

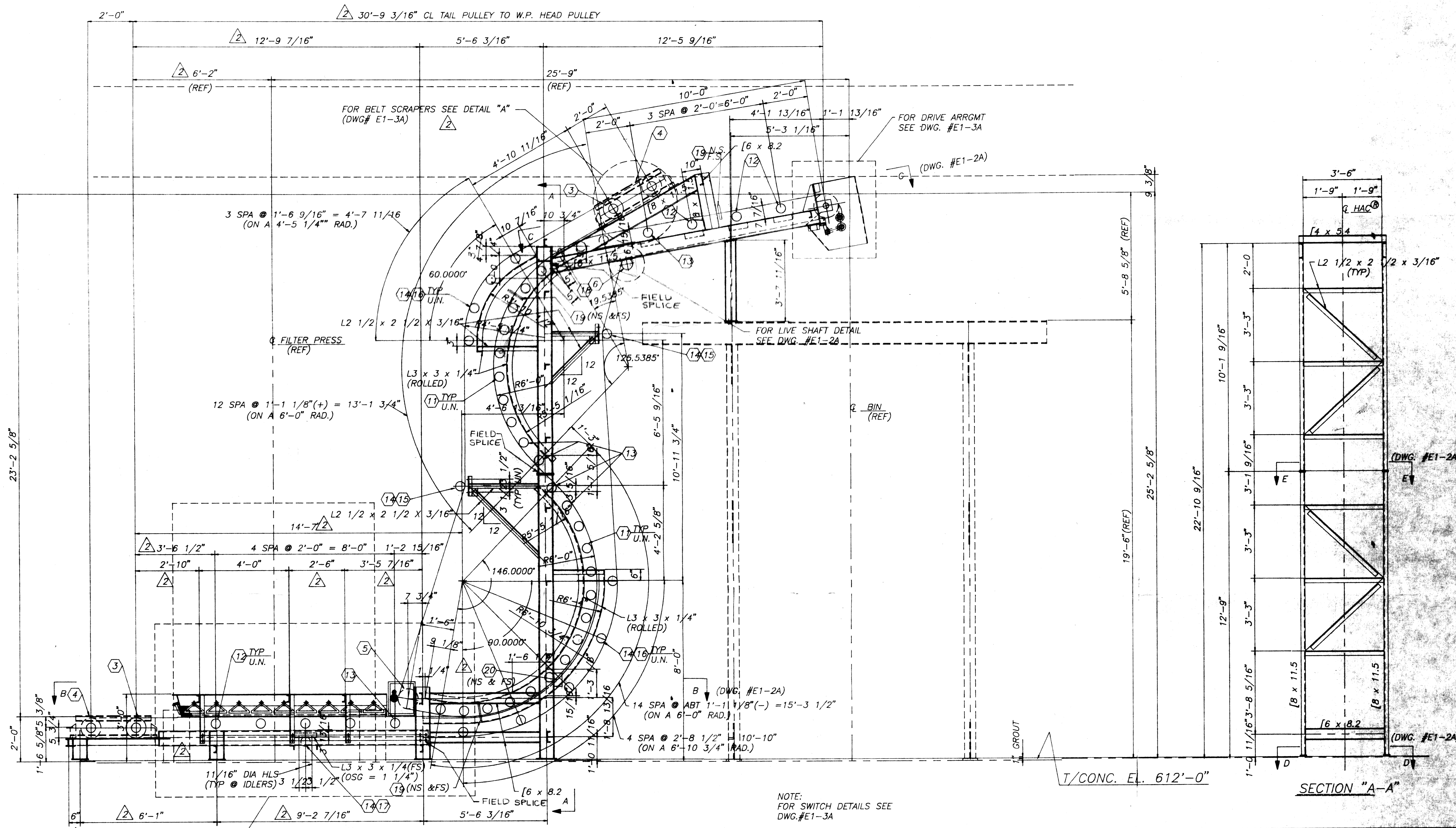
REVIEWED AND APPROVED BY THE
 DIV. OF ENVIRONMENTAL PROTECTION,
 DEPT. NATURAL RESOURCES,
 IN ACCORDANCE WITH SEC. 144.01,
 WIS. STATS., SUBJECT TO THE CON-
 DITIONS SET FORTH IN THE LETTER
 OF APPROVAL.
 THOMAS G. FRANGOS
 ADMINISTRATOR

APPROVAL NO.
 72 355

DATE: FEB 4 '74

Notes: Continue reinforcing through
 contraction joints. Place 2x4
 expansion joint a maximum of
 40 feet o.c.

DNR JAN 3 1974



23'-2 5/8"

2'-0"


FOR DETAILS THIS AREA SEE DWG. #E1-4A

GENERAL ARRANGEMENT of 24" B.W. HAC TO HANDLE FILTER CAKE SEWAGE SLUDGE
MAT'L DENSITY: 40 PCF
MAT'L SIZE: 2" MINUS
CONV. RATE: 10 TPH
CONV. SPEED: 240 FPM
CONV. DRIVE: 10 HP(BOTT BELT ONLY)

NOTE: FOR SWITCH DETAILS SEE DWG. #E1-3A


T/CONC. EL. 612'-0"

SECTION "A-A"

Morgan 7-14-92 APPROVAL CHANGES			
Morgan 6-18-92 APPROVAL CHANGES			
BY	DATE	REVISIONS	NO.
CONTINENTAL CONVEYOR & EQUIPMENT COMPANY, INC. A NESCO Company		 post office box 400 winfield, ia 33594 (205)487-6492	
THIS DRAWING IS DESIGN AND DETAIL IS THE PROPERTY OF THE CONTINENTAL CONVEYOR & EQUIPMENT CO. AND MUST BE USED ONLY IN CONNECTION WITH OUR WORK. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.		LOW NUMBER W-10393 DRAWING NUMBER E1-1A	
TELEPHONE NOT OTHERWISE SPECIFIED STEEL WORK "AISI" FRACTIONAL ± 1/32 DECIMAL ± 1/64 DIMENSIONAL UNLESS OTHERWISE SPECIFIED	DRAWN BY Morgan CHECKED BY JK APPROVED 1/2"=1'-0" DO NOT SCALE PRINT	GENERAL ARRANGEMENT for 24" B.W. HAC WASTE WATER TREATMENT PLANT SUPERIOR, WISCONSIN	

EQUIPMENT LIST -24" B.W. HAC®

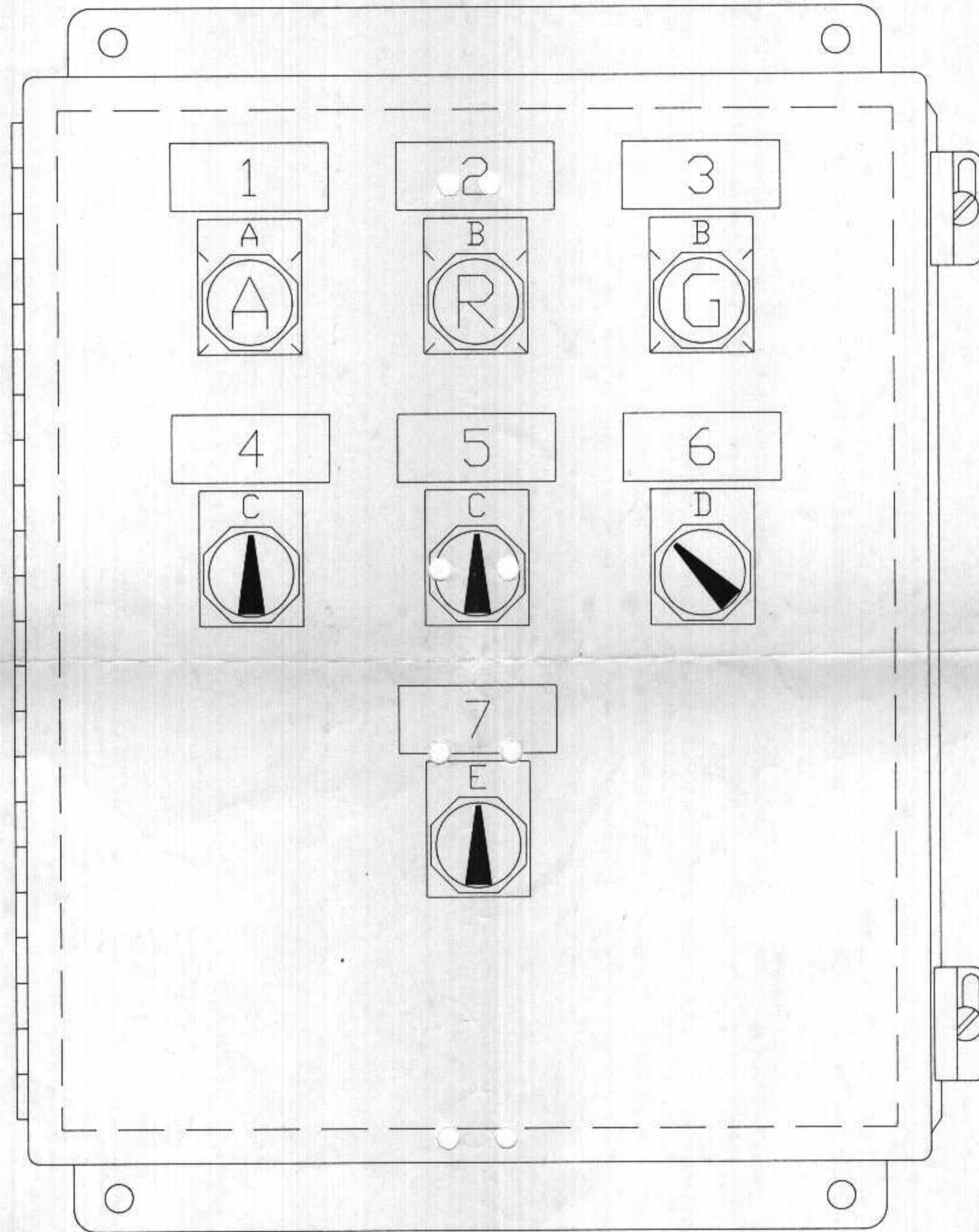
ASSEMBLY	ITEM NO.	QUANTITY	DESCRIPTION	ASSEMBLY	ITEM NO.	QUANTITY	DESCRIPTION		ITEM NO.	QUANTITY	DESCRIPTION
DRIVE	1	1	DODGE SHAFT-MOUNT REDUCER, QD-TYPE TAPERED BUSHED BORE, CAT. #TXT425, COMPLETE WITH TORQUE ARM ASS'Y AND HOLDBACK, CLASS II, 1.4 S.F., 2.4375 DIA. BORE. MOTOR MOUNT # TA-4M, 1 - 8" DIA. DRIVER SHEAVE (1.375 BORE), 1 - 8" DIA. DRIVEN SHEAVE (1.4375 BORE), 2 DYNA V-BELTS # 3VX-800 10 HP, HOSTILE ENVIRONMENT-RIGID BASE, 1750 RPM TYPE 0940M, NEMA FRAME #215T 3/80/460 VOLT NEMA "B" DESIGN	IDLERS (BY CCECO)	11	24	10 DEGREE 5" DIA. OFFSET STEEL ROLL H-PLUS TROUGHING IDLERS 24" B.W. PT# 78AK8283-24SW (B.W. + 15)	SPARE PARTS		1	DODGE FASF-XT22520 3.4375" DIA. BORE PILLOW BLOCK
					12	7	20 DEGREE 5" DIA. OFFSET STEEL ROLL H-PLUS TROUGHING IDLERS 24" B.W. PT# 78AK8286-24SW (B.W. + 15)		1	DODGE FASF-XT 2.4375" DIA. BORE PILLOW BLOCK	
					13	6	5 - 20 DEGREE 5" DIA. OFFSET STEEL ROLL H-PLUS TROUGHING IDLERS 24" B.W. PT# 78AK6989 (B.W. + 15)		1	PILLOW BLOCK SKF-SYR115-3 1.9375" DIA. BORE	
14	13	6" DIA. FLAT RETURN IDLERS PT# 78AK7920-3300 (B.W. + 15)	1	10 DEGREE 5" DIA. OFFSET STEEL ROLL H-PLUS TROUGHING IDLERS 24" B.W. PT#78AK8283-24SW (B.W. + 15)							
15	8	4 1/4" DROP BRACKET PT#72A3602	1	20 DEGREE 5" DIA. OFFSET STEEL ROLL H-PLUS TROUGHING IDLERS 24" B.W. PT#78AK8286-24SW (B.W. + 15)							
16	28	4 1/4" RISE BRACKET PT#72A4622	1	5 - 20 DEGREE 5" DIA. OFFSET STEEL ROLL H-PLUS TROUGHING IDLERS 24" B.W. PT##78AK6989 (B.W. + 15)							
17	2	2 1/8" DROP BRACKET PT#72A3606 (ALL IDLER BRACKETS PAINTED STEEL) (ALL IDLERS LAGGED WITH 1/8" THK URETHANE)	1	6" DIA. FLAT RETURN IDLERS PT#78AK7920-3300 (B.W. + 15)							
DRIVE SHAFT (BY CCECO)	2	1	C1045 SHAFT 3.4375" DIA. x APPROX. 60" LONG, NECKED TO 2.4375" DIA. FOR DRIVE WITH 3 KEYWAYS 12" DIA. x 30" STRAIGHT FACE PULLEY W/ BROWNING XT-35 HUBS & HERRINGBONE RUBBER LAGGING MACHINED TO 13,000 DIA. ASSEMBLED WITH DODGE FASF-XT22520 3.4375" DIA. BORE PILLOW BLOCKS	ELECTRICAL	18	1	ZERO-SPEED SWITCH. CONVEYOR COMPONENTS #MS STUB SHAFT # MS-3, FLEXIBLE COUPLING # MS-4, & COUPLING GUARD # MS-5		NOTE: 1. ENTIRE FRAME AND SUPPORT ASSEMBLY HOT DIPPED GALVANIZED. 2. ALL FASTENERS ON HAC STAINLESS STEEL.		
TAKE-UP SHAFT	3	2	C1045 SHAFT 2.9375" DIA. X 47" LONG, NECKED TO 2.4375" DIA. 10" DIA. X 30" STRAIGHT FACE PULLEY W/ BROWNING XT-30 HUB & .375" PLAIN RUBBER LAGGING		19	6	BELT MIS-ALIGNMENT SWITCH. SQUARE-D SERIES 9007 MODEL C54J				
TAKE-UP ASS'Y (BY CCECO)	4	4	SCREW TAKE-UP ASS'Y #TX207-24 W/2.4375" DIA. BORE BEARING WITH 24" TAKE-UP TRAVEL		20	2	EMERGENCY PULL CHORD SWITCH CONVEYOR COMPONENTS #RS-1				
BEND PULLEY (BY CCECO)	5	1	C1045 SHAFT 2.9375" DIA. x APPROX. 48" LONG, NECKED TO 2.4375" DIA. 10" DIA. x 30" S.F. CONV. PULLEY W/ XT-30 HUBS & .375 PLAIN RUBBER LAGGING. PILLOW BLOCKS DODGE FASF-XT 2.4375 DIA. BORE		21		ITEM OF SAFETY PULL CHORD, NO. 6, 3/32" DIA. (7 X 7) PREFORMED GALV. AIRCRAFT CABLE COATED W/ RED NYLON TO 3/16" DIA.				
LIVE SHAFT (BY CCECO)	6	1	C1045 SHAFT 1.9375" DIA. X 43" LONG. (DRILLED & TAPPED ONE END FOR .625" STUB SHAFT) 6" DIA. x 30" S.F. CONV. PULLEY W/ XT-20 HUBS & .25 PLAIN RUBBER LAGGING. PILLOW BLOCKS SKF - SYR115-3 1.9375 DIA. BORE (SHIPPED LOOSE)		22		LOT OF EYEBOLTS, 1/2" X 1 X 3 1/4" LG. (PLATED)				
CONV. BELT	7	APPROX. 180 LINEAR FEET	24" WIDE BELT, 2 PLY MP150 PIW, WITH 1/8" x 1/32" OMEGA COVERS, GOODYEAR OR EQUAL W/TWO (2) VULCANIZED BELT SPLICE KITS FOR FIELD VULCANIZING OF BELT		23		ITEM OF WIRE CLIPS, 3/16" DIA. (GALV.)				
					24		ITEM OF WIRE THIMBLES 3/16" DIA. (GALV.)				
BELT CLEANERS	8	1	24" B.W. GORDON PRECLEANER	SKIRT BOARD	25						
	9	1	24" B.W. GORDON URETHANE SECONDARY CLEANER								
	10	1	24" B.W. STAINLESS STEEL BLADE CLEANER								

ddc	7/20/92	Approval Changes	1
BY	DATE	REVISIONS	NO.
CONTINENTAL CONVEYOR & EQUIPMENT COMPANY, INC. A NESCO Company			
post office box 400 winfield, ill 35594 (205)487-6492			JOB NUMBER W-10393
EQUIPMENT LIST for 24" B.W. HAC® WASTE WATER TREATMENT PLANT SUPERIOR, WISCONSIN			DRAWING NUMBER E-2A

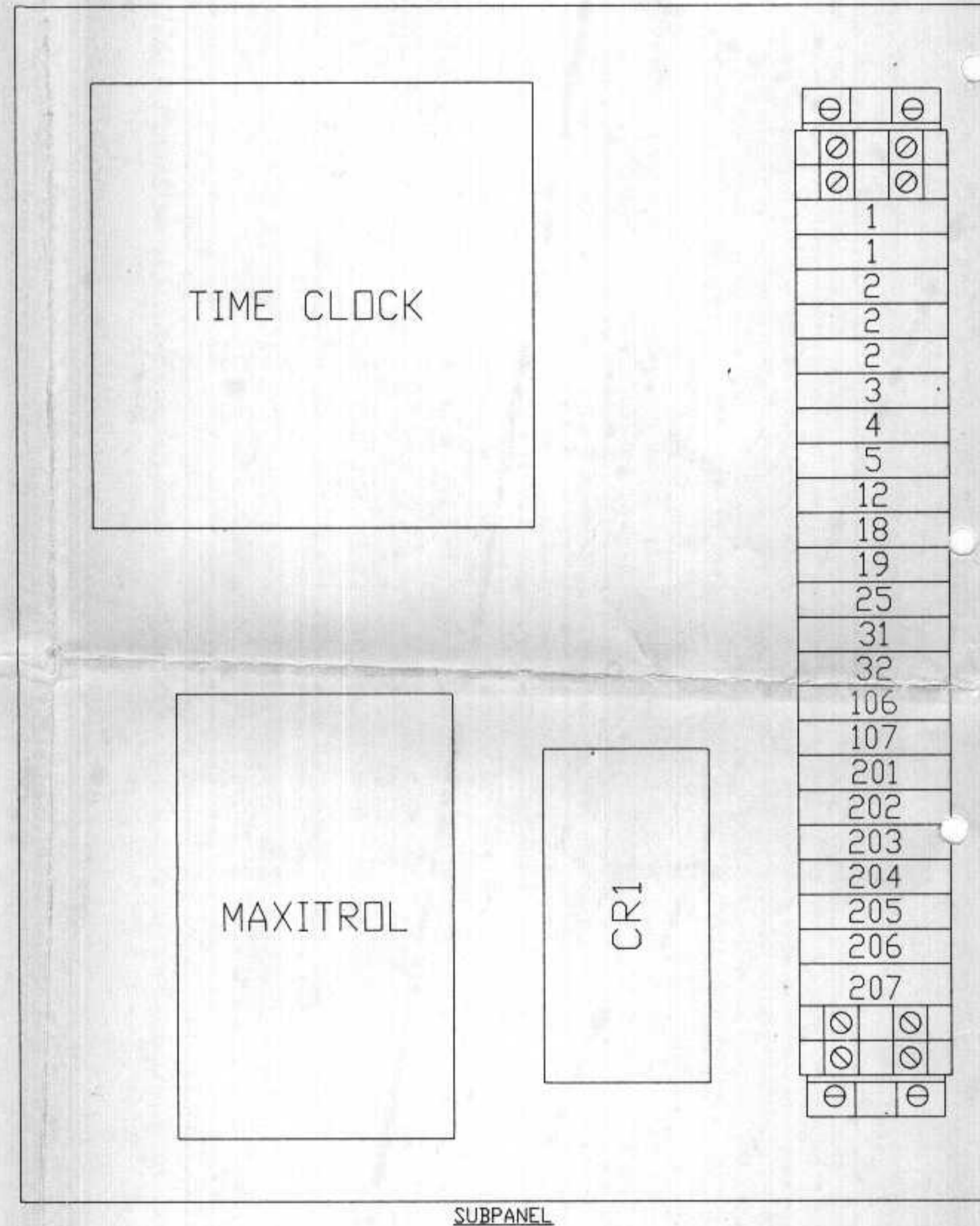
TOLERANCES NOT OTHERWISE SPECIFIED
 STEEL WORK "AISI"
 FRACTIONAL ± 1/32
 DECIMAL ± 1/64
 ANGULAR DO NOT SCALE PRINT

THIS DRAWING IS THE PROPERTY OF THE CONTINENTAL CONVEYOR AND EQUIPMENT CO. AND MUST BE USED ONLY IN CONNECTION WITH OUR WORK. ALL RIGHTS OF DESIGN OR INVENTION ARE RESERVED.

DRAWN BY Morgan
 CHECKED BY
 APPROVED
 SCALE NONE
 DO NOT SCALE PRINT



ENCLOSURE: 12"H x 10"W x 8.0"D
 JIC CONSTRUCTION
 W/DNE 10.75"H x 8.88"W SUBPANEL



SUBPANEL

RINGTAG SPECIFICATIONS :
 TYPE : CR080PXN2
 LETTER SIZE : 0.125
 CUTTER : 0.020
 DEPTH : 0.008

RINGTAG SCHEDULE	
RTG	DESCRIPTION
A	RUN
B	DN
C	HAND - OFF - AUTO
D	OFF - AUTO
E	SUMMER - OFF - WINTER

NAMEPLATE SPECIFICATIONS :
 MATERIAL : GRAVOPLY II, WHT W/BLK LETTERS
 LETTER SIZE : .156
 CUTTER : .020
 DEPTH : 5

NAMEPLATE SCHEDULE		
NP#	SIZE	DESCRIPTION
1	A	BLOWER
2	A	BURNER ALARM
3	A	MAIN FLAME
4	A	EXHAUST FAN #1
5	A	EXHAUST FAN #2
6	A	EXHAUST FAN #3
7	A	MUA CONTROL

APPROVED
 DATE 7/20/92
 BY JSL/G

PANEL SHALL BE CONSTRUCTED PER
 UL 508 REQ. AND COMPLETE ASSEMBLY
 SHALL BEAR A SERIALIZED UL LABEL

CITY OF SUPERIOR - WWTTP
 MAIN PLANT BENT FILTER PRESS Bldg.

07/09/92 13100 C5077A01

No.	DATE	BY	DESCRIPTION
A	7/9/92	RJB	REVISED PER CUSTOMER

SCALE 1=1
 DR RJB DATE 5/26/92
 CK DATE
 SHOP ISSUE DATE

Control Assemblies Co.
 Factory Automation Specialists
 Minneapolis, Minnesota

This print and all information thereon is the property of Control Assemblies Company. Any duplication or use of this print for purposes other than that for which it was furnished is hereby prohibited.

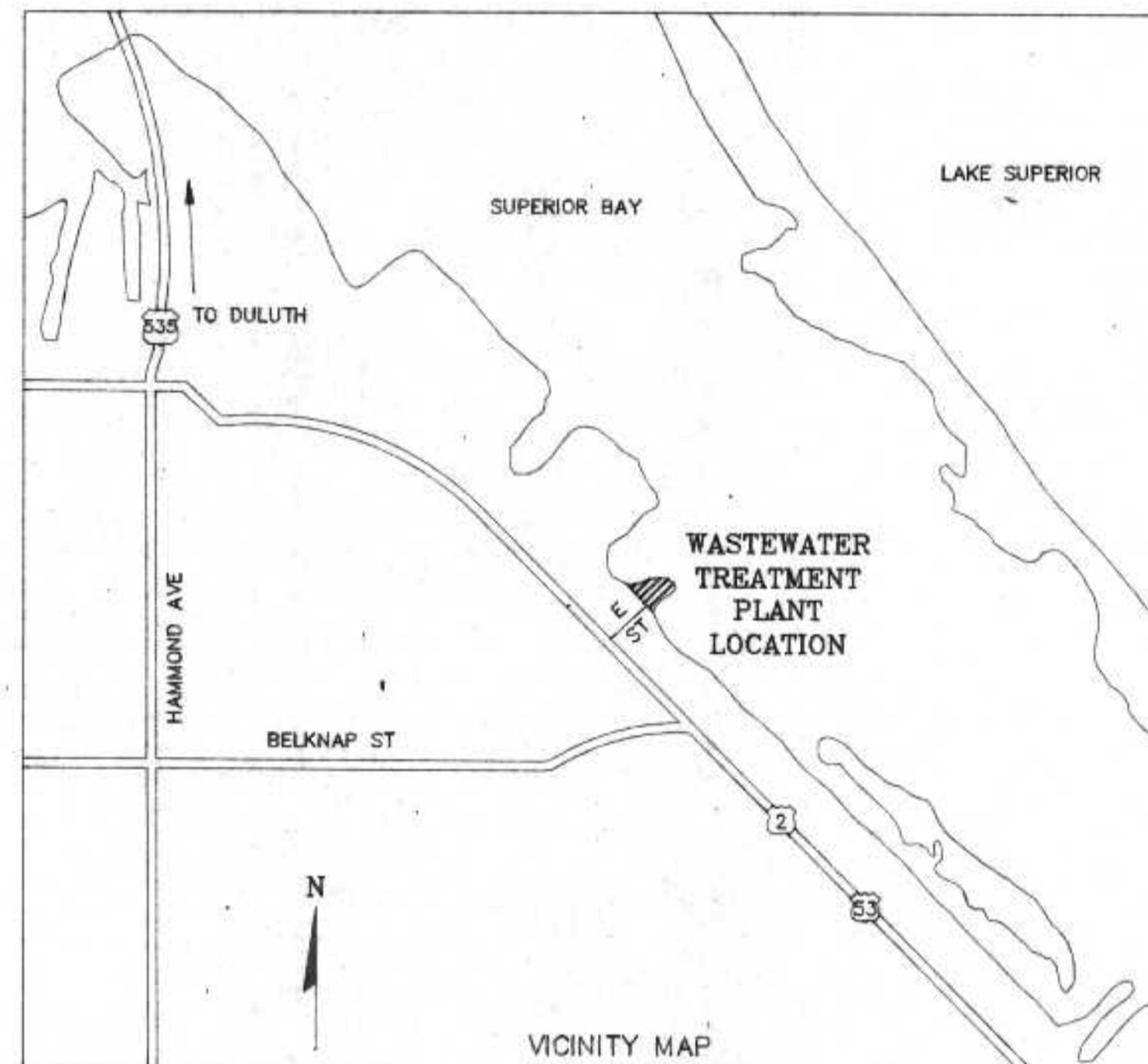
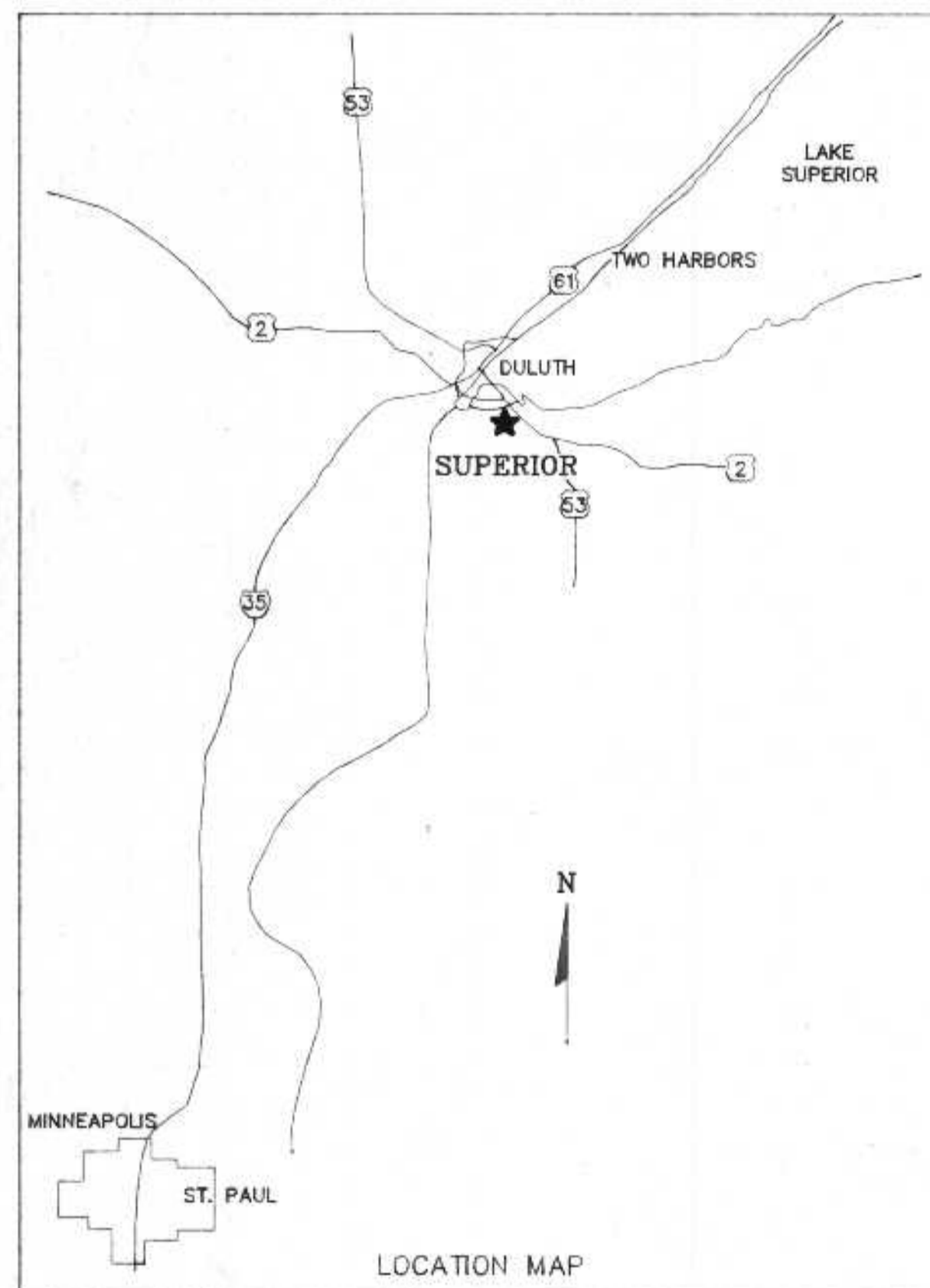
DESCRIPTION:
 REMOTE BURNER
 CONTROL PANEL
 PANEL LAYOUT

FOR:
 L.E. RIBAR CO.

DRAWING NO.
 C5077

SHEET 1 OF 2

PLANS FOR CONSTRUCTION OF
 SLUDGE DEWATERING/HANDLING FACILITIES
 SUPERIOR WASTE WATER
 TREATMENT PLANT
 CITY OF
 SUPERIOR, WISCONSIN



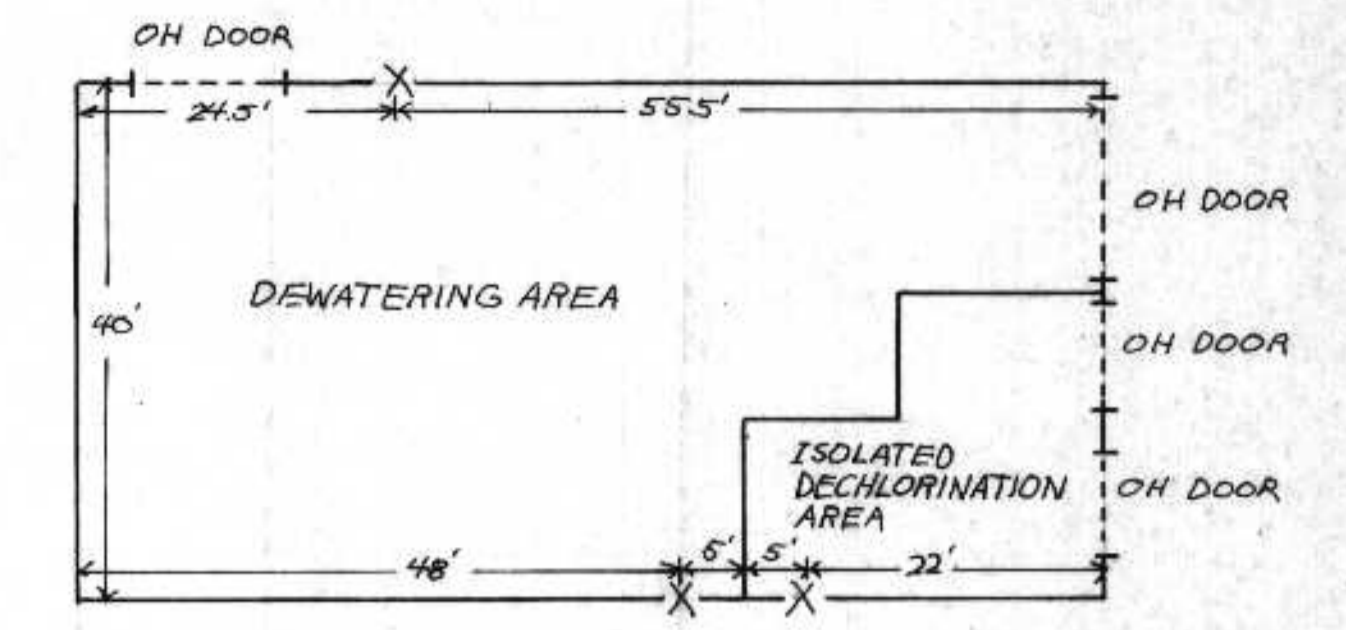
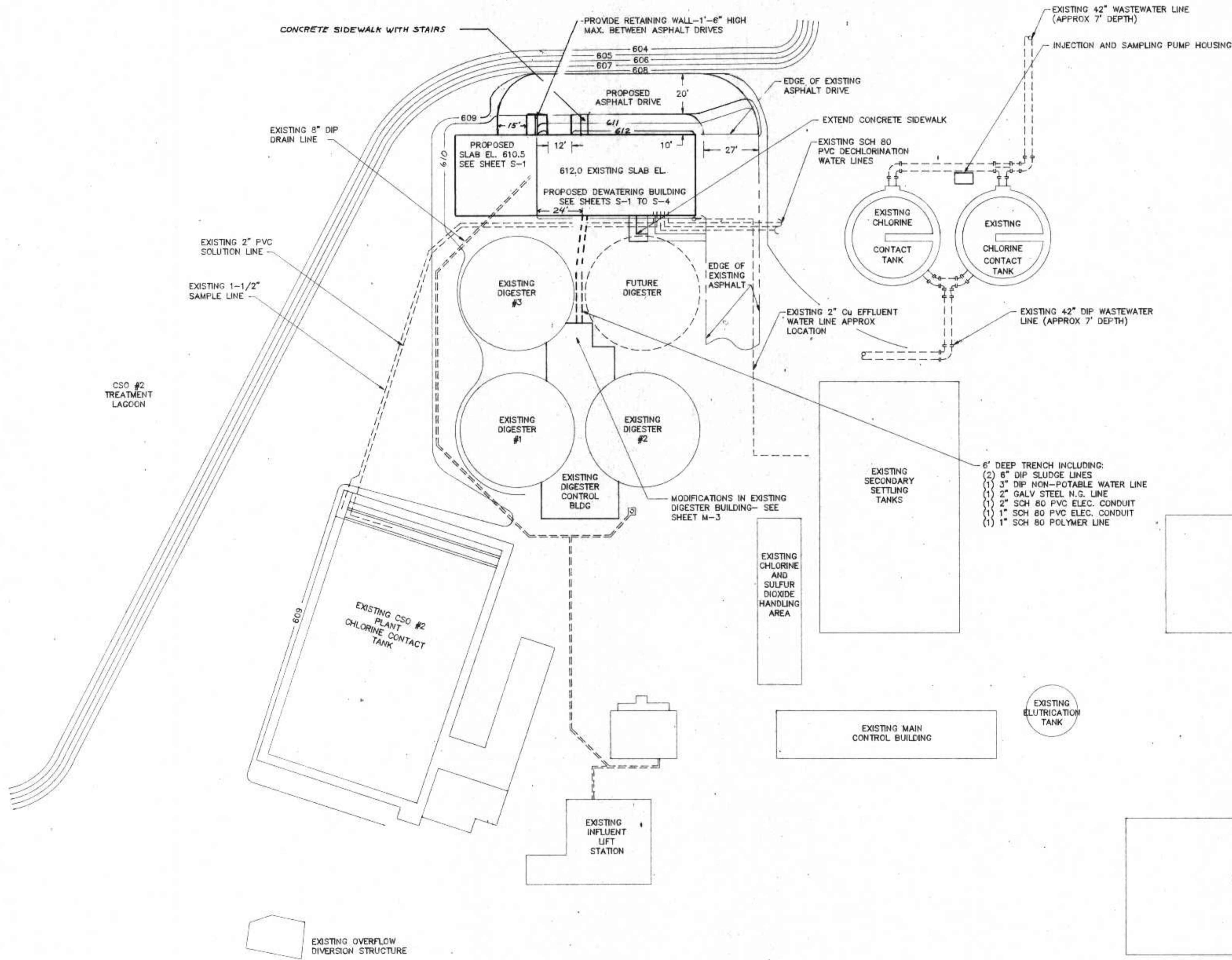
INDEX TO PLANS

TITLE	SHEET NO.
SITE PLAN	C-1
DEWATERING BUILDING FOUNDATION PLAN	S-1
DEWATERING BUILDING ROOF AND WALL SYSTEMS	S-2
DEWATERING BUILDING ELEVATIONS	S-3
DEWATERING BUILDING STRUCTURAL DETAILS	S-4
DEWATERING BUILDING MECHANICAL PLAN	M-1
DEWATERING BUILDING MECHANICAL SECTIONS	M-2
DIGESTER CONTROL BUILDING MODIFICATIONS	M-3
SLUDGE CAKE STORAGE BIN	M-4
MECHANICAL DETAILS	M-5
MECHANICAL DETAILS	M-6
DEWATERING BUILDING HVAC	H-1
ELECTRICAL SITE PLAN AND DISTRIBUTION	E-1
ELECTRICAL PLANS- DEWATERING & DIGESTER BLDGS	E-2
ELECTRICAL DETAILS	E-3

REVISED 8/22/91
 5/15/92
 9/21/92

ENGINEER
 RMA ENGINEERING CO.
 DULUTH, MN

SLUDGE DEWATERING
 HANDLING FACILITY
 1991-92



BUILDING EXIT DIAGRAM
Scale 1"=15'

SITE PLAN NOTES

- BUILDING CONTRACTOR RESPONSIBLE FOR CONCRETE WORK, DEWATERING BUILDING, ASPHALT DRIVE EXTENSION, SIDEWALK EXTENSION, NECESSARY RESEEDING AND ASPHALT PATCH AND NECESSARY GRADING WORK.
- MECHANICAL CONTRACTOR RESPONSIBLE FOR PIPE TRENCH AND YARD PIPING.
- ELECTRICAL SUB-CONTRACTOR (UNDER MECHANICAL) RESPONSIBLE FOR OUTSIDE ELECTRICAL DISTRIBUTION- SEE SHEET E-1.
- WORK UNDER THIS CONTRACT SHOWN IN DARK LINE
- ASPHALT DRIVE TO INCLUDE 6" GRAVEL SUBBASE (AS REQUIRED), 3" ASPHALT BASE COURSE, AND 1" ASPHALT SURFACE COURSE.

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME, OR UNDER MY DIRECT SUPERVISION, AND I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.
Richard Anthony
DATE: 6/24/91 REG. NO. 25488

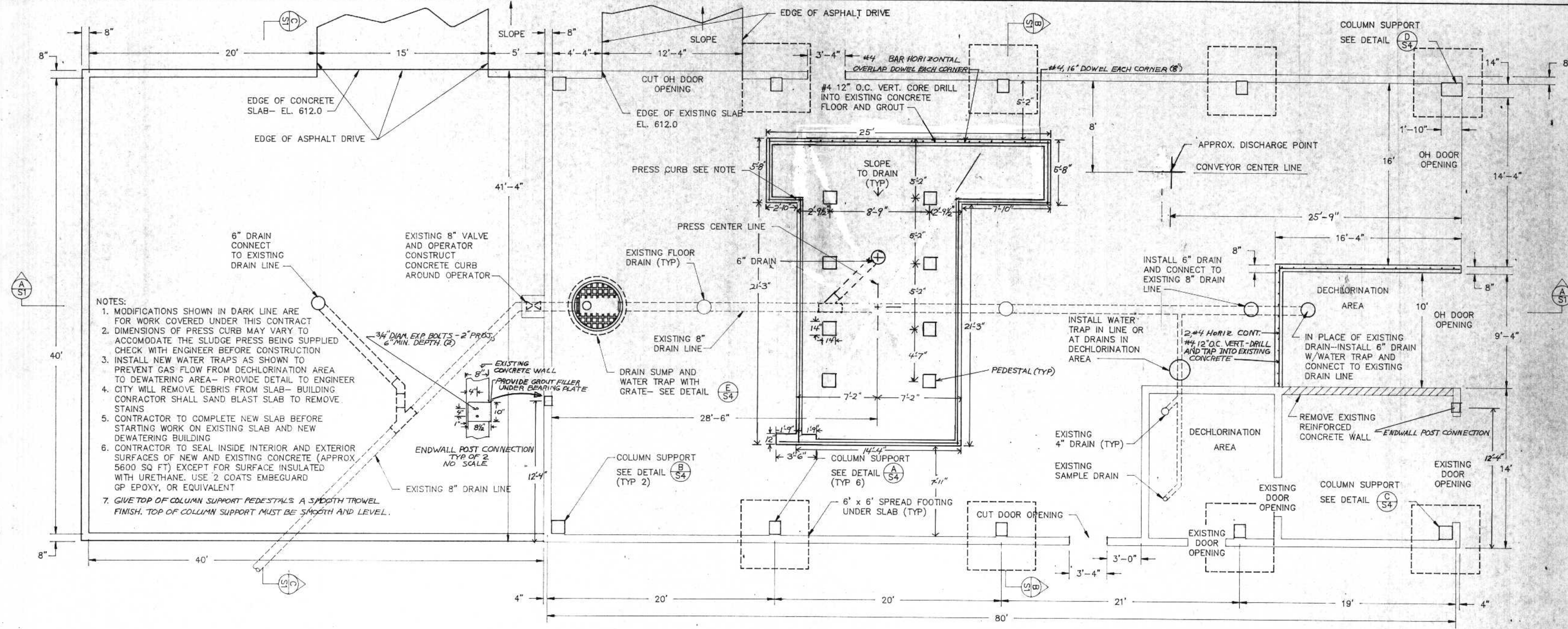
REVISIONS		
NO.	BY	DATE
1	RMA	3/22/91

SITE PLAN

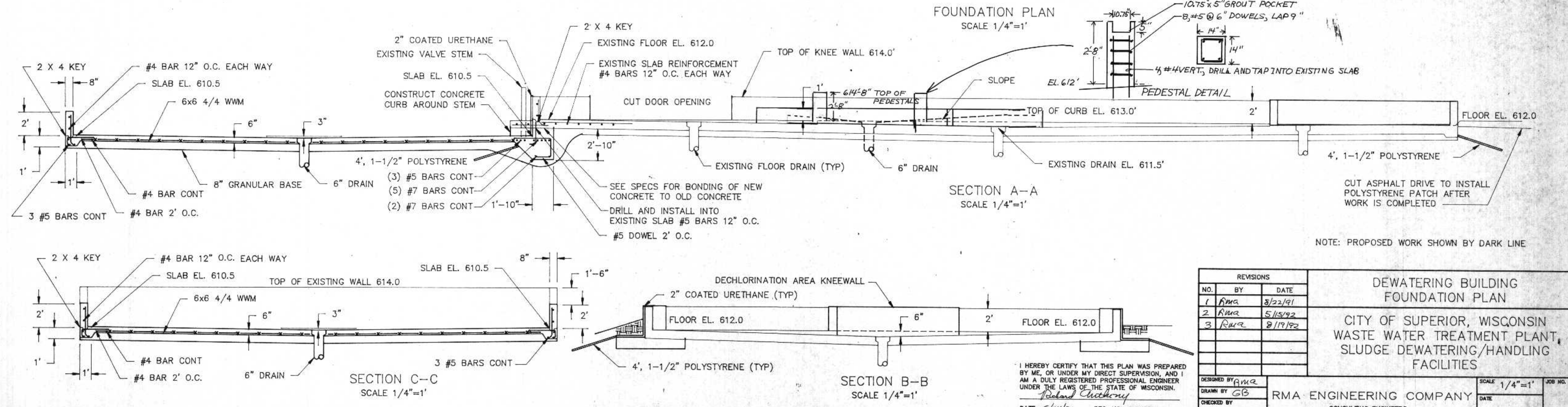
CITY OF SUPERIOR, WISCONSIN
WASTE WATER TREATMENT PLANT
SLUDGE DEWATERING/HANDLING
FACILITIES

DESIGNED BY <i>RMA</i>	SCALE 1"=30'	JOB NO.
DRAWN BY <i>GB</i>	RMA ENGINEERING COMPANY	
CHECKED BY	CONSULTING ENGINEERS	
APPROVED BY	DATE	SHEET C-1





- NOTES:
1. MODIFICATIONS SHOWN IN DARK LINE ARE FOR WORK COVERED UNDER THIS CONTRACT
 2. DIMENSIONS OF PRESS CURB MAY VARY TO ACCOMMODATE THE SLUDGE PRESS BEING SUPPLIED CHECK WITH ENGINEER BEFORE CONSTRUCTION
 3. INSTALL NEW WATER TRAPS AS SHOWN TO PREVENT GAS FLOW FROM DECHLORINATION AREA TO DEWATERING AREA- PROVIDE DETAIL TO ENGINEER
 4. CITY WILL REMOVE DEBRIS FROM SLAB- BUILDING CONTRACTOR SHALL SAND BLAST SLAB TO REMOVE STAINS
 5. CONTRACTOR TO COMPLETE NEW SLAB BEFORE STARTING WORK ON EXISTING SLAB AND NEW DEWATERING BUILDING
 6. CONTRACTOR TO SEAL INSIDE INTERIOR AND EXTERIOR SURFACES OF NEW AND EXISTING CONCRETE (APPROX 5600 SQ FT) EXCEPT FOR SURFACE INSULATED WITH URETHANE. USE 2 COATS EMBEGUARD GP EPOXY, OR EQUIVALENT
 7. GIVE TOP OF COLUMN SUPPORT PEDESTALS A SMOOTH TROWEL FINISH. TOP OF COLUMN SUPPORT MUST BE SMOOTH AND LEVEL.



REVISIONS		
NO.	BY	DATE
1	RMA	3/22/91
2	RMA	5/15/92
3	RMA	8/17/92

**DEWATERING BUILDING
FOUNDATION PLAN**

CITY OF SUPERIOR, WISCONSIN
WASTE WATER TREATMENT PLANT,
SLUDGE DEWATERING/HANDLING
FACILITIES

DESIGNED BY RMA
DRAWN BY GB
CHECKED BY
APPROVED BY

RMA ENGINEERING COMPANY
CONSULTING ENGINEERS

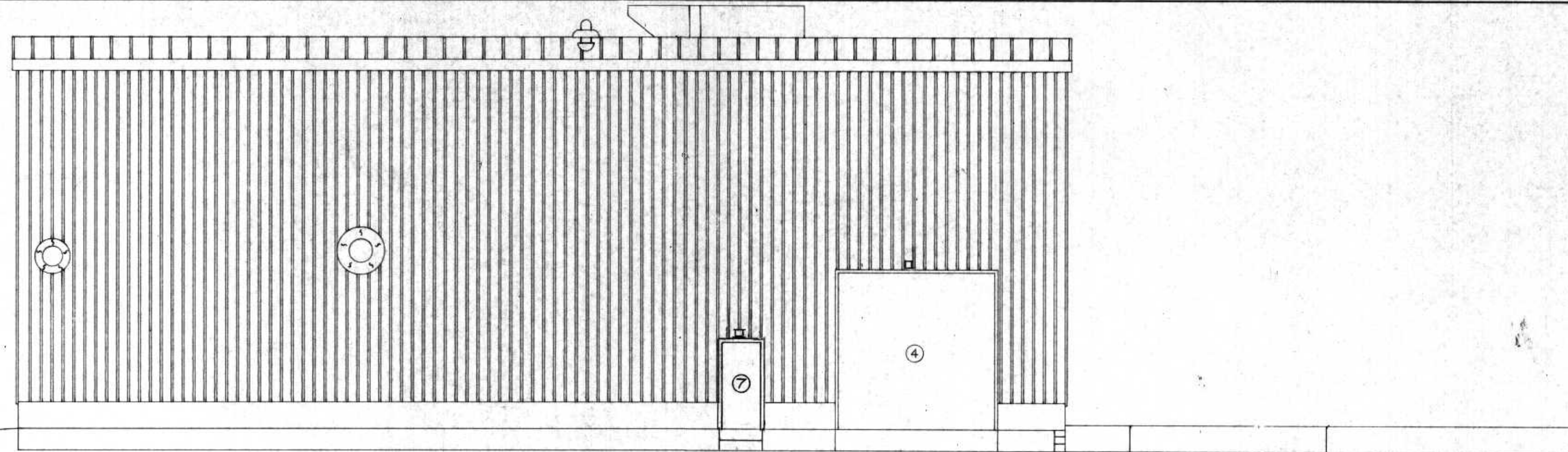
SCALE 1/4"=1'
DATE
SHEET S-1

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME, OR UNDER MY DIRECT SUPERVISION, AND I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.

Richard Anthony

DATE: 6/24/91 REG. NO.: 25488

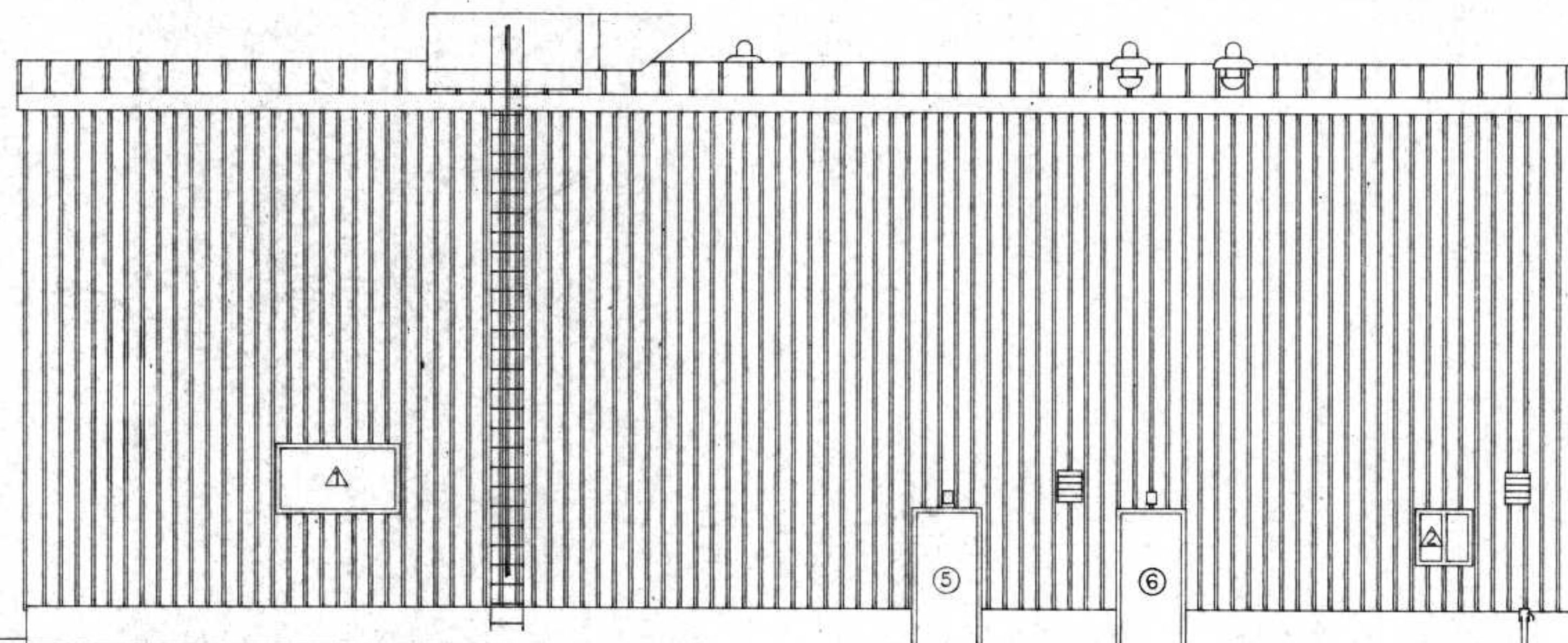
NOTE: PROPOSED WORK SHOWN BY DARK LINE



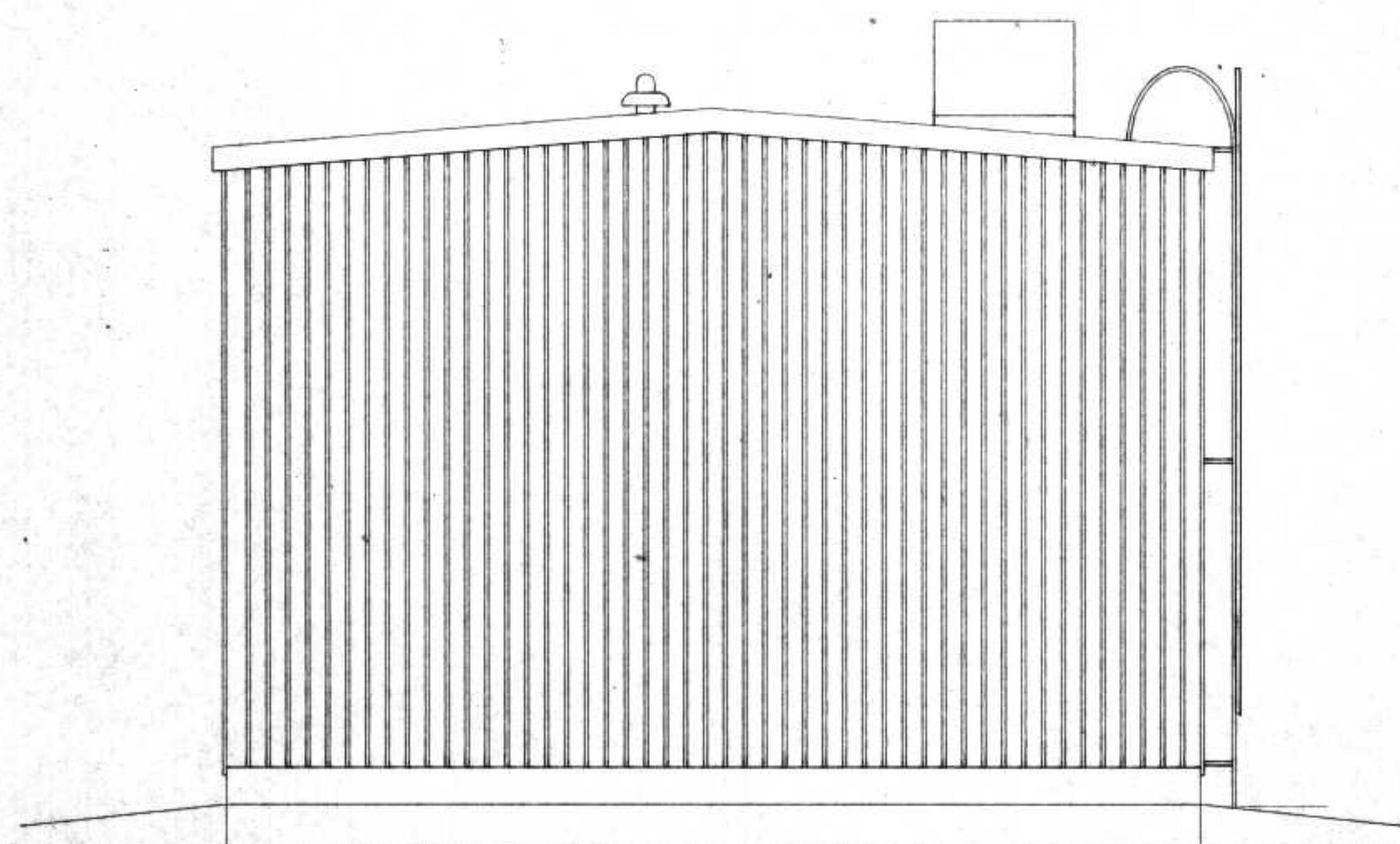
NORTH ELEVATION
SCALE 3/16"=1'

DOOR SCHEDULE					
LOCATION	TYPE	ROUGH OPENING	SIZE	THRESHOLD	REMARKS
① OH DOOR					EXISTING
② OH DOOR	INSULATED STEEL	9'-4" x 9'-2"	9' x 9'	NONE	POWER DOOR OPENER
③ OH DOOR	INSULATED STEEL	14'-4" x 12'-2"	14' x 12'	NONE	POWER DOOR OPENER
④ OH DOOR	INSULATED STEEL	12'-4" x 12'-2"	12' x 12'	NONE	POWER DOOR OPENER
⑤ DOOR	INSULATED STEEL	3'-4" x 7'-2"	3' x 7'	ALUMINUM	
⑥ DOOR					EXISTING
⑦ DOOR	INSULATED STEEL	3'-4" x 7'-2"	3' x 7'	ALUMINUM	

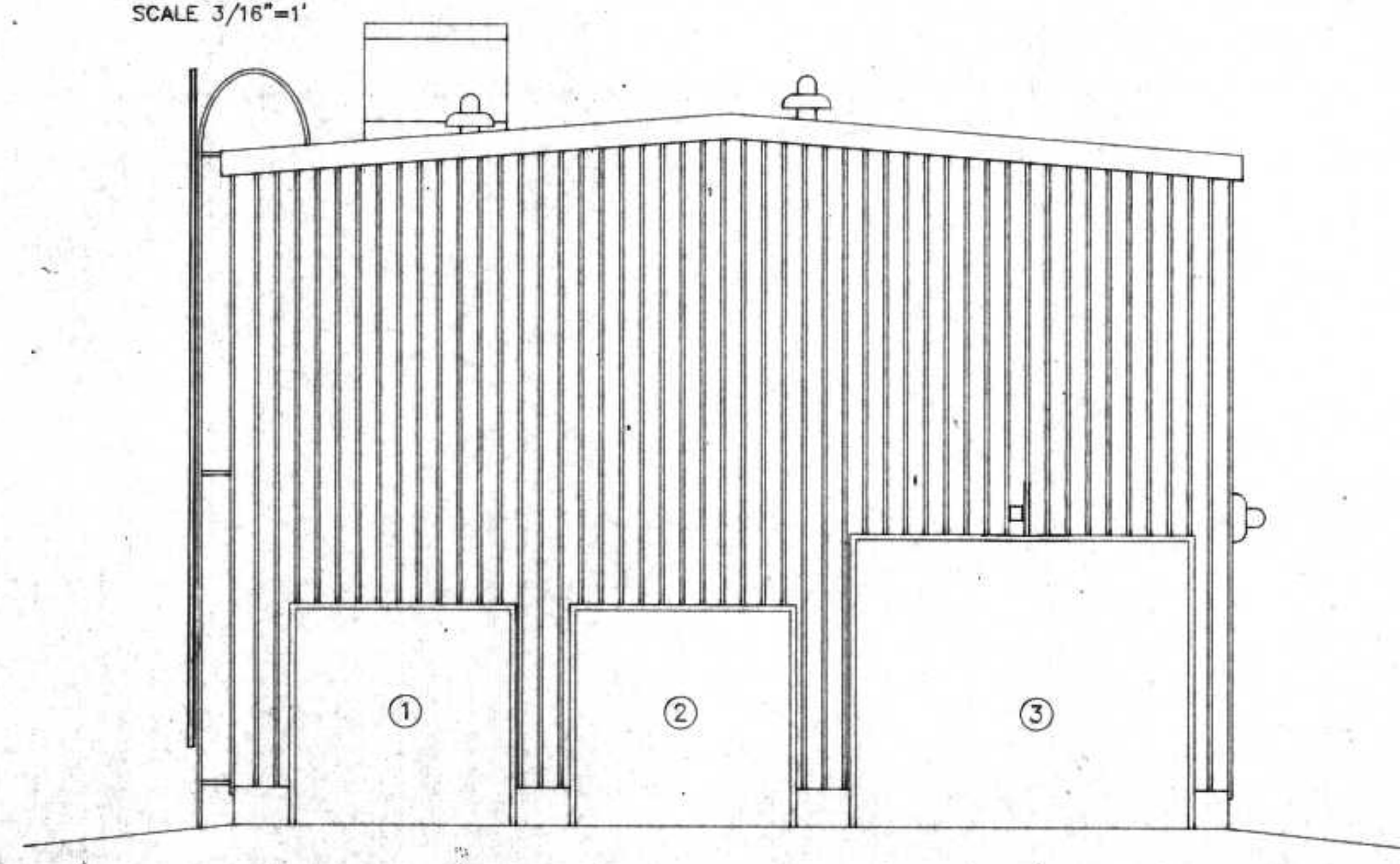
WINDOW SCHEDULE				
LOCATION	ROUGH OPENING	SIZE	GLASS	REMARKS
△	3'-4" x 6'-4"	3' x 6'	DBLE GLAZED INSULATION	
△				EXISTING



SOUTH ELEVATION
SCALE 3/16"=1'



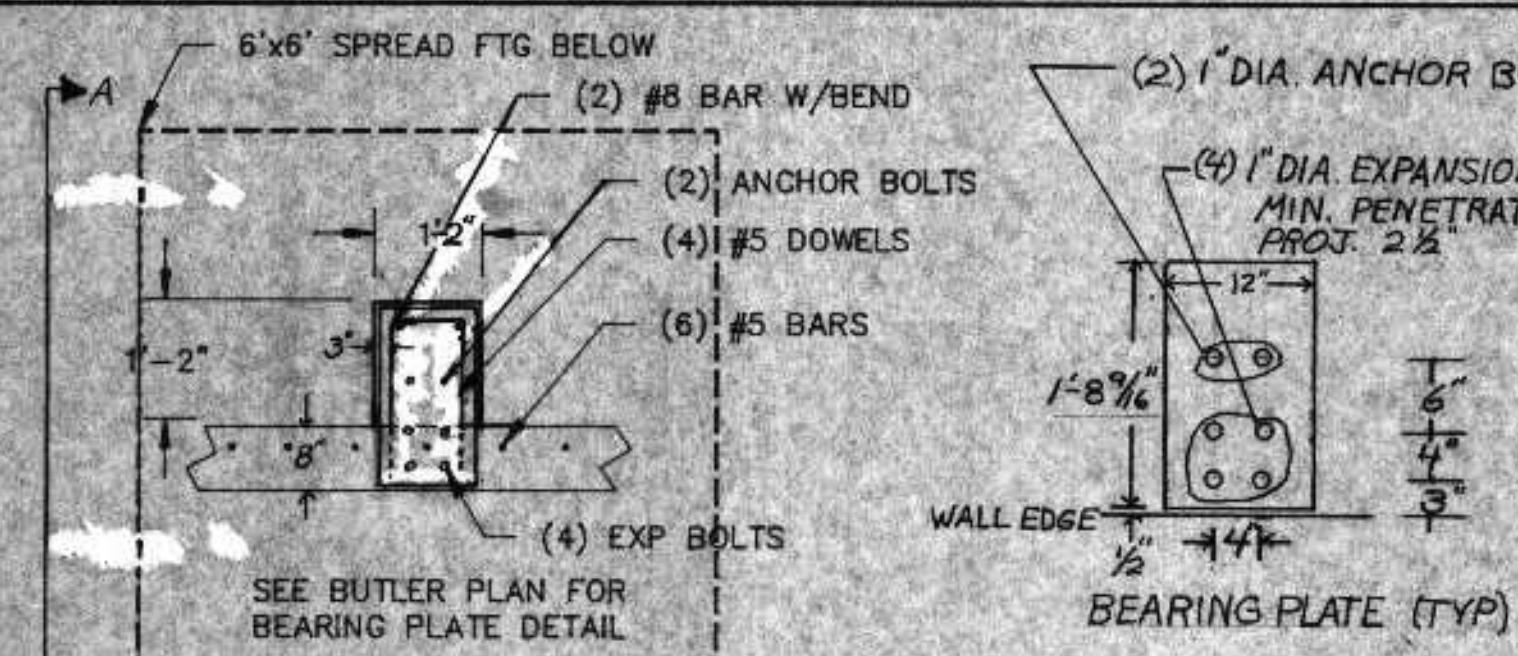
WEST ELEVATION
SCALE 3/16"=1'



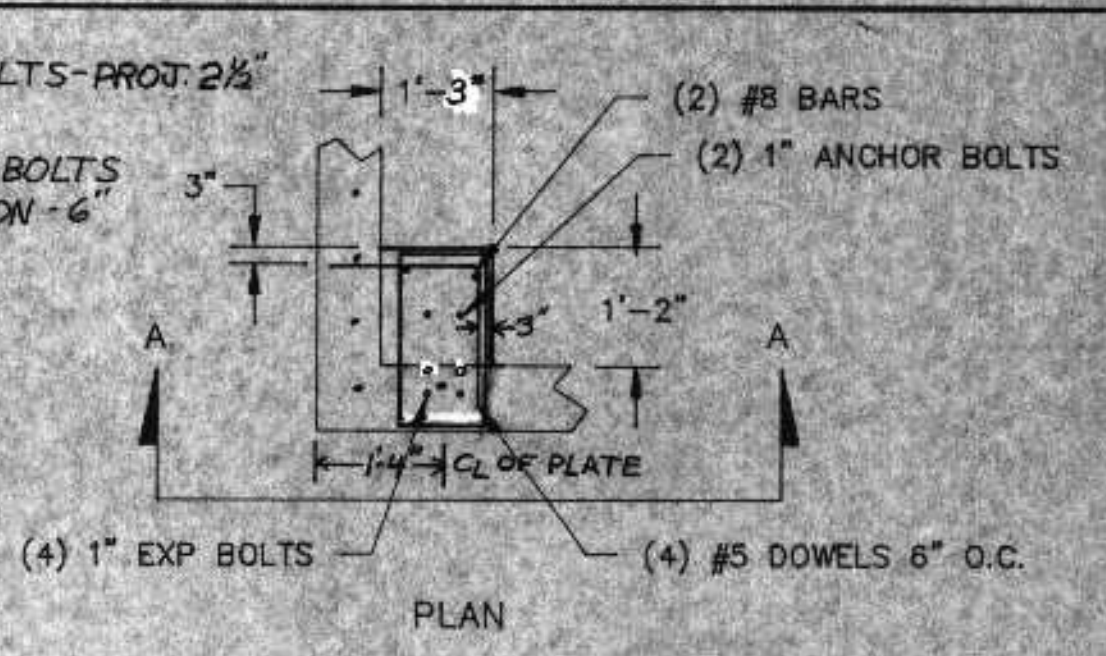
EAST ELEVATION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME, OR UNDER MY DIRECT SUPERVISION, AND I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.
Richard Anthony
DATE: 6/24/91 REG. NO.: 25488

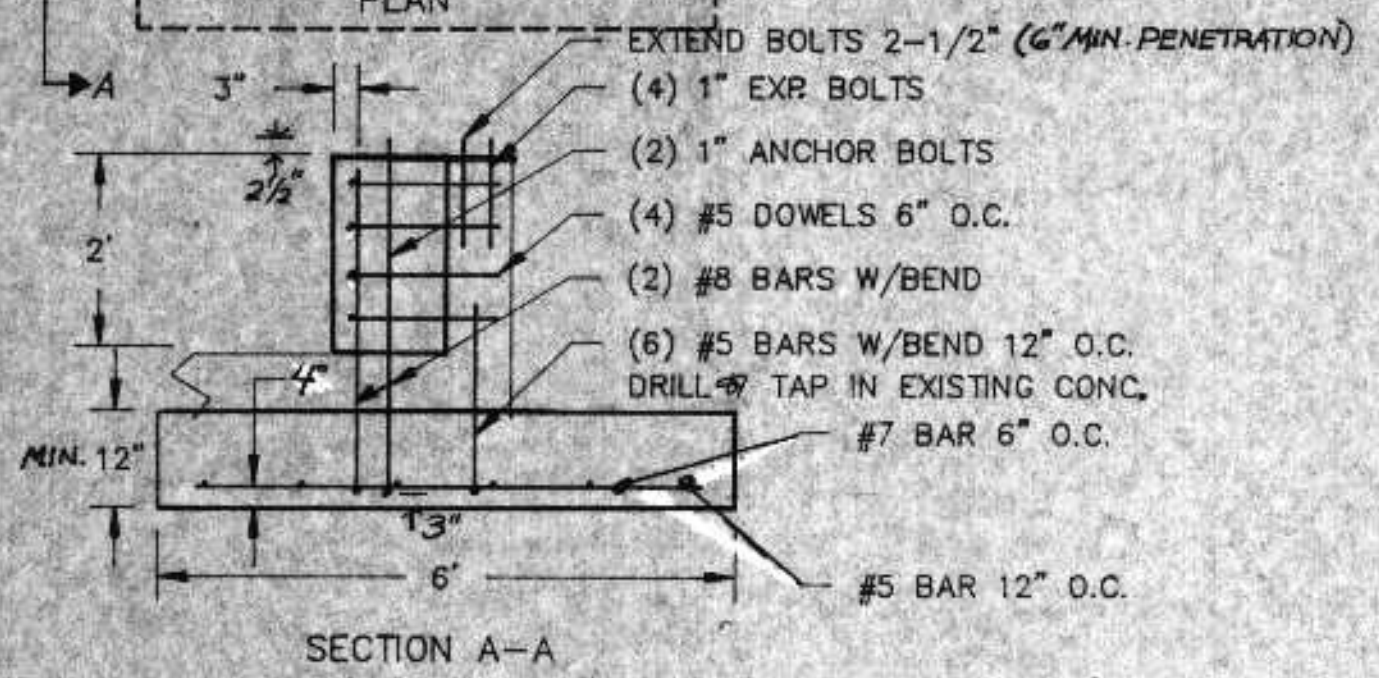
REVISIONS			DEWATERING BUILDING ELEVATIONS	
NO.	BY	DATE		
1	RMA	8/22/91	CITY OF SUPERIOR, WISCONSIN WASTE WATER TREATMENT PLANT SLUDGE DEWATERING/HANDLING FACILITIES	
2	RMA	5/15/92		
			RMA ENGINEERING COMPANY	
			CONSULTING ENGINEERS	
			SCALE 3/16"=1'	JOB NO.
			DATE	
			APPROVED BY	SHEET S-3



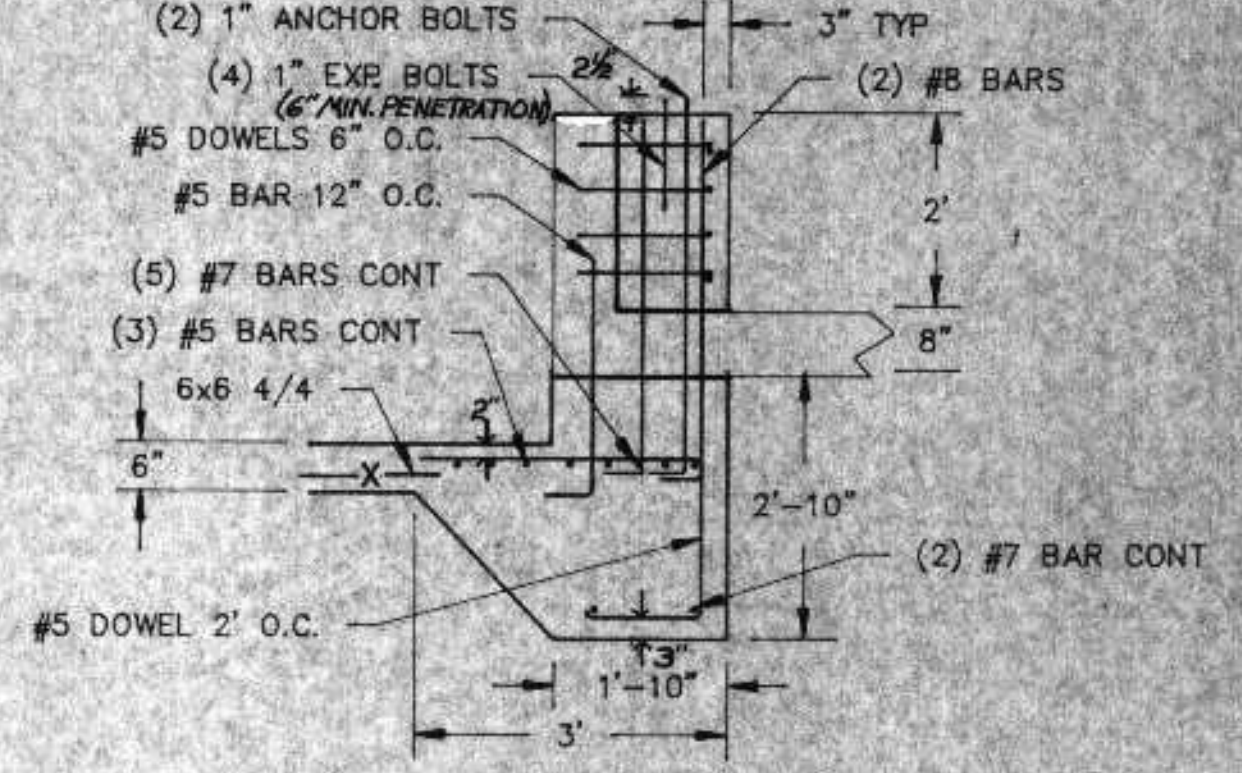
BEARING PLATE (TYP)



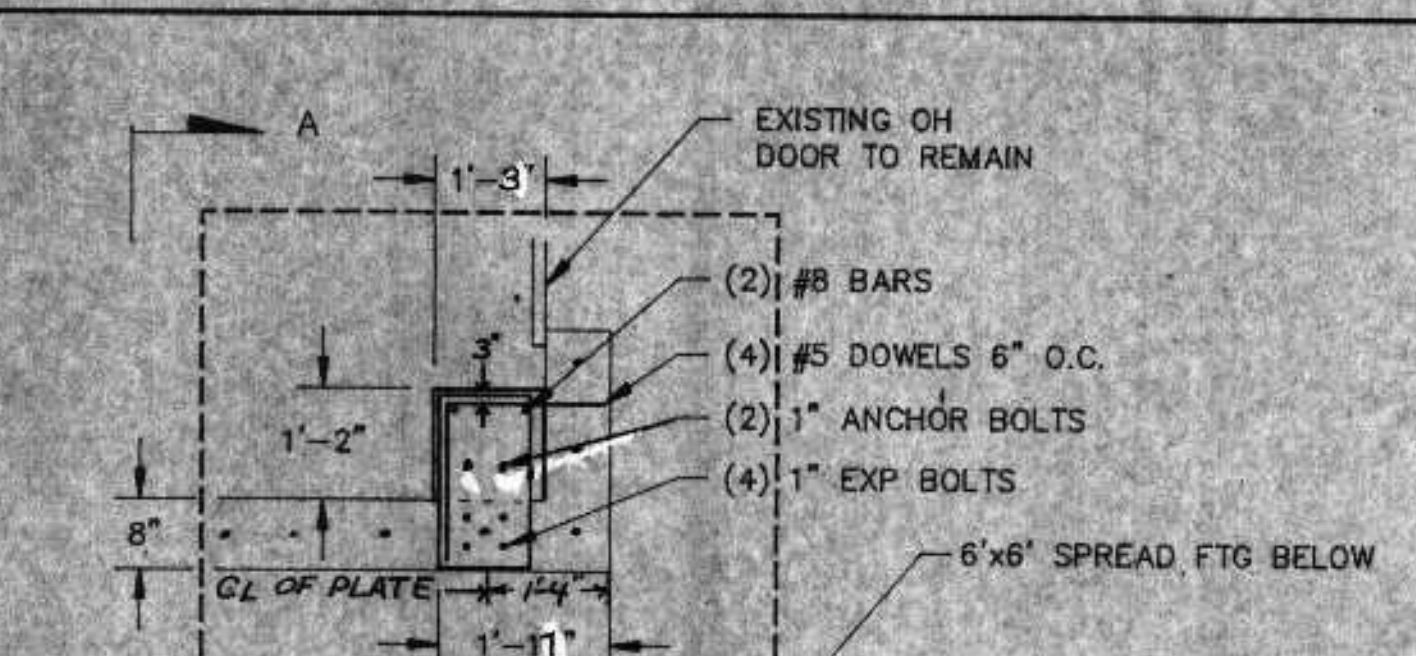
PLAN



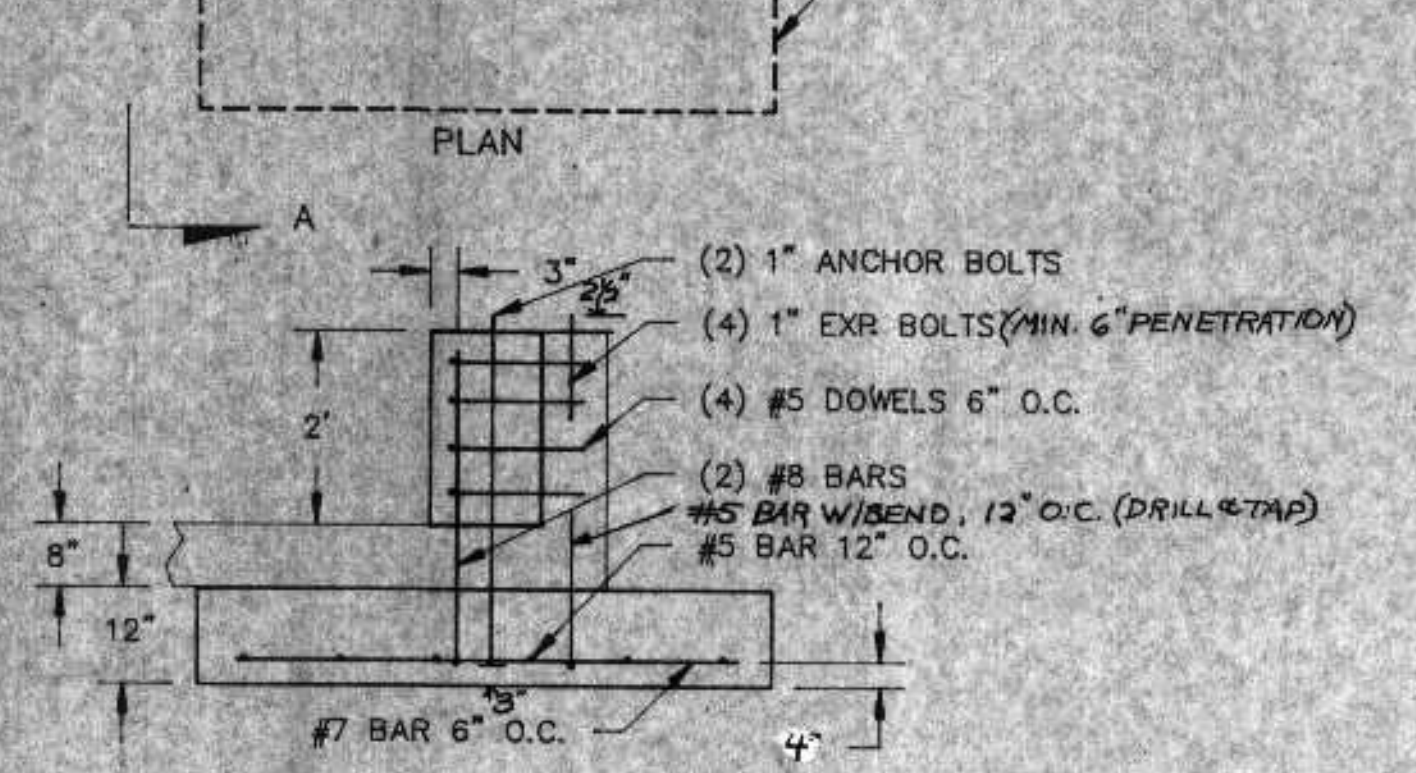
DETAIL A S4
 NOT TO SCALE
 SEE NOTES 1 AND 2



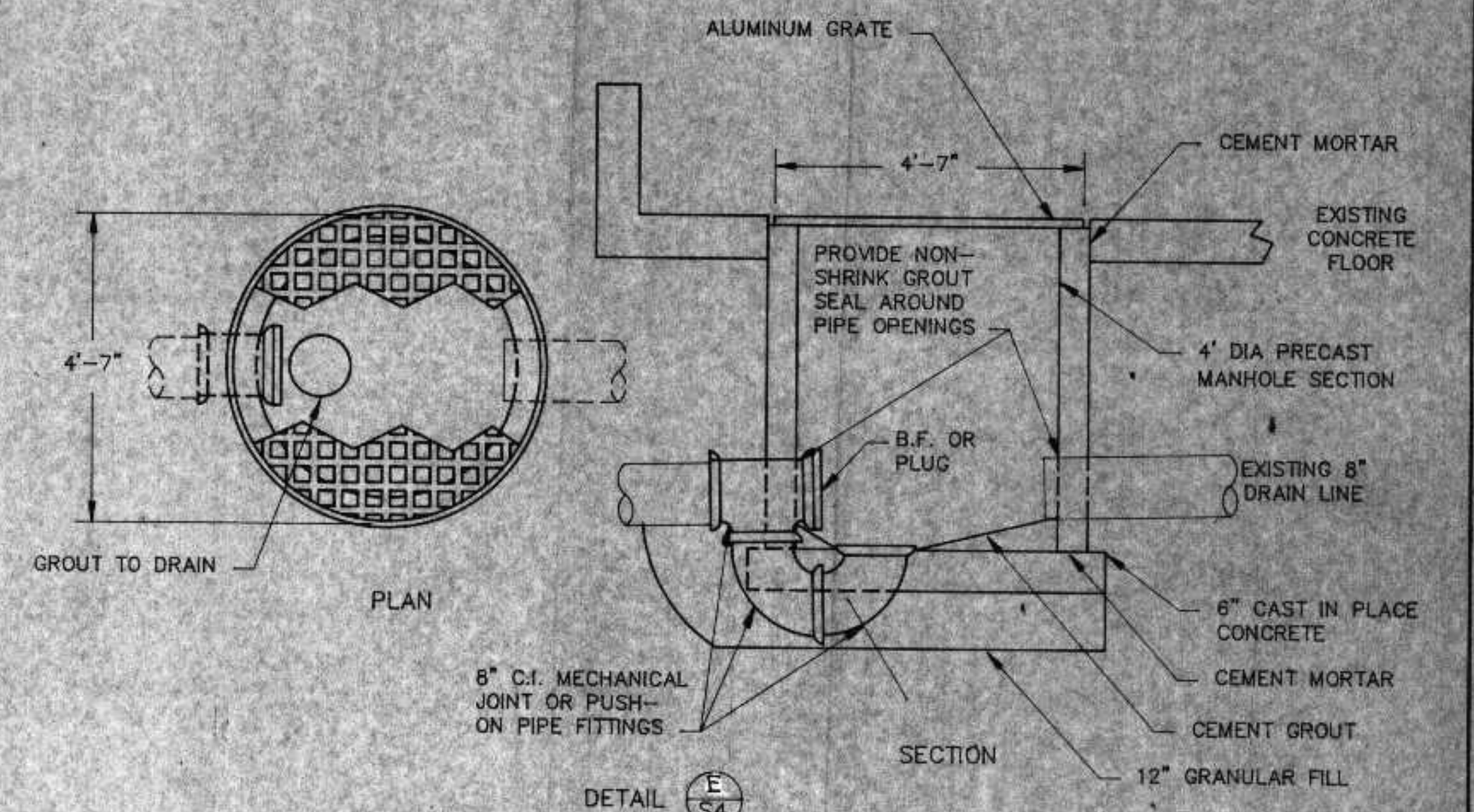
NOT TO SCALE
 SEE NOTES 1 AND 2



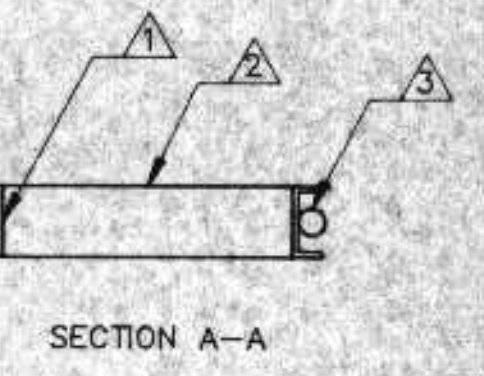
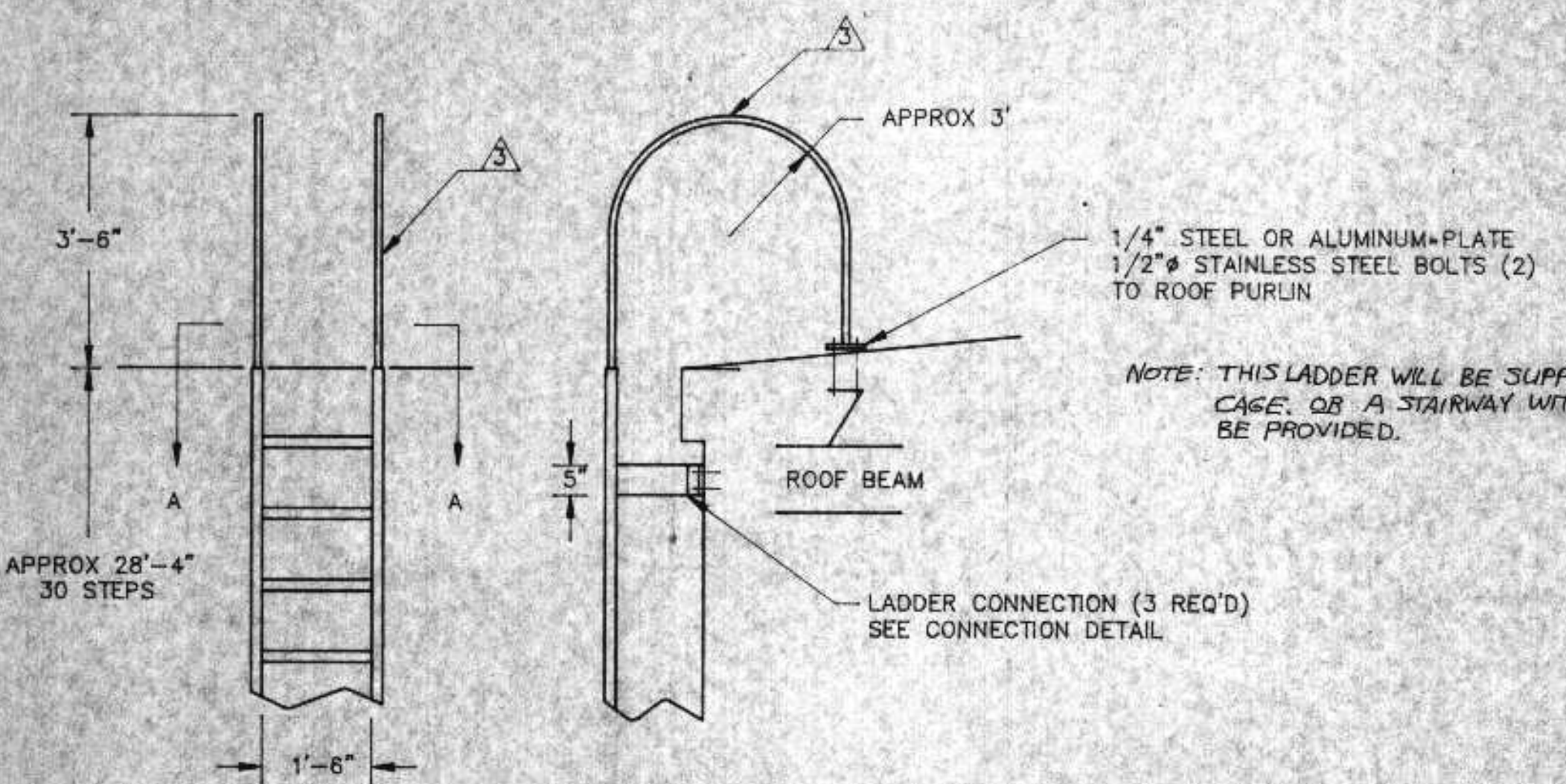
PLAN



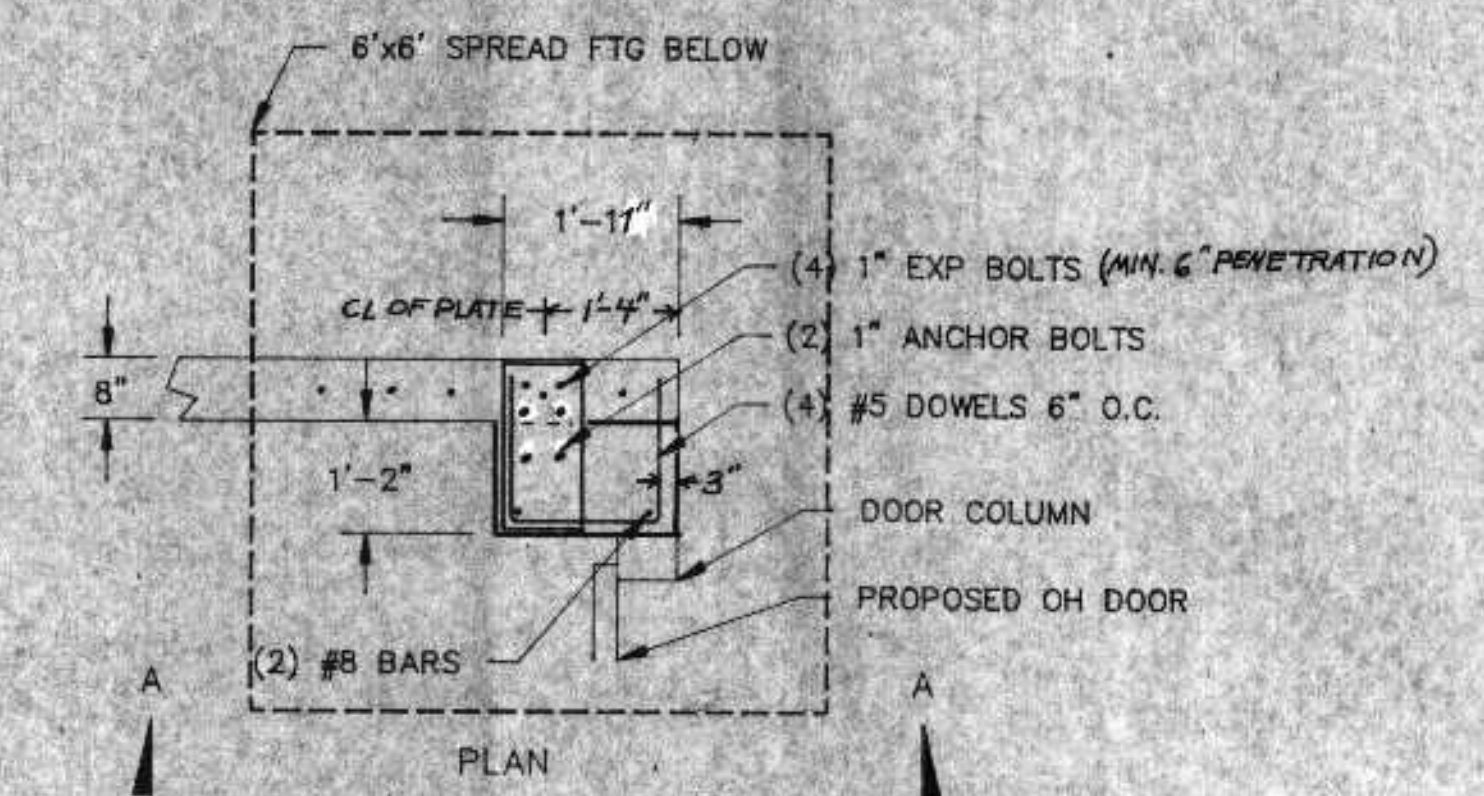
DETAIL C S4
 NOT TO SCALE
 SEE NOTES 1 AND 2



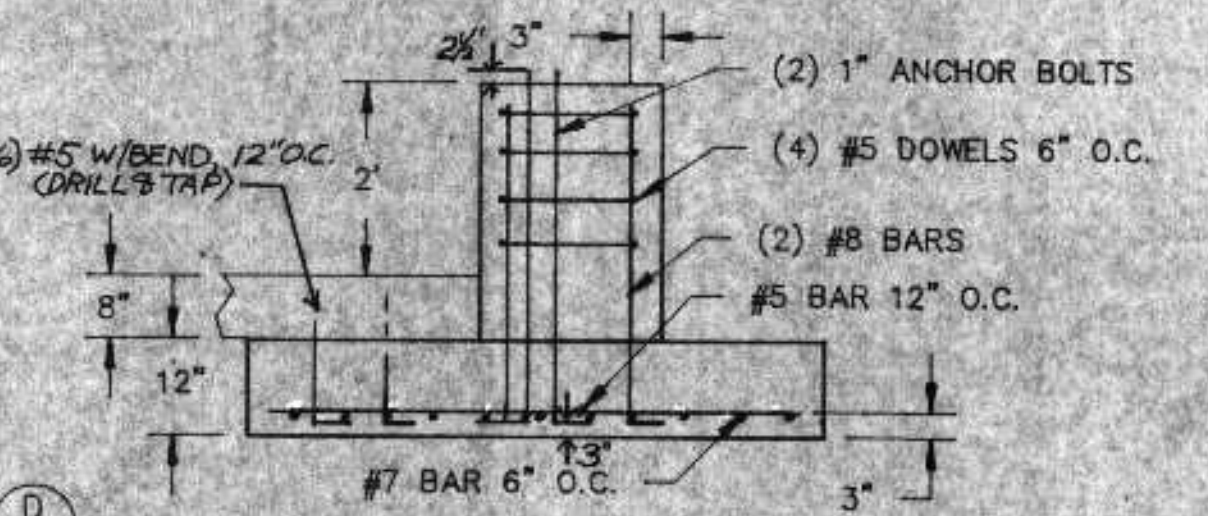
DETAIL E S4
 NOT TO SCALE
 SEE NOTE 1



DETAIL D S4
 NOT TO SCALE
 SEE NOTES 1 AND 2



PLAN



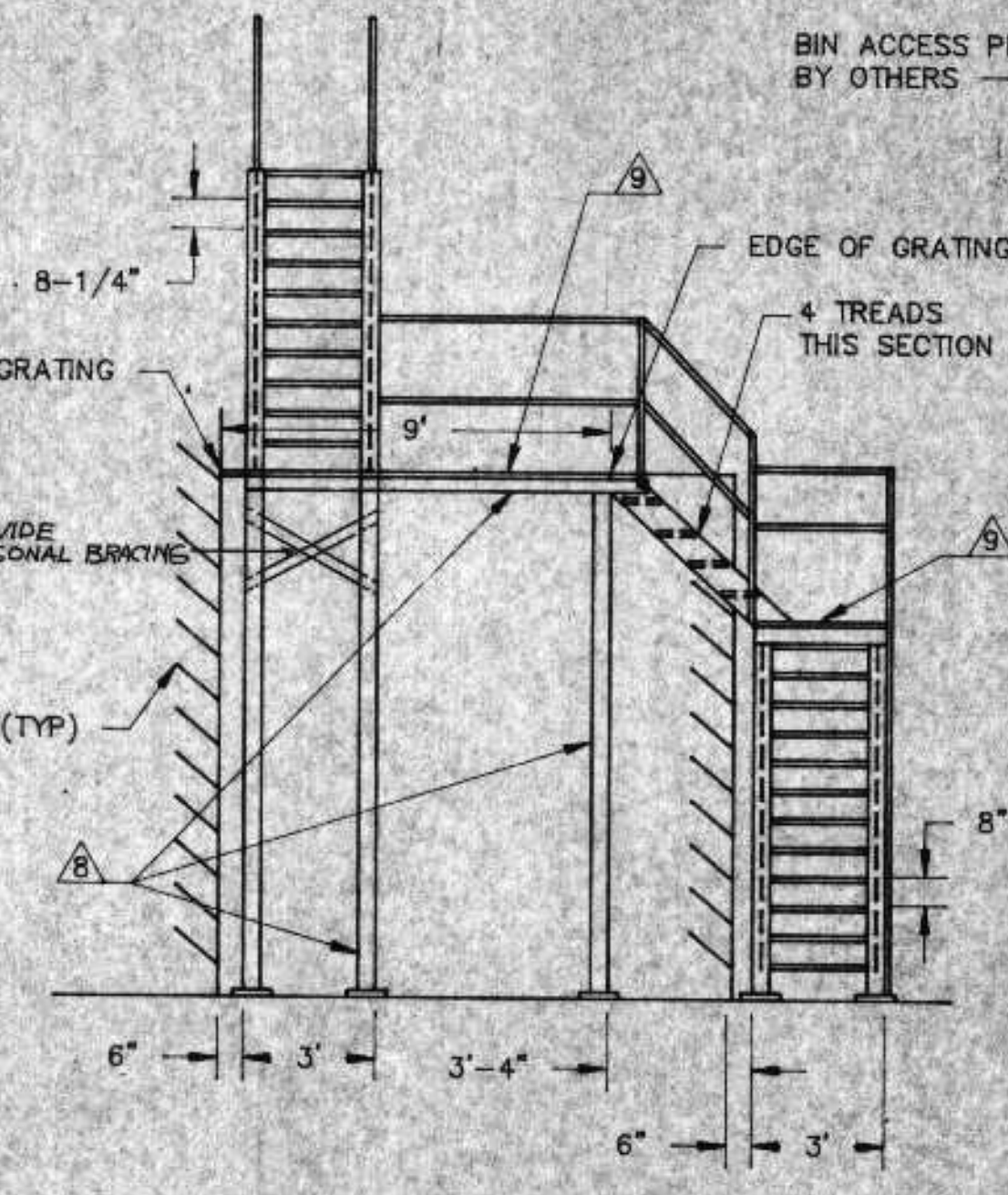
SECTION A-A

LADDER AND STAIRWAY SCHEDULE

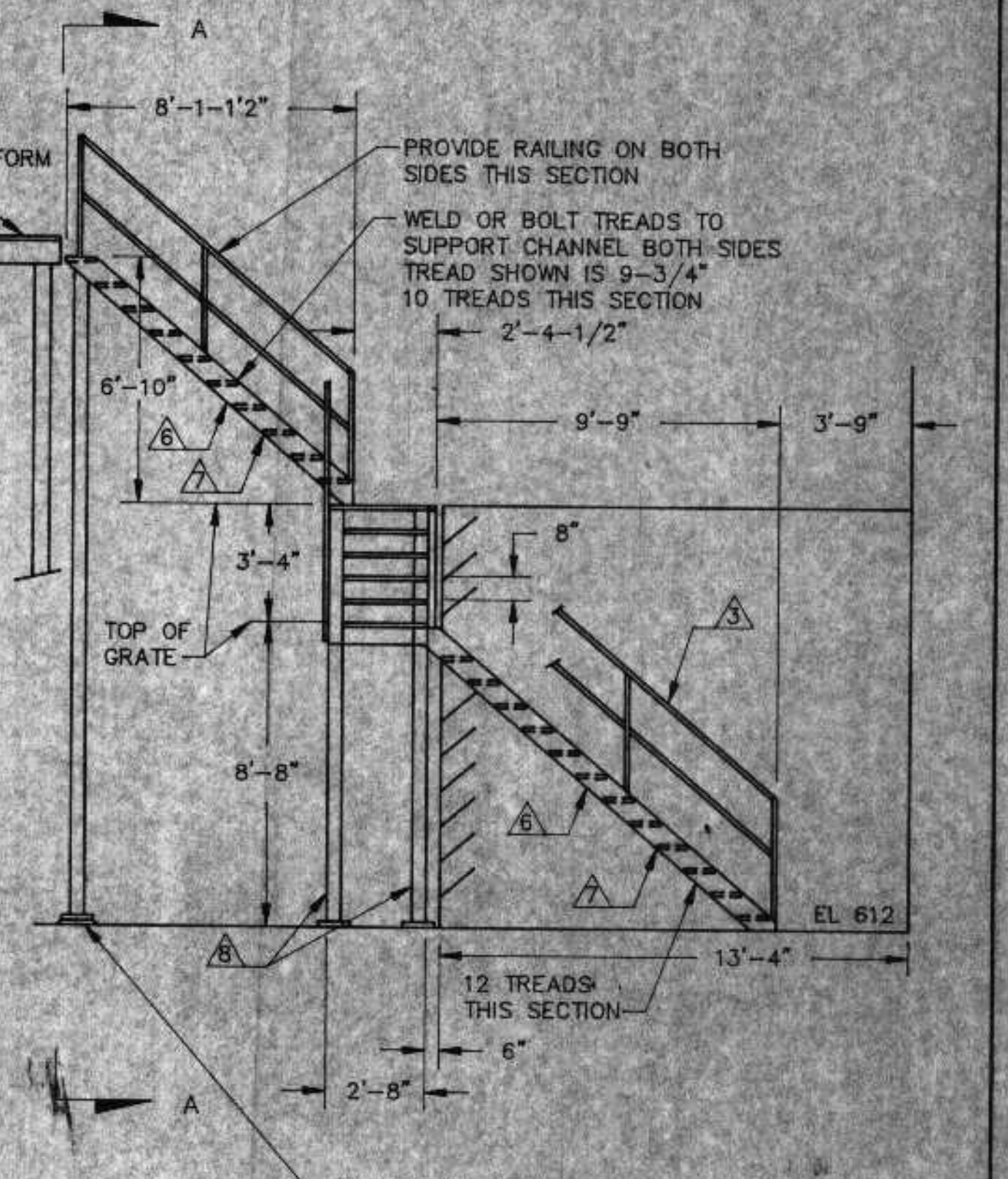
- ▲ 4" STEEL OR ALUMINUM C CHANNEL RISER
- ▲ 4" STEEL OR ALUMINUM C CHANNEL STEPS WELD TO RISER
- ▲ 1" STEEL OR 1-1/2" ALUMINUM RAILS
- ▲ 5" x 12" x 3/8" STEEL OR ALUMINUM PLATE WELD TO RISER
- ▲ 5" LONG, 3" STEEL OR ALUMINUM ANGLE WELD TO PLATE
- ▲ STEEL OR ALUMINUM CHANNEL STAIR TREAD SUPPORTS AS REQUIRED
- ▲ STEEL OR ALUMINUM STAIR TREAD WELDED WITH NOSE PLATE- 300 LB DESIGN LOAD 9-3/4" TREAD WIDTH
- ▲ 4" STEEL OR ALUMINUM CHANNEL STRUCTURAL SUPPORTS
- ▲ STEEL OR ALUMINUM GRATING- 36" SPAN 200 LBS PER SQUARE FOOT

COATINGS
 ALUMINUM- NOT REQUIRED
 ALL STEEL- HOT DIP GALVANIZED

- NOTES:
1. DRILL AND GROUT REBAR INTO EXISTING CONCRETE. SANDBLAST AND CLEAN EXISTING CONCRETE TO BE IN CONTACT WITH NEW CONCRETE. BEFORE NEW CONCRETE IS DEPOSITED THE SURFACE SHOULD BE COATED WITH 1/2" OF MORTAR.
 2. CORE DRILL REBAR AS SHOWN INTO EXISTING CONCRETE FLOOR AND KNEEWALL AND GROUT
 3. PROVIDE STAINLESS STEEL CONNECTIONS FOR ALL STAIRWAYS AND GRATINGS
 4. EXISTING CONCRETE KNEEWALL MAY VARY SLIGHTLY IN TOP ELEVATION. CONSTRUCT CONCRETE SUPPORTS FOR BUILDING COLUMNS TO HAVE IDENTICAL TOP ELEVATION
 5. BUILDING COLUMN ANCHOR PLATE DETAILS ARE SHOWN IN BUTLER BUILDING DRAWINGS

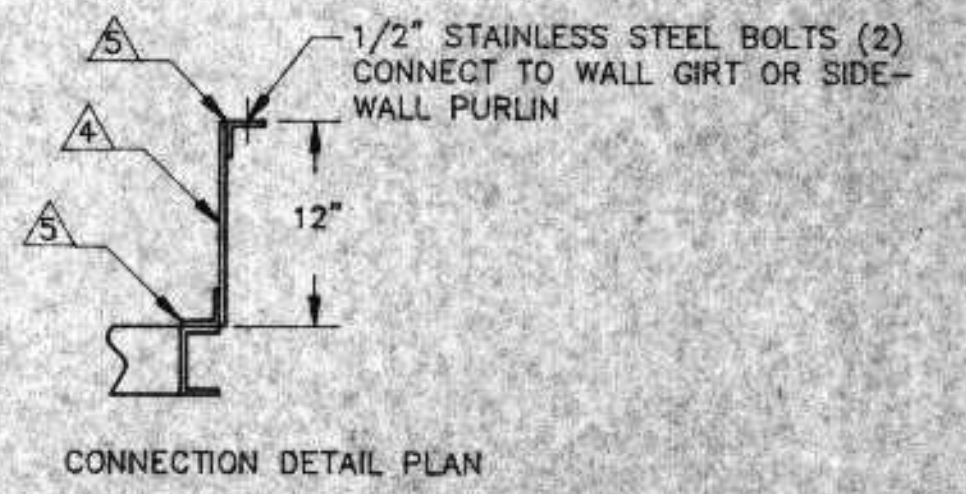


SECTION A-A



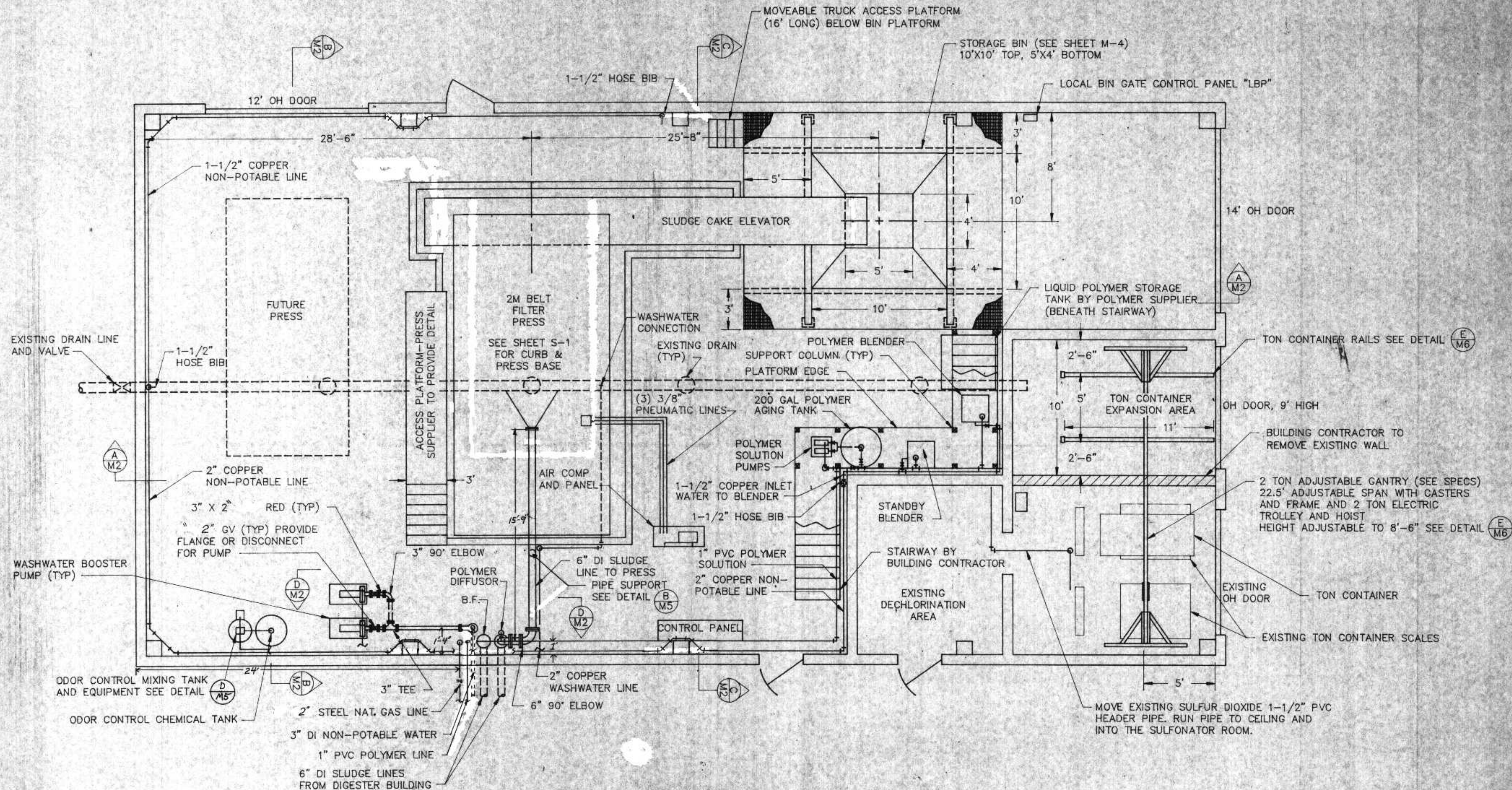
DETAIL G S4
 STAIRWAY SCALE: 1/4"=1'

DETAIL F S4
 DEWATERING BUILDING ROOF LADDER
 NO SCALE



REVISIONS		
NO.	BY	DATE
1	RMG	5/22/71
2	RMG	6/15/72

DEWATERING BUILDING STRUCTURAL DETAILS		SCALE:	JOB NO.
CITY OF SUPERIOR, WISCONSIN WASTE WATER TREATMENT PLANT SLUDGE DEWATERING/HANDLING FACILITIES		DATE:	
DESIGNED BY: RMG	DRAWN BY: GB	RMA ENGINEERING COMPANY CONSULTING ENGINEERS	
CHECKED BY:	APPROVED BY:		
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN. <i>Techend Authority</i>		DATE: 6/24/71	REG. NO.: 23488
SHEET		S-4	



PLAN VIEW
 SLUDGE DEWATERING BUILDING
 SCALE 1/4"=1'

- NOTES:
1. FOR POLYMER SYSTEM INCLUDING VALVES SEE DETAIL (A M5)
 2. SEE SHEET M-4 FOR CAKE BIN AND ACCESS PLATFORM

REVISIONS		
NO.	BY	DATE
1	RWA	8/22/91
2	RWA	7/6/92

DEWATERING BUILDING
 MECHANICAL PLAN

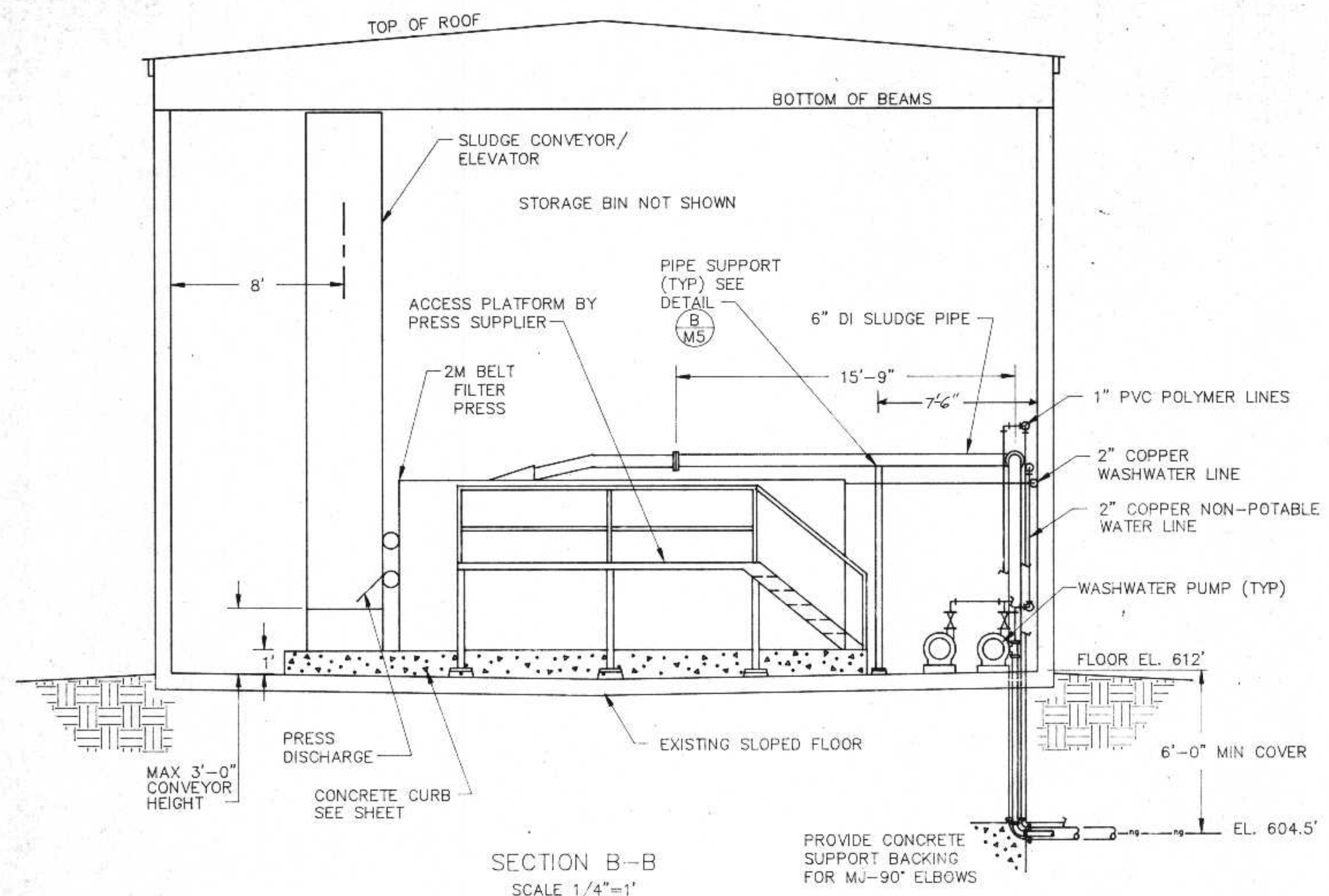
CITY OF SUPERIOR, WISCONSIN
 WASTE WATER TREATMENT PLANT
 SLUDGE DEWATERING/HANDLING
 FACILITIES

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME, OR UNDER MY DIRECT SUPERVISION, AND I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.

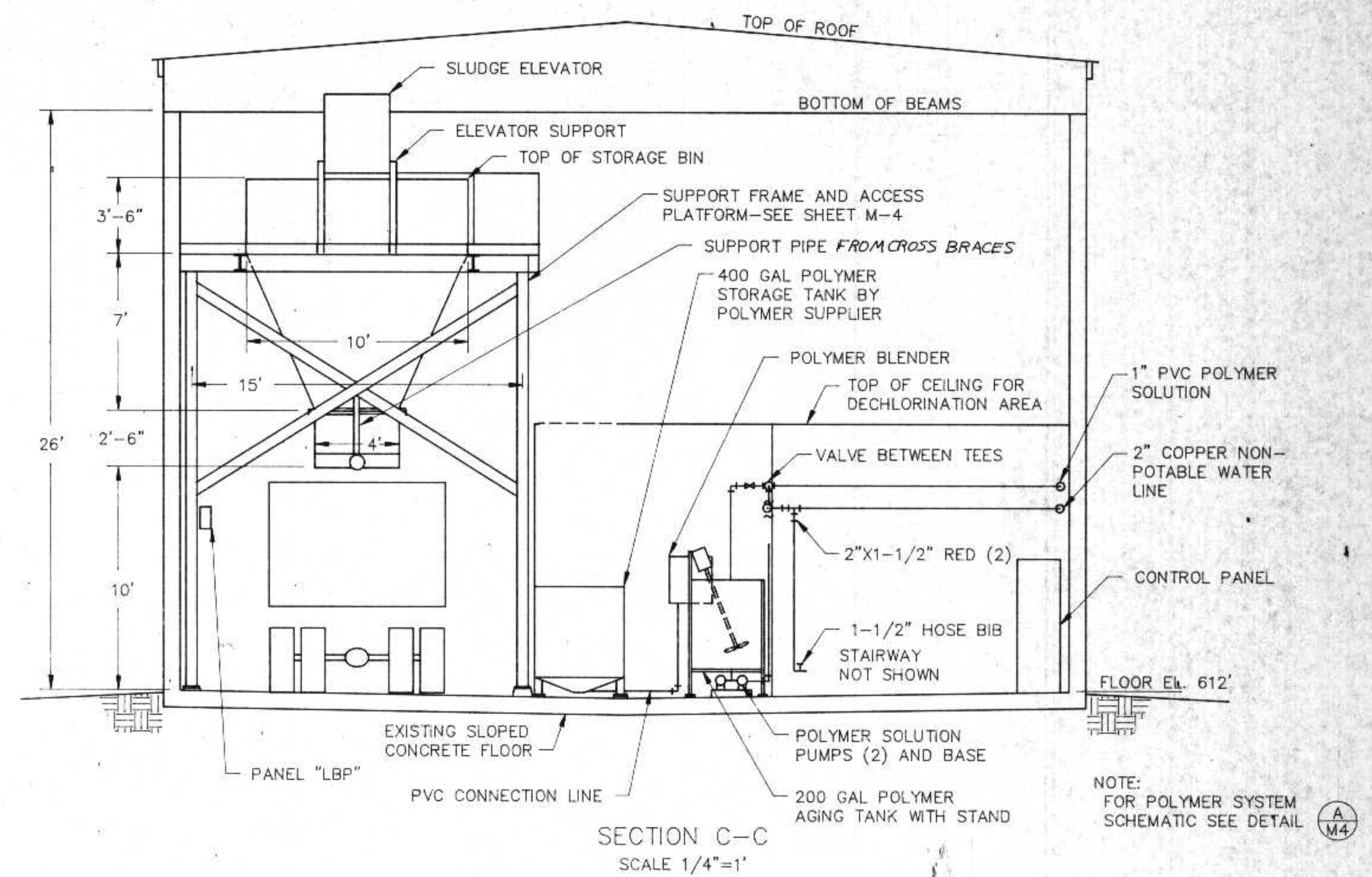
Richard Auckony

DATE: 6/24/91 REG. NO.: 25488

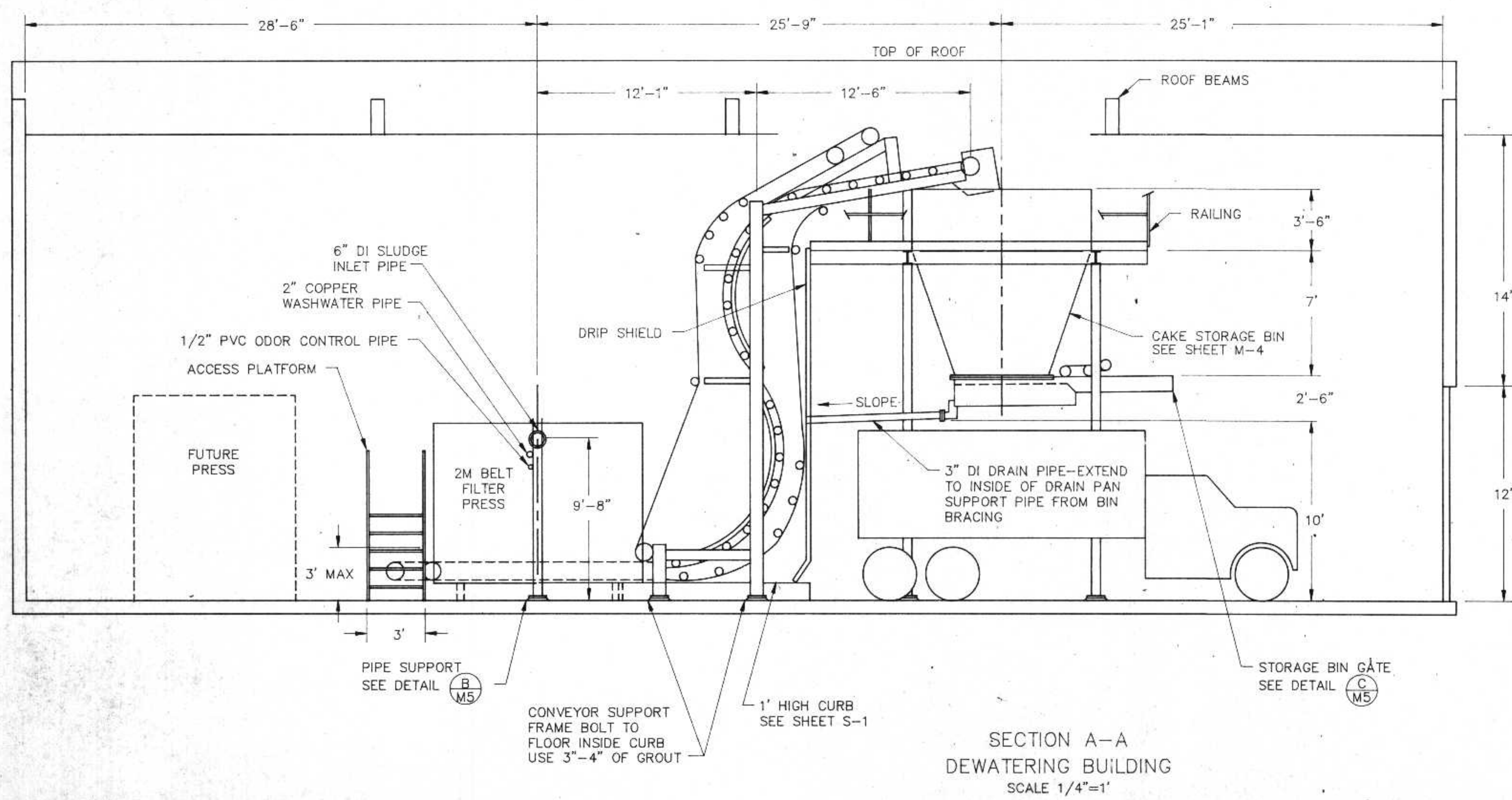
DESIGNED BY RWA	RMA ENGINEERING COMPANY CONSULTING ENGINEERS	SCALE 1/4"=1'	JOB NO.
DRAWN BY GB		DATE	
CHECKED BY			
APPROVED BY			SHEET M-1



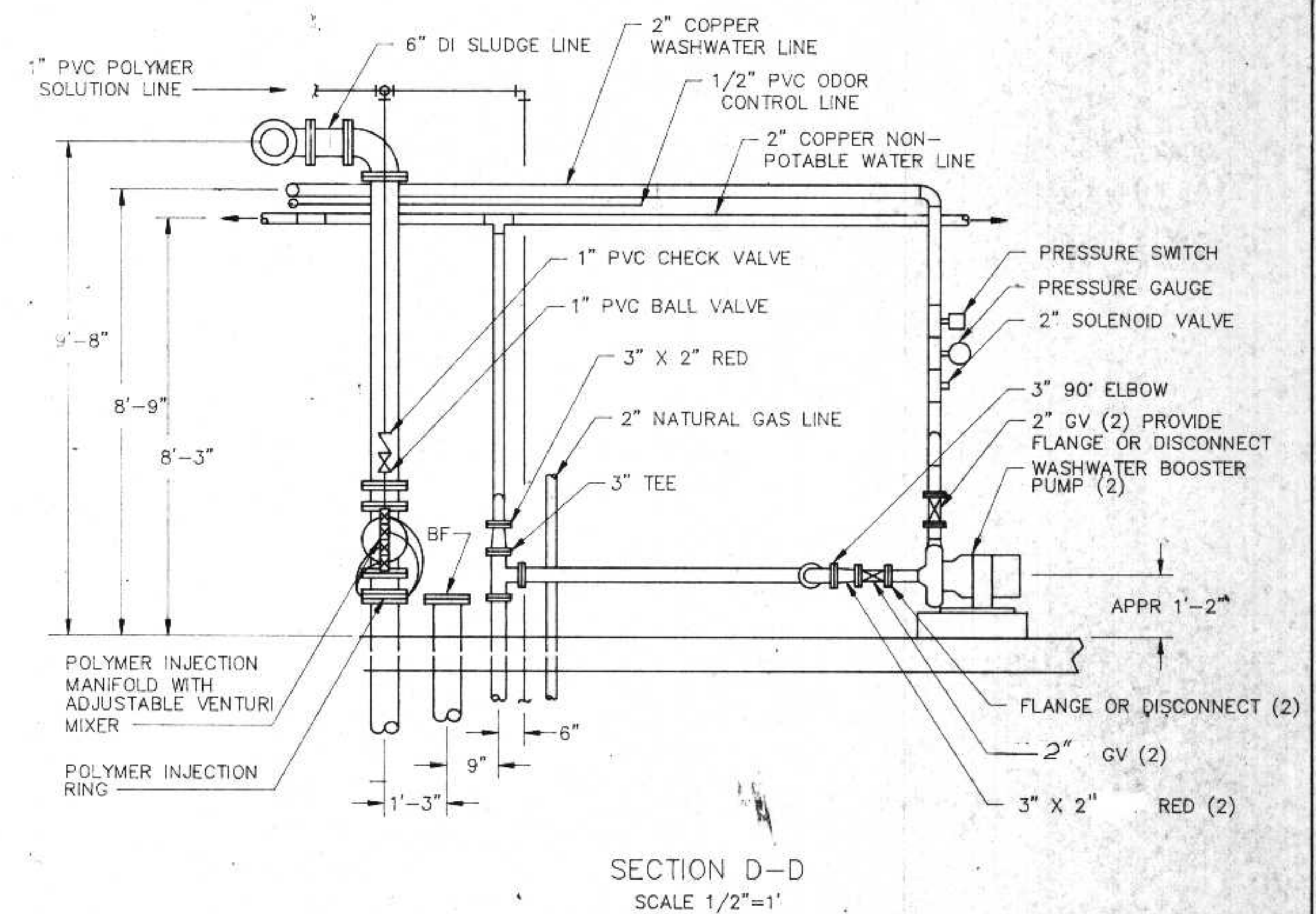
SECTION B-B
SCALE 1/4"=1'



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



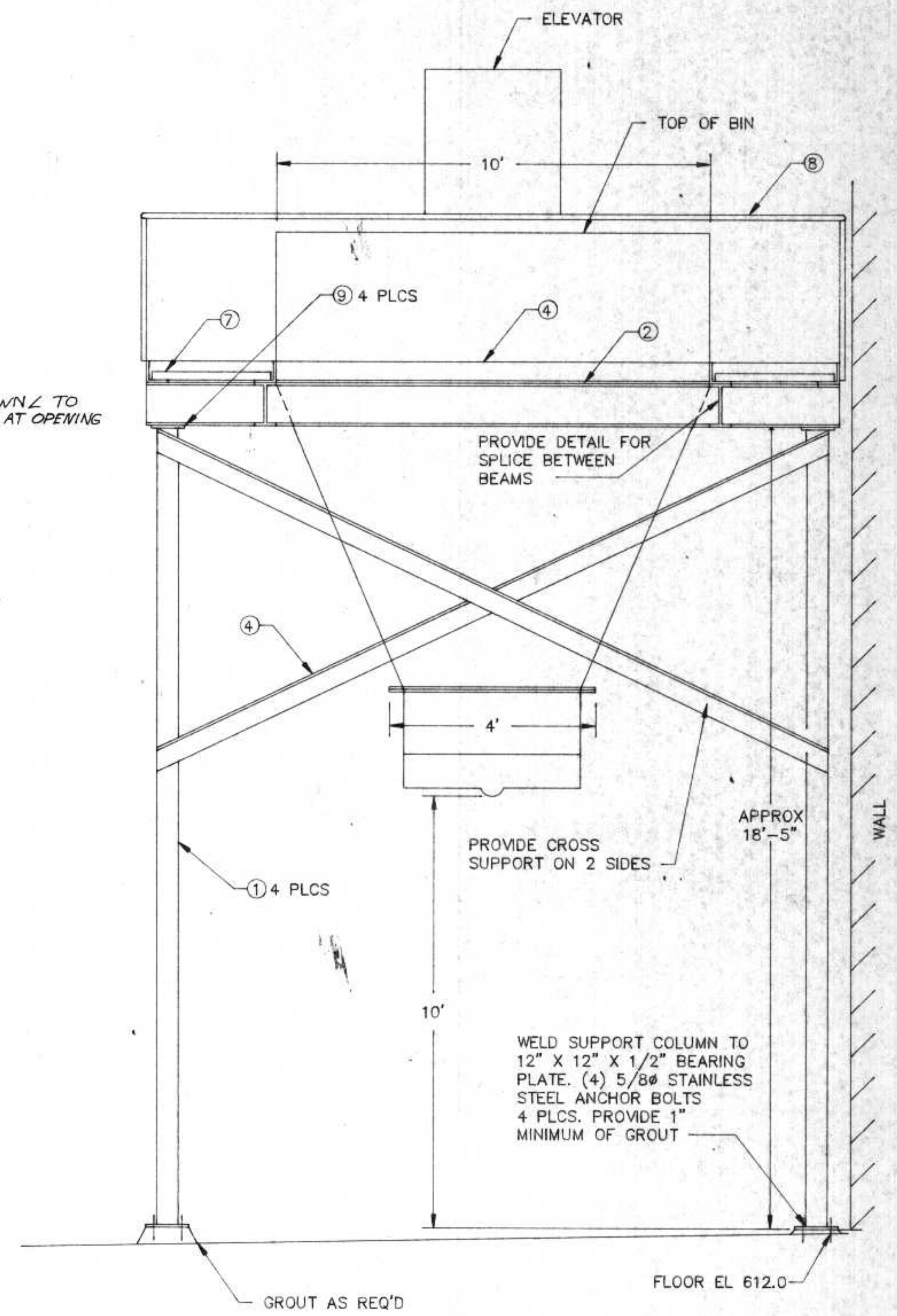
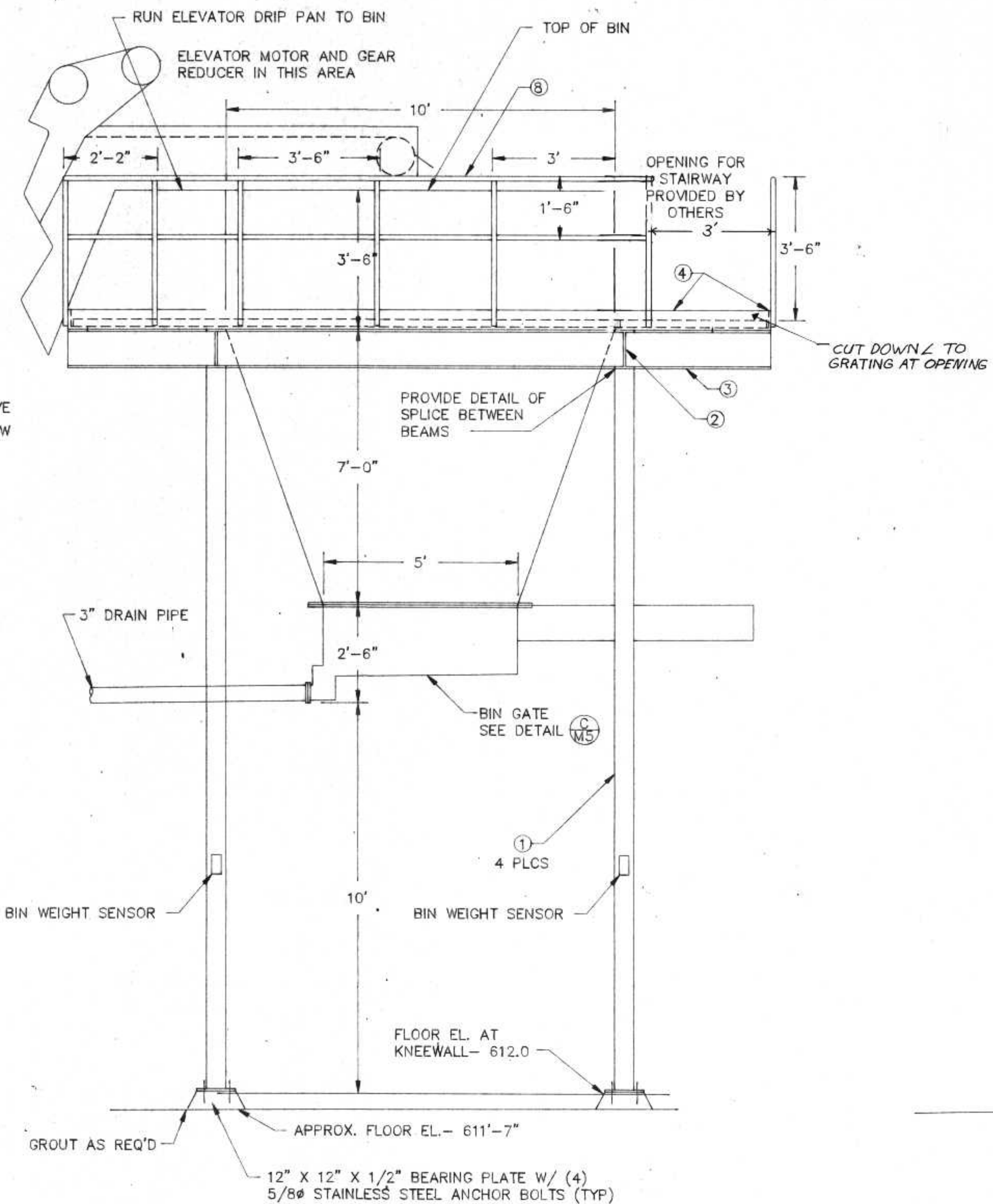
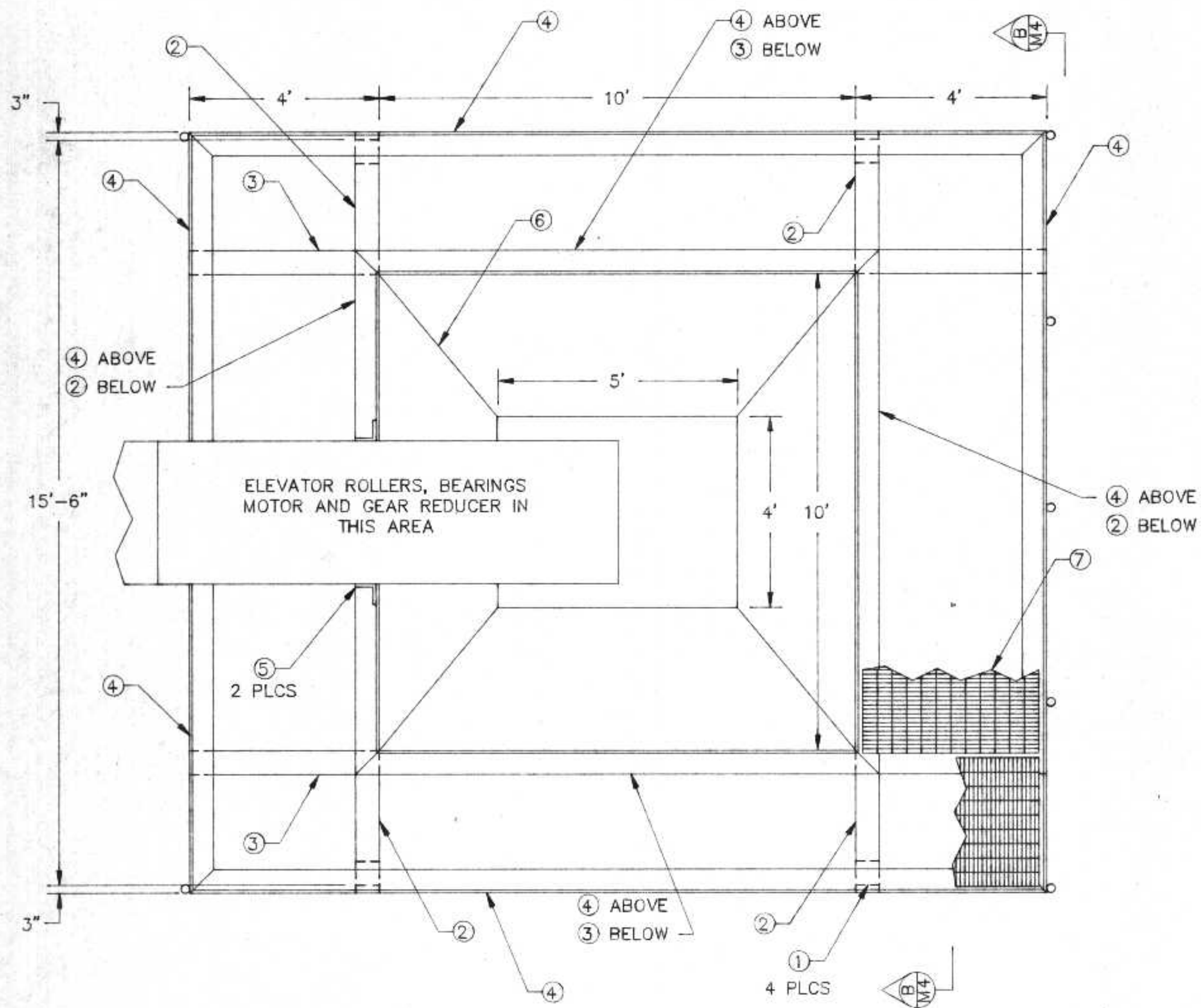
SECTION A-A
DEWATERING BUILDING
SCALE 1/4"=1'



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

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME, OR UNDER MY DIRECT SUPERVISION, AND I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.
Richard Anthony
DATE: 6/24/91 REG. NO.: 25488

REVISIONS			DEWATERING BUILDING MECHANICAL SECTIONS	
NO.	BY	DATE	SCALE	JOB NO.
1	RUA	8/22/91		
2	RUA	9/22/91		
DESIGNED BY	RUA		RMA ENGINEERING COMPANY CONSULTING ENGINEERS	
DRAWN BY	GB			
CHECKED BY				
APPROVED BY				
CITY OF SUPERIOR, WISCONSIN WASTE WATER TREATMENT PLANT SLUDGE DEWATERING/HANDLING FACILITIES			DATE	
			SHEET	M-2



STRUCTURAL SCHEDULE

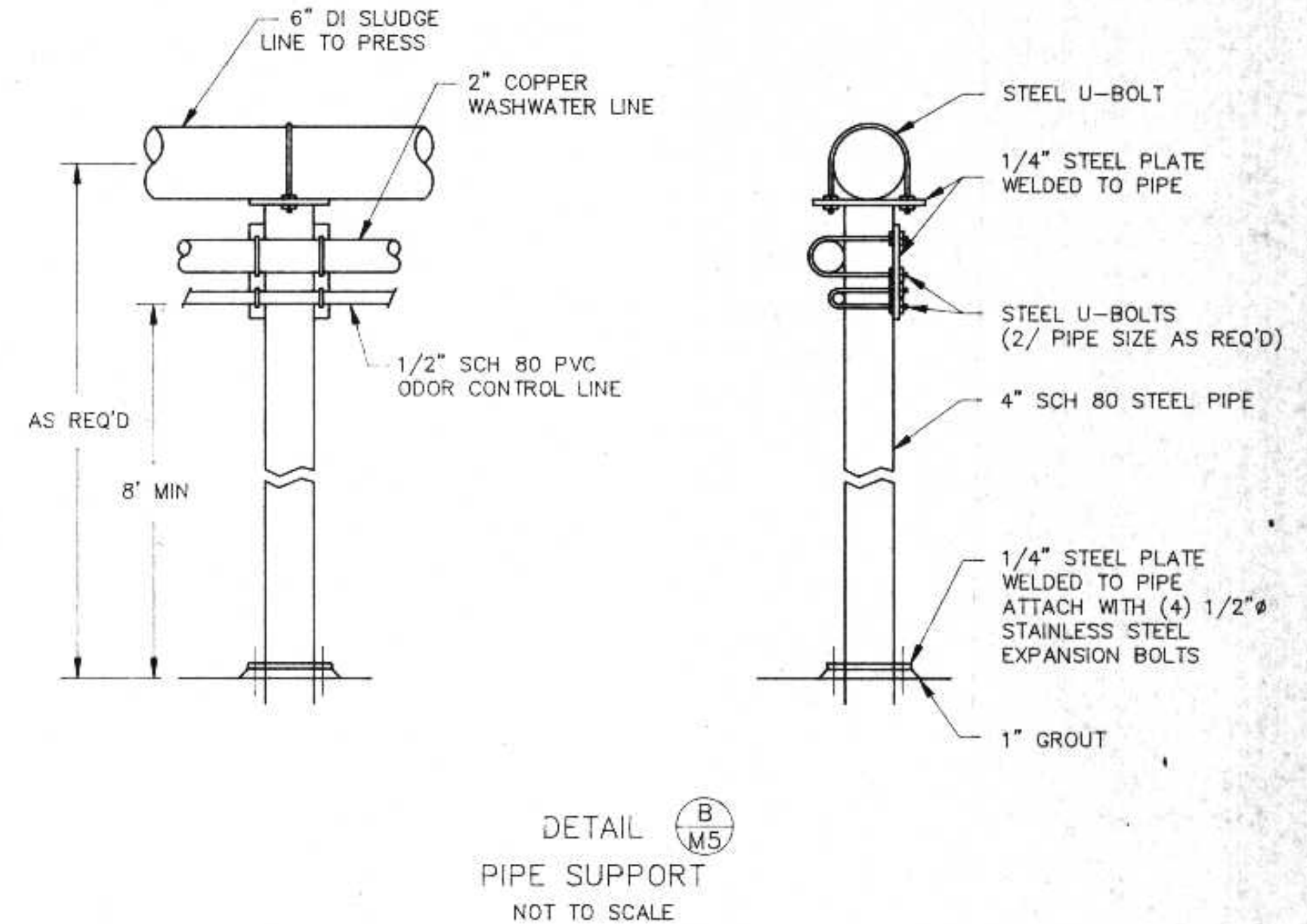
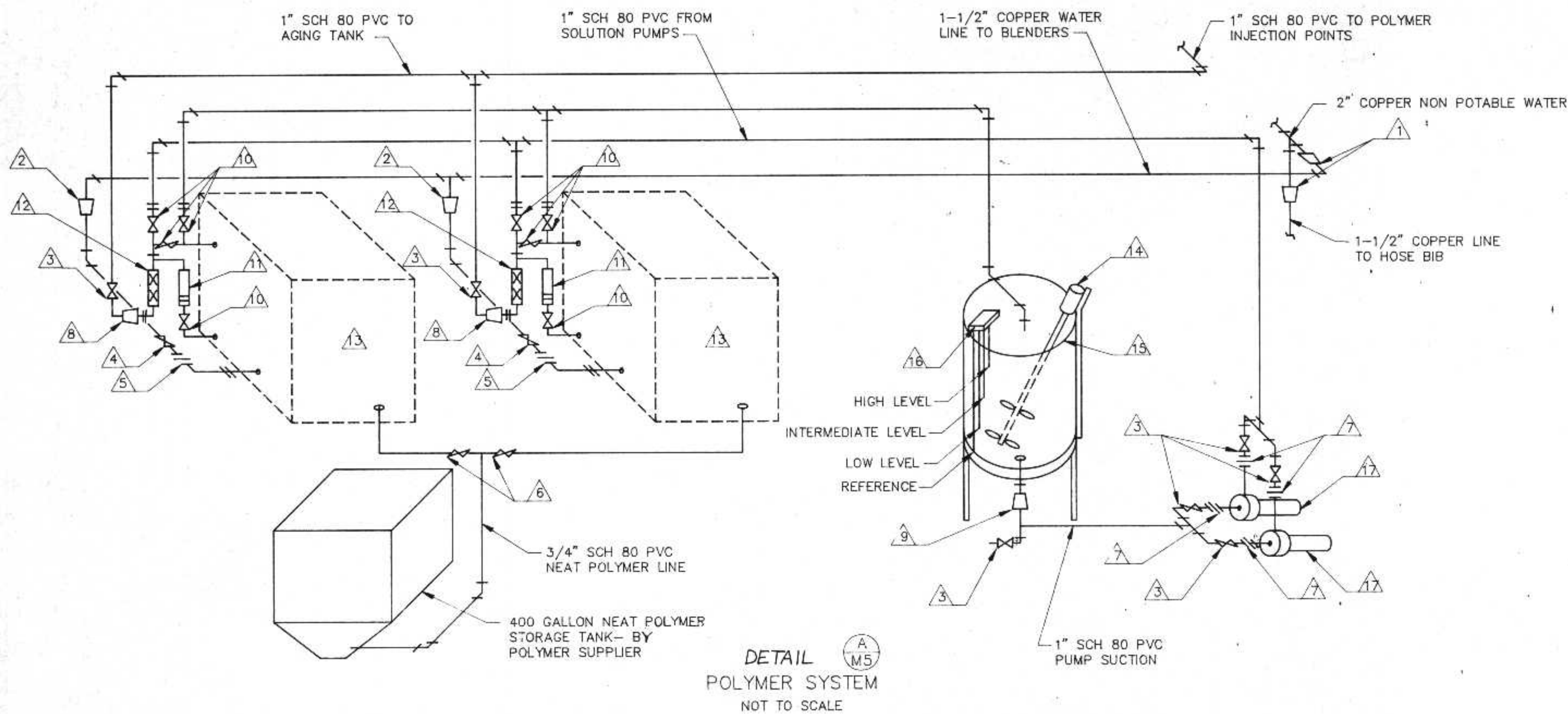
- ① COLUMN, W6x15 OR EQUIVALENT, MOUNT WEIGHT SENSORS (2) COLUMNS
- ② WIDE FLANGE STRUCTURAL BEAM, W12x26 OR EQUIVALENT
- ③ WIDE FLANGE STRUCTURAL BEAM, W12x16 OR EQUIVALENT
- ④ STRUCTURAL ANGLE 6"x6"x3/8" OR EQUIVALENT
- ⑤ 4" STRUCTURAL ANGLE
- ⑥ 1/4" STEEL PLATE- SEE SPECIFICATIONS FOR COATING
- ⑦ GRATING- HOT DIP GALVANIZED STEEL OR ALUMINUM DESIGN FOR 200 LBS/SQ FT
- ⑧ 1" STEEL OR 1-1/2" ALUMINUM RAILING
- ⑨ 6"x6"x1/2" PLATE- BOLT TO BEAM

- NOTES:
1. MAX BIN LOAD EXCLUDING STRUCTURAL COMPONENTS- 50,000 POUNDS
 2. BIN SUPPLIER TO PROVIDE SHOP DRAWINGS SHOWING ALL STRUCTURAL SHAPES, COMPONENTS AND COATINGS
 3. THIS PLAN IS DIAGRAMATIC AND IS NOT INTENDED FOR FABRICATION SUPPLIER MAY MODIFY STRUCTURAL COMPONENTS FOR APPROVAL BY ENGINEER AS LONG AS STRUCTURAL AND PROJECT REQUIREMENTS ARE MET PROVIDE DETAILS OF SPLICES BETWEEN WIDE FLANGE STRUCTURAL BEAMS
 4. STRUCTURAL STEEL AND GRATING SHALL BE HOT DIP GALVANIZED
 5. SEE SPECIFICATIONS FOR INTERIOR AND EXTERIOR COATINGS FOR BIN

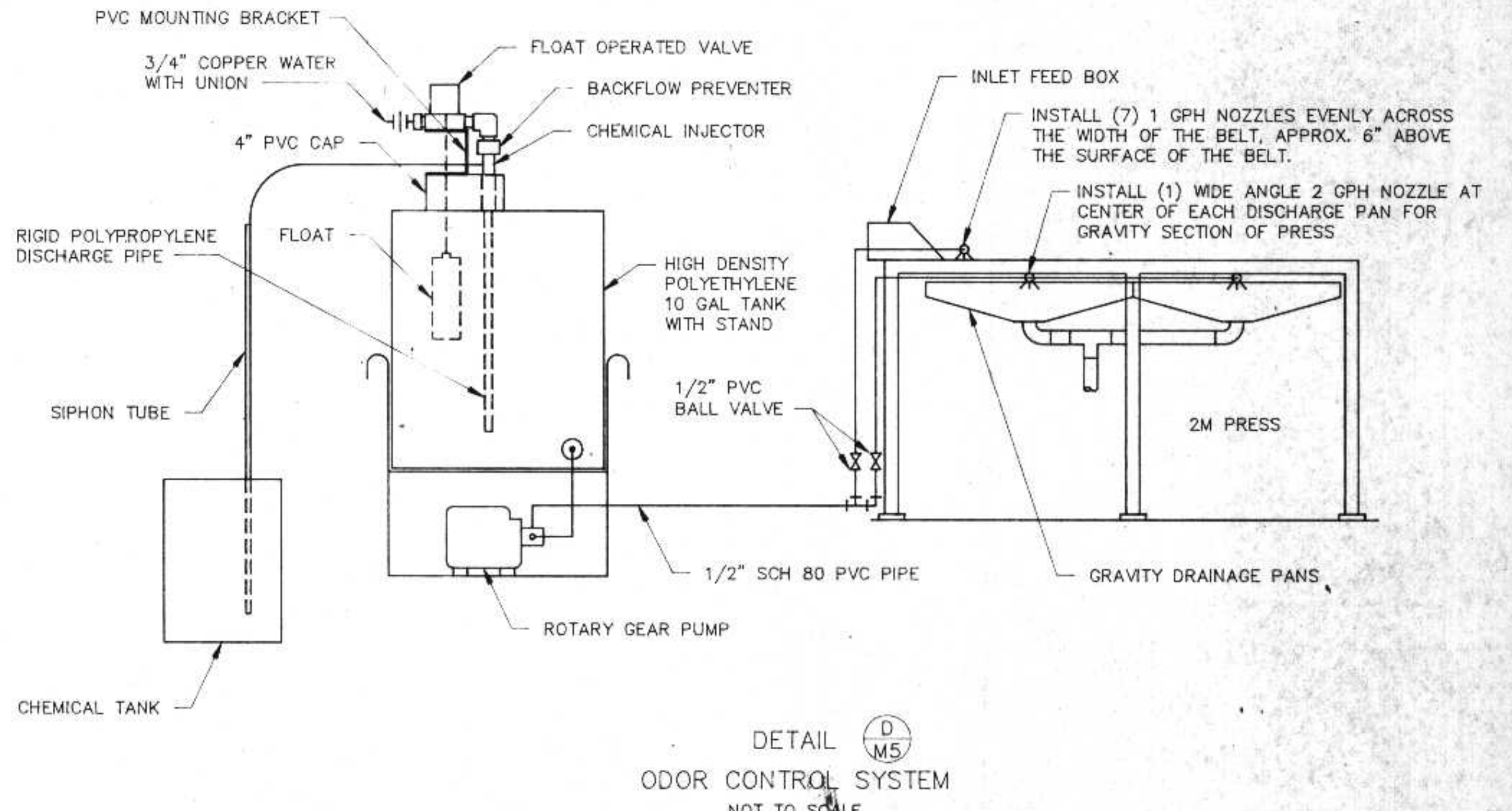
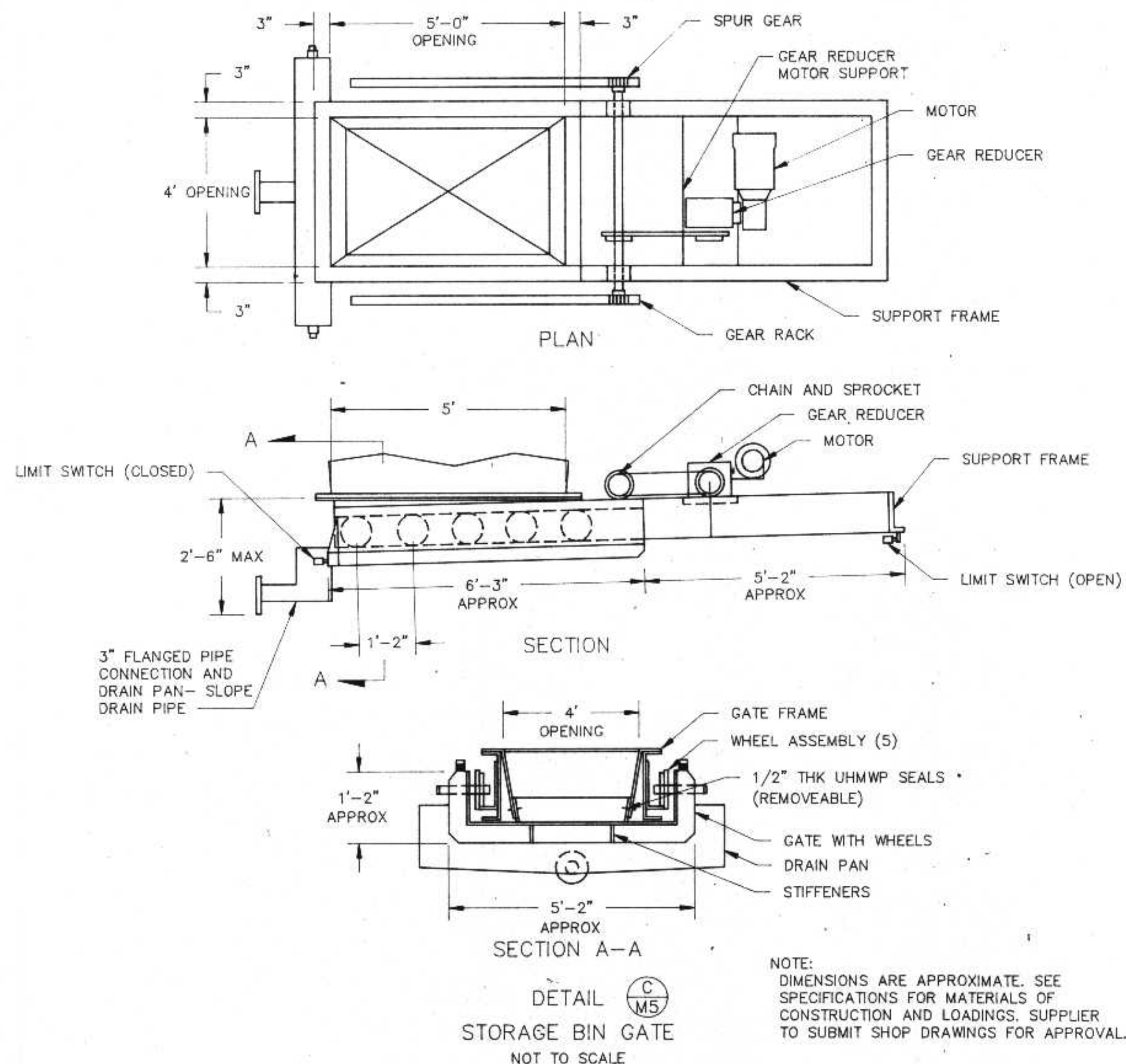
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME, OR UNDER MY DIRECT SUPERVISION, AND I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.
Richard Anthony
 DATE: 6/24/91 REG. NO.: 25488

REVISIONS			SLUDGE CAKE STORAGE BIN	
NO.	BY	DATE		
1	RMG	8/22/91		

CITY OF SUPERIOR, WISCONSIN WASTE WATER TREATMENT PLANT SLUDGE DEWATERING/HANDLING FACILITIES			SCALE: 1/2"=1'	JOB NO.
DESIGNED BY: <i>RMG</i>	RMA ENGINEERING COMPANY		DATE	
DRAWN BY: <i>GB</i>	CONSULTING ENGINEERS			
CHECKED BY:				
APPROVED BY:				SHEET M-4



POLYMER SYSTEM SCHEDULE		
ITEM	DESCRIPTION	FURNISHED BY
1	2" X 1-1/2" COPPER REDUCER	CONTRACTOR
2	1-1/2" X 1" COPPER REDUCER	CONTRACTOR
3	1" PVC BALL VALVE	CONTRACTOR
4	1" BRONZE GLOBE VALVE	CONTRACTOR
5	1" UNION	CONTRACTOR
6	3/4" PVC BALL VALVE	CONTRACTOR
7	1" DISCONNECT	CONTRACTOR
8	1-1/4" X 1" PVC REDUCER	CONTRACTOR
9	1" X 3/4" PVC REDUCER	CONTRACTOR
10	PVC VALVES	SYSTEM SUPPLIER
11	DILUTION WATER ROTOMETER	SYSTEM SUPPLIER
12	STATIC MIXER	SYSTEM SUPPLIER
13	BLENDER UNIT	SYSTEM SUPPLIER
14	SOLUTION TANK MIXER	SYSTEM SUPPLIER
15	200 GALLON TANK AND STAND	SYSTEM SUPPLIER
16	4-PROBE TANK LEVEL CONTROL	SYSTEM SUPPLIER
17	POLYMER SOLUTION PUMP	SYSTEM SUPPLIER



NOTES:
 1. ITEM 13 INCLUDES PRESSURE GAUGES, MIXING WATER ROTOMETER, NEAT POLYMER PUMP, SOLENOID SWITCH AND MIXING TANK.
 2. // DESIGNATES CONNECTIONS BETWEEN PIPING BY CONTRACTOR AND BLENDING EQUIPMENT BY SYSTEM SUPPLIER.
 3. MOUNTING PLATFORM BY SYSTEM SUPPLIER - TO BE BOLTED TO WALL.

NOTE: DIMENSIONS ARE APPROXIMATE. SEE SPECIFICATIONS FOR MATERIALS OF CONSTRUCTION AND LOADINGS. SUPPLIER TO SUBMIT SHOP DRAWINGS FOR APPROVAL.

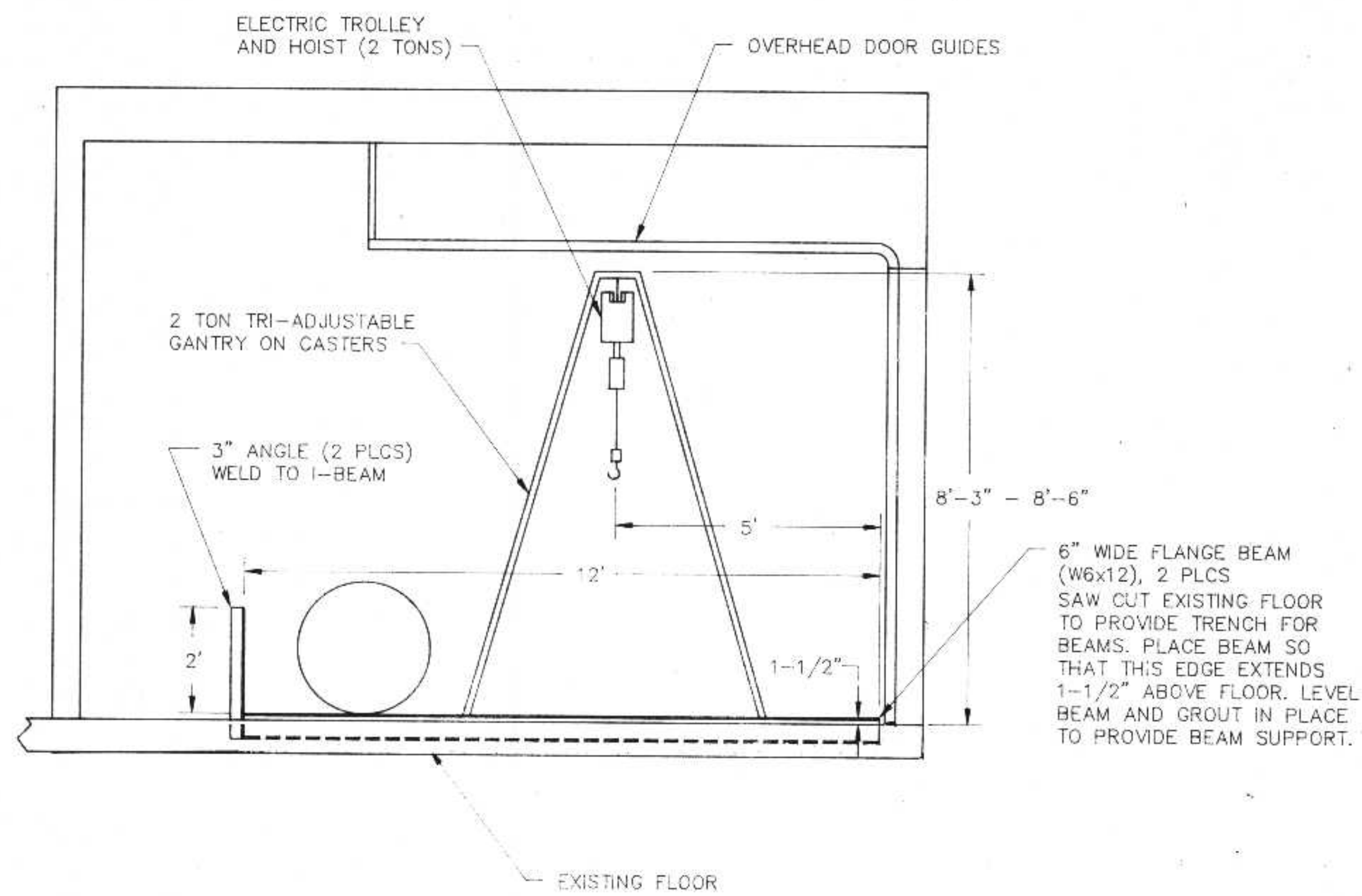
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME, OR UNDER MY DIRECT SUPERVISION, AND I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.
Richard Anthony
 DATE: 6/24/91 REG. NO.: 25488

REVISIONS		
NO.	BY	DATE
1	Rua	8/22/91
2	Rua	7/21/92

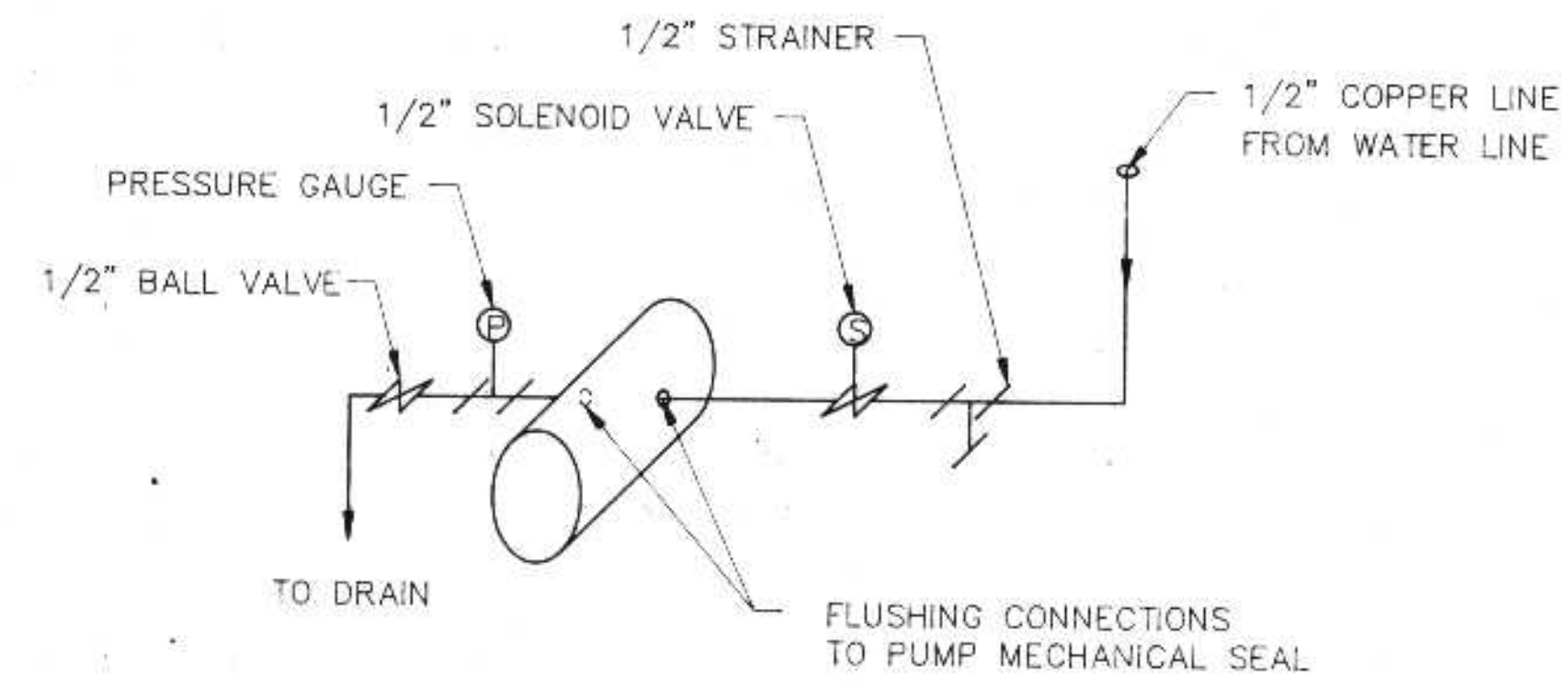
MECHANICAL DETAILS

**CITY OF SUPERIOR, WISCONSIN
 WASTE WATER TREATMENT PLANT
 SLUDGE DEWATERING/HANDLING
 FACILITIES**

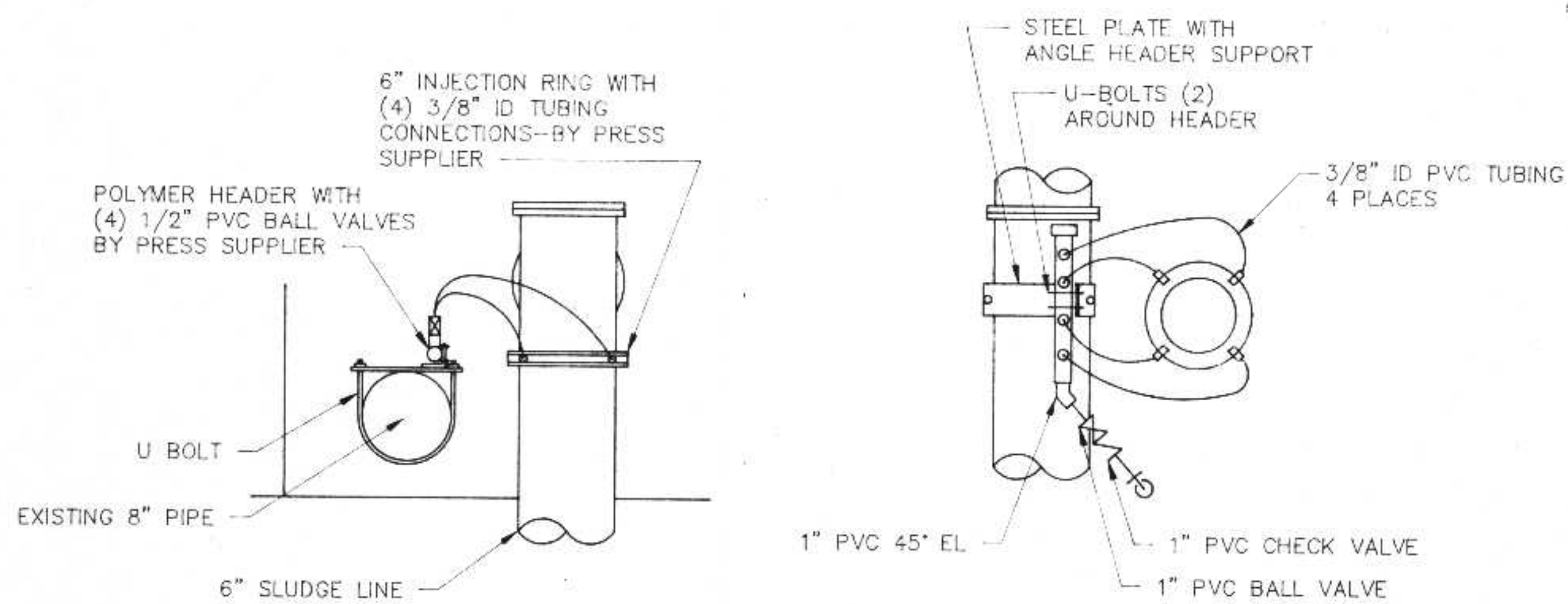
DESIGNED BY: <i>Rua</i>	SCALE: NTS	JOB NO.:
DRAWN BY: <i>GB</i>	RMA ENGINEERING COMPANY	
CHECKED BY:	CONSULTING ENGINEERS	
APPROVED BY:	DATE:	SHEET: M-5



DETAIL (E)
TON CONTAINERS RAILS AND HOIST
SCALE: 1/2"=1'



DETAIL (F)
SLUDGE PUMP FLUSHING
WATER CONNECTION



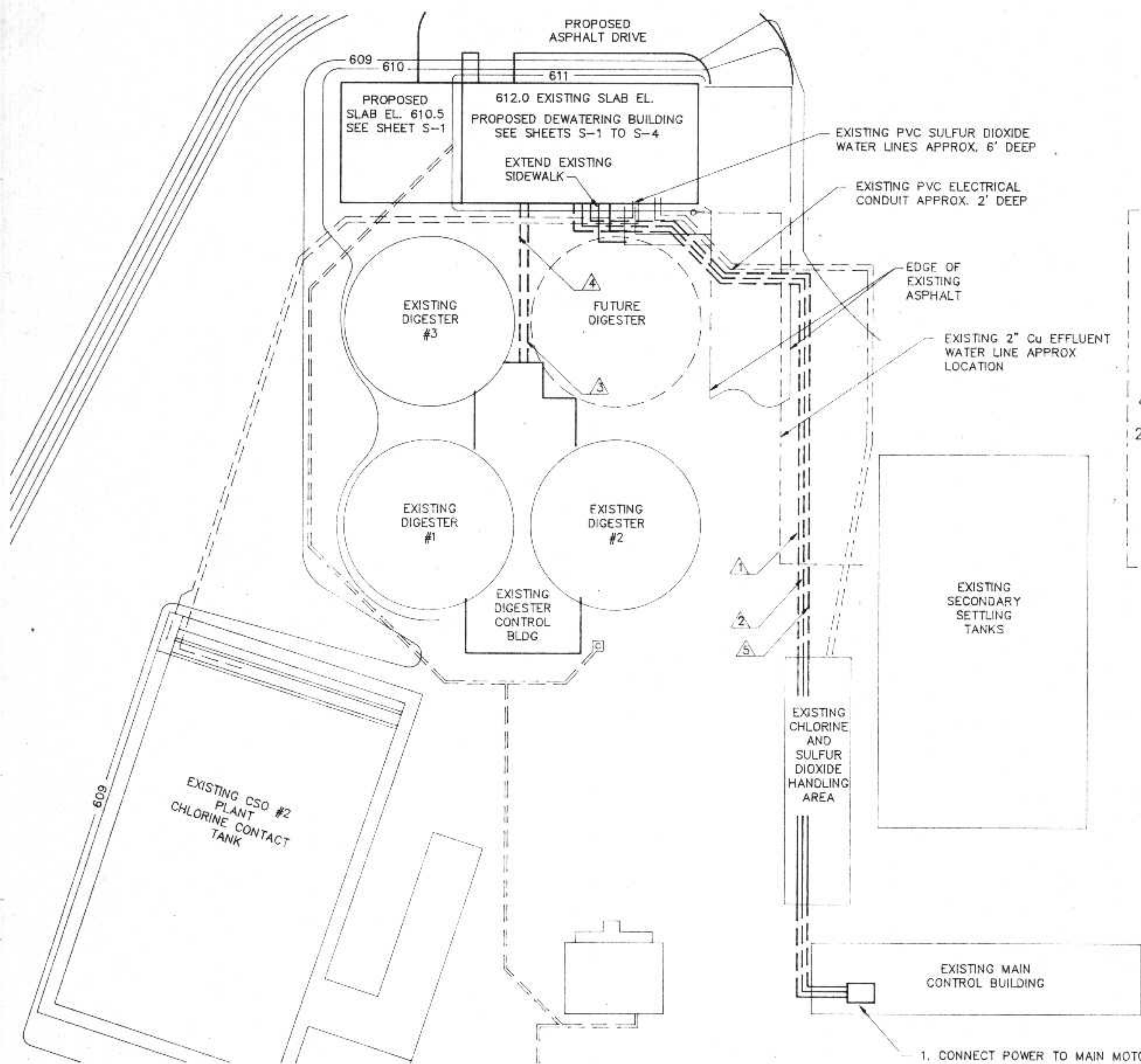
SECTION

PLAN

DETAIL (G)
POLYMER INJECTION IN
DIGESTER CONTROL BUILDING

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME, OR UNDER MY DIRECT SUPERVISION, AND I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.
Richard Anthony
DATE: 6/24/91 REG. NO.: 25488

REVISIONS			MECHANICAL DETAILS	
NO.	BY	DATE		
1	RMA	8/22/91	CITY OF SUPERIOR, WISCONSIN WASTE WATER TREATMENT PLANT SLUDGE DEWATERING/HANDLING FACILITIES	
2	RMA	9/18/92		
DESIGNED BY RMA			SCALE	NTS
DRAWN BY GB			RMA ENGINEERING COMPANY	
CHECKED BY			CONSULTING ENGINEERS	
APPROVED BY			SHEET	M-6



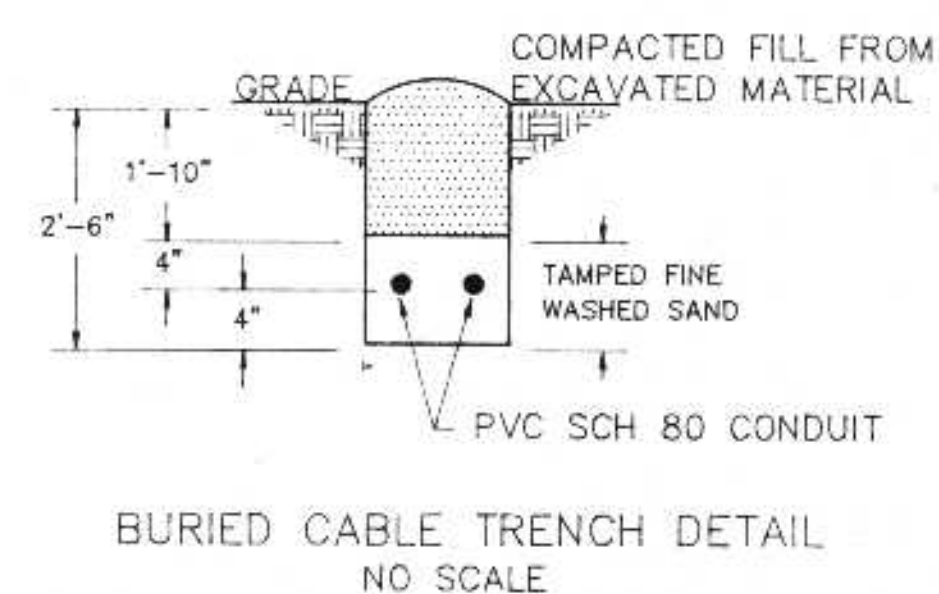
ELECTRICAL SITE PLAN
SCALE: 1"=30'

- CONNECT POWER TO MAIN MOTOR CONTROL CENTER USING 225A FUSED DISCONNECT
- CONNECT ALARM CIRCUITS TO ALARM PANEL. HORN TO ACTIVATED UPON ALARM
- INSTALL THREE ALARM LIGHTS (RED) WITH PUSH-TO-TEST PUSHBUTTON ALARM LIGHTS FOR THE FOLLOWING CONDITIONS:
-EMERGENCY STOP
-CATEGORY ONE ALARM
-CATEGORY TWO ALARM

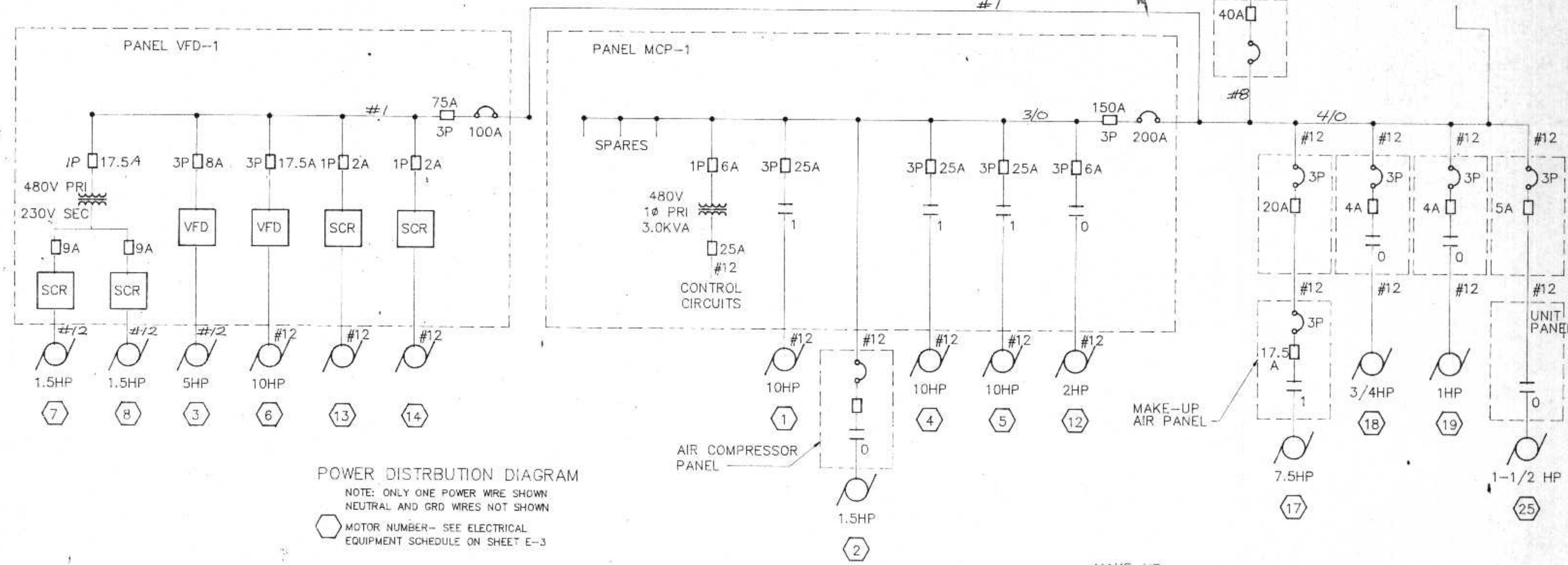
UNDERGROUND FEEDER SCHEDULE		
SYMBOL	CONDUCTORS	PVC 80
▲	(3) #4/0 AND (1) #2 GRD	2-1/2"
▲	(10) #12	1-1/2"
▲	(2) #20 AWG AND (2) #14 AWG SHIELDED PAIRS	1"
▲	(2) #12 AND (1) #12 GRD	2"
▲	(25) PAIR SHIELDED PHONE CABLE (2) SHIELDED, (2) NON-SHIELDED SPEAKER CABLE	1-1/2"

ELECTRICAL NOTES

- PROVIDE RIGID GALVANIZED CONDUIT SLEEVE WHEN PASSING UNDER ROADWAY AS SHOWN
- SEE SHEET E-3 FOR ELECTRICAL EQUIPMENT SCHEDULE
- RUN CONDUIT THROUGH TON CONTAINER STORAGE BUILDING- USE METAL CONDUIT ABOVE GROUND
- FOR RISER DIAGRAM- WIRE MAY BE RUN IN CONDUIT CONNECTING PANELS OR IN WIREWAY
- INSTEAD OF COMBINATION STARTERS FOR MOTORS 17, 18 AND 19, MAGNETIC STARTERS AND FUSES CAN BE PROVIDED BY THE HEATING/VENTILATION SYSTEM SUPPLIER AS PART OF PANEL HV

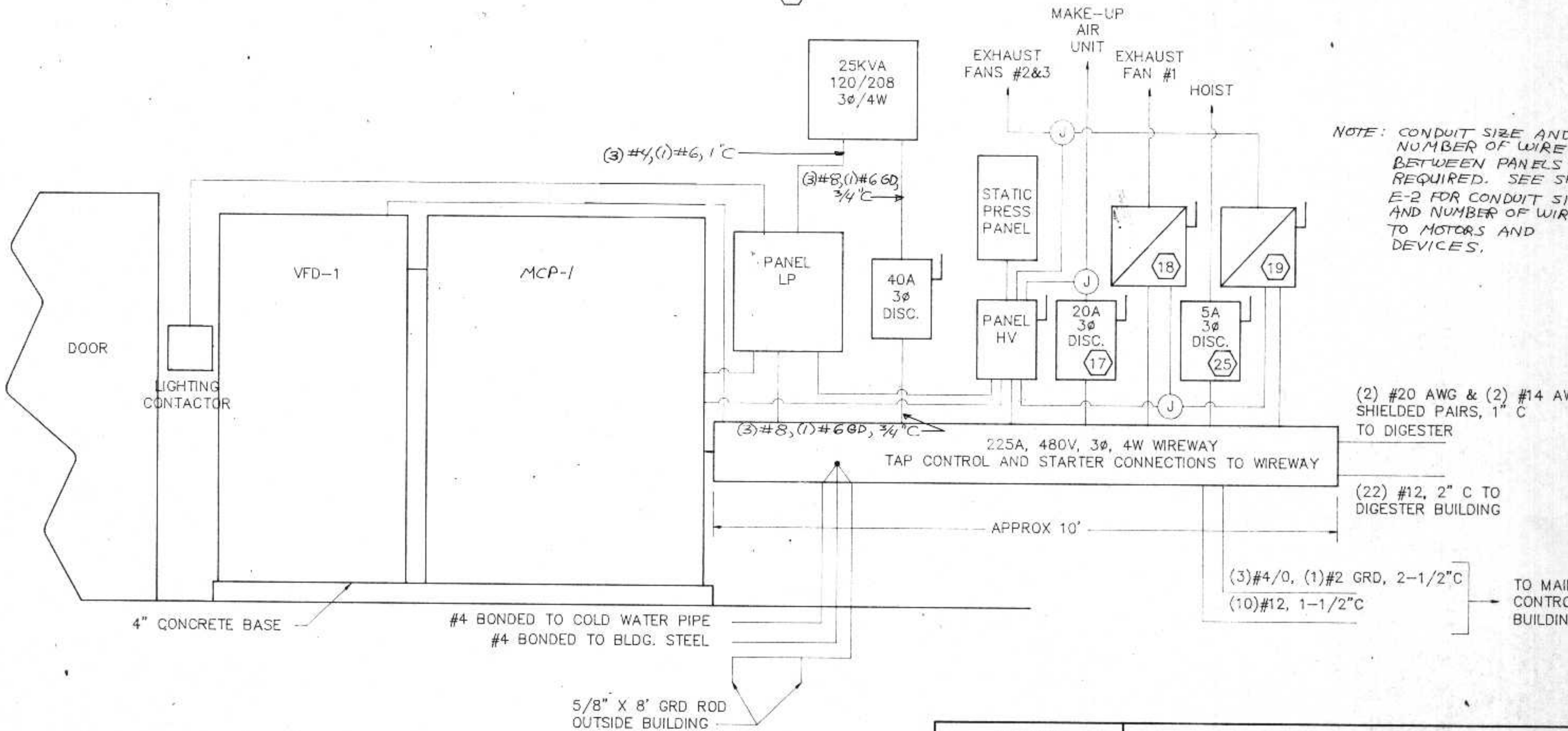


BURIED CABLE TRENCH DETAIL
NO SCALE



POWER DISTRIBUTION DIAGRAM
NOTE: ONLY ONE POWER WIRE SHOWN
NEUTRAL AND GRD WIRES NOT SHOWN
MOTOR NUMBER- SEE ELECTRICAL EQUIPMENT SCHEDULE ON SHEET E-3

NOTE:
PANEL LP PROVIDES 120 VOLT POWER FOR LIGHTS, ODOR CONTROL SYSTEM, ODOR BLENDERS #1 & #2, POLYMER TANK MIXER, IR HEATER, MAG METER AND EXHAUST FAN #3.



DEWATERING BUILDING POWER RISER DIAGRAM
NO SCALE

NOTE: CONDUIT SIZE AND NUMBER OF WIRES BETWEEN PANELS AS REQUIRED. SEE SHEET E-2 FOR CONDUIT SIZE AND NUMBER OF WIRES TO MOTORS AND DEVICES.

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME, OR UNDER MY DIRECT SUPERVISION, AND I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.
Richard C. Cichon
DATE: 6/24/91 REG. NO.: 25488

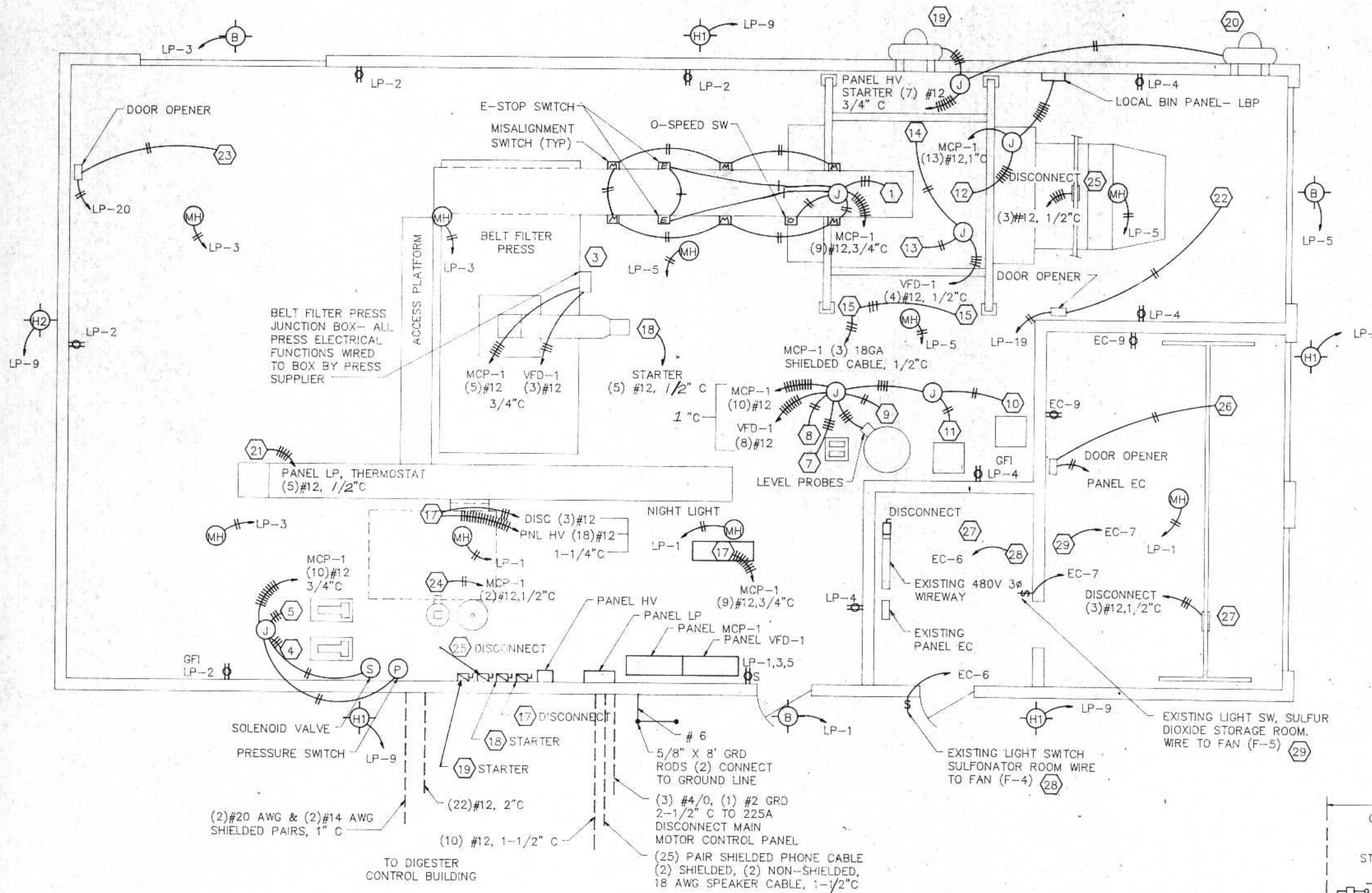
REVISIONS		
NO.	BY	DATE
1	RMA	8/22/91
2	RMA	9/21/91

ELECTRICAL SITE PLAN AND POWER DISTRIBUTION
CITY OF SUPERIOR, WISCONSIN
WASTE WATER TREATMENT PLANT
SLUDGE DEWATERING/HANDLING FACILITIES

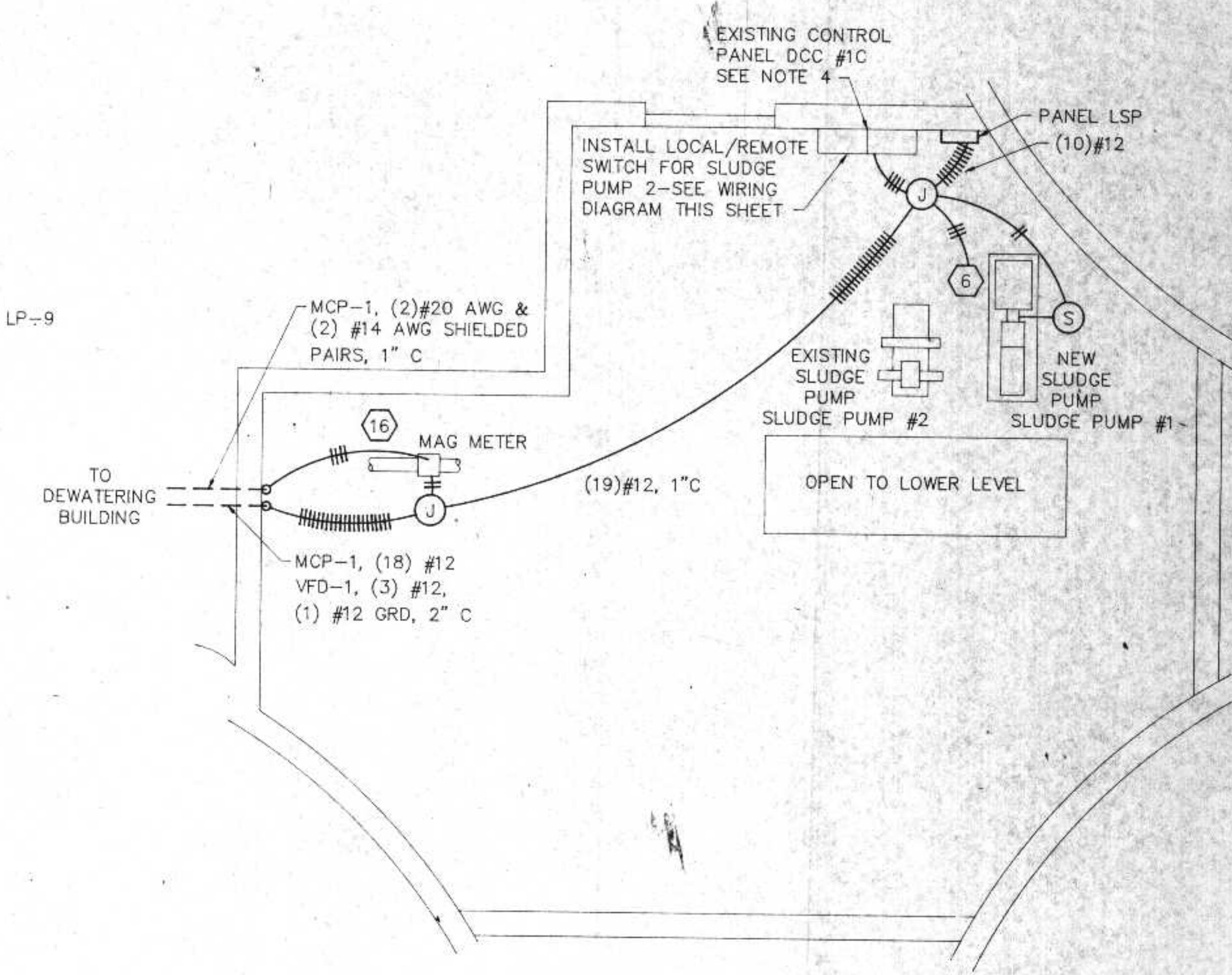
DESIGNED BY RMA
DRAWN BY GB
CHECKED BY
APPROVED BY

RMA ENGINEERING COMPANY
CONSULTING ENGINEERS

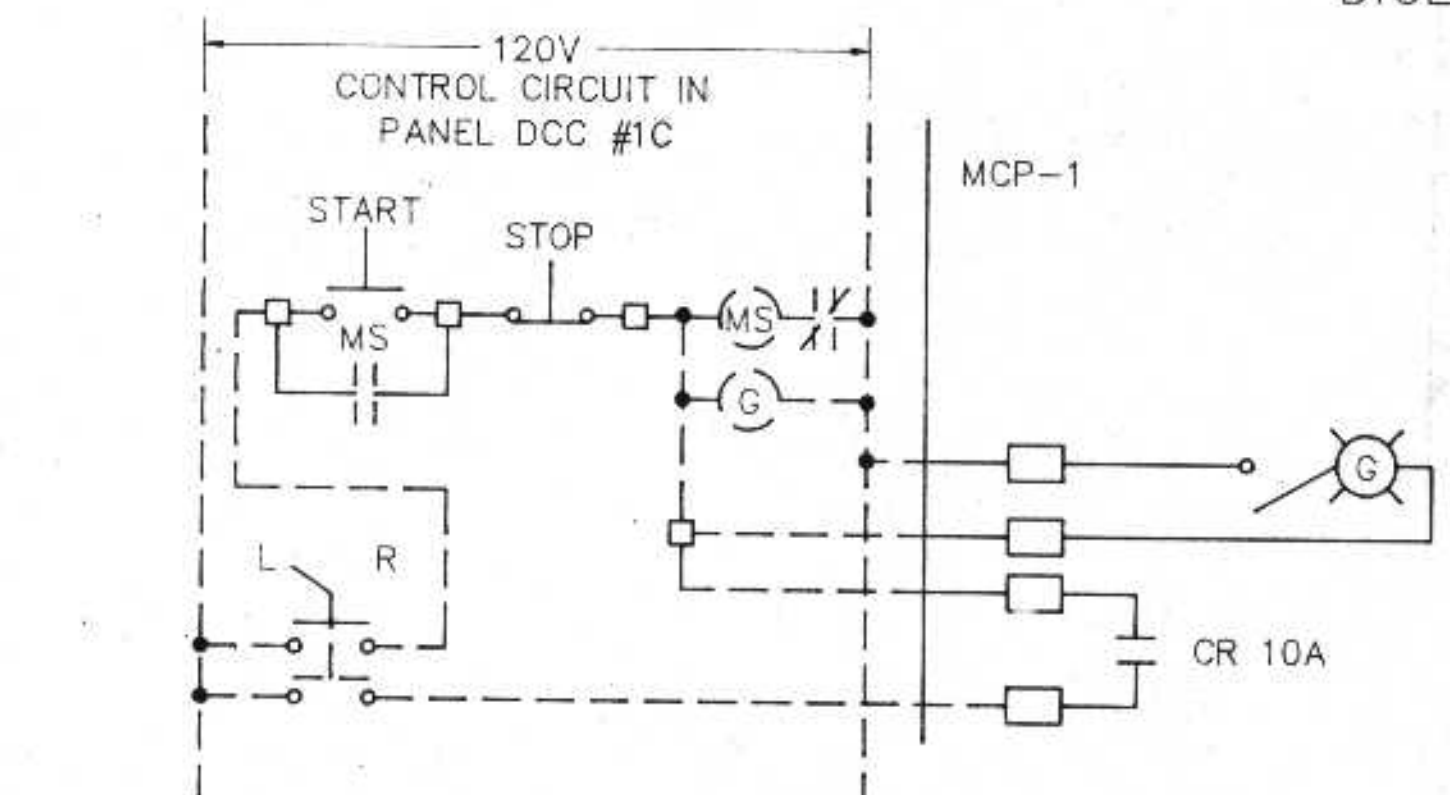
SCALE 1"=30'
DATE
JOB NO.
SHEET E-1



DEWATERING BUILDING
ELECTRICAL PLAN
SCALE: 1/4"=1'



DIGESTER CONTROL BUILDING
ELECTRICAL PLAN
SCALE: 1/4"=1'



SLUDGE PUMP-2
WIRING DIAGRAM FOR PANEL DCC #1C

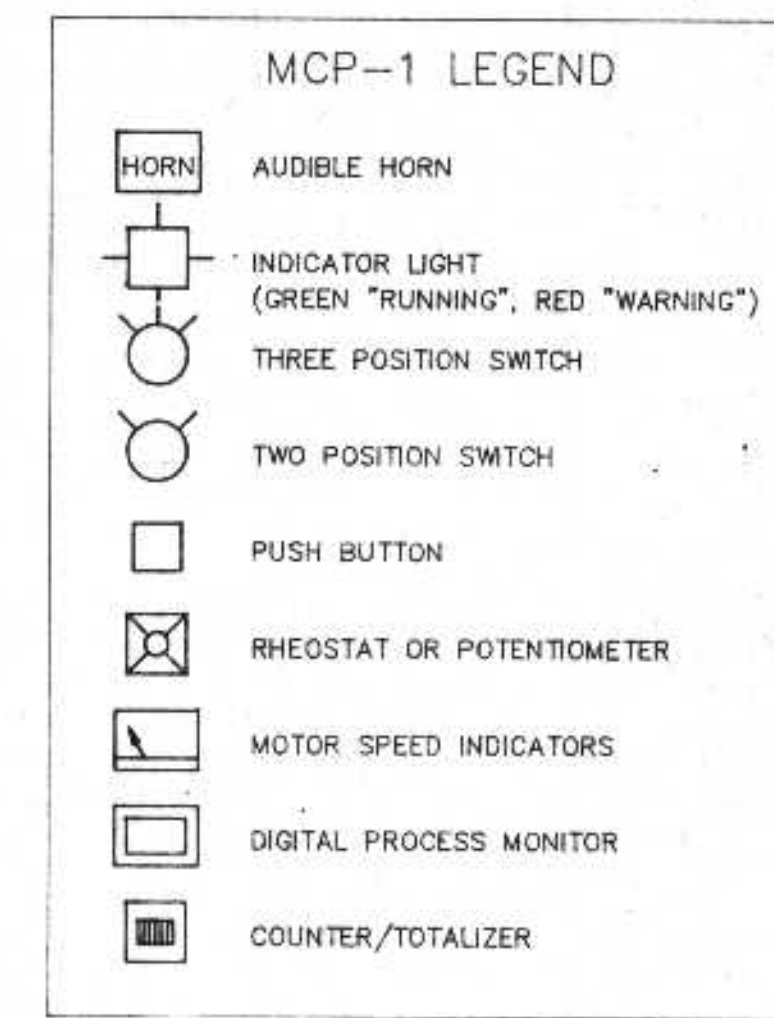
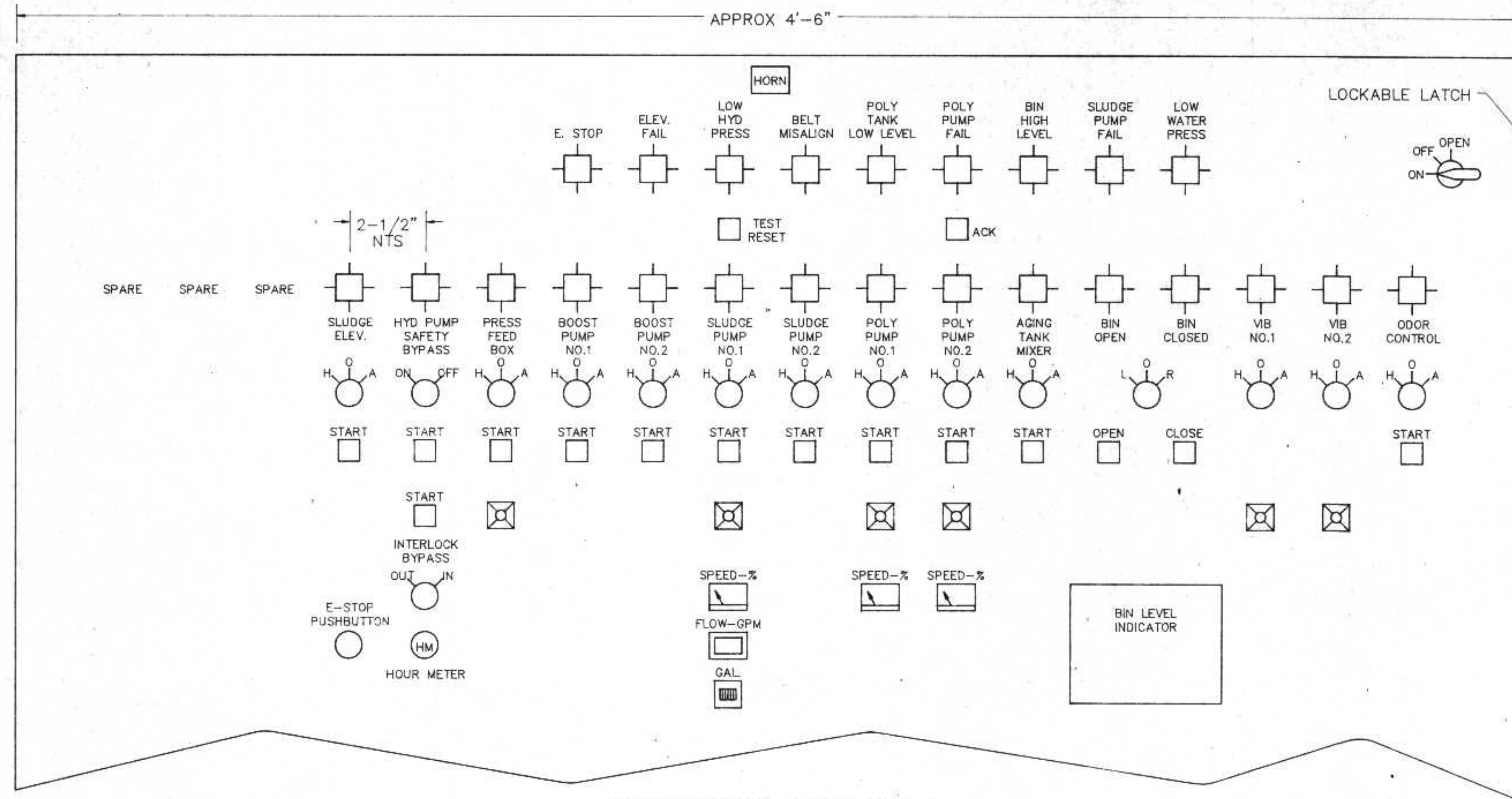
NOTE:
START AND STOP SWITCHES ARE
LOCATED AT SLUDGE PUMP #2

- ELECTRICAL NOTES**
1. USE SCHEDULE 80 PVC CONDUIT FOR BURIED CABLES USE GALVANIZED METAL RIGID CONDUIT INSIDE BUILDING
 2. SEE SHEET E-3 FOR ELECTRICAL EQUIPMENT SCHEDULE
 3. SEE SHEET E-3 FOR PROPOSED LAYOUT FOR MCP-1
 4. EXISTING SLUDGE PUMP RELAY IN PANEL DCC #1C TO BE OPERATED FROM RELAY DRY CONTACT IN MCP-1
 5. PANEL LSP TO PROVIDE LOCAL CONTROL OF NEW SLUDGE PUMP. PANEL TO CONTAIN START PUSH BUTTONS, HOA SWITCH, GREEN RUNNING LIGHT. SEE SPECIFICATIONS FOR TIE INTO MCP-1
 6. PROVIDE ONE GFI DUPLEX RECEPTACLE ON CIRCUITS LP-2 AND LP-4

LIGHTING SCHEDULE						
TYPE	MOUNTING	LAMPS	DIFFUSER	MANUFACTURERS CATALOG NO.	REMARKS	NUMBER
MH	ROOF SUPPORT	1-400W	—	HUBBELL HBS-400H8-OU	QUAD VOLTAGE METAL HALIDE	9
B	WALL	70W HPS	LEXAN	NORTH STAR WMW 059LS-12N-PE	120V OUTDOOR BRACKET WITH PHOTOCELL	3
H1	WALL	1-400W	—	HUBBELL PRP-400S-118	QUAD VOLTAGE HIGH PRESS SODIUM	4
H2	WALL	1-250W	—	HUBBELL PRP-250S-118	QUAD VOLTAGE HIGH PRESS SODIUM	1

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME, OR UNDER MY DIRECT SUPERVISION, AND I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.
Richard A. Anthony
DATE: 6/24/91 REG. NO.: 25488

REVISIONS			ELECTRICAL PLAN				
NO.	BY	DATE					
1	PMA	8/22/91					
2	Rua	9/21/92					
			CITY OF SUPERIOR, WISCONSIN WASTE WATER TREATMENT PLANT SLUDGE DEWATERING/HANDLING FACILITIES				
DESIGNED BY	Rua		RMA ENGINEERING COMPANY CONSULTING ENGINEERS	SCALE	1/4"=1'	JOB NO.	
DRAWN BY	GB			DATE			
CHECKED BY							
APPROVED BY							



PANEL SCHEDULE						
PANEL	ENCLOSURE	VOLT	AMP	PHASE	FURNISHED BY	MANUFACTURERS DESIGNATION
MCP-1	NEMA 4	480	200	3	ELECT	
VFD-1	NEMA 1	480	40	3	ELECT	
HV	NEMA 2	120	---	1	BUILDING	
LSP	NEMA 2	120	---	1	ELECT	
LBP	NEMA 2	120	---	1	ELECT	
LP	NEMA 2	208/120	90	3	ELECT	CUTLER HAMMER PB4ML125

ELECTRICAL EQUIPMENT SCHEDULE																	
NO.	DESCRIPTION	LOCATION	HP/KW	VOLT	PH	TYPE	SIZE	FURNISHED	STARTER		CONTROL PANEL		POWER PANEL		WIRE	COND	REMARKS
									PANEL	PANEL	SWITCH	FURNISHED	PANEL	FURNISHED			
1	SLUDGE ELEVATOR DR #1	DEWATERING BLDG	10 HP	480	3	MAG	1	ELECT	MCP-1	MCP-1	HOA	ELECT	MCP-1	ELECT	12		
2	AIR COMPRESSOR	DEWATERING BLDG	1.5 HP	480	3	MAG	0	PRESS	MCP-1	MCP-1	HOA	ELECT	AIR	PRESS	12		
3	PRESS DRIVE	DEWATERING BLDG	5 HP	480	3	VFD	-	PRESS	VFD-1	MCP-1	HOA	ELECT	VFD-1	ELECT	12		
4	WASHWATER PUMP #1	DEWATERING BLDG	10 HP	480	3	MAG	1	ELECT	MCP-1	MCP-1	HOA	ELECT	MCP-1	ELECT	12		
5	WASHWATER PUMP #2	DEWATERING BLDG	10 HP	480	3	MAG	1	ELECT	MCP-1	MCP-1	HOA	ELECT	MCP-1	ELECT	12		
6	SLUDGE PUMP	DEWATERING BLDG	10 HP	480	3	VFD	-	ELECT	VFD-1	MCP-1	HOA	ELECT	VFD-1	ELECT	12		
7	POLYMER SOLUTION PUMP #1	DEWATERING BLDG	1-1/2 HP	230	1	SCR	-	PRESS	VFD-1	MCP-1	HOA	ELECT	VFD-1	ELECT	12		
8	POLYMER SOLUTION PUMP #2	DEWATERING BLDG	1-1/2 HP	230	1	SCR	-	PRESS	VFD-1	MCP-1	HOA	ELECT	VFD-1	ELECT	12		
9	AGING TANK MIXER	DEWATERING BLDG	1/3 HP	120	1	MAN	-	UNIT	UNIT	MCP-1	HOA	ELECT	LP-6	ELECT	12		
10	POLYMER BLENDER #1	DEWATERING BLDG	---	120	1	MAN	-	UNIT	UNIT	UNIT	PRESS	LP-7	ELECT	12			
11	POLYMER BLENDER #2	DEWATERING BLDG	---	120	1	MAN	-	UNIT	UNIT	UNIT	PRESS	LP-8	ELECT	12			
12	STORAGE BIN GATE	DEWATERING BLDG	2 HP	480	3	MAG	0	ELECT	MCP-1	MCP-1	PB	ELECT	MCP-1	ELECT	12		
13	STORAGE BIN VIBRATOR #1	DEWATERING BLDG	---	480	-	SCR	-	ELEVATOR	VFD-1	MCP-1	HOA	ELECT	MCP-1	ELECT	12		
14	STORAGE BIN VIBRATOR #2	DEWATERING BLDG	---	480	-	SCR	-	ELEVATOR	VFD-1	MCP-1	HOA	ELECT	MCP-1	ELECT	12		
15	STORAGE BIN LEVEL SENSOR	DEWATERING BLDG	---	120	-	---	-	UNIT	UNIT	CONVEYOR	MCP-1	ELECT	MCP-1	ELECT	12		
16	MAG METER	DIGESTER BLDG	---	120	-	---	-	UNIT	UNIT	MECH	LP-10	ELECT	12				
17	MAKE-UP AIR HEATER	DEWATERING BLDG	7.5 HP	480	3	COMB	1	BUILDING	UNIT	HV	UNIT	BUILDING	UNIT	BUILDING	12		DISCONNECT BY ELECT.
18	EXHAUST FAN #1	DEWATERING BLDG	3/4 HP	480	3	COMB	0	ELECT	UNIT	HOA	BUILDING	COMB	ELECT	12			
19	EXHAUST FAN #2	DEWATERING BLDG	1 HP	480	3	COMB	0	ELECT	COMB	HV	HOA	BUILDING	COMB	ELECT	12		
20	EXHAUST FAN #3	DEWATERING BLDG	1/3 HP	120	1	MAN	-	BUILDING	HV	O-A	BUILDING	LP-17	ELECT	12			
21	IR BURNER	DEWATERING BLDG	---	120	1	---	-	UNIT	UNIT	UNIT	BUILDING	LP-18	ELECT	12			
22	14' DOOR OPENER	DEWATERING BLDG	1/2 HP	120	1	MAN	-	UNIT	UNIT	UNIT	BUILDING	LP-19	ELECT	12			
23	12' DOOR OPENER	DEWATERING BLDG	1/2 HP	120	1	MAN	-	UNIT	UNIT	UNIT	BUILDING	LP-20	ELECT	12			
24	ODOR CONTROL SYSTEM	DEWATERING BLDG	---	120	1	---	-	UNIT	UNIT	MCP-1	MCP-1	MECH	LP-21	ELECT	12		
25	HOIST AND TROLLEY	DEWATERING BLDG	2 HP	480	3	MAG	0	BUILDING	UNIT	UNIT	UNIT	BUILDING	---	---	12		DISCONNECT BY ELECT
26	9' DOOR OPENER	SULFUR DIOXIDE RM	1/3 HP	120	1	MAN	-	UNIT	UNIT	UNIT	BUILDING	EC-13	EXISTING	12			
27	HOIST AND TROLLEY	SULFUR DIOXIDE RM	2 HP	480	3	MAG	0	BUILDING	UNIT	UNIT	UNIT	BUILDING	---	---	12		DISCONNECT BY ELECT
28	EXHAUST FAN #4	SULFONATOR ROOM	1/6 HP	120	1	MAN	-	BUILDING	UNIT	UNIT	UNIT	BUILDING	EC-6	EXISTING	12		WIRE TO LIGHT SWITCH
29	EXHAUST FAN #5	SULFUR DIOXIDE RM	1/3 HP	120	1	MAN	-	BUILDING	UNIT	UNIT	UNIT	BUILDING	EC-7	EXISTING	12		WIRE TO LIGHT SWITCH

- NOTES:
- RESPONSIBLE PARTIES:
 BID ITEM #1- BUILDING CONTRACTOR (BUILDING)
 * HEATING/VENTILATION SYSTEM SUPPLIER
 BID ITEM #2- BELT FILTER PRESS SUPPLIER (PRESS)
 * POLYMER SYSTEM SUPPLIER
 BID ITEM #3- SLUDGE ELEVATOR AND BIN SUPPLIER (ELEVATOR)
 BID ITEM #4- INSTALLATION/MECHANICAL CONTRACTOR (MECH)
 * ELECTRICAL SUBCONTRACTOR (ELECT)

* SUBCONTRACTOR OR SUBSUPPLIER

2. MCP-1 BELT FILTER PRESS CONTROLS MAY BE ALTERED DEPENDING ON PRESS SUPPLIED

REVISIONS			ELECTRICAL PANELS AND SCHEDULE	
NO.	BY	DATE		
1	Rwa	8/22/91		
2	Rwa	7/21/92		
			CITY OF SUPERIOR, WISCONSIN WASTE WATER TREATMENT PLANT SLUDGE DEWATERING/HANDLING FACILITIES	
DESIGNED BY	Rwa		SCALE	JOB NO.
DRAWN BY	GB			
CHECKED BY			RMA ENGINEERING COMPANY CONSULTING ENGINEERS	
APPROVED BY			DATE	SHEET E-3

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME, OR UNDER MY DIRECT SUPERVISION, AND I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.
 Richard Cuthbert
 DATE: 6/24/91 REG. NO.: 25488