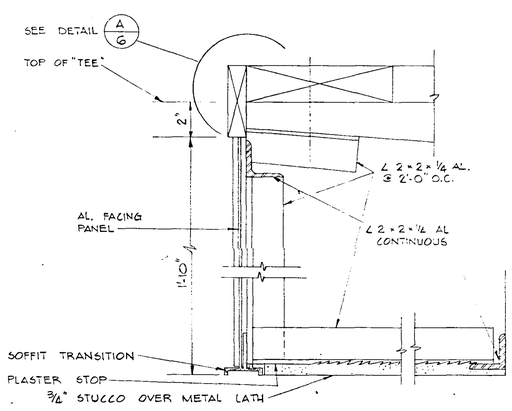
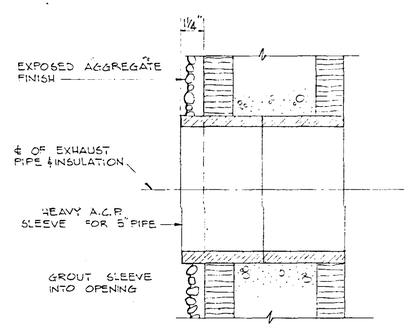


DETAIL C/G
SCALE: 3"=1'-0"



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

RECORD DRAWING
DATE 7-76 BY RJM
CK. WKN 1805

NO.	DATE	DESCRIPTION	BY	CKD.
		RECORD DRAWING		

REVISIONS

RUSSELL & AXON
Engineers — Planners — Architects
DAYTONA BEACH, FLORIDA

SANITARY SEWERAGE PROJECT
PART D
SECTION III - MASTER LIFT STATION I D
ARCH. - DETAILS
MANATEE COUNTY, FLORIDA

T279

DESIGNED BY ROV/GER	FILE No. 6681-8b	SEAL: JOHN W. CUMMING CERTIFICATE No. 9522 STATE OF FLORIDA REGISTERED ENGINEER
DRAWN BY RLB	SHEET No. 6 OF 23 SHEETS	
CHECKED BY JWC		
DATE OCT. 1973	SCALE: AS SHOWN	

OCE-ELLIOTT, INC., PGH., PA. REORDER 13936

SPACE FINISH SCHEDULE

ROOM DESCRIPTION	FLOOR: CONCRETE	FLOOR: CONC. W/ FIN.	FLOOR: COLOR CODE	WAINSCOT: G.C.F. 4'-0"	WAINSCOT: NONE	WAINSCOT: COLOR CODE	WALLS: G.C.F.	WALLS: PAINTED	WALLS: RUBBED	WALLS: COLOR CODE	CEILING: EXP/PTD.	CEILING: S.A.P.	CEILING: COLOR CODE	REMARKS
OPERATING FLOOR		X	TERRA COTTA	X		B-306-5	X			B-320-5		X	—	—
TOILET		X	TERRA COTTA	X		B-306-5	X			B-320-5		X	—	—
CHLORINATOR ROOM		X	TERRA COTTA	X		B-306-5	X			B-320-5		X	—	—
PUMP ROOM.	X		—		X	—	X			B-307-5	X		WHITE	—
WET WELL ENTRY	X		—		X	—	X			B-307-5		X	—	—
WET WELL LOWER	X		—		X	—			X	—	X		WHITE	—
CHLOR. CYLINDER STOR.	X		—		X	—		X		▶	X		WHITE	▶ #379 IVORY

CONC. - CONCRETE
CMU·PTD. - CONC. MASONRY UNIT - PAINTED
S.A.P. - SPRAYED ACCOUSTICAL PLASTER
PLAS. PTD. - PLASTER PAINTED

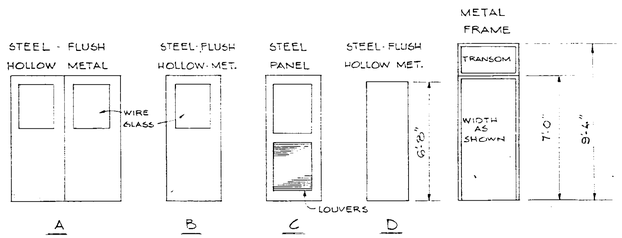
DOOR SCHEDULE

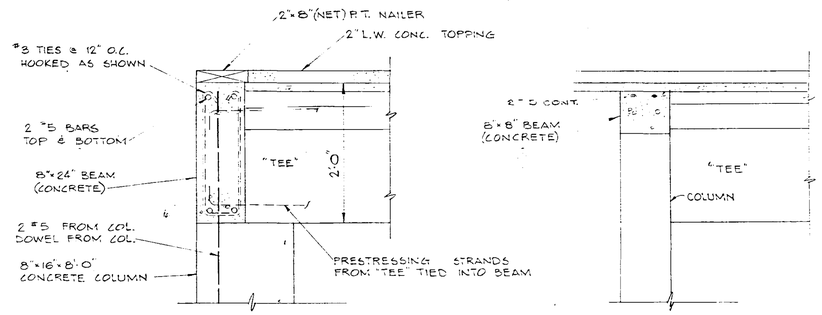
MARK	SIZE	TYPE	MATERIAL	LITE	LOUVER	TH'LD.	LOCK	REMARKS
1	2/3'-0"×7'-0"×1¾"	A	METAL	25"×30"	—	AL.	440	EA. LEAF, W/ BOLTS ON INACTIVE LEAF, OVERLAPPING ASTRAGAL
2	3'-0"×7'-0"×1¾"	C	METAL	25"×30"	HALF	AL.	440	CLOSER #3541
3	3'-0"×7'-0"×1¾"	B	METAL	25"×30"	—	AL.	440	
4	2'-4"×6'-8"×1⅜	D	METAL	—	18"×12"	—	426	

ALL DOORS & FRAMES SHALL BE PAINTED #307 MEDIUM GRAY

EXTERIOR COLORS

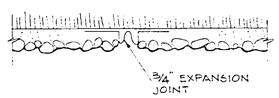
EXPOSED CONC. (EXCLUDING SLAB, BEAMS, COLS.)
NO. 311 WHITE
EXPOSED CMU
NO. 311 WHITE
EXPOSED STUCCO
NO. 311 WHITE
EXPOSED AGGREGATE
SEE SPECS. DIVISION 9 - FINISHES



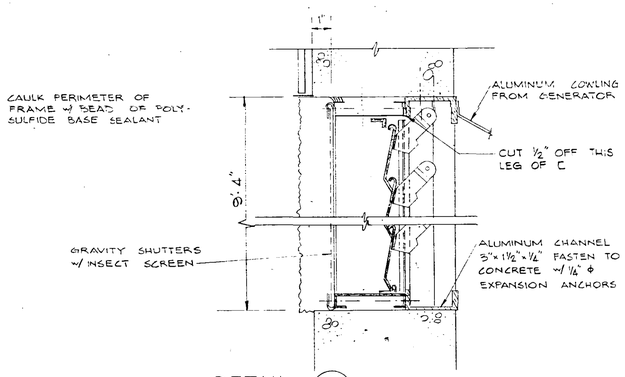


DETAIL L/7
SCALE: 1" = 1'-0"

DETAIL M/7
SCALE: 1" = 1'-0"



DETAIL H/7
SCALE: 3" = 1'-0"



DETAIL J/7
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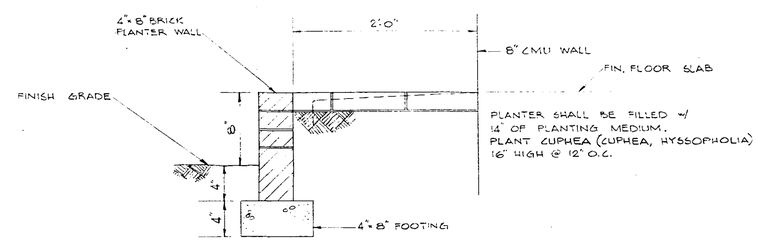


DETAIL K/7
SCALE: 1½" = 1'-0"

RECORD DRAWING
DATE 7-76 BY PJM
CK JKN 18-05

NO.	DATE	DESCRIPTION	BY	CKD.
		RECORD DRAWING		

REVISIONS

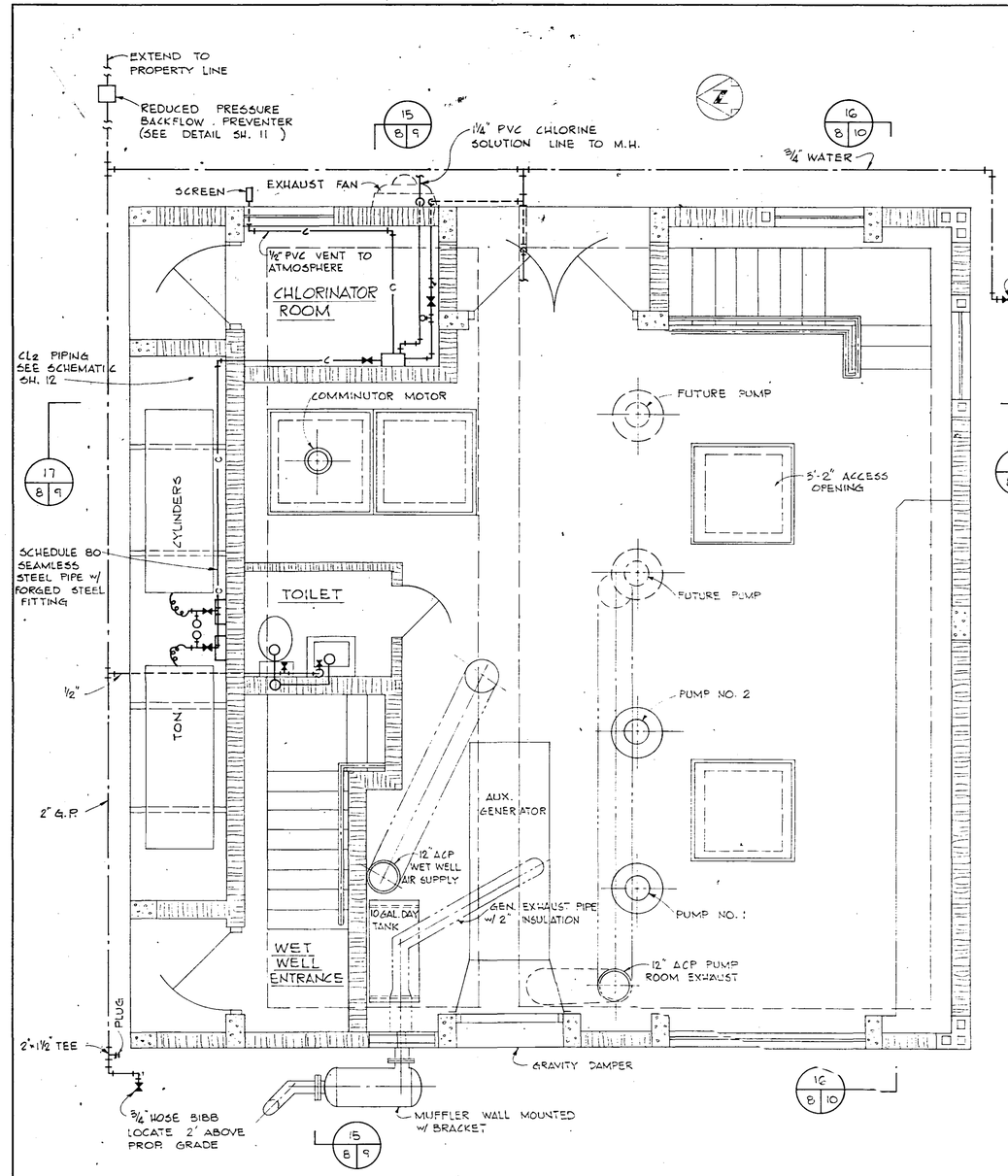
RUSSELL & AXON
Engineers — Planners — Architects
DAYTONA BEACH, FLORIDA

SANITARY SEWERAGE PROJECT
PART D
SECTION III — MASTER LIFT STATION I D
ARCH. - SCHEDULES & DETAILS
MANATEE COUNTY, FLORIDA

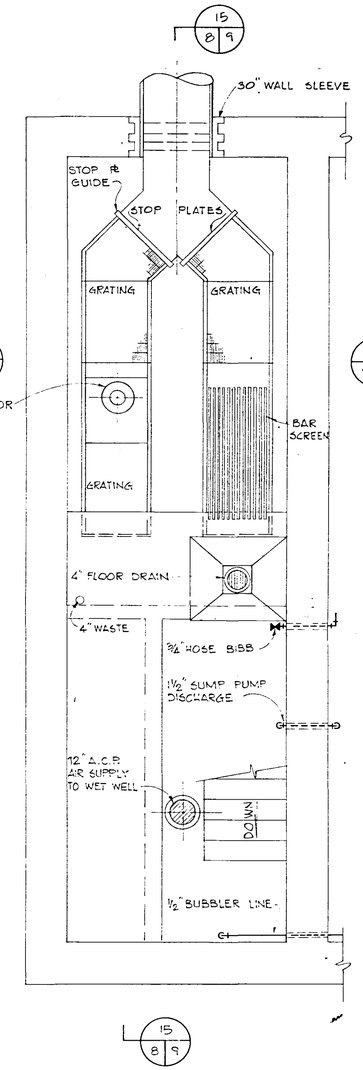
T280

DESIGNED BY	FILE No.	SEAL
ROV/GER	6681 - 8b	JOHN W. CUMMING CERTIFICATE No. 9522 STATE OF FLORIDA REGISTERED ENGINEER
DRAWN BY RLB	SHEET No. 7	
CHECKED BY JWC JKN	OF 23 SHEETS	
DATE OCT. 1973	SCALE: AS SHOWN	

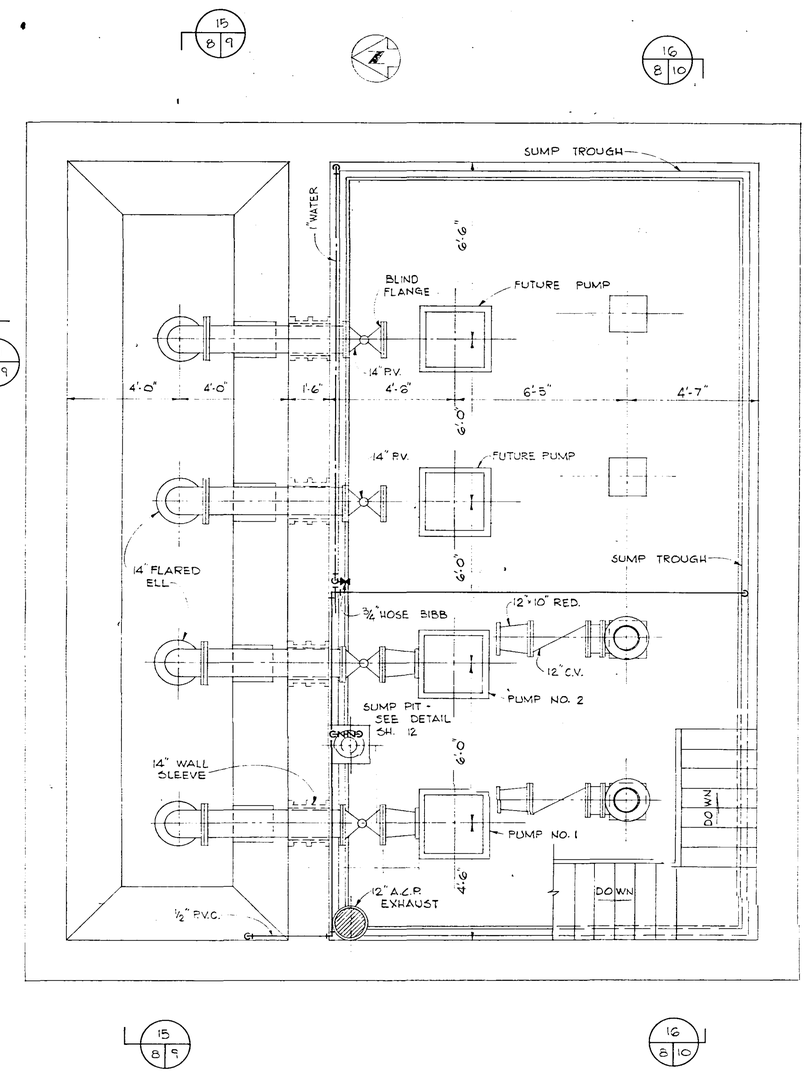
OCE-ELLIOTT, INC., PGH., PA. REORDER 13936



PLAN - OPERATING FLOOR



PLAN - WET WELL
INTERMEDIATE LEVEL



PLAN - PUMP ROOM & WET WELL

RECORD DRAWING
DATE 7-76 BY PJM
CK. RKN 18-05

NO.	DATE	DESCRIPTION	BY	CKD.
		RECORD DRAWING		

REVISIONS

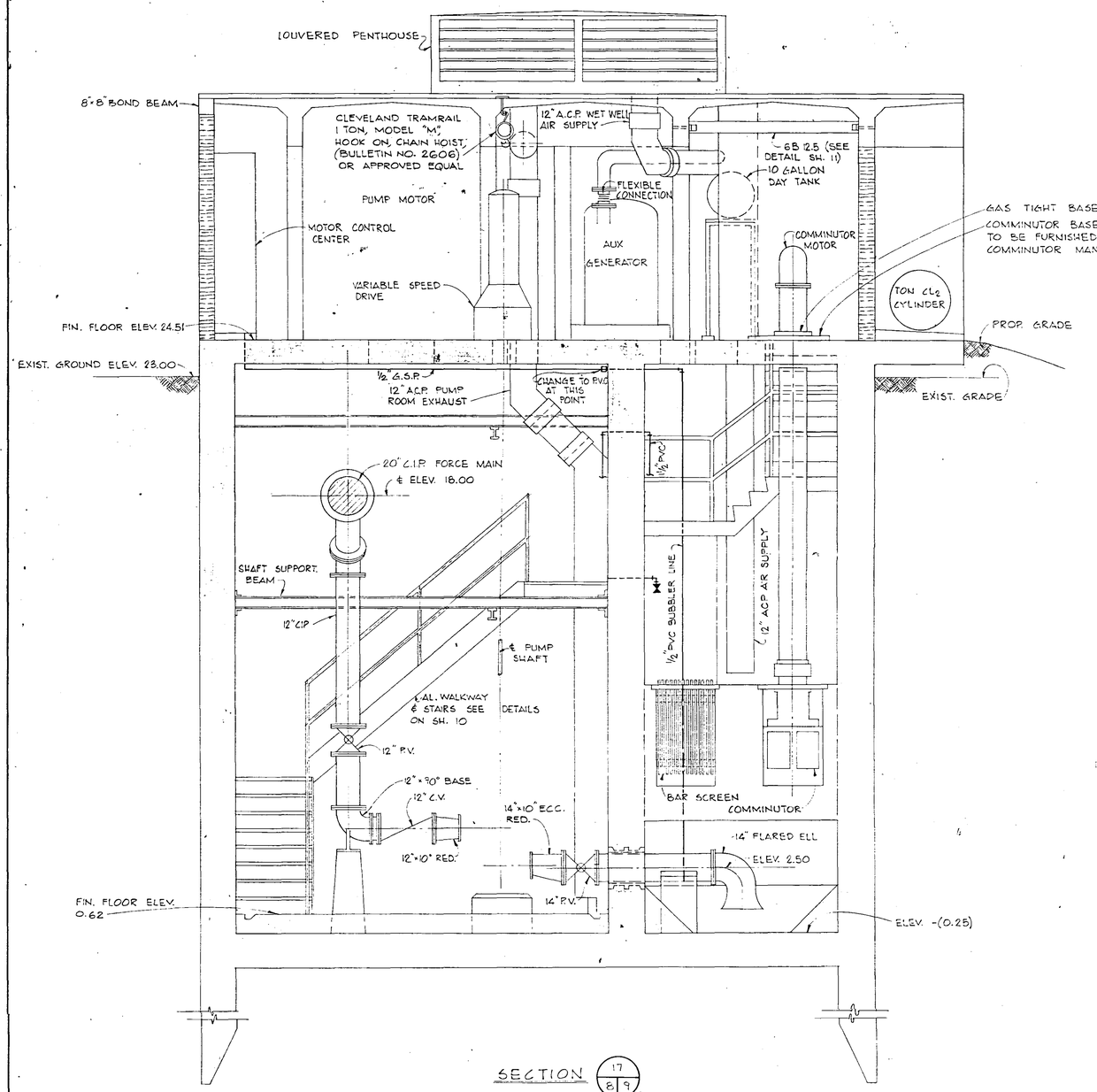
RUSSELL & AXON
Engineers — Planners — Architects
DAYTONA BEACH, FLORIDA

SANITARY SEWERAGE PROJECT
PART D
SECTION III - MASTER LIFT STATION I D
MECH. - FLOOR PLANS
MANATEE COUNTY FLORIDA

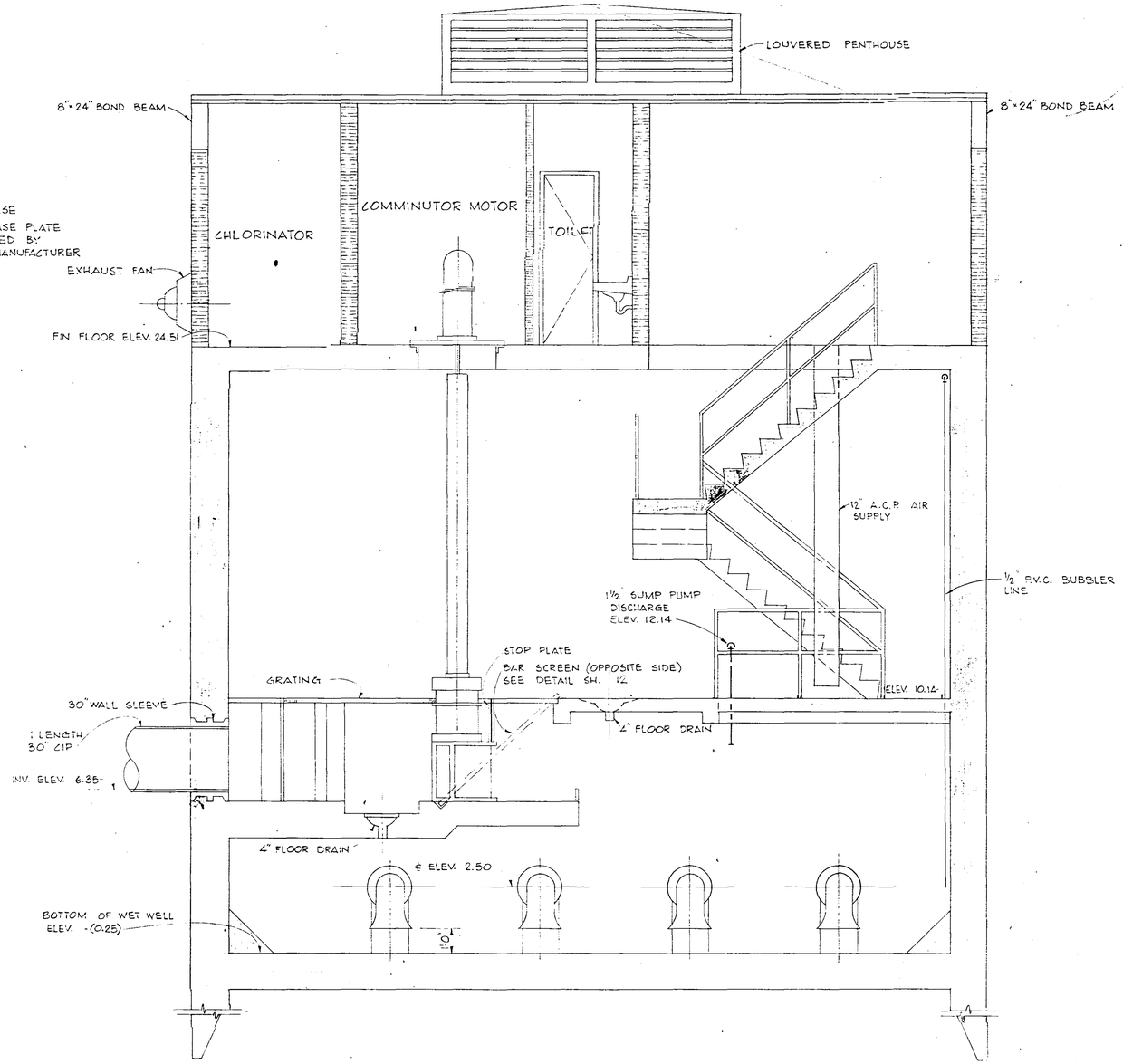
T-281

DESIGNED BY GER	FILE No. 6681 - 8b	
DRAWN BY RLB	SHEET No. 8 OF 23 SHEETS	
CHECKED BY JWC		
DATE OCT. 1973	SCALE: 3/8"=1'-0"	

JOHN W. CUMMING CERTIFICATE No. 9522 STATE OF FLORIDA REGISTERED ENGINEER



SECTION 17 / 8 | 9



SECTION 15 / 8 | 9

RECORD DRAWING
DATE 7-76 BY P.J.M.
CK. AWKN 18-05

NO.	DATE	DESCRIPTION	BY	CKD.
		RECORD DRAWING		N.D.
	7-76	REV. SUMP PUMP DISCHARGE ELEV.	PJM	AWK

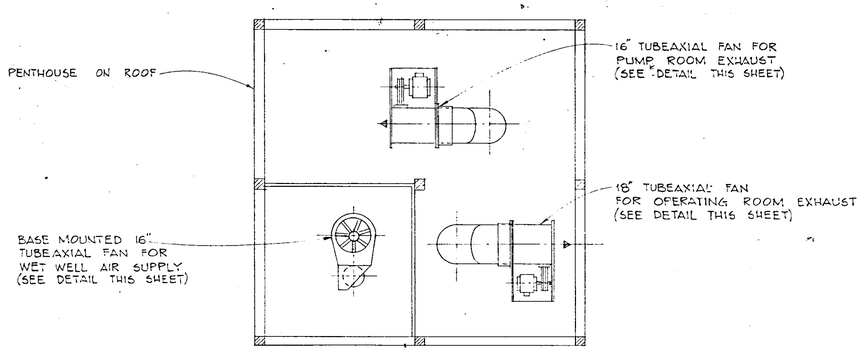
REVISIONS

RUSSELL & AXON
Engineers — Planners — Architects
DAYTONA BEACH, FLORIDA

SANITARY SEWERAGE PROJECT
PART D
SECTION III – MASTER LIFT STATION I D
MECH. - SECTIONS
T282
MANATEE COUNTY, FLORIDA

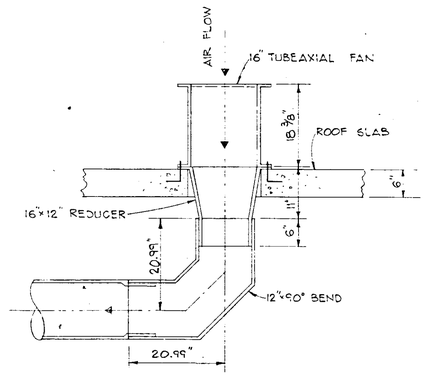
DESIGNED BY GER	FILE NO. 6681-8b	JOHN W. BUMMING CERTIFICATE No. 9522 STATE OF FLORIDA REGISTERED ENGINEER
DRAWN BY RLB	SHEET No. 9 OF 23 SHEETS	
CHECKED BY JWC		
DATE OCT. 1973	SCALE: 3/8" = 1'-0"	

OCE-ELLIOTT, INC., PGH., PA. REORDER 13936

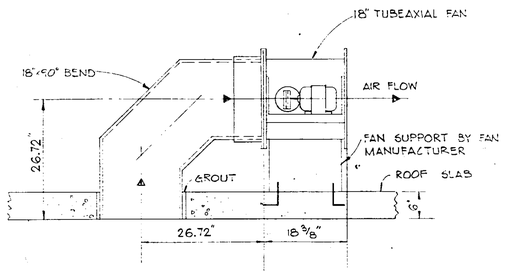


DETAIL
SCALE: 3/8" = 1'-0"
18 / 10 | 10

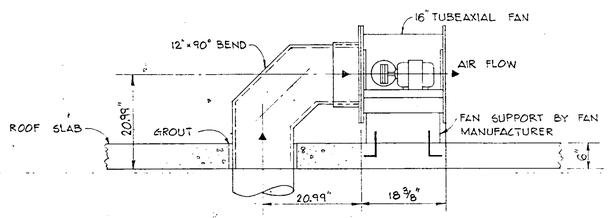
PUMPS SEQUENCE; INITIAL STAGE: 2 VARIABLE SPEED PUMPS						
FUNCTION			FUNCTION			
UNIT	CONDITION	STATUS	LEVEL	STATUS	CONDITION	REMARK
	EL. ON RISE READ UP			EL. ON. FALLING LEVEL READ DOWN		
PUMP NO. 2	RUNS	MAX. SPEED	8.25	MAX. SPEED		HIGH WATER
PUMP NO. 1	RUNS	MAX. SPEED	8.25	MAX. SPEED		LEVEL ALARM
		INC. ↓ SPEED	Δ - 12"	DEC. ↑ SPEED		
PUMP NO. 2	START	MIN. SPEED	7.25		STOP	
PUMP NO. 1	RUNS	MIN. SPEED	7.25	MIN. SPEED	RUNS	
		DEC. ↑ SPEED TO MIN.	Δ - 1/4"	INC. ↓ SPEED		
PUMP NO. 1	RUNS	MAX. SPEED	7.25	MAX. SPEED	RUNS	
		INC. ↓ SPEED	Δ - 2.7"			
PUMP NO. 1	START	MIN. SPEED	5.00	MIN. SPEED	RUNS	
				DEC. ↑ SPEED		
PUMP NO. 1	STOP		3.75		STOP	NORMAL L.W. LEVEL



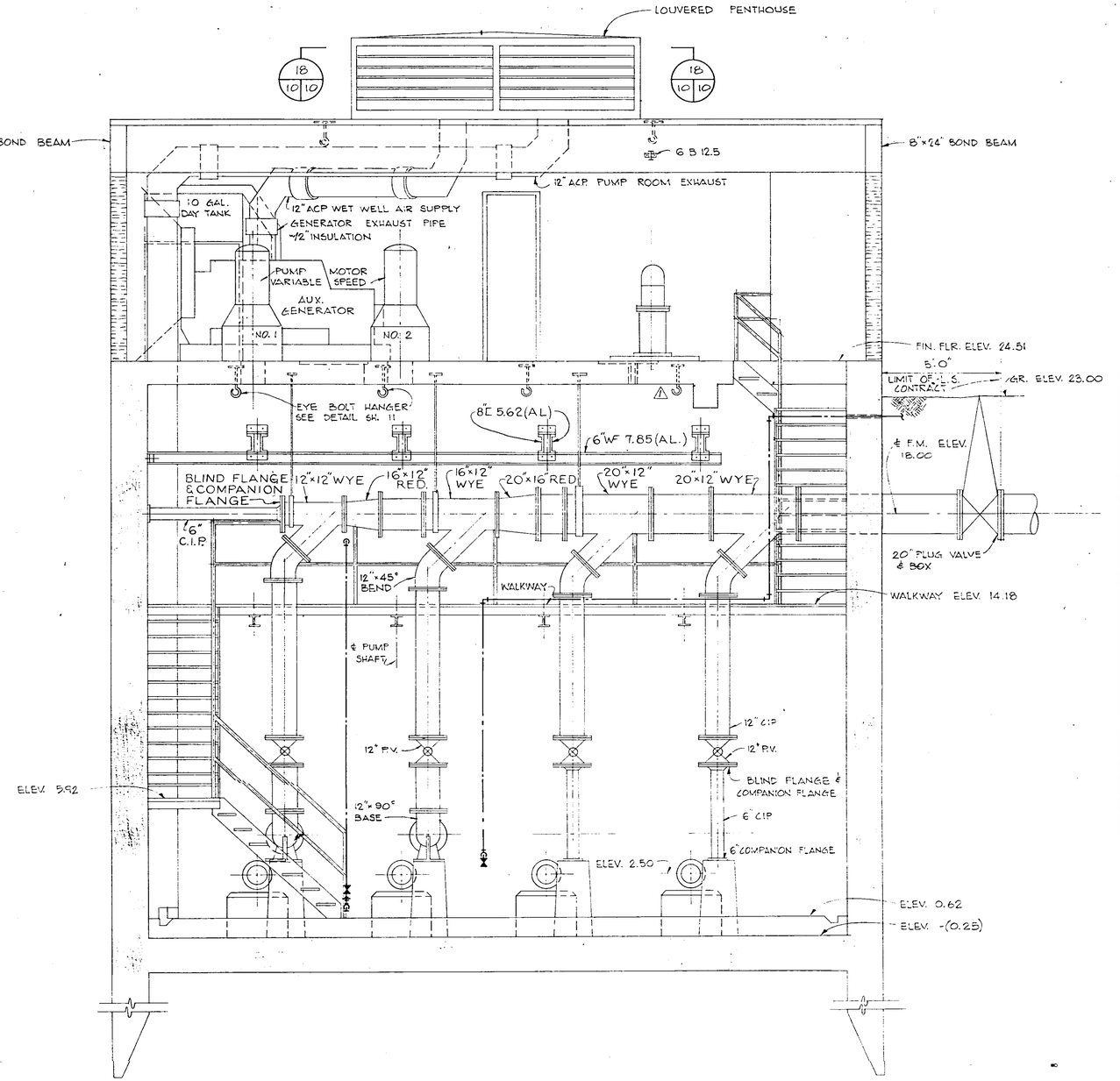
DETAIL FOR TUBEAXIAL FAN FOR WET WELL AIR SUPPLY
SCALE: 3/4" = 1'-0"



DETAIL - TUBEAXIAL FAN FOR OPERATING ROOM EXHAUST
SCALE: 3/4" = 1'-0"



DETAIL - TUBEAXIAL FAN FOR PUMP ROOM EXHAUST
SCALE: 3/4" = 1'-0"



SECTION
3/8" = 1'-0"
16 / 8 | 10

NO.	DATE	DESCRIPTION	BY	CKD.
		RECORD DRAWING		N.D.
1	JAN. 74	ADDED 1 (ONE) EYE BOLT HANGER RLB		

REVISIONS

RUSSELL & AXON
Engineers — Planners — Architects
DAYTONA BEACH, FLORIDA

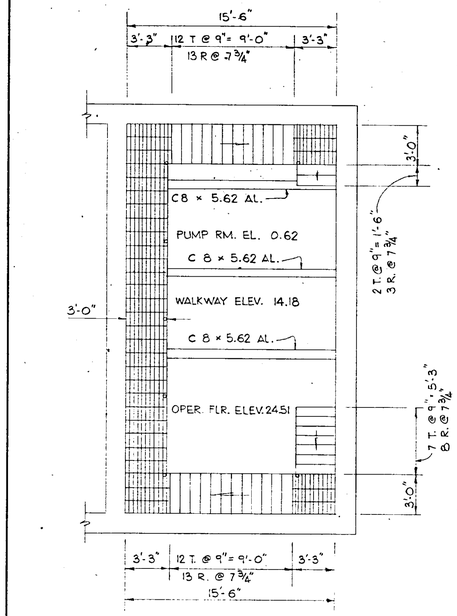
SANITARY SEWERAGE PROJECT
PART D
SECTION III - MASTER LIFT STATION 1 D
MECH. - SECTION & MISC. DETAILS
T283
MANATEE COUNTY, FLORIDA

DESIGNED BY GER	FILE NO. 6681-8b
DRAWN BY RLB	SHEET NO. 10 OF 23 SHEETS
CHECKED BY JWC	
DATE OCT. 1973	SCALE: AS SHOWN

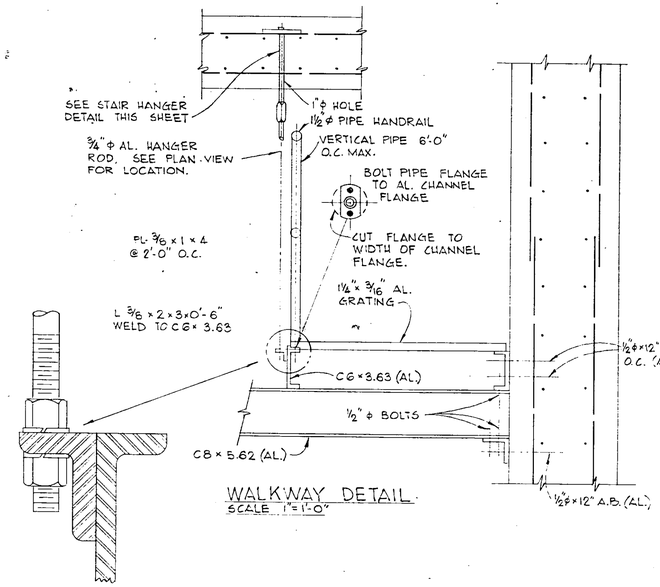
SEAL: JOHN W. CUMMING, CERTIFICATE No. 9522, STATE OF FLORIDA, REGISTERED ENGINEER

RECORD DRAWING
DATE 7-76 BY PJM
CK LOKN 18-05

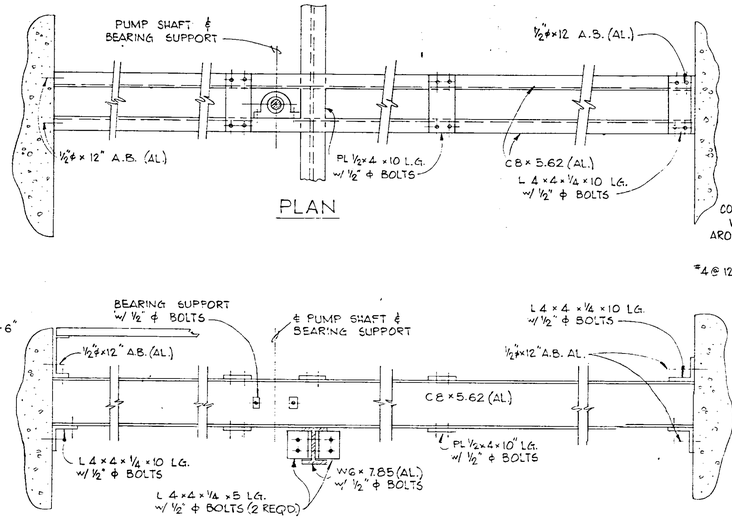
OCE-ELLIOTT, INC., PGH., PA. REORDER 13936



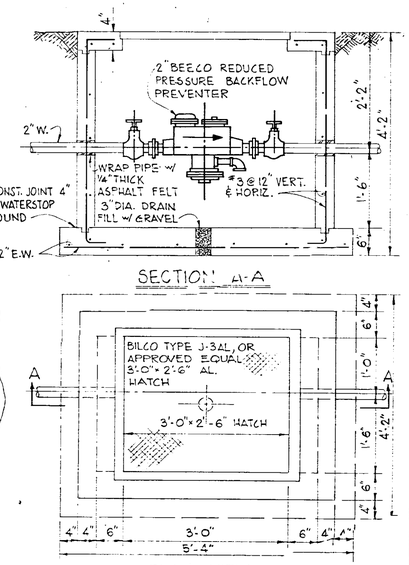
PLAN VIEW - ALUMINUM STAIRS & WALKWAY
SCALE: 3/16" = 1'-0"



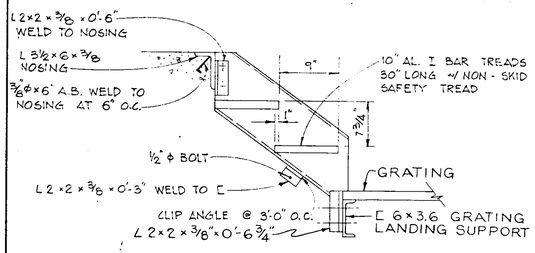
WALKWAY DETAIL
SCALE 1" = 1'-0"



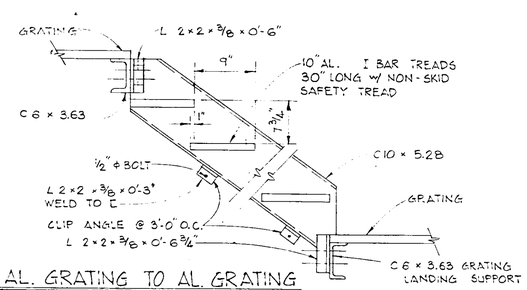
DETAIL OF PUMP SHAFT & BEARING SUPPORT
SCALE: 1" = 1'-0"



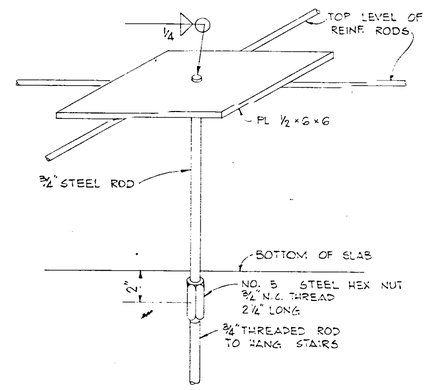
PLAN VIEW
BACKFLOW PREVENTER PIT DETAIL
SCALE: 3/4" = 1'-0"



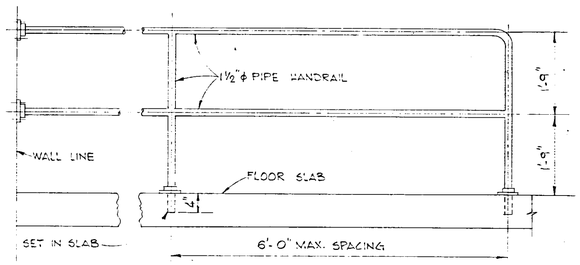
CONC. FL. TO AL. GRATING
AL. STAIR DETAIL
SCALE: 1" = 1'-0"



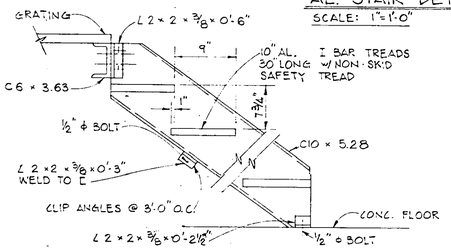
AL. GRATING TO AL. GRATING
AL. STAIR DETAIL
SCALE: 1" = 1'-0"



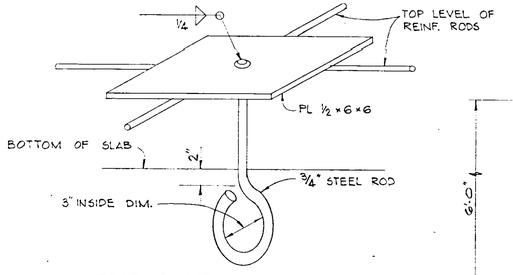
STAIR HANGER - DETAIL
NOT TO SCALE



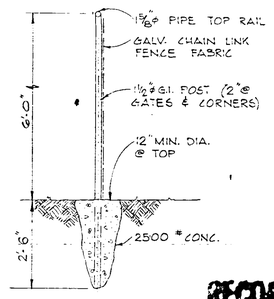
HANDRAIL DETAIL
NOT TO SCALE



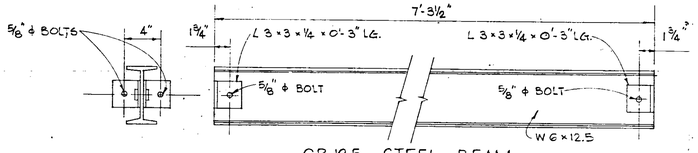
AL. GRATING TO CONC. FLOOR
AL. STAIR DETAIL
SCALE: 1" = 1'-0"



EYE BOLT HANGER DETAIL
NOT TO SCALE



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



6B 12.5 STEEL BEAM
SCALE: 1 1/2" = 1'-0"

RECORD DRAWING
DATE 7-76 BY PJM
CK. WKN 8-05

NO.	DATE	DESCRIPTION	BY	CKD.
		RECORD DRAWING		

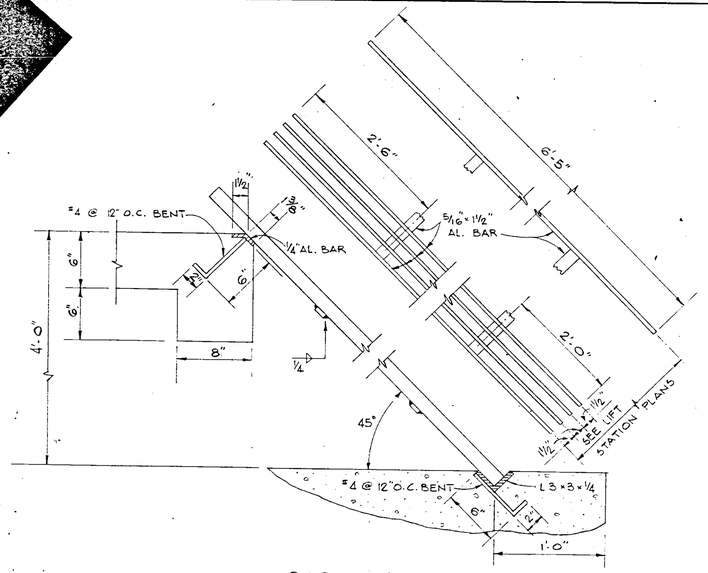
REVISIONS

RUSSELL & AXON
Engineers — Planners — Architects
DAYTONA BEACH, FLORIDA

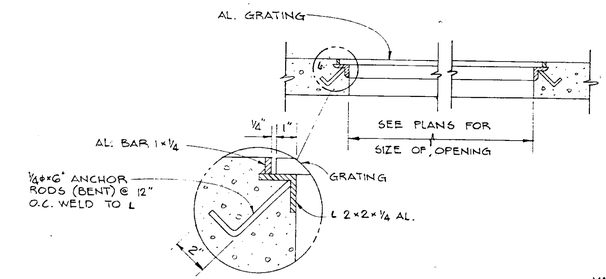
SANITARY SEWERAGE PROJECT
PART D
SECTION III – MASTER LIFT STATION I D
MECH. - DETAILS
T284
MANATEE COUNTY, FLORIDA

DESIGNED BY GER	FILE No. 6681 - 8b	SEAL: JOHN W. CUMMING, CERTIFICATE No. 9522, STATE OF FLORIDA, REGISTERED ENGINEER
DRAWN BY RLB	SHEET No. 11 OF 23 SHEETS	
CHECKED BY JWC		
DATE OCT. 1973	SCALE: AS SHOWN	

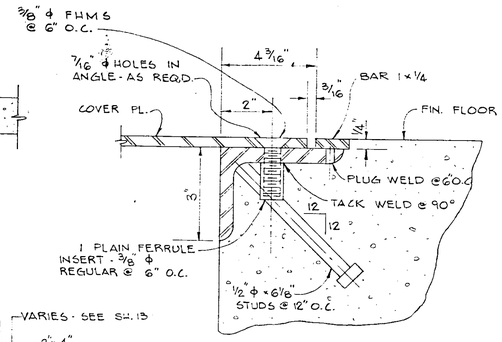
LIPOTT, INC., PGH., PA. REORDER 13936



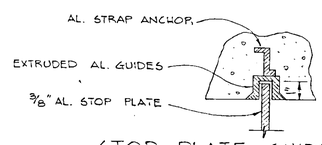
BAR SCREEN - DETAIL
SCALE: 1 1/2" = 1'-0"



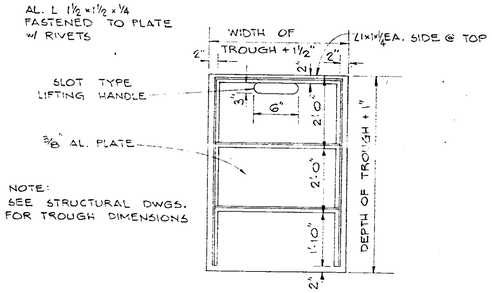
GRATING SEAT DETAIL
NOT TO SCALE



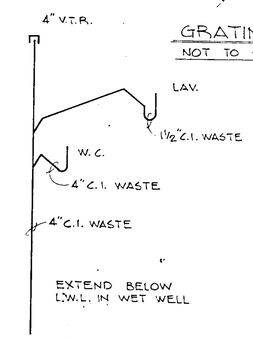
HATCH COVER & FRAME DETAIL
NOT TO SCALE



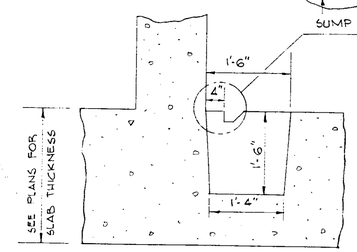
STOP PLATE GUIDE - DETAIL
NOT TO SCALE



STOP PLATE DETAIL
NOT TO SCALE

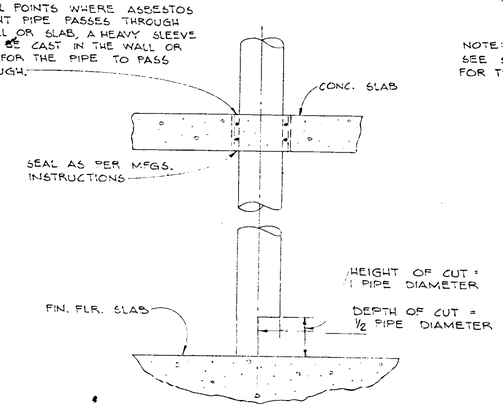


WASTE PIPING SCHEMATIC
NOT TO SCALE

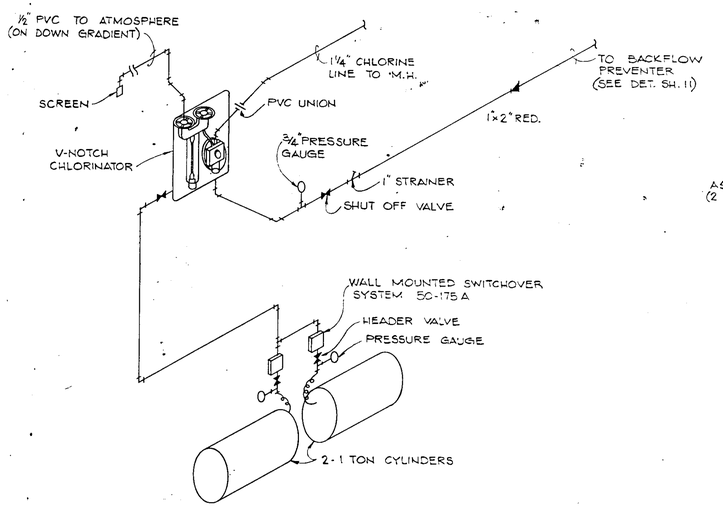


SUMP PIT DETAIL
SCALE: 3/4" = 1'-0"

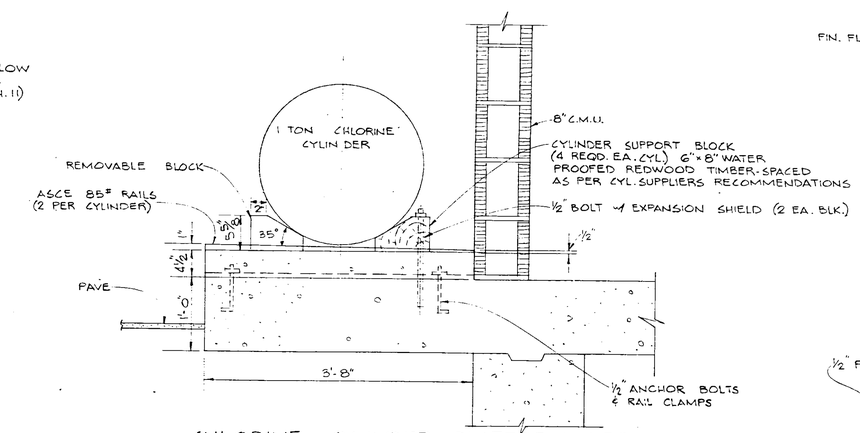
AT ALL POINTS WHERE ASBESTOS CEMENT PIPE PASSES THROUGH A WALL OR SLAB, A HEAVY SLEEVE SHALL BE CAST IN THE WALL OR SLAB FOR THE PIPE TO PASS THROUGH.



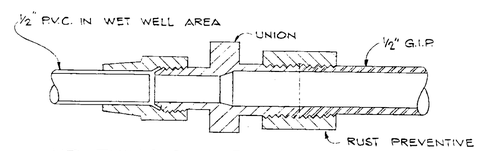
VENTILATION PIPE DETAIL
SCALE: 1/2" = 1'-0"



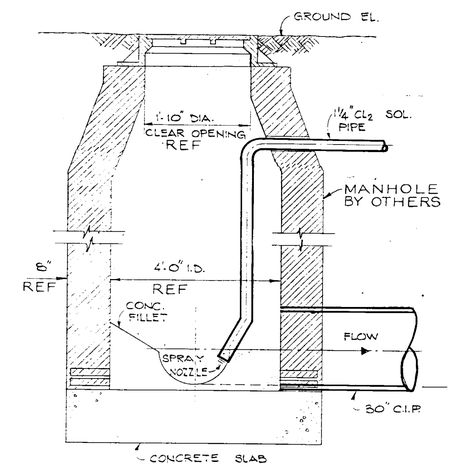
CHLORINATOR INSTALLATION SCHEMATIC
NOT TO SCALE



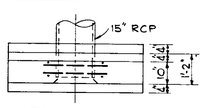
CHLORINE CYLINDER PLATFORM - DETAIL
SCALE: 1" = 1'-0"



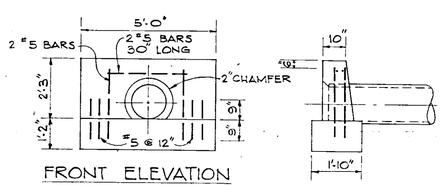
AIR TIGHT CONNECTION FOR BUBBLER LINE
NOT TO SCALE



CHLORINE CONNECTION TO MANHOLE
NOT TO SCALE

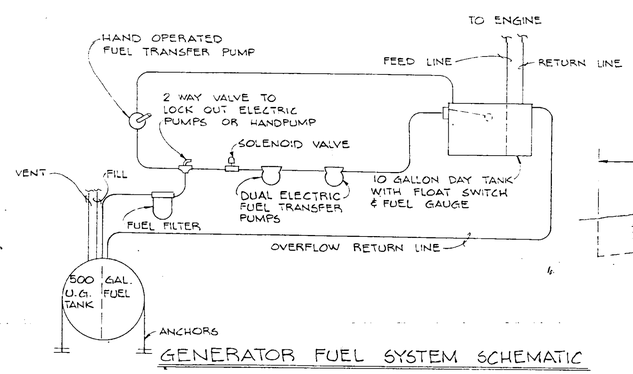


PLAN VIEW

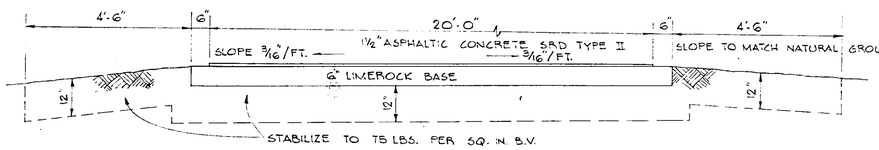


FRONT ELEVATION
SIDE ELEVATION

CONC. ENDWALL DETAIL
SCALE: 3/16" = 1'-0"



GENERATOR FUEL SYSTEM SCHEMATIC



TYPICAL PAVEMENT SECTION
NOT TO SCALE

RECORD DRAWING
DATE 7-76 BY PJM
CK. WKN 18-05

NO.	DATE	DESCRIPTION	BY	CKD.
		RECORD DRAWING		WJ

REVISIONS

RUSSELL & AXON
Engineers — Planners — Architects
DAYTONA BEACH, FLORIDA

SANITARY SEWERAGE PROJECT
PART D
SECTION III - MASTER LIFT STATION I D
MISC. DETAILS

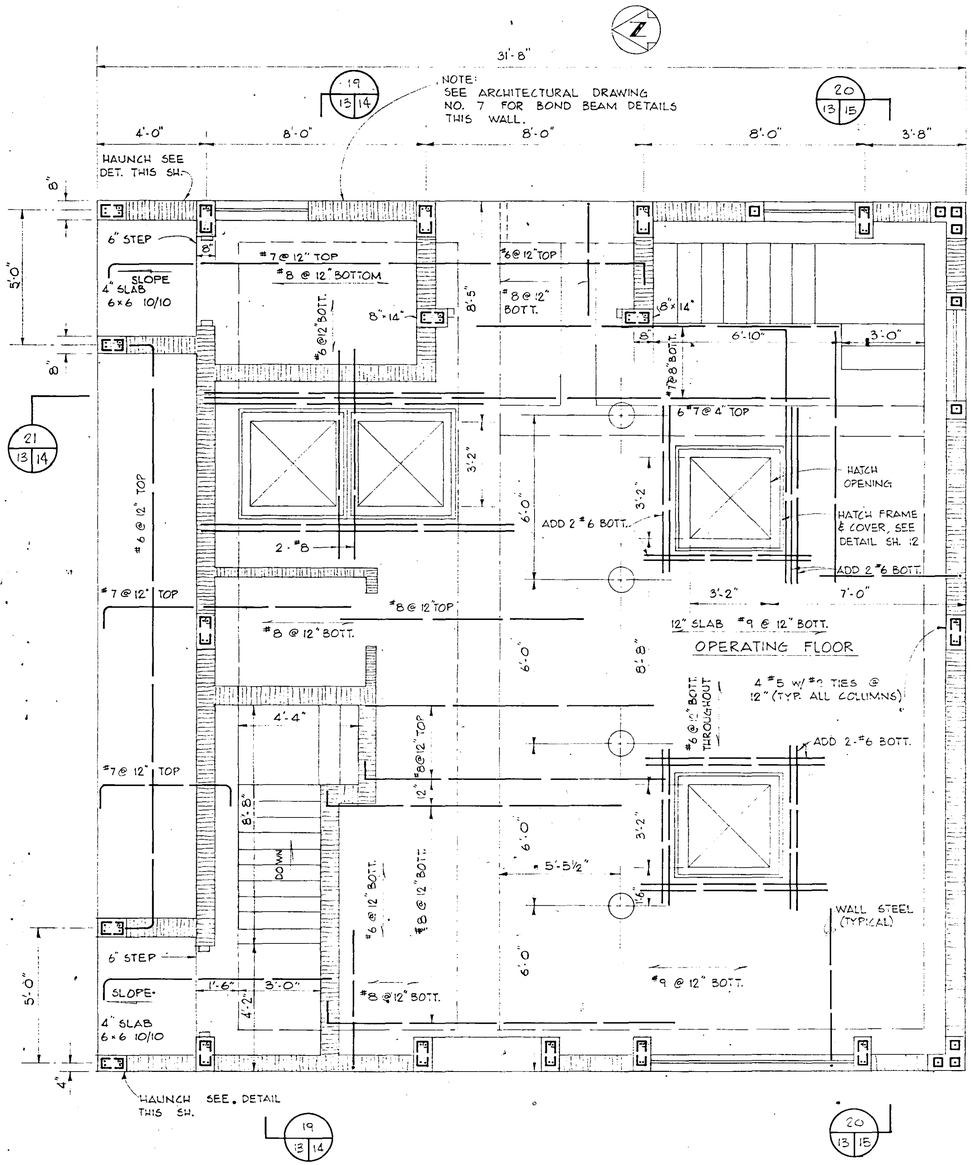
MANATEE COUNTY FLORIDA

T285

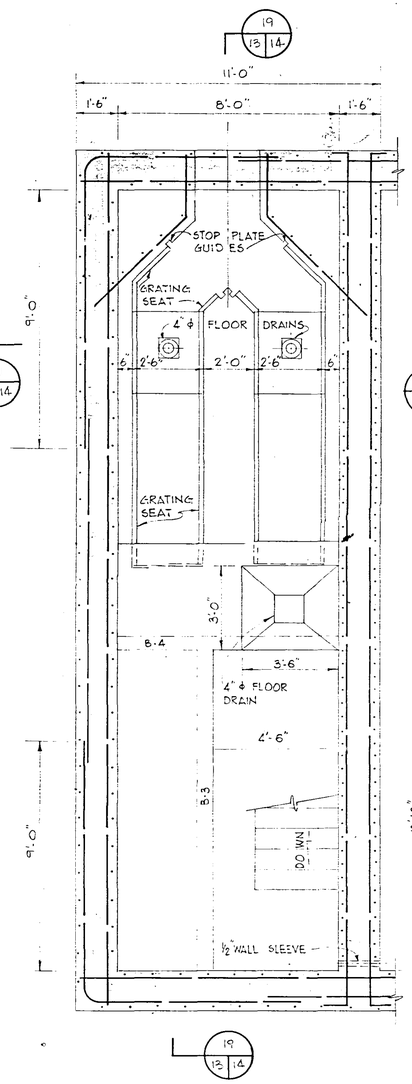
DESIGNED BY GER	FILE No. 6681-8b
DRAWN BY RLB	SHEET No. 12 OF 23 SHEETS
CHECKED BY JWC	
DATE OCT. 1973	SCALE: AS SHOWN

SEAL: JOHN W. CUMMING, CERTIFICATE No. 9522, STATE OF FLORIDA, REGISTERED ENGINEER

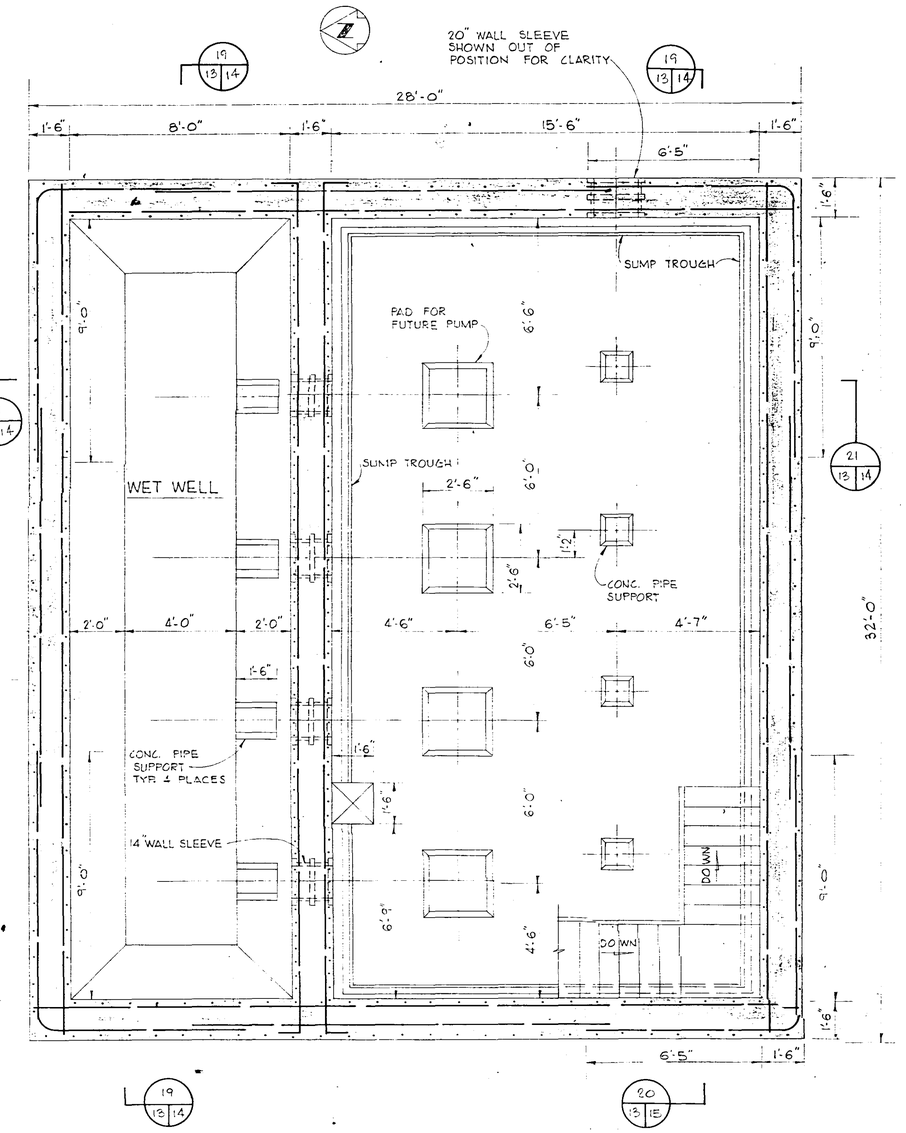
OCE-ELLIOTT, INC., PGH., PA. REORDER 13936



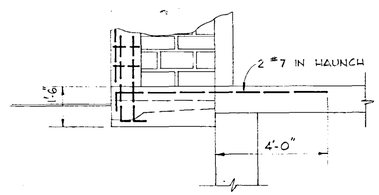
PLAN - PUMP OPERATING FLOOR



PLAN - WET WELL



PLAN - PUMP ROOM & WET WELL



HAUNCH DETAIL

RECORD DRAWING
DATE 7-76 BY RJM
CK. LOKN 18-05

NO.	DATE	DESCRIPTION	BY	CKD.
		RECORD DRAWING		

REVISIONS

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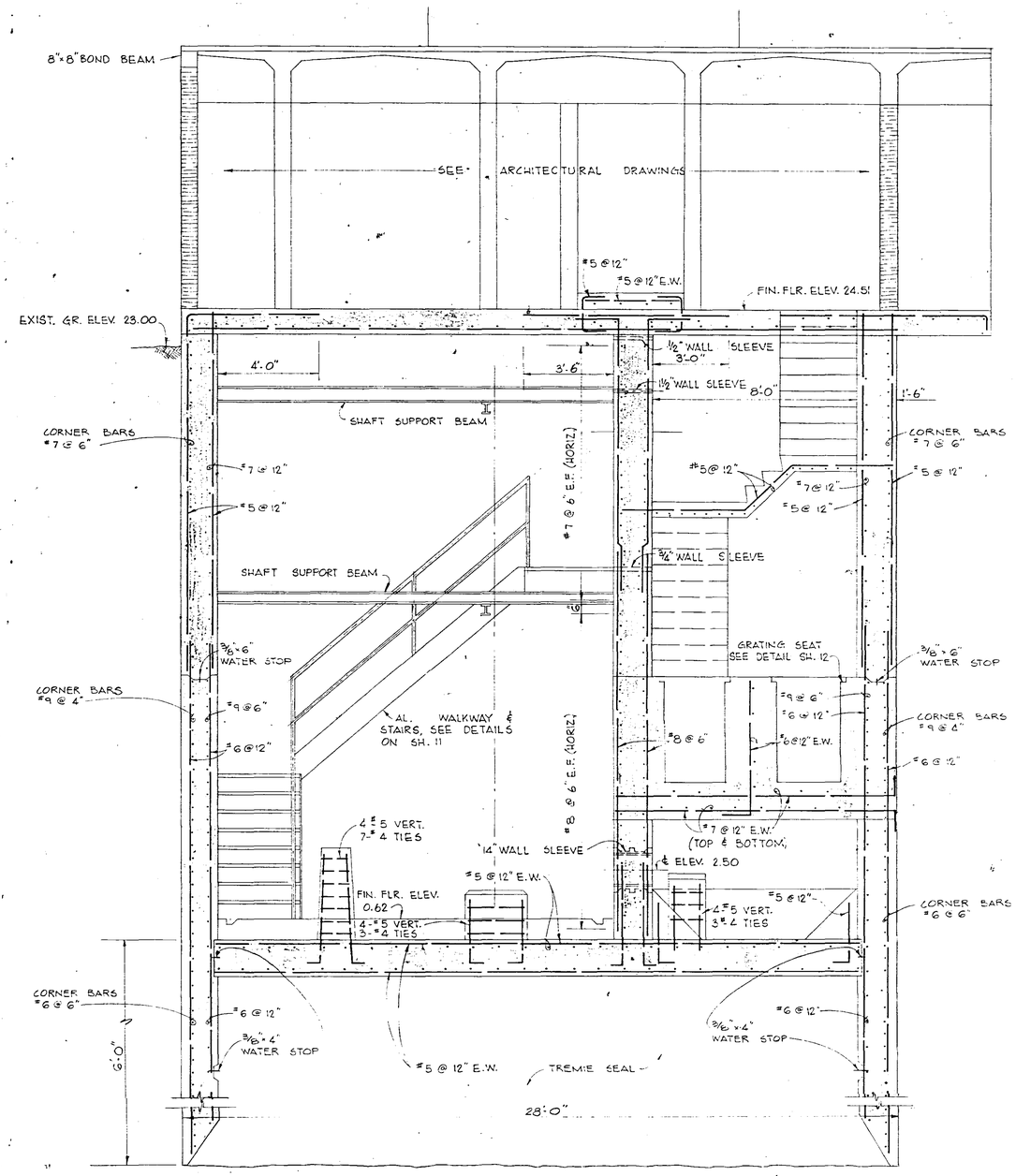
Engineers — Planners — Architects
DAYTONA BEACH, FLORIDA

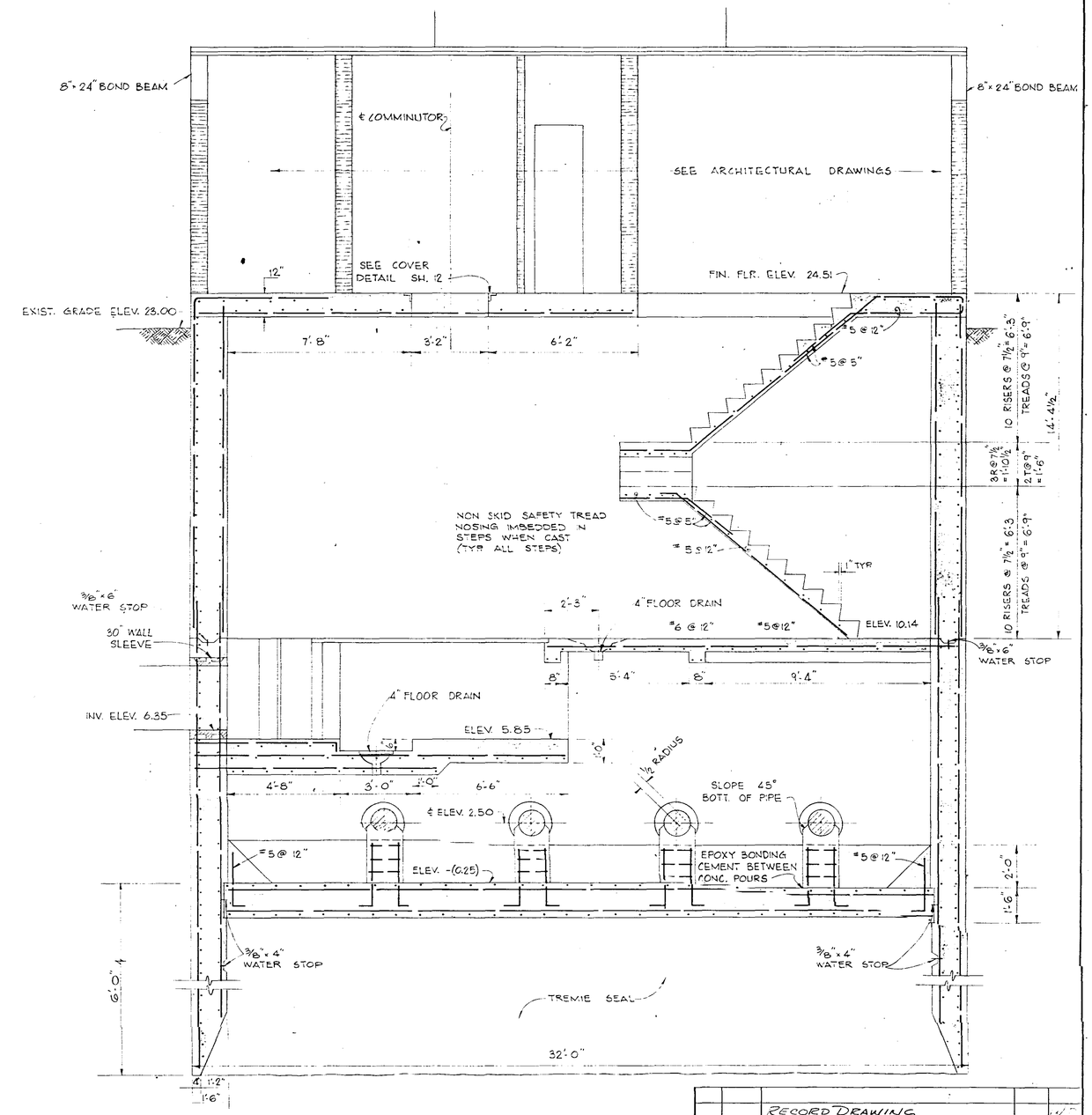
SANITARY SEWERAGE PROJECT
PART D
SECTION III - MASTER LIFT STATION I D
STRUCTURAL - FLOOR PLANS
T-286
MANATEE COUNTY, FLORIDA

DESIGNED BY GER/JTS	FILE NO. 6681 - 8b	SEAL: JOHN W. CUMMING, CERTIFICATE No. 9522, STATE OF FLORIDA, REGISTERED ENGINEER
DRAWN BY RLB	SHEET No. 13 OF 23 SHEETS	
CHECKED BY JWC JGC		
DATE OCT. 1973	SCALE: 3/8" = 1'-0"	

OCE-ELLIOTT, INC., PGH., PA. REORDER 13936



SECTION 21 / 13 | 14



SECTION 19 / 13 | 14

RECORD DRAWING
DATE 7-76 BY RJM
CK. KKN 18-05

NO.	DATE	DESCRIPTION	BY	CKD.
		RECORD DRAWING		

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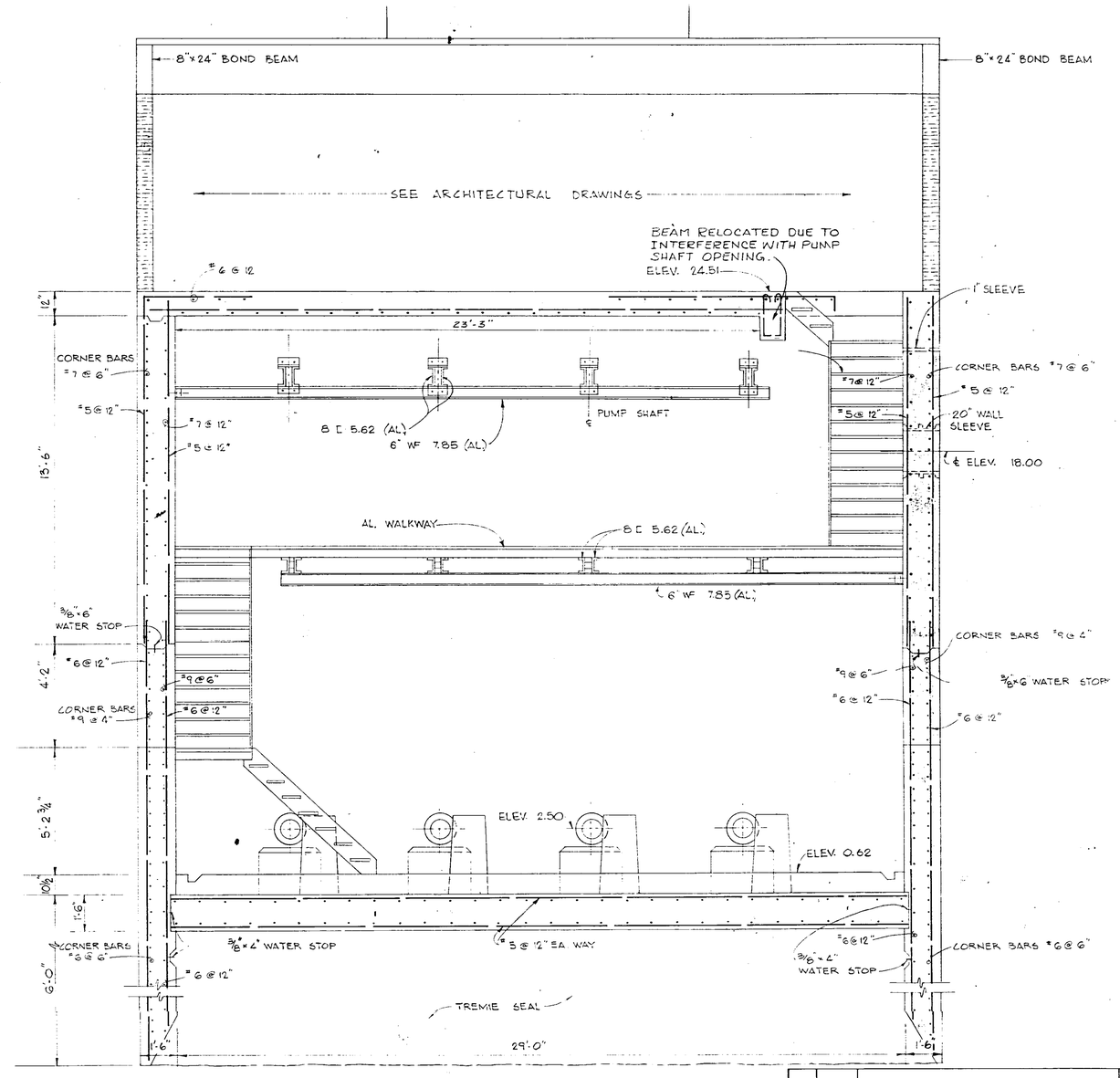
PART D
SECTION III – MASTER LIFT STATION I D
STRUCTURAL-SECTIONS
MANATEE COUNTY, FLORIDA

T 287

DESIGNED BY GER/JTS	FILE No. 6681 - 8b	SEAL: JOHN W. CUMMING CERTIFICATE No. 9522 STATE OF FLORIDA REGISTERED ENGINEER
DRAWN BY RLB	SHEET No. 14 OF 23 SHEETS	
CHECKED BY JWC		
DATE OCT. 1973	SCALE: 3/8" = 1'-0"	

OCE-ELLIOTT, INC., PGH., PA. REORDER 13936



SECTION 20 / 13 | 15

NO.	DATE	DESCRIPTION	BY	CKD.
	7-76	BEAM RELOCATED (RECORD DRAWING)	P.J.M.	W.J.

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DAYTONA BEACH, FLORIDA

SANITARY SEWERAGE PROJECT
PART D
SECTION III - MASTER LIFT STATION I D
STRUCTURAL - SECTION

T28B

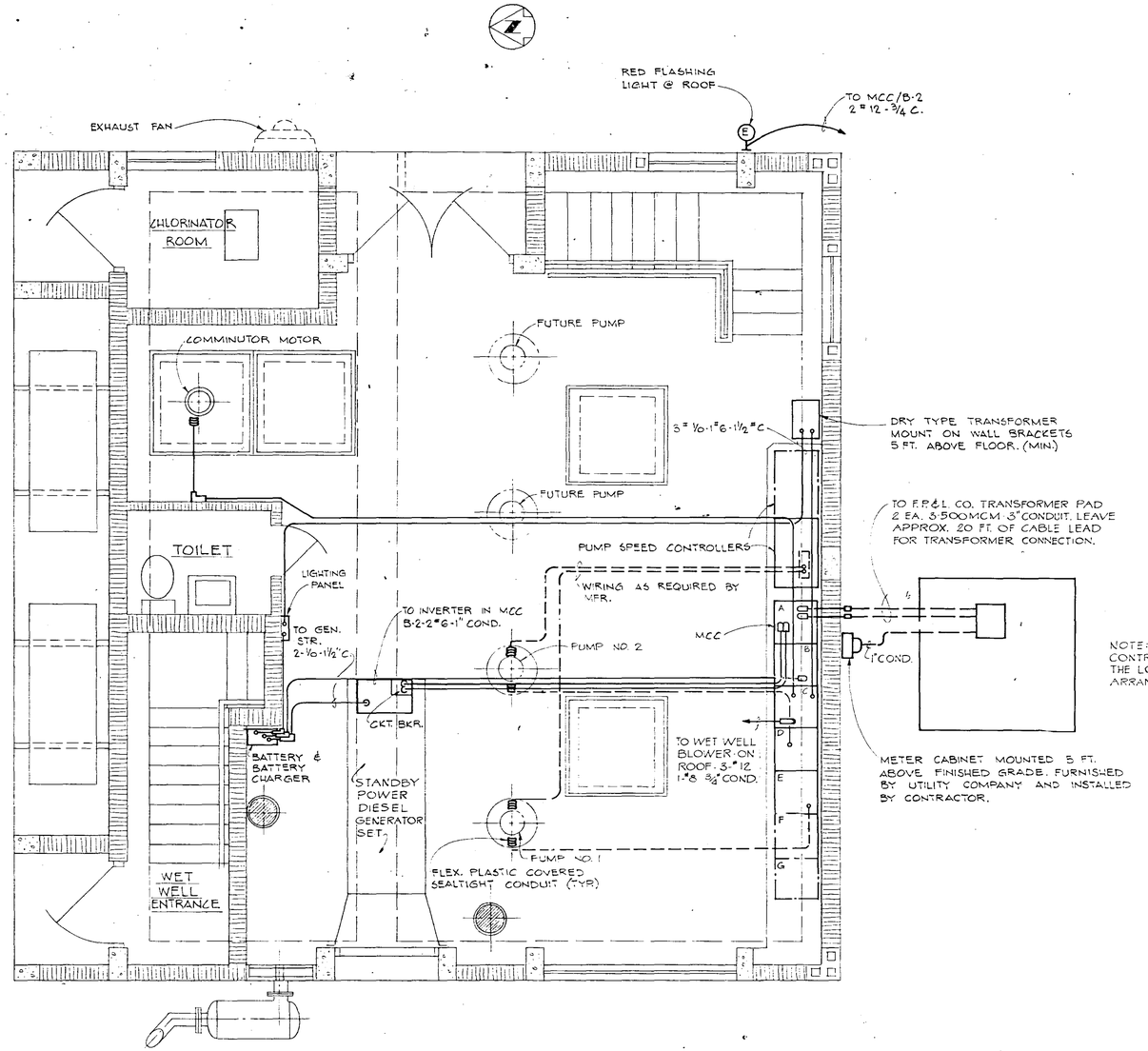
MANATEE COUNTY, FLORIDA

DESIGNED BY GER/JTS	FILE NO. 6681 - 8b	SEAL: JOHN W. CUMMING, CERTIFICATE No. 9522, STATE OF FLORIDA, REGISTERED ENGINEER
DRAWN BY RLB	SHEET No. 15 OF 23 SHEETS	
CHECKED BY JWC		
DATE OCT. 1973	SCALE: 3/8" = 1'-0"	

RECORD DRAWING
DATE 7-76 BY P.J.M.
CK LOKN

1805

OCE-ELLIOTT, INC., PGH., PA. REORDER 13936



NOTE:
CONTRACTOR SHALL VERIFY W/UTILITY CO., THE LOCATION OF TRANSFORMER & CONDUIT ARRANGEMENT, FOR SECONDARY CONNECTION.

METER CABINET MOUNTED 5 FT. ABOVE FINISHED GRADE. FURNISHED BY UTILITY COMPANY AND INSTALLED BY CONTRACTOR.

PLAN - OPERATING FLOOR

NOTE:
RUN DOTTED CONDUITS UNDER FLOOR SLAB OR UNDERGROUND.

RECORD DRAWING
DATE 7-76 BY PJM
CK. WKN 18-05

NO.	DATE	DESCRIPTION	BY	CKD.
		RECORD DRAWING		
1	SEPT. 74	CHANGE ORDER NO. 1	ABH	SJG

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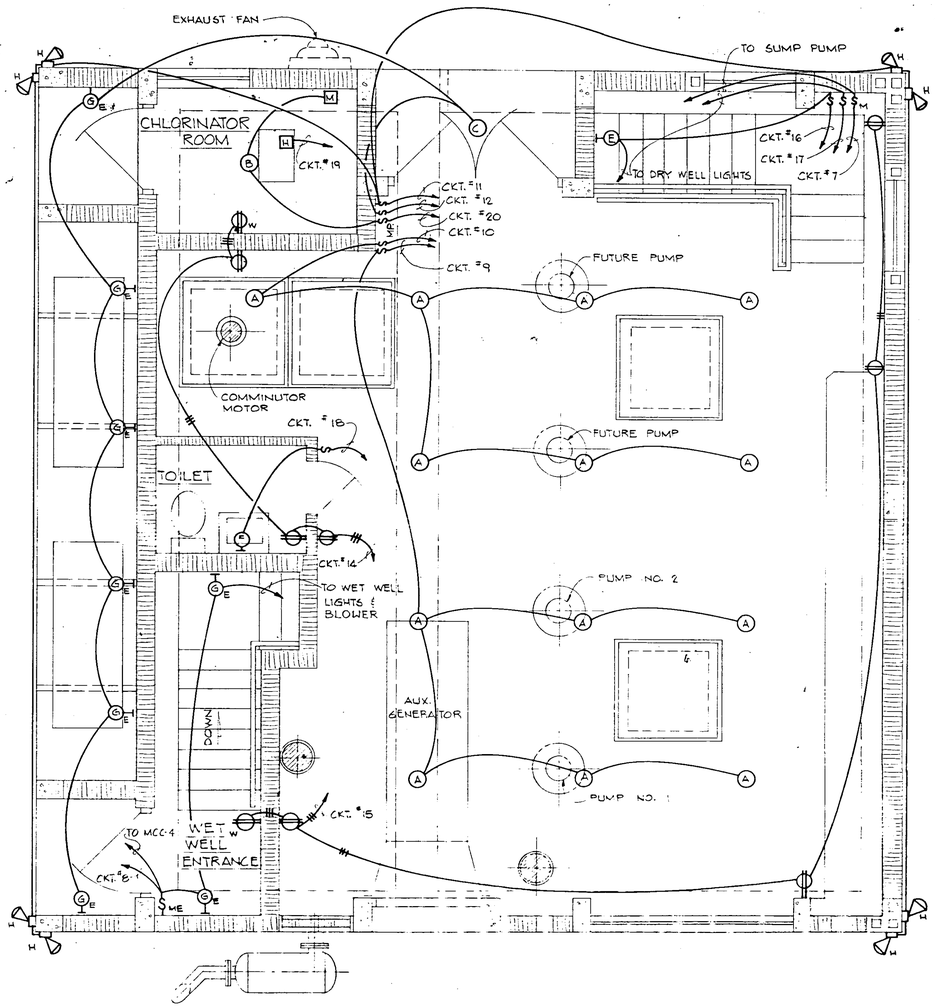
DAYTONA BEACH, FLORIDA

SANITARY SEWERAGE PROJECT
PART D
SECTION III - MASTER LIFT STATION I D
ELECTRICAL - WIRING FLOOR PLAN
MANATEE COUNTY, FLORIDA

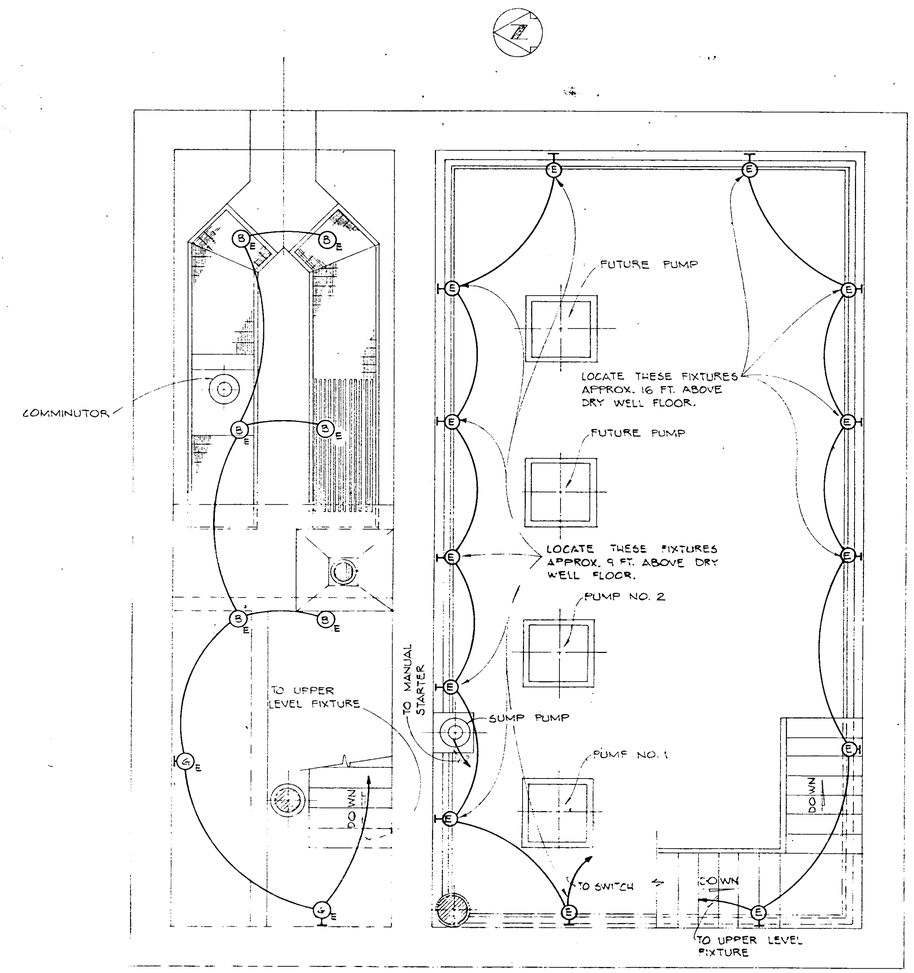
T289

DESIGNED BY GER/SJG	FILE No. 6681 - 8b	SEAL: JOHN W. CUMMING, CERTIFICATE No. 9522, STATE OF FLORIDA, REGISTERED ENGINEER
DRAWN BY RLB	SHEET No. 16 OF 23 SHEETS	
CHECKED BY JWC		
DATE OCT. 1973	SCALE: 3/16" = 1'-0"	

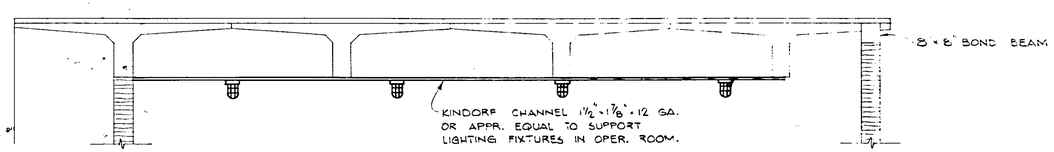
OCE-ELLIOTT, INC., PGH., PA. REORDER 13936



PLAN - OPERATING FLOOR



PLAN PUMP ROOM & WET WELL



ELEVATION
OPERATING FLOOR

RECORD DRAWING
DATE 7-76 BY PJM
CK. DKN

NO.	DATE	DESCRIPTION	BY	CKD.
		RECORD DRAWING		
1	SEPT. 74	CHANGE ORDER NO. 1	JB	SJG

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Engineers — Planners — Architects
DAYTONA BEACH, FLORIDA

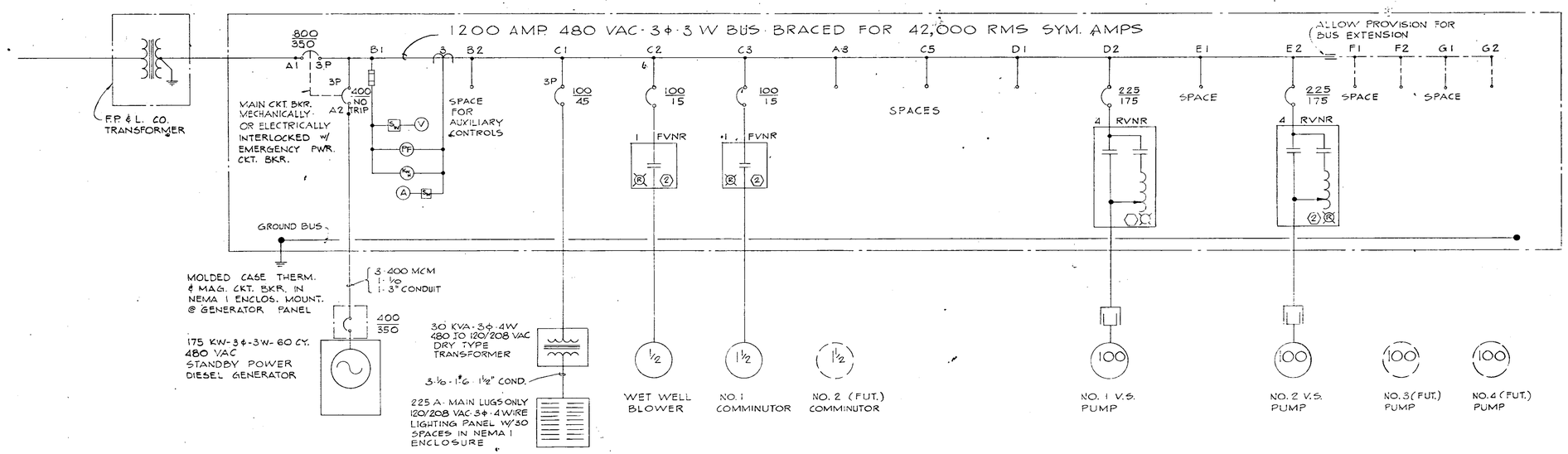
SANITARY SEWERAGE PROJECT
PART D
SECTION III MASTER LIFT STATION I D
ELECTRICAL - LIGHTING
T290
MANATEE COUNTY, FLORIDA

DESIGNED BY GER/SJG	FILE No. 6681-8b	SEAL: JOHN W. CUMMING, CERTIFICATE No. 9522, STATE OF FLORIDA, REGISTERED ENGINEER
DRAWN BY RLB	SHEET No. 17 OF 23 SHEETS	
CHECKED BY JWC		
DATE OCT. 1973	SCALE: 3/8" = 1'-0"	

18-05

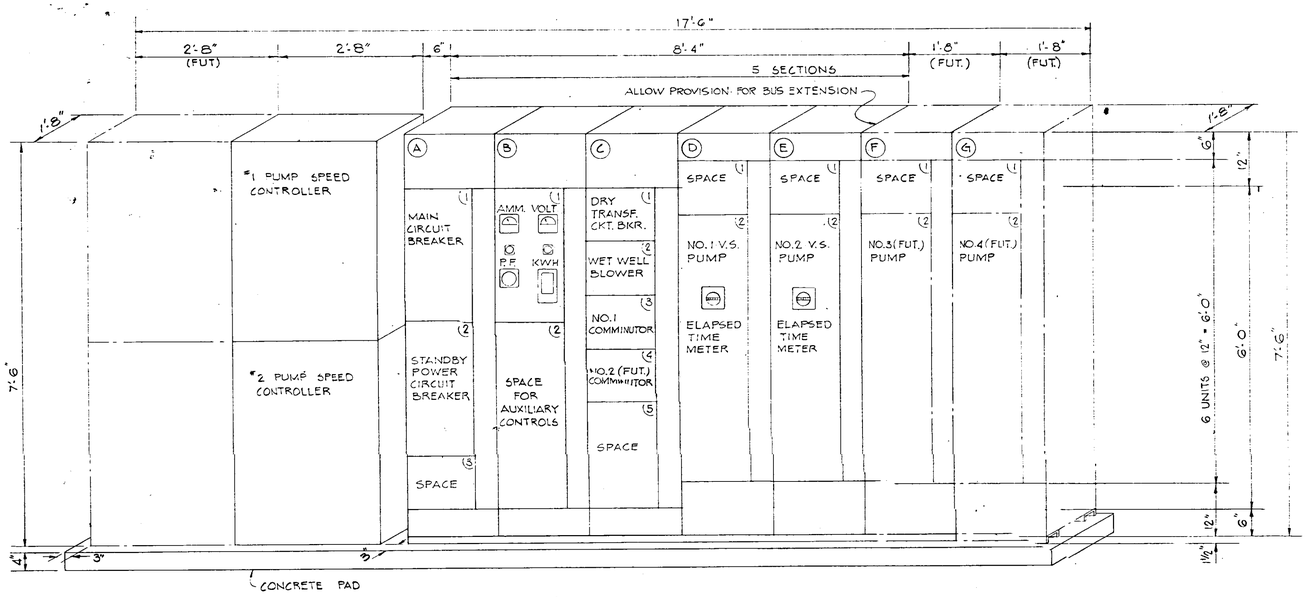
OCE-ELLIOTT, INC., PGH., PA.. REORDER 13936

MOTOR CONTROL CENTER - SINGLE LINE DIAGRAM



MOTOR CONTROL CENTER SCHEDULE

MCC SEC.	UNIT NO.	LOAD KVA	LOAD FLA	CKT. BKR. POLES	CKT. BKR. FRAME	CKT. BKR. TRIP	MOTOR STARTER POLES	MOTOR STARTER SIZE	MOTOR STARTER TYPE	MOTOR STARTER COIL VOLT.	MODIFICATIONS PILOT LIGHT RED	PILOT LIGHT GREEN	SELECT SW	P.B. STA. LOCAL	P.B. STA. MCC	INTERLOCKS N.O.	INTERLOCKS N.C.	CONT. TRANS	RELAY AUX.	C.T. AMM	AMM SW.	WIRING PHASES	WIRING GRD.	COND.	SERVICE
A	1	—	—	3	800	350	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	650 0MCM		2-3'	MAIN CKT. BKR
	2	—	263	3	400	NO TRIP	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	STANDBY PWR. CKT. BKR.
	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	SPACE
B	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	METERING EQUIPMENT
	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	SPACE FOR AUX. CONTROLS
C	1	30	36	3	100	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3-#8	1-#8	1"	DRY XFMR. CKT. BKR.
	2	½	1	3	100	15	3	1	FVNR	120	YES	—	—	—	YES	3	2	—	—	—	—	3-#12	1-#8	¾"	WET WELL BLOWER
	3	1½	2.6	3	100	15	3	1	FVNR	120	YES	—	—	—	YES	3	2	—	—	—	—	3-#12	1-#8	¾"	NO. 1 COMMINUTOR
	4	1½	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	NO. 2 COMMINUTOR (FUT.)
	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	SPACE
D	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	SPACE
	2	100	124	3	225	175	3	4	RVNR	120	YES	—	—	—	YES	3	2	—	—	—	—	3-#2/0	1-#4	2"	NO. 1 V.S. PUMP
E	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	SPACE
	2	100	124	3	225	175	3	4	RVNR	120	YES	—	—	—	YES	3	2	—	—	—	—	3-#2/0	1-#4	2"	NO. 2 V.S. PUMP
F	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	SPACE
	2	100	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	NO. 3 V.S. PUMP (FUT.)
G	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	SPACE
	2	100	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	NO. 4 V.S. PUMP (FUT.)



PUMP SPEED CONTROLLER LAYOUT

MOTOR CONTROL CENTER - LAYOUT

CKT. BKRS. A1 & B1 TO BE MECHANICALLY OR ELECTRICALLY INTERLOCKED TO PREVENT INDEPENDENT OPERATION (WHEN ONE BREAKER IS IN CLOSED POSITION THE OTHER MUST STAY OPEN & VICE-VERSA)

RECORD DRAWING
DATE 7-76 BY PJM
CK. DKN

18-05

NO.	DATE	DESCRIPTION	BY	CKD.
		RECORD DRAWING		NO
1	SEPT. 74	CHANGE ORDER NO. 1	JB	SVG

REVISIONS

RUSSELL & AXON
Engineers — Planners — Architects
DAYTONA BEACH, FLORIDA

SANITARY SEWERAGE PROJECT
PART D
SECTION III - MASTER LIFT STATION I D
ELECTRICAL - MOTOR CONTROL
T291
MANATEE COUNTY, FLORIDA

DESIGNED BY GER/SJG	FILE No. 6681-8b
DRAWN BY RLB	SHEET No. 18 OF 23 SHEETS
CHECKED BY JWC.	
DATE OCT. 1973	SCALE: NONE

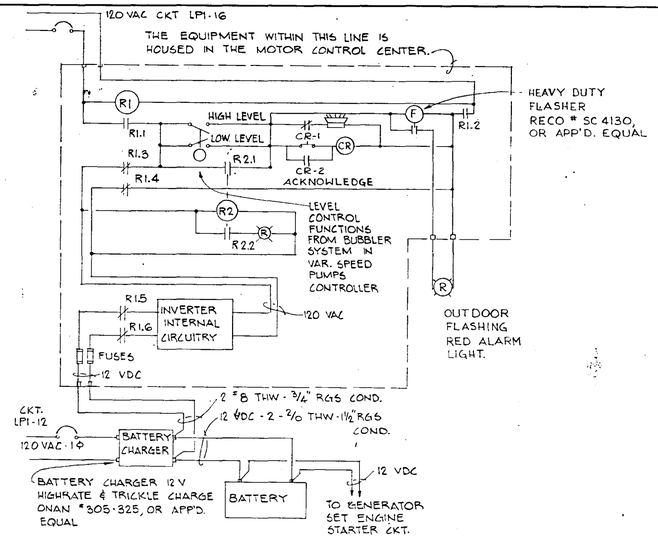
SEAL: JOHN W. CUMMING CERTIFICATE No. 9522 STATE OF FLORIDA REGISTERED ENGINEER

OCE-ELLIOTT, INC., PGH., PA. RECORDER 13936

LIGHTING PANELBOARD SCHEDULE

120/208 VAC. - 3 ϕ - 4W - SN - MAIN LUGS ONLY : 225A
30 SPACES - NEMA 1 ENCLOSURE

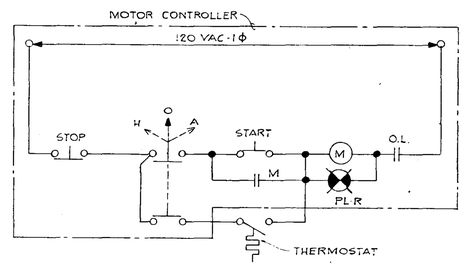
SERVICE	PUMPING STATION #1D					
	CKT. NO.	POLES	AMP.	LOAD VA -A	B	C
MOTOR CONTROL CIRCUITS	1	1	20	1000		
" " "	2		20	1000		
BATTERY CHARGER	3		20		600	
#1 PUMP SPEED CONTROLLER	4		20		1100	
#2 PUMP " "	5		20			1100
#4 PUMP " " (FUT.)	6		20			1100
SUMP PUMP 1/3 HP	7		20	700		
WET WELL LIGHTS	8		20	1500		
OPER. ROOM LIGHTS	9		20		1200	
" " "	10		20		1400	
OUTDOOR FLOOD LIGHTS	11		20			1200
" LIGHTS	12		20			1000
OPER. ROOM EXH. FAN 1/8 HP	13		20	450		
OPER. ROOM RECEPTACLES	14		20	800		
" " "	15		20		1000	
PUMP ROOM LIGHTS	16		20		1400	
" " "	17		20			1400
TOILET LIGHT	18		15			100
CHLORINATOR HEATER	19		15	50		
CHLOR. FAN & LIGHT	20		15	250		
PUMP ROOM EXH. FAN 1/8 HP	21		20		430	
SPARE	22		20			
↓	23		15			
MCC SPACE HEATERS	24	1	15			315
SPACE	25					
↓	26					
	27					
	28					
	29					
	30					
TOTAL PHASE LOAD				5730	7130	6215



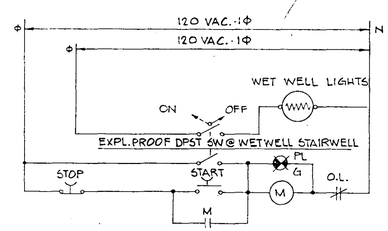
INVERTER TO BE POWERCON # 12 D 22 (CORNELL-DUBILIER ELECTRONICS) OR APP'D. EQUAL.

RELAY 'R1' TO BE G.E. 300V INDUST. RELAY CAT. #CR 120 A 02422 AA, OR APP'D. EQUAL.
RELAY 'R2' TO BE G.E. 300V INDUST. RELAY CAT. #CR 120 A 02022 AA, OR APP'D. EQUAL.

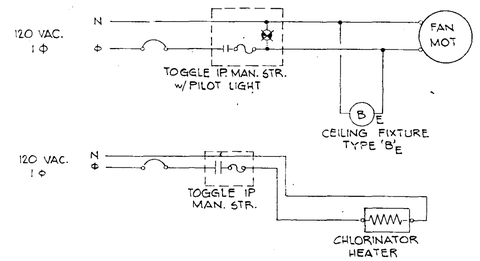
POWER FAILURE ALARM SYSTEM



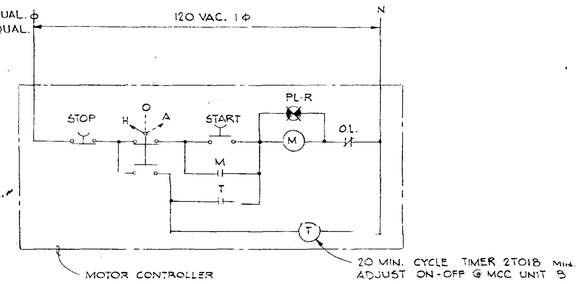
OPERATING ROOM - EXHAUST FAN SCHEMATIC



WET WELL BLOWER - SCHEMATIC



CHLORINATOR FAN LIGHT & HEATER - SCHEMATIC



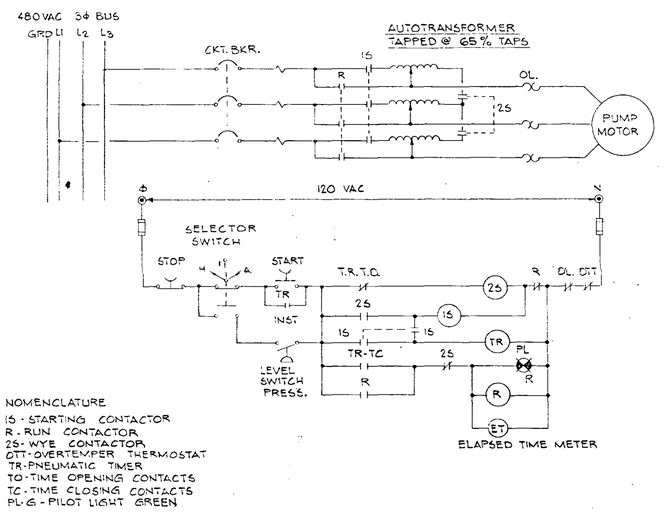
PUMP ROOM - EXHAUST FAN SCHEMATIC

ELECTRICAL LEGEND

	CIRCUIT BREAKER
	COMBINATION CIRCUIT BREAKER - MOTOR STARTER
G R	PILOT LIGHT - G = GREEN - R = RED
T C R	RELAY OR CONTACTOR COIL. LETTER DESCRIBES FUNCTION
	INCANDESCENT FLOOD LIGHT, OUTDOOR, WIDEBEAM
$ $ $ $ M P E SMP	TUMBLER SWITCH SPST - SUFFIXES: M - MOTOR STARTER w/OL; P - PILOT LIGHT E - EXPLOSION PROOF
	OVERLOAD
	FUSE ON CONTROL CIRCUITS
	MANUAL MOTOR STARTER w/ OVERLOAD PROTECTION
	NORMALLY OPEN & NORMALLY CLOSED CONTACTS
PS	SWITCH PRESSURE OPERATED
LS	SWITCH FLOAT OPERATED
	TWO POSITION SINGLE POLE SELECTOR SWITCH
	THREE POSITION DOUBLE POLE SELECTOR SWITCH
A	INCANDESCENT FIXTURE - CEILING MOUNT - LETTER DESCRIBES TYPE OF FIXTURE
	INCANDESCENT FIXTURE - WALL MOUNT
W	DOUBLE UTILITY OUTLET w GROUND - 120 V, 15A - SUFFIXES - W: WEATHR PROOF
	LIGHTING PANEL
M	MOTOR
PB	PUSH BUTTON STATION
O ⊖	INDICATES CONDUIT RUN GOING UP - GOING DOWN
	CONDUIT RUN EXPOSED - CROSS MARKS INDICATE NUMBER OF CONDUCTORS CONDUITS NOT OTHERWISE MARKED SHALL HAVE TWO.
	CONDUIT RUN CONCEILED IN WALL, SLAB OR CEILING
E	SUFFIX THAT INDICATES EXPLOSION PROOF EQUIPMENT
H	HEATER
AMM A	AMMETER
VOLT V	VOLTMETER
P.F. PF	POWER FACTOR METER
KWH	KILOWATT HOUR METER
A-SW SW	AMMETER - SWITCH
V-SW SW	VOLTMETER - SWITCH
RVNR	REDUCED VOLTAGE NONREVERSIBLE STARTER
FVNR	FULL VOLTAGE NONREVERSIBLE STARTER
ON-OFF SSW HOA-SSW	ON-OFF 2 POSITION HAND-OFF-AUTO 3 POSITION SELECTOR SWITCH
TR	TIMER DEVICE
	SAFETY NON-FUSED DISCONNECT SWITCH
SK	KEY OPERATED LIGHT SWITCH
1 - 2	SELECTOR SWITCH - START/STOP PUSH BUTTON

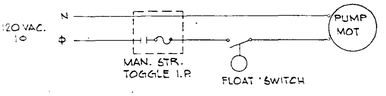
LIGHTING SCHEDULE

'A'	VAPORTIGHT CEILING MOUNTED INCANDESCENT w/ GLOBE & GUARD 200W - PS25 LAMP - CROUSE - HINDS VXHF OR APPROVED EQUAL.
'B'	EXPLOSION PROOF CEILING MOUNTED INCANDESCENT 150W - A21 LAMP - CROUSE - HINDS EVCX OR APPROVED EQUAL.
'C'	RECESSED GASKETED DUST TIGHT WEATHERPROOF INCANDESCENT 100 W - A21 LAMP - ART METAL #3617 OR APPROVED EQUAL.
	"
'E'	VAPORTIGHT BRACKET MOUNTED INCANDESCENT w/ GLOBE & GUARD 200 W - PS25 LAMP - CROUSE - HINDS VXHBF OR APPROVED EQUAL. *
'F'	VAPORTIGHT WALL MOUNTED INCANDESCENT w/ GLOBE 100W - A21 LAMP - CROUSE HINDS VUB OR APPROVED EQUAL.
'G'	EXPLOSION PROOF BRACKET MOUNTED INCANDESCENT 150 W - A21 LAMP - CROUSE - HINDS EVBX OR APPROVED EQUAL.
'H'	WEATHERPROOF INCANDESCENT FLOODLIGHT 150 W - PAR 38 PROJECTOR - STONCO 4400L OR APPROVED EQUAL.
	* PROVIDE ONE UNIT w/ RED GLOBE FOR OUTDOOR MOUNTING.

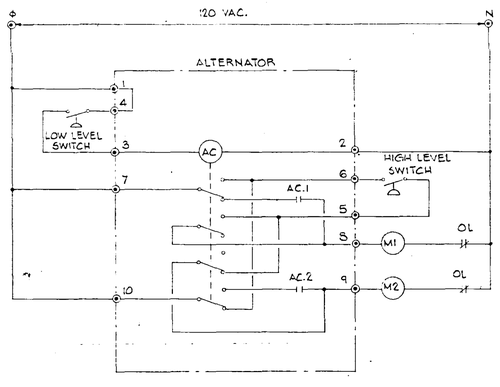


NOMENCLATURE
1S - STARTING CONTACTOR
R - RUN CONTACTOR
2S - WYE CONTACTOR
OTT - OVERTEMPER THERMOSTAT
TR - PNEUMATIC TIMER
TO - TIME OPENING CONTACTS
TC - TIME CLOSING CONTACTS
PL-G - PILOT LIGHT GREEN

PUMPS - REDUC. VOLT START - SCHEMATIC



SUMP PUMP MOTOR - SCHEMATIC



TWO CIRCUIT ALTERNATOR - SCHEMATIC

(OPEN CHASSIS, AUTOCON #7101, OR APPROVED EQUAL)

RECORD DRAWING
DATE 7-26 BY PJM
CK. KKN 18-05

NO.	DATE	DESCRIPTION	BY	CKD.
	1-26-76	RECORD DRAWING		
1	SEPT. 74	CHANGE ORDER NO. 1	GBH	SJG

REVISIONS

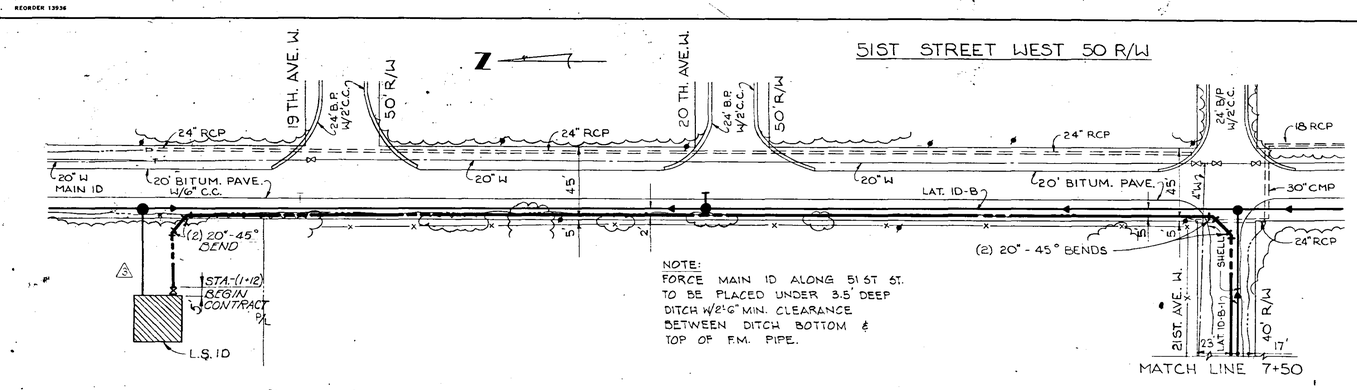
RUSSELL & AXON
Engineers — Planners — Architects
DAYTONA BEACH, FLORIDA

SANITARY SEWERAGE PROJECT
PART D
SECTION III - MASTER LIFT STATION I D
ELEC. - SCHEDULES & SCHEMATICS T-292

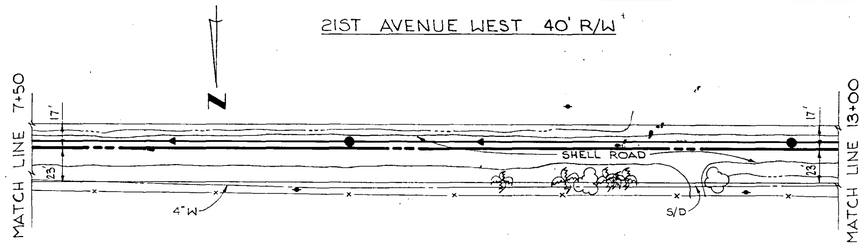
MANATEE COUNTY FLORIDA

DESIGNED BY GER/SJG	FILE NO. 6681 - 8b	SEAL: JOHN W. CUMMING CERTIFICATE No. 9522 STATE OF FLORIDA REGISTERED ENGINEER
DRAWN BY RLB	SHEET No. 19 OF 23 SHEETS	
CHECKED BY JWC		
DATE OCT. 1973	SCALE: NONE	

OCE—ELLIOTT, INC., PGH., PA. REORDER 13936



PROPOSED 20" FORCE MAIN ID



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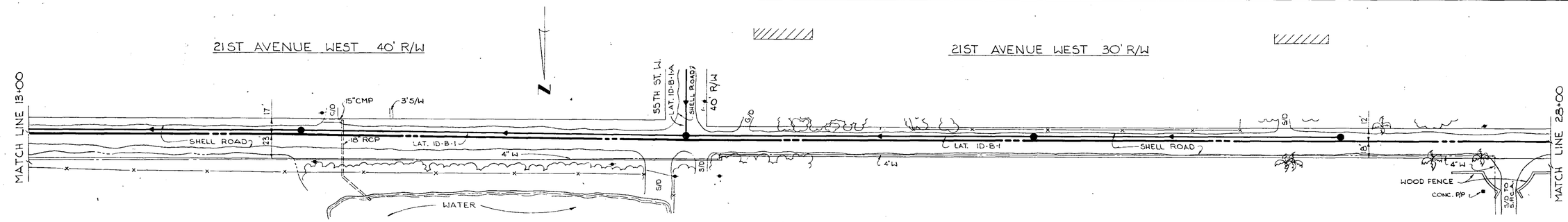

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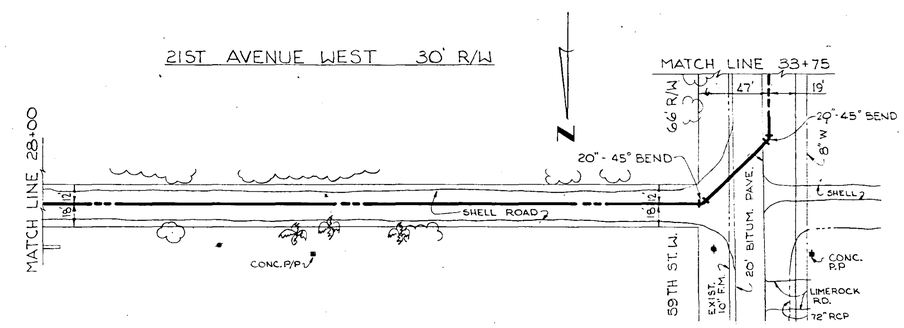

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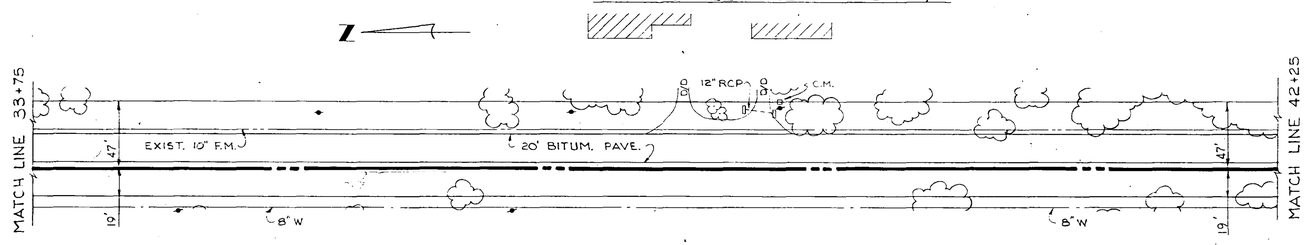

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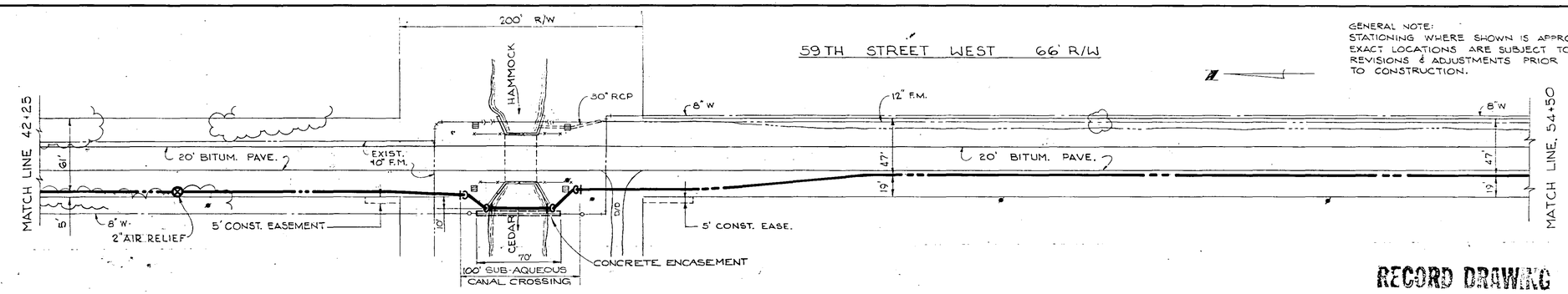


PROPOSED 20" FORCE MAIN ID

GENERAL NOTE:
STATIONING WHERE SHOWN IS APPROXIMATE EXACT LOCATIONS ARE SUBJECT TO REVISIONS & ADJUSTMENTS PRIOR TO CONSTRUCTION.

RECORD DRAWING
DATE 6-76 BY JRL
CK. JOKN 18.05

NO.	DATE	DESCRIPTION	BY	CKD.
4	1-26-76	RELOCATED F.M. (RECORD DRAWING)	J.R.L.	
3	10-25-74	RELOCATED L.S. ID IN ACCORD. WITH C.O	R.W.B.	
2	5-24-74	REV. NOTE ON F.M. COVER & CANAL X-ING PER ADD. #2	G.G.Z.	
1	5-23-74	RELOCATED L.S. # ID PER ADDENDUM #2	G.G.Z. D.E.G.	JWC

REVISIONS

RUSSELL & AXON
Engineers — Planners — Architects
DAYTONA BEACH, FLORIDA

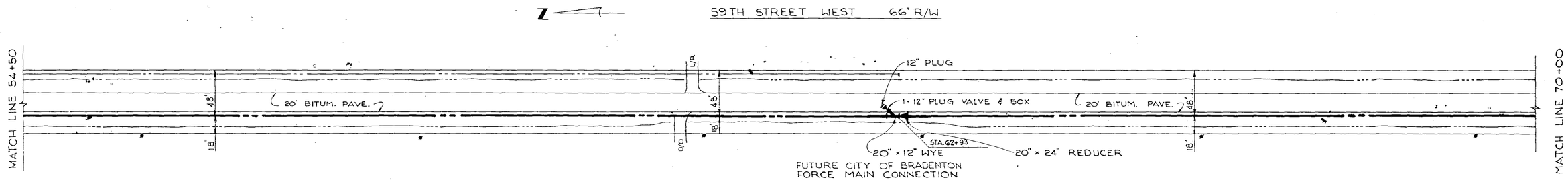
SANITARY SEWERAGE PROJECT
PART D
SECTION IV - FORCE MAIN I D

T293

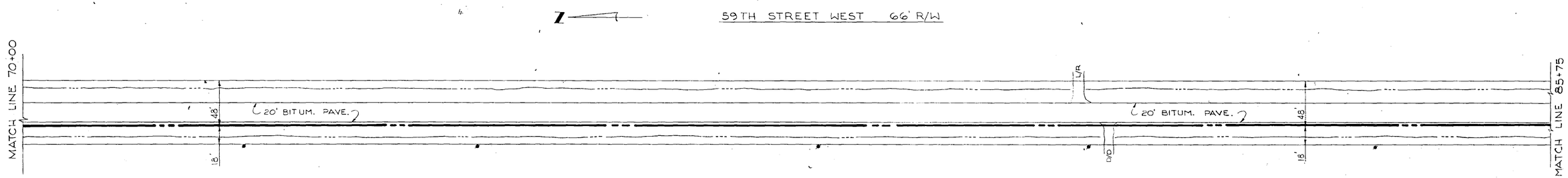
MANATEE COUNTY FLORIDA

DESIGNED BY GER	FILE No. 6681 - 8b	SEAL: JOHN W. CUMMING, CERTIFICATE No. 9522, STATE OF FLORIDA, REGISTERED ENGINEER
DRAWN BY HT	SHEET No. 20 OF 23 SHEETS	
CHECKED BY JWC		
DATE OCT. 1973	SCALE: 1" = 50'	

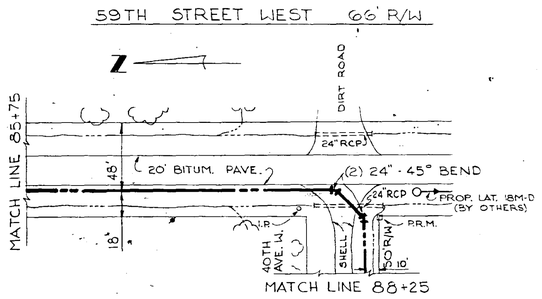
CLARKE-ELLIOTT, INC., PGH., PA. REORDER 13936



PROPOSED 20" FORCE MAIN ID PROPOSED 24" FORCE MAIN ID



PROPOSED 24" FORCE MAIN ID



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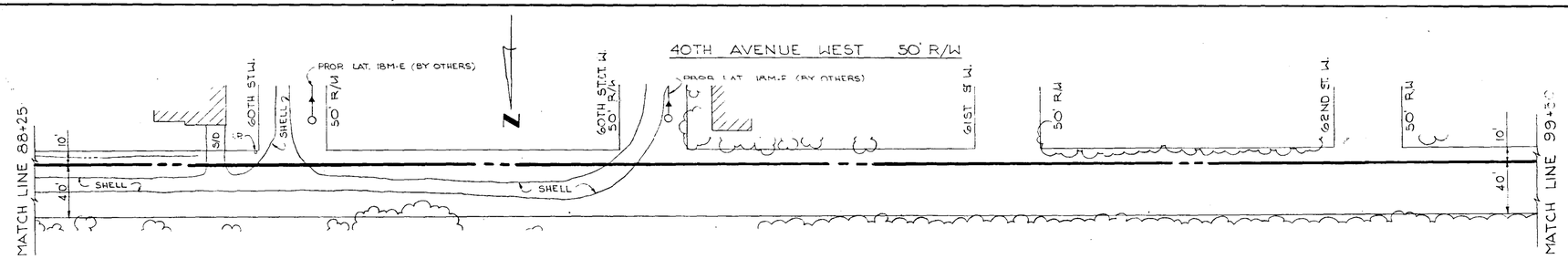
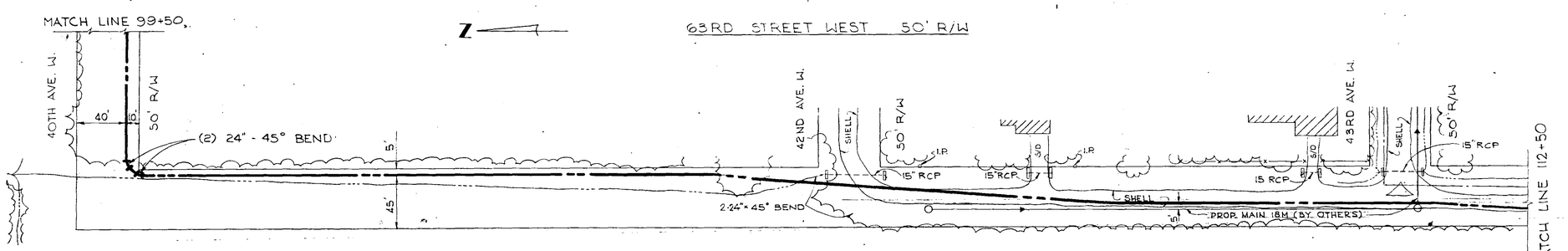


PROPOSED 24" FORCE MAIN ID



PROPOSED 24" FORCE MAIN ID

RECORD DRAWING
DATE 6-76 BY J.R.L.
CK. DKN 18-05

NO.	DATE	DESCRIPTION	BY	CKD.
1	1-26-76	RELOCATED F.M. (RECORD DRAWING)	J.R.L.	WS

REVISIONS

RUSSELL & AXON
Engineers — Planners — Architects
DAYTONA BEACH, FLORIDA

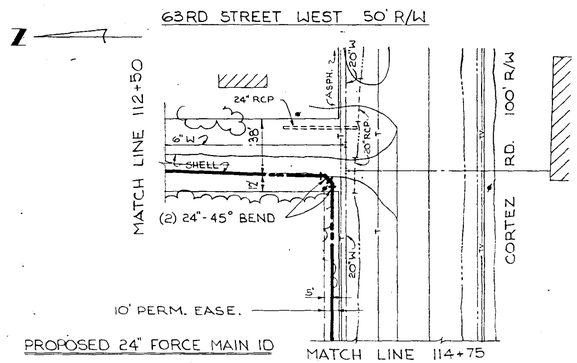
SANITARY SEWERAGE PROJECT
PART D
SECTION IV - FORCE MAIN I D

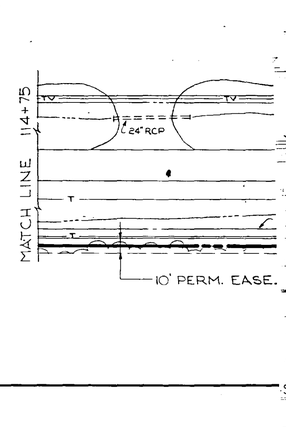
T294

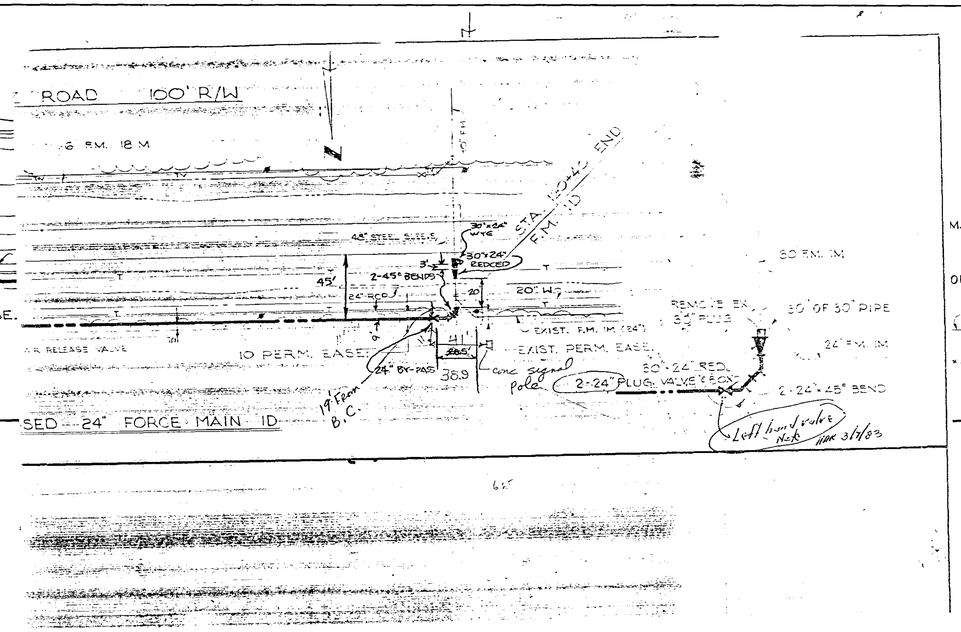
MANATEE COUNTY FLORIDA

DESIGNED BY GER	FILE NO. 6681 - 8b	SEAL: JOHN W. CUMMING, CERTIFICATE No. 9522, STATE OF FLORIDA, REGISTERED ENGINEER
DRAWN BY HT	SHEET No. 21 OF 23 SHEETS	
CHECKED BY JWC		
DATE OCT. 1973	SCALE: 1" = 50'	

OCE-ELLIOTT, INC., PE ... REORDER 13936







RECORD DRAWING
DATE 6-76 BY JRL
CK. JWKN 1805

NO.	DATE	DESCRIPTION	BY	CKD.
1	1-26-76	RELOCATED F. M. (RECORD DRAWING)	J.R.L.	

REVISIONS

RUSSELL & AXON
Engineers — Planners — Architects
DAYTONA BEACH, FLORIDA

SANITARY SEWERAGE PROJECT
PART D
SECTION IV - FORCE MAIN I D

T295

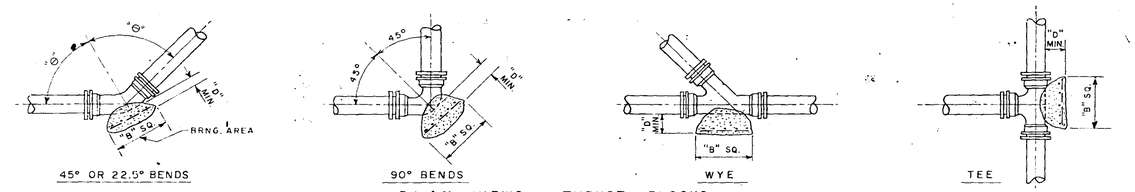
MANATEE COUNTY FLORIDA

DESIGNED BY GER	FILE No. 6681 - 8b	SEAL
DRAWN BY HT	SHEET No. 22 OF 23 SHEETS	JOHN W. CUMMING CERTIFICATE No. 9522 STATE OF FLORIDA REGISTERED ENGINEER
CHECKED BY JWC		
DATE OCT. 1973	SCALE: 1" = 50'	

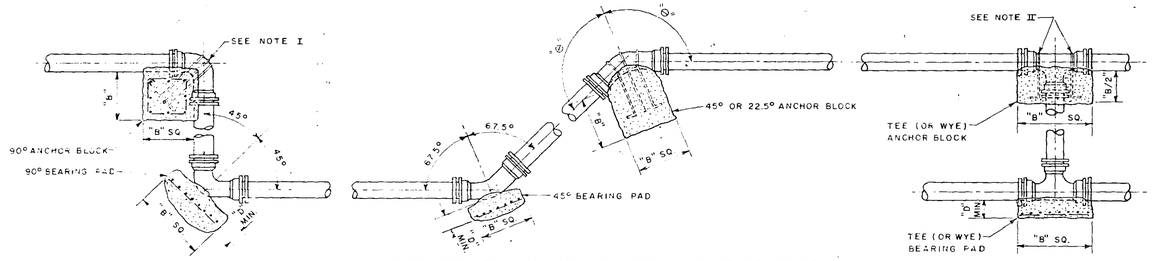
CCE-ELLIOTT. PA. REORDER 10-24373A

SEWAGE FORCE MAIN ANCHOR SYSTEM

PIPE (IN.)	THRUST BLOCKS												ANCHOR BLOCKS												BEARING PADS											
	90° BENDS			45° BENDS			22.5° BENDS			WYES & TEES			90° BENDS			45° BENDS			22.5° BENDS			WYES & TEES			90° BENDS			45° BENDS			22.5° BENDS			WYES & TEES		
	B	D	REINF. (E.W.)	B	D	REINF. (E.W.)	B	D	REINF. (E.W.)$_2$	B	D	REINF. (E.W.)	B	D	REINF. (E.W.)	B	D	REINF. (E.W.)	B	D	REINF. (E.W.)	B	D	REINF. (E.W.)	B	D	REINF. (E.W.)	B	D	REINF. (E.W.)	B	D	REINF. (E.W.)	B	D	REINF. (E.W.)
4	1.0'	0.7'	–	1.0'	0.7'	–	1.0'	0.7'	–	1.0'	0.7'	–	1.6'	–	–	1.3'	–	–	1.0'	–	–	2.3'	–	–	1.0'	0.7'	–	1.0'	0.7'	–	1.0'	0.7'	–	1.0'	0.7'	–
6	1.0'	0.7'	–	1.0'	0.7'	–	1.0'	0.7'	–	1.4'	0.7'	–	2.1'	–	–	1.7'	–	–	1.4'	–	–	3.0'	–	–	1.0'	0.7'	–	1.0'	0.7'	–	1.0'	0.7'	–	1.0'	0.7'	–
8	1.4'	0.7'	–	1.0'	0.7'	–	1.0'	0.7'	–	1.7'	0.8'	–	2.6'	–	–	2.1'	–	–	1.7'	–	–	3.7'	–	–	1.2'	0.8'	–	1.0'	0.7'	–	1.0'	0.7'	–	1.3'	0.7'	–
10	1.7'	0.8'	–	1.4'	0.7'	–	1.0'	0.7'	–	2.0'	0.8'	–	3.0'	–	–	2.4'	–	–	2.0'	–	–	4.3'	–	–	1.4'	0.8'	–	1.2'	0.8'	–	1.0'	0.7'	–	1.7'	0.8'	–
12	2.0'	0.8'	–	1.4'	0.7'	–	1.0'	0.7'	–	2.3'	1.0'	–	3.4'	–	–	2.8'	–	–	2.2'	–	–	4.8'	–	–	1.7'	0.8'	–	1.2'	0.8'	–	1.0'	0.7'	–	2.0'	0.8'	–
14	2.3'	1.0'	3#5	1.7'	0.8'	–	1.4'	0.7'	–	2.7'	1.0'	3#5	3.8'	–	4#4	3.1'	–	3#4	2.4'	–	3#4	5.3'	–	6#5	2.0'	0.8'	2#5	1.4'	0.8'	–	1.2'	0.7'	–	2.3'	1.0'	2#5
16	2.7'	1.0'	3#5	2.0'	0.8'	2#5	1.4'	0.7'	–	3.2'	1.0'	4#5	4.1'	–	4#5	3.4'	–	3#4	2.6'	–	3#4	5.8'	–	6#5	2.3'	1.0'	3#5	1.7'	0.8'	–	1.3'	0.7'	–	2.7'	1.0'	3#5
18	2.8'	1.0'	4#5	2.3'	1.0'	3#5	1.7'	0.8'	–	3.5'	1.0'	5#5	4.5'	–	5#5	3.6'	–	4#4	2.9'	–	3#4	6.3'	–	6#5	2.5'	1.0'	3#5	1.9'	0.8'	2#5	1.5'	0.8'	–	3.0'	1.0'	4#5
20	3.2'	1.0'	4#5	2.5'	1.0'	3#5	1.7'	0.8'	–	3.9'	1.0'	5#5	4.8'	–	5#5	3.9'	–	4#4	3.1'	–	3#4	6.7'	–	6#5	2.8'	1.0'	4#5	2.1'	0.8'	2#5	1.7'	0.8'	–	3.3'	1.0'	4#5
24	3.9'	1.0'	5#5	2.8'	1.0'	4#5	2.0'	0.8'	2#5	4.6'	1.2'	5#5	5.4'	–	6#5	4.4'	–	5#5	3.5'	–	4#4	7.6'	–	6#6	3.3'	1.0'	4#5	2.5'	1.0'	3#5	2.0'	0.8'	2#5	4.0'	1.0'	5#5
30	5.5'	1.2'	6#5	3.6'	1.0'	5#5	2.7'	1.0'	3#5	5.8'	1.3'	7#5	6.3'	–	7#5	5.1'	–	6#5	4.1'	–	5#5	8.8'	–	8#6	4.2'	1.2'	5#5	3.1'	1.0'	4#5	2.5'	1.0'	2#5	5.0'	1.2'	6#5
36	5.9'	1.3'	7#5	4.3'	1.2'	5#5	3.0'	1.0'	4#5	6.9'	1.5'	8#5	7.0'	–	7#6	5.7'	–	7#5	4.6'	–	5#5	10.0'	–	8#7	5.0'	1.2'	6#5	3.7'	1.0'	5#5	3.0'	1.0'	4#5	6.0'	1.3'	7#5
42	6.8'	1.5'	8#5	5.0'	1.2'	6#5	3.6'	1.0'	5#5	8.1'	1.8'	9#5	7.6'	–	7#7	6.4'	–	7#5	5.1'	–	6#5	11.3'	–	8#7	5.8'	1.3'	7#5	4.3'	2.0'	5#5	3.5'	1.0'	5#5	7.0'	1.5'	8#5



PLAN VIEWS – THRUST BLOCKS



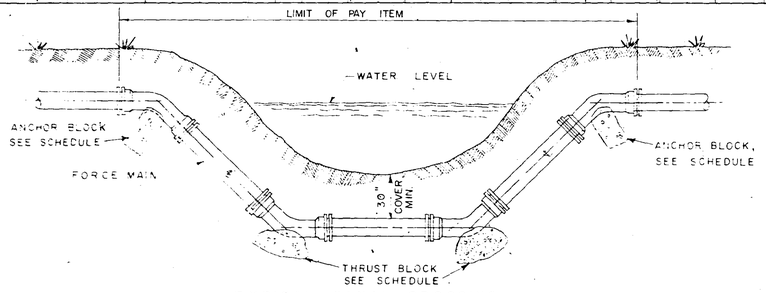
SIDE VIEWS – ANCHOR BLOCKS & BEARING PADS

GENERAL NOTES:

1. BLOCK AND PAD SIZES INDICATED IN SCHEDULE ARE TO BE USED IN SOILS WITH A MIN. BEARING CAPACITY OF 2500 PSF. WHERE BAD SOILS ARE ENCOUNTERED THEY ARE TO BE REMOVED OR THE CONTRACTOR MAY SUBMIT REVISED ANCHORAGE BLOCKS TO ENGINEER FOR APPROVAL.
2. FOR DETAILS COVERING CONDITIONS NOT SHOWN SEE DETAILS ELSEWHERE IN THESE DRAWINGS OR SUBMIT DETAILS TO ENGINEER FOR APPROVAL.

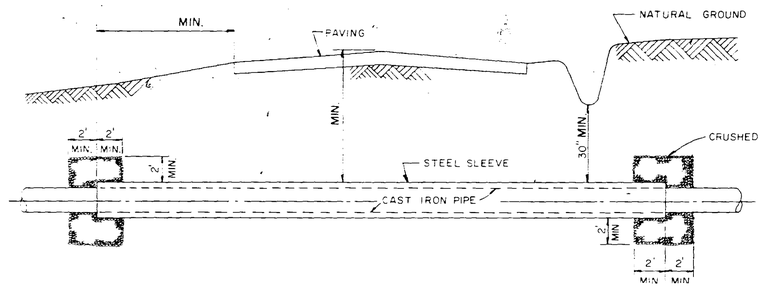
NOTE: I
ANCHOR BARS:
2" THRU. 6" PIPE: 2 # 5
8" THRU. 16" PIPE: 2 # 6
18" THRU. 24" PIPE: 3 # 8
30" THRU. 42" PIPE: 3 # 10
HOT-DIP GALV. BARS AFTER FABRICATION, COMPLETELY COAT EXPOSED BARS AFTER INSTALLATION WITH TWO COATS OF BITUMINOUS MASTIC.

NOTE: II
ANCHOR BARS:
2" THRU. 6" 2 # 5
8" THRU. 16" 2 # 6
18" THRU. 24" 4 # 8
30" THRU. 42" 4 # 10
HOT-DIP GALV. BARS AFTER FABRICATION, COMPLETELY COAT EXPOSED BARS AFTER INSTALLATION WITH TWO COATS OF BITUMINOUS MASTIC.

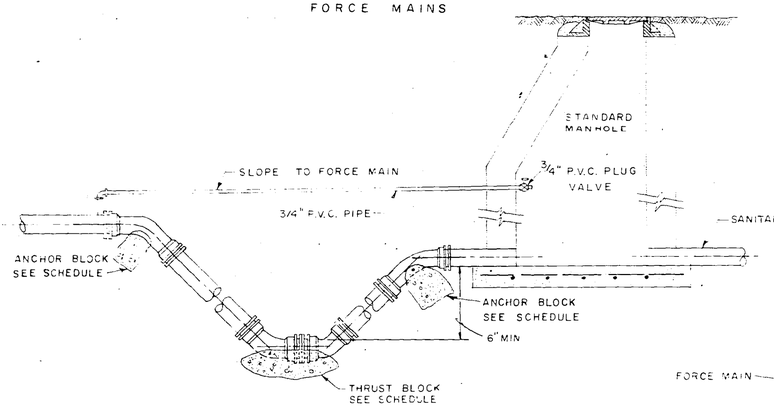


TYPICAL CANAL CROSSING

FORCE MAINS

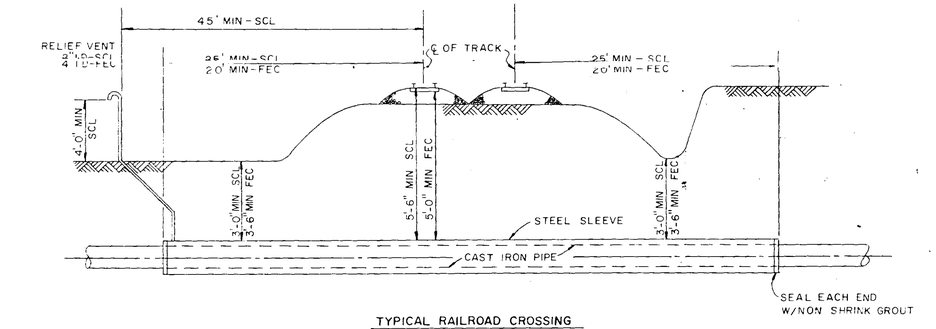


TYPICAL HIGHWAY CROSSING DETAIL



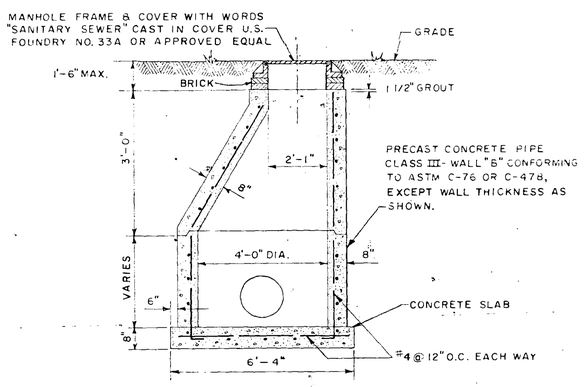
FORCE MAIN TRAP DETAIL

TYPICAL AT DISCHARGE END OF FORCE MAINS

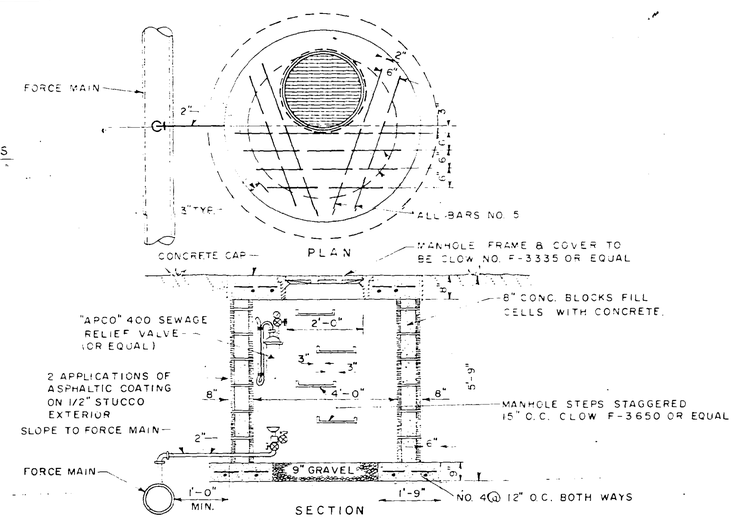


TYPICAL RAILROAD CROSSING

RECORD DRAWING
DATE 6-76 BY JRL
CK



STANDARD MANHOLE

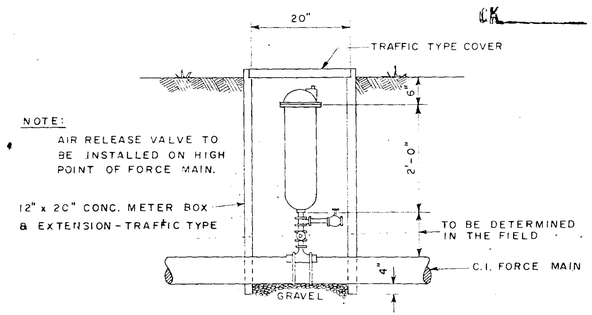


AIR RELIEF VALVE ASSEMBLY

TYPE I

NOTE:

AIR RELEASE VALVE TO BE INSTALLED ON HIGH POINT OF FORCE MAIN.



AIR RELEASE VALVE ASSEMBLY

TYPE II

DISREGARD DETAILS THAT ARE NOT APPLICABLE TO THIS PROJECT

NO.	DATE	DESCRIPTION	BY	CKD.
		RECORD DRAWING		WD

REVISIONS

RUSSELL & AXON
Engineers — Planners — Architects
DAYTONA BEACH, FLA. ST. LOUIS, MO.

SANITARY SEWERAGE PROJECT
PART D
SECTION IV FORCE MAIN ID
FORCE MAIN, STANDARD DETAILS

T-296

MANATEE COUNTY, FLORIDA

DESIGNED BY GER	FILE No. 6681 · 8b
DRAWN BY RLS	SHEET No. 23 OF 23 SHEETS
CHECKED BY JWC	
DATE OCT. 1975	SCALE: NOT TO SCALE

SEAL: JOHN W. CUMMING, CERTIFICATE No. 9522, STATE OF FLORIDA, REGISTERED ENGINEER

18-05