

LIST OF DRAWINGS

SHEET NO.	TITLE
1.	GENERAL LAYOUT
2.	ELEVATIONS AND WALL SECTIONS
3.	OPERATING FLOOR AND ROOF PLANS
4.	ARCHITECTURAL MISCELLANEOUS DETAILS
5.	STRUCTURAL OPERATING FLOOR PLAN
6.	STRUCTURAL BASEMENT FLOOR PLAN
7.	SECTIONS AND DETAILS
8.	SECTIONS AND DETAILS
9.	BEAM SCHEDULE AND MISCELLANEOUS DETAILS
10.	EXISTING FILTER BUILDING MODIFICATIONS
11.	STANDARD CONCRETE DETAILS
12.	HVAC FLOOR PLANS AND LEGEND
13.	HVAC SECTION AND DETAILS
14.	ELECTRICAL OPERATING AND BASEMENT FLOOR PLANS
15.	ELECTRICAL ONE-LINE DIAGRAMS AND LEGEND
16.	ELECTRICAL SCHEMATICS AND MISCELLANEOUS DETAILS

WICHITA, KANSAS

WATER WORKS IMPROVEMENTS

PLANS FOR

HYDROELECTRIC PLANT

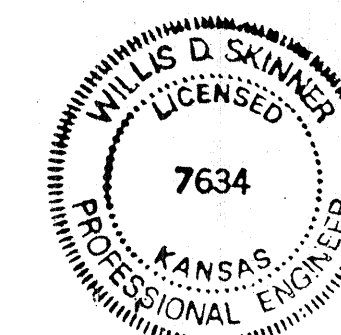
PROJECT NO. 14140

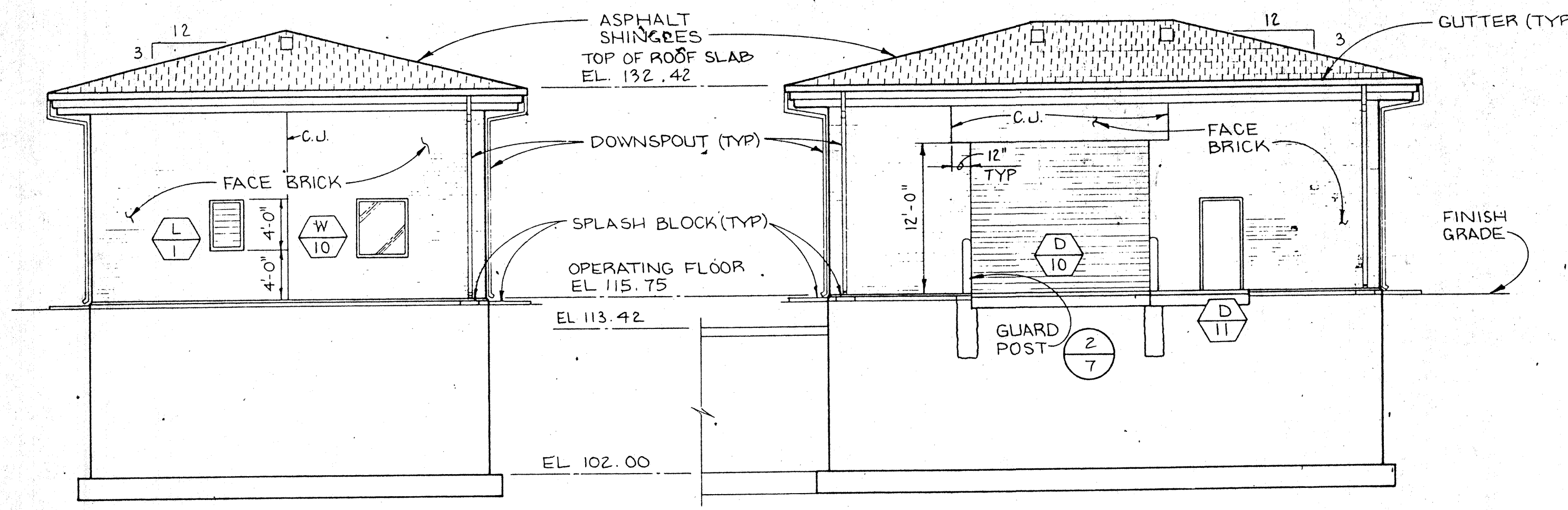
BLACK & VEATCH

ENGINEERS-ARCHITECTS

KANSAS CITY, MISSOURI

1988

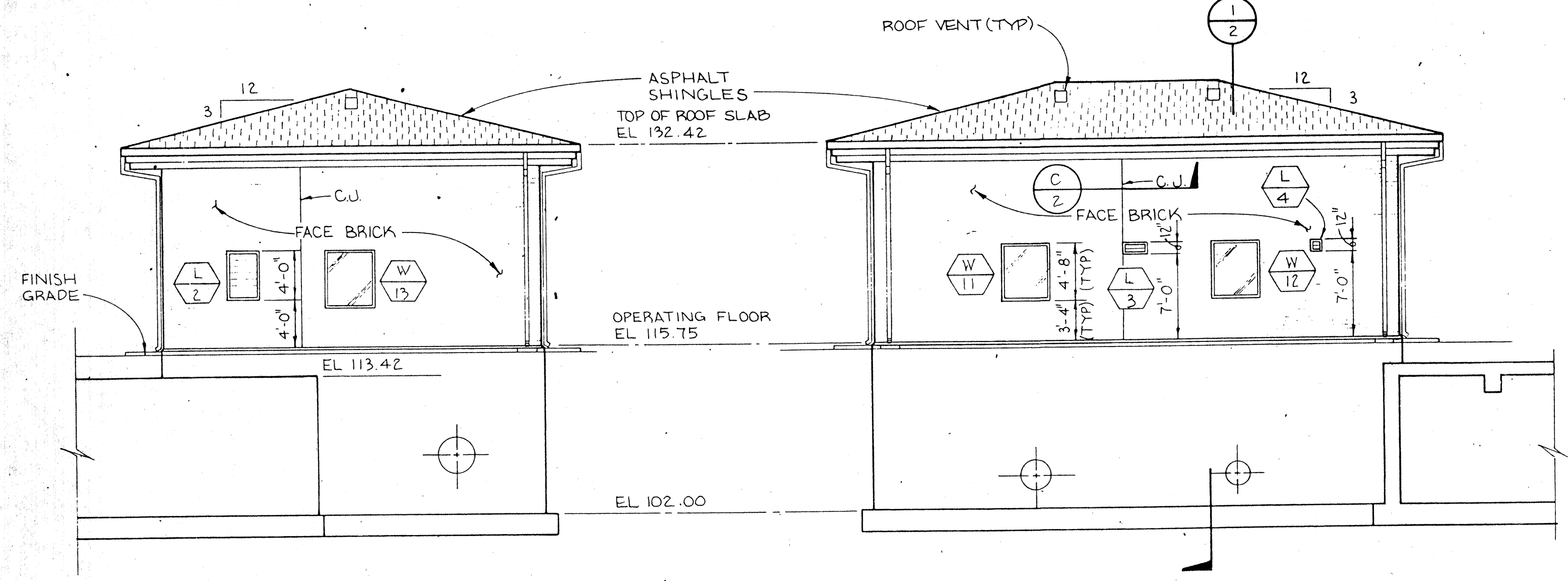




NORTH ELEVATION
1/8" = 1'-0"

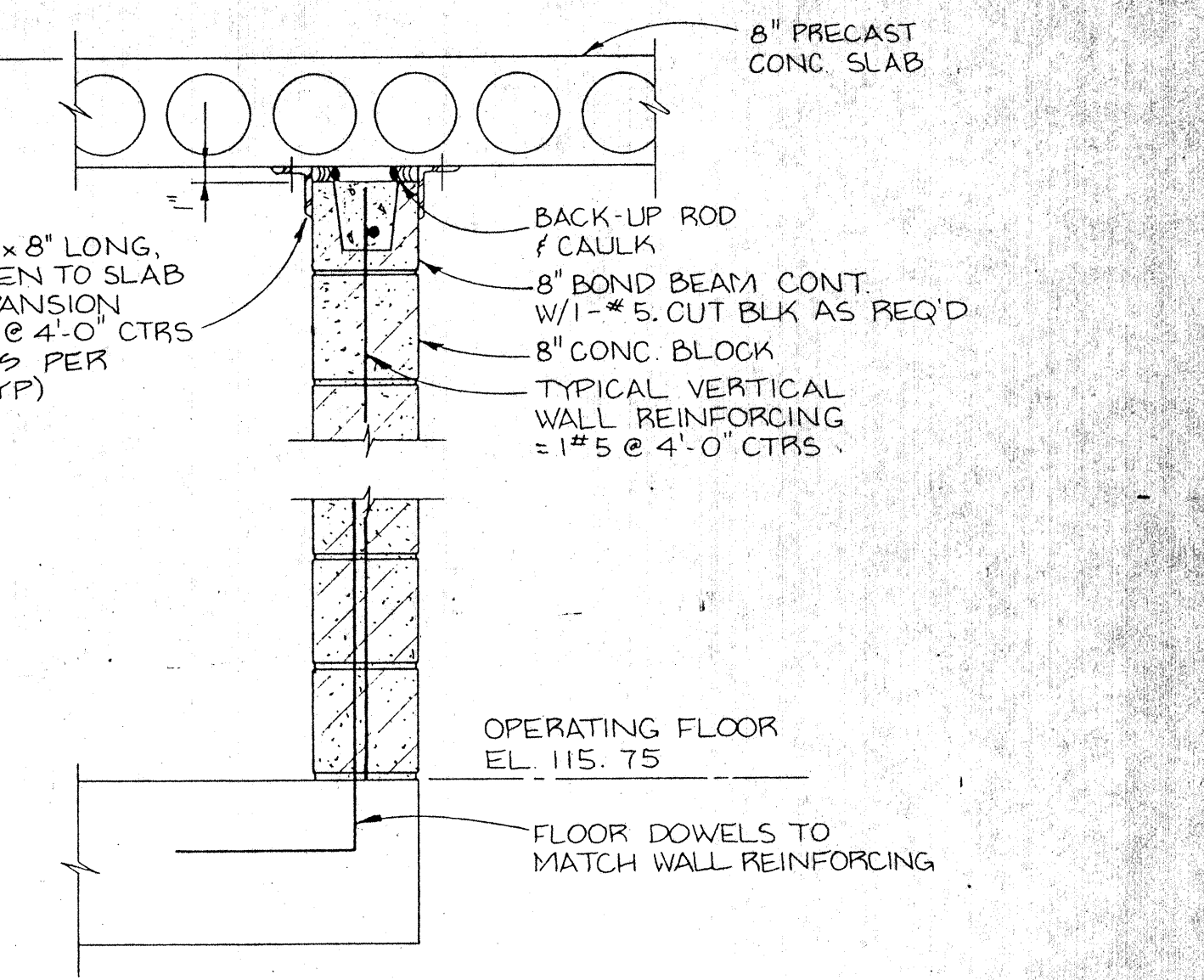
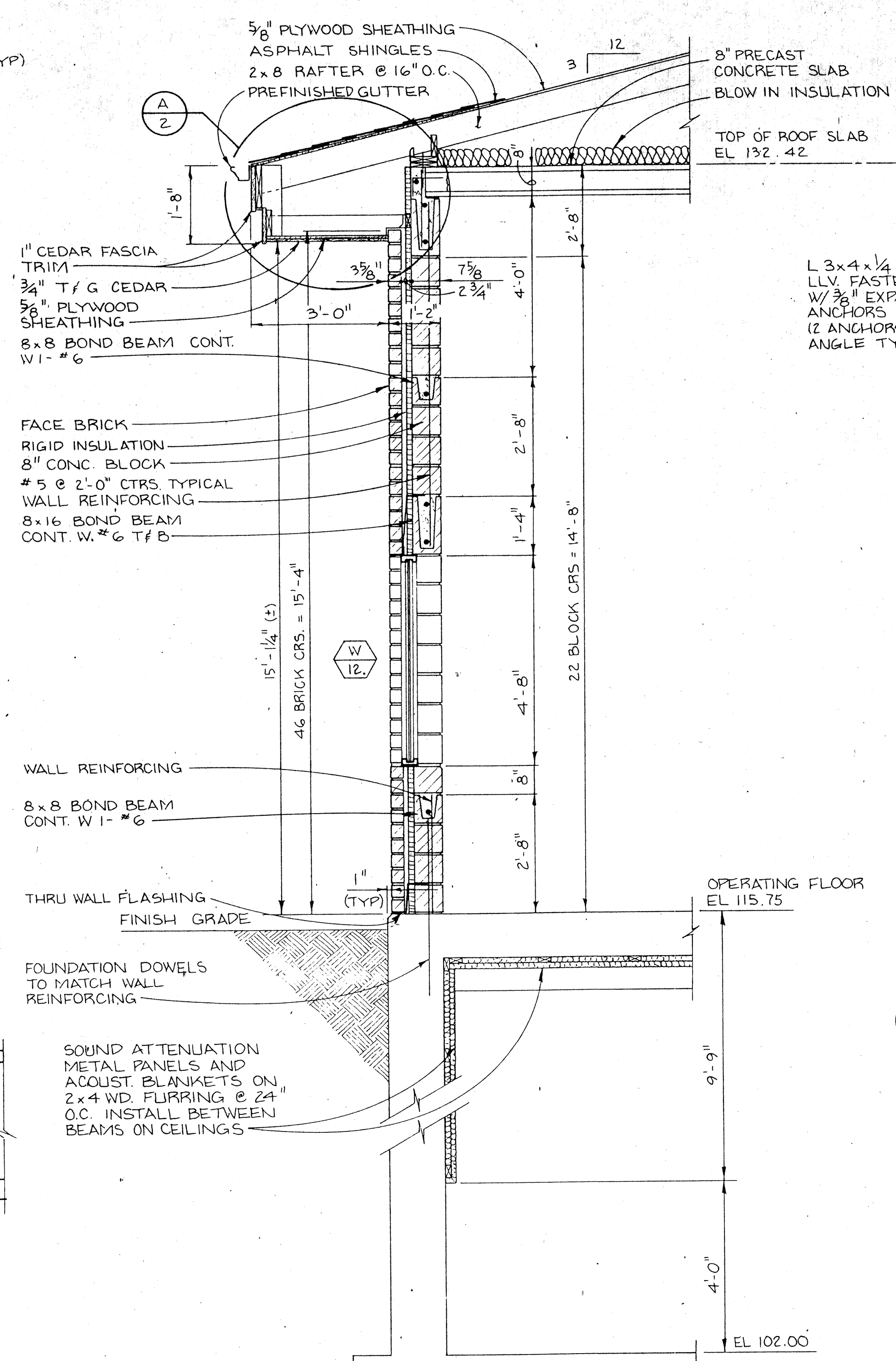
EAST ELEVATION
1/8" = 1'-0"

NOTE: FOR DOOR, WINDOW & LOUVER, DETAILS SEE SHEET 4

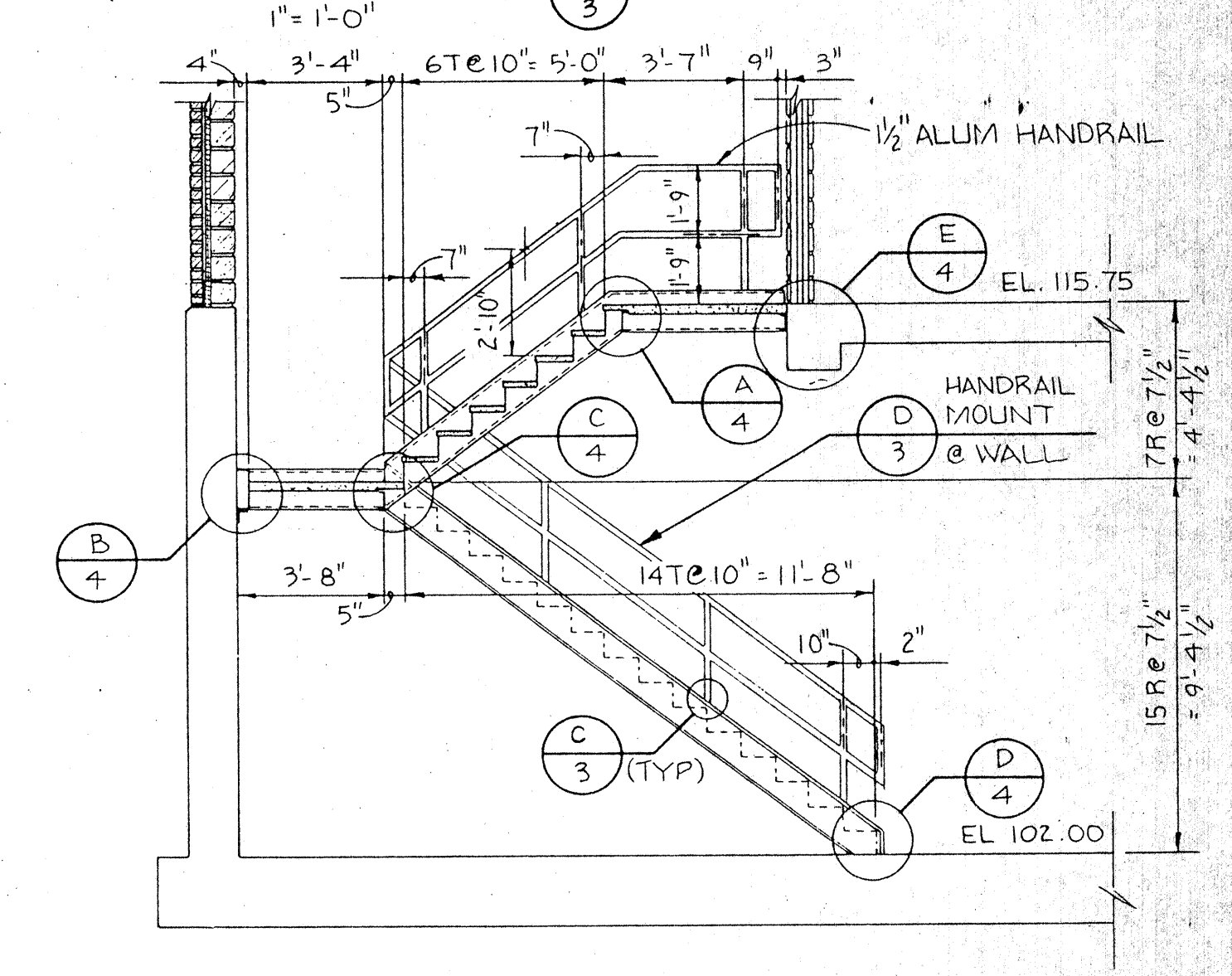


SOUTH ELEVATION
1/8" = 1'-0"

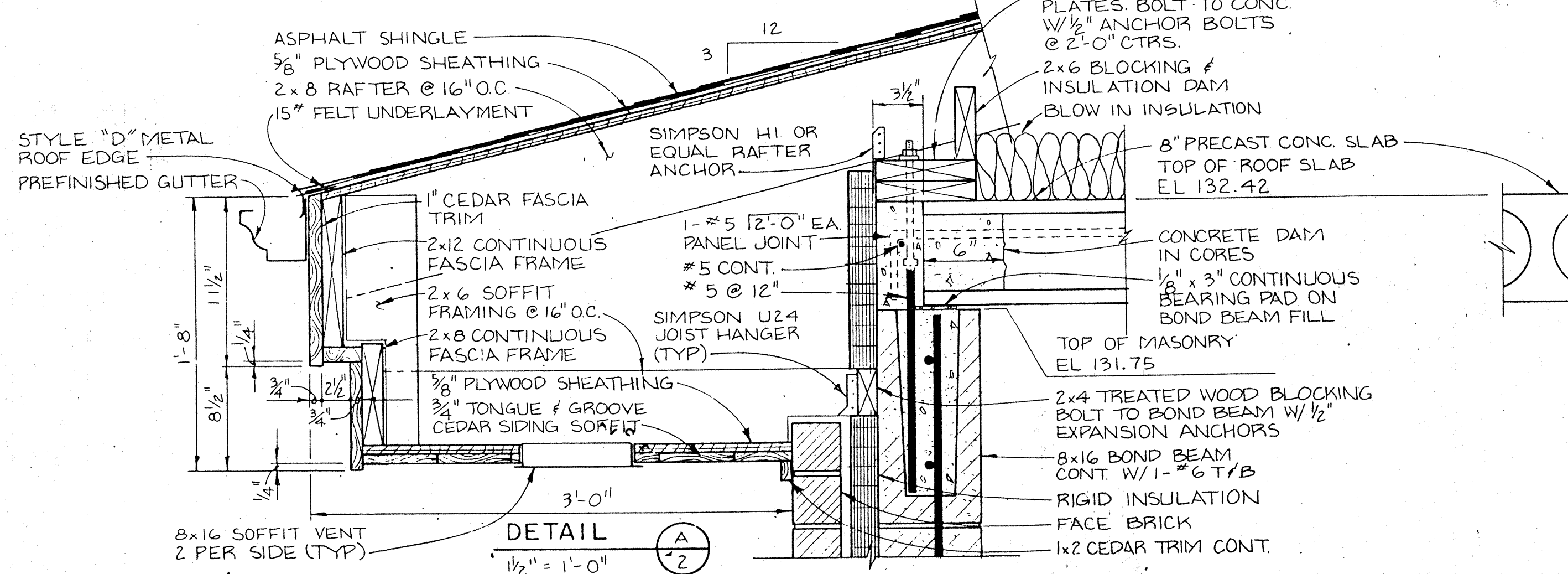
WEST ELEVATION
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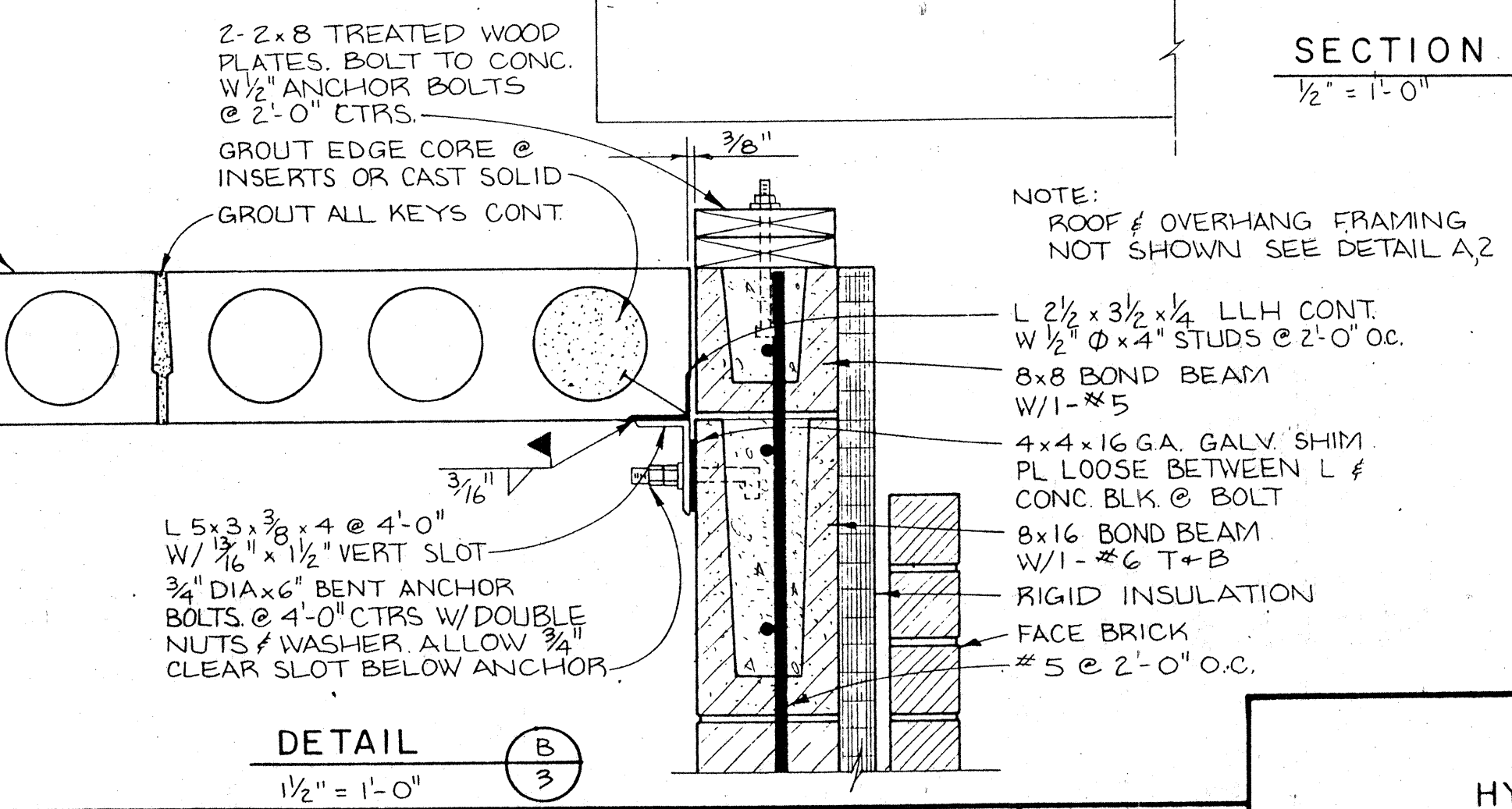
SECTION
1" = 1'-0"



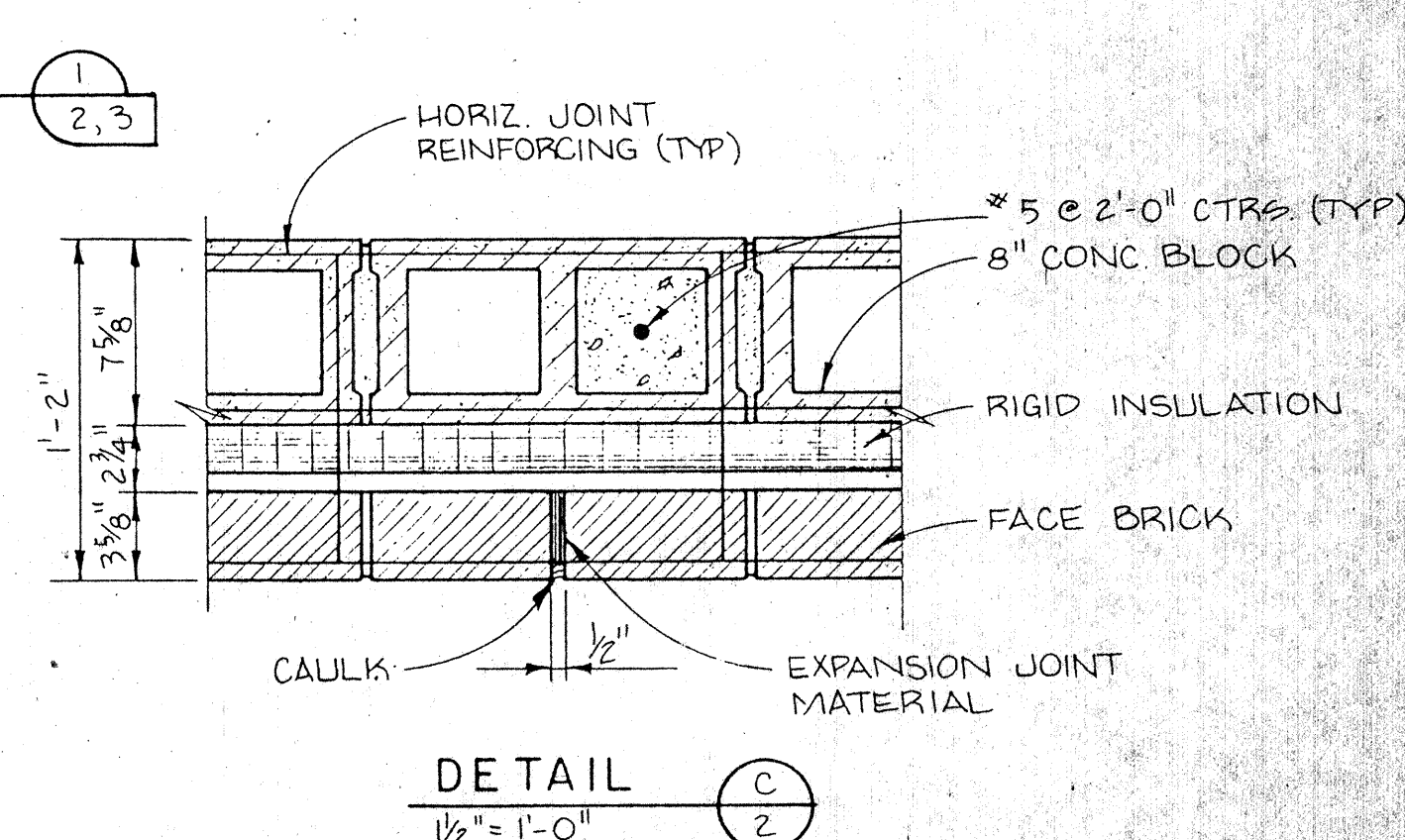
SECTION
1/4" = 1'-0"



DETAIL A
1/2" = 1'-0"



DETAIL B
1/2" = 1'-0"



DETAIL C
1/2" = 1'-0"

NOTE: ROOF OVERHANG FRAMING NOT SHOWN SEE DETAIL A,2

NO.	BY	CK	APP	DATE	REVISIONS AND RECORD OF ISSUE
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

DESIGNED: RRR
 DETAILED: JRA
 CHECKED: CFV
 APPROVED: [Signature]
 DATE: April 22, 88

Black & Veatch
 Engineers - Architects
 Kansas City, Missouri

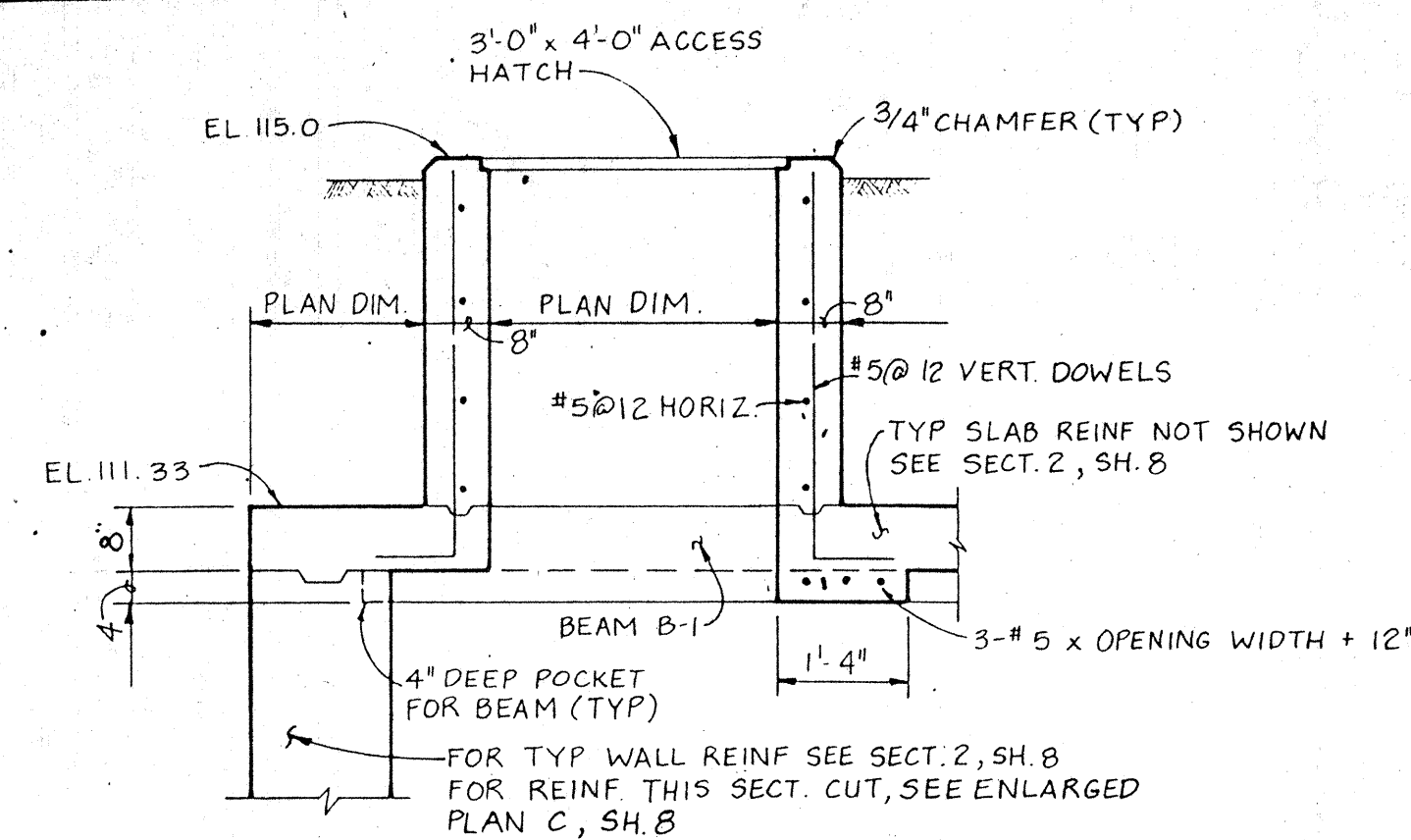
PROJECT NO.
 14140

WICHITA, KANSAS
 HYDROELECTRIC PLANT

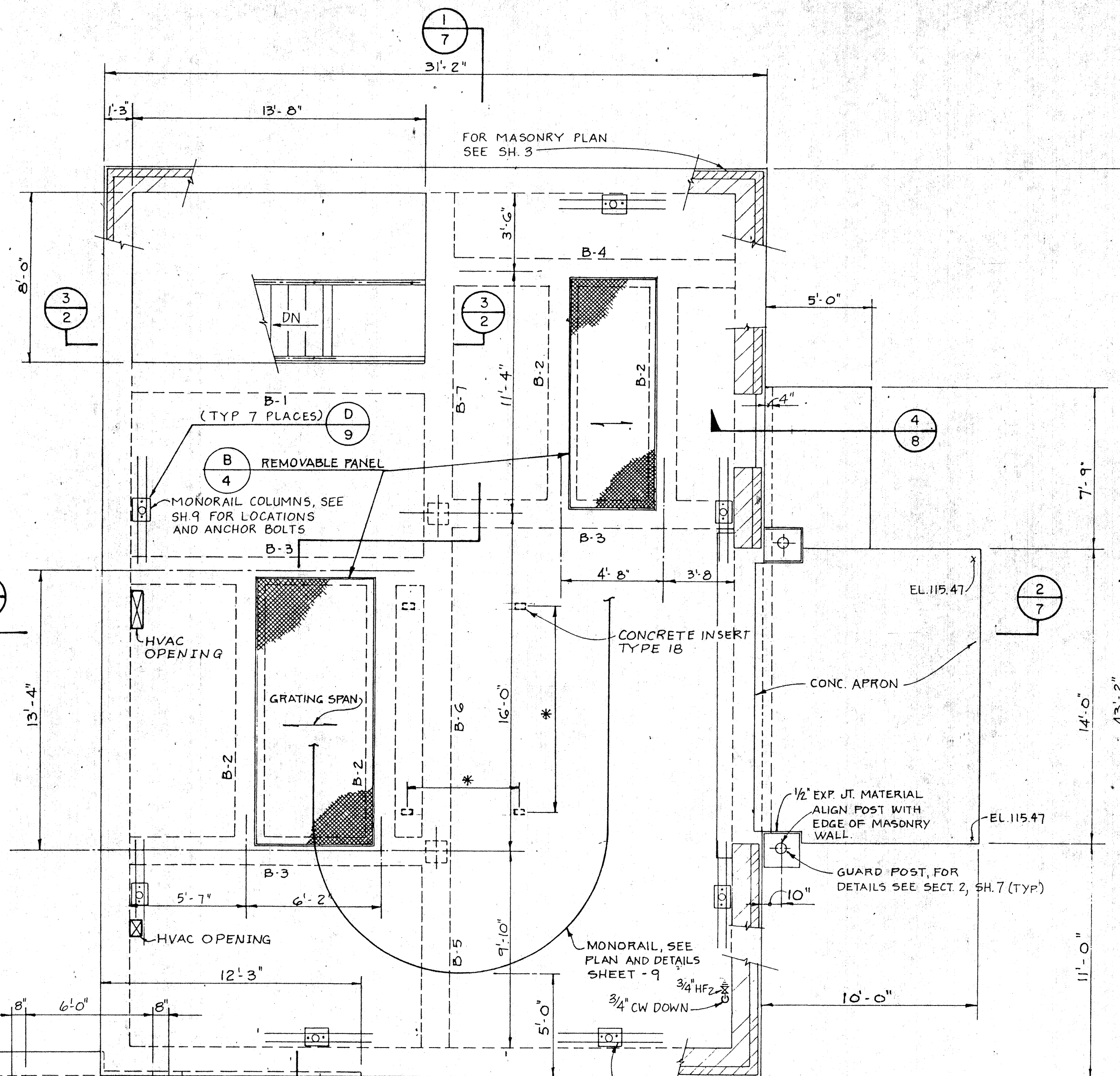
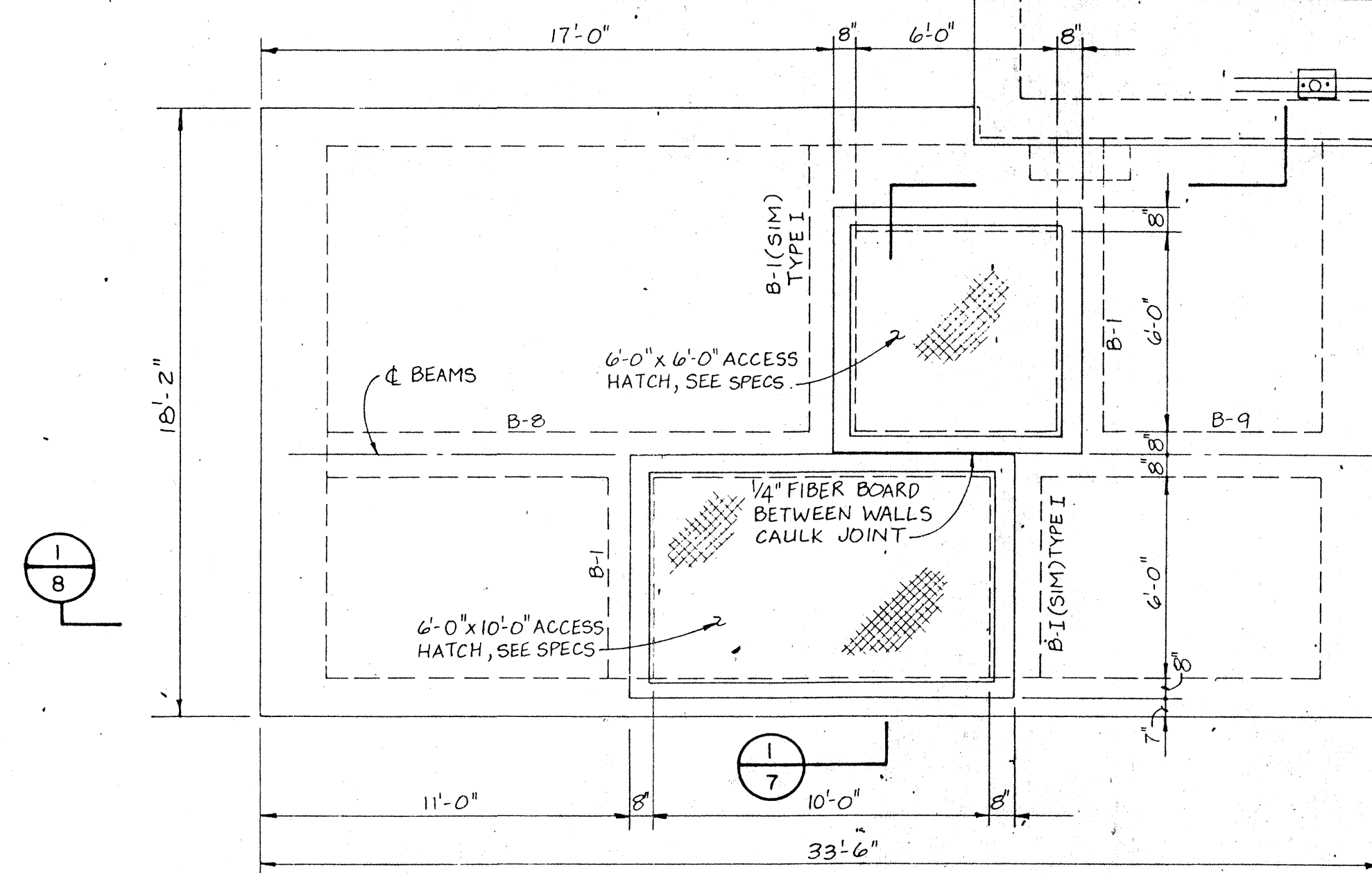
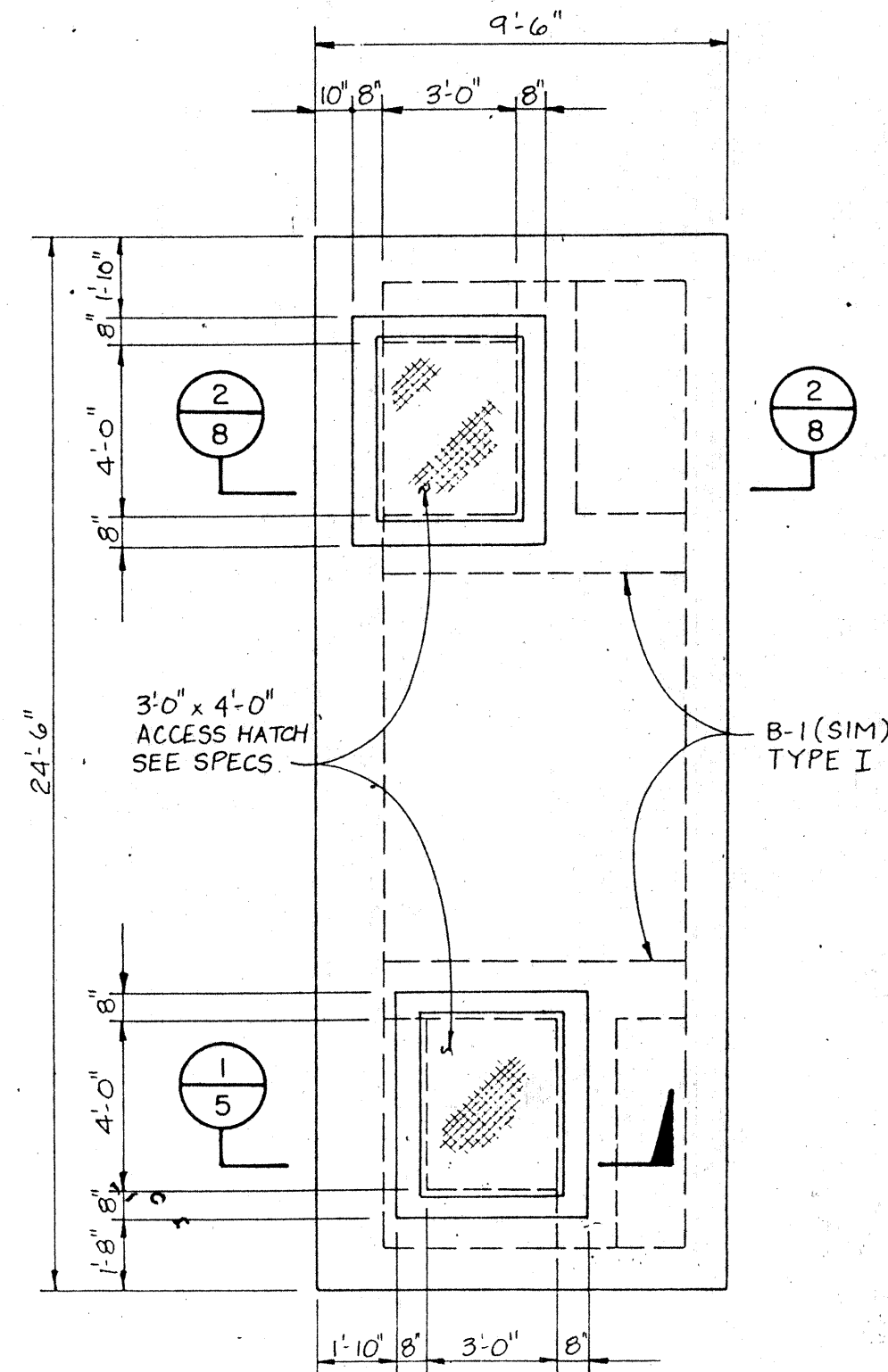
ELEVATIONS AND
WALL SECTIONS

WILLIS D. SKINNER
 LICENSED
 7634
 KANSAS
 PROFESSIONAL ENGINEER

SHEET
 2 OF 16



SECTION 1/2" = 1'-0"



* AS REQUIRED BY EQUIPMENT FURNISHED
2" x 5" x 5'-0" LG. T & B @ 4" CENTERED AT COLUMN LOCATIONS (7 PLACES)

NOTE:
CONTRACTOR SHALL NOT PLACE BACKFILL AGAINST BUILDING OR VAULT WALLS UNTIL FLOOR OR ROOF SLABS HAVE BEEN PLACED AND HAVE GAINED STRENGTH SUFFICIENT TO WITHSTAND EARTH AND EQUIPMENT LOADS

OPERATING FLOOR PLAN
1/4" = 1'-0"

NO.	BY	CHK	APP	DATE	REVISIONS AND RECORD OF ISSUE
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

DESIGNED NGM, LS.
CHECKED AEH
APPROVED [Signature]
DATE April 22, 88

Black & Veatch
Engineers - Architects
Kansas City, Missouri

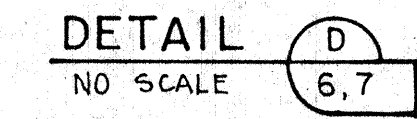
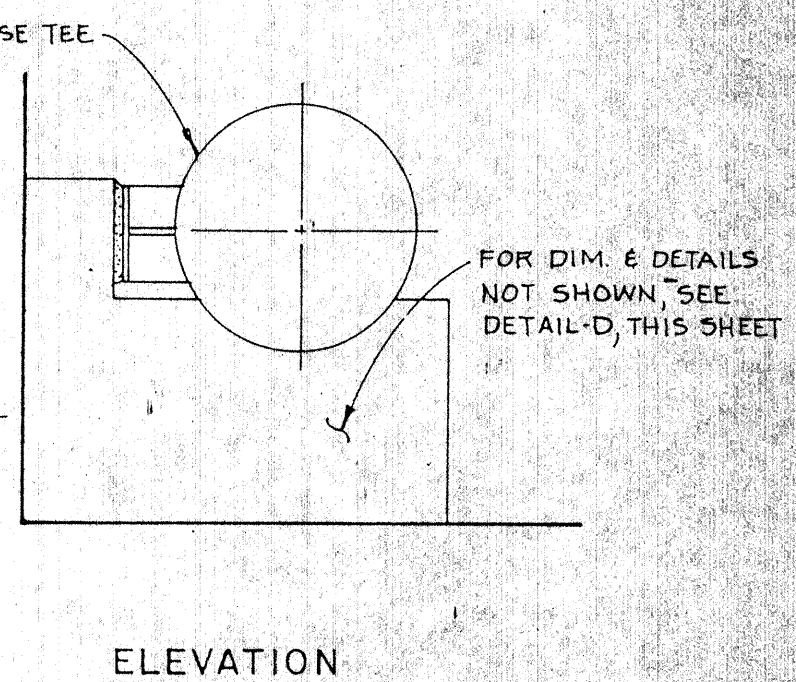
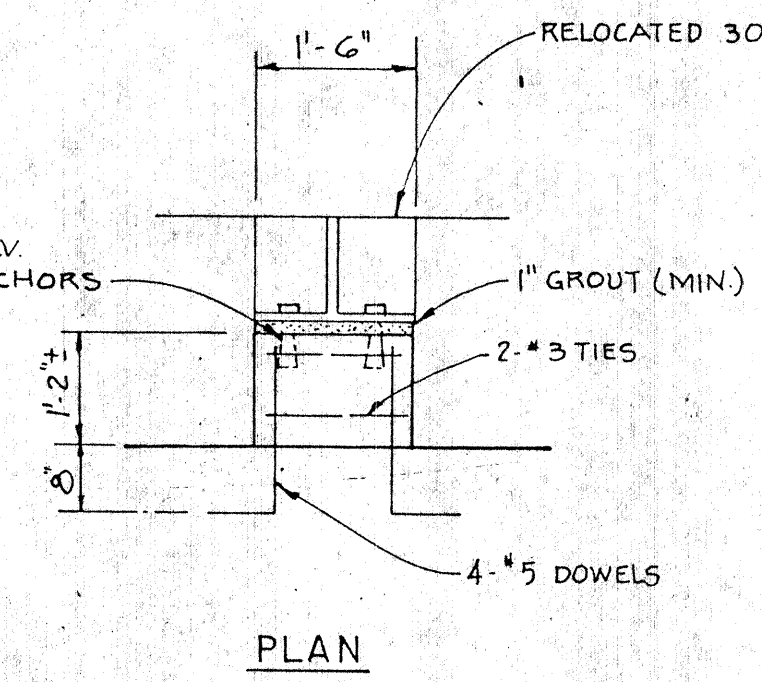
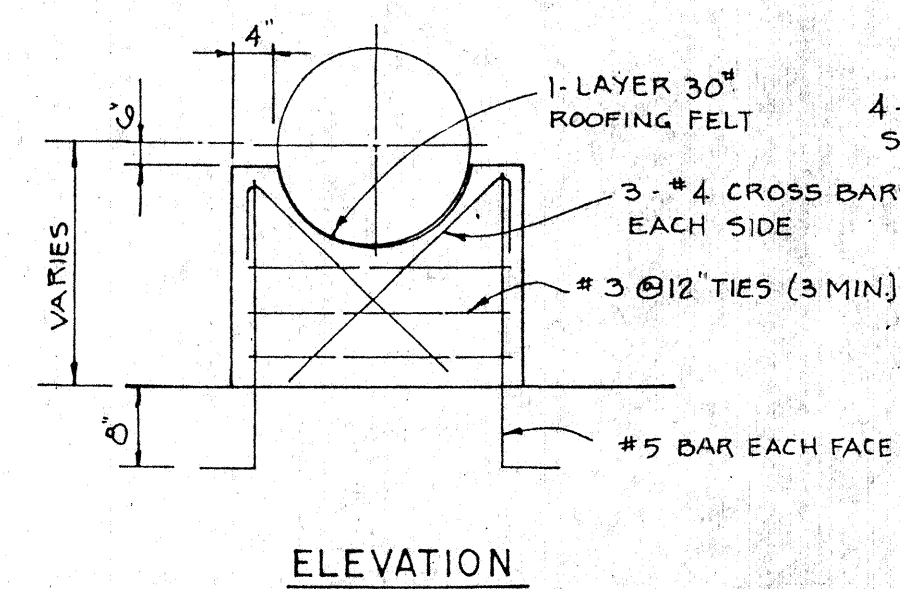
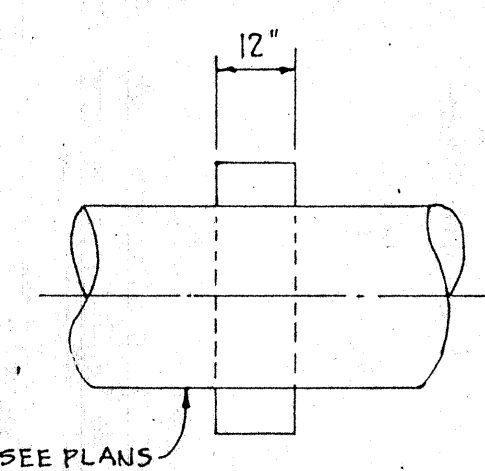
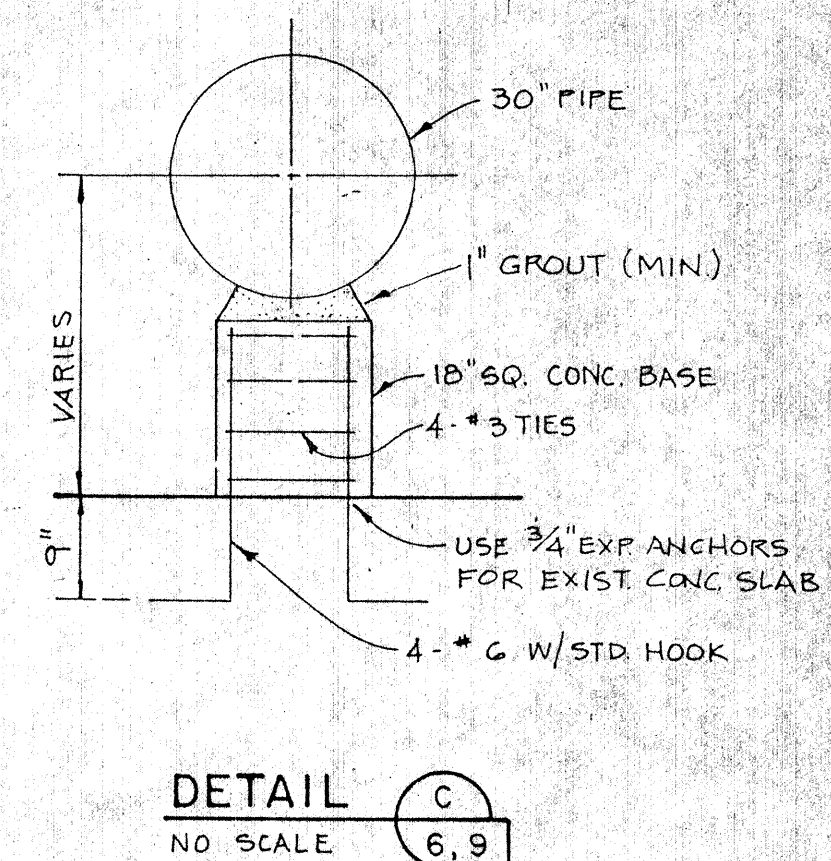
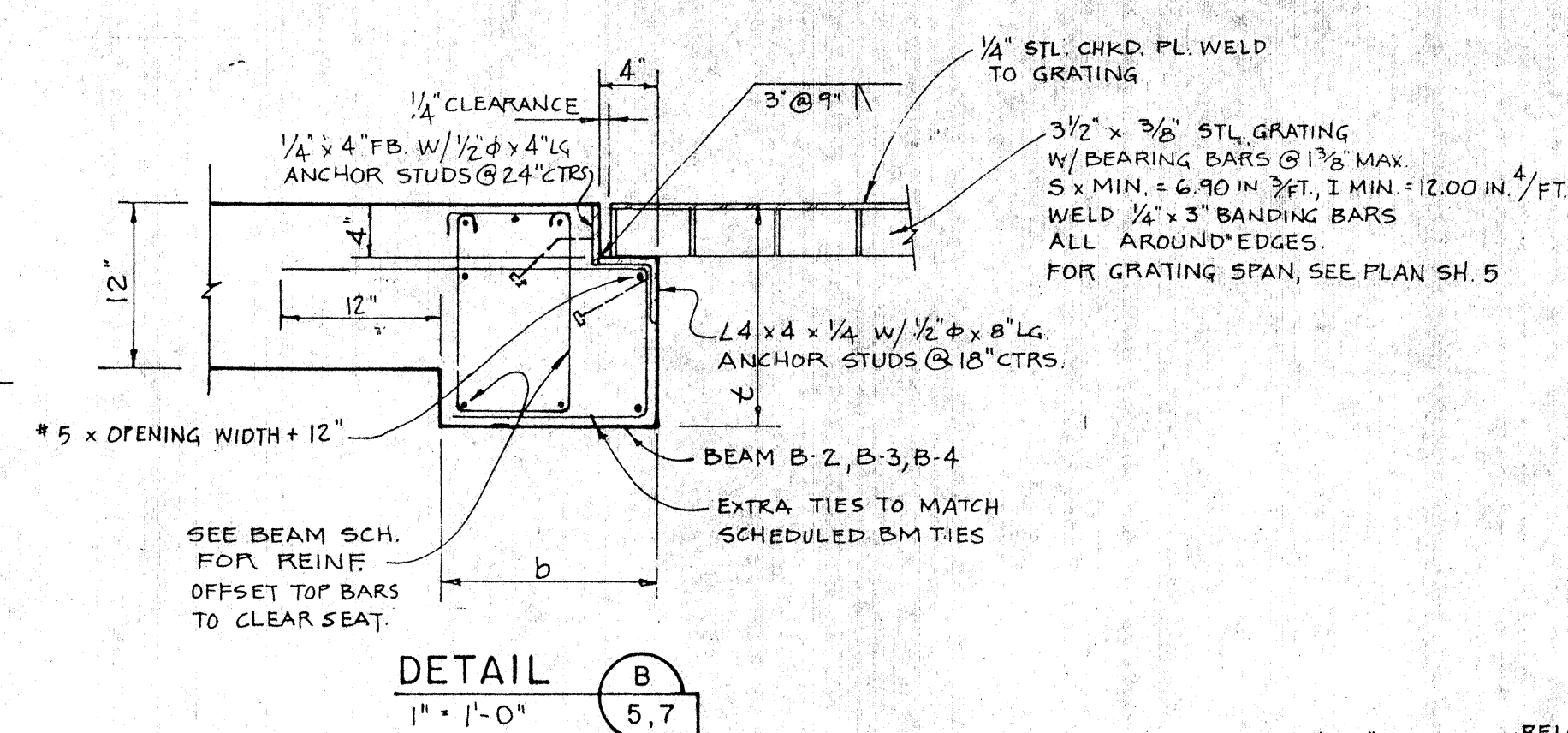
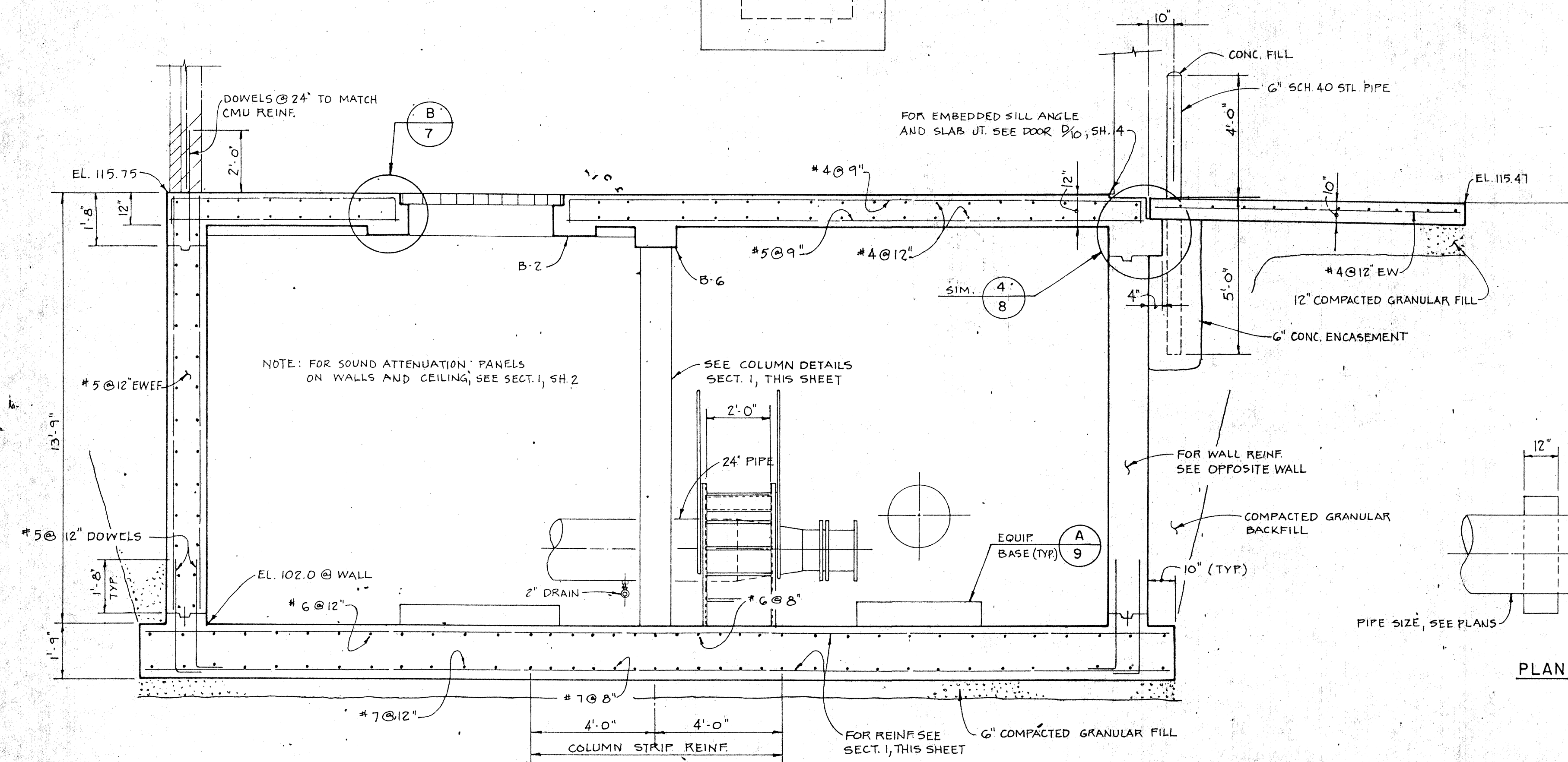
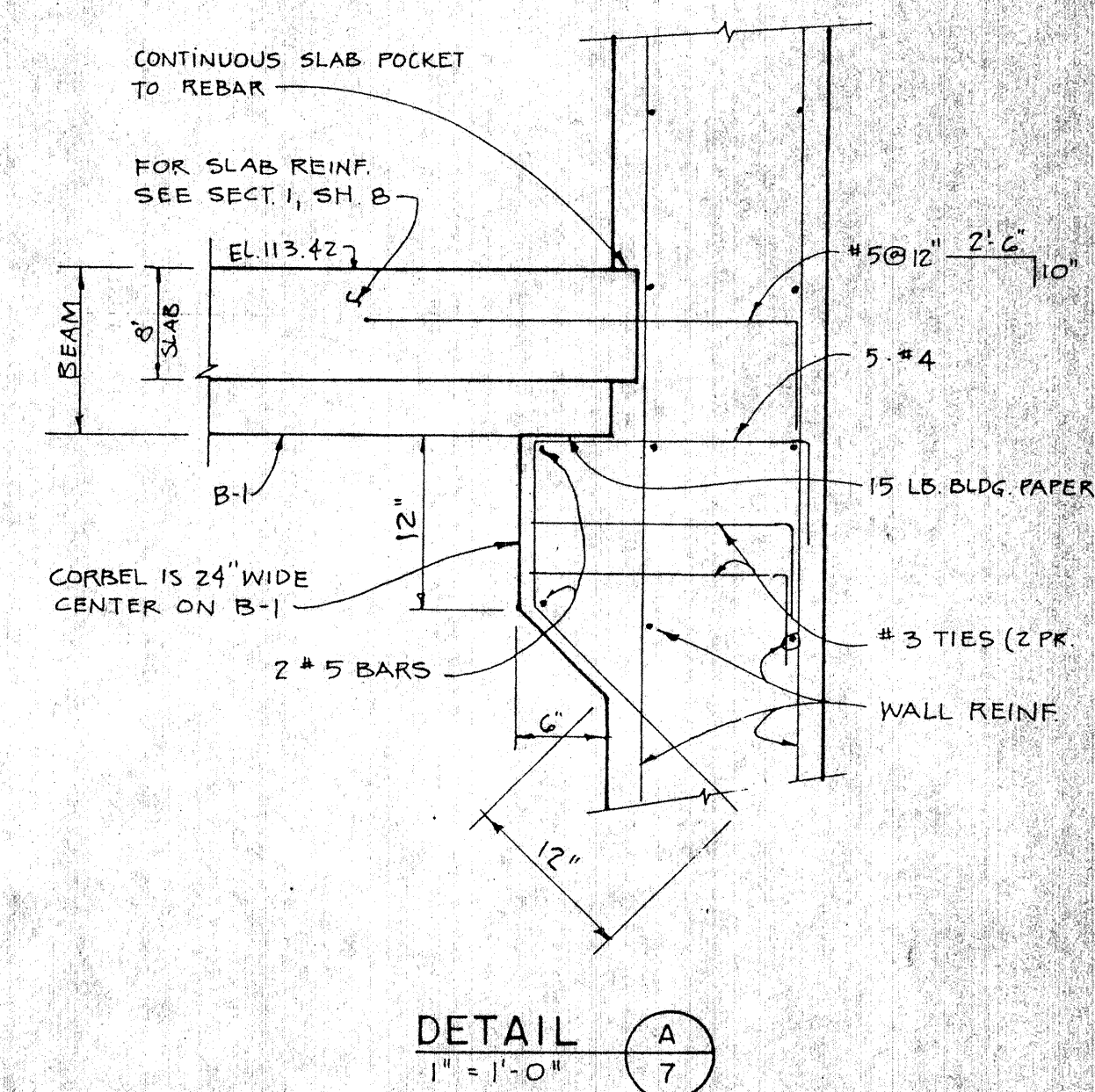
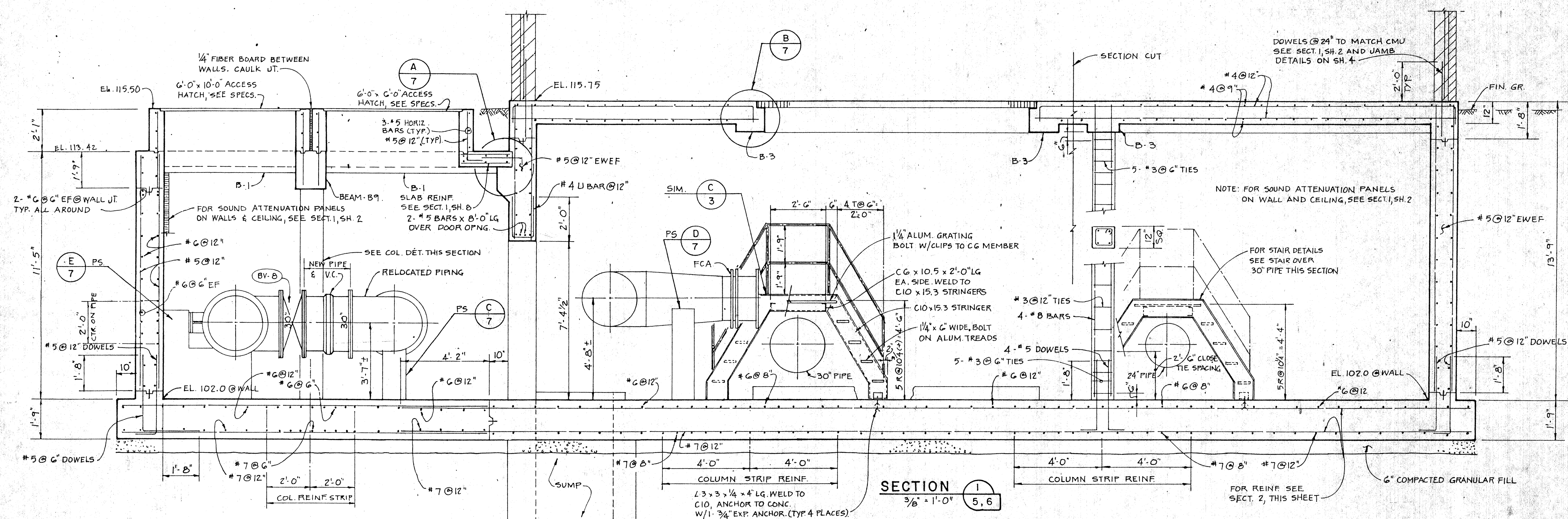
PROJECT NO.
14140

WICHITA, KANSAS
HYDROELECTRIC PLANT

STRUCTURAL OPERATING FLOOR PLAN

WILLIS D. SKINNER
LICENSED
7634
KANSAS
PROFESSIONAL ENGINEER

SHEET
5 OF 16

[illegible]

DESIGNED NGM, LS.
DETAILED AEH.
CHECKED RNS.
APPROVED *[Signature]*
DATE April 22, '88

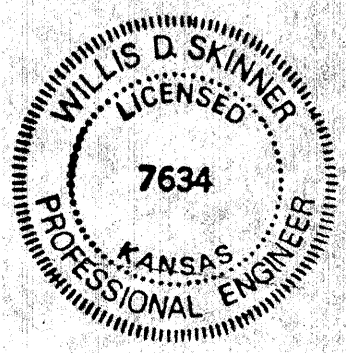


Black & Veatch
Engineers - Architects
Kansas City, Missouri

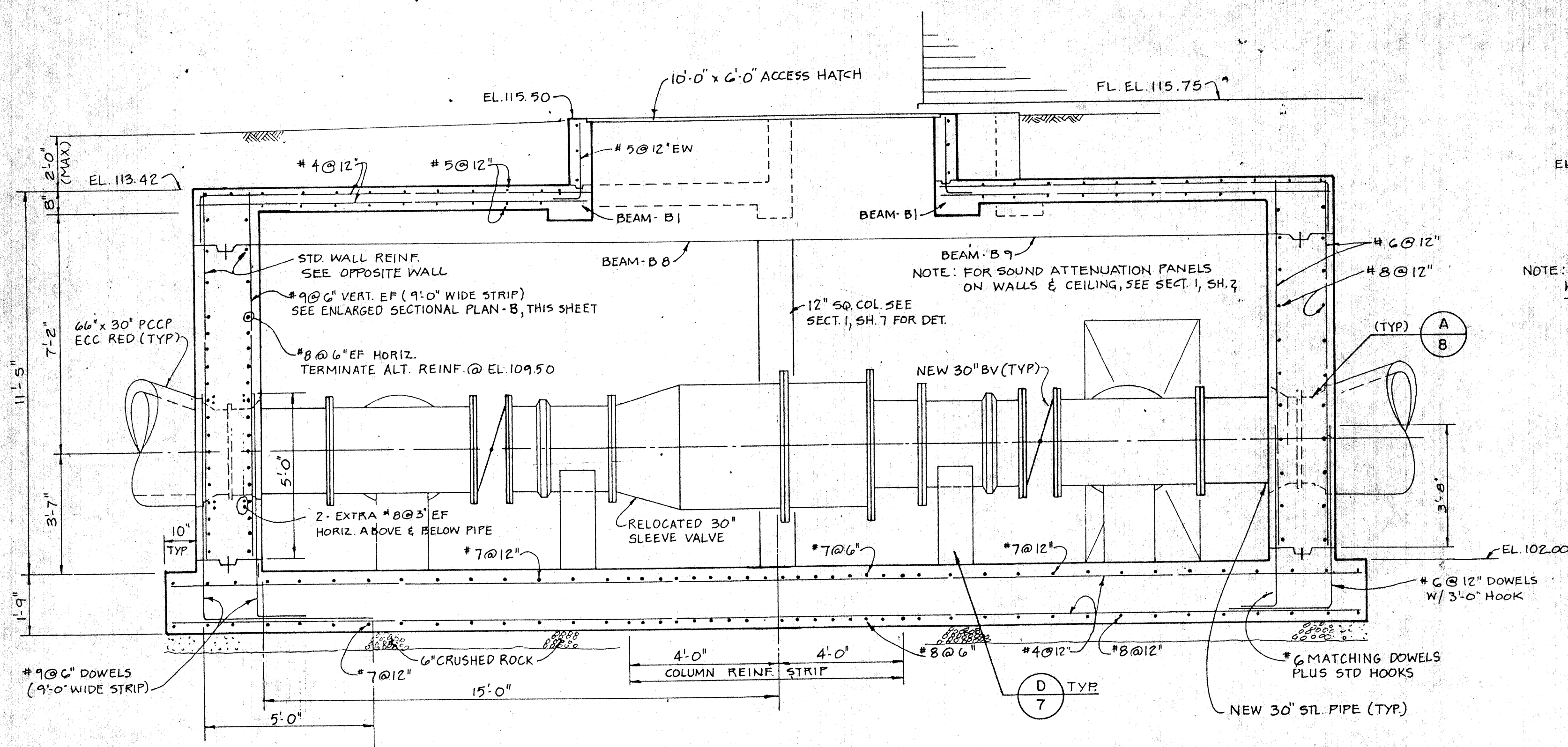
PROJECT NO	14140
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WICHITA, KANSAS
HYDROELECTRIC PLANT

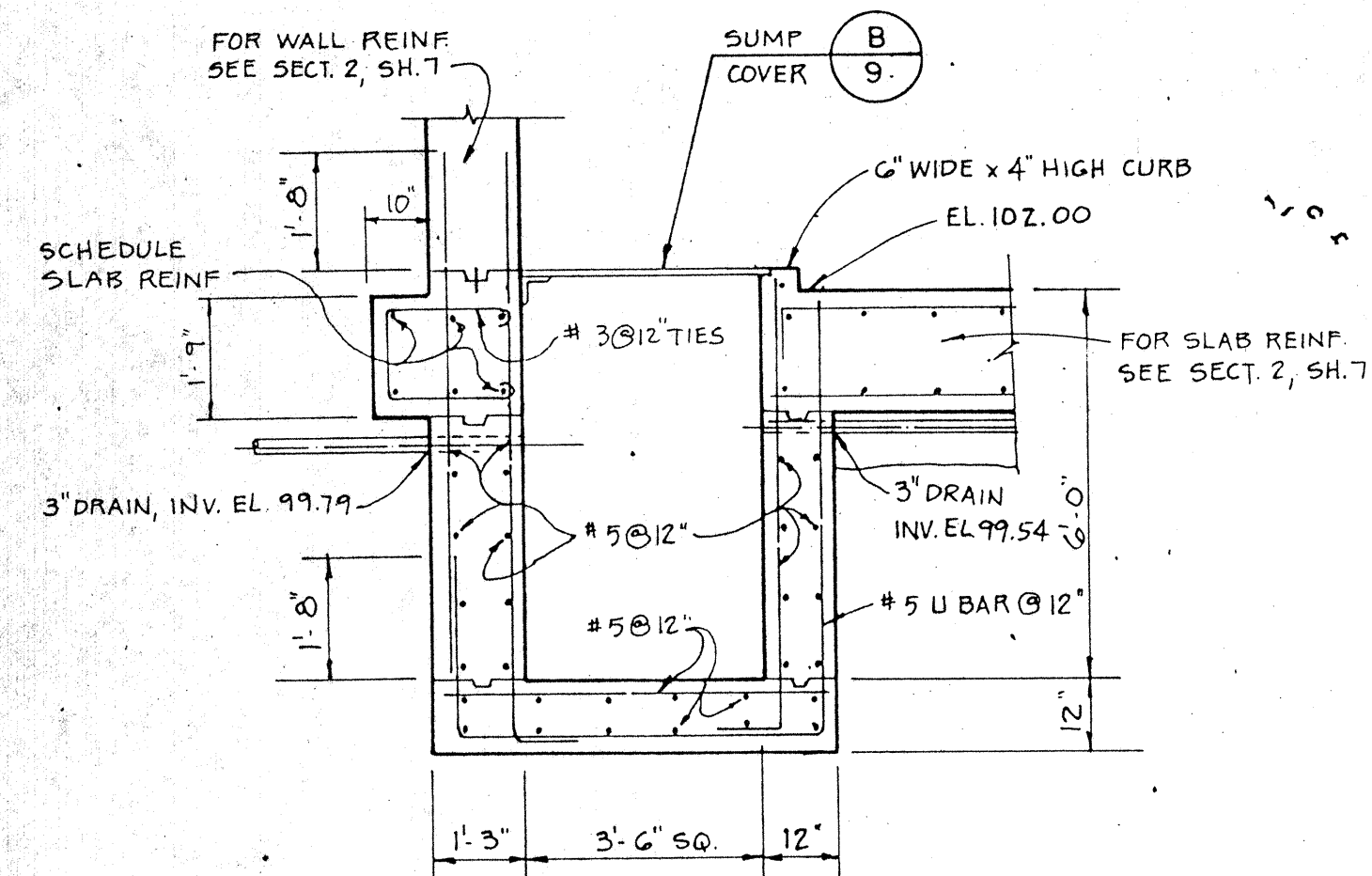
SECTIONS AND DETAILS



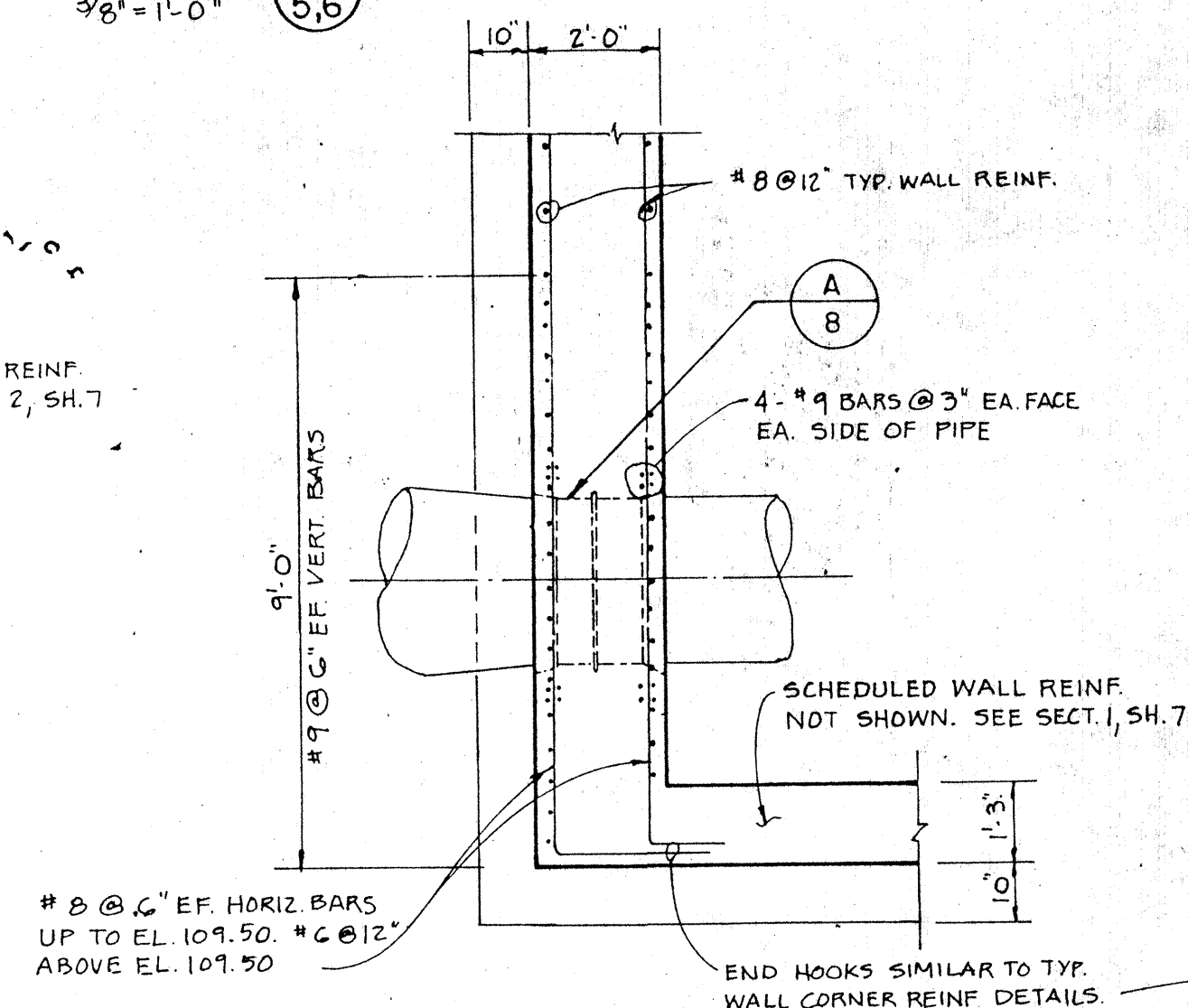
SHEET
7 OF 16



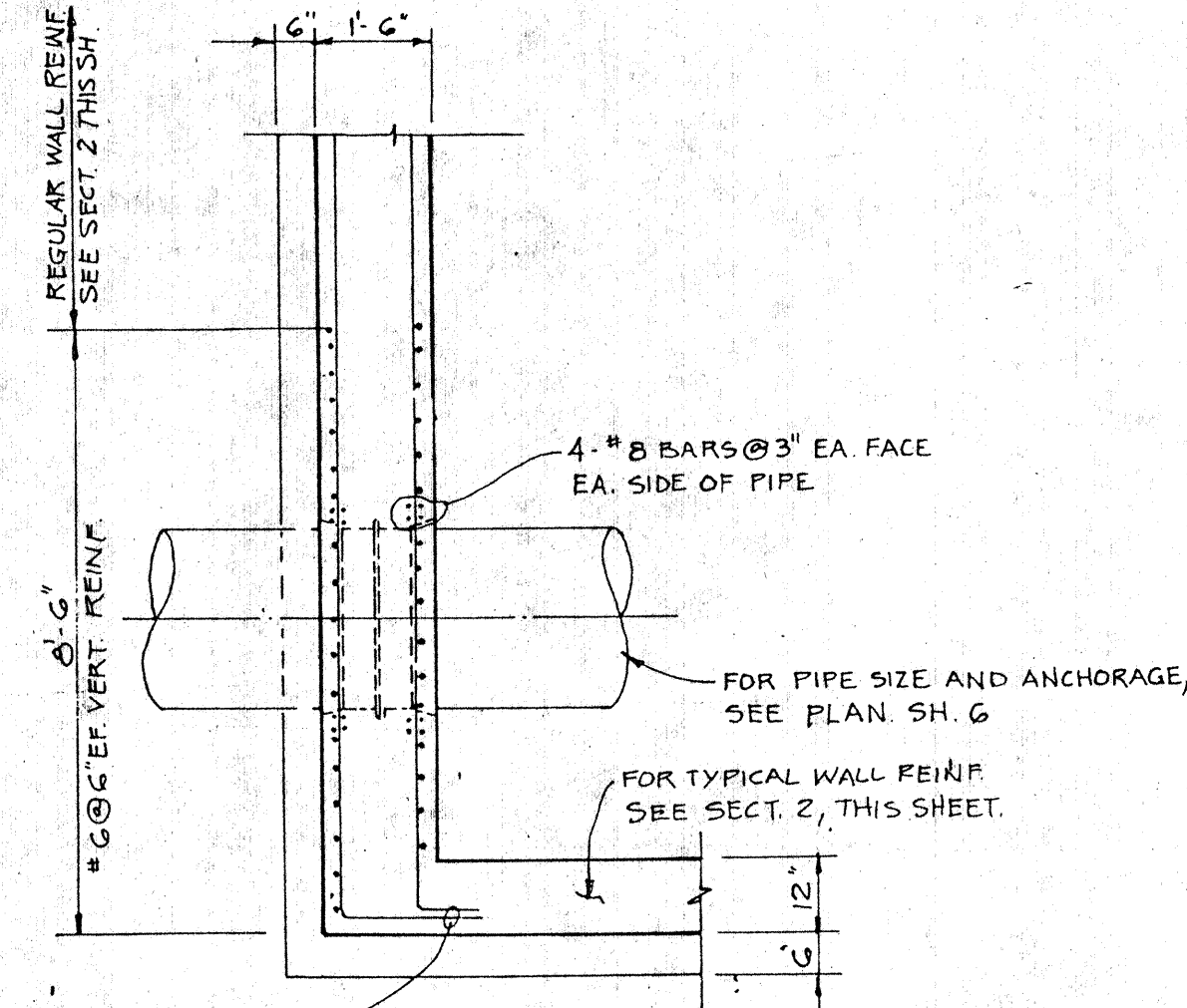
SECTION 1
3/8" = 1'-0" (5,6)



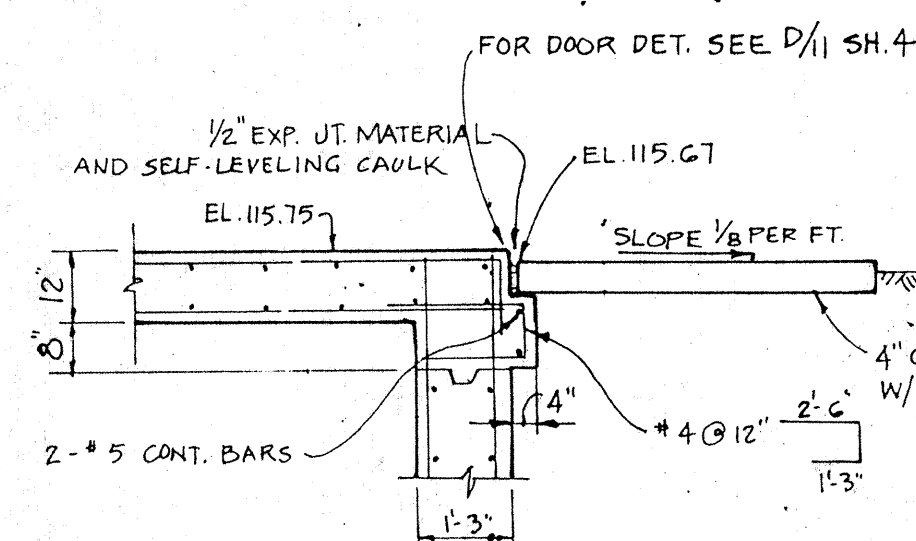
SECTION 3
3/8" = 1'-0" (6)



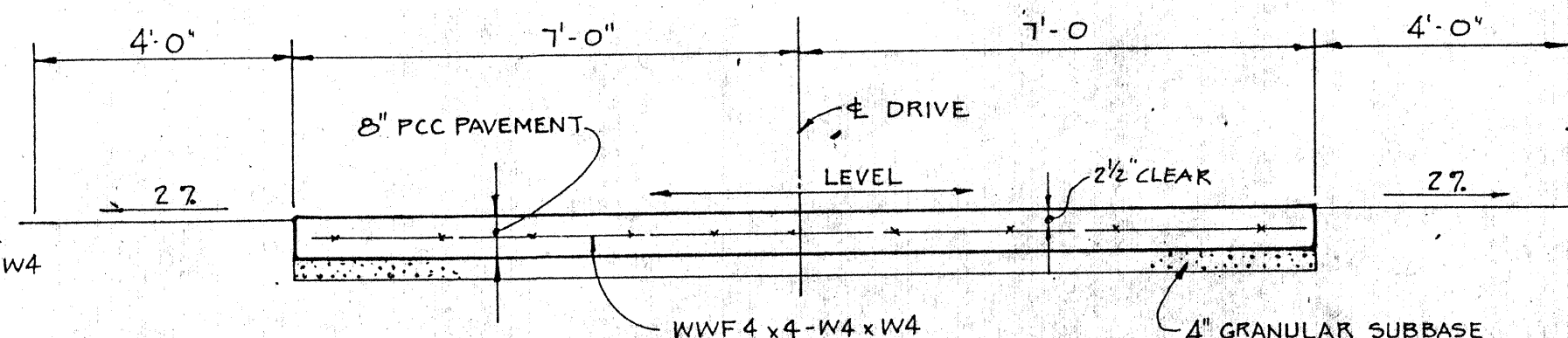
ENLARGED PLAN B
3/8" = 1'-0" (6)



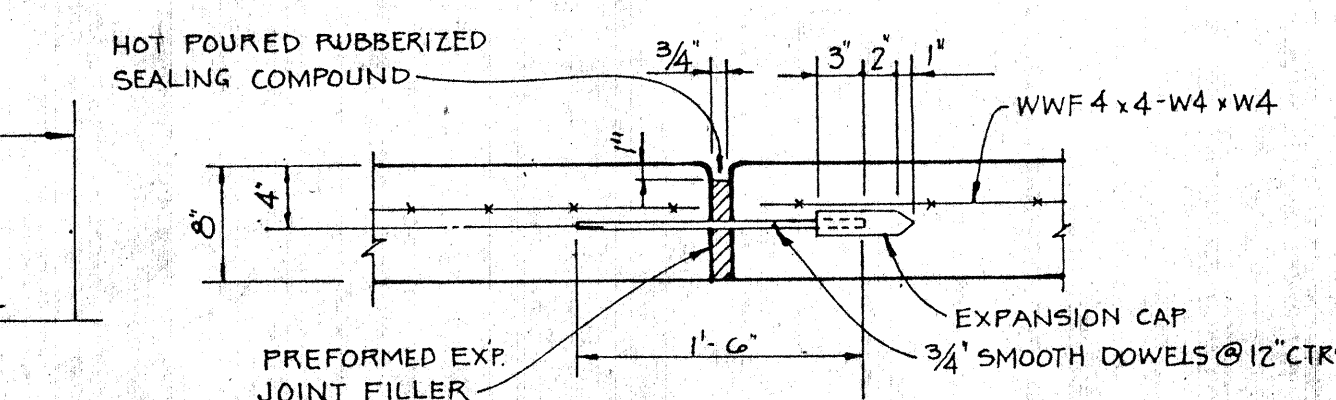
ENLARGED PLAN C
3/8" = 1'-0" (6)



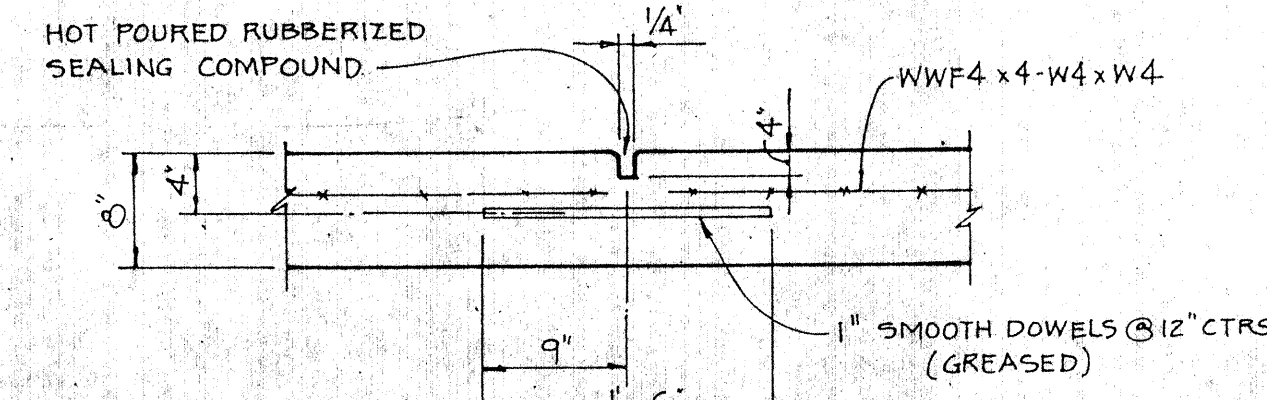
SECTION 4
3/8" = 1'-0" (5)



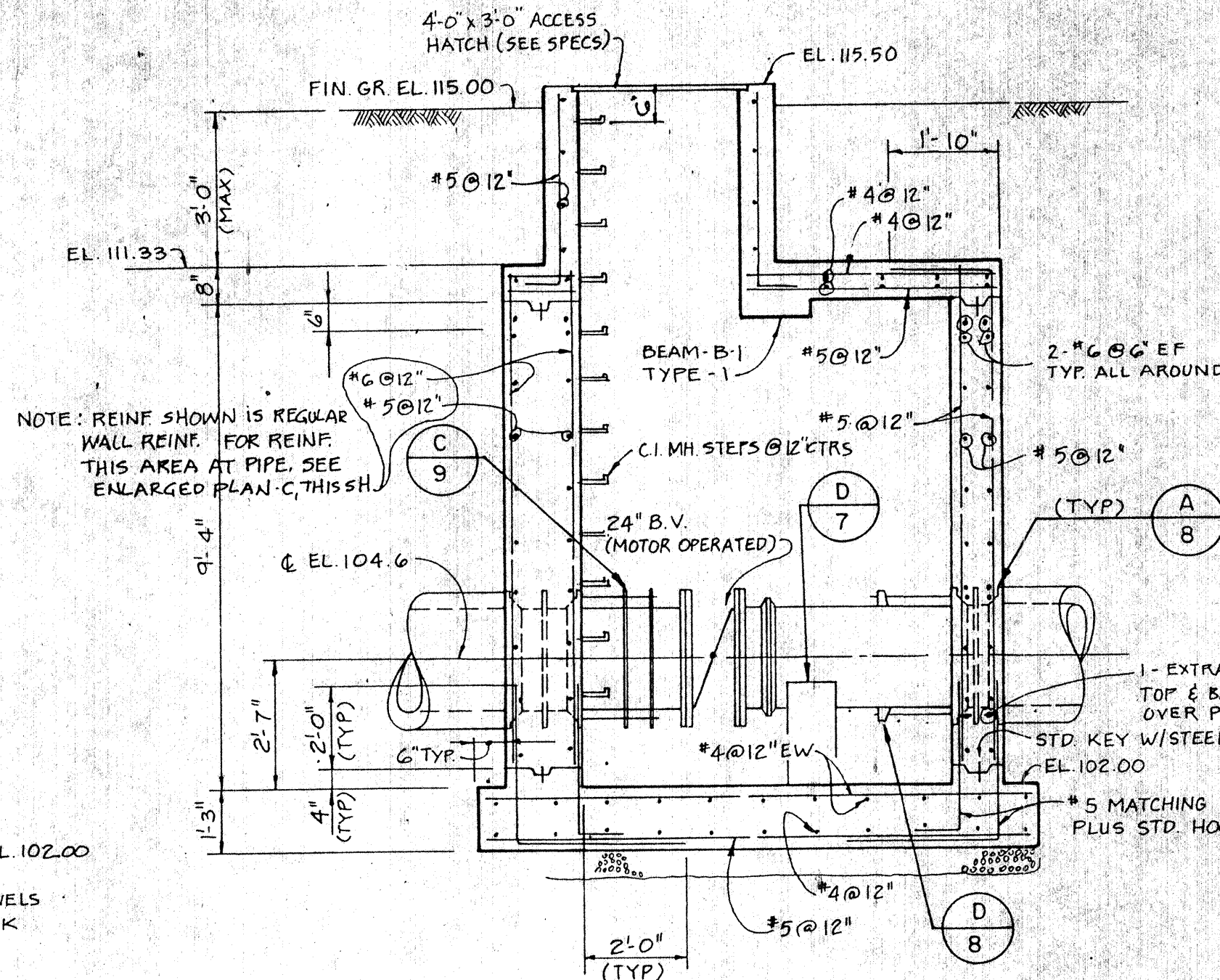
ENTRANCE DRIVE SECTION
NO SCALE



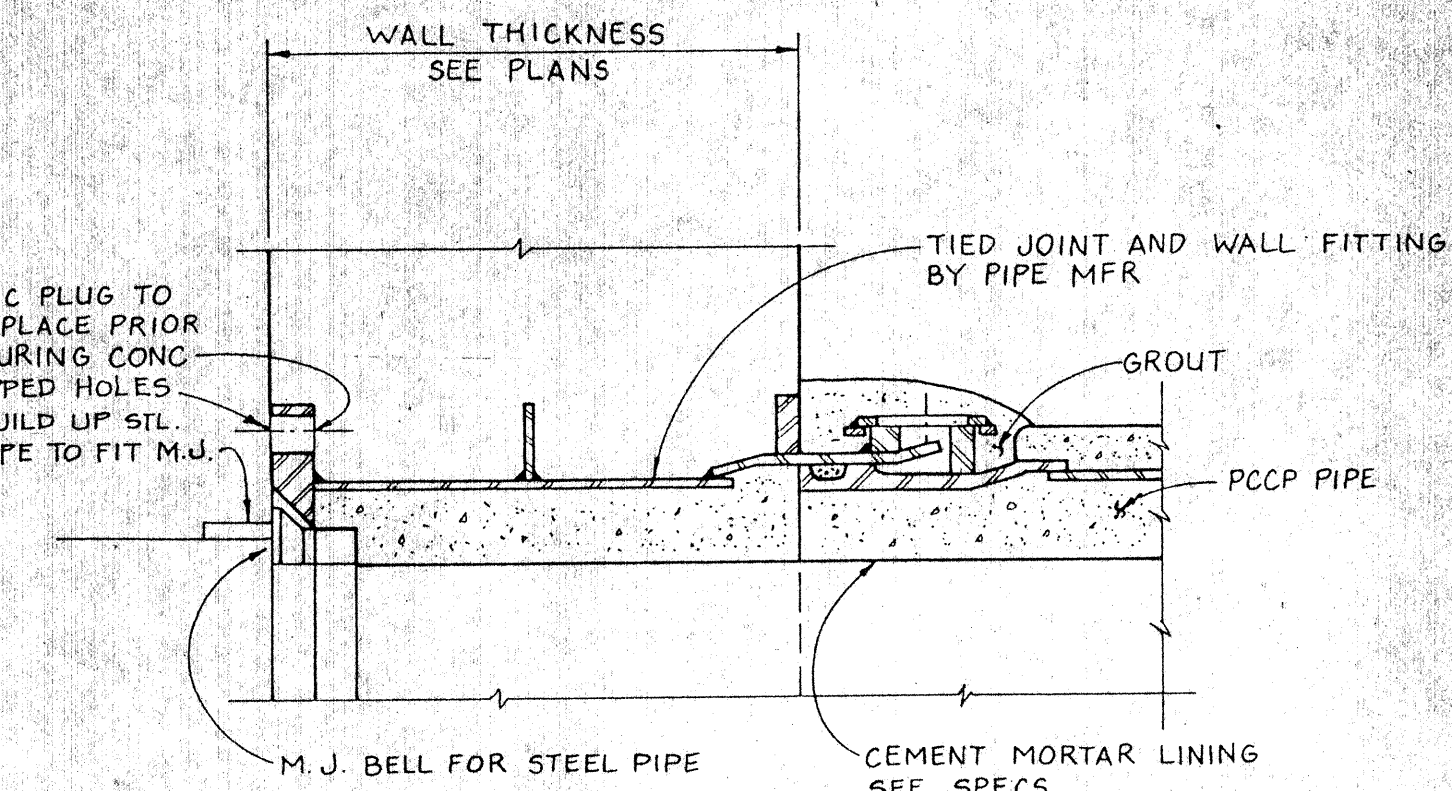
EXPANSION JOINT DETAIL F
NO SCALE



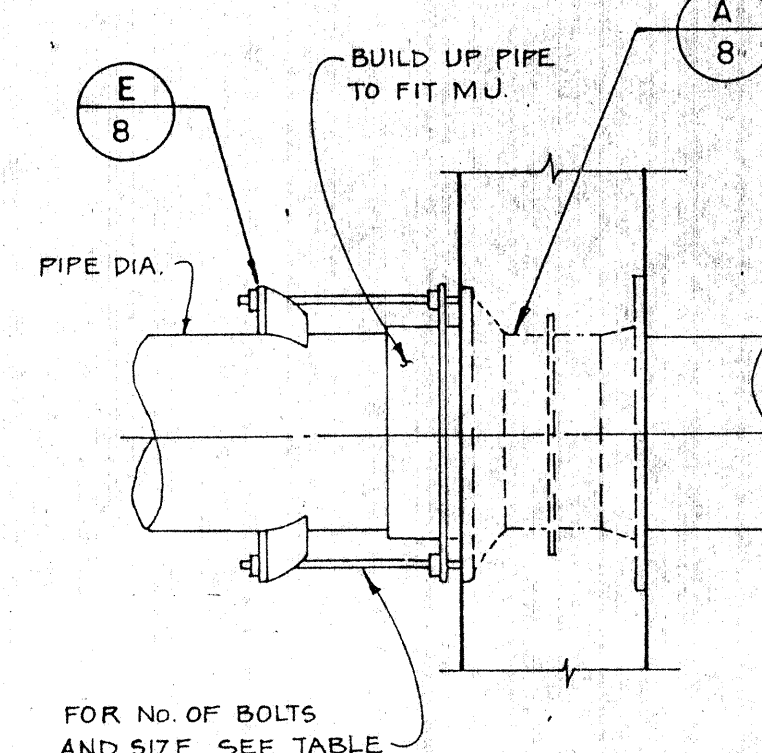
SAWED CONTRACTION JOINT DETAIL G
NO SCALE



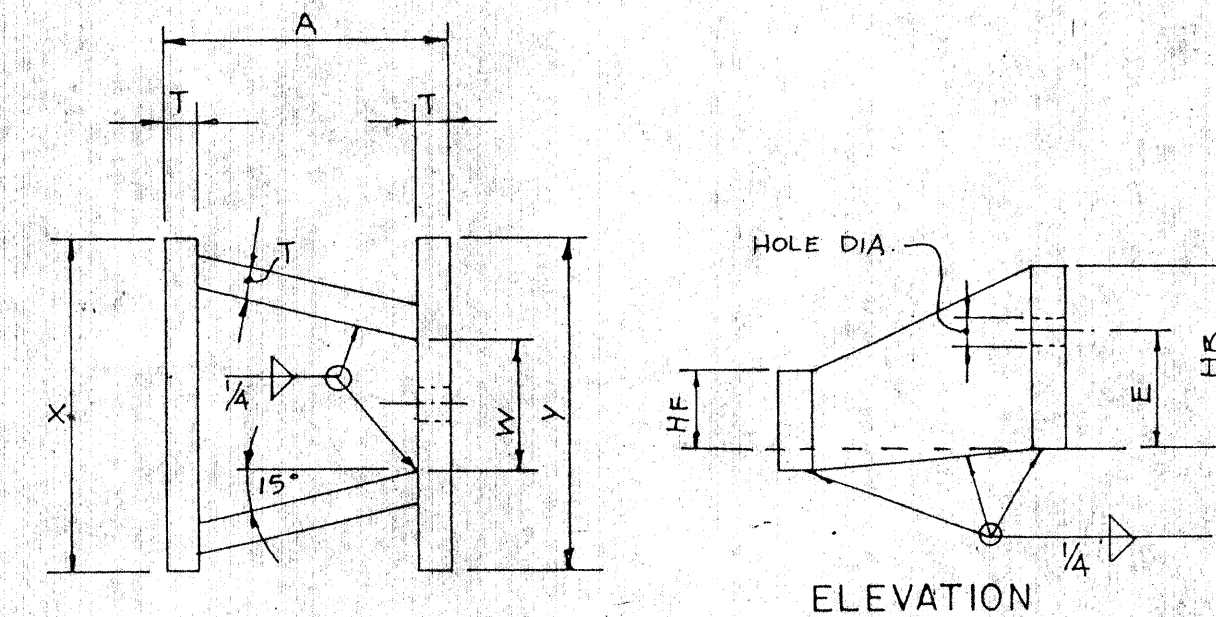
SECTION 2
3/8" = 1'-0" (5,6)



CONCRETE WALL PIPE DETAIL A
NO SCALE



PIPE DETAIL D
NO SCALE

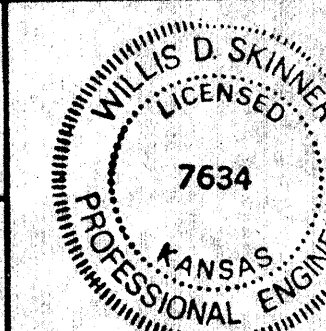


LUG DETAIL E
NO SCALE

DIMENSIONS IN INCHES											
PIPE DIA.	NO. OF BOLTS	BOLT DIA.	HOLE DIA.	T	A	Y	W	X	HB	E	HF
24	4	3/4	7/8	3/8	5	5	1 1/2	5	4 1/8	2 3/8	2
30	2	1	1 1/8	1/2	5 3/4	6	1 3/4	6	4 1/2	2 3/4	2
36	2	1	1 1/8	1/2	5 3/4	6	1 3/4	6	4 1/2	3 1/4	2

WICHITA, KANSAS
HYDROELECTRIC PLANT

SECTIONS AND DETAILS



SHEET
8 OF 16

DESIGNED NGM, LS
CHECKED AEH
APPROVED RNS
DATE April 22, 88

Black & Veatch
Engineers - Architects
Kansas City, Missouri

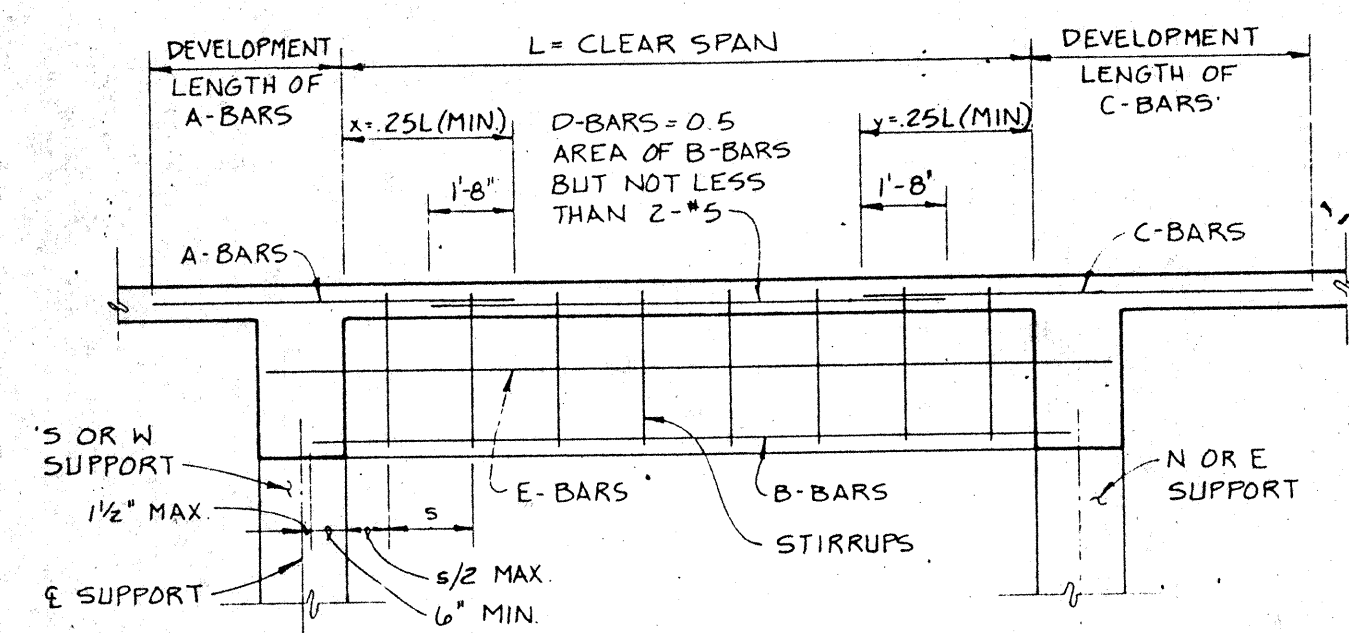
PROJECT NO.
14140

DATE REVISIONS AND RECORD OF ISSUE NO. BY CK APP

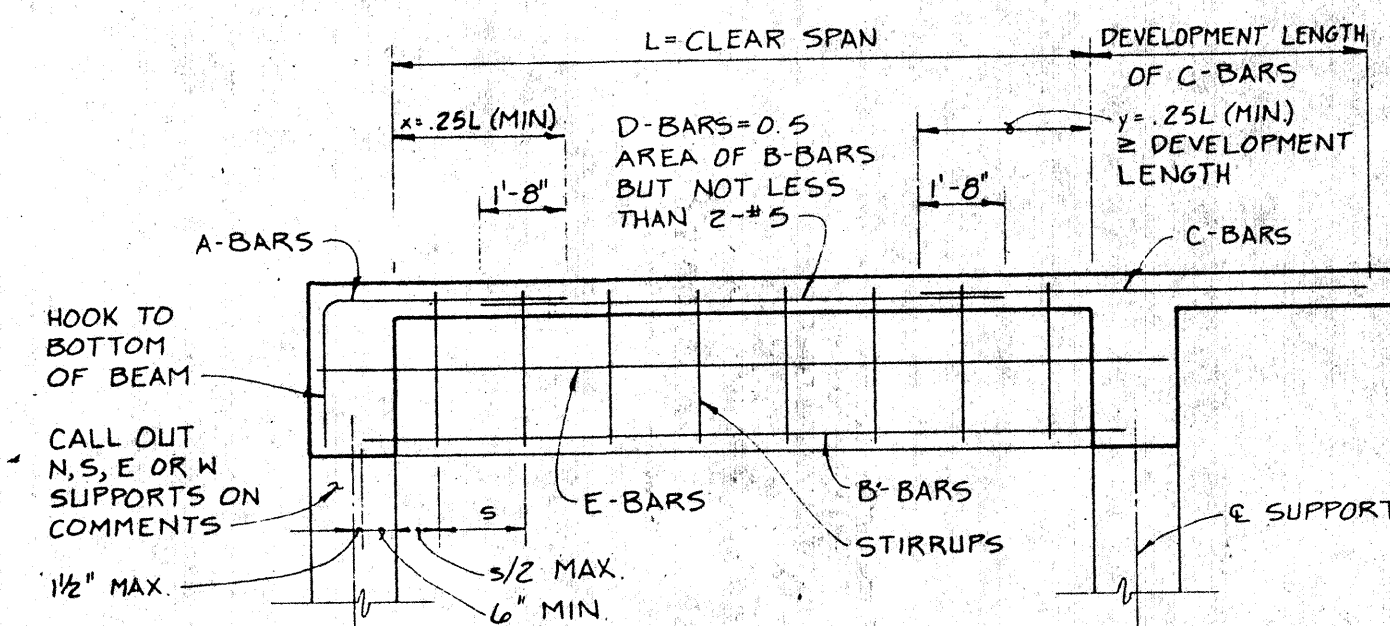
BEAM SCHEDULE

BEAM NO.	BEAM TYPE	SECT TYPE	b (in)	t (in)	A BARS	B BARS	C BARS	D BARS	E BARS	x (ft-in)	y (ft-in)	STIRRUPS SIZE AT s (in)	COMMENTS
B-1	V	A	16	12	(3)-#5	(3)-#7	(3)-#7	(3)-#5	—	4'-0"	4'-0"	SEE COMMENTS	*3, FROM EA. END: (0) @ 4 1/2" (4) @ 5", REM @ 6'
B-2	IV	A	16	16	(2)-#8	(2)-#8	(2)-#8	(2)-#6	—	4'-0"	4'-0"	SEE COMMENTS	*4, FROM EA. END @ 6'
B-3	IV	A	16	16	(2)-#7	(3)-#8	(2)-#7	(2)-#7	—	4'-0"	4'-0"	SEE COMMENTS	*4, FROM EA. END: (7) @ 4", (6) @ 5", REM @ 6'
B-4	I	A	16	16	(3)-#7	(3)-#9	(3)-#7	(3)-#7	—	4'-0"	4'-0"	SEE COMMENTS	*4, FROM EA. END: (7) @ 4 1/2" REM @ 6'
B-5	II	A	16	20	(2)-#5	(3)-#7	(2)-#5	(2)-#7	—	2'-6"	4'-0"	SEE COMMENTS	*4, FROM EA. END: (6) @ 6" REM @ 8'
B-6	III	A	16	20	(2)-#9	(3)-#9	(3)-#9	(3)-#7	—	5'-0"	5'-0"	SEE COMMENTS	*4, FROM EA. END: (1) @ 5", (4) @ 6 1/2", REM @ 8'
B-7	II	A	16	20	(3)-#7	(3)-#9	(3)-#9	(3)-#7	—	2'-6"	3'-6"	SEE COMMENTS	*4, FROM EA. END: (0) @ 5", (4) @ 6 1/2", REM @ 8'
B-8	II	A	16	21	(2)-#7	(2)-#9	(3)-#9	*	—	5'-0"	5'-0"	SEE COMMENTS	*4, FROM EA. END: (0) @ 6", (5) @ 9", REM @ 12'
B-9	II	A	16	21	(2)-#7	(2)-#9	(3)-#9	*	—	5'-0"	5'-0"	SEE COMMENTS	*4, FROM EA. END: (6) @ 4 1/2" @ 9", REM @ 12'

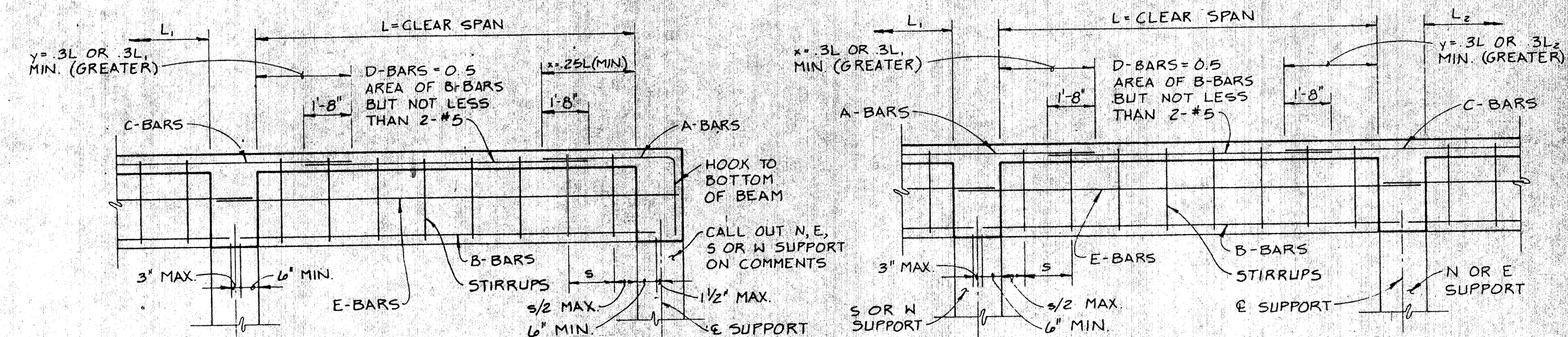
* 2- #9 BARS T & B TO BE CONTINUOUS



TYPE IV

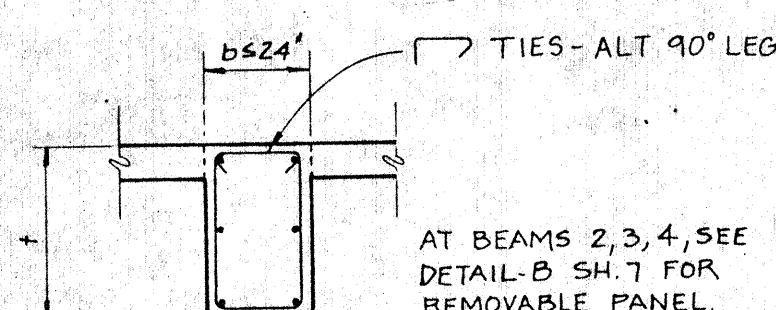


TYPE V

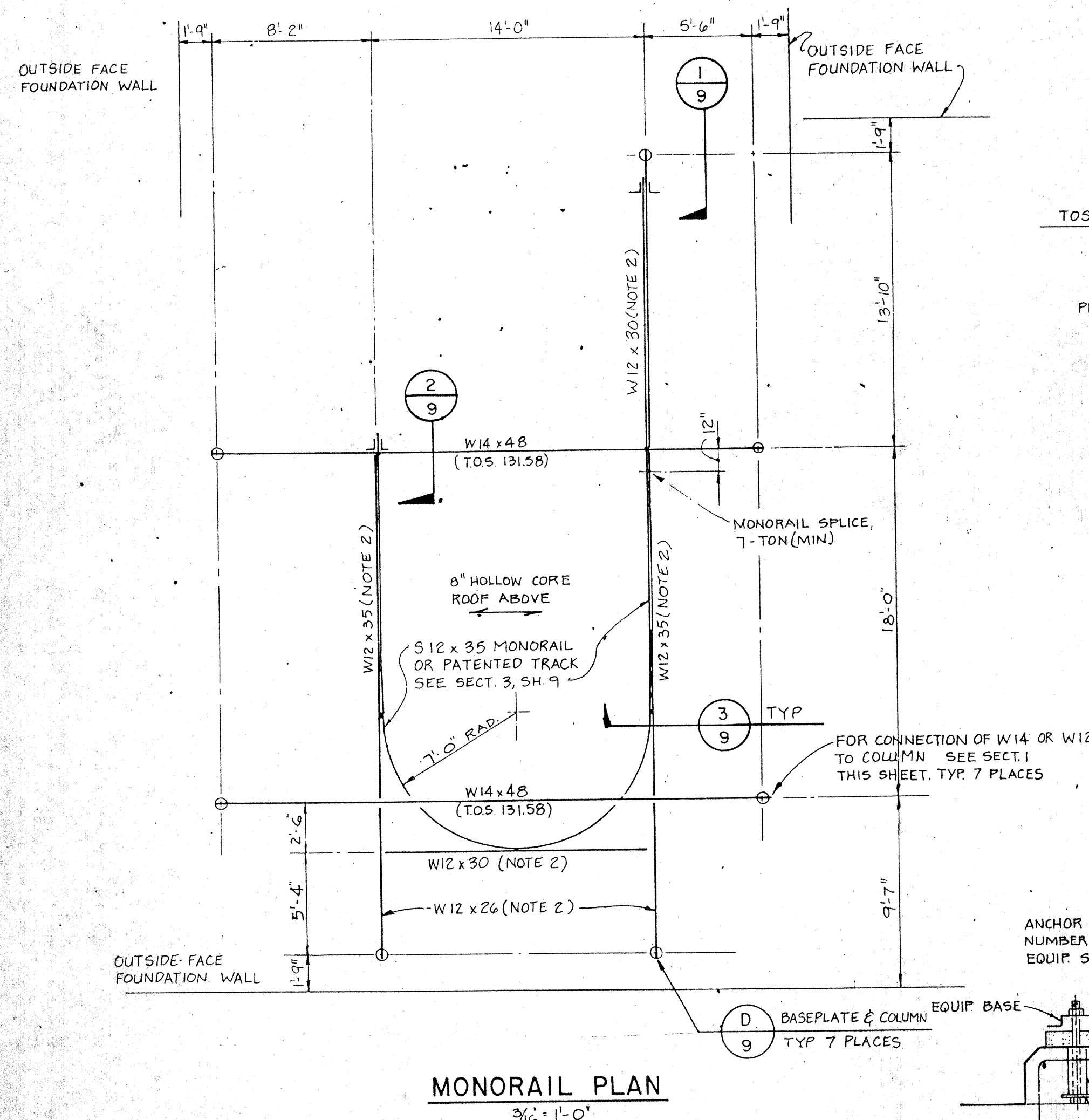


TYPE II

TYPE III



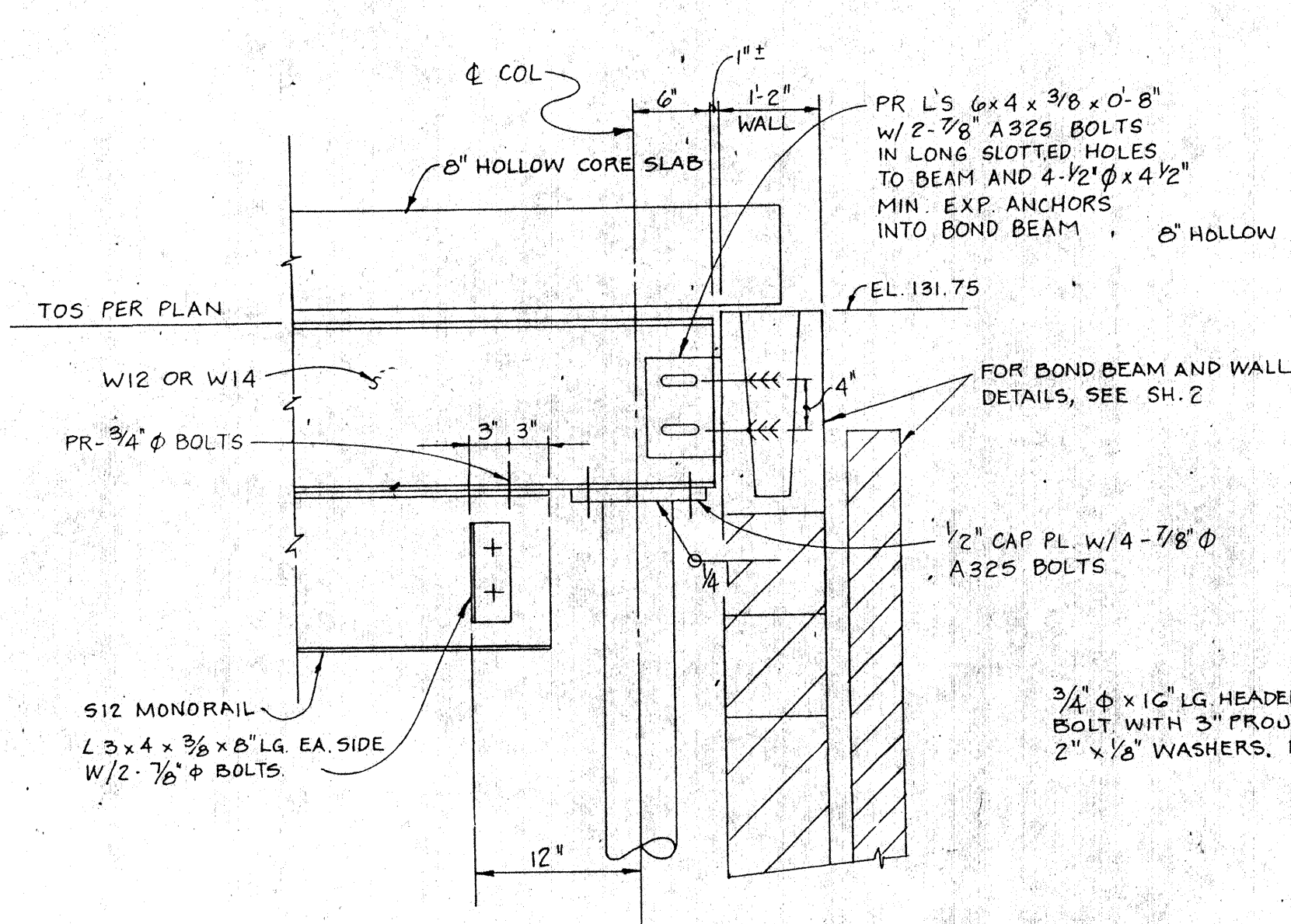
TYP STIRRUP ARRANGEMENT



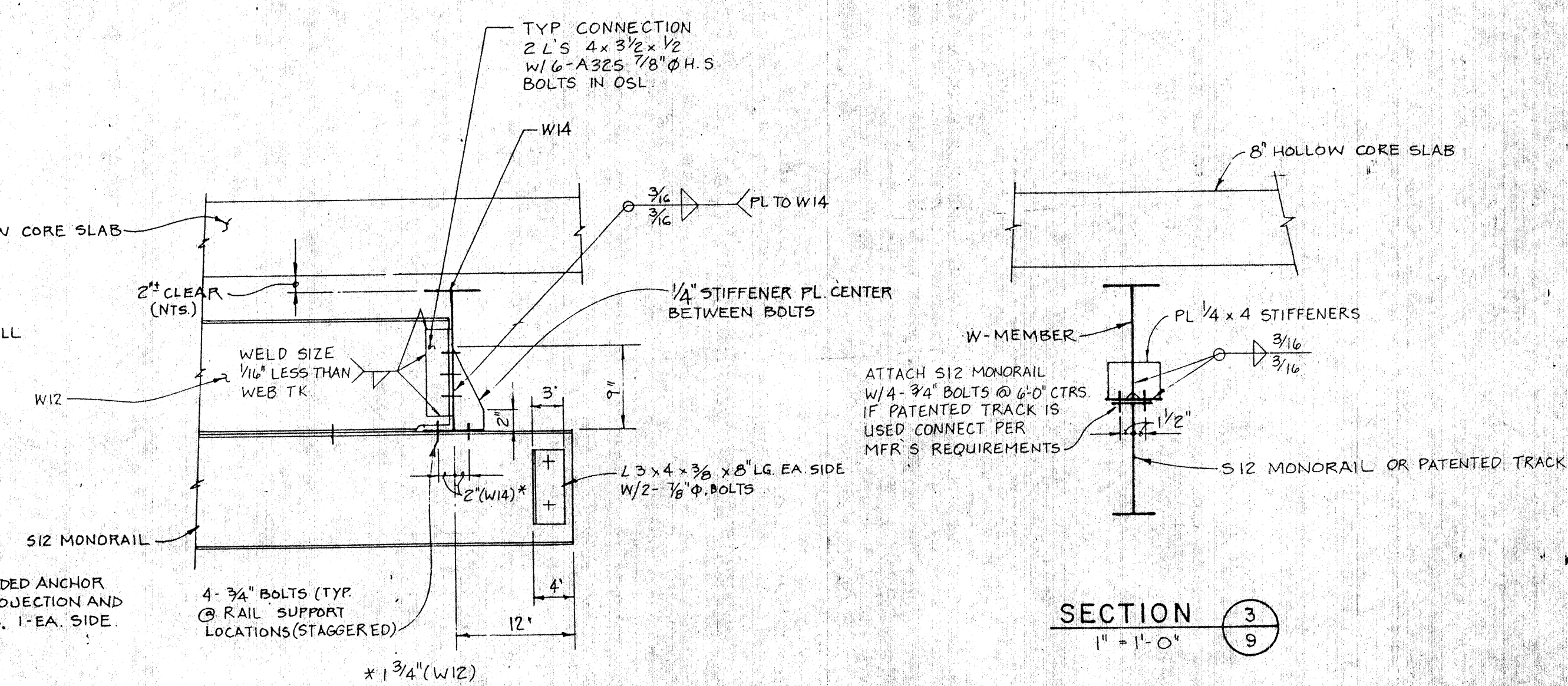
MONORAIL PLAN
3/4" = 1'-0"

NOTES:

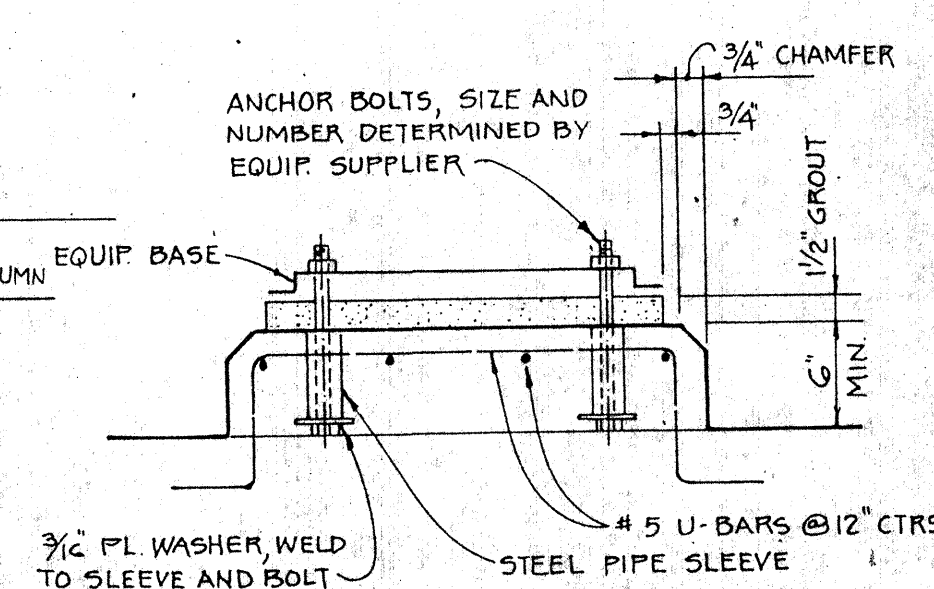
1. MONORAIL DESIGNED FOR 5 TON CAPACITY ELECTRIC HOIST.
2. BOTTOM OF STEEL FLUSH WITH BOTTOM OF W14 x 48 BEAMS.



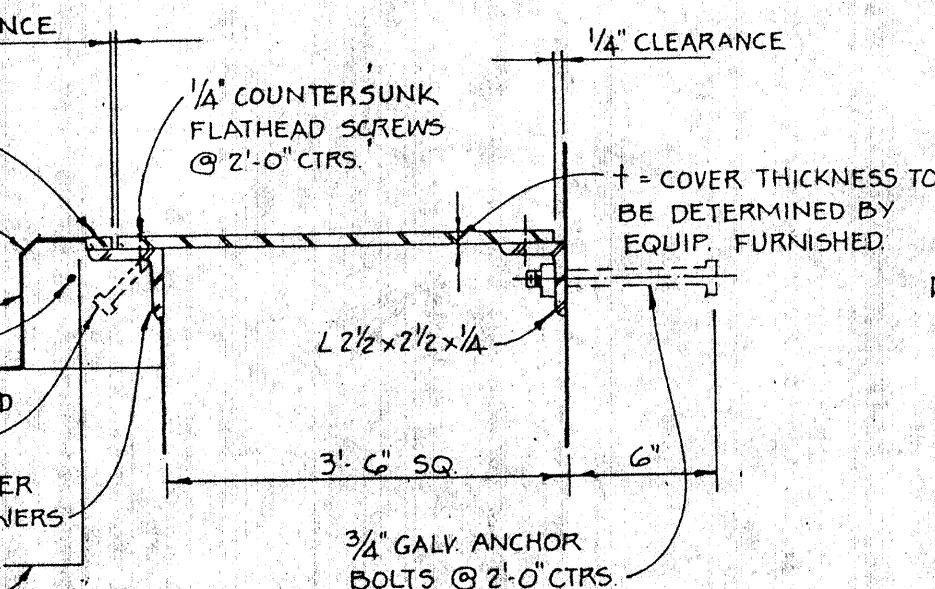
SECTION 1
9



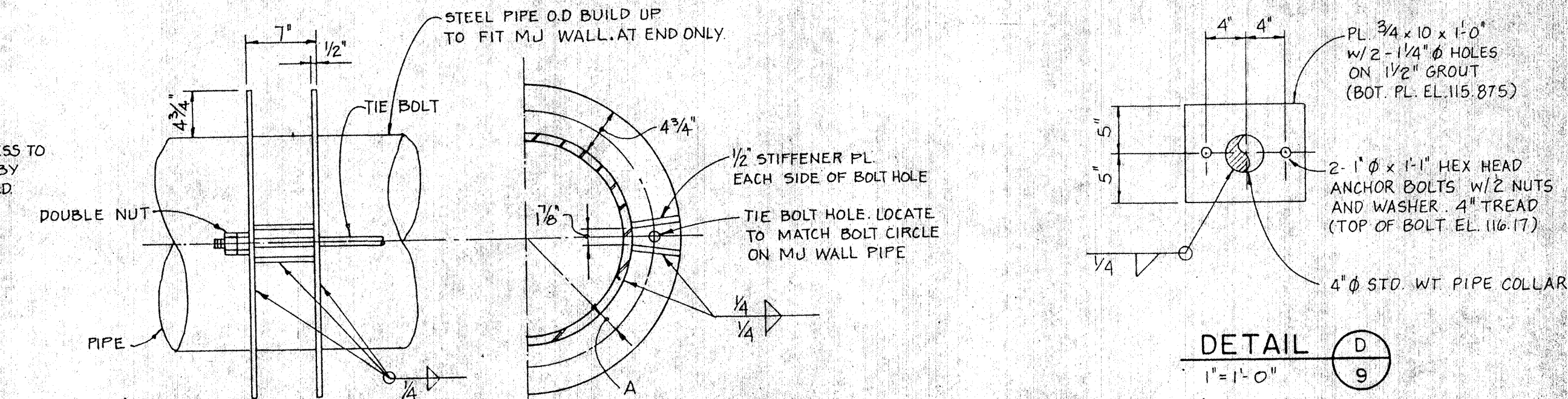
SECTION 2



EQUIPMENT BASE DETAIL
NO SCALE



SUMP COVER DETAIL (B)
NO SCALE 8



DETAIL (D)
1" = 1'-0"
(7 THUS)

PIPE DIA.	NO. OF TIE BOLTS	BOLT DIA.	HOLE DIA.	A
24"	6	3/4"	1 1/4"	2 3/8"
30"	4	1"	1 1/8"	2 1 3/16"

HARNESS RING (C)
NO SCALE

WICHITA, KANSAS
HYDROELECTRIC PLANT

BEAM SCHEDULE AND MISCELLANEOUS DETAILS

A circular professional engineer seal for the State of Kansas. The outer ring contains the text "WILLIS D. SKINNER" at the top and "PROFESSIONAL ENGINEER" at the bottom. The inner ring contains the word "LICENSED" at the top and "KANSAS" at the bottom. In the center of the seal is the license number "7634".

SHEET
9 OF 16

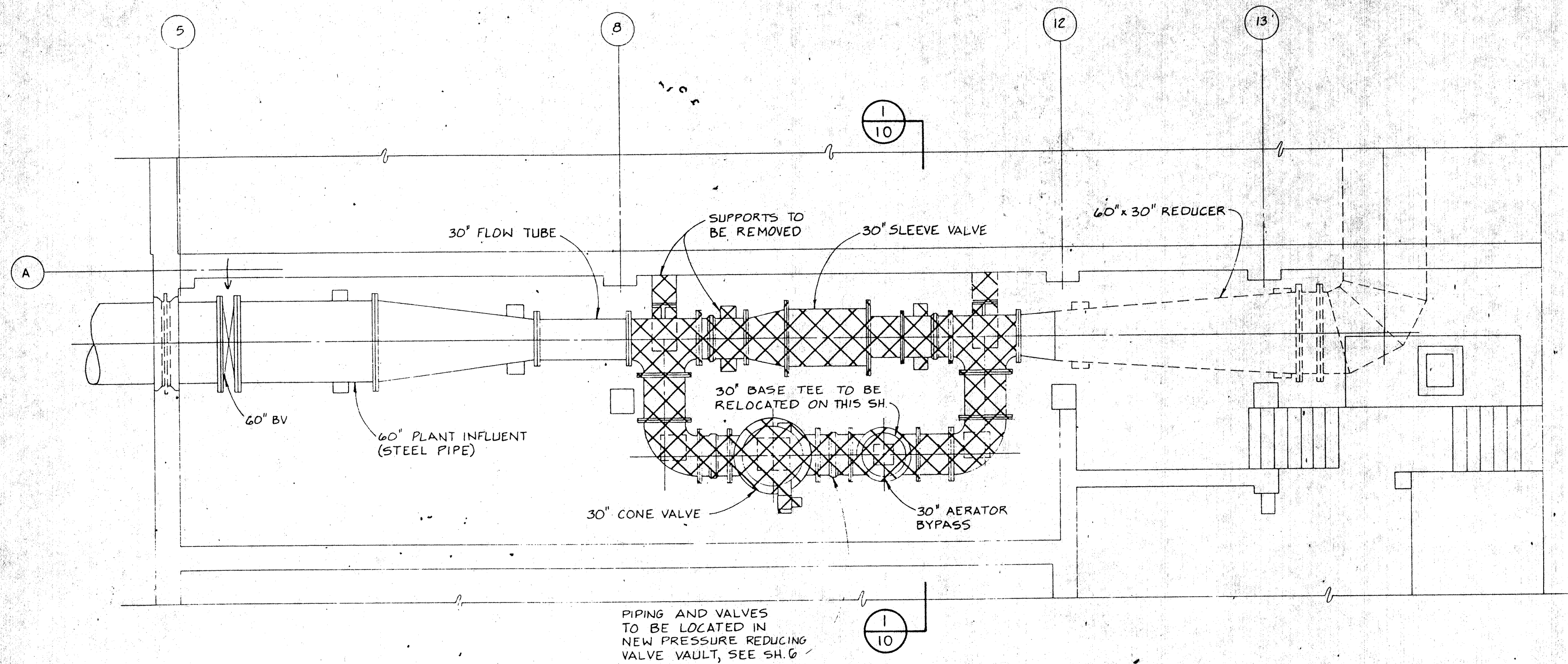
DESIGNED NGM, LS.
DETAILED AEH
CHECKED RNS, BAR
APPROVED P.C. Low
DATE April 22, '88



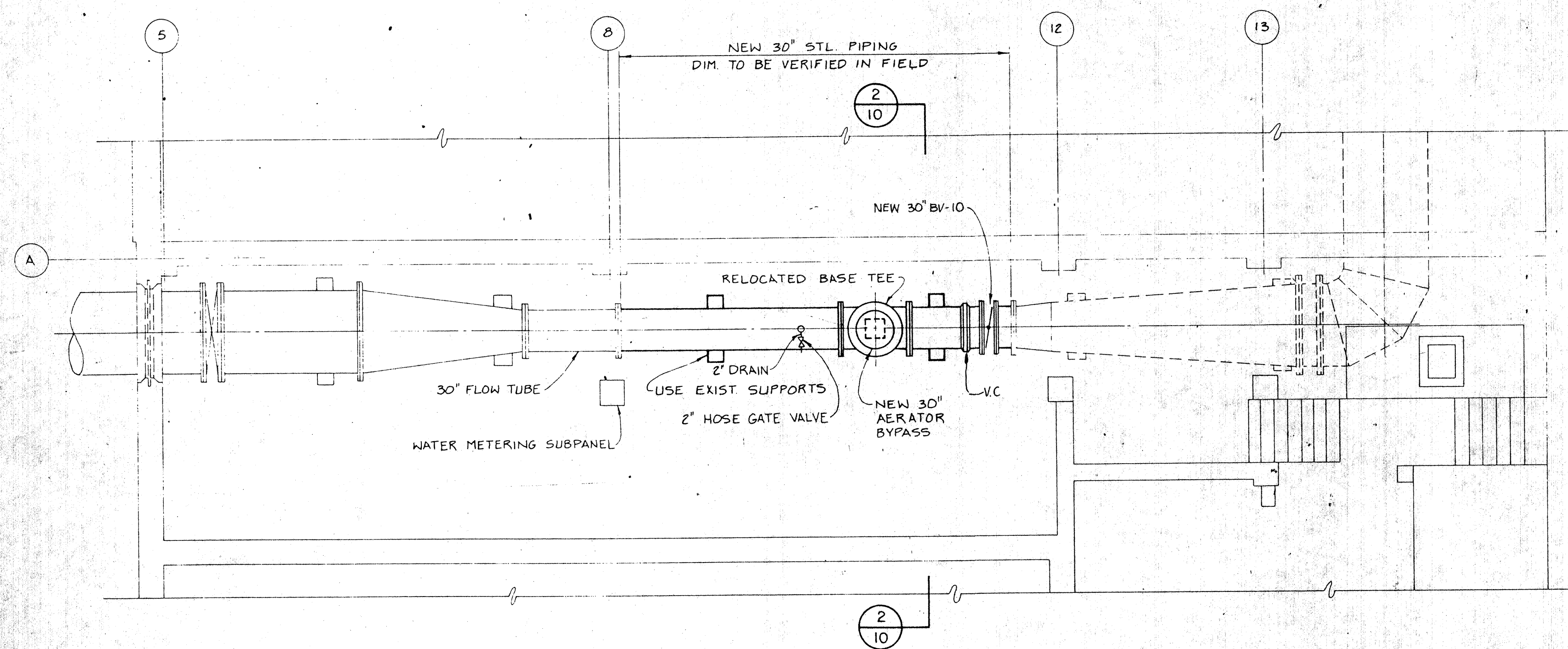
Black & Veatch
Engineers - Architects
Kansas City, Missouri

PROJECT NO	14140
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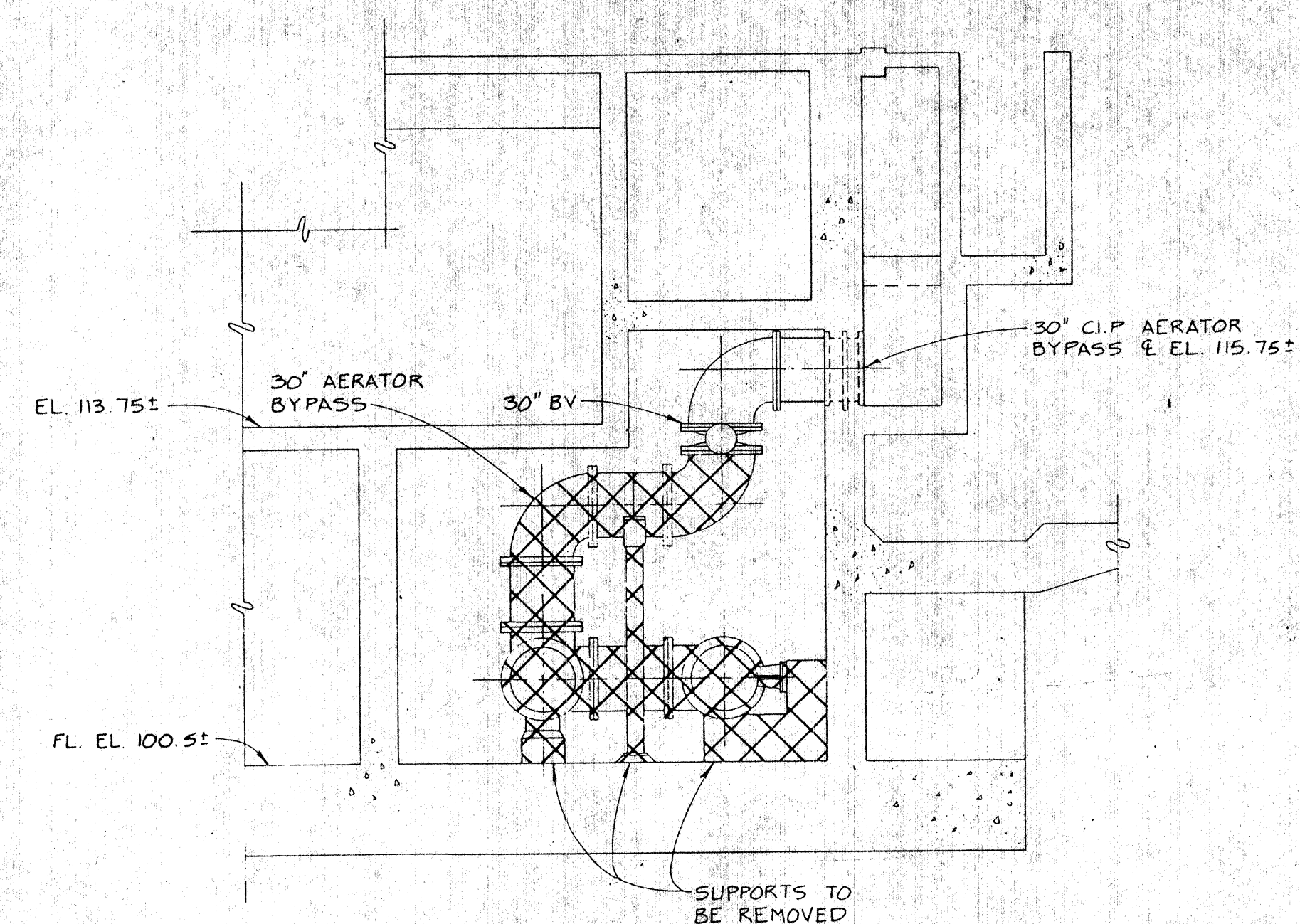
DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CK	APP
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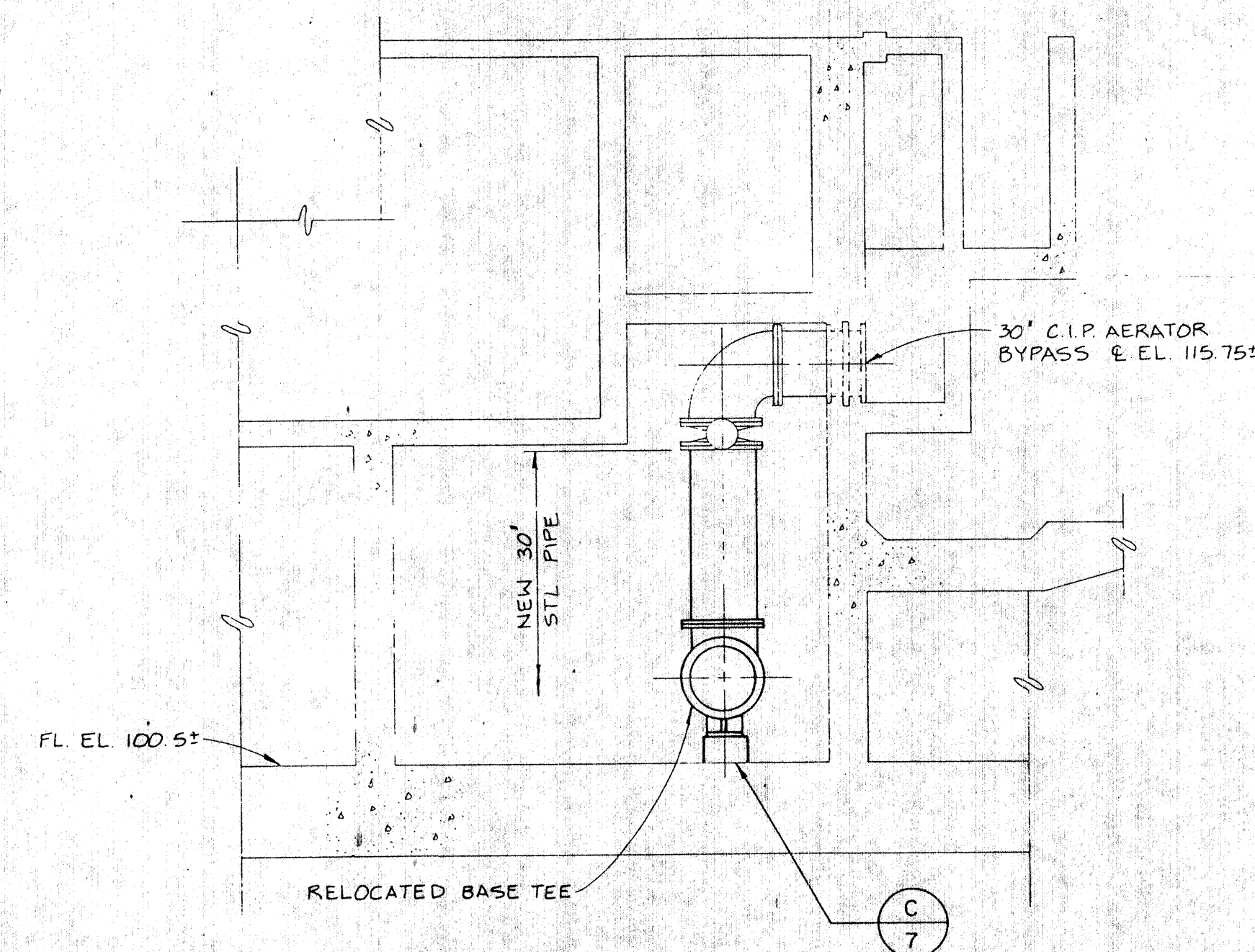
EXIST. PIPING REMOVAL PLAN - EL. 100.5±
3/16" = 1'-0"



NEW PIPING PLAN - EL. 100.5±
3/16" = 1'-0"



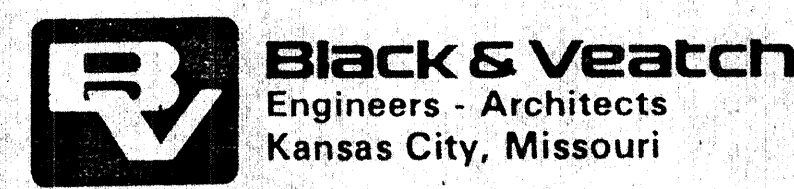
SECTION 1/10
3/16" = 1'-0"



SECTION 2/10
3/16" = 1'-0"

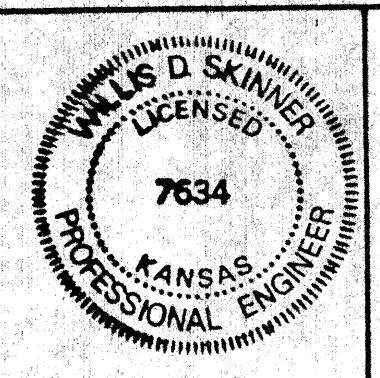
NO.	BY	CK	APP	DATE	REVISIONS AND RECORD OF ISSUE

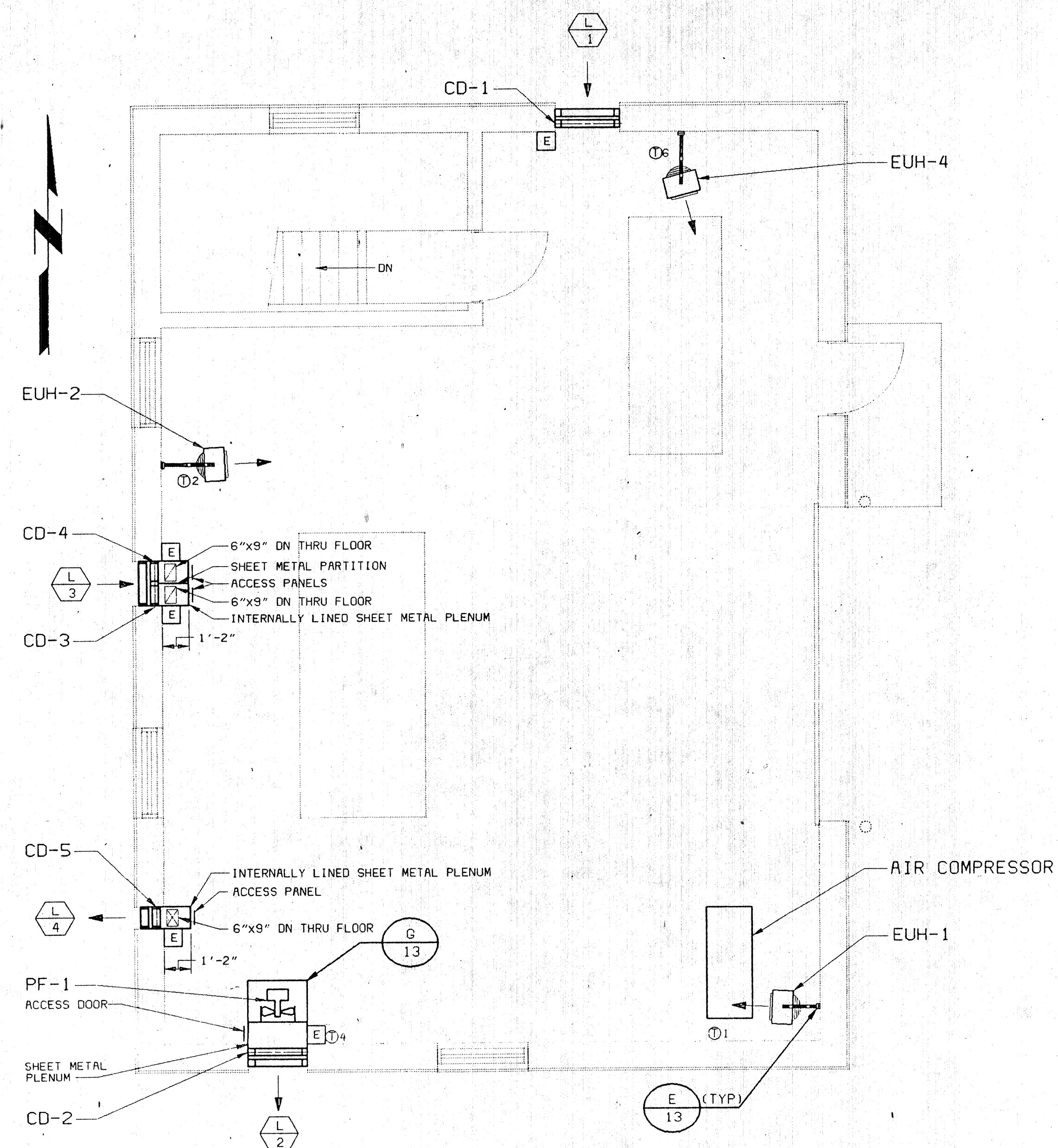
DESIGNED LS.
 DETAILED JWW
 CHECKED RBR
 APPROVED R.C. Lou
 DATE April 22, 88



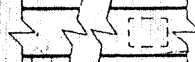
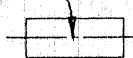
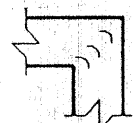
PROJECT NO.
14140

WICHITA, KANSAS
 HYDROELECTRIC PLANT
 EXISTING FILTER
 BUILDING MODIFICATIONS





FLOOR PLAN - EL. 115.75 E

<u>75</u>		<u>LEGEND</u>	
	ELECTRIC OPERATOR		NEGATIVE PRESSURE DUCT
① 1	THERMOSTAT WITH NUMBER		REGISTER, GRILLE, OR DIFFUSER
② 1	HUMIDISTAT WITH NUMBER		POSITIVE PRESSURE DUCT
			FLEXIBLE CONNECTION
CD-1		CONTROL DAMPER	
		TURNING VANES	
VCD		VOLUME CONTROL DAMPER	
			ROUND TO SQUARE ADAPTER
			LOUVER OR LOUVER/DAMPER WITH NUMBER
			DIRECTION OF AIR FLOW SUPPLY

AFF	ABOVE FINISH FLOOR	DEH	DEHUMIDIFIER
AHU	AIR HANDLING UNIT	EUH	ELECTRIC UNIT HEATER
BOD	BOTTOM OF DUCT ELEVATION	PF	PROPELLER FAN
CC	COOLING COIL	SMD	SMOKE DETECTOR
CD	CONTROL DAMPER	VCD	VOLUME CONTROL DAMPER
CWR	COOLING WATER RETURN		
CWS	COOLING WATER SUPPLY		

A diagram of a rectangular duct with labels and leader lines. The labels are as follows:

- DEVICE TYPE: S-SUPPLY, E-EXHAUST, R-RETURN
- DEVICE GROUP: R-REGISTER, G-GRILLE, D-DIFFUSER
- DEVICE DESIGNATION
- CFM THRU DEVICE
- 24"x10" SR-1-760
- AIR DEVICE - WIDTH BY HEIGHT (IN)
- 24"x10"
- SHEET METAL DUCT SIZE. (FIRST NUMBER IS SIDE SEEN OR INDICATED.)

NOTE:

1. BOTTOM ELEVATION OF ALL UNIT HEATERS SHALL BE 8'-0" ABOVE FINISH FLOOR.

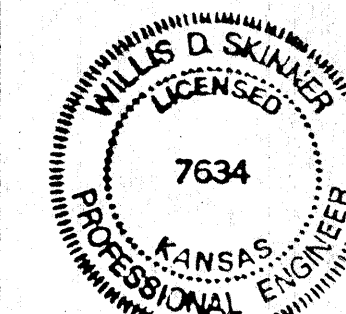
DESIGNED _____ RDJ
DETAILED _____ JWP
CHECKED _____ RGJ
APPROVED J. C. Love
DATE April 22, '88



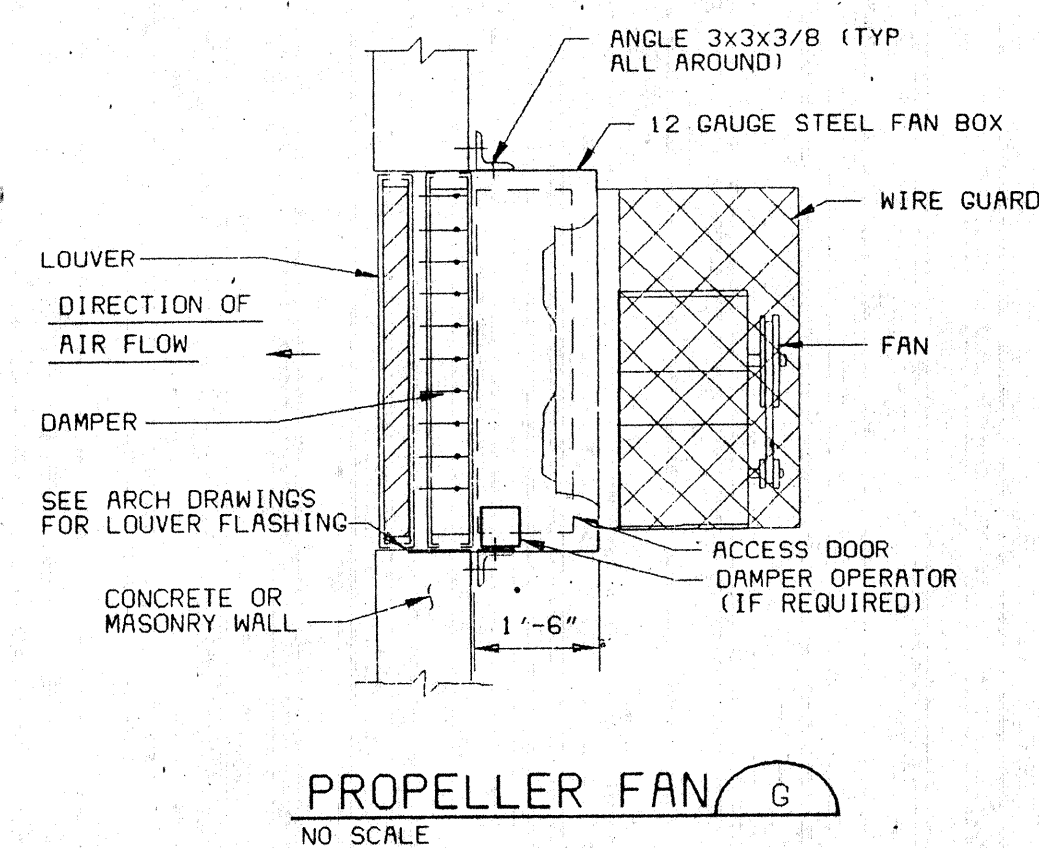
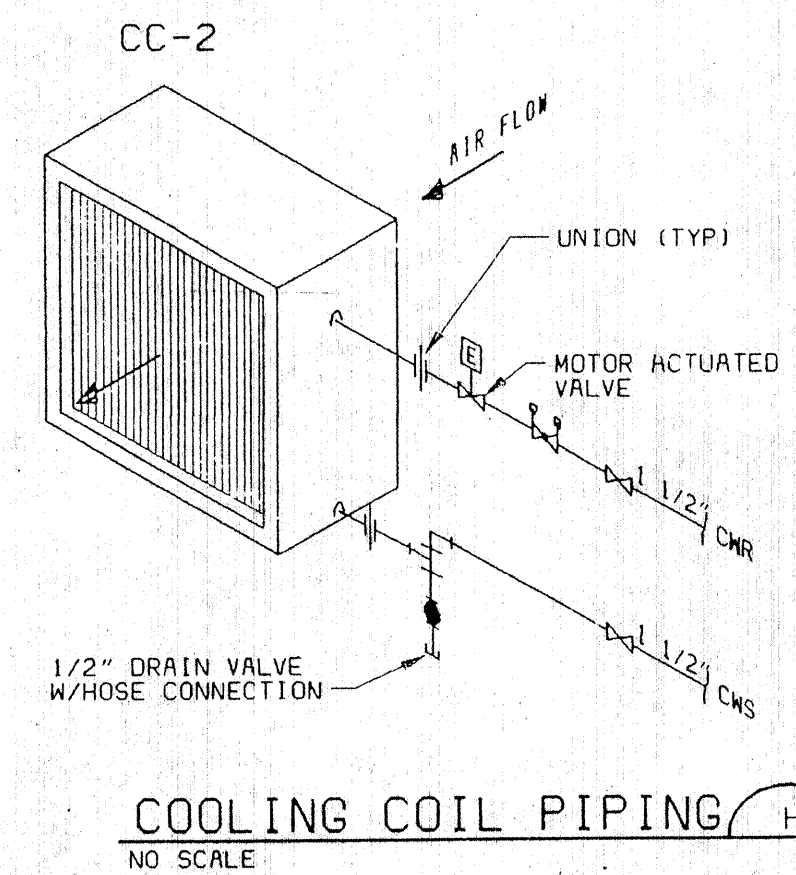
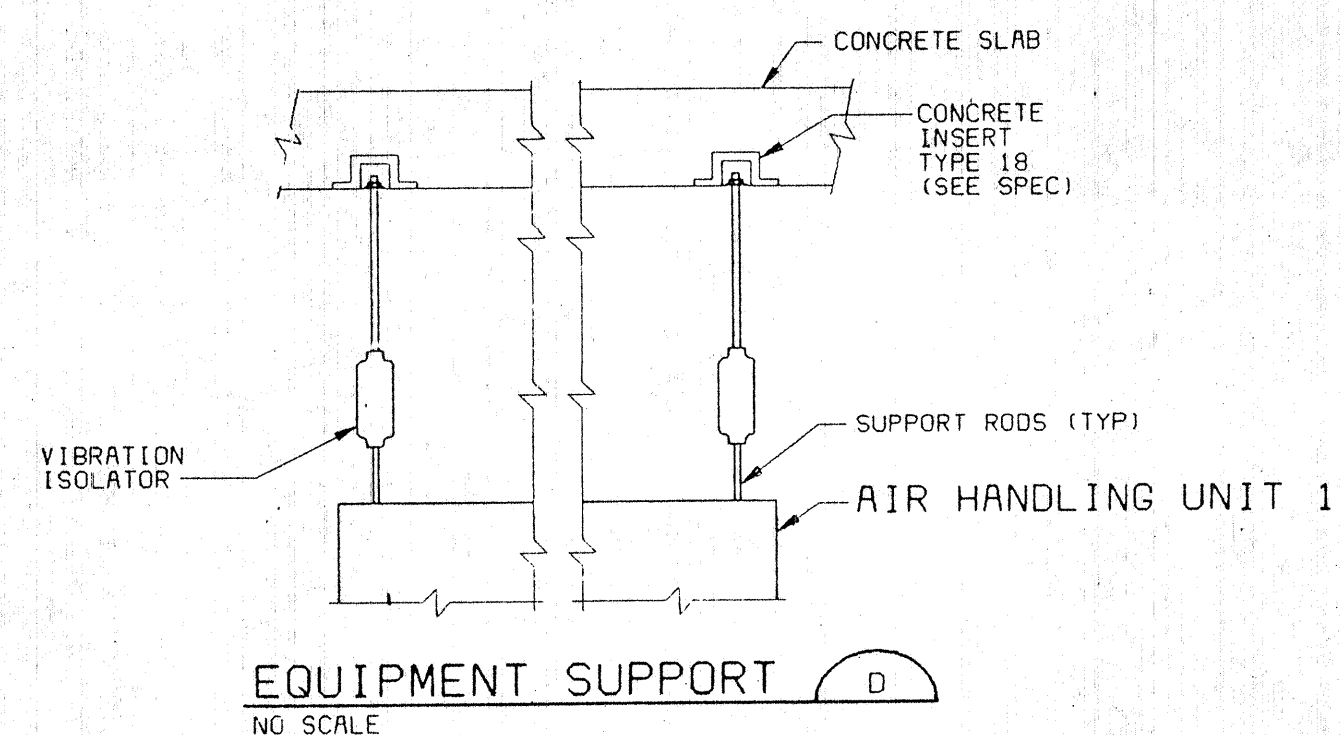
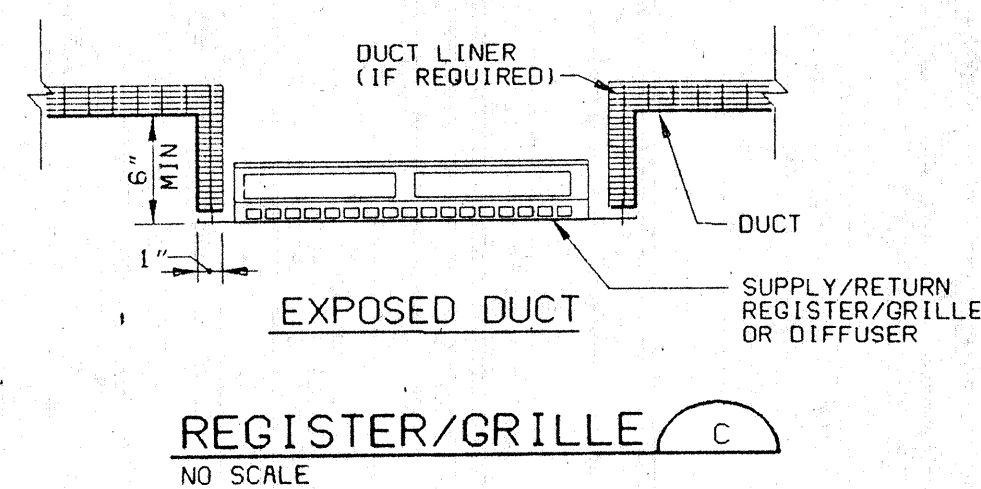
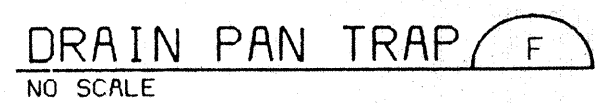
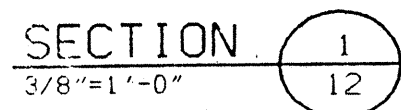
PROJECT NO.	14140
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WICHITA, KANSAS
HYDROELECTRIC PLANT

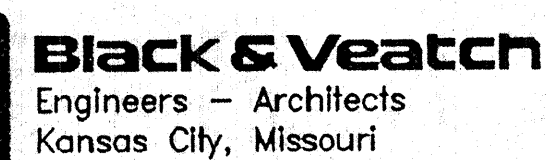
HVAC
FLOOR PLANS AND LEGEND



SHEET
12 OF 16



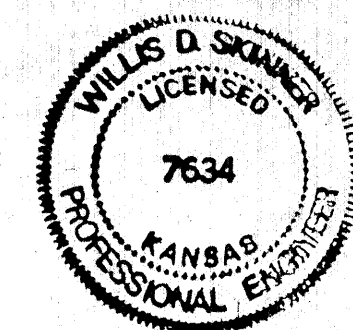
DESIGNED _____ RDJ
DETAILED _____ JWP
CHECKED _____ RGJ
APPROVED 216 Jean
DATE April 22, '88



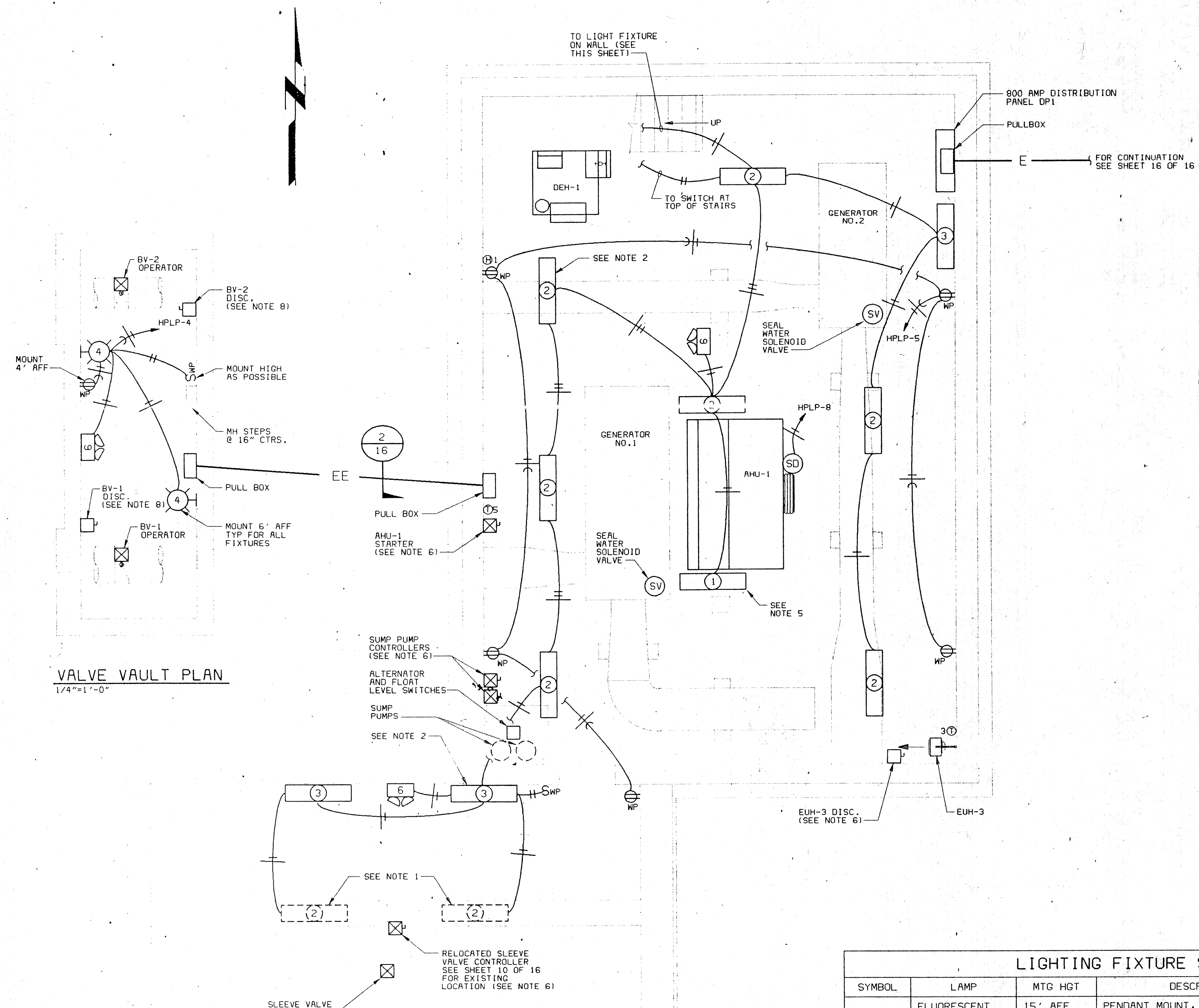
PROJECT NO.	14140
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WICHITA, KANSAS
HYDROELECTRIC PLANT

HVAC
SECTION AND DETAILS



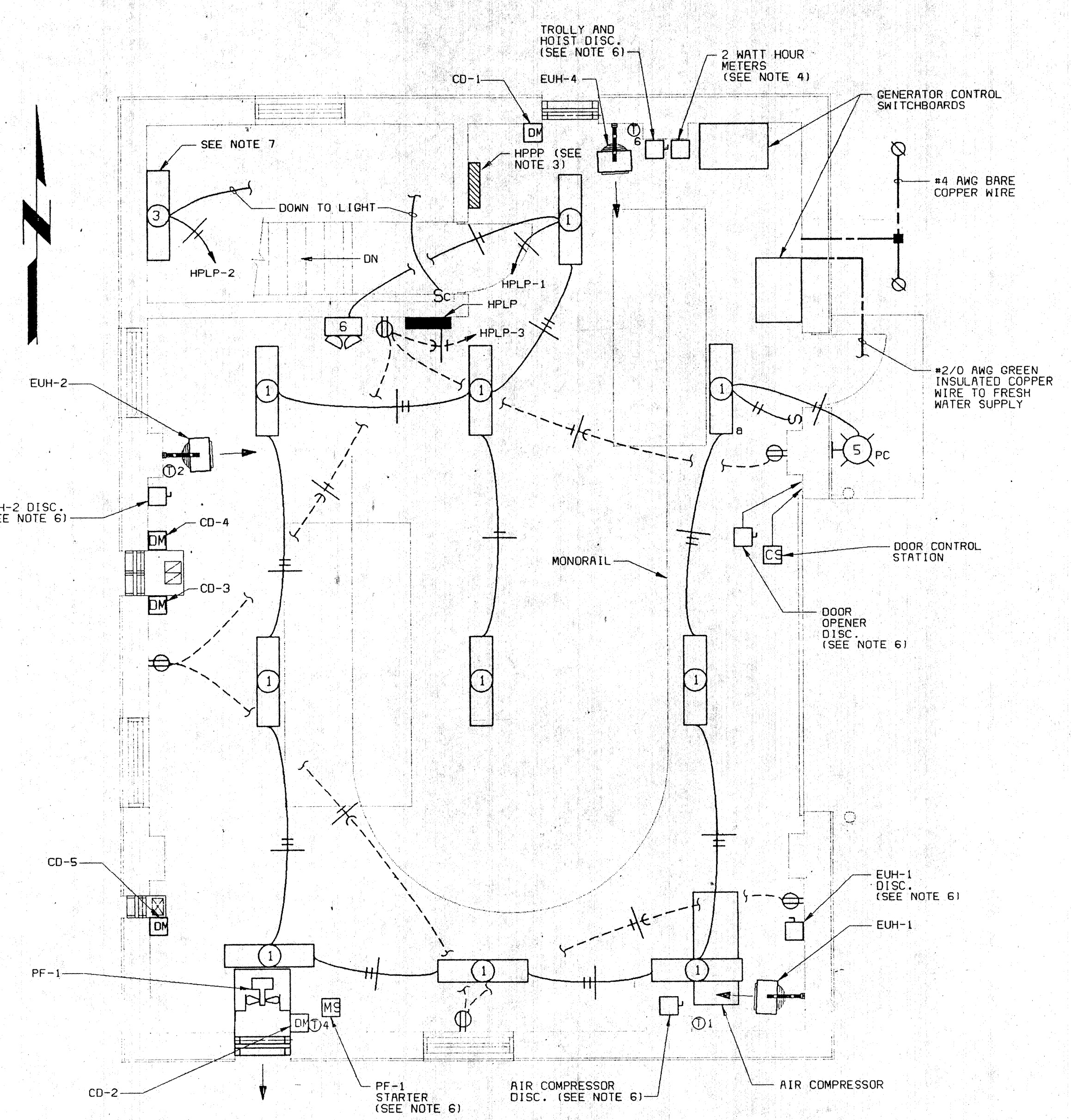
SHEET
13 OF 16



VALVE VAULT PLAN
1/4"=1'-0"

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

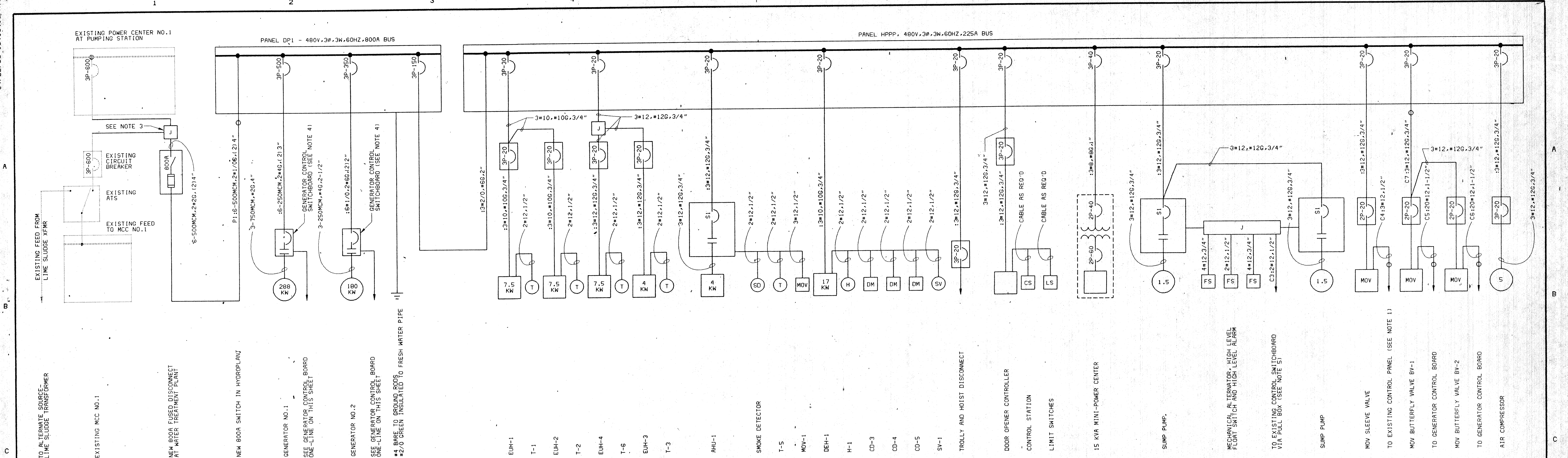
LIGHTING FIXTURE SCHEDULE				
SYMBOL	LAMP	MTG HGT	DESCRIPTION	MANUFACTURER
1	FLUORESCENT F40T12/CW/WM	15' AFF UON	PENDANT MOUNT, INDUSTRIAL FLUORESCENT, 10% UPLIGHT, PORCELAIN REFLECTOR MAXI- MISER II BALLAST GE-8G1028W	BENJAMIN FL-1024-4U
2	FLUORESCENT F40T12/CW/WM	ON CEILING	SURFACE MOUNT, INDUSTRIAL FLUORESCENT PORCELAIN RE- FLECTOR MAXI-MISER II BALLAST GE-8G1028W	BENJAMIN FL-1024-4U
3	FLUORESCENT F40T12/CW/WM	9' AFF UON	WALL MOUNTED FLUORESCENT MAXI-MISER II BALLAST GE-8G1028W	DAY-BRITE 45242-4
4	INCANDESCENT 150W	8' AFF	WALL MOUNTED INCANDESCENT W/GLOBE AND GUARD, SUITABLE FOR WET LOCATION	BENJAMIN 11W-150-GX
5	HIGH PRESS. SODIUM L70/D	10' AFG	WALL MOUNTED 70W HPS WEATHER RESISTANT, DIE CAST ALUMINUM HOUSING BALLAST GE-17G119W1A W/PHOTO CELL	HOLOPHANE #419NS-120-PR
6	2-8 WATT SEALED BEAM	8' AFF	EMERGENCY LIGHT BATTERY PACK W/WALL BRACKET #MBF	EXIDE MODEL #FSS CLASS 12



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

POWER CENTER: HPLP		KVA RATING: 15		LOCATION: HYDROELECTRIC PLANT			
SERVICE: 120/240V, 1Ø, 3W, S/N							
MOUNTING: SURFACE							
LOAD		P	BKR	CKT#	BKR	P	LOAD
LIGHTING - OPERATING FLOOR		1	20	1	2	20	LIGHTING - GEN RM & PRV VAULT
RECP - OPERATIONS RM		1	20	3	4	20	RECP & LTG - CONTROL VALVE VAULT
RECP - GEN RM & PRV VAULT		1	20	5	6	20	PF-1
SPARE		1	20	7	8	20	SMOKE DETECTOR
SPARE		1	20	9	10	20	SPARE
SPARE		1	20	11	12	20	SPARE

- NOTES:
- MOUNT FIXTURES UNDER BEAM.
 - MOUNT THIS FIXTURE BELOW AIR DUCT. CONTRACTOR SHALL COORDINATE PLACEMENT OF ALL LIGHTS WITH THE AIR DUCT CONTRACTOR.
 - LOCATE PANELS AS TO PROVIDE ADEQUATE CLEARANCE FOR MAINTENANCE.
 - THE WATT-HOUR METERS SHALL BE REMOTELY MOUNTED FROM THE CONTROL BOARDS. THEY SHALL BE MOUNTED ONE ABOVE THE OTHER IN THE LOCATION SHOWN ON THIS DRAWING.
 - FIXTURE MOUNTING HEIGHT TO BE 8'-6" FROM FLOOR FOR THIS FIXTURE ONLY.
 - ALL MOTOR STARTERS AND DISCONNECTS SHALL BE MOUNTED 4' TO CENTER AFF.
 - THIS FIXTURE SHALL BE HOT WIRED AND HAVE A SELF CONTAINED EMERGENCY PACK.
 - THE BV-1 AND BV-2 DISCONNECTS SHALL BE A NEMA 4 ENCLOSURE MOUNTED 5' AFF.



ONE-LINE DIAGRAM

ONE-LINE DIAGRAM LEGEND

20: 22: 3#8, #10G, 2" CIRCUIT NO. 22 WITH #8 INSULATED CONDUCTORS, 1#10 BARE GROUND WIRE ALL IN 2" CONDUIT TO 20 HP MOTOR. LOADS AS INDICATED IN HP OR KW ARE EXPECTED, BUT MAY VARY WITH THE EQUIPMENT FURNISHED. IF EQUIPMENT HAS LARGER LOAD THE CABLE, CONDUIT AND ELECTRICAL EQUIPMENT SHALL BE ENLARGED AS REQUIRED.

5 KW

15

AUXILIARY ITEMS MAY NOT BE SHOWN COMPLETELY

3P-20

LOW VOLTAGE AIR CIRCUIT BREAKER, 3 POLE, 20 AMPERE

S4

SIZE 4 COMBINATION MAGNETIC MOTOR STARTER

CONDUIT & WIRING INSTALLATION LEGEND

CONDUIT EXPOSED

CONDUIT CONCEALED

CONDUIT TURNING UP, CONDUIT TURNING DOWN.

SHORT DASH FOR EACH PHASE CONDUCTOR, LONG DASH FOR NEUTRAL CONDUCTOR, CIRCULAR DASH FOR GROUND WIRE.

TYPICAL FOR HOME RUN TO BE ROUTED TO LIGHTING PANEL L2-5

L2-5

LIGHTING FIXTURE. REFER TO NUMBER OR LETTER IN FIXTURE SCHEDULE

FLUORESCENT FIXTURE. REFER TO NUMBER OR LETTER IN FIXTURE SCHEDULE.

E UNDERGROUND CONCRETE ENCASED ELECTRICAL DUCT BANK

EE DIRECT BURIED CONDUIT

MISCELLANEOUS SYMBOLS

J JUNCTION BOX

T THERMOSTAT

GROUND ROD

GROUND CONNECTION

DISCONNECT SWITCH

COMBINATION STARTER

POWER PANEL

LIGHTING PANEL

MISCELLANEOUS PANEL

SWITCH & OUTLET SYMBOLS

S SINGLE POLE SWITCH

S3 THREE-WAY SWITCH

SWP WEATHERPROOF SWITCH

DUPLEX RECEPTACLE 120 VOLT

SCHEMATIC SYMBOLS

NORMALLY OPEN CONTACT

NORMALLY CLOSED CONTACT

STARTER, CONTACTOR OR RELAY COIL

FUSE

CONTROL POWER TRANSFORMER

FLOAT SWITCH (CLOSING ON RISING LEVEL)

TEMPERATURE SWITCH (CLOSING ON RISING TEMPERATURE)

LIMIT SWITCH (NORMALLY OPEN)

NOTES:

1. THE EXISTING CONTROL PANEL IS LOCATED IN THE WATER TREATMENT PLANT. SEE SHEET 16.

2. THE CONTRACTOR SHALL COORDINATE LOCATION OF GENERATOR CONTROL EQUIPMENT AT EXISTING CONTROL BOARD IN CHEMICAL BUILDING WITH THE OWNER.

3. THE CONTRACTOR SHALL SIZE THIS JUNCTION BOX ACCORDING TO THE NATIONAL ELECTRIC CODE.

4. SIZE STARTER AS REQUIRED.

5. CONNECT WIRE TO AN EXISTING WINDOW ON THE CHEMICAL BUILDING CONTROL BOARD ANNUNCIATOR.

GENERATOR CONTROL BOARD ONE-LINE
(TYPICAL OF 2)

VT TURBINE BEARING VIBRATION TRANSDUCERS

RTD TURBINE BEARING RTD'S (4)

TURBINE

GENERATOR

GENERATOR RTD'S (3)

SPEED SWITCHES (2)

TACH GENERATOR

SPACE HEATERS

TO INLET BUTTERFLY VALVE

SEAL WATER SOLENOID VALVE SV-1 OR SV-2

WATT HOUR METER

TO 800A DISTRIBUTION PANEL DP1

PULL BOX (TO CHEMICAL BLDG. - SEE DUCT BANK DETAIL ON SHEET 16 OF 16) (SEE NOTE 2)

TO CHEMICAL BUILDING CONTROL PANEL

FROM SUMP PUMP HIGH LEVEL FLOAT ALARM

FROM PRESSURE REDUCING SLAVE VALVE

DESIGNED LOP

DETAILED JKE

CHECKED DFB

APPROVED [Signature]

DATE 4-23-88

PROJECT NO. 14140

WICHITA, KANSAS
HYDROELECTRIC PLANT

ELECTRICAL
ONE-LINE DIAGRAMS AND LEGEND

10764

SHEET 15 OF 16

CCG, DWG. NO: 14140-331-292-E002

