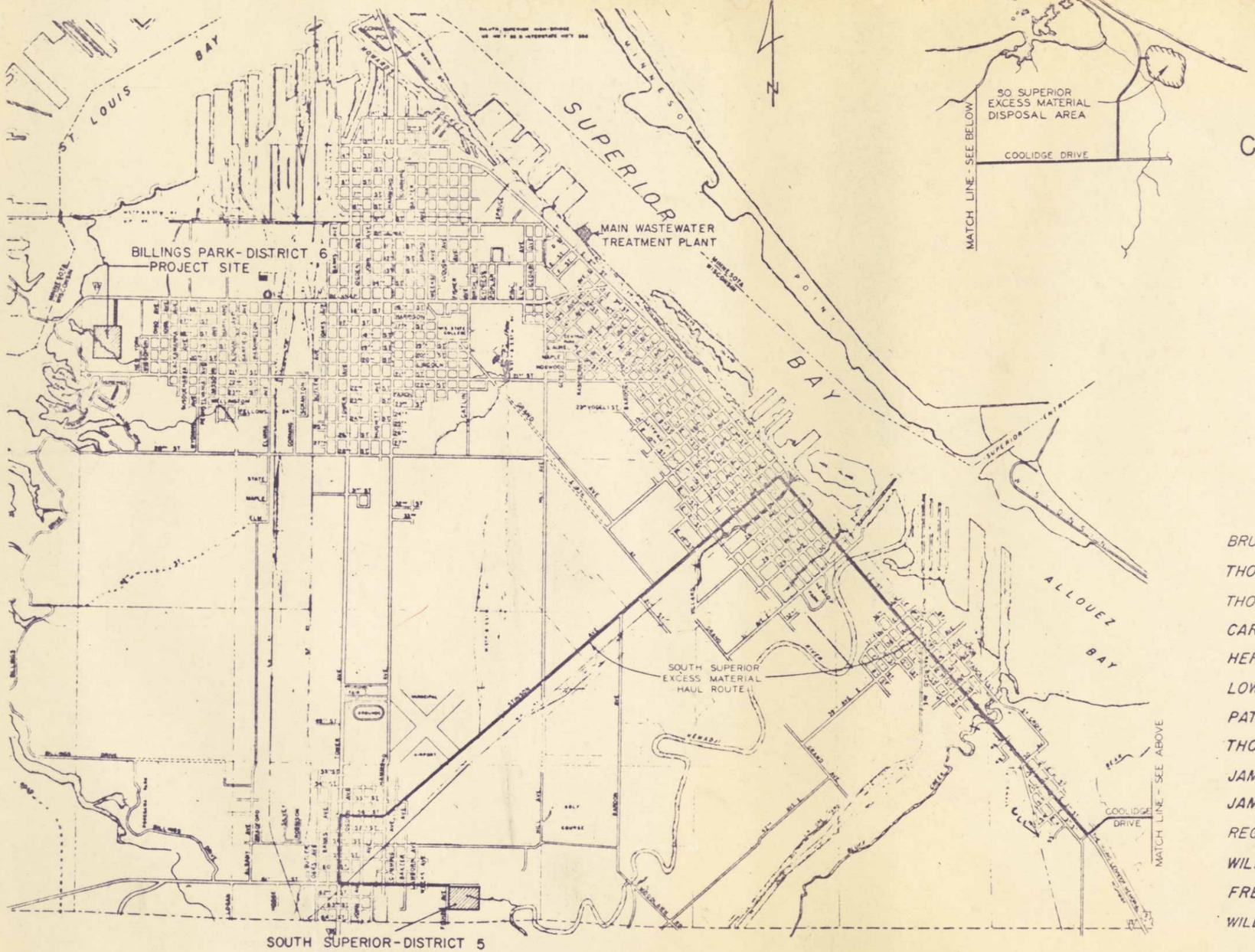


LOCATION PLAN

Scale: 1"=2,000'

SUPERIOR, WISCONSIN

COMBINED SEWER OVERFLOW TREATMENT PLANTS

BILLINGS PARK - DISTRICT 6

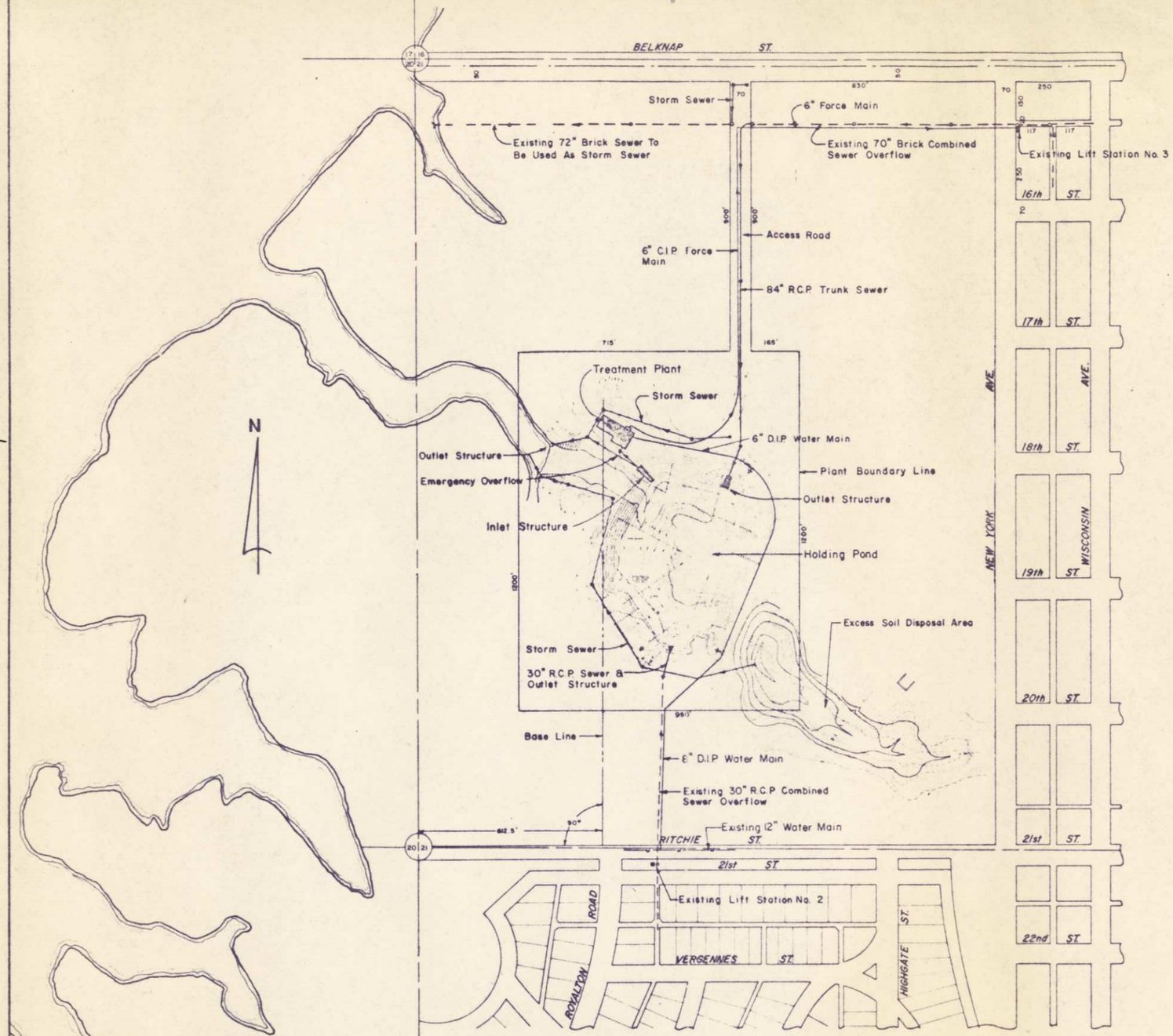
SOUTH SUPERIOR - DISTRICT 5

CITY COUNCIL

BRUCE C. HAGEN	MAYOR
THOMAS P. STROOZAS, JR.	COUNCILMAN
THOMAS G. HIGGINS	COUNCILMAN
CARL DAHLIN	COUNCILMAN
HERBERT C. WALLIN	COUNCILMAN
LOWELL W. BANKS	COUNCILMAN
PATRICIA PAQUETTE	COUNCILWOMAN
THOMAS J. GODFREY	COUNCILMAN
JAMES McHUGH	COUNCILMAN
JAMES E. JOHNSON	COUNCILMAN
REGINA HILL	COUNCILWOMAN
WILLIAM A. HAMMANN	CITY ATTORNEY
FRED M. SEGUIN	PUBLIC WORKS DIRECTOR
WILLIAM LEHMAN	CITY PLANNER

COMBINED SEWER OVERFLOW TREATMENT PLANTS - DISTRICTS 5 & 6 1974

BOKESTROO, ROSENE, ANDERLIK & ASSOC., INC. ST. PAUL, MINNESOTA | SUPERIOR, WISCONSIN DATE: SEPTEMBER 2, 1974 | TITLE SHEET



AREA PLAN
Scale: 1" = 200'

BILLINGS PARK- DISTRICT 6

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4. SITE PLAN - 2
5. SITE PLAN - 3
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7. ACCESS ROAD & SEWER PLAN
8. FENCING & PLANTING PLAN
9. INLET STRUCTURE
10. INLET STRUCTURE
11. PLANT FLOOR PLAN
12. PLANT SUBFLOOR PLAN
13. PLANT SECTIONS
14. PLANT SECTIONS
15. PLANT SECTIONS & DETAILS
16. PLANT DETAILS
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18. PLANT DETAILS
19. PIPING ISOMETRICS
20. ARCHITECTURAL DETAILS
21. BUILDING ELEVATIONS
22. DRAINAGE PIPING PLAN
23. INLET STRUCTURE - STRUCTURAL
24. INLET STRUCTURE - STRUCTURAL
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28. PLANT SECTIONS - STRUCTURAL
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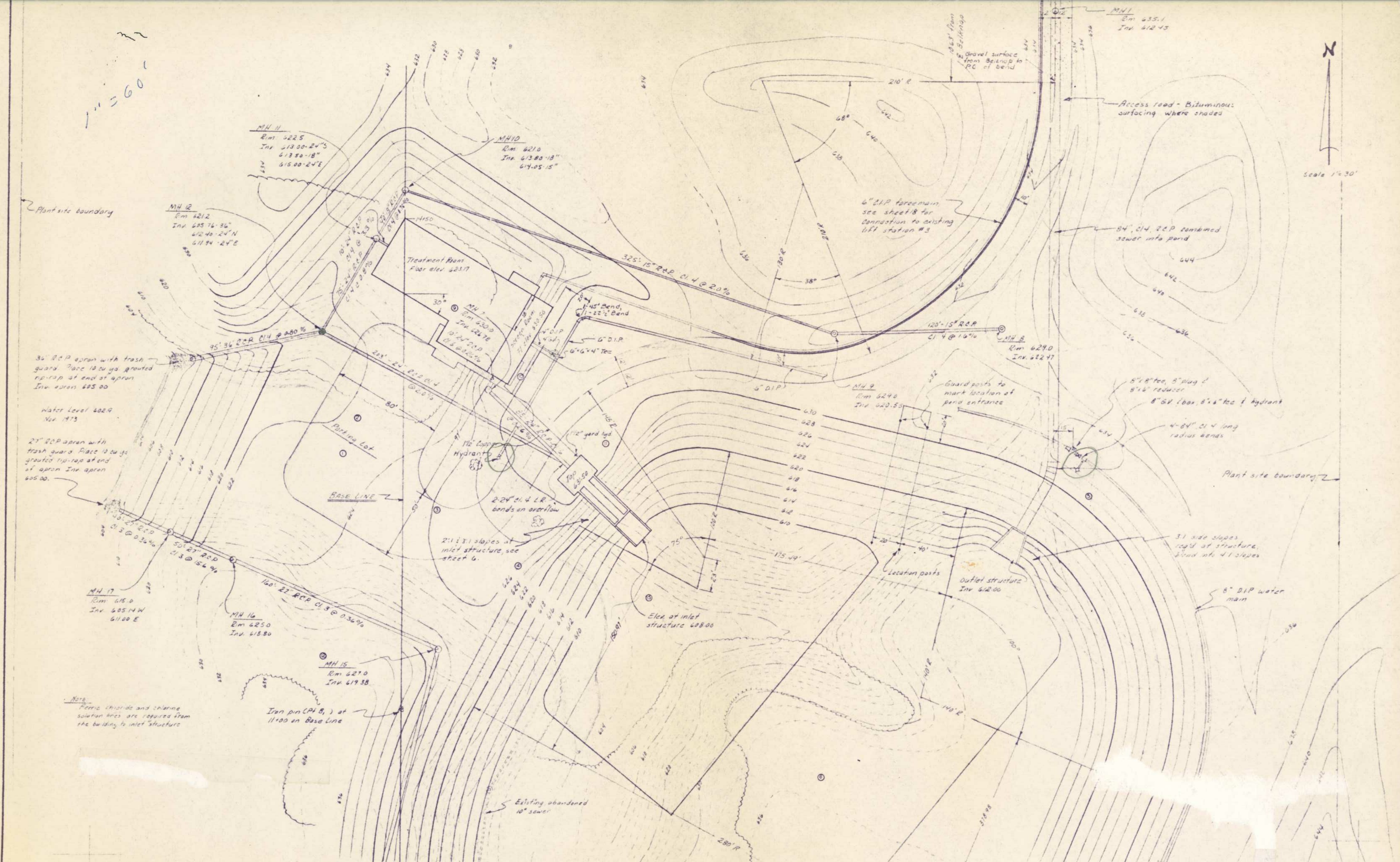
30. ROOF PLAN & SECTIONS
31. MASONRY - STRUCTURAL
32. MASONRY - STRUCTURAL
33. MECHANICAL
34. MECHANICAL
35. ELECTRICAL
36. ELECTRICAL
37. ELECTRICAL
38. GRAPHIC PANEL
39. ELECTRICAL
40. ELECTRICAL

SEE SHEET 41 FOR INDEX TO SOUTH SUPERIOR PLANT

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN	SURVEY	REVISIONS	BONESTROO, ROSENE, ANDERLIK & ASSOC., INC. ST. PAUL, MINNESOTA	SUPERIOR, WISCONSIN DATE: SEPTEMBER 2, 1974	BILLINGS PARK CSO PLANT INDEX SHEET
	DRAWN RWF				
	CKD BY RWF				
	APPROV'D				



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

SURVEY	
DRAWN	RWF
DESIGN	RWF
APPROV'D	

REVISIONS

BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN

DATE: SEPTEMBER 2, 1974 COMM. 6888 E

BILLINGS PARK CSO PLANT

SITE PLAN - I

3/78

160
50
40
5
0
2

MH 14
Rim 632.0
Inv 620.37

Base Line

MH 13
Rim 623.0
Inv 621.41

Existing, abandoned 10" sewer. Remove manholes & cap pipe with concrete.

Stream

300'

220'±

260'±

153.21'

115'±

123.6'

Outlet structure

385' 27" RCP Cl V @ 2.32%

375' 27" RCP Cl V @ 2.26%

8" D.I.P. water main

Scale 1" = 30'

Existing 27" R.C.P. remove exposed sections & pour concrete cap over end of pipe, typical both ends

27" R.C.P. apron with trash guard. Place 10 cu yd grouted rip-rap at end. Apron Inv. 622.52

8" x 8" tee 6" D.I.P. stub & hydrant

8" D.I.P. water main, see sheet 2 & sheet 18

Cut into existing manhole, remove existing 15" RMP to stream & construct 30" RCP outfall line and outlet structure Inv. 30" - 614.00 at structure. Existing manhole Rim 636.85, Inv 620.62

Existing 30" RCP Combined sewer line from 21st Street

3 27" R.C.P. Cl V long radius bends

Remove top of existing manhole & casting & reconstruct new top & casting. Manhole Rim to be lowered to 636.1 Revise manhole invert in accordance with Plate 18

NOTES:

1. All slopes shall be 4:1 unless specifically shown otherwise.
2. Grading alignment is dimensioned to proposed contour 620.
3. Trees shown are approximate, bottom of ravine is brush and saplings. Contractor shall inspect area to determine quantity of large trees to be removed. All trees, where possible, shall be saved and protected by the Contractor.
4. Bituminous surface shall cover the entire pond bottom and side slopes up to elev. 623.0.
5. Pond bottom to slope to inlet structure elev. 608.00. High water level is 617.0
6. Proposed contours are finished grade.

LEGEND

Boring & Number	⊙
Proposed Field Piping	═══
Existing Piping	═══
Existing Contours	—— 620 ——
Proposed Contours	—— 620 ——

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

DATE 11-21-75 REG. NO. 21917 L. David E. Jensen

SURVEY		REVISIONS
DRAWN		Cul-De-Ct Added Alternate
DES'GN		
APPROV'D		

BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: SEPTEMBER 2, 1974 COMM. 6668 E

BILLINGS PARK CSO PLANT
SITE PLAN - 2
SHEET 4/4

N

Scale 1"=30'

Existing high-rise building

Drainage ditch to building must remain open

Existing 24" R.C.P., See sheet 4

Existing 42" R.C.P. Remove exposed sections & pour concrete cap over end of pipe

Proposed storm sewer see sheet 4

NOTE:
Excess material is to be placed in the draw as shown on this sheet. The amount of excess material will determine the exact finish contours. The Contractor shall place the fill in the draw, bringing it up evenly the entire length of the draw. Provide drainage routes as shown. No fill slope shall exceed 4:1 after finish grading.

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

DATE ____ REG. NO. E-11937 _____

SURVEY	
DRAWN	RWF
DESIGN	RWF
APPROVED	

REVISIONS

BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

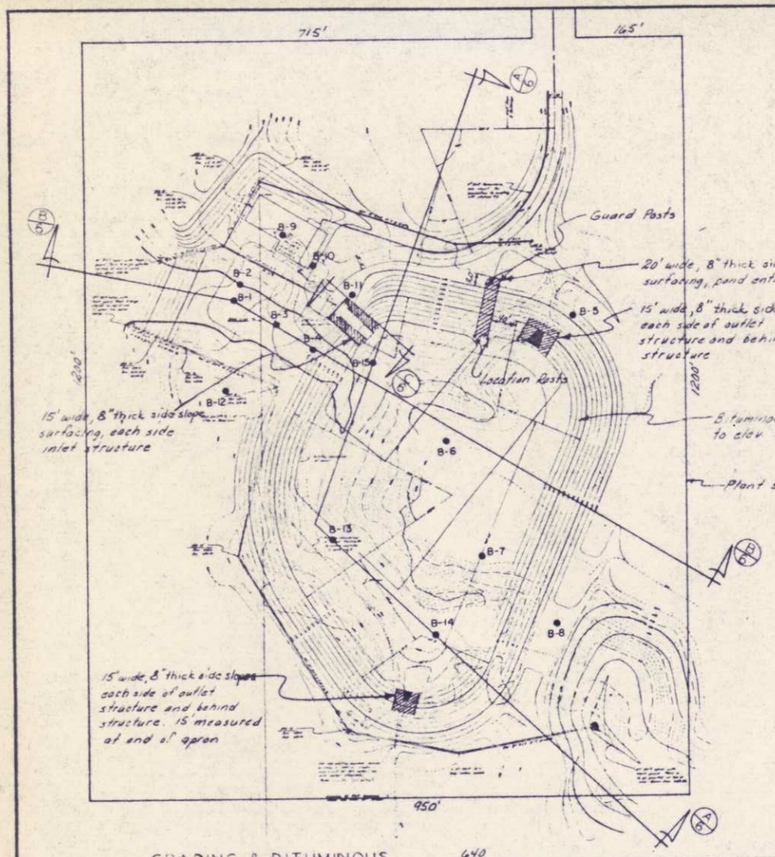
SUPERIOR, WISCONSIN

DATE: SEPTEMBER 2, 1974 CONTR. 6888 E

BILLINGS PARK CSO PLANT

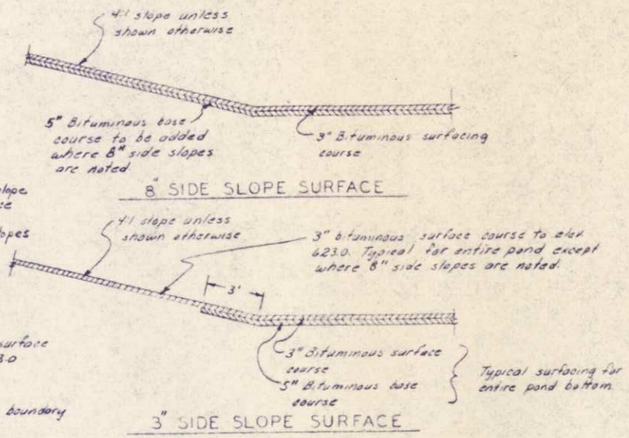
SITE PLAN - 3

5



GRADING & BITUMINOUS SURFACING PLAN

Scale 1"=120'

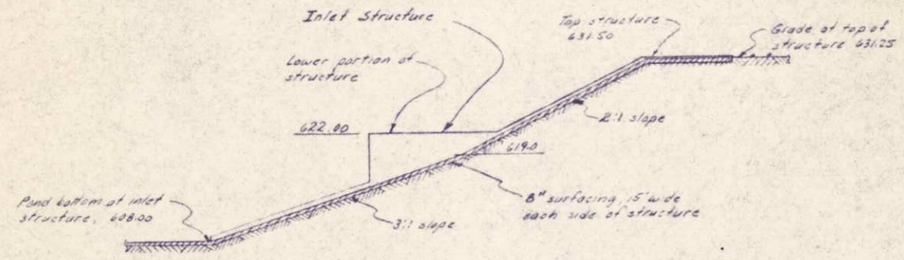


SURFACING SECTIONS

Scale 1"=4'

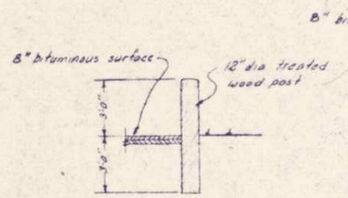
Notes:

1. Contractor shall remove all peat & topsoil from the bottom of the ravine and backfill with granular material to elevation 604.0 prior to placing any clay fill. All topsoil shall be removed from any area to be graded. Topsoil & peat shall be stockpiled, dried and mixed for respreading prior to seeding.
2. The entire pond bottom and side slopes up to elevation 623.0 shall receive a bituminous surface as shown in the surfacing sections above. Surfacing above 623.0 is shown on plan at left.
3. Bituminous surfacing shall be constructed over the compacted clay.
4. Borings shown and the approximate bottom of peat shown in the cross sections below are for information only. See specifications for removal of peat and placement of granular fill.



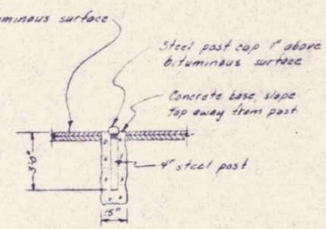
SECTION C-C

Scale: 1"=10'



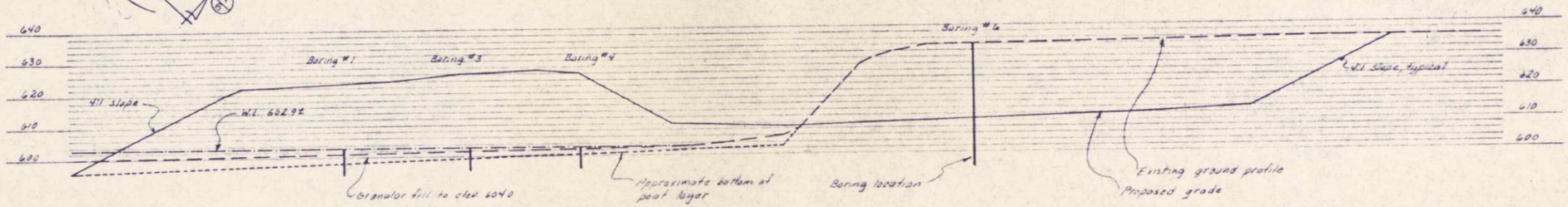
GUARD POST DETAIL

Scale 1/4"=1'-0"

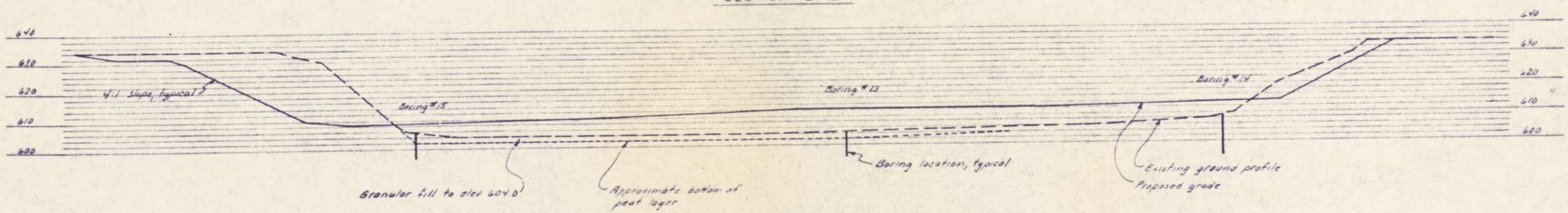


LOCATION POST DETAIL

Scale 1/4"=1'-0"



SECTION B-B



SECTION A-A

POND GRADING CROSS-SECTIONS

Scale: Horz. 1"=40'
Vert. 1"=20'

BILLINGS PARK CSO PLANT

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

DATE 3/27/75 REG. NO. 5-11577 Pollard & Evans

SURVEY
DRAWN
DESIGN
APPROVED

REVISIONS
11/4/74 2: ET

BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: SEPTEMBER 2, 1974 OMM 6888E

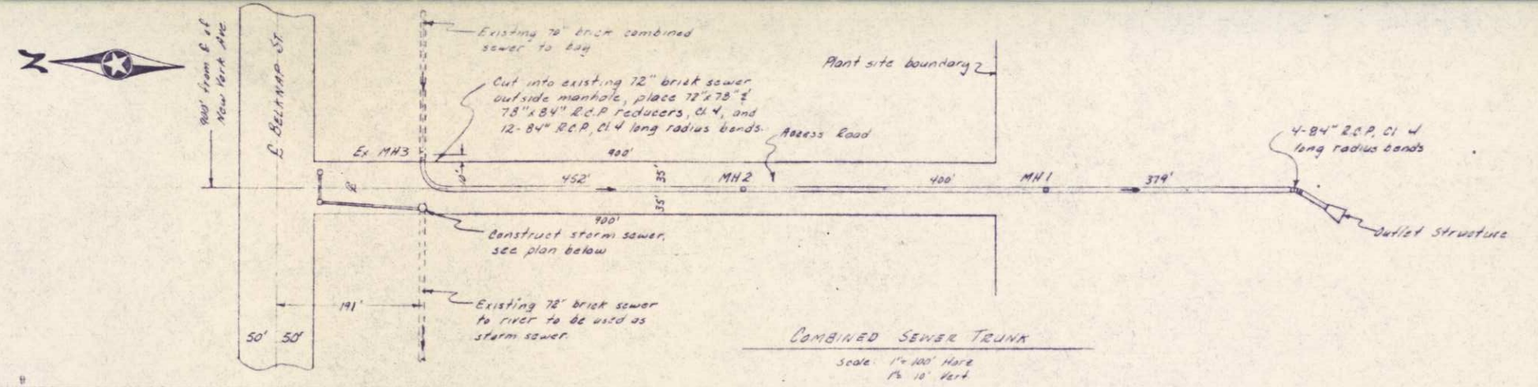
POND CROSS SECTIONS

SHEET 6/78

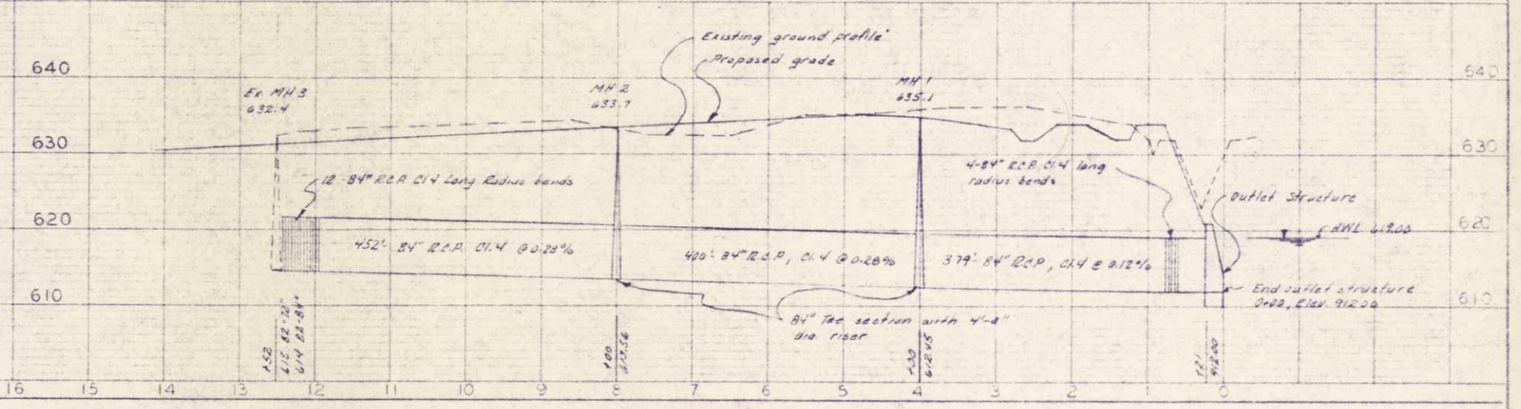
MANHOLE SCHEDULE

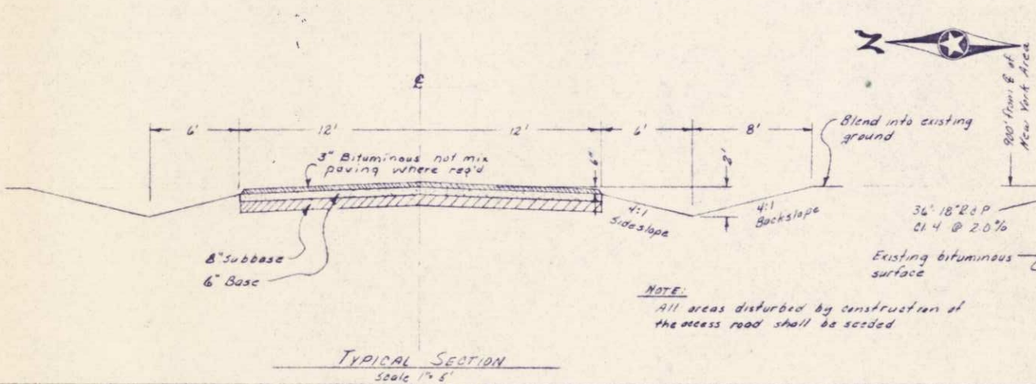
NUMBER	DIA.	RIM	INVERT	PLATE No.	NUMBER	DIA	RIM	INVERT	PLATE No.
MH1 ①	4'	635.1	612.45	1-10	MH10	4'	621.0	613.80	1-6A
MH2 ①	4'	633.7	613.56	1-10	MH11	4'	622.5	613.00	1-8
MH3	Existing	632.4	615.82	—	MH12	4'	621.2	605.76	1-8
MH4	6'	631.5	615.6	1-8	MH13	4'	630.0	621.41	1-6A
MH5	4'	629.0	620.66	1-6A	MH14	4'	632.0	620.37	1-6A
MH6	4'	629.0	621.88	1-6A	MH15	4'	627.0	619.38	1-8
MH7	4'	630.0	626.78	1-8	MH16	4'	625.0	618.80	1-8
MH8	4'	629.0	622.47	1-6A	MH17	4'	615.0	605.14	1-8
MH9	4'	629.0	628.55	1-6A	MH18 ②	Existing	636.1	620.63	1-8

① 84" Tee with 4' dia riser
② Top of manhole to be reconstructed



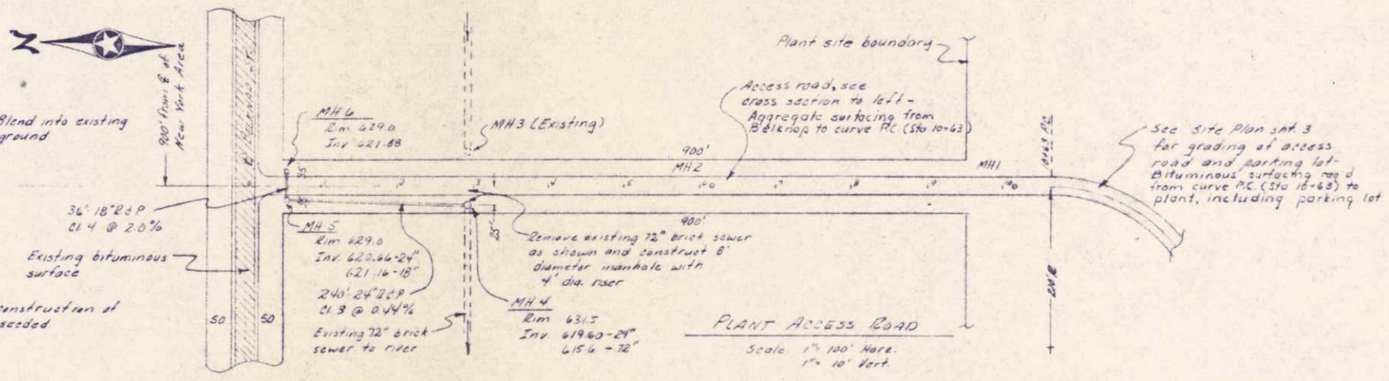
COMBINED SEWER TRUNK
Scale: 1"=100' Hore
1"= 10' Vert.



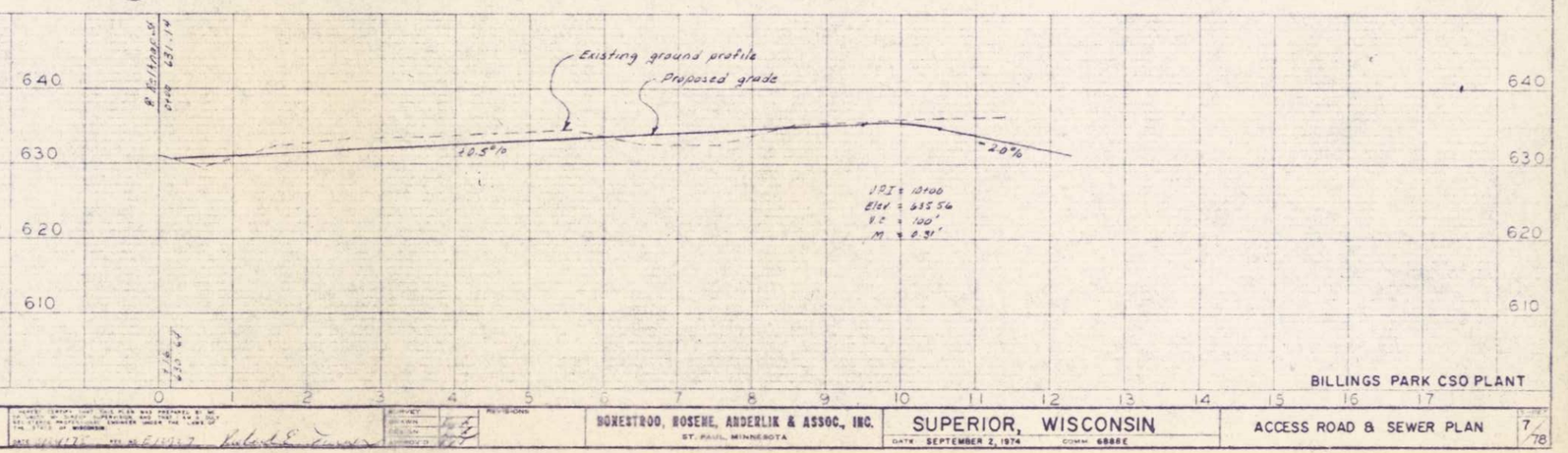


TYPICAL SECTION
Scale 1"= 5'

NOTE:
All areas disturbed by construction of the access road shall be seeded



PLANT ACCESS ROAD
Scale 1"= 100' Hore.
1"= 10' Vert.



BILLINGS PARK CSO PLANT

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

SURVEY	
DESIGN	
DRAWN	
APPROVED	

REVISIONS

BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

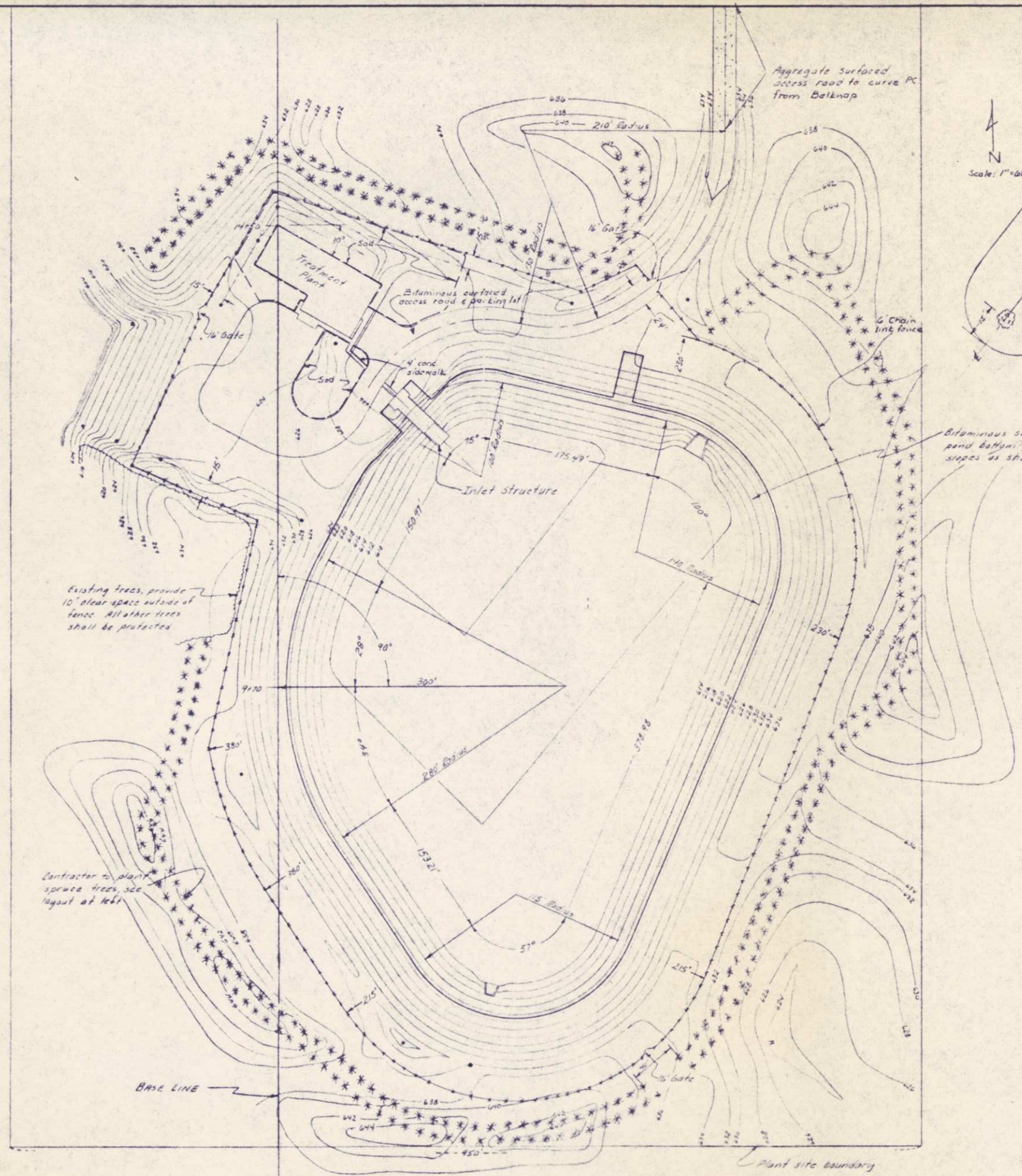
SUPERIOR, WISCONSIN
DATE SEPTEMBER 2, 1974 COMM 6888E

ACCESS ROAD & SEWER PLAN

7/78

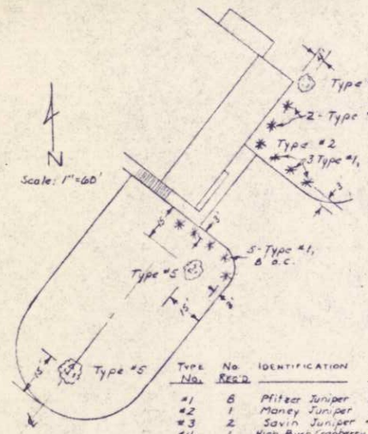
N

Scale 1"=60'



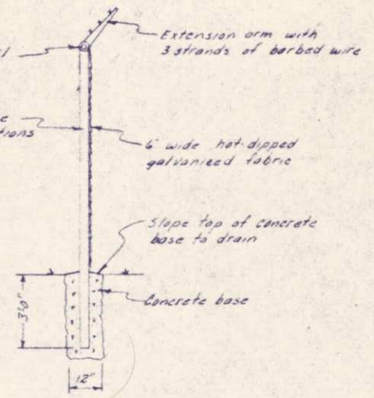
FENCIING & PLANTING PLAN

Scale 1"= 60'



TYPE No.	No. REQ'D	IDENTIFICATION	SIZE
#1	8	Pfitzer Juniper	30"-36" spread
#2	1	Money Juniper	30"-36" spread
#3	2	Savin Juniper	30"-48" spread
#4	1	High Bush Cranberry	36"-48" high
#5	2	Green Ash	3" dia.

FOUNDATION PLANTINGS

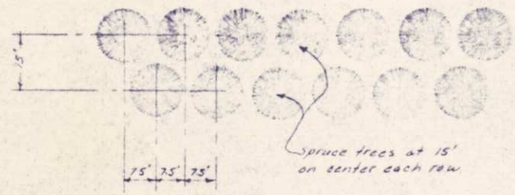


FENCE DETAIL

Scale 1/2"= 1'-0"

NOTES:

1. The Contractor shall strip all topsoil and remove all peat from the project site. This includes stripping of all topsoil and peat from the disposal area site prior to placing any excess material. The topsoil and peat shall be stockpiled, drained and blended together prior to respreading. The topsoil mixture shall be spread on all slopes 4:1 or greater and the area around the plant building and inlet structure. Any excess topsoil mixture shall be spread around within the plant site boundary and finally over the disposal area.
2. All areas, except those receiving aggregate base, bituminous surfacing, or sod and disturbed during construction shall be seeded and mulched. Any packed area shall be disked and dragged prior to seeding. Mulch shall be disk anchored.
3. The Contractor shall not remove any trees not necessary to the construction of the proposed facilities. The Contractor shall not damage any trees which are to be saved.

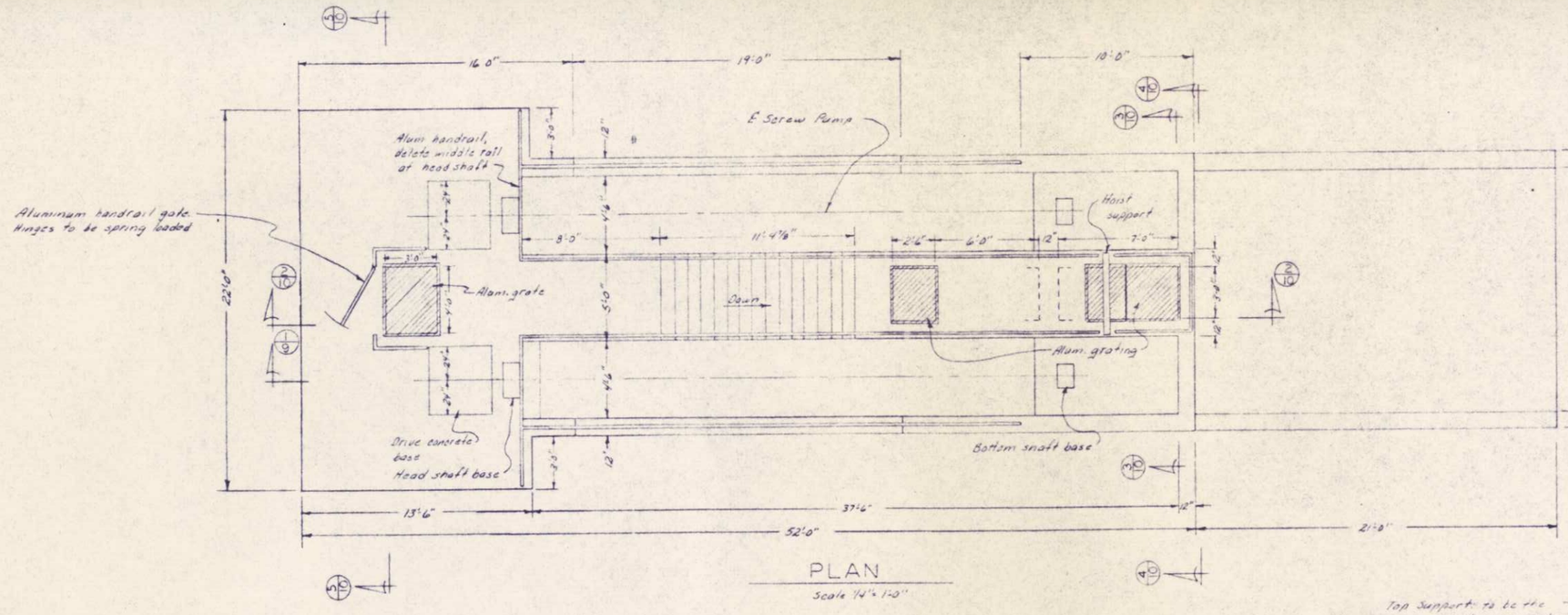


TREE LAYOUT

Scale 1"=20'-0"

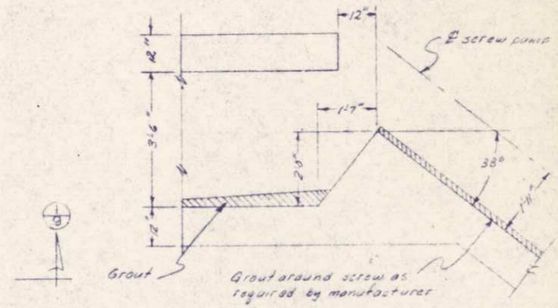
BILLINGS PARK CSO PLANT

SURVEY		REVISIONS	BONESTROO, ROSENE, ANDERLIK & ASSOC., INC. ST. PAUL, MINNESOTA	SUPERIOR, WISCONSIN DATE: SEPTEMBER 2, 1974 ODMM 6888E	FENCING & PLANTING PLAN 8/16
DRAWN					
DES-SN					
APPROVED					



PLAN

Scale 1/4" = 1'-0"

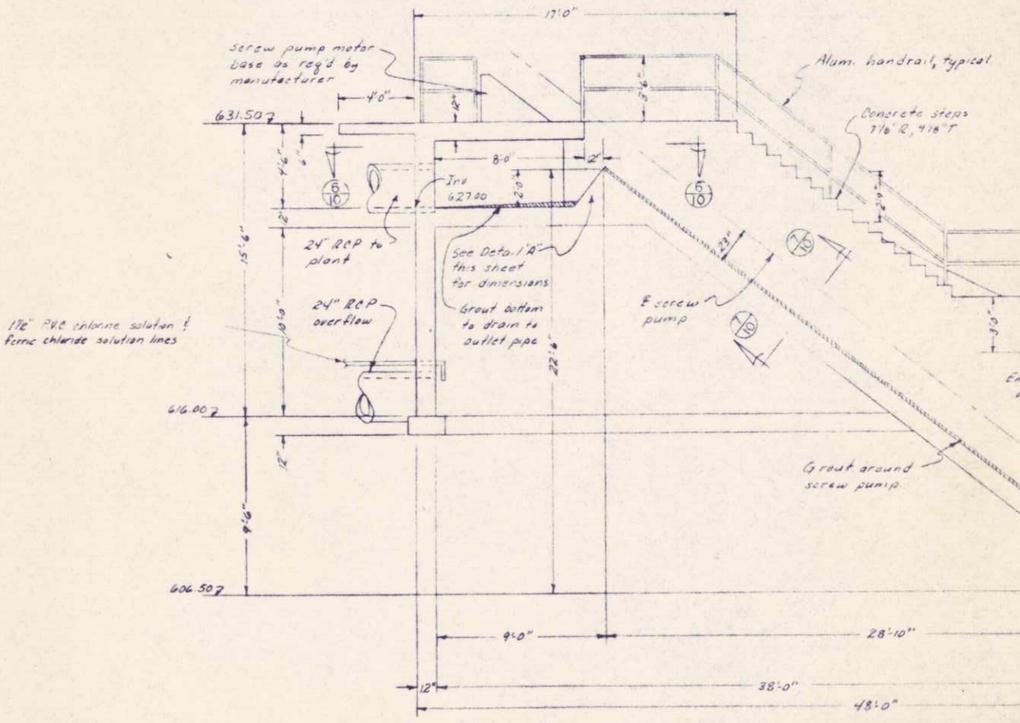


DETAIL A

Scale 1/2" = 1'-0"

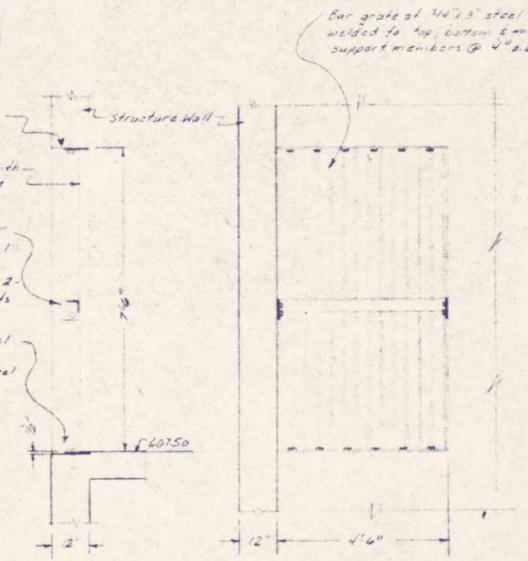
Note:
Actual shape and dimensions of screw pump discharge trough shall be as required by the pump mfgr.

Note:
All anchorage and pump bearing bases shall be of the size and at the location required by the pump manufacturer.



SECTION 1-1

1/4" = 1'-0"



BAR GRATE DETAIL

Scale 1/2" = 1'-0"

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

DATE 10-8-74 REG. NO. E-16627 [signature]

SURVEY	
DRAWN	RWF
DESIGN	RWF
APPROVED	[signature]

REVISIONS 7-15-75 Title

BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

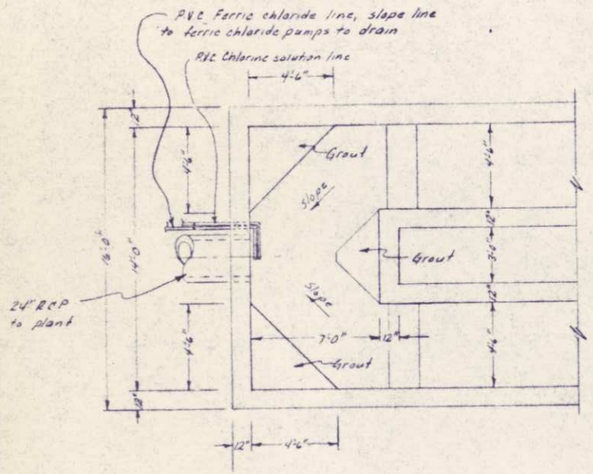
SUPERIOR, WISCONSIN

DATE: SEPTEMBER 2, 1974 COMM 6888 E

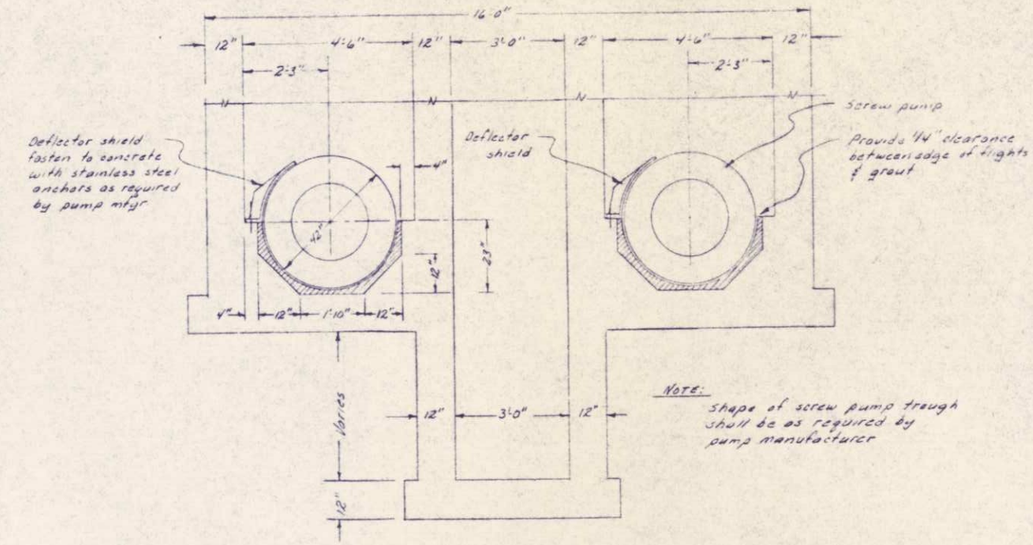
BILLINGS PARK CSO PLANT

INLET STRUCTURE

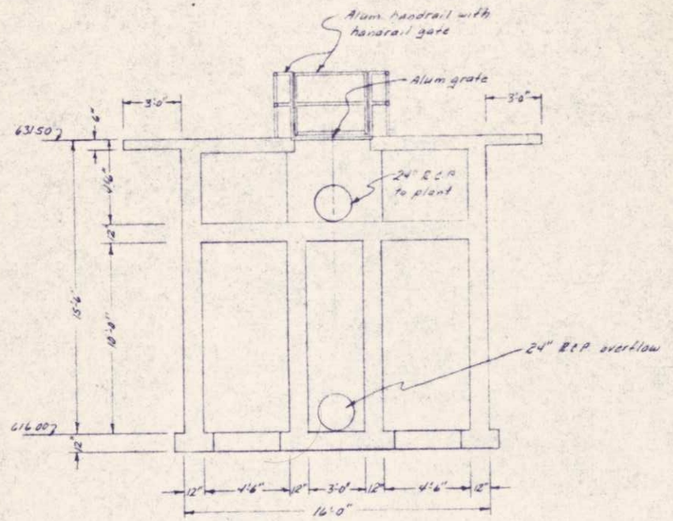
S-SET 9/70



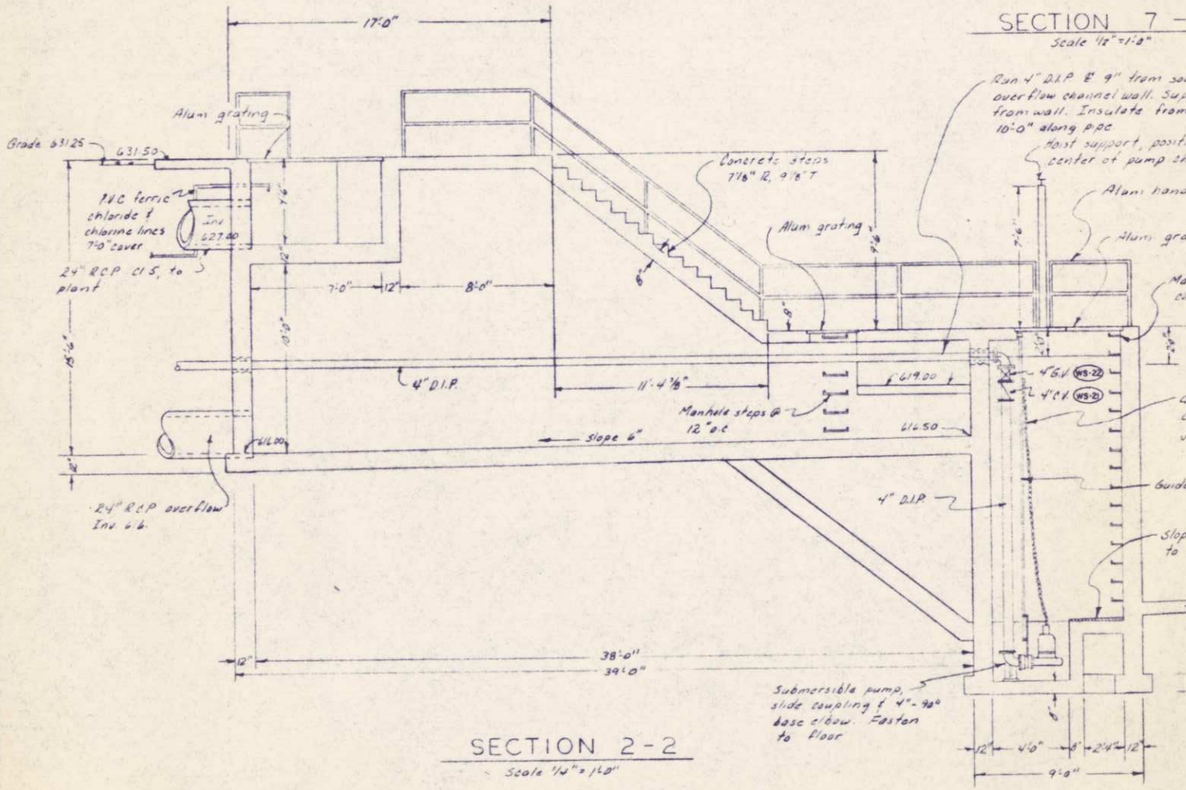
SECTION 6 - 6
Scale: 1/4" = 1'-0"



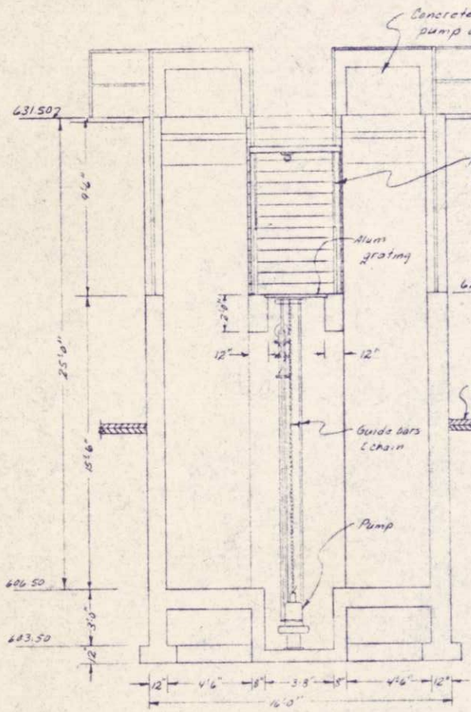
SECTION 7 - 7
Scale 1/2" = 1'-0"



SECTION 5 - 5
Scale 1/4" = 1'-0"



SECTION 2 - 2
Scale 1/4" = 1'-0"



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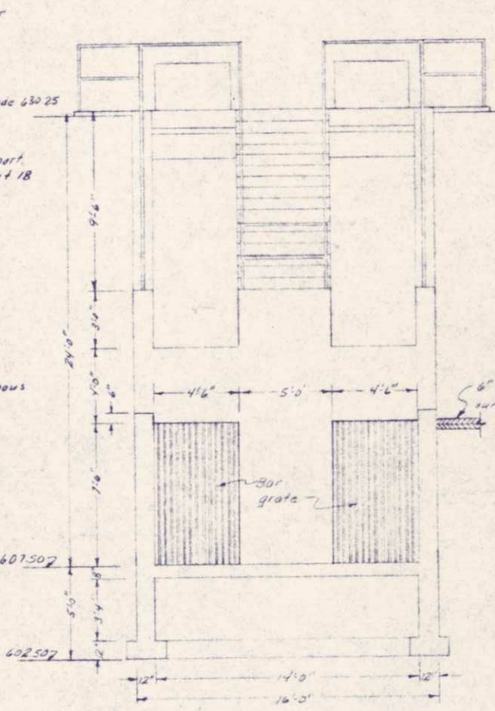


SECTION 4 - 4
Scale 1/4" = 1'-0"

BILLINGS PARK CSO PLANT

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.
DATE 7-31-74 REG. NO. 11687

SURVEY	
DRAWN	RWF
DES-CH	RWF
APPROVED	

Revis-Ons

BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: SEPTEMBER 2, 1974 COMM 6888 E

INLET STRUCTURE

NOTE
see sheet 17 for sidewalk around building

Door # 6, 14'0" 8'0" garage door

2" P.V.C. ferric chloride tank fill line, slope towards tank

2" P.V.C. screened vent

Ferric Chloride Tank

Door # 1 3'6" x 3'6" double doors

2" ferric chloride line to inlet structure

Pumps on concrete base

Concrete curb

Ferric chloride line to flume

Polymer mix tank

Polymer feed pumps

Foot ladder

Emergency eye wash & shower

Auto Bar Screen

Hand raked bar screen

Sampler

Alum grating, typical

Door # 4 3'0" x 8'6" double doors

2" P.V.C. ferric chloride line

Alum grating

Concrete stairs 12 @ 10" T.H.

4" dia. gate valve with extension operator

Safety chain

Drum screen drive mount on wall

Alum grating

Storage Cabinet

File Unit

Desk Unit

Insulate water line over panel

Cupboard Unit

Sink Unit

Drawer Unit

Control Panels

1/4" copper

Water heater

Door #7 3'0" x 7'0"

Aluminum hatch with double leaf

Alum. handrail

6" high curb with alum handrail

1" copper potable water to control room & eye wash

NOTE: All steel water pipe to be galvanized

Pressure pump 5 H.P. conc. base

2" steel pipe

3" Water Meter

2" steel

2 1/2" steel

Break tank

1" H.B.

Door #2 3'0" x 7'0"

3'0" x 3'0" cast iron access hatch

Switch over

Chlorinator & Controls

Pressure reducing valves

Ejectors

Distribution Panel

Platform Scale in pit

Door # 5 3'0" x 7'0" door

Gravity vent for chlorinators & reducing valves, insect screen required

FLOCCULATOR NO. 2

Walkway

2-1" ø P.V.C. chlorine solution lines, support from wall

Concrete steps 6" R, 12" T

Alum. floor grating over skimmings sump.

Screw conveyor drive provide drive guard. Provide 4" concrete base under drive

Concrete step at end of bridge, 6" R, 12" T

Alum handrail typical

Steel bridge to flocculator inlet

Skimmer Drive

FLOCCULATOR NO. 1

Flocculator Drive

Fiberglass weir Plate

Alum handrail

Screw Conveyor

Skimmers

Skimmer head shaft

Skimmer supports

FLOTATION TANK NO. 2

2" steel pipe to 8" vent box stub up 6" above floor. Pipe shall have welded fittings, all bends to be long radius

Sample pump with 4" concrete base

Chlorine analyzer, 4" concrete base under analyzer

1" steel pipe

NOTE: All steel sampling pipe to be galvanized

Concrete steps 6" R, 12" T

Sampler

Aluminum handrail

6" curb

3'0" x 3'0" access opening with alum grating

Skimmer rod shaft

Safety chain

Door # 3 3'0" x 3'0"

FLOTATION TANK NO. 1

Typical pilaster, see sheets 31 of 32

Skimmer supports

PLANT FLOOR PLAN

Scale 1/4" = 1'-0"

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

DATE 11/4/75 REG. NO. E18447

SURVEY	
DRAWN	RWF
DESIGN	RWF
APPROVED	

REVISIONS

BOXESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: SEPTEMBER 2, 1974 COMM 6668 E

BILLINGS PARK CSO PLANT

PLANT FLOOR PLAN

11

Chemical Feed Room

Chlorine Room

Poured concrete footing walls

1½" PVC chlorine solution line to inlet structure overflow

Note: All steel sampling piping to be galvanized

1" Copper

1" HB

Concrete base under pressurization pump

Pressure tanks

Air control panel

6" backwash water line, 6" drain line below

1" pressure tank drain line to wetwell

8" CIP drain from solids collection

Compressor Mount on cone Pad

Filters

Dryer

Coupling on drain line

2" SF on drain line

1" PVC tap into bend

FLOCCULATOR No. 2

Inlet baffle

6" drain line

2-1" PVC chlorine solution lines

Inlet baffle by flocculator manufacturer

14" sump pump discharge

18"-90° bend

FLOCCULATOR No. 1

Sump

6" CIP drain line

Perforated inlet baffle

4" dia screw conveyor

FLOTATION TANK No. 2

Slope grout to drain line

Fiberglass weir plate

Effluent weir

6" CIP drain pipe

FLOTATION TANK No. 1

Weir Wall

Slope bottom of tank to drain lines as shown

Steel baffle plate by equipment mfgr

Screw Conveyor

Solids collection Sump. Grout bottom toward drain line

12" CIP pressure flow source & drain line

6" coupling

6" butterfly valve with cylinder operator

6" butterfly valve with cylinder operator

2" steel line to sampler

2" steel sample line to analyzer

2" steel pipe sample line to chlorine analyzer, support from wall

24" RCP influent

24" RCP Plant Effluent

Slide plates

4" flare section

4" drain line under floor

Fiberglass Parshall Flume

Grout

4" City water

4" BV drain valve, 4" drain line to 6" drain line under floor

6" DIP

6" gate valve

Screen overflow weir

Weir wall with fiberglass weir

Slope grout

8" DIP screen effluent line

6" DIP force main, 7' cover, to lift station #3

6" CIP pump suction

8" CIP pump suction

1" conduit with bubbler from control panel

Manhole steps

6"-90° bend, block at tie joints

SUBFLOOR PLAN

Scale ¼" = 1'-0"

BILLINGS PARK CSO PLANT

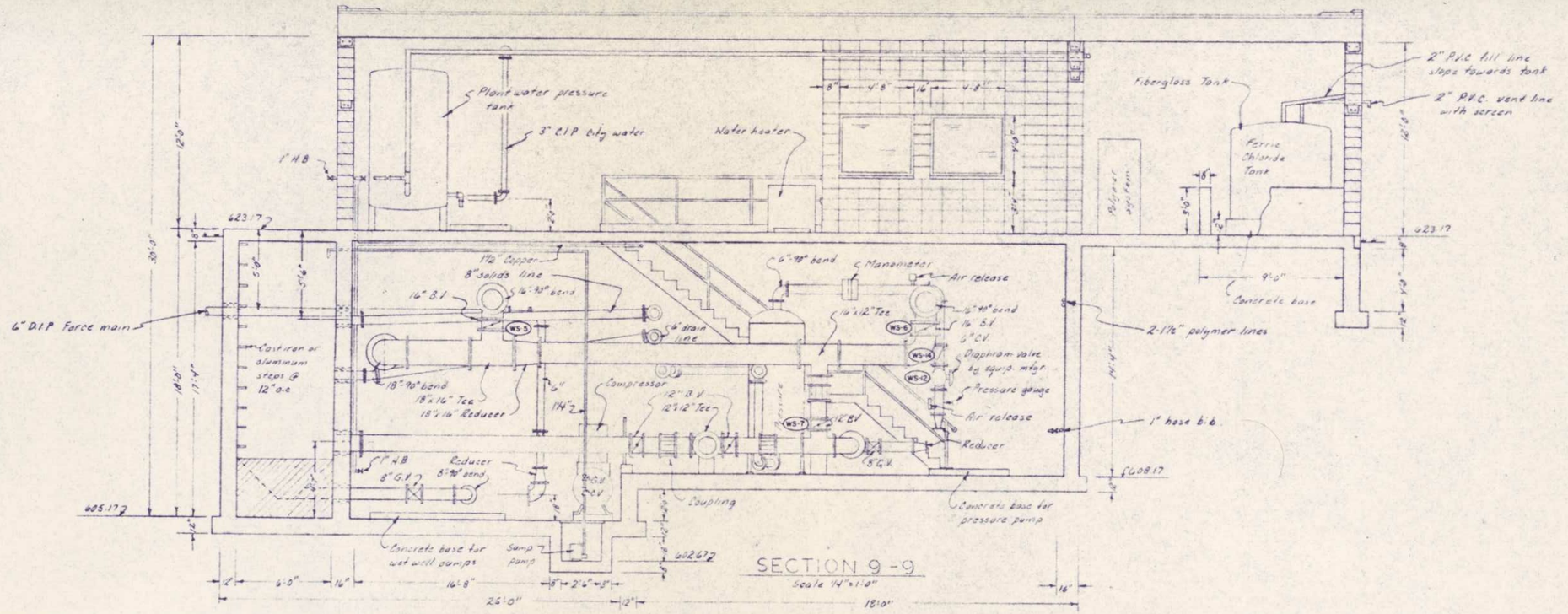
BOXESTROO, ROSENE, ANDERLIK & ASSOC., INC. ST. PAUL, MINNESOTA

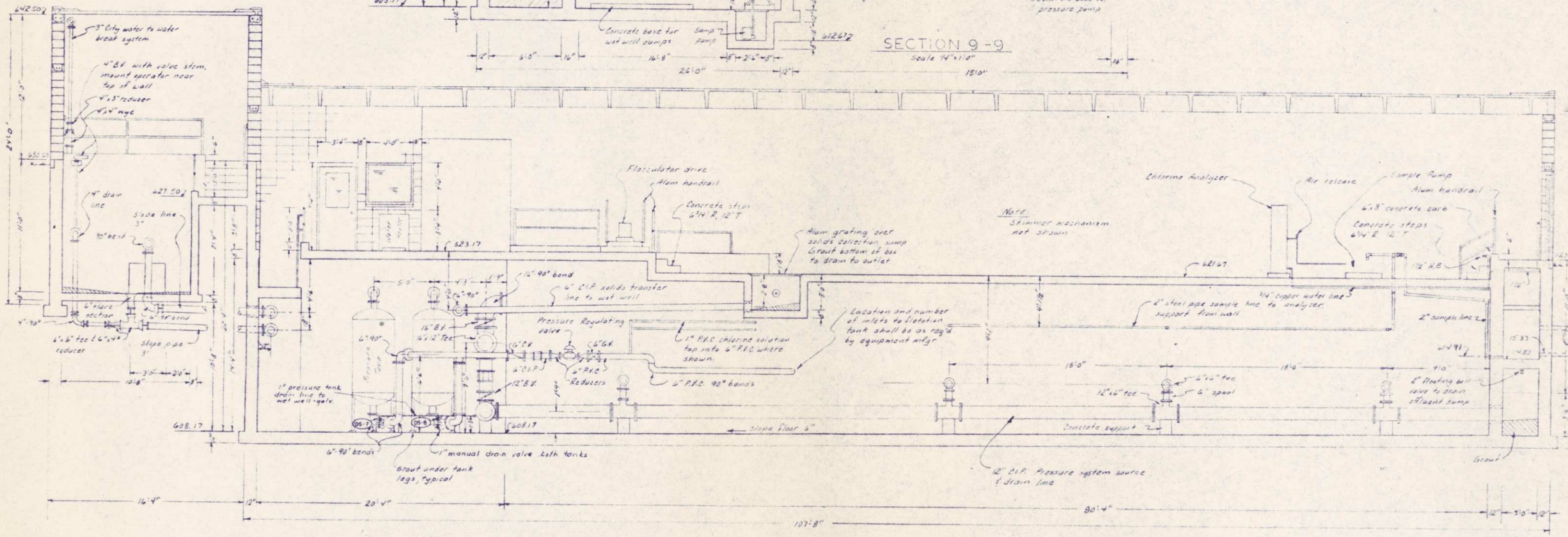
SUPERIOR, WISCONSIN

DATE: SEPTEMBER 2, 1974 COMM 6868 E

PLANT SUBFLOOR PLAN

SURVEY DRAWN RWT DESIGN RWT APPROV'D





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

DATE 7/24/75 REG. NO. 5-12157 Richard R. Thom

SURVEY		
DRAWN	RWF	
DESIGN	RWF	
APPROVED		

REVISIONS

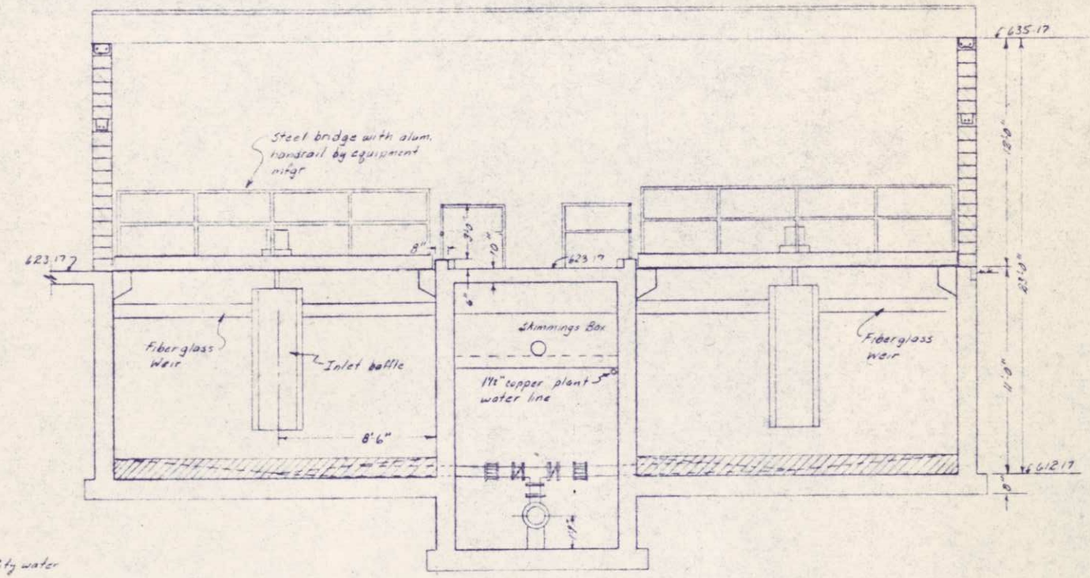
BOXESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: SEPTEMBER 2, 1974 COMM 6888 E

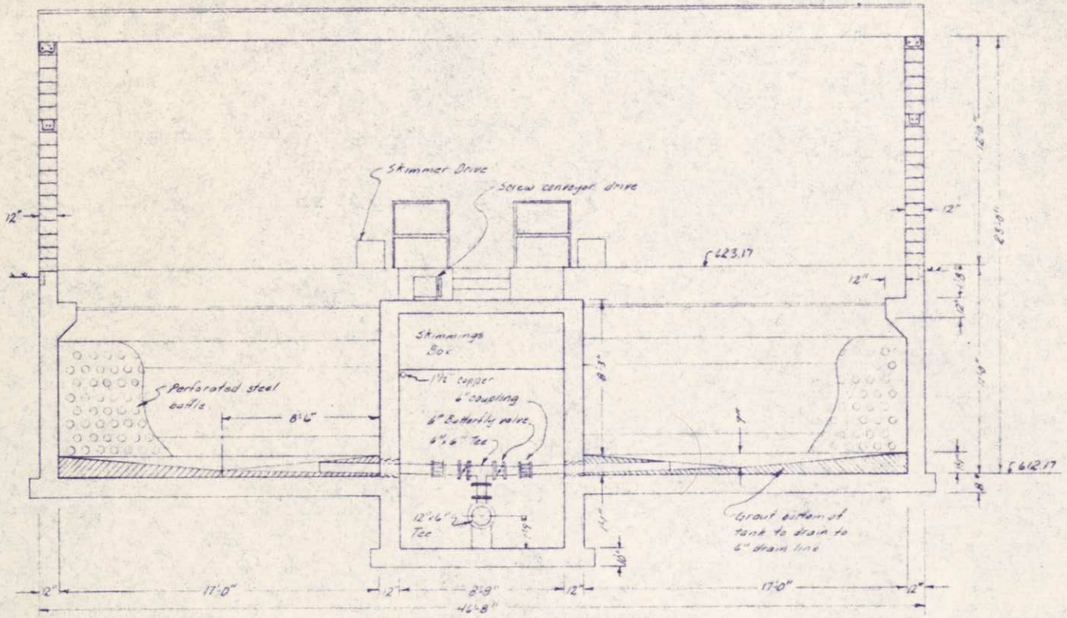
BILLINGS PARK CSO PLANT

PLANT SECTIONS

13



SECTION 11 - 11
Scale 1/4"=1'-0"



SECTION 12 - 12
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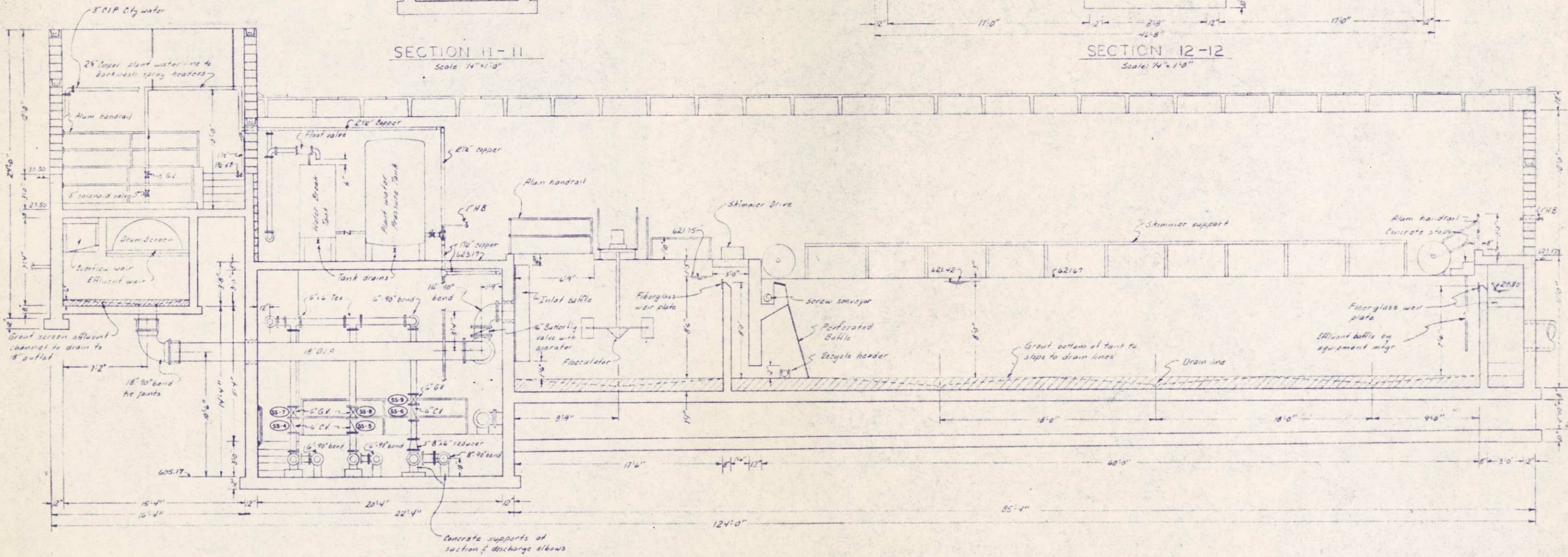


SECTION 10 - 10
Scale 1/4"=1'-0"

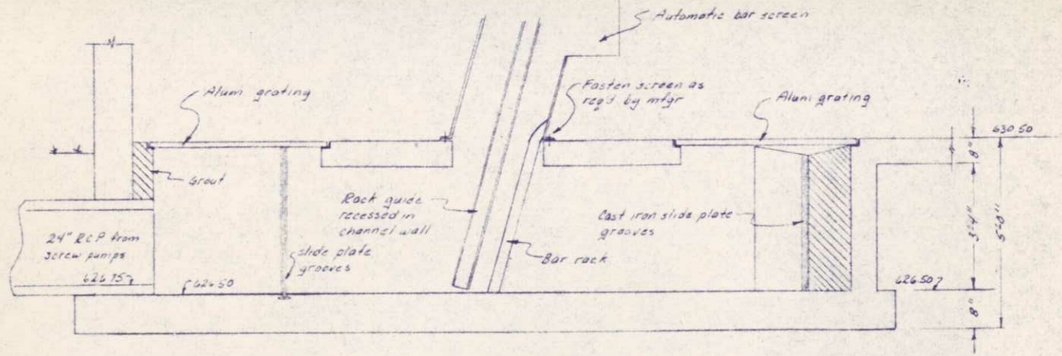
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.
DATE 7/24/74 REG. NO. E12547 Richard E. Sunde

		REVISIONS
SURVEY		
DRAWN	R.W.F.	
DESIGN	R.W.F.	
APPROVED		

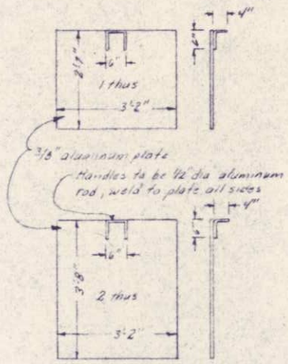
BOXESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: SEPTEMBER 2, 1974 ODNR 6888 E

BILLINGS PARK CSO PLANT
PLANT SECTIONS
SHEET 14/18

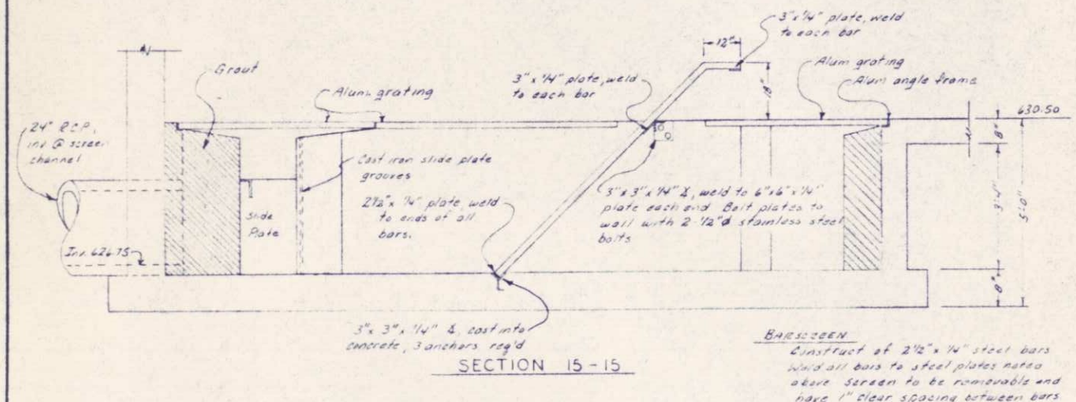


SECTION 16 - 16



SLIDE PLATES

Scale ½" = 1'-0"



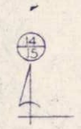
SECTION 15 - 15

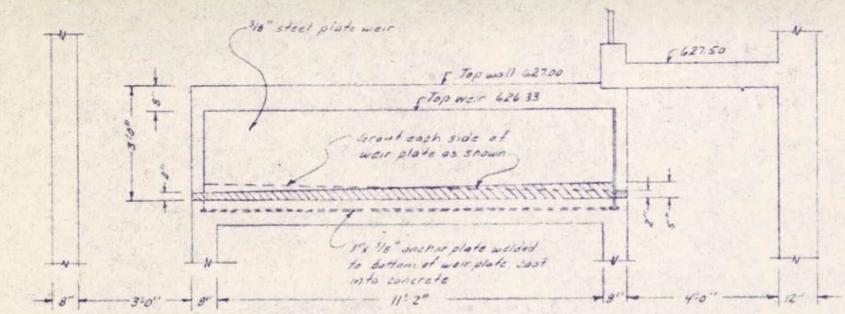
BAR SCREEN

Construct of 2½"x¼" steel bars. Weld all bars to steel plates noted above. Screen to be removable and have 1" clear spacing between bars.

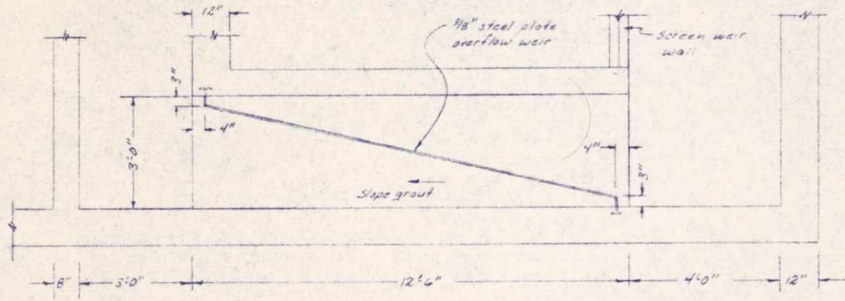
NOTE:

Furnish aluminum rake made specially for bar screen.





SECTION 14 - 14

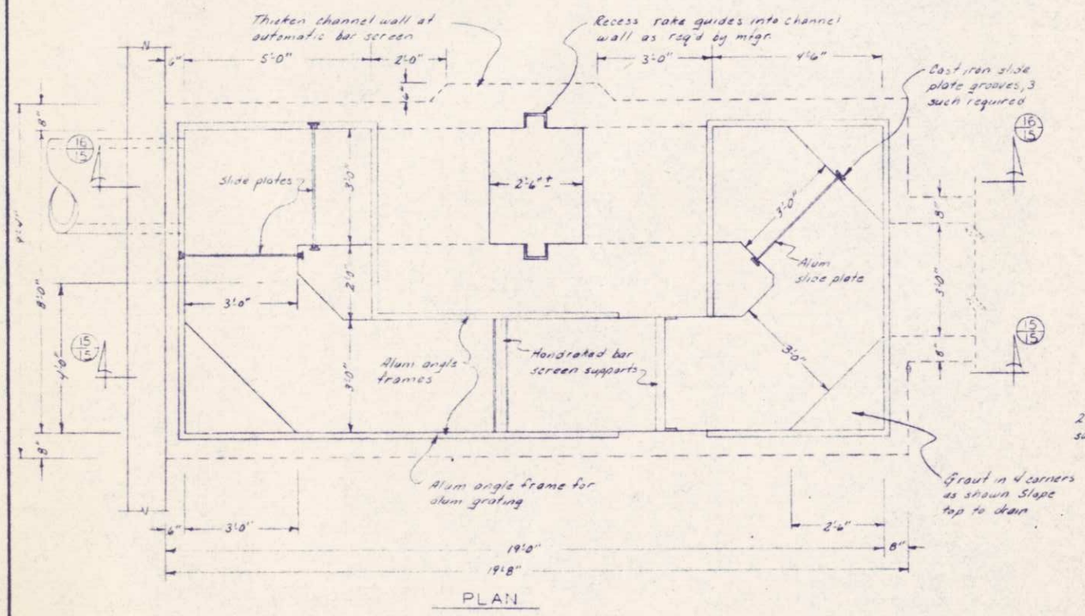


PLAN

1'x⅜" anchor plate welded to weir plate, cast into channel walls.

DRUM SCREEN OVERFLOW WEIR

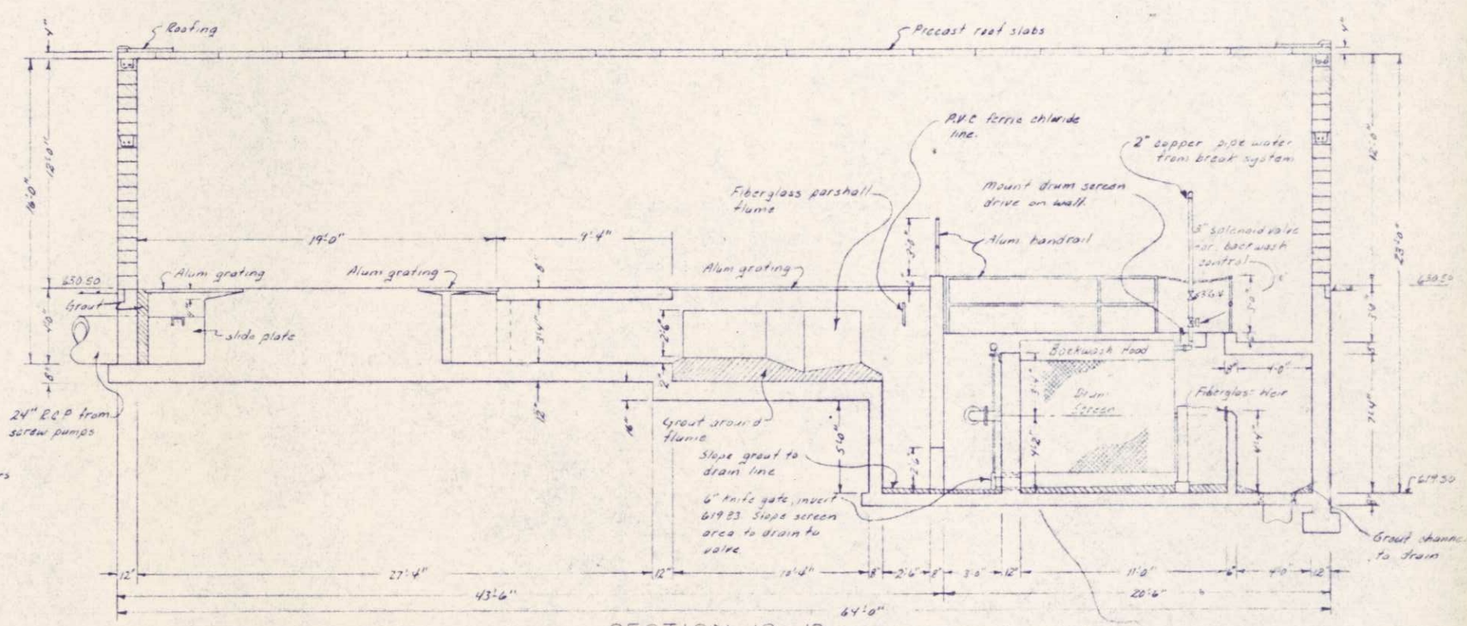
Scale ½" = 1'-0"



PLAN

SCREENING UNIT DETAILS

Scale ½" = 1'-0"



SECTION 13 - 13

Scale: ¼" = 1'-0"

BILLINGS PARK CSO PLANT

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DATE 10-4-74 REG. NO. E-19937 Richard E. Thomas

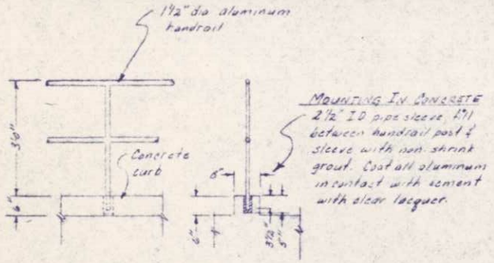
REVISIONS	SURVEY	
	DRAWN	RWF
	DESIGN	RWF
	APPROVED	

BOXESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

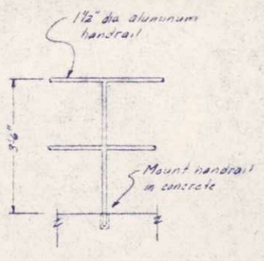
SUPERIOR, WISCONSIN
DATE: SEPTEMBER 2, 1974 COMM 6888 E

PLANT SECTION & DETAILS

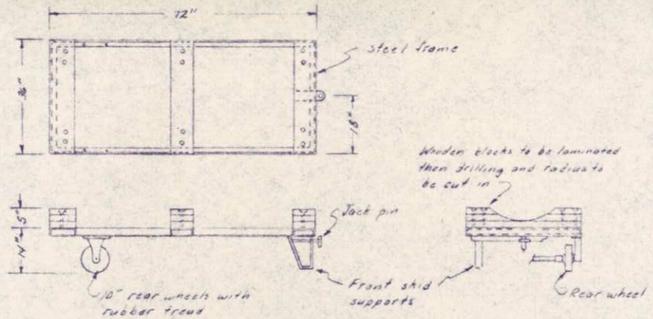
15/7



CURB MOUNTED



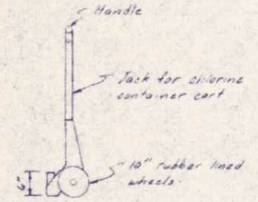
FLOOR MOUNTED

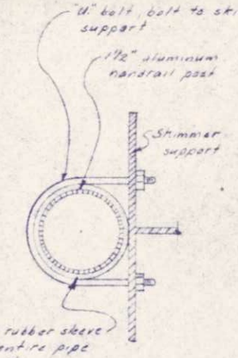


NOTE
4 casts and 2 jack handles shall be furnished.

CHLORINE CONTAINER CART

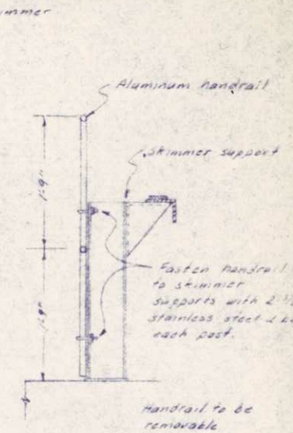
Scale: None





FASTENER DETAIL

Scale: None

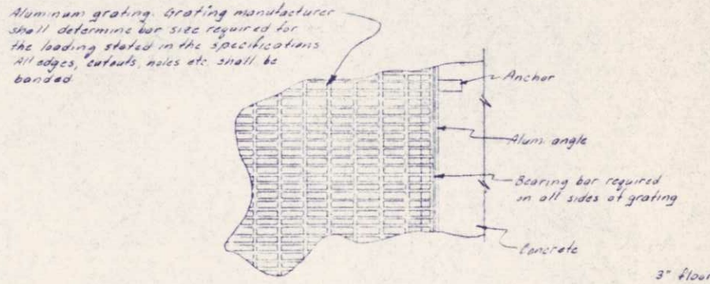


SUPPORT DETAIL

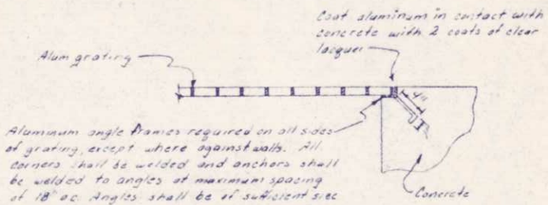
Scale: 1"=1'-0"

Note:
Flotation equipment mfgr. to furnish handrail, U bolts and sleeves.

FLOTATION UNIT HANDRAIL DETAIL



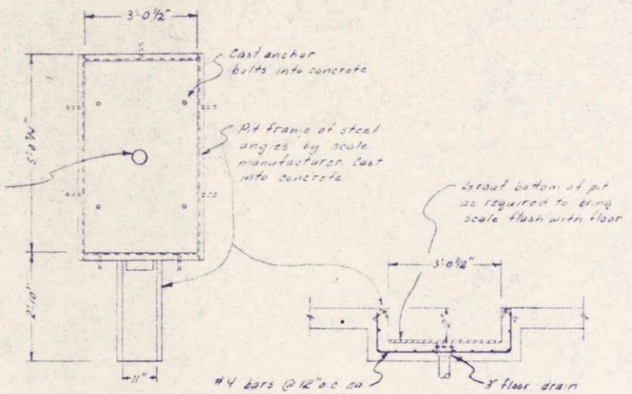
PLAN



SECTION

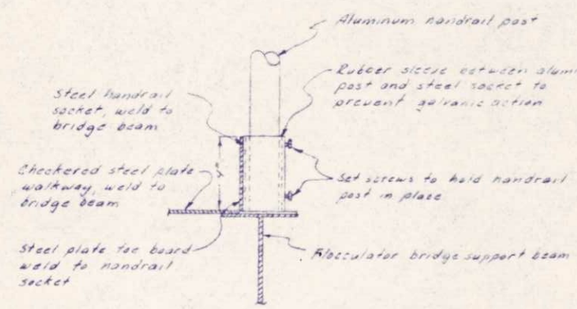
ALUMINUM GRATING DETAIL

Scale: 1"=1'-0"



CHLORINE SCALE PIT DETAIL

Scale: ½"=1'-0"

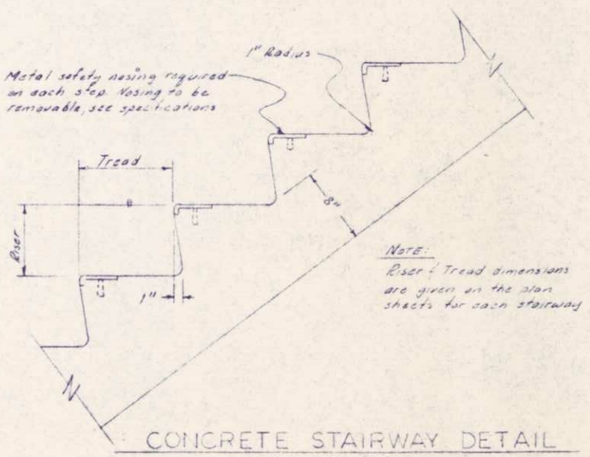


FLOCCULATOR HANDRAIL

Scale: 3"=1'-0"

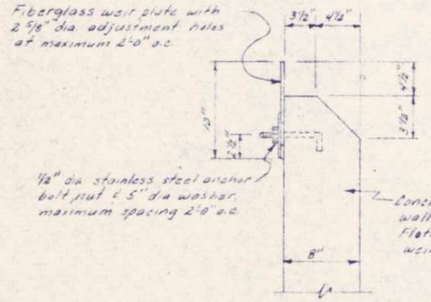
ROOF ACCESS LADDER

Scale: ½"=1'-0"

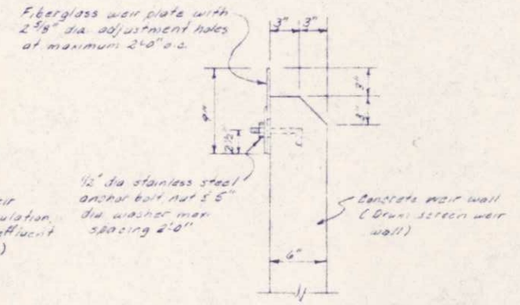


CONCRETE STAIRWAY DETAIL

Scale: ½"=1'-0"



8" WALL



6" WALL

WEIR WALL DETAILS

Scale: 1½"=1'-0"

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DATE 7/24/75 REG. NO. E-13917 [signature]

SURVEY		REVISIONS
DRAWN	RWF	
DESIGN	RWF	
APPROV'D	[illegible]	

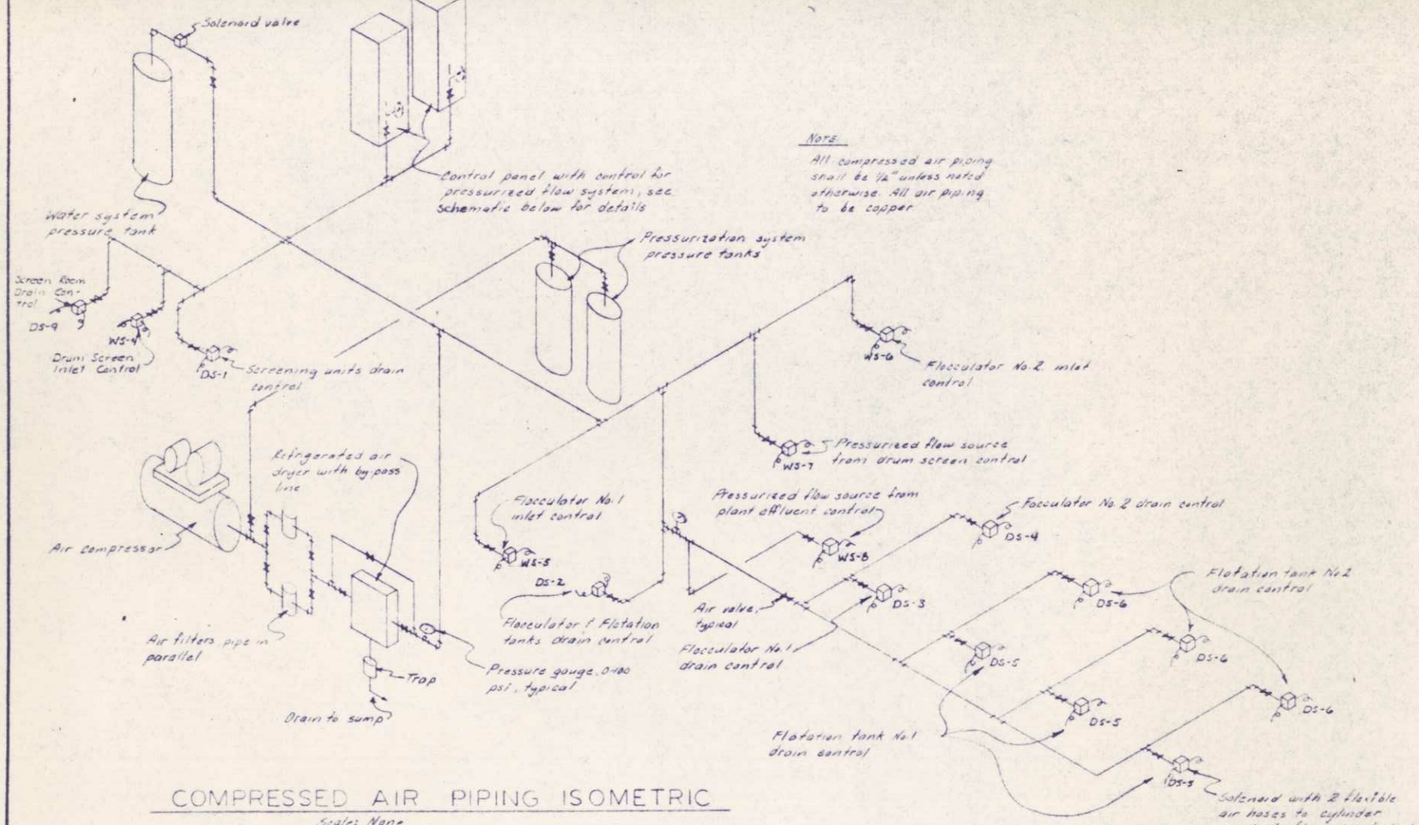
BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: SEPTEMBER 2, 1974 COMM 6868 E

BILLINGS PARK CSO PLANT

PLANT DETAILS

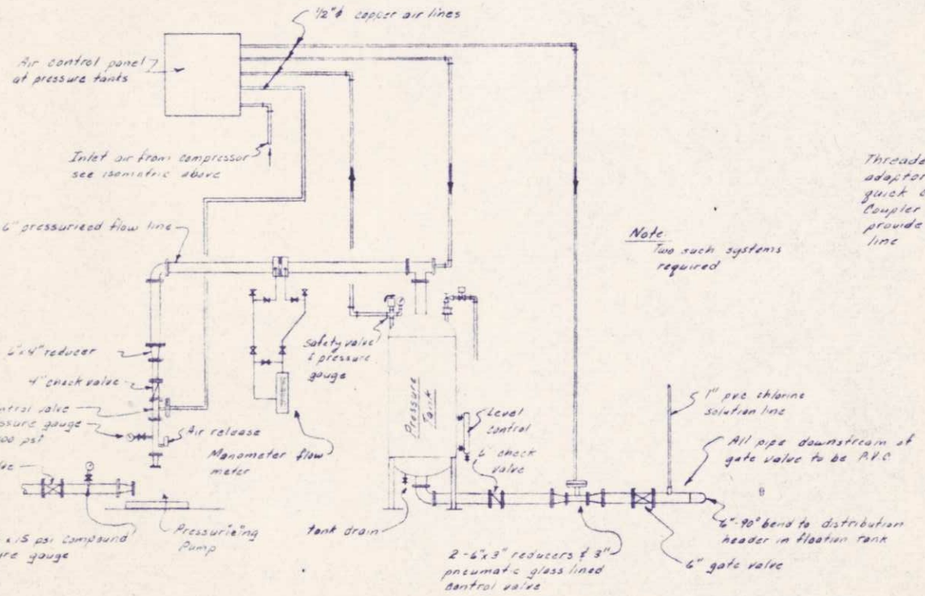
SHEET 16 / 78



Note:
All compressed air piping shall be ½" unless noted otherwise. All air piping to be copper

COMPRESSED AIR PIPING ISOMETRIC

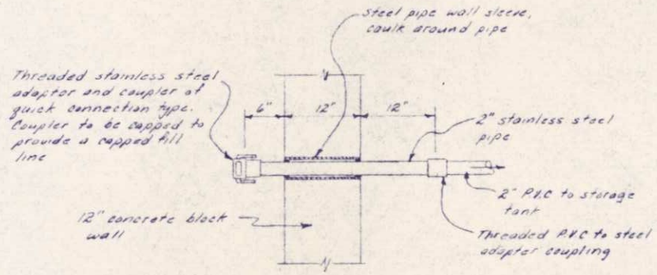
Scale: None



Note
Two such systems required

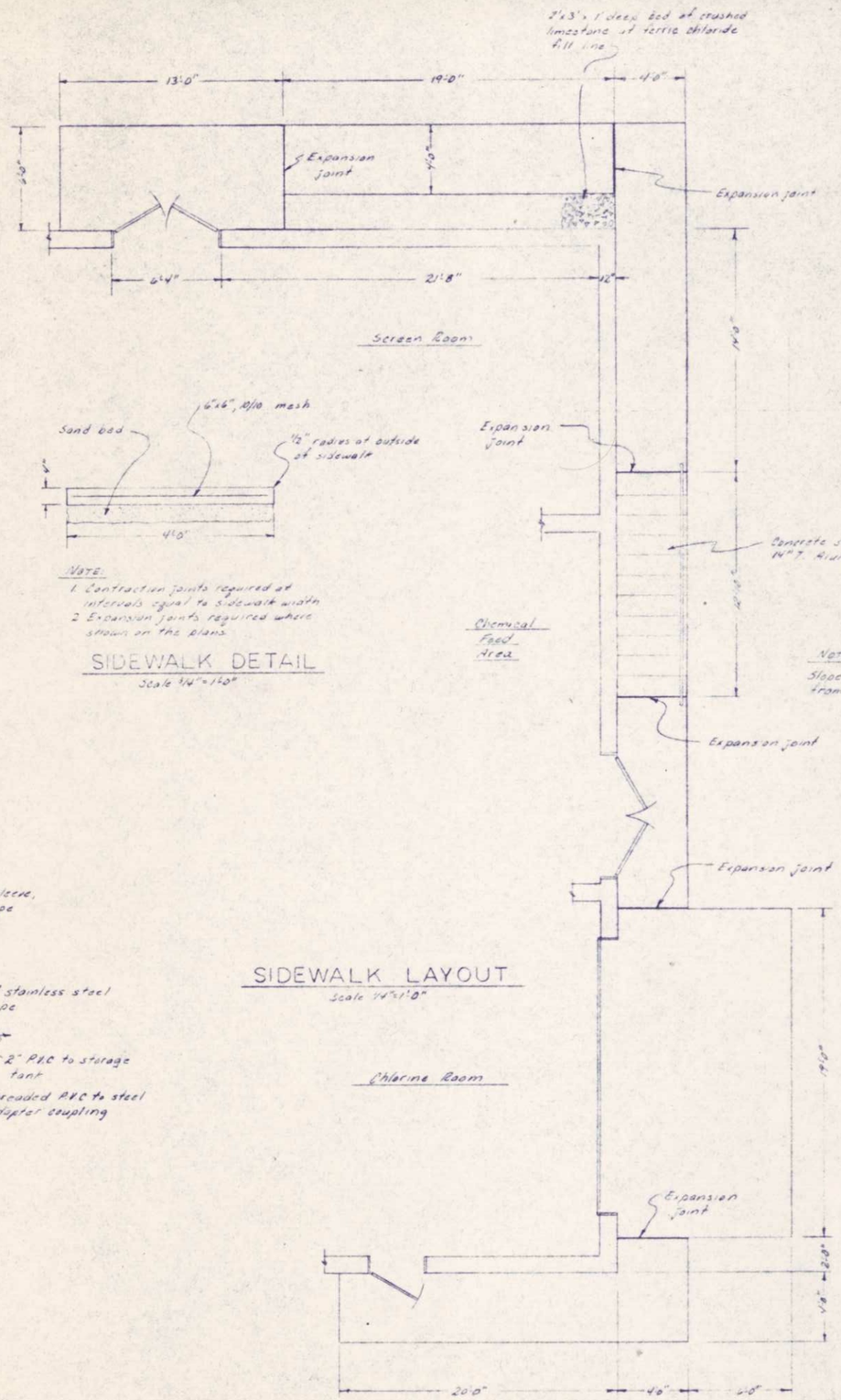
PRESSURIZED FLOW SYSTEM SCHEMATIC

Scale: None



FERRIC CHLORIDE FILL CONNECTION

Scale 1"=1'-0"



Note:
1 Contraction joints required at intervals equal to sidewalk width
2 Expansion joints required where shown on the plans

SIDEWALK DETAIL

Scale 3/4"=1'-0"

Note:
Slope sidewalk away from building

SIDEWALK LAYOUT

Scale 1/4"=1'-0"

Chlorine Room

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

DATE 8/24/74 REG. NO. 11951 Richard E. Rolfsrud

		REVISIONS
SURVEY		
DRAWN	RWF	
DESIGN	RWF	
APPROVED	[illegible]	

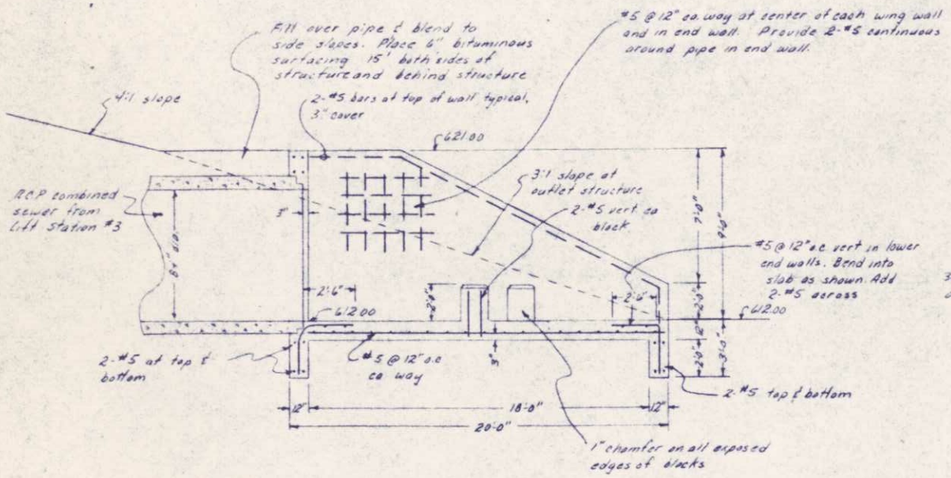
BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: SEPTEMBER 2, 1974 COMM. 6888 E

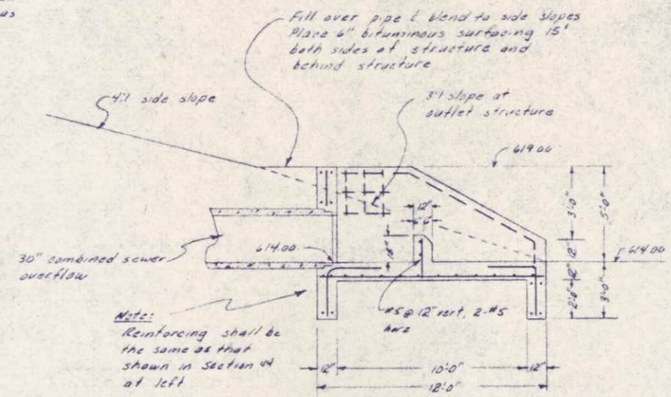
BILLINGS PARK CSO PLANT

PLANT DETAILS

SHEET 17/78



SECTION 44-44



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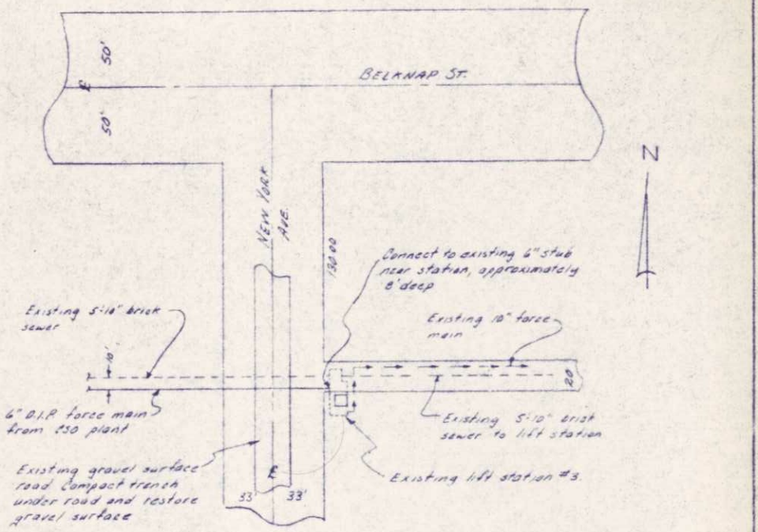
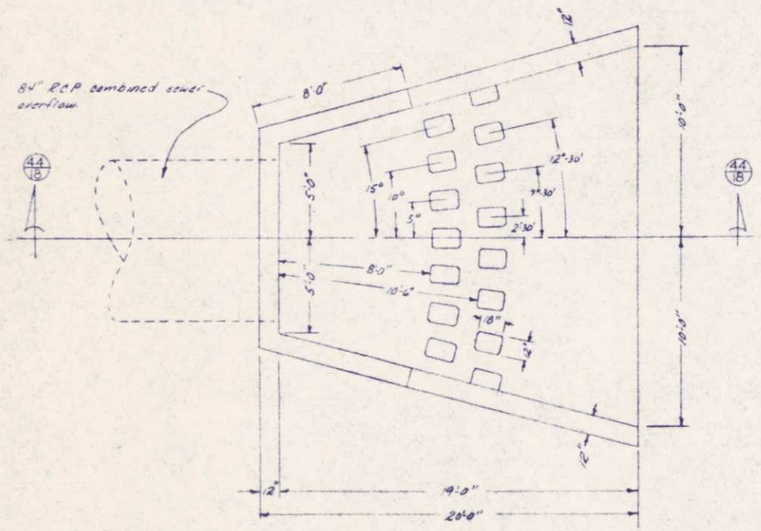


LIFT STATION NO. 3

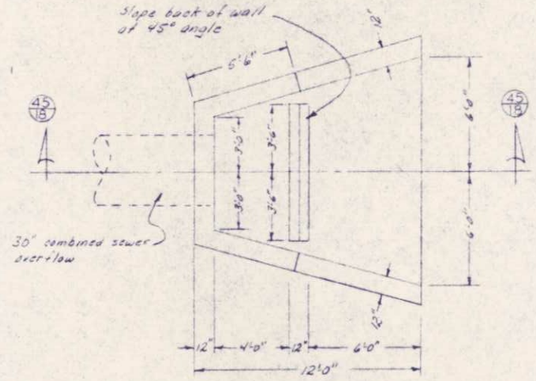
scale 1"=50'



PLAN

OUTLET STRUCTURE FOR 84" RCP

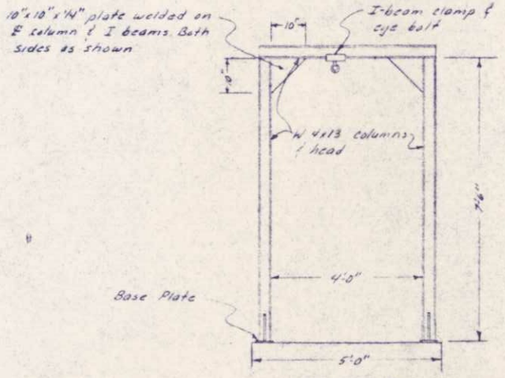
Scale 1/4"=1'-0"



PLAN

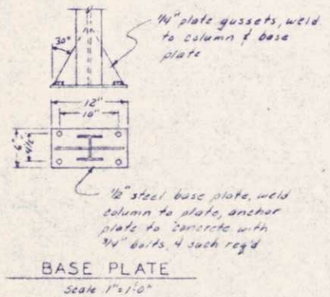
OUTLET STRUCTURE FOR 30" RCP

Scale 1/4"=1'-0"



SUPPORT

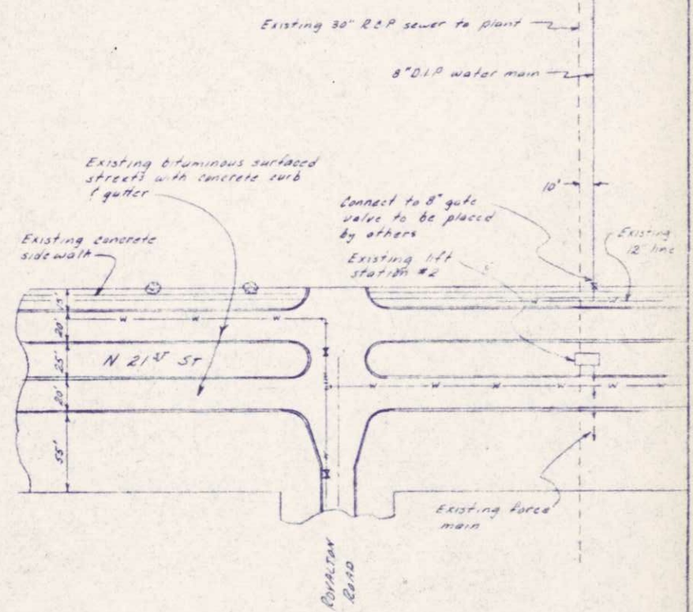
Scale 1/2"=1'-0"



BASE PLATE

Scale 1"=1'-0"

HOIST SUPPORT



WATER MAIN CONNECTION

Scale 1"=50'

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

DATE 11/4/74 REG. NO. E-18327 Richard E. [illegible]

SURVEY		REVISIONS
DRAWN	[illegible]	
DESIGN	[illegible]	
APPROVED	[illegible]	

BOXESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

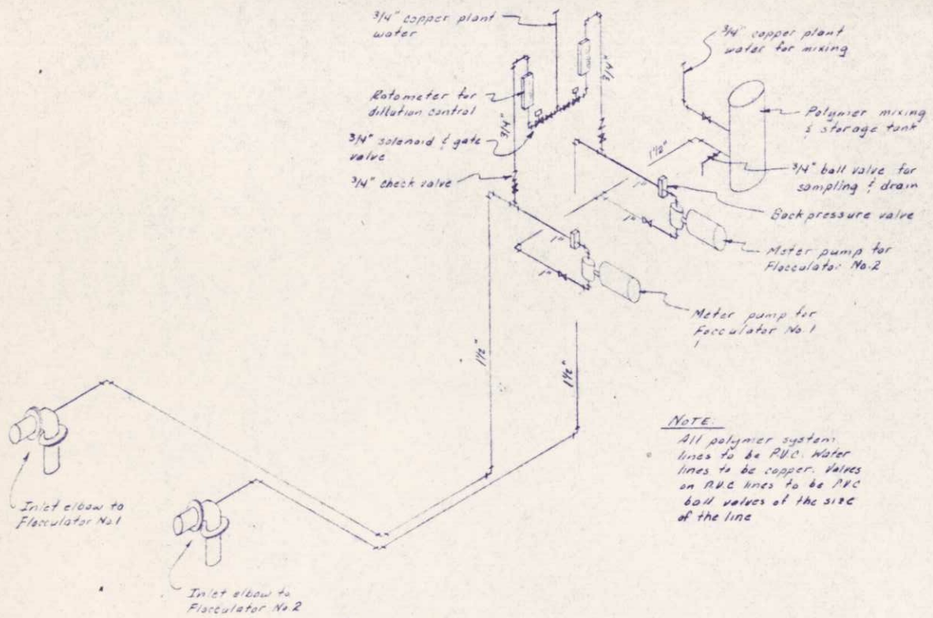
SUPERIOR, WISCONSIN

DATE: SEPTEMBER 2, 1974 CDMM 6868E

BILLINGS PARK CSO PLANT

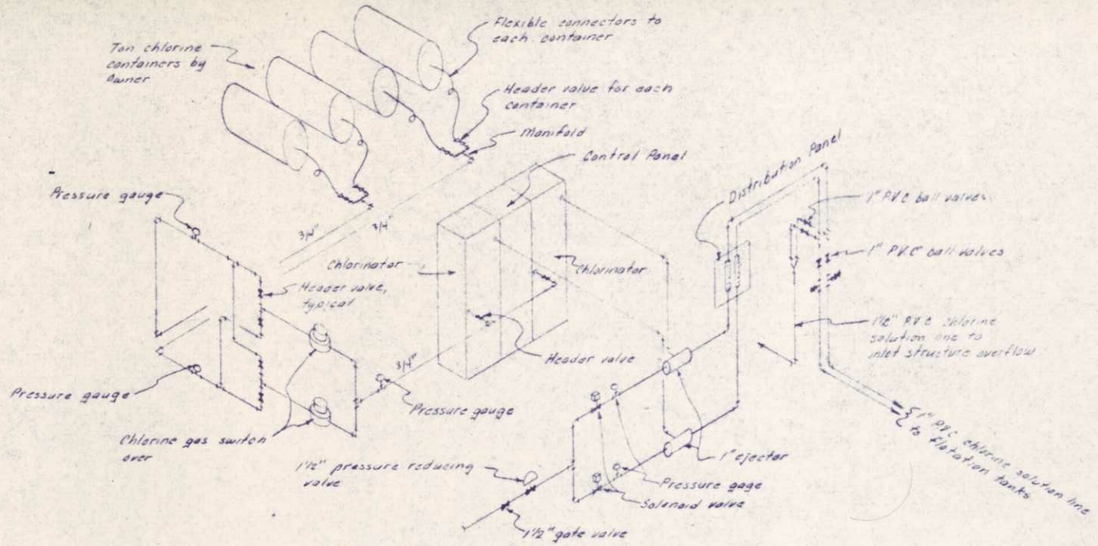
PLANT DETAILS

SHEET 18/78

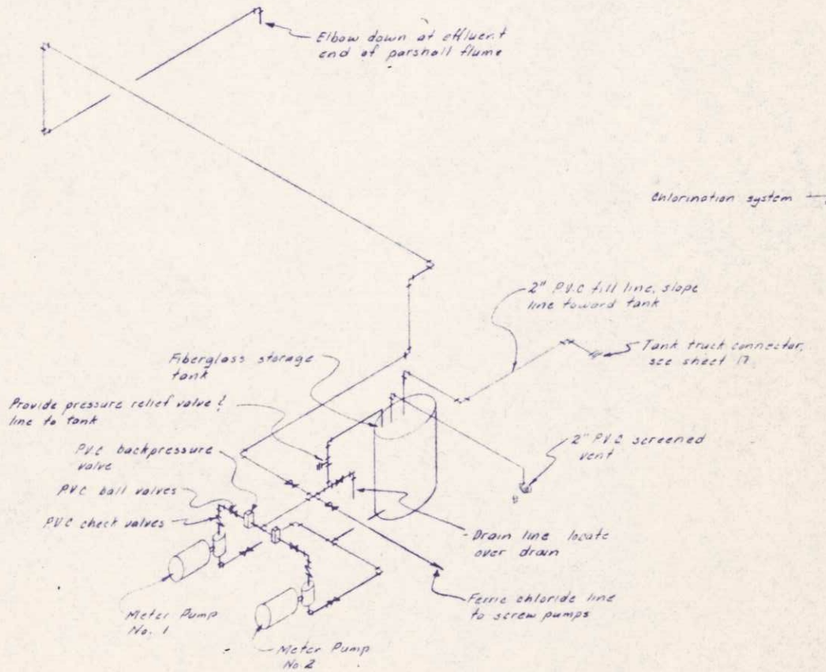


NOTE
All polymer system lines to be PVC. Water lines to be copper. Valves on PVC lines to be PVC ball valves of the size of the line

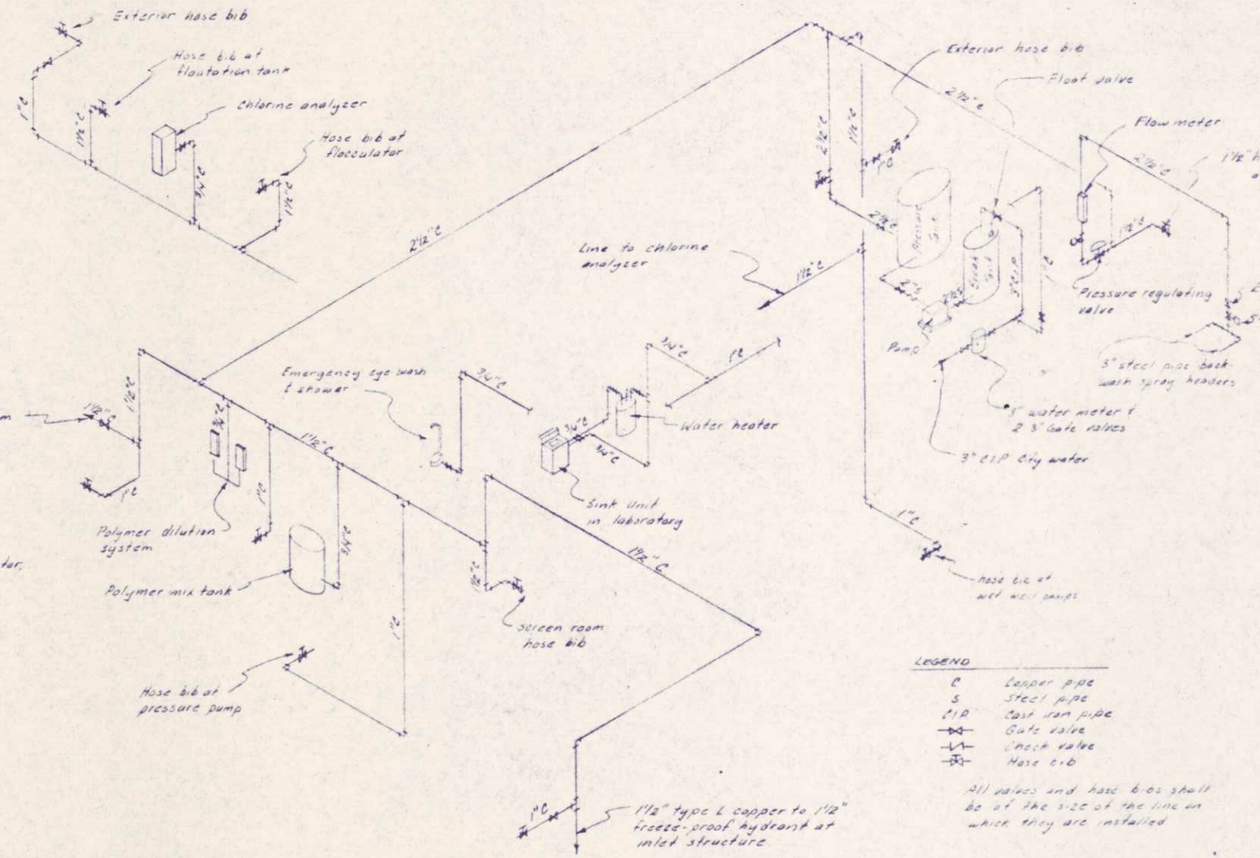
POLYMER SYSTEM ISOMETRIC
Scale: None



CHLORIME SYSTEM ISOMETRIC
Scale None



FERRIC CHLORIDE ISOMETRIC
Scale None



LEGEND

C	Copper pipe
S	Steel pipe
CIP	Cast iron pipe
	Gate valve
	Check valve
	Hose bib

All valves and hose bibs shall be of the size of the line on which they are installed

PLANT WATER SYSTEM ISOMETRIC
Scale: None

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.
DATE 10/14/75 REG. NO. 21552 Richard E. Bonestroo

SURVEY	
DRAWN	RWP
DESIGN	RWP
APPROV'D	REB

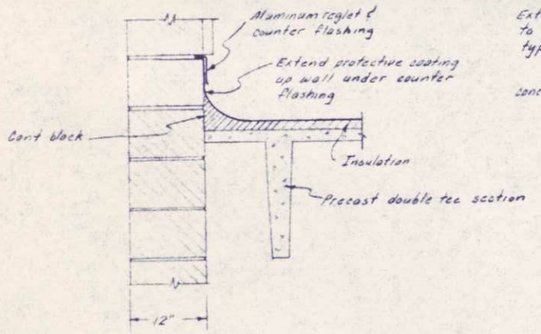
REVISIONS 1 1-13-76 Sheet No. 11 to approval

BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

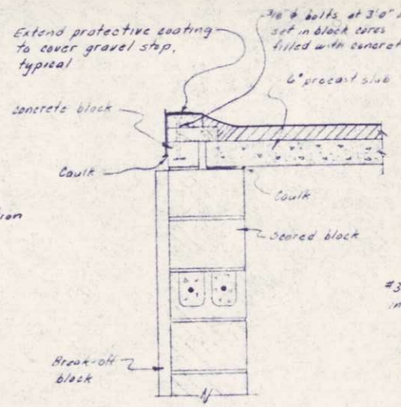
SUPERIOR, WISCONSIN
DATE: SEPTEMBER 2, 1975 OMM 6888 E

BILLINGS PARK CSO PLANT

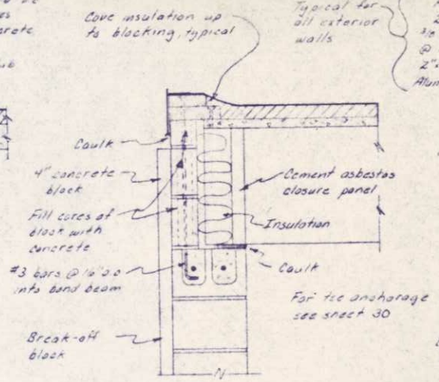
PIPING ISOMETRICS



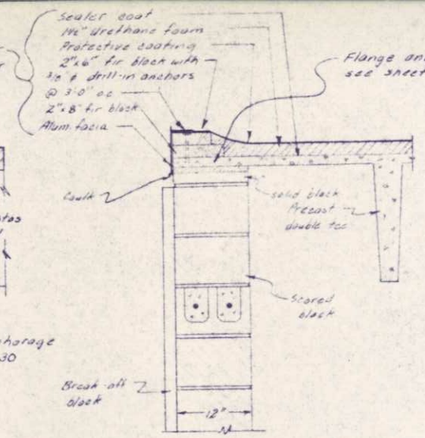
TREATMENT ROOM
EAST WALL



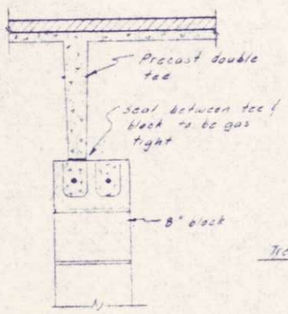
SCREEN ROOM
ALL WALLS



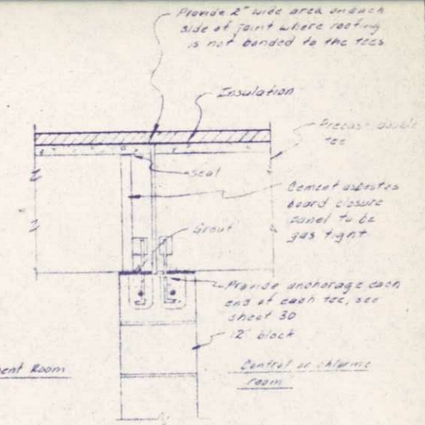
TREATMENT ROOM
NORTH & SOUTH WALLS



TREATMENT ROOM
WEST WALL



CHLORINE ROOM EAST &
CONTROL ROOM WEST WALLS



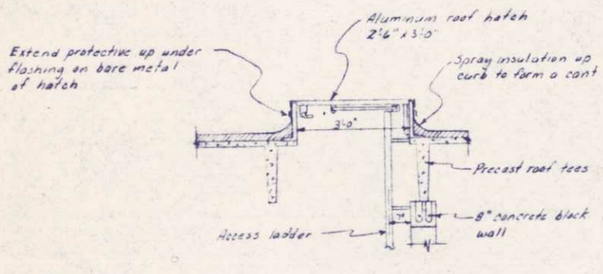
N & S CONTROL ROOM &
NORTH CHLORINE ROOM WALLS

No expansion joint on north control room wall roof

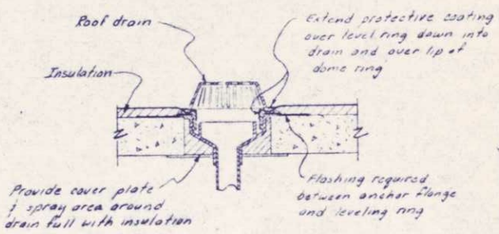
Note:
All exterior masonry walls shall have the block cores filled with insulation

ROOF DETAILS
Scale 1"=1'0"

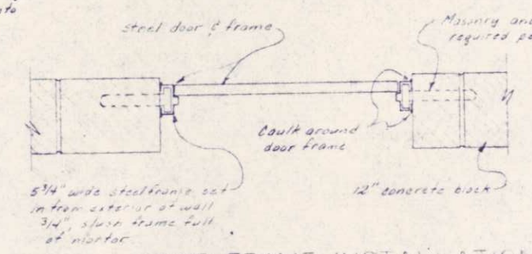
Note:
See sheet 30 for slab and tee anchorage to bearing walls



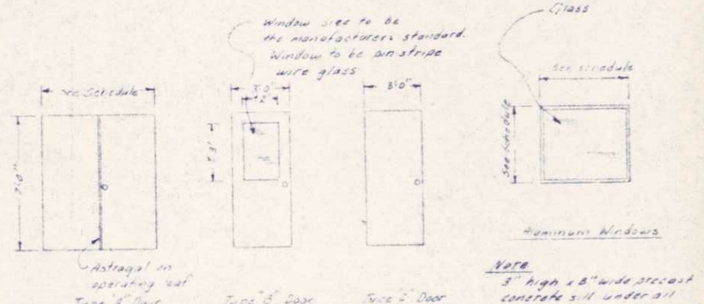
ROOF ACCESS HATCH
Scale 12"=1'0"



ROOF DRAIN
Scale 1"=1'0"

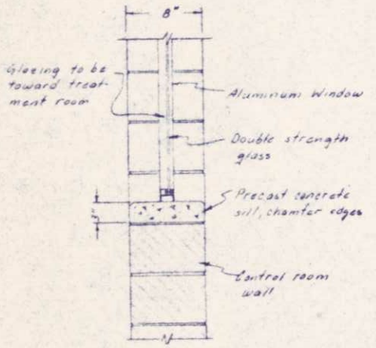


DOOR FRAME INSTALLATION
Scale 1"=1'0"

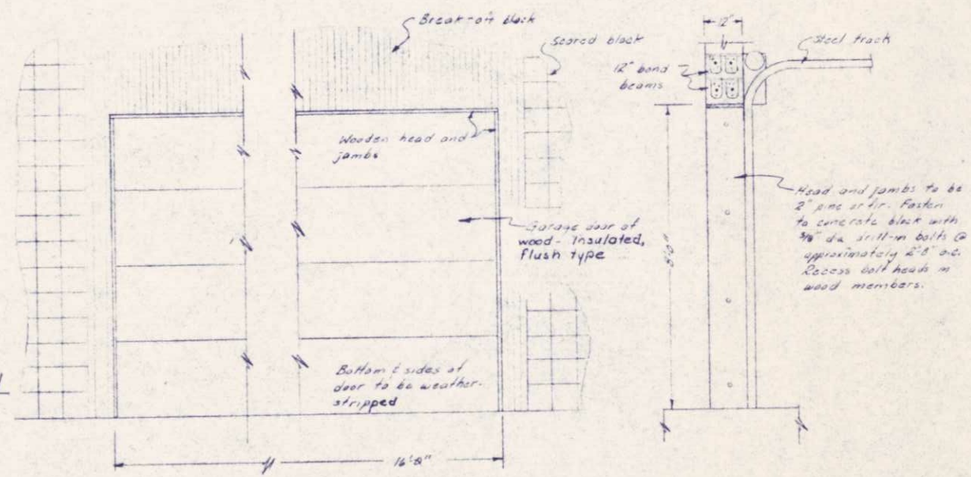


DOOR & WINDOW TYPES
Scale 1/4"=1'0"

Note
8" high x 8" wide precast concrete sill under all windows required. Chamfer edges of sill.



CONTROL ROOM WINDOW
SILL DETAIL
Scale 1"=1'0"



GARAGE DOOR DETAIL
Scale: 1/2"=1'0"

No.	LOCATION	TYPE	SIZE	THRESHOLD	LINTEL	REMARKS
	Doors					
1.	Treatment Room - South	A	3'6" x 7'0" double door	Aluminum	12" bond beam	—
2.	Treatment Room - North	C	3'0" x 7'0"	Aluminum	12" bond beam	—
3.	Treatment Room - West	B	3'0" x 7'0"	Aluminum	12" bond beam	—
4.	Screen Room	A	3'0" x 7'0" double door	None	12" bond beam	—
5.	Chlorine Room - West	B	3'0" x 7'0"	Aluminum	12" bond beam	Wire glass
6.	Chlorine Room - South	—	16'0" x 8'0" garage door	None	2-12" bond beams	Insulated, wood, flush
7.	Control Room	B	3'0" x 7'0"	Aluminum	12" bond beam	Wire glass
	Windows					
1.	Control Room - North	—	4'0" x 3'9"	—	12" bond beam	Double strength glass
2.	Control Room West	—	4'8" x 3'9"	—	12" bond beam	Double strength glass

DOOR & WINDOW SCHEDULE

Note
Window dimensions are approximate.

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.
DATE 3/24/1975 REG. NO. 5-12312

		REVISIONS
SURVEY		
DRAWN	CAF	
DESIGN	CAF	
APPROV'D		

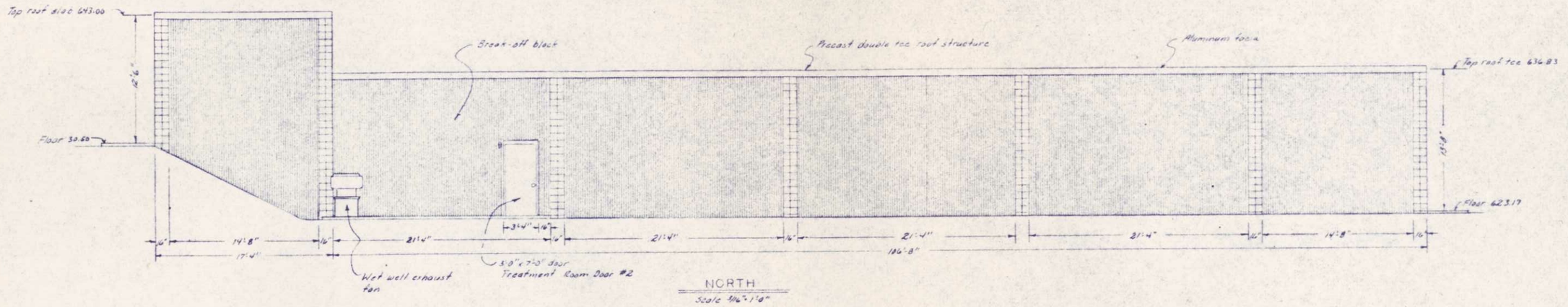
BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: SEPTEMBER 2, 1974 COMM 6888 E

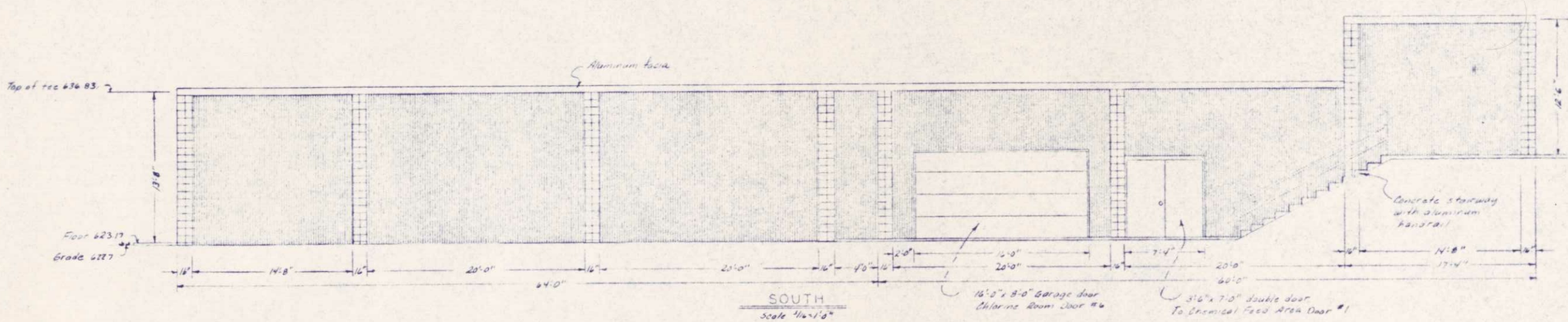
ARCHITECTURAL DETAILS

BILLINGS PARK CSO PLANT

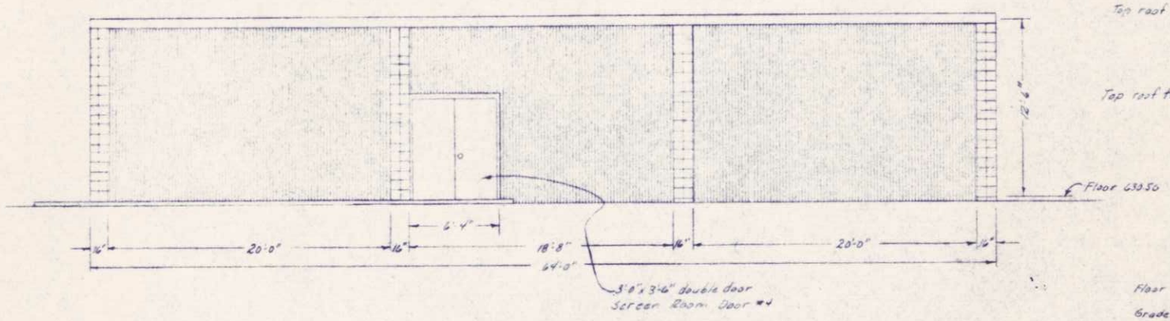
SHEET 20 OF 78



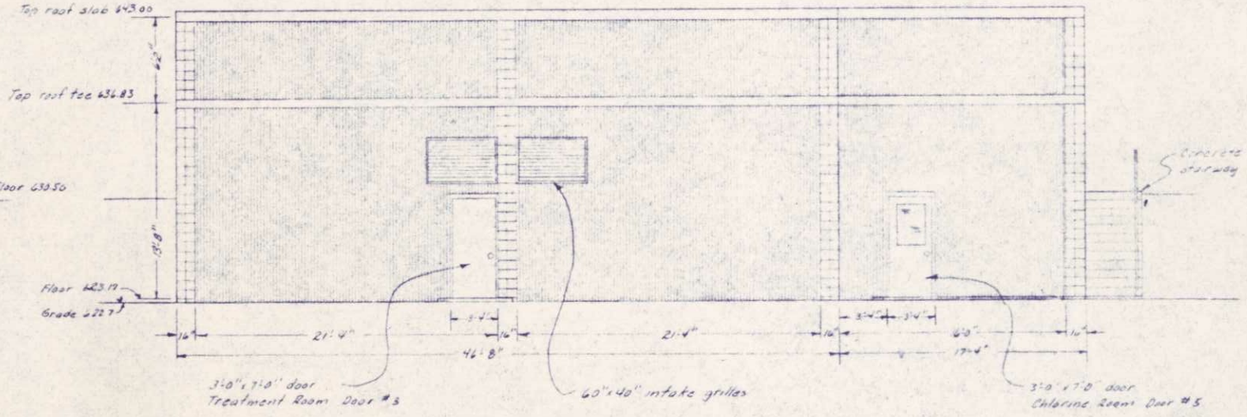
NORTH
Scale 1/16"=1'0"



SOUTH
Scale 1/16"=1'0"



EAST
Scale 1/16"=1'0"



WEST
Scale 1/16"=1'0"

PLANT ELEVATIONS
Scale 1/16"=1'0"

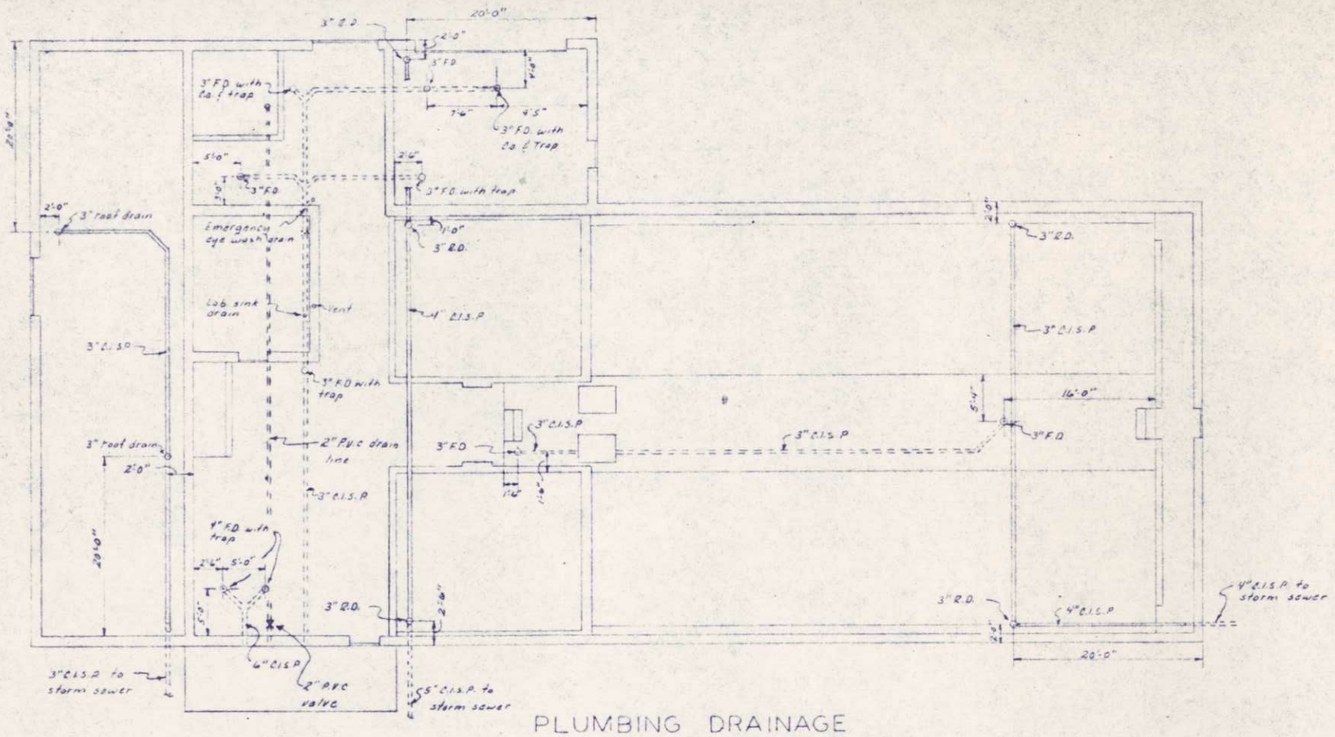
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN
DATE 12-4-74 REG. NO. 5-12-67

		REVISIONS
SURVEY		
DRAWN	RWF	
DESIGN	RWF	
APPROVED		

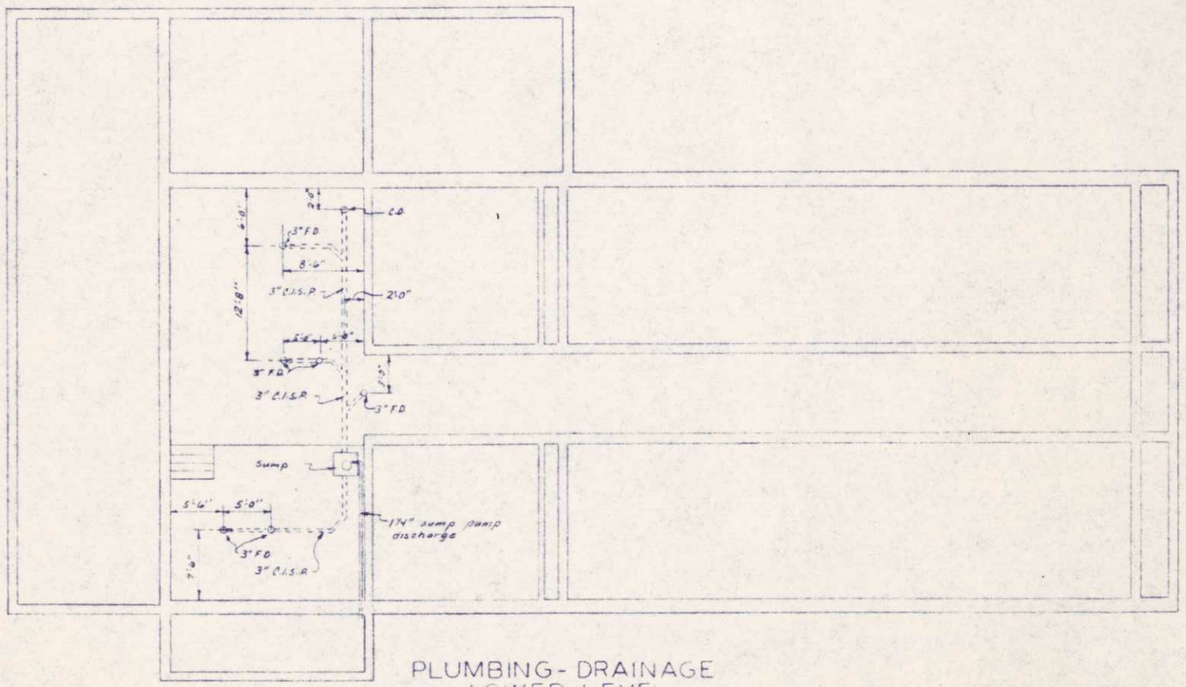
BOXESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: SEPTEMBER 2, 1974 COMM 6888 E

BILLINGS PARK CSO PLANT
BUILDING ELEVATIONS
SHEET 21 OF 25



PLUMBING DRAINAGE
UPPER LEVEL
Scale 1/8"=1'-0"



PLUMBING - DRAINAGE
LOWER LEVEL
Scale: 1/8"=1'-0"

VALVE LIST

I. WASTEWATER SYSTEM (WS)

Valve No.	Size	Type	Location	Operator	Purpose
WS-1	--	S.G.	Bar Screen	--	Emergency Overflow
WS-2	--	S.G.	Bar Screen	--	Bar Screen Bypass
WS-3	--	S.G.	Bar Screen	--	Bar Screen Bypass
WS-4	6"	KG.V.	Drum Screen	Cylinder	Drum Screen Inlet
WS-5	16"	B.V.	Flocculator 1	Cylinder	Flocculator 1 Inlet
WS-6	16"	B.V.	Flocculator 2	Cylinder	Flocculator 2 Inlet
WS-7	12"	B.V.	Pump Room	Cylinder	Wastewater Source
WS-8	12"	B.V.	Pump Room	Cylinder	Treated Water Source
WS-9	8"	G.V.	Pump Room	Handwheel	Pres. Pump 1 Inlet Shutoff
WS-10	8"	G.V.	Pump Room	Handwheel	Pres. Pump 2 Inlet Shutoff
WS-11	6"	D.V.	Pump Room	Automatic	Pres. Pump 1 Discharge Shutoff
WS-12	6"	D.V.	Pump Room	Automatic	Pres. Pump 2 Discharge Shutoff
WS-13	6"	C.V.	Pump Room	Air Cushion	Pres. Pump 1 Discharge Check
WS-14	6"	C.V.	Pump Room	Air Cushion	Pres. Pump 2 Discharge Check
WS-15	6"	C.V.	Pipe Gallery	Air Cushion	Pres. Tank 1 Discharge Check
WS-16	6"	C.V.	Pipe Gallery	Air Cushion	Pres. Tank 2 Discharge Check
WS-17	3"	D.V.	Pipe Gallery	Automatic	Pres. Tank 1 Discharge Control
WS-18	3"	D.V.	Pipe Gallery	Automatic	Pres. Tank 2 Discharge Control
WS-19	6"	G.V.	Pipe Gallery	Handwheel	Pres. Tank 1 Discharge Shutoff
WS-20	6"	G.V.	Pipe Gallery	Handwheel	Pres. Tank 2 Discharge Shutoff
WS-21	4"	C.V.	Inlet Structure	Weight	Inlet Pump 3 Discharge Check
WS-22	4"	G.V.	Inlet Structure	Handwheel	Inlet Pump 3 Discharge Shutoff

II. DRAIN DOWN SYSTEM (DS)

Valve No.	Size	Type	Location	Operator	Purpose
DS-1	6"	B.V.	Pump Room	Cylinder	Screen Room Drain
DS-2	12"	B.V.	Pump Room	Cylinder	Main Drain
DS-3	6"	B.V.	Pipe Gallery	Cylinder	Flocculator 1 Drain
DS-4	6"	B.V.	Pipe Gallery	Cylinder	Flocculator 2 Drain
DS-5	6"	B.V.	Pipe Gallery	Cylinder	Flotation Tank 1 Drain
DS-6	6"	B.V.	Pipe Gallery	Cylinder	Flotation Tank 2 Drain
DS-7	1"	S.V.	Pump Room	Solenoid	Pres. Tank 1 Drain
DS-8	1"	S.V.	Pump Room	Solenoid	Pres. Tank 2 Drain
DS-9	4"	B.V.	SCREEN ROOM	CYLINDER	SCREEN ROOM DRAIN

III. SLUDGE SYSTEM (SS)

Valve No.	Size	Type	Location	Operator	Purpose
SS-1	6"	G.V.	Pump Room	Handwheel	Sludge Pump 1 Inlet Shutoff
SS-2	6"	G.V.	Pump Room	Handwheel	Sludge Pump 2 Inlet Shutoff
SS-3	8"	G.V.	Pump Room	Handwheel	Sludge Pump 3 Inlet Shutoff
SS-4	6"	C.V.	PUmp Room	Air Cushion	Sludge Pump 1 Discharge Check
SS-5	6"	C.V.	Pump Room	Air Cushion	Sludge Pump 2 Discharge Check
SS-6	6"	C.V.	Pump Room	Air Cushion	Sludge Pump 3 Discharge Check
SS-7	6"	G.V.	Pump Room	Handwheel	Sludge Pump 1 Discharge Shutoff
SS-8	6"	G.V.	Pump Room	Handwheel	Sludge Pump 2 Discharge Shutoff
SS-9	6"	G.V.	Pump Room	Handwheel	Sludge Pump 3 Discharge Shutoff

The valves listed above are the main process valves and do not include valves for potable and plant water, compressed air, chemical feed and drainage systems. The Contractors shall furnish and install all valves shown on the plans, noted in the specifications or required for operational systems.

Legend:

BV - Butterfly Valve
BL - Ball Valve
CV - Check Valve
DV - Diaphragm Valve
GV - Gate Valve
SG - Slide Gate
SV - Solenoid Valve
KGV - KNIFE GATE VALVE

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN
DATE 10/4/74 REG. NO. 11447 Robert B. Thomas

SURVEY		REVISIONS 2/19/76 Added 24" RF
DRAWN	RBT	
DESIGN	RBT	
APPROVED	RBT	

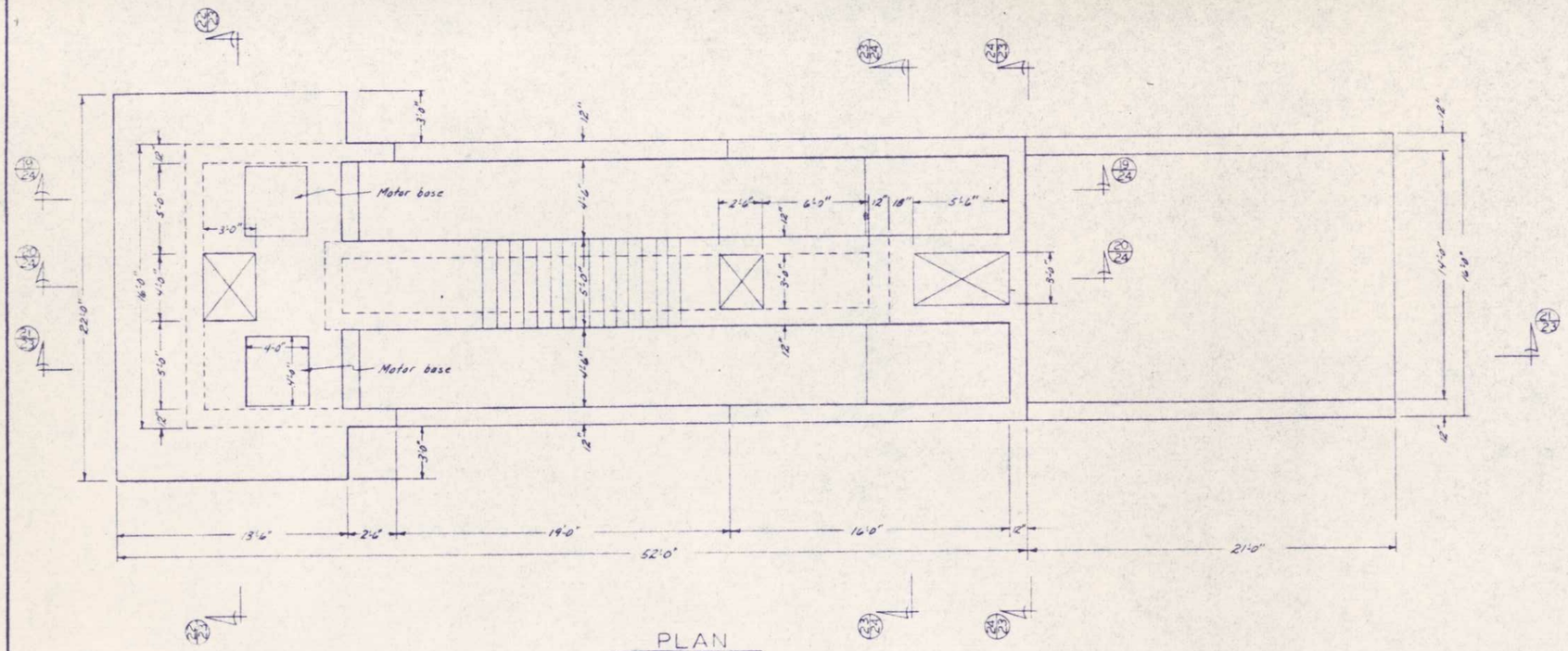
BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: SEPTEMBER 2, 1974 COMM 6888 E

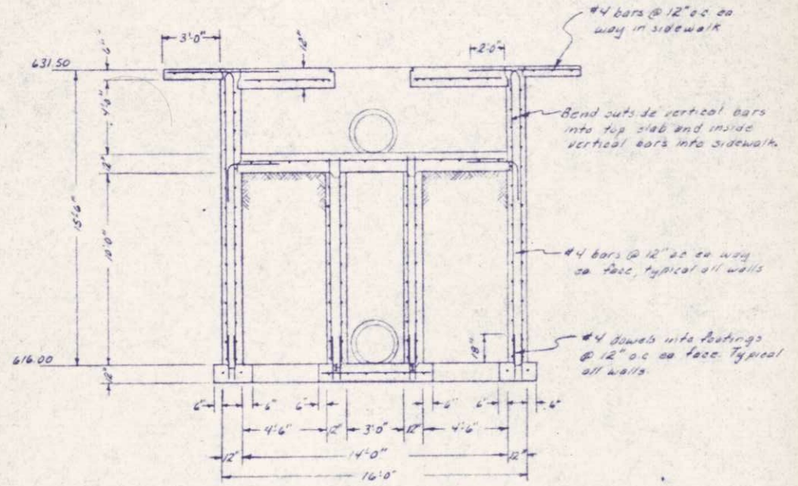
BILLINGS PARK CSO PLANT

DRAINAGE PIPING PLAN

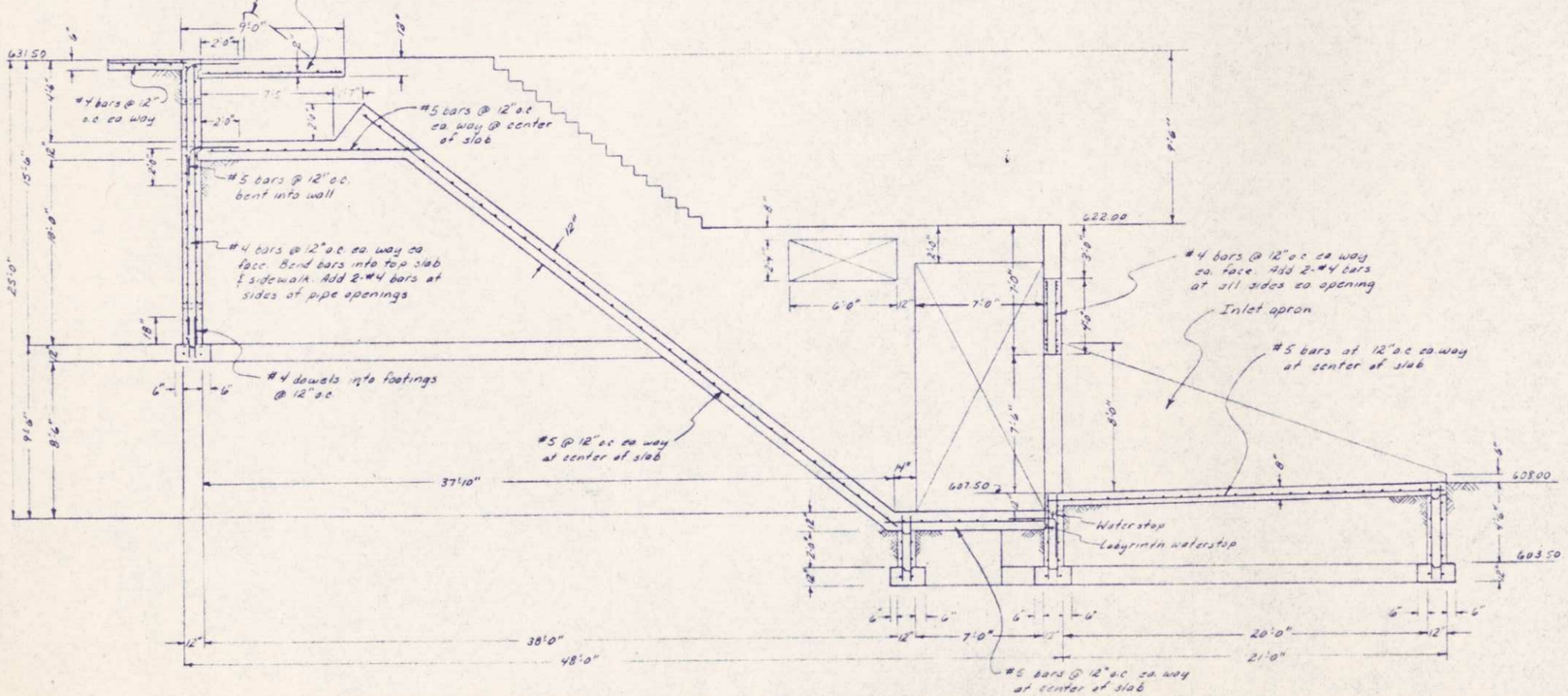
SHEET 24 OF 75



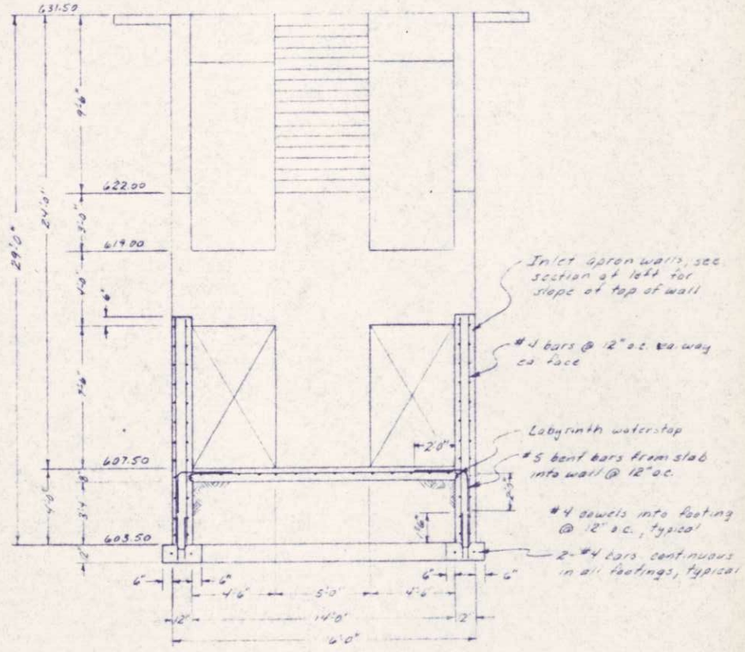
PLAN
Scale 1/4"=1'-0"



SECTION 22 – 22
Scale 1/4"=1'-0"



SECTION 21 – 21
Scale 1/4"=1'-0"



SECTION 24 – 24
Scale 1/4"=1'-0"

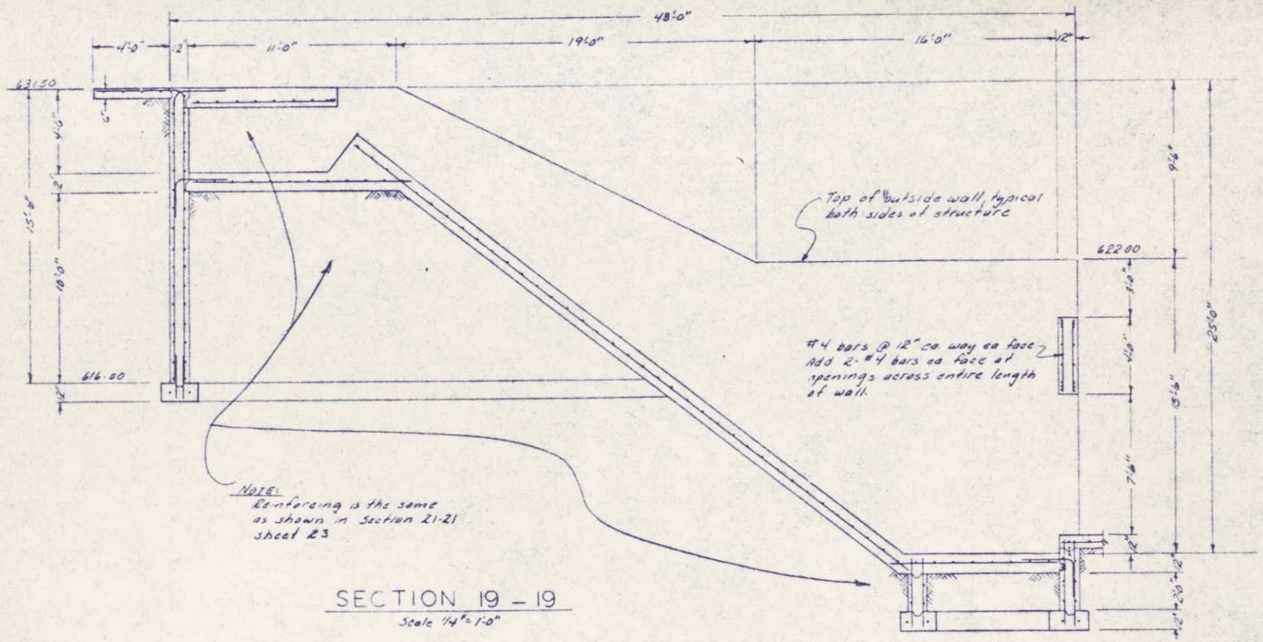
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN
DATE 6/16/75 REG. NO. E-12919 Robert W Rosene

SURVEY		REVISIONS
DRAWN		
DESIGN		
APPROV'D		

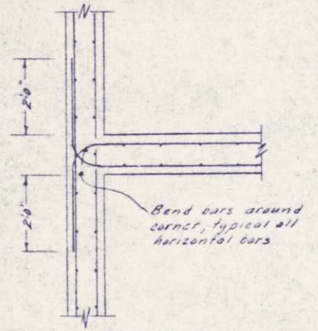
BOXESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: SEPTEMBER 2, 1974 COMM 6898 E

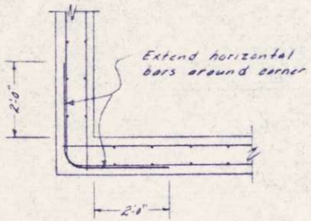
BILLINGS PARK CSO PLANT
INLET STRUCTURE - STRUCTURAL
23



SECTION 19 – 19
Scale 1/4"=1'-0"



TEE WALLS

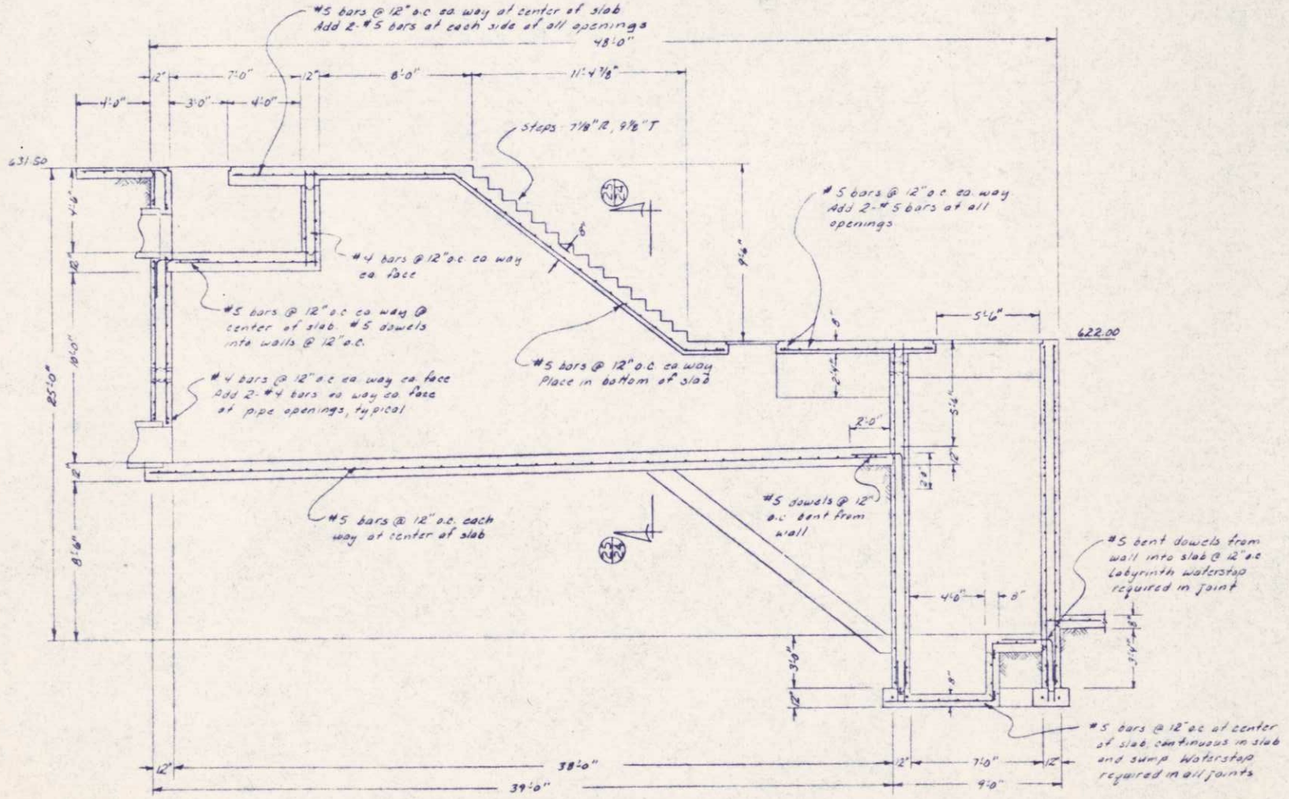


CORNER WALLS

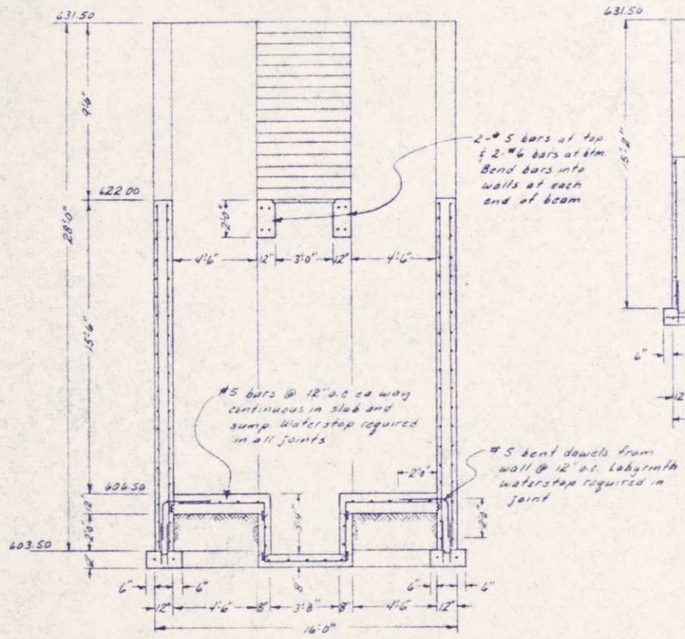
WALL DETAILS
Scale 1/2"=1'-0"

NOTES

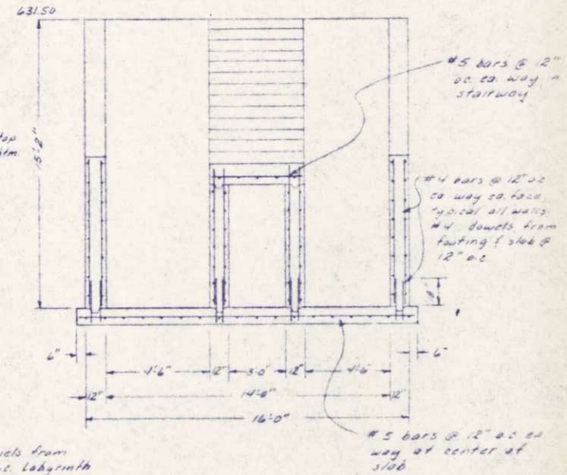
1. All exposed edges of concrete shall be chamfered ¾ inch.
2. Waterstop shall be installed in all construction joints below elevation 615 as shown for inlet structure.
3. All exterior slabs to be sloped to drain away from buildings or equipment. Interior slabs to be sloped to drain to floor drains or tanks.



SECTION 20 – 20
Scale 1/4"=1'-0"



SECTION 23 – 23
Scale 1/4"=1'-0"



SECTION 25 – 25
Scale 1/4"=1'-0"

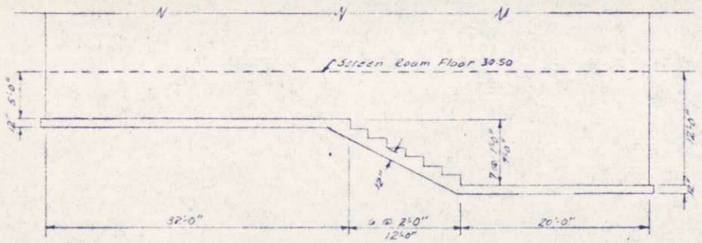
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN
DATE Jan 16 '75 REG. NO. E-12919 Robert W Rosene

SURVEY		REVISIONS
DRAWN	TJC	
DESIGN		
APPROVED		

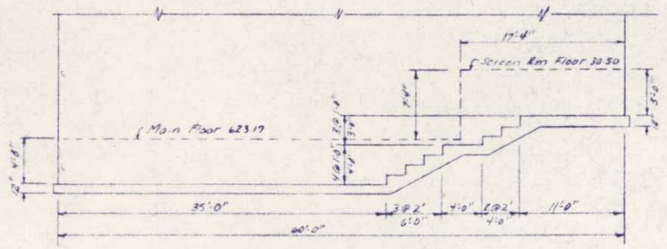
BOXESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: SEPTEMBER 2, 1974 COMM 6588 E

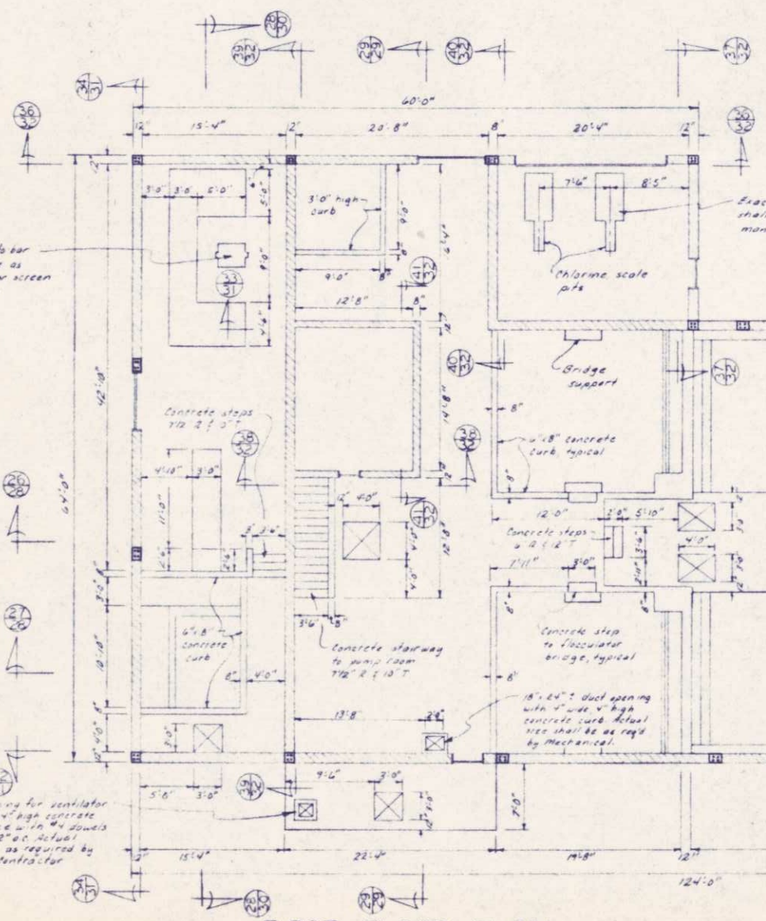
BILLINGS PARK CSO PLANT
INLET STRUCTURE-STRUCTURAL
24



EAST WALL FOOTING
Scale 1/8"=1'-0"



SOUTH WALL FOOTING
Scale 1/8"=1'-0"



SUB-FLOOR PLAN
Scale: 1/8"=1'-0"

Dozing for auto bar screen shall be as required by bar screen manufacturer

Exact dimensions for gits shall be as required by scale manufacturer

Chlorine scale pits

3'0" high curb

Bridge support

Concrete corbel for skimmer support

6"x8" concrete curb, typical

Concrete steps 7½" R, 9" T

Concrete stairway to pump room 7½" R, 10" T

Concrete step to flocculator bridge, typical

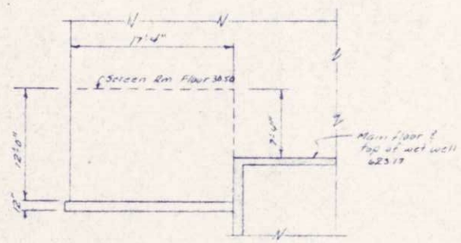
18"x24" duct opening with 4" wide 4" high concrete curb. Actual size shall be as req'd by Mechanical.

20"x20" opening for ventilator with 4" wide, 24" high concrete curb. Ventilator with #4 dowels from slab @ 12" o.c. Actual size shall be as required by Mechanical Contractor

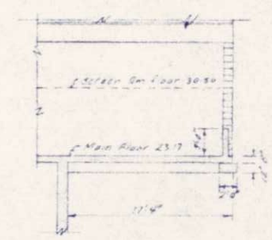
In-wall pilasters, typical. See sheets 31 & 32

124'-0"

FIRST FLOOR PLAN
Scale 1/8"=1'-0"



NORTH SCREEN ROOM WALL FOOTING
Scale: 1/8"=1'-0"



EAST CHEMICAL ROOM WALL FOOTING
Scale 1/8"=1'-0"

EAST & WEST CHLORINE ROOM WALL FOOTINGS
Scale 1/8"=1'-0"

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN
DATE Jan 16 75 REG. NO. E-12919 Robert W Rosene

SURVEY		REVISIONS
DRAWN	JWZ	
DESIGN	JWZ	
APPROVED		

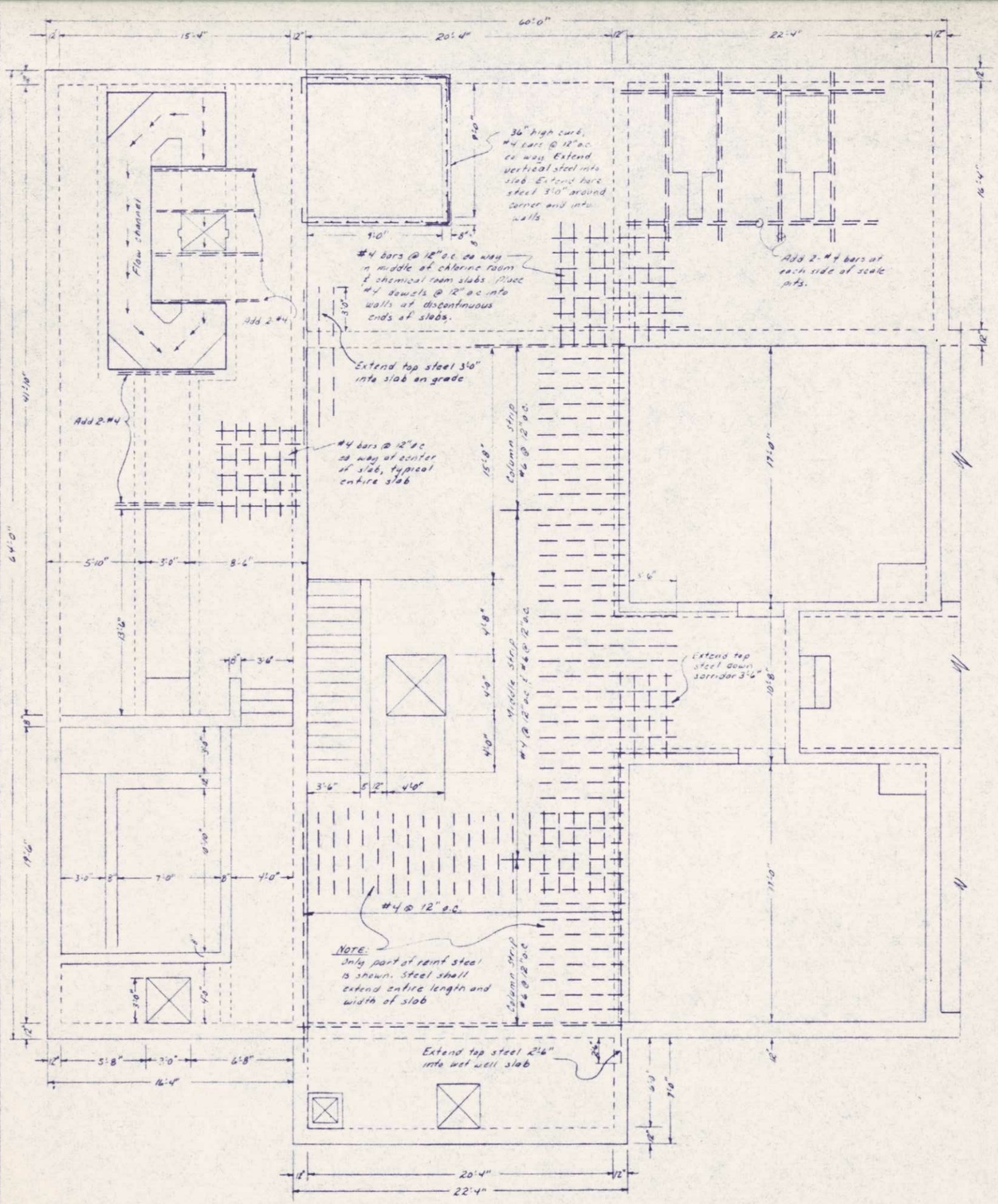
BOXESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: SEPTEMBER 2, 1974 COMM 6868 E

BILLINGS PARK CSO PLANT

FLOOR PLAN & FOOTING DETAILS

SHEET 29 OF 78



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

DATE Jan 16 75 SEAL NO. E12919 Robert W Rosene

SURVEY		REVISIONS
DRAWN	[illegible]	
DESIGN	[illegible]	
APPROV'D		

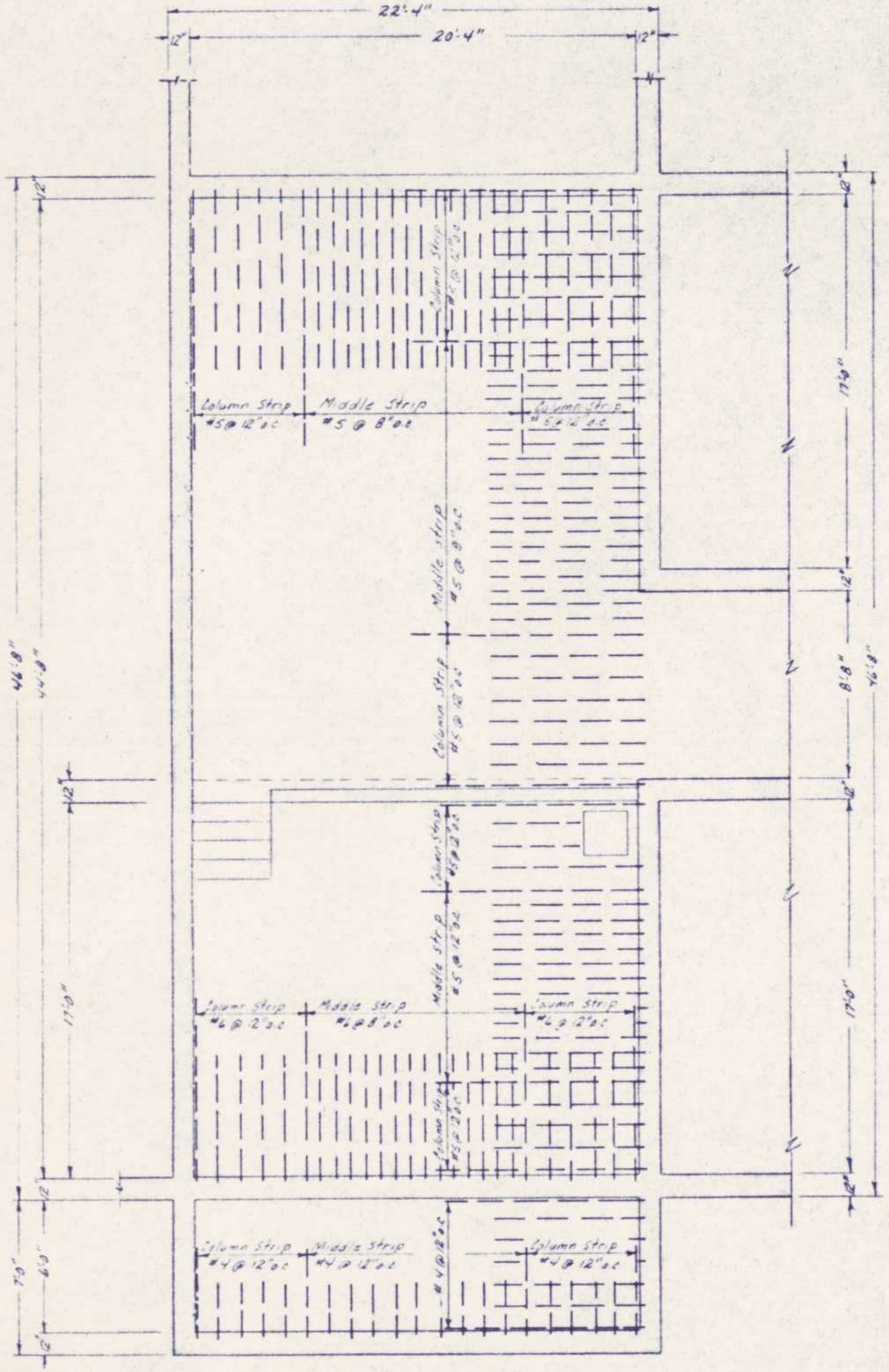
BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: SEPTEMBER 2, 1974 COMM 6668 E

BILLINGS PARK CSO PLANT

FLOOR PLAN-STRUCTURAL

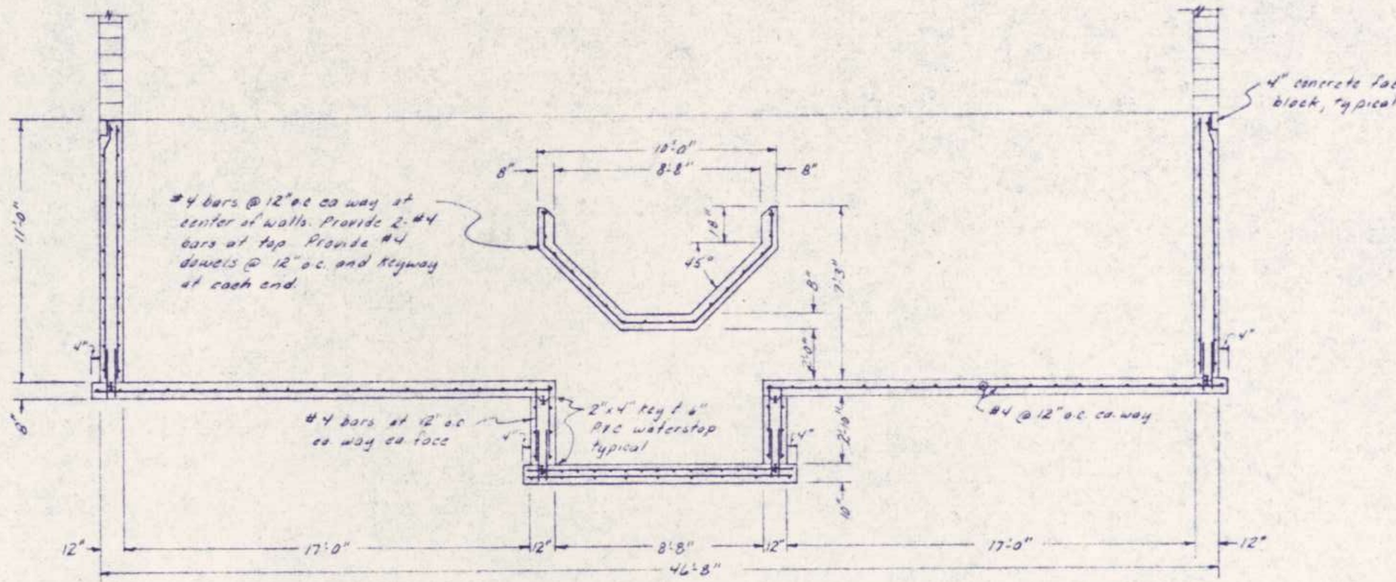
SHEET 26/78



All reinforcing shall have 2" clear cover over steel.

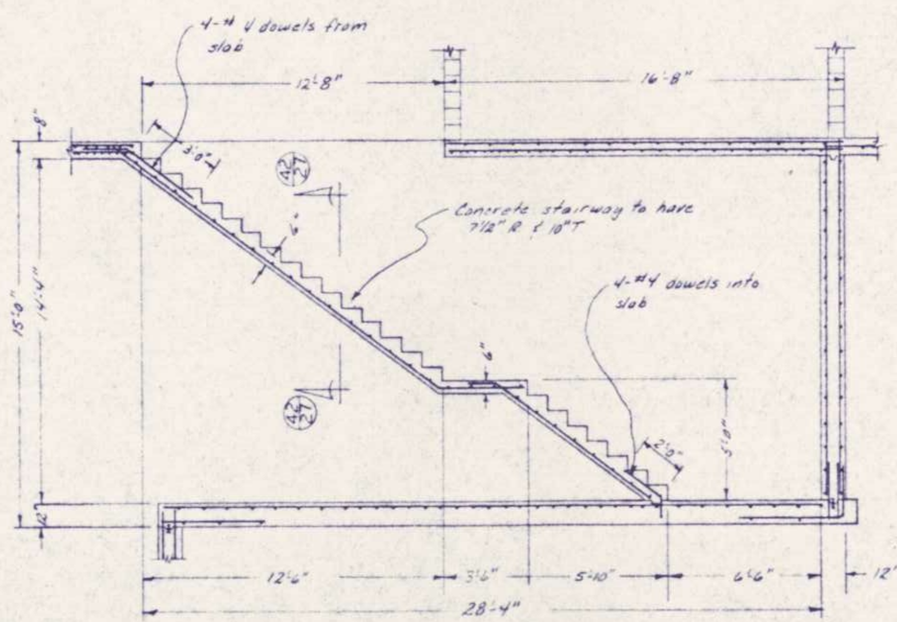
PUMP ROOM SLABS – TOP STEEL

Scale 1/4"=1'-0"



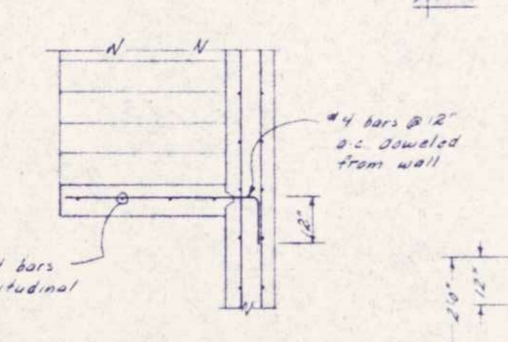
SECTION 31 – 31

Scale 1/4"=1'-0"



SECTION THRU STAIRWAY

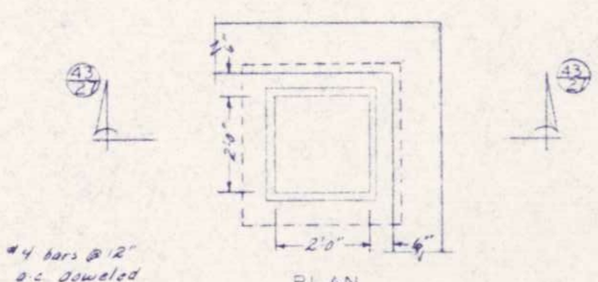
Scale 1/4"=1'-0"



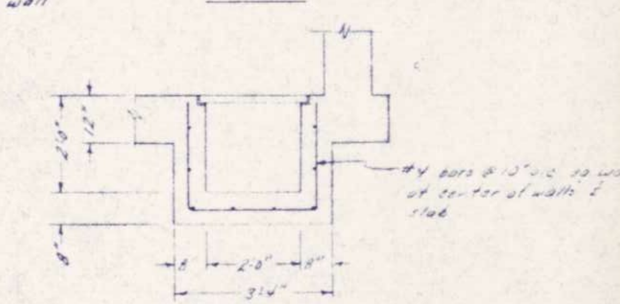
SECTION 42-42

Scale 1/2"=1'-0"

PUMP ROOM STAIRWAY



PLAN



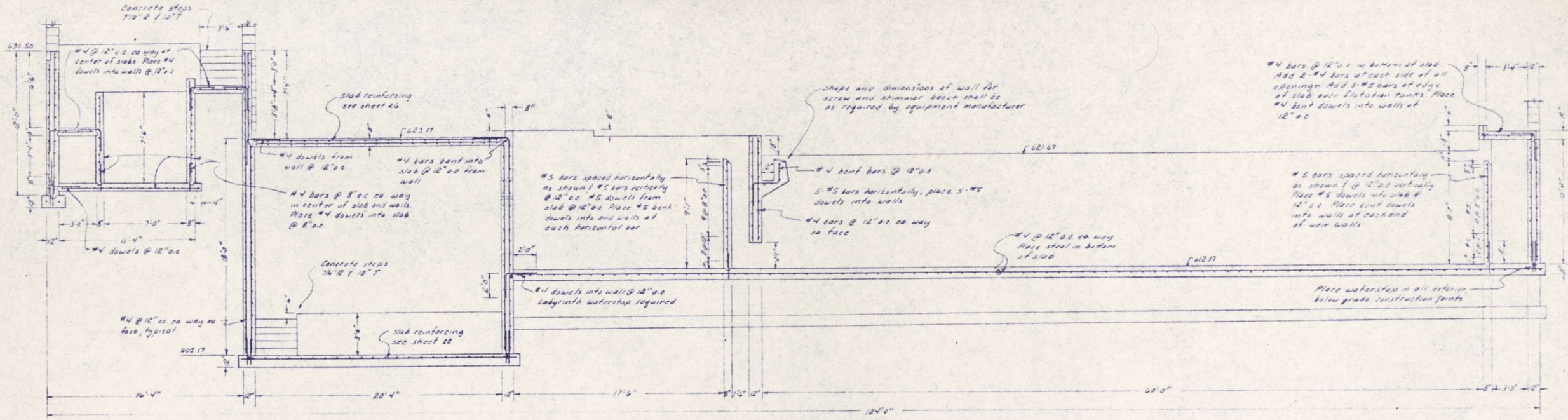
SECTION 43-43

SUMP

Scale 1/2"=1'-0"

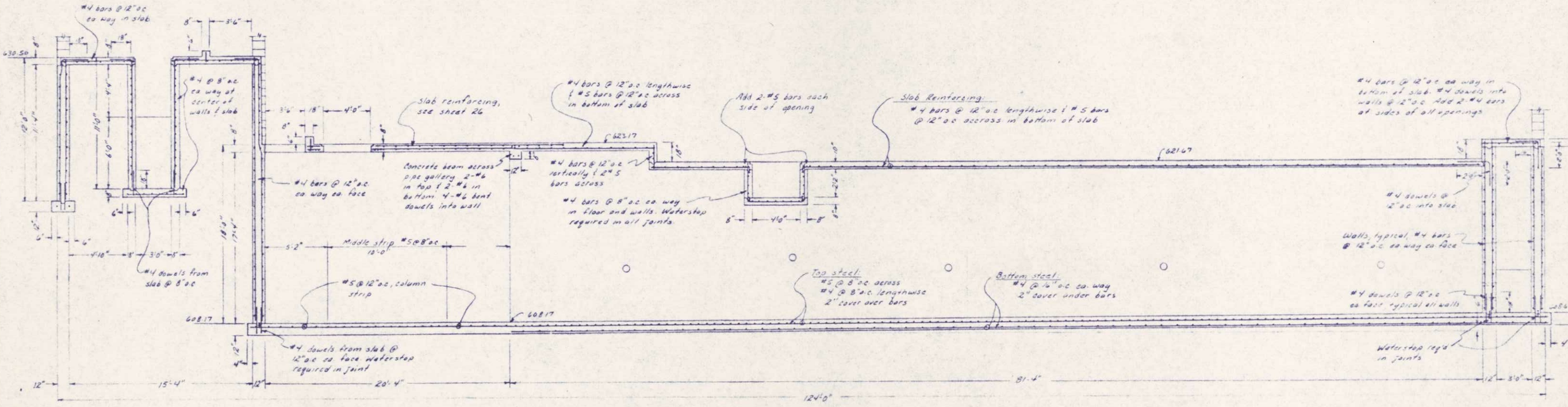
BILLINGS PARK CSO PLANT

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN. DATE Jan 16, 75 REG. NO. E12919 Robert W. Rosene	SURVEY / DRAWN / DESIGN / APPROV'D	REVISIONS	BONESTROO, ROSENE, ANDERLIK & ASSOC., INC. ST. PAUL, MINNESOTA	SUPERIOR, WISCONSIN DATE: SEPTEMBER 2, 1974 COMM 6888 E	PLANT SECTIONS–STRUCTURAL	27



SECTION 27 – 27

Scale 1/4" = 1'-0"



SECTION 26 – 26

Scale 1/4" = 1'-0"

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

DATE Jan 16 75 SIGNED E-12919 Robert W Roene

SURVEY		REVISIONS
DRAWN	JDP	
DESIGN	JDP	
APPROV'D		

BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

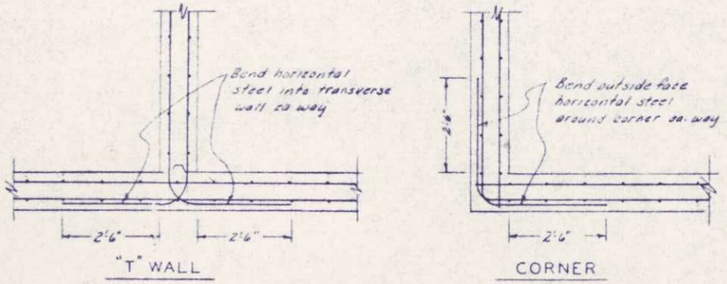
SUPERIOR, WISCONSIN

DATE: SEPTEMBER 2, 1974 CONTR. 6888 E

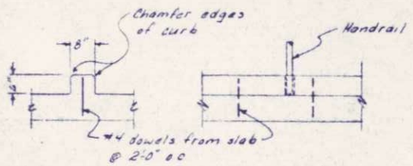
BILLINGS PARK CSO PLANT

PLANT SECTIONS–STRUCTURAL

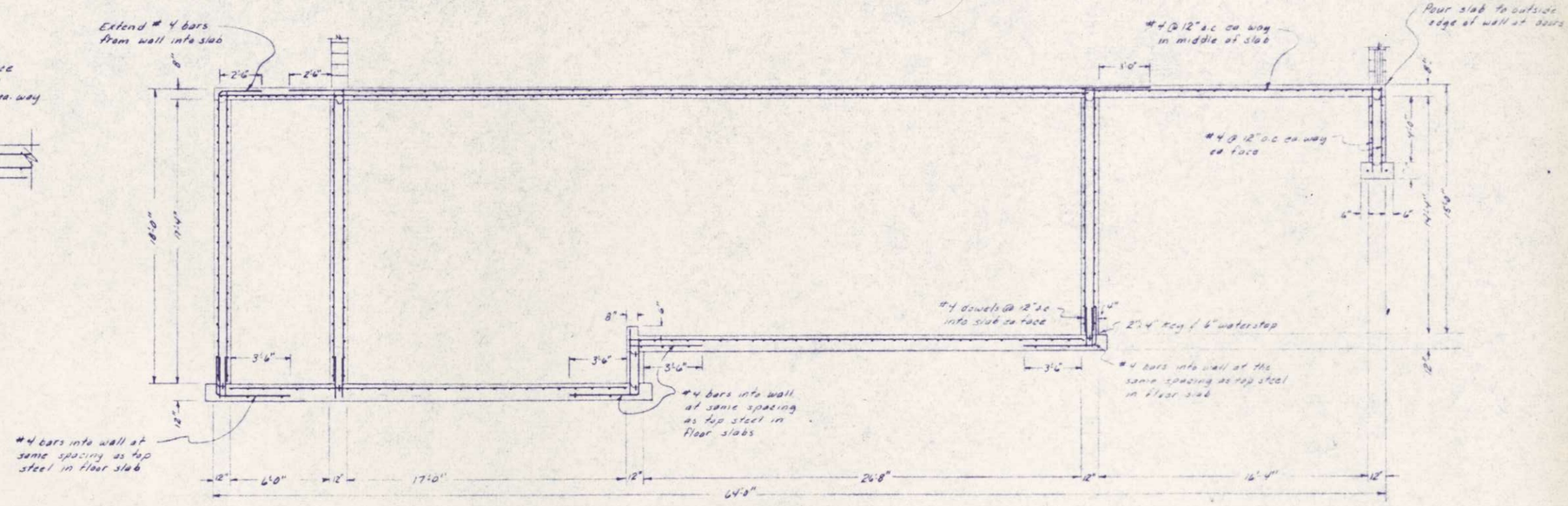
27



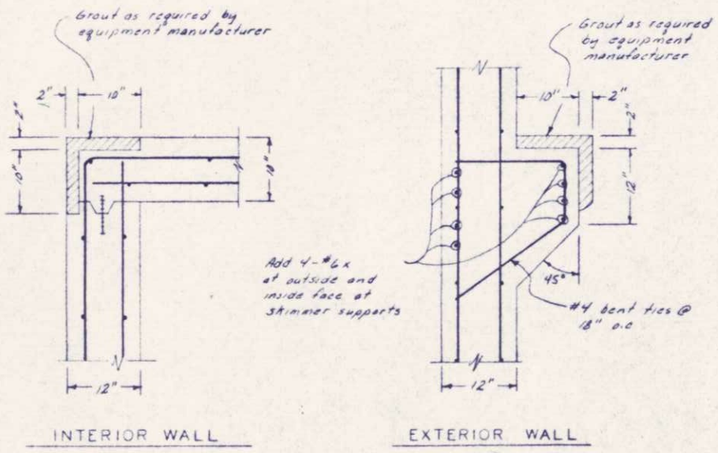
CORNER DETAILS
Scale 1/2"=1'-0"



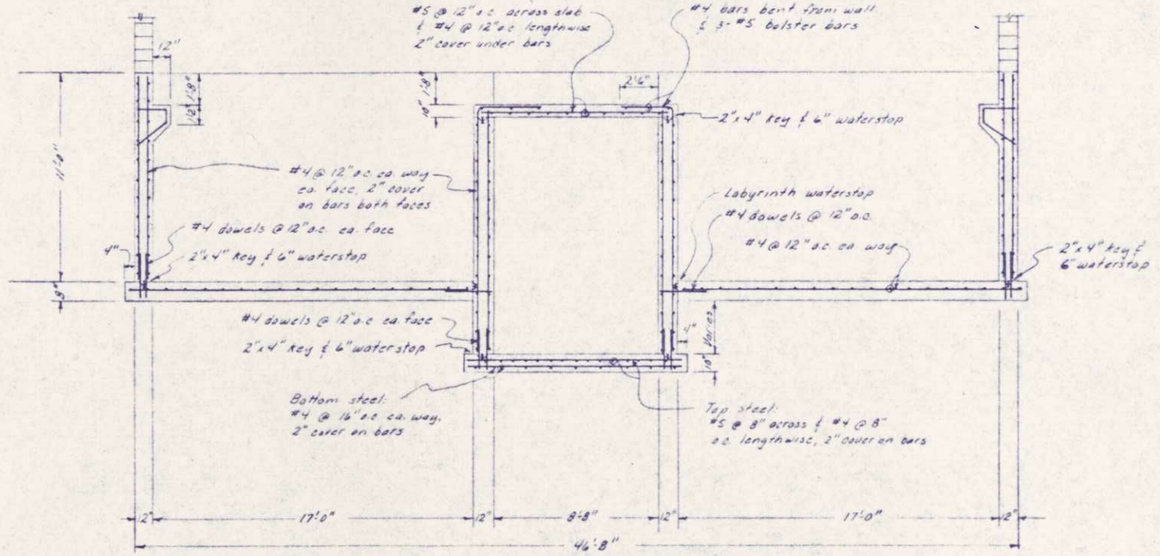
CURB DETAIL
Scale 1/2"=1'-0"



SECTION 29 - 29
Scale 1/4"=1'-0"



FLOTATION TANK WALLS
scale 1"=1'-0"



SECTION 30 - 30
Scale 1/4"=1'-0"

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.
DATE Jan 16 75 REG. NO. E12919 Robert W. Rosene

SURVEY		
DRAWN	11/74	
DESIGN	1/75	
APPROV'D		

REVISIONS

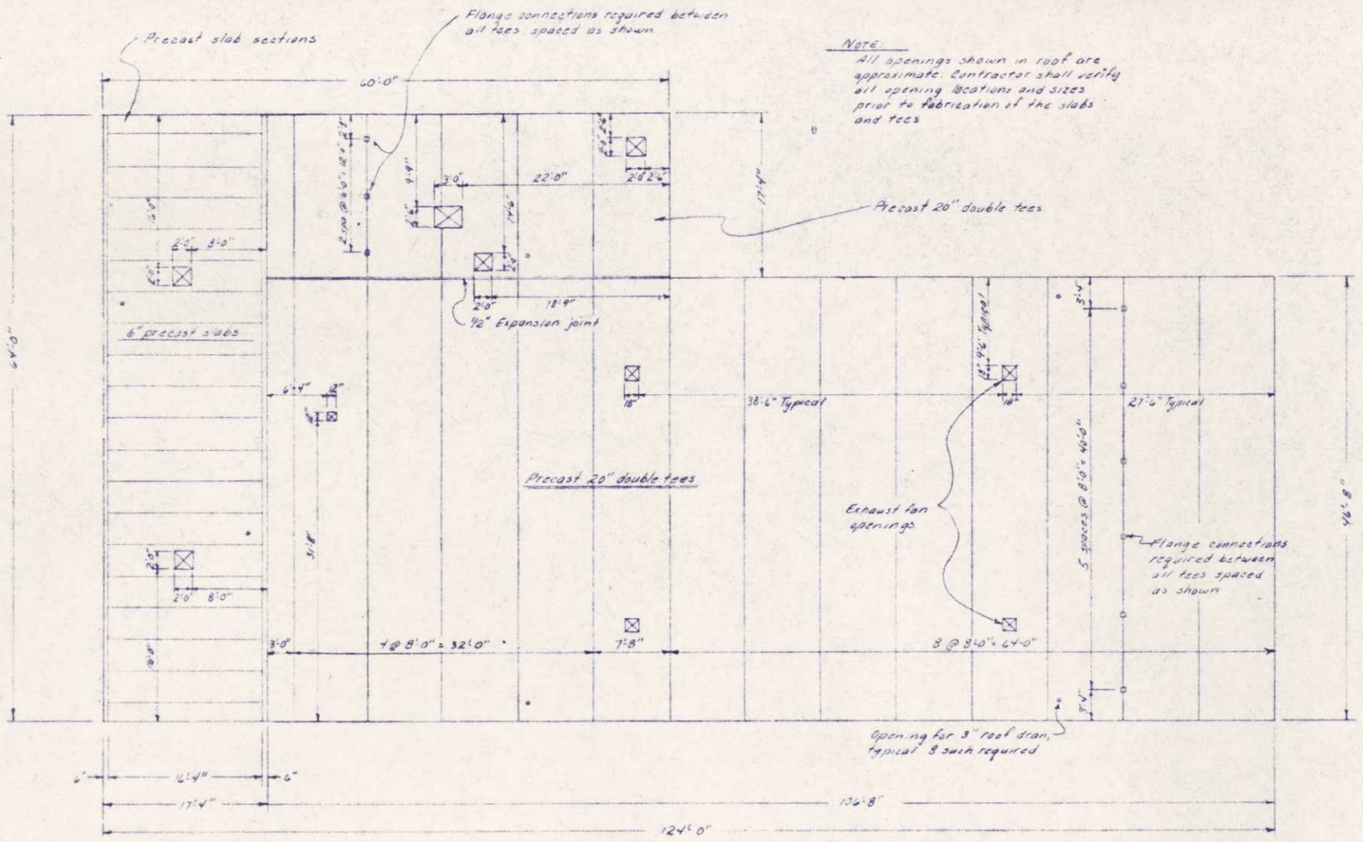
BOXESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: SEPTEMBER 2, 1974 CONTRACT 6888 E

BILLINGS PARK CSO PLANT

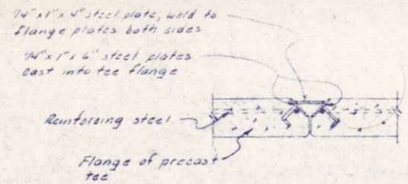
PLANT SECTIONS-STRUCTURAL

S-17
29

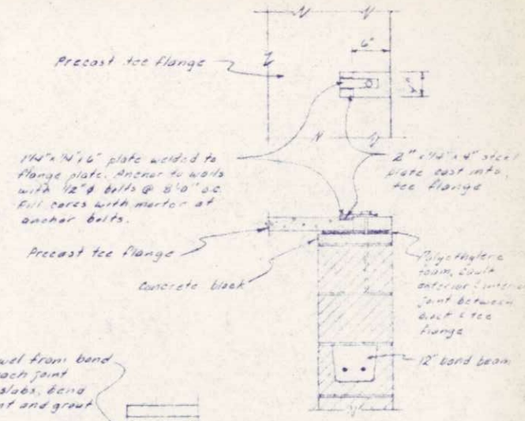


ROOF LAYOUT
Scale 1/8"=1'-0"

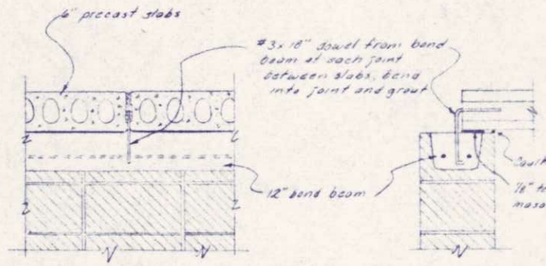
SECTION 28 - 28
Scale 1/4"=1'-0"



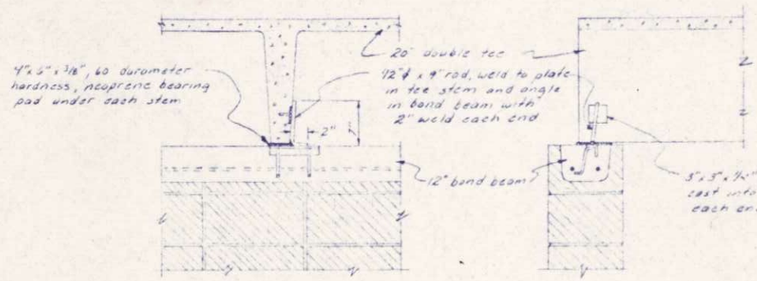
FLANGE CONNECTION DETAIL
Scale 3"=1'-0"



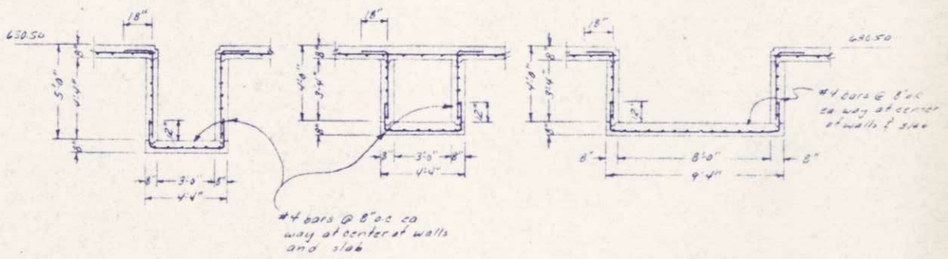
FLANGE TIE DOWN DETAIL
Scale 1"=1'-0"



END SLAB TIE DOWN DETAIL
Scale 1"=1'-0"



END TEE TIE DOWN DETAIL
Scale 1"=1'-0"



SECTION 44-44
Scale 1/4"=1'-0"

SECTION 45-45
Scale 1/4"=1'-0"

SECTION 46-46
Scale 1/4"=1'-0"

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.
Robert W Roscoe
DATE 1/28/75 REG. NO. E-12919

DRAWN
CHECKED
APPROVED
REVISIONS

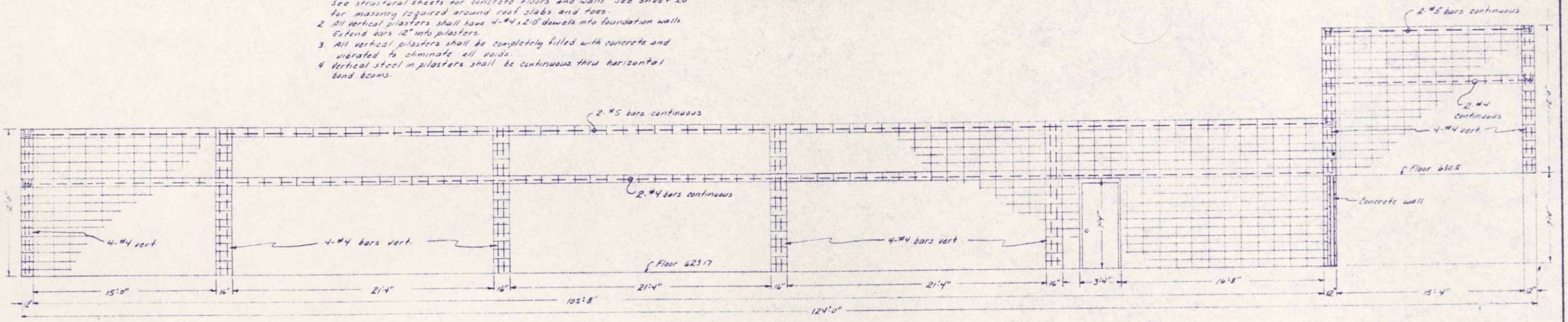
BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

BILLINGS PARK CSO PLANT
SUPERIOR, WISCONSIN
DATE: SEPTEMBER 2, 1974 ODMM 6688 E

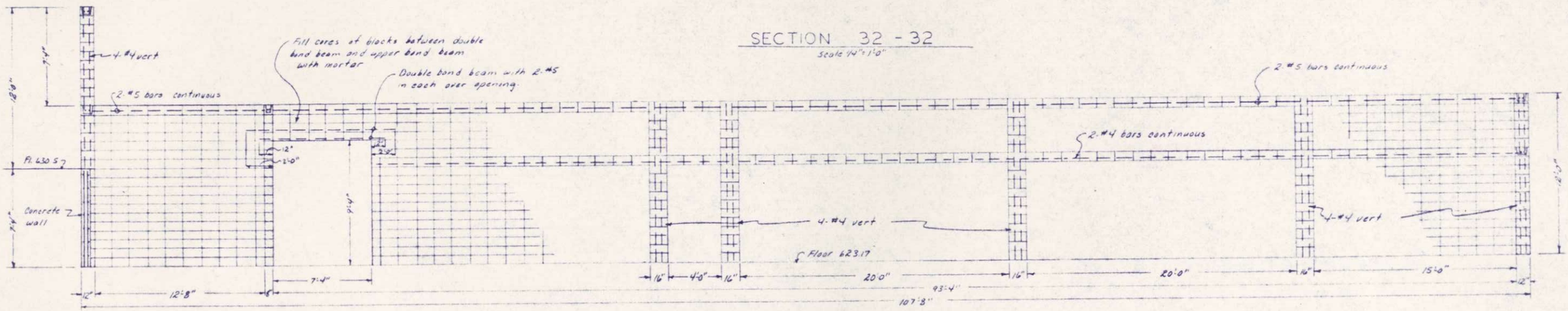
ROOF PLAN & SECTIONS

NOTES:

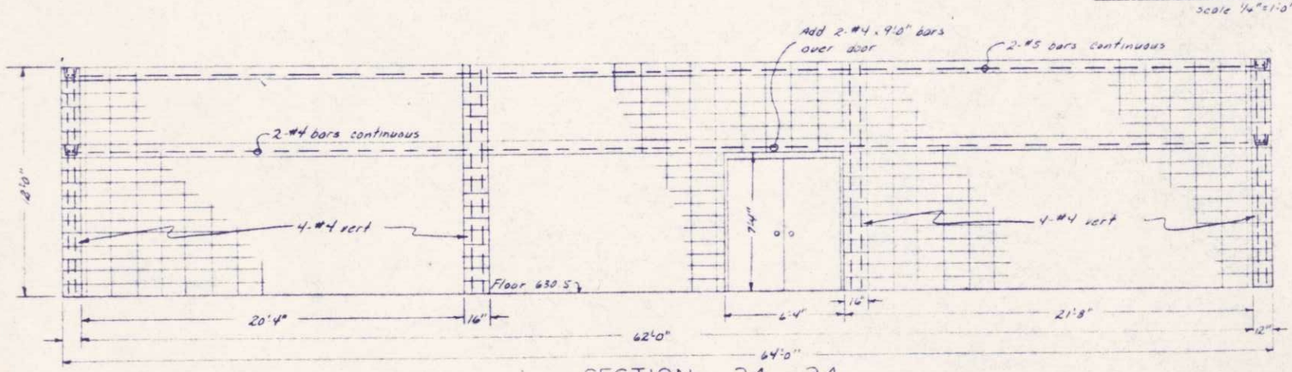
1. Masonry walls are shown from top of concrete floors to roof slab level. See structural sheets for concrete floors and walls. See sheet 20 for masonry required around roof slabs and tees.
2. All vertical pilasters shall have 4-#4 x 2'-0" dowels into foundation walls. Extend bars 12" into pilasters.
3. All vertical pilasters shall be completely filled with concrete and vibrated to eliminate all voids.
4. Vertical steel in pilasters shall be continuous thru horizontal bond beams.



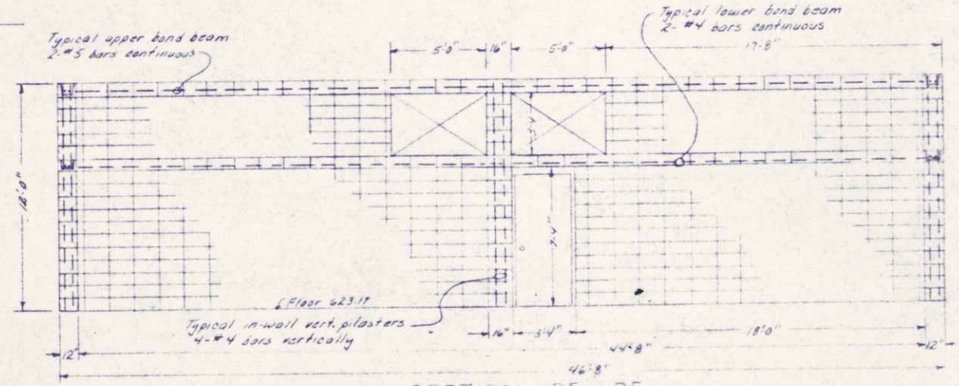
SECTION 32 - 32
scale 1/4"=1'-0"



SECTION 33 - 33
scale 1/4"=1'-0"



SECTION 34 - 34
Scale 1/4"=1'-0"



SECTION 35 - 35
Scale 1/4"=1'-0"

BILLINGS PARK CSO PLANT

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.
DATE Nov 12 '74 REG NO E12919 Robert W Rosene

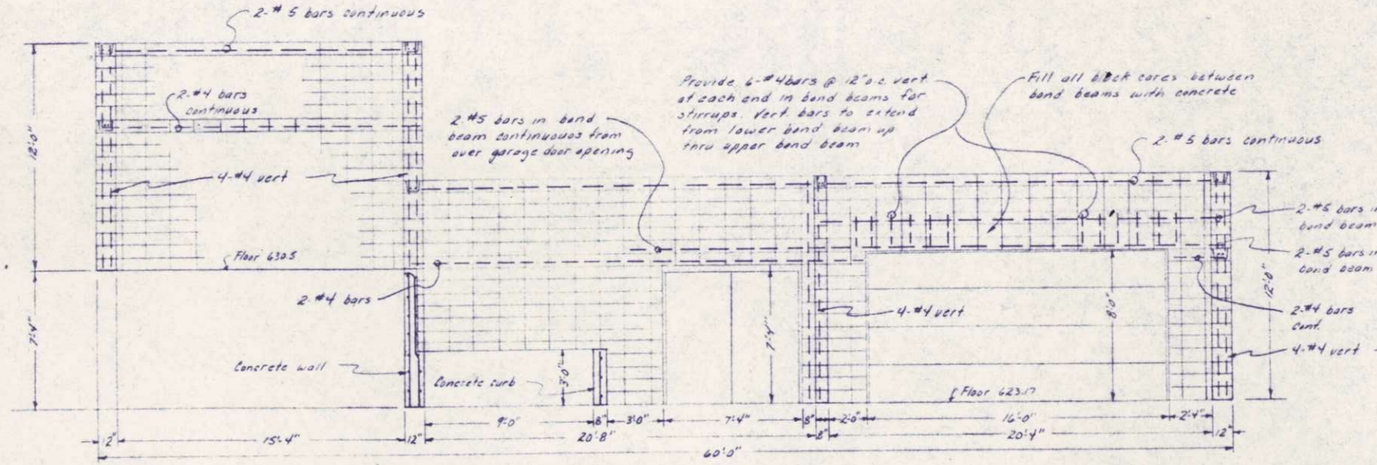
SURVEY		REVISIONS
DRAWN	TAH	
DESIGN	RWR	
APPROVED		

BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

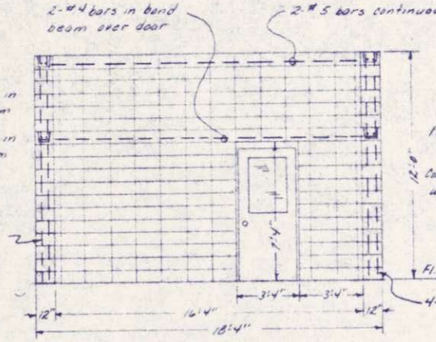
SUPERIOR, WISCONSIN
DATE: SEPTEMBER 2, 1974 COMM 6888E

MASONRY - STRUCTURAL

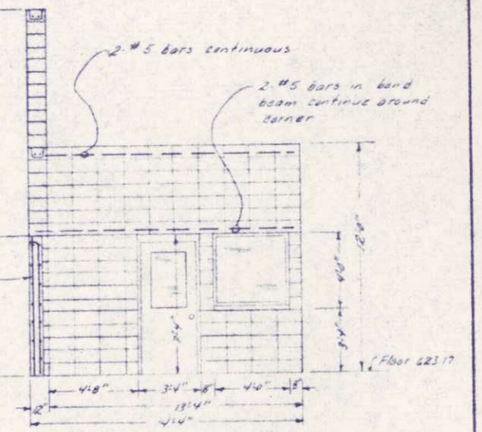
SHEET 31/78



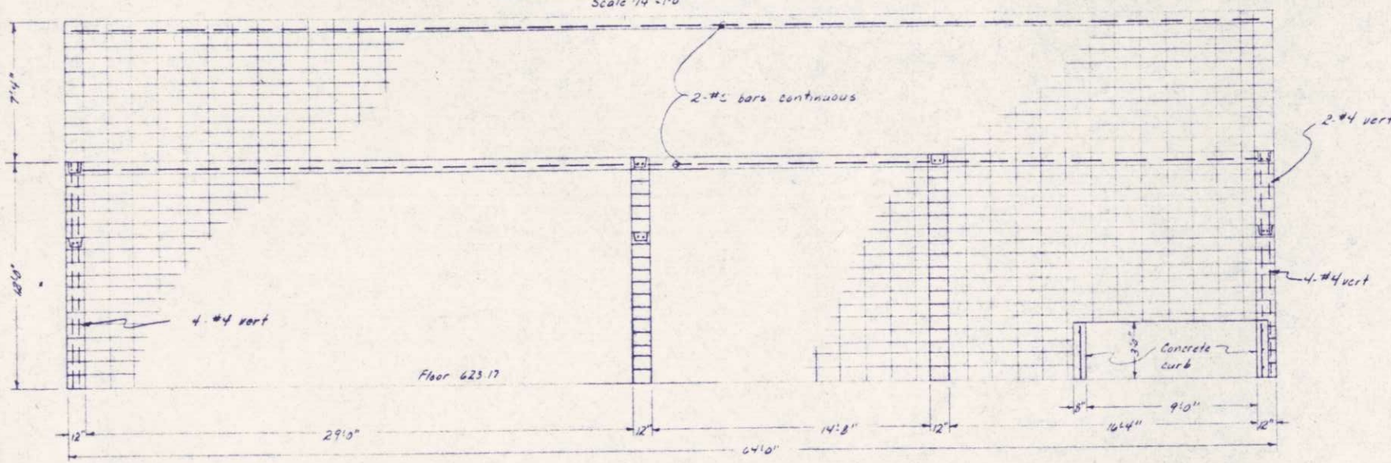
SECTION 36 - 36
Scale 1/4"=1'0"



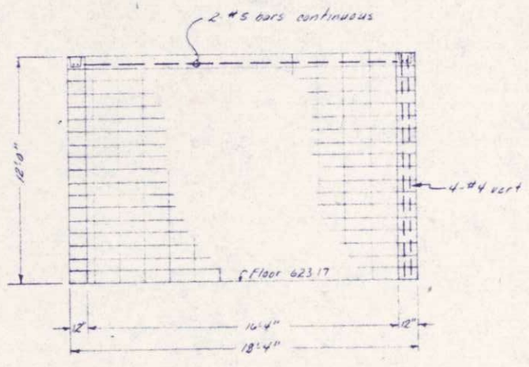
SECTION 37 - 37
Scale 1/4"=1'0"



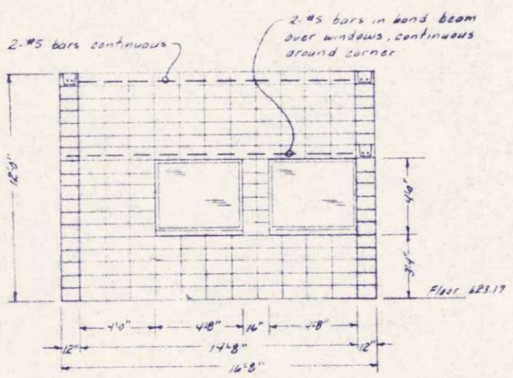
SECTION 38-38
Scale 1/4"=1'0"



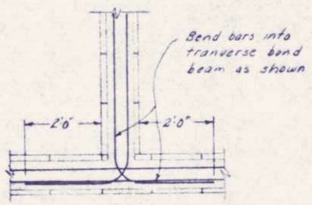
SECTION 39 - 39
Scale 1"=1'0"



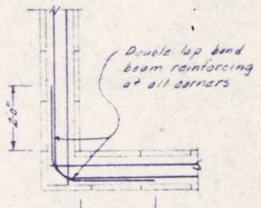
SECTION 40 - 40
Scale 1/4"=1'0"



SECTION 41 - 41
Scale 1/4"=1'0"



"T" WALL



CORNER

BOND BEAM DETAILS
Scale 1/2"=1'0"

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.
DATE Jan 16 '75 REG. NO. 5129 Robert W Rosene

SURVEY
DRAWN WJE
DESIGN WJE
APPROVD

REVISIONS

BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: SEPTEMBER 2, 1974 COMM 6886E

BILLINGS PARK CSO PLANT
MASONRY - STRUCTURAL

SHEET 32/78

OUTDOOR AIR INTAKE ON ROOM
24"x24" THROAT
HOOD INLET AREA = 8 FT²

ELECTRIC UNIT HTR BY ELEC. CONTR.

EXHAUST FAN E-5

20/24 EXH. DROP

ELECTRIC UNIT HTR BY ELEC. CONTR.

OUTDOOR AIR INTAKE ON ROOF, 24"x24" THROAT, HOOD INLET AREA = 8 FT²

SIMILAR

24"x24" CEILING TRANSFER GRILLE

24"x24" CEILING DIFFUSER W/ 85% AREA - 750 CFM

20/14

UNIT VENTILATOR

MOUNT U.V. TO BOTTOM OF ROOF TEES

O.A. DUCT TRANSITION TO 36"x4" AT UNIT

SHT MET. SLEEVE BOTTOM @ 8' ABOVE FL.

ELECTRIC UNIT HTR BY ELEC. CONTR.

OUTDOOR AIR INTAKE ON ROOF
12"x12" THROAT, HOOD INLET AREA = 2 FT²

24"x16" TRANSFER GRILLE WITH AUTO-BACKDRAFT DAMPER IN SLEEVE

OPPOSED BLADE BALANCING DAMPERS

EXHAUST FAN E-6

20/20

2/34 SIMILAR

20/20 DUCT DROP TO 8' ABOVE FLOOR WITH 8"x12" OPNG AT 6'-6" ABOVE FLR. 20"x12" DUCT TO 12" ABOVE FLOOR WITH END OPEN

24/18

28/18

24/18 SUPPLY DUCT DOWN THRU CURBED OPENING

SUPPLY FAN E-7

5/34

EXHAUST FAN E-4

EXHAUST FAN E-3

EXHAUST FAN E-2

EXHAUST FAN E-1

44/18

44/20

54/20

60/20

18"x10" SUPPLY REGISTER (TYPICAL)
SEE DETAIL OF TYPICAL DUCT EXTENTION

SPLITTER DAMPER (TYPICAL)

FILTER ACCESS DOOR

ELECTRIC HTG. COIL

FAN SECTION

60"x40" O.A. INTAKE LOUVER

4/34

(700)

SUPPLY REGISTER

SIZE EXTENTION COLLAR 1/2" LARGER THAN REG. IN BOTH DIMENSIONS

SPLITTER

DUCT EXTENTION DETAIL
NO SCALE

EXHAUST FAN E-2

3/16 DUCT THRU ROOF WITH ALUM. LOUVER FRAME

ALUMINUM CURB

AUTO-BACKDRAFT DAMPER

20/54

FAN SECTION

FILTER SECTION

O.A. PLENUM

O.A. LOUVER

HEATING AND VENTILATING UNIT S-1

ELECTRIC HEATING COIL SECTION

4/38 SECTION
1/4"=1'-0"

ERICKSEN ELLISON
AND ASSOCIATES INC.
CONSULTING ENGINEERS
SAINT PAUL MINNESOTA

E-6773

SOVESTHOO, ROSERE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE SEPTEMBER 2, 1973

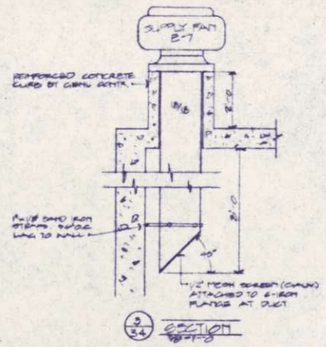
PILLINGS PARK CSO PLANT
MECHANICAL

33

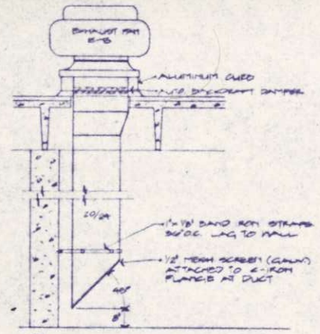
EXHAUST FAN SCHEDULE

FAN	SERVICE	MFR	MODEL	TYPE	DRIVE	CFM	"SP	FAN RPM	HP	REMARKS
E-1	TREATMENT RM. VENT	ACME	FJAG	PROP	BELT	2000	1/4	1056	1/2	NOTE 1,3
E-2	TREATMENT RM. VENT	ACME	FJ66	PROP	BELT	2000	1/4	1056	1/2	NOTE 1,3
E-3	TREATMENT RM. VENT	ACME	FJ66	PROP	BELT	2000	1/4	1056	1/2	NOTE 1,3
E-4	TREATMENT RM. VENT	ACME	FJAG	PROP	BELT	2000	1/4	1056	1/2	NOTE 1,3
E-5	CHLORINE RM. VENT	ACME	FJ24M	PROP	BELT	1000	3/8	680	3/4	NOTE 1,2,3
E-6	TOILET RM. VENT	ACME	FJ22G	PROP	BELT	500	3/8	700	1/2	NOTE 1,2,3
E-7	WELL VENTILATION	ACME	LAJ42	PROP (CENTRIF.)	DIRECT	7140	1/2"	1760	1/4	NOTE 3,4
E-8										

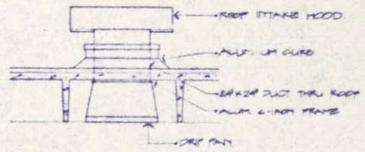
NOTES:
1) PROVIDE INSULATED ALUMINUM CURB WITH INTEGRAL BACKDRAFT DAMPER
2) UPBLAST DISCHARGE FAN
3) APPROVED MANUFACTURERS: ACME, COOK, CARBENDALE, LAU OR TWIN CITY FAN & BLOWER
4) SUPPLY FAN TO HAVE A.M. PROPELLER AND TOTALLY ENCLOSED EXPLOSION PROOF MOTOR. M-104



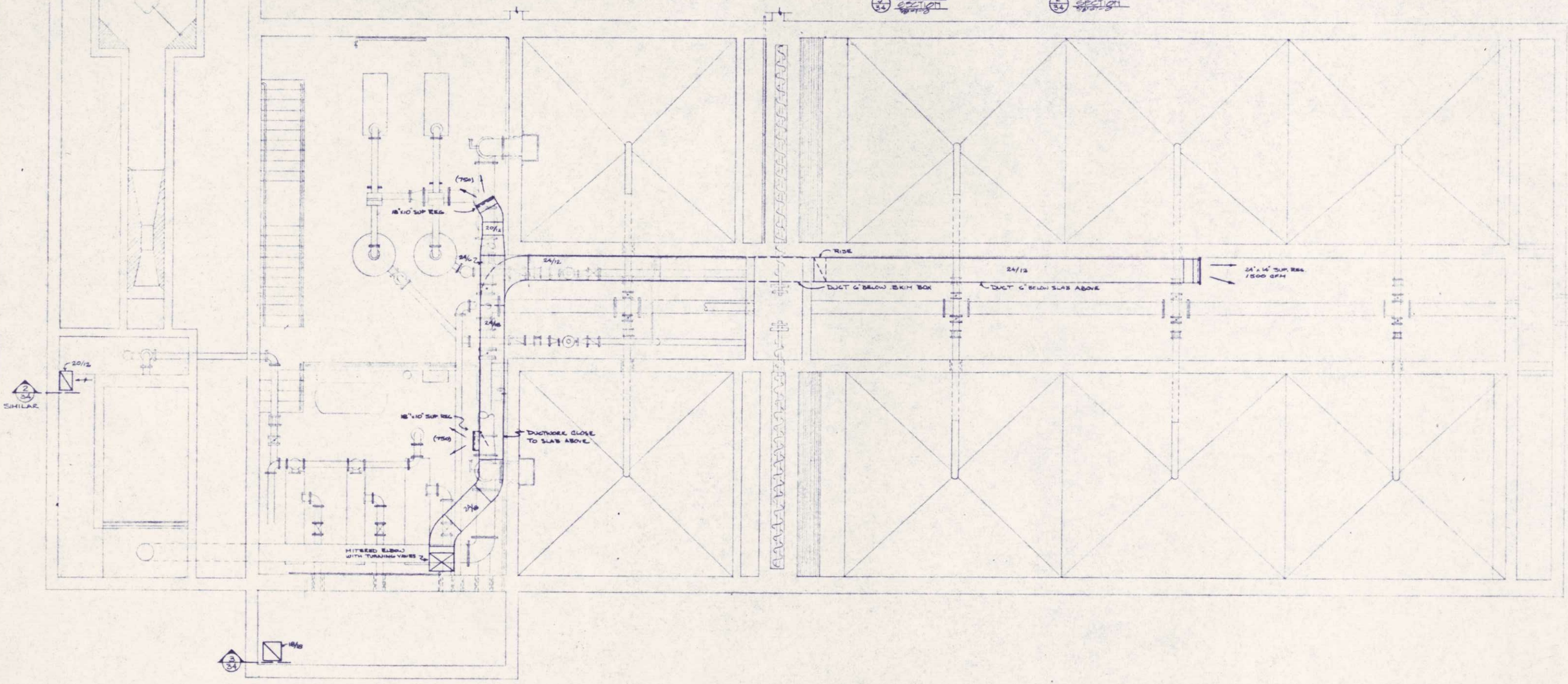
3/34 SECTION



2/34 SECTION



1/34 SECTION



ERICKSEN ELLISON AND ASSOCIATES INC. CONSULTING ENGINEERS SAINT PAUL MINNESOTA

REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN
DATE FEB 27 '74 REG. NO. E-6773

DESIGN DE
DRAWN DE
CHECKED DE

LONGSTROO, ROSENE, ANDERLIK & ASSOC., INC. ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE SEPTEMBER 2, 1974 JOB NO. 6888E

BILLINGS PARK CSO PLANT
MECHANICAL
34
78

OUTDOOR AIR INTAKE ON ROOF, 24"x24" THROAT, HOOD INLET AREA = 8 FT²

SIMILAR

24"x24" CEILING TRANSFER GRILLE

24"x24" CEILING DIFFUSER W/ 85% NECK - 750 CFM

20/14

UNIT VENTILATOR

MOUNT U.V. TO BOTTOM OF ROOF TEES

O.A. DUCT TRANSITION TO 36"x6" AT UNIT

SHT MET. SLEEVE BOTTOM 6" ABOVE FL.

ELECTRIC UNIT HTR BY ELEC. CONTR.

OUTDOOR AIR INTAKE ON ROOM 12"x12" THROAT, HOOD INLET AREA = 2 FT²

24"x16" TRANSFER GRILLE WITH AUTO-BACKDRAFT DAMPER IN SLEEVE

EXHAUST FAN E-6

20/20

2/34 SIMILAR

20/20 DUCT DROP TO 8" ABOVE FLOOR WITH 8"x12" OPNG AT 8" ℄ ABOVE FLR. 20"x12" DUCT TO 12" ABOVE FLOOR WITH END OPEN

SUPPLY FAN E-7

5/34

OUTDOOR AIR INTAKE ON ROOM 24"x24" THROAT HOOD INLET AREA = 8 FT²

1/34

ELECTRIC UNIT HTR BY ELEC. CONTR.

EXHAUST FAN E-5

3/34

20/24 EXH. DROP

2/34

ELECTRIC UNIT HTR BY ELEC. CONTR.

EXHAUST FAN E-4

EXHAUST FAN E-3

OPPOSED BLADE BALANCING DAMPERS

24/18

24/18

24/18

24"x18" SUPPLY DUCT DOWN THRU CURBED OPENING

(700)

46/18

46/20

18"x10" SUPPLY REGISTER (TYPICAL) SEE DETAIL OF TYPICAL DUCT EXTENTION

SPLITTER DAMPER (TYPICAL)

54/20

40/20

EXHAUST FAN E-2

EXHAUST FAN E-1

FILTER ACCESS DOOR

ELECTRIC HTG COIL

FAN SECTION

60"x40" O.A. INTAKE LOUVER

4/34

60"x40" O.A. INTAKE LOUVER

EXHAUST FAN E-2

2"/12" DUCT THRU ROOF WITH ALUM LOUVER PLATE

ALUMINUM CURB

AUTO-BACKDRAFT DAMPER

20/54

R.A.

FAN SECTION

FILTER SECTION

O.A. PLENUM

O.A. LOUVER

HEATING AND VENTILATING UNIT S-1

ELECTRIC HEATING COIL SECTION

4/33 SECTION

1/4" = 1'-0"

SUPPLY REGISTER

SIZE EXTENTION COLLAR 1/2" LARGER THAN REG. IN BOTH DIMENSIONS

3"

SPLITTER

DUCT EXTENTION DETAIL

NO SCALE

ERICKSEN ELLISON AND ASSOCIATES INC. CONSULTING ENGINEERS SAINT PAUL MINNESOTA

E-6773

BONESTROO, ROSENE, ANDERLIK & ASSOC., INC. ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN

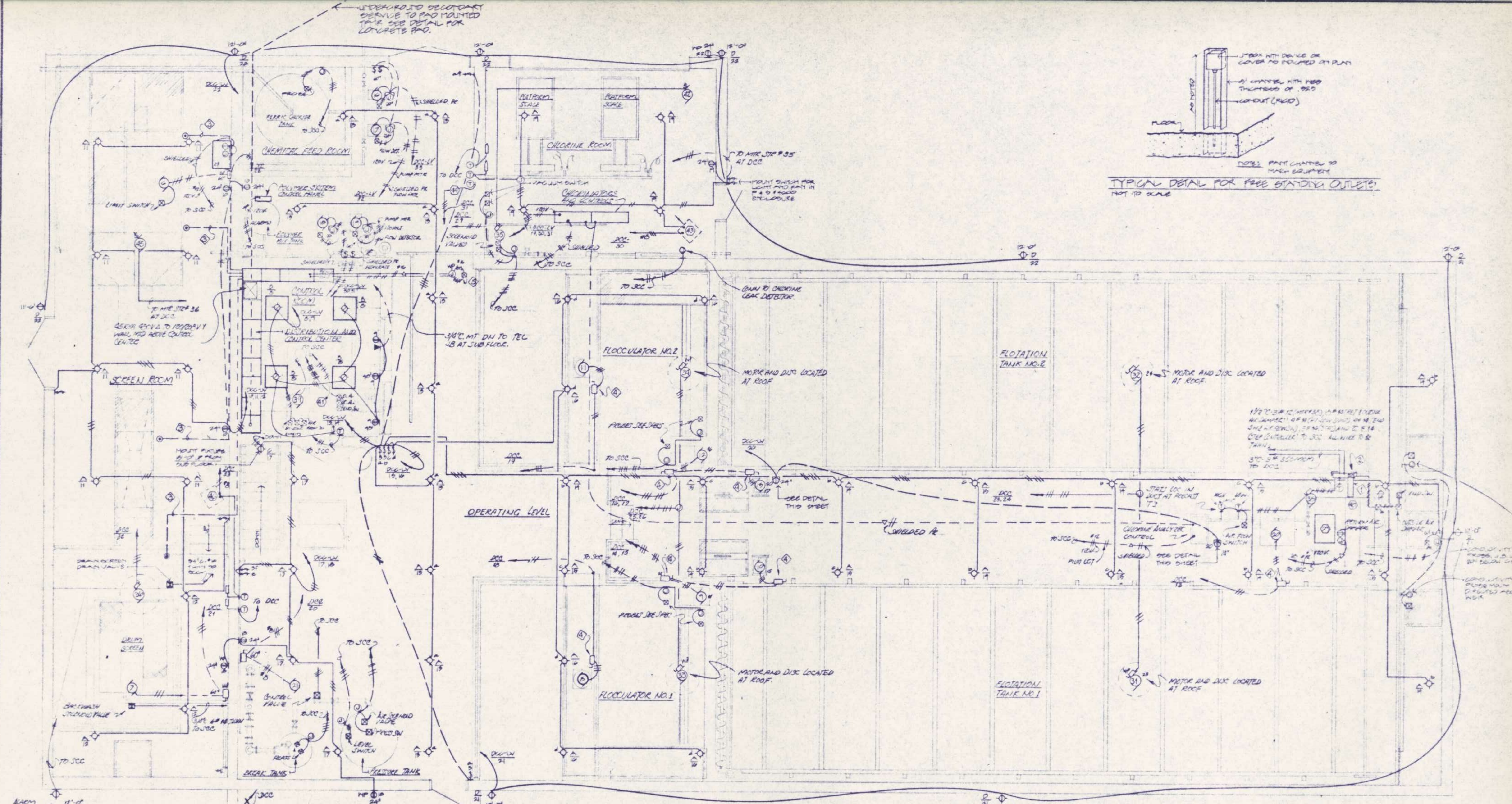
DATE SEPTEMBER 2, 1973

JOB NO. 6888E

BILLINGS PARK CSO PLANT

MECHANICAL

33



NOTES:

1. 4"X4" WIREWAY WITH 30 # 8THW BETWEEN COIL AND 10 CONTACTORS LOCATED IN PANEL SEE NOTE 2. MAKE CONNECTIONS TO CONTACTORS AND 200KW ELECTRIC COIL.
2. CONTACTOR PANEL MOUNTED TO 2"X2"X1/4"L SIMILAR TO DETAIL SHOWN FOR FREE STANDING OUTLETS. SEE DETAIL.
3. 1" CONDUIT WITH 1/2" PLASTIC TUBE FOR BUBBLER LINE BETWEEN STILLING WELL AND SCC.
4. DISCONNECT SWITCH TO BE MOUNTED ON RAILING SEE DETAIL.
5. RAIN GAUGE ROOF MTD. MAKE CONN TO EQUIP FROM CAST WEATHERPROOF BOX MOUNTED 12" ABOVE ROOF.

NORTH

PLANT FLOOR PLAN

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

ERICKSEN ELLISON
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SAINT PAUL MINNESOTA

BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN

DATE: SEPTEMBER 2, 1974 COMM 6888E

BILLINGS PARK CSO PLANT

ELECTRICAL

1½"C. MT STUB OUT 24" BELOW GRADE FOR TELEPHONE SERVICE.

3/4"C. MT TO TEL OUTLET IN CONTROL RM.

1½"C. MT UP TO SCC

FLOCCULATOR NO. 2

FLOTATION TANK NO. 2

PUMP ROOM

TO SCC.

LIMIT SWITCH CHECK VALVE

SOLENOID VALVE

INFLUENT VALVE NO. 2

3/4"C-6 #14 THHN

PRESSURIZATION SYSTEM SOURCE VALVE "A"

PRESSURIZATION SYSTEM SOURCE VALVE "B"

FLOCCULATOR NO. 2 DRAIN VALVE

FLOCCULATOR NO. 1 DRAIN VALVE

FLOTATION TANK NO. 2 DRAIN VALVE

FLOTATION TANK NO. 1 DRAIN VALVE

UP TO SCC 1"C-12 #14 THHN

1"C-10 #14 THHN

PRESSURIZATION SYSTEM PNEUMATIC CONTROL PANELS

3/4"C-8 #14 TO SCC

SCREEN ROOM DRAIN VALVE

MAIN DRAIN VALVE

BALL FLOAT FOR FLOOD ALARM

PRESSURE SW. AND ALTERNATOR

LIMIT SWITCH ON CHECK VALVES

1"C WITH ½" POLY FLOW TUBE TO SCC

3/4"C-6 #14 THHN TO SCC

INFLUENT VALVE NO. 1

FLOCCULATOR NO. 1

FLOTATION TANK NO. 1

½" PLASTIC TUBE DN TO COMPRESSION BELL IN WET WELL. SUPPORT TUBE EVERY 4'-0" (SMALL CLAMP) SPECIFY TO COMP BELL.

WET WELL

NOTES

1. 1"C. 12 #14 THHN TO SUPERVISORY CONTROL CENTER
2. ALL VALVES ARE AIR OPERATED WITH ELECTRIC SOLENOID AND OPEN - CLOSED POSITION SWITCHES. TWO PRESSURE TUBES COMP PER VALVE. CONNECTION TO BE MADE WITH SEALTIGHT.
   - AV - AIR OPERATED VALVE WITH ELECTRIC SOLENOID
   - IN - INFLUENT VALVE
   - DV - DRAIN VALVE
   - PR - PRESSURIZATION SYSTEM VALVE
3. MAKE CONNECTION TO MAGNETROL (TO BE INSTL) AND ALARM CONTACTS.

NORTH

PLANT SUBFLOOR PLAN

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

ERICKSEN ELLISON AND ASSOCIATES INC. CONSULTING ENGINEERS SAINT PAUL, MINNESOTA

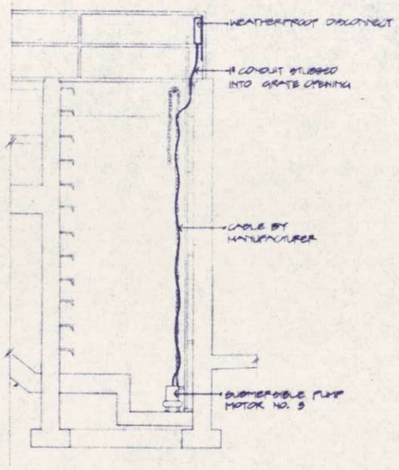
SONESTROO, ROSENE, ANDERLIK & ASSOC., INC. ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN

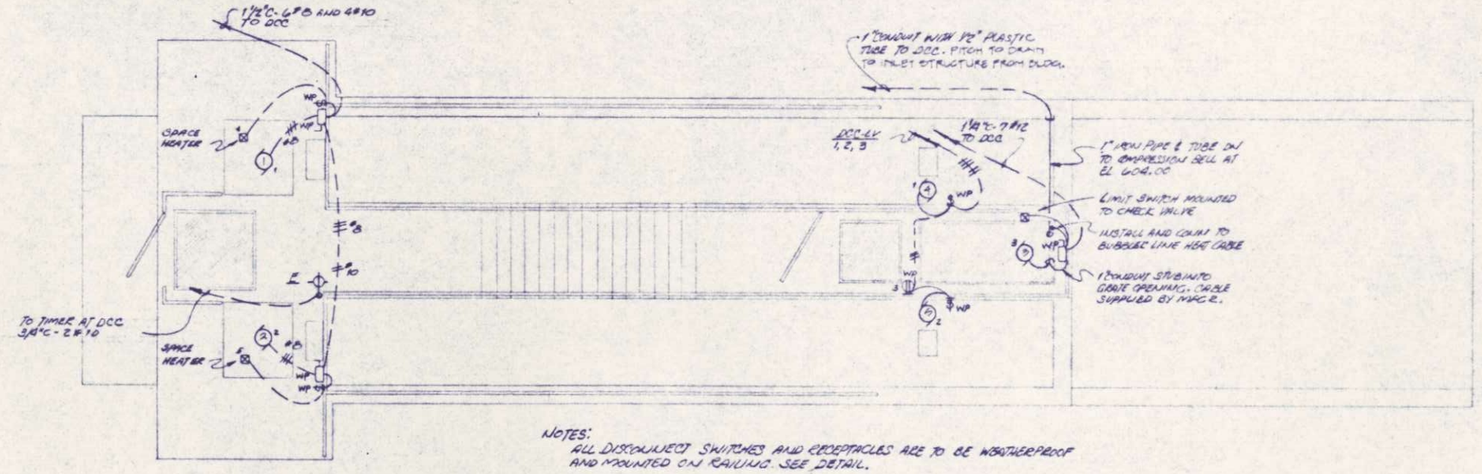
DATE: SEPTEMBER 2, 1974 COMM. 6888E

BILLINGS PARK CSO PLANT

ELECTRICAL

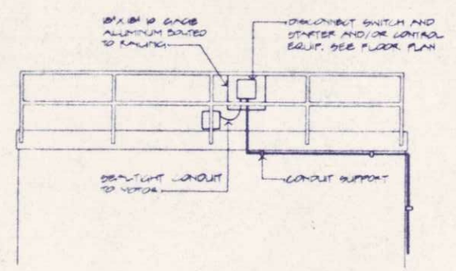


SECTION
1/4" = 1'-0"

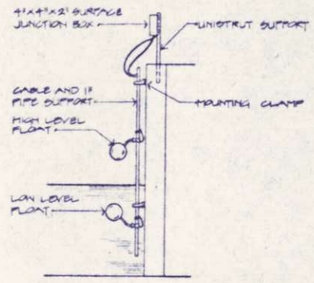


NOTES:
ALL DISCONNECT SWITCHES AND RECEPTACLES ARE TO BE WEATHERPROOF AND MOUNTED ON RAILING. SEE DETAIL.

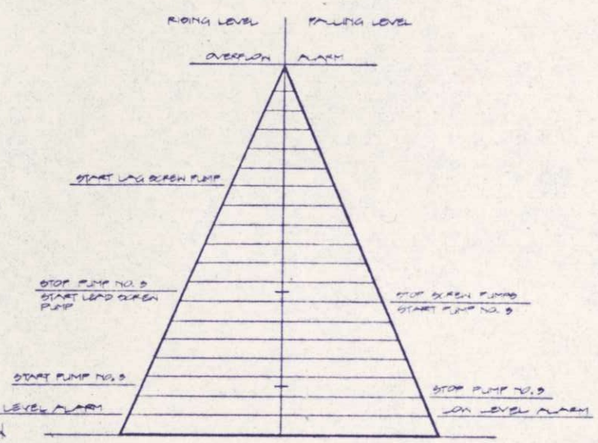
INLET STRUCTURE PLAN SCALE: 1/4" = 1'-0"



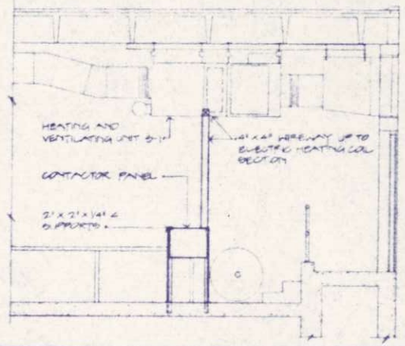
TYPICAL RAILING MOUNTED DEVICE DETAIL
N.T.S.



FLOAT MOUNTING DETAIL
N.T.S.



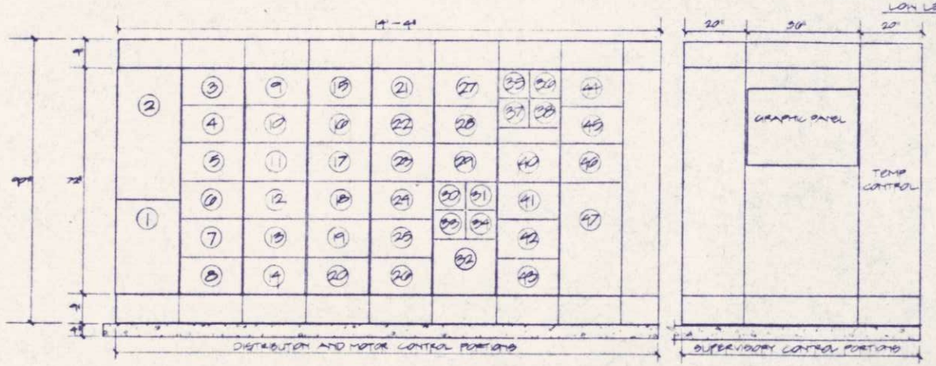
WASTE WATER PUMP OPERATION



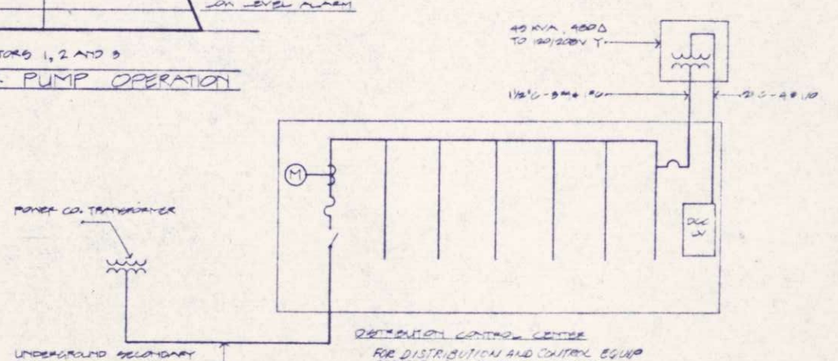
DETAIL OF CONNECTION TO HTG. & VENT. UNIT S-1
SCALE: 1/4" = 1'-0"

NOTES:

1. REFER TO UNIT NUMBER IN DISTRIBUTION CONTROL CENTER SCHEDULE FOR EQUIPMENT ITEM NOS. CIRCLED
2. ARRANGEMENT SHOWN IS TYPICAL AND MAY VARY IN LOCATION AND DIMENSION AS REQ'D BY MFGR. WITH ENGINEER APPROVAL. IF MANUFACTURER DETERMINES THAT ADDITIONAL CUBICLES ARE REQUIRED TO HOUSE EQUIPMENT SPECIFIED THE MANUFACTURER SHALL PROVIDE THOSE REQUIRED CUBICLES



ELEVATION OF DISTRIBUTION AND CONTROL CENTER
SCALE: 1/2" = 1'-0"



SERVICE & DISTRIBUTION ONE LINE DIAGRAM

ERICKSEN ELLISON
AND ASSOCIATES INC
CONSULTING ENGINEERS
SAINT PAUL MINNESOTA

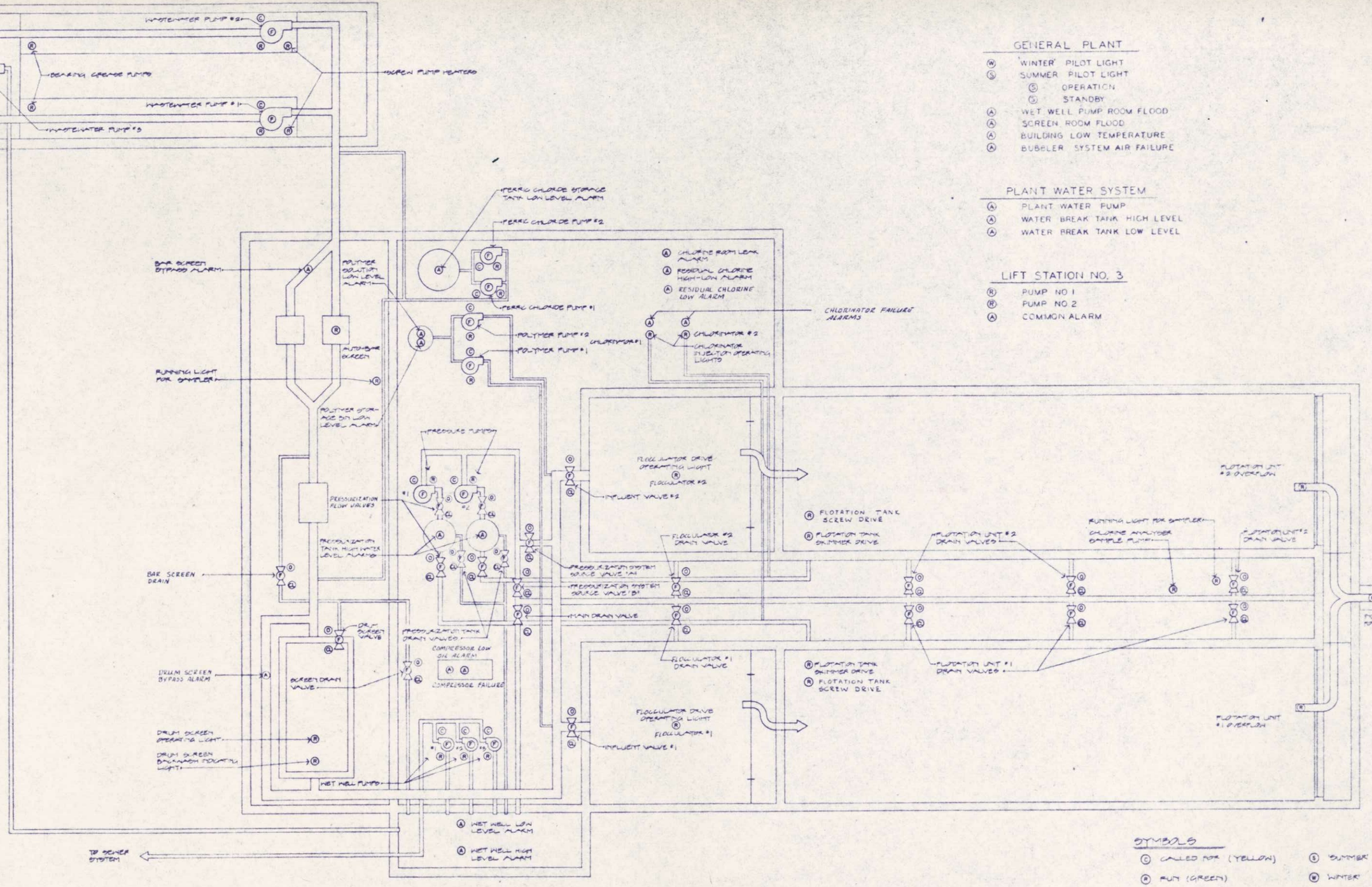
REVISIONS

SURVEY	
DRAWN	EE
DESIGN	EE
APPROVED	DE

BOXESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: SEPTEMBER 2, 1974 DRWN 6886E

BILLINGS PARK CSO PLANT
ELECTRICAL



GENERAL PLANT

- (W) 'WINTER' PILOT LIGHT
- (S) SUMMER PILOT LIGHT
  - (S) OPERATION
  - (S) STANDBY
- (A) WET WELL PUMP ROOM FLOOD
- (A) SCREEN ROOM FLOOD
- (A) BUILDING LOW TEMPERATURE
- (A) BUBBLER SYSTEM AIR FAILURE

PLANT WATER SYSTEM

- (A) PLANT WATER PUMP
- (A) WATER BREAK TANK HIGH LEVEL
- (A) WATER BREAK TANK LOW LEVEL

LIFT STATION NO. 3

- (R) PUMP NO 1
- (R) PUMP NO 2
- (A) COMMON ALARM

CSO PLANT GRAPHIC PANEL

(MAIN PLANT GRAPHIC PANEL SIMILAR)

NOTE
SEE SPECIFICATIONS FOR CONTROL DEVICES & INDICATORS REQUIRED ON MAIN PLANT GRAPHIC PANEL.

SYMBOLS

- (C) CALLED FOR (YELLOW)
- (R) RUN (GREEN)
- (F) FAIL (RED)
- (O) OPEN (GREEN)
- (Q) CLOSED (BLUE)
- (A) ALARM (RED)
- (S) 'SUMMER' (WHITE)
- (W) 'WINTER' (WHITE)

ERICKSEN ELLISON AND ASSOCIATES INC.
CONSULTING ENGINEERS
SAINT PAUL MINNESOTA

Leo P Ellison

REVISIONS

BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE SEPTEMBER 2, 1974 COMM 6888E

BILLINGS PARK CSO PLANT
GRAPHIC PANEL

38

DISTRIBUTION CONTROL CENTER SCHEDULE

BUS & TYPE	MAIN LUGS SIZE	MAIN LUGS LOCA.	MTR. NO.	UNIT #	CIRCUIT BREAKER & STARTERS FRAME SIZE	TRIP RATING	POLES	STARTER SIZE	INT. AMPS
277/480V. 3Ø 4W	800A	BOTTOM	MAIN SWITCH	(1)	800	700 (FUSES)	3	-	30,000
			METER	(2)	-	-	-	-	
			1	(3)	100	50	3	2	
			2	(4)	100	50	3	2	
			3	(5)	50	15	3	1	
			6	(6)	50	15	3	0	
			7	(7)	50	15	3	0	
			8	(8)	50	15	3	0	
			9	(9)	50	15	3	0	
			10	(10)	50	15	3	0	
			11	(11)	50	15	3	0	
			12	(12)	50	15	3	0	
			13	(13)	50	15	3	0	
			14	(14)	100	70	3	2	
			15	(15)	100	70	3	2	
			20	(16)	50	15	3	0	
			21	(17)	50	40	3	2	
			22	(18)	50	15 40	3	1	
			23	(19)	50	15 50	3	1	
			26	(20)	50	15	3	1	
			27	(21)	50	15	3	1	
			28	(22)	50	40	3	2	
			31	(23)	50	15	3	0	
			32	(24)	50	15	3	0	
			33	(25)	50	15	3	0	
			34	(26)	50	15	3	0	
			35	(27)	50	15	3	0	
			36	(28)	50	15	3	0	
			38	(29)	50	15	3	1	
			1	(30)	50	20	2	-	
			2	(31)	50	20	2	-	
			40	(32)	400	300	3	-	
			43	(33)	50	40	3	-	
			44	(34)	50	20	3	-	
			41	(35)	50	20	3	-	
			46	(36)	50	40	3	-	
			45KVA TFMR	(37)	100	70	3	-	
			SPACE	(38)					
			SPACE	(39)					
			4	(40)	50	20	1	0	15,000
			5	(41)	50	20	1	0	
			16	(42)	50	20	1	0	
			17	(43)	40	20	1	0	
			18	(44)	50	20	1	0	
			19	(45)	50	20	1	0	
			39	(46)	50	20	1	0	
			DCC-LV PANEL	(47)	REFER TO PANELBOARD SCHEDULE				
				(48)	SUPERVISORY CONTROL CENTER				

SCHEDULE - LIGHTING FIXTURE TYPES

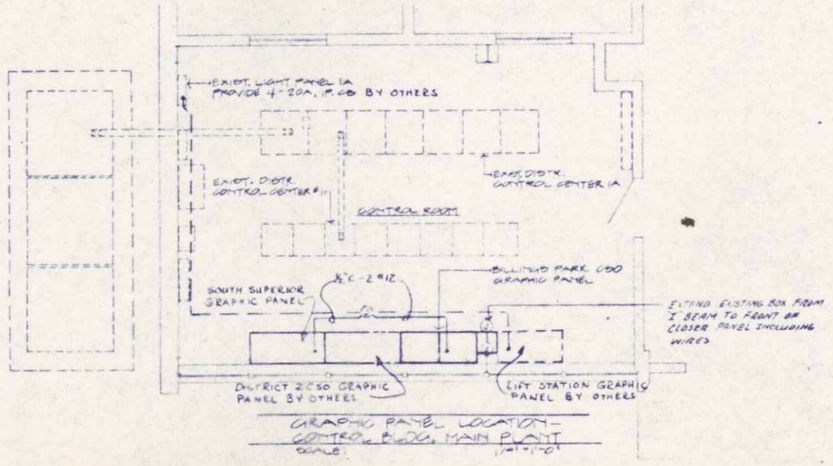
TYPE LETTER	FIXTURE TYPE	FLUOR	INCAND	OTHER	MOUNTING	LAMPS	CONTROL MEDIA (LENS, LOUVER ETC)	MANUFACTURER'S CATALOG NUMBER
A	DRUM		X		SURFACE	2-75W	PRISMATIC	SIM-KAR #V-7150C-V701A - RUSSELL *AOKF #1100 OR EQUAL
B	2x2	X			RECESSED	2-40W U	PRISMATIC	GLOBE ILLUMINATION - DAYBRIGHT *6224-WH-S57-24 # RIB 6252-2U-00, OR EQUAL
C	STAIR		X		WALL	1-100W	PRISMATIC	SIM-KAR #V-5000A-V501A, KENALL *3990, OR EQUAL
D	BRACKET			X	WALL	1-175W DELUXE WHITE MERCURY	PRISMATIC	STONCO #532-175MM-120V BENJAMIN *OWW-175-120, OR EQUAL
E	POST LGT			X	10 FOOT STEEL POLE	1-175W DELUXE WHITE MERCURY	OPAL LEXAN GLOBE	STONCO #OLT18-175NP- 120V-S100, McGraw Edison *GS 1023-PA 4100, OR EQUAL

PANELBOARD SCHEDULE

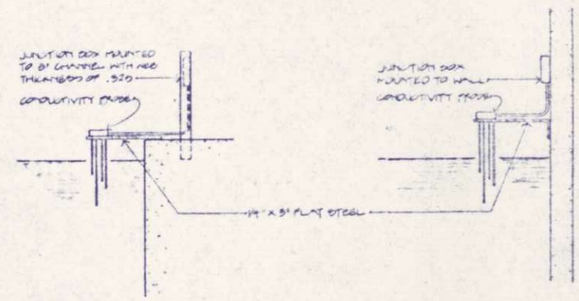
PANEL NO.	BUS AND TYPE	MAIN LUGS SIZE	MAIN LUGS LOCA.	CIRCUIT BREAKERS QUAN.	FRAME SIZE	TRIP RATING	POLES	USE	INT. AMPS RMS. SYM	MOUNTING
DCC-LV	120/208V, 3Ø 4W	150	TOP	1	225	125	3	MAIN	18,000	IN DCC
				23	50	20	1	LTG & RECEPT CCTS		
				4	50	20	1	MTR #4,5,18,19		
				4	50	20	1	MTR #16,17,24,25		
				2	50	20	1	MTR #37,39		
				7	50	20	1	SPARES		
				1	50	20	2	WATER HTR		

GENERAL NOTES

1. CIRCUIT NUMBERS SHOWN ON THESE DRAWINGS SHALL NOT NECESSARILY CORRESPOND TO ACTUAL CIRCUIT BREAKER NUMBERS.
2. VERIFY LOCATION OF ALL MOTORS WITH MECHANICAL PLANS BEFORE ROUGH-IN.
3. ADJUST MOUNTING HEIGHTS OF ALL OUTLETS IF REQUIRED SO AS NOT TO INTERFERE WITH OTHER EQUIPMENT. VERIFY CHANGES WITH ENGINEER.
4. INTERRUPTING RATINGS NOTED IN SCHEDULES SHALL APPLY TO ENTIRE PANELBOARD AND/OR SWITCHBOARD. ALL EQUIPMENT COMPRISING PANELS AND/OR SWITCHBOARDS SHALL EITHER BE RATED FOR SHORT CIRCUIT CURRENT NOTED OR BE SUITABLE PROTECTED FOR THE AVAILABLE SHORT CIRCUIT CURRENT.
5. LETTER THUS: "A" - INDICATES TYPE OF LIGHTING FIXTURES. REFER TO LIGHTING FIXTURE TYPES IN SPECIFICATIONS.



GRAPHIC PANEL LOCATION - CONTROL BLDG. MAIN PLANT
SCALE: 1/4" = 1'-0"



CONDUCTIVITY PROBE MOUNTING DETAIL
N.T.S.

ELECTRICAL SYMBOLS

EEA — E-200

- CEILING OUTLET
- OUTLET FOR, OR CONNECTION TO RECESSED LIGHTING FIXTURE
- WALL OUTLET
- OUTLET MOUNTED BELOW, OR ON MECHANICAL DUCT WORK
- EXIT LIGHT
- DUPLEX CONVENIENCE RECEPT. NEMA 5-15R
- COMBINATION 20A, 120V-208V RECEPT. GROUND. NEMA 5-20R + 6-20R
- DUPLEX CONVENIENCE RECEPT. UPPER HALF SWITCHED NEMA 5-15R
- RANGE RECEPT. 50A, 3P+G, 4W, NEMA 14-50R
- DUPLEX CONVENIENCE RECEPT. NEMA 5-20R
- BRACKET. INDICATES ALL DEVICES ON COMMON PLATE. MIN. OF ONE GANG PER DEVICE
- FLOOR OUTLET
  - F-FLUSH DEVICE
  - P-PEDESTAL MTD. DEVICE
  - C-CONDUIT CONNECTED DEVICE
  - S-STANDPIPE
- SINGLE POLE SWITCH
- 2 DOUBLE POLE SWITCH
- 3 3-WAY SWITCH
- 4 4-WAY SWITCH
- D DOOR SWITCH
- K KEY SWITCH
- SWITCH AND PILOT
- MC MOMENTARY CONTACT SWITCH
- TIME SWITCH (SEE SPECS.)
- DIMMER OR DIMMER CONTROL
- PUSH BUTTON
- BUZZER
- BELL
- TRANSFORMER
- F FIRE ALARM STATION
- F FIRE ALARM HORN
- F FIRE ALARM BELL
- D F FIRE ALARM-DOOR HOLDER
- THERMAL DETECTOR
- FIRE ALARM FLOW SWITCH
- I IONIZATION DETECTOR
- I 3/2 IONIZATION DETECTOR INSTALLED IN DUCT (3/2 = DUCT SIZE)
- CHIME
- C CLOCK OUTLET
- S SPEAKER OUTLET
- SOUND OR INTERCOM 'CALL BACK' SWITCH
- SOUND OR INTERCOM VOLUME CONTROL
- TELEPHONE OUTLET
- M MICROPHONE OUTLET
- PR PRESSURIZATION SYSTEM VALVE
- OA OUTSIDE AIR
- RA RETURN AIR
- HOME RUN
  - 2 (LIGHTING) — PANEL NUMBER
  - 3,4 — CIRCUIT NUMBER
  - * INDICATES WIRE SIZE IF NOT NOTED #12 AWG CONDUCTORS SHALL BE USED

NOTE: ANY CIRCUITS WITHOUT FURTHER DESIGNATION IS A TWO WIRE CIRCUIT. A GREATER NUMBER OF WIRES ARE INDICATED BY CROSS MARKS.

ANY SYMBOL MAY BE FURTHER DESIGNATED BY ONE OR MORE OF THE FOLLOWING SUBSCRIPTS:
- PS. OUTLET WITH PULL SWITCH
- WP WEATHERPROOF OUTLET
- X EXISTING OUTLET (DOES NOT APPLY TO EQUIP. OR DEVICE)
- XC EXISTING OUTLET TO BE REMOVED OR COVERED WITH A BLANK COVER (DOES NOT APPLY TO EQUIP. OR DEVICE)
- A LETTER INDICATES FIXTURE TYPE
- 2 NUMBER INDICATES CIRCUIT NUMBER

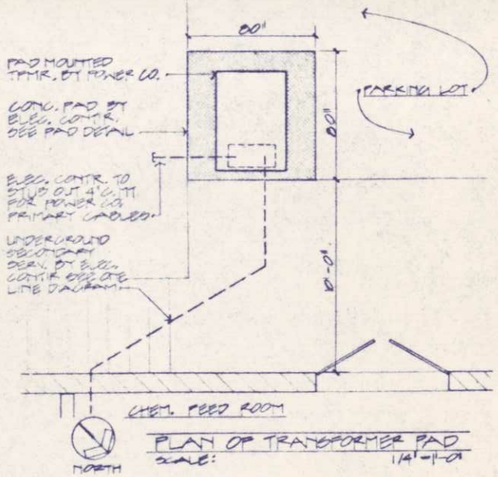
- TERMINAL CABINET
- ANNUNCIATOR
- BRANCH CIRCUIT PANEL (250V OR LESS)
- BRANCH CIRCUIT PANEL (277V/480)
- MAGNETIC MOTOR STARTER
- DISCONNECT SWITCH
- DISCONNECT SWITCH & MAGNETIC MOTOR STARTER IN SAME LOCATION
- M MANUAL MOTOR STARTING SWITCH
- MANUAL MOTOR CONTROL SWITCH
- MANUAL MOTOR CONTROL SWITCH WITH PILOT
- THERMOSTAT
- AUXILIARY EQUIPMENT (AS NOTED)
- JUNCTION BOX
- UNDERFLOOR DUCT
  - LOW POTENTIAL OUTLET
  - HIGH POTENTIAL OUTLET
- AUXILIARY SYSTEM CIRCUITS
- A INDICATES SHIELDED CABLE (SEE SPECS.)
- C INDICATES CABLE ONLY (CONDUIT NOT REQ'D)
- BRANCH CIRCUIT (CEILING OR WALL)
- BRANCH CIRCUIT (FLOOR)
- EXISTING CONDUIT
- EXISTING CONDUIT, CONDUCTORS REMOVED
- EXISTING CONDUIT + NEW CONDUCTORS
- PLUGSTRIP - OUTLET SPACING AS SHOWN OR SPECIFIED
- INDICATES NOTE ON PLAN
- (2) EQUIPMENT OR APPLIANCE (NO. REFERS TO SCH.)
- (3) MOTOR (NO. REFERS TO SCHEDULE)
- ID INTERCOMMUNICATION STATION OUTLET
- AIR OPERATED VALVE WITH ELECTRIC SOLENOID
- N NURSES CALL STATION (LETTER INDICATES TYPE OF STATION)
- NURSES CALL CORRIDOR DOME LIGHT-TWO CCT
- P PROJECTOR OUTLET
- TV TELEVISION OUTLET
- IV INFLUENT VALVE
- DV DRAIN VALVE

ERICKSEN ELLISON AND ASSOCIATES INC. CONSULTING ENGINEERS SAINT PAUL MINNESOTA

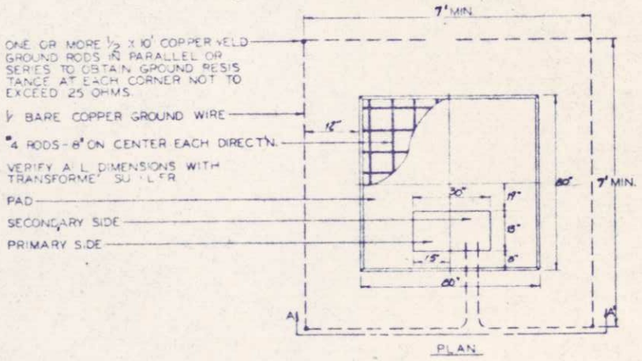
BONESTROO, ROSENE, ANDERLIK & ASSOC., INC. ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN — DATE: SEPTEMBER 2, 1975

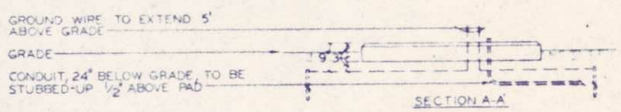
BILLINGS PARK CSO PLANT — ELECTRICAL



PLAN OF TRANSFORMER PAD
SCALE: 1/4"=1'-0"



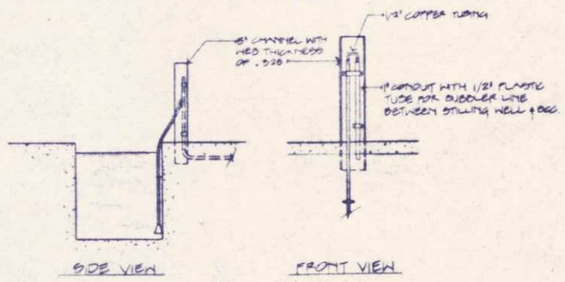
PLAN



SECTION A-A

TRANSFORMER PAD DETAIL

EEA E-212



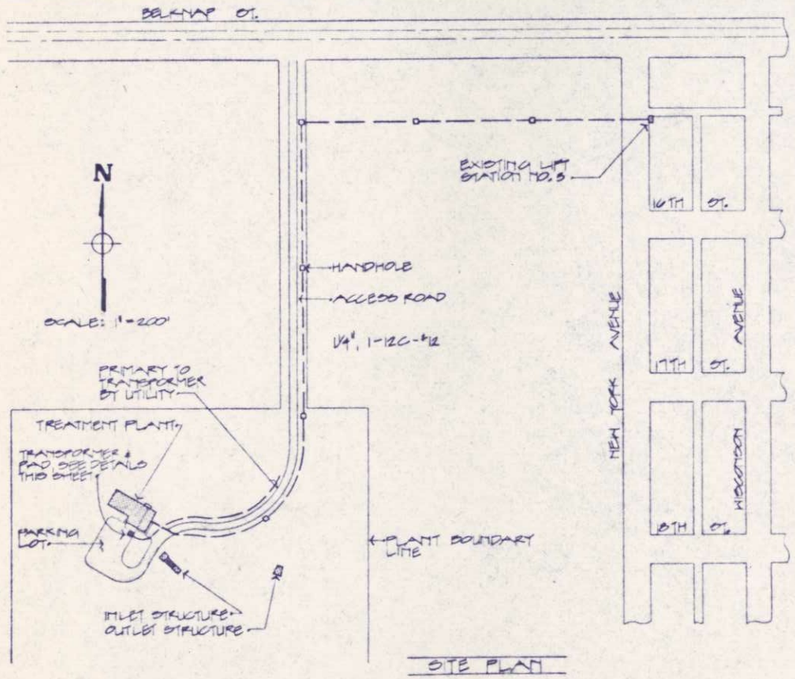
BUBBLER LINE MOUNTING DETAIL

N.T.S.

37	EXHAUST FAN E-7	1/4	120-1	WET WELL	MS+P	DCC	NONE	-	TOGGLE SW.
38	HV UNIT S-1	5	460-3	OPERATING LEVEL	SEE SPEC STAT	OPERATING LEVEL	1	DCC	30A.3P.NF
39	HV UNIT S-2	1/3	120-1	CONTROL RM	SEE SPEC (2)	CONTROL	RM 0	DCC	TOGGLE SW.
40	HV UNIT S-1 COIL	200KW	460-3	OPERATING LEVEL	10 STAGE STEP CONTROLLER	SCC	-	-	-
41	HV UNIT S-2 COIL	6KW	460-3	CONTROL RM	3 STAGE STEP CONTROLLER	SCC	-	-	-
42	MOTORIZED DAMPER	-	120-1	CHLORINE RM	INTERLOCK WITH MTR #35	DCC	NONE	-	TOGGLE SW.
43	ELECT. UNIT HTR.	20KW	460-3	CHLORINE RM	REMOTE STAT.	NEAR UNIT	NONE	-	-
44	ELECT. UNIT HTR.	7.5KW	460-3	OPERATING LEVEL	STAT.	NEAR UNIT	NONE	-	-
45	MOTORIZED DAMPER	-	120-1	OPERATING LEVEL	INTERLOCK WITH MTR #36	DCC	NONE	-	TOGGLE SW.
46	ELECT. UNIT HTR.	20KW	460-3	OPERATING LEVEL	STAT. REMOTE	NEAR UNIT	NONE	-	-
47	ELECT. WATER HTR.	1500KW	208-1	OPERATING LEVEL	BY MFGR.	AT UNIT	-	-	-

MOTOR NOTES:

1. PROVIDE A WEATHERPROOF START STOP STATION AT OUTSIDE ENTRANCE TO CHLORINE ROOM TO BY-PASS TIMER AND START EXHAUST FAN. FURNISH, INSTALL AND CONNECT A TIMER INTERMATIC #C8865, TORK, OR EQUAL TO AUTOMATICALLY CONTROL EXHAUST FAN. EXHAUST FAN SHALL BE INTERLOCKED WITH MOTORIZED LOUVER.
2. ELECTRICAL CONTRACTOR SHALL MAKE CONNECTION TO OUTSIDE AIR AND RETURN AIR DAMPERS, END SWITCH, AIR FLOW SWITCH, HI AND LOW LIMITS, THREE STAGE STEP CONTROLLER AND STAT.



SITE PLAN

MOTOR, APPLIANCE AND EQUIPMENT SCHEDULE

NUMBER	EQUIPMENT	SIZE	VOLT & Ø	LOCA.	CONTROL	CONT. LOCA.	STARTER SIZE	STARTER LOCA.	DISC SIZE & TYPE
1	WASTEWATER PUMP NO 1	20	460-3	INLET STRUCTURE	SEE SPECS	DCC	2	DCC	60A.3P.NF(WP)
2	WASTEWATER PUMP NO 2	20	460-3	INLET STRUCTURE	SEE SPECS	DCC	2	DCC	60A.3P.NF(WP)
3	WASTEWATER PUMP NO 3	3	460-3	INLET STRUCTURE	SEE SPECS	DCC	1	DCC	30A.3P.NF(WP)
4	GREASE PUMP NO 1	1/3	120-1	INLET STRUCTURE	SEE SPECS	DCC	0	DCC	TOGGLE SW(WP)
5	GREASE PUMP NO 2	1/3	120-1	INLET STRUCTURE	SEE SPECS	DCC	0	DCC	TOGGLE SW(WP)
6	BAR SCREEN RAKE	1	460-3	SCREEN ROOM	SEE SPECS	DCC	0	DCC	30A.3P.NF(WP)
7	DRUM SCREEN	2	460-3	SCREEN ROOM	SEE SPECS	DCC	0	DCC	30A.3P.NF(WP)
8	FLOCULATOR NO 1 DRIVE	2	460-3	OPERATING LEVEL	SEE SPECS	DCC	0	DCC	30A.3P.NF
9	SKIMMER NO 1 DRIVE	2	460-3	OPERATING LEVEL	SEE SPECS	DCC	0	DCC	30A.3P.NF
10	SCREW NO 1 DRIVE	1	460-3	OPERATING LEVEL	SEE SPECS	DCC	0	DCC	30A.3P.NF
11	FLOCULATOR NO 2 DRIVE	2	460-3	OPERATING LEVEL	SEE SPECS	DCC	0	DCC	30A.3P.NF
12	SKIMMER NO 2 DRIVE	2	460-3	OPERATING LEVEL	SEE SPECS	DCC	0	DCC	30A.3P.NF
13	SCREW NO 2 DRIVE	1	460-3	OPERATING LEVEL	SEE SPECS	DCC	0	DCC	30A.3P.NF
14	PRESSURIZATION PUMP NO 1	25	460-3	PUMP ROOM	SEE SPECS	DCC	2	DCC	60A.3P.NF
15	PRESSURIZATION PUMP NO 2	25	460-3	PUMP ROOM	SEE SPECS	DCC	2	DCC	60A.3P.NF
16	FERRIC CHLORIDE PUMP NO 1	1/4	120-1	CHEMICAL ROOM	SEE SPECS	DCC	0	DCC	TOGGLE SW.
17	FERRIC CHLORIDE PUMP NO 2	1/4	120-1	CHEMICAL ROOM	SEE SPECS	DCC	0	DCC	TOGGLE SW.
18	POLYMER PUMP NO 1	1/4	120-1	CHEMICAL ROOM	SEE SPECS	DCC	0	DCC	TOGGLE SW.
19	POLYMER PUMP NO 2	1/4	120-1	CHEMICAL ROOM	SEE SPECS	DCC	0	DCC	TOGGLE SW.
20	CHLORINE ANALYSER SAMPLE PUMP	3/4	460-3	OPERATING LEVEL	SEE SPECS	DCC	0	DCC	30A.3P.NF
21	POTABLE WATER PUMP	15	460-3	OPERATING LEVEL	SEE SPECS	DCC	2	DCC	60A.3P.NF
22	AIR COMPRESSOR NO. 1	7½	460-3	PUMP ROOM	SEE SPECS	ON COMPRESSOR	1	DCC	60A.3P.NF
23	AIR COMPRESSOR NO. 2	7½	460-3	PUMP ROOM	SEE SPECS	ON COMPRESSOR	1	DCC	60A.3P.NF
24	AIR DRYER	1/5	120-1	PUMP ROOM	PRESS SW.	ON DRYER	NONE	-	-
25	SUMP PUMP	1/2	120-1	PUMP ROOM	PRESS SW.	ON PUMP	NONE	-	MS
26	WET WELL PUMP NO. 1	5	460-3	PUMP ROOM	SEE SPECS	DCC	1	DCC	30A.3P.NF
27	WET WELL PUMP NO. 2	5	460-3	PUMP ROOM	SEE SPECS	DCC	1	DCC	30A.3P.NF
28	WET WELL PUMP NO. 3	15	460-3	PUMP ROOM	SEE SPECS	DCC	2	DCC	60A.3P.NF
29	REFRIGERATED SAMPLER	-	120-1	OPERATING LEVEL	SEE SPECS	DCC	0	DCC	-
30	REFRIGERATED SAMPLER	-	120-1	SCREEN RM.	SEE SPECS	DCC	0	DCC	-
31	EXHAUST FAN E-1	1/2	460-3	OPERATING LEVEL	SEE SPECS INTERLOCK W/MTR. 38	DCC	0	DCC	30A.3P.NF
32	EXHAUST FAN E-2	1/2	460-3	OPERATING LEVEL	SEE SPECS INTERLOCK W/MTR. 38	DCC	0	DCC	30A.3P.NF
33	EXHAUST FAN E-3	1/2	460-3	OPERATING LEVEL	SEE SPECS INTERLOCK W/MTR. 38	DCC	0	DCC	30A.3P.NF
34	EXHAUST FAN E-4	1/2	460-3	OPERATING LEVEL	SEE SPECS INTERLOCK W/MTR. 38	DCC	0	DCC	30A.3P.NF
35	CHLORINE ROOM EXHAUST E-5	3/4	460-3	OPERATING LEVEL	TIMER (1)	DCC	0	DCC	30A.3P.NF
36	SCREEN ROOM EXHAUST E-6	1/2	460-3	OPERATING LEVEL	START STOP & P	DCC	0	DCC	30A.3P.NF

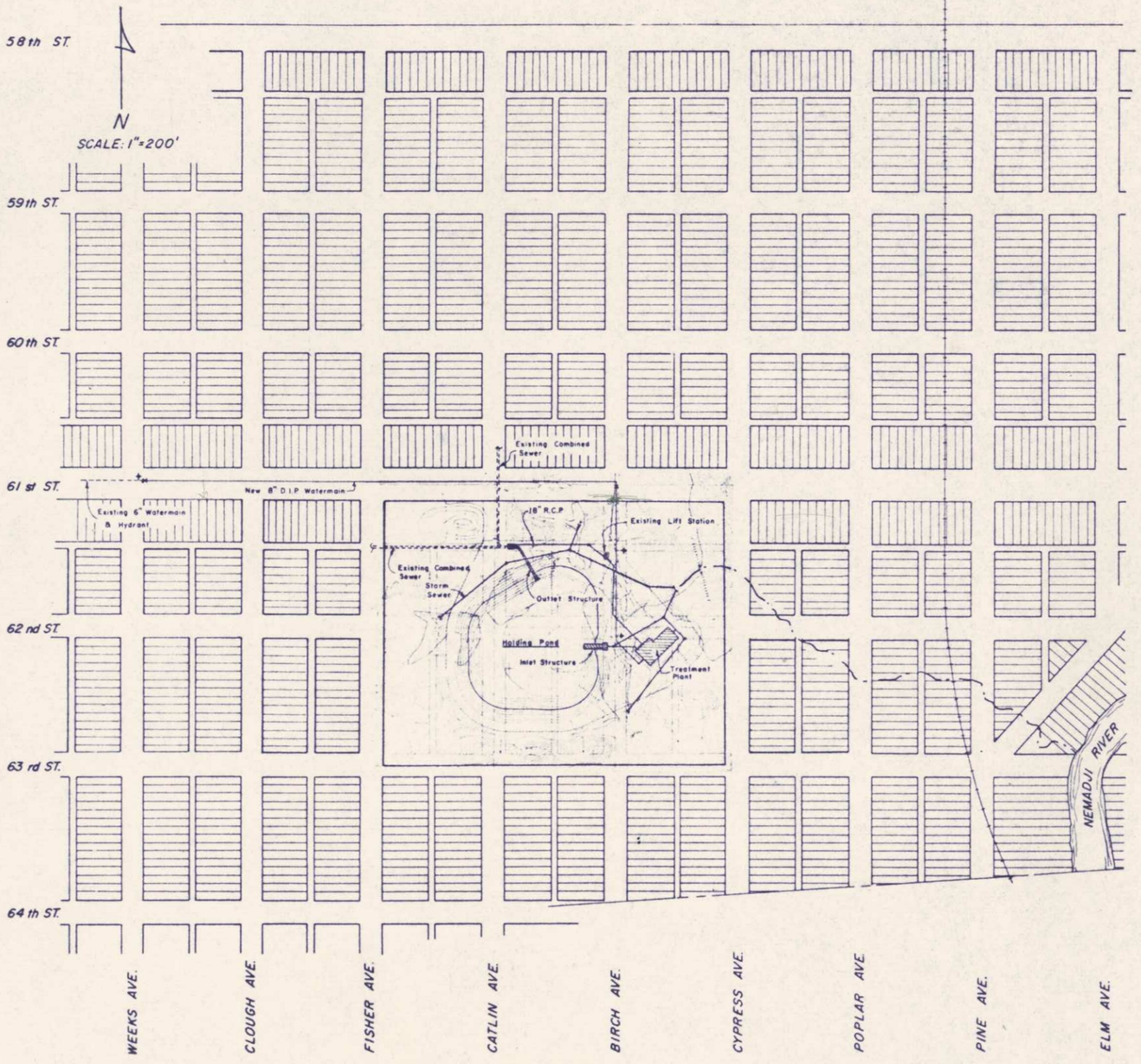
ERICKSEN ELLISON AND ASSOCIATES INC
CONSULTING ENGINEERS
SAINT PAUL MINNESOTA

Leo P. Ellison

BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE SEPTEMBER 2, 1974

BILLINGS PARK CSO PLANT
ELECTRICAL



AREA PLAN

SOUTH SUPERIOR-DISTRICT 5

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SEE SHEET 2 FOR INDEX TO BILLINGS PARK PLANT

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.
DATE 2/16/76 REG. NO E12727 Richard E. Fowler

SURVEY		REVISIONS
DRAWN	RT	
DESIGN		
APPROVED		

BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: FEB. 16, 1976 COMM 6888E

SOUTH SUPERIOR CSO PLANT

INDEX SHEET

SHEET 41 OF 78

℄ CYPRESS AVE.

150.04' | 200.08' | 350.12'

50' 50' 20' 35' 35' 35' 35'

Scale: 1" = 30'

MH #2
Rim: 654.5
Inv: 644.75 E.W
644.90 S

MH #3
Rim: 655.00
Inv. 645.13-18"
645.23-24"

Chain link fence

Place 30 cu yd grouted rip rap at aprons, extend downstream

36" R.C.P. Cl 4 @ 1.0%. Place 36" apron with trash guard Inv. 639.00

36" R.C.P apron with trash guard Inv. 639.0

80'-36" R.C.P, Cl 4 @ 1.0%

4' Gate

MH #1
Rim: 654.3
Inv. 639.93-36"
644.13-24" W
645.50 24" E

52'-24" R.C.P. Cl 4 @ 2.4%

10'-24" R.C.P. Cl 4 @ 33%

MH # 8
Rim: 644.0
Inv. 640.73

18'-24" R.C.P. Cl 4 @ 22.4%

MH #4
Rim: 654.1
Inv. 639.80 E.
649.00 W

265'-36" R.C.P. Cl 4 @ 2.4%

24" R.C.P. Cl 4 @ 2.0% grade

4" gate valve
4" C.I.P., 7' cover

280'-18" R.C.P. Cl 4 @ 44%

18" R.C.P apron with trash guard Inv. 638.85 Place 5 cu yds grouted riprap

Note:
Ferric chloride and chlorine solution lines required from building to inlet structure

End bituminous surfacing

8"-6" tee, 6" D.I.P. & hydrant

8"-90° bend & 8" G.V. & box

Power poles to be relocated by others

8" D.I.P. water main 7' cover

16' gate

BIRCH AVE

0+00 1+00 2+00 3+00 3+70 4+00 5+00 6+00 7+00 8+00

℄ BASE LINE

6" x 6" x 6" tee, 6" D.I.P. & hydrant, 6" x 4" reducer & 4" C.I.P. to plant

85'-24" RCP Cl. 4 @ 2.4%

¾" Copper
5' Yard hydrant

16' gate

Cut 18" R.C.P. into existing lift station Inv. 650.20

60'-18" RCP Cl. 4 @ 0.12%

MH # 7
Rim: 662.5
Inv. 650.26

Remove existing outlet structure & plug 18" line with concrete

8" D.I.P. water main to Weeks Ave.

Existing gravel road

MH # 5
Rim 662.6
Inv. 653.14-34"
654.86-18"

80'-18 R.C.P. Cl. 4 with trash guard Inv. 658.80 Place 10cy grouted riprap at inlet

Remove existing 12" C.M.P.

Inlet Structure

135'

190' Rad.

191'

190' Rad.

Remove existing outlet structure and plug end of 60" RCP with concrete

300.03'

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

DATE 2/16/76 REG. NO. E12927 Richard E. Linsen

SURVEY	
DRAWN	EWF
DESIGN	EWF
APPROV'D	REF

REVISIONS

BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: FEB. 16, 1976 COMM. 6888 E

SOUTH SUPERIOR CSO PLANT

SITE PLAN - 1

42/78

Scale: 1" = 30'

Existing 12" RCP to be removed

Existing 60" RCP to be abandoned

200'-36" RCP, Cl 3 @ 0.8%

New 18" RCP 235', Cl 4 @ 0.12%

Outlet Structure Inv. 648.00

105'-60" RCP, Cl 4 @ 0.50%

5-60" 3 R. Bends Inv. 648.58

Inv. 650.54

MH-6 Rim 668.2 Invert 656.90

Existing 60" RCP Combined Sewer

Modify existing overflow structure See Sht. 54

16' Gate

158'

Existing 5'-6" Brick Combined Sewer

260'-36" RCP, Cl 3 @ 0.8%

Proposed 8" DIP watermain to Weeks Ave. - See sht. 41 & 54

℄ CATLIN AVE.

℄ 61 ST.

100 Radius

191'

86.60'

150'

104.46'

100' Radius

100' Radius

Chain link fence

36" RCP apron w/trash guard Place 10 c.y. grouted rip-rap. Inv. Elev. 659.04

200.08

350.12

℄ 62 ND ST.

℄ 63 RD ST.

℄ FISHER AVE.

FOUNDATION PLANTINGS

Scale, 1" = 30'

Treatment Plant Building

Bit. paved parking lot

Concrete sidewalk

Type #8

4 Type #7, 12' o.c.

Type #6

3-Type #6 8' o.c.

Type #5

TYPE No.	No. REQ'D.	IDENTIFICATION	SIZE
#5	2	Green Ash	3" dia.
#6	4	Spreading Yew	24"-30" spread
#7	4	Globe Yew	24"-30" spread
#8	2	Upright Yew	3' to 3½' high

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

DATE 2/16/76 REG. NO. E-12,927 Richard E. Turner

SURVEY
DRAWN RWF
DES-GN RWF
APPROV'D REF

REVISIONS

BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: FEB. 16, 1976 GDMM 6888 E

SOUTH SUPERIOR CSO PLANT

SITE PLAN - 2

SHEET 43/78

N scale: 1"=60'

FISHER AVE. | CATLIN AVE. | BIRCH AVE. | CYPRESS AVE.

61ST ST. | 62ND ST. | 63RD ST.

Proposed aggregate surfaced driveway

16' Gate

6' chain link fence

Existing overflow structure

New overflow structure

Outlet structure

Equipment entranceway

Existing Lift Station #5

Contractor to plant spruce trees as shown - Spacing same as that shown on Sht 8. See Sht. 43 for foundation & other plantings

Existing tree line - Contractor shall protect all trees except those specifically tagged for removal

BORING #2 | BORING #3 | BORING #4 | BORING #8

Guard posts

Location posts

Bituminous surfaced access road & parking lot

Sod

4' Gate

4' sidewalk

Treatment Plant

Remove trees to 10' outside of fence-line. Protect all others

Remove existing trees to 10' outside of fence line. Protect others

6" thick surfacing as each side of inlet & outlet structures and for 20' wide equipment entranceway

Inlet structure

Bituminous surfacing in pond & up side slopes as shown by shading

Baseline

FENCING AND PLANTING PLAN

Scale: 1"=60'

4:1 slope unless shown otherwise

3" Bituminous surfacing

5" Bituminous base course to be added where 8" side slopes are noted

8" SIDE SLOPE SURFACE

4:1 slope unless shown otherwise

3" bituminous surface course to elev. 656.0 typical for entire pond except where 8" side slopes are noted

3" Bituminous surface

5" Bituminous base

Typical surfacing for entire pond bottom

3" SIDE SLOPE SURFACE

Top structure 666.50

Grade elev. at top of structure 665.25

Lower portion of structure

656.0

653.0

2:1 slope

8" bituminous surfacing 15' each side of structure

Pond bottom at inlet structure 642.0

3:1 slope

SECTION AT INLET STRUCTURE

Scale: 1"=10'

Top rail

Extension arm with 3 strands barbed wire

Posts, see Specs

4' wide galv. fabric, see Specs

Concrete base, slope top to drain

3'-0"

12"

FENCE DETAIL

Scale: 1/2"=1'-0"

8" bituminous surface over eq't. entranceway

12" dia. treated wood post

3" bit. surface over parking lot

6" base

6" sub-base

3'-0"

3'-0"

GUARD POST DETAIL

Scale: 1/2"=1'-0"

8" bituminous surface

Steel post cap 1" above bituminous surface

Concrete base, slope top away from post

3'-0"

LOCATION POST DETAIL

Scale: 1/2"=1'-0"

6' | 10' | 10' | 6'

3" Bituminous surfacing where shown on drawing

4:1 | 4:1 Back slope

Parking lots shall receive same surfacing, base & sub-base section as roadway

6" Base

6" SUB-base

2'

ROADWAY DETAIL

Notes:

1. Topsoil shall be stripped from all areas to be excavated or to receive fill. Topsoil shall be stockpiled and re-spread at completion of final grading over all slopes 4:1 or greater. Excess topsoil shall be spread evenly within fenced area.
2. All areas except those receiving aggregate base, bituminous surfacing, or sod, and disturbed during construction, shall be seeded and mulched. Any packed area shall be disced and dragged prior to seeding. Mulch shall be disk crimped.
3. The entire pond bottom and side slopes up to elev. 656.0 shall receive bituminous surfacing as detailed above. Surfacing at inlet structure & equip. entranceway to be placed above elev. 656.0 as detailed above.
4. Remove only those trees specifically tagged. All others shall be fully protected.

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

DATE 2/16/78 REG. NO. E12927 Richard E. Turner

SURVEY | DRAWN | DES-SPR | APPROV'D

REVISIONS

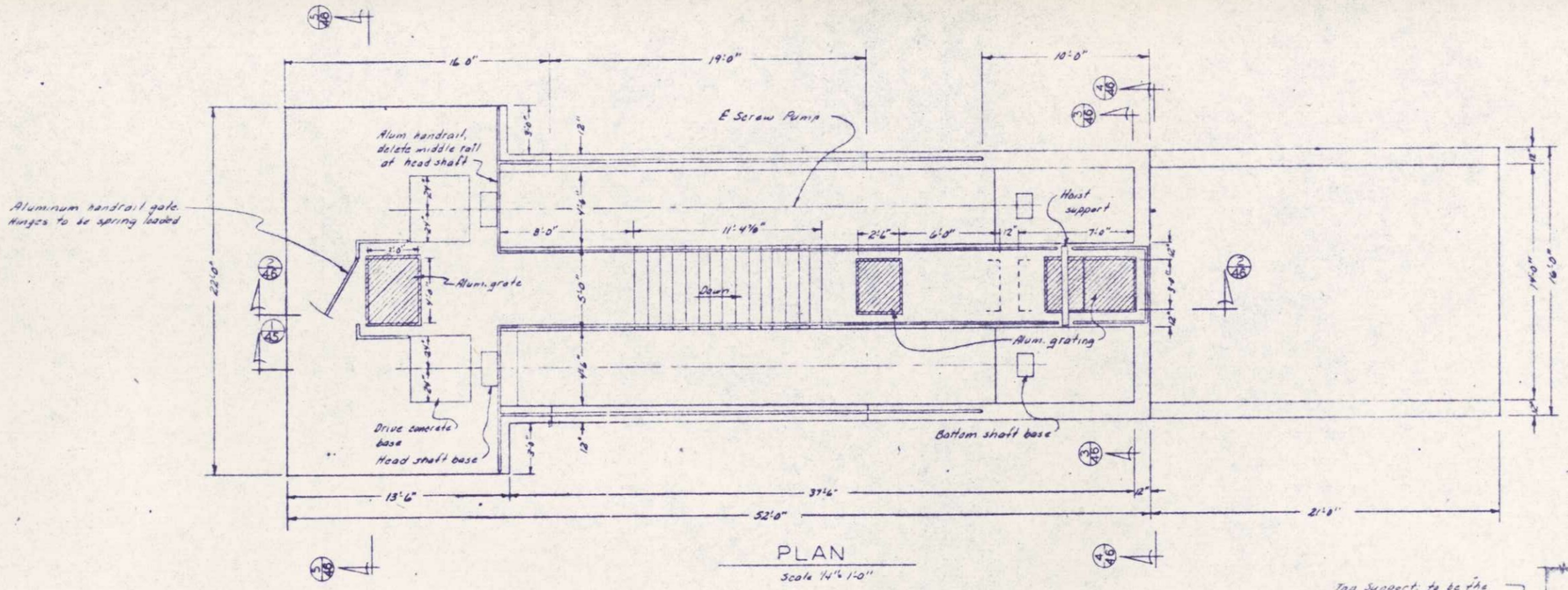
BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN

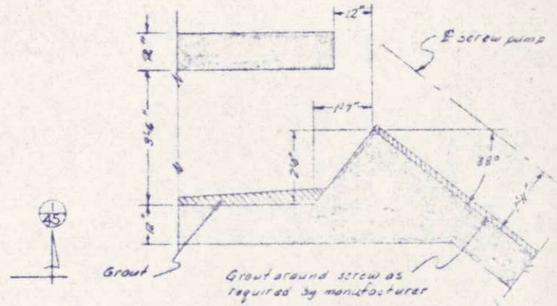
DATE: FEB. 16, 1978 COMM 6888 E

SOUTH SUPERIOR CSO PLANT
FENCING & PLANTING PLAN

SHEET 44/78

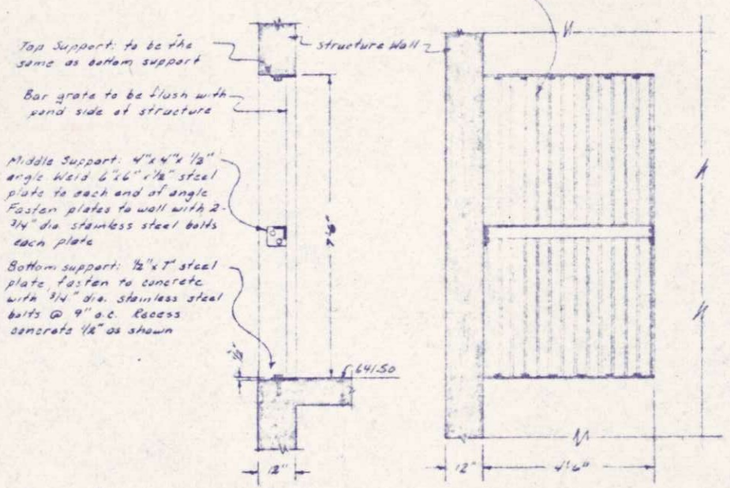


PLAN
Scale ¼"=1'-0"

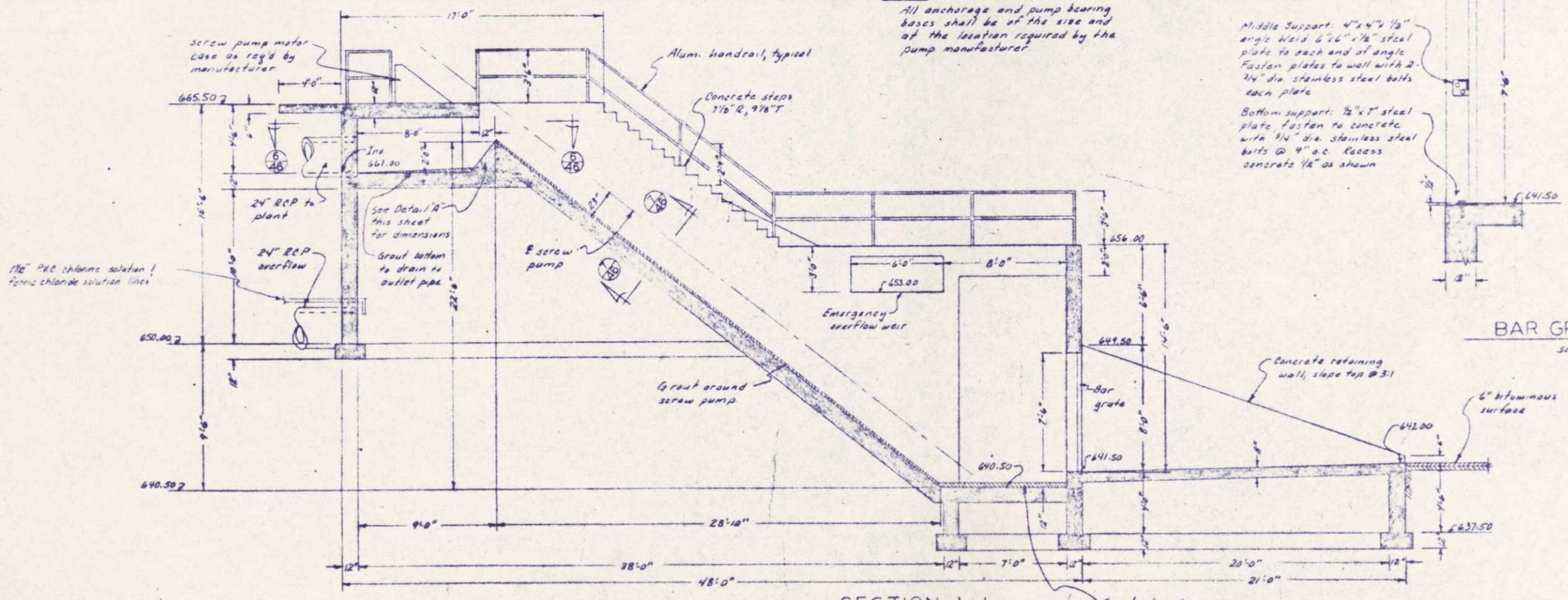


Note
Actual shape and dimensions of screw pump discharge beach shall be as required by the pump mfgr

DETAIL A
Scale ½"=1'-0"



BAR GRATE DETAIL
Scale ½"=1'-0"



SECTION 1-1
¼"=1'-0"

Note:
All anchorage and pump bearing bases shall be of the size and at the location required by the pump manufacturer

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

DATE 5/10/76 REG. NO. E-11927 Richard E. Young

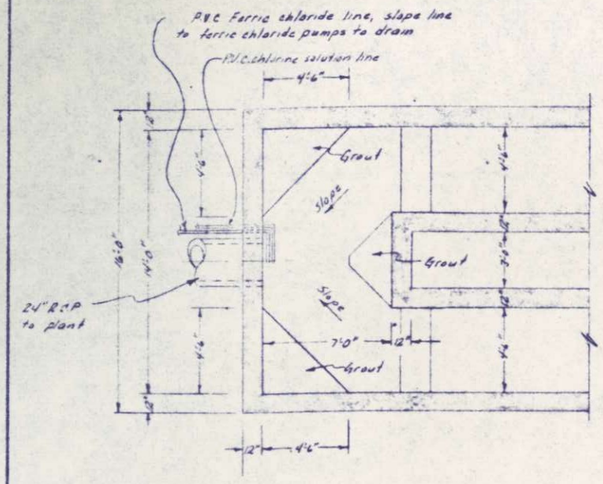
SURVEY		
DRAWN	RAP	
DESIGN	RAP	
APPROVED	REY	

REVISIONS 7/13/76 Add new sheet sequence information

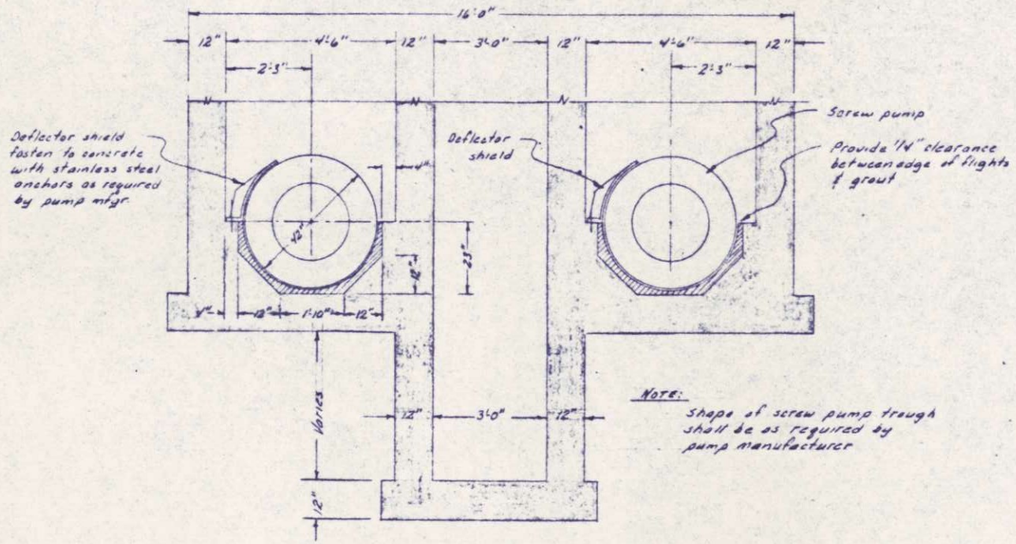
BORESTEEL, BOSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: FEB. 18, 1976 DRAWN GSB/EF

SOUTH SUPERIOR CSO PLANT
INLET STRUCTURE

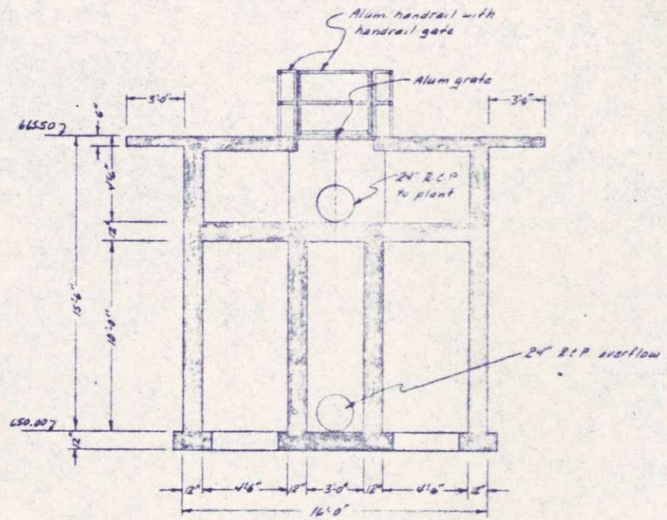


SECTION 6 - 6
Scale: 1/4" = 1'-0"

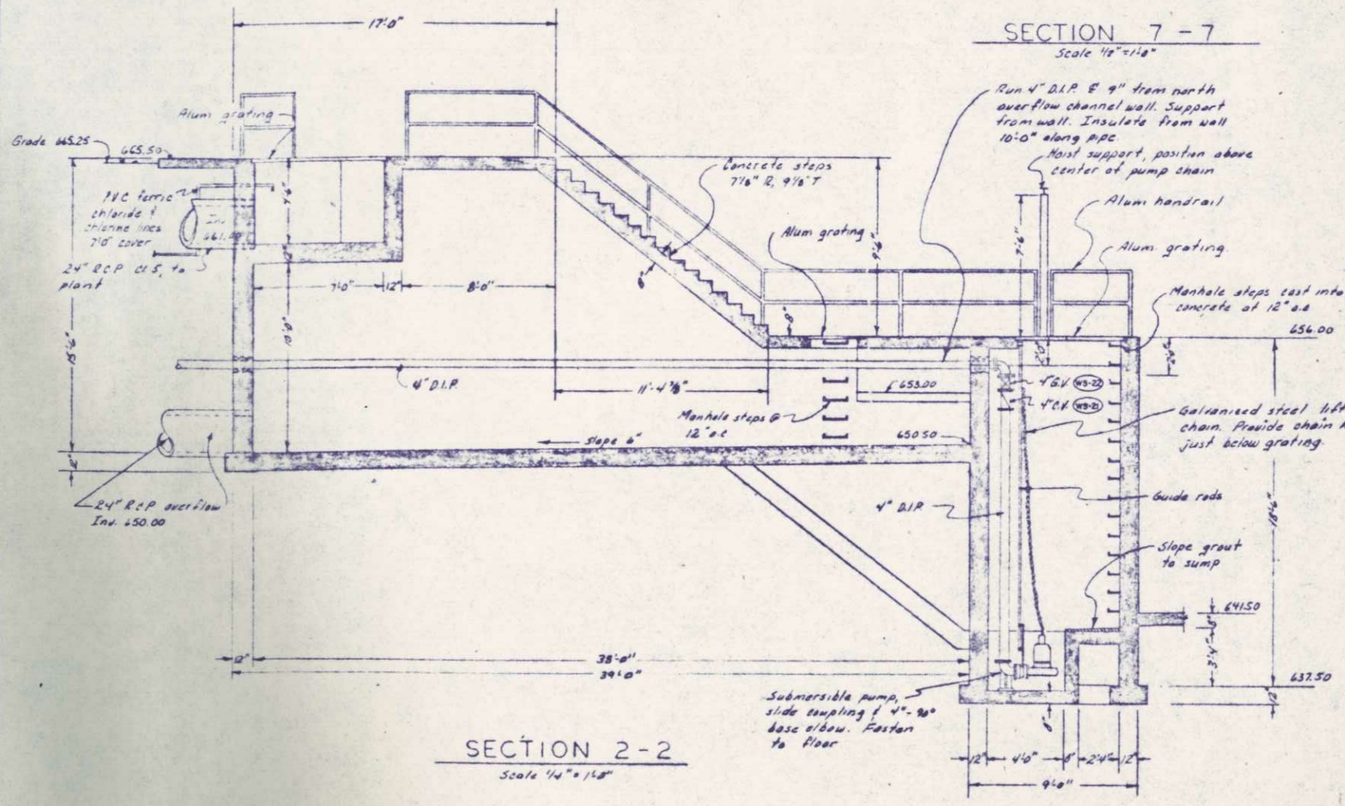


Note:
Shape of screw pump trough shall be as required by pump manufacturer

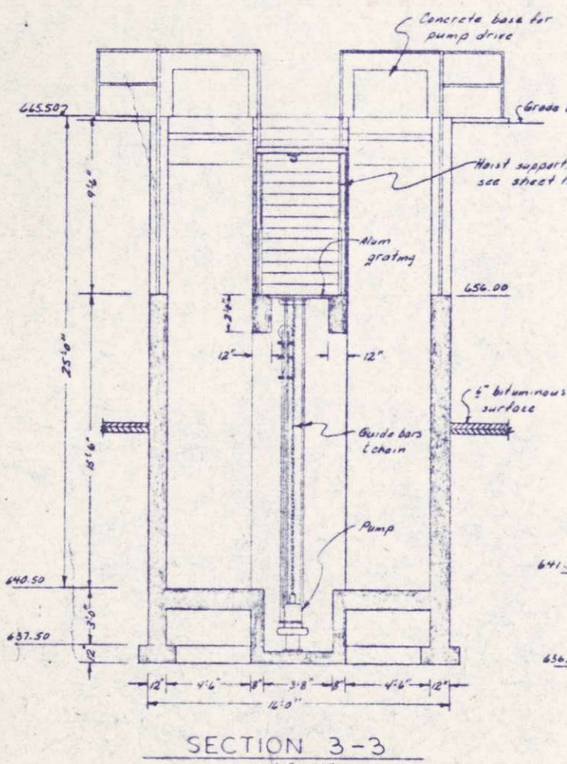
SECTION 7 - 7
Scale 1/2" = 1'-0"



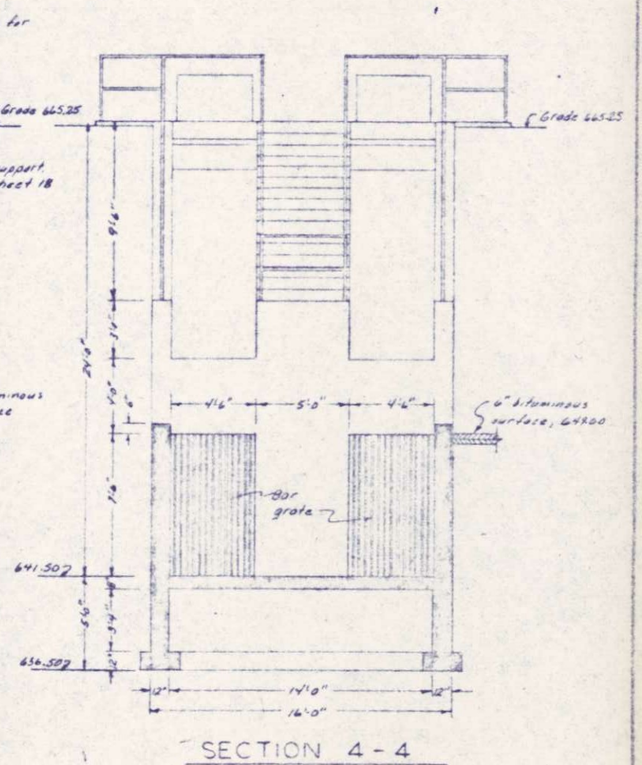
SECTION 5 - 5
Scale 1/4" = 1'-0"



SECTION 2 - 2
Scale 1/4" = 1'-0"



SECTION 3 - 3
Scale 1/4" = 1'-0"



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

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN
DATE 8/16/76 REG. NO. E-13937 Richard E. Turner

SURVEY	
DRAWN	RWF
DESIGN	RWF
APPROVED	RWF

REVISIONS

BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: FEB 16, 1976 6688 E

SOUTH SUPERIOR CSO PLANT
INLET STRUCTURE

NOTE:
See sheet 53 for sidewalk around building

FLOCCULATOR NO 2

FLOCCULATOR NO 1

FLOTATION TANK NO 2

FLOTATION TANK NO 1

Auto Bar Screen

Hand-raked bar screen

Ferric Chloride Tank

2" PVC ferric chloride tank fill line, slope towards tank

2" PVC screened vent

2" Ferric chloride line to inlet structure

Pumps on concrete base

Concrete curb

Ferric chloride line to flume

Polymer mix tank

Polymer feed pumps

Emergency eye wash & shower

Roof ladder

Door # 1
3'-6" x 3'-6"
double doors

Door # 6, 16'-0"
8'-0" garage door

Platform scale in pit

Switch over

Chlorinator & Controls

1" H.B.

Pressure reducing valves 2-1"

Ejectors

Distribution Panel

Door # 5
3'-0" x 7'-0" door

Gravity vent for chlorinators & reducing valves, insect screen required

Safety chain

Sampler

Alum grating, Typical

Door # 4
3'-0" x 3'-6"
double doors

2" PVC ferric chloride line

Alum grating

Parshall flume

3" City water

4" high curb with alum handrail

Concrete stairs 7 @ 7", 10" T.G.

Central Panels

12'-8" Storage Cabinet

File Unit

Desk Unit

Insulate water line over panel

Cupboard Unit

Sink Unit

Drawer Unit

4" copper

Water heater

Door #7
3'-0" x 7'-0"

Aluminum hatch with double leaf

6" high curb with alum handrail

Walkway

2-1" PVC chlorine solution lines, support from wall

Concrete steps 6" @ 12" T

Concrete step at end of bridge, 6" @ 12" T

Alum handrail typical

Alum. floor grating over skimmings sump.

Screw conveyor drive provide drive guard. Provide 4" concrete base under drive

Skimmer supports

Sample pump with 4" concrete base

Chlorine analyzer, 4" concrete base under analyzer

Note:
All sampling pipe to be galvanized

1" steel pipe

2" steel pipe to effluent box stub up 6" above floor. Pipe shall have welded fittings, all bends to be long radius

Aluminum handrail

3'-0" x 3'-0" access opening with alum grating

6"-6", 8" curb

Door # 3
3'-0" x 7'-0"

3'-8" x 3'-0" access opening with alum grating

Skimmer tail shaft

Steel bridge by flocculator mfgr.

Skimmer Drive

Flocculator Drive

Fiberglass Weir Plate

Alum. handrail

Screw Conveyor

Skimmers

Skimmer head shaft

Safety chain

Typical pilaster, see sheets

Skimmer supports

Drum screen drive mount on wall

Break tank

Pressure pump 4" conc base

2" steel pipe

3" Water Meter

2½" steel

1" copper potable water to control room & eye wash

Note:
All steel water pipe to be galvanized

6" in-fl. gate valve with reducer operator

Overflow weir

Door # 2
3'-6" x 7'-0"

3'-6" x 3'-0" cast iron access hatch

Alum grating

PLANT FLOOR PLAN

Scale 1/4" = 1'-0"

SURVEY	
DRAWN	RWF
DESIGN	RWF
APPROVED	RWF

REVISIONS

BORESTROO, ROSENE, AHLERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: FEB. 16, 1976 DRAWN 6585 E

SOUTH SUPERIOR CSO PLANT

PLANT FLOOR PLAN

Note
All steel sampling piping to be galvanized

Chemical Feed Room

Chlorine Room

Poured concrete footing walls

1½" P.V.C. chlorine solution line to inlet structure overflow

6" D.I.P. forcemain to Lift Station No. 1

1" Copper

1" H.B.

Concrete base under pressurization pump

Slide plates

Slide plate

Grout

4" flare section

4" drain line under floor

D.I.P.

Fiberglass Parshall Flume

Grout

4" City water

4" B.I. drain valve, 4" drain line to 6" drain line under floor

6" knife gate valve

Screen baerlow weir

Weir wall with fiberglass weir

Sump grout

18" D.I.P. stream effluent line

FLOCCULATOR No. 2

Inlet baffle

6" drain line

2-1" P.V.C. chlorine solution lines

FLOTATION TANK No. 2

Slope grout to drain line

6" P.I.P. drain pipe

Fiberglass weir plate

Effluent weir

24" R.C.P. Plant Effluent

1" P.R.S. polymer tap into bend

16"-90° bend

Pressure tanks

Air control panel

6" backwash water line, 6" drain line below, 1" pressure tank drain line to wet well

6" C.I.P.

6" P.V.C.

12" B.I.

Air Release

6" C.I.P.

6" P.V.C.

6" C.I.P.

5'-6"-90° bend

drain from solids collection

Compressor Mount on Conc. Pad

Filters Dryer

Coupling on drain line

6"-90° bend

6"x6" Tee

1" P.R.S. tap into bend

Screw Conveyor

Solids collection Sump. Grout bottom toward drain line

12" C.I.P. pressure flow source & drain line

6" coupling

6" butterfly valve with cylinder operator

2" steel line to sampler

2"x6" Tee

6" butterfly valve with cylinder operator

2"x6" Tee

2" steel sample line to analyzer

2"G.V.

2" steel pipe sample line to chlorine analyzer, support from wall

Effluent weir

Fiberglass weir plate

Weir Wall

Sump

6" C.I.P. drain line

Inlet baffle by flocculator manufacturer

18" sump pump discharge

18"-90° bend

FLOCCULATOR No. 1

Perforated inlet baffle

9" dia screw conveyor

FLOTATION TANK No. 1

Slope bottom of tank to drain lines as shown

Steel baffle plate by equipment mfgr

6" C.I.P. pump suction

8" C.I.P. pump suction

1" conduit with bubbler from control panel

Manhole steps

SUBFLOOR PLAN

Scale "¼" = 1'0"

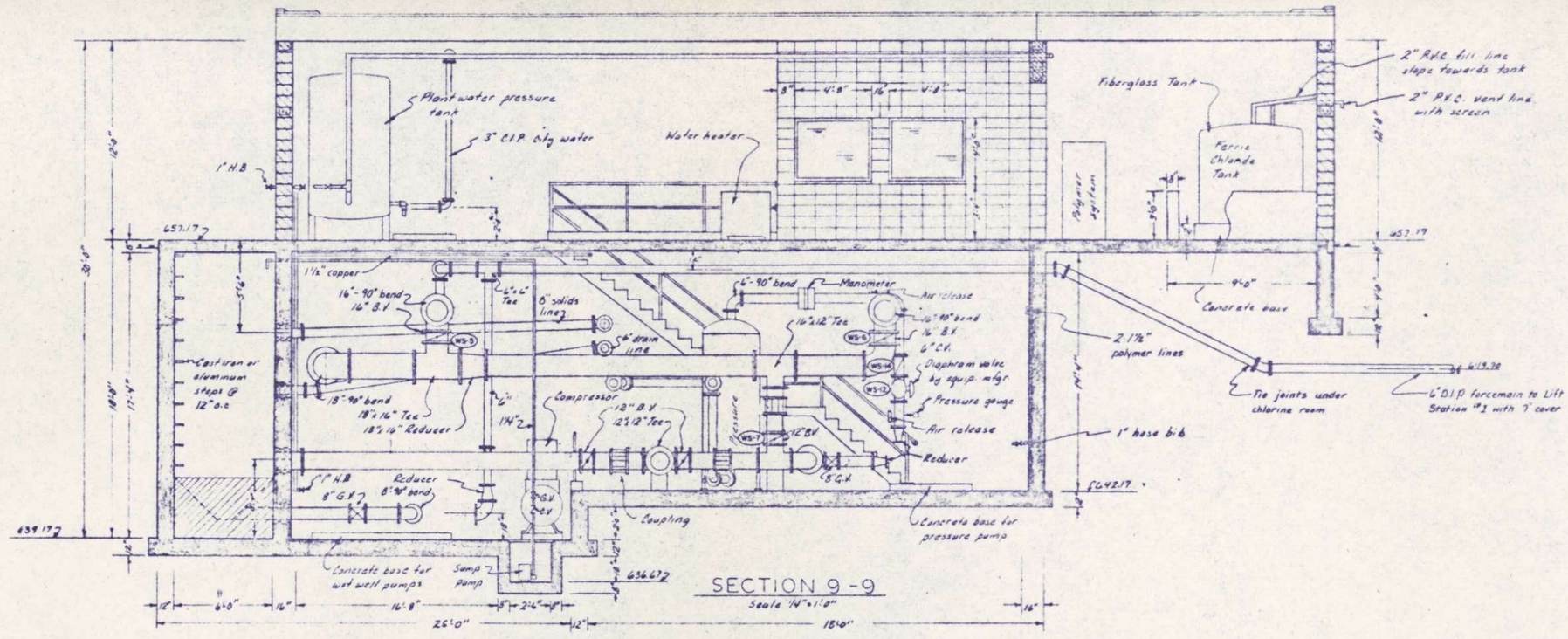
BOUSTEDO, ROSEKE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

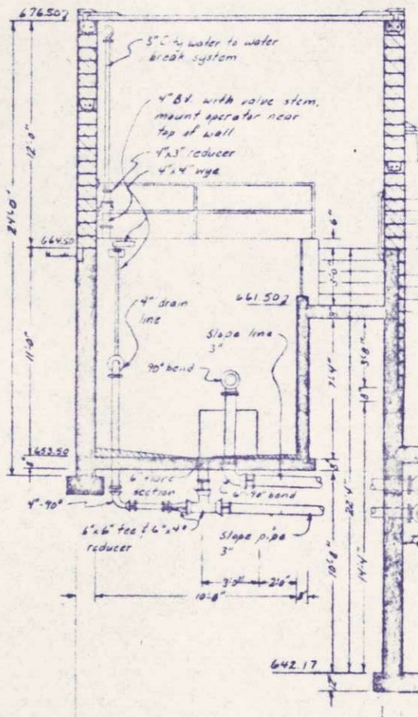
SUPERIOR, WISCONSIN

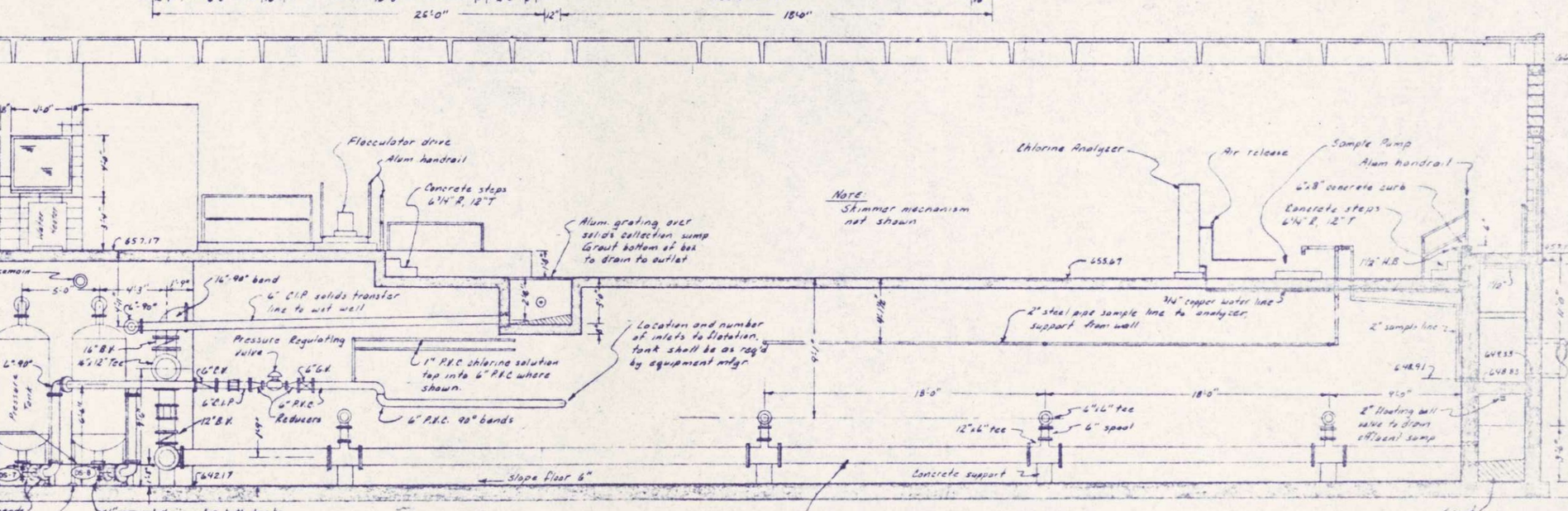
DATE: FEB 16, 1976

SOUTH SUPERIOR CSO PLANT

PLANT SUBFLOOR PLAN







SECTION 9-9
Scale 1/4"=1'-0"

SECTION 8-8
Scale 1/4"=1'-0"

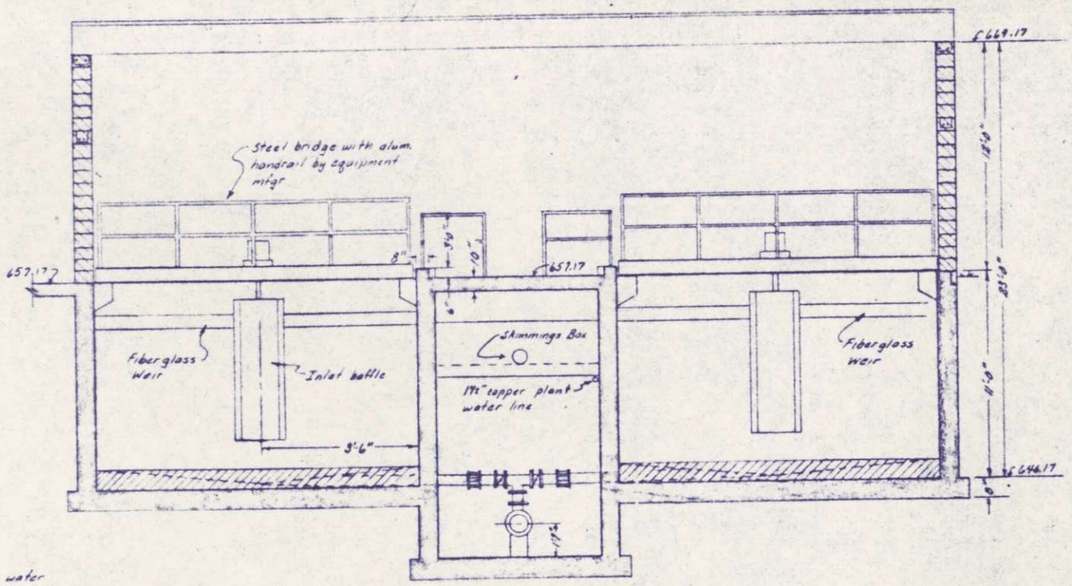
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.
DATE 3/16/76 REG. NO. E-12937 Richard E. Thune

SUBMITTED		REVISIONS
DRAWN	RWF	
DESIGN	RWF	
VERIFIED	RWF	

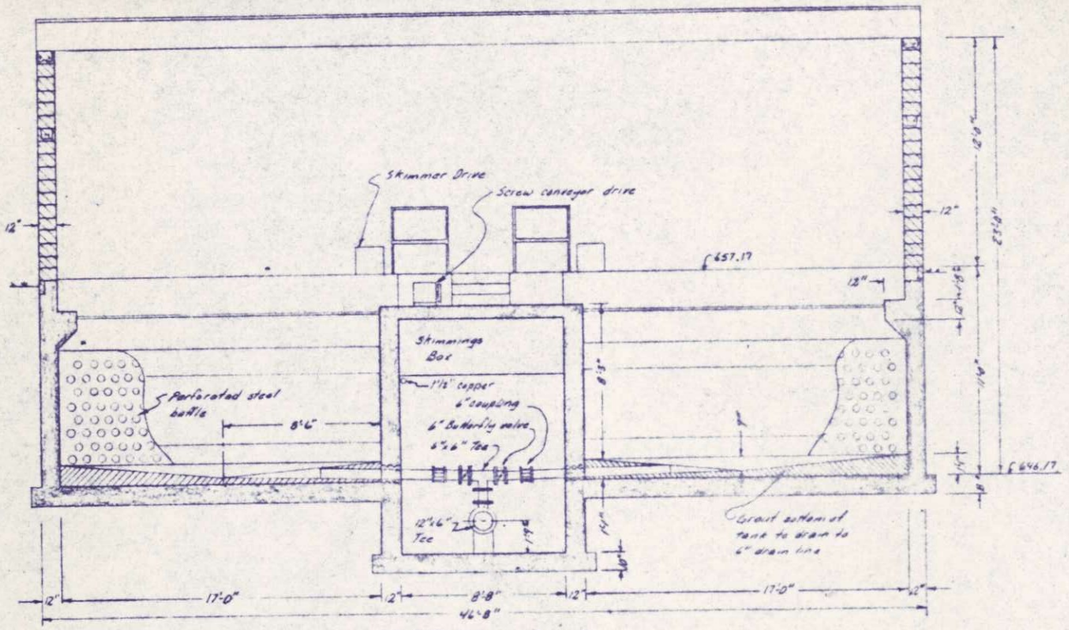
BORESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: FEB. 16, 1976 DRAWING 6888 E

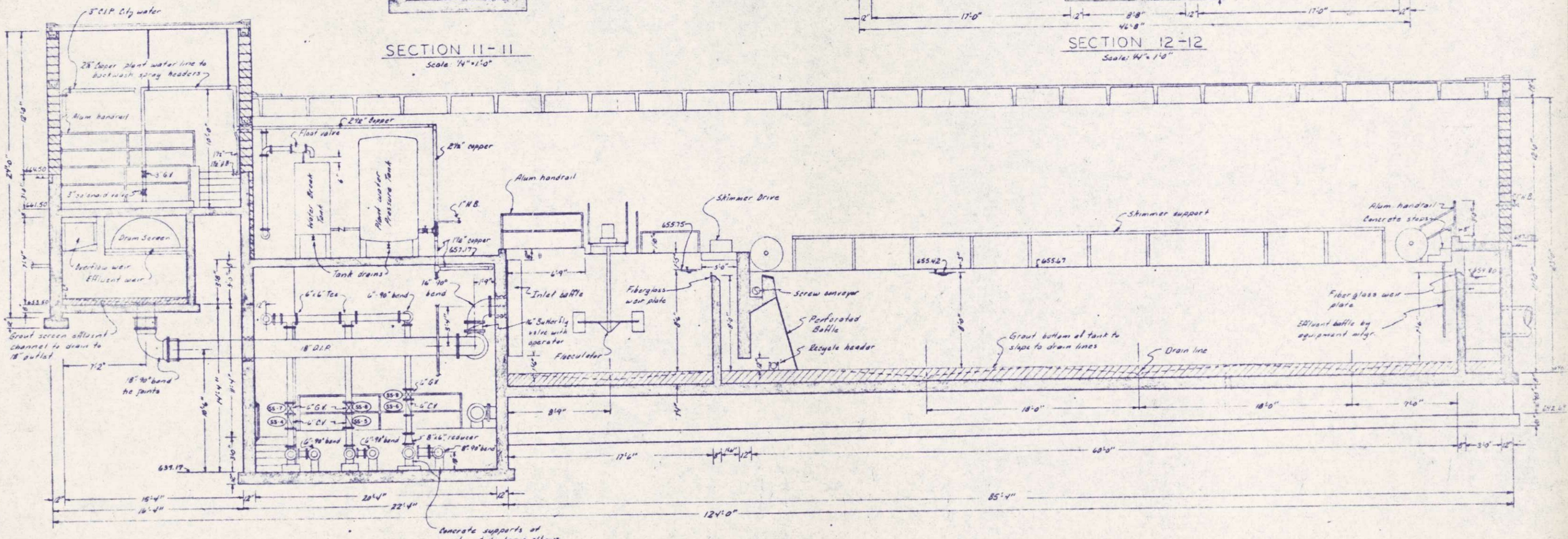
SOUTH SUPERIOR CSO PLANT
PLANT SECTIONS



SECTION 11-11
Scale: 1/4"=1'-0"



SECTION 12-12
Scale: 1/4"=1'-0"



SECTION 10-10
Scale: 1/4"=1'-0"

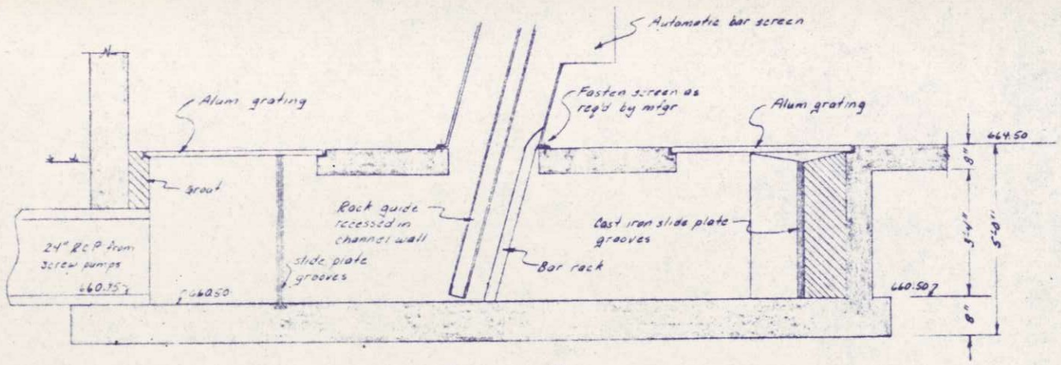
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.
DATE 2/16/76 REG. NO. E-12927 Richard E. Sumner

		REVISIONS
SURVEY		
DRAWN	AWF	
DESIGN	AWF	
APPROVED		

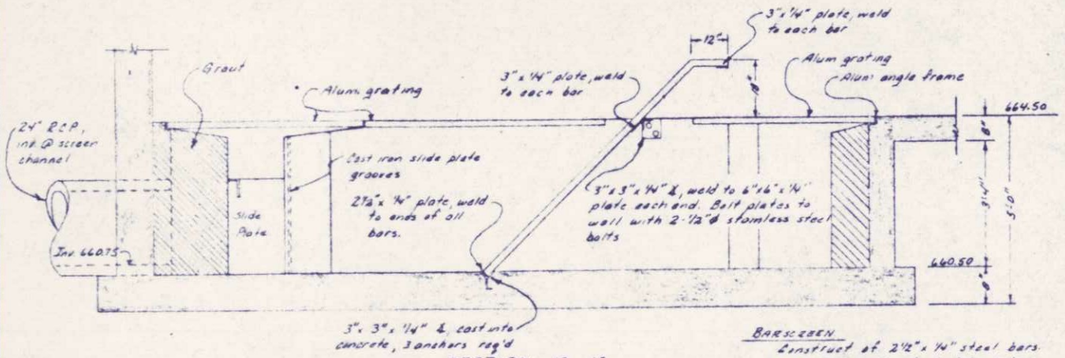
BORESTEEL, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: FEB 16, 1976 CHRON 6888 E

SOUTH SUPERIOR CSO PLANT
PLANT SECTIONS



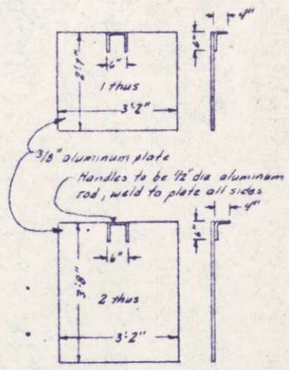
SECTION 16 - 16



SECTION 15 - 15

BARSCREEN

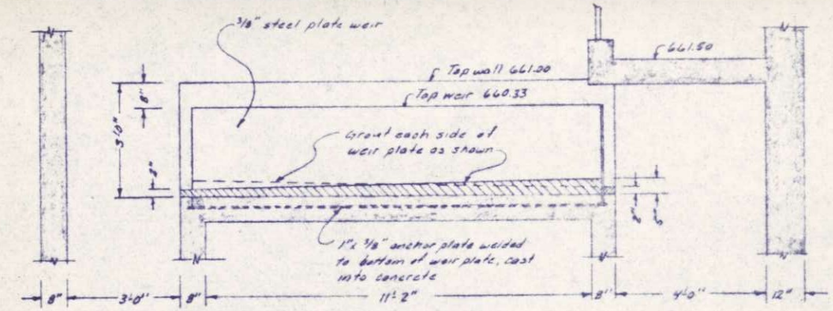
Construct of 2 1/2" x 1/4" steel bars. Weld all bars to steel plates noted above. Screen to be removable and have 1" clear spacing between bars.



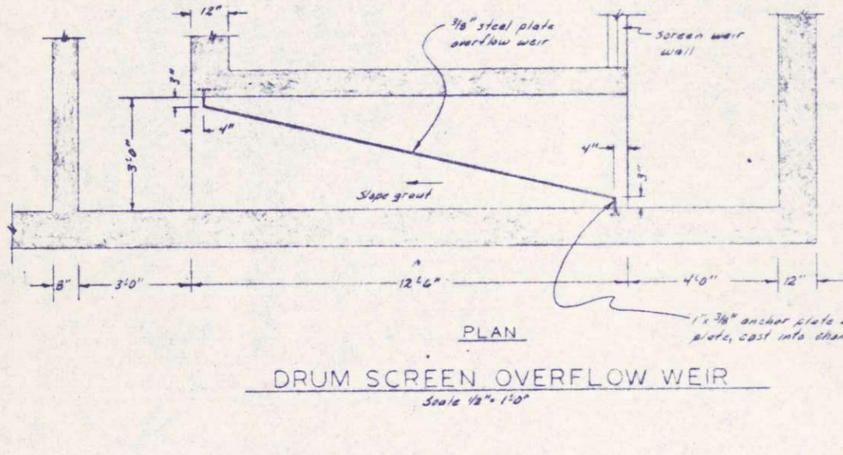
SLIDE PLATES

Scale 1/2" = 1'-0"

Note:
Provide aluminum take made specially for bar screen.



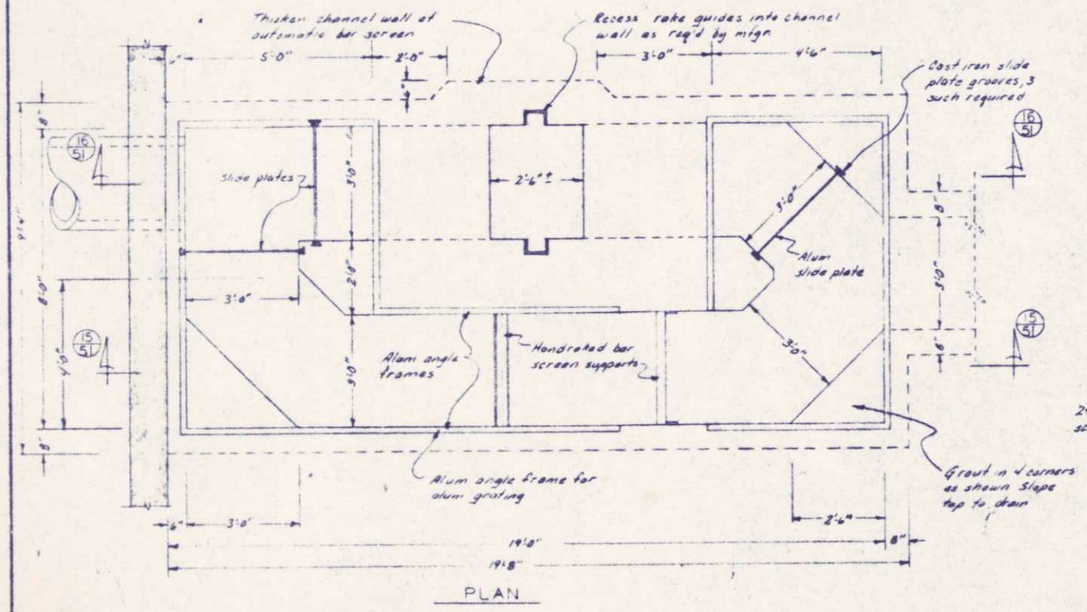
SECTION 14 - 14



PLAN

DRUM SCREEN OVERFLOW WEIR

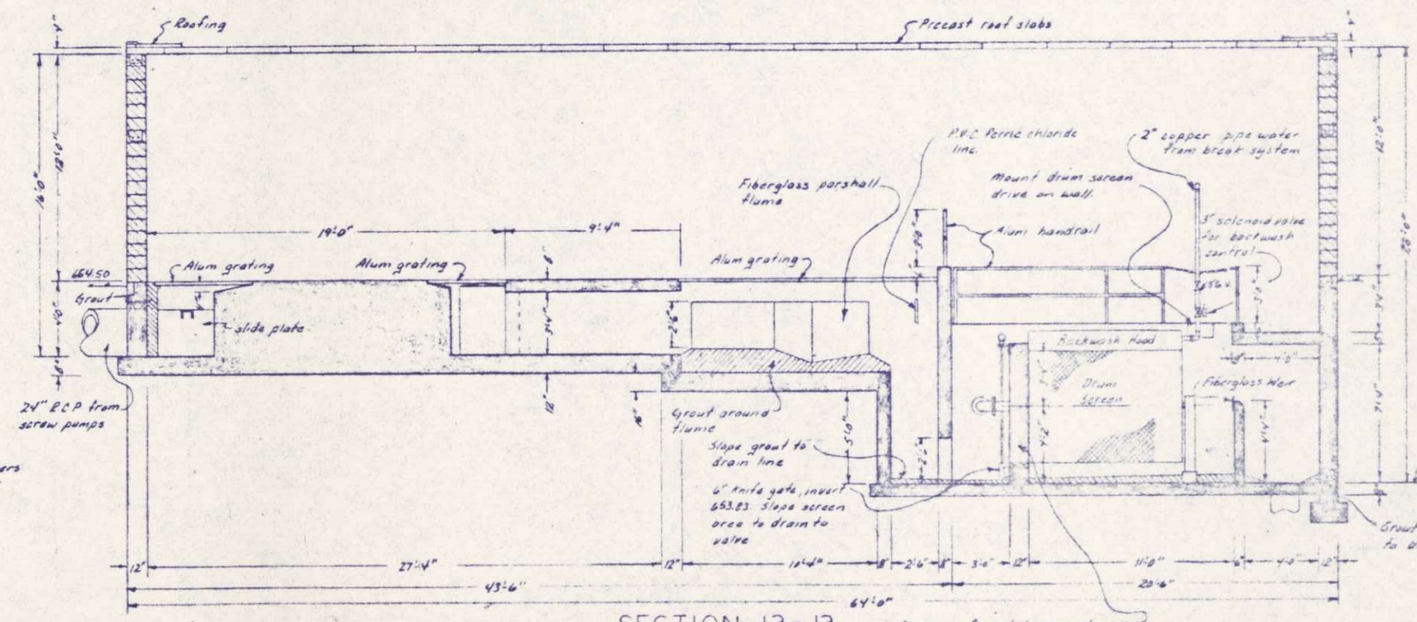
Scale 1/2" = 1'-0"



PLAN

SCREENING UNIT DETAILS

Scale 1/2" = 1'-0"

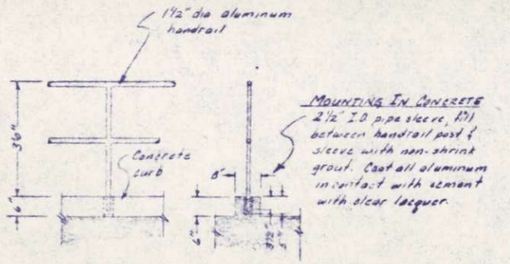


SECTION 13 - 13

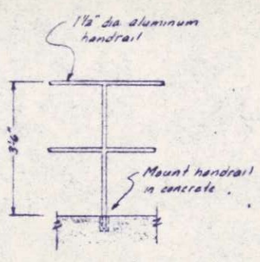
Scale 1/4" = 1'-0"

SOUTH SUPERIOR CSO PLANT

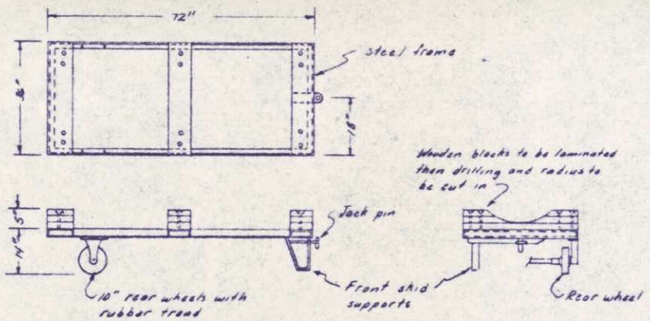
	BOXESTROO, ROSENE, ANDERLIK & ASSOC., INC. ST. PAUL, MINNESOTA	SUPERIOR, WISCONSIN DATE FEB 16, 1970	PLANT SECTION & DETAILS	52



CURB MOUNTED



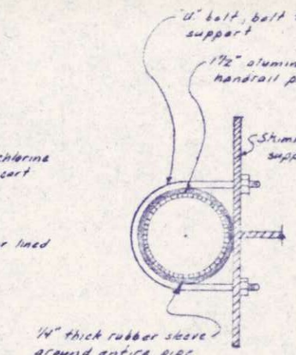
FLOOR MOUNTED



NOTE: 4 carts and 2 jack handles shall be furnished.

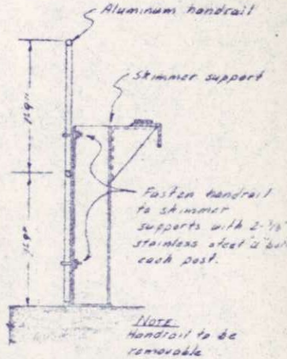
CHLORINE CONTAINER CART

Scale: None



FASTENER DETAIL

Scale None

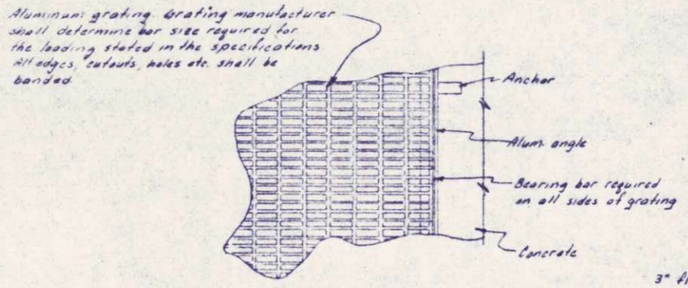


SUPPORT DETAIL

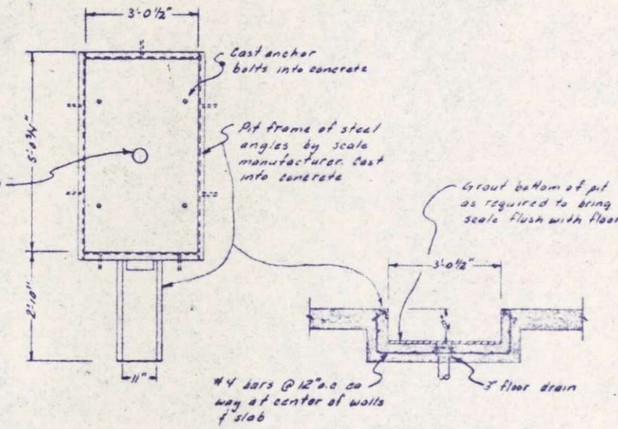
Scale 1"=1'0"

NOTE: Flotation equipment mfgr. to furnish handrail, U-bolts and sleeves.

FLOTATION UNIT HANDRAIL DETAIL

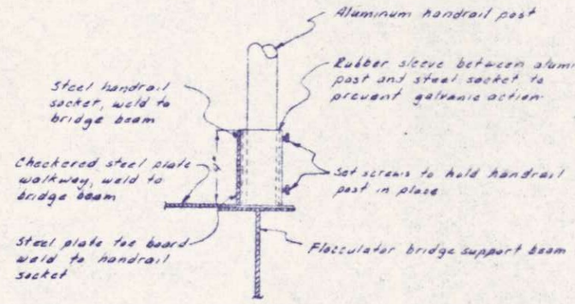


PLAN



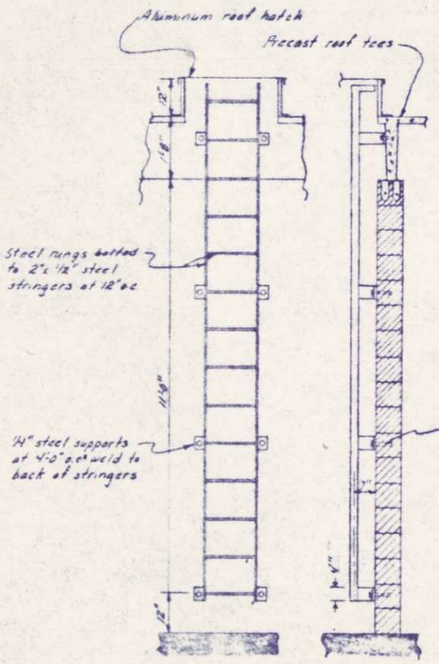
CHLORINE SCALE PIT DETAIL

Scale ½"=1'0"



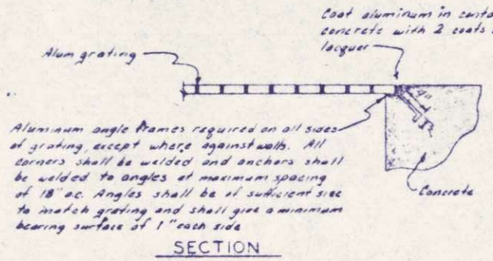
FLOCCULATOR HANDRAIL

Scale 3"=1'0"



ROOF ACCESS LADDER

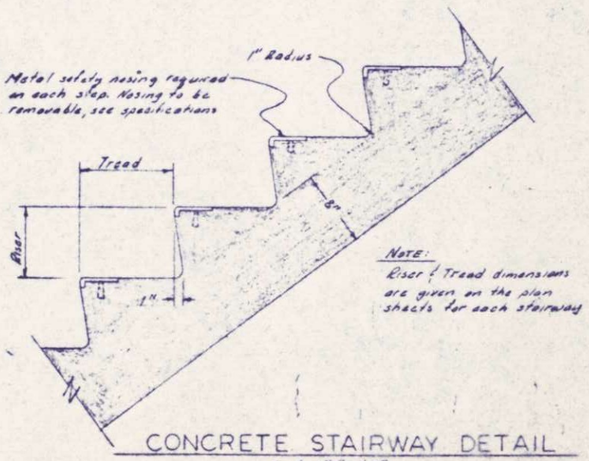
Scale 1½"=1'0"



SECTION

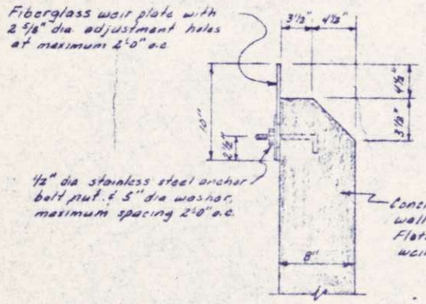
ALUMINUM GRATING DETAIL

Scale: 1"=1'0"

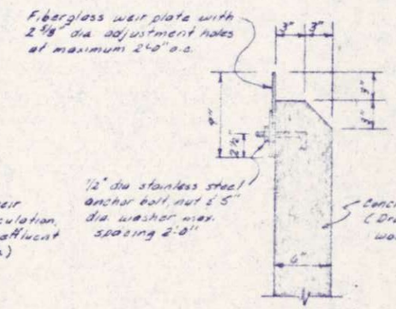


CONCRETE STAIRWAY DETAIL

Scale 1½"=1'0"



8" WALL



6" WALL

WEIR WALL DETAILS

Scale 1½"=1'-0"

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

DATE 2/16/76 REG. NO. E-12927 Richard E. Kunes

REVISIONS	BY
SURVEY	
DRAWN	B.W.T.
DESIGN	R.E.K.
APPROVED	R.E.K.

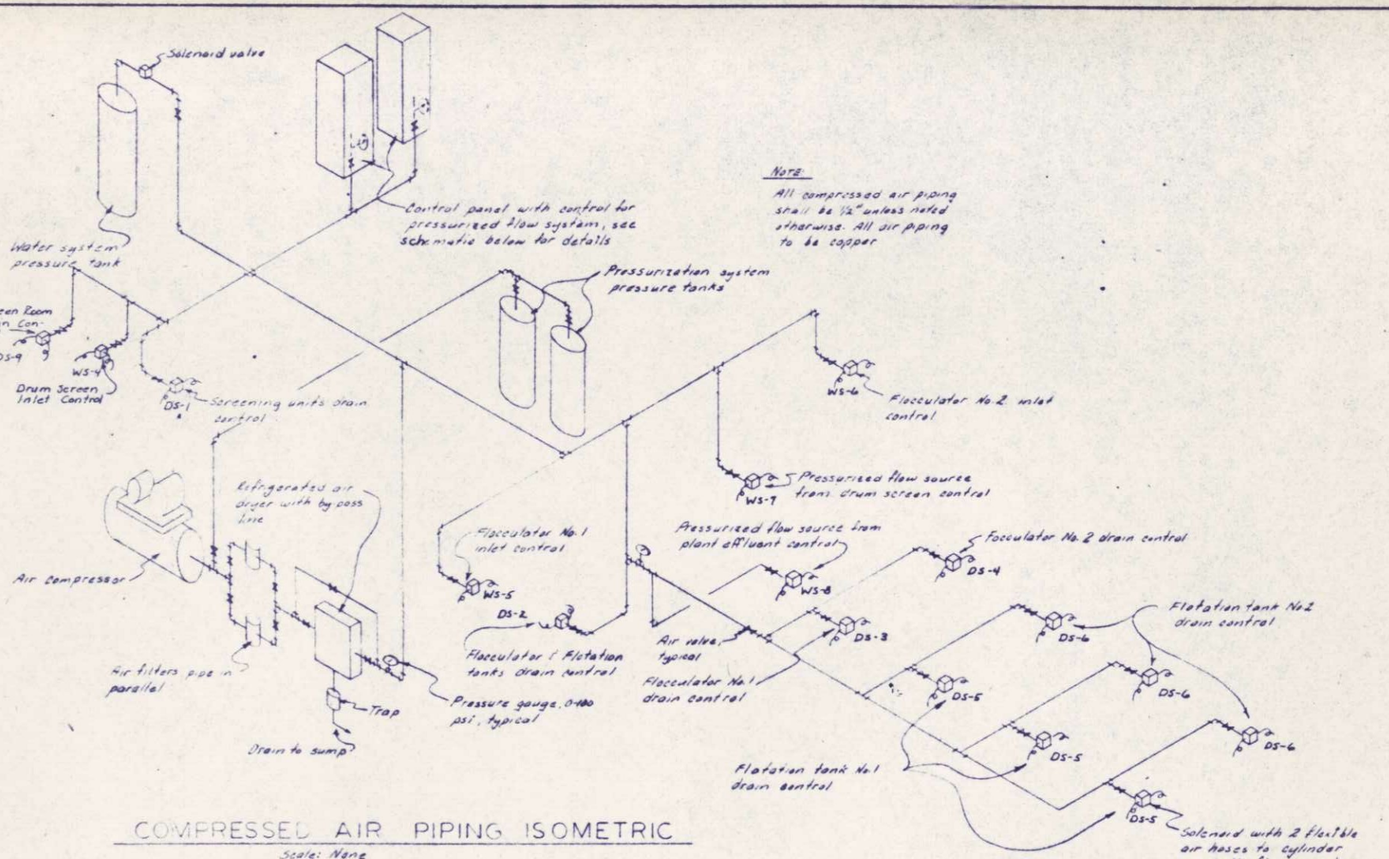
BORESTEEL, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN

DATE: FEB. 16, 1976 DRAWING 8888.E

SOUTH SUPERIOR CSO PLANT

PLANT DETAILS

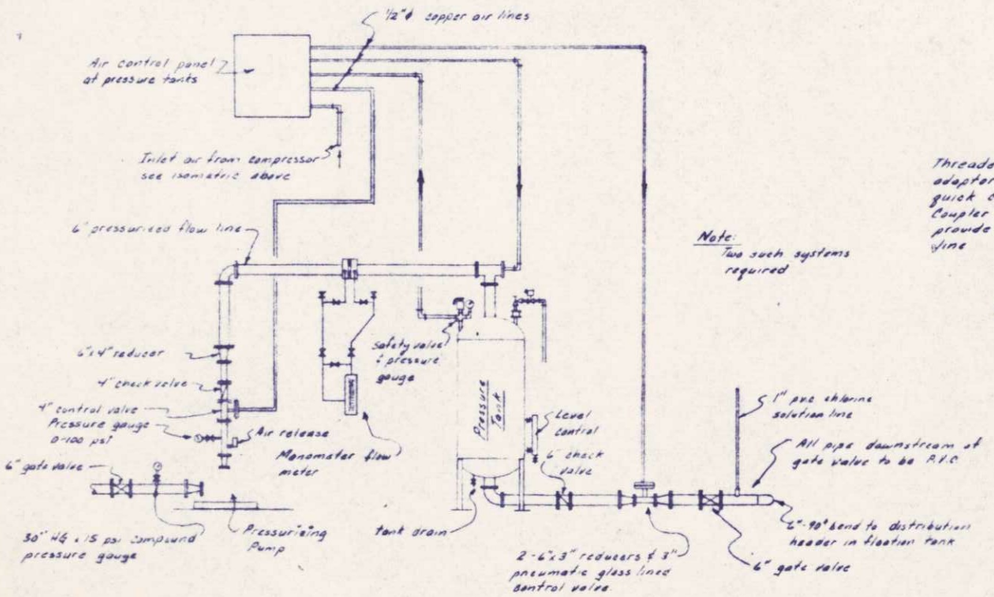


Note

All compressed air piping shall be ½" unless noted otherwise. All air piping to be copper

COMPRESSED AIR PIPING ISOMETRIC

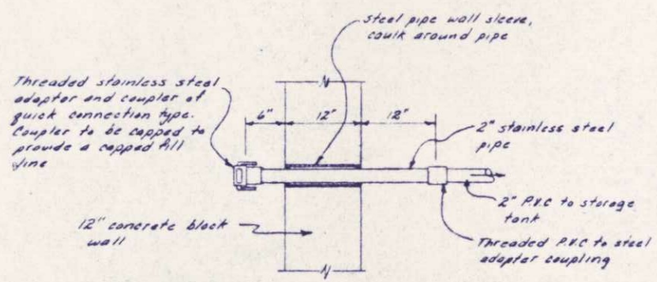
Scale: None



Note:
Two such systems required

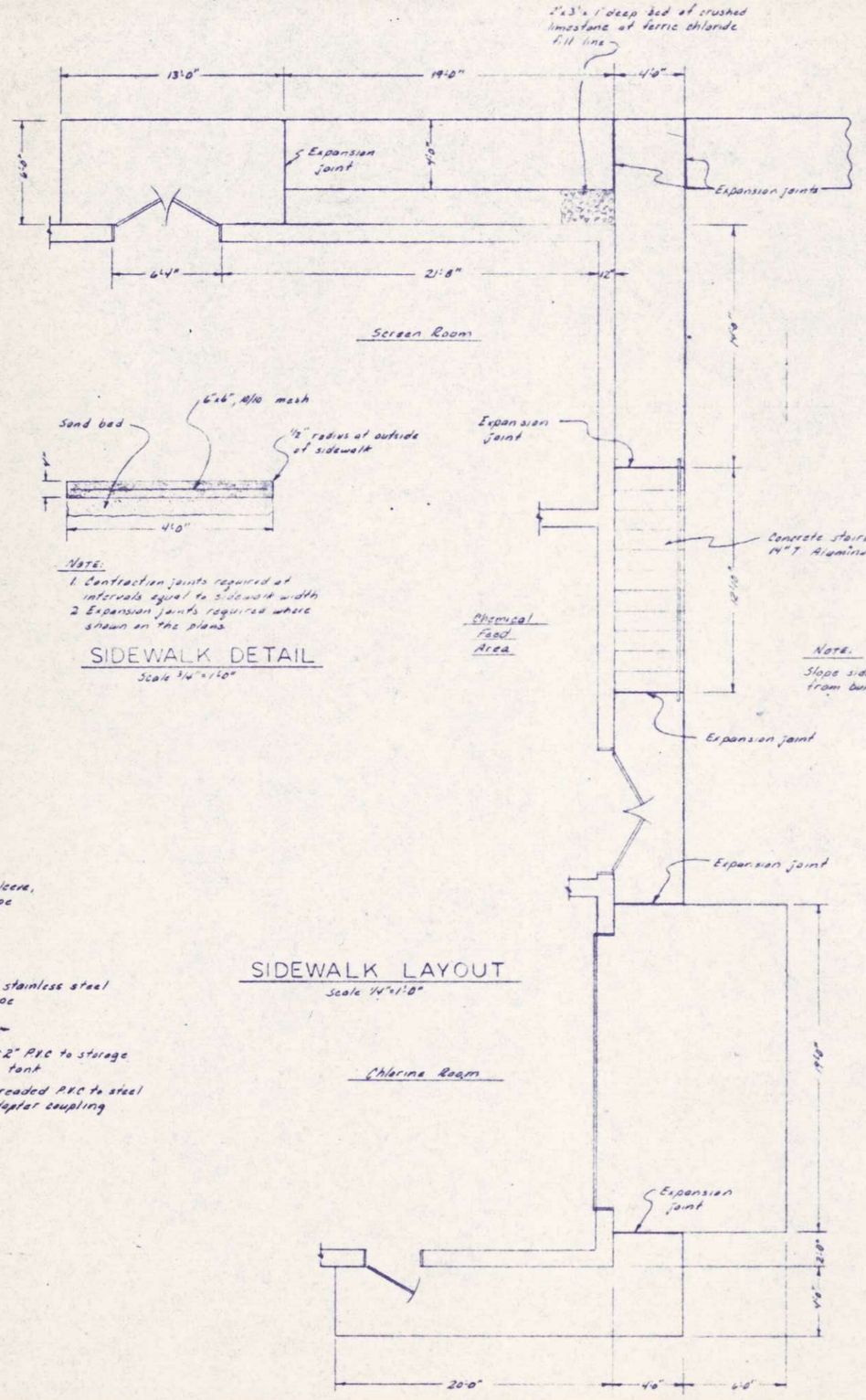
PRESSURIZED FLOW SYSTEM SCHEMATIC

Scale: None



FERRIC CHLORIDE FILL CONNECTION

Scale 1"=1'0"



Note:
1. Contraction joints required at intervals equal to sidewalk width
2 Expansion joints required where shown on the plans

SIDEWALK DETAIL

Scale 3/4"=1'0"

SIDEWALK LAYOUT

Scale 1/4"=1'0"

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.
DATE 11/16/76 REG. NO. E12947 Richard E. Turner

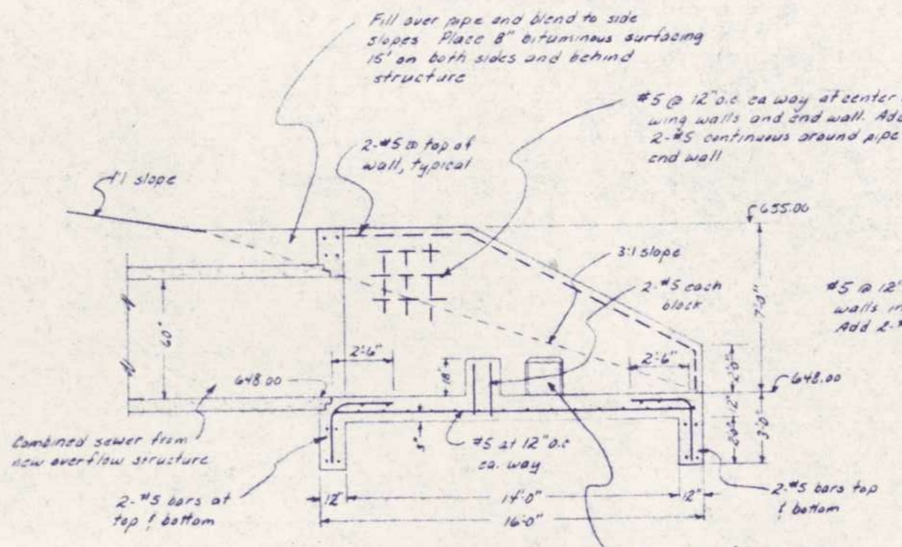
REVISIONS	BY

BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

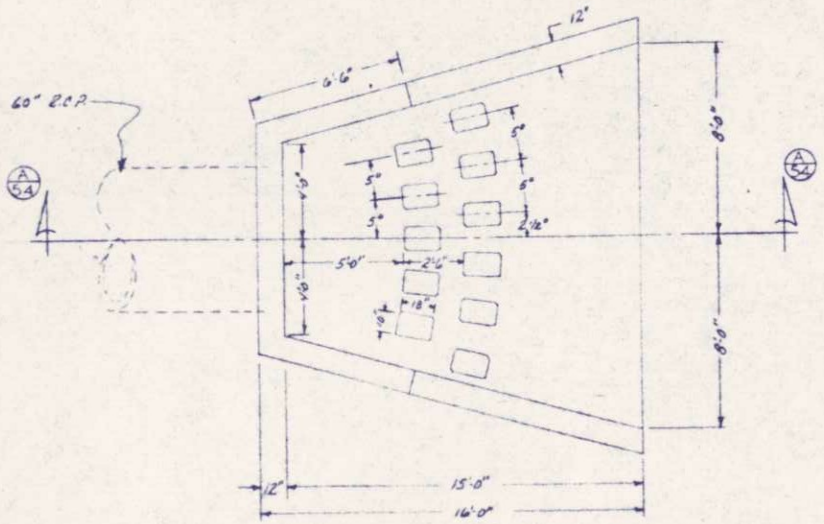
SUPERIOR, WISCONSIN
DATE: FEB. 16, 1978 Drawing 6888 E

SOUTH SUPERIOR CSO PLANT

PLANT DETAILS



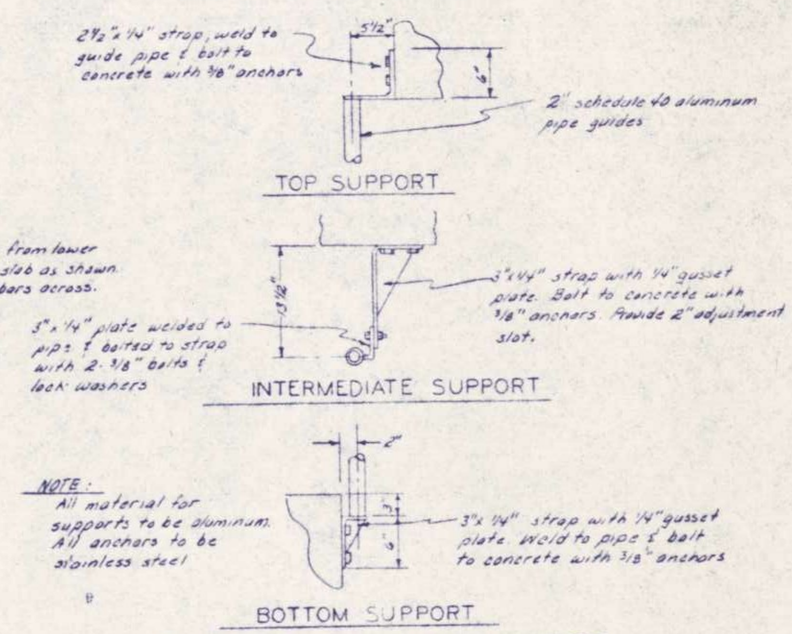
SECTION A-A



PLAN

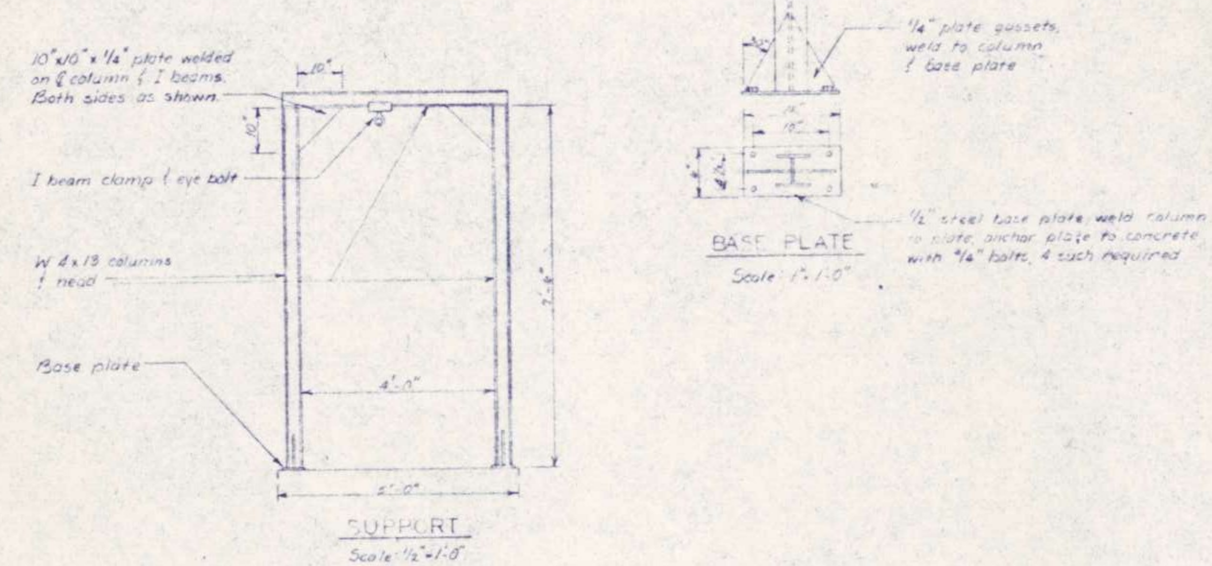
OUTLET STRUCTURE FOR 60" R.C.P

Scale 1/4" = 1'-0"

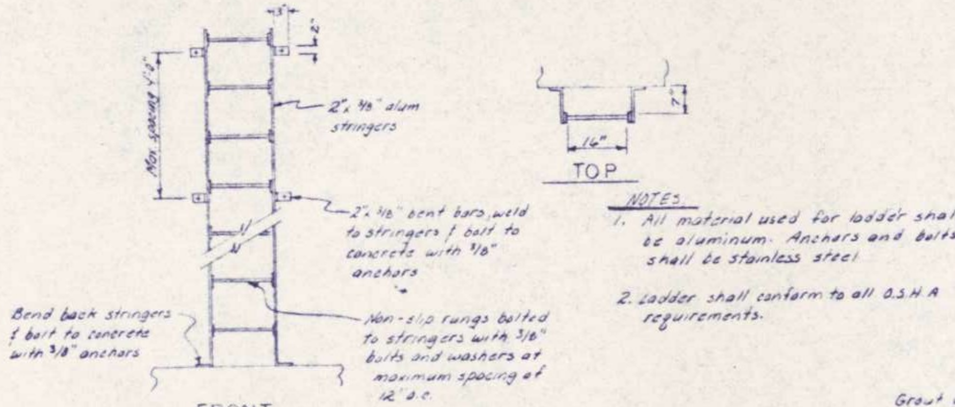


BASKET GUIDE SUPPORTS

Scale: 1" = 1'-0"



HOIST SUPPORT



NOTES:
1. All material used for ladder shall be aluminum. Anchors and bolts shall be stainless steel
2. Ladder shall conform to all O.S.H.A requirements.

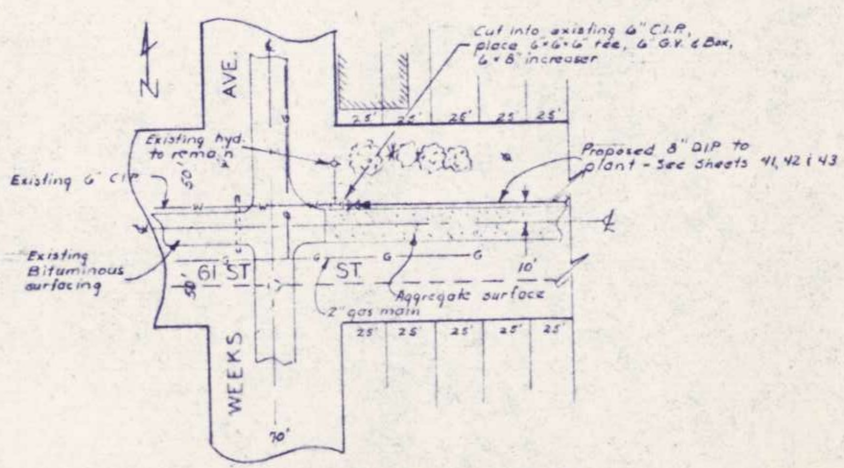
ALUMINUM LADDER DETAIL

Scale 1/2" = 1'-0"

NO.	DIA.	RIM	INVERT*	PLATE NO.
1	4'	656.3	639.90	1-8
2	4'	656.5	644.75	1-8
3	4'	655.0	645.23	1-6A
4	4'	656.1	639.80	1-8
5	4'	662.6	655.36	1-8
6	4'	668.2	656.96	1-8
7	4'	662.5	650.27	1-8
8	4'	664.0	660.78	1-8

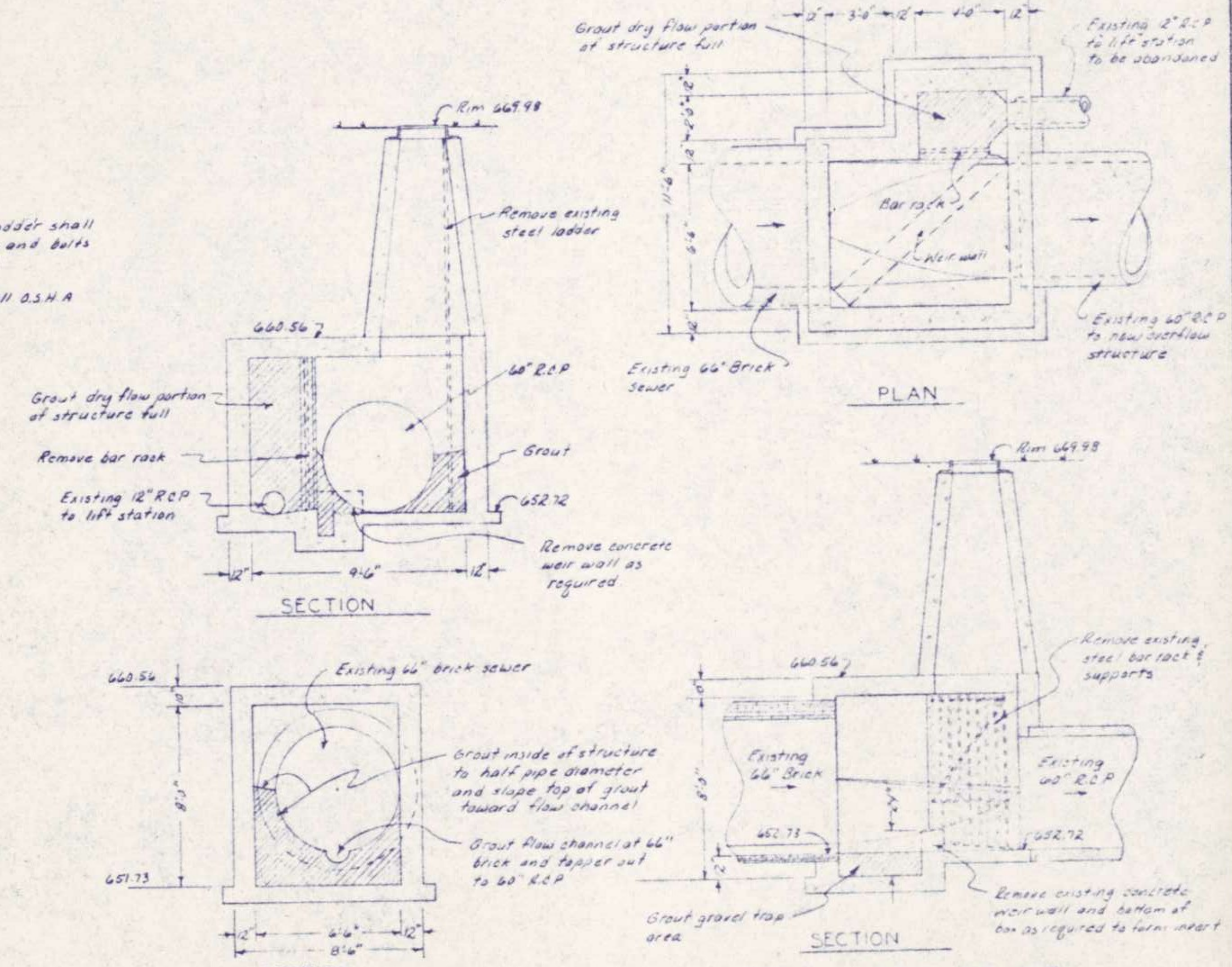
* Outlet invert in MH - See Sheets 42 & 43 for inlet invert elevations

MANHOLE SCHEDULE



WATERMAIN CONNECTION DETAIL

Scale: 1" = 50'



EXISTING OVERFLOW STRUCTURE

Scale 1/4" = 1'-0"

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly registered professional engineer under the laws of the State of Wisconsin.
Date 2/16/76 Reg. No. E12927 Richard E. Turner

SURVEY	
DRAWN	Ewf, RT
DESIGN	Ewf
APPROV'D	RET

REVISIONS

BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

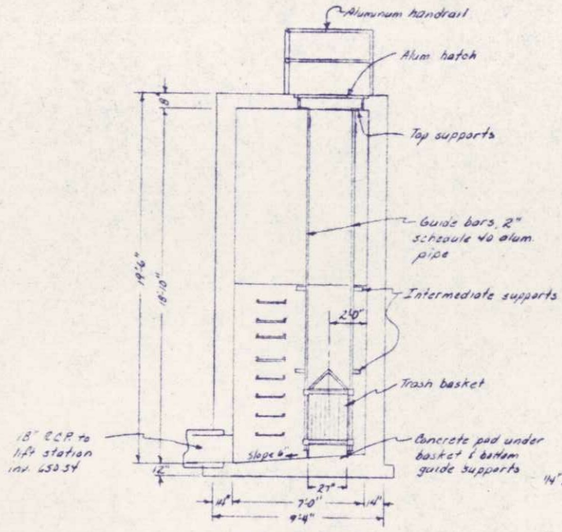
SOUTH SUPERIOR CSO PLANT

SUPERIOR, WISCONSIN

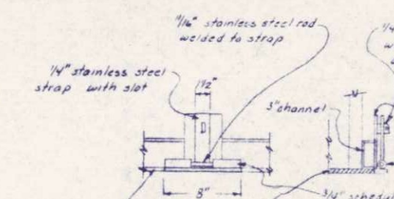
DATE: FEB 16, 1976 COMM 6888E

OUTLET STRUCTURE & MISCELLANEOUS DETAILS

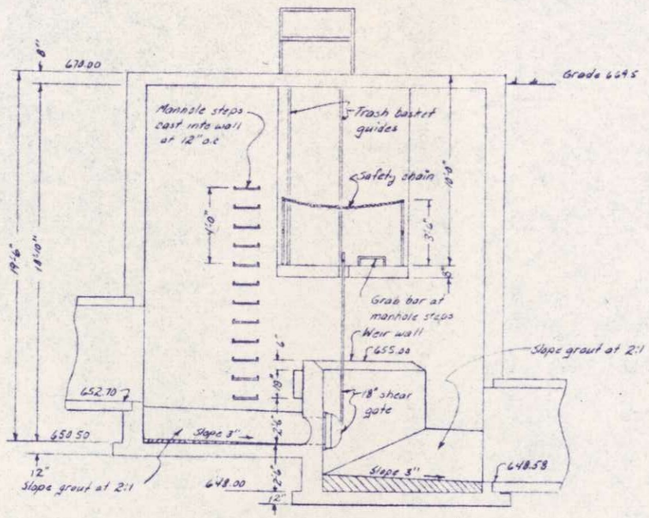
SHEET 54/78



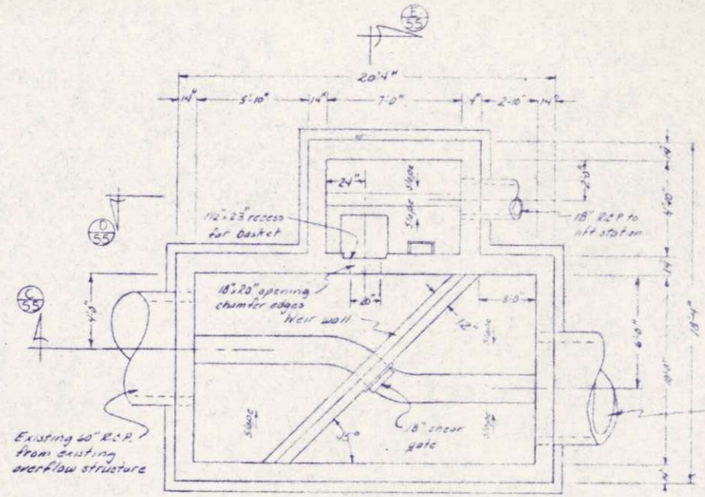
SECTION D - D



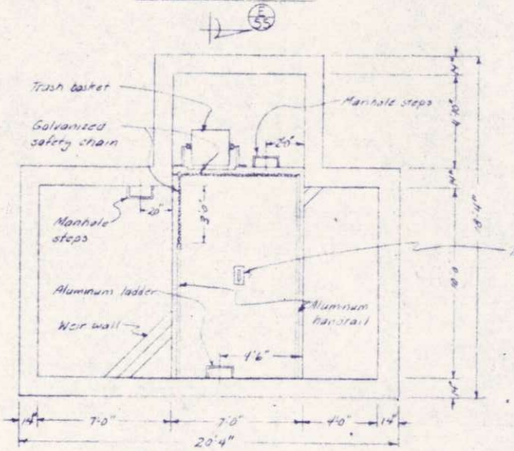
HINGE DETAIL
Scale: None



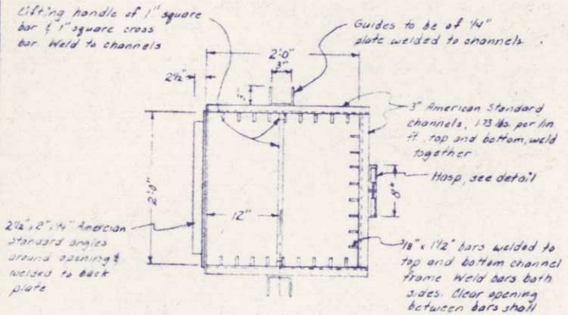
SECTION C - C



SECTION B-B



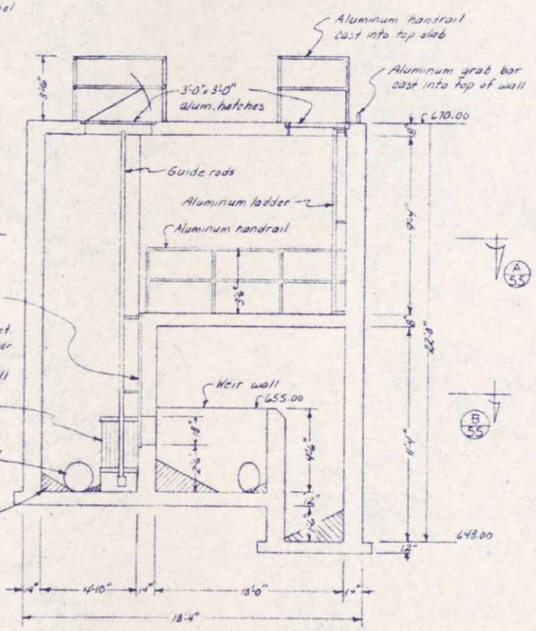
SECTION A - A



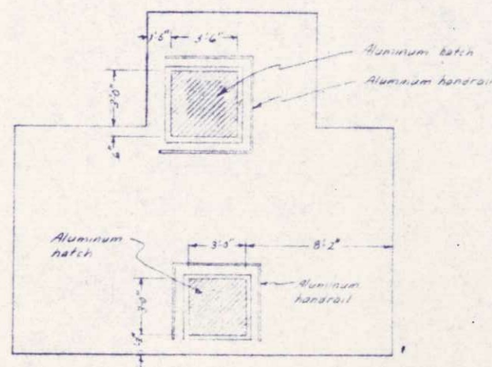
PLAN

FRONT SIDE

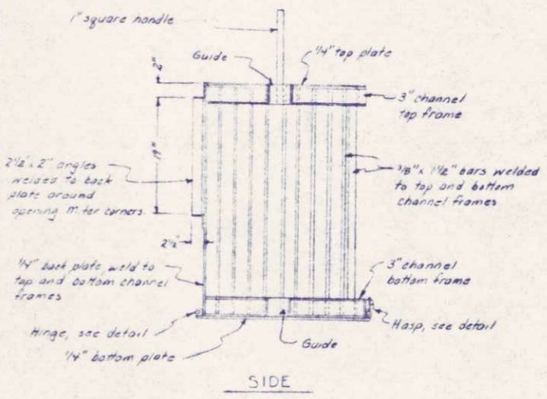
HINGE DETAIL
Scale 1½" = 1'-0"



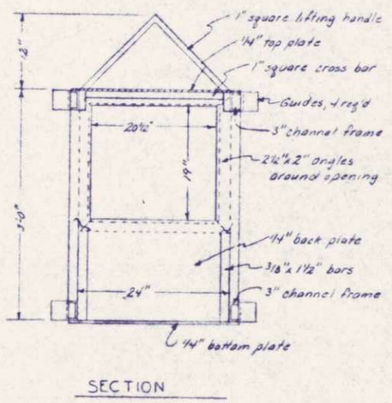
SECTION E - E



PLAN



SIDE



SECTION

NOTE:
All materials used for trash basket, guides and supports shall be 6061-T6 aluminum unless specifically noted otherwise.

TRASH BASKET DETAIL
Scale 1" = 1'-0"

NEW OVERFLOW STRUCTURE
Scale 1/4" = 1'-0"

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.
DATE 2/16/76 REG. NO. E-12927 Richard E. Sunde

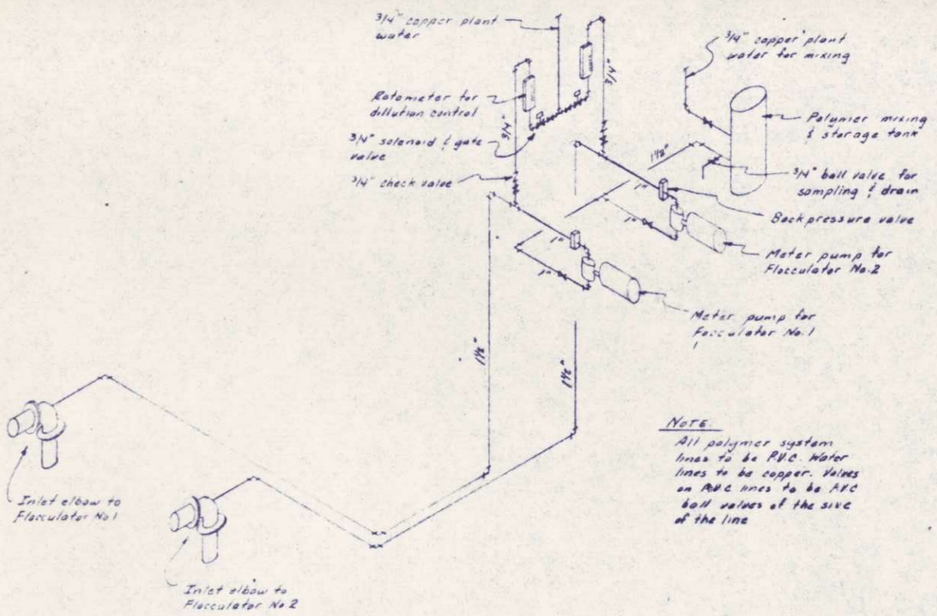
SURVEY	
DRAWN	RWF
DESIGN	RWF
APPROVED	RES

REVISIONS

BORESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: FEB. 16, 1976 COMM 6888E

SOUTH SUPERIOR CSO PLANT
OVERFLOW STRUCTURE
SHEET 55 OF 78

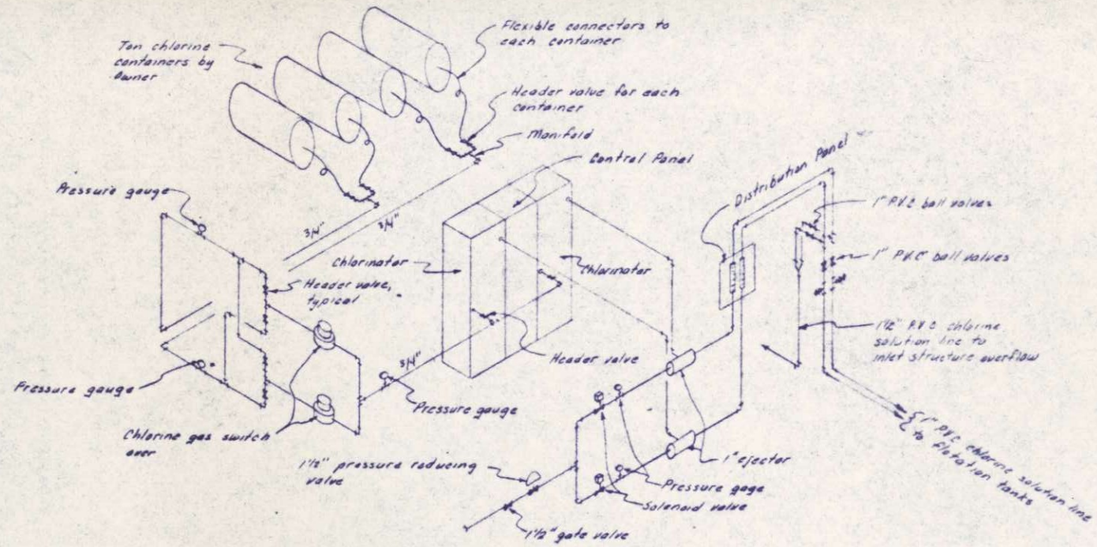


Note

All polymer system lines to be PVC. Water lines to be copper. Valves on PVC lines to be PVC ball valves of the size of the line

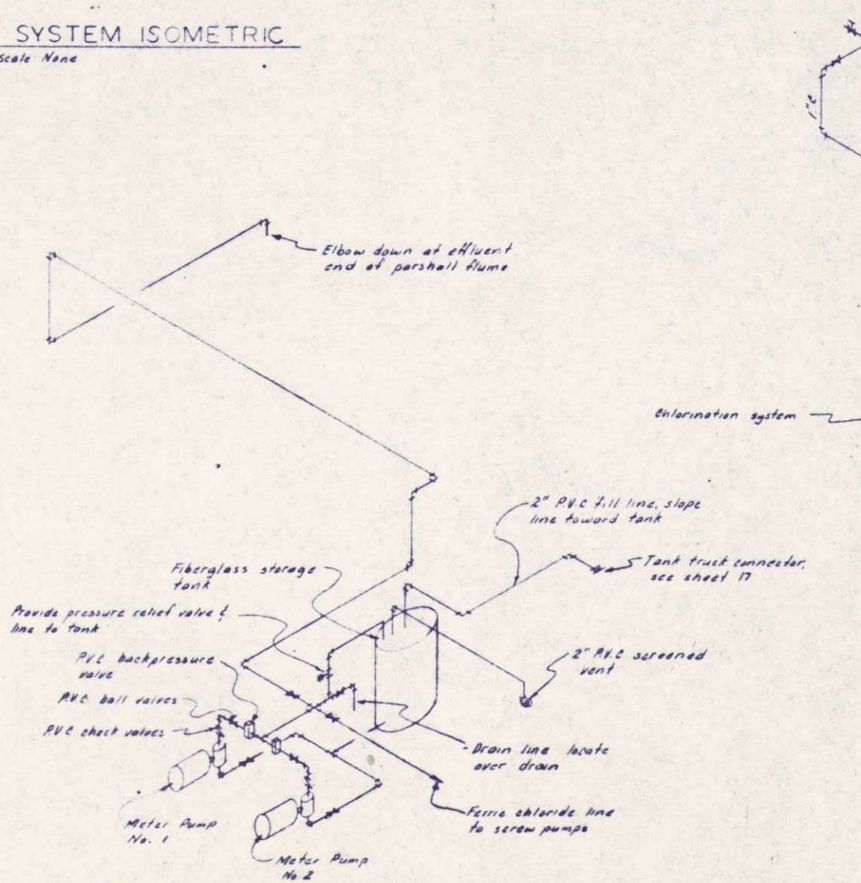
POLYMER SYSTEM ISOMETRIC

Scale None



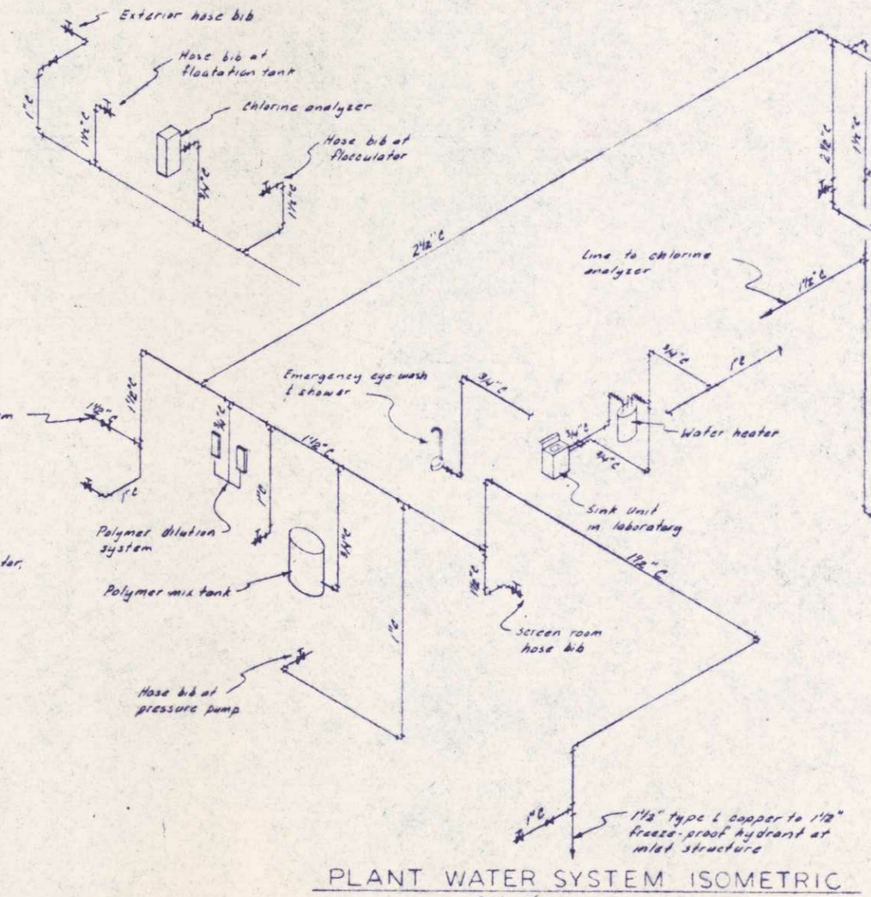
CHLORINE SYSTEM ISOMETRIC

Scale None



FERRIC CHLORIDE ISOMETRIC

Scale None



PLANT WATER SYSTEM ISOMETRIC

Scale: None

LEGEND

C	Copper pipe
S	Steel pipe
CIP	Cast iron pipe
	Gate valve
	Check valve
	Hose bib

All valves and hose bibs shall be of the size of the line on which they are installed

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

DATE 2/10/76 SEE ALSO E12767 Richard E. Turner

SURVEY	
DRAWN	RAW
DESIGN	RAT
APPROVED	RET

REVISIONS 3-1-76 Split Operating pipe to major line

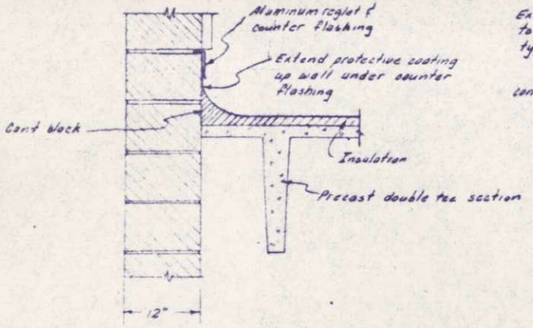
BOSTROOM, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: FEB 16, 1976 Drawing 6558 E

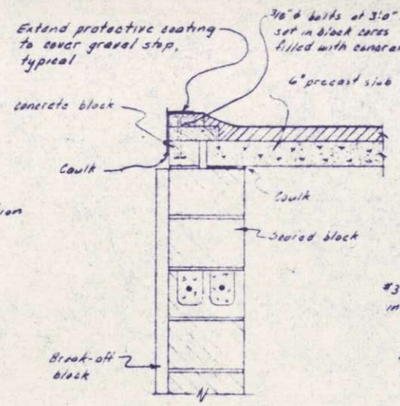
SOUTH SUPERIOR CSO PLANT

PIPING ISOMETRICS

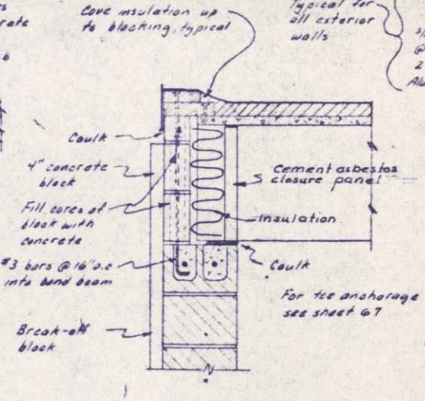
17



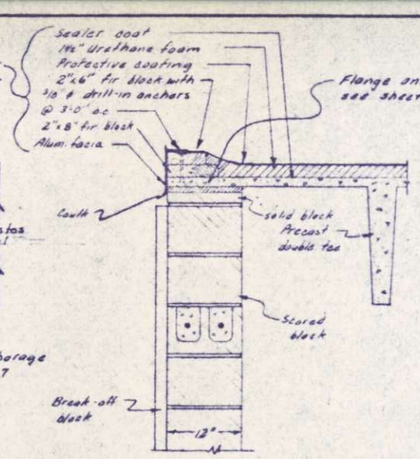
TREATMENT ROOM
WEST WALL



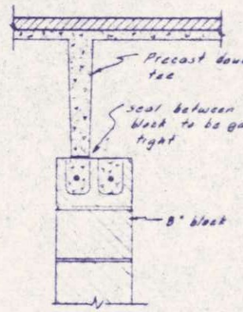
SCREEN ROOM
ALL WALLS



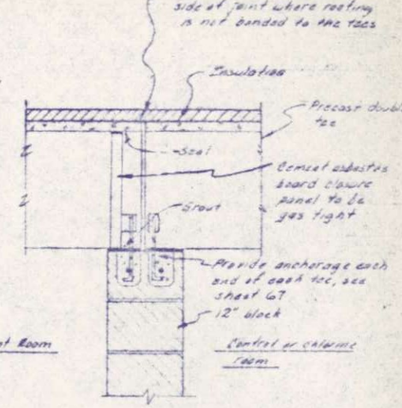
TREATMENT ROOM
NORTH & SOUTH WALLS



TREATMENT ROOM
EAST WALL



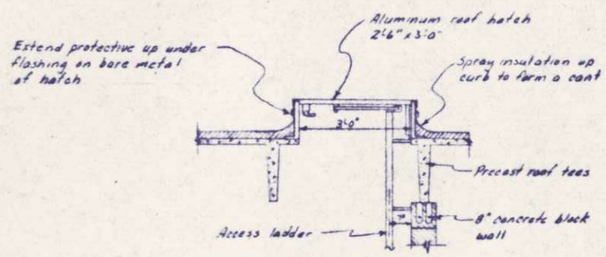
CHLORINE ROOM WEST &
CONTROL ROOM EAST WALLS



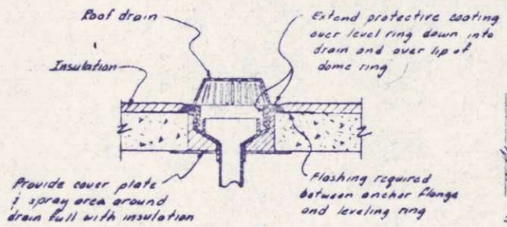
N & S CONTROL ROOM &
SOUTH CHLORINE ROOM WALLS

*No expansion joint on north control room wall roof

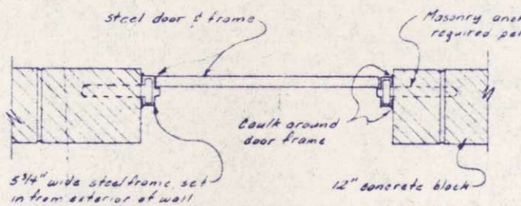
NOTE:
All exterior masonry walls shall have the block cores filled with insulation



ROOF ACCESS HATCH
Scale 1/2"=1'0"



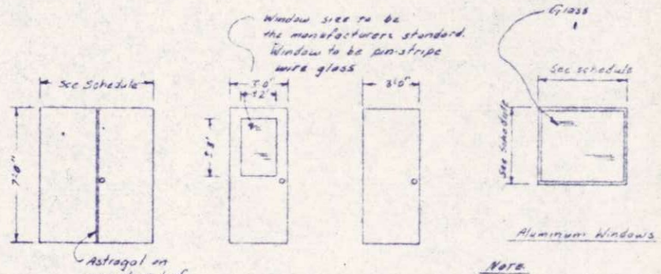
ROOF DRAIN
Scale 1"=1'0"



DOOR FRAME INSTALLATION
Scale: 1"=1'0"

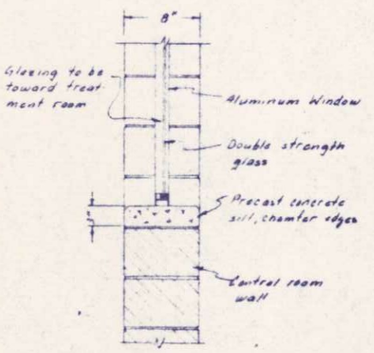
ROOF DETAILS
Scale 1"=1'0"

NOTE:
See sheet G7 for slab and tee anchorage to bearing walls

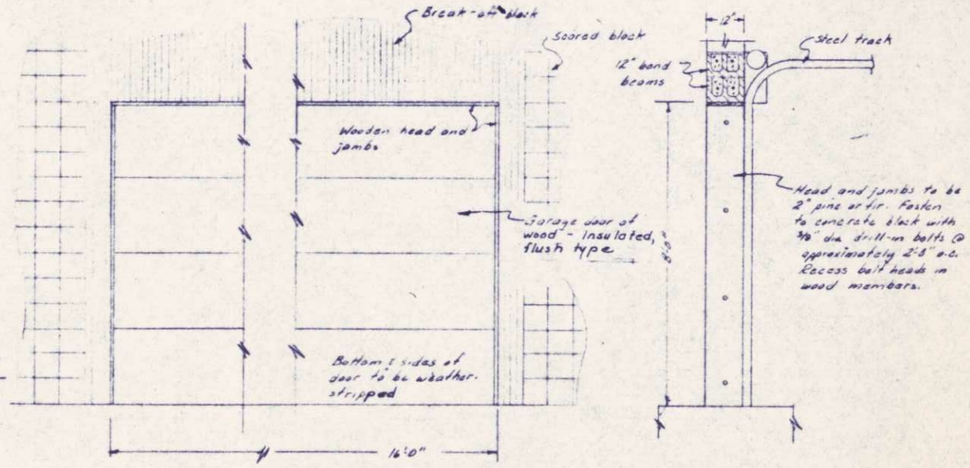


DOOR & WINDOW TYPES
Scale: 1/4"=1'0"

NOTE
8" high x 8" wide precast concrete sill under all windows required. Chamfer edges of sill.



CONTROL ROOM WINDOW
SILL DETAIL
Scale 1"=1'0"



GARAGE DOOR DETAIL
Scale: 1/2"=1'0"

	No.	Location	Type	Size	Threshold	Lintel	Remarks
Doors	1.	Treatment Room - North	A	3'6" x 7'0" double door	Aluminum	12" bond beam	—
	2.	Treatment Room - South	C	3'0" x 7'0"	Aluminum	12" bond beam	—
	3	Treatment Room - East	C	3'0" x 7'0"	Aluminum	12" bond beam	—
	4.	Screen Room	A	3'0" x 7'0" double door	None	12" bond beam	—
	5.	Chlorine Room - East	B	3'0" x 7'0"	Aluminum	12" bond beam	Wire glass
	6	Chlorine Room - North	—	16'0" x 8'6" garage door	None	2-12" bond beams	Insulated, wood, flush
	7.	Control Room	B	3'0" x 7'0"	Aluminum	12" bond beam	Wire glass
Windows	1.	Control Room - South	—	4'0" x 3'9"	—	12" bond beam	Double strength glass
	2.	Control Room - East	—	4'8" x 3'9"	—	12" bond beam	Double strength glass

DOOR & WINDOW SCHEDULE

NOTE
Window dimensions are approximate

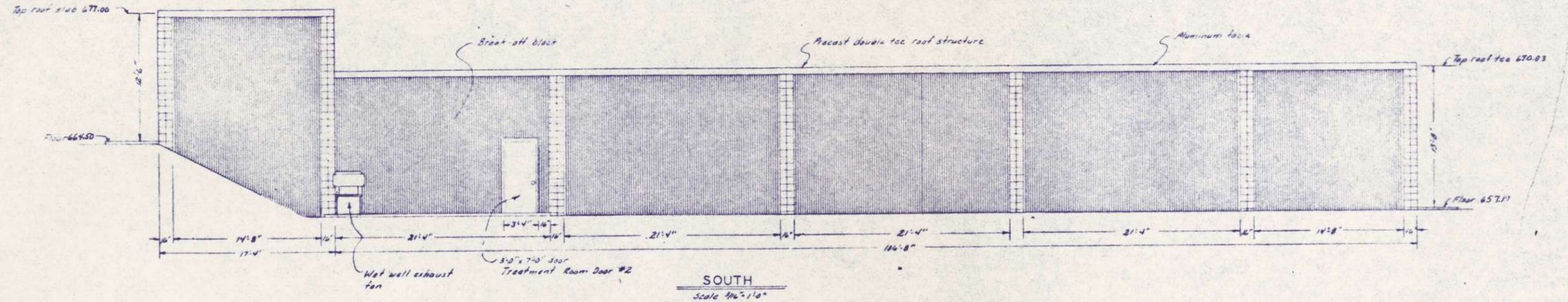
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN
DATE 2/16/76 REG. NO. E-3917 Richard E. Lewis

SURVEY
DRAWN RAF
DESIGN RAF
APPROV'D RAF
REVISIONS

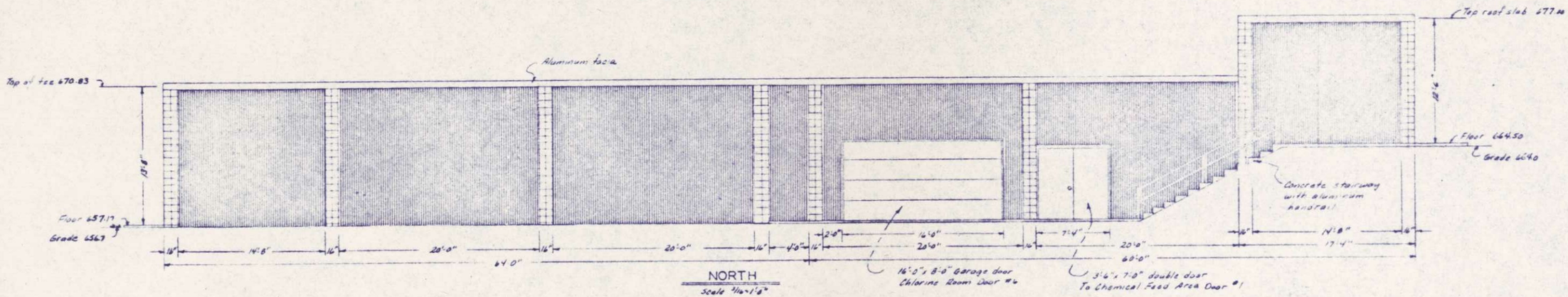
BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: FEB. 16, 1976 DRAWING 8886 E

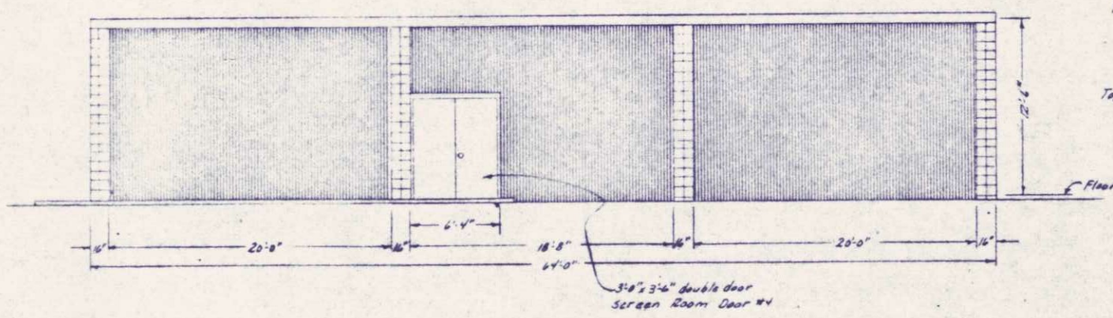
SOUTH SUPERIOR CSO PLANT
ARCHITECTURAL DETAILS



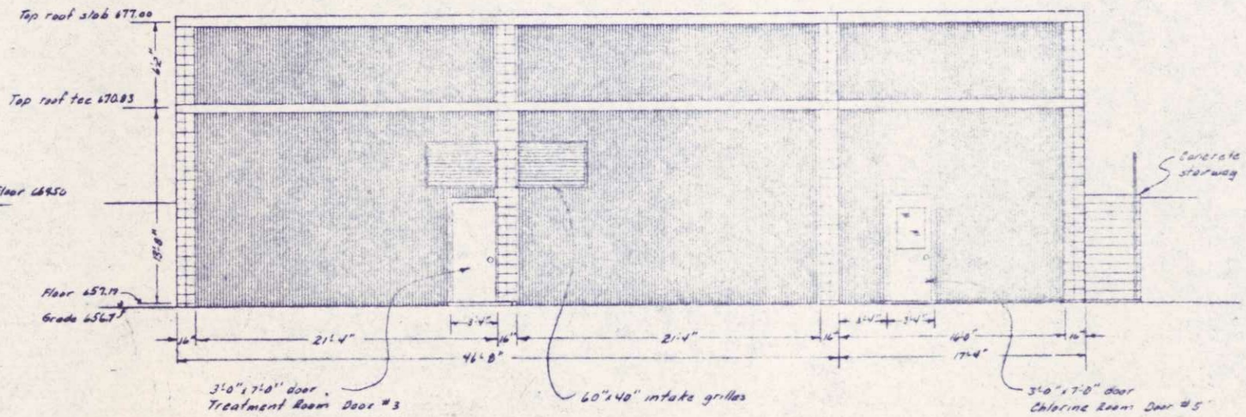
SOUTH
Scale 3/16"=1'0"



NORTH
Scale 3/16"=1'0"



WEST
Scale 3/16"=1'0"



EAST
Scale 3/16"=1'0"

PLANT ELEVATIONS
Scale 3/16"=1'0"

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN
DATE 3/16/76 REG. NO. E12947 Roland E. Linse

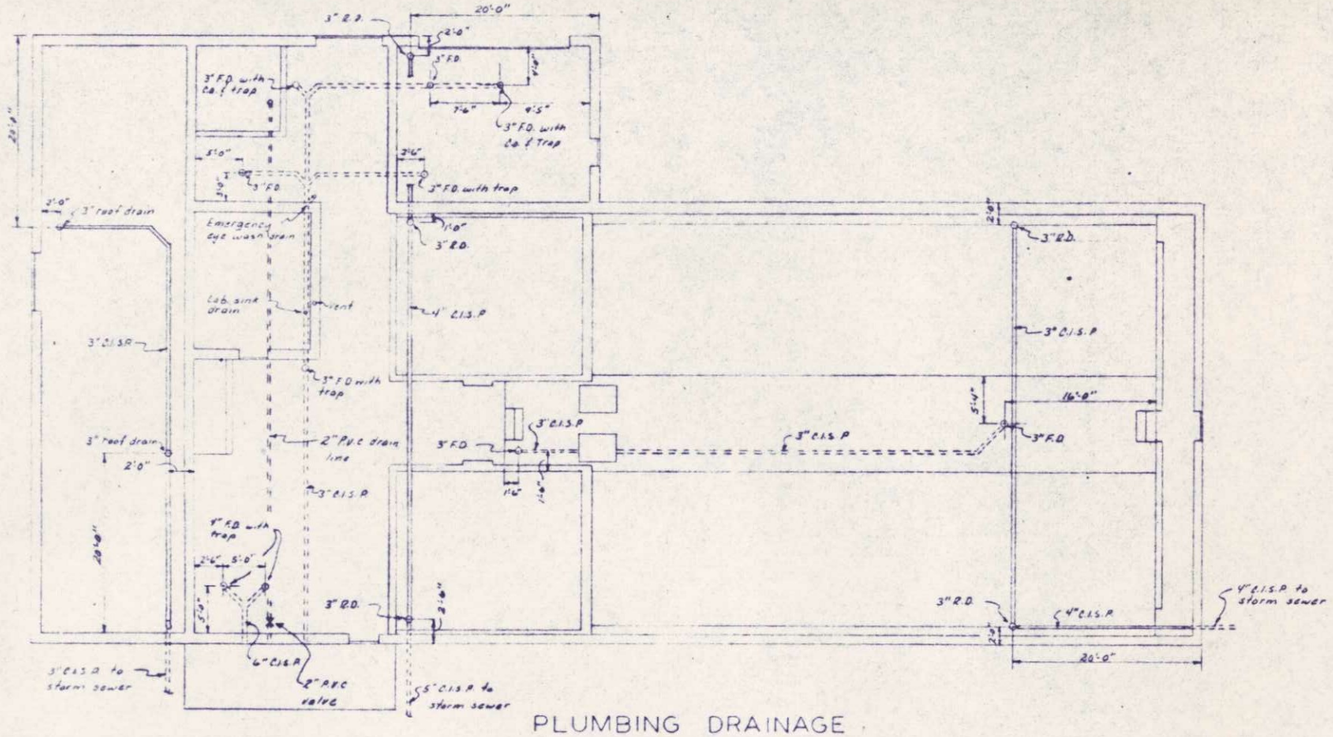
SURVEY	
DRAWN	R.W.F.
DESIGN	R.W.F.
APPROVED	R.E.L.

REVISIONS

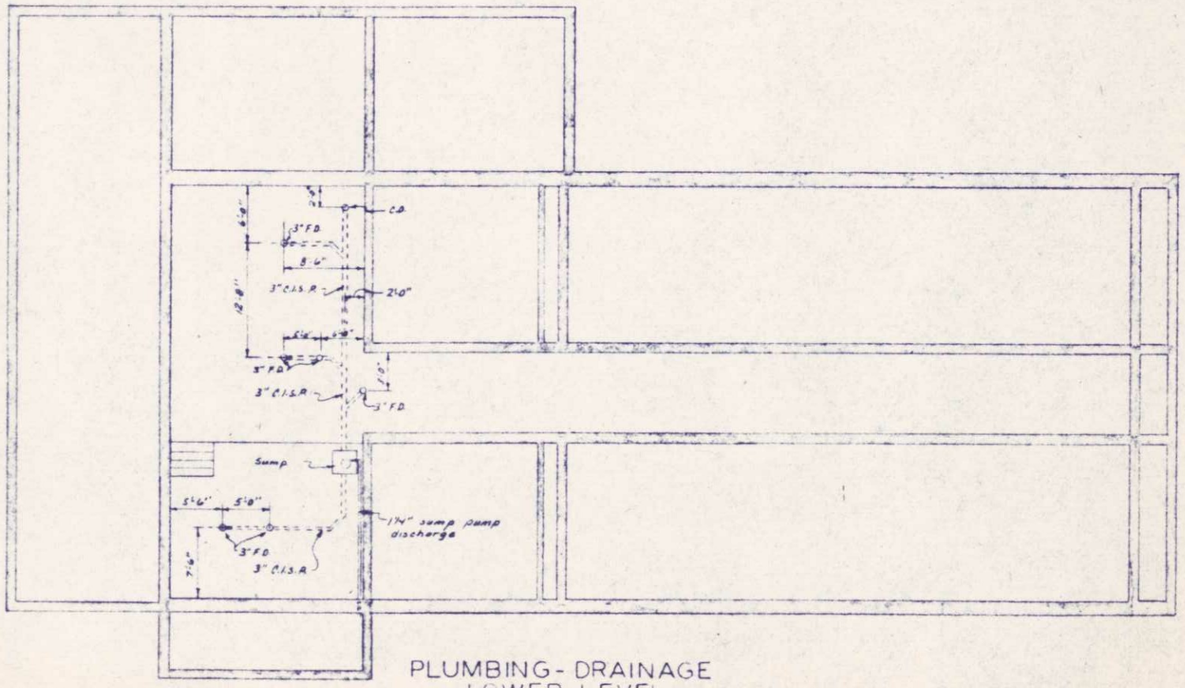
BOSSERTOOG, ROSERE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: FEB. 16, 1976 DRAWING 6858 E

SOUTH SUPERIOR CSO PLANT
BUILDING ELEVATIONS



PLUMBING DRAINAGE
UPPER LEVEL
Scale 1/8"=1'-0"



PLUMBING - DRAINAGE
LOWER LEVEL
Scale: 1/8"=1'-0"

VALVE LIST

I. WASTEWATER SYSTEM (WS)

Valve No.	Size	Type	Location	Operator	Purpose
WS-1	—	S.G.	Bar Screen	—	Emergency Overflow
WS-2	—	S.G.	Bar Screen	—	Bar Screen Bypass
WS-3	—	S.G.	Bar Screen	—	Bar Screen Bypass
WS-4	6"	EC.V.	Drum Screen	Cylinder	Drum Screen Inlet
WS-5	16"	B.V.	Flocculator 1	Cylinder	Flocculator 1 Inlet
WS-6	16"	B.V.	Flocculator 2	Cylinder	Flocculator 2 Inlet
WS-7	12"	B.V.	Pump Room	Cylinder	Wastewater Source
WS-8	12"	B.V.	Pump Room	Cylinder	Treated Water Source
WS-9	8"	G.V.	Pump Room	Handwheel	Pres. Pump 1 Inlet Shutoff
WS-10	8"	G.V.	Pump Room	Handwheel	Pres. Pump 2 Inlet Shutoff
WS-11	6"	D.V.	Pump Room	Automatic	Pres. Pump 1 Discharge Shutoff
WS-12	6"	D.V.	Pump Room	Automatic	Pres. Pump 2 Discharge Shutoff
WS-13	6"	C.V.	Pump Room	Air Cushion	Pres. Pump 1 Discharge Check
WS-14	6"	C.V.	Pump Room	Air Cushion	Pres. Pump 2 Discharge Check
WS-15	6"	C.V.	Pipe Gallery	Air Cushion	Pres. Tank 1 Discharge Check
WS-16	6"	C.V.	Pipe Gallery	Air Cushion	Pres. Tank 2 Discharge Check
WS-17	3"	D.V.	Pipe Gallery	Automatic	Pres. Tank 1 Discharge Control
WS-18	3"	D.V.	Pipe Gallery	Automatic	Pres. Tank 2 Discharge Control
WS-19	6"	G.V.	Pipe Gallery	Handwheel	Pres. Tank 1 Discharge Shutoff
WS-20	6"	G.V.	Pipe Gallery	Handwheel	Pres. Tank 2 Discharge Shutoff
WS-21	4"	C.V.	Inlet Structure	Weight	Inlet Pump 3 Discharge Check
WS-22	4"	G.V.	Inlet Structure	Handwheel	Inlet Pump 3 Discharge Shutoff

II. DRAIN DOWN SYSTEM (DS)

Valve No.	Size	Type	Location	Operator	Purpose
DS-1	6"	B.V.	Pump Room	Cylinder	Screen Room Drain
DS-2	12"	B.V.	Pump Room	Cylinder	Main Drain
DS-3	6"	B.V.	Pipe Gallery	Cylinder	Flocculator 1 Drain
DS-4	6"	B.V.	Pipe Gallery	Cylinder	Flocculator 2 Drain
DS-5	6"	B.V.	Pipe Gallery	Cylinder	Flotation Tank 1 Drain
DS-6	6"	B.V.	Pipe Gallery	Cylinder	Flotation Tank 2 Drain
DS-7	1"	S.V.	Pump Room	Solenoid	Pres. Tank 1 Drain
DS-8	1"	S.V.	Pump Room	Solenoid	Pres. Tank Drain
DS-9	4	B.V.	SCREEN ROOM	CYLINDER	SCREEN ROOM DRAIN

III. SLUDGE SYSTEM (SS)

Valve No.	Size	Type	Location	Operator	Purpose
SS-1	6"	G.V.	Pump Room	Handwheel	Sludge Pump 1 Inlet Shutoff
SS-2	6"	G.V.	Pump Room	Handwheel	Sludge Pump 2 Inlet Shutoff
SS-3	8"	G.V.	Pump Room	Handwheel	Sludge Pump 3 Inlet Shutoff
SS-4	6"	C.V.	PUmp Room	Air Cushion	Sludge Pump 1 Discharge Check
SS-5	6"	C.V.	Pump Room	Air Cushion	Sludge Pump 2 Discharge Check
SS-6	6"	C.V.	Pump Room	Air Cushion	Sludge Pump 3 Discharge Check
SS-7	6"	G.V.	Pump Room	Handwheel	Sludge Pump 1 Discharge Shutoff
SS-8	6"	G.V.	Pump Room	Handwheel	Sludge Pump 2 Discharge Shutoff
SS-9	6"	G.V.	Pump Room	Handwheel	Sludge Pump 3 Discharge Shutoff

The valves listed above are the main process valves and do not include valves for potable and plant water, compressed air, chemical feed and drainage systems. The Contractors shall furnish and install all valves shown on the plans, noted in the specifications or required for operational systems.

Legend:

BV - Butterfly Valve
BL - Ball Valve
CV - Check Valve
DV - Diaphragm Valve
GV - Gate Valve
SG - Slide Gate
SV - Solenoid Valve
KGV - KNIFE GATE VALVE

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN
DATE 2/16/76 REG. NO. E-11927 Richard E. Turner

SURVEY
DRAWN TOE
DESIGN MAE
APPROV'D RET

REVISIONS 4/1/76 Added DS-9 R.T.

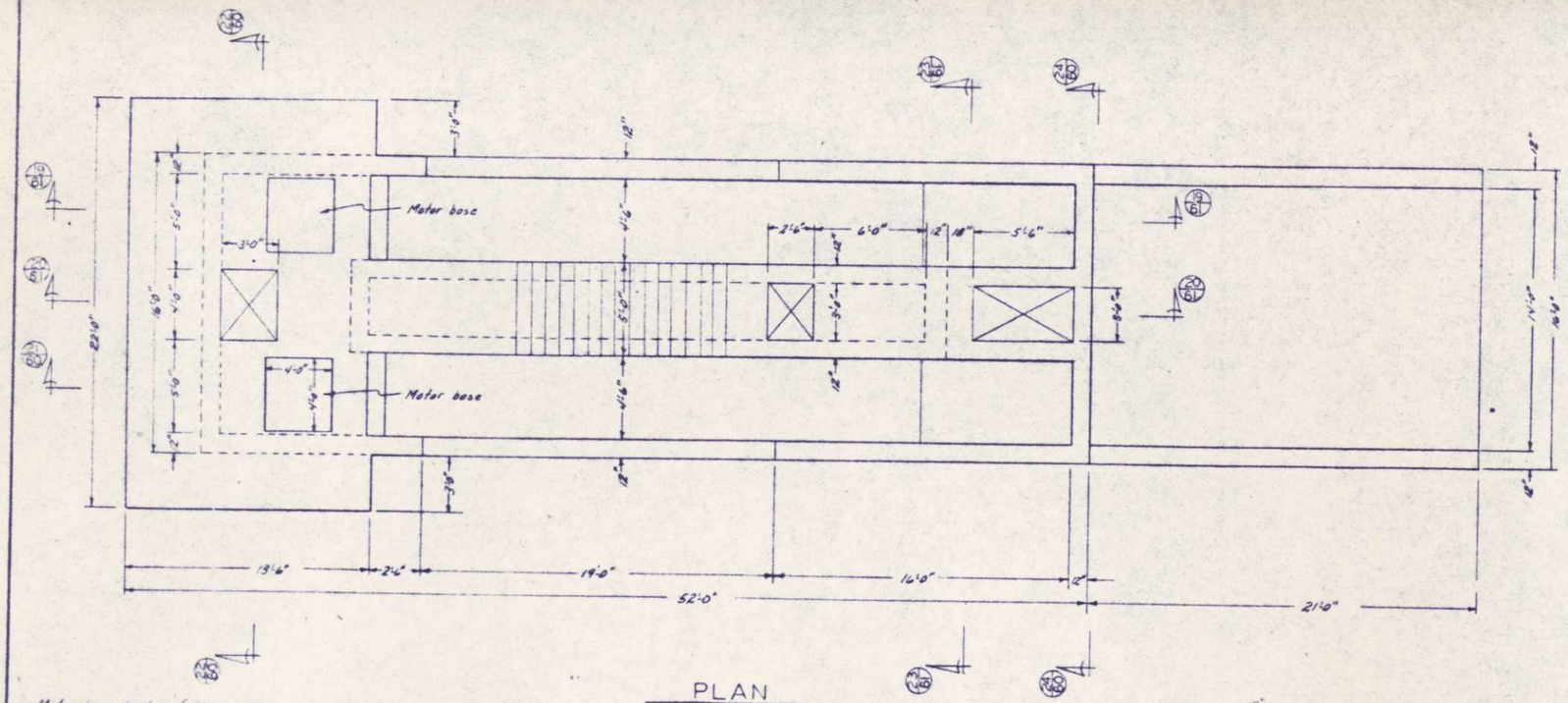
BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: FEB. 16, 1976

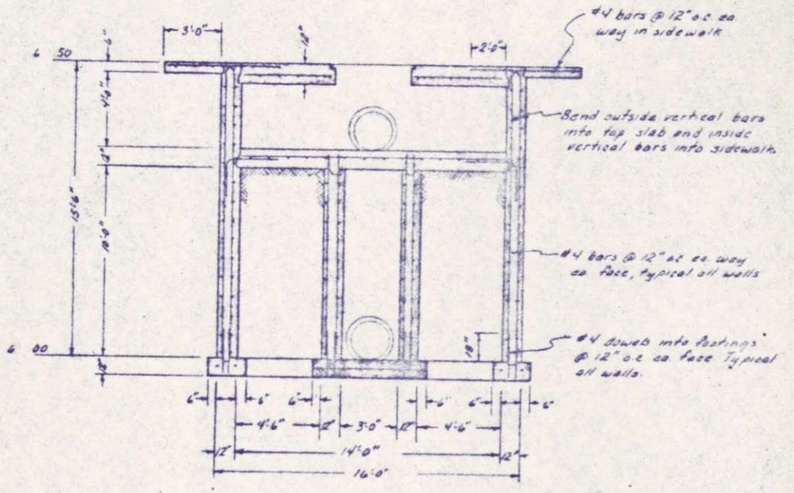
SOUTH SUPERIOR CSO PLANT

DRAINAGE PIPING PLAN

5



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



SECTION 22 - 22
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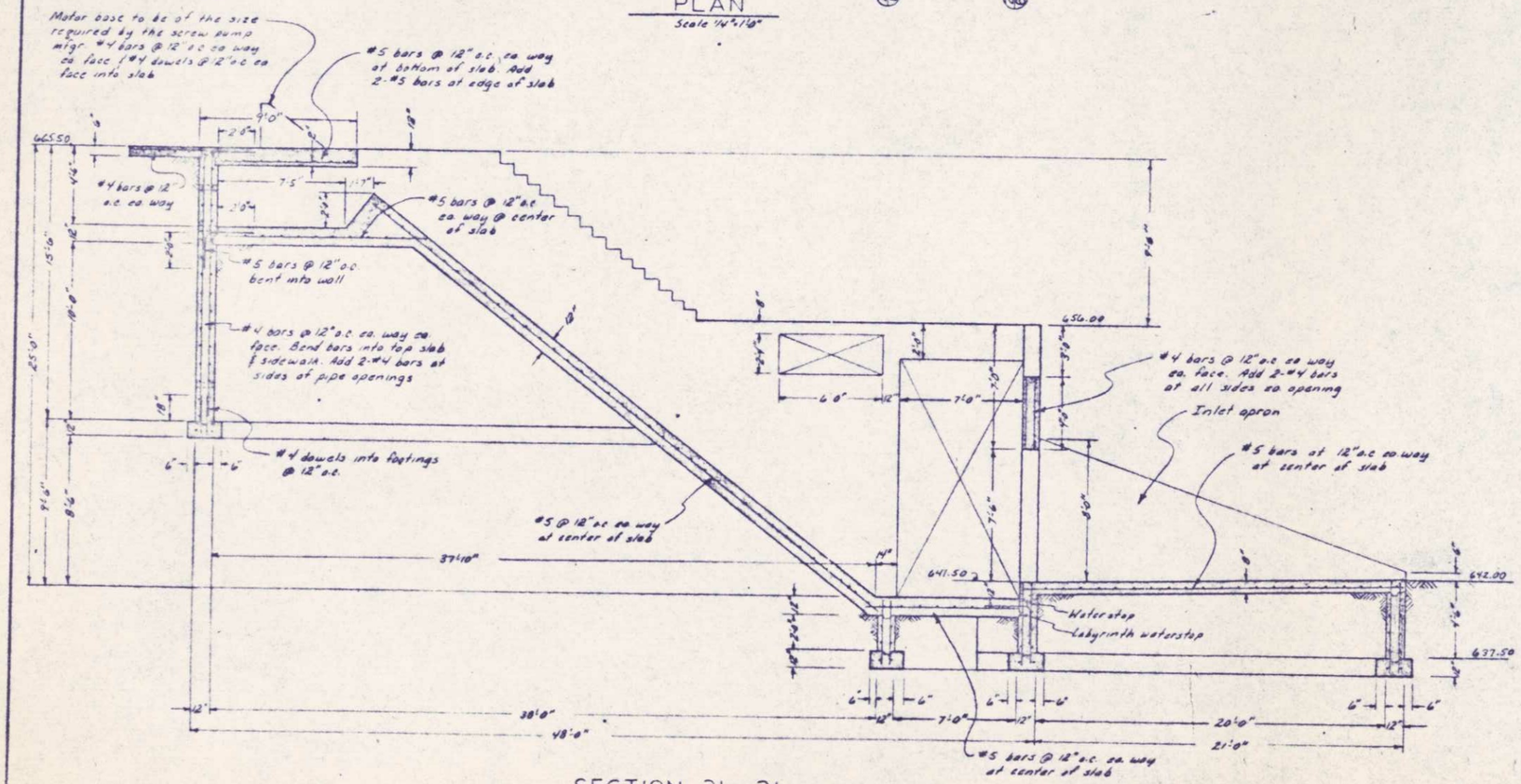

SECTION 21 - 21
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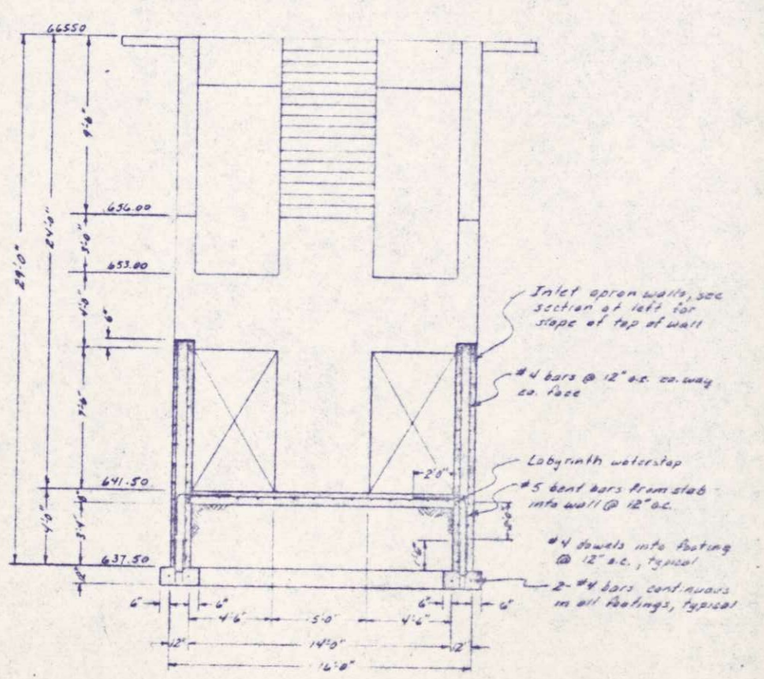


SECTION 24 - 24
Scale 1/4"=1'-0"

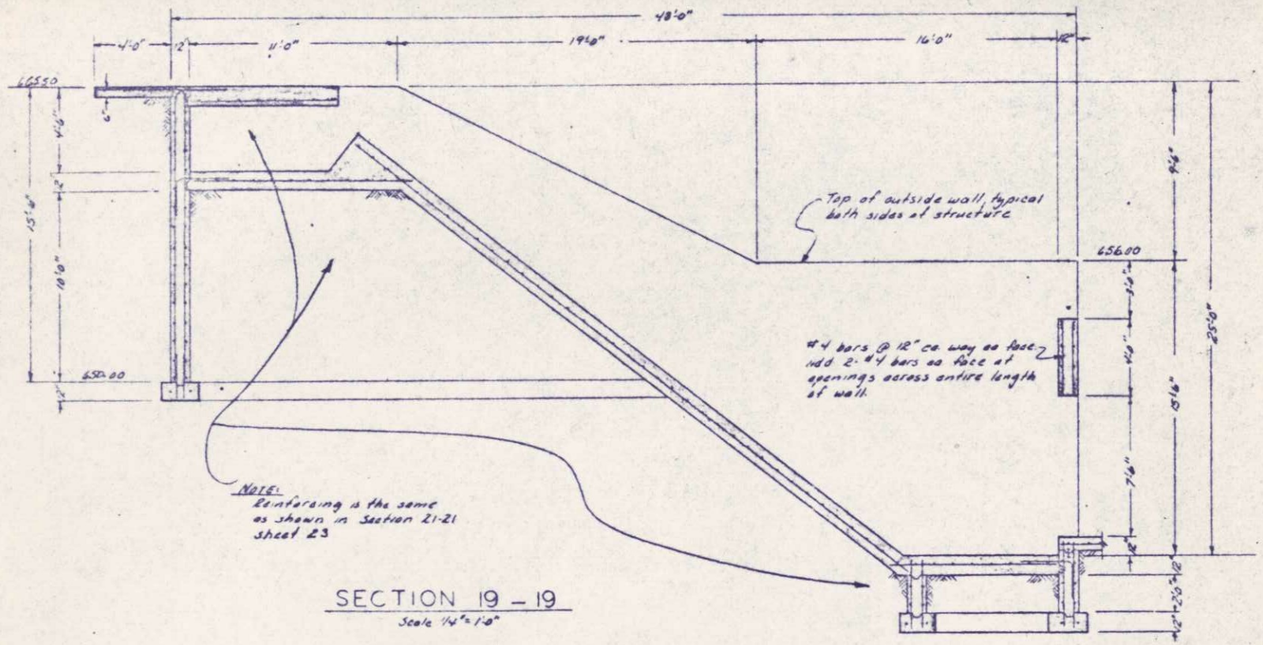
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.
DATE 2/16/76 REG. NO. E-12919 Robert W Rosene

SURVEY		REVISIONS
DRAWN	JWP	
DESIGN	RWR	
APPROVED		

BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: FEB 16, 1976 ODMM 6088 E

SOUTH SUPERIOR CSO PLANT
INLET STRUCTURE - STRUCTURAL
60/76



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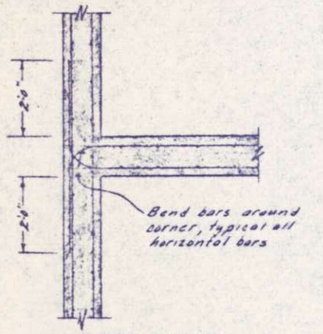
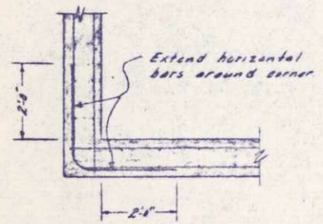


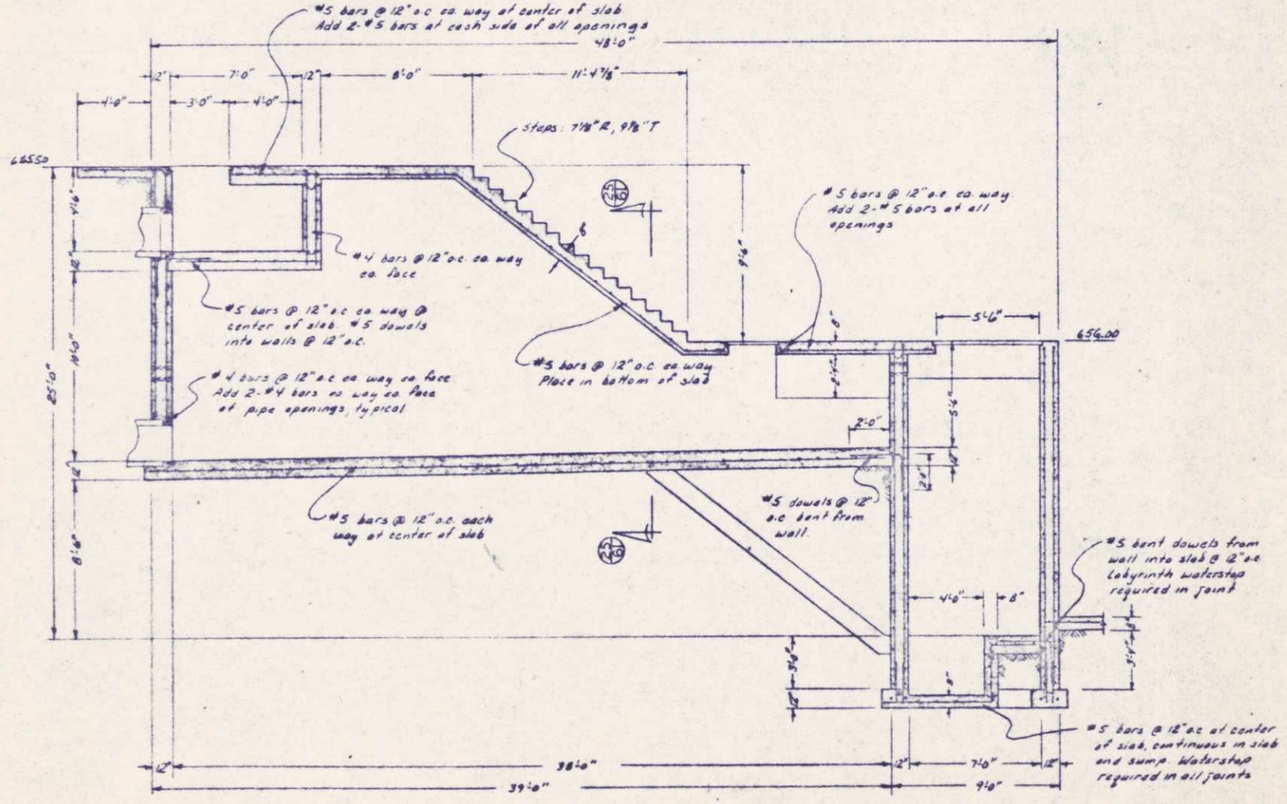
TEE WALLS



CORNER WALLS

WALL DETAILS
Scale 1/2"=1'0"

NOTES:
1. All exposed edges of concrete shall be chamfered ¾ inch.
2. Waterstop shall be installed in all construction joints below elevation 675 as shown for inlet structure.
3. All exterior slabs to be sloped to drain away from buildings or equipment. Interior slabs to be sloped to drain to floor drains or tanks.



SECTION 20 – 20
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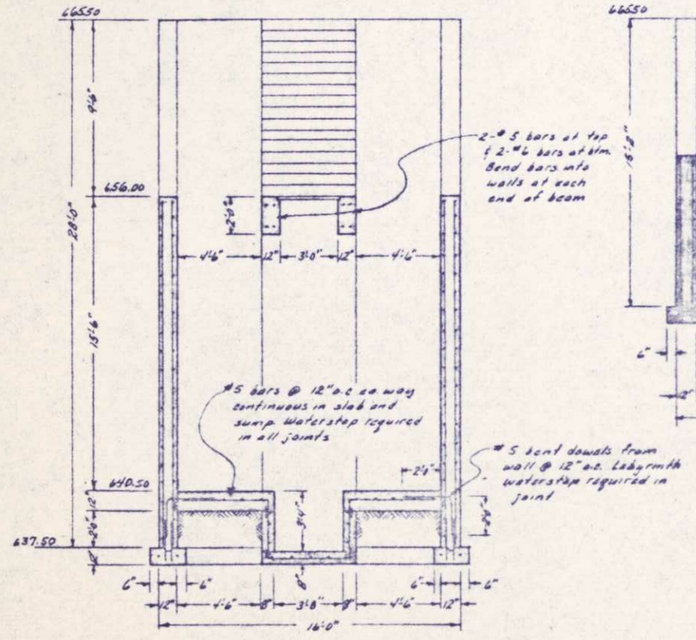
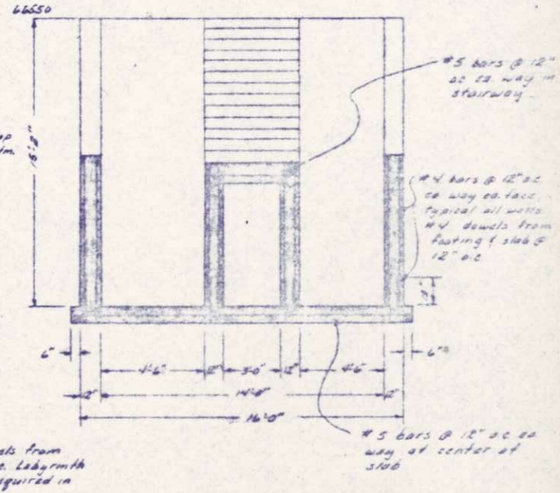


SECTION 23 – 23
Scale 1/4"



SECTION 25 – 25
Scale 1/4"=1'0"

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DATE 2/16/76 REG. NO. E-12919 Robert W Rosene

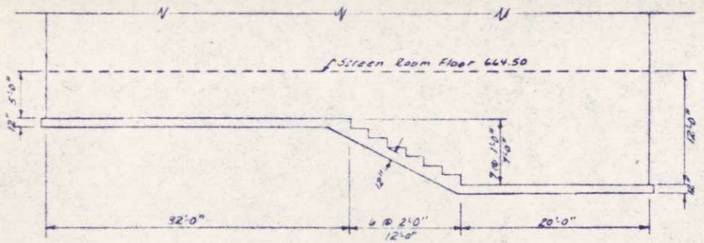
SURVEY	
DRAWN	EJK
DESIGN	RWR
APPROVED	

REVISIONS

BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

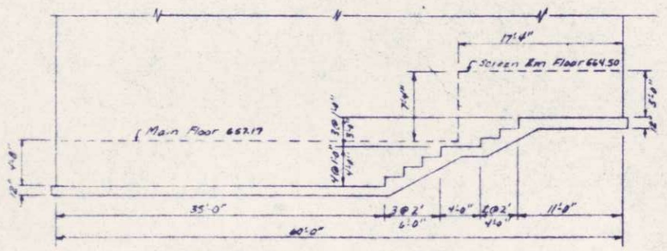
SUPERIOR, WISCONSIN
DATE: FEB. 16, 1976 ODNW 6858 S

SOUTH SUPERIOR CSO PLANT
INLET STRUCTURE-STRUCTURAL
6/



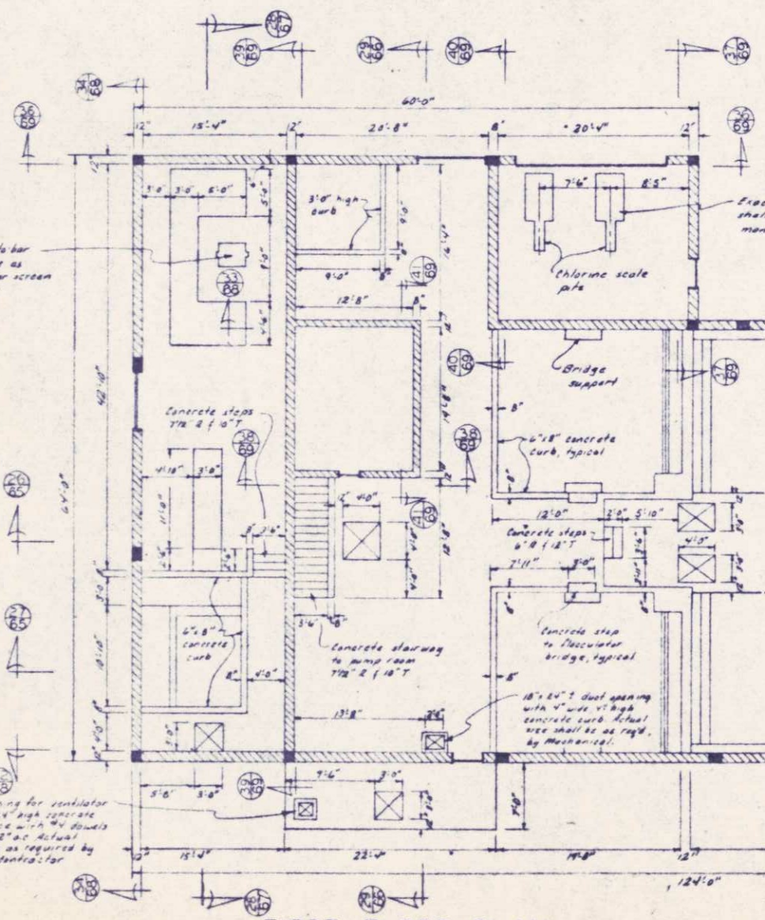
WEST WALL FOOTING

Scale 1/8"=1'-0"



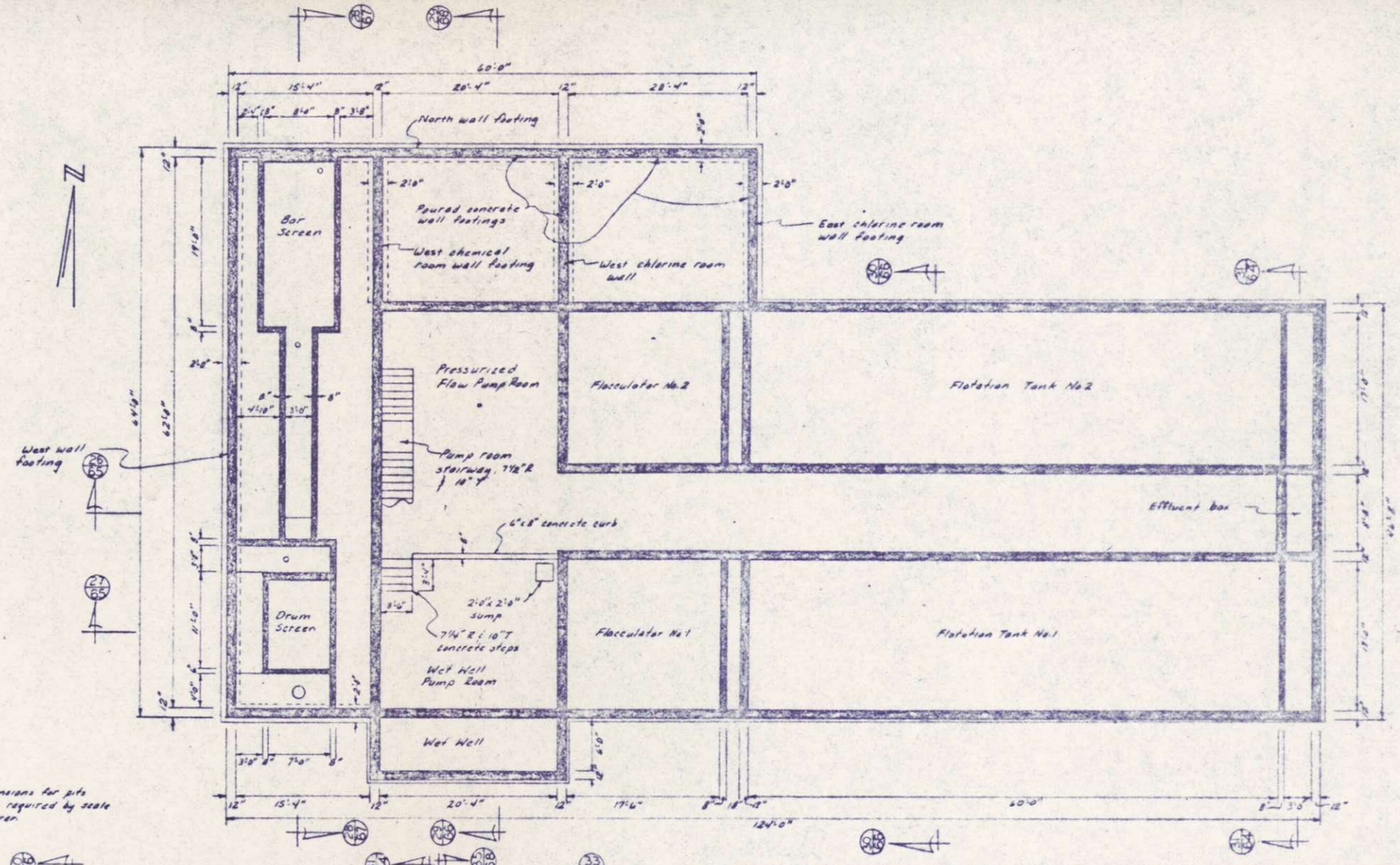
NORTH WALL FOOTING

Scale 1/8"=1'-0"



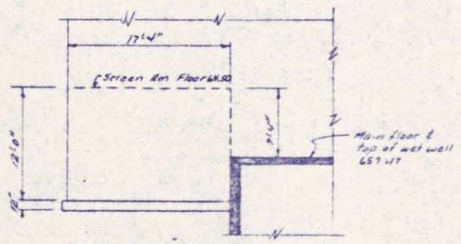
FIRST FLOOR PLAN

Scale 1/8"=1'-0"



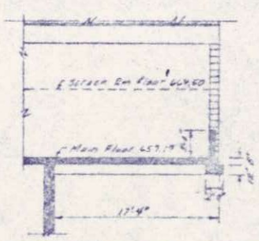
SUB-FLOOR PLAN

Scale 1/8"=1'-0"



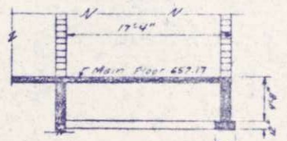
SOUTH SCREEN ROOM WALL FOOTING

Scale 1/8"=1'-0"



WEST CHEMICAL ROOM WALL FOOTING

Scale 1/8"=1'-0"



EAST & WEST CHLORINE ROOM WALL FOOTINGS

Scale 1/8"=1'-0"

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

DATE 2/16/76 REG. NO. E-12919 Robert W Roscoe

SURVEY
DRAWN Kolz
DESIGN Kuntz
APPROVED

REVISIONS

BOSSERMAN, BOSCHE, KIDERLIN & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE FEB 16, 1976 COMM 6885 E

SOUTH SUPERIOR CSO PLANT

FLOOR PLAN & FOOTING DETAILS

52

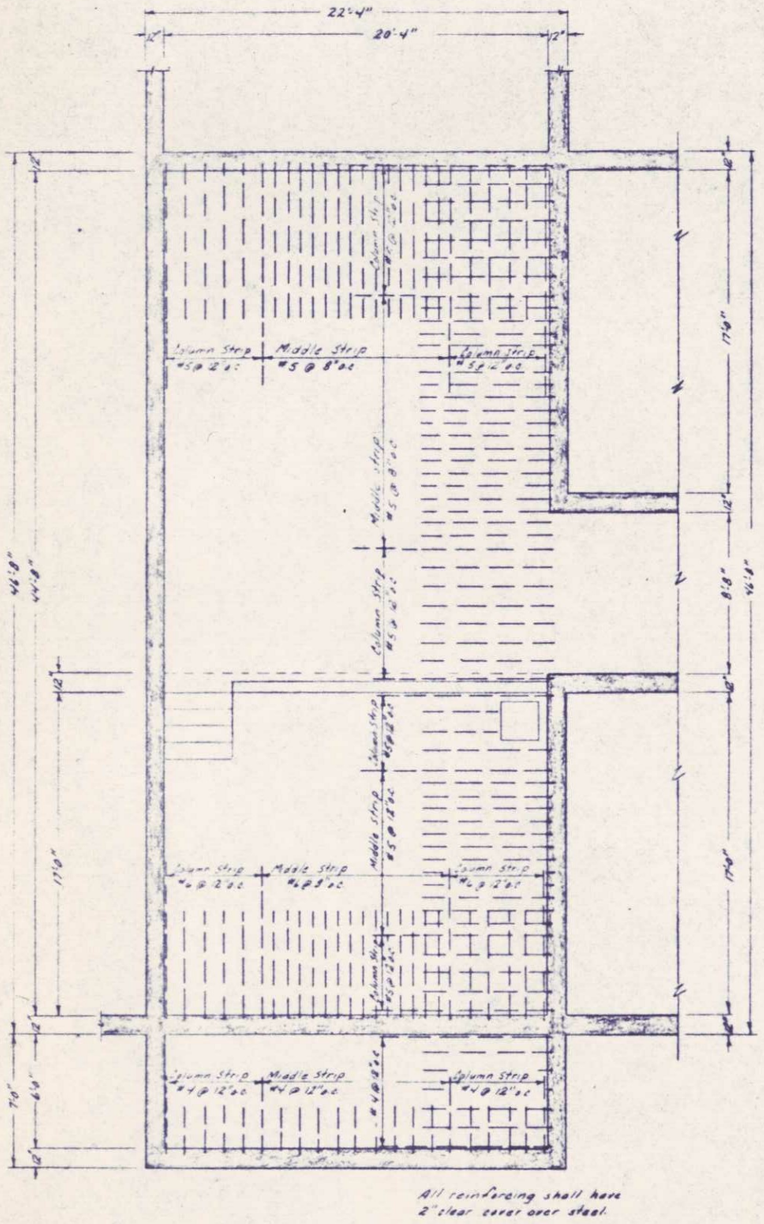
60'-0"
2" 15'-4" 2" 20'-4" 12" 22'-4" 12"
41'-10"
6'-10"
Flow channel
36" high curb, #4 bars @ 12" o.c. ea. way. Extend vertical steel into slab. Extend horz. steel 3'-0" around corner and into walls.
1'-0"
8"
#4 bars @ 12" o.c. ea way in middle of chlorine room & chemical room slabs. Place #4 dowels @ 12" o.c. into walls at discontinuous ends of slabs.
Add 2-#4
Add 2-#4 bars at each side of scale pits.
Extend top steel 3'-0" into slab on grade
Add 2-#4
#4 bars @ 12" o.c. ea way at center of slab, typical entire slab
5'-10" 3'-0" 8'-6"
15'-0"
Column strip #4 @ 12" o.c.
17'-0"
11'-6"
3'-6"
Extend top steel down corridor 3'-6"
Middle strip #4 @ 12" o.c. T & B
1'-8"
4'-0"
3'-6" 5'-2" 4'-8"
3'-6" 8" 7'-0" 8" 4'-8"
#4 @ 12" o.c.
Note: Only part of reinf steel is shown. Steel shall extend entire length and width of slab
Column strip #4 @ 12" o.c.
1'-2" 5'-8" 3'-0" 6'-8"
16'-4"
Extend top steel 2'-6" into wet well slab
4'-0"
7'-0"
20'-4"
22'-4"

MAIN FLOOR SLABS - TOP STEEL
Scale 1/4"=1'-0"

2" 2'-4" 8" 8'-0" 8" 3'-8" 12" 20'-4" 12" 22'-4" 2"
5'-10"
19'-0"
Flow channel
Size of opening shall be as required by bar screen manufacturer.
3'-8" 3'-0" 5'-0"
#4 @ 12" o.c.
Note: Only part of reinf steel is shown. Steel shall extend entire length and width of slab
17'-0"
Add 3-#6 as shown
Add 2-#6
Middle strip #5 @ 9" o.c. T & B
Column strip #5 @ 6" o.c. T & B
#4 bars @ 12" o.c. ea way in walkway
Add 2-#4 bars at edge of walkway
Add 2-#4 bars at each side of opening
Add 2-#5 bars each side of opening
22'-4"
Add 2-#5 bars each side of opening as shown
#5 @ 6" o.c. short span, #5 @ 12" o.c. long span. Typical for entire wet well slab

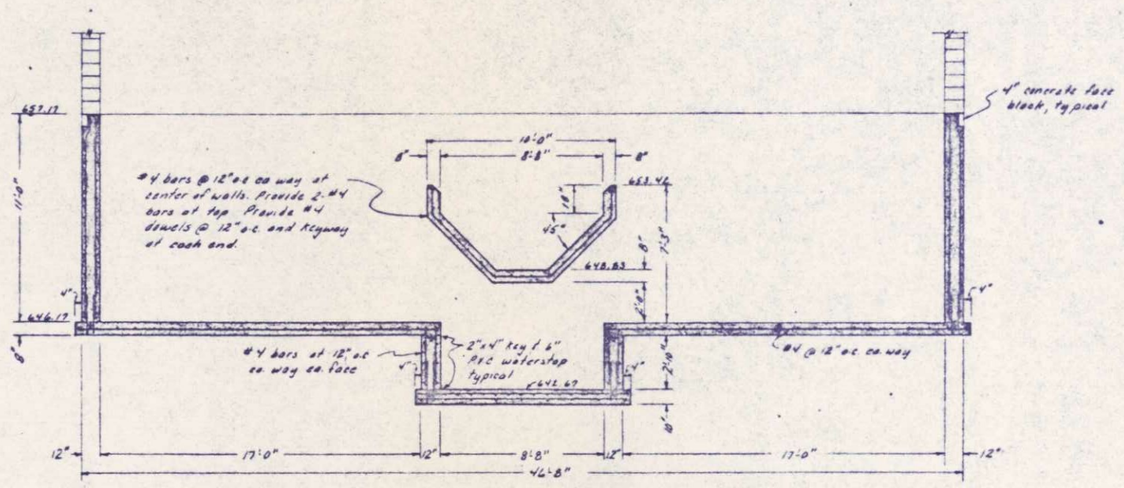
MAIN FLOOR SLABS — BOTTOM STEEL
Scale: 1/4"=1'-0"

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN
DATE 6/16/76 SEE AS E/29/9 Robert W Rosene
SURVEY
DRAWN
DESIGN
APPROVED
REVISIONS
BOXESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA
SUPERIOR, WISCONSIN
DATE: FEB 18, 1976
SOUTH SUPERIOR CSO PLANT
FLOOR PLAN-STRUCTURAL

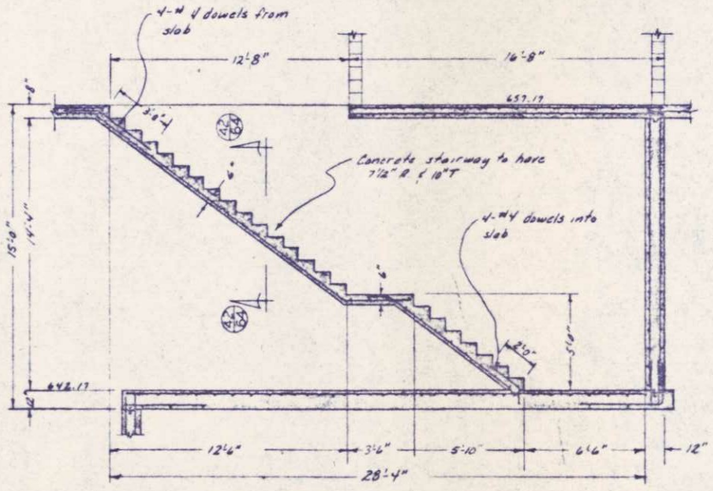


All reinforcing shall have 2" clear cover over steel.

PUMP ROOM SLABS – TOP STEEL
Scale 1/4"=1'-0"

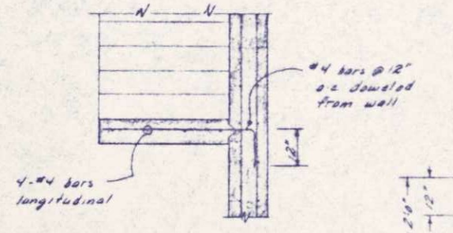


SECTION 31 - 31
Scale 1/4"=1'-0"

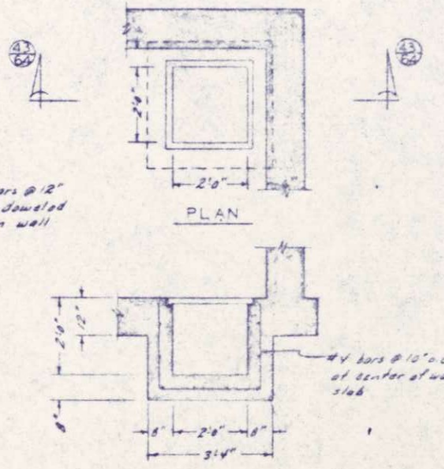


SECTION THRU STAIRWAY
Scale 1/4"=1'-0"

PUMP ROOM STAIRWAY



SECTION 42-42
Scale 1/2"=1'-0"



SECTION 43-43

SUMP
Scale 1/2"=1'-0"

SOUTH SUPERIOR CSO PLANT

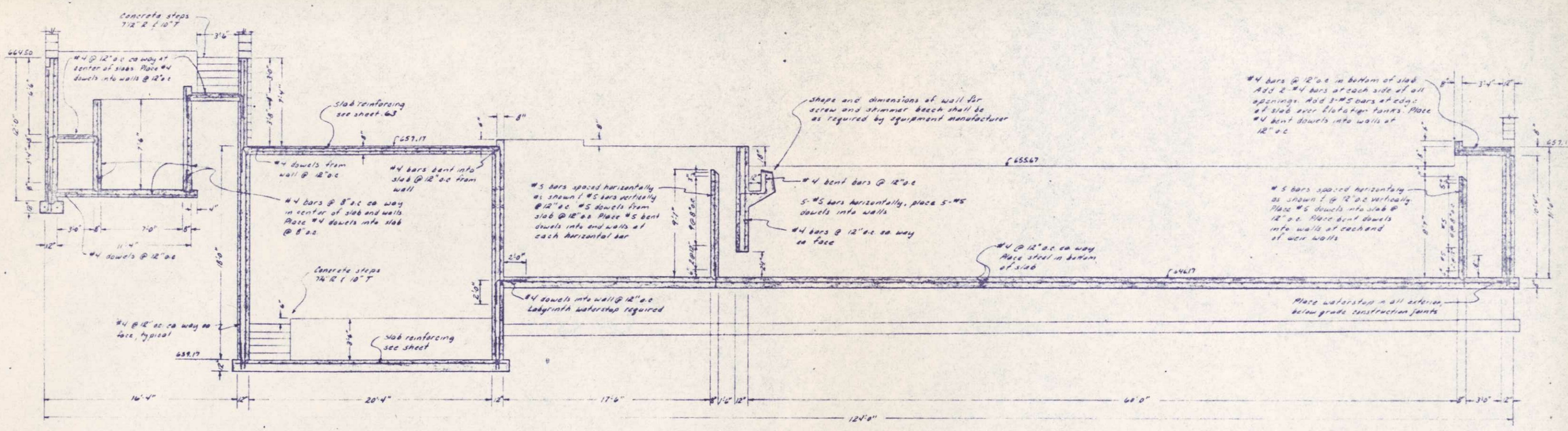
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.
DATE 4/16/76 REG. NO. E-12919 Robert W. Roscoe

		REVISIONS
SURVEY		
DRAWN	KJE	
DESIGN	KJE	
APPROVED		

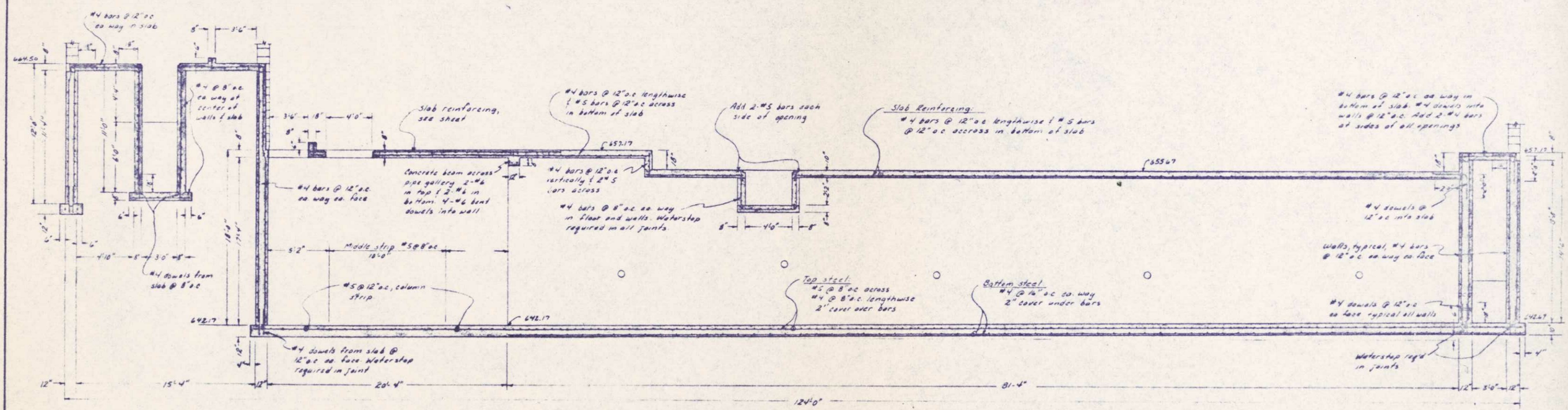
BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: FEB. 16, 1976 DRAWN 6888 E

PLANT SECTIONS—STRUCTURAL



SECTION 27–27
Scale 1/4"=1'-0"



SECTION 26 – 26
Scale 1/4"=1'-0"

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.
DATE 2/16/76 REG. NO. E 12919 Robert W Roesne

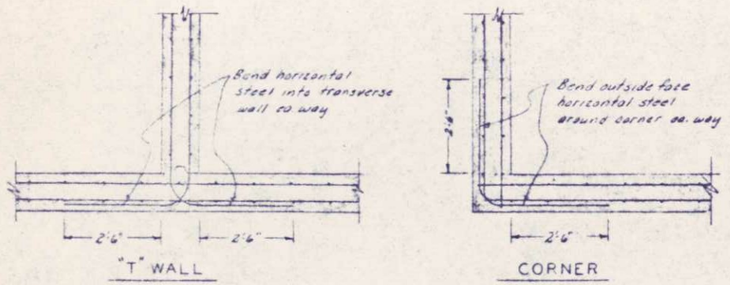
SURVEY
DRAWN DWLF
DESIGN PWL
APPROVED

REVISIONS

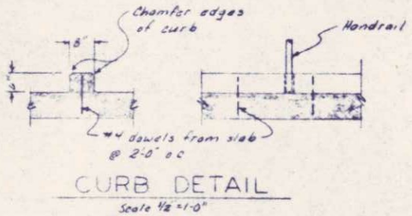
BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: FEB 16, 1976 6566 E

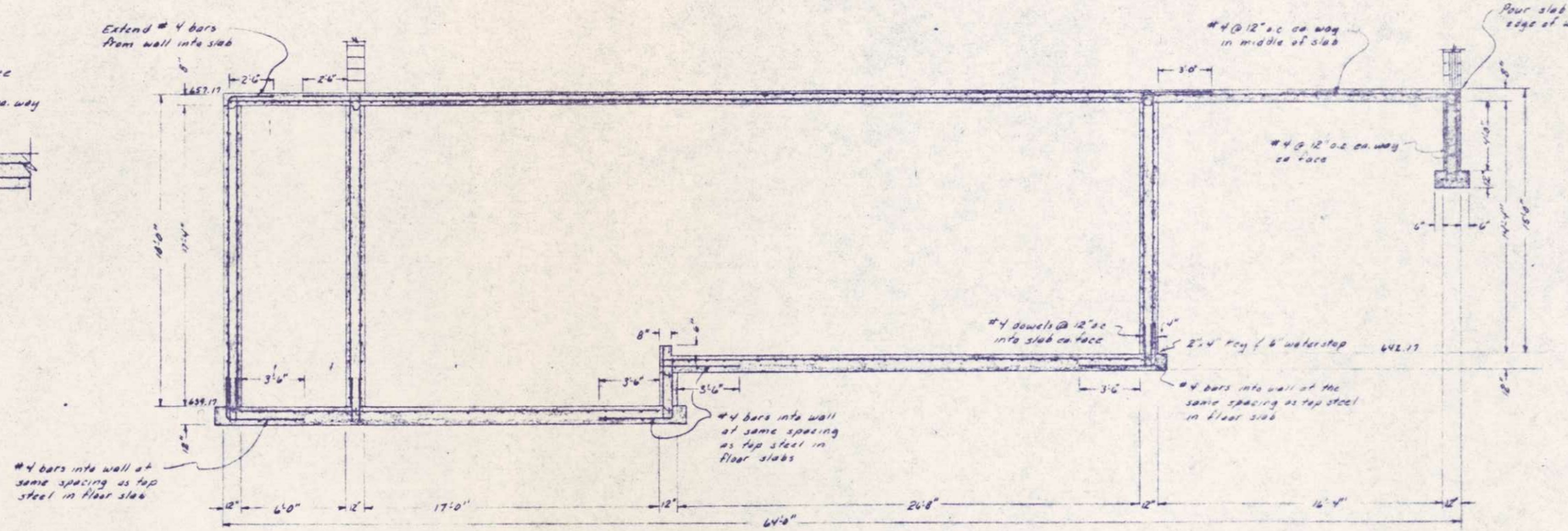
SOUTH SUPERIOR CSO PLANT
PLANT SECTIONS–STRUCTURAL



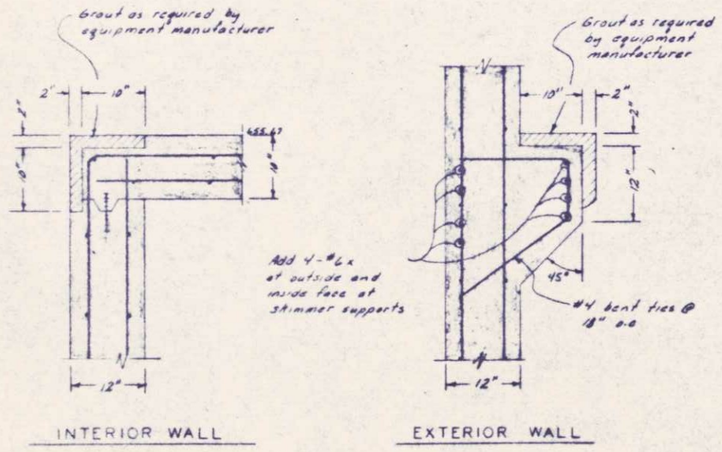
CORNER DETAILS
Scale 1/2" = 1'-0"



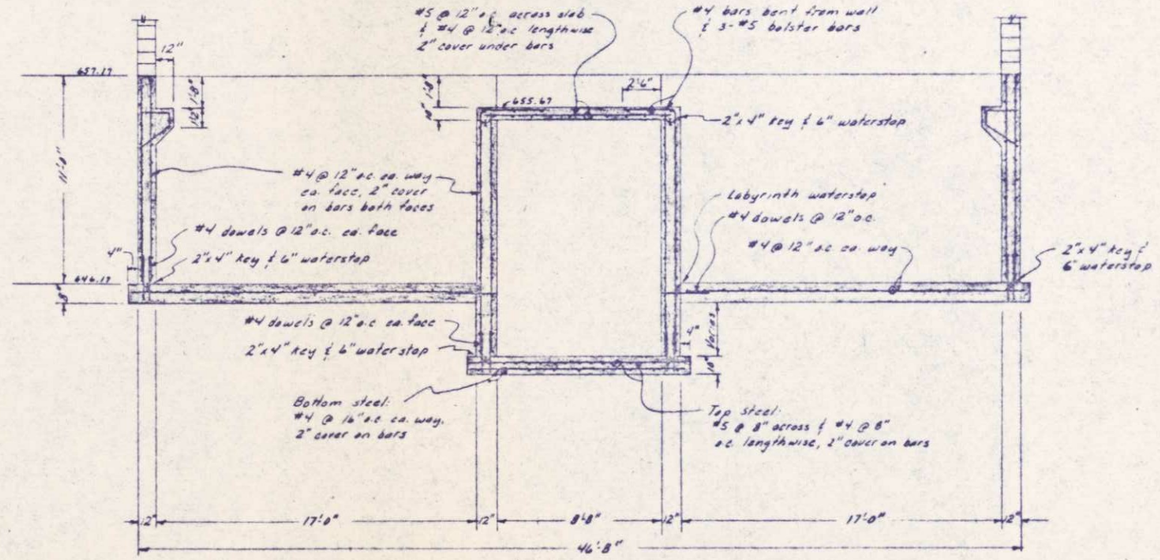
CURB DETAIL
Scale 1/2" = 1'-0"



SECTION 29 - 29
Scale 1/4" = 1'-0"



FLOTATION TANK WALLS
Scale 1" = 1'-0"



SECTION 30 - 30
Scale 1/4" = 1'-0"

SOUTH SUPERIOR CSO PLANT

PLANT SECTIONS - STRUCTURAL

BOXESTROO, ROSENE, AUDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: FEB. 16, 1976

Precast slab sections

Flange connections required between all tees, spaced as shown

Note:
All openings shown in roof are approximate. Contractor shall verify all opening locations and sizes prior to fabrication of the slabs and tees

Precast 20" double tees

½" Expansion joint

6" precast slabs

Precast 20" double tees

Exhaust fan openings

Flange connections required between all tees spaced as shown

Opening for 3" roof drain, typical 8 such required

ROOF LAYOUT
Scale 1/8"=1'-0"

#4 bars @12" o.c. add 2-#4 bars at end of slab

#4 bars @ 8" o.c. each way

#4 bars @ 8" o.c. each way Provide #4 dowels into slab and intersecting walls @ 8" o.c.

#4 bars @ 12" o.c. each way Add 2-#4 bars at edge of walkway Provide #4 dowels into wall @ 12" o.c.

2-#4 bars typical all footings

#4 bars @ 12" o.c. each way each face with #4 dowels into footing @ 12" o.c. each face Typical all exterior building support walls.

SECTION 28 - 28
Scale 1/4"=1'-0"

FLANGE CONNECTION DETAIL
Scale 3"=1'-0"

Precast tee flange

2"x4"x¼" steel plate cast into tee flange

1¼"x4"x6" plate welded to flange plate. Anchor to walls with ½"ø bolts @ 8'-0" o.c. Fill cores with mortar at anchor bolts.

Concrete block

Poly-styrene foam, caulk exterior & interior joint between block & tee flange

12" bond beam

FLANGE TIE DOWN DETAIL
Scale 1"=1'-0"

6" precast slabs

#3x18" dowel from bond beam at each joint between slabs, bend into joint and grout

12" bond beam

Caulk

½" tempered masonite strip

END SLAB TIE DOWN DETAIL
Scale 1"=1'-0"

4"x6"x⅜", 40 durometer hardness, neoprene bearing pad under each stem

20" double tee

½"ø x 9" rod, weld to plate in tee stem and angle in bond beam with 2" weld each end

12" bond beam

5"x5"x¼" steel plate with anchor cast into each tee stem at each end

END TEE TIE DOWN DETAIL
Scale 1"=1'-0"

#4 bars @ 8" o.c. each way at center of walls & slab

SECTION 44-44
Scale 1¼"=1'-0"

SECTION 45-45
Scale 1¼"=1'-0"

SECTION 46-46
Scale 1¼"=1'-0"

SOUTH SUPERIOR CSO PLANT

BOSTROOD, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN

ROOF PLAN & SECTIONS

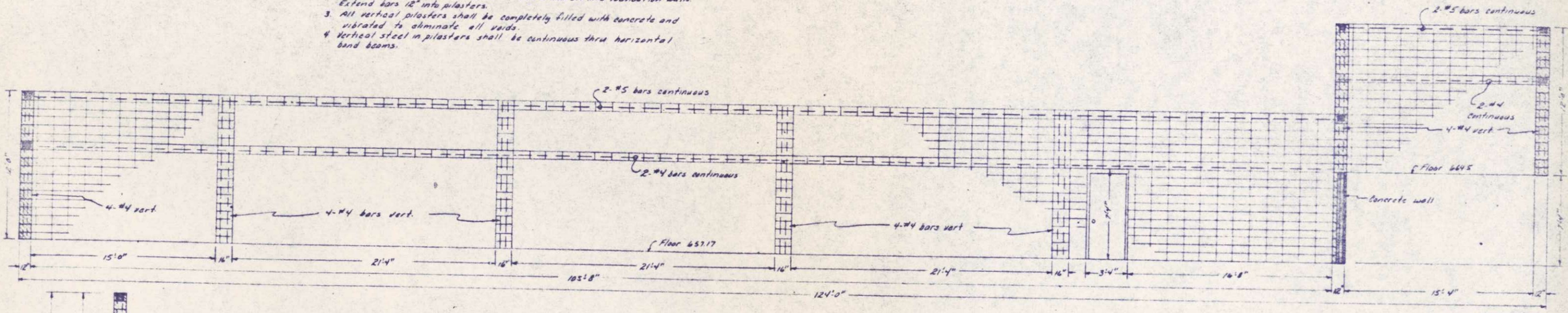
DATE: FEB. 16 1973, 1974

SURVEY
DRAWN
DESIGN
APPROVED

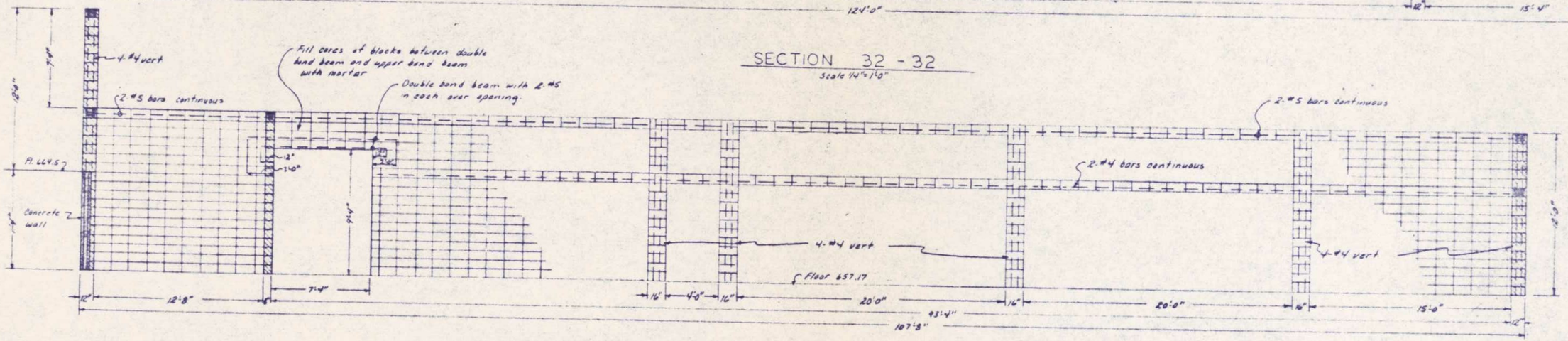
Robert W Rosene

NOTES:

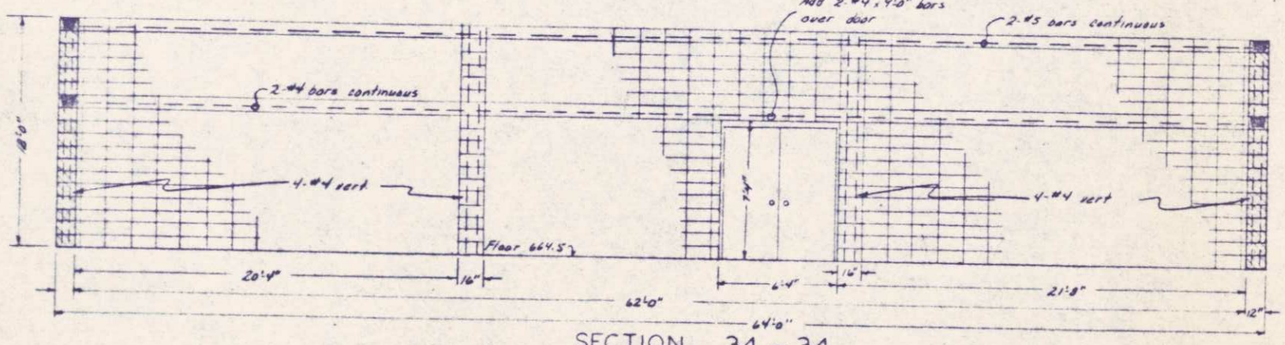
1. Masonry walls are shown from top of concrete floors to roof slab level. See structural sheets for concrete floors and walls. See sheet S7 for masonry required around roof slabs and tees.
2. All vertical pilasters shall have 4-#4 x 2'-0" dowels into foundation walls. Extend bars 12" into pilasters.
3. All vertical pilasters shall be completely filled with concrete and vibrated to eliminate all voids.
4. Vertical steel in pilasters shall be continuous thru horizontal band beams.



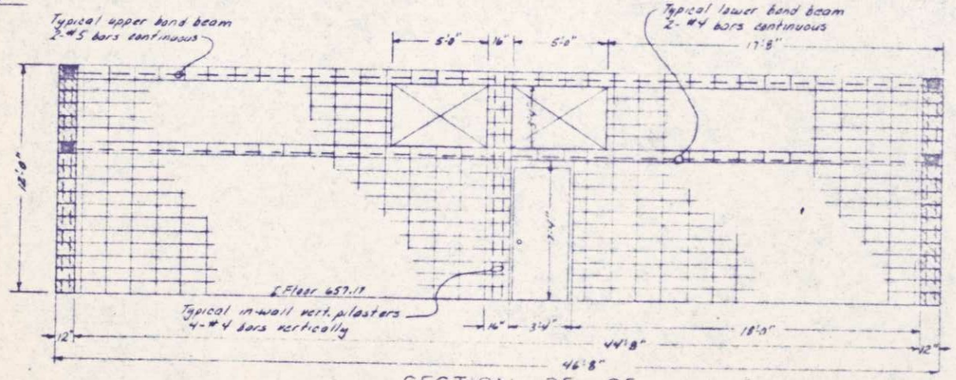
SECTION 32 - 32
scale 1/4"=1'-0"



SECTION 33 -33
scale 1/4"=1'-0"



SECTION 34 - 34
Scale 1/4"=1'-0"



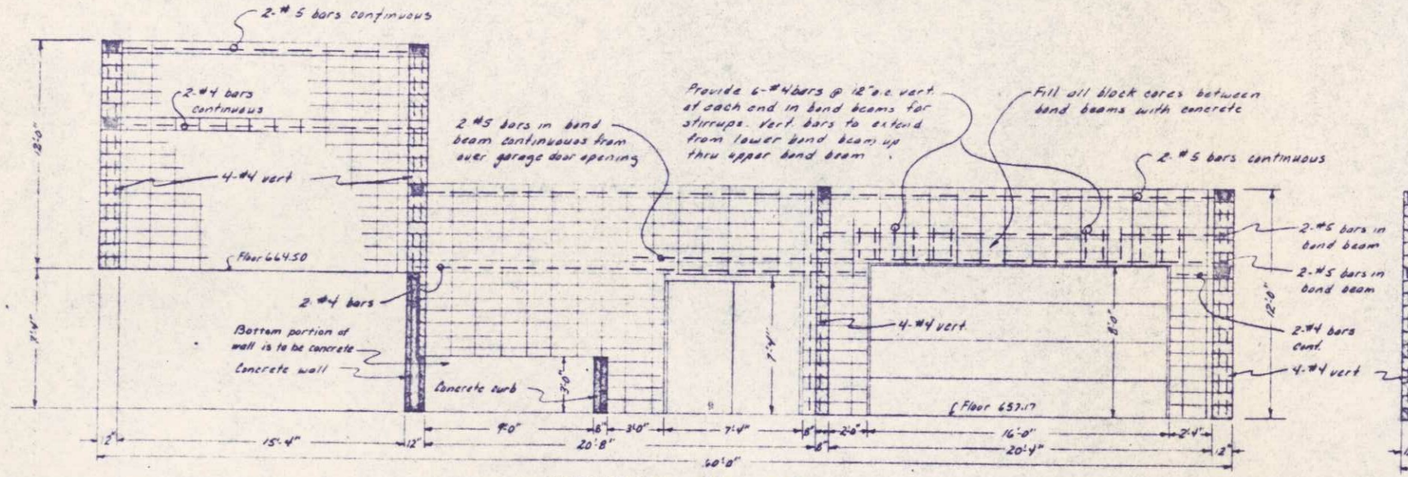
SECTION 35 - 35
Scale 1/4"=1'-0"

SURVEY
DRAWN
DESIGN
APPROV'D
Date
REVISIONS

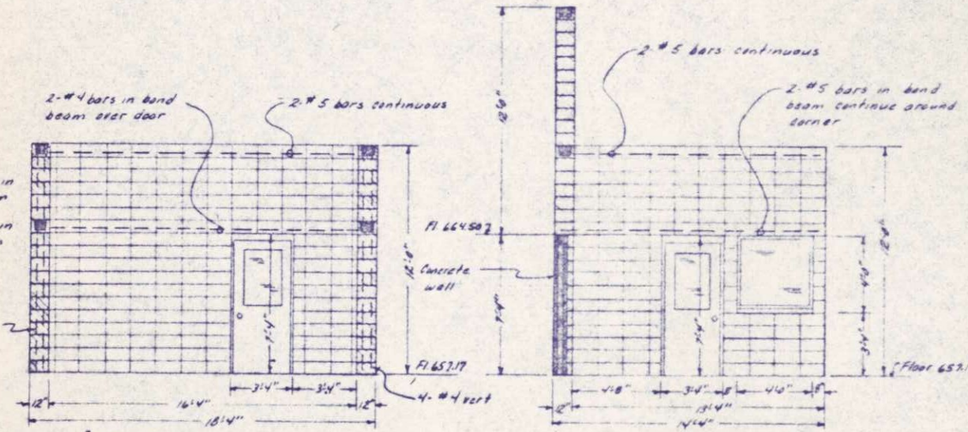
BORESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: FEB 16, 1976

SOUTH SUPERIOR CSO PLANT
MASONRY - STRUCTURAL

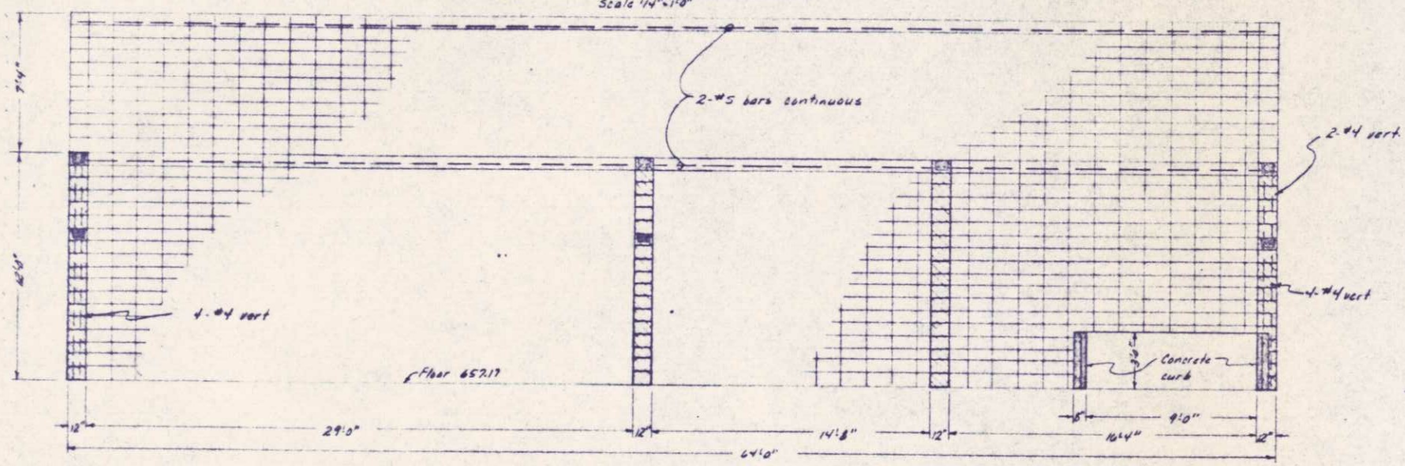


SECTION 36 - 36
Scale 1/4"=1'-0"

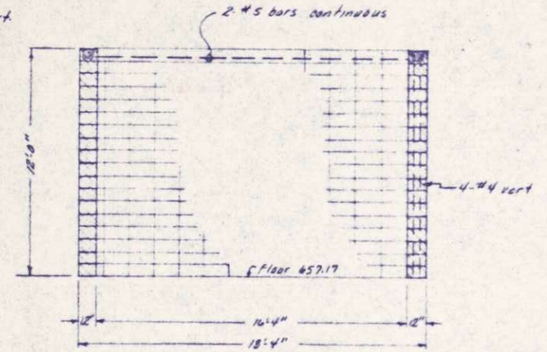


SECTION 37 - 37
Scale 1/4"=1'-0"

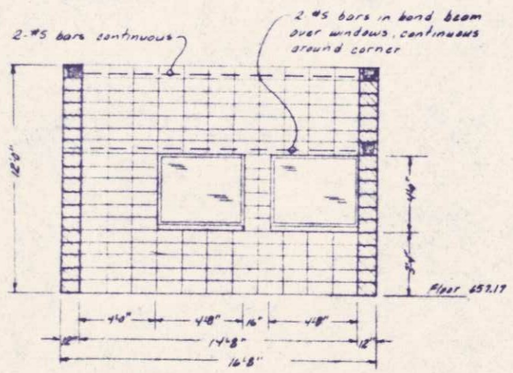
SECTION 38 - 38
Scale 1/4"=1'-0"



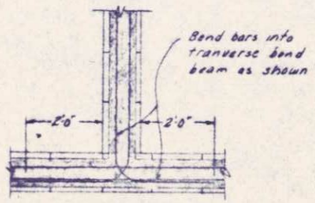
SECTION 39 - 39
Scale 1"=1'-0"



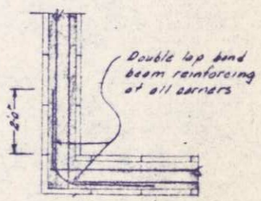
SECTION 40 - 40
Scale 1/4"=1'-0"



SECTION 41 - 41
Scale 1/4"=1'-0"



"T" WALL



CORNER

BOND BEAM DETAILS
Scale 1/2"=1'-0"

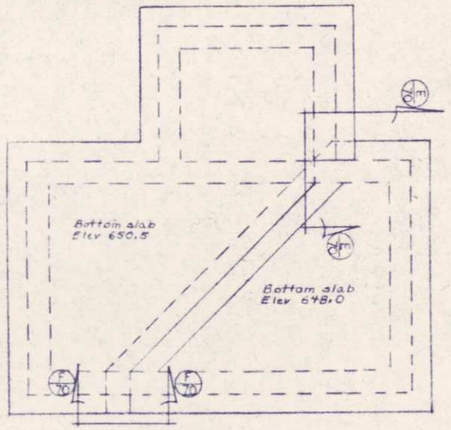
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.
DATE 2/16/76 REG. NO. E-12979 Robert W. Roseke

SURVEY		REVISIONS
DRAWN	RWR	
DESIGN	RWR	
APPROV'D		

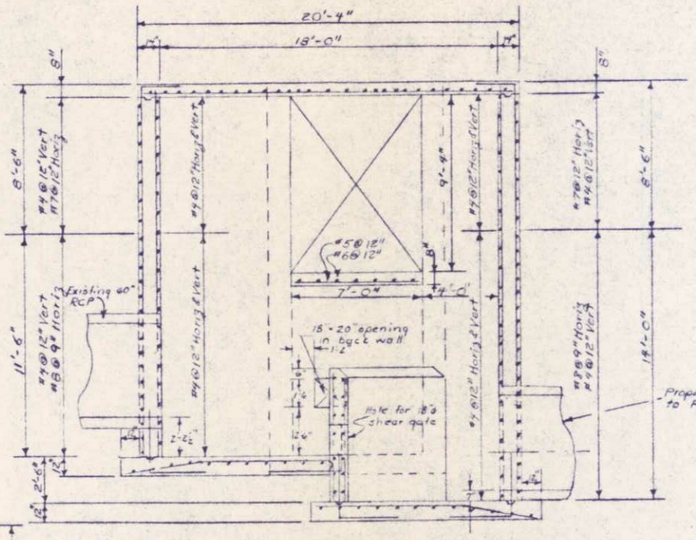
ROHESTROO, ROSEKE, ADDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: FEB. 16, 1976 DRAWING 6868E

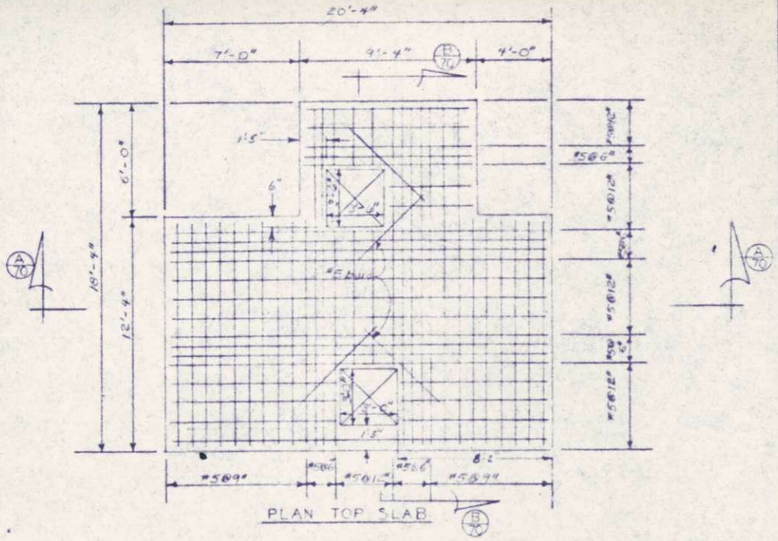
SOUTH SUPERIOR CSO PLANT
MASONRY - STRUCTURAL
69/78



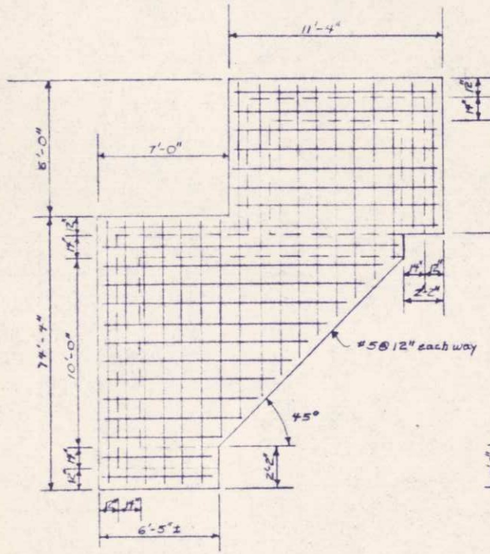
BOTTOM SLAB PLAN



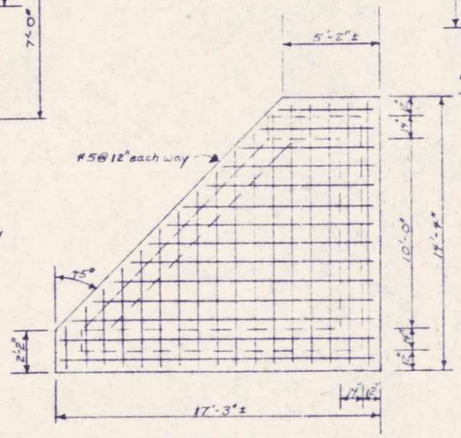
ELEVATION—AA



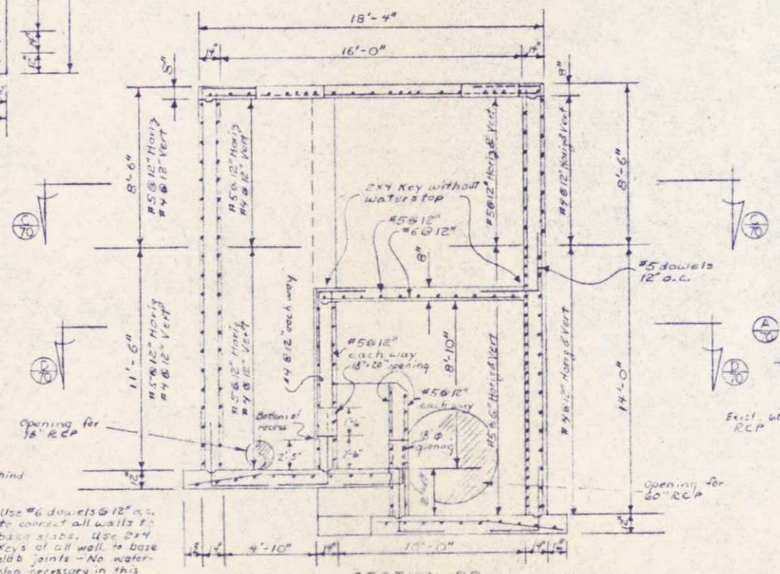
PLAN TOP SLAB



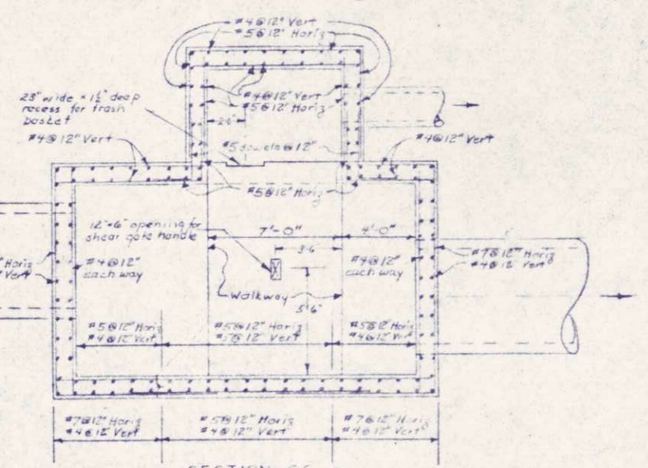
BOTTOM SLAB ELEV 650.5



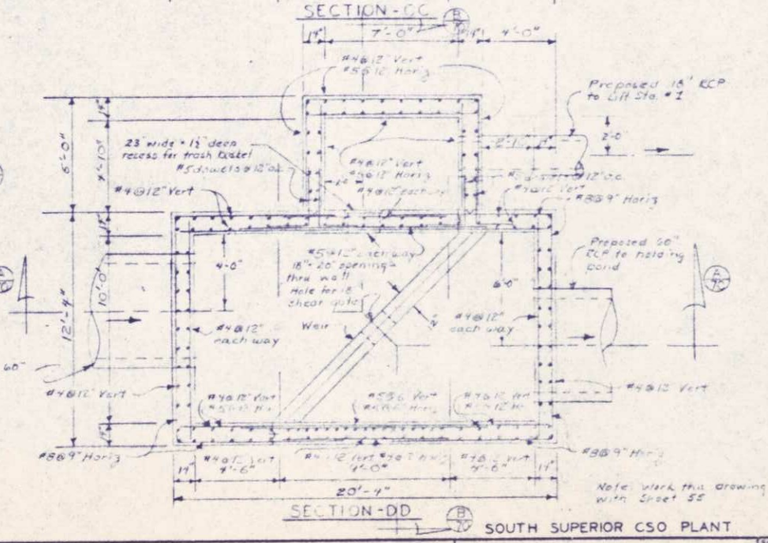
BOTTOM SLAB ELEV 648.0



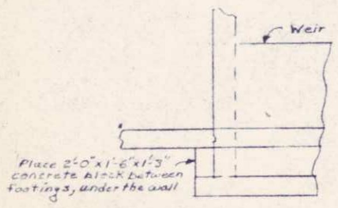
SECTION-BB



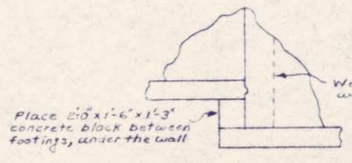
SECTION-CC



SECTION-DD



SECTION-EE



SECTION-FF

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

DATE Feb 16 1978 SIGNED 21291 Robert W Rosene

REVISIONS	
SURVEY	
DRAWN	
DESIGN	
APPROVED	

BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: FEB. 11, 1978 COMM 6888E

SOUTH SUPERIOR CSO PLANT

OVERFLOW STRUCTURE - STRUCTURAL

S-6C7 70/78

OUTDOOR AIR INTAKE ON ROOF 24"x24" THROAT HOOD INLET AREA = 8 FT²

ELECTRIC UNIT HTR. 3kW ELEC. CONTR.

EXHAUST FAN E-5

20/24 EXH DROP

ELECTRIC UNIT HTR. BY ELEC. CONTR.

SUPPLY REGISTER

SIZE EXTENTION COLLAR 1½" LARGER THAN REG. IN BOTH DIMENSIONS

SPLITTER

DUCT EXTENTION DETAIL
NO SCALE

EXHAUST FAN E-2

3/16 DUCT THRU ROOF WITH ALUM. LIGHT FRAME

ALUMINUM CURB

AUTO-BACKDRAFT DAMPER

20/54

RA

FAN SECTION

FILTER SECTION

O.A. PLENUM

O.A. LOUVER

HEATING AND VENTILATING UNIT S-1

ELECTRIC HEATING COIL SECTION

4/71 SECTION
1/4"=1'-0"

OUTDOOR AIR INTAKE ON ROOF 24"x24" THROAT HOOD INLET AREA = 8 FT²

3IH.

24"x24" CEILING TRANSFER GRILLE

24"x24" CEILING DIFFUSER W/65% NECK - 750 CFM

20/14

UNIT VENTILATOR

MOUNT U.V. 6" BOTTOM OF ROOF TEES

O.A. DUCT TRANSITION TO 36"x4" AT UNIT

SHT MET. SLEEVE BOTTOM 8'-8" ABOVE FL.

ELECTRIC UNIT HTR. 3kW ELEC. CONTR.

OUTDOOR AIR INTAKE ON ROOF 12"x12" THROAT, HOOD INLET AREA = 2 FT²

24"x16" TRANSFER GRILLE WITH AUTO-BACKDRAFT DAMPER IN SLEEVE

OPPOSED BLADE BALANCING DAMPERS

EXHAUST FAN E-6

20/20

2/72 SIMILAR

20/20 DUCT DROP TO 8' ABOVE FLOOR WITH 8/12 OPNG. AT 8'0 ABOVE FLR. 20/12 DUCT TO 12' ABOVE FLR. WITH END OPEN

24/16

24/18

46/18

46/20

54/20

40/20

18"x16" SUPPLY REGISTER (TYPICAL) SEE DETAIL OF TYPICAL DUCT EXTENTION

SPLITTER DAMPER (TYPICAL)

FILTER ACCESS DOOR

ELECTRIC HTG. COIL

FAN SECTION

5 60"x40" O.A. INTAKE LOUVER

4/71

24/16 SUPPLY DUCT DOWN THRU CURBED OPENING

EXHAUST FAN E-4

EXHAUST FAN E-3

EXHAUST FAN E-2

EXHAUST FAN E-1

SUPPLY FAN E-7

5/72

ERICKSEN ELLISON
AND ASSOCIATES INC.
CONSULTING ENGINEERS
SAINT PAUL MINNESOTA

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN
DATE 11-29-76 REG. NO. E-6773 T.M. Ericksen

SURVEY		
DRAWN	TP	
DESIGN	AE	
APPROVED	EE	

REVISIONS

BONESTEEL, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE FEB 11 '76 ODMW 5888E

SOUTH SUPERIOR CSO PLANT
MECHANICAL

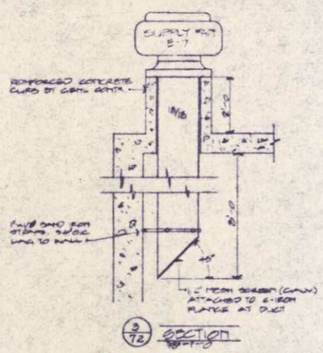
EXHAUST FAN SCHEDULE

FAN	SERVICE	MFR	MODEL	TYPE	DRIVE	CFM	"SP	FAN RPM	HP	REMARKS
E-1	TREATMENT RM. VENT	ACME	P1B10	PROP	BELT	2500	1/4	850	1/2	NOTE 1,3
E-2	TREATMENT RM VENT	ACME	P1B10	PROP	BELT	2000	1/4	850	1/2	NOTE 1,3
E-3	TREATMENT RM VENT	ACME	P1B10	PROP	BELT	2500	1/4	850	1/2	NOTE 1,3
E-4	TREATMENT RM VENT	ACME	P1B10	PROP	BELT	2500	1/4	850	1/2	NOTE 1,3
E-5	CHLORINE RM. VENT	ACME	PU12H	PROP	BELT	4300	3/8	680	3/4	NOTE 1,2,3
E-6	ATTLENT RM. VENT.	ACME	PU22G	PROP	BELT	8000	3/8	780	1 1/2	NOTE 1,2,3
E-7	WELL VENTILATION	ACME	LA14D3	PROP DIRECT DRIVE	DIRECT	1400	1/2	1140	1/2	NOTE 3,4
E-8										

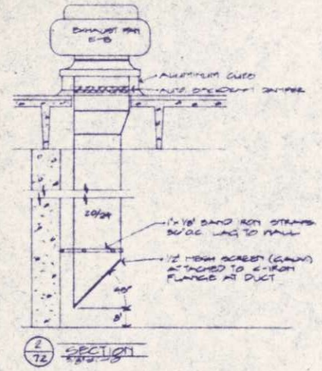
NOTES:
1) PROVIDE INSULATED ALUMINUM CURB WITH INTEGRAL BACKDRAFT DAMPER
2) PROPELLOR DISCHARGE FAN
3) APPROVED MANUFACTURERS: ACME, COOK, GREENHECK, LOR FOR BELT DRIVE, FOR DIRECT DRIVE PROPELLOR FAN TO HAVE A NEMA FRAME MOTOR
4) PROVIDE FAN TO HAVE A NEMA FRAME MOTOR

EEA

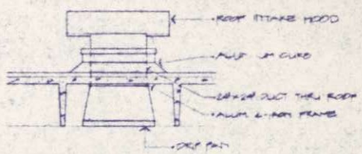
M-108



3/72 SECTION



2/72 SECTION



1/72 SECTION

ERICKSEN ELLISON AND ASSOCIATES INC.
CONSULTING ENGINEERS
SAINT PAUL MINNESOTA

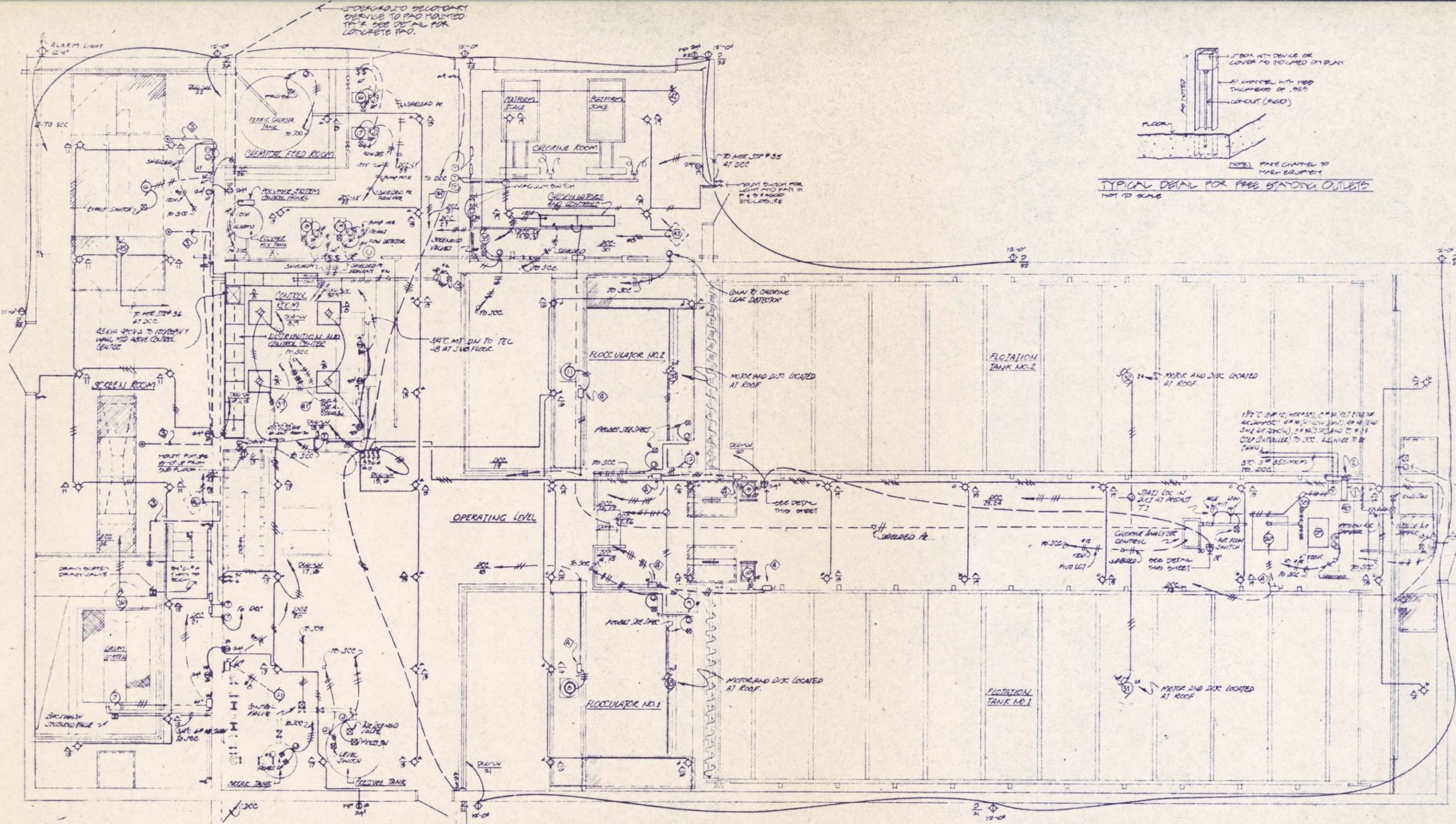
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN
DATE FEB. 9, 1976 REG. NO. E-6775

		REVISIONS
SURVEY		
DRAWN	JLF	
DESIGN	JLF	
APPROVED	GJE	

BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: FEB. 11, 1976 JOB NO. 6868E

SOUTH SUPERIOR CSO PLAN
MECHANICAL



TYPICAL DETAIL FOR FREE STANDING OUTLETS
NOT TO SCALE

NOTES:

1. 8"X8" WIREWAY WITH 30 # BTWN BETWEEN COIL AND TO CONTACTORS LOCATED IN PANEL SEE NOTE 2. MAKE CONNECTIONS TO CONTACTORS AND TO DEKEW ELECTRIC COIL.
2. CONTACTOR PANEL MOUNTED TO 2"X2"X1/4"L SIMILAR TO DETAIL SHOWN FOR FREE STANDING OUTLETS. SEE DETAIL
3. 1" CONDUIT WITH 1/2" PLASTIC TUBE FOR BUBBLER LINE BETWEEN STILLING WELL AND SCC.
4. DISCONNECT SWITCH TO BE MOUNTED ON RAILING. SEE DETAIL.
5. RAIN CAULK ROOF AND MAKE CONN TO EQUIP FROM CAST WEATHERPROOF BOX MOUNTED 12" ABOVE ROOF.

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

ERICKSEN ELLISON AND ASSOCIATES INC
CONSULTING ENGINEERS
SAINT PAUL MINNESOTA

BOESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN

SOUTH SUPERIOR CSO PLANT

ELECTRICAL

1½"C. MT STUB OUT 24" BELOW GRADE FOR TELEPHONE SERVICE.

3/4"C. MT TO TEL OUTLET IN CONTROL RM.

1½"C. MT UP TO SCC

FLOCCULATOR NO. 2

INFLUENT VALVE NO. 2

3/4"C-6#14 THWN

PUMP ROOM

PRESSURIZATION SYSTEM SOURCE VALVE "A"

PRESSURIZATION SYSTEM SOURCE VALVE "B"

FLOCCULATOR NO. 2 DRAIN VALVE

FLOCCULATOR NO. 1 DRAIN VALVE

3/4"C-6#14 THWN TO SCC

MAIN DRAIN VALVE

3/4"C-6#14 THWN

FLOCCULATOR NO. 1

INFLUENT VALVE NO. 1

1"C WITH ¼" POLY FLOW TUBE TO S.C.C.

½" PLASTIC TUBE ON TO COMPRESSION BELL IN WET WELL. SUPPORT TUBE EVERY 4'-0". CONN CONDUIT DIRECTLY TO COMP BELL.

WET WELL

FLOTATION TANK NO. 2

FLOTATION TANK NO. 2 DRAIN VALVE

FLOTATION TANK NO. 1 DRAIN VALVE

FLOTATION TANK NO. 2 DRAIN VALVE

FLOTATION TANK NO. 1 DRAIN VALVE

FLOTATION TANK NO. 1

NOTES

1. 1"C. 12 # 14 THWN TO SUPERVISORY CONTROL CENTER
2. ALL VALVES ARE AIR OPERATED WITH ELECTRIC SOLENOIDS AND OPEN - CLOSED POSITION SWITCHES. THIS REQUIRES THREE CONN PER VALVE. CONNECTION TO BE MADE WITH SEALTIGHT.
   - AIR OPERATED VALVE WITH ELECTRIC SOLENOID
   - IN - INFLUENT VALVE
   - DV - DRAIN VALVE
   - PR - PRESSURIZATION SYSTEM VALVE
3. MAKE CONNECTION TO MAGNETROL (120 VOLTS) AND ALARM CONTACTS.

NORTH

PLANT SUBFLOOR PLAN

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

ERICKSEN ELLISON AND ASSOCIATES INC. CONSULTING ENGINEERS SAINT PAUL MINNESOTA

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

DATE: FEB. 20, 1976 REG. NO. 5313

Leo P. Ellison

DESIGNED — DRAWN — CHECKED — APPROVED

REVISIONS

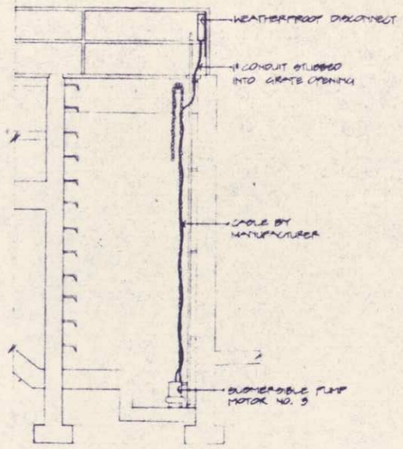
DORESTROO, ROSENE, ARDERLIE & ASSOC., INC. ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN

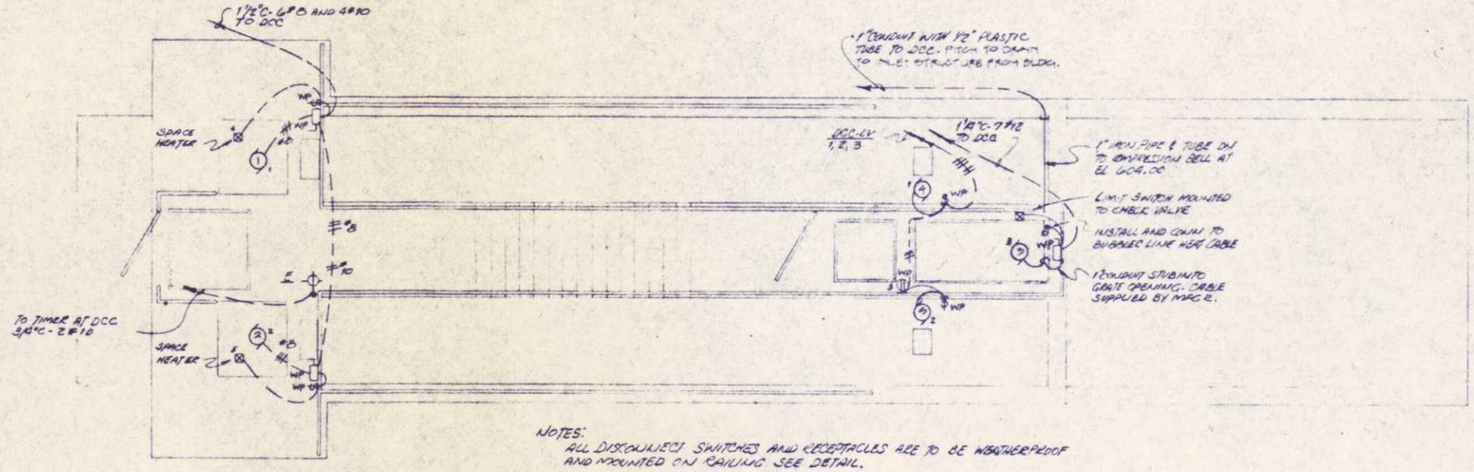
DATE: FEB. 20, 1976 CONTRACT 6888E

SOUTH SUPERIOR CSO PLANT

ELECTRICAL



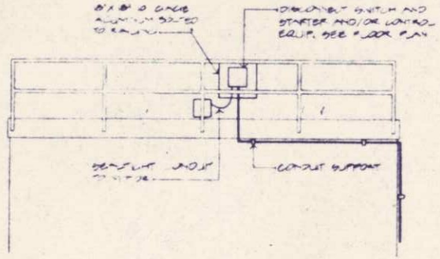
SECTION
1/4" = 1'-0"



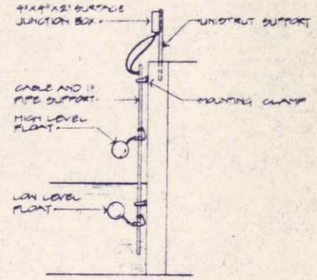
NOTES:
ALL DISCONNECT SWITCHES AND RECEPTACLES ARE TO BE WEATHERPROOF AND MOUNTED ON RAILING SEE DETAIL.

NORTH

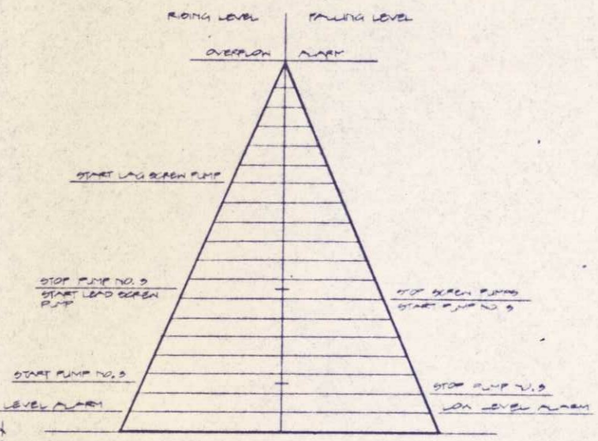
INLET STRUCTURE PLAN SCALE: 1/4" = 1'-0"



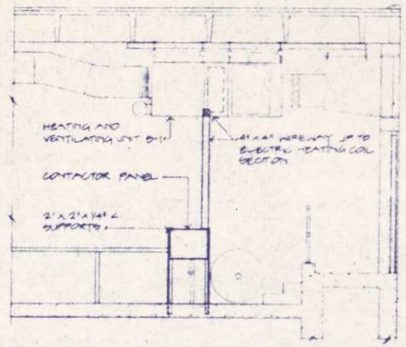
TYPICAL RAIL MOUNTED DEVICE DETAIL
N.T.S.



FLOAT MOUNTING DETAIL
N.T.S.



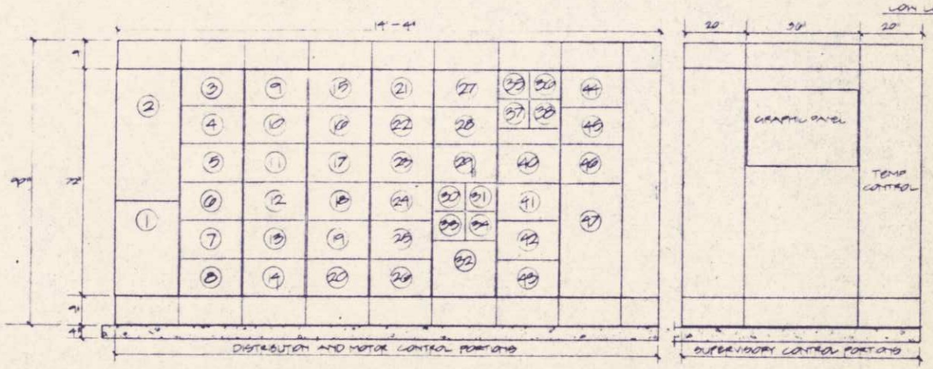
WASTE WATER PUMP OPERATION



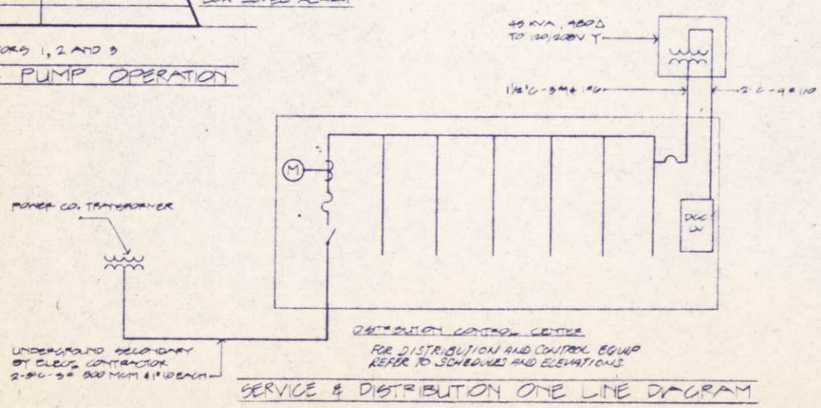
DETAIL OF CONNECTION TO HTG. & VENT. UNIT S-1
SCALE: 1/4" = 1'-0"

NOTES:

1. REFER TO UNIT NUMBER IN SCHEDULE OF CONTROL CENTER TO SPECIFIC ITEM FOR EQUIPMENT ITEM NO. CIRCUITED
2. ARRANGEMENT SHOWN IS TYPICAL AND MAY VARY IN LOCATION AND DIMENSION AS REQUIRED BY MFGR. OR ENGINEER APPROVAL. IN NO CASE SHALL BE LESS THAN MINIMUM WORKING CLEARANCES REQUIRED BY THE NATIONAL ELECTRICAL CODE. EQUIPMENT SUPPLIED THE MANUFACTURER SHALL PROVIDE THOSE REQUIRED CLEARANCES



ELEVATION OF DISTRIBUTION AND CONTROL CENTER
SCALE: 1/2" = 1'-0"



SERVICE & DISTRIBUTION ONE LINE DIAGRAM

ERICKSEN ELLISON
AND ASSOCIATES INC.
CONSULTING ENGINEERS
SAINT PAUL MINNESOTA

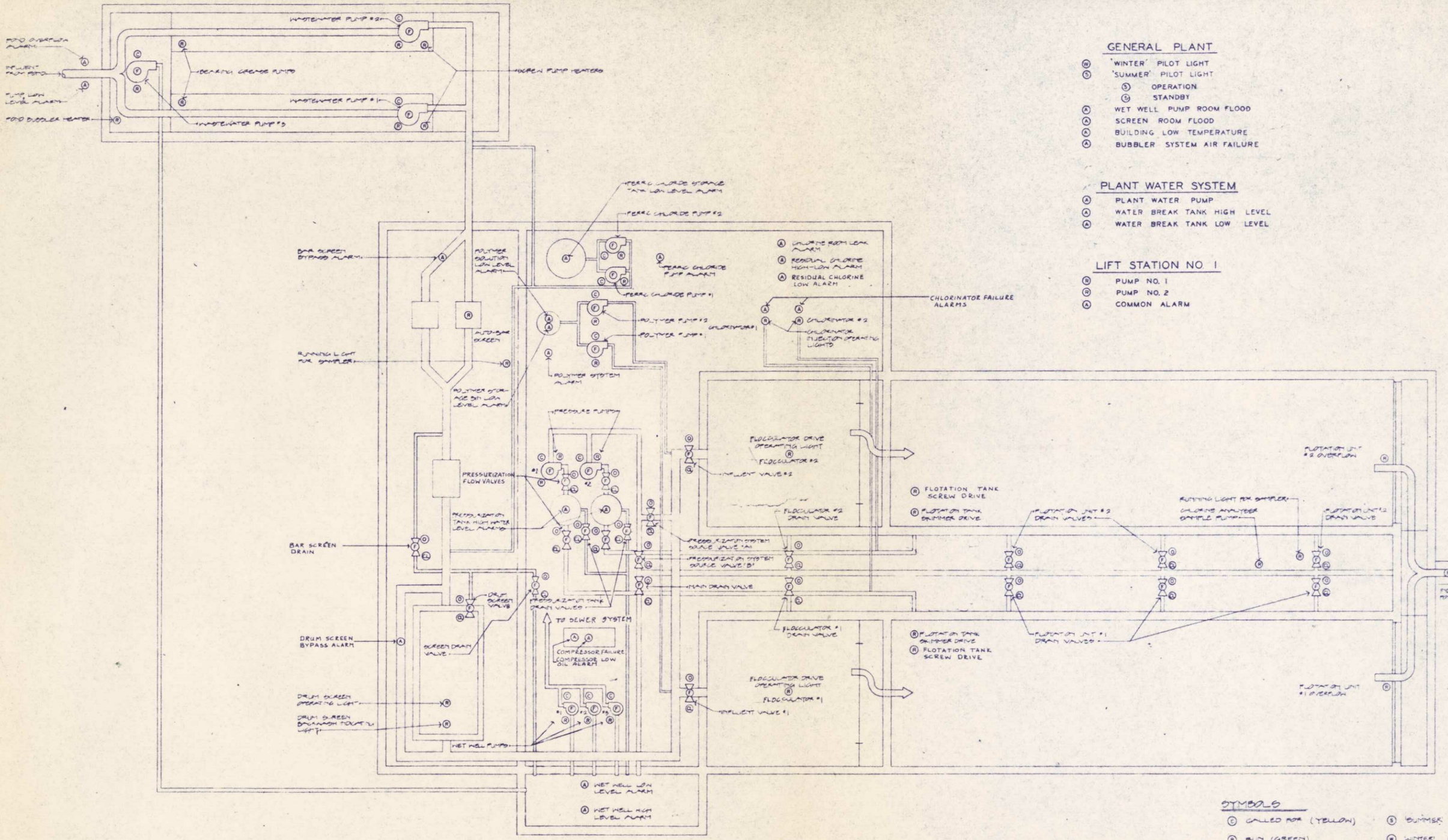
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.
DATE 11 FEB. 1976 REG. NO. 15713 Leo P Ellison

REVISIONS	
SURVEY	
DRAWN	TT
DESIGNED	TT
APPROVED	GR

BORESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: FEB 11, 1976 COMM. 6886E

SOUTH SUPERIOR CSO PLANT
ELECTRICAL
E-1
75/72



GENERAL PLANT

- (W) 'WINTER' PILOT LIGHT
- (S) 'SUMMER' PILOT LIGHT
  - (S) OPERATION
  - (St) STANDBY
- (A) WET WELL PUMP ROOM FLOOD
- (A) SCREEN ROOM FLOOD
- (A) BUILDING LOW TEMPERATURE
- (A) BUBBLER SYSTEM AIR FAILURE

PLANT WATER SYSTEM

- (A) PLANT WATER PUMP
- (A) WATER BREAK TANK HIGH LEVEL
- (A) WATER BREAK TANK LOW LEVEL

LIFT STATION NO. 1

- (R) PUMP NO. 1
- (R) PUMP NO. 2
- (A) COMMON ALARM

C50 PLANT GRAPHIC PANEL

(MAIN PLANT GRAPHIC PANEL SIMILAR)

NOTE:
SEE SPECIFICATIONS FOR CONTROL DEVICES & INDICATORS REQUIRED ON MAIN PLANT GRAPHIC PANEL

SYMBOLS

- (C) CALLED FOR (YELLOW)
- (R) RUN (GREEN)
- (F) FAIL (RED)
- (O) OPEN (GREEN)
- (Q) CLOSED (BLUE)
- (A) ALARM (RED)
- (S) SUMMER (WHITE)
- (W) WINTER (WHITE)

ERICKSEN ELLISON AND ASSOCIATES INC.
CONSULTING ENGINEERS
SAINT PAUL MINNESOTA

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Leo P. Ellison
DATE FEB. 11, 1976 REG. NO. E-5713

SURVEY	
DRAWN	EE
DESIGN	EE
ATTY'D	QE

REVISIONS

BORESTROO, ROSENE, AUDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

SUPERIOR, WISCONSIN
DATE: FEB. 11, 1976 COMM. 66896

SOUTH SUPERIOR CSO PLANT
GRAPHIC PANEL

DISTRIBUTION CONTROL CENTER SCHEDULE

BUS & TYPE	MAIN LUGS SIZE	MAIN LUGS LOCA.	CIRCUIT BREAKER & STARTERS MTR. NO.	UNIT #	FRAME SIZE	TRIP RATING	POLES	STARTER SIZE	INT. AMPS
277/480V. 3Ø 4W	800A	BOTTOM	MAIN SWITCH	(1)	800	700 (FUSES)	3	-	30,000
			METER	(2)	-	-	-	-	
			1	(3)	100	50	3	2	
			2	(4)	100	50	3	2	
			3	(5)	50	15	3	1	
			6	(6)	50	15	3	0	
			7	(7)	50	15	3	0	
			8	(8)	50	15	3	0	
			9	(9)	50	15	3	0	
			10	(10)	50	15	3	0	
			11	(11)	50	15	3	0	
			12	(12)	50	15	3	0	
			13	(13)	50	15	3	0	
			14	(14)	100	70	3	2	
			15	(15)	100	70	3	2	
			20	(16)	50	15	3	0	
			21	(17)	50	40	3	2	
			22	(18)	50	15	3	1	
			23	(19)	50	15	3	1	
			26	(20)	50	15	3	1	
			27	(21)	50	15	3	1	
			28	(22)	50	40	3	2	
			31	(23)	50	15	3	0	
			32	(24)	50	15	3	0	
			33	(25)	50	15	3	0	
			34	(26)	50	15	3	0	
			35	(27)	50	15	3	0	
			36	(28)	50	15	3	0	
			38	(29)	50	15	3	1	
			1	(30)	50	20	2	-	
			2	(31)	50	20	2	-	
			40	(32)	400	300	3	-	
			43	(33)	50	40	3	-	
			44	(34)	50	20	3	-	
			41	(35)	50	20	3	-	
			46	(36)	50	40	3	-	
			45KVA TFMR	(37)	100	70	3	-	
			SPACE	(38)					
			SPACE	(39)					
			4	(40)	50	20	1	0	10,000
			5	(41)	50	20	1	0	
			16	(42)	50	20	1	0	
			17	(43)	40	20	1	0	
			18	(44)	50	20	1	0	
			19	(45)	50	20	1	0	
			39	(46)	50	20	1	0	
			DCC-LV PANEL	(47)	REFER TO PANELBOARD SCHEDULE				
				(48)	SUPERVISORY CONTROL CENTER				

SCHEDULE - LIGHTING FIXTURE TYPES

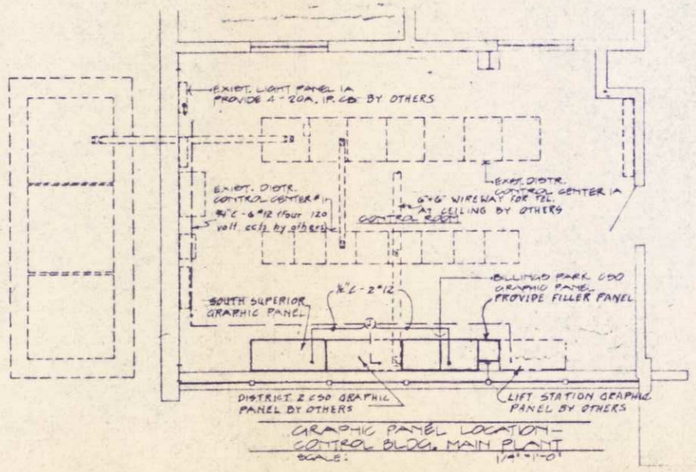
TYPE LETTER	FIXTURE TYPE	FLUOR	INCAND	OTHER	MOUNTING	LAMPS	CONTROL MEDIA (LENS, LOUVER ETC)	MANUFACTURER'S CATALOG NUMBER
A	DRUM		X		SURFACE	2-75W	PRISMATIC	SIM-KAR #V-7150C-V701A, HUBBELL #40KF11100, OR EQUAL
B	2×2	X			RECESSED	2-40W U	PRISMATIC	GLOBE ILLUMINATION DAYBRIGHT #6224 WRNST-ELE #RTB-2S02-2U-CB, OR EQUAL
C	STAIR		X		WALL	1-100W	PRISMATIC	SIM-KAR #V-5000A-V501A, KENALL #3490, OR EQUAL
D	BRACKET			X	WALL	1-175W DELUXE WHITE MERCURY	PRISMATIC	STONCO #532-175MM-120V BENJAMIN #OWW-175-120, OR EQUAL
E	POST LGT			X	10 FOOT STEEL POLE	1-175W DELUXE WHITE MERCURY	OPAL LEXAN GLOBE	STONCO #OLT18-175NP-120V-S100, McGraw Edison #GS 1023-PA #100, OR EQUAL

PANELBOARD SCHEDULE

PANEL NO.	BUS AND TYPE	MAIN LUGS SIZE	MAIN LUGS LOCA.	CIRCUIT BREAKERS QUAN.	FRAME SIZE	TRIP RATING	POLES	USE	INT. AMPS RMS. SYM	MOUNTING
DCC-LV	120/208V, 3Ø 4W	150	TOP	1	225	125	3	MAIN	18,000	IN DCC
				23	50	20	1	LTG & RECEPT CCTS		
				4	50	20	1	MTR #4,5,18,19		
				4	50	20	1	MTR #16,17,24,25		
				2	50	20	1	MTR #37,39		
				7	50	20	1	SPARES		
				1	50	20	2	WATER HTR		

GENERAL NOTES

1. CIRCUIT NUMBERS SHOWN ON THESE DRAWINGS SHALL NOT NECESSARILY CORRESPOND TO ACTUAL CIRCUIT BREAKER NUMBERS.
2. VERIFY LOCATION OF ALL MOTORS WITH MECHANICAL PLANS BEFORE ROUGH-IN.
3. ADJUST MOUNTING HEIGHTS OF ALL OUTLETS IF REQUIRED SO AS NOT TO INTERFERE WITH OTHER EQUIPMENT. VERIFY CHANGES WITH ENGINEER.
4. INTERRUPTING RATINGS NOTED IN SCHEDULES SHALL APPLY TO ENTIRE PANELBOARD AND/OR SWITCHBOARD. ALL EQUIPMENT COMPRISING PANELS AND/OR SWITCHBOARDS SHALL EITHER BE RATED FOR SHORT CIRCUIT CURRENT NOTED OR BE SUITABLE PROTECTED FOR THE AVAILABLE SHORT CIRCUIT CURRENT.
5. LETTER THUS: "A" - INDICATES TYPE OF LIGHTING FIXTURES. REFER TO LIGHTING FIXTURE TYPES IN SPECIFICATIONS.



GRAPHIC PANEL LOCATION - CONTROL BLDG. MAIN PLANT
SCALE: 1/4"=1'-0"

ELECTRICAL SYMBOLS

E-200

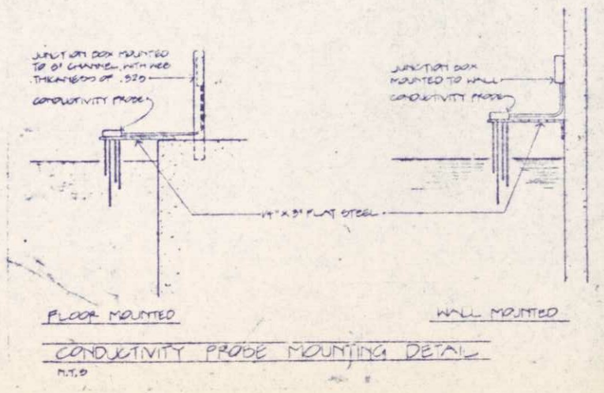
- CEILING OUTLET
- OUTLET FOR, OR CONNECTION TO RECESSED LIGHTING FIXTURE
- WALL OUTLET
- OUTLET MOUNTED BELOW, OR ON MECHANICAL DUCT WORK
- EXIT LIGHT
- DUPLEX CONVENIENCE RECEPT. NEMA 5-15R
- COMBINATION 20A, 120V-208V RECEPT. GROUND NEMA 5-20R + 6-20R
- DUPLEX CONVENIENCE RECEPT. UPPER HALF SWITCHED NEMA 5-15R
- RANGE RECEPT. 50A, 3P+G, 4W, NEMA 14-50R
- DUPLEX CONVENIENCE RECEPT. NEMA 5-20R
- BRACKET INDICATES ALL DEVICES ON COMMON PLATE. MIN. OF ONE GANG PER DEVICE
- FLOOR OUTLET
  - F - FLUSH DEVICE
  - P - PEDESTAL MTD. DEVICE
  - C - CONDUIT CONNECTED DEVICE
  - S - STANDPIPE
- SINGLE POLE SWITCH
- 2 DOUBLE POLE SWITCH
- 3 3-WAY SWITCH
- 4 4-WAY SWITCH
- D DOOR SWITCH
- K KEY SWITCH
- P SWITCH AND PILOT
- MC MOMENTARY CONTACT SWITCH
- TIME SWITCH (SEE SPECS.)
- DIMMER OR DIMMER CONTROL
- PUSH BUTTON
- BUZZER
- BELL
- TRANSFORMER
- F FIRE ALARM STATION
- F FIRE ALARM HORN
- F FIRE ALARM BELL
- D F FIRE ALARM - DOOR HOLDER
- THERMAL DETECTOR
- FIRE ALARM FLOW SWITCH
- IONIZATION DETECTOR
- F (S/D) IONIZATION DETECTOR INSTALLED IN DUCT (DUCT SIZE)
- CHIME
- CLOCK OUTLET
- SPEAKER OUTLET
- SOUND OR INTERCOM 'CALL BACK' SWITCH
- SOUND OR INTERCOM VOLUME CONTROL
- TELEPHONE OUTLET
- MICROPHONE OUTLET
- PR PRESSURIZATION SYSTEM VALVE
- OA OUTSIDE AIR
- RA RETURN AIR

- HOME RUN
- 10 L101 / 3,4 — PANEL NUMBER, CIRCUIT NUMBER; INDICATES WIRE SIZE IF NOT NOTED #12 AWG CONDUCTORS SHALL BE USED
- NOTE: ANY CIRCUITS WITHOUT FURTHER DESIGNATION IS A TWO WIRE CIRCUIT. A GREATER NUMBER OF WIRES ARE INDICATED BY CROSS MARKS

ANY SYMBOL MAY BE FURTHER DESIGNATED BY ONE OR MORE OF THE FOLLOWING SUBSCRIPTS.

- PS OUTLET WITH PULL SWITCH
- WP WEATHERPROOF OUTLET
- X EXISTING OUTLET (DOES NOT APPLY TO EQUIP. OR DEVICE)
- XC EXISTING OUTLET TO BE REMOVED OR COVERED WITH A BLANK COVER (DOES NOT APPLY TO EQUIP. OR DEVICE)
- A LETTER INDICATES FIXTURE TYPE
- 2 NUMBER INDICATES CIRCUIT NUMBER

- TERMINAL CABINET
- ANNUNCIATOR
- BRANCH CIRCUIT PANEL (250V OR LESS)
- BRANCH CIRCUIT PANEL (277V/480)
- MAGNETIC MOTOR STARTER
- DISCONNECT SWITCH
- DISCONNECT SWITCH & MAGNETIC MOTOR STARTER IN SAME LOCATION
- M MANUAL MOTOR STARTING SWITCH
- MANUAL MOTOR CONTROL SWITCH
- MANUAL MOTOR CONTROL SWITCH WITH PILOT
- THERMOSTAT
- AUXILIARY EQUIPMENT (AS NOTED)
- JUNCTION BOX
- UNDERFLOOR DUCT
  - LOW POTENTIAL OUTLET
  - HIGH POTENTIAL OUTLET
- AUXILIARY SYSTEM CIRCUITS
- A INDICATES SHIELDED CABLE (SEE SPECS.)
- C INDICATES CABLE ONLY (CONDUIT NOT REQ'D.)
- BRANCH CIRCUIT (CEILING OR WALL)
- BRANCH CIRCUIT (FLOOR)
- EXISTING CONDUIT
- EXISTING CONDUIT, CONDUCTORS REMOVED
- EXISTING CONDUIT (W) NEW CONDUCTORS
- PLUGSTRIP - OUTLET SPACING AS SHOWN OR SPECIFIED
- INDICATES NOTE ON PLAN
- EQUIPMENT OR APPLIANCE (NO. REFERS TO SCH.)
- MOTOR (NO. REFERS TO SCHEDULE)
- INTERCOMMUNICATION STATION OUTLET
- A/C OPERATED VALVE WITH ELECTRIC SOLENOID
- N NURSES CALL STATION (LETTER INDICATES TYPE OF STATION)
- NURSES CALL CORRIDOR DOME LIGHT - TWO CO
- PROJECTOR OUTLET
- TV TELEVISION OUTLET
- IV INFLUENT VALVE
- DV DRAIN VALVE



CONDUCTIVITY PROBE MOUNTING DETAIL
N.T.S.

ERICKSEN ELLISON AND ASSOCIATES INC. CONSULTING ENGINEERS SAINT PAUL MINNESOTA

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
DATE 11 FEBRUARY 1976 REG. NO. 5573 Leo P. Ellison

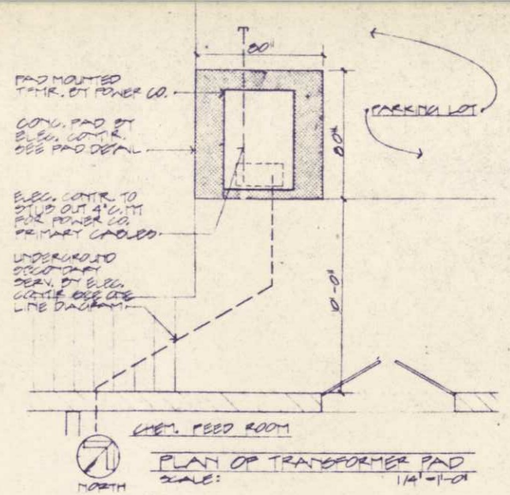
SURVEY	
DRAWN	MH
DESIGN	
CHECKED	LPE

BOXESTROO, ROSENE, ANDERLIK & ASSOC., INC. ST. PAUL, MINNESOTA

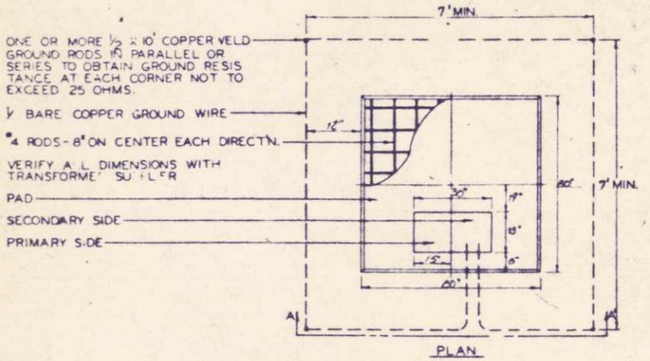
SUPERIOR, WISCONSIN
DATE FEB 11 1976 DIMM 6858E

SOUTH SUPERIOR CSO PLAN

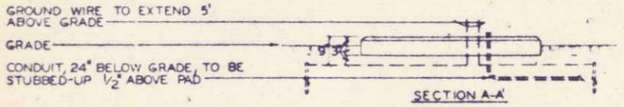
ELECTRICAL



PLAN OF TRANSFORMER PAD
SCALE: 1/4"=1'-0"



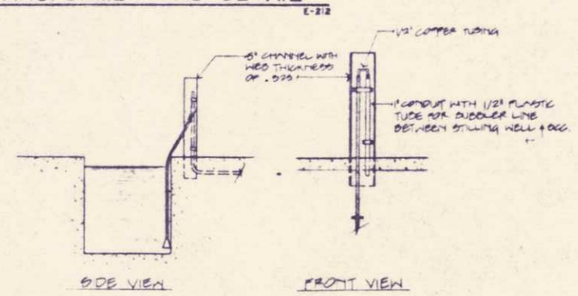
PLAN



SECTION A-A'

TRANSFORMER PAD DETAIL

EEA E-212



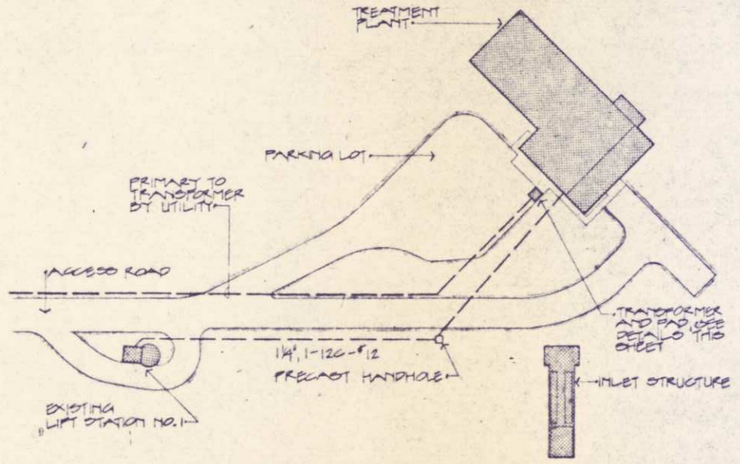
BUBBLER LINE MOUNTING DETAIL

N.T.S.

37	EXHAUST FAN E-7	1/4	120-1	WET WELL	MS+P	DCC	NONE	-	TOGGLE SW.
38	HV UNIT S-1	5	460-3	OPERATING LEVEL	SEE SPEC STAT	OPERATING LEVEL	1	DCC	30A.3P.NF
39	HV UNIT S-2	1/3	120-1	CONTROL RM	SEE SPEC (2)	CONTROL RM 0	DCC		TOGGLE SW.
40	HV UNIT S-1 COIL	200KW	460-3	OPERATING LEVEL	10 STAGE STEP CONTROLLER	SCC	-	-	-
41	HV UNIT S-2 COIL	6KW	460-3	CONTROL RM	3 STAGE STEP CONTROLLER	SCC	-	-	-
42	MOTORIZED DAMPER	-	120-1	CHLORINE RM	INTERLOCK WITH MTR #35	DCC	NONE	-	TOGGLE SW.
43	ELECT. UNIT HTR.	20KW	460-3	CHLORINE RM	REMOTE STAT.	NEAR UNIT	NONE	-	-
44	ELECT. UNIT HTR.	7.5KW	460-3	OPERATING LEVEL	STAT.	NEAR UNIT	NONE	-	-
45	MOTORIZED DAMPER	-	120-1	OPERATING LEVEL	INTERLOCK WITH MTR #36	DCC	NONE	-	TOGGLE SW.
46	ELECT. UNIT HTR.	20KW	460-3	OPERATING LEVEL	STAT. REMOTE	NEAR UNIT	NONE	-	-
47	ELECT. WATER HTR.	1500KW	208-1	OPERATING LEVEL	BY MFGR.	AT UNIT	-	-	-

MOTOR NOTES:

1. PROVIDE A WEATHERPROOF START STOP STATION AT OUTSIDE ENTRANCE TO CHLORINE ROOM TO BY-PASS TIMER AND START EXHAUST FAN. FURNISH, INSTALL AND CONNECT A TIMER INTERMATIC #C8865, TORK OR EQUAL TO AUTOMATICALLY CONTROL EXHAUST FAN. EXHAUST FAN SHALL BE INTERLOCKED WITH MOTORIZED LOUVER.
2. ELECTRICAL CONTRACTOR SHALL MAKE CONNECTION TO OUTSIDE AIR AND RETURN AIR DAMPERS, END SWITCH, AIR FLOW SWITCH, HI AND LOW LIMITS, THREE STAGE STEP CONTROLLER AND STAT.



SITE PLAN
SCALE: 1"=60'-0"

MOTOR, APPLIANCE AND EQUIPMENT SCHEDULE

NUMBER	EQUIPMENT	SIZE	VOLT & Ø	LOCA.	CONTROL	CONT. LOCA.	STARTER SIZE	STARTER LOCA.	DISC SIZE & TYPE
1	WASTEWATER PUMP NO 1	20	460-3	INLET STRUCTURE	SEE SPECS	DCC	2	DCC	60A.3P.NF(WP)
2	WASTEWATER PUMP NO 2	20	460-3	INLET STRUCTURE	SEE SPECS	DCC	2	DCC	60A.3P.NF(WP)
3	WASTEWATER PUMP NO 3	3	460-3	INLET STRUCTURE	SEE SPECS	DCC	1	DCC	30A.3P.NF(WP)
4	GREASE PUMP NO 1	1/3	120-1	INLET STRUCTURE	SEE SPECS	DCC	0	DCC	TOGGLE SW(WP)
5	GREASE PUMP NO 2	1/3	120-1	INLET STRUCTURE	SEE SPECS	DCC	0	DCC	TOGGLE SW(WP)
6	BAR SCREEN RAKE	1	460-3	SCREEN ROOM	SEE SPECS	DCC	0	DCC	30A.3P.NF(WP)
7	DRUM SCREEN	2	460-3	SCREEN ROOM	SEE SPECS	DCC	0	DCC	30A.3P.NF(WP)
8	FLOCULATOR NO 1 DRIVE	2	460-3	OPERATING LEVEL	SEE SPECS	DCC	0	DCC	30A.3P.NF
9	SKIMMER NO 1 DRIVE	2	460-3	OPERATING LEVEL	SEE SPECS	DCC	0	DCC	30A.3P.NF
10	SCREW NO 1 DRIVE	1	460-3	OPERATING LEVEL	SEE SPECS	DCC	0	DCC	30A.3P.NF
11	FLOCULATOR NO 2 DRIVE	2	460-3	OPERATING LEVEL	SEE SPECS	DCC	0	DCC	30A.3P.NF
12	SKIMMER NO 2 DRIVE	2	460-3	OPERATING LEVEL	SEE SPECS	DCC	0	DCC	30A.3P.NF
13	SCREW NO 2 DRIVE	1	460-3	OPERATING LEVEL	SEE SPECS	DCC	0	DCC	30A.3P.NF
14	PRESSURIZATION PUMP NO 1	25	460-3	PUMP ROOM	SEE SPECS	DCC	2	DCC	60A.3P.NF
15	PRESSURIZATION PUMP NO 2	25	460-3	PUMP ROOM	SEE SPECS	DCC	2	DCC	60A.3P.NF
16	FERRIC CHLORIDE PUMP NO 1	1/4	120-1	CHEMICAL ROOM	SEE SPECS	DCC	0	DCC	TOGGLE SW.
17	FERRIC CHLORIDE PUMP NO 2	1/4	120-1	CHEMICAL ROOM	SEE SPECS	DCC	0	DCC	TOGGLE SW.
18	POLYMER PUMP NO 1	1/4	120-1	CHEMICAL ROOM	SEE SPECS	DCC	0	DCC	TOGGLE SW.
19	POLYMER PUMP NO 2	1/4	120-1	CHEMICAL ROOM	SEE SPECS	DCC	0	DCC	TOGGLE SW.
20	CHLORINE ANALYSER SAMPLE PUMP	3/4	460-3	OPERATING LEVEL	SEE SPECS	DCC	0	DCC	30A.3P.NF
21	POTABLE WATER PUMP	15	460-3	OPERATING LEVEL	SEE SPECS	DCC	2	DCC	60A.3P.NF
22	AIR COMPRESSOR NO. 1	7½	460-3	PUMP ROOM	SEE SPECS	ON COMPRESSOR	1	DCC	30A.3P.NF
23	AIR COMPRESSOR NO. 2	7½	460-3	PUMP ROOM	SEE SPECS	ON COMPRESSOR	1	DCC	30A.3P.NF
24	AIR DRYER	1/3	120-1	PUMP ROOM	PRESS SW.	ON DRYER	NONE	-	-
25	SUMP PUMP	1/2	120-1	PUMP ROOM	PRESS SW.	ON PUMP	NONE	-	MS
26	WET WELL PUMP NO. 1	5	460-3	PUMP ROOM	SEE SPECS	DCC	1	DCC	30A.3P.NF
27	WET WELL PUMP NO. 2	5	460-3	PUMP ROOM	SEE SPECS	DCC	1	DCC	30A.3P.NF
28	WET WELL PUMP NO. 3	15	460-3	PUMP ROOM	SEE SPECS	DCC	2	DCC	60A.3P.NF
29	REFRIGERATED SAMPLER	-	120-1	OPERATING LEVEL	SEE SPECS	DCC	0	DCC	-
30	REFRIGERATED SAMPLER	-	120-1	SCREEN RM.	SEE SPECS	DCC	0	DCC	-
31	EXHAUST FAN E-1	1/2	460-3	OPERATING LEVEL	SEE SPECS INTERLOCK W/MTR. 38	DCC	0	DCC	30A.3P.NF
32	EXHAUST FAN E-2	1/2	460-3	OPERATING LEVEL	SEE SPECS INTERLOCK W/MTR. 38	DCC	0	DCC	30A.3P.NF
33	EXHAUST FAN E-3	1/2	460-3	OPERATING LEVEL	SEE SPECS INTERLOCK W/MTR. 38	DCC	0	DCC	30A.3P.NF
34	EXHAUST FAN E-4	1/2	460-3	OPERATING LEVEL	SEE SPECS INTERLOCK W/MTR. 38	DCC	0	DCC	30A.3P.NF
35	CHLORINE ROOM EXHAUST E-5	3/4	460-3	OPERATING LEVEL	TIMER (I)	DCC	0	DCC	30A.3P.NF
36	SCREEN ROOM EXHAUST E-6	1/2	460-3	OPERATING LEVEL	START STOP & P	DCC	0	DCC	30A.3P.NF

ERICKSEN ELLISON
AND ASSOCIATES INC
CONSULTING ENGINEERS
SAINT PAUL MINNESOTA

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA
DATE FEB 11, 1976 LIC. NO. 8-5119 Leo P. Ellison

SURVEY
DRAWN TF
CHECKED
APPROVED DJE

REVISIONS

BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL MINNESOTA

SUPERIOR, WISCONSIN
DATE FEB 11, 1976 COMM 6886E

SOUTH SUPERIOR CSO PLANT
ELECTRICAL
E-1

Alan Peterson