

CITY OF SUPERIOR, WISCONSIN DEPARTMENT OF PUBLIC WORKS

PLANS FOR THE CONSTRUCTION OF CONTRACT 2

PRELIMINARY TREATMENT IMPROVEMENTS AT THE MAIN WASTEWATER TREATMENT PLANT

CITY OF SUPERIOR

HERBERT W. BERGSON

MAYOR

CONSOER TOWNSEND & ASSOCIATES

Thomas L. Noerenberg

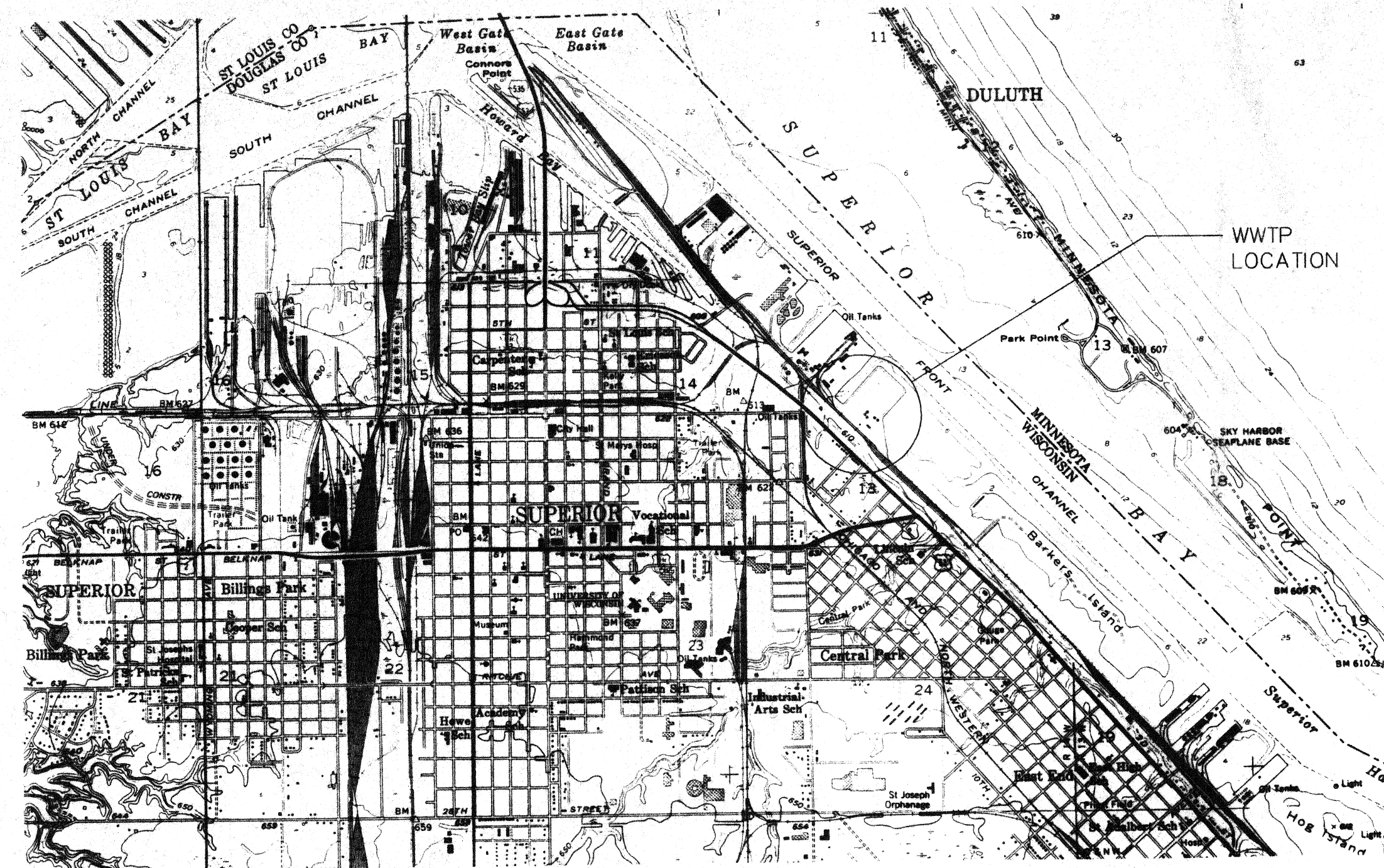
THOMAS L. NOERENBERG, P.E.

NO. E-23049

DEPT. OF PUBLIC WORKS

JEFF VITO

DIRECTOR



LOCATION MAP
SCALE: 1" = 24000'

LIST OF CONTRACT DRAWINGS

SHEET NO.	TITLE SHEET
	COVER SHEET
G-1	LOCATION MAP & SHEET INDEX
G-2	EXISTING & PROPOSED SITE PLANS
A-1	SCREEN BUILDING PLANS & ELEVATIONS
A-2	ROOF PLAN, SECTIONS & DETAILS
S-1	SCREEN BUILDING PLANS & SECTIONS
S-2	SCREEN BUILDING PLANS & SECTIONS
S-3	SCREEN BUILDING SECTIONS & DETAILS
S-4	PILING PLAN & DETAILS
S-5	STRUCTURAL STANDARDS, NOTES & DETAILS
S-6	STRUCTURAL STANDARDS, SECTIONS & DETAILS
P-1	SCREEN BUILDING PROCESS PLAN & SECTIONS
P-2	SCREEN BUILDING SECTIONS & CHEMICAL FEED SYSTEM
P-3	INFLUENT REGULATOR STRUCTURAL/PROCESS & GATE SCHEDULE
P-4	CS02 INFLUENT JUNCTION CHAMBER & FLOW DIVERSION STRUCTURE
P-5	GRIT TANKS & BARMINUTOR BUILDING DEMOLITION & MODIFICATION
H-1	SCREEN BUILDING HEATING & VENTILATION
PL-1	SCREEN BUILDING PLUMBING PLAN
E-1	SCREEN BUILDING ELECTRICAL PLANS
E-2	SCREEN BUILDING ELECTRICAL DETAILS & SCHEDULES
E-3	ELECTRICAL SYMBOLS

SHEET NUMBER LEGEND

P-1 — TYPE OF WORK INDICATED
CONSECUTIVE NUMBERS PER BUILDING OR SEPARATE
STRUCTURE DESIGNATION

SECTION NUMBER LEGEND

P-5A — DRAWING ON WHICH SECTION APPEARS
P-5A — LETTER OF SECTION ON DRAWING

TYPE OF WORK

G - GENERAL
A - ARCHITECTURAL
S - STRUCTURAL
P - PROCESS
H - HEATING, VENTILATION
PL - PLUMBING
E - ELECTRICAL

DESIGNED TN
DRAWN LED
CHECKED
DATE APRIL 1994

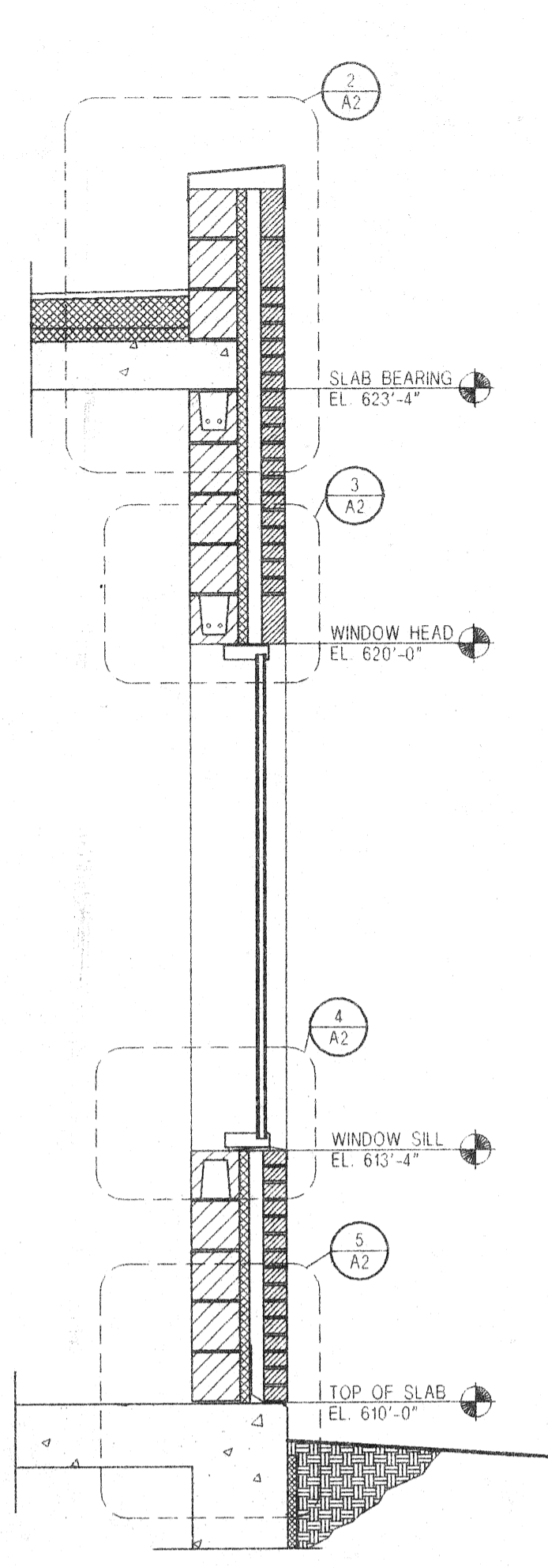
SCALE
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DEPARTMENT OF PUBLIC WORKS
CITY OF SUPERIOR, WISCONSIN

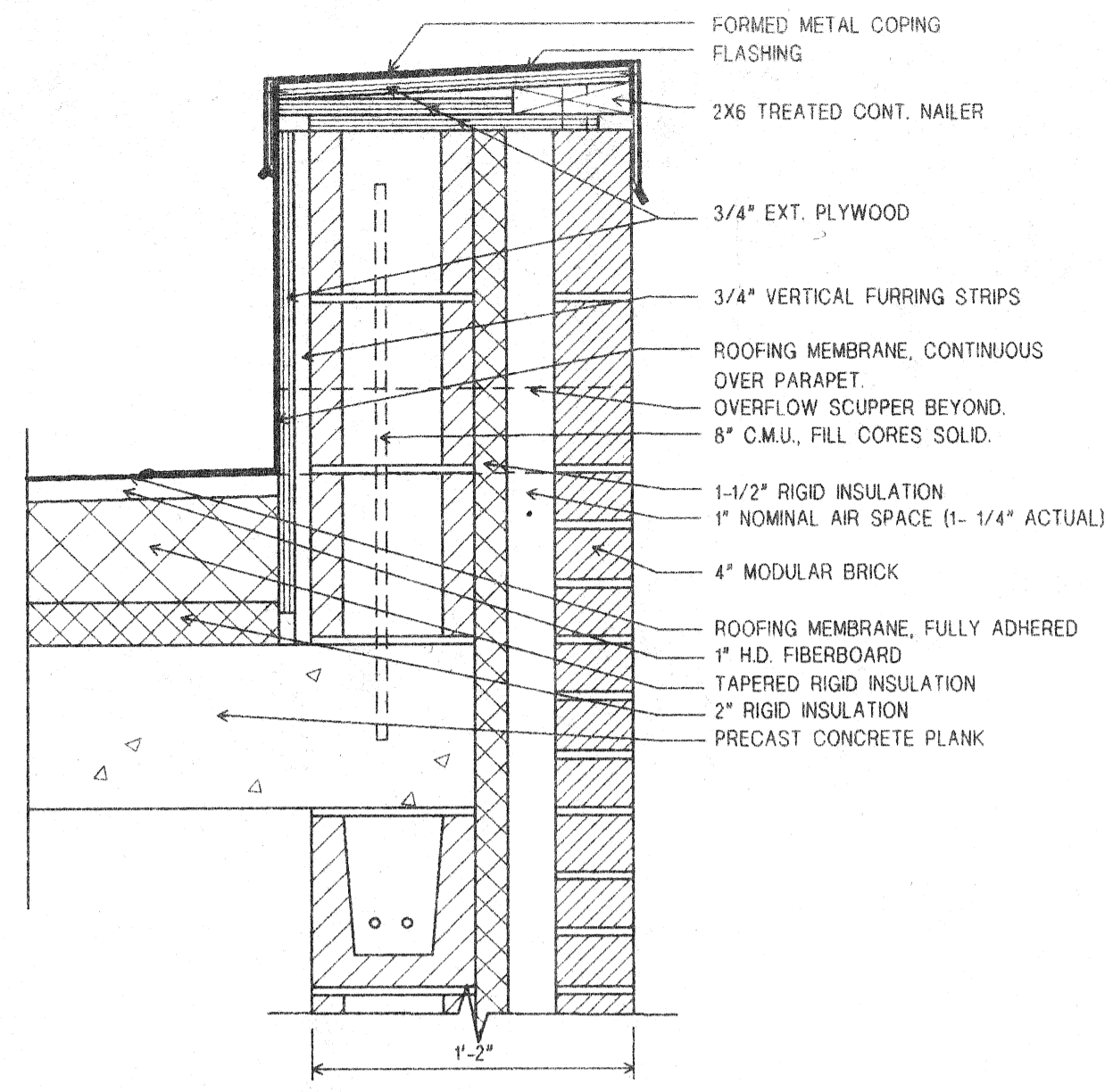
CONOR TOWNSEND ASSOCIATES
ENGINEERING PLANNING MANAGEMENT
2855 ANTHONY LANE SOUTH, SUITE 145
MINNEAPOLIS, MN, 55418-3265

LOCATION MAP & SHEET INDEX

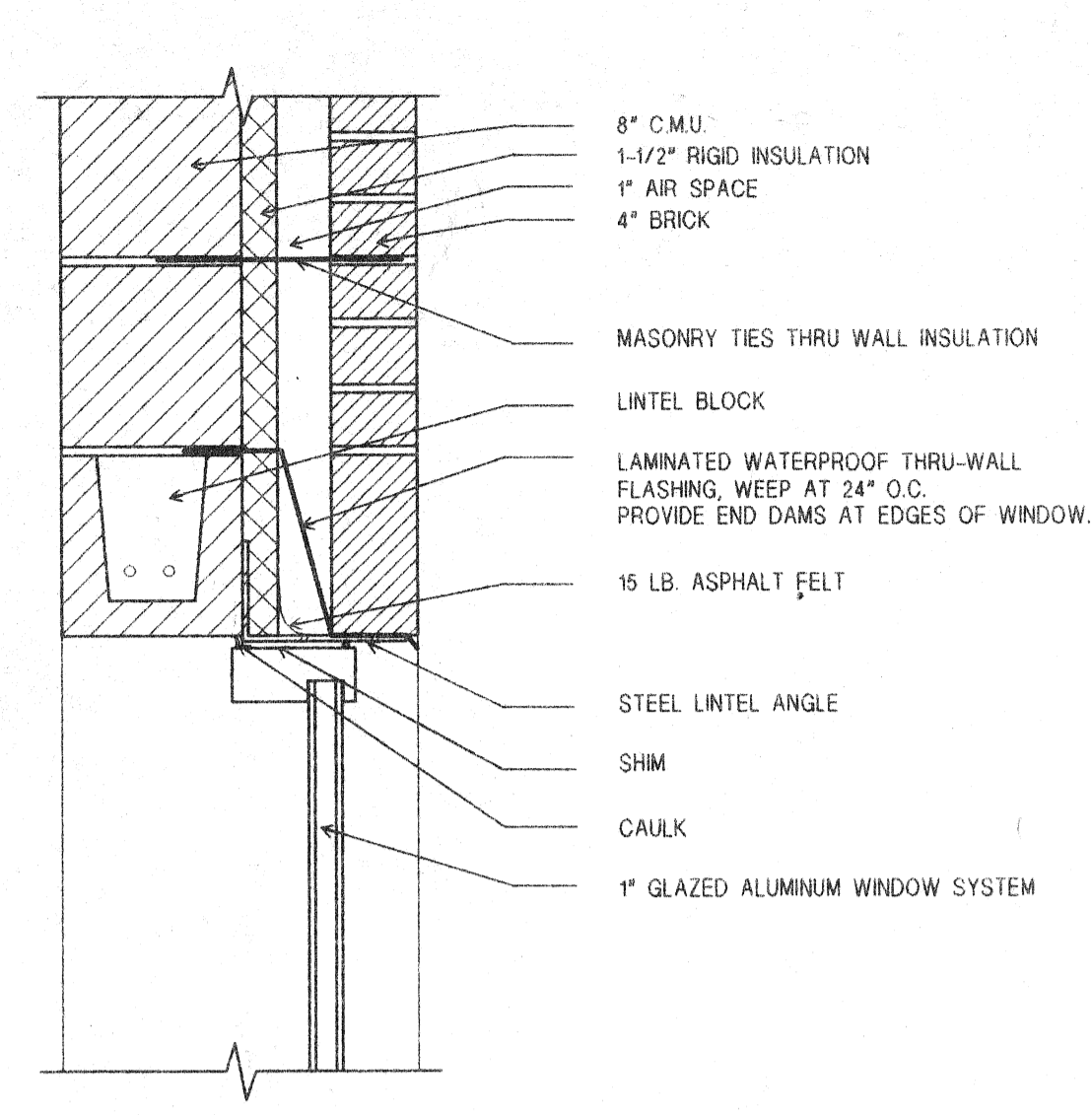
SHEET G-1
OF 2 SHEETS
RECORD MAP NO.
CT&A PROJECT NO. 5899-02



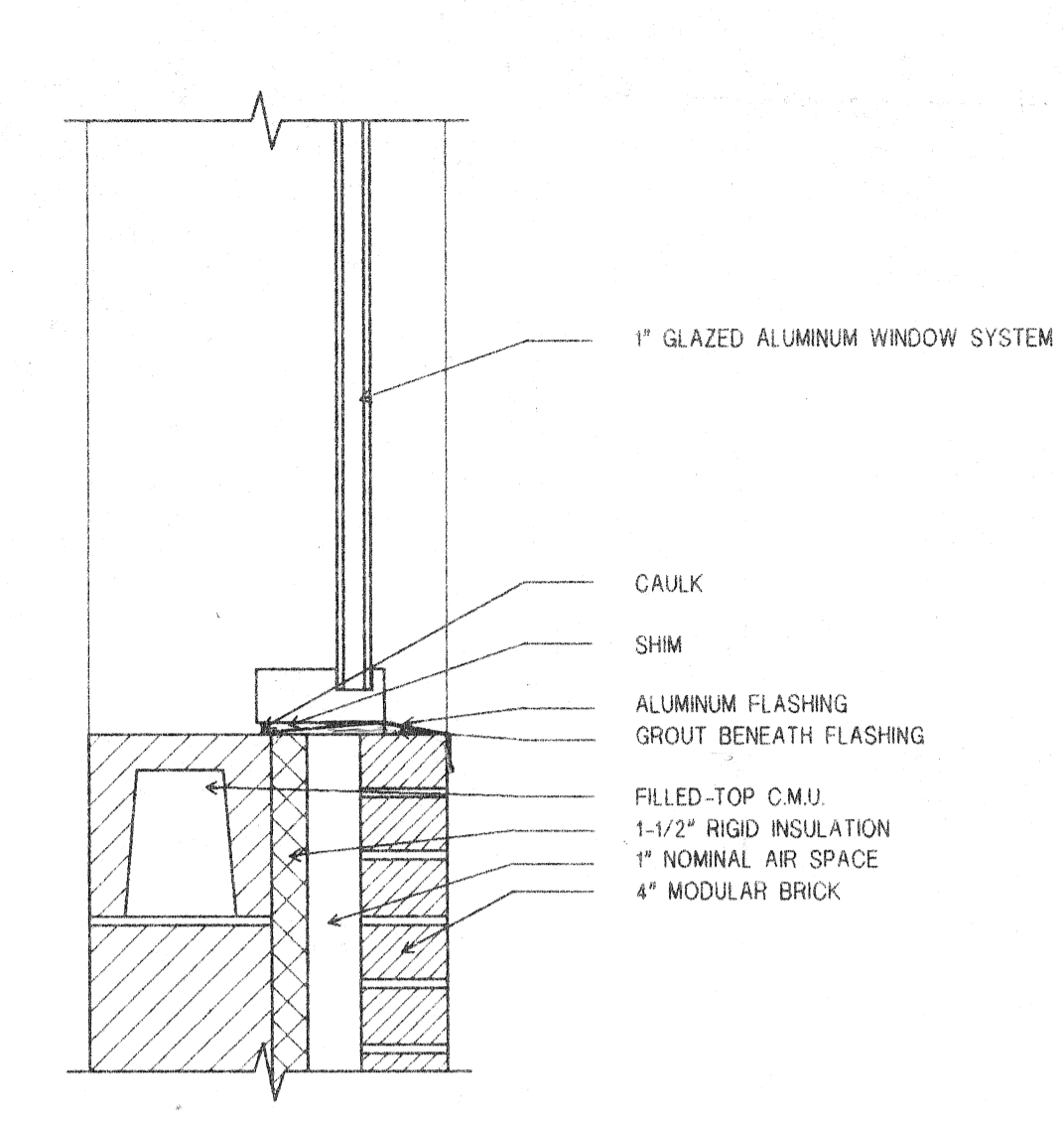
1 WALL SECTION
1/2"=1'-0"



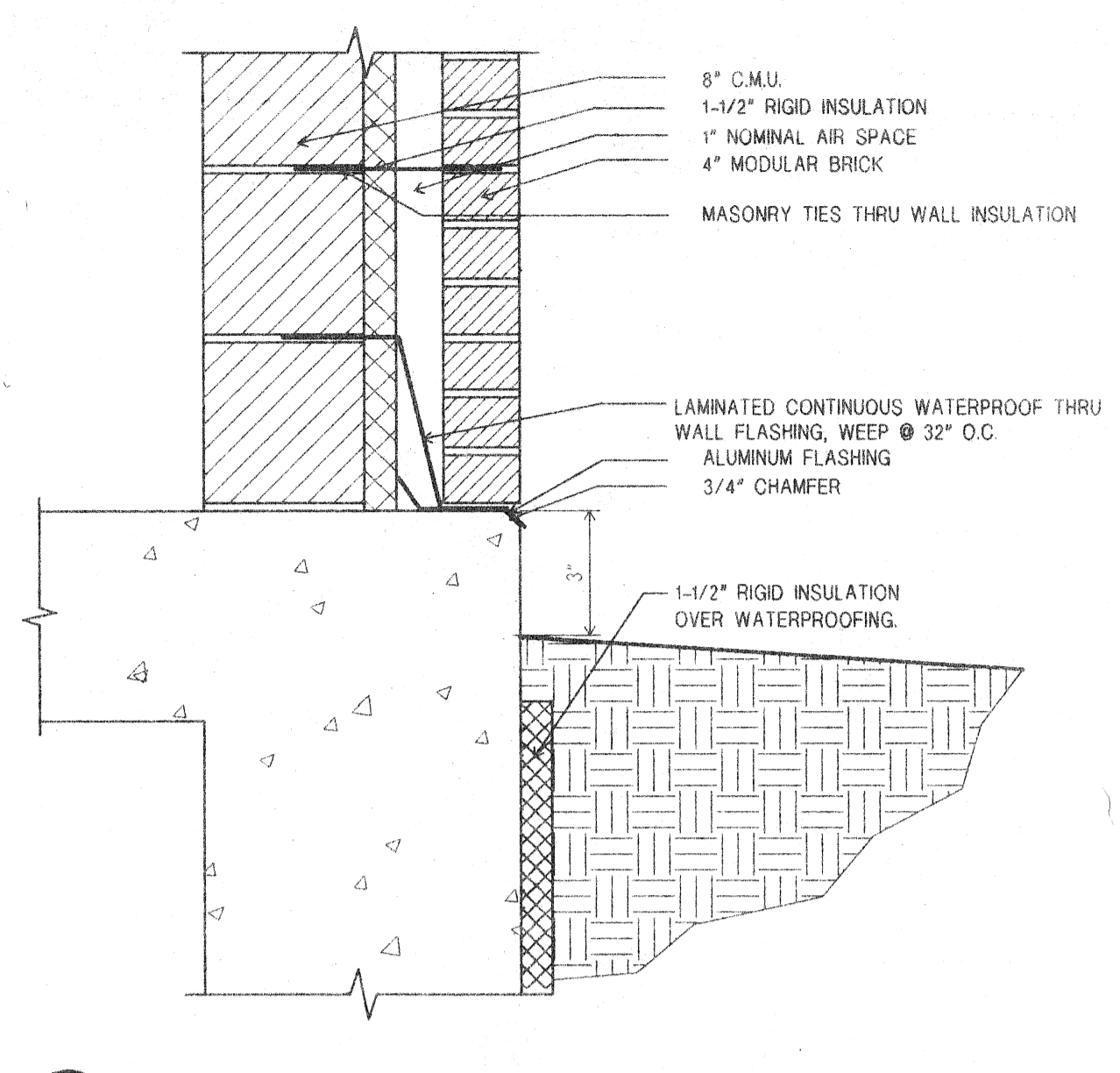
2 ROOF EDGE DETAIL
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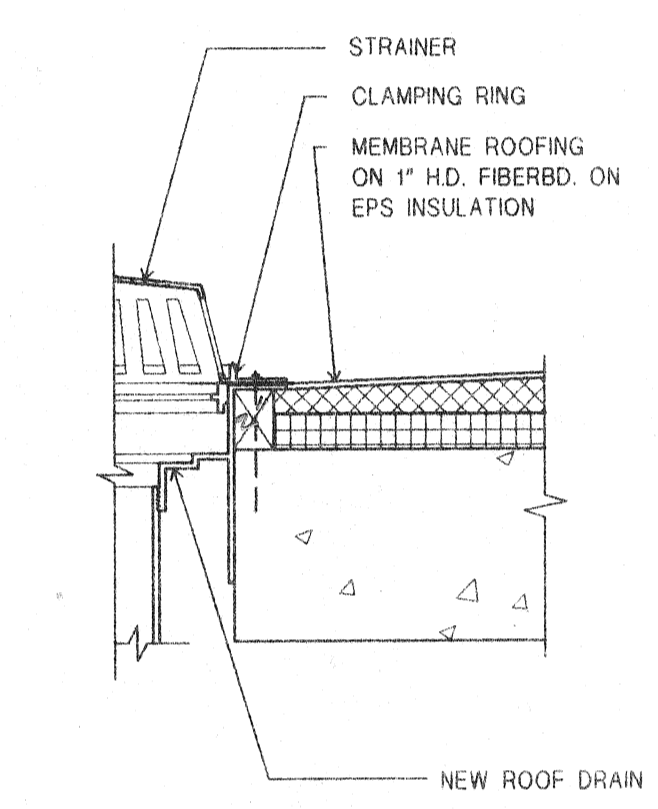
3 WINDOW HEAD DETAIL
1 1/2"=1'-0"



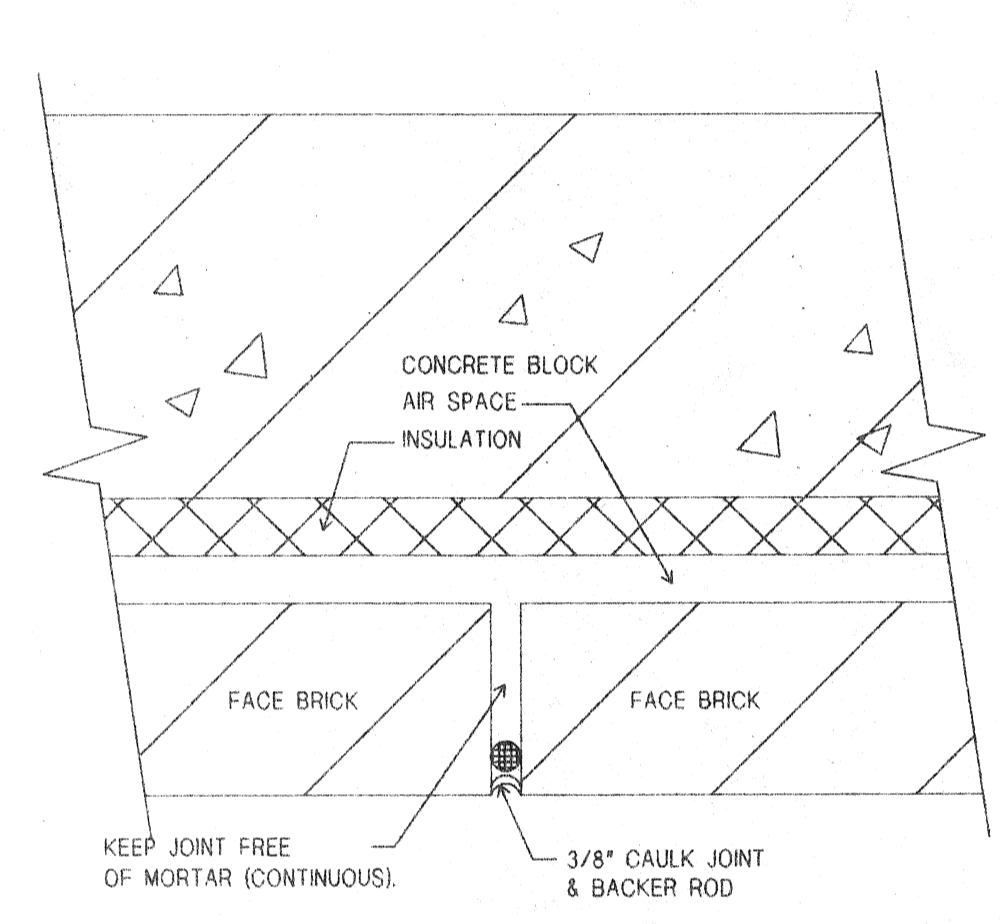
4 WINDOW SILL DETAIL
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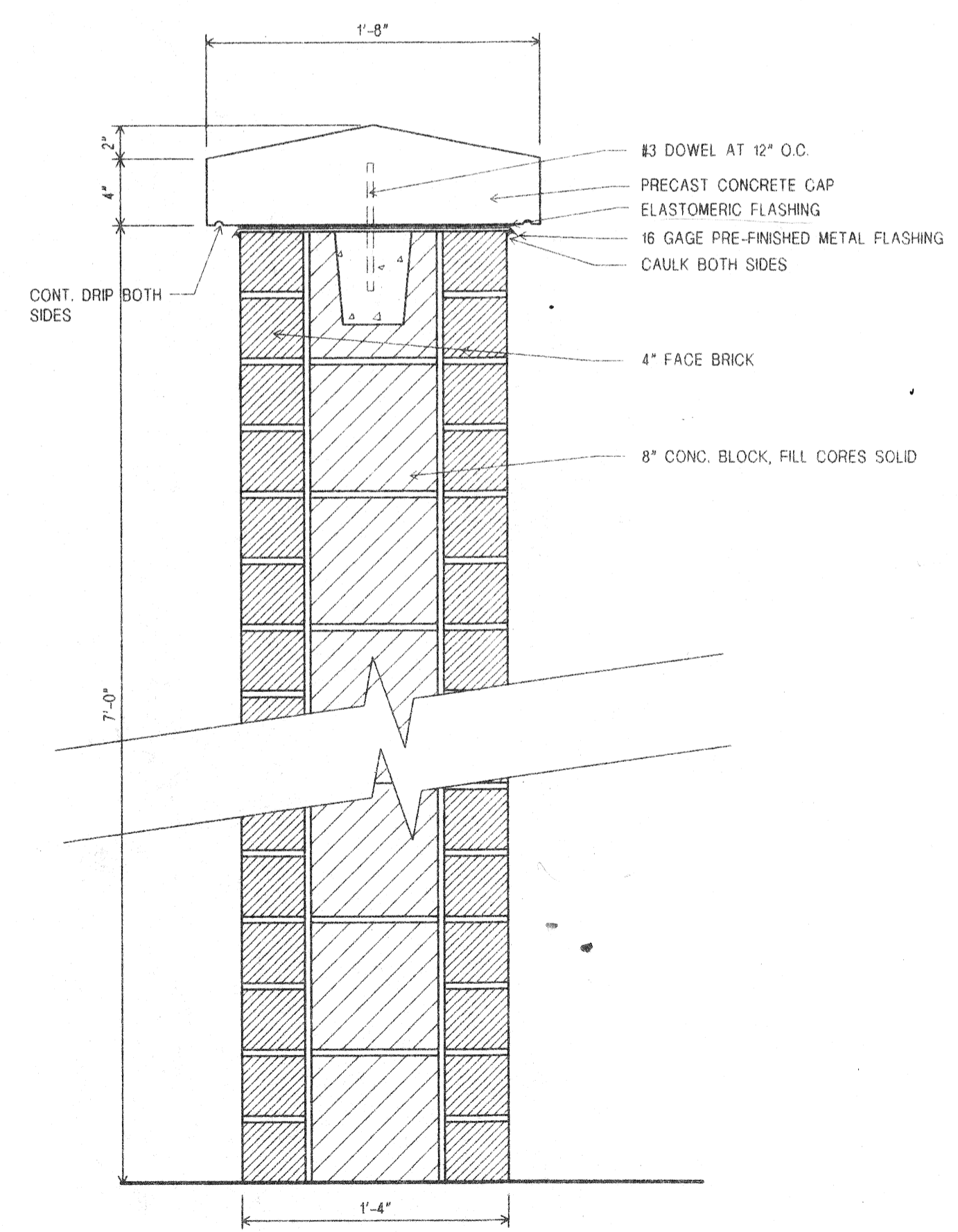
5 WALL BASE DETAIL
1 1/2"=1'-0"



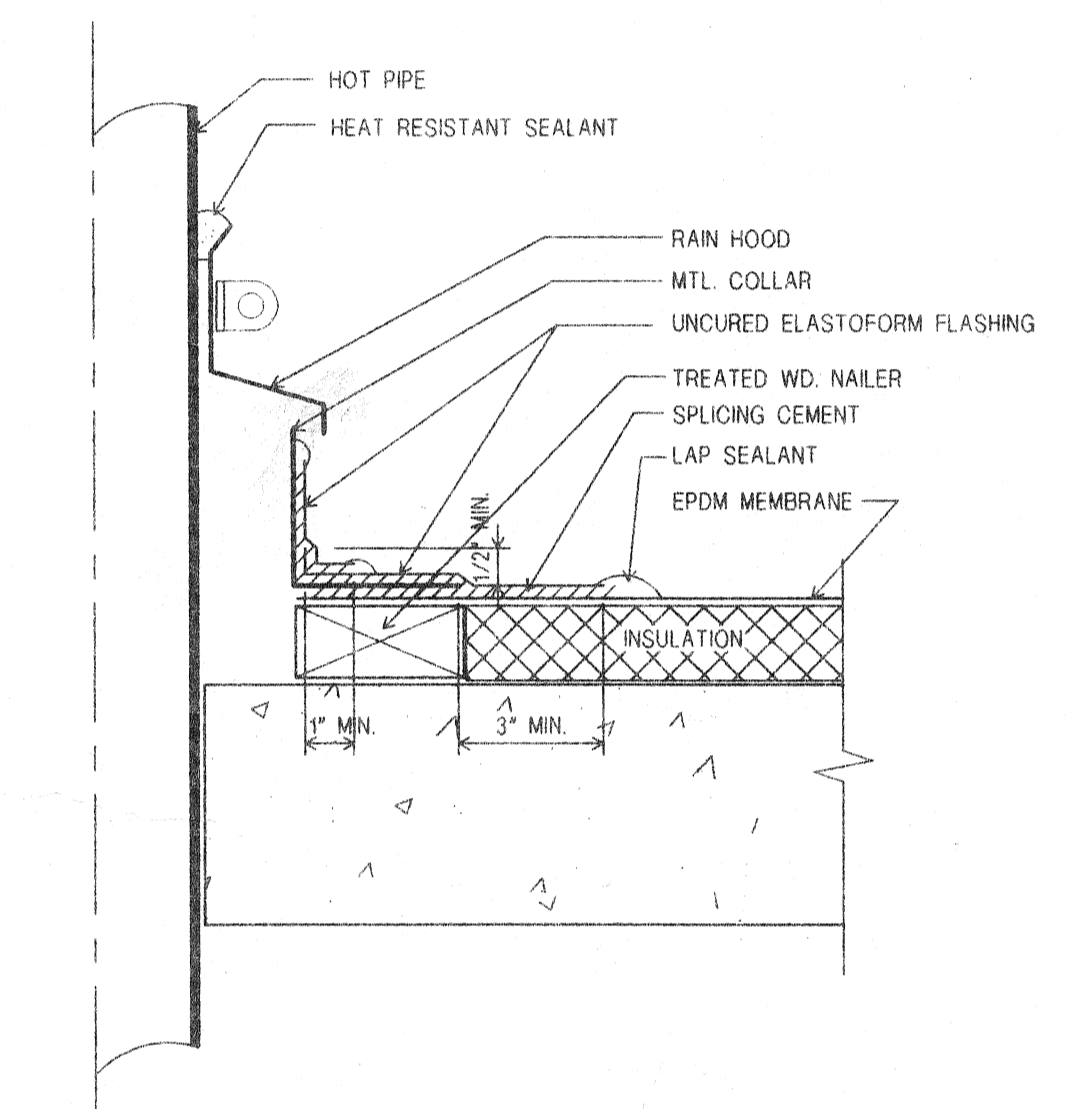
7 ROOF DRAIN DETAIL
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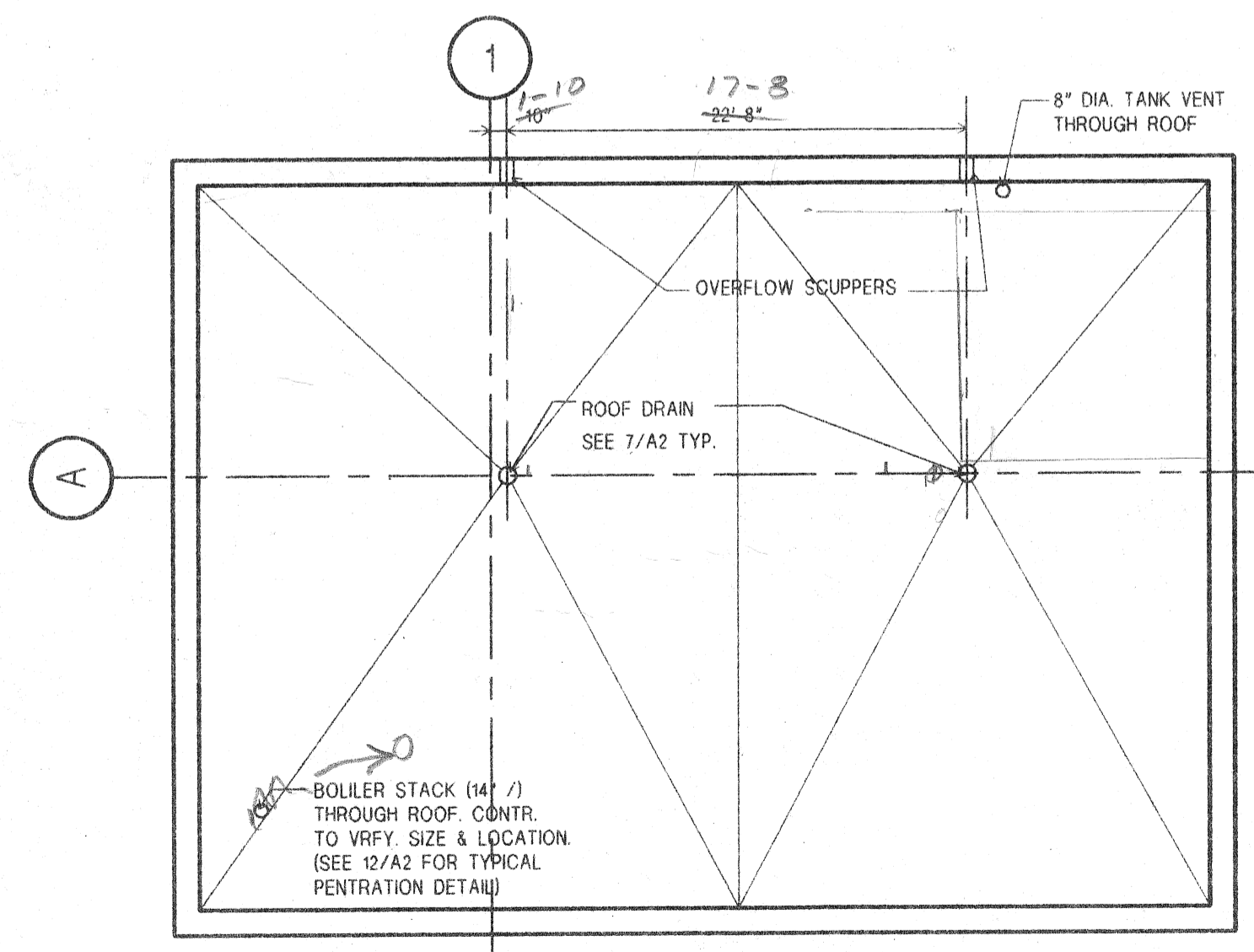
11 CONTROL JOINT DETAIL
3\"/>



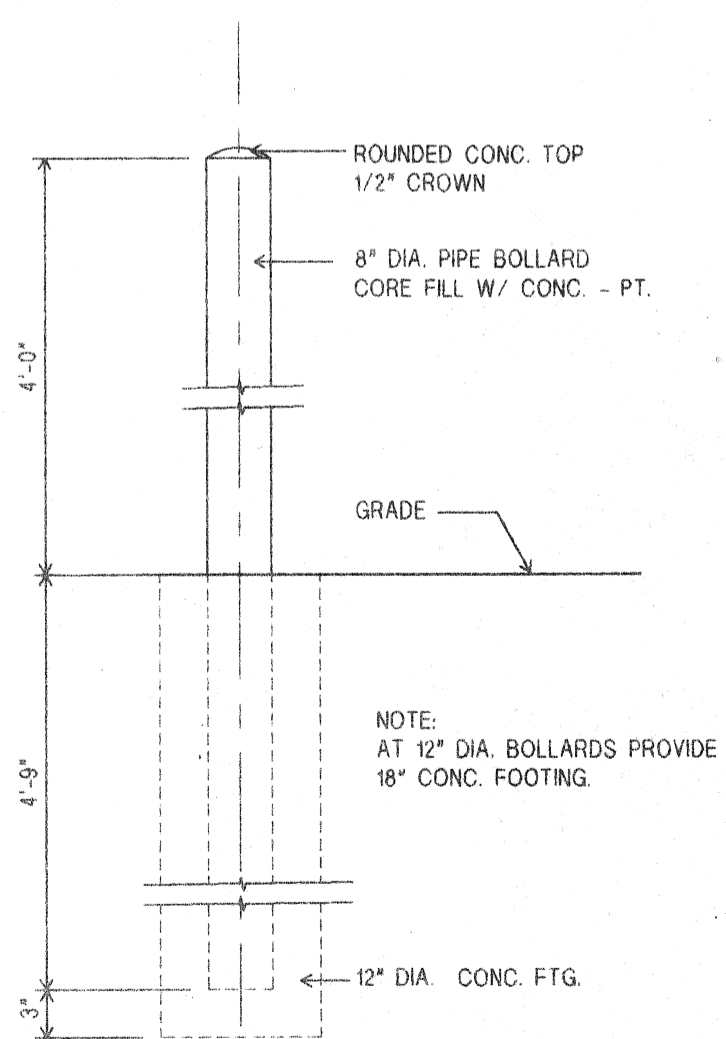
8 SCREEN WALL DETAIL
1 1/2"=1'-0"



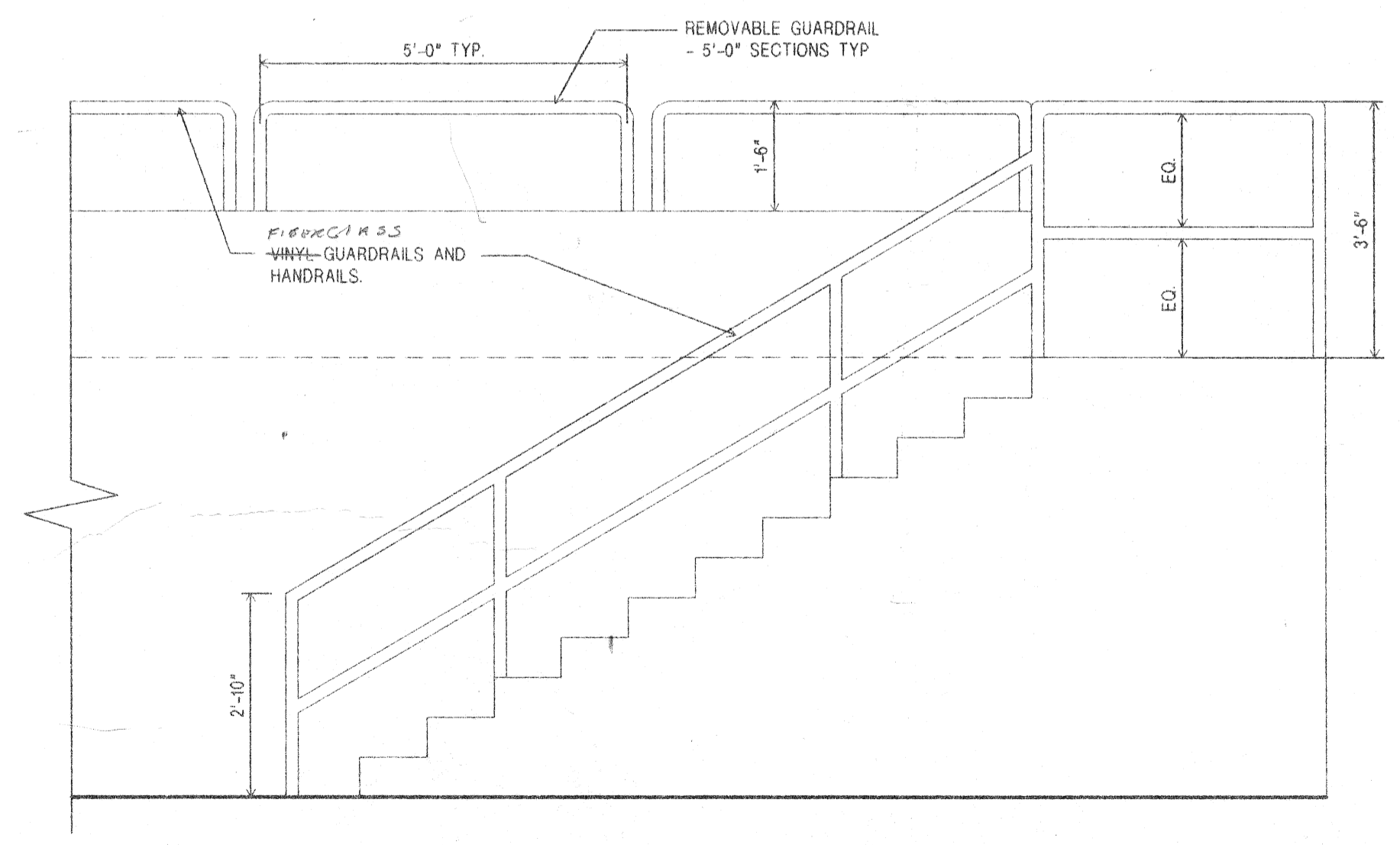
12 ROOF PENETRATION DETAIL
3\"/>



6 ROOF PLAN
1/8"=1'-0"



10 BOLLARD DETAIL
1"=1'-0"



9 RAIL ELEVATION
1/2"=1'-0"

NO.	DATE	DESCRIPTION	APPROVED
REVISIONS			

DESIGNED _____
 DRAWN MAF
 CHECKED _____
 DATE 8-25-94

SCALE: AS NOTED
 DRAWING TITLE
 ROOF PLAN &
 DETAILS

DEPARTMENT OF PUBLIC WORKS
 CITY OF SUPERIOR, WISCONSIN

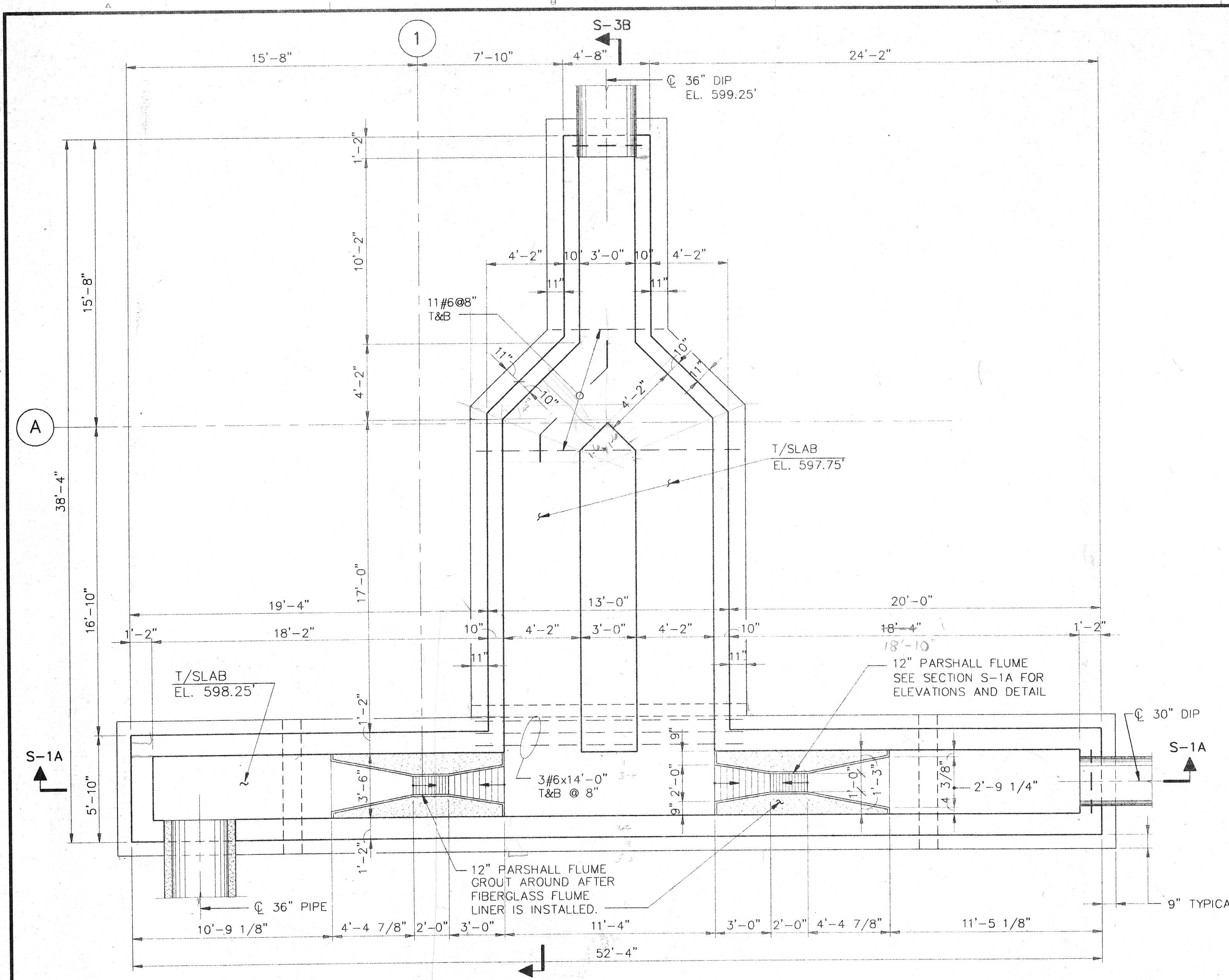
CONSER
 TOWNSEND
 ASSOCIATES
 ENGINEERING PLANNING MANAGEMENT
 2855 ANTHONY LANE SOUTH, SUITE 145
 MINNEAPOLIS, MN. 55418-3265

LHB ENGINEERS & ARCHITECTS
 DALLAS • MINNEAPOLIS
 21 W. Superior St., Ste. 100, S.W. 55002
 TEL: 762/72-4446 • FAX: 292/72-4458

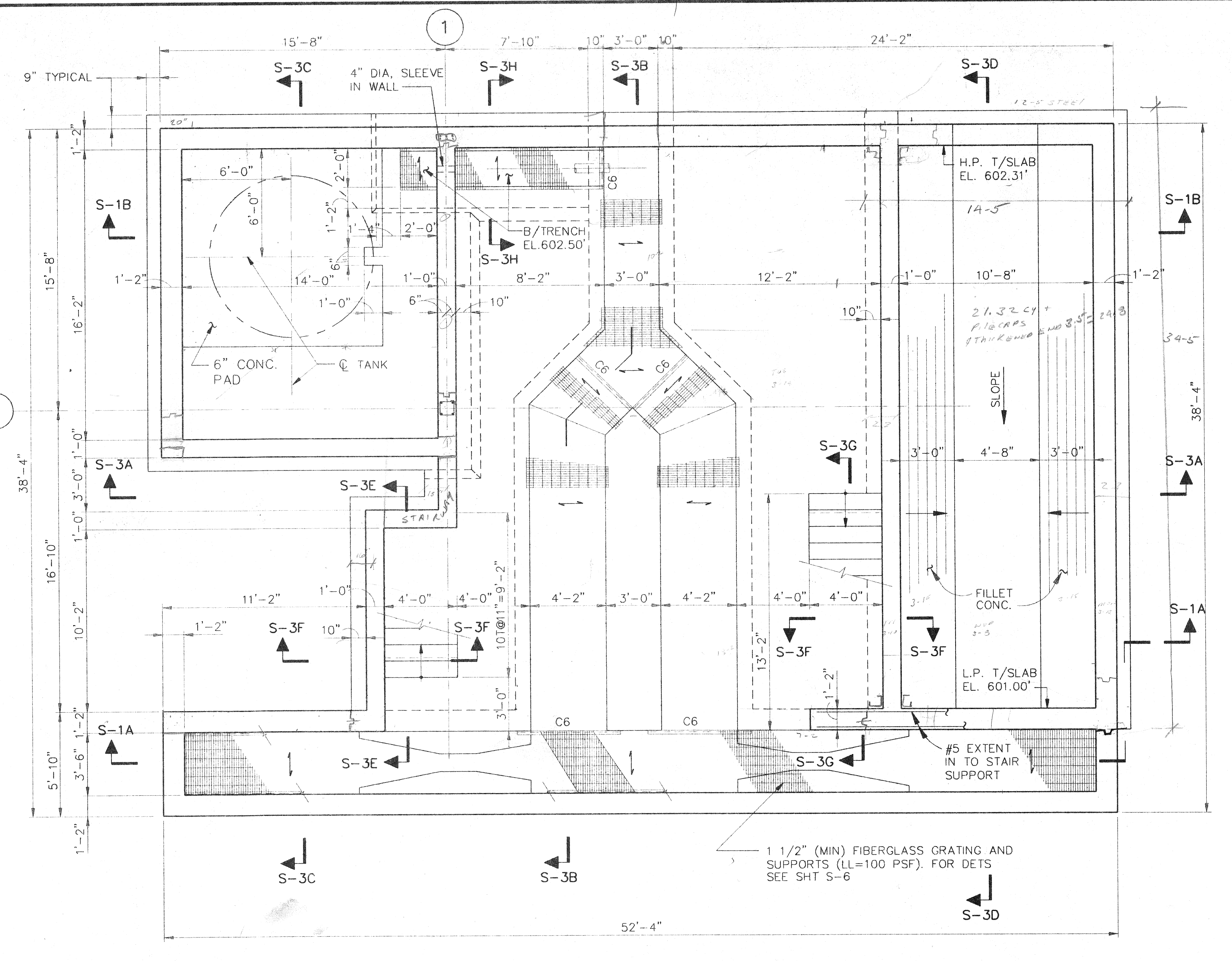
PROJECT NAME:
 SCREEN BUILDING

SHEET A2
 OF 2 SHEETS
 RECORD MAP NO.
 LHB PROJECT NO. 94064-1

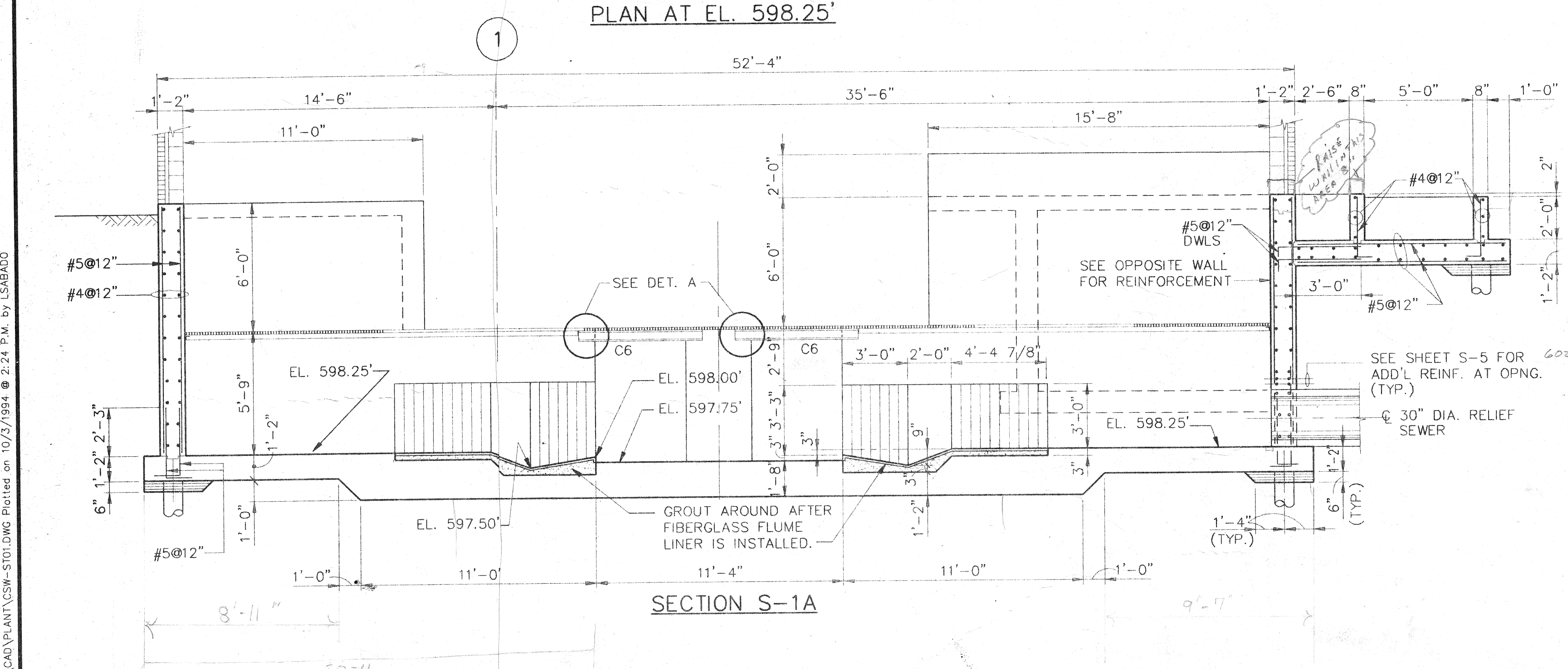
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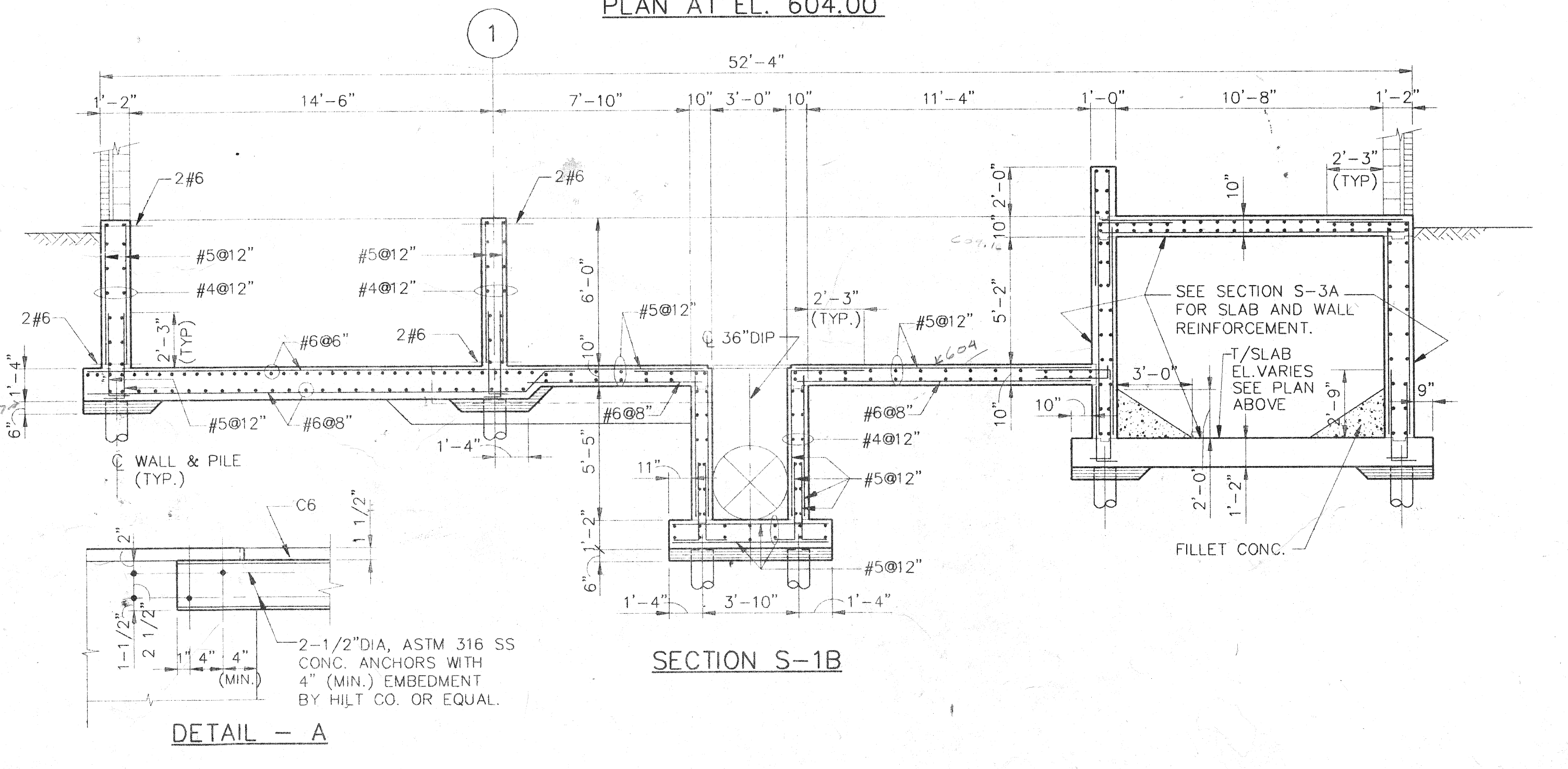
PLAN AT EL. 598.25'



PLAN AT EL. 604.00'



SECTION S-1A



SECTION S-1B

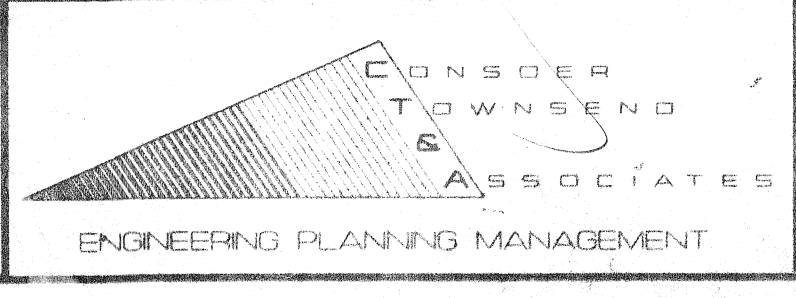
DETAIL - A

NO.	DATE	DESCRIPTION	APPROVED
REVISIONS			

DESIGNED	JAM
DRAWN	LTS/MKR
CHECKED	NMP
DATE	OCT. 1994

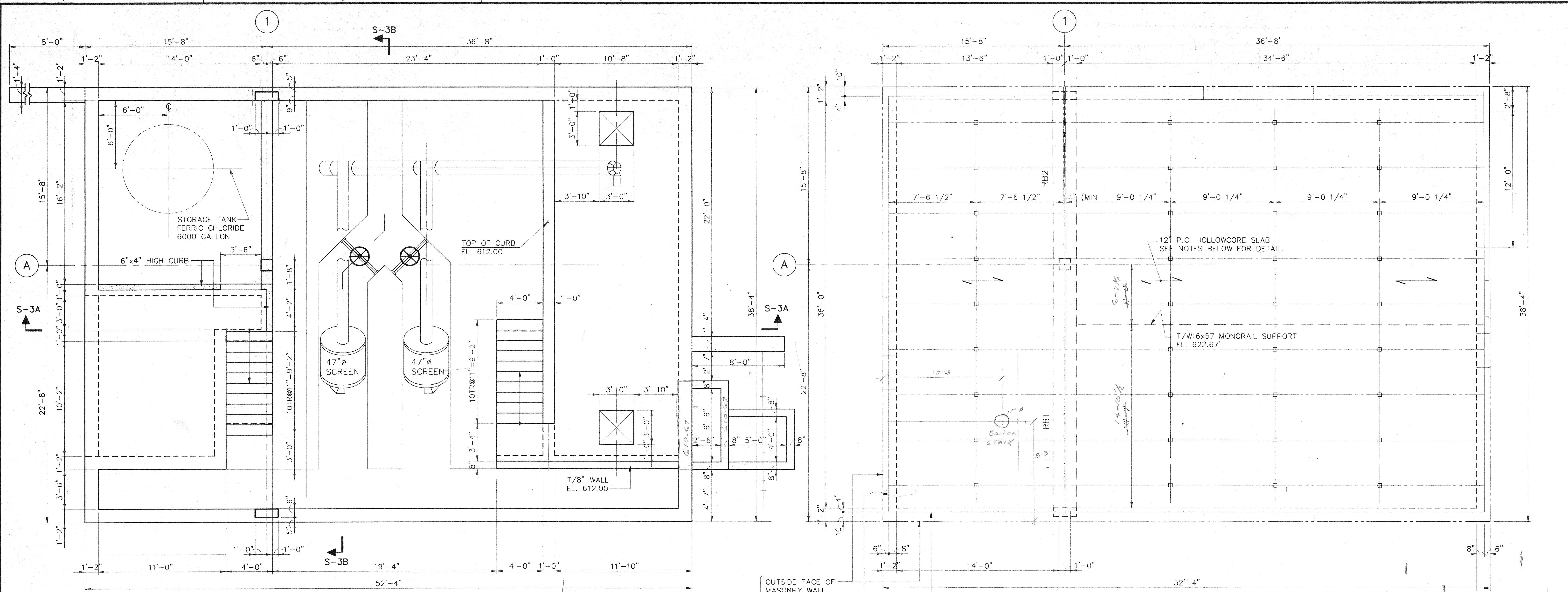
SCALE
 4 3 2 1 0 4 8
 FEET

DEPARTMENT OF PUBLIC WORKS
CITY OF SUPERIOR, WISCONSIN



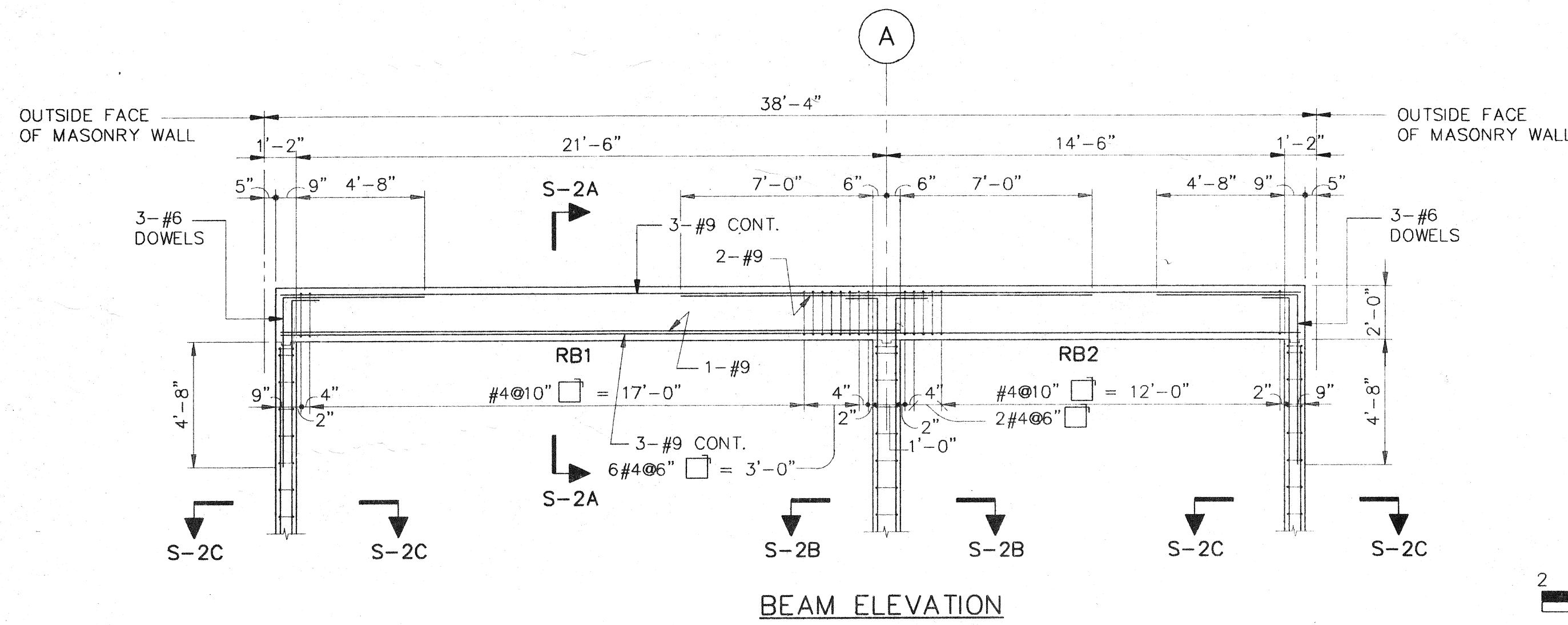
SCREEN BUILDING
PLAN AND SECTIONS

SHEET S-1	OF 6	SHEETS
RECORD MAP NO.		3899-02
CT&A PROJECT NO.		3899-02

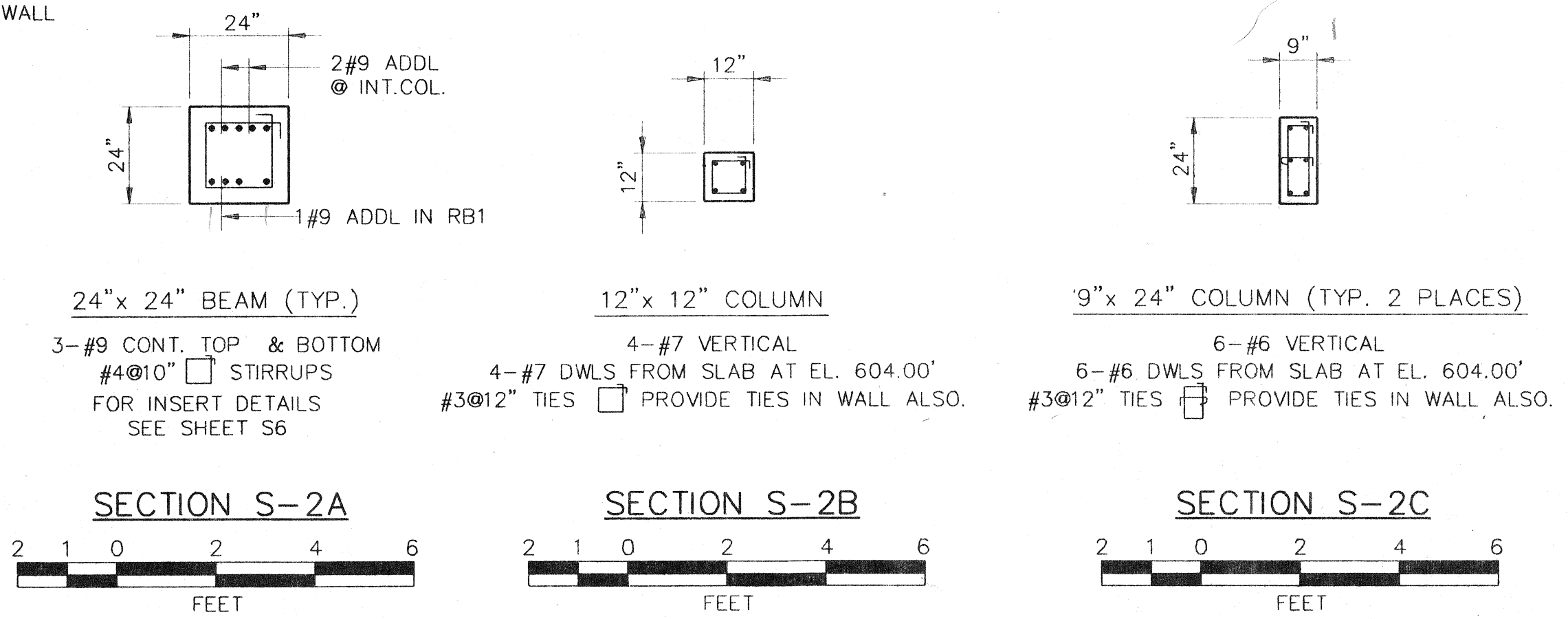


GRADE PLAN AT EL. 610.00'

ROOF FRAMING PLAN
T/PC. HOLLOWCORE SLAB
EL. 624.33'



BEAM ELEVATION

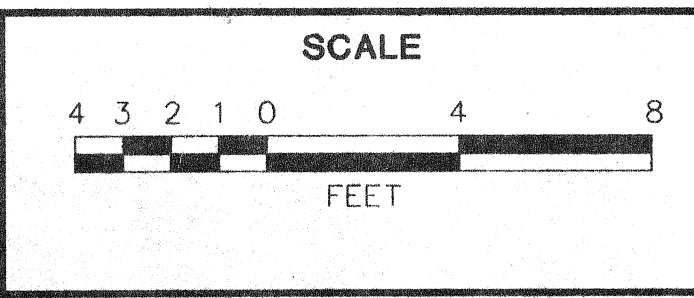


- NOTES :**
- P.C. HOLLOWCORE ROOF SLAB SHALL SUPPORT THE FOLLOWING SUPERIMPOSED LOADS:
LIVE LOAD.....30 PSF
ROOFING AND INSULATION.....15 PSF
MECHANICAL, ETC.....15 PSF
 - 12" P.C. HOLLOWCORE SLAB SHALL NOT WEIGH MORE THAN 86 PSE.
 - FOR LOCATION AND SIZE OF ROOF OPENINGS SEE PROCESS, MECHANICAL AND ARCHITECTURAL DRAWINGS.
 - (*) DIMENSIONS TO BE CHECKED AGAINST MECHANICAL DRAWINGS AND COORDINATED WITH EQUIPMENT MANUFACTURER'S DRAWINGS.
 - PRECAST ROOF SLAB CONTRACTOR TO FRAME ALL OPENINGS AS REQUIRED TO SUPPORT INTERRUPTED SLABS, EXCEPT AS SHOWN OTHERWISE.
 - PRECAST SLAB MANUFACTURER SHALL PROVIDE INSERTS TO SUPPORT PIPES, DUCTWORK AND OTHER EQUIPMENT. FOR DETAILS SEE PROCESS, MECHANICAL, ELECTRICAL AND ARCHITECTURAL DWGS.
 - MASONRY WALLS SHALL BE ADEQUATELY BRACED DURING ERECTION OF PRECAST ROOF SLAB UNITS. THESE TEMPORARY BRACINGS AND GUYS SHALL BE MAINTAINED UNTIL ALL CONNECTIONS SHOWN ARE SATISFACTORILY COMPLETED. FOR CONNECTION DETAILS SEE SHEET S6.

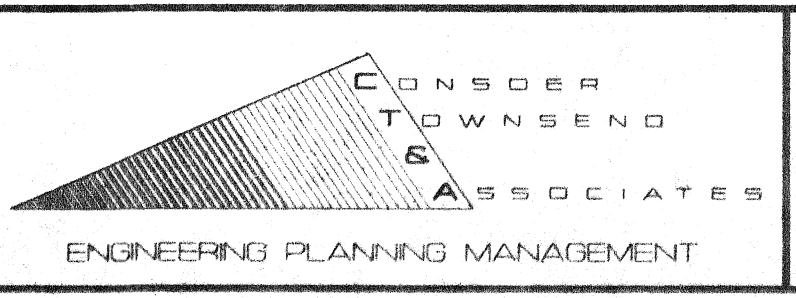
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NO.	DATE	DESCRIPTION	APPROVED

DESIGNED JAM
DRAWN LTS
CHECKED NMP
DATE OCT. 1994

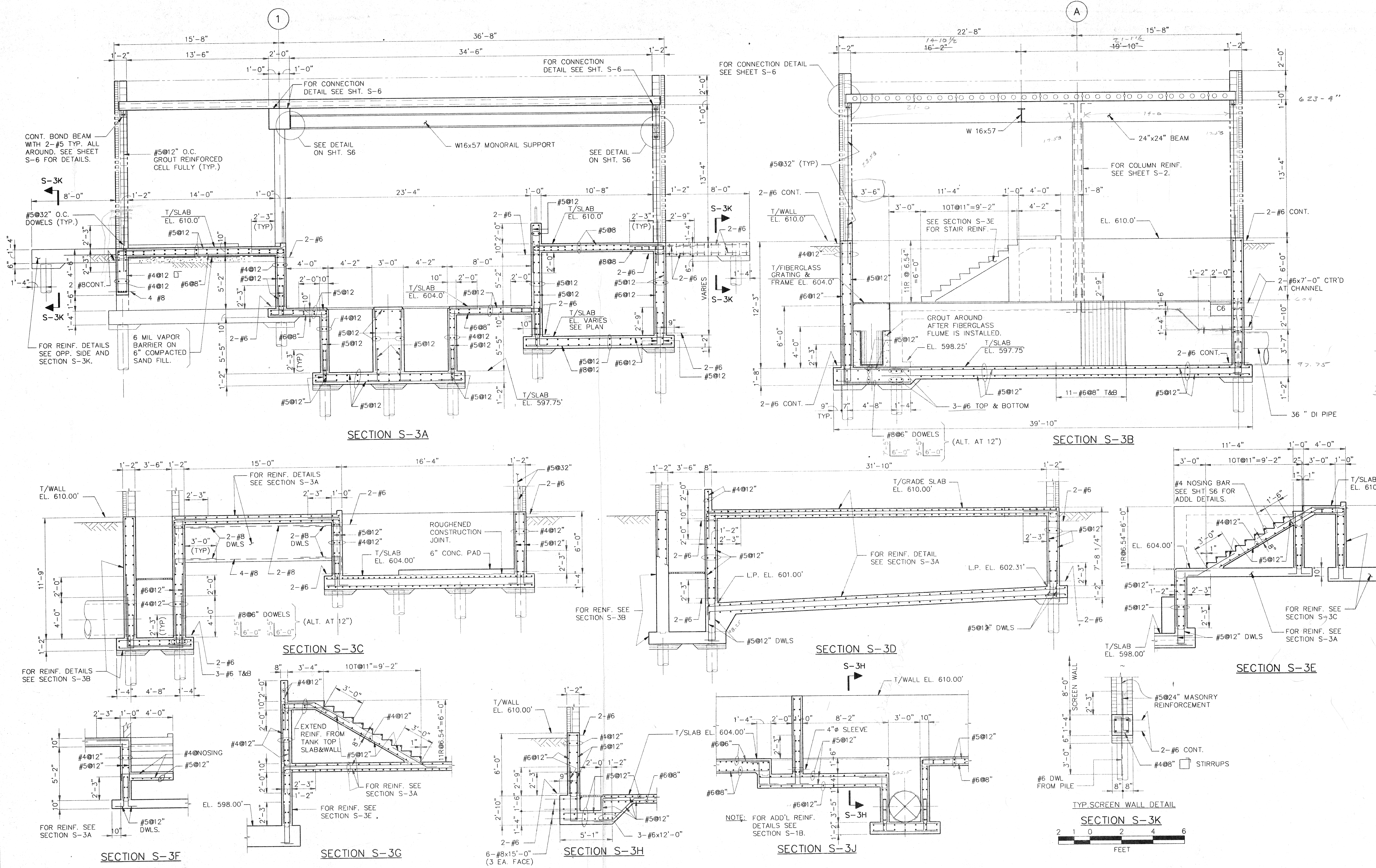


DEPARTMENT OF PUBLIC WORKS
CITY OF SUPERIOR, WISCONSIN



SCREEN BUILDING
PLAN AND SECTIONS

SHEET S-2
OF 6 SHEETS
RECORD MAP NO.
CT&A PROJECT NO. 3899-00



SECTION S-3A

SECTION S-3B

SECTION S-3C

SECTION S-3D

SECTION S-3E

SECTION S-3F

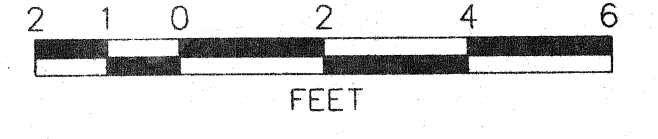
SECTION S-3G

SECTION S-3H

SECTION S-3J

TYP. SCREEN WALL DETAIL

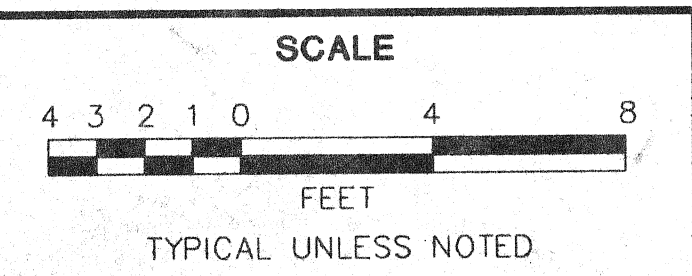
SECTION S-3K



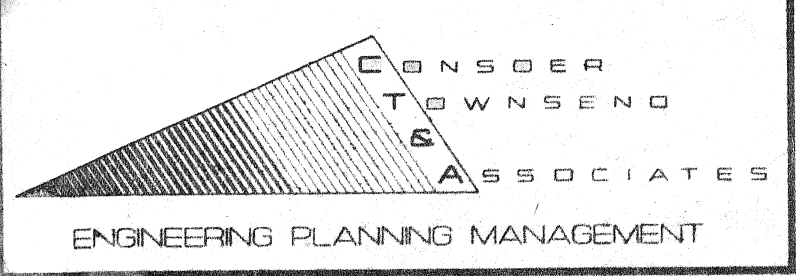
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NO.	DATE	DESCRIPTION	APPROVED
REVISIONS			

DESIGNED: JAM
 DRAWN: LTS
 CHECKED: NMP
 DATE: OCT. 1994



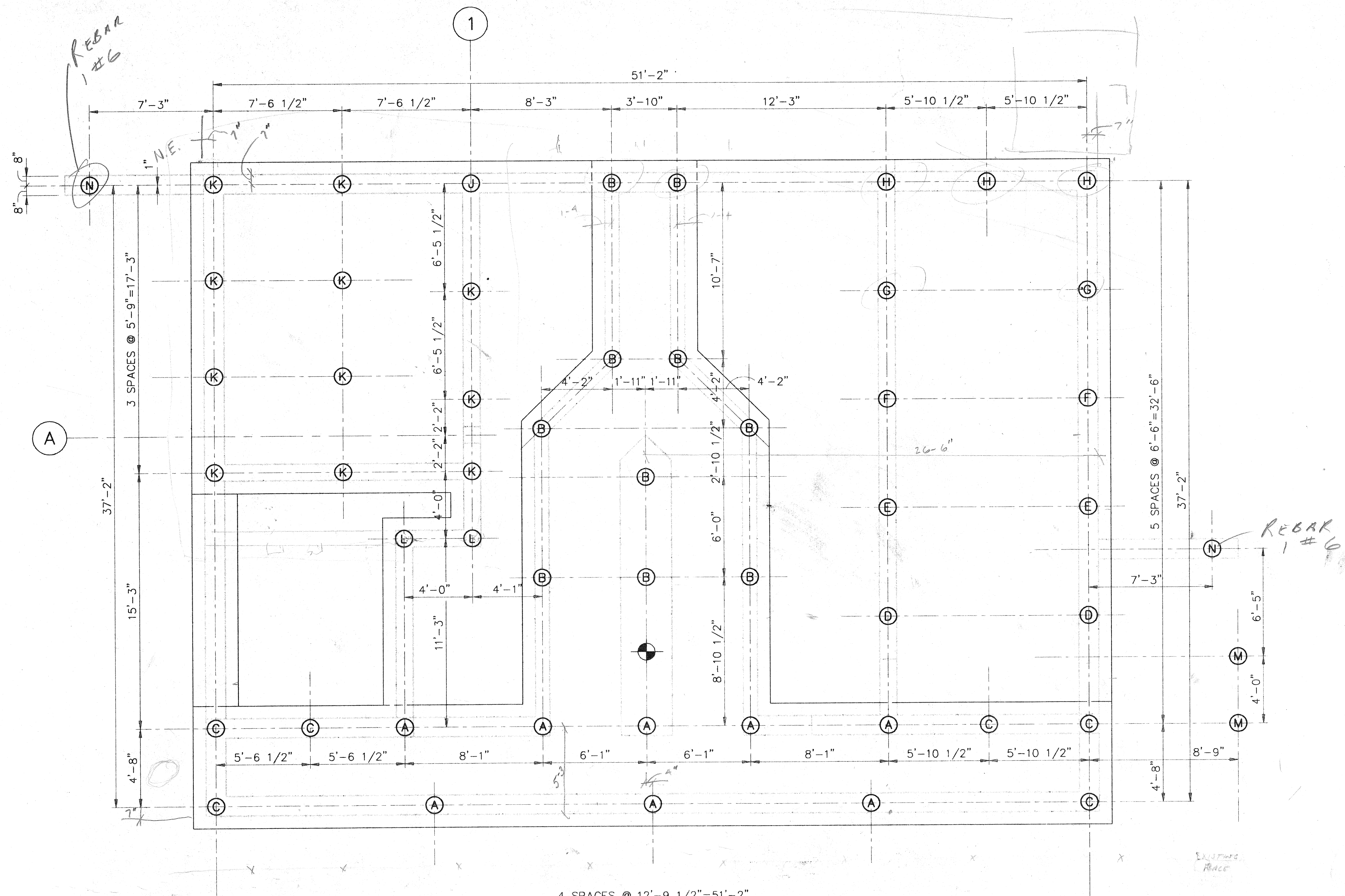
DEPARTMENT OF PUBLIC WORKS
 CITY OF SUPERIOR, WISCONSIN



SCREEN BUILDING
 SECTIONS AND DETAILS

SHEET S-3
 OF 6 SHEETS
 RECORD MAP NO. CT&A PROJECT NO. 3899-02

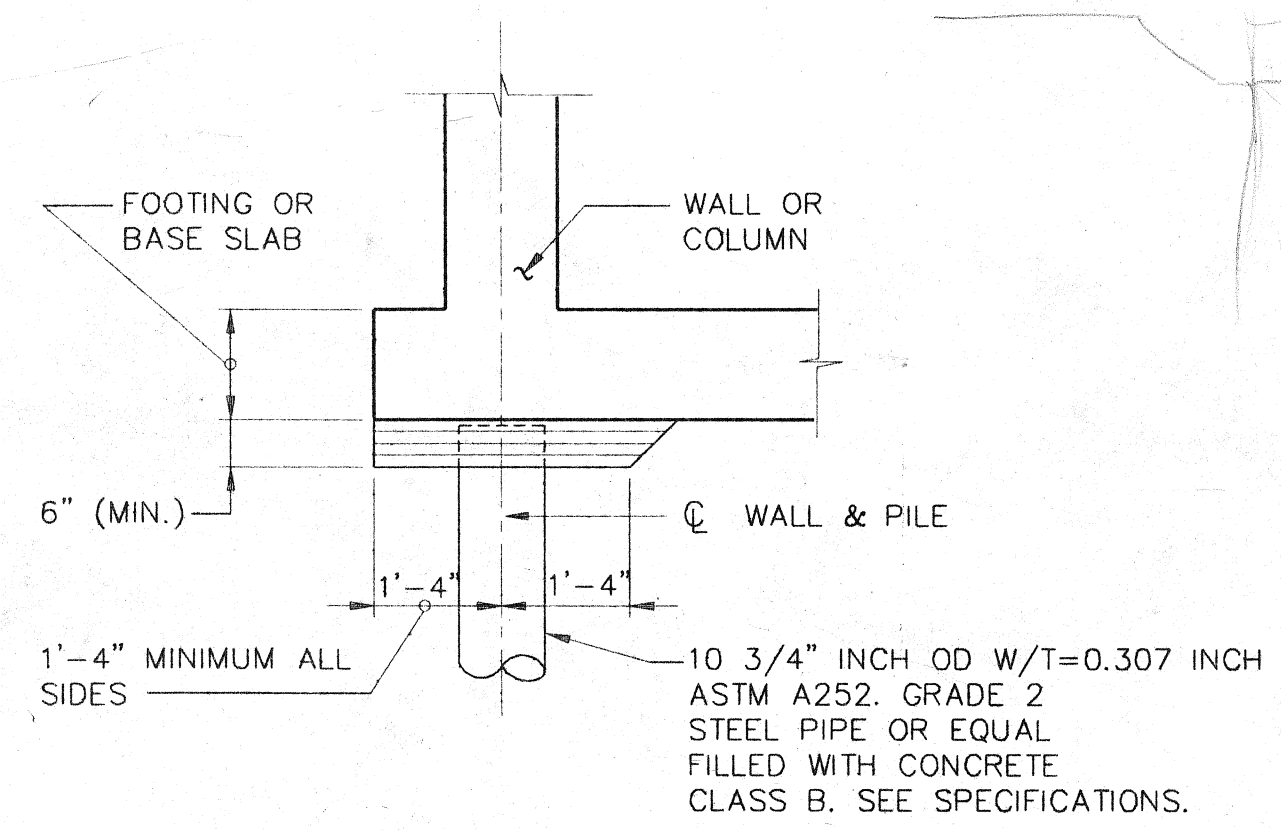
REBAR #6



PILE PLAN

PILE CUT-OFF SCHEDULE	
MARK	P.C.O. ELEVATION
(A)	596.08'
(B)	596.58'
(C)	597.08'
(D)	600.09'
(E)	600.35'
(F)	600.62'
(G)	600.88'
(H)	601.14'
(J)	601.17'
(K)	602.67'
(L)	603.17'
(M)	606.66'
(N)	608.66'

NOTES:
 ALL PILES SHOWN ON THIS SHEET ARE CONCRETE FILLED STEEL PILES.
 ALL PILES HAVE BEARING CAPACITY OF 45 TONS.
 PILE SHOWN (C) HAVE BATTER OF ONE HORIZONTAL TO FOUR VERTICAL.
 (M) SHOWS BEARING TEST PILES.

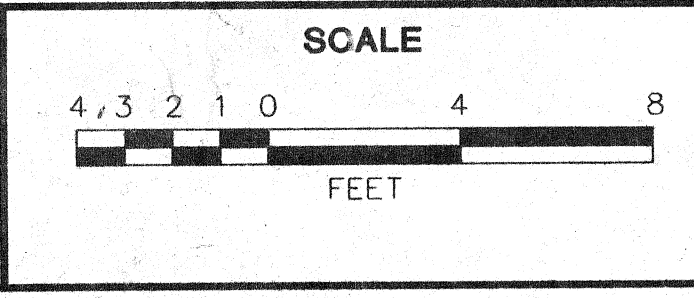


TYPICAL PILE DETAIL

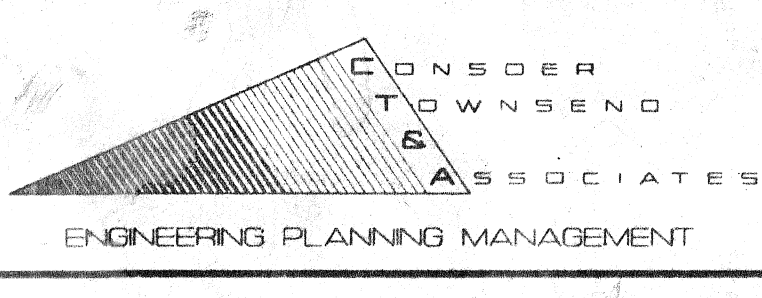
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NO.	DATE	DESCRIPTION	APPROVED
REVISIONS			

DESIGNED NMP
 DRAWN MKR
 CHECKED NMP
 DATE OCT. 1994



DEPARTMENT OF PUBLIC WORKS
 CITY OF SUPERIOR, WISCONSIN



SCREEN BUILDING
 PILE PLAN

SHEET S-4
 OF 6 SHEETS
 RECORD MAP NO. CT&A PROJECT NO. 3899-00

GENERAL NOTES FOR STRUCTURES

CONCRETE

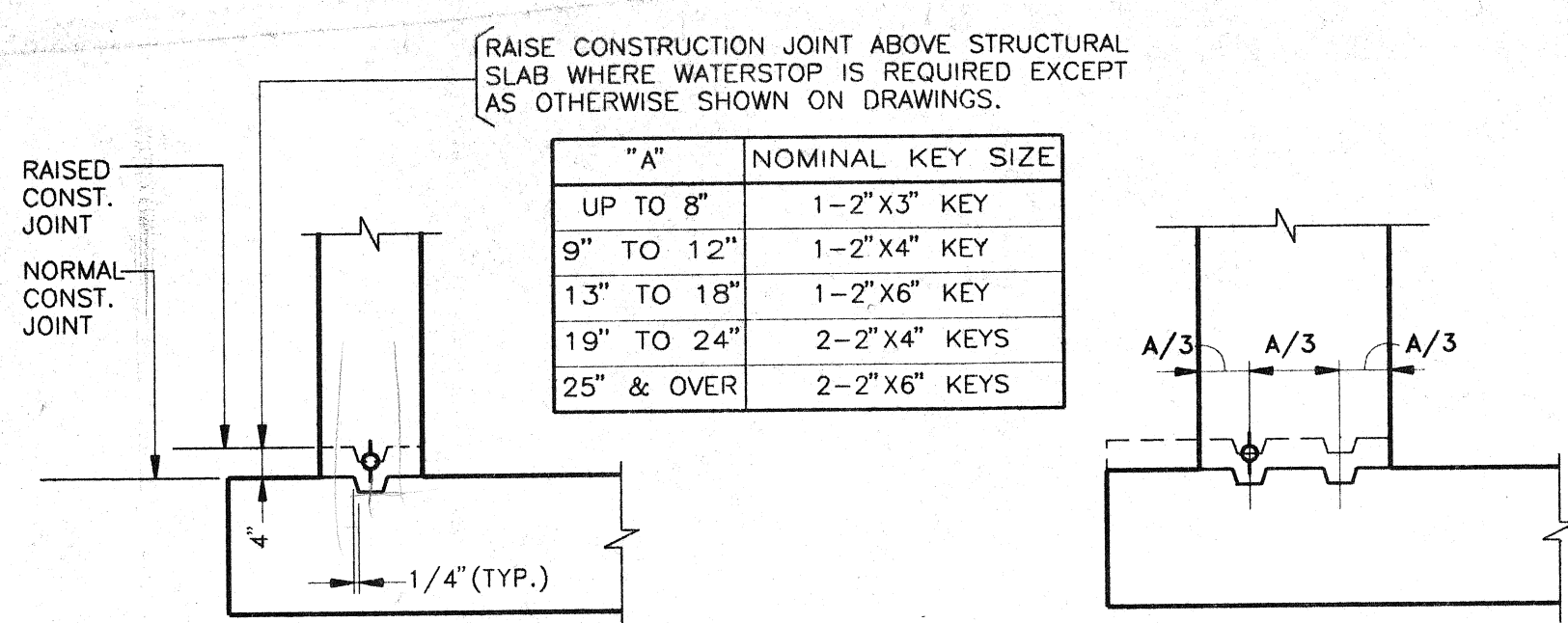
- DESIGN AND CONSTRUCTION SHALL CONFORM TO THE LATEST BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE OF THE AMERICAN CONCRETE INSTITUTE (ACI 318)
- ALL REINFORCING BARS SHALL CONFORM TO A.S.T.M A-615, GRADE 60. ARRANGEMENT AND DETAILS OF REINFORCING STEEL, INCLUDING BAR SUPPORTS AND SPACERS, SHALL BE IN ACCORDANCE WITH THE LATEST A.C.I. DETAILING MANUAL UNLESS OTHERWISE NOTED.
- ALL SLAB AND BEAM REINFORCEMENT SHALL HAVE A MINIMUM EXTENSION INTO THE SUPPORT IN ACCORDANCE WITH THE LATEST A.C.I. CODE. IF SUCH EXTENSION IS NOT POSSIBLE, BARS SHALL TERMINATE IN STANDARD HOOKS.
- HORIZONTAL WALL REINFORCEMENT AND TEMPERATURE REINFORCEMENT SHALL LAP A MINIMUM OF 1.7L_d AT SPLICES. WALL DOWELS AND WALL BAR EXTENSIONS AND ALL STRESS SPLICES SHALL LAP A MINIMUM OF 1.7L_d UNLESS OTHERWISE NOTED.
- PILASTERS SHALL HAVE DOWELS FROM FOUNDATIONS OR CONSTRUCTION BELOW OF SAME SIZE AND SPACING AS PILASTER VERTICAL STEEL. SEE FOOTING SCHEDULE.
- UNLESS OTHERWISE NOTED ON THE DRAWINGS, CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS SHALL NOT BE LESS THAN THE FOLLOWING:
 - STRUCTURAL MEMBERS, FOUNDATIONS, WALLS AND SUSPENDED SLABS --- 4000 PSI
 - SLABS ON GRADE --- 4000 PSI
 - LEAN CONCRETE OR GROUT FILL --- 2000 PSI

- UNLESS OTHERWISE SHOWN, THE COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:
 - SLABS AND JOISTS
 - TOP AND BOTTOM OF FORMED SLABS FOR DRY CONDITION:
 - #14 AND #18 BARS --- 1 1/2"
 - #11 BARS AND SMALLER --- 1"
 - FORMED CONCRETE SURFACES EXPOSED TO EARTH, WATER OR WEATHER, AND OVER OR IN CONTACT WITH SEWAGE AND FOR BOTTOMS BEARING ON WORK MAT, OR SLABS SUPPORTING EARTH COVER:
 - ALL BARS --- 2"
 - BEAMS AND COLUMNS
 - FOR DRY CONDITIONS:
 - STIRRUPS, SPIRALS AND TIES --- 1 1/2"
 - PRINCIPAL REINFORCEMENT --- 2"
 - EXPOSED TO EARTH, WATER, SEWAGE OR WEATHER:
 - STIRRUPS AND TIES --- 2"
 - PRINCIPAL REINFORCEMENT --- 2 1/2"
 - WALLS
 - FOR DRY CONDITIONS:
 - #11 BARS AND SMALLER --- 1"
 - #14 AND #18 BARS --- 1 1/2"
 - FORMED CONCRETE SURFACES EXPOSED TO EARTH, WATER, SEWAGE, WEATHER, OR IN CONTACT WITH GROUND:
 - CIRCULAR TANKS WITH RING TENSION --- 2"
 - ALL OTHERS --- 2"
 - WALLS 12" OR OVER IN THICKNESS WITH POURS MORE THAN 10 FEET --- 2 1/2"
 - FLOORINGS AND BASE SLABS
 - AT FORMED SURFACES AND BOTTOMS BEARING ON CONCRETE WORK MAT --- 2"
 - AT UNFORMED SURFACES AND BOTTOMS IN CONTACT WITH EARTH --- 3"
 - TOP OF FOOTINGS - SAME AS SLABS
 - OVER TOP OF PILES --- 2"

- HORIZONTAL AND VERTICAL CONSTRUCTION JOINTS SHOWN OR NOTED ON THE PLANS ARE RECOMMENDED. ANY DEVIATION FROM THOSE SHOWN SHALL HAVE APPROVAL OF THE ENGINEER.
- ANY STOP IN FRAMED CONCRETE WORK MUST BE MADE IN THE CENTER OF THE SPAN AND INCORPORATE AN APPROVED KEYWAY. REINFORCEMENT SHALL EXTEND THROUGH THESE JOINTS IF REQUIRED FOR CONTINUITY.
- USE TYPE "C2" JOINT FOR ALL CONSTRUCTION JOINTS IN WALLS AND SLABS BELOW GRADE WITHIN BUILDINGS AND WALLS WHICH SEPARATE AREAS OF SOIL OR LIQUID FROM PERMANENTLY DRY AREAS SUCH AS TUNNELS, GALLERIES, BASEMENT ROOMS, ETC. USE TYPE C1 JOINT AT ALL OTHER CONSTRUCTION JOINTS UNLESS OTHERWISE NOTED ON DRAWINGS.
- CONCRETE WALLS AND PARTITIONS SHALL BE POURED IN MAXIMUM LENGTHS OF 40 FEET BETWEEN VERTICAL CONSTRUCTION JOINTS.
- ALL CONCRETE SLABS OVER 8" IN THICKNESS, REINFORCED WITH BARS, AND POURED AGAINST SOIL SHALL BE POURED IN A STRIP PATTERN OF 40 FEET OR LESS IN EACH DIRECTION.
- ALL EXPOSED EDGES OF BEAMS, COLUMNS, SLABS AND WALLS SHALL BE CHAMFERED 3/4" UNLESS MASONRY OR OTHER MEMBERS ARE ERECTED FLUSH WITH THEM.
- REFER TO ARCHITECTURAL, PROCESS, MECHANICAL AND ELECTRICAL DRAWINGS FOR ALL SLEEVES, PIPES, CONDUITS AND MISCELLANEOUS ANCHORING DEVICES TO BE INCORPORATED IN THE CONSTRUCTION.

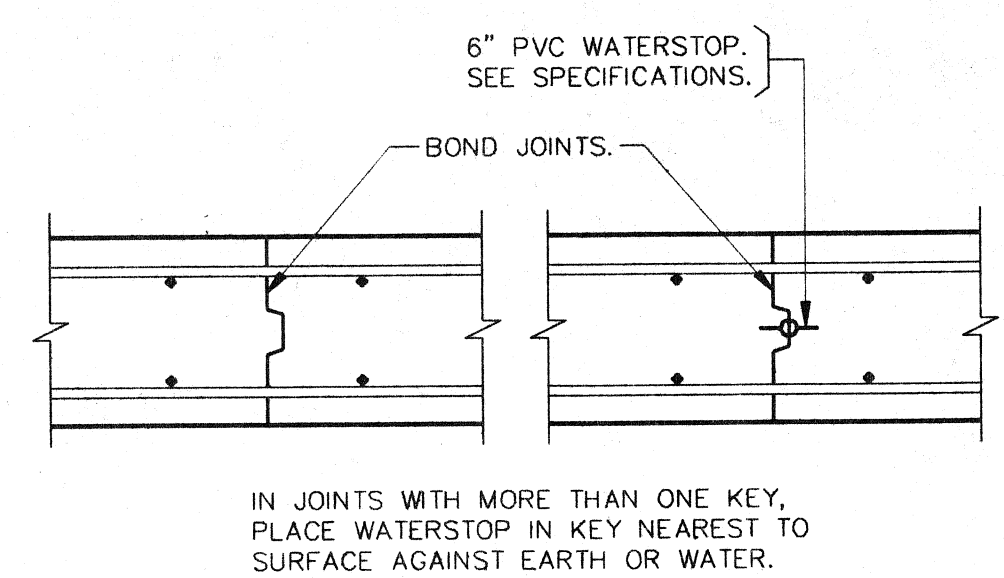
- STRUCTURAL STEEL**
- STRUCTURAL STEEL SHALL CONFORM TO THE LATEST AISC "SPECIFICATION FOR STRUCTURAL STEEL FOR BUILDINGS". ALL STRUCTURAL STEEL SHALL BE ASTM A36.
 - ELEVATIONS OF STEEL BEAMS SHOWN ON FRAMING PLANS REFER TO TOP OF FLANGE, UNLESS OTHERWISE NOTED.
 - ALL BOLTED CONNECTIONS SHALL BE MADE WITH 3/4" DIAMETER ASTM A-325 BOLTS EXCEPT AS OTHERWISE SHOWN OR NOTED. ALL CONNECTIONS SHALL BE CAPABLE OF SUPPORTING ONE HALF THE MAXIMUM ALLOWABLE UNIFORM LOAD FOR INDICATED BEAM SIZE AND SPAN IN AISC MANUAL OF STEEL CONSTRUCTION EXCEPT AS OTHERWISE NOTED.
 - FIELD CONNECTIONS SHALL BE BOLTED EXCEPT AS OTHERWISE SHOWN OR NOTED.
 - ALL WELDING SHALL CONFORM TO THE LATEST SPECIFICATION OF THE AMERICAN WELDING SOCIETY. ALL WELDED CONNECTIONS SHALL BE MADE WITH AWS A5.1 OR A5.5 E70 XX ELECTRODE.
 - ANCHOR BOLTS AND MISC. EMBEDDED STEEL --- ASTM A36.

- FOUNDATIONS**
- ALLOWABLE SOIL BEARING PRESSURE, EXCAVATION AND BACKFILL FOR FOUNDATIONS AND STRUCTURES SHALL BE AS RECOMMENDED IN THE GEOTECHNICAL REPORT.
 - ALL EXCAVATIONS SHALL BE CARRIED OUT IN THE DRY, AND PROVISIONS SHALL BE MADE TO PREVENT THE BOTTOM OF ALL EXCAVATIONS AND SLABS ON GROUND FROM FREEZING OR FLOODING AT ALL TIMES.
 - ALL FOUNDATIONS SHALL BE CONSTRUCTED IN EXCAVATIONS FREE OF STANDING WATER.
 - BACKFILL MATERIAL, PLACING AND COMPACTION OF BACKFILL SHALL BE IN ACCORDANCE WITH THE DRAWINGS, AND THE CONTRACT SPECIFICATIONS.



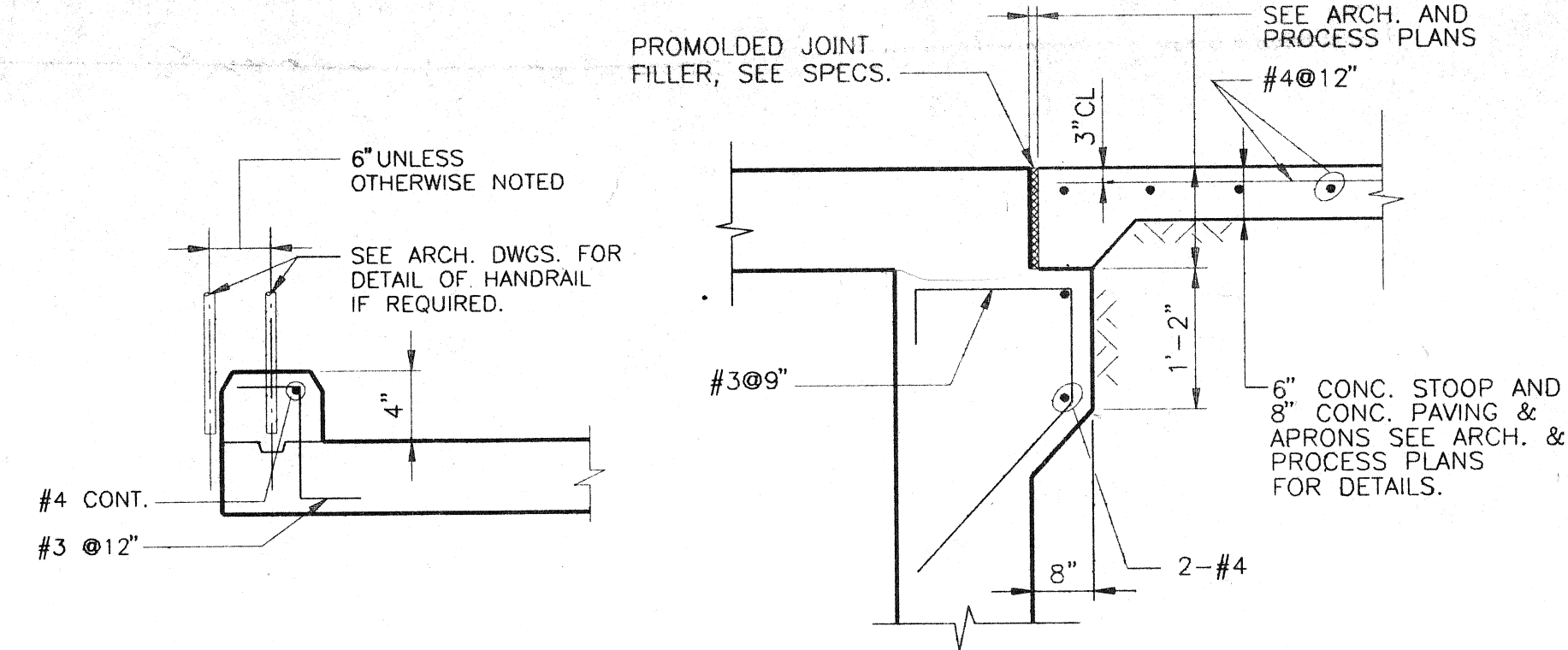
NUMBER AND SIZE OF KEYS SHOWN APPLY TO JOINTS IN SLABS AND TO BOTH VERTICAL AND HORIZONTAL JOINTS IN WALLS EXCEPT OTHERWISE NOTED ON DRAWINGS.

**CONSTRUCTION JOINTS
KEY DETAILS**

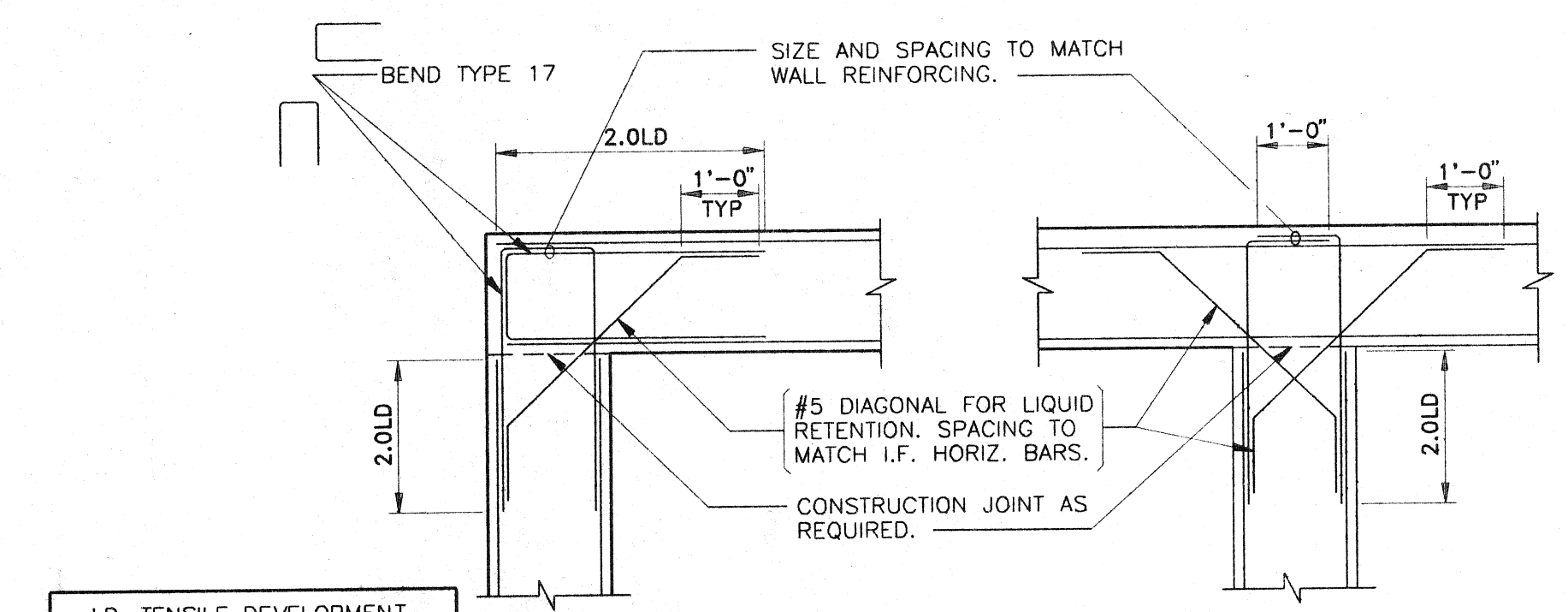


IN JOINTS WITH MORE THAN ONE KEY, PLACE WATERSTOP IN KEY NEAREST TO SURFACE AGAINST EARTH OR WATER.

**TYPE C1 TYPE C2
CONSTRUCTION JOINTS**

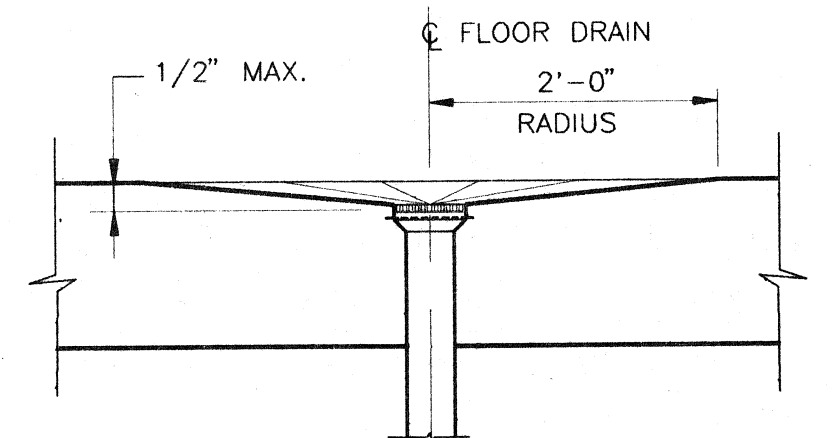


**WITH OR WITHOUT HANDRAIL
APRONS AND STOOPS
TYP. CONCRETE CURB DETAILS SUPPORT BRACKET DETAIL**



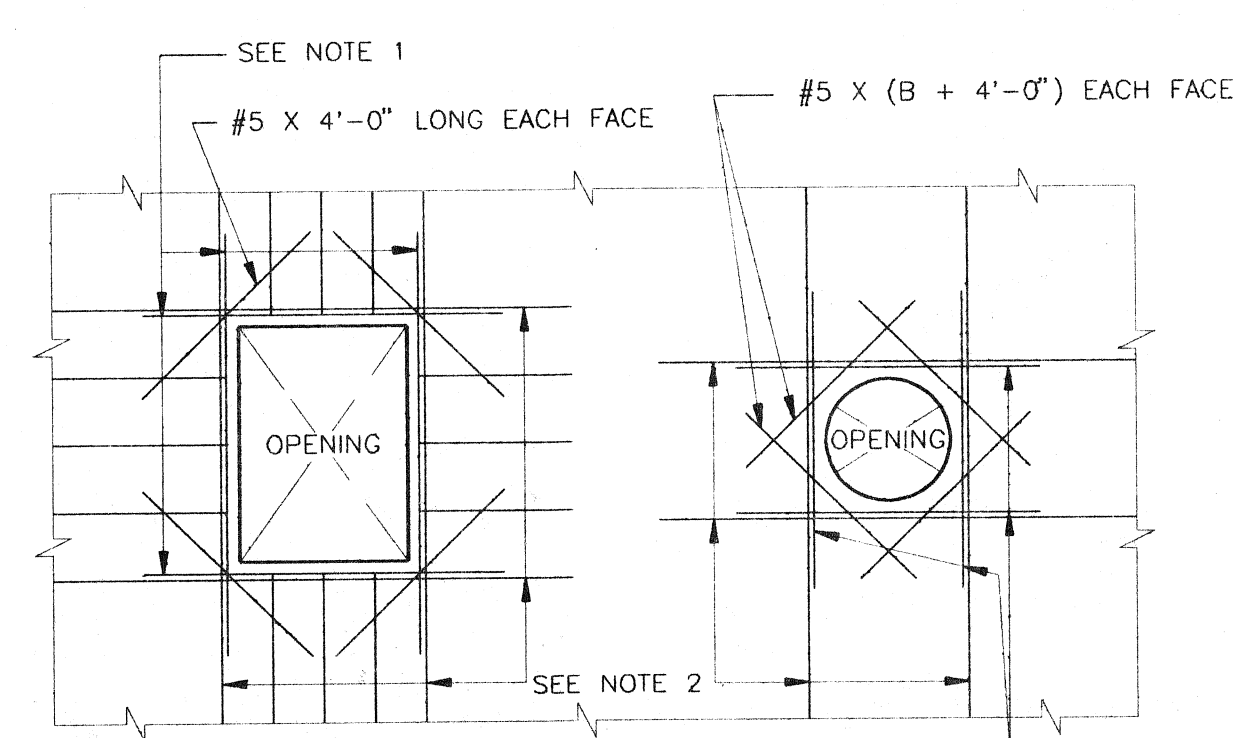
**CORNER INTERSECTION
TYP. DETAILS OF WALL REINFORCEMENT**

BAR SIZE	TENSION DEVELOPMENT LENGTH "LD" INCHES
3	12
4	12
5	15
6	19
7	26
8	35
9	44
10	56
11	68



NOTE: DETAIL APPLIES ONLY WHERE FLOOR IS LEVEL.

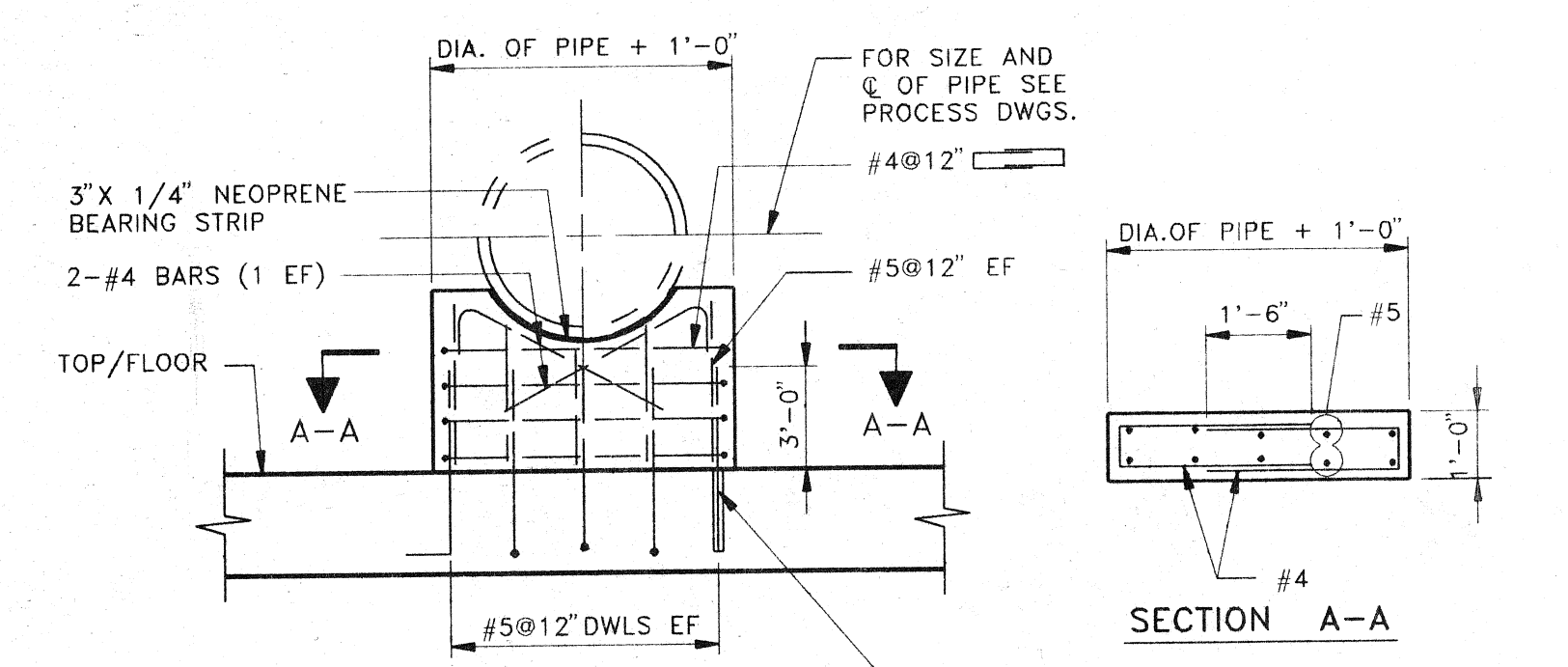
FLOOR DRAIN DETAIL



NOTE 1 PROVIDE 2-#6X(B+4'-0") ADD'L TOP & BOTTOM AND 2-#6X(A+4'-0") ADD'L AT EACH SIDE OF OPENING IN WALLS ONLY.

NOTE 2 PROVIDE ADD'L BARS EQUAL TO ONE-HALF OF BARS INTERRUPTED AT EACH SIDE OF OPENING AT 3" C/C. THESE BAR SHALL BE ORIGINAL SIZES AND LENGTHS AS THOSE OF THE INTERRUPTED BARS. (TYPICAL FOR OPENINGS IN SLABS AND PRESSURE WALLS.)

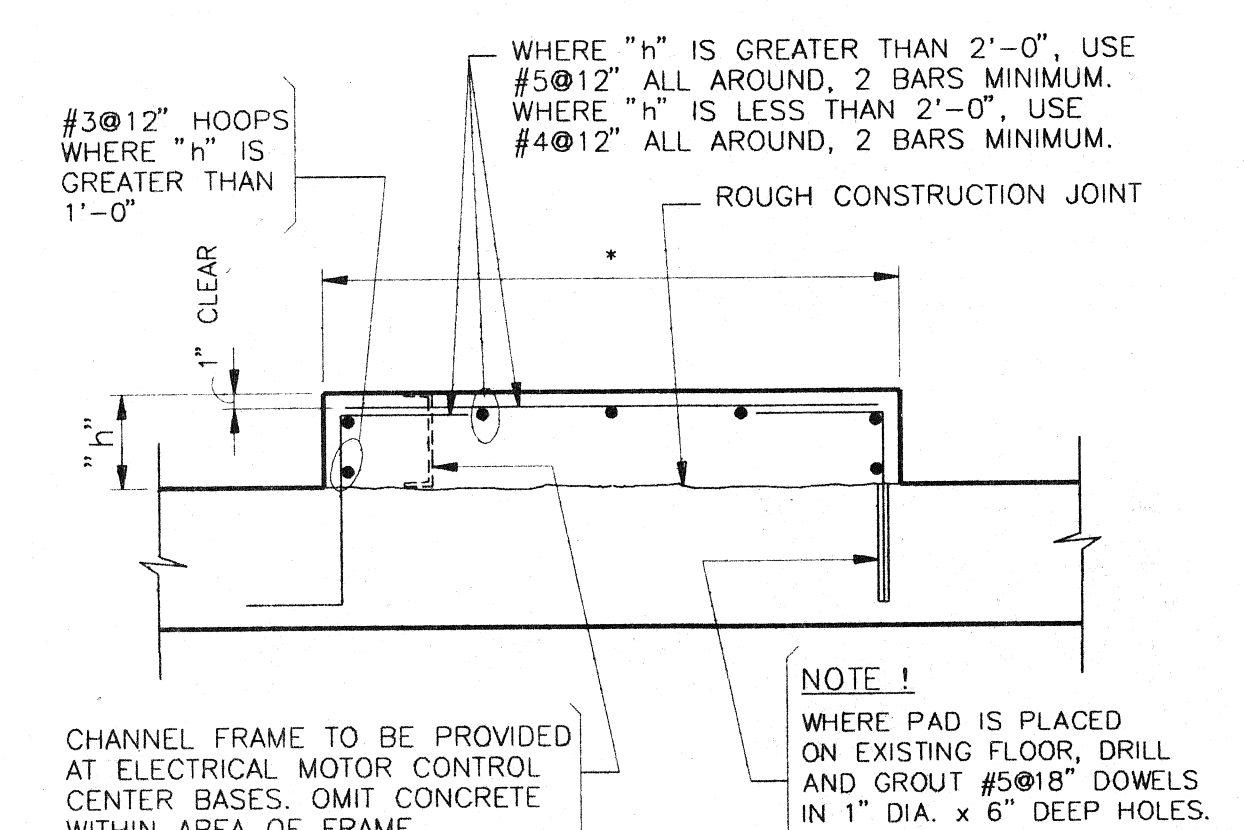
ADDITIONAL REINFORCING STEEL AT OPENINGS IN WALLS AND SLABS



NOTE 1 WHERE SUPPORT PIER IS PLACED ON EXISTING CONCRETE FLOOR, DRILL AND GROUT #5@12" DOWELS IN 1" DIA. x 10" DEEP HOLES. CLEAN AND ROUGHEN EXISTING CONCRETE SURFACE AND APPLY A CEMENT SLURRY PRIOR TO PLACING NEW CONCRETE.

FOR SUPPORT PIER LOCATIONS SEE PROCESS DWGS. AND SPECS.

TYPICAL PIPE SUPPORT PIER



NOTE 1 WHERE PAD IS PLACED ON EXISTING FLOOR, DRILL AND GROUT #5@18" DOWELS IN 1" DIA. x 6" DEEP HOLES. CLEAN AND ROUGHEN EXISTING CONC. SURFACE AND APPLY A CEMENT SLURRY PRIOR TO PLACING NEW CONCRETE.

EQUIPMENT PAD DETAIL

ABBREVIATIONS

ADD'L	ADDITIONAL	MIN.	MINIMUM
ALT	ALTERNATE	MTL	METAL
ARCH	ARCHITECT	OPNG	OPENING
BRG	BEARING	P	PLATE
BM	BEAM	P.V.C	POLYVINYL CHLORIDE
BOT	BOTTOM	R	RADIUS
BLDG	BUILDING	REINF	REINFORCEMENT
COL	COLUMN	SECT	SECTION
CONT	CONTINUOUS	STD	STANDARD
DET	DETAIL	STL	STEEL
DIA	DIAMETER	SYM	SYMMETRICAL
DWG	DRAWING	TYP	TYPICAL
DWL	DOWEL	VERT	VERTICAL
O.A.	OVERALL	W.W.F.	WELDED WIRE FABRIC
CL	CENTER LINE	T/	TOP OF
CONC.	CONCRETE	B/	BOTTOM OF
CTR'D	CENTERED	U.O.N.	UNLESS OTHERWISE NOTED
E.F.	EACH FACE		
E.W.	EACH WAY		
EL.	ELEVATION		
EXP.	EXPANSION		
EXT	EXTERIOR		
FTG	FOOTING		
H.P.	HIGH POINT		
I.D.	INSIDE DIMENSION		
I.F.	INSIDE FACE		
INT	INTERIOR		
L.P.	LOW POINT		
MAX	MAXIMUM		
MECH	MECHANICAL		
MFR.	MANUFACTURER		

LEGEND

	EXISTING CONCRETE STRUCTURE
	NEW CONCRETE STRUCTURE
	EXISTING STEEL STRUCTURE
	NEW STEEL STRUCTURE
	EXISTING STRUCTURE TO BE REMOVED

* DIMENSIONS NOTED THUS TO BE DETERMINED BY EQUIPMENT MANUFACTURER.

DETAILS SHOWN ON THIS DRAWING ARE TYPICAL DETAILS AND SHALL BE USED WHOLLY OR IN PART WHERE THEY APPLY EXCEPT WHERE MODIFIED BY DETAILED DRAWINGS & SPECIFICATIONS.

M:\PROJECTS\3899\CD\PLANT\CSB-XS01.DWG, Plotted on: 10/13/1994 @ 2:51 P.M. by LSABADO

NO.	DATE	DESCRIPTION	APPROVED

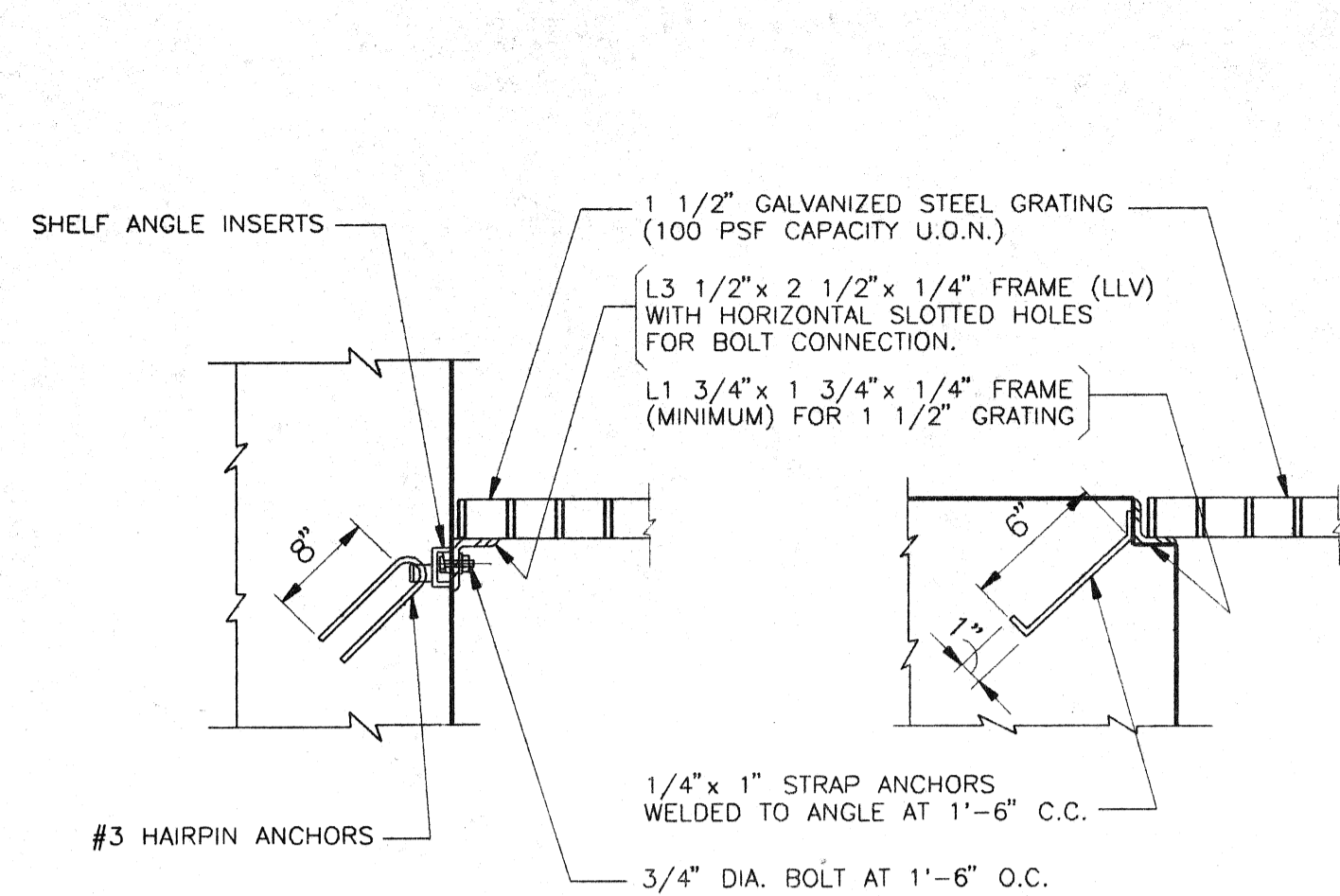
DESIGNED	JAM
DRAWN	LTS
CHECKED	NMP
DATE	OCT. 1994

SCALE
NO SCALE

DEPARTMENT OF PUBLIC WORKS
CITY OF SUPERIOR, WISCONSIN

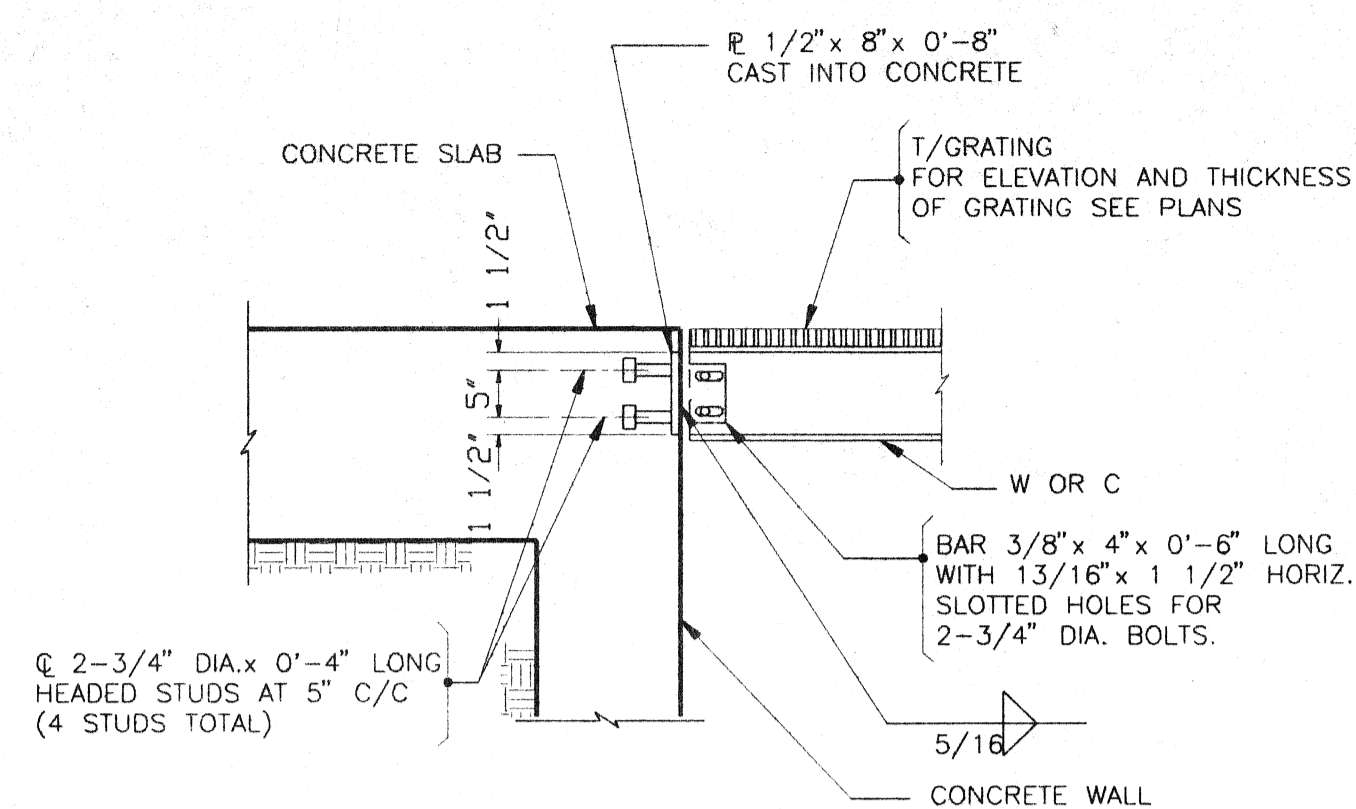
STRUCTURAL STANDARDS
NOTES AND DETAILS

SHEET S-5
OF 6 SHEETS
RECORD MAP NO. 3899-00
CT&A PROJECT NO.

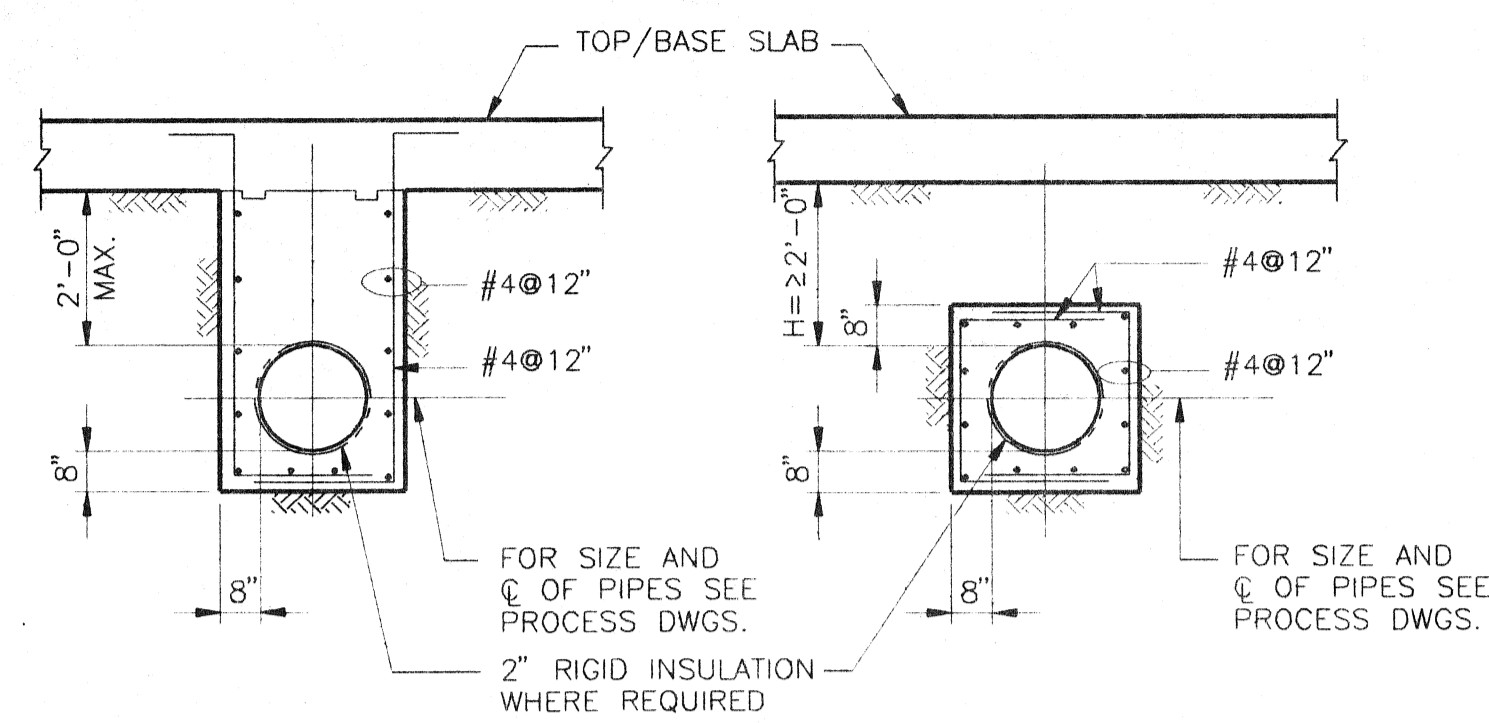


TYPICAL GRATING & FRAME DETAILS

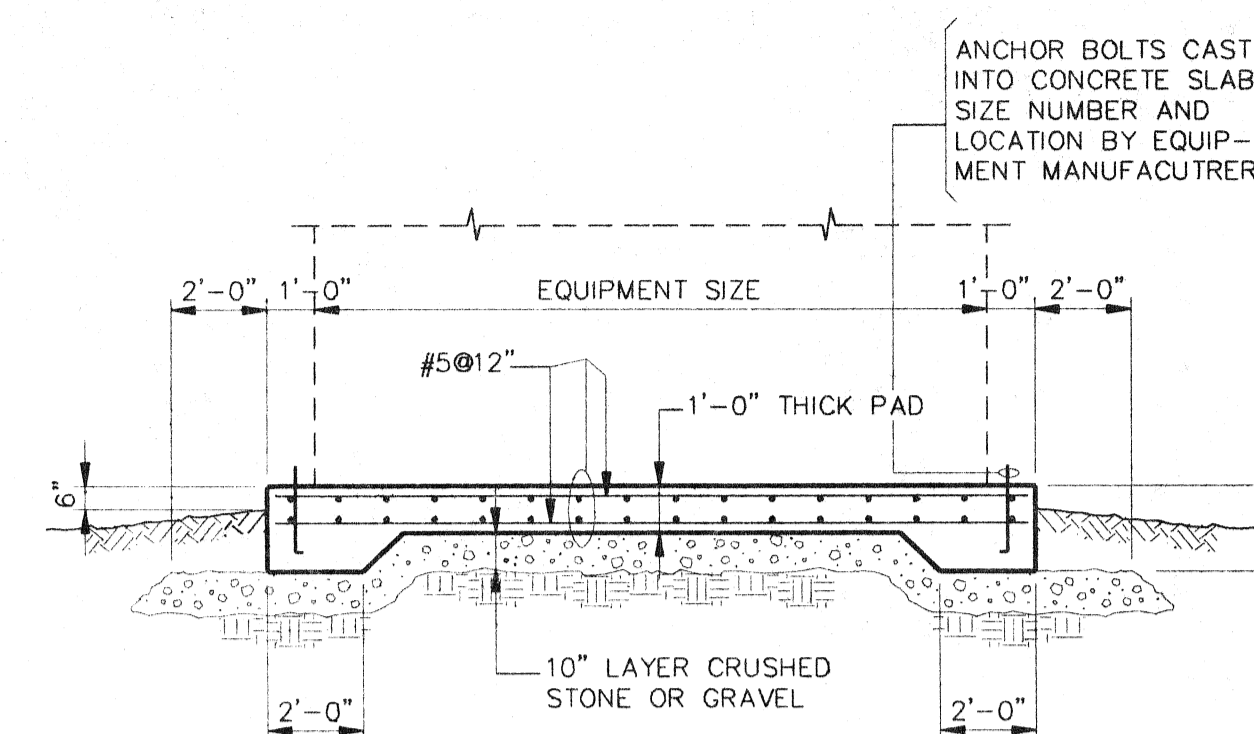
NOTE: WHERE FIBERGLASS GRATING IS REQUIRED PROVIDE FIBERGLASS SUPPORT BEAMS, CONNECTIONS, FRAMES AND ANCHORS. PROVIDE ASTM 316 STAINLESS STEEL BOLTS AND CONCRETE ANCHORS BY HILTI CO. OR EQUAL.



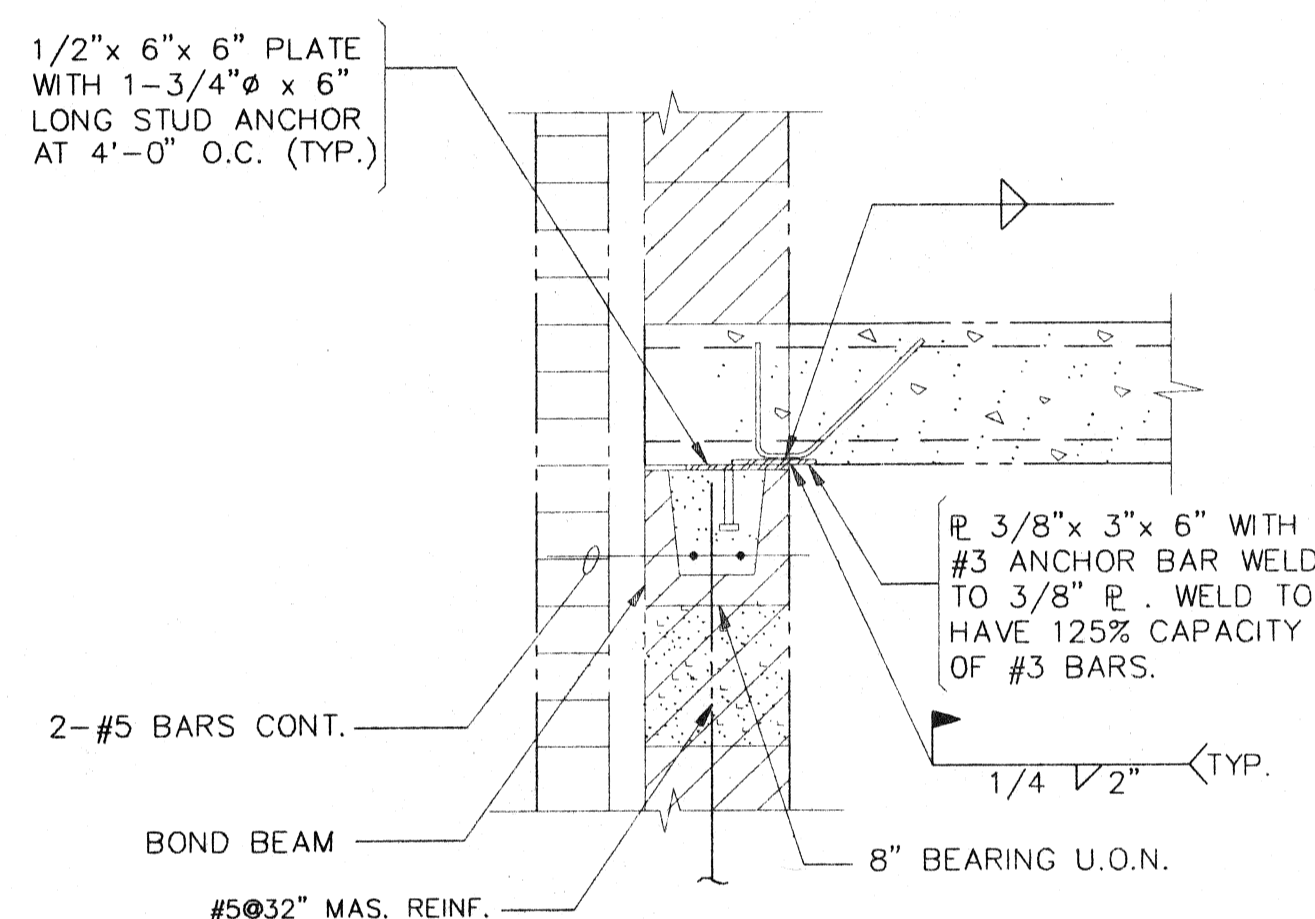
TYPICAL GRATING SUPPORT BEAM CONNECTION TO CONCRETE



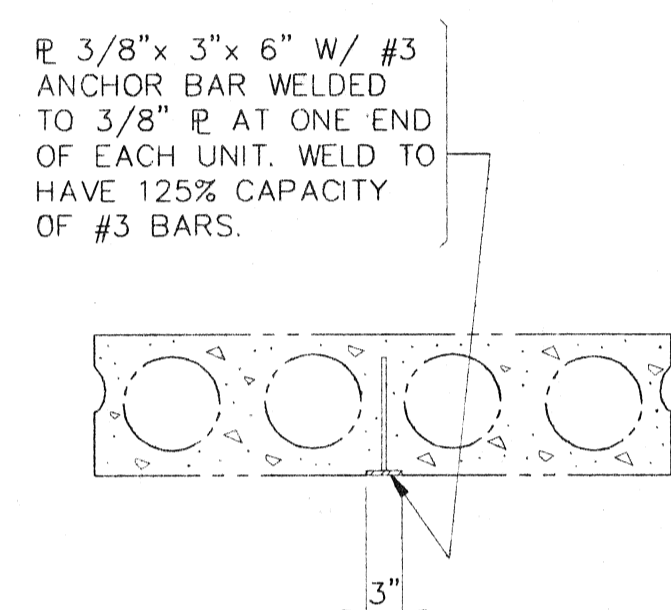
TYPICAL PIPE ENCASEMENT DETAILS



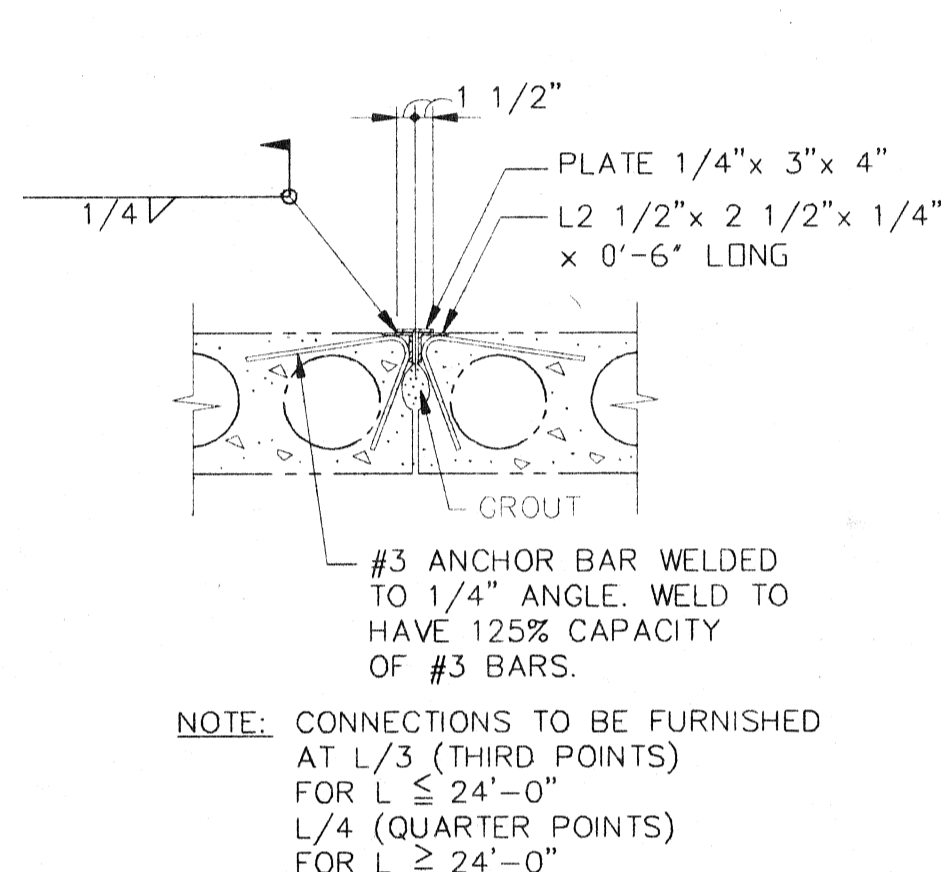
TYP. CONCRETE PAD FOR OUTSIDE EQUIPMENT (U.O.N.)



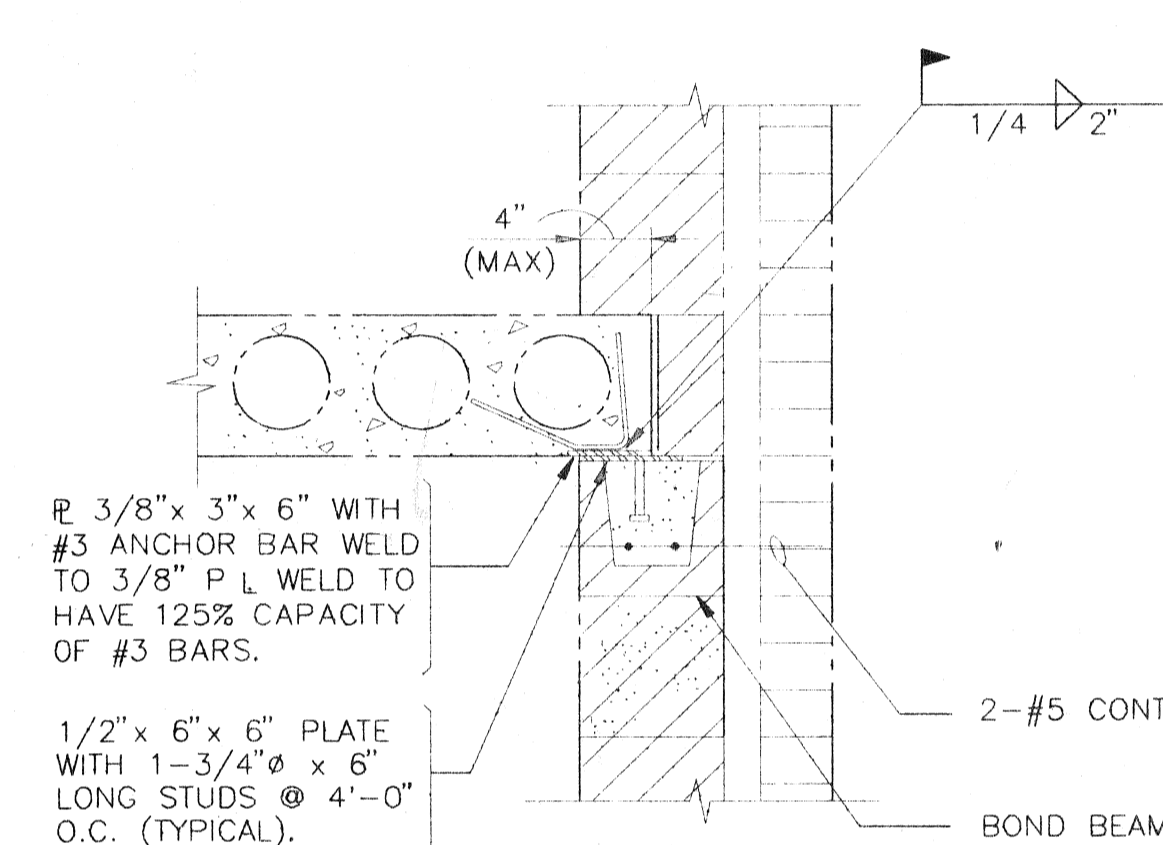
TYP. HOLLOWCORE SLAB AND MASONRY WALL CONN. DETAIL



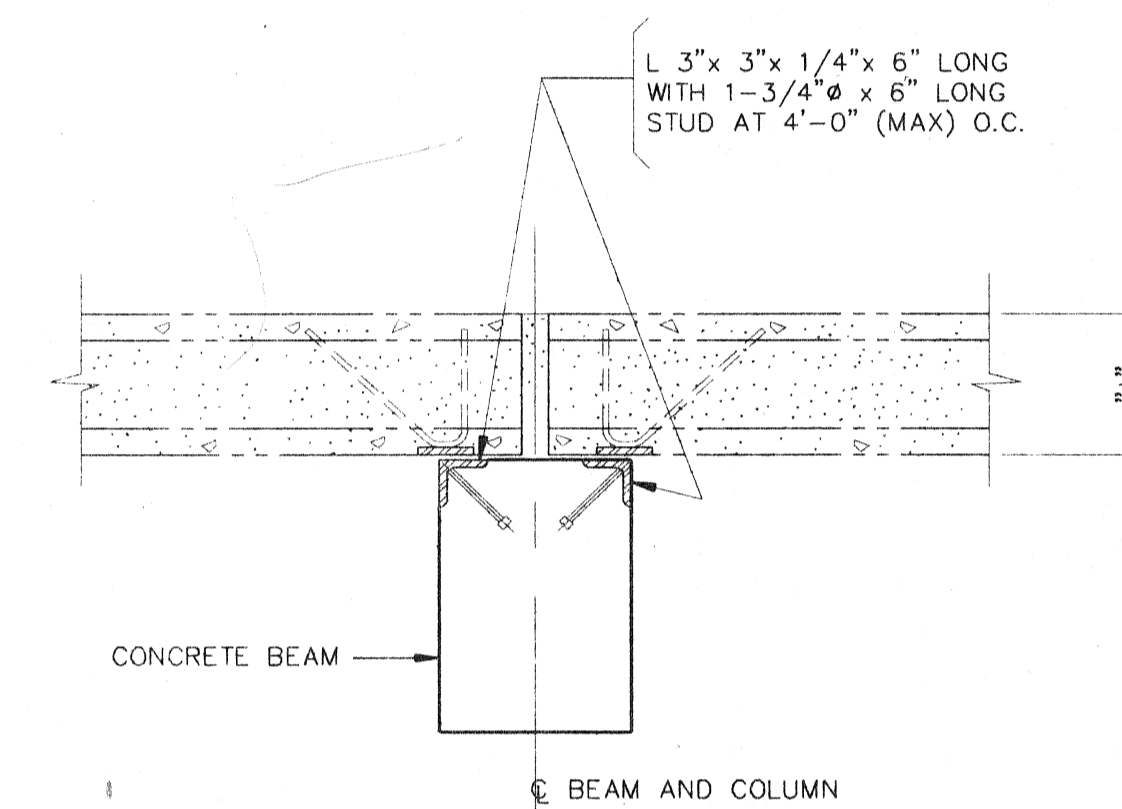
TYPICAL HOLLOWCORE SLAB SUPPORT CONNECTION INSERT DETAIL



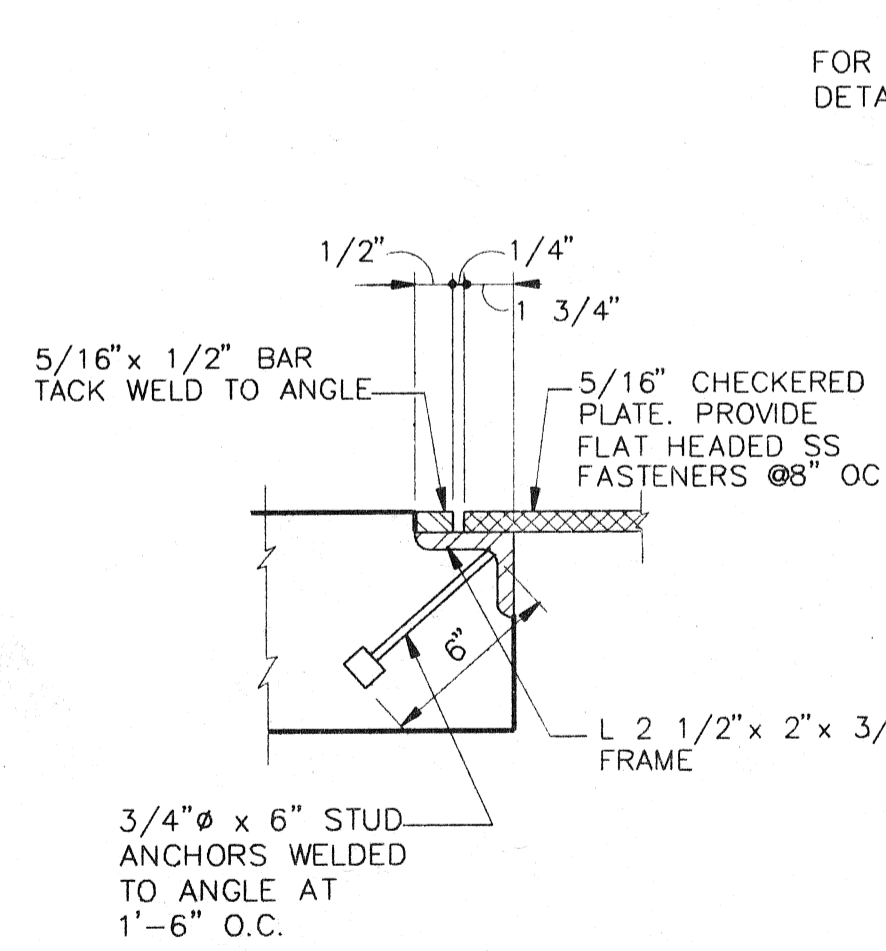
TYPICAL HOLLOWCORE SLAB TO SLAB CONNECTION DETAIL



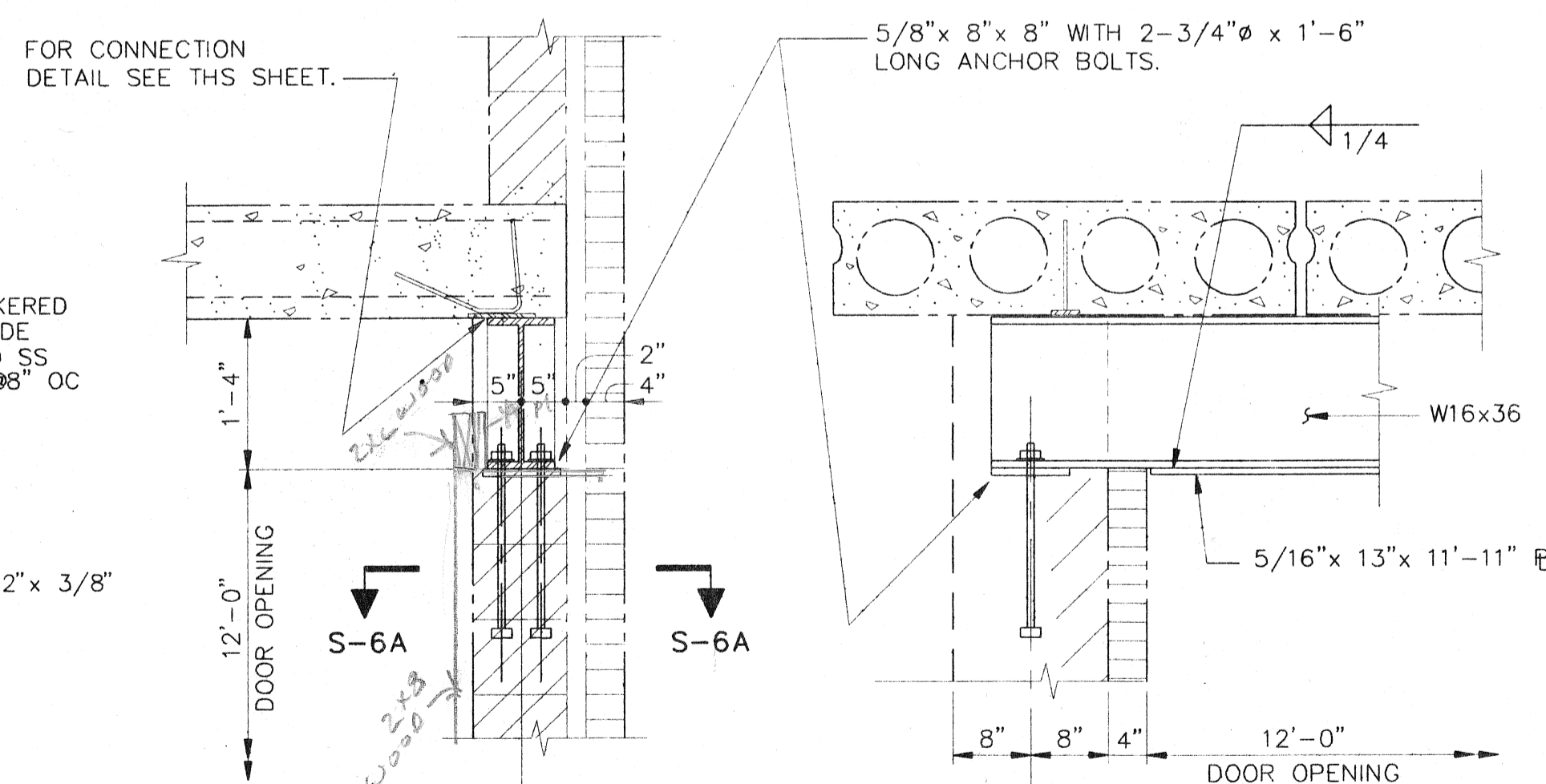
TYP. HOLLOWCORE SLAB AND MASONRY WALL CONN. DETAIL



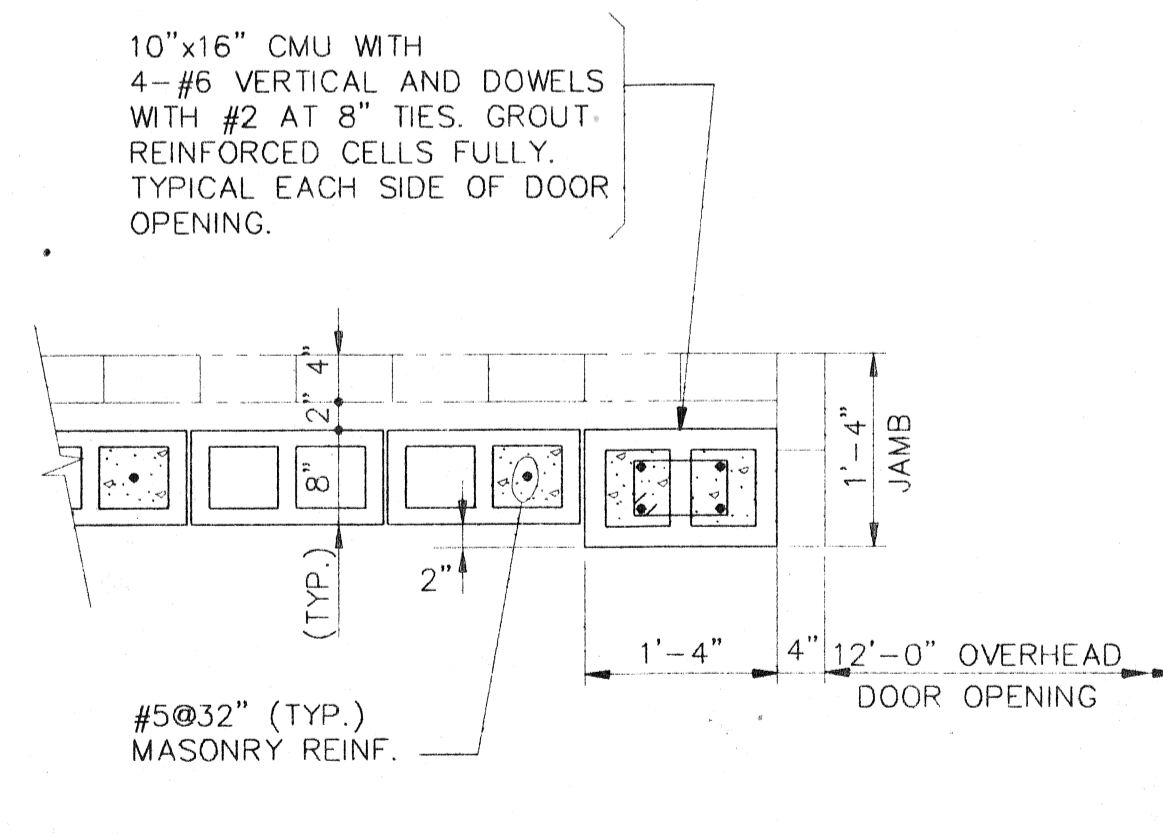
TYP. HOLLOWCORE SLAB AND CONCRETE BEAM CONNECTION DETAIL



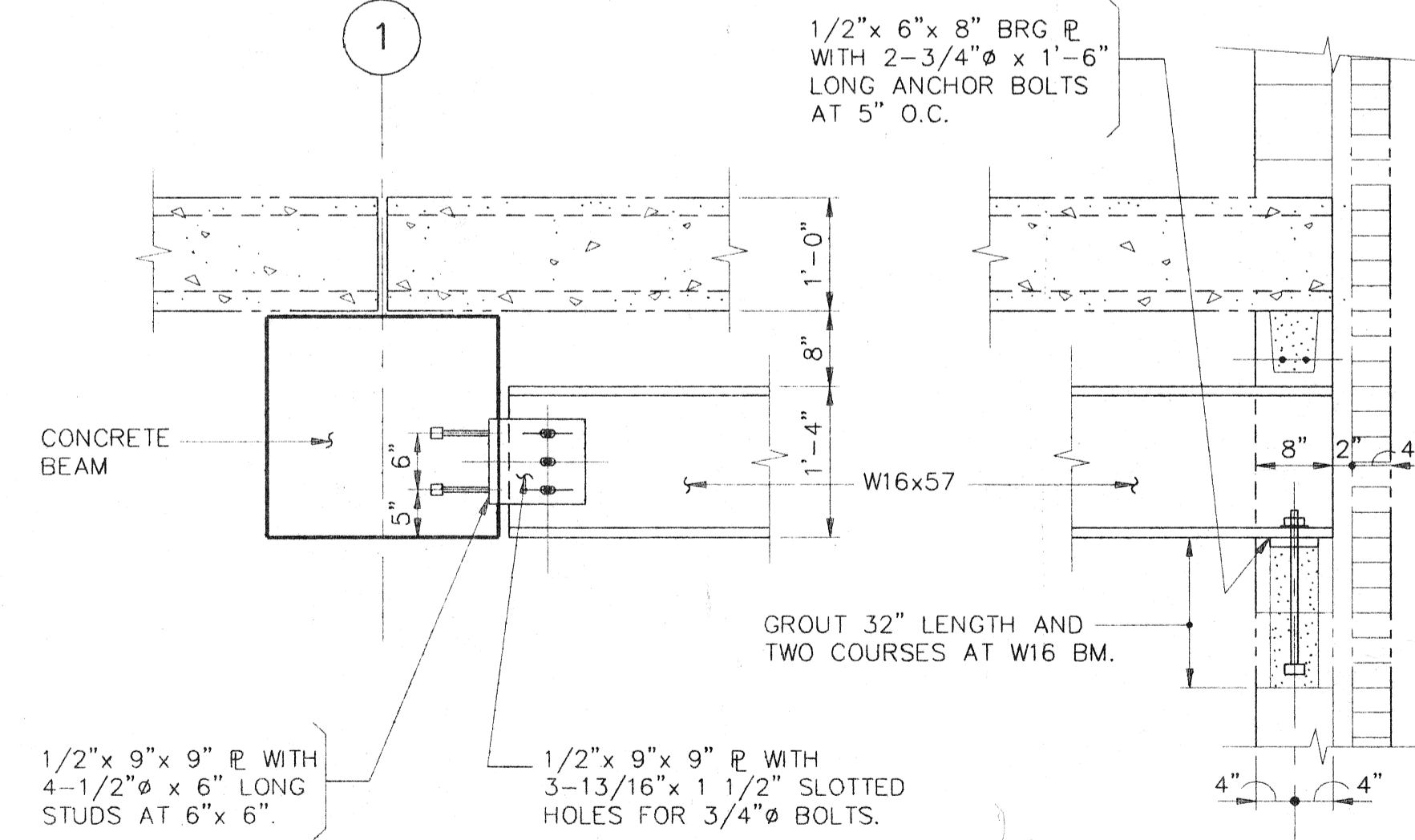
TYPICAL CHECKERED PLATE FRAME DETAIL



OVERHEAD DOOR LINTEL DETAILS



SECTION S-6A OVERHEAD DOOR JAMB DETAIL



MONORAIL SUPPORT BEAM DETAILS

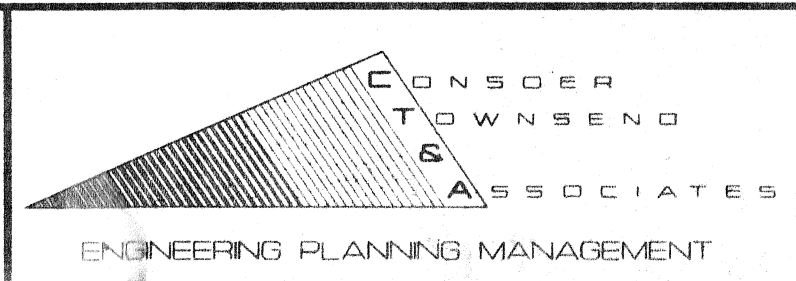
M:\PROJECTS\989900\CAD\PLANT\CSW-XS02.DWG Plotted on 10/7/1994 @ 5:21 P.M. by ACAD18

NO.	DATE	DESCRIPTION	APPROVED
REVISIONS			

DESIGNED	JAM
DRAWN	LTS
CHECKED	NMP
DATE	OCT. 1994

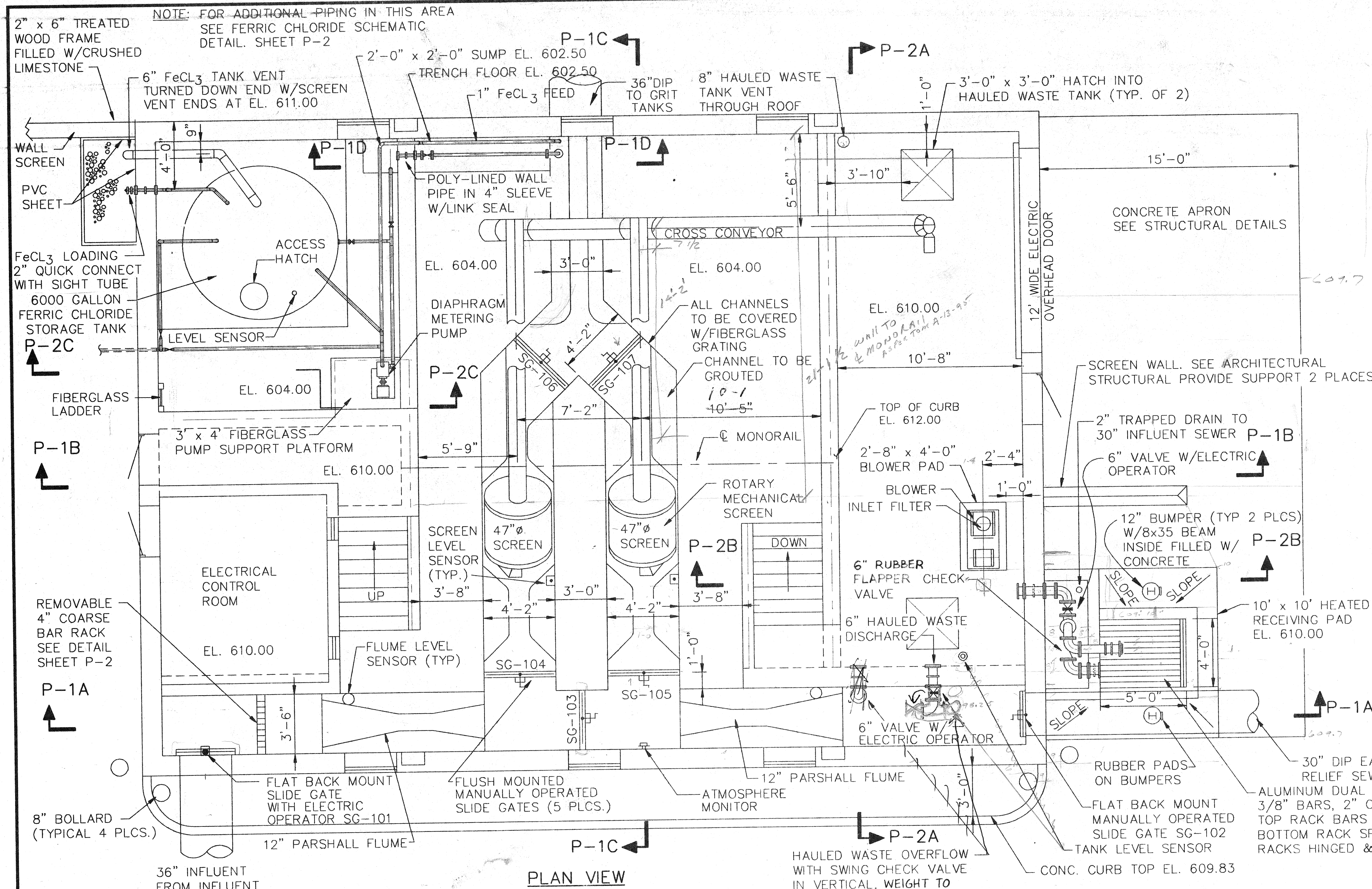
SCALE	NO SCALE
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**DEPARTMENT OF PUBLIC WORKS
CITY OF SUPERIOR, WISCONSIN**

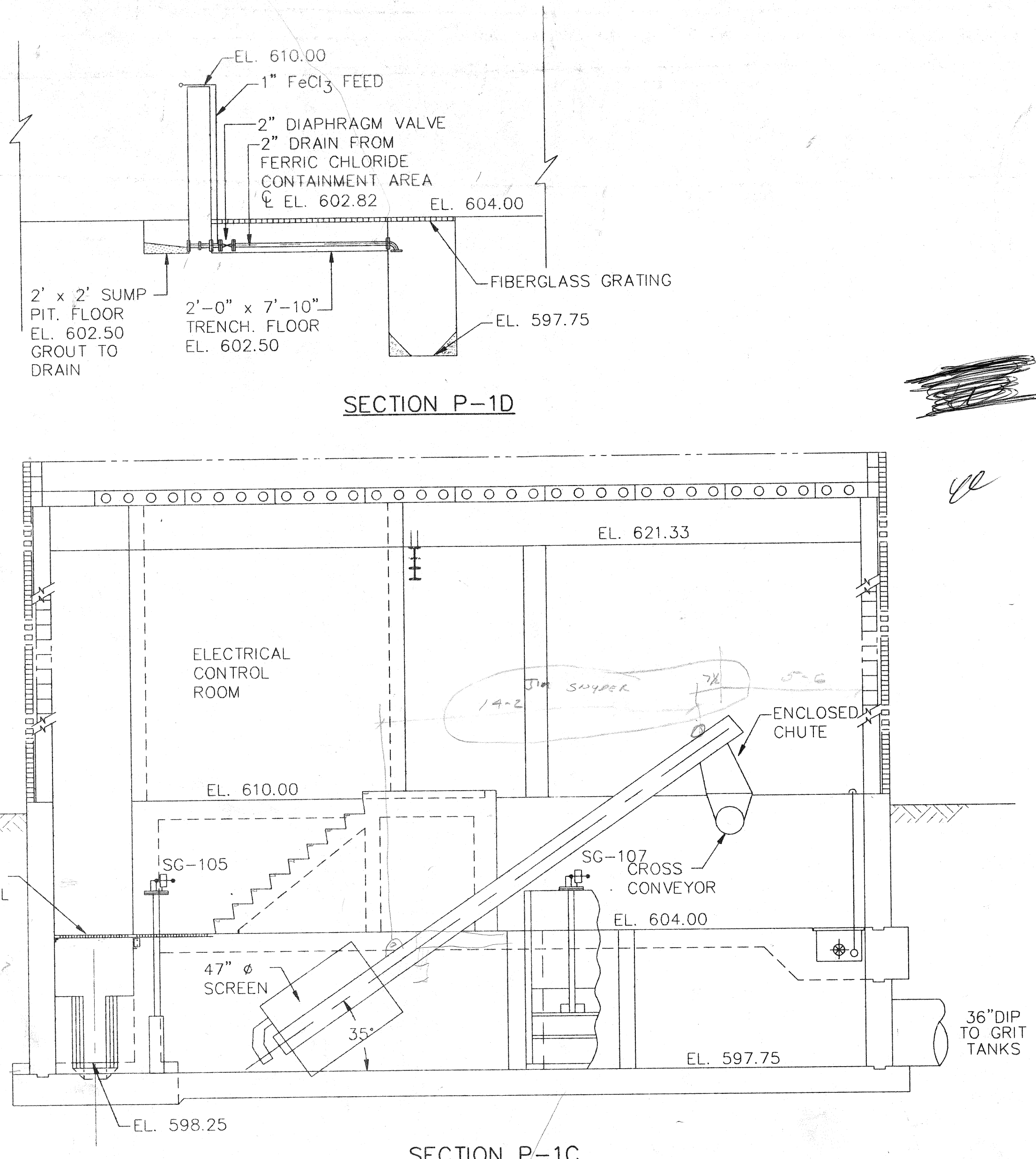


**STRUCTURAL STANDARDS
SECTIONS AND DETAILS**

SHEET	S-6
OF	6 SHEETS
RECORD MAP NO.	CT&A PROJECT NO. 3899-00

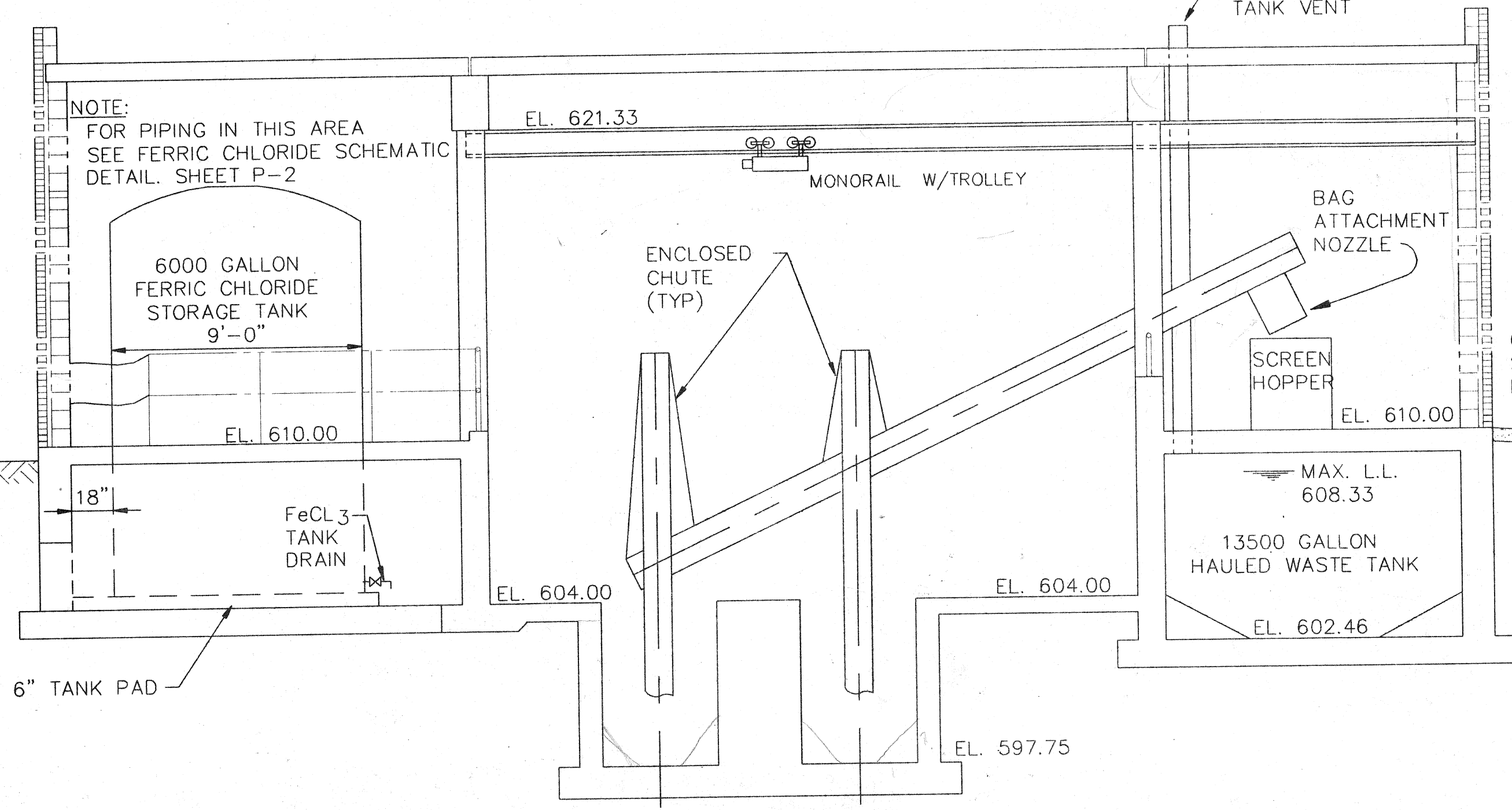


PLAN VIEW

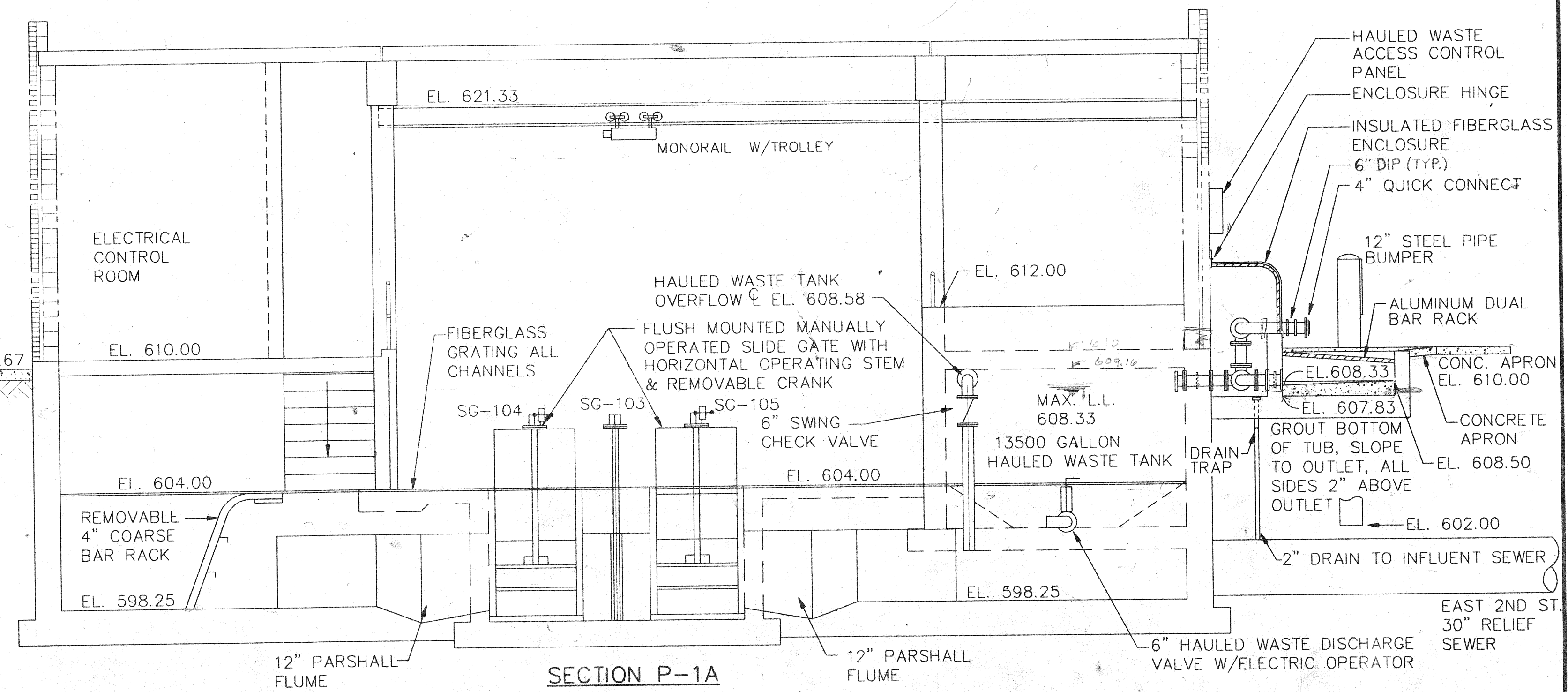


SECTION P-1D

SECTION P-1C



SECTION P-1B

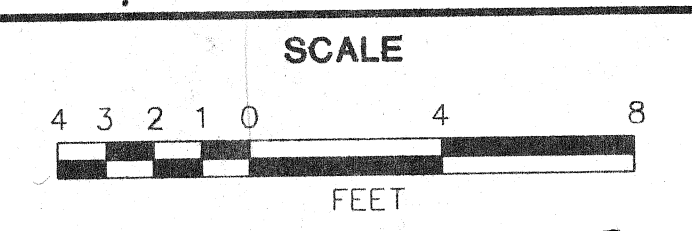


SECTION P-1A

M:\PROJECTS\389900\CAD\PLANTS-SCREEN\DWG PLOTTED ON 10/7/1994 @ 1:58 P.M. BY LDUBET

NO.	DATE	DESCRIPTION	APPROVED
REVISIONS			

DESIGNED TN
DRAWN LED
CHECKED
DATE APRIL 1994

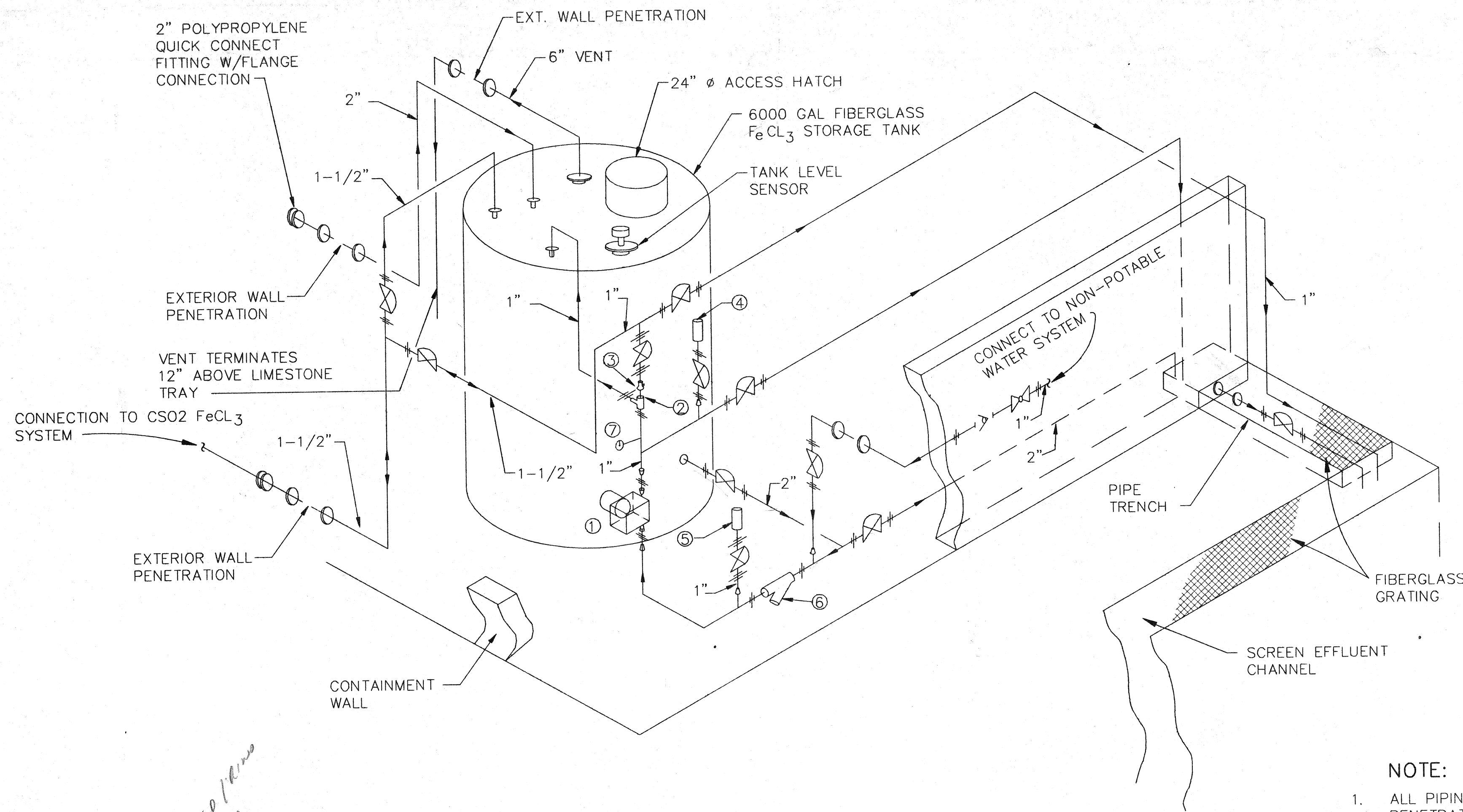


DEPARTMENT OF PUBLIC WORKS
CITY OF SUPERIOR, WISCONSIN

CONOR
OWNSEND
ASSOCIATES
ENGINEERING PLANNING MANAGEMENT
2855 ANTHONY LANE SOUTH, SUITE 145
MINNEAPOLIS, MN. 55416-3265

SCREEN BUILDING
PROCESS PLAN & SECTIONS

SHEET P-1
OF 5 SHEETS
RECORD MAP NO.
CT&A PROJECT NO. 3899-02

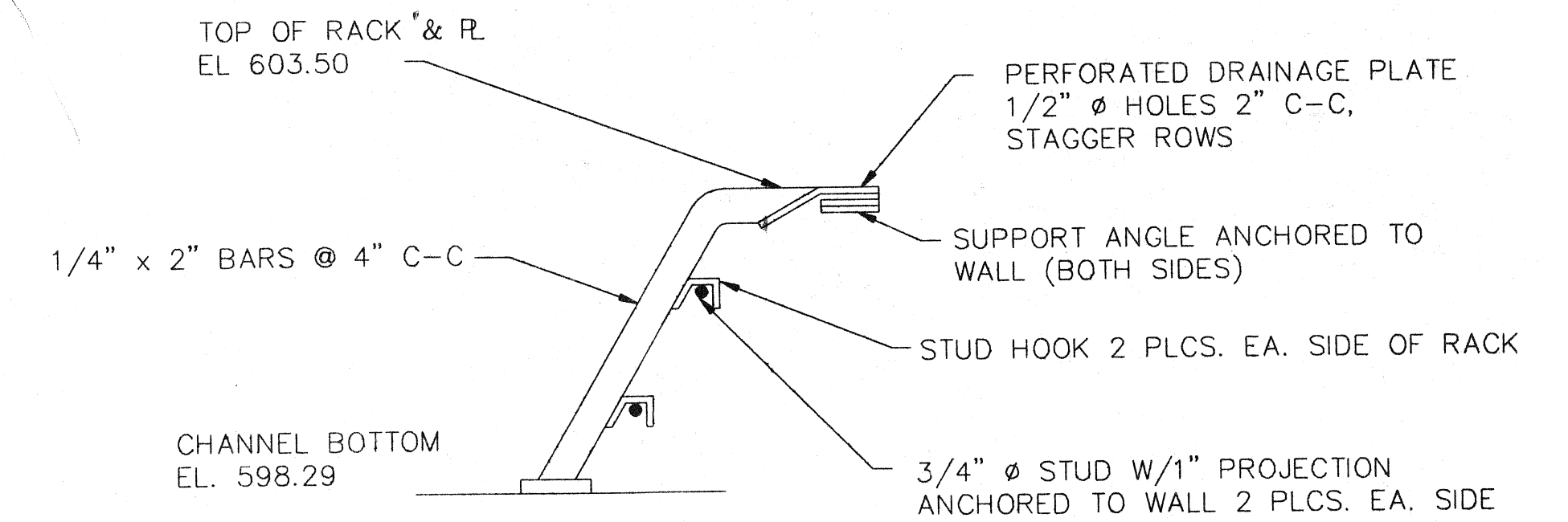


FERRIC CHLORIDE SYSTEM PIPING SCHEMATIC

NO SCALE

LEGEND

- ① METERING PUMP
- ② RELIEF VALVE
- ③ BACKPRESSURE VALVE
- ④ PULSATION DAMPER
- ⑤ CALIBRATION CHAMBER
- ⑥ STRAINER
- ⑦ PRESSURE GAUGE
- DOUBLE-UNION DIAPHRAGM VALVE
- UNION
- REDUCER
- BALL CHECK VALVE
- BALL VALVE
- WALL PENETRATION

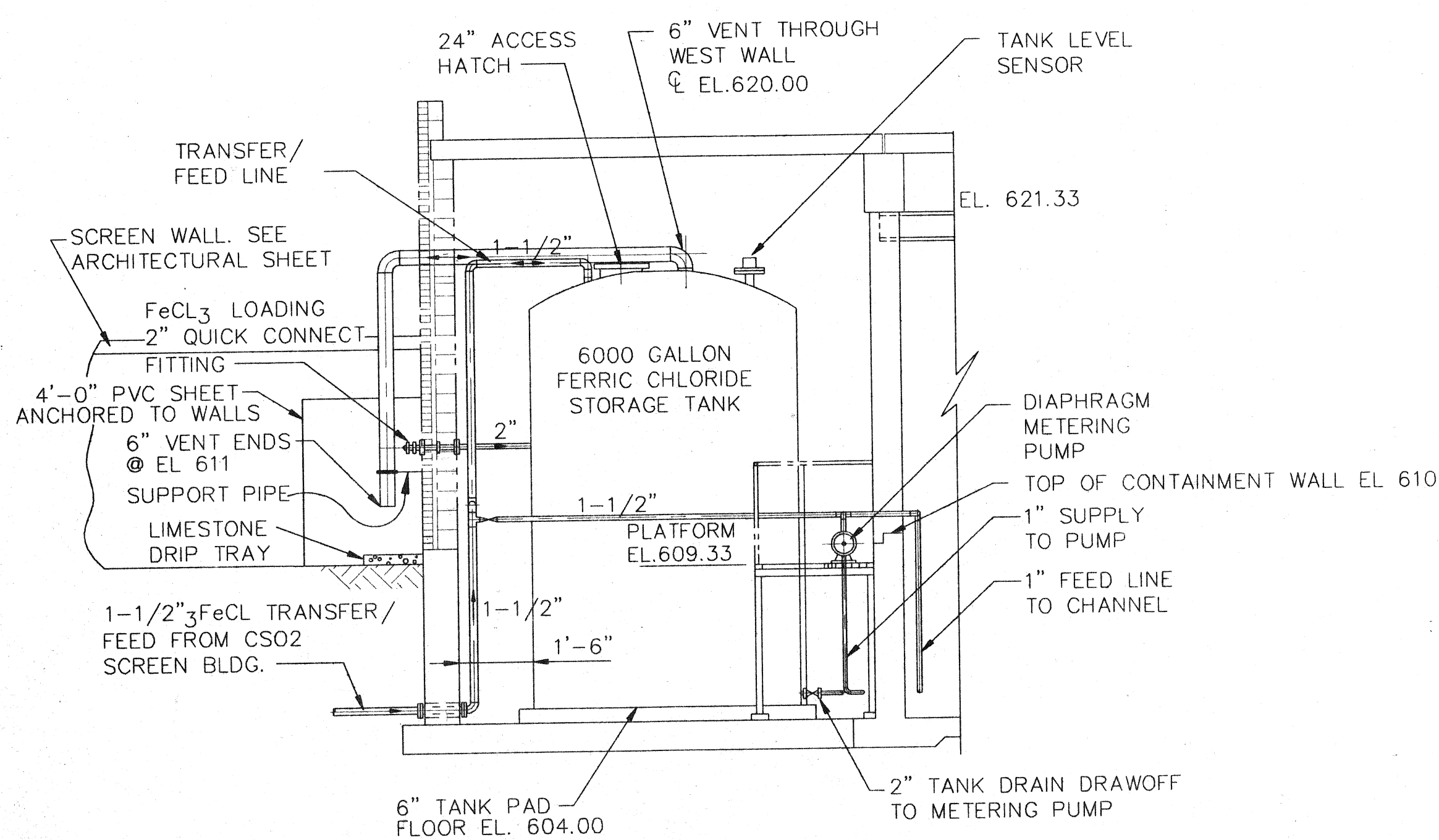


REMOVABLE BAR RACK DETAIL

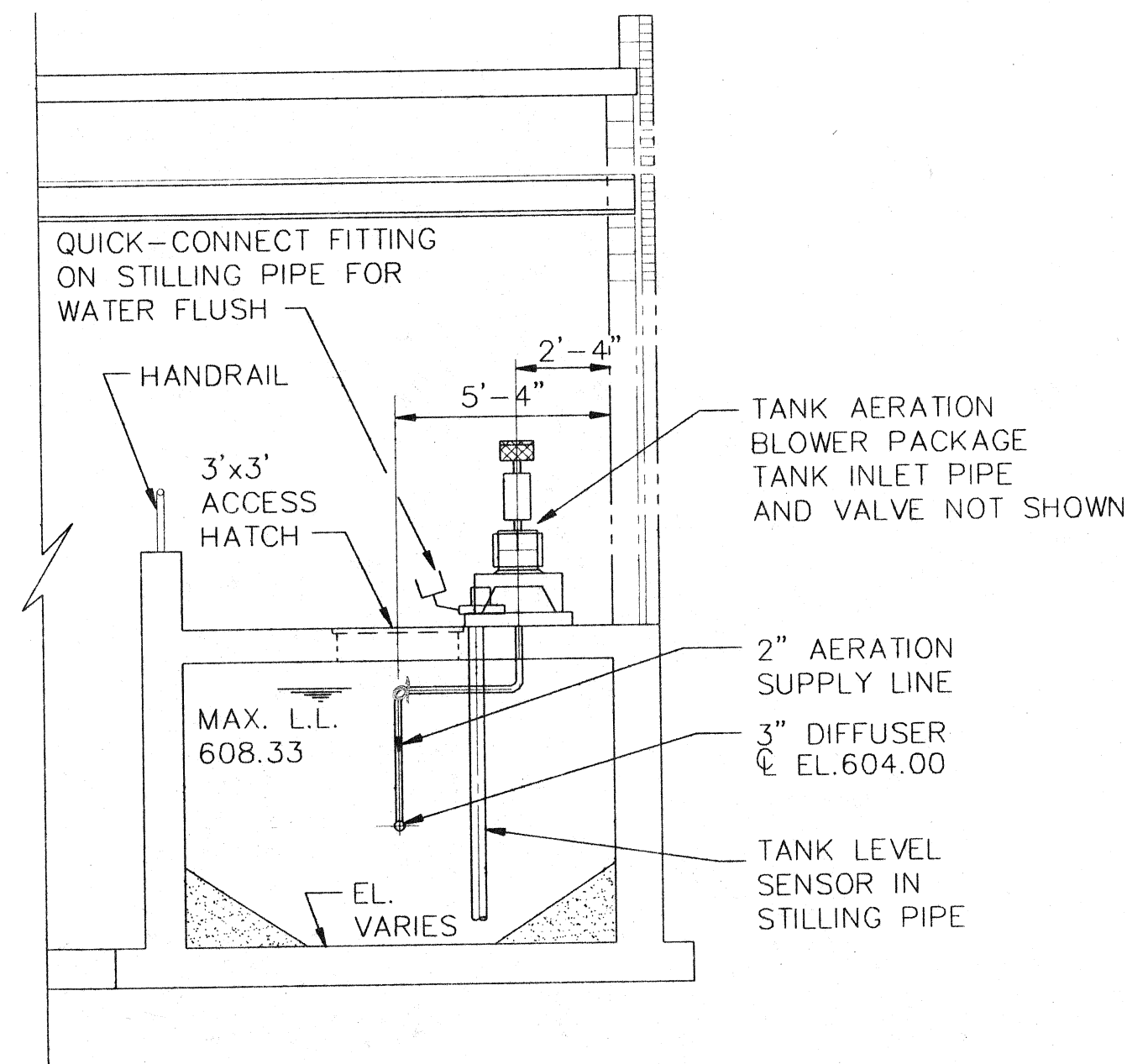
NO SCALE

NOTE:

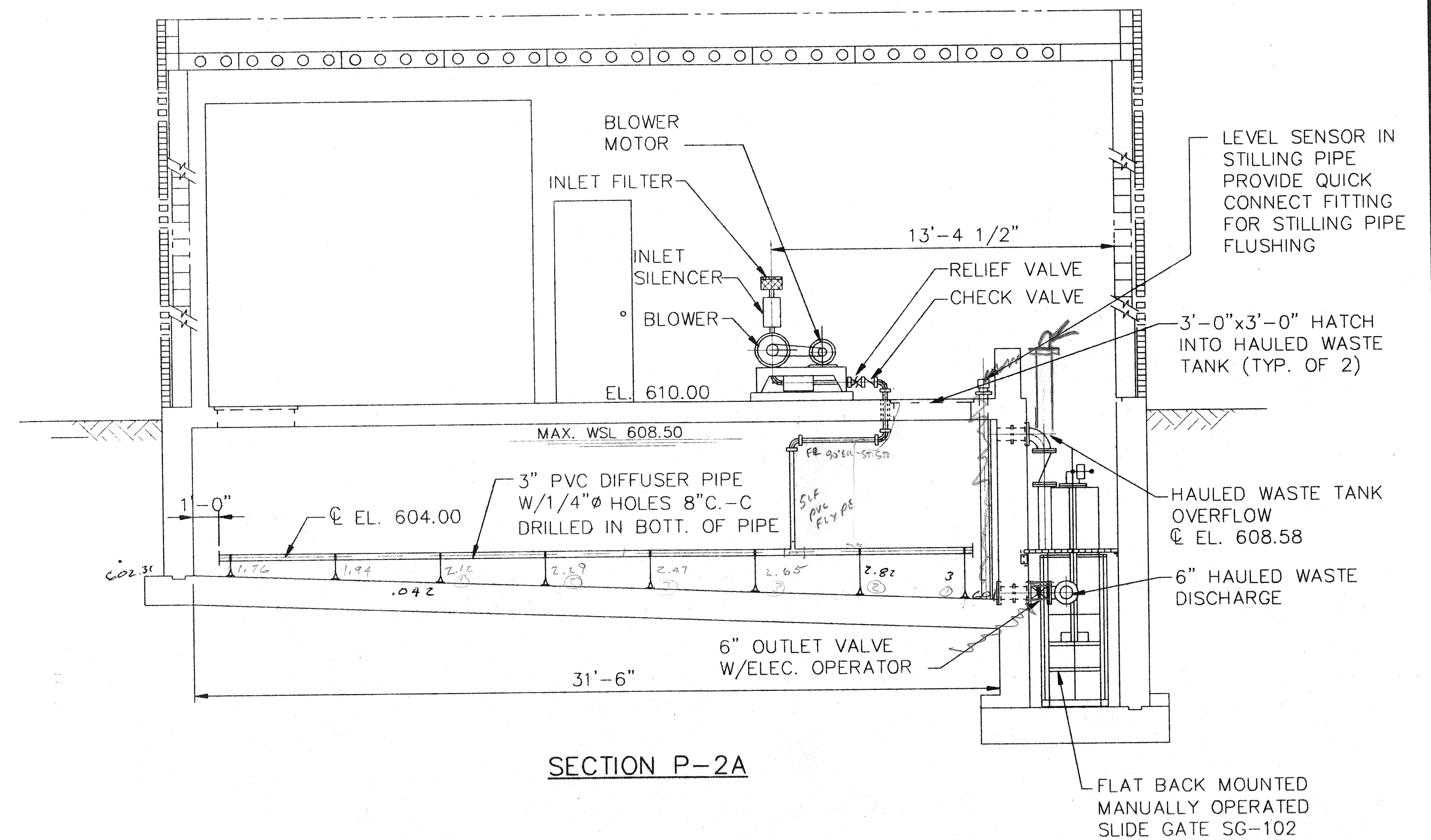
1. ALL PIPING IS SCH 80 PVC EXCEPT WALL PENETRATION AT QUICK CONNECT WHICH IS POLYPROPYLENE-LINED STEEL MOUNTED USING LINK-SEALS.
2. INTERIOR OF CONTAINMENT AREA, PIPE TRENCH, AND SCREEN EFFLUENT CHANNEL TO HAVE CHEMICAL RESISTANT COATING PER SPECIFICATIONS.



SECTION P-2C



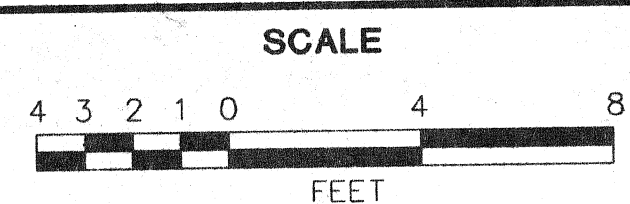
SECTION P-2B



SECTION P-2A

NO.	DATE	DESCRIPTION	APPROVED
REVISIONS			

DESIGNED	TN
DRAWN	LED
CHECKED	
DATE	APRIL, 1994

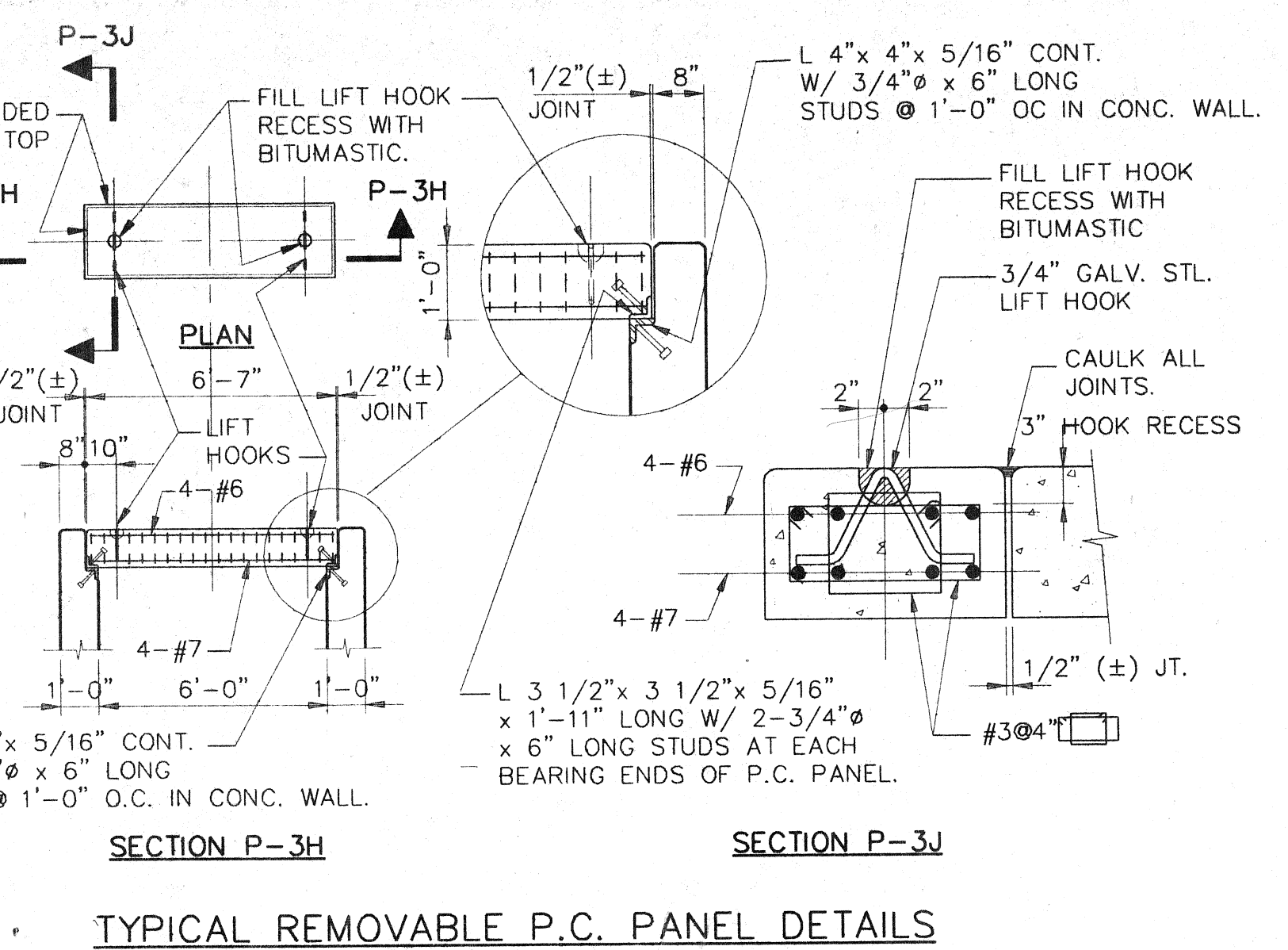
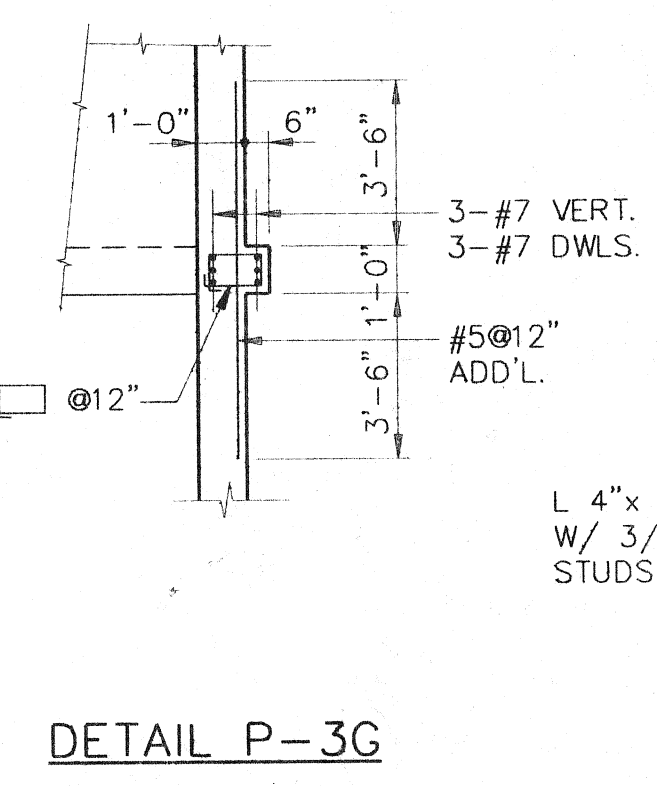
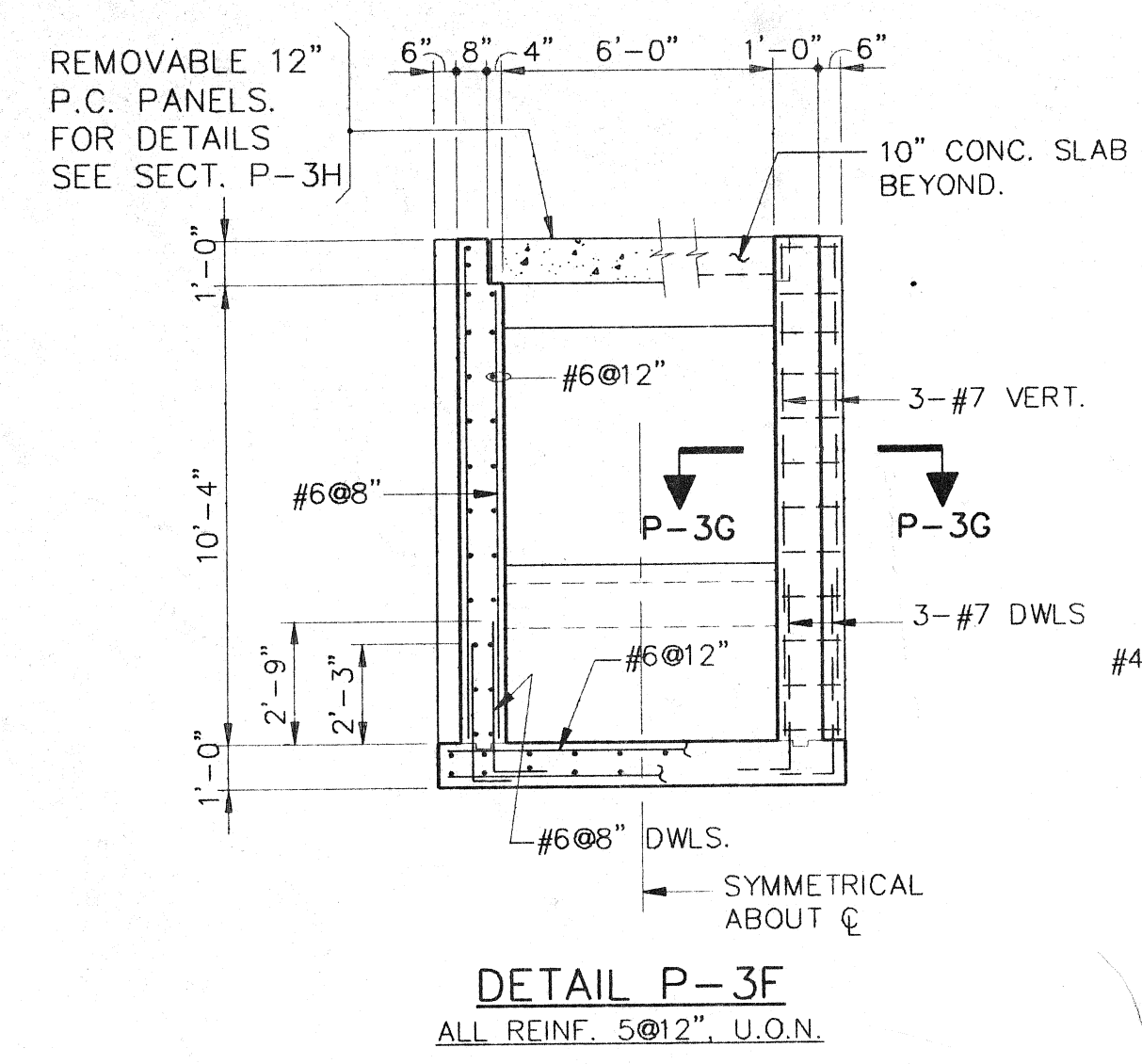
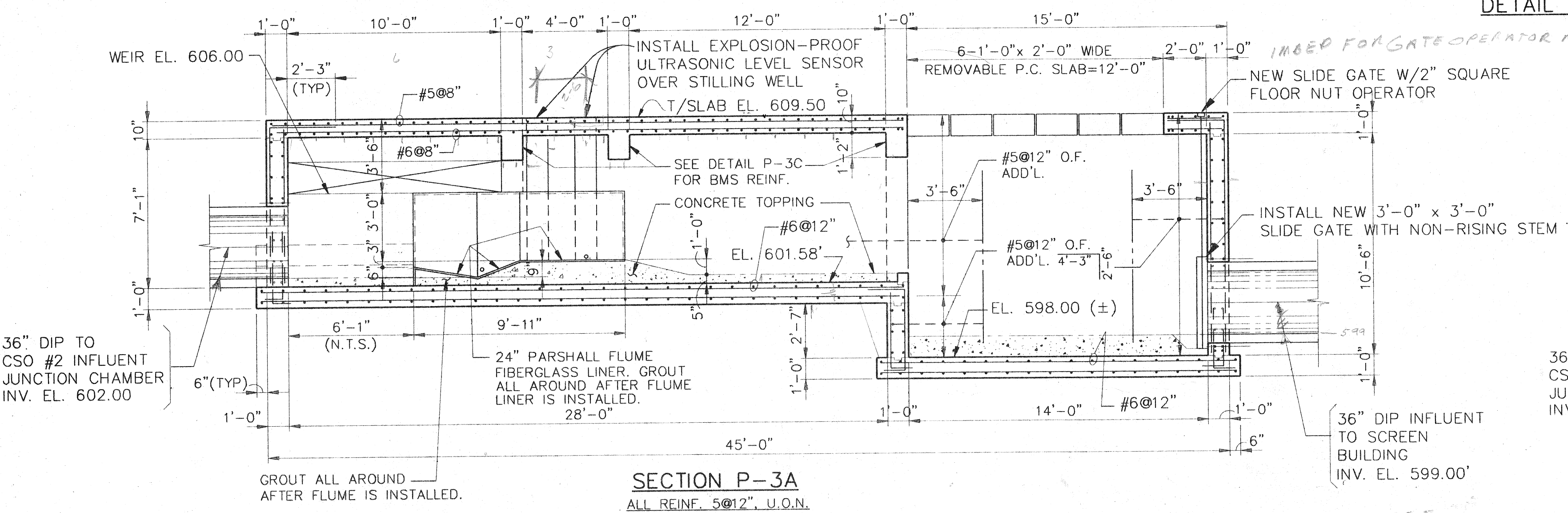
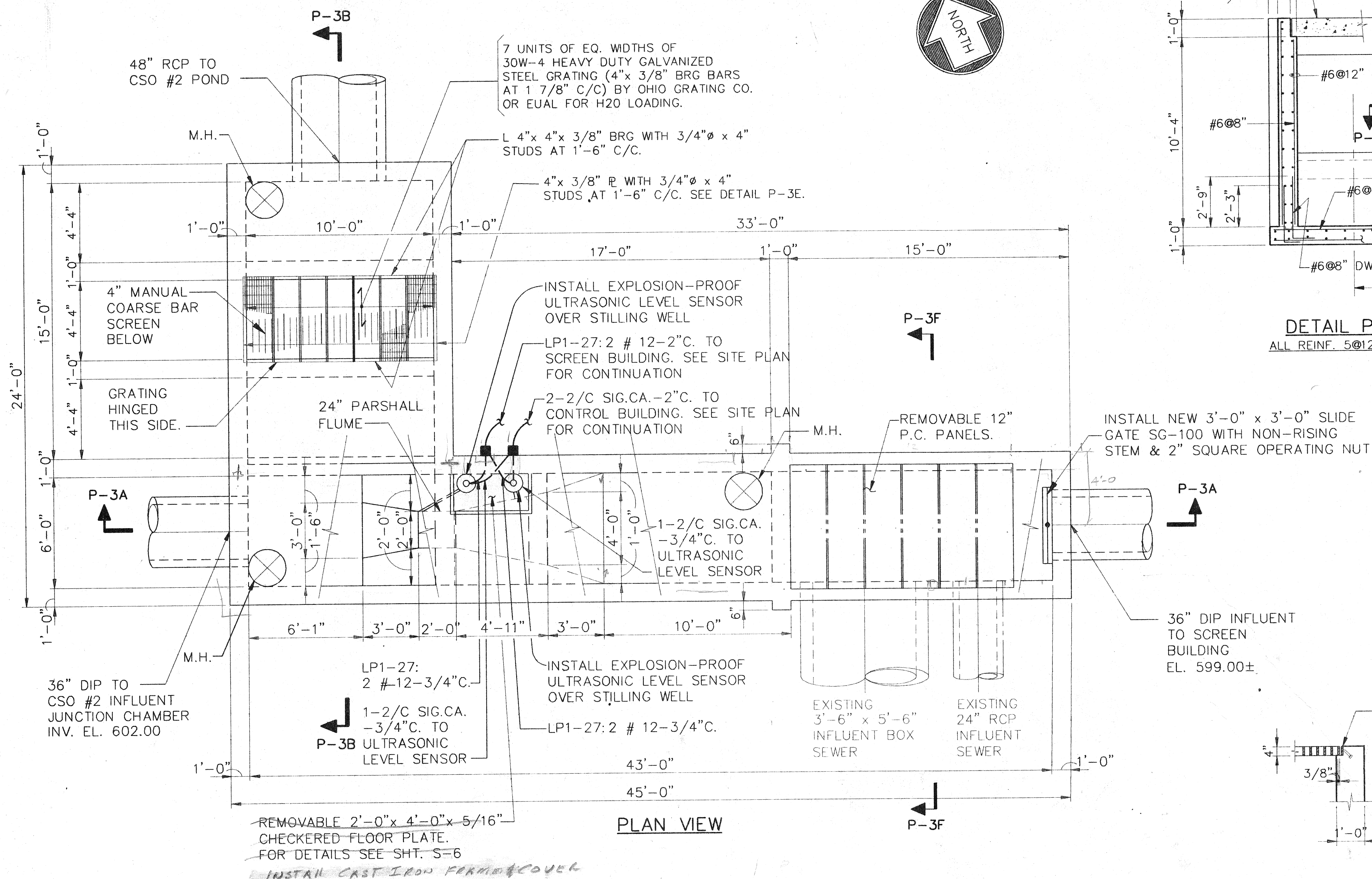


DEPARTMENT OF PUBLIC WORKS
CITY OF SUPERIOR, WISCONSIN

CONSOER
TOWNSEND
&
ASSOCIATES
ENGINEERING PLANNING MANAGEMENT
2855 ANTHONY LANE SOUTH, SUITE 145
MINNEAPOLIS, MN. 55418-3265

SCREEN BUILDING
SECTIONS & CHEMICAL FEED SYSTEM

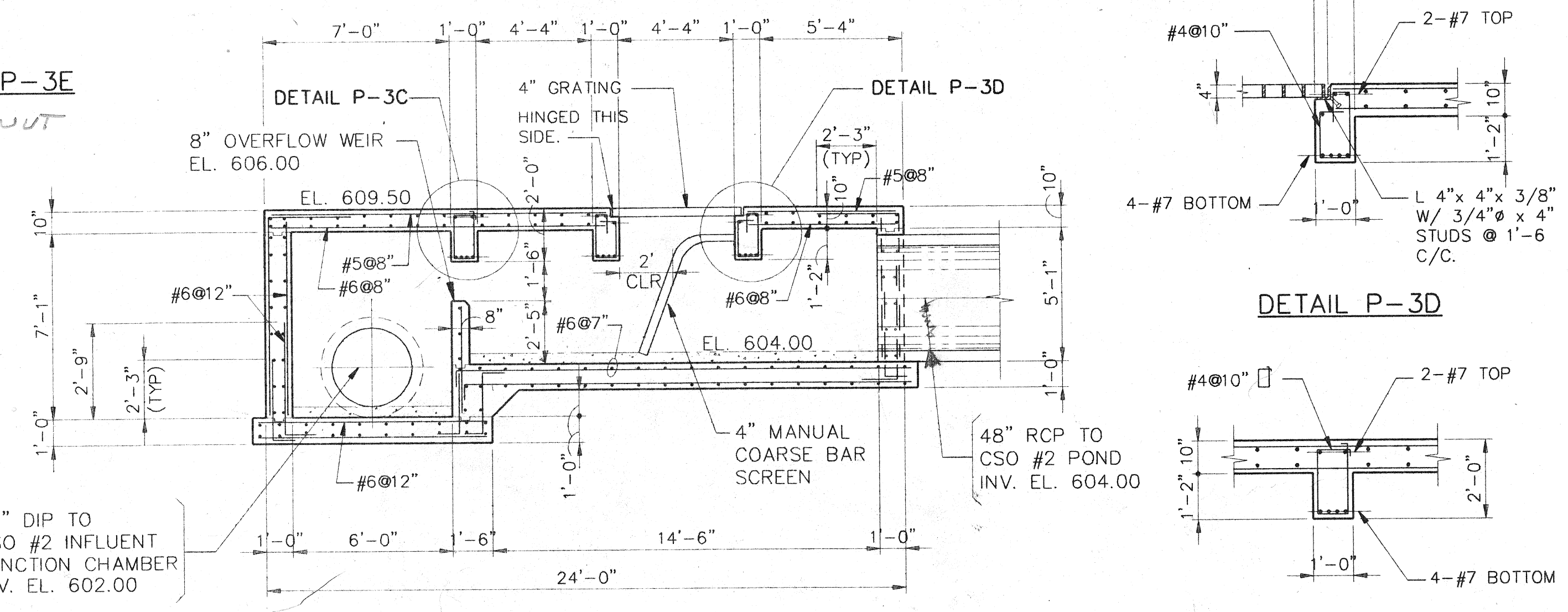
SHEET P-2
OF 5 SHEETS
RECORD MAP NO.
CT&A PROJECT NO. 3899-02



**Contract 2
GATE SCHEDULE
Slide and Flap Gates**

Gate No.	Location	Ref. Drawing Sheet	Size (W x H) (in.)	Design Head (ft.)		Stroke (in.)	Type/Comments
				(seating)	(unseating)		
SG-100	Influent Regulator Chamber	P3	36 x 36	8	2.5	36	non-self-contained; flat-back mount; non-rising stem; recessed operator nut in valve box; manual/portable electric operator
SG-101	Screen Bldg.	P1	36 x 36	4.25	10	36	self-contained; flat-back mount; electrically operated w/positioner
SG-102	Screen Bldg.	P1	30 x 30	4.25	7	30	self-contained; flat-back mount; manual/portable electric operator
SG-103	Screen Bldg.	P1	45 x 48	2	2	48	self-contained; flush mount; manual/portable electric operator
SG-104	Screen Bldg.	P1	45 x 48	2	NA	48	self-contained; flush mount; manual/portable electric operator
SG-105	Screen Bldg.	P1	45 x 48	2	NA	48	self-contained; flush mount; manual/portable electric operator
SG-106	Screen Bldg.	P1	45 x 48	2	NA	48	self-contained; flush mount; manual/portable electric operator
SG-107	Screen Bldg.	P1	45 x 48	2	NA	48	self-contained; flush mount; manual/portable electric operator
FG-100	CSO #2 Infl. Jct. Chamber	P4	36 dia.	8	NA	36	flap gate; flat-back mount
SG-201	Flow Diversion Structure	P4	36 x 36	6	NA	36	non-self-contained; flat-back mount; non-rising stem; recessed operator nut in valve box; manual/portable electric operator
SG-202	Flow Diversion Structure	P4	36 x 36	6	NA	36	non-self-contained; flat-back mount; non-rising stem; recessed operator nut in valve box; manual/portable electric operator

DETAIL P-3E



SECTION P-3B
ALL REINF. 5@12\"/>

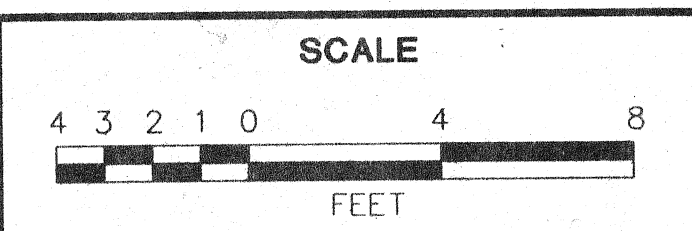
DETAIL P-3D

DETAIL P-3C

M:\PROJECTS\389900\CAD\PLANS\3-REG.DWG Plotted on: 10/7/1994 @ 3:52 P.M. by: LSR/DAO

NO.	DATE	DESCRIPTION	APPROVED
REVISIONS			

DESIGNED: TN, JAM
 DRAWN: LED, LTS
 CHECKED: JAM, NMP
 DATE: OCT. 1994

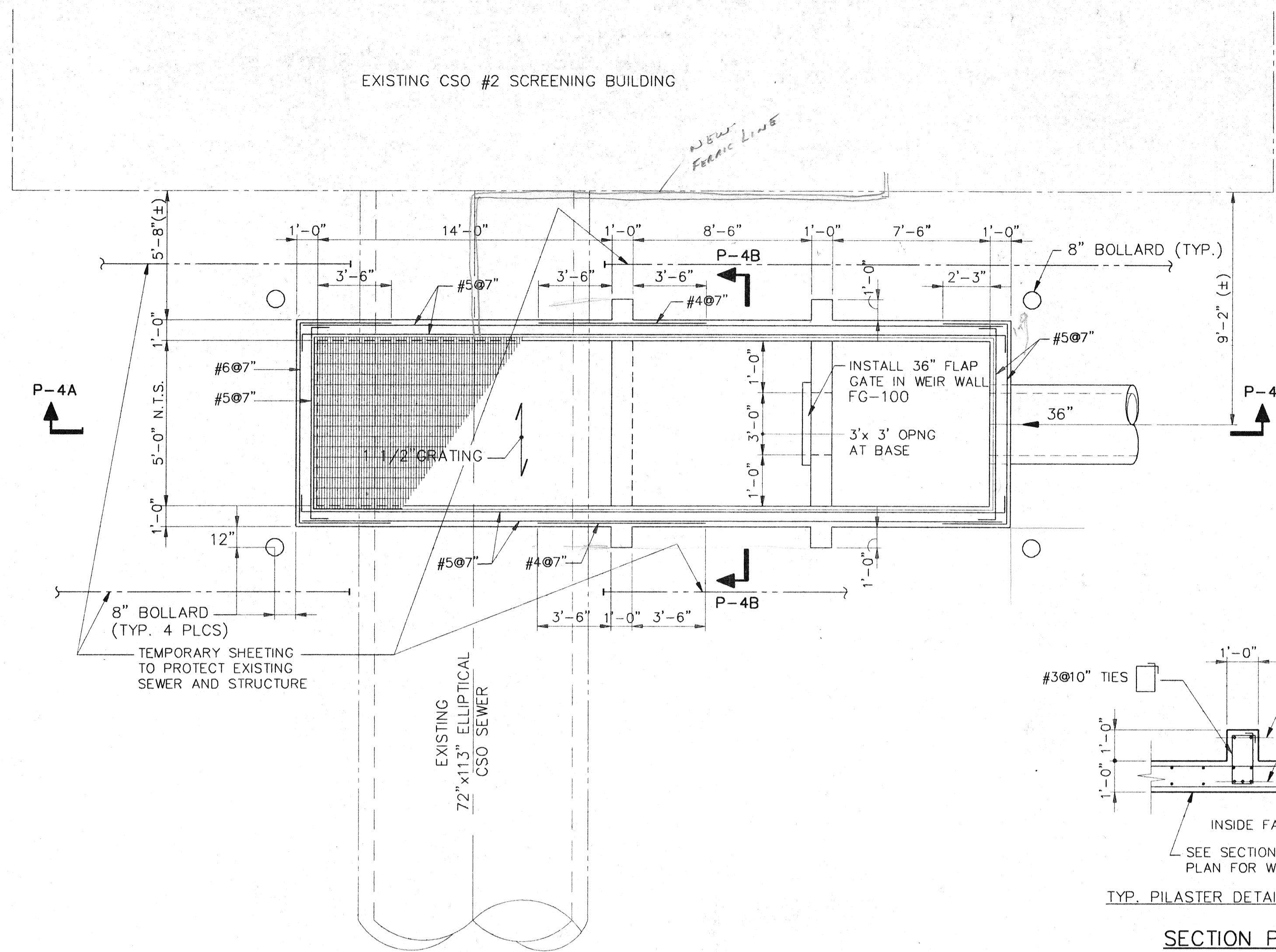


**DEPARTMENT OF PUBLIC WORKS
CITY OF SUPERIOR, WISCONSIN**

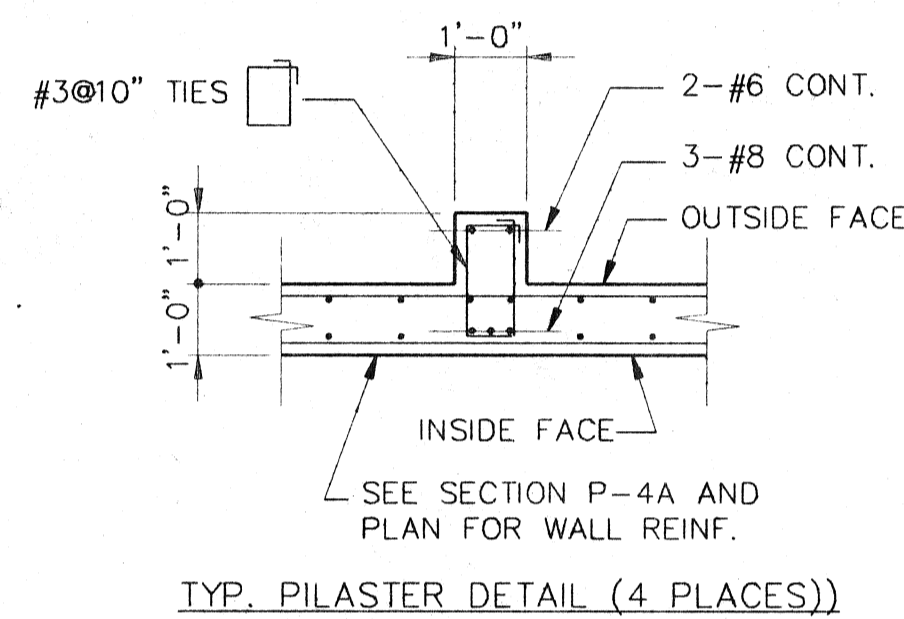
CONROD TOWNSEND ASSOCIATES
ENGINEERING PLANNING MANAGEMENT
2855 ANTHONY LANE SOUTH, SUITE 145
MINNEAPOLIS, MN. 55418-3265

**INFLUENT REGULATOR STRUCTURAL/PROCESS
AND GATE SCHEDULE**

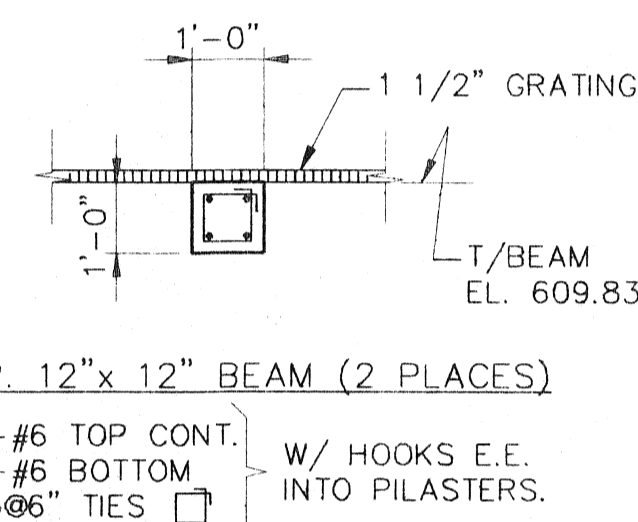
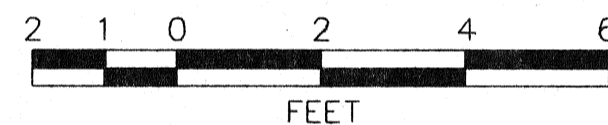
SHEET P-3
OF 5 SHEETS
RECORD MAP NO. CT&A PROJECT NO. 3899-02



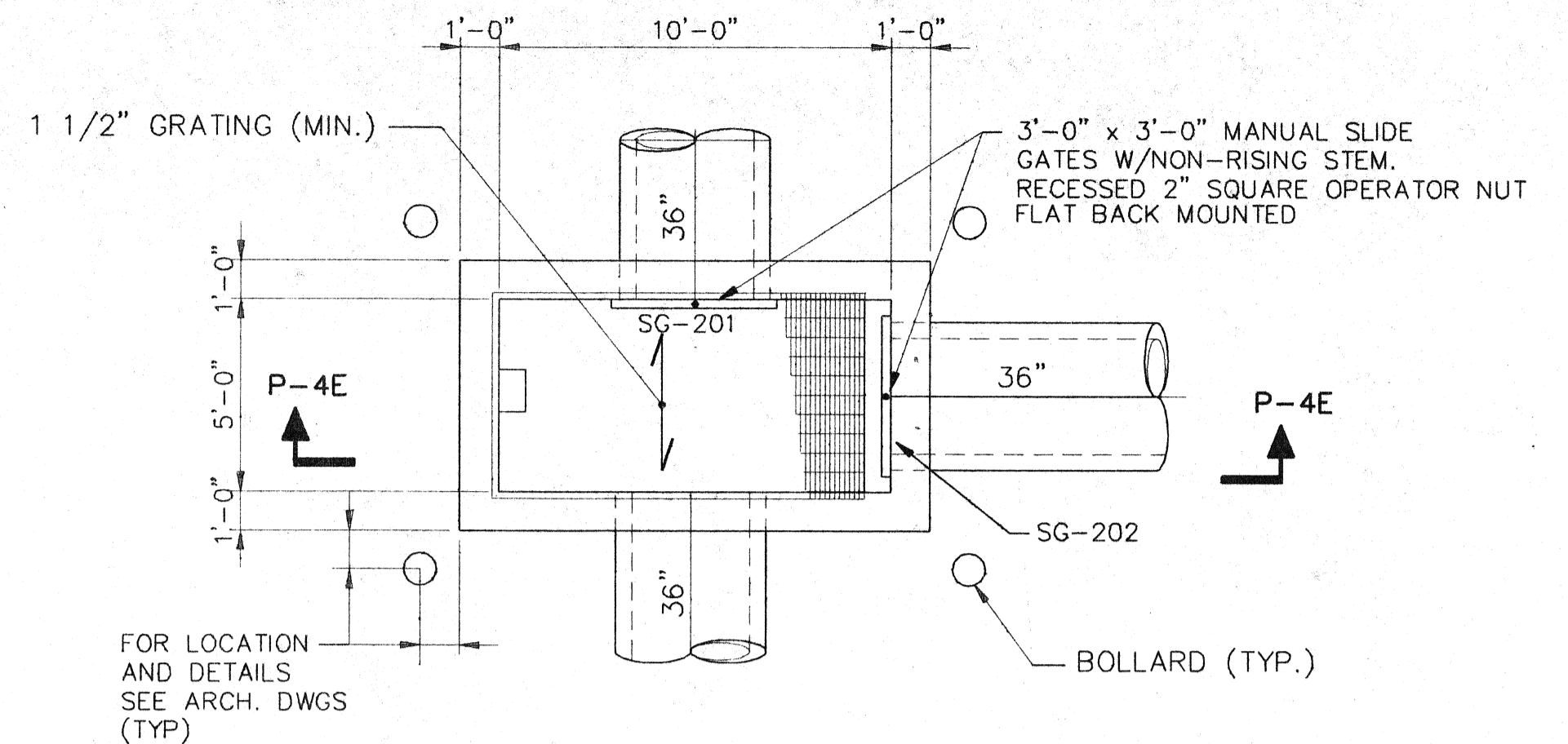
CSO #2 INFLUENT JUNCTION CHAMBER PLAN



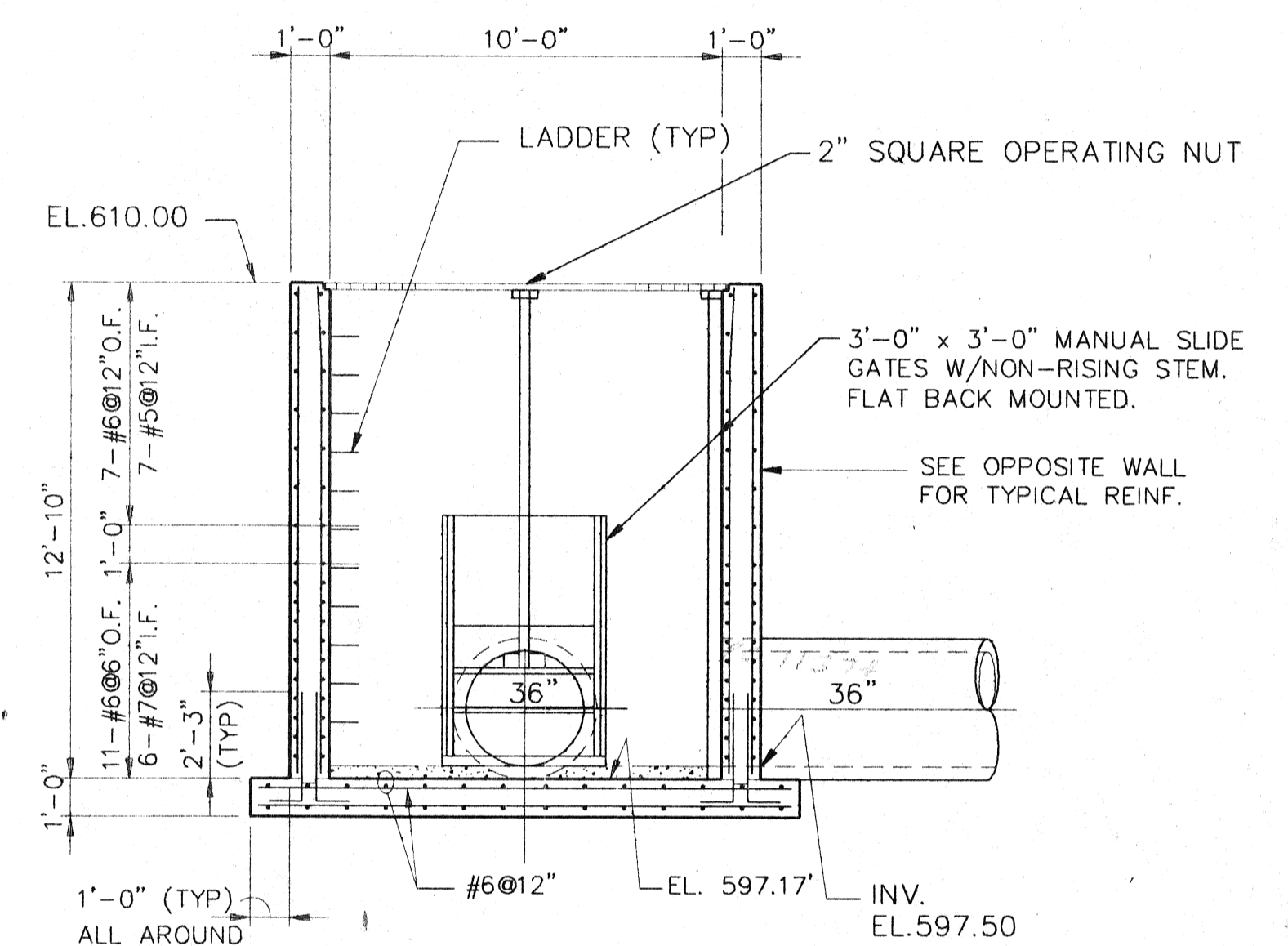
SECTION P-4C



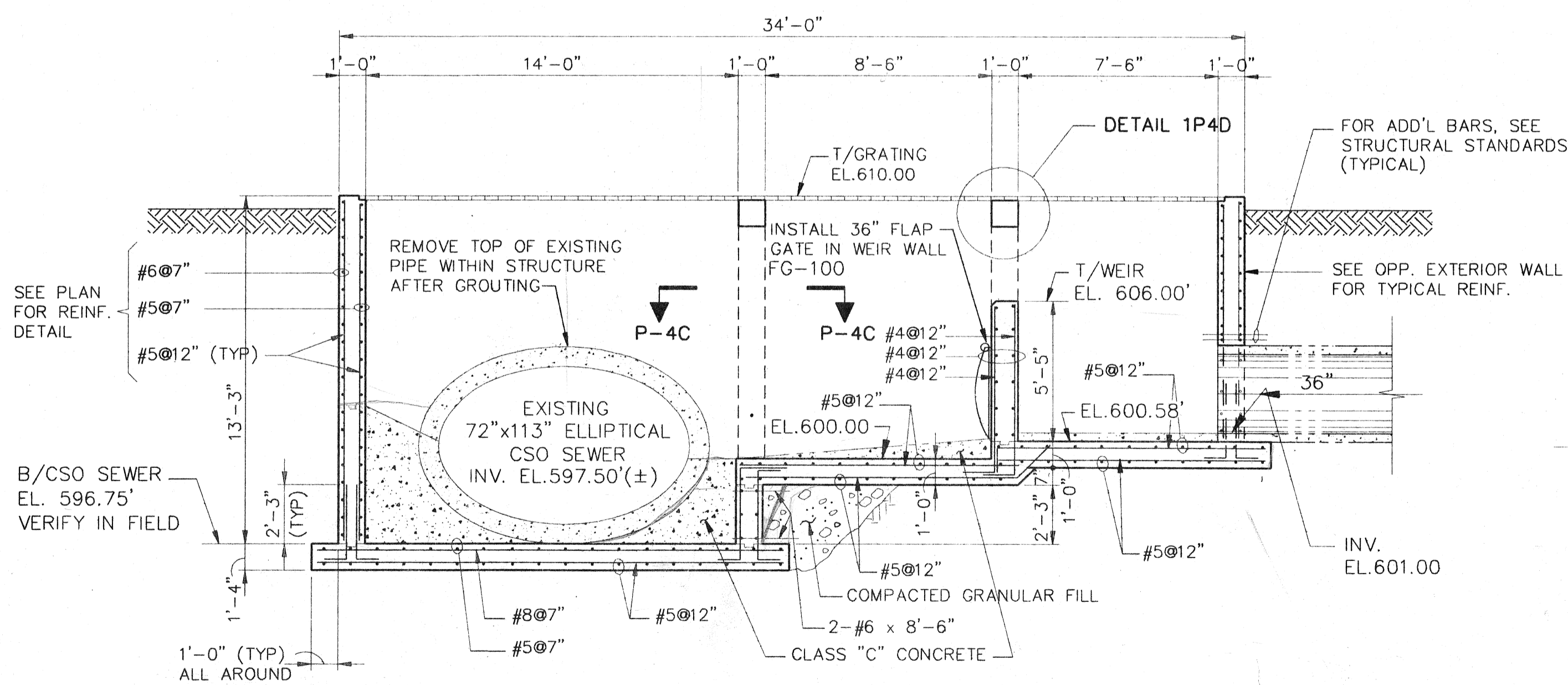
DETAIL P-4D



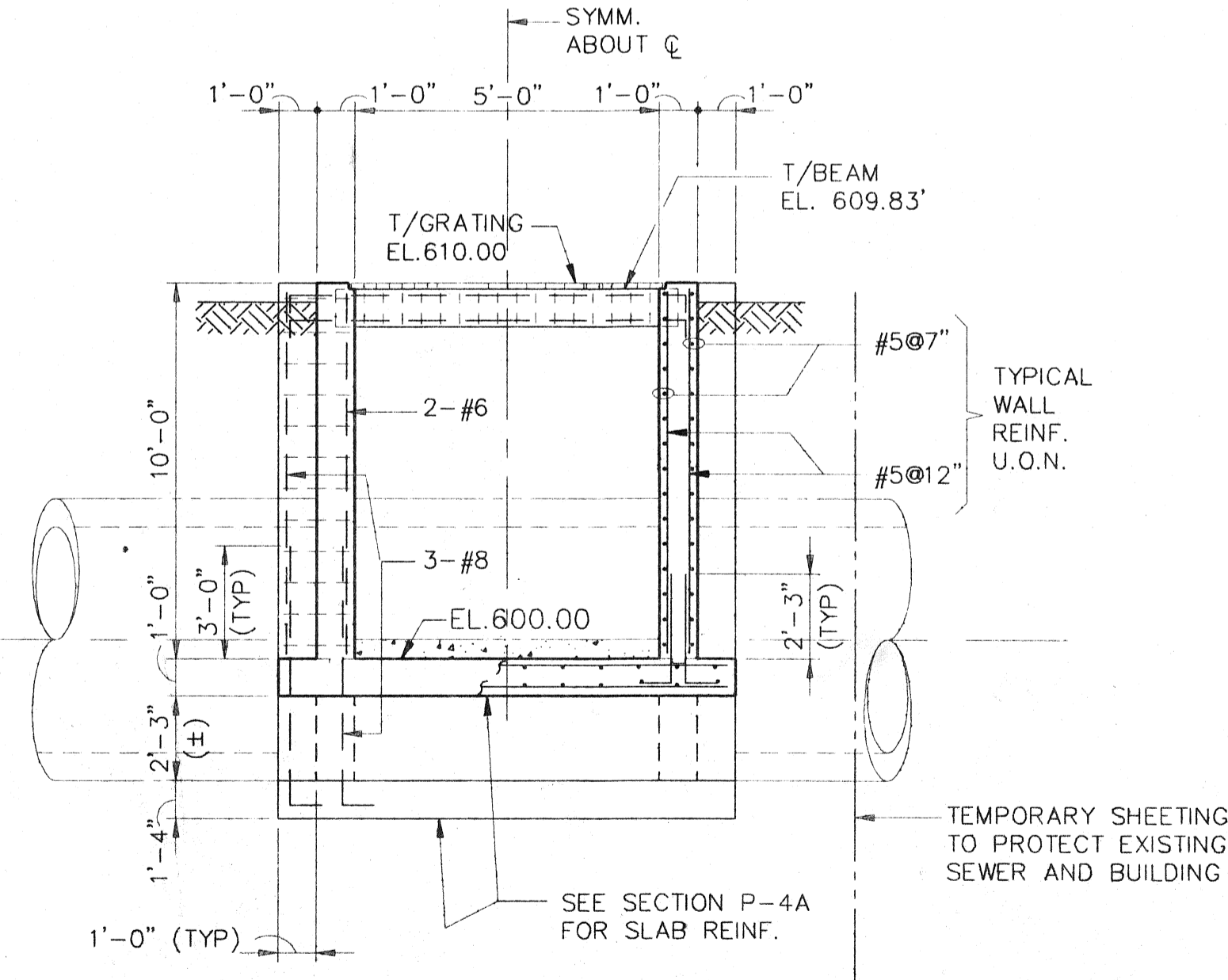
FLOW DIVERSION STRUCTURE PLAN



SECTION P-4E



SECTION P-4A

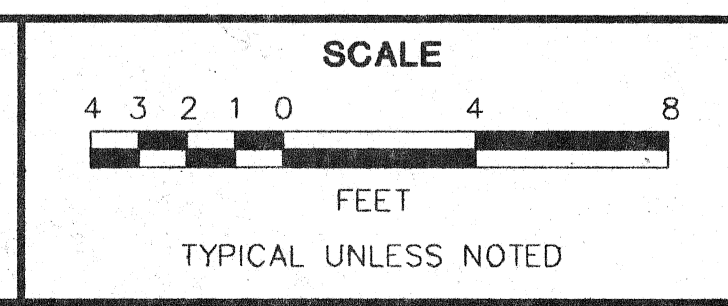


SECTION P-4B

M:\PROJECTS\3899\DWG\PLANTS-INF\NC.DWG Plotted on 10/8/1994 @ 9:32 A.M. by LDUBET

NO.	DATE	DESCRIPTION	APPROVED
REVISIONS			

DESIGNED	TN, JAM
DRAWN	LED, LTS
CHECKED	NMP
DATE	OCT, 1994

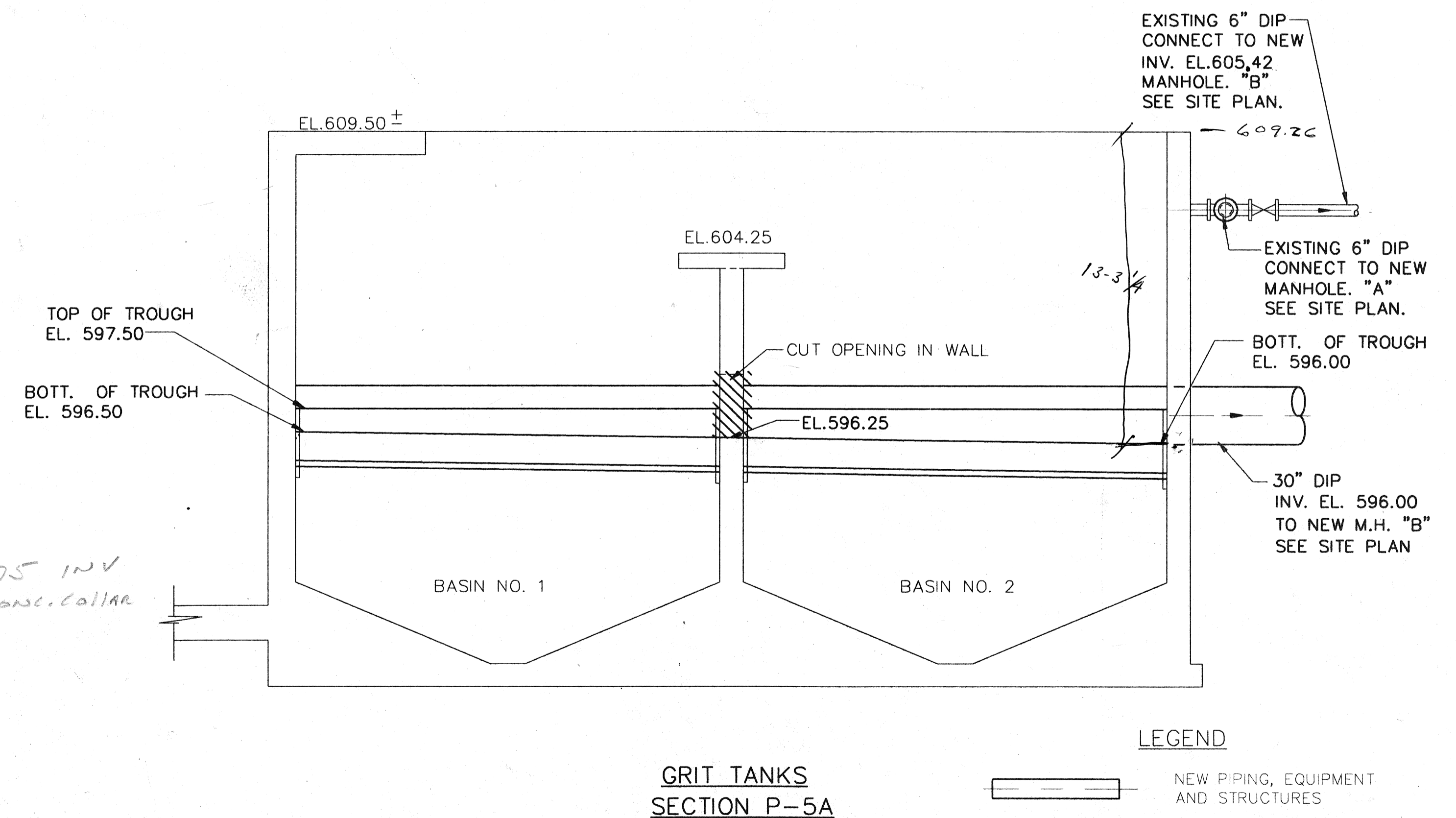
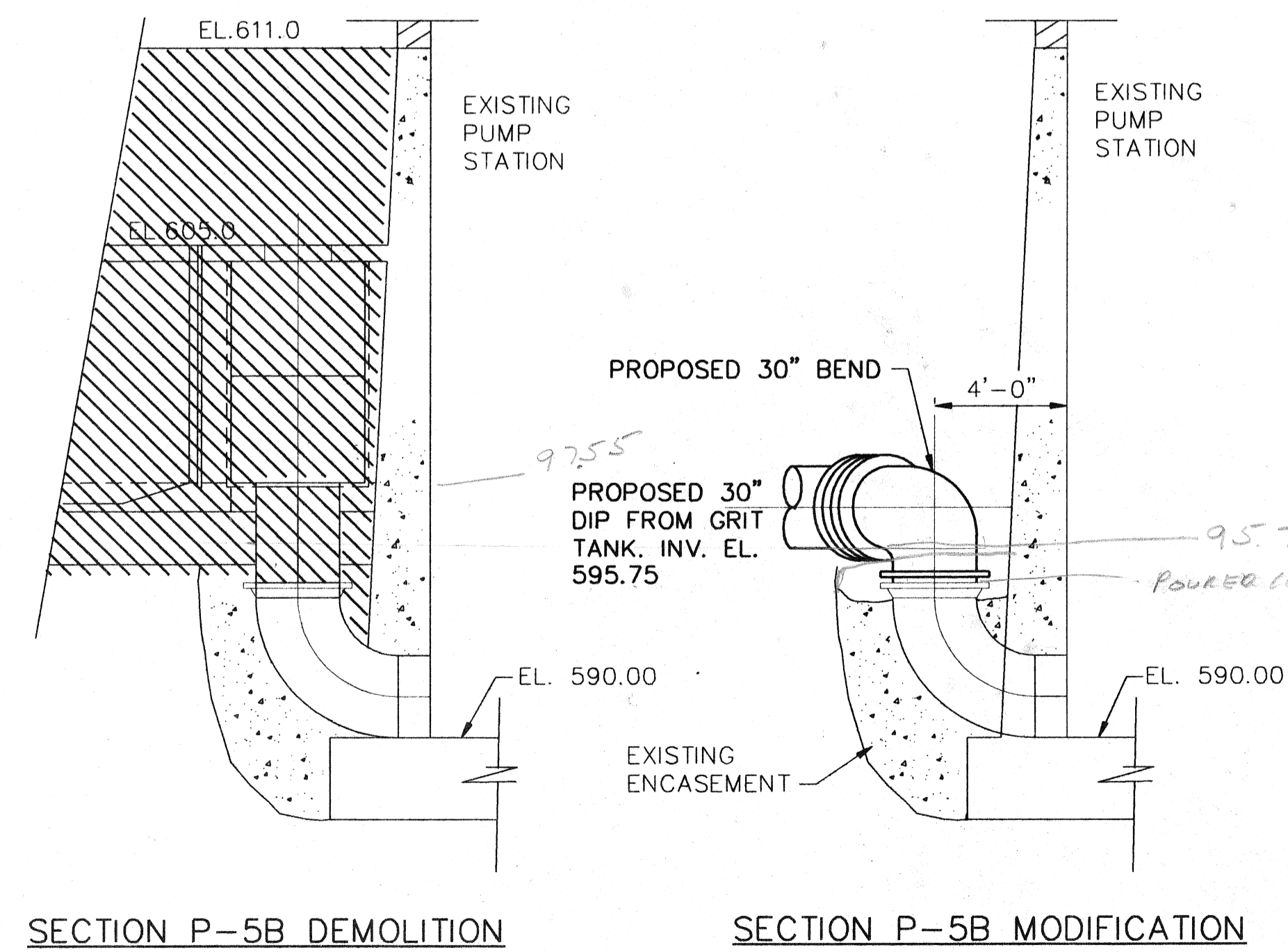
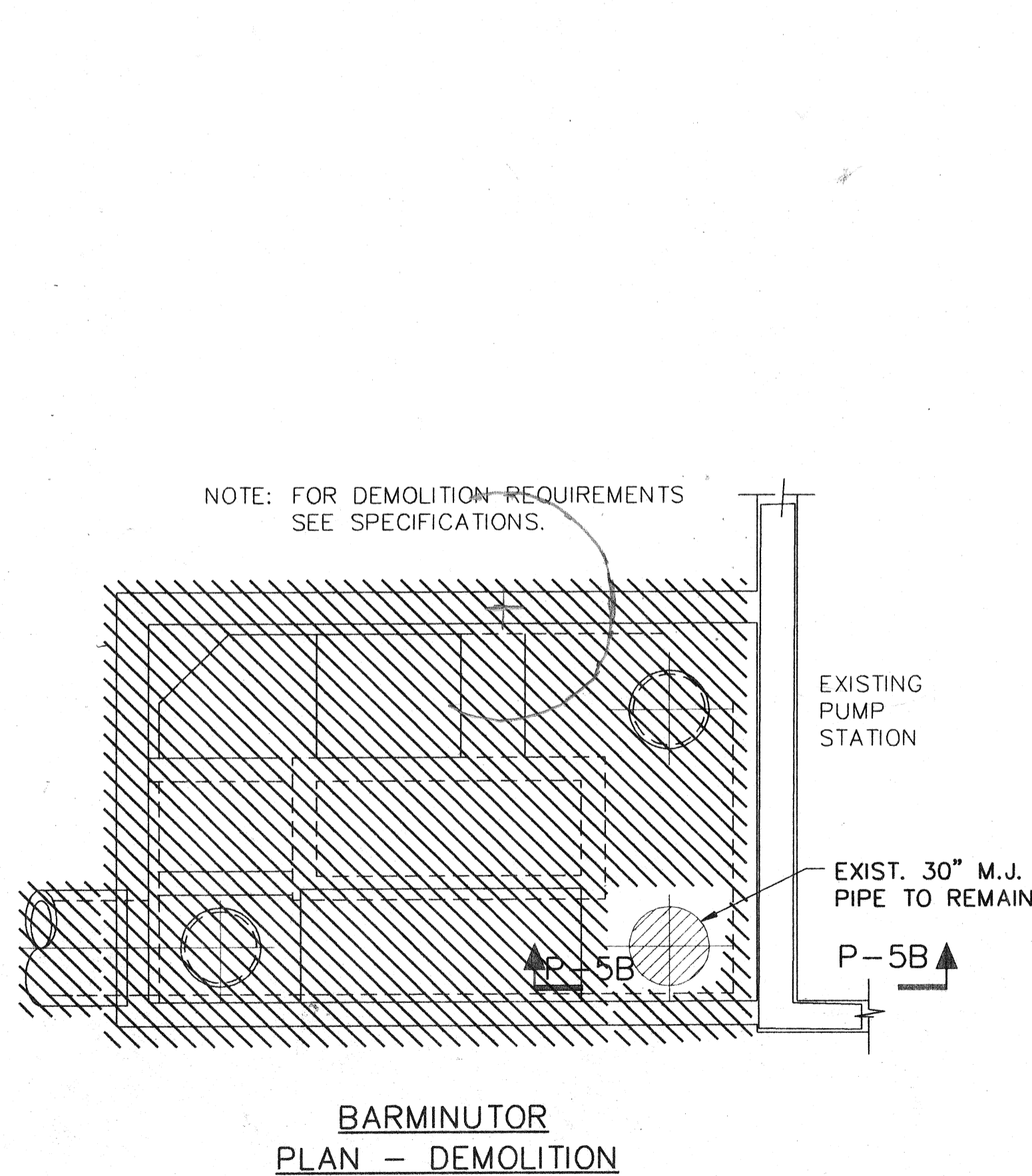
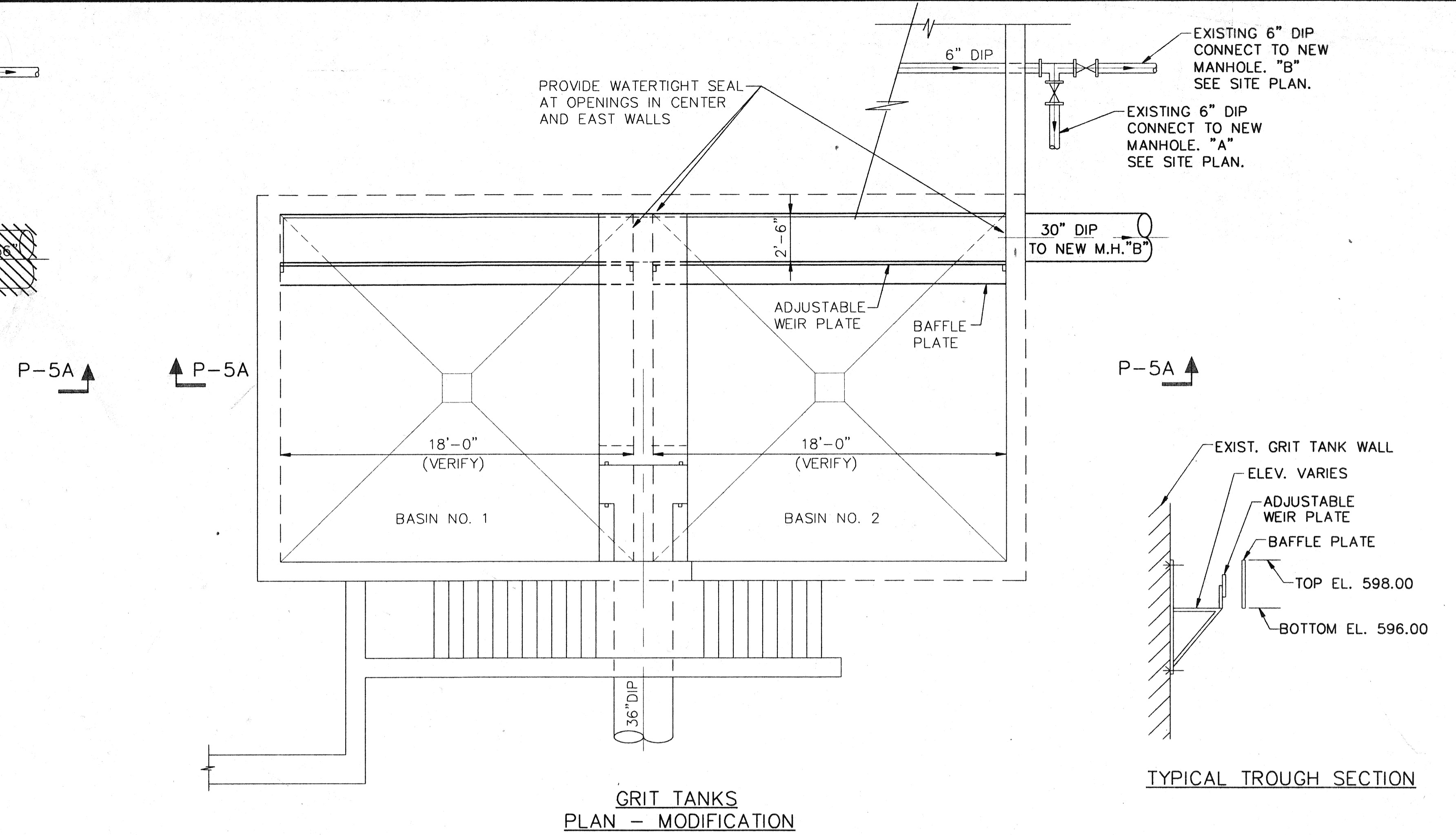
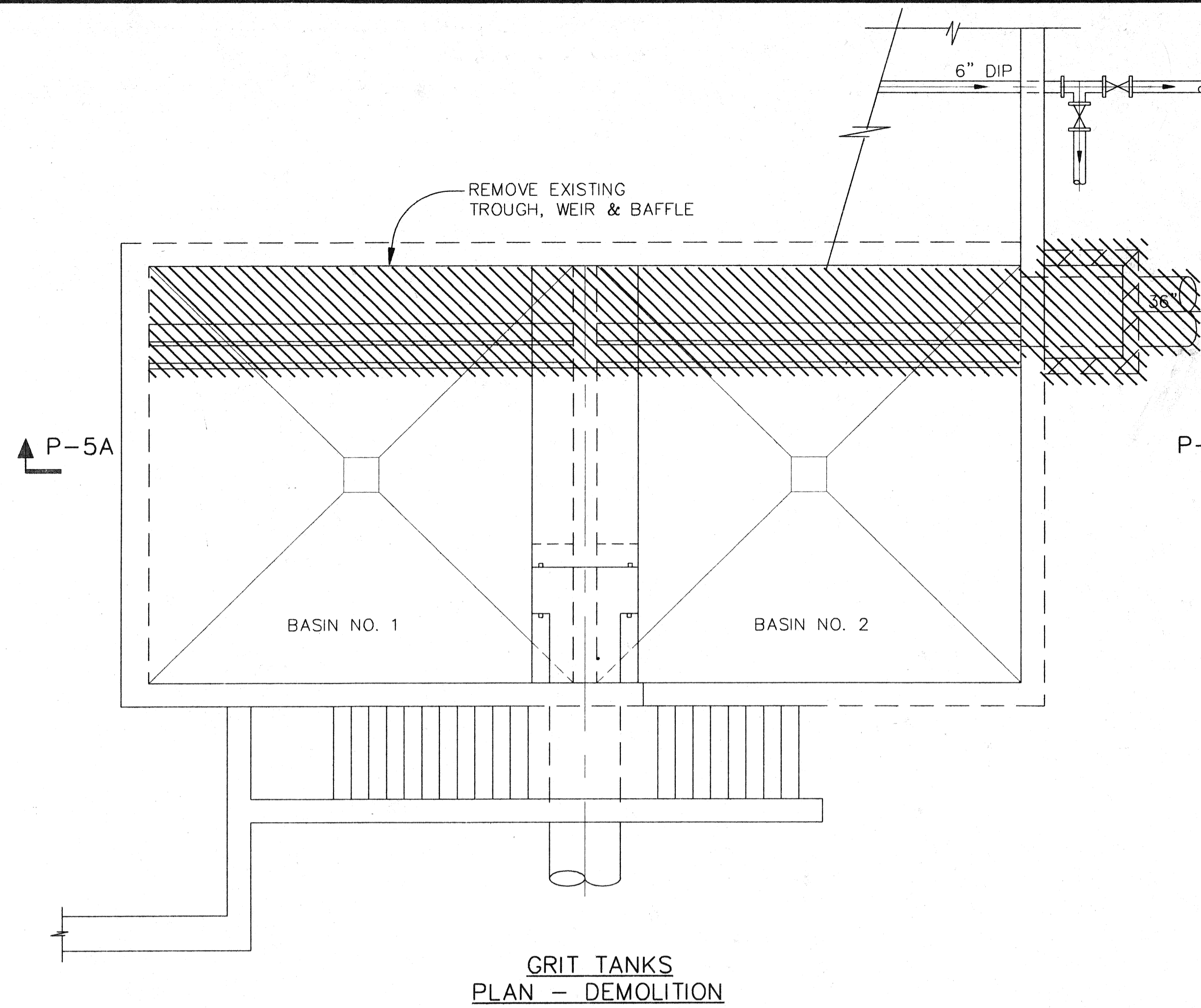


DEPARTMENT OF PUBLIC WORKS
CITY OF SUPERIOR, WISCONSIN



CSO #2 INFLUENT JUNCTION CHAMBER AND
FLOW DIVERSION STRUCTURE

SHEET P-4	OF 5	SHEETS
RECORD MAP NO.	CT&A PROJECT NO. 3899-02	



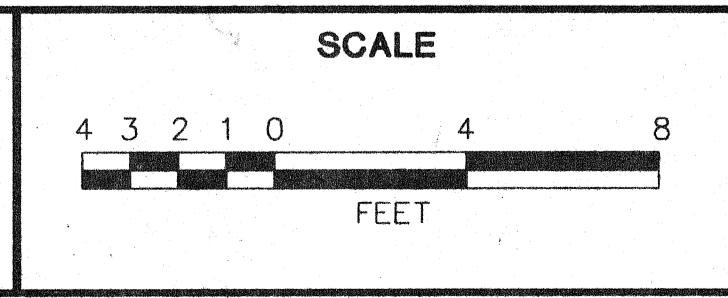
LEGEND

	NEW PIPING, EQUIPMENT AND STRUCTURES
	EXISTING PIPING, EQUIPMENT AND STRUCTURES
	EXISTING PIPING, EQUIPMENT AND STRUCTURES TO BE REMOVED

M:\PROJECTS\389900\CAD\PLANTS-GRITBLD.DWG Plotted on 8/31/1994 @ 8:35 A.M. by LDUBRETT

NO.	DATE	DESCRIPTION	APPROVED
REVISIONS			

DESIGNED TN
 DRAWN LED-PN
 CHECKED _____
 DATE APRIL, 1994

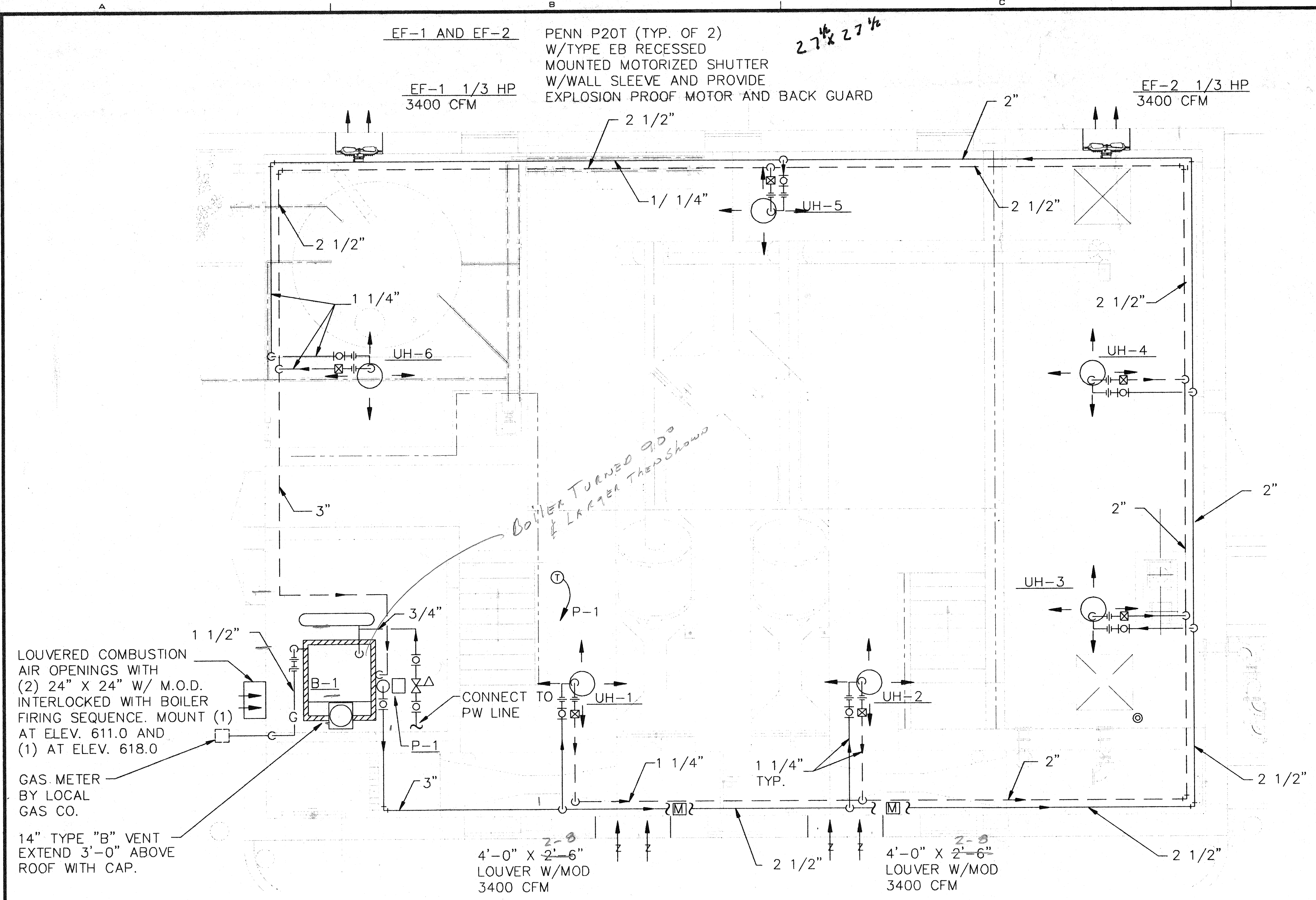


DEPARTMENT OF PUBLIC WORKS
 CITY OF SUPERIOR, WISCONSIN

ENGINEERING PLANNING MANAGEMENT
 2855 ANTHONY LANE SOUTH, SUITE 145
 MINNEAPOLIS, MN. 55418-3265

GRIT TANKS & BARMINUTOR BUILDING
 DEMOLITION & MODIFICATION

SHEET P-5
 OF 5 SHEETS
 RECORD MAP NO. _____
 CT&A PROJECT NO. 3899-02



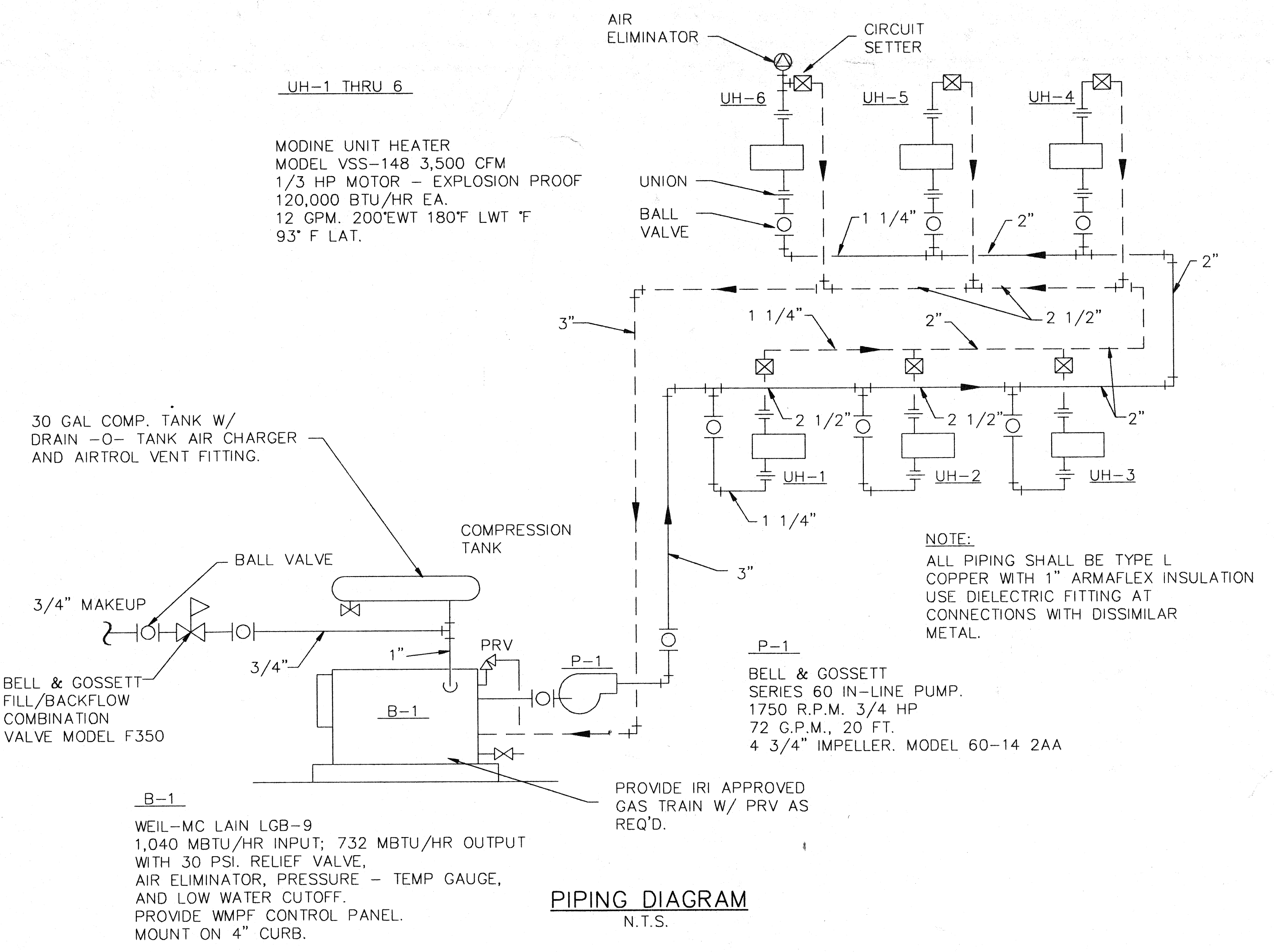
PIPING PLAN
SCALE 1/4" = 1'-0"

SEQUENCE OF OPERATION

HEATING CYCLE
UPON CALL FOR HEAT FROM THERMOSTAT, PUMP P-1 RUNS. BOILER RUNS ON LOW FIRE SETTING TO MAINTAIN 180°F. IF PUMP IS RUNNING AND BOILER TEMPERATURE IS LESS THAN 170°F, THEN BOILER RUNS ON HIGH FIRE SETTING.

UNIT HEATER FANS UH-1 THRU UH-6 SHALL BE MANUALLY OPERATED FROM ON/OFF SWITCHES IN CONTROL ROOM.

VENTILATION CYCLE
EXHAUST FANS EF-1, EF-2 SHALL BE MANUALLY OPERATED FROM ON/OFF SWITCHES IN CONTROL ROOM. MOTOR OPERATED DAMPER AT RELIEF OPENING SHALL OPEN WHEN EITHER EF-1 OR EF-2 RUNS.



PIPING DIAGRAM
N.T.S.

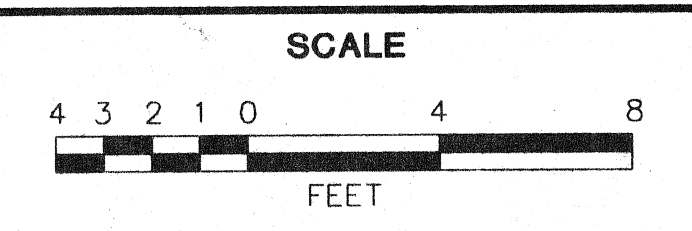
SYMBOLS

- | | | | |
|---|--|-----|-----------------------------------|
| ➔ | DIRECTION OF FLOW | ⊗ | PRESSURE VACUUM OR COMPOUND GAUGE |
| ~ | CONTINUATION | ⊕ | THERMOSTAT |
| ⊕ | CONNECTION BETWEEN NEW AND OLD SYSTEMS | ⊞ | THERMOMETER |
| ⊞ | PRESSURE REDUCING VALVE | ⊞ | VERTICAL UNIT HEATER |
| ⊞ | BUTTERFLY VALVE | ⊞ | CIRCUIT SETTER |
| ⊞ | THREWAY TEMPERATURE CONTROL VALVE | ⊞ | SIDE OUT ELBOW TURNED DOWN 90° |
| ⊞ | PLUG VALVE | ⊞ | UNION |
| ⊞ | HOSE BIBB | ⊞ | BALL VALVE |
| ⊞ | GATE VALVE | ⊞ | PUMP |
| ⊞ | GLOBE VALVE | ⊞ | PRESSURE RELIEF VALVE |
| ⊞ | CHECK VALVE | ⊞ | AIR ELIMINATOR |
| ⊞ | EXPANSION JOINT | ⊞ | 90° ELBOW |
| ⊞ | MOTOR OPERATED DAMPER | ⊞ | STRAINER |
| | | --- | HHWR |
| | | --- | HHWS |

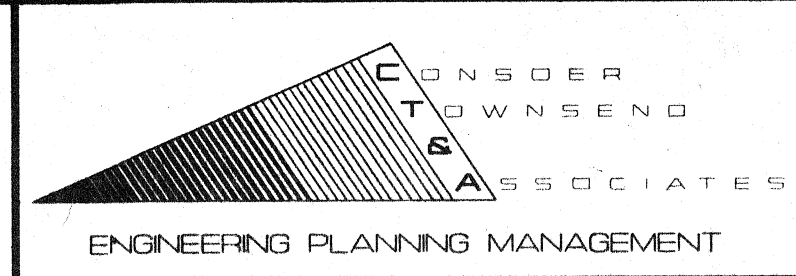
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REVISIONS			

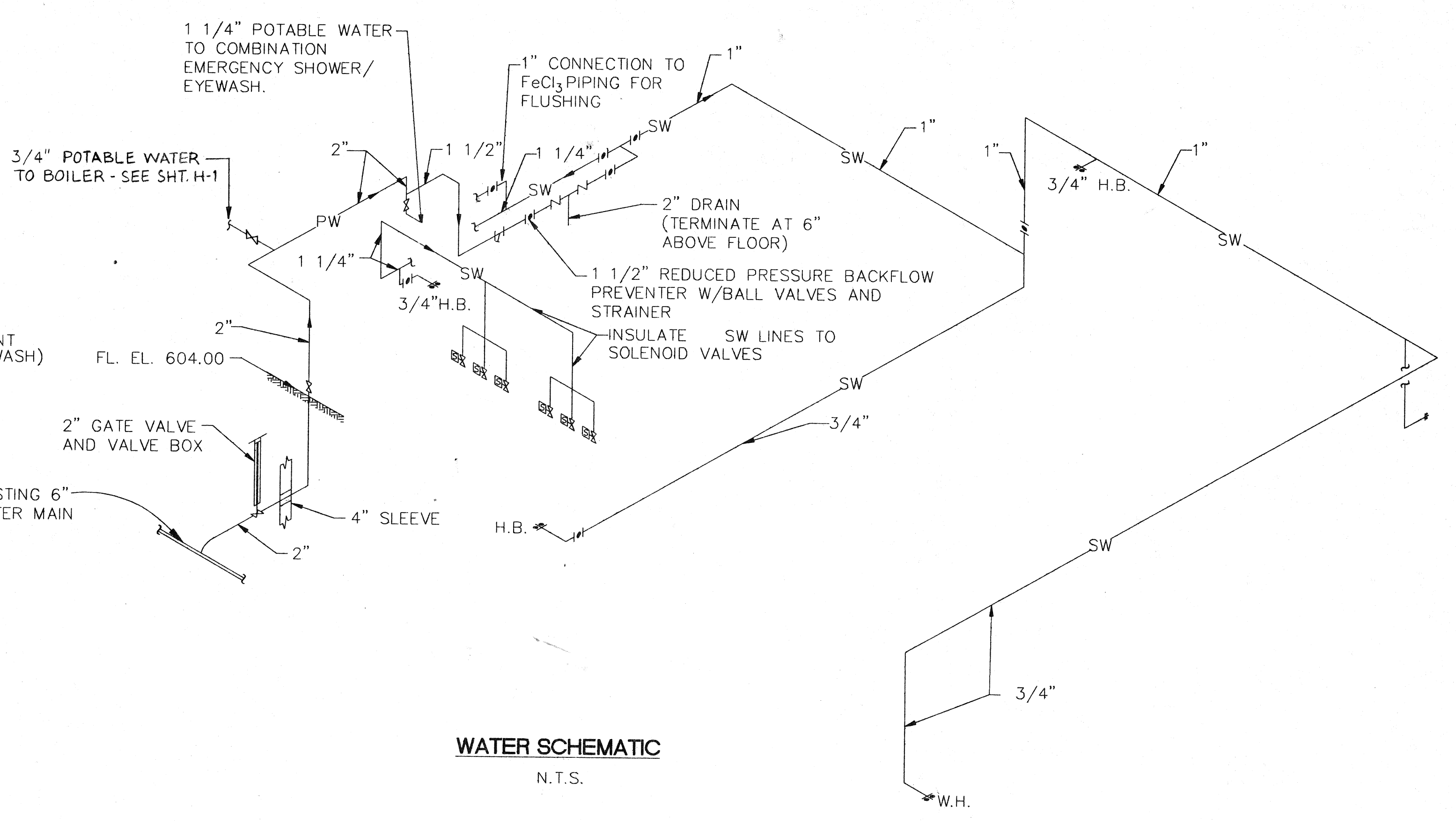
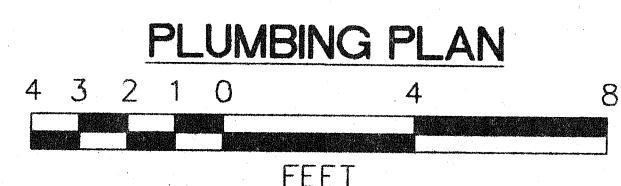
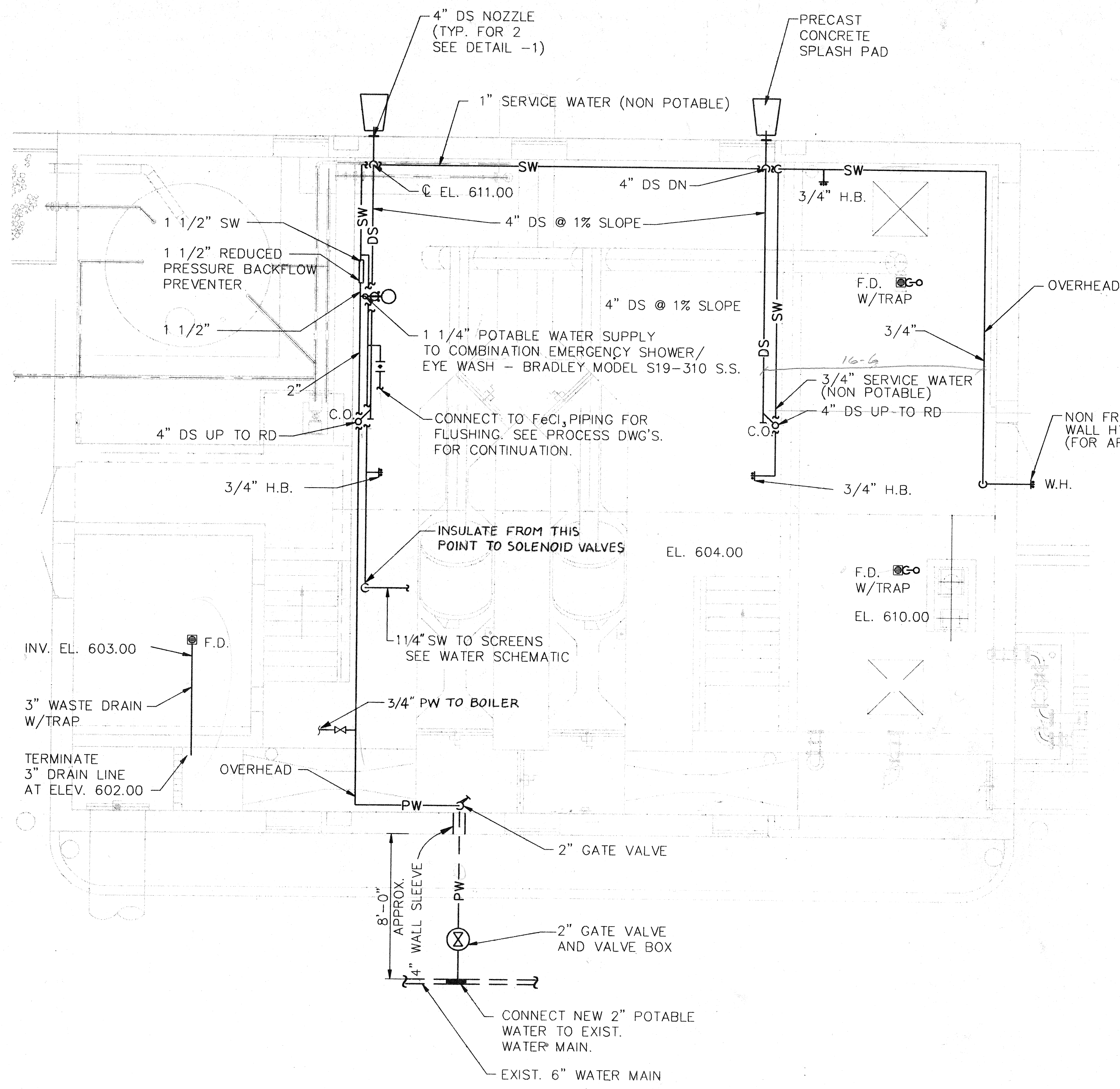
DESIGNED FXN
DRAWN RCF/TMS
CHECKED
DATE 8-30-94



**DEPARTMENT OF PUBLIC WORKS
CITY OF SUPERIOR, WISCONSIN**

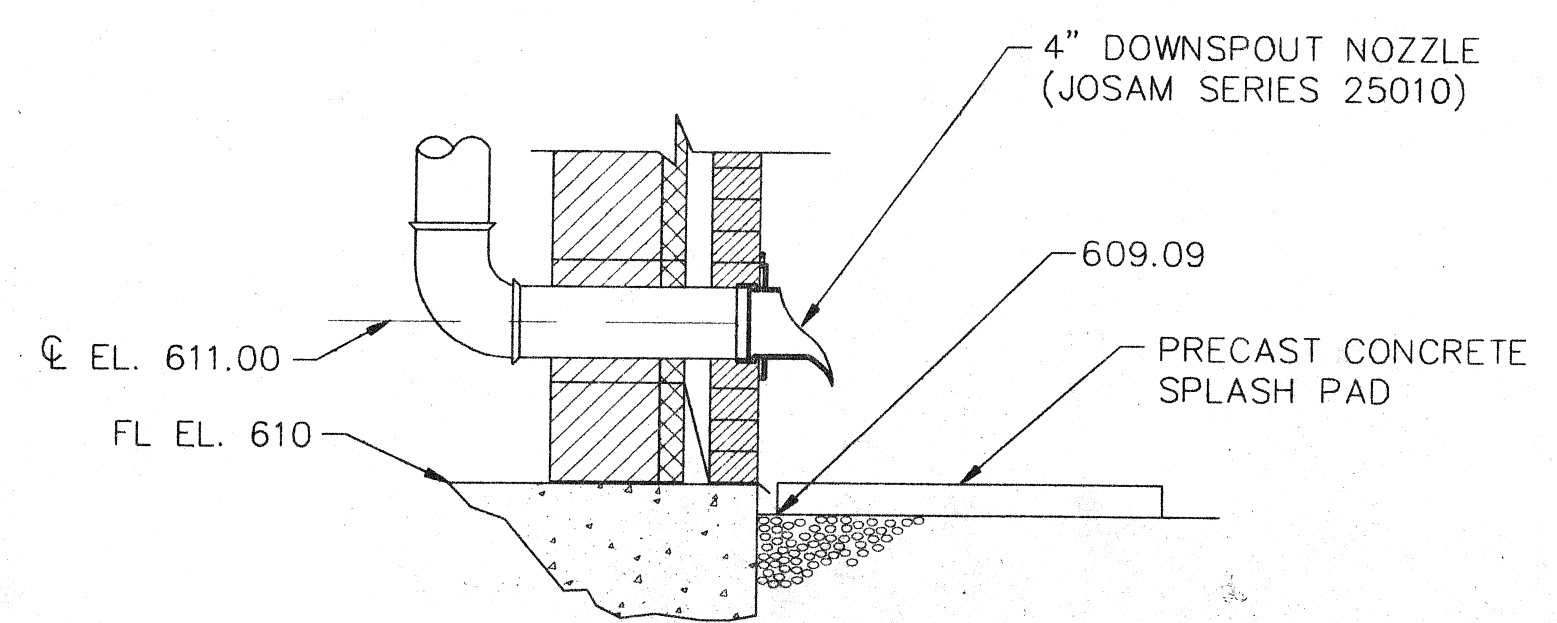


**SCREEN BUILDING
HEATING AND VENTILATION**



SYMBOLS AND ABBREVIATIONS

	EXISTING WATER MAIN
	NEW POTABLE WATER LINE (UNDERGROUND)
	POTABLE WATER (ABOVE GROUND)
	SERVICE WATER - NONPOTABLE (ABOVE GROUND)
	DOWNSPOUT
	WASTE DRAINAGE LINE (ABOVE GROUND)
	FD FLOOR DRAIN
	HB/WH HOSE BIBB/OR WALL HYDRANT
	SOLENOID VALVE
	STRAINER
	BALL VALVE
	GATE VALVE
	CLEAN OUT



1 DOWNSPOUT OUTLET
PL-1
SCALE 1" = 1'-0"

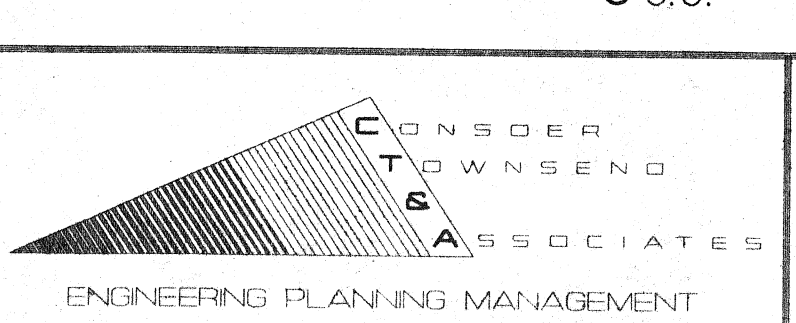
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NO.	DATE	DESCRIPTION	APPROVED
REVISIONS			

DESIGNED	A.R.
DRAWN	R.C.F.
CHECKED	
DATE	8/16/94

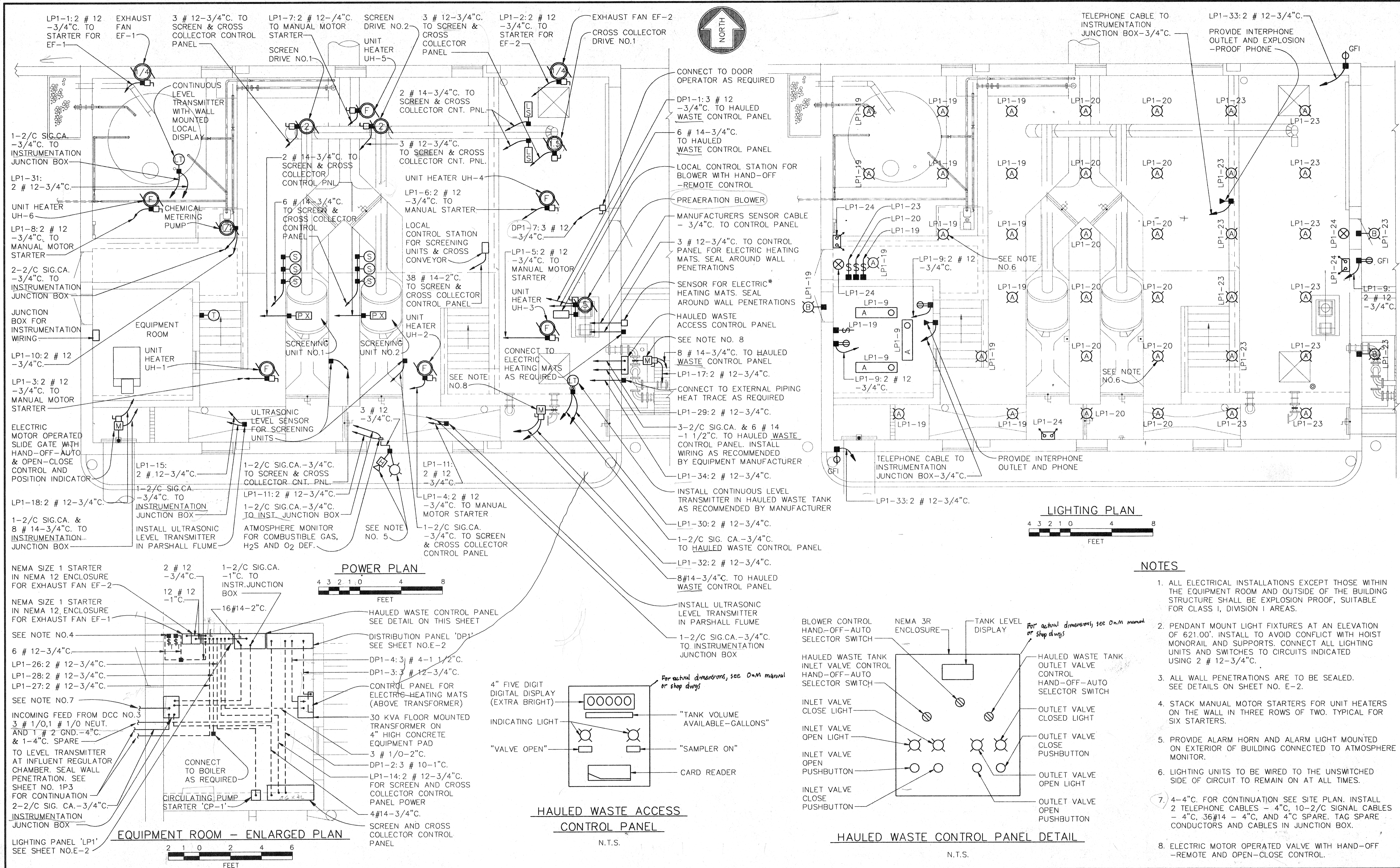
SCALE
AS NOTED

DEPARTMENT OF PUBLIC WORKS
CITY OF SUPERIOR, WISCONSIN



SCREEN BUILDING
PLUMBING PLAN

SHEET PL-1
OF 1 SHEETS
CT&A PROJECT NO. 3899-02



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NO.	DATE	DESCRIPTION	APPROVED

DESIGNED	E.J.V.
DRAWN	K.C.M.
CHECKED	J.C.
DATE	APRIL 1994

SCALE
AS NOTED

**DEPARTMENT OF PUBLIC WORKS
CITY OF SUPERIOR, WISCONSIN**



**SCREEN BUILDING
ELECTRICAL PLANS**

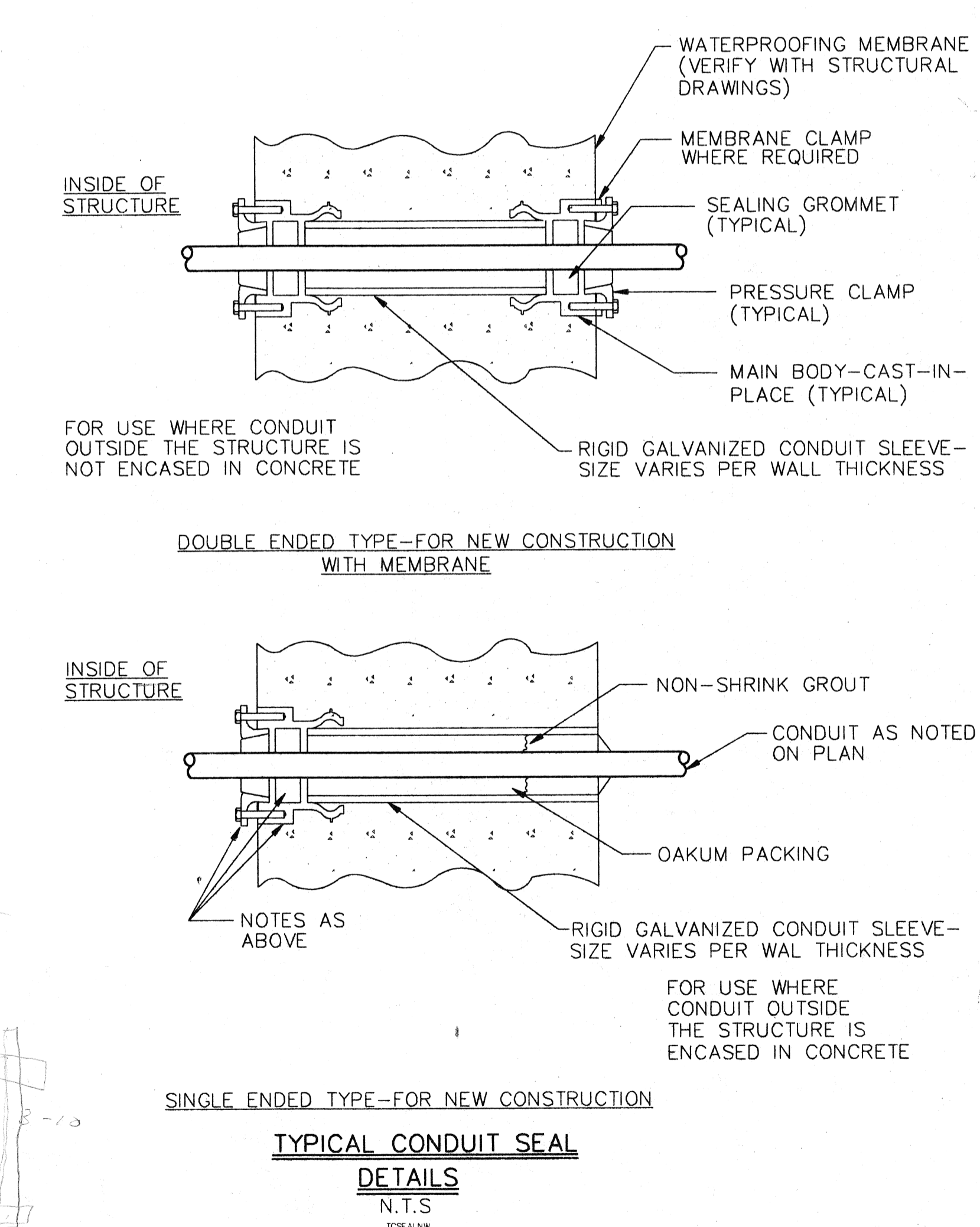
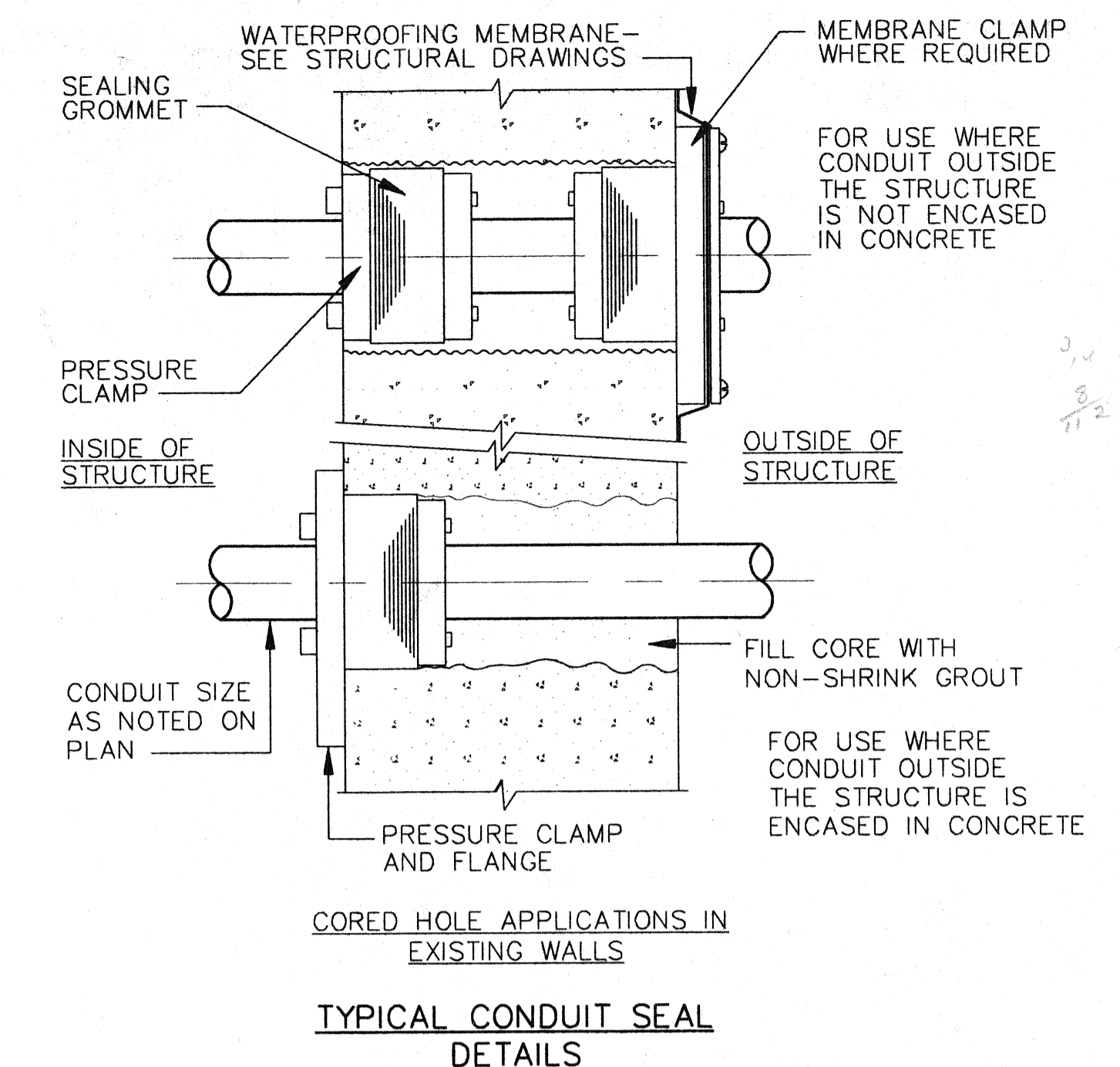
SHEET E-1
OF 3 SHEETS

RECORD MAP NO.
CT&A PROJECT NO. 3899-02

LIGHTING FIXTURE SCHEDULE					
FLUORESCENT					
TYPE	MANUFACTURER	CATALOG NO.	LAMP SIZE	MOUNTING	REMARKS
⊙ A	DAY-BRITE	FL-1024-4U	2-40W.	PENDANT	
HIGH INTENSITY DISCHARGE					
TYPE	MANUFACTURER	CATALOG NO.	LAMP SIZE	MOUNTING	REMARKS
⊙ A	CROUSE HINDS	EVMA93250W/RD73 DOME	250W. M.H.	PENDANT	SUITABLE FOR EXPLOSION PROOF INSTALLATION
⊙ B	HOLOPHANE	WL3K-250HP-24-BZ-FI-WL2KPR24	250W. H.P.S.	WALL	INTEGRAL PHOTOCONTROL WIRE TO UNSWITCHED SIDE OF CIRCUIT

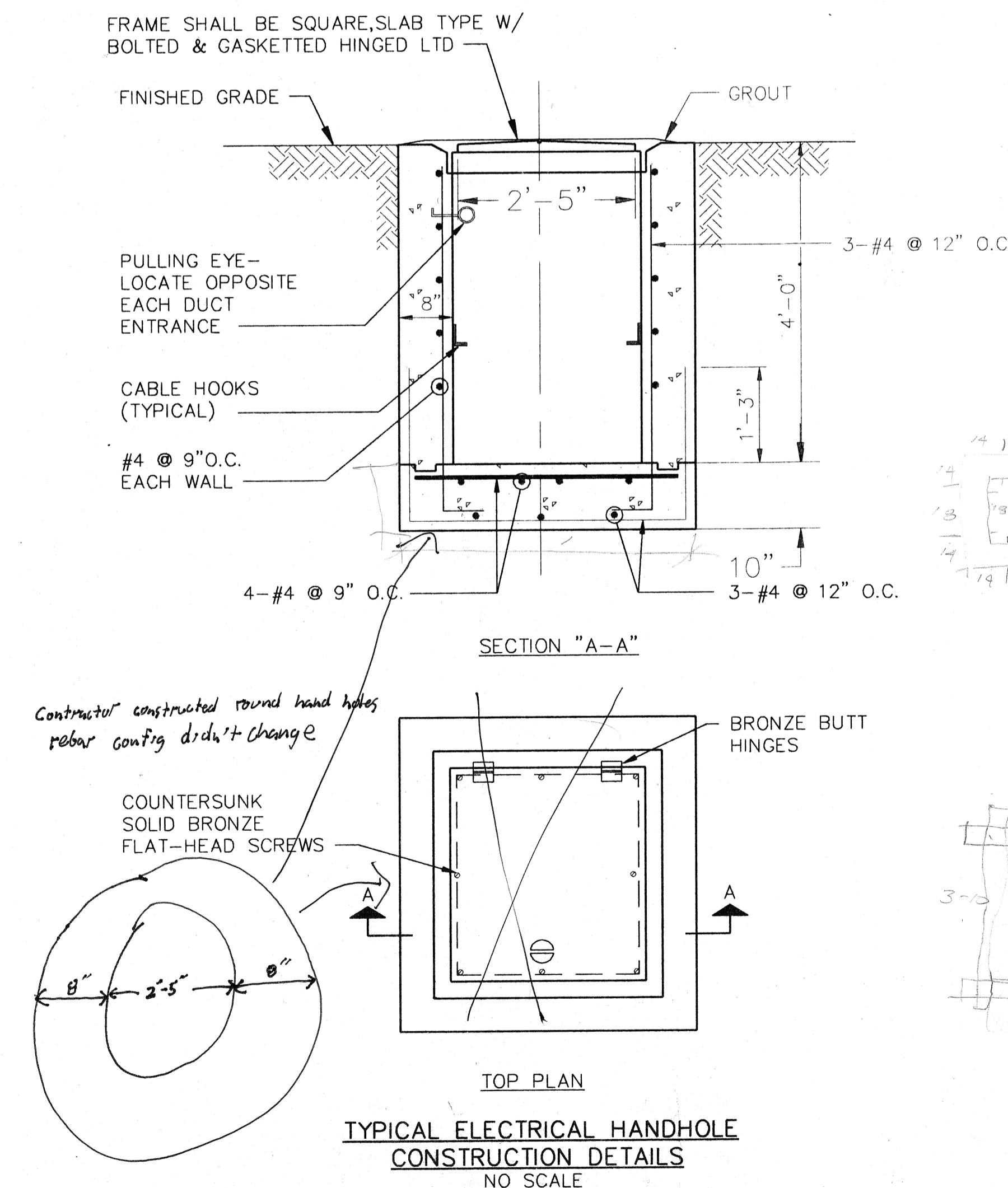
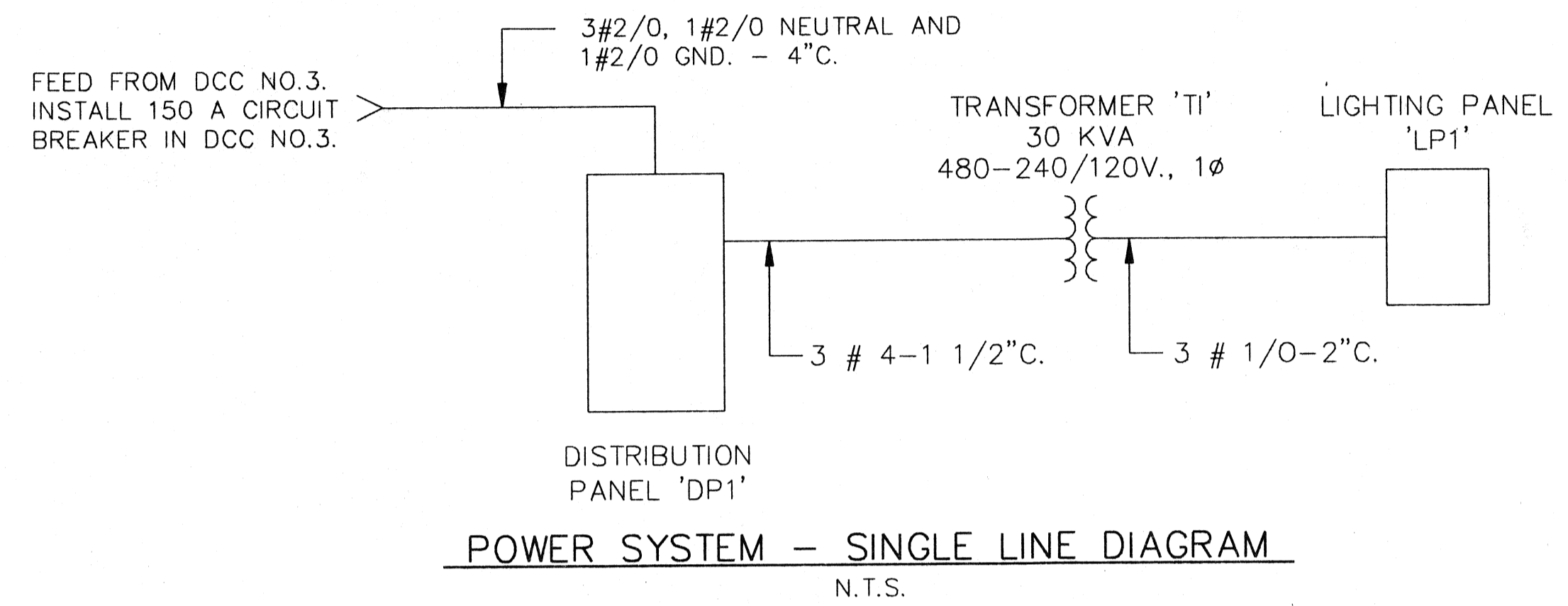
EXIT/DIRECTIONAL FIXTURE SCHEDULE				
TYPE	FACE	DESCRIPTION	REMARKS	
⊙	SINGLE NO ARROW	CROUSE-HINDS MODEL NO. EXL21A OR EQUAL	WALL MOUNT 9'-6" FT. ABOVE FINISHED FLOOR SUITABLE FOR EXPLOSION PROOF INSTALLATION	

EMERGENCY LIGHTING FIXTURE SCHEDULE				
TYPE	MANUFACTURER	CATALOG NO.	LAMP	REMARKS
⊙	CROUSE-HINDS	ELPS502	2-12 WATT	WALL MOUNT 9'-6" FT. ABOVE FINISHED FLOOR SUITABLE FOR EXPLOSION PROOF INSTALLATION



PANEL 'LP1'		TYPE 1 Ø, 3 WIRE	
VOLTAGE 120/240V.		MAINS 225A. MAIN, 125A. MAIN BKR.	
DEVICE	BRANCH CIRCUIT		DEVICE
AMPS TRIP	POLES	DESIGNATION	TRIP AMPS
20	1	EXHAUST FAN EF-1	20
20	1	UNIT HEATER UH-1	20
20	1	UNIT HEATER UH-3	20
20	1	UNIT HEATER UH-5	20
20	1	EQPMNT. RM. RECEPT. & LIGHTS	20
20	1	COMBUSTIBLE GAS DETECTOR	20
20	1	SPARE	20
20	1	ULTRASONIC LEVEL TRANSMITTER	20
20	1	HAULED WASTE VALVE OPERATOR	20
20	2	LIGHTING	20
20	2	LIGHTING	20
20	1	ULTRASONIC LEVEL TRANSMITTER	20
20	1	CARD READER	20
20	1	CHEMICAL LEVEL TRANSMITTER	20
20	2	OUTDOOR RECEPTACLE (GFI)	20
20	1	SPARE	20
20	1	SPARE	20
20	1	SPARE	20

PANEL 'DP1'		TYPE 3 Ø, 4 WIRE	
VOLTAGE 480V.		MAINS 600A. MAIN, 150A. MAIN BKR.	
DEVICE	BRANCH CIRCUIT		DEVICE
AMPS TRIP	POLES	DESIGNATION	TRIP AMPS
20	3	PREAERATION BLOWER	30
20	3	ELECTRIC HEATING MATS	80
20	3	SPARE	20
20	3	DOOR OPENER	20
20	3	SPARE	20
20	3	SPARE	20



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NO.	DATE	DESCRIPTION	APPROVED
REVISIONS			

DESIGNED	E.J.V.
DRAWN	K.C.M.
CHECKED	
DATE	APRIL, 1994

SCALE
NO SCALE

DEPARTMENT OF PUBLIC WORKS
CITY OF SUPERIOR, WISCONSIN

CONSER
DOWNSEND
ASSOCIATES

ENGINEERING PLANNING MANAGEMENT
2855 ANTHONY LANE SOUTH, SUITE 145
MINNEAPOLIS, MN. 55418-3265

SCREEN BUILDING
ELECTRICAL DETAILS AND SCHEDULES

SHEET E-2
OF 3 SHEETS

RECORD MAP NO.
CT&A PROJECT NO. 3899-02

ELECTRICAL PLAN SHEET SYMBOLS

SYMBOLS	DESCRIPTION	SYMBOLS	DESCRIPTION
	BRACKET MOUNTED INCANDESCENT OR HIGH INTENSITY DISCHARGE FIXTURE	$\frac{1}{2}$ +48	SINGLE POLE TOGGLE SWITCH (NUMBER INDICATES MOUNTING HEIGHT, IF NO NUMBER IS SHOWN, SEE SPECIFICATIONS)
	DUPLEX GFI RECEPTACLE (NUMBER INDICATES MOUNTING HEIGHT, IF NO NUMBER IS SHOWN, SEE SPECIFICATIONS)	$\frac{2}{2}$ +48	2 - POLE TOGGLE SWITCH (NUMBER INDICATES MOUNTING HEIGHT, IF NO NUMBER IS SHOWN, SEE SPECIFICATIONS)
	SINGLE CONVENIENCE RECEPTACLE (220 V) (NUMBER INDICATES MOUNTING HEIGHT, IF NO NUMBER IS SHOWN, SEE SPECIFICATIONS)	$\frac{3}{3}$ +48	3 - POLE TOGGLE SWITCH (NUMBER INDICATES MOUNTING HEIGHT, IF NO NUMBER IS SHOWN, SEE SPECIFICATIONS)
	DUPLEX CONVENIENCE RECEPTACLE (NUMBER INDICATES MOUNTING HEIGHT, IF NO NUMBER IS SHOWN, SEE SPECIFICATIONS)	$\frac{4}{4}$ +48	4 - POLE TOGGLE SWITCH (NUMBER INDICATES MOUNTING HEIGHT, IF NO NUMBER IS SHOWN, SEE SPECIFICATIONS)
	FLOOR MOUNTED DUPLEX CONVENIENCE RECEPTACLE	$\frac{1}{1}$ +48	MANUAL MOTOR STARTER SWITCH W/OVERLOAD PROTECTION AND ENCLOSURE (NUMBER INDICATES MOUNTING HEIGHT, IF NO NUMBER IS SHOWN, SEE SPECIFICATIONS.)
	TELEPHONE UTILITY SYSTEM OUTLET		BATTERY POWERED EMERGENCY LIGHTING FIXTURE
	LIGHTING PANEL		UNIT HEATER
	REMOTE TELEMETRY SYSTEM CABINET		ALARM HORN
	TELEPHONE UTILITY SYSTEM		ZONAL GROUNDING
	DISTRIBUTION PANEL	HH	HANDHOLE
	CABINET OR PULL BOX	GFI	GROUND FAULT INTERRUPTION
	UNFUSED SAFETY SWITCH, 3P-30A, 600V, IN NEMA 4 STAINLESS STEEL ENCLOSURE, UNLESS OTHERWISE NOTED.	C	CONDUIT
	FUSED SAFETY SWITCH, 3P-30A, 600V, IN NEMA 4 STAINLESS STEEL ENCLOSURE, UNLESS OTHERWISE NOTED.	SIG. CA.	SIGNAL CABLE
	HANDHOLE	F.O.	FIBER OPTIC
	OUTLET OR JUNCTION BOX		EMERGENCY SHOWER & EYEWASH WITH LIGHT AND ALARM
	COMBINATION PROTECTIVE DEVICE AND MAGNETIC STARTER OR CONTROL PANEL WITH CONTROL TRANSFORMER AND (3) AUXILIARY CONTACTS.		SMOKE DETECTOR (IONIZATION TYPE)
	SINGLE UNIT PUSHBUTTON STATION		RATE OF RISE HEAT DETECTOR
	2-UNIT PUSHBUTTON STATION		MANUAL FIRE ALARM PULL STATION
	3-UNIT PUSHBUTTON STATION		FIRE ALARM SYSTEM HORN
	ELECTRIC MOTOR - "NUMBER" INDICATES HORSEPOWER, "F" DENOTES FRACTIONAL HORSEPOWER.	---	EXPOSED CONDUIT
	CONTROL STATION-SELECTOR SWITCH, SPEED CONTROL, RUN INDICATION, START/STOP, SPEED INDICATION	---	UNDERGROUND DUCT AS NOTED
	FLOW SWITCH	---	CONDUIT CONCEALED IN CEILING OR WALL
	LIMIT SWITCH	---	CONDUIT CONCEALED IN FLOOR SLAB OR UNDER FLOOR SLAB. (CONDUITS 1-1/4" OR LARGER SHALL BE INSTALLED UNDER FLOOR SLAB). CONDUITS RUN UNDER FLOOR SLAB SHALL BE ENCASED IN CONCRETE.
	PNEUMATIC/ELECTRIC SWITCH	---	HOMERUN TO PANEL OR M.C.C. AS NOTED
	PRESSURE SWITCH	E	EXISTING CONDUIT AND WIRE SHALL REMAIN
	PROXIMITY SWITCH	R	EXISTING CONDUIT, WIRE, BOXES, ETC., WHICH SHALL BE REMOVED.
	"HAND-OFF-AUTOMATIC" SELECTOR SWITCH	A	EXISTING CONDUIT WHICH SHALL BE ABANDONED, DISCONNECT AND REMOVE EXISTING CONDUCTORS. CUT OFF CONDUIT FLUSH W/FINISHED SURFACE AND FILL W/GROUT.
	TORQUE SWITCH	E/R	EXISTING CONDUIT WHICH SHALL BE REUSED, REMOVE EXISTING CONDUCTORS AND INSTALL NEW CONDUCTORS AS INDICATED OR NOTED ON PLAN.
	VACUUM SWITCH		
	POINT FLOAT SWITCH		
	ELECTRO-PNEUMATIC VALVE		
	SOLENOID VALVE		
	ELECTRIC THERMOSTAT		
	ELECTRIC DAMPER MOTOR		
	TEMPERATURE ACTUATED DEVICE		

CONDUIT SYSTEM NOTES

- CONDUITS IMBEDDED IN STRUCTURAL CONCRETE (FLOOR SLABS, ETC.) SHALL BE SO LOCATED AS NOT TO UNDULY IMPAIR THE STRENGTH OF THE CONSTRUCTION AND SHALL BE SPACED NOT LESS THAN TWO TIMES THE CONDUIT O.D. BETWEEN ADJACENT CONDUITS EXCEPT WHERE CROSSING OR OTHERWISE APPROVED BY THE ENGINEER.
- ANY CONDUIT WITHOUT FURTHER DESIGNATION, INDICATES 2#12 IN 3/4 INCH CONDUIT, GREATER NUMBER OF WIRE ARE INDICATED AS FOLLOWS: $\frac{3}{4}$ (3-WIRES) $\frac{4}{4}$ (4-WIRES) ETC. LONGER HATCHMARK INDICATES NEUTRAL CONDUCTOR.
- WIRING FOR LIGHTING, RECEPTACLES AND OTHER MISCELLANEOUS CIRCUITS SHALL CONFORM TO THE CIRCUITING INDICATED ON THE DRAWINGS WITH ARRANGEMENT AND ROUTING AS REQUIRED. THE WIRING SHALL BE SO ARRANGED THAT NO MORE THAN 6 CURRENT CARRYING CONDUCTORS SHALL BE INSTALLED PER CONDUIT AND CIRCUITS OF DIFFERENT PANELS SHALL BE INSTALLED IN SEPERATE RACEWAYS.
- ALL EQUIPMENT SHALL BE PROPERLY GROUNDED PER APPLICABLE LOCAL CODES.

SCHEMATIC WIRING SYMBOLS

SYMBOLS	DESCRIPTION
	CONTACT, NORMALLY OPEN
	CONTACT, NORMALLY CLOSED
	PUSHBUTTON, NORMALLY CLOSED
	PUSHBUTTON, NORMALLY OPEN
	SELECTOR SWITCH - "HAND-OFF-AUTO", UNLESS OTHERWISE NOTED.
	PUSHBUTTON, MAINTAINED CONTACT, DOUBLE CIRCUIT
	OVERLOADS
	FUSE
	PILOT LIGHT
	MANUAL MOTOR STARTER
	AUXILIARY STARTER CONTACTS
	PRESSURE SWITCH, OPENS ON RISE
	PRESSURE SWITCH, CLOSES ON RISE
	LIMIT SWITCH, NORMALLY CLOSED
	LIMIT SWITCH, NORMALLY OPEN
	LIMIT SWITCH, NORMALLY OPEN, HELD CLOSED
	LIMIT SWITCH, NORMALLY CLOSED, HELD OPEN
	TEMPERATURE ACTUATED SWITCH, OPENS ON RISE
	TEMPERATURE ACTUATED SWITCH, CLOSES ON RISE
	VACUUM SWITCH, OPENS ON RISE
	VACUUM SWITCH, CLOSES ON RISE
	FLOW SWITCH (CLOSES WITH FLOW)
	FLOW SWITCH (OPENS WITH FLOW)
	FLOAT OPERATED SWITCH, OPENS ON RISE
	FLOAT OPERATED SWITCH, CLOSES ON RISE
	TORQUE SWITCH (OPENS ON INCREASE)
	TORQUE SWITCH (CLOSES ON INCREASE)
	OVERLOAD
	LOCATED REMOTE
	LOCATED AT MOTOR
	NEW DEVICE TO BE PROVIDED
	MOTORIZED TIME DELAY RELAY
	TIME DELAY RELAY
	STARTER COIL
	CONTROL RELAY
	ELAPSED TIME METER

INSTRUMENTATION SYSTEM SYMBOLS

	PRESSURE TRANSMITTER WITH LOCAL INDICATION
	LEVEL TRANSMITTER WITH LOCAL INDICATION
	LEVEL TRANSMITTER
	LEVEL ALARM HIGH
	LEVEL ALARM LOW
	TEMPERATURE TRANSMITTER WITH LOCAL INDICATION
	ANALYZING TRANSMITTER WITH LOCAL INDICATION
	FLOW TRANSMITTER WITH LOCAL INDICATION
	DIFFERENTIAL PRESSURE TRANSMITTER
	CURRENT-TO-PNEUMATIC TRANSDUCER
	VOLTAGE-TO-CURRENT TRANSDUCER
	CURRENT-TO-CURRENT TRANSDUCER
	MANUAL BACKUP UNIT AS SPECIFIED
	EXISTING INDICATOR
	HYDRAULIC VALVE ACTUATOR
	HYDRAULIC VALVE ACTUATOR WITH NEW POSITIONER
	MANUALLY OPERATED VALVE
	PNEUMATIC VALVE ACTUATOR
	PNEUMATIC VALVE ACTUATOR WITH NEW POSITIONER
	ELECTRIC VALVE ACTUATOR, OPEN/CLOSE
	ELECTRIC VALVE ACTUATOR, MODULATING
	FILTER CONTROL CONSOLE
	FLOW DEVICE
	BUTTERFLY VALVE
	MODULATING BUTTERFLY VALVE
	GATE VALVE
	CHECK VALVE
	PUMP
	ANALOG INPUT TO RTU
	ANALOG OUT FROM RTU
	DISCRETE INPUT TO RTU UNLESS OTHERWISE NOTED
	DISCRETE OUTPUT FROM RTU UNLESS OTHERWISE NOTED
	PULSE INPUT TO RTU
	EQUIPMENT PER INSTRUMENTATION INSTALLATION DETAIL "A" (TYPICAL)

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NO.	DATE	DESCRIPTION	APPROVED
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DESIGNED E.J.V.
 DRAWN K.C.M.
 CHECKED _____
 DATE APRIL, 1994

SCALE
 NO SCALE

**DEPARTMENT OF PUBLIC WORKS
 CITY OF SUPERIOR, WISCONSIN**

**CONOR
 TOWNSEND
 ASSOCIATES**
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ELECTRICAL SYMBOLS

SHEET E-3
 OF 3 SHEETS
 RECORD MAP NO.
 CT&A PROJECT NO. 3899-02