



Purchasing Division

## **ADDENDUM NO. 1**

**DATE: May 23, 2015**  
**FROM: City of Grand Junction Purchasing Division**  
**TO: All Offerors**  
**RE: Engineering Study for City of Grand Junction Water Treatment Plant Upgrade Project RFP-4604-19-DH**

Offerors responding to the above referenced solicitation are hereby instructed that the requirements have been clarified, modified, superseded and supplemented as to this date as hereinafter described.

Please make note of the following clarifications:

1. Q. We assume this study for City of Grand Junction Water Treatment Plant will focus on treatment options and NOT review water rights (and thus we are not planning to include those services in our scope). Is that a correct assumption?

A. Yes, that is correct.

2. Q. Do the cover letter, solicitation response form, or fee proposal count against the 12 page limit for the proposal?

A. The cover letter, solicitation response form, and fee proposal do not count against the 12 page limit for the proposal.

3. Q. The RFP states on page 18 that we are to provide a "sealed cost proposal," but since the proposals are to be submitted online, please clarify. I assume we are to upload two separate PDF files for the technical and fee proposals.

A. The primary proposal, and cost/fee proposal, shall be separate electronic PDF documents.

4. Q. Can the City please provide the as-built drawings, or at a minimum, the hydraulic profile of the Orchard Mesa WTP?

A. See attached as built drawings.

5. Q. The RFP requests that the fee proposal be provided as a sealed cost proposal. Since this is an electronic submission, I just wanted to confirm that consultants are expected to deliver a hard copy of the fee proposal separately by the proposal deadline in order for it to be sealed, and no financials are included in the digital submission.

A. Firms shall submit their Cost Proposals in electronic format only, as a separate electronic document titled "Cost Proposal". This will be submitted when the Firm submits their proposal.

6. Q. (With regard to Task Two) Will the City provide all the current and historical water quality data for the Gunnison River?

A. The data will be provided to the awarded firm, while said firm would need to compile USGS data on their own.

7. Q. Is a cover page excluded from the 12 page limit?

A. See answer to question 2.

The original solicitation for the project noted above is amended as noted.

All other conditions of subject remain the same.

Respectfully,

A handwritten signature in black ink, appearing to read "Duane Hoff Jr.", written in a cursive style.

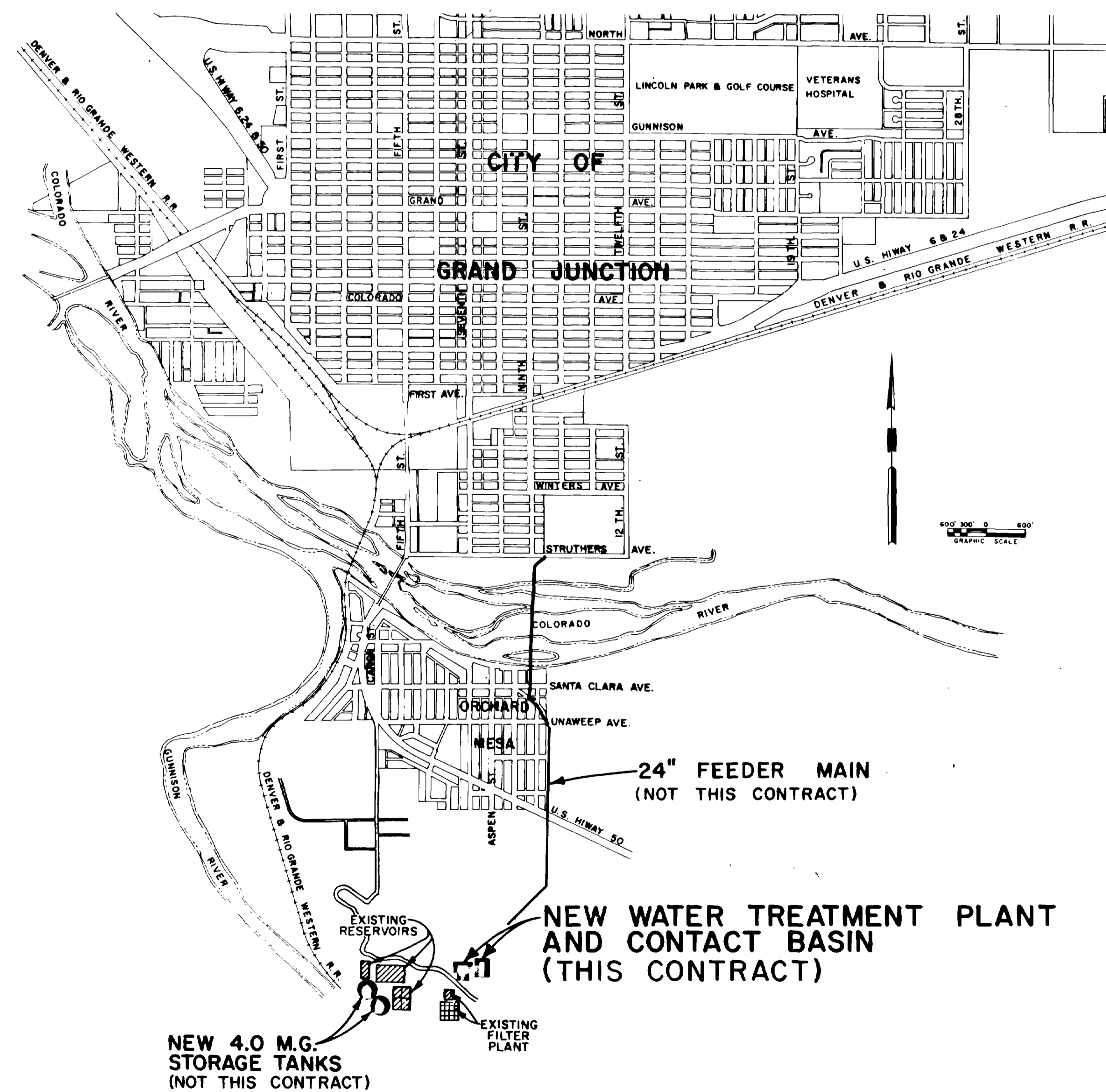
Duane Hoff Jr., Senior Buyer  
City of Grand Junction, Colorado

# WATERWORKS IMPROVEMENTS (GRAND JUNCTION, COLORADO)

1967

## CONTRACT - I

# WATER TREATMENT PLANT



VICINITY MAP

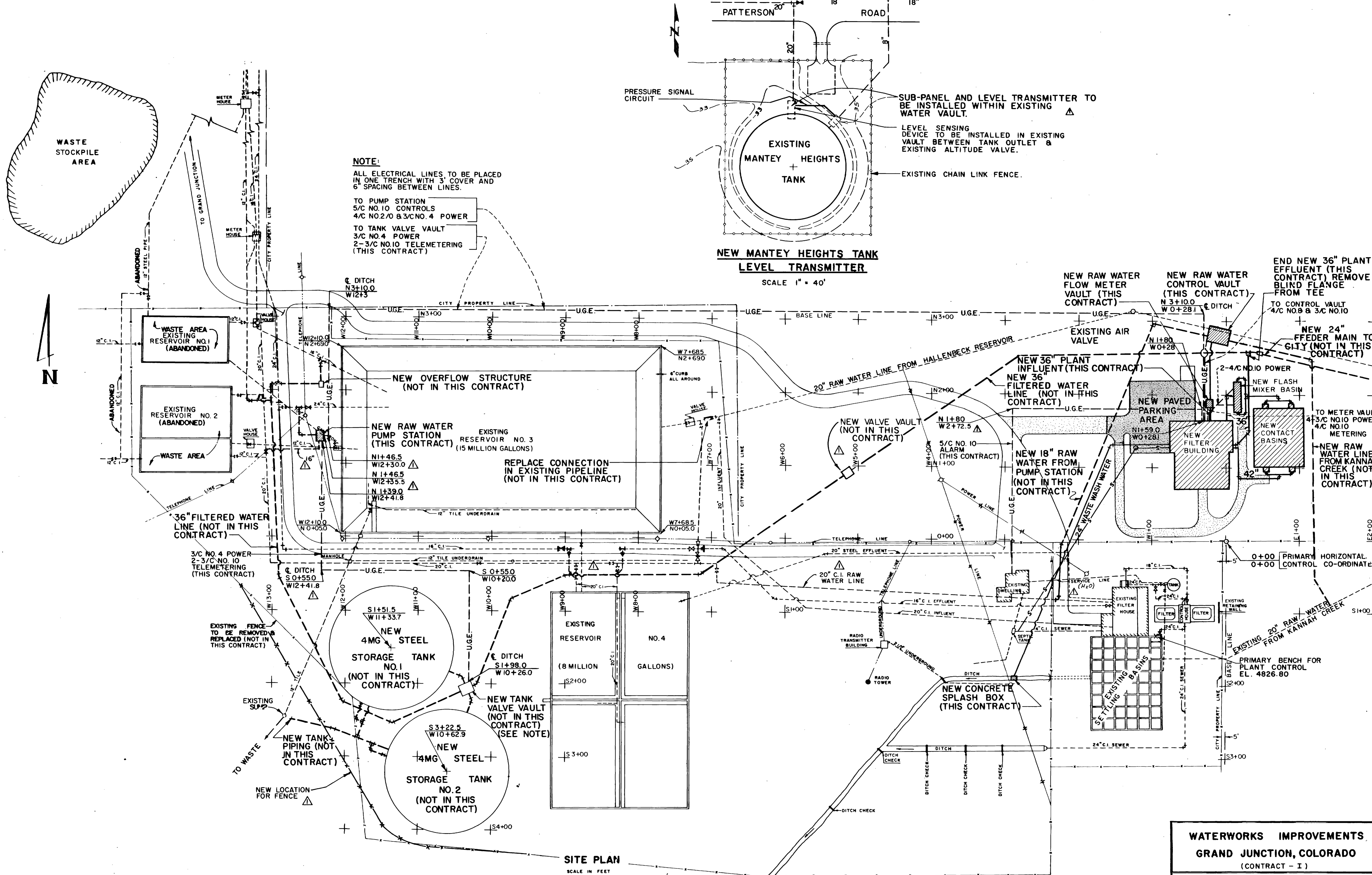
### LIST OF DRAWINGS

SHEET NO.	TITLE	SHEET NO.	TITLE
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2.	GENERAL - PLANT GRADING & CONTROL, MISCELLANEOUS SITE DETAILS	22.	STRUCTURAL - MECHANICAL - SECTION 7/22 AND DETAILS
3.	GENERAL - PLANT YARD PIPING - PLAN	23.	STRUCTURAL - MECHANICAL - MISCELLANEOUS DETAILS
4.	METERING & CONTROLS - HYDRAULIC PROFILE, PLANT FLOW AND CONTROL SCHEMATICS	24.	STRUCTURAL - BEAM FRAMING DETAILS & SCHEDULES
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9.	ARCHITECTURAL - BUILDING ELEVATIONS AND DETAILS	29.	METERING & CONTROLS - MAIN CONTROL PANEL - ELEVATIONS, SECTIONS AND SCHEDULES
10.	ARCHITECTURAL - BUILDING ELEVATIONS AND WINDOW DETAILS	30.	ELECTRICAL - LIGHTING AND POWER PLAN - STORAGE FLOOR, MOTOR CONTROL CENTER, ELECTRICAL ONE LINE DIAGRAM
11.	ARCHITECTURAL - BUILDING SECTIONS AND DETAILS	31.	ELECTRICAL - LIGHTING AND POWER - GROUND AND OPERATING FLOOR PLANS
12.	ARCHITECTURAL - ROOM FINISH, DOOR AND OPENING SCHEDULES	32.	MECHANICAL - PLUMBING - GROUND AND OPERATING FLOOR PLANS
13.	STRUCTURAL - MECHANICAL - FOUNDATION PLAN	33.	MECHANICAL - HEATING AND VENTILATING - GROUND AND OPERATING FLOOR PLANS
14.	STRUCTURAL - MECHANICAL - GROUND FLOOR AND PIPE GALLERY, PLANS AND DETAILS	34.	MECHANICAL - PLUMBING, HEATING AND VENTILATING - STORAGE FLOOR PLAN
15.	STRUCTURAL - MECHANICAL - OPERATING FLOOR PLAN	35.	CONTACT BASINS - PLAN AND DETAILS
16.	STRUCTURAL - MECHANICAL - STORAGE FLOOR PLAN, MISCELLANEOUS DETAILS	36.	CONTACT BASINS - SECTIONS AND DETAILS
17.	STRUCTURAL - MECHANICAL - SECTION 1/17 AND DETAILS	37.	FLASH MIXING BASINS - PLANS, SECTIONS & DETAILS
18.	STRUCTURAL - MECHANICAL - SECTION 2/18 AND DETAILS	38.	RAW WATER CONTROL VAULT - PLANS, SECTIONS AND DETAILS
19.	STRUCTURAL - MECHANICAL - SECTION 3/19 AND DETAILS	39.	RAW WATER PUMPING STATION - RAW WATER FLOW METER VAULT - PLANS, SECTIONS AND DETAILS
20.	STRUCTURAL - MECHANICAL - SECTION 5/20 AND DETAILS		

HENNINGSON, DURHAM & RICHARDSON  
ENGINEERS • PLANNERS • CONSULTANTS  
DENVER

FILED WITH CITY OF GRAND JUNCTION,  
COLORADO - DECEMBER 29, 1967





**NOTE:**  
 ALL ELECTRICAL LINES TO BE PLACED IN ONE TRENCH WITH 3' COVER AND 6" SPACING BETWEEN LINES.  
 TO PUMP STATION  
 5/C NO.10 CONTROLS  
 4/C NO.2/0 & 3/C NO.4 POWER  
 TO TANK VALVE VAULT  
 3/C NO.4 POWER  
 2-3/C NO.10 TELEMETERING (THIS CONTRACT)

**NEW MANTEY HEIGHTS TANK LEVEL TRANSMITTER**  
 SCALE 1" = 40'

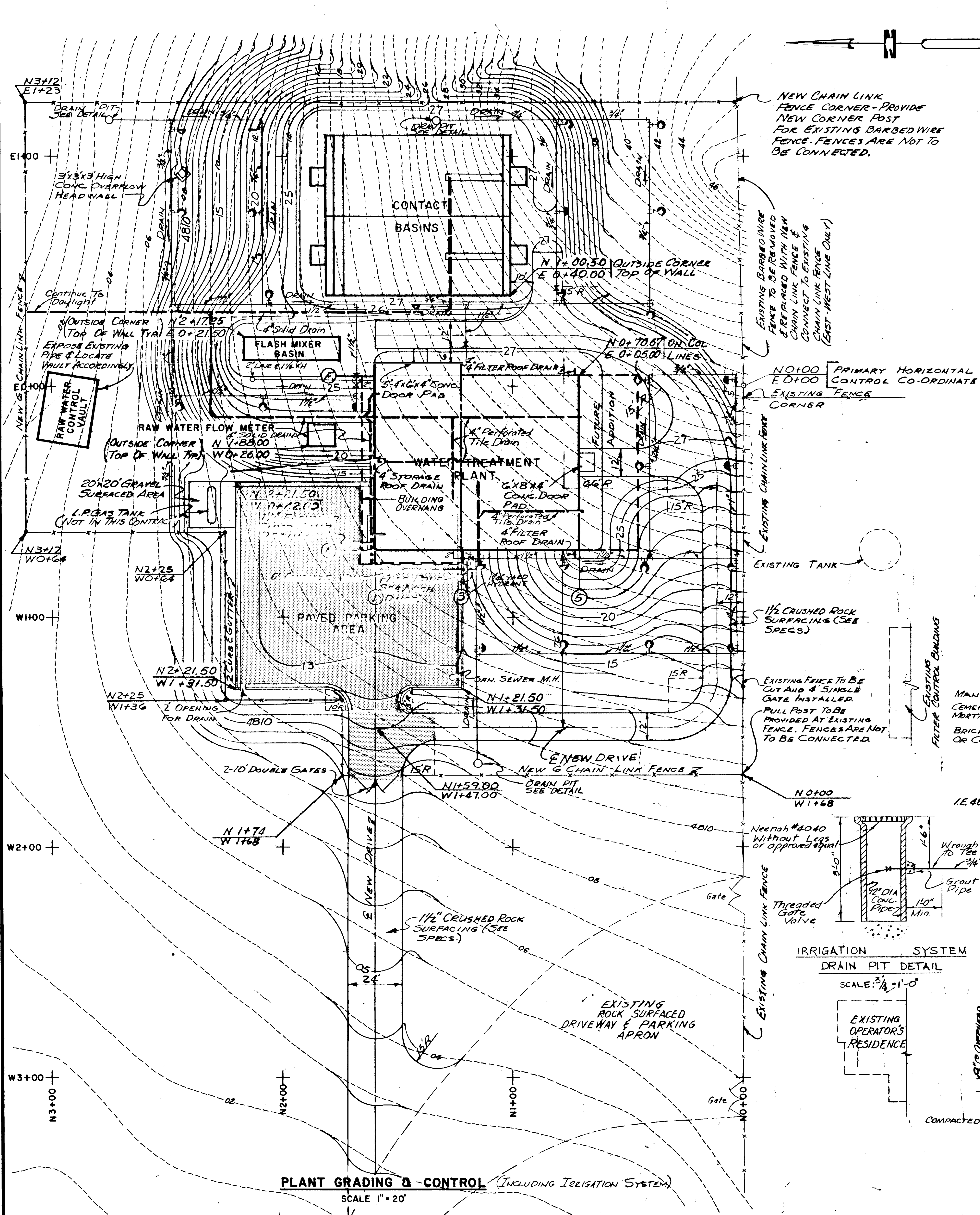
**SITE PLAN**  
 SCALE IN FEET  
 100' 75' 50' 25' 0'

**NOTE:**  
 1. PLANT CONTRACTOR SHALL FURNISH AND INSTALL TELEMETERING AND POWER SUPPLY IN NEW TANK VALVE VAULT.  
 2. FOR ADDITIONAL NEW PLANT YARD PIPING (THIS CONTRACT) SEE SHEET 3

**WATERWORKS IMPROVEMENTS  
 GRAND JUNCTION, COLORADO  
 (CONTRACT - I)  
 WATER TREATMENT PLANT  
 GENERAL  
 LAYOUT & SITE PLAN**

**BRIDGEMAN, DUNHAM & RICHARDSON, INC.**  
 ENGINEERS - PLANNERS - CONSULTANTS  
 DENVER

DATE	DESCRIPTION	MADE	APPROV
12-26-70	As BUILT	A.T.	K.D.H.
73080	REVISIONS	E.F.R.	APPROVED W.L.B.
		M.W.W.	DATE DEC. 1967



**PLANT GRADING & CONTROL (INCLUDING IRRIGATION SYSTEM)**  
SCALE 1" = 20'

NEW CHAIN LINK FENCE  
NEW CORNER - PROVIDE  
NEW CORNER POST  
FOR EXISTING BARBED WIRE  
FENCES ARE NOT TO  
BE CONNECTED.

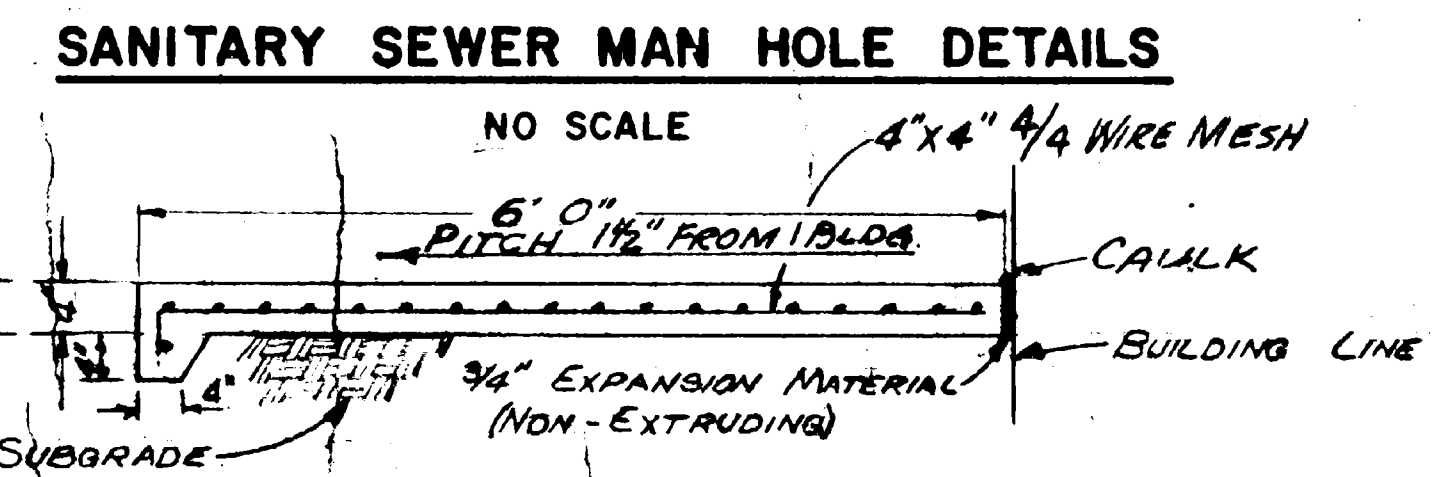
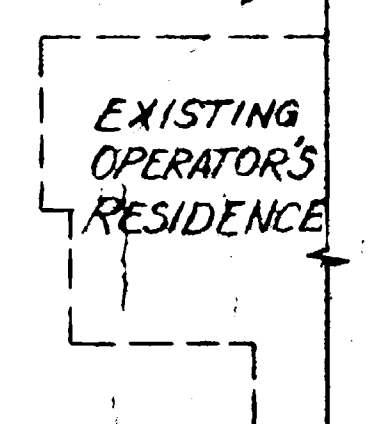
EXISTING BARBED WIRE  
FENCE TO BE REMOVED  
& REPLACED WITH NEW  
CHAIN LINK FENCE &  
CONNECT TO EXISTING  
CHAIN LINK FENCE (EAST - WEST LINE ONLY)

N0+00 PRIMARY HORIZONTAL  
E 0+00  
EXISTING FENCE  
CORNER

EXISTING FENCE TO BE  
CUT AND 4" SINGLE  
GATE INSTALLED.  
PULL POST TO BE  
PROVIDED AT EXISTING  
FENCE. FENCES ARE NOT  
TO BE CONNECTED.

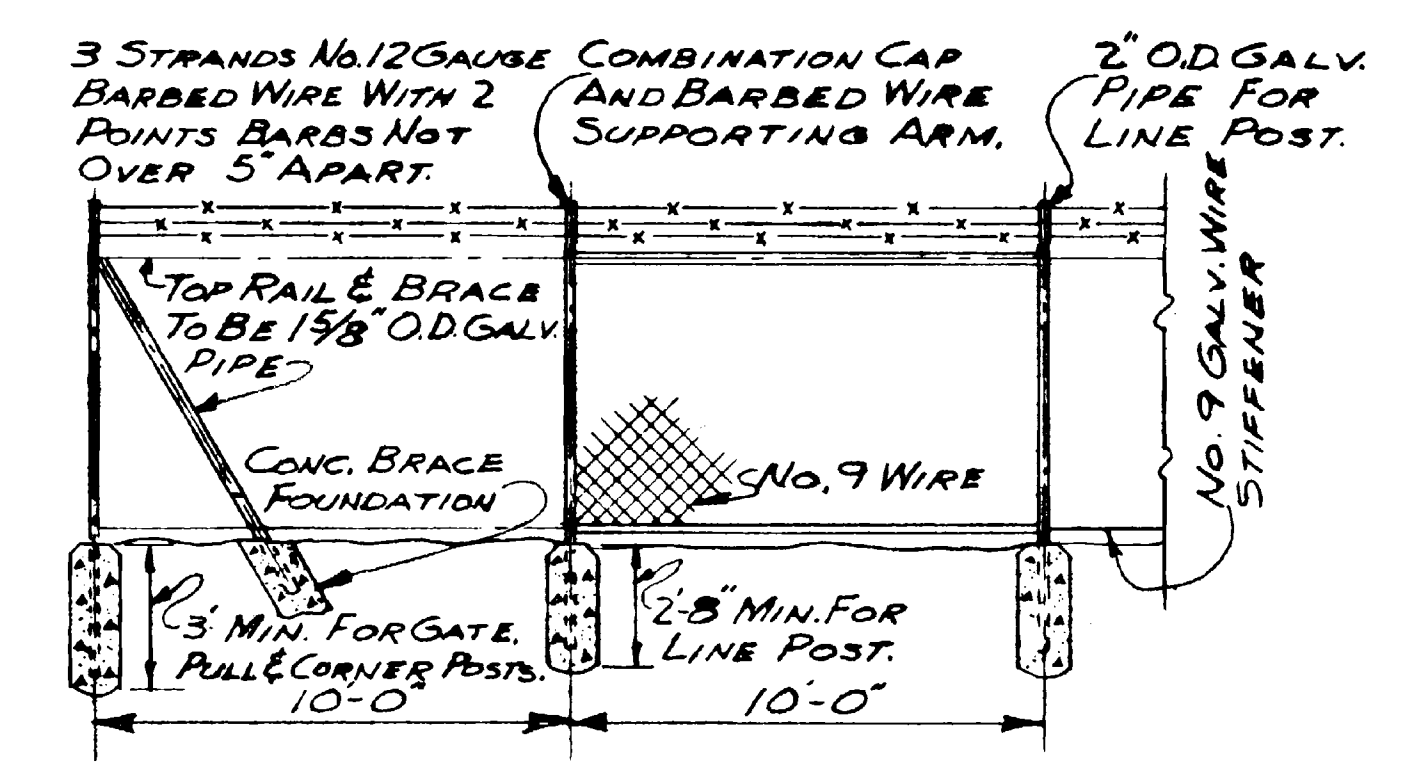
Neenah #4040  
Without Legs  
or approved equal

**IRRIGATION SYSTEM  
DRAIN PIT DETAIL**  
SCALE: 3/4" = 1'-0"

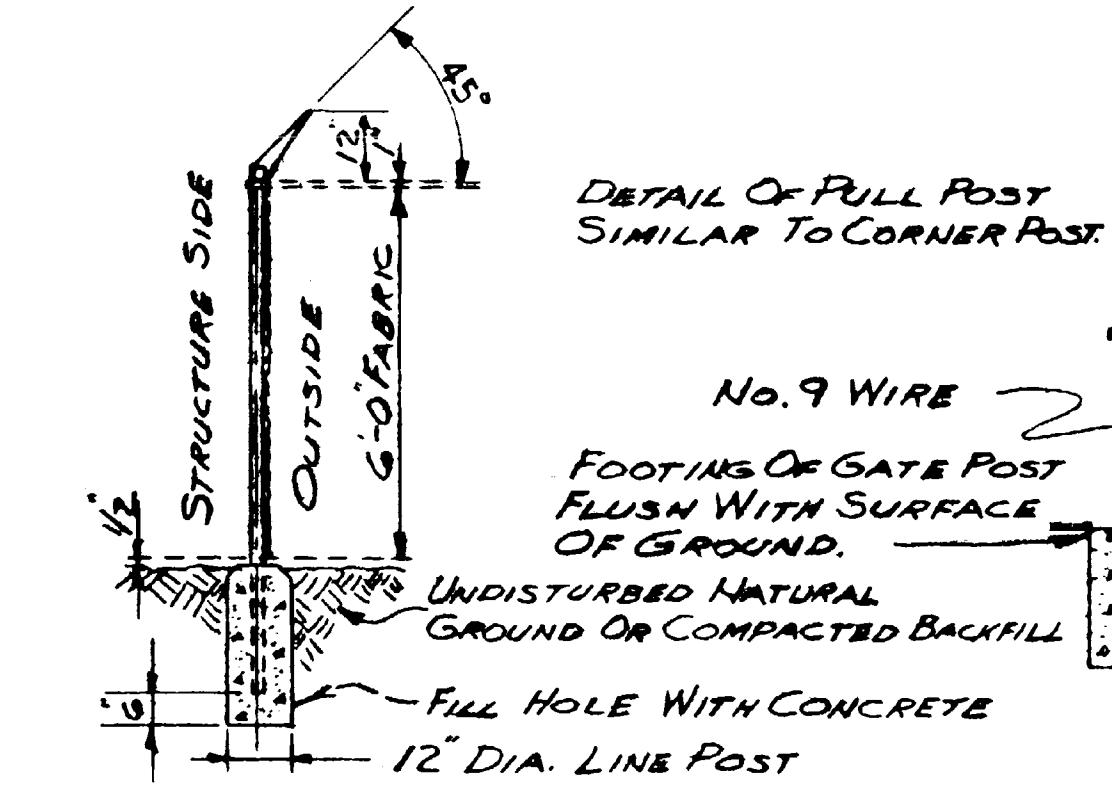


**SIDWALK DETAIL**  
SCALE 3/4" = 1'-0"

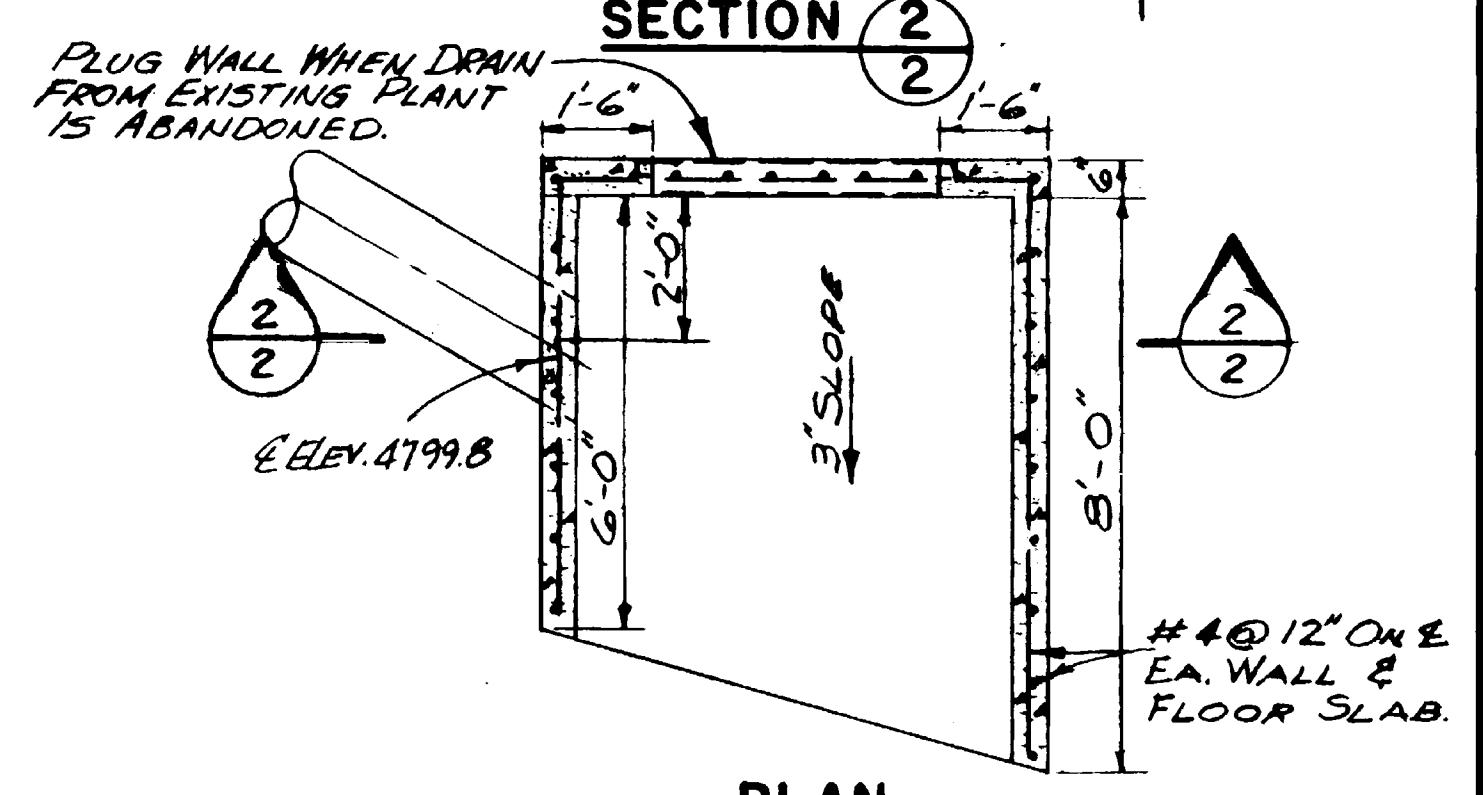
**MISCELLANEOUS  
SITE DETAILS**



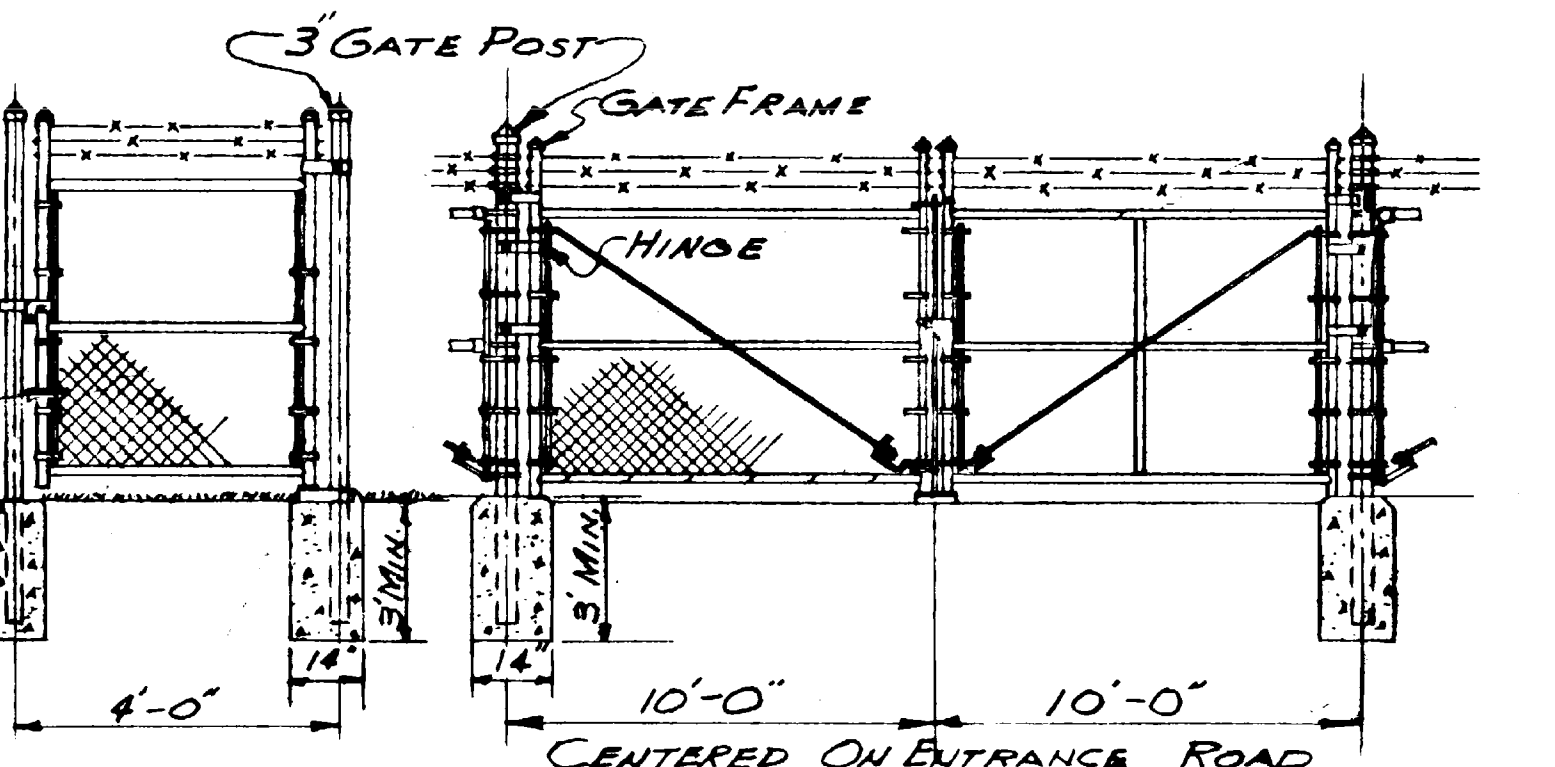
**PLAIN PANELS**



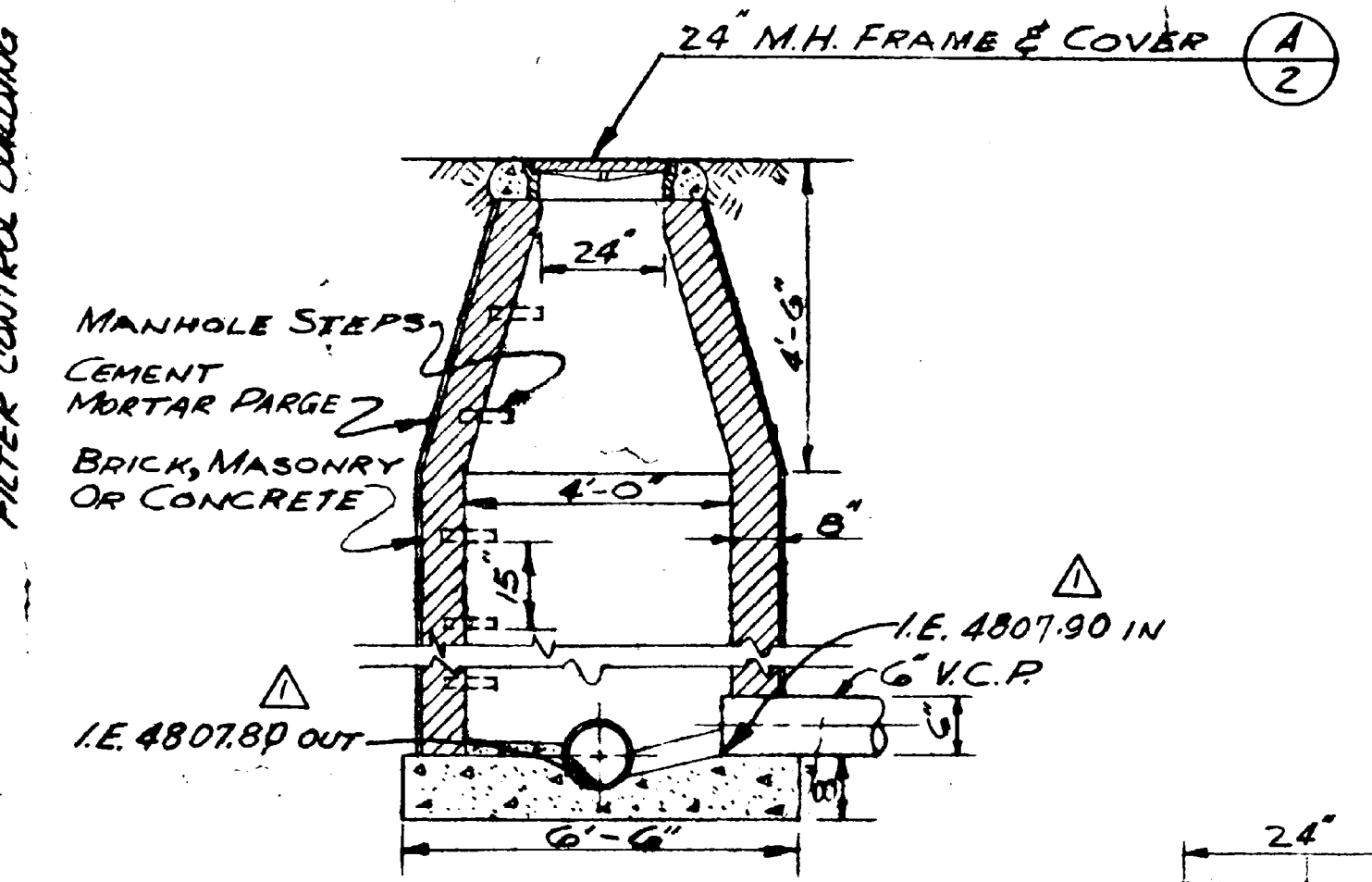
**TYPICAL SECTION**



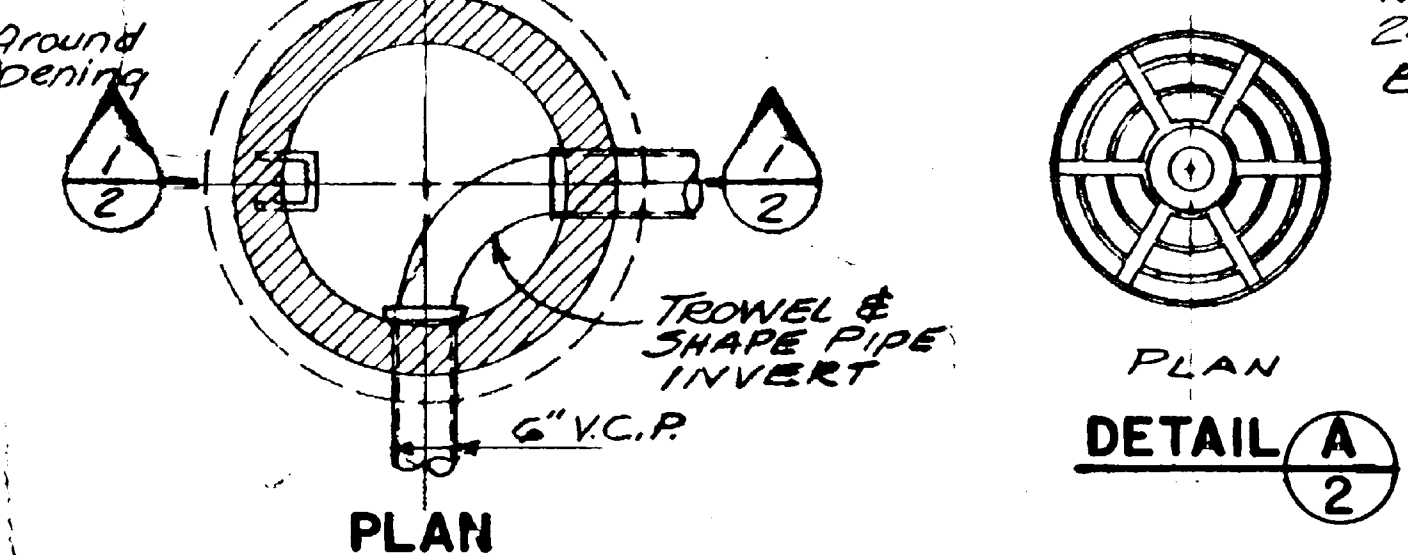
**CONCRETE SPLASH BOX DETAIL**  
SCALE 3/8" = 1'-0"



**CHAIN LINK FENCE & GATE DETAILS**  
NO SCALE

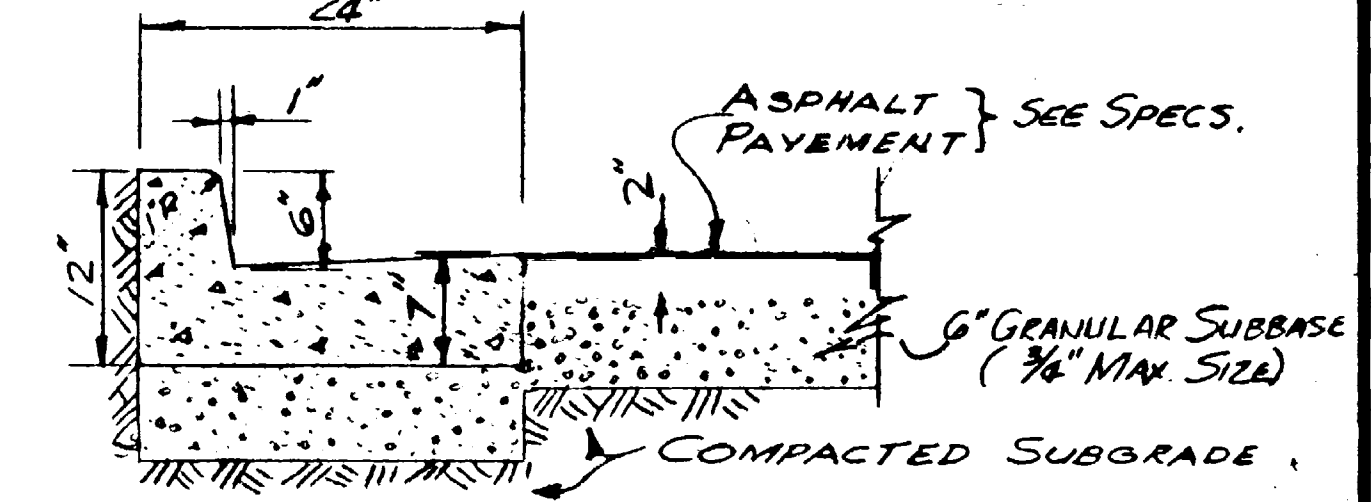


**SECTION 1**



**SECTION**

**PLAN  
DETAIL A**



**CURB & GUTTER & PAVEMENT DETAIL**  
SCALE 1" = 1'-0"

**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
(CONTRACT - I)  
WATER TREATMENT PLANT  
GENERAL  
**PLANT GRADING & CONTROL**  
**MISCELLANEOUS SITE DETAILS**

FRANKSON, DURHAM & RICHARDSON, INC.  
ENGINEERS - PLANNERS - CONSULTANTS  
DENVER, COLORADO

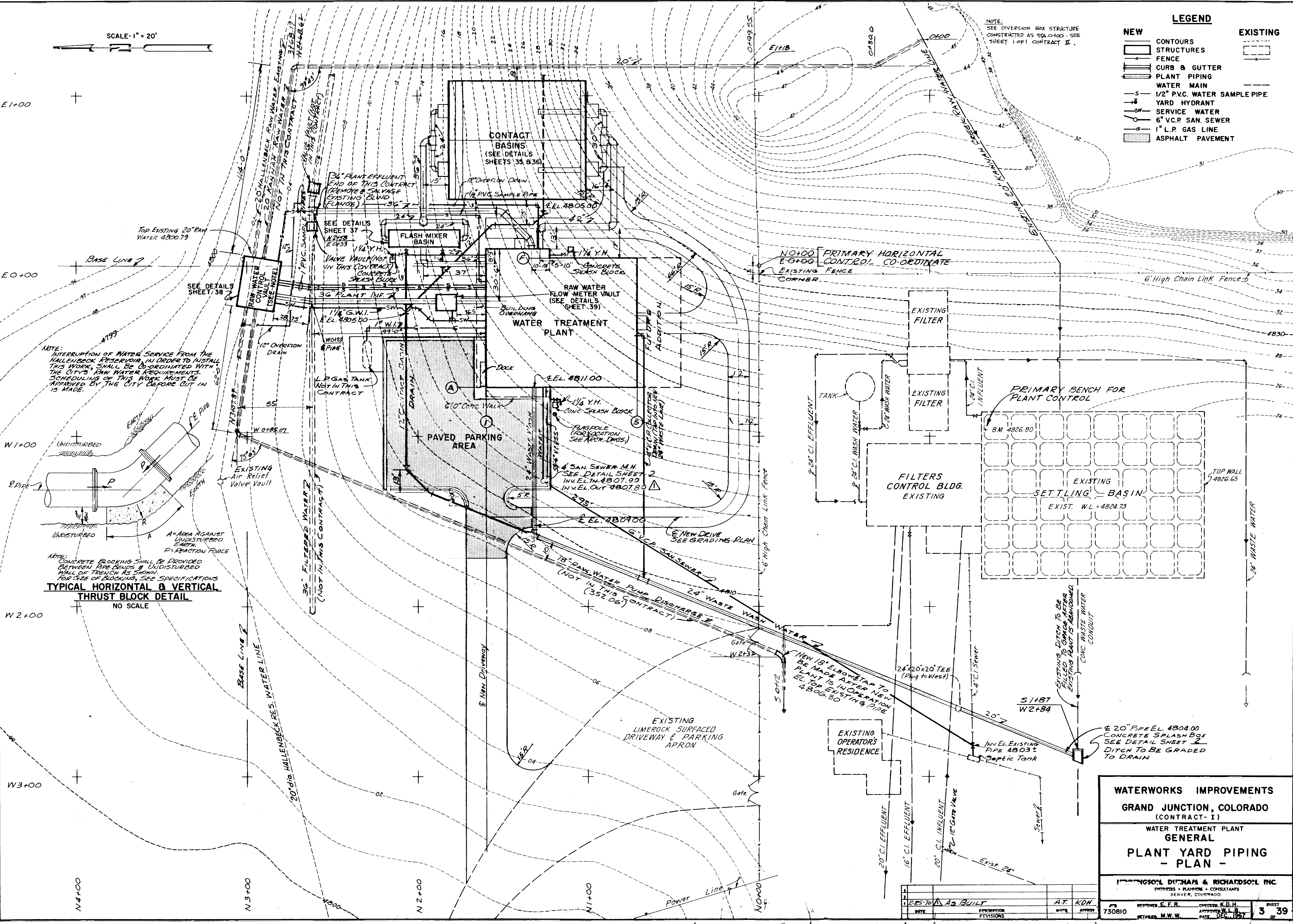
DATE	DESCRIPTION	MADE	APPROV	DATE	BY
12-25-70	AS-BUILT	EAB	KDH	DEC. 1967	2
					39

SCALE: 1" = 20'

LEGEND

- |            |                               |
|------------|-------------------------------|
| <b>NEW</b> | <b>EXISTING</b>               |
|            |                               |
| CONTOURS   | STRUCTURES                    |
|            | FENCE                         |
|            | CURB & GUTTER                 |
|            | PLANT PIPING                  |
|            | WATER MAIN                    |
|            | 1/2" P.V.C. WATER SAMPLE PIPE |
|            | YARD HYDRANT                  |
|            | SERVICE WATER                 |
|            | 6" V.C.P. SAN. SEWER          |
|            | 1" L.P. GAS LINE              |
|            | ASPHALT PAVEMENT              |

NOTE: SEE DIVERSION BOX STRUCTURE CONSTRUCTED AS STA. 0+00 - SEE SHEET 1 OF 1 CONTRACT II.



NOTE: INTERRUPTION OF WATER SERVICE FROM THE HALLENBECK RESERVOIR, IN ORDER TO INSTALL THIS WORK, SHALL BE CO-ORDINATED WITH THE CITY'S RAW WATER REQUIREMENTS. SCHEDULING OF THIS WORK MUST BE APPROVED BY THE CITY BEFORE CUT IN IS MADE.

NOTE: CONCRETE BLOCKING SHALL BE PROVIDED BETWEEN PIPE BENDS & UNDISTURBED WALL OF TRENCH AS SHOWN. FOR SIZE OF BLOCKING, SEE SPECIFICATIONS

**TYPICAL HORIZONTAL & VERTICAL THRUST BLOCK DETAIL**  
NO SCALE

**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
(CONTRACT - I)

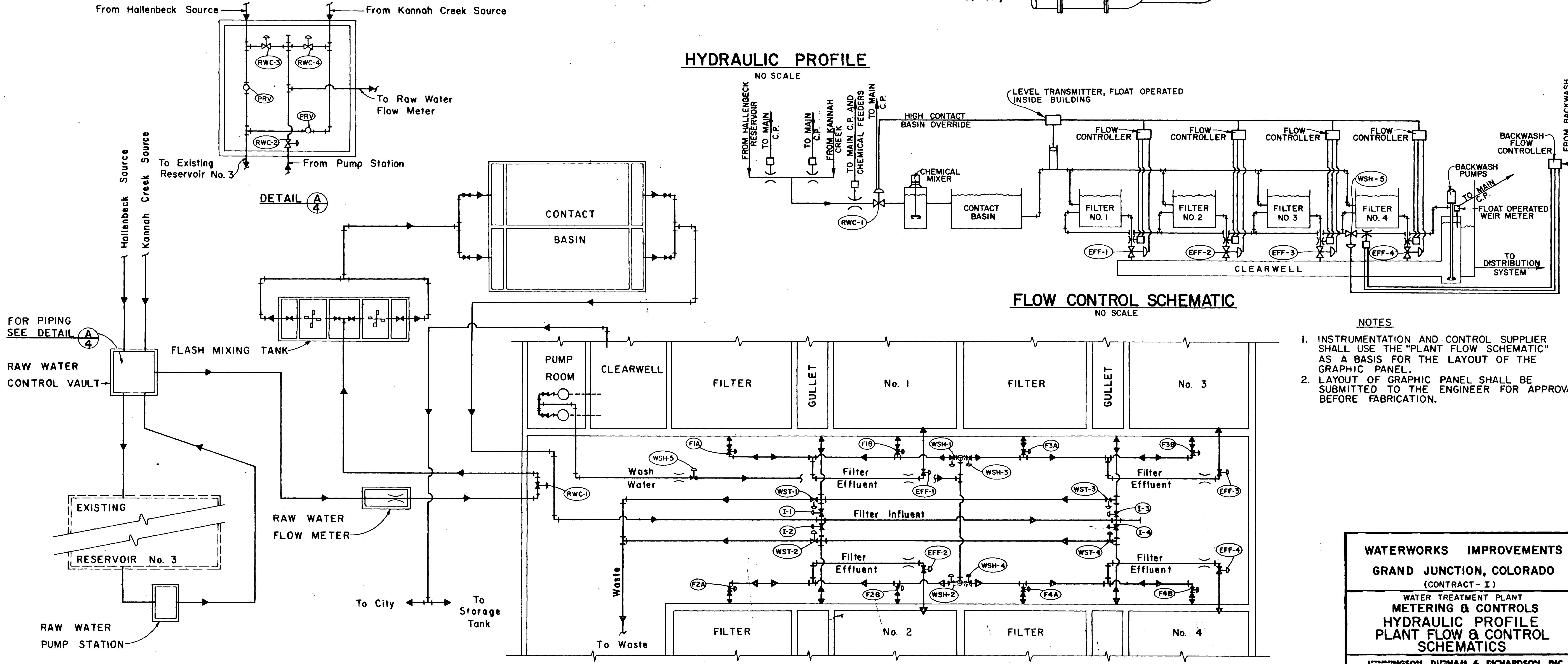
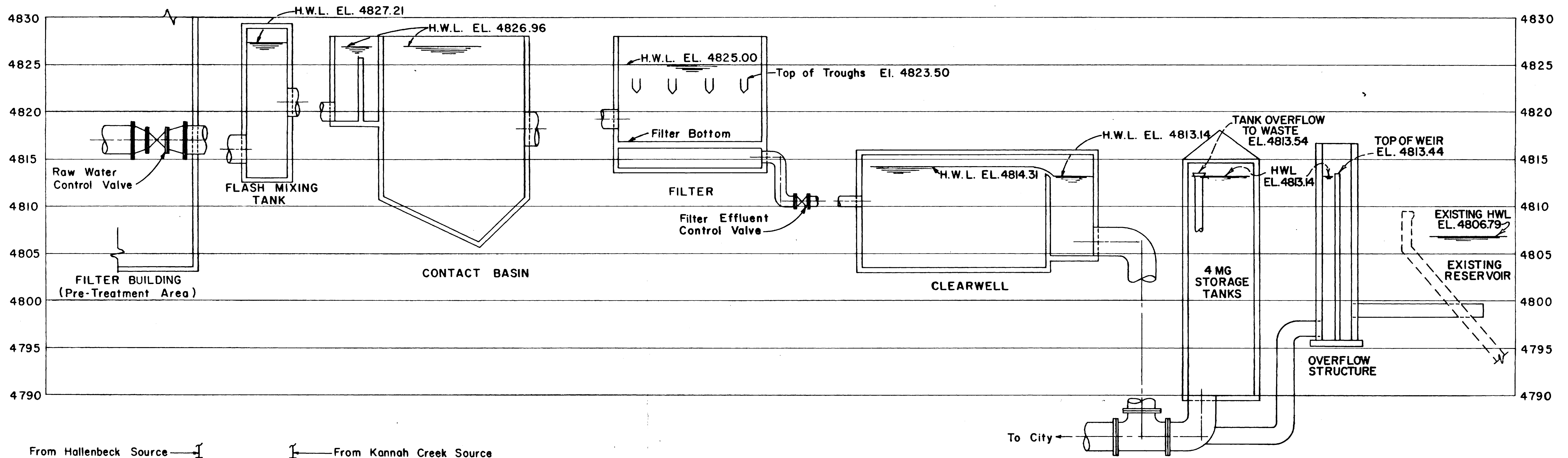
WATER TREATMENT PLANT  
**GENERAL**  
**PLANT YARD PIPING**  
**- PLAN -**

FRANKSON, DUTHAM & RICHARDSON, INC.  
ENGINEERS - PLANNERS - CONSULTANTS  
DENVER, COLORADO

DESIGNED: E.F.R. CHECKED: K.D.H.  
DATE: 7/30/80 APPROVED: W.L.B. DATE: DEC. 1987

DATE	DESCRIPTION	DATE	APPROVAL
7/30/80	AS BUILT		A.F. KDN

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**HYDRAULIC PROFILE**

**FLOW CONTROL SCHEMATIC**

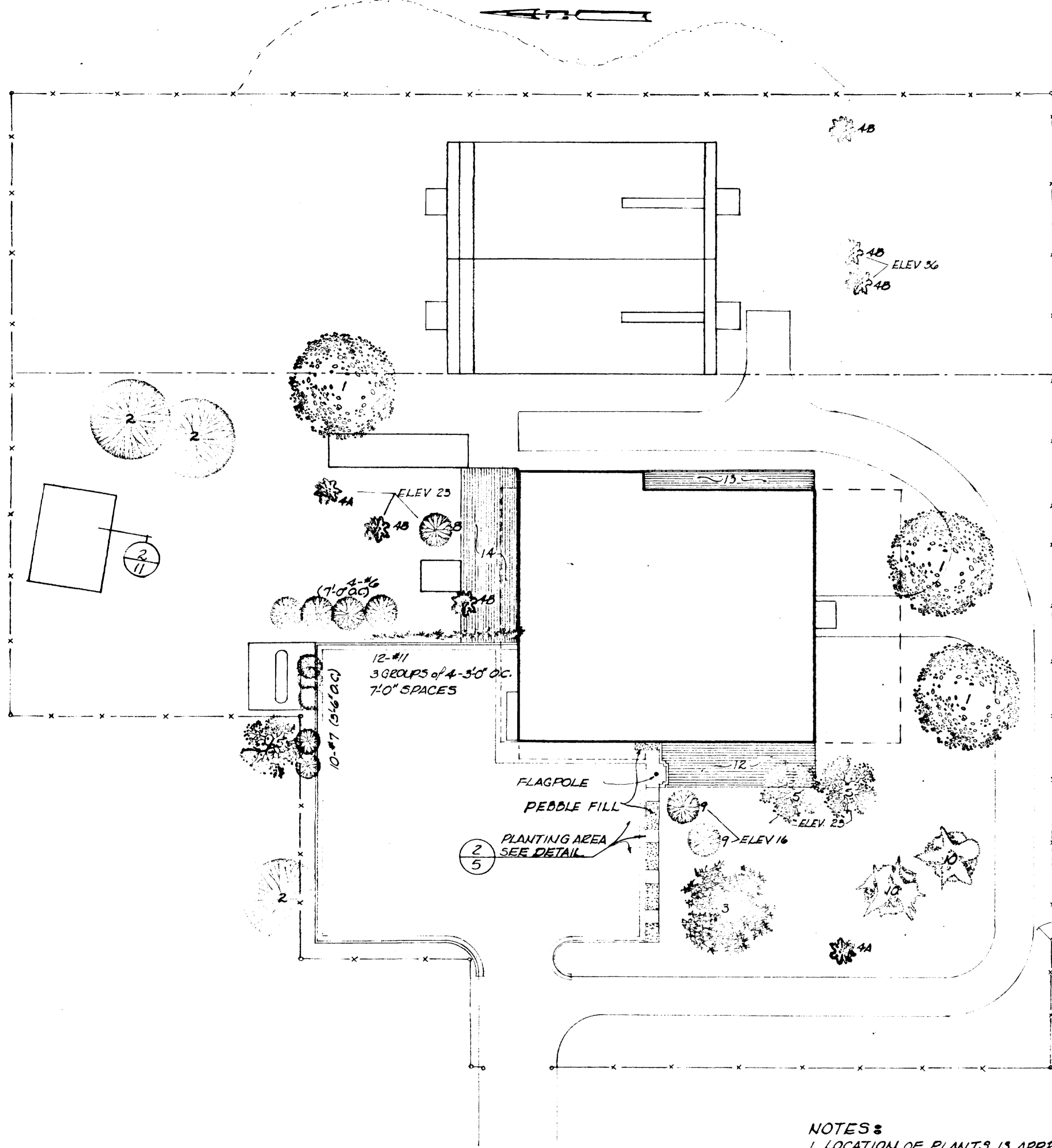
- NOTES**
1. INSTRUMENTATION AND CONTROL SUPPLIER SHALL USE THE "PLANT FLOW SCHEMATIC" AS A BASIS FOR THE LAYOUT OF THE GRAPHIC PANEL.
  2. LAYOUT OF GRAPHIC PANEL SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE FABRICATION.

**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
 (CONTRACT - I)  
**WATER TREATMENT PLANT**  
**METERING & CONTROLS**  
**HYDRAULIC PROFILE**  
**PLANT FLOW & CONTROL**  
**SCHEMATICS**

INGOSON, DURNAM & RICHARDSON, INC.  
 ENGINEERS - PLANNERS - CONSULTANTS  
 DENVER, COLORADO

DATE: 12/25/70 AS BUILT  
 MADE: A.T. K.D.H.  
 APPROVED: W.L.B.  
 730810 DESIGNED: E.F.R. CHECKED: K.D.H.  
 DRAWN: J.A.-D.A.S. DATE: DEC. 1967

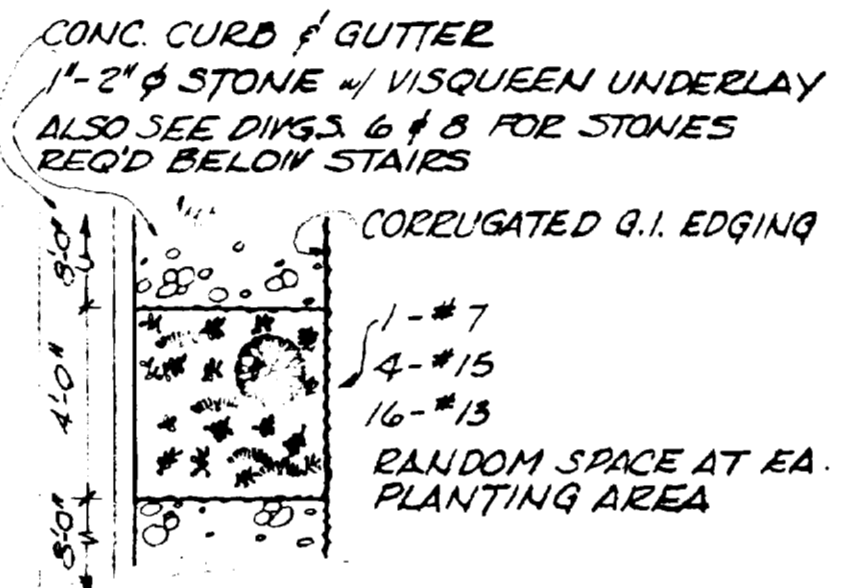
4 of 39



**LANDSCAPING PLAN**  
SCALE: 1" = 20'

ALL AREAS WITHIN FENCE-LINE AND ANY OTHER AREA WHERE NATURAL GROUND COVER IS DISTURBED LYING EAST OF THIS LINE SHALL BE SEED TO BUFFALO GRASS

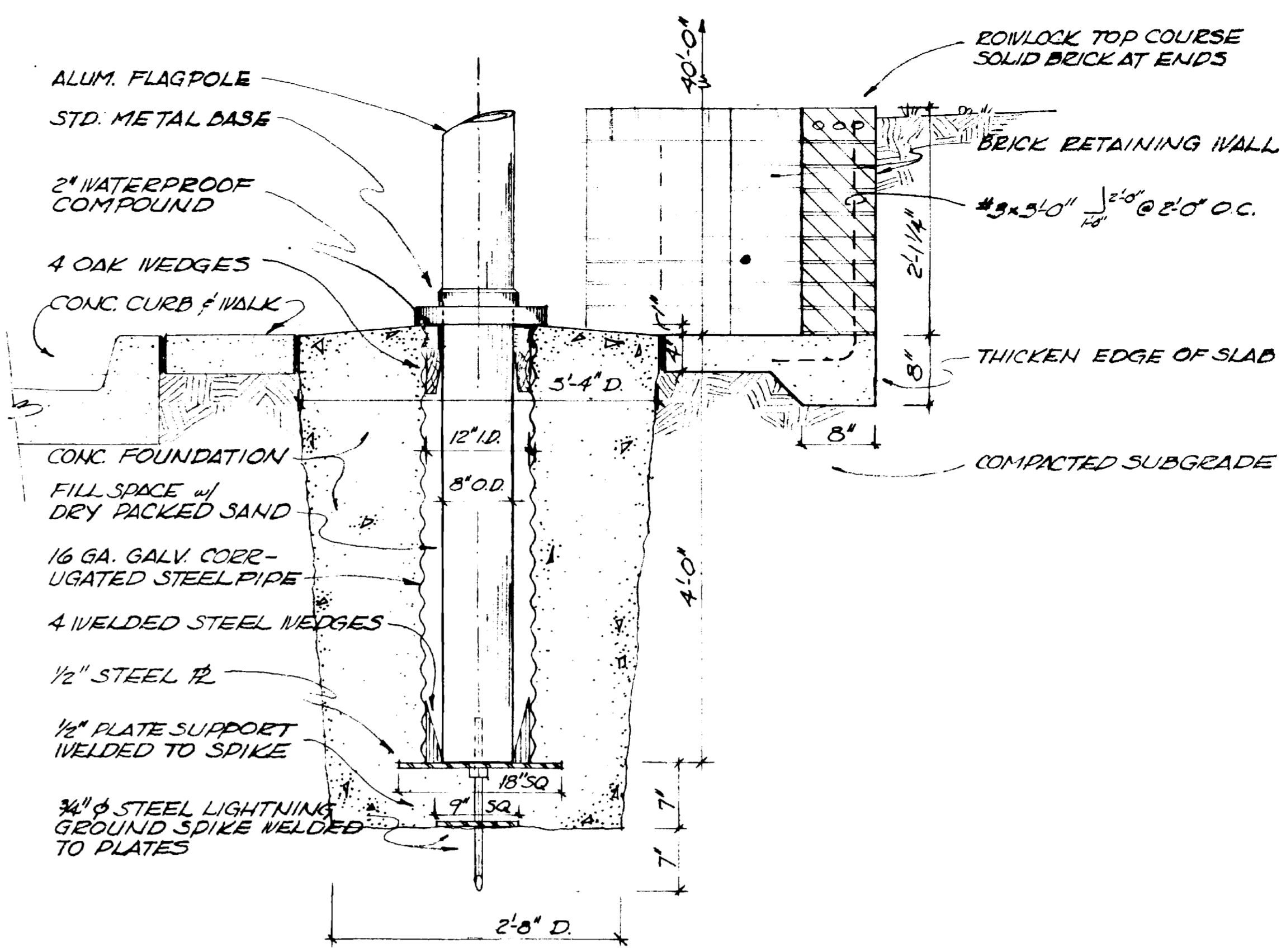
ALL AREAS WITHIN FENCE-LINE AND ANY OTHER AREA WHERE NATURAL GROUND COVER IS DISTURBED LYING WEST OF THIS LINE SHALL BE SEED TO KENTUCKY BLUEGRASS



**PLANTING AREA DETAIL** 2/5  
NO SCALE

- NOTES:**
1. LOCATION OF PLANTS IS APPROXIMATE - VERIFY BEFORE EXCAVATING.
  2. PLANTS SHALL BE SET AT A COMMON ELEVATION WHERE SO SHOWN
  3. DELINEATION OF MATERIAL DOES NOT NECESSARILY INDICATE SIZE, SHAPE, OR SPECIES

- LEGEND**
- PEBBLE FILL AREA
  - GROUND COVER PLANTING AREA



**FLAGPOLE FOUNDATION AND RETAINING WALL SECTION** 1/5  
SCALE: 1" = 1'-0"

**SECTION AND DETAIL SYMBOLS**

- INDICATES SECTION NUMBER OR LETTER
- INDICATES SHEET ON WHICH SECTION IS DRAWN
- INDICATES DETAIL LETTER OR NUMBER
- INDICATES SHEET ON WHICH DETAIL IS DRAWN

KEY	QUANTITY	COMMON NAME	BOTANICAL OR PATENT NAME	SIZE
1	3	LINDEN, REDMOND	<i>Tilia americana, sp.</i>	1 1/2-1 3/4" CAL., CONT.
2	3	HONEYLOCUST	<i>Shademoor Pst. 1515</i>	1 1/4-1 1/2" CAL., CONT.
3	1	PIN OAK	<i>Quercus palustris</i>	2 1/2-3" CAL., B. & B.
4A 4B	2 3	PIÑON PINE	<i>Pinus edulis</i>	7 1/2-8", B. & B. 3 1/2-4"
5	3	RUSSIAN OLIVE	<i>Elaeagnus angustifolia</i>	3'-4", B.R.
6	4	STAGHOEN SUMAC	<i>Rhus typhina</i>	2'-3", B.R.
7	15	SKUNKBUSH SUMAC	<i>Rhus trilobata</i>	2 ft., B.R.
8	1	DOLGO CRABAPPLE	<i>Malus dolga</i>	4'-6", CONT.
9	2	ELEY CRABAPPLE	<i>Malus purpurea</i>	4'-6", CONT.
10	2	PONDEROSA PINE	<i>Pinus ponderosa</i>	4'-4 1/2", B. & B.
11	12	FIRETHORN	<i>Pyracantha coccinea blanda</i>	2'-3", CONT.
12	80	ST. PAUL VIRGINIA CREEPER	<i>Parthenocissus saintpauli</i>	2 yr., B.R.
13	200	PERIWINKLE (MYETLE)	<i>Vinca minor</i>	CLUMP
14	300	CREEPING HOLLY-LEAF	<i>Mahonia repens</i>	5", CONT.
15	20	SILVERMOUND SAGE	<i>Artemisia -</i>	5", CLUMP

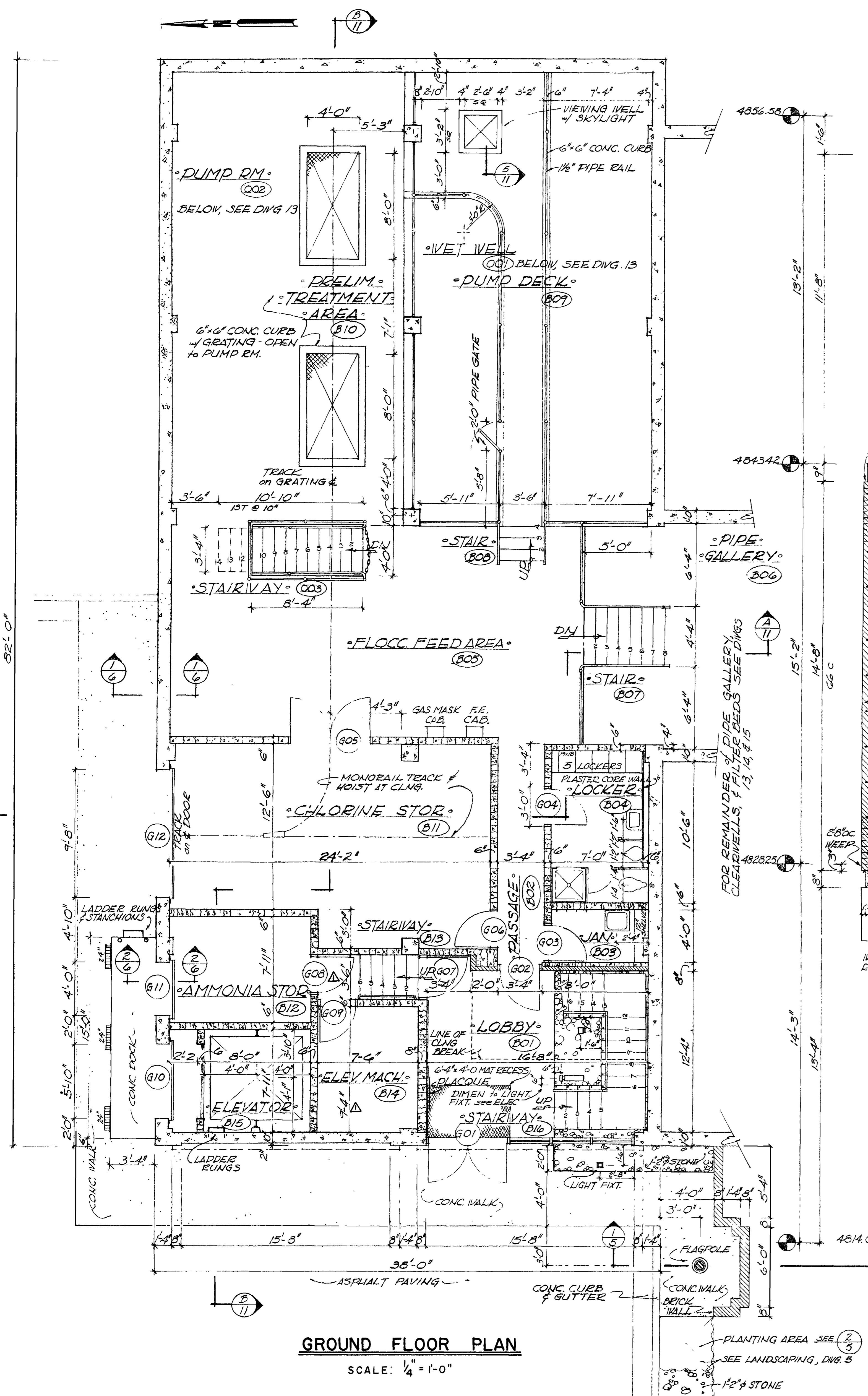
**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
(CONTRACT - I)  
WATER TREATMENT PLANT  
ARCHITECTURAL  
**LANDSCAPING PLAN**

**J. B. HARRINGTONSON, DURHAM & RICHARDSON, INC.**  
ENGINEERS - PLANNERS - CONSULTANTS  
DENVER, COLORADO

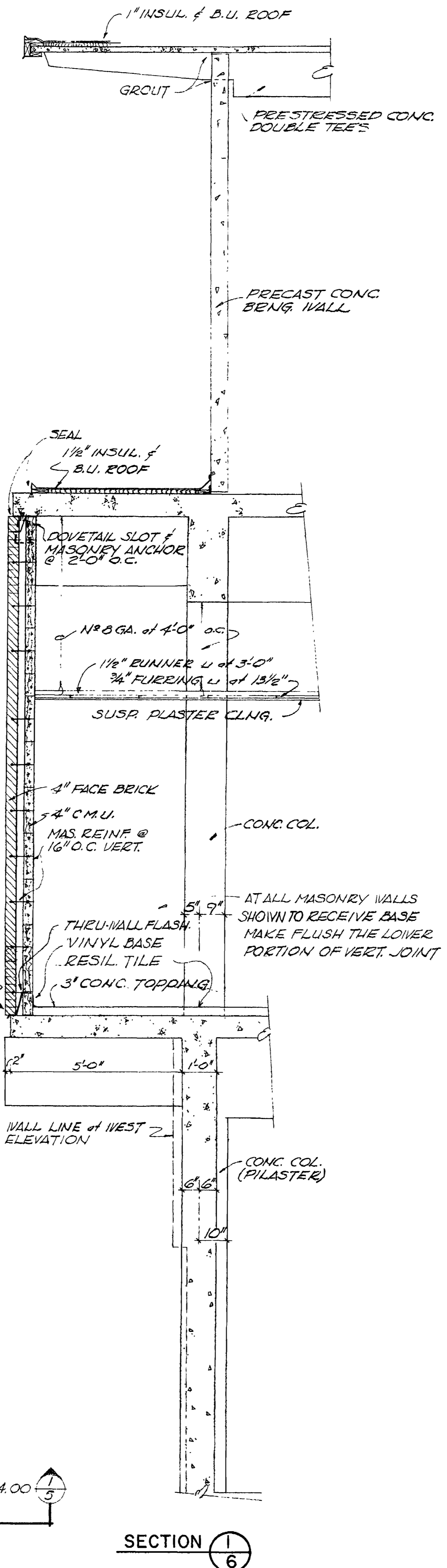
NO.	DATE	DESCRIPTION	MADE	APPROV.
1	12-25-70	AS BUILT	A.T.	K.D.H.

JOB NO. 730810  
DESIGNED BY J.B.  
CHECKED BY K.D.H.  
APPROVED BY W.L.B.  
DATE DEC. 1967

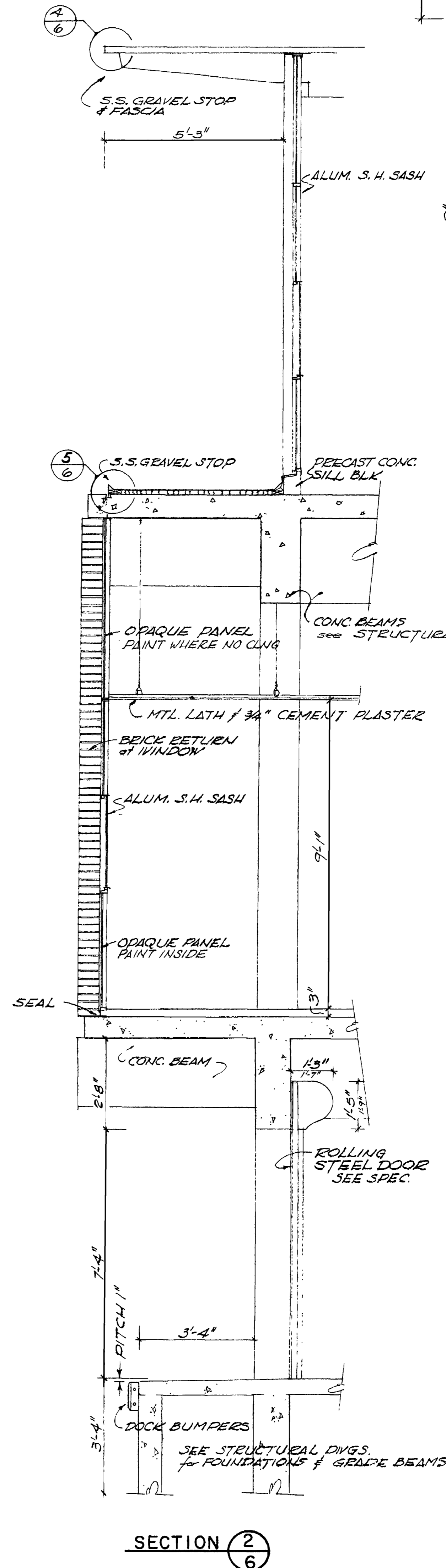




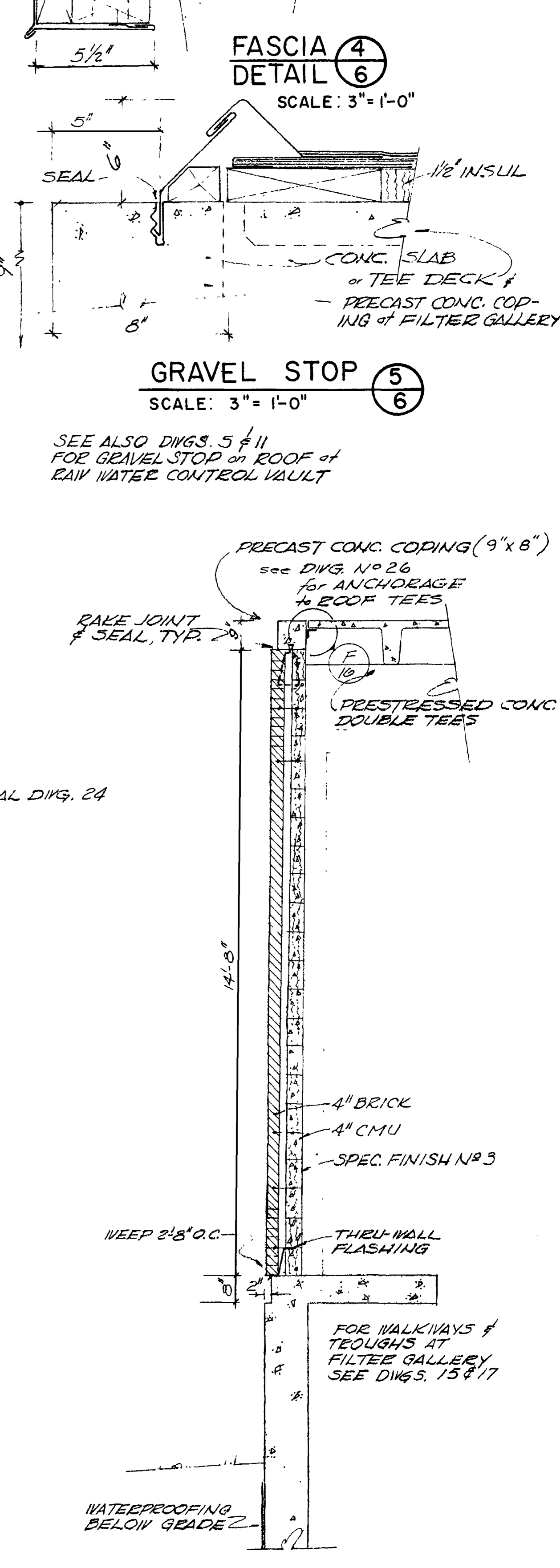
**GROUND FLOOR PLAN**  
SCALE: 1/4" = 1'-0"



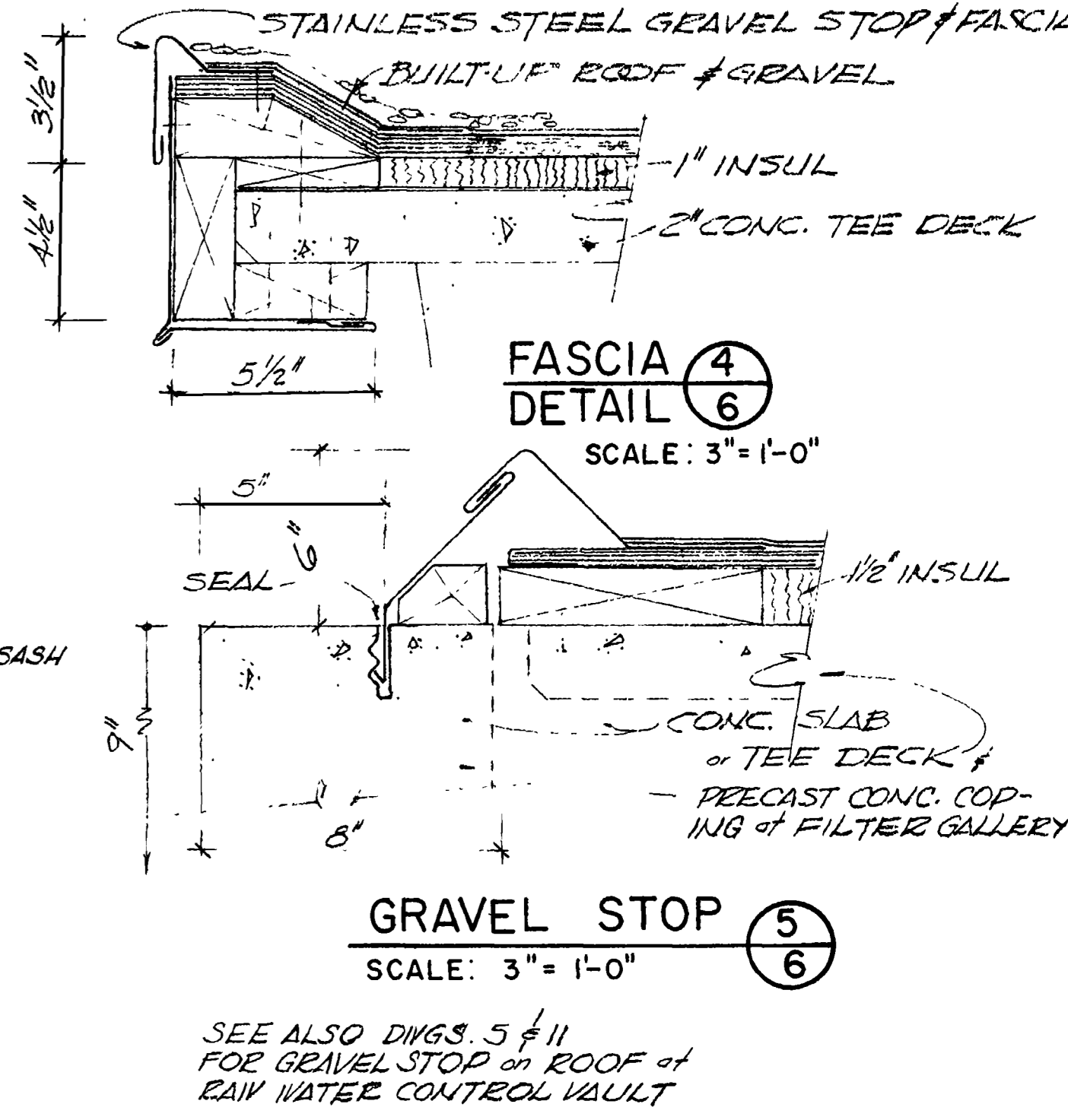
**SECTION 1**  
SCALE: 1/2" = 1'-0"



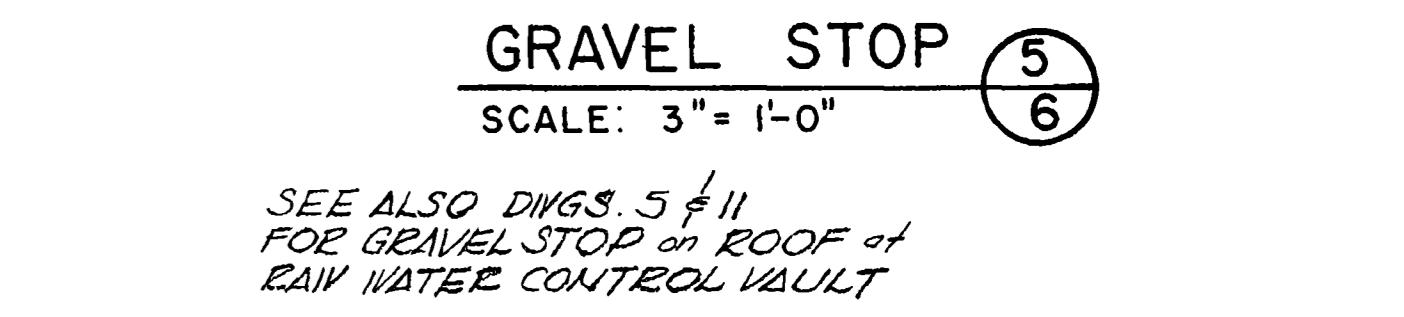
**SECTION 2**  
SCALE: 1/2" = 1'-0"



**SECTION 3**  
SCALE: 1/2" = 1'-0"



**FASCIA DETAIL 4**  
SCALE: 3" = 1'-0"



**GRAVEL STOP 5**  
SCALE: 3" = 1'-0"

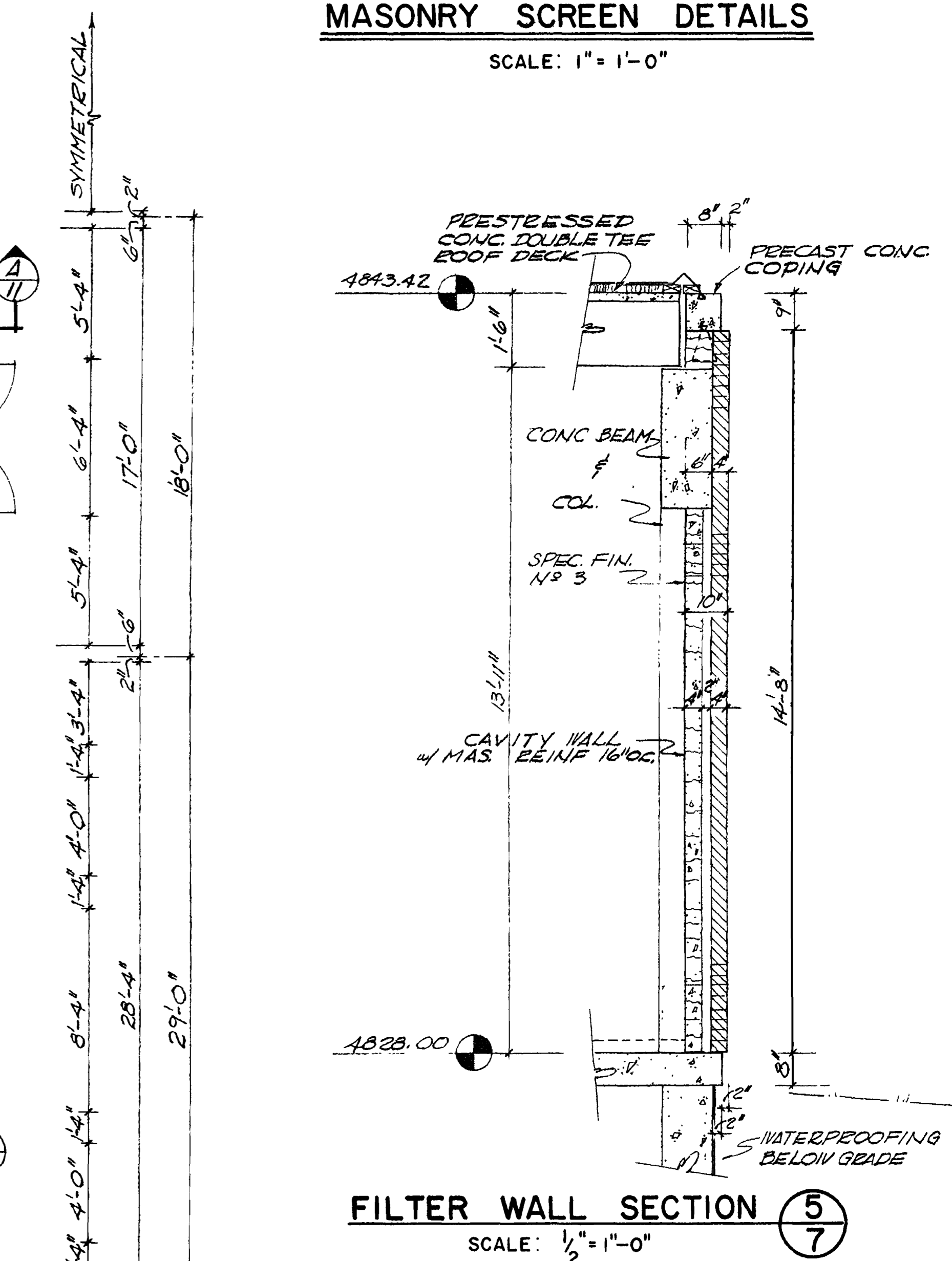
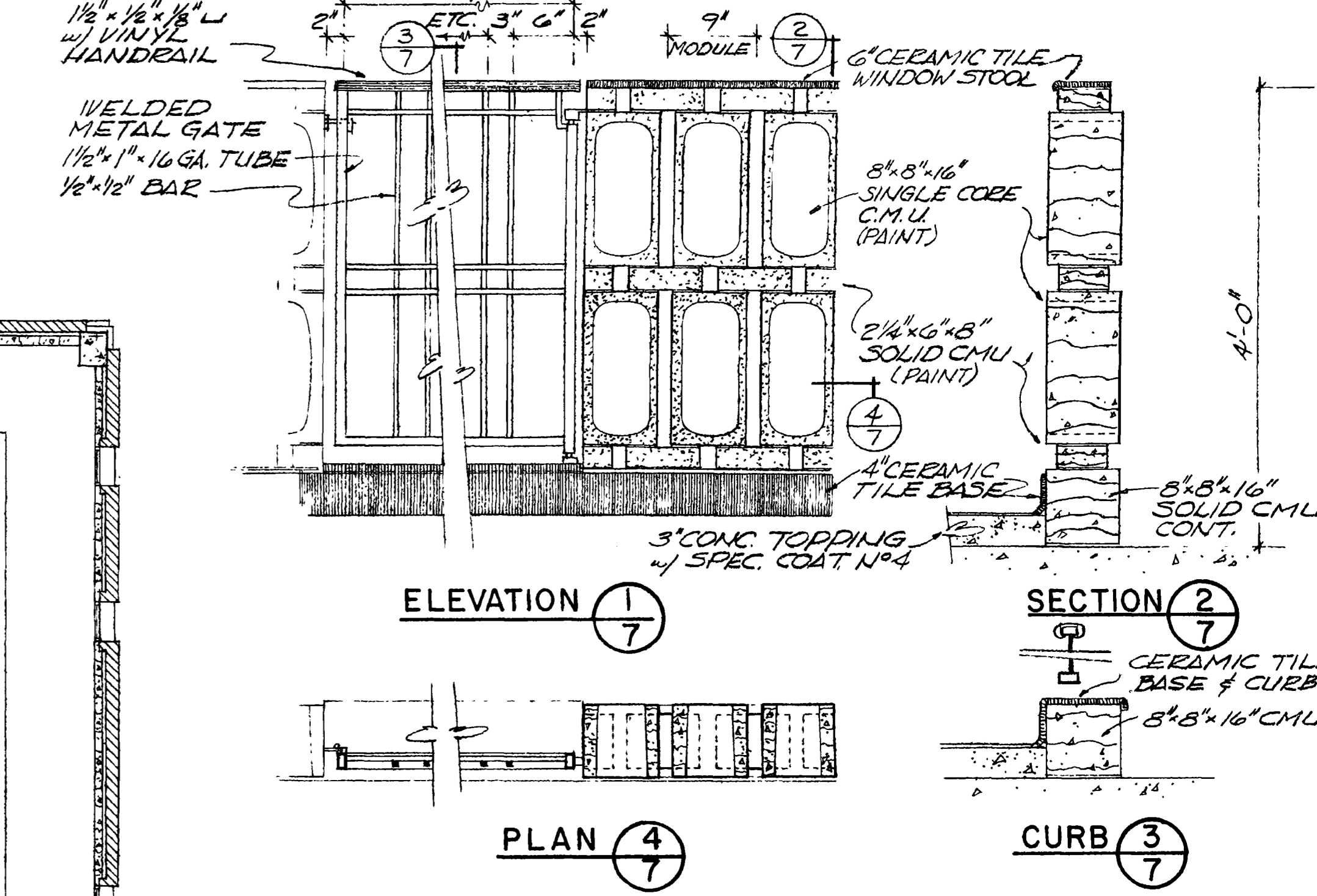
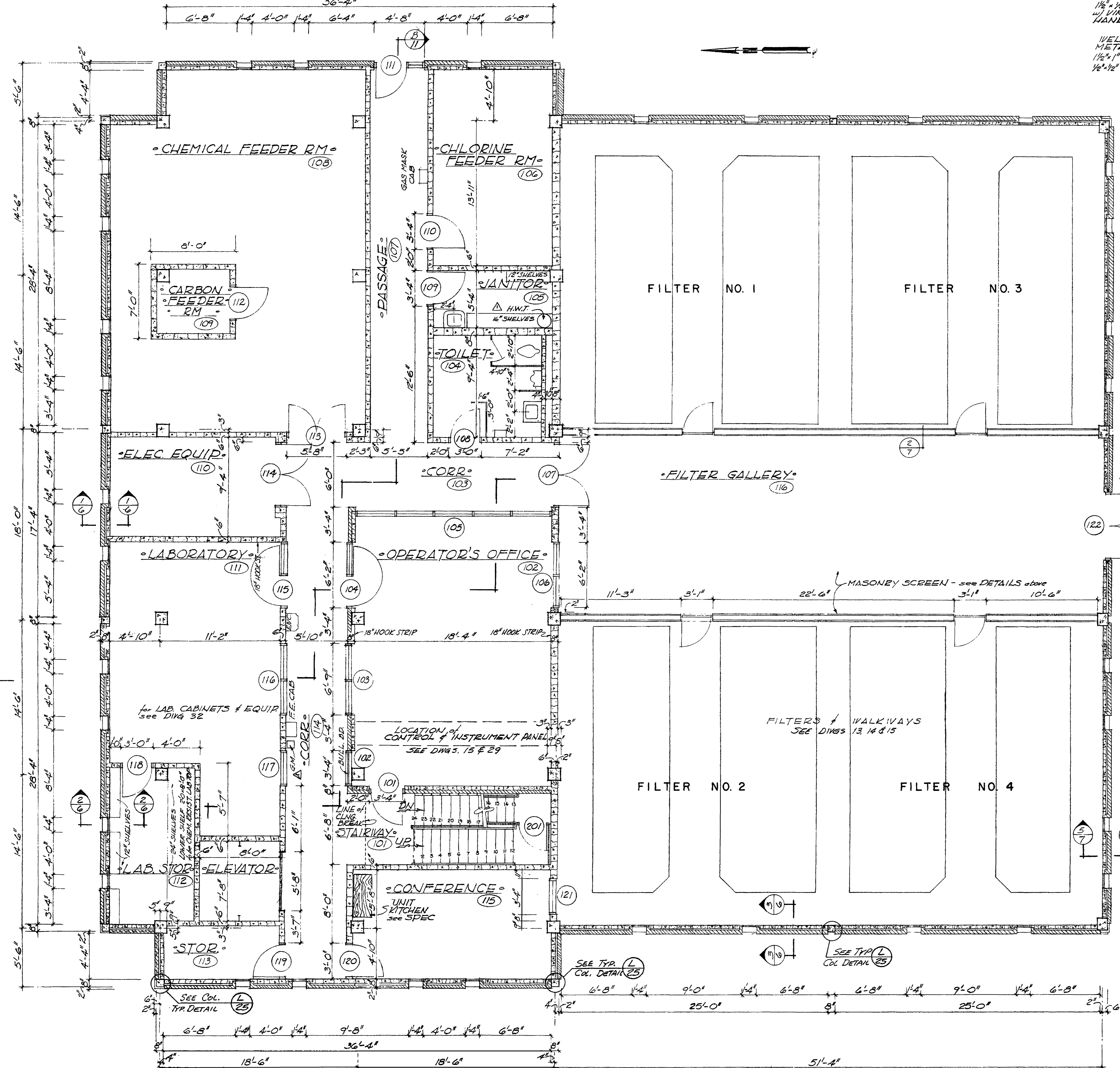
SEE ALSO DWGS. 5 & 11 FOR GRAVEL STOP ON ROOF OF RAIN WATER CONTROL VAULT

**WALL SECTIONS**  
SCALE: 1/2" = 1'-0"

**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
(CONTRACT - I)  
WATER TREATMENT PLANT  
**ARCHITECTURAL**  
**GROUND FLOOR PLAN AND**  
**WALL SECTIONS**

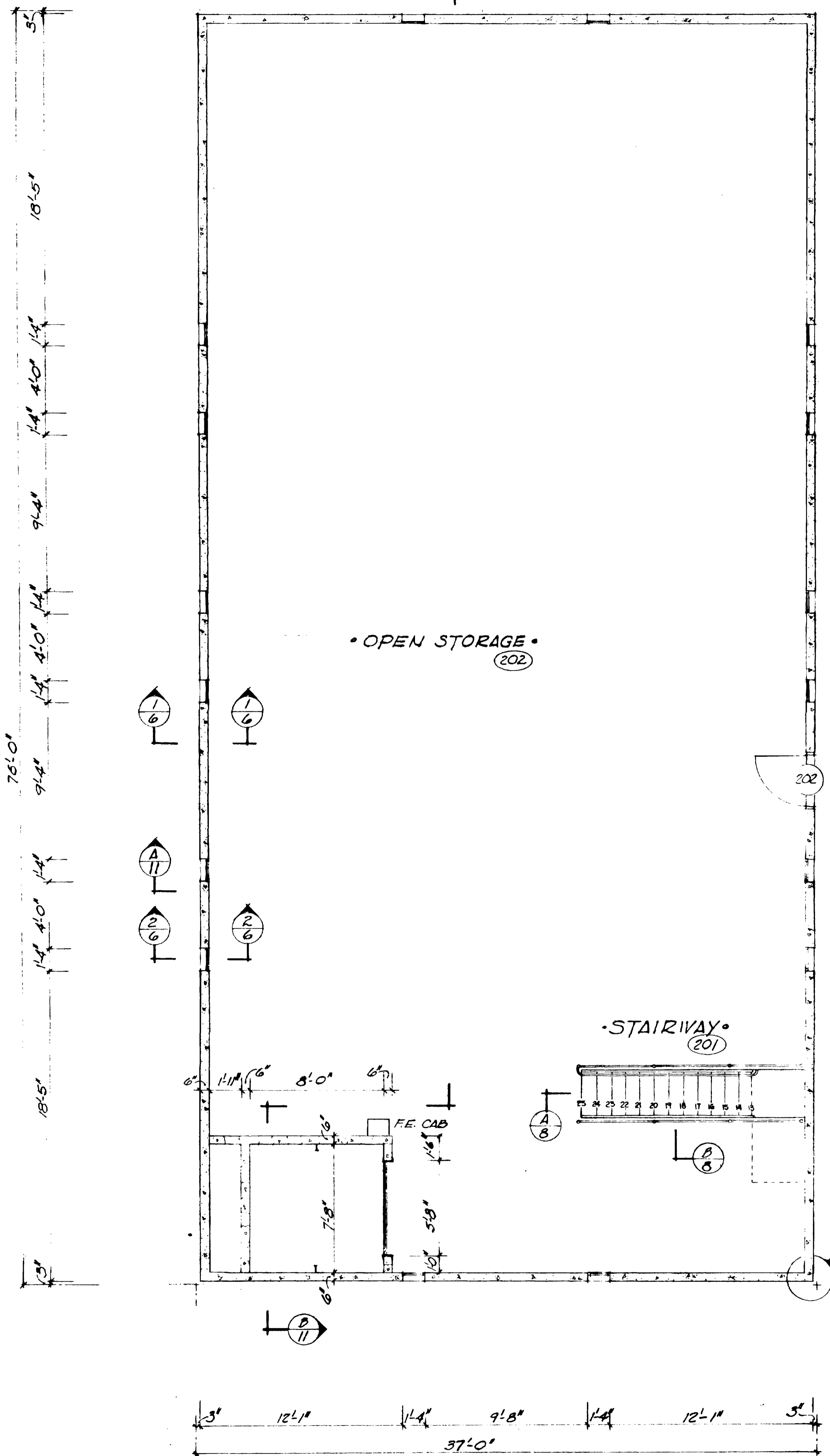
**HENNINGSON, DURHAM & RICHARDSON, INC.**  
ENGINEERS • PLANNERS • CONSULTANTS  
DENVER, COLORADO

DATE	DESCRIPTION	MADE	APPROV
12-25-70	AS BUILT	A.T.	K.D.H.

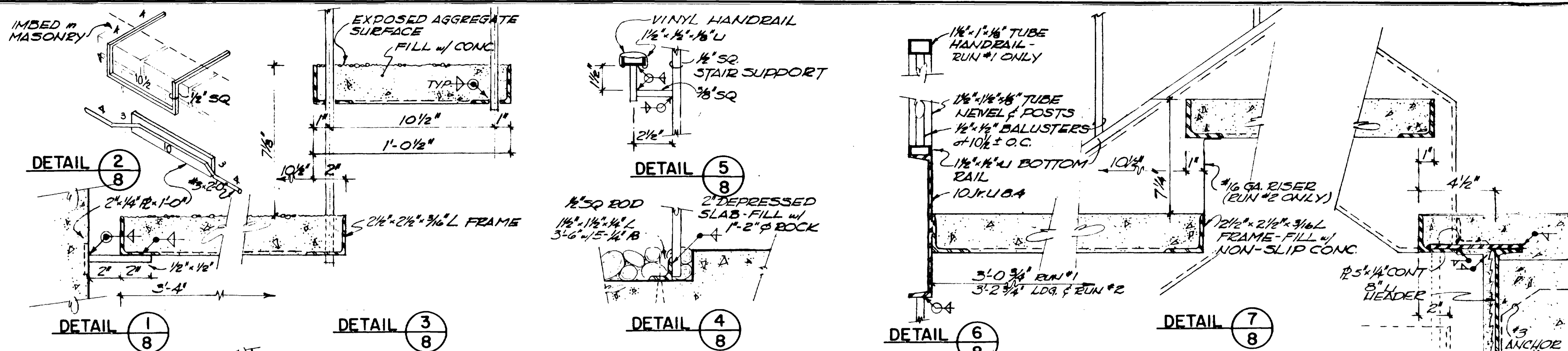


WATERWORKS IMPROVEMENTS		GRAND JUNCTION, COLORADO		(CONTRACT - I)	
WATER TREATMENT PLANT		ARCHITECTURAL		OPERATING FLOOR PLAN	
HENNINGSON, DURHAM & RICHARDSON, INC. ENGINEERS • PLANNERS • CONSULTANTS DENVER, COLORADO					
JOB NO. 730810	DESIGNED J. B.	CHECKED K. D. H.	APPROVED W. L. B.	DATE DEC. 1987	SHEET 7 OF 39

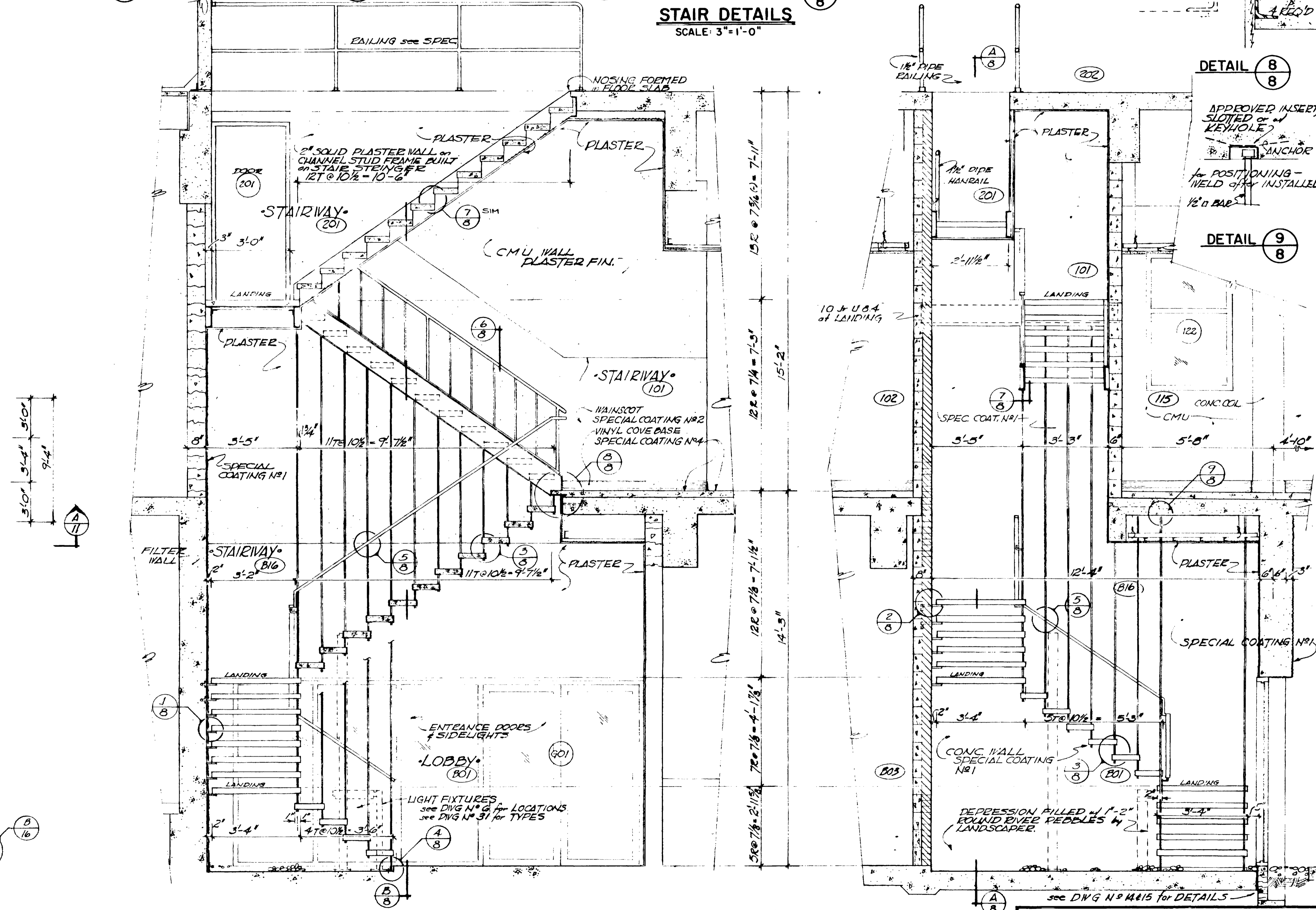
DATE	DESCRIPTION	MADE	APPROV
12-25-70	AS BUILT	A.T.	K.D.H.



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



**STAIR DETAILS**  
SCALE: 3" = 1'-0"

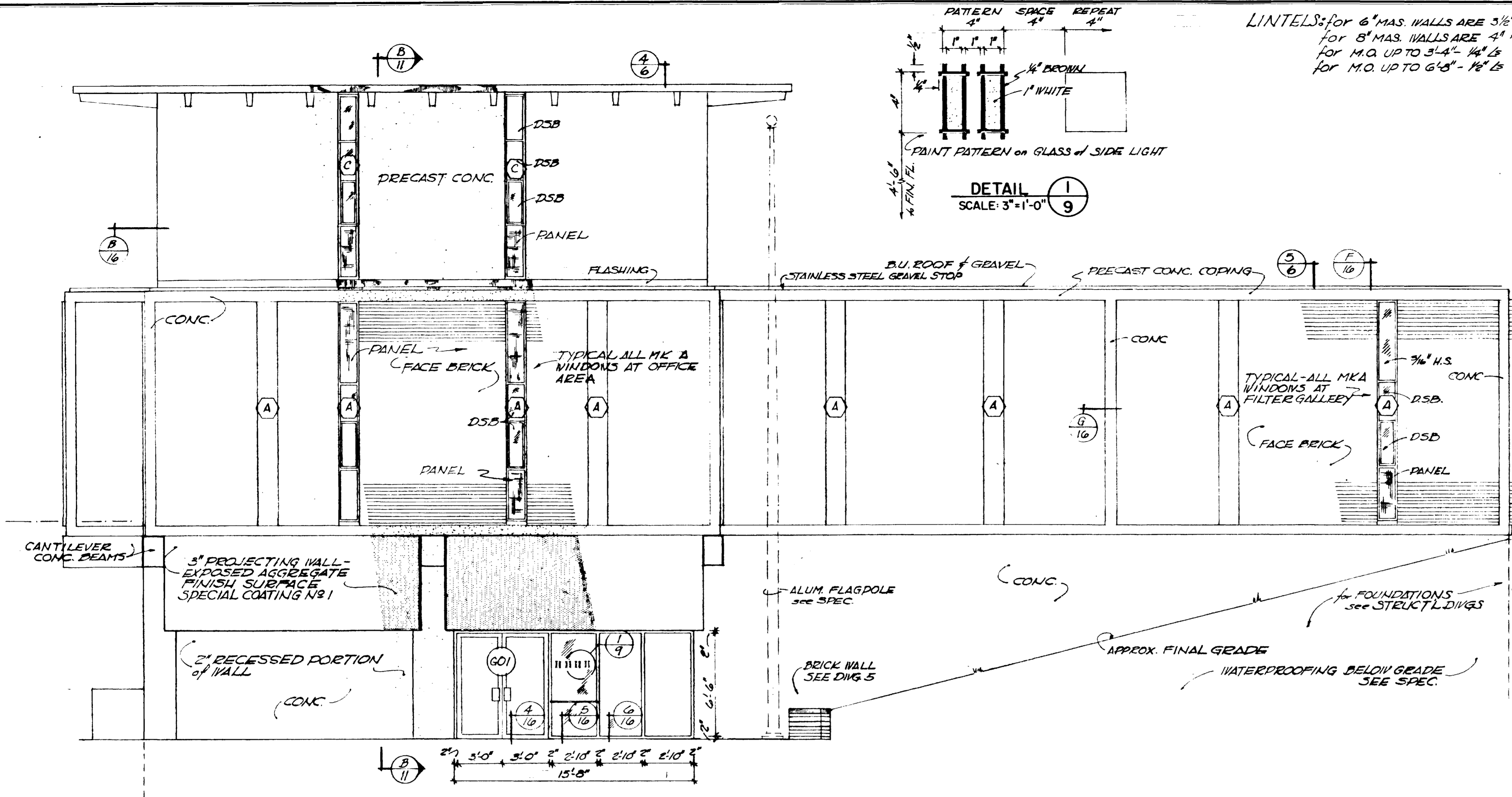


**STAIRWAY SECTIONS**  
SCALE: 1/2" = 1'-0"

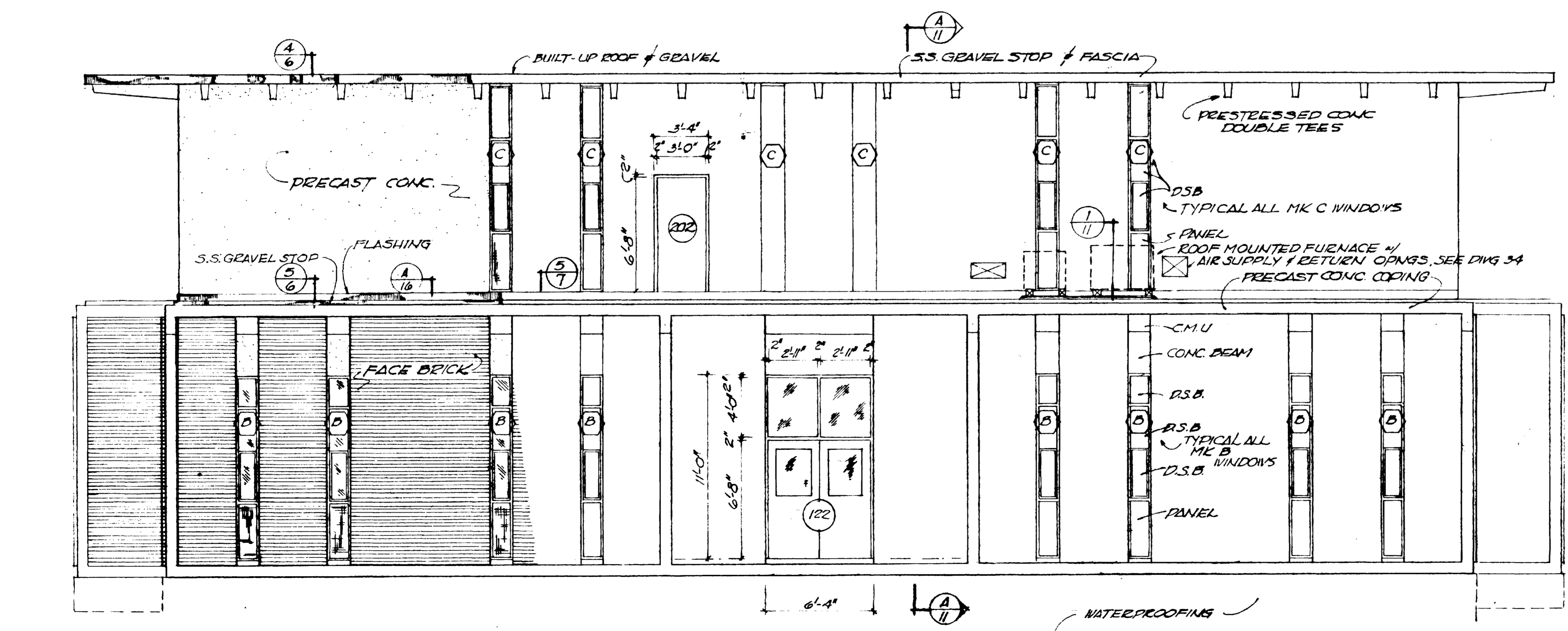
**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
(CONTRACT - I)  
WATER TREATMENT PLANT  
**ARCHITECTURAL**  
**STORAGE FLOOR PLAN AND**  
**STAIR SECTIONS**

**HERRINGSON, DURHAM & RICHARDSON, INC.**  
ENGINEERS • PLANNERS • CONSULTANTS  
DENVER, COLORADO

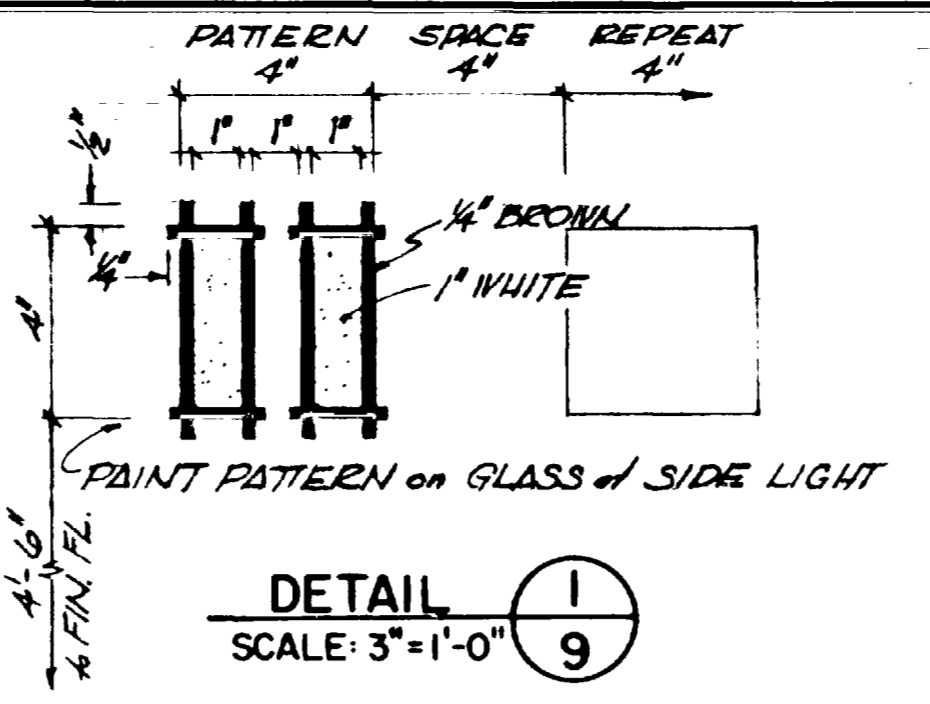
DATE	DESCRIPTION	MADE	APPROV	DATE	SHEET
12-25-70	AS BUILT	A.T.	K.D.H.	730810	8
					39



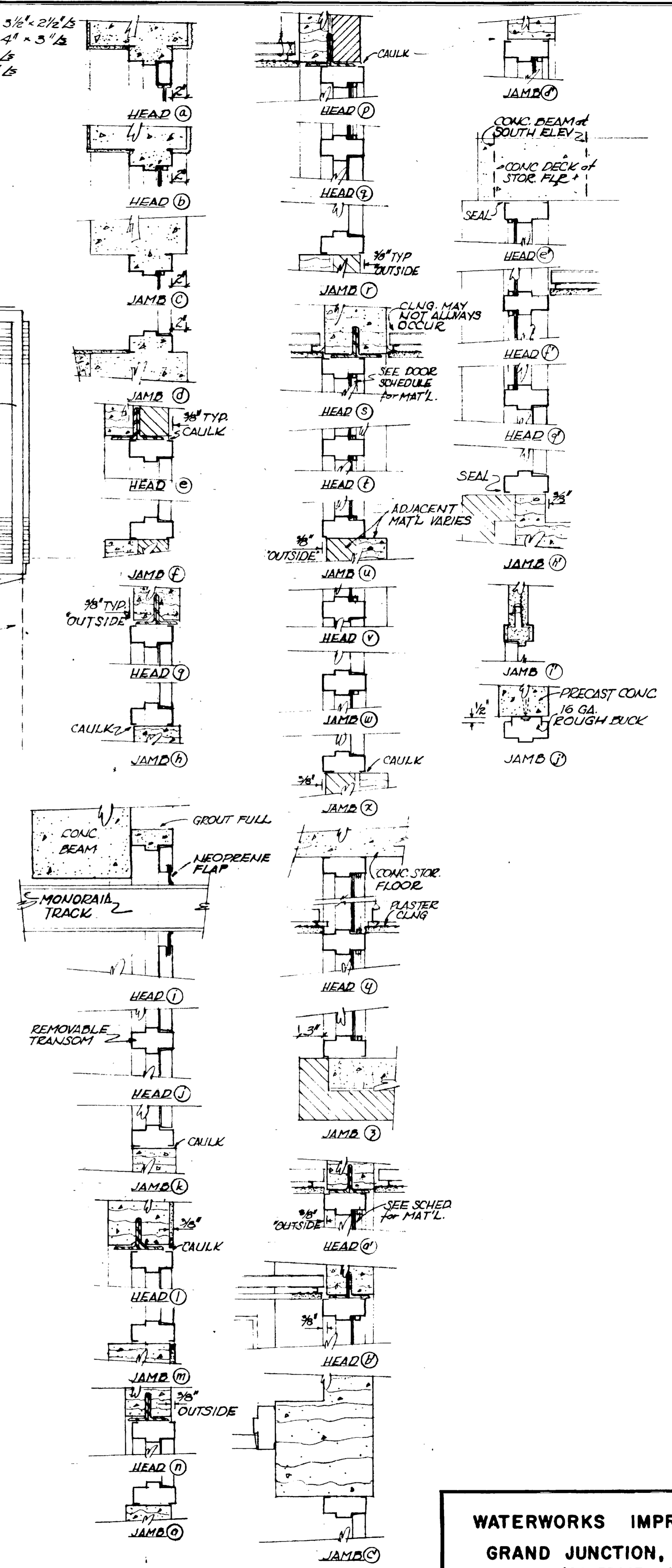
**WEST ELEVATION**  
SCALE: 1/4" = 1'-0"



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



LINTELS: for 6" MAS. WALLS ARE 3/8" x 2 1/2" L  
for 8" MAS. WALLS ARE 3/8" x 3 1/2" L  
for M.O. UP TO 3'-4" - 1 1/2" L  
for M.O. UP TO 6'-8" - 1 1/2" L



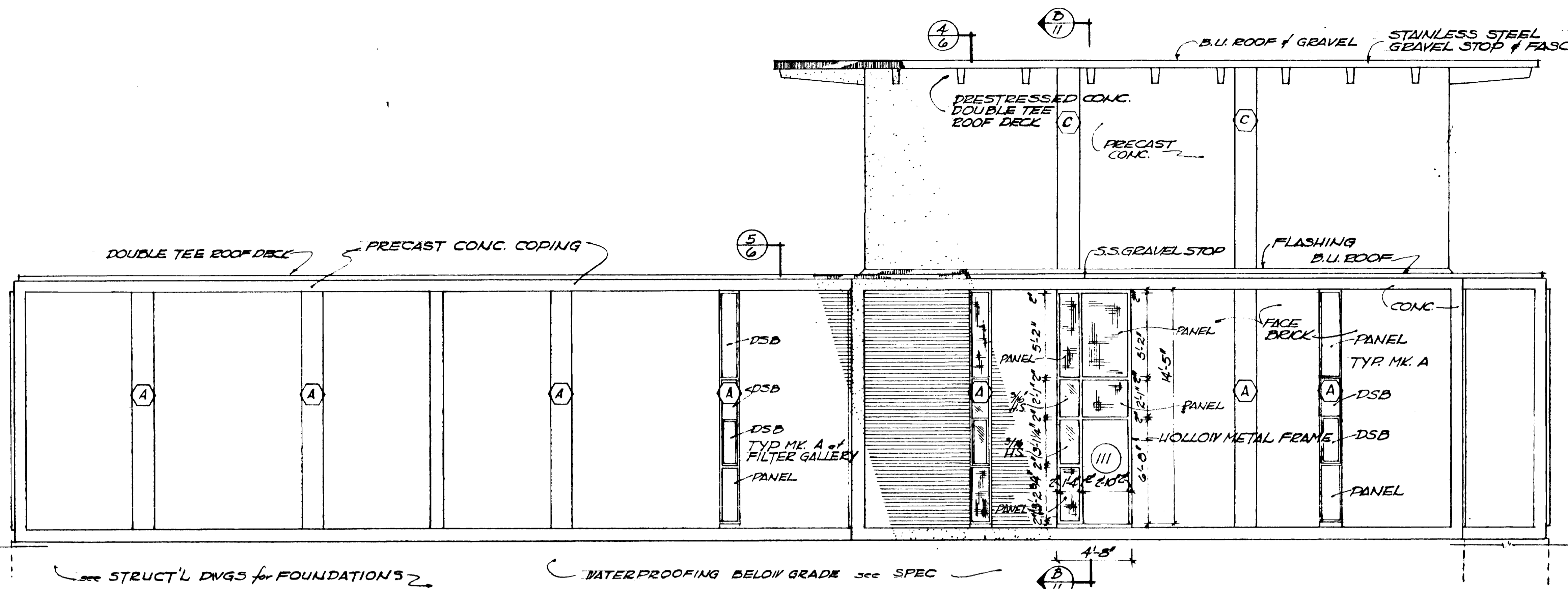
**DOOR DETAILS**  
SCALE: 1 1/2" = 1'-0"

**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
(CONTRACT - I)  
WATER TREATMENT PLANT  
**ARCHITECTURAL**  
**BUILDING ELEVATIONS**  
**AND DETAILS**

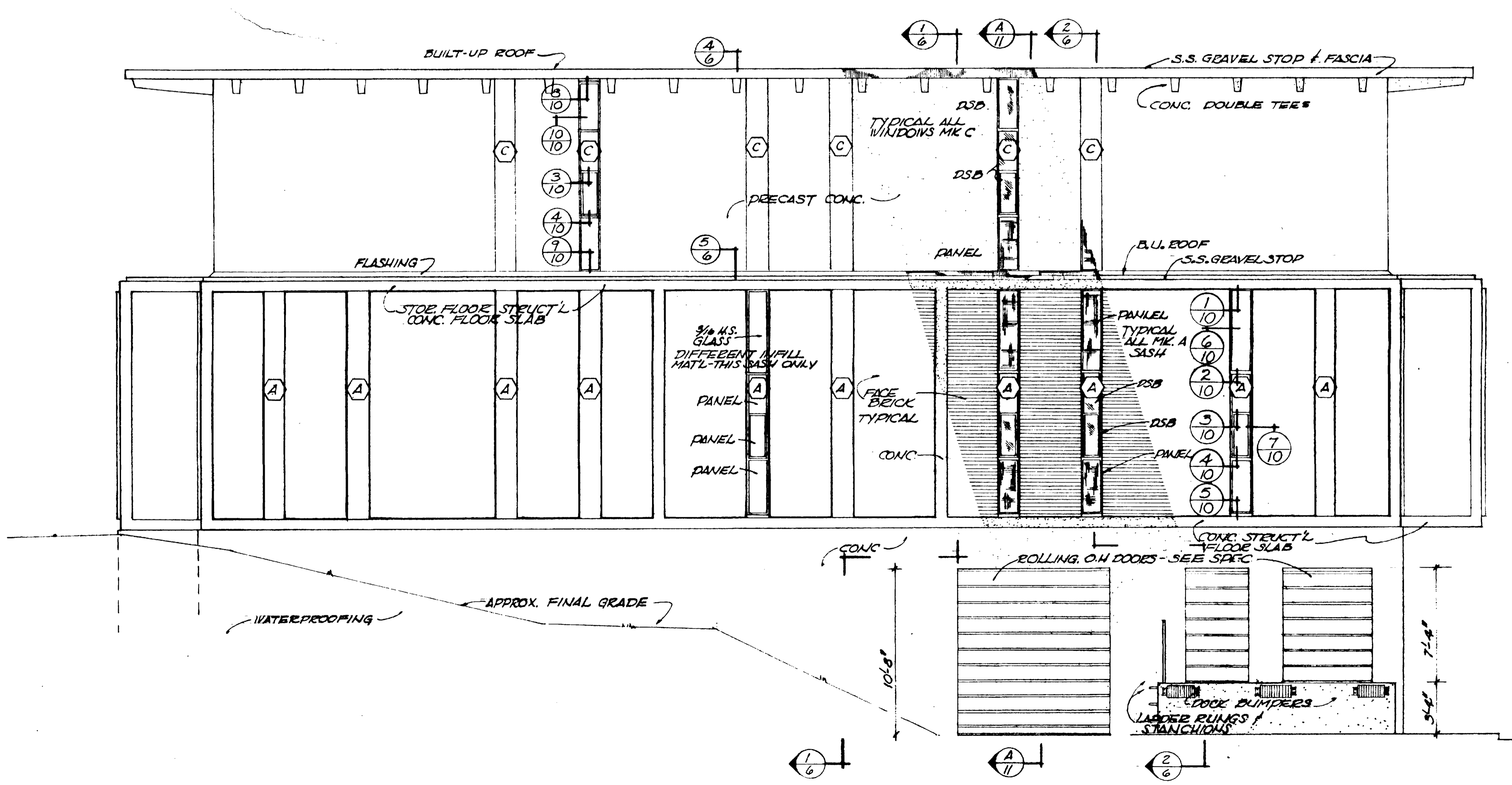
**HARRINGTON, DURHAM & RICHARDSON, INC.**  
ENGINEERS - PLANNERS - CONSULTANTS  
DENVER, COLORADO

1	2-25-70	AS BUILT	A.T.	K.D.H.
DATE	DESCRIPTION	REVISIONS	MADE	APPROV

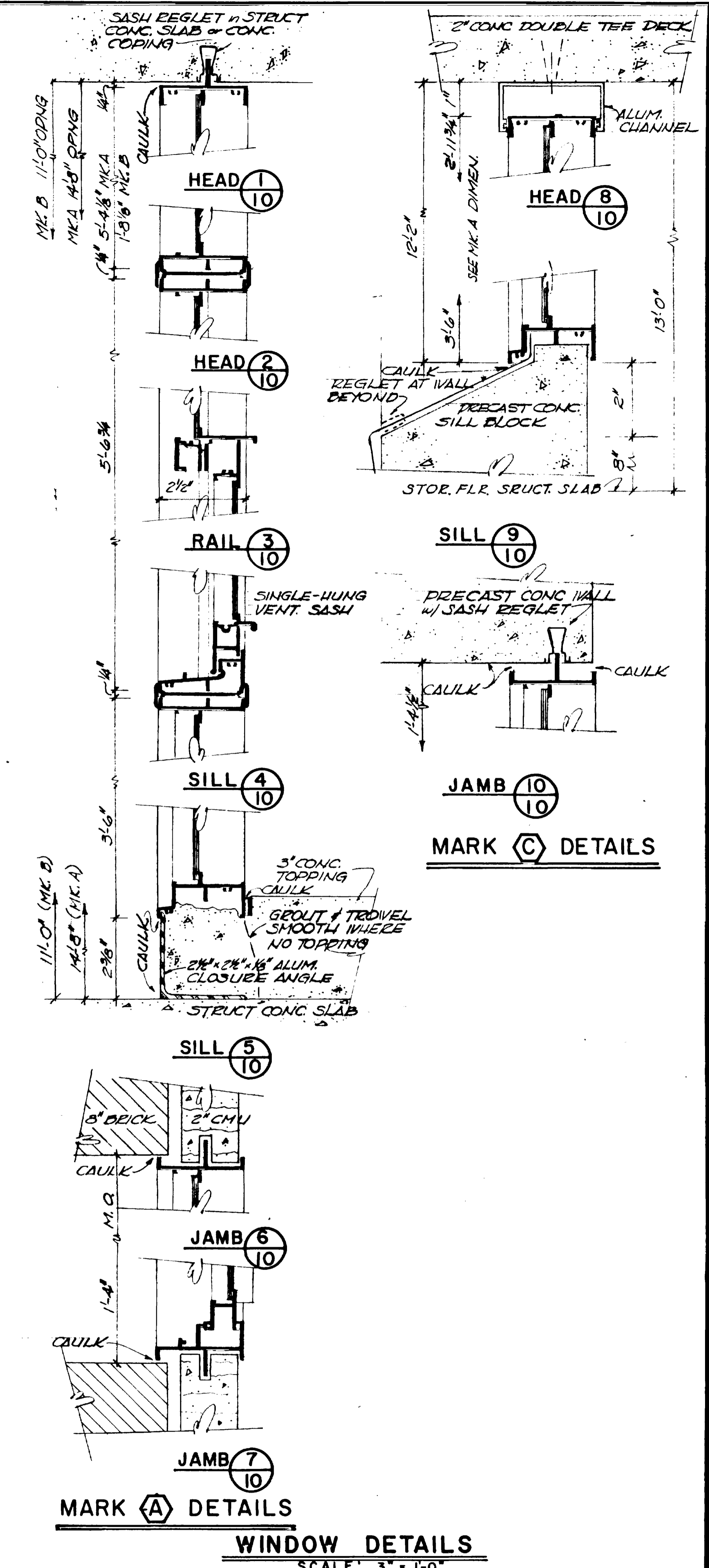
JOB 730810  
DESIGNED J.B.  
CHECKED K.D.H.  
APPROVED W.L.B.  
DATE DEC. 1967



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



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

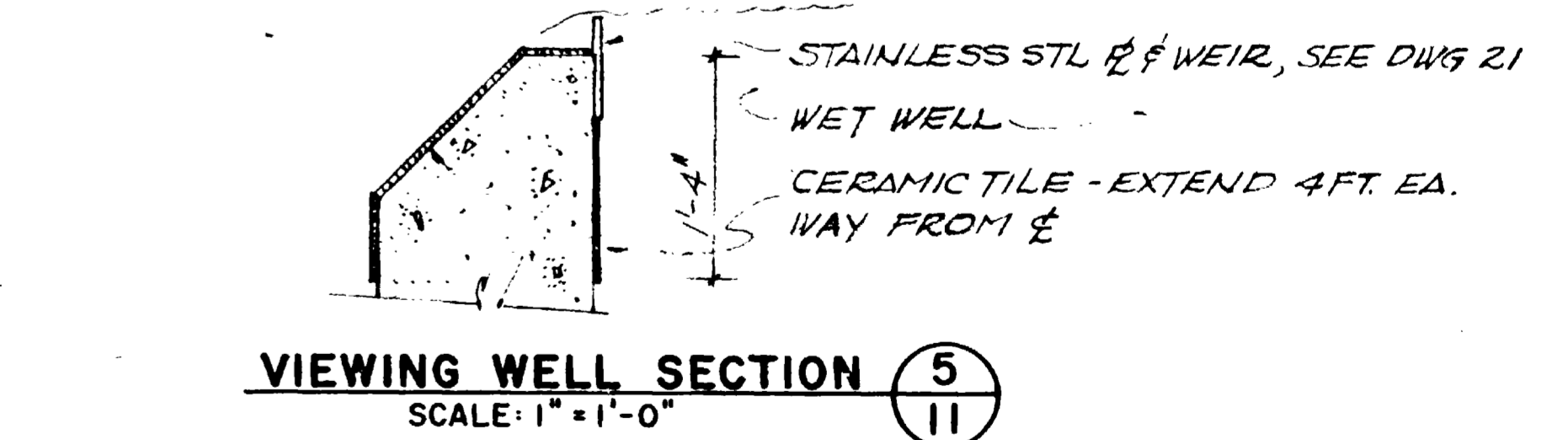
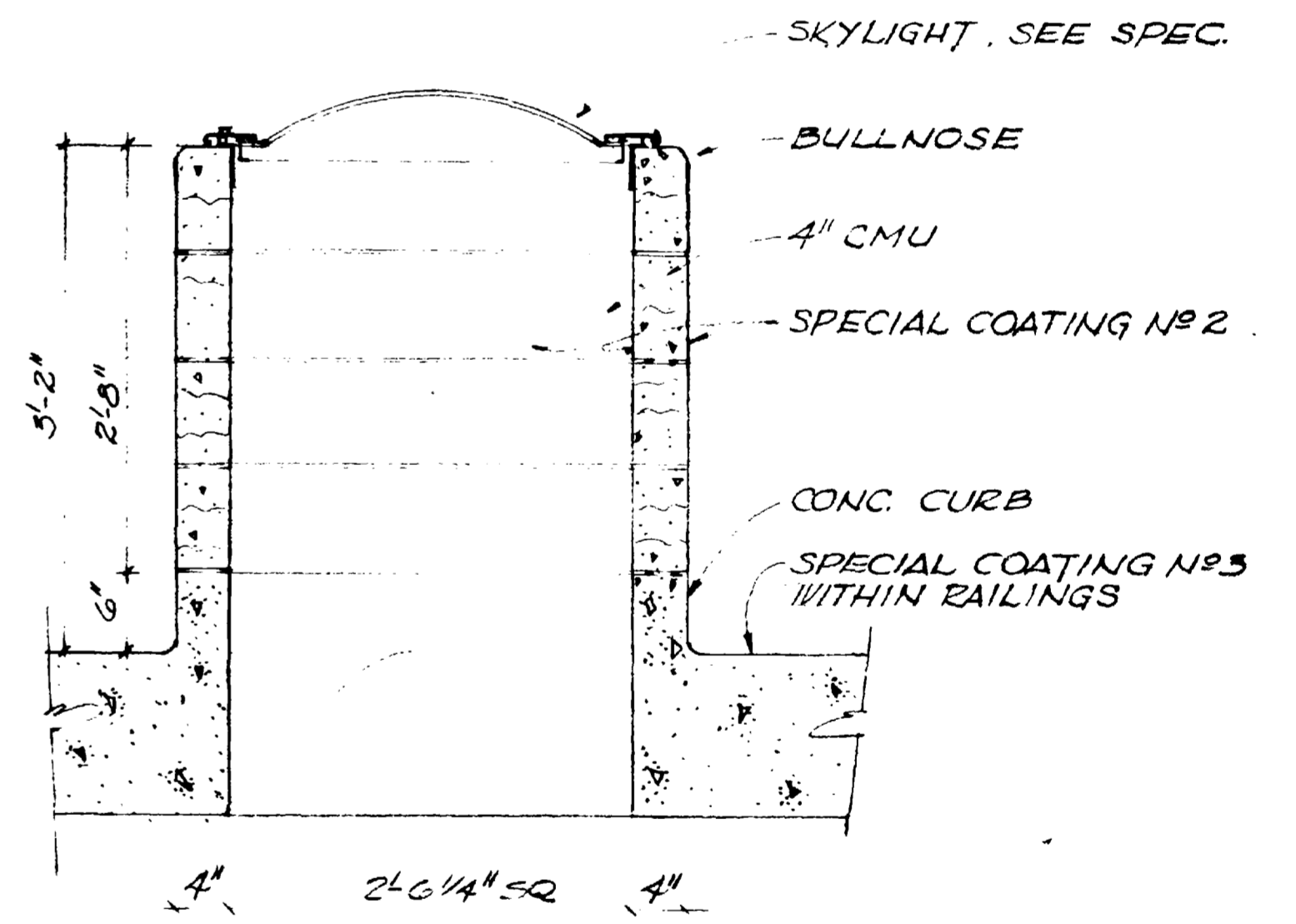
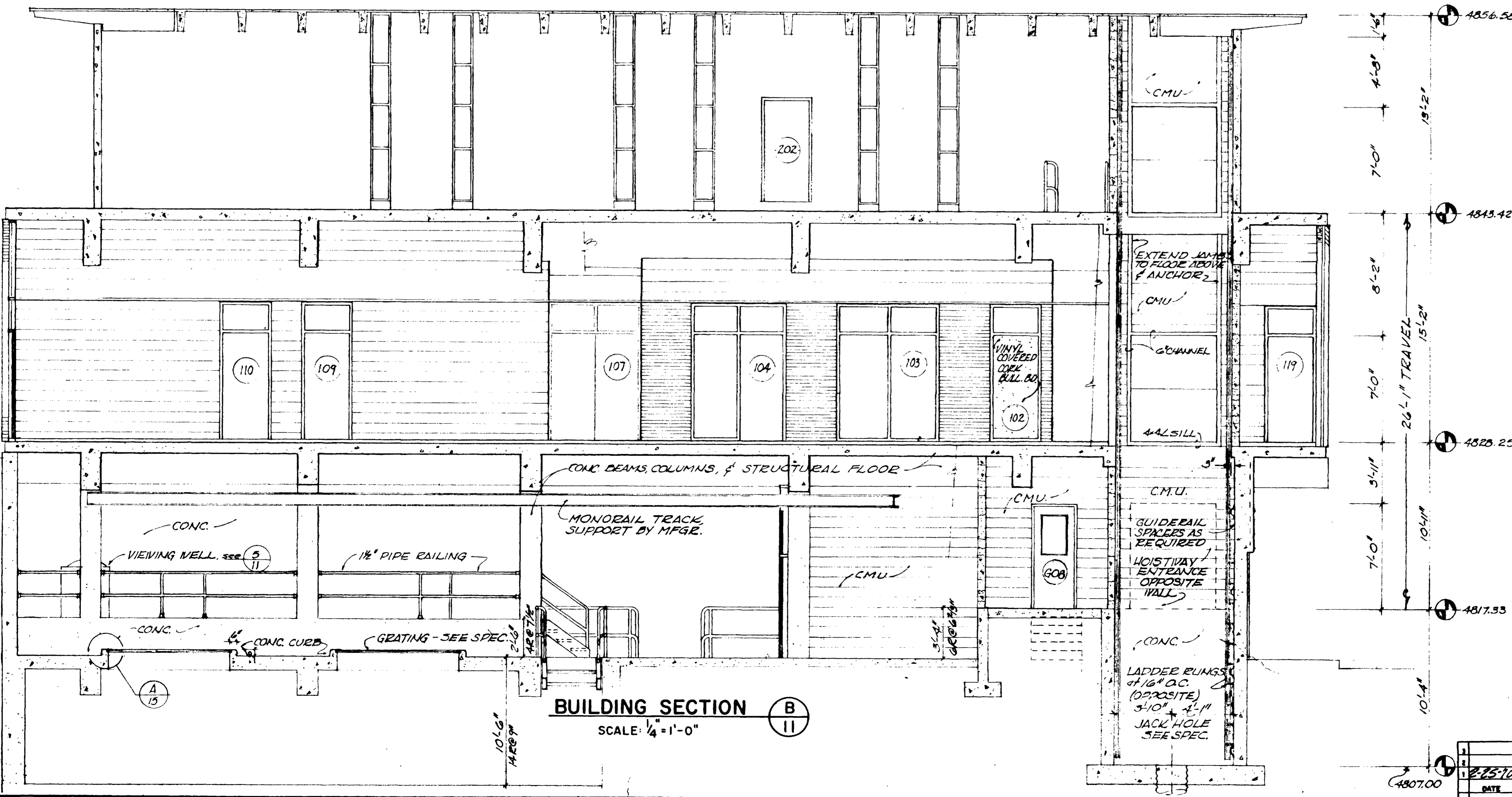
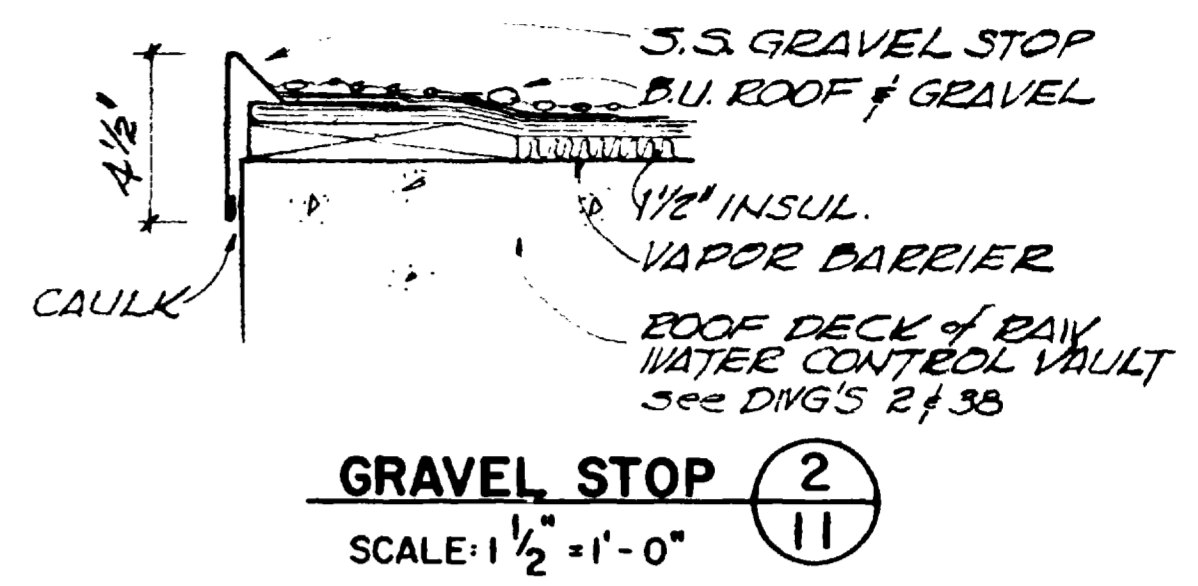
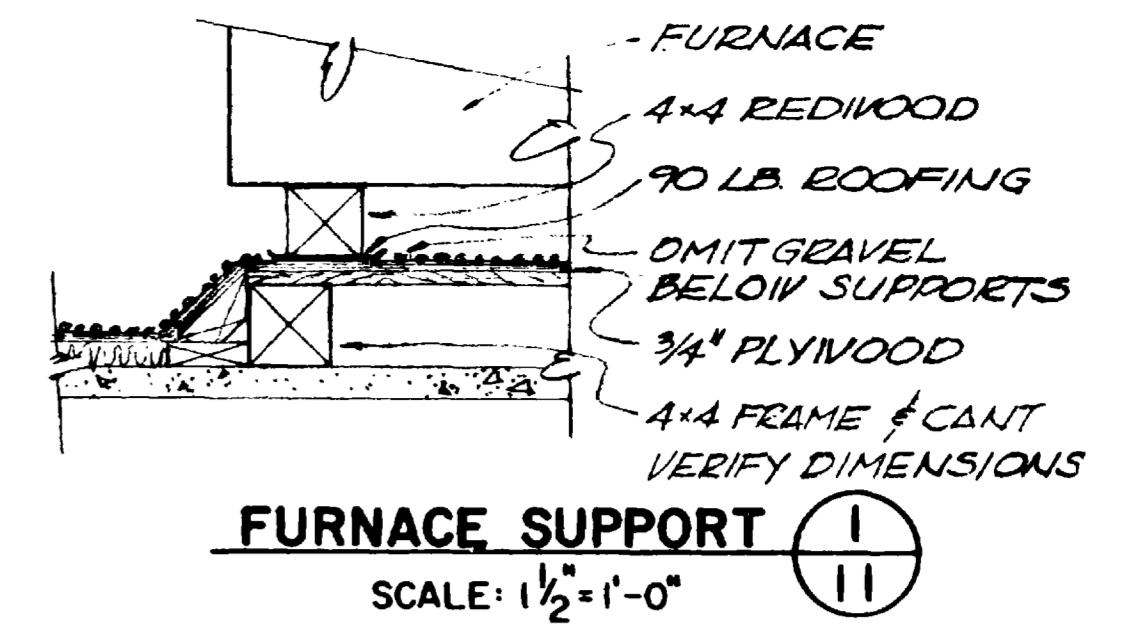
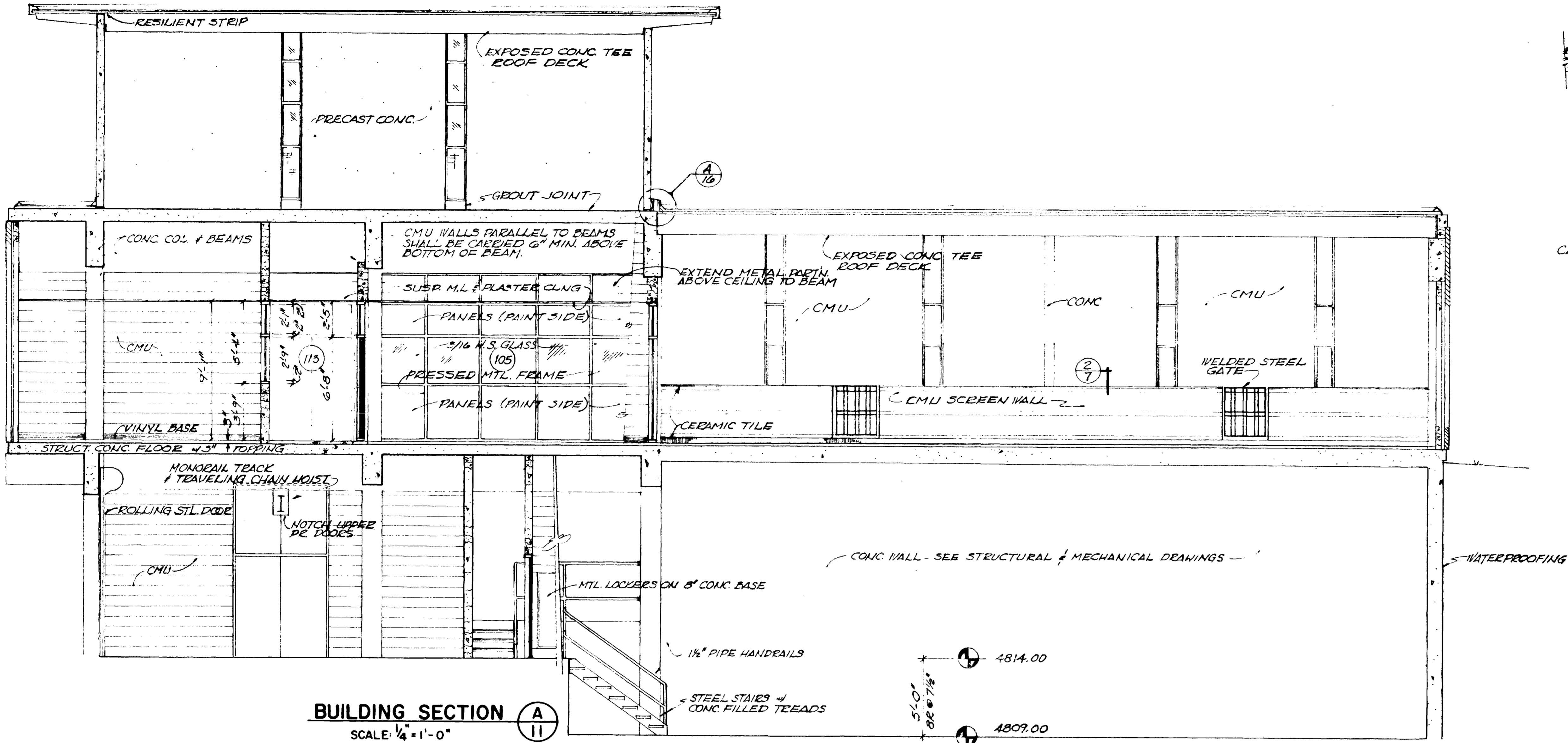


**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
(CONTRACT - I)  
WATER TREATMENT PLANT  
**ARCHITECTURAL**  
**BUILDING ELEVATIONS AND**  
**WINDOW DETAILS**

**HERRINGTON, DURHAM & RICHARDSON, INC.**  
ENGINEERS • PLANNERS • CONSULTANTS  
DENVER, COLORADO

DATE	DESCRIPTION	BY	APPROVED
12-25-76	AS BUILT	A.T.	K.D.H.
	REVISIONS		

JOB 73081Q  
DESIGNER J.B.  
CHECKED K.D.H.  
APPROVED W.L.B.  
DATE DEC. 1967



**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
(CONTRACT - I)  
WATER TREATMENT PLANT  
**ARCHITECTURAL**  
**BUILDING SECTIONS**  
**AND DETAILS**

**HUTTONSON, DURHAM & RICHARDSON, INC.**  
ENGINEERS • PLANNERS • CONSULTANTS  
DENVER, COLORADO

DESIGNED: J.B. CHECKED: K.D.H.  
APPROVED: W.L.B. DATE: DEC. 1967

DATE: 12/25/67 AS BUILT  
DESCRIPTION: REVISIONS  
MADE: A.T. APPROX: K.D.H.

JOB NO: 730810 SHEET NO: 39

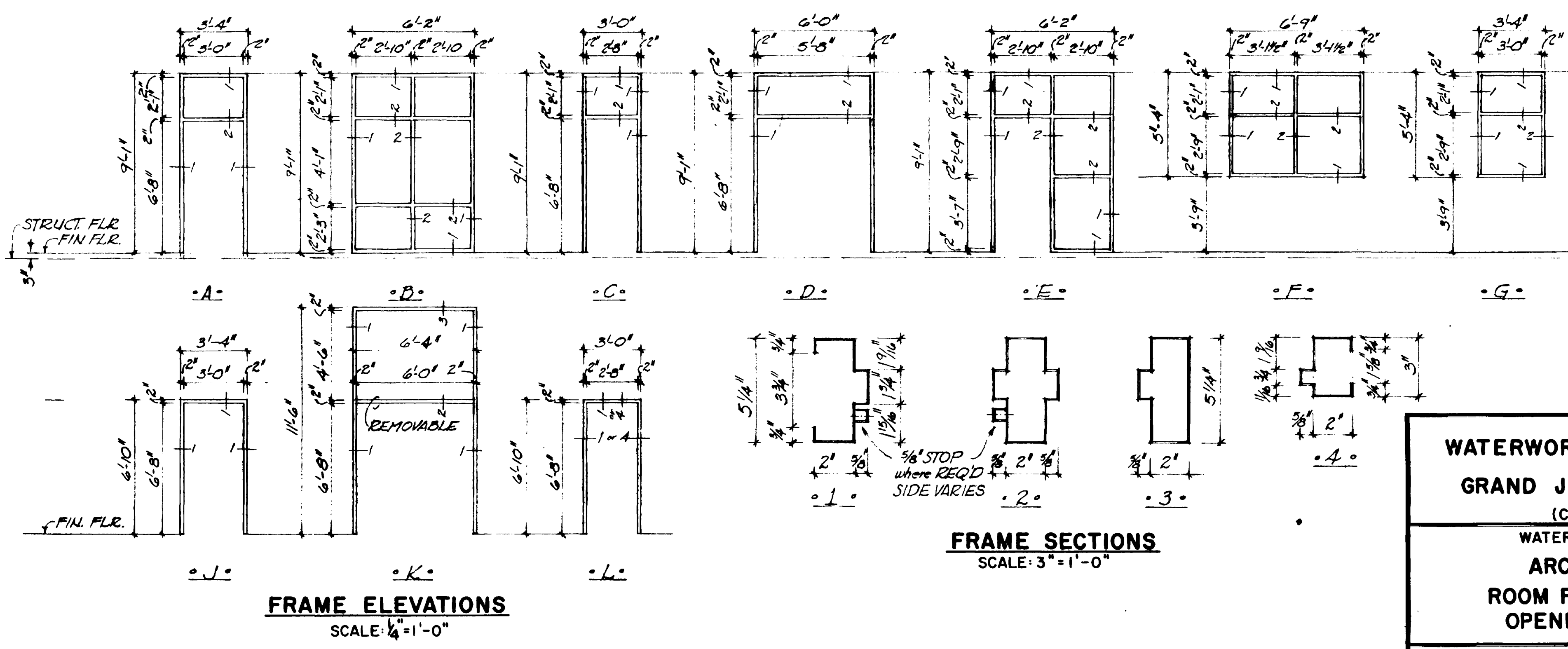
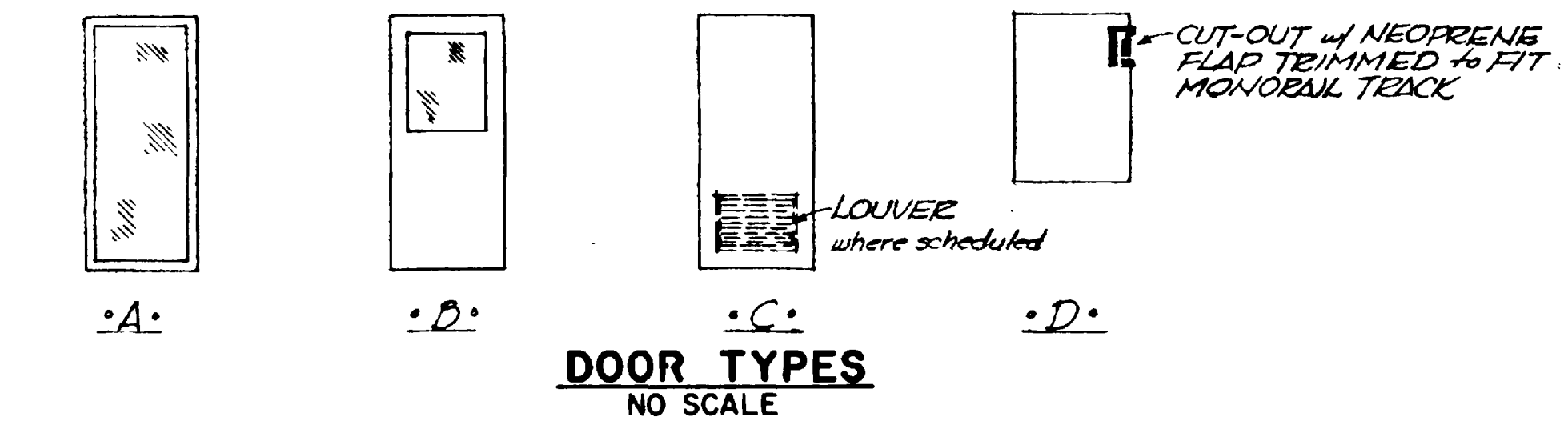
**ROOM FINISH SCHEDULE**

**DOOR AND OPENING SCHEDULE**

ROOM DESIGNATION	ROOM NO.	FLOOR	BASE	WALLS	WAINS-COT	CEILING	REMARKS
IVET IVELL	001						
DUMP RM.	002						
STAIRWAY	003						PAINT MTL.
LOBBY	801						* PLASTER CM.U. & E. WALL
PASSAGE	802						
JAN	803						
LOCKER	804						
FLOCC. FEED AREA	805						
PIPE GALLERY	806						
STAIRS	807						PAINT
STAIRS	808						PAINT
PUMP DECK	809						* SEE DWG. 11 FOR FINISHES AT VIEWING WELL
PRELIM. TREATMENT AREA	810						
CHLORINE STOR.	811						
AMMONIA STOR.	812						
STAIRWAY	813						PAINT RAIL & SUPPORTS
ELEV. MACH	814						
ELEVATOR (SHAFT)	815						
STAIRWAY	816						
STAIRWAY	101						W/NOT 1" RUN UP & LANDING - TO DOOR 201
OPERATOR'S OFFICE	102						PAINT PANELS IN METAL FRAMES
CORR.	103						
TOILET	104						
JANITOR	105						W/NOT 4 FT WIDE BEHIND S. SINK AT WEST WALL
CHLORINE FEEDER RM.	106						
PASSAGE	107						PAINT BACK-SIDE OF PANELS IN ALL WINDOW & DOOR FRAMES THROUGHOUT THIS LEVEL
CHEMICAL FEEDER RM.	108						
CARBON FEEDER RM.	109						PAINT OUTSIDE WALLS OF ROOM
ELEC EQUIP	110						
LABORATORY	111						PAINT PANEL IN METAL FRAMES
LAB. STOR.	112						
STOR.	113						
CORR.	114						NO PAINT OR W/NOT ON BACK AT SOUTH WALL
CONFERENCE	115						
FILTER GALLERY	116						WALKWAYS AT FILTER BED = CONC. FLOOR (NO-MND) CERAM. TILE ROSE & PAINT AT MAS. SCREEN ONLY
STAIRWAY	201						
OPEN STOR.	202						

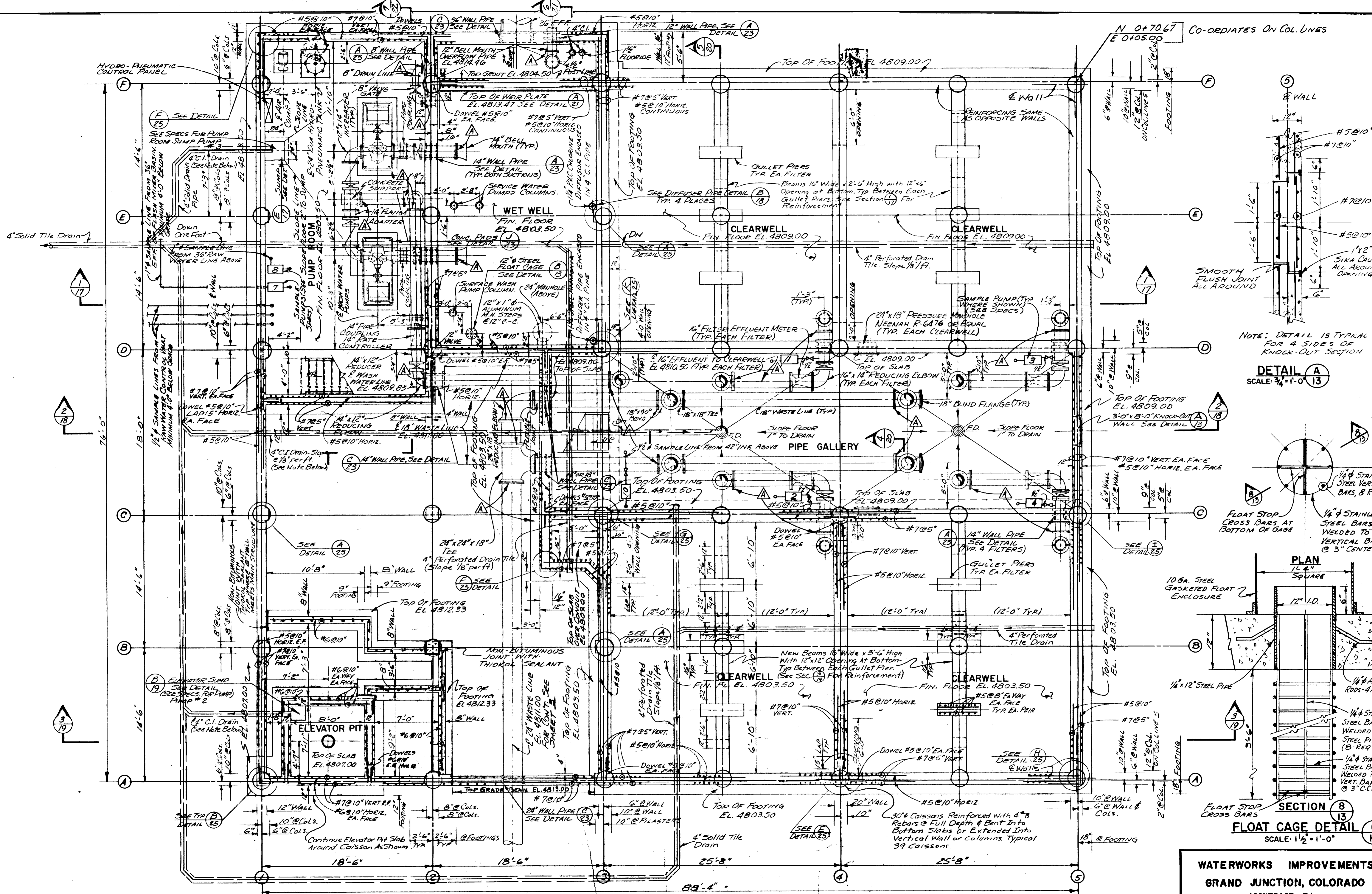
OPNG NO.	FROM RM. NO.	TO RM. NO.	DOOR					TRANSOM	SIDELIGHTS	FRAME		HARDWARE					REMARKS														
			SIZE	DESCRIPT	GLASS	LOUVER	ELEVATION NO.			SECTION	JAMB	HEAD	BUTTS	LOCKSET	LATCH	PUSH PULLS		KICK-PLATE	BUMPER	THRESHOLD	DOOR BOTTOM	WEATHERSTRIP	HEAD AND FOOT BOLTS								
401	EXT.	801	PR	3-0	6-5	1 1/2	1/8"	A	RHR	30x74	3/16			3/16	WEST	1,2	cd	ob	4	1	1	1	1	1	1	1	1	1	* REQ'D ONLY ON INACTIVE LEAF OF A PAIR		
402	801	802	1	3-0	6-5	1 1/2	1/8"	C	RHR					J	1														* NOT REQ'D ON INACTIVE LEAF		
403	802	803	1	2-8	6-5	1 1/2	1/8"	20	C	RH				L	1														• SEE REMARKS		
404	802	804	1	2-8	6-5	1 1/2	1/8"	20	C	RH				L	1																
405	805	811	PR	3-0	6-8	1 1/2	1/8"	20	C	RHR																					
406	802	811	1	2-8	6-8	1 1/2	1/8"	20	B	LH	20x30	3/16																			
407	801	813	1	3-0	6-8	1 1/2	1/8"	20	C	RHR																					
408	813	812	1	2-8	6-8	1 1/2	1/8"	20	B	RHR	20x30	3/16																			
409	813	814	1	2-8	6-8	1 1/2	1/8"	20	C	RH																					
410	EXT.	815	1	5-10	7-4					ROLLING DOOR																					
411	EXT.	812	1	4-0	7-4																										
412	EXT.	811	1	9-8	10-8																										
405	SEE ABOVE	UPPER DOORS	PR	3-0	4-6	1 1/2	1/8"	20	D	RHR																					

**KEY**  
 • INDICATES FINISHED MATERIAL  
 P PAINT FINISH  
 1 REFERS TO SPECIAL COATING SEE SPEC.  
 2 DO  
 3 DO  
 4 DO



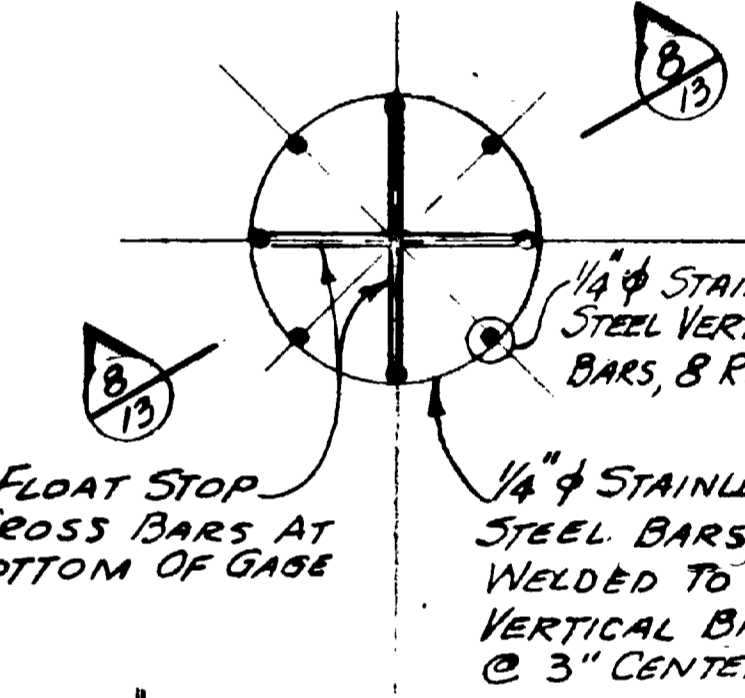
SIGN No.	TEXT	No. LTRS.
1	EMPLOYEES ONLY	(14)
2	OPERATORS OFFICE	(8)
3	RESTROOM	(8)
4	JANITOR	(7)
5	CHLORINE FEEDER	(15)
6	CHEMICAL FEEDER	(15)
7	ELECTRICAL EQUIP	(10)
8	LABORATORY	(10)
9	STORAGE	(7)
10	CONFERENCE	(10)

**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
 (CONTRACT - I)  
 WATER TREATMENT PLANT  
**ARCHITECTURAL**  
**ROOM FINISH, DOOR AND**  
**OPENING SCHEDULES**

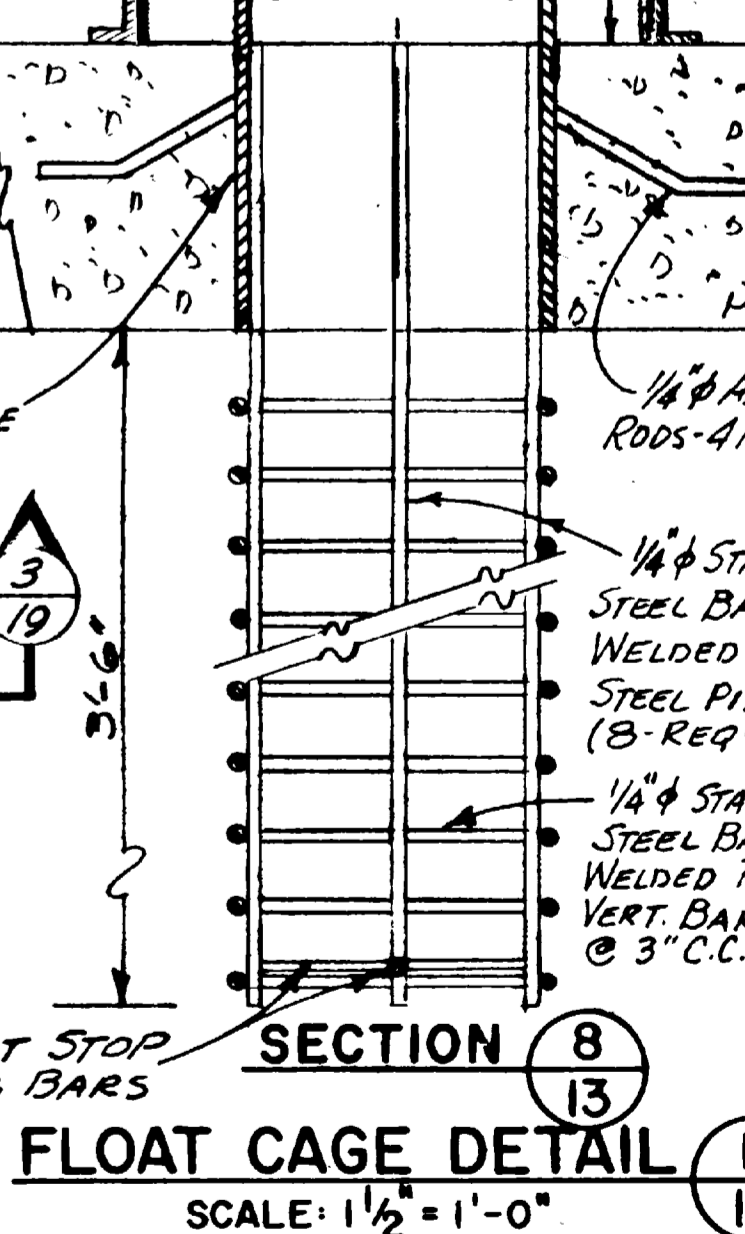


NOTE: DETAIL 15 TYPICAL FOR 4 SIDES OF KNOCK-OUT SECTION

**DETAIL A**  
SCALE: 3/4" = 1'-0"



**DETAIL B**  
SCALE: 1 1/2" = 1'-0"

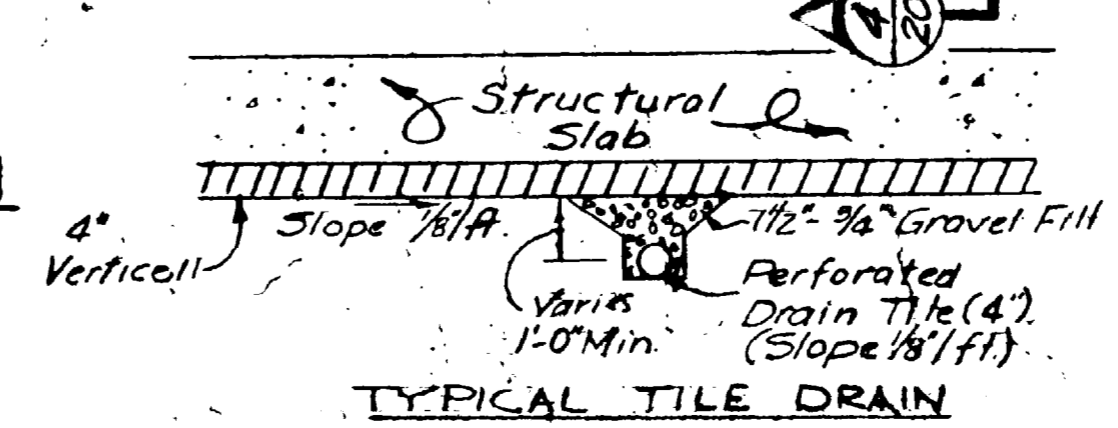


NOTE: Set All Caissons At Intersection of Foundation Wall Centerlines & At Centerlines of Columns Where No Walls Intersect.

All Caissons To Be Drilled 2'-0" Into Hard Sandstone. Depth Varies From 25' to 30' (Approx.)

All C.I. Drain Piping To Be Extended 2'-0" Beyond Concrete Floor Slab or Bldg. Wall, Continue Line with Solid Tile Pipe.

**FOUNDATION PLAN**  
SCALE: 1/4" = 1'-0"

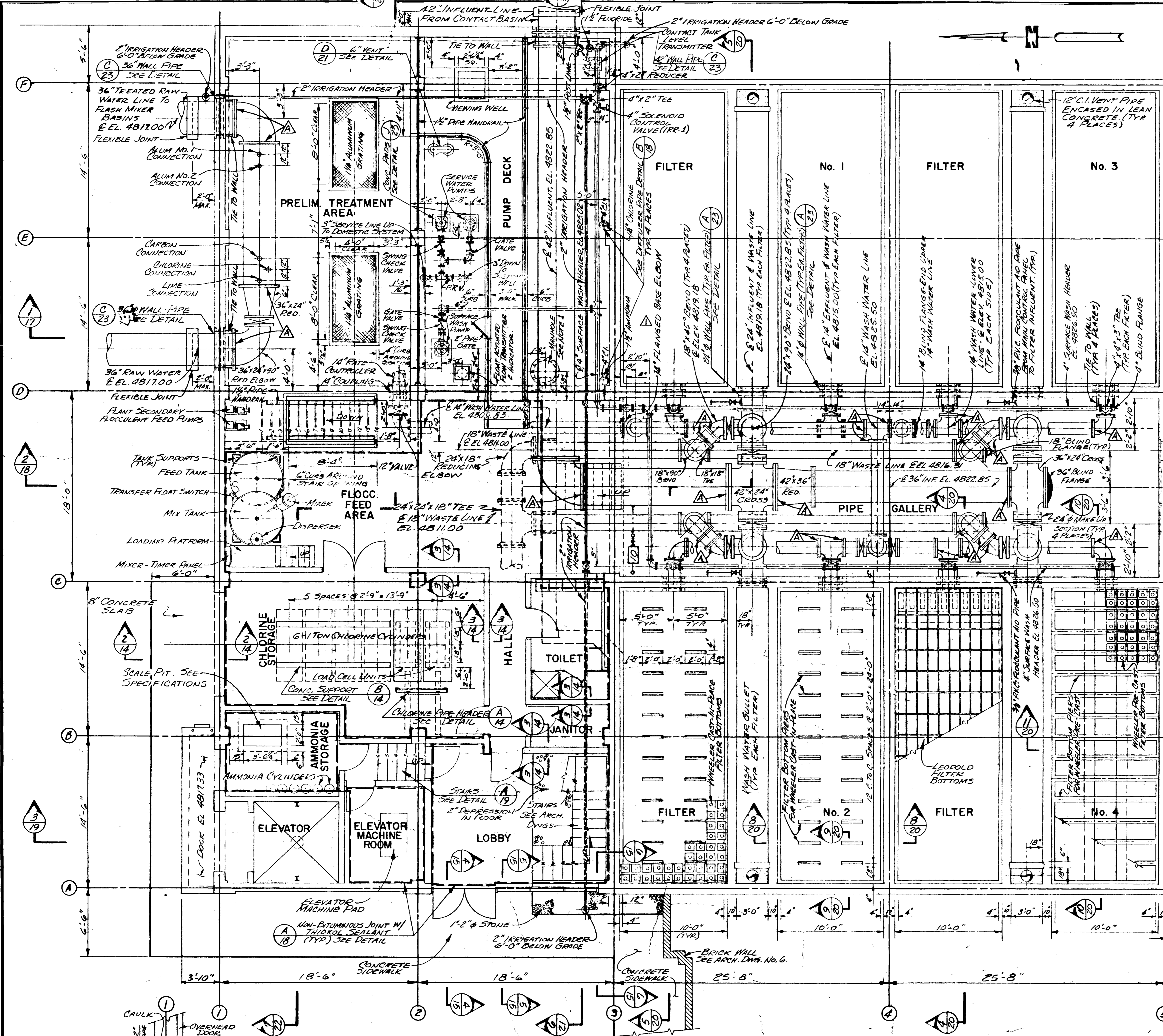


NOTE: INDICATES SHOD WELDED JOINT MAY BE SUBSTITUTED FOR FLANGED JOINT WHERE STEEL PIPE IS USED.

**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
(CONTRACT - I)  
WATER TREATMENT PLANT  
**STRUCTURAL - MECHANICAL**  
**FOUNDATION PLAN**

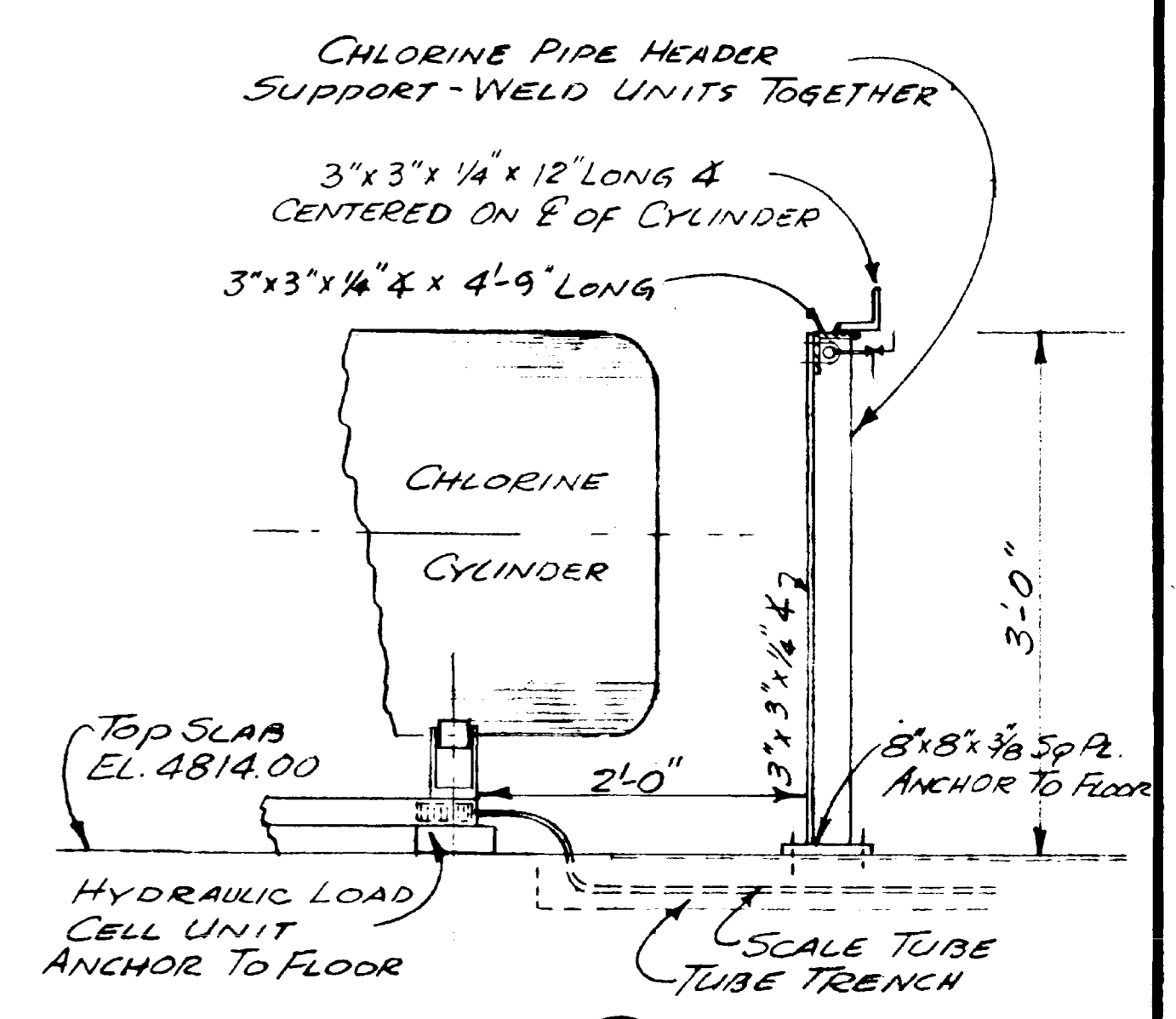
HARRINGTONSON, DURHAM & RICHARDSON, INC. ENGINEERS - PLANNERS - CONSULTANTS DENVER, COLORADO		DESIGNED: E.F.R.-R.E.R. CHECKED: K.D.H.	
DATE: 12-25-70 As Built	DESCRIPTION: REVISIONS	MADE: E.A.B.	APPROVED: K.D.H.
730810		DATE: DEC. 1971	



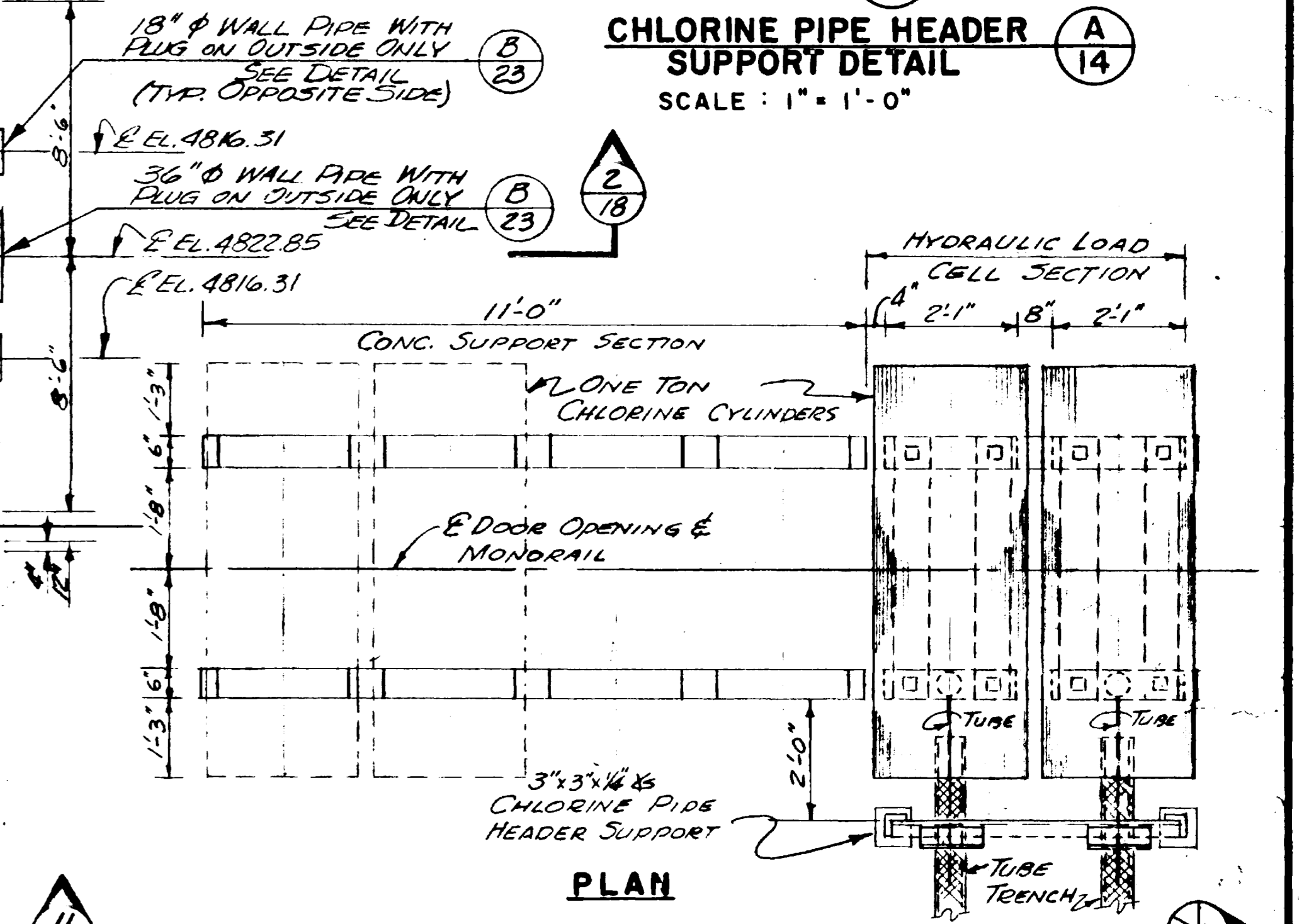


**GROUND FLOOR & PIPE GALLERY PLAN**  
 SCALE: 1/4" = 1'-0"  
 ELEV. 4814.00

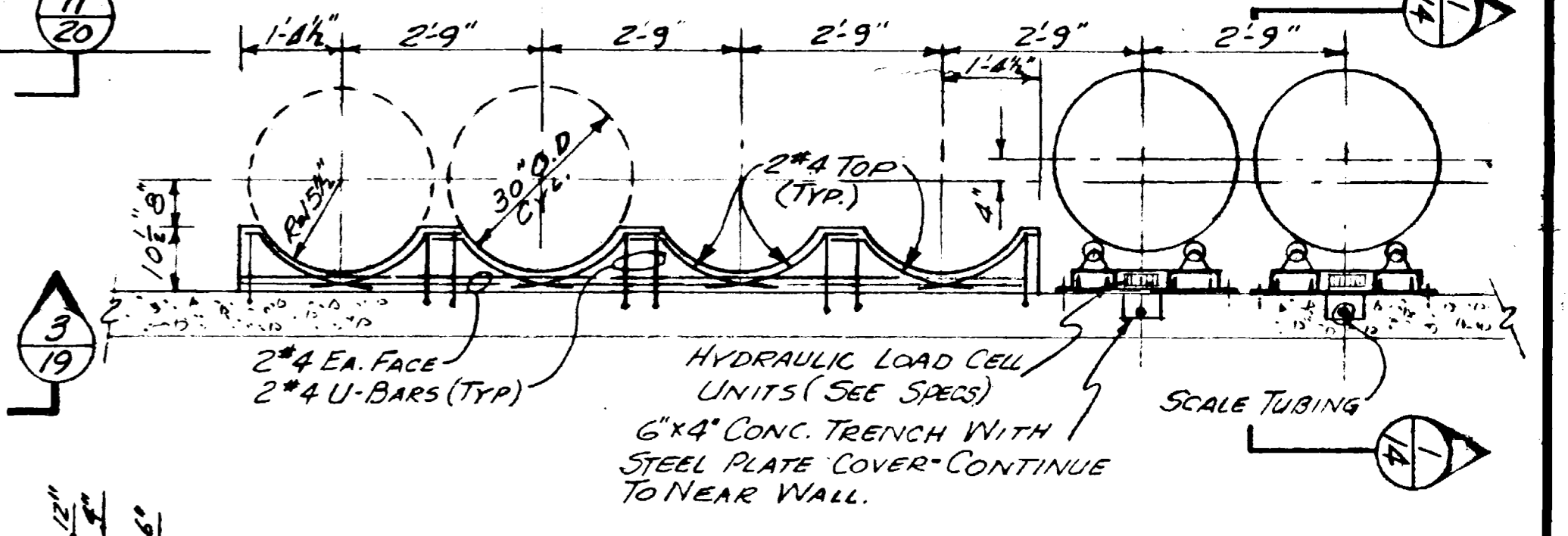
- NOTES:**
1. PROVIDE 24" PRESSURE TYPE MANHOLE ACCESS TO WETWELL COMPLETE WITH GASKETS, RING & COVER. (MINIMUM R. 150-1/2 OR EQUAL)
  2. PROVIDE 12" ALUMINUM MANHOLE STEPS TO WETWELL SERVICE @ 24" (C.C.)
  3. ALL SURFACE WASH PIPING & ALL INTERIOR IRRIGATION PIPING SHALL BE GALVANIZED STEEL THREADED MALLEABLE FITTINGS
4. IN CASES WHERE STEEL PIPE PASSES THRU WALLS, CONTRACTOR SHALL BE REQUIRED TO FURNISH & INSTALL JOINT HARNESSES LUGS WELDED TO THE PIPE & TIE BOLTS AS RECOMMEND IN AWWA MANUAL M-11 PAR. 19.8



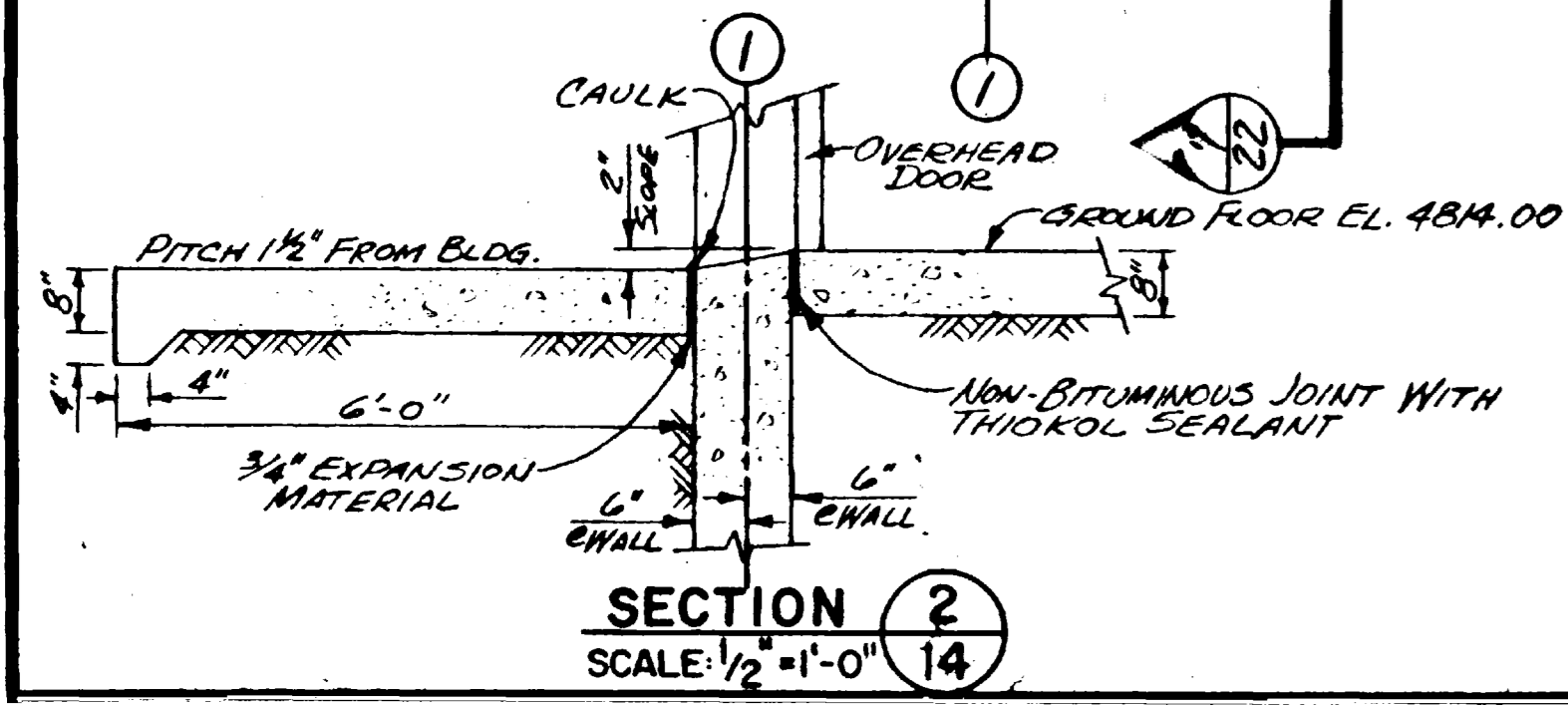
**SECTION 1**  
**CHLORINE PIPE HEADER SUPPORT DETAIL**  
 SCALE: 1" = 1'-0"



**SECTION 2**  
**THICKENED SLAB DETAIL TYPICAL AT MASONRY WALLS**  
 SCALE: 3/4" = 1'-0"



**SECTION 3**  
**CHLORINE CYLINDER DETAIL SUPPORT DETAILS**  
 SCALE: 1/2" = 1'-0"



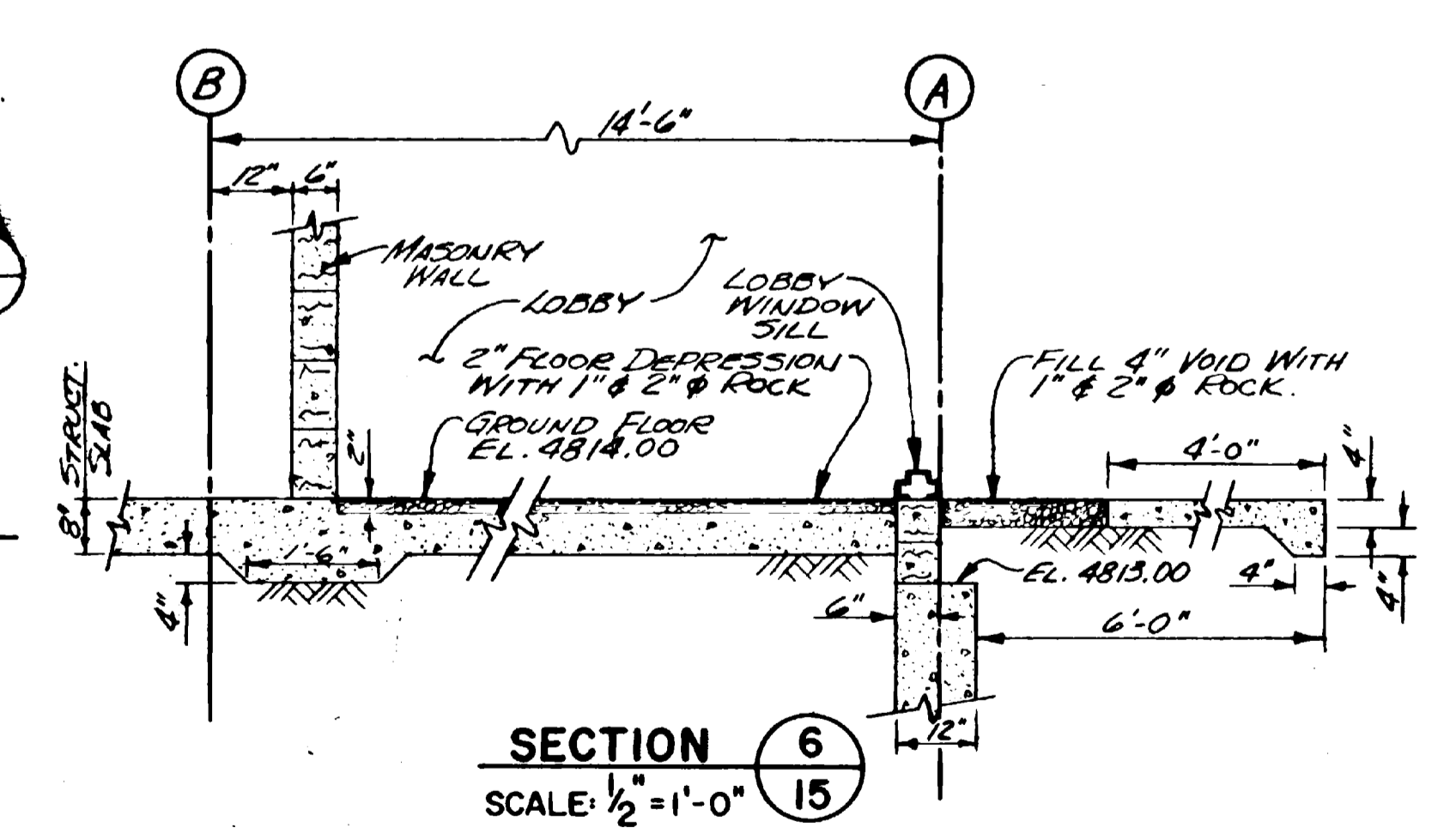
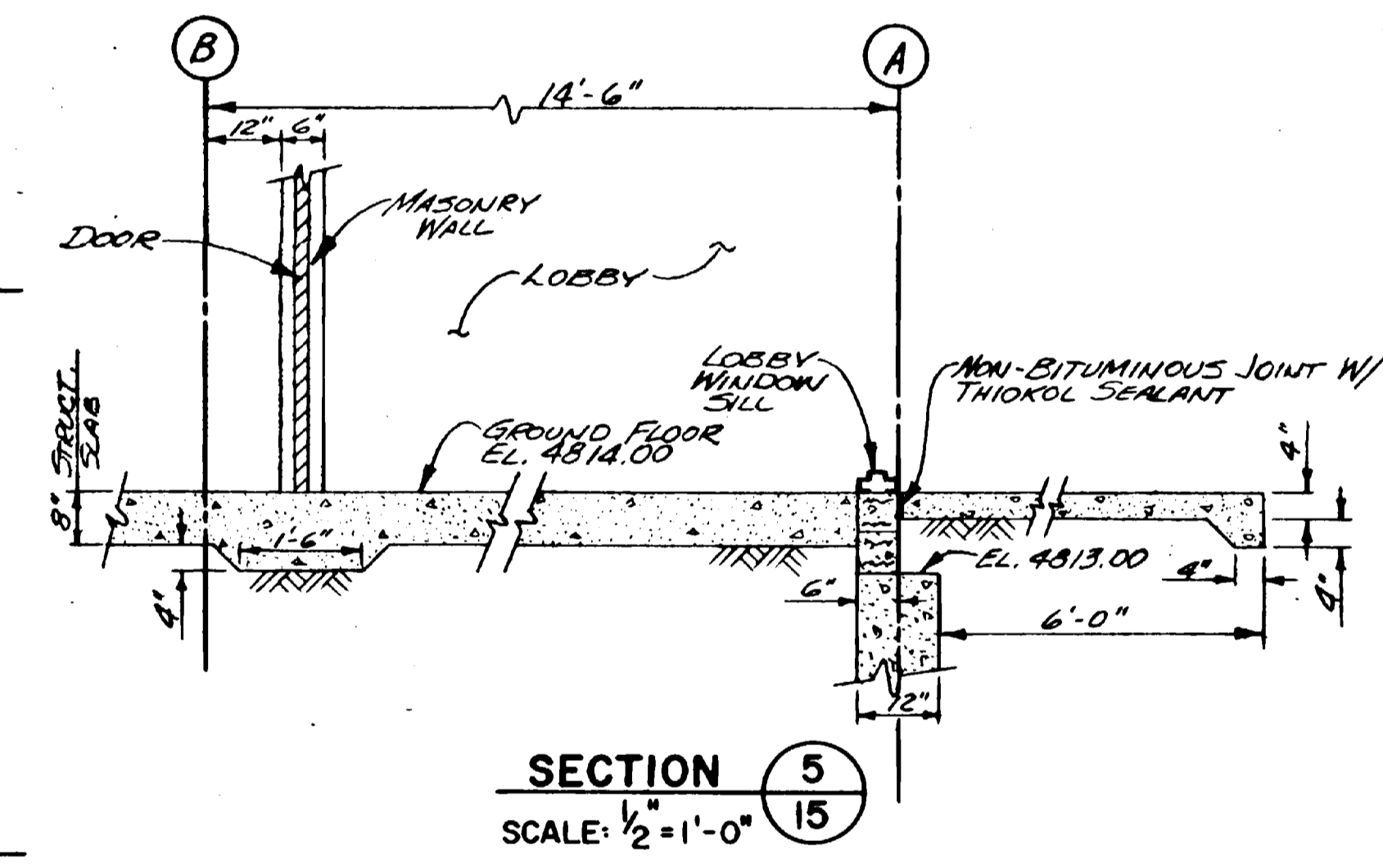
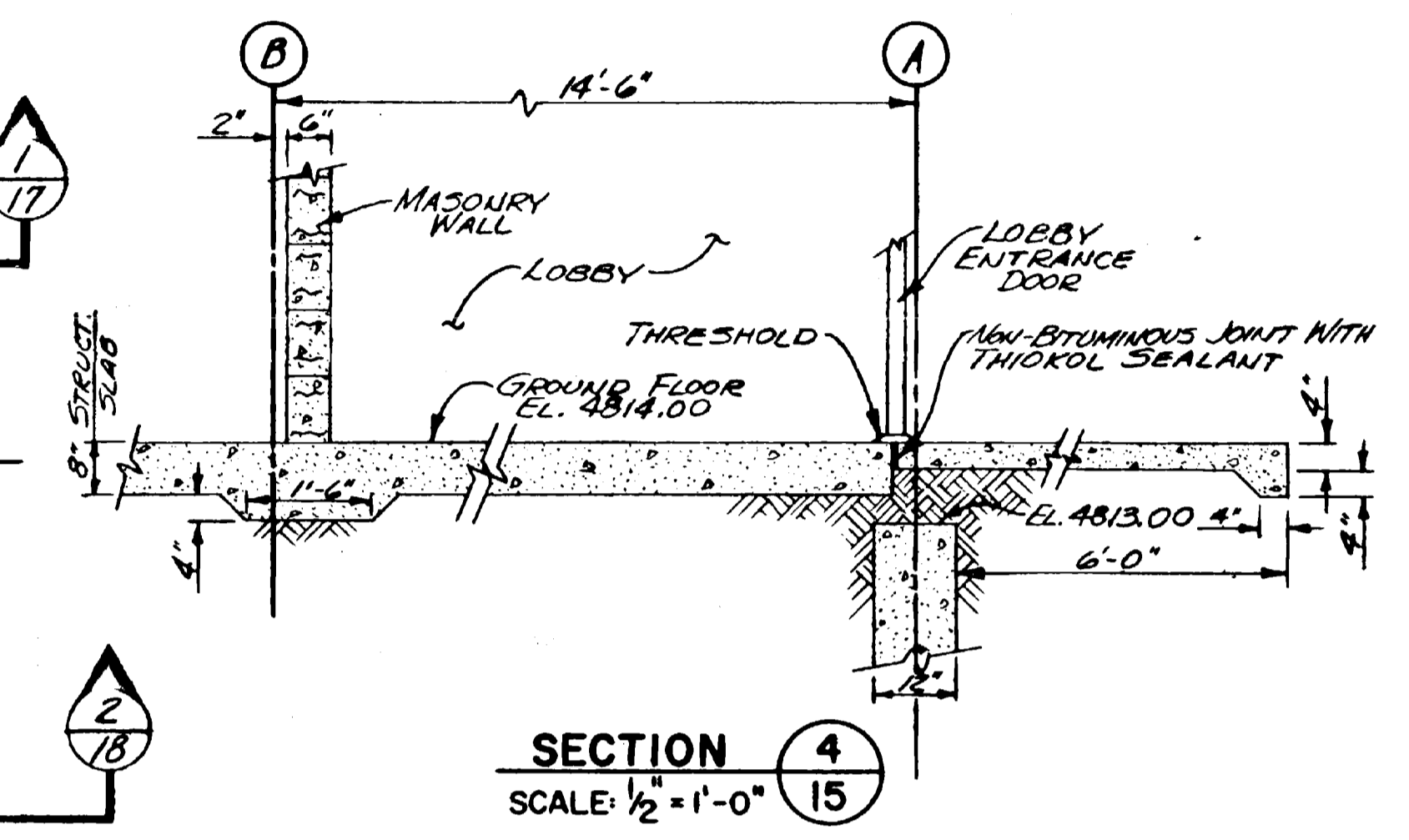
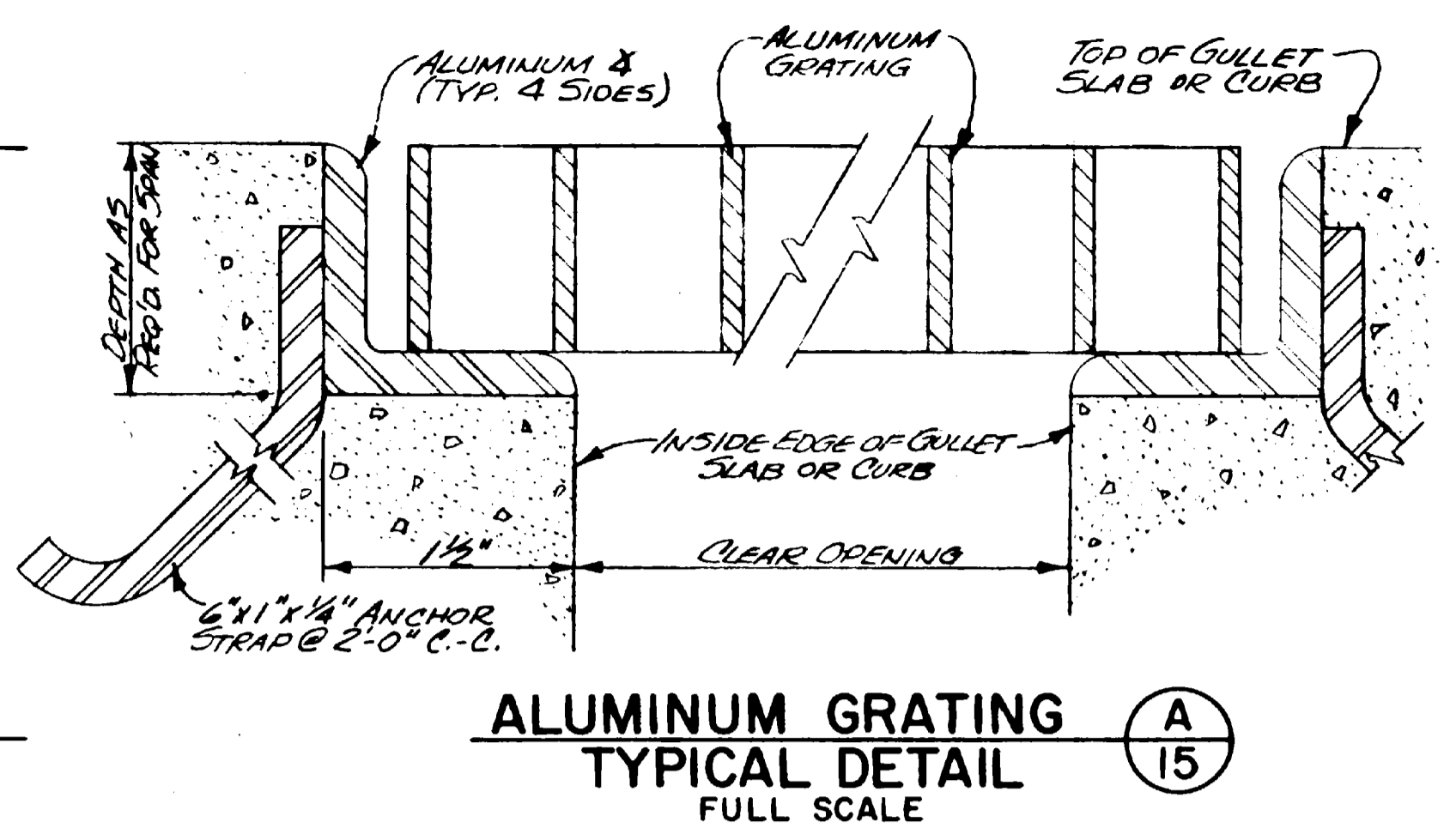
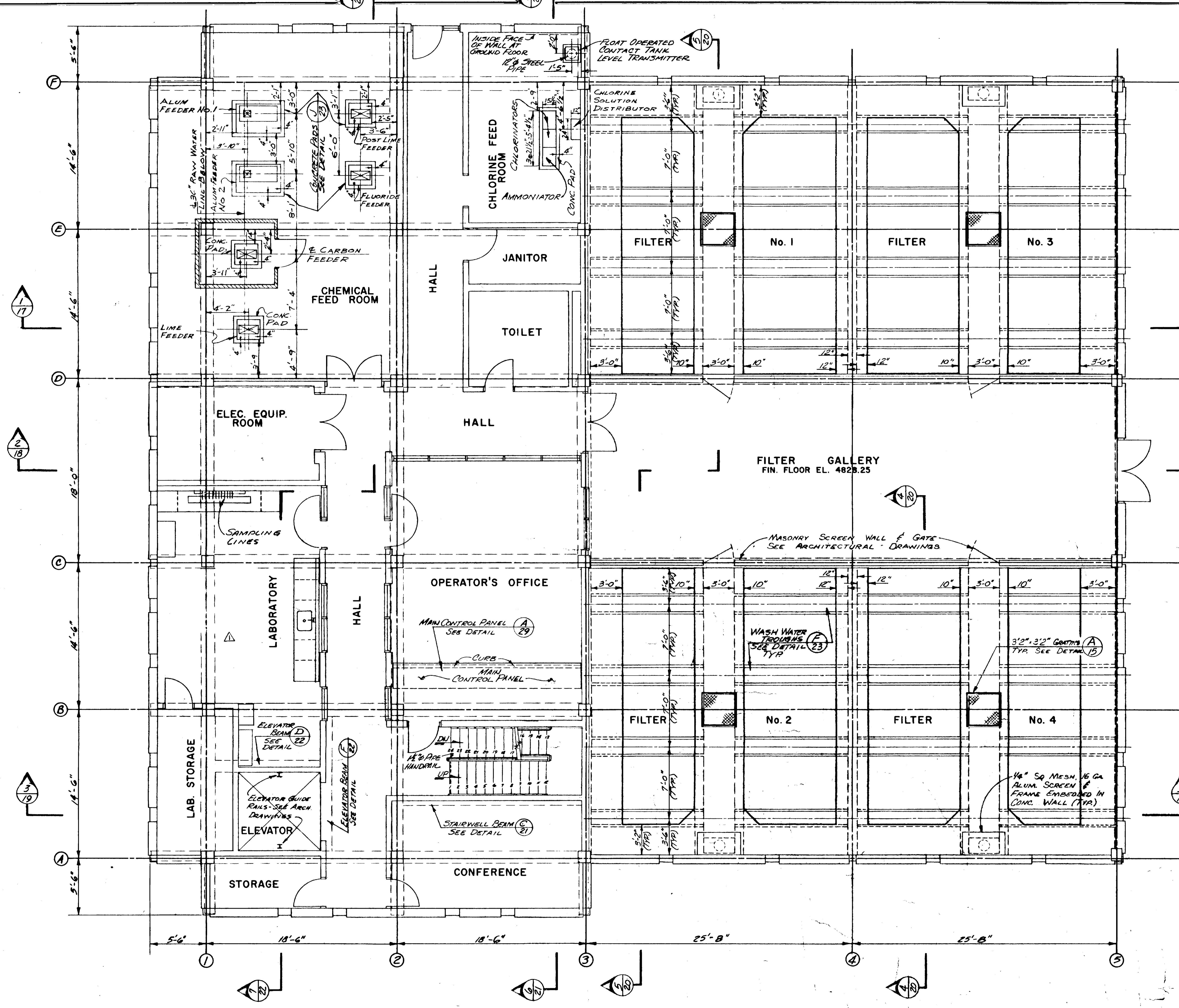
**SECTION 2**  
 SCALE: 1/2" = 1'-0"  
 14

**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
 (CONTRACT - I)  
 WATER TREATMENT PLANT  
**STRUCTURAL - MECHANICAL**  
**GROUND FLOOR & PIPE GALLERY**  
**PLANS & DETAILS**

**HARRINGTON, DUNHAM & RICHARDSON, INC.**  
 ENGINEERS - PLANNERS - CONSULTANTS  
 DENVER, COLORADO

DESIGNED: E.F.R. R.E.R. CHECKED: K.D.H.  
 DATE: 7-25-70 DRAWN: A.S. BUILT: A.T. MADE: K.D.H.  
 SHEET NO. 730810 REVISED: DATE: DEC. 1967

14 OF 39  
 07055315.tiff



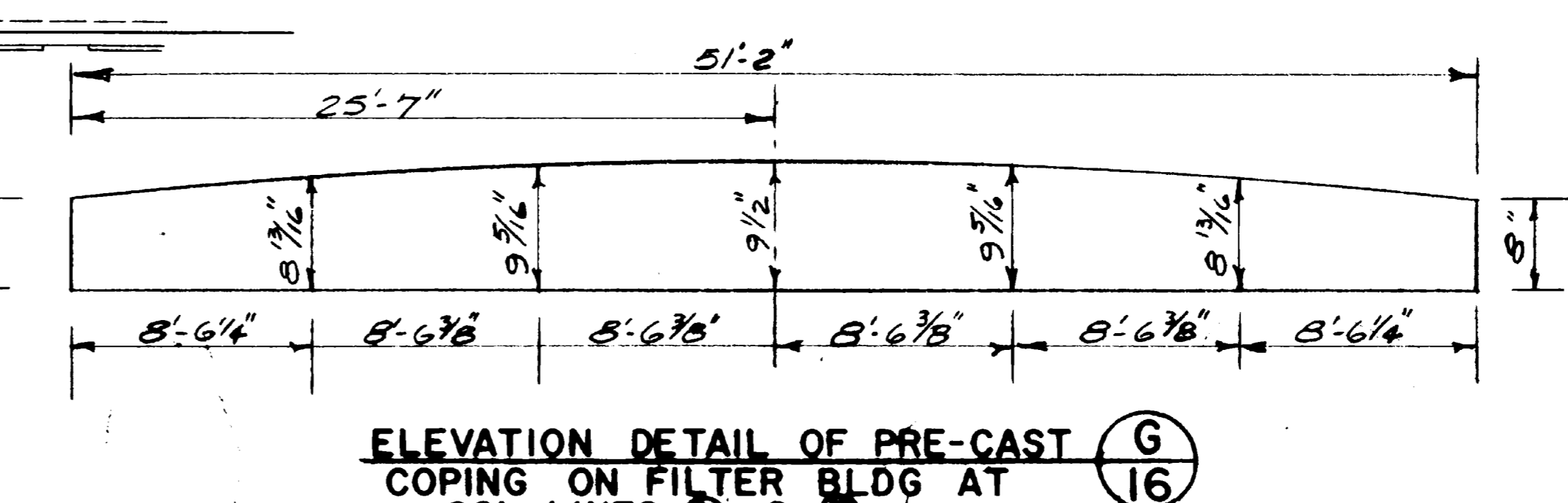
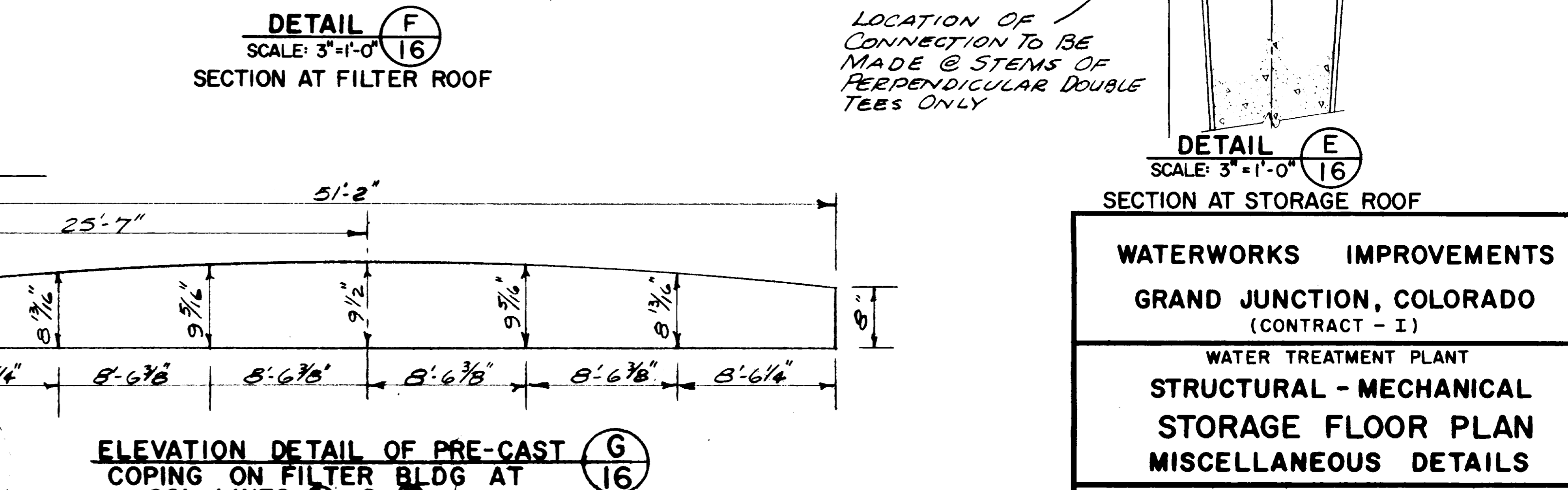
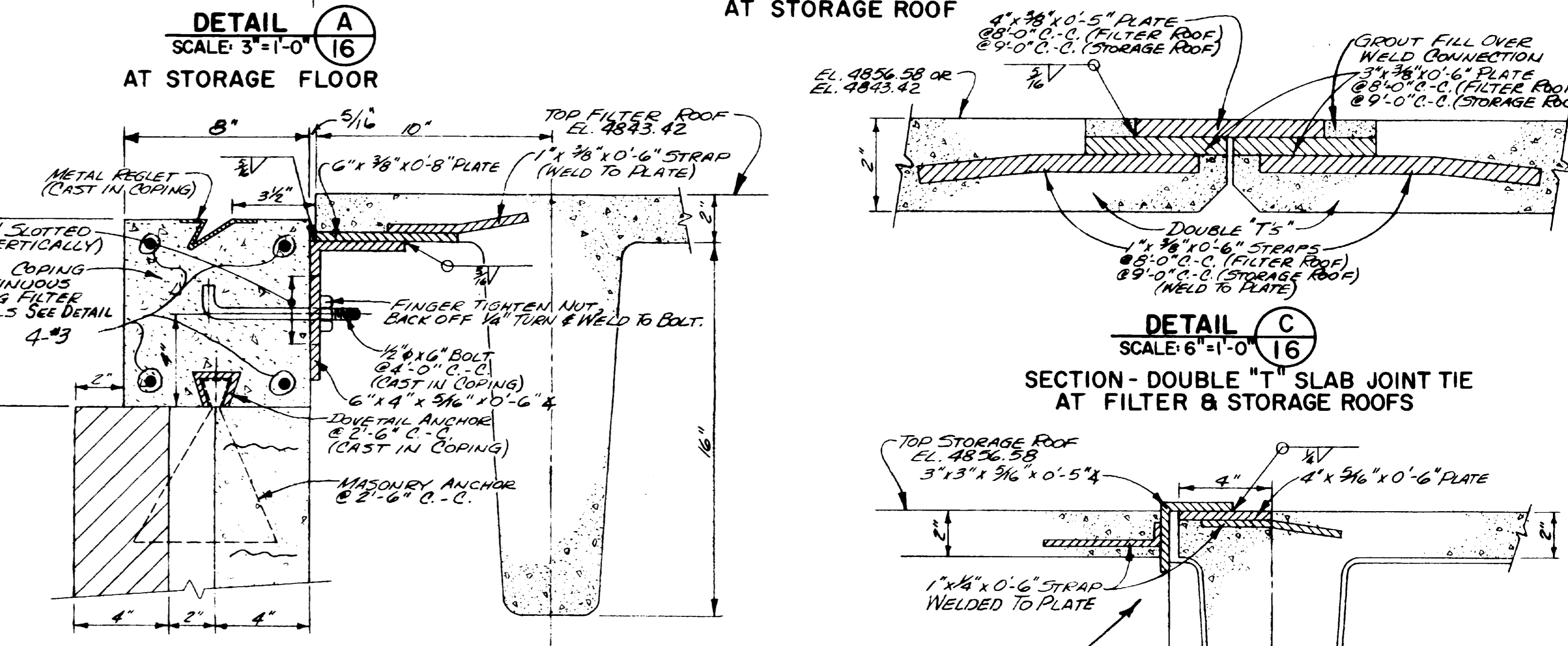
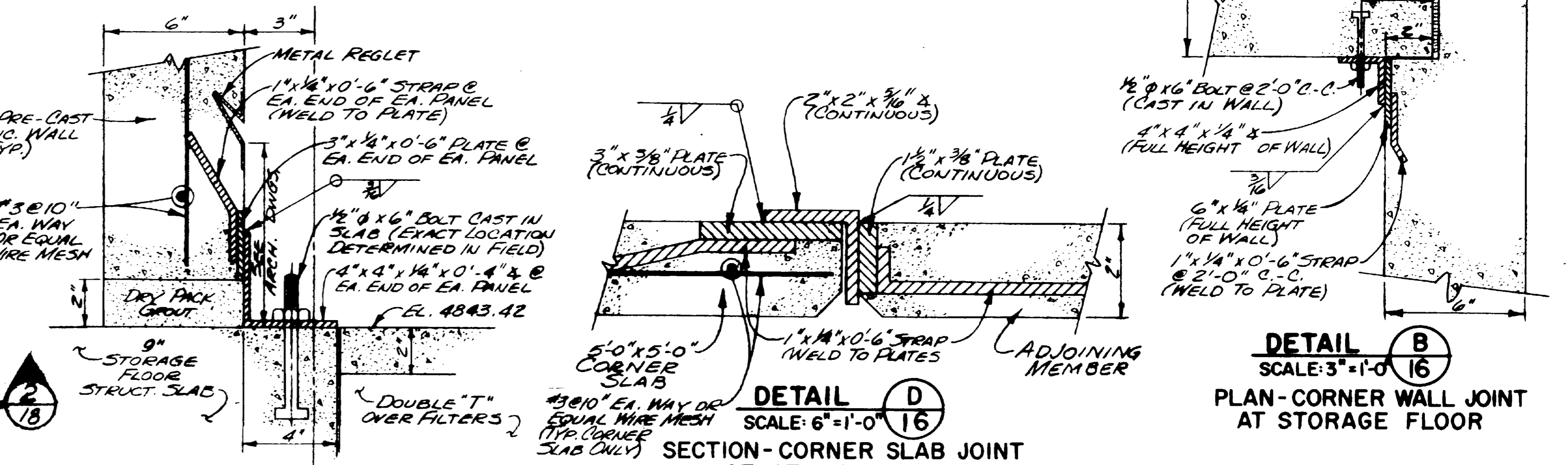
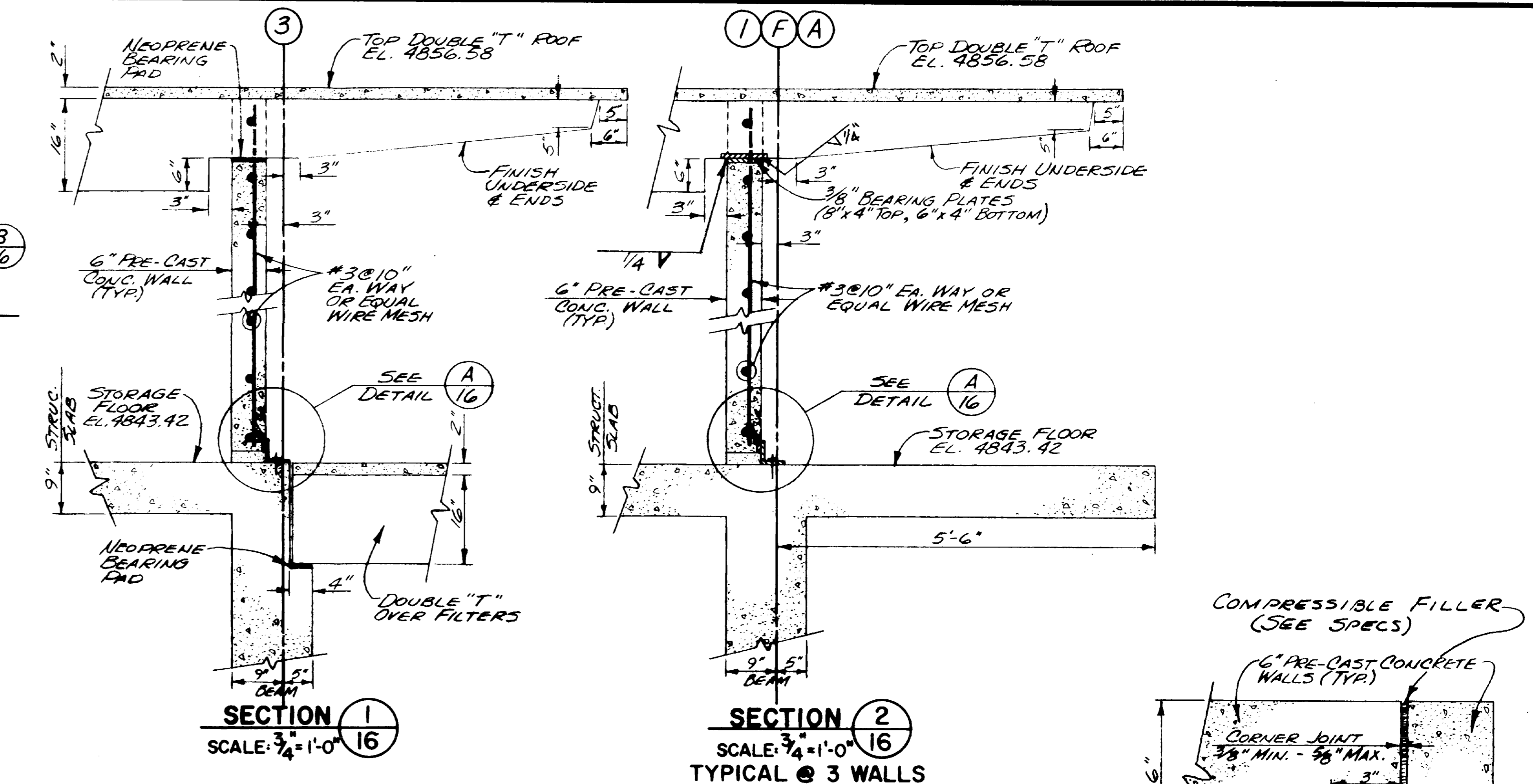
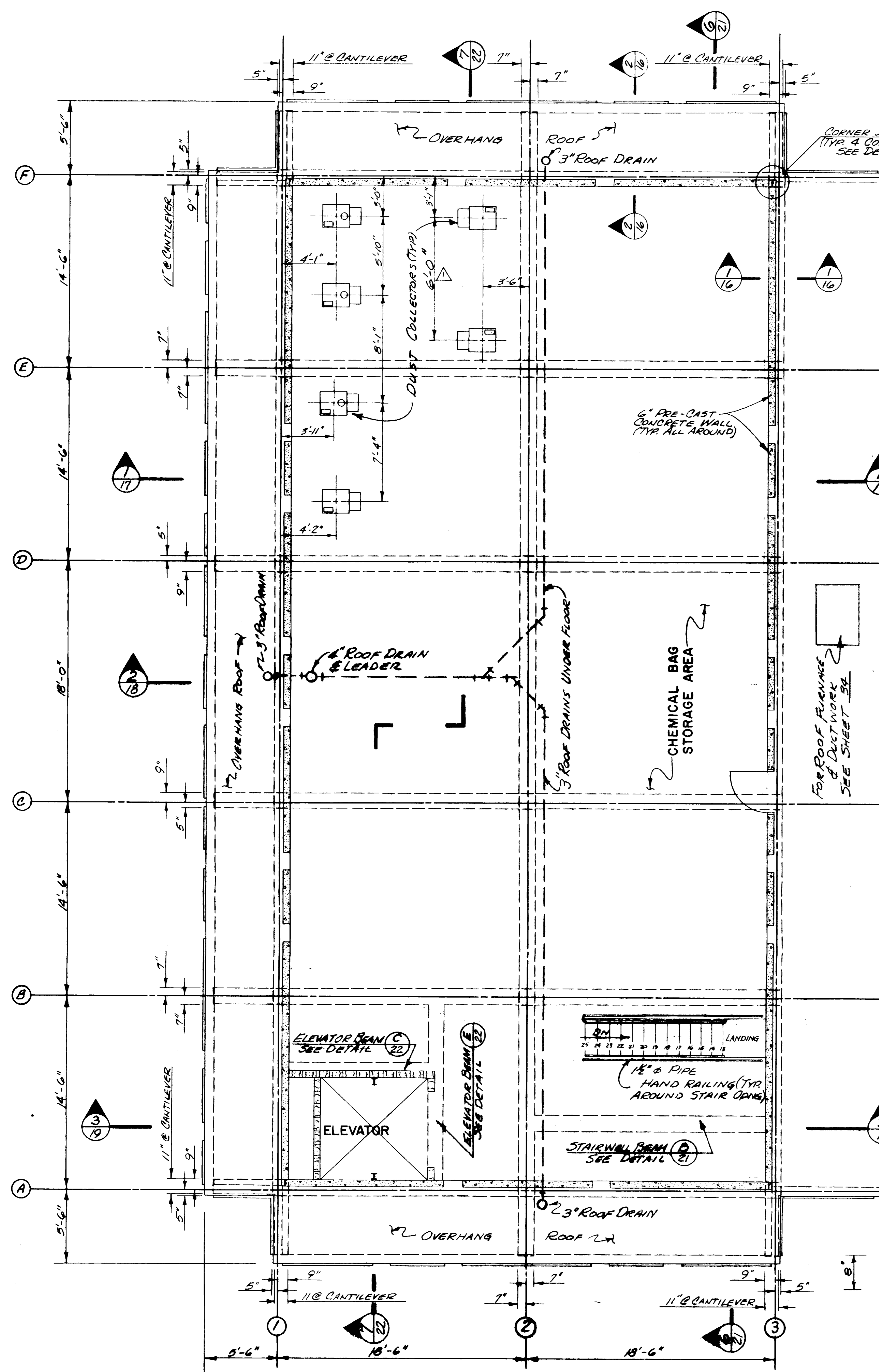
**OPERATING FLOOR PLAN**  
SCALE: 1/4" = 1'-0"  
ELEV. 4828.25

**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
(CONTRACT - I)  
WATER TREATMENT PLANT  
**STRUCTURAL - MECHANICAL**  
**OPERATING FLOOR PLAN**

**HARRINGTON, DURHAM & RICHARDSON, INC.**  
ENGINEERS • PLANNERS • CONSULTANTS  
DENVER, COLORADO

NO.	DATE	DESCRIPTION	BY	APPROV.
1	2-25-70	As Built - (Removed Lab. Table)	A.T.	K.D.M.

JOB 730810 DESIGNED E.R.-R.E.R. CHECKED K.D.M. APPROVED W.L.B.  
DATE AT - D.A.S. DATE DEC. 1967



**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
(CONTRACT - I)

WATER TREATMENT PLANT  
**STRUCTURAL - MECHANICAL**  
**STORAGE FLOOR PLAN**  
**MISCELLANEOUS DETAILS**

**HENDERSONSON, DURHAM & RICHARDSON, INC.**  
ENGINEERS - PLANNERS - CONSULTANTS  
DENVER, COLORADO

NO. 730810  
DATE 12-25-70  
AS BUILT  
DESCRIPTION REVISIONS  
A.T. K.D.N.  
MADE APPROV.  
DESIGNED E.F.R.-R.E.R.  
APPROVED W.L.B.  
DATE D.A.S. INT. REV. 1987

SHEET 16 OF 39

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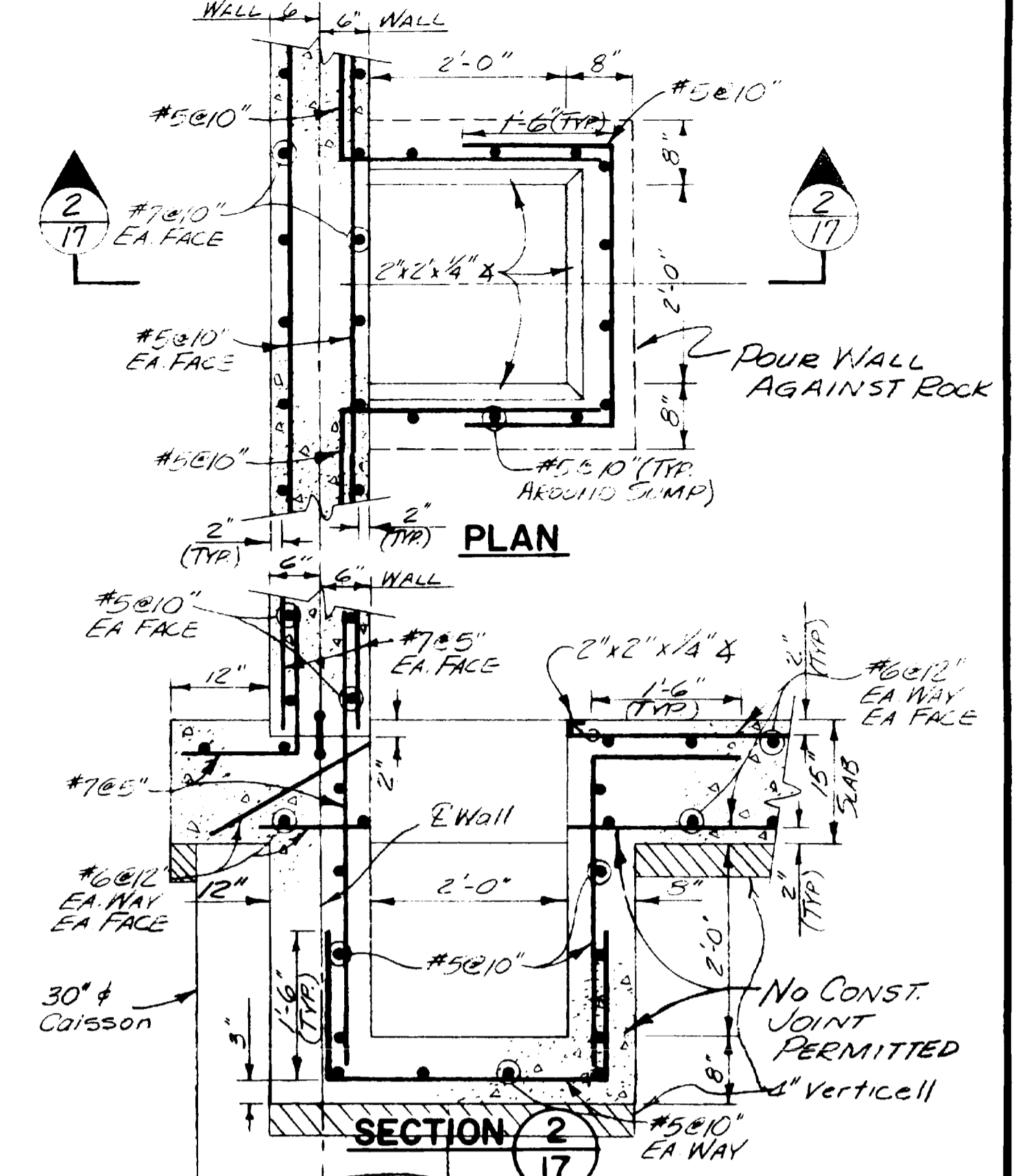
1 15'-6" 2 15'-6" 3 25'-8" 4 25'-8" 5

**NOTE:**  
 CONCRETE PROTECTION FOR REINFORCEMENT THE METAL REINFORCEMENT SHALL BE PROTECTED BY THE THICKNESS OF CONCRETE OVER THE REINFORCEMENT AS SHOWN ON THE PLANS BUT IN NO CASE LESS THAN THE FOLLOWING:  
 1. WHERE CONCRETE IS DEPOSITED AGAINST GROUND WITHOUT THE USE OF FORMS, NO LESS THAN THREE (3) INCHES.  
 2. WHERE CONCRETE IS EXPOSED TO THE WEATHER, OR EXPOSED TO THE GROUND BUT IS PLACED IN FORMS, NOT LESS THAN TWO (2) INCHES FOR BARS MORE THAN 5/8 INCH IN DIAMETER AND 1 1/2 INCHES FOR BARS 5/8 INCH OR LESS IN DIAMETER.  
 3. IN SLABS AND WALLS NOT EXPOSED TO THE GROUND OR TO THE WEATHER, NOT LESS THAN 3/4 INCH.  
 4. IN BEAMS, GIRDERS AND COLUMNS NOT EXPOSED TO THE GROUND OR TO THE WEATHER, NOT LESS THAN 1 1/2 INCHES.  
 IN ALL CASES, THE THICKNESS OF CONCRETE OVER THE REINFORCEMENT SHALL BE AT LEAST EQUAL TO THE DIAMETER OF ROUND BARS.

**NOTE:**  
 CONTRACTOR SHALL CO-ORDINATE WITH PRE-CAST, PRE-STRESSED CONCRETE DOUBLE TEE SUPPLIER FOR PROPER LOCATIONS OF VENT & PIPE OPENINGS

18' x 8' 0" x 4' 0" SPAN PRE-CAST, PRE-STRESSED CONCRETE DOUBLE TEE ROOF BEAMS

18' x 8' 0" x 5' 2" SPAN PRE-CAST, PRE-STRESSED CONCRETE DOUBLE TEE ROOF BEAMS



**PUMP ROOM SUMP DETAIL E**  
 SCALE: 3/4" = 1'-0"

TOP #5@10" x 10'-3" (8'-3" & ELEVATOR) HOOK INTO BEAM WHERE SLAB IS DISCONTINUOUS  
 TOP STORAGE FLOOR EL. 4843.42

TOP #6@10" (ALTERNATE 6'-0" LENGTH & 10'-3" LENGTH) CENTERED ON COLUMN LINE (HOOK INTO BEAM WHERE SLAB IS DISCONTINUOUS) (8'-3" & ELEVATOR)  
 TOP OPERATING FLOOR (STRUCT.) EL. 4828.00  
 GRADE EL. 4827.00

**NOTE:** 3" VERTICELL ENCASED IN POLYETHYLENE BAG IS TO BE PLACED UNDER EACH CANTILEVER BEAM CONSTRUCTED BELOW GRADE.  
 WATERPROOF ALL AROUND BELOW GRADE (SEE SPECS)  
 #7@10" EA FACE VERT  
 3" WALL PIPE SEE DETAIL  
 E. EL. 4817.00

TOP GROUND FLOOR EL. 4814.00

PROVIDE FULL KEY 2" DEEP (TYP) HYDRO-PNEUMATIC CONTROL PANEL

TOP OF PUMP ROOM & VENT WELL FLOOR EL. 4803.50

PROVIDE FULL KEY 2" DEEP (TYP) PUMP ROOM SUMP (SEE SPECS FOR PUMP)  
 30" & Caissons, Typ Drill Down to Hard Sandstone

**DETAIL A**  
 SCALE: 1/2" = 1'-0"

**DETAIL B**  
 SCALE: 1/2" = 1'-0"

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

**DETAIL C**  
 SCALE: 1/2" = 1'-0"

**DETAIL D**  
 SCALE: 1/2" = 1'-0"

**DETAIL E**  
 SCALE: 3/4" = 1'-0"

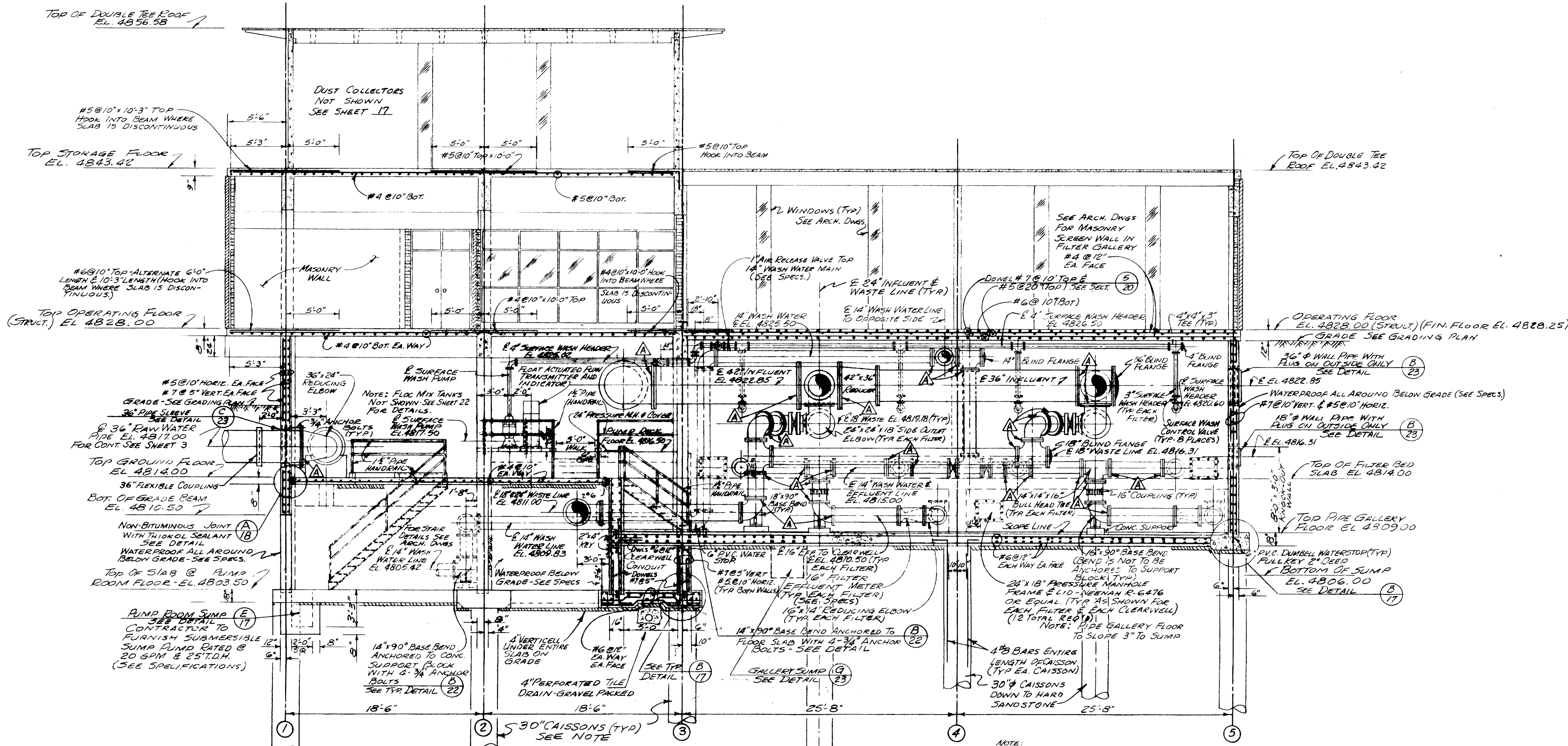
**NOTE:**  
 CAST IN PLACE FILTER BOTTOMS ARE SHOWN. FOR PRE-CAST FILTER BOTTOMS SEE SHEET 20.

Note All Caissons To Be Drilled 2'-0" Into Hard Sandstone. Depth Varies from 25' to 30' (Approx)

**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
 (CONTRACT - I)  
 WATER TREATMENT PLANT  
**STRUCTURAL-MECHANICAL SECTION 1/17 & DETAILS**

**HINNINGSON, DURHAM & RICHARDSON, INC.**  
 ENGINEERS • PLANNERS • CONSULTANTS  
 DENVER, COLORADO

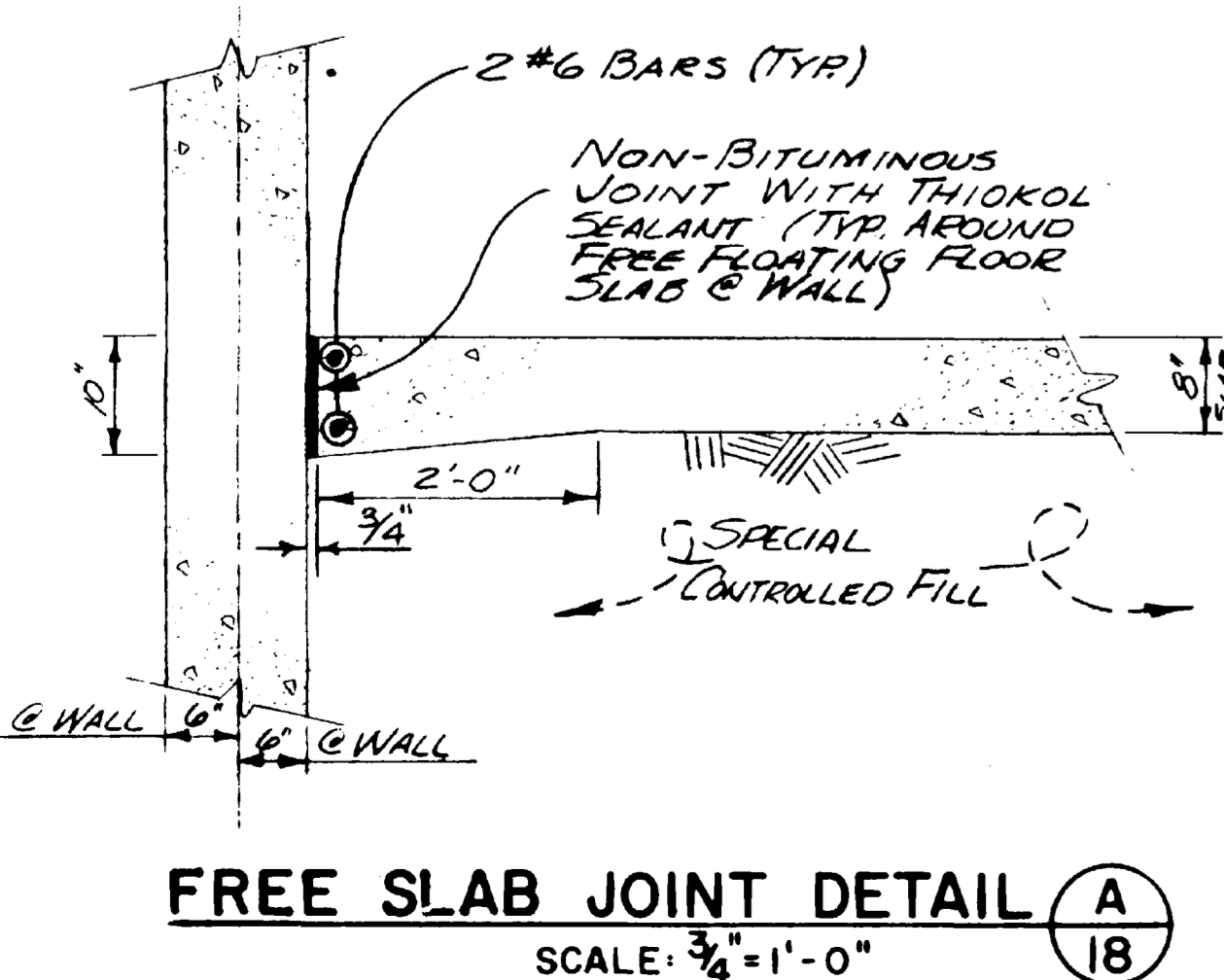
DATE	DESCRIPTION	REVISIONS	EAB	KDH	MADE	APPROVED
2-25-70	AS BUILT					
3-1-70						
3-1-70						
3-1-70						



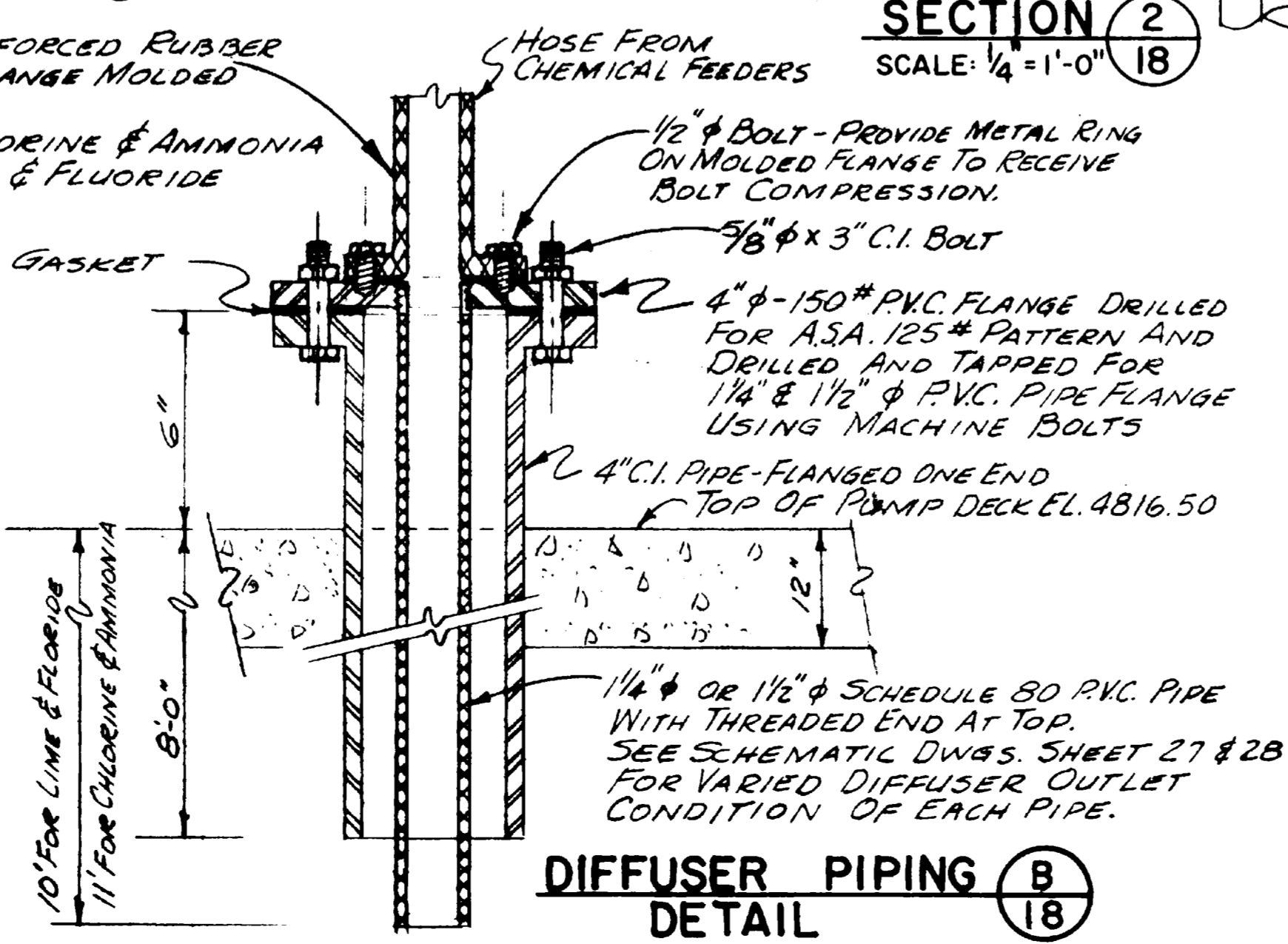
**SECTION 2**  
SCALE: 1/4" = 1'-0" (18)

NOTE:  $\Delta$  INDICATES SHOP WELDED JOINT MAY BE SUBSTITUTED FOR FLANGED JOINT OR BELL JOINT WHERE STEEL PIPE IS USED.

NOTE: ALL CAISSONS TO BE DRILLED 2'-0" INTO HARD SANDSTONE. DEPTH VARIES FROM APPROX. 25' TO 30'.



**FREE SLAB JOINT DETAIL (A)**  
SCALE: 3/4" = 1'-0" (18)



**DIFFUSER PIPING DETAIL (B)**  
NO SCALE (18)

<b>WATERWORKS IMPROVEMENTS</b>	
<b>GRAND JUNCTION, COLORADO</b>	
(CONTRACT - I)	
WATER TREATMENT PLANT	
<b>STRUCTURAL - MECHANICAL</b>	
<b>SECTION 2/18</b>	
<b>&amp; DETAILS</b>	
HERRINGSON, DURHAM & RICHARDSON, INC. ENGINEERS - PLANNERS - CONSULTANTS DENVER, COLORADO	
DATE: 12-25-70	AS BUILT
BY: A.F. K.D.H.	MADE: APPROX.
NO. 730810	DATE: DEC. 1967

TOP STORAGE ROOF DOUBLE TEE SECTIONS EL. 4856.58

TOP #5/8" x 10'-5" 18'-3" @ ELEVATOR HOOK INTO BEAM WHERE SLAB IS DISCONTINUOUS

TOP STORAGE FLOOR EL. 4843.42

TOP #6/8" (ALTERNATE 6'-0" LENGTH AND 10'-3" LENGTH) CENTERED ON COLUMN LINE (HOOK INTO BEAM WHERE SLAB IS DISCONTINUOUS) 8'-3" @ ELEVATOR

TOP OPERATING FLOOR (STRUCT.) EL. 4828.00

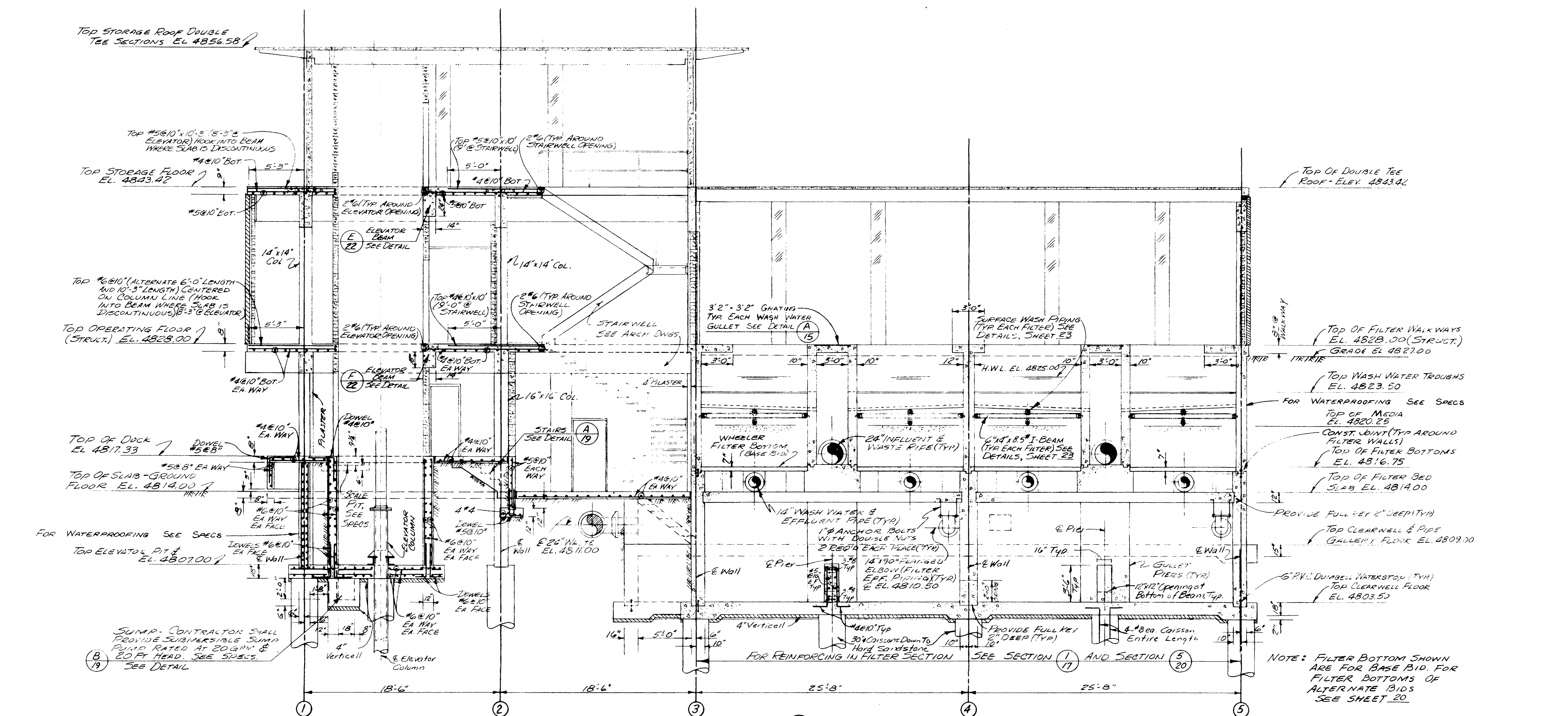
TOP OF DOCK EL. 4817.33

TOP OF SLAB - GROUND FLOOR EL. 4814.00

FOR WATERPROOFING SEE SPECS

TOP ELEVATOR PIT & EL. 4807.00

SUMP - CONTRACTOR SHALL PROVIDE SUBMERSIBLE SUMP PUMP RATED AT 20 GPM & 20 FT. HEAD. SEE SPECS. SEE DETAIL



**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
 (CONTRACT - I)

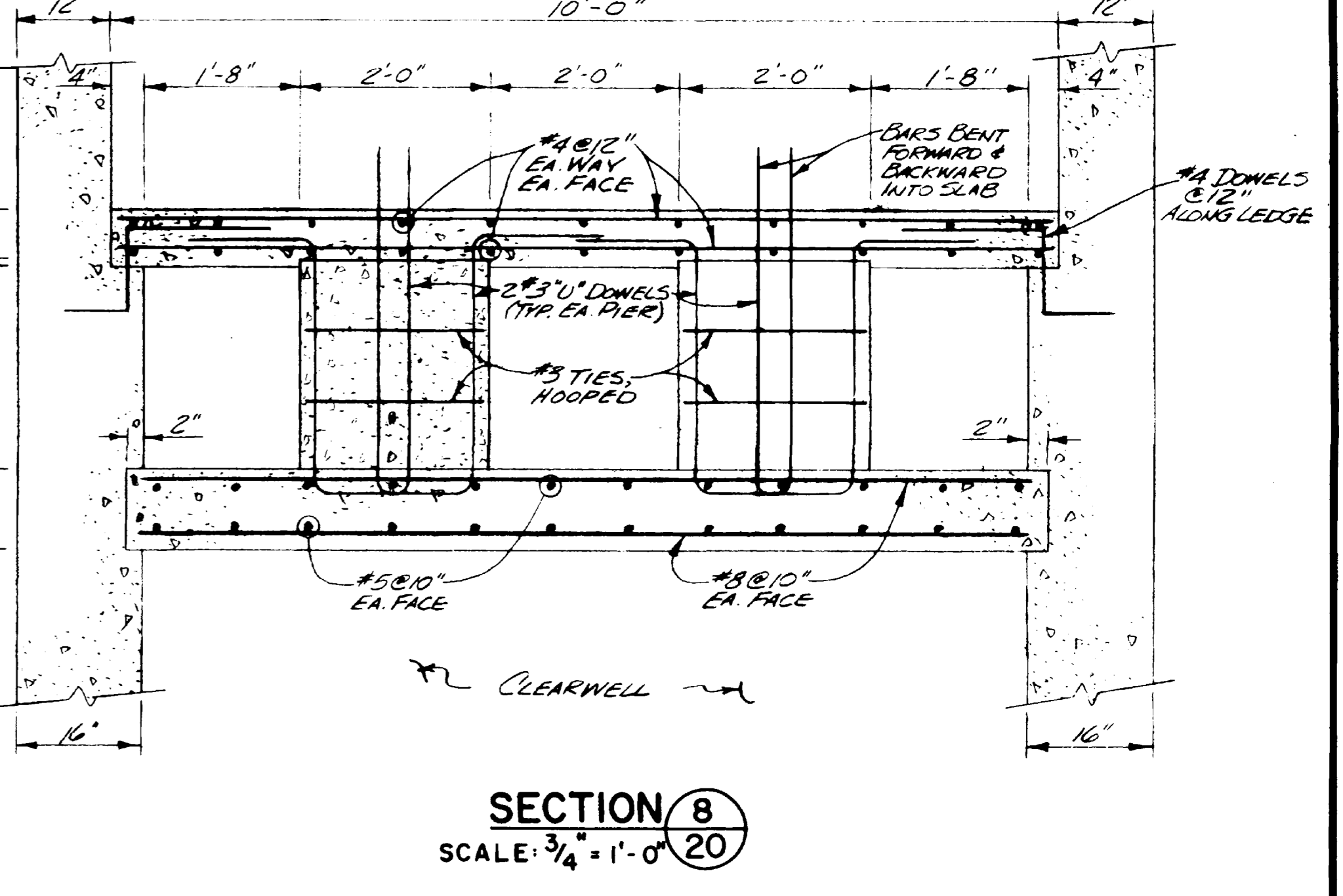
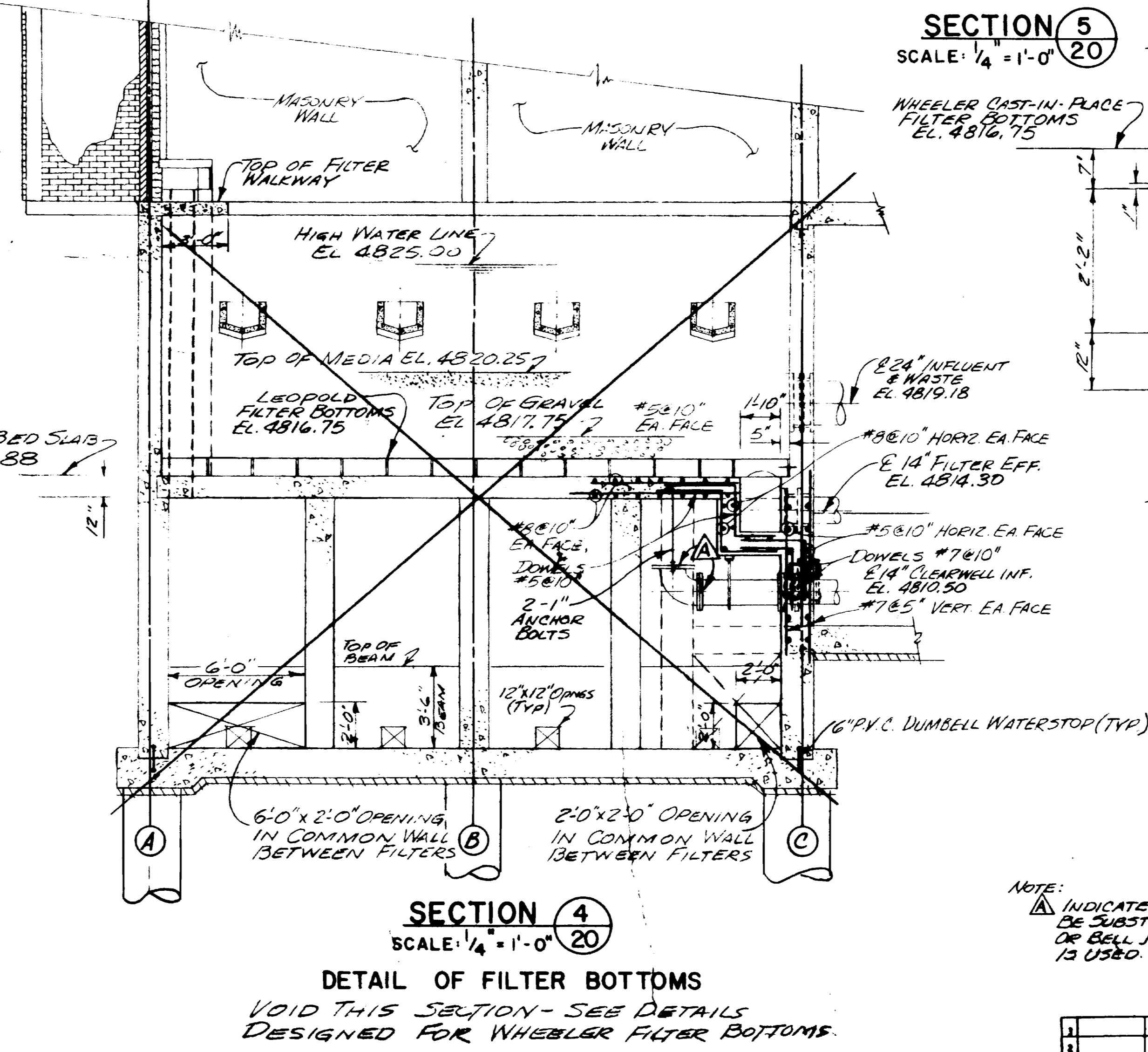
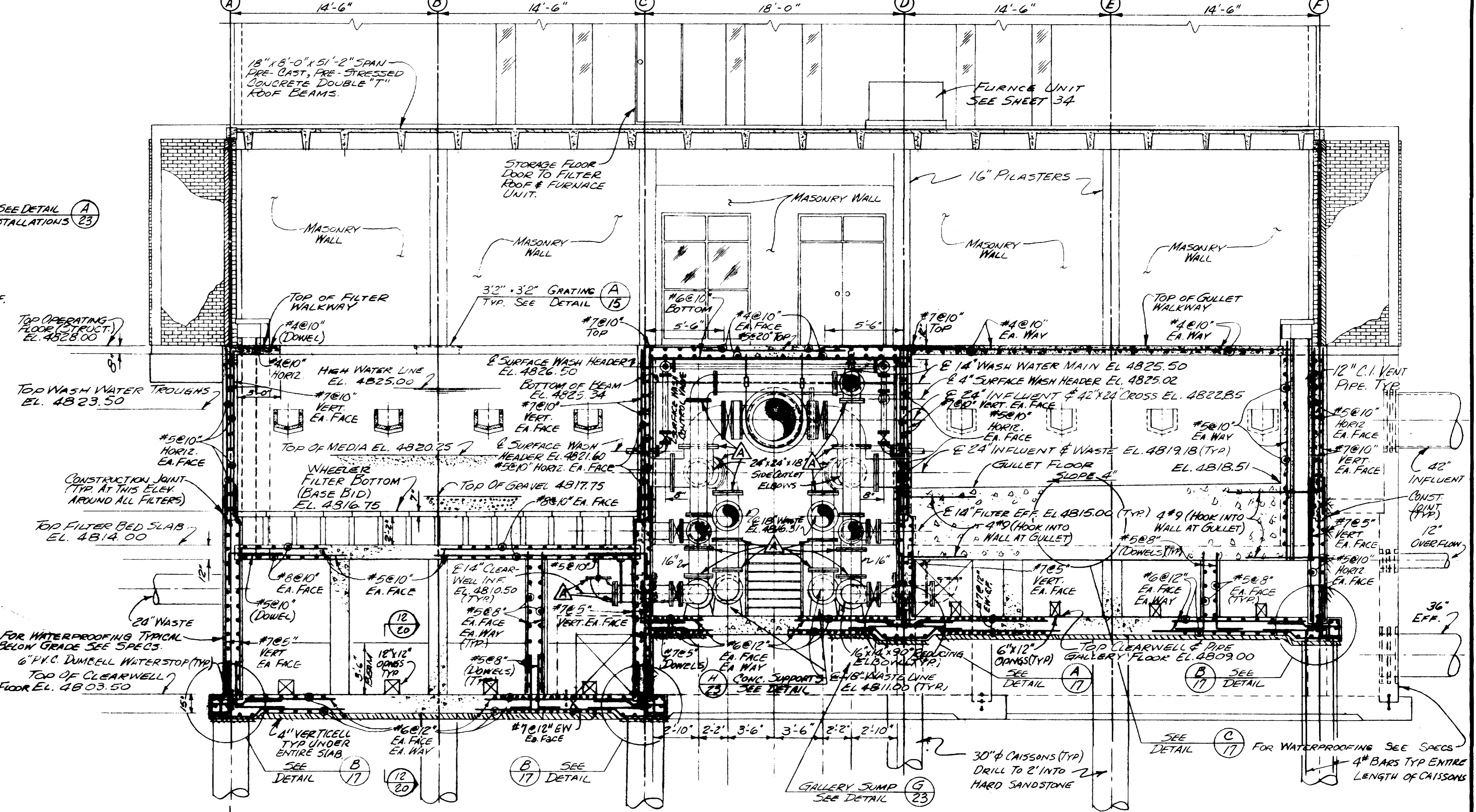
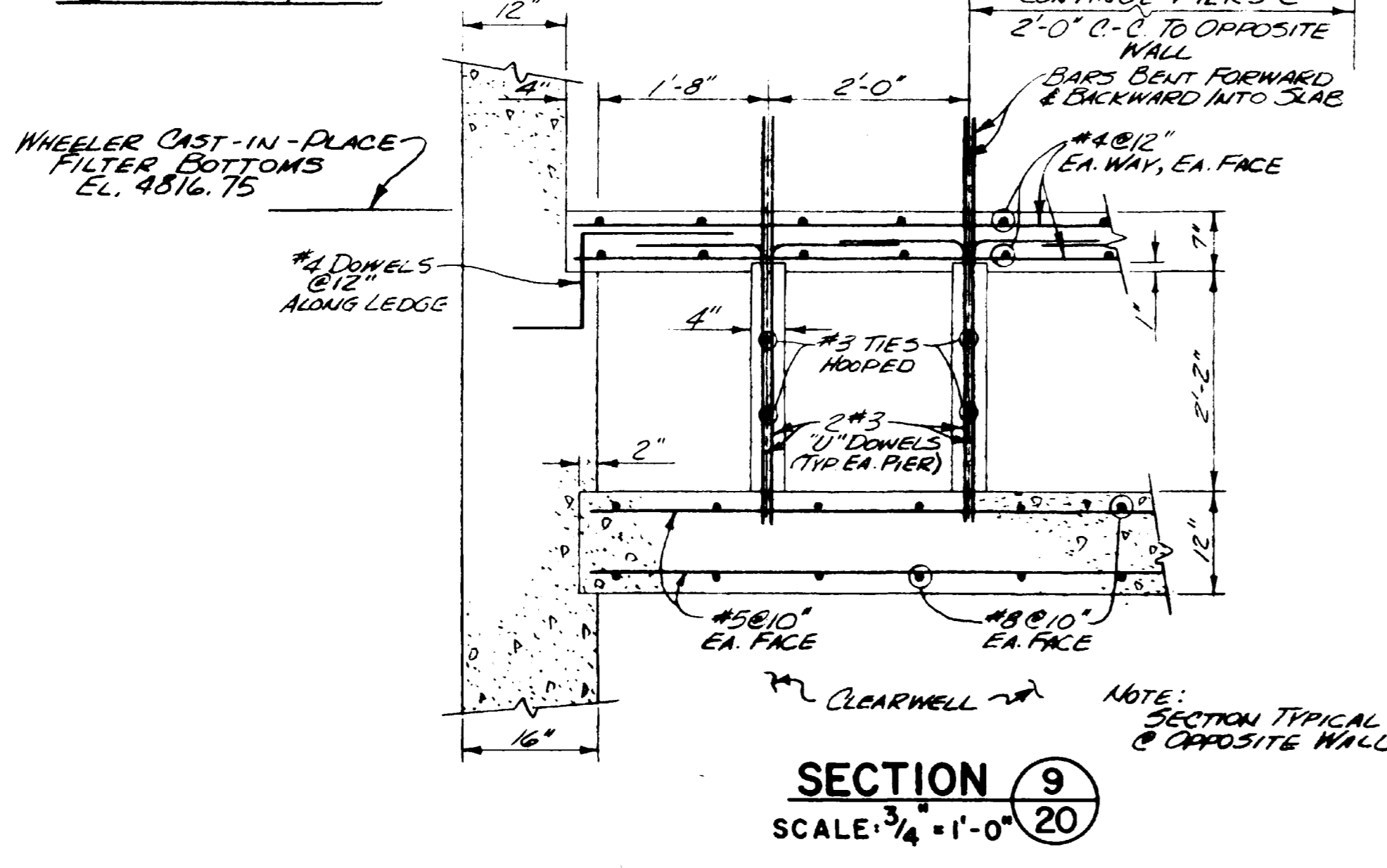
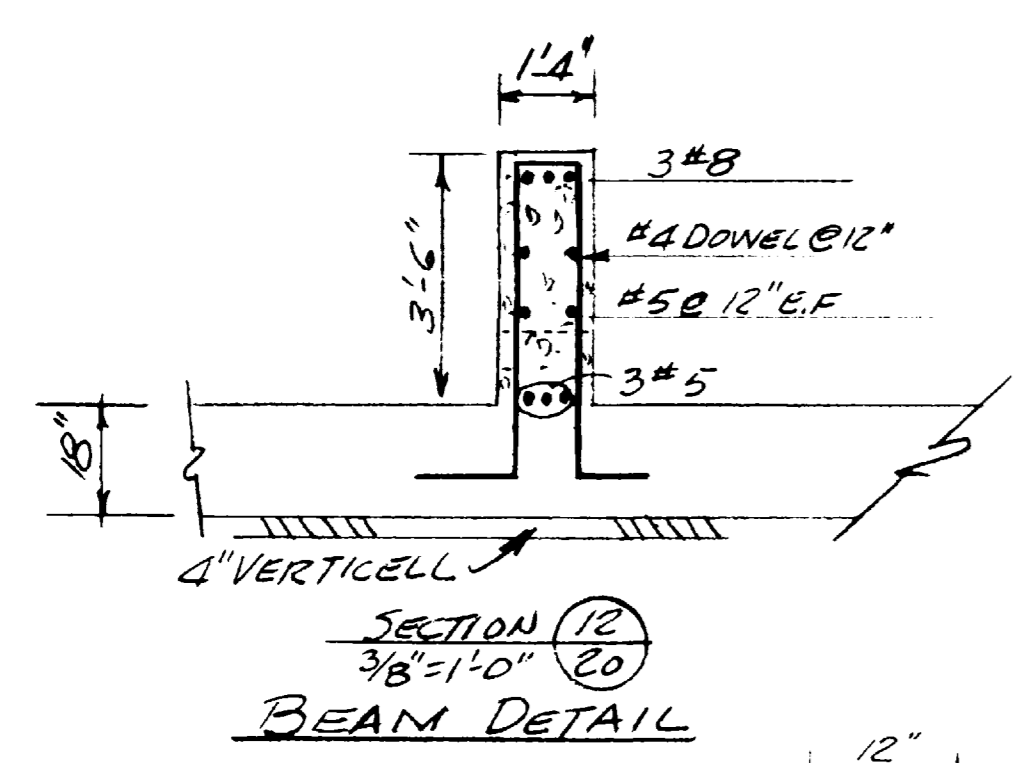
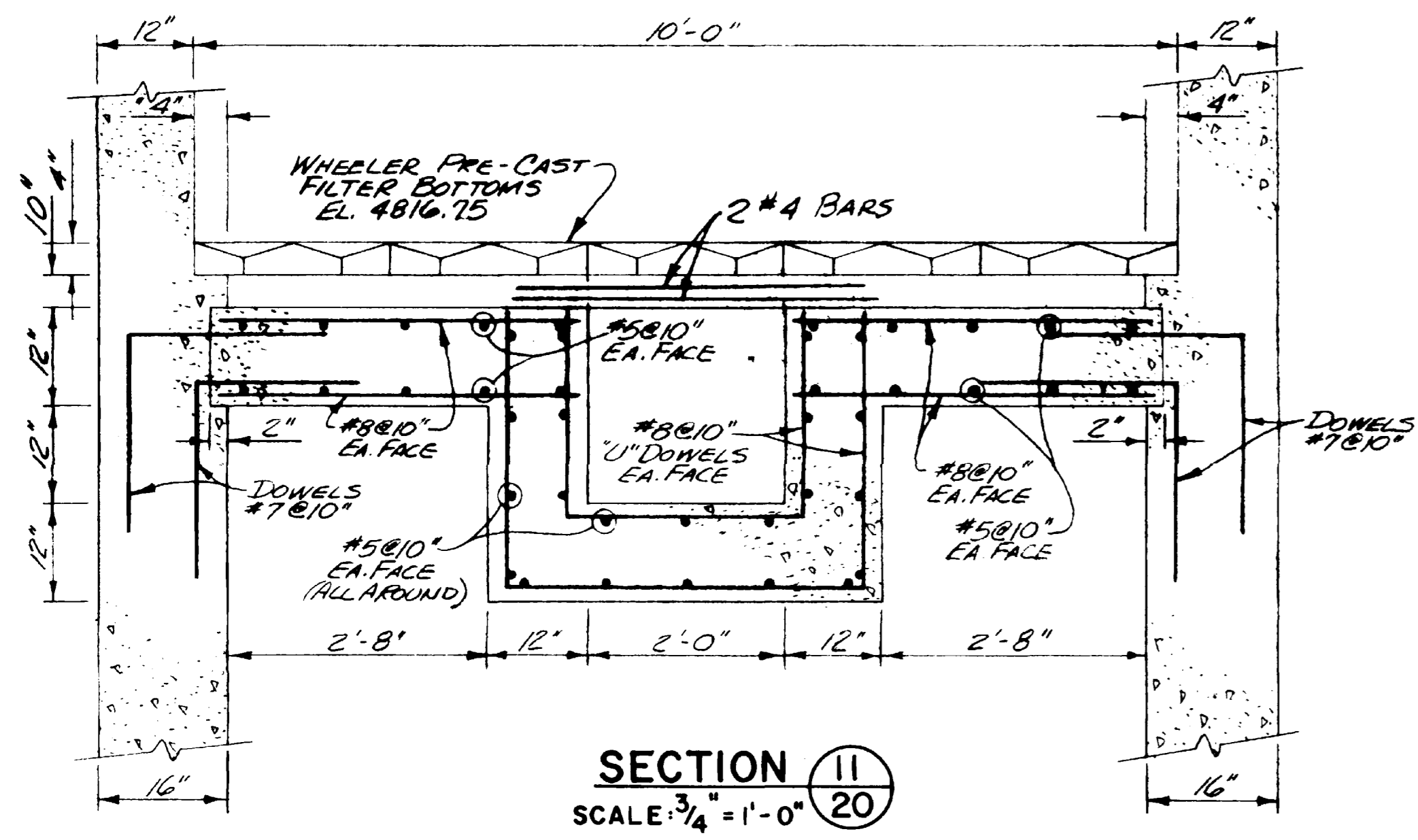
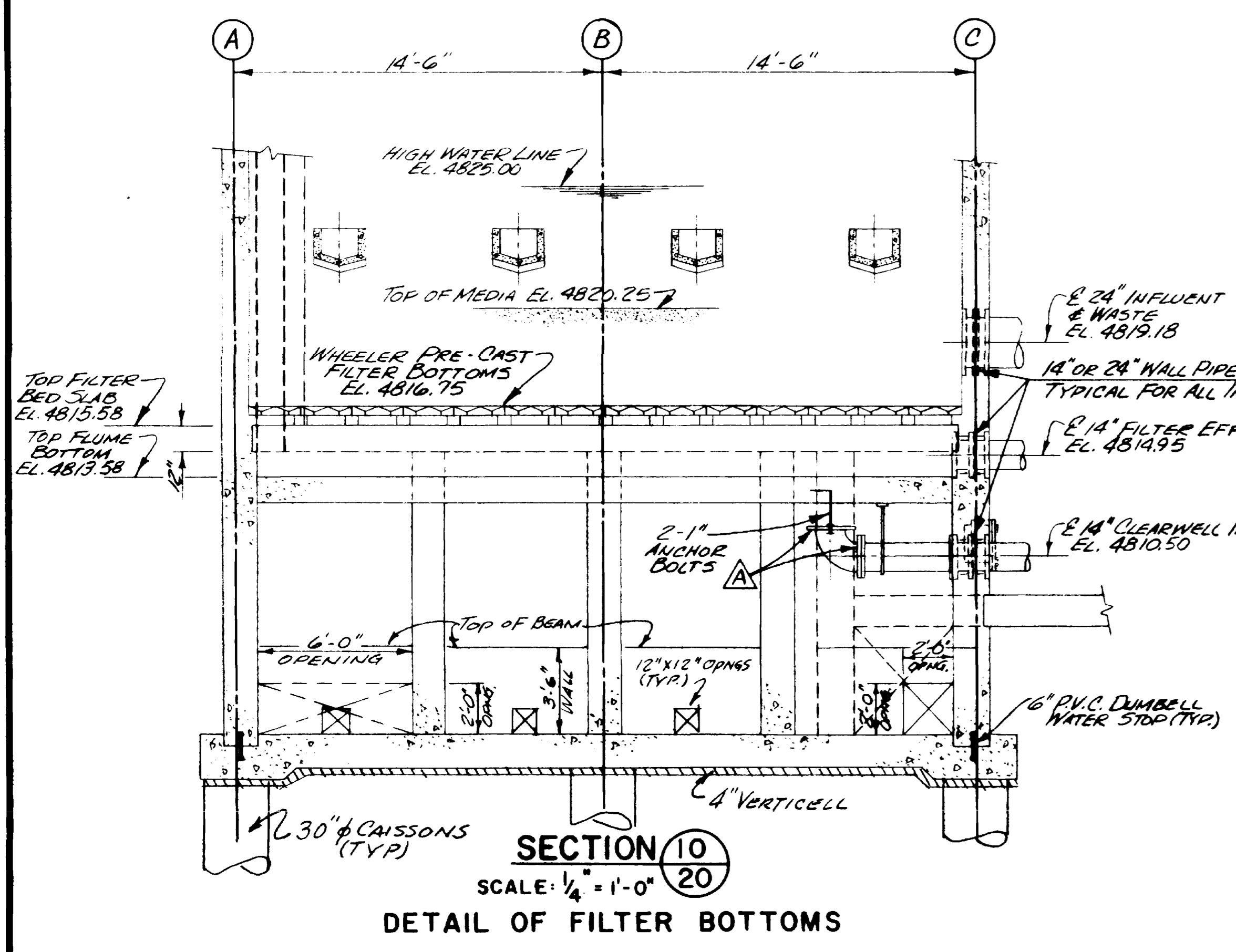
WATER TREATMENT PLANT  
**STRUCTURAL - MECHANICAL**  
**SECTION 3/19**  
**& DETAILS**

HERRINGSON, DURHAM & RICHARDSON, INC.  
 ENGINEERS - PLANNERS - CONSULTANTS  
 DENVER, COLORADO

DESIGNED BY: E.F.R. - R.E.R. CHECKED BY: K.D.H.  
 DRAWN BY: A.T. APPROVED BY: W.L.B.  
 DATE: DEC. 1967

NO. 730810 SHEET 19 OF 39

Note: All Caissons To Be Drilled 2'-0" Into Hard Sandstone. Depth Varies From 25' to 30' (Approx.)



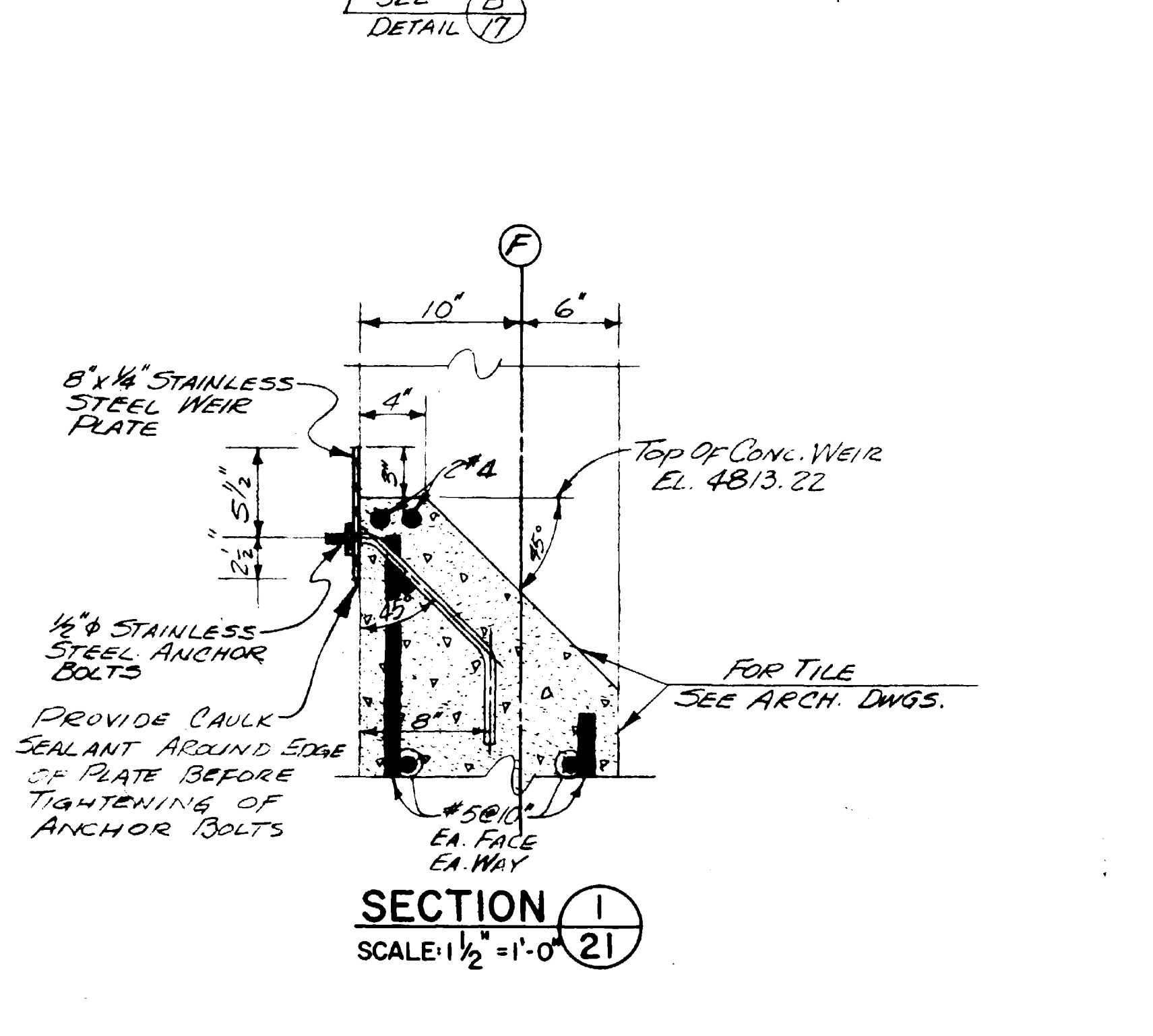
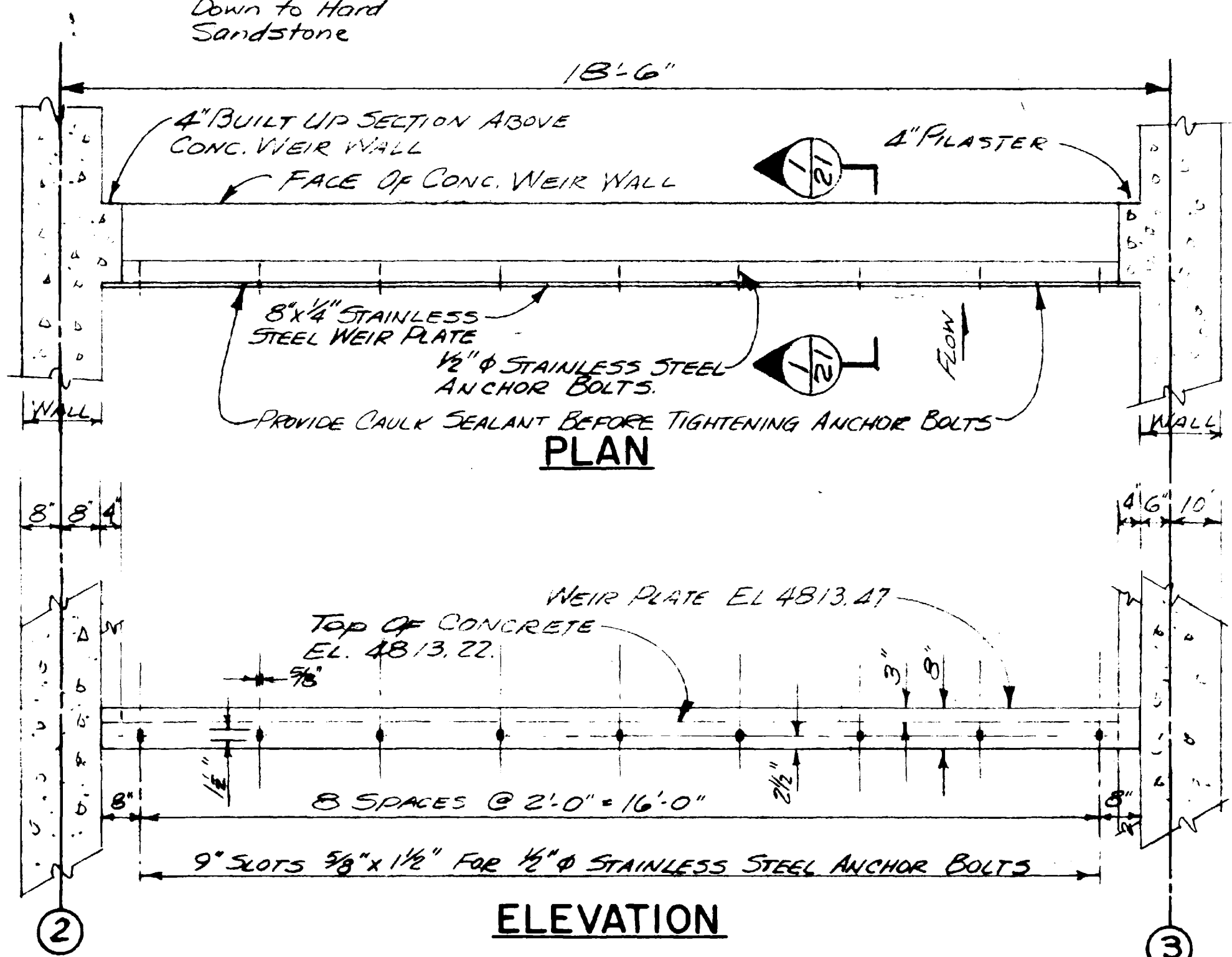
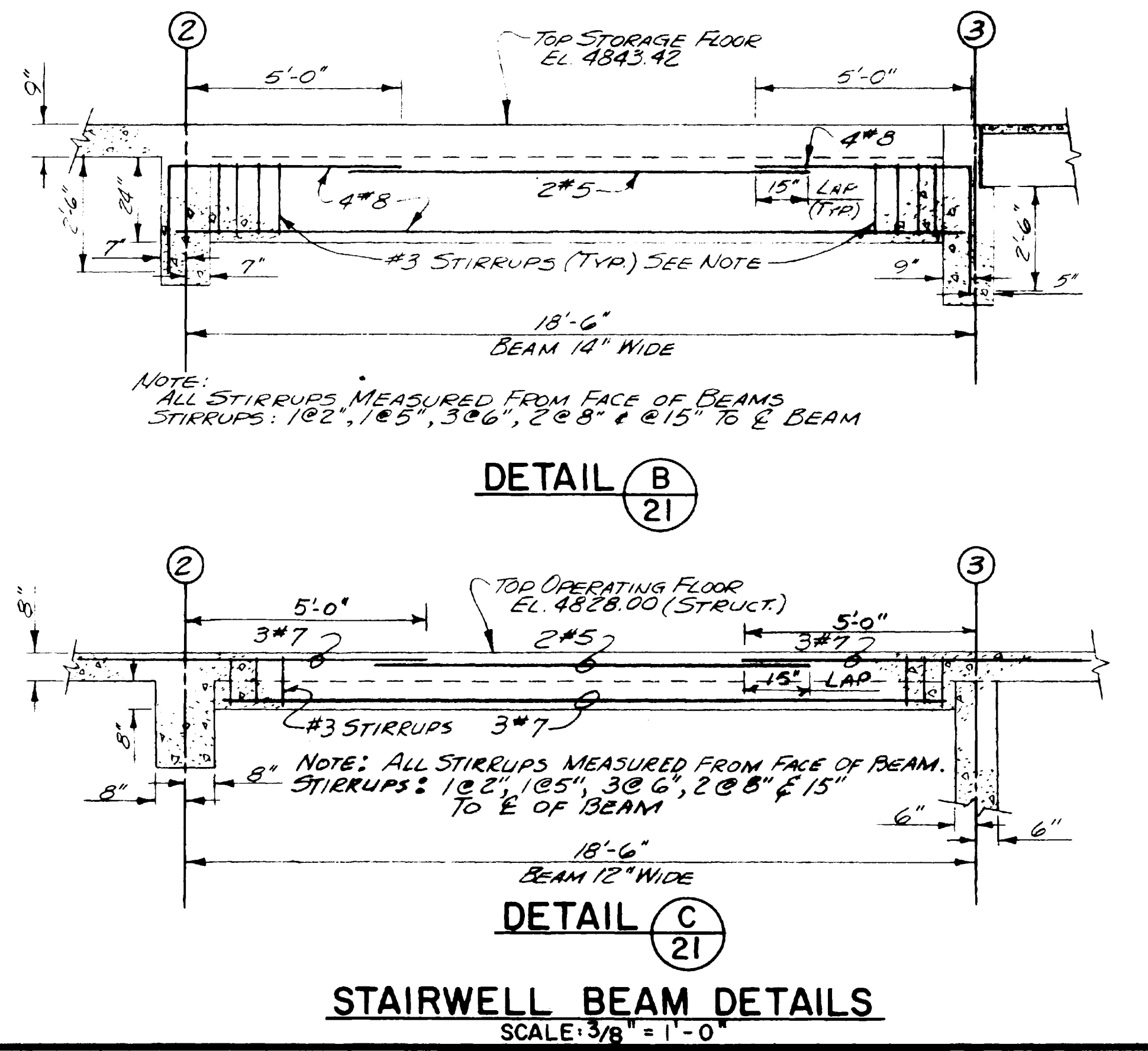
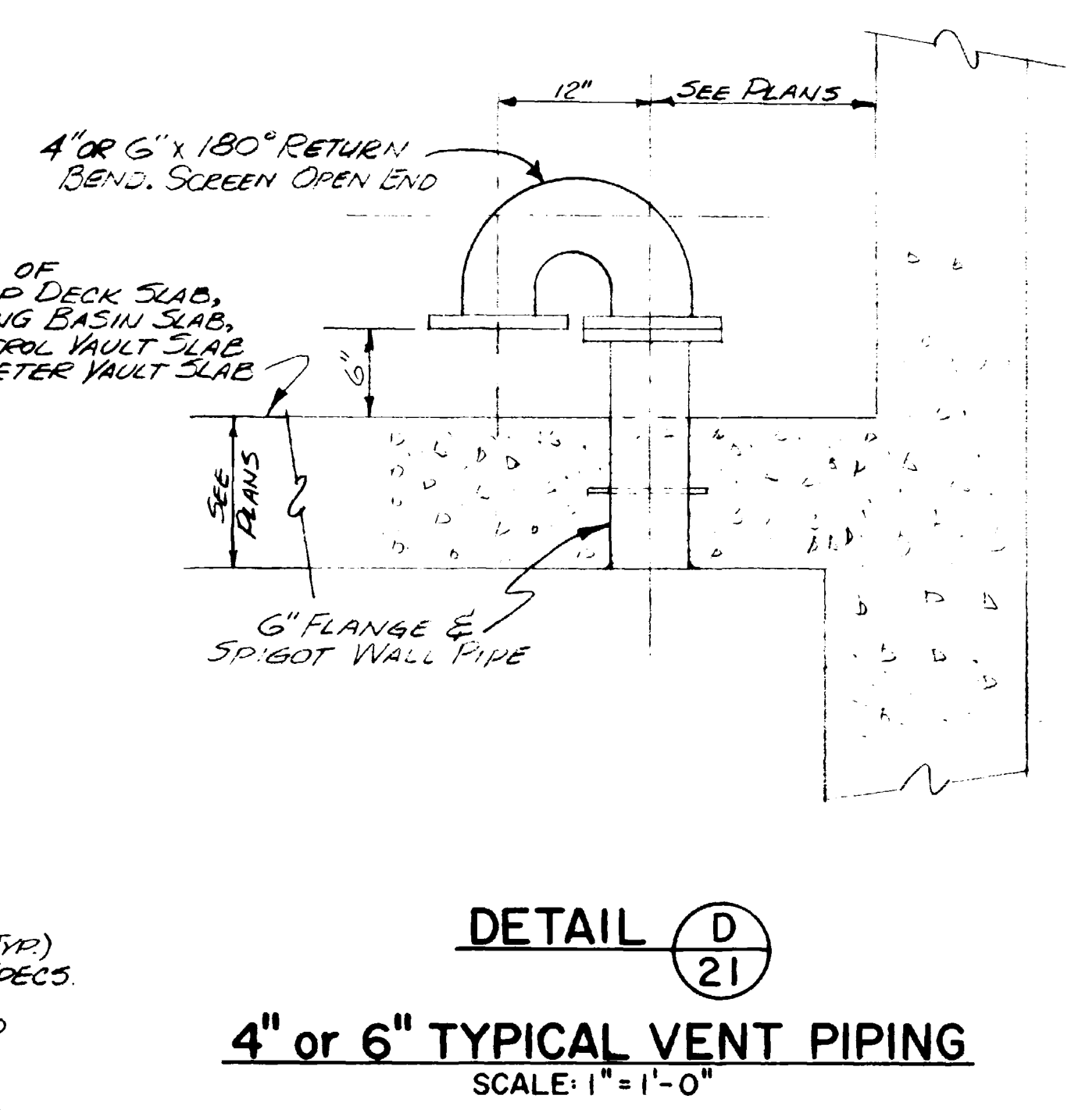
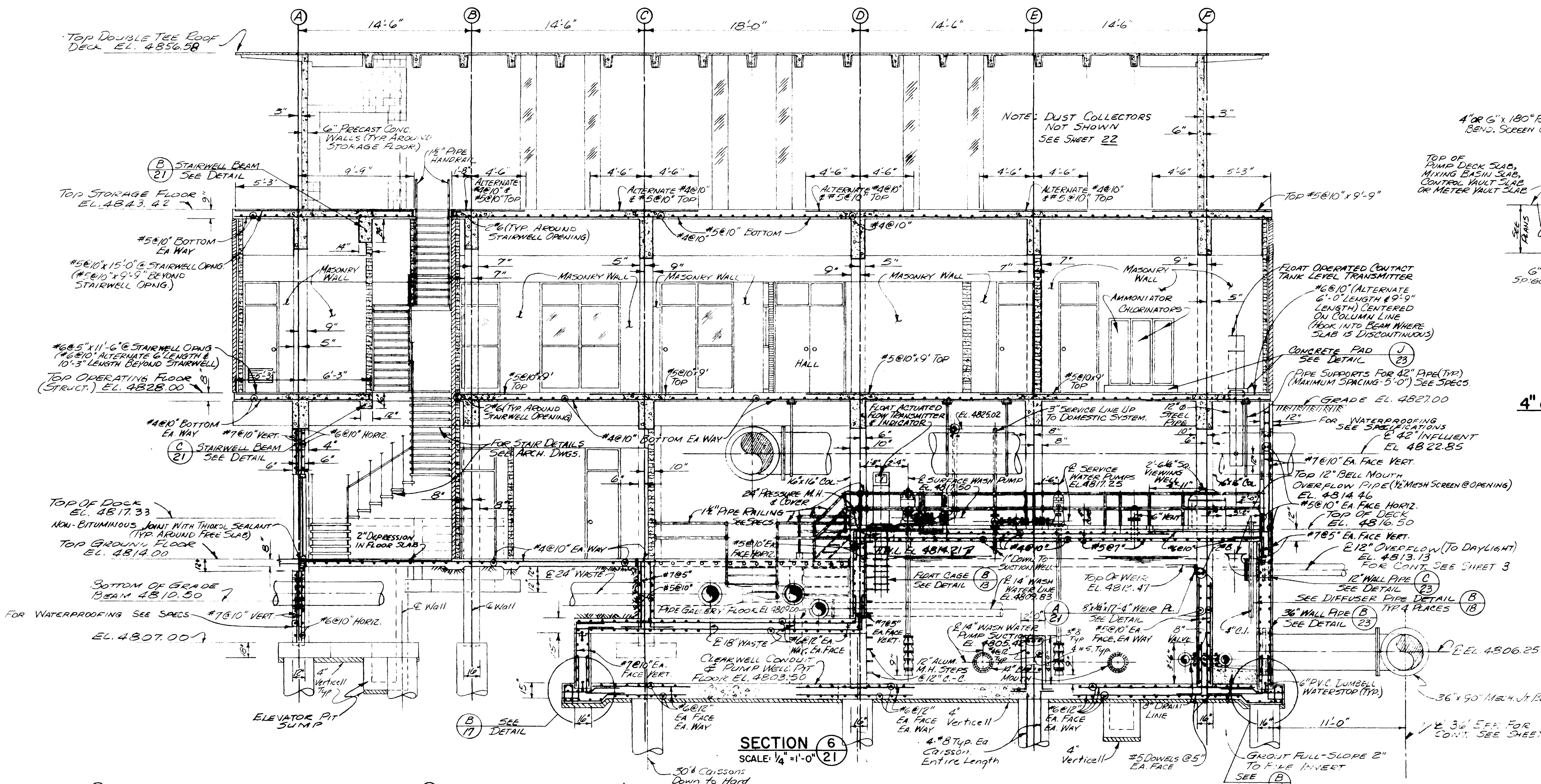
NOTE:  
INDICATES SHOP WELDED JOINT MAY BE SUBSTITUTED FOR FLANGED JOINT OR BELL JOINT WHERE STEEL PIPE IS USED.

**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
(CONTRACT - I)  
WATER TREATMENT PLANT  
**STRUCTURAL-MECHANICAL**  
**SECTION 5/20**  
**& DETAILS**

**HARRINGTON, DURHAM & RICHARDSON, INC.**  
ENGINEERS - PLANNERS - CONSULTANTS  
DENVER, COLORADO

DESIGNED: E.F.R.-R.E.R. CHECKED: K.D.H.  
DATE: 7/30/80 APPROVED: W.L.B.  
REVISION: D.A.S. DATE: DEC. 1987

20 OF 39  
0705321.tif



**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
 (CONTRACT - I)  
 WATER TREATMENT PLANT  
**STRUCTURAL - MECHANICAL**  
**SECTION 6/21**  
**& DETAILS**

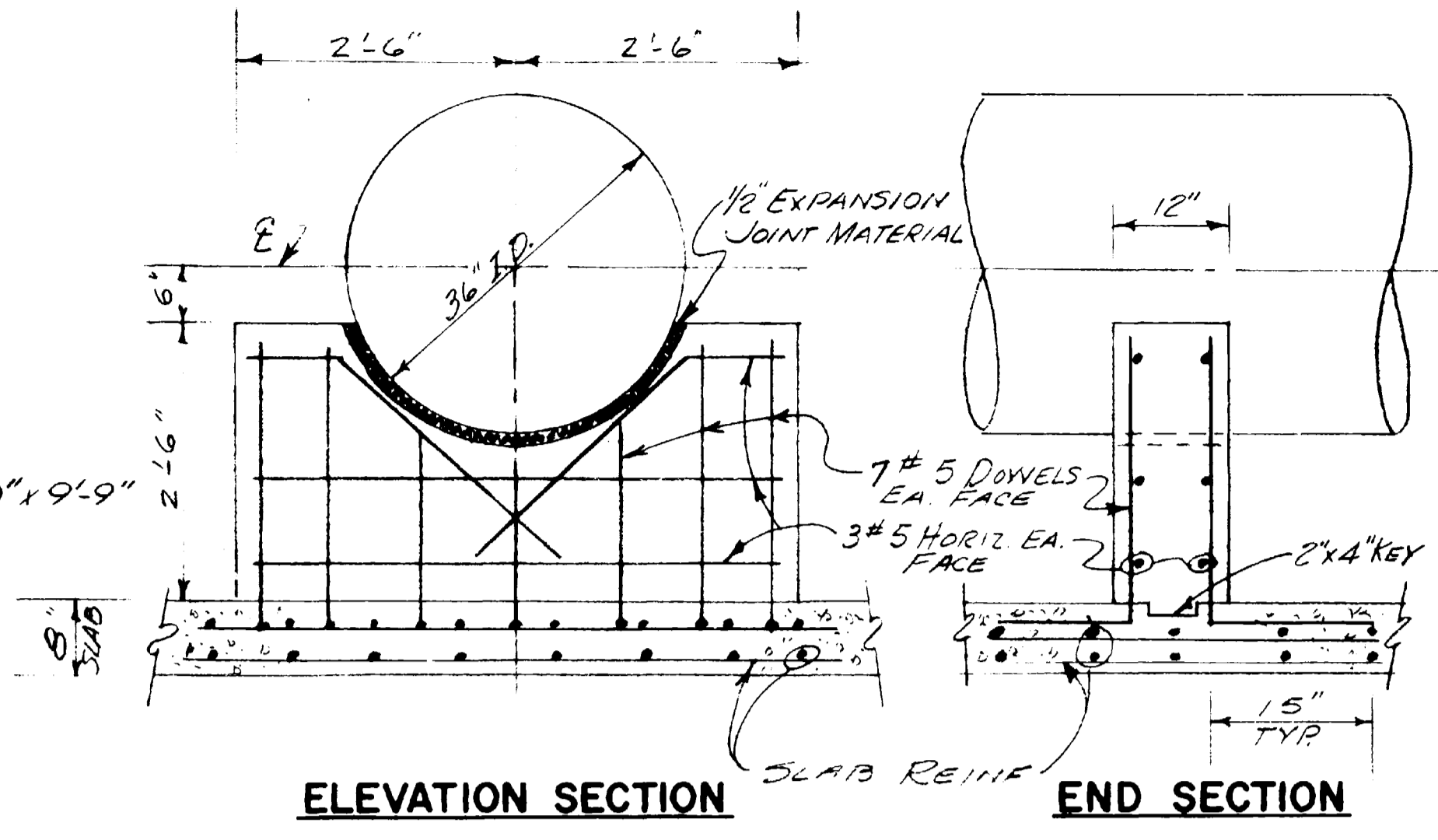
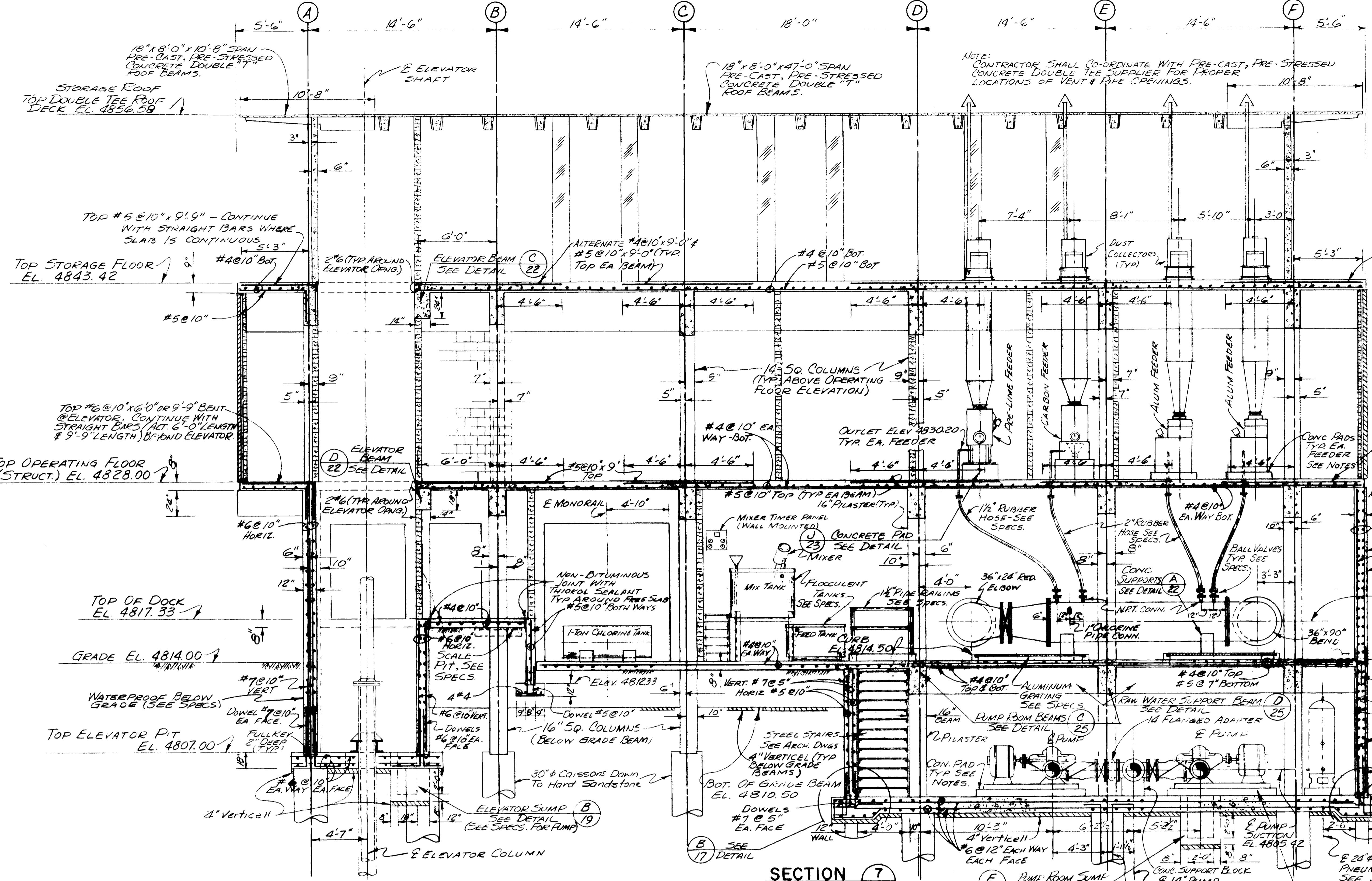
HENNINGSON, DURHAM & RICHARDSON, INC.  
 ENGINEERS - PLANNERS - CONSULTANTS  
 DENVER, COLORADO

DESIGNED E.E.R.-R.E.R. CHECKED K.D.H.  
 APPROVED W.L.B.  
 DATE DEC. 1967

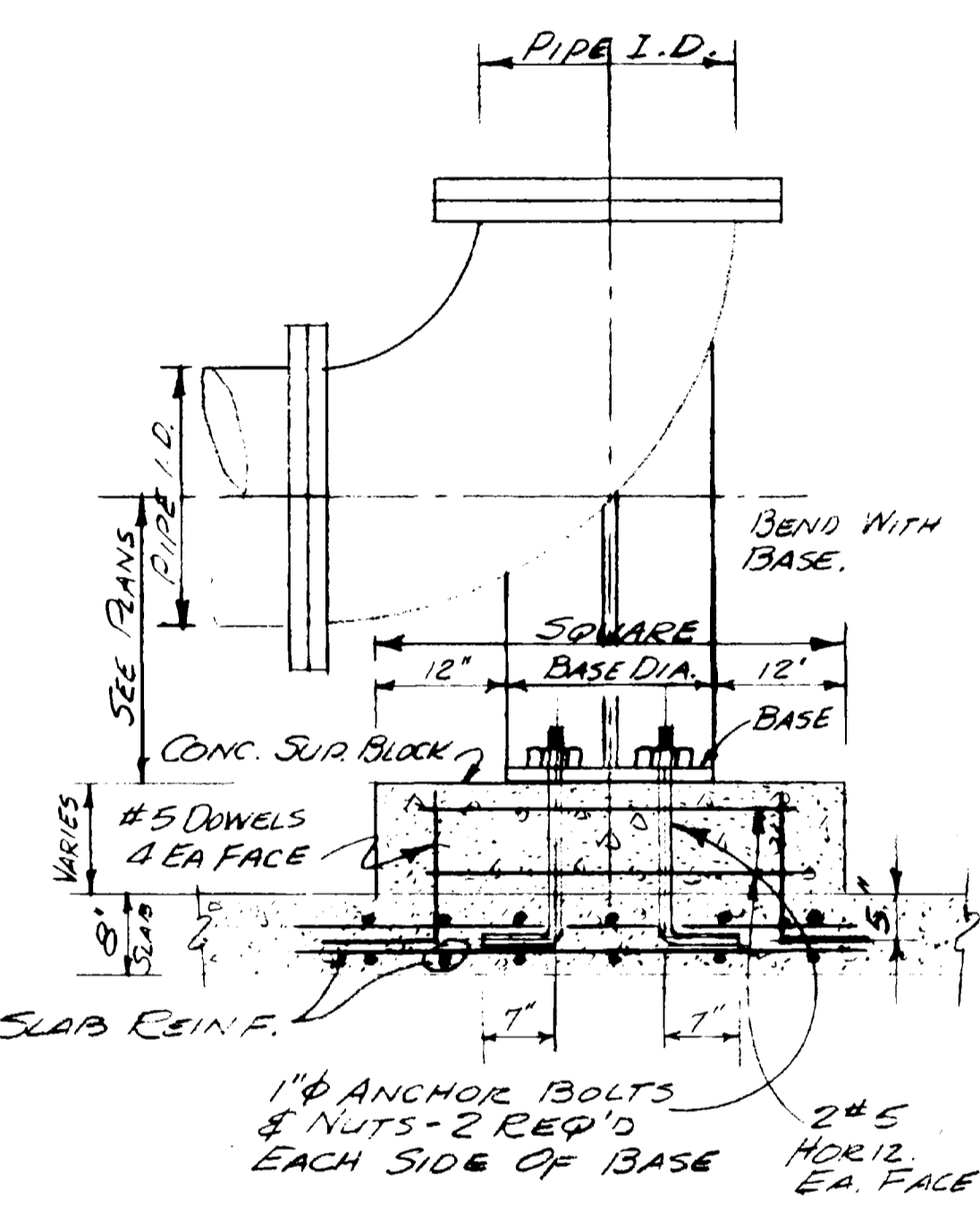
JOB 730810 SHEET 21 OF 39  
 DRAWN A.T.

NO.	DESCRIPTION	DATE	BY	APPROVED



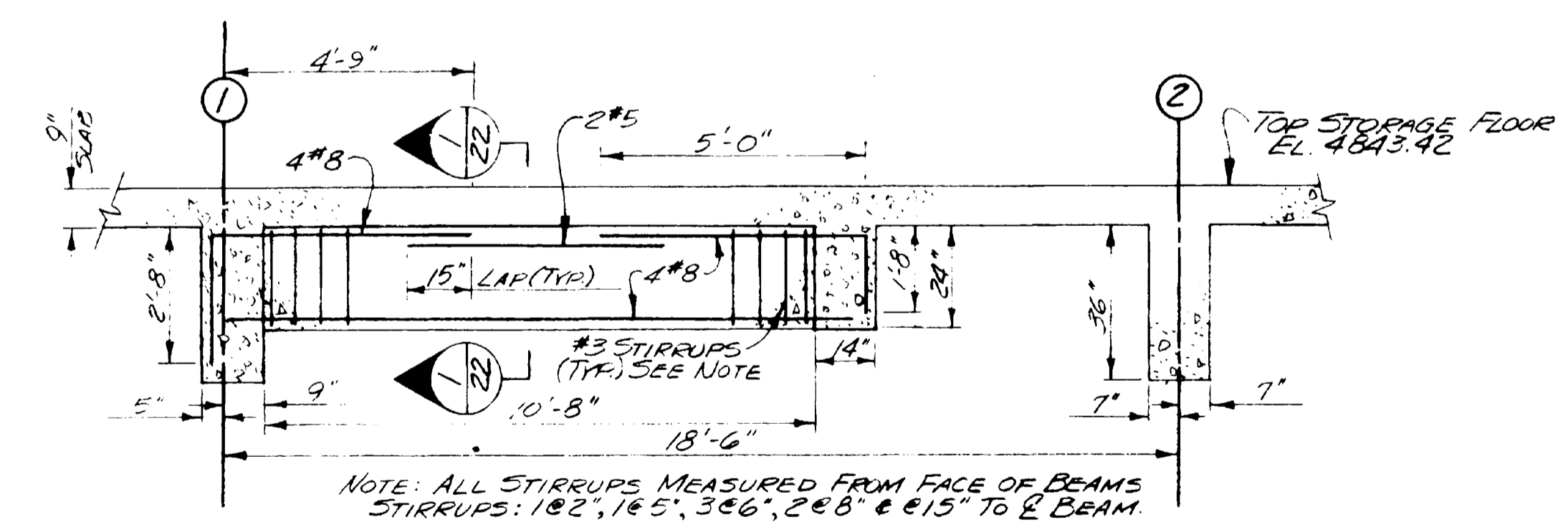


**TYPICAL 36" PIPE SUPPORT**  
SCALE: 3/4" = 1'-0"

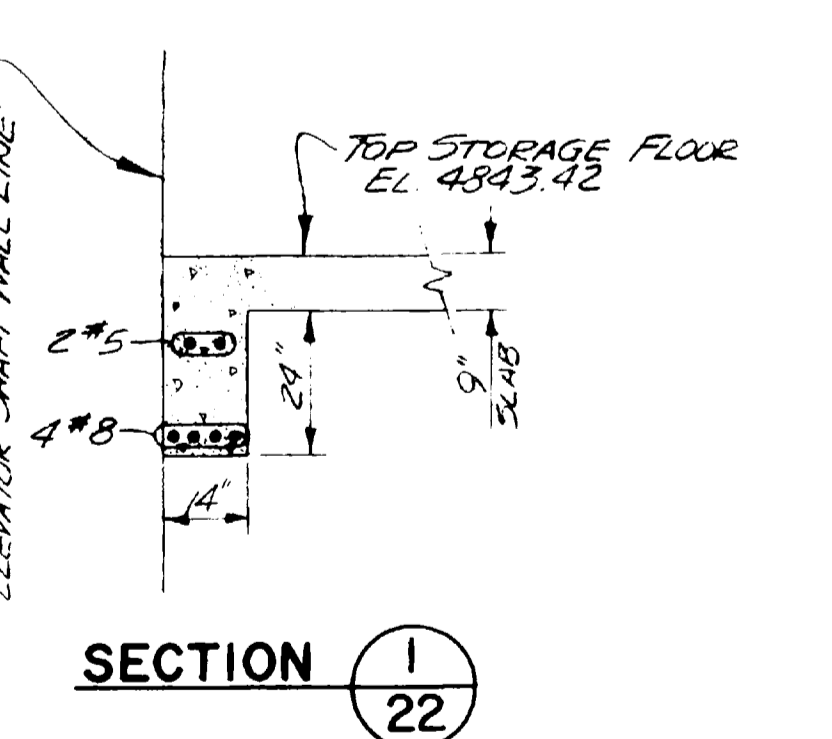


**DETAIL B**  
SCALE: 3/4" = 1'-0"

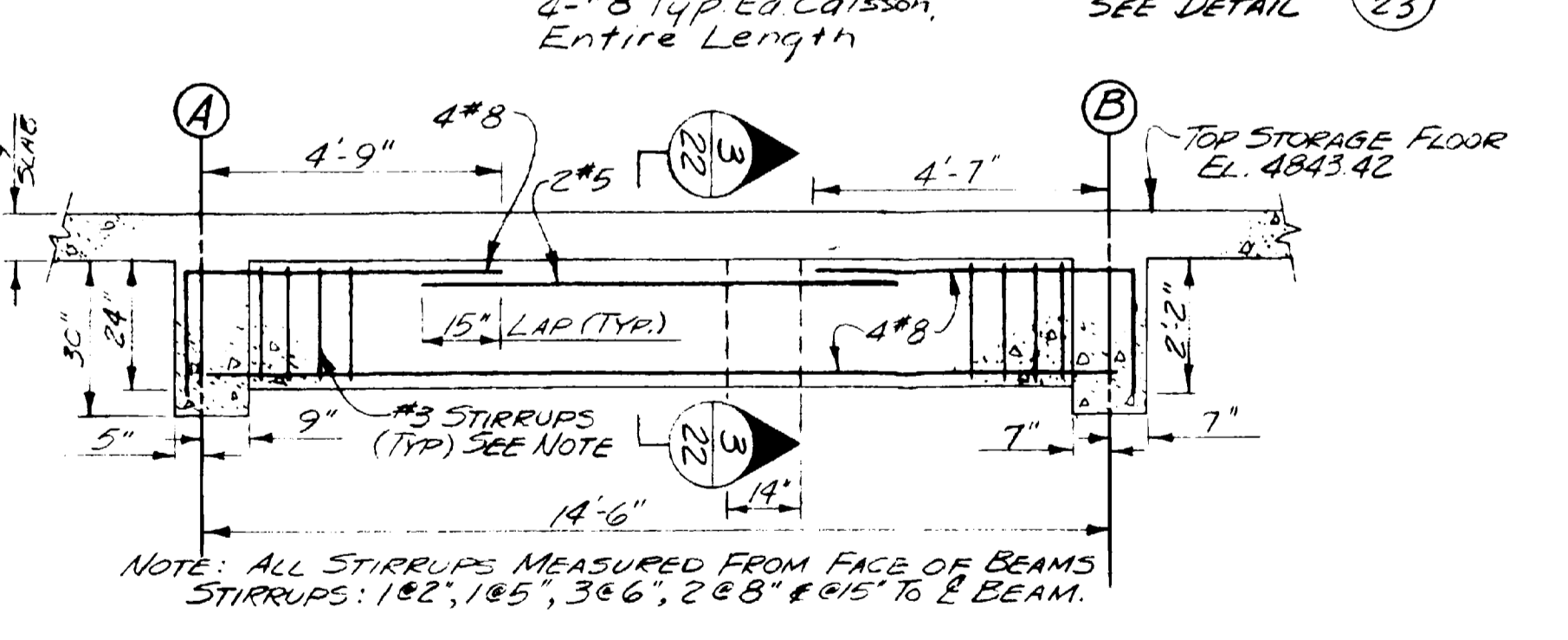
**NOTES**  
CONCRETE PAD DIMENSIONS SHALL EXTEND 4" BEYOND EQUIPMENT BASE PLATES. DEPTH OF PADS TO BE DETERMINED IN FIELD. PADS SHALL BE REINFORCED AS SHOWN IN DETAIL ON SHEET 23.



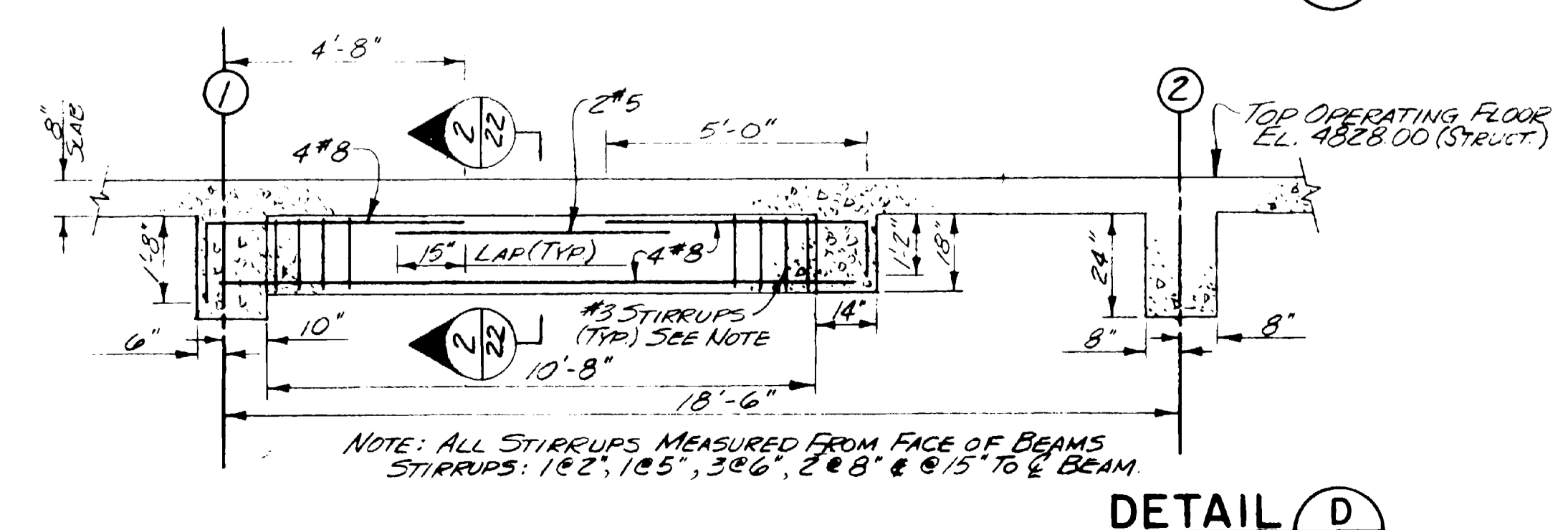
**DETAIL C**  
SCALE: 3/8" = 1'-0"



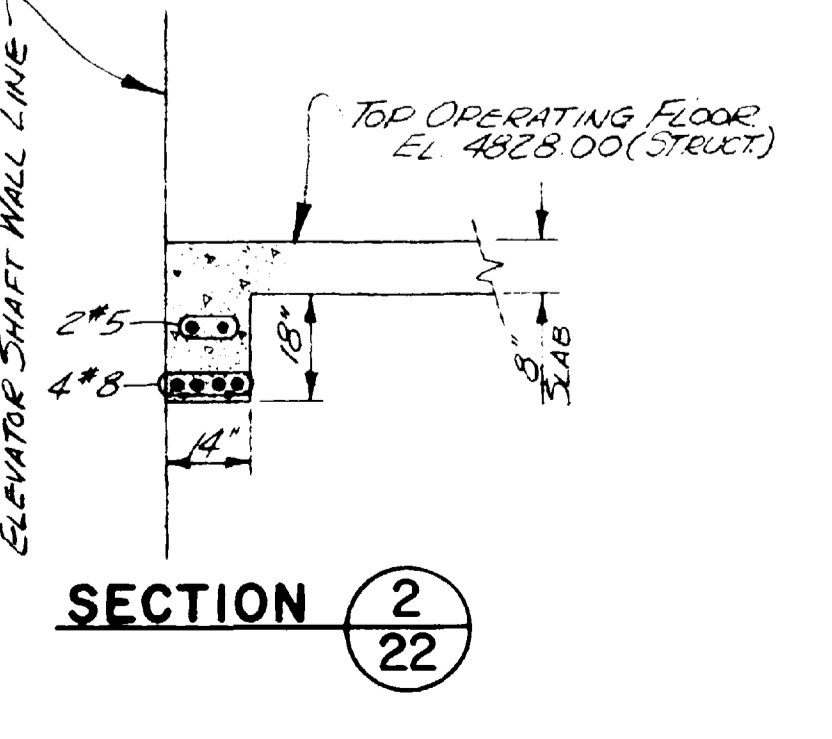
**SECTION 1**  
SCALE: 3/8" = 1'-0"



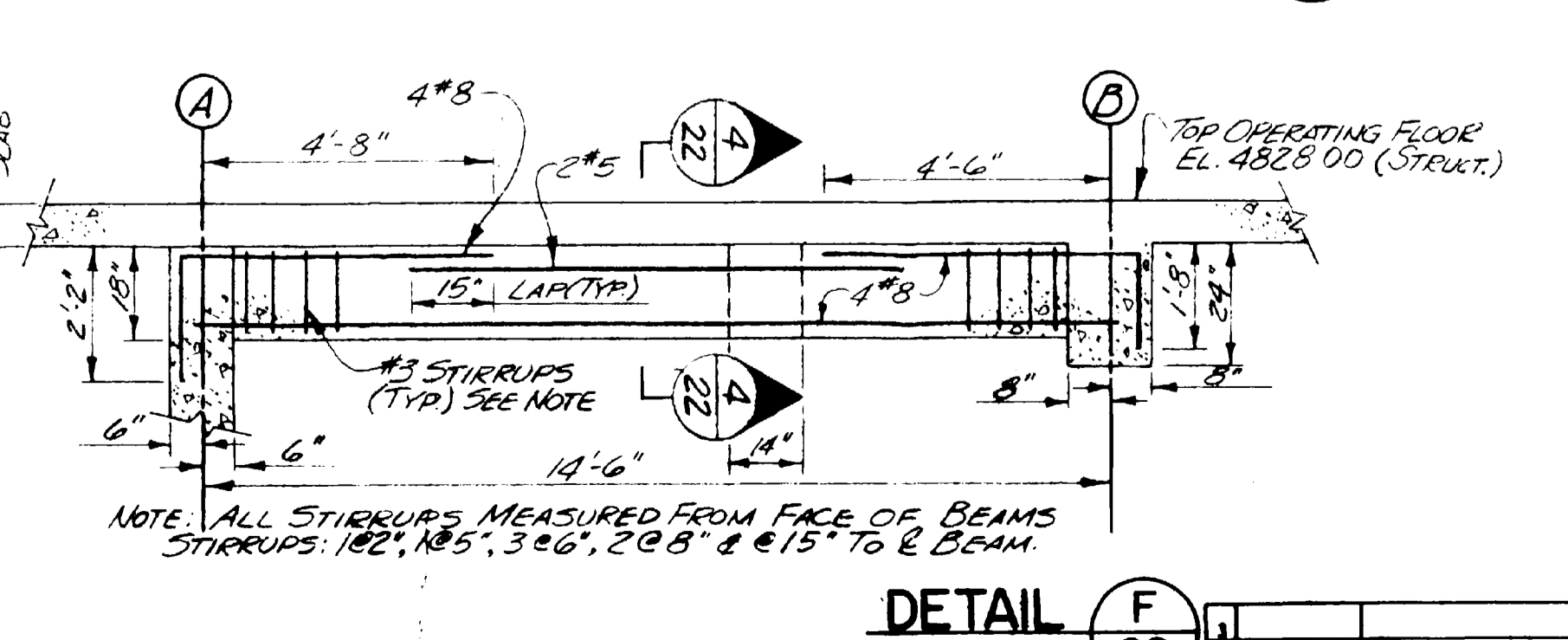
**DETAIL E**  
SCALE: 3/8" = 1'-0"



**DETAIL D**  
SCALE: 3/8" = 1'-0"



**SECTION 2**  
SCALE: 3/8" = 1'-0"



**DETAIL F**  
SCALE: 3/8" = 1'-0"

**ELEVATOR BEAM DETAILS**  
SCALE: 3/8" = 1'-0"

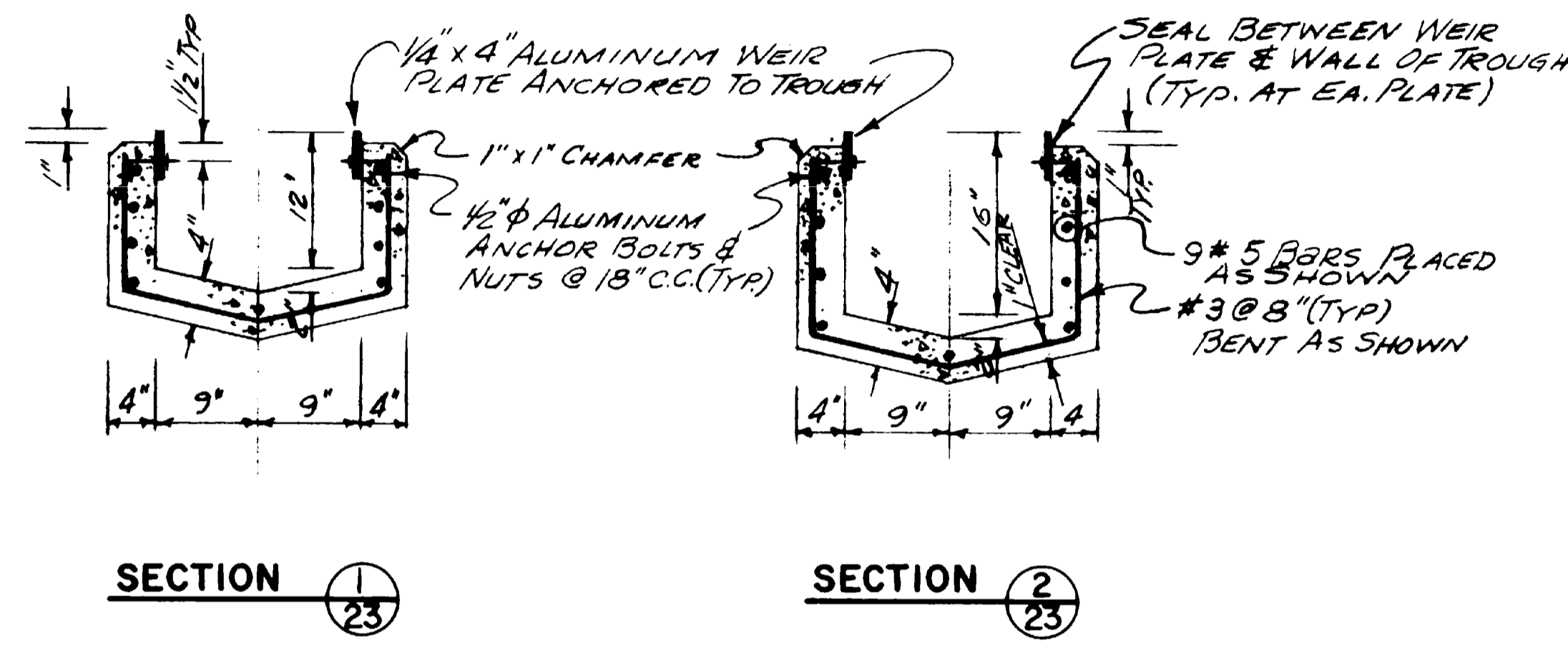
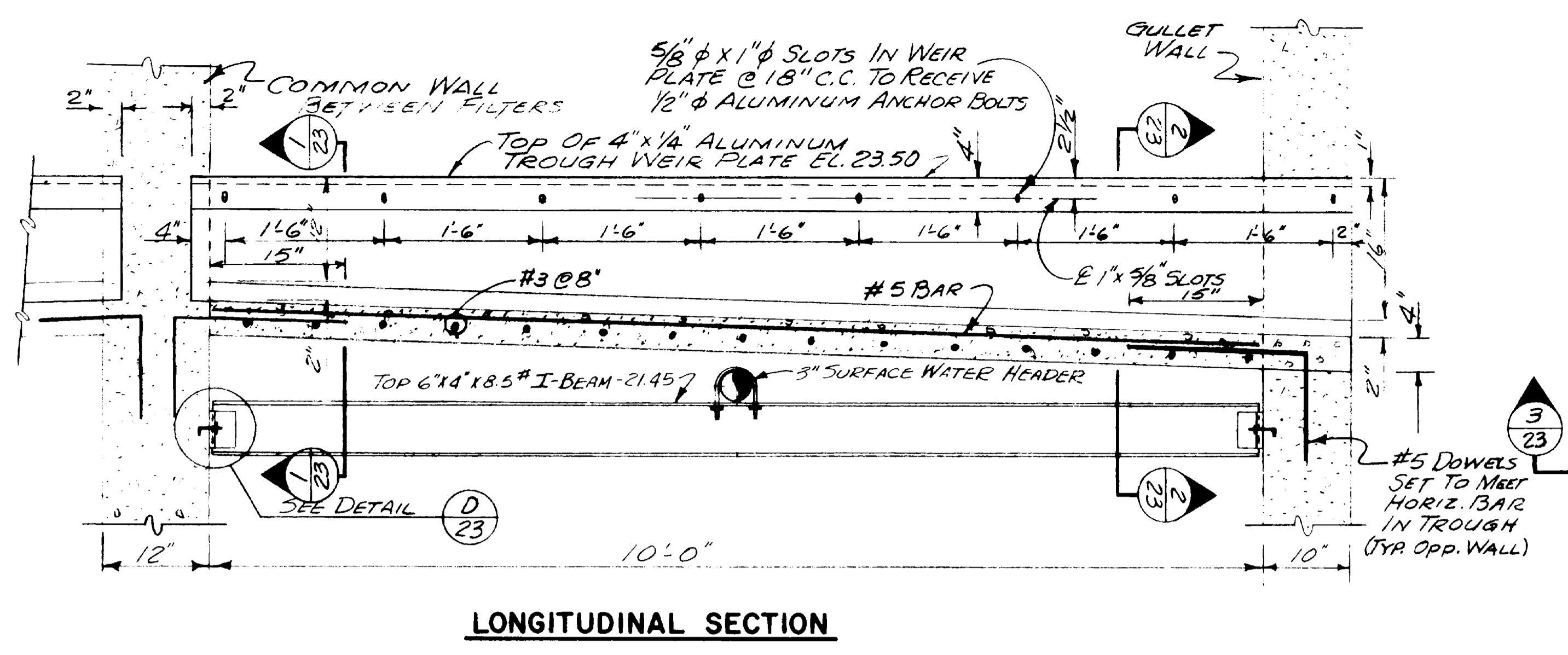
**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
(CONTRACT - I)  
WATER TREATMENT PLANT  
**STRUCTURAL - MECHANICAL**  
**SECTION 7/22**  
**& DETAILS**

**HARRINGTON, DURHAM & RICHARDSON, INC.**  
ENGINEERS • PLANNERS • CONSULTANTS  
DENVER, COLORADO

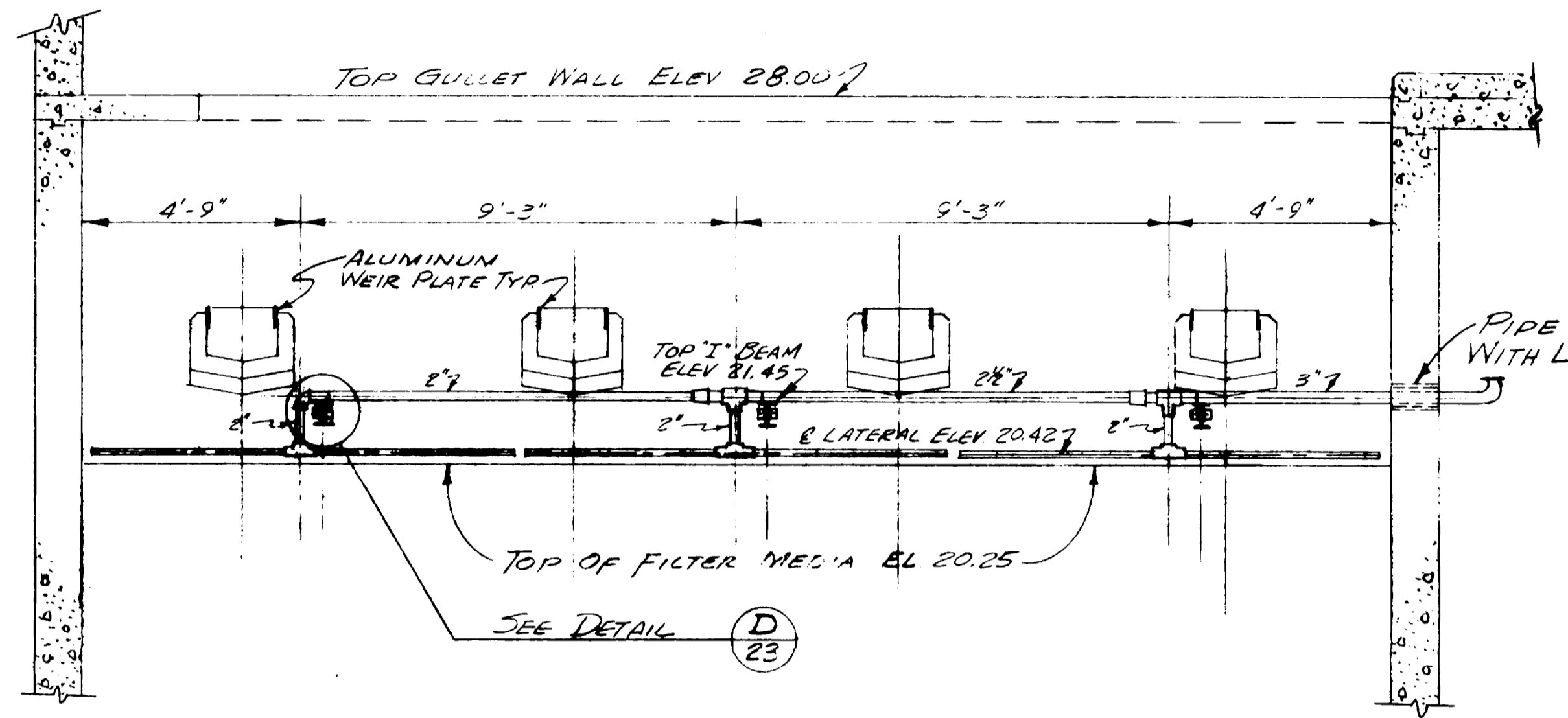
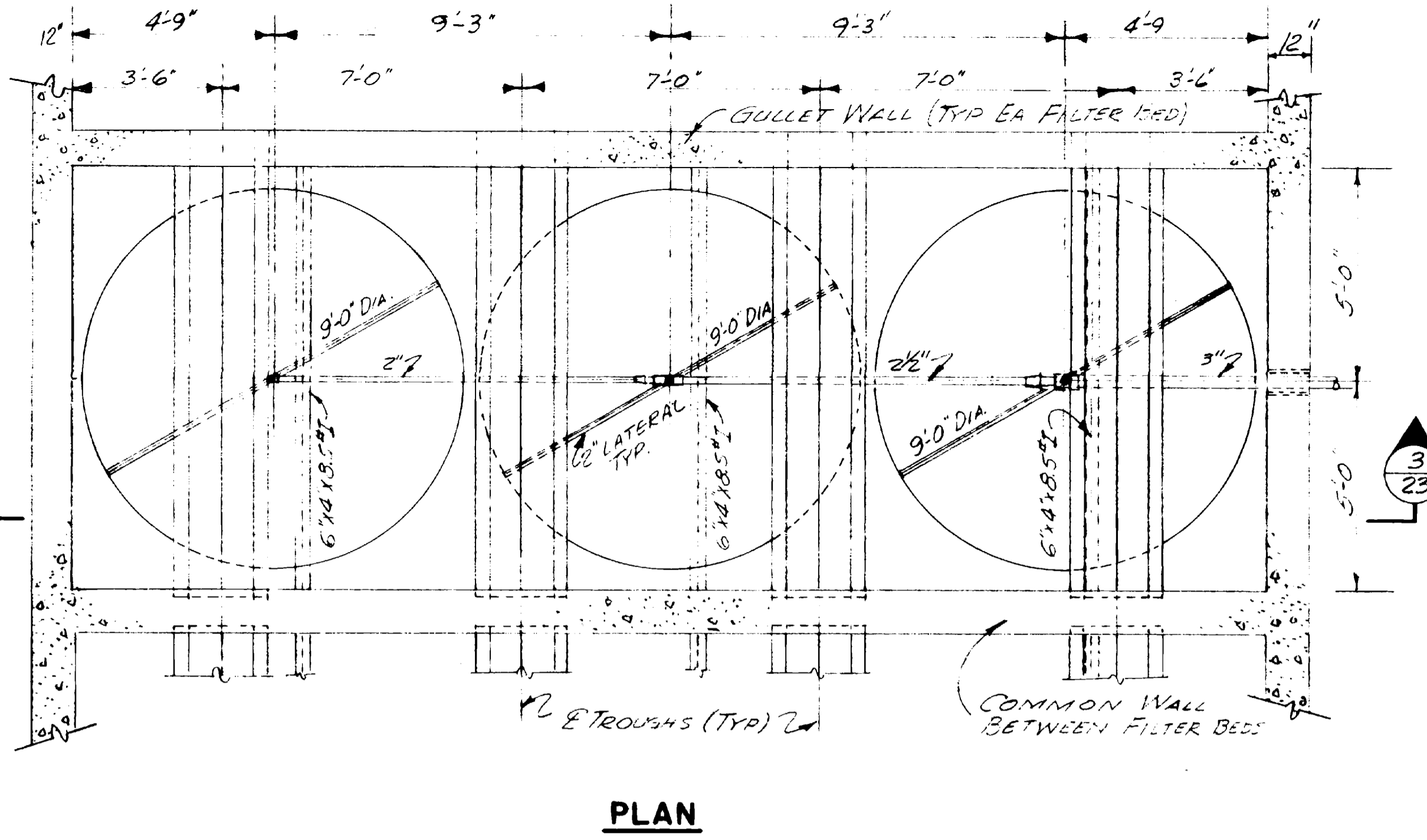
DATE: 12/25/70 AS BUILT  
DESCRIPTION: REVISIONS  
MADE: EAB  
APPROVED: KDH

JOB NO. 730810  
DESIGNER: EFR-RER  
CHECKER: K.D.H.  
APPROVED: W.L.B.  
DATE: DEC. 1967

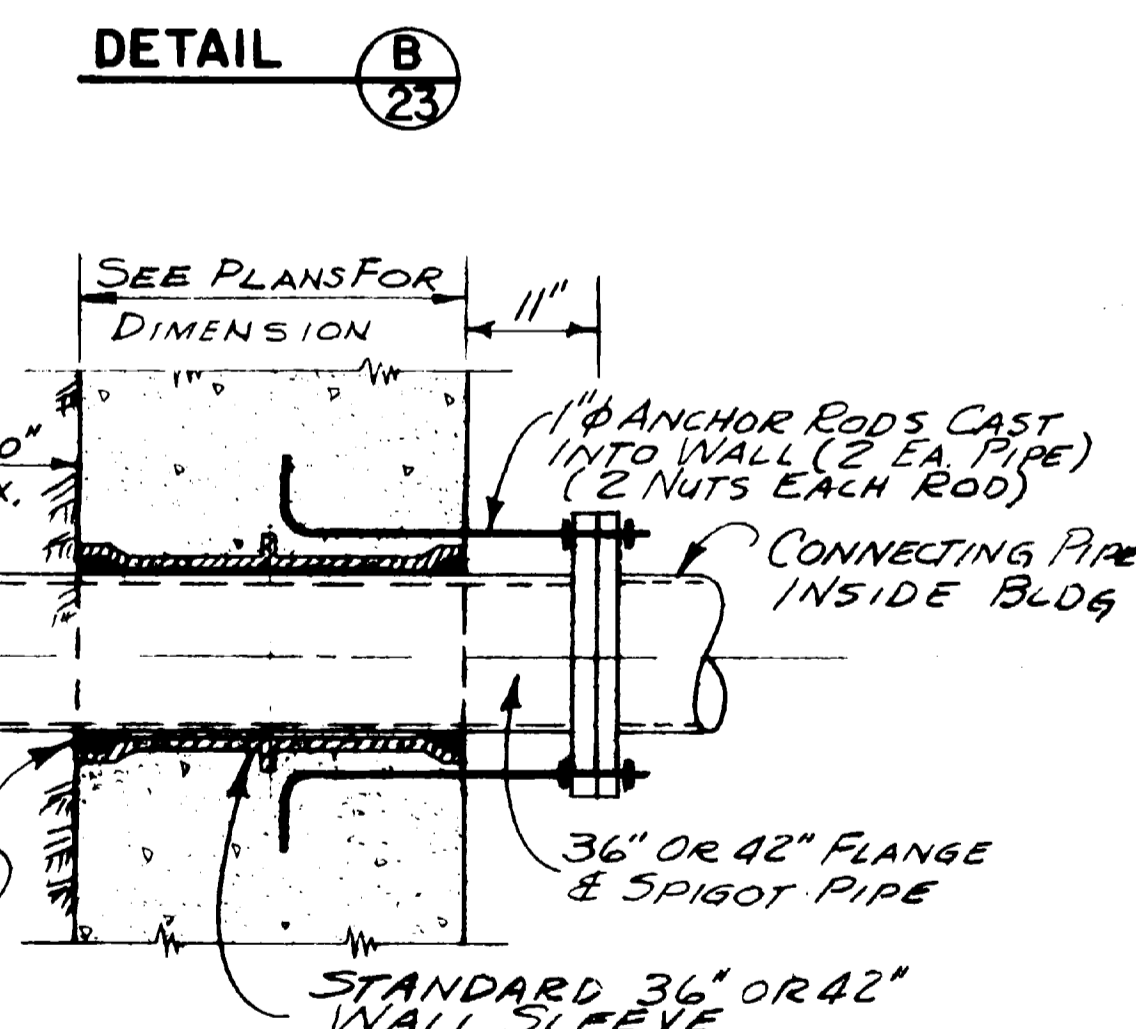
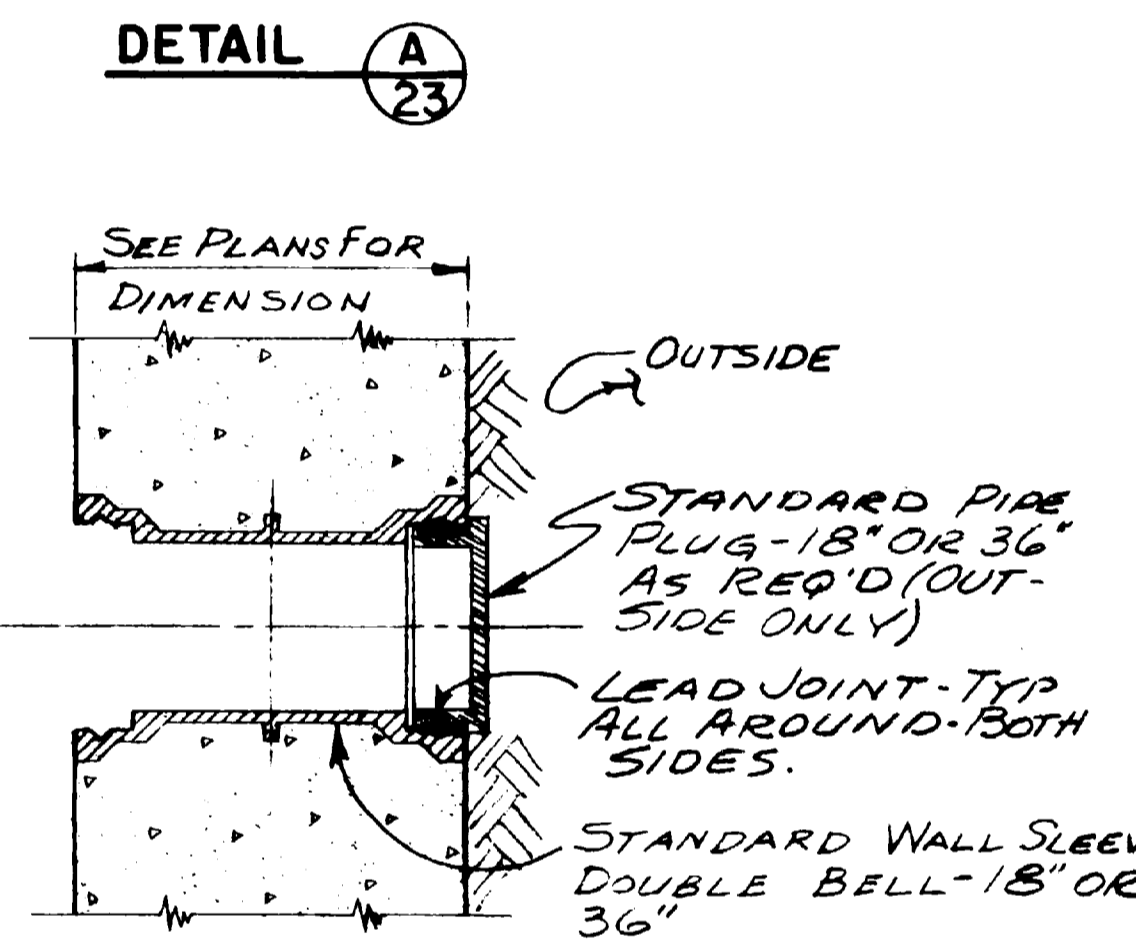
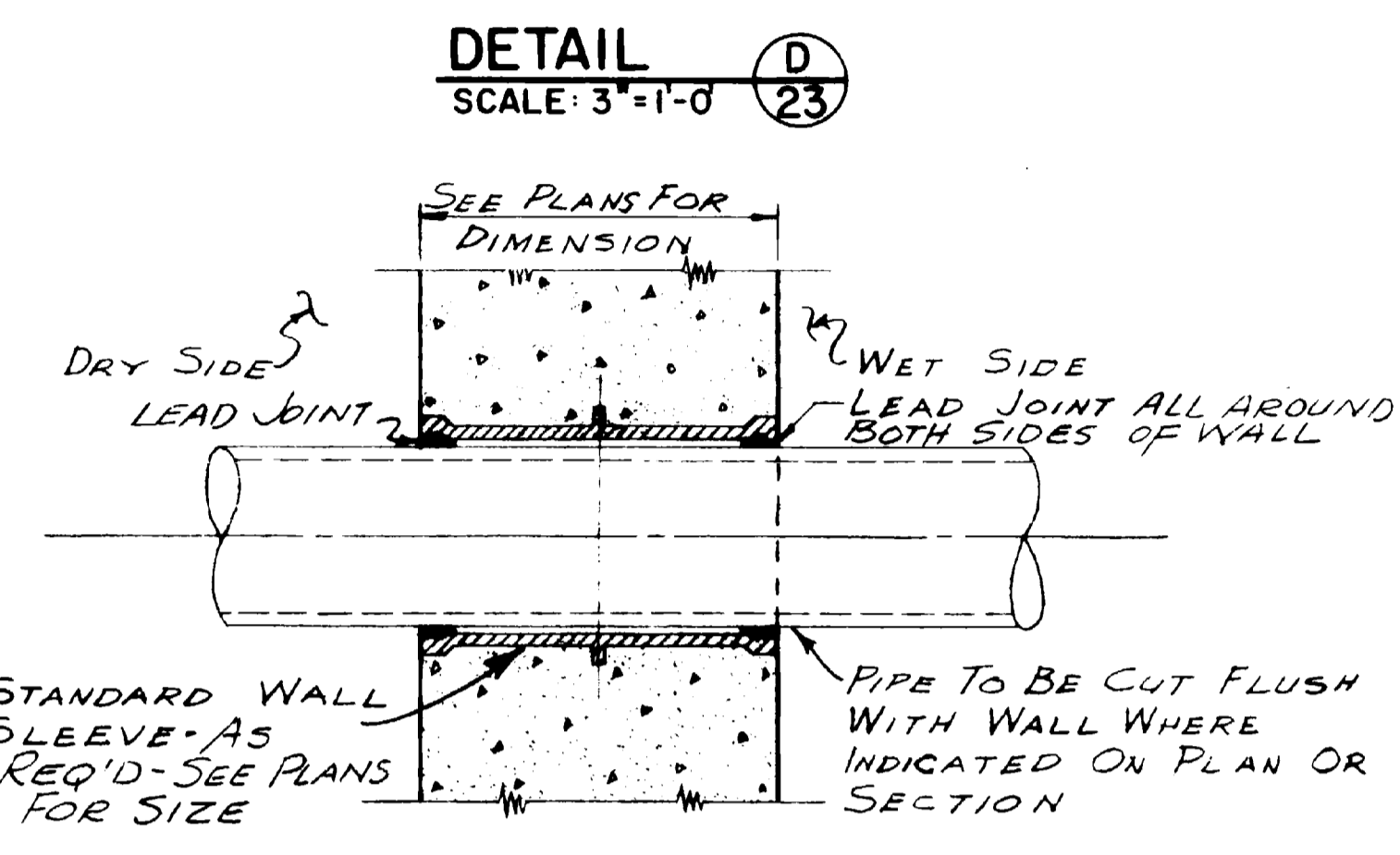
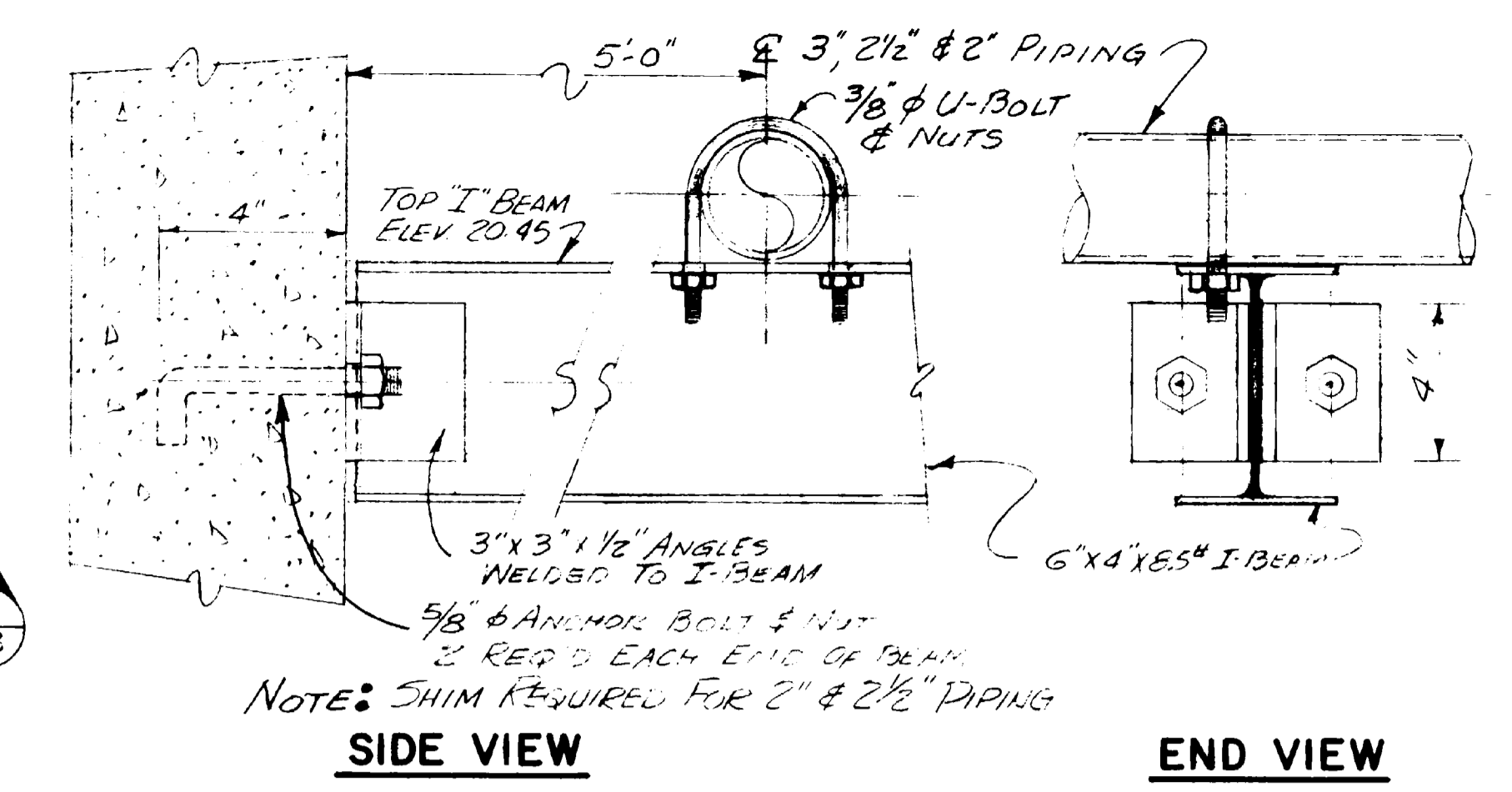
SHEET 22 OF 39



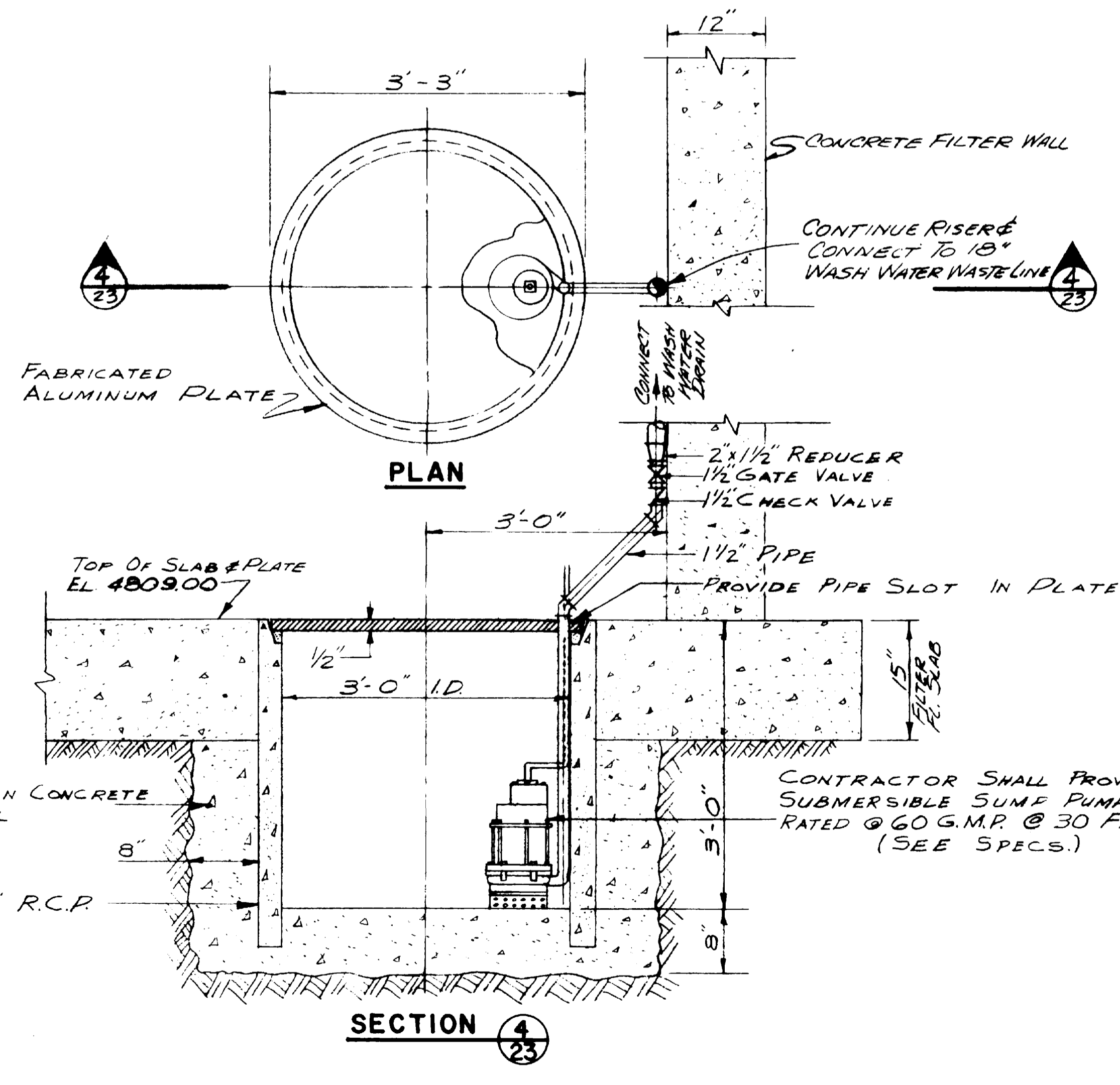
**WASH WATER TROUGH DETAILS**  
SCALE: 1" = 1'-0"



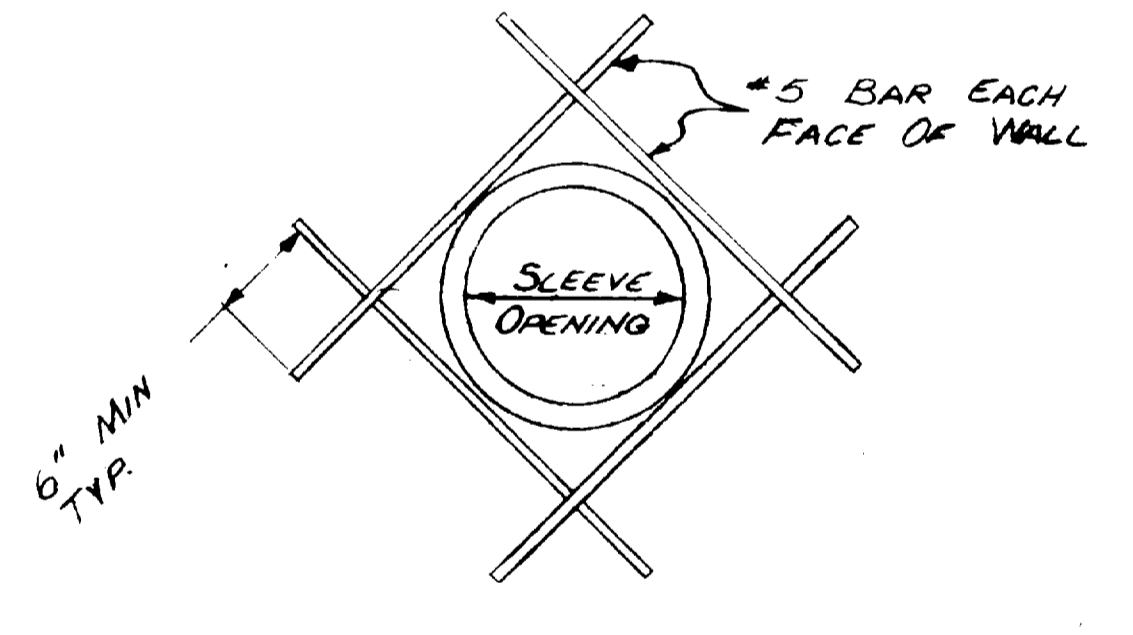
**SURFACE WATER PIPING DETAILS**  
SCALE: 3/8" = 1'-0"



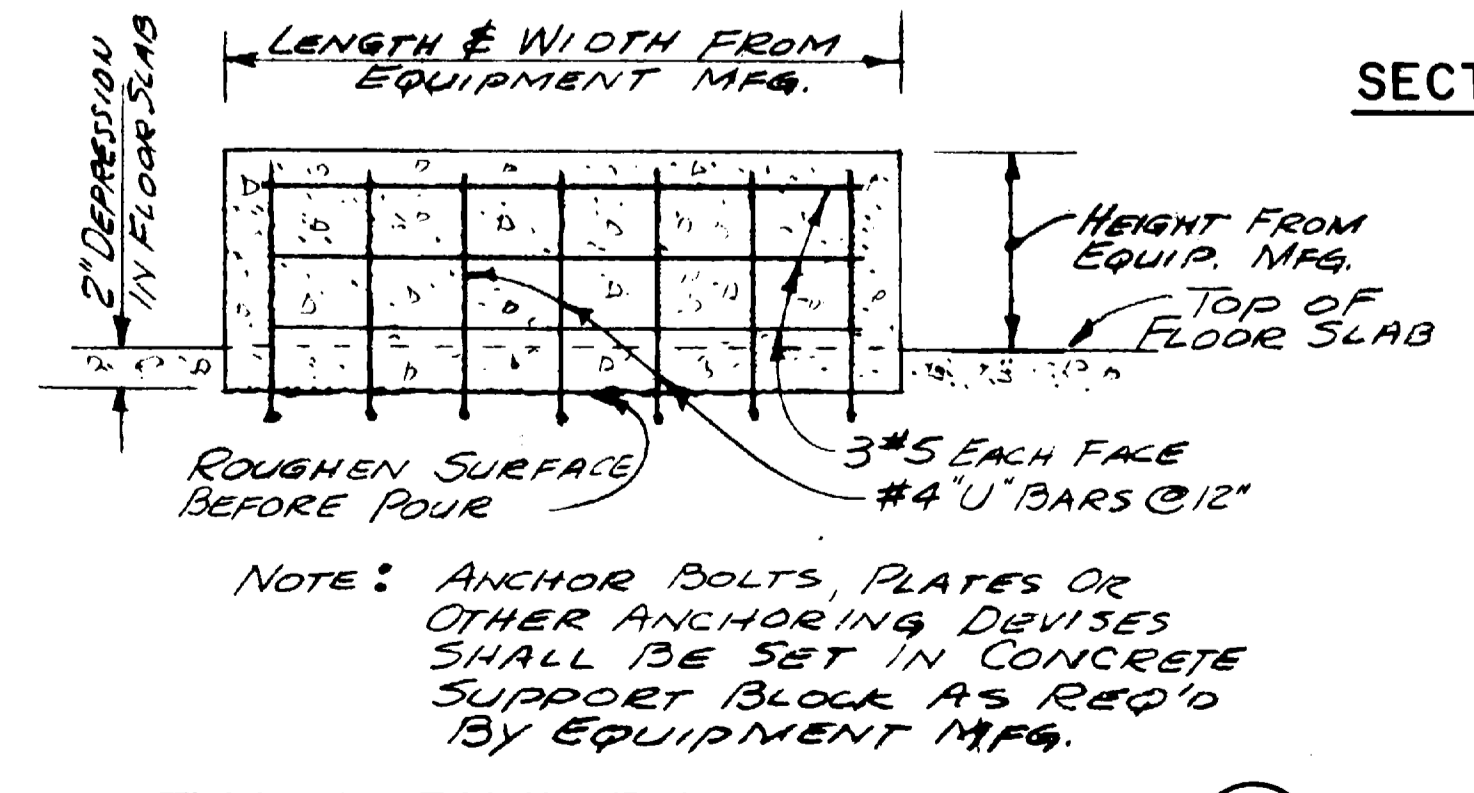
**TYPICAL WALL SLEEVES**  
NO SCALE  
TYPICAL ALL STRUCTURES THIS CONTRACT



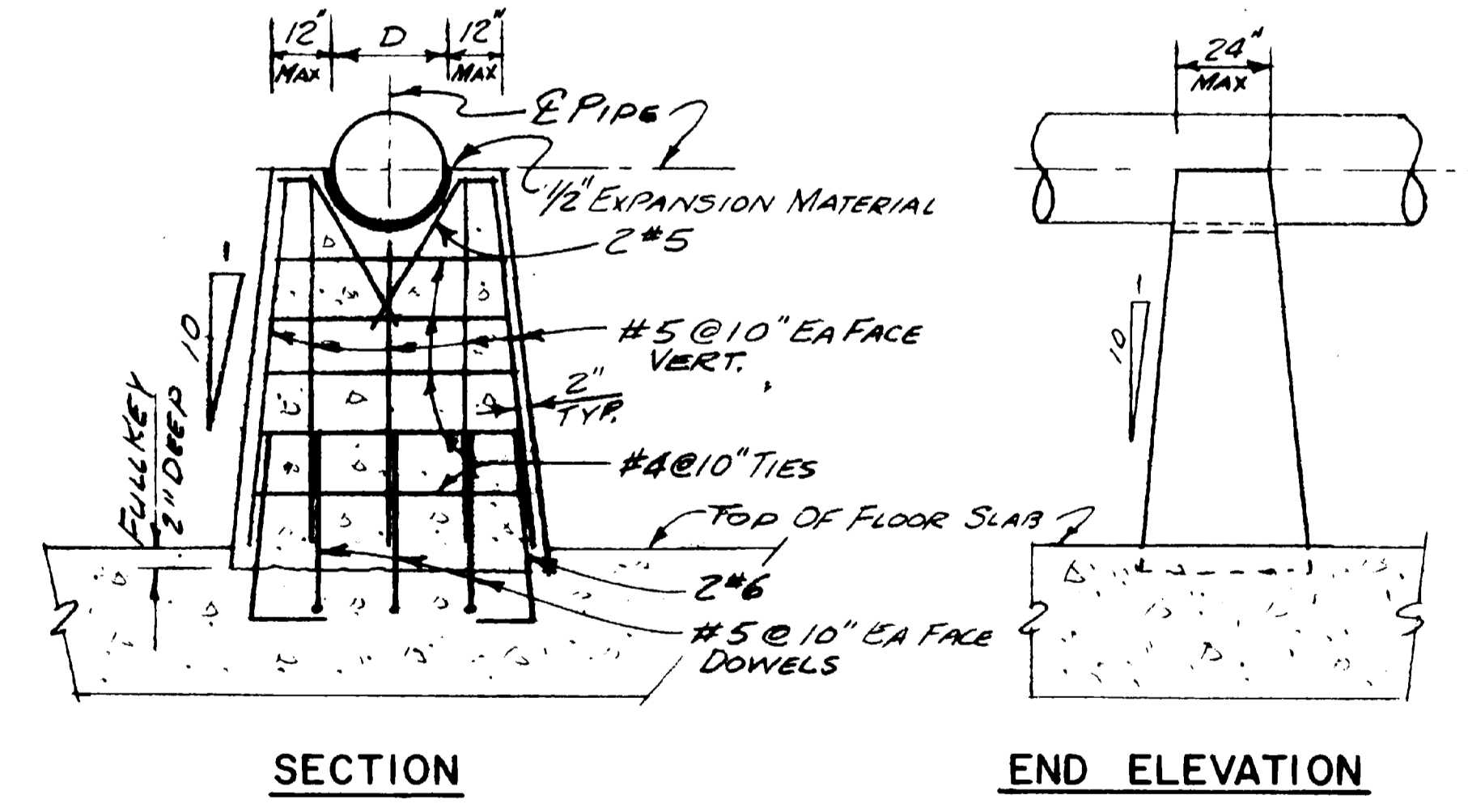
**GALLERY SUMP DETAIL**  
SCALE: 1" = 1'-0"



NO SCALE  
NOTE: DETAIL TYPICAL FOR ALL STRUCTURES THIS CONTRACT



NO SCALE  
TYPICAL ALL EQUIPMENT THIS CONTRACT WHERE REQUIRED



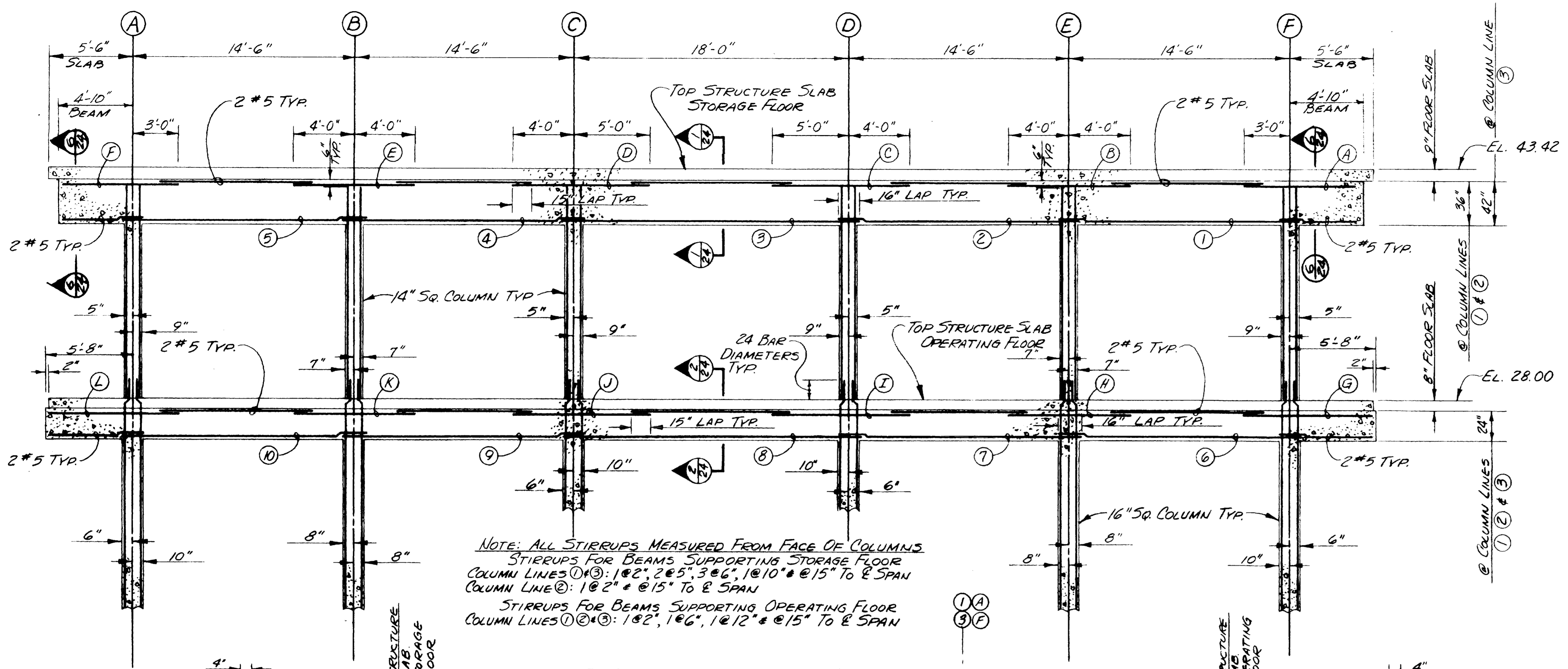
NO SCALE  
DETAIL TYPICAL FOR ALL STRUCTURES THIS CONTRACT

**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
(CONTRACT - I)

**WATER TREATMENT PLANT**  
**STRUCTURAL-MECHANICAL**  
**MISCELLANEOUS DETAILS**

**HENNINGSON, DURHAM & RICHARDSON, INC.**  
ENGINEERS - PLANNERS - CONSULTANTS  
DENVER, COLORADO

NO.	DATE	DESCRIPTION	BY	CHKD.
1	2-25-70	AS BUILT	A.T.	R.D.H.
2				
3				



NOTE: ALL STIRRUPS MEASURED FROM FACE OF COLUMNS  
 STIRRUPS FOR BEAMS SUPPORTING STORAGE FLOOR  
 COLUMN LINES ①②③: 1@2", 2@5", 3@6", 1@10" & @15" TO E SPAN  
 COLUMN LINE ④: 1@2" & @15" TO E SPAN  
 STIRRUPS FOR BEAMS SUPPORTING OPERATING FLOOR  
 COLUMN LINES ①②③: 1@2", 1@6", 1@12" & @15" TO E SPAN

**BEAM DETAIL AT COLUMN LINES ①②&③**  
 SCALE: - NONE

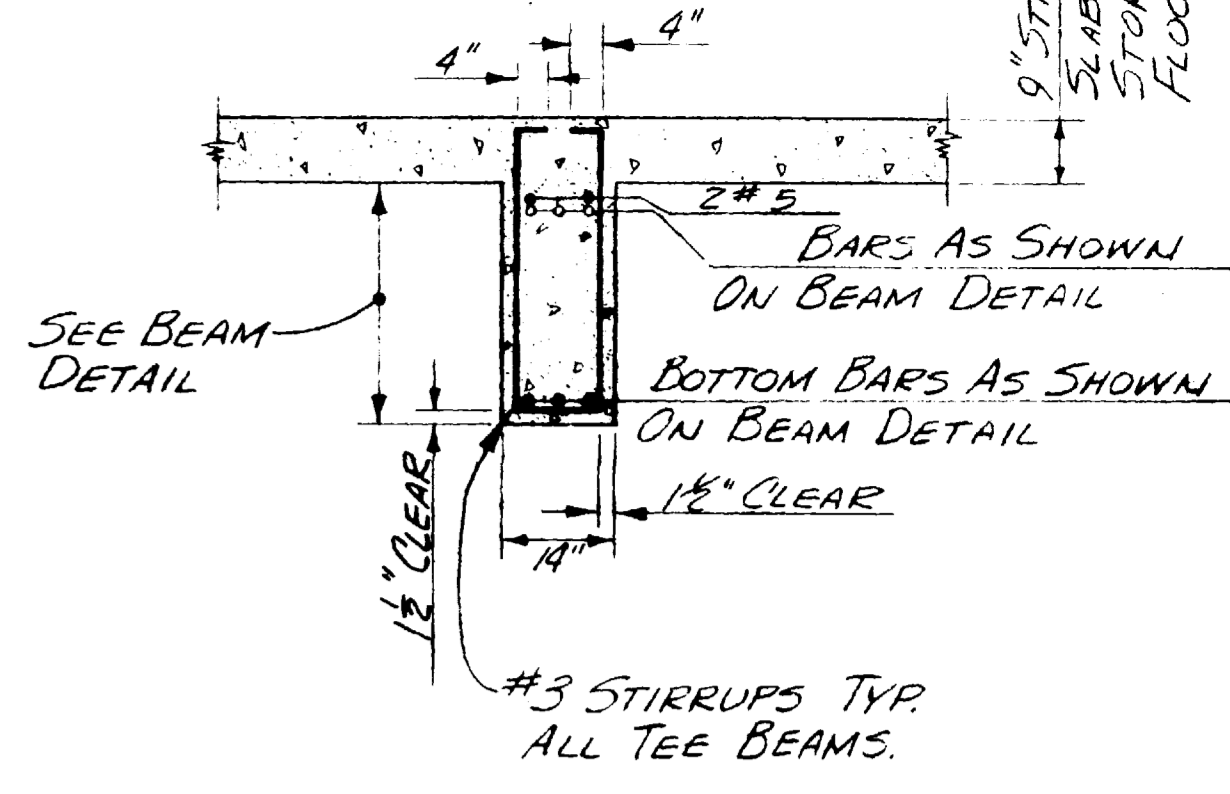
**BEAM SECTION ⑥**  
 SCALE: - NONE

**BEAM BAR SCHEDULE**

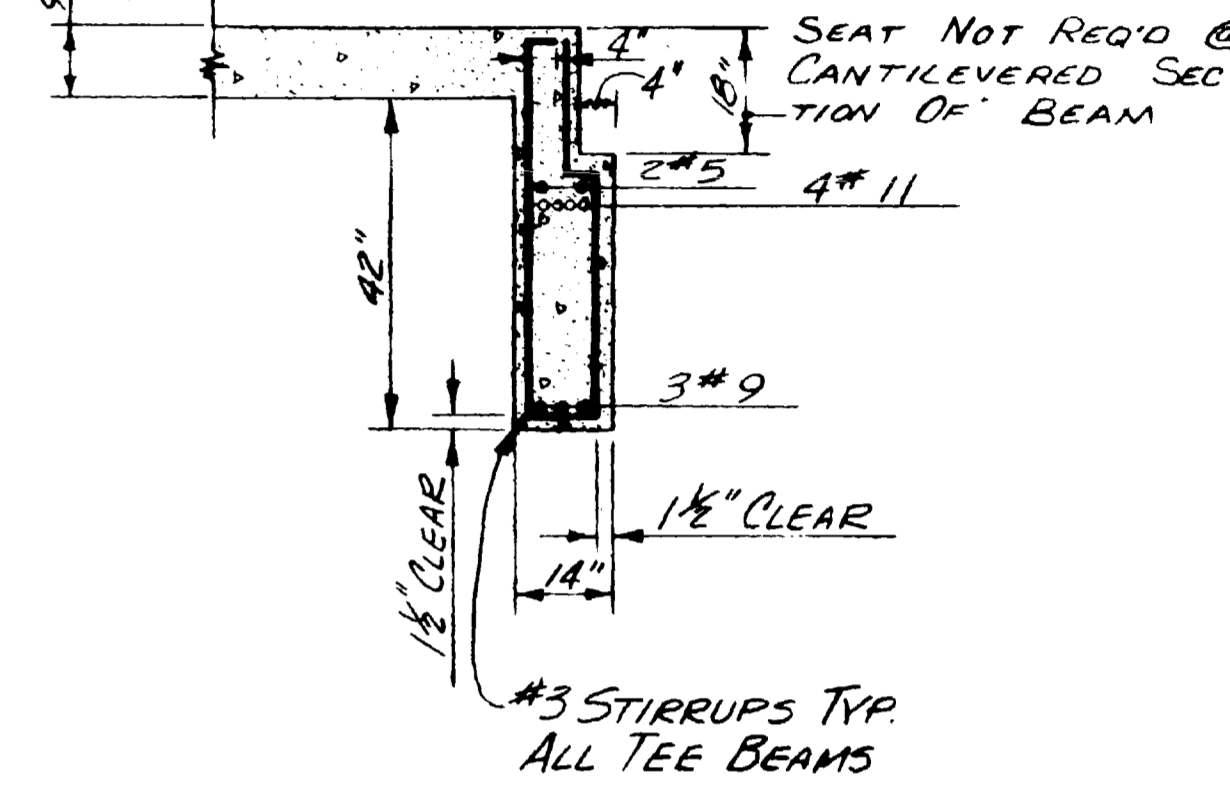
BAR DESIGNATION	COLUMN LINE	NUMBER & SIZE OF BARS
M	A	2-#6
M	B	2-#6
M	C	2-#6
M	D	2-#6
M	E	2-#6
M	F	2-#6
N	A	3-#9
N	B	3-#9
N	C	3-#9
N	D	3-#9
N	E	3-#9
N	F	3-#9
O	A	2-#10
O	B	2-#10
O	C	2-#10
O	D	2-#10
O	E	2-#10
O	F	2-#10
P	A	3-#7
P	B	3-#7
P	C	3-#7
P	D	3-#7
P	E	3-#7
P	F	3-#7
Q	A	3-#8
Q	B	3-#8
Q	C	3-#8
Q	D	3-#8
Q	E	3-#8
Q	F	3-#8
R	A	3-#10
R	B	3-#10
R	C	3-#10
R	D	3-#10
R	E	3-#10
R	F	3-#10
11	A	3-#9
11	B	3-#9
11	C	3-#9
11	D	3-#9
11	E	3-#9
11	F	3-#9
12	A	3-#10
12	B	3-#10
12	C	3-#10
12	D	3-#10
12	E	3-#10
12	F	3-#10
13	A	3-#8
13	B	3-#8
13	C	3-#8
13	D	3-#8
13	E	3-#8
13	F	3-#8
14	A	3-#8
14	B	3-#8
14	C	3-#8
14	D	3-#8
14	E	3-#8
14	F	3-#8

**BEAM BAR SCHEDULE**

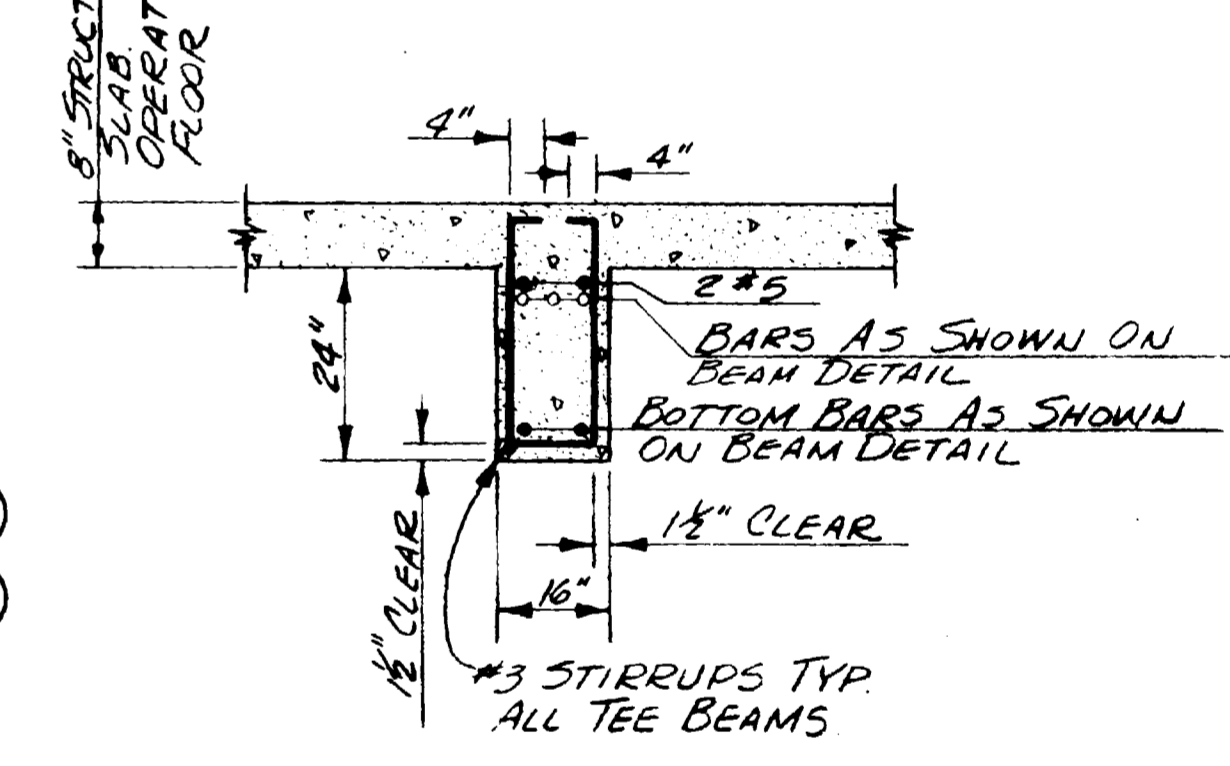
BAR DESIGNATION	COLUMN LINE	NUMBER & SIZE OF BARS
A	1	2-#5
A	2	2-#5
A	3	2-#5
B	1	2-#5
B	2	2-#5
B	3	2-#5
C	1	4-#9
C	2	4-#9
C	3	4-#11
D	1	4-#9
D	2	4-#9
D	3	4-#11
E	1	3-#9
E	2	3-#9
E	3	3-#9
F	1	2-#5
F	2	2-#5
F	3	2-#5
G	1	WALL
G	2	3-#9
G	3	WALL
H	1	WALL
H	2	2-#7
H	3	WALL
I	1	WALL
I	2	3-#8
I	3	WALL
J	1	WALL
J	2	3-#8
J	3	WALL
K	1	WALL
K	2	2-#7
K	3	WALL
L	1	WALL
L	2	3-#9
L	3	WALL
1	1	3-#9
1	2	3-#6
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8	2	2-#8
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9	2	2-#8
9	3	WALL
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10	2	3-#8
10	3	WALL



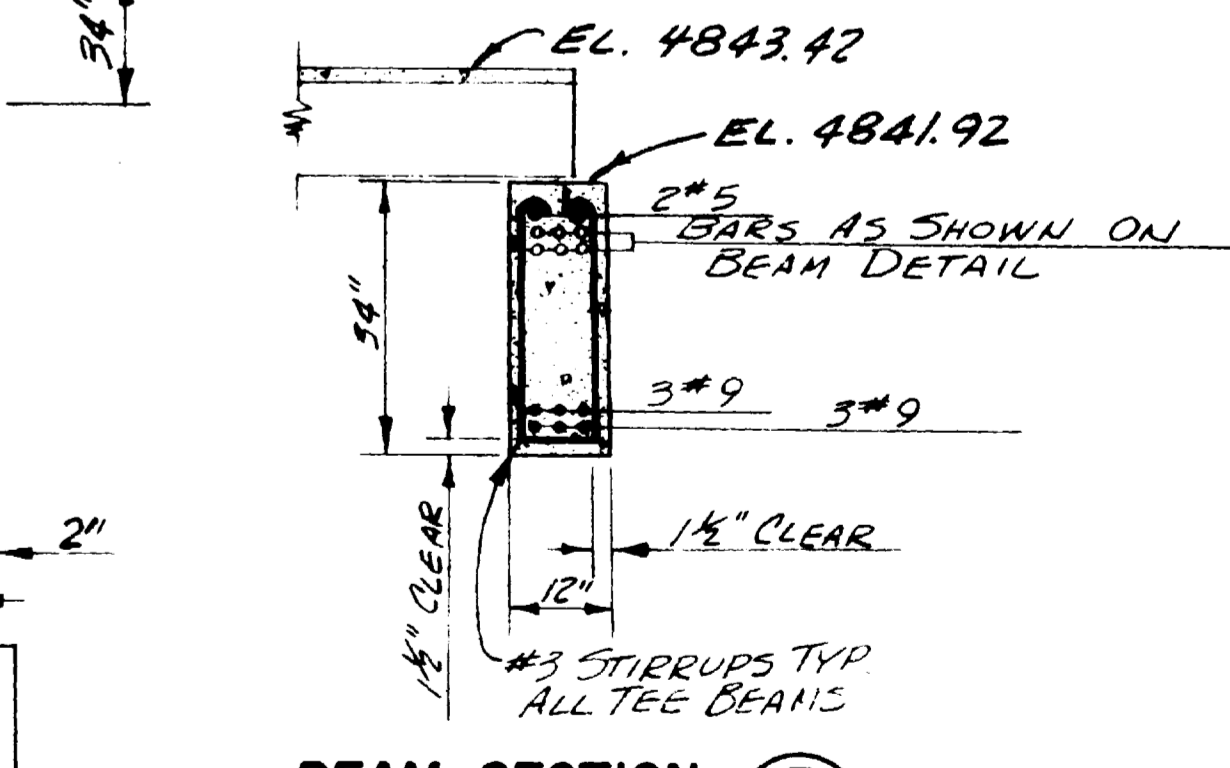
**BEAM SECTION ①**  
 SCALE: - NONE  
 TYP. AT COLUMN LINES ① & ②



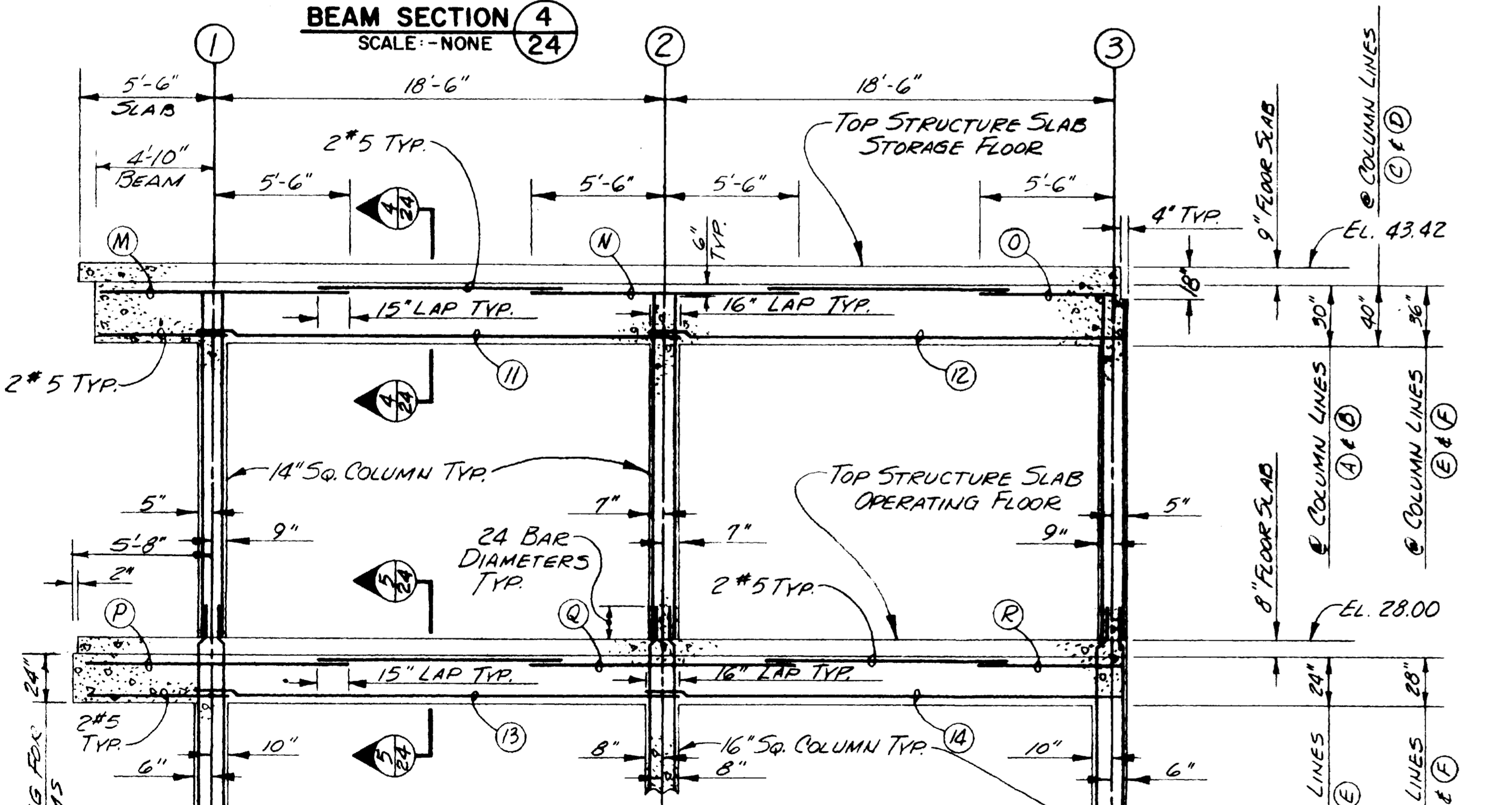
**BEAM SECTION ①**  
 SCALE: - NONE  
 AT COLUMN LINE ③ ONLY



**BEAM SECTION ②**  
 SCALE: - NONE  
 TYP. AT COLUMN LINES ① ② & ③

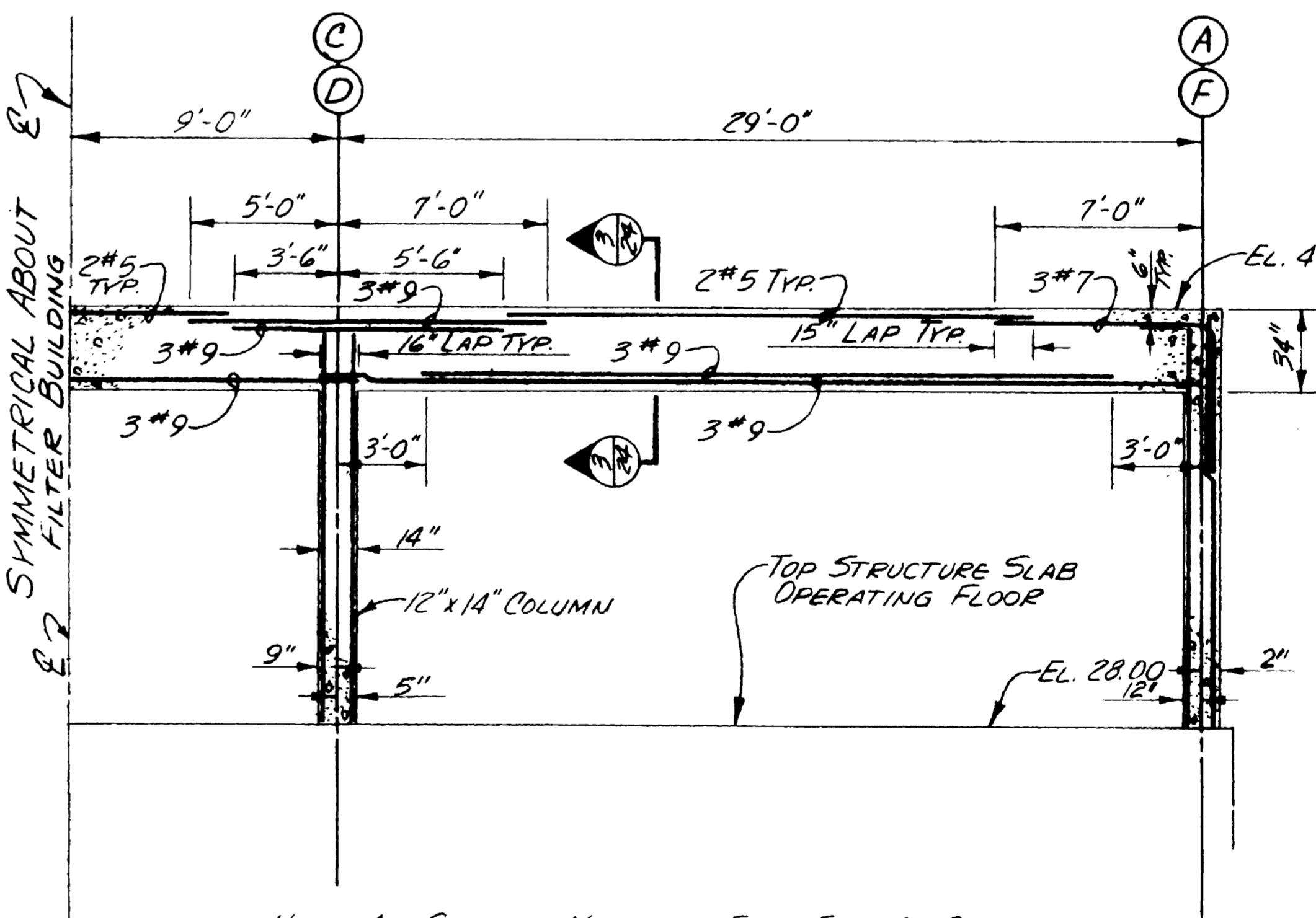


**BEAM SECTION ③**  
 SCALE: - NONE



NOTE: ALL STIRRUPS MEASURED FROM FACE OF COLUMNS  
 STIRRUPS FOR BEAMS SUPPORTING STORAGE FLOOR  
 COLUMN LINE ①: 1@2", 3@6", 2@10" & @15" TO E SPAN  
 COLUMN LINE ②: 1@2", 1@6" & @15" TO E SPAN  
 COLUMN LINES ③④⑤: 1@2", 1@8", 1@12" & @15" TO E SPAN  
 COLUMN LINE ⑥: 1@2", 1@6", 1@12" & @15" TO E SPAN  
 COLUMN LINE ⑦: 1@2", 3@6", 1@10" & @15" TO E SPAN  
 STIRRUPS FOR BEAMS SUPPORTING OPERATING FLOOR  
 ALL COLUMN LINES: 1@2", 1@6", 1@12" & @15" TO E SPAN

**BEAM DETAIL AT COLUMN LINES ①②③④⑤⑥⑦**  
 SCALE: - NONE



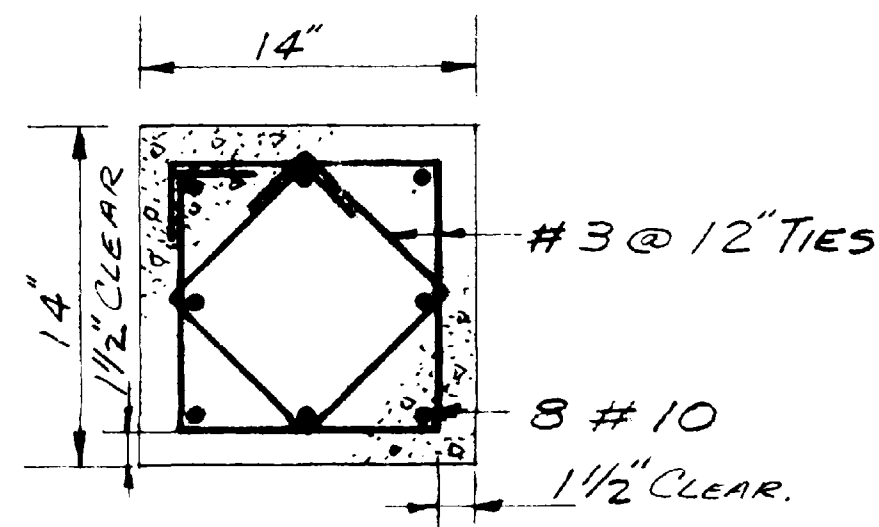
**BEAM DETAIL AT COLUMN LINE ⑤**  
 SCALE: - NONE

NOTE: ALL STIRRUPS MEASURED FROM FACE OF COLUMNS  
 STIRRUP SPACING  
 COLUMN LINE ⑤: 1@2", 3@5", 3@6", 3@8", 3@10", 2@12" & @15" TO E SPAN  
 BEAM 12" WIDE

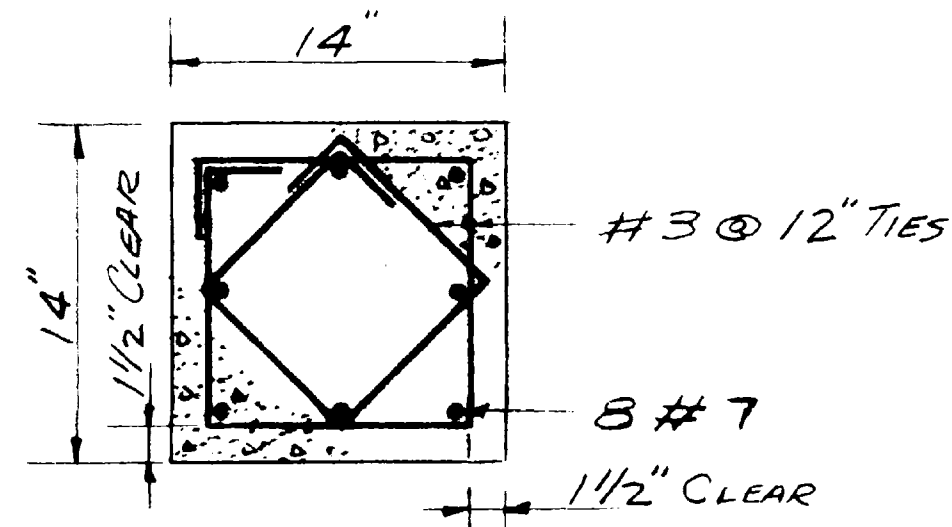
**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
 (CONTRACT - I)  
 WATER TREATMENT PLANT  
**STRUCTURAL**  
**BEAM FRAMING DETAILS & SCHEDULES**

**HERRINGTON, DURHAM & RICHARDSON, INC.**  
 ENGINEERS • PLANNERS • CONSULTANTS  
 DENVER, COLORADO

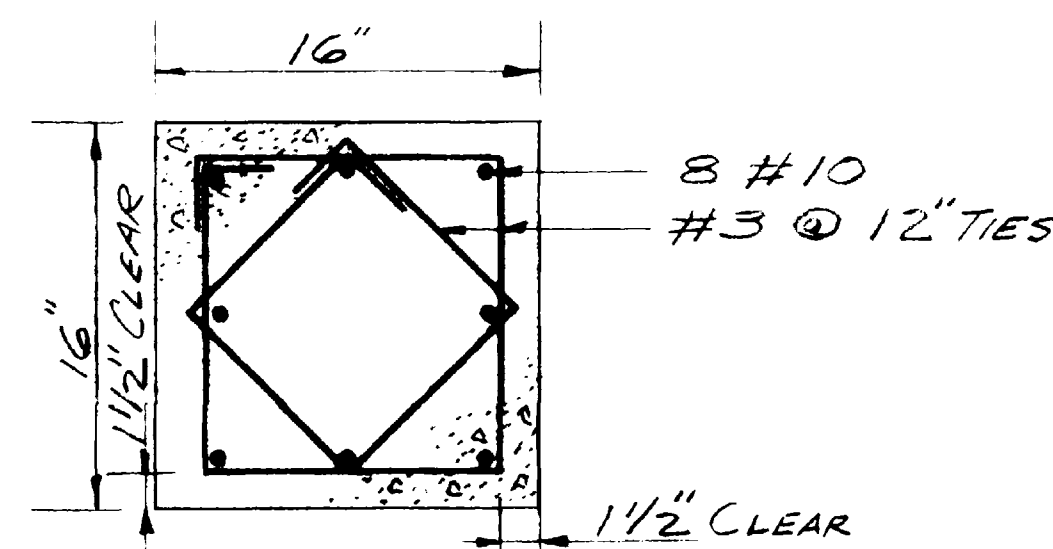
DATE	DESCRIPTION	MADE	APPROVED	DATE	SHEET
12/25/70	AS BUILT	AT	KDH	730810	24
	REVISOR				39



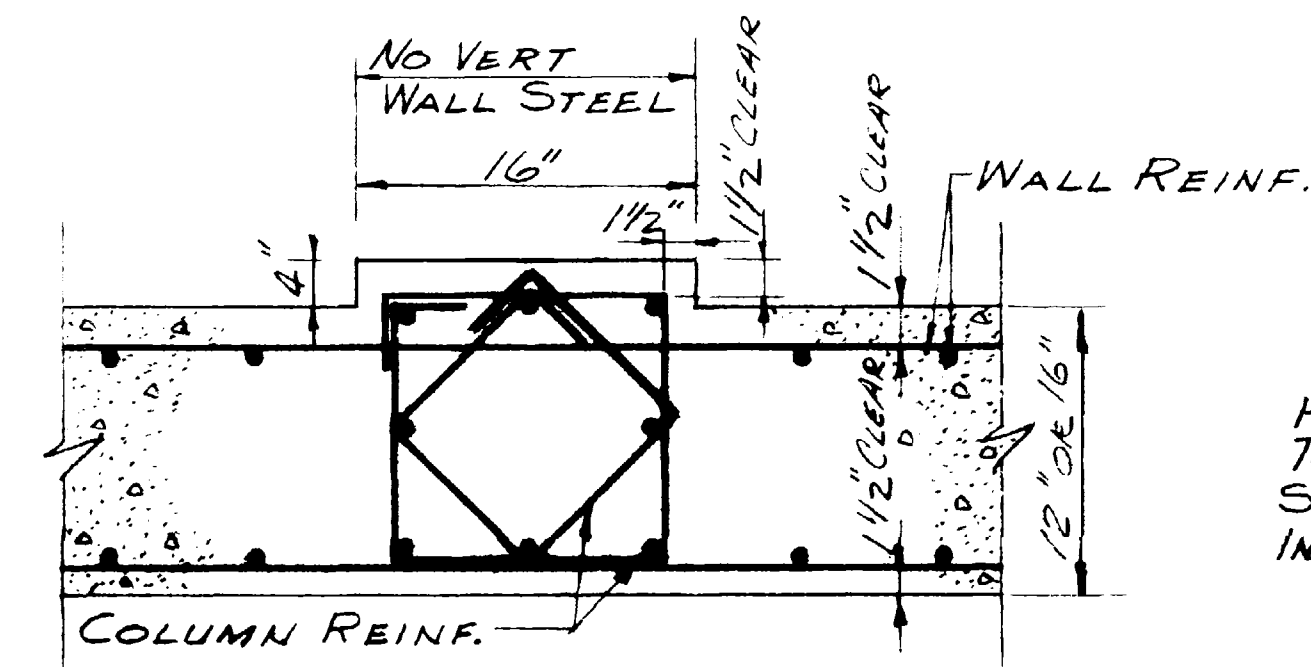
**TYPICAL COLUMN & PILASTER SUPPORTING STORAGE FLOOR ON COLUMN LINES ① & ③**  
SCALE 1/2" = 1'-0"



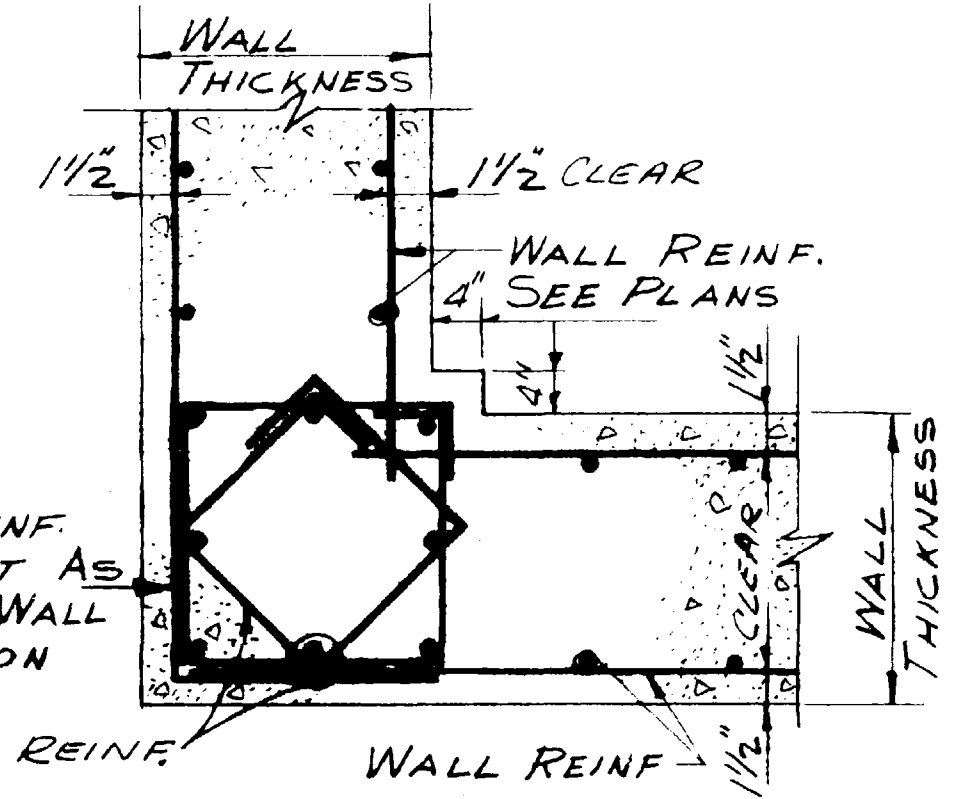
**TYPICAL COLUMN SECTION SUPPORTING STORAGE FLOOR ON COLUMN LINE ②**  
SCALE 1/2" = 1'-0"



**TYPICAL COLUMN SECTION SUPPORTING OPERATING FLOOR**  
SCALE 1/2" = 1'-0"

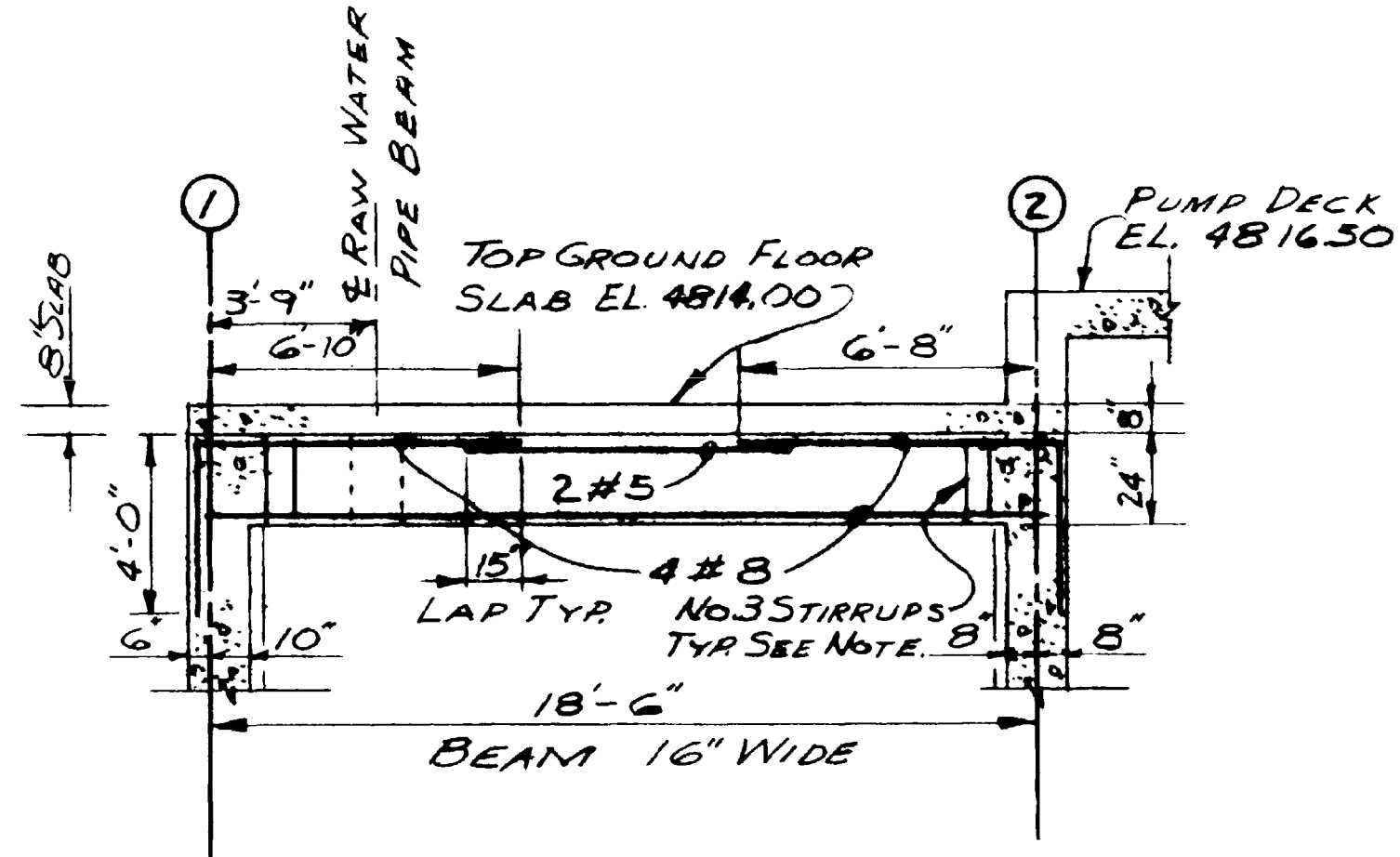


**TYPICAL PILASTER DETAIL**  
SCALE 1/2" = 1'-0"



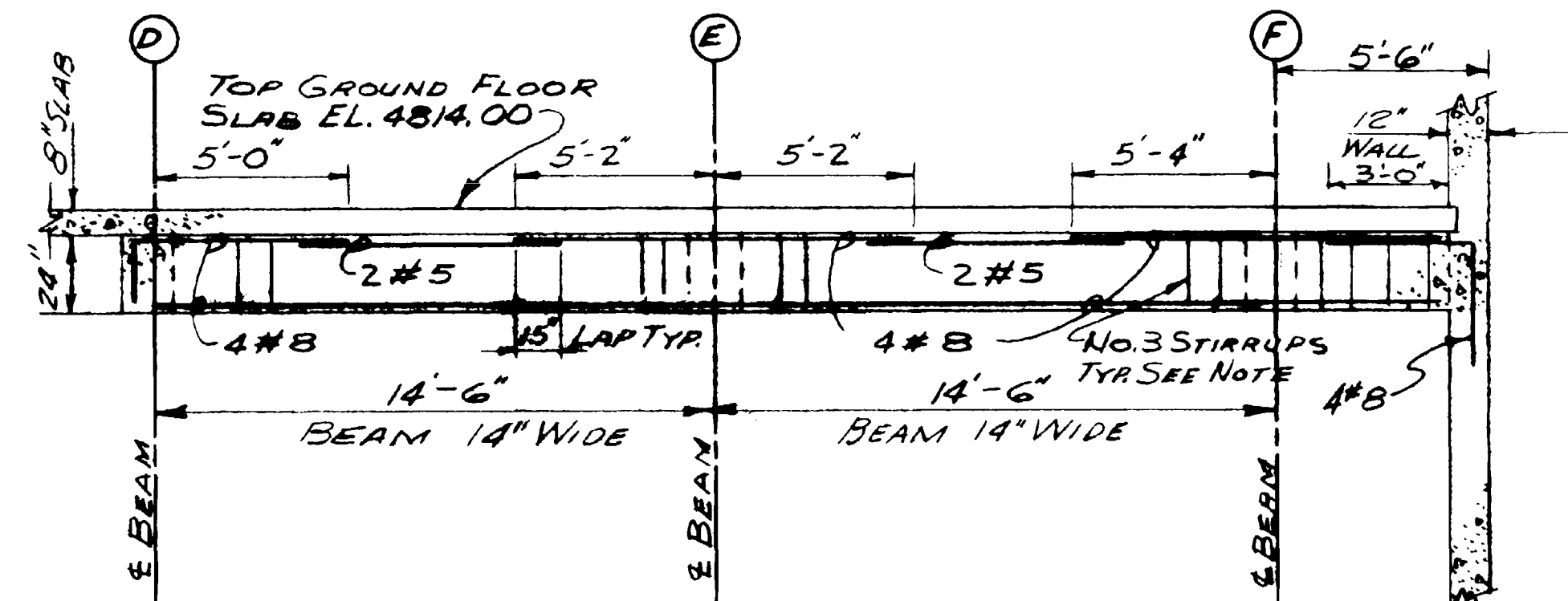
**TYPICAL CORNER PILASTER DETAIL B 25**  
SCALE 1/2" = 1'-0"

NOTE:  
COLUMNS WHICH ARE POURED INTEGRAL WITH THE WALL ARE NOTED AS PILASTERS. AT PILASTERS HORIZONTAL WALL REINFORCEMENT IS EXTENDED THROUGH THE PILASTER, AND THE VERTICAL WALL REINFORCEMENT IS INTERRUPTED AND COLUMN REINFORCEMENT SHALL BE PLACED AS SHOWN.



NOTE: ALL STIRRUPS MEASURED FROM FACE BEAMS. STIRRUPS: 1 @ 2', 1 @ 5', 3 @ 6', 2 @ 8', & @ 15' TO E BEAM

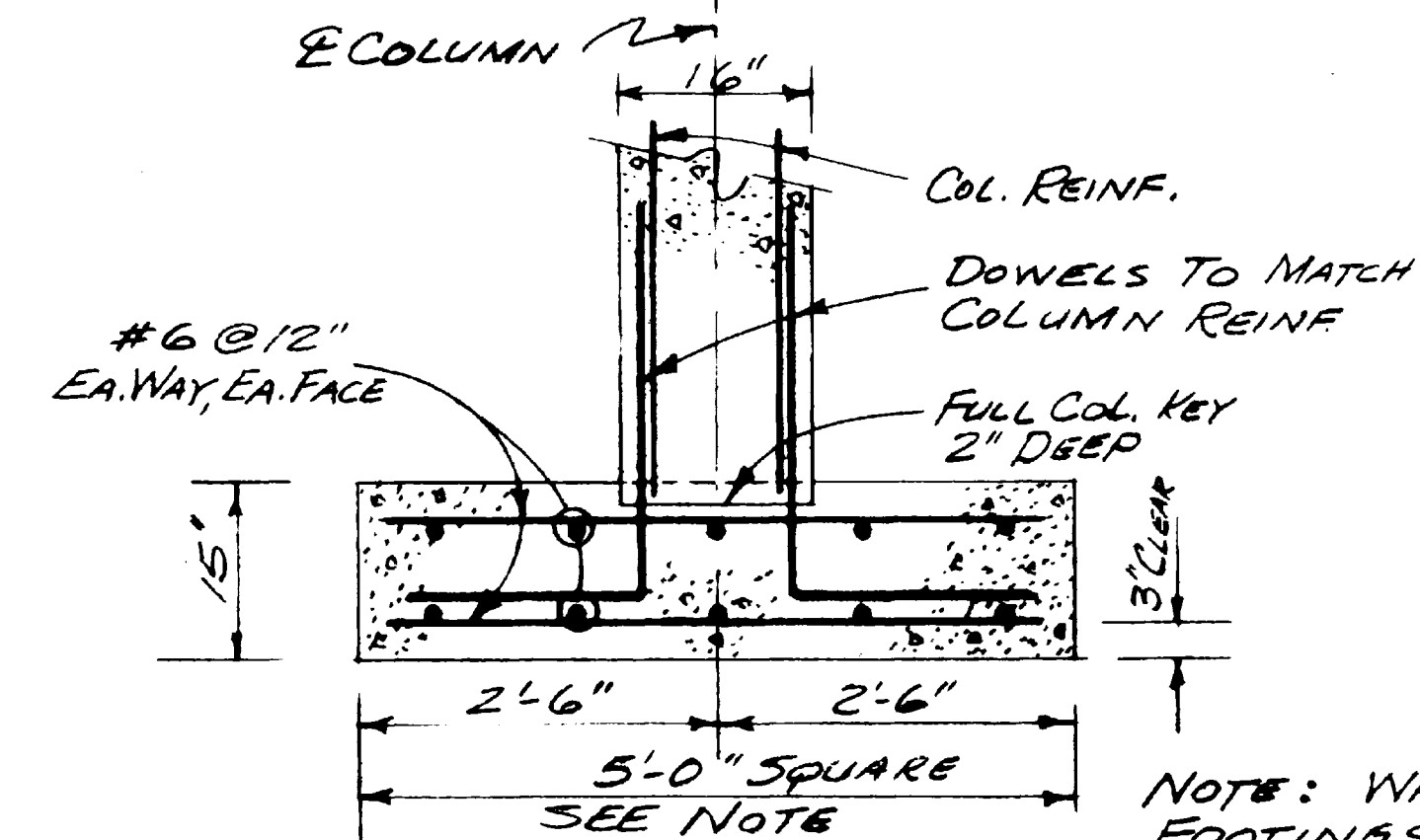
**PUMP ROOM BEAM DETAIL BEAMS ON COLUMN ① ② & ③**



NOTE: ALL STIRRUPS MEASURED FROM FACE OF BEAMS. STIRRUPS: 1 @ 2', 1 @ 5', 3 @ 6', 2 @ 8', & @ 15' TO E BEAM TYR FOR BOTH SPANS.

**PUMP ROOM BEAM DETAIL RAW WATER PIPE SUPPORT BEAM**

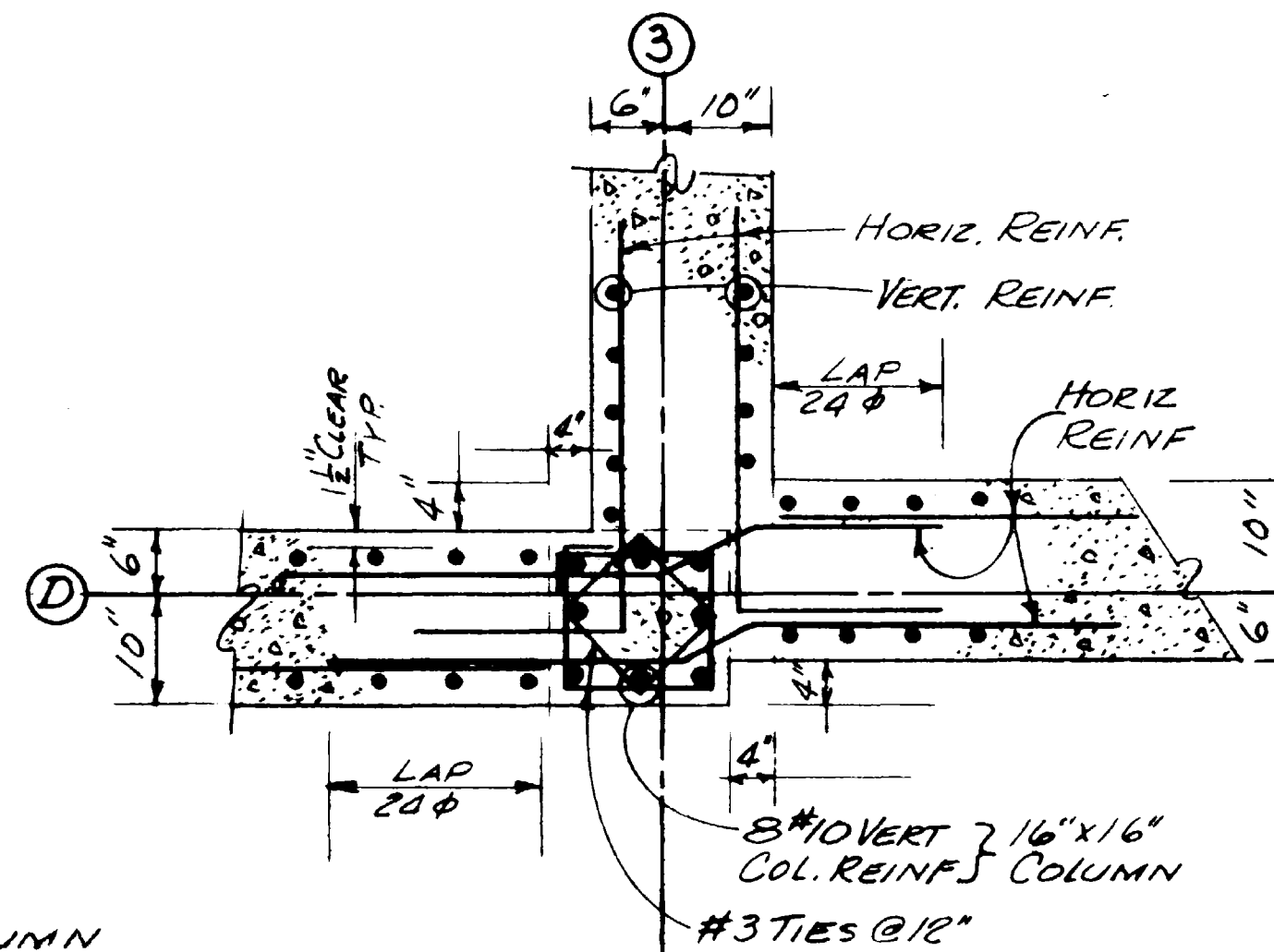
**DETAIL A 25**



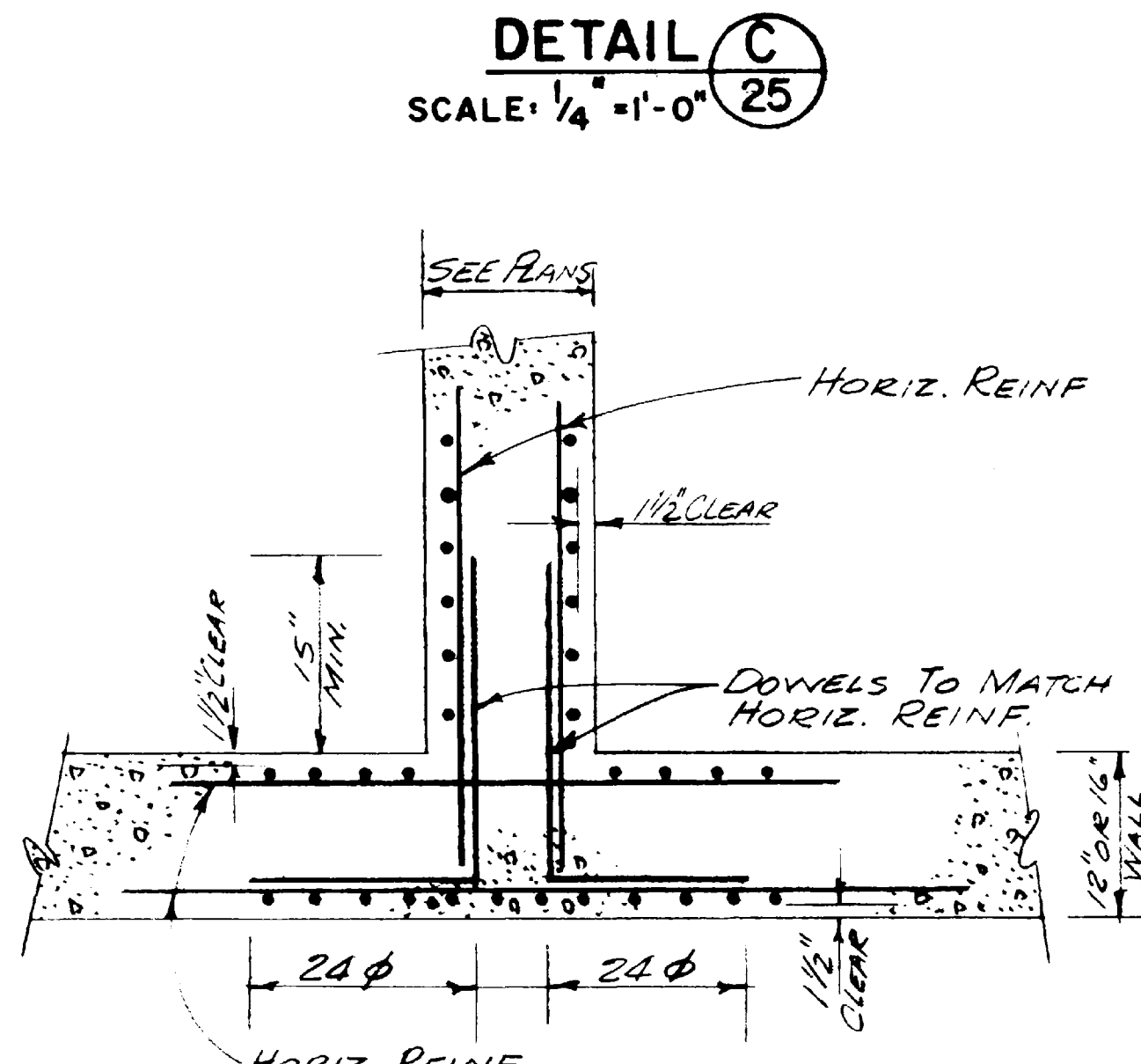
**TYPICAL COLUMN FOOTING**

**DETAIL J 25**  
SCALE: 3/4" = 1'-0"

NOTE: WHERE COLUMN FOOTINGS ARE INTEGRAL WITH FLOOR SLABS, SLAB REINFORCEMENT SHALL BE EXTENDED INTO FOOTING AREA

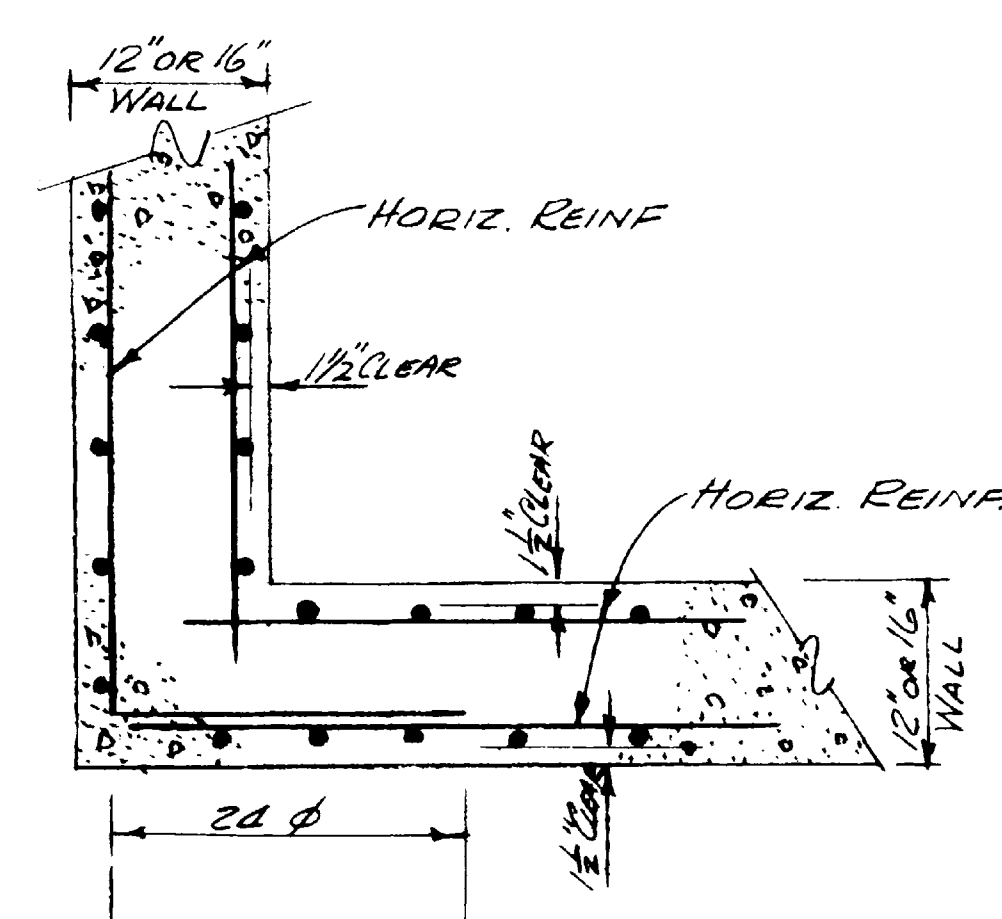


**DETAIL K 25**  
SCALE: 3/4" = 1'-0"



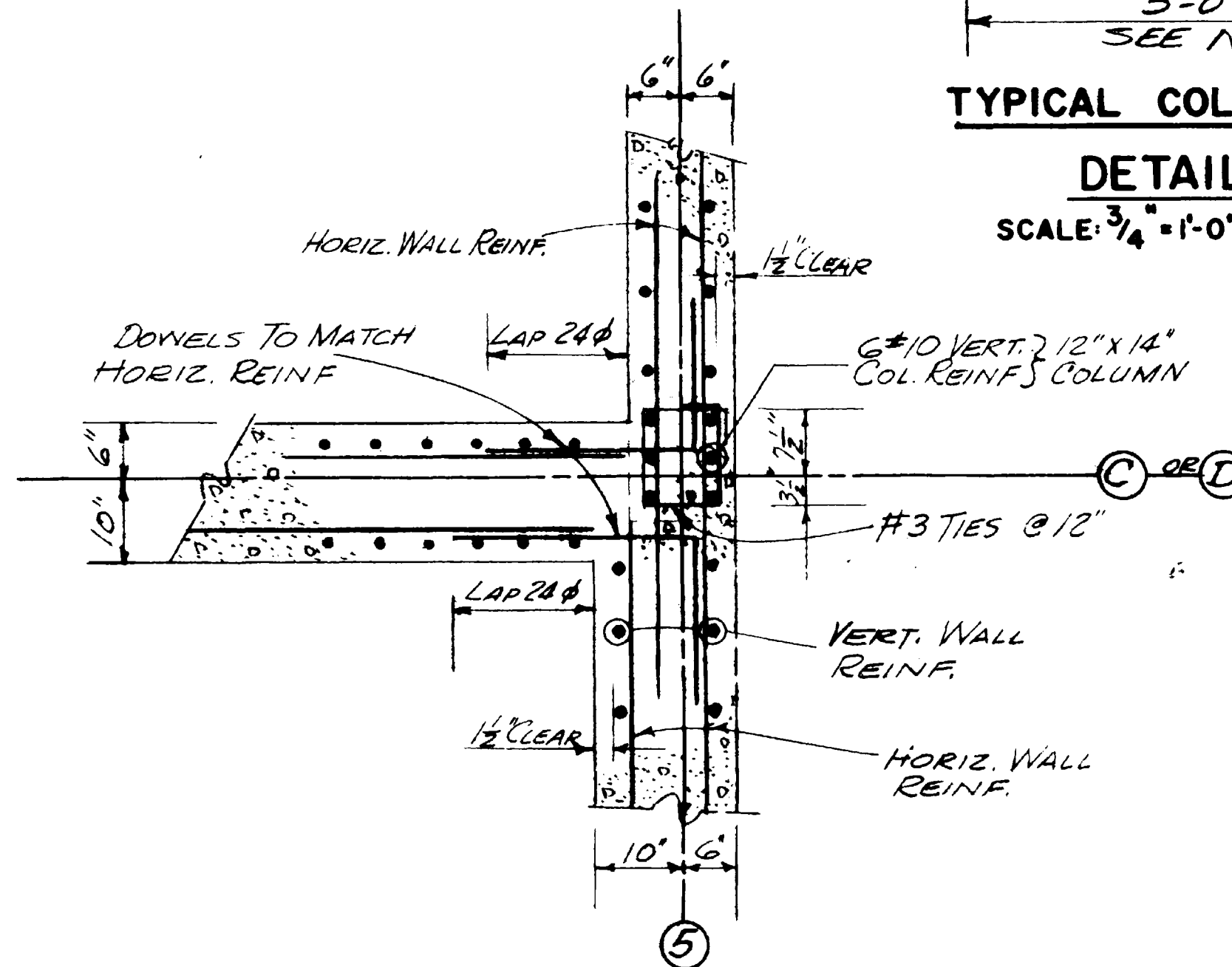
**PLAN-TYPICAL INTERSECTING WALL WITHOUT COLUMN**

**DETAIL E 25**  
SCALE: 3/4" = 1'-0"

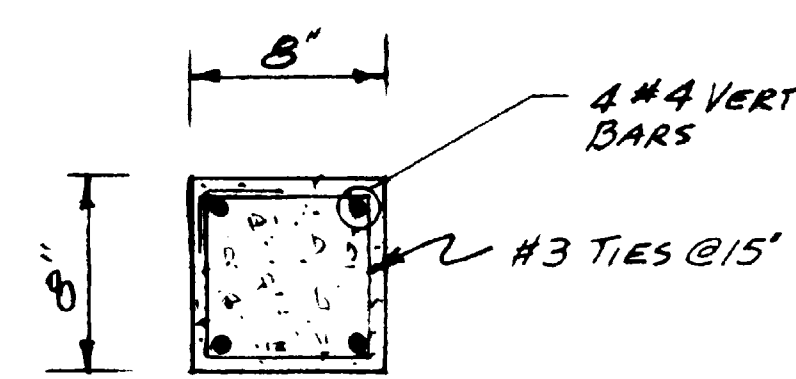


**PLAN-TYPICAL CORNER WALL WITHOUT COLUMN**

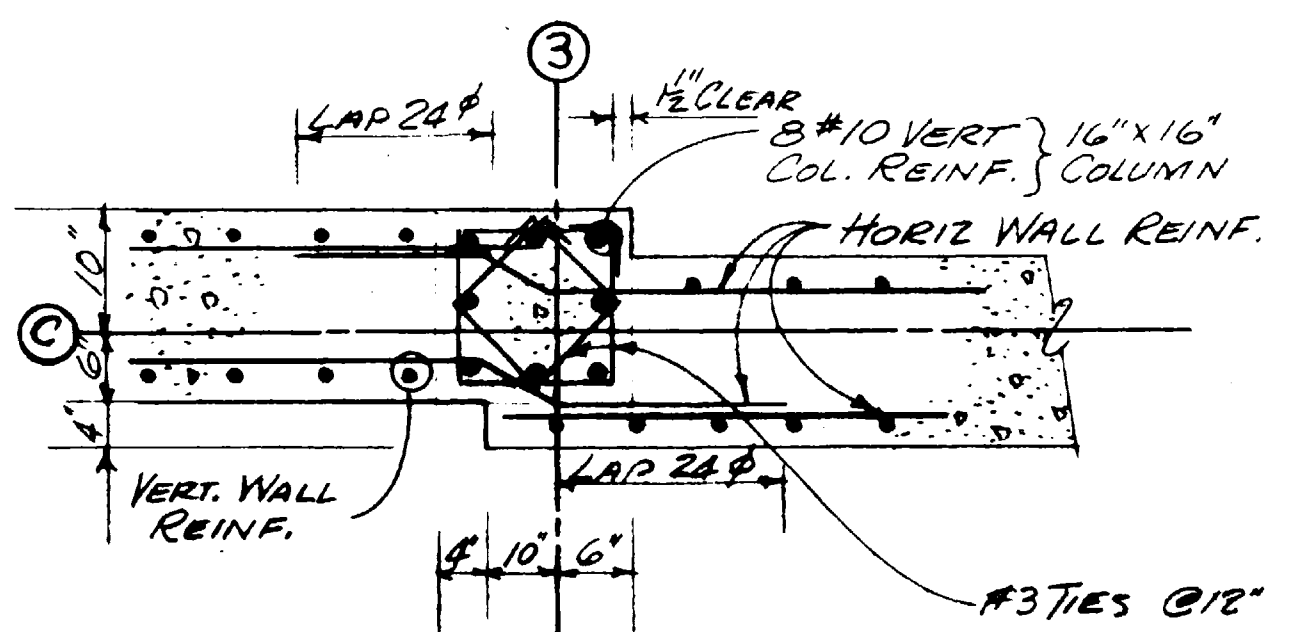
**DETAIL F 25**  
SCALE: 3/4" = 1'-0"



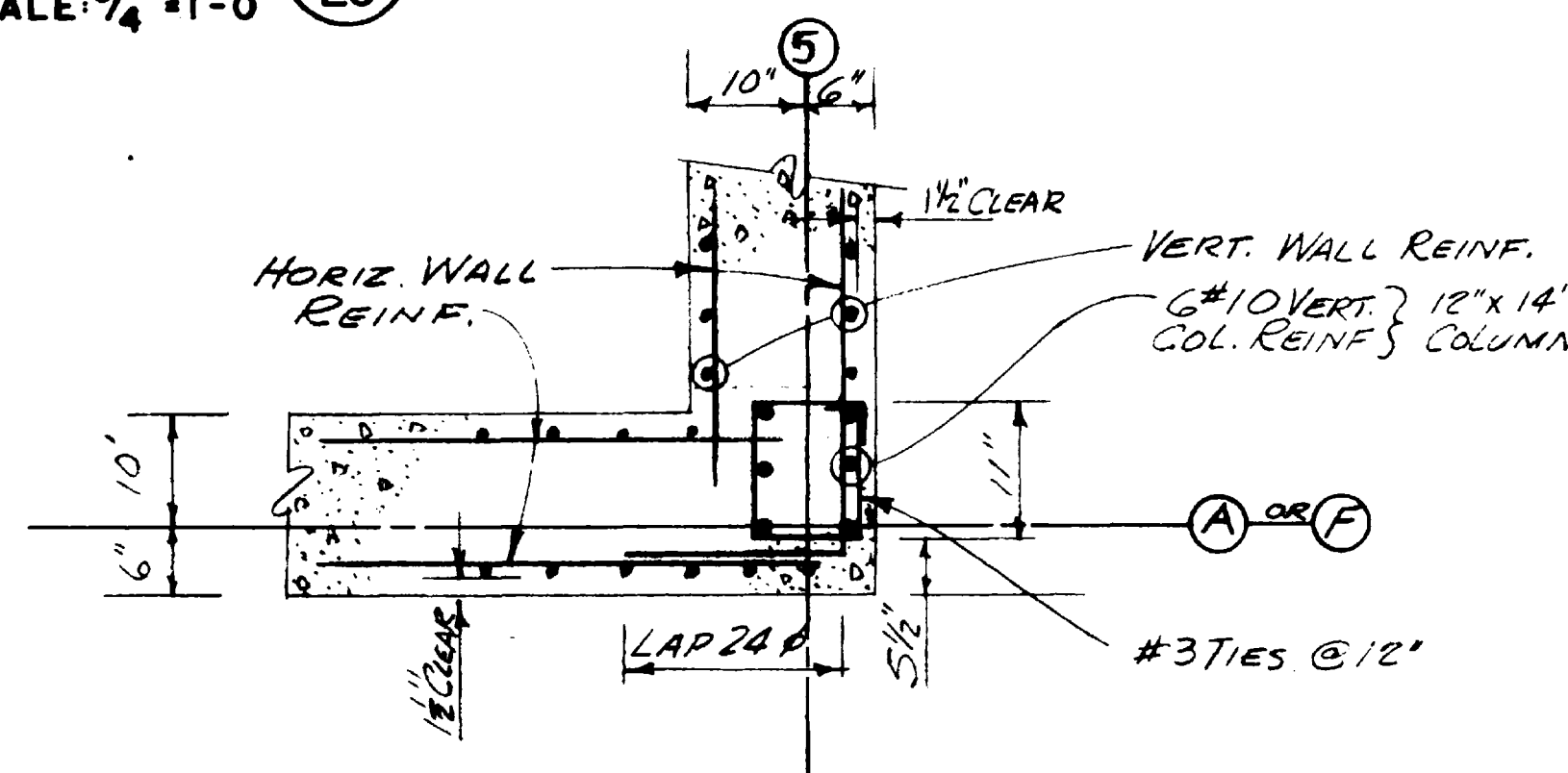
**DETAIL I 25**  
SCALE: 3/4" = 1'-0"



**TYPICAL COLUMN DETAIL L 25**  
SCALE: 3/4" = 1'-0"



**DETAIL G 25**  
SCALE: 3/4" = 1'-0"



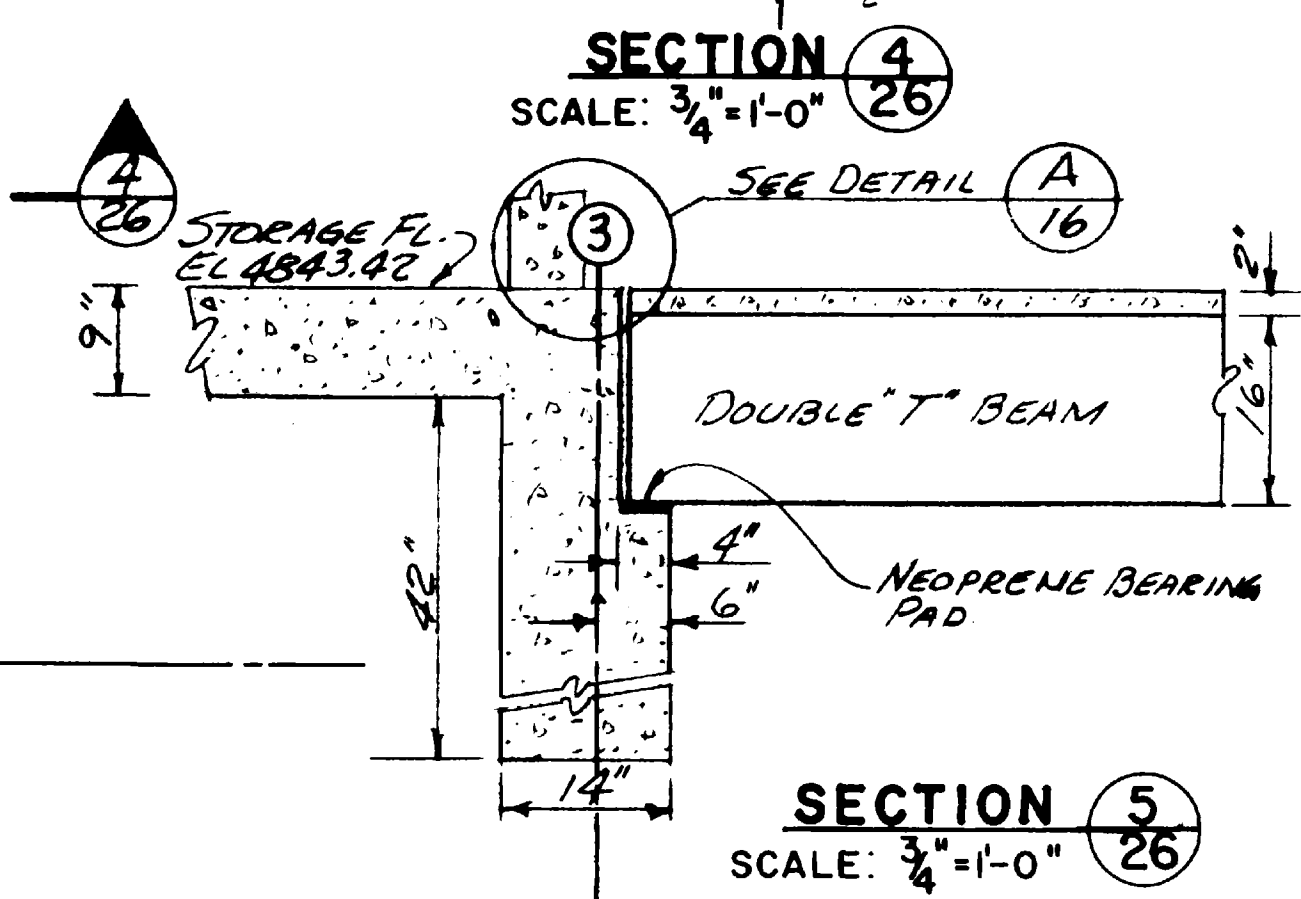
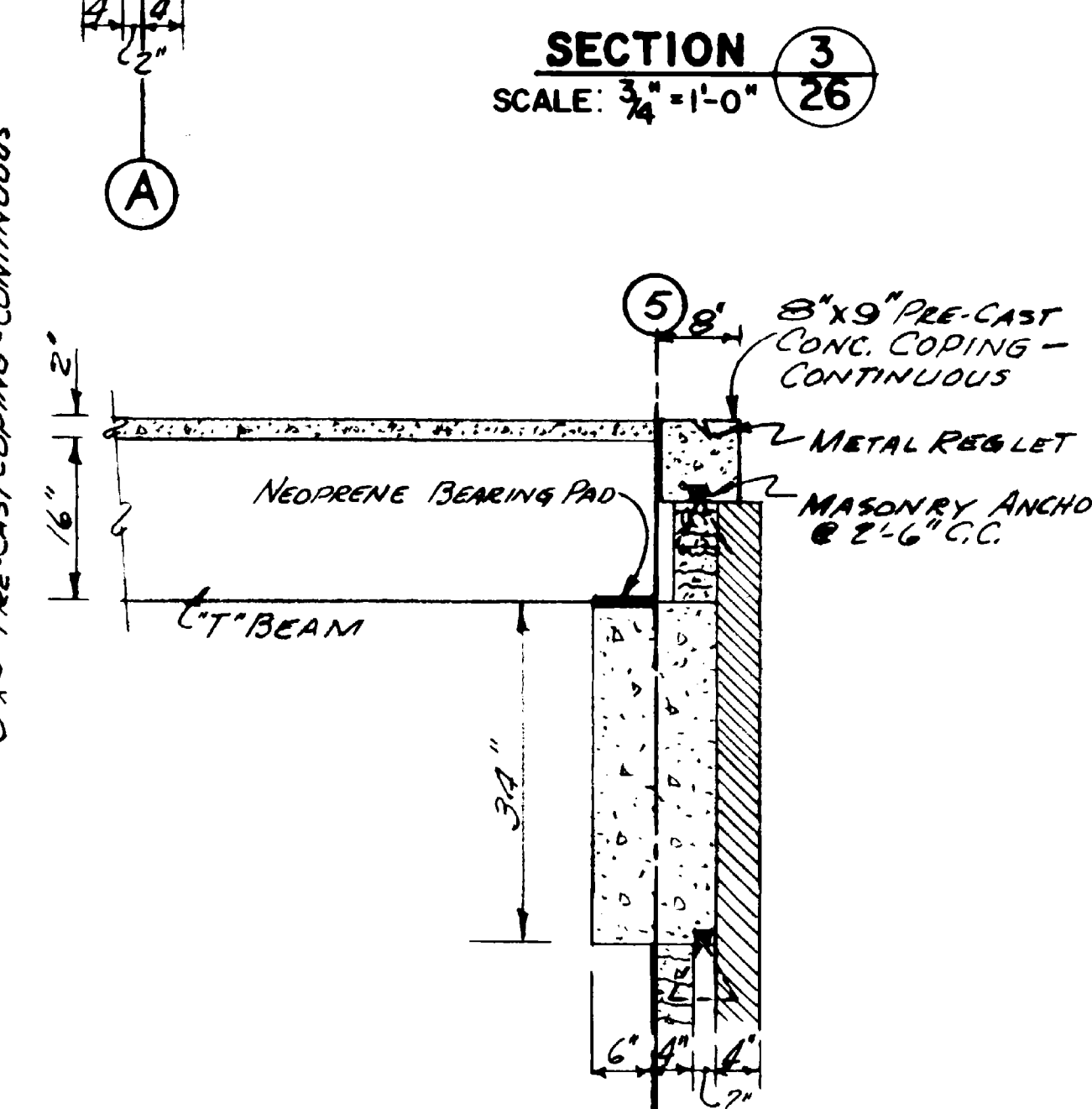
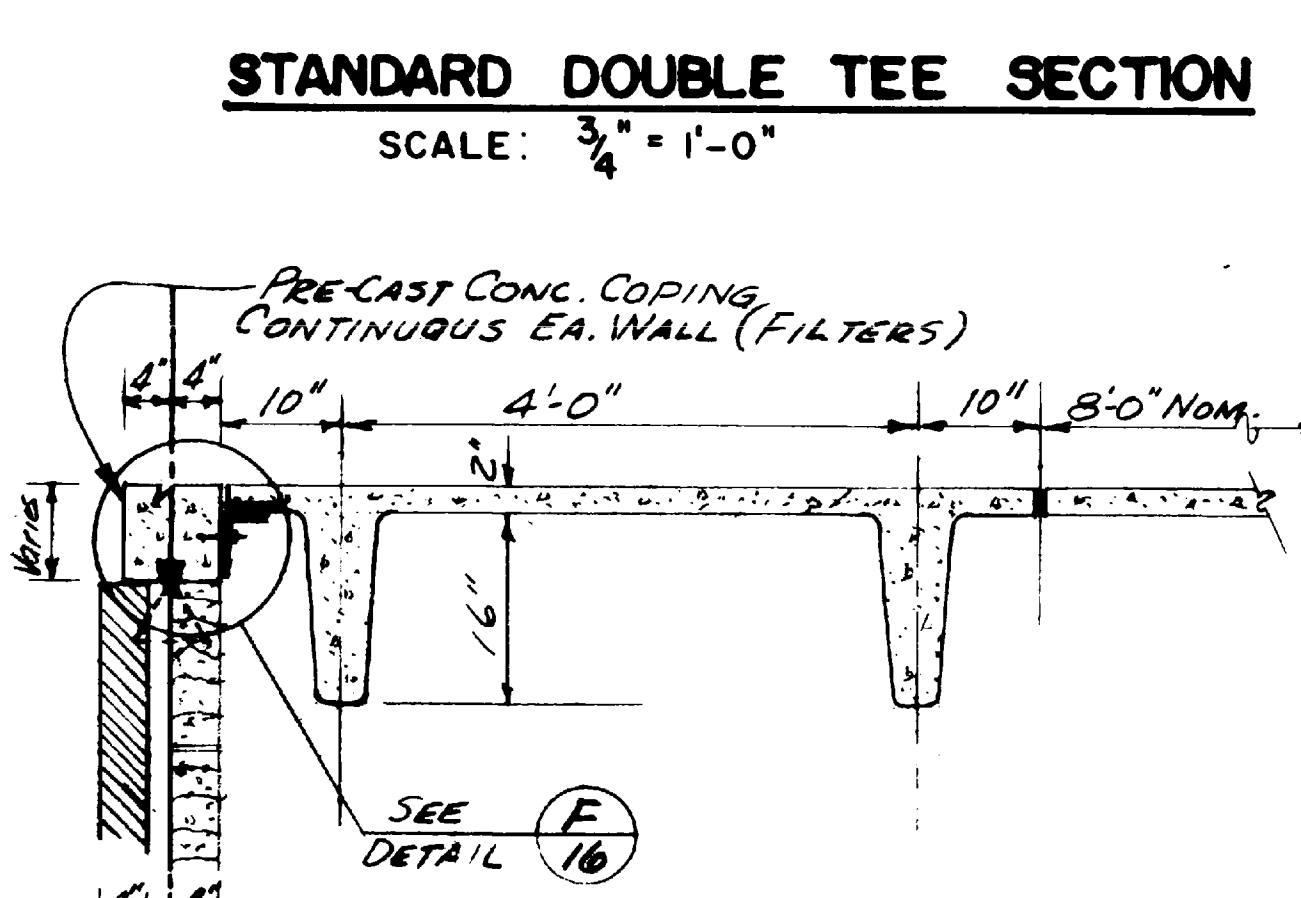
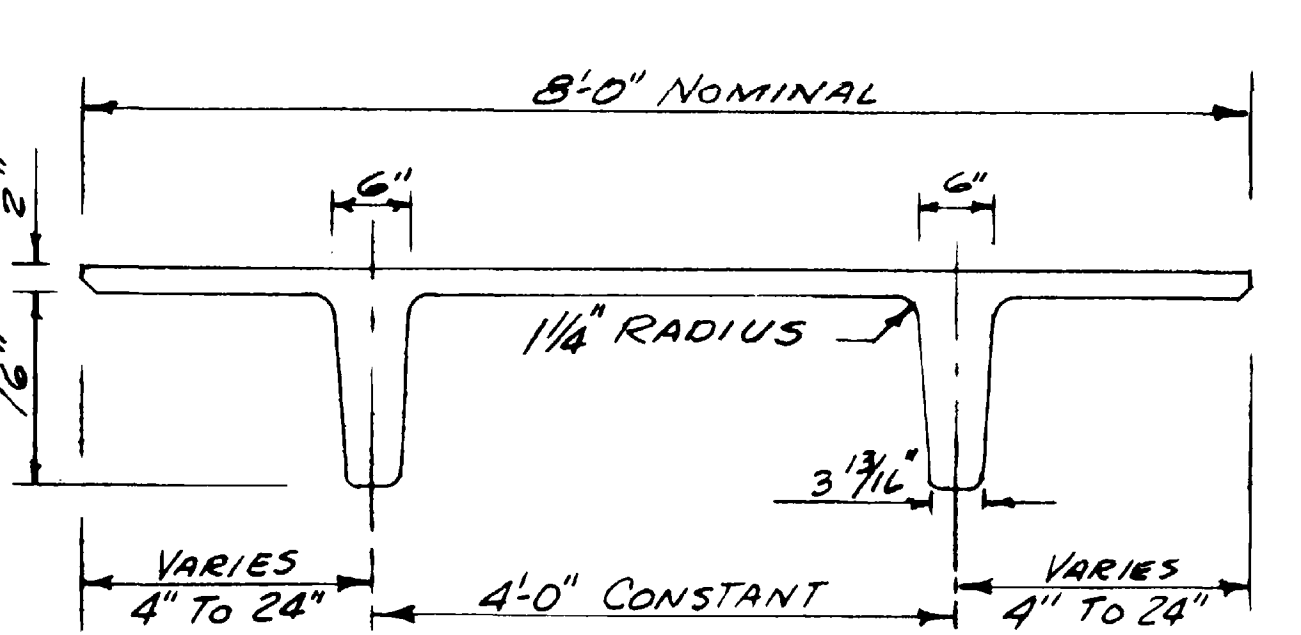
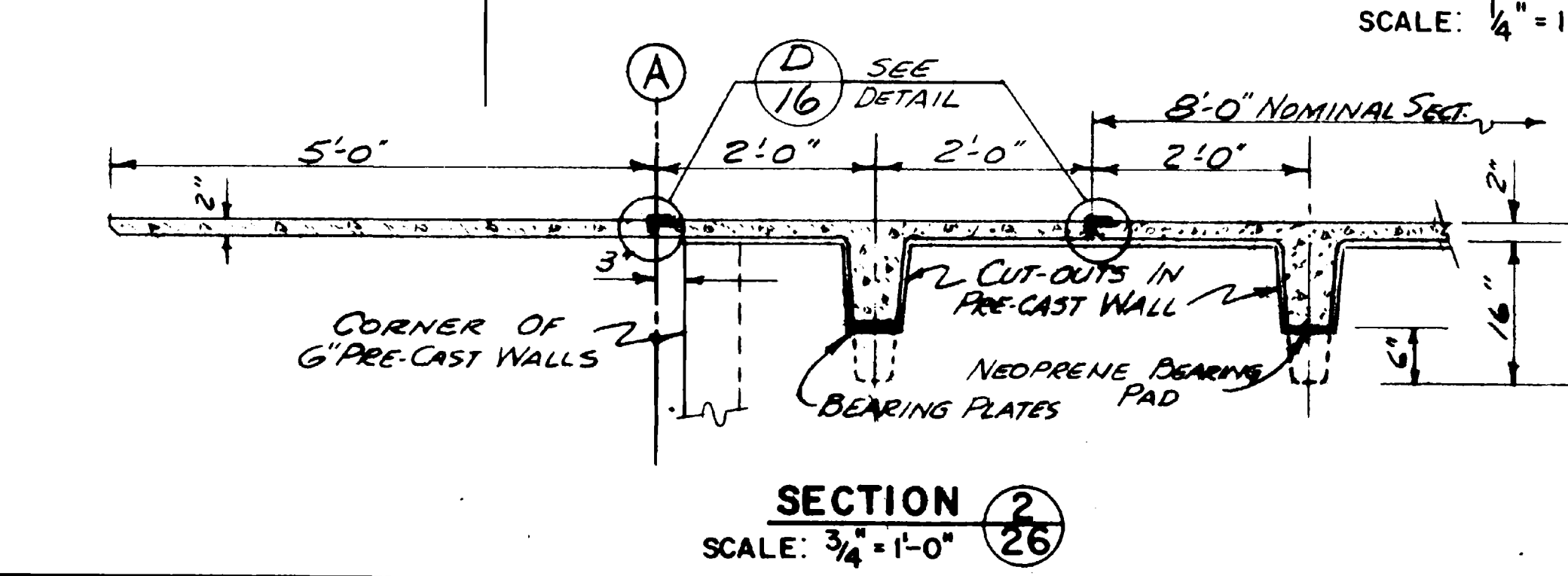
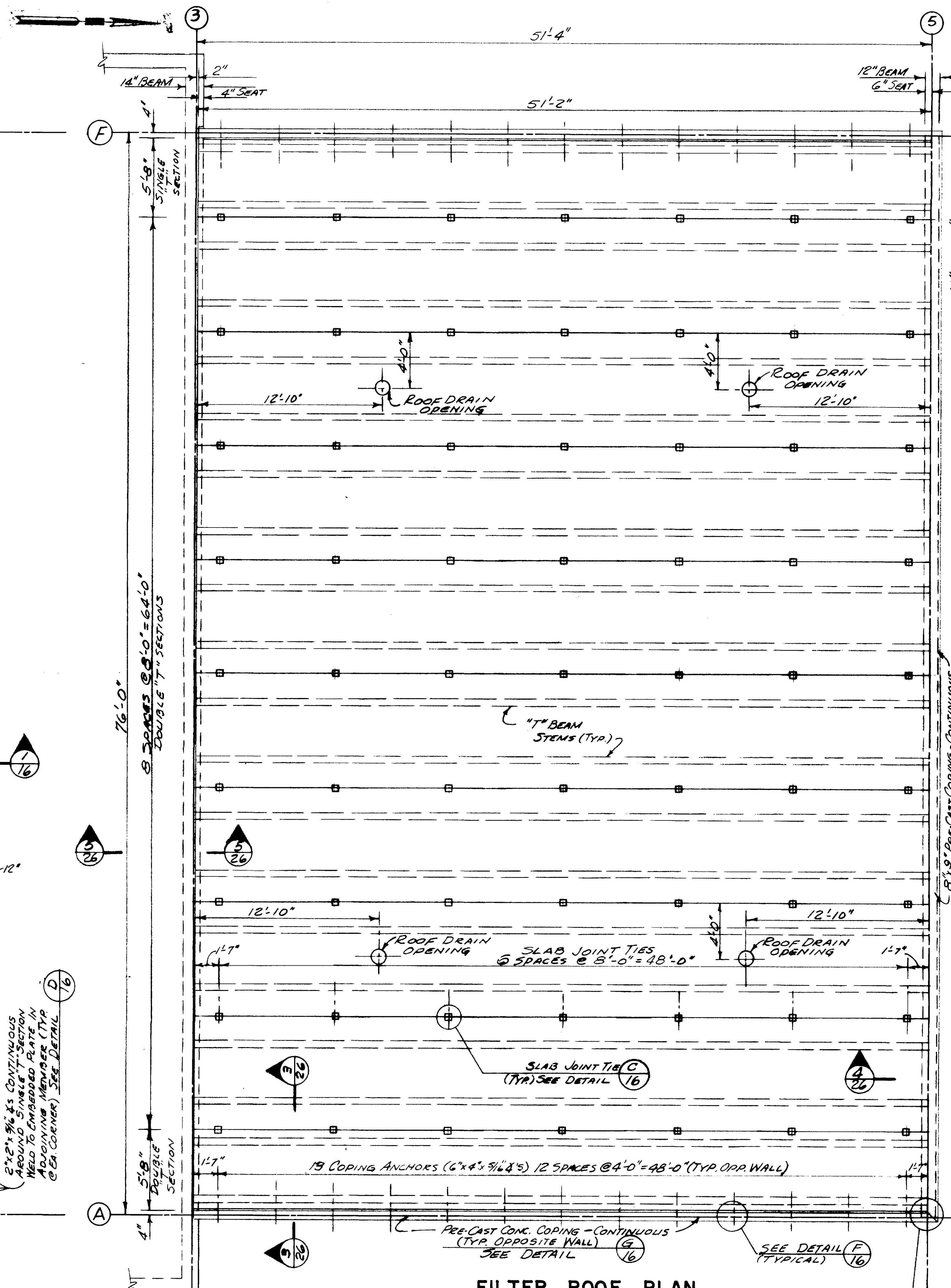
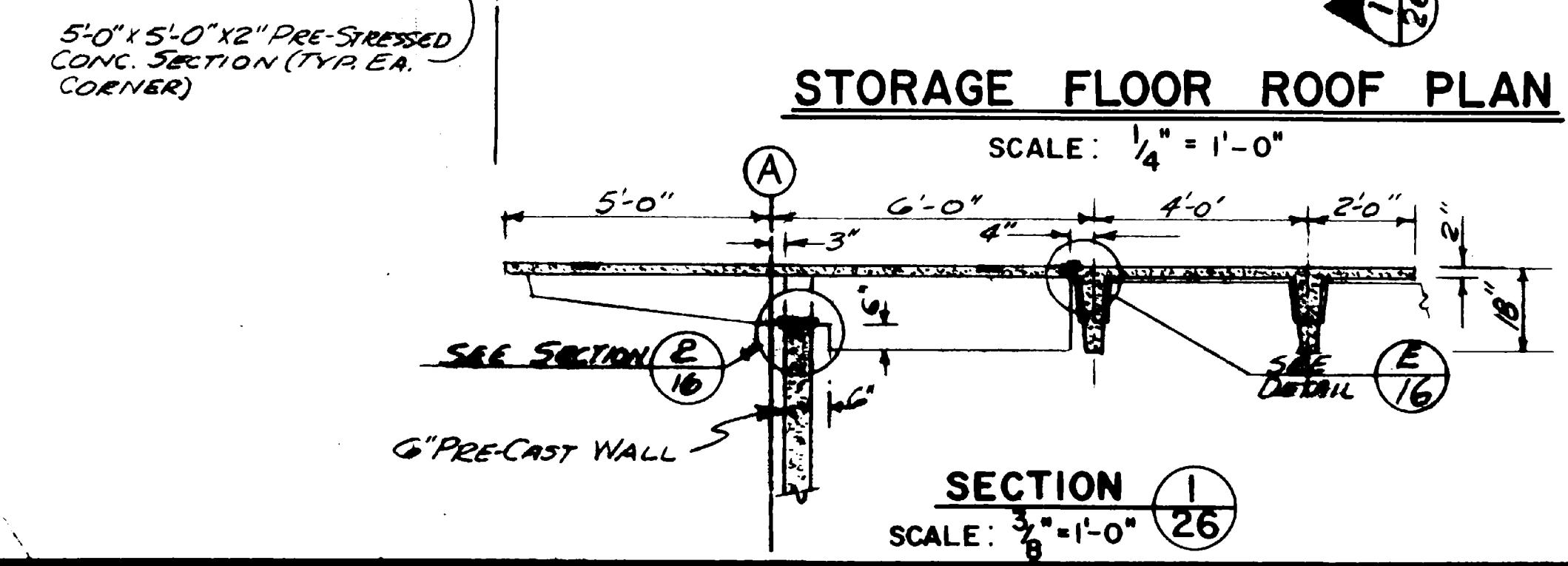
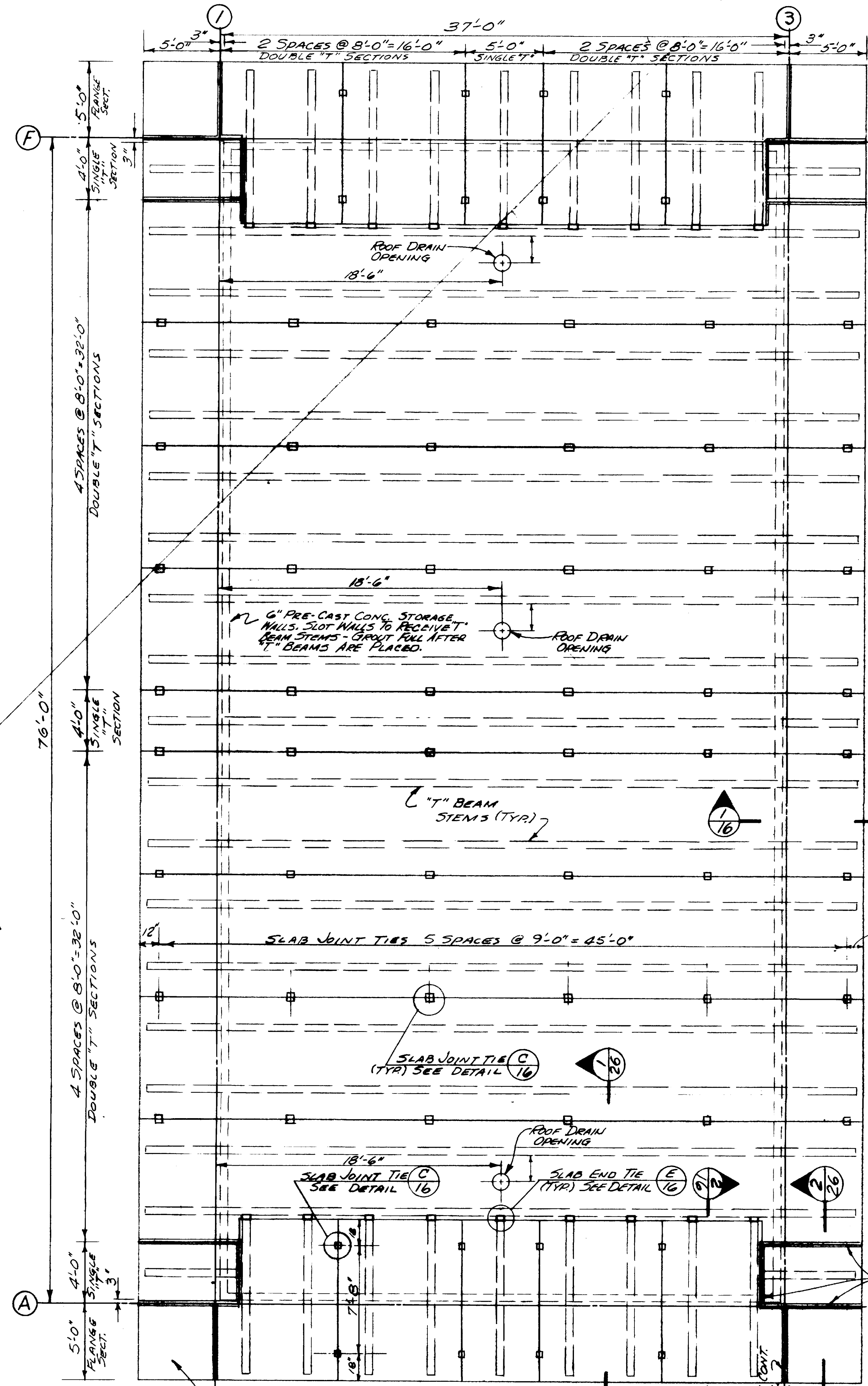
**DETAIL H 25**  
SCALE: 3/4" = 1'-0"

**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
(CONTRACT - I)  
WATER TREATMENT PLANT  
**STRUCTURAL**  
**COLUMN SCHEDULE**  
**& STRUCTURAL DETAILS**

**HENNINGSON, DURHAM & RICHARDSON, INC.**  
ENGINEERS - PLANNERS - CONSULTANTS  
DENVER, COLORADO

DATE	DESCRIPTION	MADE	APPROV
2.25.70	As BUILT	A.T.	K.D.H.

730810  
REVISIONS  
APPROVED: K.D.H.  
APPROVED: W.L.R.  
DATE: DEC. 1967  
SHEET 25 OF 39



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

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

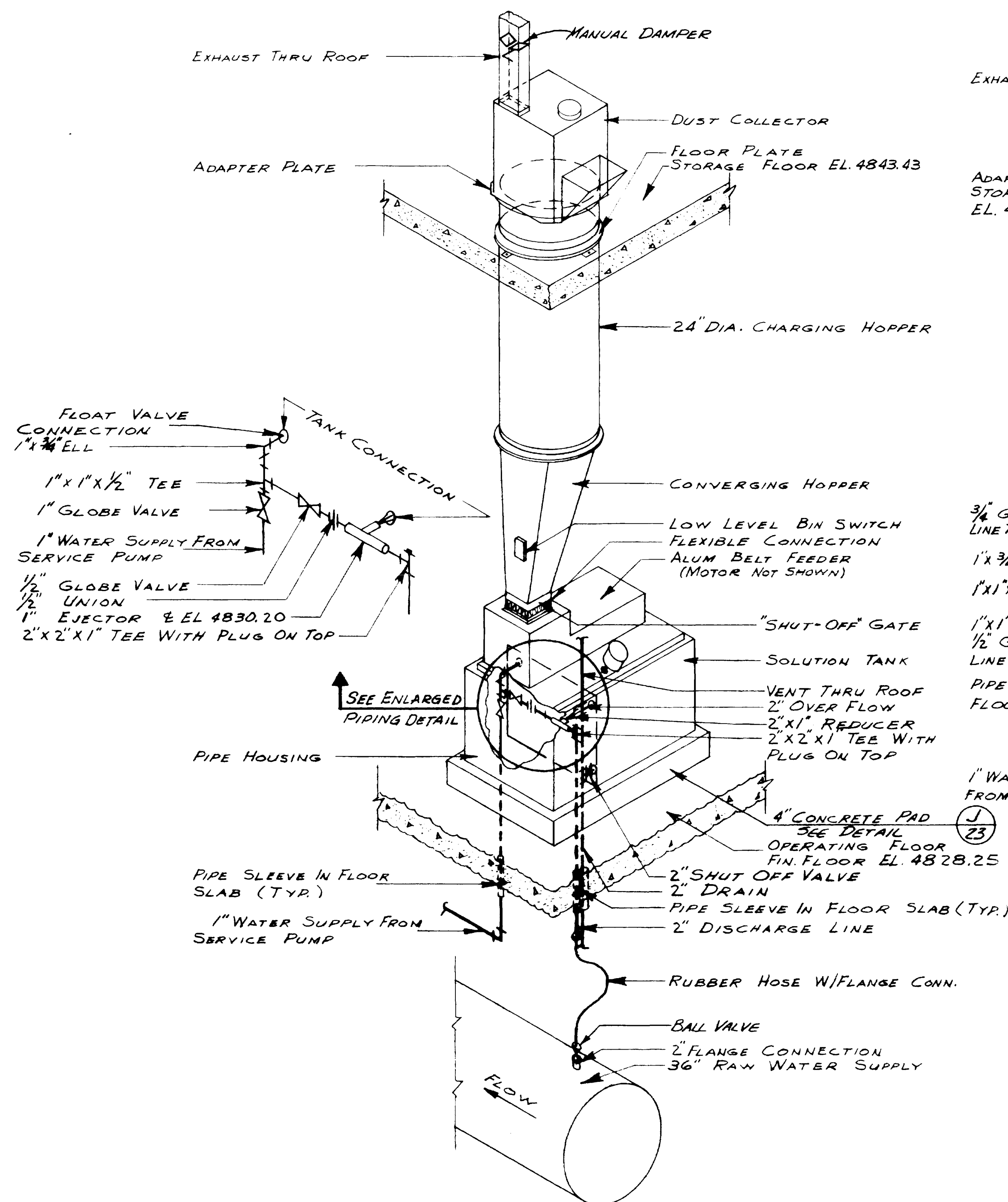
**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
 (CONTRACT - I)  
 WATER TREATMENT PLANT  
**STRUCTURAL**  
**ROOF FRAMING PLANS**  
**& DETAILS**

**HERRINGSON, DURHAM & RICHARDSON, INC.**  
 ENGINEERS - PLANNERS - CONSULTANTS  
 DENVER, COLORADO

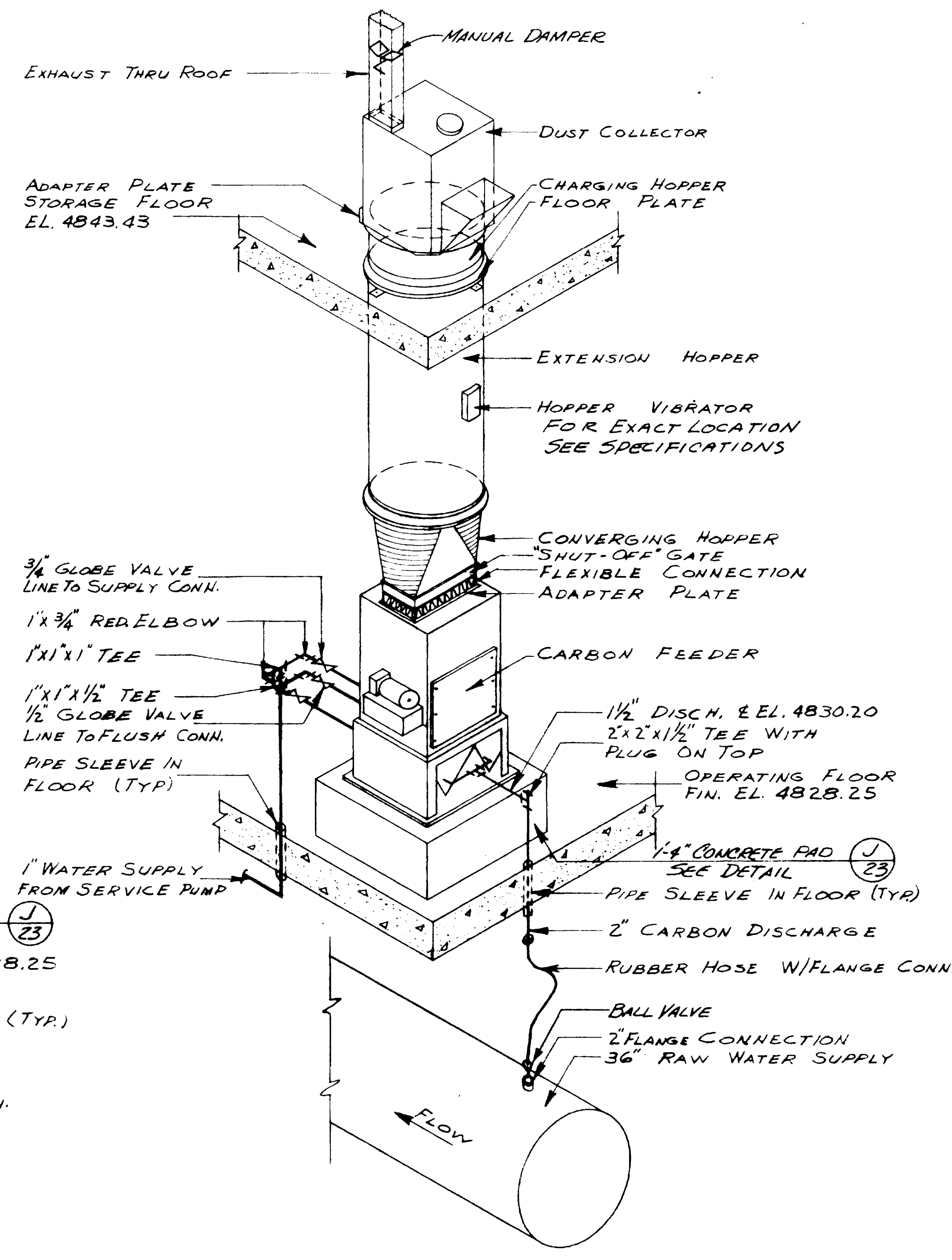
DESIGNED E.F.R.-R.E.R. CHECKED K.D.H.  
 DRAWN M.L.B. APPROVED M.L.B.  
 DATE DEC. 1957

DATE: 12-1-57  
 DESCRIPTION: AS BUILT  
 MADE: AT  
 APPROV: K.D.H.

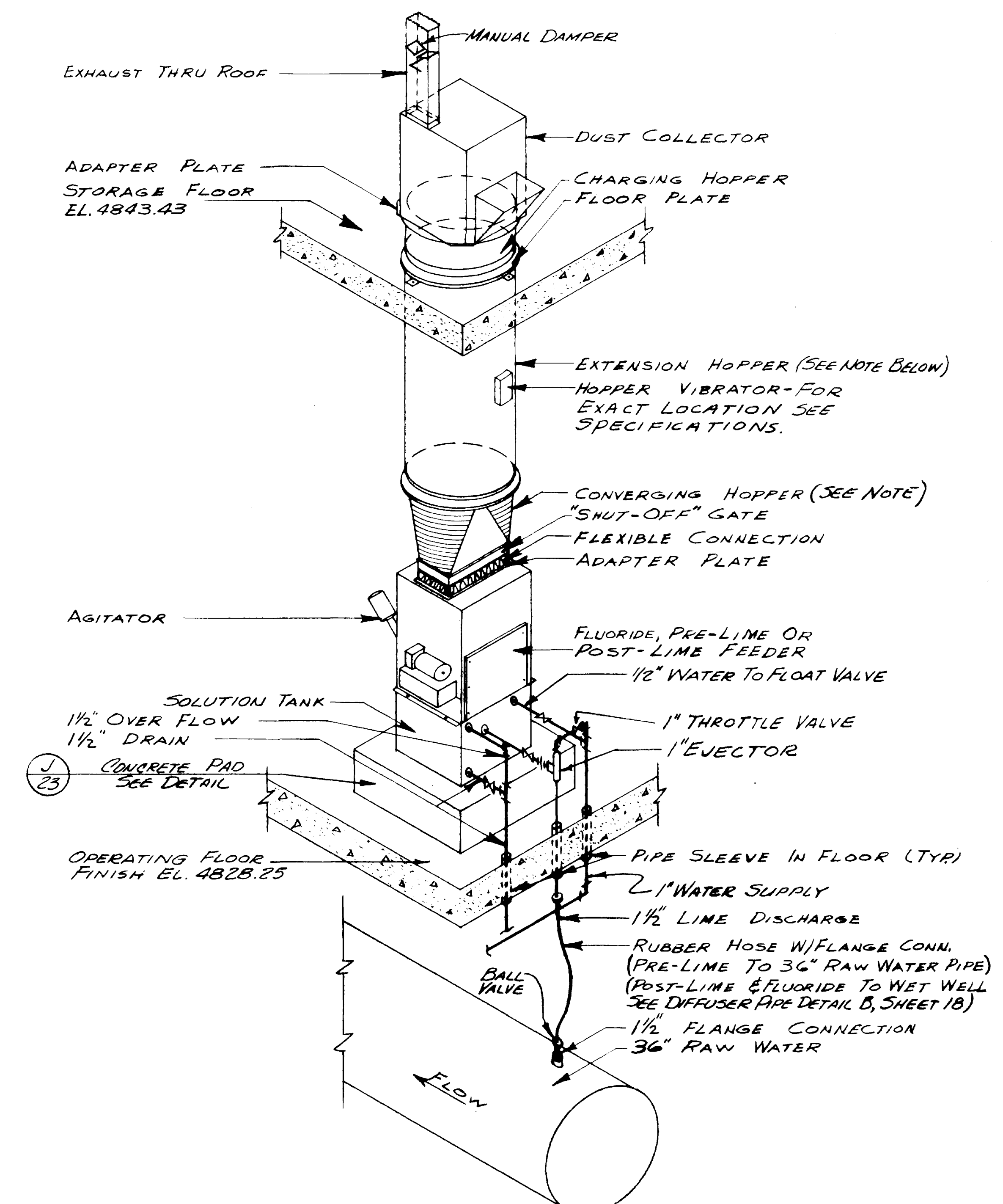
JOB: 730810  
 SHEET: 26 OF 39



**SCHMATIC  
ALUM FEEDER  
2 REQUIRED**



**SCHMATIC  
CARBON FEEDER  
1 REQUIRED**



**SCHMATIC FOR  
PRE-LIME, POST-LIME & FLUORIDE  
FEEDERS  
1 EACH REQUIRED**

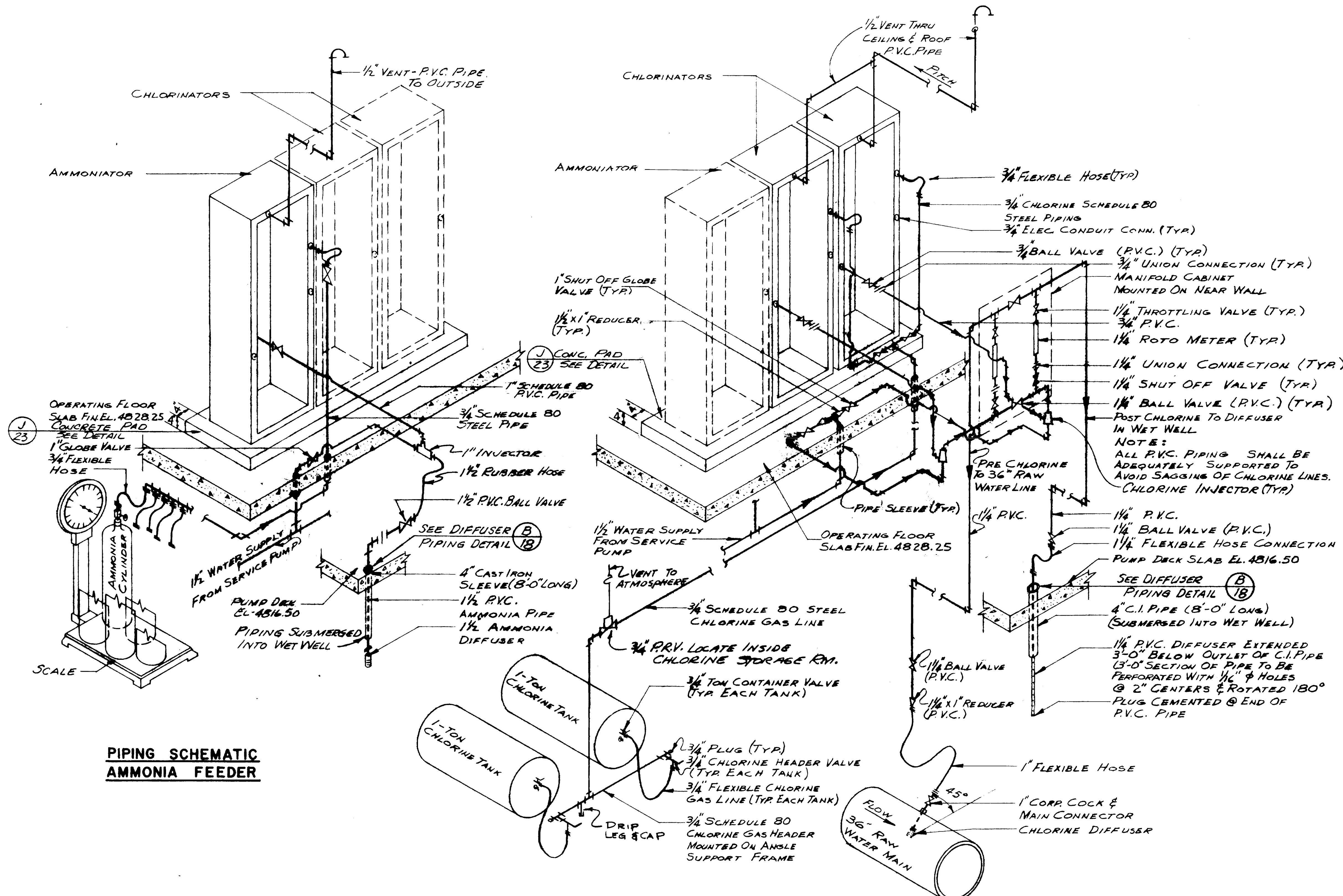
NOTE: CONVERGING HOPPER FOR FLUORIDE MACHINE IS TO BE MOUNTED DIRECTLY BELOW STORAGE FLOOR SLAB & CONTINUE WITH A 10"x20" EXTENSION HOPPER DOWN TO TOP OF FLUORIDE MACHINE COMPLETE WITH SHUT OFF GATE, FLEXIBLE CONNECTIONS AND ADAPTER PLATES.

WATERWORKS IMPROVEMENTS  
GRAND JUNCTION, COLORADO  
(CONTRACT - I)  
WATER TREATMENT PLANT  
MECHANICAL  
EQUIPMENT PIPING  
SCHEMATICS

HENNINGSON, DURHAM & RICHARDSON, INC.  
ENGINEERS - PLANNERS - CONSULTANTS  
DENVER, COLORADO

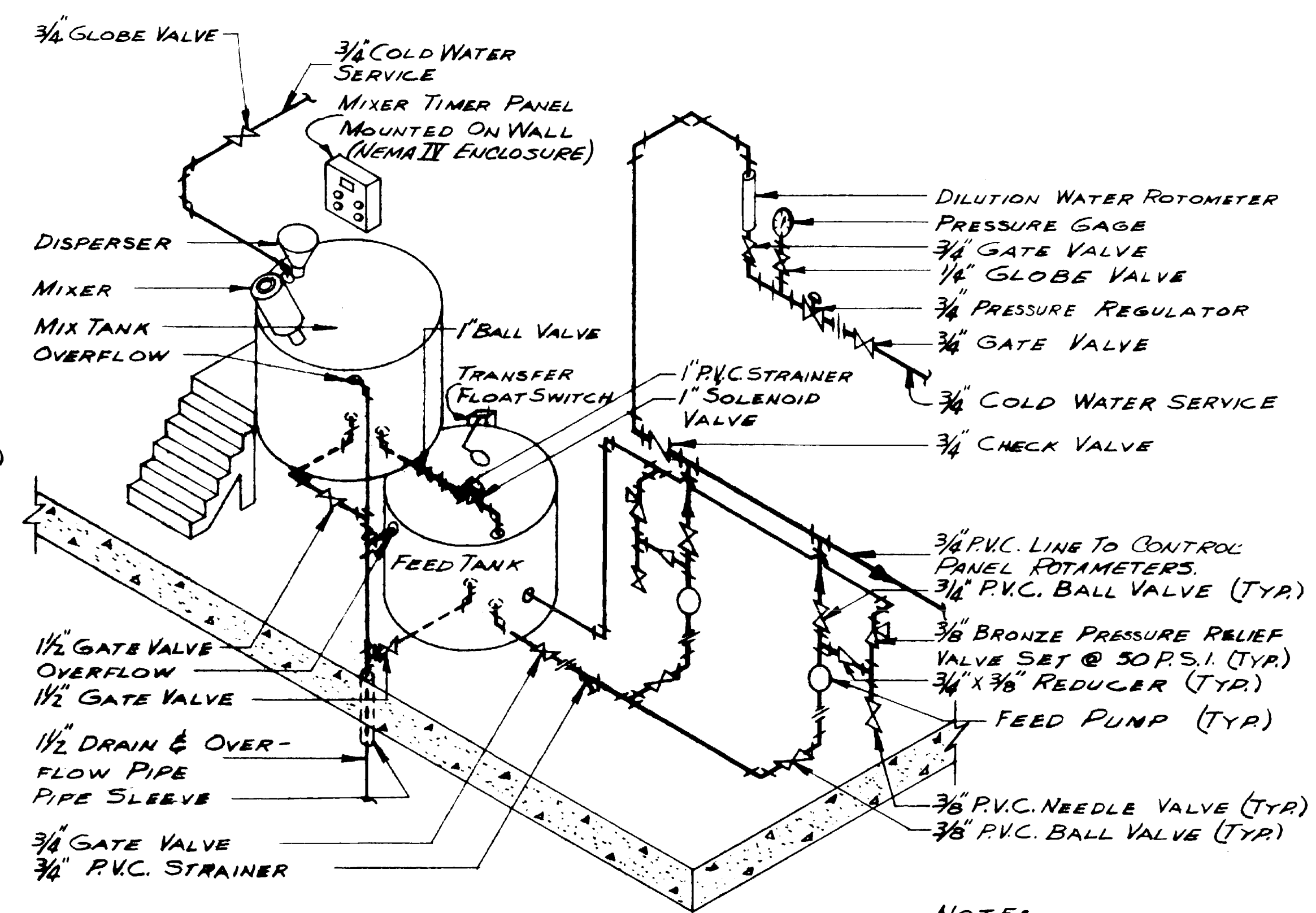
DATE	DESCRIPTION	MADE	APPROVED
2-25-70	As Built	AT	KDH

730810  
DESIGNED: EFR  
APPROVED: WLB  
DATE: DEC. 1967  
SHEET 27 OF 39

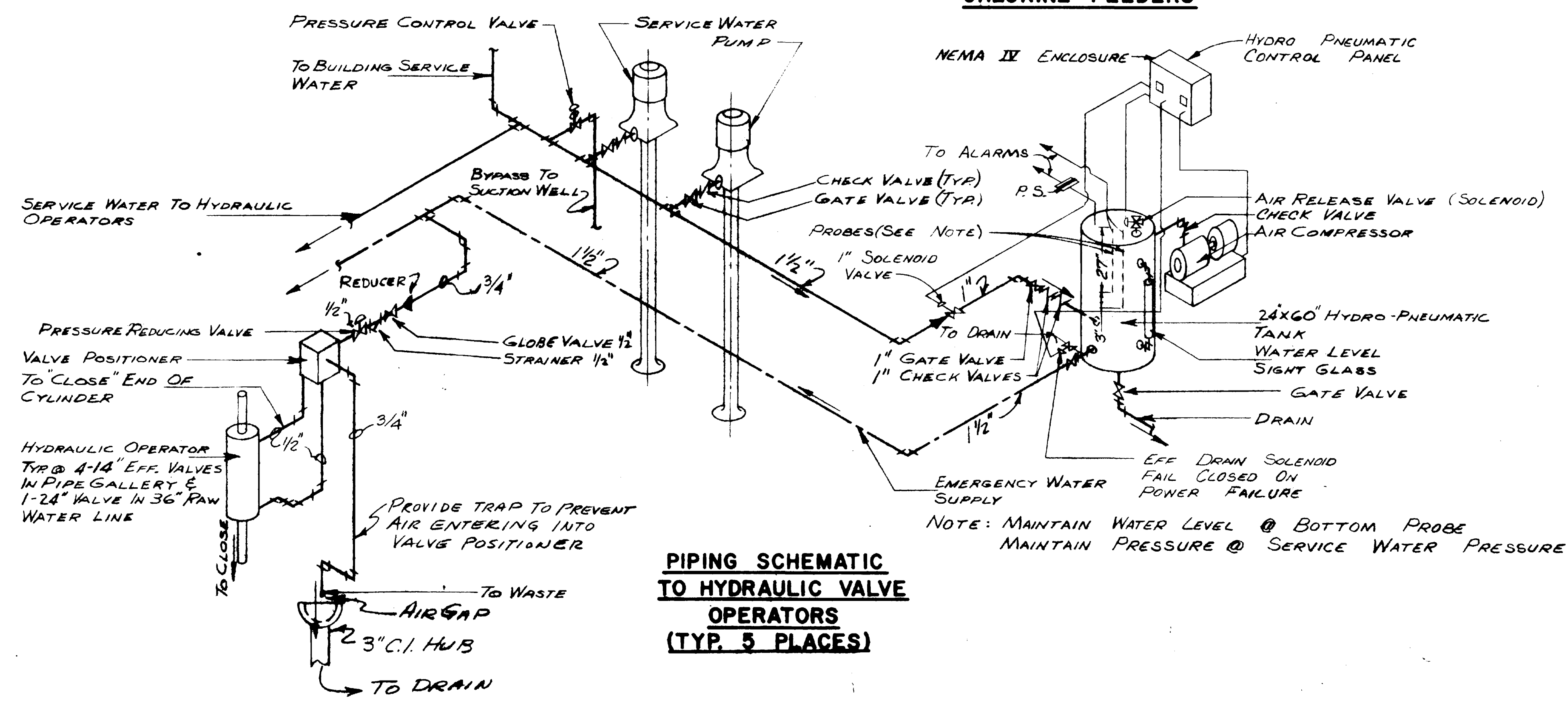


**PIPING SCHEMATIC  
AMMONIA FEEDER**

**PIPING SCHEMATIC  
CHLORINE FEEDERS**



**SCHEMATIC FLOCCULENT  
MIX & FEED TANK**



**PIPING SCHEMATIC  
TO HYDRAULIC VALVE  
OPERATORS  
(TYP. 5 PLACES)**

**WATERWORKS IMPROVEMENTS  
GRAND JUNCTION, COLORADO  
(CONTRACT - I)**

WATER TREATMENT PLANT  
**MECHANICAL  
EQUIPMENT PIPING  
SCHEMATICS**

**HERRINGSON, DURHAM & RICHARDSON, INC.**  
ENGINEERS - PLANNERS - CONSULTANTS  
DENVER, COLORADO

NO.	DATE	DESCRIPTION	BY	APPROVED
1	2-26-70	AS BUILT	A.T.	K.P.H.
2		REVISIONS	MADE	APPROVED

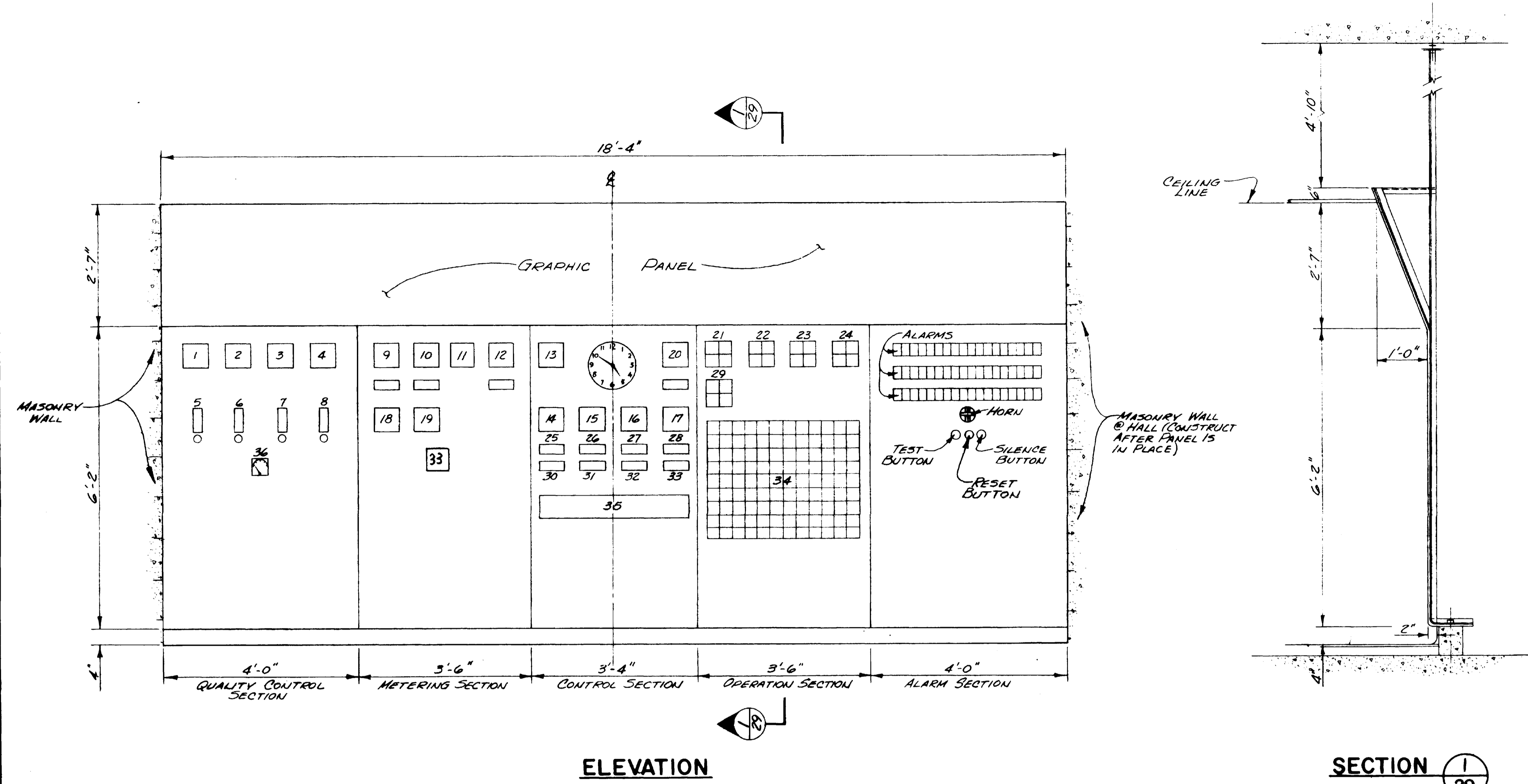
JOB 730810  
DESIGNED E.F.R.  
CHECKED M.L.B.  
DRAWN M.W.W.  
DATE DEC. 1967

SHEET 28 OF 39

**ALARM SCHEDULE**

LIST OF ALARMS	
ALARM No.	DESCRIPTION
1	HIGH RAW WATER TURBIDITY
2	HIGH WATER LEVEL CONTACT BASIN
3	MANTEY HEIGHTS TANK HIGH LEVEL
4	MANTEY HEIGHTS TANK LOW LEVEL
5	RESERVOIR No.1 & No.2 HIGH LEVEL
6	RESERVOIR No.1 & No.2 LOW LEVEL
7	CHLORINE STORAGE ROOM LEAK
8	CHLORINE FEEDER ROOM LEAK
9	CLEARWELL HIGH LEVEL
10	LOW SERVICE WATER PRESSURE
11	HIGH FILTER HEAD LOSS (ONE ALARM FOR ALL FILTERS)
12	LOW HYDRO-PNEUMATIC TANK LEVEL
13	HIGH HYDRO-PNEUMATIC TANK LEVEL
14	CLEARWELL LOW LEVEL
15	LOW CHEMICAL FEEDER HOPPER LEVEL (ONE ALARM FOR ALL FEEDERS)
16	CHEMICAL FEED OFF NORMAL (ONE ALARM FOR ALL FEEDERS)
17	LOW CHLORINE PRESSURE
18	INCOMPLETE BACKWASH SEQUENCE
19	HIGH RAW WATER PRESSURE (SENSOR IN RAW WATER CONTROL VAULT)
20	HIGH WATER LEVEL GALLERY SUMP
21	HIGH WATER LEVEL PUMP ROOM SUMP
22	HIGH WATER LEVEL ELEVATOR PIT
23	NO FLOW FROM KANNAH CREEK INFLUENT LINE
24	NO FLOW FROM HALLENBECK RESERVOIR INFLUENT LINE

NOTES:  
 1. PROVIDE RELAYS AND BLANK ALARM POINTS FOR A MINIMUM OF 8 SPARE ALARM POINTS.  
 2. INSTRUMENTATION AND CONTROL SUPPLIER SHALL FURNISH ALL ALARM INITIATING DEVICES.



**ELEVATION**

**SECTION 1**

**MAIN CONTROL PANEL - DETAIL**  
 SCALE: 3/4" = 1'-0"

MAIN CONTROL PANEL						
INST. No.	DESCRIPTION	TYPE	RANGE	ALARM CONTACTS		REMARKS
				YES	NO	
1	RAW WATER TURBIDITY METER RECORDER	I-R	0-100ppm	/		1 PEN RECORDS POINT SAMPLED - 1 PEN RECORDS VALUE (METER MTD. BEHIND PANEL)
2	FINISHED WATER TURBIDITY METER RECORDER	I-R	0-5ppm	/		1 PEN RECORDS POINT SAMPLED - 1 PEN RECORDS VALUE (METER MTD. BEHIND PANEL)
3	pH	I-R	2-12	HIGH & LOW		2 PEN (METERS MTD. BEHIND PANEL)
4	CHLORINE RESIDUAL	I-R	0-3 ppm	/		(METER MTD. BEHIND PANEL)
5	POLYELECTROLYTE ROTOMETERS - FILTER No.1			/		
6	POLYELECTROLYTE ROTOMETERS - FILTER No.2			/		
7	POLYELECTROLYTE ROTOMETERS - FILTER No.3			/		
8	POLYELECTROLYTE ROTOMETERS - FILTER No.4			/		
9	KANNAH CREEK FLOW	IRT.D.	0-8mgd.	/		
10	HALLENBECK RESERVOIR FLOW	IRT.D.	0-12mgd.	/		
11	CLEARWELL EFFLUENT	IR	0-24mgd.			
12	MAIN RAW WATER INFLUENT	IRT.D.	0-20mgd.			CONTROLLER ON HIGH LEVEL
13	CONTACT BASIN LEVEL	I		/		FILTER RATE CONTROLLER
14	FLOW AND HEAD LOSS - FILTER No.1	I-R	0-5mgd.	/		2 PEN RECORDER & FILTER RATE CONTROLLER
15	FLOW AND HEAD LOSS - FILTER No.2	I-R	0-5mgd.	/		2 PEN RECORDER & FILTER RATE CONTROLLER
16	FLOW AND HEAD LOSS - FILTER No.3	I-R	0-5mgd.	/		2 PEN RECORDER & FILTER RATE CONTROLLER
17	FLOW AND HEAD LOSS - FILTER No.4	I-R	0-5mgd.	/		2 PEN RECORDER & FILTER RATE CONTROLLER
18	MANTEY HEIGHTS TANK LEVEL	I-R	0-40 ft.	/		
19	RESERVOIR No.1 AND No.2 LEVEL	I-R	0-25 ft.	/		2 PEN
20	BACKWASH RATE CONTROLLER	IRT.	0-8mgd.			
21	BACKWASH PUMP - CONTROLS No.1 W/AUTOMATIC ALTERNATOR					MANUAL - AUTOMATIC / ON-OFF W/LIGHTS
22	BACKWASH PUMP - CONTROLS No.2 W/AUTOMATIC ALTERNATOR					MANUAL - AUTOMATIC / ON-OFF W/LIGHTS
23	SERVICE WATER PUMP - CONTROLS No.1 W/SELECTOR SWITCH					MANUAL - AUTOMATIC / ON-OFF W/LIGHTS
24	SERVICE WATER PUMP - CONTROLS No.2 W/SELECTOR SWITCH					MANUAL - AUTOMATIC / ON-OFF W/LIGHTS
25	FILTER BACKWASH SELECTOR BUTTON W/LIGHT - FILTER No.1					
26	FILTER BACKWASH SELECTOR BUTTON W/LIGHT - FILTER No.2					
27	FILTER BACKWASH SELECTOR BUTTON W/LIGHT - FILTER No.3					
28	FILTER BACKWASH SELECTOR BUTTON W/LIGHT - FILTER No.4					
29	SURFACE WASH PUMP CONTROLS					MANUAL - AUTOMATIC / ON-OFF W/LIGHTS
30	START BACKWASHING					PUSH BUTTON W/LIGHT
31	STOP BACKWASHING					PUSH BUTTON W/LIGHT
32	EXTEND BACKWASHING					PUSH BUTTON
33	THREE DIGITAL READOUT WITH SELECTOR	D				FOR INST. 9-10 OR 12 LOCATE FRONT OF PANEL CENTERED BELOW SPACE 19
34	CONTROL VALVES - MANUAL - AUTOMATIC / OPEN - CLOSE SWITCHES					NUMBER OF VALVES AS ON GRAPHIC PANEL
35	INDICATING LIGHTS FOR PUMPS					
36	*ALUM MANUAL RATE SET CONTROLLER					

NOTE: ALL INSTRUMENTS & LIGHTS TO HAVE SCREW MOUNTED, NAME PLATES AS PER SPECIFICATIONS. PROVIDE MANUAL RESET FOR ALARMS AFTER ALARM CONDITION

\* FURNISHED BY CHEMICAL FEEDER SUPPLIER, INSTALLED IN MAIN CONTROL PANEL BY INSTRUMENTATION & CONTROL SUPPLIER.  
 \*\* INSTRUMENT TYPE: I - INDICATOR, R - RECORDER, T - TOTALIZER, D - DIGITAL READOUT

**MAIN CONTROL PANEL INSTRUMENT SCHEDULE**

**WATERWORKS IMPROVEMENTS**  
 GRAND JUNCTION, COLORADO  
 (CONTRACT - I)

WATER TREATMENT PLANT  
 METERING & CONTROLS  
 MAIN CONTROL PANEL  
 ELEVATIONS, SECTIONS  
 & SCHEDULES

HENNINGSON, DURHAM & RICHARDSON, INC.  
 ENGINEERS - PLANNERS - CONSULTANTS  
 DENVER, COLORADO

DESIGNED E.F.R. RER. CHECKED K.D.H.  
 APPROVED W.L.B.  
 DATE DEC. 1967

730810

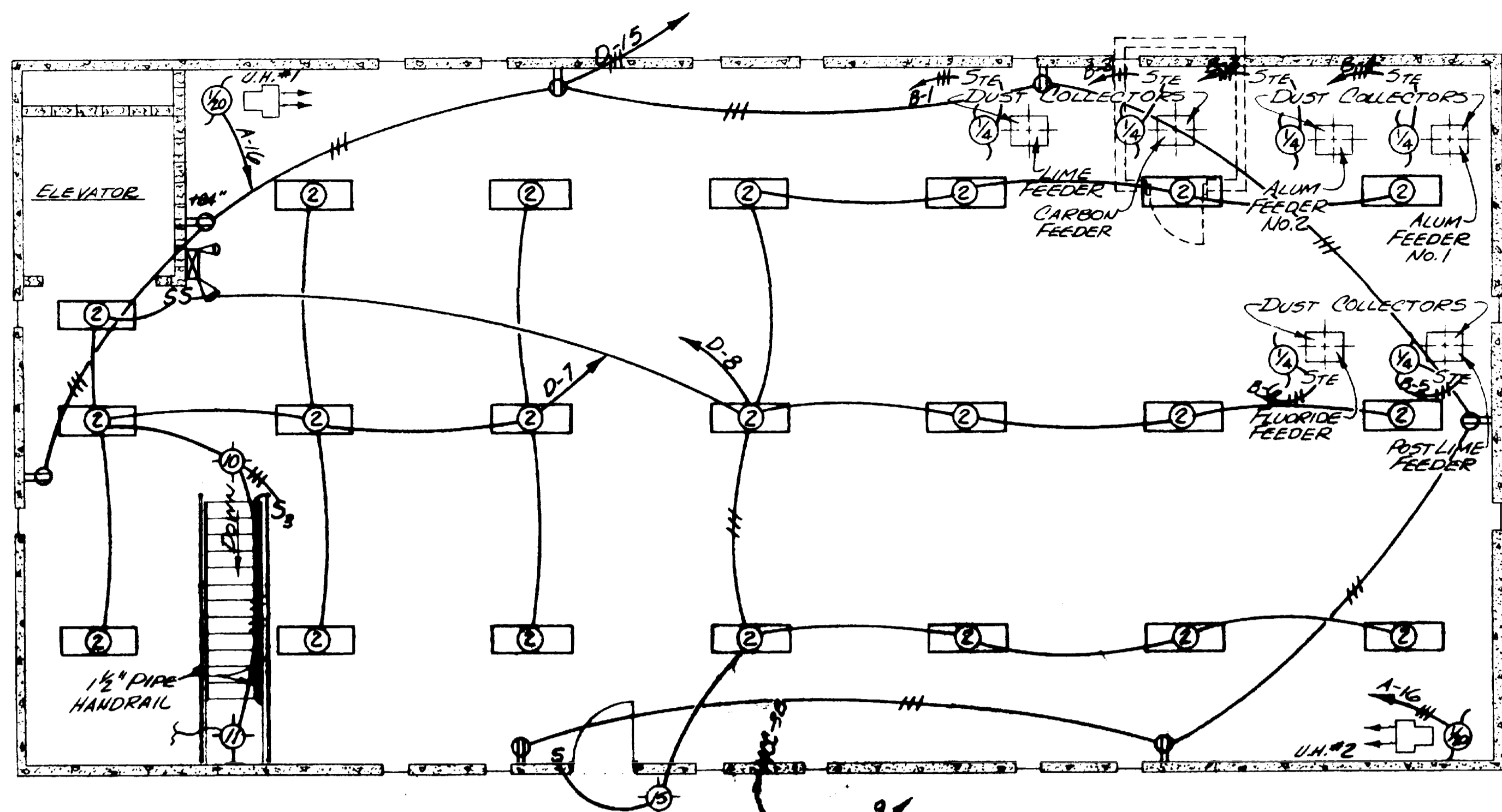
DATE 12-25-70 AS BUILT

REVISIONS

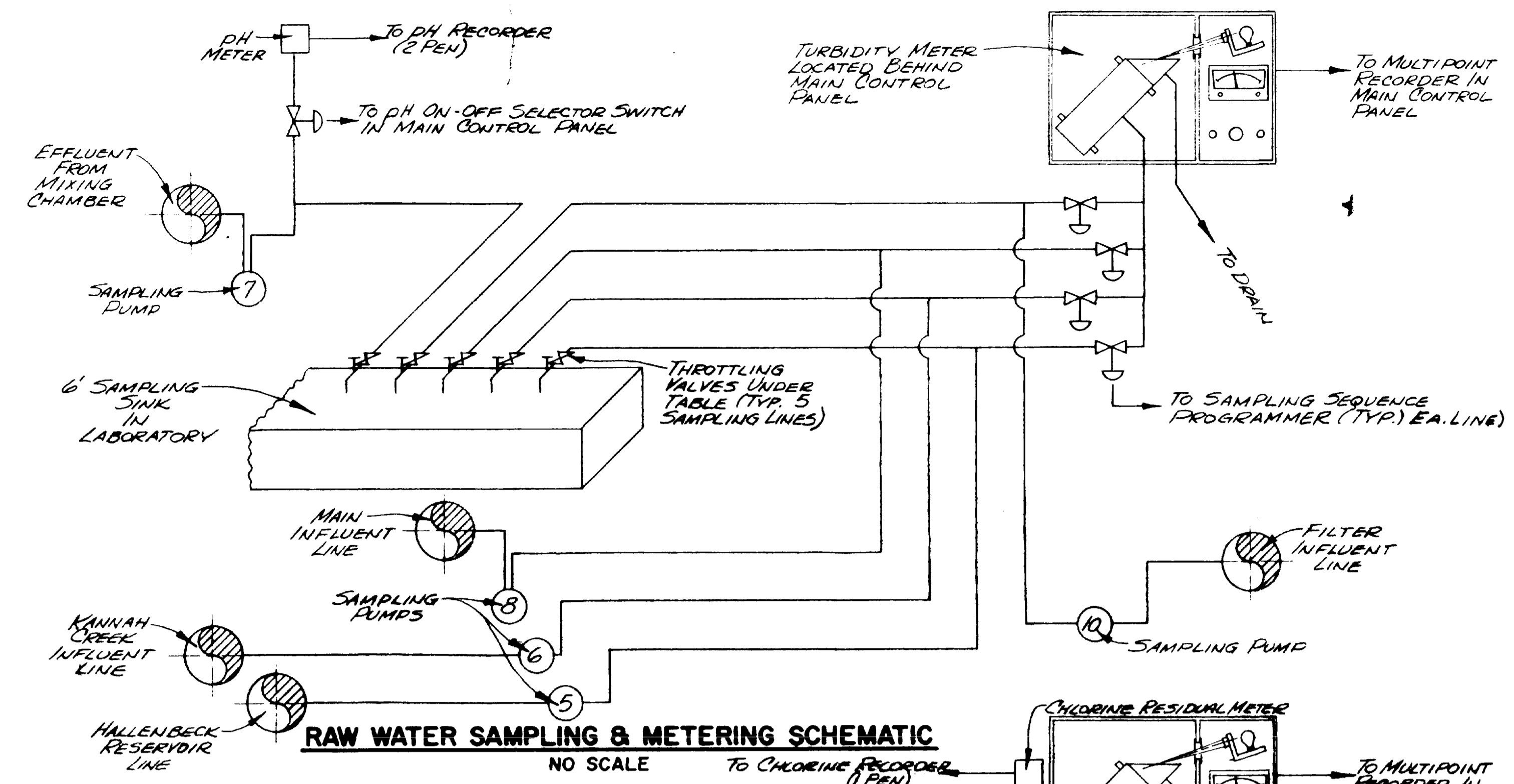
MADE APPROV

SHEET 29 OF 39

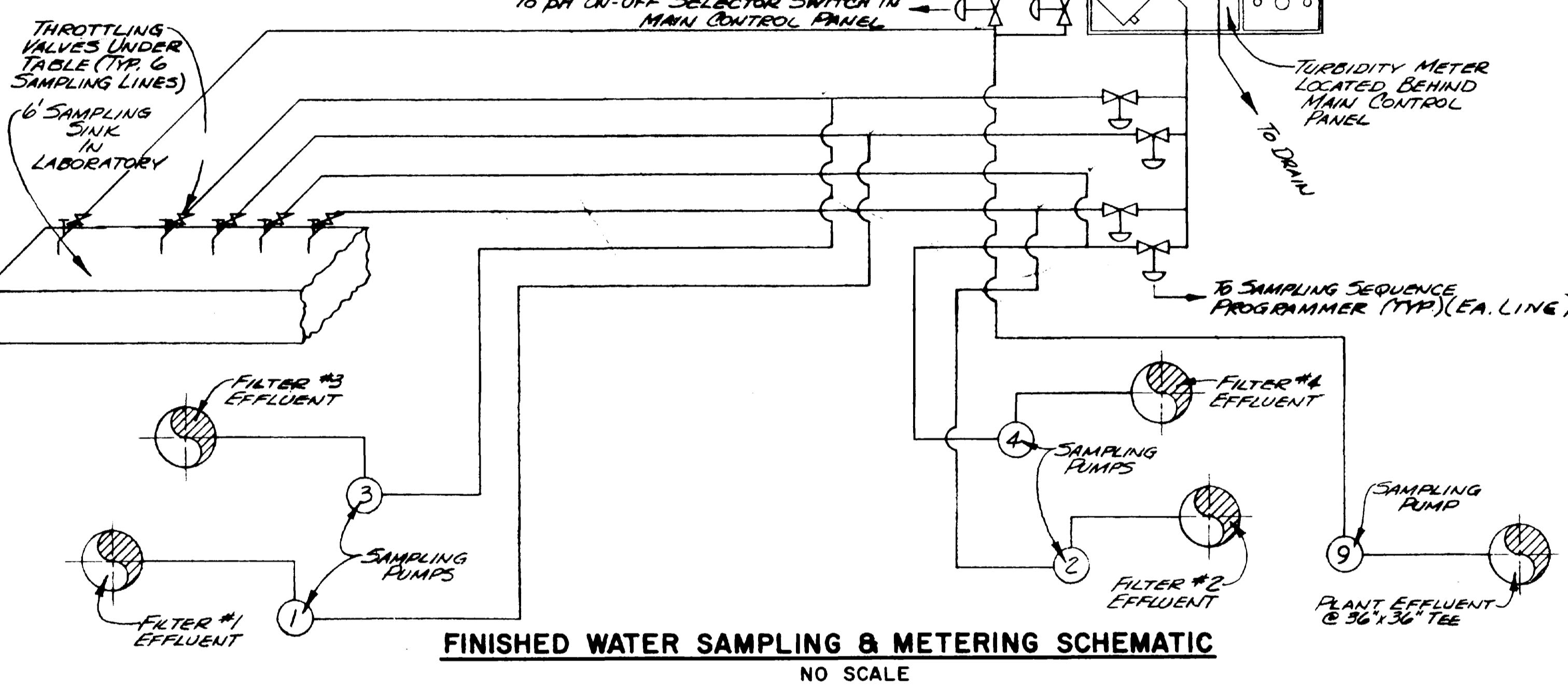




**LIGHTING PLAN - STORAGE FLOOR - ELEV. 4843.42**  
SCALE: 3/16" = 1'-0"



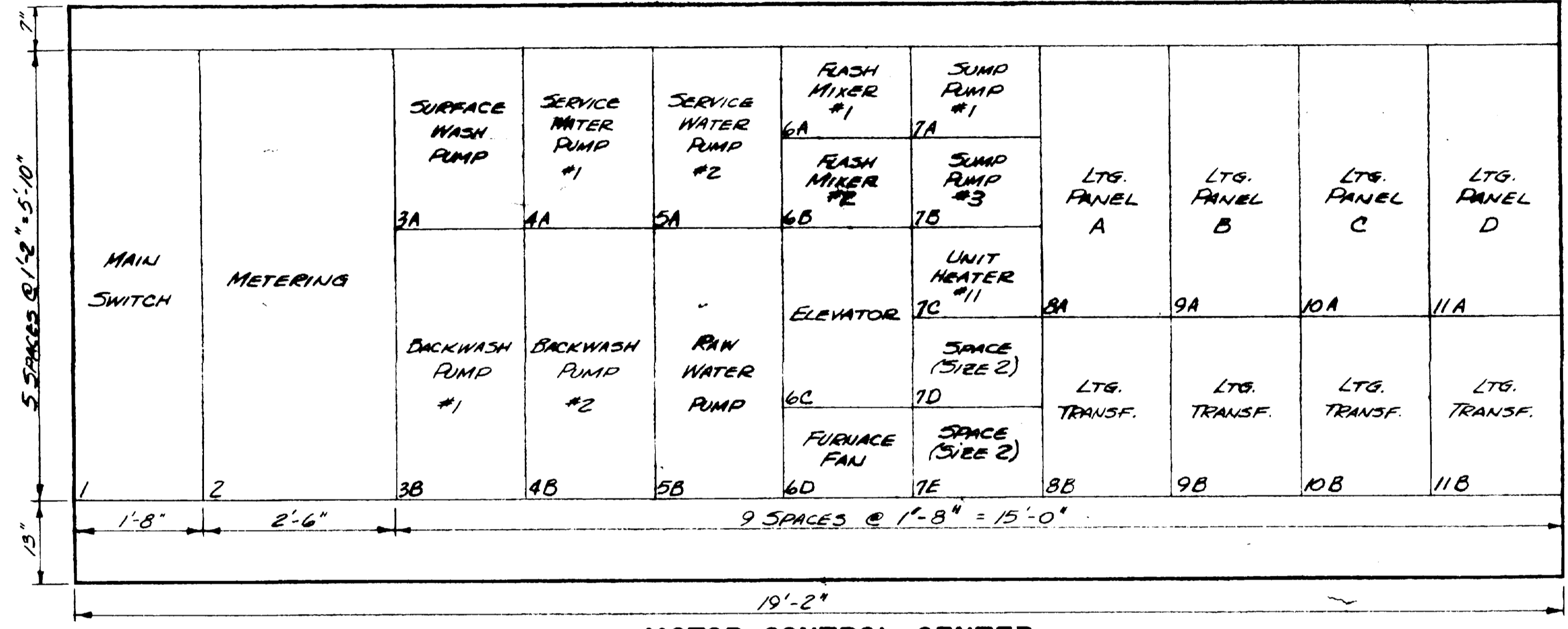
**RAW WATER SAMPLING & METERING SCHEMATIC**  
NO SCALE



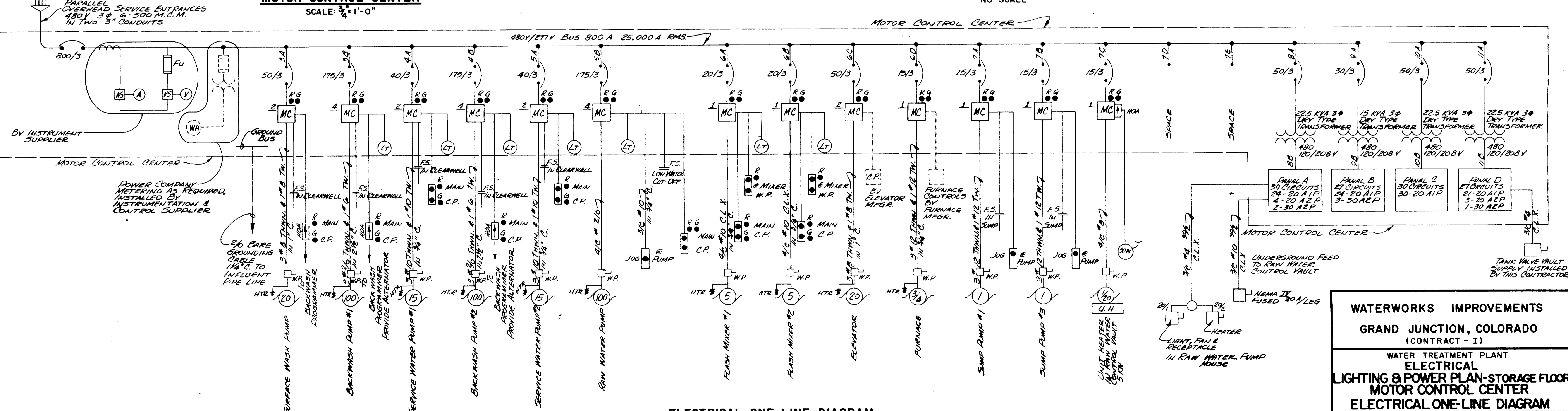
**FINISHED WATER SAMPLING & METERING SCHEMATIC**  
NO SCALE

ELECTRICAL LEGEND	
SYMBOL	DESCRIPTION
⊙	CEILING OUTLET - NUMERAL INDICATES FIXTURE MANUFACTURER & CAT. NO.
⊙	BRACKET OUTLET - DITTO FOR NUMERALS
⊙	15A, 125V, 1 CIRCUIT, 15A, 250V, 1 CIRCUIT GENERAL ELECTRIC CAT. NO. 4096-1
⊙	DUPLEX CONVENIENCE OUTLET
⊙	WEATHER-PROOF OUTLET
S	SINGLE POLE SWITCH
S <sub>3</sub>	SWITCH - NUMERAL INDICATES NO. OF POLES
⊙	MOTOR - NUMERAL INDICATES H.P. SIZE W/HEATER WHERE SHOWN
⊙	MOTOR CONTROLLER - NUMERAL INDICATES SIZE
STE	FRACTIONAL H.P. MOTOR THERMAL ELEMENT
⊙	NON-FUSIBLE DISCONNECT SWITCH - SIZE INDICATED
⊙	START-STOP PUSHBUTTON STATION
⊙	THERMOSTAT
⊙	TELEPHONE OUTLET
—	CONDUIT - CROSS-LINES INDICATE NO. OF CONDUCTORS IF GREATER THAN 2
WP	INDICATES WEATHER-PROOF NEMA 4 ENCL.
EX	INDICATES EXPLOSION-PROOF NEMA 4 ENCL.
⊙	MOMENTARY CONTACT P.B. STATION
⊙	TIME DELAY RELAY
⊙	HAND-OFF AUTOMATIC SELECTOR SWITCH
⊙	PRESSURE SWITCH
⊙	LIMIT SWITCH
⊙	THERMOSTAT W/SUMMER-OFF-WINTER SWITCH
⊙	ELAPSED TIME METER
FS	FLOAT OPERATED SWITCH
⊙	EMERGENCY LIGHT UNIT - LUXTRON ANX 1-A-2 (2 LAMP) W/WALL BRACKET
⊙	INDICATES CONDUIT SIZE
WP	INDICATES VAPOR-PROOF
⊙	TELEPHONE BUZZER

NOTE:  
1) FOR ELECTRICAL UNIT HEATER SCHEDULE SEE SHEET 34  
2) RECEPTACLES ON STORAGE FLOOR TO BE SURFACE MOUNTED.



**MOTOR CONTROL CENTER**  
SCALE: 3/4" = 1'-0"



**ELECTRICAL ONE LINE DIAGRAM**  
NO SCALE

**WATERWORKS IMPROVEMENTS**  
GRAND JUNCTION, COLORADO  
(CONTRACT - I)

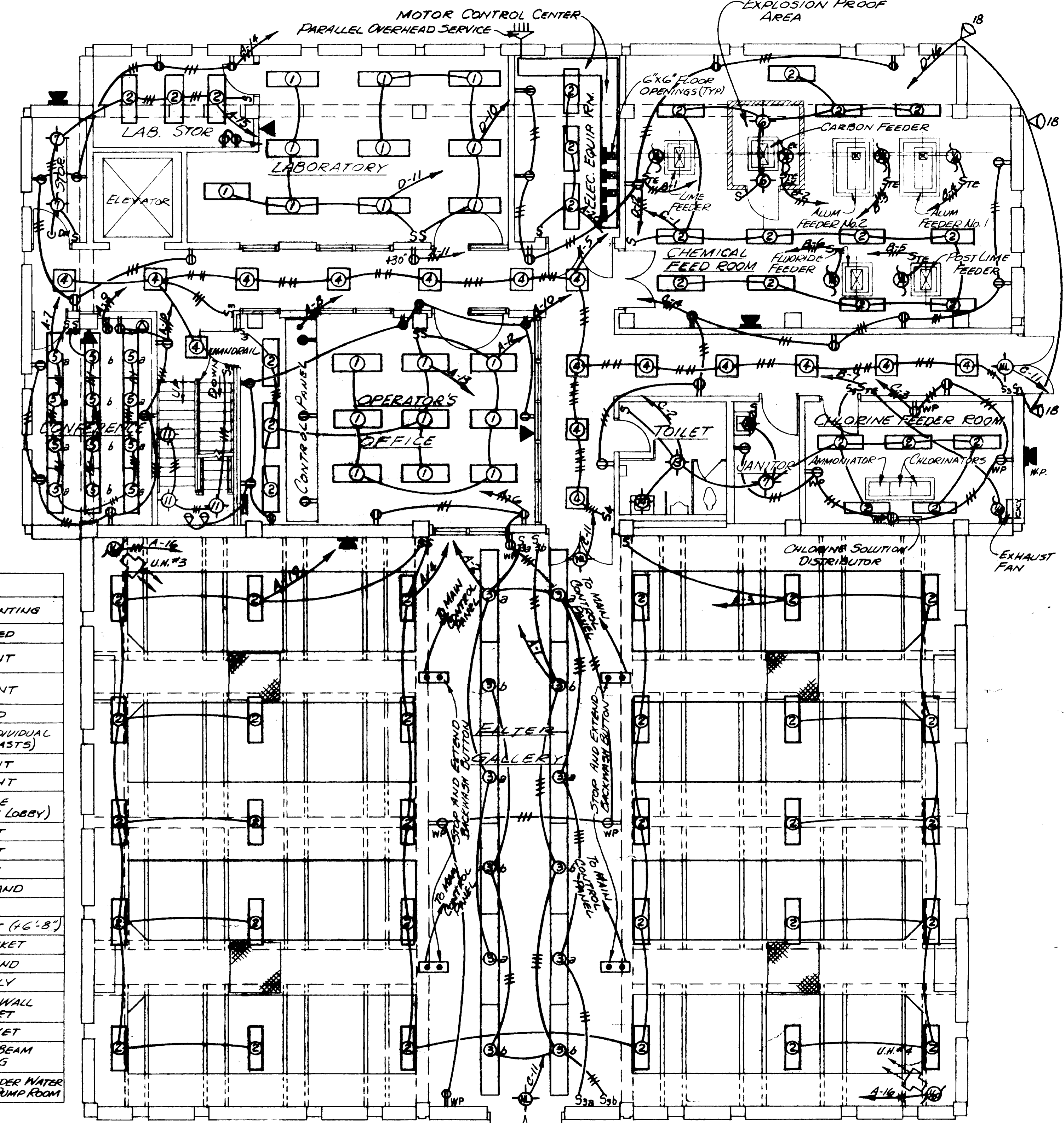
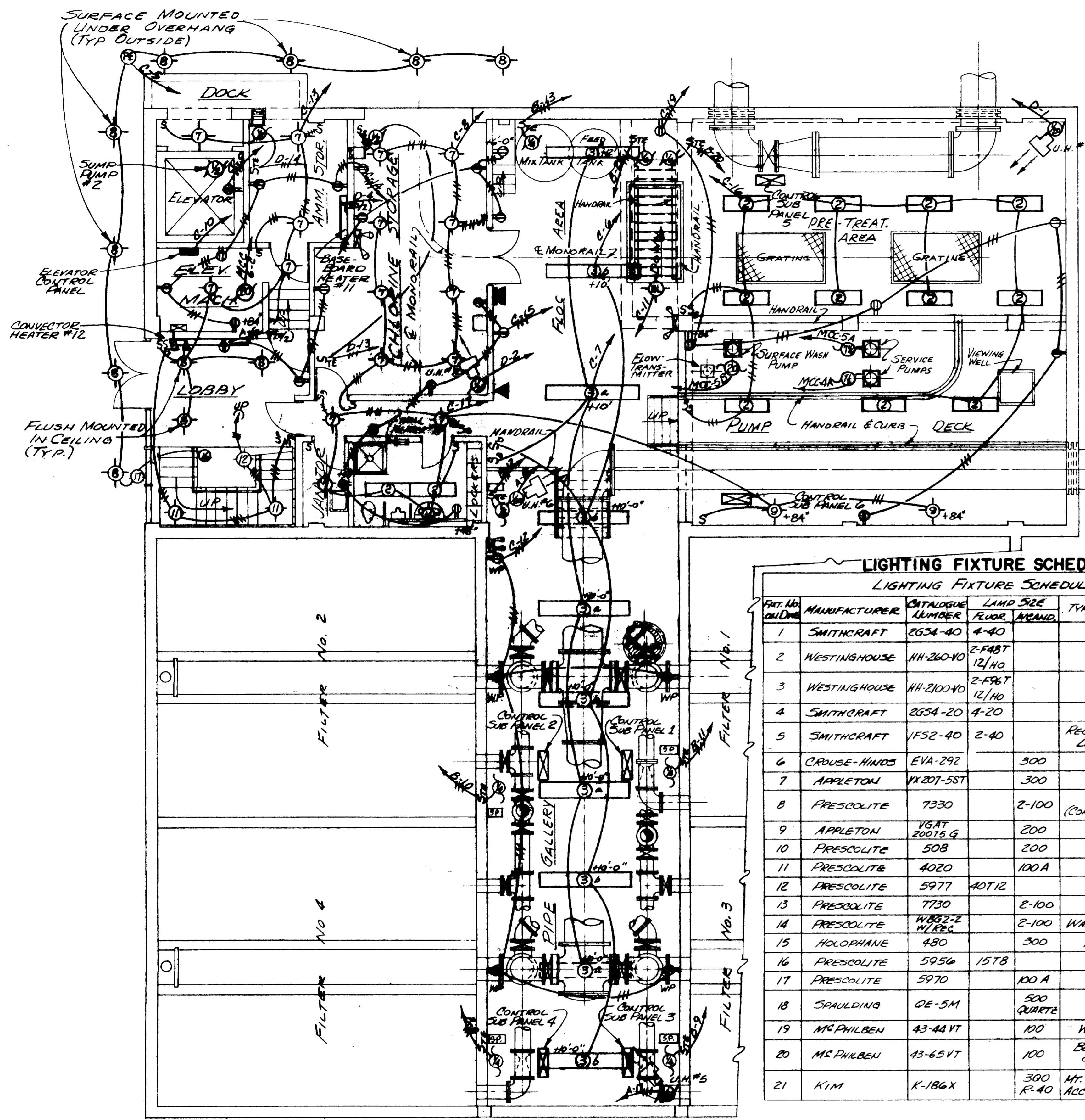
WATER TREATMENT PLANT  
**ELECTRICAL**  
**LIGHTING & POWER PLAN-STORAGE FLOOR**  
**MOTOR CONTROL CENTER**  
**ELECTRICAL ONE-LINE DIAGRAM**

HINNINGSON, DURHAM & RICHARDSON, INC.  
ENGINEERS • PLANNERS • CONSULTANTS  
DENVER, COLORADO

DATE	DESCRIPTION	REVISIONS	MADE	APPROV.
7/28/20	A-2 BUILT		AT	K.D.H.

730810  
DESIGNED R.E.R.  
CHECKED K.D.H.  
APPROVED W.L.B.  
DATE DEC. 1987

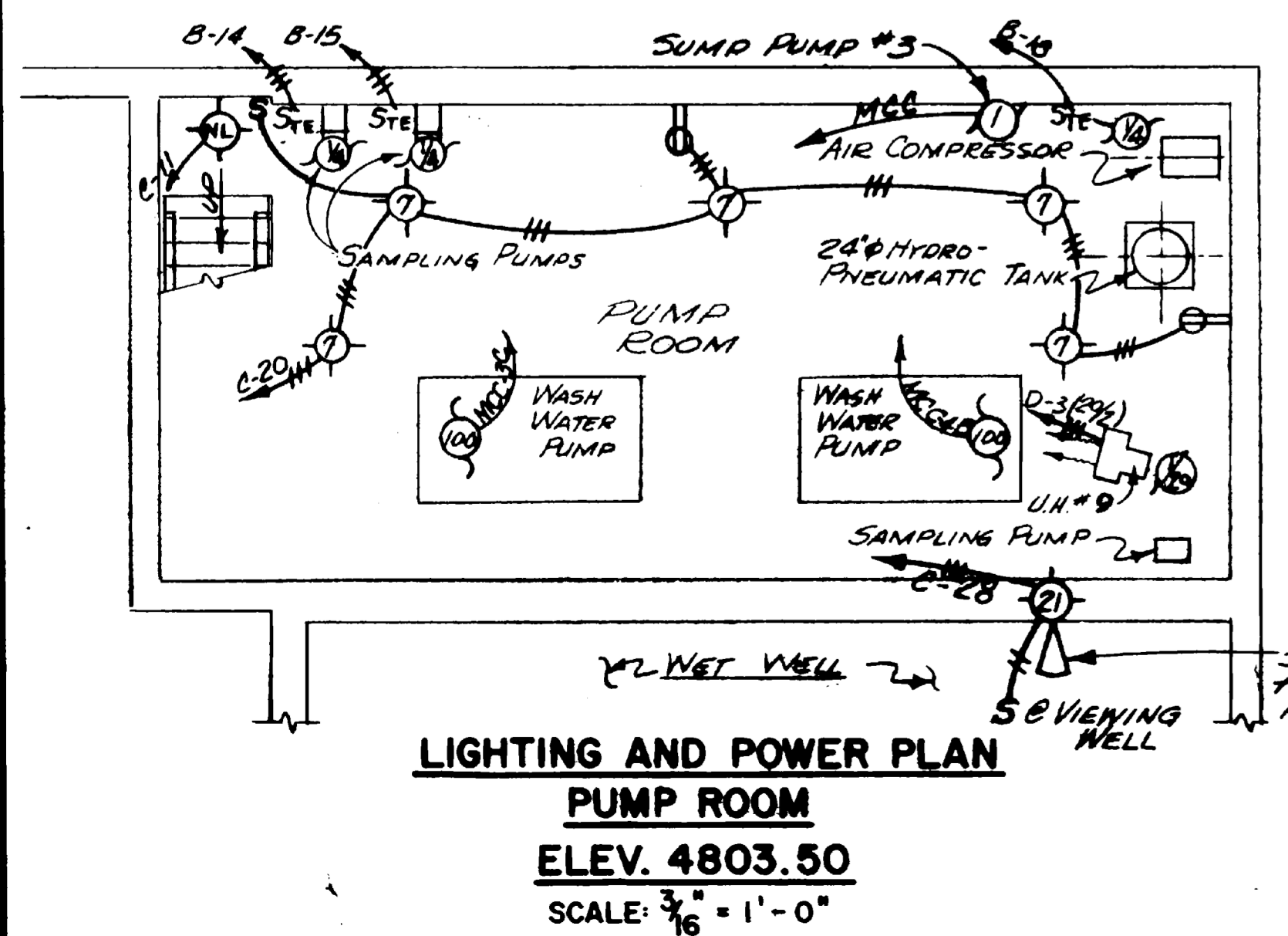
SHEET **39** OF 39



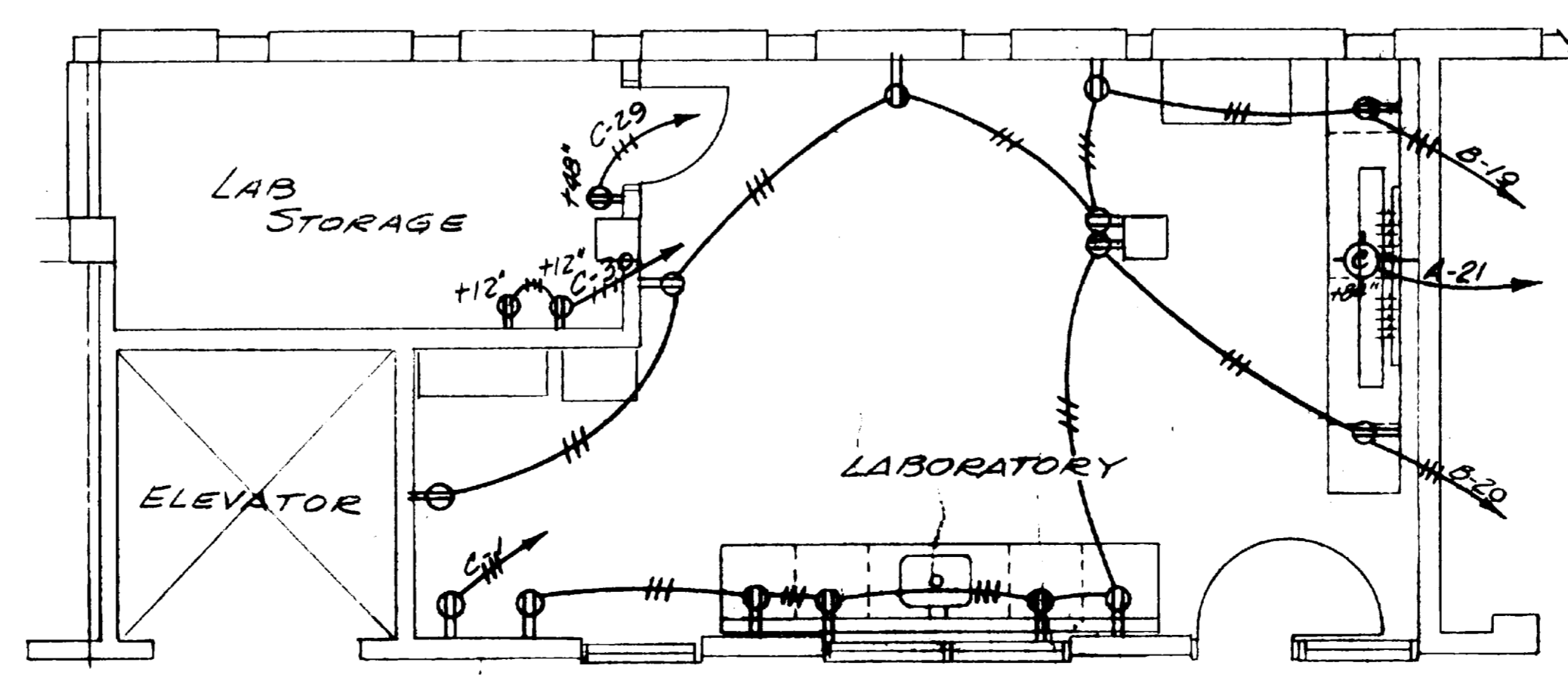
**LIGHTING FIXTURE SCHEDULE**

LIGHTING FIXTURE SCHEDULE

FIX. NO.	MANUFACTURER	CATALOGUE NUMBER	LAMP SIZE	FLOOR	AVANGD.	TYPE OF MOUNTING
1	SMITHCRAFT	2654-40	4-40			RECESSED
2	WESTINGHOUSE	WH-210-40	2-F8T 12/HO			PENDANT
3	WESTINGHOUSE	WH-2100-40	2-F8T 12/HO			PENDANT
4	SMITHCRAFT	2654-20	4-20			RECESSED
5	SMITHCRAFT	VF52-40	2-40			RECESSED (INDIVIDUAL LAMP BALLASTS)
6	CRUSE-HINDS	EVA-292		300		PENDANT
7	APPLETON	VX207-5ST		300		PENDANT
8	PRESCOLITE	7330	2-100			SURFACE (CONCEALED IN LOBBY)
9	APPLETON	VGAT 20075 G		200		BRACKET
10	PRESCOLITE	508		200		PENDANT
11	PRESCOLITE	4020		100A		BRACKET
12	PRESCOLITE	5977	40T12			FLOOR STAND
13	PRESCOLITE	7730		2-100		CEILING
14	PRESCOLITE	W483-2 M186L		2-100		WALL BRACKET (16'-8")
15	HOLOPHANE	480		300		WALL BRACKET
16	PRESCOLITE	5956	15T8			FLOOR STAND
17	PRESCOLITE	5970		100A		VERTICALLY
18	SPALDING	GE-5M		500 QUARTZ		OUTSIDE WALL BRACKET
19	MCPHILBEN	43-44 VT		100		WALL BRACKET
20	MCPHILBEN	43-65 VT		100		BOTTOM OF BEAM OR CEILING
21	KIM	K-186X		300 R-40		HT. IN WALL UNDER WATER ACCESS FROM PUMP ROOM



**GROUND FLOOR PLAN**  
ELEV. 4814.00  
SCALE 3/16" = 1'-0"



**ELECTRICAL POWER PLAN**  
LABORATORY  
ELEV. 4828.25  
SCALE: 1/4" = 1'-0"

**OPERATING FLOOR PLAN**  
ELEV. 4828.25  
SCALE 3/16" = 1'-0"

NOTE: ALL LIGHTING FIXTURES SHALL BE PLACED AT THE ELEVATION OF THE SUSPENDED CEILING WHERE APPLICABLE, OTHERWISE AT 10'-0" ABOVE FLOOR ELEVATION UNLESS OTHERWISE NOTED.

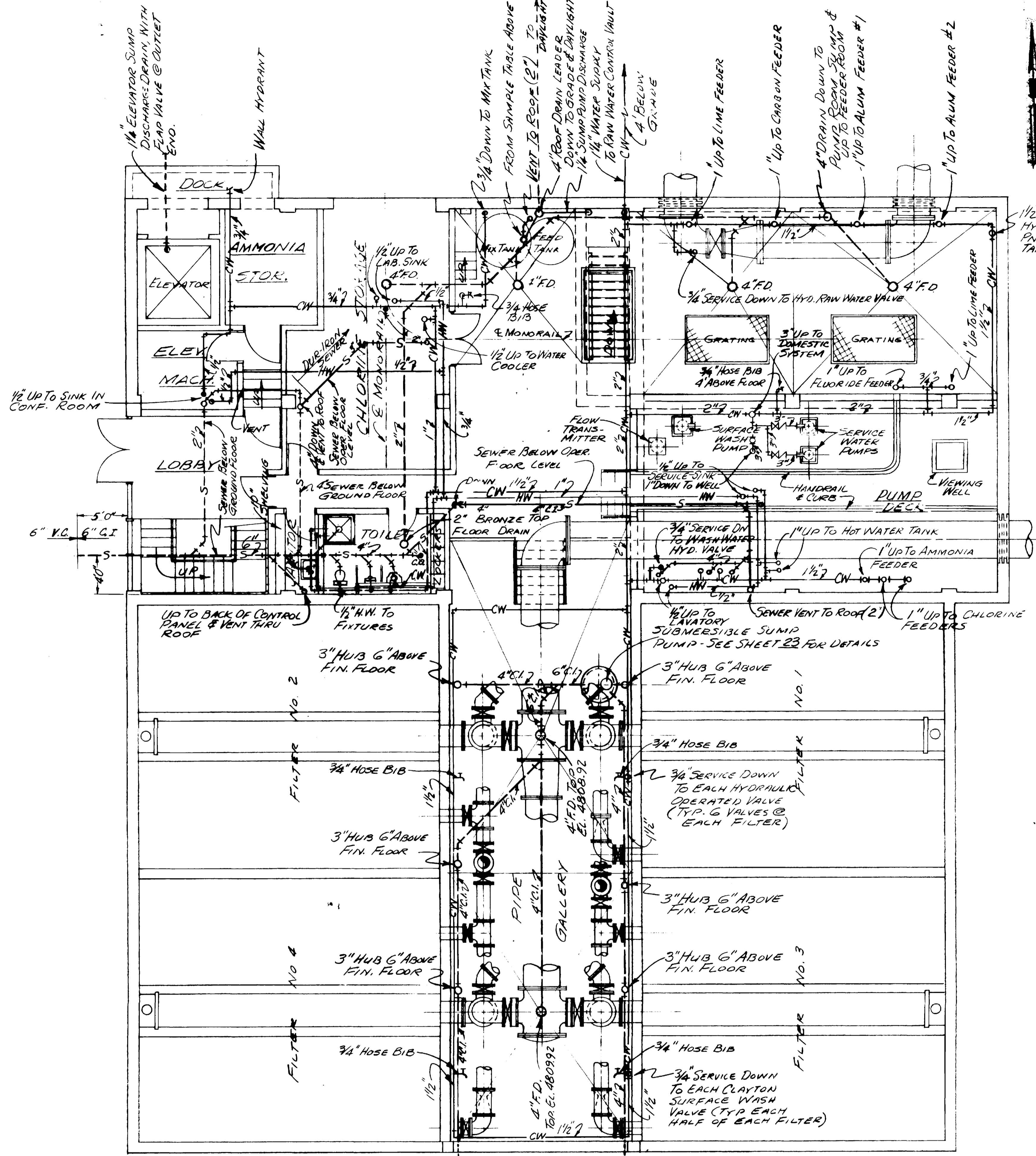
**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
(CONTRACT - I)

WATER TREATMENT PLANT  
**ELECTRICAL**  
**LIGHTING & POWER**  
**GROUND & OPERATING**  
**FLOOR PLANS**

**HERRINGSON, DURHAM & RICHARDSON, INC.**  
ENGINEERS - PLANNERS - CONSULTANTS  
DENVER, COLORADO

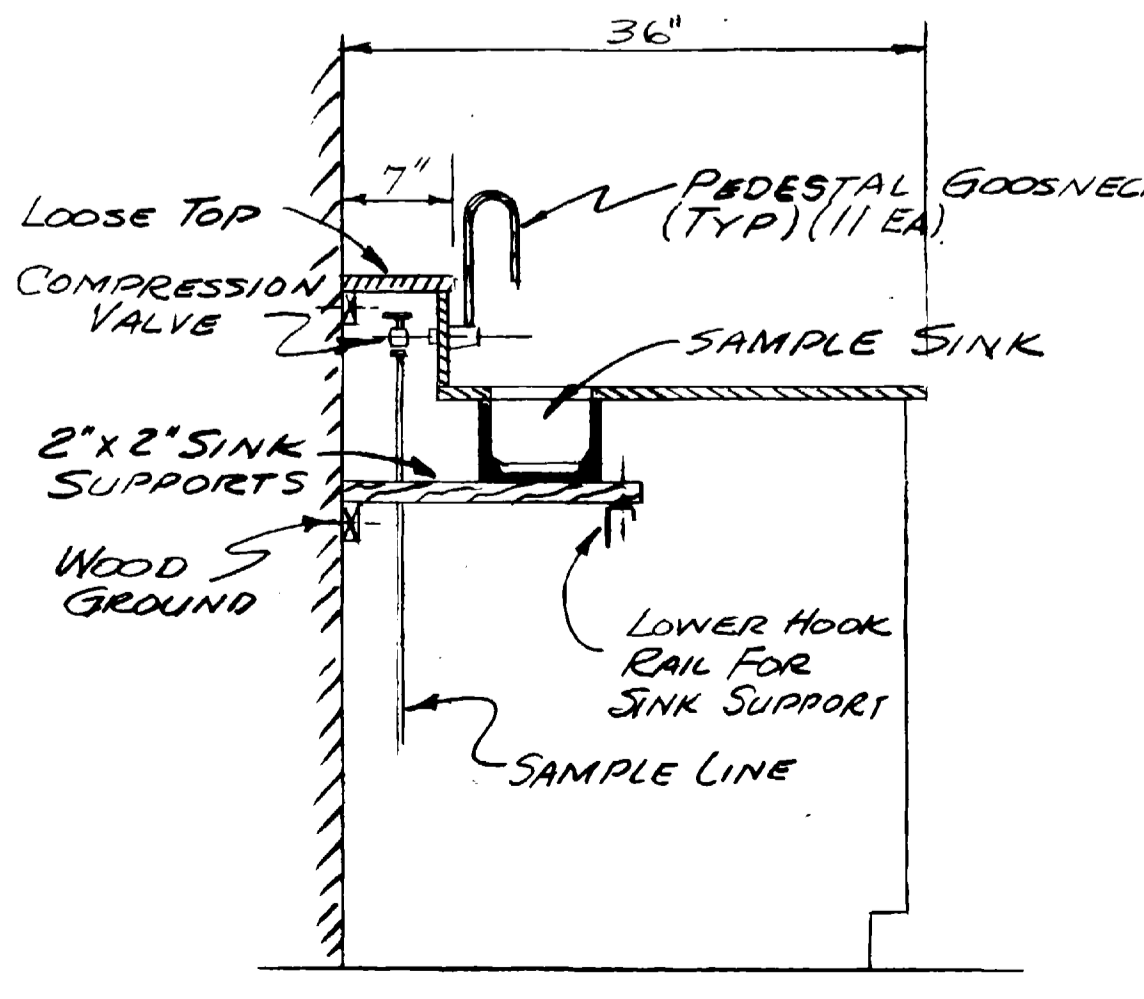
NO.	REVISION	DATE	BY	APPROVED
1	AS BUILT			

730810  
DATE DEC. 1967  
SHEET 31 OF 39

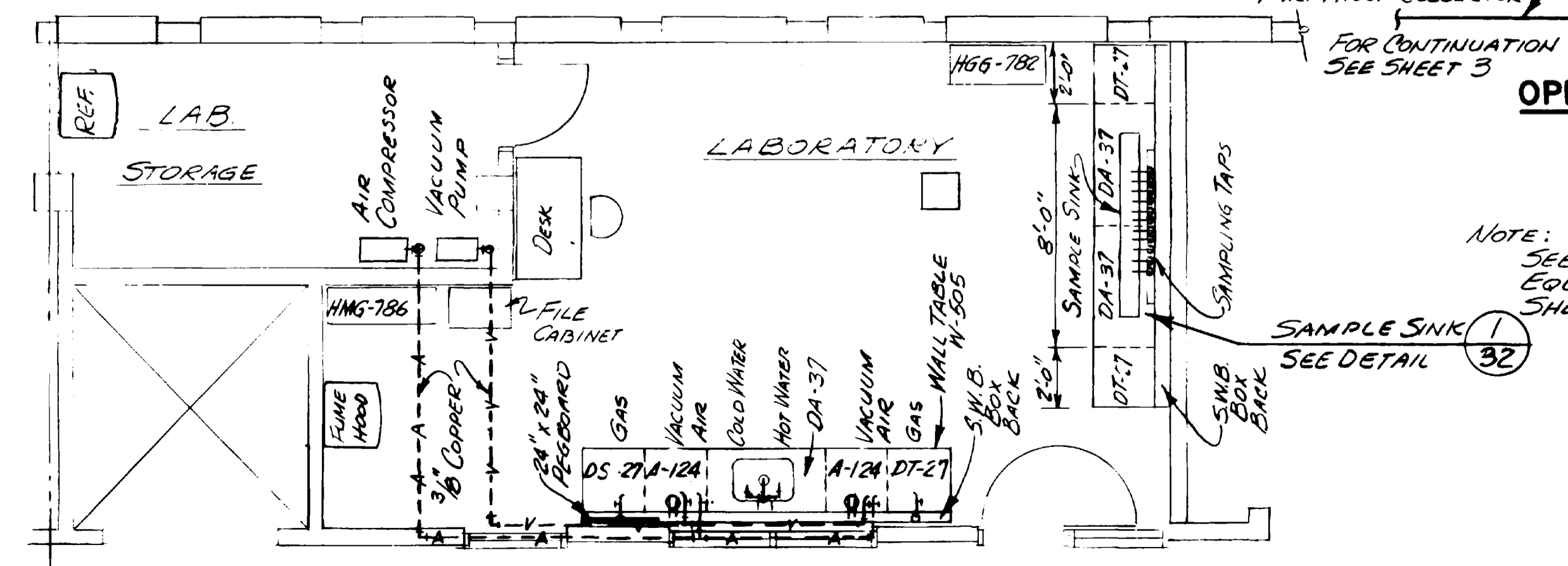


**GROUND FLOOR PLAN**  
ELEV. 4814.00  
SCALE 3/16" = 1'-0"

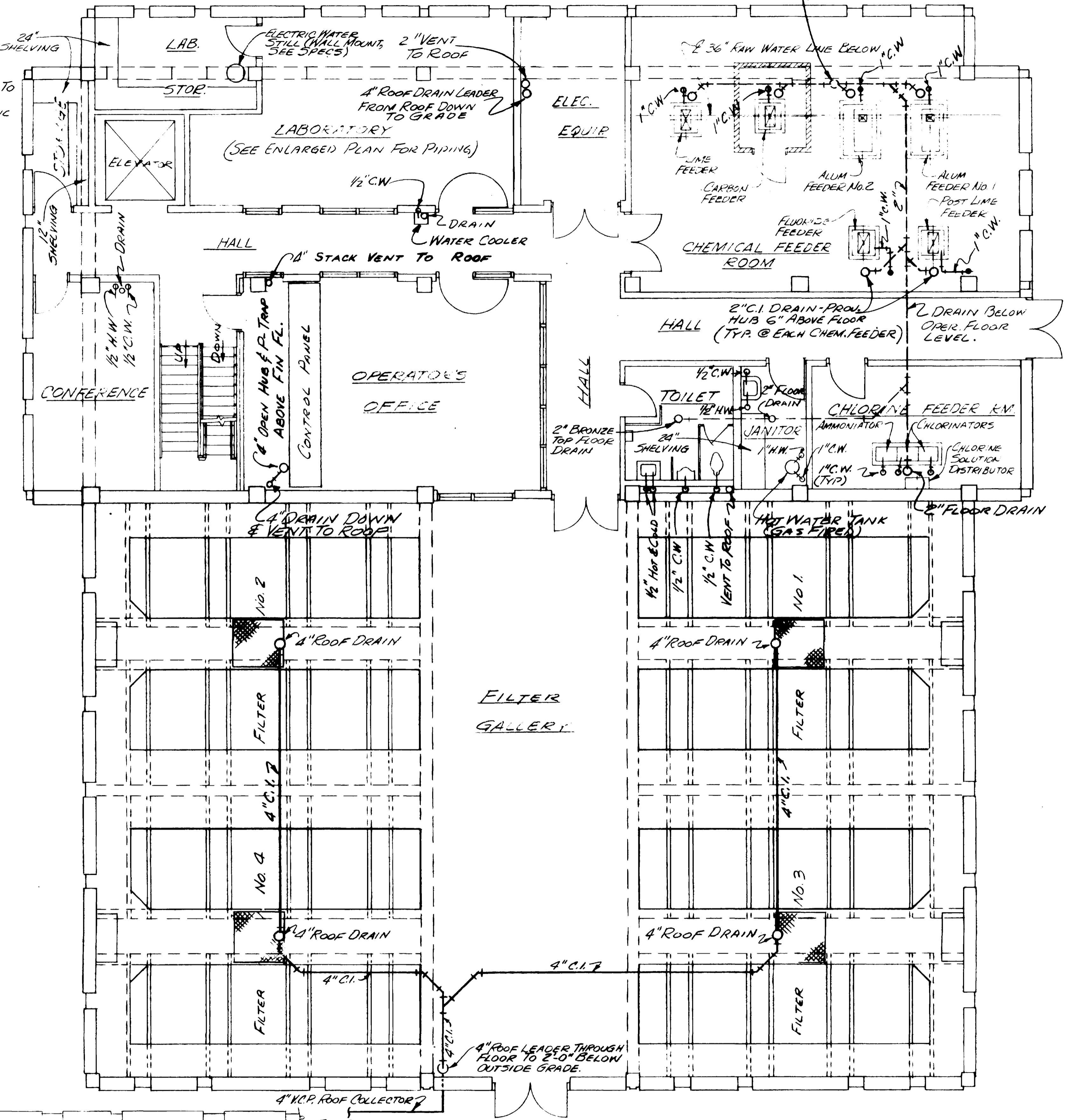
- PIPING LEGEND**
- S-S- SANITARY SEWER
  - CW-CW- COLD WATER
  - HW-HW- HOT WATER
  - A-A- AIR
  - V-V- VACUUM
  - F.D.O- FLOOR DRAIN
  - OVERHEAD PIPING
  - UNDER FLOOR PIPING



**SAMPLE SINK WALL TABLE**  
DETAIL NO SCALE



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



**OPERATING FLOOR PLAN**  
ELEV. 4828.25  
SCALE 3/16" = 1'-0"

NOTE: SEE SCHEMATIC PIPING FOR EQUIPMENT AND FEEDERS. SHEETS 27 & 28

NO.	DATE	DESCRIPTION	BY	APPROV.
1	2-25-70	As BUILT	A.T.	K.D.H.

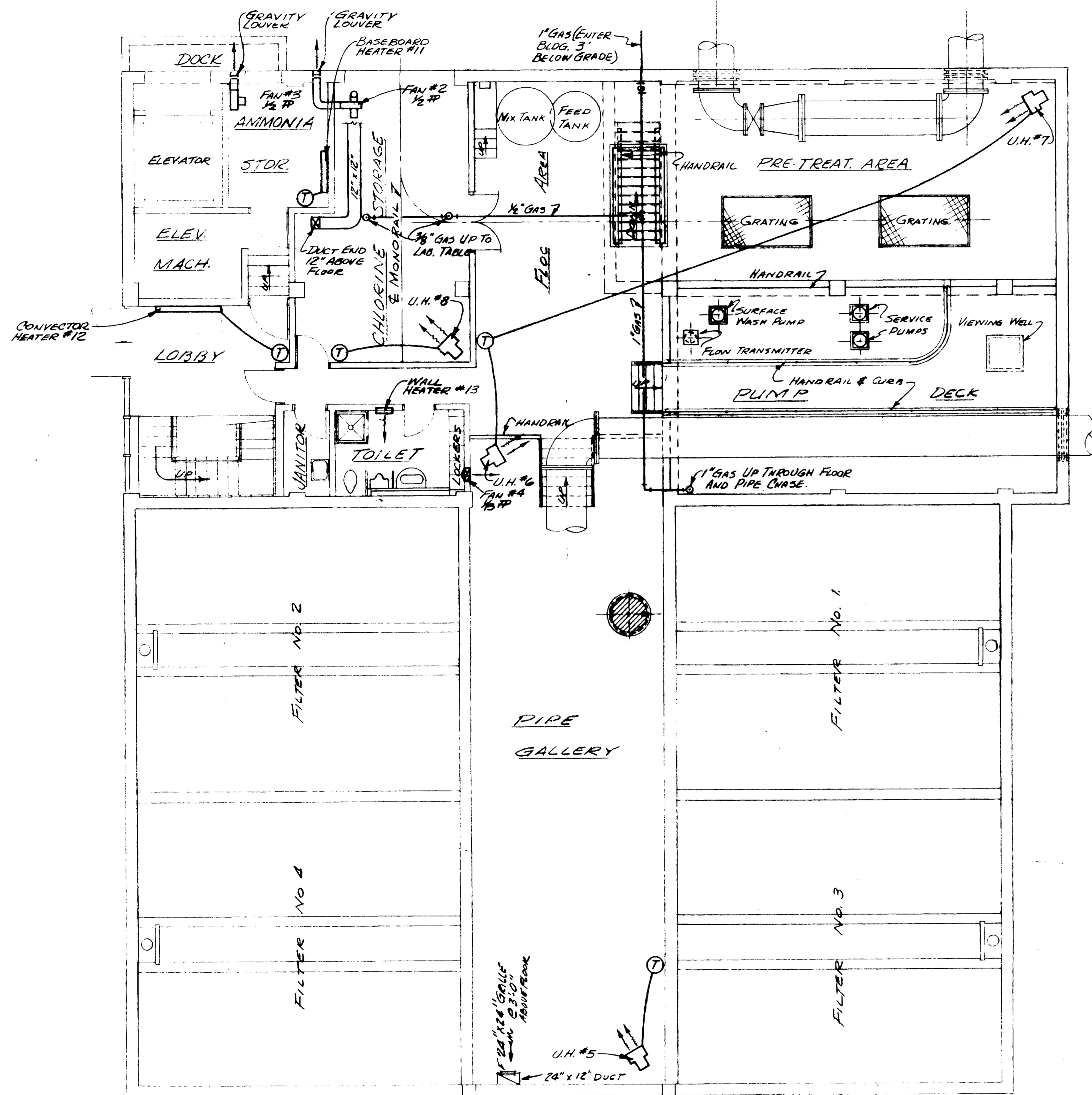
**WATERWORKS IMPROVEMENTS**  
GRAND JUNCTION, COLORADO  
(CONTRACT - I)

**WATER TREATMENT PLANT**  
**MECHANICAL PLUMBING**  
**GROUND & OPERATING FLOOR PLANS**

**HERRINGSON, DURHAM & RICHARDSON, INC.**  
ENGINEERS - PLANNERS - CONSULTANTS  
DENVER, COLORADO

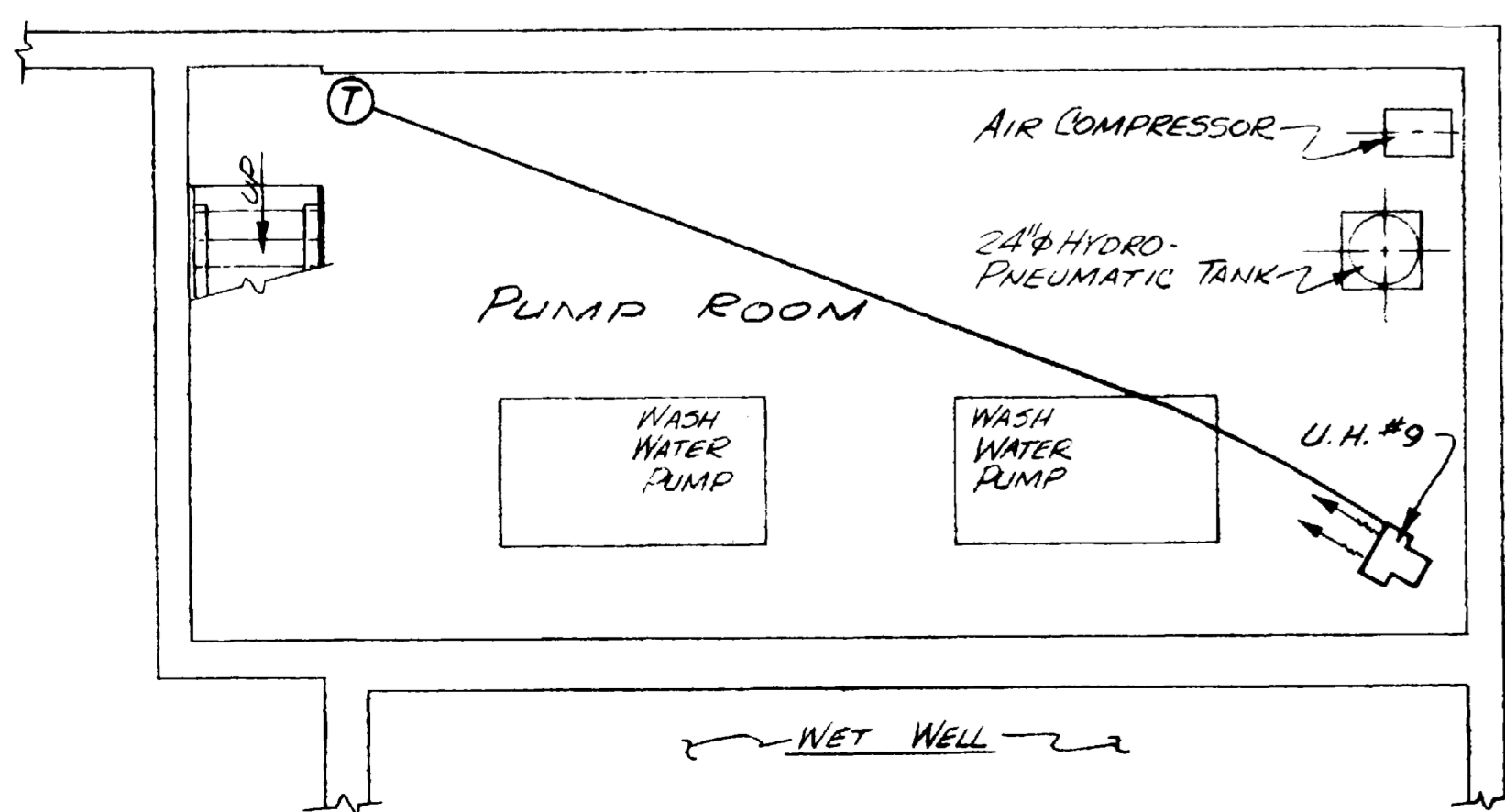
JOB NO. 730810  
DESIGNED E.F.R.  
CHECKED K.D.H.  
APPROVED W.L.B.  
DATE DEC. 1967

SHEET 32 OF 39

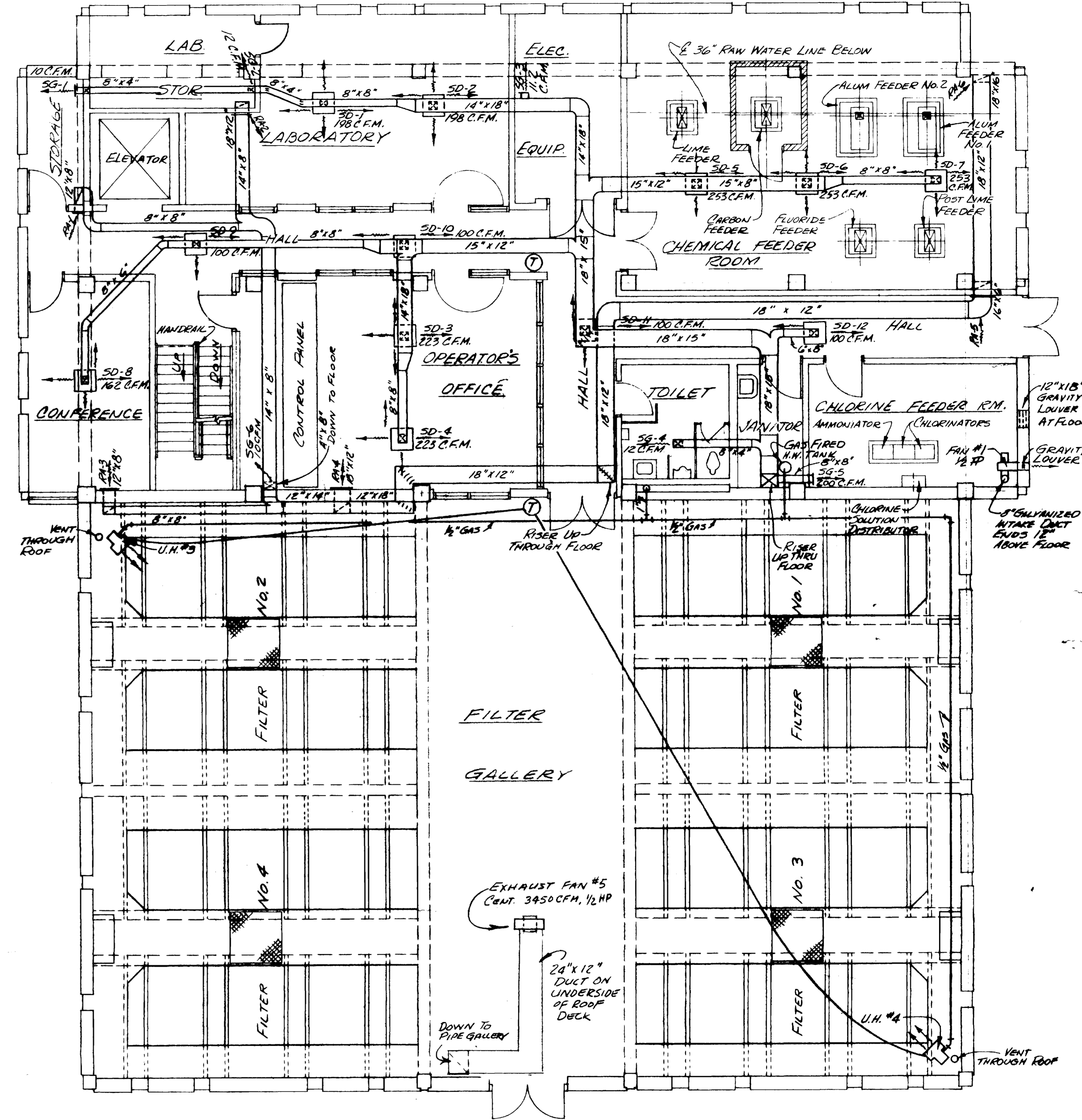


**GROUND FLOOR PLAN**

EL. 4814.00  
SCALE: 3/16" = 1'-0"



**PUMP ROOM**  
EL. 4803.50  
SCALE: 3/16" = 1'-0"



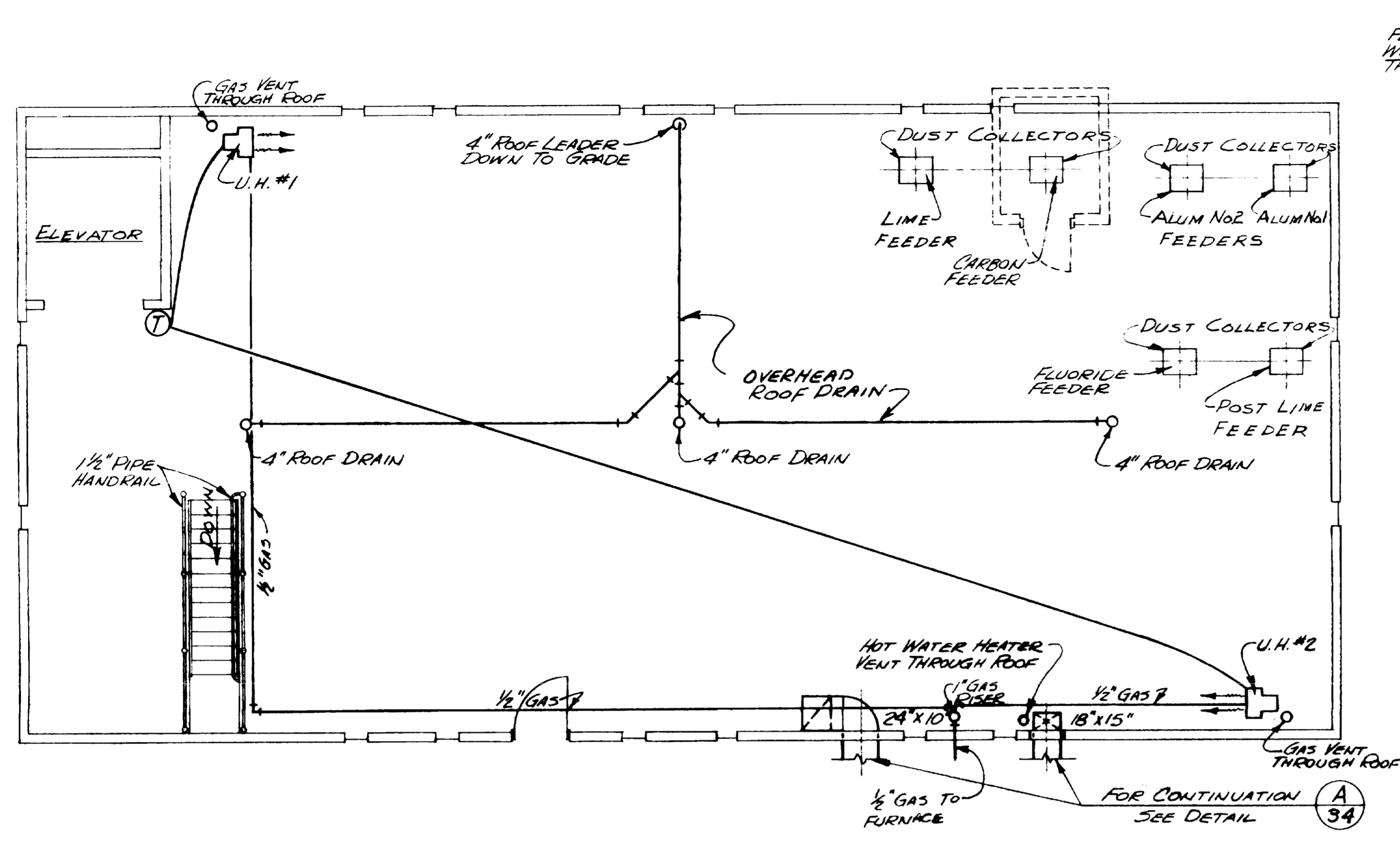
**OPERATING FLOOR PLAN**

EL. 4828.00  
SCALE: 3/16" = 1'-0"

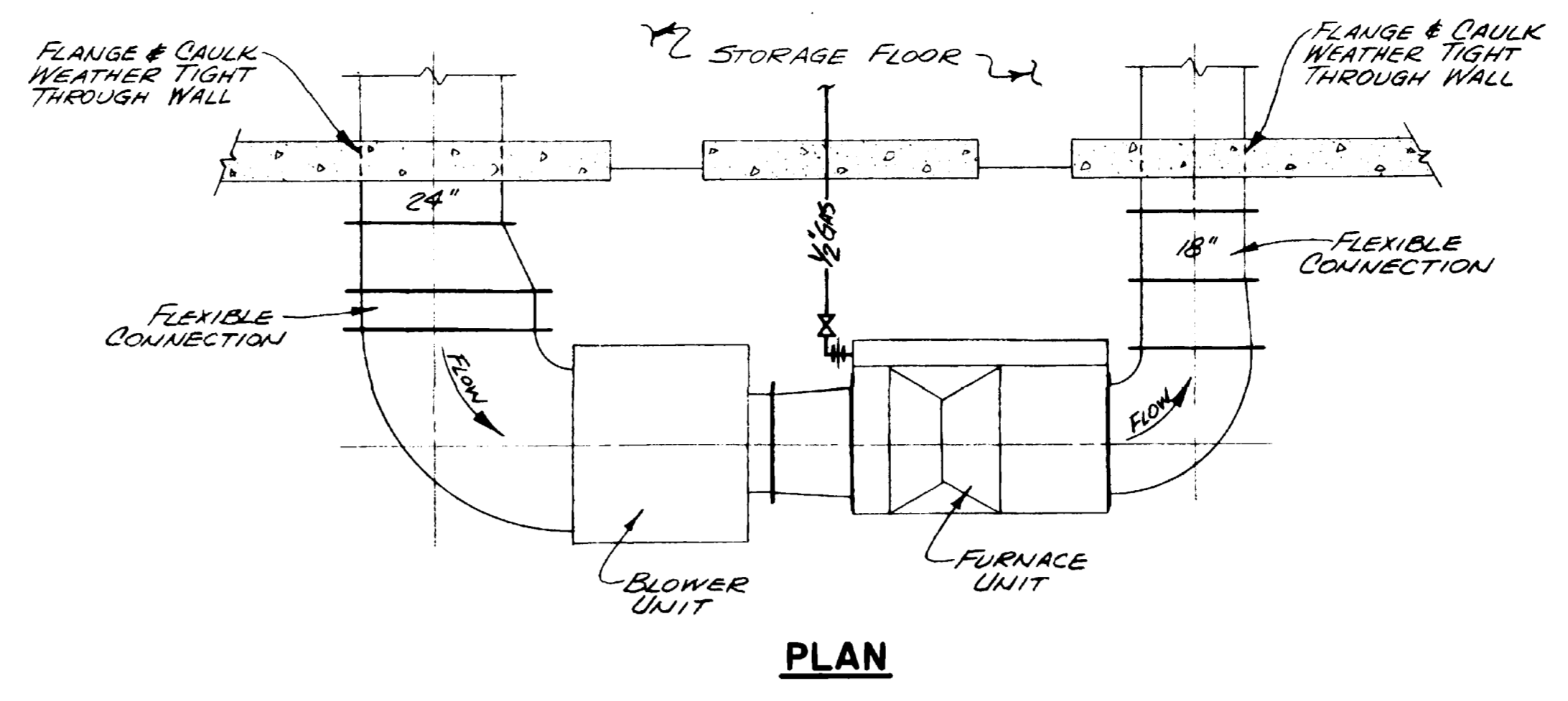
**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
(CONTRACT - I)  
WATER TREATMENT PLANT  
**MECHANICAL**  
**HEATING AND VENTILATING**  
**GROUND & OPERATING FLOOR PLANS**

**HERRINGTON, DURHAM & RICHARDSON, INC.**  
ENGINEERS - PLANNERS - CONSULTANTS  
DENVER, COLORADO

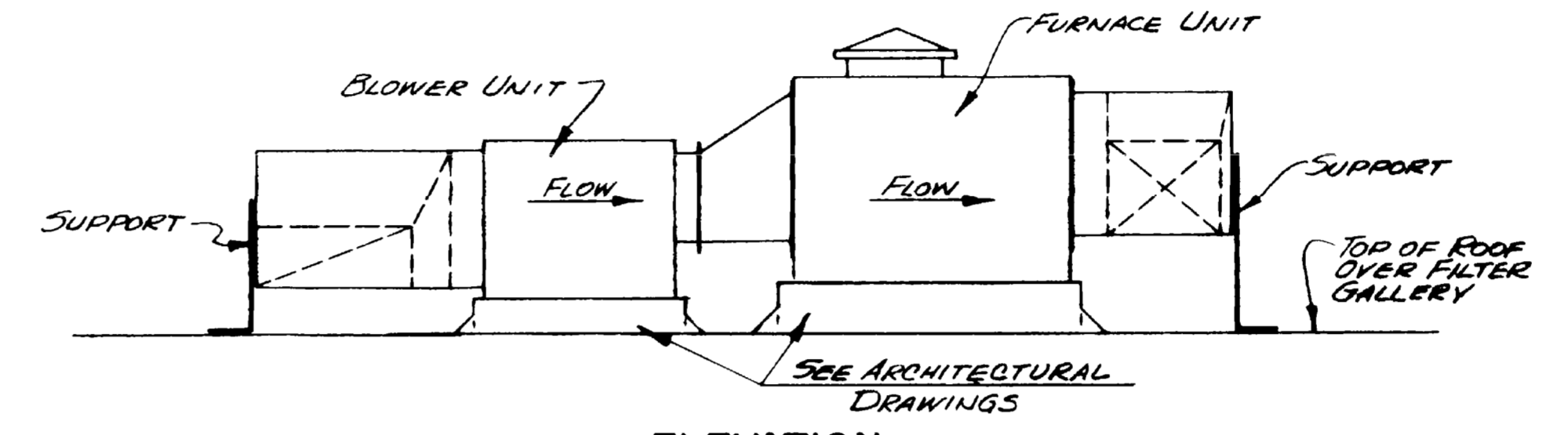
1	PREPARED AS BUILT	A.T.	K.D.H.	DATE	APPROVED
2	REVISIONS	MADE	BY	DATE	APPROVED



**STORAGE FLOOR PLAN**  
**PLUMBING & HEATING**  
 ELEV. 4843.42  
 SCALE: 3/8" = 1'-0"



**PLAN**



**ELEVATION**

**FURNACE DETAIL** (A)  
 SCALE: 1/2" = 1'-0" (34)

**HEATER SCHEDULE**

HEATER SCHEDULE					
NO.	LOCATION	TYPE	BTU OUTPUT	KW. REQ.	SUPPLY
<b>UNIT HEATERS:</b>					
1	CHEMICAL STORAGE FLOOR	L.P.G.	50,000		120V, 1φ
2	CHEMICAL STORAGE FLOOR	L.P.G.	50,000		120V, 1φ
3	FILTER GALLERY	L.P.G.	60,000		120V, 1φ
4	FILTER GALLERY	L.P.G.	60,000		120V, 1φ
5	PIPE GALLERY	ELECTRIC	6000	2	208V, 1φ
6	PUMP AREA	ELECTRIC	6000	2	208V, 1φ
7	PUMP AREA	ELECTRIC	6000	2	208V, 1φ
8	CHLORINE STORAGE ROOM	ELECTRIC	6000	2	208V, 1φ
9	PUMP PIT	ELECTRIC	5,000	2	208V, 1φ
10	RAW WATER VAULT	ELECTRIC	10,000	5	480V, 1φ
<b>BASEBOARD HEATERS:</b>					
11	AMMONIA STORAGE ROOM	ELECTRIC		0.80	208V, 1φ
12	LOBBY (CONVECTOR)	ELECTRIC		4.0	208V, 1φ
13	GROUND FLOOR TOILET	ELECTRIC		1.50	208V, 1φ

**EXHAUST FAN SCHEDULE**

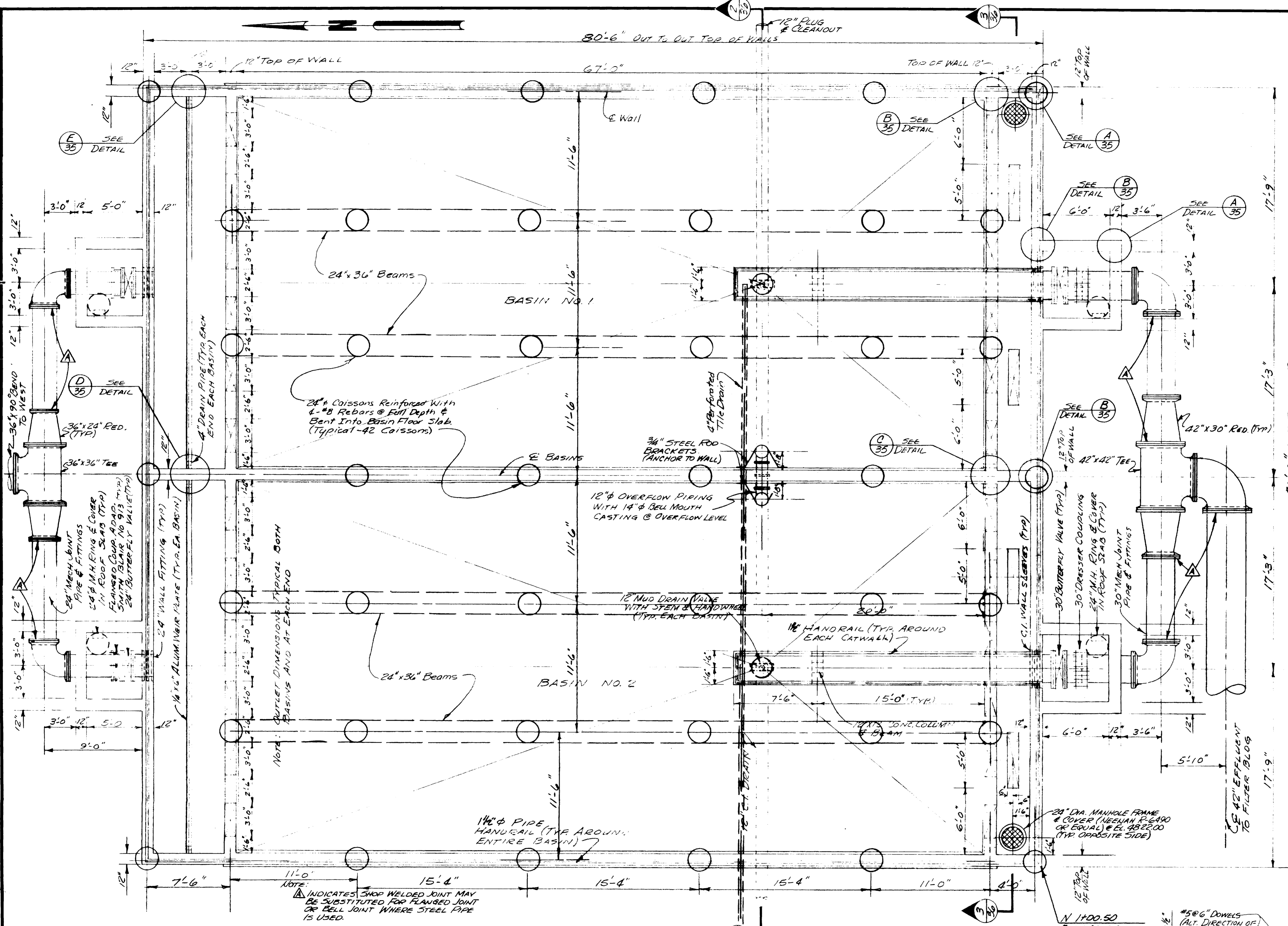
EXHAUST FAN SCHEDULE				
NO.	LOCATION	TYPE	C.F.M.	FP
1	CHLORINE FEEDER ROOM	CENTRIFUGAL	1300	1/2
2	CHLORINE STORAGE ROOM	CENTRIFUGAL	1525	1/2
3	AMMONIA STORAGE ROOM	CENTRIFUGAL	1130	1/2
4	GROUND FLOOR TOILET	PROPELLER	575	1/15
5	FILTER GALLERY ROOF	CENTRIFUGAL	3450	1/2

**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
 (CONTRACT - I)  
 WATER TREATMENT PLANT  
**MECHANICAL**  
**PLUMBING-HEATING-VENTILATING**  
**STORAGE FLOOR PLAN**

**HERRINGSON, DURHAM & RICHARDSON, INC.**  
 ENGINEERS - PLANNERS - CONSULTANTS  
 DENVER, COLORADO

NO.	DATE	DESCRIPTION	BY	APP'D.
1	2-25-70	As BUILT	A.T.	K.D.H.

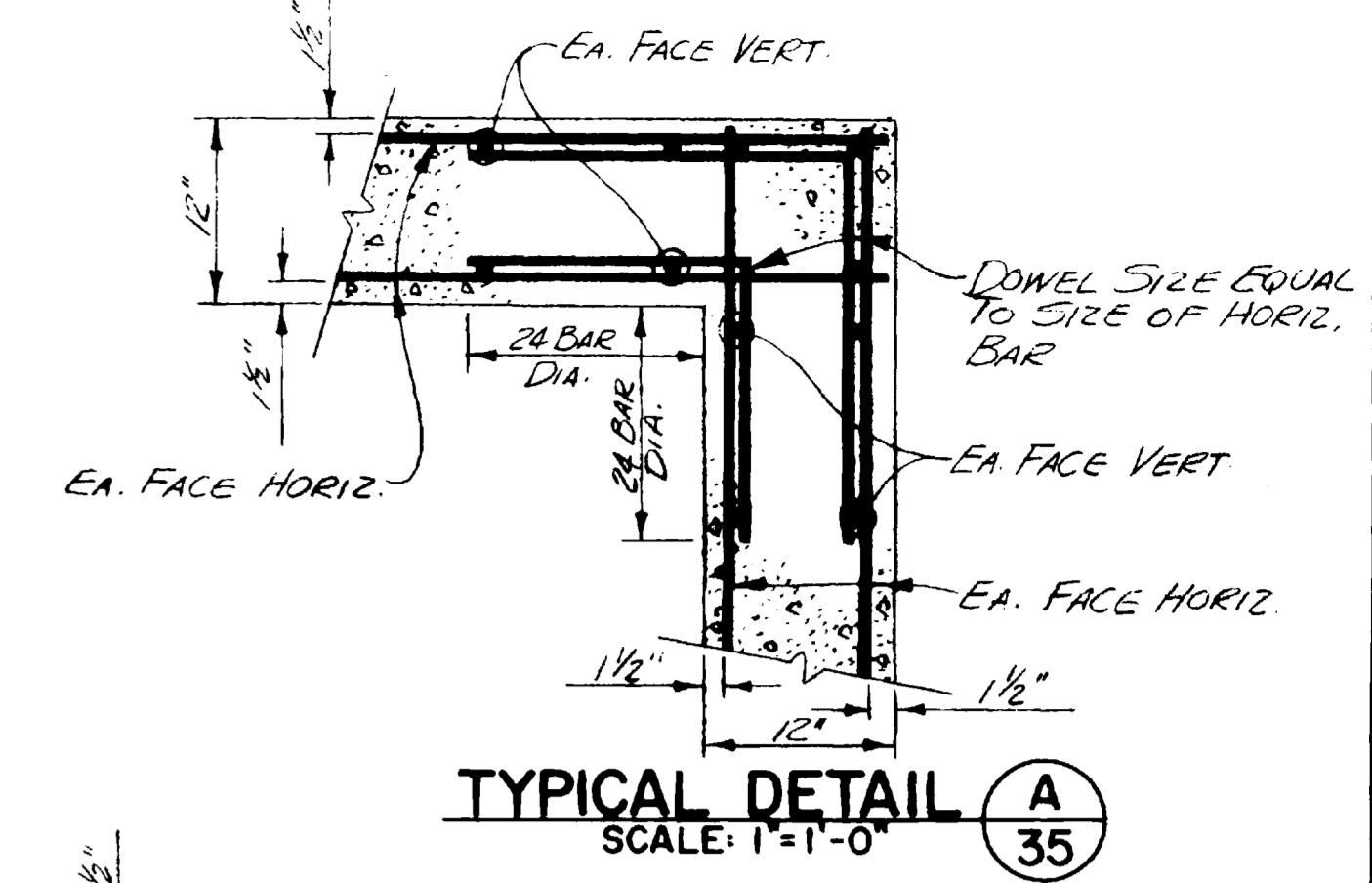
JOB NO. 730810  
 DESIGNED BY E.F.R.  
 CHECKED BY K.D.H.  
 APPROVED BY W.L.B.  
 DATE DEC. 1967  
 SHEET NO. 34 OF 39



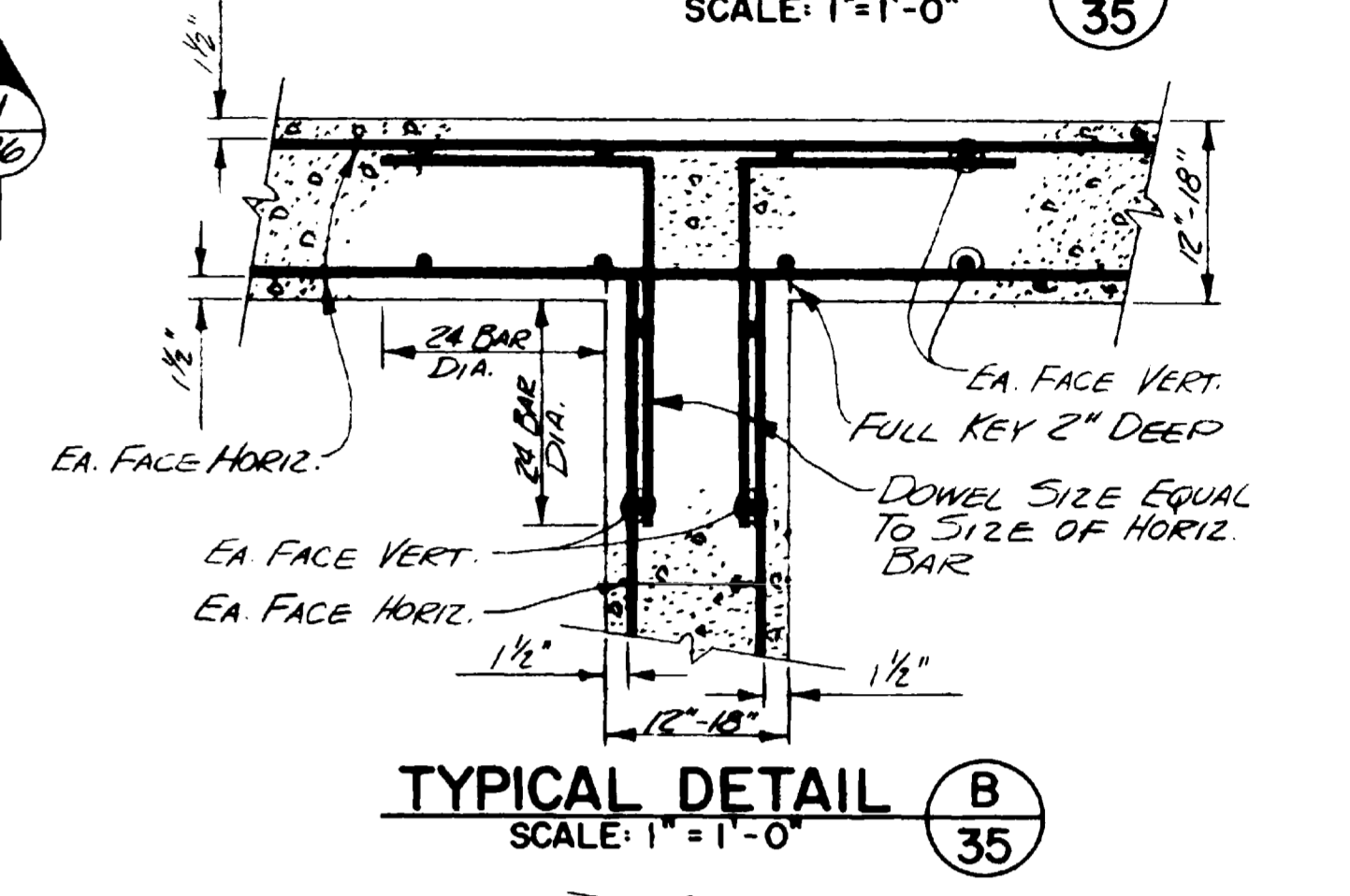
**PLAN - CONTACT BASINS**  
SCALE: 1/4" = 1'-0"

NOTE: INDICATES SHOP WELDED JOINT MAY BE SUBSTITUTED FOR FLANGED JOINT OR BELL JOINT WHERE STEEL PIPE IS USED.

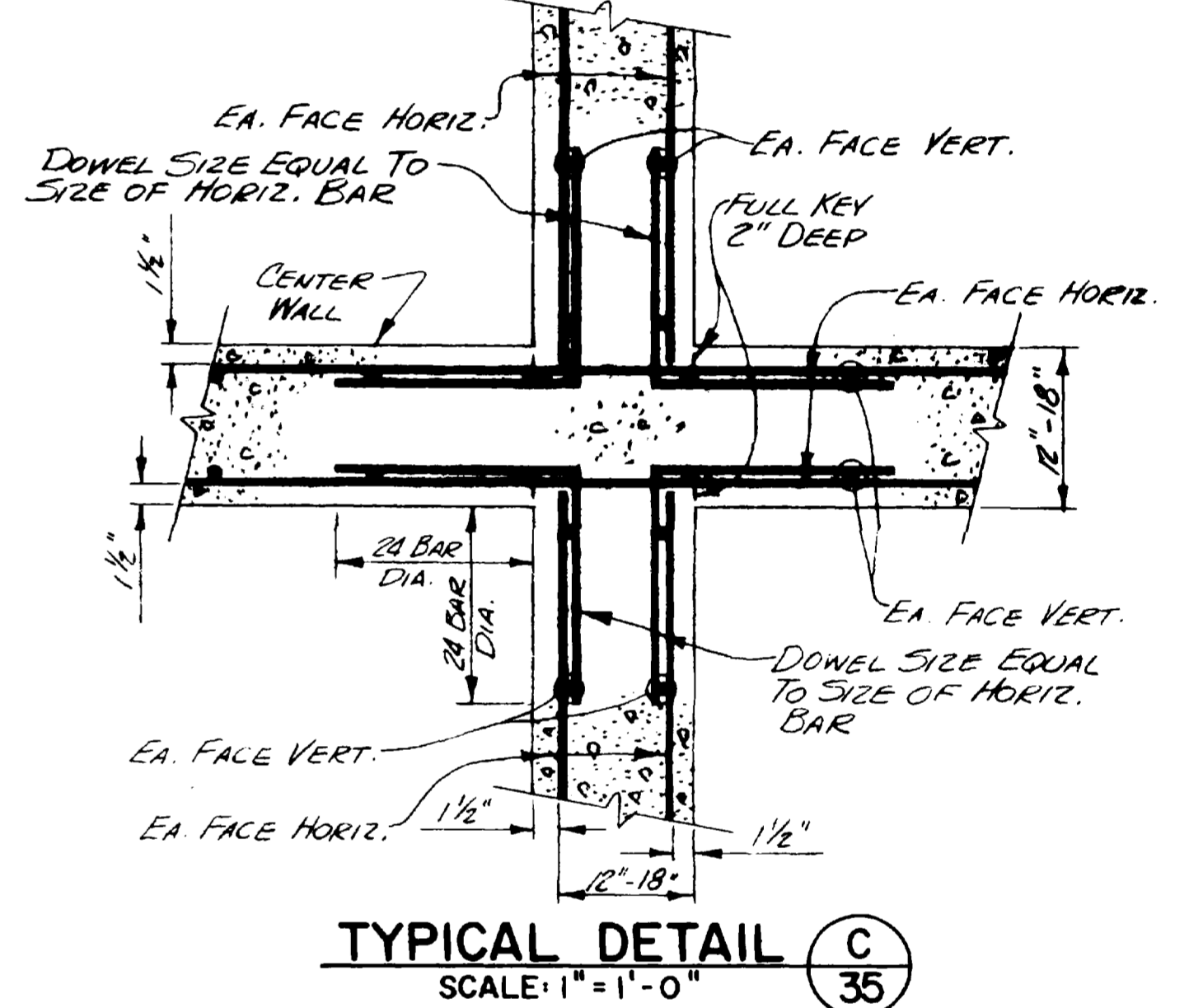
Note: Set All Coissons At Intersection of Wall & Beam Centerlines. All Coissons To Be Drilled 2'-0" Into Hard Sandstone. Depth varies 25' to 30' (Approx.)



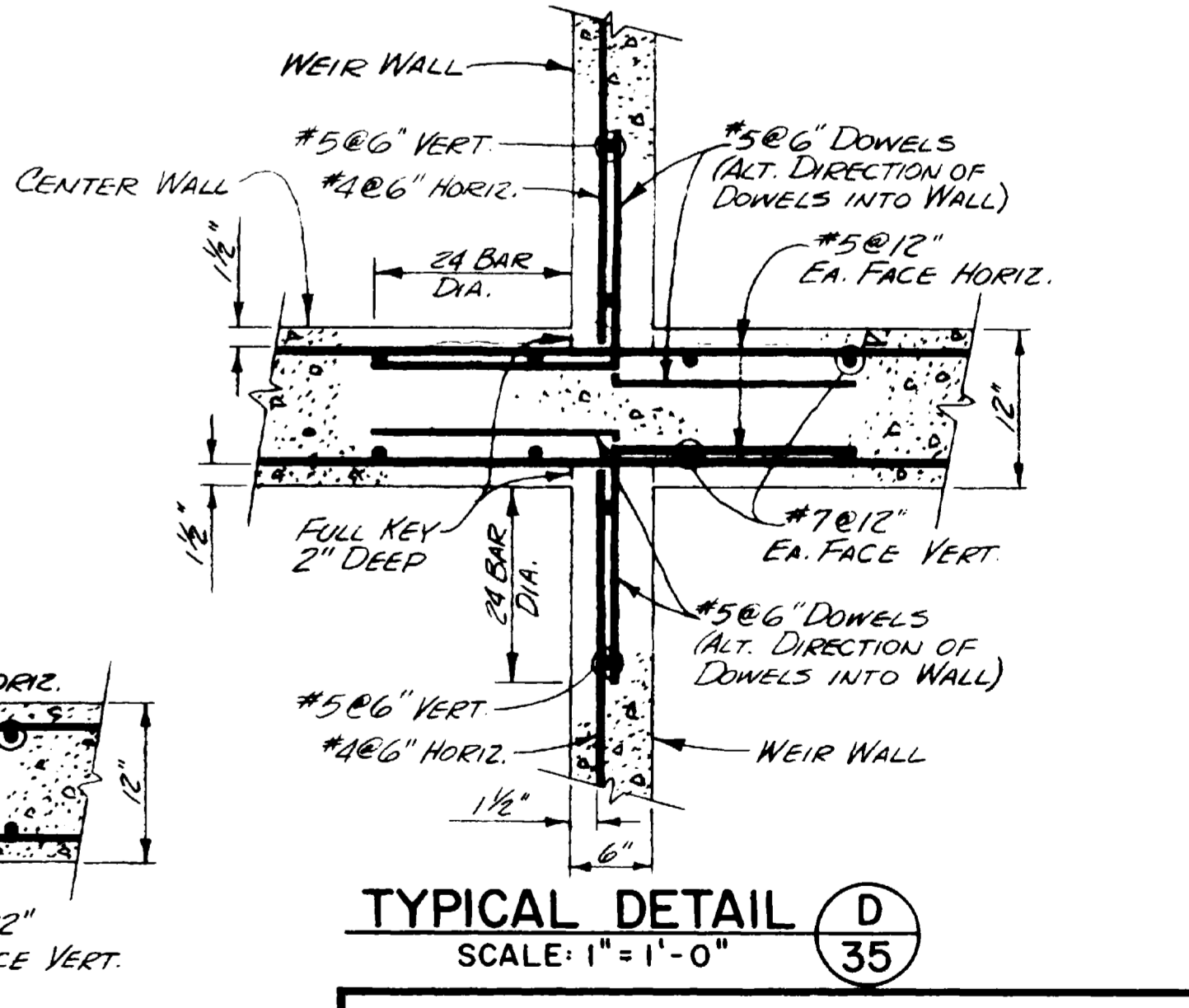
**TYPICAL DETAIL A**  
SCALE: 1" = 1'-0" 35



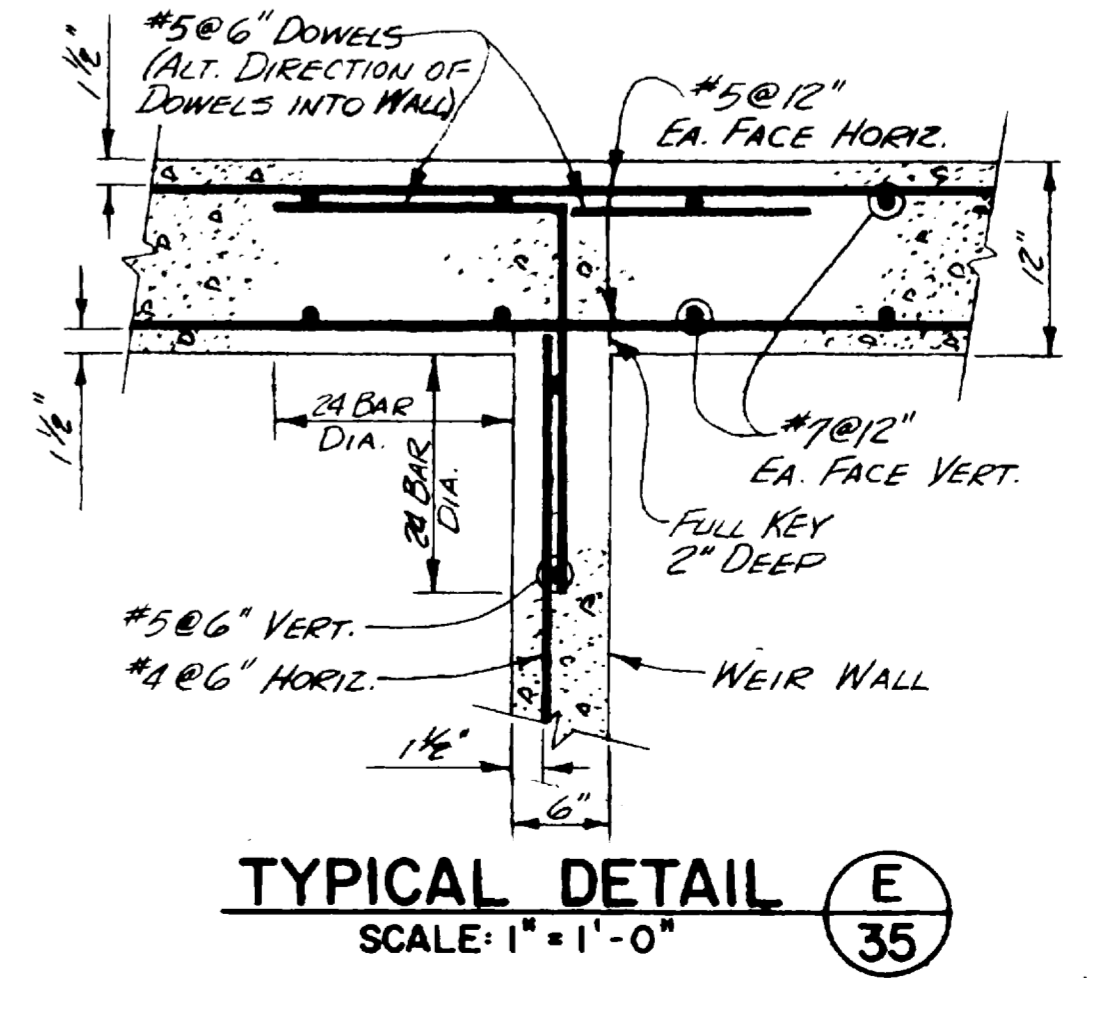
**TYPICAL DETAIL B**  
SCALE: 1" = 1'-0" 35



**TYPICAL DETAIL C**  
SCALE: 1" = 1'-0" 35



**TYPICAL DETAIL D**  
SCALE: 1" = 1'-0" 35

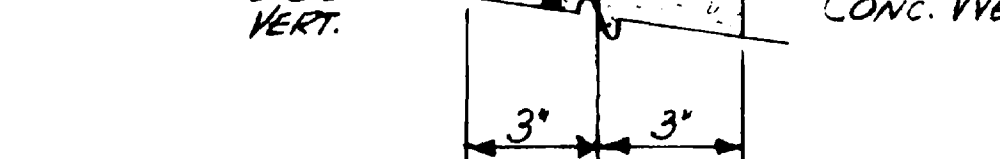
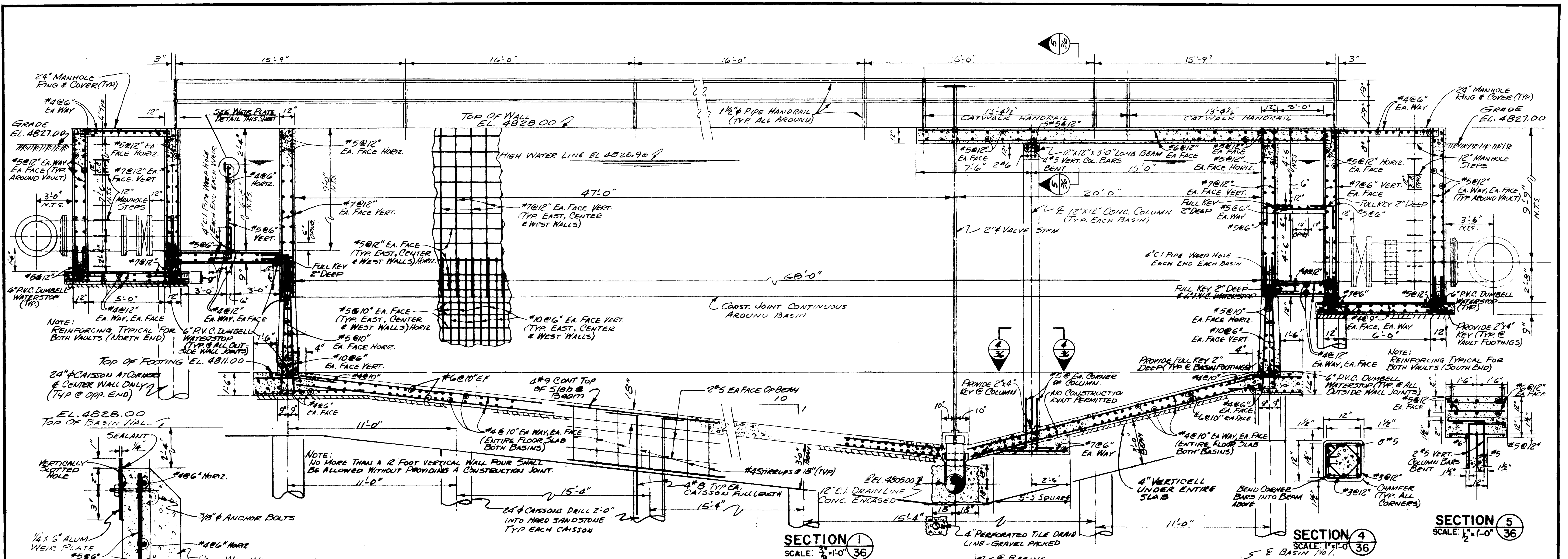


**TYPICAL DETAIL E**  
SCALE: 1" = 1'-0" 35

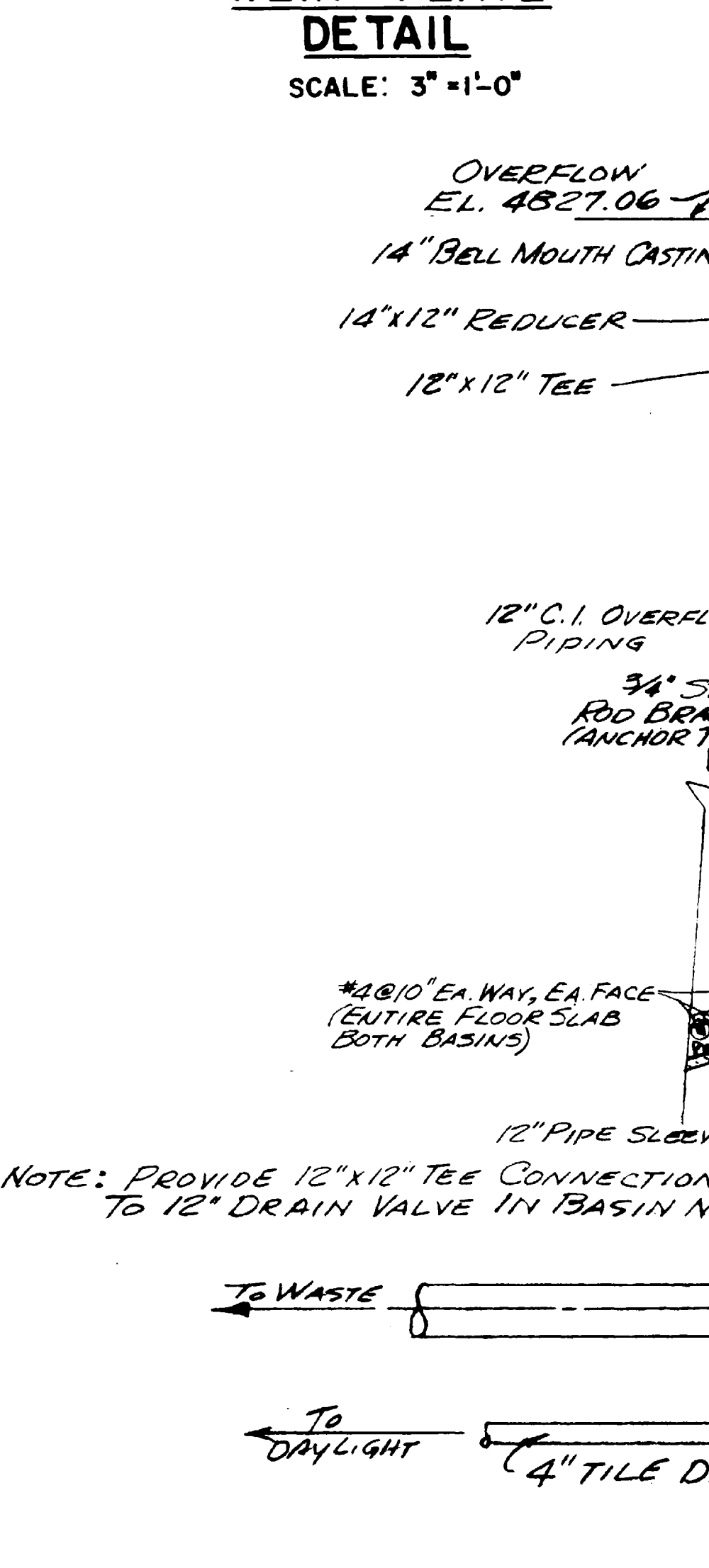
**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
(CONTRACT - I)  
WATER TREATMENT PLANT  
**CONTACT BASINS**  
PLAN & DETAILS

**HERRINGSON, DURHAM & RICHARDSON, INC.**  
ENGINEERS - PLANNERS - CONSULTANTS  
DENVER, COLORADO

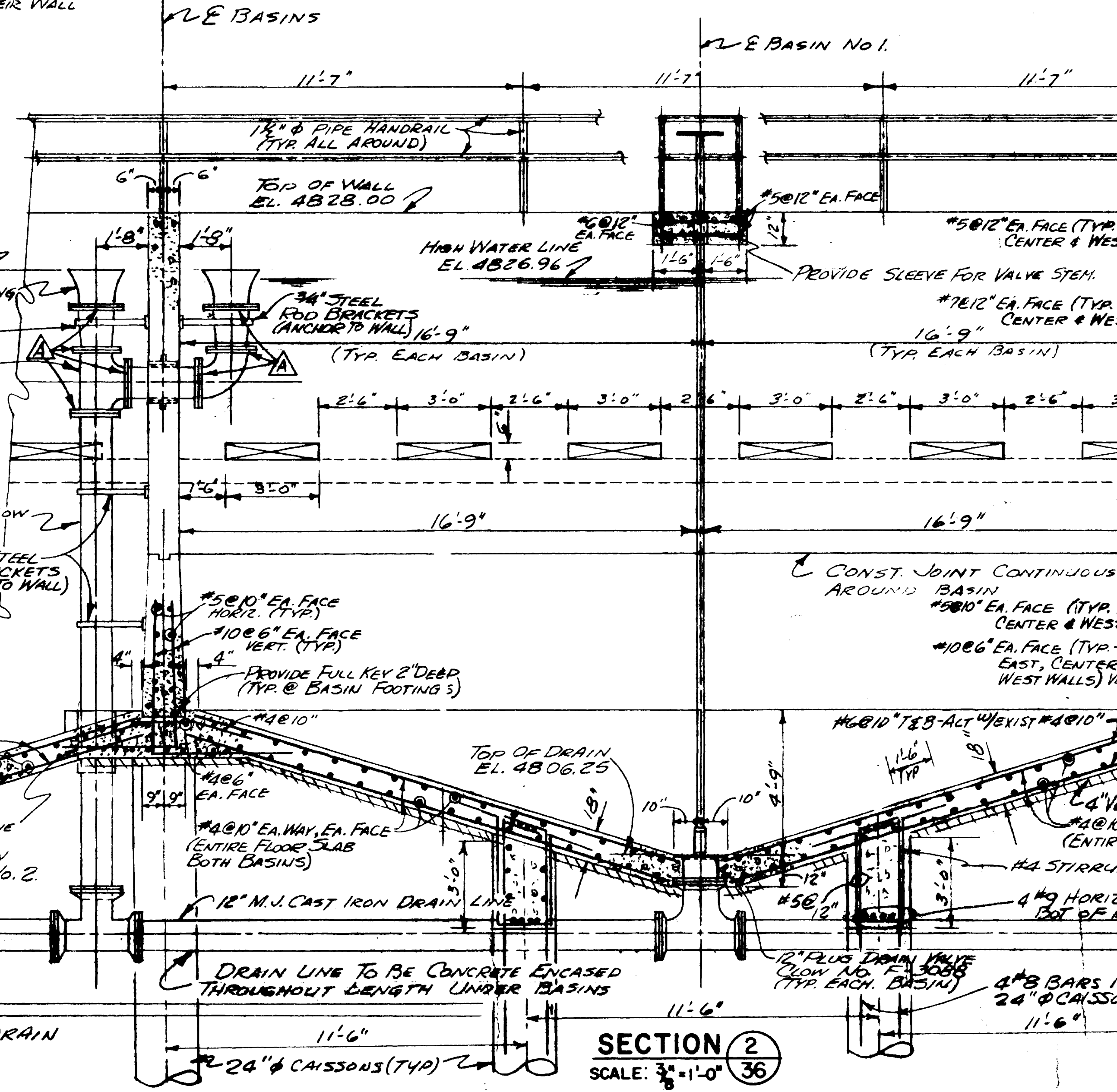
1	2-2570 As Built	EAB	KDH
DATE	DESCRIPTION	MADE	APPROV
	REVISIONS		



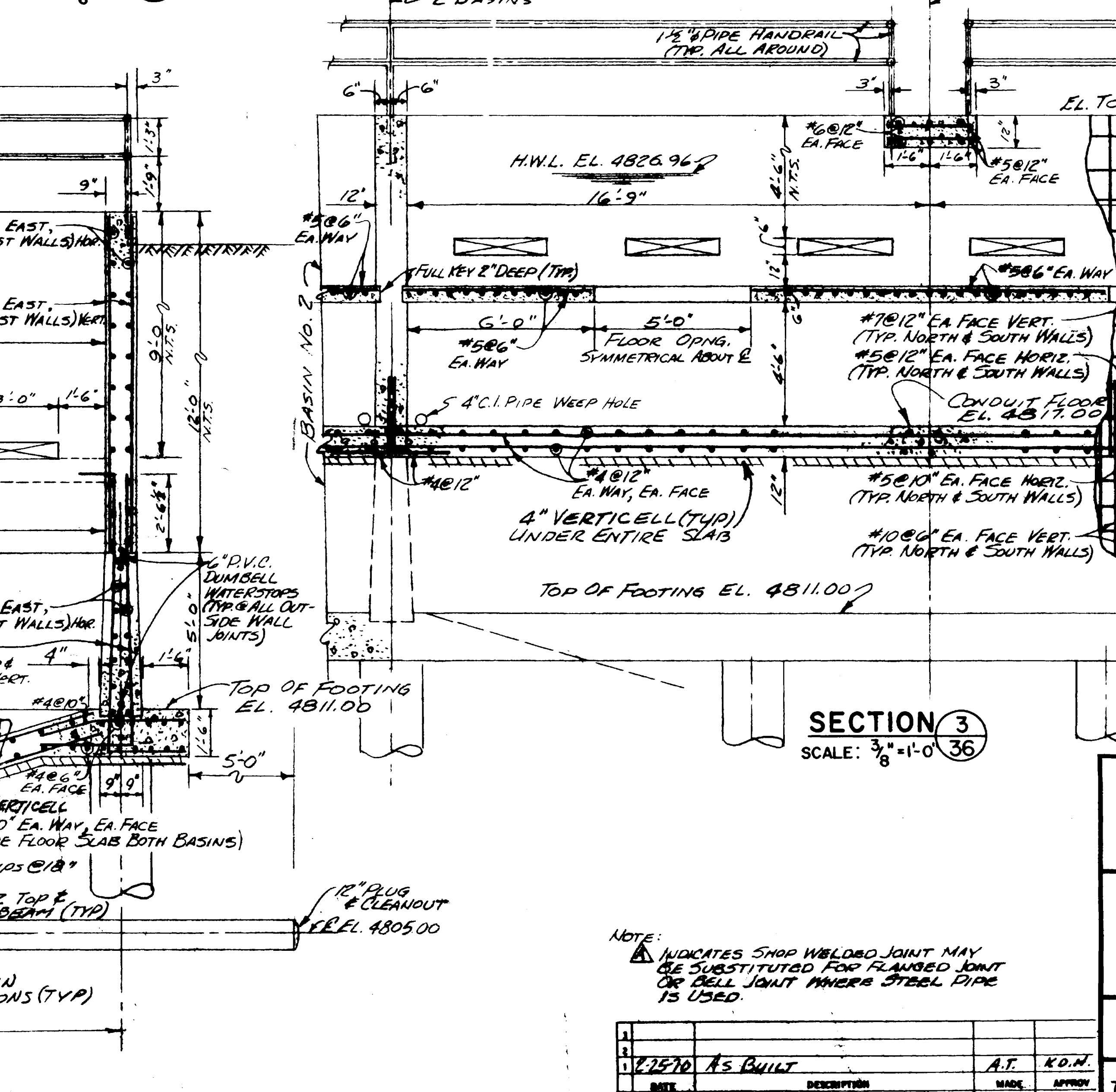
**WEIR PLATE DETAIL**  
SCALE: 3" = 1'-0"



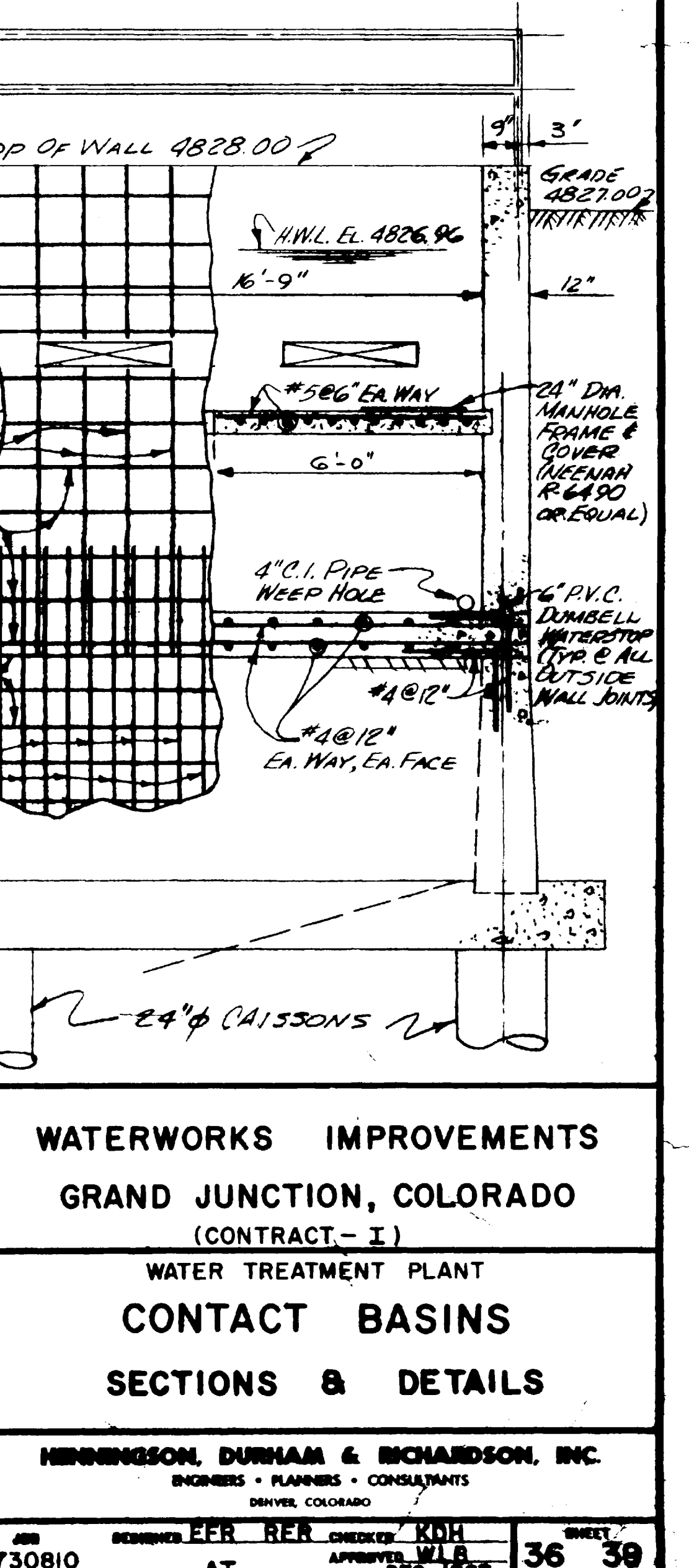
**SECTION 2**  
SCALE: 3/8" = 1'-0" 36



**SECTION 3**  
SCALE: 3/8" = 1'-0" 36



**SECTION 4**  
SCALE: 3/8" = 1'-0" 36



**SECTION 5**  
SCALE: 1/2" = 1'-0" 36

NOTE: INDICATES SHOP WELDED JOINT MAY BE SUBSTITUTED FOR FLANGED JOINT OR BELL JOINT WHEN STEEL PIPE IS USED.

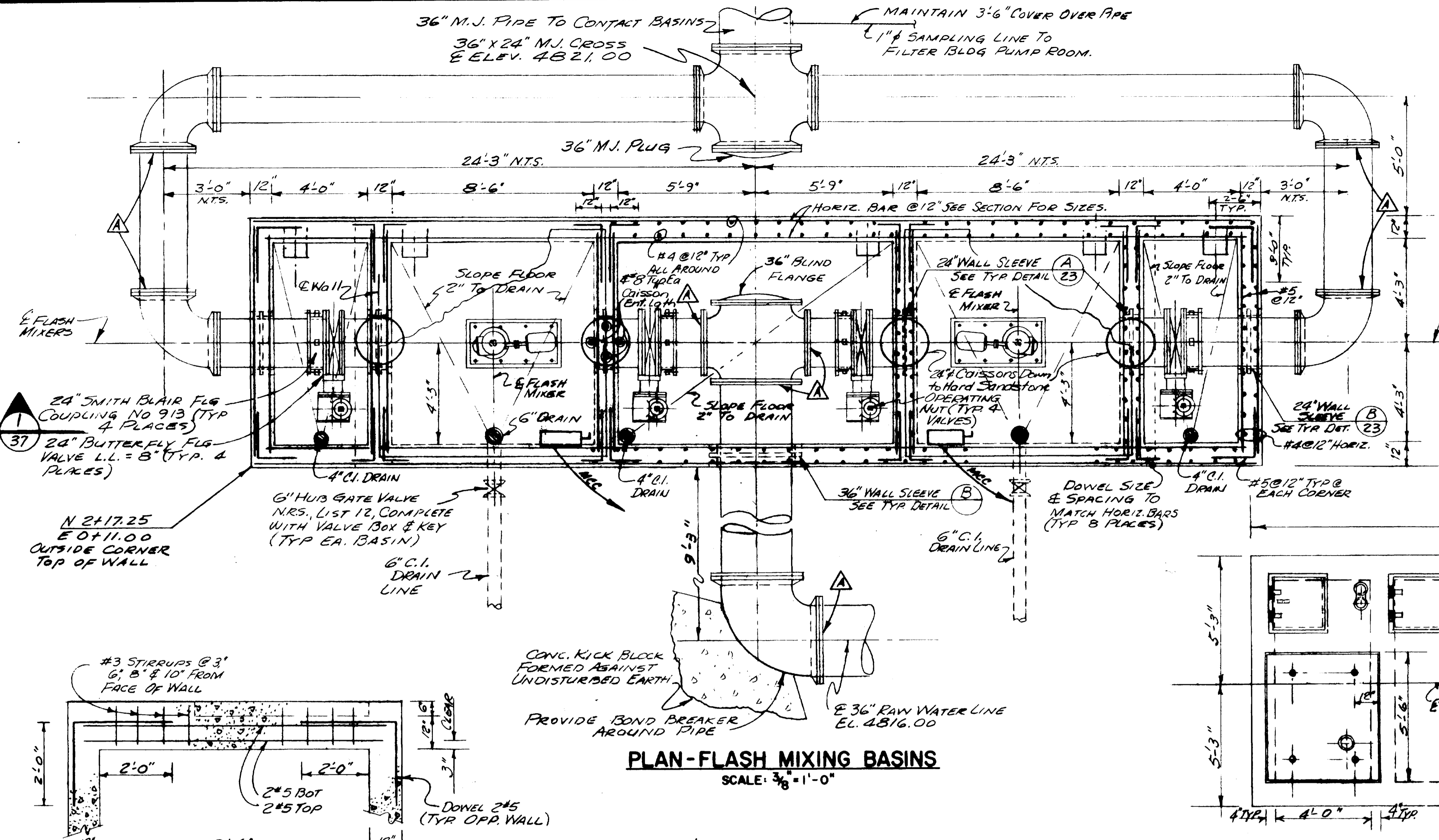
**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
(CONTRACT - I)  
WATER TREATMENT PLANT  
**CONTACT BASINS**  
SECTIONS & DETAILS

HINSHENSON, DUNHAM & RICHARDSON, INC.  
ENGINEERS - PLANNERS - CONSULTANTS  
DENVER, COLORADO

NO.	DATE	BY	DESCRIPTION	A.T.	K.O.N.
1	7-27-70	AS BUILT			
2					
3					
4					
5					

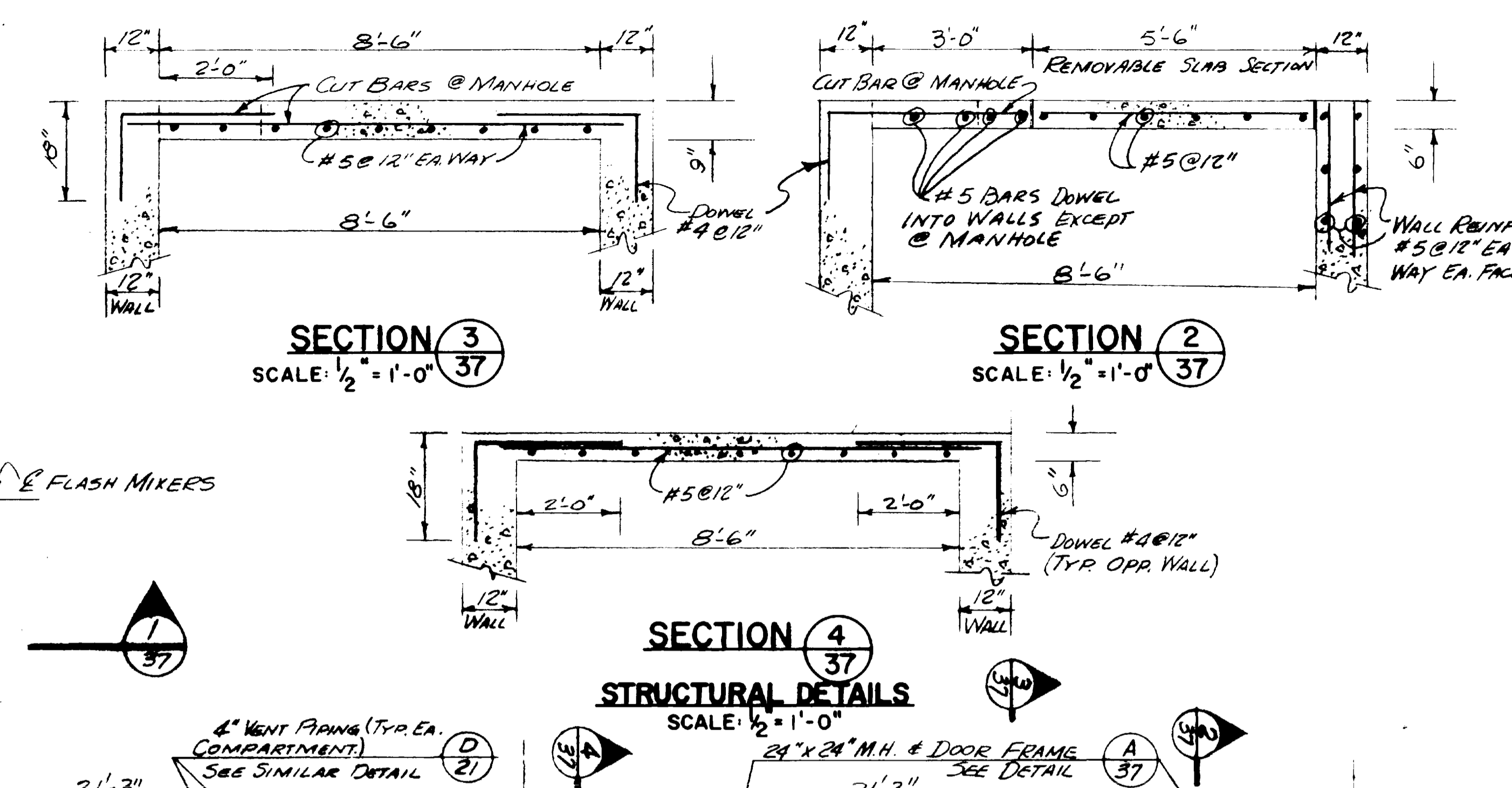
730810 STABLE AT  
REVISIONS: PER RER CHECKED: R/HH APPROVED: W/LB  
DATE: DEC. 1987

SHEET 36 OF 39



**PLAN-FLASH MIXING BASINS**

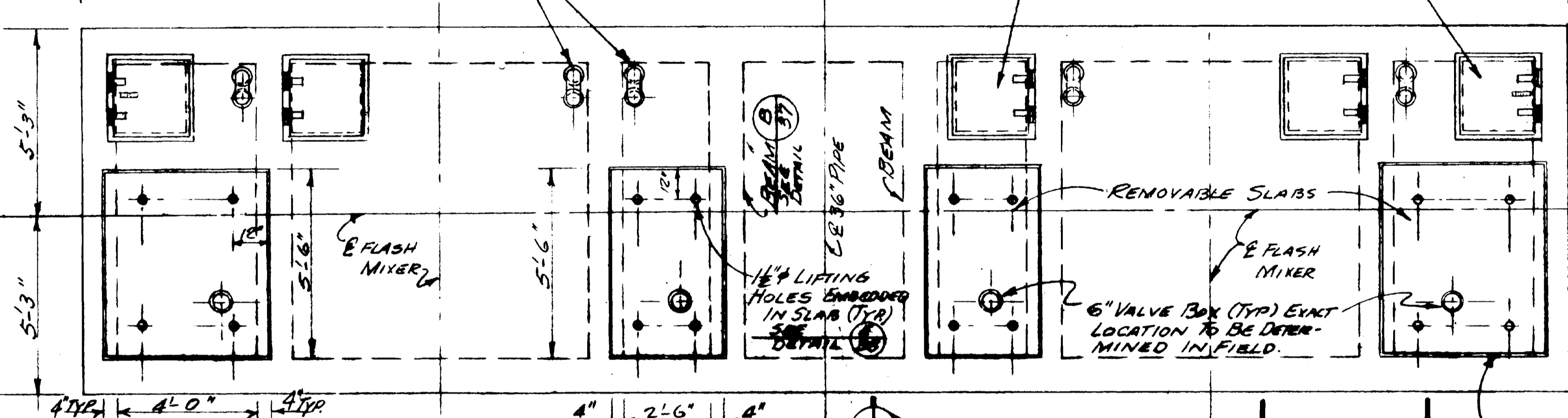
SCALE: 3/8" = 1'-0"



**SECTION 3**  
SCALE: 1/2" = 1'-0" (37)

**SECTION 2**  
SCALE: 1/2" = 1'-0" (37)

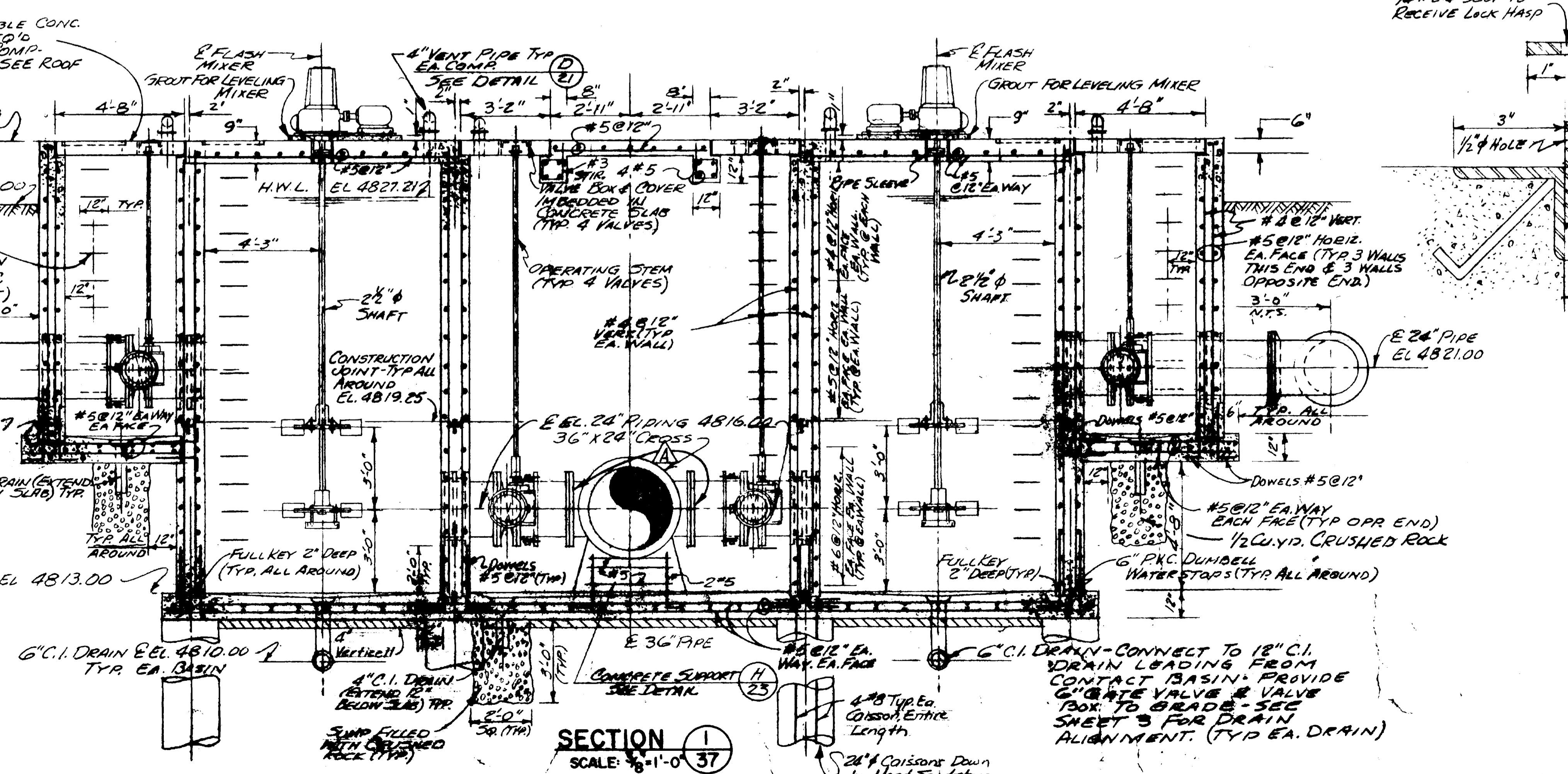
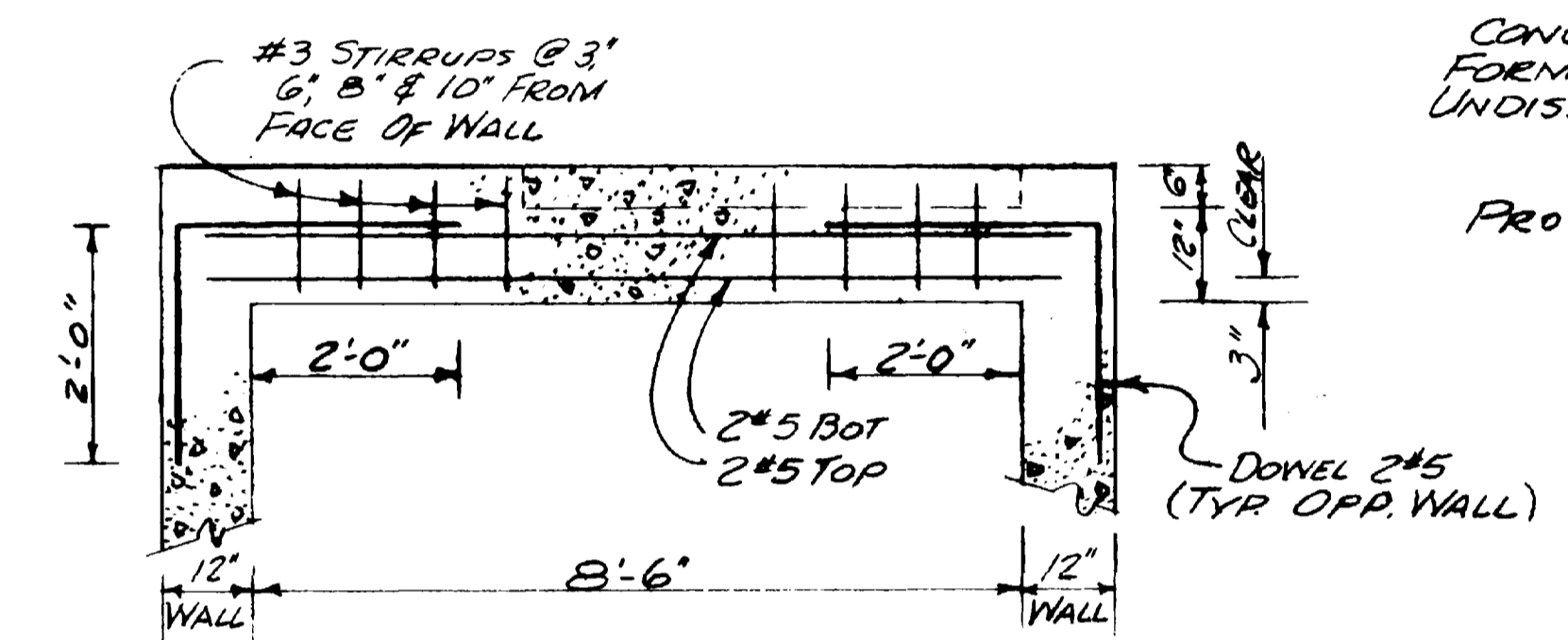
**SECTION 4**  
**STRUCTURAL DETAILS**  
SCALE: 1/2" = 1'-0" (37)



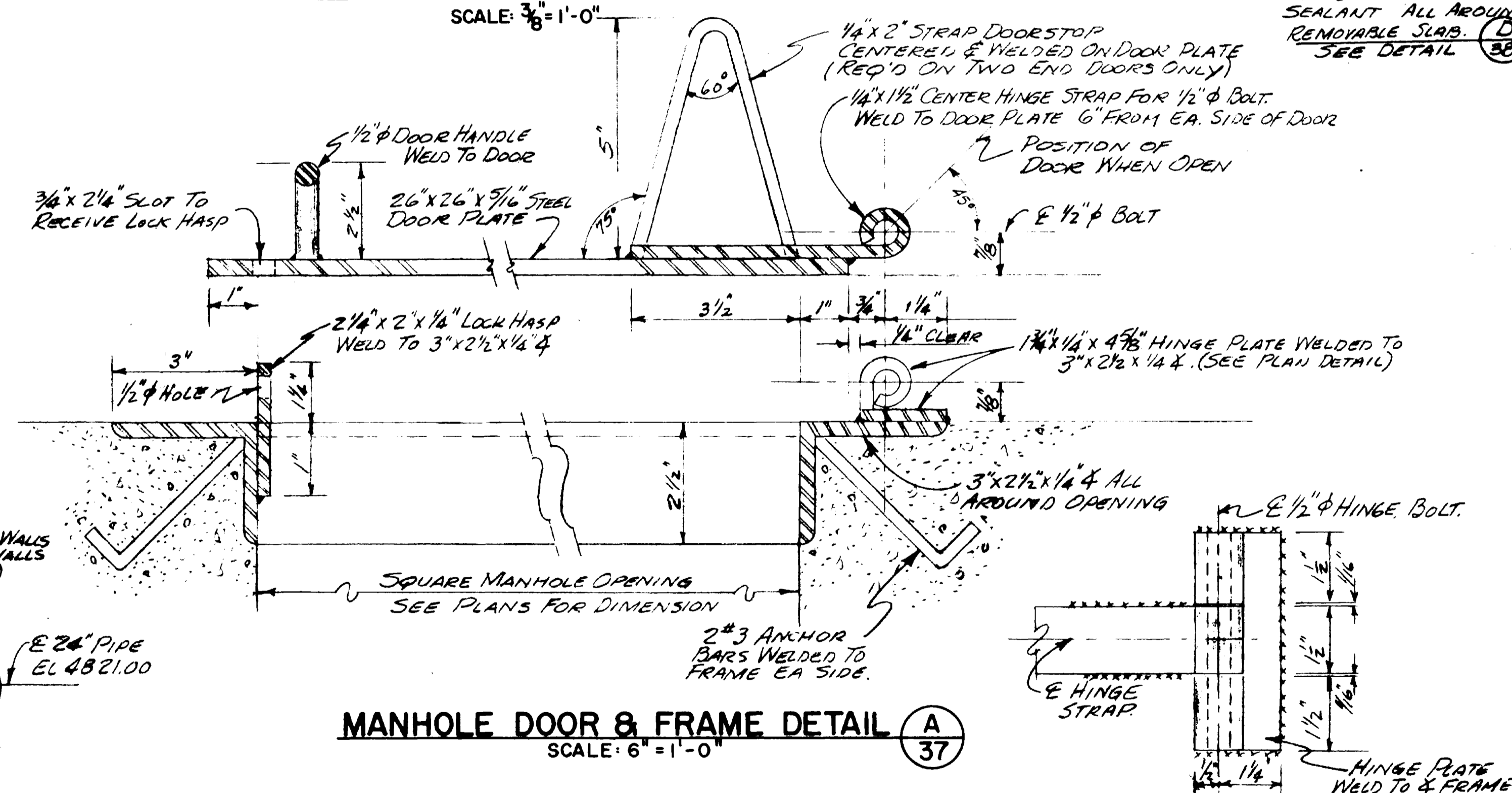
**ROOF PLAN-FLASH MIXING BASINS**

SCALE: 3/8" = 1'-0"

**BEAM DETAIL B**  
SCALE: 1/2" = 1'-0" (37)



**SECTION 1**  
SCALE: 3/8" = 1'-0" (37)



**MANHOLE DOOR & FRAME DETAIL A**  
SCALE: 6" = 1'-0" (37)

**PLAN-HINGE PLATE**  
2 REQ'D FOR EACH DOOR

**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
(CONTRACT - I)  
WATER TREATMENT PLANT

**FLASH MIXING BASINS**  
**PLANS-SECTIONS-DETAILS**

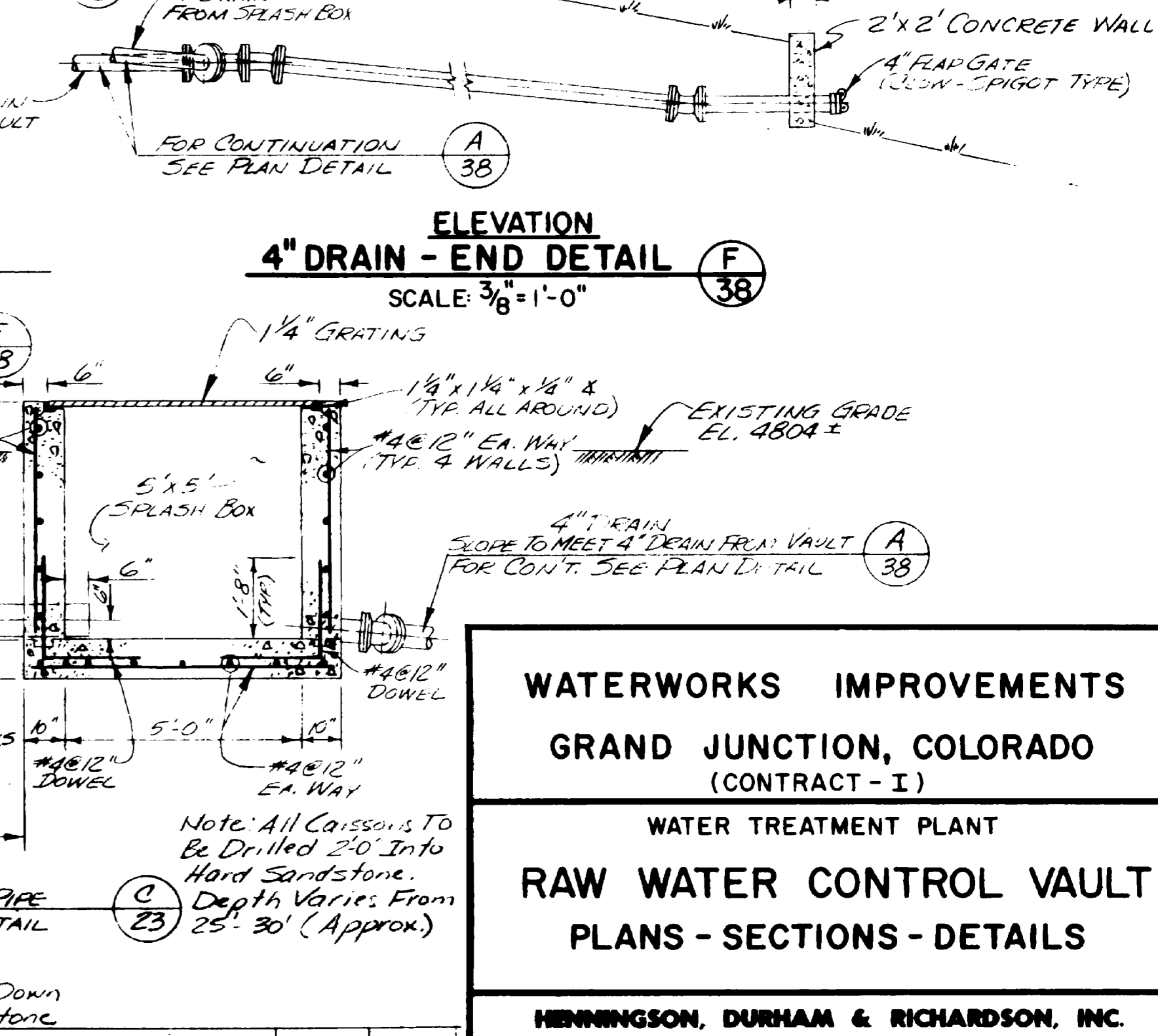
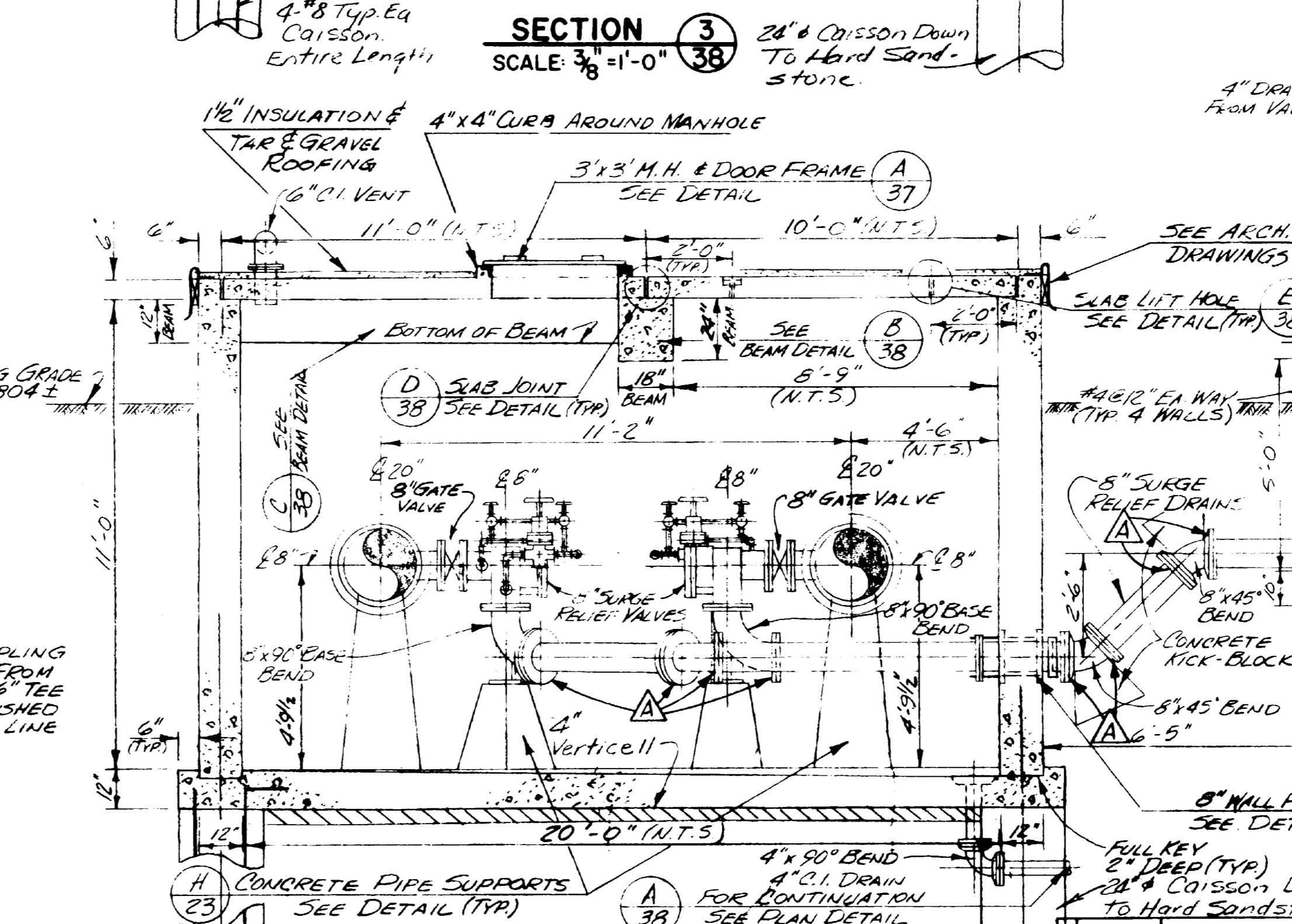
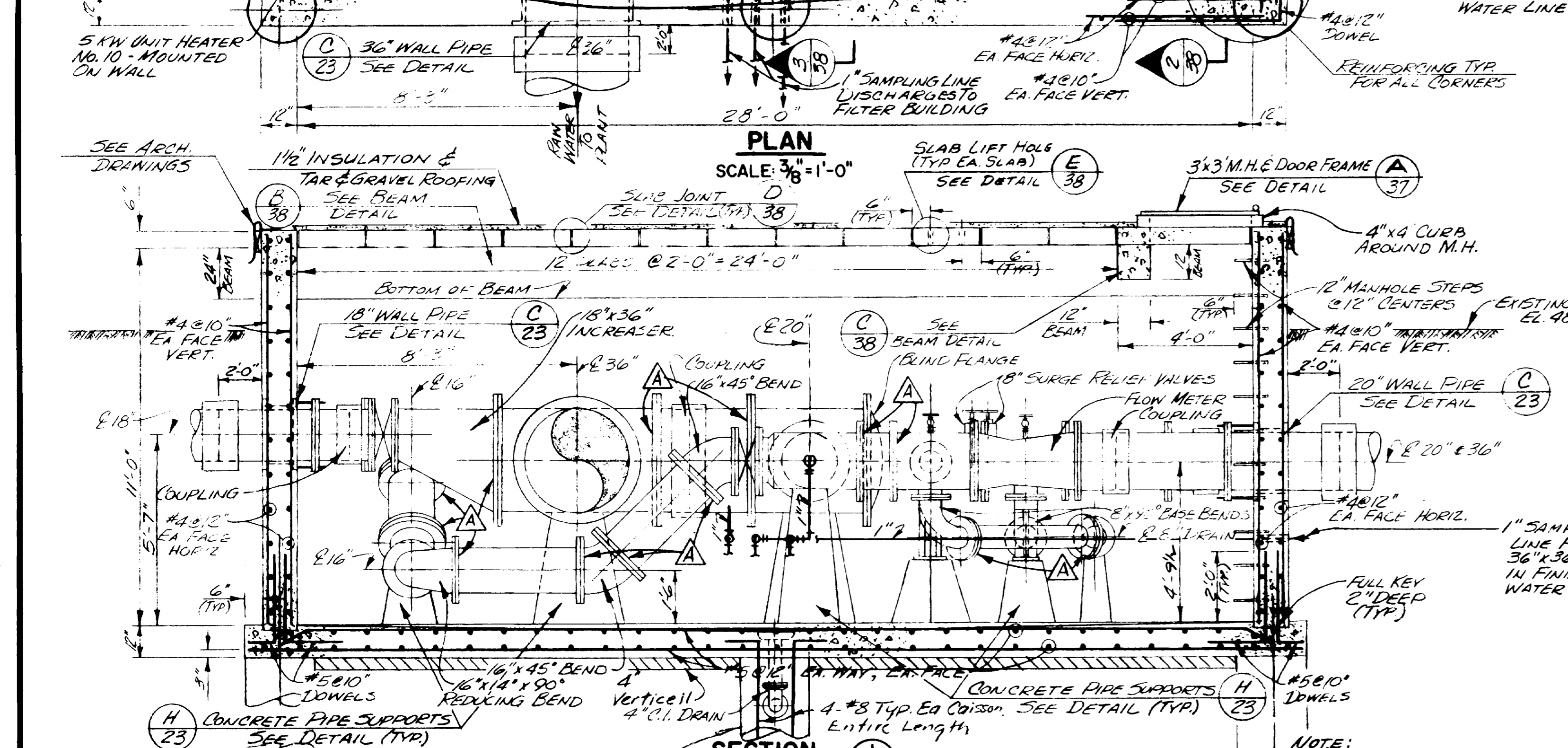
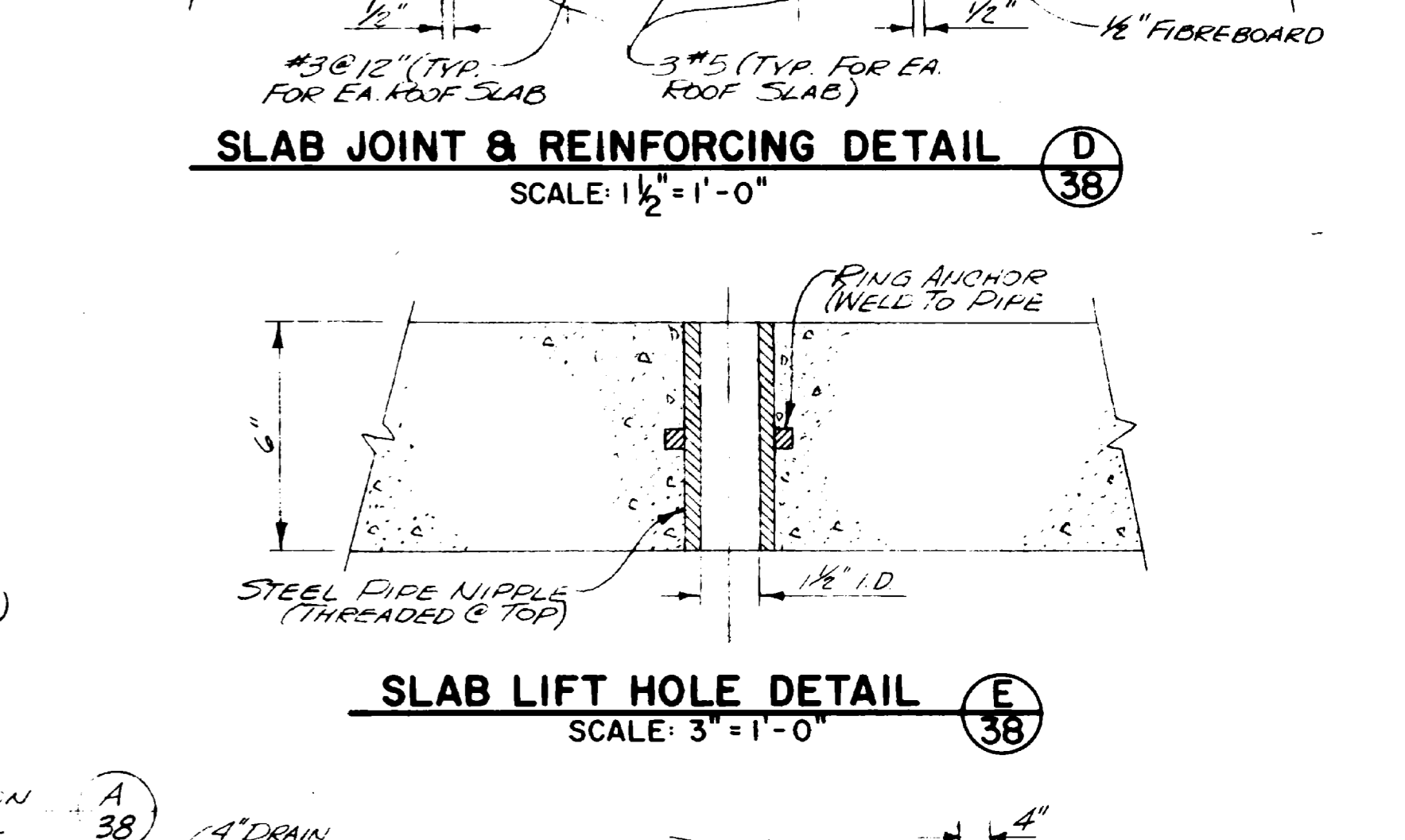
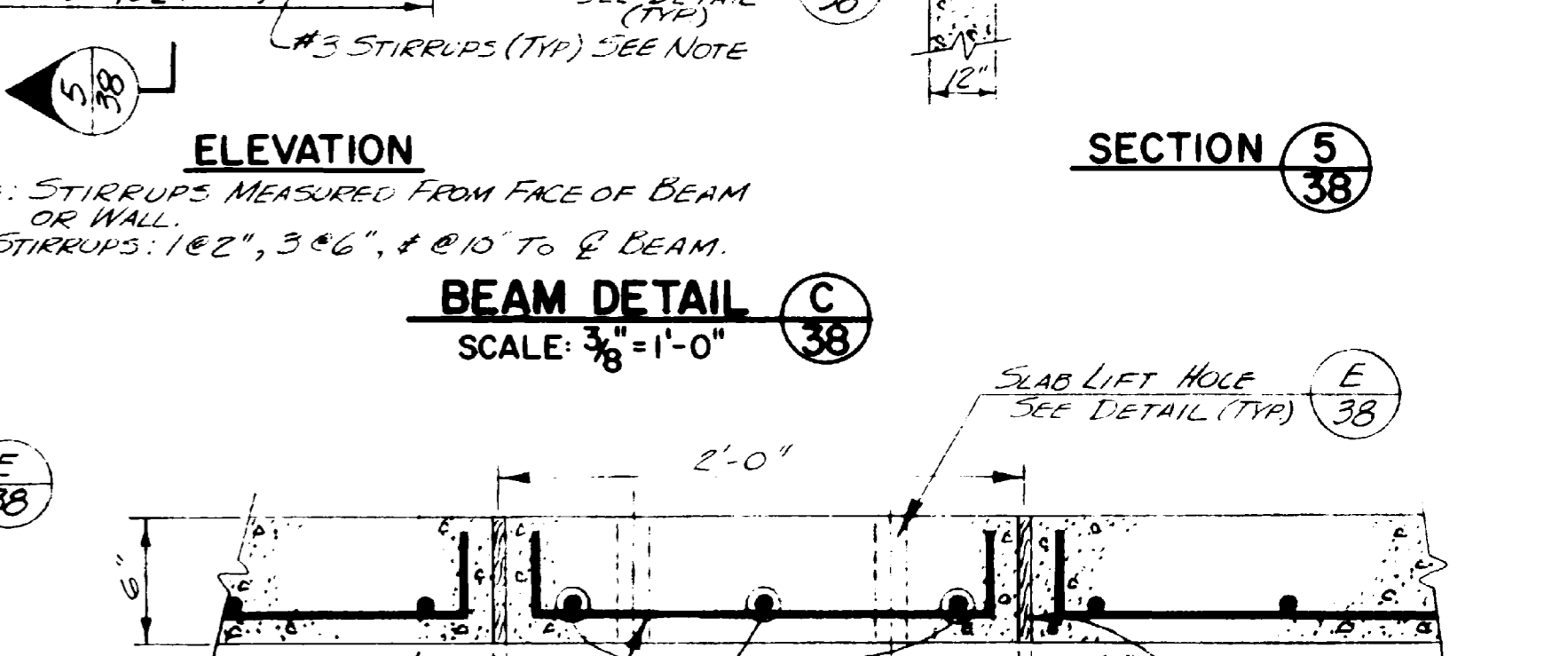
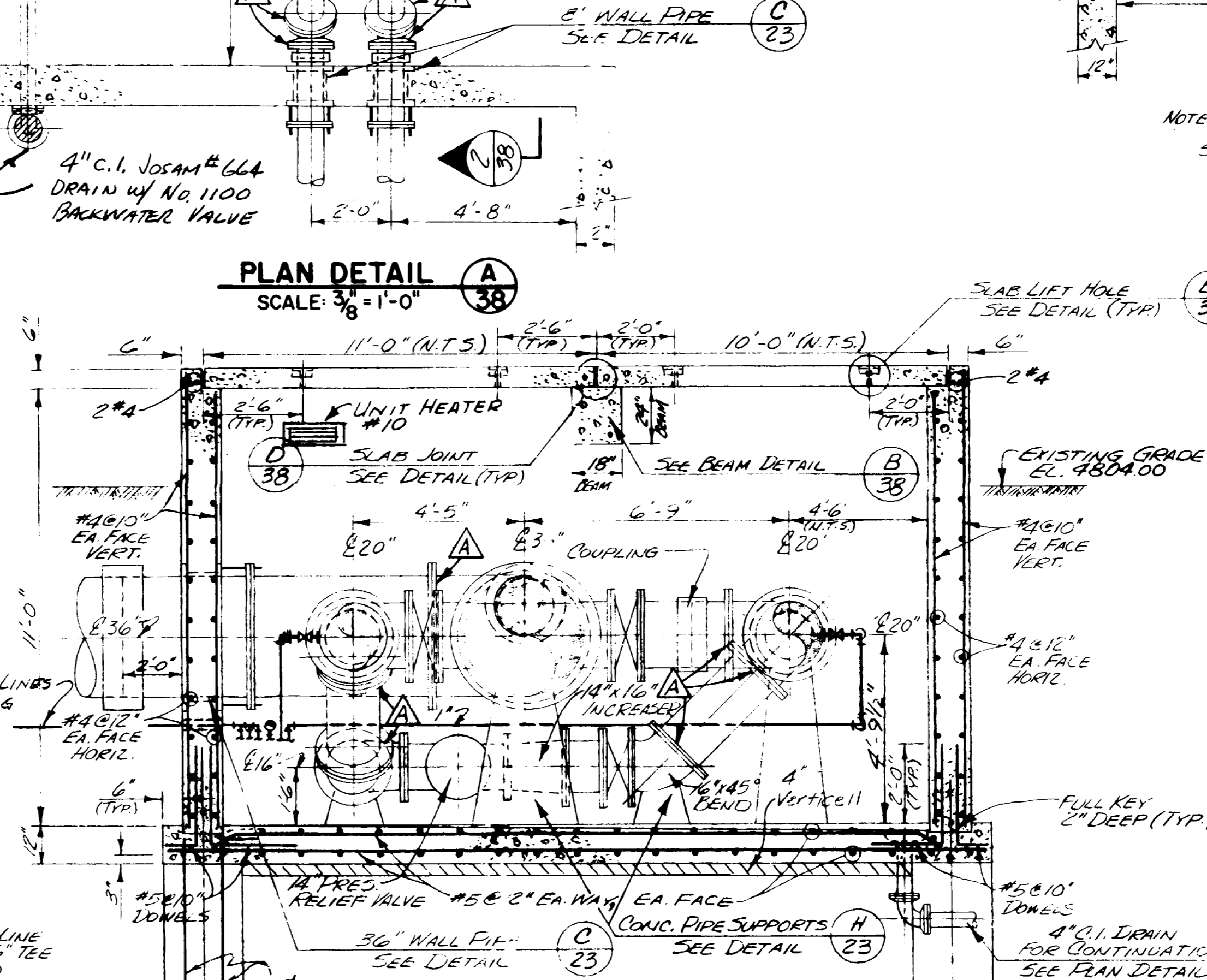
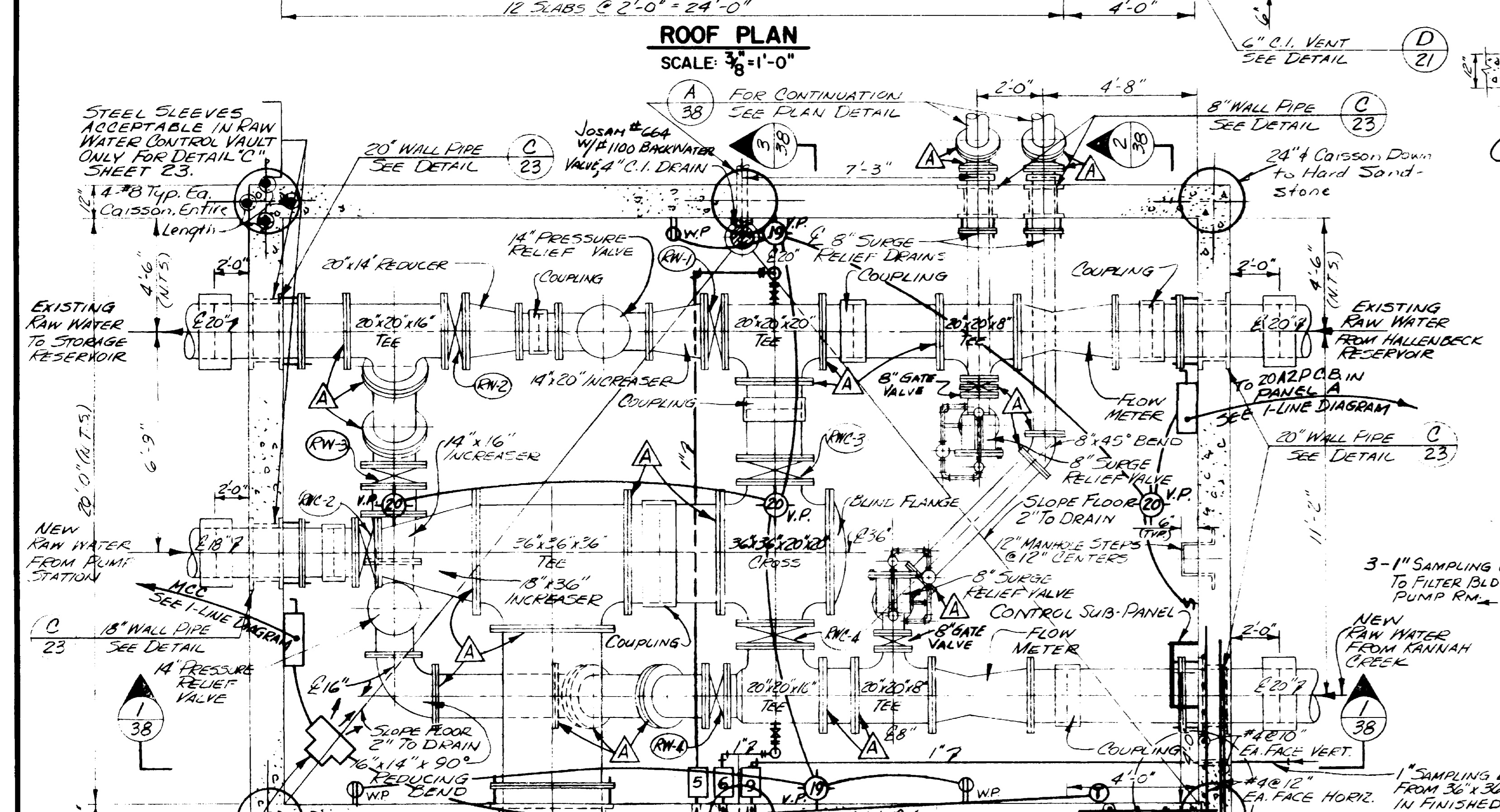
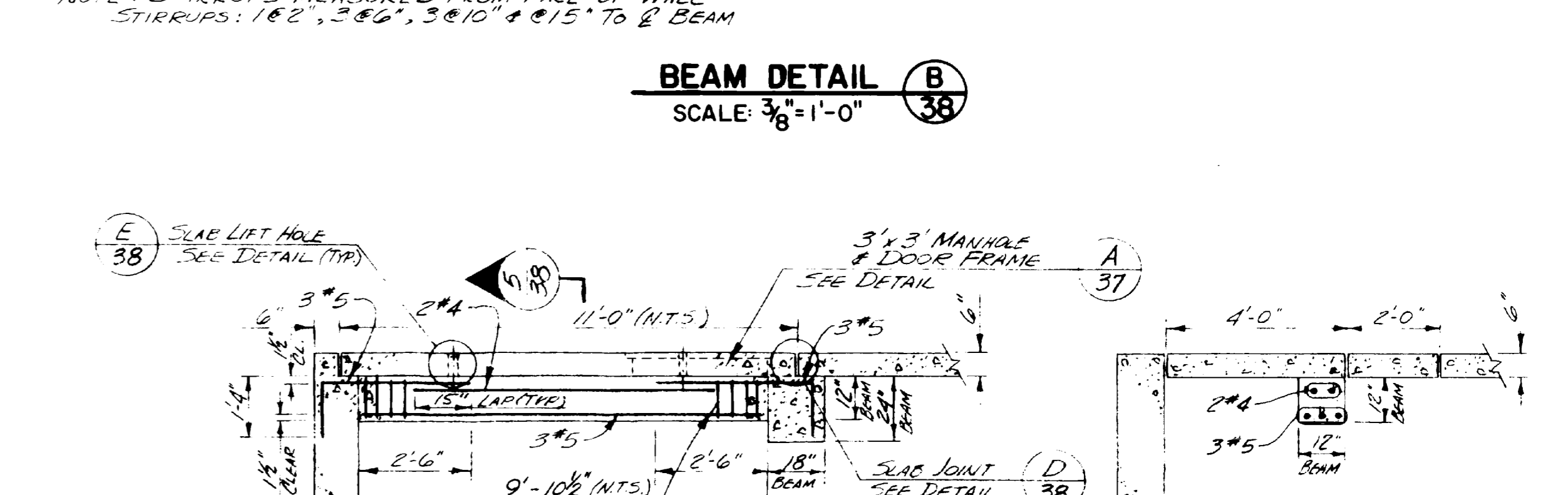
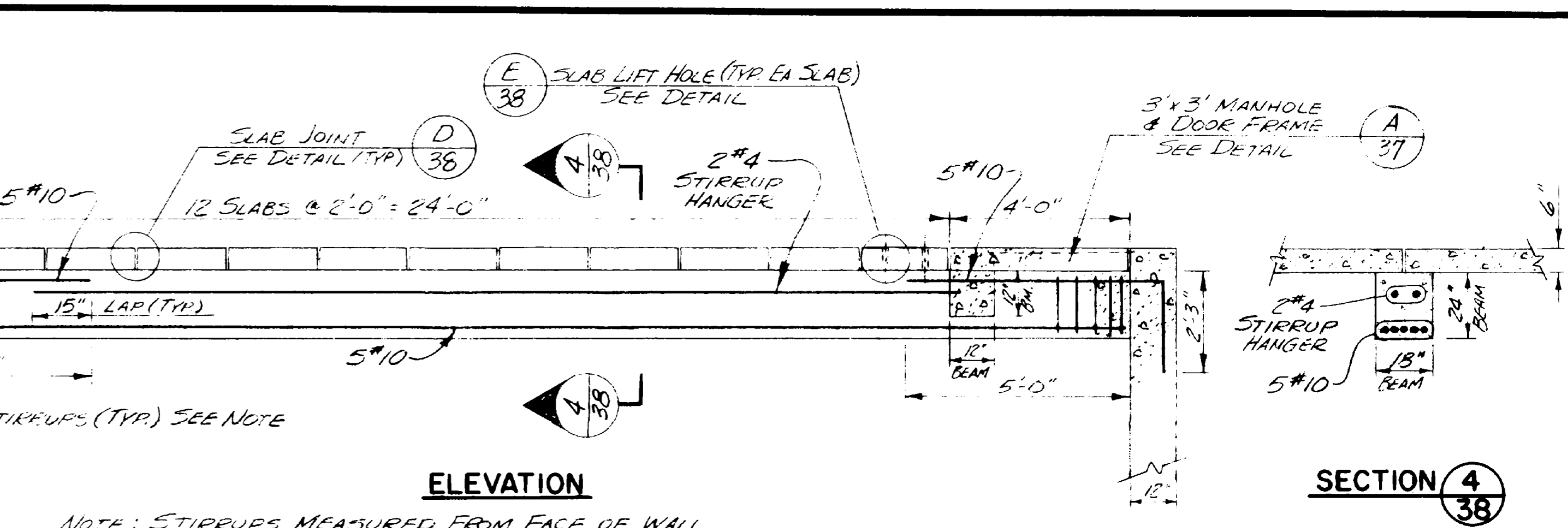
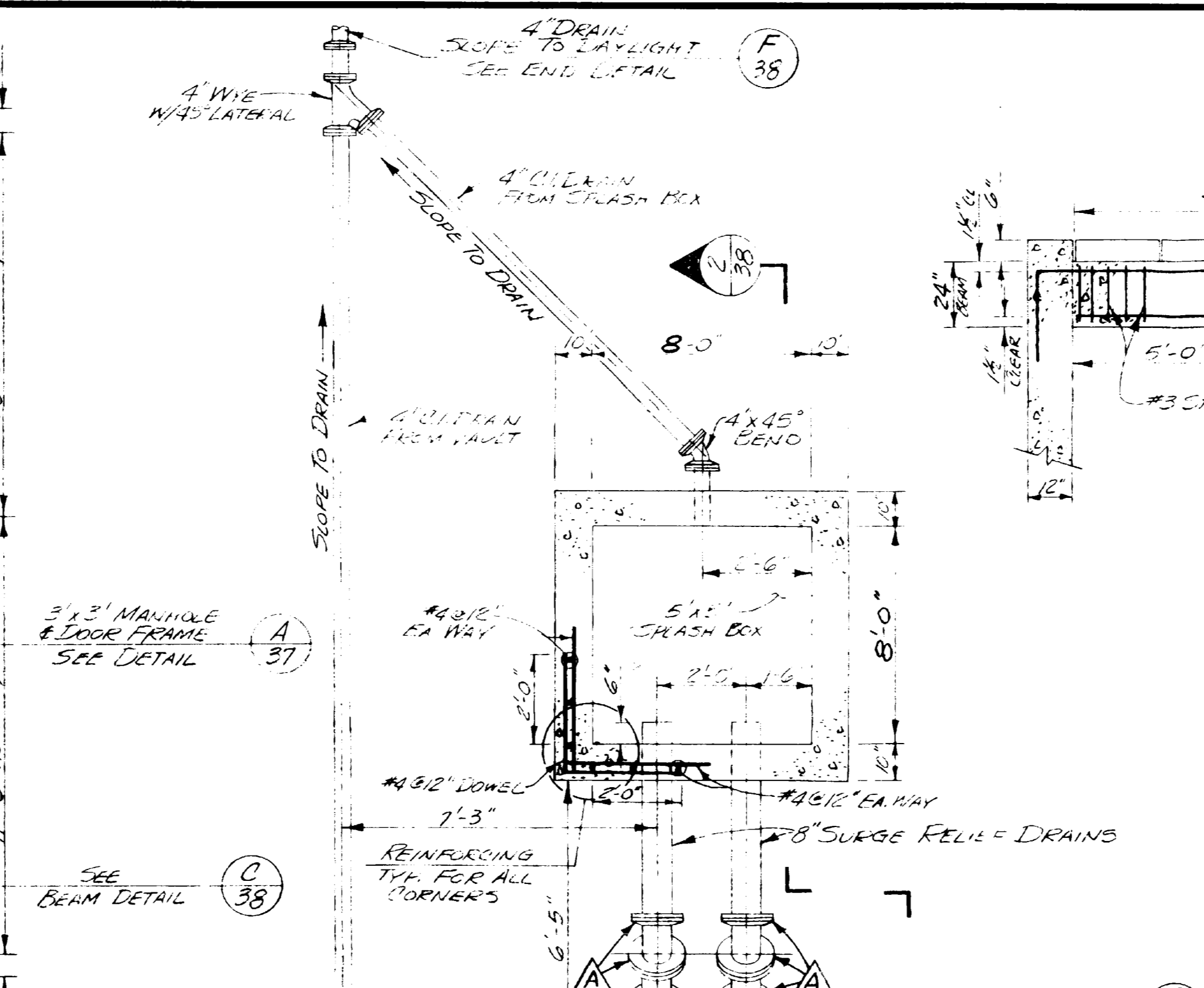
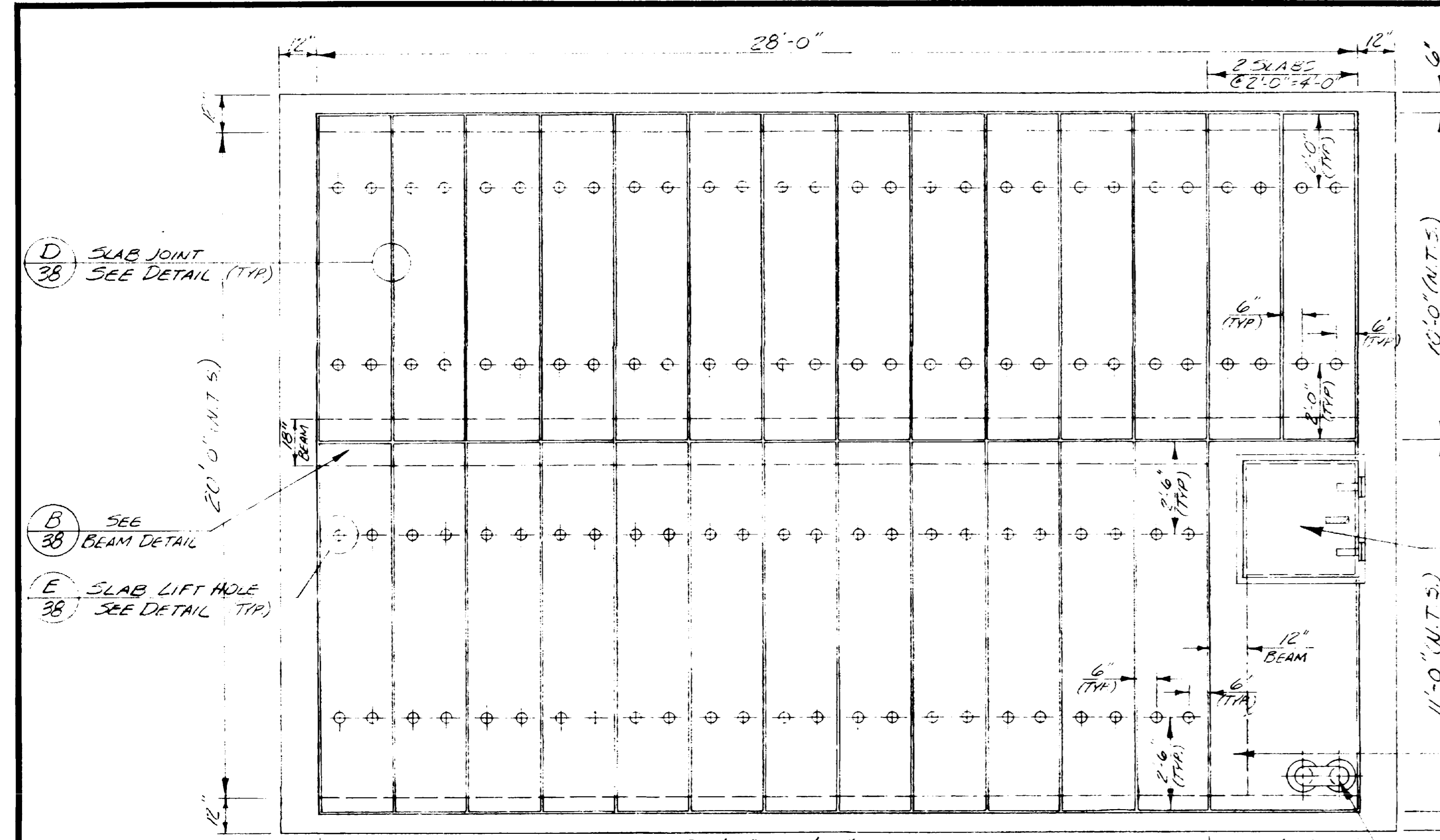
**HENDERSON, DURNHAM & RICHARDSON, INC.**  
ENGINEERS - PLANNERS - CONSULTANTS  
DENVER, COLORADO

Note: All Coissons To Be Drilled 2'-0" Into Hard Sandstone, Depth Varies From 25 To 30' (Approx.)

Note: (B) INDICATES SHOD WELDED JOINT MAY BE SUBSTITUTED FOR PLANNED JOINT OR ALL JOINT WHERS STEEL PIPE IS USED.

NO.	DESCRIPTION	DATE	BY	APPROVED
1	AS BUILT			
2				
3				





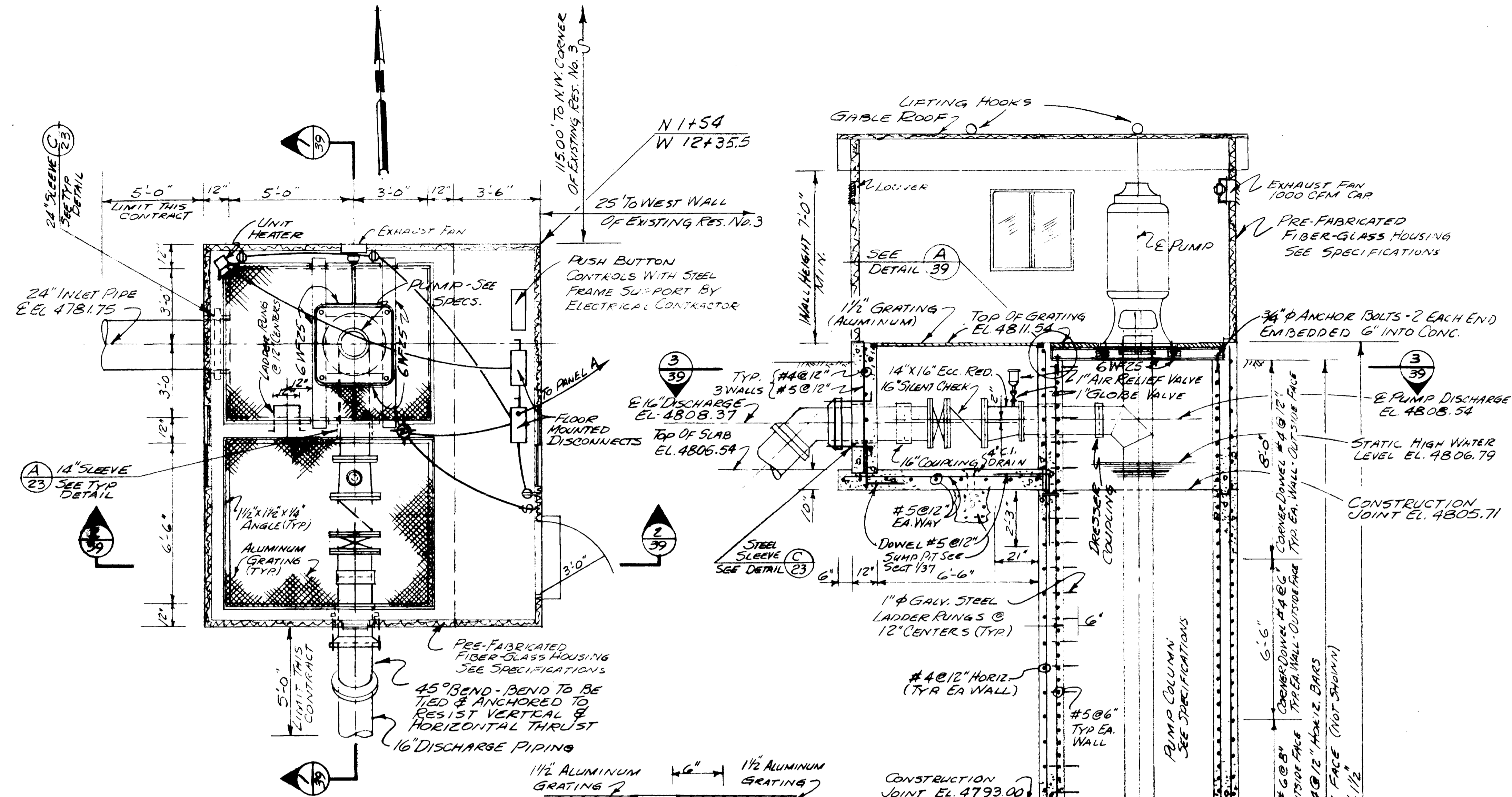
**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
(CONTRACT - I)

WATER TREATMENT PLANT  
**RAW WATER CONTROL VAULT**  
PLANS - SECTIONS - DETAILS

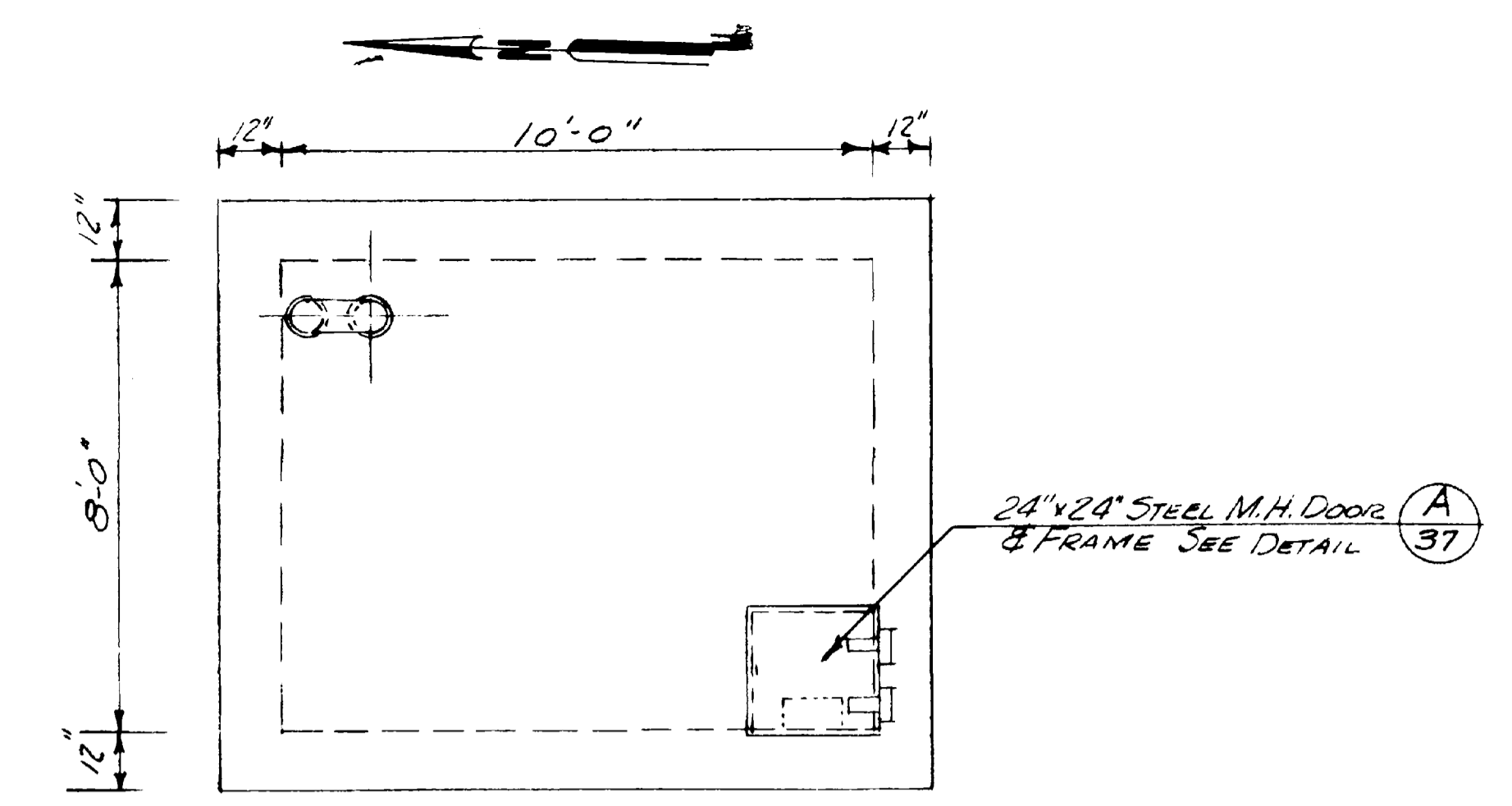
HERRINGSON, DURHAM & RICHARDSON, INC.  
ENGINEERS • PLANNERS • CONSULTANTS  
DENVER, COLORADO

DATE: 2-25-75 AS-BUILT  
DESCRIPTION: RAW WATER CONTROL VAULT  
MADE: EAB  
APPROVED: R.D.H.  
730810  
DESIGNED: E.F.R.-R.E.R. CHECKED: K.D.H.  
REVIEWED: D.A.S. DATE: DEC. 1967

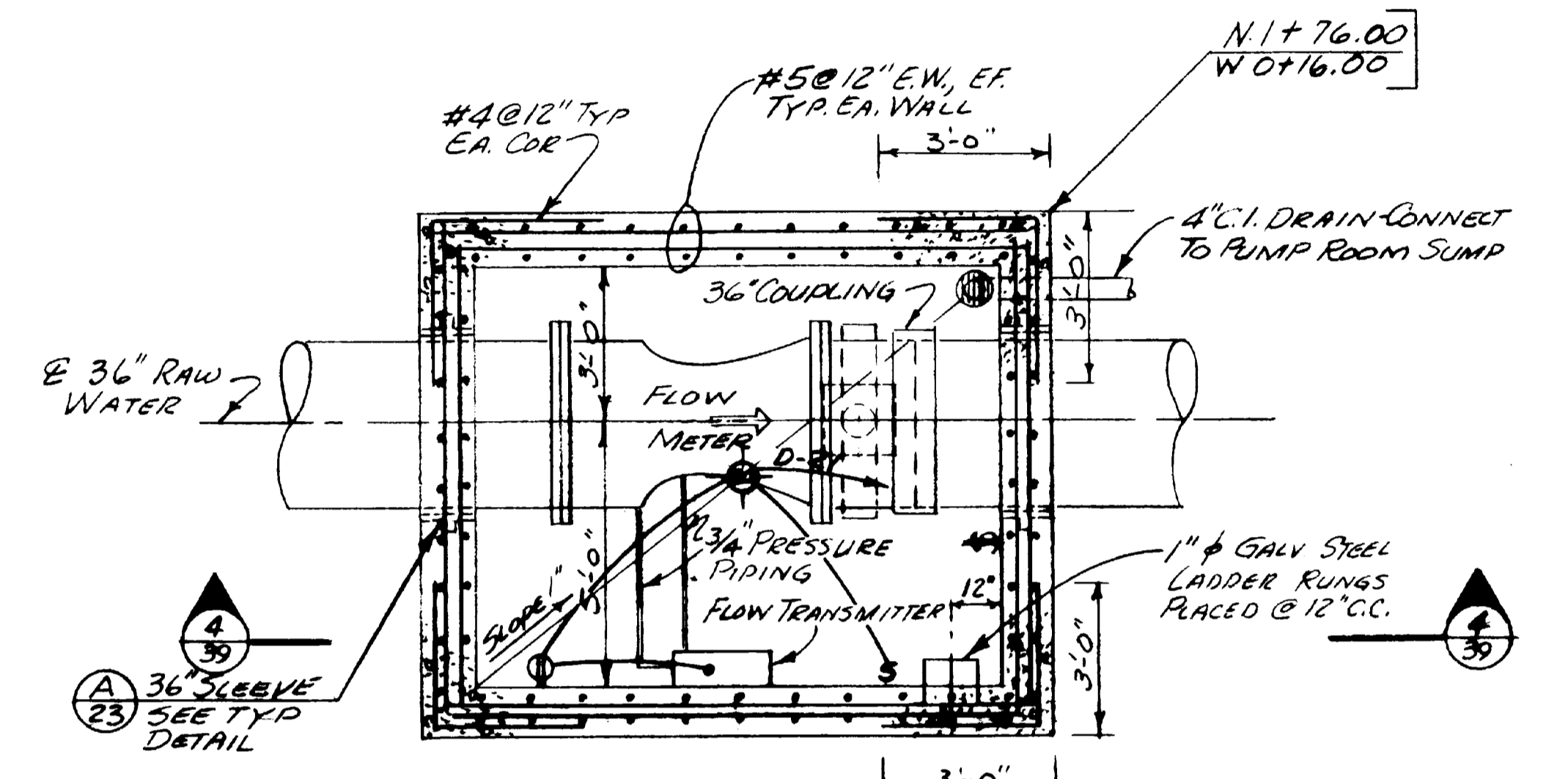
38 39



**PLAN-RAW WATER PUMP HOUSE**  
FOR LOCATION SEE SITE PLAN DRAWING

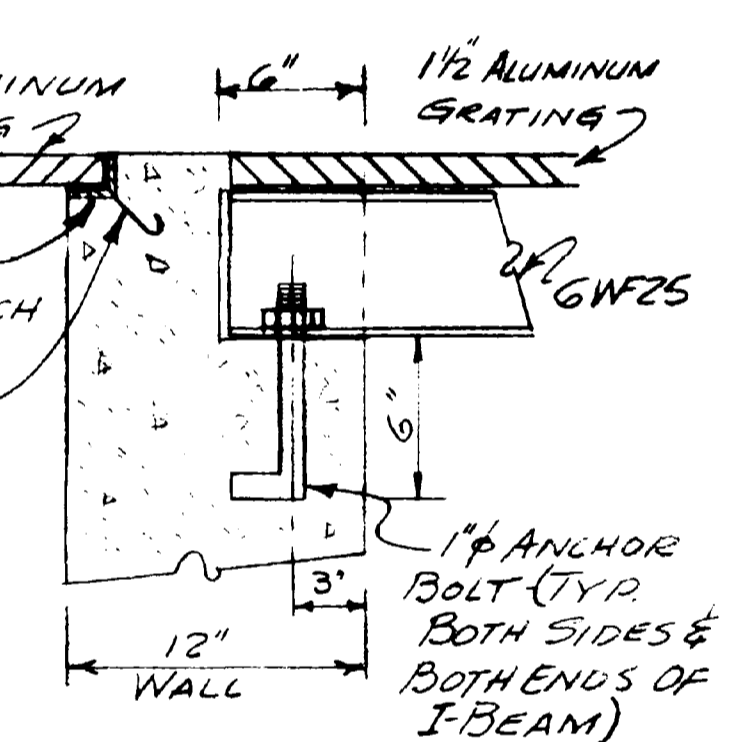


**ROOF PLAN**

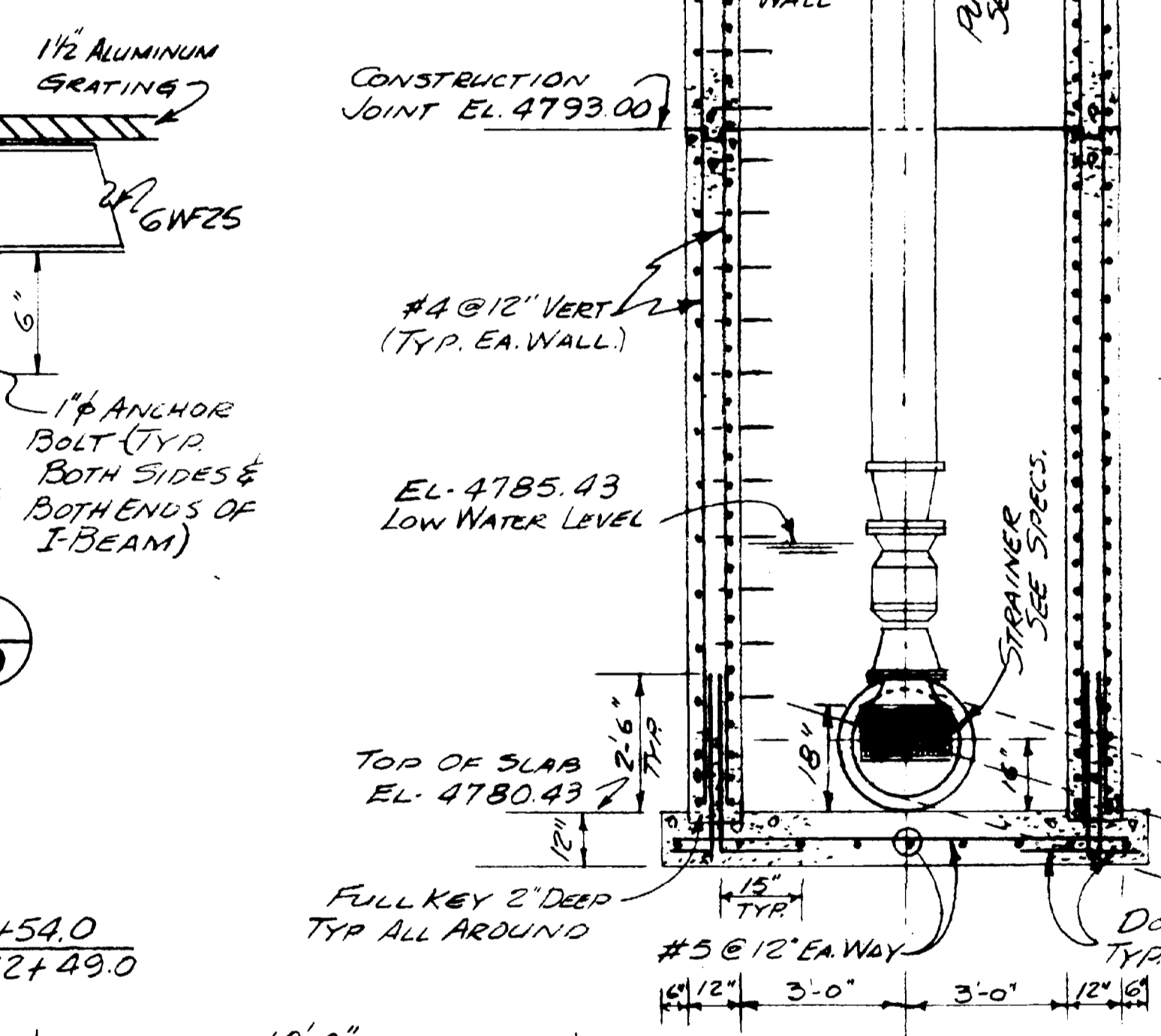


**FLOOR PLAN**

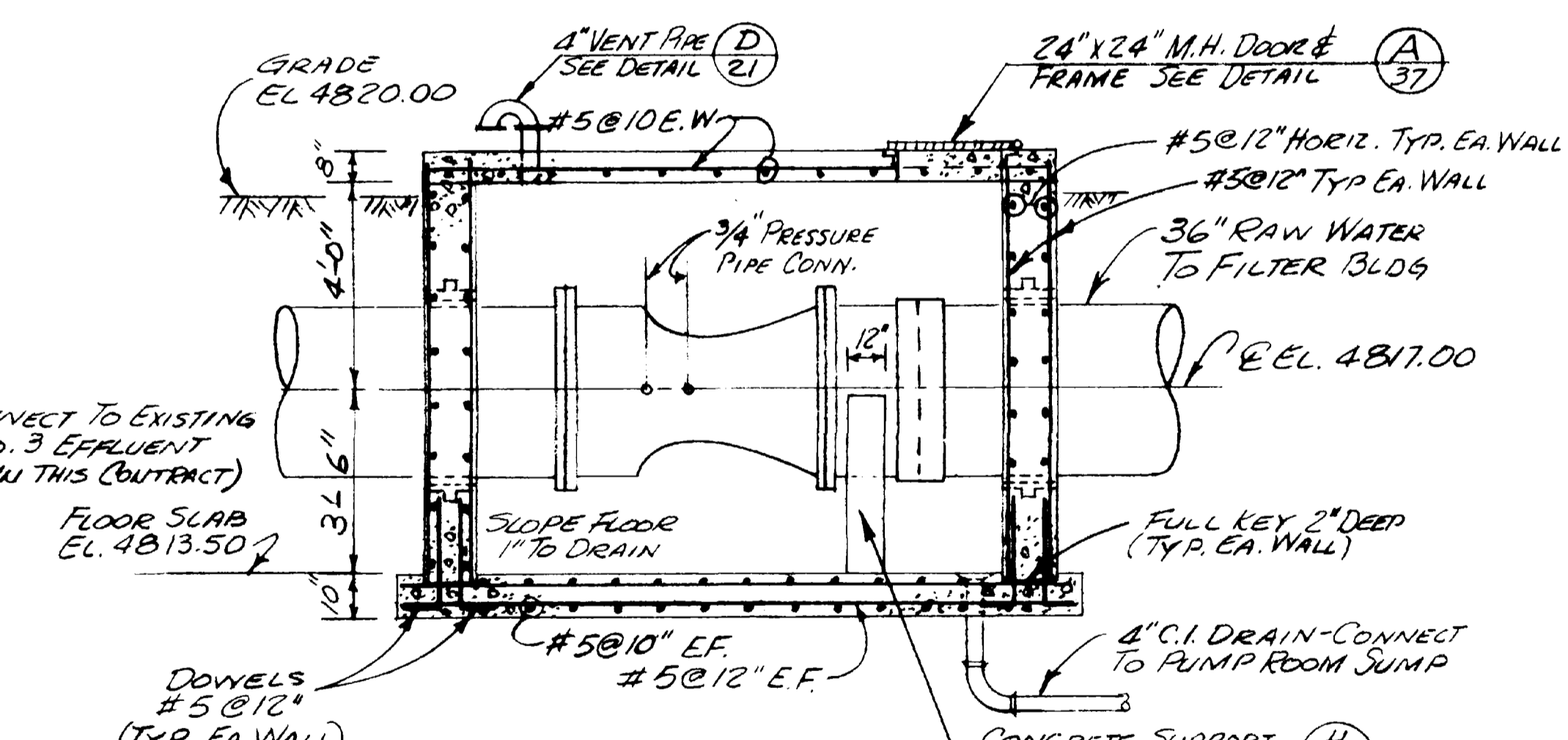
**DETAIL A**  
SCALE: 1 1/2" = 1'-0"



**SECTION 1**  
39

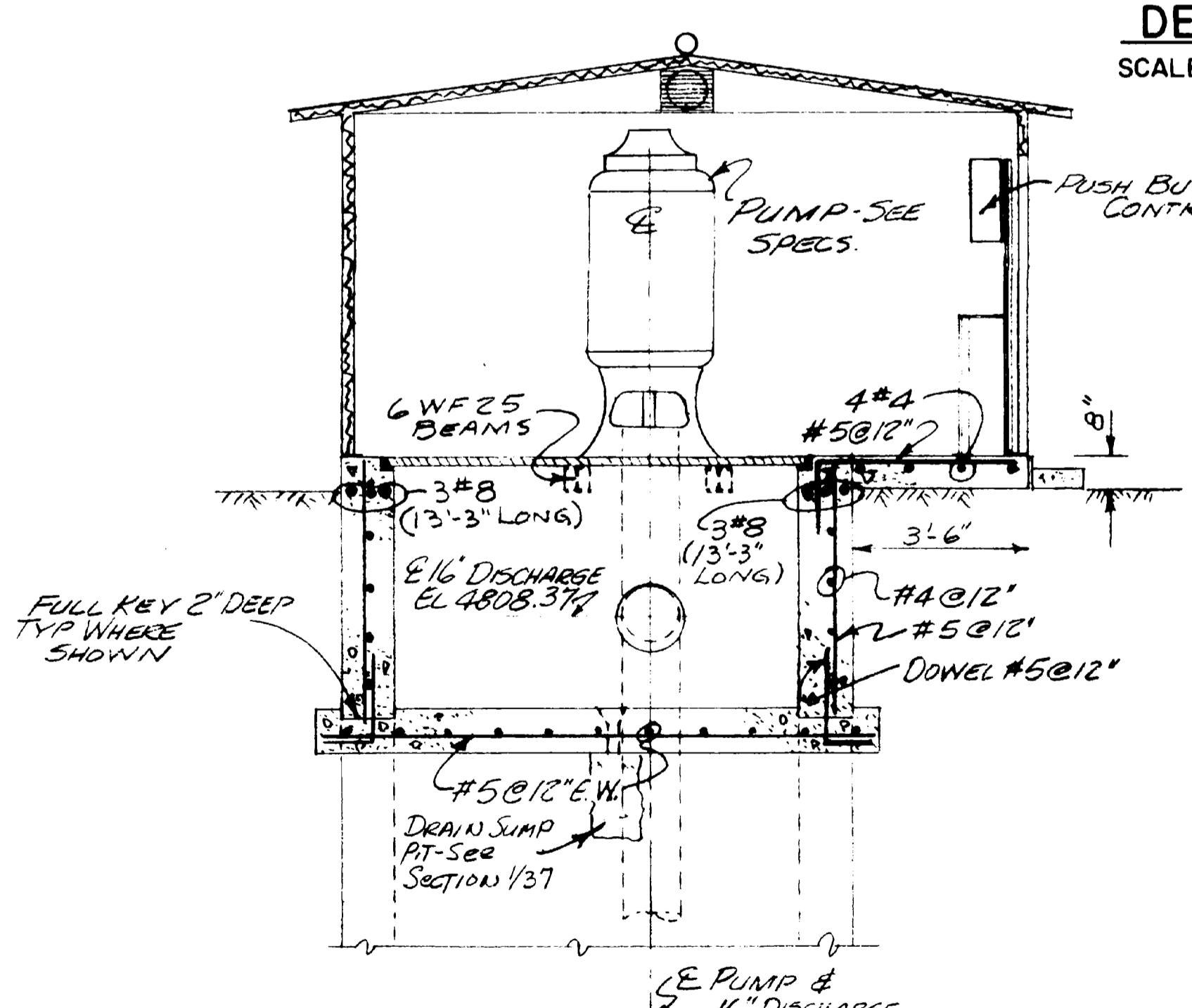


**SECTION 4**  
39

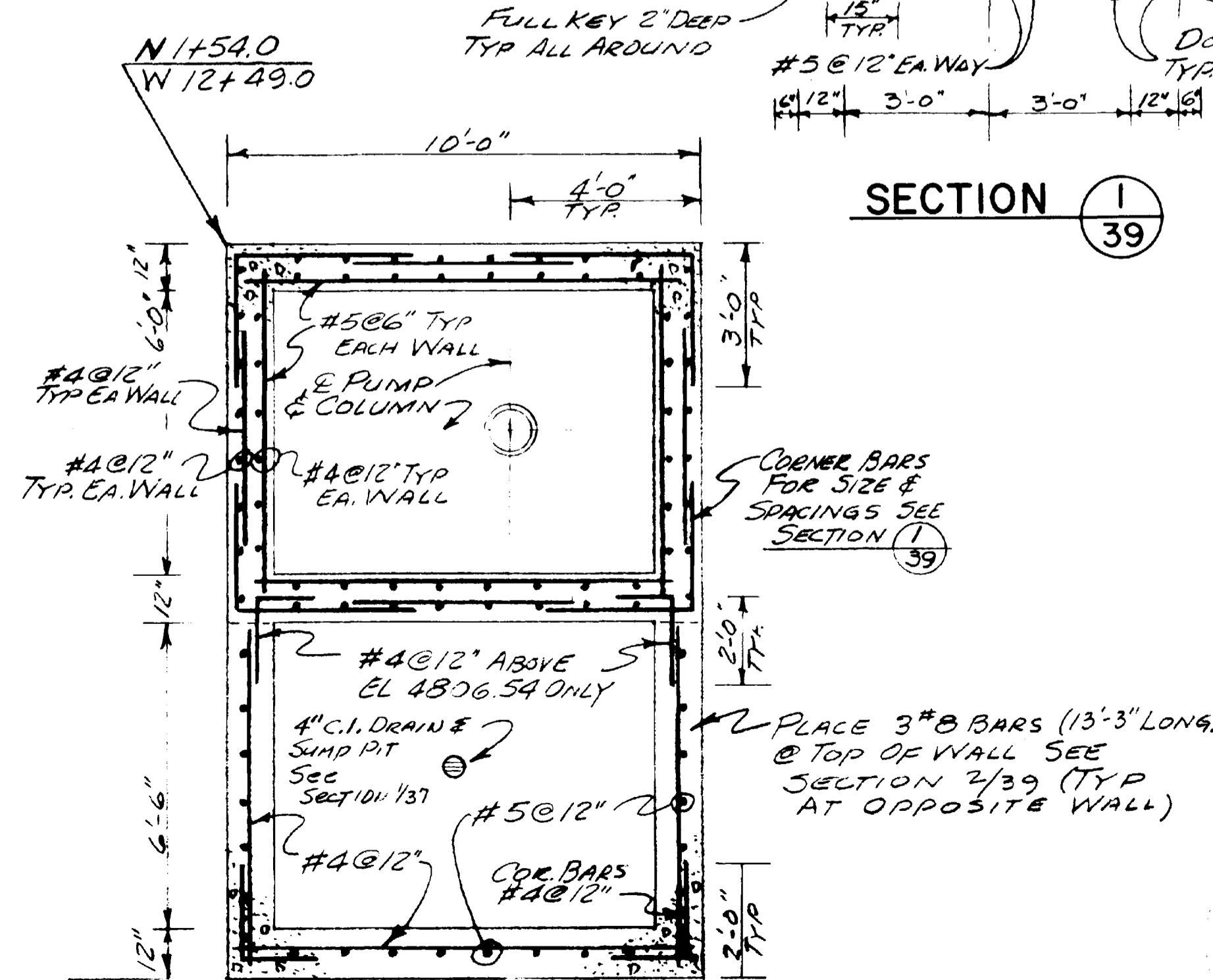


**RAW WATER FLOW METER VAULT DETAILS**  
SCALE: 3/8" = 1'-0"

**SECTION 2**  
39



**SECTION 3**  
39



**RAW WATER PUMP HOUSE DETAILS**  
SCALE: 3/8" = 1'-0"

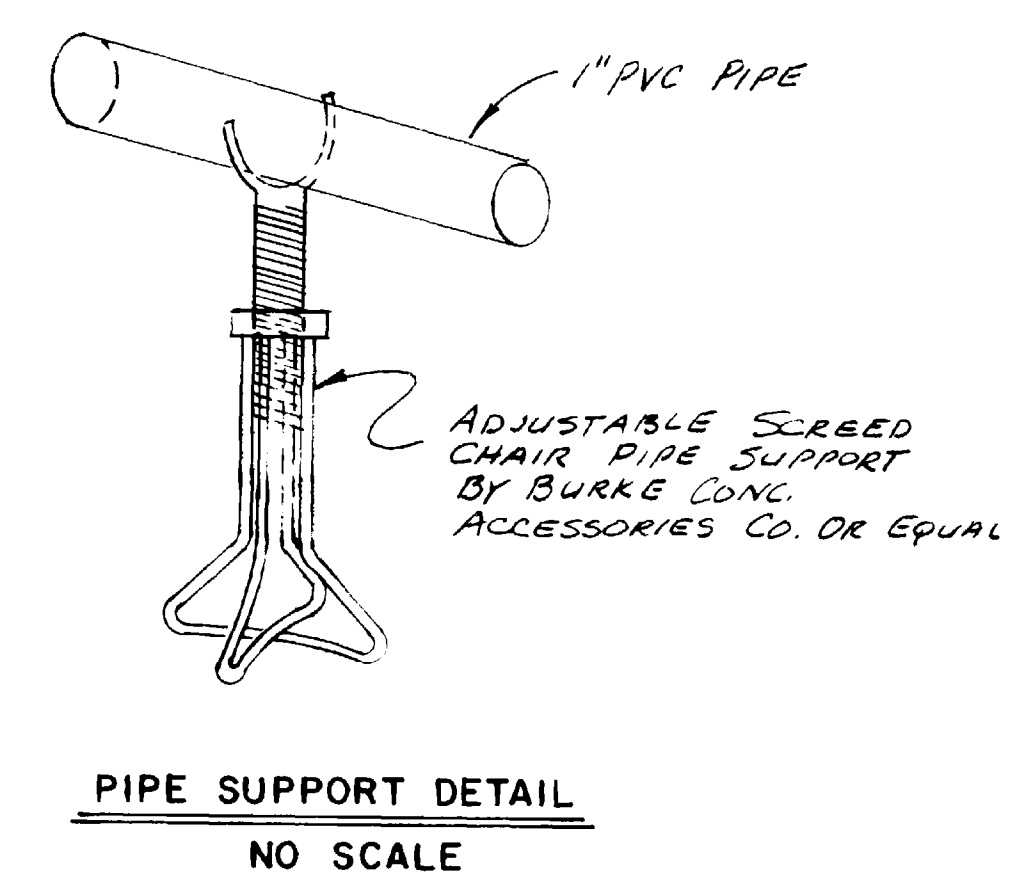
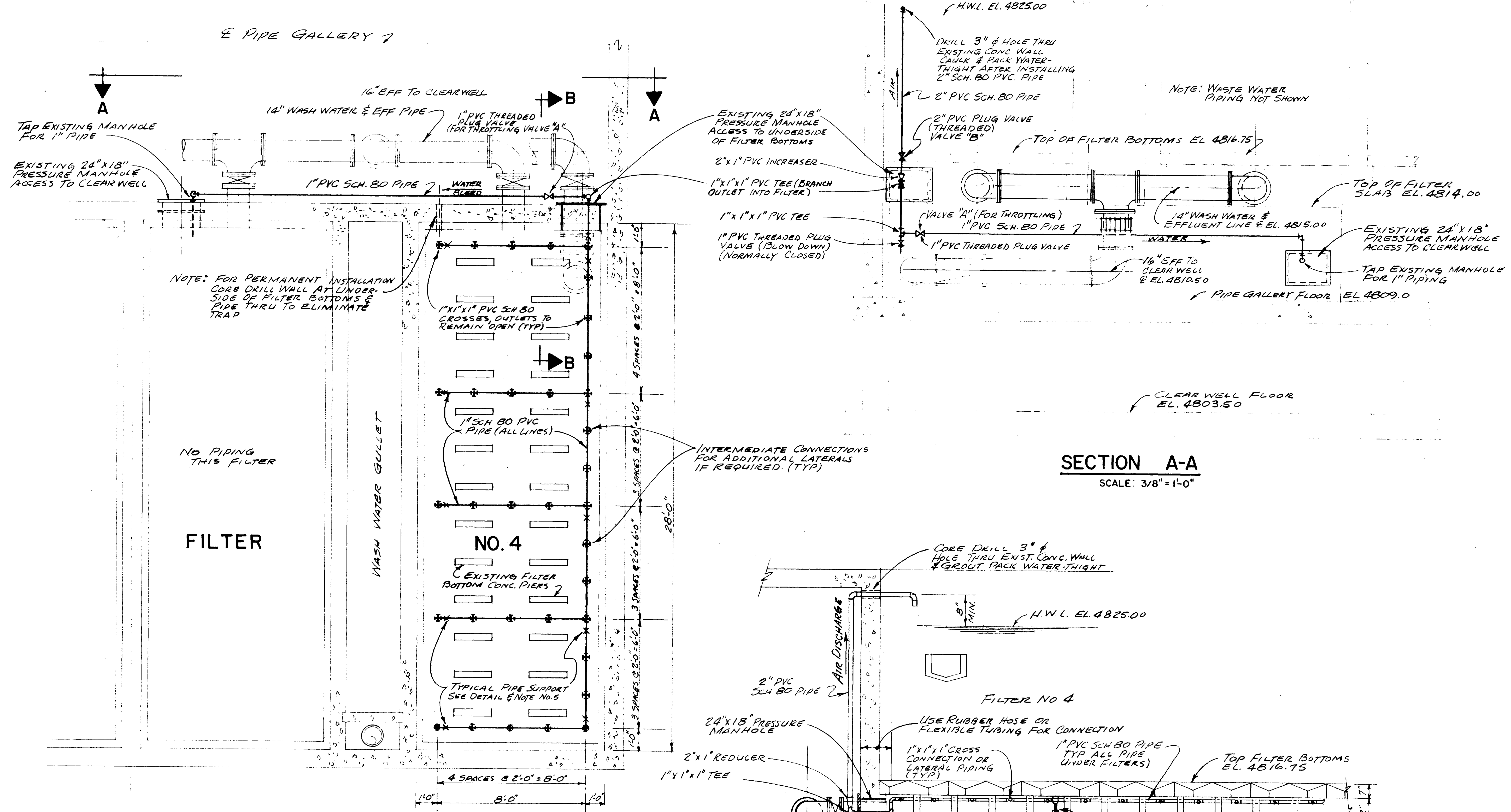
**WATERWORKS IMPROVEMENTS**  
**GRAND JUNCTION, COLORADO**  
 (CONTRACT - I)  
 WATER TREATMENT PLANT  
**RAW WATER PUMPING STATION**  
**RAW WATER FLOW METER VAULT**  
 PLANS - SECTIONS - DETAILS

**HENNINGSON, DURHAM & RICHARDSON, INC.**  
 ENGINEERS • PLANNERS • CONSULTANTS  
 DENVER, COLORADO

JOB NO. 730810  
 DESIGNED: E.F.R.-R.E.R.  
 CHECKED: K.D.H.  
 APPROVED: W.L.B.  
 DATE: DEC. 1967

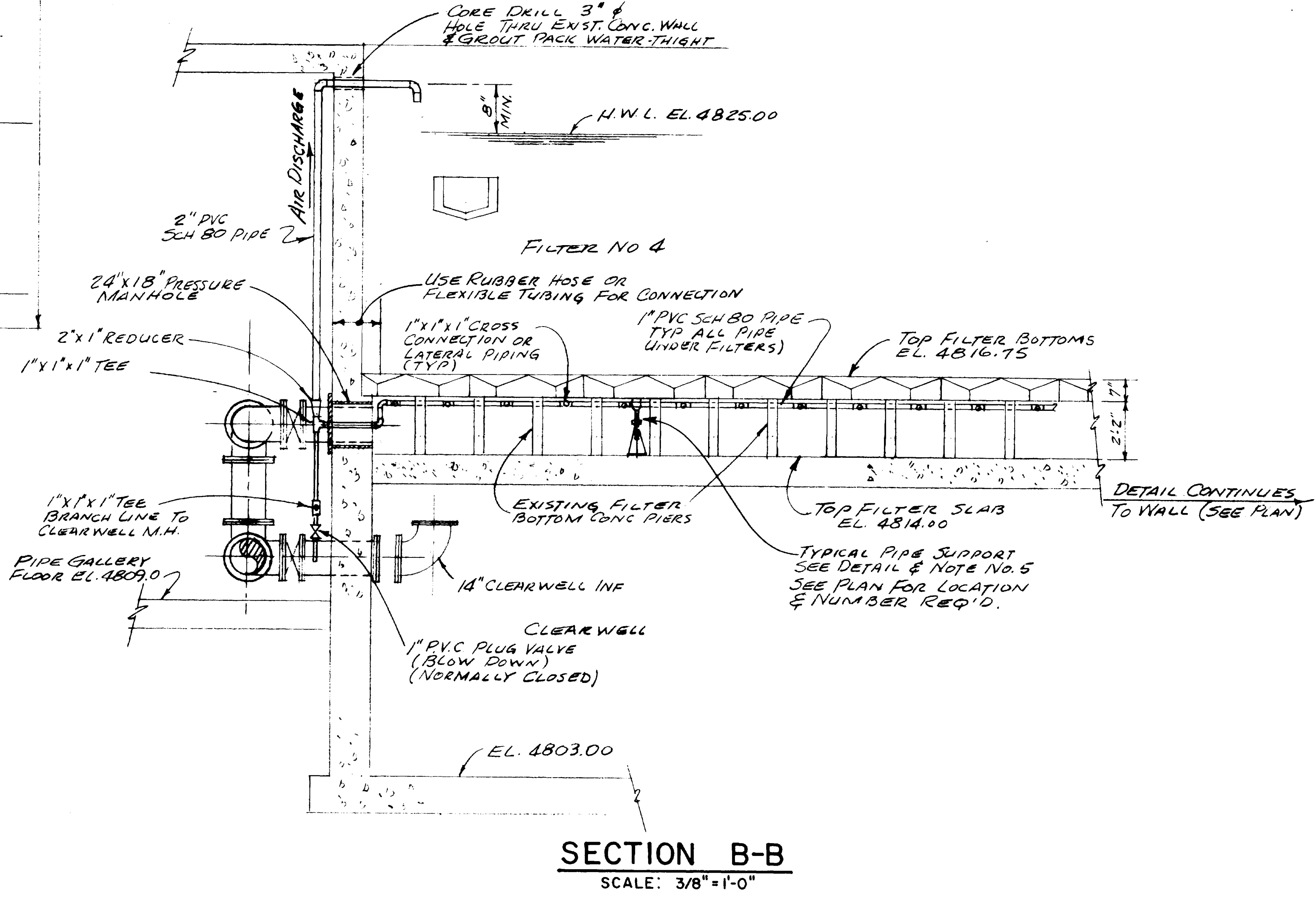
SHEET **39** OF **39**

NO.	DATE	DESCRIPTION	MADE	APPROV.



**PLAN**  
**FILTER UNDERDRAIN**  
**AIR RELEASE PIPING**  
 SCALE: 3/8" = 1'-0"

**SECTION A-A**  
 SCALE: 3/8" = 1'-0"



**SECTION B-B**  
 SCALE: 3/8" = 1'-0"

- NOTES**
1. VALVES TO BE EQUAL TO "CABOT" TU SERIES UNION TYPE BALL VALVE.
  2. ALL FITTINGS UNDER FILTER TO BE THREADED SCHEDULE 80. USE NO SOLVENT WELDED CONNECTIONS.
  3. VALVE "A" IS INTENDED TO BE USED TO THROTTLE FLOW OF WATER FROM THE UNDERSIDE OF THE FILTER INTO THE CLEARWELL. THIS VALVE MUST BE CLOSED DURING BACKWASHING.
  4. VALVE "B" IS TO BE CLOSED ONLY IF EXCESSIVE PUMPING OF WATER TOGETHER WITH AIR OCCURS.
  5. PIPING WITHIN FILTER UNDERDRAIN IS TO BE SUPPORTED BY ADJUSTABLE PIPE SCREED CHAIRS AS MANUFACTURED BY BURKE CONCRETE ACCESSORIES, INC. CHAIRS ARE TO BE GALVANIZED.

WATERWORKS IMPROVEMENTS  
 GRAND JUNCTION, COLORADO

FILTER PLANT MODIFICATIONS  
**AIR RELEASE PIPING**  
**PLANS & DETAILS**

**HENNINGSON, DURHAM & RICHARDSON, INC.**  
 ENGINEERS • PLANNERS • CONSULTANTS  
 DENVER, COLORADO

NO.	DESCRIPTION	DATE	BY	APPROVED
1	ISSUED FOR PERMITS	11/15/97	A.TACITO	E.ROTH
2	ISSUED FOR CONSTRUCTION	12/2/97	A.TACITO	E.ROTH