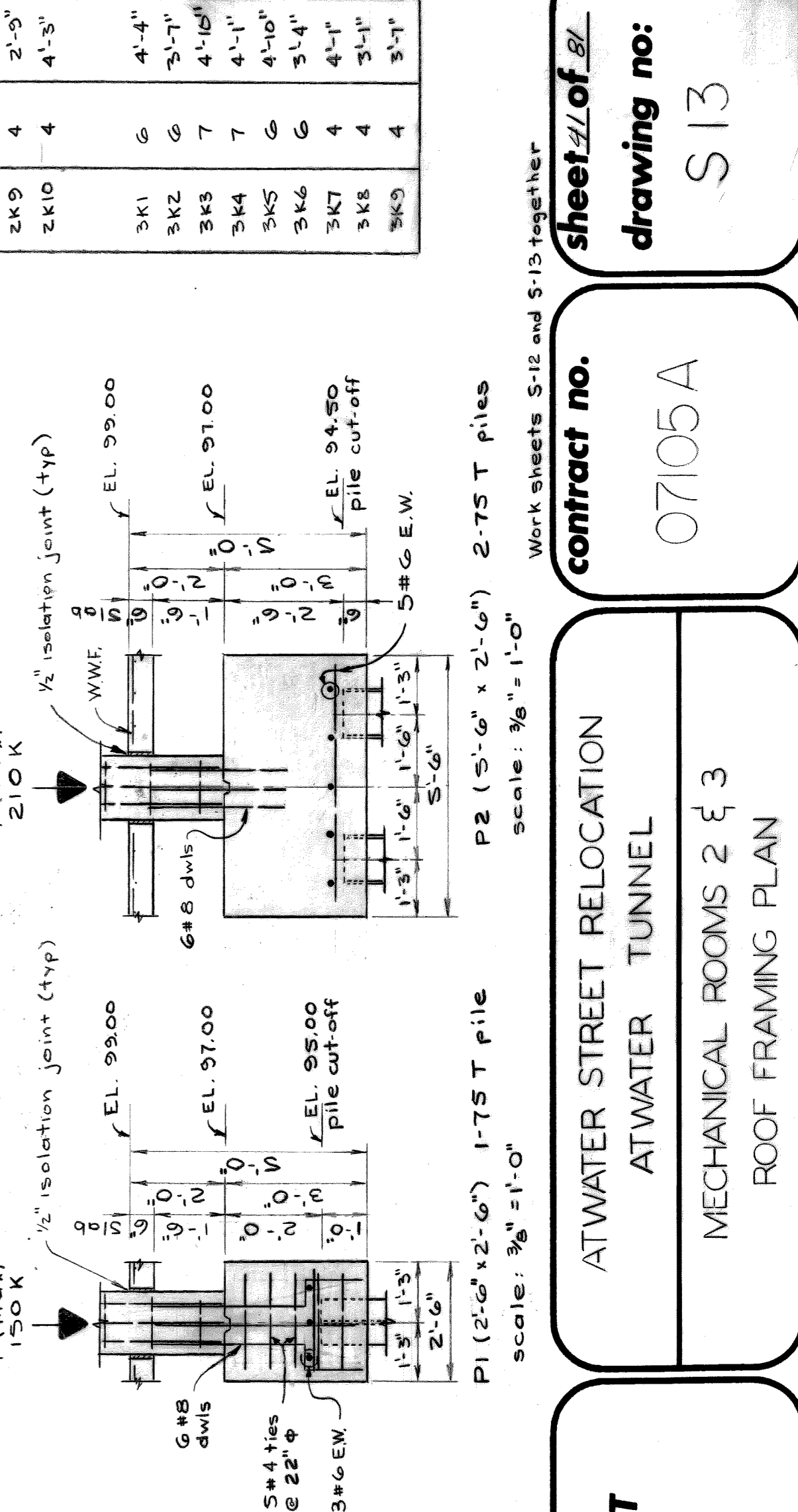
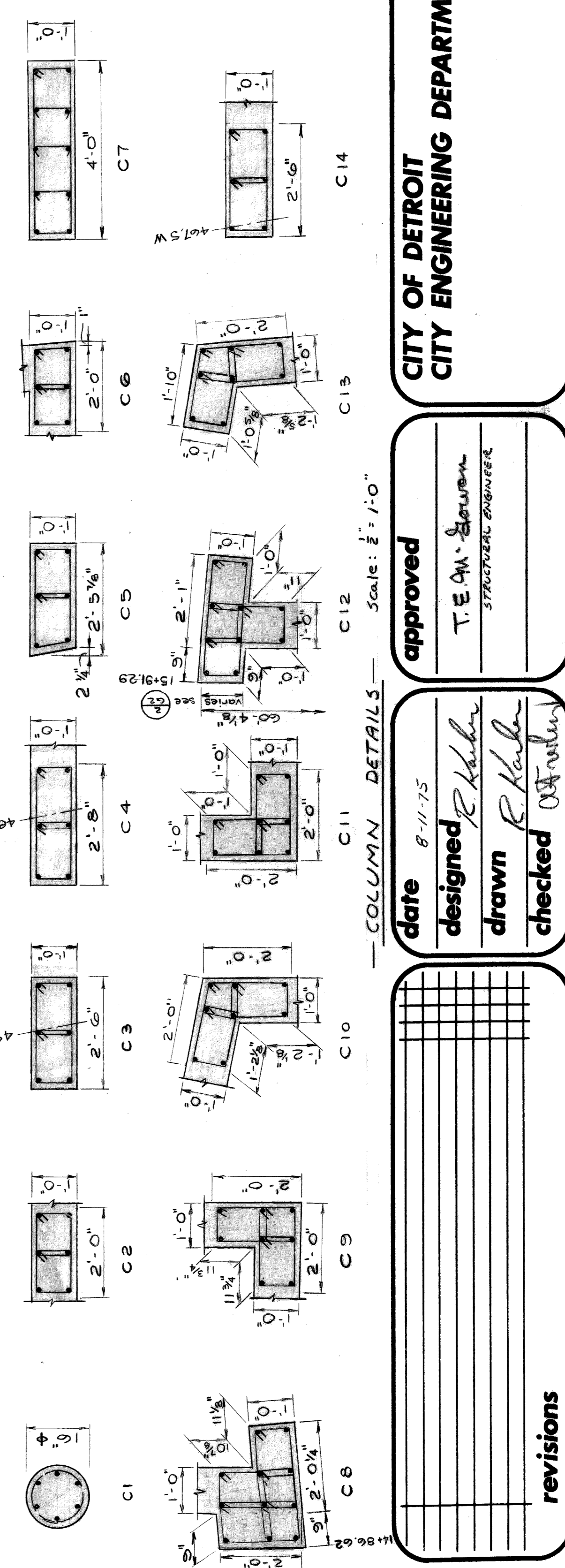


ROOF FRAMING PLAN #2  
 MECHANICAL ROOM #2  
 Scale: 3/16" = 1'-0"

Mark	Size and Shape	Reinforcement			Remarks
		Cent. Bottom	Cent. Top	add'l top at supp.	
SB1	12' x 24"	4#6	2#6	4#10	1 add'l #4 mesh in 2 layers
SB2	12' x 24"	4#6	2#6	4#10	"
SB3	17' x 24"	4#7	2#6	3#6	"
SB4	17' x 24"	4#7	2#6	3#6	"
SB5	12' x 45"	2#6	2#6	3#6	2 add'l #4 EF.
SB6	12' x 45"	2#6	2#6	3#6	2 add'l #4 EF.
SB7	12' x 30"	4#7	2#7	4#12	"
SB8	12' x 45"	2#6	2#6	3#6	2 add'l #4 EF.
B1	12' x 24"	3#5	2#5	3#12	"
B2	12' x 24"	3#5	2#5	3#12	"

BEAM		SCHEDULE	
Mark	Size and Shape	Reinforcement	Remarks
C1	2'-0"	4#7	
C2	2'-0"	4#7	
C3	2'-0"	4#7	
C4	2'-0"	4#7	
C5	2'-0"	4#7	
C6	2'-0"	4#7	
C7	4'-0"	4#7	
C8	2'-0"	4#7	
C9	2'-0"	4#7	
C10	2'-0"	4#7	
C11	2'-0"	4#7	
C12	2'-0"	4#7	
C13	2'-0"	4#7	
C14	2'-0"	4#7	



ROOF FRAMING PLAN #3  
 MECHANICAL ROOM #3  
 Scale: 3/16" = 1'-0"

Bottom Bars	Top Bars
mark no.	mark no.
2M1 1 3#6@12", 4#6@12"	2MT1 1 6-2K8
2M2 2 4#6@12", 3#6@12"	2MT2 1 10-2K8
2M3 3 4#6@12", 4#6@12"	2MT3 3 6-2K10
2M4 4 3#7@12", 4#7@12"	2MT4 5 12#6@10"
2M5 5 3#6@12", 4#6@12"	2MT5 2 8#4@5'-6"
2M6 6 3#6@12", 3#6@12"	2MT6 6 8#4@5'-6"
2M7 7 4#4@10", 4#4@10"	2MT7 6 11#5@5'-6"
2M8 8 4#4@10", 4#4@10"	2MT8 10#7@7'-3"
2M9 9 3#7@10", 4#7@10"	2MT9 10#7@6'-3"
2M10 10 3#8@10", 3#8@10"	2MT10 2 10#6@5'-6"
2M11 11 3#6@10", 3#6@10"	2MT11 4 10#5@7'-3"
2M12 12 7#5@6'-0"	2MT12 11#7@7'-6"
	2MT13 1 7#6@7'-6"
	2MT14 1 3-2K8
	2MT15 14#5@13'-0"
	2MT16 6-2K1
	2MT17 14#5@10'-0"
	2MT18 1 14#5@10'-0"
	2MT19 10-2K8
	2MT20 10-2K8
	2MT21 6-2K1
	2MT22 6-2K1
	2MT23 6-2K1
	2MT24 6-2K1
	2MT25 6-2K1
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	2MT95 6-2K1
	2MT96 6-2K1
	2MT97 6-2K1
	2MT98 6-2K1
	2MT99 6-2K1
	2MT100 6-2K1

Room	Room
Room 2	Room 3
1. E-W bottom	N-S bottom
2. N-S bottom	E-W bottom
3. N-S top	E-W top
4. E-W top	N-S top

Mark	Vert	Ties
C1	6#8	#5@12"
C2	6#7	#5@12"
C3	6#7	do
C4	6#7	do
C5	6#7	do
C6	6#7	do
C7	10#6	do
C8	11#7	do
C9	8#7	do
C10	8#7	do
C11	8#7	do
C12	10#7	do
C13	8#7	do
C14	6#7	#5@12"

Mark	Size	Bottom	Top	Stirrups	Remarks
SB1	12' x 24"	4#6	2#6	4#10	1 add'l #4 mesh in 2 layers
SB2	12' x 24"	4#6	2#6	4#10	"
SB3	17' x 24"	4#7	2#6	3#6	"
SB4	17' x 24"	4#7	2#6	3#6	"
SB5	12' x 45"	2#6	2#6	3#6	2 add'l #4 EF.
SB6	12' x 45"	2#6	2#6	3#6	2 add'l #4 EF.
SB7	12' x 30"	4#7	2#7	4#12	"
SB8	12' x 45"	2#6	2#6	3#6	2 add'l #4 EF.
B1	12' x 24"	3#5	2#5	3#12	"
B2	12' x 24"	3#5	2#5	3#12	"

**NOTES:**  
 See S-10 for General Notes  
 for all 4. mech. rooms.  
 See S-11 for re-steel placement  
 in two-way slabs.

**REVISIONS**

**approved**  
 T. E. An...  
 STRUCTURAL ENGINEER

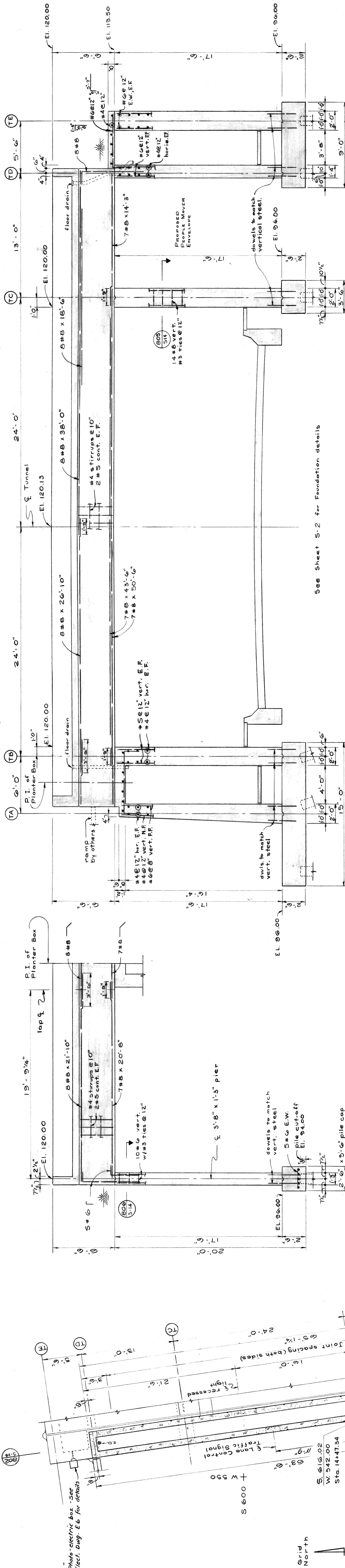
**date** 8-11-75  
**designed** R. K...  
**drawn** R. K...  
**checked** O.S. ...

**AT WATER STREET RELOCATION  
 AT WATER TUNNEL  
 MECHANICAL ROOMS 2 & 3  
 ROOF FRAMING PLAN**

**contract no.** 07105A  
**drawing no.** S13

**City of Detroit  
 City Engineering Department**

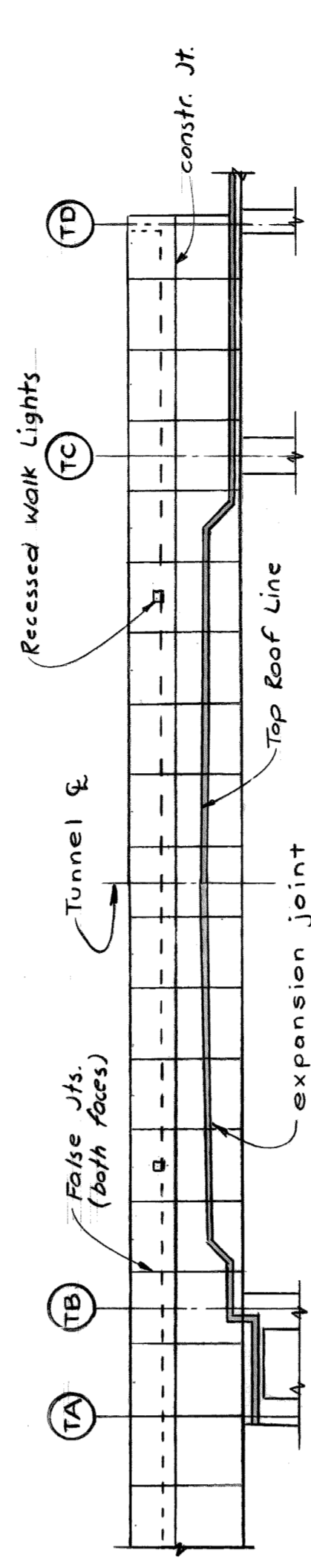
**Sheet 4 of 8**



SECTION  $\frac{602}{S14}$  Scale:  $\frac{1}{4}'' = 1'-0''$

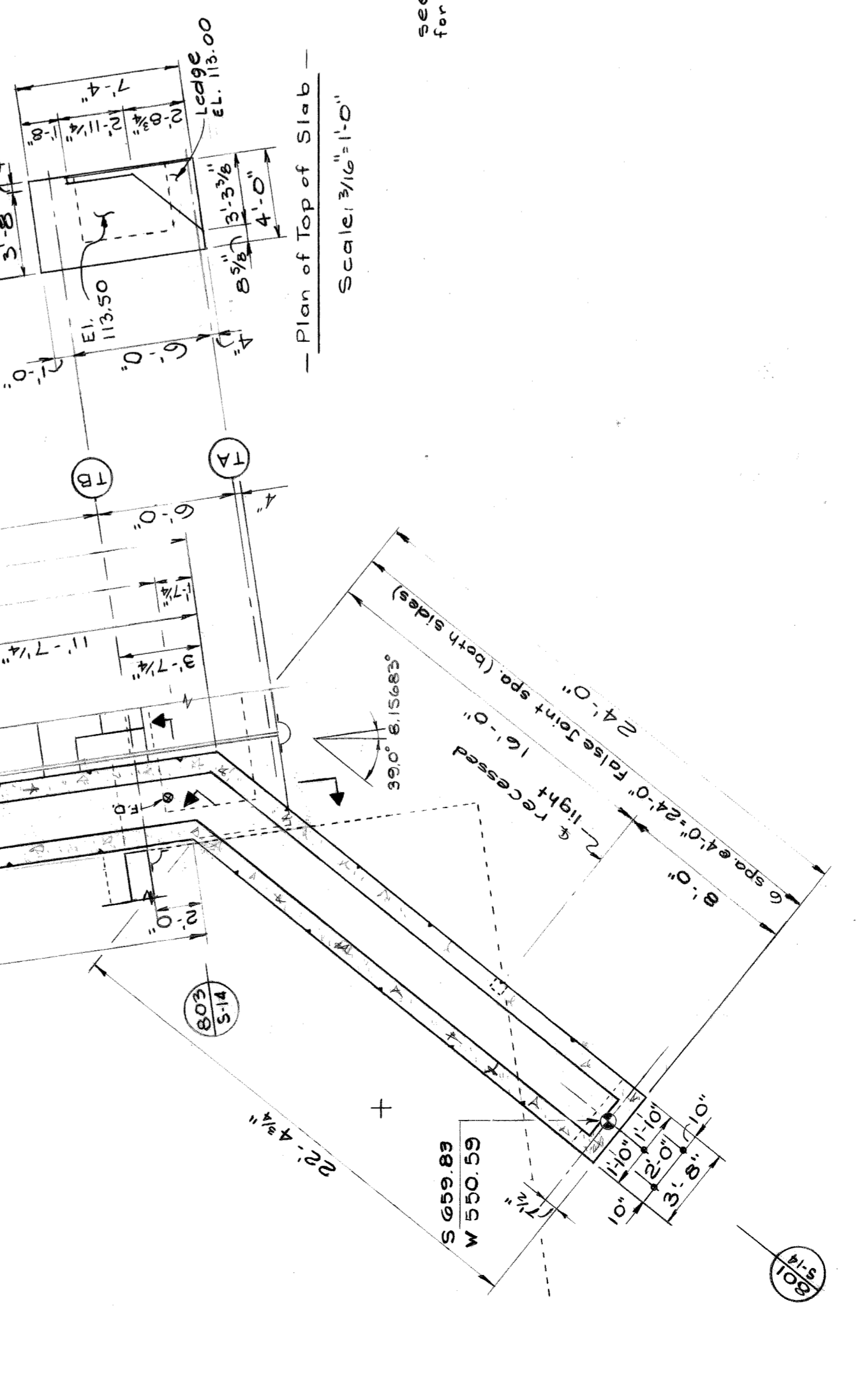
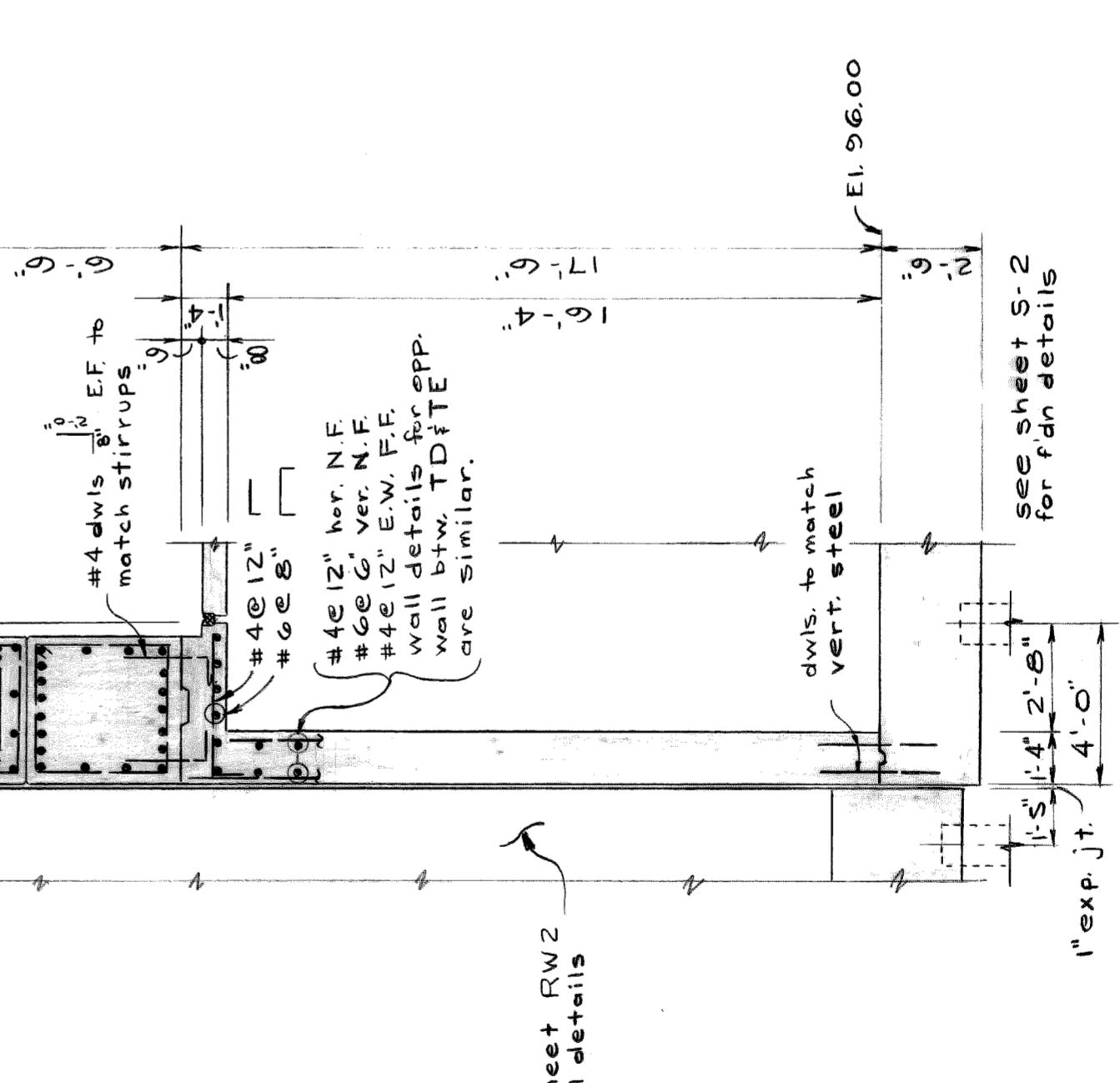
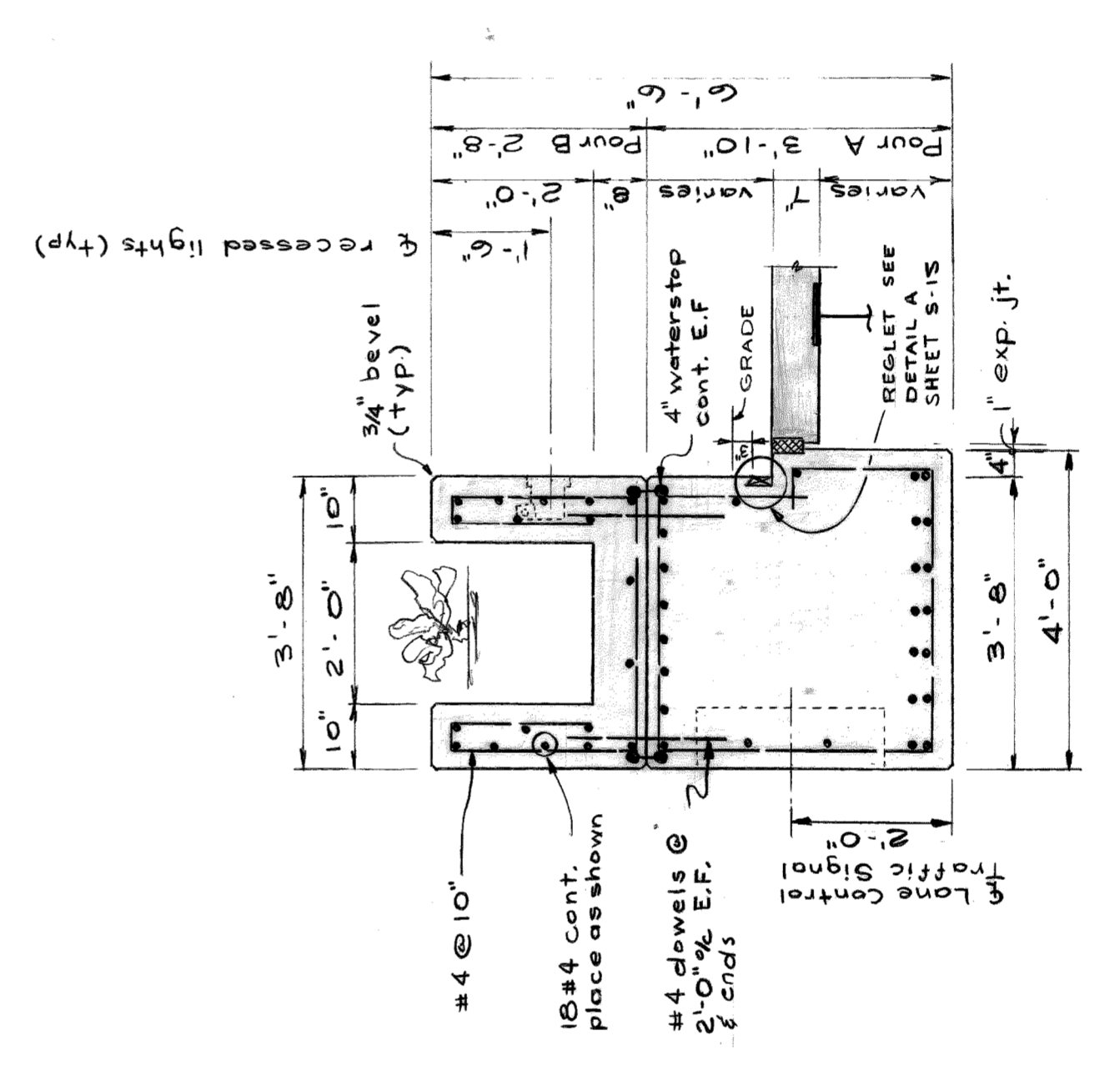
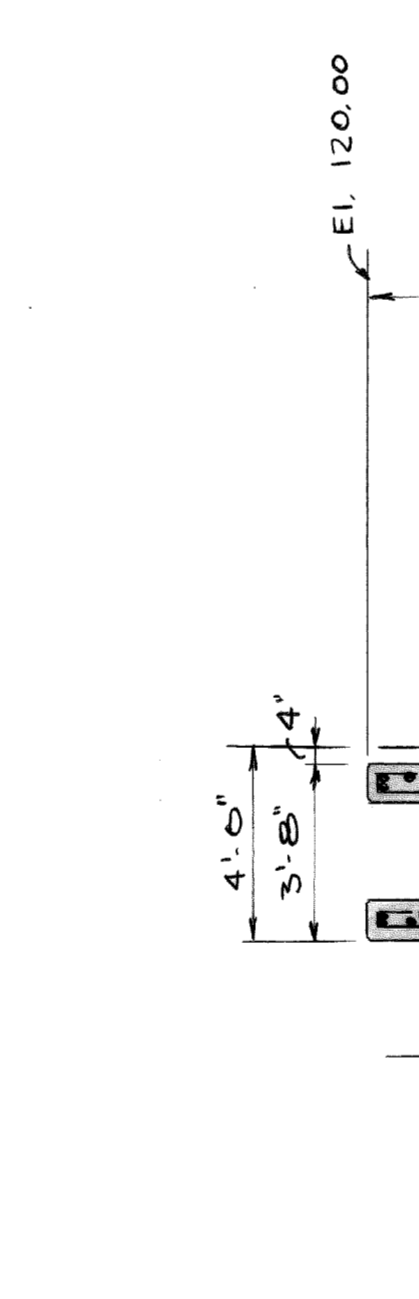
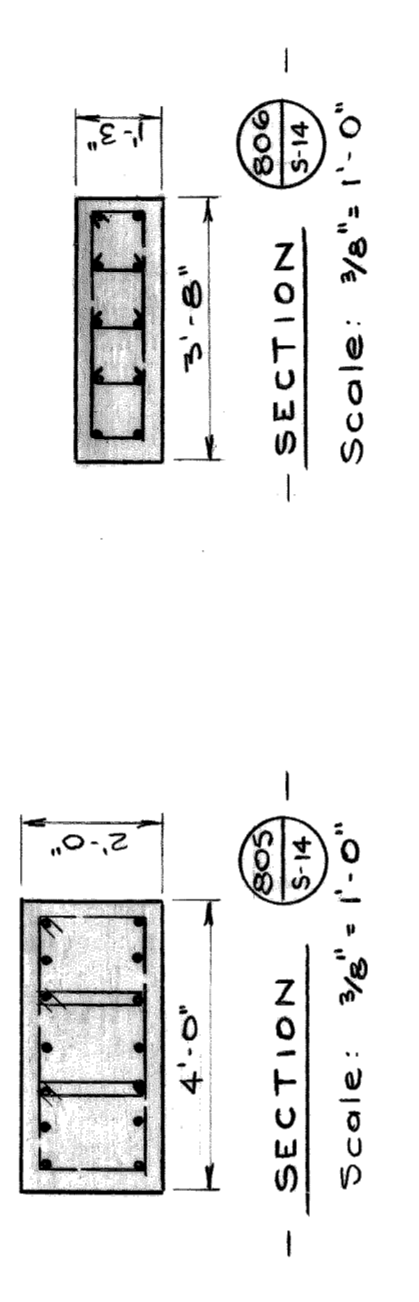
SECTION  $\frac{602}{S14}$  Scale:  $\frac{1}{4}'' = 1'-0''$

SECTION  $\frac{602}{S14}$  Scale:  $\frac{1}{4}'' = 1'-0''$



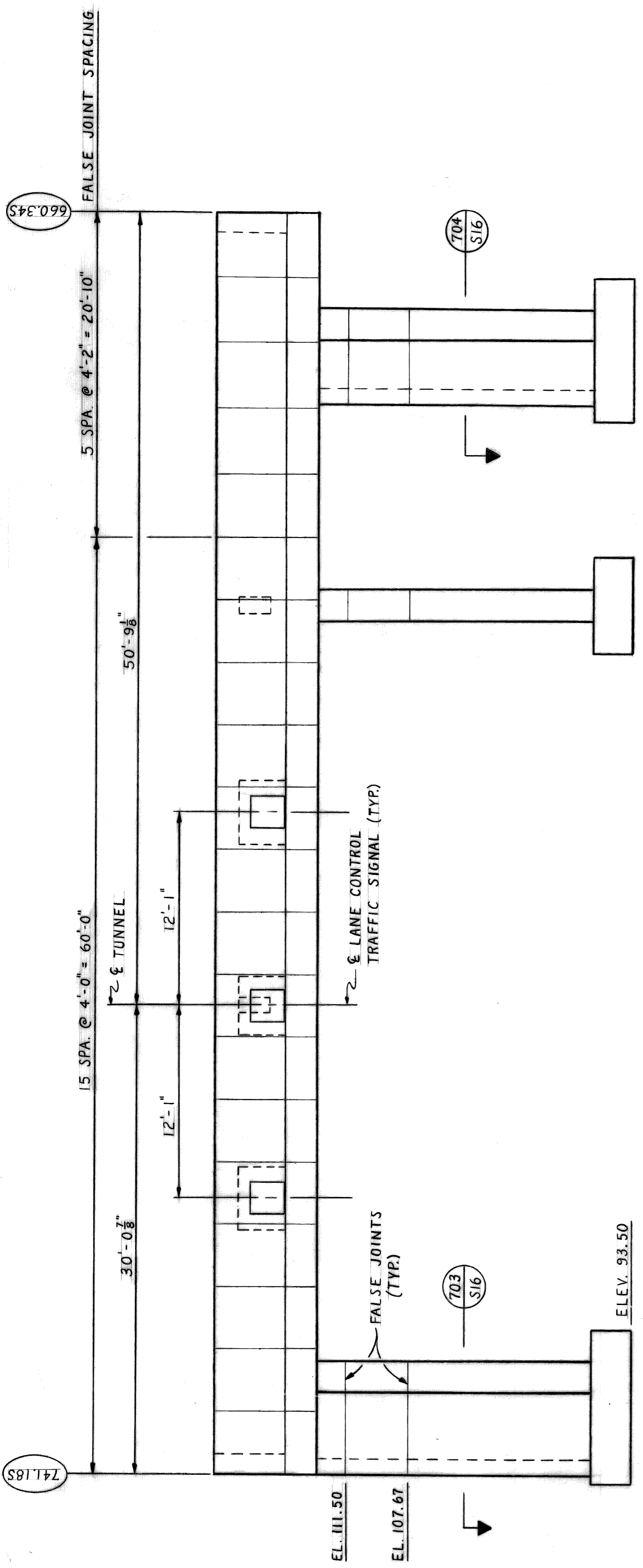
EAST ELEVATION OF WEST PORTAL Scale:  $\frac{1}{8}'' = 1'-0''$

**GENERAL NOTES - PLANTER BOXES**  
 BEFORE PLACING CONCRETE, REFER TO ARCH. ELECTRICAL AND MECHANICAL DRAWINGS FOR ALL REQUISITE CONDITIONS. ADVISE AS NECESSARY THE CONTRACTOR OF ANY SPECIAL REQUIREMENTS. PLANTER BOXES AND COLUMNS SHALL BE GRADE 40S CONCRETE. WALLS AND FOOTINGS SHALL BE GRADE 35 S.  
 DAMPROOFING SHALL BE APPLIED TO THE OUTSIDE FACE OF ALL PLENUM WALLS RECEIVING BACKFILL.  
 A FLEXIBLE WATERPROOFING SYSTEM SHALL BE APPLIED TO THE INSIDE OF BOTH PLANTER BOXES TO WITHIN 6" OF THE TOP.  
 REINFORCING BARS, WHERE LENGTHS ARE NOT SPECIFICALLY CALLED OUT, SHALL BE TO THE MAXIMUM PERMISSIBLE LENGTHS WITH LAP SPICES, SUBJECT TO THE REQUIREMENTS OF THE DRAWINGS.  
 See Arch. Drawg's. for details of masonry wall anchors to concrete walls.

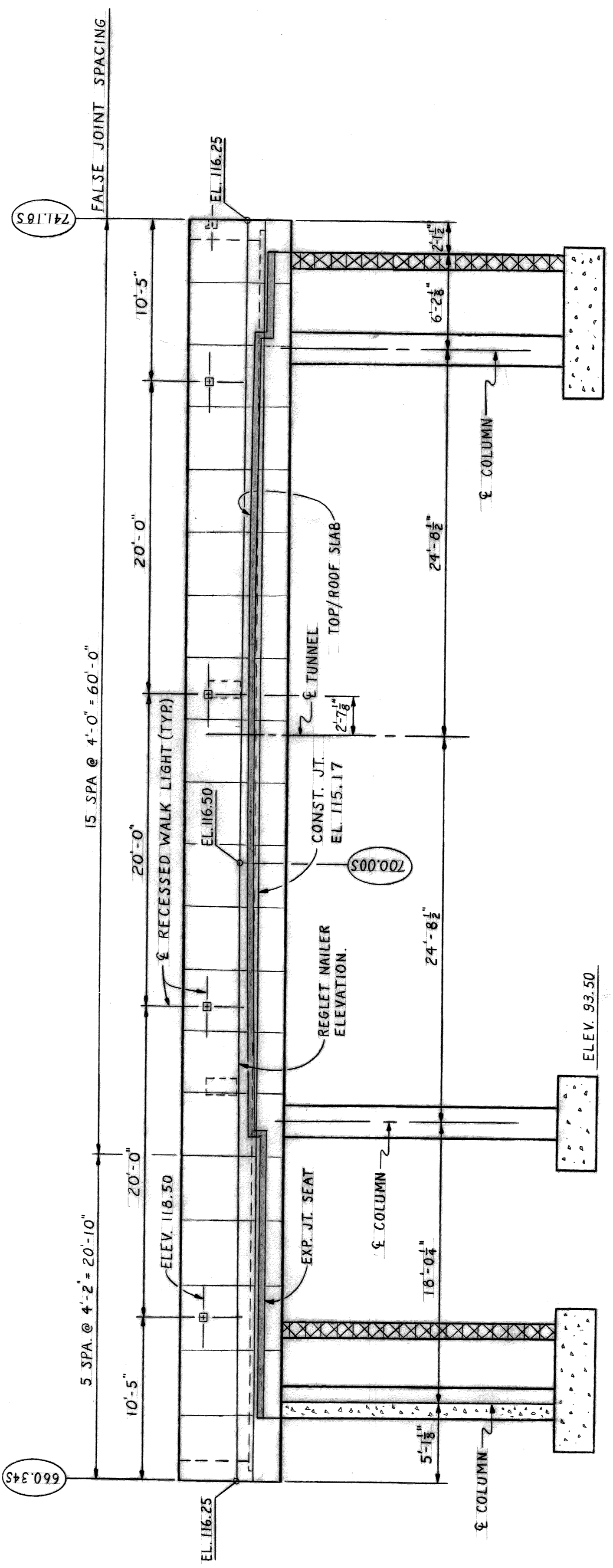


PLAN Scale:  $\frac{3}{16}'' = 1'-0''$

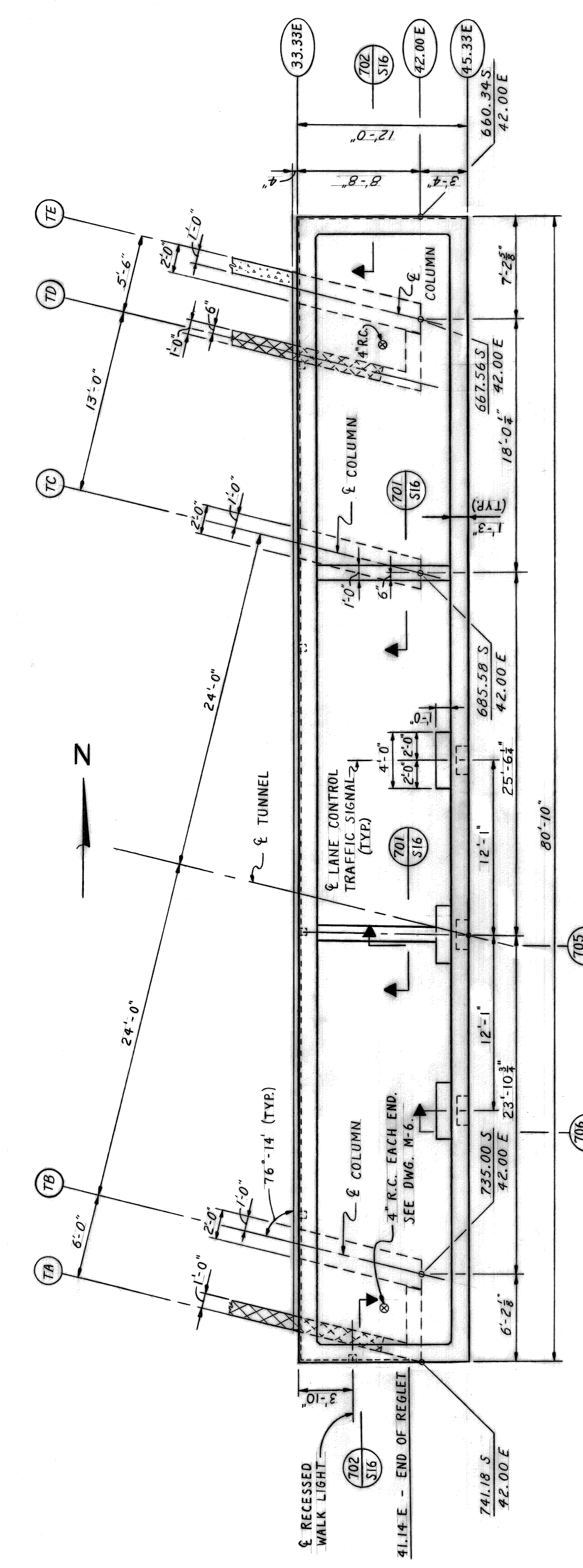
<b>Sheet</b> 22 of 31 <b>drawing no:</b> S 14	<b>contract no.</b> 07105 A	<b>CITY OF DETROIT</b> <b>CITY ENGINEERING DEPARTMENT</b>	<b>ATWATER STREET RELOCATION</b> <b>ATWATER TUNNEL</b> <b>WEST PLANTER BOX DETAILS</b>	<b>approved</b> T. E. SMITH STRUCTURAL ENGINEER	<b>date</b> 8-11-75 <b>designed</b> R. K. K. K. <b>drawn</b> E. K. K. K. <b>checked</b> D. K. K. K.	<b>revisions</b>
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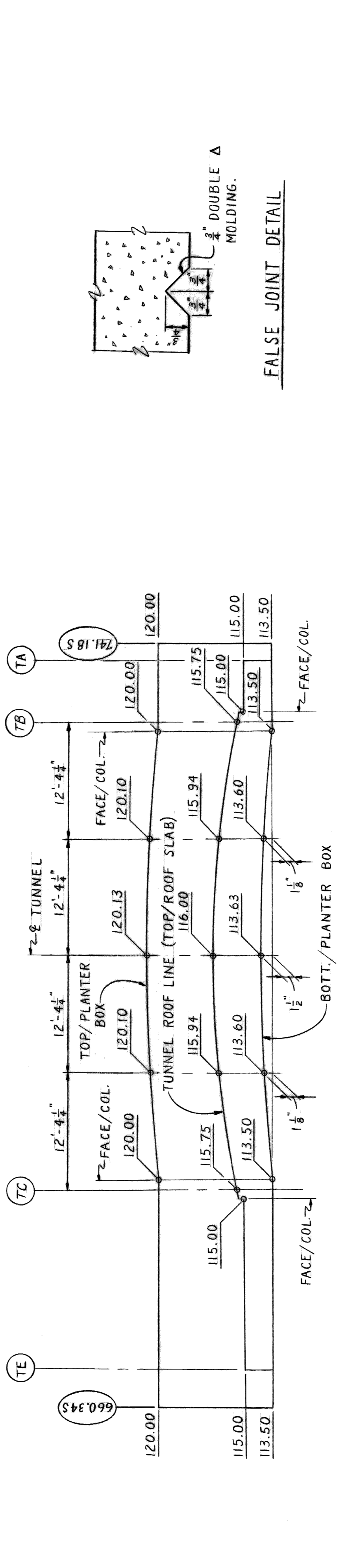
EAST ELEVATION - EAST PLANTER BOX  
SCALE: 3/8" = 1'-0"



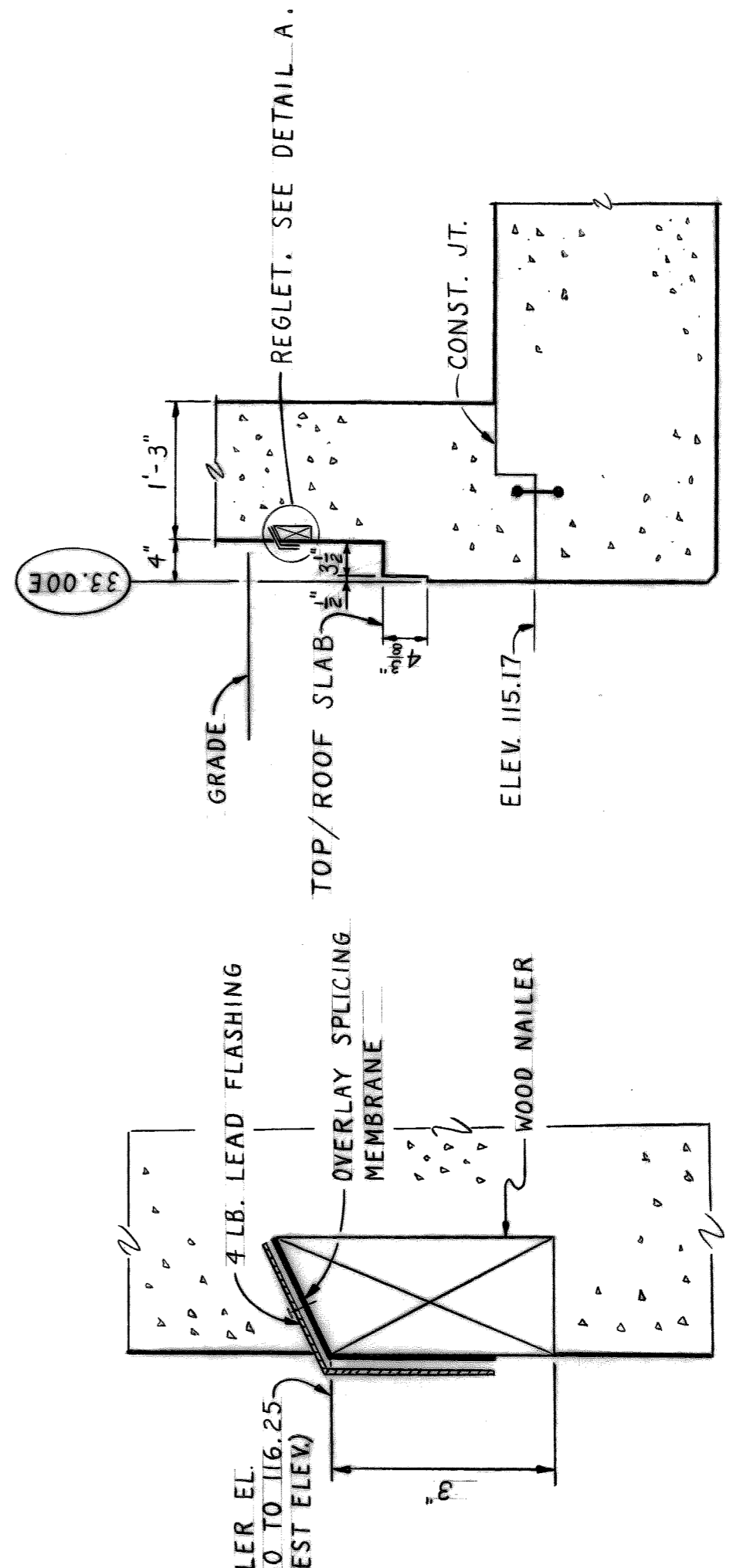
WEST ELEVATION - EAST PLANTER BOX  
SCALE: 3/8" = 1'-0"



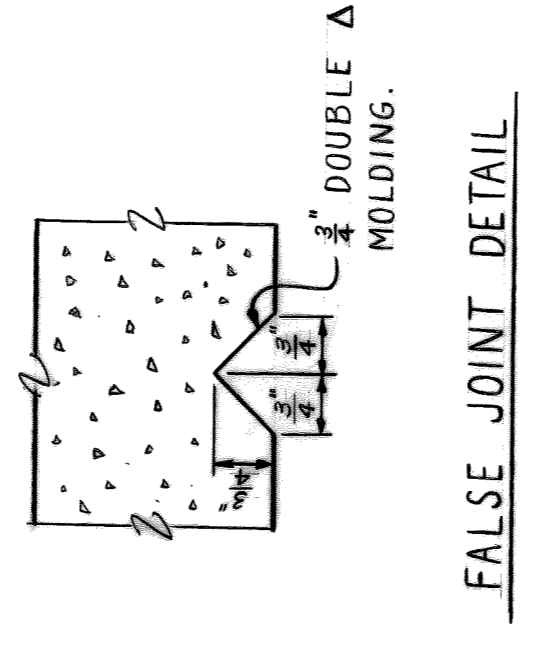
EAST PLANTER BOX PLAN  
SCALE: 3/8" = 1'-0"



WEST ELEVATION (EAST ELEVATION SIMILAR)  
CONSTRUCTION PROFILE  
NO SCALE



EXPANSION JOINT SEAT DETAIL  
SCALE: 3/4" = 1'-0"



FALSE JOINT DETAIL

DETAIL A  
HALF FULL SCALE

NO.	REVISIONS

date 8-11-75  
designed R. Bunce  
drawn R. Bunce  
checked

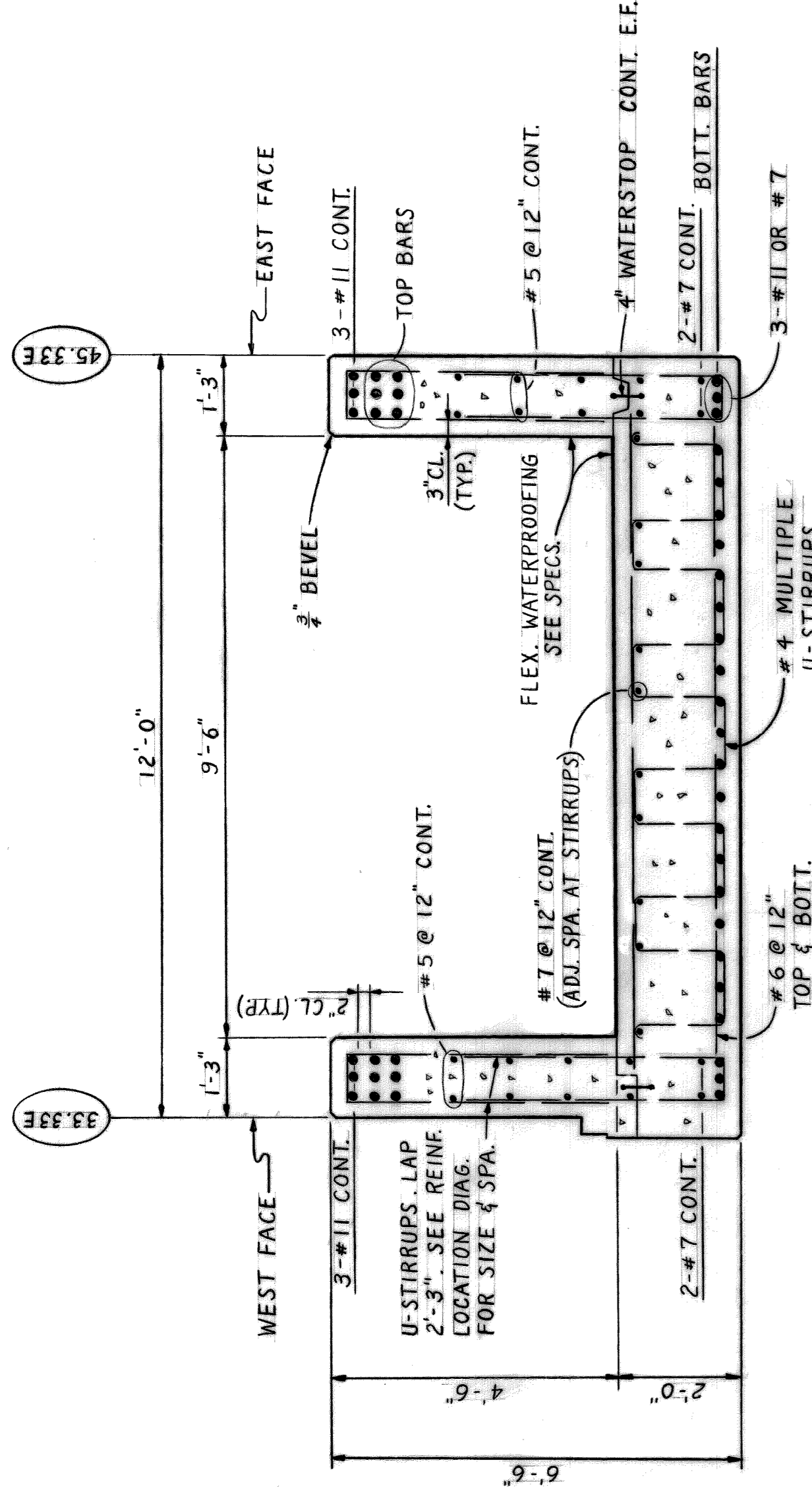
approved  
T. E. Quinn  
STRUCTURAL ENGINEER

CITY OF DETROIT  
CITY ENGINEERING DEPARTMENT

ATWATER STREET RELOCATION  
ATWATER STREET  
EAST PLANTER BOX DETAILS

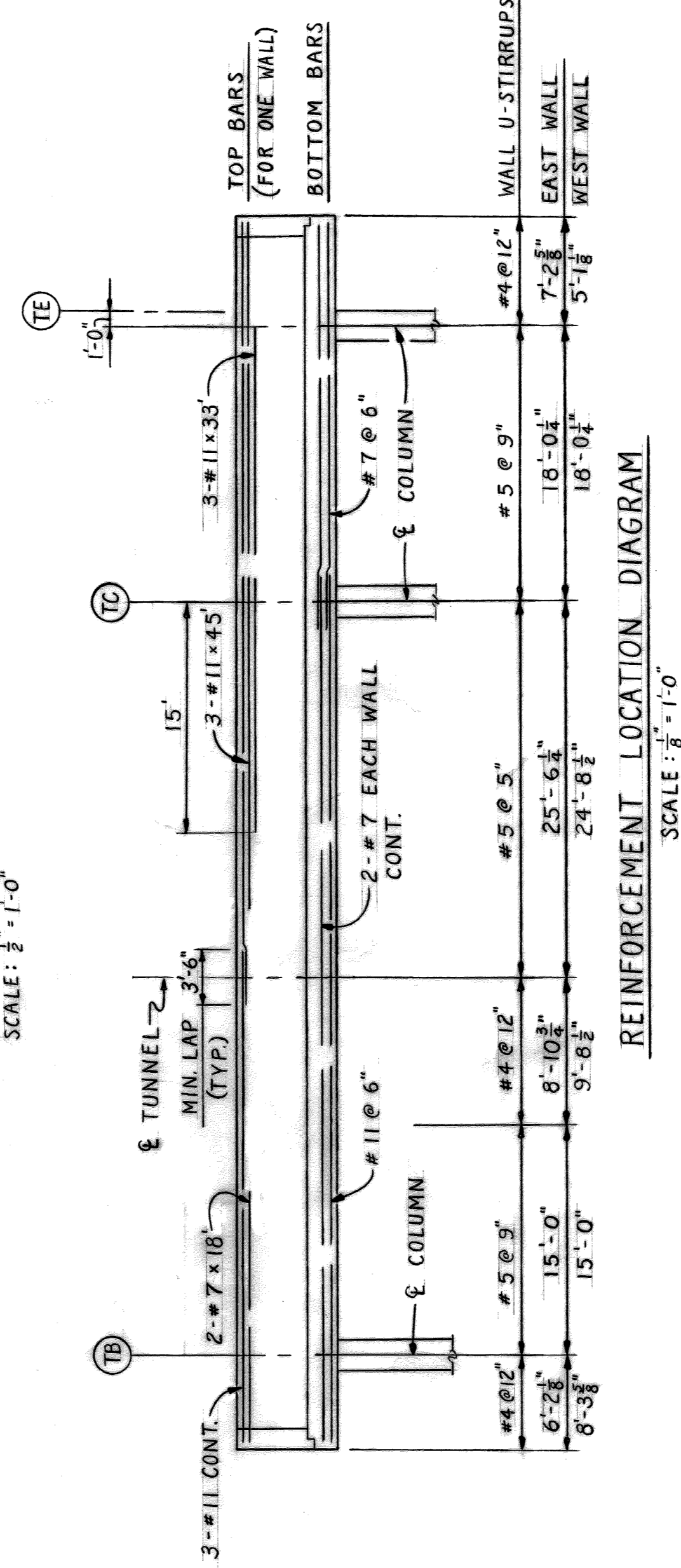
contract no. 07105 A

Sheet 13 of 81  
drawing no. S 15

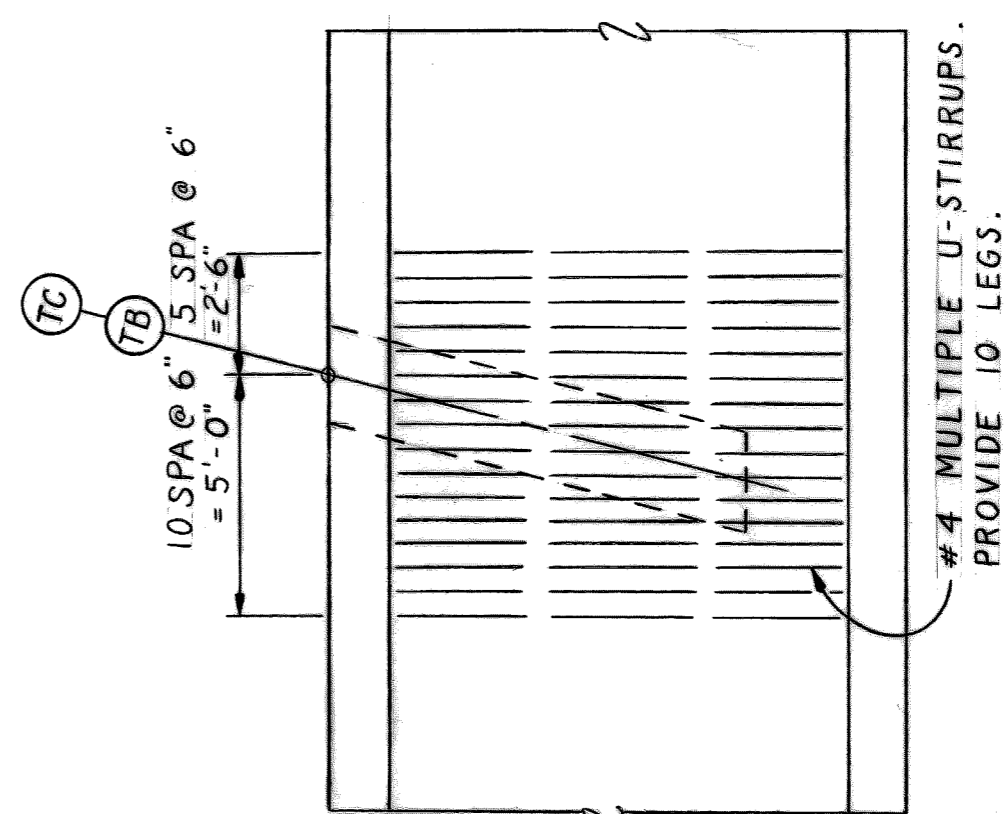


NOTE: SEE REINFORCEMENT LOCATION DIAGRAM FOR REINFORCEMENT NOT CALLED OUT ON SECTION.

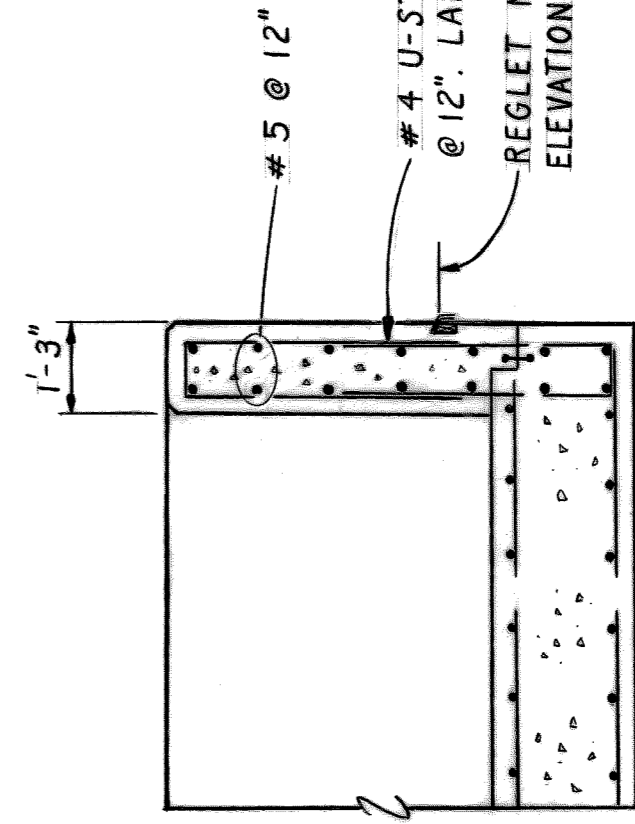
PLANTER BOX SECTION  
SCALE: 1/2" = 1'-0"



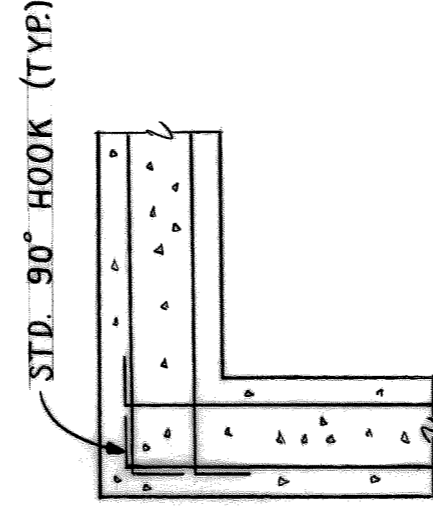
REINFORCEMENT LOCATION DIAGRAM  
SCALE: 1/8" = 1'-0"



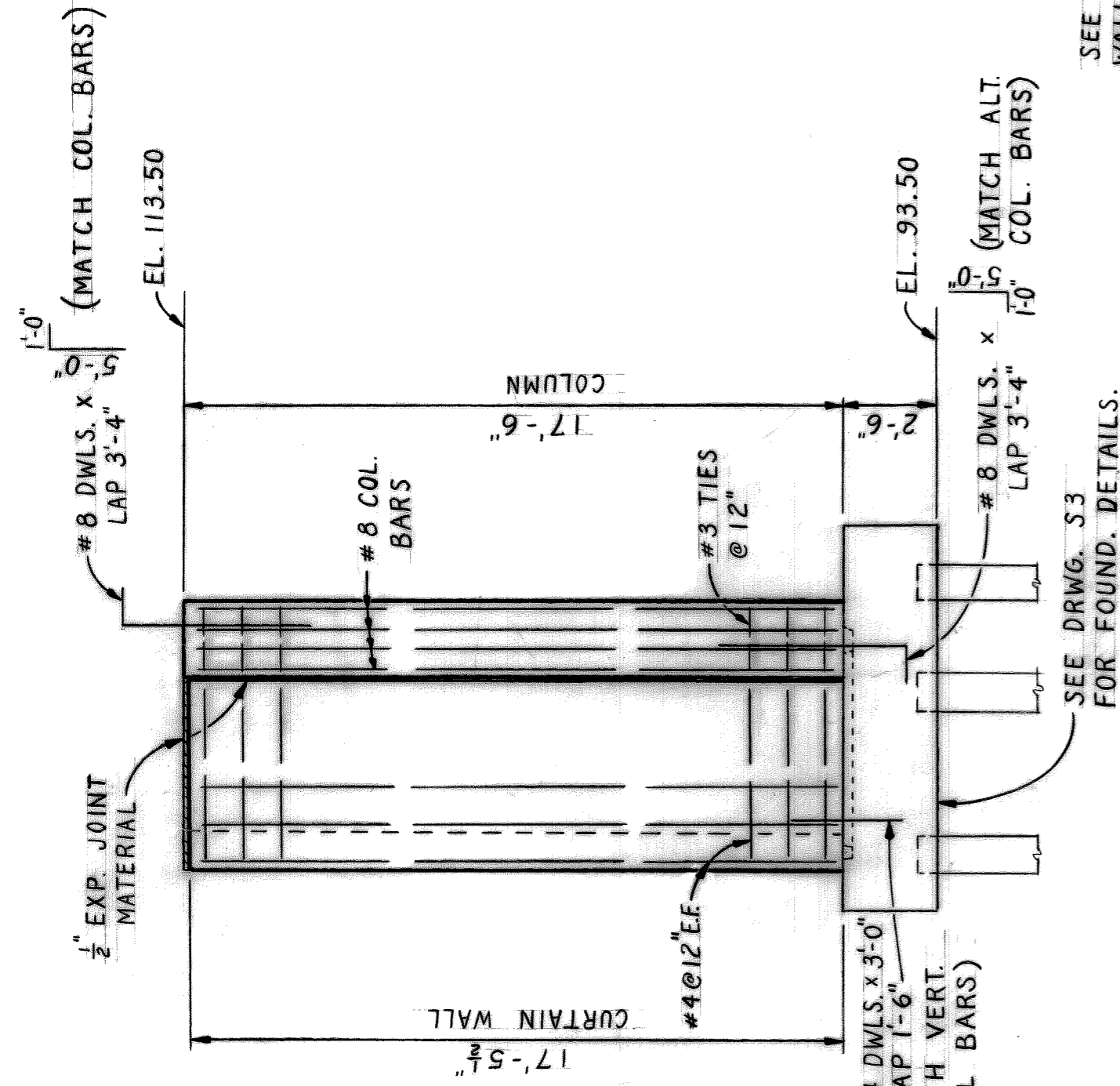
MULTIPLE U-STIRRUPS LOCATION PLAN  
SCALE: 1/2" = 1'-0"



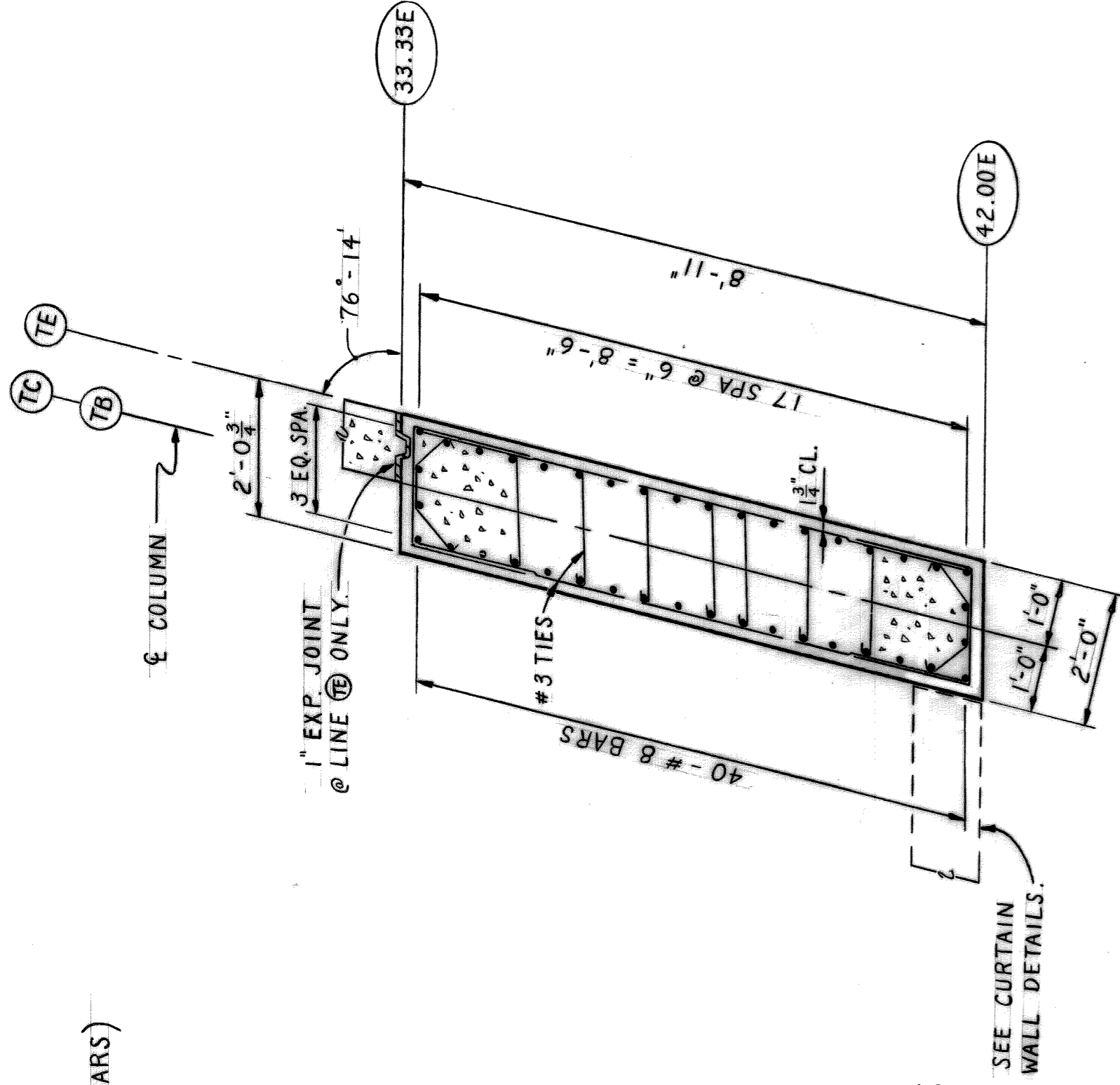
CORNER DETAIL  
SCALE: 1/2" = 1'-0"



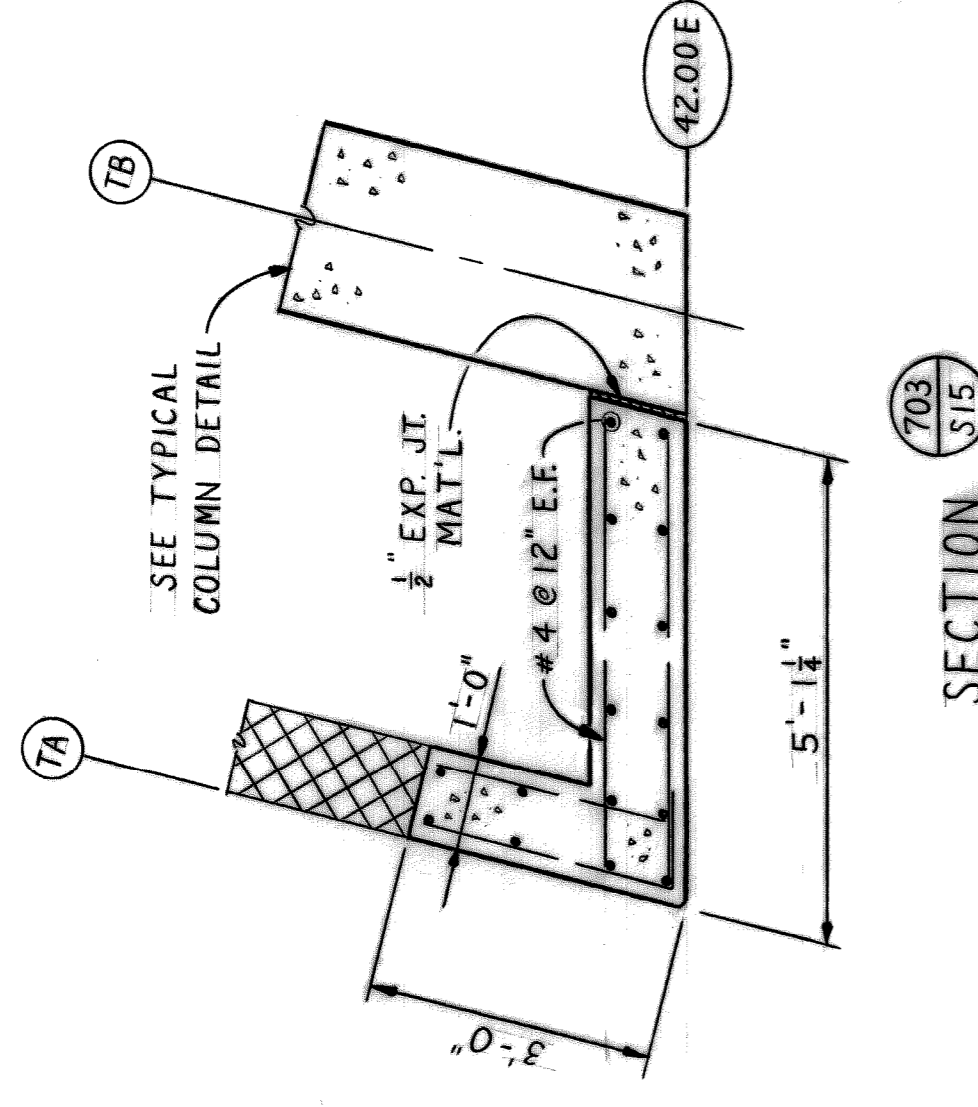
STD. 90° HOOK (TYP)



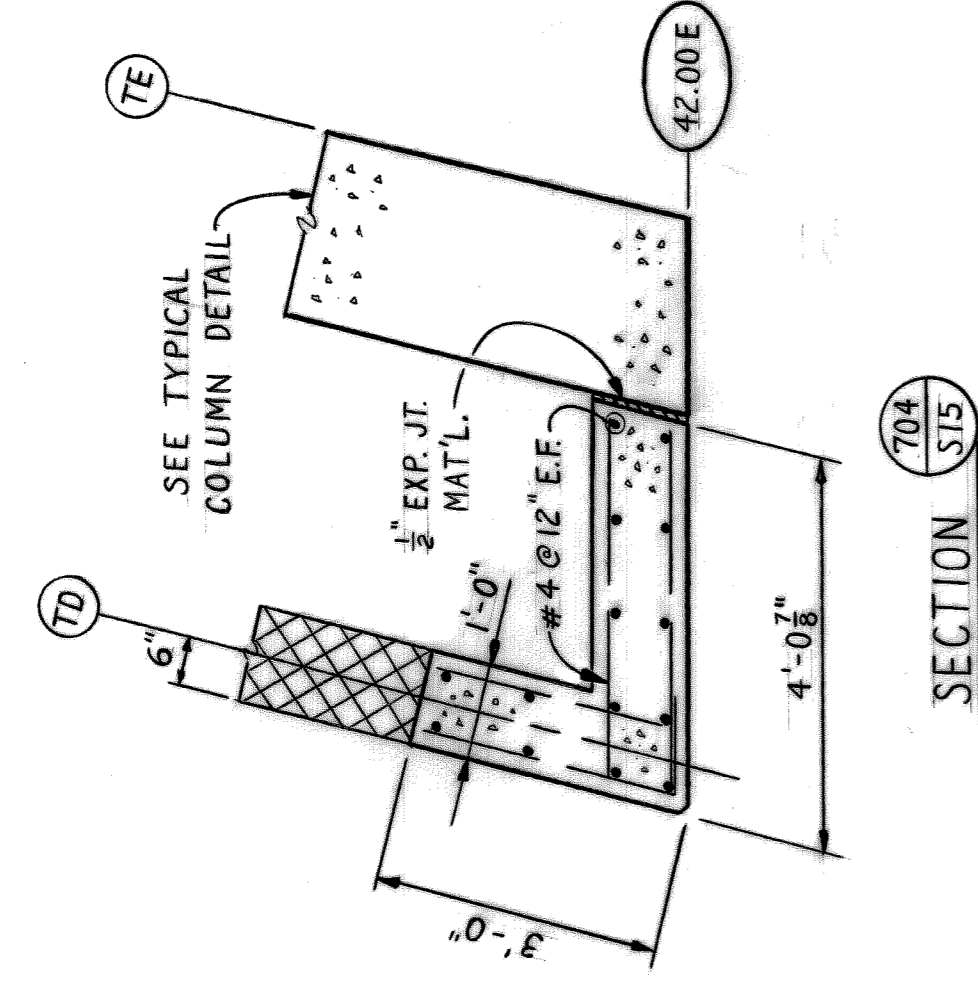
COLUMN & CURTAIN WALL ELEVATION  
SCALE: 1/2" = 1'-0"



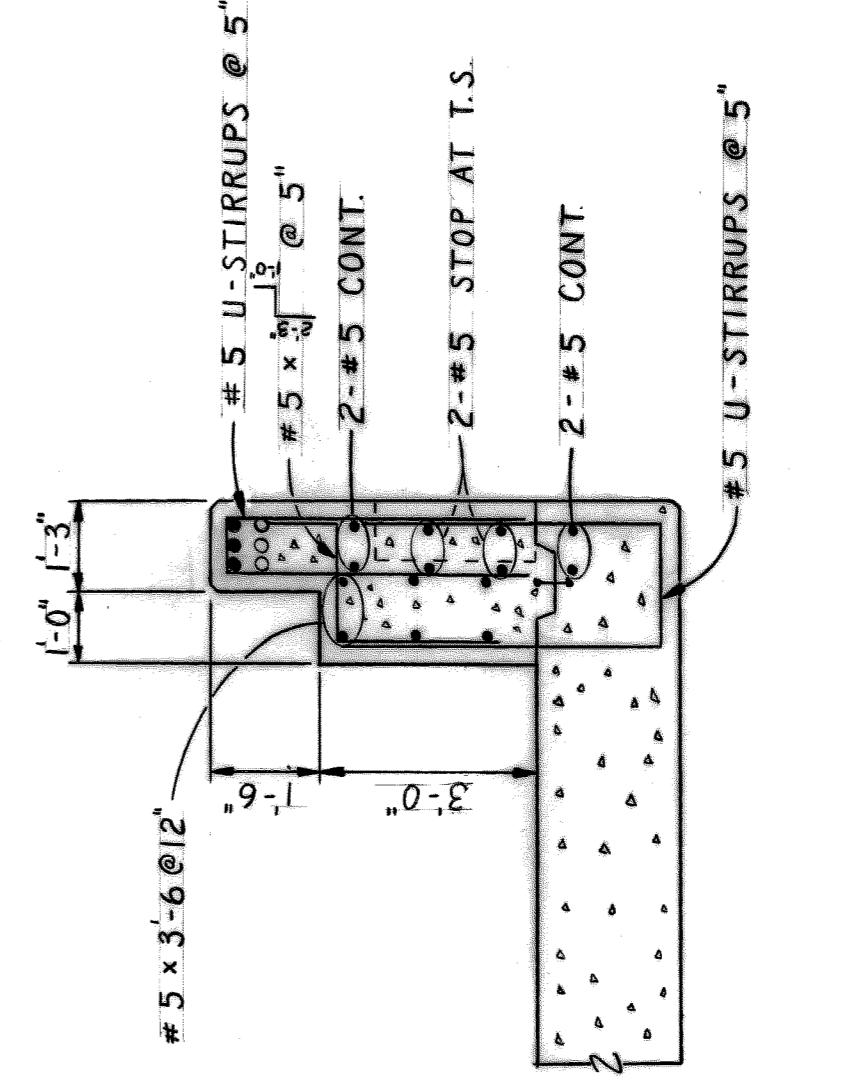
TYPICAL COLUMN DETAIL  
SCALE: 1/2" = 1'-0"



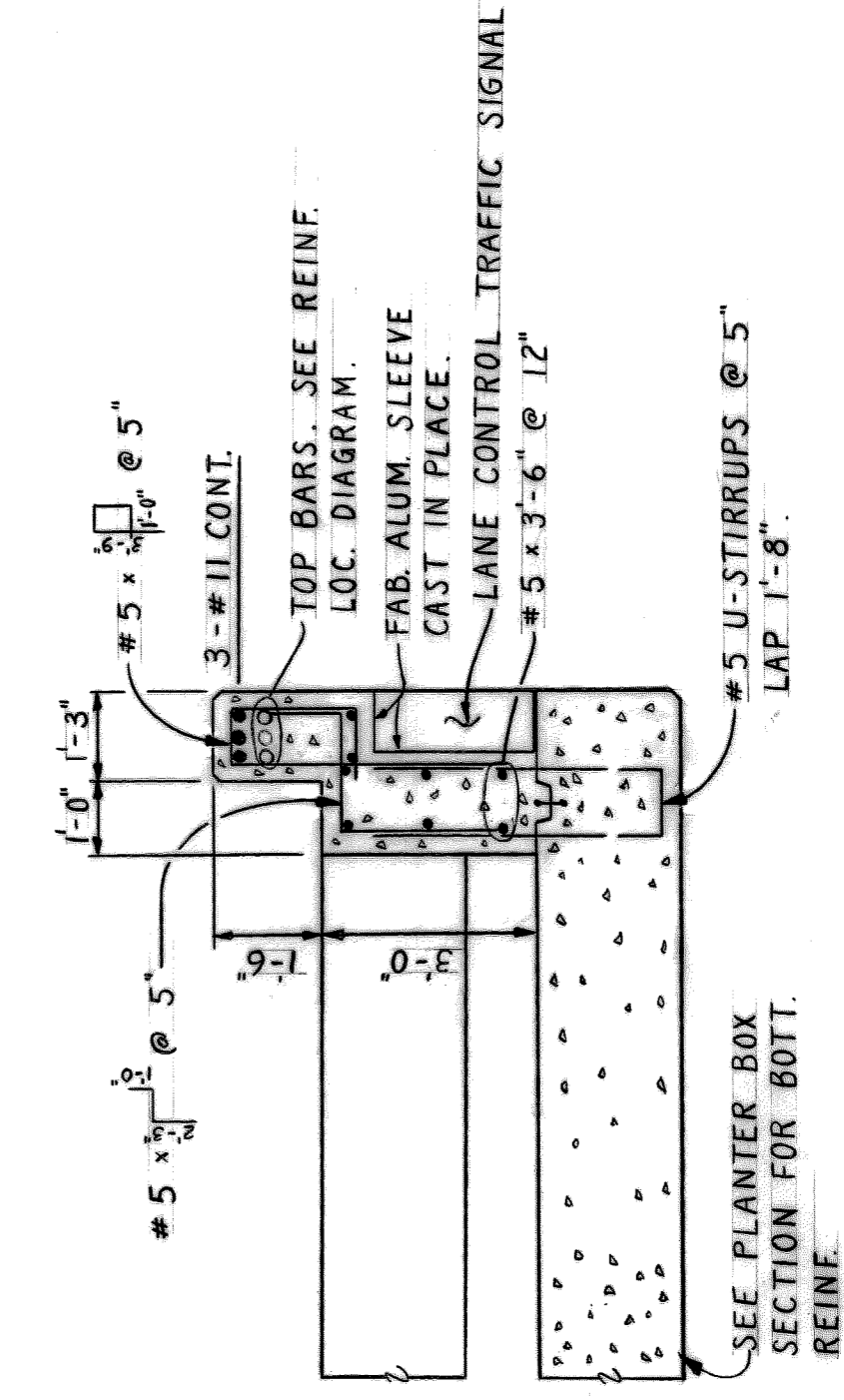
SECTION 703 S15



SECTION 704 S15



SECTION 706 S15  
SCALE: 1/2" = 1'-0"



SECTION 705 S15  
SCALE: 1/2" = 1'-0"

NOTE: PROVIDE TYP. REINF. AT EACH LANE CONTROL T.S.

revisions

NO.	DATE	BY	CHKD.

date 8/11/75  
designed R. Bunce  
drawn R. Bunce  
checked

approved  
T.E. McSwain  
STRUCTURAL ENGINEER

CITY OF DETROIT  
CITY ENGINEERING DEPARTMENT

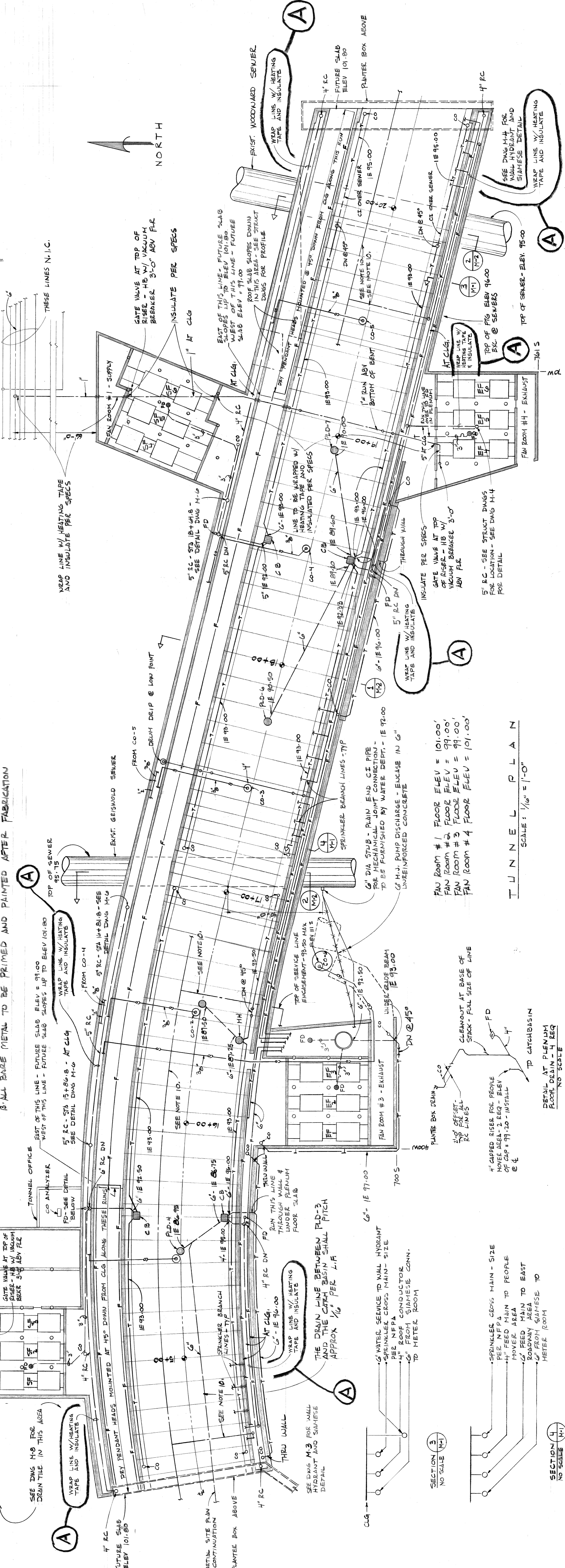
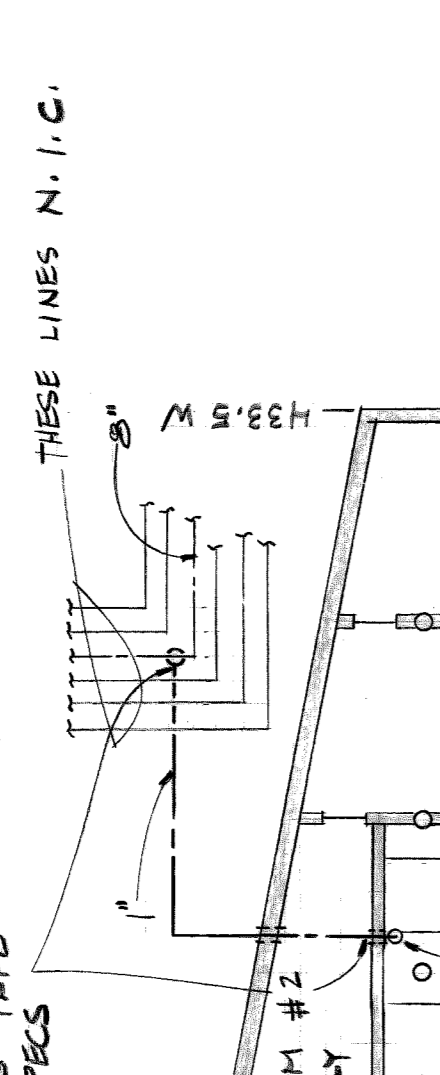
ATWATER STREET RELOCATION  
ATWATER TUNNEL  
EAST PLANTER BOX DETAILS

contract no. 07105A  
drawing no. S 16  
sheet 24 of 27

- ABBREVIATIONS**
- RC ROOF CONDUCTOR
  - FD FLOOR DRAIN
  - IE INVERT ELEVATION
  - CB CATCH BASIN
  - CH MAN HOLE
  - CO CLEANOUT
  - HB HOSE BIBBS
  - YCP VITRIFIED CLAY PIPE
  - CI WRAP LINE W/ HEATING TAPE AND INSULATE PER SPECS
  - DT DRAIN TILE
  - HP HIGH POINT
  - LP LOW POINT
  - SF SUPPLY FAN
  - EF EXHAUST FAN
  - PCF # / CO. FT.

- LEGEND**
- A COMPRESSED AIR
  - CO CARBON MONOXIDE SENSING LINE
  - WATER LINE
  - F STORM DRAIN LINE (CI OR VCP)
  - T FIRE PROTECTION LINE
  - PERFORATED DRAIN TILE
  - V VENT LINE
  - ⊙ CARBON MONOXIDE SENSOR

- NOTES**
- 1- THE SPRINKLER SYSTEM SHALL BE BASED ON ORDINARY HAZARD OCCUPANCY WITH A COVERAGE OF 150 SQUARE FEET PER HEAD.
  - 2- THE TUNNEL ROADWAY AREA AND PEOPLE MOVER AREA SHALL BE PROVIDED WITH A SPRINKLER SYSTEM.
  - 3- CATCHBASINS, MANHOLES, AND DRAINAGE PIPING NOT INDICATED ON THIS DWG ARE INCLUDED ON AND GOVERNED BY THE PAVING DWGS AND SPECIFICATIONS.
  - 4- REFER TO ELECTRICAL DRAWINGS FOR DETAILS AND LOCATIONS OF PUBLIC LIGHTING DEPARTMENT (PLD) MANHOLES.
  - 5- ALL REFORCED DRAIN TILE TO BE 6" DIA. D.I.O.N.
  - 6- ALL DRAINS FROM PLD MANHOLES TO BE 6" DIA. D.I.O.N. AND ENCASED IN A 6" THICKNESS OF UNREINFORCED CONCRETE U.O.N.
  - 7- ALL DRAINS TO PITCH 1/8" PER LINEAR FOOT D.I.O.N.
  - 8- ALL DRAINS UNDER WALLS OR FOOTINGS TO HAVE AT LEAST 6" CLEAR. BETWEEN TOP OF PIPE AND UNDERSIDE OF WALL OR FOOTING.
  - 9- PLENUM FLOOR PROFILE SAME AS ROADWAY PROFILE.
  - 10- SEE DWGS W/ THRU W-6 FOR WATER MAIN AND SERVICE LINE DETAILS.
  - 11- SEE ARCHITECTURAL DWGS FOR PLENUM DAMPER LOCATIONS AND MOUNTING DETAILS.
  - 12- ALL WELDS TO BE CONTINUOUS - NO TACK WELDS.
  - 13- ALL BARE METAL TO BE PRIMED AND PAINTED AFTER FABRICATION.



NO.	REVISIONS	DATE	BY	CHKD.
AS	BUILT			
A	REVISIONS			

approved  
*R. Tassin*  
MECHANICAL ENGINEER

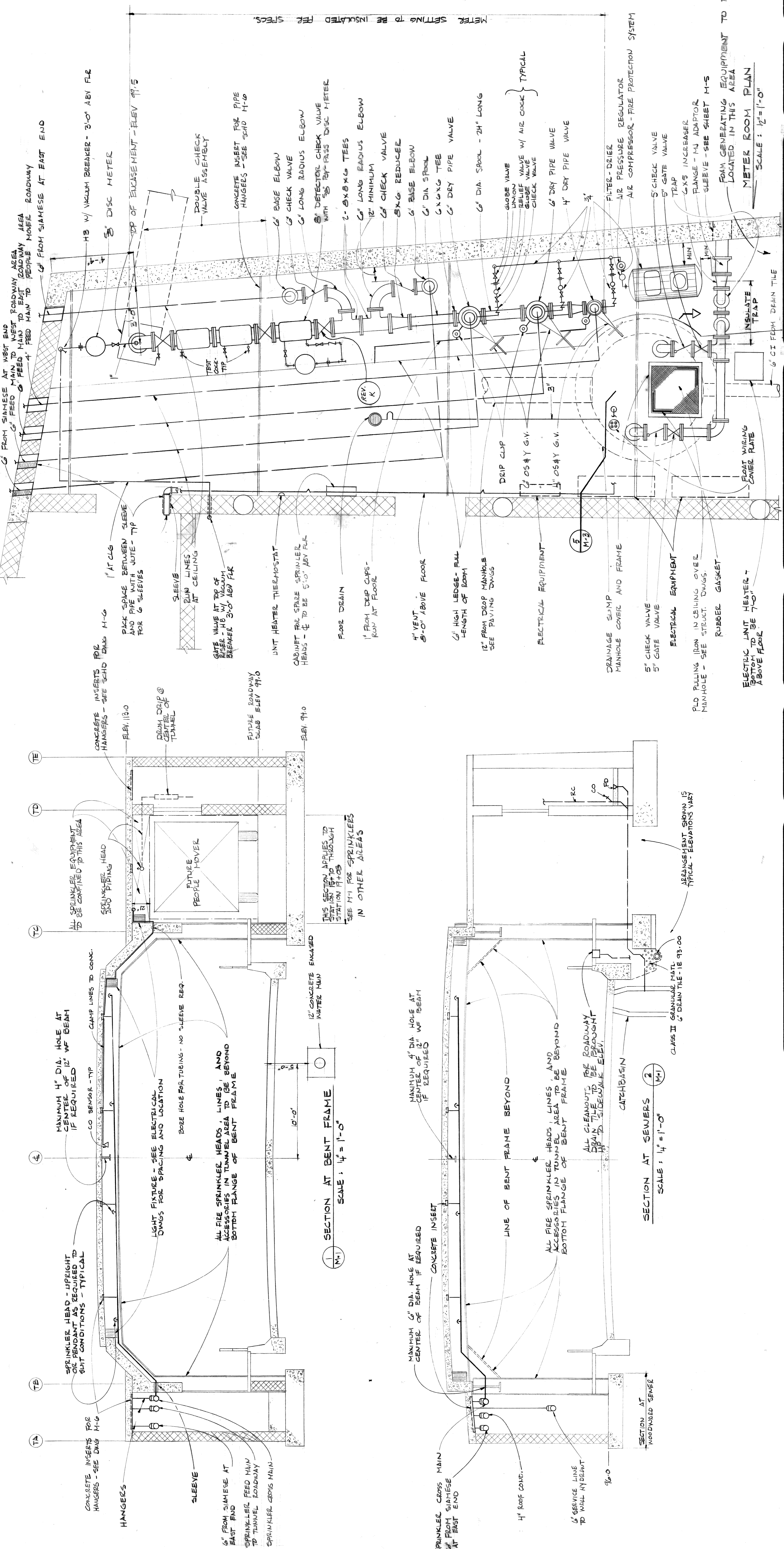
date 8-11-75  
designed R. Tassin  
drawn R. Tassin  
checked J. Meyer

CITY OF DETROIT  
CITY ENGINEERING DEPARTMENT

ATWATER STREET RELOCATION  
ATWATER TUNNEL  
FIRE PROTECTION AND DRAINAGE PLAN

sheet 15 of 31  
drawing no: 07105 A  
M I





FROM SIAMISE AT WEST END  
6" FEED MAIN TO WEST ROADWAY AREA  
4" FEED MAIN TO EAST ROADWAY AREA  
6" FEED MAIN TO PEOPLE MOVER

H3 W/ VACUUM BREAKER - 3'-0" ABV FLR  
5" DISC METER  
TOP OF ENCASMENT - ELEV 99.5

CONCRETE INSERTS FOR HANGERS - SEE SCHED M-6  
DOUBLE CHECK VALVE ASSEMBLY  
CONCRETE INSERT FOR PIPE HANGERS - SEE SCHED M-6

6" BASE ELBOW  
6" CHECK VALVE  
6" LONG RADIUS ELBOW  
8" DETECTOR CHECK VALVE WITH 5" BY-PASS DISC METER  
2-8X8X6 TEES  
12" LONG RADIUS ELBOW  
6" CHECK VALVE  
8X6 REDUCER  
6" BASE ELBOW  
6" DIA SPOOL  
6X6X6 TEE  
6" DRY PIPE VALVE  
6" DIA SPOOL - 24" LONG

GLOBE VALVE  
RELIEF VALVE W/ AIR COCK TYPICAL  
SLUICING VALVE  
CHECK VALVE  
6" DRY PIPE VALVE  
4" DRY PIPE VALVE

6" DIA. SPOOL - 24" LONG  
FILTER-DRIER  
AIR PRESSURE REGULATOR  
AIR COMPRESSOR - FIRE PROTECTION SYSTEM  
5" CHECK VALVE  
5" GATE VALVE  
TRAP  
6X6 INCREASER  
FLANGE - MJ ADAPTOR  
SLEEVE - SEE SHEET M-5

FOAM GENERATING EQUIPMENT LOCATED IN THIS AREA  
METER ROOM PLAN  
SCALE: 1/2" = 1'-0"

DRIP CUP  
2" OS&Y G.V.  
1" OS&Y G.V.  
FLOOR DRAIN  
1" FROM DRIP CUPS - RUN AT FLOOR  
4" VENT 5'-0" ABOVE FLOOR  
6" HIGH LEDGE - FULL LENGTH OF BODY  
12" FROM DROP MANHOLE SEE PAVING DWGS

ELECTRICAL EQUIPMENT  
DRAINAGE SLUMP AND FRAME  
MANHOLE COVER AND FRAME  
5" CHECK VALVE  
5" GATE VALVE  
ELECTRICAL EQUIPMENT  
RUBBER GASKET  
ELECTRIC UNIT HEATER - BOTTOM TO BE 7'-0" ABOVE FLOOR  
6" GI FROM DRAIN TILE  
INSULATE TRAP  
FLOAT WIRING COVER PLATE

1" AT CLG  
BACK SPACE BETWEEN SLEEVE AND PIPE WITH W/TE-TIP FOR 6 SLEEVES  
SLEEVE RUN LINES AT CEILING  
GATE VALVE AT TOP OF RISER - H8 W/ VACUUM BREAKER 3'-0" ABV FLR  
UNIT HEATER THERMOSTAT  
CABINET FOR SPACE SPRINKLER HEADS - 4 TO BE 5'-0" ABV FLR  
FLOOR DRAIN  
1" FROM DRIP CUPS - RUN AT FLOOR  
4" VENT 5'-0" ABOVE FLOOR  
6" HIGH LEDGE - FULL LENGTH OF BODY  
12" FROM DROP MANHOLE SEE PAVING DWGS

CONCRETE INSERTS FOR HANGERS - SEE SCHED M-6  
DRINK DIP @ CENTER OF TUNNEL  
FUTURE ROADWAY SLAB ELEV 99.0  
ELEV. 99.0  
ELEV. 99.0

ALL SPRINKLER EQUIPMENT TO BE CONFINED TO THIS AREA  
SPRINKLER HEAD  
SPRINKLER HEAD  
FUTURE PEOPLE MOVER  
THIS SECTION APPLIES TO STATION 11+0 THROUGH STATION 11+05  
SEE M1 FOR SPRINKLERS IN OTHER AREAS

MINIMUM 4" DIA. HOLE AT CENTER OF 12" WF BEAM IF REQUIRED  
CLAMP LINES TO CONC.  
CO SENSOR - TYP  
LIGHT FIXTURE - SEE ELECTRICAL DWGS FOR SPACING AND LOCATION  
BORE HOLE FOR TUBING - NO SLEEVE REQ.  
ALL FIRE SPRINKLER HEADS, LINES, AND ACCESSORIES IN TUNNEL AREA TO BE BEYOND BOTTOM FLANGE OF BENT FRAME  
CONCRETE ENCASED  
12" CONCRETE ENCASED WATER MAIN  
10'-0"

SECTION AT BENT FRAME  
SCALE: 1/4" = 1'-0"

MINIMUM 6" DIA. HOLE AT CENTER OF BEAM IF REQUIRED  
CONCRETE INSERT  
LINE OF BENT FRAME BEYOND  
ALL FIRE SPRINKLER HEADS, LINES, AND ACCESSORIES IN TUNNEL AREA TO BE BEYOND BOTTOM FLANGE OF BENT FRAME  
ALL CLEANOUTS TO BE ROADWAY DRAIN TILE TO BE BROUGHT DOWN TO SIDEWALK LEVEL  
CATCHBASIN  
CLASS II GRANULAR MATERIAL 93.00  
SECTION AT SEWERS  
SCALE: 1/4" = 1'-0"

SECTION AT WOODENED SEWER  
96'-0"  
6" SERVICE LINE TO WALL HYDRANT

**revisions**

NO.	DESCRIPTION	DATE
1	ADDITIONAL GATE VALVE FOR DETECTOR CHECK	11/11/75

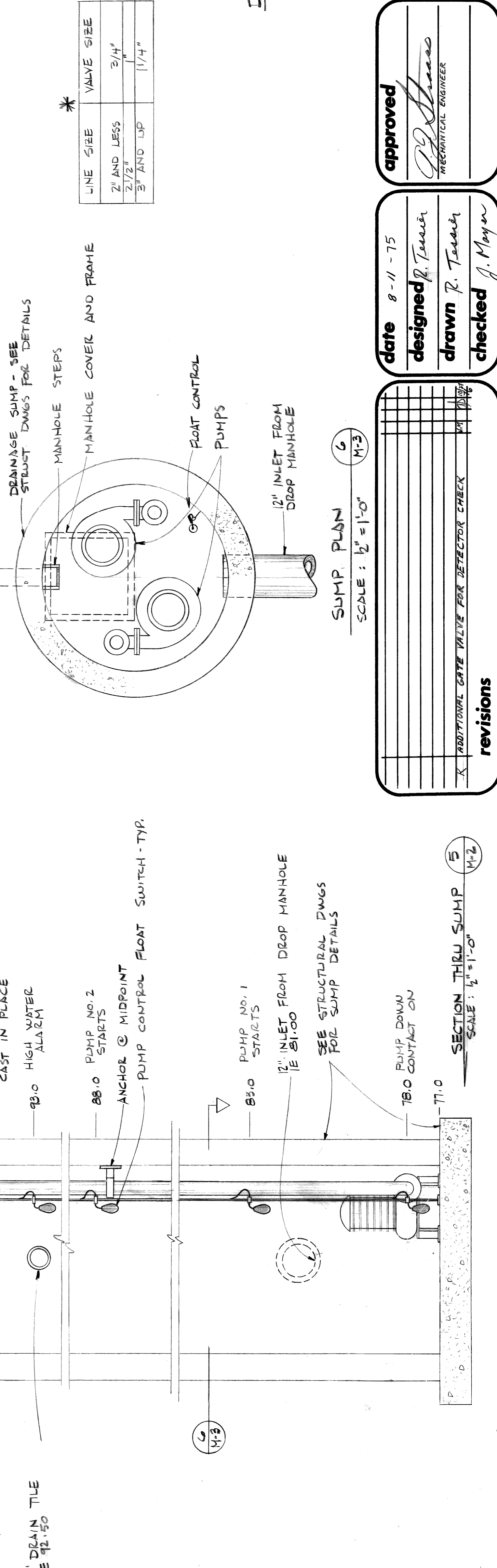
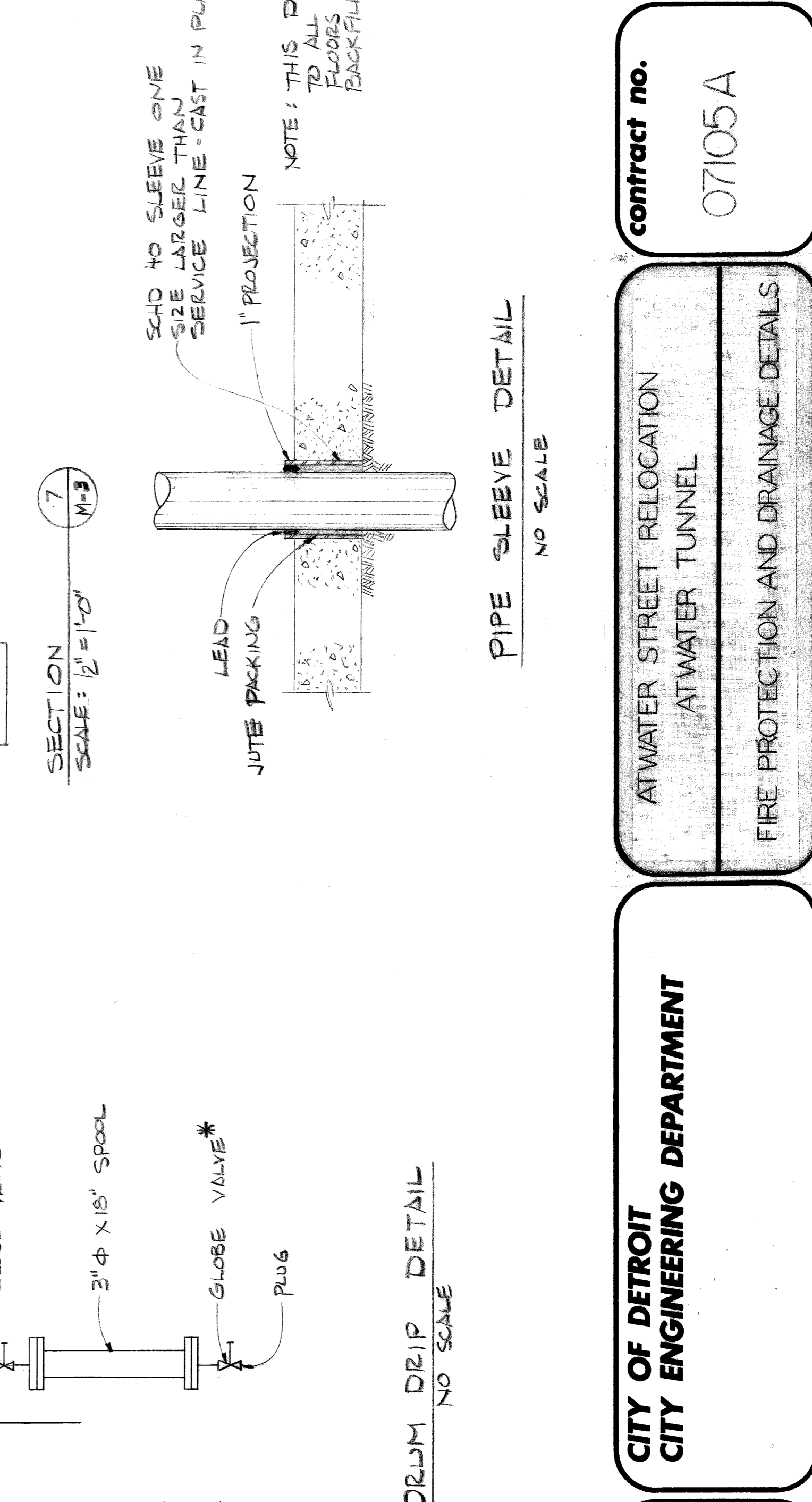
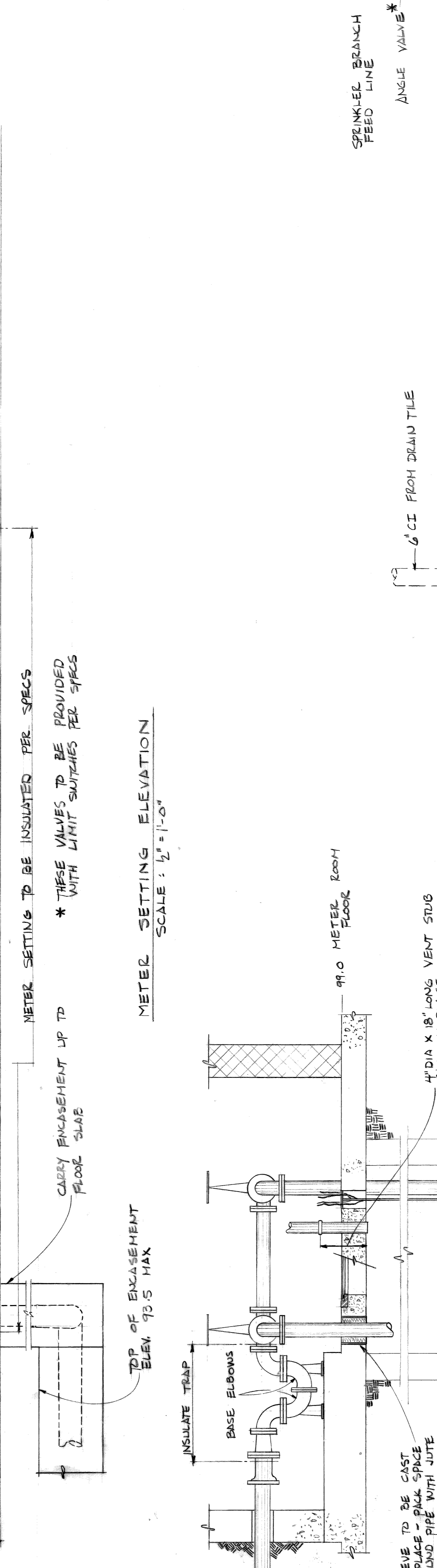
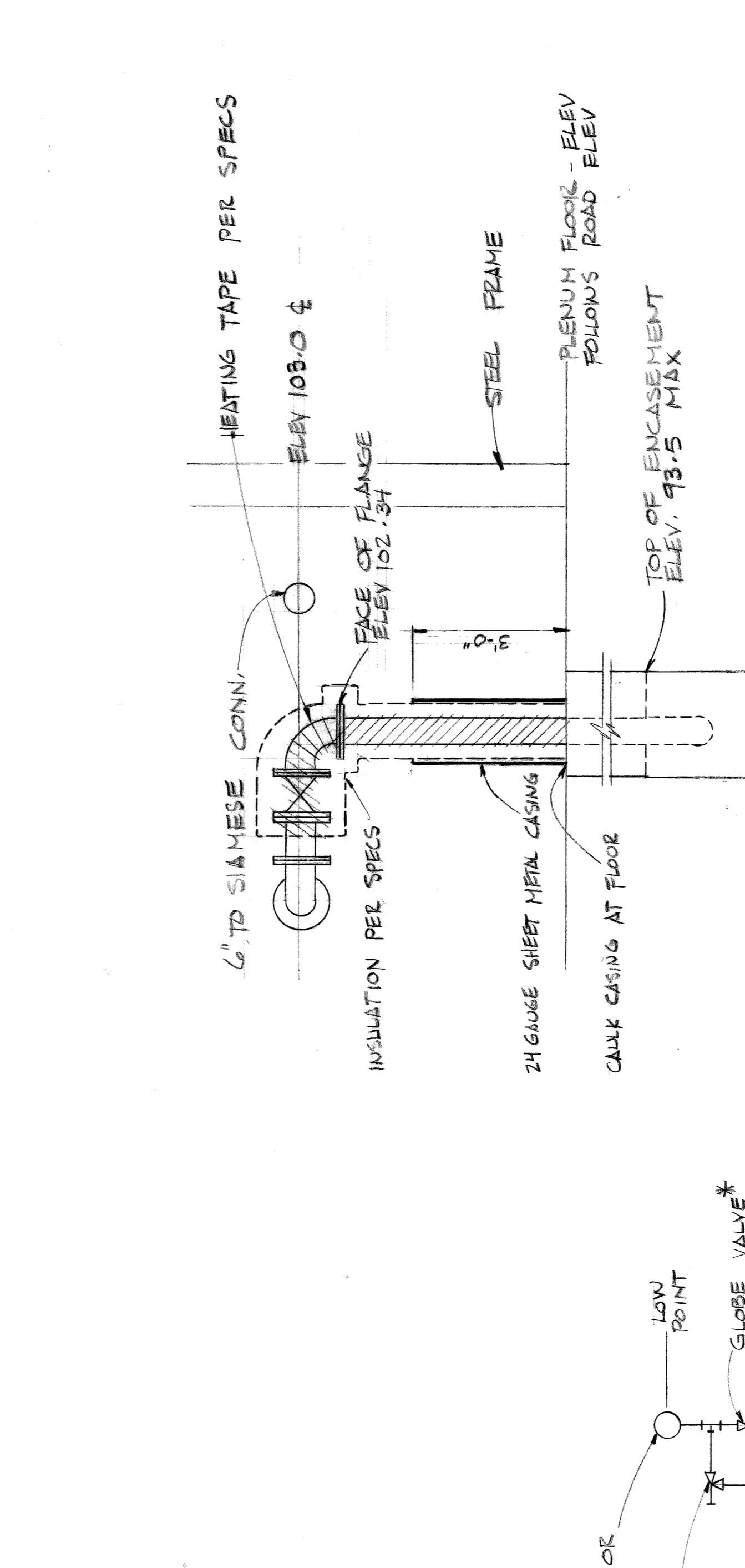
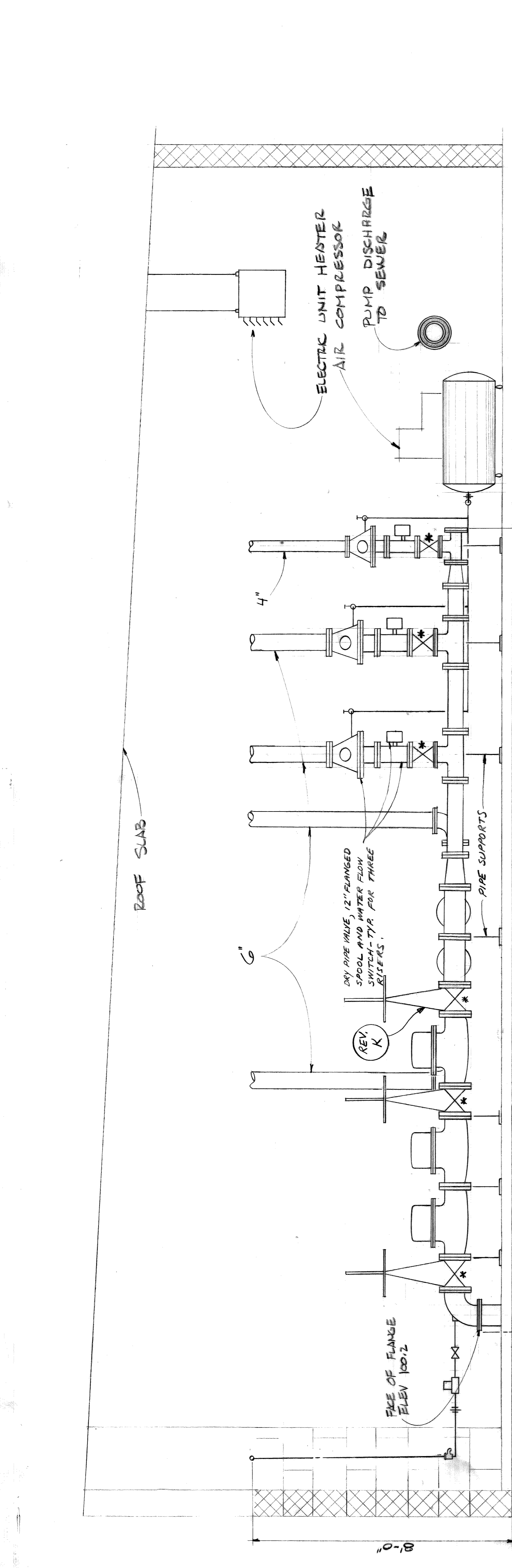
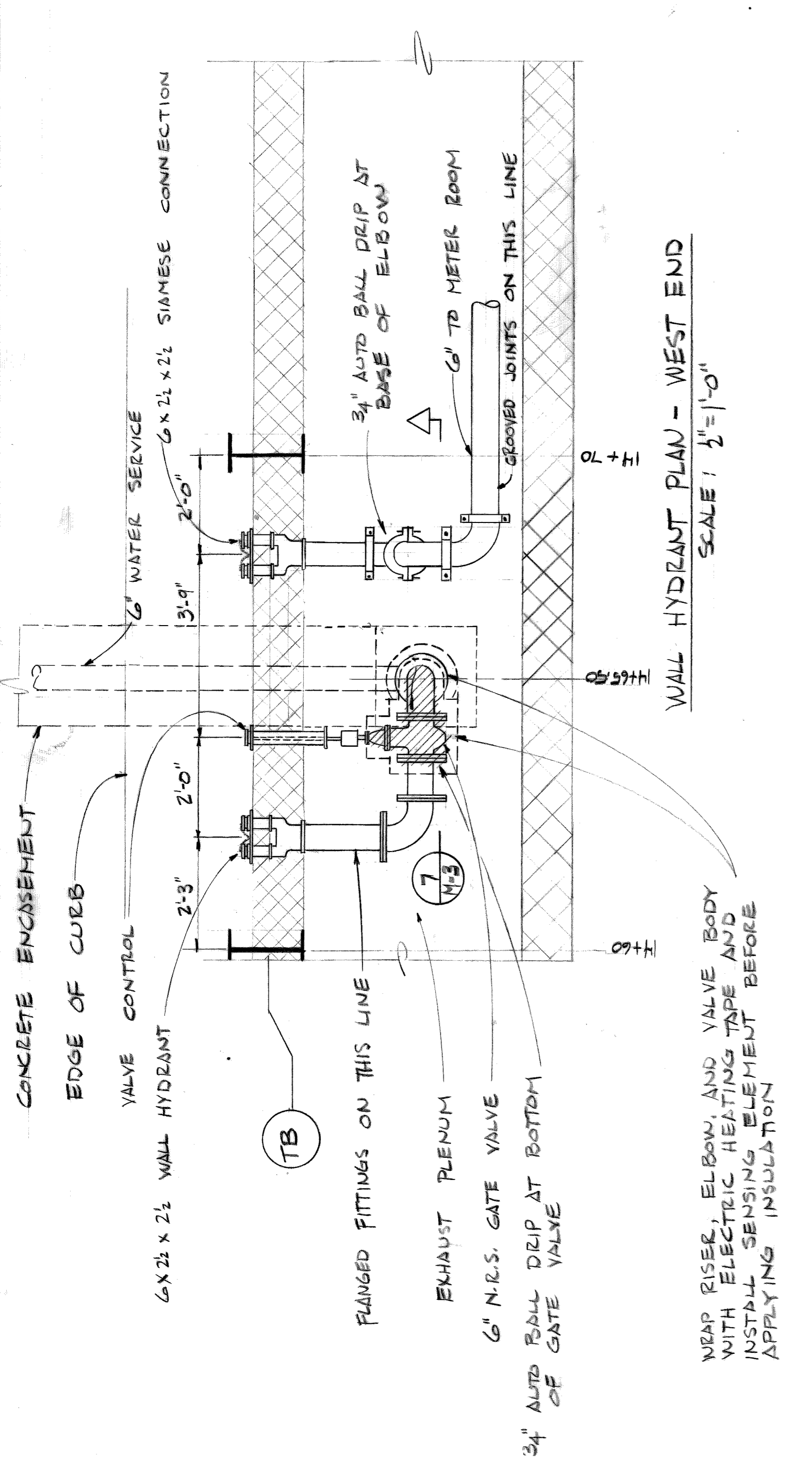
date 8-11-75  
designed R. Tashir  
drawn R. Tashir  
checked J. Moran

approved *R. Tashir*  
MECHANICAL ENGINEER

CITY OF DETROIT  
CITY ENGINEERING DEPARTMENT

ATWATER STREET RELOCATION  
ATWATER TUNNEL  
FIRE PROTECTION DETAIL

contract no. 07105 A  
drawing no. M2

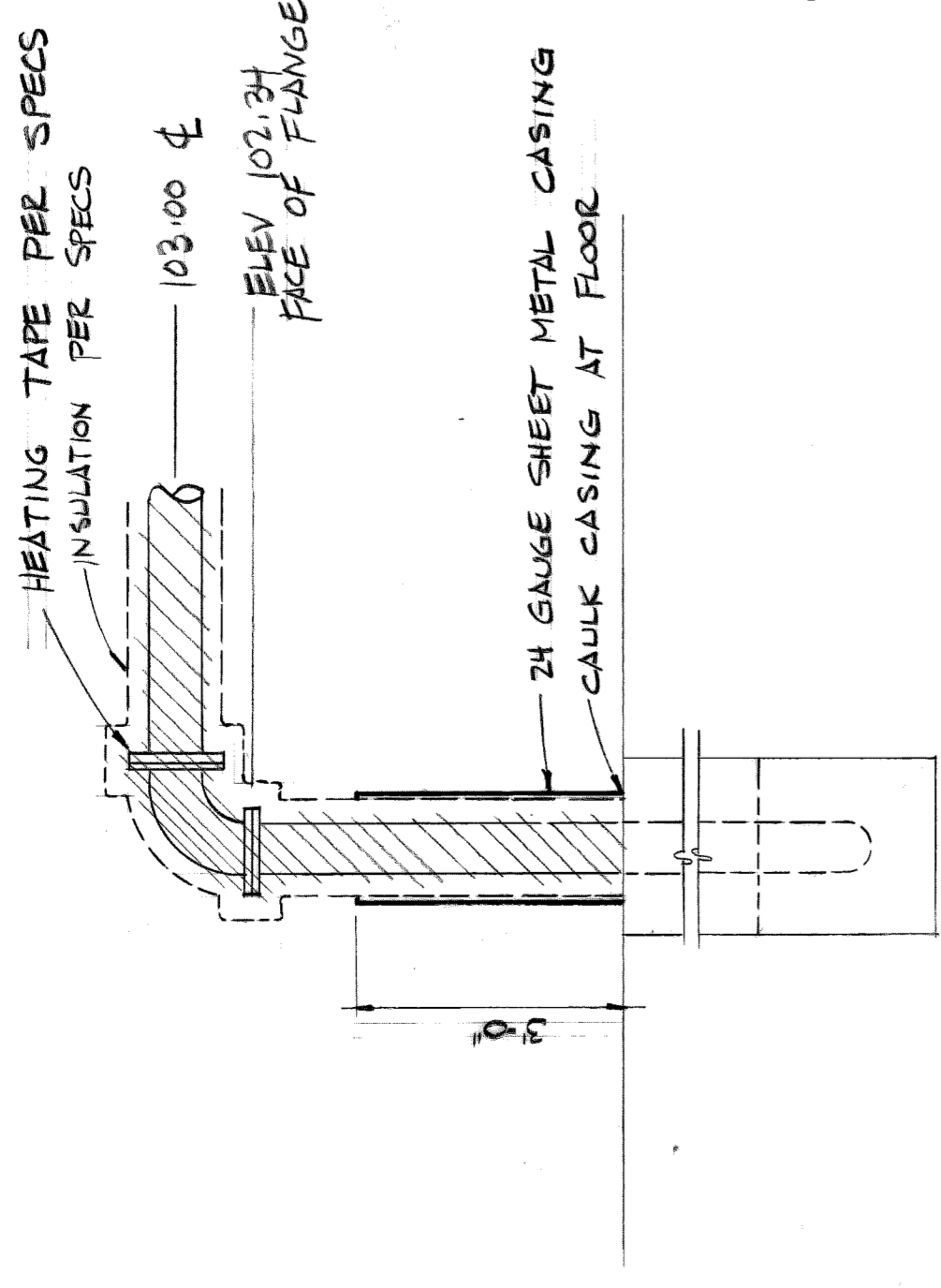


LINE SIZE	VALVE SIZE
2" AND LESS	3/4"
2 1/2"	1"
3" AND UP	1 1/4"

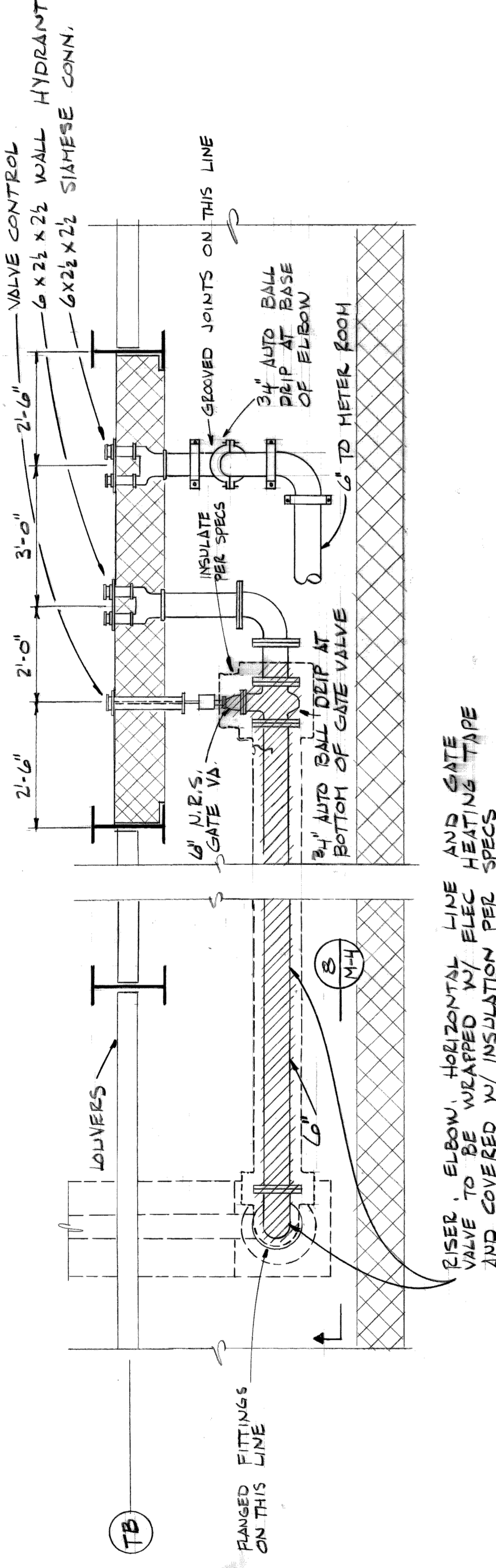
sheet 17 of 21  
 drawing no: M-3  
 contract no. 07105A  
 ATWATER STREET RELOCATION ATWATER TUNNEL  
 FIRE PROTECTION AND DRAINAGE DETAILS  
 CITY OF DETROIT  
 CITY ENGINEERING DEPARTMENT  
 approved: *[Signature]*  
 MECHANICAL ENGINEER  
 date: 8-11-75  
 designed: *[Signature]*  
 drawn: *[Signature]*  
 checked: *[Signature]*  
 revisions:

NO.	DESCRIPTION	DATE
X	ADDITIONAL GATE VALVE FOR DETECTOR CHECK	VI

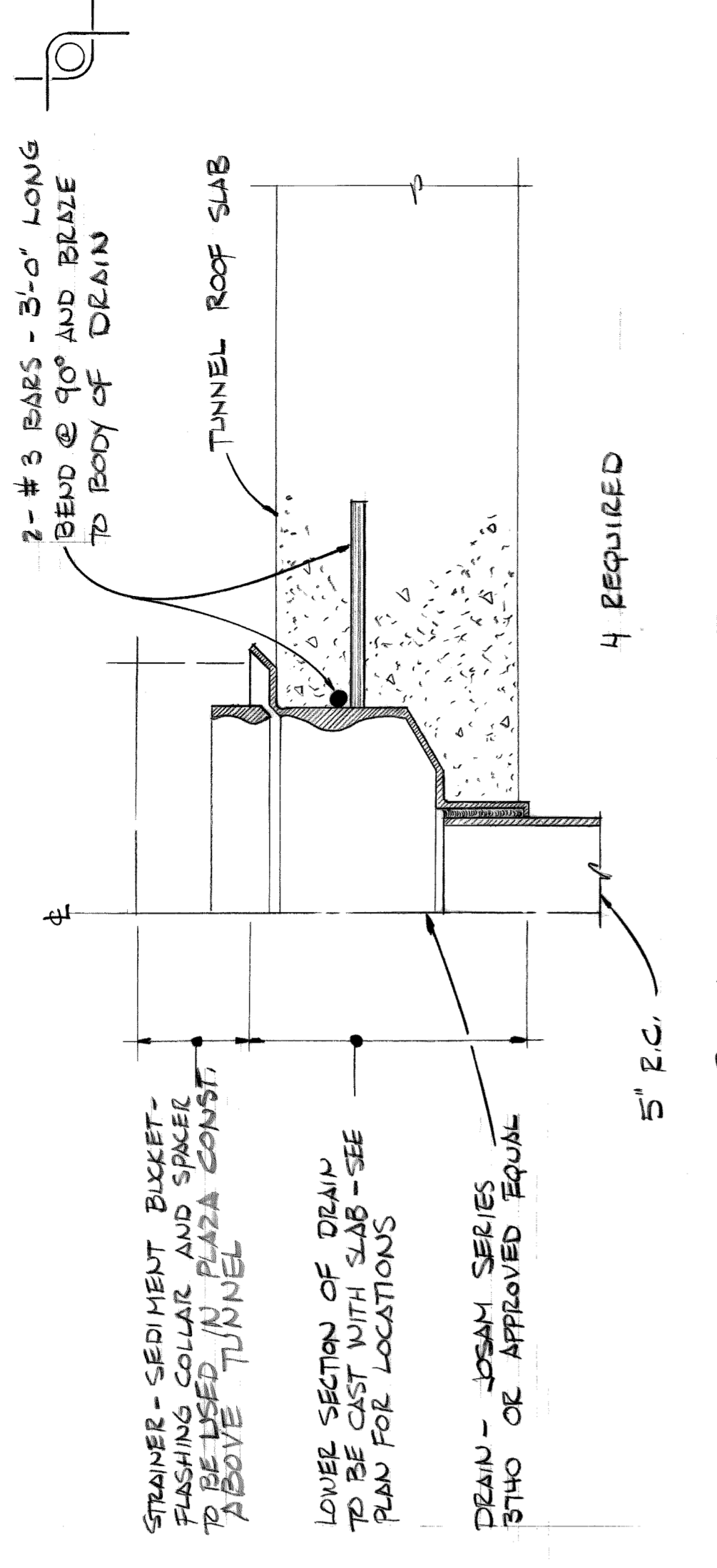
SECTION THRU SUMP  
 SCALE: 1/2" = 1'-0"  
 M-2



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

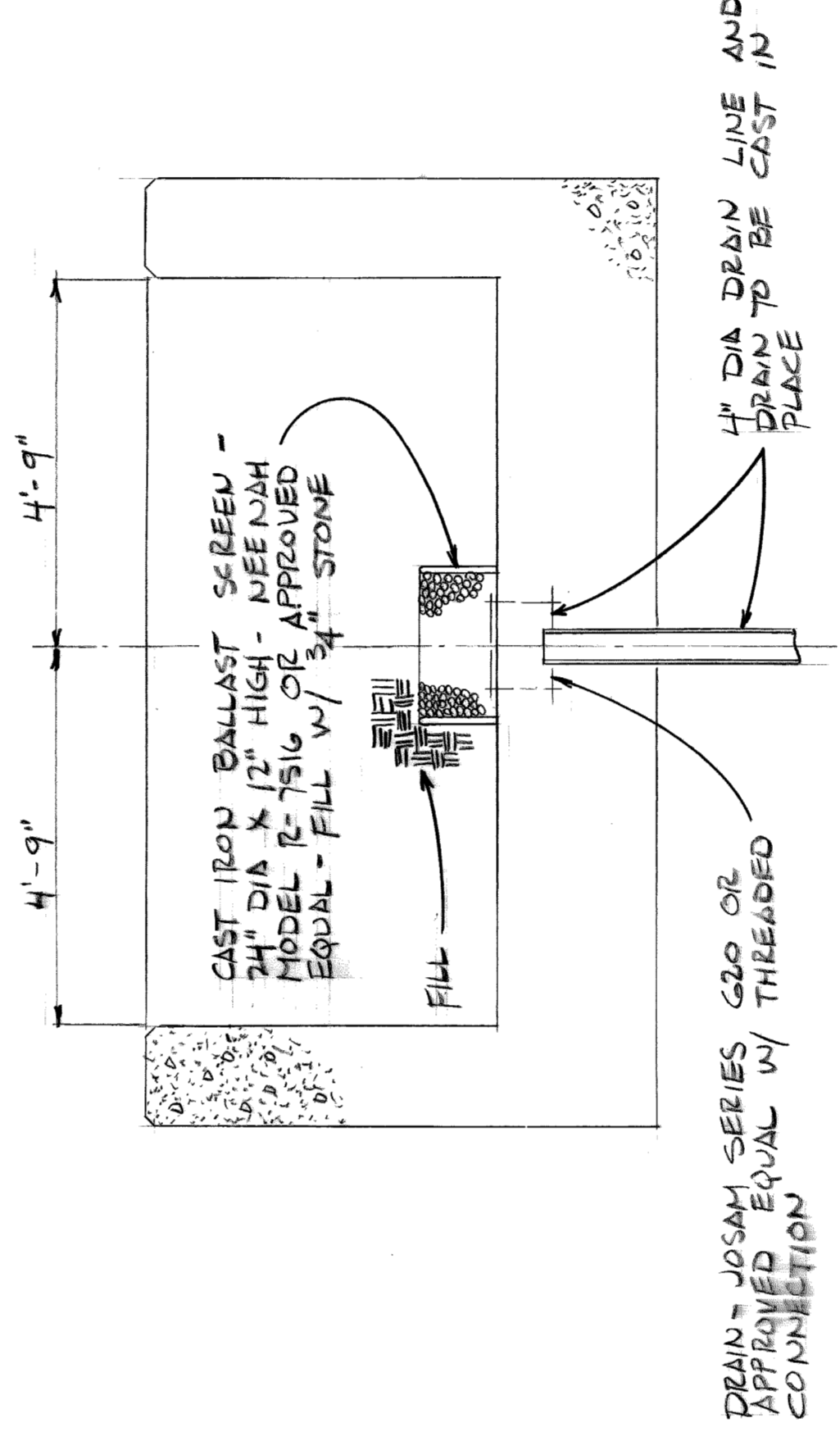


RISER ELBOW, HORIZONTAL LINE AND GATE VALVE TO BE WRAPPED W/ ELEC HEATING TAPE AND COVERED W/ INSULATION PER SPECS

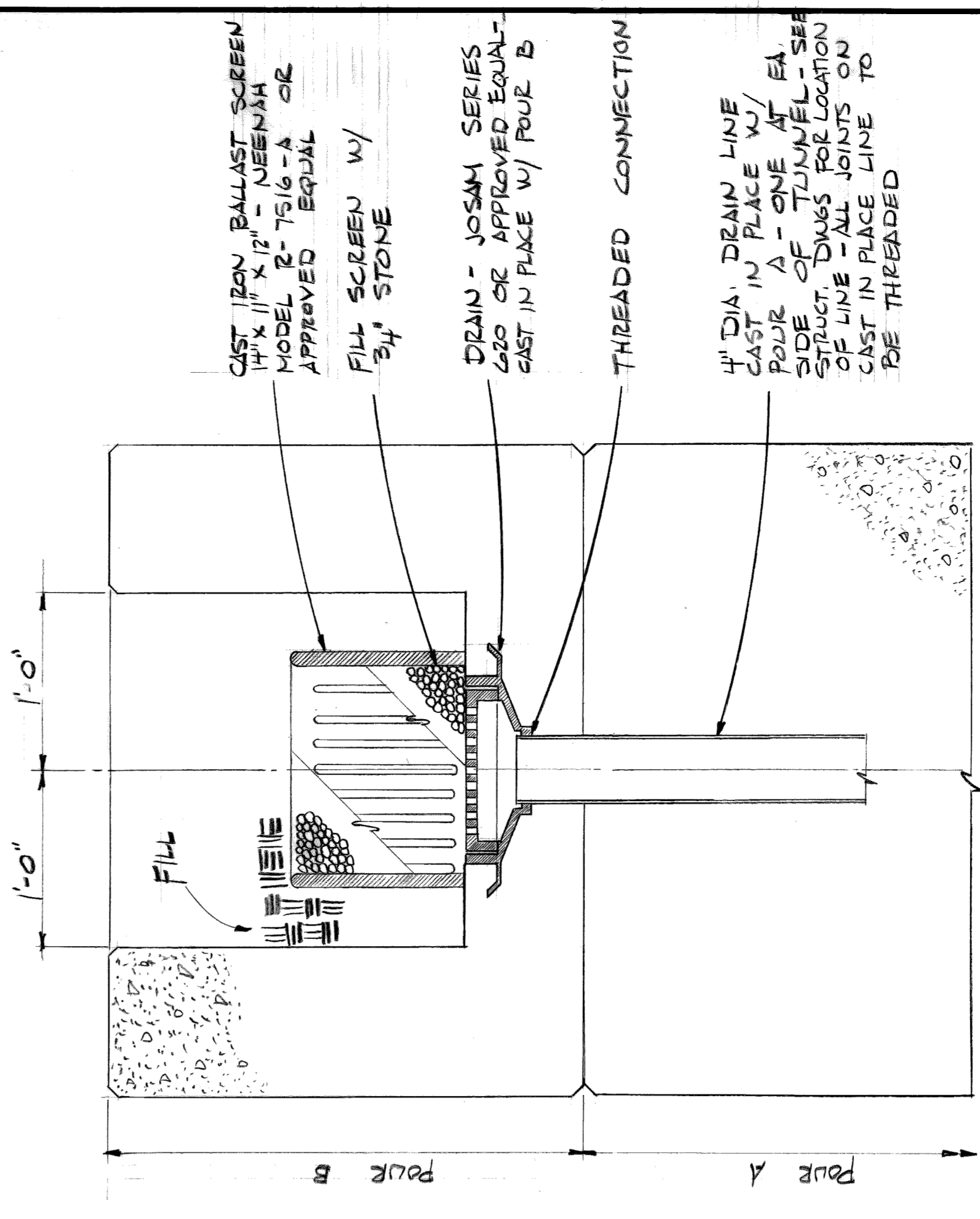


AREA	SPACING	INSERT TYPE	SCHEDULE	LENGTH	REMARKS
SOUTH PLENUM	10'-0" C/C	CONTINUOUS		3'-4"	-
TUNNEL ROADWAY	* AS REQ BY NFPA	SPOT		3'-4"	-
NORTH PLENUM	10'-0" C/C	CONTINUOUS			ONE ROW ALONG NORTH WALL
STA 14+53 TO 15+10	* 10'-0" C/C	SPOT			ONE ROW ALONG SOUTH WALL
STA 15+10 TO 16+05	* 10'-0" C/C	SPOT			ALONG ♯ OF ROADWAY
STA 16+05 TO 17+20*	* 10'-0" C/C	SPOT			ONE ROW ALONG SOUTH WALL
METER ROOM	10'-0" C/C	CONTINUOUS		LENGTH = WIDTH OF ROOM	

\* EXACT LOCATION TO BE DETERMINED FROM FIRE SPRINKLER SHOP DRAWINGS



DRAIN DETAIL - EAST PLANTER BOX  
SCALE: 1/2" = 1'-0"



DRAIN DETAIL - WEST PLANTER BOX  
SCALE: 1/2" = 1'-0"

no.	description

revisions

date 8-11-75  
designed R. Fenwick  
drawn R. Tascia  
checked J. Meyer

approved  
R. Fenwick  
MECHANICAL ENGINEER

CITY OF DETROIT  
CITY ENGINEERING DEPARTMENT

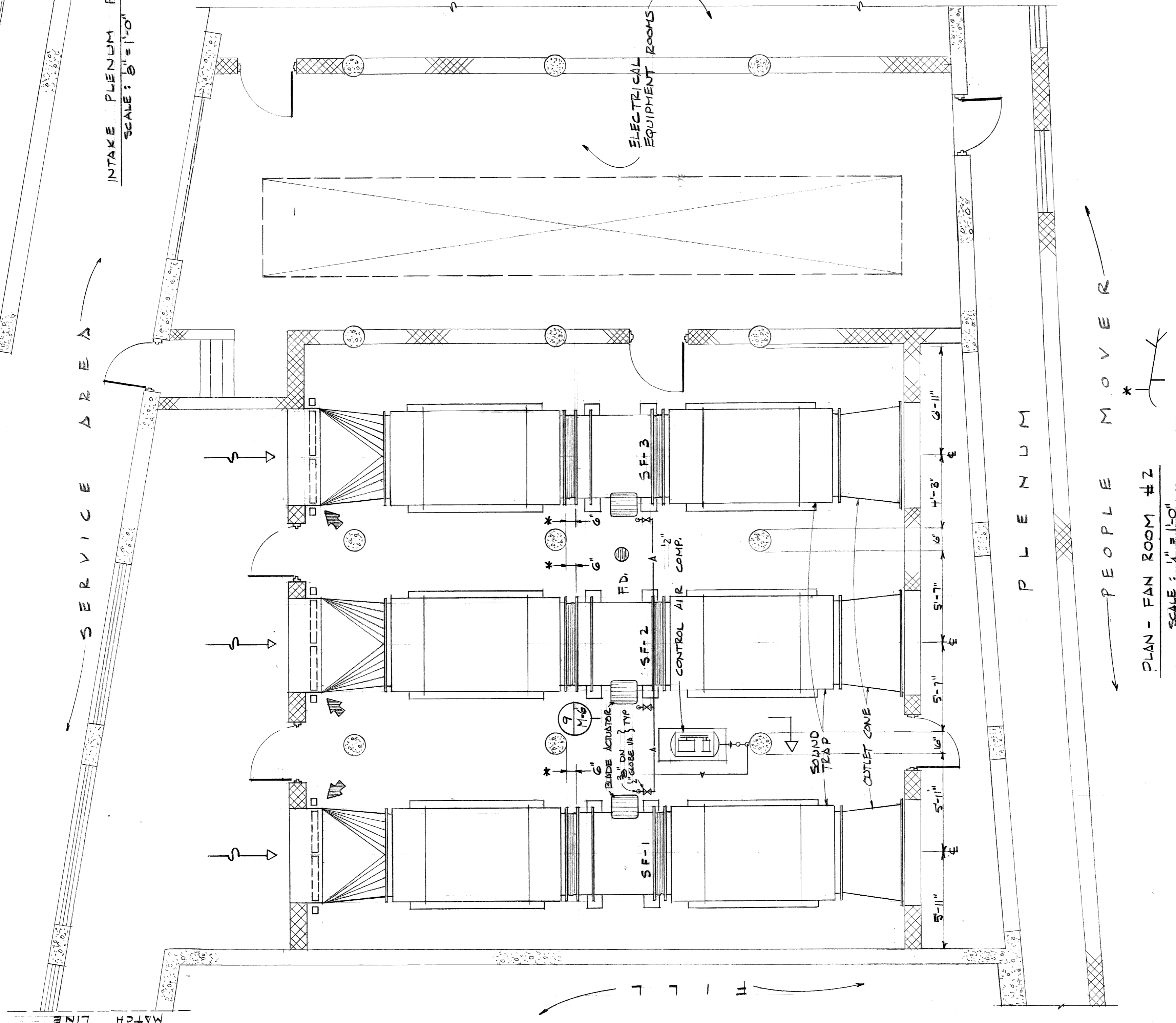
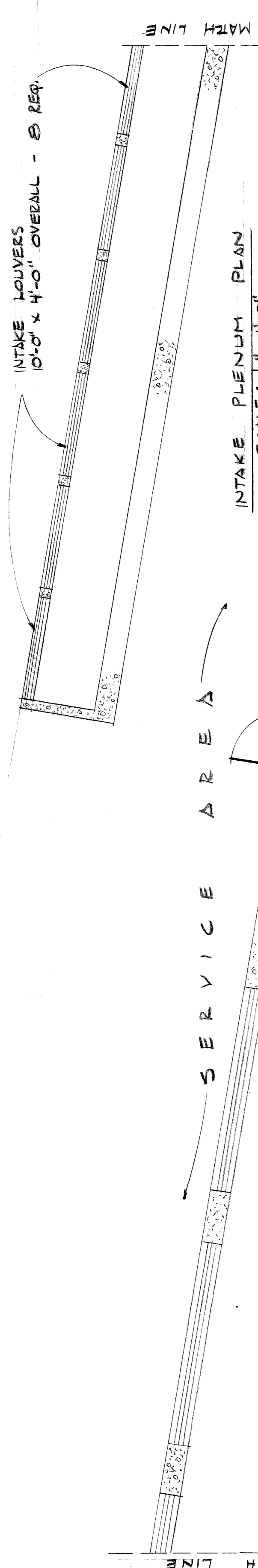
ATWATER STREET RELOCATION  
ATWATER TUNNEL  
FIRE PROTECTION AND DRAINAGE DETAILS

contract no.  
07105 A

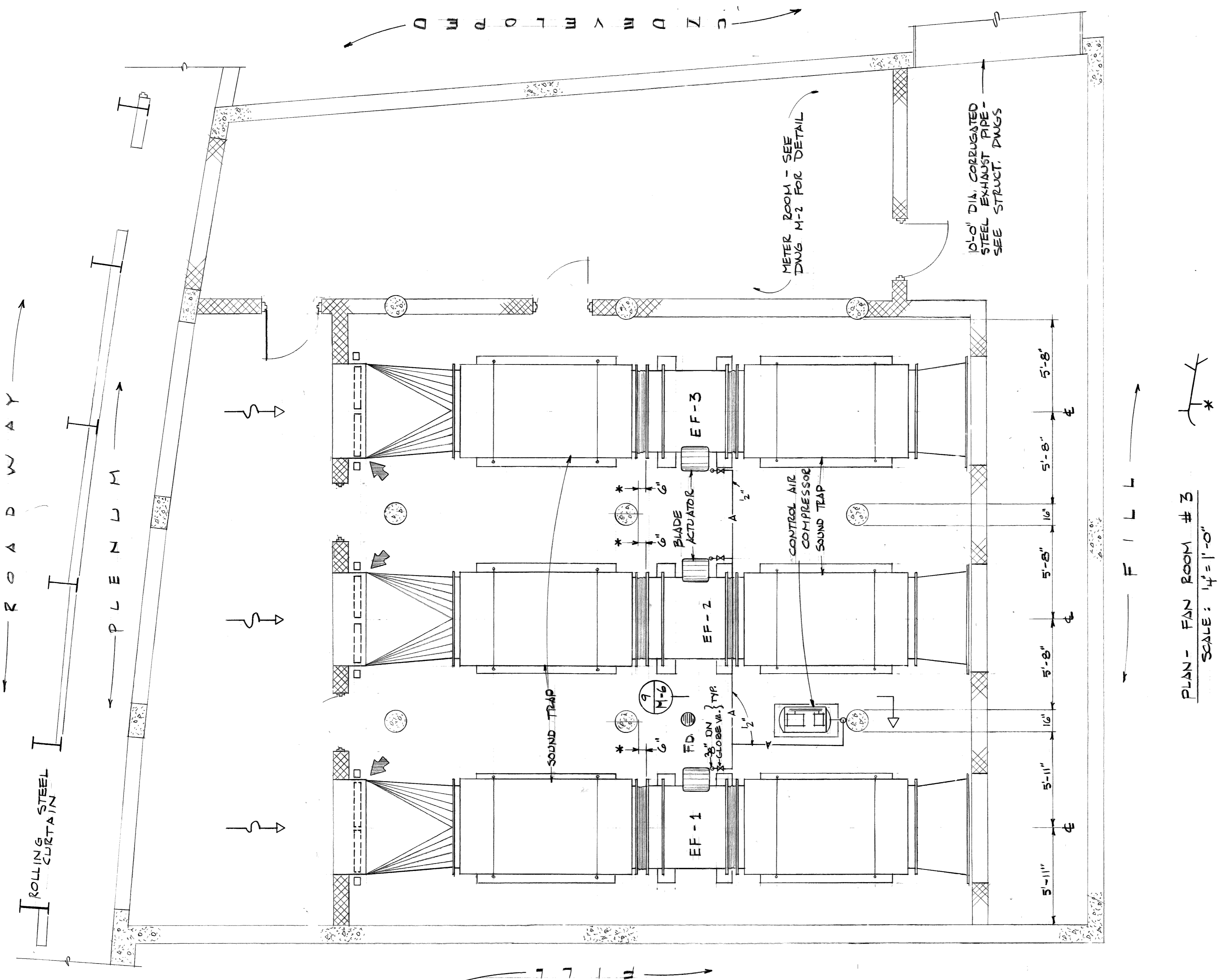
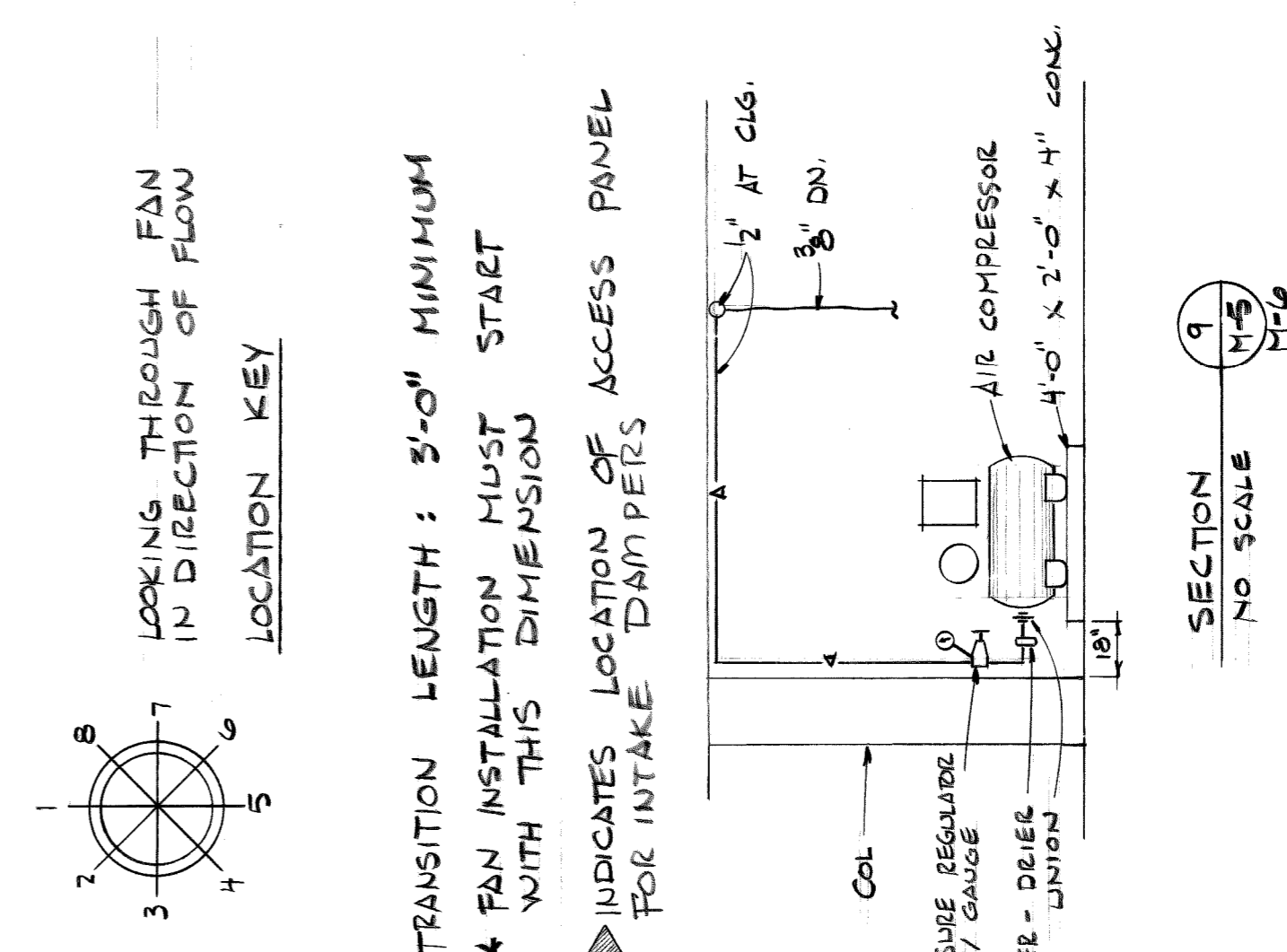
sheet 15 of 21  
drawing no.  
M 4







FAN NO.	BLADE ACTUATOR	GREASE CONNECTIONS	LOCATION	CONDUIT NO.	SCHEDULE
SF-1	2	4	7	3	6
SF-2	8	7	7	6	6
SF-3	8	7	7	6	6
SF-4	2	4	4	3	6
SF-5	8	7	7	6	6
SF-6	2	4	4	3	6
EF-1	2	4	4	3	6
EF-2	2	4	4	3	6
EF-3	8	7	7	6	6
EF-4	8	7	7	6	6
EF-5	2	4	4	3	6
EF-6	8	7	7	6	6



NO.	DATE	BY	REVISIONS

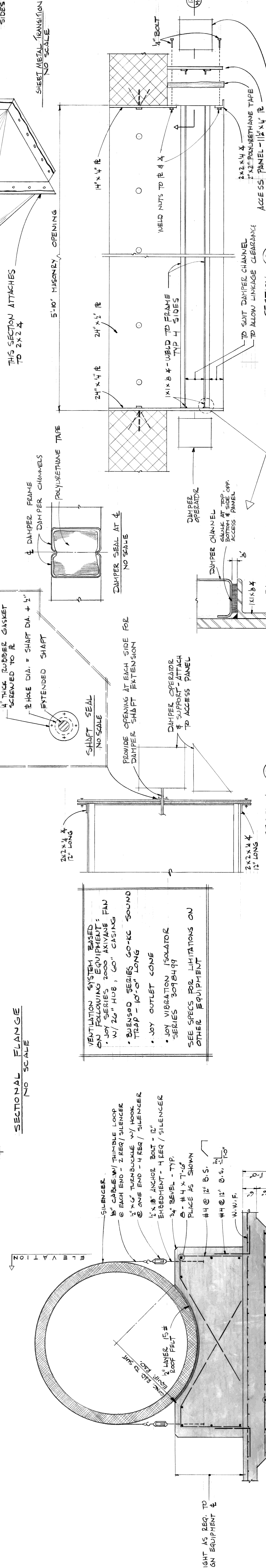
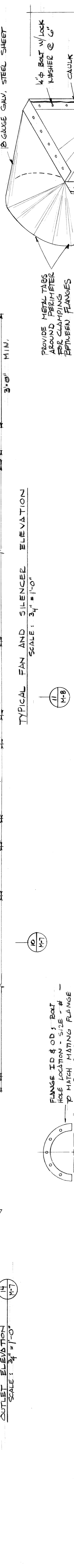
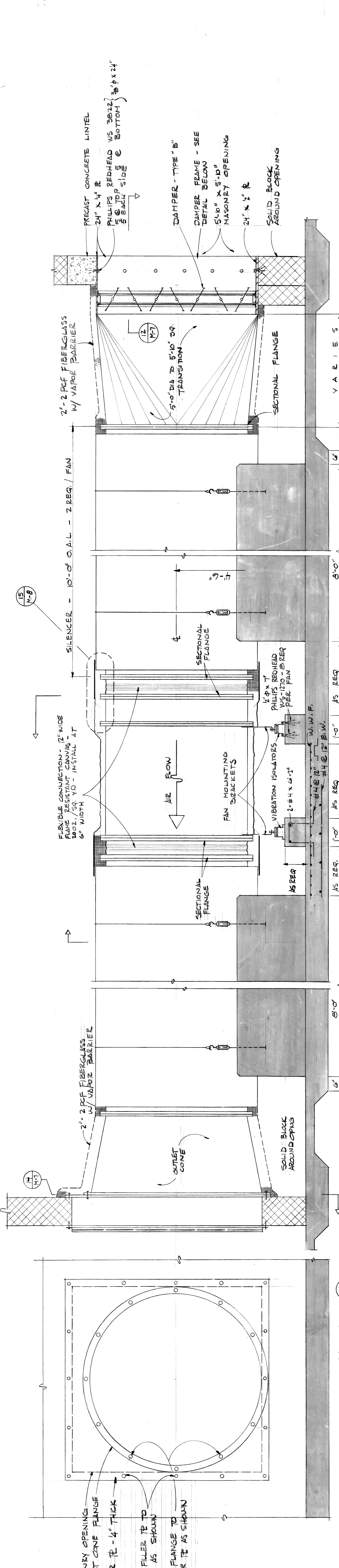
date 8-11-75  
designed R. Tamm  
drawn R. Tamm  
checked J. Mayo

approved  
R. Tamm  
MECHANICAL ENGINEER

CITY OF DETROIT  
CITY ENGINEERING DEPARTMENT

ATWATER STREET RELOCATION  
ATWATER TUNNEL  
PLAN - FAN ROOMS 2 AND 3

contract no. 07105 A  
drawing no. M 6  
sheet 52 of 51



VENTILATION SYSTEM BASED ON FOLLOWING EQUIPMENT: FAN - JOY SERIES 2000, ANYVANE, W/ 26" HUB, 60" CASING

BUSVSD SERIES 60-KC SOUND TRAP - 10'-0" LONG

JOY OUTLET CONE

JOY VIBRATION ISOLATOR SERIES 309B499

SEE SPECS FOR LIMITATIONS ON OTHER EQUIPMENT

VENTILATION

SILENCER

8" CABLE W/ THIMBLE LOOP @ EACH END - 2 REQ / SILENCER

1/2" x 1/2" TURNBUCKLE W/ HOOK @ ONE END - 4 REQ / SILENCER

1" x 8" ANCHOR BOLT - 12" EMBEDMENT - 4 REQ / SILENCER

3/4" BEVEL - TYP

PLACE AS SHOWN

#4 @ 12" B.S.

#4 @ 12" O.S. 3'-10"

N.W.F.

HEIGHT AS REQ. TO ALIGN EQUIPMENT &

SECTION 10

SCALE: 3/4" = 1'-0" (M7)

SECTION 11

SCALE: 1/2" = 1'-0" (M7)

SECTION 12

SCALE: 1/2" = 1'-0" (M7)

SECTION 13

SCALE: 1/2" = 1'-0" (M7)

SECTION 14

SCALE: 3/4" = 1'-0" (M7)

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SECTION 99

SCALE: 3/4" = 1'-0" (M7)

SECTION 100

SCALE: 3/4" = 1'-0" (M7)

DATE: 8-11-75

DESIGNED BY: R. TAVELIN

DRAWN BY: R. TAVELIN

CHECKED BY: J. M. MOYER

APPROVED BY: [Signature]

MECHANICAL ENGINEER

CITY OF DETROIT

CITY ENGINEERING DEPARTMENT

ATWATER STREET RELOCATION

ATWATER TUNNEL

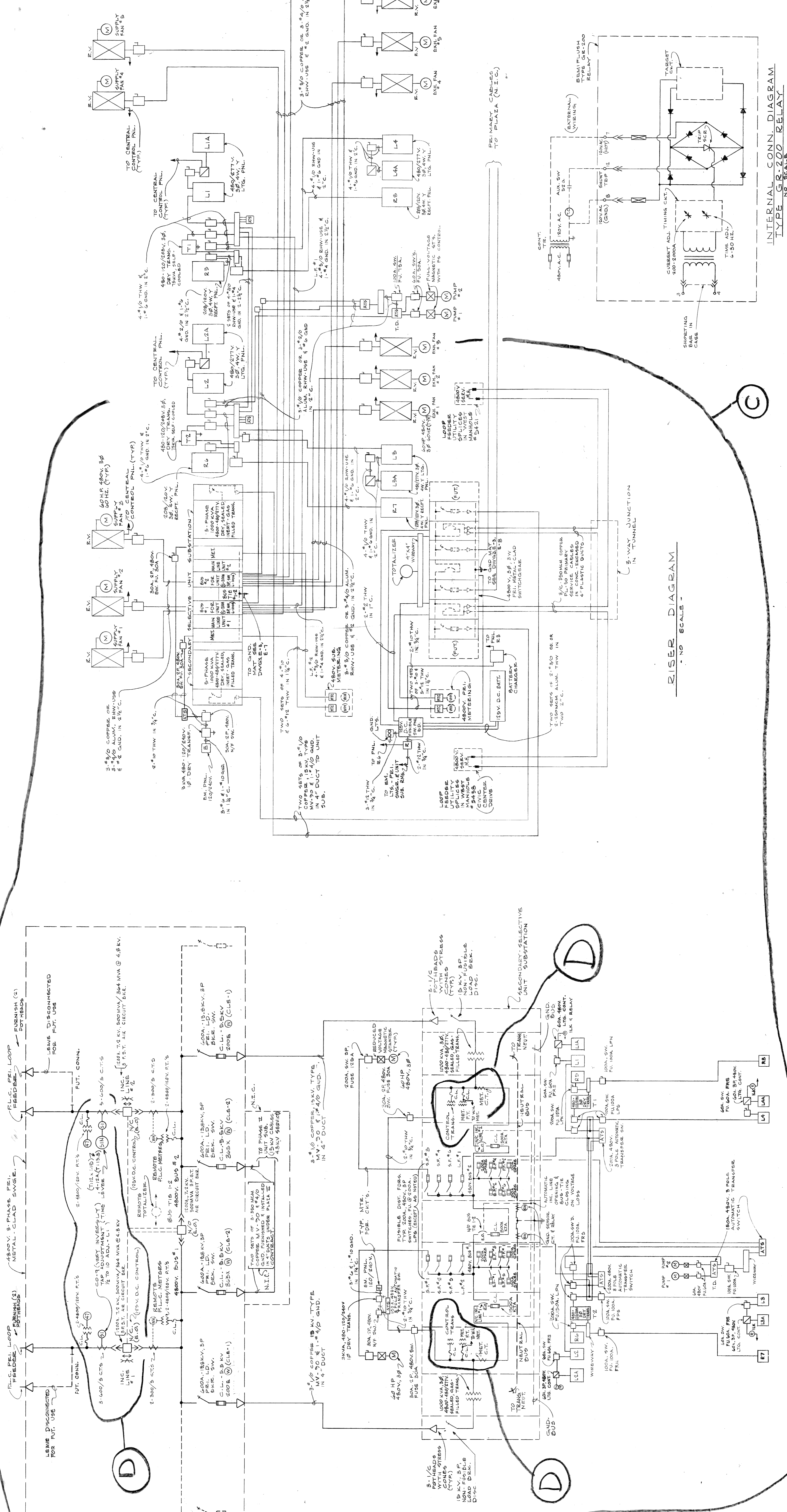
VENTILATION DETAILS

CONTRACT NO. 07105A

DRAWING NO. M7

SHEET NO. OF 21





RISER DIAGRAM  
NO SCALE

INTERNAL CONN. DIAGRAM  
TYPE GR-200 RELAY  
NO SCALE

SINGLE LINE DIAGRAM  
NO SCALE

ATWATER STREET RELOCATION  
ATWATER TUNNEL  
SINGLE LINE & ELECTRICAL  
RISER DIAGRAM

CITY OF DETROIT  
CITY ENGINEERING DEPARTMENT

approved  
MILTON T. BROWN  
ELECT. ENGR.

date 8-11-75  
designed M. BROWN  
drawn SIMON  
checked M. BROWN

contract no. 07105A

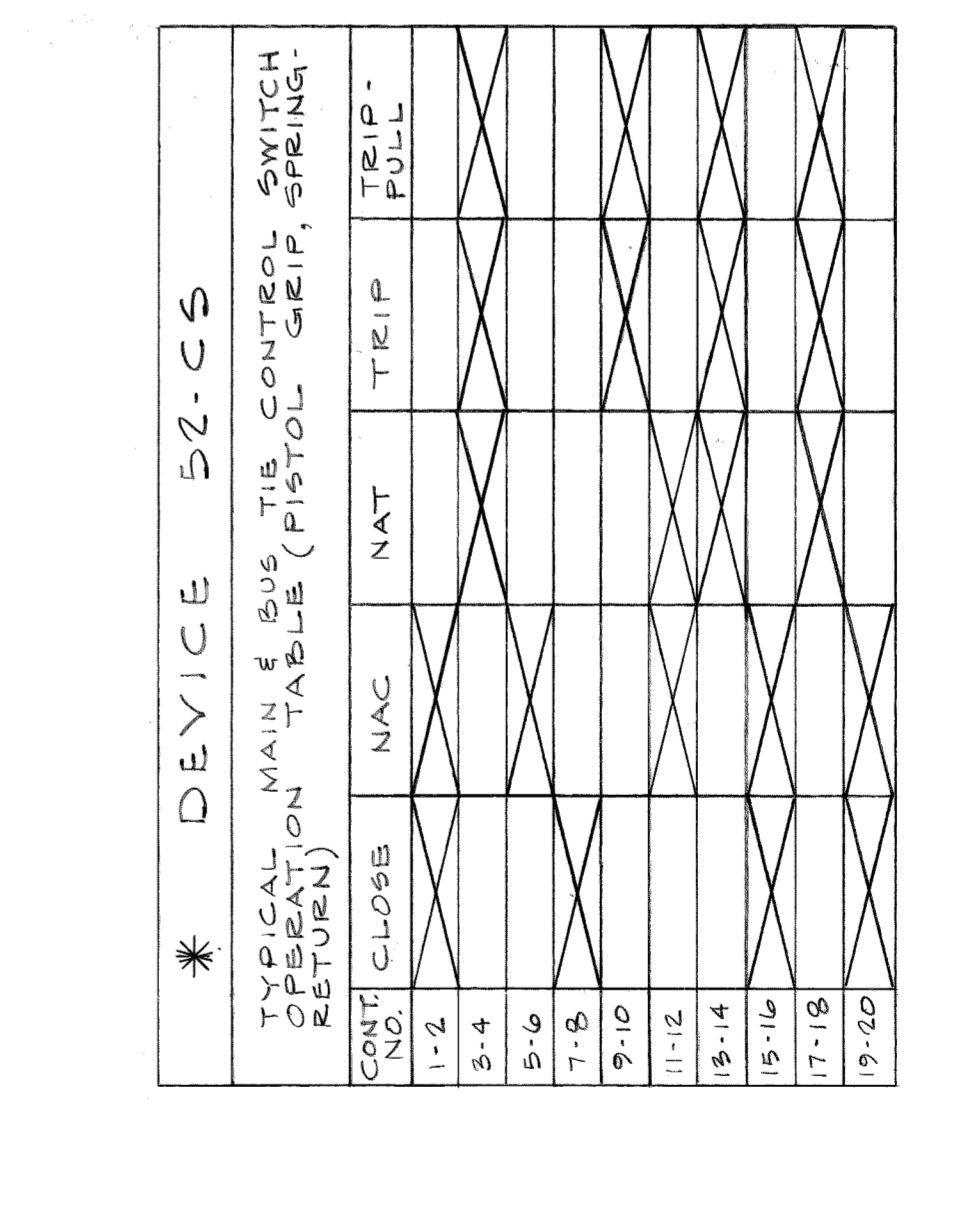
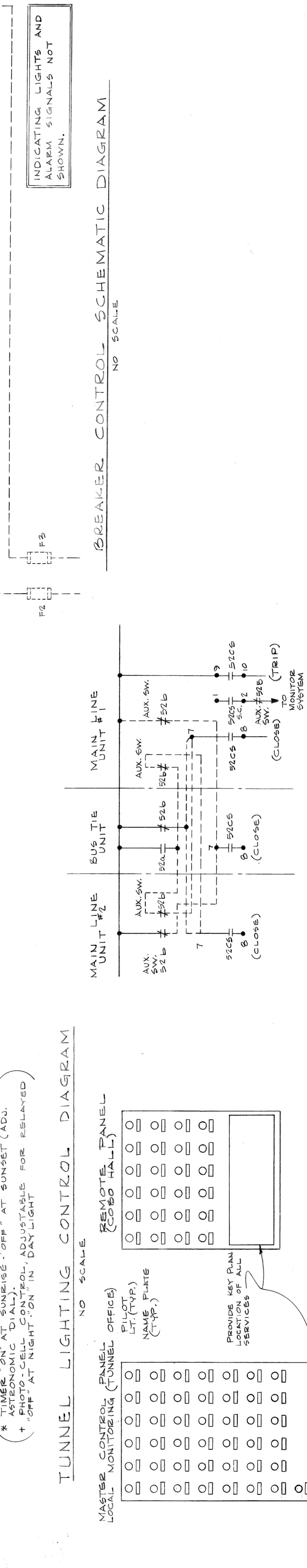
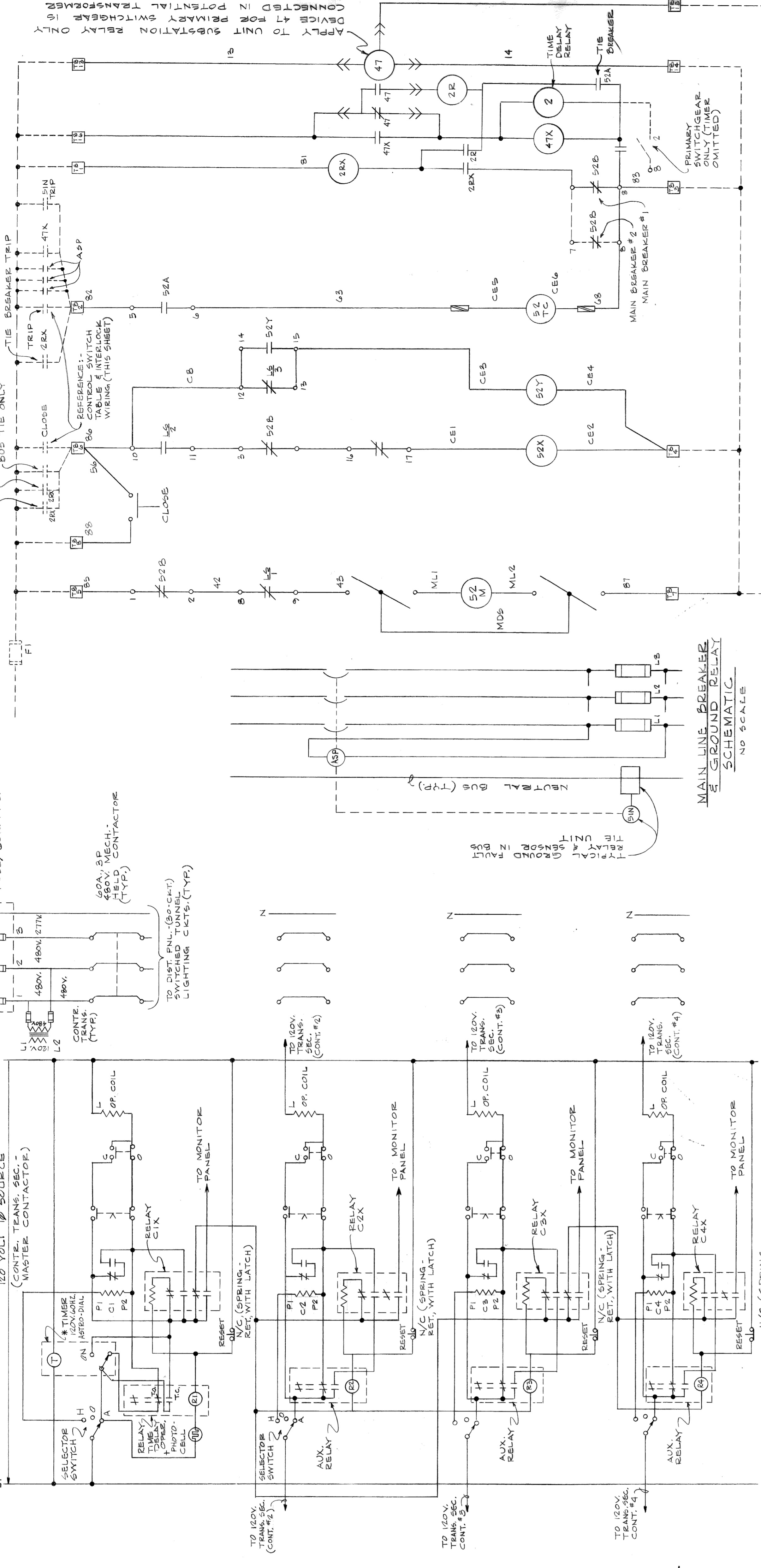
sheet 2 of 3  
drawing no. E-1

NO.	REVISIONS	DATE	BY	CHKD.
1	REVISED PER INSTRUMENT DRAWING TO TEAM BY P.L.D.			
2	REVISED PER SHOP DRAW. SUBMITTALS			

KEY CONTACT #	REMOTE PANEL MONITORING SYSTEM FOR	STATUS	REF. NOTE
1	PRIMARY SWGR.	AUTOMATIC TRIP	1
2	TUNNEL SUBSTATION	TRIP	2
3	TUNNEL SUBSTATION	CLOSE	3
4	TUNNEL SUBSTATION	TEMPERATURE HIGH ALARM	4
5	TUNNEL SUBSTATION	TEMPERATURE HIGH ALARM	5
6	PLAZA II SUBSTATION	AUTOMATIC TRIP	6
7	PLAZA II SUBSTATION	"	7
8	PLAZA II SUBSTATION	"	8
9	PLAZA II SUBSTATION	"	9
10	PLAZA II SUBSTATION	"	10
11	PLAZA II SUBSTATION	"	11
12	PLAZA II SUBSTATION	"	12
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16	PLAZA II SUBSTATION	"	16
17	PLAZA II SUBSTATION	"	17
18	PLAZA II SUBSTATION	"	18
19	PLAZA II SUBSTATION	"	19
20	PLAZA II SUBSTATION	"	20

**NOTES**

1. ALL ITEMS INDIVIDUALLY-ANNUNCIATED IN PLAZA II SUBSTATION ROOM OR TUNNEL OFFICE (WHERE APPLICABLE) AT EQUIPMENT ASSEMBLIES IN PRIMARY SWITCHGEAR AND UNIT SUBSTATION INSTALLATIONS AND IN REMOTE CONTROL PANEL FOR TRANSMITTED FROM MASTER MONITORING PANEL FOR GROUPED-ANNUNCIATION OF SEPARATELY-NUMBERED ITEMS AS FOLLOWS:
1. THERMOSTAT-SWITCH SLIP-CONTACTS, REMAINING IN OPERATED POSITION WHEN RELIGIOUSLY CONTROLLED TO MOVE ON THE DRAWINGS) TOGETHER WITH AIR EXCHANGERS, IN BREAKER OPERATION OF MECHANISMS GROUPED-ANNUNCIATION OF OFF-NORMAL POSITION OF MAIN & TIE PRIMARY AIR CIRCUIT BREAKERS SHALL BE REGISTERED AT REMOTE ANNUNCIATOR PANEL.
2. SAME AS 1), BUT WITH BOTH TRANSFORMER HIGH-TEMPERATURE ALARMS ADDED IN GROUPED-ANNUNCIATION FOR TUNNEL SUBSTATION OFF-NORMAL INDICATION.
3. SAME AS 2.) BUT WITH FEEDER OUTAGES (TRIPPED BREAKERS OR VOLTAGE LOSS, AS APPLICABLE) IN SERVICES TO THE FOUNTAIN (A) AND SKATING RINK (B).
4. ACTUATION OF REMOTE ANNUNCIATOR BY F.A. PNL.
5. SAME AS 4.) BUT FOR TUNNEL FIRE-ALARM MANUAL OPERATION OR SPINKLER AUTOMATIC OPERATION.
6. HIGH-LIMIT OVERFLOW ALARM FOR SUMP PUMP.
7. FAILURE OF SERVICE-OUTAGE (S.V. SUMP).
8. VALVE ROOM LOW TEMP. ALARM.
9. HIGH MONOXIDE ALARM.
10. TUNNEL-FAN AUTOMATIC OPERATION.
11. LOSS OF A.C. INPUT TO CHARGER OPERATING WITH 105V. D.C. CONTROL BATTERY FOR PRIMARY SWITCHGEAR.
12. OUTAGE IN ALL OR PART OF PLAZA II LIGHTING.
13. DRY-PIPE SYSTEM PRESSURE FAILURE.
14. CLOSED (OFF-NOP) SPINKLER VALVES.
15. PNEUMATIC-CONTROL SYSTEM PRESSURE FAILURE.
16. OPERATION OF ONE OR MORE 400/277V. AUTOMATIC TRANSFER SWITCHES IN THE TUNNEL MECHANICAL ROOMS.
17. SKATING RINK HIGH-TEMP. ALARM.
18. HIGH WATER ALARMS FOR NOTED EQUIPMENT - PLAZA II.



SEE CONTROL SWITCH OPERATION TABLE  
SEE DWG'S. B-7 AND B-19 FOR MONITORING SCHEMATIC & RISER DIAGRAM

**BREAKER CONTROL SCHEMATIC DIAGRAM**  
NO SCALE

**MAIN LINE BREAKER GROUND RELAY SCHEMATIC**  
NO SCALE

**TUNNEL LIGHTING CONTROL DIAGRAM**  
NO SCALE

**PARTIAL TYPICAL DIAGRAM CONTROL SWITCH WIRING INTERLOCKS**  
NO SCALE

**MONITORING PANEL ARRANGEMENT**  
NO SCALE

5005

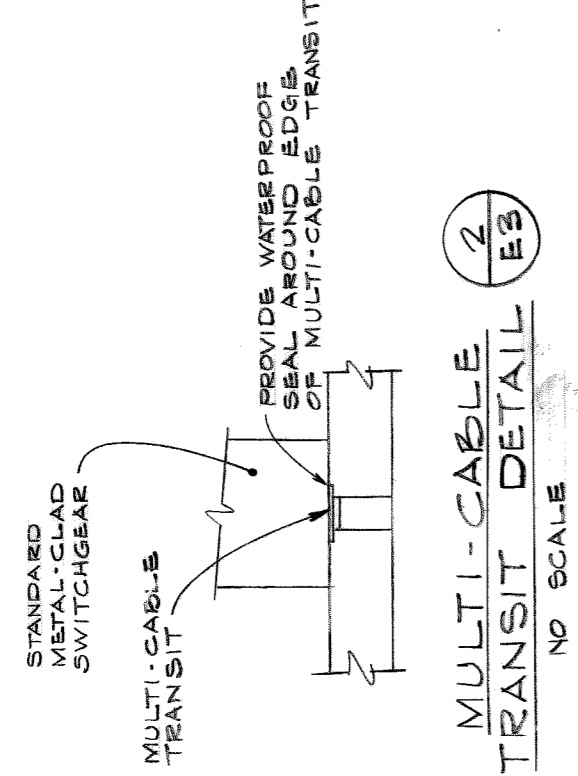
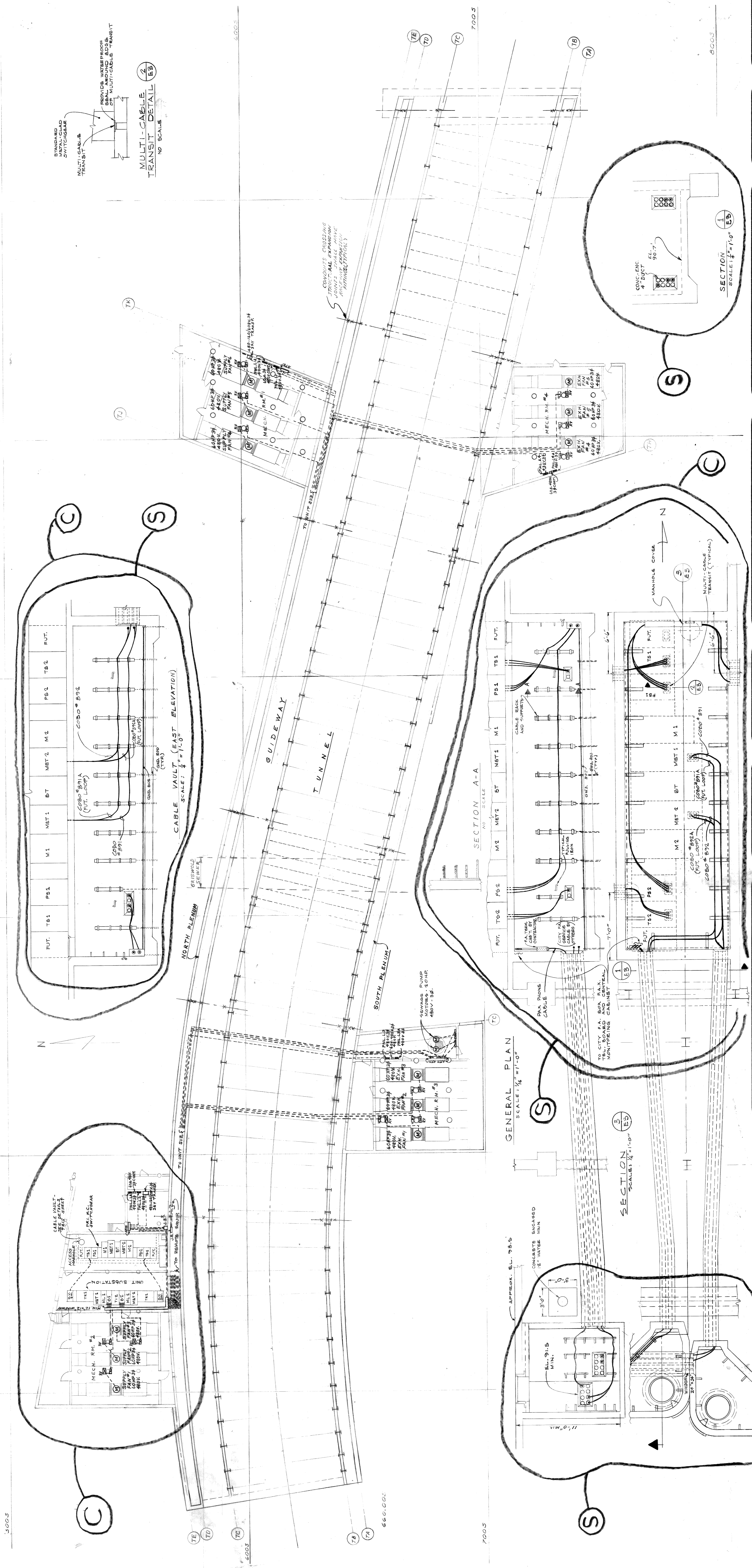
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2000

3000

4000

5000



MULTI-CABLE TRANSIT DETAIL (E3)  
NO SCALE

CABLE VAULT (EAST ELEVATION)  
SCALE: 1/4" = 1'-0"

SECTION A-A  
NO SCALE

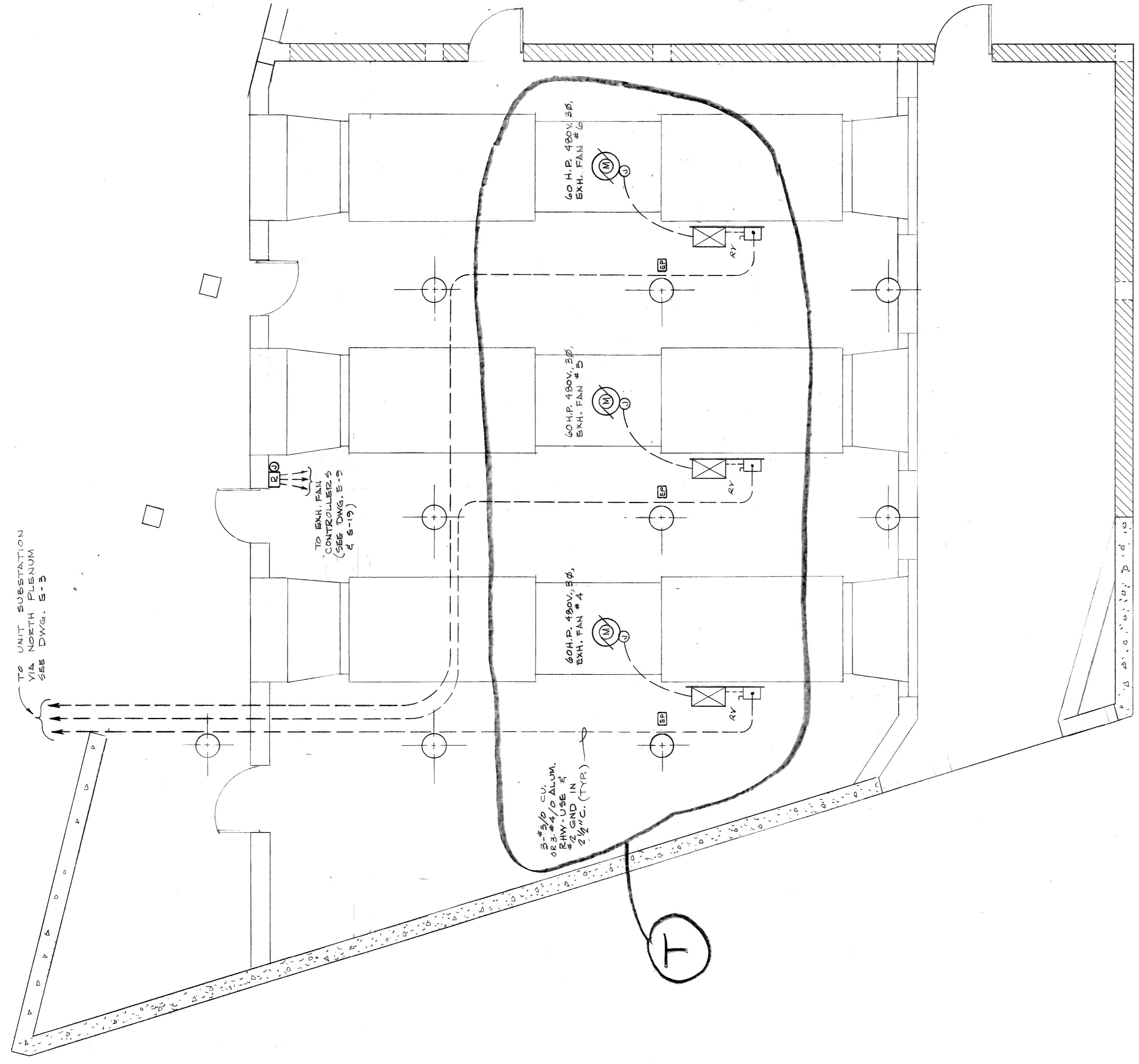
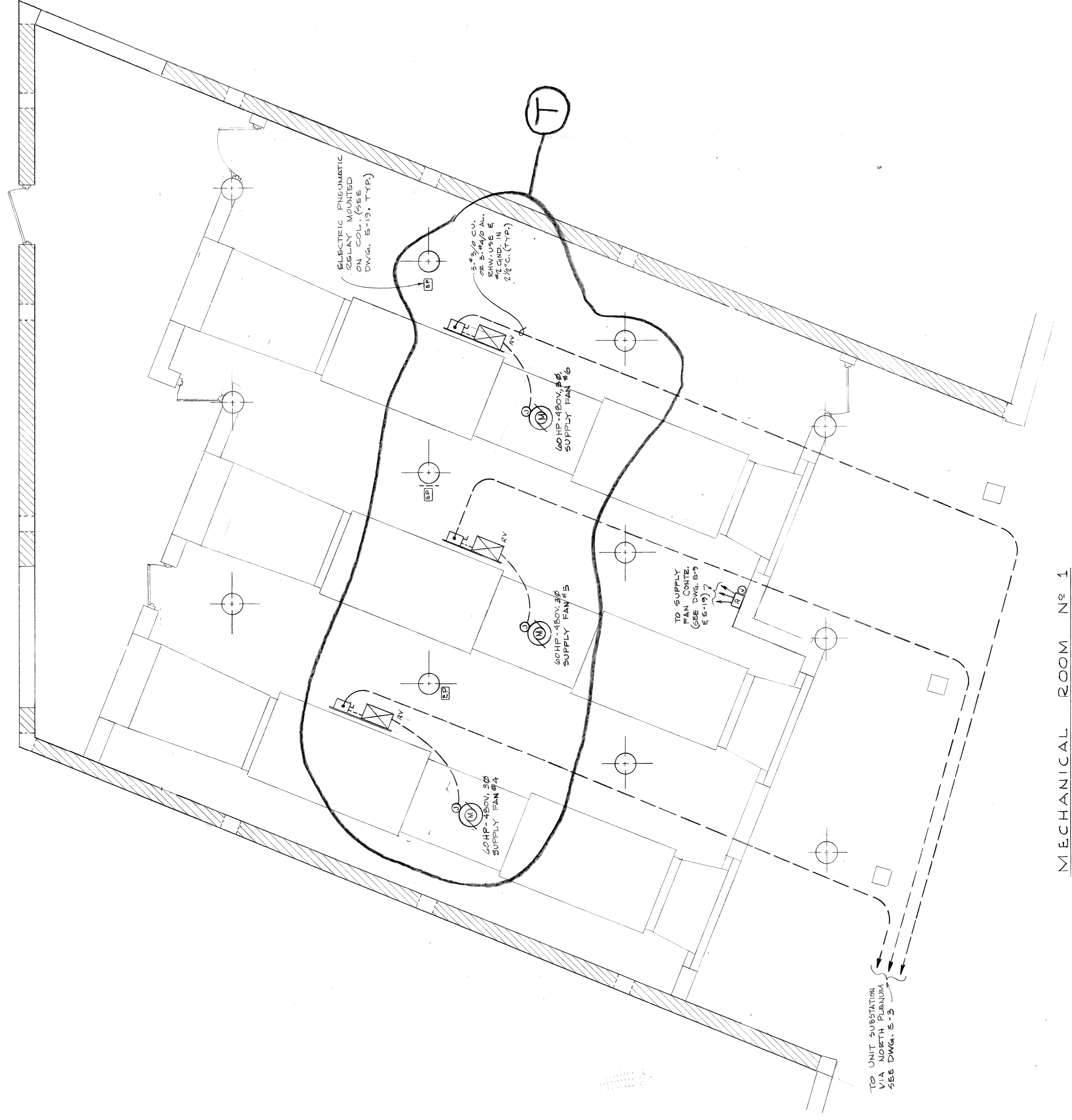
GENERAL PLAN  
SCALE: 1/8" = 1'-0"

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

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

PLAN VIEW OF DUCT RUN & MANHOLE  
SCALE: 1/4" = 1'-0"

<b>revisions</b> 2 REVISED PER AS-BUILT CONDITIONS 3 REVISED PER SHOP DRAWL SUBMITTAL 4 5 6 7 8 9 10	<b>date</b> 8-11-75 <b>designed</b> M. BROWN <b>drawn</b> SIMON <b>checked</b> M. BROWN	<b>approved</b> <i>Milton T. Brown</i> ELECT. ENGR.	<b>contract no.</b> 07105A	<b>sheet</b> of 81 <b>drawing no.</b> E-3
	<b>CITY OF DETROIT</b> <b>CITY ENGINEERING DEPARTMENT</b>			<b>ATWATER STREET RELOCATION</b> <b>ATWATER TUNNEL</b>
	<b>3-PHASE 4800V PRIMARY &amp; 480V</b> <b>SECONDARY SERVICE AND DETAILS</b>			



revisions	DATE	BY	REASON
T	REVISED PER AS-BUILT CONDITIONS		

**date** 8-11-75  
**designed** M. BROWN  
**drawn** SIMON  
**checked** M. BROWN

**approved**  
 Milton T. Brown  
 ELECT. ENGR.

**CITY OF DETROIT**  
**CITY ENGINEERING DEPARTMENT**

**ATWATER STREET RELOCATION**  
**ATWATER TUNNEL**  
**3-PHASE 480v POWER LAYOUT - I**

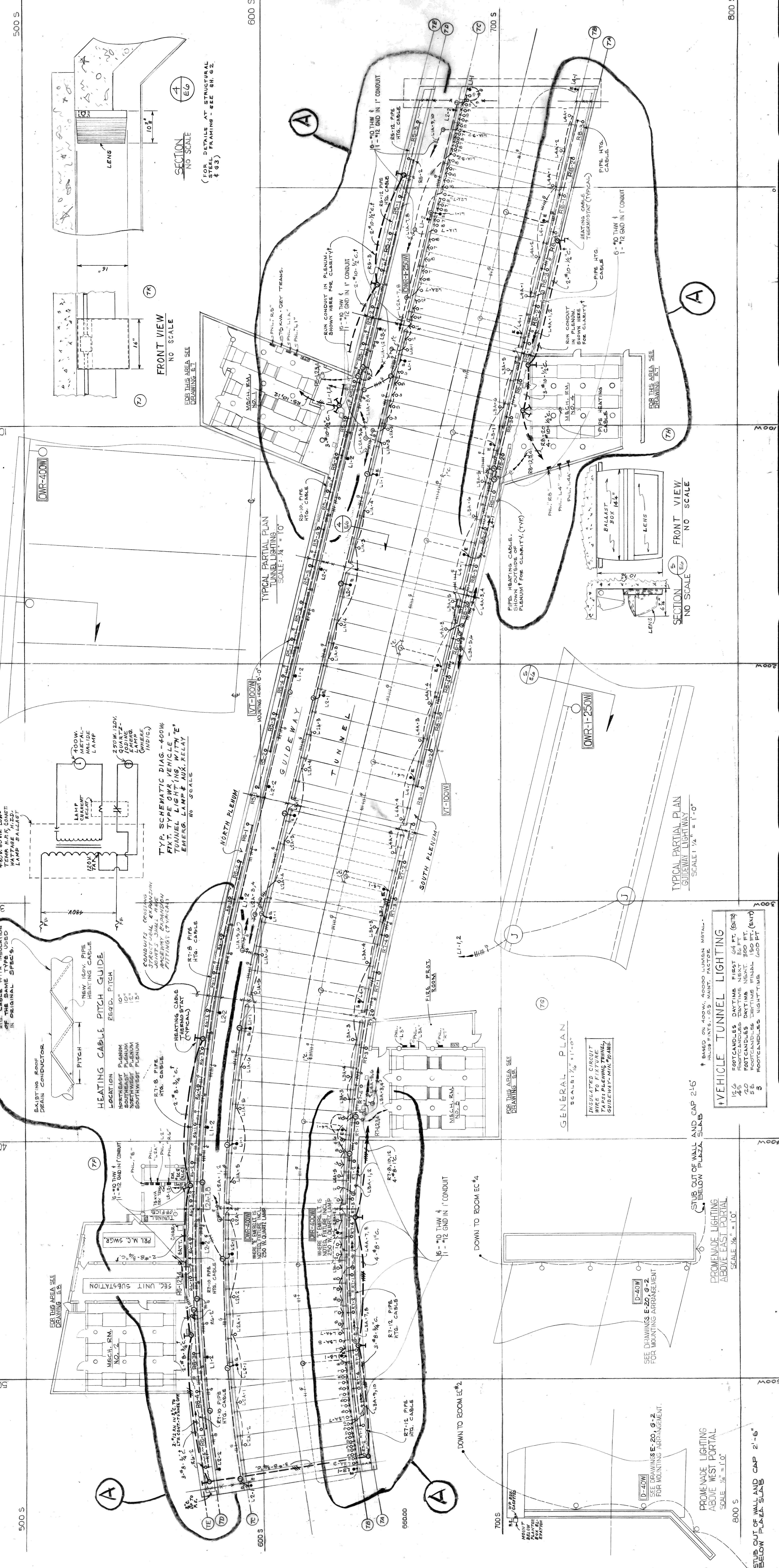
**contract no.**  
 07105 A

**sheet** 8 of 8  
**drawing no:**  
 E-4

MECHANICAL ROOM No. 4  
 SCALE: 1/4" = 1'-0"







contract no. 07105 A  
 drawing no. E-6  
 sheet 28 of 31

ATWATER STREET RELOCATION  
 ATWATER TUNNEL  
 TUNNEL, GUIDEWAY AND PLENUM  
 LIGHTING LAYOUT AND DETAILS

CITY OF DETROIT  
 CITY ENGINEERING DEPARTMENT

approved  
 designed M. BROWN  
 drawn S. IMON  
 checked M. BROWN  
 Milton T. Brown  
 ELECT. ENGR.

date 8-11-75  
 approved  
 designed M. BROWN  
 drawn S. IMON  
 checked M. BROWN

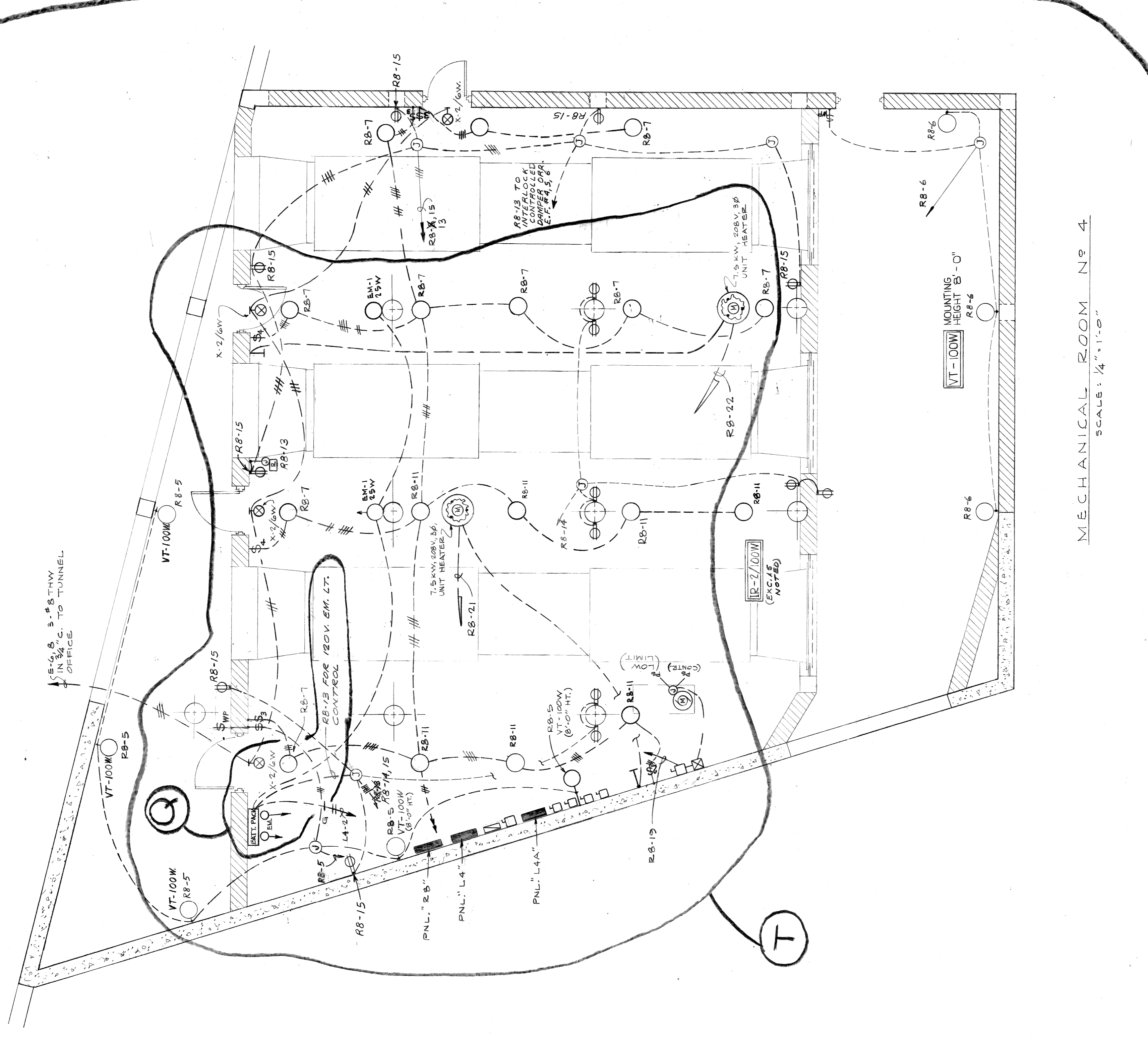
NO.	REVISIONS

\*VEHICLE TUNNEL LIGHTING  
 126 FOOTCANDLES DAYTIME FIRST 64 FT. (EXIT)  
 45 FOOTCANDLES DAYTIME NEXT 86 FT.  
 20 FOOTCANDLES DAYTIME NEXT 150 FT. (EXIT)  
 5 FOOTCANDLES NIGHTTIME NEXT 150 FT. (EXIT)

† BASED ON 400W. 40000 LUMEN METAL HALIDE FTS. 2.9 MAINT. FACTOR.  
 ‡ STUDS OUT OF WALL AND CAP 2'-6" BELOW PLAZA SLAB  
 § PROMENADE LIGHTING ABOVE EAST PORTAL SCALE: 1/8" = 1'-0"  
 ¶ PROMENADE LIGHTING ABOVE WEST PORTAL SCALE: 1/8" = 1'-0"  
 †† SEE DRAWINGS E-20, G-2 FOR MOUNTING ARRANGEMENT

STUB OUT OF WALL AND CAP 2'-6" BELOW PLAZA SLAB  
 D-40W  
 SEE DRAWINGS E-20, G-2 FOR MOUNTING ARRANGEMENT

J



MÉCHANICAL ROOM No 4  
SCALE: 1/4" = 1'-0"

sheet 2 of 8

drawing no: E-7

contract no.

07105 A

ATWATER STREET RELOCATION  
ATWATER TUNNEL

3-PHASE 480/277V LIGHTING & 208/120v RECEPTACLE LAYOUT & DETAILS - 1

CITY OF DETROIT  
CITY ENGINEERING DEPARTMENT

approved

Milton T. Brown  
ELECT. ENGR.

date 8-11-75

designed M. BROWN

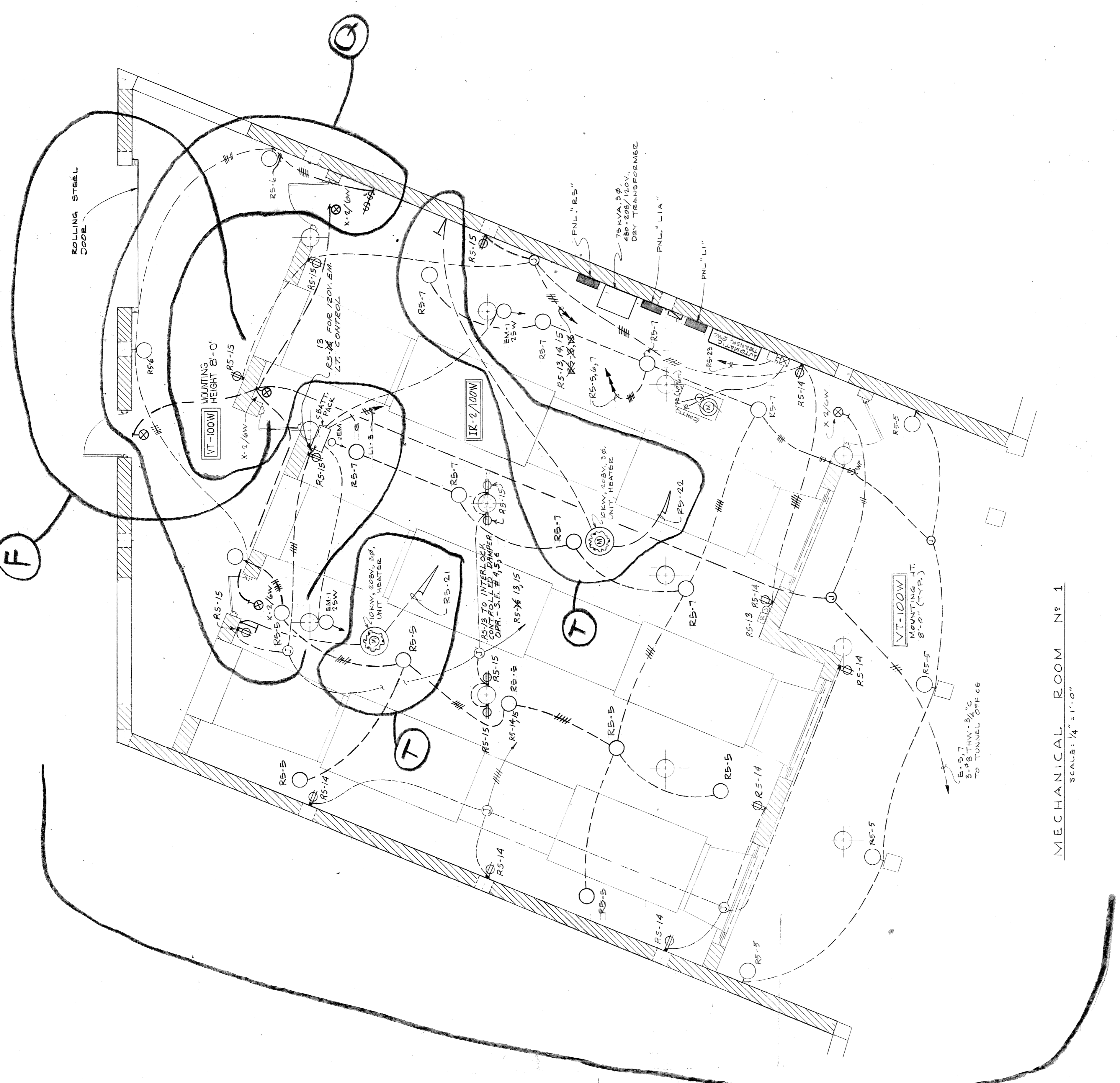
drawn SIMON

checked M. BROWN

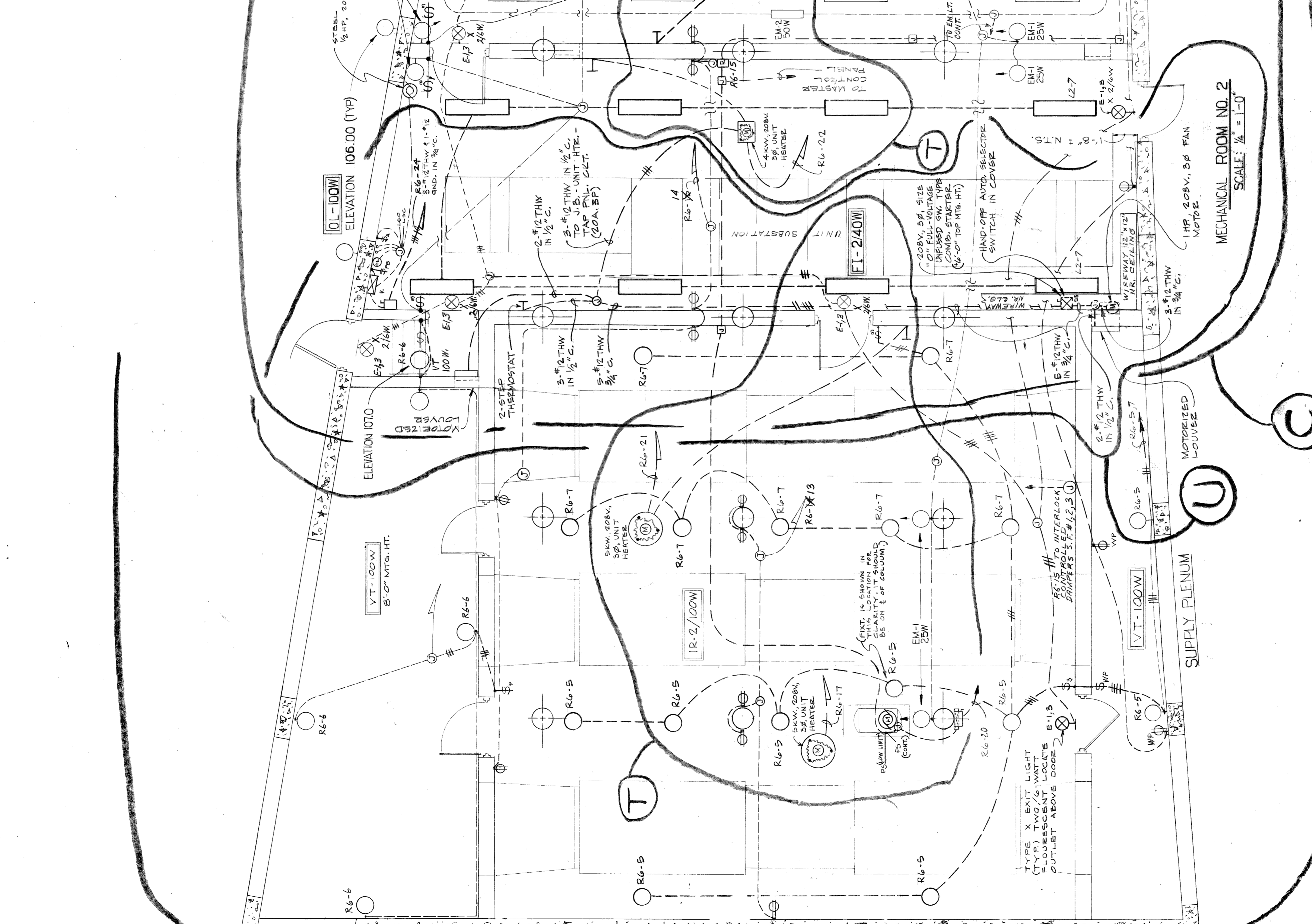
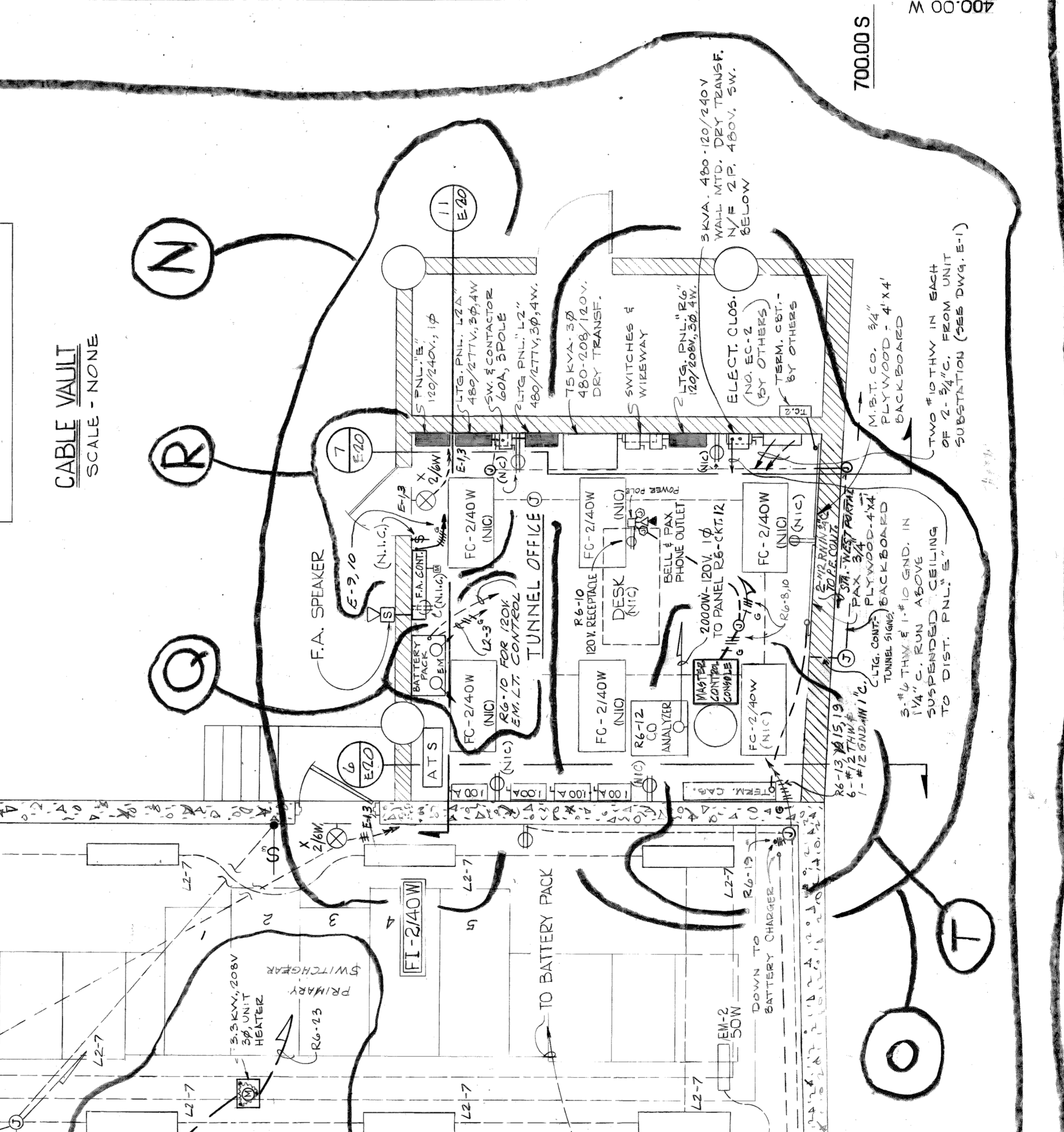
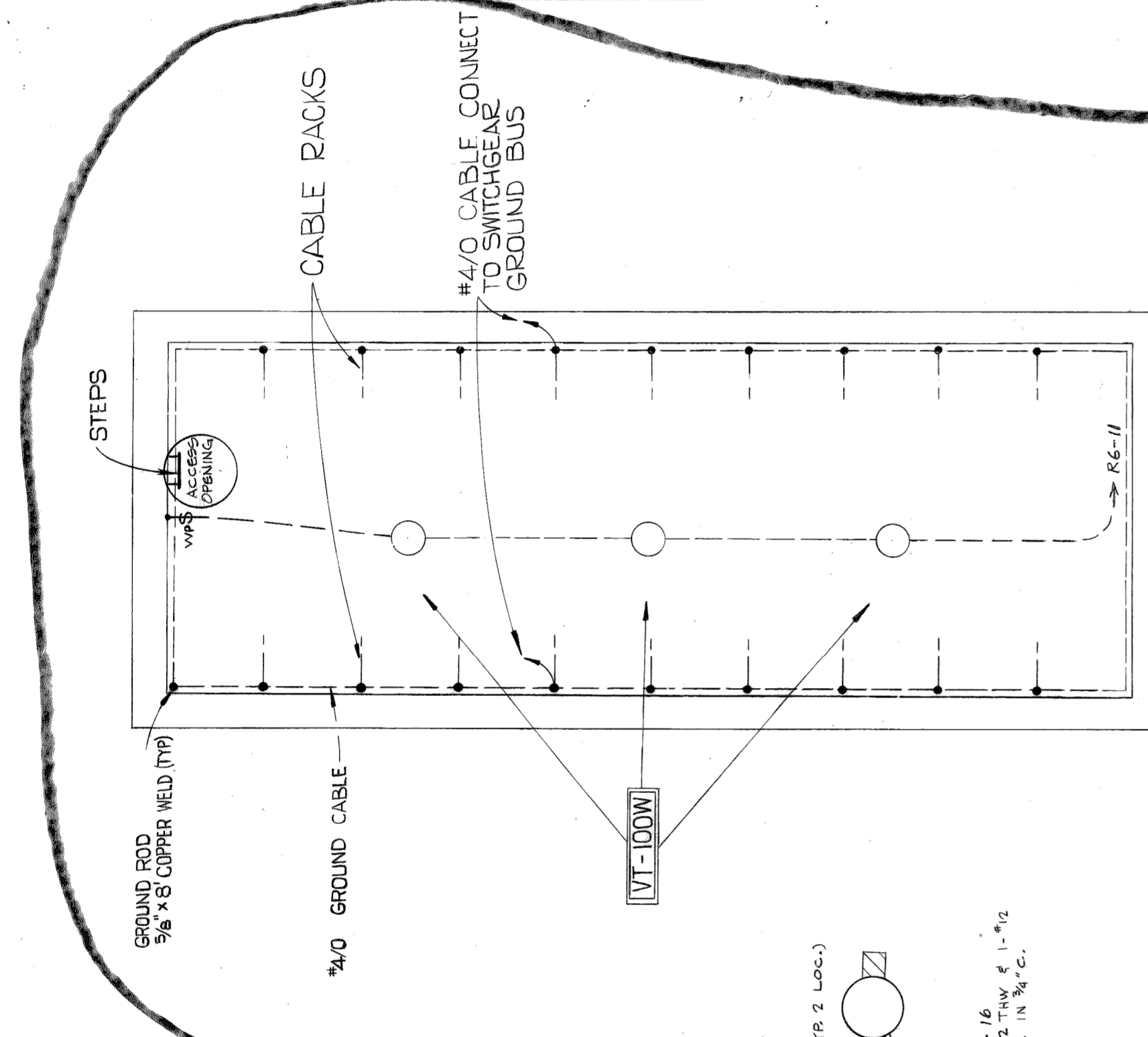
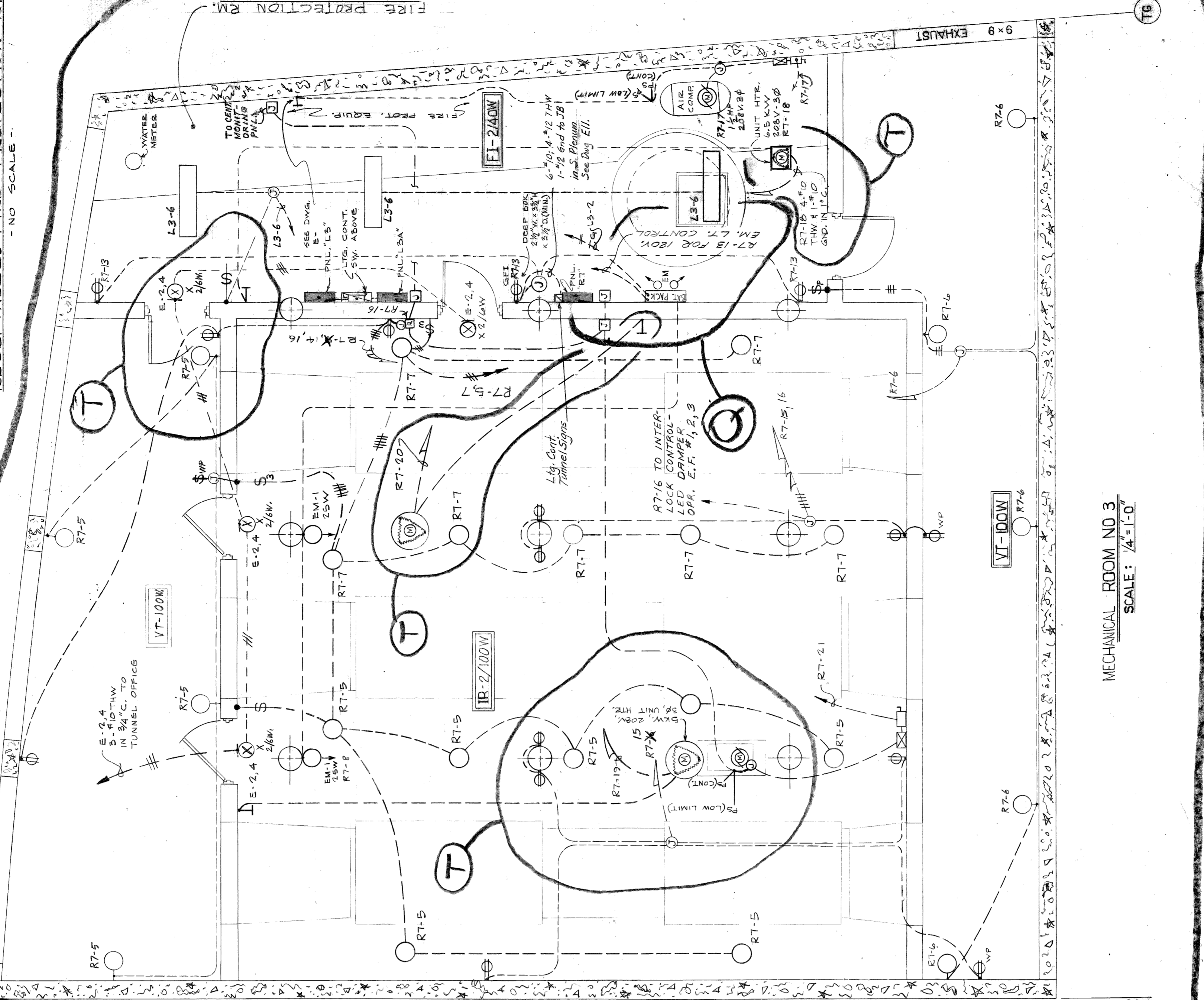
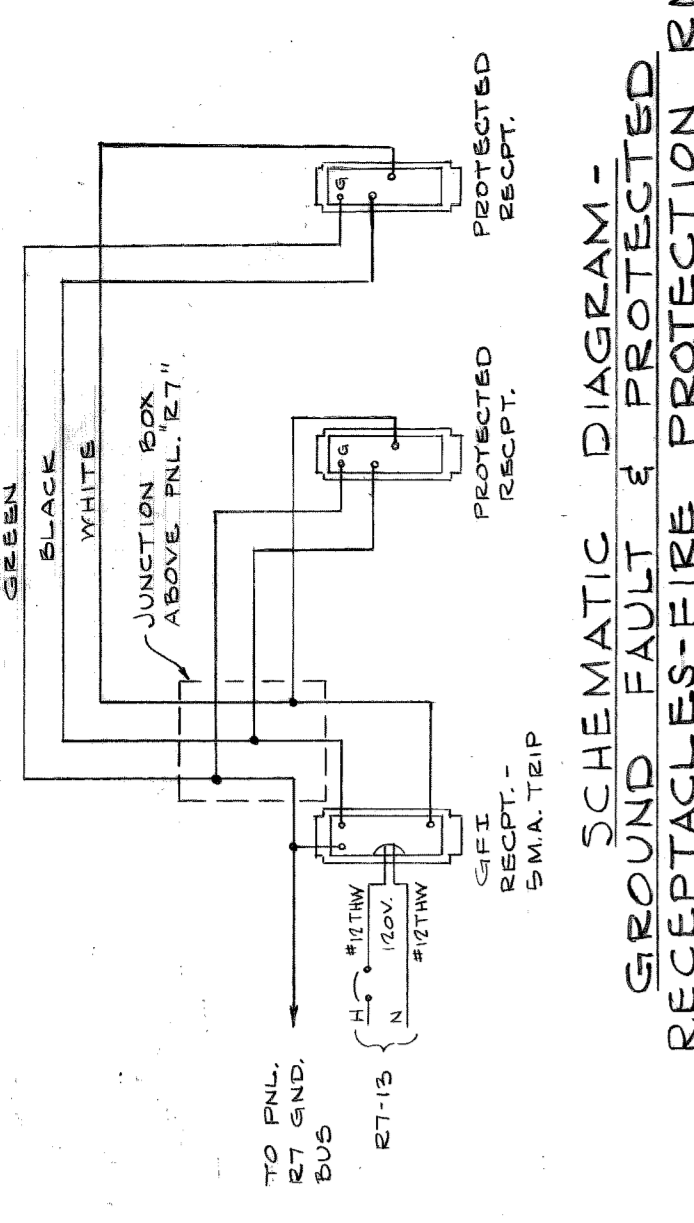
NO.	DESCRIPTION	BY	DATE
1	AS BUILT	M.B.	
2	REVISED FOR AS-BUILT CONDITIONS	M.B.	
3	REVISED SET, SEE TUNNEL BUILT CONDITIONS	M.B.	
4	REVISED SET, SEE TUNNEL BUILT CONDITIONS	M.B.	
5	REVISED SET, SEE TUNNEL BUILT CONDITIONS	M.B.	
6	REVISED SET, SEE TUNNEL BUILT CONDITIONS	M.B.	
7	REVISED SET, SEE TUNNEL BUILT CONDITIONS	M.B.	
8	REVISED SET, SEE TUNNEL BUILT CONDITIONS	M.B.	
9	REVISED SET, SEE TUNNEL BUILT CONDITIONS	M.B.	
10	REVISED SET, SEE TUNNEL BUILT CONDITIONS	M.B.	
11	REVISED SET, SEE TUNNEL BUILT CONDITIONS	M.B.	
12	REVISED SET, SEE TUNNEL BUILT CONDITIONS	M.B.	
13	REVISED SET, SEE TUNNEL BUILT CONDITIONS	M.B.	
14	REVISED SET, SEE TUNNEL BUILT CONDITIONS	M.B.	
15	REVISED SET, SEE TUNNEL BUILT CONDITIONS	M.B.	
16	REVISED SET, SEE TUNNEL BUILT CONDITIONS	M.B.	
17	REVISED SET, SEE TUNNEL BUILT CONDITIONS	M.B.	
18	REVISED SET, SEE TUNNEL BUILT CONDITIONS	M.B.	
19	REVISED SET, SEE TUNNEL BUILT CONDITIONS	M.B.	
20	REVISED SET, SEE TUNNEL BUILT CONDITIONS	M.B.	

revisions

F



MÉCHANICAL ROOM No 1  
SCALE: 1/4" = 1'-0"



revisions

NO.	DATE	DESCRIPTION
1	AS BUILT	REVISIONS MADE AS BUILT
2	8-11-75	DESIGNED PER AS BUILT CONDITIONS
3		REVISED LT SW. TO MEET WITH AS BUILT CONDITIONS
4		REVISED CKT. FOR 120V. EM. LT. CONTROL
5		REVISED PER EQUIPMENT SHOP DWGS.
6		SECTION LINE II ADDED
7		REVISED PER SHOP DWGS.
8		REVISED PER SHOP DWGS. SUBMITTAL

approved  
date 8-11-75  
designed M. BROWN  
drawn SIMON  
checked M. BROWN

approved  
PULSTON T. BROWN  
ELECT. ENGR.