



MEETING MINUTES – MANDATORY PREBID MEETING
2023 Rockwood WWTP CIP Project
City of Rockwood WWTP

Date: January 18, 2023

HRC Job No. 20220739.02

Time: 10:30 AM

Meeting Held: Rockwood City Hall, followed by Site Meeting at Rockwood WWTP

SEE ATTACHED Sign-in Sheet for Meeting Attendees

PURPOSE: Review the requirements and details for the Rockwood WWTP CIP project and answer general Contractor questions.

1. Introductions – City Staff and HRC staff were introduced:
 - a. John Laub – City of Rockwood City Manager and point of contact for all bid questions
 - b. Robert Boron – City of Rockwood DPW
 - c. Ken Witkowski – Operations Services (Rockwood WWTP contract operators)
 - d. Jesse VanDeCreek – HRC Partner in Charge
 - e. Aaron Uranga – HRC Project Manager
2. Sign in sheet – all attendees signed in, sheet is appended to minutes.
3. Project Summary – A brief summary of the project was provided by HRC with input from City of Rockwood and Operations Services staff. The project consists of five (5) sections of work to remove and replace existing components at the WWTP:
 - a. South Primary Clarifier – Two bid items
 - i. Primary collector drive chain and take up assembly replacement
 - ii. Primary helicoid drive chain and take up assembly
 - b. North and Middle Primary Clarifiers- Three bid items
 - i. North collector drive chain replacement
 - ii. Middle Collector drive chain replacement
 - iii. Common take up assembly serving both tanks replacement
 - c. Filter Pump Wetwell and Valves – 7 bid items
 - i. Replacement of 5 butterfly valves
 - ii. Replacement of float control recirculation valves
 - iii. Replacement of 2 swing check valves
 - iv. Bypass pumping (if needed based on work sequence)
 - v. Replacement of pipe hangers/supports
 - vi. Replacement of piping
 - d. Piston Pump – two items
 - i. Replacement of piston pump
 - ii. Replacement of gate valve on piston pump discharge
 - e. Secondary Clarifier – two items

- i. Remove and re-align check valve
 - ii. Remove and replace Flygt submersible pump guide rail systems (rails, bases, hardware) on both north and south secondary clarifiers.
- 4. Additional Clarification were made regarding the Request for Proposals:
 - a. Project is bid as lump sums for complete work – all tools, safety equipment, supplies and labor to be provided by the Contractor.
 - i. It was clarified that the intent is to award a single contract to the qualified low bidder for the multiple sections of the work. It is not intended to split the work among multiple contractors.
 - b. Bids to include itemized list of all proposed items to be installed, refer to item 8 in the RFP.
 - c. Awarded Contractor to prepare and submit a detailed schedule with start and completion dates for each Section of work – this is not required with bids.
 - d. Awarded Contractor to prepare and submit a detailed sequence of construction; WWTP must remain in operation throughout the work.
- 5. Important dates
 - a. Questions due – January 27, 2023 by 3:00 pm. All questions must be submitted in writing to the City of Rockwood to the attention of John Laub
 - b. Bids due – by 2:00 PM on Thursday, February 9, 2023 – see RFP for submission details to City Clerk.
 - c. Project on City Council agenda for approval – Anticipated on March 1, 2023
 - d. Signed Contracts – Anticipated by early April, 2023
 - e. Substantial Completion – June 30, 2024
 - i. Substantial completion is defined as all award sections of work installed and ready for use.
 - f. Final Completion – November 15, 2024
 - i. Final completion is all punchlist items completed and all contractual items addressed such as final waivers, consent of surety, etc.
- 6. Permits
 - a. EGLE Part 41 Permit to be obtained by the City
 - i. Permit has not been applied for yet but will be soon. Improvements are all of maintenance nature; treatment changes are not proposed, therefore Part 41 permit is not anticipated to have a long review.
 - b. City of Rockwood plumbing permit – to be applied for and obtained by Contractor, City to waive fees.
 - c. City of Rockwood electrical permit – to be obtained by Contractor, City to waive fees
- 7. Questions asked and answered during the pre-bid:
 - Q. Is the intent to award a single contract or multiple contracts for each section of work?
A. It is intended to award a single contract for multiple sections of the work, preferably all five (5); final decision on sections awarded will be contingent on actual bids and project budget.
 - Q. Who is responsible for draining tankage to provide access?
A. The City will empty/drain tanks and provide minor flushing for Contractor access.
 - Q. Is there a preferred order of work?
A. Work on the primaries is the highest priority to the WWTP, however, order is to be determined based on lead times and new equipment availability.

- Q. What are the anticipated work hours?
A. 7:30 am to 5:00 pm. Work outside of these hours for critical work sequencing may be approved on an individual basis.
- Q. Can the plant be taken offline?
A. Flow can be temporarily diverted to the wet weather storage tanks but storage is limited to a total of 1 MG, equivalent to approximately 1 day storage for average daily flow.
- Q. Are there any drawings available of the plant to assist with depths and dimensioning of piping?
A. HRC has limited reference drawings from c. 1963 and 1970 Rockwood WWTP improvement projects.
These drawings are appended to the meeting minutes. Note that the drawings are over 50 years old and are provided for reference only. No guarantee is made, or should be assumed as the the completeness or accuracy of the information shown on these drawings. Parties shall field verify the accuracy and completeness prior to construction activities.
8. Site visit – following the meeting, all attendees adjourned from City Hall to a site visit and tour of the WWTP to review the work areas.
9. Additional Questions during bidding – all questions should be submitted in writing to City Manager John Laub email - jlaub@rockwoodmi.org . Questions will be answered by Bid Addendum posted to the City's website.

Respectfully submitted,

HUBBELL, ROTH & CLARK, INC.



Aaron Uranga, PE
Associate

Attachments:

- 1) Sign-in Sheet
- 2) HRC Reference Drawings titled "Alterations & Additions to Rockwood Sewage Treatment Plant" c. 1963 (5 sheets)
- 3) HRC Reference Drawings titled "1970 Additions to the Waste Treatment Plant" (13 Sheets)

pc: All present
HRC; File



HUBBELL, ROTH & CLARK, INC
CONSULTING ENGINEERS SINCE 1915

MEETING SIGN-IN SHEET

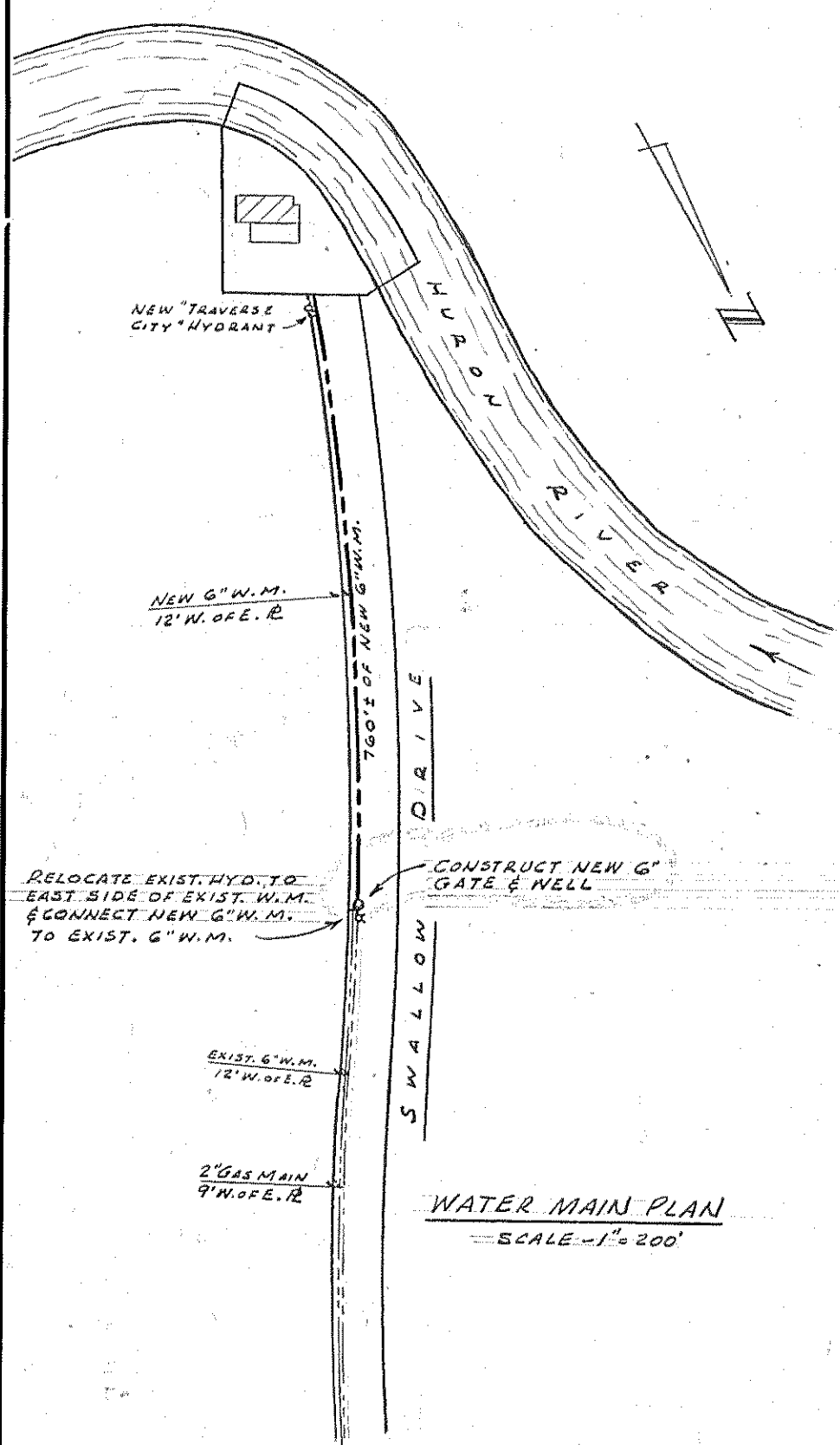
Project: 2023 Rockwood WWTP CIP Project

Location: City of Rockwood, Michigan

Purpose: Pre-Bid Meeting

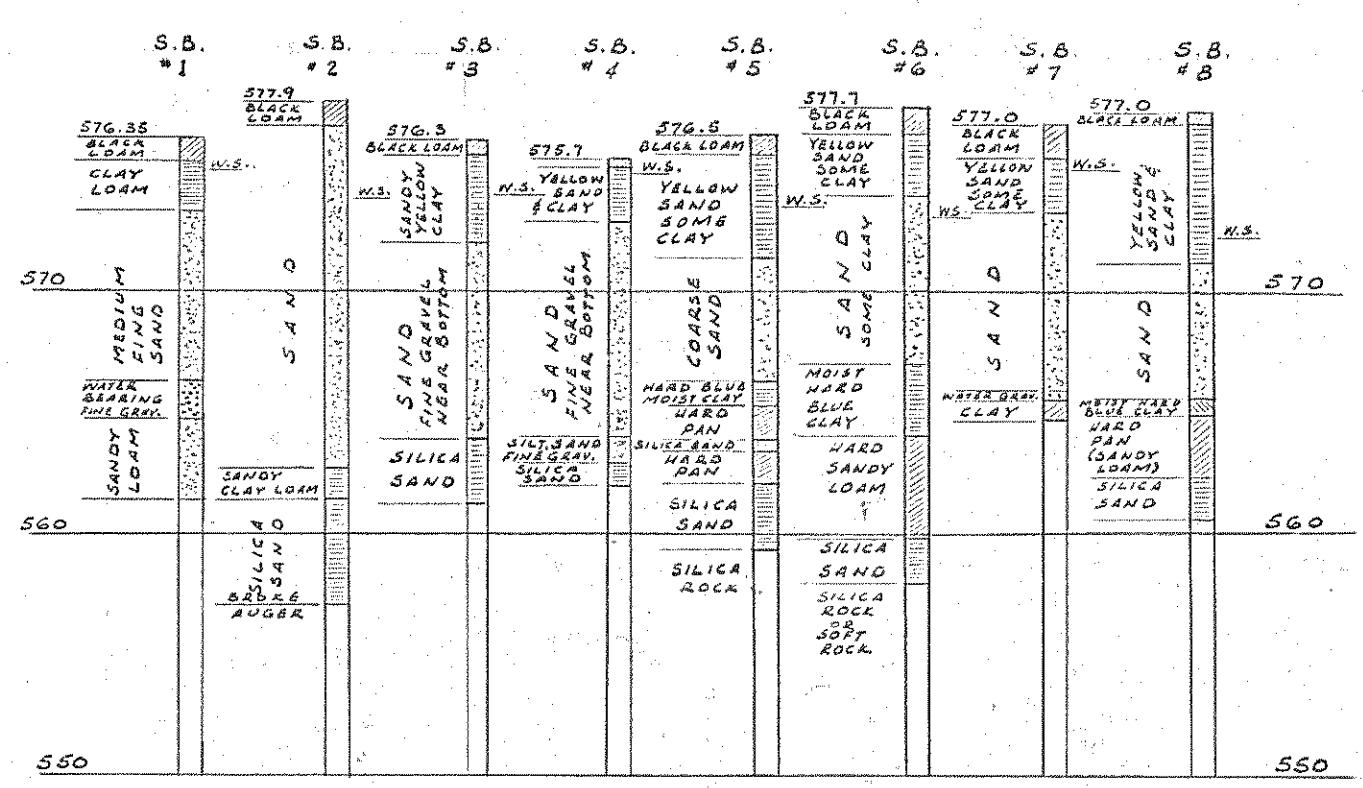
Date/Time: 01/18/2023/10:30 AM

	NAME	REPRESENTING	PHONE	E-MAIL
1.	Aaron Uranga	HRC	248-535-3466	auranga@hrcengr.com
2.	Chris Smith	Dunbar Inc	419-349-7137	CSmith@Dunbarinc.com
3.	Tyler Przywar	CSM Mech	810-730-1053	tyler@CSMmechanical.com
4.	John Laub	Rockwood, City of	734-379-9496	JLAUB@ROCKWOODMI.ORG
5.	Ken Witkowski	OPERATIONS SERVICES	586-405-6143	KWitkowski@OPERATIONSSERVICES.COM
6.	Robert Borow	City of Rockwood	734-379-9496	R.Borow@Rockwoodmi.ORG
7.	TOM THELSEN	MONROE PLUMBING & HEATING	734-241-4277	TOMT@MONROEPLUMBING.COM
8.	JESSE VAN DE CREEK	HRC	248-535-3322	JVANDECREEK@HRCENG2.COM
9.	Tyler Pozan	HRC	248-303-7775	TPOZAN@HRCENG.COM
10.				
11.				
12.				



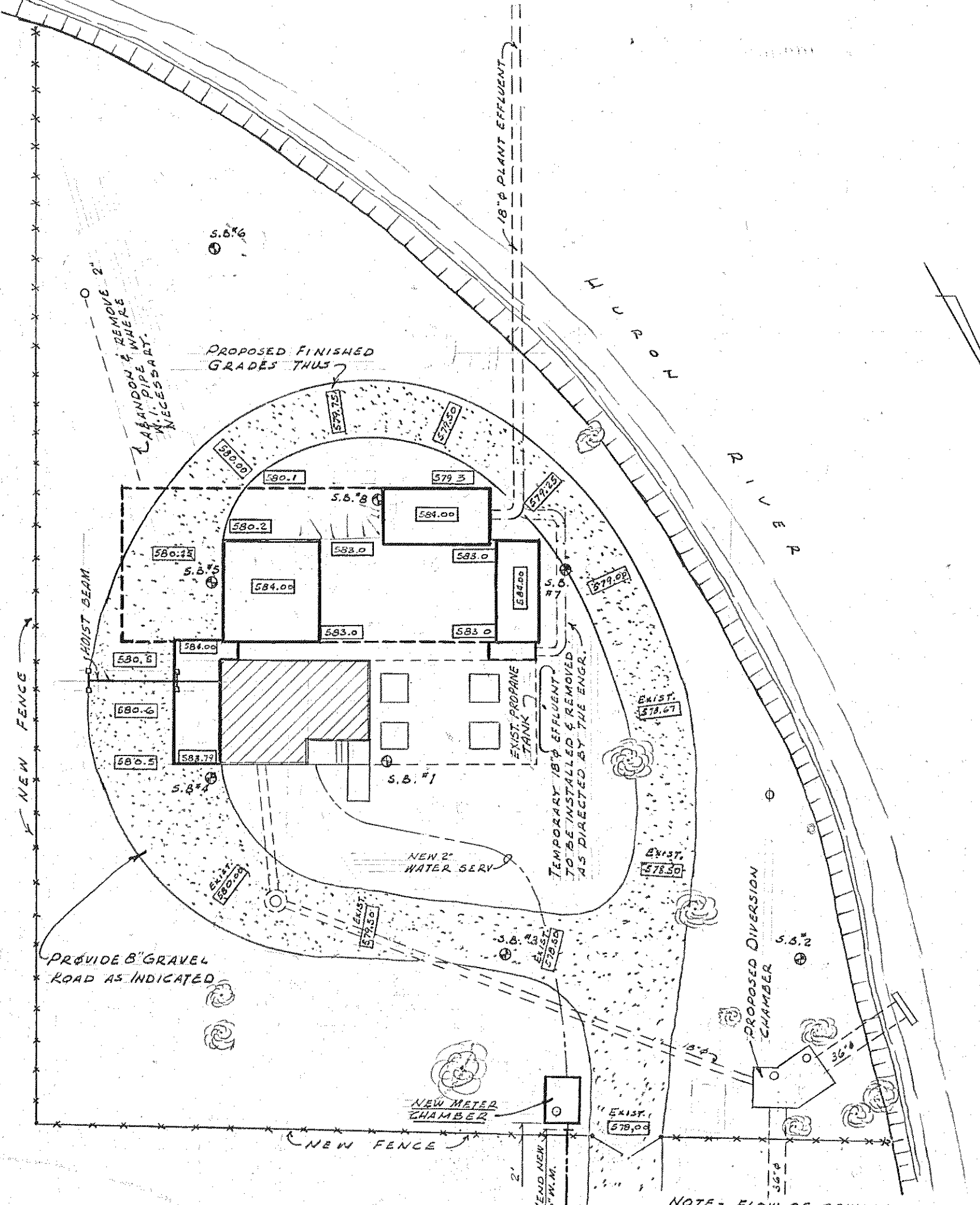
WATERMAIN NOTES

1. ALL WATERMAIN, VALVES, HYDRANTS, ETC. SHALL CONFORM TO THE STANDARDS OF THE VILLAGE OF ROCKWOOD.
2. ALL WATERMAIN SHALL BE LAID WITH A MIN. OF 5% COVER.
3. ALL INSPECTION TAP IN FEES, ETC. REQUIRED BY THE VILLAGE OF ROCKWOOD SHALL BE PAID FOR BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

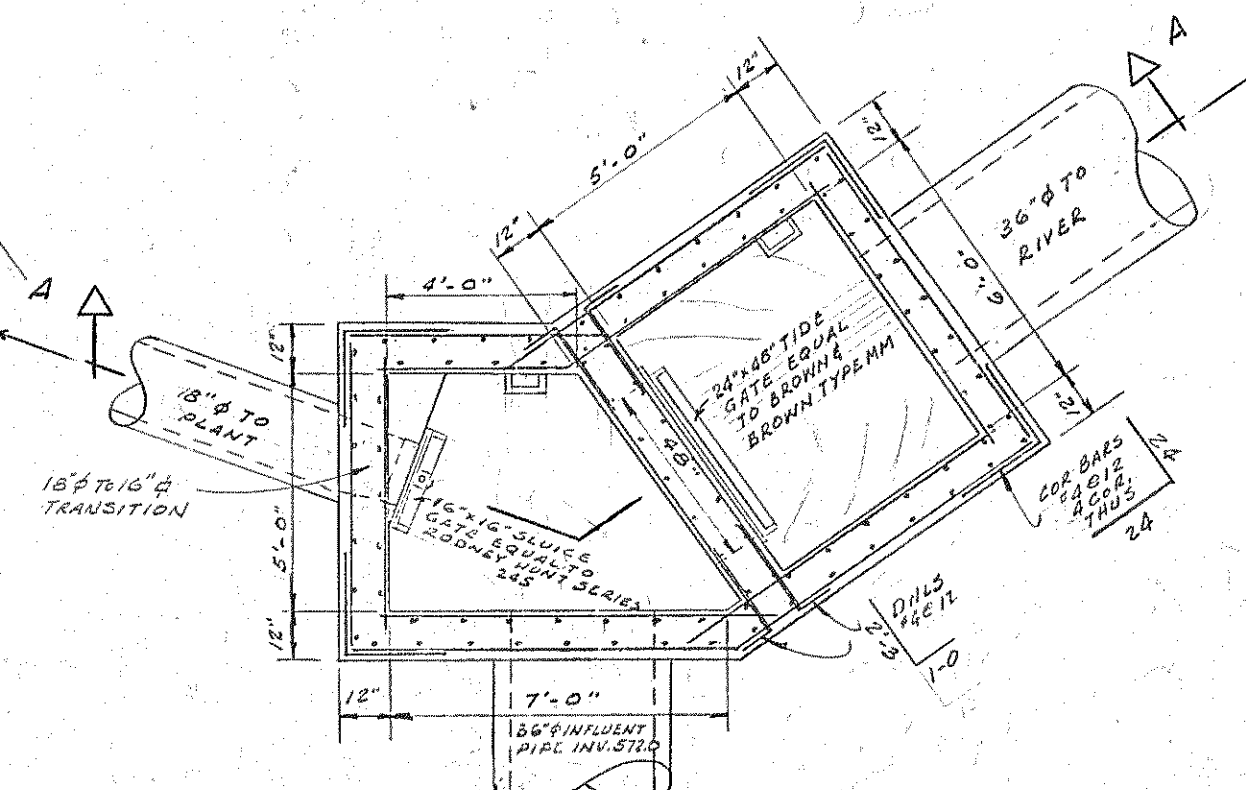
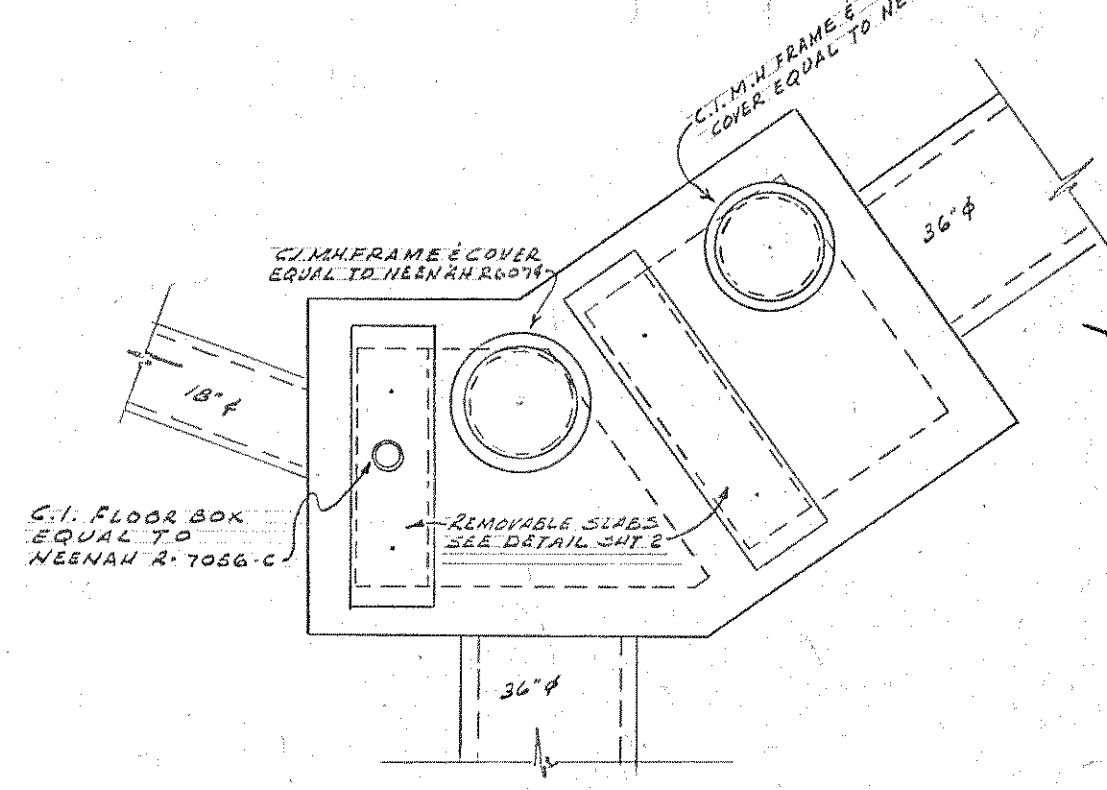
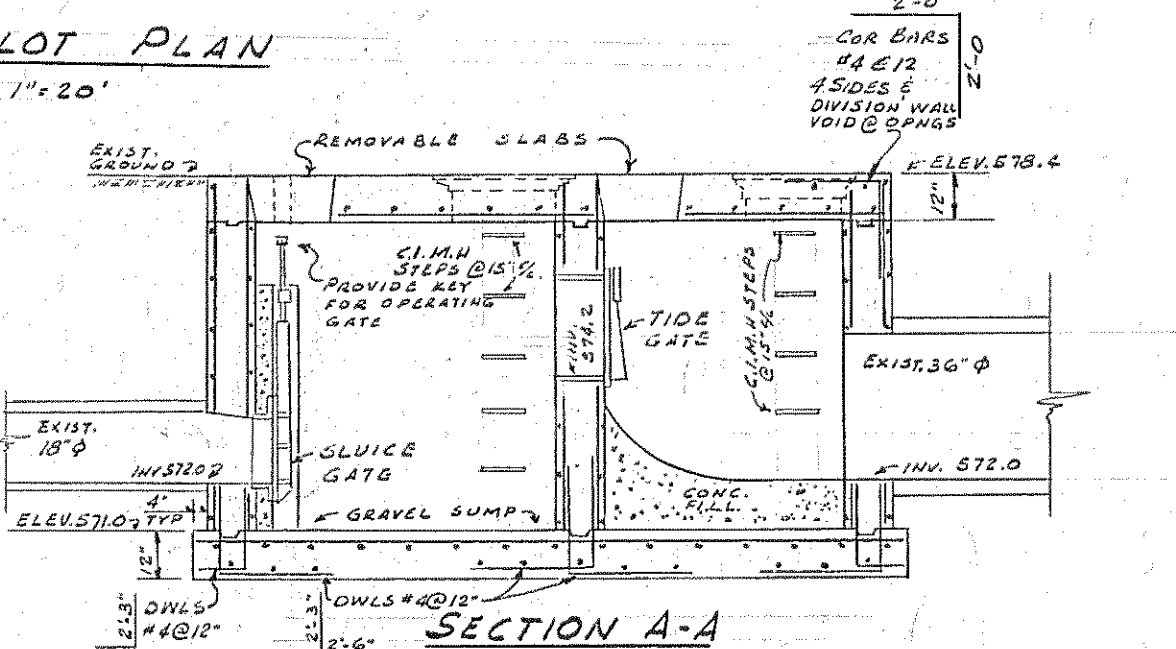
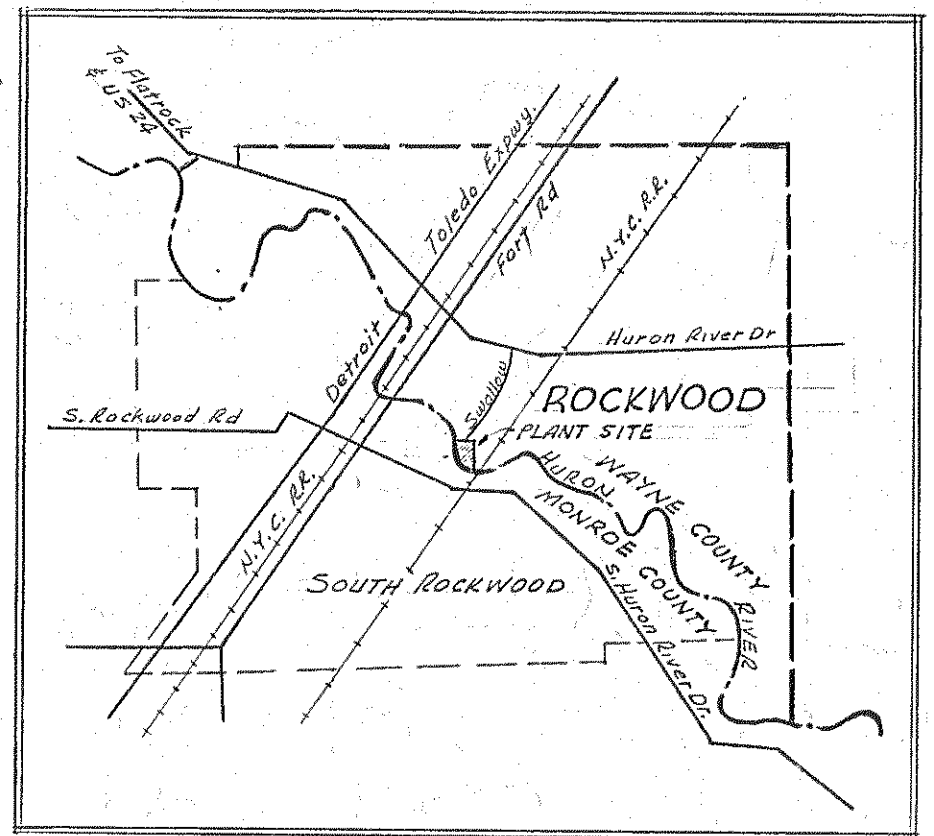
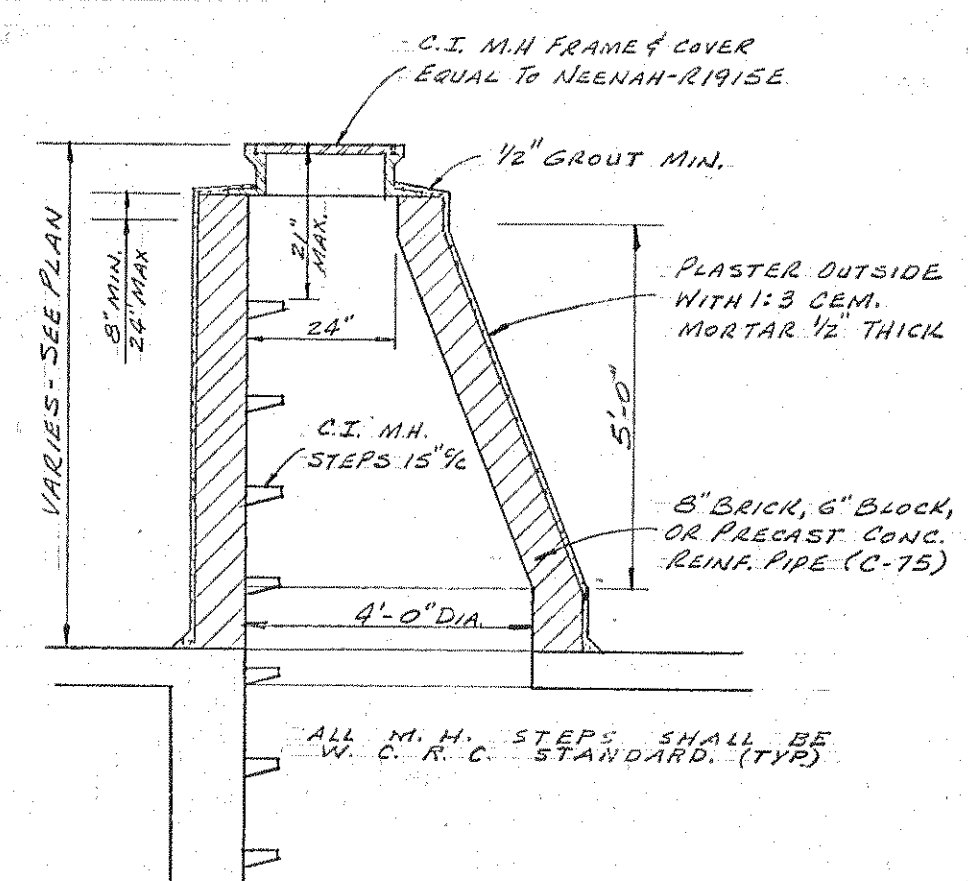
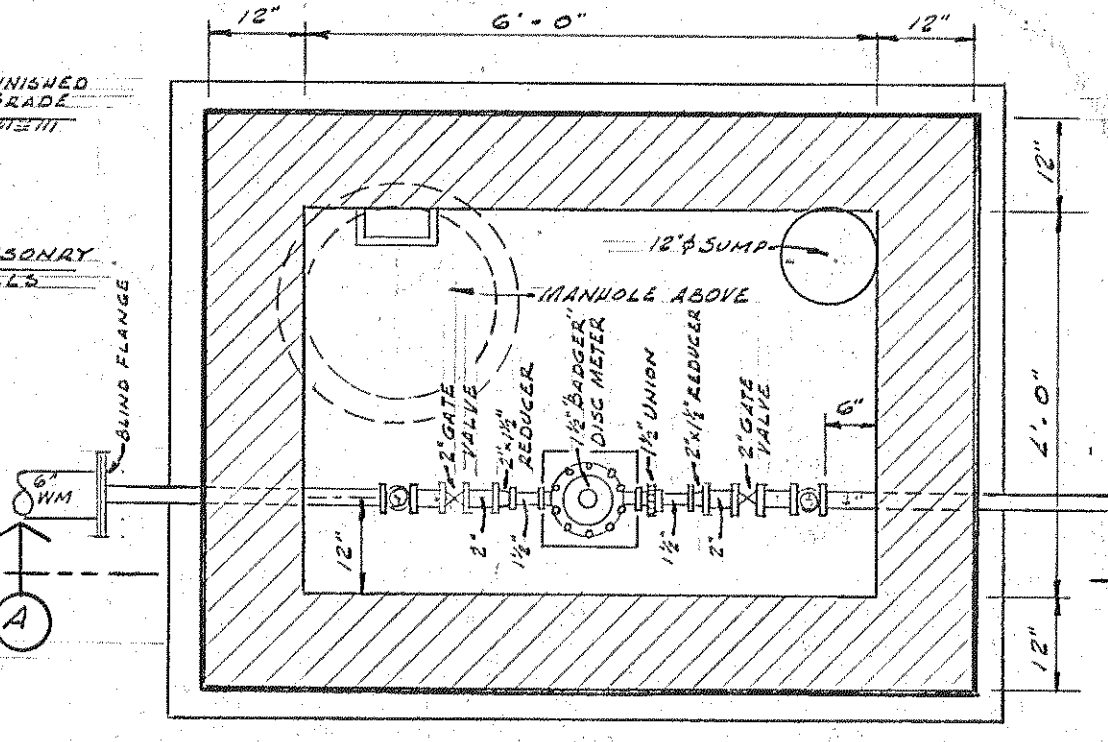
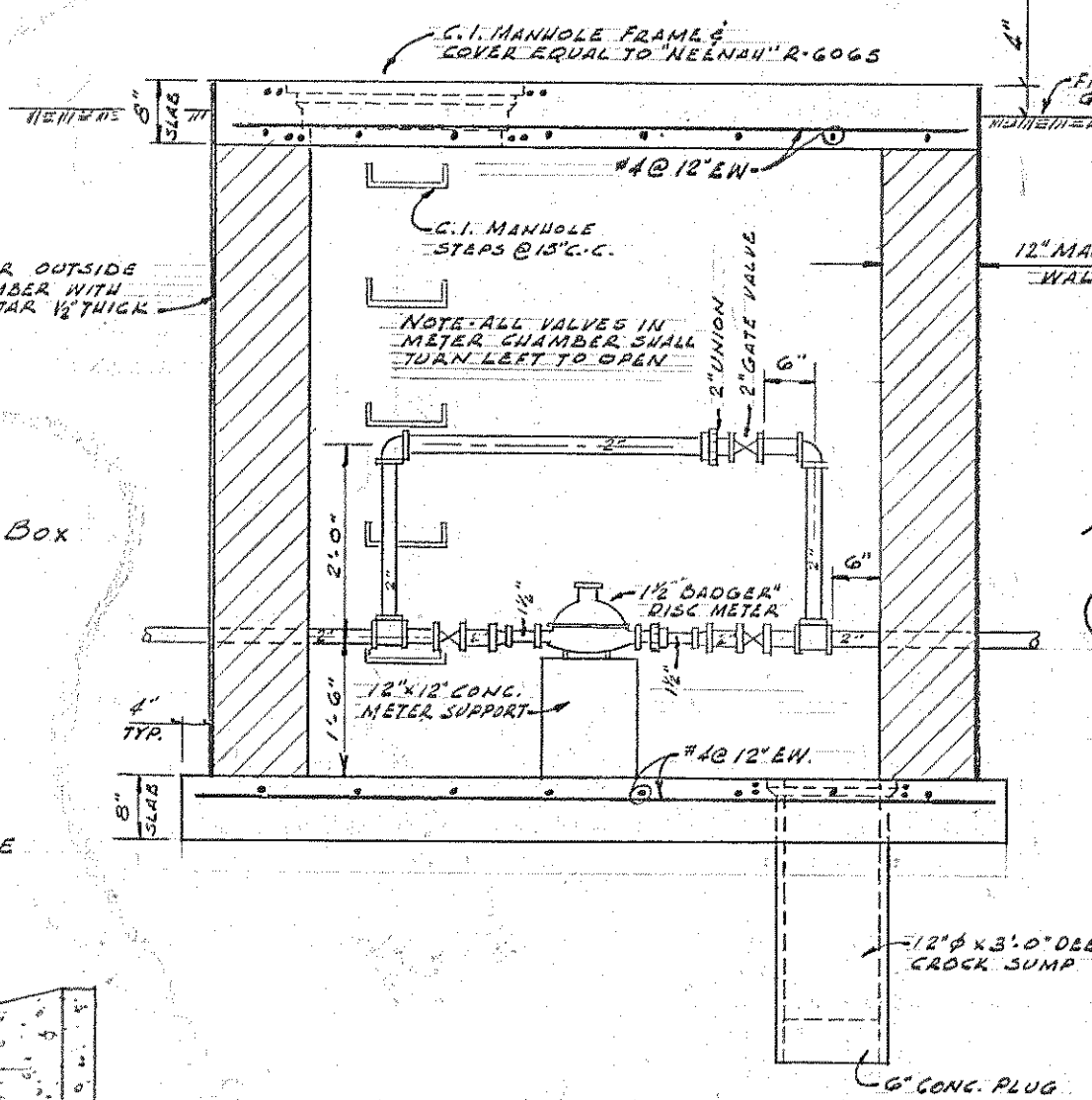
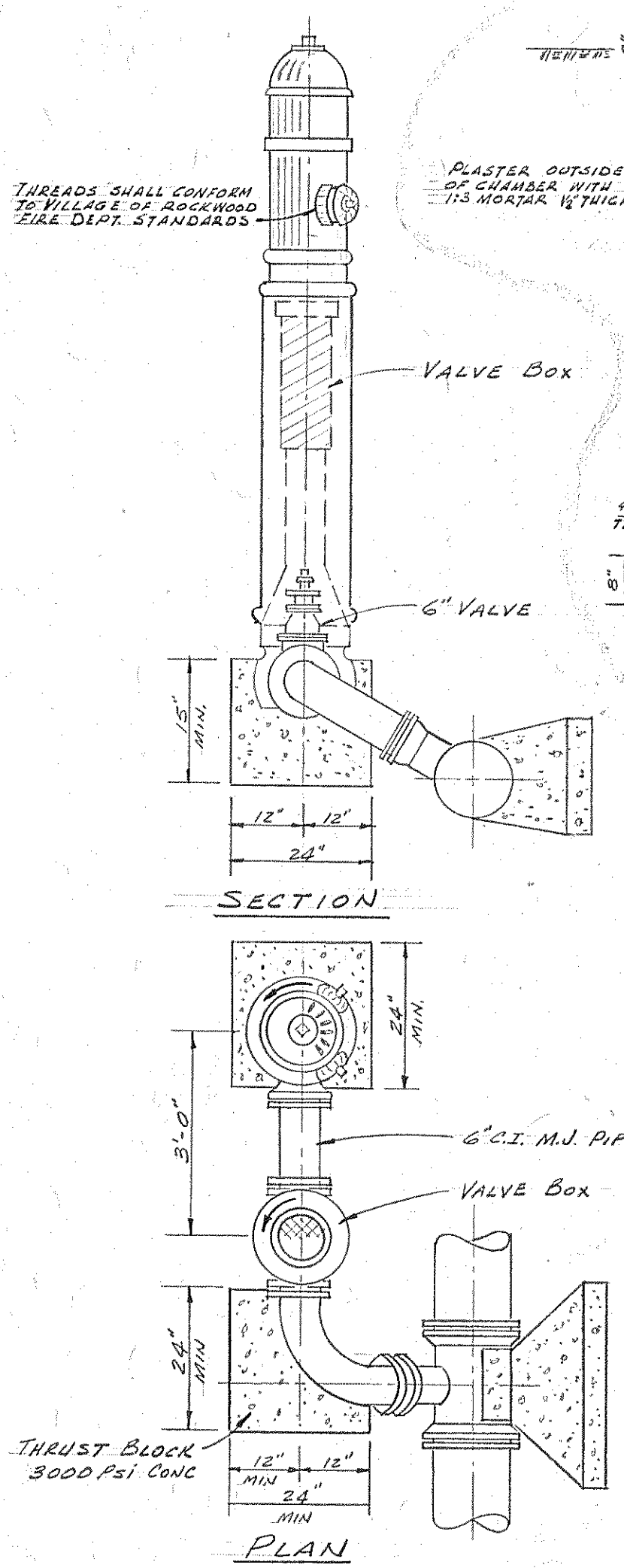
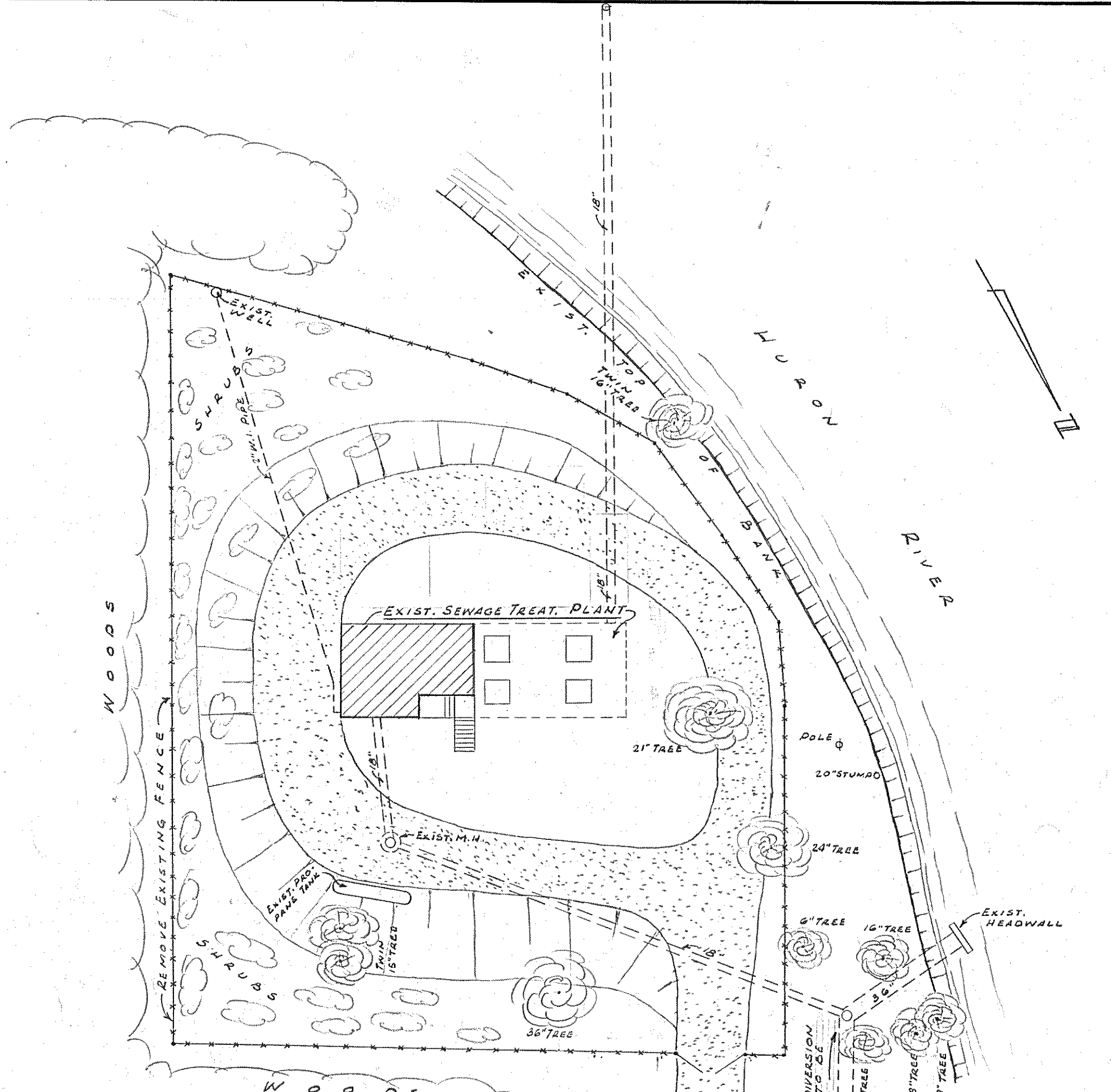


GENERAL NOTES

1. ALL CONC. TO BE GRADE "A" UNLESS OTHERWISE CALLED FOR.
2. ALL REINFORCING BARS TO BE DEFORMED AS PER ASTM A 305 & TO BE INTERMEDIATE OR HARD GRADE NEW BILLET STEEL (ASTM A 15) OR RAIL STEEL (ASTM A 16).
3. MIN. LAP OF REINFORCING BARS TO BE 30 DIAS.
4. MIN. COVER TO REINFORCING TO BE AS FOLLOWS:
 - a. CONCRETE POURED AGAINST GROUND - 3"
 - b. CONCRETE IN CONTACT WITH GROUND OR WATER - 1 1/2" FOR BARS LARGER THAN #5
 - c. CONCRETE NOT IN CONTACT WITH GROUND OR WATER AFTER REMOVAL OF FORMS - 1 1/2" FOR SLABS & WALLS
 - d. CONCRETE NOT IN CONTACT WITH GROUND OR WATER AFTER REMOVAL OF FORMS - 1 1/2" FOR BEAMS
5. PROVIDE 2" BARS E.F. AROUND ALL SLAB & WALL OPENINGS UNLESS OTHERWISE NOTED.
6. PROVIDE CORNER BARS ON O.F. OF ALL CORNERS TO MATCH HOR. WALL STEEL UNLESS OTHERWISE NOTED.
7. IN REINFORCING STEEL DETAILING NOTE SUCH AS #6 @ 12" C/L SHALL BE TAKEN TO MEAN #6 @ 24" C/L. ALT. WITH #7 @ 24" C/L TO GIVE BARS @ 12" C/L.

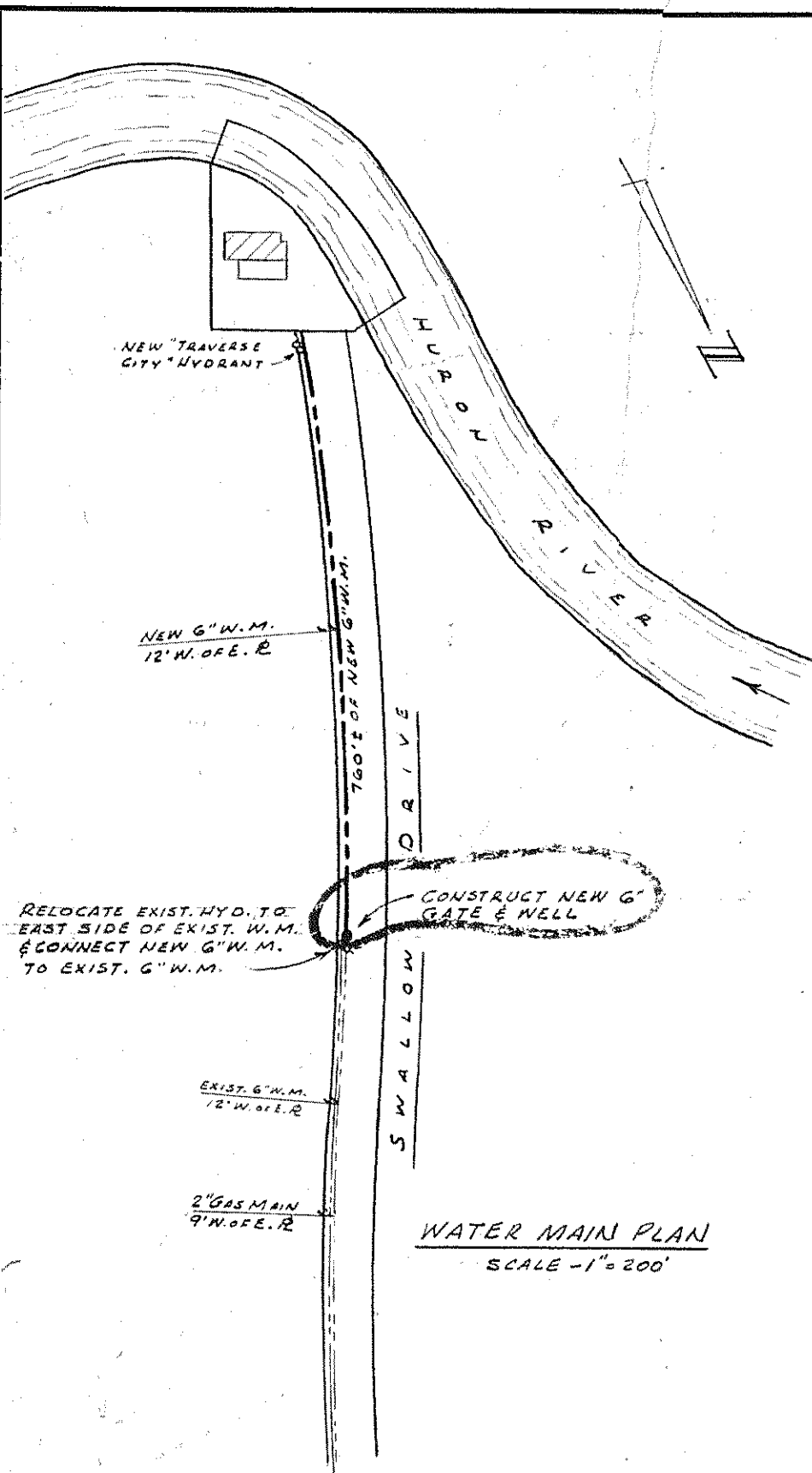


NOTE: FLOW OF SEWAGE THROUGH PLANT SHALL BE MAINTAINED AT ALL TIME DURING CONSTRUCTION OF NEW DIVERSION CHAMBER. ALL TREES ON SITE SHALL BE PRESERVED UNLESS WRITTEN PERMISSION FOR REMOVAL IS GRANTED BY OWNER.



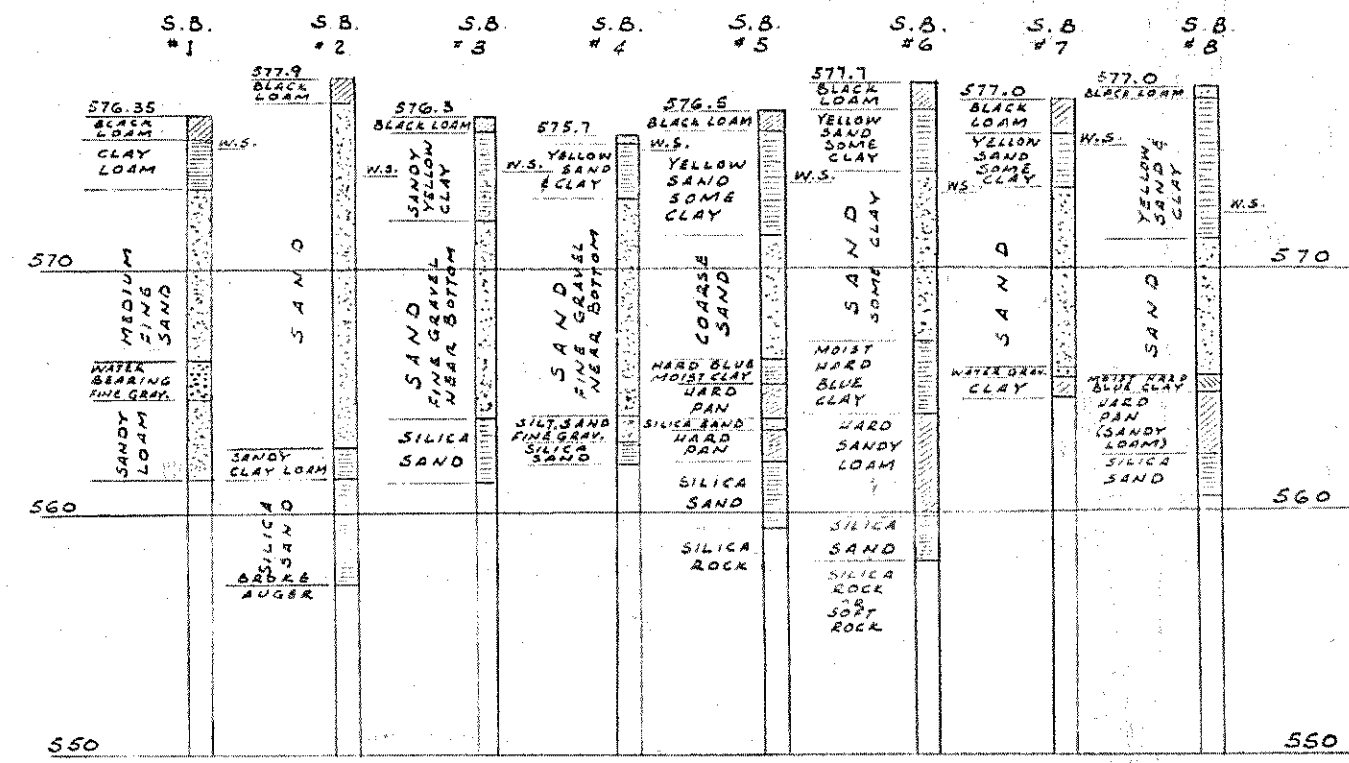
NOTE: ALL REINFORCING TO BE #4 @ 12"

BOARD OF WAYNE COUNTY ROAD COMMISSIONERS				HUBBELL, ROTH & CLARK, INC.				SHEET No.	
ALTERATIONS & ADDITIONS TO ROCKWOOD SEWAGE TREATMENT PLANT				CONSULTING ENGINEERS				1	
DATE				JOB No.				6259-220	
FLD. BK.				DATE				DEC. 27, 1962	
SCALE				DR.				T.R.	
NOTED				CK.				D.M.	
APPROVED				APP.				G.E.H.	



WATERMAIN NOTES

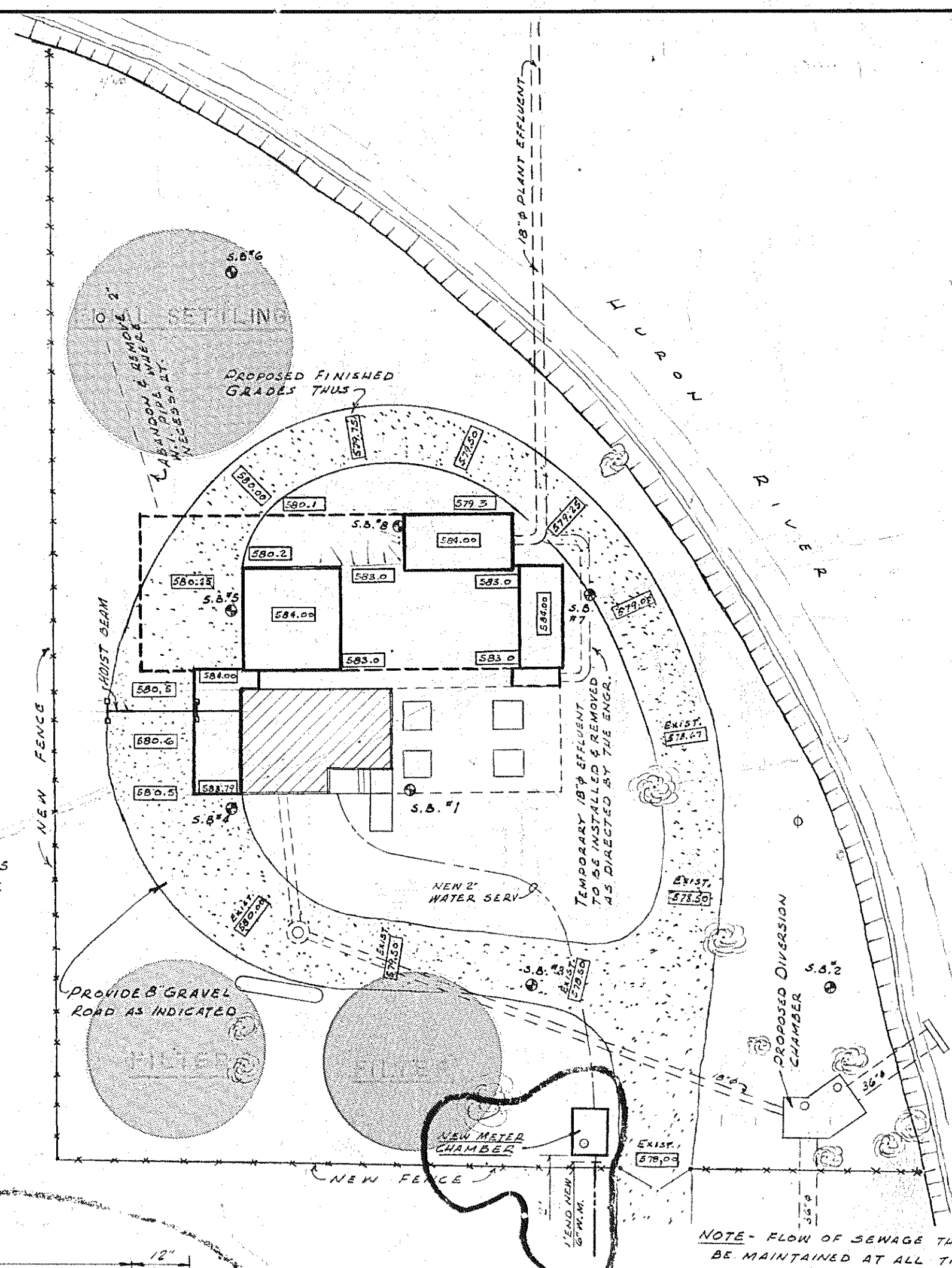
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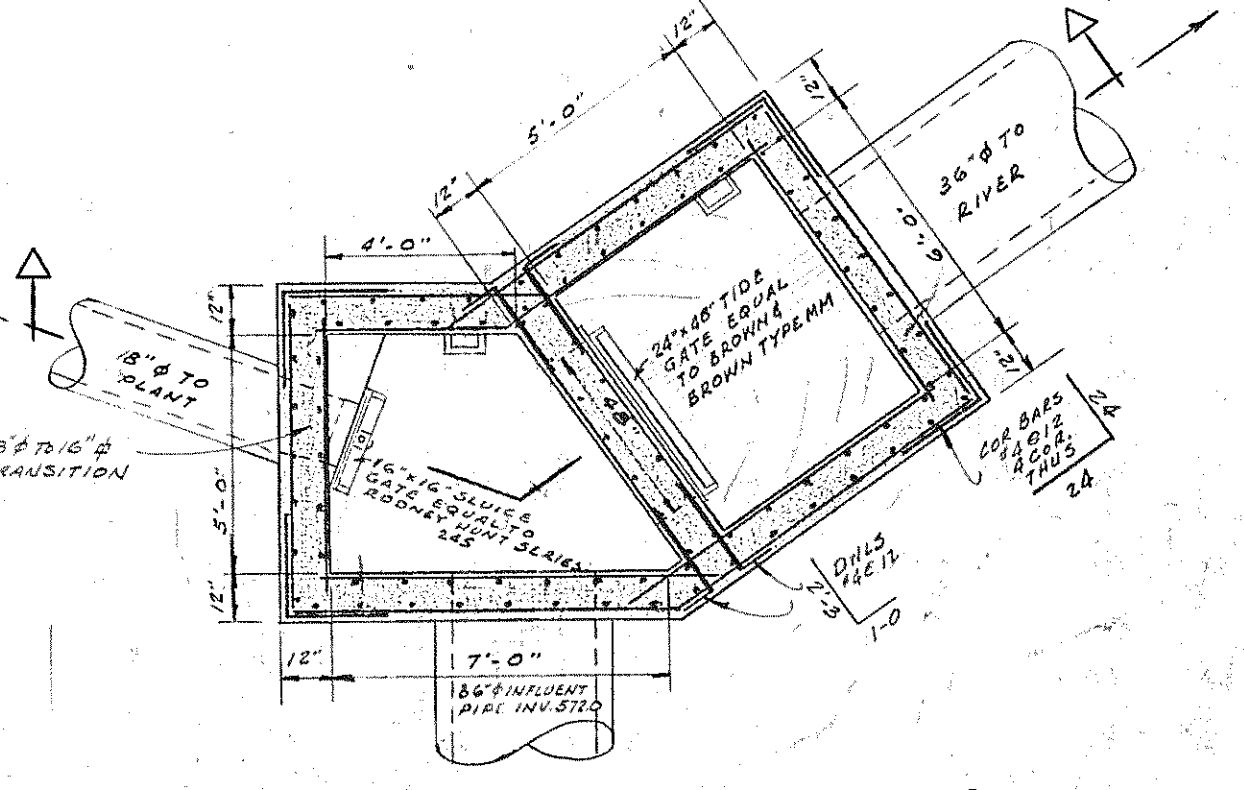
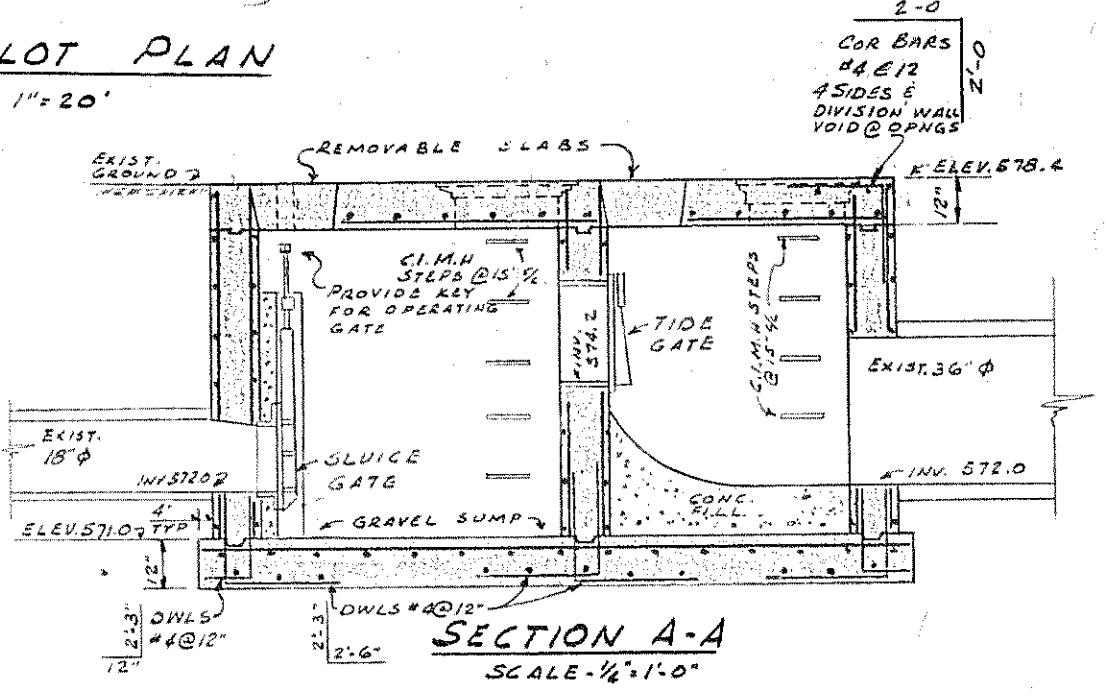
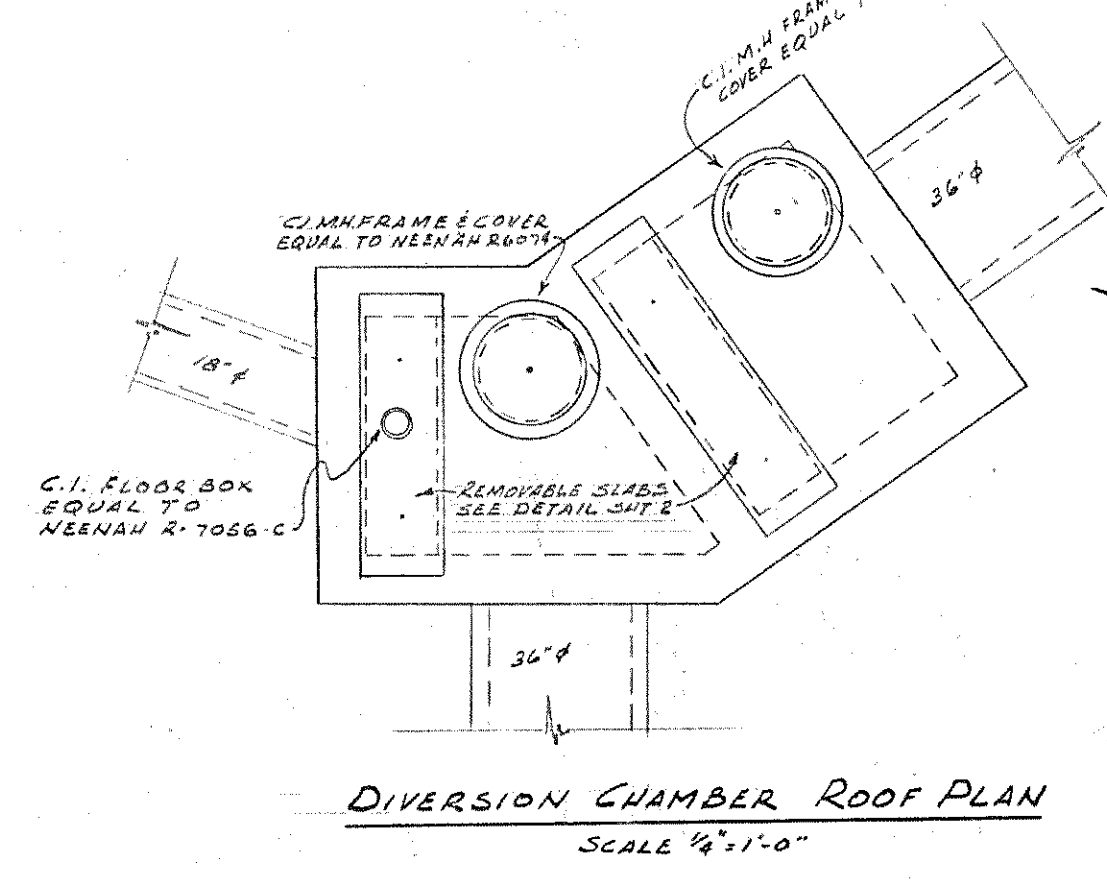
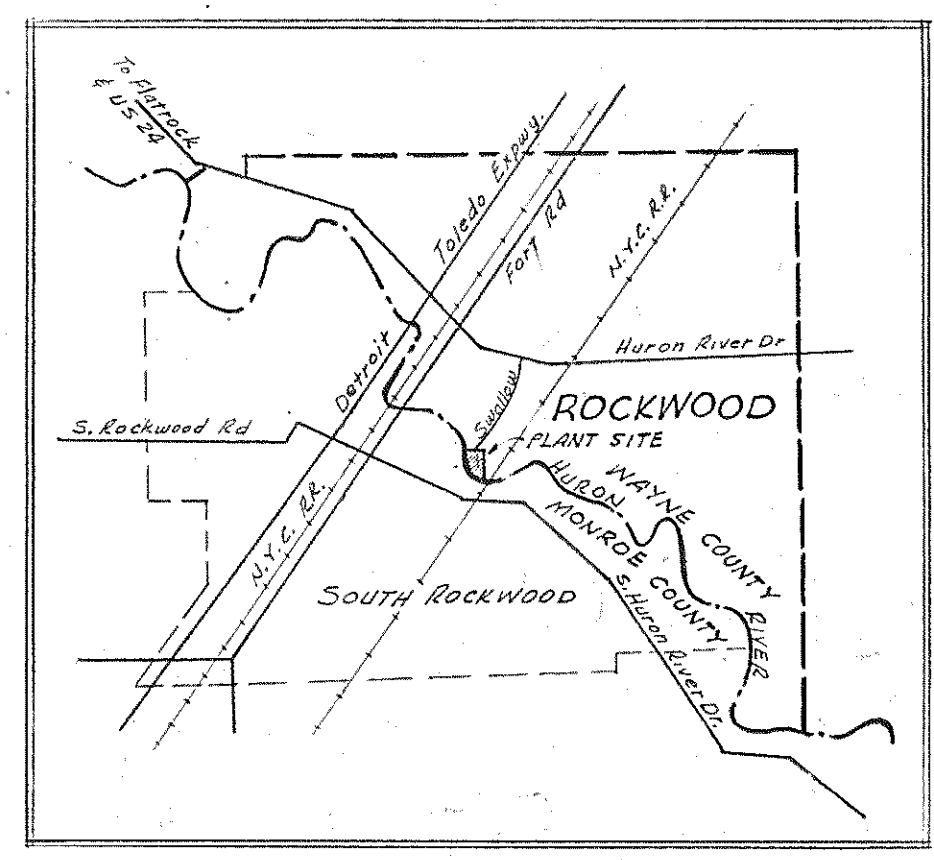
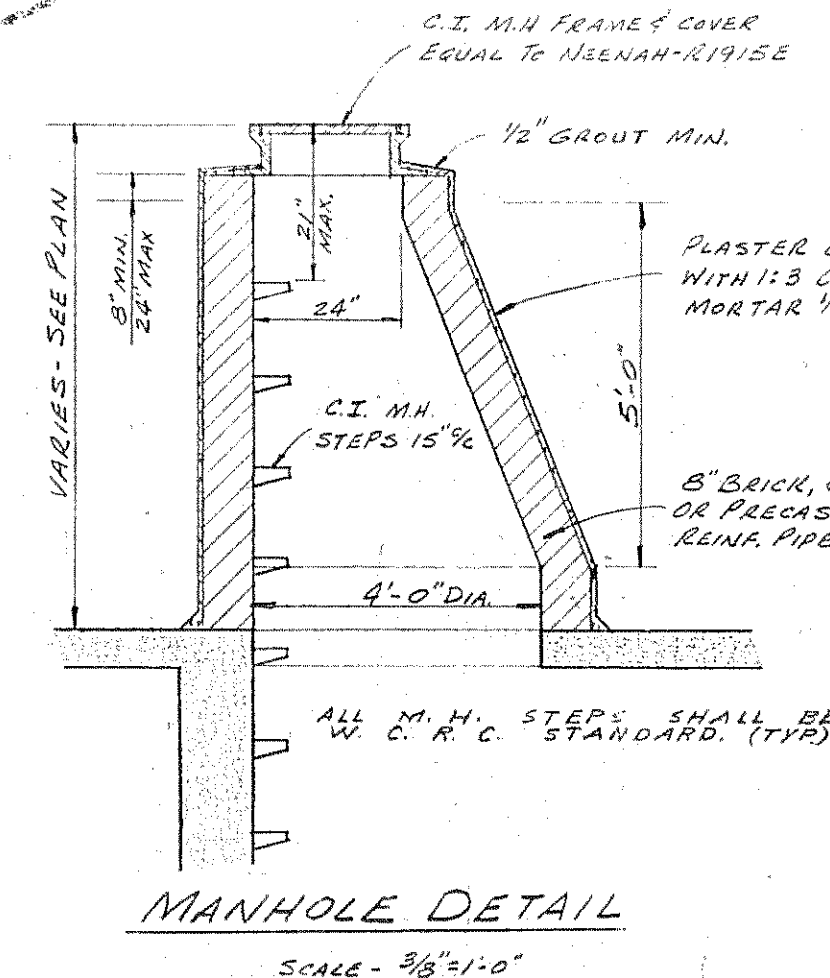
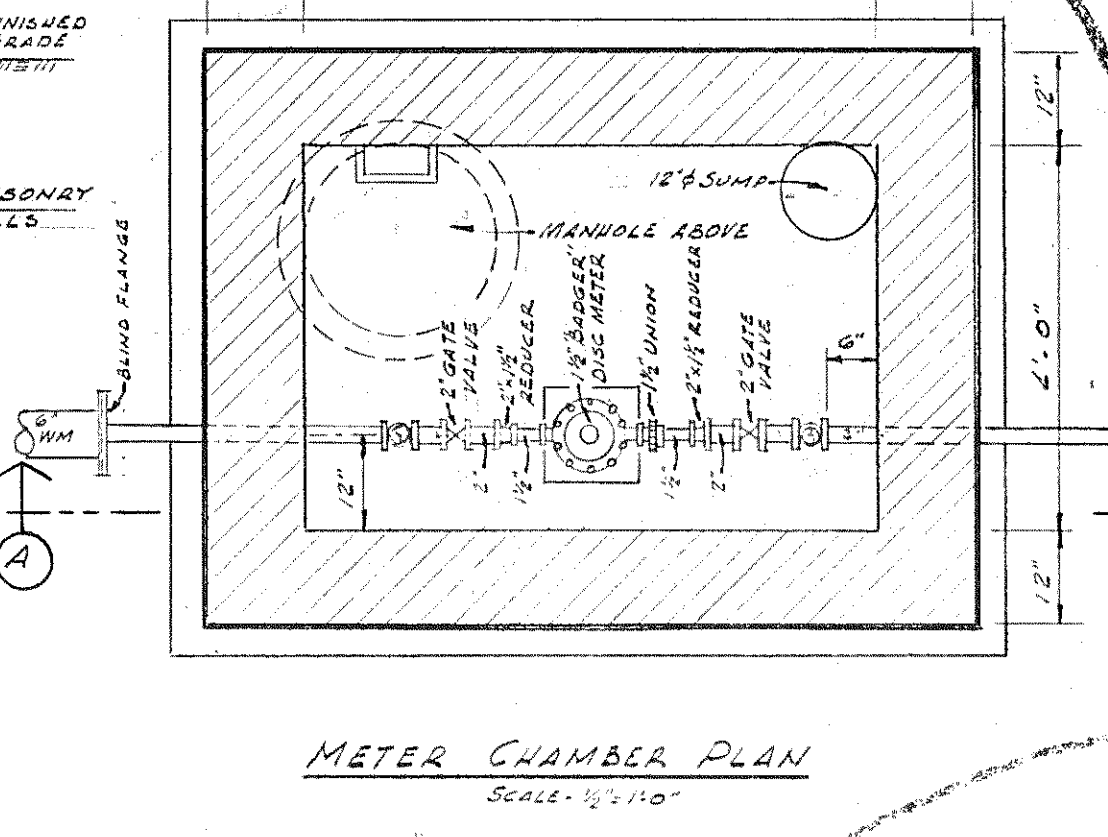
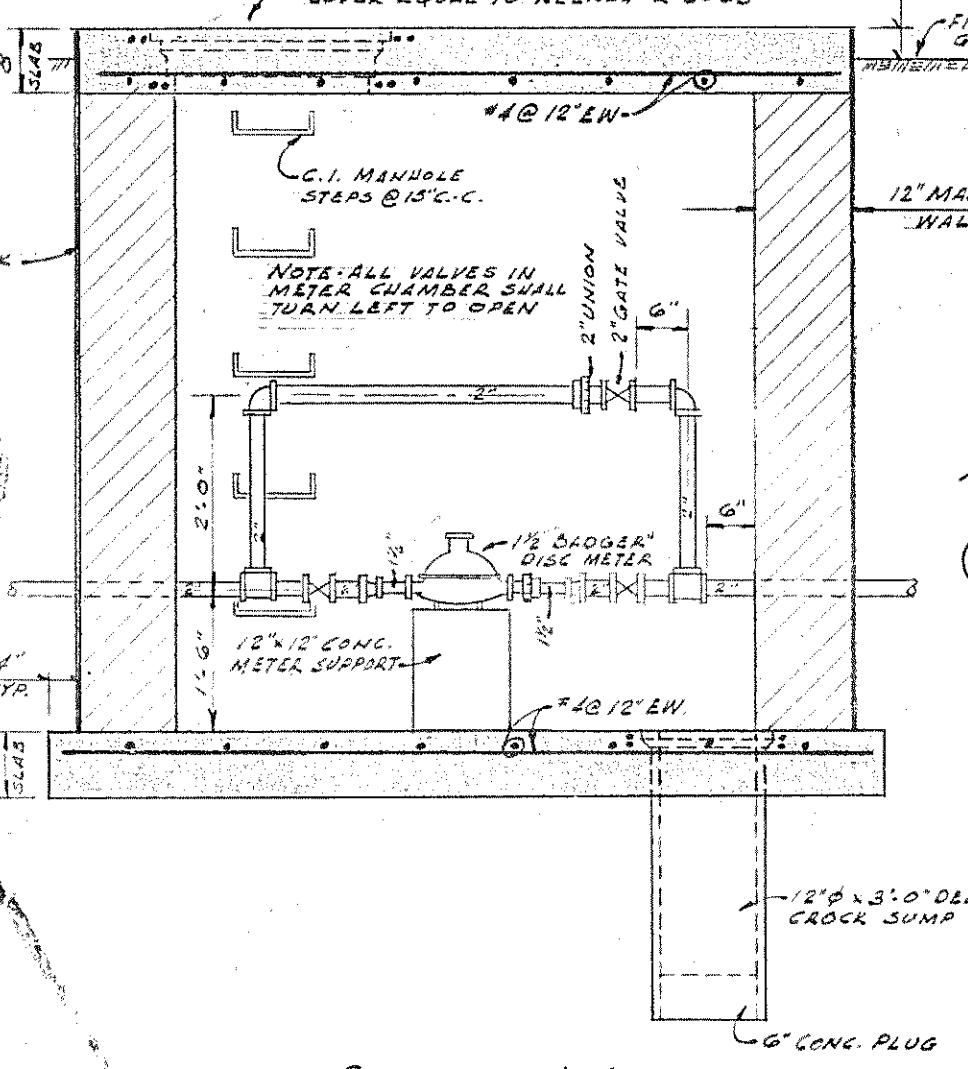
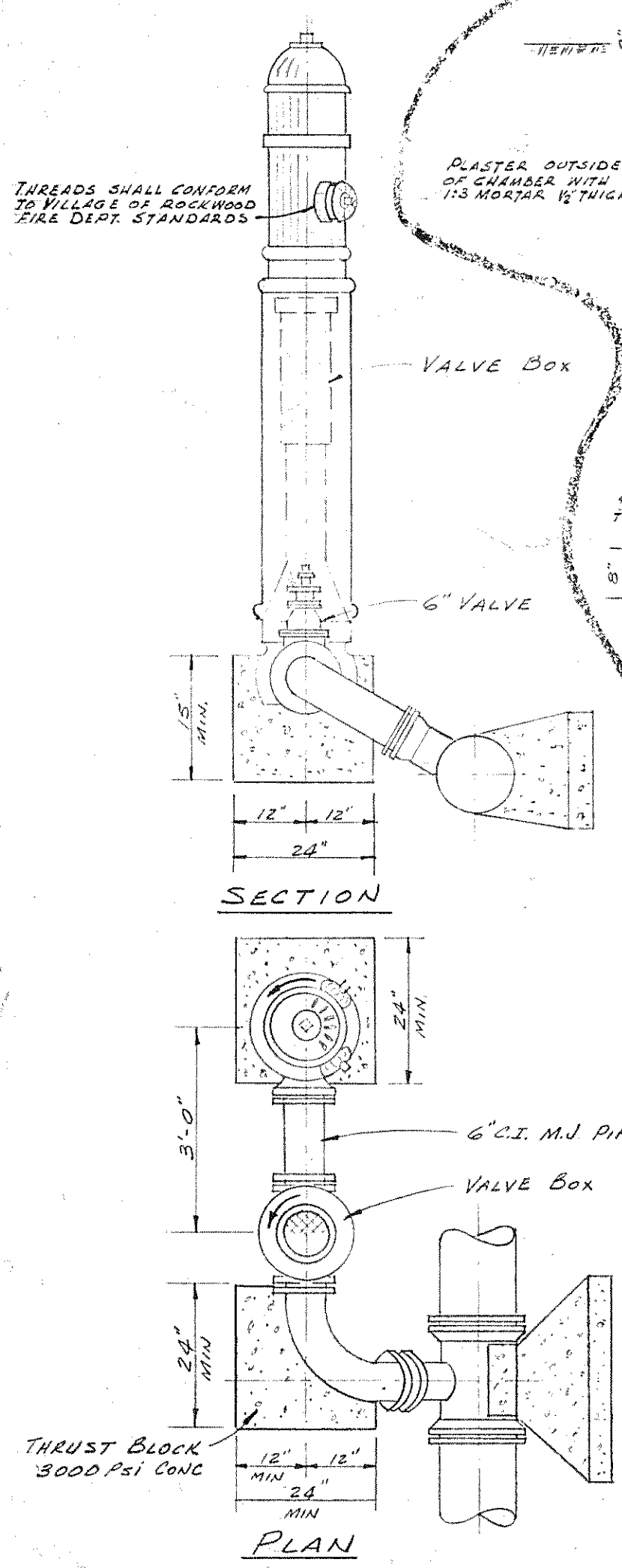
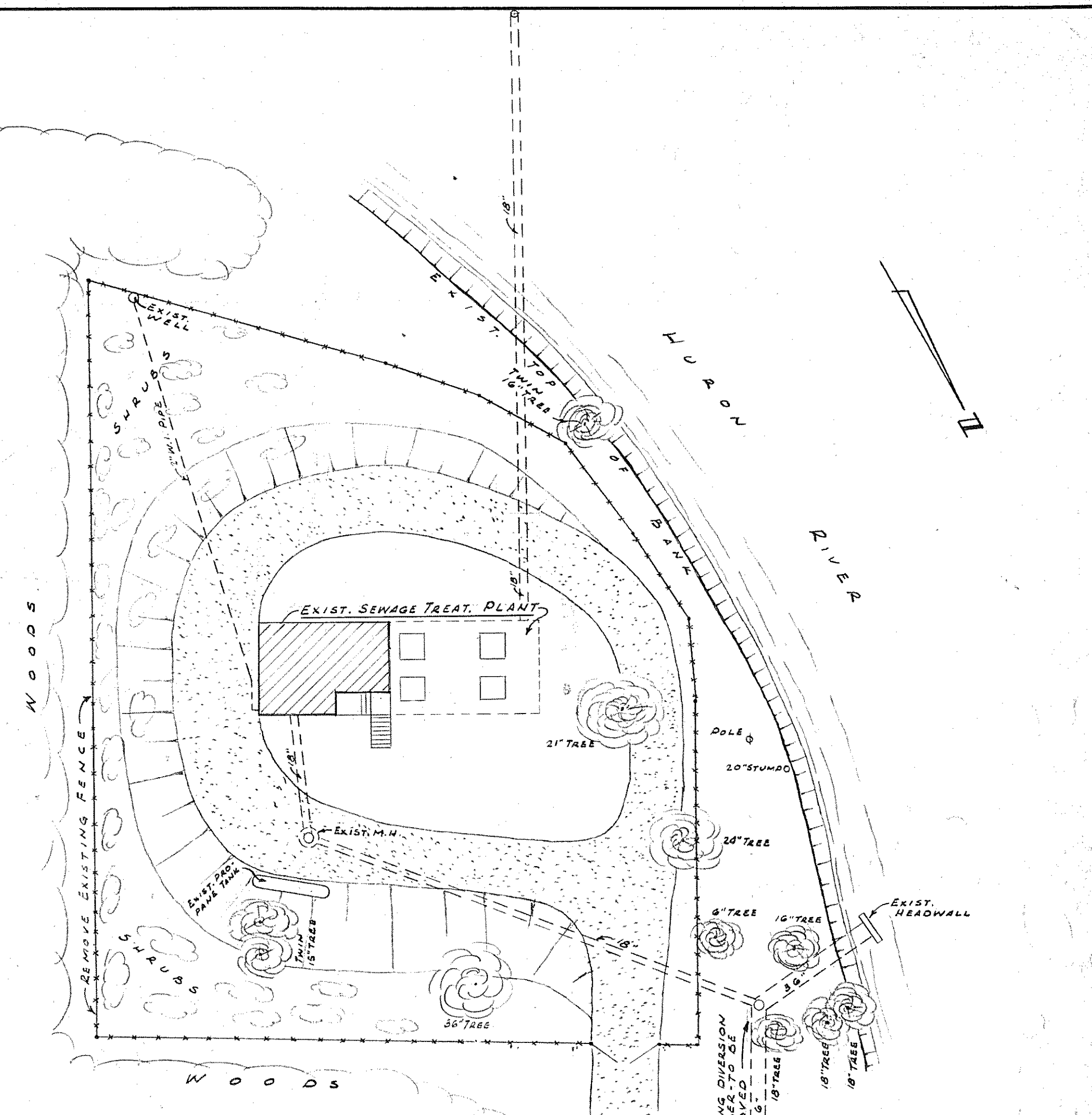
NOTE: BORINGS SHOWN WERE MADE IN 1939 FOR ORIGINAL PLANT CONSTRUCTION.

GENERAL NOTES

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2. ALL REINFORCING BARS TO BE DEFORMED AS PER ASTM A305 & TO BE INTERMEDIATE OR HARD GRADE NEW BILLET STEEL (ASTM A15) OR RAIL STEEL (ASTM A16).
3. MIN. LAP OF REINFORCING BARS TO BE 30 DIAS.
4. MIN. COVER TO REINFORCING TO BE AS FOLLOWS:
 - a. CONCRETE PAVED AGAINST GROUND - 3"
 - b. CONCRETE IN CONTACT WITH GROUND OR WATER - 5" FOR BARS LARGER THAN #5
 - c. AFTER REMOVAL OF FORMS - 1 1/2" FOR BARS #5 & SMALLER
 - d. CONCRETE NOT IN CONTACT WITH GROUND OR WATER - 1 1/2" FOR SLABS & WALLS
 - e. AFTER REMOVAL OF FORMS - 1 1/2" FOR BEAMS
5. PROVIDE 2" x 5" BARS E.F. AROUND ALL SLAB & WALL OPENINGS UNLESS OTHERWISE NOTED.
6. PROVIDE CORNER BARS ON O.F. OF ALL CORNERS TO MATCH HOR. WALL STEEL UNLESS OTHERWISE NOTED.
7. IN REINFORCING STEEL DETAILING NOTE SUCH AS #5 x 7 @ 12" SHALL BE TAKEN TO MEAN #5 @ 24" O.C. ALT. WITH #7 @ 24" O.C. TO GIVE BARS @ 12" O.C.



NOTE: FLOW OF SEWAGE THROUGH PLANT SHALL BE MAINTAINED AT ALL TIME DURING CONSTRUCTION OF NEW DIVERSION CHAMBER. ALL TREES ON SITE SHALL BE PRESERVED UNLESS WRITTEN PERMISSION FOR REMOVAL IS GRANTED BY OWNER.

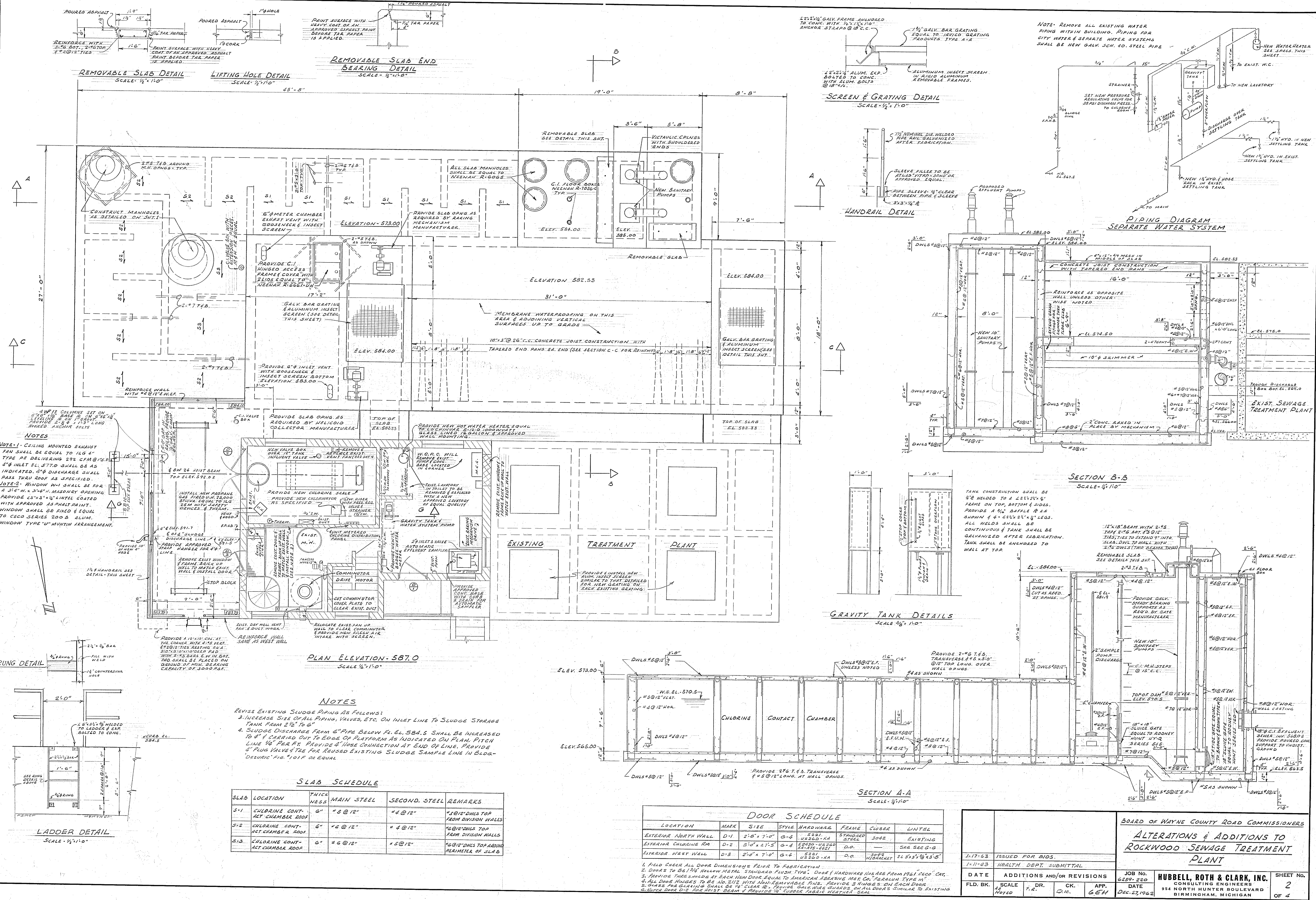


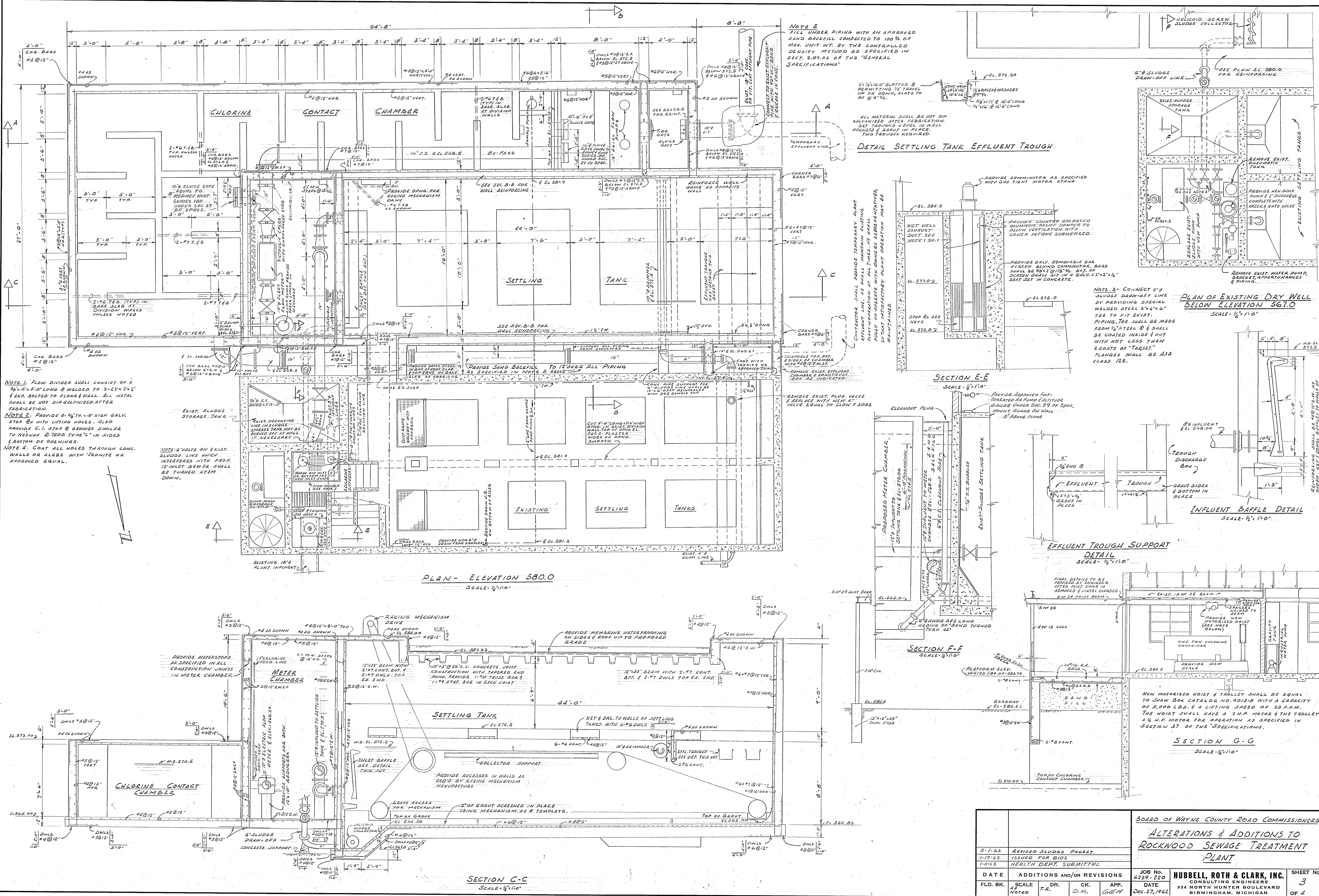
NOTE: ALL REINFORCING TO BE #4 @ 12"

FACILITIES FOR
ADVANCED WASTE TREATMENT

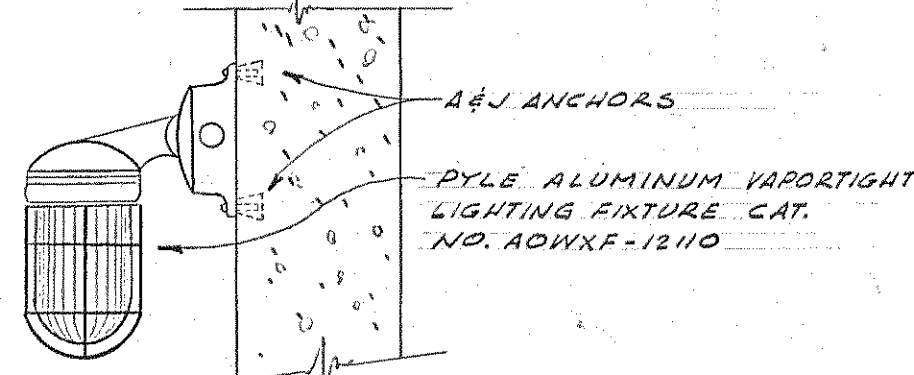
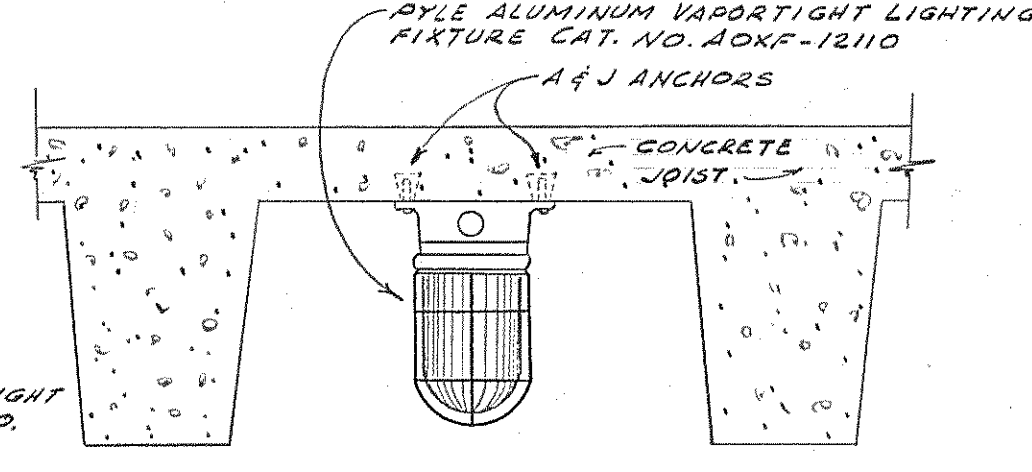
APRIL 1967

BOARD OF WAYNE COUNTY ROAD COMMISSIONERS			
ALTERATIONS & ADDITIONS TO ROCKWOOD SEWAGE TREATMENT PLANT			
DATE	ADDITIONS AND/OR REVISIONS	JOB No.	HUBBELL, ROTH & CLARK, INC.
6-18-63	REVISED PER REQUEST OF VILLAGE OF ROCKWOOD WATER DEPT.	6259 - 220	954 NORTH HUNTER BOULEVARD
4-25-63	ADDED GAS MAIN ON SWANSON DR.	DATE	BIRMINGHAM, MICHIGAN
1-17-63	ISSUED FOR BIDS.	DEC. 27, 1962	
1-11-63	HEALTH DEPT. SUBMITTAL		
SCALE	DR.	CK.	APP.
7/8" = 1'-0"	RMB	D.M.	GEN

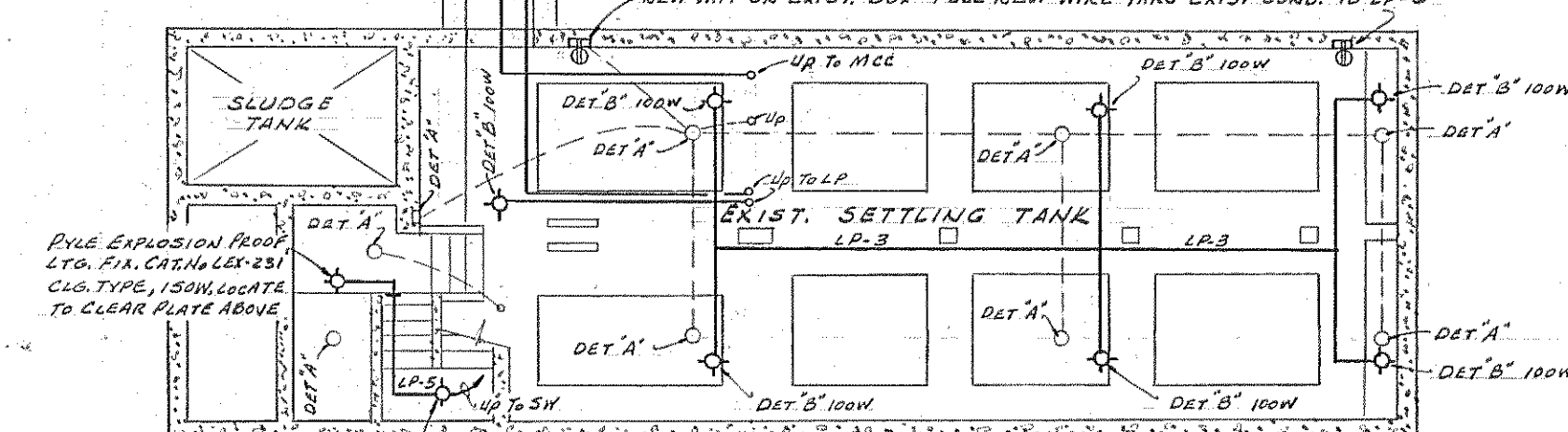
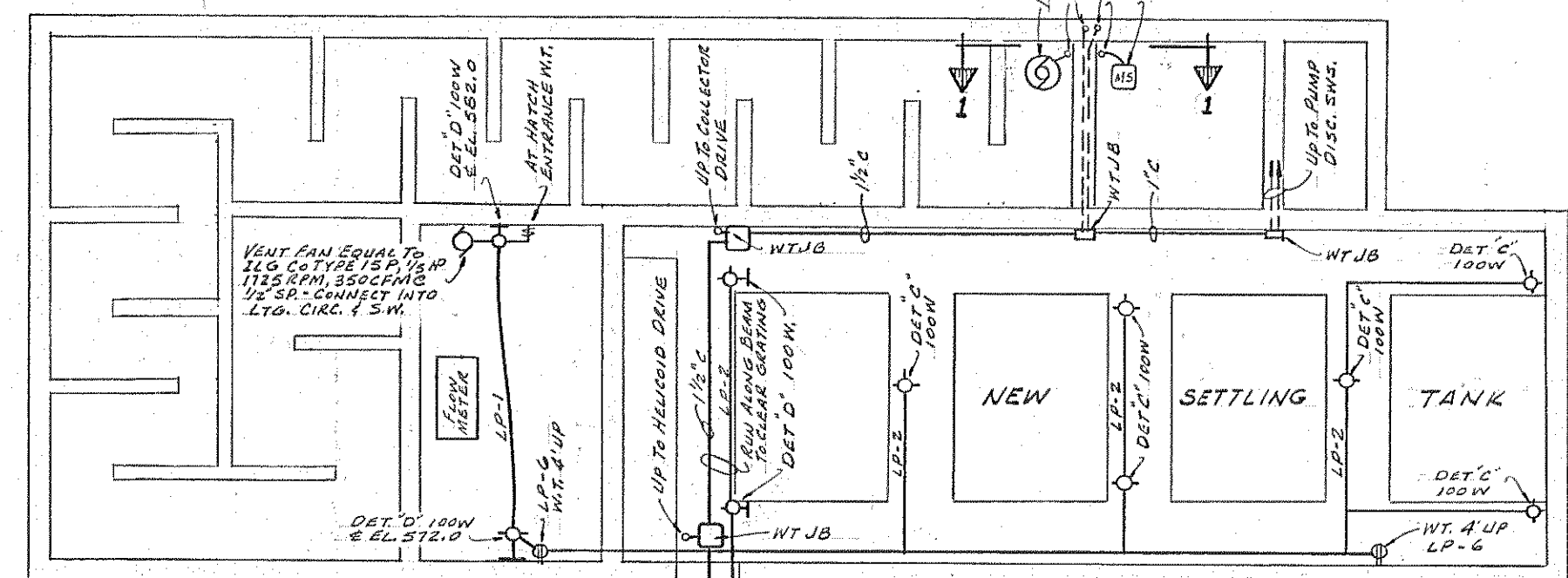




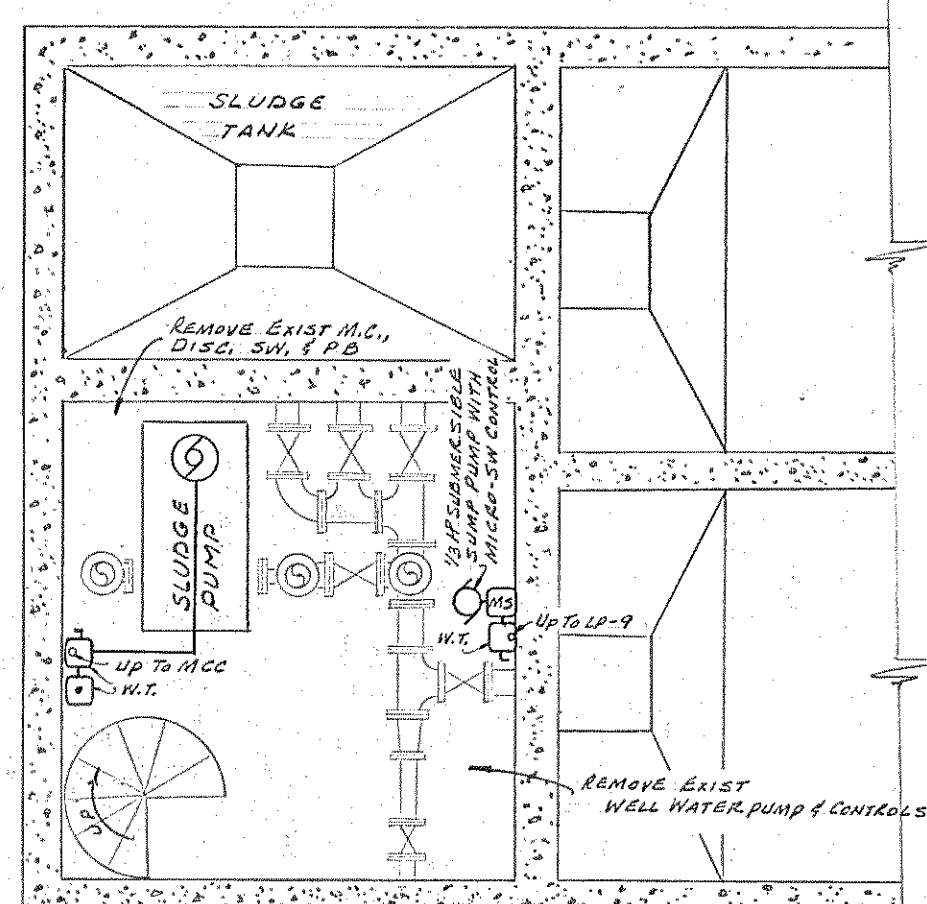
					<u>BOARD OF WAYNE COUNTY ROAD COMMISSIONERS</u>						
					<u>ALTERATIONS & ADDITIONS TO</u>						
					<u>ROCKWOOD SEWAGE TREATMENT</u>						
					<u>PLANT</u>						
3-1-63					REVISED SLUDGE POCKET						
1-17-63					ISSUED FOR BIDS						
1-11-63					HEALTH DEPT. SUBMITTAL						
DATE		ADDITIONS AND/OR REVISIONS			JOB No. 6259-220		HUBBELL, ROTH & CLARK, INC.			SHEET No.	
F.L.D. BK.		SCALE AS NOTED		DR.	CK.	APP.	DATE		CONSULTING ENGINEERS		3
				T.R.	D.M.	GEM	DEC. 27, 1962		954 NORTH HUNTER BOULEVARD BIRMINGHAM, MICHIGAN		OF 4



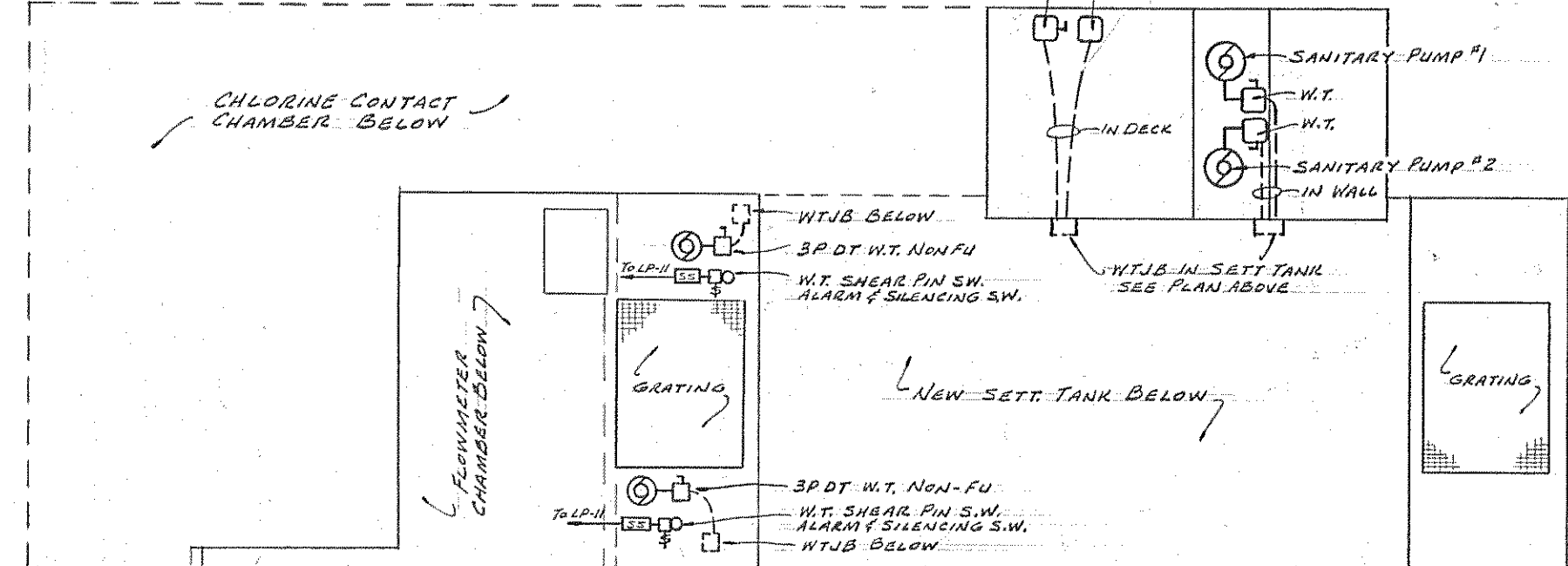
- ## NOTES
1. PROVIDE 2" MIN LENGTH OF LIQUA-TITE FLEXIBLE CONDUIT & CONDUIT SEALS AT FLOWMETER. MAKE SEALS WITH APPROVED COMPOUND TO PREVENT ENTRY OF MOISTURE INTO WATER
 2. ALL CONDUIT CONDUIT FITTINGS TO BE ALUMINUM & RUN EXPOSED UNLESS NOTED OTHERWISE
 3. CLOSE ALL SWITCH, RECEPTACLE, & FUTURE OUTLET BOXES NO LONGER REQUIRED BELOW FL. EL. 584.5 IN ACCORDANCE WITH DETAIL "A"
 4. PROVIDE COMPLETE WATERPROOF TREATMENT OF MAGNETIC FLOWMETER INCLUDING RUSTPROOFING INTERIOR METAL COMPONENTS, DISBURGEMENTS, SEALING OF INTERNAL ELECTRICAL PARTS, AND WATERPROOFING OF HOUSING AND ELECTRICAL FITTINGS



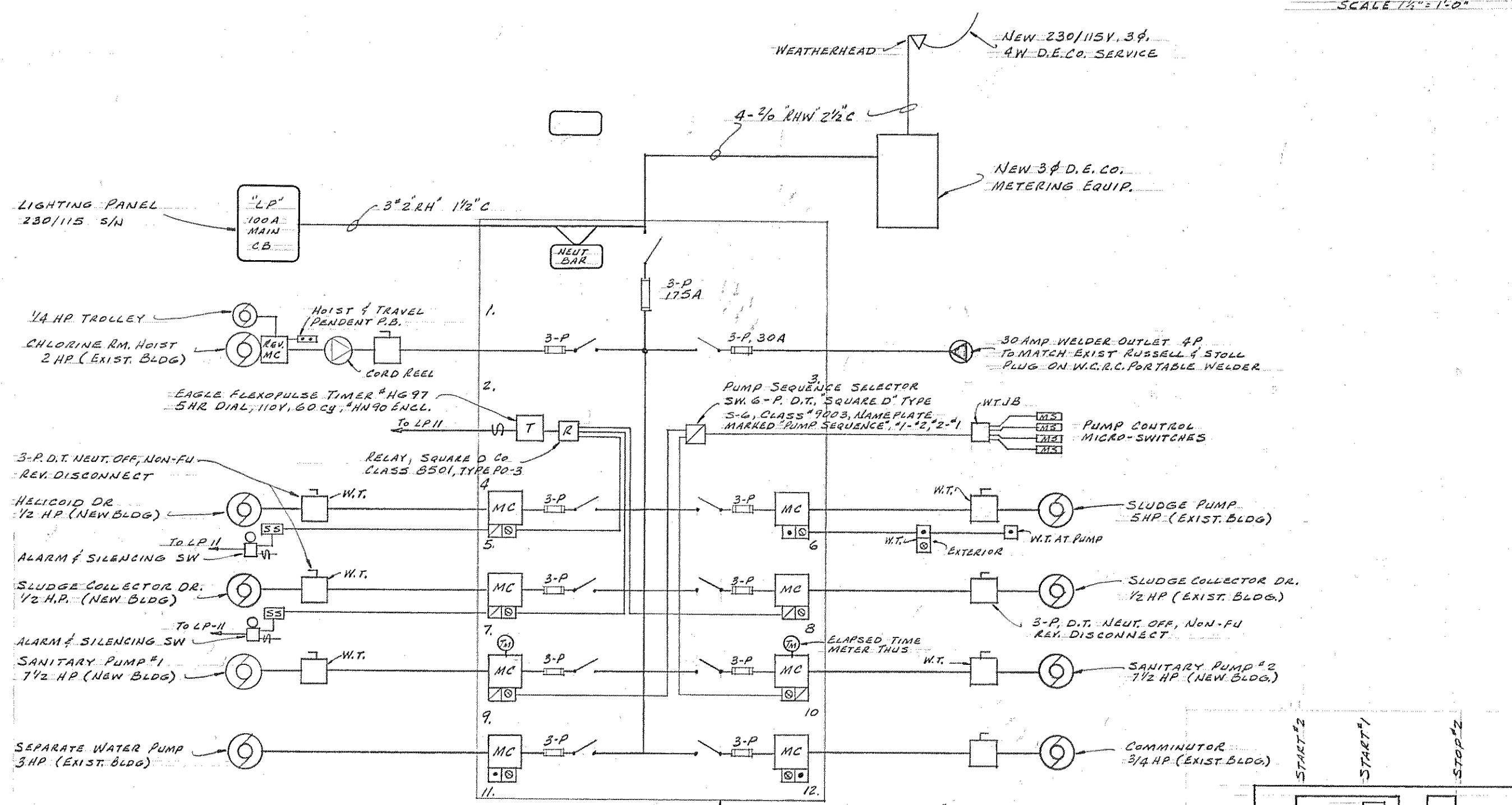
PLAN ELEV 574.5





















PARTIAL PLAN EL 565.0

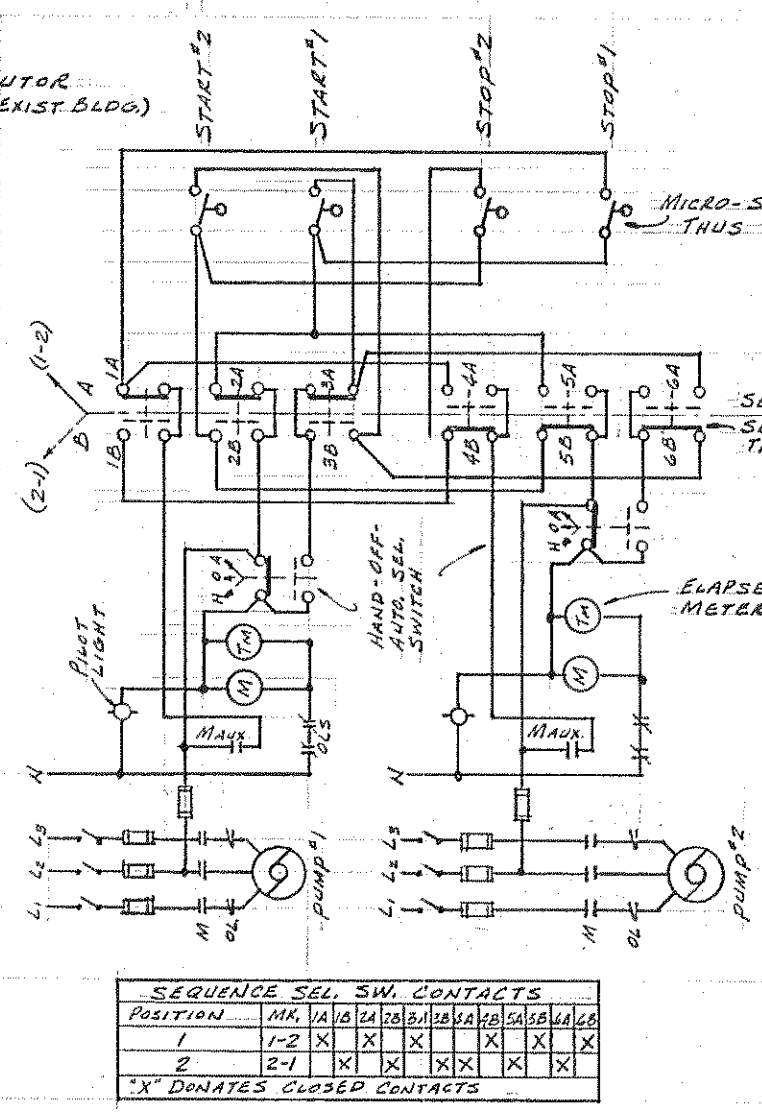


PLAN EL 584.5

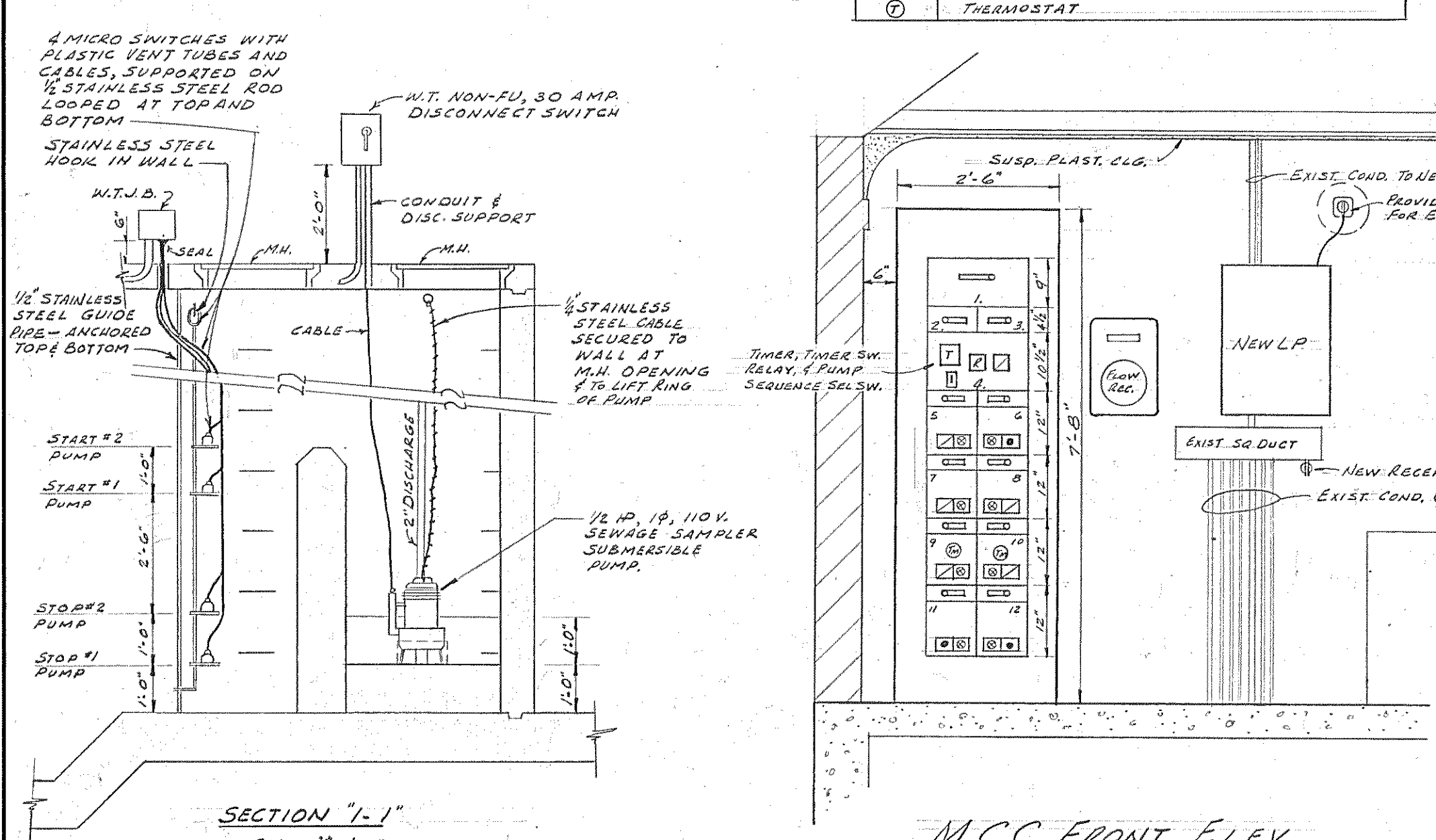


CIRC.	USE
1.	LIGHTING METER CHAMBER & VENT FAN
2.	" NEW SETTLING TANK
3.	" EXIST. SETTLING TANK
4.	" FIRST FLOOR & EXTERIOR
5.	" SLUDGE PUMP CHAMBER, VENT FAN, & STAIRS
6.	RECEPTACLES METER CHAMBER & SETTLING TANKS
7.	" FIRST FLOOR
8.	SEWAGE SAMPLER PUMP
9.	SUMP PUMP - SLUDGE PUMP CHAMBER
10.	FLOW METER
11.	ALARM BELL & TIMER
12.	UNIT HEATERS
13.	BAR SCREEN VENT FAN
14.	SUMP PUMP - METER CHAMBER
15.	CHLORINE ROOM FAN
16.	WATER HEATER
17.	SPARE
18.	SPARE

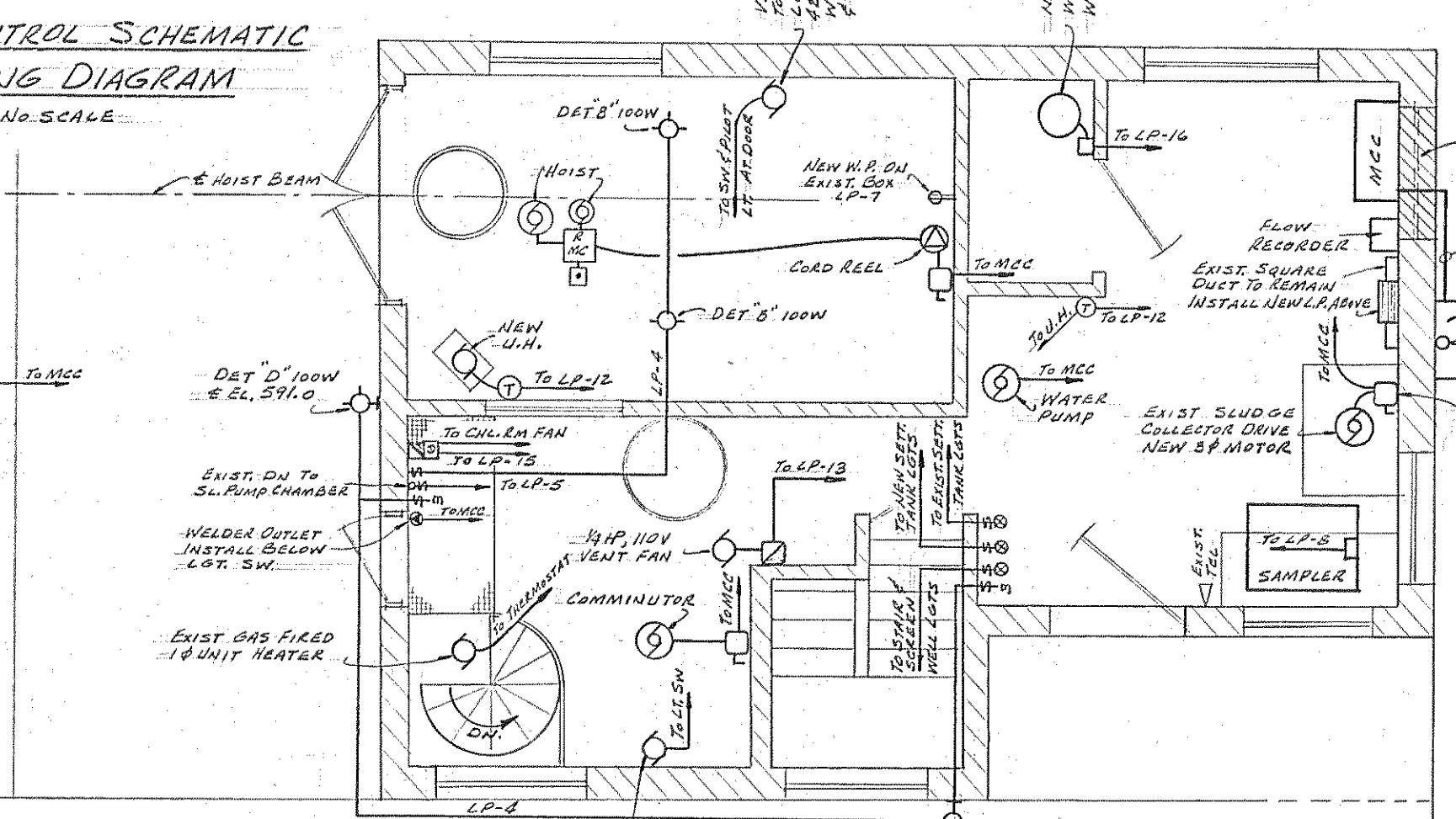
LEGEND	
	3 ϕ , 220 VOLT MOTOR
	1 ϕ , 110 VOLT MOTOR
M.C.C.	MOTOR CONTROL CENTER
	MOTOR CONTROLLER
	DISCONNECT SWITCH, 600 V., 3- ϕ , NON-FD, UNLESS NOTED
	1 ϕ , 110 V., MANUAL MOTOR CONTROLLER
	HAND-STOP SELECTOR SWITCH
	START-STOP PUSH BUTTON SWITCH
	SHEAR PIN OVERLOAD ϕ ALARM SWITCH
	LEVEL CONTROL MICRO-SWITCHES
W.P.	WEATHER PROOF
W.T.	WATER TIGHT NEMA IV
	DUPLEX CONVENIENCE OUTLET, GROUNDING TYPE
	INCANDESCENT LIGHTING FIXTURE CEILING OUTLET
	INCANDESCENT LIGHTING FIXTURE WALL BRACKET OUTLET
	LIGHT SWITCH, 1-POLE, INSTALL 4' ABOVE FLOOR, 3-WAY WHERE NOTED
	PILOT LIGHT
	CONDUIT RUN EXPOSED
	CONDUIT RUN EXPOSED BELOW SLAB
	CONDUIT RUN CONCEALED
	THERMISTAT



PUMP CONTROL SCHEMATIC WIRING DIAGRAM



MCC FRONT ELEV.
SCALE - $\frac{1}{2}" = 1'-0"$



PARTIAL RELEASE

				BOARD OF WAYNE COUNTY ROAD COMMISSIONERS	
				ALTERATIONS & ADDITIONS TO ROCKWOOD SEWAGE TREATMENT PLANT	
1-17-63		ISSUED FOR BIDS			
1-18-63		HEALTH DEPT. SUBMITTAL			
DATE		ADDITIONS AND/OR REVISIONS		JOB NO. 6259-220	
FLD. BK.		SCALE AS NOTED	DR. RMB	CK. G.R.	APP. GCH
				DATE Dec. 27, 1962	
		HUBBELL, ROTH & CLARK, INC. CONSULTING ENGINEERS 954 NORTH HUNTER BOULEVARD BIRMINGHAM, MICHIGAN			
		SHEET NO. 4 OF 4			

SHEET INDEX

1. PLOT PLAN, HYD. DIAG., SOIL BORING
2. WORK IN EXISTING BLDG.
3. CHEMICAL FEED
4. FILTER & PUMP STATION
5. FILTER & PUMP STATION
6. FINAL SEDIMENTATION TANK
7. MISC. DETAILS
8. INFLUENT METER INSTALLATION
- E1. ELECTRICAL
- E2. ELECTRICAL

S.D. STANDARD DETAILS

BOARD OF PUBLIC WORKS

WILLIAM E. KREGER
CHAIRMAN

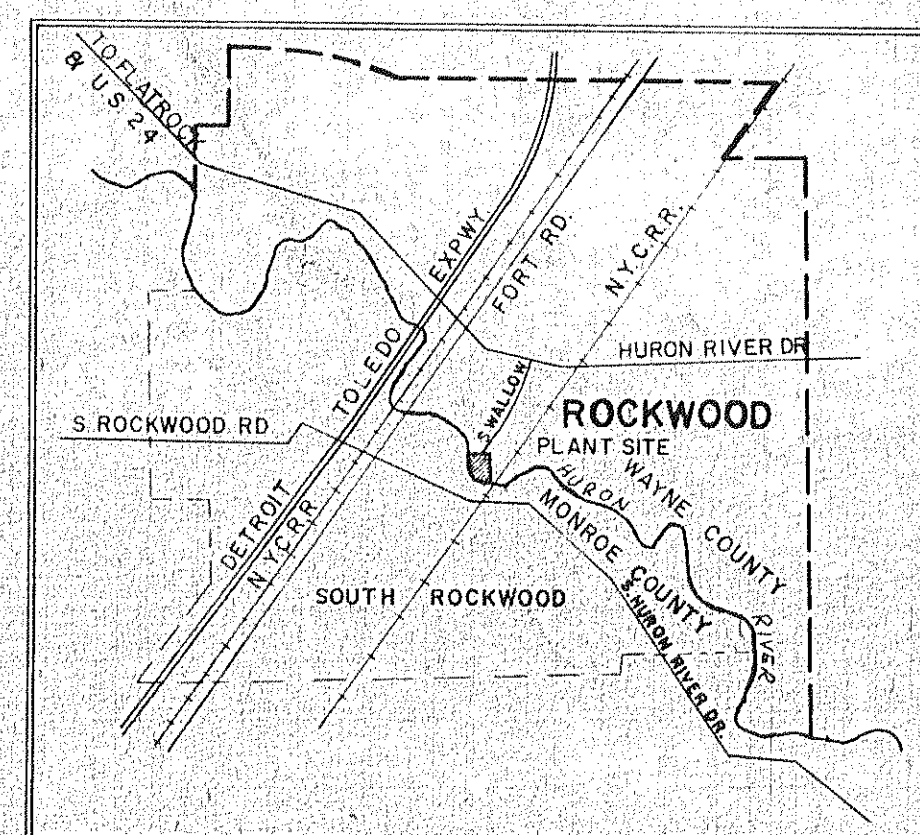
MICHAEL BERRY
VICE-CHAIRMAN

PHILIP J. NEUDECK
SECRETARY

ROCKWOOD - 1970 ADDITIONS TO WASTEWATER TREATMENT PLANT

COUNTY OF WAYNE, MICHIGAN

NOVEMBER 1970



LOCATION MAP

APPROVED *M. Togasaki*
M. TOGASAKI
CHIEF ENGINEER - DESIGN DIVISION

APPROVED *George R. Bingham*
GEORGE R. BINGHAM
DIRECTOR

APPROVED *Duane R. Egeland*
DUANE R. EGELAND
CHIEF ENGINEER

PREPARED UNDER SUPERVISION OF
David Brody
REGISTERED PROFESSIONAL ENGINEER REG. NO. 11531

HUBBELL, ROTH & CLARK, INC.

CONSULTING ENGINEERS

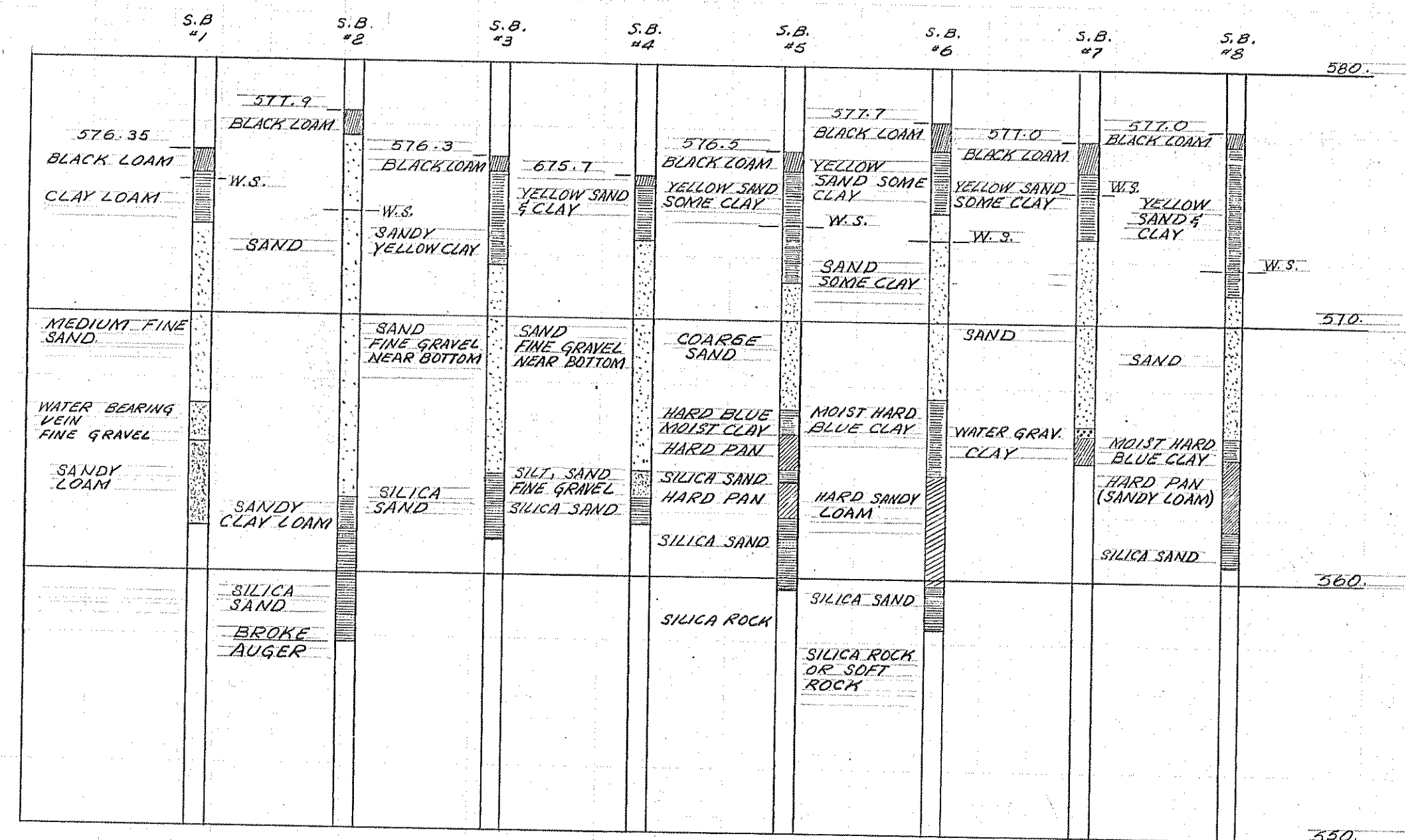
BLOOMFIELD HILLS,

MICHIGAN

WAYNE COUNTY JOB NO. S-234

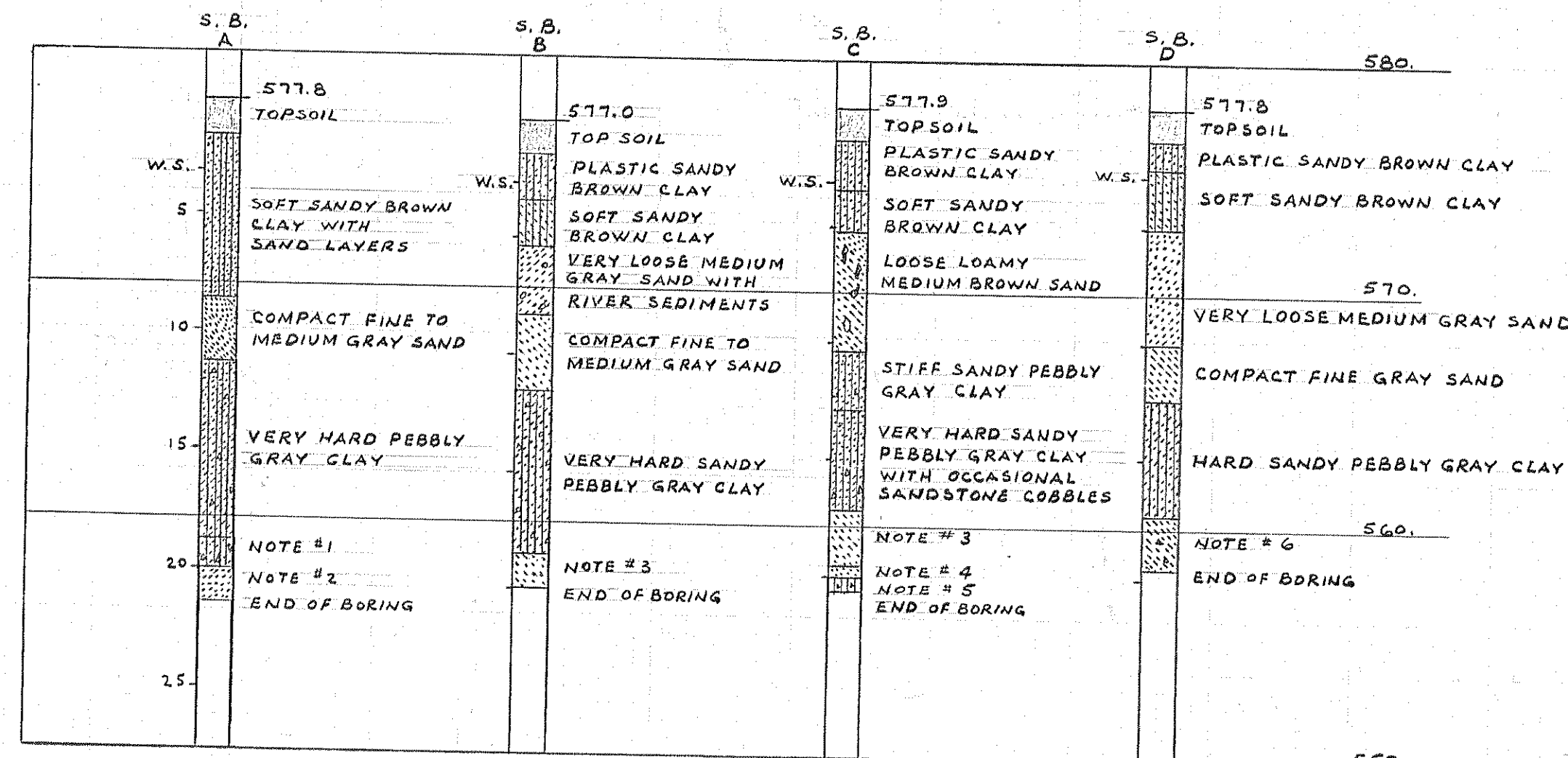
WPC-MICH.- 1639

MICHIGAN DEPARTMENT OF HEALTH PERMIT#S-700356



SOIL BORINGS

NOTE: BORINGS SHOWN WERE MADE IN 1939 FOR ORIGINAL PLANT CONSTRUCTION

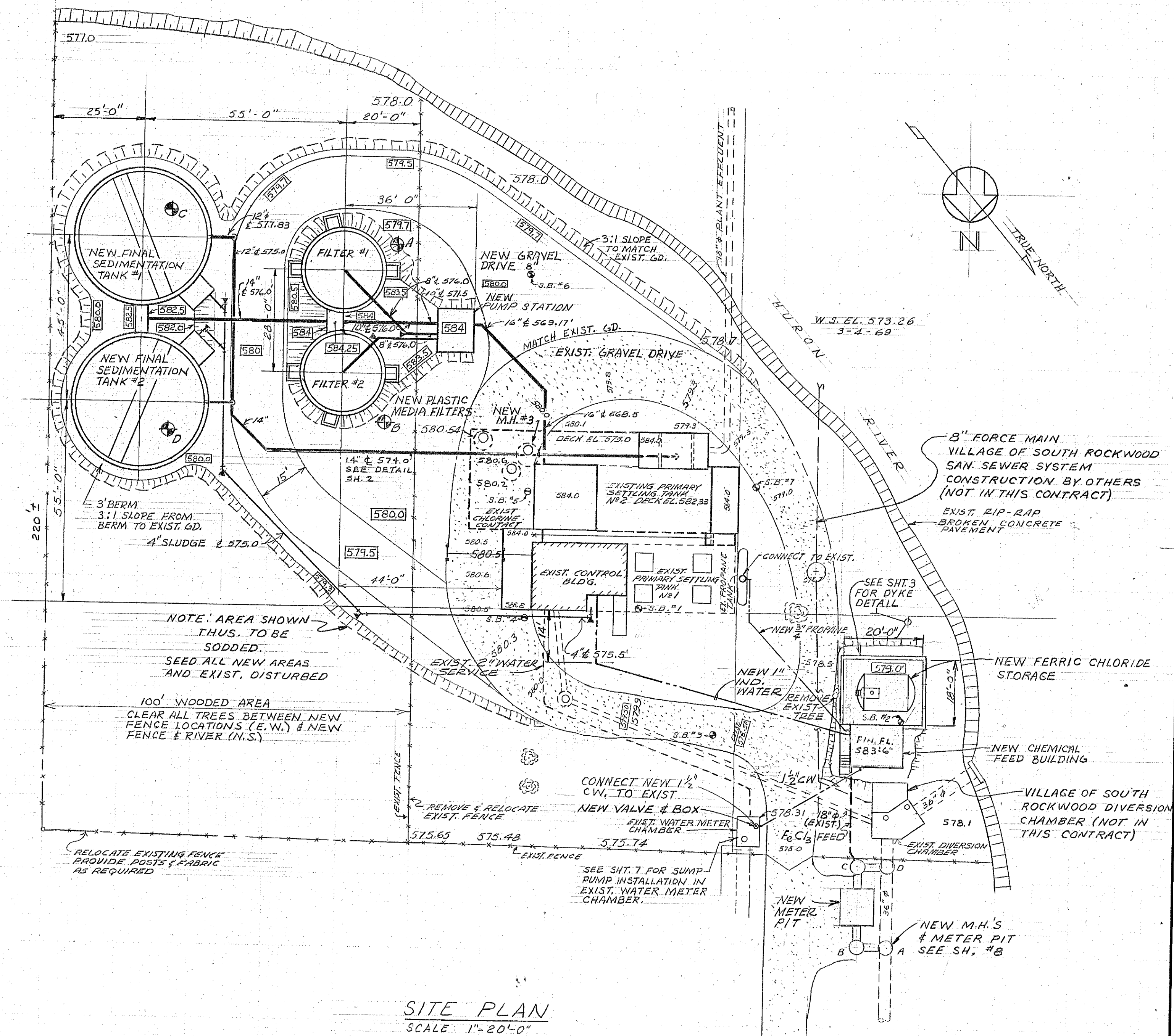


SOIL BORINGS

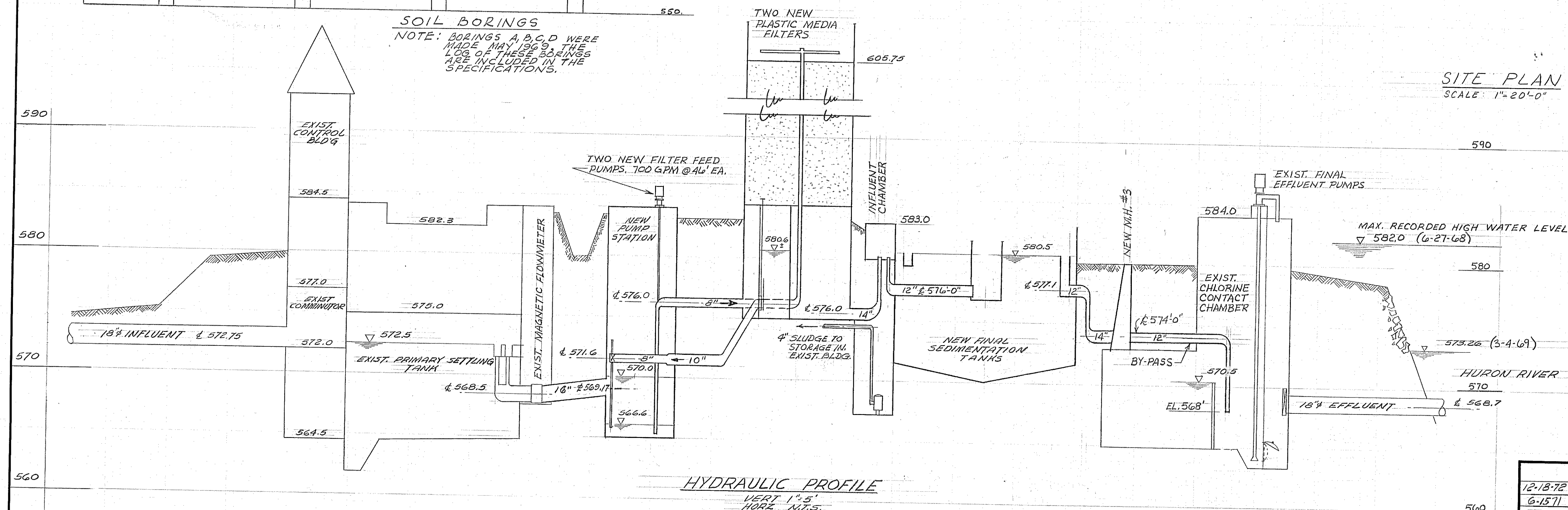
NOTE: BORINGS A,B,C,D WERE MADE MAY 1969. THE LOG OF THESE BORINGS ARE INCLUDED IN THE SPECIFICATIONS.

NOTES

- VERY HARD SANDY PEBBLY GRAY CLAY WITH SANDSTONE COBBLES.
- VERY COMPACT FINE TO VERY FINE GRAY SAND WITH SANDSTONE COBBLES.
- VERY COMPACT FINE TO VERY FINE GRAY SAND.
- COMPACT FINE GRAY SAND
- HARD SANDY PEBBLY GRAY CLAY WITH SANDSTONE COBBLES.
- COMPACT VERY FINE GRAY SAND WITH OCCASIONAL COBBLES.

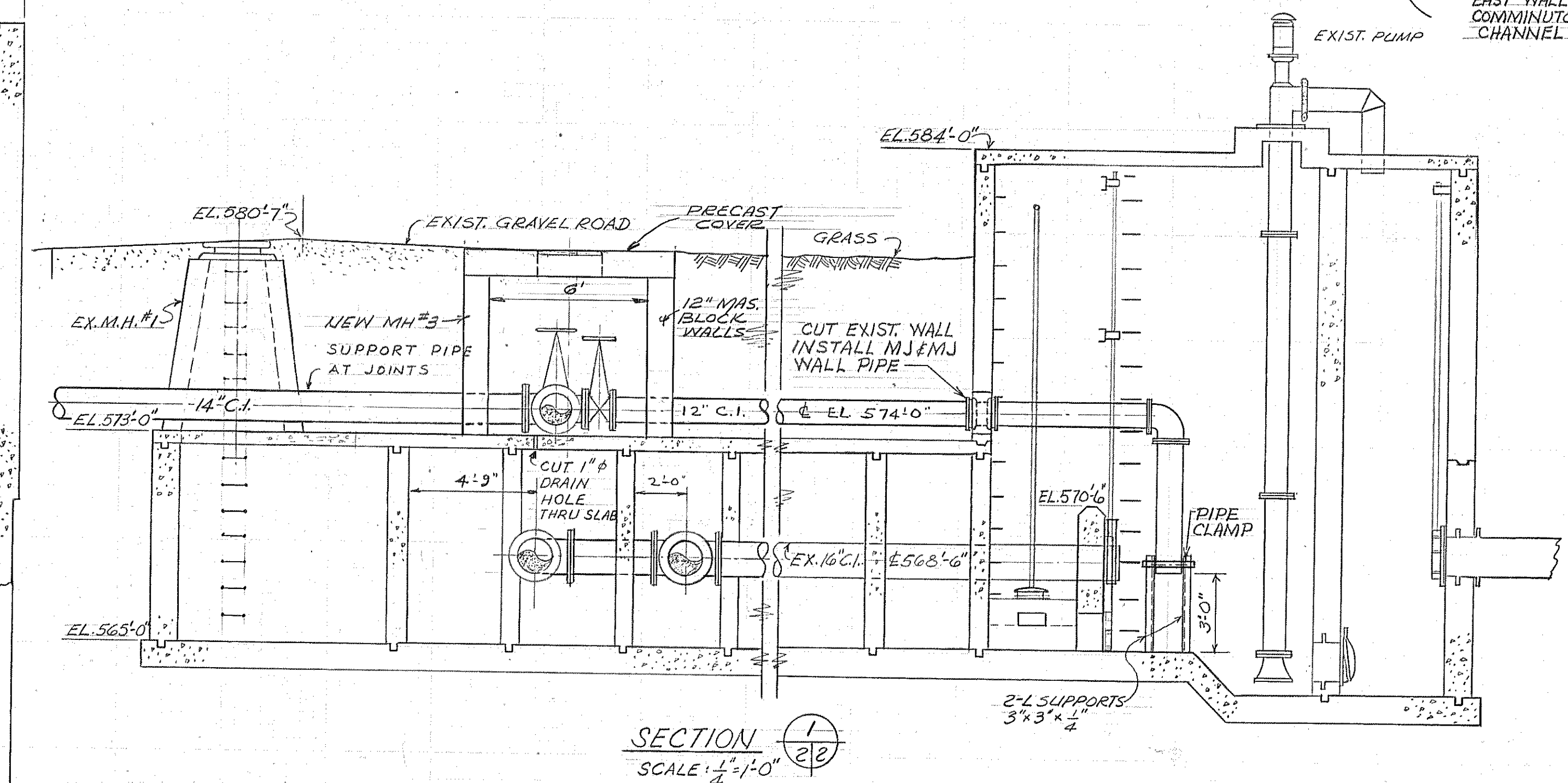
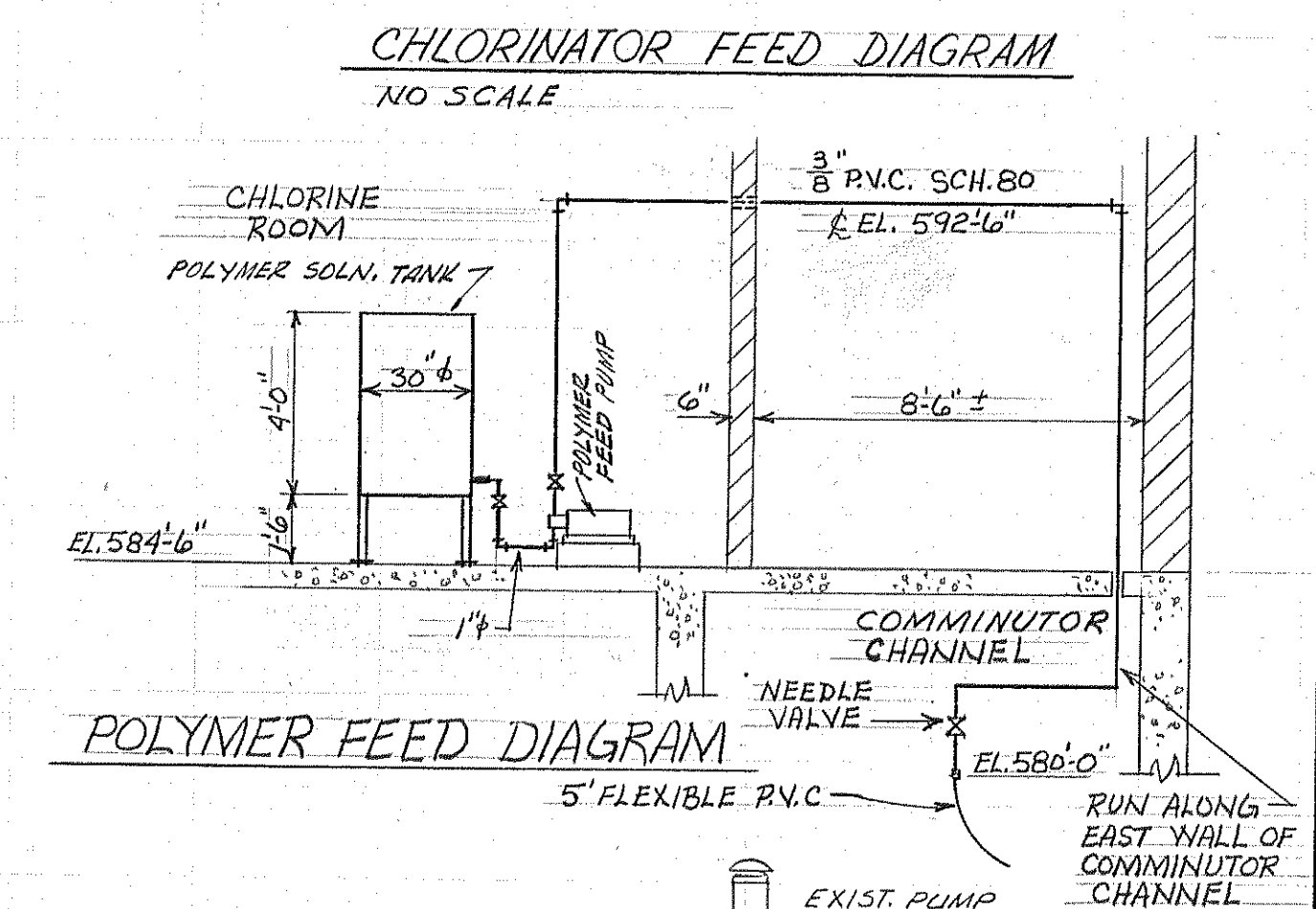
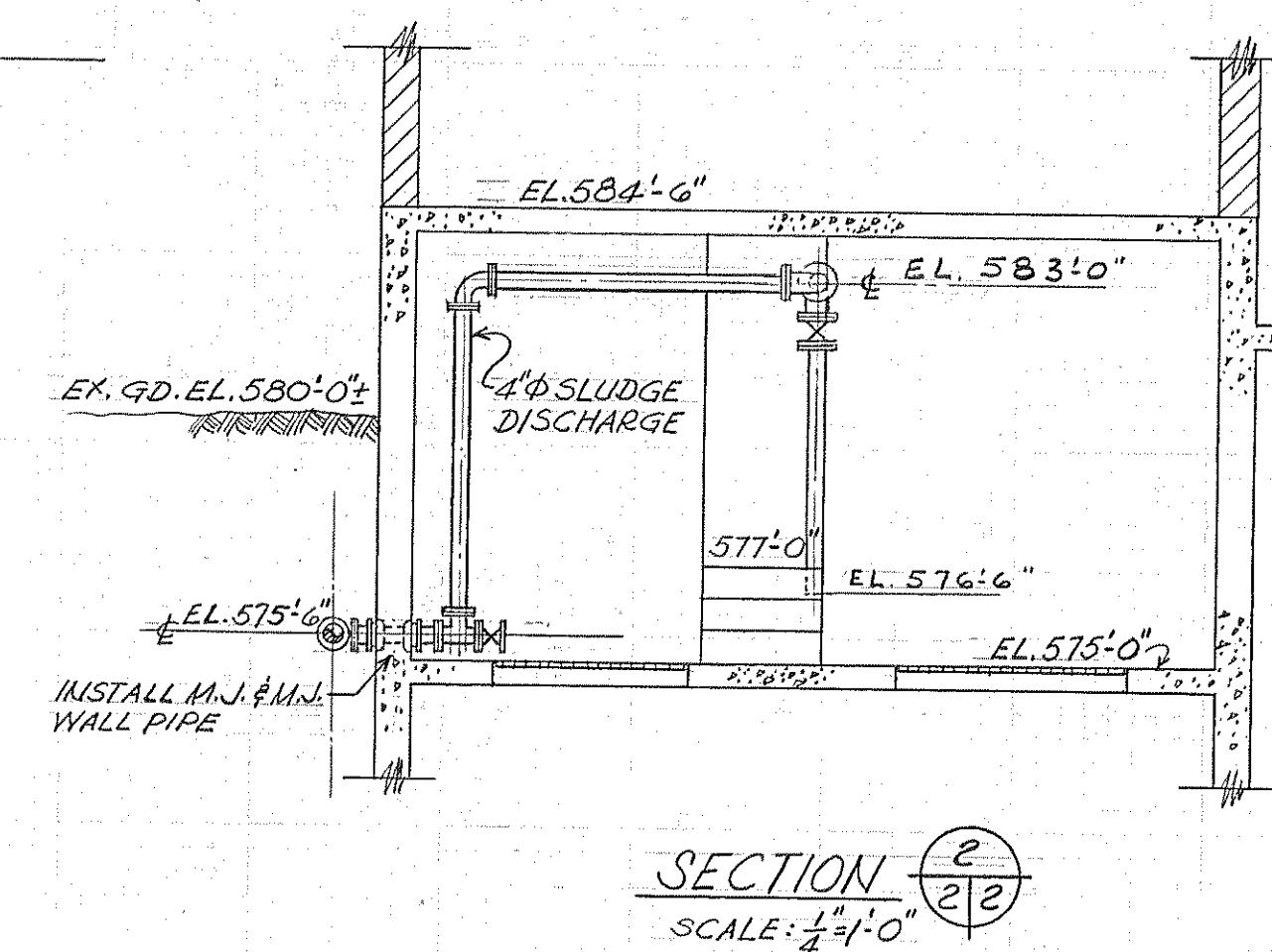
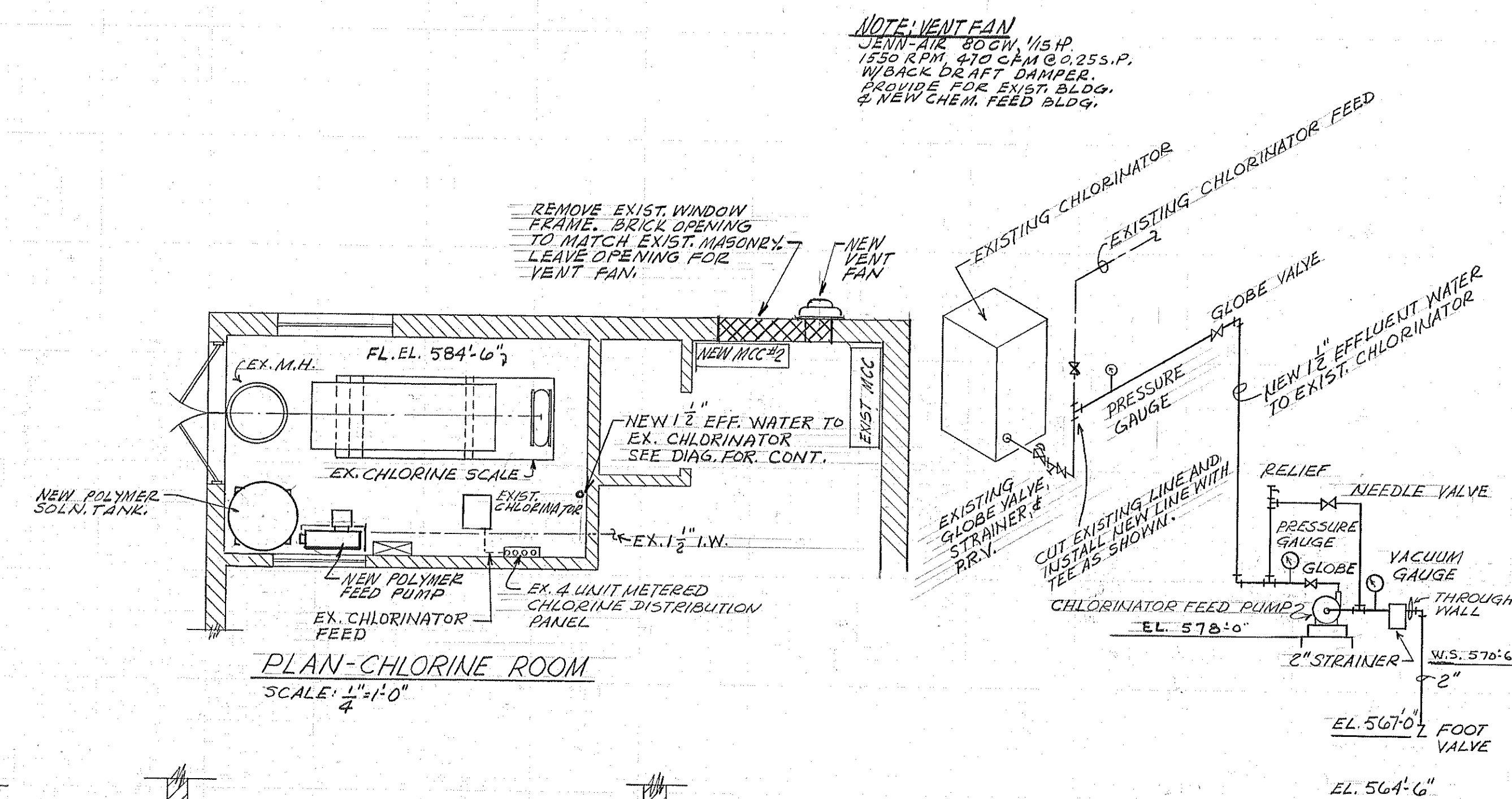
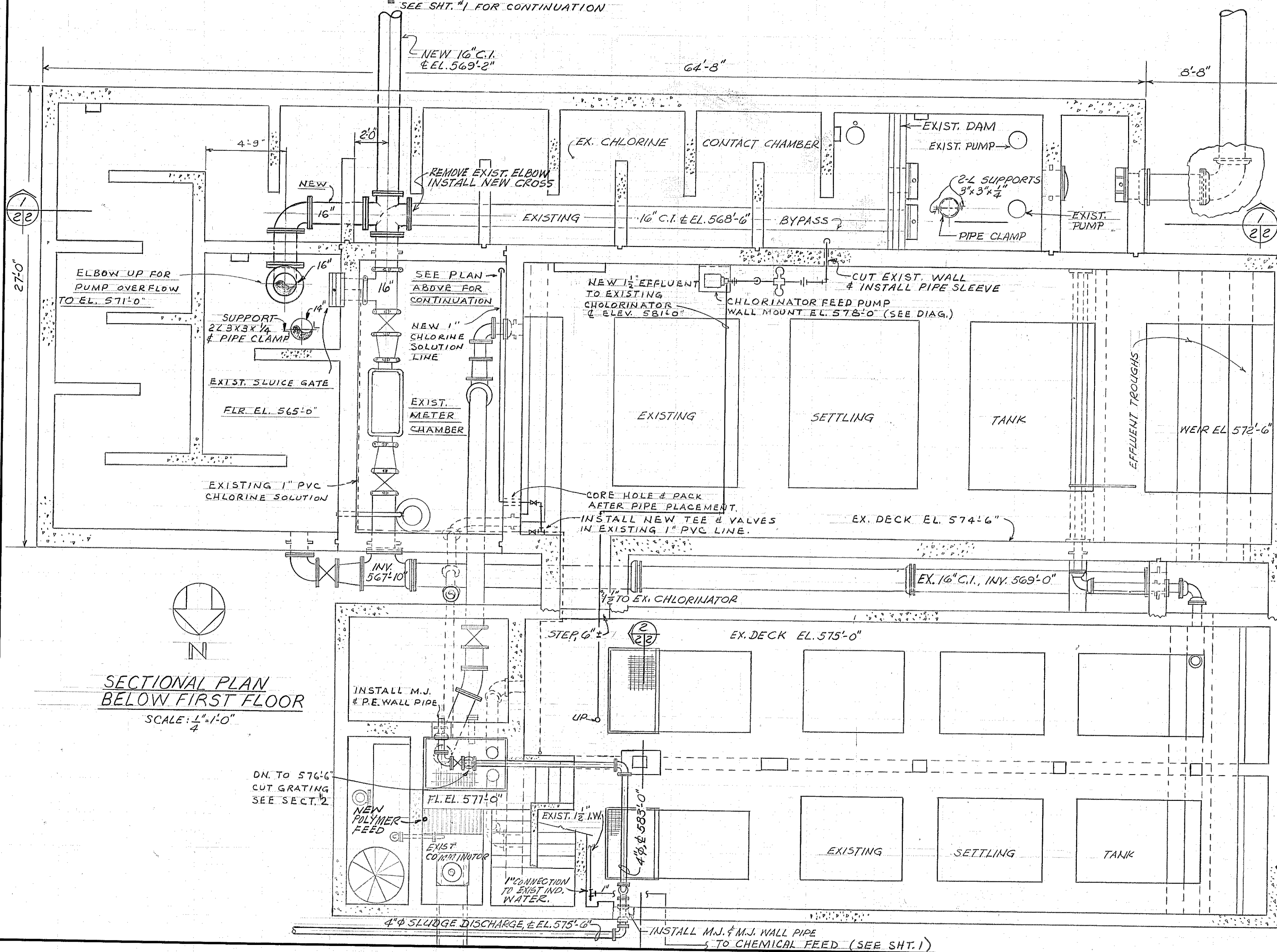
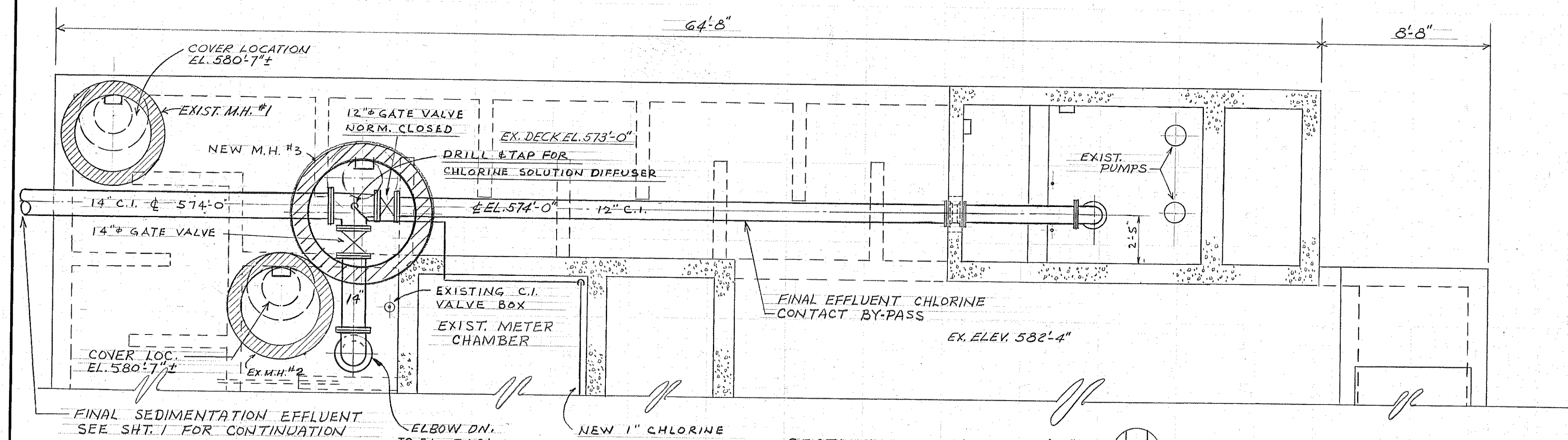


SITE PLAN
SCALE: 1"=20'-0"

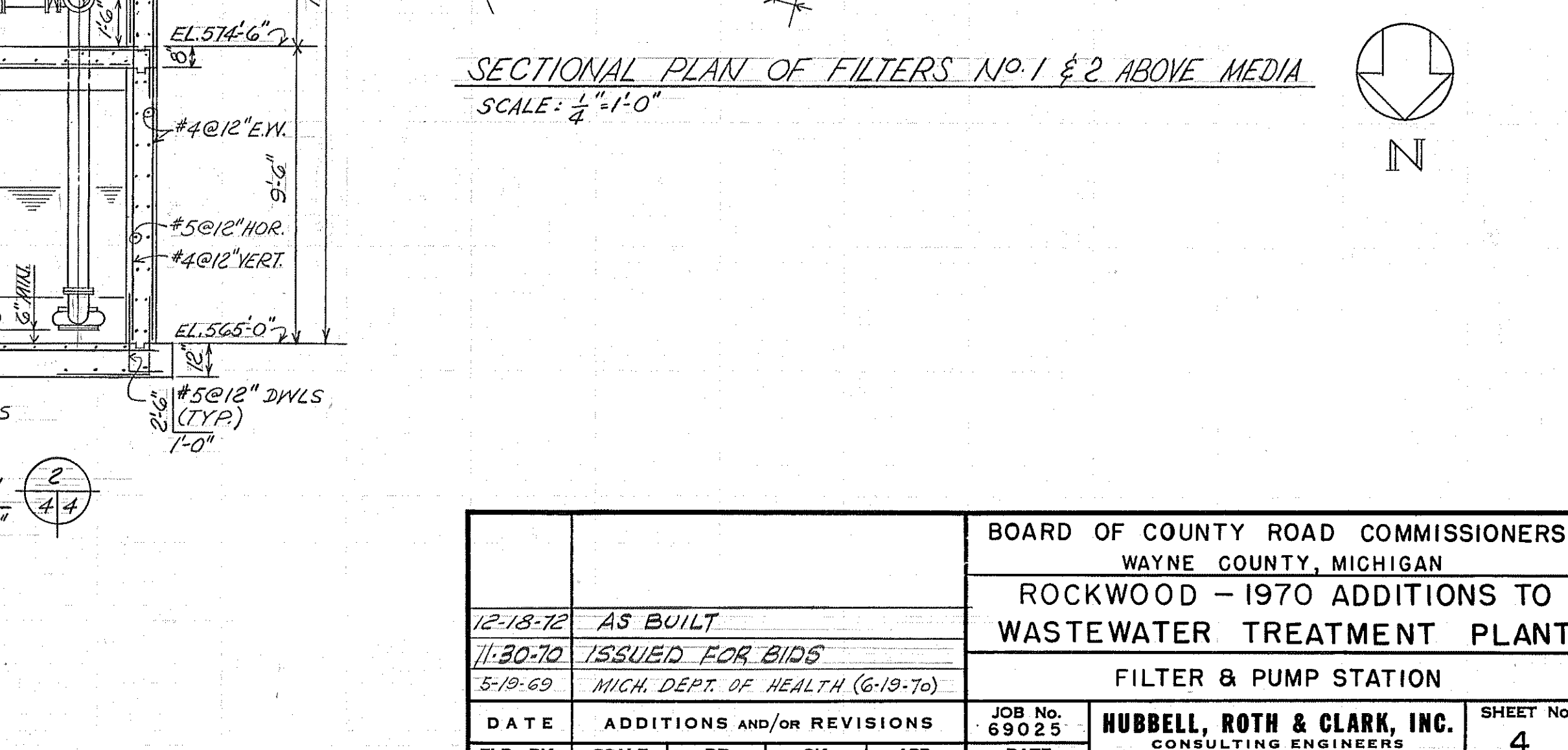
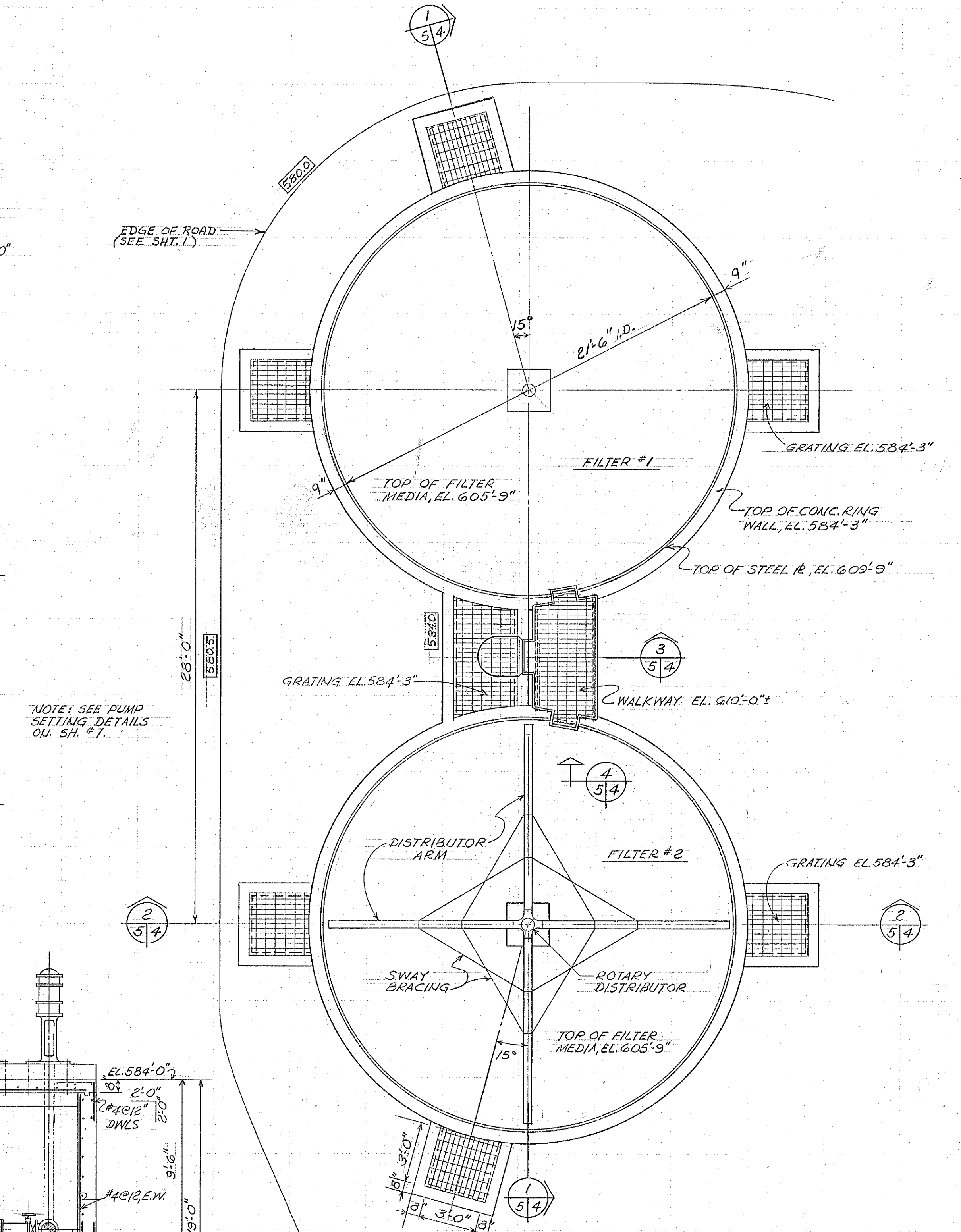
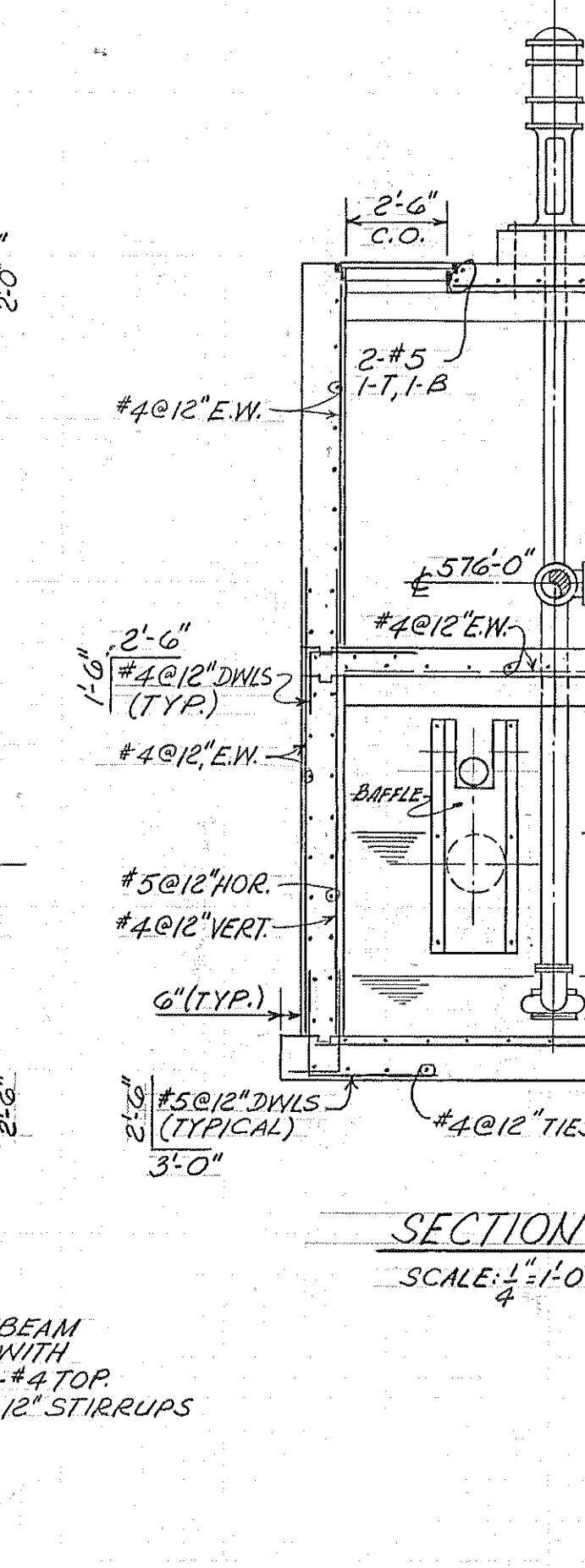
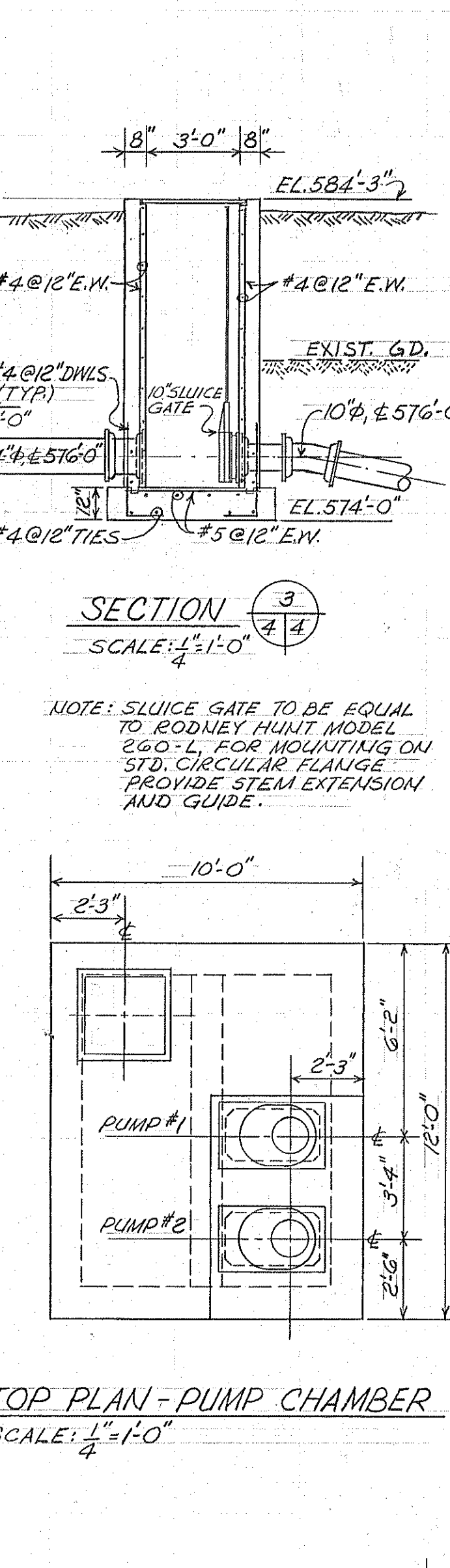
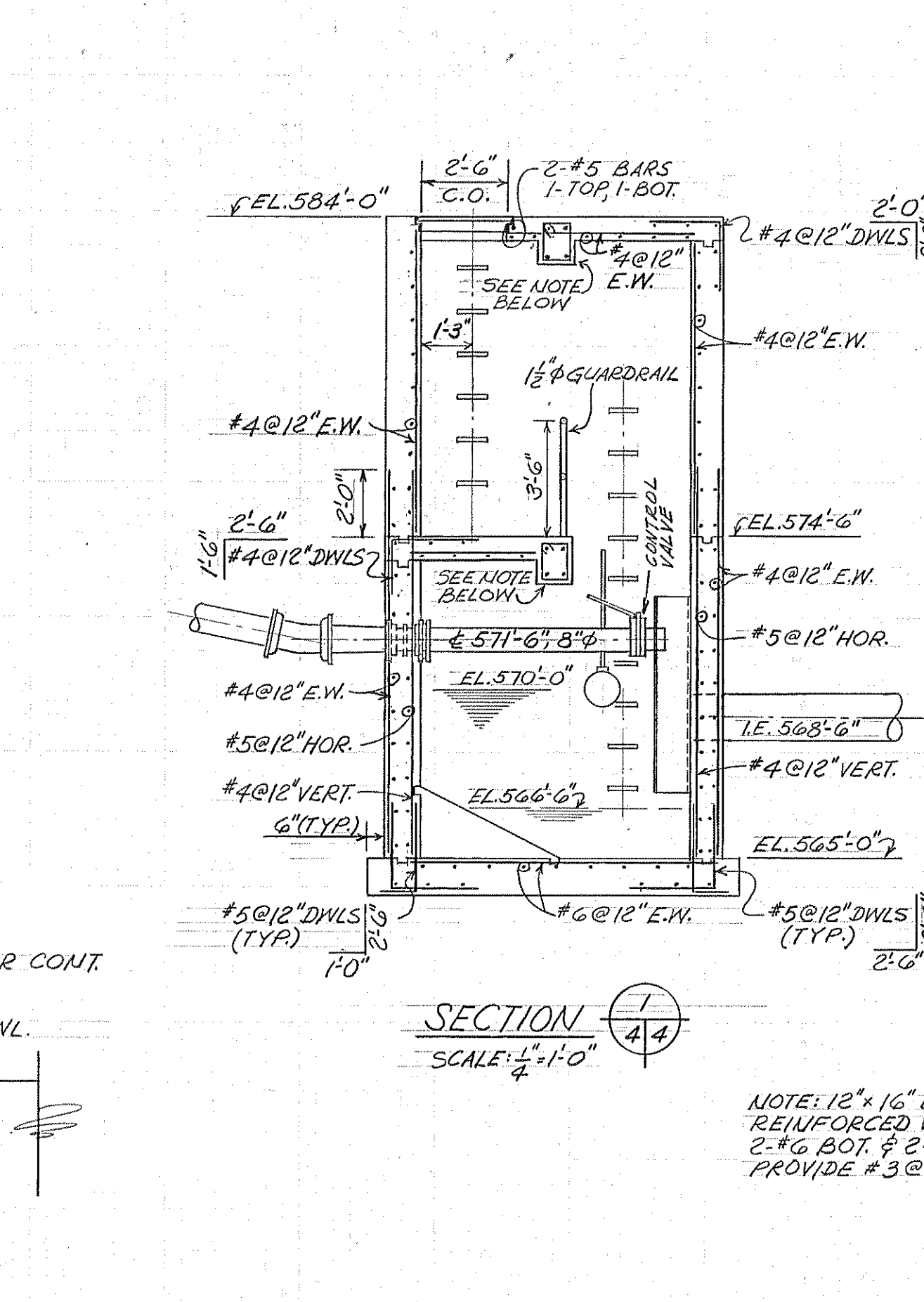
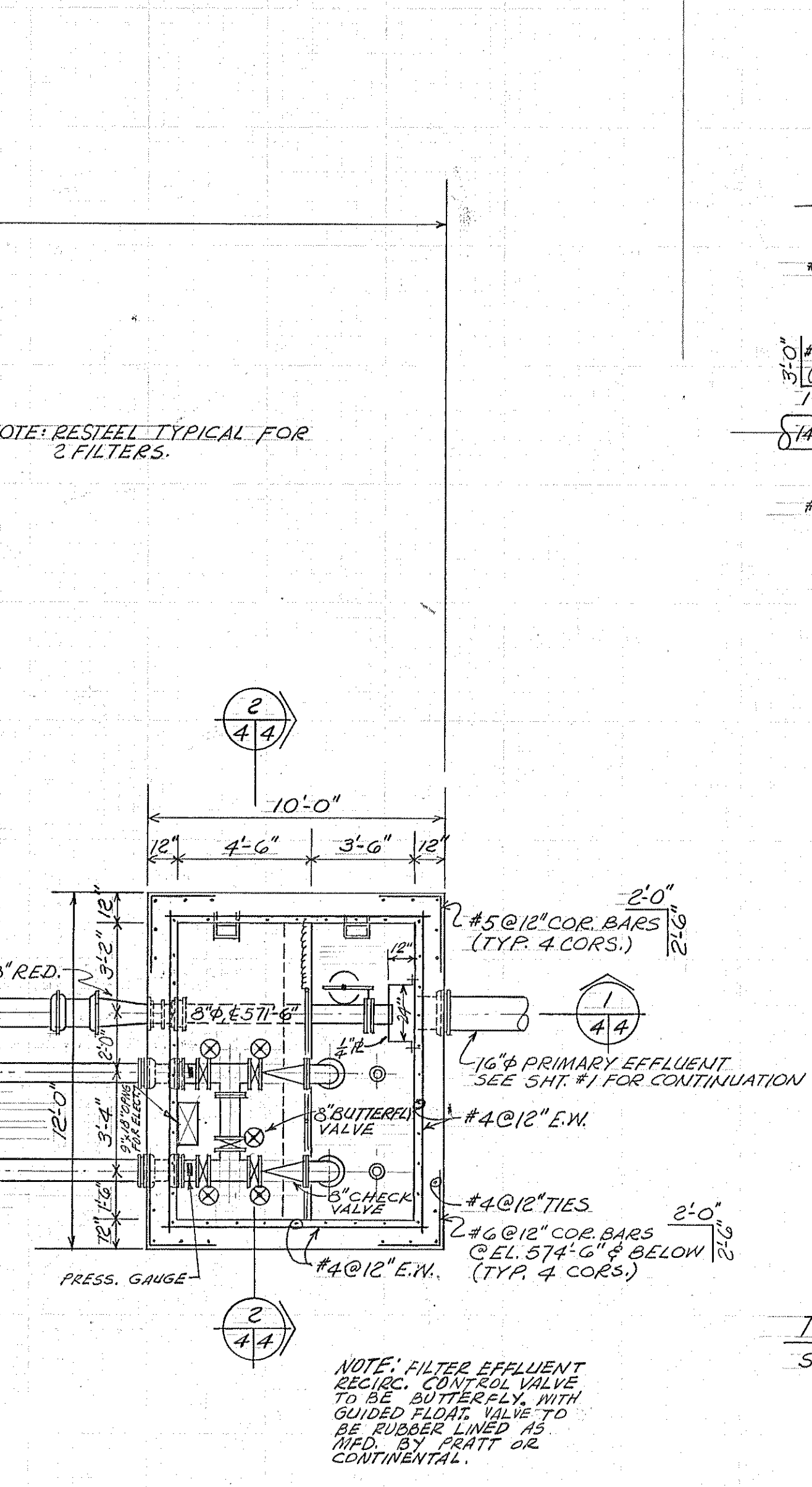
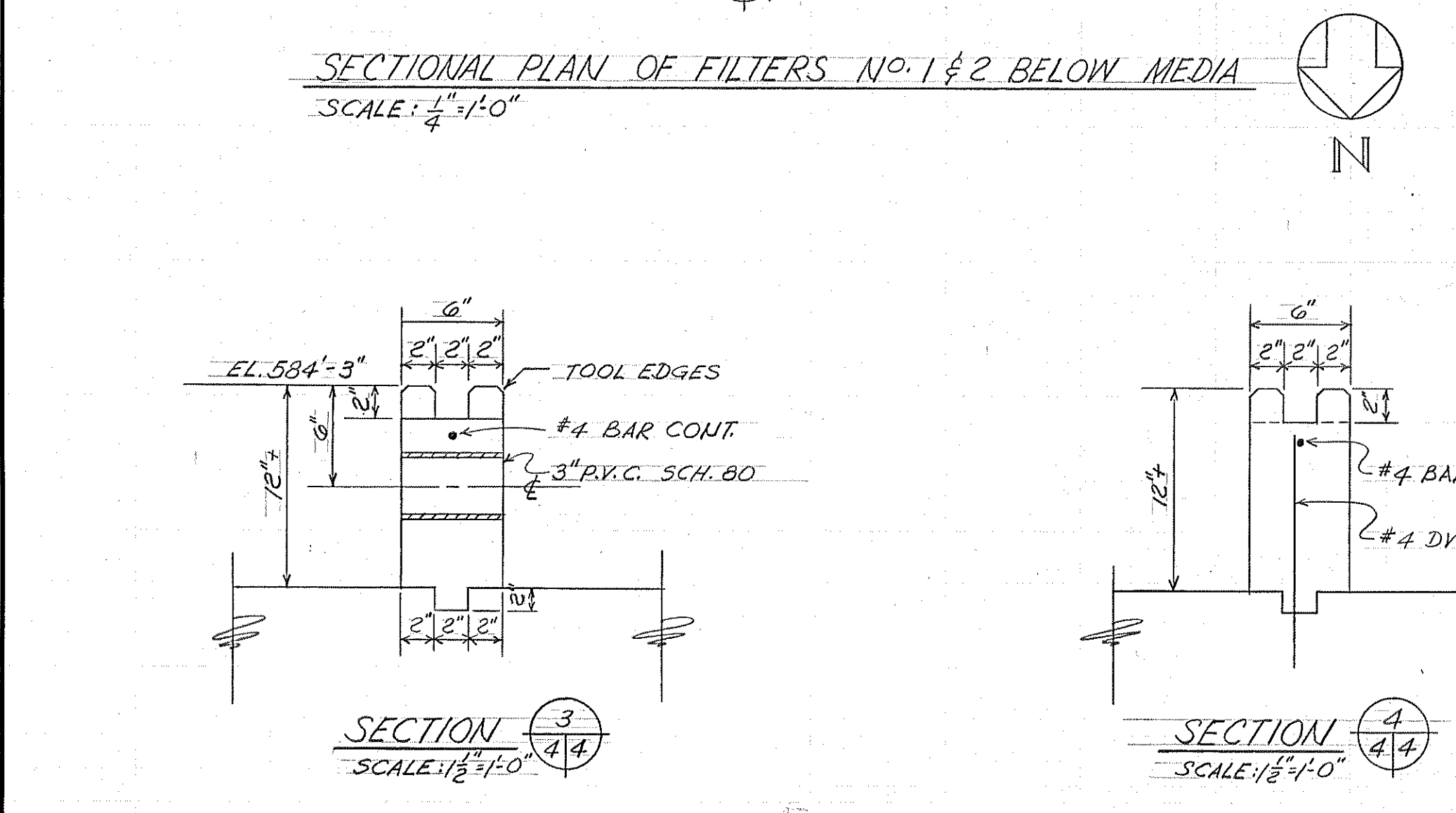
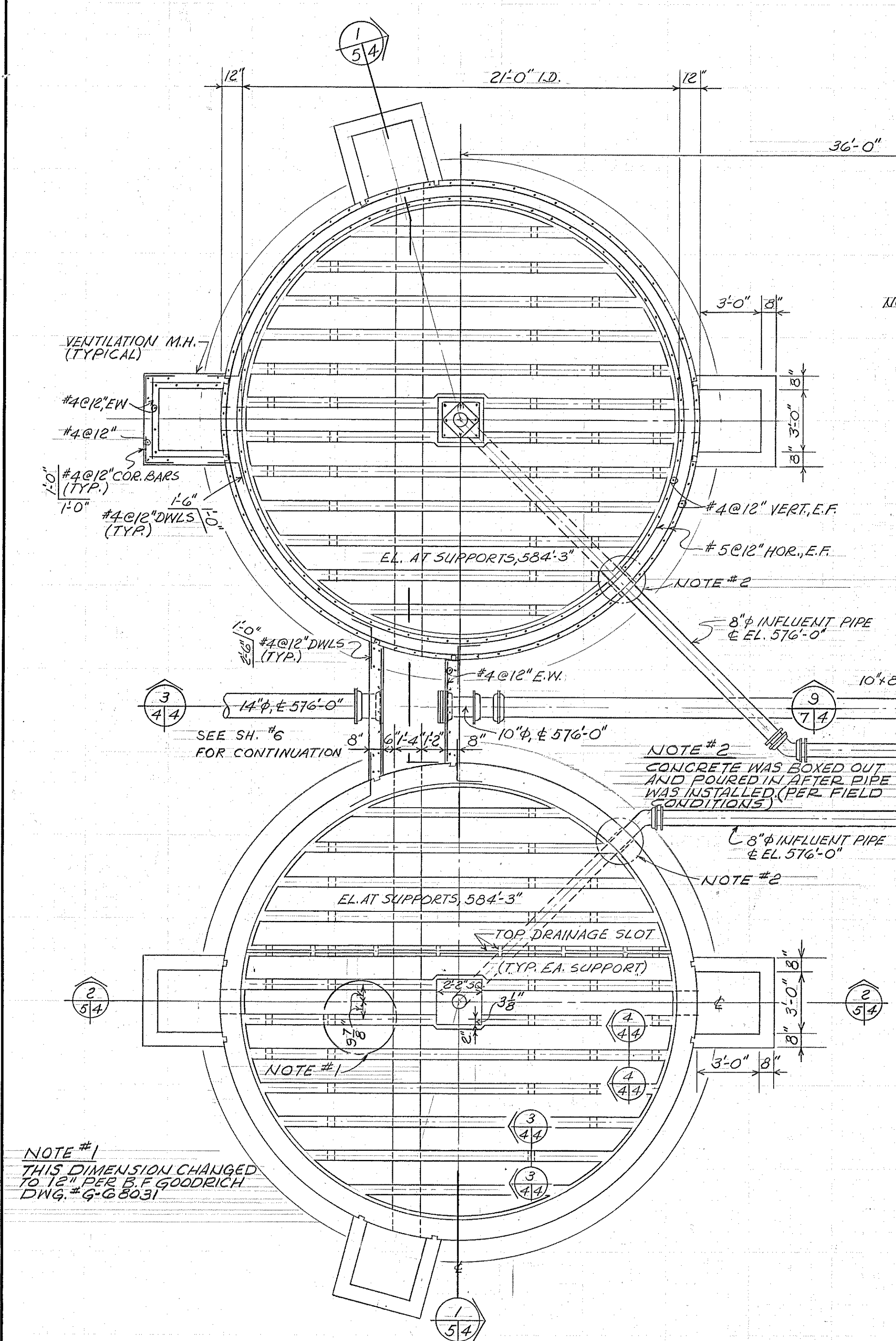


HYDRAULIC PROFILE
VERT. 1"=5'
HORIZ. N.T.S.

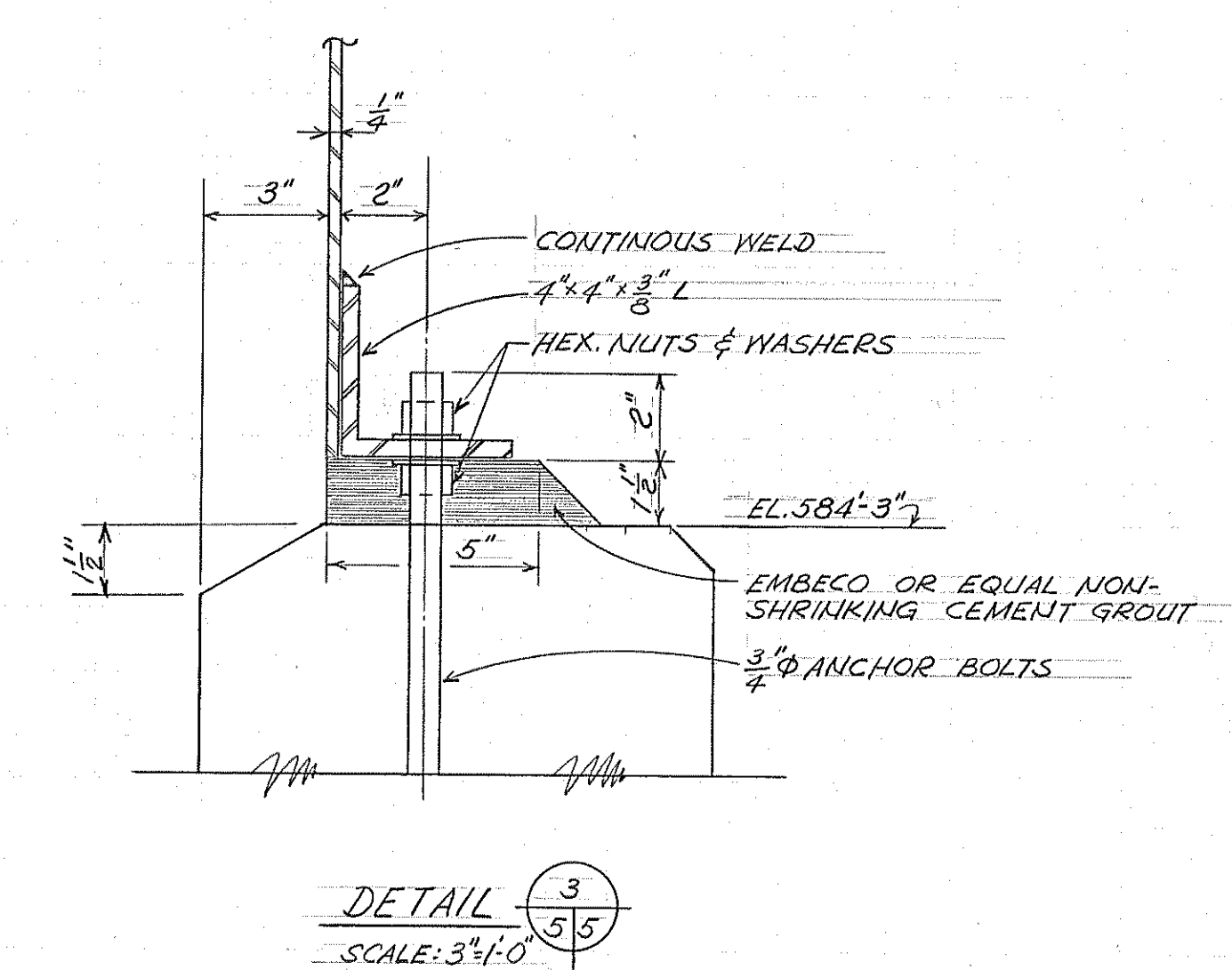
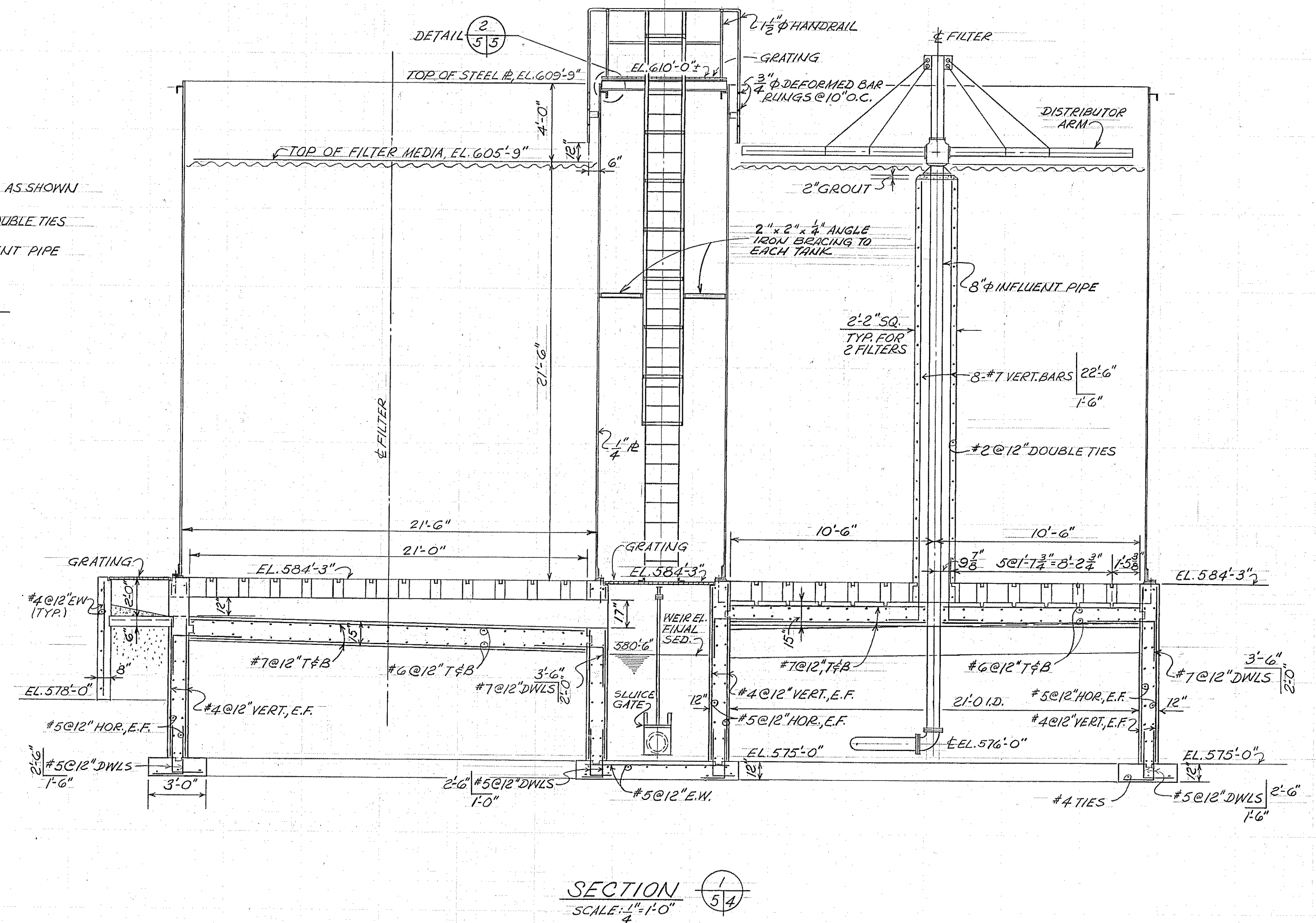
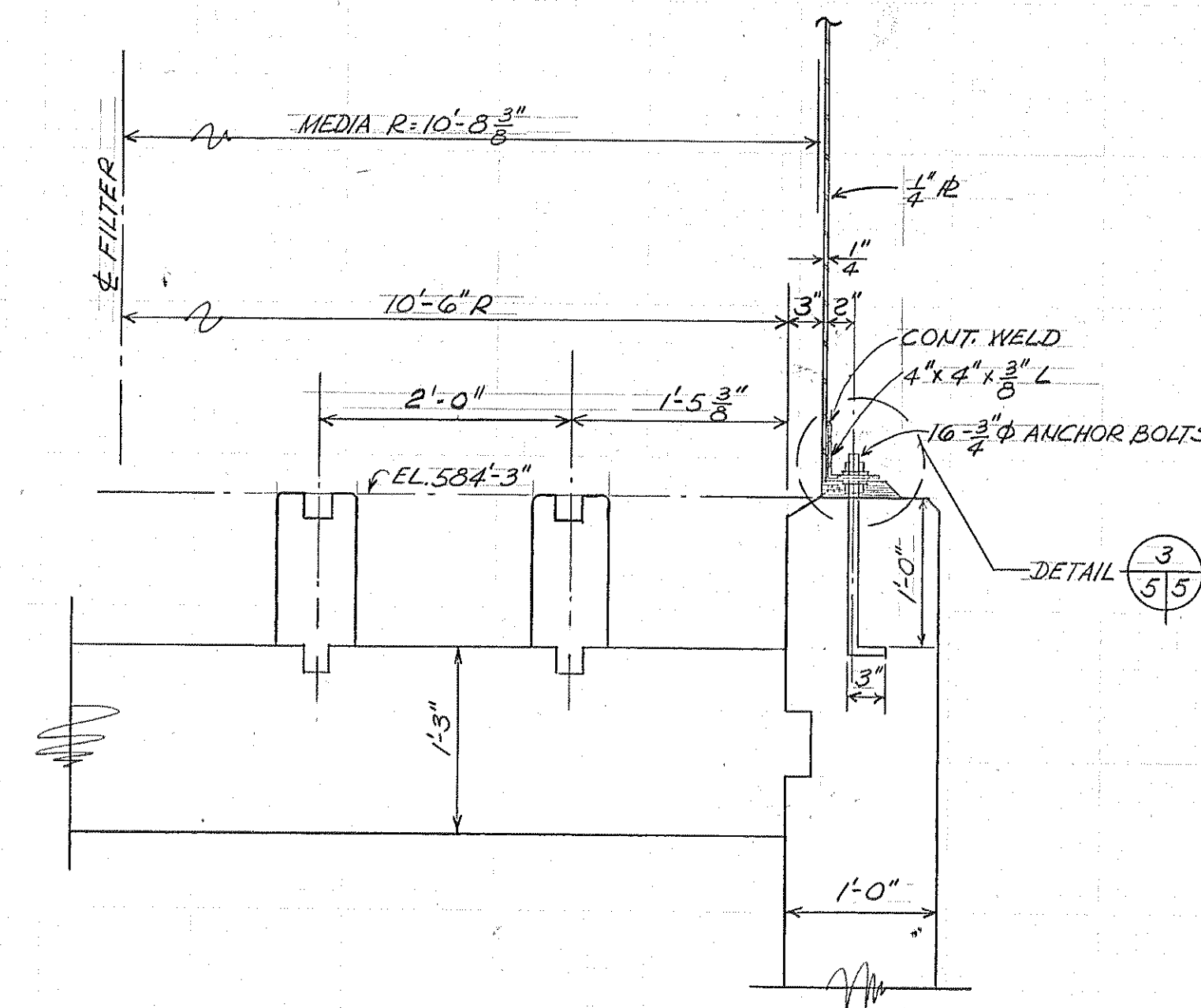
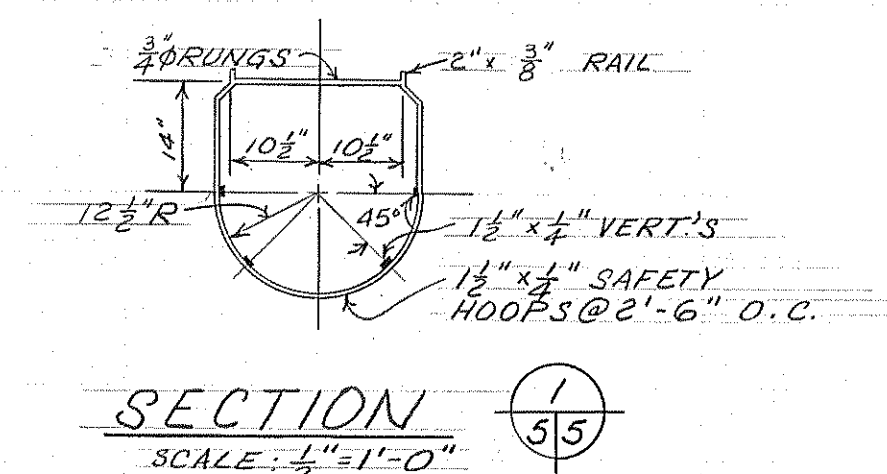
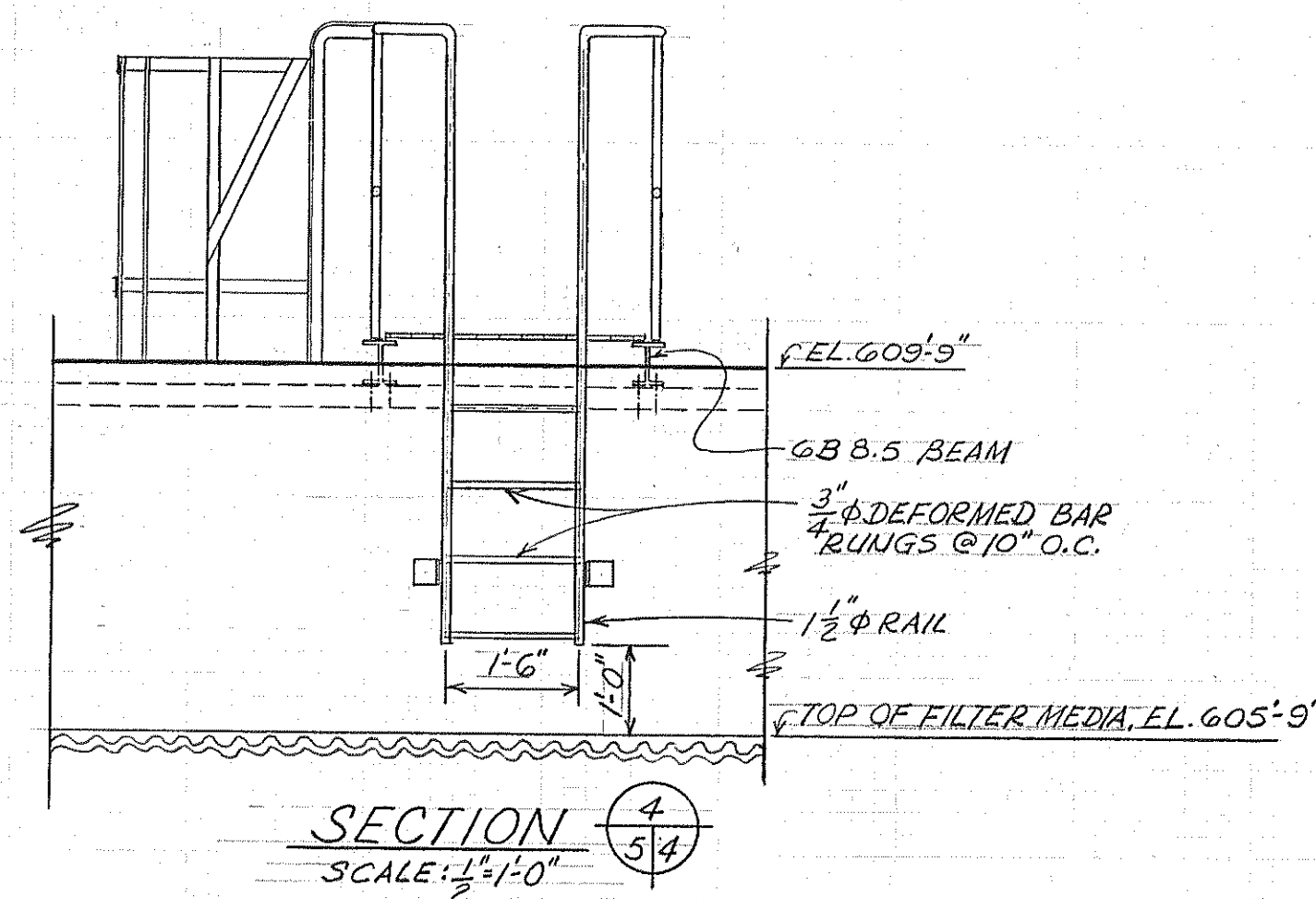
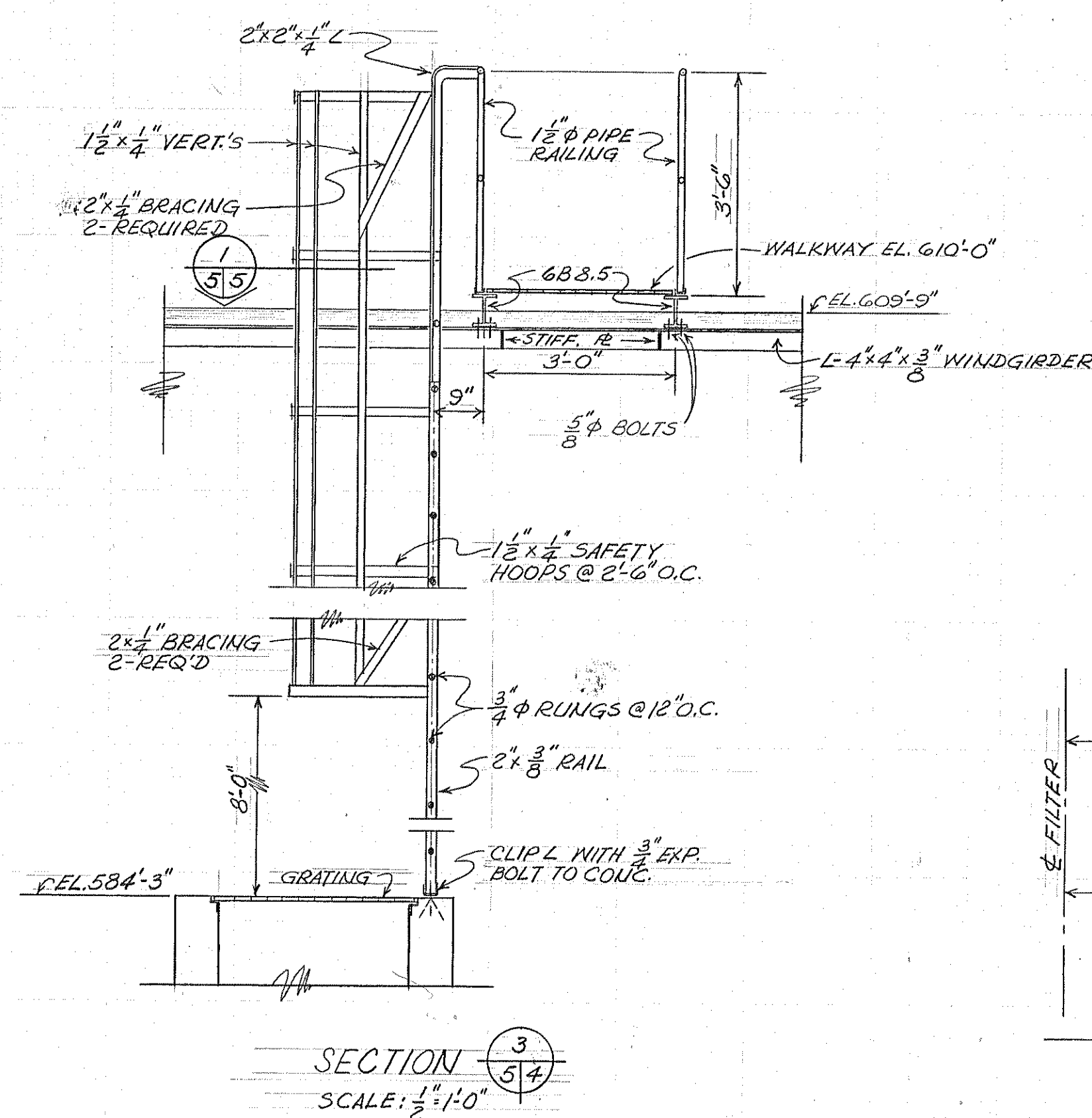
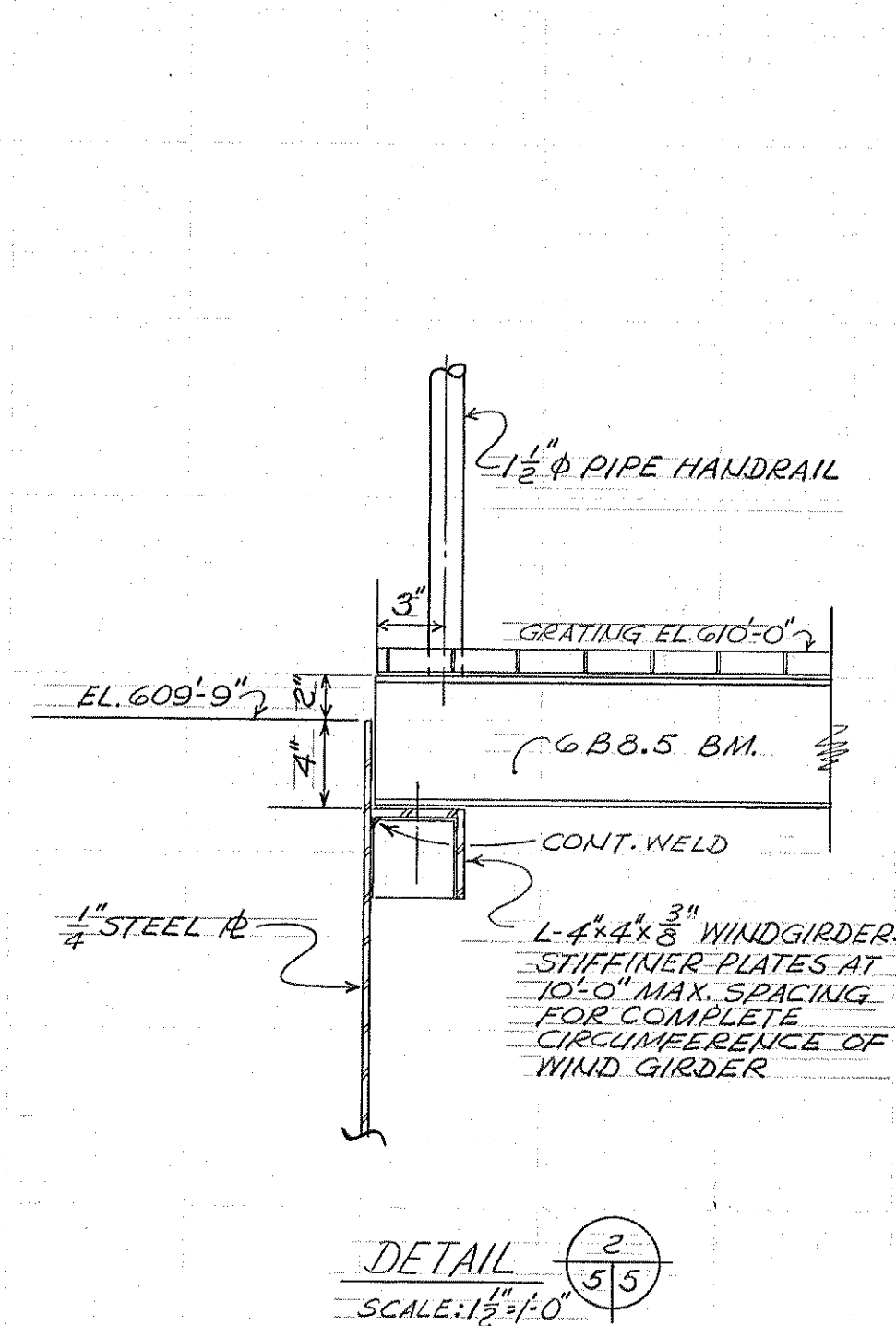
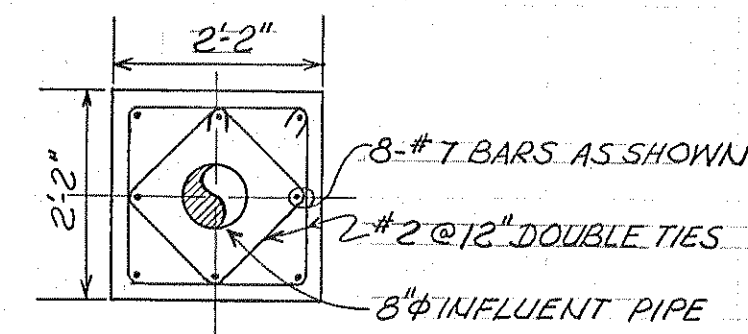
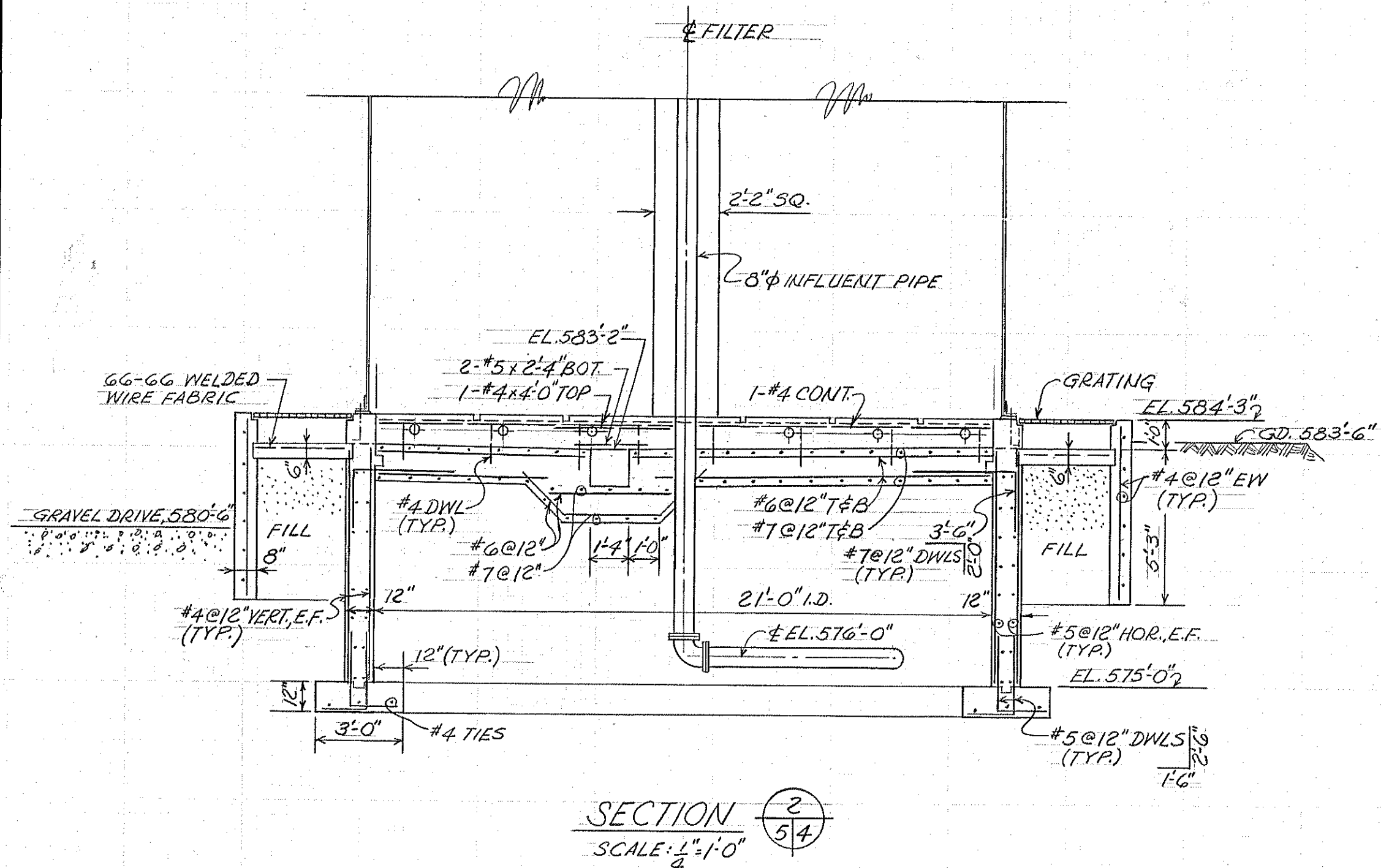
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6-15-71	BULLETIN No. 1		
11-30-70	ISSUED FOR BIDS		
8-14-70	INSTRUMENT PANEL		
5-19-69	MICH. DEPT. OF HEALTH (6-19-70)		
DATE	ADDITIONS AND/OR REVISIONS	JOB No.	HUBBELL, ROTH & CLARK, INC. CONSULTING ENGINEERS 2709 TELEGRAPH ROAD BLOOMFIELD HILLS, MICH. 48303
FLD. BK.	SCALE	DR.	
		CK.	
		APP.	
		DATE	SHEET No.
		MAY 1969	1
			OF 8



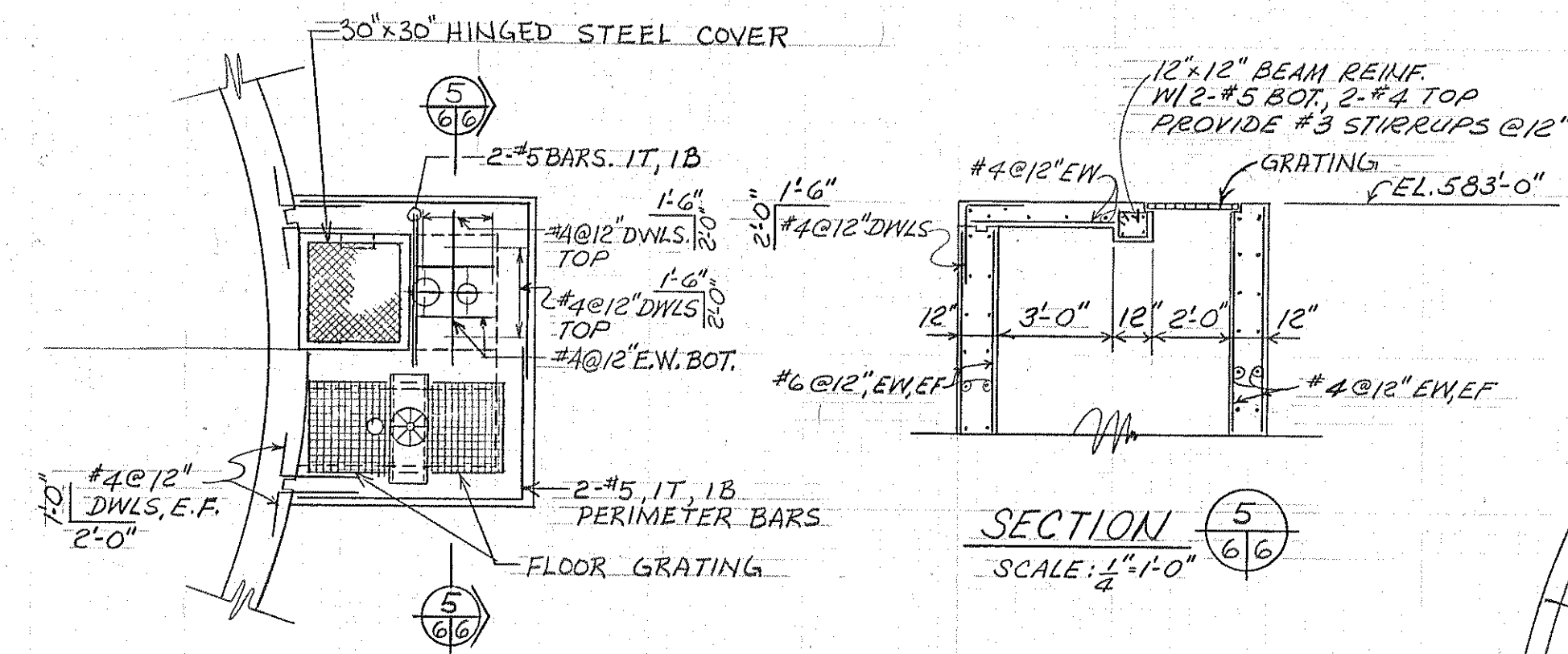
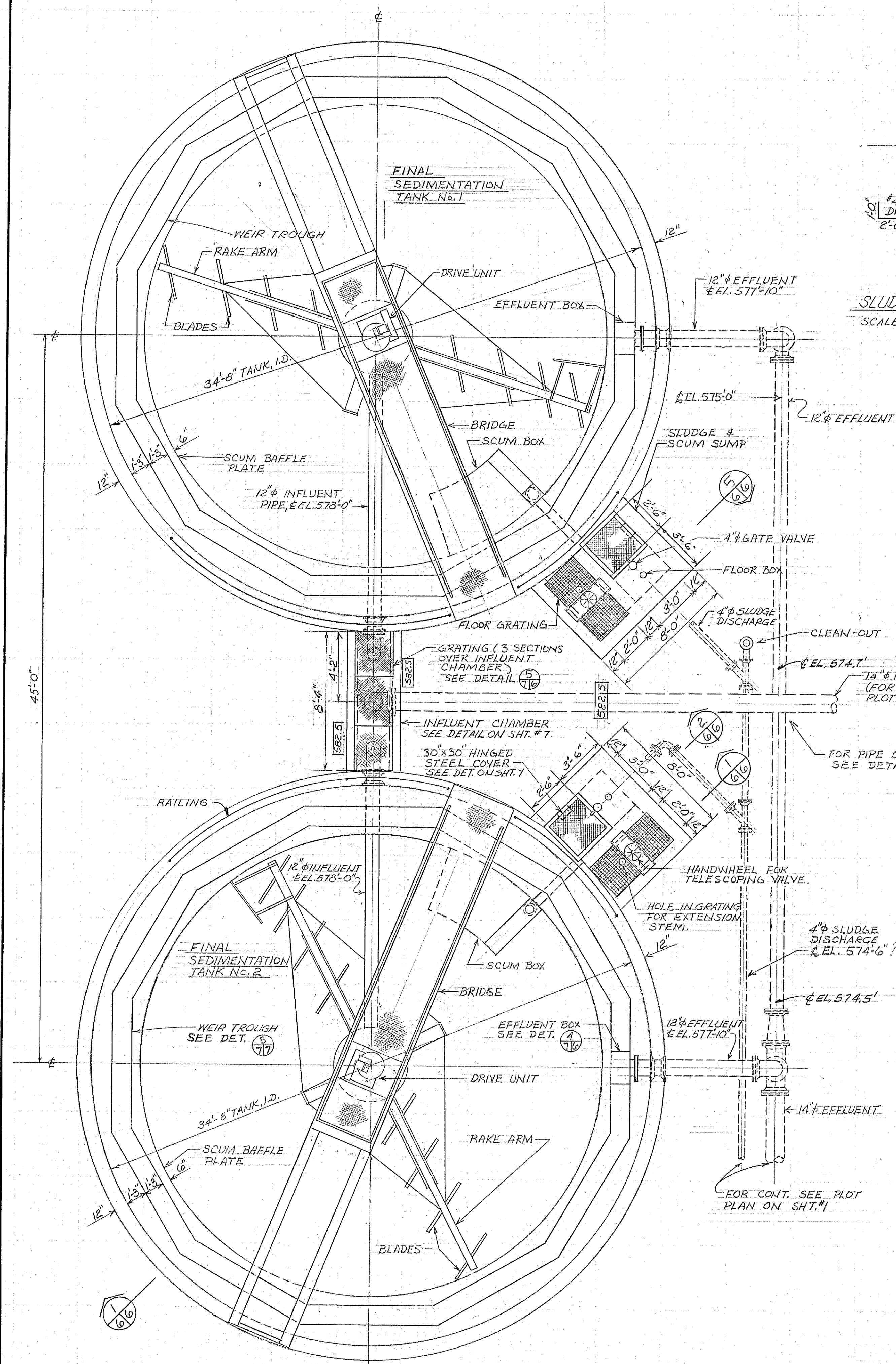
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12-18-72		AS BUILT		ROCKWOOD - 1970 ADDITIONS TO WASTEWATER TREATMENT PLANT			
11-30-70		ISSUED FOR BIDS					
5-19-69		MICH. DEPT. OF HEALTH (6-19-70)		WORK IN EXISTING BUILDING			
DATE		ADDITIONS AND/OR REVISIONS		JOB NO. 69025		SHEET No.	
FLD. BK.		SCALE		DATE		2	
		DR. <i>L.M.R.</i>		MAY 1969		OF 8	
		CK. <i>ATS</i>					
		APP. <i>ATS</i>					
				HUBBELL, ROTH & CLARK, INC. CONSULTING ENGINEERS 2709 TELEGRAPH ROAD BLOOMFIELD HILLS, MICH. 48013			



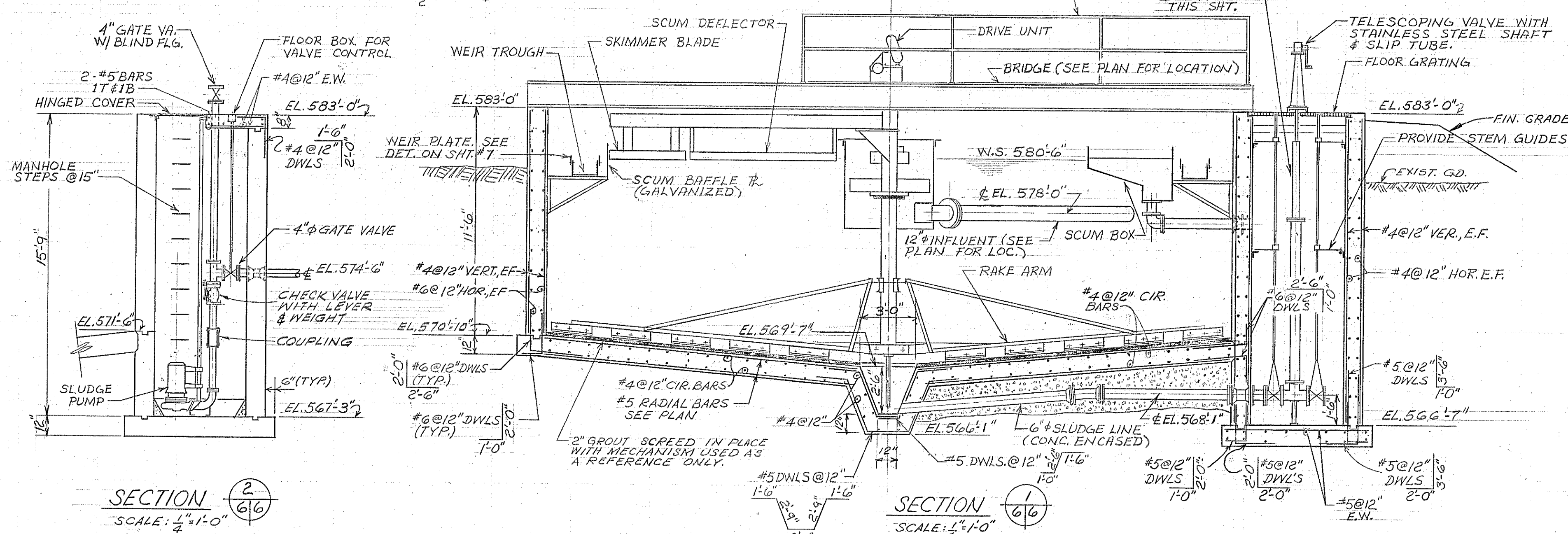
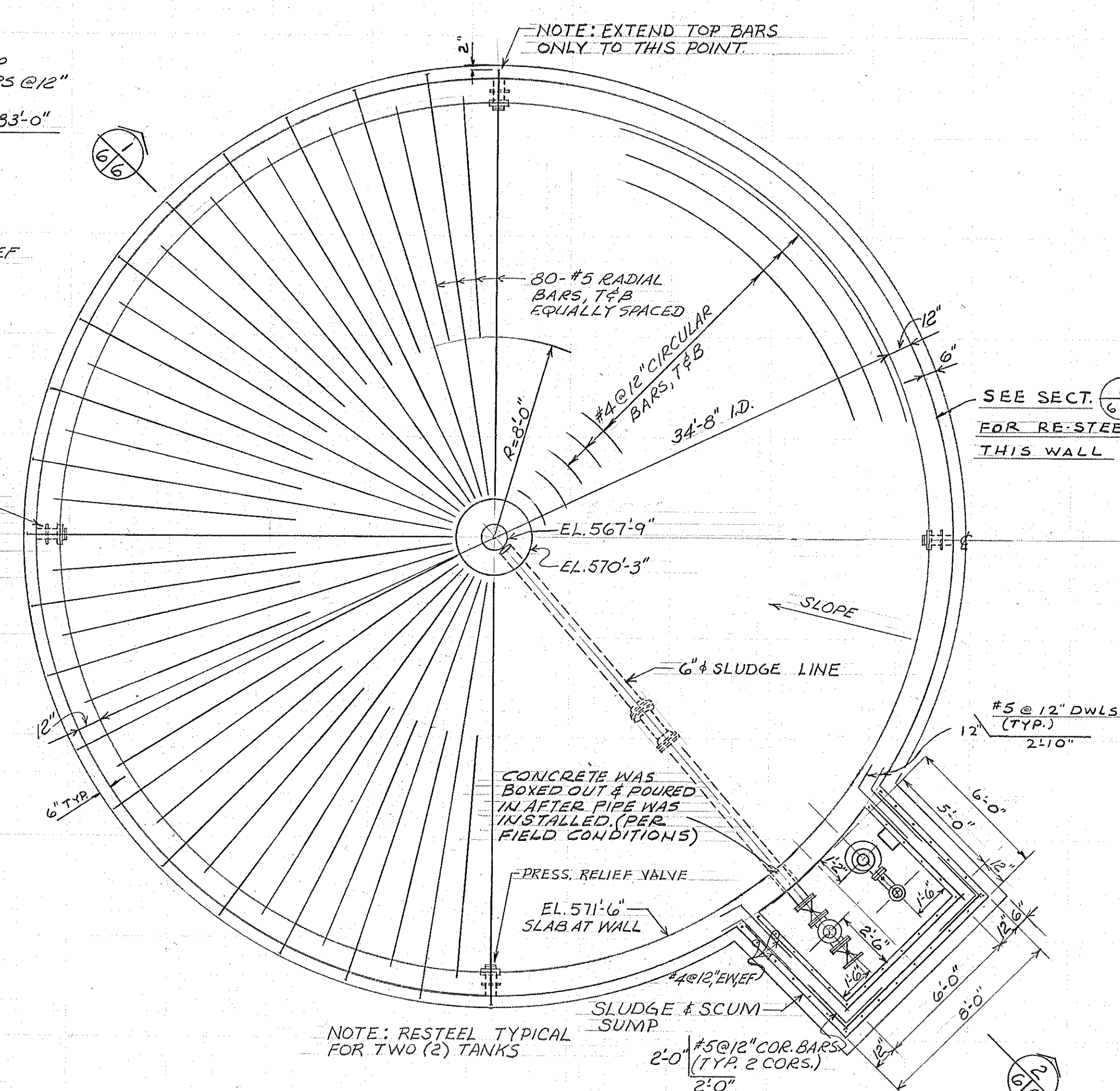
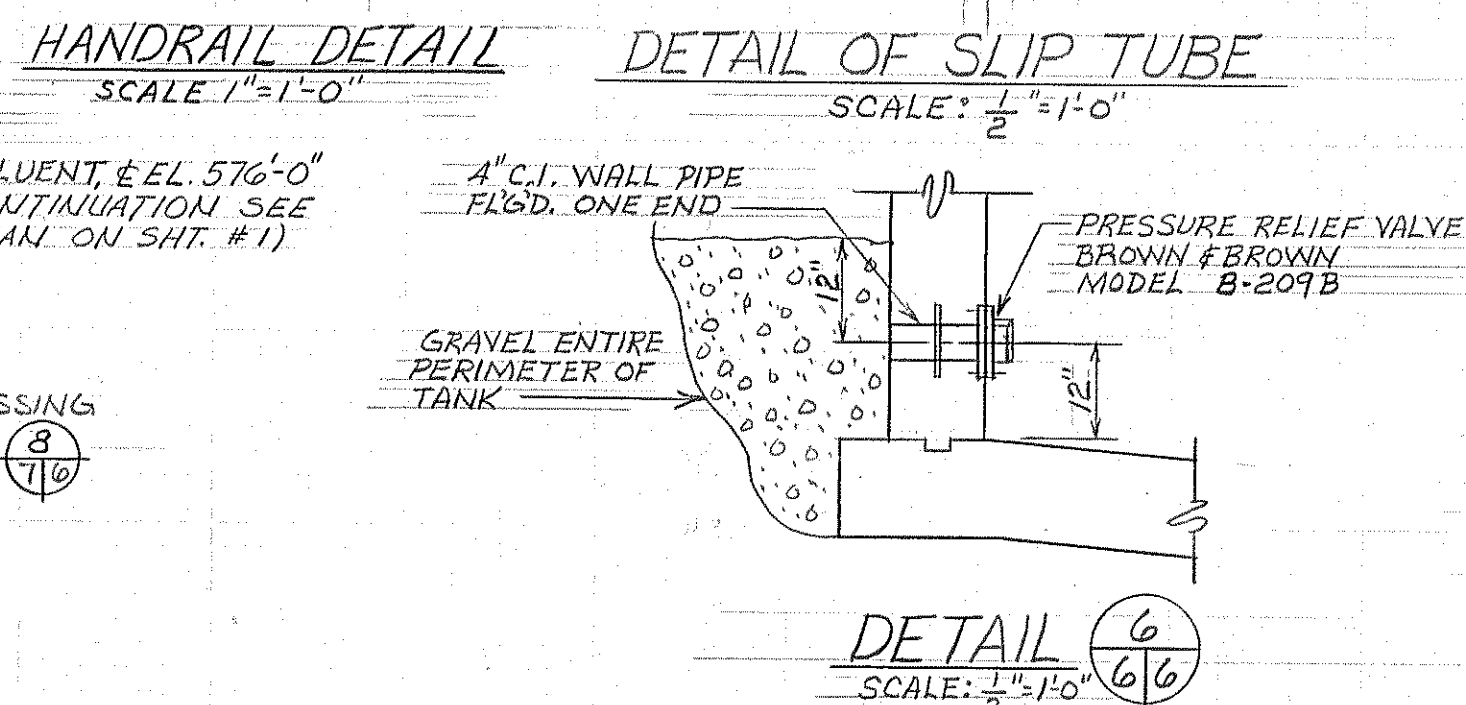
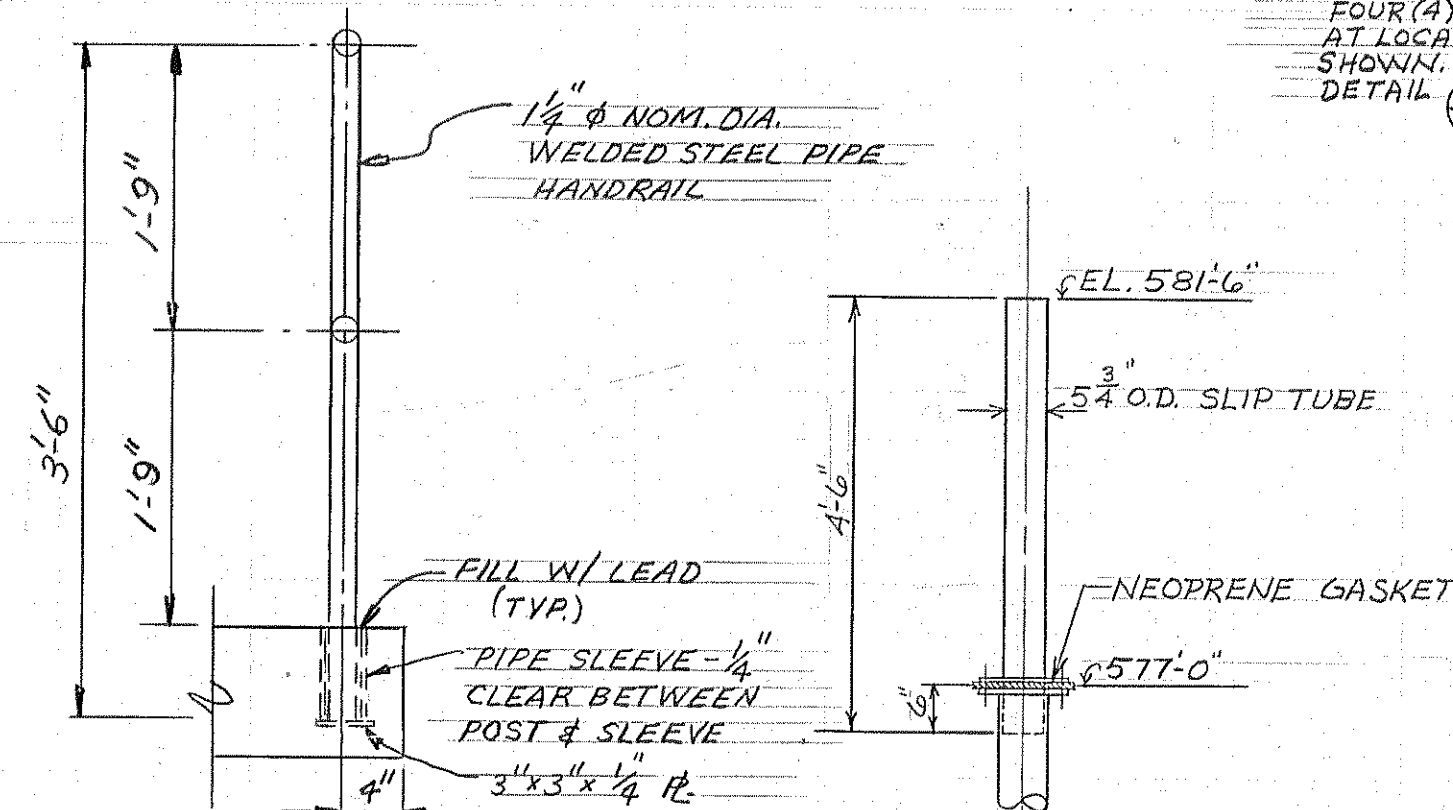
BOARD OF COUNTY ROAD COMMISSIONERS WAYNE COUNTY, MICHIGAN			
ROCKWOOD - 1970 ADDITIONS TO WASTEWATER TREATMENT PLANT			
FILTER & PUMP STATION			
DATE	ADDITIONS AND/OR REVISIONS	JOB No.	HUBBELL, ROTH & CLARK, INC.
12-18-72	AS BUILT	69025	CONSULTING ENGINEERS
11-30-70	ISSUED FOR BIDS	DATE	2709 TELEGRAPH ROAD
5-19-69	MICH. DEPT. OF HEALTH (6-19-70)	MAY 1969	BLOOMFIELD HILLS, MICH. 48013
FLD. BK.	SCALE	DR.	SHEET No.
		J.R.F.	4
		CK	OF 8
		APP	



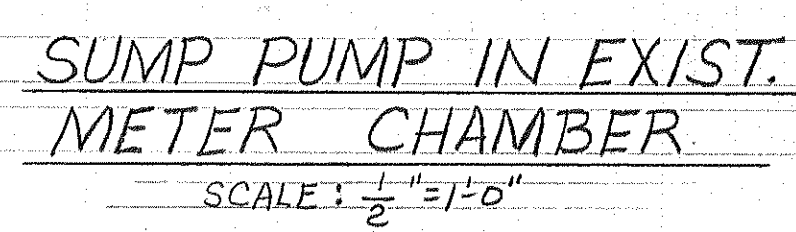
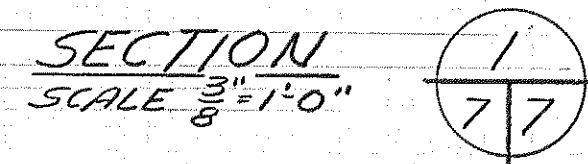
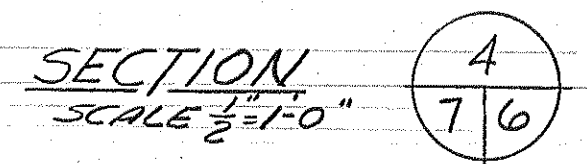
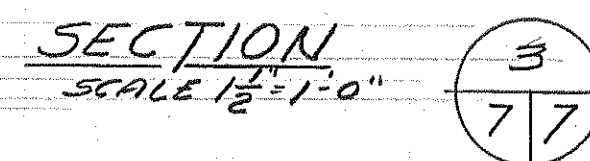
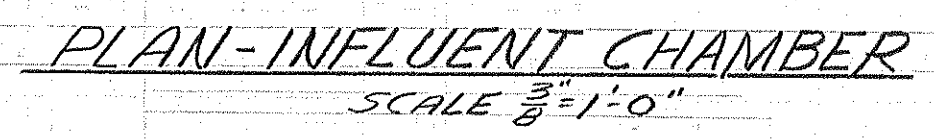
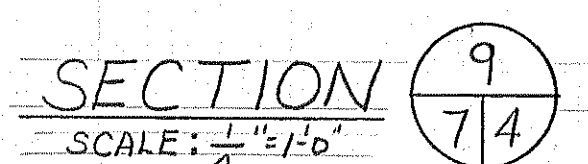
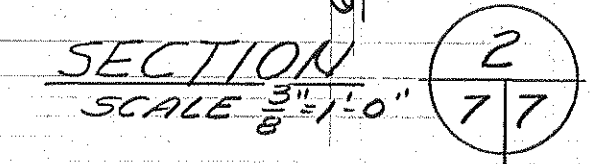
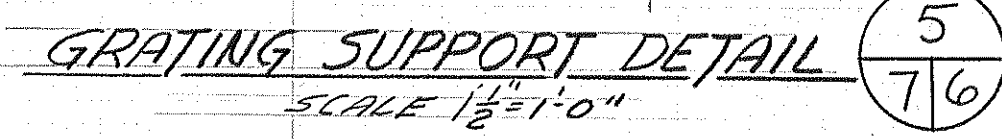
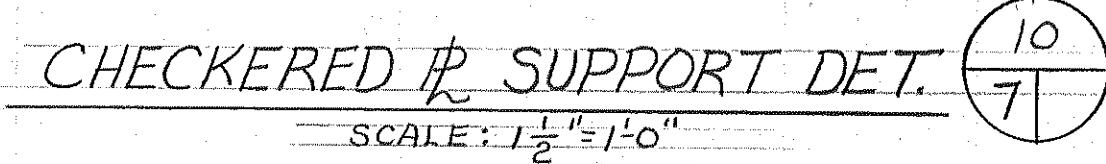
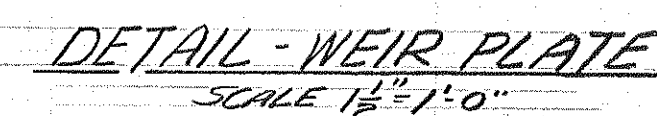
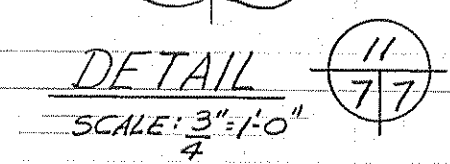
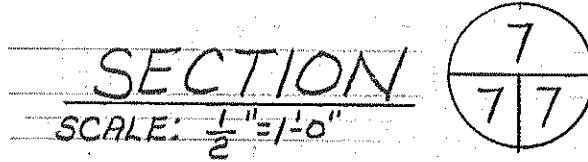
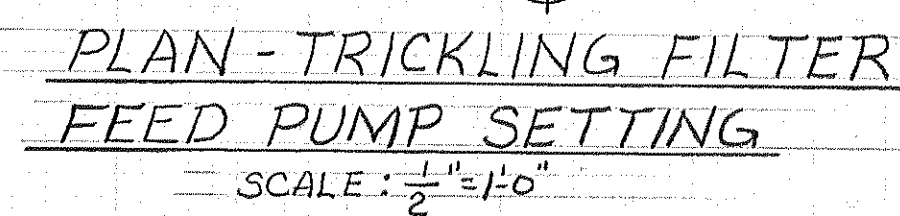
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12-18-72	AS BUILT					ROCKWOOD - 1970 ADDITIONS TO WASTEWATER TREATMENT PLANT FILTER & PUMP STATION	
11-30-70	ISSUED FOR BIDS						
5-19-69	MICH. DEPT. OF HEALTH (6-13-70)						
DATE	ADDITIONS AND/OR REVISIONS				JOB No. 69025	HUBBELL, ROTH & CLARK, INC. CONSULTING ENGINEERS 2729 TELEGRAPH ROAD BLOOMFIELD HILLS, MICH. 48013	SHEET No. 5
F.L.D. BK.	SCALE	DR. J.R.T.	CK. A.P.	APP. A.P.	DATE MAY 1969		OF 2



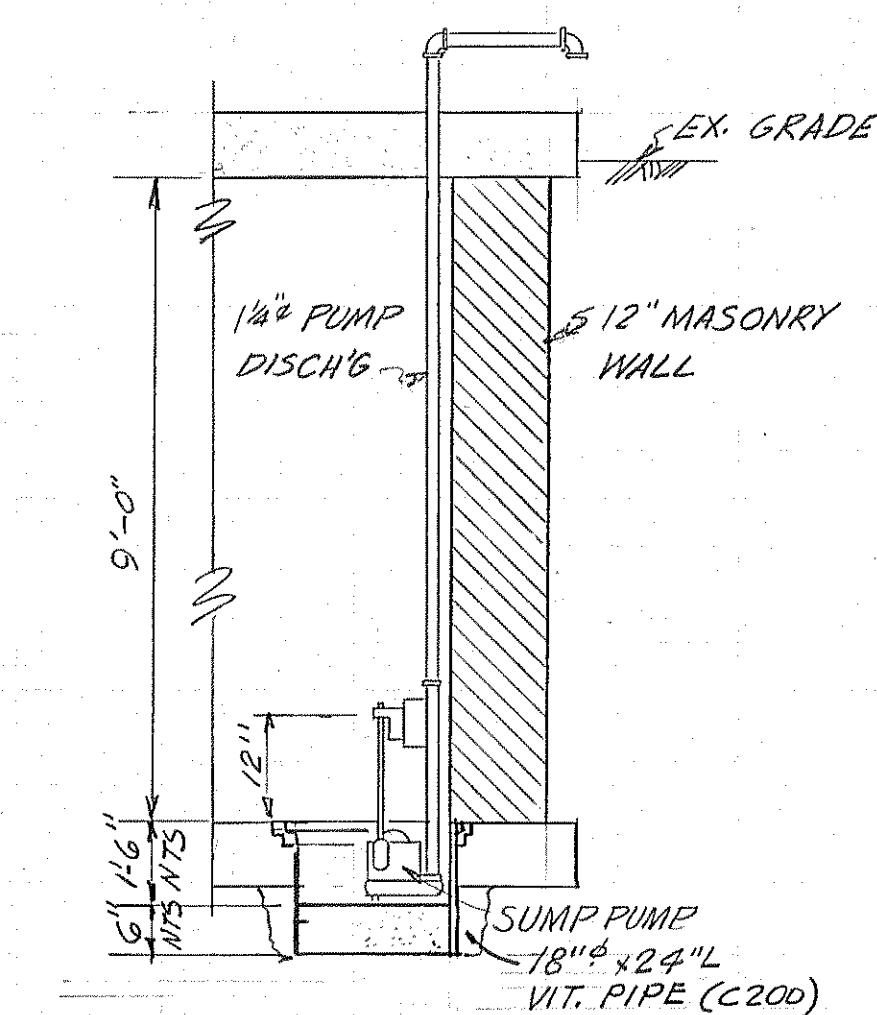
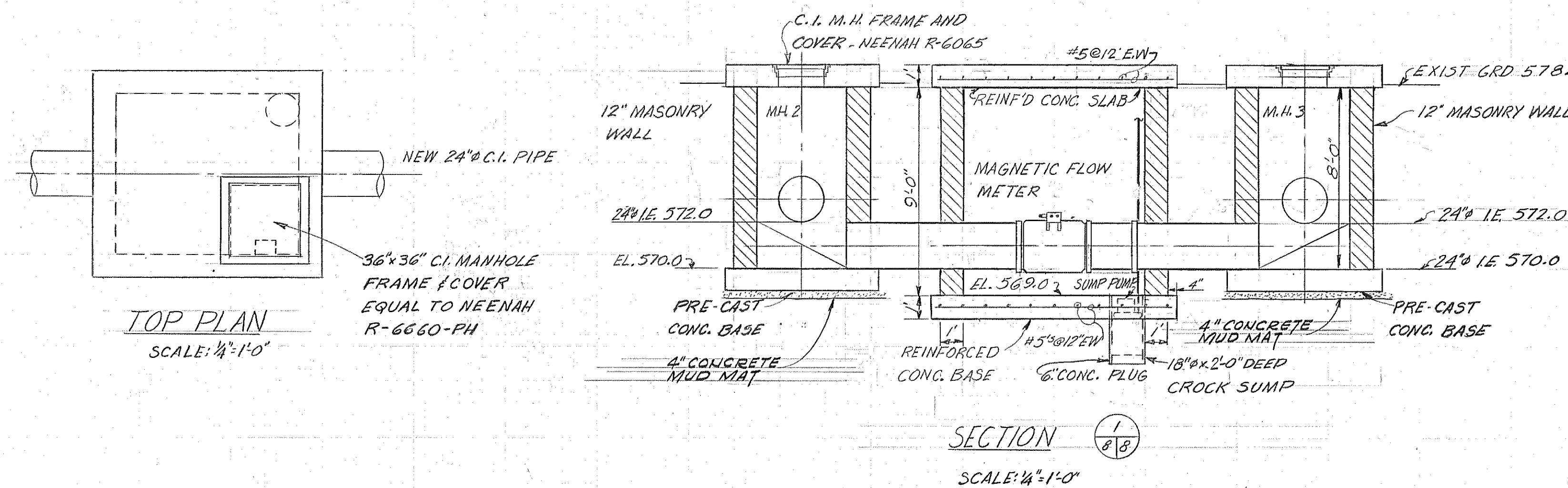
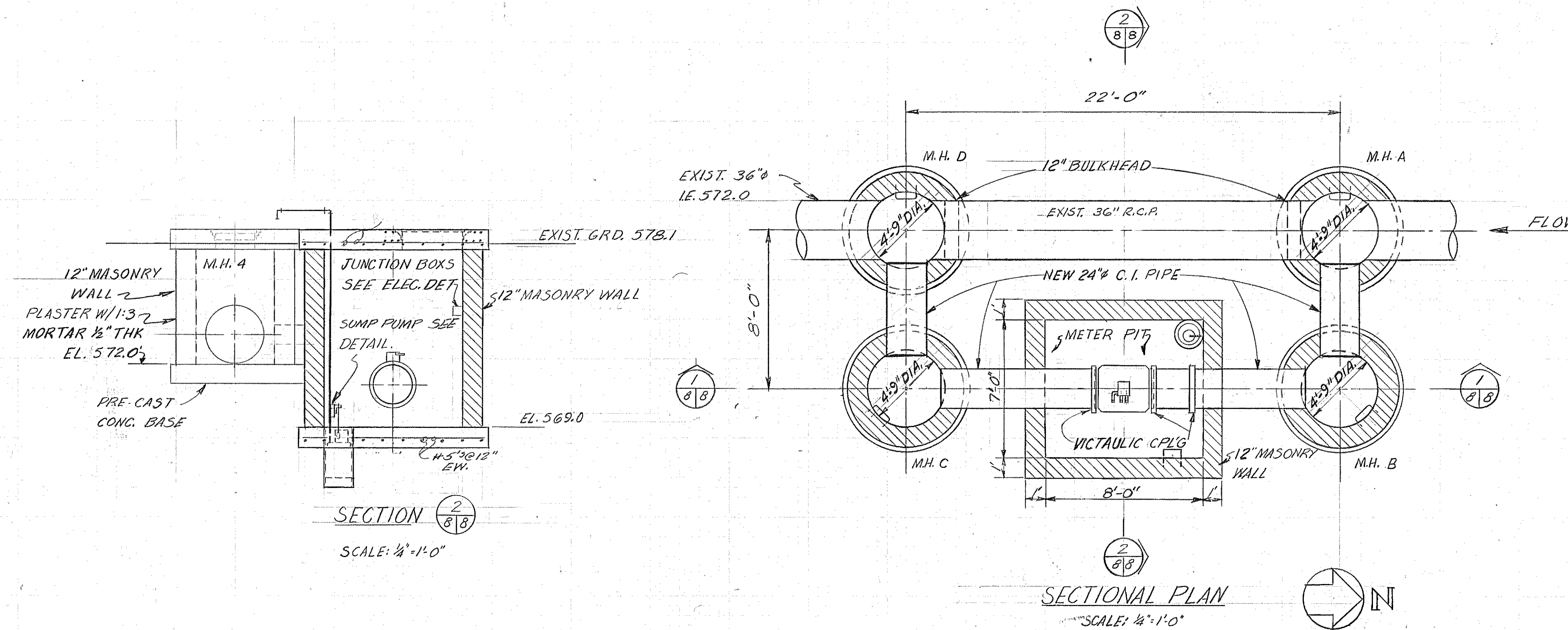
SLUDGE & SCUM SUMP (TOP SLAB REINFORCING)
SCALE: 1/4" = 1'-0"



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3-18-72		BULLETIN No. 4		WAYNE COUNTY, MICHIGAN	
11-30-70		ISSUED FOR BIDS		ROCKWOOD - 1970 ADDITIONS TO	
5-19-69		MICH. DEPT. OF HEALTH (6-19-70)		WASTEWATER TREATMENT PLANT	
DATE		ADDITIONS AND/OR REVISIONS		FINAL SEDIMENTATION TANK	
FLD. BK.	SCALE	DR.	CK.	APP.	JOB No. 69025
					HUBBELL, ROTH & CLARK, INC.
					CONSULTING ENGINEERS
					2709 TELEGRAPH ROAD
					BLOOMFIELD HILLS, MICH. 48013
					DATE MAY 1969
					SHEET No. 6
					OF 8



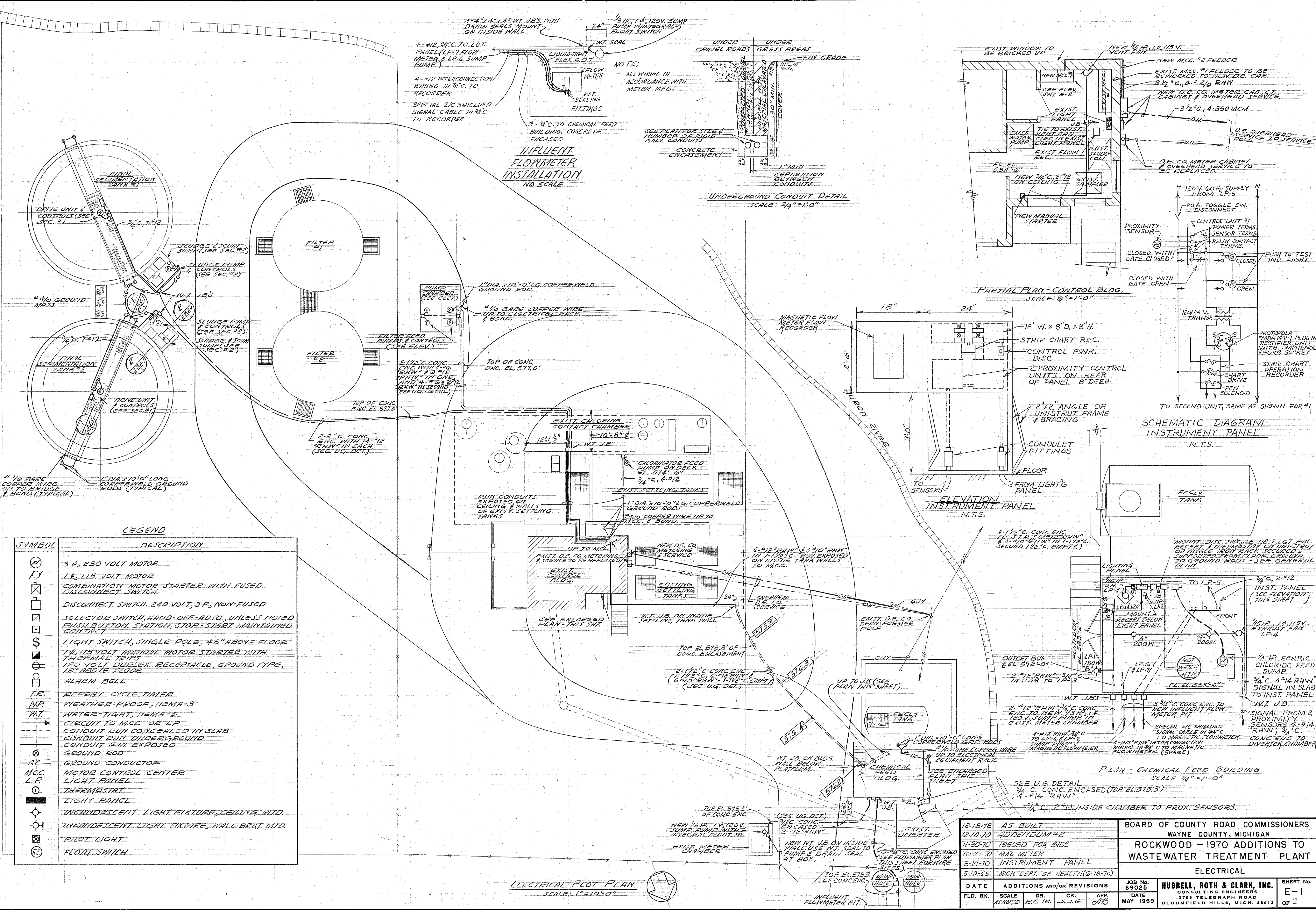
				BOARD OF COUNTY ROAD COMMISSIONERS			
				WAYNE COUNTY, MICHIGAN			
12-18-72		AS BUILT		ROCKWOOD - 1970 ADDITIONS TO			
11-30-70		ISSUED FOR BIDS		WASTEWATER TREATMENT PLANT			
5-19-69		MICH. DEPT. OF HEALTH (6-19-70)		MISC. DETAILS			
DATE		ADDITIONS AND/OR REVISIONS		JOB No.		SHEET No.	
FLD. BK.		SCALE		90225		7	
		DR.		DATE		HUBBELL, ROTH & CLARK, INC.	
		J.R.T.		MAY 1969		CONSULTING ENGINEERS	
		CK.				2709 TELEGRAPH ROAD	
		APP.				BLOOMFIELD HILLS, MICH. 48013	
		J.B.				OF 8	



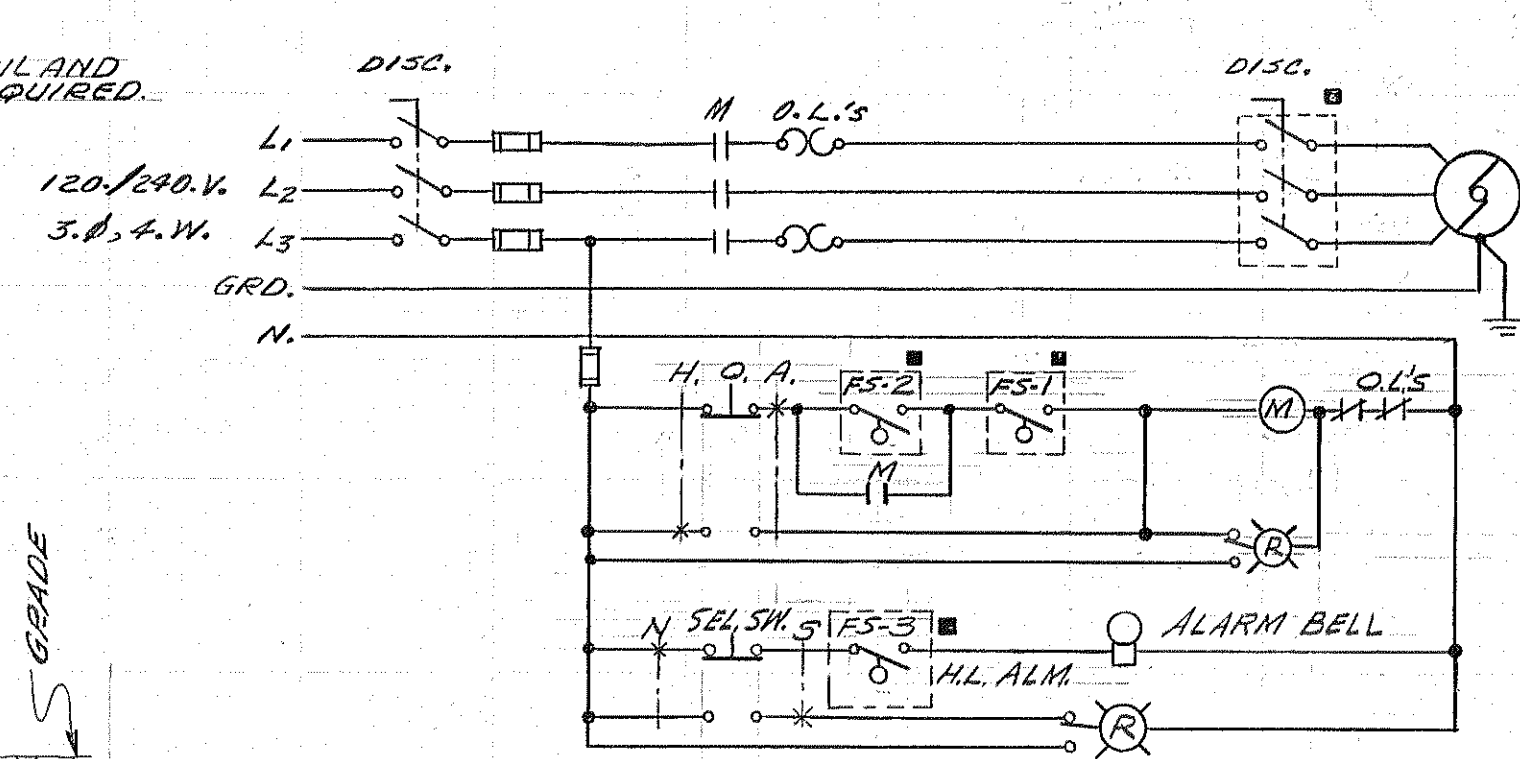
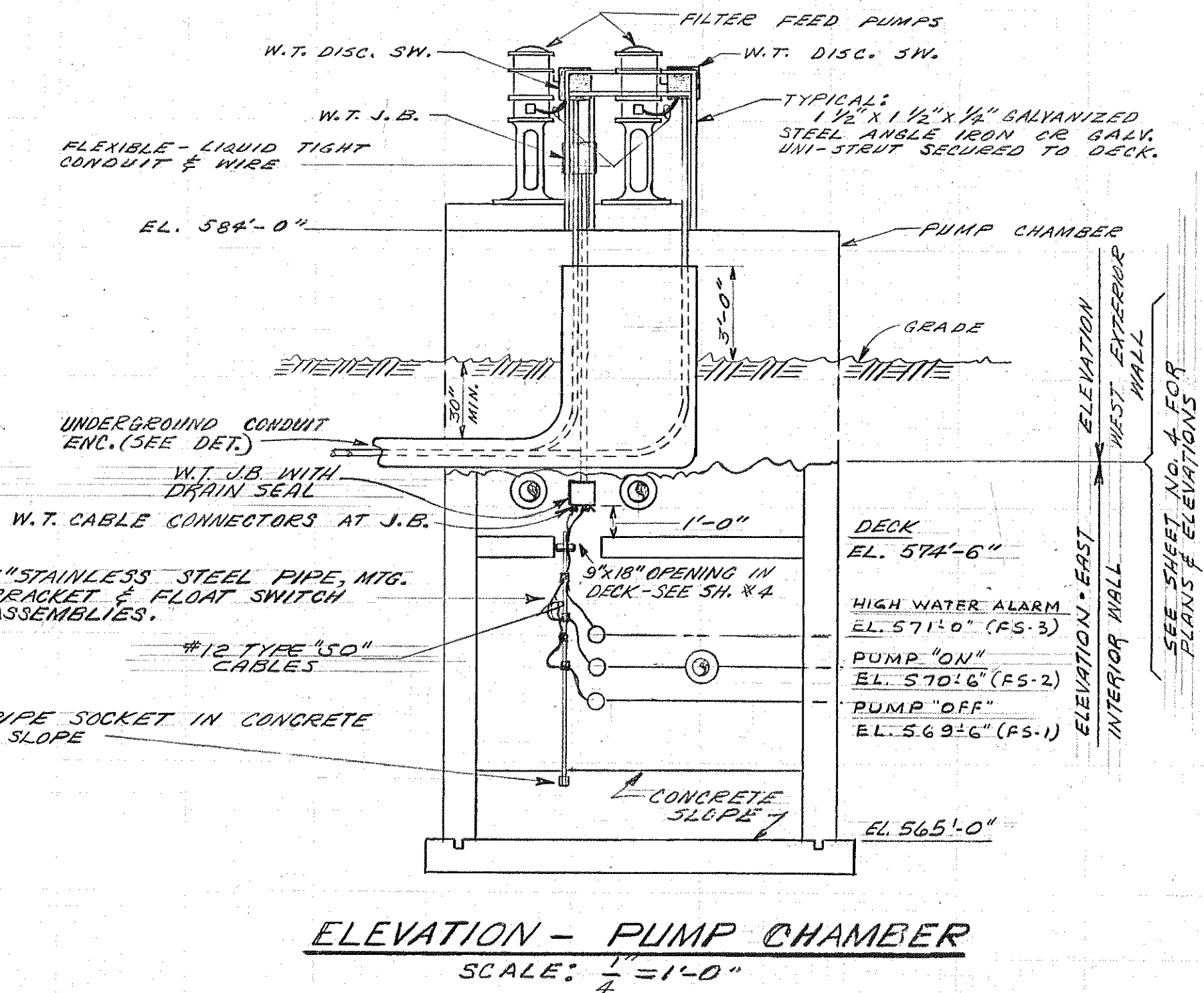
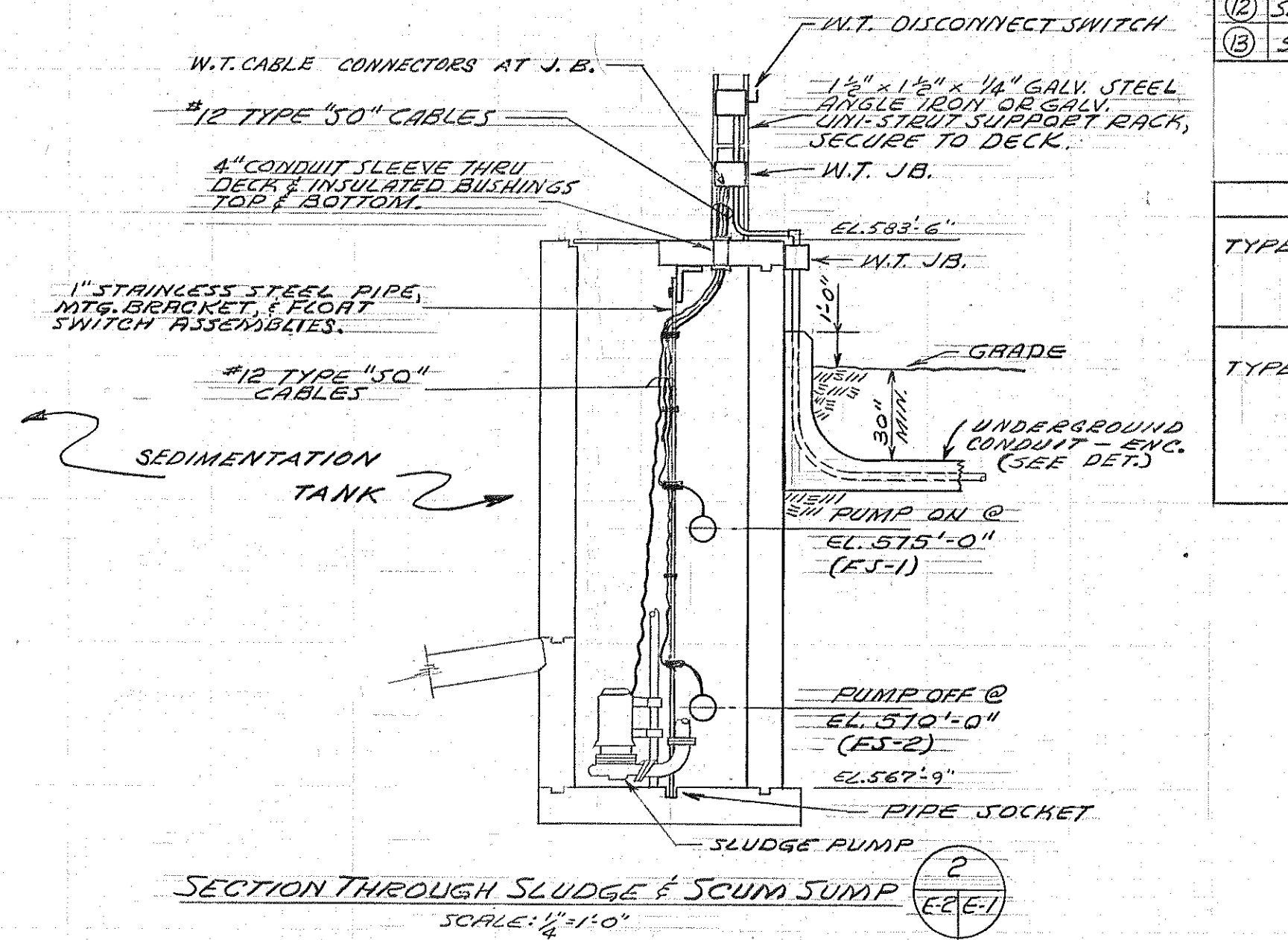
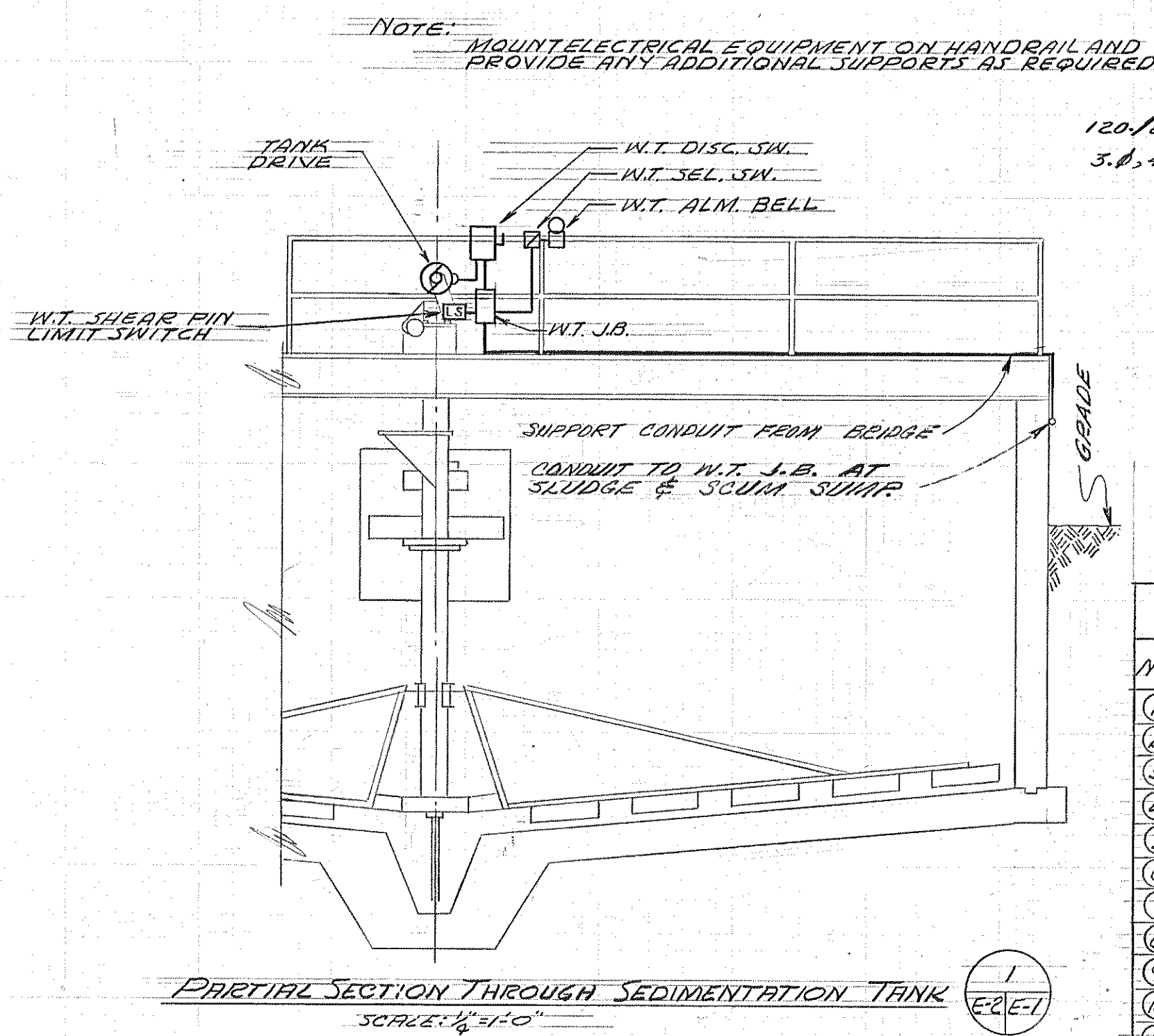
BOARD OF COUNTY ROAD COMMISSIONERS WAYNE COUNTY, MICHIGAN						ROCKWOOD - 1970 ADDITIONS TO WASTEWATER TREATMENT PLANT	
12-18-72 AS BUILT						INFLUENT METER INSTALLATION	
11-30-70 ISSUED FOR BIDS						HUBBELL, ROTH & CLARK, INC.	
10-70 MICH. DEPT. OF HEALTH						CONSULTING ENGINEERS	
DATE	ADDITIONS AND/OR REVISIONS					JOB No. 69025	SHEET No. 8
FLD. BK.	SCALE	DR.	CK.	APP.	DATE	1709 TELEGRAPH ROAD BLOOMFIELD HILLS, MICH. 48303	OF 8
	AS NOTED	CLW	SB	SB	OCT 1970		

SYMBOL	DESCRIPTION
	3 ϕ , 230 VOLT MOTOR
	1 ϕ , 115 VOLT MOTOR
	COMBINATION MOTOR STARTER WITH FUSED DISCONNECT SWITCH.
	DISCONNECT SWITCH, 240 VOLT, 3-P, NON-FUSED
	SELECTOR SWITCH, HAND-OFF-AUTO, UNLESS NOTED PUSH BUTTON STATION, STOP-START MAINTAINED CONTACT
	LIGHT SWITCH, SINGLE POLE, 48" ABOVE FLOOR
	1 ϕ , 115 VOLT MANUAL MOTOR STARTER WITH THERMAL TRIP
	120 VOLT DUPLEX RECEPTACLE, GROUND TYPE, 18" ABOVE FLOOR
	ALARM BELL
	REPEAT CYCLE TIMER
	WEATHER-PROOF, NEMA-3
	WATER-TIGHT, NEMA-4
	CIRCUIT TO MCC. OR LP CONDUIT RUN CONCEALED IN SLAB CONDUIT RUN UNDERGROUND CONDUIT RUN EXPOSED
	GROUND ROD
	GROUND CONDUCTOR
	MCC. MOTOR CONTROL CENTER
	L.P. LIGHT PANEL
	THERMOSTAT
	LIGHT PANEL
	INCANDESCENT LIGHT FIXTURE, CEILING MTD.
	INCANDESCENT LIGHT FIXTURE, WALL BRKT. MTD.
	PILOT LIGHT
	FLOAT SWITCH

ELECTRICAL PLOT PLAN
SCALE: 1"=10'-0"

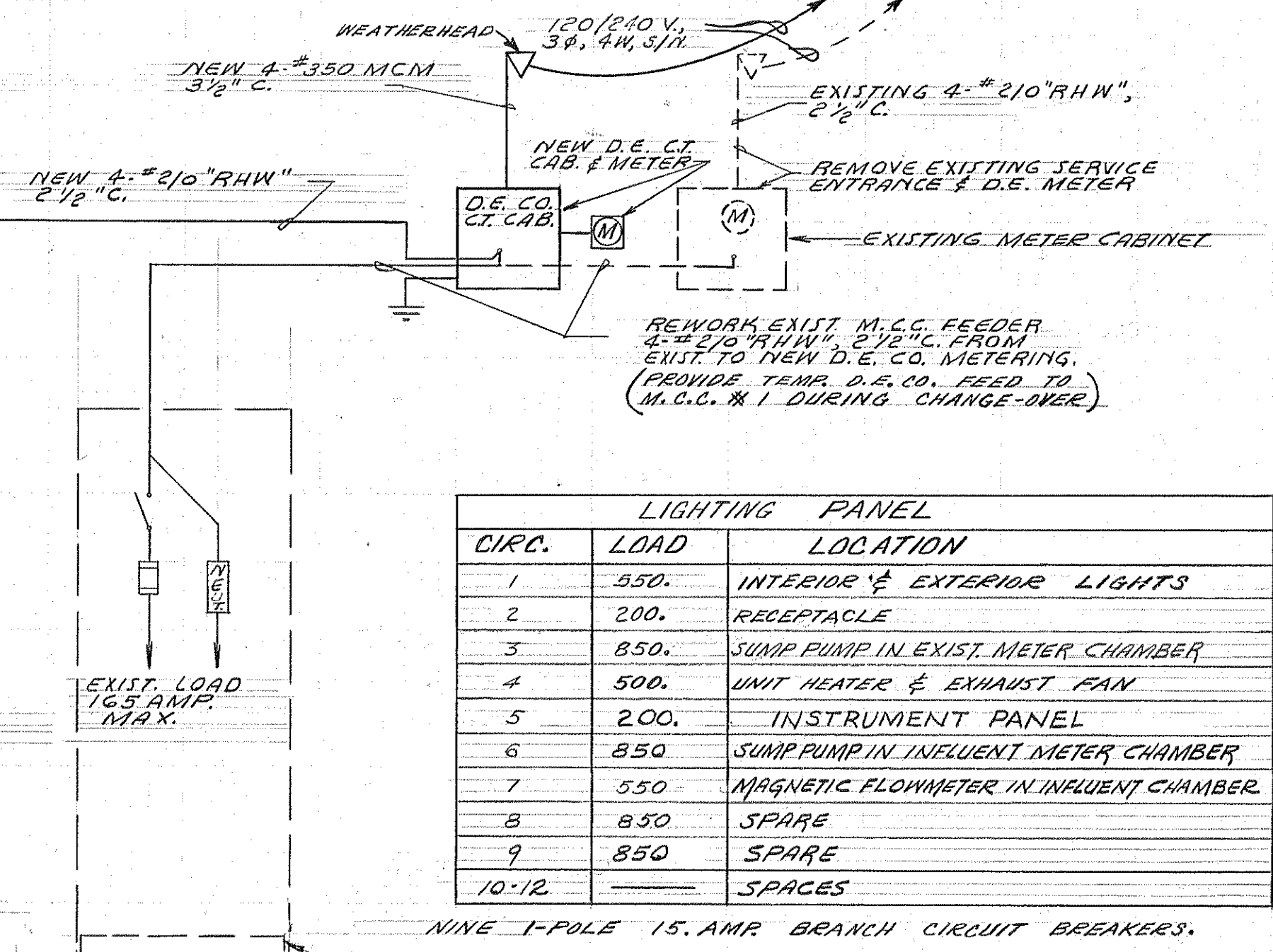
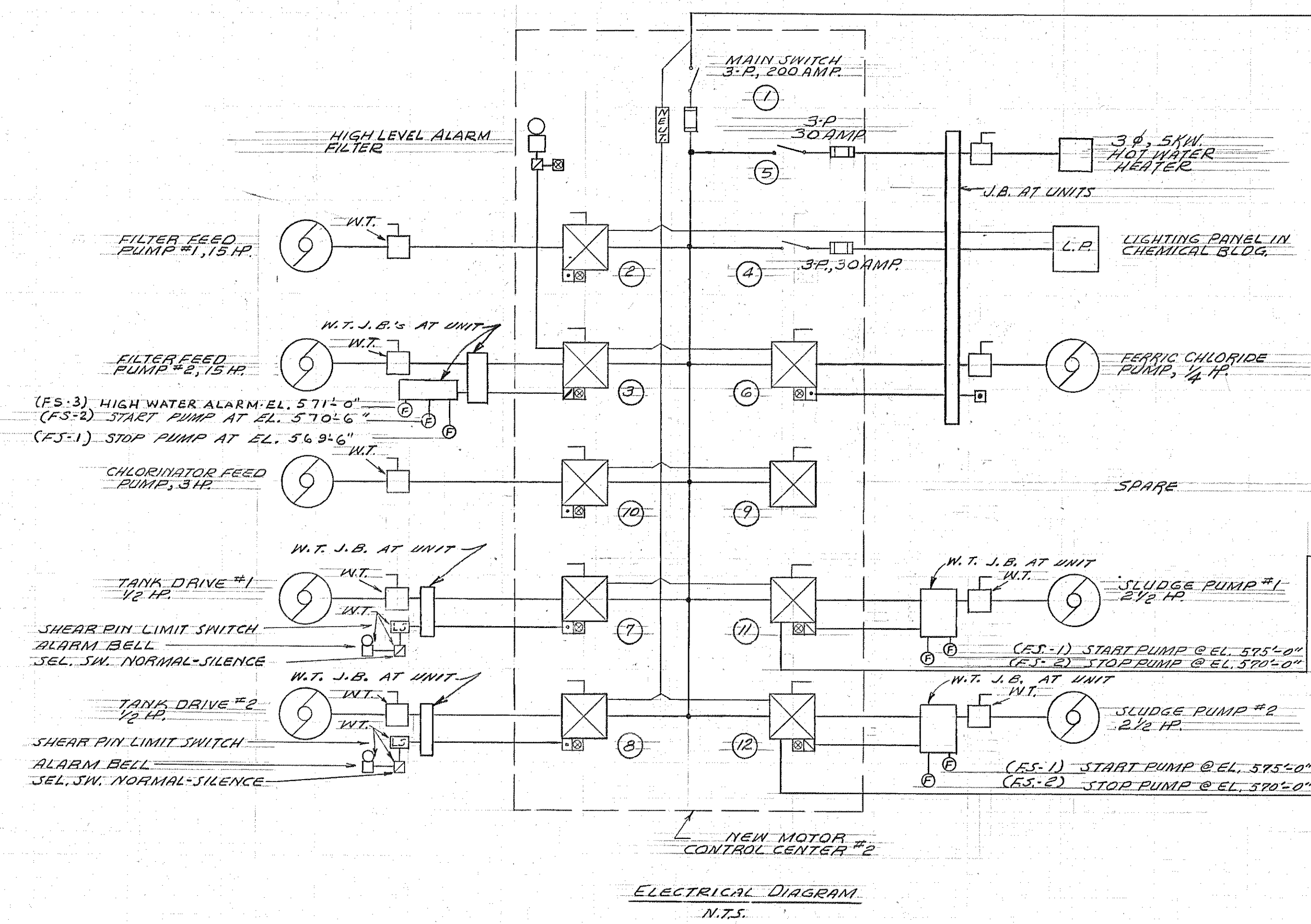
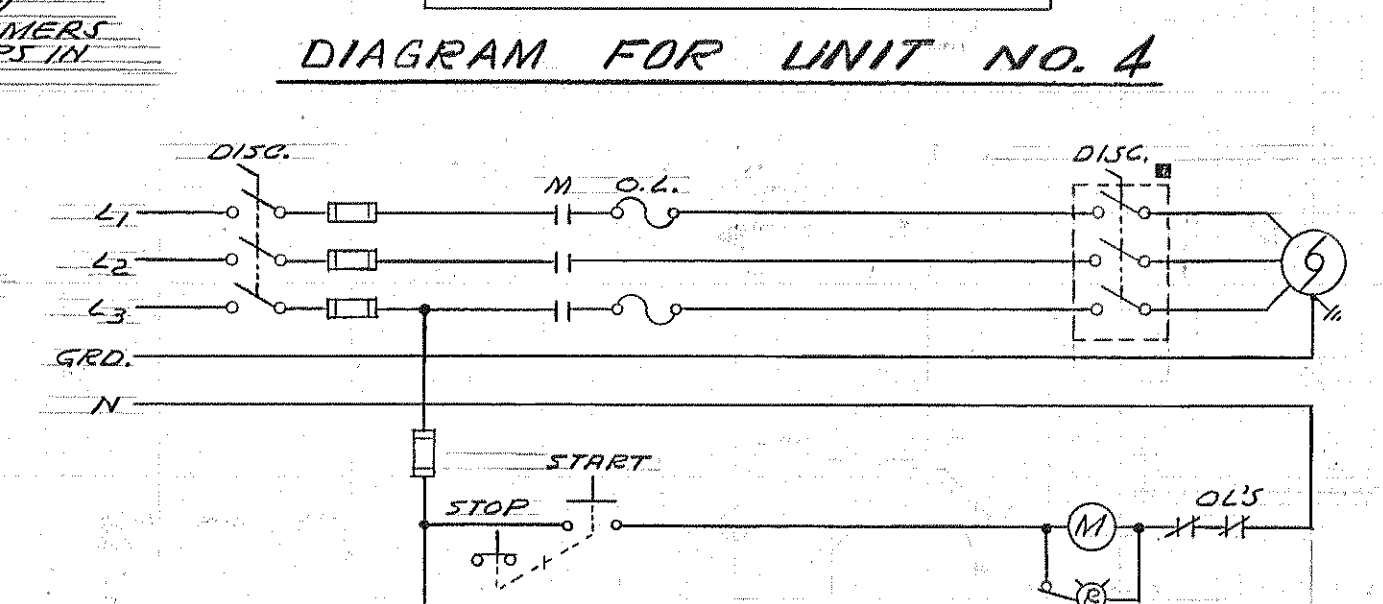
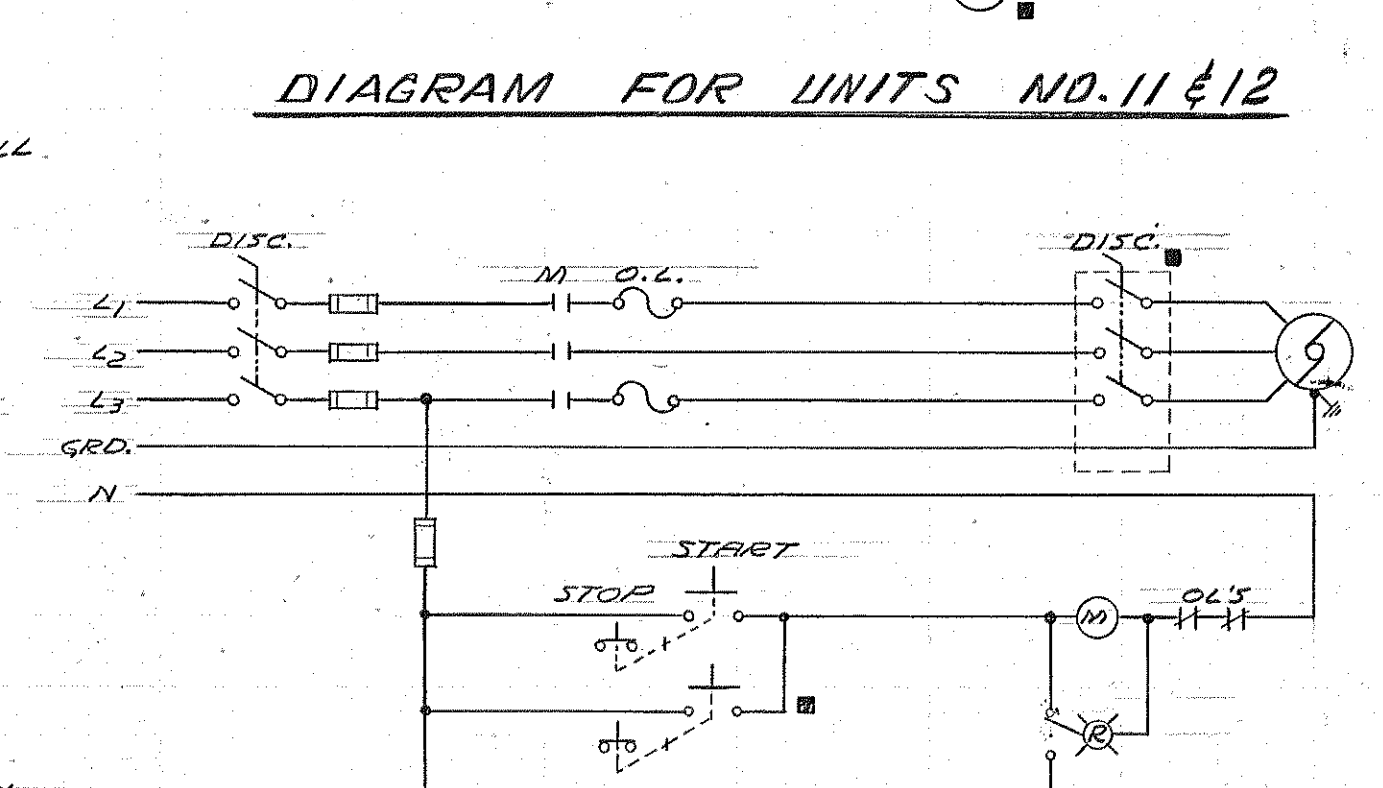
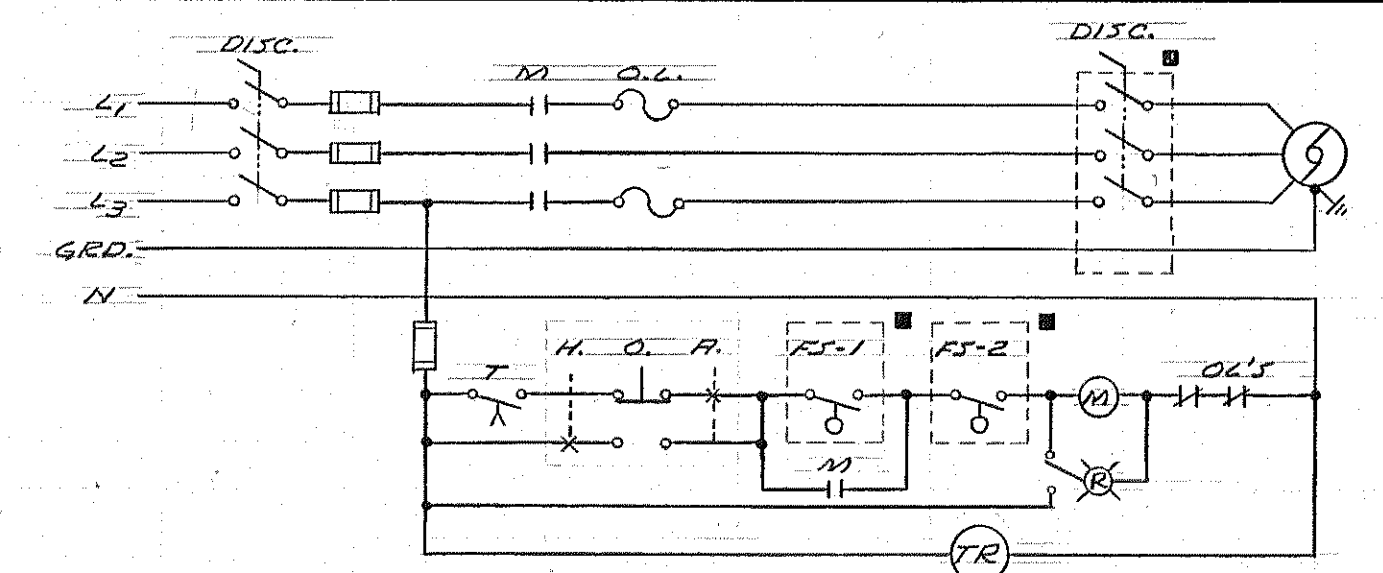
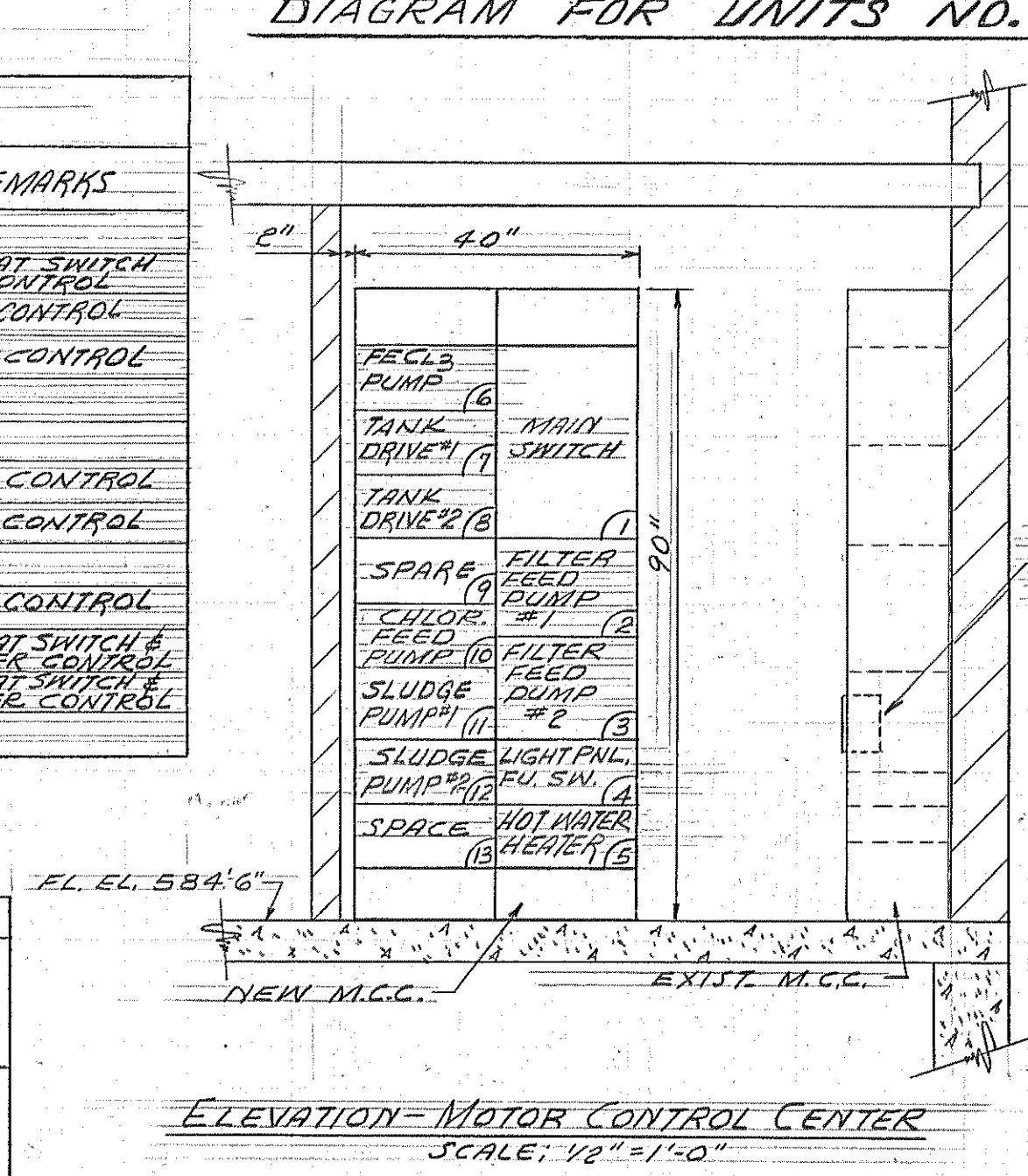
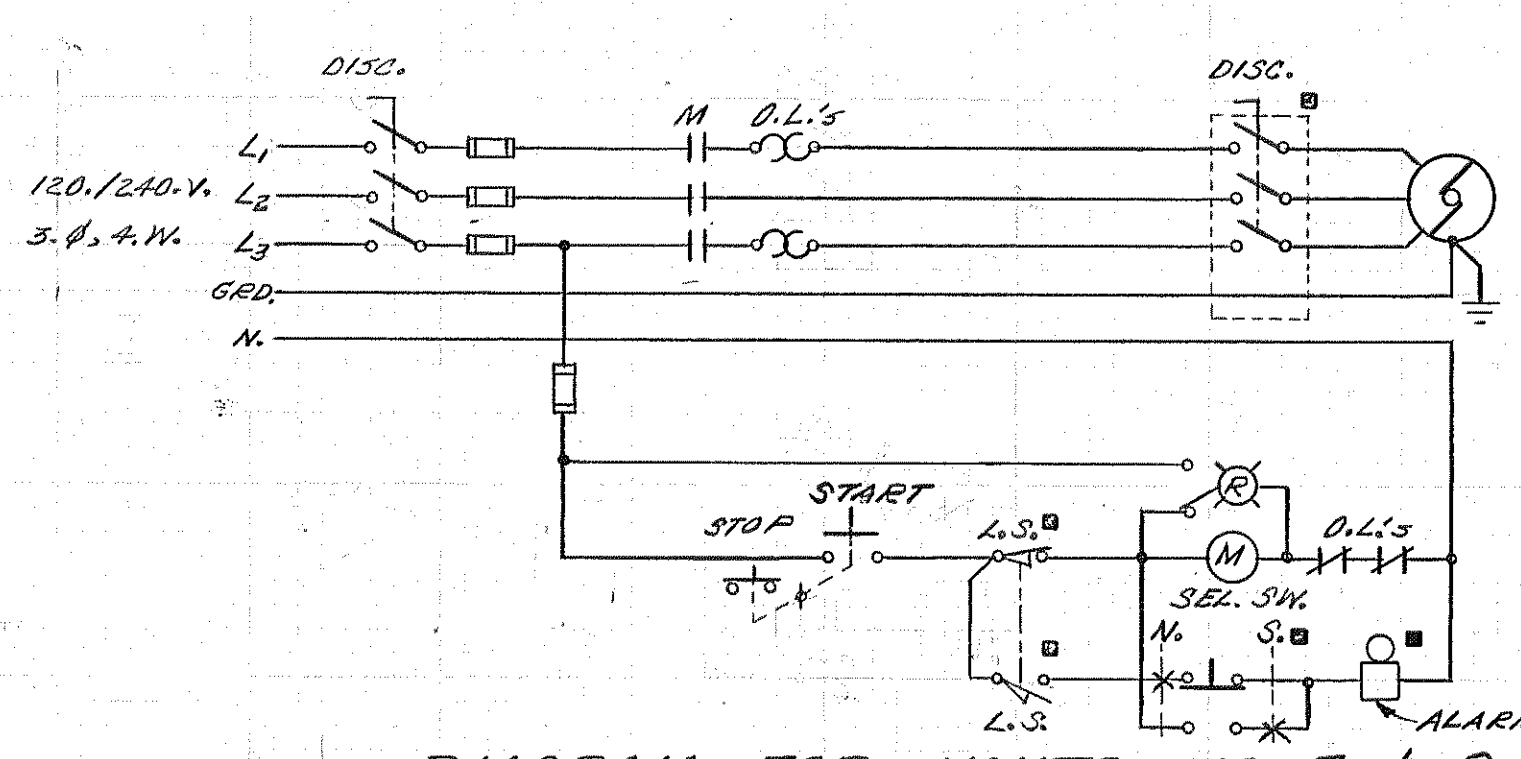


12-18-72	A5 BUILT	BOARD OF COUNTY ROAD COMMISSIONERS WAYNE COUNTY, MICHIGAN ROCKWOOD - 1970 ADDITIONS TO WASTEWATER TREATMENT PLANT ELECTRICAL	JOB No. 69025 DATE MAY 1969	HUBBELL, ROTH & CLARK, INC. CONSULTING ENGINEERS 2789 TELEGRAPH ROAD BLOOMFIELD HILLS, MICH. 48303	SHEET No. E-1 OF 2
12-10-70	ADDENDUM #2				
11-30-70	ISSUED FOR BIDS				
10-27-70	MAG. METER				
8-14-70	INSTRUMENT PANEL				
5-19-69	MICH. DEPT. OF HEALTH (6-19-70)				
DATE	ADDITIONS AND/OR REVISIONS				
F.L.D. BK.	SCALE	DR.	CK.	APP.	
	AS NOTED	E.C. H.	S.J.G.	J.T.B.	



No.	ITEM	CONV. HP	CONV. AMP.	FUSE AMP.	SW. SIZE	CONDUIT WIRE & GROUND	REMARKS
1	MAIN SWITCH			175	200	2 1/2" C, 4 # 2/0	
2	FILTER FEED PUMP #1	1.5	40.0	50	60	2 1/2" C, 4 # 2/0	FLOAT SWITCH CONTROL
3	FILTER FEED PUMP #2	1.5	40.0	50	60	2 1/2" C, 4 # 2/0	RA. CONTROL
4	FERRIC CHLORIDE PUMP	1/4	1.0	1.6	30	1 1/2" C, 4 # 2/0	RA. CONTROL
5	HOT WATER HEATER	5 KW	13	20	30	3 1/2" C, 4 # 2/0	RA. CONTROL
6	LIGHT PANEL		16.0	25	30	3 1/2" C, 4 # 2/0	RA. CONTROL
7	TANK DRIVE #1	1/2	2.2	5	30	1 1/2" C, 4 # 2/0	RA. CONTROL
8	TANK DRIVE #2	1/2	2.2	5	30	1 1/2" C, 4 # 2/0	RA. CONTROL
9	SPARE						
10	CHLORINATOR FEED PUMP	3	7.6	10	30	3 1/2" C, 4 # 2/0	RA. CONTROL
11	SLUDGE PUMP #1	2 1/2	7.4	10	30	3 1/2" C, 4 # 2/0	RA. CONTROL
12	SLUDGE PUMP #2	2 1/2	7.4	10	30	3 1/2" C, 4 # 2/0	RA. CONTROL
13	SPARE						

FIXTURE SCHEDULE	
TYPE "A"	VAPORTIGHT CEILING BOX MTD. INCANDESCENT 200-W. FIXTURE WITH UNBREAKABLE GLASS & SHALLOW DOME REFLECTOR, RUSSELL & STOLL CAT. NO. 6713-PV-2 OR ENGINEER APPROVED.
TYPE "B"	EXTERIOR WALL BRACKET MTD. INCANDESCENT 150-W. FIXTURE, ENCLOSING GLASS REFLECTOR, HINGED & GASKETED, HOLOPHANE CAT. NO. 415 WITH NO. 0230 OUTLET BOX OR ENGINEER APPROVED.



INSTALL SLUDGE PUMPS REPEAT
CYCLE TIMERS, IN EXISTING SPACE
BELOW EXISTING TIMER, CONTROL
SWITCH, & SWITCH.

EXIST. MOTOR
CONTROL CENTER #1

12-18-72	AS BUILT
11-11-71	BULLETIN #3
12-10-70	ADDENDUM #2
11-30-70	ISSUED FOR BIDS
8-14-70	INSTRUMENT PANEL
5-19-69	MICH. DEPT. OF HEALTH (6-19-70)

BOARD OF COUNTY ROAD COMMISSIONERS
WAYNE COUNTY, MICHIGAN

ROCKWOOD - 1970 ADDITIONS TO
WASTEWATER TREATMENT PLANT

ELECTRICAL

DATE	ADDITIONS AND/OR REVISIONS			
FLD. BK.	SCALE AS NOTED	DR. R.C.	CK. S.J.G.	APP. O.B.

JOB No.
69025

HUBBELL, ROTH & CLARK, INC.
CONSULTING ENGINEERS
2709 TELEGRAPH ROAD
BLOOMFIELD HILLS, MICH. 48303

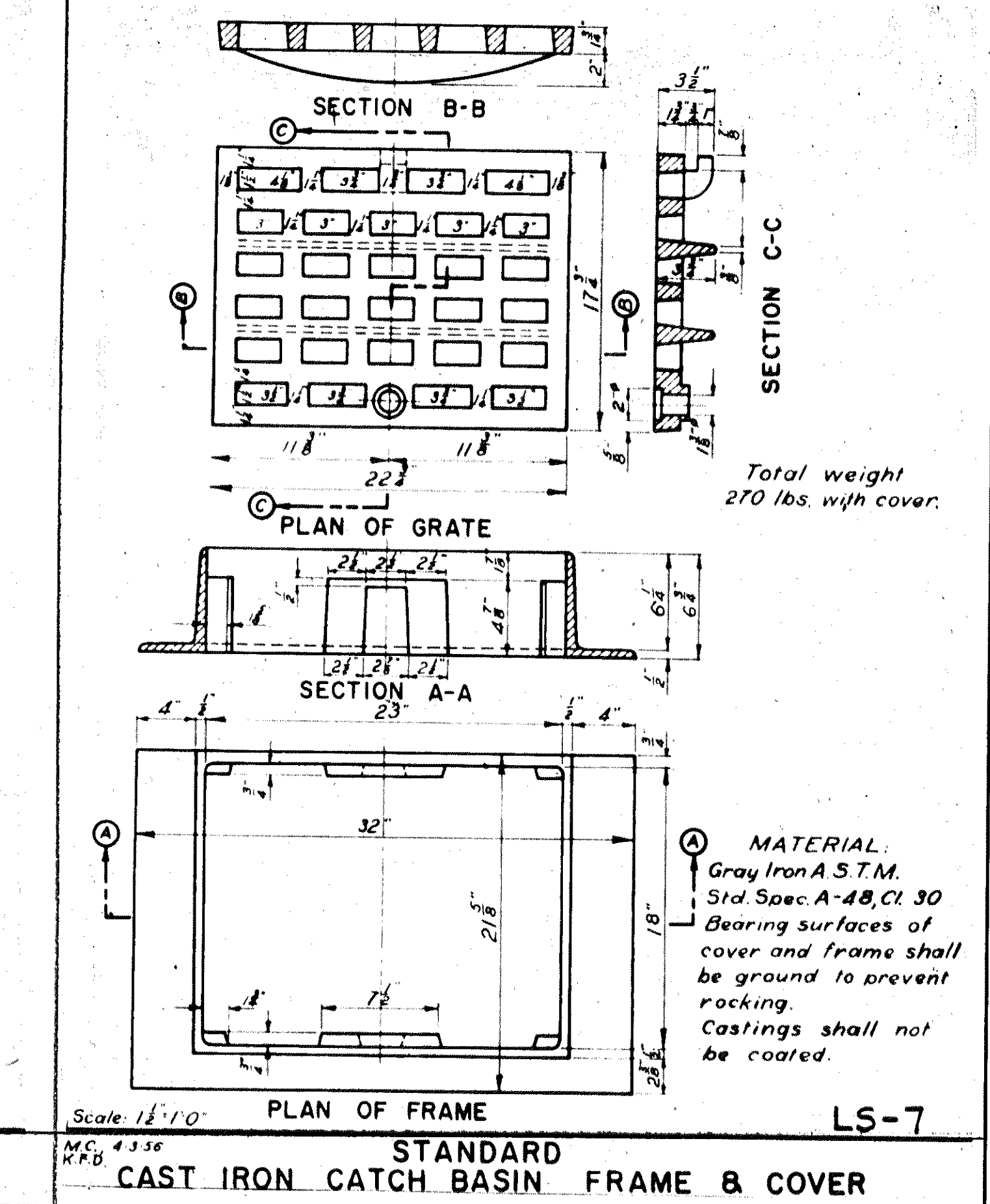
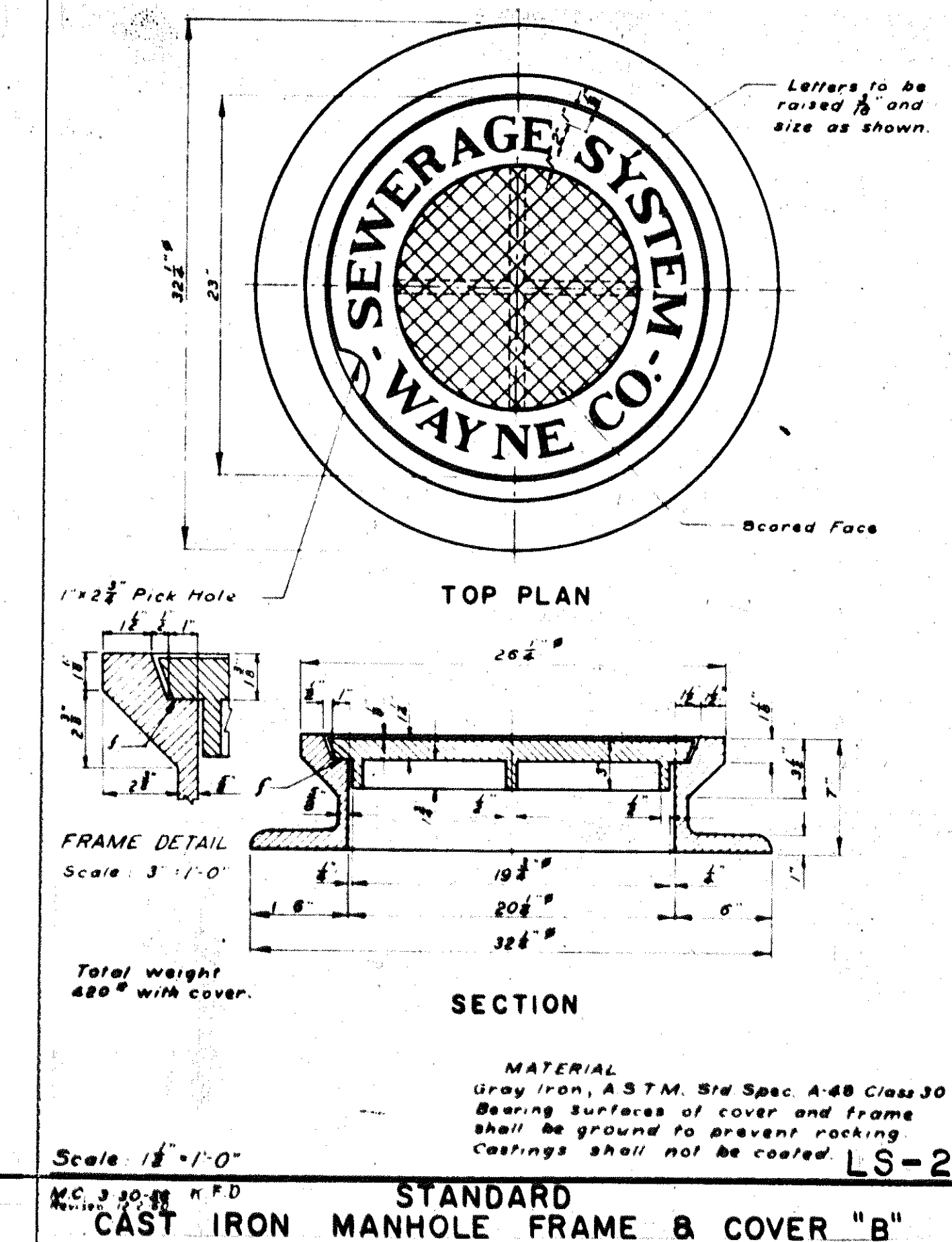
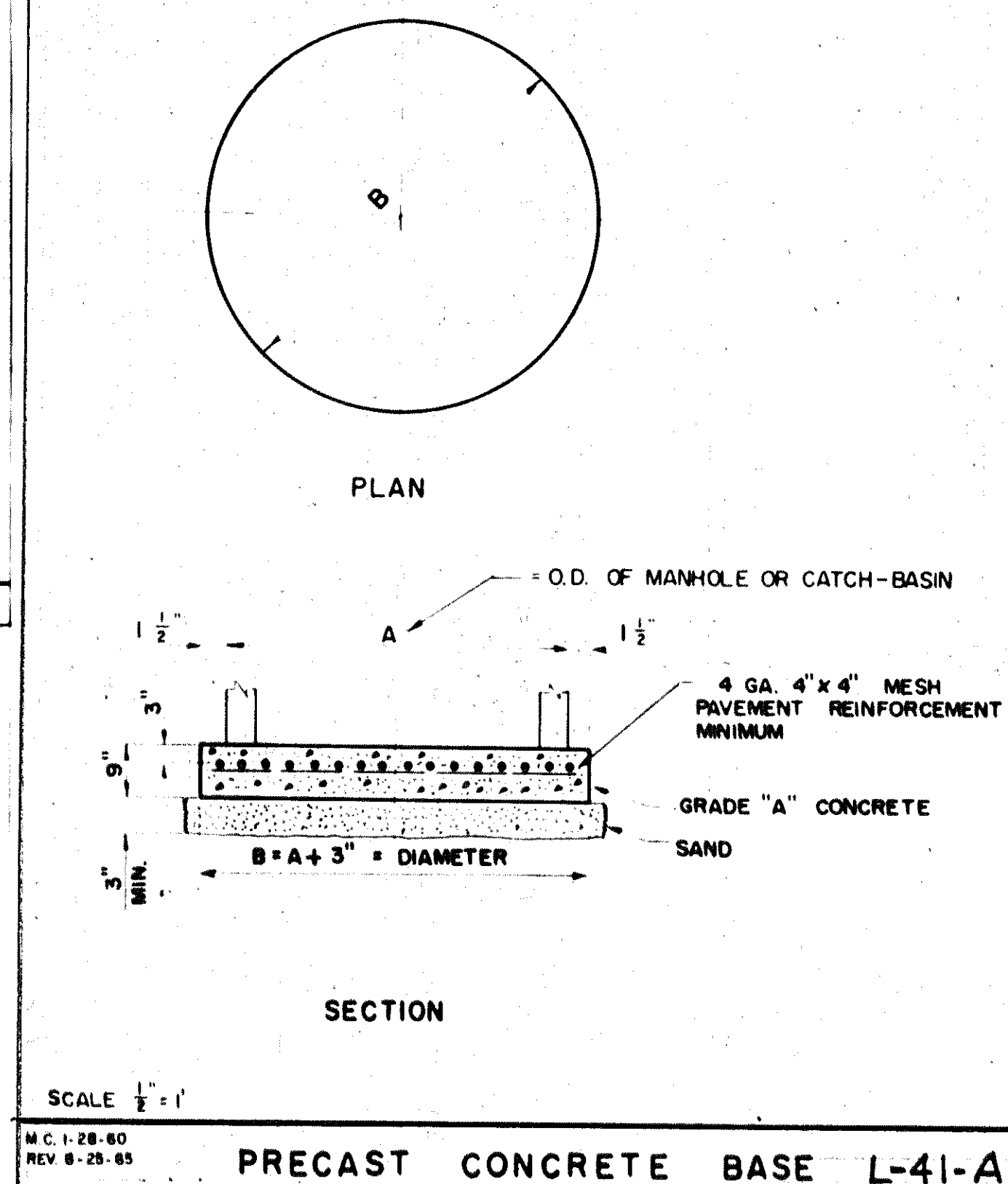
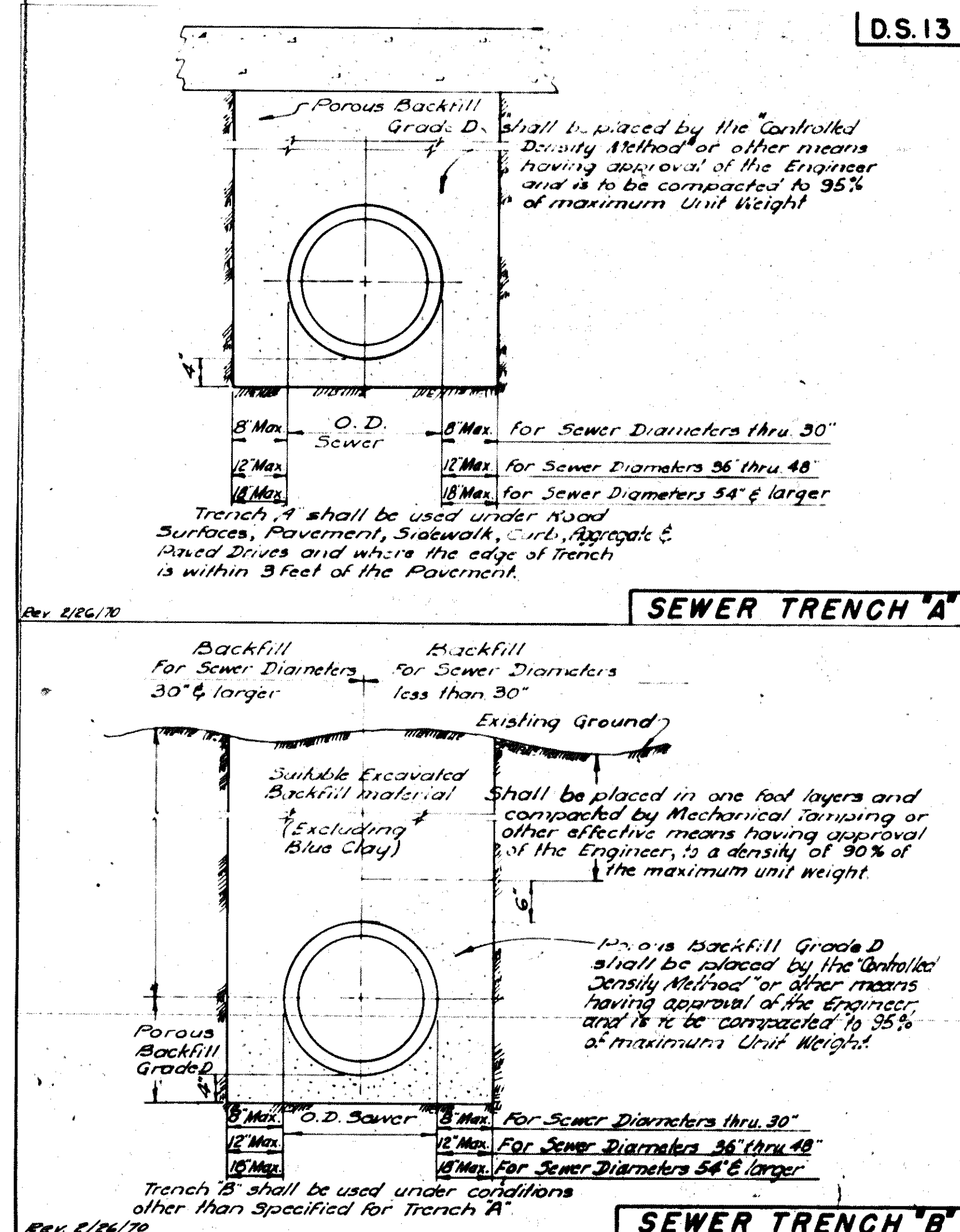
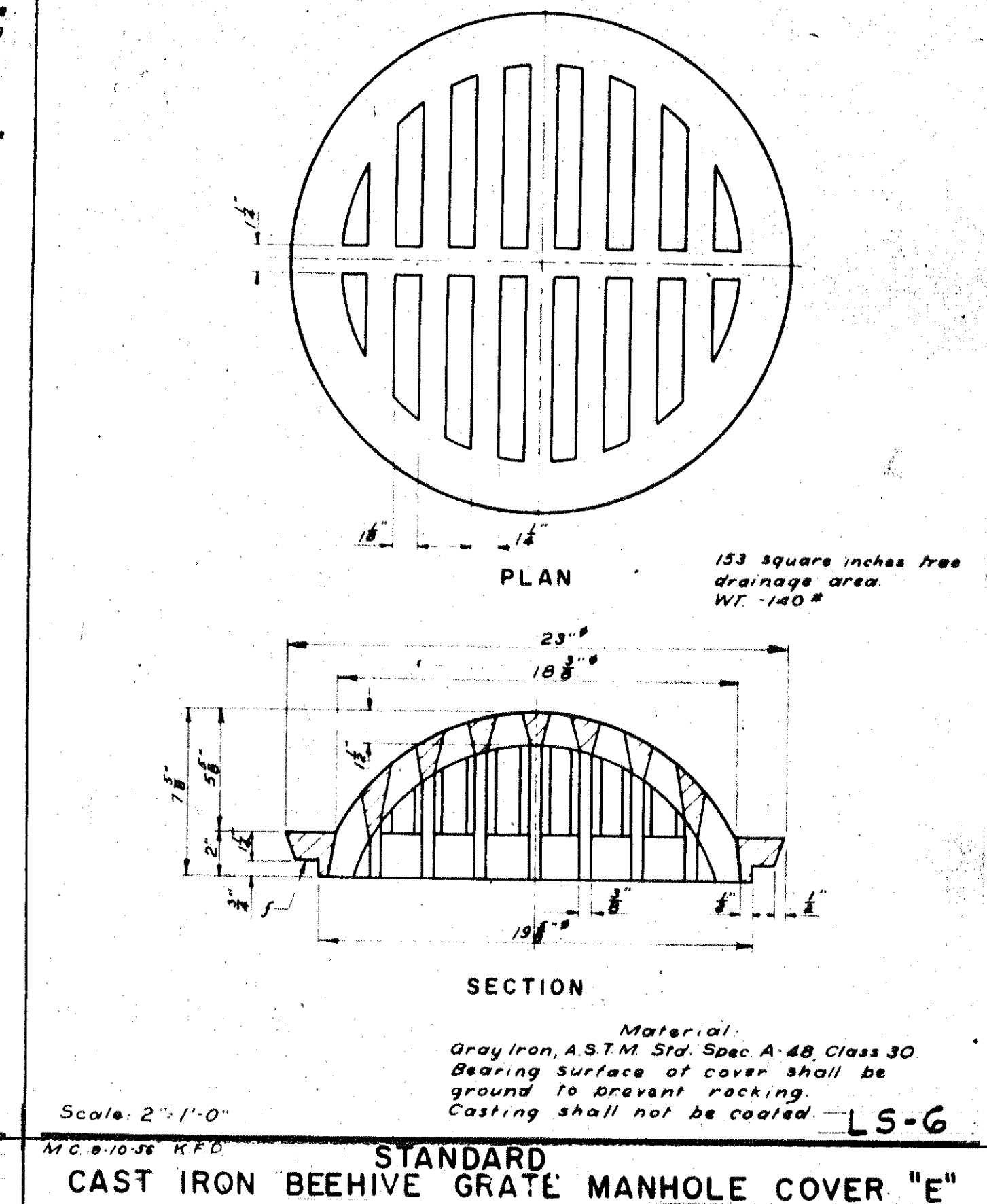
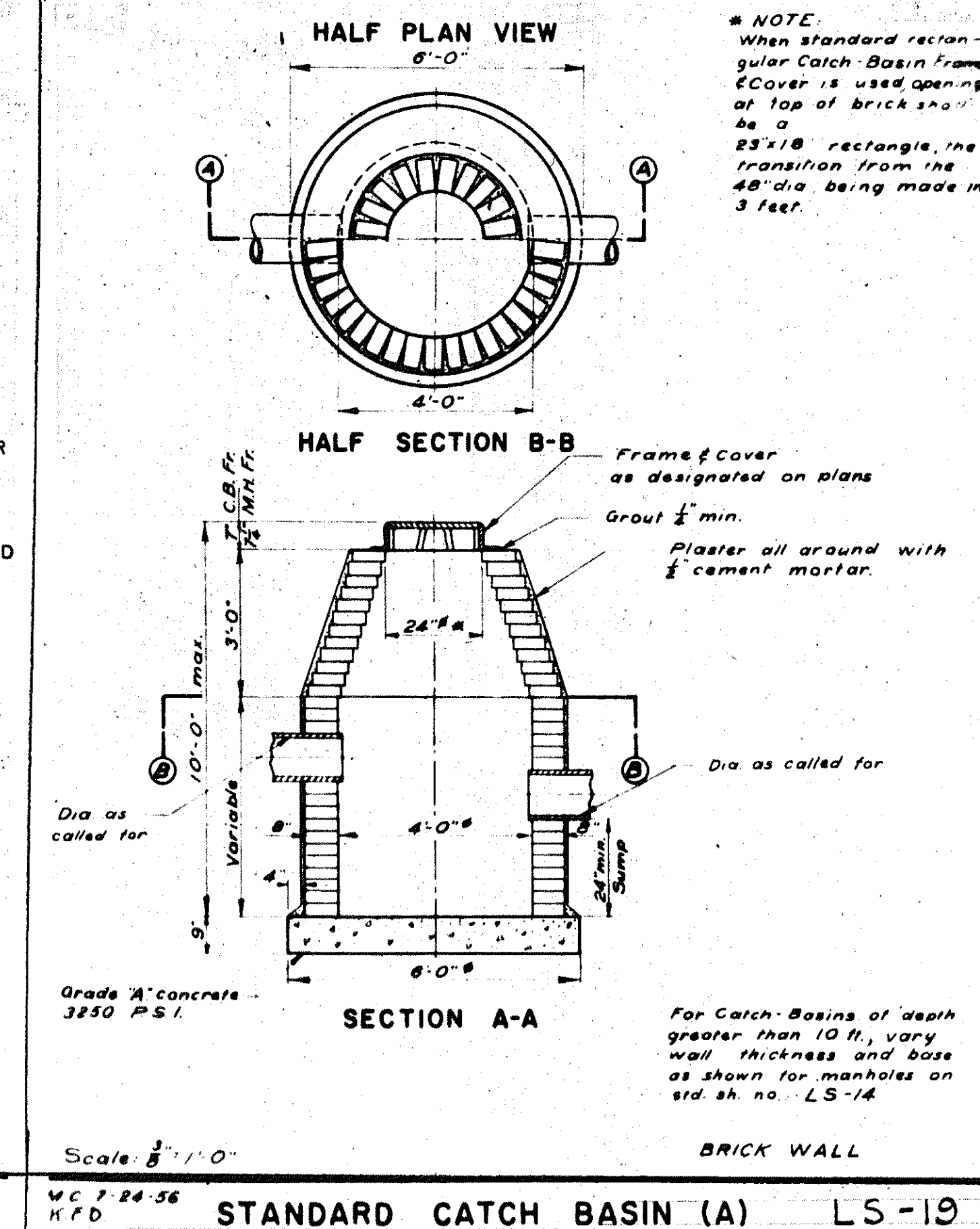
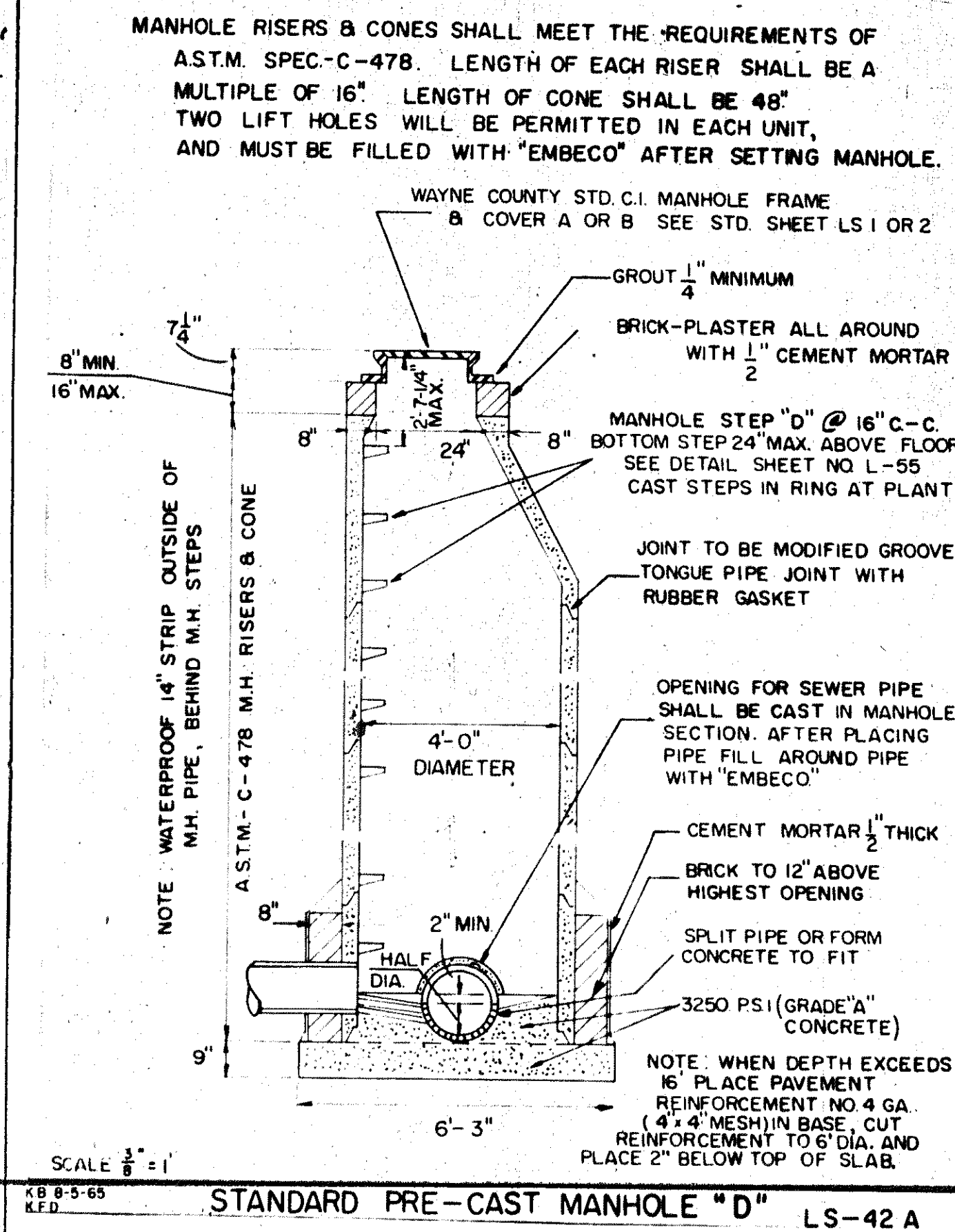
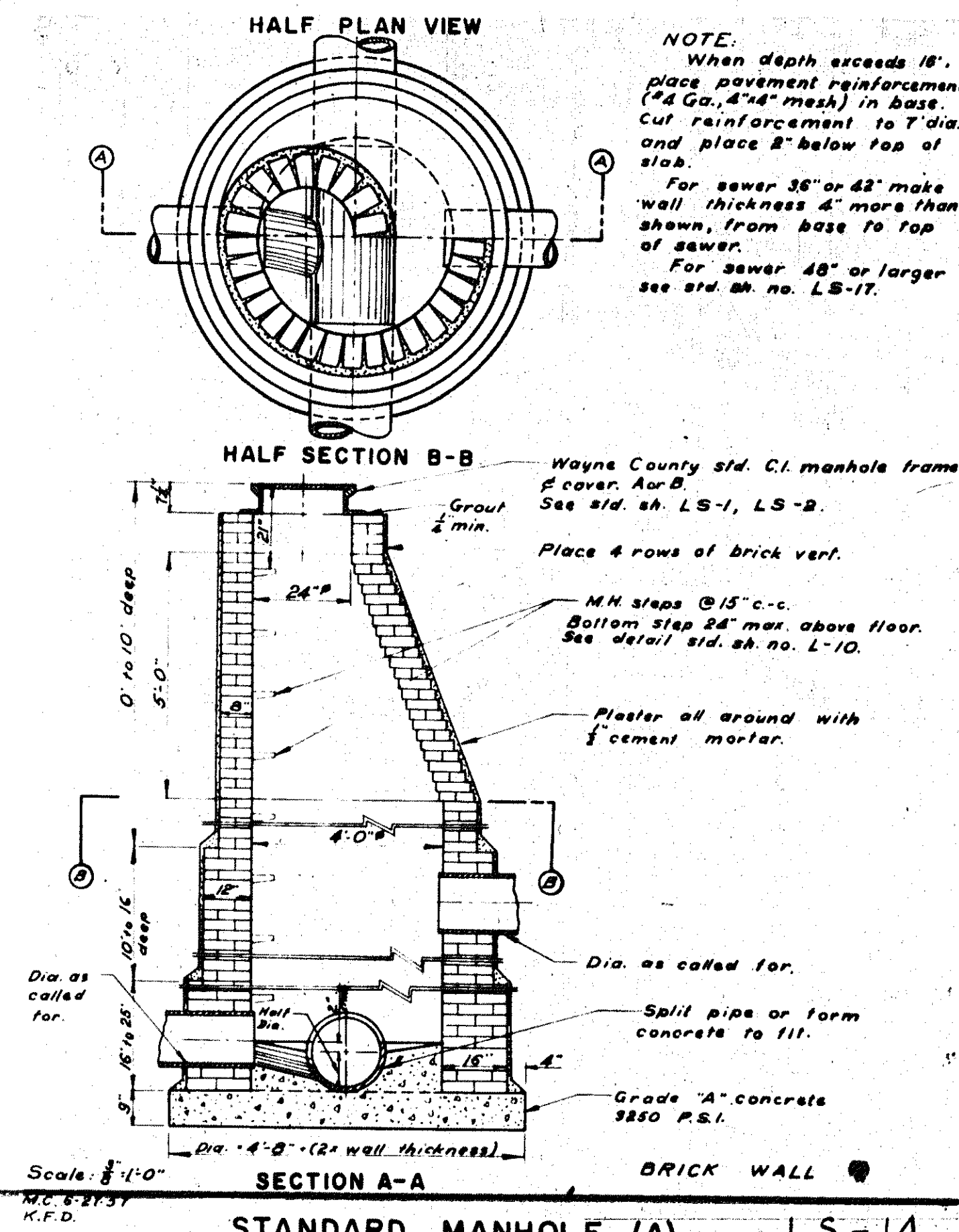
DATE
MAY 1969

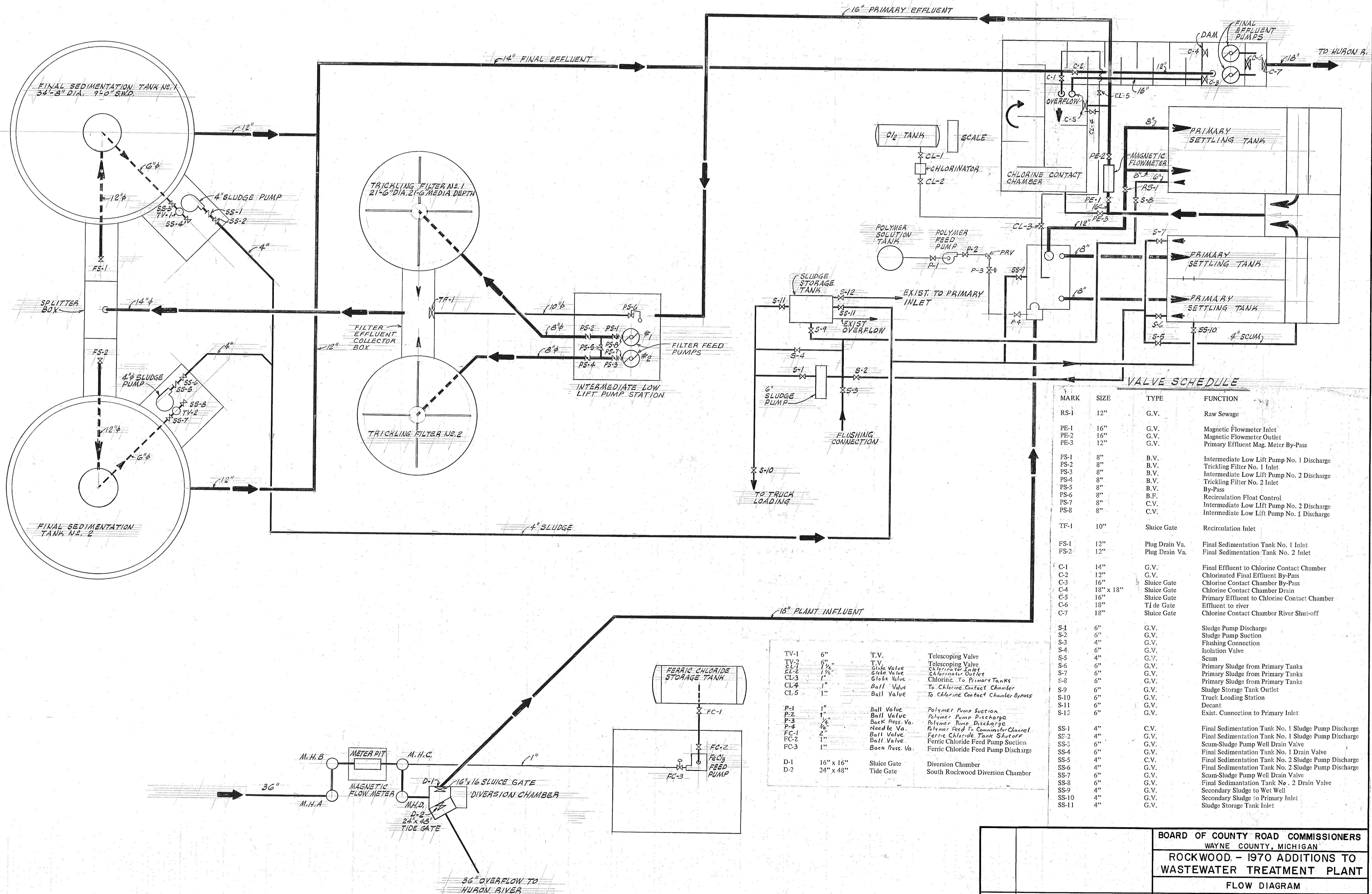
SHEET No.

E-2

OF 2

NOTE: INDICATES DEVICES REMOTE FROM M.C.C. #2.





MARK	SIZE	TYPE	FUNCTION
RS-1	12"	G.V.	Raw Sewage
PE-1	16"	G.V.	Magnetic Flowmeter Inlet
PE-2	16"	G.V.	Magnetic Flowmeter Outlet
PE-3	12"	G.V.	Primary Effluent Mag. Meter By-Pass
PS-1	8"	B.V.	Intermediate Low Lift Pump No. 1 Discharge
PS-2	8"	B.V.	Trickling Filter No. 1 Inlet
PS-3	8"	B.V.	Intermediate Low Lift Pump No. 2 Discharge
PS-4	8"	B.V.	Trickling Filter No. 2 Inlet
PS-5	8"	B.V.	By-Pass
PS-6	8"	B.F.	Recirculation Float Control
PS-7	8"	C.V.	Intermediate Low Lift Pump No. 2 Discharge
PS-8	8"	C.V.	Intermediate Low Lift Pump No. 1 Discharge
TF-1	10"	Sluice Gate	Recirculation Inlet
FS-1	12"	Plug Drain Va.	Final Sedimentation Tank No. 1 Inlet
FS-2	12"	Plug Drain Va.	Final Sedimentation Tank No. 2 Inlet
C-1	14"	G.V.	Final Effluent to Chlorine Contact Chamber
C-2	12"	G.V.	Chlorinated Final Effluent By-Pass
C-3	16"	Sluice Gate	Chlorine Contact Chamber By-Pass
C-4	18" x 12"	Sluice Gate	Chlorine Contact Chamber Drain
C-5	16"	Sluice Gate	Primary Effluent to Chlorine Contact Chamber
C-6	18"	Ti de Gate	Effluent to river
C-7	18"	Sluice Gate	Chlorine Contact Chamber River Shut-off
S-1	6"	G.V.	Sludge Pump Discharge
S-2	6"	G.V.	Sludge Pump Suction
S-3	4"	G.V.	Flushing Connection
S-4	6"	G.V.	Isolation Valve
S-5	4"	G.V.	Scum
S-6	6"	G.V.	Primary Sludge from Primary Tanks
S-7	6"	G.V.	Primary Sludge from Primary Tanks
S-8	6"	G.V.	Primary Sludge from Primary Tanks
S-9	6"	G.V.	Sludge Storage Tank Outlet
S-10	6"	G.V.	Truck Loading Station
S-11	6"	G.V.	Decant
S-12	6"	G.V.	Exist. Connection to Primary Inlet
SS-1	4"	C.V.	Final Sedimentation Tank No. 1 Sludge Pump Dis
SS-2	4"	G.V.	Final Sedimentation Tank No. 1 Sludge Pump Dis
SS-5	6"	G.V.	Scum-Sludge Pump Well Drain Valve
SS-4	6"	C.V.	Final Sedimentation Tank No. 1 Drain Valve
SS-5	4"	C.V.	Final Sedimentation Tank No. 2 Sludge Pump Dis
SS-6	4"	G.V.	Final Sedimentation Tank No. 2 Sludge Pump Dis
SS-7	6"	G.V.	Scum-Sludge Pump Well Drain Valve
SS-8	6"	G.V.	Final Sedimentation Tank No. 2 Drain Valve
SS-9	4"	G.V.	Secondary Sludge to Wet Well
SS-10	4"	G.V.	Secondary Sludge to Primary Inlet
SS-11	4"	G.V.	Sludge Storage Tank Inlet

TV-1	6"	T.V.	Telescoping Valve
TV-2	6"	T.V.	Telescoping Valve
CL-1	1 1/2"	Globe Valve	Chlorinator Inlet
CL-2	1 1/2"	Globe Valve	Chlorinator Outlet
CL-3	1 1/2"	Globe Valve	Chlorine to Primary Tanks
CL-4	1"	Ball Valve	To Chlorine Contact Chamber
CL-5	1"	Ball Valve	To Chlorine Contact Chamber Bypass
P-1	1"	Ball Valve	Polymer Pump Suction
P-2	1"	Ball Valve	Polymer Pump Discharge
P-3	3/4"	Back Press. Va.	Polymer Pump Discharge
P-4	3/4"	Back Press. Va.	Polymer Feed To Commutator Channel
FC-1	2"	Ball Valve	Ferric Chloride Feed Suction
FC-2	2"	Ball Valve	Ferric Chloride Feed Pump Suction
FC-3	1"	Back Press. Va.	Ferric Chloride Feed Pump Discharge
D-1	16" x 16"	Sluice Gate	Diversion Chamber
D-2	24" x 48"	Tide Gate	South Rockwood Diversion Chamber