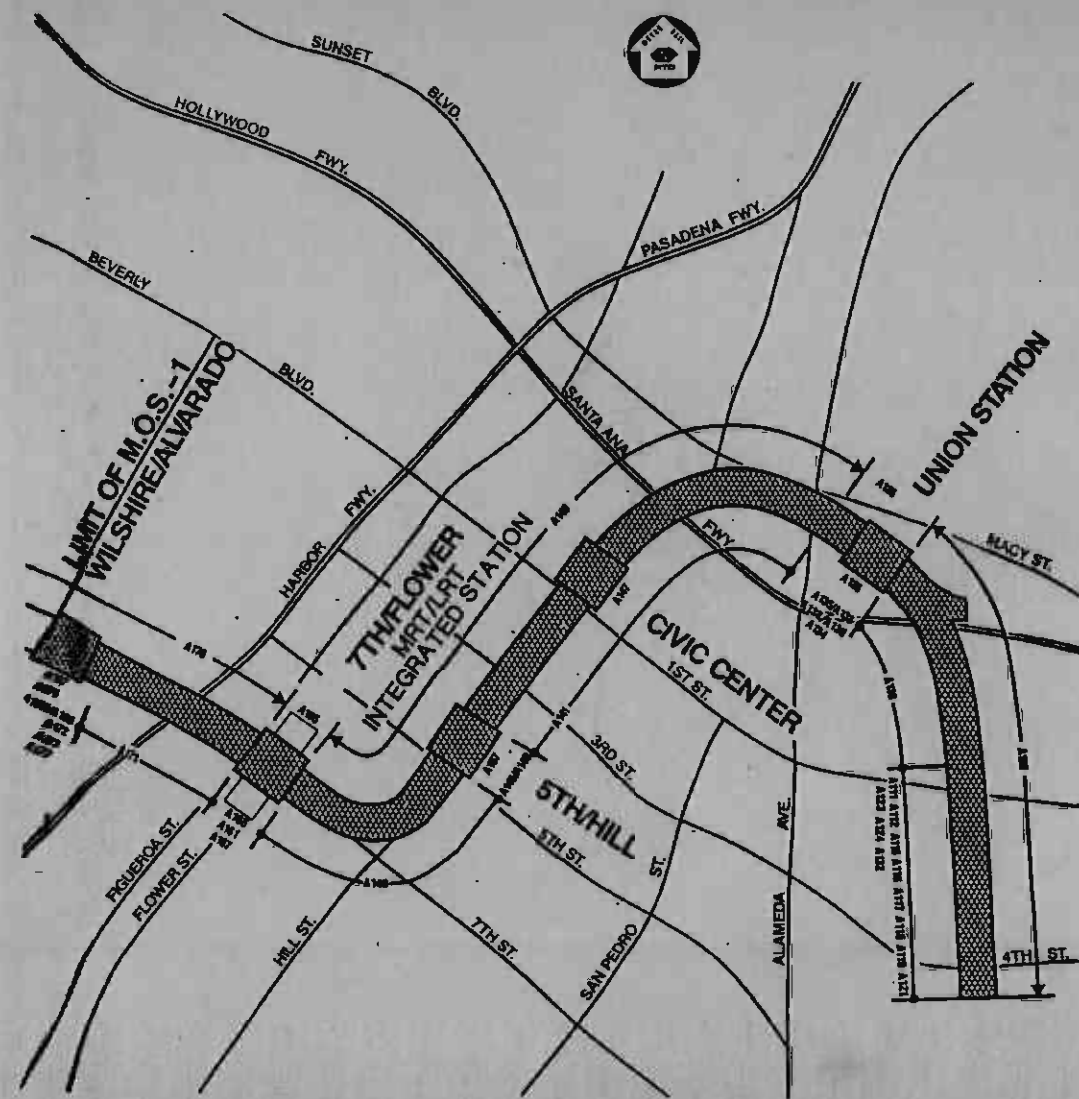


SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT

LOS ANGELES CENTRAL BUSINESS DISTRICT TO NORTH HOLLYWOOD



VII. AUTOMATIC TRAIN CONTROL SYSTEM CONTRACT DRAWINGS CONTRACT A620

JULY 1987

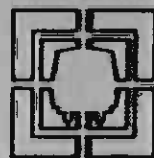
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GENERAL CONSULTANT:

METRO RAIL TRANSIT CONSULTANTS
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LOS ANGELES CENTRAL BUSINESS DISTRICT TO NORTH HOLLYWOOD



VII. AUTOMATIC TRAIN CONTROL SYSTEM CONTRACT DRAWINGS CONTRACT A620

JULY 1987



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CONSULTANTS:



GENERAL CONSULTANT:
METRO RAIL TRANSIT CONSULTANTS
DMJM/PBQD/KE/HWA

APPROVED: *Harold Chaff* DATE: 6/24/87
PROJECT DIRECTOR



RTD
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

APPROVED: *Robert J. ...* DATE: 6/24/87
ASSISTANT GENERAL MANAGER
TRANSIT-SYSTEMS DEVELOPMENT

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INDEX OF DRAWINGS

SHEET NO.	DRAWING NO.	DRAWING TITLE / DESCRIPTION	SHEET NO.	DRAWING NO.	DRAWING TITLE / DESCRIPTION	SHEET NO.	DRAWING NO.	DRAWING TITLE / DESCRIPTION
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48	Q-048	NOT USED	97	Q-097	NOT USED			

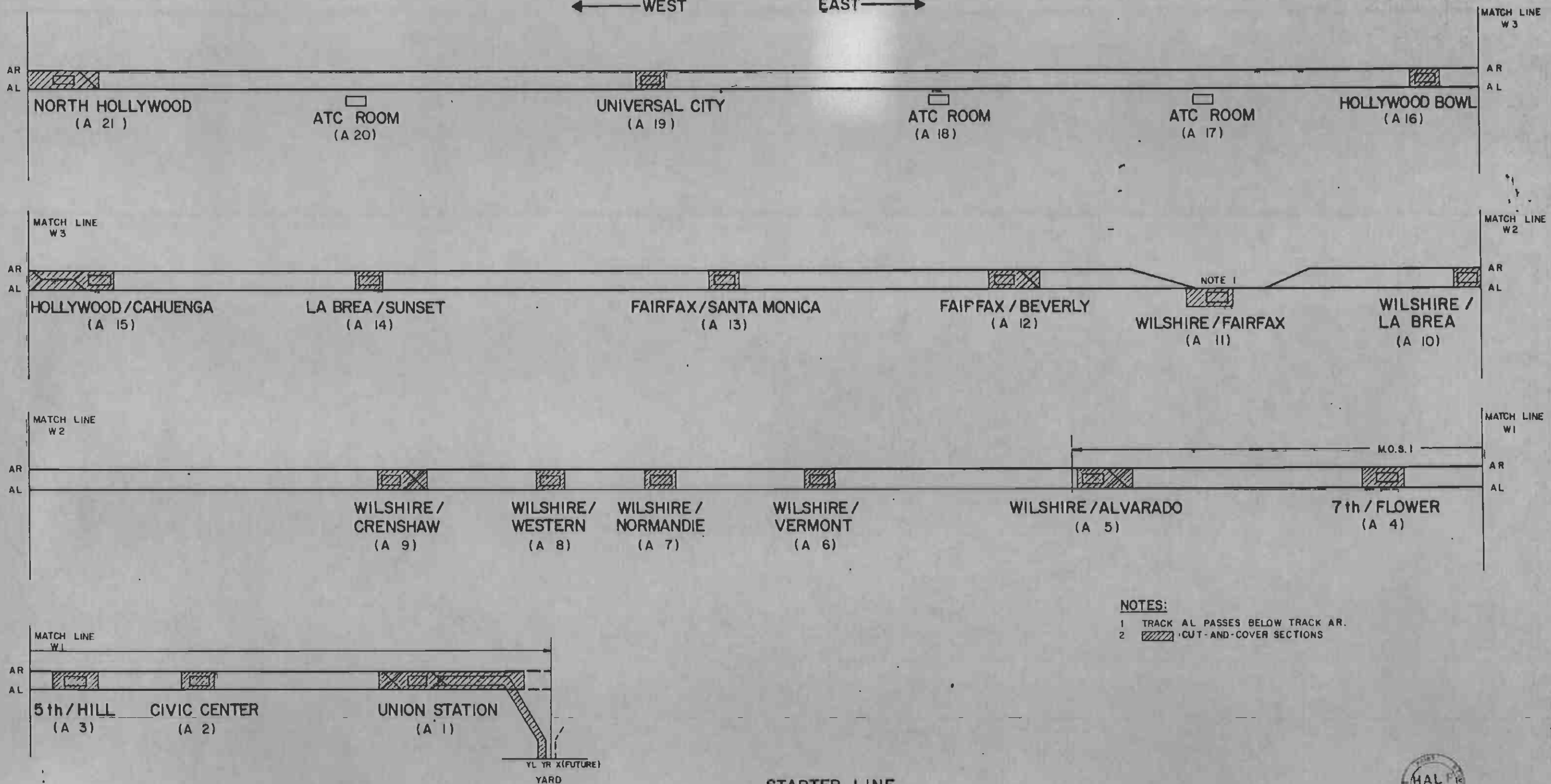
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REV.	DATE	BY	SUB.	APP.	DESCRIPTION	REV.	DATE	BY	SUB.	APP.	DESCRIPTION
					INITIAL ISSUE						

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- NOTES:**
- 1 TRACK AL PASSES BELOW TRACK AR.
 - 2 CUT-AND-COVER SECTIONS

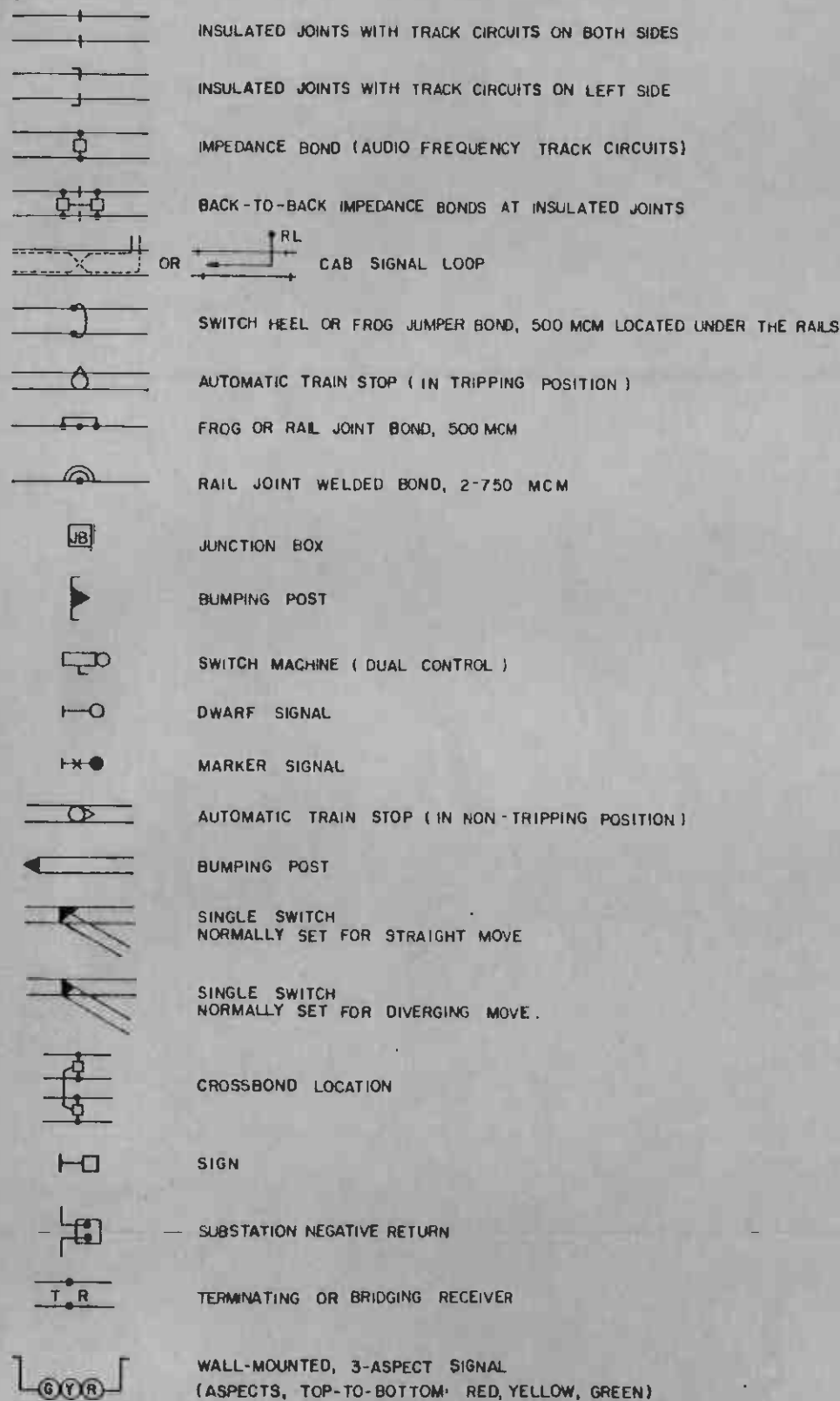
**STARTER LINE
PHASE A-1**



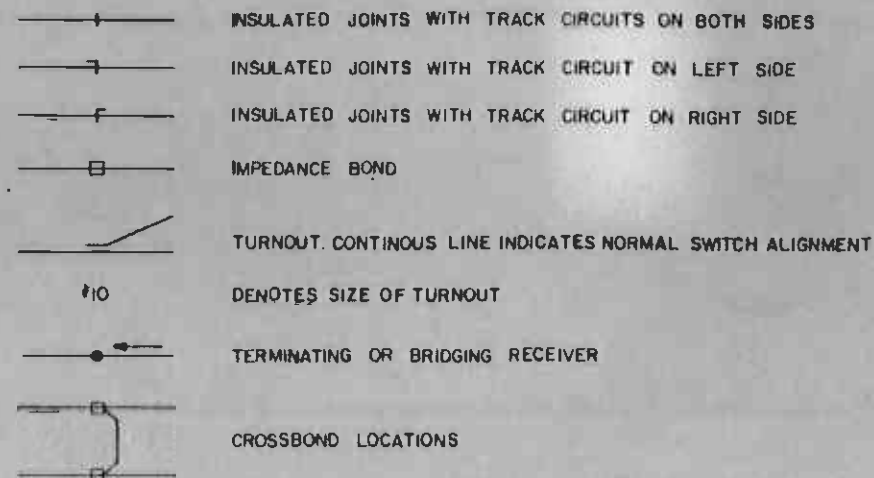
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TRACK PLAN SYMBOLS

DOUBLE LINE



SINGLE LINE



ABBREVIATIONS

ALIGNMENT

CC	CURVE TO CURVE TRANSITION POINT
CS	CURVE TO SPIRAL TRANSITION POINT
PC	POINT OF CURVATURE
PRC	POINT OF REVERSE CURVATURE
PT	POINT OF TANGENT
SC	SPIRAL TO CURVE TRANSITION POINT
SS	SPIRAL TO SPIRAL TRANSITION POINT
ST	SPIRAL TO TANGENT TRANSITION POINT
TS	TANGENT TO SPIRAL TRANSITION POINT
SE	SUPER ELEVATION

PROFILE

PVC	POINT OF VERTICAL CURVE TRANSITION
PVI	POINT OF VERTICAL INTERSECTION OF TANGENTS TO VERTICAL CURVES
PVT	POINT OF VERTICAL TANGENT TRACK

NOTES

- ON THE ALIGNMENT DIAGRAMS APPEARING ON EACH SHEET OF THE DOUBLE LINE TRACK PLAN, THE TRACKS BEAR THE DESIGNATIONS TAKEN FROM THE CIVIL AND STRUCTURAL DESIGN PLANS.
- ALL POINTS AND PERCENT GRADES ARE REFERENCED IN THE DIRECTION OF INCREASING SURVEY STATION NUMBERS.
- DISTANCES ARE MEASURED ALONG THE CENTERLINE BETWEEN THE TWO RAILS OF EACH TRACK
- SURVEY STATION EQUALITIES ARE INDICATED IN THE FOLLOWING MANNER:
40+40 BK = (BK IS ALL THE STATIONING LEADING UP TO THE EQUALITY.)
41+30 AHD (AHD IS ALL STATIONING AHEAD OF THE EQUALITY.)
- THE SPEED LIMITS INDICATED ON EACH SHEET OF THE DOUBLE LINE TRACK PLANS ARE THE MAXIMUM SPEED LIMITS TO BE OBSERVED BY THE TRAIN CONTROL SYSTEM; THESE SPEEDS CORRESPOND GENERALLY WITH THE CIVIL AND STRUCTURAL DESIGN CRITERIA, EXCEPT WHERE A LOWER MAXIMUM TRAIN OPERATING SPEED LIMIT HAS BEEN APPLIED FOR PRACTICABILITY.
- MAXIMUM TRAIN SPEED THROUGH PASSENGER STATIONS IS INDICATED ON DOUBLE LINE TRACK PLANS.

TRACK DIAGRAM

CP	CROSS PASSAGE
EP	END OF PLATFORM
PS	POINT OF SWITCH
SP	SUMP PUMP
AL	STARTER LINE, INBOUND TRACK, EASTWARD TOWARD UNION STATION
AR	STARTER LINE, OUTBOUND TRACK, WESTWARD AWAY FROM UNION STATION
BPS	BUMPER POST SIGNAL
SW	TRACK SWITCH
TS	TRAIN STOP
IJ	INSULATED JOINT
XO	CROSSOVER
EQ	EQUILATERAL
YL	YARD LEAD TRACK, SOUTHWARD TOWARD YARD
YR	YARD LEAD TRACK, NORTHWARD AWAY FROM YARD

STRUCTURE

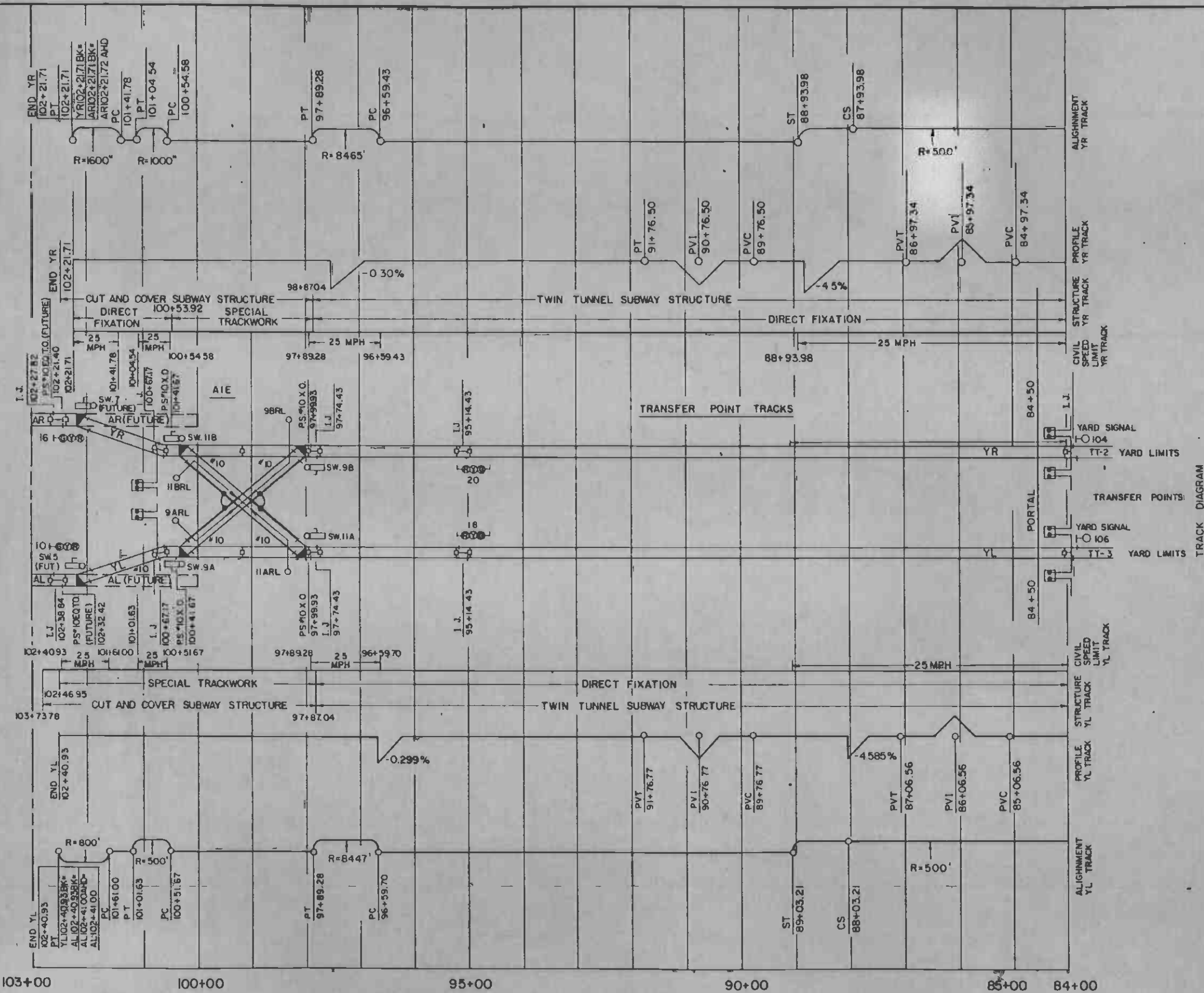
BB	BRIDGING BEAM
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REV. DATE BY SUB APP 1 2 3 4 5 6 7 8 9 10	INITIALS ISSUE DESCRIPTION				

NOTES:

- 1. SWITCHES 5 AND 7 ARE FUTURE AND NOT IN CONTRACT.
- 2. TRACK PLAN BEYOND MOS -1 PROVIDED FOR BLOCK DESIGN VERIFICATION.



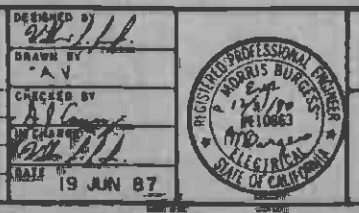
TRACK DIAGRAM



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 DRAWN BY: *[Signature]*
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 DATE: 19 JUN 87



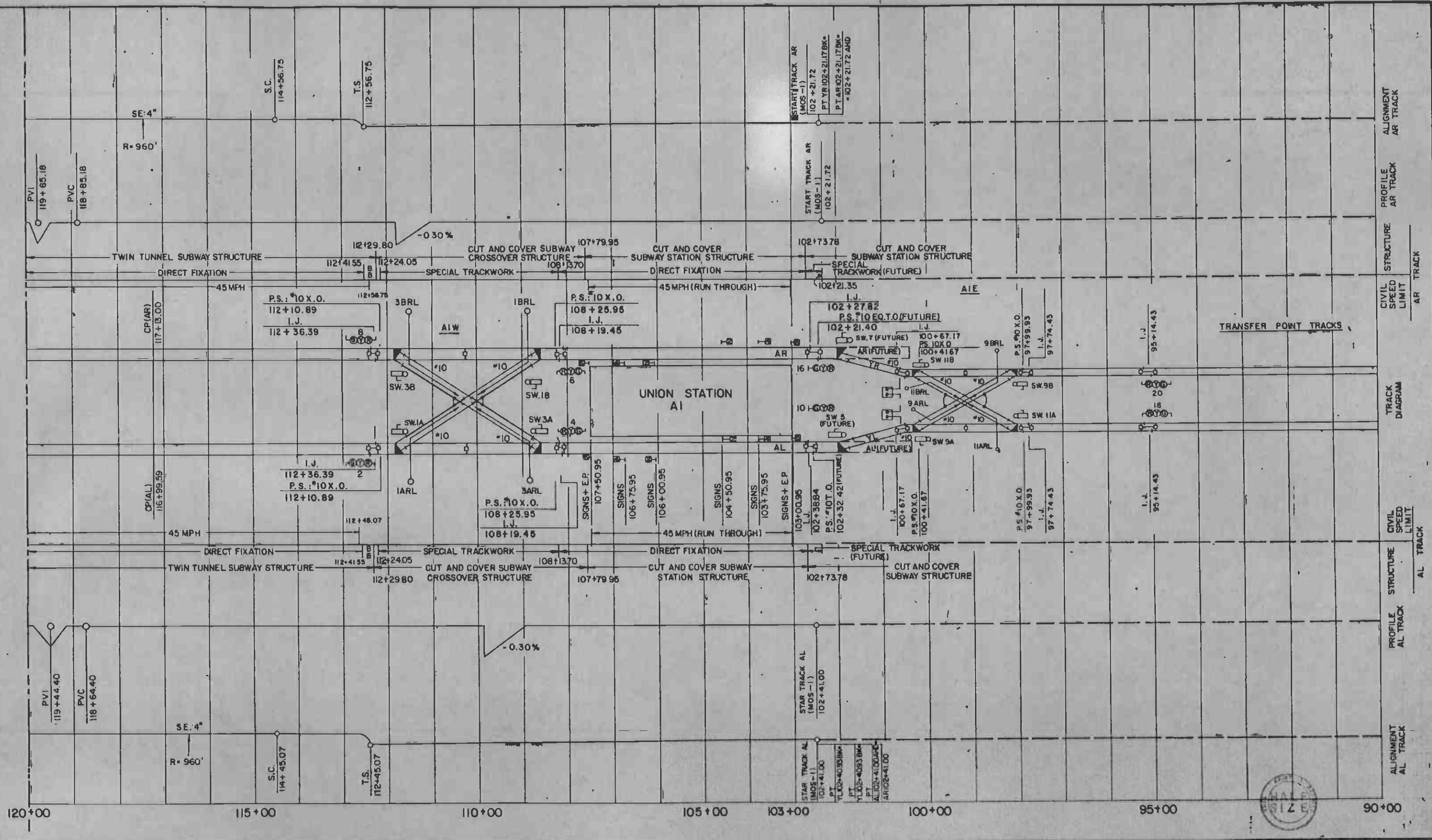
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METRO RAIL PROJECT

DMJM/PBOD/KE/HWA
 GENERAL CONSULTANTS

APPROVED: *[Signature]*

LA CBD TO NORTH HOLLYWOOD
 AUTOMATIC TRAIN CONTROL
 DOUBLE LINE TRACK PLAN
 84+00 TO 103+00
 UNION STATION - YARD LEAD TRACKS

CONTRACT NO.	A620
DRAWING NO.	Q-007
SCALE	NO SCALE
SHEET NO.	7



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 CHECKED BY
 IN CHARGE
 DATE 31 OCT 92

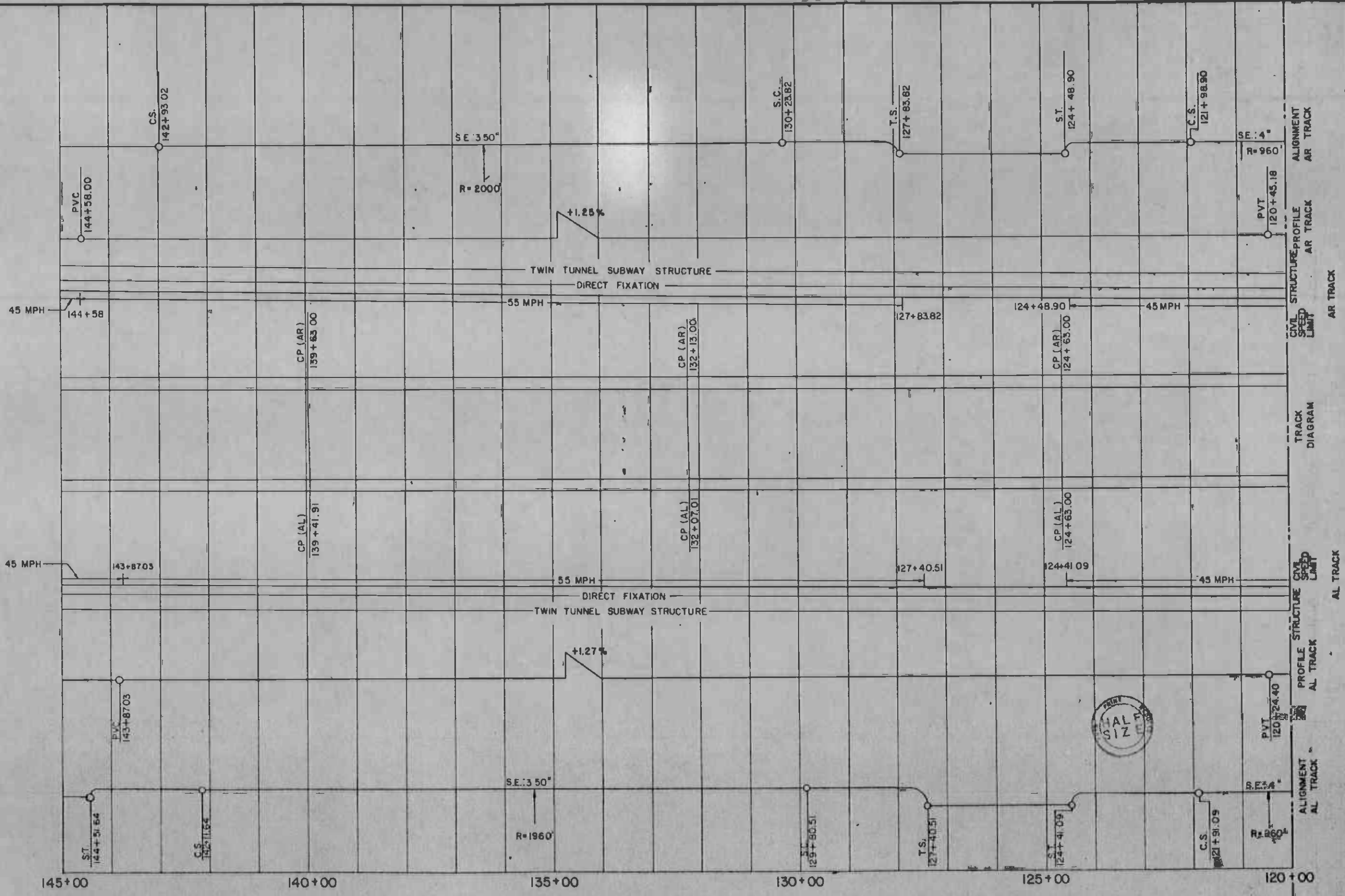
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METRO RAIL PROJECT

DMJM/BBOG/KE/HWA
 GENERAL CONSULTANTS

APPROVED

LA CBD TO NORTH HOLLYWOOD
**AUTOMATIC TRAIN CONTROL
 DOUBLE LINE TRACK PLAN**
 90+00 TO 120+00

CONTRACT NO. A620
 DRAWING NO. Q-008
 SCALE: NO SCALE
 SHEET NO. 8



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 DRAWN BY *[Signature]*
 CHECKED BY *[Signature]*
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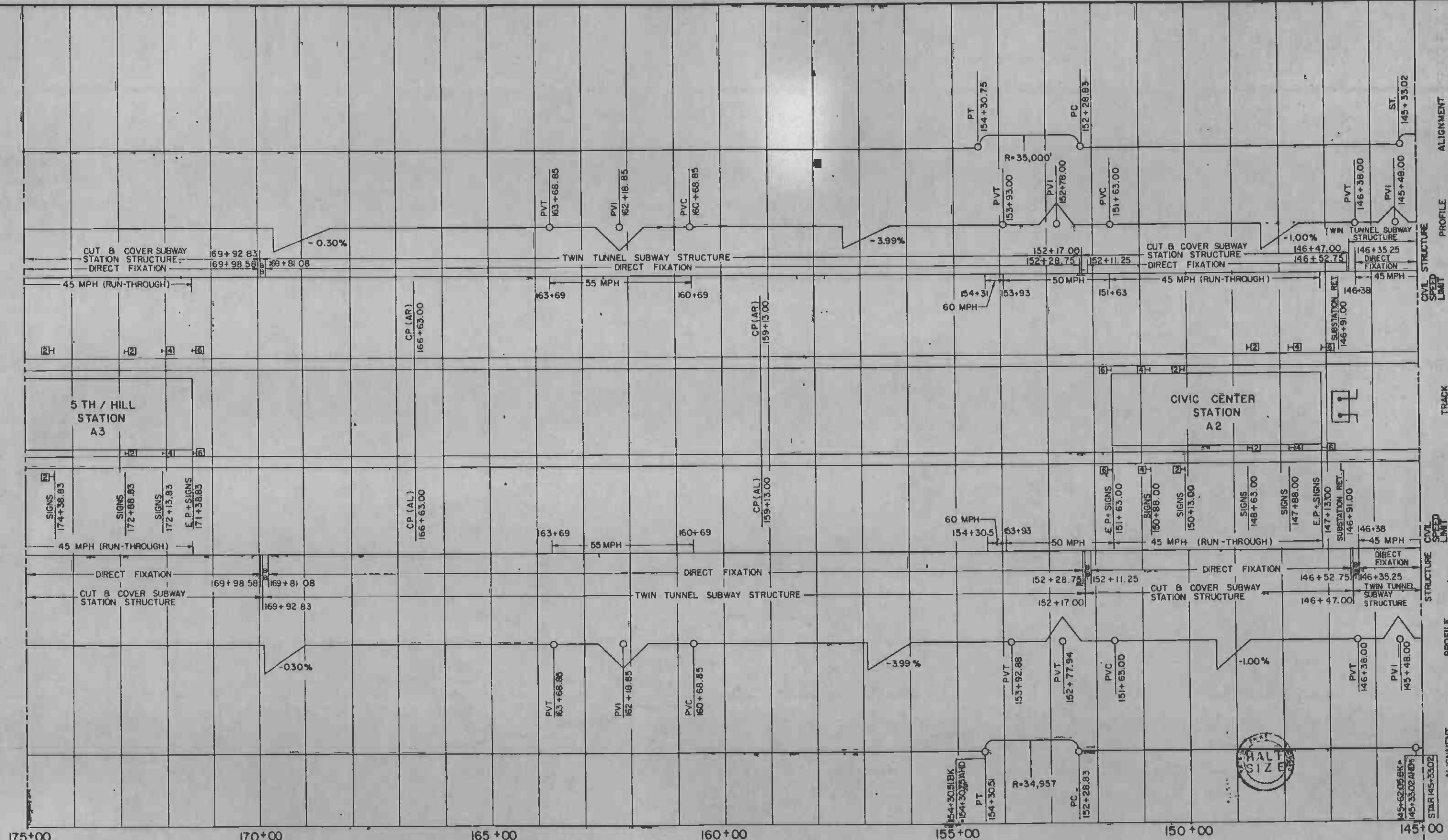
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 METRO RAIL PROJECT

DMJM/PROD/KE/HWA
 GENERAL CONTRACTOR

APPROVED *[Signature]*

LA CBD TO NORTH HOLLYWOOD
 AUTOMATIC TRAIN CONTROL
 DOUBLE LINE TRACK PLAN
 120+00 TO 145+00

CONTRACT NO. A 620
 DRAWING NO. Q-009
 SCALE: NO SCALE
 SHEET NO. 9



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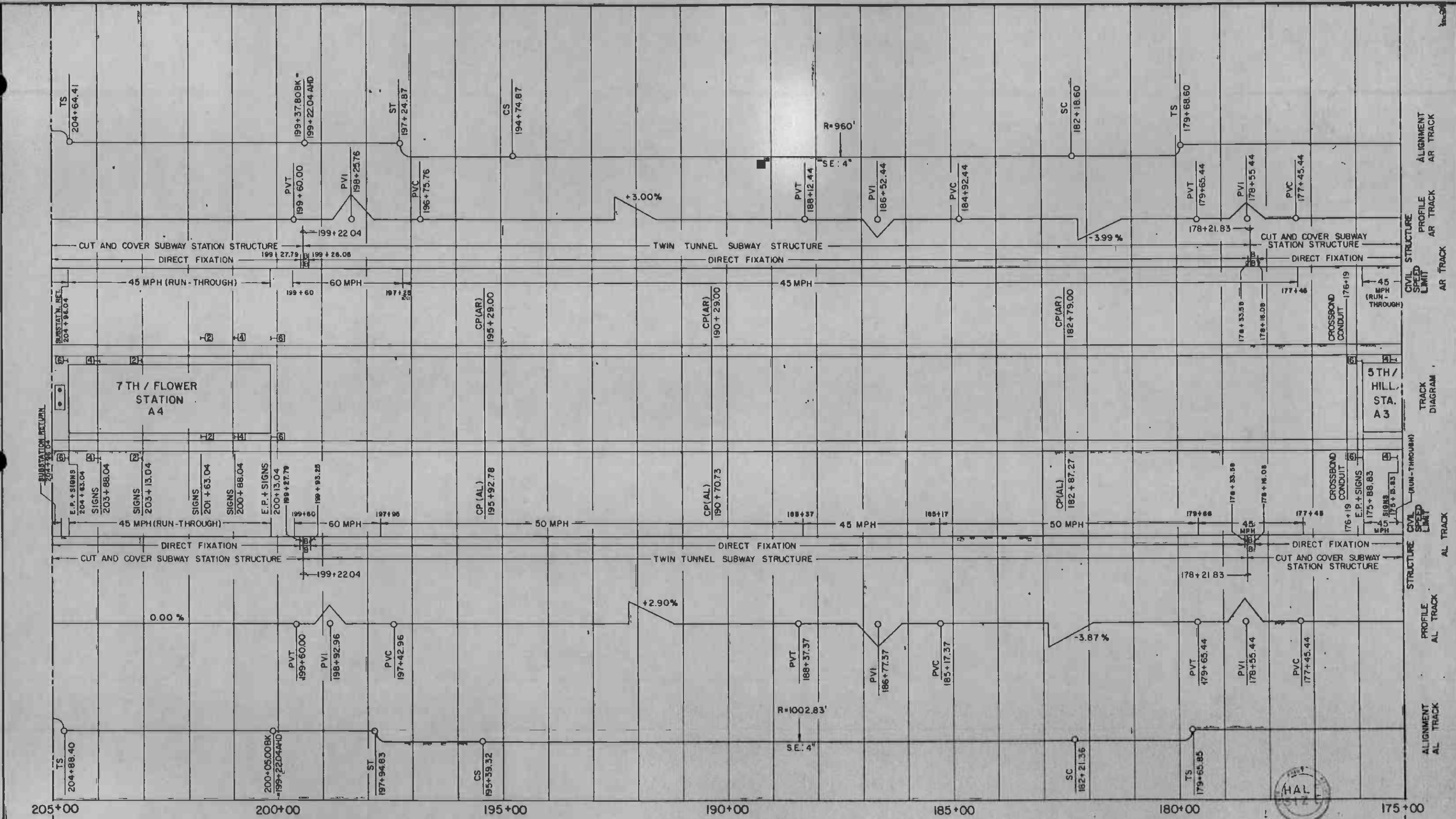
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 METRO RAIL PROJECT

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 GENERAL CONSULTANTS

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LA CBD TO NORTH HOLLYWOOD
 AUTOMATIC TRAIN CONTROL
 DOUBLE LINE TRACK PLAN
 145+00 TO 175+00

CONTRACT NO. A620
 DRAWING NO. Q-010
 SCALE NO SCALE
 SHEET NO. 10



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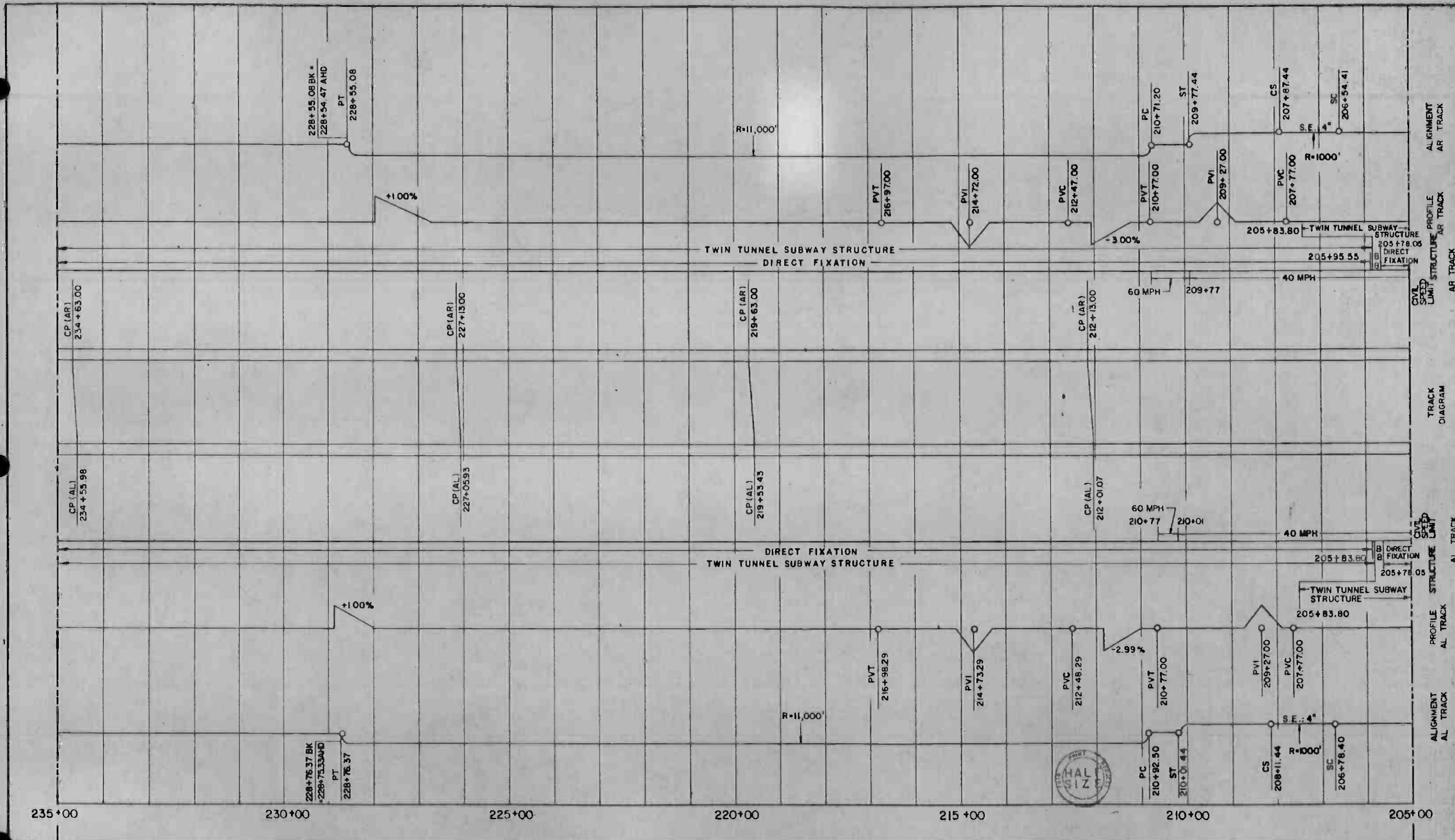
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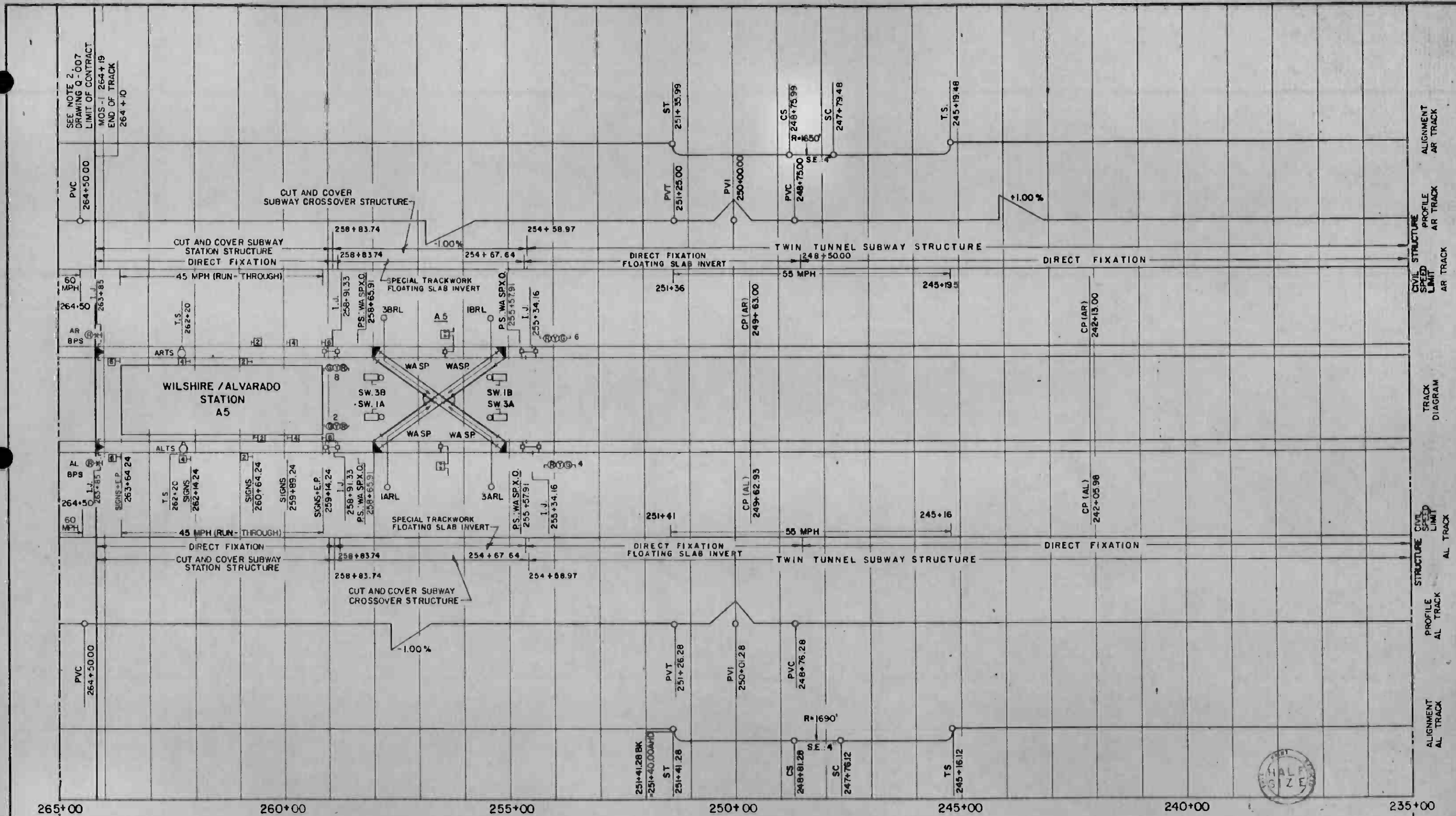
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LA CBD TO NORTH HOLLYWOOD
AUTOMATIC TRAIN CONTROL
DOUBLE LINE TRACK PLAN
175+00 TO 205+00

CONTRACT NO. A620	REV. 0
DRAWING NO. Q-011	
SCALE NO SCALE	
SHEET NO. 11	



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7/1/84
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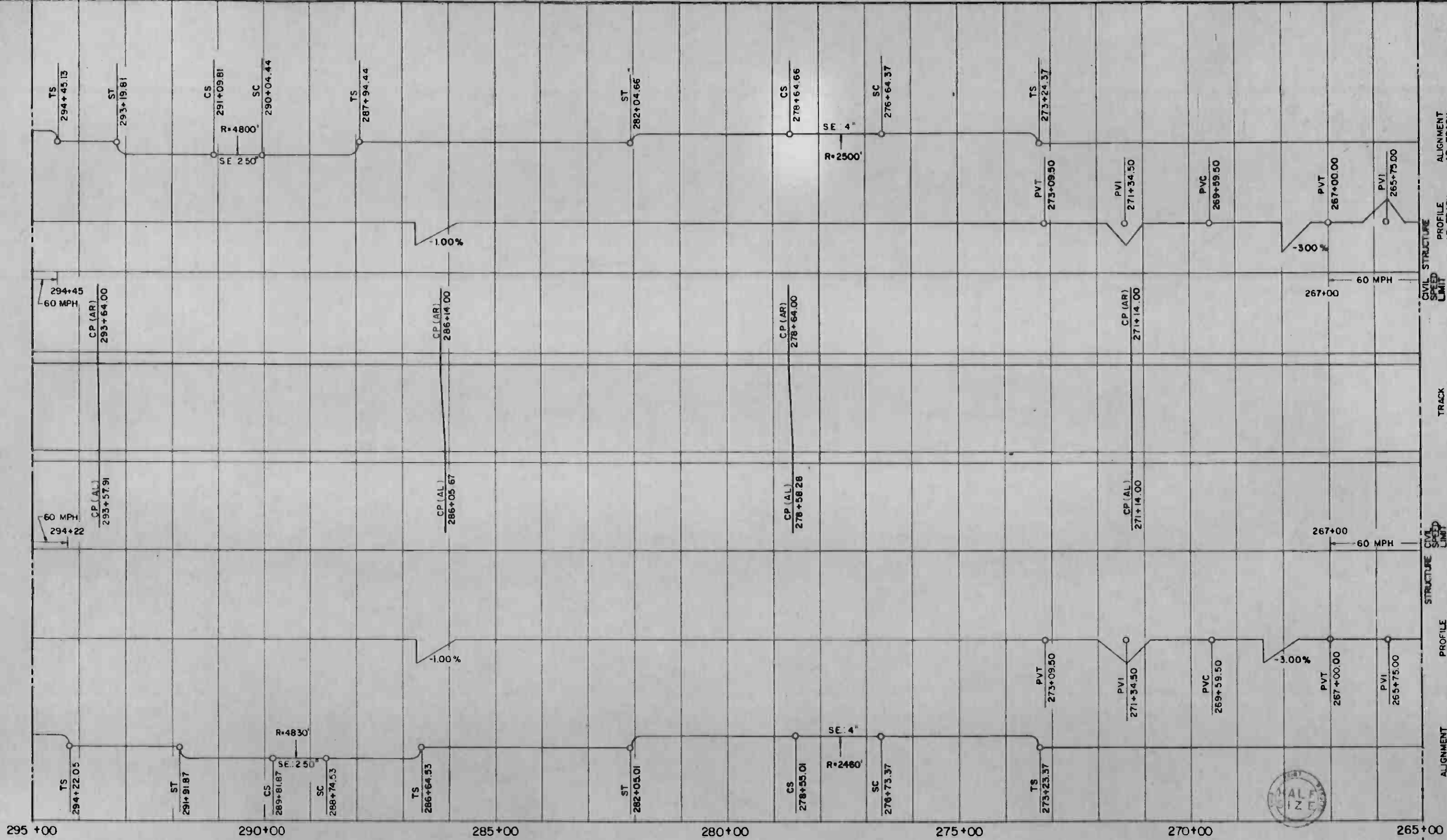
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METRO RAIL PROJECT

DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

APPROVED
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LA CBD TO NORTH HOLLYWOOD
AUTOMATIC TRAIN CONTROL
DOUBLE LINE TRACK PLAN
1 235 + 00 TO 265 + 00

CONTRACT NO.
A620
DRAWING NO.
Q-013
SCALE
NO SCALE
SHEET NO.
13

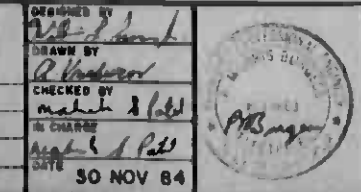


REV.	DATE	BY	SUB.	APP.	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY: *[Signature]*
 DRAWN BY: *[Signature]*
 CHECKED BY: *[Signature]*
 IN CHARGE: *[Signature]*
 DATE: 30 NOV 84

7-1-87 *[Signature]* INITIAL ISSUE



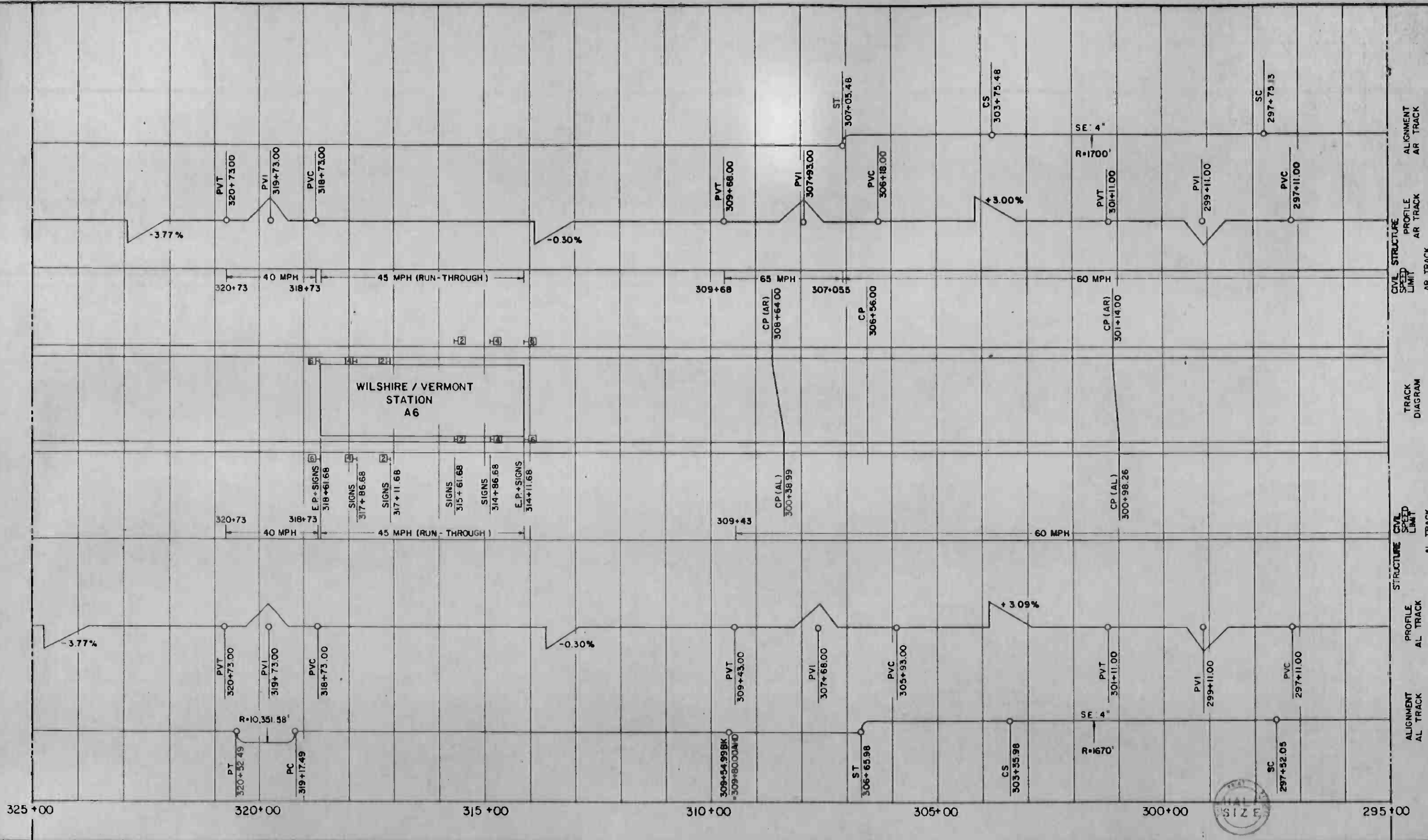
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBQD/KE/HWA
 GENERAL CONSULTANTS

APPROVED: *[Signature]*

LA CBD TO NORTH HOLLYWOOD
AUTOMATIC TRAIN CONTROL
 DOUBLE LINE TRACK PLAN
 265+00 TO 295+00

CONTRACT NO. A620
 DRAWING NO. Q-014
 SCALE: NO SCALE
 SHEET NO. 14

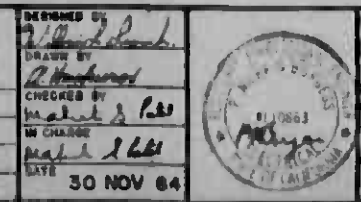


REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY: *[Signature]*
 DRAWN BY: *[Signature]*
 CHECKED BY: *[Signature]*
 IN CHARGE: *[Signature]*
 DATE: 30 NOV 84

INITIAL ISSUE



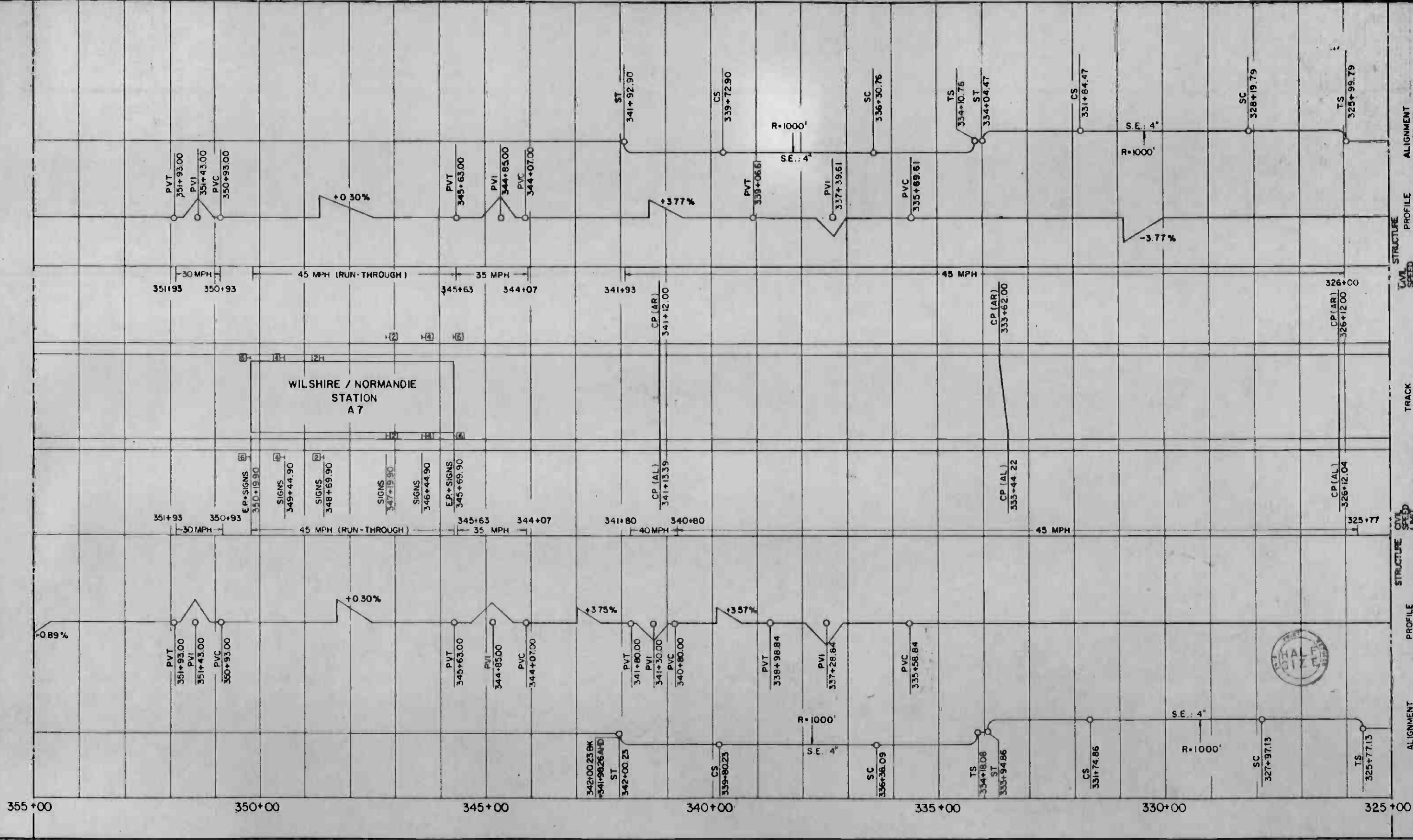
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT

DMJM/PBOD/KE/HWA
 GENERAL CONSULTANTS

APPROVED: *[Signature]*

LA CBD TO NORTH HOLLYWOOD
 AUTOMATIC TRAIN CONTROL
 DOUBLE LINE TRACK PLAN
 295+00 TO 325+00

CONTRACT NO.	A620
DRAWING NO.	Q-015
SCALE	NO SCALE
SHEET NO.	15

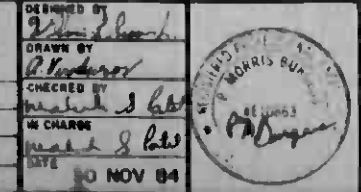


REV	DATE	BY	DWG	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY: *[Signature]*
 DRAWN BY: *[Signature]*
 CHECKED BY: *[Signature]*
 IN CHARGE: *[Signature]*
 DATE: NOV 84

7-10-84
 INITIAL ISSUE



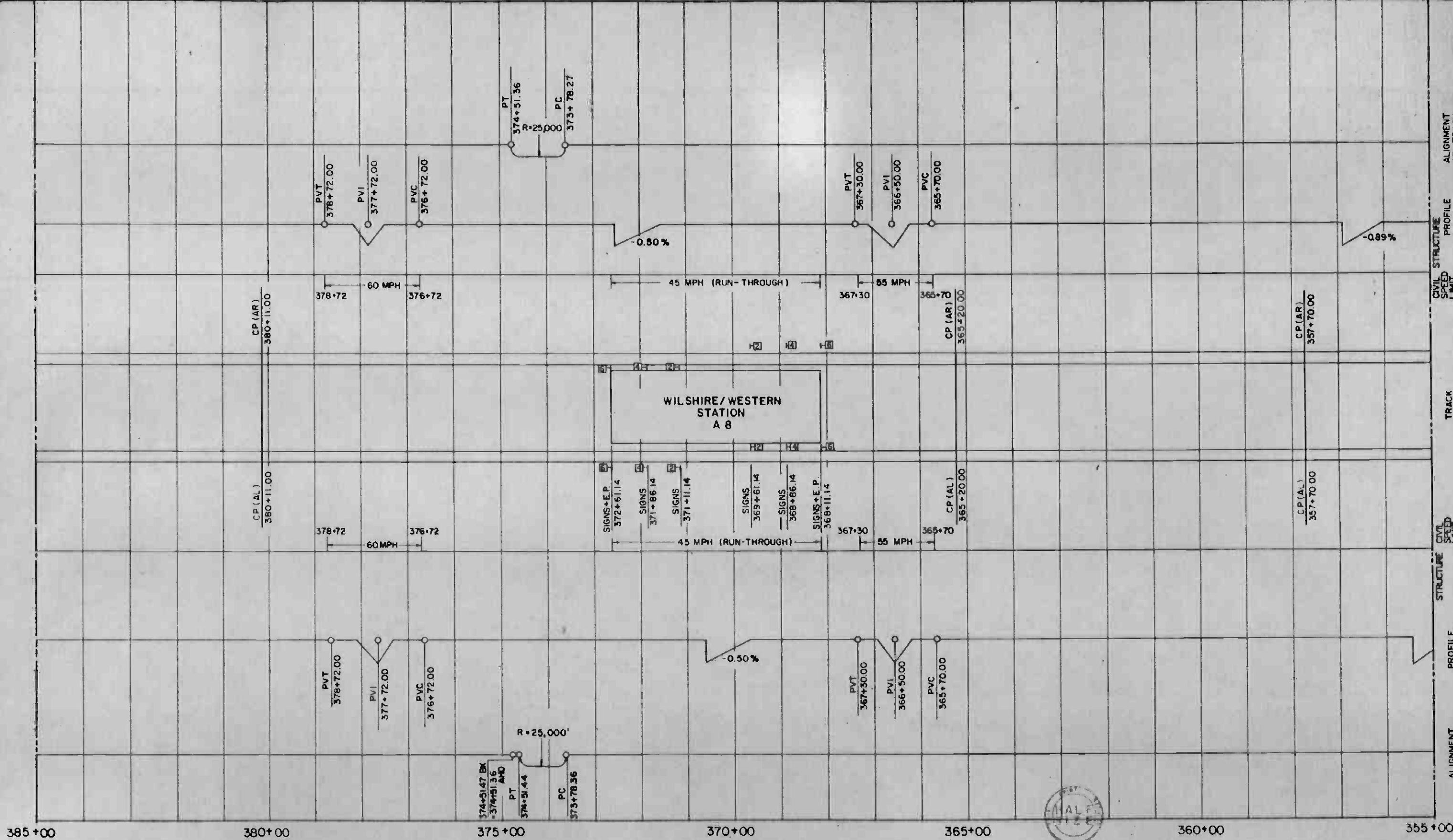
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT

DMJM/PBQD/KE/HWA
 GENERAL CONSULTANTS

APPROVED: *[Signature]*

LA CBD TO NORTH HOLLYWOOD
 AUTOMATIC TRAIN CONTROL
 DOUBLE LINE TRACK PLAN
 325+00 TO 355+00

CONTRACT NO.	A620
DRAWING NO.	Q-016
SCALE	NO SCALE
SHEET NO.	16



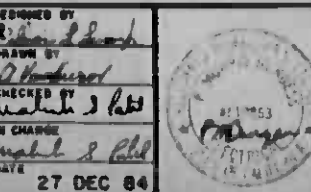
ALIGNMENT AL TRACK
 PROFILE AL TRACK
 CIVIL STRUCTURE PROFILE AR TRACK
 SPEED LIMIT AR TRACK
 TRACK DIAGRAM
 CIVIL STRUCTURE PROFILE AL TRACK
 SPEED LIMIT AL TRACK
 ALIGNMENT AL TRACK

REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY: *[Signature]*
 DRAWN BY: *[Signature]*
 CHECKED BY: *[Signature]*
 IN CHARGE: *[Signature]*
 DATE: 27 DEC 84

11-87 *[Signature]* INITIAL ISSUE



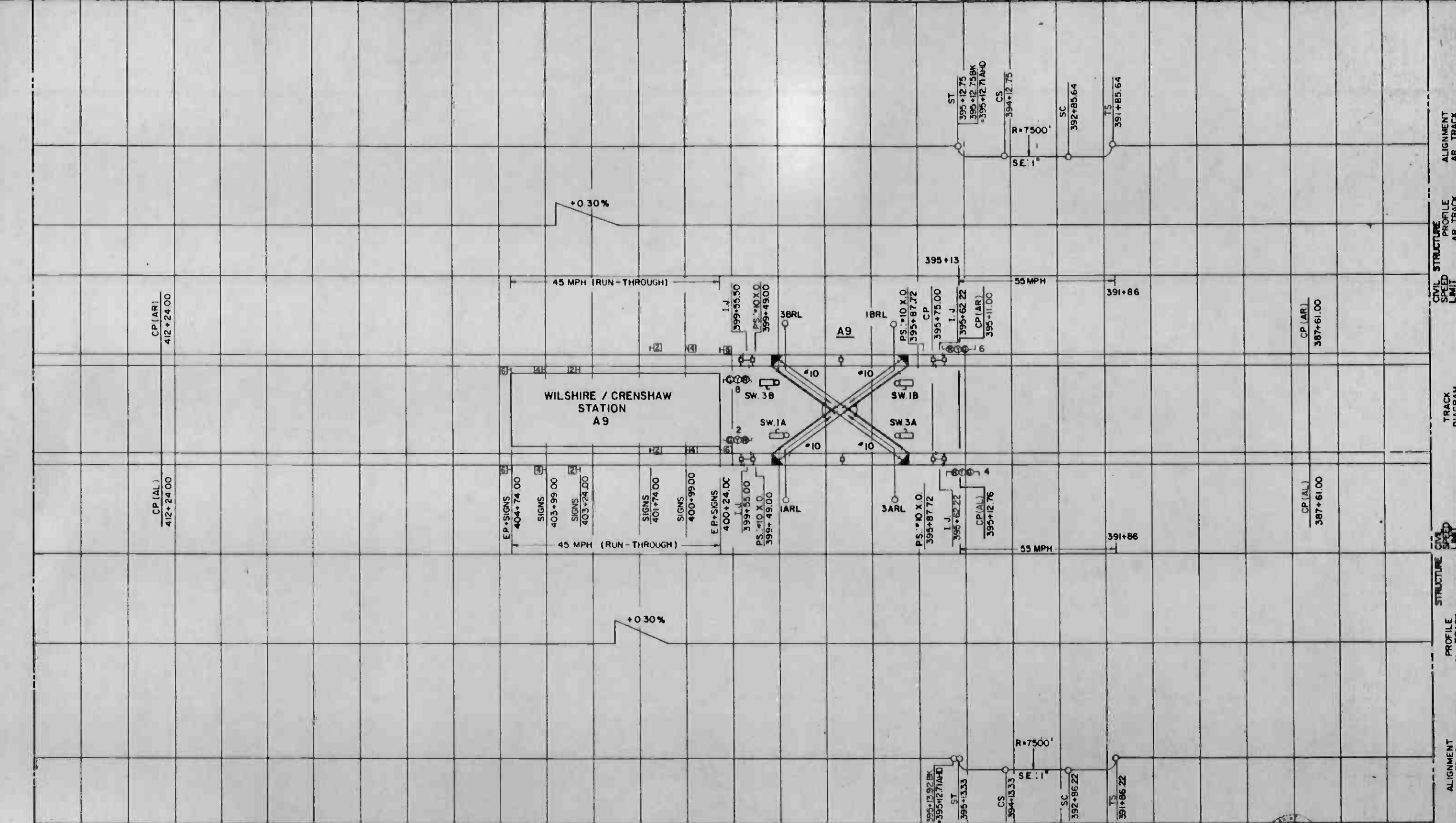
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT

DMJM/PBOD/KE/HWA
 GENERAL CONSULTANTS

APPROVED: *[Signature]*

LA CBD TO NORTH HOLLYWOOD
 AUTOMATIC TRAIN CONTROL
 DOUBLE LINE TRACK PLAN
 355+00 TO 385+00

CONTRACT NO.	A620
DRAWING NO.	Q-017
SCALE	NO SCALE
SHEET NO.	17



415+00 410+00 405+00 400+00 395+00 390+00 385+00

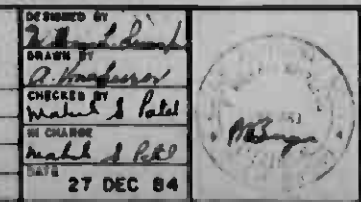


REV.	DATE	BY	RUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY: *[Signature]*
 DRAWN BY: *[Signature]*
 CHECKED BY: *[Signature]*
 IN CHARGE: *[Signature]*
 DATE: 27 DEC 84

1-01 27 INITIAL ISSUE



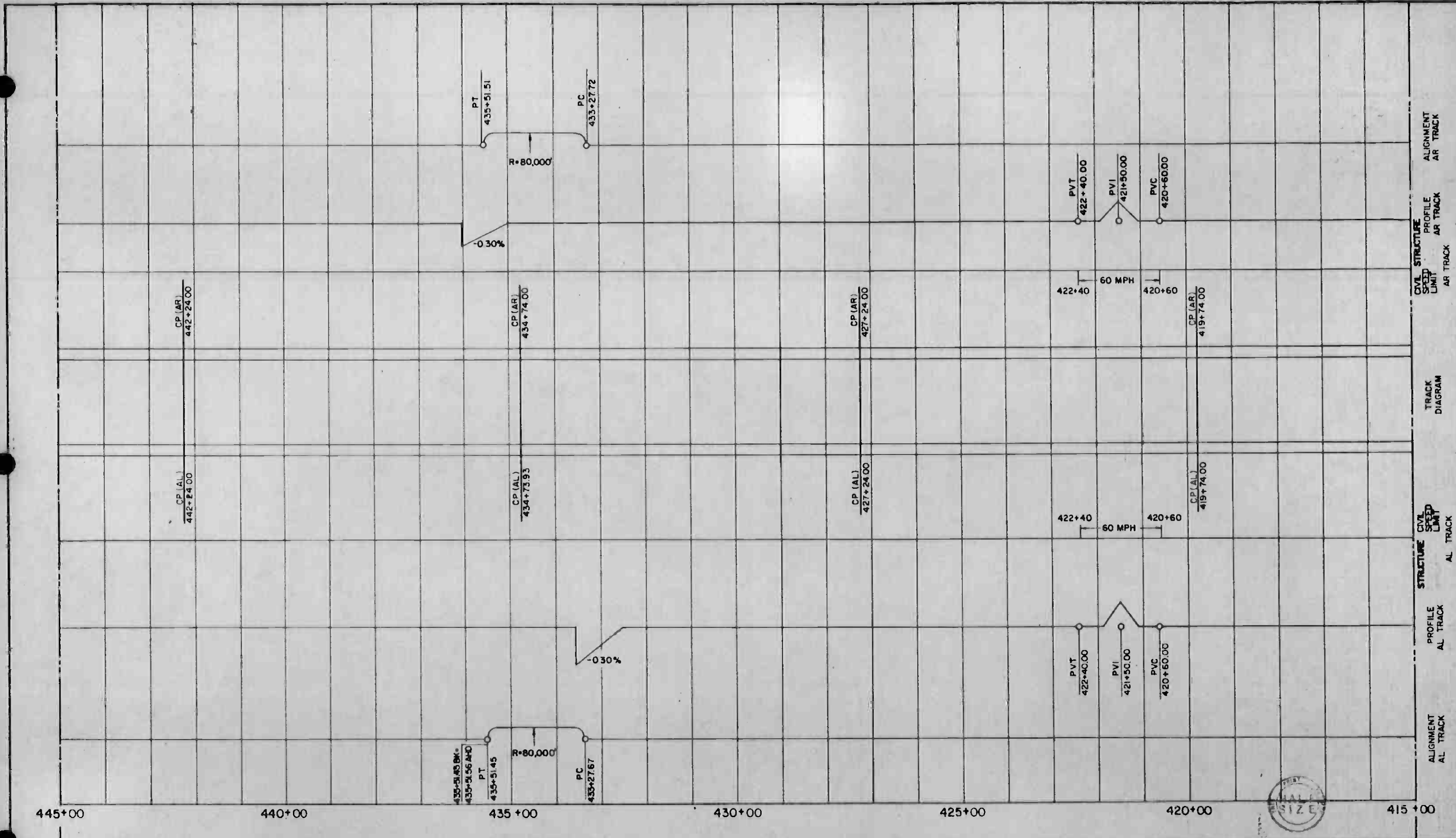
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT

DMJM/PBQD/KE/HWA
 GENERAL CONSULTANTS

APPROVED: *[Signature]*

LA CBD TO NORTH HOLLYWOOD
 AUTOMATIC TRAIN CONTROL
 DOUBLE LINE TRACK PLAN
 385+00 TO 415+00

CONTRACT NO.	A620
DRAWING NO.	Q-018
SCALE	NO SCALE
SHEET NO.	18



445+00 440+00 435+00 430+00 425+00 420+00 415+00

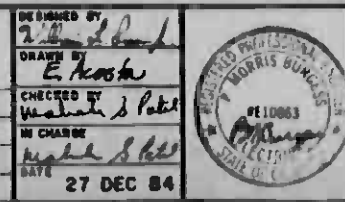


REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY: *[Signature]*
 DRAWN BY: *E. Kosh*
 CHECKED BY: *Walter J. Patel*
 IN CHARGE: *Walter J. Patel*
 DATE: 27 DEC 84

71-87 24 INITIAL ISSUE



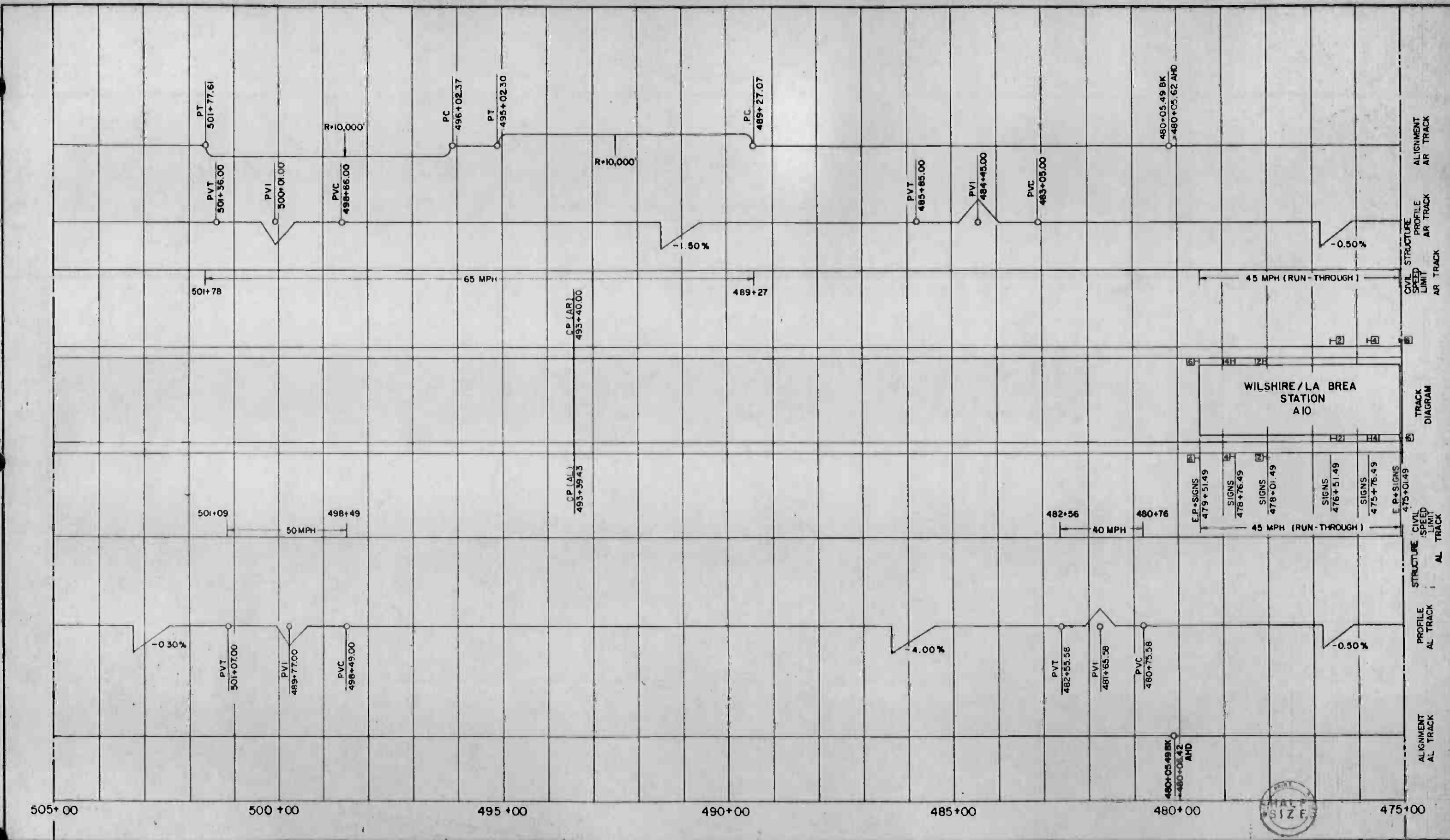
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT

DMJM/PBQD/KE/HWA
 GENERAL CONSULTANTS

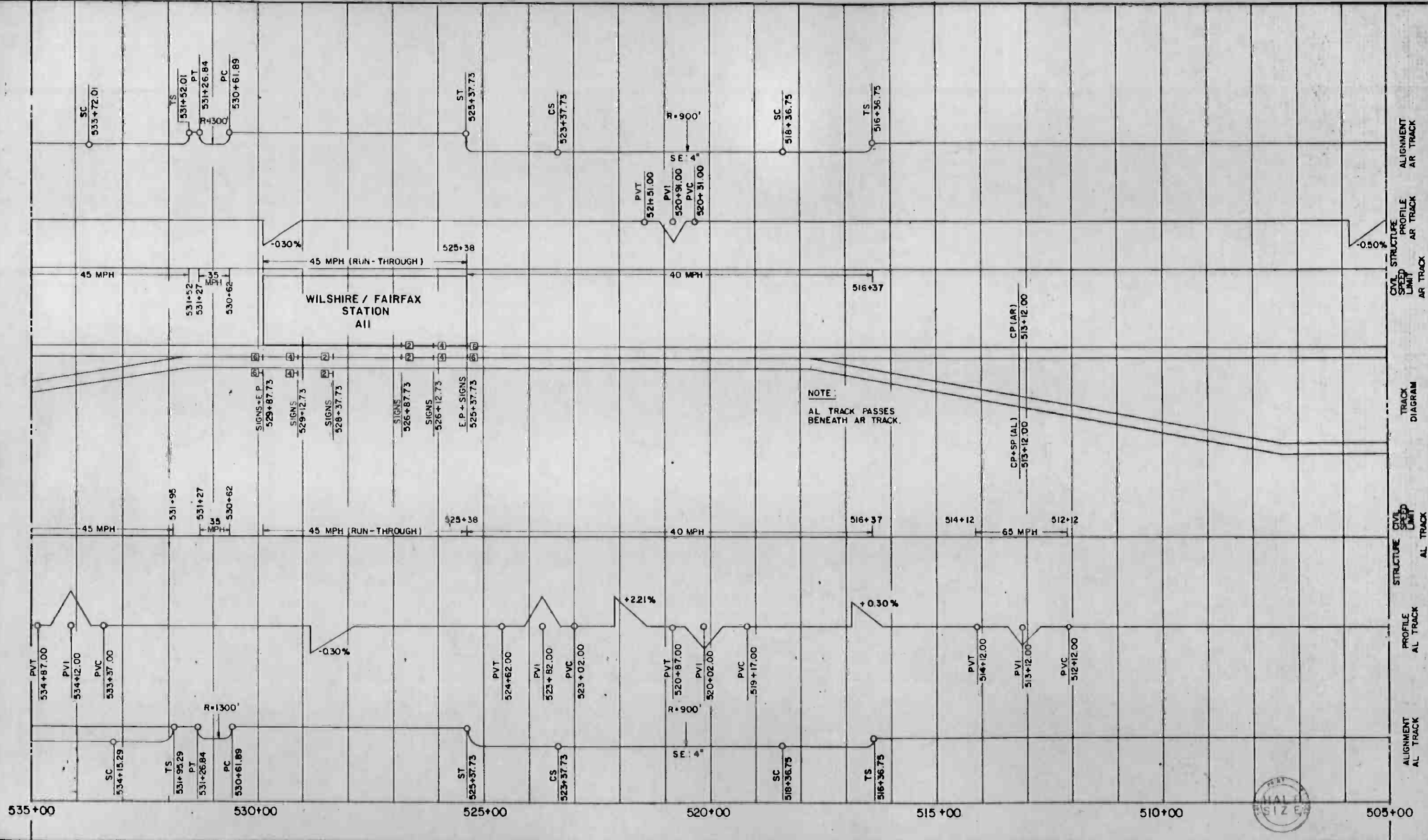
APPROVED: *[Signature]*

LA CBD TO NORTH HOLLYWOOD
 AUTOMATIC TRAIN CONTROL
 DOUBLE LINE TRACK PLAN
 415+00 TO 445+00

CONTRACT NO.	A620
DRAWING NO.	Q-019
REV.	0
SCALE	NO SCALE
SHEET NO.	19



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.										DESIGNED BY <i>[Signature]</i> CHECKED BY <i>[Signature]</i> DATE 27 DEC 84				SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT				LA CBD TO NORTH HOLLYWOOD AUTOMATIC TRAIN CONTROL DOUBLE LINE TRACK PLAN 475+00 TO 505+00		CONTRACT NO. A620 DRAWING NO. Q-021 SCALE NO SCALE SHEET NO. 21	
REV	DATE	BY	SUB	APP	DESCRIPTION	REV	DATE	BY	SUB	APP	DESCRIPTION	SUBMITTED	APPROVED								
					INITIAL ISSUE							<i>[Signature]</i>	<i>[Signature]</i>								

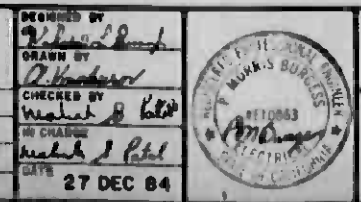


REV.	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY: *[Signature]*
 DRAWN BY: *[Signature]*
 CHECKED BY: *[Signature]*
 IN CHARGE: *[Signature]*
 DATE: 27 DEC 84

INITIAL ISSUE



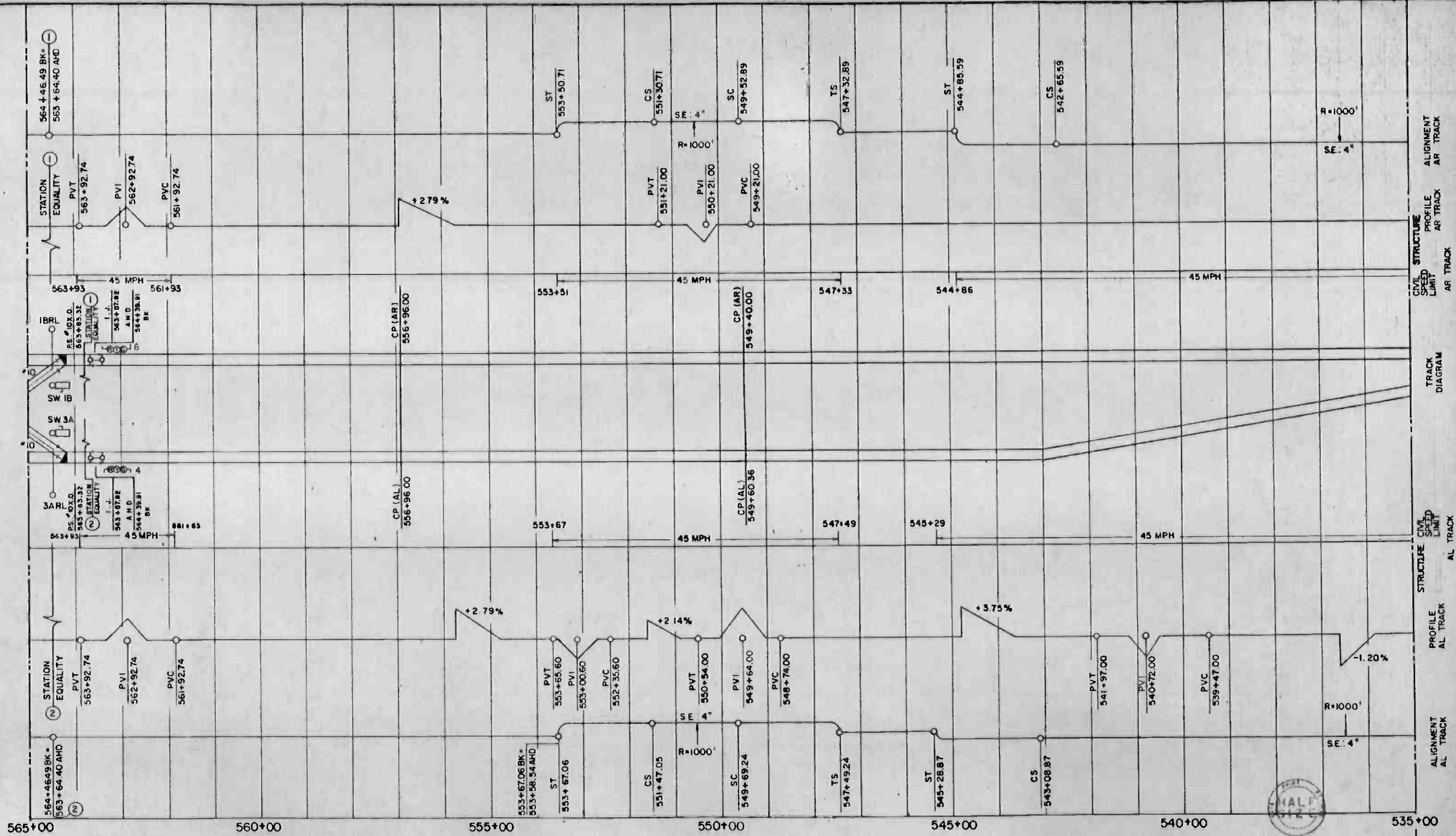
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT

DMJM/PBQD/KE/HWA
 GENERAL CONSULTANTS

APPROVED: *[Signature]*

LA CBD TO NORTH HOLLYWOOD
 AUTOMATIC TRAIN CONTROL
 DOUBLE LINE TRACK PLAN
 505+00 TO 535+00

CONTRACT NO.	A620
DRAWING NO.	Q-022
SCALE	NO SCALE
SHEET NO.	22

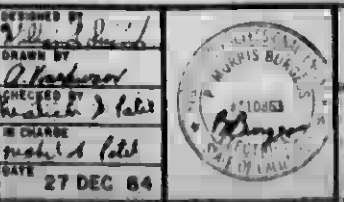


REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY: *William P. ...*
 DRAWN BY: *R. ...*
 CHECKED BY: *...*
 IN CHARGE: *...*
 DATE: 27 DEC 64

INITIAL ISSUE



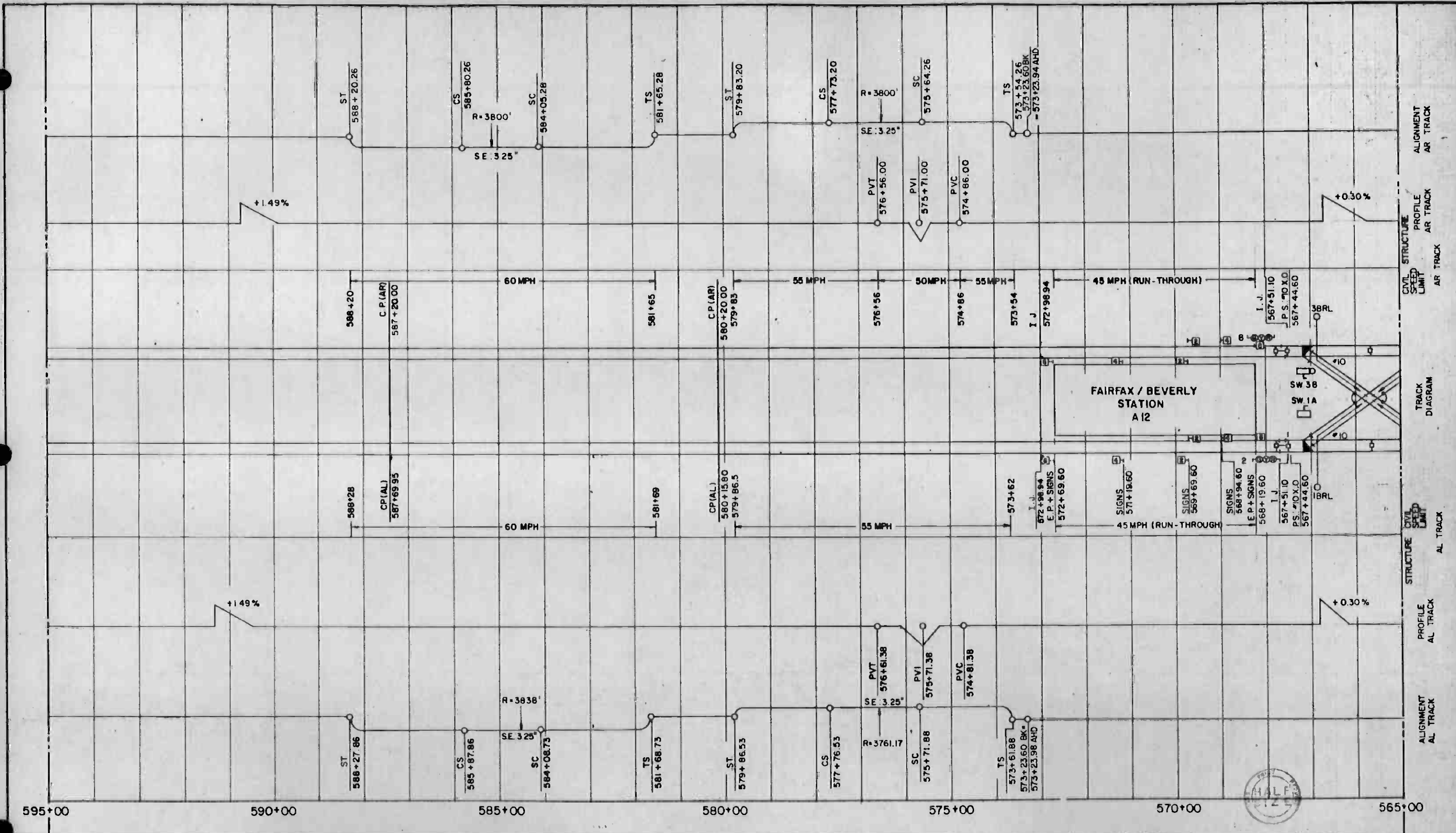
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT

DMJM/PBOD/KE/HWA
 GENERAL CONSULTANTS

APPROVED: *...*

LA CBD TO NORTH HOLLYWOOD
 AUTOMATIC TRAIN CONTROL
 DOUBLE LINE TRACK PLAN
 535+00 TO 565+00

CONTRACT NO.	A620
DRAWING NO.	Q-023
SCALE	NO SCALE
SHEET NO.	23

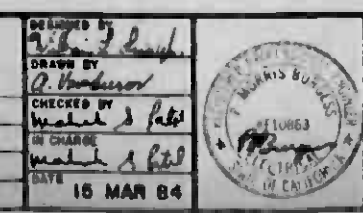


REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY: *[Signature]*
 DRAWN BY: *[Signature]*
 CHECKED BY: *[Signature]*
 IN CHARGE: *[Signature]*
 DATE: 16 MAR 84

INITIAL ISSUE



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT

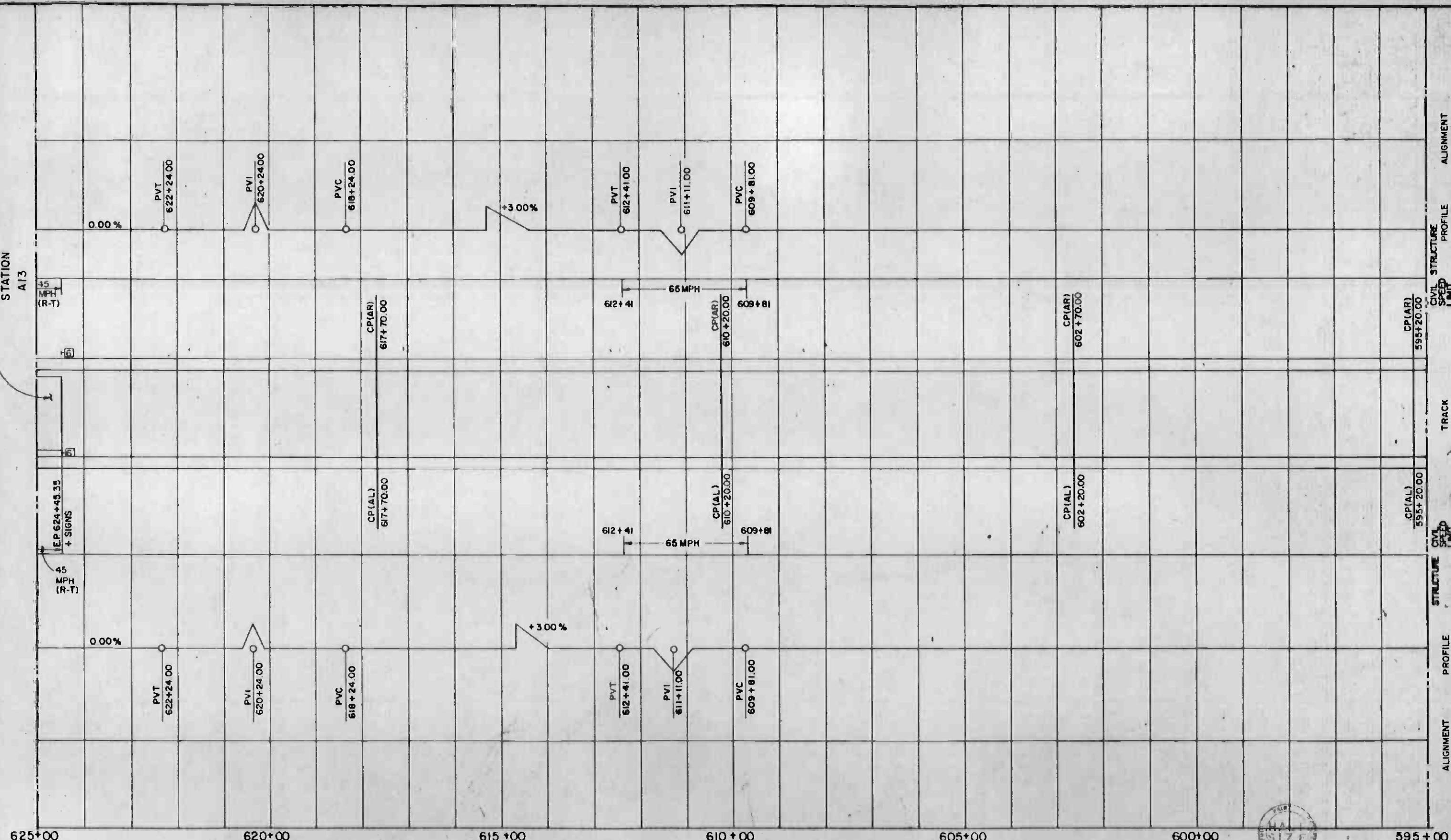
DMJM/PB00/KE/MWA
 GENERAL CONSULTANTS

APPROVED: *[Signature]*

LA CBD TO NORTH HOLLYWOOD
 AUTOMATIC TRAIN CONTROL
 DOUBLE LINE TRACK PLAN
 565+00 TO 595+00

CONTRACT NO.	A620
DRAWING NO.	Q-024
SCALE	NO SCALE
SHEET NO.	24

FAIRFAX / SANTA MONICA
STATION
A13



REV	DATE	BY	APP	DESCRIPTION

DESIGNED BY
[Signature]
DRAWN BY
[Signature]
CHECKED BY
[Signature]
DATE
27 DEC 84

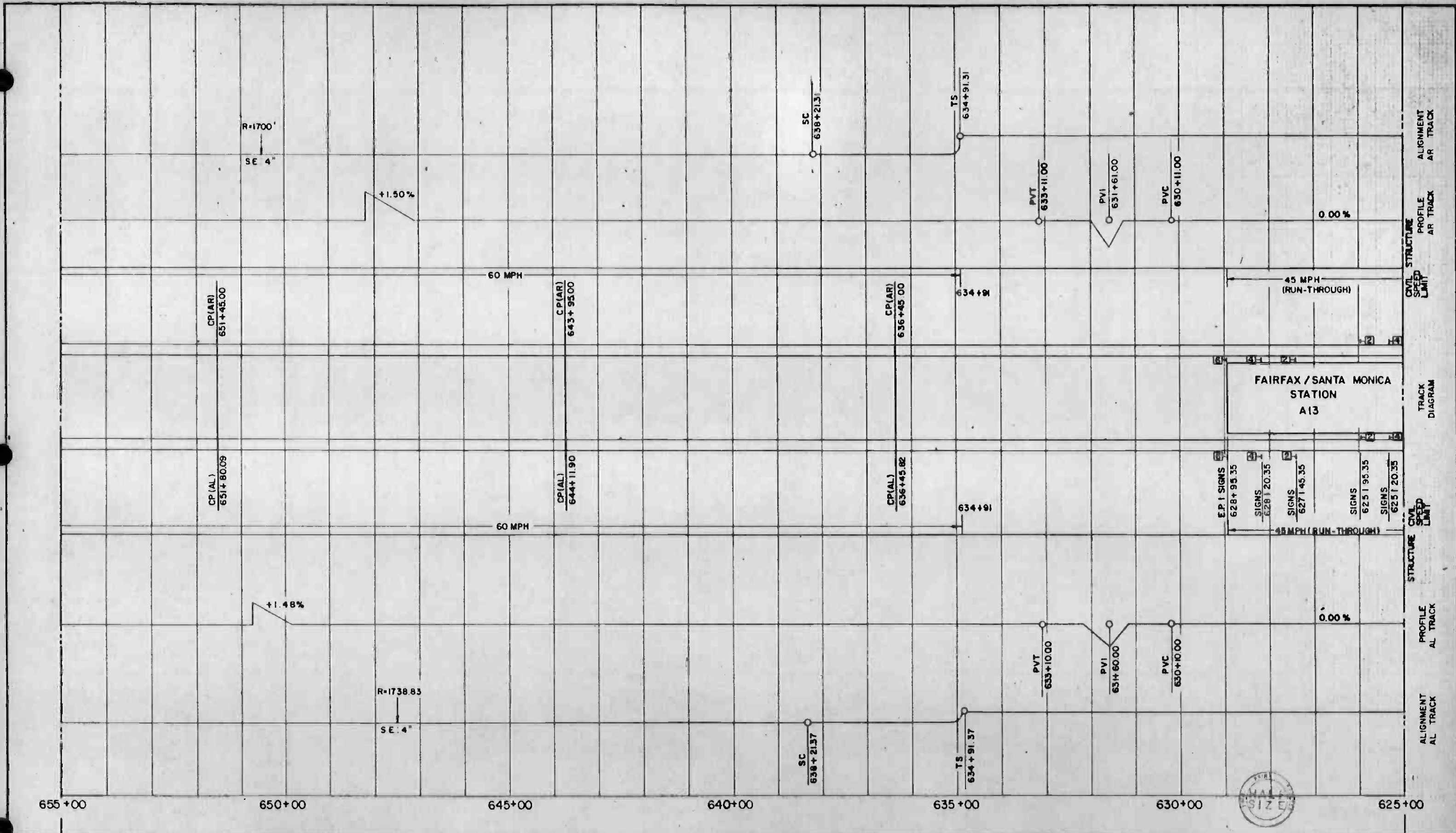
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

APPROVED *[Signature]*

LA CBD TO NORTH HOLLYWOOD
AUTOMATIC TRAIN CONTROL
DOUBLE LINE TRACK PLAN
595+00 TO 625+00

CONTRACT NO
A620
DRAWING NO
Q-025
SCALE
NO SCALE
SHEET NO
26

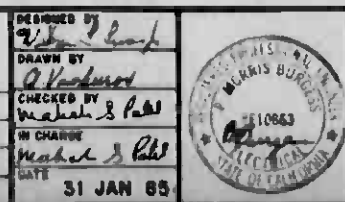


REV.	DATE	BY	SUB	APP.	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY *[Signature]*
 DRAWN BY *[Signature]*
 CHECKED BY *[Signature]*
 IN CHARGE *[Signature]*
 DATE 31 JAN 85

INITIAL ISSUE



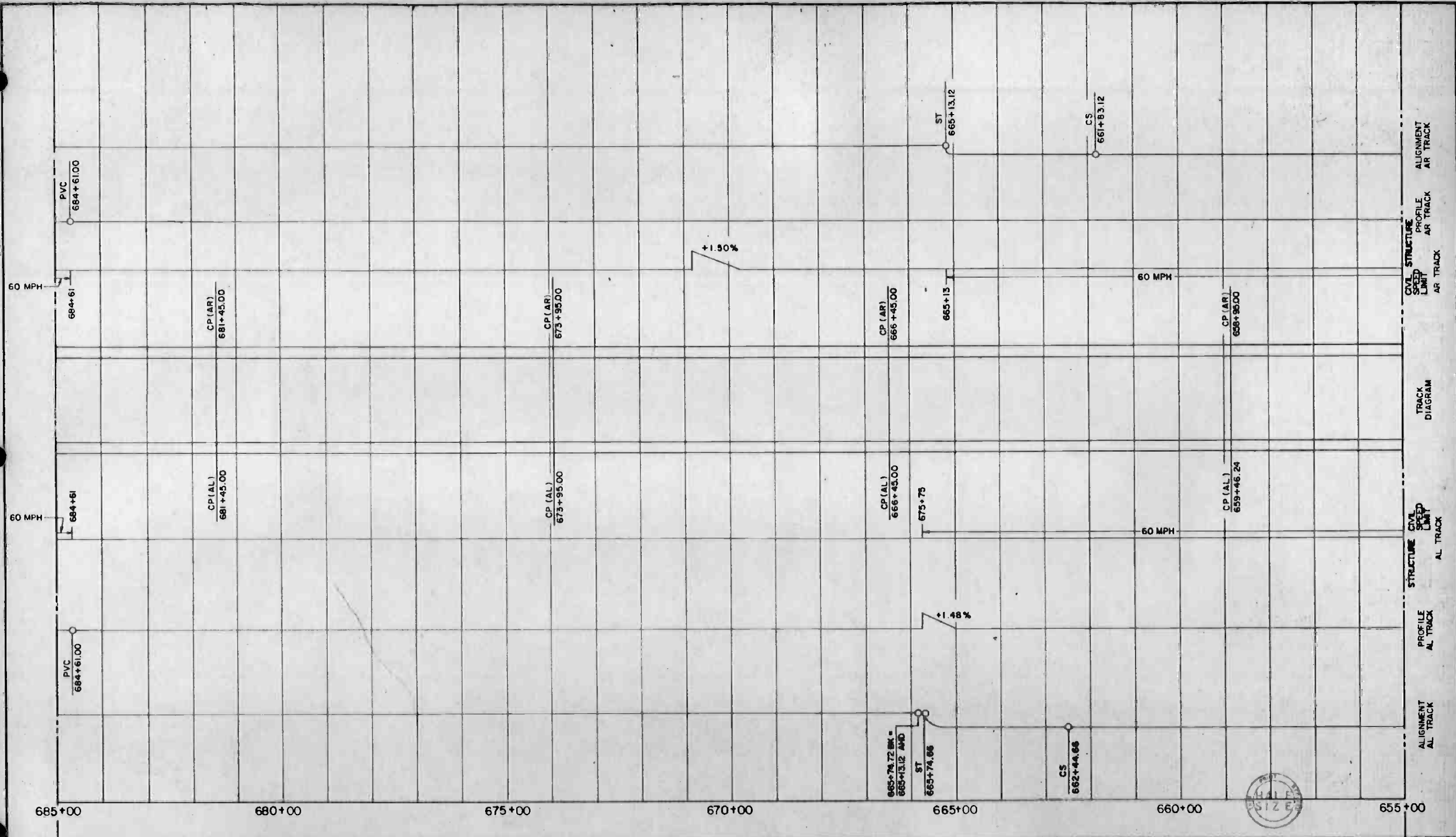
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT

DMJM/PBDD/KE/HWA
 GENERAL CONSULTANTS

APPROVED *[Signature]*

LA CBD TO NORTH HOLLYWOOD
 AUTOMATIC TRAIN CONTROL
 DOUBLE LINE TRACK PLAN
 625+00 TO 655+00

CONTRACT NO.	A620
DRAWING NO.	Q-026
SCALE	NO SCALE
SHEET NO.	26

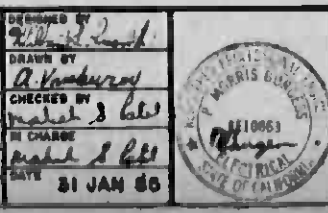


REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY *[Signature]*
 DRAWN BY *[Signature]*
 CHECKED BY *[Signature]*
 IN CHARGE *[Signature]*
 DATE 31 JAN 86

7-1-B-24
 INITIAL ISSUE



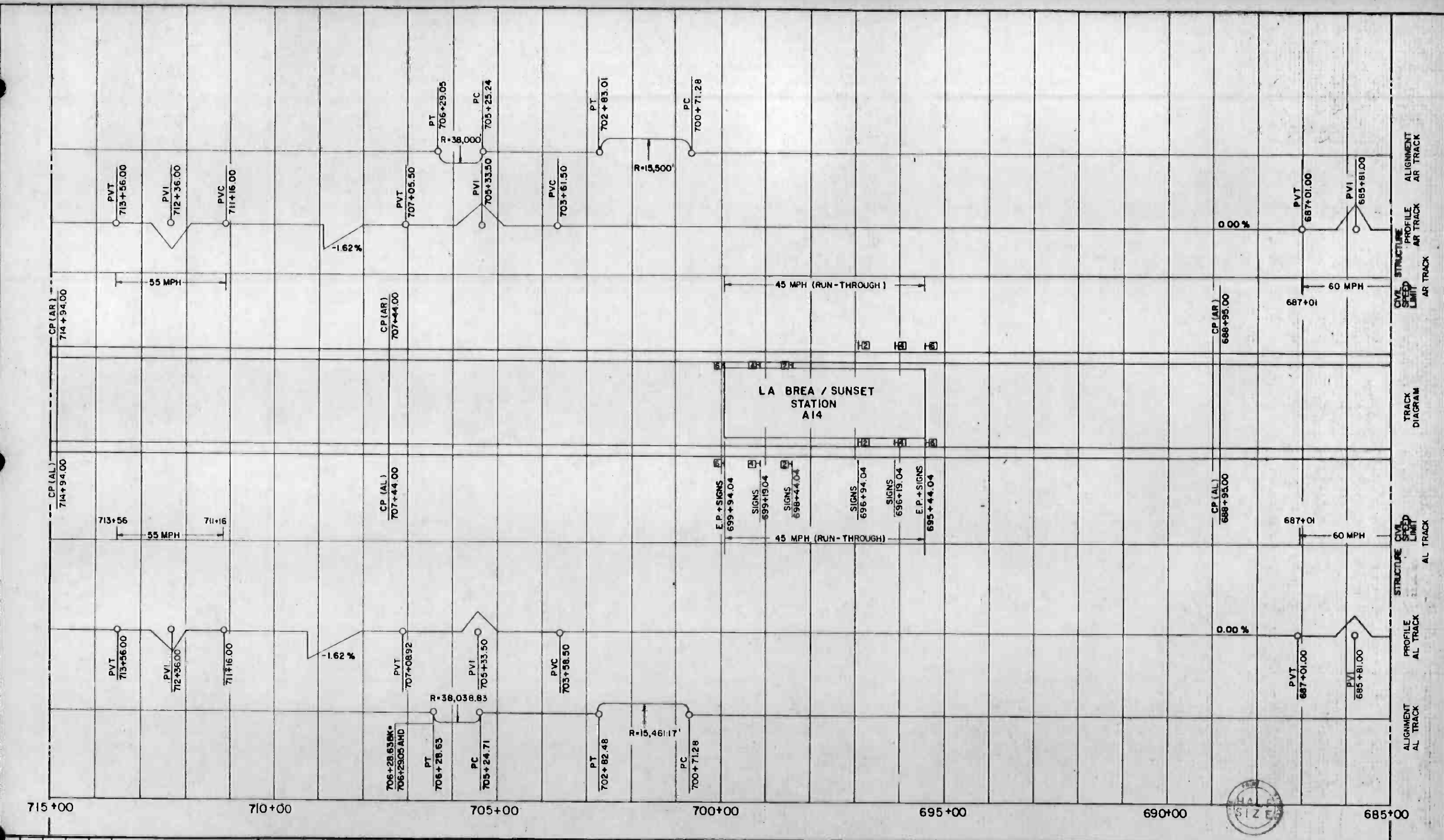
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT

DMJM/PBQO/KE/MWA
 GENERAL CONSULTANTS

APPROVED *[Signature]*

LA CBD TO NORTH HOLLYWOOD
 AUTOMATIC TRAIN CONTROL
 DOUBLE LINE TRACK PLAN
 655+00 TO 685+00

CONTRACT NO.	A620
DRAWING NO.	Q-027
SCALE	NO SCALE
SHEET NO.	27

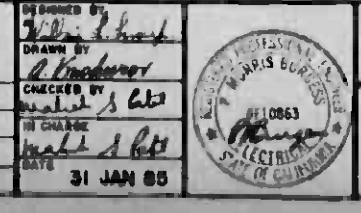


REV.	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY: *[Signature]*
 DRAWN BY: *[Signature]*
 CHECKED BY: *[Signature]*
 IN CHARGE: *[Signature]*
 DATE: 31 JAN 85

INITIAL ISSUE



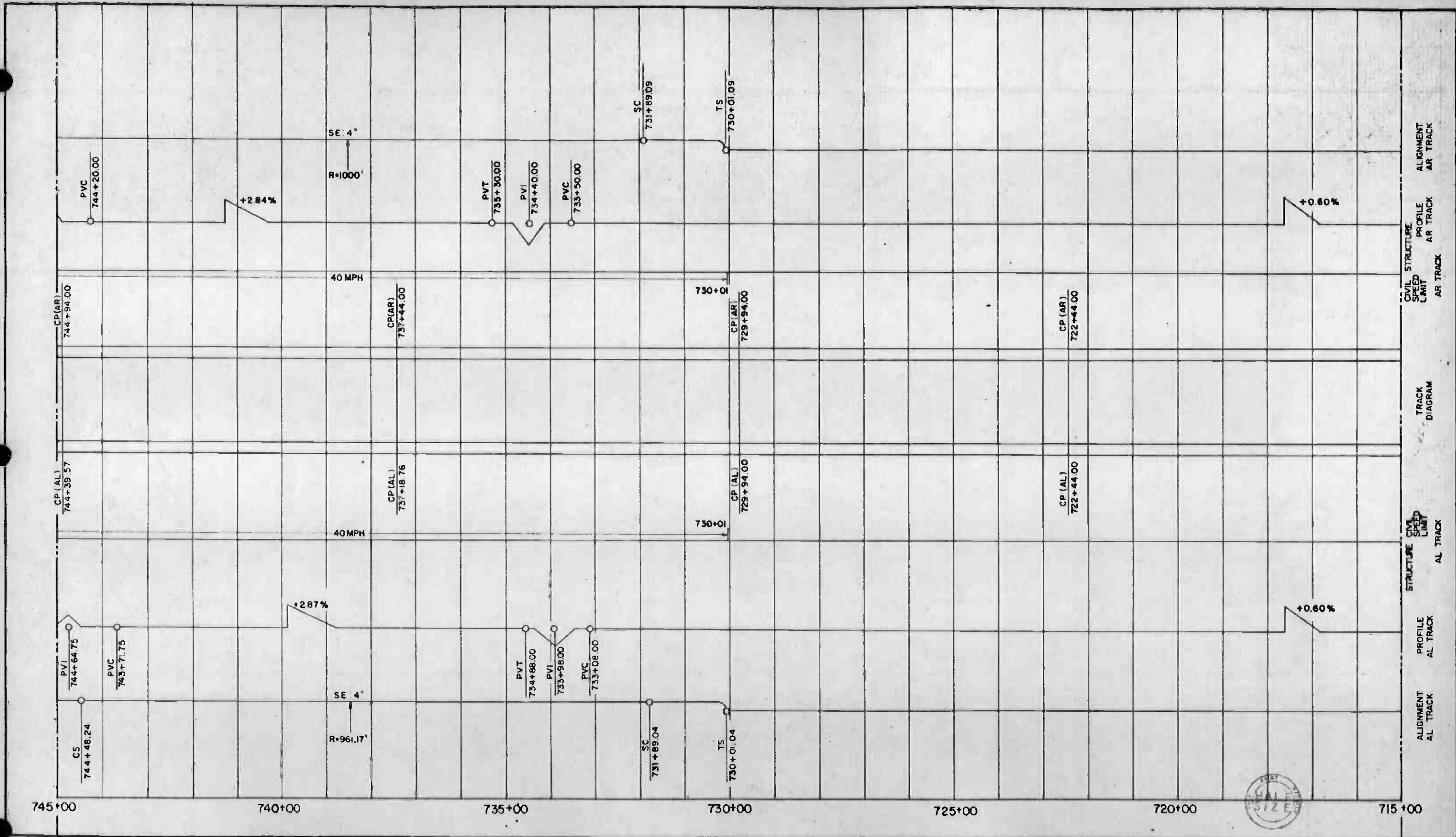
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT

DMJM/PBOD/KE/HWA
 GENERAL CONSULTANTS

APPROVED: *[Signature]*

LA CBD TO NORTH HOLLYWOOD
 AUTOMATIC TRAIN CONTROL
 DOUBLE LINE TRACK PLAN
 685+00 TO 715+00

CONTRACT NO.	A620
DRAWING NO.	Q-028
SCALE	NO SCALE
SHEET NO.	28

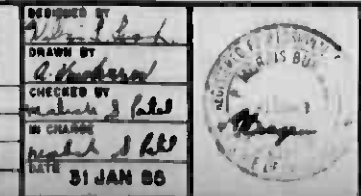


REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY *[Signature]*
 DRAWN BY *[Signature]*
 CHECKED BY *[Signature]*
 IN CHARGE *[Signature]*
 DATE 31 JAN 86

INITIAL ISSUE



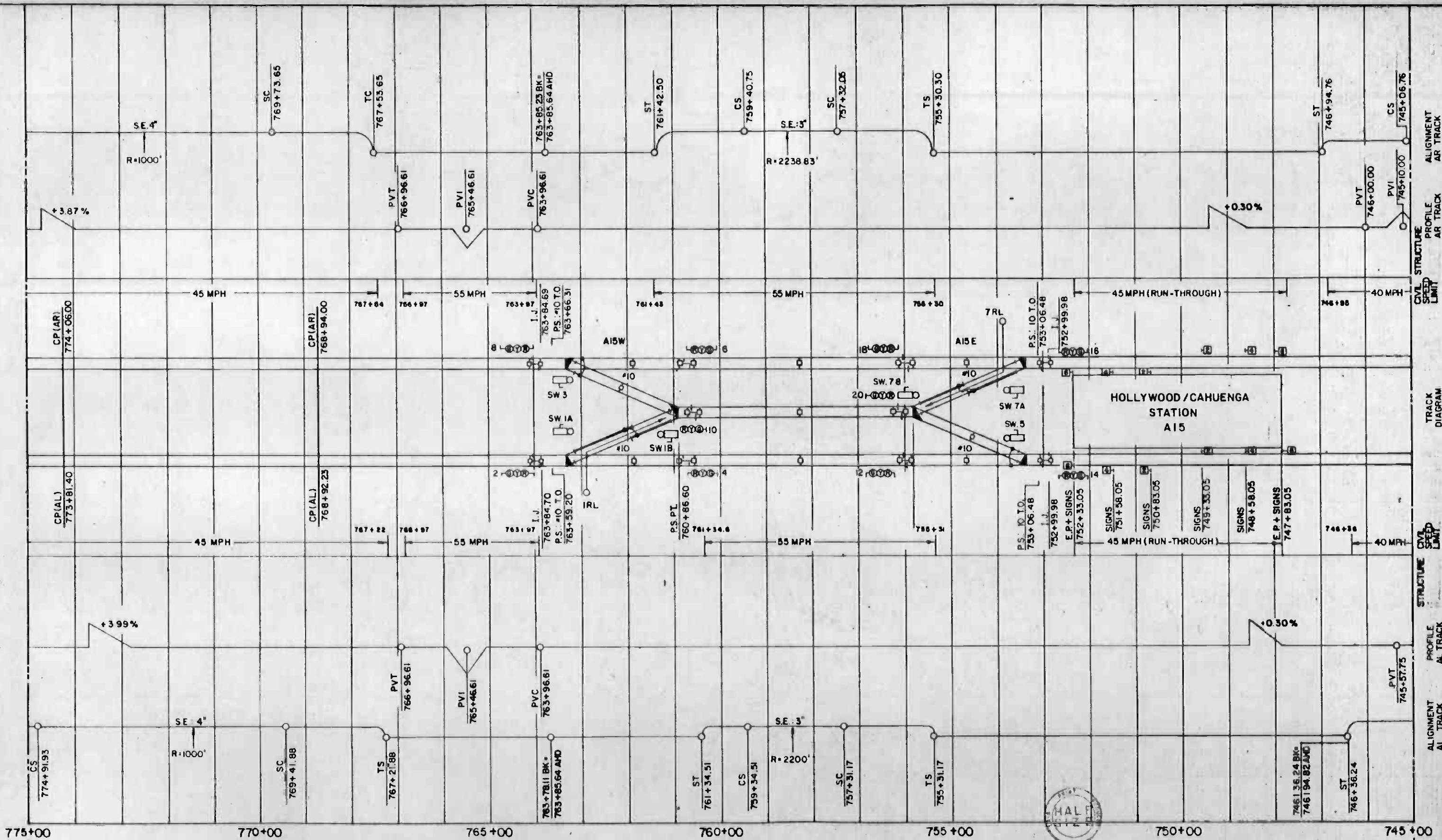
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT

DMJM/PBQD/KE/HWA
 GENERAL CONSULTANTS

APPROVED *[Signature]*

LA CBD TO NORTH HOLLYWOOD
 AUTOMATIC TRAIN CONTROL
 DOUBLE LINE TRACK PLAN
 715+00 TO 745+00

CONTRACT NO.	A620
DRAWING NO.	Q-029
SCALE	NO SCALE
SHEET NO.	29

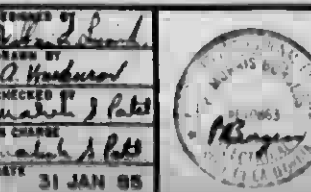


REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY: *Robert J. ...*
 DRAWN BY: *A. Woodward*
 CHECKED BY: *Michael J. ...*
 IN CHARGE: *Michael J. ...*
 DATE: 31 JAN 95

INITIAL ISSUE



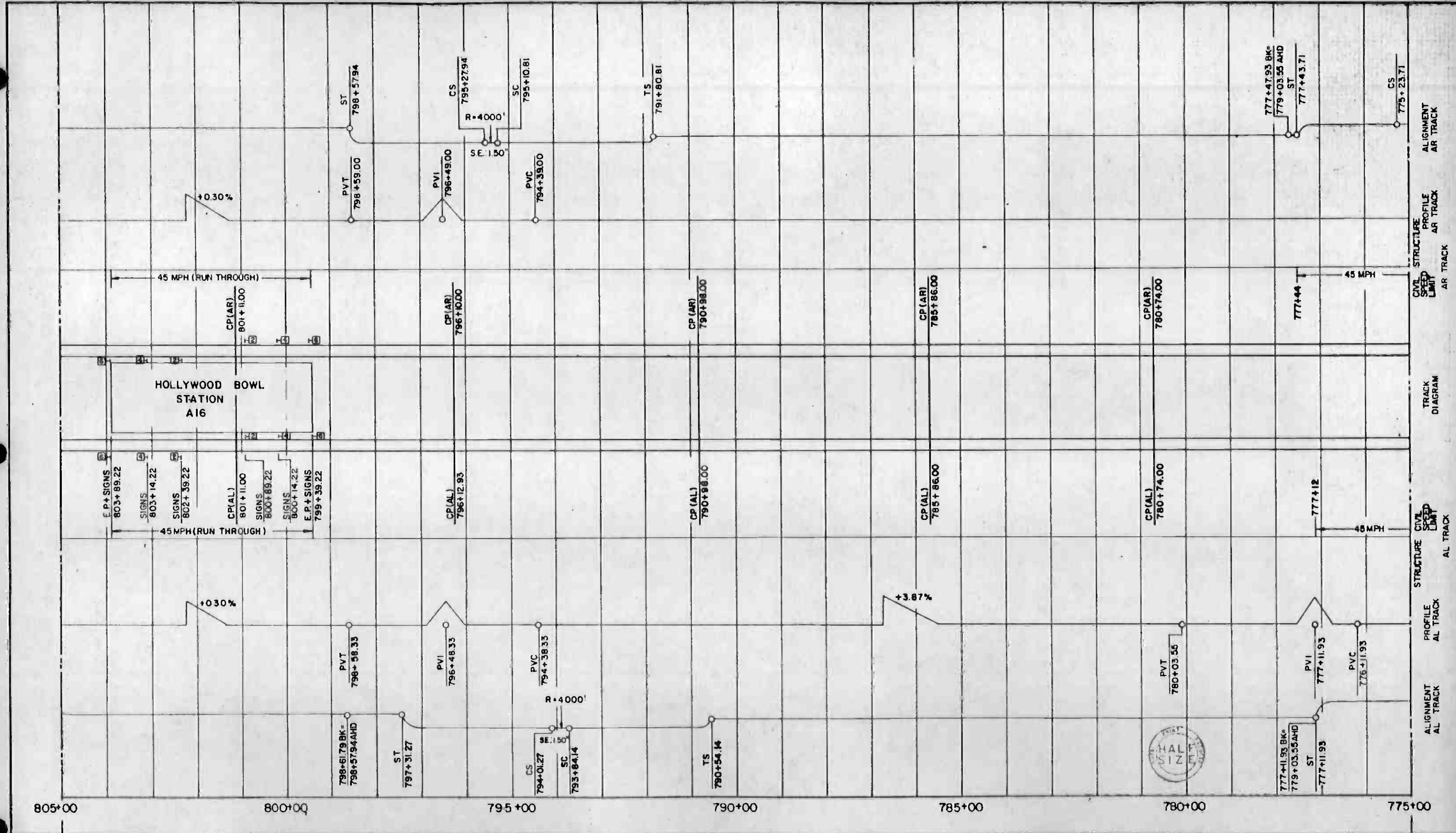
**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

KAISER ENGINEERS (CALIFORNIA) CORPORATION DMJM/PBQD/KE/HWA
 GENERAL CONSULTANTS

APPROVED: *James J. ...*

**LA CBD TO NORTH HOLLYWOOD
AUTOMATIC TRAIN CONTROL
DOUBLE LINE TRACK PLAN
745+00 TO 775+00**

CONTRACT NO.	A620
DRAWING NO.	Q-030
SCALE	NO SCALE
SHEET NO.	30

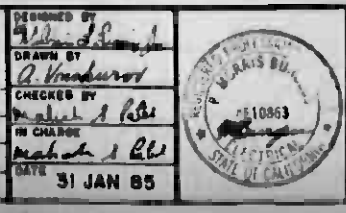


REV	DATE	BY	SUB.	APP.	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY: *[Signature]*
 DRAWN BY: *[Signature]*
 CHECKED BY: *[Signature]*
 IN CHARGE: *[Signature]*
 DATE: 31 JAN 85

1-1-D-197 INITIAL ISSUE



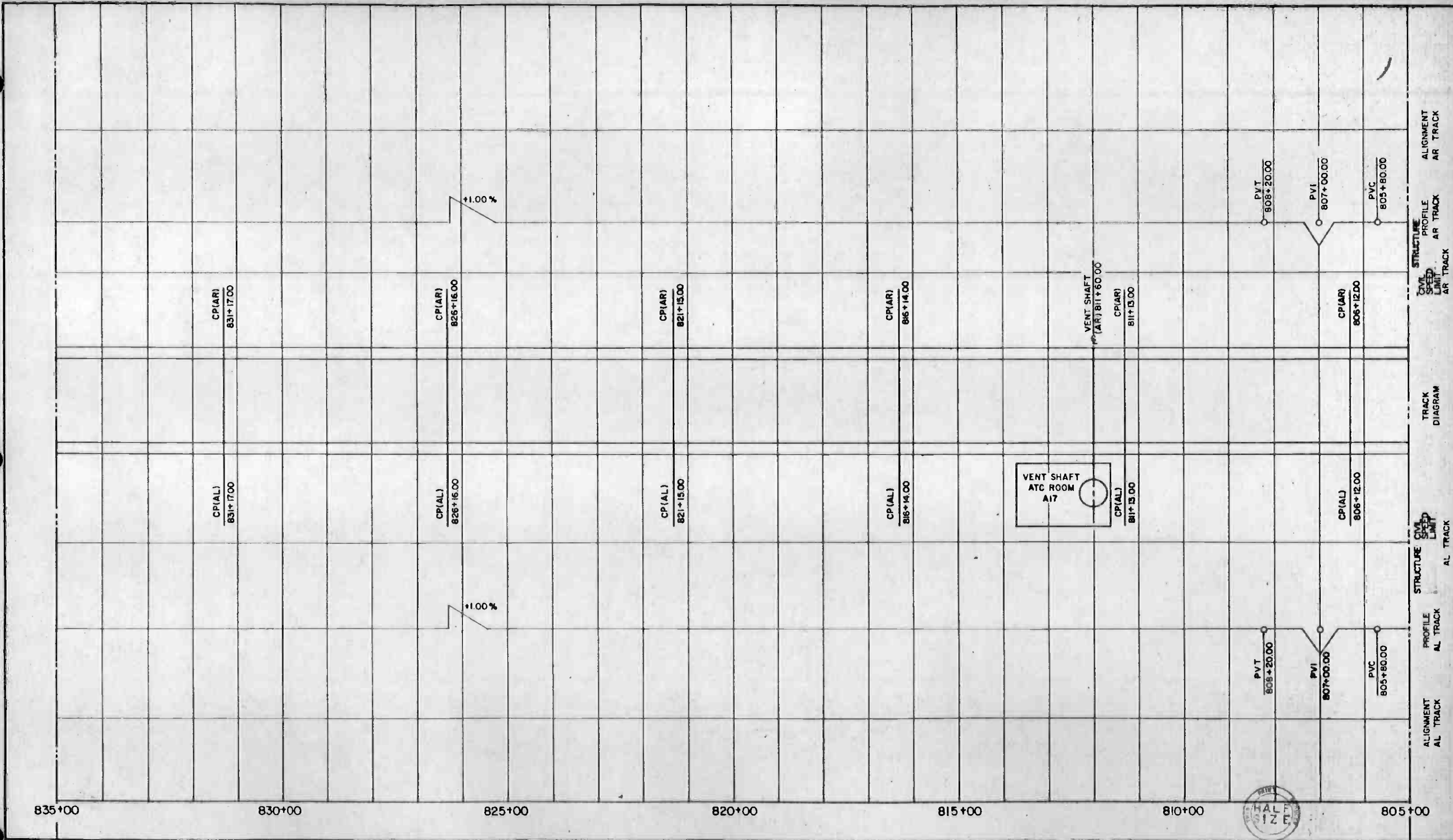
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBOD/KE/HWA
 GENERAL CONSULTANTS

APPROVED: *[Signature]*

LA CBD TO NORTH HOLLYWOOD
AUTOMATIC TRAIN CONTROL
 DOUBLE LINE TRACK PLAN
 775+00 TO 845+00

CONTRACT NO.	A620
DRAWING NO.	Q-031
SCALE	NO SCALE
SHEET NO.	31

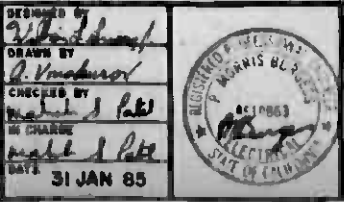


REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1954, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA

DESIGNED BY *[Signature]*
 DRAWN BY *[Signature]*
 CHECKED BY *[Signature]*
 IN CHARGE *[Signature]*
 DATE 31 JAN 85

INITIAL ISSUE



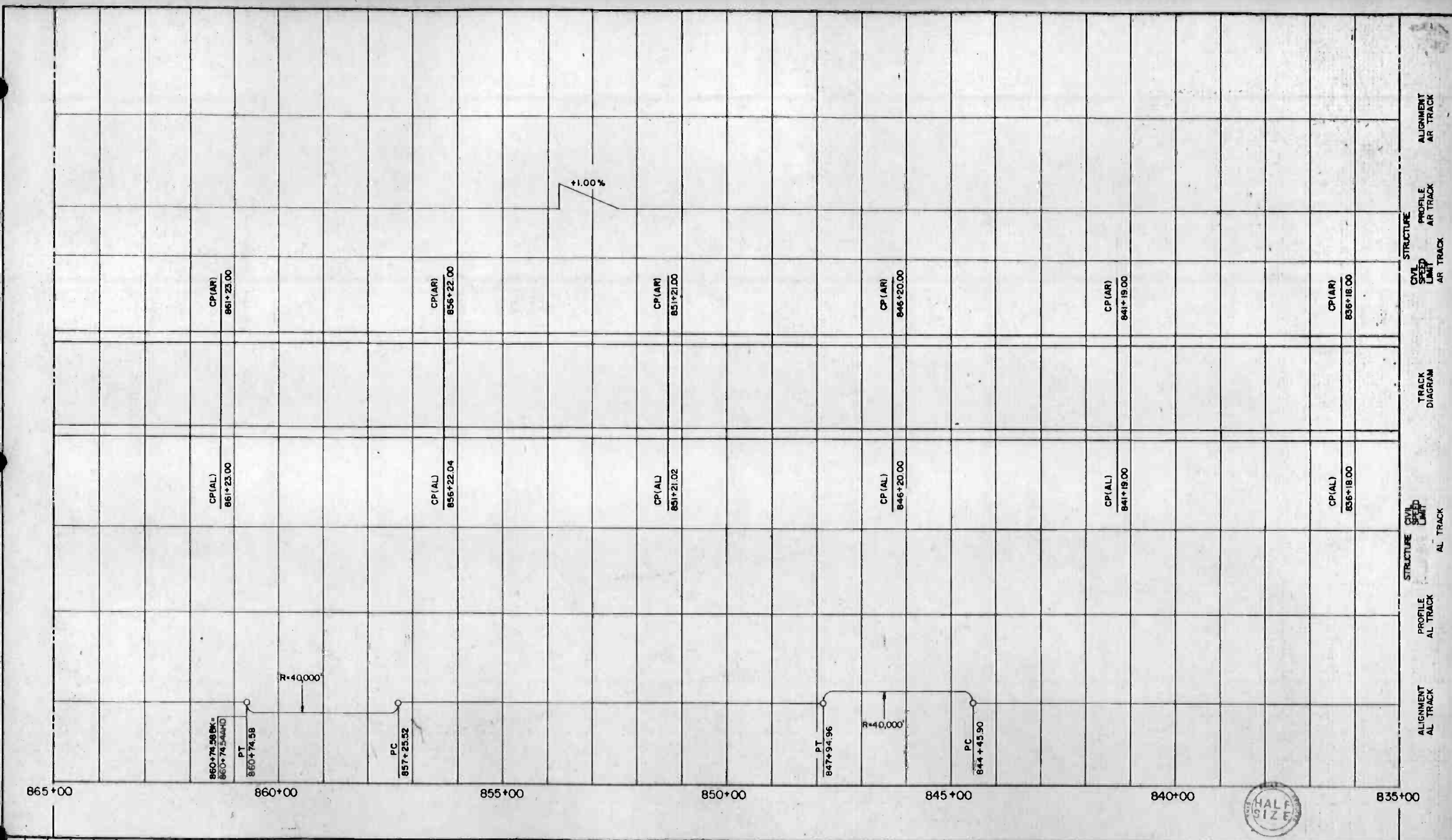
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PB00/KE/HWA
 GENERAL CONSULTANTS

APPROVED *[Signature]*

LA CBD TO NORTH HOLLYWOOD
AUTOMATIC TRAIN CONTROL
 DOUBLE LINE TRACK PLAN
 805+00 TO 835+00

CONTRACT NO. A620
 DRAWING NO. Q-032
 SCALE NO SCALE
 SHEET NO. 32

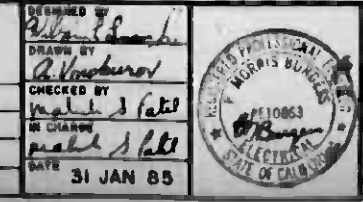


REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY *[Signature]*
 DRAWN BY *[Signature]*
 CHECKED BY *[Signature]*
 IN CHARGE *[Signature]*
 DATE 31 JAN 85

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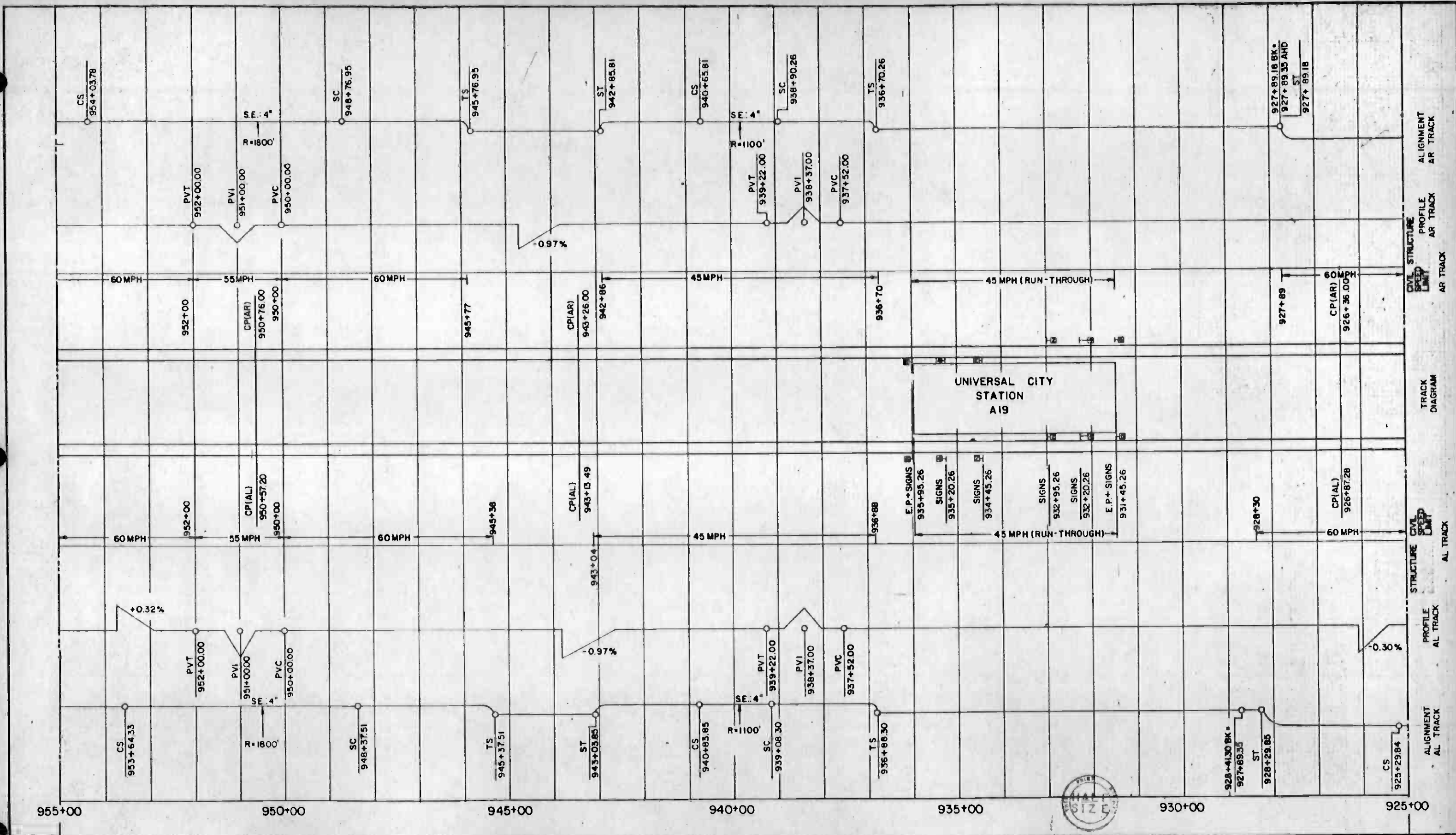
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT

DMJM/PBQD/KE/HWA
 GENERAL CONSULTANTS

APPROVED *[Signature]*

LA CBD TO NORTH HOLLYWOOD
 AUTOMATIC TRAIN CONTROL
 DOUBLE LINE TRACK PLAN
 835+00 TO 865+00

CONTRACT NO.	A620
DRAWING NO.	Q-033
SCALE	NO SCALE
SHEET NO.	33

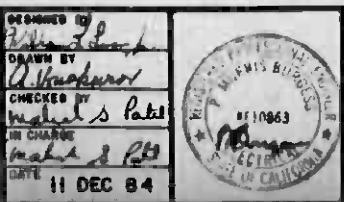


REV.	DATE	BY	SUB	APP	DESCRIPTION

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DESIGNED BY *[Signature]*
 DRAWN BY *[Signature]*
 CHECKED BY *[Signature]*
 IN CHARGE *[Signature]*
 DATE 11 DEC 84

7-1-81
 INITIAL ISSUE



**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT**

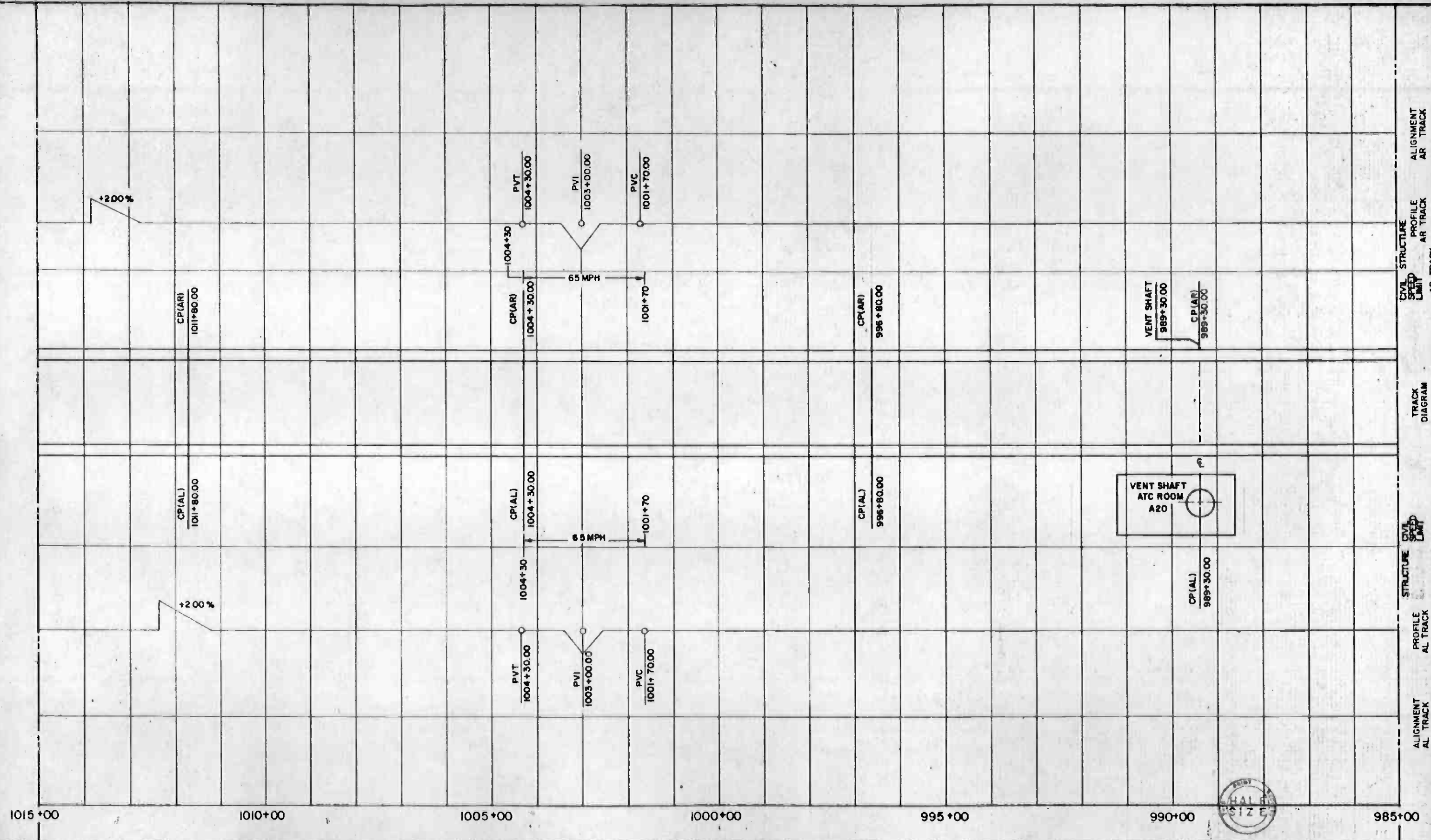
RTD

DMJM/PBOD/KE/HWA
 GENERAL CONSULTANTS

APPROVED *[Signature]*

**LA CBD TO NORTH HOLLYWOOD
 AUTOMATIC TRAIN CONTROL
 DOUBLE LINE TRACK PLAN
 925+00 TO 955+00**

CONTRACT NO. A620
 DRAWING NO. Q-036
 SCALE: NO SCALE
 SHEET NO. 36

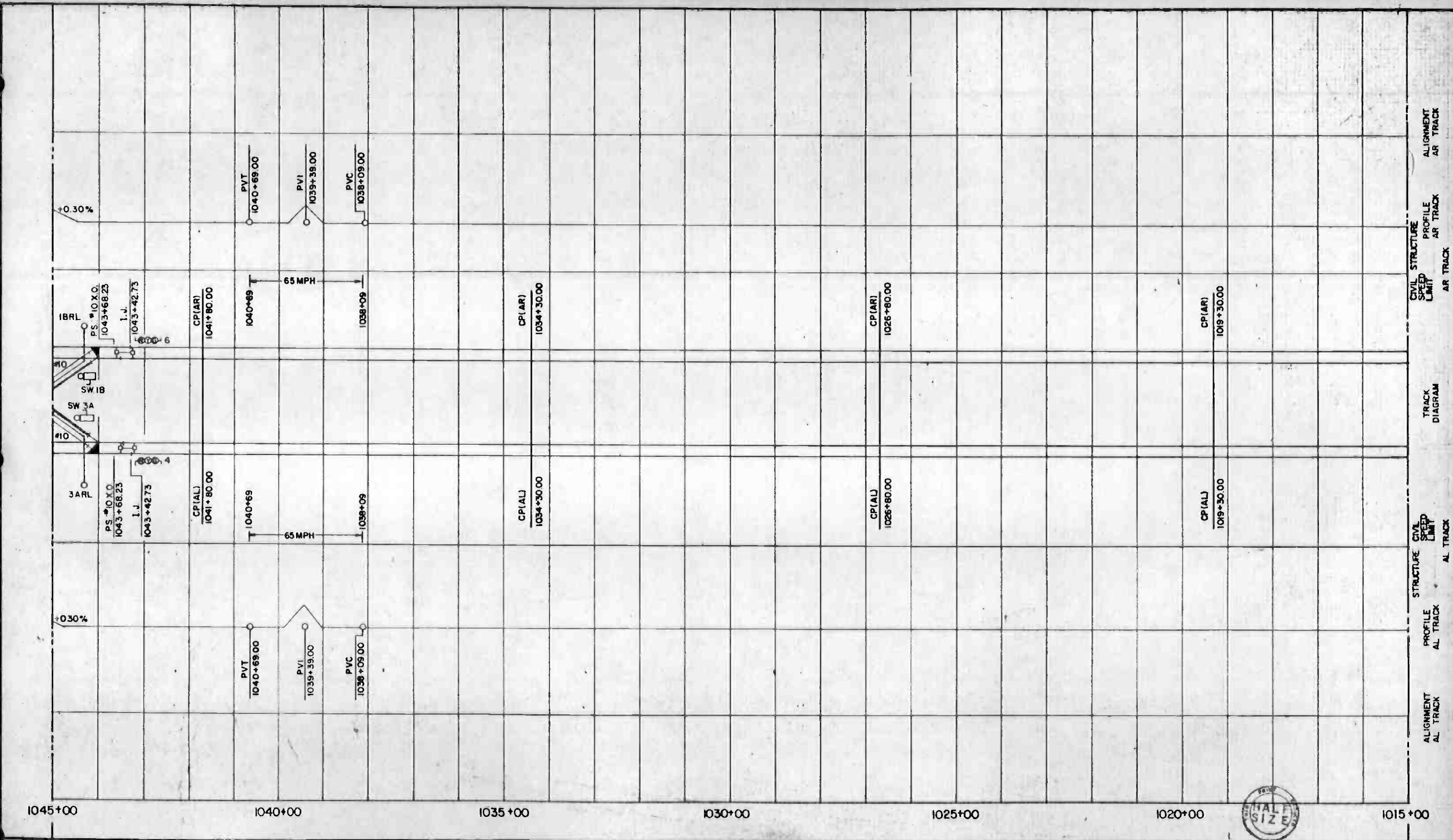


1015+00 1010+00 1005+00 1000+00 995+00 990+00 985+00

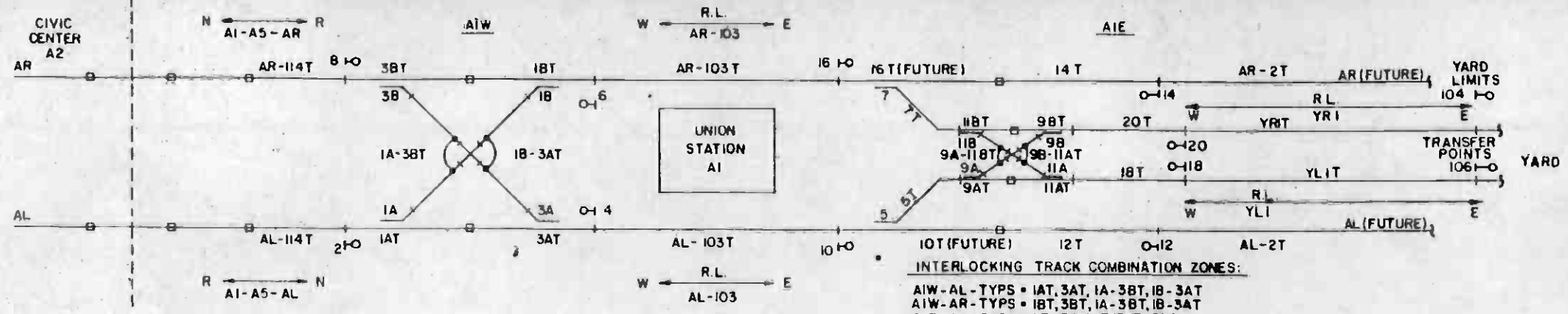
ALIGNMENT AL TRACK
 PROFILE AL TRACK
 STRUCTURE AL TRACK
 CIVIL STRUCTURE PROFILE AR TRACK
 SPEED LIMIT AR TRACK
 TRACK DIAGRAM
 CIVIL STRUCTURE SPEED LIMIT AL TRACK

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION. URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DESIGNED BY <i>[Signature]</i> DRAWN BY <i>[Signature]</i> CHECKED BY <i>[Signature]</i> IN CHARGE <i>[Signature]</i> DATE 20 DEC 84		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT		DMJM/PBQD/KE/HWA GENERAL CONSULTANTS APPROVED <i>[Signature]</i>	LA CBD TO NORTH HOLLYWOOD AUTOMATIC TRAIN CONTROL DOUBLE LINE TRACK PLAN 985+00 TO 1015+00	CONTRACT NO. A620 DRAWING NO. Q-038 SCALE NO SCALE SHEET NO. 38
REV. DATE BY SUB APP. DESCRIPTION	1-1-B 20 DEC 84 INITIAL ISSUE							





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REV DATE BY SUB APP DESCRIPTION	REV DATE BY SUB APP DESCRIPTION	INITIAL ISSUE				CONTRACT NO A620 DRAWING NO Q-039 SCALE NO SCALE SHEET NO 39



INTERLOCKING TRACK COMBINATION ZONES:
 AIW-AL-TYPS = IAT, 3AT, IA-3BT, IB-3AT
 AIW-AR-TYPS = IBT, 3BT, IA-3BT, IB-3AT
 AIE-AL-TYPS = 5T, 10T, 12T (FUTURE)
 AIE-AR-TYPS = 7T, 14T, 16T (FUTURE)
 AIE-YL-TYPS = 5T, 9AT, 11AT, 9A-11BT, 9B-11AT, 1BT
 AIE-YR-TYPS = 7T, 9BT, 11BT, 9A-11BT, 9B-11AT, 20T

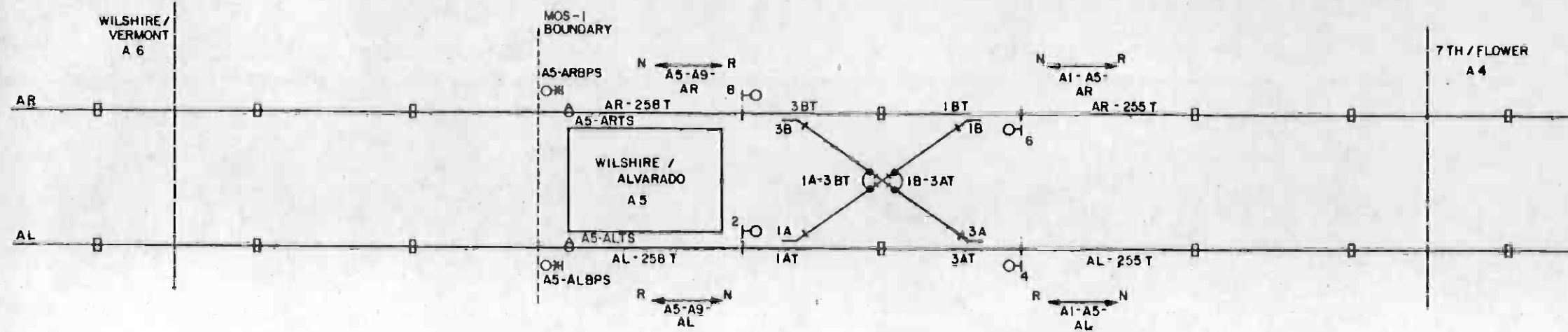
- GENERAL NOTES:**
- ALL ROUTES MAY BE INITIATED FROM RCC OR BY LOCAL MANUAL CONTROL PANEL.
 - R.L. INDICATES ROUTE LOCKING.

- SPECIAL NOTES:**
- FOR TURNBACK TRAIN, ROUTE LOCKING AL-103E SHALL CANCEL AFTER PRE-DETERMINED TIME.
 - FOR TURNBACK TRAIN, ROUTE LOCKING AR-103E SHALL CANCEL AFTER PRE-DETERMINED TIME.
 - TERMINAL OPERATING MODES
 MODE 1: TRAINS SHALL BE AUTOMATICALLY ROUTED ALTERNATELY TO AR TRACK PLATFORM (PREFERRED) AND AL TRACK PLATFORM, WHICHEVER IS UNOCCUPIED.
 MODE 2: ALL TRAINS SHALL BE AUTOMATICALLY ROUTED ACROSS SWITCH I REVERSE TO AR TRACK PLATFORM.
 MODE 3: ALL TRAINS SHALL BE AUTOMATICALLY ROUTED ACROSS SWITCH I NORMAL TO AL TRACK PLATFORM.
 MANUAL ROUTE MUST BE INITIATED FROM RCC OR BY LOCAL MANUAL CONTROL PANEL.

SW. REQ.	ENT.	ROUTE	SIG. ASP.	TRAFFIC CALLED AND LOCKED	SW. LOCKED	PREVENTS			APPROACH LOCKING RELEASED BY	AUTO ROUTE	SPECIAL NOTES	REMARKS
						SIG. CLEARING	TRAFFIC CALL	ADJACENT LOCATION SIGNAL				
IN, 3N	2	2-4	G	R.L. AL-103E	IN, 3N	4	R.L. AL-103W	12, 18W/SW1N, 20W/SW9R	AIW-AL-TYPS AL-103T	APPROACH CLEARED-MODE CONTROL	NOTE 1 3 4 6 8	MODE CONTROL ROUTE
IR, 3N	2	2-6	Y	R.L. AR-103E	IR, 3N	4, 6, 8	R.L. AR-103W	14, 20W/SW9N, 8W/SW1R	AIW-AL-TYPS 1BT	APPROACH CLEARED-MODE CONTROL	NOTE 2 3 5 6	MODE CONTROL ROUTE
IN, 3N	4	4-2	G	AI-A5-ALR	IN, 3N	2	AI-A5-ALN	A5 2W/SW 1N, 8W/SW 3R	AIW-AL-TYPS AL-114T	NO		MANUAL DISPATCH ONLY
IN, 3R	4	4-8	Y	AI-A5-ARN	IN, 3R	2, 6, 8	AI-A5-ARR	A5 8W/SW 3N, 2W/SW 1R	AIW-AL-TYPS 3BT	OCCUPANCY CLEARED		
IN, 3N	6	6-8	G	AI-A5-ARN	IN, 3N	8	AI-A5-ARR	A5 8W/SW 3N, 2W/SW 1R	AIW-AR-TYPS AR-114T	OCCUPANCY CLEARED		
IR, 3N	6	6-2	Y	AI-A5-ALR	IR, 3N	2, 4, 8	AI-A5-ALN	A5 2W/SW 1N, 8W/SW 3R	AIW-AR-TYPS IAT	NO		MANUAL DISPATCH ONLY
IN, 3N	8	8-6	G	R.L. AR-103E	IN, 3N	6	R.L. AR-103W	14, 20W/SW9N, 8W/SW1R	AIW-AR-TYPS AR-103T	NO	NOTE 2 6 8	
IN, 3R	8	8-4	Y	R.L. AL-103E	IN, 3R	2, 4, 6	R.L. AL-103W	18W/SW1N, 12, 20W/SW9R	AIW-AR-TYPS 3AT	NO	NOTE 1 4 6	
5N	10	10-12	G	FUTURE	5N, 9N	12	FUTURE	(FUTURE)	AIE-AL-TYPS AL-2T	(FUTURE)	NOTE 6 NOTE 7	FUTURE ROUTE
5R, 9N, 11N	10	10-18	Y	R.L. YL1E	5R, 9N, 11N	12, 18	R.L. YL1W	YARD EXIT AT SIGNAL 106	AIE-YL-TYPS 11AT	NO	NOTE 6 NOTE 7	SECTIONALLY RELEASE SW 5
5R, 9R	10	10-20	Y	R.L. YR1E	5R, 9R, 7N, 11N	12, 18, 20	R.L. YR1W	YARD EXIT AT SIGNAL 104	AIE-YL-TYPS 9BT	NO	NOTE 6 NOTE 7	SECTIONALLY RELEASE SW 5 AND SW 7
5N	12	12-10	G	R.L. AL-103W	5N	10	R.L. AL-103E	2W/SW 1N, 8W/SW 3R	AIE-AL-TYPS AL-103T	NO	NOTE 6 NOTE 7	FUTURE ROUTE
7N	14	14-16	G	R.L. AR-103E	7N	16	R.L. AR-103E	2W/SW 1R, 8W/SW 3N	AIE-AR-TYPS AR-103T	(FUTURE)	NOTE 6 NOTE 7	FUTURE ROUTE
7N	16	16-14	G	FUTURE	7N	14	FUTURE	(FUTURE)	AIE-AR-TYPS AR-2T	(FUTURE)	NOTE 6 NOTE 7	FUTURE ROUTE
7R, 9N, 11N	16	16-20	Y	R.L. YR1E	7R, 9N, 11N	14, 20	R.L. YR1W	YARD EXIT AT SIGNAL 104	AIE-YR-TYPS 9BT	NO	NOTE 6 NOTE 7	SECTIONALLY RELEASE SW 7
5R, 9N, 11N	18	18-10	Y	R.L. AL-103W	5R, 9N, 11N	10, 12	R.L. AL-103E	2W/SW 1N, 8W/SW 3R	AIE-YL-TYPS AL-103T	NO	NOTE 6 NOTE 7	
5R, 9R, 11N	20	20-10	Y	R.L. AL-103W	5R, 9R, 7N, 11N	10, 12, 18	R.L. AL-103E	2W/SW 1N, 8W/SW 3R	AIE-YR-TYPS AL-103T	NO	NOTE 6 NOTE 7	
7R, 9N, 11N	20	20-16	Y	R.L. AR-103W	7R, 9N, 11N	14, 16	R.L. AR-103E	2W/SW 1R, 8W/SW 3N	AIE-YR-TYPS AR-103T	NO	NOTE 6 NOTE 7	
5N, 7R, 9N, 11R	16	16-18	Y	R.L. YL1E	5N, 7R, 9N, 11R	14, 18, 20	R.L. YL1W	YARD EXIT AT SIGNAL 106	AIE-YR-TYPS 11AT	NO	NOTE 6 NOTE 7	SECTIONALLY RELEASE SW 7 AND SW 5
7R, 9N, 11R	18	18-16	Y	R.L. AR-103W	7R, 9N, 11R	14, 16, 20	R.L. AR-103E	2W/SW 1R, 8W/SW 3N	AIE-YR-TYPS AR-103T	NO	NOTE 6 NOTE 7	



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REV	DATE	BY	SUB	APP	DESCRIPTION	REV	DATE	BY	SUB	APP	DESCRIPTION		
					INITIAL ISSUE								



INTERLOCKING TRACK COMBINATION ZONES
 A5 - AL - TYPES = 1AT, 3AT, 1A - 3BT, 1B - 3AT
 A5 - AR - TYPES = 1BT, 3BT, 1B - 3AT, 1A - 3BT

GENERAL NOTES:

1. ALL ROUTES MAY BE INITIATED FROM RCC OR BY LOCAL MANUAL CONTROL PANEL.
2. THIS CHART DESCRIBES FUTURE OPERATION WHEN THE LINE IS EXTENDED; REFER TO DRAWING Q-046 (NORTH HOLLYWOOD INTERLOCKING) FOR MOS-1 REQUIREMENT.
3. PROVIDE EQUIPMENT IN WILSHIRE/ALVARADO TC & C ROOM TO IMPLEMENT MOS-1 REQUIREMENTS AND PROVIDE EQUIPMENT COMPLETE TO THE INTERFACE WITH TC & C ROOM A6 FOR IMPLEMENTING FUTURE REQUIREMENTS AS DESCRIBED IN THIS CHART.
4. PROVIDE BUMPER POST SIGNALS AND TRAIN STOPS FOR MOS-1.

SPECIAL NOTES:

1. OPERATION FOR MOS-1 REQUIRES A5 TO BE AN AUTOMATIC TERMINAL UNTIL THE LINE IS EXTENDED. A5 SHALL HAVE THE SAME TERMINAL OPERATING MODES AS NORTH HOLLYWOOD (A1B) - SEE SH. 46 SPECIAL NOTE 3.
2. MOS-1 OPERATION UNTIL THE LINE IS EXTENDED REQUIRES A5 TO HAVE AUTOMATIC TURNBACK CAPABILITY. ROUTES FROM PLATFORM AR OR AL SHALL BE INITIATED ON A FIRST-IN, FIRST-OUT BASIS - SEE NORTH HOLLYWOOD CHART ON SH. 46.

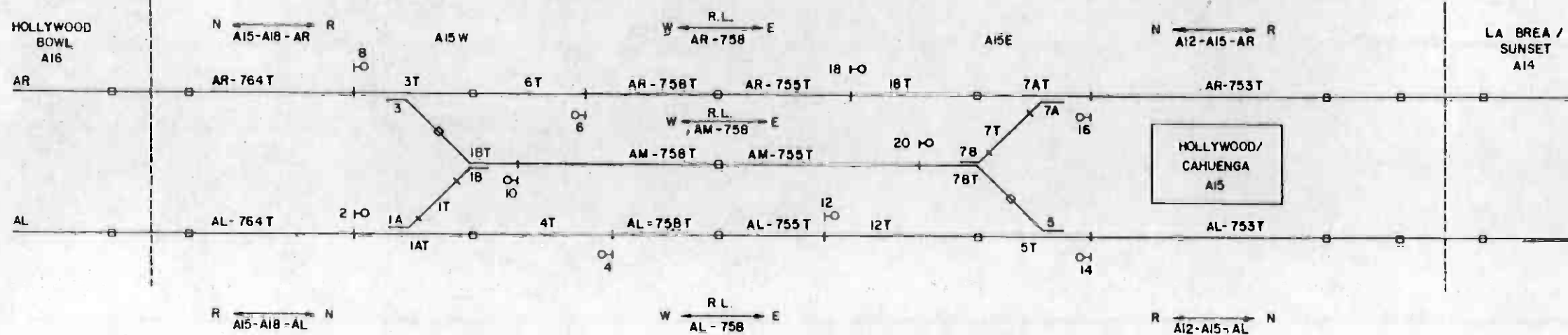
SW REQ	ENT	ROUTE	SIG ASP	TRAFFIC CALLED AND LOCKED	SW LOCKED	PREVENTS			APPROACH LOCKING RELEASED BY:	AUTO ROUTE	SPECIAL NOTES	REMARKS
						SIG CLEARING	TRAFFIC CALL	ADJACENT LOCATION SIGNAL				
IN, 3N	2	2-4	G	A1-A5-ALN	IN, 3N		4	A1-A5-ALR	A1 4W/SW 3N 6W/SW 1R	A5-AL-TYPES AL-255T	NOTE 2	INTERMEDIATE TURNBACK
IR, 3N	2	2-6	Y	A1-A5-ARR	IR, 3N		4, 6, 8	A1-A5-ARN	A1 4W/SW 3R 6W/SW 1N	A5-AL-TYPES 1BT		INTERMEDIATE TURNBACK
IN, 3N	4	4-2	G	A5-A9-ALR	IN, 3N		2	A5-A9-ALN	A9 2W/SW 1N 8W/SW 3R	A5-AL-TYPES AL-258T		
IN, 3R	4	4-8	Y	A5-A9-ARN	IN, 3R		2, 6, 8	A5-A9-ARR	A9 2W/SW 1R 8W/SW 3N	A5-AL-TYPES 3BT		
IN, 3N	6	6-8	G	A5-A9-ARN	IN, 3N		8	A5-A9-ARR	A9 2W/SW 1R 8W/SW 3N	A5-AR-TYPES AR-258T	NOTE 1	
IR, 3N	6	6-2	Y	A5-A9-ALR	IR, 3N		2, 4, 8	A5-A9-ALN	A9 2W/SW 1N 8W/SW 3R	A5-AR-TYPES 1AT	NOTE 1	
IN, 3N	8	8-6	G	A1-A5-ARR	IN, 3N		6	A1-A5-ARN	A1 4W/SW 3R 6W/SW 1N	A5-AR-TYPES AR-255T		INTERMEDIATE TURNBACK
IN, 3R	8	8-4	Y	A1-A5-ALN	IN, 3R		2, 4, 6	A1-A5-ALR	A1 4W/SW 3N 6W/SW 1R	A5-AR-TYPES 3AT	NOTE 2	INTERMEDIATE TURNBACK



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INITIAL ISSUE				DMJM/PBQD/KE/HWA GENERAL CONSULTANTS		APPROVED <i>[Signature]</i>		LA CBD TO NORTH HOLLYWOOD AUTOMATIC TRAIN CONTROL ROUTE AND ASPECT CHART TYPICAL INTERLOCKING DOUBLE CROSSOVER		DRAWING NO. Q-044		REV. 0	
REV. DATE BY SUB APP DESCRIPTION				DATE 8 AUG 84		APPROVED <i>[Signature]</i>		SCALE NO SCALE		SHEET NO. 44			

GENERAL NOTES:

- 1. ALL ROUTES MAY BE INITIATED FROM RCC OR BY LOCAL MANUAL CONTROL PANEL.
- 2. R.L. INDICATES ROUTE LOCKING.

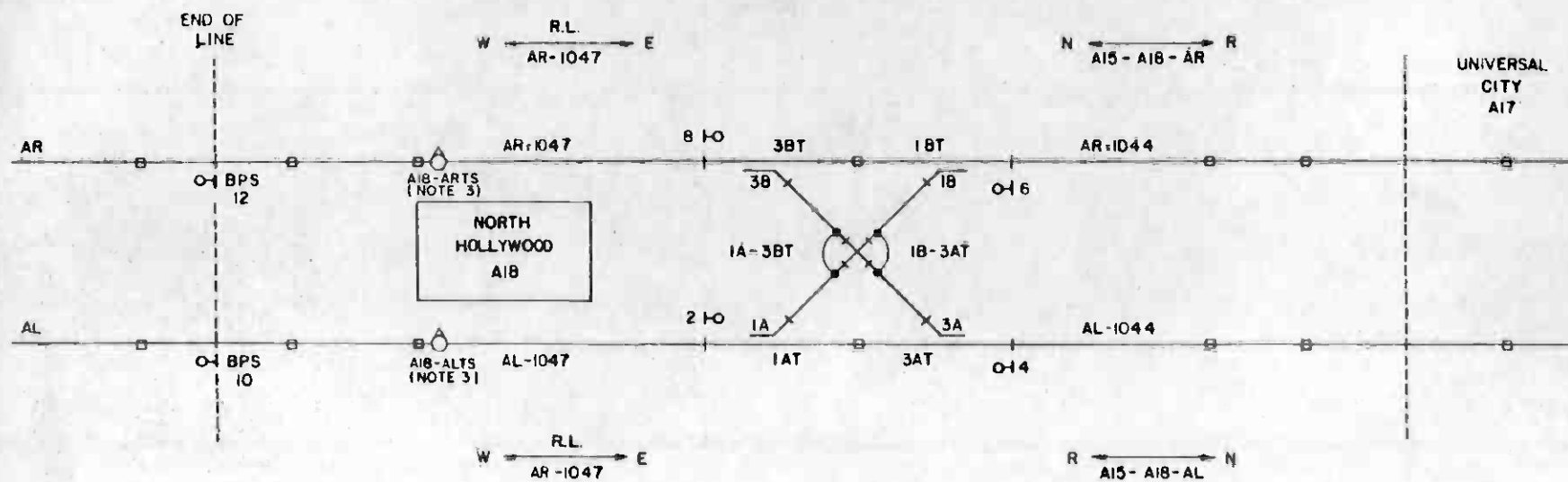


INTERLOCKING TRACK COMBINATION ZONES
 A15W-AR-TYPS = 3T, 6T, (18T IF A15-IRWC↓)
 A15W-AL-TYPS = 1AT, 1T, 4T, (18T IF A15-INWC↓)
 A15E-AR-TYPS = 18T, 7AT, 7T, (78T IF A15-7NWC↓)
 A15E-AL-TYPS = 12T, 5T, (78T IF A15-7RWC↓)

SW REQ	ENT	ROUTE	SIG ASP	TRAFFIC CALLED AND LOCKED	SW LOCKED	PREVENTS			APPROACH LOCKING RELEASED BY:	AUTO ROUTE	SPECIAL NOTES	REMARKS
						SIG CLEARING	TRAFFIC CALL	ADJACENT LOCATION SIGNAL				
IN	2	2-4	G	R L AL-758E	IN	4	R L AL-758W	A15E 4W/SW 5N	A15W-AL-TYPS AL-758T	NO		
IR	2	2-10	Y	R L AM-758E	IR, 3N	4, 10	R L AM-758W	A15E 14W/SW 5R 16W/SW 7R	A15W-AL-TYPS AM-758T	NO		
IN	4	4-2	G	A15-A18- ALR	IN	2	A15-A18- ALN	A18 2W/SW IN 8W/SW 3R	A15W-AR-TYPS AL-764T	NO		
3N	6	6-8	G	A15-A18- ARN	3N	8	A15-A18- ARR	A18 2W/SW IR 8W/SW 3N	A15W-AR-TYPS AR-764T	NO		
3N	8	8-6	G	R L AR-758E	3N	6	R L AR-758W	A15E 16W/SW 7N	A15W-AL-TYPS AR-758T	NO		
IN, 3R	8	8-10	Y	R L AM-758E	IN, 3R	6, 10	R L AM-758W	A15E 14W/SW 5R 16W/SW 7R	A15W-AR-TYPS AM-758T	NO		
IR	10	10-2	Y	A15-A18- ALR	IR, 3N	2, 4	A15-A18- ALN	A18 2W/SW IN 8W/SW 3R	A15W-AR-TYPS AL-764T	NO		
IN, 3R	10	10-8	Y	A15-A18- ARN	IN, 3R	6, 8	A15-A18- ARR	A18 2W/SW IR 8W/SW 3N	A15W-AR-TYPS AR-764T	NO		
5N	12	12-14	G	A12-A15- ALN	5N	14	A12-A15- ALR	A12 4W/SW 3N 6W/SW IR	A15E-AL-TYPS AL-753T	NO		INTERMEDIATE TURNBACK
5N	14	14-12	G	R L AL-758W	5N	12	R L AL-758E	A15W 2W/SW IN	A15E-AL-TYPS AL-755T	NO		INTERMEDIATE TURNBACK
5R, 7N	14	14-20	Y	R L AM-758W	5R, 7N	12, 20	R L AM-758W	A15W 2W/SW IR 8W/SW 3R	A15E-AL-TYPS AM-755T	NO		INTERMEDIATE TURNBACK
7N	16	16-18	G	R L AR-758W	7N	18	R L AR-758E	A15W 8W/SW 3N	A15E-AR-TYPS AR-755T	NO		INTERMEDIATE TURNBACK
7R	16	16-20	Y	R L AM-758W	5N, 7R	18, 20	R L AM-758E	A15W 2W/SW IR 8W/SW 3R	A15E-AR-TYPS AM-755T	NO		INTERMEDIATE TURNBACK
7N	18	18-16	G	A12-A15- ARR	7N	16	A12-A15- ARN	A12 4W/SW 3R 6W/SW IN	A15E-AR-TYPS AR-753T	NO		INTERMEDIATE TURNBACK
5R, 7N	20	20-14	Y	A12-A15- ALN	5R, 7N	12, 14	A12-A15- ALR	A12 4W/SW 3N 6W/SW IR	A15E-AL-TYPS AL-753T	NO		INTERMEDIATE TURNBACK
7R	20	20-16	Y	A12-A15- ARR	5N, 7R	16, 18	A12-A15- ARR	A12 4W/SW 3R 6W/SW IN	A15E-AR-TYPS AR-753T	NO		INTERMEDIATE TURNBACK



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REV	DATE	BY	SUB	APP	DESCRIPTION	REV	DATE	BY	SUB	APP	DESCRIPTION
					INITIAL ISSUE						



INTERLOCKING TRACK COMBINATION ZONES
 A18 - AL - TYP5 = 1AT, 3AT, 1A-3BT, 1B-3AT
 A18 - AR - TYP5 = 1BT, 3BT, 1A-3BT, 1B-3AT

- GENERAL NOTES:**
1. ALL ROUTES MAY BE INITIATED FROM RCC OR BY LOCAL MANUAL CONTROL PANEL.
 2. R.L. INDICATES ROUTE LOCKING.
 3. INCORPORATE TRAIN STOP FUNCTIONS WHERE REQUIRED.

- SPECIAL NOTES:**
1. ROUTE LOCKING AL-1047W SHALL CANCEL AFTER PRE-DETERMINED ADJUSTABLE TIME.
 2. ROUTE LOCKING AR-1047W SHALL CANCEL AFTER PRE-DETERMINED ADJUSTABLE TIME.
 3. **TERMINAL OPERATING MODES:**
 - MODE 1: TRAINS SHALL BE AUTOMATICALLY ROUTED ALTERNATELY TO AL TRACK PLATFORM (PREFERRED) AND AL TRACK PLATFORM, WHICHEVER IS UNOCCUPIED.
 - MODE 2: ALL TRAINS SHALL BE AUTOMATICALLY ROUTED ACROSS SWITCH 1 REVERSE TO AL TRACK PLATFORM.
 - MODE 3: ALL TRAINS SHALL BE AUTOMATICALLY ROUTED ACROSS SWITCH 1 NORMAL TO AR TRACK PLATFORM.
- MANUAL: ROUTES MUST BE INITIATED FROM RCC OR BY LOCAL MANUAL CONTROL PANEL.

SW REQ.	ENT	ROUTE	SIG ASP	TRAFFIC CALLED AND LOCKED	SW LOCKED	PREVENTS			APPROACH LOCKING RELEASED BY	AUTO ROUTE	SPECIAL NOTES	REMARKS
						SIG CLEARING	TRAFFIC CALL	ADJACENT LOCATION SIGNAL				
IN, 3N	2	2-4	G	A15-A18-ALN	IN, 3N	4	A15-A18-ALN	A15W 4, 10W/SW1R	A18-AL-TYP5 AL-1044T	OCCUPANCY CLEARED CENTRAL DISPATCH		AUTOMATIC CENTRAL DISPATCH
IR, 3N	2	2-6	Y	A15-A18-ARR	IR, 3N	4, 6	A15-A18-ALN	A15W 6, 10W/SW3R	A18-AL-TYP5 1BT	NO		MANUAL DISPATCH ONLY
IN, 3N	4	4-2	G	R L AL-1047 W	IN, 3N	2	R L AL-1047 E	---	A18-AL-TYP5 AR-1044T	NO		
IN, 3R	4	4-8	Y	R L AR-1047 W	IN, 3R	2, 8	R L AR-1047 E	---	A18-AL-TYP5 3BT	NO		
IR, 3N	6	6-2	Y	R L AL-1047 W	IR, 3N	2, 8	R L AL-1047 E	---	A18-AR-TYP5 1AT	APPROACH CLEARED MODE CONTROL	NOTE 1 NOTE 3	MODE CONTROL ROUTE
IN, 3N	6	6-8	G	R L AR-1047 W	IN, 3N	8	R L AR-1047 E	---	A18-AR-TYP5 AR-1047T	APPROACH CLEARED MODE CONTROL	NOTE 2 NOTE 3	MODE CONTROL ROUTE
IN, 3R	8	8-4	Y	A15-A18-ALN	IN, 3R	4, 6	A15-A18-ALN	A15W 4, 10W/SW1R	A18-AR-TYP5 3AT	OCCUPANCY CLEARED CENTRAL DISPATCH		AUTOMATIC CENTRAL DISPATCH
IN, 3N	8	8-6	G	A15-A18-ARR	IN, 3N	6	A15-A18-ARN	A15W 6, 10W/SW3R	A18-AR-TYP5 AR-1044T	NO		MANUAL DISPATCH ONLY

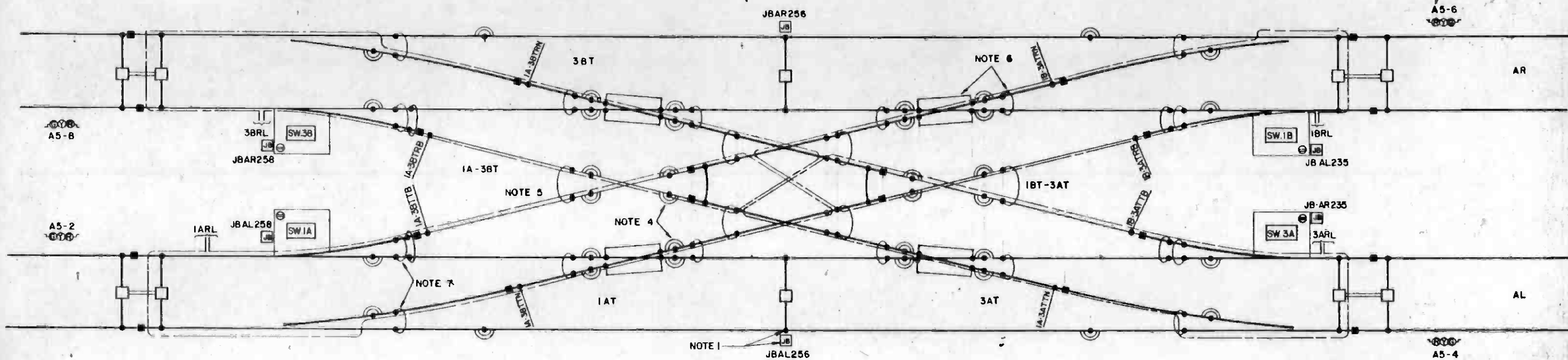


THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY: <i>[Signature]</i> DRAWN BY: <i>[Signature]</i> CHECKED BY: <i>[Signature]</i> IN CHARGE: <i>[Signature]</i> DATE: 9 AUG 84		REGISTERED PROFESSIONAL ENGINEER 910663 STATE OF CALIFORNIA		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT SUBMITTED: <i>[Signature]</i>				LA CBD TO NORTH HOLLYWOOD AUTOMATIC TRAIN CONTROL ROUTE AND ASPECT CHART NORTH HOLLYWOOD INTERLOCKING APPROVED: <i>[Signature]</i>		CONTRACT NO. A620 DRAWING NO. Q-046 SCALE: NO SCALE SHEET NO. 48	
REV	DATE	BY	SUB	APP	DESCRIPTION	REV	DATE	BY	SUB	APP	DESCRIPTION				
					INITIAL ISSUE										

WEST

EAST

← TO STATION



NOTES:

1. PROVIDE LOCAL CABLES FROM JUNCTION BOX TO SIGNALS, SWITCH MACHINES, LOOPS OR ANY OTHER EQUIPMENT IN NON-METALLIC FLEXIBLE CONDUIT CLAMPED TO CONCRETE OR TIES.
2. ROUTE CABLE TO AVOID TRIPPING HAZZARD.
3. MOUNT LOOPS ON SIDE OF RAIL AWAY FROM RAIL FLANGE. ADJUST LOOPS WHERE NECESSARY FOR ROUTING AROUND FROGS AND OTHER OBSTACLES. PROTECT LOOP WIRES AT ALL CLAMPS AND EDGES FROM VIBRATION.
4. PROVIDE 2-250 MCM TYPE "C" BONDS ON SIDE OF RAIL AWAY FROM FLANGE FOR ALL UNINSULATED RAIL JOINTS.
5. PROVIDE TRANSPOSITION OF POWER FREQUENCY TRACK CIRCUIT SIGNAL RAIL WITH 6 AWG BOND STRAND CABLE.
6. PROVIDE 1000 MCM POWER JUMPERS (4) AT ALL FROGS. PROVIDE 1000 MCM POWER JUMPERS ELSEWHERE AS REQUIRED.
7. PROVIDE ONE OR TWO 1000 MCM POWER JUMPERS AT EACH SWITCH HEEL. TWO IF JUMPER CARRIES CURRENT FOR OTHER THAN SWITCH AREA.
8. MOUNT SIGNAL ON SIDE AWAY FROM SAFETY WALK WHENEVER POSSIBLE. ADJUST HEIGHT OR DISTANCE FROM I. J. (5' MIN.) TO AVOID CLEARANCE PROBLEMS WITH SAFETY WALK OR TRAIN.
9. ——— SIGNAL RAIL.
——— TRACTION POWER RETURN RAIL.



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DESIGNED BY
[Signature]
DRAWN BY
C. D. [Signature]
CHECKED BY
[Signature]
IN CHARGE
[Signature]
DATE
6 JUL 65



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DNJM/PSGD/KE/MWA
GENERAL CONSULTANTS

APPROVED *[Signature]*

LA CBD TO NORTH HOLLYWOOD
AUTOMATIC TRAIN CONTROL
INTERLOCKING SIGNAL EQUIPMENT
TYPICAL DOUBLE CROSSOVER

CONTRACT NO.
A620

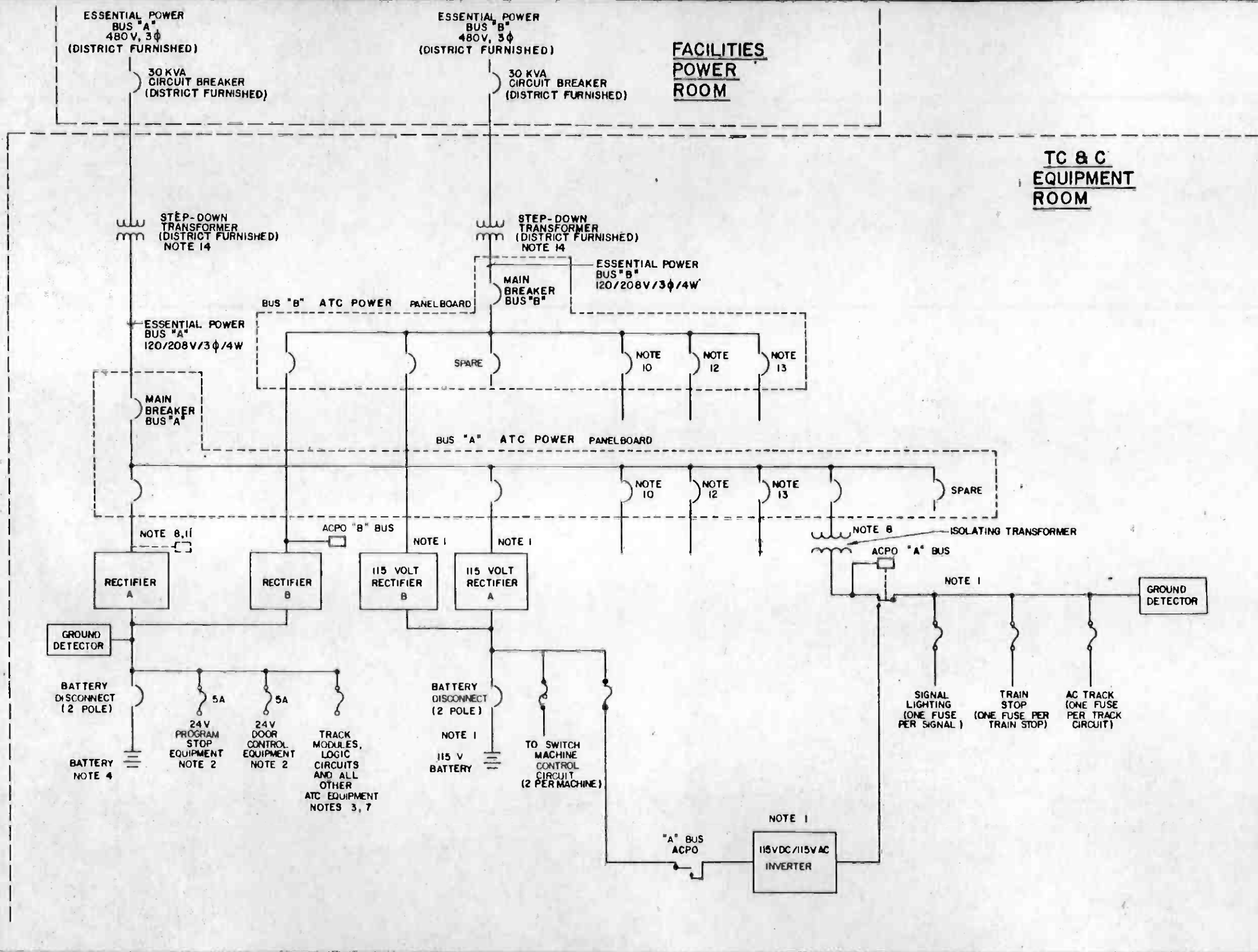
DRAWING NO.
Q-047

SCALE
NO SCALE

SHEET NO.
47

REV.	DATE	BY	CHK.	APP.	DESCRIPTION

74-87
INITIAL ISSUE



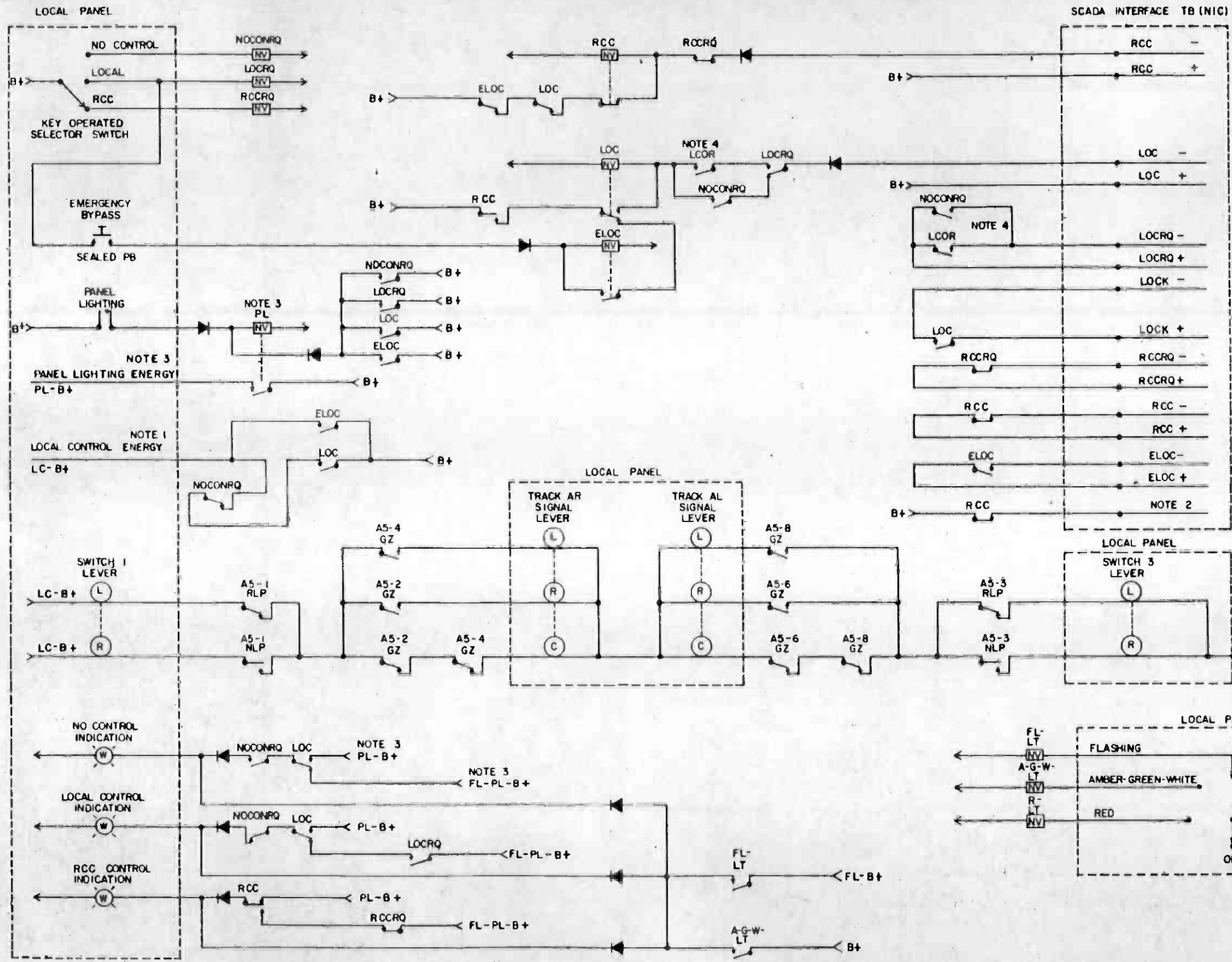
NOTES:

1. THIS EQUIPMENT NOT NECESSARY AT NON-INTERLOCKING STATIONS.
2. PROVIDE FUSES FOR USE BY OTHERS ONE EACH FOR TRACK AR AND TRACK AL.
3. PROVIDE FUSES SIZED AS REQUIRED FOR ATC EQUIPMENT USING THE FOLLOWING GUIDELINES:
 - A. ONE FUSE PER TRACK CIRCUIT MODULE,
 - B. ONE FUSE PER LOGIC RACK.
 - C. ONE FUSE PANEL LIGHTING.
 - D. ONE FUSE FOR LOCAL PANEL CONTROL.
4. BATTERY AND POWER SUPPLY USED FOR TRAFFIC AND LINE CIRCUITS SHALL BE UNGROUNDED.
5. FOR POWER SCHEMATIC REQUIREMENTS AT THE YARD SEE DWG. Q-103.
6. POWER AVAILABLE AT EACH TCR AS FOLLOWS:

LOCATION	BREAKER
MOS - UNION STATION CIVIC CENTER FIFTH / HILL SEVENTH / FLOWER WILSHIRE / ALVARADO WILSHIRE / VERMONT WILSHIRE / NORMANDIE WILSHIRE / WESTERN WILSHIRE / CRENSHAW WILSHIRE / LA BREA WILSHIRE / FAIRFAX FAIRFAX / BEVERLY FAIRFAX / SANTA MONICA LA BREA / SUNSET HOLLYWOOD / CAHUENGA	} 30 KVA (ALL LOCATIONS)
FUTURE B17 + 50 TCR B71 + 00 TCR UNIVERSAL CITY 1000 + 00 TCR NORTH HOLLYWOOD	
7. DISTRIBUTE DC ENERGY TO LOGIC COMPONENTS BY USE OF ENERGY LOOPS.
8. INDICATE AC POWER LOSS TO LOCAL CONTROL PANEL AND SCADA INTERFACE FOR BOTH INTERLOCKING AND NON-INTERLOCKING ROOMS. LOCATE ACPO RELAY AHEAD OF RECTIFIER AT NON-INTERLOCKING TCR.
9. USE INDICATING FUSES FOR ALL ATC LOADS. INDICATE BLOWN FUSE TO LOCAL CONTROL PANEL AND SCADA INTERFACE.
10. ONE -120V/208V, 3-PHASE, 4 WIRE SERVICE CIRCUIT BREAKER FOR COMMUNICATIONS LOAD OF 35 A.
11. THE CONTRACTOR SHALL PROVIDE OTHER RECTIFIERS AND BATTERY VOLTAGES AS REQUIRED FOR HIS EQUIPMENT.
12. TWELVE -120 VAC, SINGLE-PHASE CIRCUIT BREAKERS FOR COMMUNICATIONS UTILITY LOAD OF 20 A. EACH.
13. 120 VAC, SINGLE-PHASE, 20A CIRCUIT BREAKERS FOR ATC RACK-MOUNTED CONVENIENCE OUTLETS.
14. WIRING TO PRIMARIES OF STEP-DOWN TRANSFORMERS IS DISTRICT FURNISHED.



	THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.	DESIGNED BY <i>A. G. ...</i> DRAWN BY <i>...</i> CHECKED BY <i>...</i> IN CHARGE <i>...</i> DATE 4 JUN 84	SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT 	DMJM/PBQD/KE/HWA GENERAL CONSULTANTS APPROVED <i>...</i>	LA CBD TO NORTH HOLLYWOOD AUTOMATIC TRAIN CONTROL TYPICAL POWER DISTRIBUTION SCHEMATIC	CONTRACT NO. A620 DRAWING NO. Q-052 REV. 0 SCALE NO SCALE SHEET NO. 52
REV. DATE BY SUB APP DESCRIPTION	REV. DATE BY SUB APP DESCRIPTION	INITIAL ISSUE	SUBMITTED <i>PMB...</i>	APPROVED <i>...</i>		

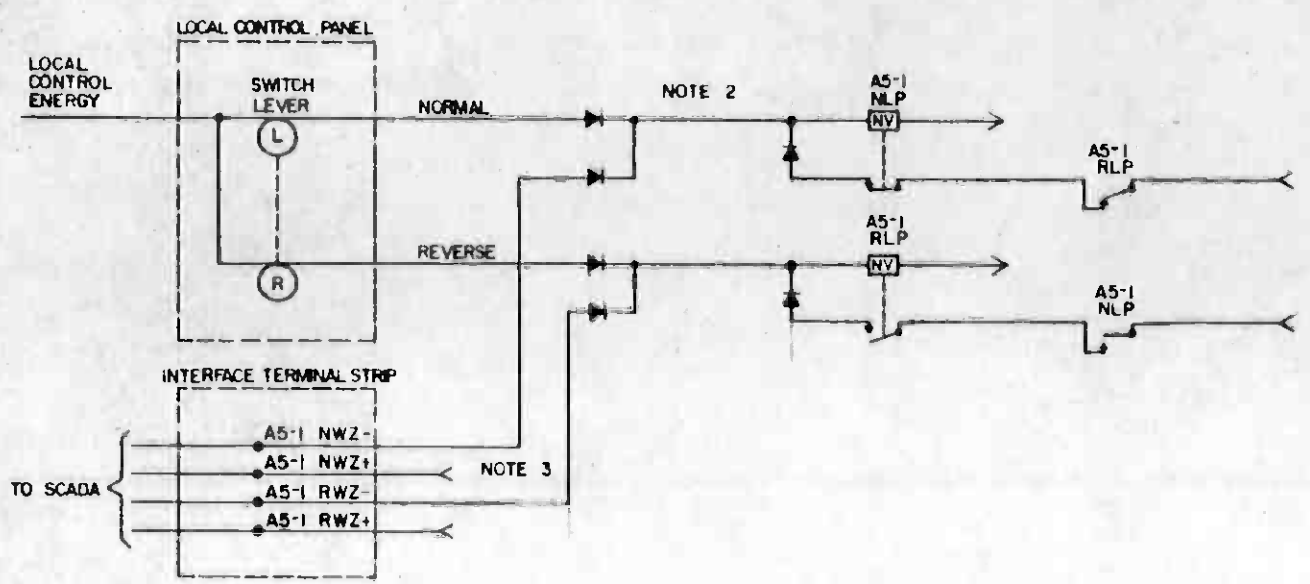


- NOTES:**
1. LOCAL CONTROL SHALL POWER THE SIGNAL LEVERS, SWITCH LEVERS, TEMPORARY SLOW SPEED ORDERS SELECTION, AUDIBLE ALARM, AND ALARM SILENCE PUSH BUTTON.
 2. RCC RELAY ENERGIZED SHALL POWER THE SWITCH AND SIGNAL CONTROLS FROM RCC.
 3. ALL PANEL LIGHTING ON ONE FUSE FROM DC SOURCE. PANEL LIGHTING BUS (PL-B+) AND FLASHING PANEL LIGHT BUS (FL-PL-B+) ENERGIZED WHEN PL RELAY ENERGIZES.
 4. REQUEST FOR AND TRANSFER TO LOCAL CONTROL REQUIRE CORRESPONDENCE OF THE SWITCH AND SIGNAL LEVERS.

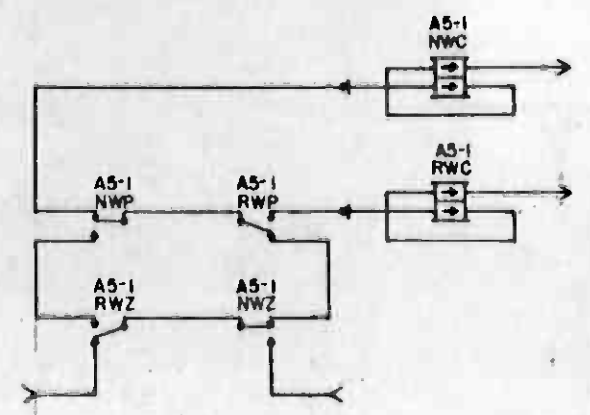


THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DESIGNED BY DRAWN BY CHECKED BY IN CHARGE DATE 24 MAY 84		REGISTERED PROFESSIONAL ENGINEER MORGAN BURGESS No. 10663 STATE OF CALIFORNIA		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT DMJM/PBOD/KE/HWA GENERAL CONSULTANTS APPROVED: <i>[Signature]</i>		CONTRACT NO. A620 DRAWING NO. Q-053 SCALE NO SCALE SHEET NO. 53	
INITIAL ISSUE		24 MAY 84		SUBMITTED <i>[Signature]</i>		APPROVED <i>[Signature]</i>		LA CBD TO NORTH HOLLYWOOD AUTOMATIC TRAIN CONTROL TYPICAL CONTROL PANEL CIRCUITS	

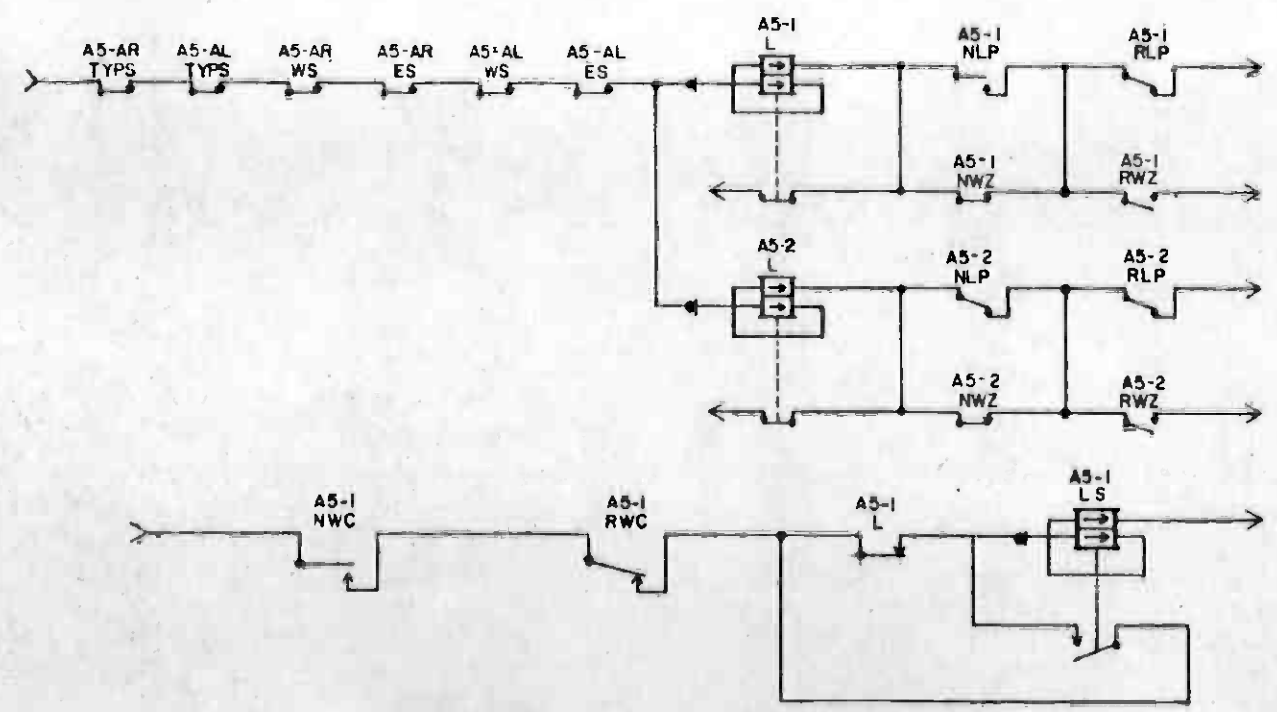
- NOTES:**
1. SHOW RACK AND RACK COORDINATE LOCATION FOR ALL CONTACTS COILS, TERMINALS AND EQUIPMENT USED.
 2. DO NOT PERMIT BACKFEEDS OF ENERGY BETWEEN DIFFERENT BUSSES.
 3. FOR CENTRAL CONTROL ENERGY SEE NOTE 2 DRAWING Q-053



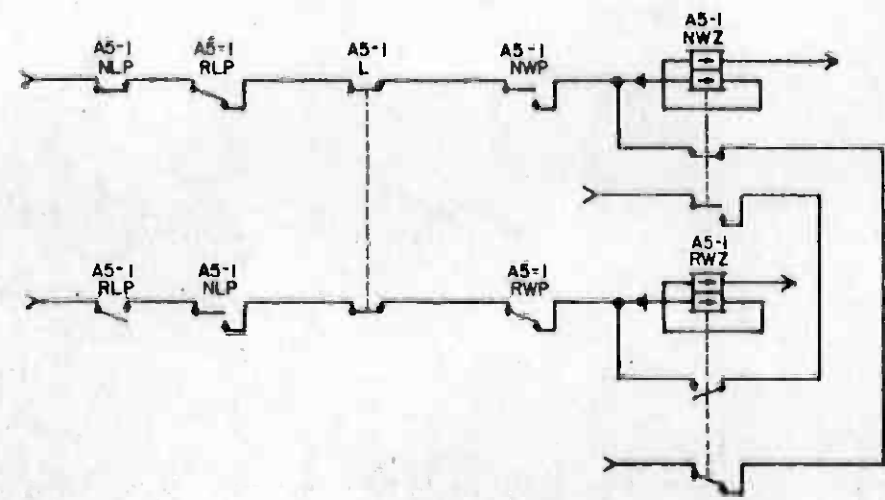
TYPICAL SWITCH REQUEST CIRCUITS



TYPICAL SWITCH CORRESPONDENCE CIRCUITS



TYPICAL SWITCH LOCKING CIRCUITS



TYPICAL SWITCH CALL CIRCUITS



REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U S DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA

DESIGNED BY *A. Coenig*
 DRAWN BY *R. J. Wagon*
 CHECKED BY *W. J. Wagon*
 IN CHARGE *M. J. Wagon*
 DATE 23 MAY 84

7-1-87
 INITIAL ISSUE



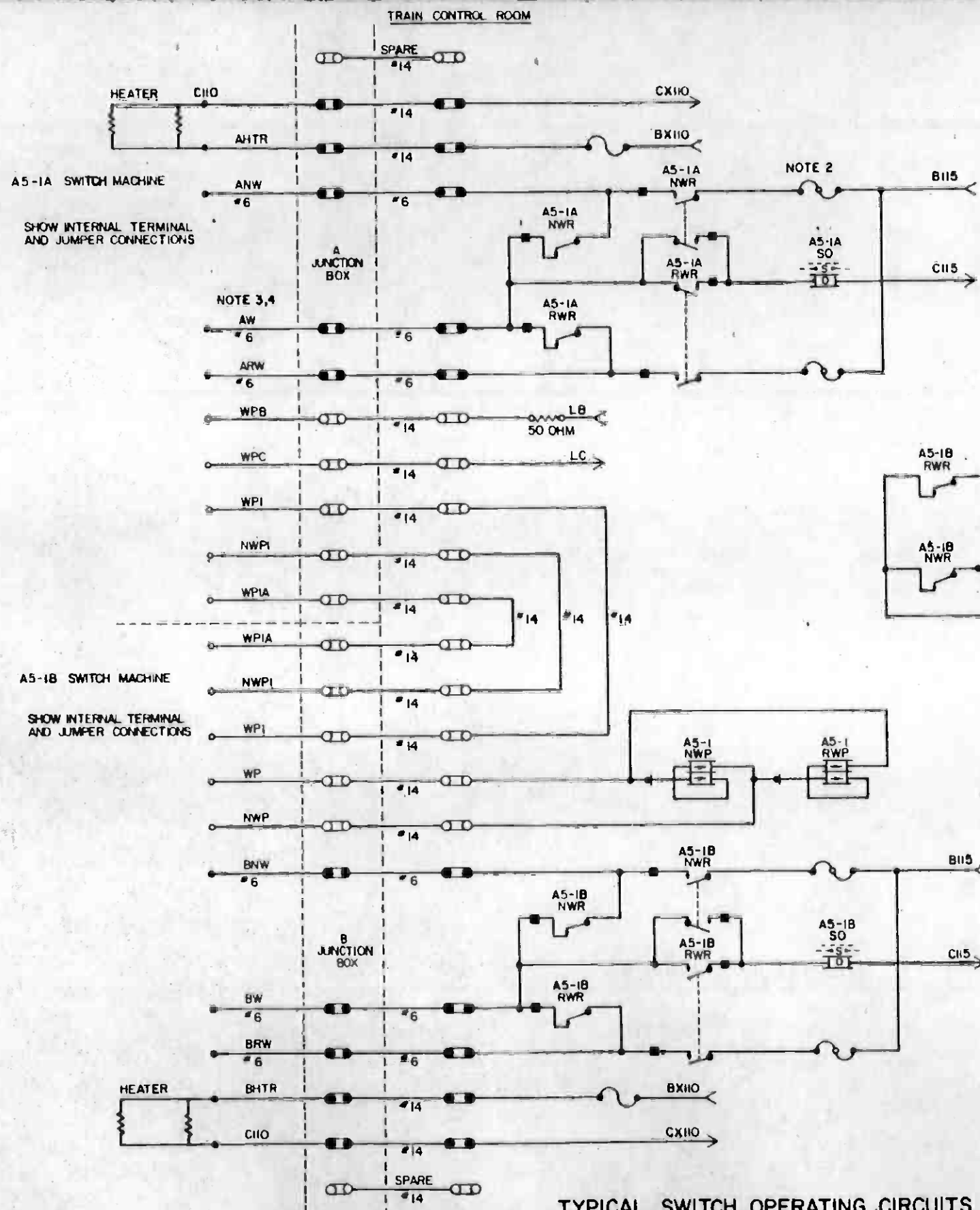
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT

DMJM/PBQO/KE/HWA
 GENERAL CONSULTANTS

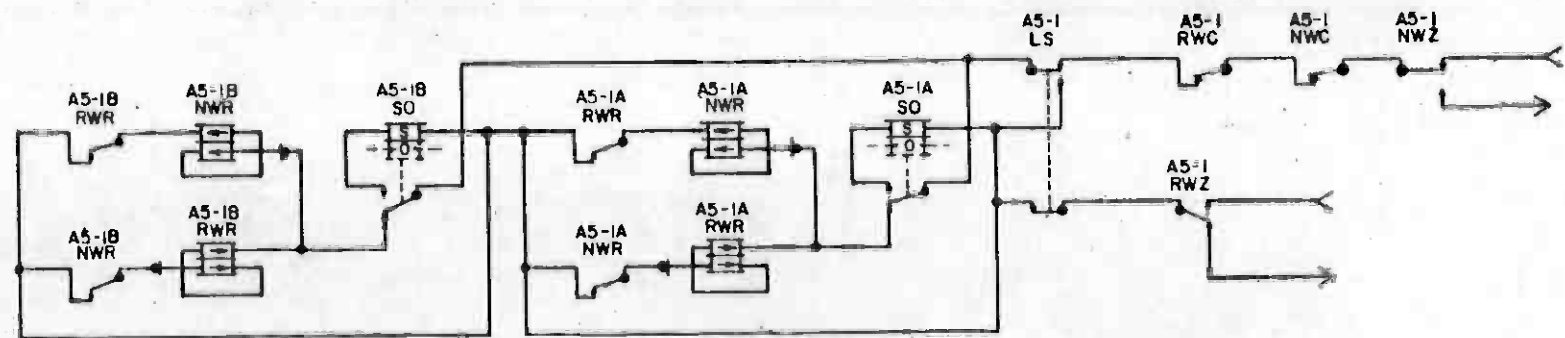
APPROVED *Amund J. Kelly*

LA CBD TO NORTH HOLLYWOOD
 AUTOMATIC TRAIN CONTROL
 TYPICAL SWITCH CONTROL CIRCUITS

CONTRACT NO. A620	REV. 0
DRAWING NO. Q-054	SCALE NO SCALE
SHEET NO. 84	



TYPICAL SWITCH OPERATING CIRCUITS



TYPICAL SWITCH CONTROL CIRCUITS

NOTES:

1. SHOW RACK AND RACK COORDINATE LOCATION FOR ALL CONTACTS, COILS, TERMINALS AND EQUIPMENT USED.
2. SHOW FUSE, RESISTOR, CAPACITORS, ETC SIZES.
3. SHOW ALL TERMINATION POINT DESIGNATION.
4. SHOW CONDUCTOR IDENTIFICATION AND CIRCUIT NOMENCLATURE ON CIRCUITS AND DETAILS FOR ALL WAYSIDE CABLES.

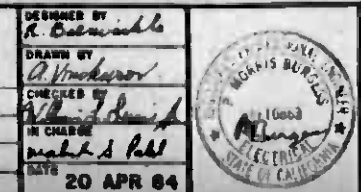


REV.	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY *R. Belmont*
 DRAWN BY *A. V. ...*
 CHECKED BY *...*
 IN CHARGE *...*
 DATE 20 APR 84

INITIAL ISSUE



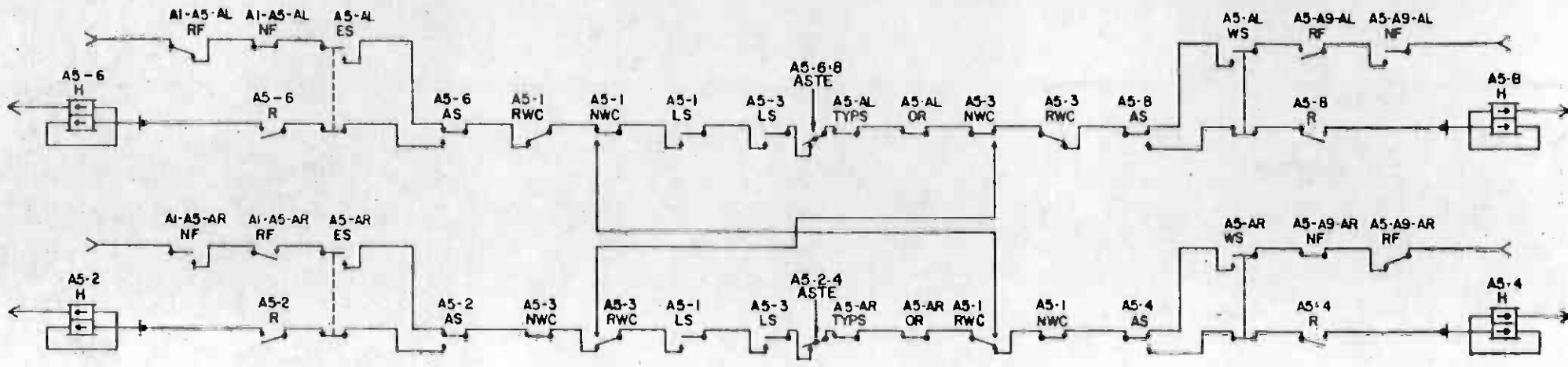
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT

DMJM/PBOD/KE/HWA
 GENERAL COMBATANTS

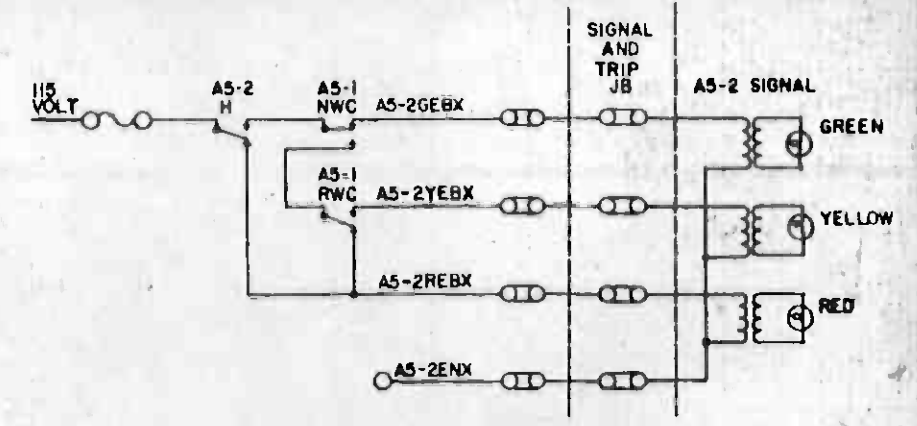
APPROVED: *...*

LA CBD TO NORTH HOLLYWOOD
 AUTOMATIC TRAIN CONTROL
 TYPICAL SWITCH OPERATING
 AND REPEATER CIRCUITS

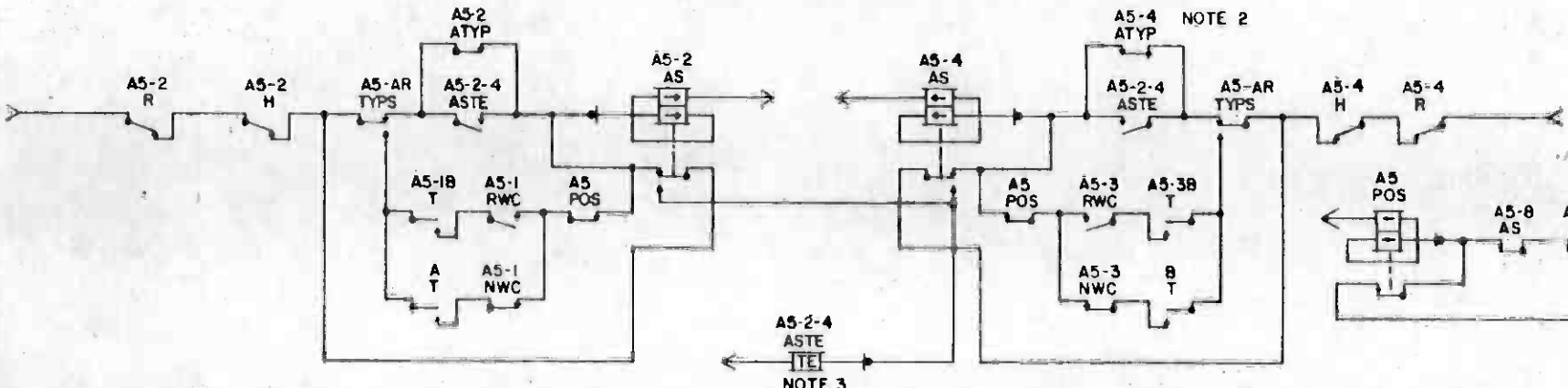
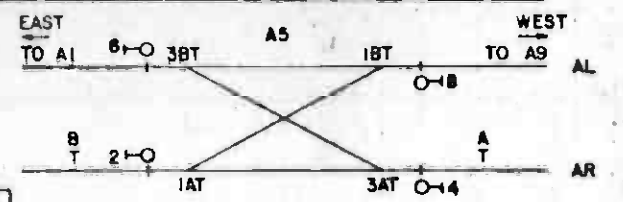
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DRAWING NO.	Q-055
SCALE	NO SCALE
SHEET NO.	55



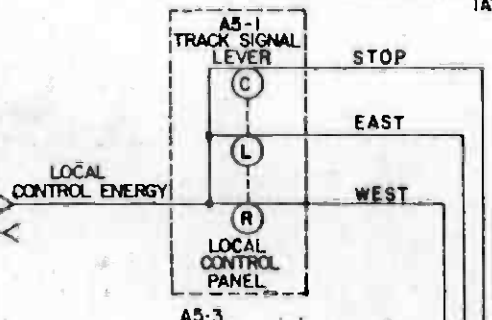
TYPICAL SIGNAL CLEARING CIRCUITS



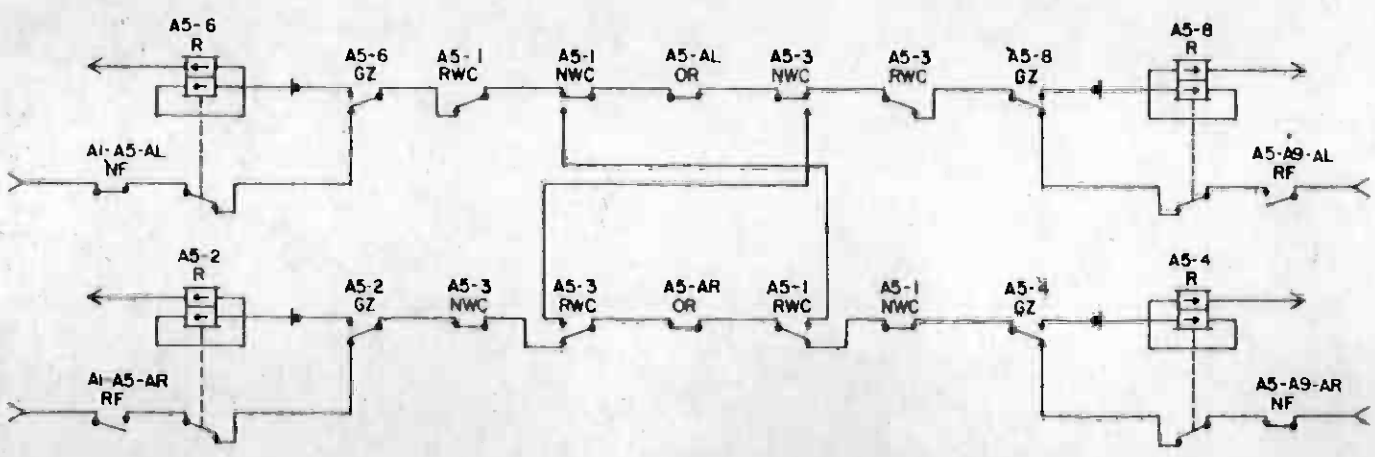
TYPICAL SIGNAL LIGHTING CIRCUITS



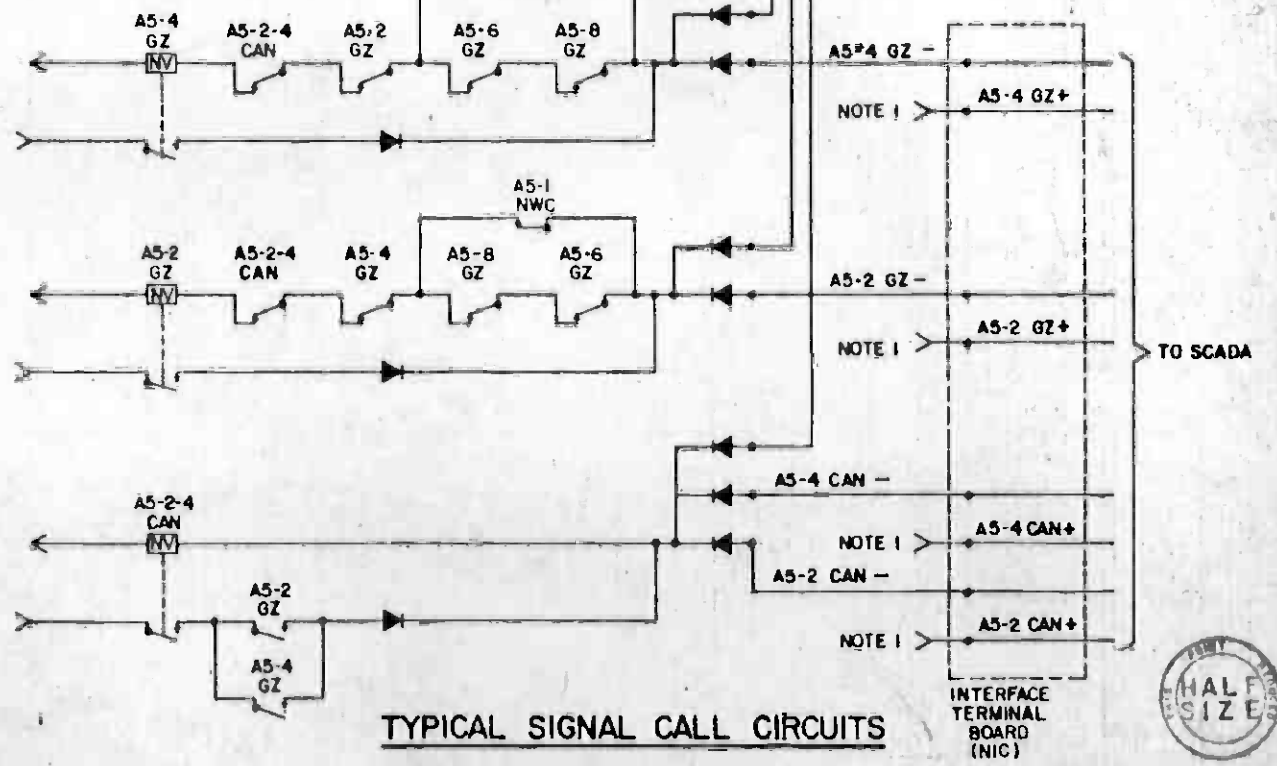
TYPICAL APPROACH LOCKING CIRCUITS



- NOTES:**
1. FOR RCC ENERGY, SEE NOTE 2 ON DRAWING Q-063
 2. APPROACH LOCKING SHALL BE TIMED ONLY WHEN TRAIN IS IN APPROACH TO SIGNAL.
 3. SET APPROACH LOCKING TIME FOR WORST CASE STOPPING TIME FOR TRAIN IN APPROACH

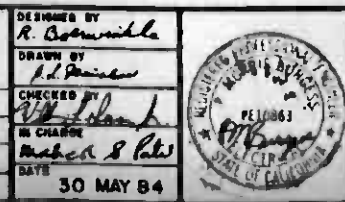


TYPICAL ROUTE CHECK CIRCUITS



TYPICAL SIGNAL CALL CIRCUITS

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DESIGNED BY	R. Coonville			
DRAWN BY	A. J. Pinner			
CHECKED BY	[Signature]			
IN CHARGE	Mason & Patis			
DATE	30 MAY 84			
REV. DATE	1-1-87	BY	APP.	DESCRIPTION
REV.	DATE	BY	APP.	DESCRIPTION



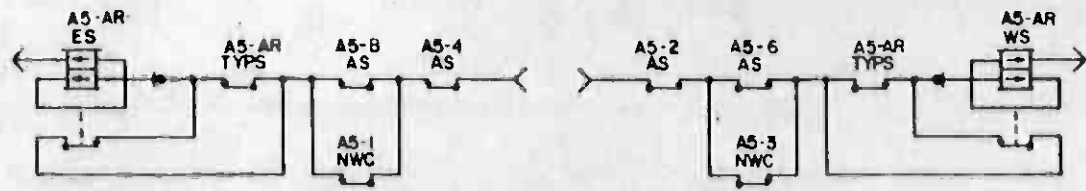
**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

DMJM/PBOD/KE/HWA
 GENERAL CONSULTANTS

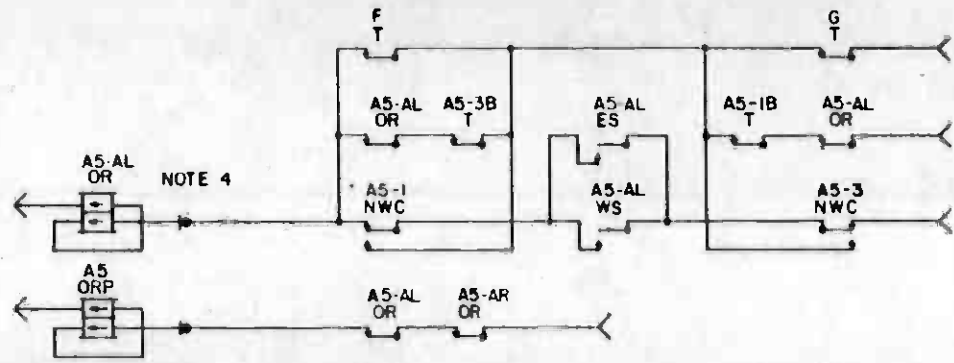
APPROVED: [Signature]

**LA CBD TO NORTH HOLLYWOOD
AUTOMATIC TRAIN CONTROL
TYPICAL SIGNAL CONTROL CIRCUITS**

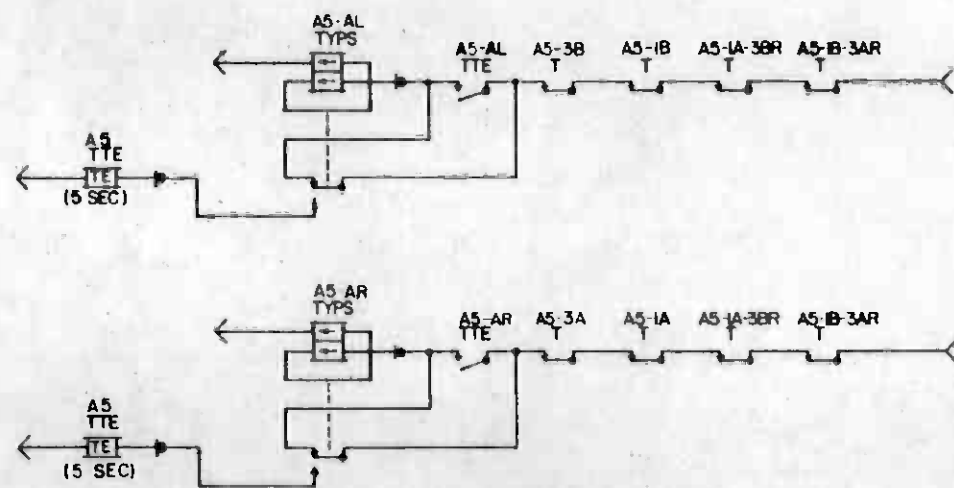
CONTRACT NO. A620
 DRAWING NO. Q-056
 SCALE: NO SCALE
 SHEET NO. 56



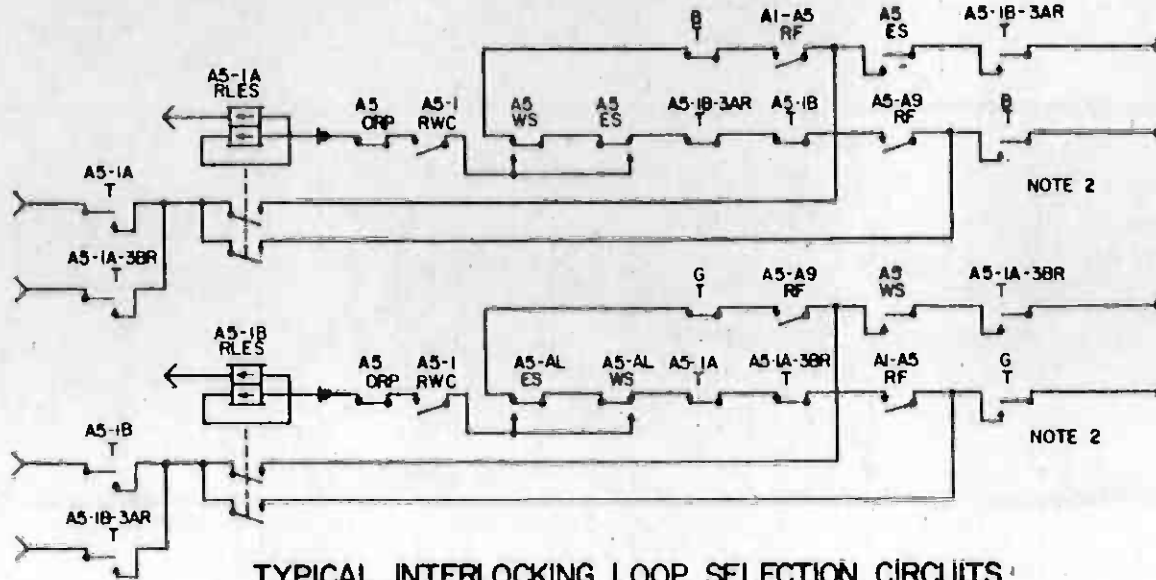
TYPICAL ROUTE LOCKING CIRCUITS



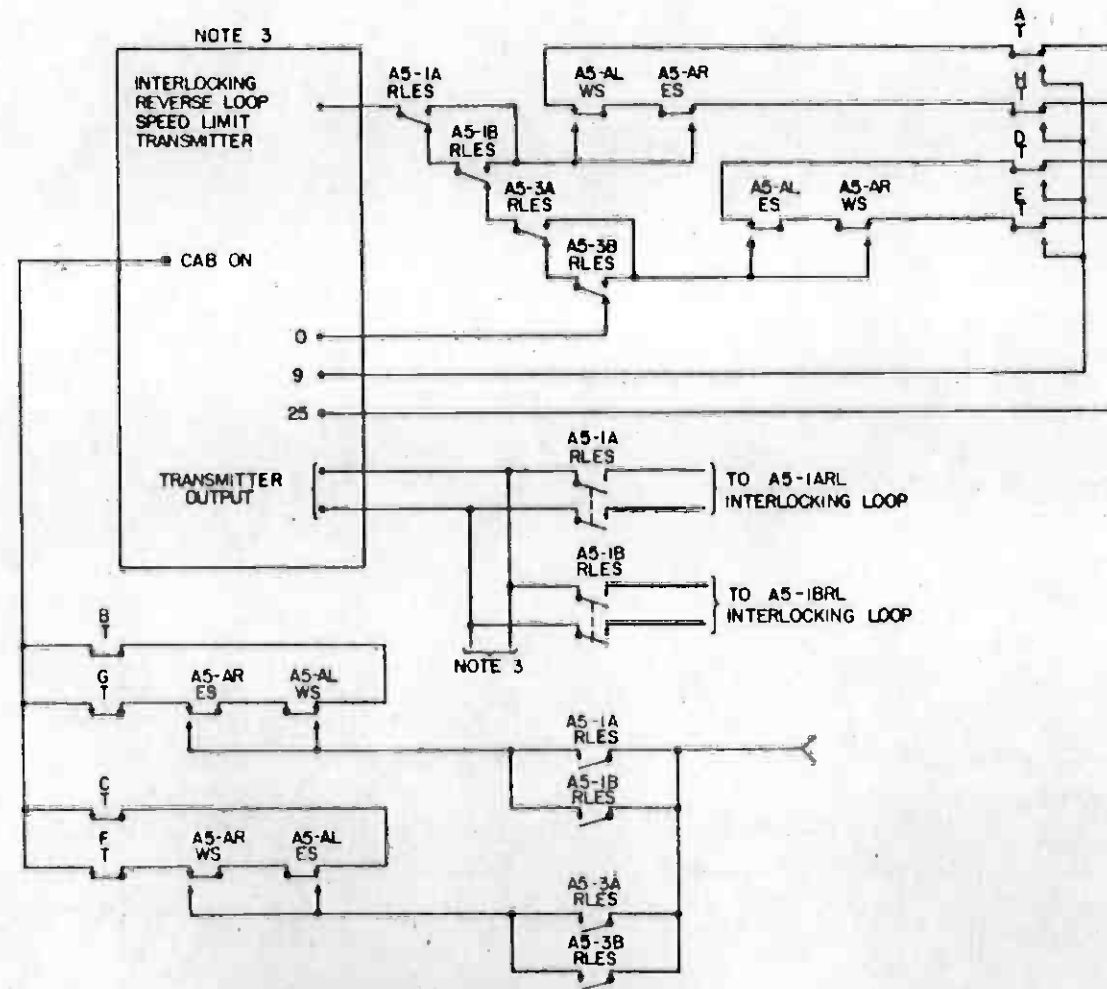
TYPICAL OVERRUN CIRCUITS



TYPICAL INTERLOCKING TRACK REPEATER CIRCUITS



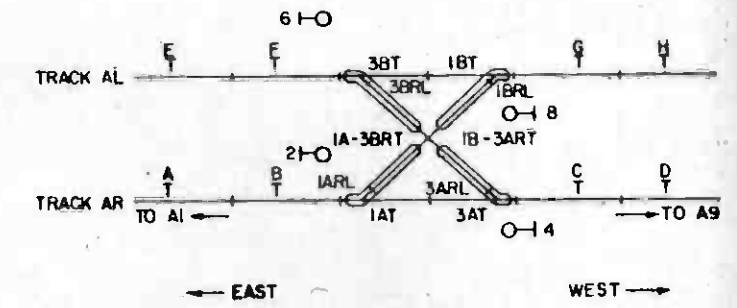
TYPICAL INTERLOCKING LOOP SELECTION CIRCUITS



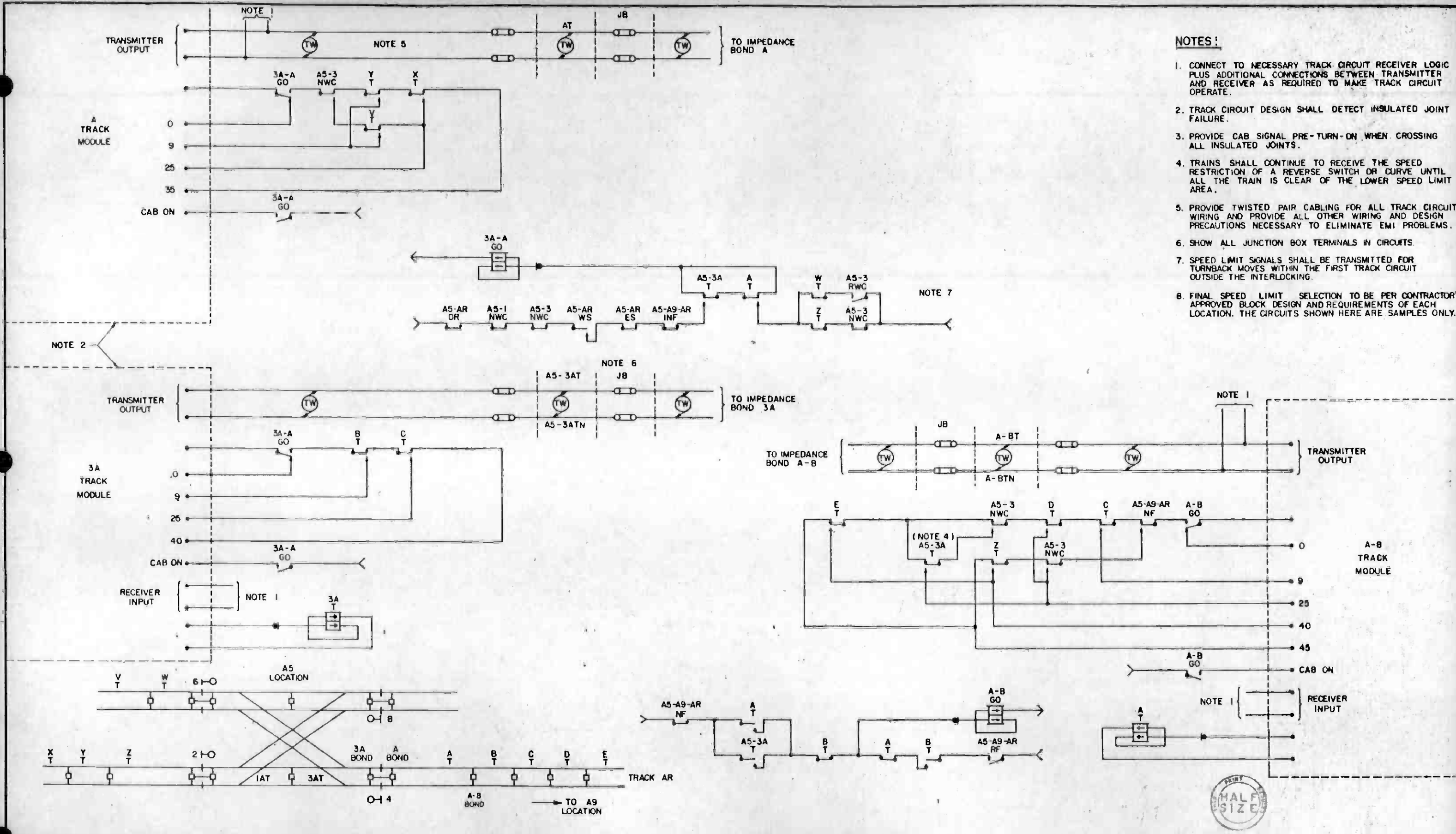
TYPICAL INTERLOCKING LOOP TRANSMITTER CIRCUIT

NOTES:

- INTERLOCKING LOOPS SHALL ONLY TRANSMIT SPEED LIMITS FOR ROUTES OVER SWITCH REVERSE.
- PROVIDE PRE-TURN-ON OF SPEED LIMIT TRANSMISSIONS AT ALL INSULATED JOINTS TO PREVENT MOMENTARY LOSS OF SPEED LIMITS BY VEHICLE.
- PROVIDE AS MANY INTERLOCKING LOOP SPEED LIMIT TRANSMITTER MODULES AS ARE REQUIRED FOR ANY SIMULTANEOUS ROUTES OR SPEED LIMIT TRANSMISSIONS.
- PROVIDE OVERRUN DETECTION FOR EACH TRACK INDEPENDENTLY.

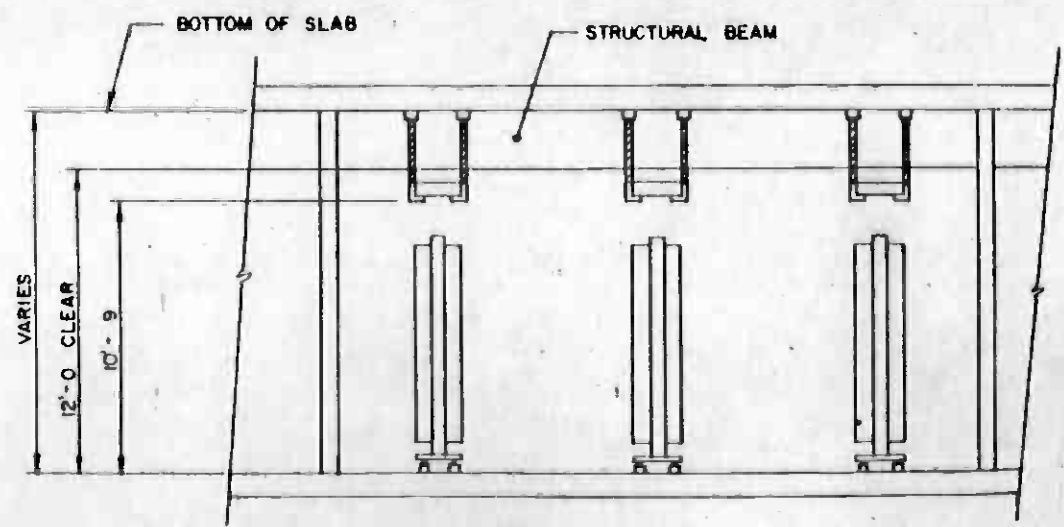
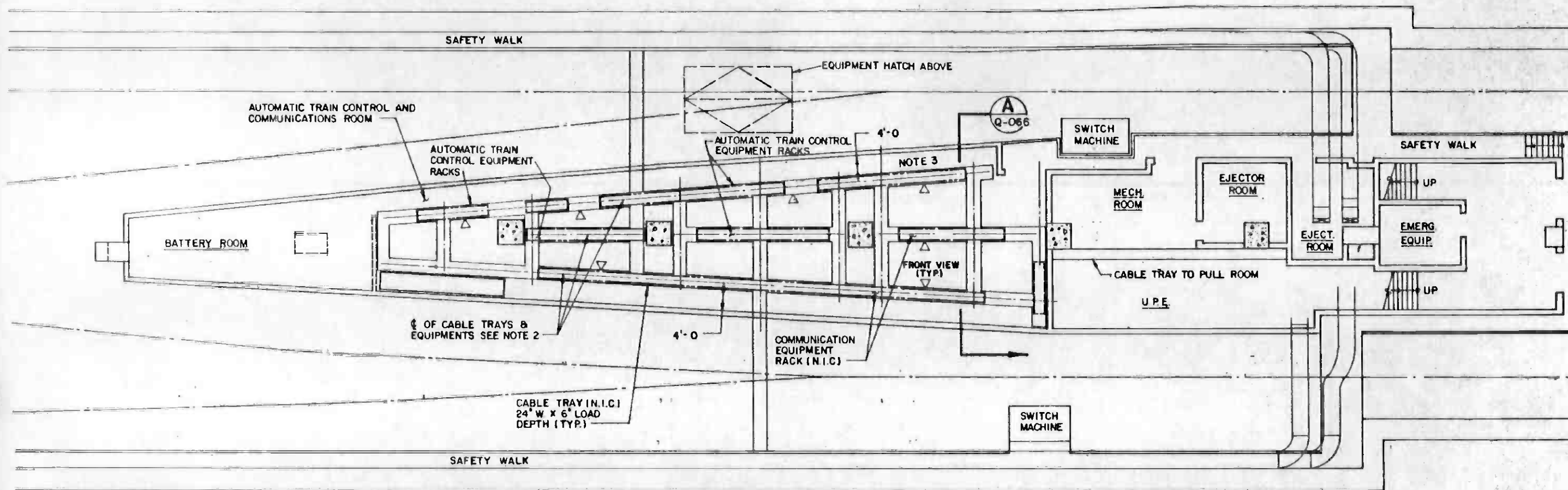


THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DESIGNED BY <i>R. Bussanville</i> DRAWN BY <i>A. Woodbury</i> CHECKED BY <i>M. J. Kelly</i> IN CHARGE <i>M. J. Kelly</i> DATE 17 APR 84	SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT	DMJM/PBOD/KE/HWA GENERAL CONSULTANTS APPROVED <i>[Signature]</i>	CONTRACT NO. A620 DRAWING NO. Q-057 SCALE NO SCALE SHEET NO. 57
REV. DATE BY SUB APP DESCRIPTION	1-1-84 INITIAL ISSUE	17 APR 84	SUBMITTED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	LA CBD TO NORTH HOLLYWOOD AUTOMATIC TRAIN CONTROL TYPICAL INTERLOCKING CIRCUITS



- NOTES!**
1. CONNECT TO NECESSARY TRACK CIRCUIT RECEIVER LOGIC PLUS ADDITIONAL CONNECTIONS BETWEEN TRANSMITTER AND RECEIVER AS REQUIRED TO MAKE TRACK CIRCUIT OPERATE.
 2. TRACK CIRCUIT DESIGN SHALL DETECT INSULATED JOINT FAILURE.
 3. PROVIDE CAB SIGNAL PRE-TURN-ON WHEN CROSSING ALL INSULATED JOINTS.
 4. TRAINS SHALL CONTINUE TO RECEIVE THE SPEED RESTRICTION OF A REVERSE SWITCH OR CURVE UNTIL ALL THE TRAIN IS CLEAR OF THE LOWER SPEED LIMIT AREA.
 5. PROVIDE TWISTED PAIR CABLING FOR ALL TRACK CIRCUIT WIRING AND PROVIDE ALL OTHER WIRING AND DESIGN PRECAUTIONS NECESSARY TO ELIMINATE EMI PROBLEMS.
 6. SHOW ALL JUNCTION BOX TERMINALS IN CIRCUITS.
 7. SPEED LIMIT SIGNALS SHALL BE TRANSMITTED FOR TURNBACK MOVES WITHIN THE FIRST TRACK CIRCUIT OUTSIDE THE INTERLOCKING.
 8. FINAL SPEED LIMIT SELECTION TO BE PER CONTRACTOR'S APPROVED BLOCK DESIGN AND REQUIREMENTS OF EACH LOCATION. THE CIRCUITS SHOWN HERE ARE SAMPLES ONLY.

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY <i>R. Coonville</i> DRAWN BY <i>A. Vachon</i> CHECKED BY <i>W. J. [unclear]</i> IN CHARGE <i>M. S. [unclear]</i> DATE 26 APR 84		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT				CONTRACT NO. A620	
INITIAL ISSUE						DMJM/PBOD/NE/HWA GENERAL CONSULTANTS		LA CBD TO NORTH HOLLYWOOD AUTOMATIC TRAIN CONTROL TYPICAL SPEED LIMIT SELECTION CIRCUITS		DRAWING NO. Q-061	
REV. DATE BY SUB APP DESCRIPTION				APPROVED: <i>Howard [unclear]</i>		SCALE NO SCALE		SHEET NO. 61			



TYPICAL SECTION
NO SCALE

NOTES:

1. CHANGES TO LAYOUT TO BE COORDINATED WITH DISTRICT
2. AUTOMATIC TRAIN CONTROL AND COMMUNICATIONS EQUIPMENT RACKS TO BE LOCATED DIRECTLY UNDER THE 5'-0" CENTER LINE OF THE CABLE TRAY.
3. LOCATE SCADA INTERFACE RACK(S) AS CLOSE TO COMMUNICATIONS EQUIPMENT AS POSSIBLE. FINAL LOCATIONS SHALL BE PER INTERFACE DESIGN.



REV	DATE	BY	SUB	APP	DESCRIPTION

<small>THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.</small>					

DESIGNED BY
[Signature]
CHECKED BY
[Signature]
DATE
27 SEP 84

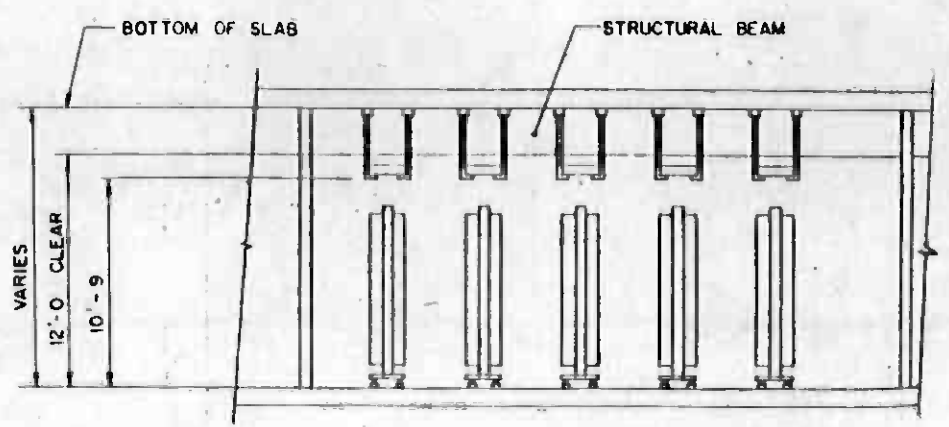
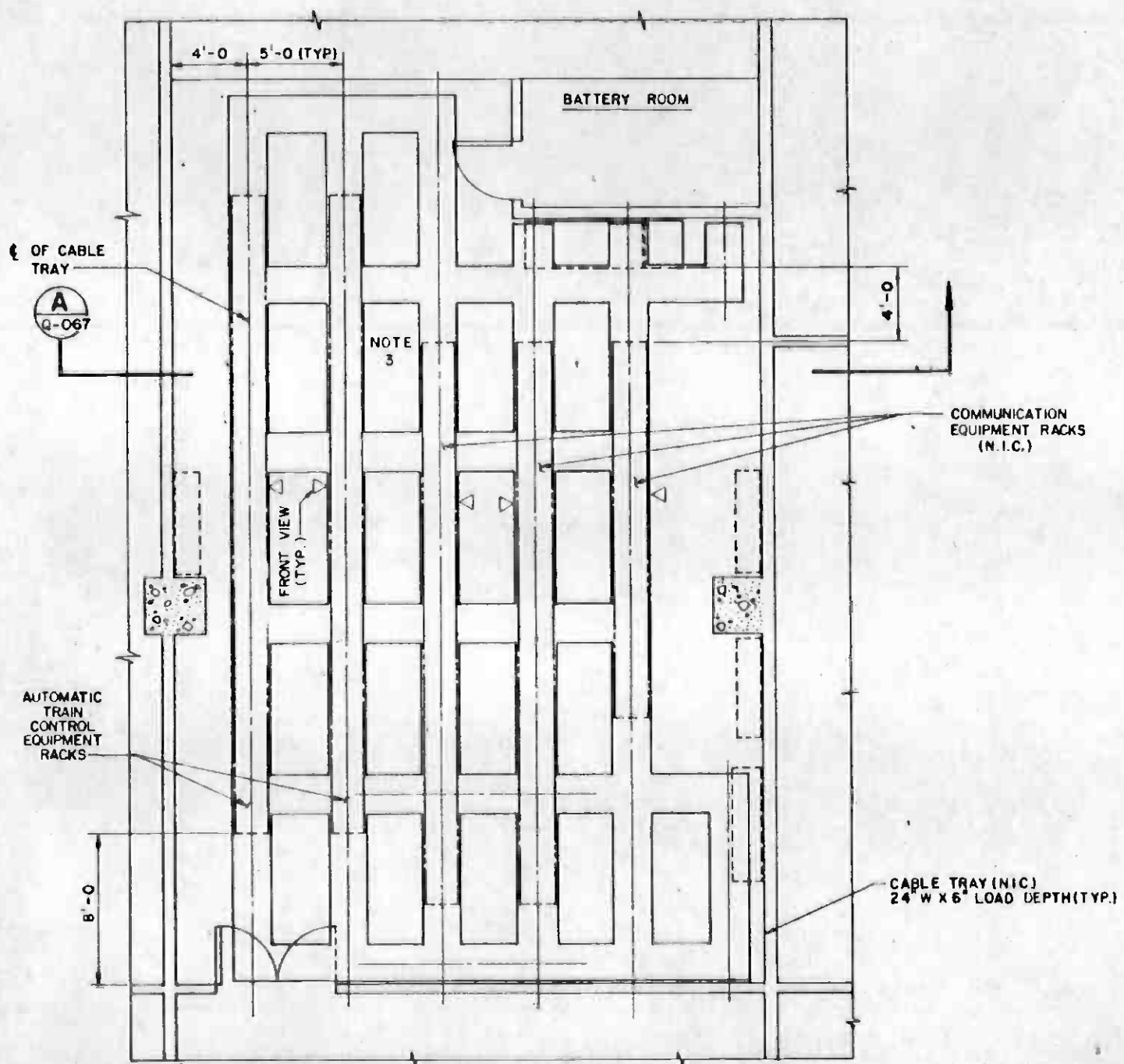
**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

APPROVED *[Signature]*

**LA CBD TO NORTH HOLLYWOOD
AUTOMATIC TRAIN CONTROL
UNION STATION
TC & C ROOM
EQUIPMENT LAYOUT**

CONTRACT NO.	A620
DRAWING NO.	Q-066
SCALE	1/8" = 1'-0"
SHEET NO.	66



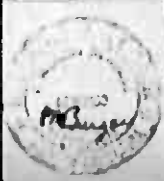
TYPICAL SECTION A
NO SCALE

- NOTES:**
1. CHANGES TO LAYOUT TO BE COORDINATED WITH DISTRICT.
 2. AUTOMATIC TRAIN CONTROL AND COMMUNICATIONS EQUIPMENT RACKS TO BE LOCATED DIRECTLY UNDER THE 5'-0\"/>
 - 3. LOCATE SCADA INTERFACE RACK(S) AS CLOSE TO COMMUNICATIONS EQUIPMENT AS POSSIBLE. FINAL LOCATIONS SHALL BE PER INTERFACE DESIGN.



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY
[Signature]
DRAWN BY
[Signature]
CHECKED BY
[Signature]
IN CHARGE
[Signature]
DATE
28 SEP 84



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT



DMJM/PBQD/KE/HWA
GENERAL CONTRACTORS

APPROVED
[Signature]

LA CBD TO NORTH HOLLYWOOD
**AUTOMATIC TRAIN CONTROL
CIVIC CENTER STATION
TC & C ROOM
EQUIPMENT LAYOUT**

CONTRACT NO.	A620
DRAWING NO.	Q-067
REV.	0
SCALE	1/4" = 1'-0"
SHEET NO.	67

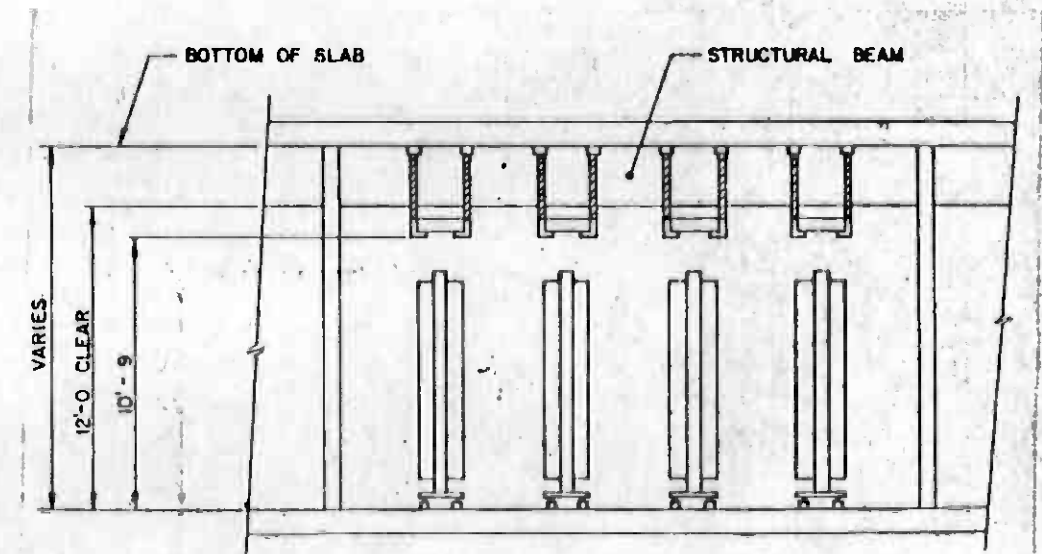
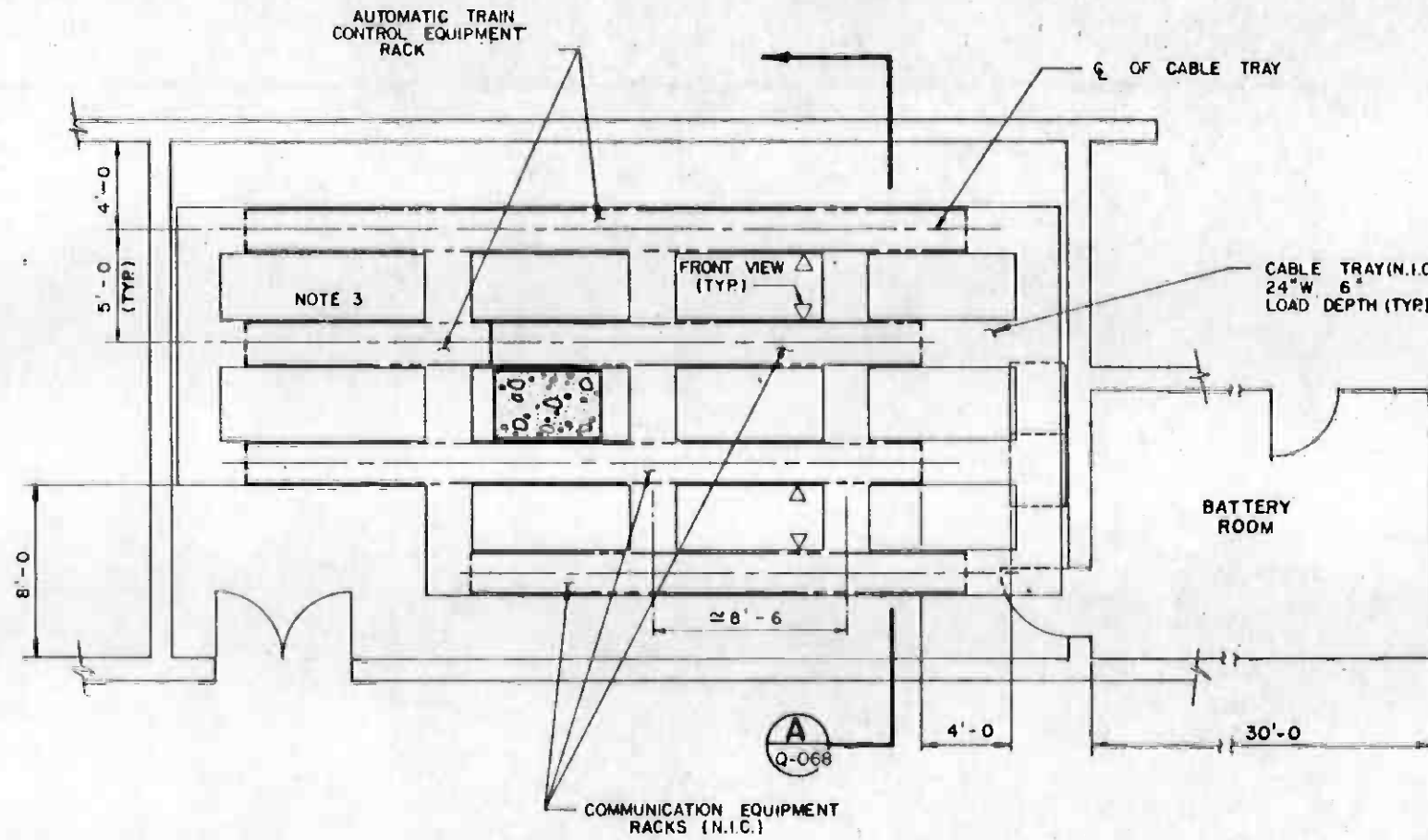
FOOT DRAWINGS 002714

REV.	DATE	BY	SUB.	APP.	DESCRIPTION

REV.	DATE	BY	SUB.	APP.	DESCRIPTION
1	7-1-84	[Signature]			INITIAL ISSUE

NOTES:

1. CHANGES TO LAYOUT TO BE COORDINATED WITH DISTRICT.
2. AUTOMATIC TRAIN CONTROL AND COMMUNICATIONS EQUIPMENT RACKS TO BE LOCATED DIRECTLY UNDER THE 5'-0" CENTERLINE OF THE CABLE TRAY.
3. LOCATE SCADA INTERFACE RACK(S) AS CLOSE TO COMMUNICATIONS EQUIPMENT AS POSSIBLE. FINAL LOCATIONS SHALL BE PER INTERFACE DESIGN.



TYPICAL SECTION

NO SCALE

A
Q-068



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY
[Signature]
DRAWN BY
[Signature]
CHECKED BY
[Signature]
IN CHARGE
[Signature]
DATE
28 SEP 84

**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**



DMJM/PBDD/KE/HWA
GENERAL CONSULTANTS

**LA CBD TO NORTH HOLLYWOOD
AUTOMATIC TRAIN CONTROL
5TH / HILL STATION
TC & C ROOM
EQUIPMENT LAYOUT**

CONTRACT NO. A620
DRAWING NO. Q-068
SCALE 1/4" = 1'-0"
SHEET NO. 68

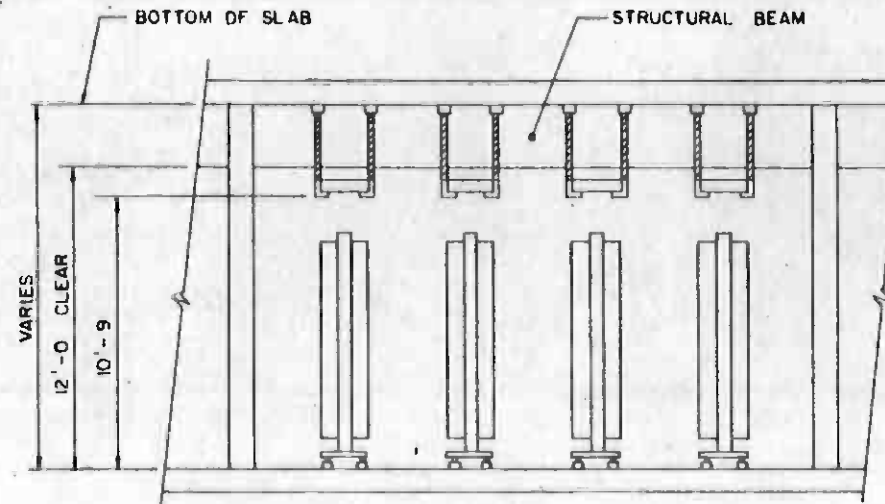
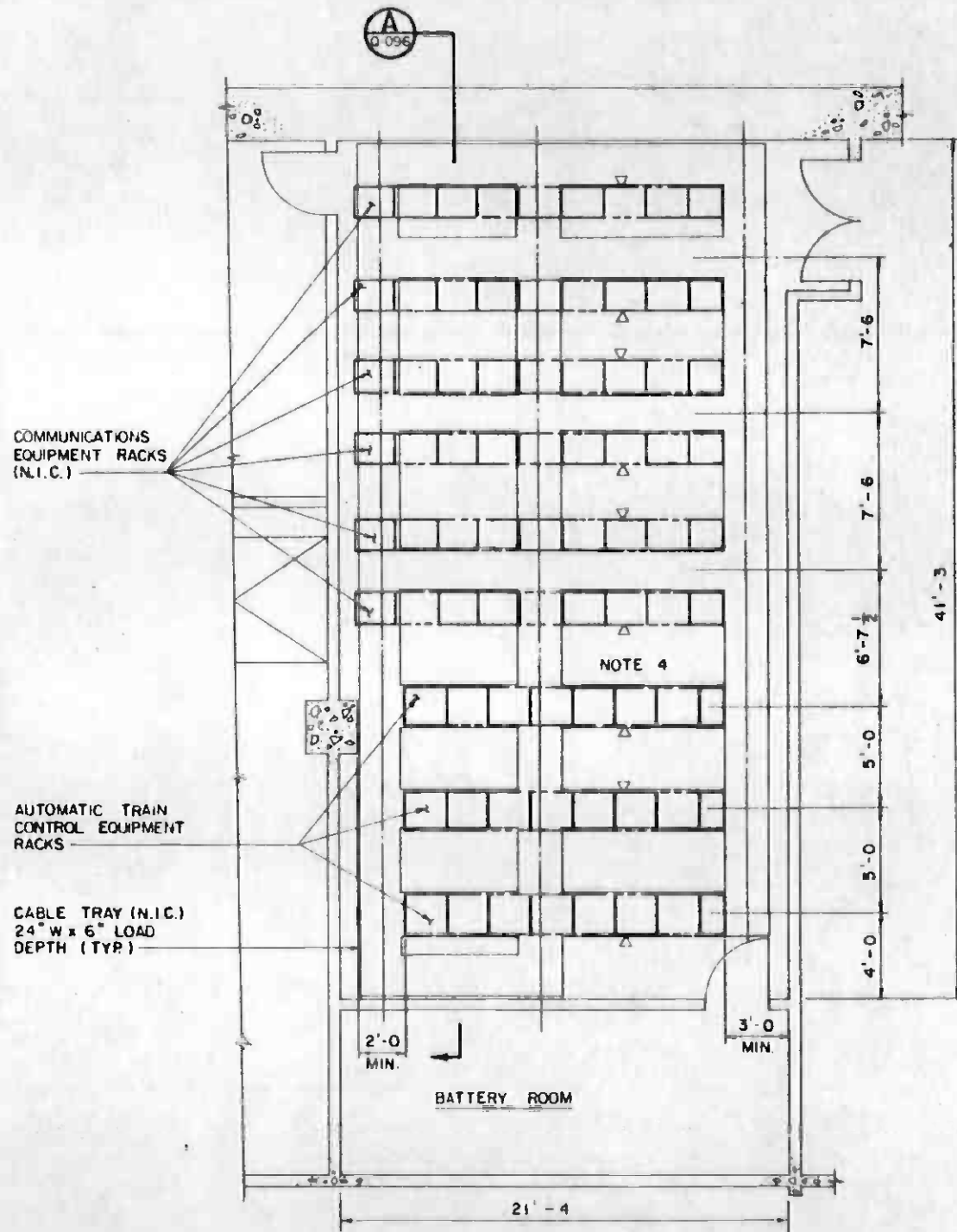
REV.	DATE	BY	SUB.	APP.	DESCRIPTION
1	7-1-84				INITIAL ISSUE

REV.	DATE	BY	SUB.	APP.	DESCRIPTION

PUNCH DIMENSIONS: 11/2017 N

NOTES:

1. CHANGES TO LAYOUT TO BE COORDINATED WITH DISTRICT.
2. AUTOMATIC TRAIN CONTROL EQUIPMENT RACKS SHALL BE LOCATED DIRECTLY UNDER THE CABLE TRAY.
3. ATC & C ROOM CABLE TRAY TO BE INSULATED FROM TRAY HANGARS, INCOMING CONDUITS AND CABLE TRAY FROM WAYSIDE AND PULL ROOM. ALL CABLE TRAY SHALL BE ELECTRICALLY BONDED AND CABLE TRAY SHALL BE GROUNDED AT ONLY ONE POINT TO AUTOMATIC TRAIN CONTROL GROUND BUS.
4. LOCATE SCADA INTERFACE RACK(S) AS CLOSE TO COMMUNICATIONS EQUIPMENT AS POSSIBLE. FINAL LOCATIONS SHALL BE PER INTERFACE DESIGN.



TYPICAL SECTION A
NO SCALE



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY
[Signature]
DRAWN BY
[Signature]
CHECKED BY
[Signature]
DATE
05-11-87



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT



DMJM/PBOD/KE/MWA
GENERAL CONSULTANTS

LA CBD TO NORTH HOLLYWOOD
AUTOMATIC TRAIN CONTROL
7TH / FLOWER STATION
TC & C ROOM
EQUIPMENT LAYOUT

CONTRACT NO.	A620
DRAWING NO.	Q-069
SCALE	1/4" = 1'-0"
SHEET NO.	69

REV	DATE	BY	SUB	APP	DESCRIPTION

REV	DATE	BY	SUB	APP	DESCRIPTION

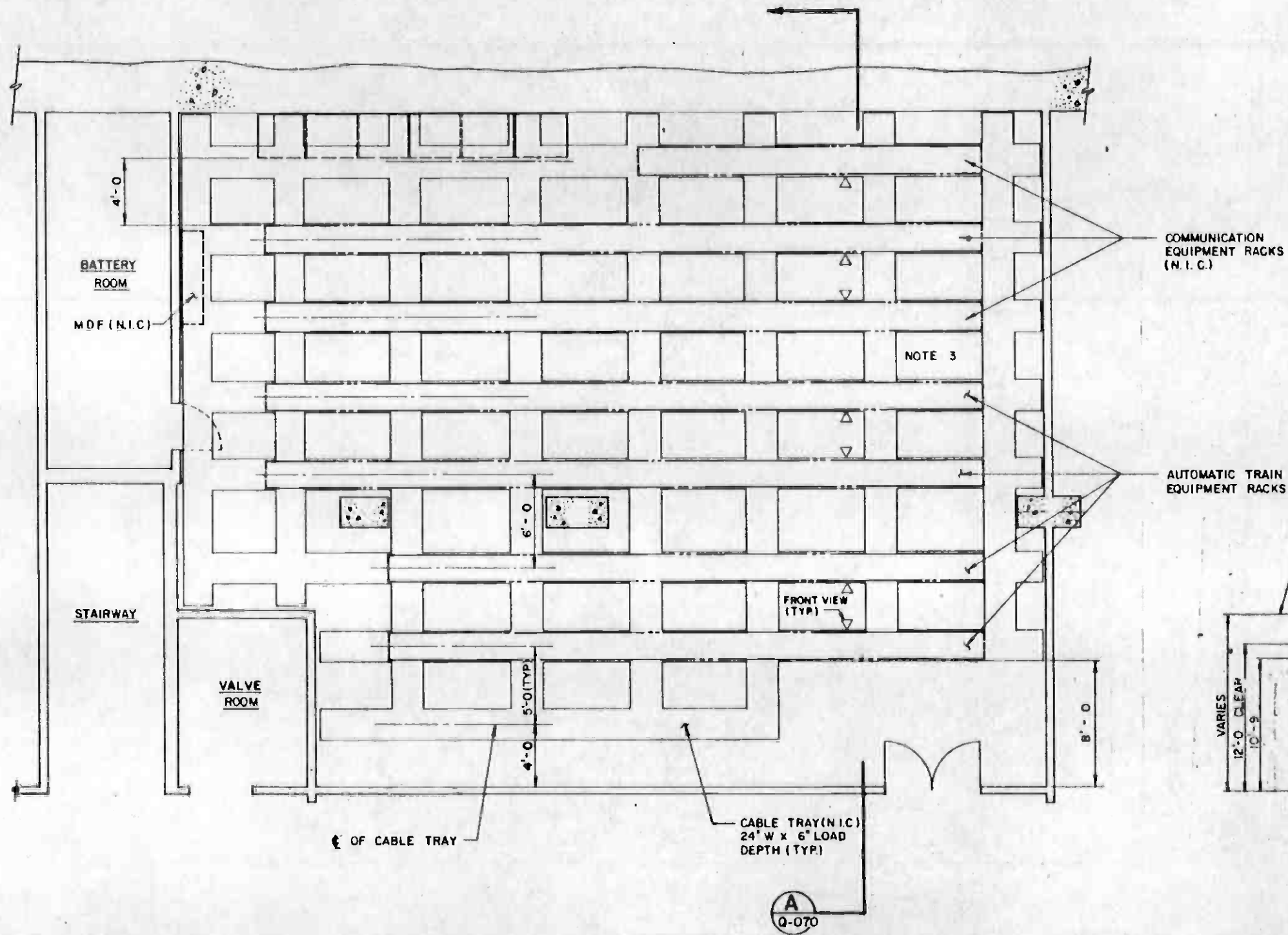
SUBMITTED *[Signature]*

APPROVED *[Signature]*

INITIAL ISSUE

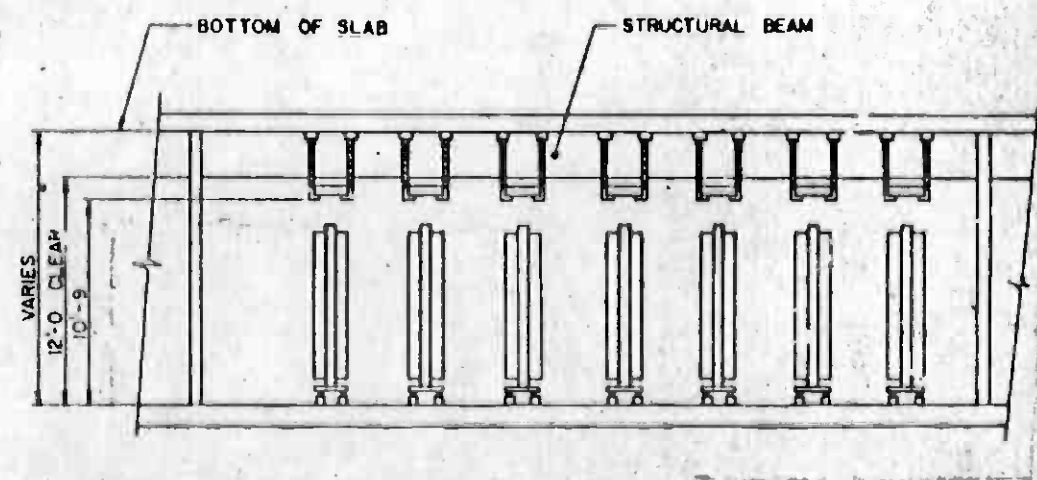
NOTES:

1. CHANGES TO LAYOUT TO BE COORDINATED WITH DISTRICT.
2. AUTOMATIC TRAIN CONTROL AND COMMUNICATIONS EQUIPMENT RACKS TO BE LOCATED DIRECTLY UNDER THE 5'-0" CENTER LINE OF THE CABLE TRAY.
3. LOCATE SCADA INTERFACE RACK(S) AS CLOSE TO COMMUNICATIONS EQUIPMENT AS POSSIBLE FINAL LOCATIONS SHALL BE PER INTERFACE DESIGN.



COMMUNICATION EQUIPMENT RACKS (N.I.C.)

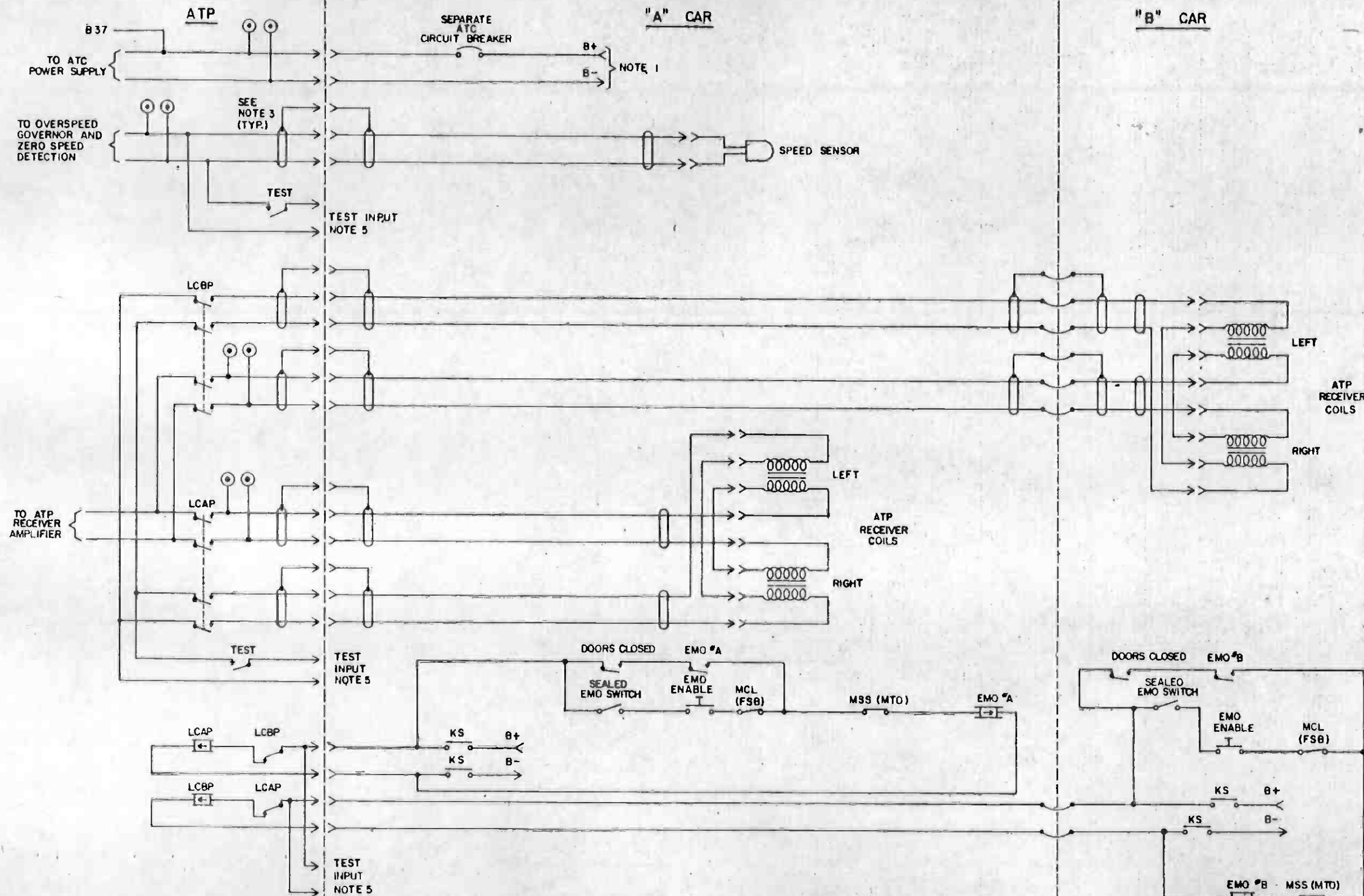
AUTOMATIC TRAIN CONTROL EQUIPMENT RACKS



TYPICAL SECTION A
NO SCALE



<p>THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND BY THE STATE OF CALIFORNIA</p>				<p>SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT</p>				<p>LA CBD TO NORTH HOLLYWOOD AUTOMATIC TRAIN CONTROL WILSHIRE /ALVARADO STATION TC & C ROOM EQUIPMENT LAYOUT</p>				<p>CONTRACT NO. A620 DRAWING NO. Q-070 SCALE 1/4" = 1'-0" SHEET NO. 70</p>			
REV.	DATE	BY	APP.	DESCRIPTION	REV.	DATE	BY	APP.	DESCRIPTION	<p>DESIGNED BY: [Signature] CHECKED BY: [Signature] DATE: 27 SEP 84</p>		<p>DMJM/PBOD/KE/HWA GENERAL CONSULTANTS</p>		<p>APPROVED: [Signature]</p>	
				INITIAL ISSUE						<p>HALF SIZE</p>					

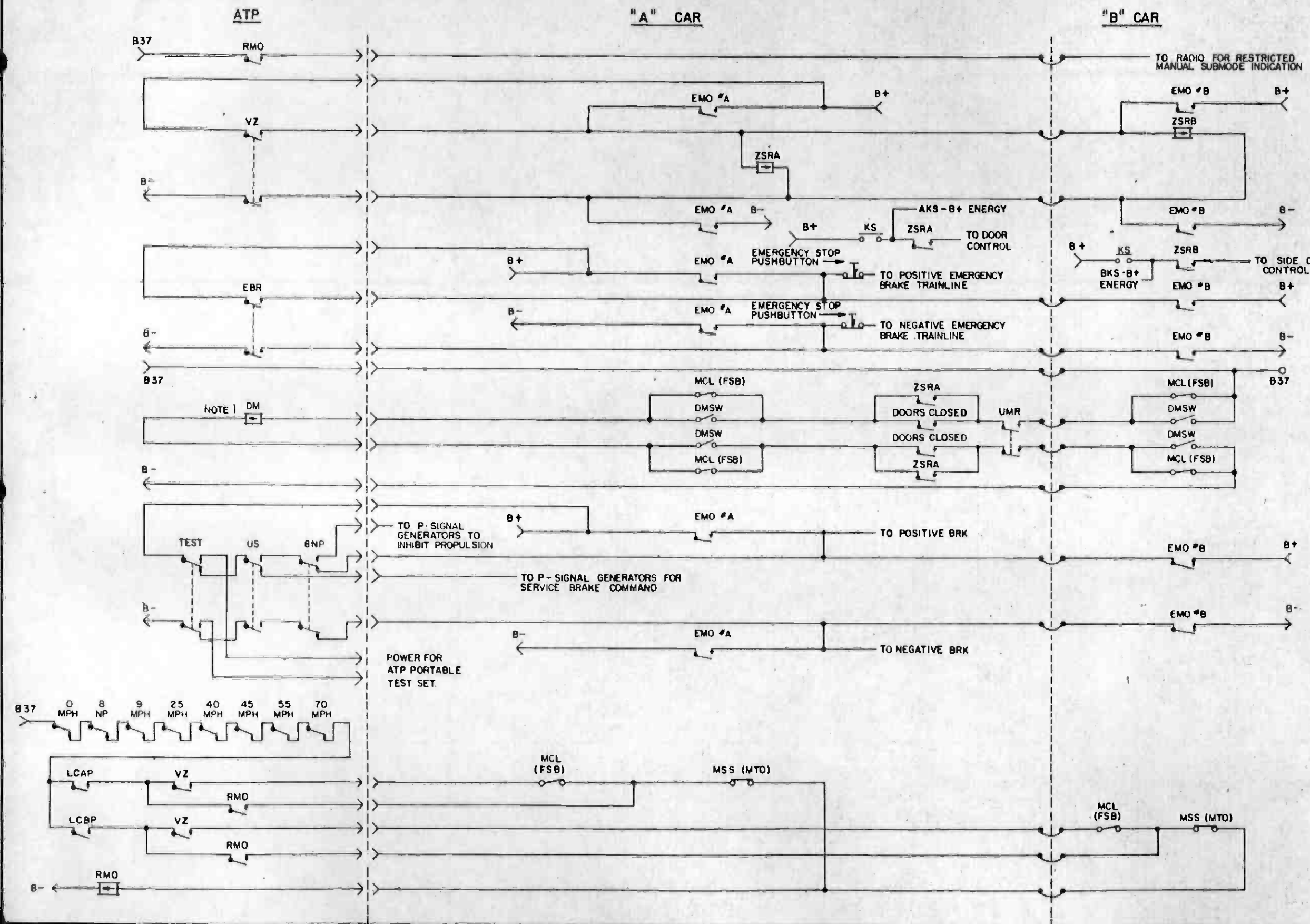


- SYMBOLS:**
- TWISTED PAIR CABLE
 - VITAL RELAY
 - NONVITAL RELAY
 - PUSH-ON, PULL-OFF PUSHBUTTON
 - MOMENTARY SWITCH
 - DOUBLE BREAK SWITCH CONTACT
 - SINGLE BREAK SWITCH CONTACT
 - ANTENNA OR RECEIVER COIL
 - TEST POINT
 - CONTACT OF RELAY CLOSED WHEN ENERGIZED
 - CONTACT OF RELAY CLOSED WHEN DE-ENERGIZED
 - AUDIBLE ALARM
 - CONSOLE INDICATING LIGHT (W) WHITE, (G) GREEN, (A) AMBER, (R) RED
- ATC** AUTOMATIC TRAIN OPERATION
ATP AUTOMATIC TRAIN PROTECTION
BRK MODE ASSURANCE TRAINLINE
EBR EMERGENCY BRAKE RELAY
EMO EMERGENCY MANUAL OPERATION
FSB FULL SERVICE BRAKE POSITION
DMSW DEAD MAN SWITCH
KS KEY SWITCH
US UNDER SPEED RELAY
LCAP LEAD CAR "A" REPEATER
LCBP LEAD CAR "B" REPEATER
MCL MANUAL CONTROLLER
MCBP MANUAL CONTROLLER BRAKE POSITION
MSS MODE SELECTION SWITCH
MTO MANUAL TRAIN OPERATION
OSA OVERSPEED ALARM
RMO RESTRICTED MANUAL OPERATION
VZ VELOCITY ZERO RELAY
ZSR ZERO SPEED RELAY
DM DEAD MAN RELAY
UMR UNINTENTIONAL MOVEMENT RELAY

- NOTES:**
1. THESE CIRCUITS ARE BASED ON THE B- CONNECTED TO THE CAR BODY AND THE B+ TO BATTERY TO PREVENT SHORTS TO CAR BODY FROM CAUSING UNSAFE CONDITIONS. POLARITY REVERSAL REQUIRES CIRCUIT ALTERATIONS.
 2. ALL CONTACTS IN THESE CIRCUITS SHOWN WITH RELAYS DE-ENERGIZED.
 3. ATC CONTRACTOR TO GROUND ALL SHIELDS.
 4. ALL ITEMS SHOWN ON "A"-CAR AND "B"-CAR, EXCEPT ATP RECEIVER COILS, ARE VEHICLE CONTRACTOR FURNISHED.
 5. CONNECTOR FOR ATP PORTABLE TEST SET. PROVIDE ADDITIONAL TEST POINTS, TEST INPUTS, OR PARALLEL CONNECTIONS TO THESE INTERFACE CIRCUITS AS NECESSARY TO ACHIEVE THE REQUIRED TEST FUNCTIONS.



		THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DESIGNED BY <i>R. Beardsville</i> DRAWN BY <i>Ad. Garcia</i> CHECKED BY <i>Ad. Garcia</i> IN CHARGE <i>Charles Bell</i> DATE 2 APR 84		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT 		LA CBD TO NORTH HOLLYWOOD AUTOMATIC TRAIN CONTROL PASSENGER VEHICLE INTERFACE SHEET 1 OF 3		CONTRACT NO. A620 DRAWING NO. Q-087 SCALE NO SCALE SHEET NO. 87	
REV. DATE BY SUB APP DESCRIPTION		REV. DATE BY SUB APP DESCRIPTION		INITIAL ISSUE		SUBMITTED <i>PMBurgess</i>		APPROVED <i>Howard J. Kelly</i>			



NOTES:
 1. DM INITIATES BRAKE ASSURANCE FUNCTION WHEN THE DEADMAN SWITCH IS RELEASED, DOORS OPEN WITH TRAIN MOVING, OR ROLLBACK DETECTED. DM RELAY MAY BE REPLACED BY CIRCUITRY THAT SERVES THE SAME PURPOSE.



REV	DATE	BY	SUB	APP	DESCRIPTION

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7-1-84
 INITIAL ISSUE

APPROVED BY: *R. Woodard*
 DRAWN BY: *R. Woodard*
 CHECKED BY: *[Signature]*
 IN CHARGE: *[Signature]*
 DATE: 9 APR 84

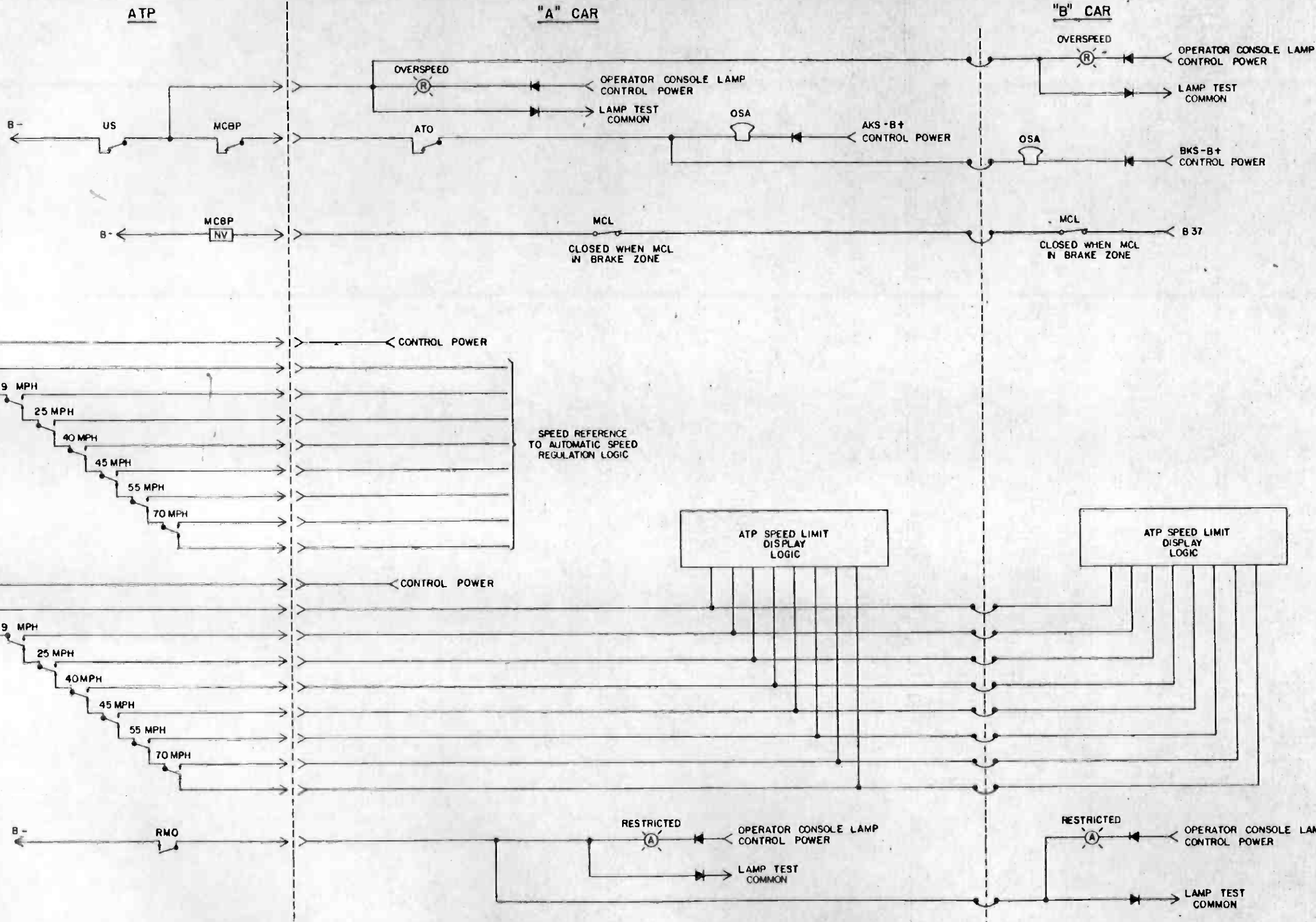
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT

DMJM/PBGD/KE/HWA
 GENERAL CONSULTANTS

APPROVED: *[Signature]*

LA CBD TO NORTH HOLLYWOOD
 AUTOMATIC TRAIN CONTROL
 PASSENGER VEHICLE
 INTERFACE
 SHEET 2 OF 3

CONTRACT NO.	A620
DRAWING NO.	0-088
REV.	0
SCALE	NO SCALE
SHEET NO.	88



REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

1-1-B *MB* INITIAL ISSUE

REV. DATE BY SUB APP DESCRIPTION

DESIGNED BY *A. Bredwell*

DRAWN BY *A. Bredwell*

CHECKED BY *D. Long*

IN CHARGE *Mohab & Pelt*

DATE 10 APR 84

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

APPROVED *Samuel J. Clabiff*

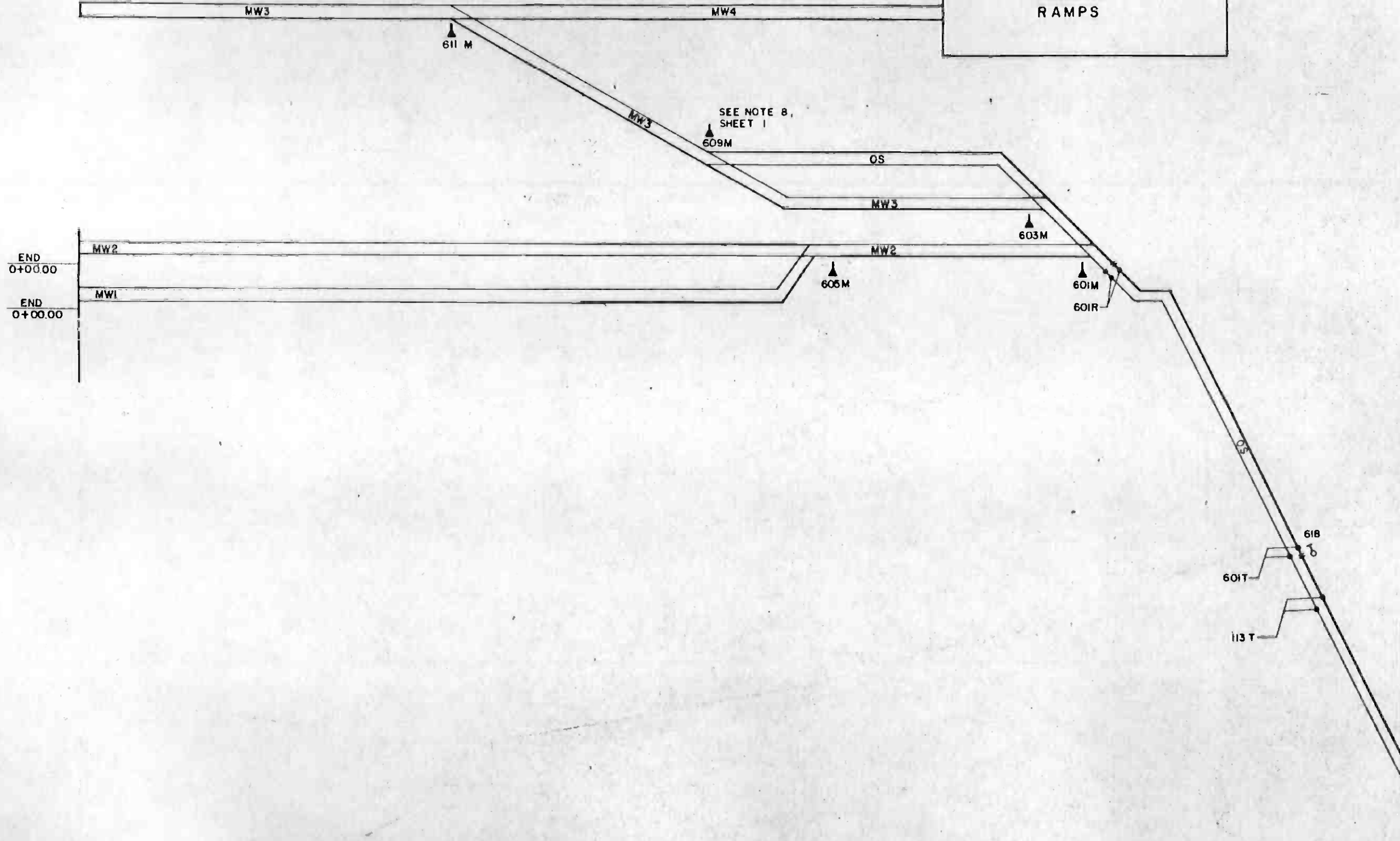
SUBMITTED *PMBurgess*

LA CBD TO NORTH HOLLYWOOD
AUTOMATIC TRAIN CONTROL
PASSENGER VEHICLE
INTERFACE
SHEET 3 OF 3

CONTRACT NO. A620	REV. 0
DRAWING NO. Q-089	
SCALE NO SCALE	
SHEET NO. 89	

MAINTENANCE -OF-WAY BUILDING

LOADING RAMP



MATCH LINE:
Y-1, DWG. Q-091



REV.	DATE	BY	CHK	APP.	DESCRIPTION

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DESIGNED BY: *[Signature]*
 DRAWN BY: *[Signature]*
 CHECKED BY: *[Signature]*
 IN CHARGE: *[Signature]*
 DATE: 12 SEP 84

7/1/84
 INITIAL ISSUE



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT

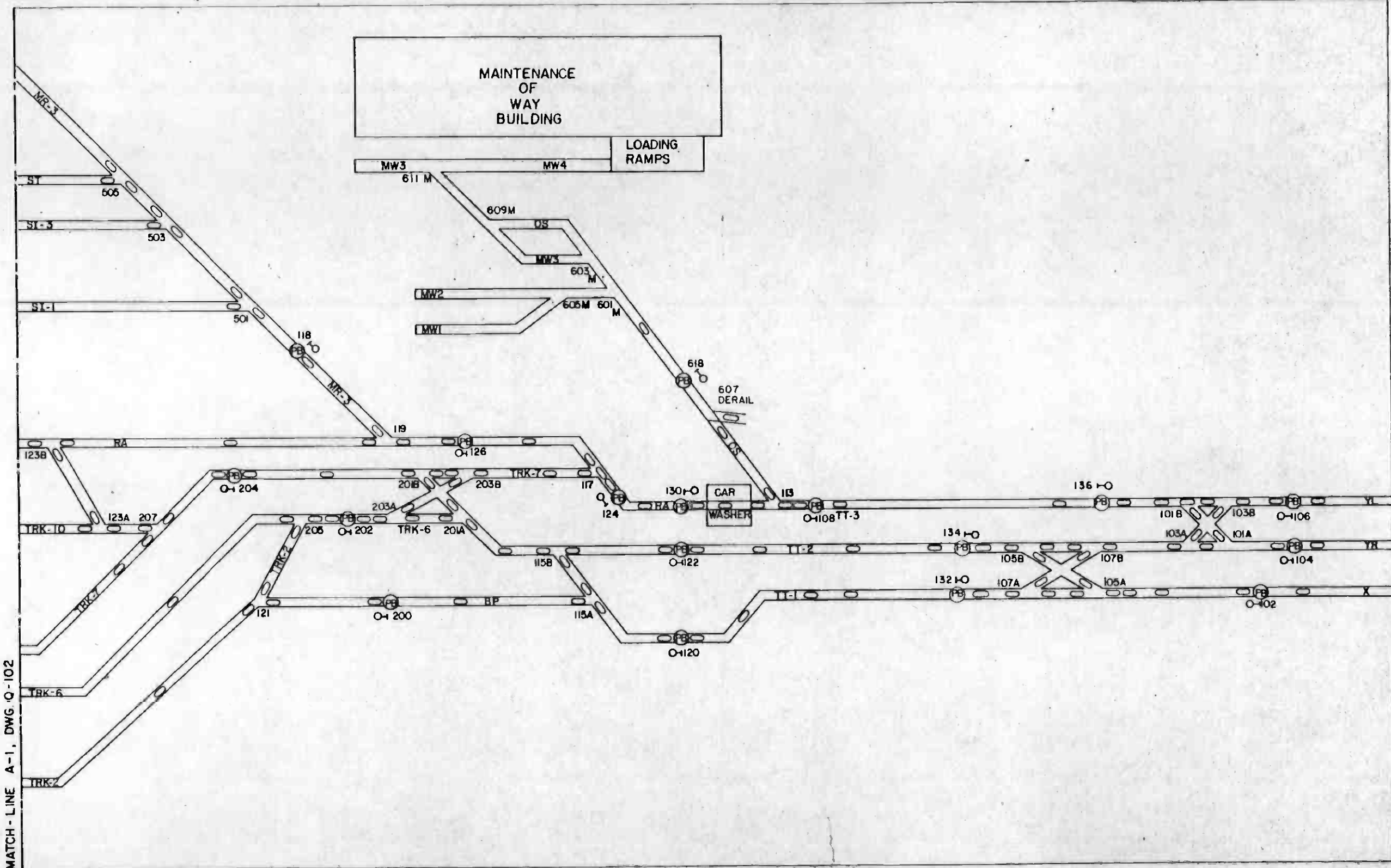
DMJM/PBOD/KE/HWA
 GENERAL CONSULTANTS

APPROVED: *[Signature]*



LA CBD TO NORTH HOLLYWOOD
 AUTOMATIC TRAIN CONTROL
 YARD SCHEMATIC
 SHEET 2 OF 4

CONTRACT NO.	A620
DRAWING NO.	Q-092
SCALE	NO SCALE
SHEET NO.	92



- NOTES:**
1. THIS DRAWING SHALL BE USED FOR REFERENCE ONLY. CONTROLS, INDICATIONS, AND TRACK DIAGRAM ARE SHOWN FOR DEFINITION AND RELATIVE POSITIONING. FINAL DESIGN AND DRAWINGS SHALL REFLECT PANEL ORIENTATION AND COMPOSITE CONTROL CONSOLE IN ACCORDANCE WITH DRAWINGS Q-112, Q-113, AND Q-114.
 2. : RED/WHITE LINE-OF-LIGHT INDICATIONS.
 3. : RED/GREEN SIGNAL INDICATIONS.
 4. : PUSH/PULL SPRING RETURN-TO-CENTER PUSHBUTTON.



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY
 DRAWN BY
 CHECKED BY
 IN CHARGE
 DATE
 5 JUL 85



**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT**



DMJM/PBOD/KE/HWA
 GENERAL CONSULTANTS

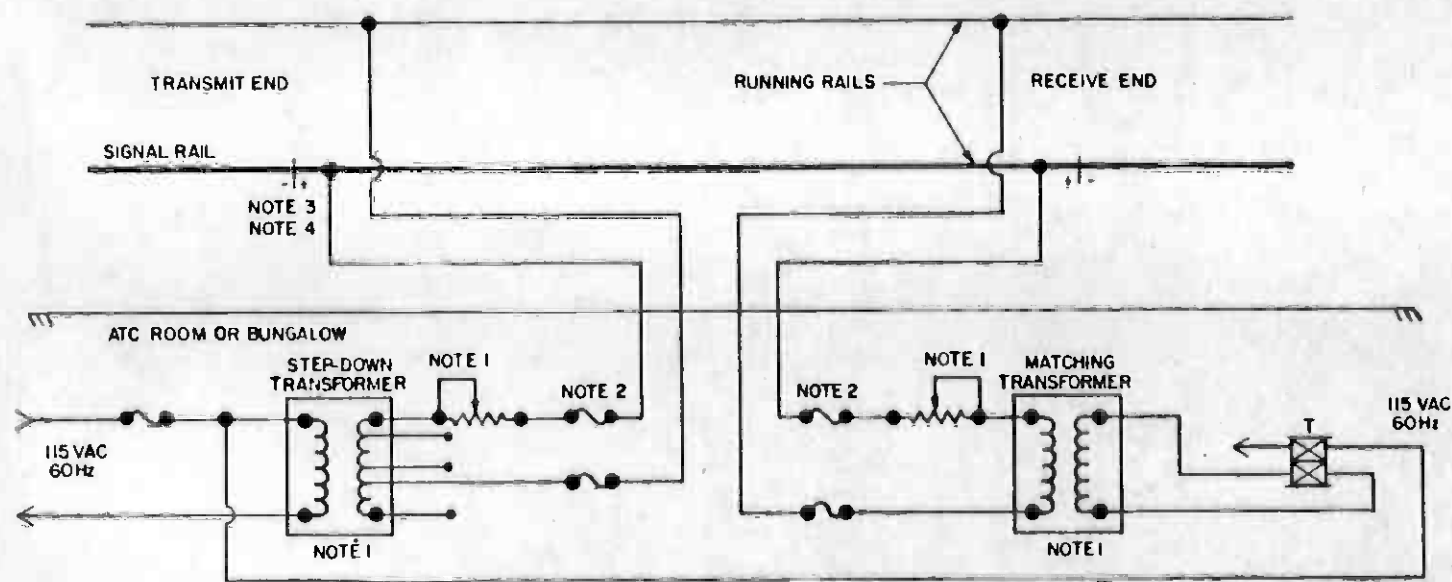
**LA CBD TO NORTH HOLLYWOOD
 AUTOMATIC TRAIN CONTROL
 YARD CONTROL CONSOLE
 PANEL FACE DETAIL**

CONTRACT NO.	A-620
DRAWING NO.	Q-101
REV.	0
SCALE	NO SCALE
SHEET NO.	101

REV.	DATE	BY	APP.	DESCRIPTION
1	7-1-85			INITIAL ISSUE

NOTES:

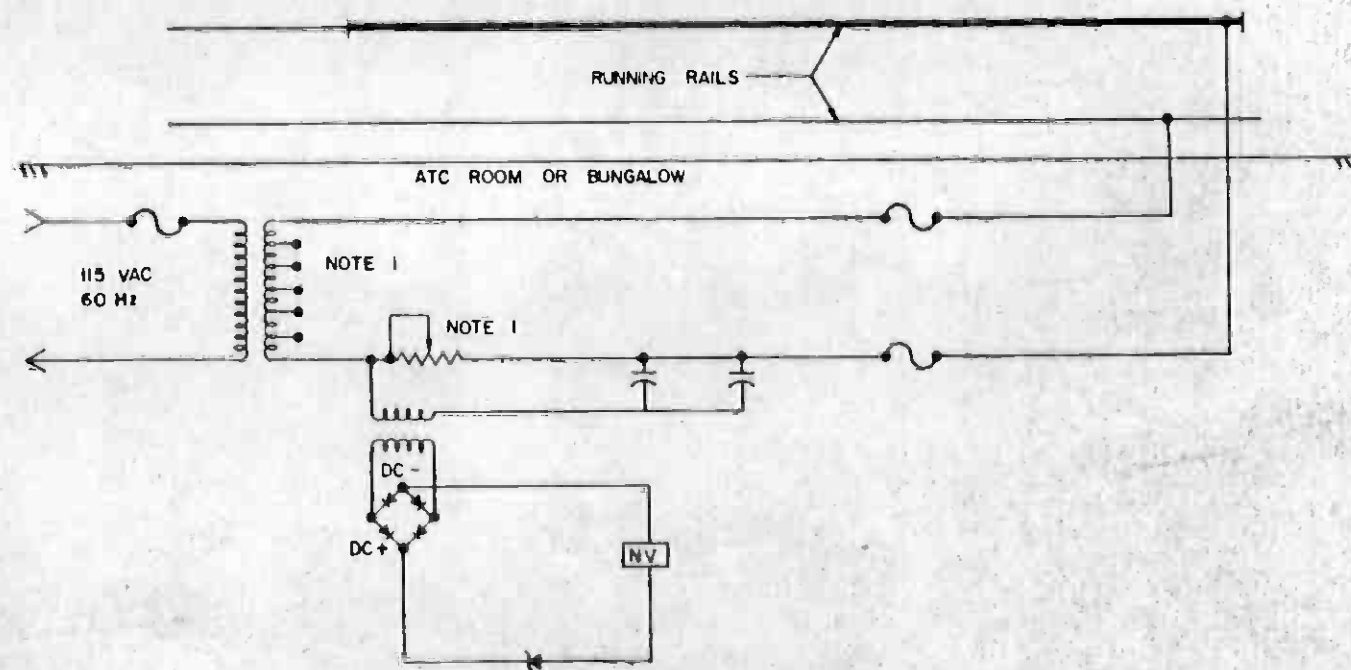
- 1. VARIABLE, FIXED TAPS
- 2. 600V RATED FUSE
- 3. PHASING FOR BROKEN-DOWN INSULATED JOINT DETECTION
- 4. INSULATED JOINTS PROVIDED BY OTHERS



TYPICAL VITAL PWR FREQUENCY

NOTES:

- 1. VARIABLE, FIXED TAPS.
- 2. INSULATED JOINTS PROVIDED BY OTHERS.
- 3. FOR USE IN YARD STORAGE TRACKS.



TYPICAL INDICATING



REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA

REV	DATE	BY	SUB	APP	DESCRIPTION

DESIGNED BY
 DRAWN BY
 CHECKED BY
 IN CHARGE
 DATE
 11 SEPT 84



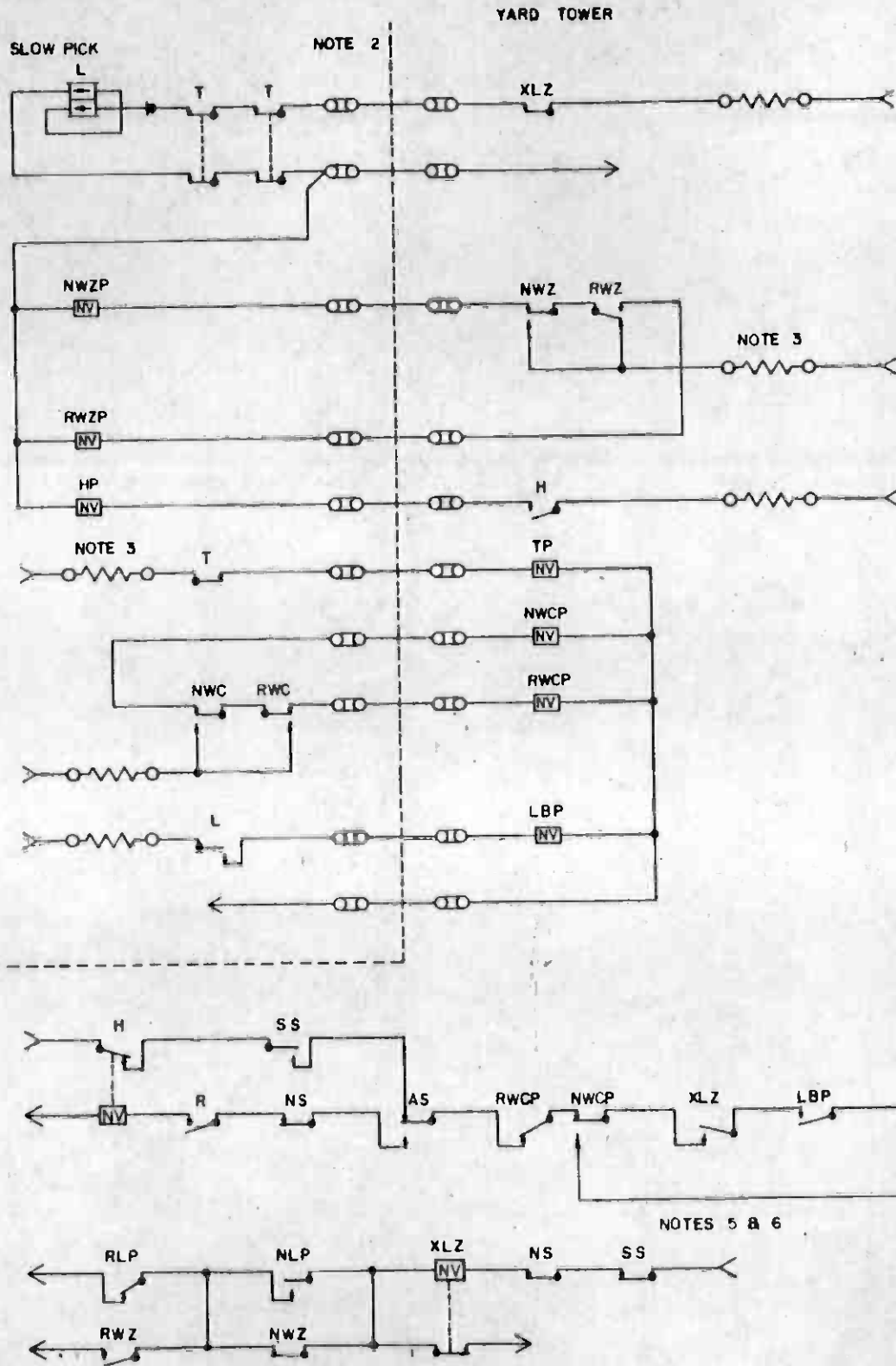
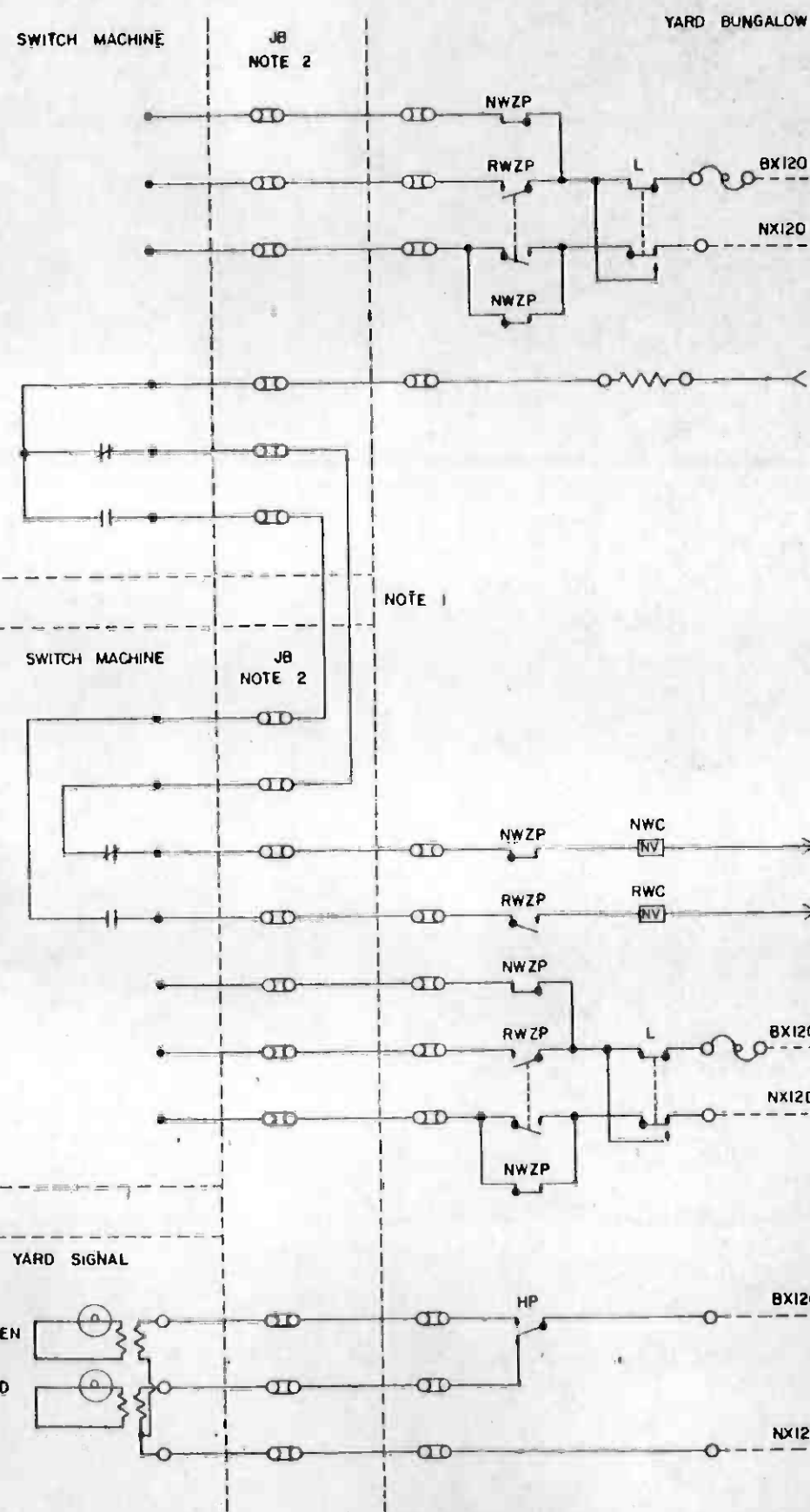
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT

DMJM/PBQD/KE/HWA
 GENERAL CONSULTANTS

SUBMITTED *PMBurgess*
 APPROVED *Howard J. Halliff*

LA CBD TO NORTH HOLLYWOOD
 AUTOMATIC TRAIN CONTROL
 TYPICAL POWER FREQUENCY
 TRACK CIRCUITS

CONTRACT NO.	A620
DRAWING NO.	Q-104
SCALE	NO SCALE
SHEET NO.	104



- NOTES:**
1. PROVIDE CAPABILITY TO DETERMINE SWITCH POSITION BY USING A VOLTMETER AT ENTRANCE RACK IN EQUIPMENT ROOM.
 2. SHOW ALL JUNCTION BOXES ASSOCIATED WITH EACH CIRCUIT.
 3. PROVIDE RESISTORS IN ALL LINE-CIRCUIT FEEDS.
 4. PROVIDE LOGIC AS NECESSARY TO DETECT TRACK OCCUPANCY WITHIN ALL FOULING POINTS OF THE INTERLOCKING.
 5. PROVIDE LOGIC NETWORKS NECESSARY FOR INTERLOCKING CONTROL, INCLUDING ENTRANCE/EXIT ROUTE PROCESSING, AUXILIARY SWITCH CONTROL, SWITCH CONTROL AND CORRESPONDENCE, ROUTE CHECK, SIGNAL CLEARING, SWITCH LOCKING, TIME LOCKING, AND ROUTE LOCKING.
 6. PROVIDE SEQUENTIAL RELEASE OF ROUTE LOCKING IN YARD INTERLOCKINGS. RELEASE SWITCH MACHINE LOCKING BEHIND THE TRAIN AS TRACK CIRCUIT OCCUPANCY CONFIRMS TRAIN HAS CLEARED SWITCH AREA.



REV.	DATE	BY	SUB.	APP.	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY: *[Signature]*
 CHECKED BY: *[Signature]*
 IN CHARGE: *[Signature]*
 DATE: 29 AUG 84

INITIAL ISSUE

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

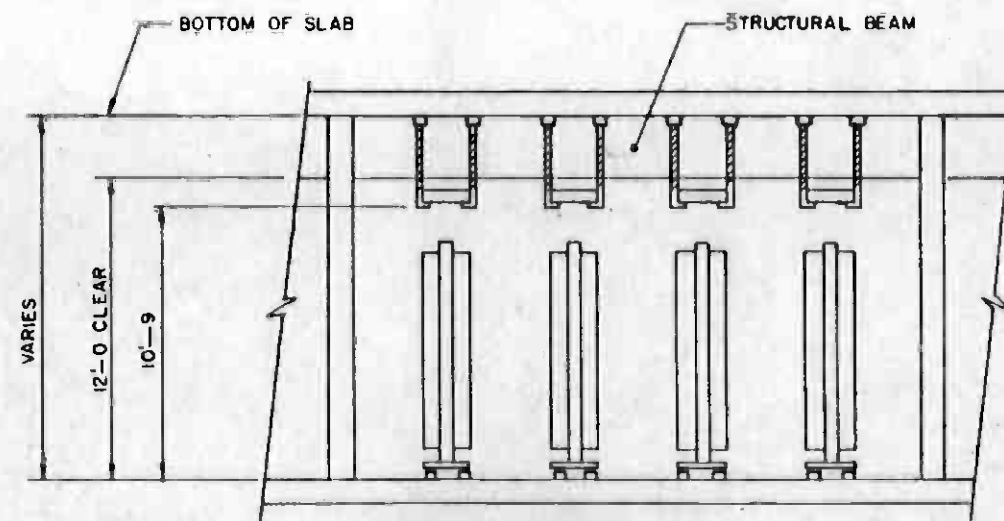
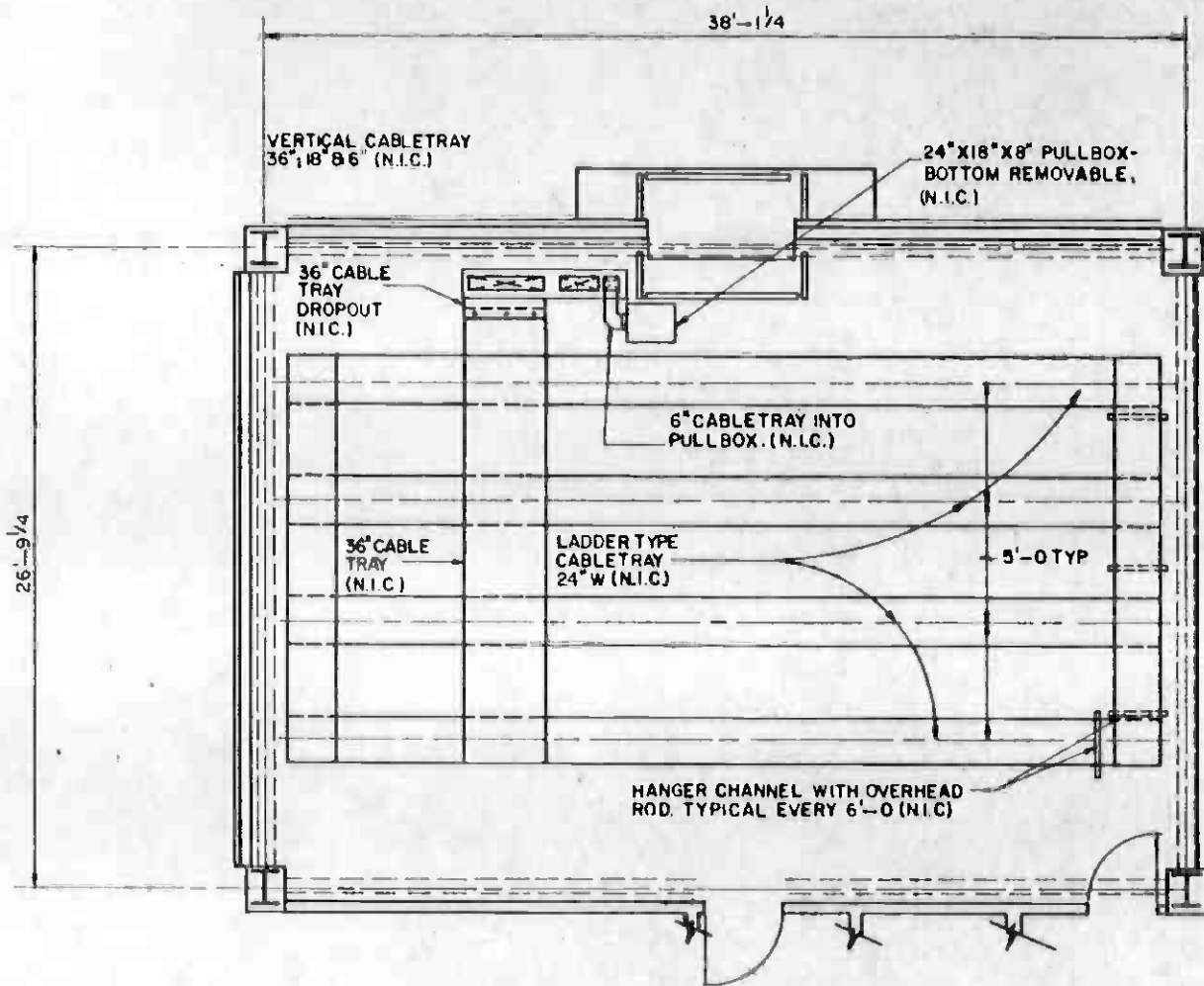
DMJM/PBQD/KE/HWA
 GENERAL CONTRACTORS

APPROVED: *[Signature]*

LA CBD TO NORTH HOLLYWOOD
 AUTOMATIC TRAIN CONTROL
 TYPICAL YARD CIRCUITS

CONTRACT NO. A620
 DRAWING NO. Q-105
 SCALE: NO SCALE
 SHEET NO. 105





TYPICAL SECTION
NO SCALE



REV.	DATE	BY	SUB.	APP.	DESCRIPTION

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7-1-85

INITIAL ISSUE

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE

24 SEP 85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

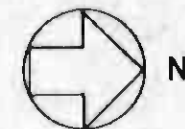
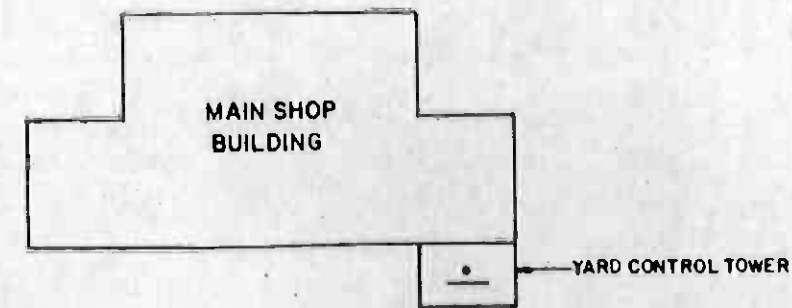
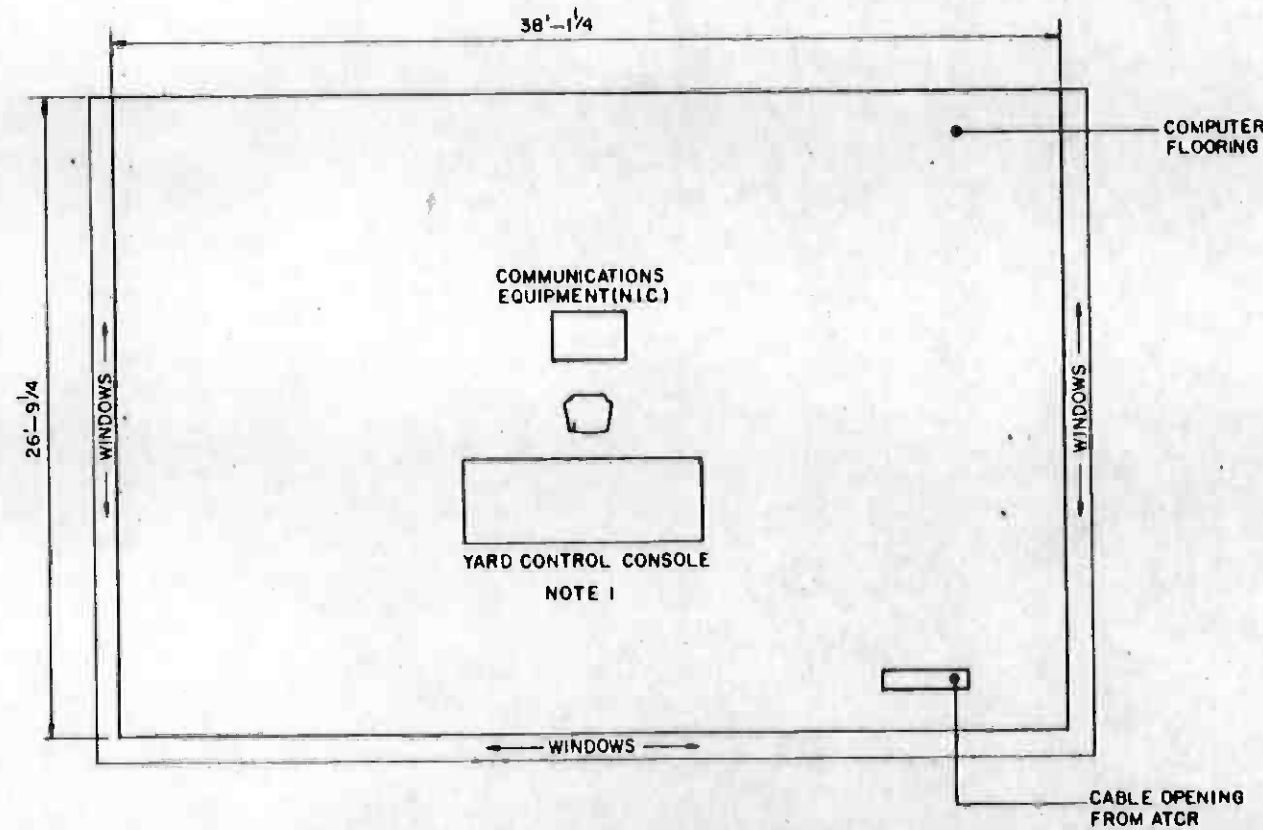
APPROVED

LA CBD TO NORTH HOLLYWOOD
AUTOMATIC TRAIN CONTROL
YCT ATC EQUIPMENT
ROOM LAYOUT

CONTRACT NO. A620
DRAWING NO. Q-111
SCALE NONE
SHEET NO. 111

NOTES

1. FOR DETAILS ON YARD CONTROL CONSOLE SEE DRAWINGS Q-101, Q-102, Q-113, AND Q-114.



REV.	DATE	BY	CHKD.	APP.	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY *[Signature]*
 DRAWN BY *[Signature]*
 CHECKED BY *[Signature]*
 IN CHARGE *[Signature]*
 DATE 20 SEP 85

INITIAL ISSUE

20 SEP 85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

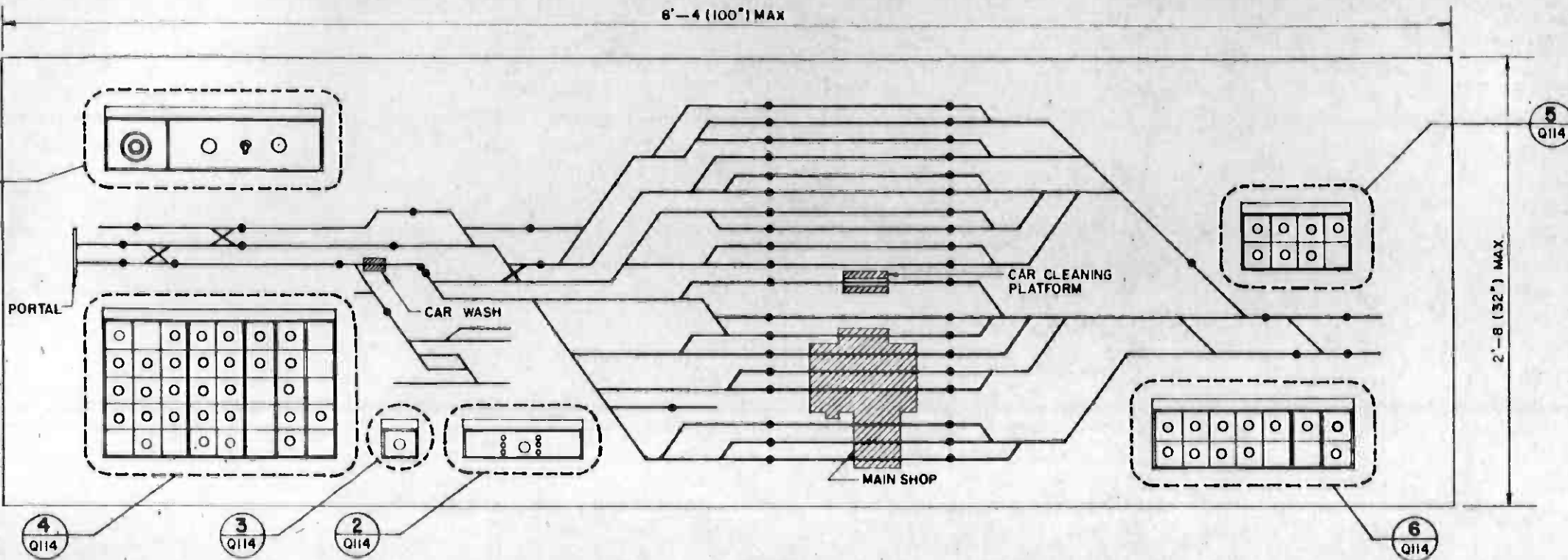
DMJM/PBQD/KE/HWA
 GENERAL CONSULTANTS

APPROVED *[Signature]*

LA CBD TO NORTH HOLLYWOOD
 AUTOMATIC TRAIN CONTROL
 YARD CONTROL ROOM
 LAYOUT

CONTRACT NO.	A620
DRAWING NO.	Q-112
SCALE	NONE
SHEET NO.	112

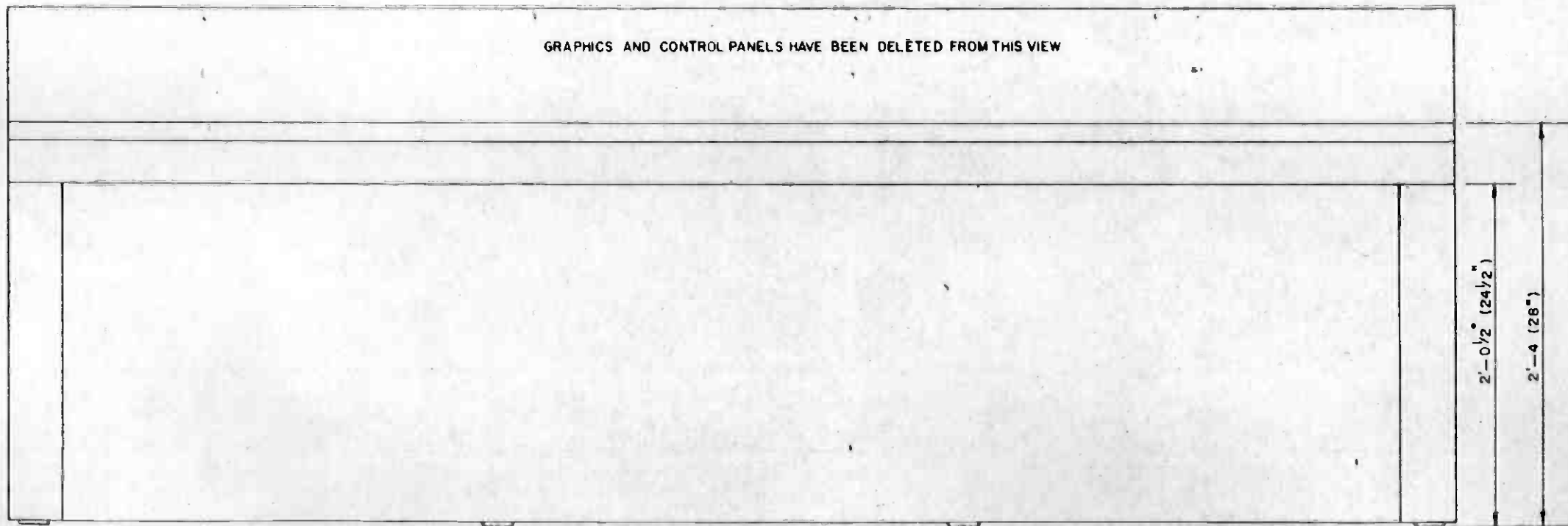
6'-4 (100") MAX



AUXILIARY ELEVATION (TRUE PLAN VIEW)

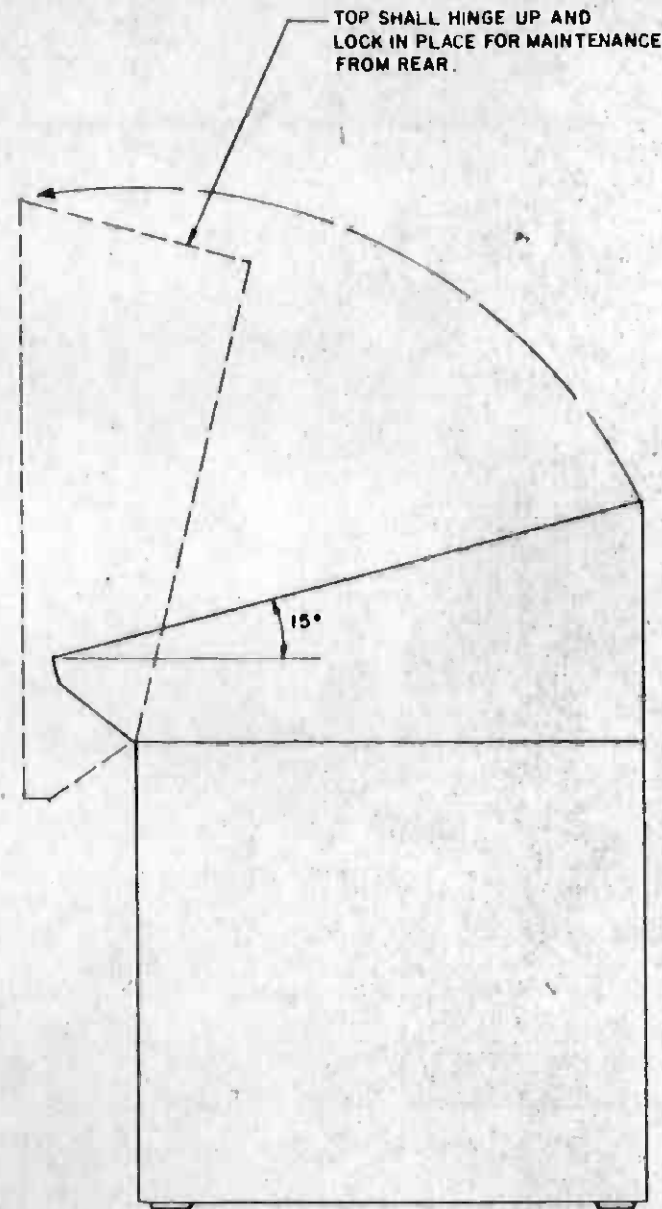
A Q113

GRAPHICS AND CONTROL PANELS HAVE BEEN DELETED FROM THIS VIEW



FRONT VIEW

B Q113



END VIEW

C Q113

HALF SIZE

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY
[Signature]

DRAWN BY
[Signature]

CHECKED BY
[Signature]

IN CHARGE
[Signature]

DATE
25 SEP 85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT



DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

SUBMITTER *[Signature]*

APPROVED *[Signature]*

LA CBD TO NORTH HOLLYWOOD
AUTOMATIC TRAIN CONTROL
YARD CONTROL CONSOLE

CONTRACT NO. A620

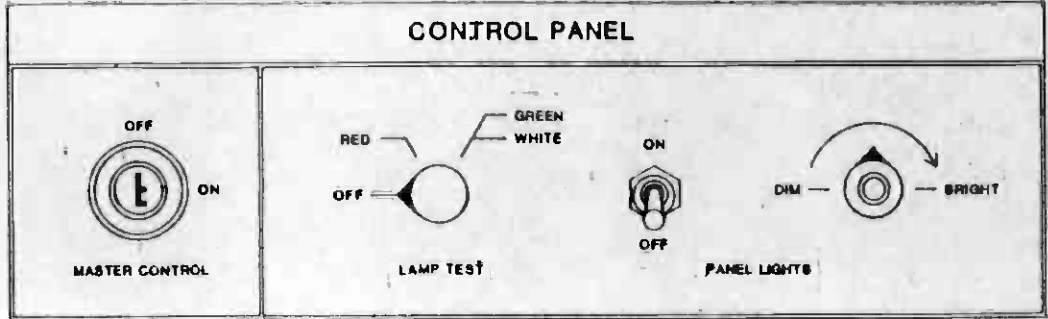
DRAWING NO. Q-113

SCALE NONE

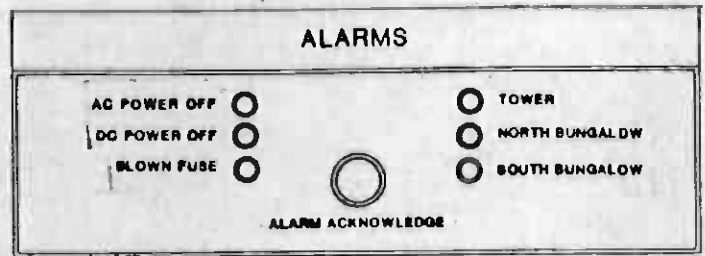
SHEET NO. 113

REV.	DATE	BY	SUB.	APP.	DESCRIPTION

7-1-81
INITIAL ISSUE



DETAIL 1
Q113



DETAIL 2
Q113



DETAIL 3
Q113

AUXILIARY SWITCH CONTROL

N R		N R	N R	N R	N R	N R	
101		121	201	211	401	501	
N R	N R	N R	N R	N R	N R	N R	
103	113	123	203	213	403	503	
N R	N R	N R	N R	N R		N R	
105	115	125	205	215		505	
N R	N R	N R	N R	N R		N R	N R
107	117	127	207	217		507	607 DERAIL
	N R		N R	N R		N R	
	119		209	219		509	

DETAIL 4
Q113

- ### KEY
- KEY SWITCH
 - 3-POSITION ROTARY SWITCH
 - RHEOSTAT
 - MOMENTARY PUSHBUTTON
 - MOMENTARY ROTARY SWITCH

AUXILIARY SWITCH CONTROL

N R	N R	N R	N R
129	131	133	135
N R	N R	N R	
137	139	141	

DETAIL 5
Q113

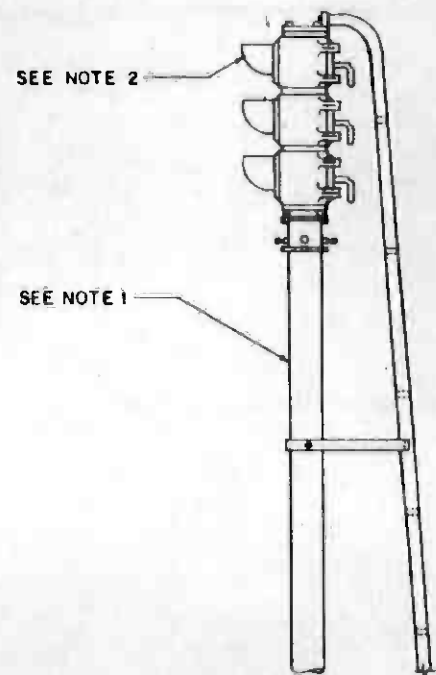
AUXILIARY SWITCH CONTROL

N R	N R	N R	N R	N R	N R	N R
221	223	225	227	229	405	511
N R	N R	N R	N R			N R
231	233	235	237			513

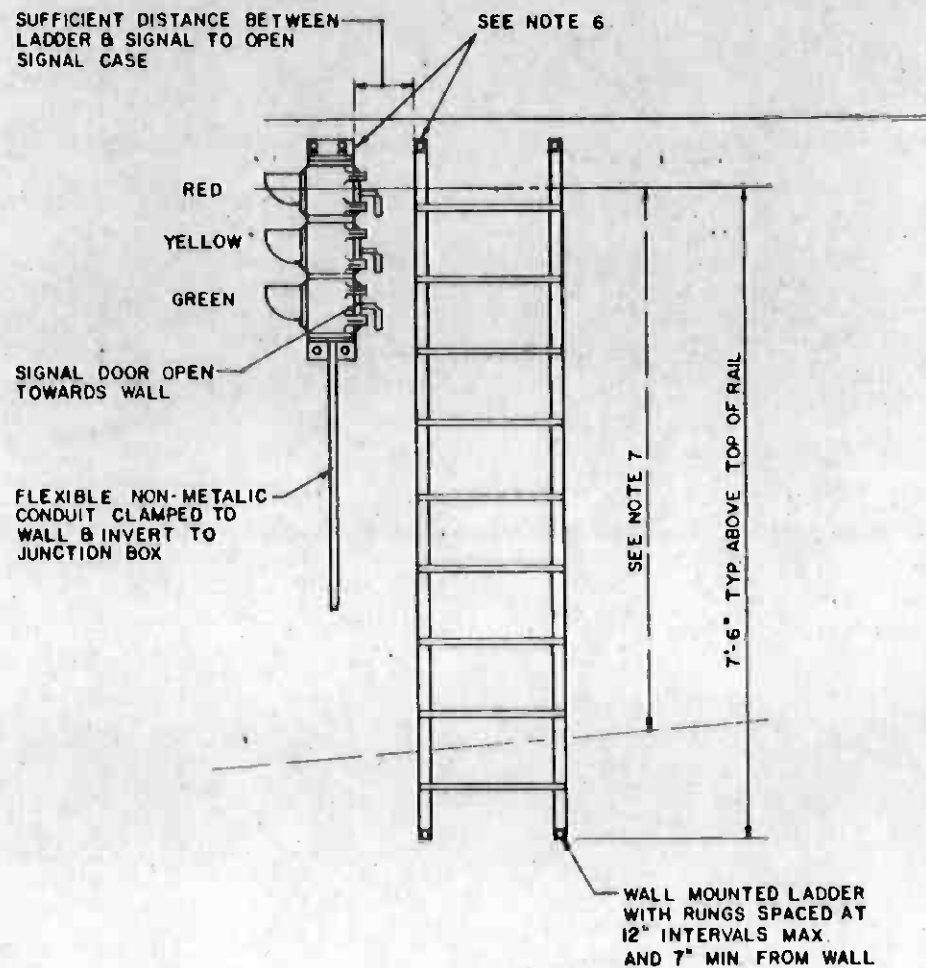
DETAIL 6
Q113



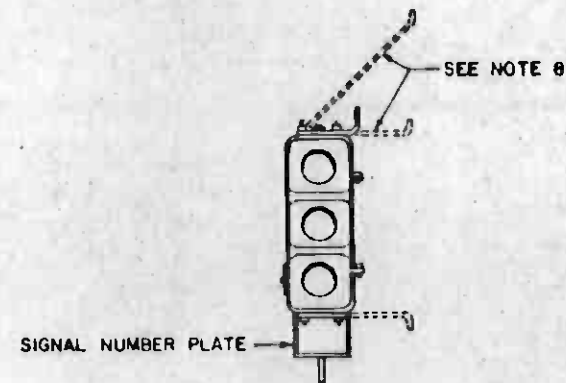
	THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.	DESIGNED BY <i>Prater</i> DRAWN BY <i>Prater</i> CHECKED BY <i>William</i> IN CHARGE <i>Match Field</i> DATE 24 SEP 85		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT DMJM/PBOD/KE/HWA GENERAL COORDINATOR APPROVED <i>[Signature]</i>	LA CBD TO NORTH HOLLYWOOD AUTOMATIC TRAIN CONTROL YARD CONTROL CONSOLE CONTROL DETAILS	CONTRACT NO. A620 DRAWING NO. Q-114 SCALE NONE SHEET NO. 114
REV. DATE BY SUB APP DESCRIPTION	REV. DATE BY SUB APP DESCRIPTION	INITIAL ISSUE 7-1-85				



MAST MOUNTED



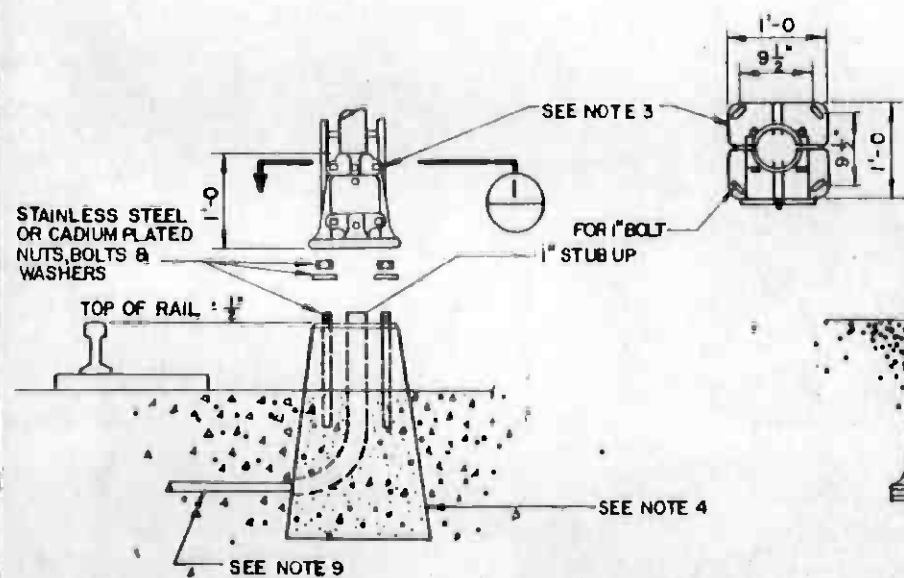
WALL MOUNTED UNIT



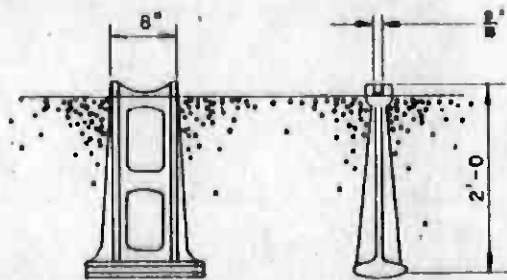
WALL-MOUNTED BRACKET

NOTES:

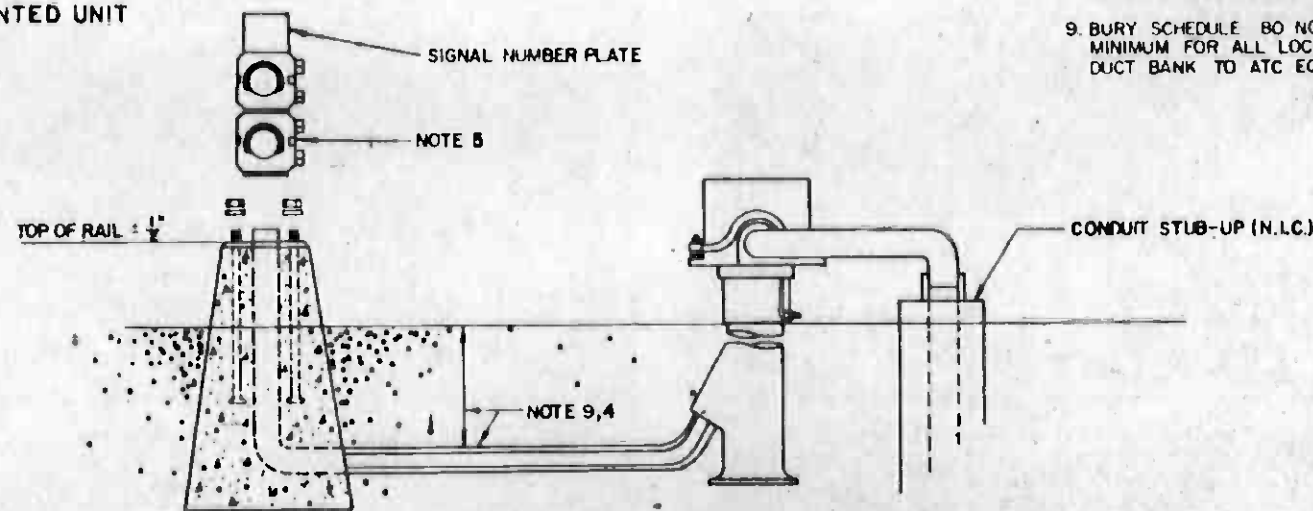
1. PROVIDE ALUMINUM POLES FOR MOUNTING SIGNALS WHEREVER REQUIRED.
2. PHANKIL SHALL BE ADJUSTED AS NECESSARY FOR VISIBILITY.
3. PROVIDE SPLIT BASE JUNCTION BOX FOR ALL POLE MOUNTED SIGNALS.
4. ALL INSTALLATION METHODS SHALL KEEP BALLAST CLEAN.
5. GROUND ALL SIGNAL HEADS. SUPPLY GROUND RODS OR CABLES AS NECESSARY.
6. FASTEN SIGNAL EQUIPMENT TO CONCRETE WITH $\frac{3}{8}$ " MINIMUM BOLTS EPOXIED INTO CONCRETE.
7. ADJUST SIGNAL HEIGHT AS NECESSARY TO PROVIDE VEHICLE AND WALKWAY CLEARANCES.
8. PROVIDE SPECIAL BRACKETS WHERE NECESSARY TO ACHIEVE 600 FT SITING DISTANCE.
9. BURY SCHEDULE 80 NON-METALLIC CONDUIT 18 INCHES MINIMUM FOR ALL LOCAL CABLE CONNECTIONS FROM DUCT BANK TO ATC EQUIPMENT IN BALLAST AREAS.



BASE FOR BALLAST POLE SIGNAL



LADDER FOUNDATION FOR BALLAST SIGNAL



DWARF SIGNAL AND FOUNDATION

BALLAST JUNCTION BOX LAYOUT



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE
5 JUL 85

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT



DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

LA CBD TO NORTH HOLLYWOOD
AUTOMATIC TRAIN CONTROL
TYPICAL SIGNAL LAYOUTS

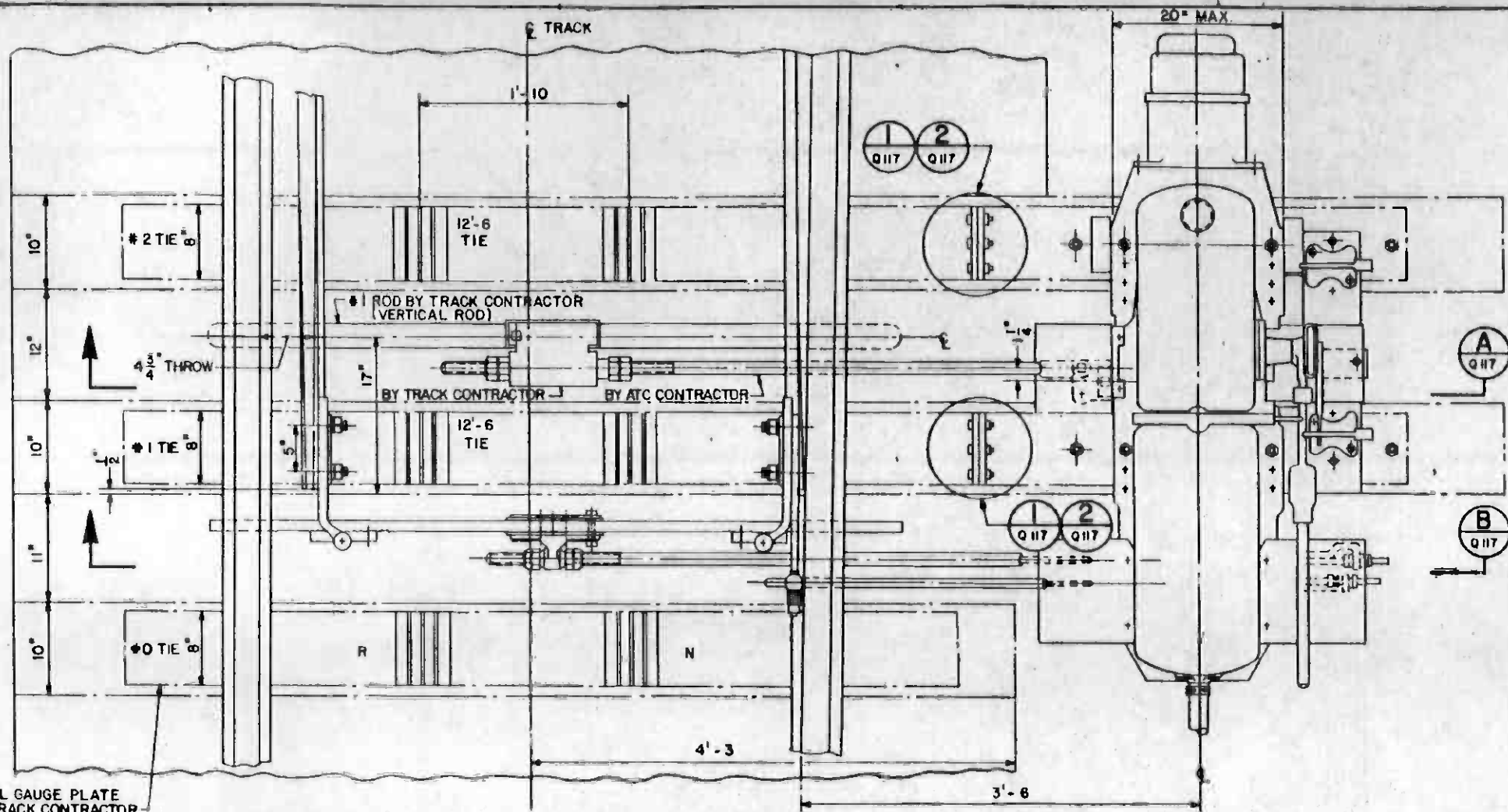
CONTRACT NO
A620

DRAWING NO
Q-115

SCALE
NO SCALE

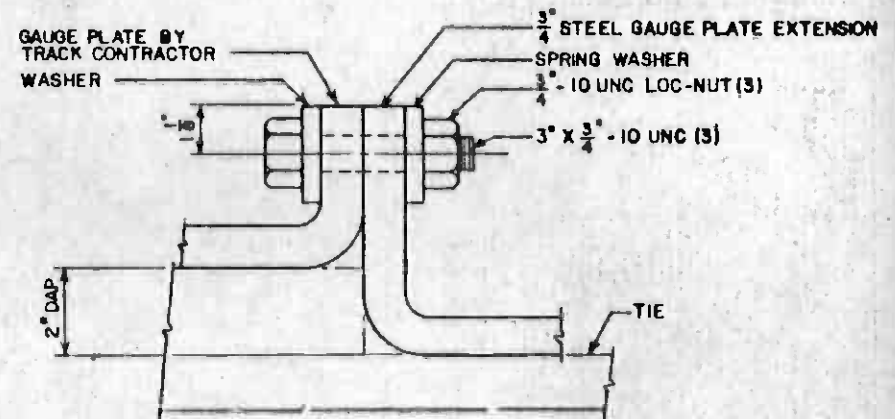
SHEET NO
115

REV	DATE	BY	APP	DESCRIPTION
1	7-1-85			INITIAL ISSUE



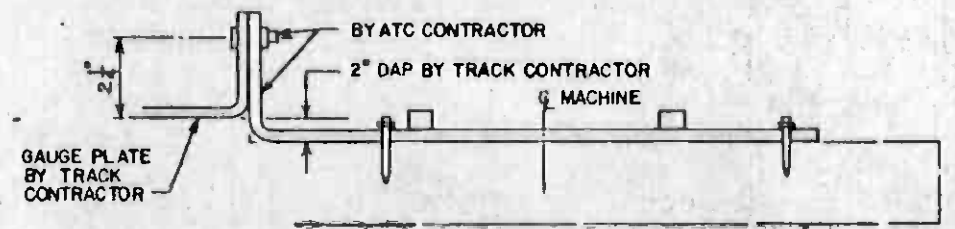
NOTES:

1. DRILLING OF SWITCH POINTS AND TIE DAPPING WILL BE PROVIDED BY OTHERS.



DETAIL 1
N.T.S. Q117

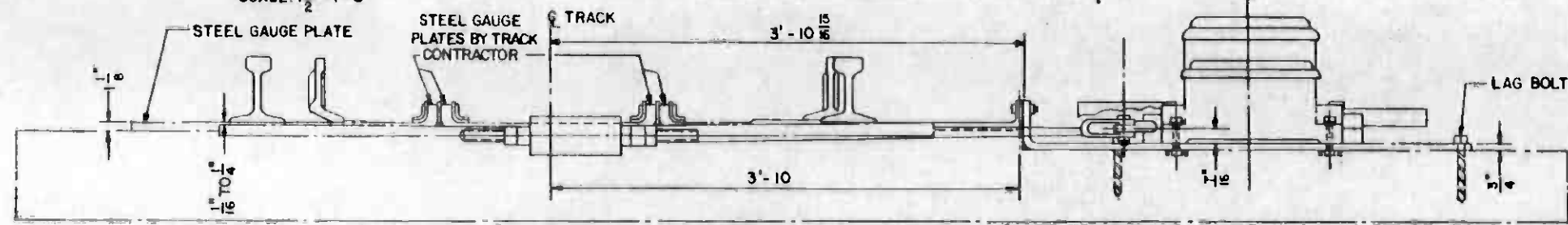
(BY TRACK CONTRACTOR)
IN CONFORMANCE WITH AREA
PLAN 223-62
DETAIL 4103



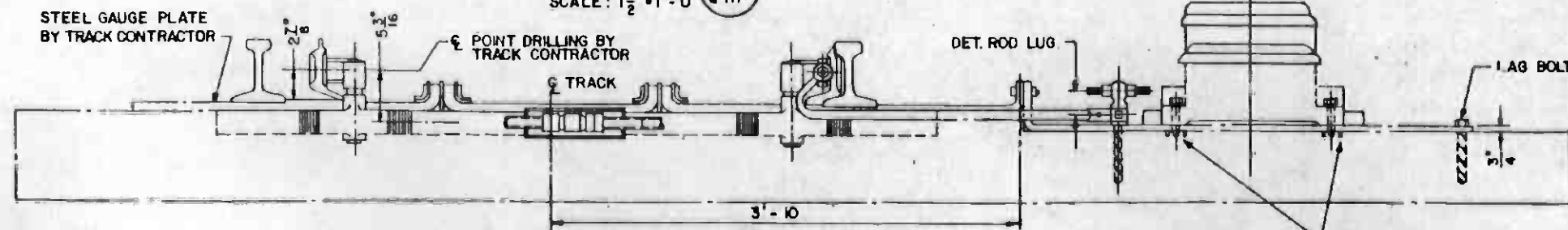
DETAIL 2
N.T.S. Q117

EMBEDDED TIE IN SECOND POUR SWITCH MACHINE LAYOUT

SCALE: 1 1/2\"/>



SECTION A
SCALE: 1 1/2\"/>



SECTION B
SCALE: 1 1/2\"/>



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY
W.L. LUCCI
DRAWN BY
E.S. ACOSTA



**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**



DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

**LA CBD TO NORTH HOLLYWOOD
AUTOMATIC TRAIN CONTROL
SWITCH MACHINE LAYOUT
EMBEDDED TIE AREA**

CONTRACT NO.	A620
DRAWING NO.	Q-117
SCALE	AS NOTED
SHEET NO.	117

REV.	DATE	BY	SUB.	APP.	DESCRIPTION

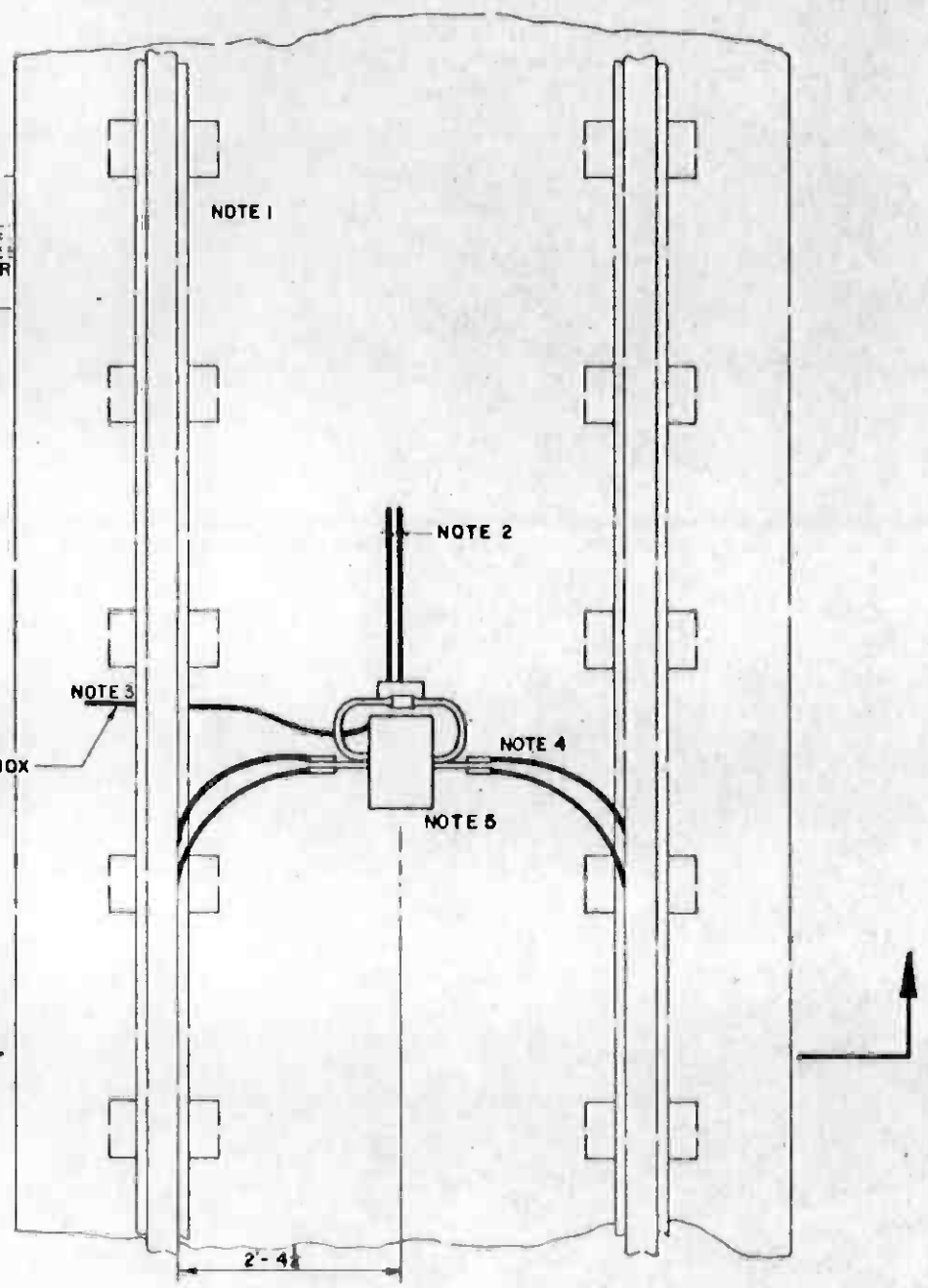
REV.	DATE	BY	SUB.	APP.	DESCRIPTION

INITIAL ISSUE
DATE: 10 OCT 86

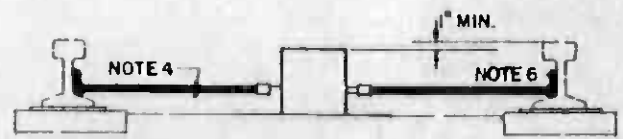
SUBMITTED: *[Signature]*

APPROVED: *[Signature]*

CROSS-PASSAGE
 THROUGH CROSS-PASSAGE
 FOR CROSSBONDING
 OR TO TRACTION POWER
 SUBSTATION CONNECTION FOR
 NEGATIVE RETURN



PLAN
 SCALE 1"=1'-0"



SECTION A
 SCALE 1"=1'-0"

- NOTES:**
1. AT ALL CROSS-PASSAGES: THREE - 4-INCH NON-METALLIC CONDUITS FOR CROSSBONDING.
 2. CORRECT CABLE SIZES AS NECESSARY:
 CROSSBOND 4 - 750 MCM
 NEGATIVE RETURN 6 - 750 MCM
 BACK TO BACK BONDS 4 - 750 MCM
 3. WATERTIGHT NON-METALLIC FLEXIBLE CONDUIT CLAMPED TO INVERT.
 4. CONNECT TO EACH RAIL WITH TWO 500 MCM CABLES; AT SUBSTATION RETURN AND INSULATED JOINT LOCATIONS, CONNECT TO EACH RAIL WITH TWO 1000 MCM CABLES.
 5. SHOCKMOUNTING METHOD SHALL BE DESIGNED, FURNISHED AND INSTALLED.
 6. RAIL CONNECTIONS EXOTHERMICALLY BONDED TO RAIL NEUTRAL AXIS.



REV	DATE	BY	CHKD	APP	DESCRIPTION

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DESIGNED BY *[Signature]*
 DRAWN BY *[Signature]*
 CHECKED BY *[Signature]*
 IN CHARGE *[Signature]*
 DATE 3 APR 84

7-1-84
 INITIAL ISSUE



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT

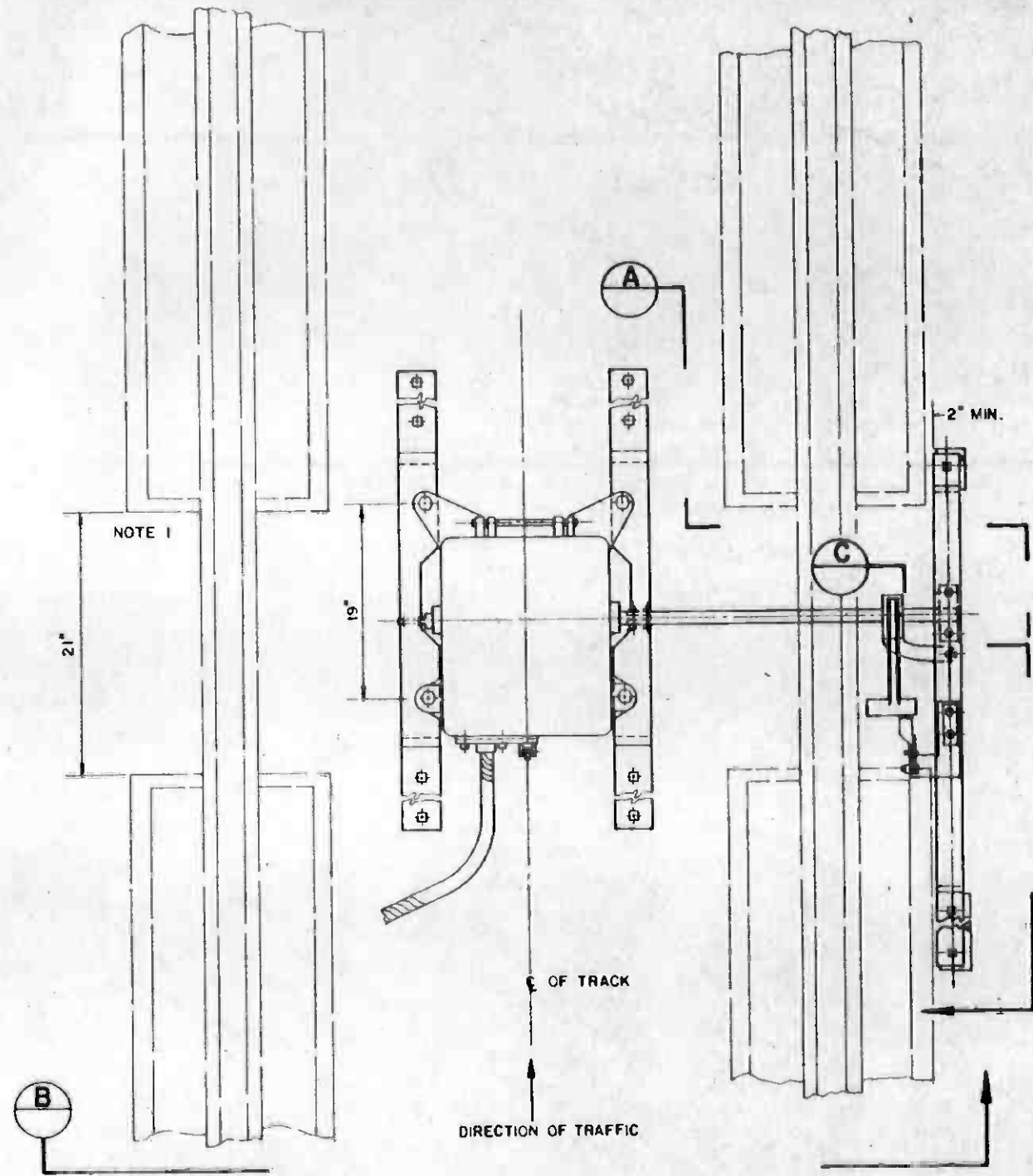
DMJM/PBQD/KE/HWA
 GENERAL CONSULTANTS

APPROVED *[Signature]*

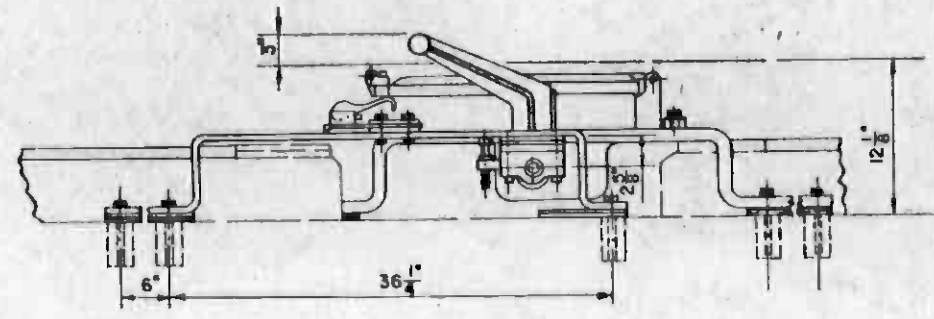
LA CBD TO NORTH HOLLYWOOD
 AUTOMATIC TRAIN CONTROL
 IMPEDANCE BOND LAYOUT
 CROSSBONDING & NEGATIVE RETURN
 DETAILS

CONTRACT NO.	A620
DRAWING NO.	Q-118
SCALE	1"=1'-0"
SHEET NO.	118

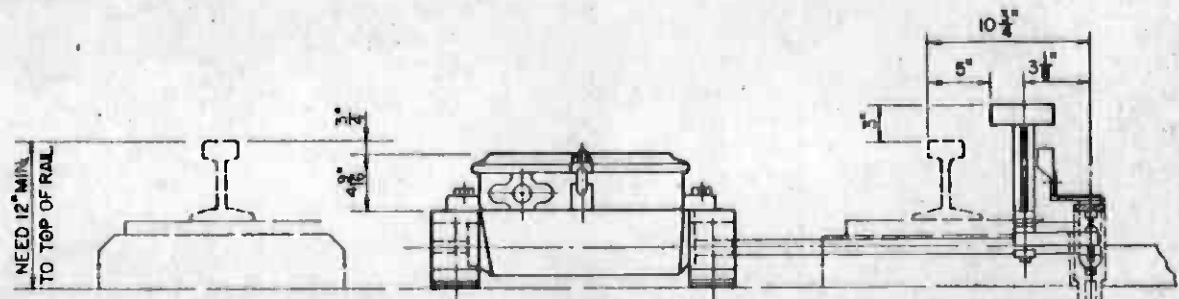
NOTE:
 1. OPENINGS IN CONCRETE PROVIDED BY DISTRICT
 AS REQUIRED



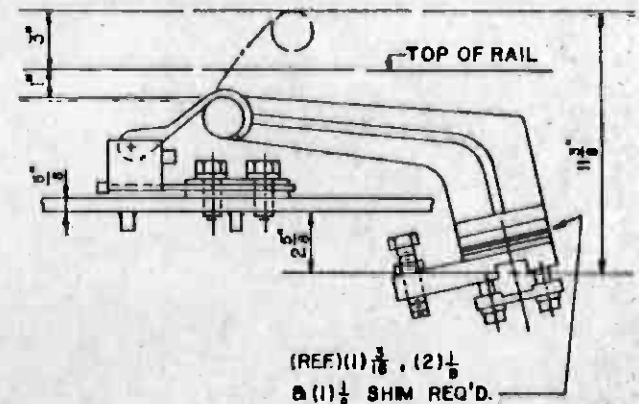
PLAN
 SCALE: 1 1/2" = 1'-0"



SECTION A
 N.T.S.



SECTION B
 N.T.S.



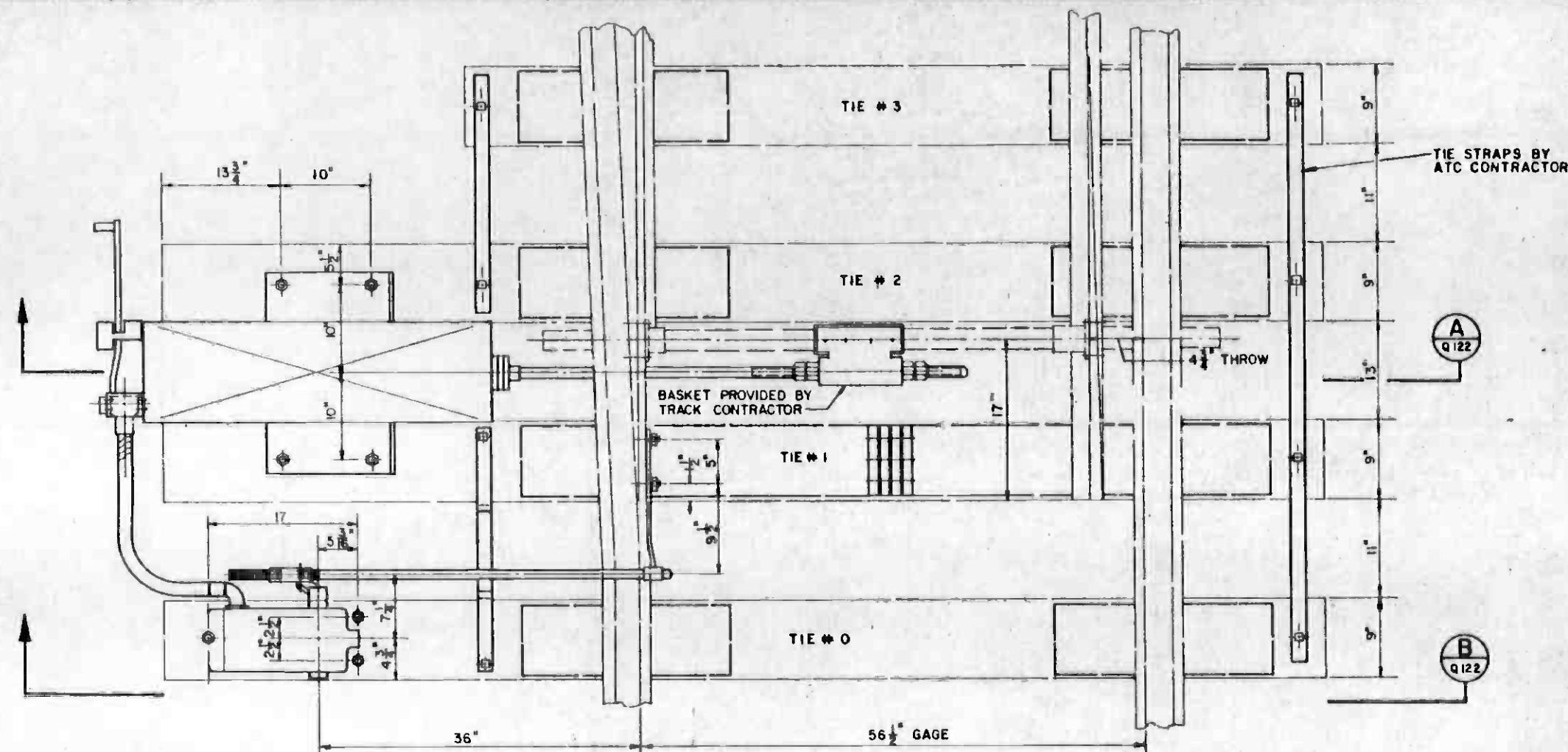
ENLARGED TRIPPER ARM SECTION C
 SHOWN IN HOOKED POSITION
 N.T.S.

HALF SIZE

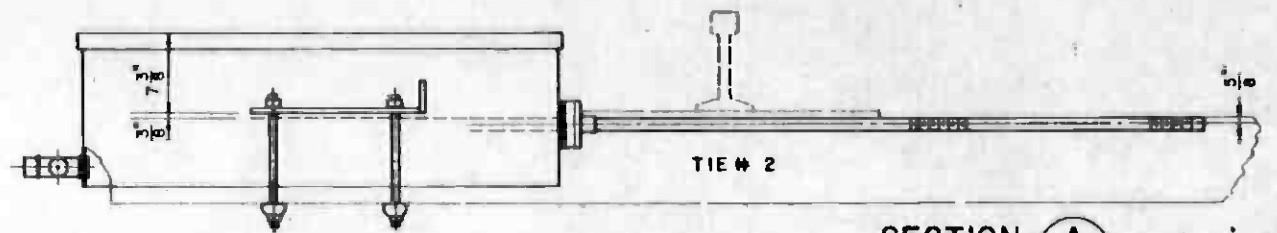
THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DRAWN BY <i>[Signature]</i> CHECKED BY <i>[Signature]</i> 25 MAY 84		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT ATD		LA CBD TO NORTH HOLLYWOOD AUTOMATIC TRAIN CONTROL LAYOUT OF ALL-ELECTRIC TRAIN STOP EMBEDDED TIE AREA		CONTRACT NO. A620	
INITIAL ISSUE		7-1-81		OMJM/PBQD/KE/HWA GENERAL CONSULTANTS APPROVED <i>[Signature]</i>		DRAWING NO. Q-120		REV. 0	
REV. DATE BY SUB APP DESCRIPTION		REV. DATE BY SUB APP DESCRIPTION		SUBMITTED <i>[Signature]</i>		SCALE AS NOTED		SHEET NO. 120	

NOTES:

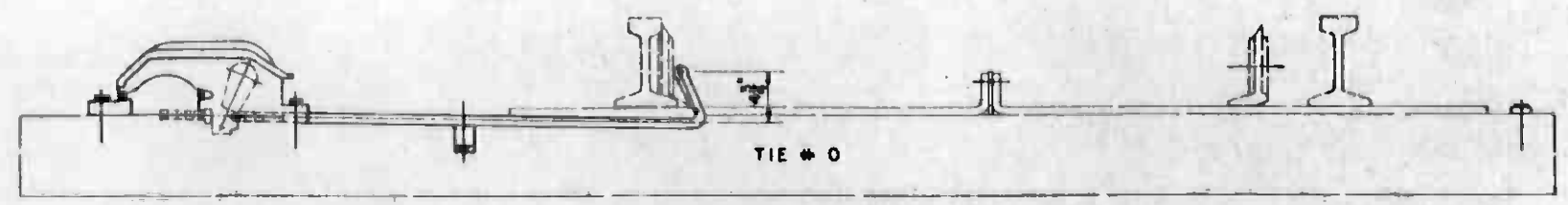
1. SWITCH CIRCUIT CONTROLLER MAY BE ONE UNIT WITH SWITCH MACHINE.
2. PROVIDE SAME MATERIAL FOR DERAIL.



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



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



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



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY
[Signature]
DRAWN BY
[Signature]
CHECKED BY
[Signature]
IN CHARGE
[Signature]
DATE
3 APR 84



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

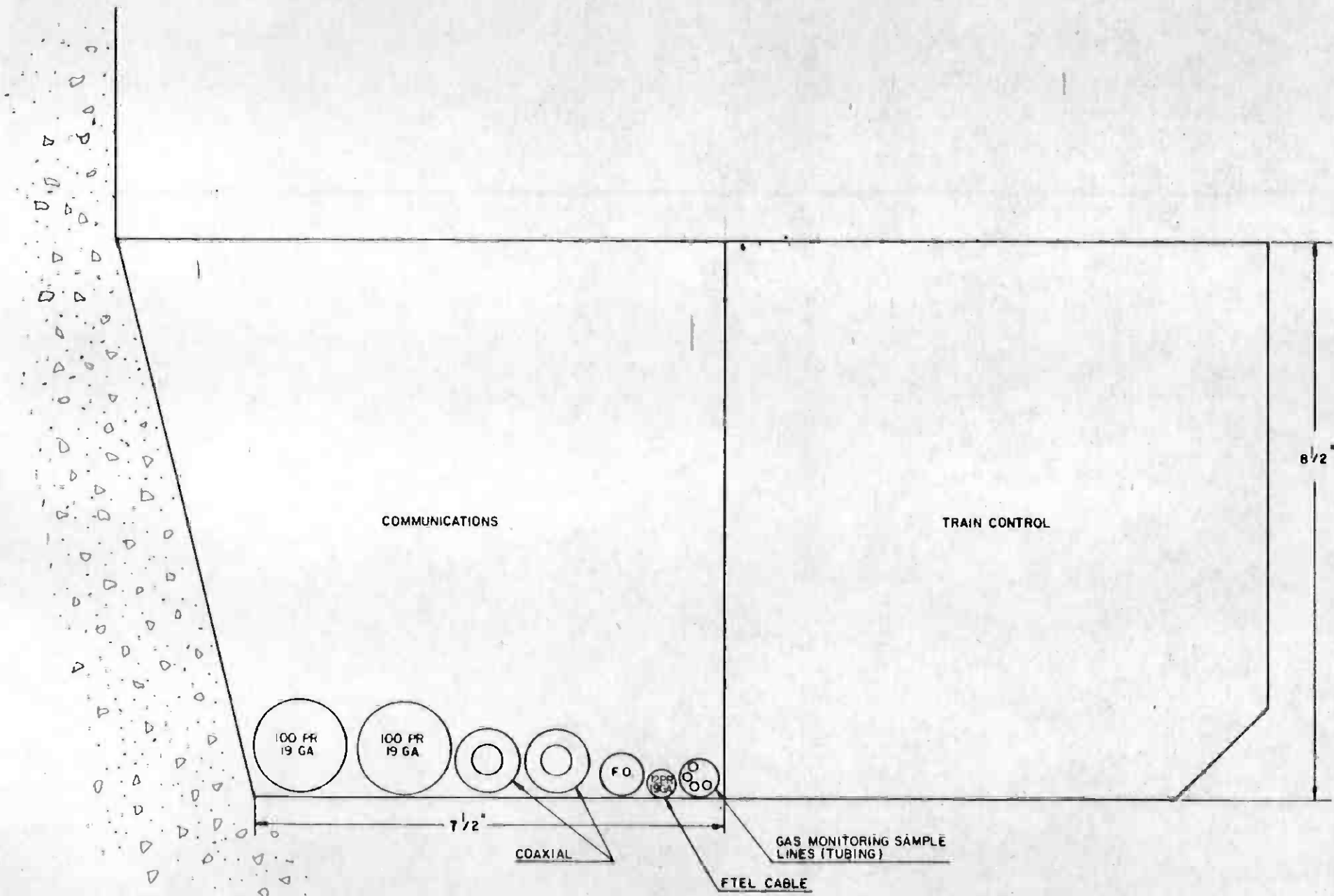


DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS
APPROVED
[Signature]

LA CBD TO NORTH HOLLYWOOD
AUTOMATIC TRAIN CONTROL
SWITCH MACHINE LAYOUT
YARD AREA

CONTRACT NO.		A 620
DRAWING NO.	Q-122	REV 0
SCALE		1 1/2" = 1'-0"
SHEET NO.		122

REV.	DATE	BY	SUB	APP.	DESCRIPTION



CABLE TROUGH CABLE PILE UP



REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY	<i>J. Blahut</i>
DRAWN BY	<i>E. Kosh</i>
CHECKED BY	<i>W. J. ...</i>
IN CHARGE	<i>M. ...</i>
DATE	7-18-74

INITIAL ISSUE



**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

APPROVED *Howard K. ...*

**LA CBD TO NORTH HOLLYWOOD
AUTOMATIC TRAIN CONTROL
COMMUNICATION CABLE
INSTALLATION**

CONTRACT NO.	A620
DRAWING NO.	Q-124
SCALE	NO SCALE
SHEET NO.	12

YARD THROAT INTERLOCKING
ROUTE LOCKING SEGMENTS

SEGMENT	TRACK CIRCUITS
YR	101A-3AT, 101-3T, 105B-7AT, 105-7T
101B-3B	101B-3BT, 101-3T
105A-7A	105A-7AT, 105-7T
108AT	108AT
132A	132AT
134A	134AT

NOTES:

1. (123) MEANS SWITCH 123 REVERSI. 125N MEANS ROUTE LOCKING SEGMENT 125 LOCKED NORTH.
2. PROVIDE THROUGH ROUTING FOR ALL SIGNALS WITHIN THE SAME INTERLOCKING.
EXAMPLE: ROUTE 120 TO 114 SHALL BE THE COMBINATION OF ROUTE 120 TO 204 AND 204 TO 114. SIGNAL 204 SHALL AUTOMATICALLY CALL AND CLEAR.
3. INTERMEDIATE SIGNALS SHALL PERMIT TURNBACK OPERATION FROM ONE YARD TRACK TO ANOTHER.
4. ADDITIONAL YARD THROUGH ROUTING IS TABULATED ON DRAWING Q-132.

MAINTENANCE OF WAY INTERLOCKING

ROUTE LOCKING SEGMENTS

SEGMENTS	TRACK CIRCUITS
113	113T
130A	130AT
601	601T, 603T, 605T
108A	108AT

ENTRANCE SIGNAL	ASPECT	EXIT	SWITCHES LOCKED	ROUTE LOCKING	PREVENTS	NOTES
102	6	132	105, 107	132AS, 105-7AS	132, 120 EXIT	
102	6	134	105, 107	134AS, 105-7AS, YRS	134, 122 EXIT	
104	6	132	103, 105, 107, 101	132AS, YRS, 105A-7AS	102, 132, 134, 120 EXIT	
104	6	134	101, 103, 105, 107	134AS, YRS	134, 122 EXIT	
104	6	136	101, 103	108AS, YRS, 101B-3BS	106, 134, 136, 108 EXIT	
106	6	132	103, 105, 107, 101	132S, 101B-3BS, YRS, 105A-7AS	100, 102, 104, 132, 134, 136, 120 EXIT	
106	6	134	101, 103, 105, 107	134AS, YRS, 101B-3BS	104, 134, 136, 122 EXIT	
106	6	136	101, 103	108AS, 101B-3BS	136, 108 EXIT	
132	6	102	105, 107	105A-7AN, XW	102	
132	6	104	101, 103, 105, 107	105A-7AN, YR, YN	102, 104, 134 UNION STATION: AIE-20 EXIT	
132	6	106	101, 103, 105, 107	105A-7AN, YRN, YLIW	102, 104, 106, 134, 136 UNION STATION: AIE-18 EXIT	

ENTRANCE SIGNAL	ASPECT	EXIT	SWITCHES LOCKED	ROUTE LOCKING	PREVENTS	NOTES
134	6	102	101, 103, 105, 107	YRN, 105A-7AN, XW	102	
134	6	104	101, 103, 105, 107	YRN, YRIW	104 UNION STATION: AIE-20 EXIT	
134	6	106	101, 103, 105, 107	YRN, 101B-3BN, YLIW	104, 106, 136 UNION STATION: AIE-18 EXIT	
136	6	104	101, 103	101B-3BN, YRIW	104, 106 UNION STATION: AIE-20 EXIT	
136	6	106	101, 103	101B-3BN, YLIW	106, UNION STATION: AIE-18 EXIT	
108	6	130	113	113S, 130AN	618, 130, 124 EXIT	
108	6	618	113	113S	618, 130	
130	6	108	113	113N	108, 136 EXIT, 618	
618	6	108	113	113N, 108AN	108, 130, 136 EXIT	



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY
[Signature]
CHECKED BY
[Signature]
IN CHARGE
[Signature]
DATE 1 OCT 85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT



DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

APPROVED *[Signature]*

LA CBD TO NORTH HOLLYWOOD
AUTOMATIC TRAIN CONTROL
YARD LOCKING CHART
SHEET 1 OF 8

CONTRACT NO. A620
DRAWING NO. Q-125
SCALE: NO SCALE
SHEET NO. 125

PHOTO DIMENSION: 070774

REV	DATE	BY	APP	DESCRIPTION

NORTH YARD INTERLOCKING

ROUTE LOCKING SEGMENTS	
SEGMENT	TRACK CIRCUITS
115a	115aT
115b	115bT
117	117T
119	119T
123a	123aT, 123aT
123b	123bT, 123bT
125	125T, 127aT
127a	127aT
203a	203aT, 201aT, 201aT
207	207T
209	205T, 209i

ROUTE LOCKING SEGMENTS	
SEGMENT	TRACK CIRCUITS
211	211T
213	213T, 121T
217	217T
401	401T
403	403T
501	501T
503	503T
505	505T

ENTRANCE SIGNAL	ASPECT	EXIT	SWITCHES LOCKED	ROUTE LOCKING	PREVENTS	NOTES
114	6	122	127, 125, 123, 203, 115	125N, 123BN, 123AN, 207N, 203BN, 203AN, 115BN, 134AN	116, 122, 204, 210 w 121, 212 w 121, 214 w 121, 216, 218, 230, 232, 234, 236, 238, 134 EXIT	
114	6	124	127, 125, 123, 117	125N, 123BN, 117N, 130AN	116, 118, 124, 126, 130 EXIT	PREFERRED
114	6	124	127, 125, 123, 201, 203, 117	125N, 123BN, 123AN, 207N, 203BN, 117N, 130AN	116, 118, 124, 232, 234, 236, 238, 126, 130 EXIT	
116	6	120	125, 123, 201, 203, 115, 127	125N, 123BN, 123AN, 207N, 203BN, 203AN, 115BN, 115AN, 132AN	114, 120, 122, 204, 210, 212, 214, 216, 218, 230, 232, 234, 236, 238, 126, 132 EXIT	
116	6	122	127, 125, 123, 207, 201, 203, 115	125N, 123BN, 123AN, 207N, 203BN, 203AN, 115BN, 134AN	114, 122, 204, 210 w 121, 212 w 121, 214 w 121, 216, 218, 230, 232, 234, 236, 238, 126, 134 EXIT	
116	6	124	127, 125, 123, 119, 117	125N, 123BN, 119N, 117N, 130AN	114, 118, 124, 126, 130 EXIT	PREFERRED
116	6	124	127, 125, 123, 201, 203, 117	125N, 123BN, 123AN, 207N, 203BN, 119N, 117N, 130AN	114, 118, 124, 232, 234, 236, 238, 126, 130 EXIT	
118	6	124	119, 117	119N, 117N, 130AN	124, 126, 114 w 201, 116 w 201, 210 w 203 & 121, 212 w 203, 214 w 203, 203 & 121 216 w 203, 218 w 203, 230 w 203, 232 w 201, 234 w 201, 236 w 201, 238 w 201 116 w 123, 116 w 125 & 201 114 w 123, 114 w 125 & 201 310 w 127 & 123, 310 w 127 & 123 & 201, 130 EXIT	NOTES 2, 3
120	6	200	115	115As	210 w 121, 212 w 121, 214 w 121	FUTURE, NOTE 2
120	6	202	115, 201, 203	115As, 115Bs, 203As	122, 210 w 121, 212 w 121, 214 w 121, 216, 218, 230	FUTURE, NOTE 2
120	6	204	115, 201, 203	115As, 115Bs	122, 124 w 117, 210, 212, 214, 216, 218, 230, 232, 234, 236, 238, 114 w 123, 116 w 123, 310 w 127 & 123	NOTE 2

ENTRANCE SIGNAL	ASPECT	EXIT	SWITCHES LOCKED	ROUTE LOCKING	PREVENTS	NOTES
122	6	204	115, 201, 203	115As, 203As	210 w 121, 212 w 121, 214 w 121, 216, 218, 230, 232, 234, 236, 238, 124 w 117, 116 w 123, 114 w 123, 310 w 127 & 123	NOTE 2
124	6	202	117, 203, 201	117s, 203As, 203As	120 w 115, 122, 118, 210 w 121, 212 w 121, 214 w 121, 216, 218, 230, 232, 234, 236, 238, 114, 116, 310 w 127	FUTURE, NOTE 2
124	6	204	117, 203, 201	117s, 203As	118, 232, 234, 236, 238, 114, 116, 310 w 127	NOTE 2
124	6	126	117	117s	118, 210 w 121 & 203, 212 w 121 & 203, 214 w 121 & 203, 216 w 203, 218 w 203, 230 w 203, 232 w 201, 234 w 201, 236 w 201, 238 w 201, 114 w 123, 114 w 123 & 201, 116 w 123, 116 w 123 & 201, 310 w 127 & 123 & 201	NOTE 2
126	6	114	119, 123, 125, 127	119s, 123As, 125s	114, 116, 118	NOTES 2, 3
126	6	116	119, 123, 125, 127	119s, 123As, 125s	114, 116, 118	NOTES 2, 3
126	6	310	119, 501, 401, 127	119s, 501s, 401s, 127s	118, 310, 410, 412, 414, 416, 510, 512, 514	NOTES 2, 3 PREFERRED ROUTE
126	6	310	119, 123, 125, 127	119s, 123As, 125s, 127As	114, 116, 118, 310	NOTES 2, 3
126	6	410	119, 501, 401	119s, 501s, 401s	118, 310 w 127, 410, 412, 414, 416, 510, 512, 514, 114 w 123, 116 w 123	NOTES 2, 3
126	6	412	119, 501, 503, 403	119s, 501s, 503s, 403s	118, 114 w 123, 116 w 123, 310 w 127, 310 w 127 & 123, 410, 412, 414, 416, 510, 512, 514	NOTES 2, 3
126	6	414	119, 501, 503, 403	119s, 501s, 503s, 403s	118, 114 w 123, 116 w 123, 310 w 127, 310 w 127 & 123, 410, 412, 414, 416, 510, 512, 514	NOTES 2, 3



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TREASURY OF THE CITIES OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY DRAWN BY CHECKED BY DATE 1 OCT 85		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT DMJM/PBQD/KE/MWA GENERAL CONSULTANTS APPROVED:		CONTRACT NO. A620 DRAWING NO. Q-126 SCALE NO SCALE SHEET NO. 126			
REV.	DATE	BY	SUB.	APP.	DESCRIPTION	REV.	DATE	BY	SUB.	APP.	DESCRIPTION
					INITIAL ISSUE						

NORTH YARD INTERLOCKING

ENTRANCE SIGNAL	ASPECT		EXIT	SWITCHES LOCKED	ROUTE LOCKING	PREVENTS	NOTES
	ASPECT	ASPECT					
126	G		416	(119), 501, 503, (507)	119s, 501s, 503s, 403s	118, 114 w 123, 116 w 123, 310 w 127, 310 w (127) & 123, 410, 412, 414, 416, 510, 512, 514	NOTES 2, 3
126	G		510	(119), 501, 503, 505, (507)	119s, 501s, 503s, 505s	118, 114 w 123, 116 w 123, 310 w 127, 310 w (127) & 123, 410, 412, 414, 416, 510, 512, 514	NOTES 2, 3
126	G		512	(119), 501, 503, 505, 507, (509)	119s, 501s, 503s, 505s	118, 114 w 123, 116 w 123, 310 w 127, 310 w (127) & 123, 410, 412, 414, 416, 510, 512, 514	NOTES 2, 3
126	G		514	(119), 501, 503, 505, 507, 509	119s, 501s, 503s, 505s	118, 114 w 123, 116 w 123, 310 w 127, 310 w (127) & 123, 410, 412, 414, 416, 510, 512, 514	NOTES 2, 3

ENTRANCE SIGNAL	ASPECT		EXIT	SWITCHES LOCKED	ROUTE LOCKING	PREVENTS	NOTES
	ASPECT	ASPECT					



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA

DESIGNED BY
 DRAWN BY
 CHECKED BY
 IN CHARGE
 DATE 1 OCT 85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT



DMJM/PBOD/KE/HWA
 GENERAL CONSULTANTS

LA CBD TO NORTH HOLLYWOOD
 AUTOMATIC TRAIN CONTROL
 YARD LOCKING CHART
 SHEET 3 OF 8

CONTRACT NO. A620
 DRAWING NO. Q-127
 SCALE NO SCALE
 SHEET NO. 127

POND GRAPHICS 030704

REV. DATE BY SUB APP

DESCRIPTION

REV. DATE BY SUB APP

INITIAL ISSUE

DESCRIPTION

SUBMITTED 19 OCT 85

APPROVED

ENTRANCE SIGNAL	ASPECT	EXIT	SWITCHES LOCKED	ROUTE LOCKING	PREVENTS	NOTES
218	6	120	(215), 209, 205, 203, 201, (115)	209N, 203AN, 115BN, 115AN, 132AN	120, 122, 202, 210, 212, 214, 216, 230, 132 EXIT	FUTURE
218	6	122	(215), 209, 205, 203, 201, 115	209N, 203AN, 115BN, 134AN	122, 202, 216, 230, 210 W 121, 212 W 121, 214 W 121, 134 EXIT	FUTURE
218	6	124	(215), 209, (203), 201, (117)	209N, 203AN, 203BN, 117N, 130AN	120 W 115, 122, 202, 210 W 121, 212 W 121, 214 W 121, 216, 230, 124, 118, 232, 234, 236, 238, 114, 116, 310 W 127, 130 EXIT	FUTURE
230	6	120	215, 209, 205, 203, 201, (115)	209N, 203AN, 115BN, 115AN, 132AN	120, 122, 202, 210, 212, 214, 216, 218, 132 EXIT	FUTURE
230	6	122	215, 209, 205, 203, 201, 115	209N, 203AN, 115BN, 134AN	122, 202, 216, 218, 210 W 121, 212 W 121, 214 W 121, 134 EXIT	FUTURE
230	6	124	215, 209, (203), 201, (117)	209N, 203AN, 203BN, 117N, 130AN	120 W 115, 122, 202, 210 W 121, 212 W 121, 214 W 121, 216, 218, 124, 118, 232, 234, 236, 238, 114, 116, 310 W 127, 130 EXIT	FUTURE
232	6	120	211, 207, (201), 203, (115)	211N, 207, 203BN, 203AN, 115BN, 115AN, 132AN	120, 122, 124 W (117), 210, 212, 214, 216, 218, 230, 234, 236, 238, 114 W (123), 116 W (123), 310 W (127) & (123), 204, 132 EXIT	FUTURE
232	6	122	211, 207, (201), 203, 115	211N, 207N, 203BN, 203AN, 115BN, 134AN	122, 124 W (117), 210 W 121, 212 W 121, 214 W 121, 216, 218, 230, 234, 236, 238, 114 W (123), 116 W (123), 310 W (127) & (123), 204, 134 EXIT	FUTURE
232	6	124	211, 207, 201, 203, (117)	211N, 207N, 203BN, 117N	124, 118, 204, 234, 236, 238, 114, 116, 310 W (127), 130 EXIT	FUTURE
234	6	120	(211), 207, (201), 203, (115)	211N, 207N, 203BN, 203AN, 115BN, 115AN, 132AN	120, 122, 124 W (117), 210, 212, 214, 216, 218, 230, 232, 236, 238, 114 W (123), 116 W (123), 310 W (127) & (123), 204, 132 EXIT	FUTURE

ENTRANCE SIGNAL	ASPECT	EXIT	SWITCHES LOCKED	ROUTE LOCKING	PREVENTS	NOTES
234	6	122	211, 207, (201), 203, 115	211N, 207N, 203BN, 203AN, 115BN, 134AN	122, 124 W (117), 210 W 121, 212 W 121, 214 W 121, 216, 218, 230, 232, 236, 238, 114 W (123), 116 W (123), 310 W (127) & (123), 204, 134 EXIT	FUTURE
234	6	124	211, 207, 201, 203, (117)	211N, 207N, 203BN, 117N	124, 118, 204, 232, 236, 238, 114, 116, 310 W (127), 130 EXIT	FUTURE

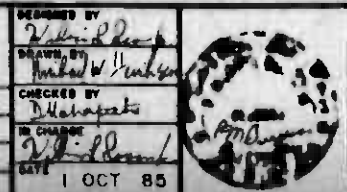


REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA

DESIGNED BY *[Signature]*
 DRAWN BY *[Signature]*
 CHECKED BY *[Signature]*
 IN CHARGE *[Signature]*
 DATE 1 OCT 85

1-1-87 *[Signature]* INITIAL ISSUE



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBOD/KE/HWA
 GENERAL CONSULTANTS

APPROVED *[Signature]*



LA CBD TO NORTH HOLLYWOOD
 AUTOMATIC TRAIN CONTROL
 YARD LOCKING CHART
 SHEET 5 OF 8

CONTRACT NO.	A620
DRAWING NO.	Q-129
REV.	0
SCALE	NO SCALE
SHEET NO.	129

ROUTE LOCKING SEGMENTS

SEGMENT	TRACK CIRCUITS
133	129T, 131T, 133T
137A	137T, 137T
141A	139T, 141T, 141AT
141B	137T, 137BT, 141T, 141BT
144A	144AT, 237T, 235T
146A	135T, 146AT
148A	148AT, 513T
229	229T
231	221T, 223T, 231T
233	225T, 227T, 233T
405	405T

ENTRANCE SIGNAL	ASPECT	EXIT	SWITCHES LOCKED	ROUTE LOCKING	PREVENTS	NOTES
236	6	122	(217), 123, (207), (201), 203, 115	217N, 123AN, 207N, 203BN, 203AN, 115BN, 134AN	122, 124 w (117), 204, 210 w 121, 212 w 121, 214 w 121, 216, 218, 230, 232, 234, 238, 132 EXIT	
236	6	124	(217), 123, (207), (201), 203, (117)	217N, 123AN, 207N, 203BN, 117N, 130AN	118, 124, 204, 232, 234, 238, 130 EXIT	
238	6	120	217, 123, (207), (201), 203, (115)	217N, 123AN, 207N, 203BN, 203AN, 115BN, 115AN, 132AN	120, 122, 124 w (117), 204, 210, 212, 214, 216, 218, 230, 232, 234, 236, 132 EXIT	
238	6	122	217, 123, (207), (201), 203, 115	217N, 123AN, 207N, 203BN, 203AN, 115BN, 134AN	122, 124 w (117), 204, 210 w 121, 212 w 121, 214 w 121, 216, 218, 230, 232, 234, 236, 132 EXIT	
238	6	124	217, 123, (207), (201), 203, (117)	217N, 123AN, 207N, 203BN, 117N, 130AN	118, 124, 204, 232, 234, 236, 130 EXIT	
310	6	124	(127), 125, (123), (207), 201, 203, (117)	127BN, 401N, 501N	126 w (119), 410, 412, 414, 416, 510, 512, 514	
310	6	118	127, (401), (501)	127BN, 127AN, 123BN, 123AN, 207N, 203BN, 203AN, 115BN, 115AN, 132AN	120, 122, 124 w (117), 126 w (119), 204, 114, 116, 210, 212, 214, 216, 218, 230, 232, 234, 236, 238, 132 EXIT	
310	6	120	(127), 125, (123), (207), (201), 203, (115)	127BN, 127AN, 123BN, 123AN, 207N, 203BN, 203AN, 115BN, 134AN	122, 124 w (117), 126 w (119), 204, 114, 116, 210 w 121, 212 w 121, 214 w 121, 216, 218, 230, 232, 234, 236, 238, 134 EXIT	
310	6	122	(127), 125, (123), (207), (201), 203, 115	127BN, 127AN, 123BN, 123AN, 207N, 203AN, 117N, 130AN	124, 204, 118, 126 w (119), 114, 116, 232, 234, 236, 238, 130 EXIT	
410	6	118	401, 501	401N, 501N	126 w (119), 310 w 127, 412, 414, 416, 510, 512, 514	
412	6	118	(403), (503), 501	403N, 503N, 501N	126 w (119), 310 w 127, 410, 414, 416, 510, 512, 514	
414	6	118	403, (503), 501	403N, 503N, 501N	126 w (119), 310 w 127, 410, 412, 416, 510, 512, 514	

ENTRANCE SIGNAL	ASPECT	EXIT	SWITCHES LOCKED	ROUTE LOCKING	PREVENTS	NOTES
510	6	118	(507), 505, 503, 501	505N, 503N, 501N	126 w (119), 310 w 127, 410, 412, 414, 416, 512, 514	
512	6	118	(509), 507, 505, 503, 501	505N, 503N, 501N	126 w (119), 310 w 127, 410, 412, 414, 416, 510, 514	
514	6	118	509, 507, 505, 503	505N, 503N, 501N	126 w (119), 310 w 127, 410, 412, 414, 416, 510, 512	
128		146	129, 131, 133, 135	133s, 146as	140, 142, 136 w 141 & (137), 136 w (141) & 139 & 137, 150 w 139, 400, 402, 404	
136		128	141, (137), 135, 133, 131, 129	141BN, 137AN, 146AN, 133N	128, 140, 144, 146, 148, 150 w 139, 142, 400, 402, 404	
136		140	141, (137), 135, 133, (131)	141BN, 137AN, 146AN, 133N	128, 136, 144, 146, 148, 150 w 139, 142, 400, 402, 404	
136		142	141, (137), 135, 133, 131, (129)	141BN, 137AN, 146AN, 133N	128, 140, 142, 144, 146, 148, 150 w 139, 400, 402, 404	
136		206	(141), (139), 237, 231, (221)	141BN, 141AN, 144AN, 231N	144, 146, 148, 206, 208, 220, 222, 224, 226, 228, 240, 242, 244	
136		208	(141), (139), 237, 231, 221	141BN, 141AN, 144AN, 231N	144, 146, 148, 206, 208, 220, 222, 224, 226, 228, 240, 242, 244	
136		220	(141), (139), 237, (231), (223)	141BN, 141AN, 144AN, 231N	144, 146, 148, 206, 208, 220, 222, 224, 226, 228, 240, 242, 244	
136		222	(141), (139), 237, (231), 223	141BN, 141AN, 144AN, 231N	144, 146, 148, 206, 208, 220, 222, 224, 226, 228, 240, 242, 244	
136		224	(141), (139), (237), 235, 233, (225)	141BN, 141AN, 144AN, 233N	144, 146, 148, 206, 208, 220, 222, 224, 226, 228, 240, 242, 244	
136		226	(141), (139), (237), 235, 233, 225	141BN, 141AN, 144AN, 233N	144, 146, 148, 206, 208, 220, 222, 224, 226, 228, 240, 242, 244	
136		228	(141), (139), (237), 235, (233), (227)	141BN, 141AN, 144AN, 233N	144, 146, 148, 206, 208, 220, 222, 224, 226, 228, 240, 242, 244	
136		240	(141), (139), (237), 235, (233), 227	141BN, 141AN, 144AN, 233N	144, 146, 148, 206, 208, 220, 222, 224, 226, 228, 240, 242, 244	

<p>THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.</p>				<p>DESIGNED BY <i>[Signature]</i></p> <p>CHECKED BY <i>[Signature]</i></p> <p>DATE 1 OCT 85</p>		<p>SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT</p> <p>DLJM/PBOD/KE/HWA GENERAL CONSULTANTS</p>		<p>LA CBD TO NORTH HOLLYWOOD AUTOMATIC TRAIN CONTROL YARD LOCKING CHART SHEET 7 OF 8</p>		<p>CONTRACT NO. A620</p> <p>DRAWING NO. Q-131</p> <p>SCALE NO SCALE</p> <p>SHEET NO. 131</p>	
REV	DATE	BY	APP	DESCRIPTION	REV	DATE	BY	APP	DESCRIPTION		

YARD THROUGH ROUTES

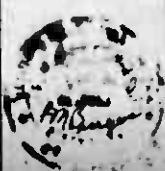
ENTRANCE SIGNAL	EXIT	SWITCHES LOCKED	ROUTE LOCKING	PREVENTS	NOTES
136	242	141, 139, 237 235, 229	141BN, 141AN, 144AN, 229N	144, 146, 148, 206, 208, 220, 222, 224, 226, 228, 240, 242, 244	
136	244	141, 139, 237 235, 229	141BN, 141AN, 144AN, 229N	144, 146, 148, 206, 208, 220, 222, 224, 226, 228, 240, 242, 244	
136	400	141, 137, 135, 133	141BN, 137AN, 146AN, 133N	128, 140, 142, 144, 146, 148, 150 w 139, 400, 402, 404	
136	402	141, 137, 135 405	141BN, 137AN, 146AN, 405N	128, 140, 142, 144, 146, 148, 150 w 139, 400, 402, 404	
136	404	141, 137, 135 405	141BN, 137AN, 146AN, 405N	128, 140, 142, 144, 146, 148, 150 w 139, 400, 402, 404	
136	500	141, 137, 513, 511	141BN, 148AN	148, 500, 502, 504	
136	502	141, 137, 513, 511	141BN, 148AN	148, 500, 502, 504	
136	504	141, 137, 513	141BN, 148AN	148, 500, 502, 504	

ENTRANCE SIGNAL	EXIT	THROUGH ROUTE SIGNAL (S)
114	104	134
	106	134
116	104	134
	106	134
236	104	134
	106	134
238	104	134
	106	134
310	104	134
	106	134
410	104	118, 130
	106	118, 130
412	104	118, 130
	106	118, 130
414	104	118, 130
	106	118, 130
416	104	118, 130
	106	118, 130
510	104	118, 130
	106	118, 130
512	104	118, 130
	106	118, 130
514	104	118, 130
	106	118, 130



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA

DESIGNED BY
[Signature]
CHECKED BY
[Signature]
IN CHARGE
[Signature]
1 OCT 85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT



DMJM/PBOD/KE/MWA
GENERAL CONSULTANTS
[Signature]

LA CBD TO NORTH HOLLYWOOD
AUTOMATIC TRAIN CONTROL
YARD LOCKING CHART
SHEET B OF 8

CONTRACT NO. A620
DRAWING NO. Q-132
SCALE NO SCALE
SHEET NO. 132

REV.	DATE	BY	APP.	DESCRIPTION

7-1-87
INITIAL ISSUE


G.O. NO.127 REQUIREMENT		A620 CONTRACT DOCUMENTS				* CONTRACTOR DESIGN DOCUMENTS
NO.	DESCRIPTION	TECHNICAL PROVISIONS		CONTRACT DRAWINGS		
		SECTION NO./TITLE	ARTICLE	NO.	TITLE	
SECTION 3	GENERAL SPECIFICATIONS					
3.1	AUTOMATIC PROTECTION AGAINST:					
3.1(a)	REAR END COLLISIONS	3/GENERAL REQUIREMENTS	3.2.2.C 3.4.2.A.2 3.4.2.B 3.4.2.F.1 3.4.2.H.1	N/A	N/A	
SEE ALSO A650 CONTRACT (PASSENGER VEHICLE) DOCUMENTS						
3.1(b)	HEAD-ON OR SIDESWIPE COLLISIONS	3/GENERAL REQUIREMENTS	3.4.2.F.7	Q-047	INTERLOCKING SIGNAL EQUIPMENT	
				Q-056	TYPICAL SIGNAL CONTROL CIRCUITS	
		5/ MAIN LINE TRACK CIRCUITS	5.2.2.F	Q-057	TYPICAL INTERLOCKING CIRCUITS	
		6/ INTERLOCKING REQUIREMENTS	6.1.2.A 6.4.4 6.4.6 6.4.8	Q-058	TYPICAL TRAFFIC AND LINE CIRCUITS	
				Q-061	TYPICAL SPEED LIMIT SELECTION CIRCUITS	
SEE ALSO A650 CONTRACT (PASSENGER VEHICLE) DOCUMENTS						
3.1(c)	DERAILMENT OR COLLISION RESULTING FROM MOVING TRACK SWITCH	6/ INTERLOCKING REQUIREMENTS	6.4.1 6.4.2 6.4.3 6.4.4.B 6.4.4.E 6.4.5.D 6.4.6.B	Q-054 Q-055 Q-056 Q-061	TYPICAL SWITCH CONTROL CIRCUITS TYPICAL SWITCH OPERATING AND REPEATER CIRCUITS TYPICAL SIGNAL CONTROL CIRCUITS TYPICAL SPEED LIMIT SELECTION CIRCUITS	
SEE ALSO A650 CONTRACT (PASSENGER VEHICLE) DOCUMENTS						
3.1(e)	DETECTABLE RIGHT-OF-WAY HAZARDS	5/ MAIN LINE TRACK CIRCUITS	5.2.1.A.1 5.2.1.B.2	N/A	N/A	
SEE ALSO A640 CONTRACT (COMMUNICATIONS) DOCUMENTS						
SEE ALSO A650 CONTRACT (PASSENGER VEHICLE) DOCUMENTS						
3.2	SUBORDINATION OF OTHER ATC FUNCTIONS TO ATP	3/GENERAL REQUIREMENTS	3.2.2	N/A	N/A	
SEE ALSO A650 CONTRACT (PASSENGER VEHICLE) DOCUMENTS						
3.3	TRAIN DETECTION REQUIREMENTS	3/GENERAL REQUIREMENTS	3.4.2.F	N/A	N/A	
		5/ MAIN LINE TRACK CIRCUITS	5.1 5.2			
SEE ALSO A650 CONTRACT (PASSENGER VEHICLE) DOCUMENTS						

G.O. NO.127 REQUIREMENT		A620 CONTRACT DOCUMENTS				* CONTRACTOR DESIGN DOCUMENTS
NO.	DESCRIPTION	TECHNICAL PROVISIONS		CONTRACT DRAWINGS		
		SECTION NO./TITLE	ARTICLE	NO.	TITLE	
SECTION 3.4	VEHICLE ATP BYPASS	3/GENERAL REQUIREMENTS	3.1.7.C	Q-087 Q-088	PASSENGER VEHICLE INTERFACE	
		6/ AUTOMATIC TRAIN CONTROL VEHICLE EQUIPMENT	6.2.2.B.3			
SEE ALSO A650 CONTRACT (PASSENGER VEHICLE) DOCUMENTS						
3.5	SAFE BRAKING DISTANCES	3/GENERAL REQUIREMENTS	3.4.2	N/A	N/A	
SEE ALSO A650 CONTRACT (PASSENGER VEHICLE) DOCUMENTS						
3.6	ROUTE INTERLOCKING REQUIREMENTS	3/GENERAL REQUIREMENTS	3.3.2	Q-053	TYPICAL CONTROL PANEL CIRCUITS	
		6/ INTERLOCKING REQUIREMENTS	ALL	Q-054 Q-055 Q-056 Q-057	TYPICAL SWITCH CONTROL CIRCUITS TYPICAL SWITCH OPERATING AND REPEATER CIRCUITS TYPICAL SIGNAL CONTROL CIRCUITS TYPICAL INTERLOCKING CIRCUITS	
3.6(a)	INTERLOCKING CIRCUIT SEQUENCE	N/A	N/A	Q-043 Q-044	ROUTE AND ASPECT CHART-UNION STATION INTERLOCKINGS ROUTE AND ASPECT CHART-TYPICAL INTERLOCKING-DOUBLE CROSSOVER	
3.6(b)	SWITCH POINT DETECTION	6/ INTERLOCKING REQUIREMENTS	6.4.2 6.4.3 6.4.4	Q-055 Q-064	TYPICAL SWITCH OPERATING AND REPEATER CIRCUITS TYPICAL SWITCH CONTROL CIRCUITS	
		7/WAYSIDE EQUIPMENT	7.2.1.D 7.2.1.F	Q-068 Q-057	TYPICAL SIGNAL CONTROL CIRCUITS TYPICAL INTERLOCKING CIRCUITS	
3.6(c)	TRAIN DETECTION IN INTERLOCKINGS	6/ INTERLOCKING REQUIREMENTS	6.4.4.C 6.4.5.D	Q-056 Q-057	TYPICAL SIGNAL CONTROL CIRCUITS TYPICAL INTERLOCKING CIRCUITS	
3.6(d)	CONTROLLED INTERLOCKING APPROACH AND ENTRY	3/GENERAL REQUIREMENTS	3.4.2.B 3.4.2.F.7	Q-056	TYPICAL SIGNAL CONTROL CIRCUITS	
		5/ MAIN LINE TRACK CIRCUITS	5.2.2.F	Q-057	TYPICAL INTERLOCKING CIRCUITS	
		6/ INTERLOCKING REQUIREMENTS	6.4.5.D	Q-061	TYPICAL SPEED LIMIT SELECTION CIRCUITS	
SEE ALSO A650 CONTRACT (PASSENGER VEHICLE) DOCUMENTS						

CONTINUES AT RIGHT

* CONTRACTOR SHALL COMPLETE CHECKLIST, IDENTIFYING THE DOCUMENTS WHICH VERIFY CONFORMANCE TO EACH REQUIREMENT

FOR CONTINUATION SEE DWG. Q-135

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DESIGNED BY BILL LUCCI DRAWN BY ED ACOSTA CHECKED BY <i>[Signature]</i> IN CHARGE <i>[Signature]</i> 29 AUG 86	SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT 	LA CBD TO NORTH HOLLYWOOD AUTOMATIC TRAIN CONTROL CHECKLIST OF REQUIREMENTS PUC G.O. NO. 127 SHEET 2 OF 3	CONTRACT NO. A620 DRAWING NO. Q-134 SCALE NONE SHEET NO. 134
REV. DATE BY SUB APP DESCRIPTION	INITIAL ISSUE	SUBMITTED <i>[Signature]</i>	APPROVED <i>[Signature]</i>		

G.O. NO.127 REQUIREMENT		A620 CONTRACT DOCUMENTS				* CONTRACTOR DESIGN DOCUMENTS
NO.	DESCRIPTION	TECHNICAL PROVISIONS		CONTRACT DRAWINGS		
		SECTION NO./TITLE	ARTICLE	NO.	TITLE	
SECTION 3.6(e)	TIME LOCKING	6/ INTERLOCKING REQUIREMENTS	6.4.4.C 6.5.1	Q-056	TYPICAL SIGNAL CONTROL CIRCUITS	
3.6(f)	ROUTE LOCKING	6/ INTERLOCKING REQUIREMENTS	6.4.4.C 6.4.4.D 6.4.4.E 6.4.5.D 6.5.2 6.5.3	Q-054	TYPICAL SWITCH CONTROL CIRCUITS	
				Q-056	TYPICAL SIGNAL CONTROL CIRCUITS	
				Q-057	TYPICAL INTERLOCKING CIRCUITS	
3.7	CIVIL SPEED LIMITS	3/GENERAL REQUIREMENTS	4.4.A.1 4.4.A.2 4.4.A.3 4.4.B.1 4.4.B.2 4.4.B.3 4.4.C.1 4.4.C.2 4.4.C.3 4.4.D.1 4.4.D.2 4.4.D.3 4.4.E.1 4.4.E.2 4.4.E.3 4.4.F.1 4.4.F.2 4.4.F.3	N/A	N/A	
SEE ALSO A650 CONTRACT (PASSENGER VEHICLE) DOCUMENTS						
3.8	SAFE SPEED - DISTANCE PROFILE	3/GENERAL REQUIREMENTS	3.4.A.1 3.4.A.2 3.4.A.3 3.4.B 3.4.C	N/A	N/A	
SEE ALSO A650 CONTRACT (PASSENGER VEHICLE) DOCUMENTS						
3.8(a)	REACTION TO OVERSPEED	6/ AUTOMATIC TRAIN CONTROL VEHICLE EQUIPMENT	8.3.1.B 8.3.2.G	N/A	N/A	
SEE ALSO A650 CONTRACT (PASSENGER VEHICLE) DOCUMENTS						
3.8(b)	SAFE SPEED - DISTANCE PROFILE	3/GENERAL REQUIREMENTS	3.4.2.A.2 3.4.2.B 3.4.2.F	N/A	N/A	
SEE ALSO A650 CONTRACT (PASSENGER VEHICLE) DOCUMENTS						
3.8(c)	BRAKING WITH ZERO SPEED COMMANDED	REFER TO A650 CONTRACT (PASSENGER VEHICLE) DOCUMENTS				
3.8(d)	TRAIN SPEED DETECTION	6/ AUTOMATIC TRAIN CONTROL VEHICLE EQUIPMENT	8.3.2.F	N/A	N/A	
3.8(e)	ZERO SPEED DETECTION	6/ AUTOMATIC TRAIN CONTROL VEHICLE EQUIPMENT	8.3.1.B.5 8.3.2.F.2	N/A	N/A	
SEE ALSO A650 CONTRACT (PASSENGER VEHICLE) DOCUMENTS						
3.8(f)	ROLL-BACK DETECTION AND REACTION	3/GENERAL REQUIREMENTS	3.2.3.A.4	N/A	N/A	
SEE ALSO A650 CONTRACT (PASSENGER VEHICLE) DOCUMENTS						

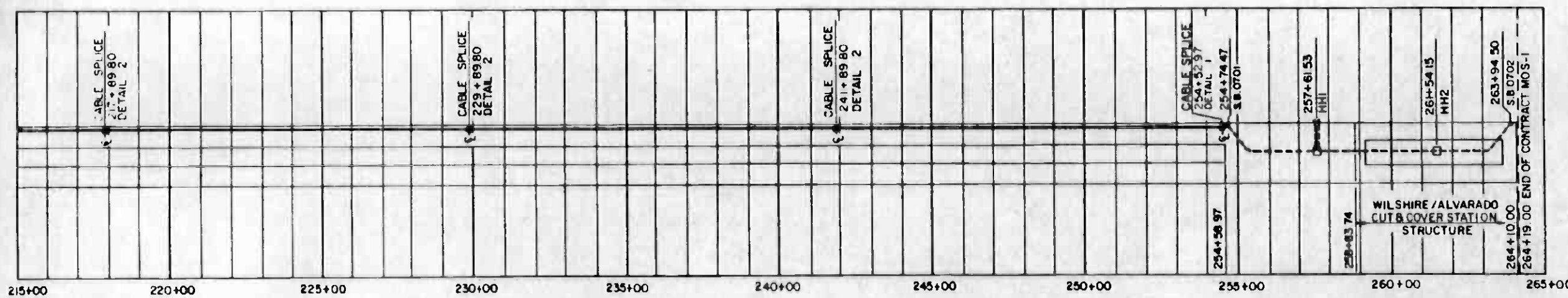
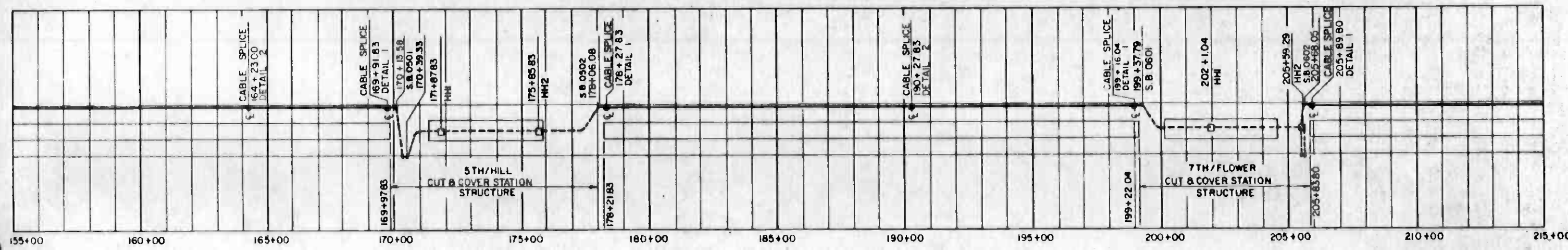
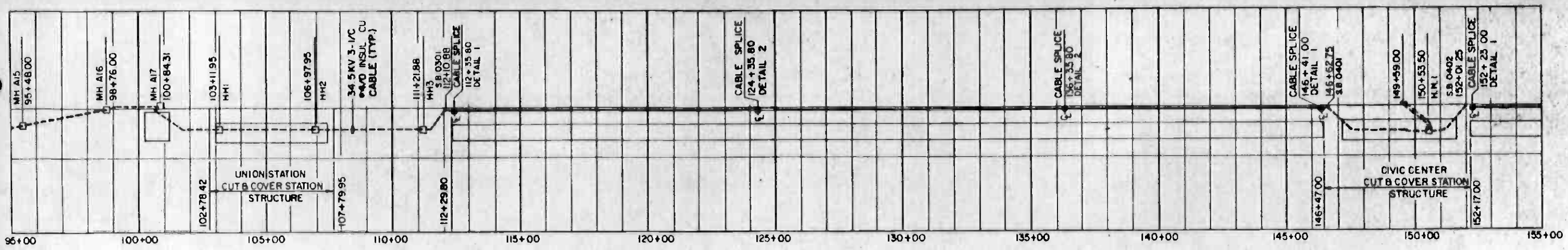
G.O. NO.127 REQUIREMENT		A620 CONTRACT DOCUMENTS				* CONTRACTOR DESIGN DOCUMENTS
NO.	DESCRIPTION	TECHNICAL PROVISIONS		CONTRACT DRAWINGS		
		SECTION NO./TITLE	ARTICLE	NO.	TITLE	
3.9	REACTION TO ABSENCE OF SPEED LIMIT SIGNALS	6/ AUTOMATIC TRAIN CONTROL VEHICLE EQUIPMENT	8.3.2.F	N/A	N/A	
SEE ALSO A650 CONTRACT (PASSENGER VEHICLE) DOCUMENTS						
3.10	RIGHT-OF-WAY HAZARD PROTECTION	5/MAIN LINE TRACK CIRCUITS	5.2.1.A.1 5.2.1.B 5.2.2.F	N/A	N/A	
SEE ALSO A640 CONTRACT (COMMUNICATIONS) DOCUMENTS						
SEE ALSO A650 CONTRACT (PASSENGER VEHICLE) DOCUMENTS						
3.12	SECURITY FOR EQUIPMENT	4/ AUTOMATIC TRAIN CONTROL EQUIPMENT ROOM	4.4.2.A 4.7.1.C	N/A	N/A	
		7/ MAIN LINE WAYSIDE EQUIPMENT	7.2.1.K.G.A 7.3.1.G 7.4.1.J 7.5.1.F 7.7			
		9/ YARD EQUIPMENT	9.4.2.1 9.5.2.C 9.7.1.E			
SEE ALSO A112 CONTRACT (YARD MAIN SHOP BUILDING CONSTRUCTION) DOCUMENTS						
SEE ALSO A136 CONTRACT (UNION STATION CONSTRUCTION, STAGE II) DOCUMENTS						
SEE ALSO A147 CONTRACT (CIVIC CENTER STATION CONSTRUCTION, STAGE II) DOCUMENTS						
SEE ALSO A157 CONTRACT (5 th HILL STATION CONSTRUCTION, STAGE II) DOCUMENTS						
SEE ALSO A167 CONTRACT (7 th /FLOWER STATION CONSTRUCTION, STAGE II) DOCUMENTS						
SEE ALSO A187 CONTRACT (WILSHIRE/ALVARADO STATION CONSTRUCTION, STAGE II) DOCUMENTS						
SEE ALSO A640 CONTRACT (COMMUNICATIONS) DOCUMENTS						
SEE ALSO A650 CONTRACT (PASSENGER VEHICLE) DOCUMENTS						
3.13	CROSS AND GROUND PROTECTION	3/GENERAL REQUIREMENTS	3.3.2.E 3.3.2.F 3.3.2.K 3.3.8.C 3.3.8.D 3.6.3.A	N/A	N/A	
		4/ AUTOMATIC TRAIN CONTROL EQUIPMENT ROOM	4.2.6 4.3.2.D.2 4.3.4			
SEE ALSO A640 CONTRACT (COMMUNICATIONS) DOCUMENTS						
SEE ALSO A650 CONTRACT (PASSENGER VEHICLE) DOCUMENTS						
3.15	MAINTENANCE AND OPERATION	15/SYSTEMS ASSURANCE PROGRAM	15.4	N/A	N/A	
SEE ALSO A640 CONTRACT (COMMUNICATIONS) DOCUMENTS						
SEE ALSO A650 CONTRACT (PASSENGER VEHICLE) DOCUMENTS						

CONTINUES AT RIGHT

* CONTRACTOR SHALL COMPLETE CHECKLIST, IDENTIFYING THE DOCUMENTS WHICH VERIFY CONFORMANCE TO EACH REQUIREMENT.

THE END

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DESIGNED BY BILL LUCCI DRAWN BY ED ACOSTA CHECKED BY <i>[Signature]</i> IN CHARGE <i>[Signature]</i> DATE 3 SEP 88		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT		LA CBD TO NORTH HOLLYWOOD AUTOMATIC TRAIN CONTROL CHECKLIST OF REQUIREMENTS PUC G.O. NO. 127 SHEET 3 OF 3	CONTRACT NO. A620 DRAWING NO. Q-135 SCALE NONE SHEET NO. 35
REV. DATE BY SUB APP DESCRIPTION	REV. DATE BY SUB APP DESCRIPTION	INITIAL ISSUE	SUBMITTED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DMJM/PBQD/KE/HWA GENERAL CONSULTANTS		



- NOTES:**
1. CABLE SPLICE LOCATIONS ARE BASED ON APPROXIMATE CABLE LENGTH OF 1,200 FT. IN A MAXIMUM 96 IN. DIAMETER REEL. SEE PLAN THIS DRAWING FOR CORRESPONDING CENTER LINE STATIONING.
 2. CONTRACTOR TO FURNISH CONDUIT & APPURTENANCES AND INSTALL AS INDICATED.
 3. CONTRACTOR TO OBTAIN 35 KV, 3-1/4 #4/0 INSULATED COPPER CABLE FROM THE DISTRICT AND INSTALL IN CONDUIT AS INDICATED.
 4. ATTACH CABLE PIGTAILS TO SUPPORT BRACKETS BY MEANS OF CABLE TIES.
 5. SEAL CABLE ENDS WITH TAPE AFTER INSTALLATION TO PROTECT THEM FROM PHYSICAL DAMAGE AND MOISTURE.
 6. SEAL CONDUIT ENDS AFTER INSTALLATION WITH CONDUIT SEALING COMPOUND.



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DESIGNED BY <i>E. Norck</i>	DRAWN BY <i>A. Vinogradov</i>	CHECKED BY <i>I. S. Aofir</i>	IN CHARGE <i>I. S. Aofir</i>	DATE 3-20-87
REV	DATE	BY	APP	DESCRIPTION
				INITIAL ISSUE



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

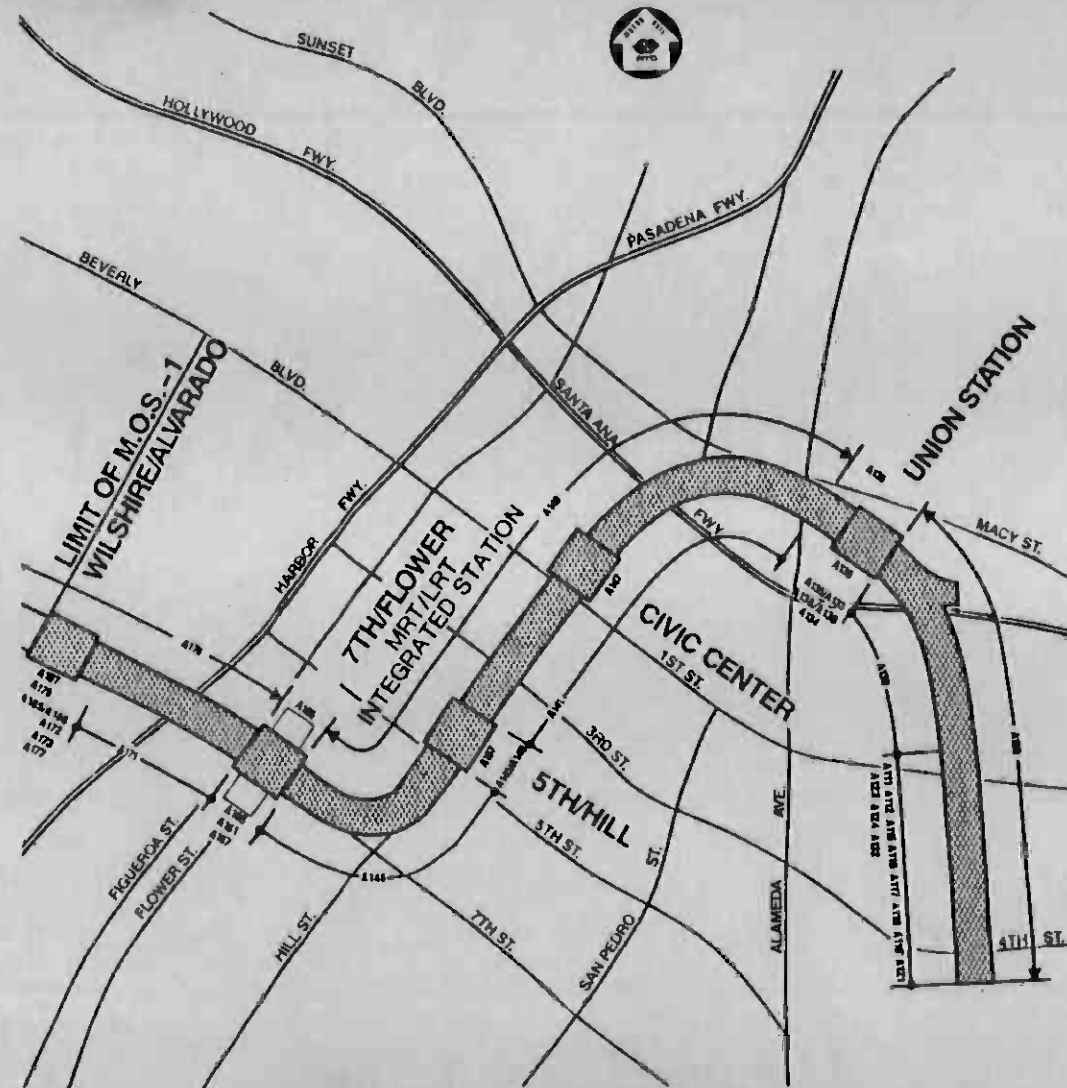
DULM/PSOO/KE/MWA
 GENERAL CONTRACTOR
 APPROVED *Howard K. ...*

LA CBD TO NORTH HOLLYWOOD
AUTOMATIC TRAIN CONTROL
35 KV TRAINWAY FEEDER
INSTALLATION DETAILS
SHEET 1 OF 2

CONTRACT NO. A620	REV. 0
DRAWING NO. Q-136	SCALE NO SCALE
SHEET NO. 136	

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT

LOS ANGELES CENTRAL BUSINESS DISTRICT TO NORTH HOLLYWOOD

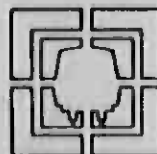


VIII. AUTOMATIC TRAIN CONTROL SYSTEM REFERENCE DRAWINGS CONTRACT A620

JULY 1987



The preparation of this document has been financed in part through a grant from the U.S. Department of Transportation, Urban Mass Transportation Administration, under the Urban Mass Transportation Act of 1964, as amended, the State of California, and the Los Angeles County Transportation Commission.



GENERAL CONSULTANT:

METRO RAIL TRANSIT CONSULTANTS
DMJM/PBQD/KE/HWA

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT

LOS ANGELES CENTRAL BUSINESS DISTRICT TO NORTH HOLLYWOOD



VIII. AUTOMATIC TRAIN CONTROL SYSTEM REFERENCE DRAWINGS CONTRACT A620

JULY 1987



CONSULTANTS:



GENERAL CONSULTANT:
METRO RAIL TRANSIT CONSULTANTS
DMJM/PBQD/KE/HWA

APPROVED: Howard Schelliff
PROJECT DIRECTOR

DATE: 6/26/87



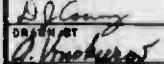
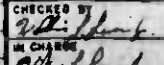
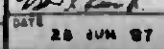
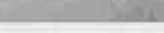




RTD
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

APPROVED: Robert J. ...
ASSISTANT GENERAL MANAGER
TRANSIT SYSTEMS DEVELOPMENT

DATE: 6/24/87

INDEX OF DRAWINGS

SHEET NO.	DRAWING NO.	DRAWING TITLE / DESCRIPTION	SHEET NO.	DRAWING NO.	DRAWING TITLE / DESCRIPTION	SHEET NO.	DRAWING NO.	DRAWING TITLE / DESCRIPTION
1	Q-300	INDEX SHEET 1	46	E-251	MISCELLANEOUS ELECTRICAL DETAILS	88		NOT USED
2	Q-301	INDEX SHEET 2	47	E-259	COORDINATE CODES FOR MANHOLES, HANDHOLES, AND DUCT BANKS	89		NOT USED
3	Q-302	INDEX SHEET 3			WORK POINTS	90	E-062	DUCT BANKS AND STUB-UP - 2 COORDINATE CODES
4	Q-303	INDEX SHEET 4	48	E-260	COORDINATE CODES FOR MANHOLES, HANDHOLES, AND STUB-UPS	91	E-063	DUCT BANKS AND STUB-UPS - 3 COORDINATE CODES
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7	E-002	SYMBOL LIST AND ABBREVIATIONS - 2	51	E-265	MANHOLE C6 AND CABLE TRAYS	95	E-097	PLAN - EMBEDDED CONDUIT - 3
8	E-003	SYMBOL LIST AND ABBREVIATIONS - 3	52	E-266	HANDHOLE CH17, CH17A, MANHOLE C8 & CABLE TRAYS	96	E-098	EMBEDDED CONDUIT SECTIONS
9	E-026	MANHOLE DETAILS AND CABLE TRAYS - 1	53	E-267	MANHOLES C9 AND C10 AND CABLE TRAYS	97	E-099	PLAN - EMBEDDED CONDUIT - 4
10	E-031	MANHOLE DETAILS AND CABLE TRAYS - 6	54	E-268	MANHOLE C11 AND CABLE TRAYS	98	E-100	PLAN - EMBEDDED CONDUIT - 5
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13	E-218	CONTROL TOWER POWER	57	E-279	COMMUNICATIONS MANHOLE SECTIONS			
14	E-219	CONTROL TOWER CABLE TRAY LAYOUTS	58	E-280	MANHOLE C2 AND CABLE TRAYS			
15	E-224	CONTROL TOWER CABLE TRAY DETAILS	59	E-281	MANHOLE C3 AND CABLE TRAYS			
16		NOT USED	60	E-282	COMMUNICATIONS DUCT BANK SECTIONS - 1			UNION STATION STAGE I CONTRACT A135
17	E-271	TRAIN CONTROL - COMMUNICATIONS MANHOLE NO. C1 PLAN - CABLE TRAYS	61	E-283	COMMUNICATIONS DUCT BANK SECTIONS - 2	104	E-001S	ELECTRICAL SYMBOLS ABBREVIATIONS AND GENERAL CONSTRUCTION NOTES
18	E-273	TRAIN CONTROL - COMMUNICATIONS MANHOLE NO. C1 SECTIONS - CABLE TRAYS	62-65		NOT USED	105	E-004S	EAST ANCILLARY ROOMS TRACK LEVEL POWER AND LIGHTING PLAN
19	E-275	TRAIN CONTROL - COMMUNICATIONS MANHOLE NO. C1 SECTIONS - CABLE TRAYS				106	E-013S	UNDER PLATFORM DUCT BANK PLANS
20-24		NOT USED				107	E-014S	UNDER PLATFORM DUCT BANK SECTIONS AND DETAILS SHEET 1
		YARD LEADS CONTRACT A130				108	E-015S	UNDER PLATFORM DUCT BANK SECTIONS AND DETAILS SHEET 2
			66	E-001	SYMBOL LIST AND ABBREVIATIONS - 1	109	E-016S	UNDER PLATFORM DUCT BANK SECTIONS AND DETAILS SHEET 3
		YARD STORAGE AREA CONTRACT A115	67	E-002	SYMBOL LIST AND ABBREVIATIONS - 2	110	E-017S	EAST ANCILLARY ROOMS - MEZZANINE LEVEL - TRAIN CONTROL AND COMMUNICATION RACEWAY PLAN
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29	E-009	YARD FACILITIES - UNDERGROUND DUCT BANKS - 6	72		NOT USED	115	E-027S	WEST EMERGENCY FAN ROOM - TRACK LEVEL - TRAIN CONTROL AND COMMUNICATION RACEWAY PLAN
30	E-010	YARD FACILITIES - UNDERGROUND DUCT BANKS - 7	73		NOT USED	116	E-028S	ANCILLARY ROOMS - TRACK LEVEL - ENLARGED TRAIN CONTROL AND COMMUNICATION RACEWAY PLAN
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32	E-013	YARD FACILITIES - UNDERGROUND DUCT BANKS - 10	75		NOT USED	118	E-030S	GROUNDING PLANS
33	E-014	YARD FACILITIES - UNDERGROUND DUCT BANKS - 11	76		NOT USED	119	E-031S	GROUNDING DETAIL PLANS
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35	E-016	YARD FACILITIES - UNDERGROUND DUCT BANKS - 13	78	E-036	UNDERGROUND DUCT BANKS - 8	121	E-042S	ELECTRICAL ROOMS AND MANHOLES SECTIONS AND DETAIL
36	E-018	YARD FACILITIES - UNDERGROUND DUCT BANKS - 15	79		NOT USED	122	E-044S	JUNCTION AND PULL BOX SCHEDULE
37	E-019	YARD FACILITIES - UNDERGROUND DUCT BANKS - 16	80	E-044	PA, COMMUNICATIONS AND TRAIN CONTROL - DUCT BANK DETAILS AND SECTIONS - 2	123	E-047S	ELECTRICAL RACEWAY AND CABLE SCHEDULE - TRAIN CONTROL AND COMMUNICATION - SHEET 1
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39	E-021	YARD FACILITIES - UNDERGROUND DUCT BANKS - 18	81	E-045	PA & COMMUNICATIONS DUCT BANK DETAILS AND SECTIONS - 3			
40	E-025	HANDHOLE AND MANHOLES DETAILS AND CABLE TRAYS	82	E-046	MISCELLANEOUS ELECTRICAL DETAILS			
41	E-034	UNDERGROUND YARD FACILITIES LEGEND - SYMBOLS - NOTES	83		NOT USED			
42	E-091	TRAIN CONTROL RACEWAY AND CABLE SCHEDULE - 1	84		NOT USED			
43	E-092	TRAIN CONTROL RACEWAY AND CABLE SCHEDULE - 2	85		NOT USED			
44	E-248	PA AND COMMUNICATIONS DUCT BANK SECTIONS	86		NOT USED			
45	E-249	PA AND COMMUNICATIONS HANDHOLES AND DUCT BANK SECTIONS	87		NOT USED			

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247	E-078	SYSTEMWIDE SERVICES PLATFORM GRID 15.1 TO 21	291	T-180	NO.10 DOUBLE CROSSOVER, 42'-10" TC - DIRECT FIXATION - SHEET 2 OF 2	329	T-228	SECOND POUR CONCRETE LAYOUT - WILSHIRE/ALVARADO DOUBLE CROSSOVER FLOATING SLAB - SHEET 2 OF 2
248	E-079	SYSTEMWIDE SERVICES PLATFORM GRID 21 TO 27						
249	E-080	SYSTEMWIDE SERVICES PLATFORM GRID 27 TO 33	292		NOT USED	330		NOT USED
250	E-083	SYSTEMWIDE SERVICES MEZZANINE GRID 15.1 TO 20	293		NOT USED	331	T-232	MISCELLANEOUS TRACKWORK INSTALLATION DETAILS - SHEET 2
251	E-084	SYSTEMWIDE SERVICES MEZZANINE GRID 20 TO 27	294	T-183	DIAMOND DETAILS - 19° 11'-00" - DIRECT FIXATION	332	T-233	MISCELLANEOUS TRACKWORK INSTALLATION DETAILS - SHEET 3
252	E-085	SYSTEMWIDE SERVICES MEZZANINE GRID 27 TO 33	295	T-185	12'-0" TEE RAIL DESIGN GUARD RAIL - BALLASTED	333	T-234	MISCELLANEOUS TRACKWORK INSTALLATION DETAILS - SHEET 4
253	E-088	SYSTEMWIDE SERVICES - CONDUIT SCHEDULES - SHEET 1	296	T-186	12'-0" TEE RAIL DESIGN GUARD RAIL - DIRECT FIXATION	334	T-235	MISCELLANEOUS TRACKWORK INSTALLATION DETAILS - SHEET 5
254	E-089	SYSTEMWIDE SERVICES - CONDUIT SCHEDULES - SHEET 2	297	T-187	SPECIAL PLATE DETAILS - SHEET 1 OF 4	335	T-236	MISCELLANEOUS TRACKWORK INSTALLATION DETAILS - SHEET 6
255	E-094	MISCELLANEOUS DETAILS - SHEET 1	298		NOT USED	336	T-237	BUMPING POST DETAIL - HYDRAULIC
256	E-107	GROUNDING STATION GRID 15.1 TO 27	299		NOT USED	337	T-238	BUMPING POST DETAIL - STANDARD
257-261		NOT USED	300		NOT USED	338	T-239	TYPICAL GRADE CROSSING
			301	T-191	SPECIAL PLATE ANCHORAGE ASSEMBLY	339	T-240	SERVICE AISLE DETAILS
			302		NOT USED	341	T-244	MISCELLANEOUS TRACK SECTIONS
			303	T-193	16'-6" SPLIT SWITCH POINT DERAIL	342	T-245	TRACK CROSSWALK - TYPE 1 - DETAILS
			304	T-194	WILSHIRE/ALVARADO LATERAL TURNOUT - DIRECT FIXATION	343	T-246	TRACK CROSSWALK - TYPE 2 - DETAILS
		WILSHIRE/ALVARADO STATION AND LINE STAGE II CONTRACT A187	305	T-195	WILSHIRE/ALVARADO LATERAL SWITCH - DIRECT FIXATION	344	T-247	DIRECT FIXATION TRACK CONSTRUCTION - BRIDGING BEAM
			306	T-196	WILSHIRE/ALVARADO LATERAL TURNOUT CLOSURE RAIL SECTION - DIRECT FIXATION	345	T-248	EMBEDDED TIMBER TIE INSTALLATION DETAIL
262	E-037	LIGHTING MEZZANINE GRID 15.1 TO 20				346	T-249	MISCELLANEOUS DETAILS
263	E-095	MISCELLANEOUS DETAILS, SHEET 2	307	T-197	WILSHIRE/ALVARADO LATERAL FROG - DIRECT FIXATION	347	T-250	BALLAST PAD - CONSTRUCTION LIMITS
264-268		NOT USED	308	T-198	WILSHIRE/ALVARADO DOUBLE CROSSOVER, 38'-10" TC - DIRECT FIXATION - SHEET 1 OF 2	348	T-251	NEGATIVE RETURN JOINT BONDING
						349	T-301	CONTACT RAIL LAYOUT - DOUBLE CROSSOVER TRACKS
			309	T-199	WILSHIRE/ALVARADO DOUBLE CROSSOVER, 38'-10" TC - DIRECT FIXATION - SHEET 2 OF 2	350		NOT USED
						351		NOT USED
			310	T-200	DIAMOND DETAILS - 23° 40'-00" - DIRECT FIXATION	352		NOT USED
		TRACKWORK INSTALLATION CONTRACT A61D	311	T-201	WILSHIRE/ALVARADO SPECIAL PLATE DETAILS	353		NOT USED
269	T-103	ABBREVIATIONS AND SYMBOLS	312	T-211	STANDARD YARD TRACK CONSTRUCTION - NONELECTRIFIED	354		NOT USED
270	T-104	GENERAL NOTES	313	T-212	STANDARD YARD TRACK CONSTRUCTION - ELECTRIFIED	355		NOT USED
271		NOT USED	314	T-213	DIRECT FIXATION TRACK CONSTRUCTION - CUT & COVER TYPES 1, 2 & 3	356	T-308	CONTACT RAIL MOUNTING DETAILS - DIRECT FIXATION TRACK IN CUT & COVER
272	T-161	NO.8 LATERAL TURNOUT - BALLASTED - NONELECTRIFIED	315	T-214	DIRECT FIXATION TRACK CONSTRUCTION - TUNNEL SUBWAY			
273	T-162	NO.8 LATERAL TURNOUT - BALLASTED - ELECTRIFIED	316	T-215	DIRECT FIXATION TRACK CONSTRUCTION - TUNNEL SUBWAY FLOATING SLAB	357		NOT USED
274	T-163	NO.8 LATERAL SWITCH - BALLASTED	317		NOT USED	358		NOT USED
275	T-164	NO.8 LATERAL FROG - BALLASTED	318		NOT USED	359	T-311	COVERBOARD DETAILS - COVERBOARD ASSEMBLY
276	T-165	NO.10 LATERAL TURNOUT - DIRECT FIXATION	319	T-218	SECOND POUR CONCRETE LAYOUT - 42'-10" TC - DOUBLE CROSSOVER PLAN - SHEET 1	360	T-312	COVERBOARD DETAILS - ASSEMBLY AT END APPROACH
277	T-166	NO.10 LATERAL SWITCH - DIRECT FIXATION				361	T-313	COVERBOARD DETAILS - ASSEMBLY AT EXPANSION JOINT
278	T-167	NO.10 LATERAL TURNOUT CLOSURE RAIL SECTION - DIRECT FIXATION	320	T-219	SECOND POUR CONCRETE LAYOUT - 42'-10" TC - DOUBLE CROSSOVER PLAN - SHEET 2	362	T-314	COVERBOARD DETAILS - COVERBOARD SUPPORT BRACKET ASSEMBLY
279	T-168	NO.10 LATERAL FROG - DIRECT FIXATION				363		NOT USED
280	T-169	NO.8 SINGLE CROSSOVER, 16' TC TYPE 1 - BALLASTED	321	T-220	SECOND POUR CONCRETE LAYOUT - NO.10 SINGLE CROSSOVER - TYPE 1	364		NOT USED
281		NOT USED				365		NOT USED
282		NOT USED	322	T-221	SECOND POUR CONCRETE LAYOUT - NO.10 SINGLE CROSSOVER - TYPE 2	366	T-318	COVERBOARD DETAILS - ASSEMBLY AT CONTACT RAIL DIP SECTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT



DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

APPROVED

LA CBD TO NORTH HOLLYWOOD
AUTOMATIC TRAIN CONTROL
REFERENCE DRAWINGS
INDEX SHEET 3 OF 4

CONTRACT NO
A620
DRAWING NO
Q-302
SCALE
NO. SCALE
SHEET NO
A620/3

REV	DATE	BY	SUB	APP	DESCRIPTION

REV	DATE	BY	SUB	APP	DESCRIPTION
1	7-1-87	JK			INITIAL ISSUE

SUBMITTED

LIGHTING OUTLETS

	WALL	OUTLET FOR INCANDESCENT HIGH INTENSITY DISCHARGE, OR HIGH PRESSURE SODIUM FIXTURE
		FLUORESCENT FIXTURE OUTLET
		FLUORESCENT STRIP LIGHTING FIXTURE
		EXIT LIGHT OUTLET (IF WITH CORD ATTACHMENT, INDICATES CONNECTION TO ADJACENT BATTERY-PACK EMERGENCY LIGHT)
		JUNCTION BOX
		LETTER SUBSCRIPT ADJACENT TO FIXTURE OUTLET DESIGNATES SWITCH CONTROL
		FLOODLIGHT, ARROWS INDICATE DIRECTION OF BEAM
		EMERGENCY LIGHT OUTLET (FLUORESCENT)
		BLANKED OUTLET

RECEPTACLE OUTLETS

	SINGLE RECEPTACLE OUTLET
	DUPLEX RECEPTACLE OUTLET
	SINGLE SPECIAL-PURPOSE RECEPTACLE OUTLET
	POWER RECEPTACLE 100A-2P-750V D.C. *USE SUBSCRIPT LETTERS TO INDICATE FUNCTION
	FLOOR BOX WITH SINGLE RECEPTACLE
	FLOOR BOX WITH DUPLEX RECEPTACLE
	FLOOR BOX WITH SERVICE FITTING AS NOTED
	FLOOR BOX - PUBLIC TELEPHONE
	FLOOR BOX - PRIVATE TELEPHONE
	UNDERFLOOR DUCT (WITH ASSOCIATED OUTLETS IF INDICATED)
	TRENCH OUTLET
	30A-3P-4W-600V
	15A-2P-3W-125V TWISTLOCK (NEMA L5-15)
	15A-3P-4W-250V
	30A-3P-4W-600V
	ANGLE TYPE AND THREADED CAP
	50A-3P-4W-600V (CROUSE HINDS CAT. NO. 6425) WITH WEATHERPROOF PLATE & BOX IF INDICATED
	50A-2P-3W-600V WITH WEATHERPROOF PLATE & BOX
	20A-2P-3W-125V
	15A-3P-4W-600V

PANELBOARDS, SWITCHBOARDS, ETC.

	PANELBOARD M - 480/277V, L - 208/120V
	TERMINAL CABINET, TYPES AS FOLLOWS: CIC - COMMUNICATIONS INTERFACE CABINET TTC - TELEPHONE TERMINAL CABINET FTC - FACILITIES TERMINAL CABINET DATC - DATA ACQUISITION TERMINAL CABINET ITC - INTERCONNECTION TERMINAL CABINET CTC - CABLE TRANSMISSION TERMINAL CABINET
	PULL BOX
	MOTOR CONTROLLER, SUBSCRIPT INDICATES NEMA SIZE
	FUSED DISCONNECT SWITCH, SUBSCRIPT INDICATES FUSE SIZE AND NO. OF POLES
	NON-FUSED DISCONNECT SWITCH, SUBSCRIPT INDICATES SIZE AND NO. OF POLES
	ELECTRICAL MANHOLE
	ELECTRICAL HANDHOLE
	COMBINATION MAGNETIC MOTOR STARTER, FUSIBLE SUBSCRIPT INDICATES NEMA SIZE
	COMBINATION MAGNETIC MOTOR STARTER NON-FUSIBLE. SUBSCRIPT INDICATES NEMA SIZE
	COMBINATION MAGNETIC MOTOR STARTER, WITH CIRCUIT BREAKER. SUBSCRIPT INDICATES NEMA SIZE
	MOTOR, WITH IDENTIFICATION, INSERT INDICATES HORSEPOWER. THREE PHASE OR SINGLE PHASE.
	SWITCHBOARD (SWBD) OR MOTOR CONTROL CENTER (MCC) MS - MAIN SWBD, HP - DISTRIBUTION, SWBD - 480/277V, LP - DISTRIBUTION SWBD - 208/120V
	CONTROL PANEL, TYPES AS FOLLOWS: HCP - HALON CONTROL PANEL FSCP - FIRE/SECURITY CONTROL PANEL EMP - EMERGENCY MANAGEMENT PANEL ACP - AUXILIARY CONTROL PANEL
	RCP - REFRIGERATION CONTROL PANEL
	ACCP - AIR CONDITIONING CONTROL PANEL

DISCONNECT SWITCHES SHALL BE HORSEPOWER RATED PER NATIONAL ELECTRICAL CODE

SPECIAL IDENTIFICATION

WP - WEATHERPROOF	RT - RAIN TIGHT	G - GROUND
WT - WATERTIGHT	DT - DUST TIGHT	R - RECESSED
VT - VAPOR TIGHT	EP - EXPLOSION PROOF	F - FLUSH
C.O - CONDUIT ONLY	BC - BARE COPPER	

CONDUCTORS & CONDUIT

	RACEWAY EMBEDDED IN FLOOR
	RACEWAY EMBEDDED IN CEILING OR WALL
	RACEWAY EXPDSED OR CONCEALED IN CEILING.
	BRANCH CIRCUIT HOME RUN TO PANELBOARD. LL2 DENOTES PANEL LL2 AND NUMERALS IDENTIFY CIRCUIT NUMBERS.
	INDICATES NUMBER OF NO. 12 WIRES. NO CROSS LINES INDICATES 3 NO. 12 WIRES UNLESS NOTED
	WIRE AND RACEWAY SIZE FOR NO. 10 AND LARGER
	LIGHT LINES DESIGNATE CONDUIT OR EQUIPMENT INSTALLED IN STRUCTURAL CONTRACT (STAGE 1) AND ARE EXISTING.
	HEAVY LINES DENOTE CONDUITS OR EQUIPMENT TO BE INSTALLED IN THIS CONTRACT
	FEEDER OR HOME RUN RACEWAY IDENTIFICATION AS FOLLOWS: P - POWER, A - AUXILIARY, T - TRACTION POWER, TC - TRAIN CONTRDL, C - COMMUNICATION, F - FIRE PROTECTION AND DETECTION, EM - EMERGENCY, PA - PUBLIC ADDRESS, TV - TELEVISION, ET - EMERGENCY TELEPHONE, IA - INTRUSION S - SIGNAL, TE - PUBLIC TELEPHONE, MT - MAINTENANCE TELEPHONE, AT - ADMINISTRATIVE TELEPHONE, FT - FIRE DEPT. PHONE LINE
	GROUND WIRE
	RACEWAY TURNED UP OR TOWARDS VIEWER
	RACEWAY TURNED DOWN OR AWAY FROM VIEWER
	GROUND ROD.
	RACEWAY CAPPED
	GROUND WELL & ROD MINIMUM SIZE EXPOSED CONDUIT: 3/4" MINIMUM SIZE EMBEDDED: 1"

SWITCH OUTLETS

S	SINGLE-POLE SINGLE THROW SWITCH
S ₂	DOUBLE-POLE SWITCH
S ₃	THREE-WAY SWITCH
S ₄	FOUR-WAY SWITCH
S _K	KEY-OPERATED SWITCH
S _P	SWITCH WITH PILOT LAMP
S _D	DOOR SWITCH
S _T	TIME SWITCH
S _M	MANUAL MOTOR STARTER WITH OVERLOAD DEVICE
S _{MC}	MOMENTARY CONTACT SWITCH OR PUSHBUTTON FOR OTHER THAN SIGNALING SYSTEM
S _a	SUBSCRIPT _a DENOTES SWITCH CIRCUIT

DUCTBANK IDENTIFICATION

SEE DWG. E-034

FIRE AND INTRUSION

	FIRE SECURITY CONTROL PANEL
	PULL STATION, MANUAL AND ELECTRICALLY TRIPPED
	BELL
	HORN
	STANOPIPE WATER FLOW MONITOR
	FIREHOSE CABINET MONITOR
	SMOKE DETECTORS, S - AREA, D - DUCT, F - FLAME C - COMBUSTIBLE PRODUCTS, P - PHOTOELECTRIC
	VALVE POSITION MONITOR
	HEAT DETECTORS, F - FIXED TEMPERATURE, R - COMBINATION RATE-OF-RISE/FIXED OR RATE COMPENSATED
	INTRUSION ALARM









































































TELEPHONE SYSTEM DEVICES

	SECURITY TELEPHONE OUTLET
	PABX TELEPHONE OUTLET
	MAINTENANCE TELEPHONE OUTLET
	LINE EMERGENCY TELEPHONE OUTLET
	FIRE TELEPHONE OUTLET
	PATRON ASSISTANCE TELEPHONE
	PUBLIC PAY PHONE OUTLET
	ADMINISTRATIVE TELEPHONE OUTLET

SOUND SYSTEM

	MICROPHONE
	AMPLIFIER
	4 1/16" SQUARE X 2 1/8" DEEP JUNCTION BOX FOR H - HORN SPEAKER
	4 1/16" SQUARE X 2 1/8" DEEP JUNCTION BOX FOR SC - SUSPENDED CEILING SPEAKER
	3" X 2" X 2 3/4" DEEP, SWITCH BOX FOR SPEAKER VOLUME CONTROL. MDUNT 54" AFF
	SPEAKER BACK BOX S - SURFACE MTD F - FLUSH MTD.
	4 1/16" SQUARE X 2 1/8" DEEP J.B WALL MTD. FOR S - SURFACE MTD SPEAKER

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DESIGNED BY FO-AHA ELAN DRAWN BY PAUL GARCIA CHECKED BY V.T. IN CHARGE Robert [Signature]				SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT 		MAIN YARD AND SHOPS CONTRACT NO. A112 DRAWING NO. E 001 SCALE: NO SCALE SHEET NO. 1620/6	
REVISED AS PER CR 6-022 INITIAL ISSUE		CHECKED BY DMJM/PBQD IN CHARGE DMJM/PBQD/KE/HWA GENERAL CONSULTANTS		SUBMITTED BY A.H. LAWSON (ORIGINAL SIGNATURE WORN OFF) APPROVED [Signature]		SYMBOL LIST AND ABBREVIATIONS-I			

DEVICE FUNCTION NUMBERS		DEVICE SYMBOL		DEVICE SYMBOL		ABBREVIATION DESIGNATION	
PREFIX NO. 2 PREFIX NO. 1	DEVICE FOR 34.5 KV AC EQUIPMENT. DEVICE FOR 750V DC EQUIPMENT. NO PREFIX NO. - DEVICE FOR 480V AC EQUIPMENT. RECTIFIER DIODE TEMPERATURE DEVICE. UNDervOLTAGE RELAY. LOSS OF CONTROL POWER RELAY. DC INSTANTANEOUS REVERSE CURRENT TRIP DEVICE. DOOR INTERLOCK DEVICE. PHASE BALANCE CURRENT RELAY. SINGLE PHASING, REVERSE PHASE OF AUXILIARY POWER RELAY. RECTIFIER DIODE TEMPERATURE MONITORING DEVICE, STAGE 1. RECTIFIER DIODE TEMPERATURE MONITORING DEVICE, STAGE 2. COOLING FAN THERMAL OVERLOAD RELAY. HOT SPOT WINDING TEMPERATURE DEVICE - STAGE 1. HOT SPOT WINDING TEMPERATURE DEVICE - STAGE 2. AC INSTANTANEOUS OVERCURRENT PHASE RELAY. AC INSTANTANEOUS OVERCURRENT GROUND (RESIDUAL) RELAY. DC RATE OF RISE RELAY. AC TIME OVERCURRENT PHASE RELAY. AC TIME OVERCURRENT GROUND (RESIDUAL) RELAY. AC TIME OVERCURRENT PHASE RELAY. AC TIME OVERCURRENT PHASE RELAY. DC INVERSE - TIME OVERCURRENT RELAY. AC CIRCUIT-BREAKER. POWER FACTOR RELAY. OVERVOLTAGE RELAY. ENCLOSURE POSITIVE BUS FAULT AND GROUND DETECTOR. PERMISSIVE CONTROL DEVICE. DC CIRCUIT BREAKER. ALARM RELAY. AUXILIARY ALARM RELAY. INSTANTANEOUS, SERIES, DIRECT ACTING, BI-DIRECTIONAL OVERCURRENT TRIP DEVICE. RECTIFIER DIODE FAILURE DEVICE. FREQUENCY RELAY. AUTOMATIC RECLOSING RELAY. TRANSFER TRIP PILOT WIRE RELAY. DIFFERENTIAL PROTECTIVE RELAY. LOAD MEASURING DEVICE. EMERGENCY TRIP RELAY. KWHR AND KW DEMAND METER. KWHR TOTALIZER. AC BUS SURGE PROTECTIVE DEVICE. DC BUS SURGE PROTECTIVE DEVICE. LOCK-OUT RELAY. LONG/SHORT-TIME-DELAY OVERCURRENT PHASE DEVICE. LONG/SHORT-TIME-DELAY NEUTRAL OVERCUR. PHASE DEVICE INVERSE TIME OVERCURRENT NEUTRAL GROUND RELAY. AUTOMATIC TRANSFER RELAY. TRIPPING RELAY. DISCONNECT SWITCH.	                                               	CONTROL OR PROTECTIVE DEVICE (FUNCTION NUMBER SHOWN) AMMETER VOLTMETER CONTROL SWITCH ANNUNCIATION DEVICE - INDICATING TYPE FAN STARTER AUDIBLE ALARM DEVICE VOLTAGE TRANSDUCER AMPERE TRANSDUCER EMERGENCY TRIP STATION INPUT-OUTPUT OF MULTIPLEXING SYSTEM MANUAL RESET COMPUTER RECORDING AND AUDIBLE ANNUNCIATION DRAW-OUT DEVICE CIRCUIT BREAKER, 34.5 KV. BUS DUCT LOW-VOLTAGE POWER AND MOLDED-CASE CIRCUIT BREAKER. SERIES TRIP DEVICE. CURRENT TRANSFORMER OR CURRENT SENSOR OF SOLID STATE TRIP DEVICE. CURRENT TRANSFORMER, WINDOW TYPE. POTENTIAL TRANSFORMER. NEUTRAL CONNECTION. FUSE RESISTOR DC SHUNT SHORTING TYPE TERMINAL BLOCK. RECTIFIER POWER DIODE. DELTA CONNECTION. WYE CONNECTION. OPEN DELTA CONNECTION. POWER TRANSFORMER, 2 - WINDING. (WITH TRANSFORMER IDENTIFICATION) INTERPHASE TRANSFORMER. RECTIFIER TRANSFORMER, 3 - WINDING. LIGHTNING ARRESTER WITH GROUND CONNECTION. CABLE TERMINATION. DIRECTION OF CONTROL OR INDICATION SIGNAL.	           LOGIC DIAGRAM SYMBOL             	KIRK - KEY INTERLOCK. GROUND CONNECTION. BRIDGEABLE GAP - CONTACT RAIL. EQUIPMENT METALLIC ENCLOSURE. NON-BRIDGEABLE GAP - CONTACT RAIL. DISCONNECT SWITCH, NO-LOAD BREAK TYPE. MOTORIZED, LOAD BREAK TYPE DISCONNECT SWITCH. IMPEDANCE BOND. AMMETER SELECTOR SWITCH. VOLTMETER SELECTOR SWITCH. ELECTRICAL RESET.	4 W THREE PHASE CIRCUIT WITH NEUTRAL (4 WIRE) B BUS L LINE BKR CIRCUIT BREAKER RT RECTIFIER - TRANSFORMER POWER CONVERSION UNIT. CCS DEVICE LOCATED REMOTE AT CENTRAL CONTROL FACILITY LDCAL DEVICE LOCATED IN PROXIMITY OF THE EQUIPMENT M MANUALLY OPERATED E ELECTRICALLY OPERATED TC TRAIN CONTROL SWGR SWITCHGEAR DC SWGR DC SWITCHGEAR. MCC 480V AC MOTOR CONTROL CENTER. NC NORMALLY CLOSED DEVICE. NO NORMALLY OPEN DEVICE. ACB AIR CIRCUIT BREAKER. XFMR TRANSFORMER. SIC INTERRUPTING CAPACITY IN AMPERES (SYMMETRICAL). MVA SHORT CIRCUIT WITHSTANDING CAPABILITY IN MEGAVOLT - AMPERE. 3φ THREE PHASE CIRCUIT.	

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA		DESIGNED BY ED SAHAKIAN DRAWN BY PETE GARCIA CHECKED BY VLADIMIR TSIDULKO IN CHARGE Robert J. Kelly		REGISTERED PROFESSIONAL ENGINEER ALBERT R. LANSON No. 7242 ELECTRICAL STATE OF CALIFORNIA		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT		DMJM/PBQD A JOINT VENTURE DMJM/PBQD/KE/HWA GENERAL CONSULTANTS		CONTRACT NO. A112 DRAWING NO. E002 SCALE NO SCALE SHEET NO. A620/7	
INITIAL ISSUE		APPROVED		APPROVED		APPROVED		APPROVED		APPROVED	



ELECTRICAL SCHEMATIC DIAGRAM SYMBOLS

SYMBOL	REPRESENTS
	TRANSFORMER
	PUSHBUTTON SWITCH, MOMENTARY CONTACT, N.C. LQ INDICATES LOCK-OUT
	PUSHBUTTON SWITCH, MOMENTARY CONTACT, N.O.
	MECHANICAL CONNECTION
	SINGLE POLE CIRCUIT BREAKER, SIZE AS NOTED
	NORMALLY OPEN CONTACT, AUX. OR RELAY. TDE - TIME DELAY AFTER ENERGIZED TDD - TIME DELAY AFTER DE-ENERGIZED
	NORMALLY CLOSED CONTACT, AUX. OR RELAY. TDE - TIME DELAY AFTER ENERGIZED TDD - TIME DELAY AFTER DE-ENERGIZED
	COIL, OPERATING 42 - STARTER OR CONTACTOR OTHER NO. - RELAY PER IEEE DEVICE NO. (SHEET 2)
	OVERLOAD RELAY CONTACTS
	OVERLOAD RELAY WITH HEATER
	FUSE WITH RATING
	GROUND CONNECTION
	PILOT LIGHT: R = RED, G = GREEN, A = AMBER, W = WHITE, C = CLEAR, B = BLUE
	SOLENOID VALVE COIL
	LIMIT SWITCH, NORMALLY OPEN
	LIMIT SWITCH, NORMALLY CLOSED
	LIMIT SWITCH, N.O., HELD CLOSED BY ACTUATOR
	LIMIT SWITCH, N.C., HELD OPEN BY ACTUATOR
	PRESSURE SWITCH, NORMALLY OPEN, CLOSSES ON RISING PRESSURE
	PRESSURE SWITCH, NORMALLY CLOSED, OPENS ON RISING TEMPERATURE
	FLOW SWITCH, NORMALLY OPEN, CLOSSES WITH FLOW
	FLOW SWITCH, NORMALLY CLOSED, OPENS WITH FLOW
	TEMPERATURE SWITCH, NORMALLY OPEN, CLOSSES ON RISING TEMPERATURE (COOLING THERMOSTAT)
	TEMPERATURE SWITCH, NORMALLY CLOSED, OPENS ON RISING TEMPERATURE (HEATING THERMOSTAT)
	LEVEL CONTROLLER (SWITCH), NORMALLY OPEN AT LOW POSITION, CLOSSES ON RISE
	LEVEL CONTROLLER (SWITCH), NORMALLY CLOSED AT LOW POSITION, OPENS ON RISE
	SELECTOR SWITCH, HAND-OFF-AUTOMATIC, OR AS NOTED: K = KEY OPERATED, KK = KIRK KEY LOCK (STANDARD OR HEAVY DUTY INDUSTRIAL CONTROL)

SYMBOL	REPRESENTS
	MANUAL MOTOR STARTER
	SINGLE POLE SINGLE THROW SWITCH
	SINGLE POLE DOUBLE THROW SWITCH
	MULTICONDUCTOR CABLE
	SHIELDED 2 CONDUCTOR CABLE WITH SHIELD GROUNDING
	COAXIAL CABLE
	DISCONNECTING DEVICE
	CONDUCTORS, CONNECTED
	CONDUCTORS, NOT CONNECTED
	CURRENT TRANSFORMER WITH POLARITY MARKINGS
	POTENTIAL TRANSFORMER WITH POLARITY MARKINGS
	OUTLINE OF EQUIPMENT
	FUTURE DR N.I.C.
	TERMINAL STRIP
	WIRING TERMINAL
	BATTERY (LONG SYMBOL IS POSITIVE TERMINAL)
	AUDIBLE SIGNAL
	INSTRUMENT GROUNDING
	WIRE DESIGNATION SUFFIX COMPLETE DESIGNATION TO BE PRECEDED BY EQUIPMENT PREFIX VIZ: EFI-5
	RECTIFIER, DRY TYPE, FULL WAVE
	TRANSDUCER. E/I - VOLTAGE TO CURRENT I/E - CURRENT TO VOLTAGE

FIXTURE TYPE SYMBOL

	<p>a. LETTER NUMBER ABOVE CENTER BAR INDICATES TYPE OF FIXTURE (SEE SCHEDULE)</p> <p>b. NUMBER BELOW THE CENTER BAR INDICATES COMBINED WATTAGE OF LAMP/S AND BALLAST/S IF APPLICABLE</p> <p>c. NUMBER ABOVE OR ADJACENT TO SYMBOL INDICATES THE HEIGHT ABOVE FINISHED FLOOR TO BOTTOM OF FIXTURE</p> <p>d. INPUT VOLTAGE OTHER THAN 277 VOLTS IS SHOWN NOTED BELOW SYMBOL</p> <p>ITEMS NOT ON LIGHTING FIXTURE SCHEDULE (EG. VV) ARE MECHANICAL. SEE MECHANICAL DRAWINGS.</p>
--	---

GENERAL CONSTRUCTION NOTES

- CONTRACTOR SHALL INSTALL, TERMINATE AND LOCATE WITH TEMPORARY MARKERS EMPTY RACEWAYS THAT EXTEND BEYOND THE CONTRACT LIMITS, UNLESS OTHERWISE NOTED.
- CERTAIN RACEWAYS (E.G. FOR NEGATIVE TRACTION POWER CONDUCTORS) EXTEND BEYOND THE FIVE-FOOT LIMIT BUT REENTER THE MAIN SHOP BUILDING AND ARE THUS INCLUDED IN THIS CONTRACT.
- CONTRACTOR SHALL INSTALL EMPTY RACEWAYS FOR THE FOLLOWING WITHIN-THE-BUILDING SUBSYSTEMS:
 - AUTOMATIC TRAIN CONTROL
 - COMMUNICATION INCLUDING FIRE PROTECTION, INTRUSION, AND GAS DETECTION.
 - 34.5KV FEEDER
- ALL OTHER WITHIN-THE-BUILDING SUBSYSTEMS SHALL INCLUDE FURNISHING, INSTALLING, WIRING, TERMINATING, AND TESTING, UNLESS OTHERWISE NOTED.
- EMPTY CONDUITS SHALL BE PROPERLY TAGGED, EQUIPPED WITH PULLING CDRS, AND CAPPED.
- INTERFACE WITH ADJACENT CONTRACTS:
 - ADJACENT CONTRACTOR(S) WILL CONNECT TO STUBBED RACEWAYS, PULL AND TERMINATE CONDUCTORS.
 - THE EARLIER CONSTRUCTION CONTRACTOR SHALL BE RESPONSIBLE FOR THE TESTING (TO THE EXTENT POSSIBLE) OF HIS PORTION OF THE SYSTEMS. THE LATER CONSTRUCTION CONTRACTOR SHALL BE RESPONSIBLE BOTH FOR TESTING OF HIS PORTIONS OF THE SYSTEMS AS WELL AS FOR THE OVERALL SYSTEM TESTING.
- GROUNDING:

INSTALL PROTECTIVE SLEEVE (12" LONG METALLIC CONDUIT) OVER THE GROUND WIRE(S) WITH 36" PIGTAIL, PROPERLY COILED AND PROTECTED. INSTALL TEMPORARY MARKER AT THE EMBEDDED LOCATION(S).

 - ALL EMBEDDED CONDUITS OTHER THAN TRAIN CONTROL AND COMMUNICATIONS ARE 1" MINIMUM NON-METALLIC (PVC)
 - ALL EMBEDDED TRAIN CONTROL AND COMMUNICATION CONDUITS ARE GRS, 1" MINIMUM.
 - ALL EXPOSED CONDUITS ARE 3/4" MINIMUM, GRS.

ABBREVIATIONS

ACCP	AIR CONDITIONING CONTROL PANEL
ACP	AUXILIARY CONTROL PANEL
FACP	FIRE ALARM CONTROL PANEL
EMP	EMERGENCY MANAGEMENT PANEL
RCP	REFRIGERATOR CONTROL PANEL
CIC	COMMUNICATIONS INTERFACE CABINET
AHU	AIR HANDLING UNIT
LP	LIGHTING PANEL
EBD	EMERGENCY BYPASS DAMPER
EFD	EMERGENCY FAN DAMPER
MCC	MOTOR CONTROL CENTER
LAP	LOCAL ANNUNCIATION PANEL
AHCP	AIR HANDLING CONTROL PANEL
AUX.	AUXILIARY
N.I.C.	NOT IN CONTRACT
C OR CND.	CONDUIT
SPST	SINGLE POLE SINGLE THROW
SPDT	SINGLE POLE DOUBLE THROW
N.O., N.C.	NORMALLY OPEN, NORMALLY CLOSED
C.O.	RACEWAY ONLY
MC	METALLIC CONDUIT
NMC	NON-METALLIC CONDUIT
GRS	GALVANIZED RIGID STEEL CONDUIT
PVC	POLYVINYL CHLORIDE CONDUIT
IMC	INTERMEDIATE METAL CONDUIT
TEL	TELEPHONE
GRD	GROUND
FUT	FUTURE
ELEV	ELEVATION, ELEVATOR
MTD	MOUNTED
MTG	MOUNTING
A.F.F.	ABOVE FINISHED FLOOR
FLR	FLOOR
RTU	REMOTE TERMINAL UNIT
ZC	ZONE CONTROL
4'-6"	MOUNTING HEIGHT TO C OF OUTLET ABOVE FINISHED FLOOR
IC	INTERCOM
DMPR	DAMPER
MTR	MOTOR
HTR	HEATER
EXH	EXHAUST
COMPT	COMPARTMENT
SW	SWITCH
FS	FLOW SWITCH
TS	TEMPERATURE SWITCH
GDCP	GAS DETECTION CONTROL PANEL

MISCELLANEOUS

	CCTV CAMERA OUTLET
	CCTV MONITOR
	BELL
	PUSHBUTTON
	HORN
	PHOTO CELL
	SELECTOR SWITCH, H.O.A. UNLESS OTHERWISE NOTED
	CLOCK OUTLET
	TRACTION POWER EMERGENCY TRIP STATION
	DISABLE SWITCH
	LIGHTNING PROTECTION AIR TERMINAL
	IDENTIFIES EQUIPMENT ITEM NUMBER

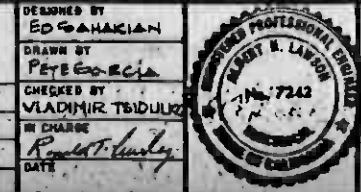
MISCELLANEOUS CONTD

- ⑨ ELECTRICALLY OPERATED DEVICE TYPE PER LETTERS AS FOLLOWS:
- S-SOLENOID, D-DAMPER OPERATOR, R-RELAY, DO-DOOR OPERATOR, EP-ELECTRO PNEUMATIC RELAY
- ⊙ TIME CARD READER



REV.	DATE	BY	SUB.	APP.	DESCRIPTION

<p>THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA</p>	<p>DESIGNED BY ED SAHAKIAN</p> <p>DRAWN BY PEPE ESCOBAR</p> <p>CHECKED BY VLADIMIR TSDULIZ</p> <p>IN CHARGE Robert J. ...</p> <p>DATE</p>
<p>REVISED PER CRG-022</p> <p>REVISED PER CRG-502</p> <p>INITIAL ISSUE</p>	<p>PROFESSIONAL ENGINEER</p> <p>7342</p> <p>DMJM/PBOD</p> <p>A JOINT VENTURE</p> <p>APPROVED</p>



**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

ATO

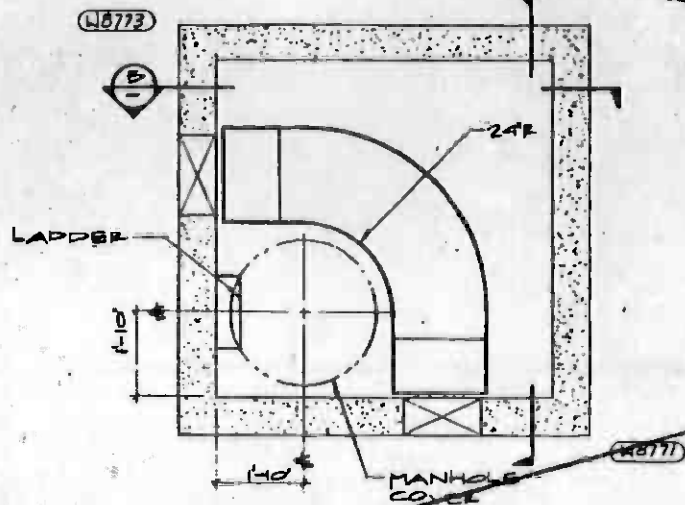
DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

APPROVED

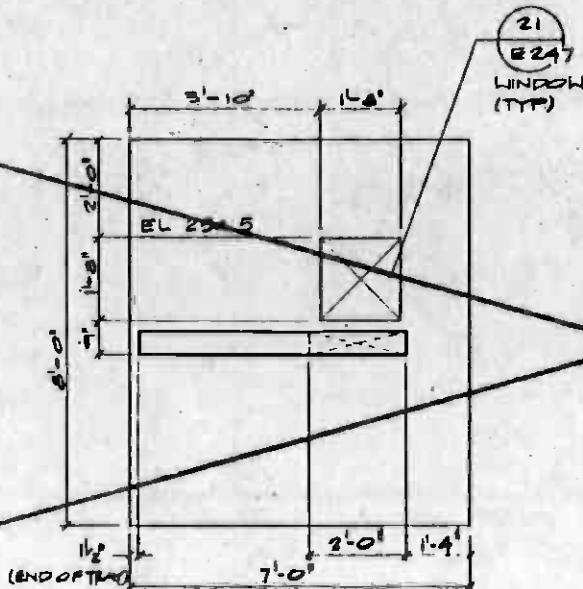
**MAIN YARD AND SHOPS
MAIN SHOP BUILDING**

SYMBOL LIST AND ABBREVIATIONS-3

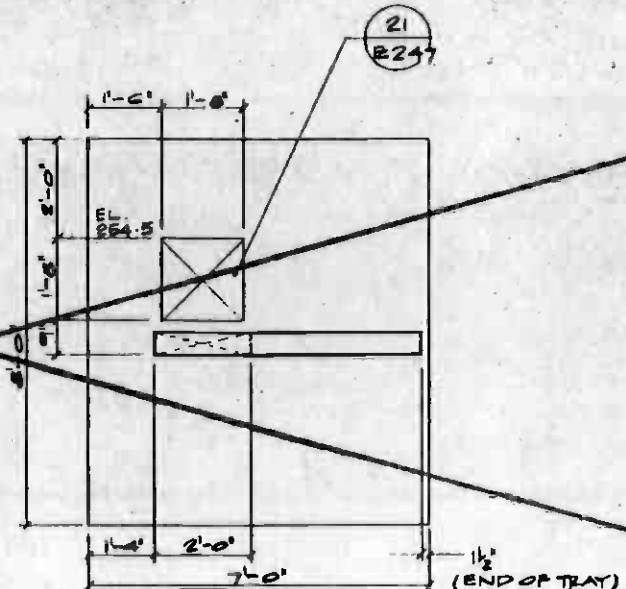
CONTRACT NO.	A-112
DRAWING NO.	E003
REV.	2
SCALE	NO SCALE
SHEET NO.	A620/81



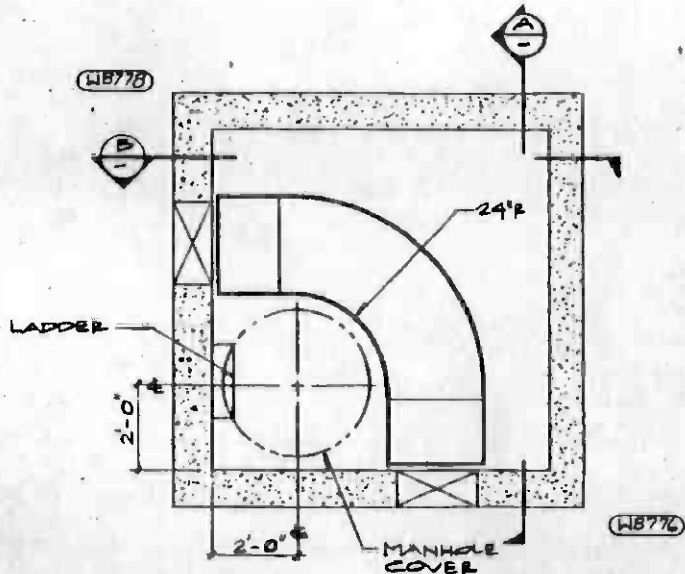
PLAN DETAIL
SCALE 1/2" = 1'-0"
A5
E026 E015



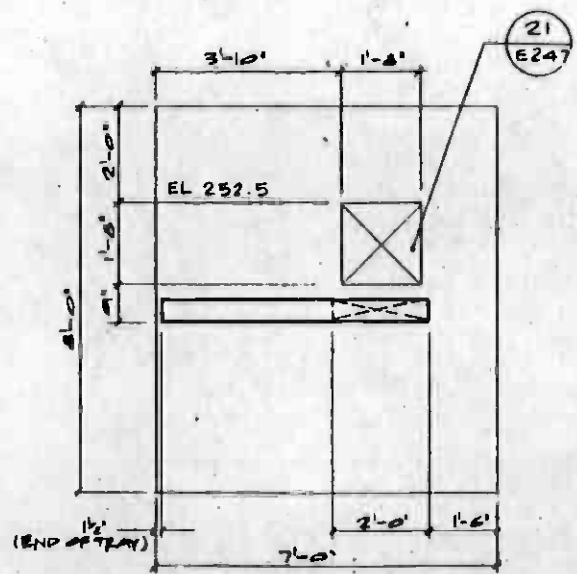
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A
LOOKING SOUTH



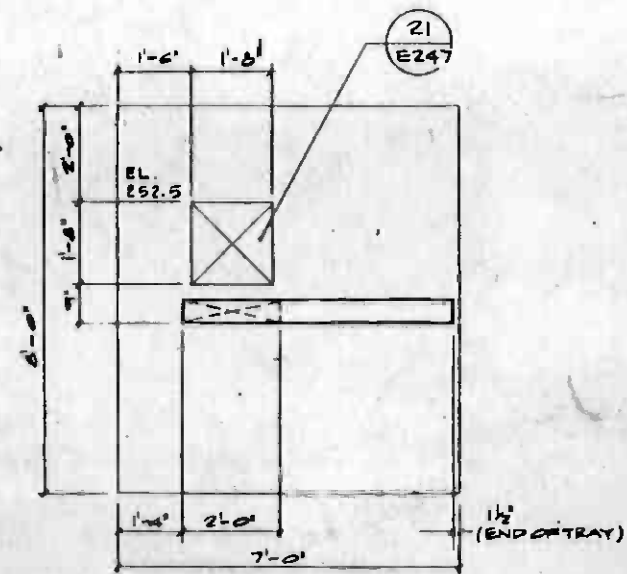
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SCALE 1/2" = 1'-0"
B
LOOKING EAST



PLAN DETAIL
SCALE 1/2" = 1'-0"
A6
E026 E015



SECTION
SCALE 1/2" = 1'-0"
A
LOOKING SOUTH



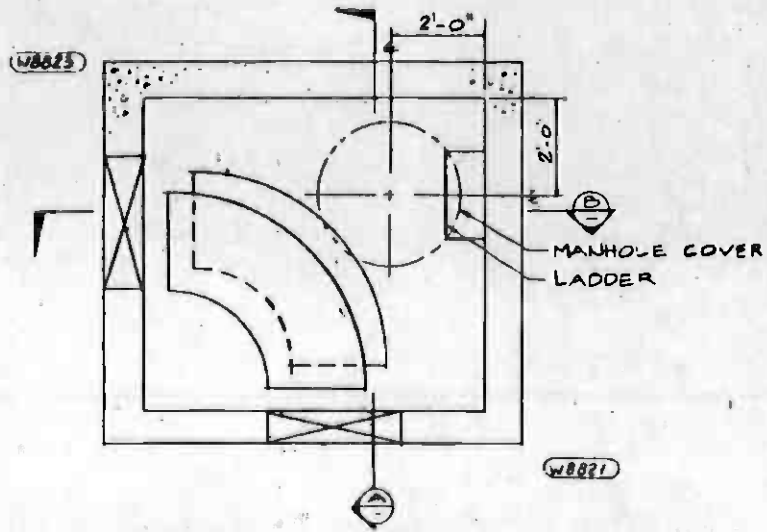
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SCALE 1/2" = 1'-0"
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LOOKING EAST



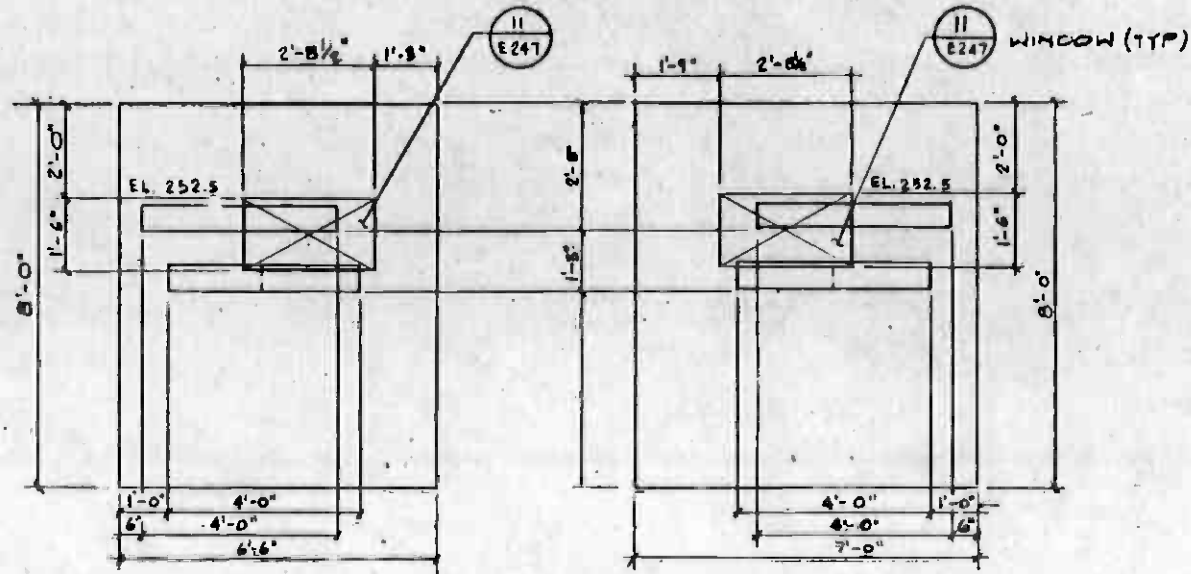
NOTE:
1. FOR NOTES SEE DWG. NO. E034

A5, A6

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY <i>John Doe</i>		REGISTERED PROFESSIONAL ENGINEER NO. 7242 ELECTRICAL STATE OF CALIFORNIA		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT				CONTRACT NO. A-112	
				DRAWN BY CHAR. SIRIPAT		DMJM/PBOD A JOINT VENTURE		DMJM/PBOD/KE/HWA GENERAL CONSULTANTS		MAIN YARD AND SHOPS		DRAWING NO. E026 REV. 2	
				CHECKED BY LARRY WARREN		IN CHARGE <i>Ronald T. Kelly</i>		SUBMITTED <i>R. Kelly</i>		APPROVED <i>Ronald T. Kelly</i>		SCALE AS NOTED	
				REV. DATE BY SUB. APP. DESCRIPTION		DATE 12 NOV. 84						SHEET NO. A620/9	
				REVISIONS: 1. REVISED PER CRG-022 2. REVISED PER CRG-518 3. INITIAL ISSUE									



PLAN DETAIL (D7) E015
SCALE 1/2" = 1'-0"



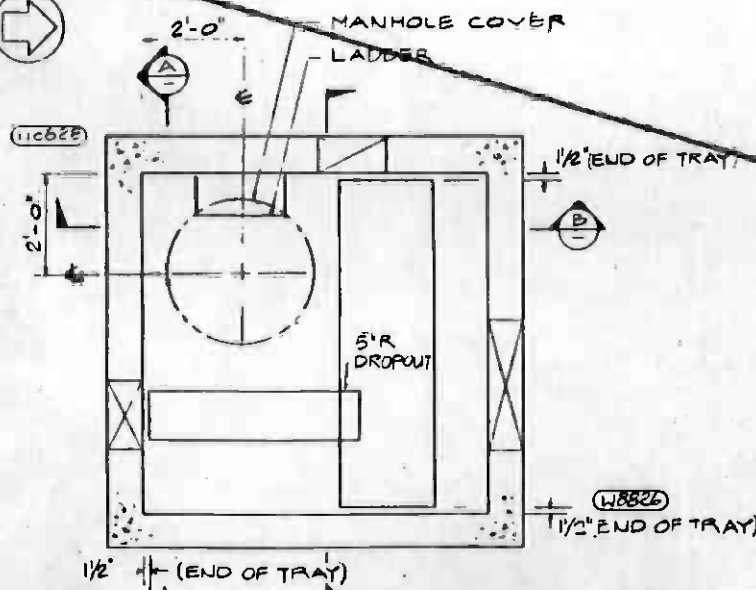
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SCALE 1/2" = 1'-0"

SECTION B LOOKING EAST
SCALE 1/2" = 1'-0"

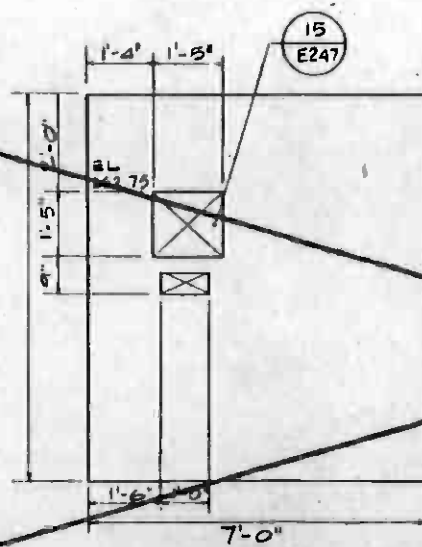
NOTE:
① FOR NOTES SEE DWG. E-034



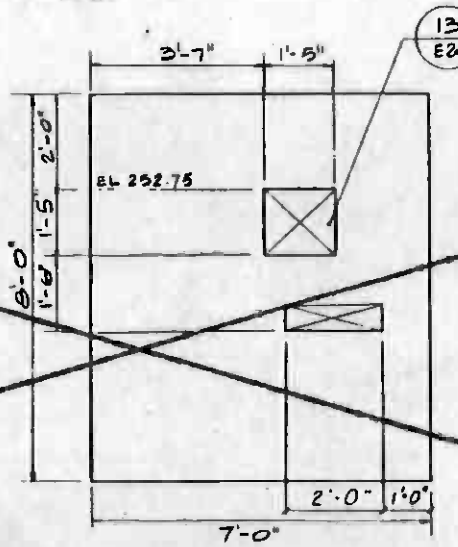
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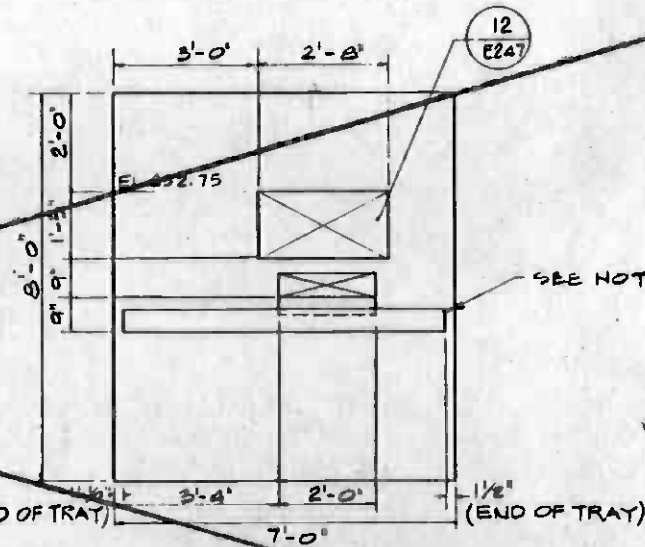
PLAN DETAIL (D8) E018
SCALE 1/2" = 1'-0"



SECTION A LOOKING SOUTH
SCALE 1/2" = 1'-0"



SECTION B LOOKING WEST
SCALE 1/2" = 1'-0"



SECTION C LOOKING NORTH
SCALE 1/2" = 1'-0"

SEE NOTE 1, DWG. E031



D7, D8

REV.	DATE	BY	SUB.	APP.	DESCRIPTION

REV.	DATE	BY	SUB.	APP.	DESCRIPTION

DESIGNED BY: *John Smith*

DRAWN BY: *[Signature]*

CHECKED BY: *[Signature]*

IN CHARGE: *[Signature]*

DATE: 28 DEC 84

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBOD
A JOINT VENTURE

SUBMITTED: *[Signature]*

DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

APPROVED: *[Signature]*

CONTRACT NO. A112

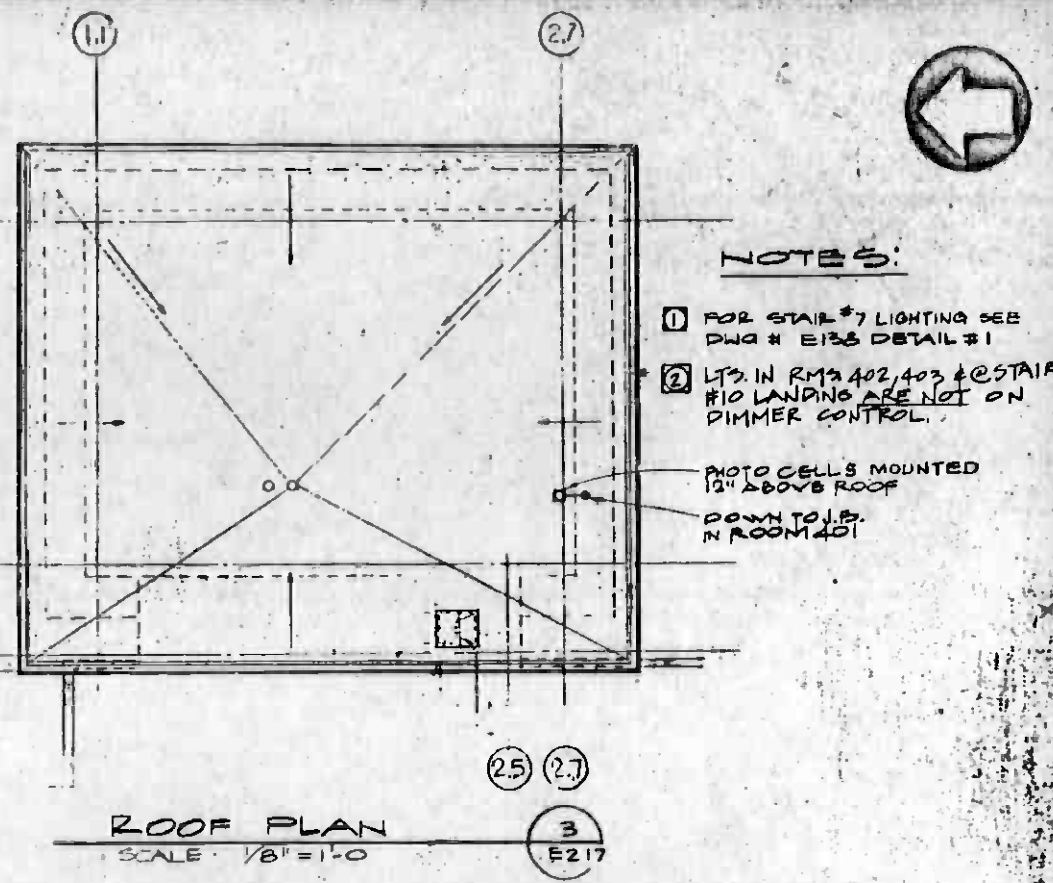
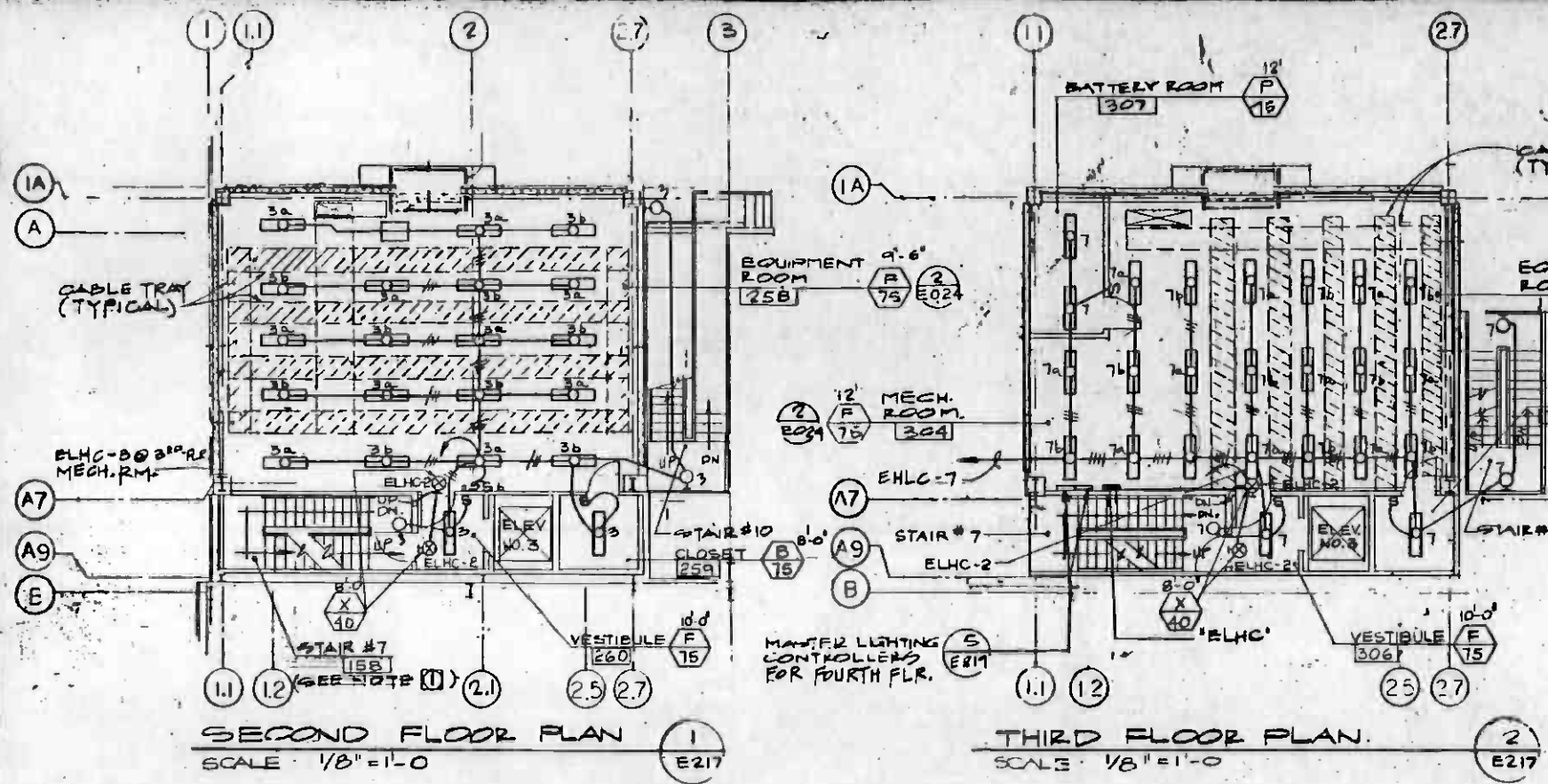
DRAWING NO. E031

SCALE AS NOTED

SHEET NO. A 620/10

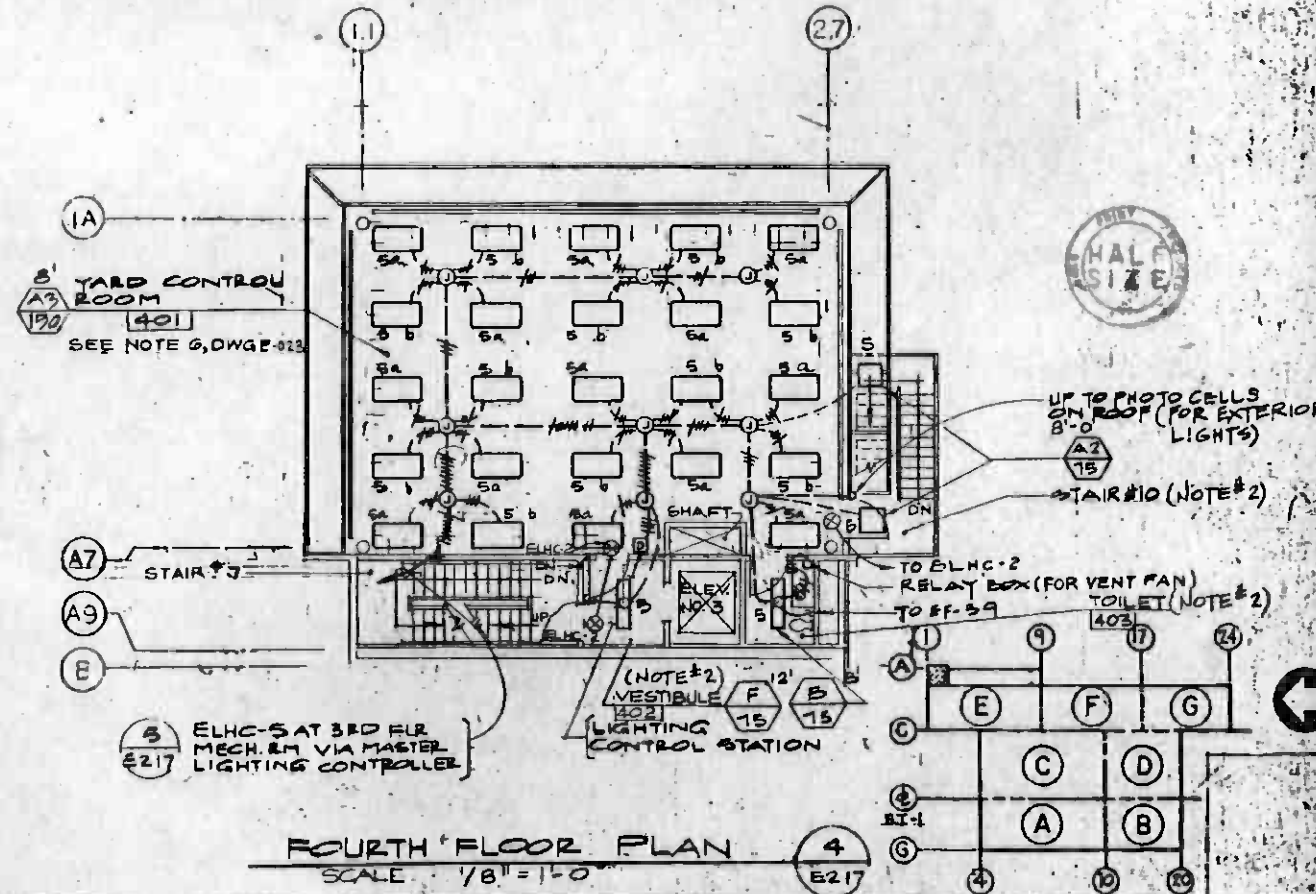
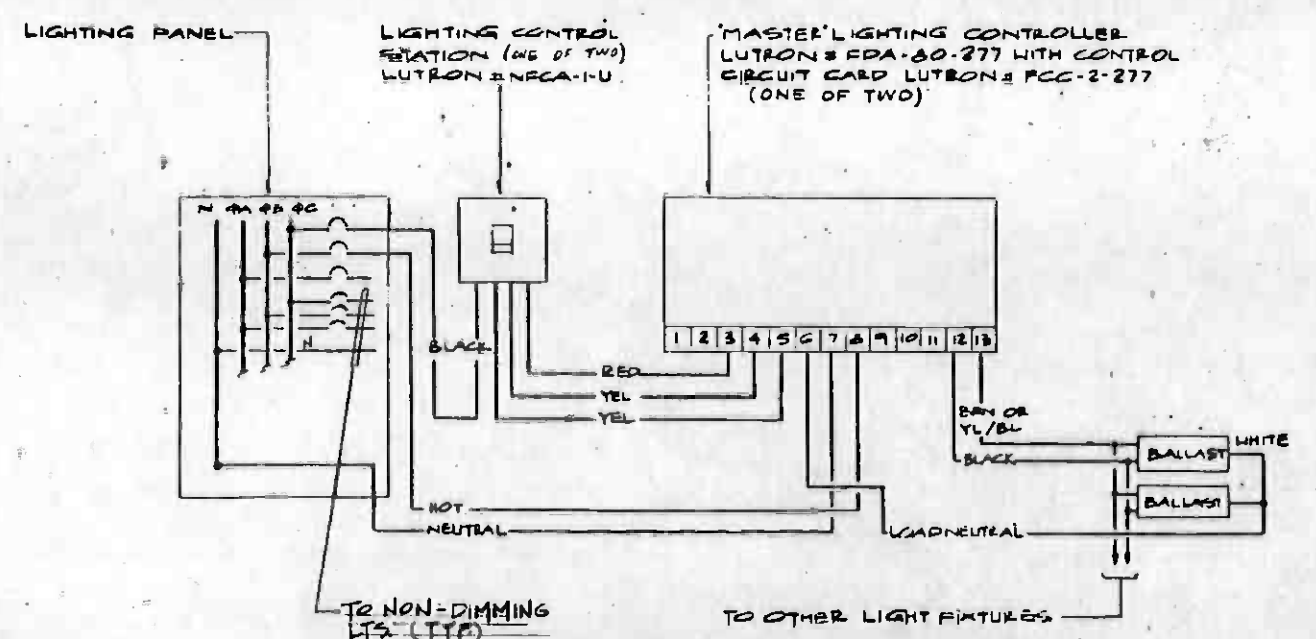
MAIN YARD AND SHOPS
MANHOLE DETAILS
& CABLE TRAYS-6

CONTRACT NO.	A112
DRAWING NO.	E031
SCALE	AS NOTED
SHEET NO.	A 620/10

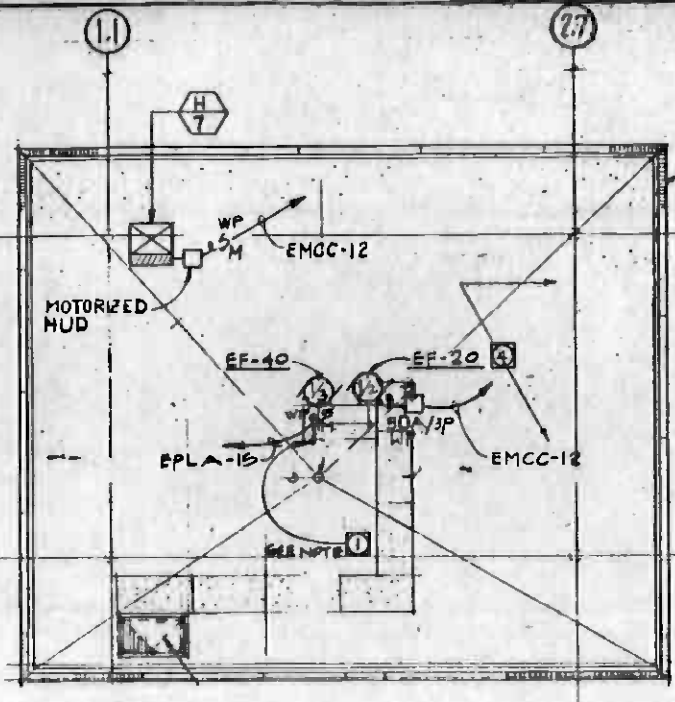
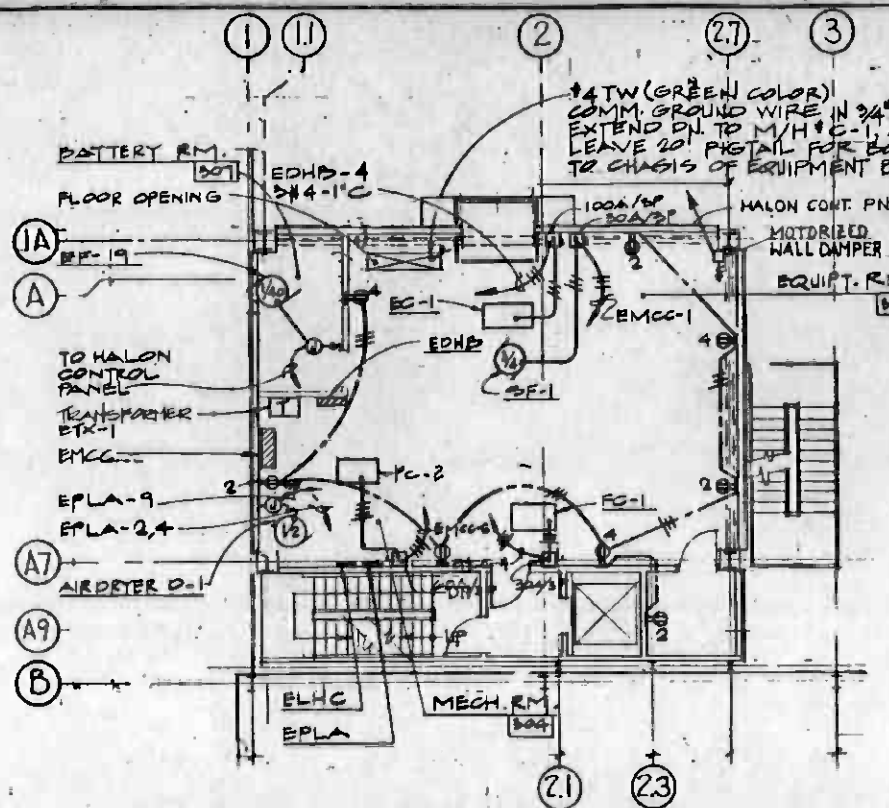
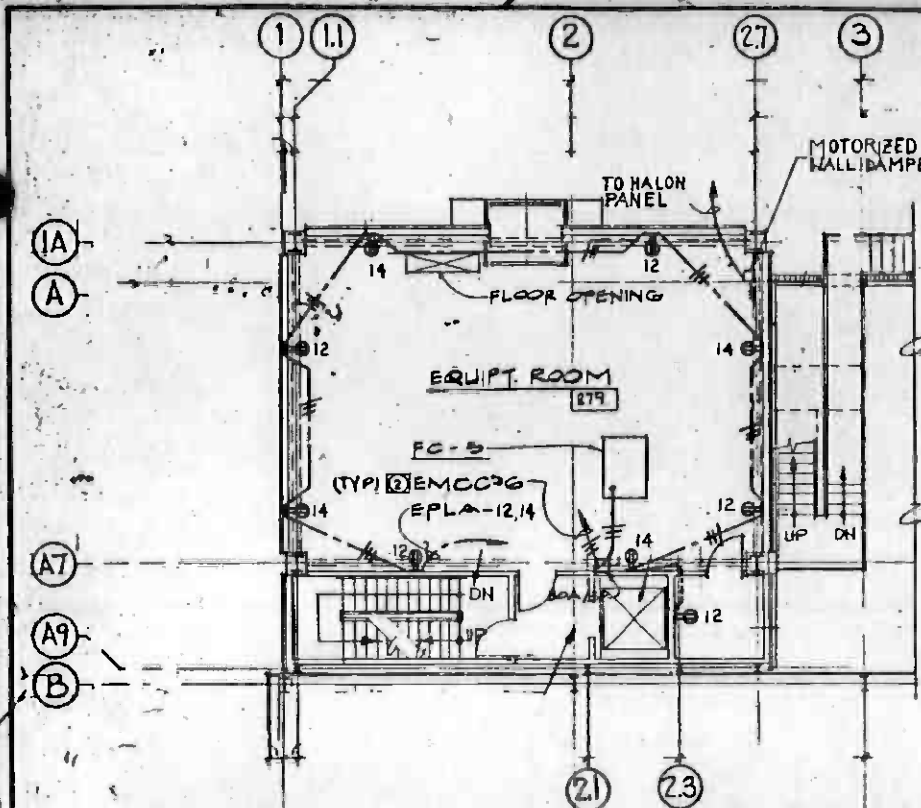


- NOTES:**
- FOR STAIR #7 LIGHTING SEE DWG # E133 DETAIL #1
 - LTS IN RMS 402, 403 @ STAIR #10 LANDING ARE NOT ON DIMMER CONTROL.

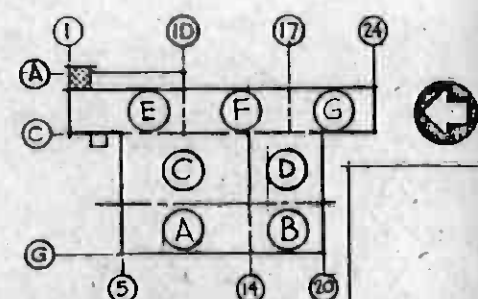
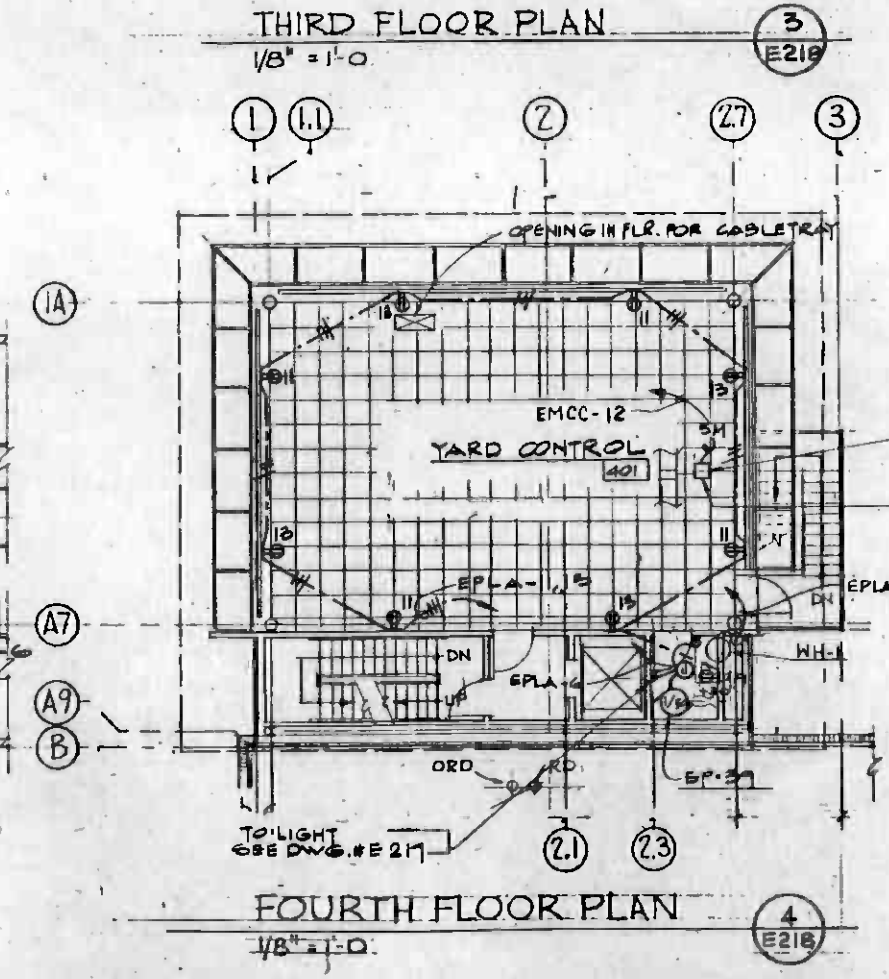
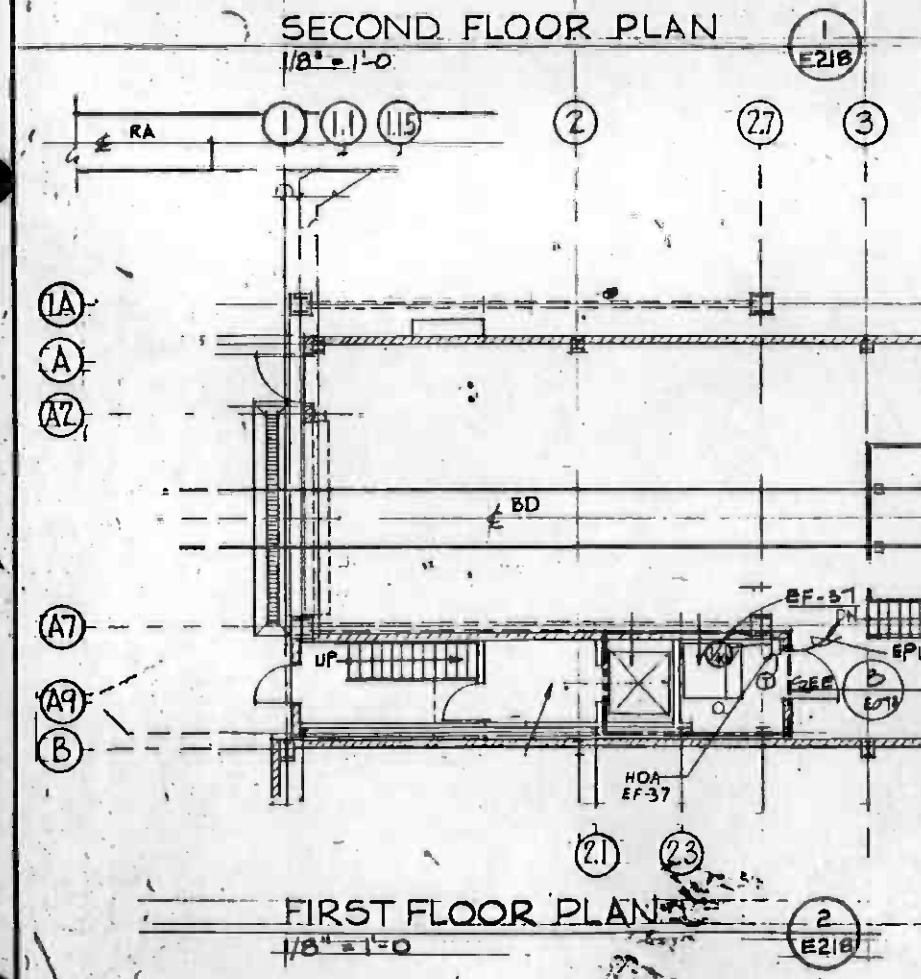
PHOTO CELLS MOUNTED 12" ABOVE ROOF DOWN TO J.P. IN ROOM 401



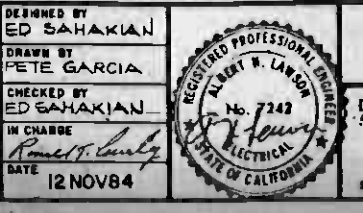
THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1954, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DESIGNED BY R. LOVARIOS DRAWN BY MARIE GORLEKIAN CHECKED BY ED SAHAKIAN IN CHARGE R. LOVARIOS DATE 12 NOV. 84		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT DMJM/PROD A JOINT VENTURE APPROVED: <i>[Signature]</i>		MAIN YARD AND SHOPS MAIN SHOP BUILDING CONTROL TOWER LIGHTING CONTRACT NO. A-112 DRAWING NO. E217 SCALE AS NOTED SHEET NO. A620/12					
REV.	DATE	BY	SUB.	APP.	DESCRIPTION	REV.	DATE	BY	SUB.	APP.	DESCRIPTION
1	12-87	MA	45	MA	REVISED PER CR 6-022	2	05-88	CM	12	CM	INITIAL ISSUE



- NOTE:**
- 1 RUN 3/4" C WITH 2#12 & 2#4 FROM SWITCH TO MANUAL SELECTOR SWITCH IN ROOM 401. SEE DRAWING E-223.
 - 2 REFER TO DRAWING E074 FOR MCC SCHEDULES.
 - 3 REFER TO DRAWING E 223 FOR ADDITIONAL HVAC CONTROL CONDUIT CONNECTIONS.
 - 4 PROVIDE 1" CONTROL CONDUIT FROM EMCC-12 TO HALON PANEL FOR EF-20 ON-OFF SWITCH. REFER TO MECHANICAL DRAWING M-045.



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DESIGNED BY ED SAHAKIAN	DRAWN BY PETE GARCIA		
CHECKED BY ED SAHAKIAN	IN CHARGE [Signature]		
DATE 12 NOV 84			
REV. DATE	BY	APP.	DESCRIPTION
1-28-85	[Signature]	[Signature]	REVISED PER CRG-022
			INITIAL ISSUE



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

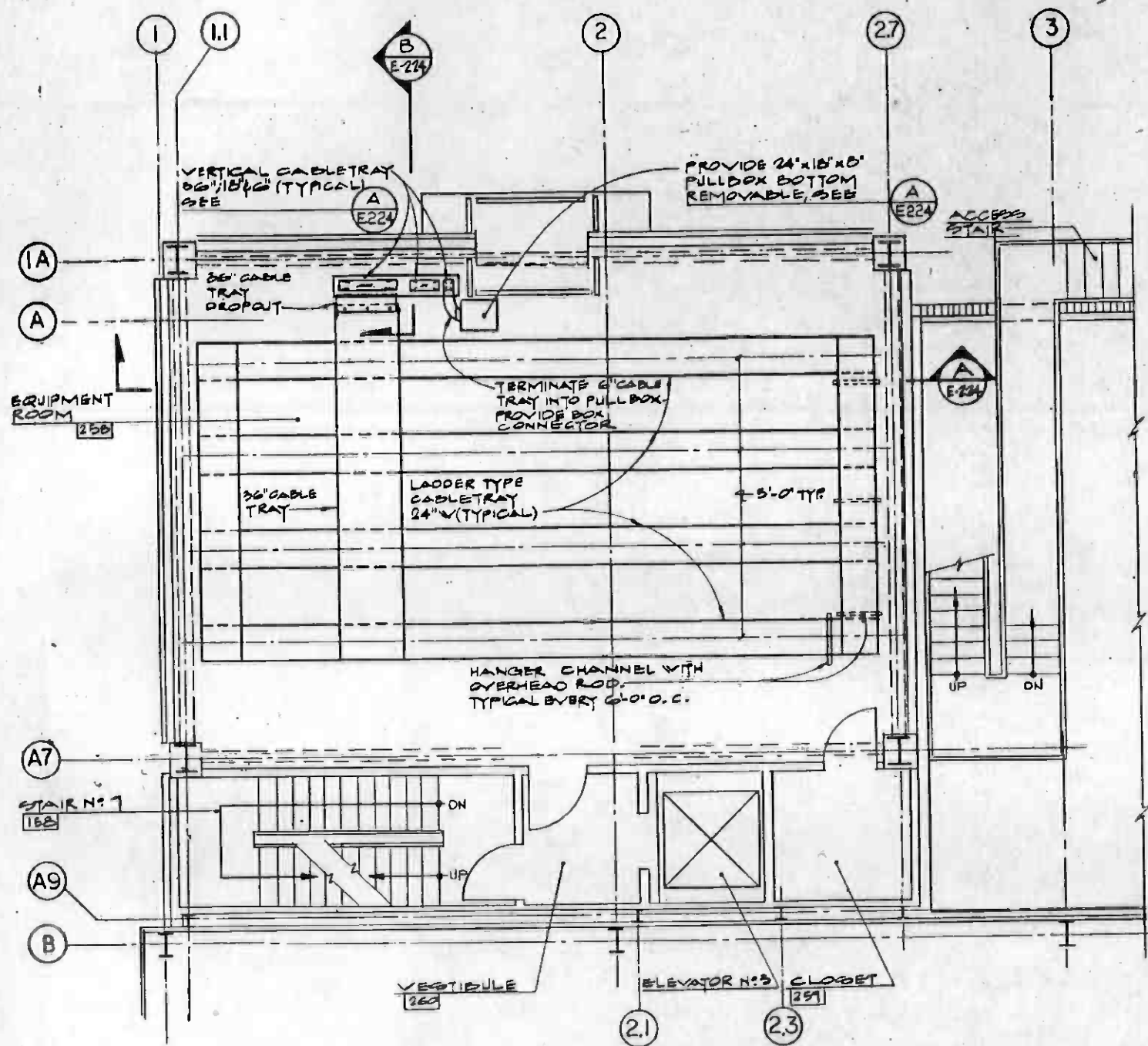
DMJM/PBQD
GENERAL CONSULTANTS

APPROVED: [Signature]

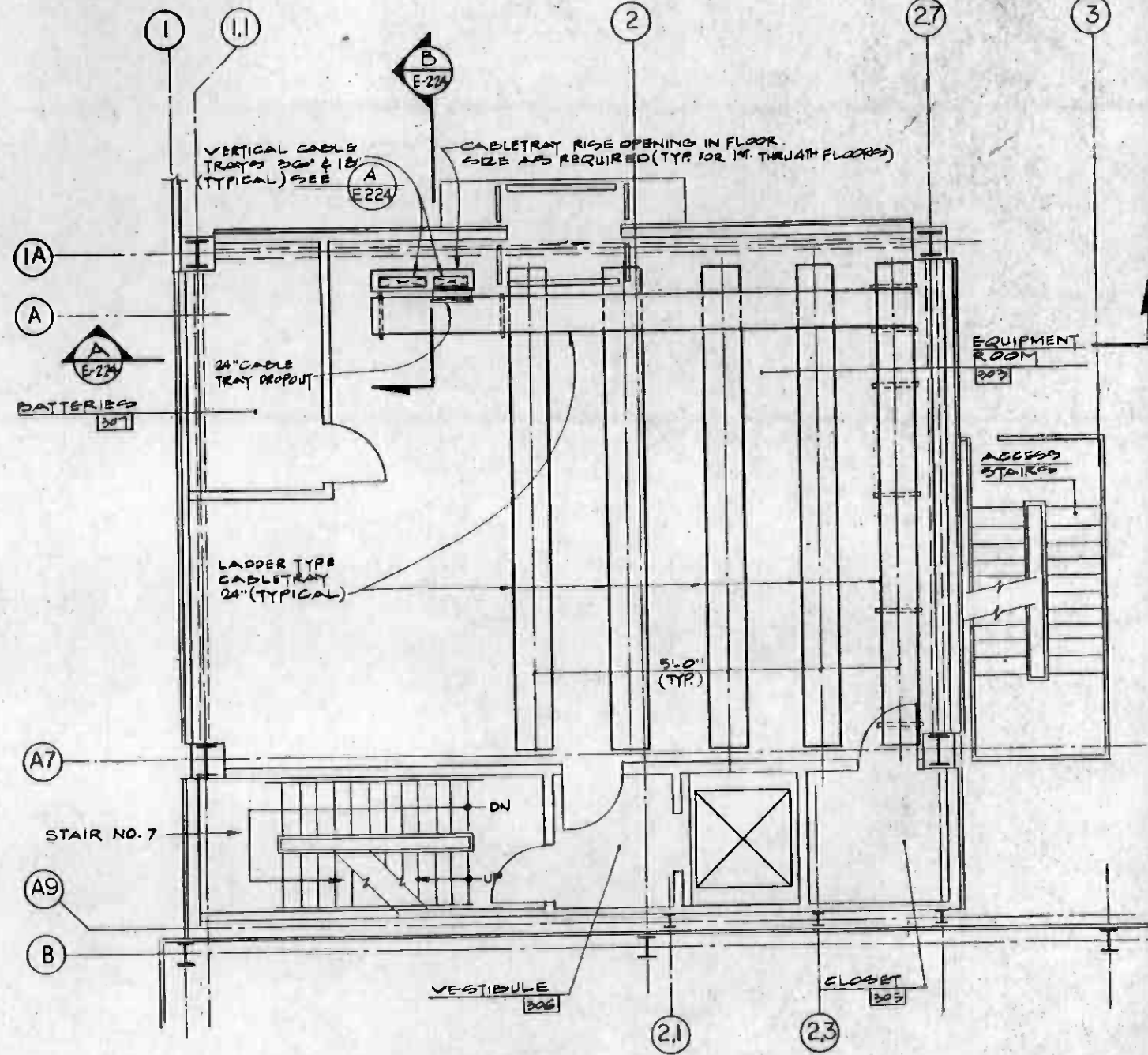
CONTRACT NO. 112
DRAWING NO. E218
SCALE AS NOTED
SHEET NO. A620/13

MAIN YARD AND SHOPS
MAIN SHOP BUILDING
CONTROL TOWER POWER

CONTRACT NO.	112
DRAWING NO.	E218
SCALE	AS NOTED
SHEET NO.	A620/13



2ND FLOOR PLAN
1/4" = 1'-0" (1) E224 E-224



3-RD FLOOR PLAN
1/4" = 1'-0" (2) E219



REV.	DATE	BY	SUB.	APP.	DESCRIPTION

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DESIGNED BY
EO SANAKIAN

DRAWN BY
CHAR. SIRIPAT.

CHECKED BY
RON LINDEQUEST

IN CHARGE
Ronald T. Lundy

DATE
12 NOV 84

REGISTERED PROFESSIONAL ENGINEER
ALBERT R. LARSON
No. 7242
ELECTRICAL
STATE OF CALIFORNIA

DMJM/PBQD
A JOINT VENTURE

DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

APPROVED
Howard F. Schell

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

ATD

MAIN YARD AND SHOPS
MAIN SHQP BUILDING
CONTROL TOWER CABLE TRAY LAYOUTS

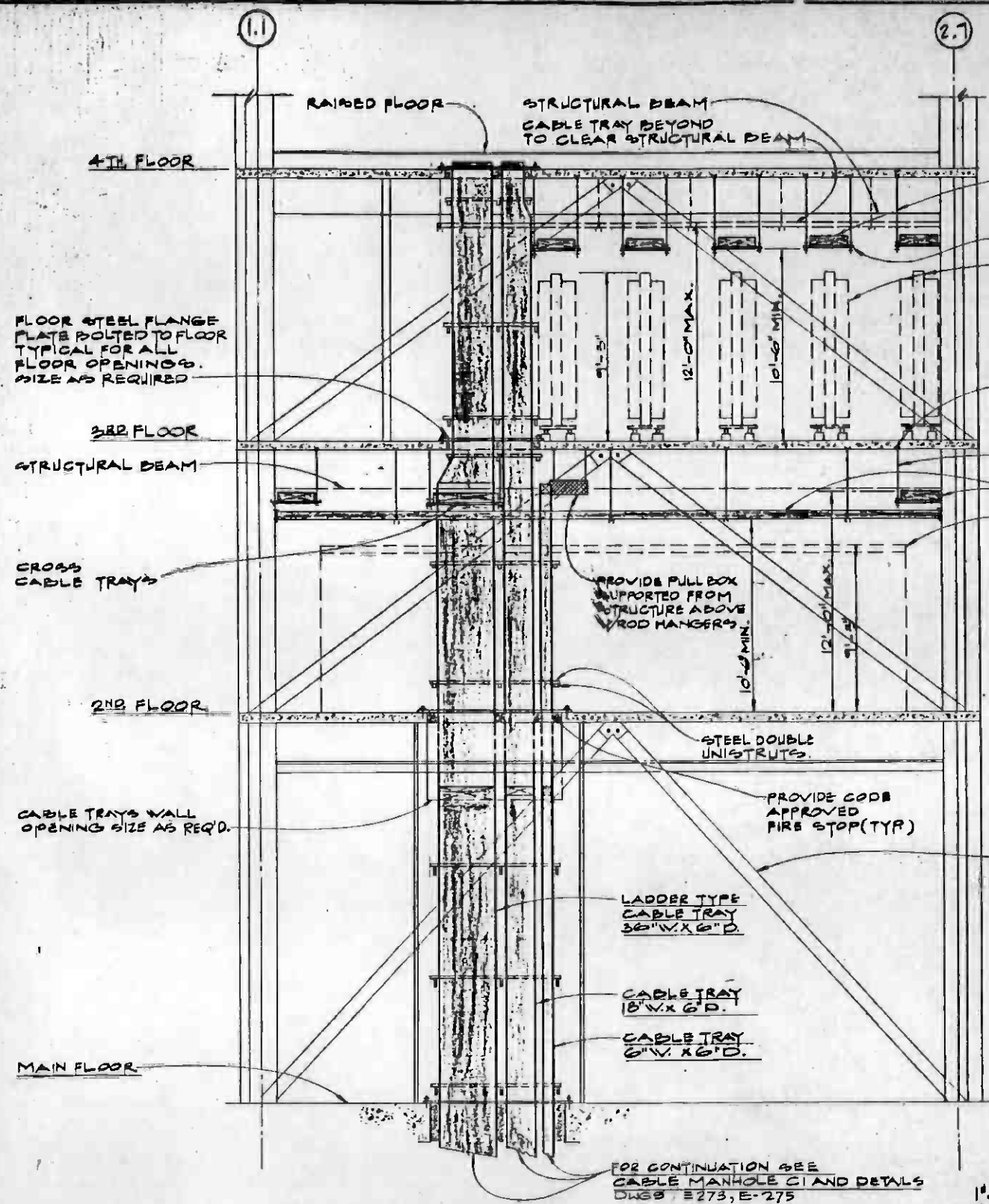
CONTRACT NO.
112

DRAWING NO.
E219

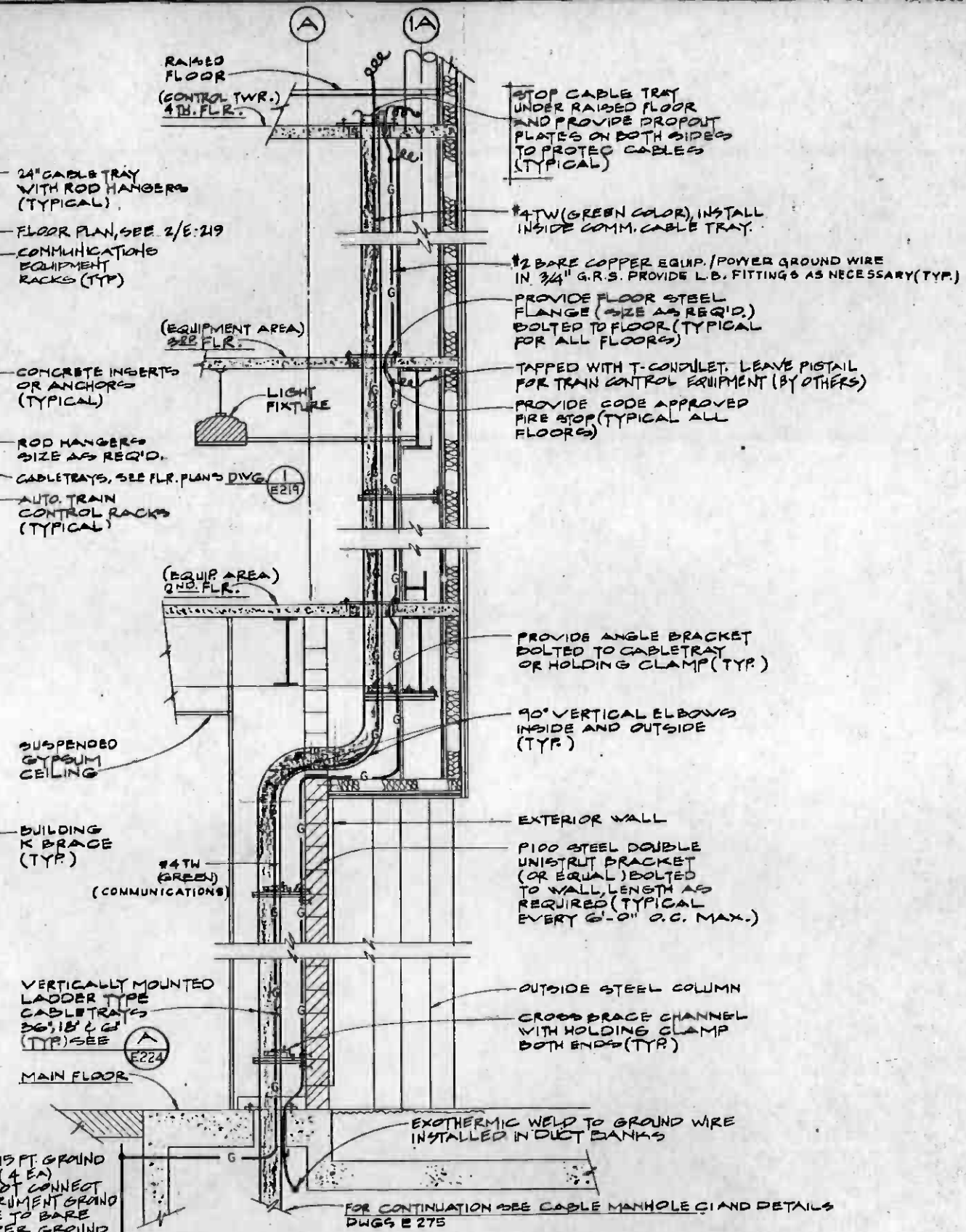
SCALE
1/4" = 1'-0"

SHEET NO.
A620/14

REV.	DESCRIPTION



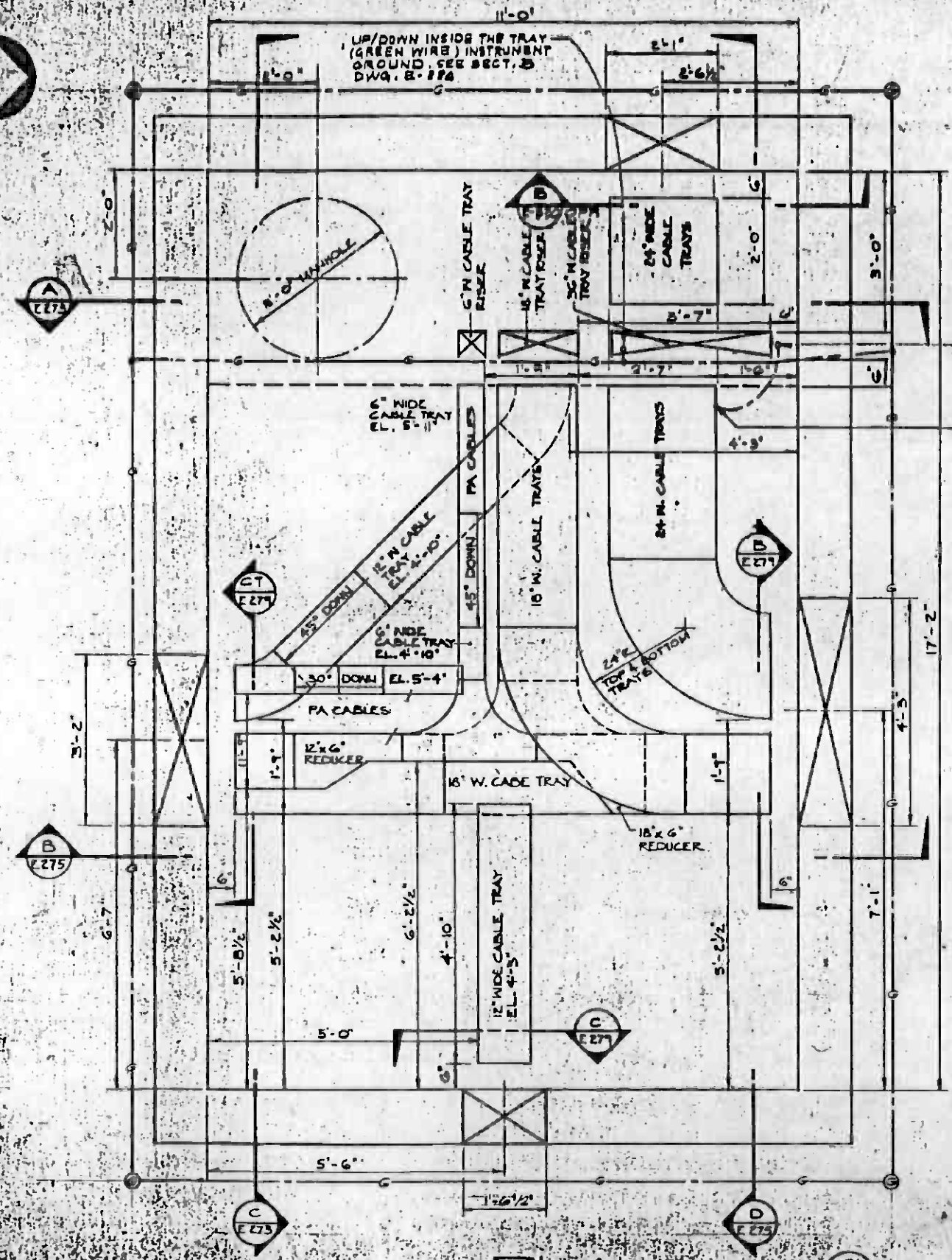
SECTION ELEVATION 'B-B' (A) E224 E-219



SECTION ELEVATION 'A-A' (B) E224 E-219

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA		DESIGNED BY ED SAHAKIAN DRAWN BY PETE BARCA CHECKED BY RON CURLEY IN CHARGE <i>Ronald Curley</i> DATE 12 NOV 84	SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT DMJM/PBQD 3 JOINT VENTURE SUBMITTED <i>A. J. Levan</i>	RTD DMJM/PBQD/KE/HWA 3 JOINT VENTURE GENERAL CONSULTANTS APPROVED <i>Shirley M. Kelly</i>	MAIN YARD AND SHOPS MAIN SHOP BUILDING CONTROL TOWER CABLE TRAY DETAILS	CONTRACT NO. A-112 DRAWING NO. E224 SCALE AS NOTED SHEET NO. 1 OF 15
REV. DATE BY SUB. APP. DESCRIPTION	REV. DATE BY SUB. APP. DESCRIPTION	REV. DATE BY SUB. APP. DESCRIPTION	REV. DATE BY SUB. APP. DESCRIPTION	REV. DATE BY SUB. APP. DESCRIPTION	REV. DATE BY SUB. APP. DESCRIPTION	REV. DATE BY SUB. APP. DESCRIPTION





NOTES:

- ① CABLE TRAYS ARE MEDIUM DUTY, LADDER TYPE, 6" NOMINAL DEPTH, HOT DIP GALVANIZED, WITH 9" RUNG SPACING.
- ② ALL CABLE TRAYS TO HAVE A 12" RADIUS FITTINGS UNLESS OTHERWISE NOTED.
- ③ BOND ALL CABLE TRAY TO EQUIPMENT GROUND WIRE (BARE COPPER) CONNECTED TO DUCT BANKS.
- ④ FOR CONSTRUCTION OF MANHOLE SEE STRUCTURAL DWG. 5041, 5108 & 5110.

REV.	DATE	BY	CHK.	APP.	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIES OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

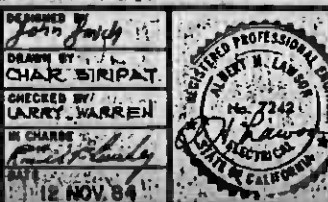
DESIGNED BY: *John J. J...*

DRAWN BY: CHAR SINGPAT

CHECKED BY: LARRY WARREN

IN CHARGE: *...*

DATE: 12 NOV 84



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBQO
GENERAL CONSULTANTS

DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

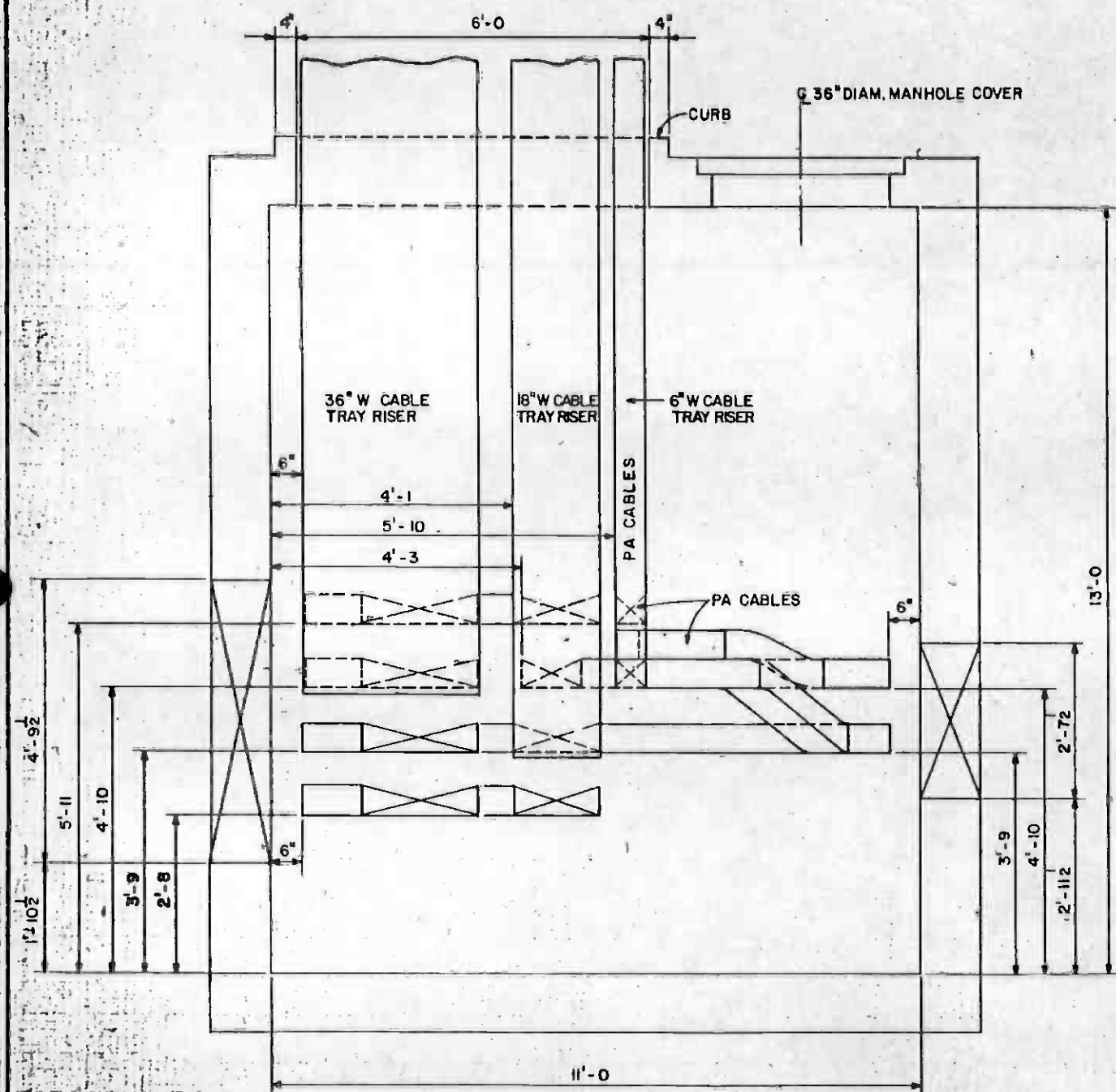
APPROVED: *...*

MAIN YARD AND SHOPS
TRAIN CONTROL
COMMUNICATIONS MANHOLE
PLAN CABLE TRAYS

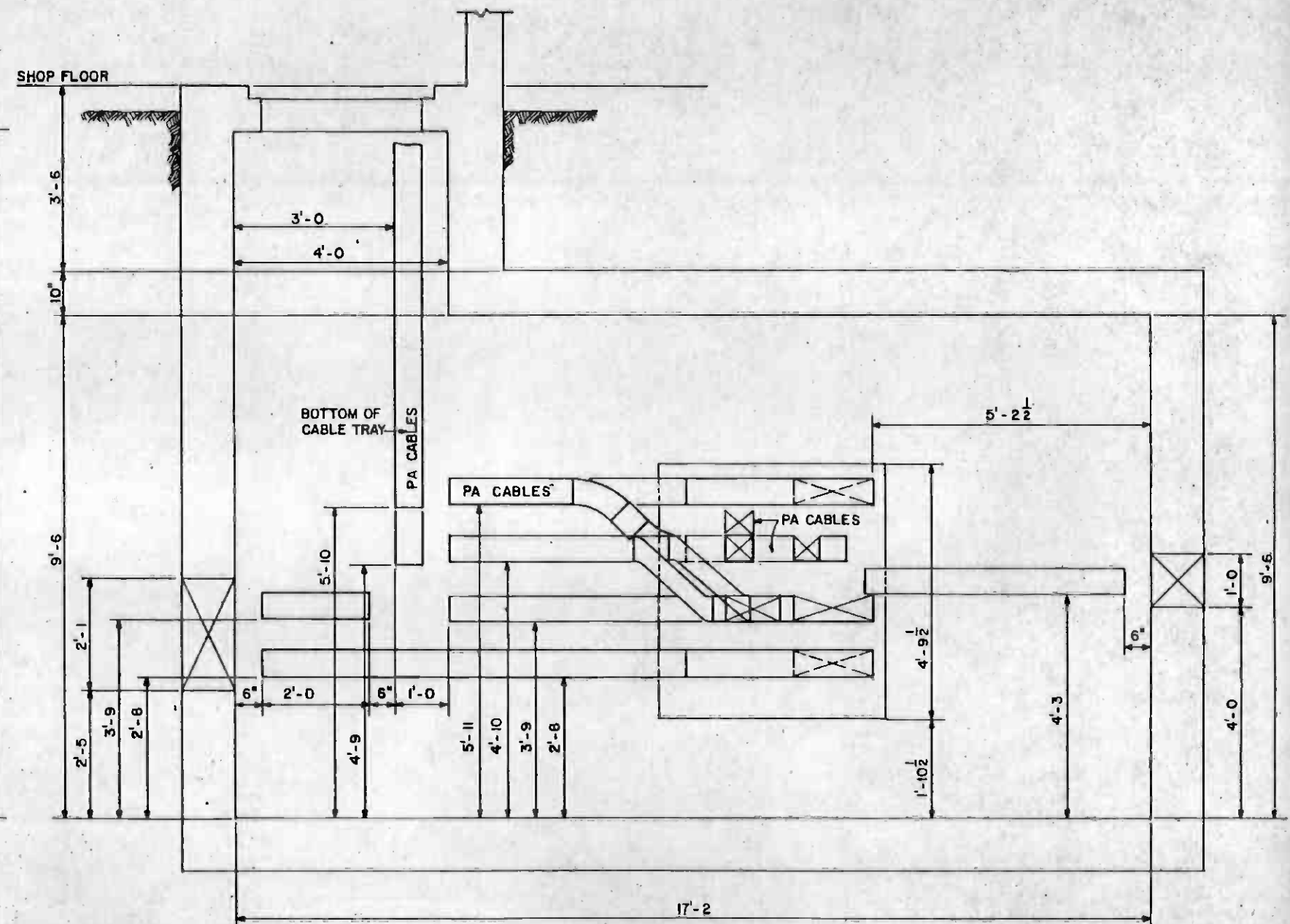
CONTRACT NO.	
DRAWING NO.	E271
REV.	2
SCALE	AS NOTED
SHEET NO.	620/17

NOTE:

SEE DRAWING E-271 FOR NOTES.



SECTION **A**
E-273 E-271



SECTION **C**
E-273 E-271



REV.	DATE	BY	APP.	DESCRIPTION

DESIGNED BY
ERICH NOACH

DRAWN BY
EDUARDO ACOSTA

CHECKED BY
[Signature]

IN CHARGE
[Signature]

DATE
21 NOV. 86

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

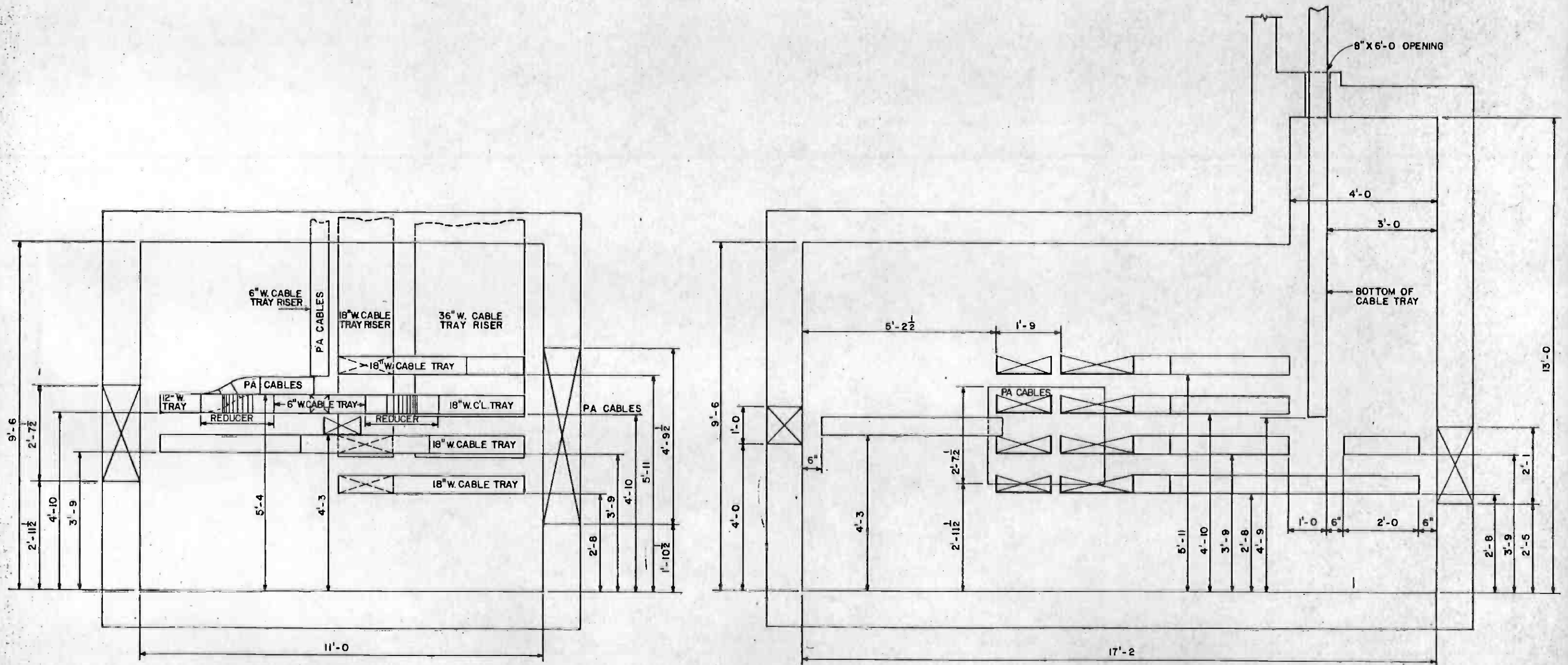
APPROVED *[Signature]*

MAIN YARD AND SHOPS
TRAIN CONTROL
COMMUNICATIONS MANHOLE CI
SECTIONS CABLE TRAYS

CONTRACT NO.	A112
DRAWING NO.	E-273
SCALE	3/4" = 1'-0"
SHEET NO.	A620/18

NOTE:
SEE DRAWING E-271 FOR NOTES.

CONTINUES ON DWG. E-224

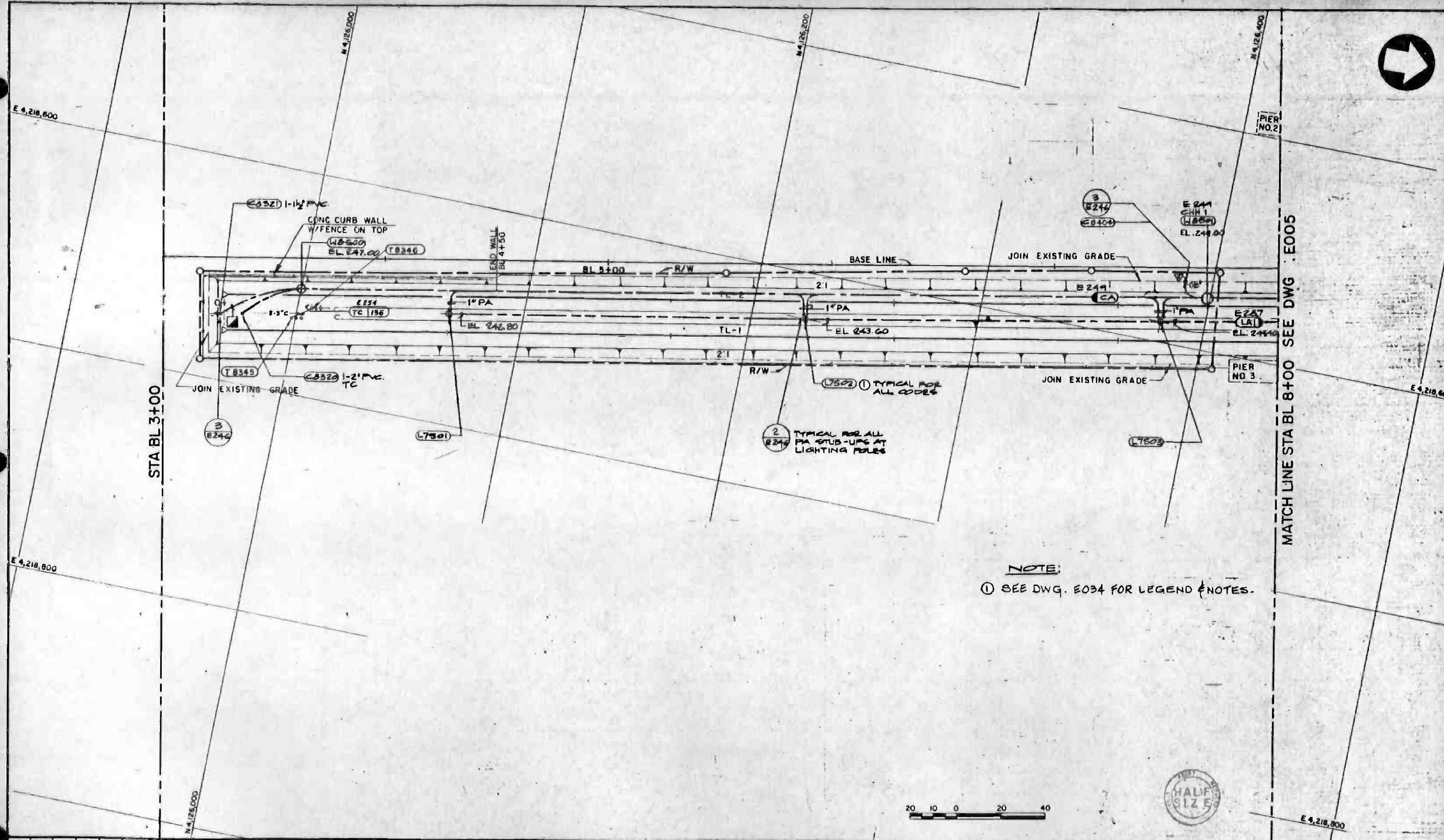


SECTION **B**
E-275 E-271

SECTION **D**
E-275 E-271



<p>THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA</p>		<p>DESIGNED <i>John Smith</i></p>		<p>SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT</p>		<p>MAIN YARD AND SHOPS TRAIN CONTROL COMMUNICATIONS MANHOLE CI SECTIONS - CABLE TRAYS..</p>		<p>CONTRACT NO. A-112</p>	
<p>REVISOR: 241186 E.A. A.S. REVISED PER CR 6-022</p> <p>REVISOR: 24284 P.B. C.S. REVISED PER CR 6-008</p> <p>REVISOR: 101 W.C.M. A.S. INITIAL ISSUE</p>		<p>DRAWN BY CHAR. SURI PAT.</p> <p>CHECKED BY LARRY WARREN</p> <p>IN CHARGE <i>Robert L. ...</i></p> <p>DATE 12 NOV 64</p>						<p>DMJM/PBOD A JOINT VENTURE</p> <p>DMJM/PBOD/KE/HWA GENERAL CONSULTANTS</p> <p>APPROVED <i>Edward J. ...</i></p>	



NOTE:
 ① SEE DWG. E034 FOR LEGEND & NOTES.

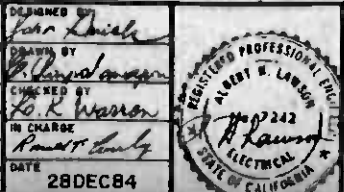


REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY: *John Davis*
 DRAWN BY: *[Signature]*
 CHECKED BY: *[Signature]*
 IN CHARGE: *[Signature]*
 DATE: 28DEC84

REVISED PER CRG-518
 REVISED PER CRS-026



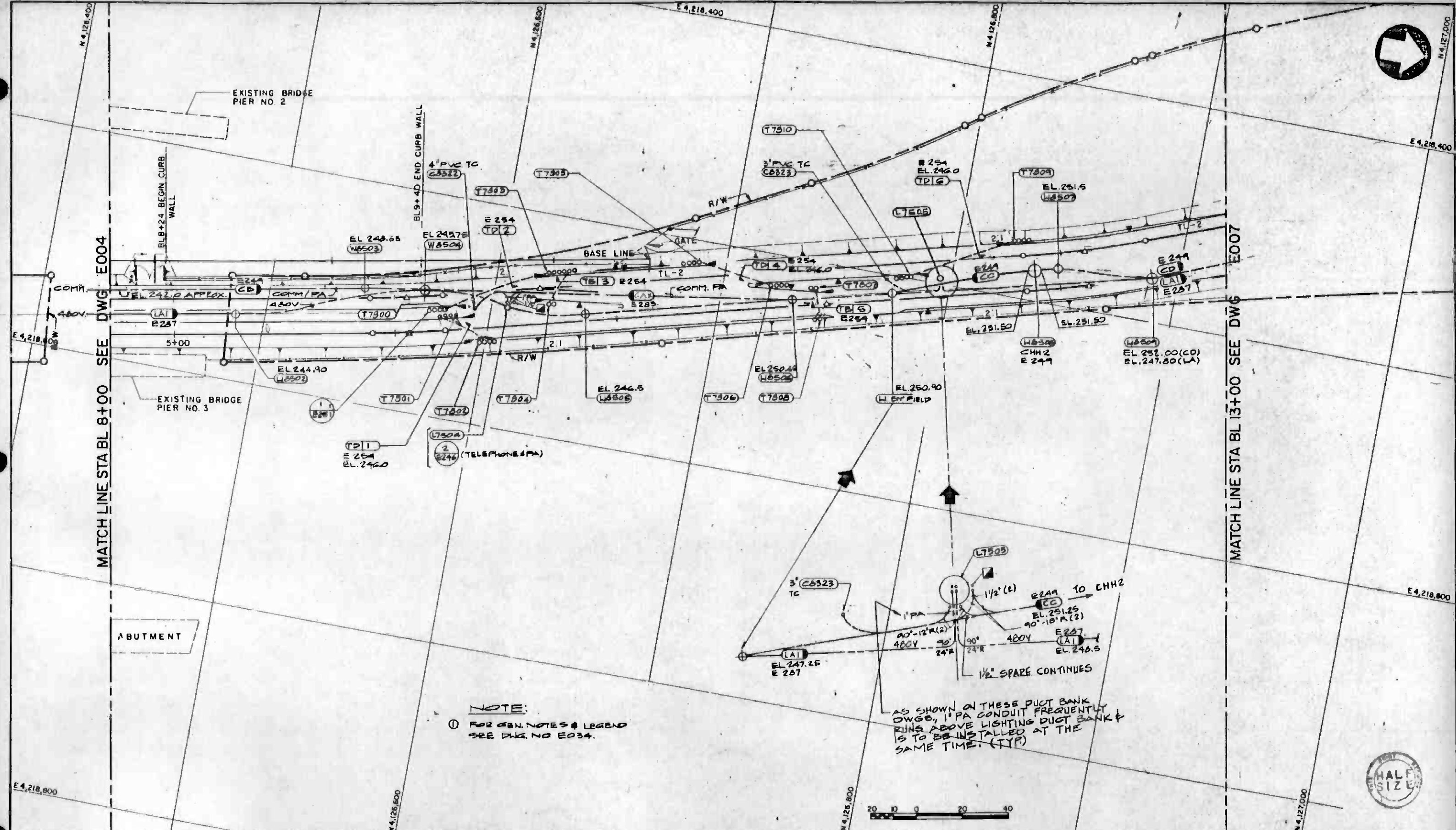
**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT**

DMJM/PB00
 SUBMITTER: *[Signature]*

DMJM/PB00/KE/HWA
 GENERAL CONSULTANTS
 APPROVED: *[Signature]*

**MAIN YARD AND SHOPS
 YARD FACILITIES
 UNDERGROUND DUCT BANKS-1**

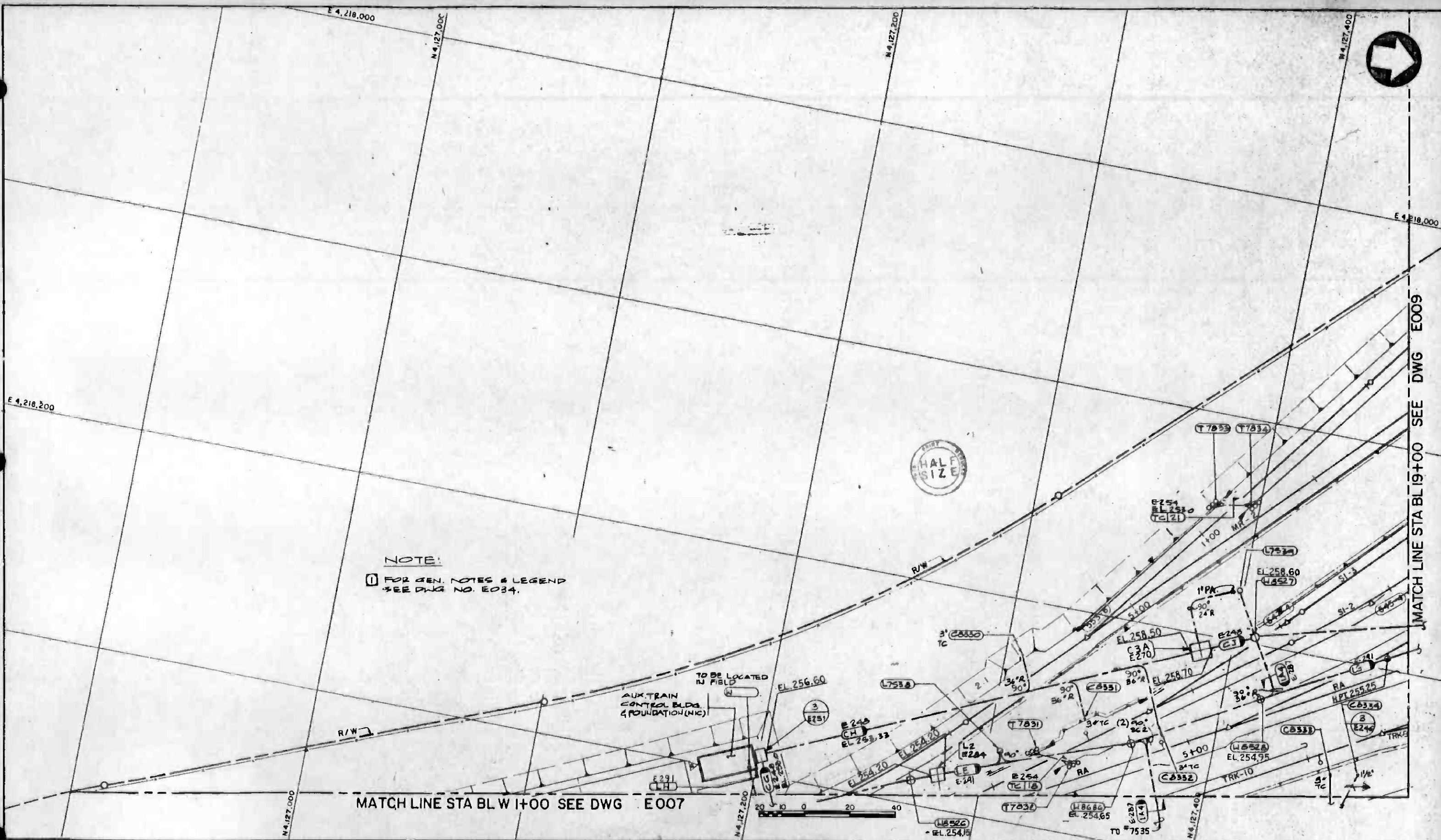
CONTRACT NO. A 115
 DRAWING NO. E004
 SCALE: 1" = 20'
 SHEET NO. A620/25



NOTE:
 ① FOR GEN. NOTES & LEGEND SEE DWG. NO. E034.

AS SHOWN ON THESE DUCT BANK DWGS, 1" PA CONDUIT FREQUENTLY RUNS ABOVE LIGHTING DUCT BANK & IS TO BE INSTALLED AT THE SAME TIME. (TYP)

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DESIGNED BY <i>John Frick</i> DRAWN BY <i>B. Guadalupe</i> CHECKED BY <i>R. K. Warren</i> IN CHARGE <i>Ronald T. Kelly</i> DATE 28 DEC 84	REGISTERED PROFESSIONAL ELECTRICAL ENGINEER ALBERT W. LAWSON No. 7742 STATE OF CALIFORNIA	SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT DMJM/PBQD DAJM/PBQD/KE/HWA GENERAL CONSULTANTS APPROVED: <i>Harold J. Cheliff</i>	CONTRACT NO. A 115 DRAWING NO. E005 SCALE 1" = 20' SHEET NO. A620/26
REV. DATE BY SUB APP DESCRIPTION	REV. DATE BY SUB APP DESCRIPTION	REVISED PER CR6-510 INITIAL ISSUE	3/6/85 CM	MAIN YARD AND SHOPS YARD FACILITIES UNDERGROUND DUCT BANKS-2	HALF SIZE



NOTE:
 1 FOR GEN. NOTES & LEGEND
 SEE DWG NO. E034.

MATCH LINE STA BL W 1+00 SEE DWG E007

MATCH LINE STA BL 19+00 SEE DWG E009

REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY *Mich*
 DRAWN BY *Chirakorn*
 CHECKED BY *B.K. Hanson*
 IN CHARGE *Ronald G. Gandy*
 DATE 28DEC84

REVISOR'S INITIALS: *368 PM*, *MS CM*
 REVISIONS: **REVISED PER CRG-518**
INITIAL ISSUE



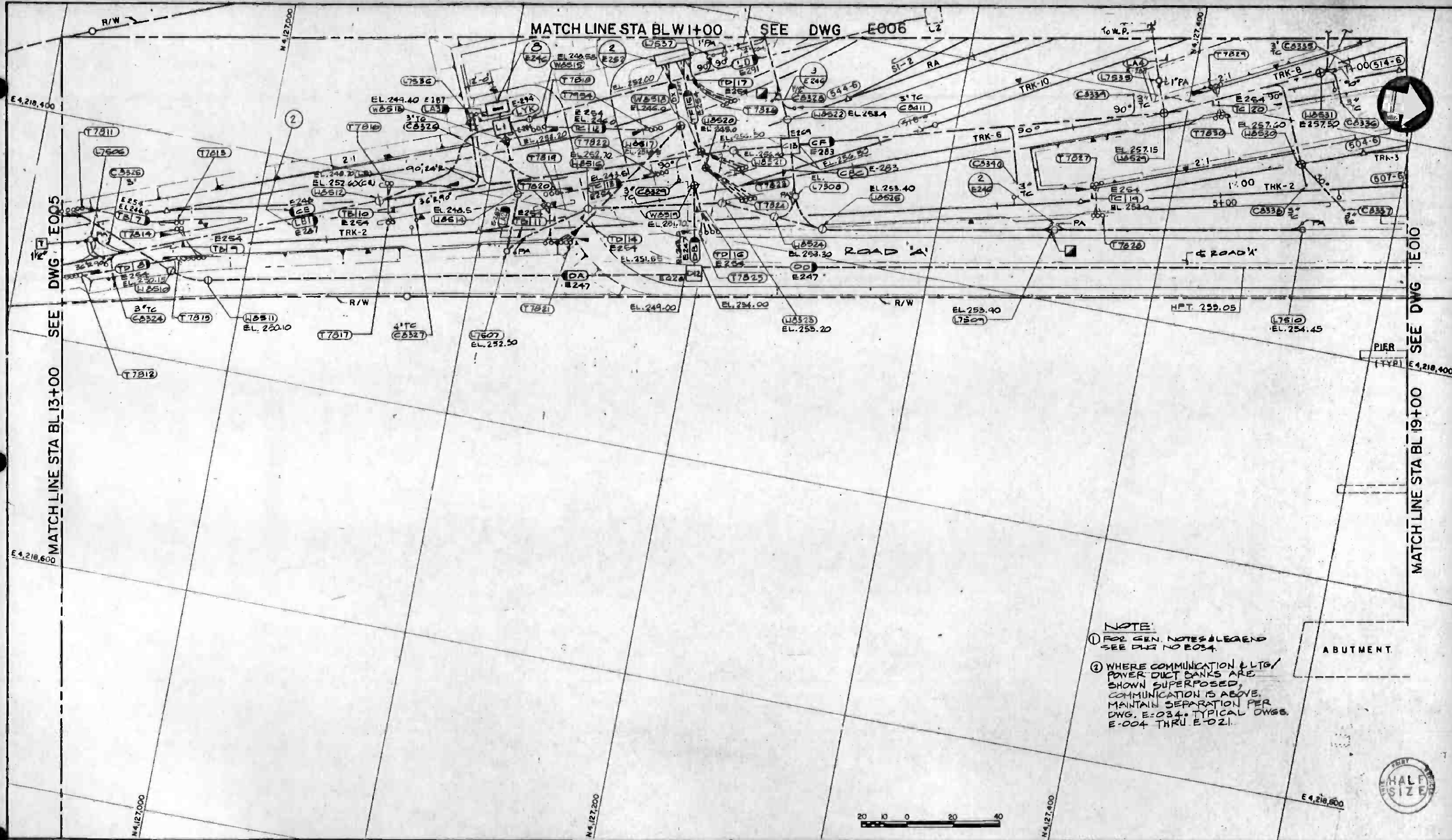
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PB00
 SUBMITTED *A. Hanson*

DMJM/PB00/KE/MWA
 GENERAL CONSULTANTS
 APPROVED *Howard J. Cheliff*

MAIN YARD AND SHOPS
YARD FACILITIES
UNDERGROUND DUCT BANKS-3

CONTRACT NO. A115
 DRAWING NO. E006
 SCALE 1" = 20'
 SHEET NO. A620/27



NOTE:
 ① FOR GEN. NOTES & LEGEND SEE DWG NO E034.
 ② WHERE COMMUNICATION & LTG/POWER DUCT BANKS ARE SHOWN SUPERPOSED, COMMUNICATION IS ABOVE. MAINTAIN SEPARATION PER DWG. E-034. TYPICAL DWGS. E-004 THRU E-021.

ABUTMENT.

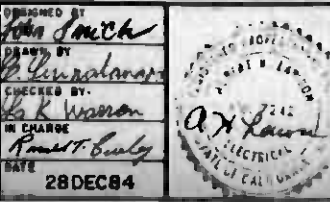


REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, UNDER THE URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY: *John Smith*
 DRAWN BY: *[Signature]*
 CHECKED BY: *[Signature]*
 IN CHARGE: *[Signature]*
 DATE: 28DEC84

REVISED PER CRG-518
 REVISED PER CR5-026



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

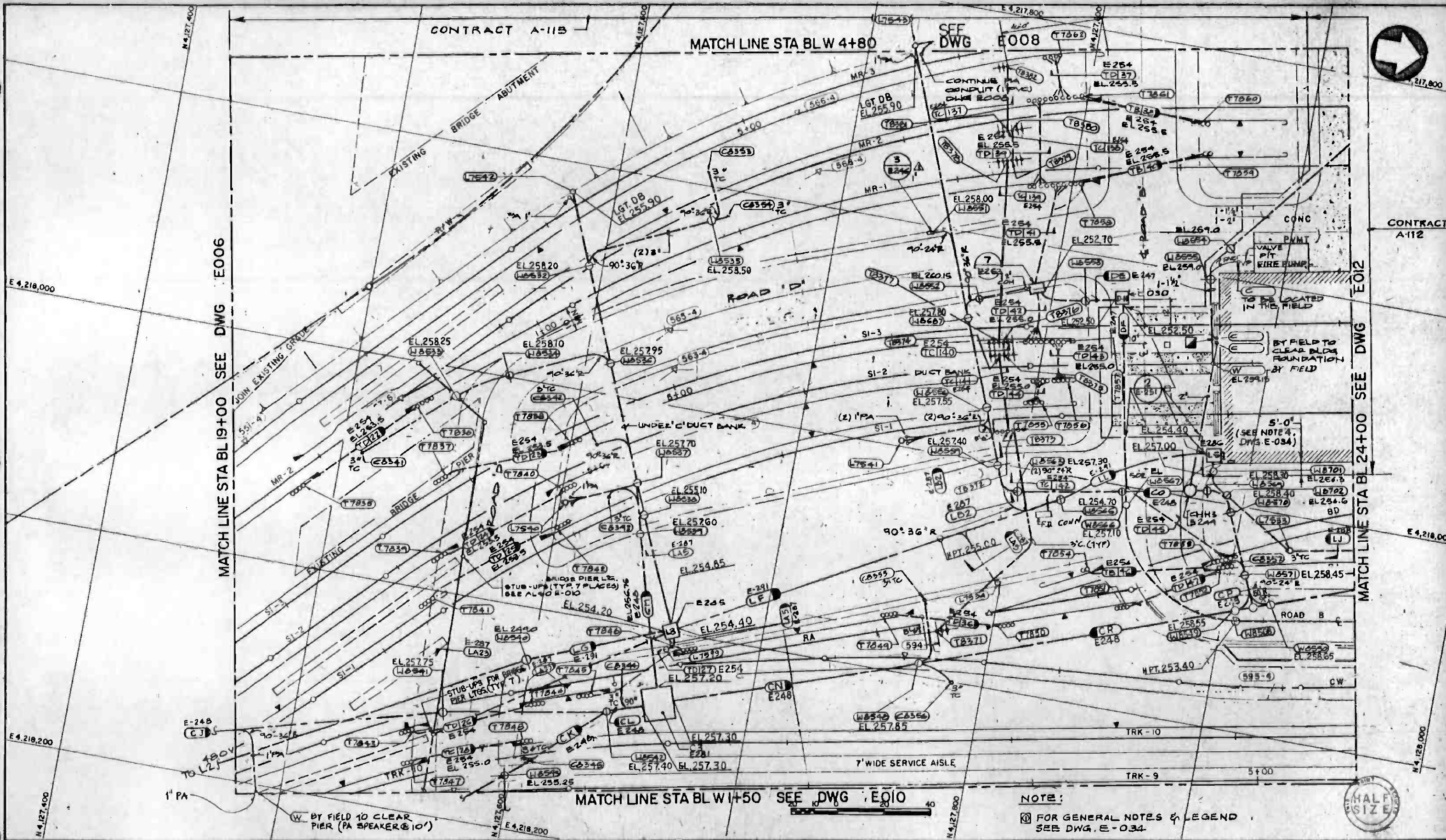
DMJM/PB00
 SUBMITTED: *[Signature]*

DMJM/PB00/KE/HWA
 GENERAL CONSULTANTS
 APPROVED: *[Signature]*

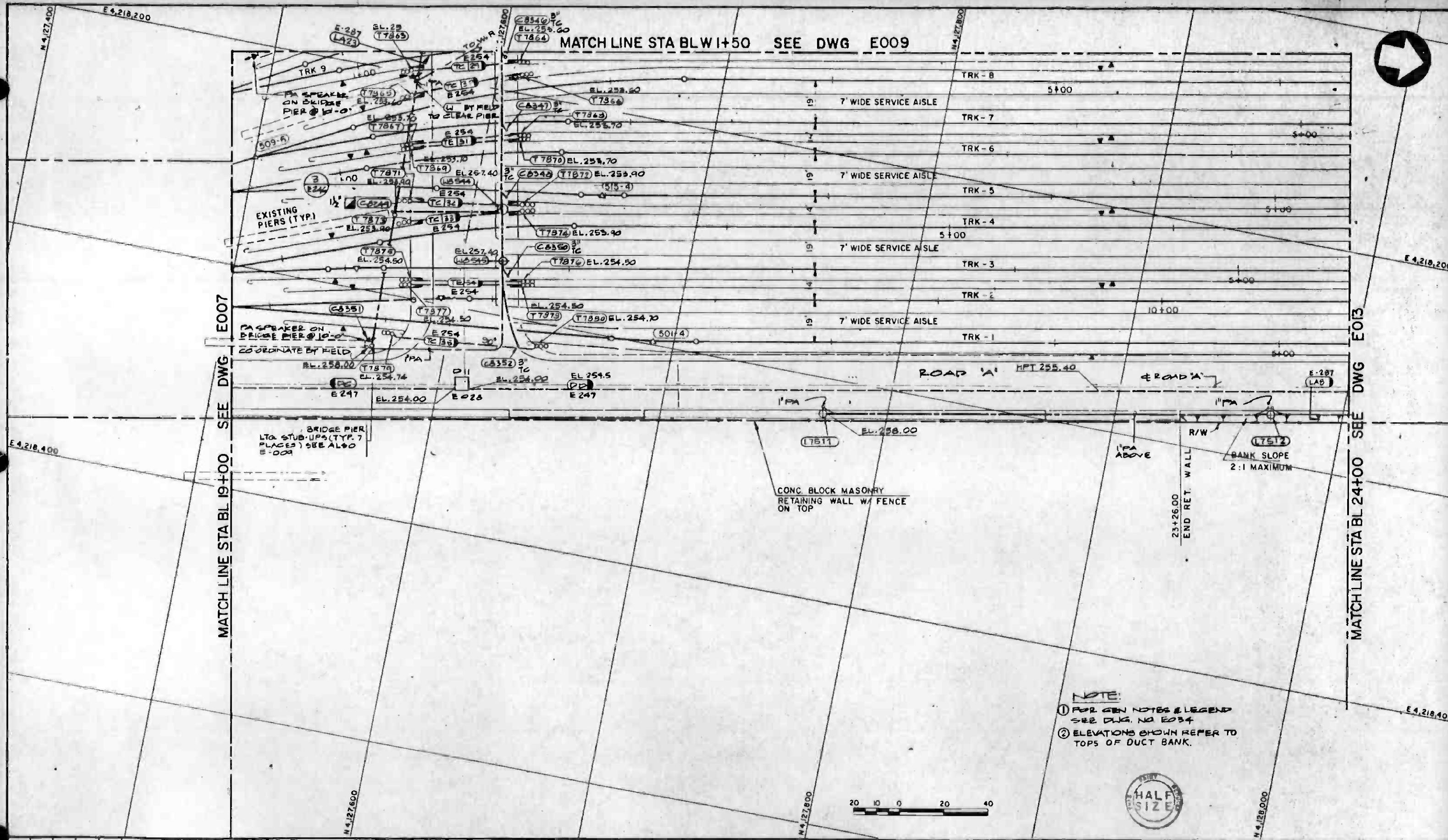
ATD

MAIN YARD AND SHOPS
YARD FACILITIES
UNDERGROUND DUCT BANKS-4

CONTRACT NO. A 115
 DRAWING NO. E007
 SCALE: 1" = 20'
 SHEET NO. A620/28



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DESIGNED BY <i>John Smith</i> DRAWN BY CHAR. SIRIPAT. CHECKED BY LARRY WARREN IN CHARGE <i>Randy P. Smith</i> DATE 12 NOV 84		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT 		MAIN YARD AND SHOPS YARD FACILITIES UNDERGROUND DUCT BANKS-6		CONTRACT NO. A-115. DRAWING NO. E009 REV. 2 SCALE 1" = 20' SHEET NO. A620/29			
REV	DATE	BY	SUB	APP	DESCRIPTION	REV	DATE	BY	SUB	APP	DESCRIPTION
1	11/15/84	J. Siripat			REVISED PER CRG-513						
2	11/15/84	J. Siripat			REVISED PER CR 6-201						



MATCH LINE STA BL 19+00 SEE DWG E007

MATCH LINE STA BL 24+00 SEE DWG E013

MATCH LINE STA BL W I+50 SEE DWG E009

NOTE:
 ① FOR GEN NOTES & LEGEND SEE DWG. NO E034
 ② ELEVATIONS SHOWN REFER TO TOPS OF DUCT BANK.

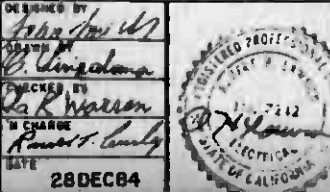


REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY: *[Signature]*
 CHECKED BY: *[Signature]*
 IN CHARGE: *[Signature]*
 DATE: 28DEC84

REVISED PER CRG-518
 INITIAL ISSUE



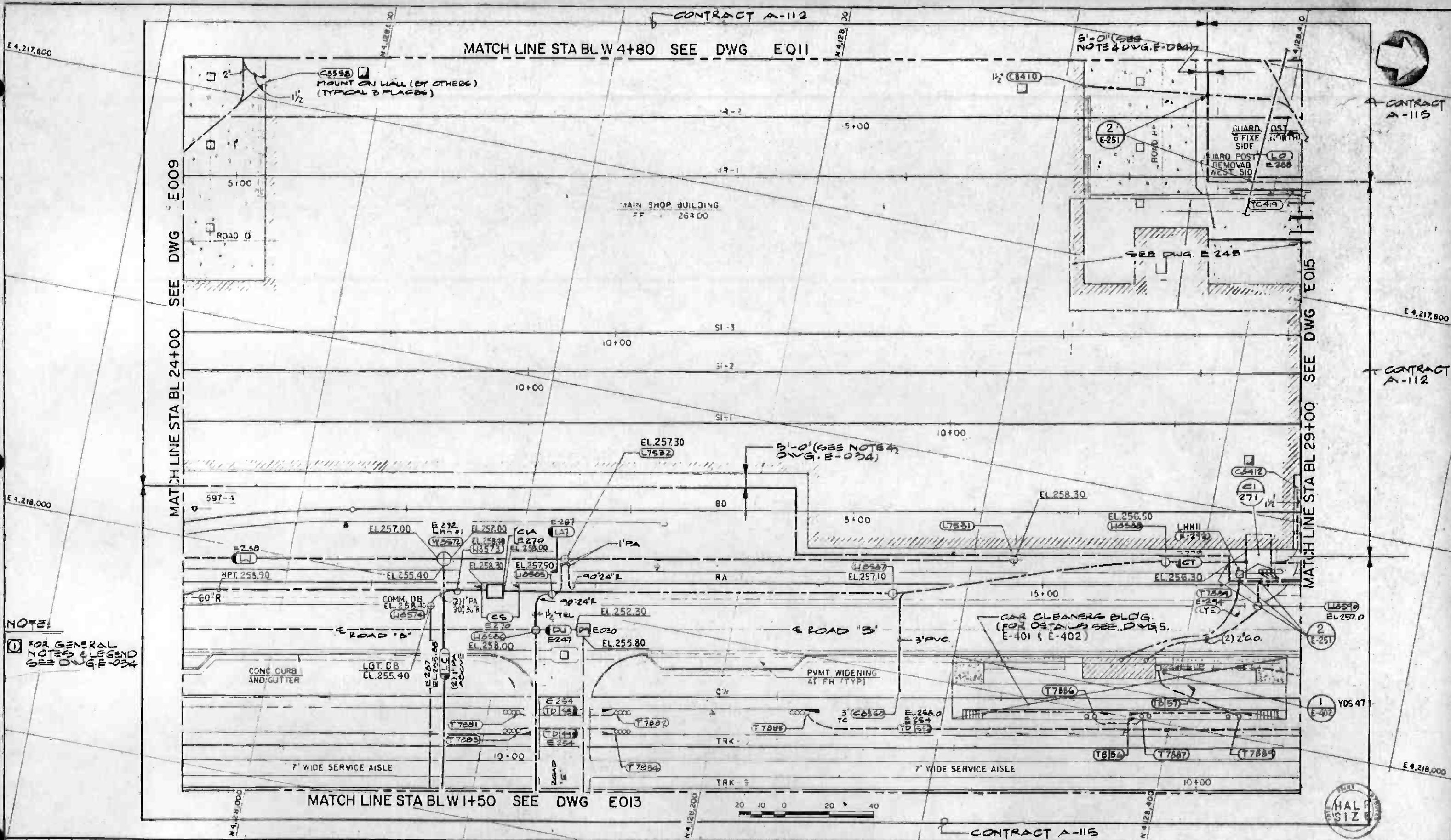
**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT**

DMJM/PBQD
 GENERAL CONSULTANTS

APPROVED: *[Signature]*

**MAIN YARD AND SHOPS
 YARD FACILITIES
 UNDERGROUND DUCT BANKS-7**

CONTRACT NO. A 115
 DRAWING NO. E010
 SCALE 1" = 20'
 SHEET NO. A620 / 30



REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY: *[Signature]*

DRAWN BY: CHAR. SIRIPAT

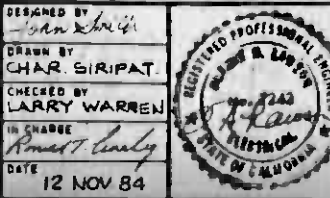
CHECKED BY: LARRY WARREN

IN CHARGE: *[Signature]*

DATE: 12 NOV 84

REVISED PER CRG-518

INITIAL ISSUE



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBQD

DMJM/PBQD/KE/HWA

GENERAL CONSULTANTS

APPROVED: *[Signature]*

CONTRACT NO. A-115

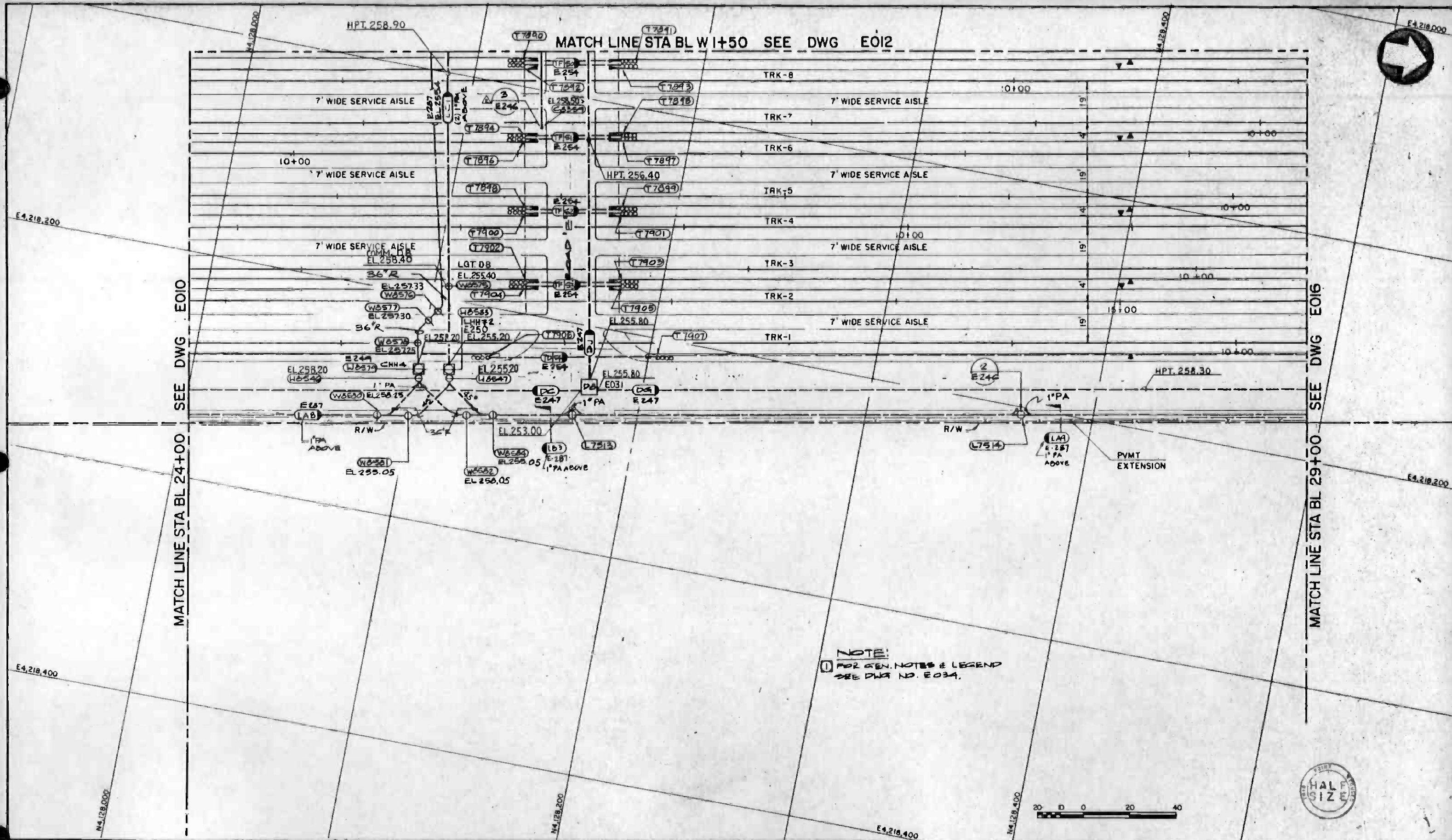
DRAWING NO. E012

SCALE: 1" = 20'

SHEET NO. A620/31

MAIN YARD AND SHOPS
YARD FACILITIES
UNDERGROUND DUCT BANKS-9

CONTRACT NO.	A-115
DRAWING NO.	E012
SCALE	1" = 20'
SHEET NO.	A620/31



REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA

DESIGNED BY
John Smith

DRAWN BY
Robert Curly

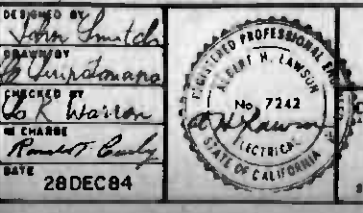
CHECKED BY
Robert Curly

IN CHARGE
Robert Curly

DATE
28DEC84

REVISED PER CRG-518

INITIAL ISSUE



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBQD
GENERAL CONSULTANTS

APPROVED
David J. Chaff

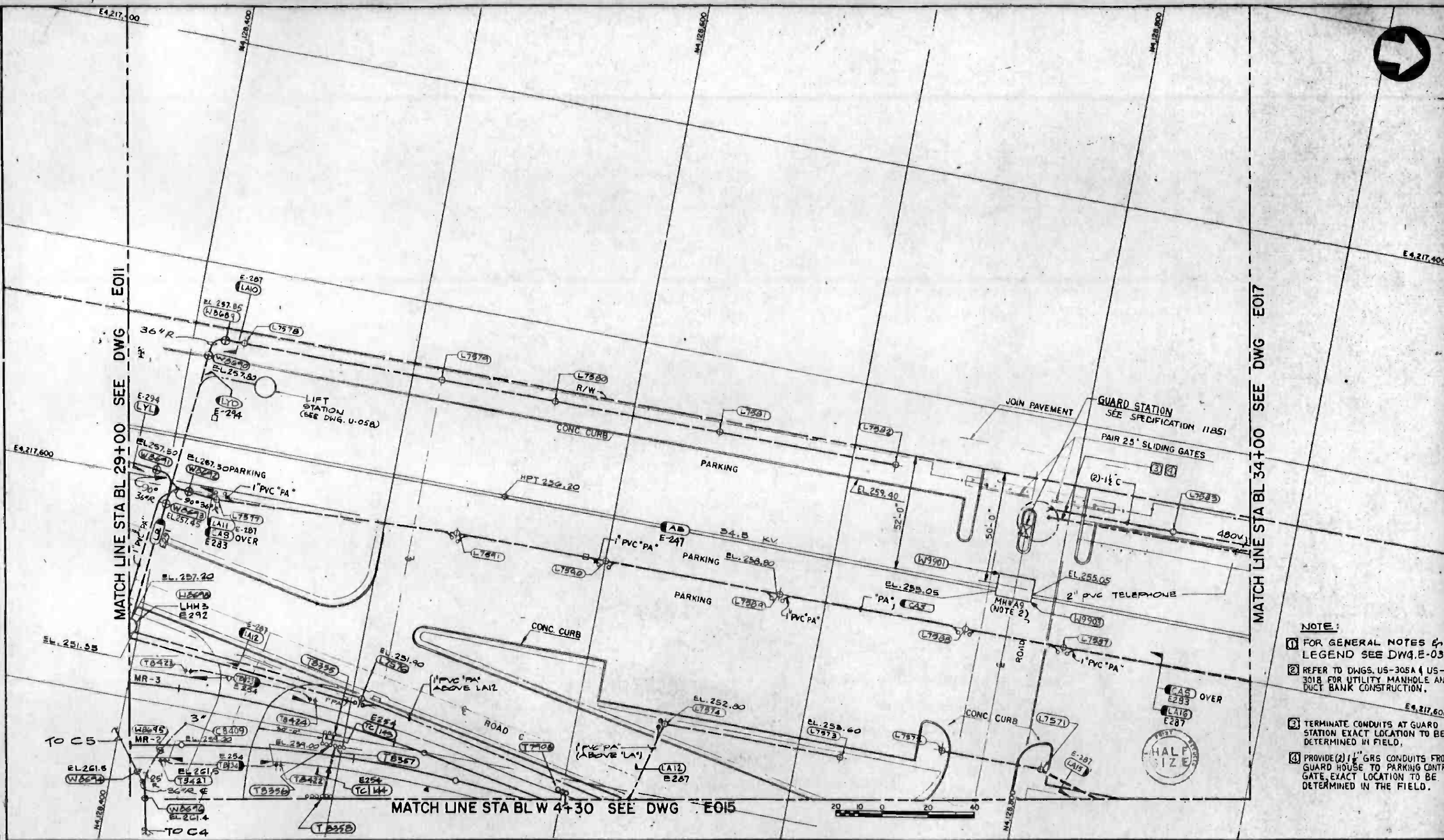
MAIN YARD AND SHOPS
YARD FACILITIES
UNDERGROUND DUCT BANKS-10

CONTRACT NO.
A 115

DRAWING NO.
E013

SCALE
1" = 20'

SHEET NO.
A620/32



- NOTE:**
- 1 FOR GENERAL NOTES & LEGEND SEE DWG. E-034
 - 2 REFER TO DWGS. US-305A & US-301B FOR UTILITY MANHOLE AND DUCT BANK CONSTRUCTION.
 - 3 TERMINATE CONDUITS AT GUARD STATION EXACT LOCATION TO BE DETERMINED IN FIELD.
 - 4 PROVIDE (2) 1 1/2" GRS CONDUITS FROM GUARD HOUSE TO PARKING CONTROL GATE, EXACT LOCATION TO BE DETERMINED IN THE FIELD.

REV	DATE	BY	SUB	APP	DESCRIPTION

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DESIGNED BY
Siba Sm, ch

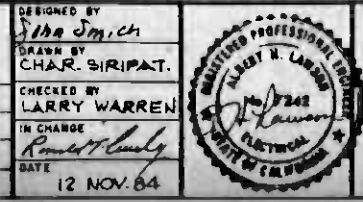
DRAWN BY
CHAR. SIRIPAT.

CHECKED BY
LARRY WARREN

IN CHARGE
Ronald C. Lundy

DATE
12 NOV. 64

REVISED PER CRG-516
REVISED PER CR 5-201



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

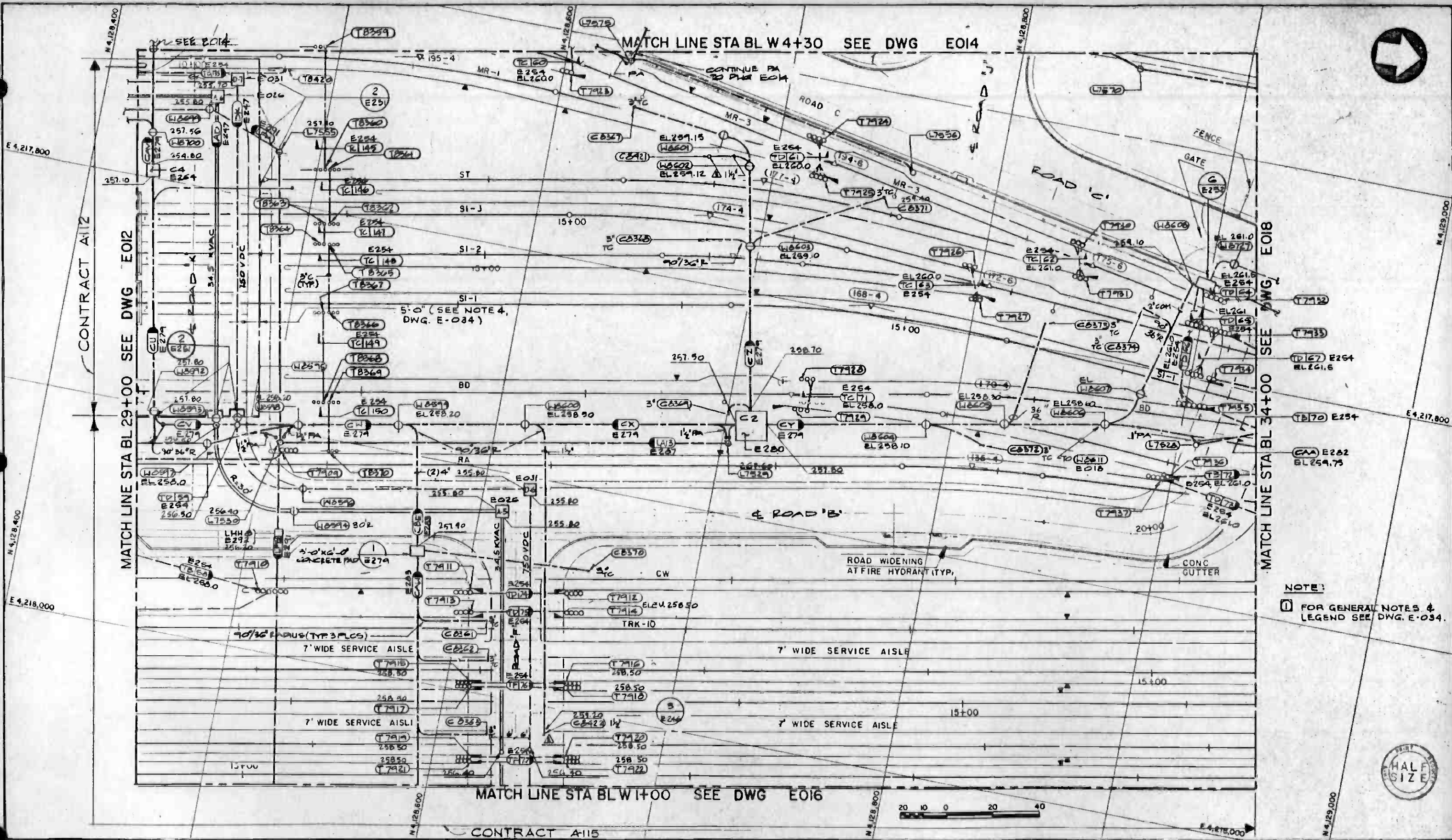
DMJM/PBOD
A JOINT VENTURE

DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

APPROVED: *Howard J. Chaffin*

MAIN YARD AND SHOPS
YARD FACILITIES
UNDERGROUND DUCT BANK-II

CONTRACT NO. A-115
DRAWING NO. E 014
SCALE 1" = 20'
SHEET NO. A620/33



NOTE:
 1 FOR GENERAL NOTES & LEGEND SEE DWG. E-034.



REV.	DATE	BY	SUB	APP	DESCRIPTION

REV.	DATE	BY	SUB	APP	DESCRIPTION

DESIGNED BY
Jerry Smith
 DRAWN BY
 CHAR SIRIPAT.
 CHECKED BY
 LARRY WARREN
 IN CHARGE
Robert Dudley
 DATE
 12 NOV 84



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBOD/KE/HWA
 GENERAL CONSULTANTS

APPROVED
Harold J. ...

MAIN YARD AND SHOPS
 YARD FACILITIES
 UNDERGROUND DUCT BANKS-12

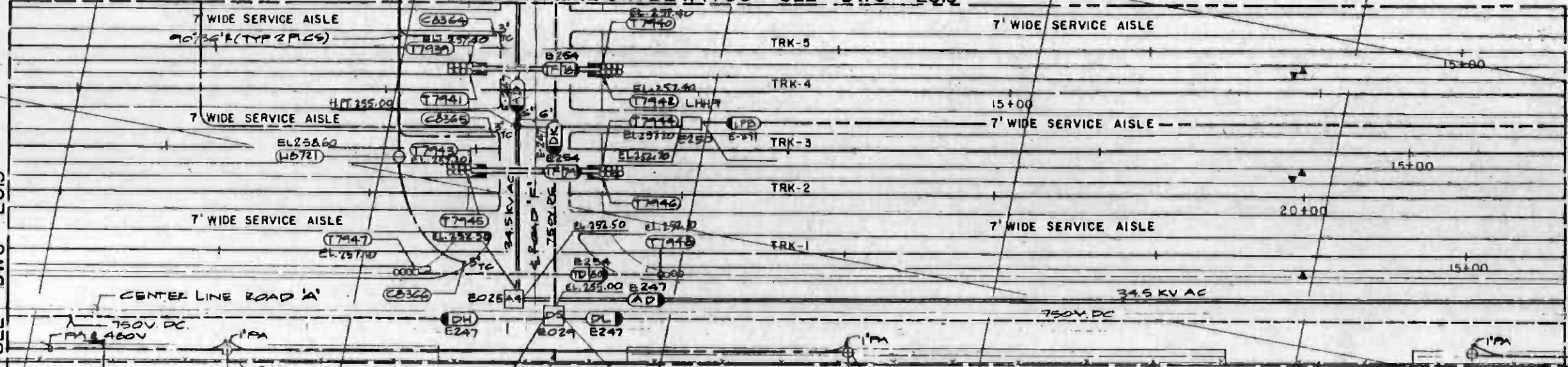
CONTRACT NO.	A-115
DRAWING NO.	E015
REV.	2
SCALE	1" = 20'
SHEET NO.	A620/34



MATCH LINE STA BL W+00 SEE DWG E015

SEE DWG E013
MATCH LINE STA BL 29+00

MATCH LINE STA BL 34+00
SEE DWG E019



CENTER LINE ROAD 'A'

750V DC
PA 2400V

750V DC

34.5 KV AC

PAVEMENT
EXTENSION

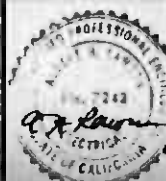
2 TYPE PLCS
E246

NOTE:
1 FOR GEN NOTES & LEGEND
SEE DWG. NO E034.
2 ELEVATIONS SHOWN REFERS TO
TOP OF DUCTBANK.



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA

DESIGNED BY
Joe Smith
DRAWN BY
De Anagnano
CHECKED BY
W. R. Hanson
IN CHARGE
Robert Kelly
DATE
28DEC84



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT



DMJM/PBQO
SUBMITTED
Q. V. Lawson

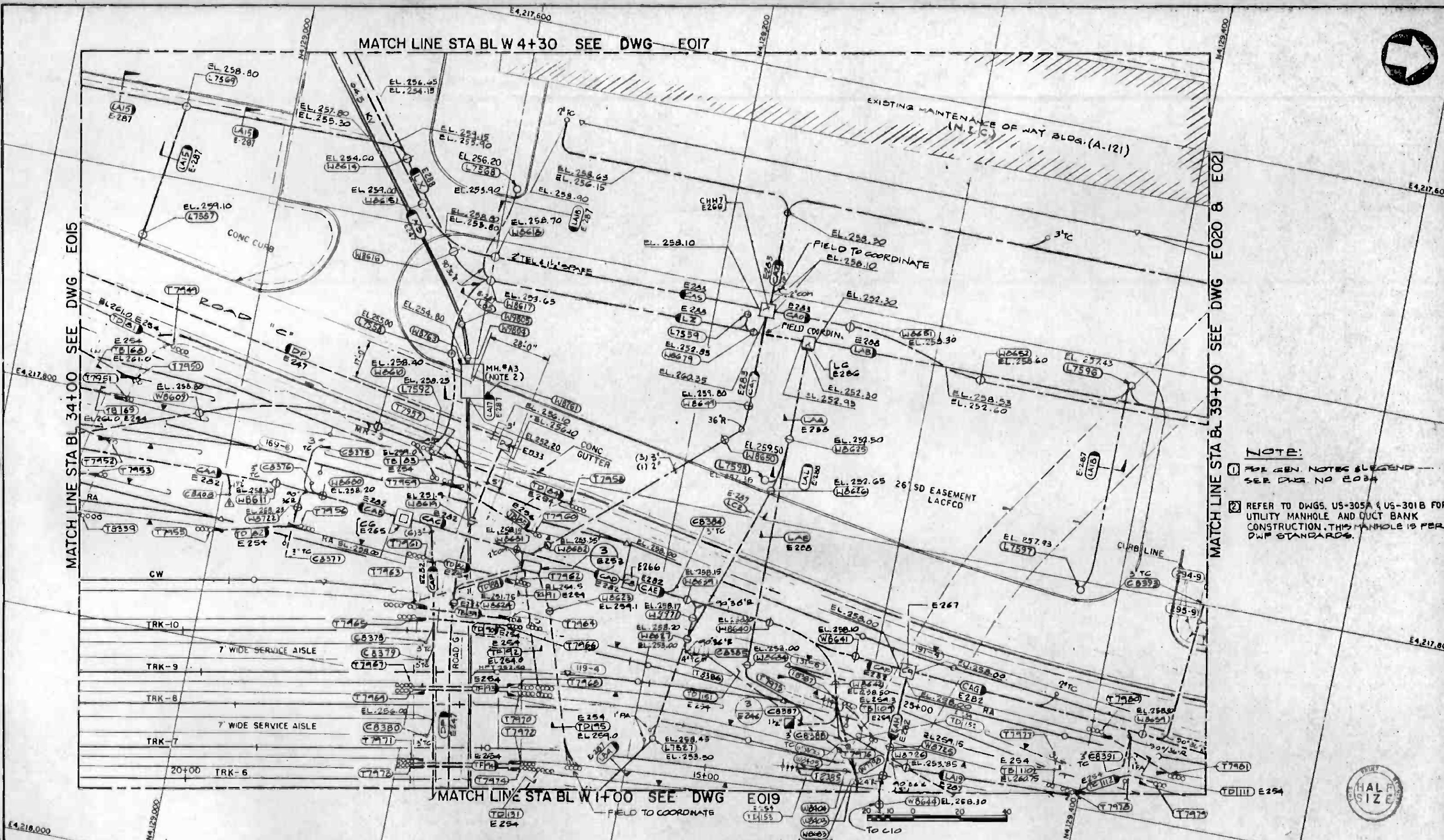
DMJM/PBQO/KE/HWA
GENERAL CONSULTANTS
APPROVED
Harold K. Kelly

MAIN YARD AND SHOPS
YARD FACILITIES
UNDERGROUND DUCT BANKS-13

CONTRACT NO.
A115
DRAWING NO.
E016
SCALE
1" = 20'
SHEET NO. A620 / 35

REV	DATE	BY	SUB	APP	DESCRIPTION
1	1-17-84	DM	4	DM	REVISED PER CRG-518
2	1-19-84	DM	4	DM	INITIAL ISSUE

MATCH LINE STA BL W 4+30 SEE DWG E017



MATCH LINE STA BL 39+00 SEE DWG E020 & E021

NOTE:
 1. SEE GEN. NOTES & LEGEND - SEE DWG NO E004
 2. REFER TO DWGS. US-305A & US-301B FOR UTILITY MANHOLE AND DUCT BANK CONSTRUCTION. THIS MANHOLE IS PER DWP STANDARDS.

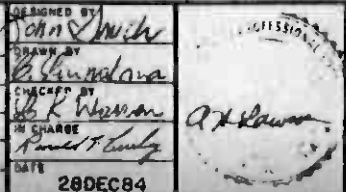
MATCH LINE STA BL W 1+00 SEE DWG E019

REV.	DATE	BY	SUB.	APP.	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY: *John Smith*
 DRAWN BY: *John Smith*
 CHECKED BY: *R. K. Wilson*
 IN CHARGE: *R. K. Wilson*
 DATE: 28DEC84

REVISED PER CRG-510
 REVISED PER CR5-026



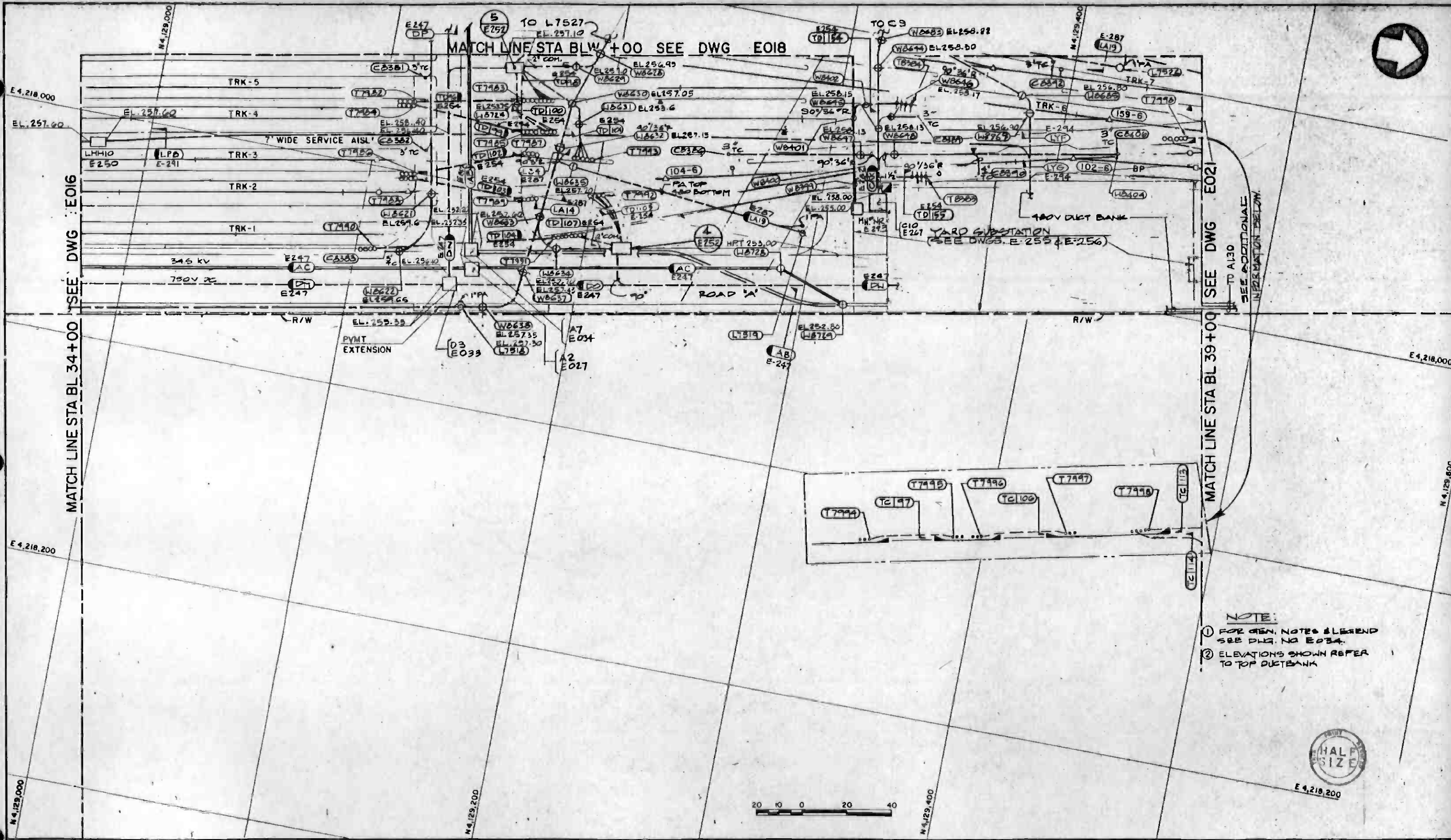
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBOD
 DMJM/PBOD/XE/HWA
 GENERAL CONSULTANTS

APPROVED: *[Signature]*

MAIN YARD AND SHOPS
YARD FACILITIES
UNDERGROUND DUCT BANKS-15

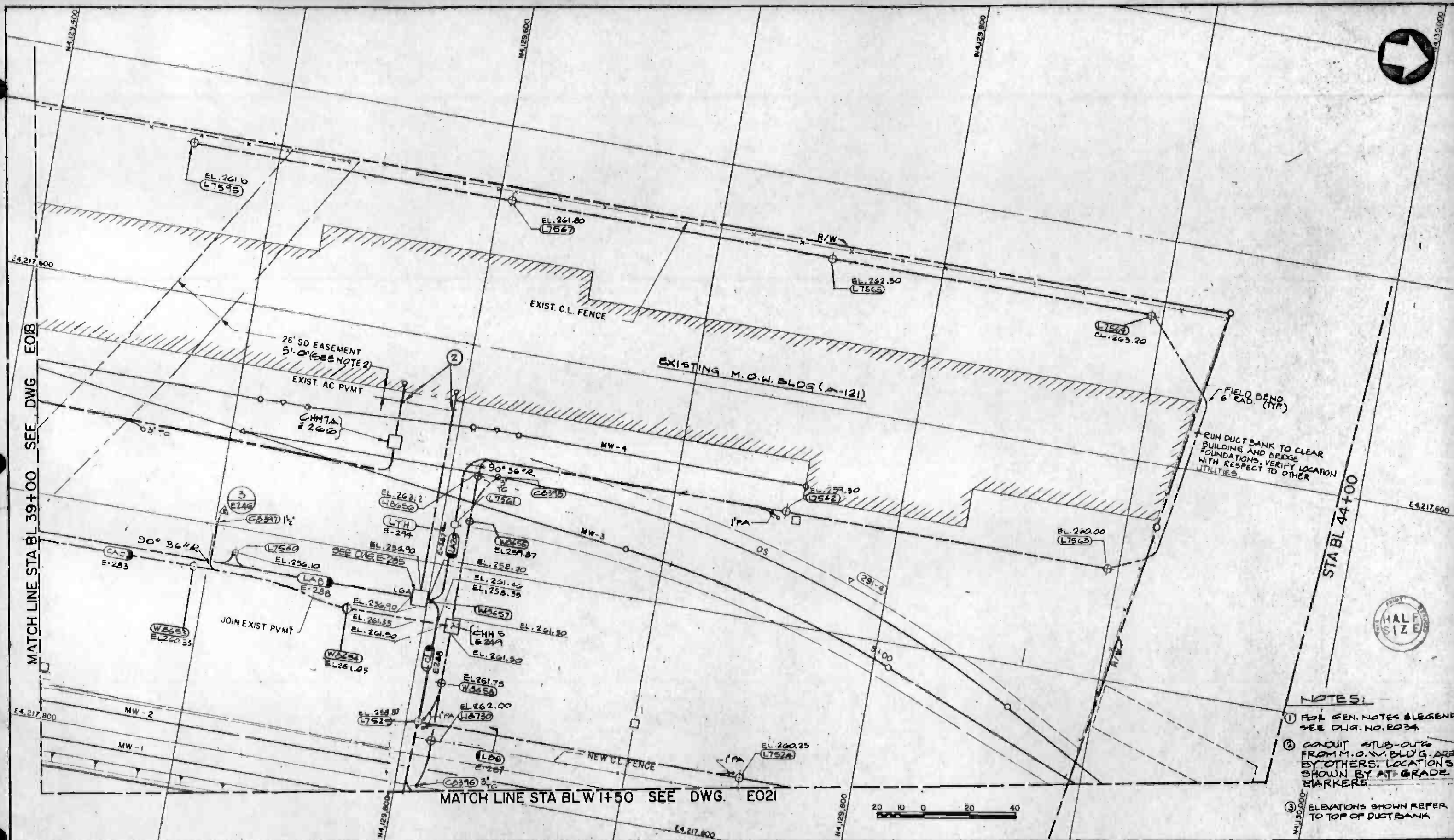
CONTRACT NO.	A115
DRAWING NO.	E018
REV.	2
SCALE	1" = 20'
SHEET NO.	A620/36



NOTE:
 ① FOR GEN. NOTES & LEGEND SEE DWG. NO E034.
 ② ELEVATIONS SHOWN REFER TO TOP DUCTBANK



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY <i>John Orlich</i> DRAWN BY <i>Blanca Palomares</i> CHECKED BY <i>Lo K. Warren</i> IN CHARGE <i>Frank C. Cully</i> DATE 28DEC84		REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA NO. 212 <i>Frank C. Cully</i>		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT DMJM/PBOD A JOINT VENTURE SUBMITTED <i>Frank C. Cully</i>		 DMJM/PBOD/KE/HWA GENERAL CONSULTANTS APPROVED <i>Howard J. Kelly</i>		MAIN YARD AND SHOPS YARD FACILITIES UNDERGROUND DUCT BANKS-19		CONTRACT NO. A 115 DRAWING NO. E019 SCALE 1" = 20' SHEET NO. A620/37		
REV	DATE	BY	SUB	APP	DESCRIPTION	REV	DATE	BY	SUB	APP	DESCRIPTION	REV	DATE	BY	APP	DESCRIPTION
1	3-6-84	Blanca Palomares			REVISED PER CR 6-318	2	2/28/84	Frank C. Cully			REVISED PER CR 5-026	3				



MATCH LINE STA BL 39+00 SEE DWG EOB

STA BL 44+00

MATCH LINE STA BL W 1+50 SEE DWG. E021

- NOTES:**
- FOR GEN. NOTES & LEGEND SEE DWG. NO. E034.
 - CONDUIT SUB-OUTS FROM M.O.W. BLDG. ARE BY OTHERS. LOCATIONS SHOWN BY AT-GRADE MARKERS.
 - ELEVATIONS SHOWN REFER TO TOP OF DUCTBANK.

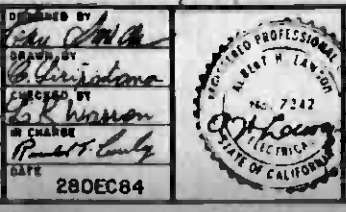


REV.	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1960, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY: *[Signature]*
 DRAWN BY: *[Signature]*
 CHECKED BY: *[Signature]*
 IN CHARGE: *[Signature]*
 DATE: 280EC84

REVISED PER CRG-316
 INITIAL ISSUE



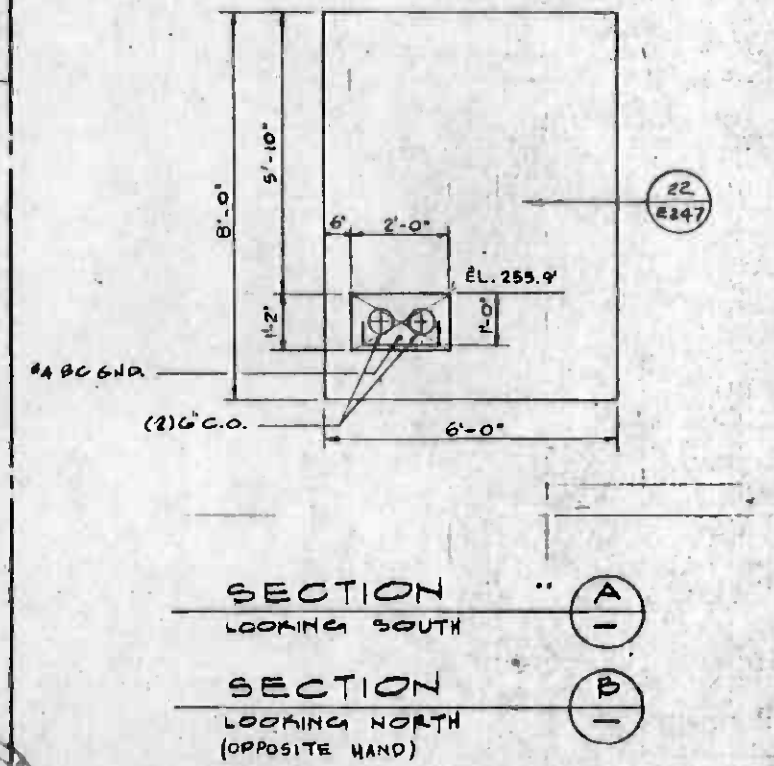
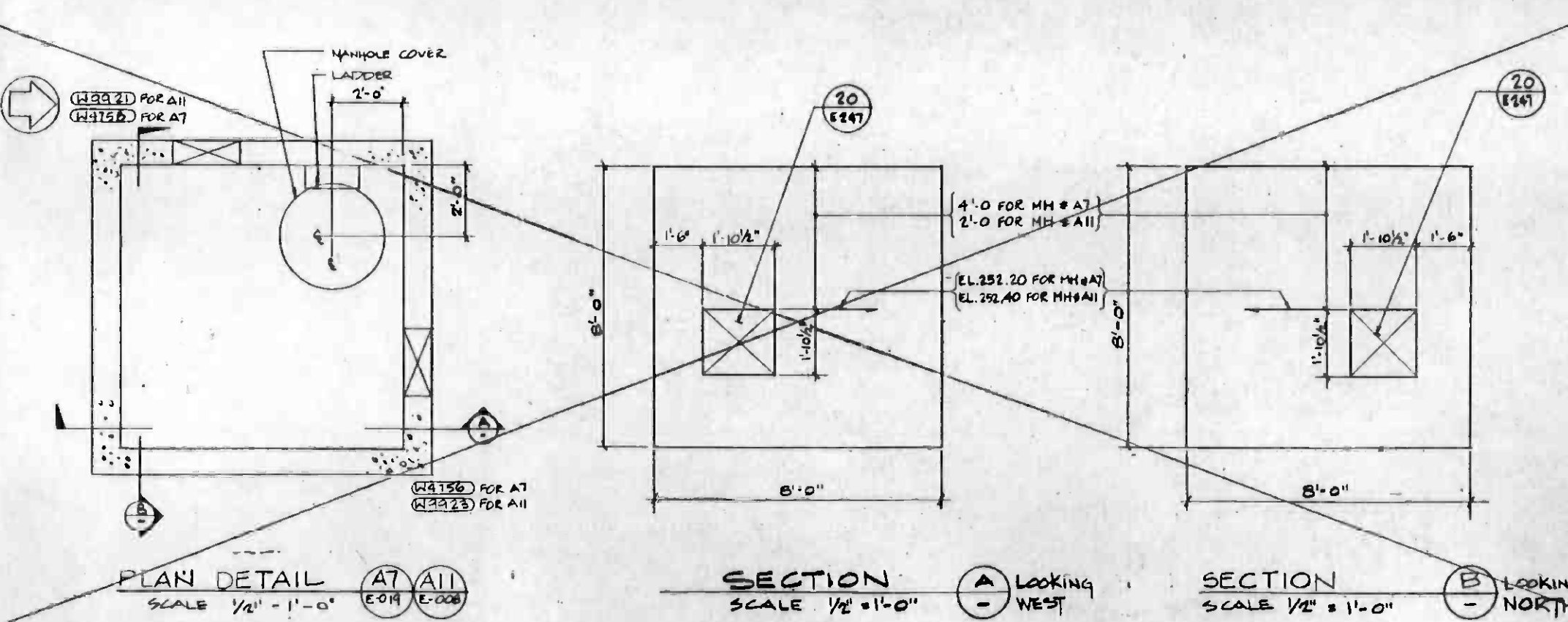
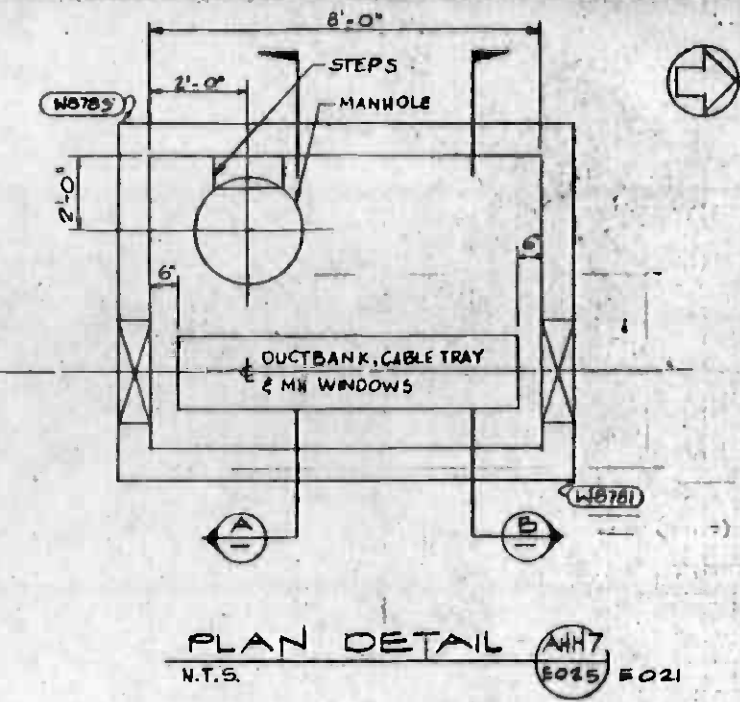
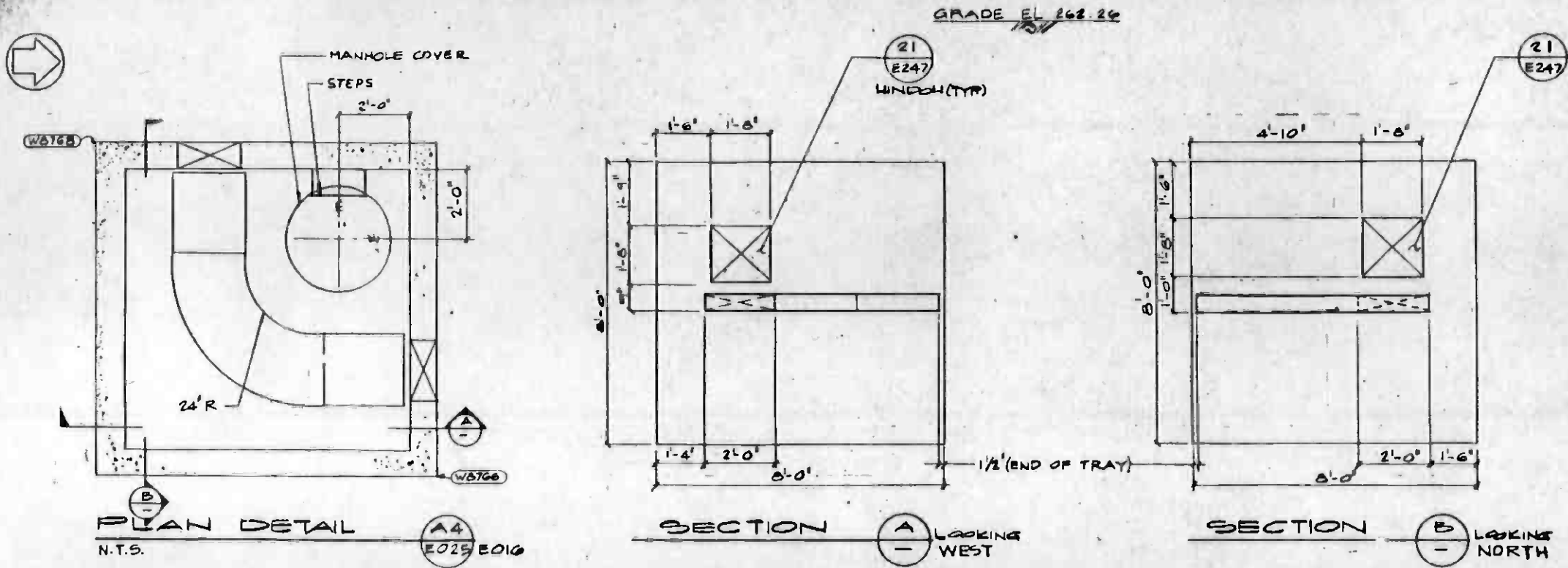
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBQD
 GENERAL CONSULTANTS

APPROVED: *[Signature]*

MAIN YARD AND SHOPS
 YARD FACILITIES
 UNDERGROUND DUCT BANKS-1Z

CONTRACT NO. A115
 DRAWING NO. E020
 SCALE 1" = 20'
 SHEET NO. A620/38



NOTES:

- ALL CABLE TRAYS SHOWN IN NEGATIVE RETURN (NR), TRACTION POWER (P) AND 34.5 KV (A) MANHOLES ARE NOT IN CONTRACT.
- FOR CONSTRUCTION OF MANHOLES SEE DWG. E0229
- PULLING IRONS SHALL BE LOCATED ON THE OPPOSITE WALL OF ANY GIVEN CONDUIT WINDOW & AT 6" MIN. BELOW THE BOTTOM ELEV. OF SUCH WINDOW. CONTRACTOR TO REARRANGE LOCATION OF PULLING IRONS IN CASE OF ANY CONFLICTING INTERFERENCE. SEE DETAIL 2 DWG. E029

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DESIGNED BY <i>G. Fay</i> DRAWN BY <i>R. Williams</i> CHECKED BY <i>R. Williams</i> IN CHARGE <i>Ronald L. Kelly</i> DATE 28DEC84		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT DMJM/PBQD A JOINT VENTURE SUBMITTED <i>O. K. Loran</i>				MAIN YARD AND SHOPS HANDHOLE & MANHOLE DETAILS & CABLE TRAYS		CONTRACT NO. : A115 DRAWING NO. E025 SCALE AS NOTED SHEET NO. A620/40	
REV	DATE	BY	SUB.	APP.	DESCRIPTION	REV	DATE	BY	SUB.	APP.	DESCRIPTION
	1-6-87				REVISED PER CRG-515						
	4/5/88	MMAR	SMAR		REVISED & REDRAWN PER CRS-026						

UNDERGROUND POINTS TABULATION

M.H. OR H.M. NO.	PLAN DWG.	CO-ORDINATE CODES SW	NE	VOLTAGE LEVEL	REMARKS
A1	E019	(W8753)	(W8751)	34.5 KV	
A2	E019	(W8752)	(W8752)		
A3	E018	(W8763)	(W8761)		DWP STD.
A4	E018	(W8763)	(W8763)		
A5	E018	(W8773)	(W8771)		
A6	E018	(W8773)	(W8773)		
AH7	E021	(W8783)	(W8781)		
AH8	E021	(W8783)	(W8783)		
D1	E-255	(W8793)	(W8791)	750V DC	TRACI PWR.
D2	E-256	(W8793)	(W8793)		
D3	E019	(W8803)	(W8801)		
D4	E018	(W8803)	(W8803)		
D5	E016	(W8813)	(W8811)		
D6	E016	(W8813)	(W8813)		
D7	E-255	(W8813)	(W8813)		
D8	E013	(W8823)	(W8823)		
D9	E012	(W8833)	(W8831)		
D10	E004	(W8833)	(W8833)		
D11	E010	(W8843)	(W8841)		
D12	E007	(W8843)	(W8843)		
L1	E007	(W8853)	(W8851)	480V	
L2	E006	(W8853)	(W8853)		
L3	E009	(W8863)	(W8861)		
L4	E009	(W8863)	(W8863)		
L5	E009	(W8873)	(W8871)		
L6	E018	(W8873)	(W8873)		
L7	E-255	(W8873)	(W8873)		
L6A	E020	(W8873)	(W8873)		
LHH1	E012	(W8883)	(W8881)		
LHH2	E013	(W8883)	(W8883)		
LHH3	E014	(W8893)	(W8891)		
LHH4	E020	(W8893)	(W8893)		
LHH5	E255	(W9013)	(W9013)		
LHH6	E255	(W9013)	(W9013)		
C1	E012	(W8903)	(W8901)	COMM	
C1A	E012	(W8903)	(W8903)		
C2	E016	(W8913)	(W8911)		
C3	E009	(W8913)	(W8913)		
C3A	E006	(W8923)	(W8921)		
C4	E013	(W8923)	(W8923)		
C5	E011	(W8933)	(W8931)		
C6	E018	(W8933)	(W8933)		
C5A	E011	TDD	TDD		
C8	E018	(W8943)	(W8943)		
C9	E018	(W8953)	(W8951)		
C10	E019	(W8953)	(W8953)		
C11	E021	(W8963)	(W8961)		
C12	E021	(W8963)	(W8963)		
C13	E007	(W8973)	(W8971)		
LHH7	E021	(W9013)	(W9013)	480V	
LHH8	E015	(W9033)	(W9031)		
LHH9	E016	(W9033)	(W9033)		
LHH10	E019	(W9043)	(W9041)		
LHH11	E012	(W9163)	(W9163)		

CONCRETE CONTRACTOR SHALL MAINTAIN HORIZ & VERT. SEPARATION BETWEEN DUCTBANKS AS SHOWN BELOW.

DUCT BANK HORIZONTAL & VERTICAL SEPARATION CRITERIA

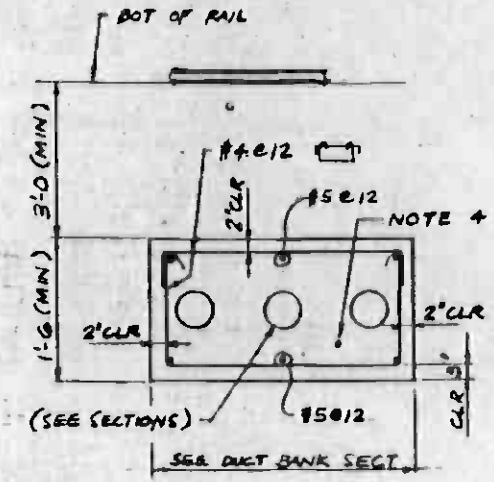
SERVICE VOLTAGE	PA	COMM	TG	HORIZONTAL (IN FEET)		
				480 AC	750 DC	34.5 KV
PA TO V AC	1.5	1.5	0	.5	2	4
CCTV COAX	0	0	.5	.5	1	1.5
COMMUN 48V	1.5	1.5	0	.5	1.5	4
FIBER-OPTIC	0	0	0	.5	.5	1.5
TRAIN CONT. 130 (24V DC)	0	0	-	2	3	4
480V LTG.	.5	.5	2	-	2	3
750V DC	2	1.5	3	2	-	2
34.5KV AC	4	4	4	3	2	-

- EXCEPT:
- 1'-6" IS OK FOR VERTICAL SEPARATION, WHERE DUCTBANKS CROSS @ 90° TO A MIN UDL-15.
 - 2) WHERE NOT IN DUCTBANKS.
 - 3) SEPARATION MAY BE REDUCED ADDITIONAL 33% WHEN COMMUNICATIONS CIRCUITS ARE IN GRS.

FOR COORDINATE CODE LOCATIONS REFER TO DWG. NOS E-258 THRU E-261

UNDERGROUND POINTS TABULATION (CONT.)

A7	E019	(W8753)	(W8756)	34.5KV	DWP STD
A8	E019	(W8753)	(W8752)		
A9	E014	(W8903)	(W8903)		
A10	E011	(W8913)	(W8913)		
A11	E008	(W8923)	(W8923)	34.5KV	DWP STD
CHH1	E004	(W8983)	(W8981)	COMM	
CHH2	E005	(W8983)	(W8983)		
CHH3	E009	(W8993)	(W8993)		
CHH4	E013	(W8993)	(W8993)		
CHH5	E020	(W9003)	(W9001)		
CHH7	E018	(W8943)	(W8941)	COMM	
CHH7A	E020	(W9753)	(W9753)		
TCTB	E015	(W9003)	(W9003)	COMM	
NR	E019	(W8783)	(W8783)	NEG RETURN	(SEE NOTE DWG. E-022)
LHH12	E021	(W9763)	(W9762)	480V	

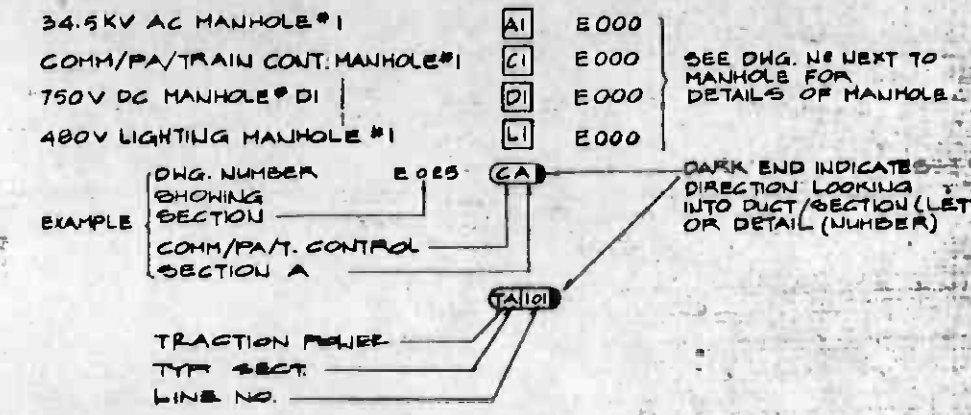


TYP DUCT BANK REINF UNDER RAILS & ROADWAYS

- NOTES:
1. REINF SHOWN SHALL EXTEND 2'-0" BEYOND THE RAILS EACH SIDE (OR ROAD BOUNDARIES).
 2. DUCT BANK SECTION LESS THAN 1'-6" DEPTH SHALL BE MADE 1'-6" UNDER RAIL TRACKS AND ROADWAYS.
 3. SECTION SHOWN IS FOR A 90 DEGREE ANGLE BETWEEN THE DUCT BANK AND RAIL / ROADWAY, HOWEVER REINF SHALL ALSO APPLY TO ANY OTHER ANGLE.
 4. DUCT BANKS INCLUDE BARE #4 CU. GROUND WIRE.

DUCT BANK LEGEND

EXPLANATION	SYMBOL
34.5 KV. DUCT BANK	AA
750V. DC. DUCT BANK	DA
480V. LTG. DUCT BANK	LA
120V. DUCT BANK	CA
COMMUNICATION/PA & TRAIN CONTROL	CA



- NOTES:
1. A FOUR DIGIT CODE IS USED TO LOCATE ALL MANHOLES, DUCTBANKS & CONDUIT SUB-UPS, AS SHOWN BELOW:
 - (ATXXX) A = 34.5KV. LOCATIONS
 - (CTXXX) C = COMMUNICATIONS/TRAIN CONTROL OR PUBLIC ADDRESS LOCATIONS
 - (DTXXX) D = 750V. DC. LOCATIONS
 - (LTXXX) L = 480V. LIGHTING LOCATIONS
 - (TXXXX) T = 750V. DC. TRACTION POWER SUB-UPS.
 - (XXXX) #N: INDICATES A CO-ORDINATE FOR WORK POINTS OF DUCT BANKS WHERE CHANGE IN DIRECTION OR ELEVATION IS REQUIRED.
 2. SUB-UP ALL UNDERGROUND CONDUITS 6" MIN. & CAP UNLESS OTHERWISE NOTED.
 3. ALL TRACTION POWER CONDUIT TO BE 3".
 4. ELECTRICAL CONTRACT LIMITS ARE GENERALLY 5 FEET OUTSIDE THE PERMANENT BUILDING AND/OR PAVEMENT CONSTRUCTION OF CONTRACT A-112 UNLESS OTHERWISE INDICATED AND SHOWN ON THE DWGS.
 5. FOR DUCTBANKS TO BE EXTENDED UNDERGROUND, SUB AND TEMPORARILY CAP CONDUITS & LOCATE WITH AN AT GRADE MARKER AT THIS POINT.
 6. ELECTRICAL CONTRACT LIMITS WITH CONTRACT A150 ARE AT THE INDICATED LOCATION ON THE PLAN DRAWINGS UNLESS OTHERWISE INDICATED - AS FOR CABLE PULLING.

ABBREVIATIONS:
PA = PUBLIC ADDRESS SPEAKER (USUALLY ON LTG. POLES).

<p>THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA</p>				<p>DESIGNED BY: John Smith DRAWN BY: V. Hong CHECKED BY: K. Warner IN CHARGE: Paul G. Kelly DATE: 28DEC84</p>		<p>SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT</p>		<p>DMJM/PBOD GENERAL CONSULTANTS</p>		<p>CONTRACT NO. A115 DRAWING NO. E034 SCALE: NONE SHEET NO. A620/41</p>	
<p>REVISED PER CRG-510 INITIAL ISSUE</p>				<p>7742</p>		<p>DMJM/PBOD/KE/HWA GENERAL CONSULTANTS</p>		<p>MAIN YARD AND SHOPS UNDERGROUND YARD FACILITIES LEGEND-SYMBOLS-NOTES</p>		<p>CONTRACT NO. A115 DRAWING NO. E034 SCALE: NONE SHEET NO. A620/41</p>	

ELECTRICAL RACEWAY AND CABLE SCHEDULE

ELECTRICAL RACEWAY AND CABLE SCHEDULE

NO.	FROM	TO	CKTS.	RACEWAY			CONDUCTOR			DWG. NO.	SHT. NO.	REMARKS	NO.	FROM	TO	CKTS.	RACEWAY			CONDUCTOR			DWG. NO.	SHT. NO.	REMARKS
				METHOD	SIZE	TYPE	NO.	SIZE	TYPE								GND.	METHOD	SIZE	TYPE	NO.	SIZE			
TC001	CB 320	MH # CH1		DUCT BANK	2"	PVC				E004		TC060	MH # C1A	MH # C1			DUCT BANK	4"	PVC			E279			
TC002	CB 323	MH # CH2			3"					E005		TC061						4"							
TC003	CB 322	MH # CH2			4"							TC062						4"							
TC004	MH # CH1	MH # CH2			2"					E248		TC063						4"							
TC005	CB 325	MH # C13			3"					E007		TC064						4"							
TC006	CB 324				3"							TC065						4"							
TC007	CB 327				4"							TC066						4"							
TC008	CB 326				3"							TC067	NOT USED												
TC009	CB 329				3"							TC068													
TC010	MH # CH2				2"					E248		TC069													
TC011					3"							TC070													
TC012					4"							TC071													
TC013	CB 340				3"					E007		TC072													
TC014	CB 339				3"							TC073													
TC015	CB 338				3"							TC074													
TC016	CB 337				3"							TC075													
TC017	CB 336				3"							TC076													
TC018	CB 335				3"							TC077													
TC019	CB 333				3"					E006		TC078													
TC020	CB 411	SOUTH BUNGALOW BOX			3"					E007		TC079													
TC021	MH # C13				4"					E248		TC080													
TC022					4"							TC081													
TC023					4"							TC082													
TC024					4"							TC083													
TC025					4"							TC084													
TC026					4"							TC085													
TC027	CB 330				3"					E008		TC086													
TC028	CB 332				3"							TC087													
TC029	CB 331				3"							TC088													
TC030	SOUTH BUNGALOW BOX	MH # C3A			4"					E 248		TC089													
TC031					4"							TC090													
TC032	CB 352	MH # C3			3"					E010		TC091													
TC033	CB 350				3"							TC092													
TC034	CB 348				3"							TC093													
TC035	CB 347				3"							TC094													
TC036	CB 346				3"							TC095													
TC037	CB 345				3"					E009		TC096													
TC038	CB 344				3"							TC097													
TC039	MH # C3A				4"					E248		TC098	MH # C12	MH # C1	*	DUCT BANK	4"	PVC				E279		VIA MHS # C11, C9, C8, C6, C2	
TC040					4"							TC099			*		4"								
TC041					4"							TC100	NOT USED												
TC042	CB 353				3"					E008		TC101													
TC043	CB 354				3"							TC102													
TC044	CB 343				3"							TC103													
TC045	CB 342				3"							TC104													
TC046	CB 341				3"							TC105													
TC047	CB 355				3"							TC106													
TC048	CB 357				3"							TC107													
TC049	CB 356				3"							TC108	CB 399	MH # C11		DUCT BANK	3"	PVC				E021			
TC050	MH # C3	MH # C1A			4"					E248		TC109	CB 401												
TC051					4"							TC110	CB 400												
TC052					4"							TC111													
TC053					4"							TC112	MH # C12												
TC054					4"							TC113													
TC055					4"							TC114													
TC056					4"							TC115													
TC057					4"							TC116	CB 405	MH # C9									E021		
TC058	CB 360	MH # C1			3"					E012		TC117													
TC059	MH # C1A	MH # C1			4"					E278		TC118	CB 395												

<p>THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.</p>				<p>DESIGNED BY MRTC</p> <p>DRAWN BY M.A. UDRESCU</p> <p>CHECKED BY <i>[Signature]</i></p> <p>IN CHARGE <i>[Signature]</i></p> <p>DATE 3-6-87</p>		<p>SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT</p> <p>ATD</p> <p>DMJM/PBOD/KE/HWA GENERAL CONSULTANTS</p> <p>SUBMITTED <i>[Signature]</i></p> <p>APPROVED _____</p>		<p>MAIN YARD AND SHOPS TRAIN CONTROL RACEWAY AND CABLE SCHEDULE-1</p>		<p>CONTRACT NO. A115</p> <p>DRAWING NO. E-091</p> <p>SCALE NO SCALE</p> <p>SHEET NO. A620/42</p>	
REV.	DATE	BY	SUB	APP.	DESCRIPTION	REV.	DATE	BY	SUB	APP.	DESCRIPTION
					INITIAL ISSUE CR6-516						

ELECTRICAL RACEWAY AND CABLE SCHEDULE

ELECTRICAL RACEWAY AND CABLE SCHEDULE

NO.	FROM	TO	CKTS.	RACEWAY			CONDUCTOR			DWG. NO.	SHT. NO.	REMARKS	NO.	FROM	TO	CKTS.	RACEWAY			CONDUCTOR			DWG. NO.	SHT. NO.	REMARKS
				METHOD	SIZE	TYPE	NO. & SIZE	TYPE	GND.								METHOD	SIZE	TYPE	NO. & SIZE	TYPE	GND.			
TC119	CB394	MH # C9		DUCT BANK	3"	PVC			E021			TC178	CB375	MH # C2		DUCT BANK	3"	PVC			E018				
TC120	CB393				3"				E018			TC179	CB376				3"								
TC121	CB391				3"							TC180	CB377				3"								
TC122					2"							TC181	CB374				3"					E015			
TC123	MH # C11				2"				E282			TC182	CB373				3"								
TC124					3"				E279			TC183	CB372				3"								
TC125					4"							TC184	MH # C6				4"					E279			
TC126					4"							TC185					4"								
TC127					4"				E282			TC186					4"								
TC128					4"							TC187					4"								
TC129	CB392				3"				E019			TC188					4"								
TC130	CB389				3"							TC189					4"								
TC131	CB386				3"							TC190					4"								
TC132	CB390				4"							TC191					4"								
TC133	CB406				3"							TC192					4"								
TC134	CB388	MH # C8			3"				E018			TC193					4"								
TC135	CB385				4"							TC194					4"								
TC136	CB384				3"							TC195					4"								
TC137	MH # C9				3"				E282			TC196					4"								
TC138					3"							TC197					4"								
TC139					4"							TC198					4"								
TC140					4"							TC199					4"								
TC141					4"							TC200	CB369				3"					E015			
TC142					4"							TC201	CB368				3"								
TC143					4"							TC202	CB367				3"								
TC144					4"							TC203	CB371				3"								
TC145					4"							TC204	CB354	MH # C4			3"					E014			
TC146					4"							TC205	END OF ST. TRACK	MH # C1			2"					E016			
TC147					4"							TC206	MH # C4	MH # C1			3"								
TC148					4"							TC207	CB366	CONCRETE PAD SOUTH OF ROAD 4' E. WEST OF TRACK			3"					E016			
TC149	CB396	MH # CHH5			3"				E020			TC208	CB365				3"								
TC150	CB398				3"							TC209	CB364				3"								
TC151	MH # CHH5	MH # CHH7			3"				E283			TC210	CB363				3"					E015			
TC152					3"							TC211	CB362				3"								
TC153	CHH @ MH3 TRACK SW				3"				E020			TC212	CB361				3"								
TC154	CHH @ MH4 TRACK SW				3"				E018			TC213	CB370				3"								
TC155	CHH @ END OF TRACK				2"							TC214	CONCRETE PAD SOUTH OF ROAD 4' E. WEST OF TRACK	MH # C1			4"					E279			
TC156	MH # CHH7	MH # C6			2"				E283			TC215					4"								
TC157					3"				E282			TC216					4"								
TC158					4"				E283			TC217	MH # C2				3"								
TC159	CB378				3"				E018			TC218					4"								
TC160	CB379				3"							TC219					4"								
TC161	CB380				3"							TC220					4"								
TC162	CB381				3"				E019			TC221					4"								
TC163	CB382				3"							TC222					4"								
TC164	CB383				3"							TC223					4"								
TC165	MH # C8				3"				E282			TC224					4"								
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DESIGNED BY
MRTC
DRAWN BY
M. A. UDRESCO



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT



DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

MAIN YARD AND SHOPS
TRAIN CONTROL
RACEWAY AND CABLE SCHEDULE-2

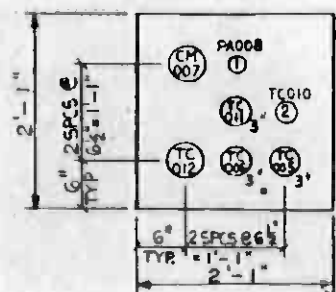
CONTRACT NO. A115
DRAWING NO. E-092
SCALE: NO SCALE
SHEET NO. A620/43

REV	DATE	BY	SUB.	APP.	DESCRIPTION

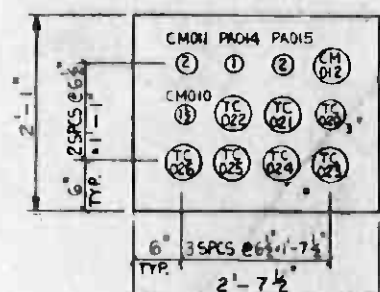
CHECKED BY
DATE 3-6-87

SUBMITTED BY [Signature]
APPROVED BY [Signature]

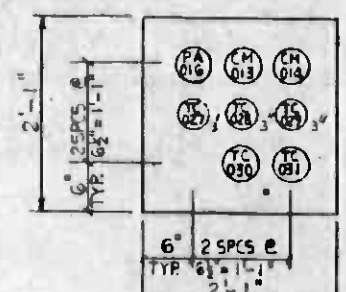
INITIAL ISSUE CRG-518



SECTION **CE**
E-248 E-007

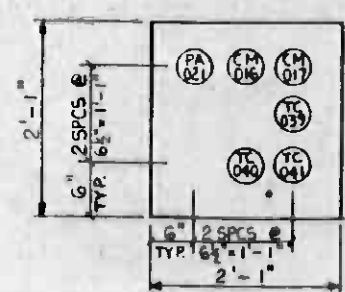


SECTION **CG**
E-248 E-006
E-251



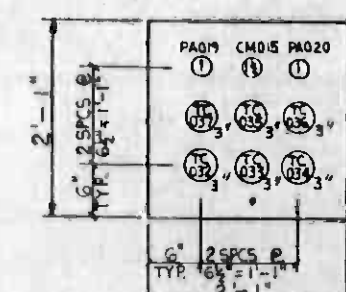
SECTION **CH**
E-248 E-006
E-251

DETAIL **5**
LOOKING SOUTH FROM C3A
OPR. HAND DELETE 3" TC-027, 028, 029

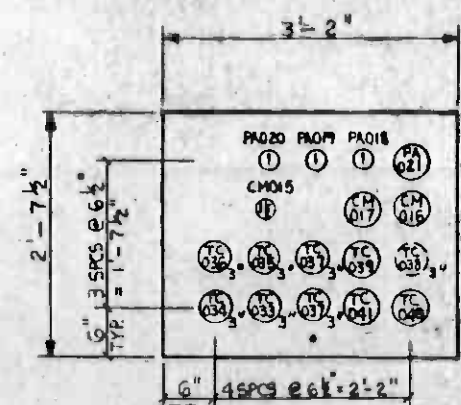


SECTION **CJ**
E-248 E-006
E-009

DETAIL **4**
LOOKING NORTH FROM C3A
OPR. HAND DELETE 3" TC-033

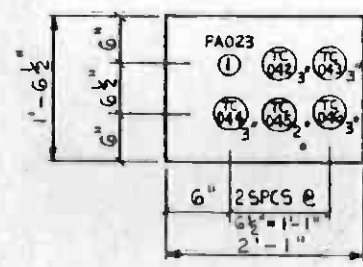


SECTION **CK**
E-248 E-009



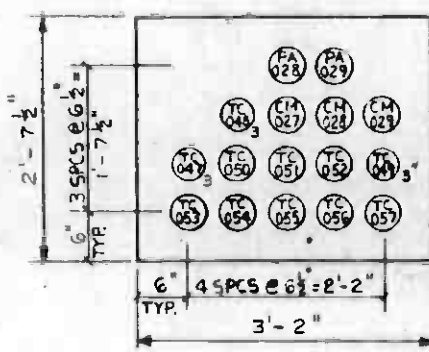
SECTION **CL**
E-248 E-009

DETAIL **2**
LOOKING SOUTH FROM C3
ADD 3" TC 038 IN DOTTED LINE



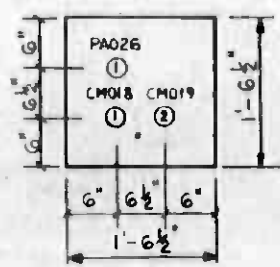
SECTION **CM**
E-248 E-009

DETAIL **3**
LOOKING WEST FROM C3



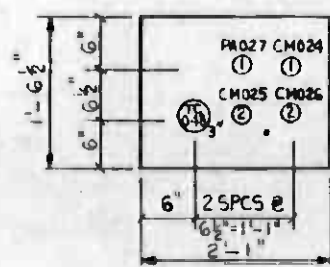
SECTION **CN**
E-248 E-009

DETAIL **1**
LOOKING NORTH FROM C3



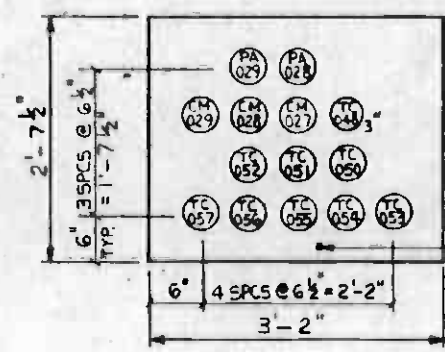
SECTION **CO**
E-248 E-009
E-249

SECTION **E**
LOOKING SOUTH FROM CHH3



SECTION **CP**
E-248 E-009

SECTION **G**
LOOKING NORTH FROM CHH3
OPR. HAND DELETE 3" TC-048

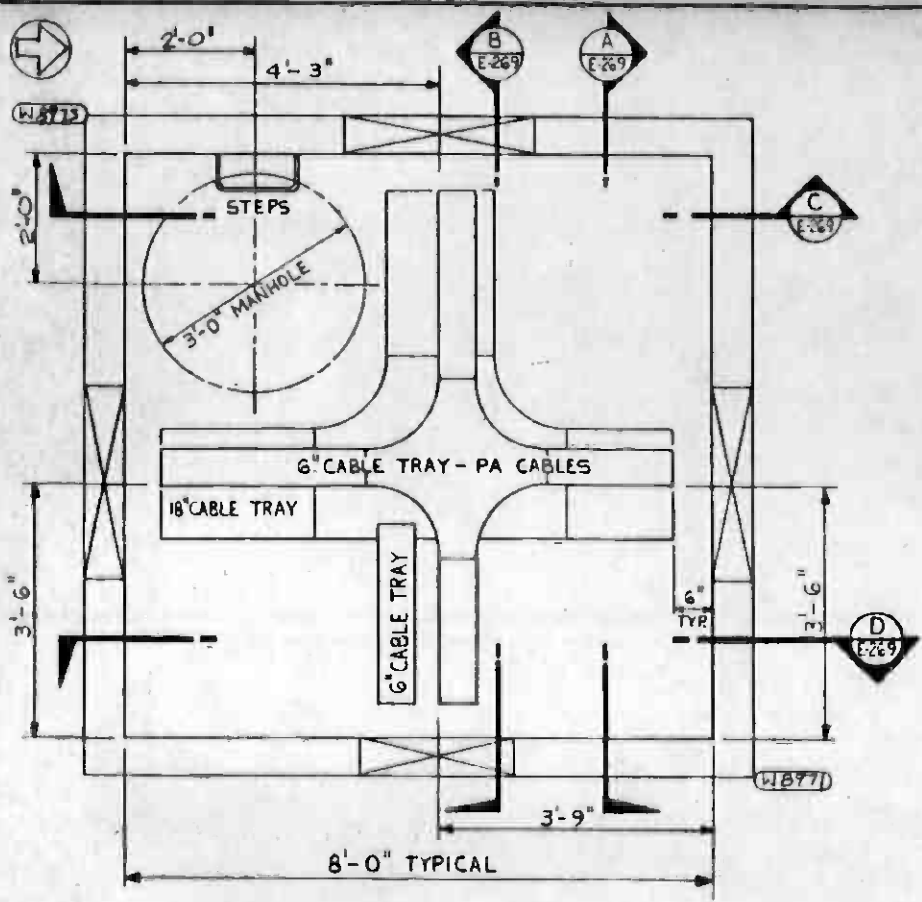


SECTION **CR**
E-248 E-009

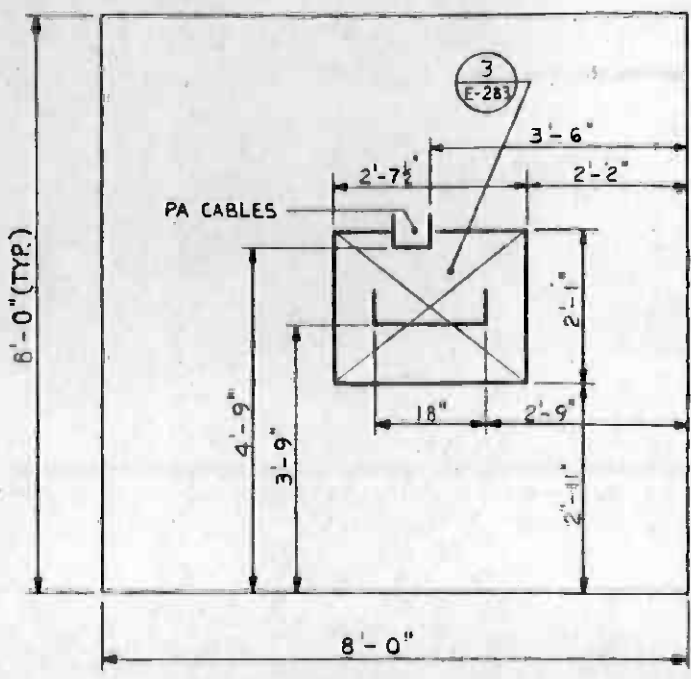
4 B.C. GROUND (TYP ALL DUCT BANK SECTIONS)



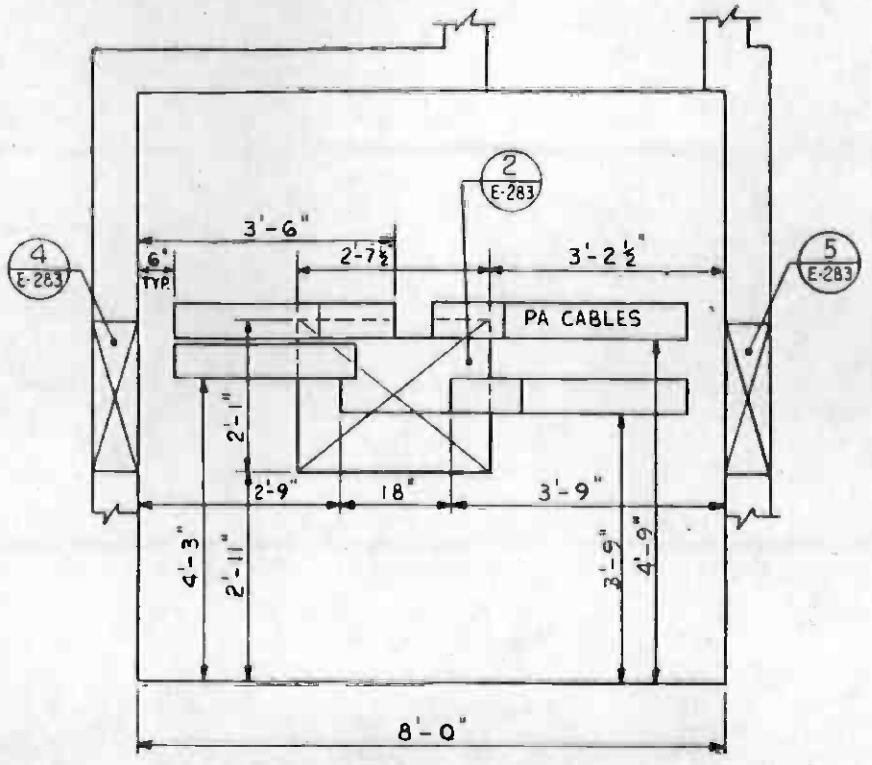
THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY MRTC DRAWN BY J. HARRIS CHECKED BY <i>[Signature]</i> DATE 3-6-87		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT 		CONTRACT NO. A-115 DRAWING NO. E-248 SCALE 1" = 1'-0" SHEET NO. A620/44	
REDRAWN, CR 6-518				DMJM/PBOD/KE/HWA GENERAL CONSULTANTS APPROVED <i>[Signature]</i>		MAIN YARD AND SHOPS PA & COMMUNICATIONS DUCT BANK SECTIONS		REV. 2	



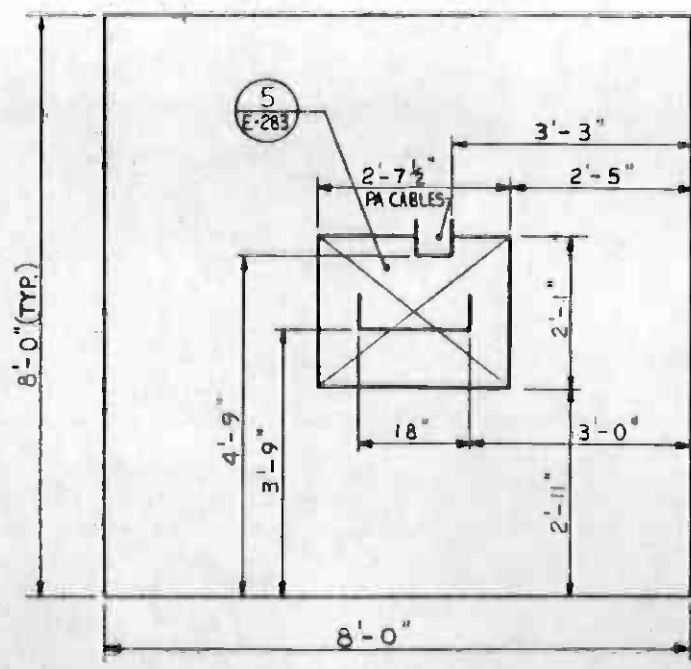
PLAN
N.T.S. (C13)
E-269 E-007



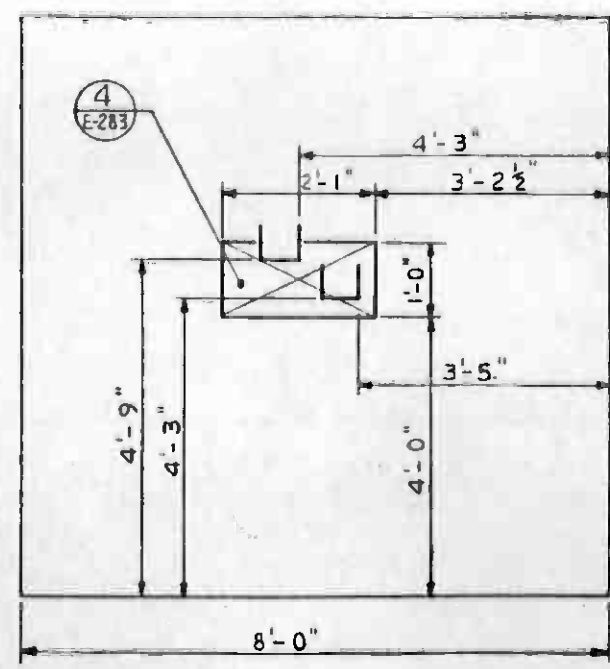
SECTION A
LOOKING NORTH
E-269



SECTION B
LOOKING SOUTH
E-269



SECTION C
N.T.S. WEST
E-269



SECTION D
LOOKING EAST
E-269

NOTE
1. FOR NOTES SEE DWG. NO. E-267.



REV.	DATE	BY	SUB.	APP.	DESCRIPTION

DESIGNED BY
MRTC

DRAWN BY
J. HARRIS

CHECKED BY
[Signature]

IN CHARGE
[Signature]

DATE
3-6-87

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

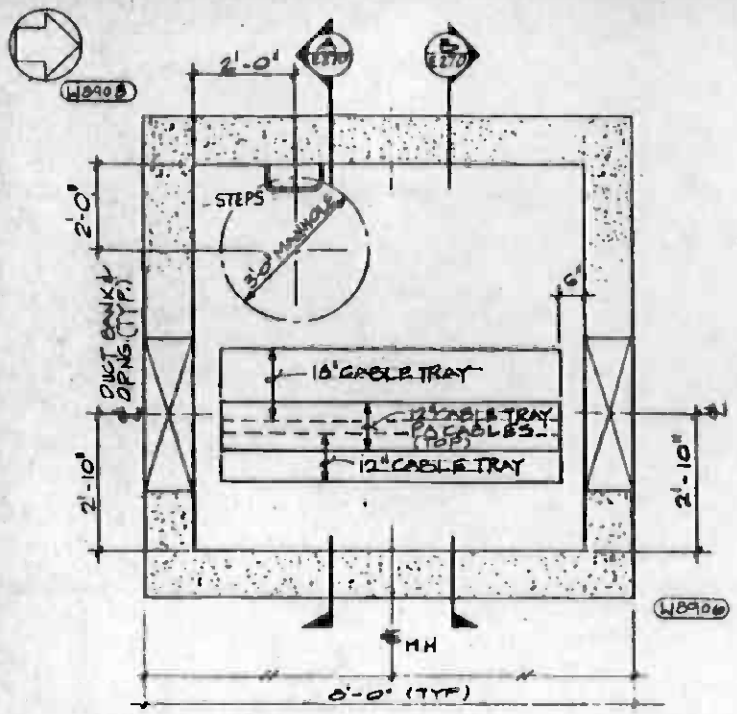
DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

APPROVED
[Signature]

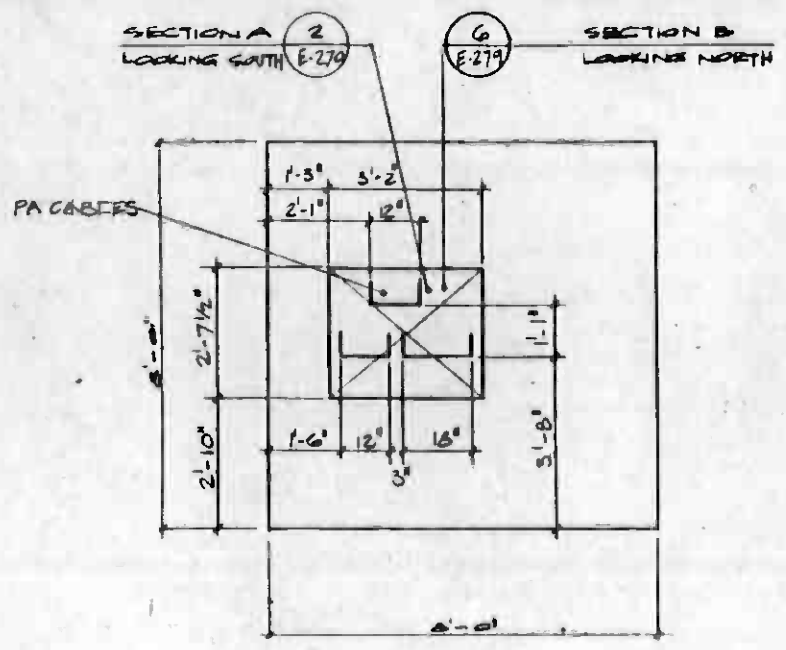
MAIN YARD AND SHOPS

MANHOLE C13
& CABLE TRAYS

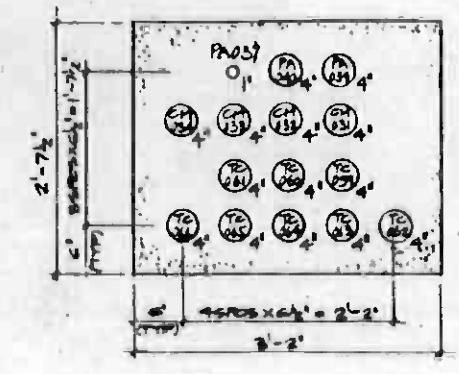
CONTRACT NO.	A-115
DRAWING NO.	E-269
SCALE	AS NOTED
SHEET NO.	A620/55



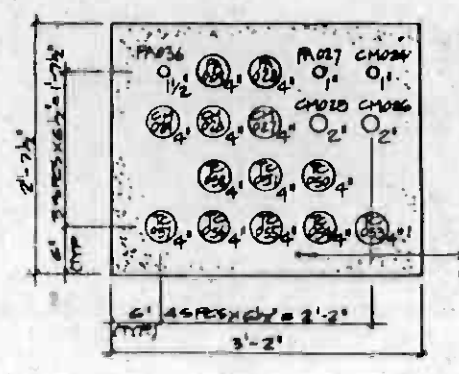
PLAN
NT.S.
E1A
E-270 E012



SECTION A
LOOKING SOUTH
E-270
SECTION B
LOOKING NORTH
E-279

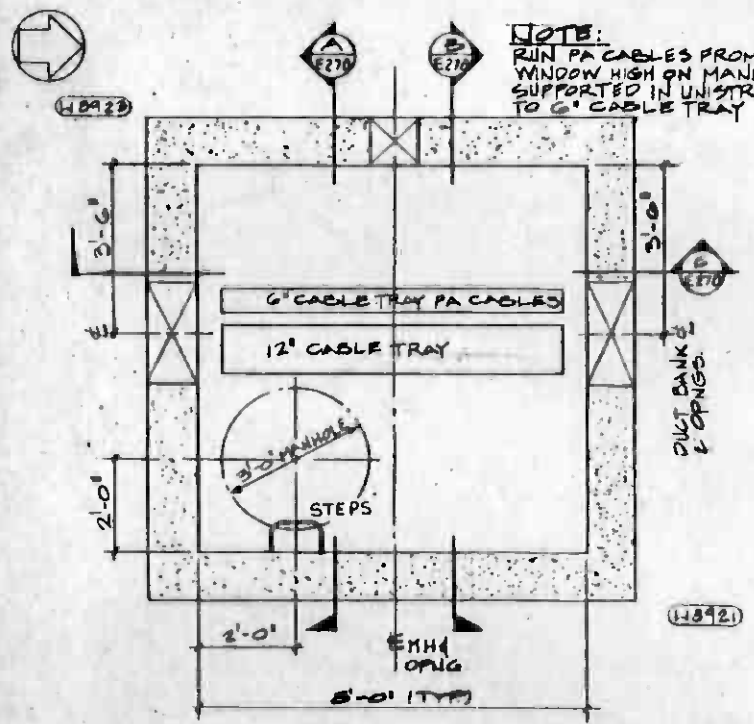


DETAIL
1
E-270
LOOKING NORTH



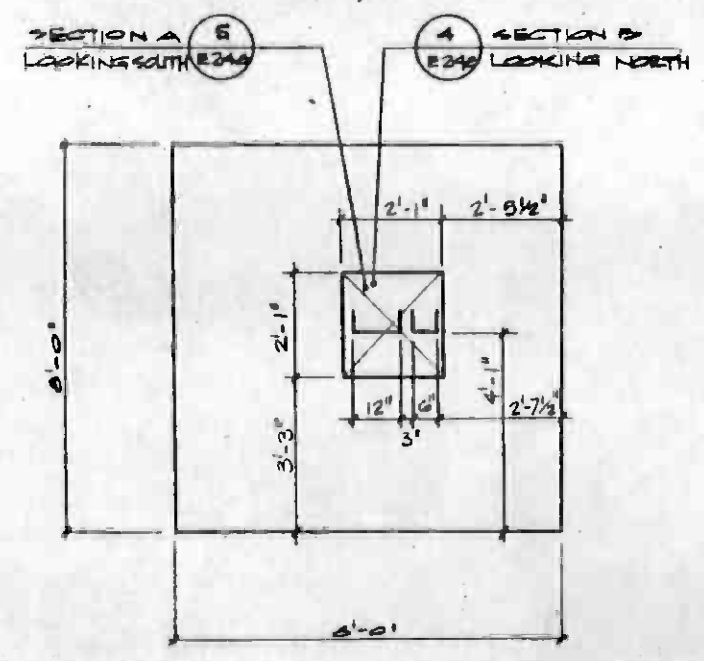
DETAIL
2
E-270
LOOKING SOUTH
SECTION
E0
E-270 E012

24 B.C. GROUND WIRE
(TYP. ALL DUCT BANK
SECTIONS THIS SHEET)

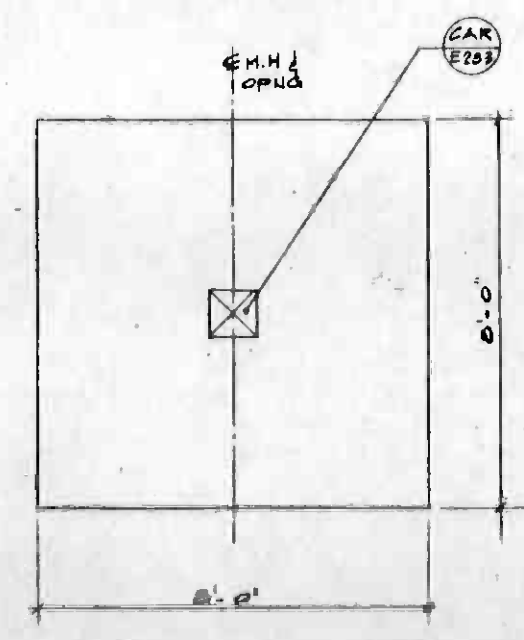


PLAN
NT.S.
E3A
E-270 E000

NOTE:
RUN PA CABLES FROM WEST
WINDOW HIGH ON MANHOLE
SUPPORTED IN UNISTRUTS
TO 6" CABLE TRAY



SECTION A
LOOKING SOUTH
E-249
SECTION B
LOOKING NORTH
E-248



SECTION
C
E-270

NOTES
1. FOR NOTES SEE DWG NO. E-267



REV.	DATE	BY	SUB.	APP.	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.
DESIGNED BY JOHN SMICH
DRAWN BY CHAR SIRIPAT.
CHECKED BY LARRY WARREN
IN CHARGE Randy Curly
DATE 12 NOV. 84
REVISOR 3687/2044
REVISED PER CRG-510
INITIAL ISSUE

REGISTERED PROFESSIONAL ENGINEER
ALBERT W. LARSON
No. 7742
ELECTRICAL
STATE OF CALIFORNIA

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

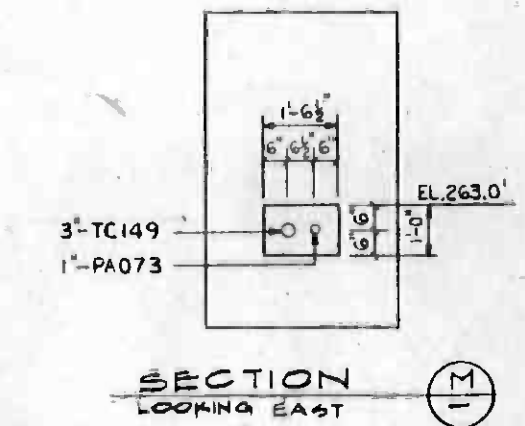
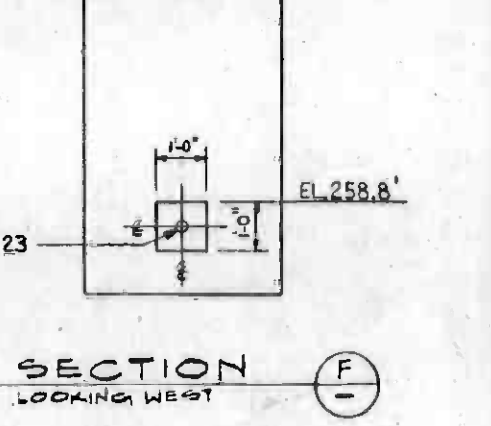
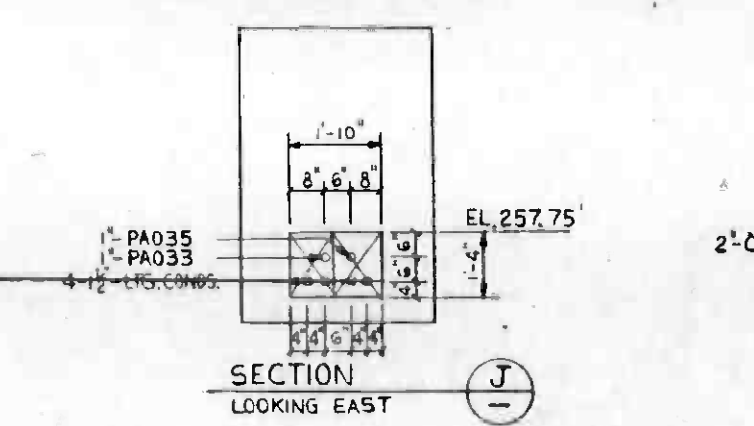
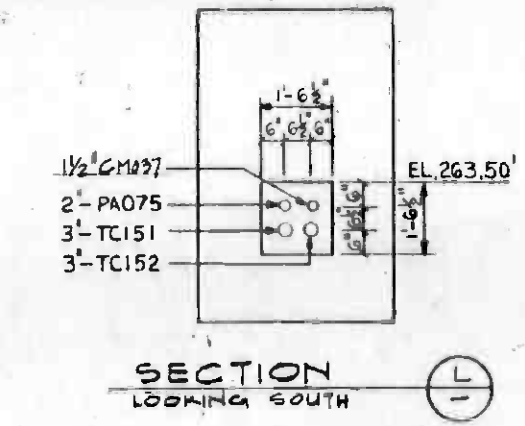
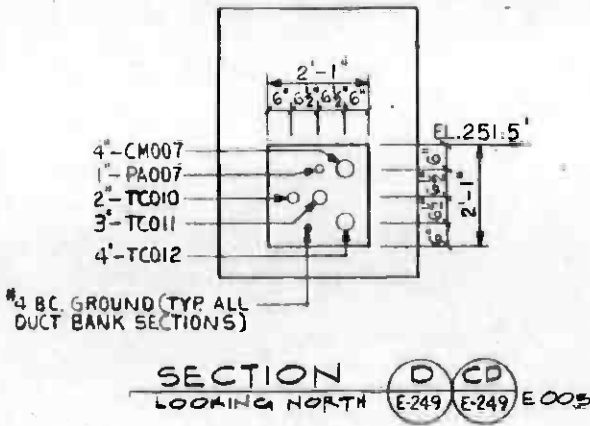
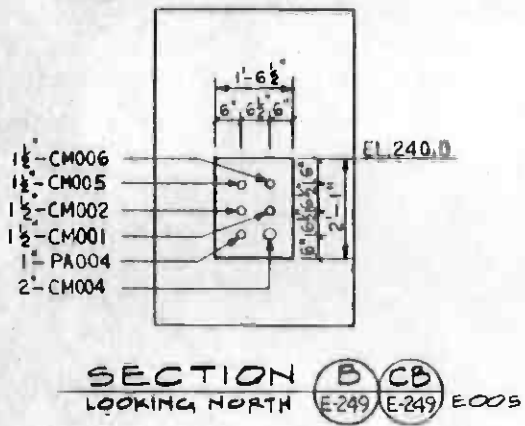
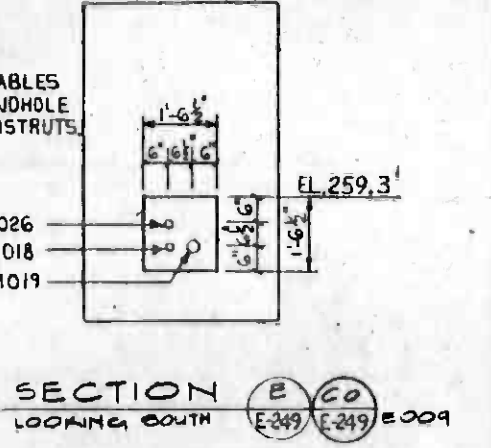
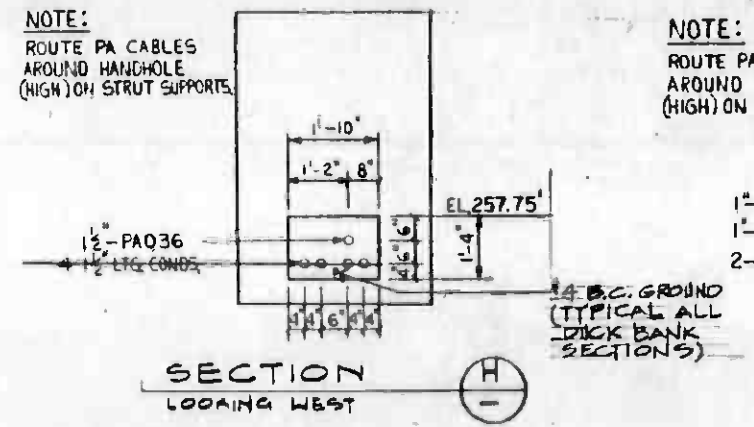
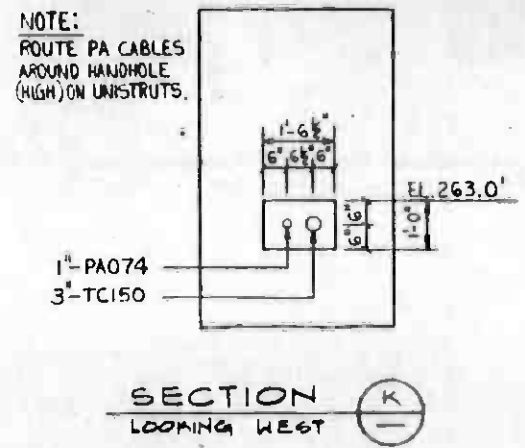
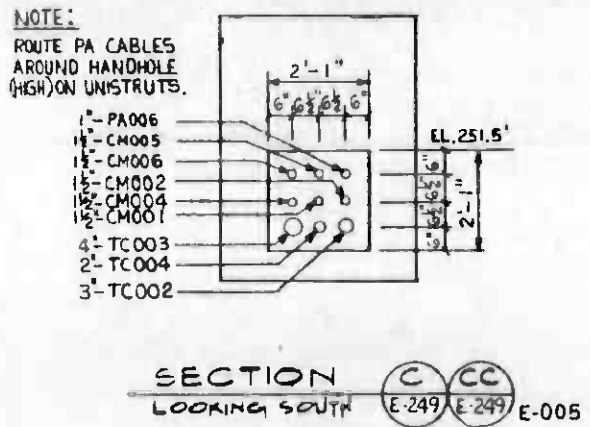
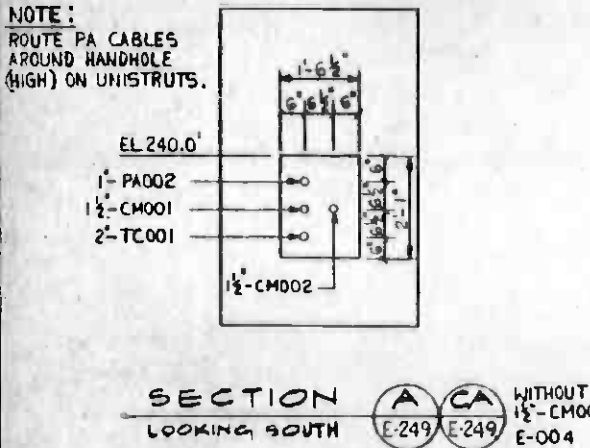
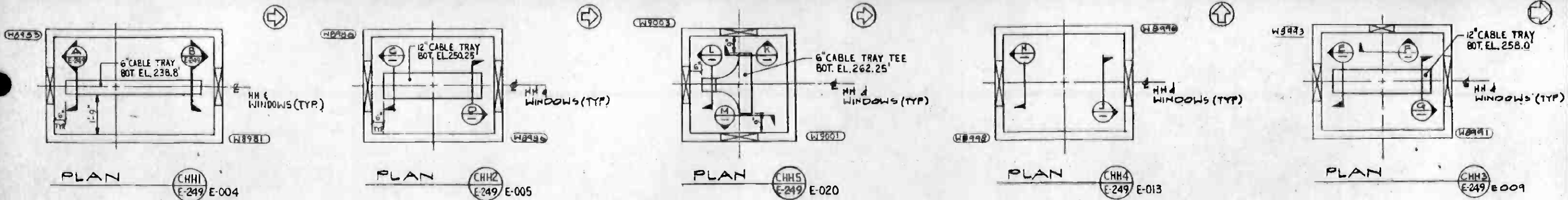
DMJM/PBOD
GENERAL CONSULTANTS

DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

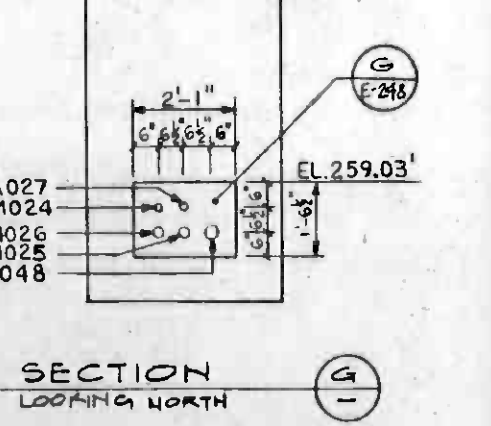
APPROVED: *Randy Curly*

MAIN YARD AND SHOPS
MANHOLES CIA & C3A, DUCT BANK SECTIONS
AND CABLE TRAYS

CONTRACT NO. A-115
DRAWING NO. E270
SCALE AS NOTED
SHEET NO. A620/56



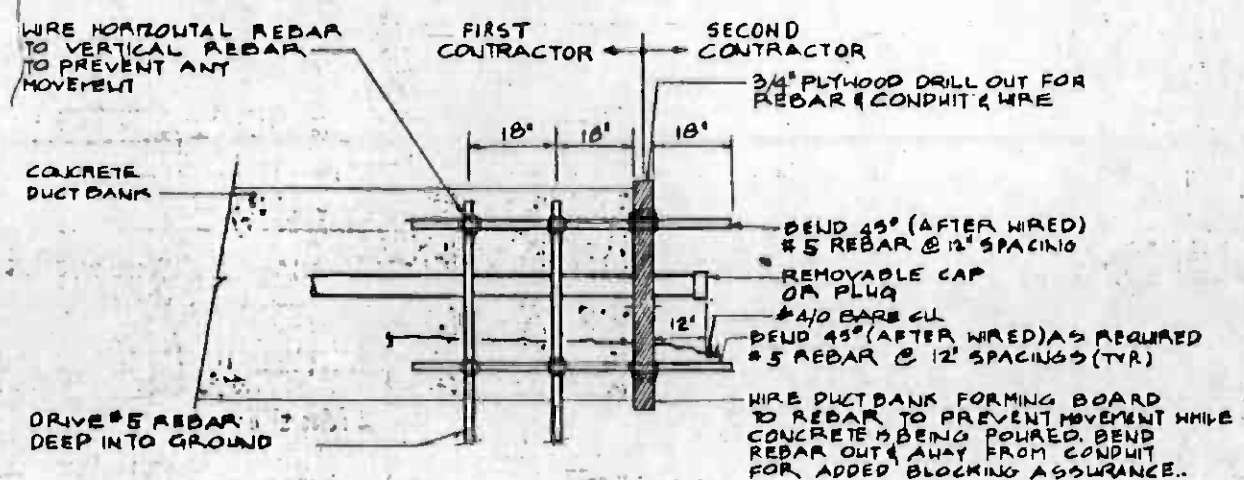
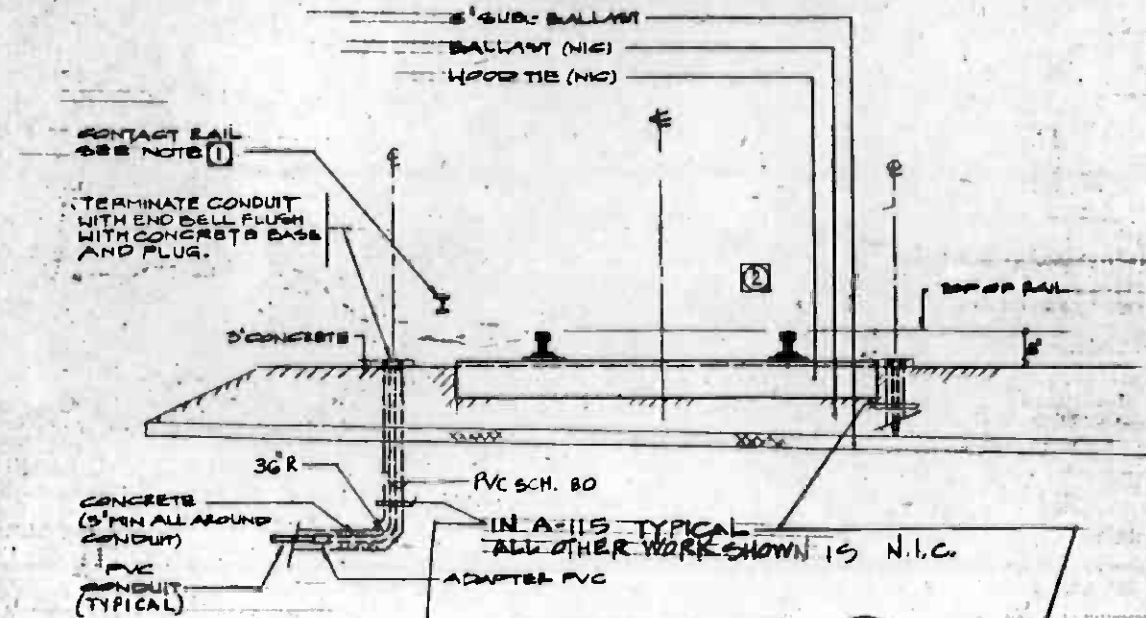
NOTES:
1. FOR DESCRIPTION OF HANDHOLES
(CAT. NO.) INDICATING OVERALL
SIZES SEE DWG. NO. E-034
2. SEE ALSO NOTES DWG. E-250.



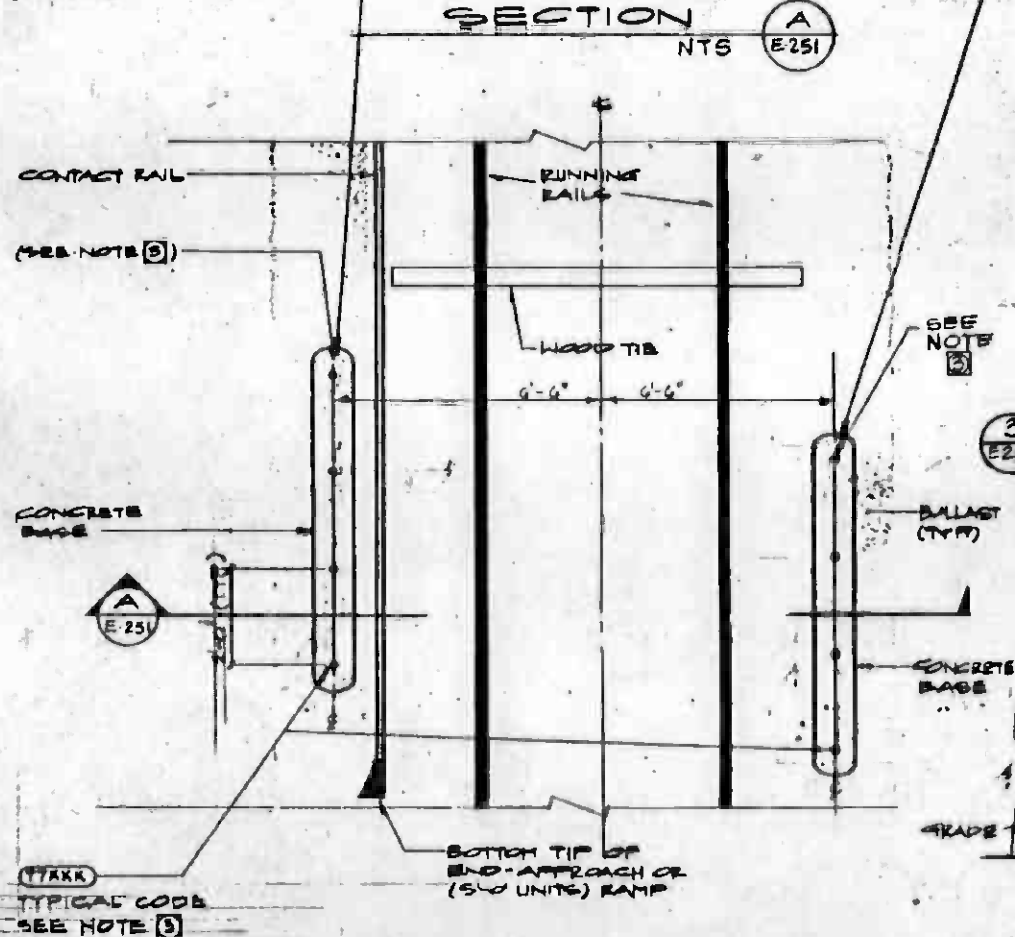
THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY JOHN SMICH DRAWN BY VINH HOANG CHECKED BY LARRY WARREN DATE 12 NOV. 84		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT DMJM/PBOD GENERAL CONSULTANTS		MAIN YARD AND SHOPS PA & COMMUNICATIONS HAND HOLES AND DUCT BANK SECTIONS		CONTRACT NO. A-115 DRAWING NO. E249 SCALE 1/2" = 1'-0" SHEET NO. A620/45	
REVISED PER CRG-5B INITIAL ISSUE				APPROVED [Signature]		APPROVED [Signature]					

NOTES:

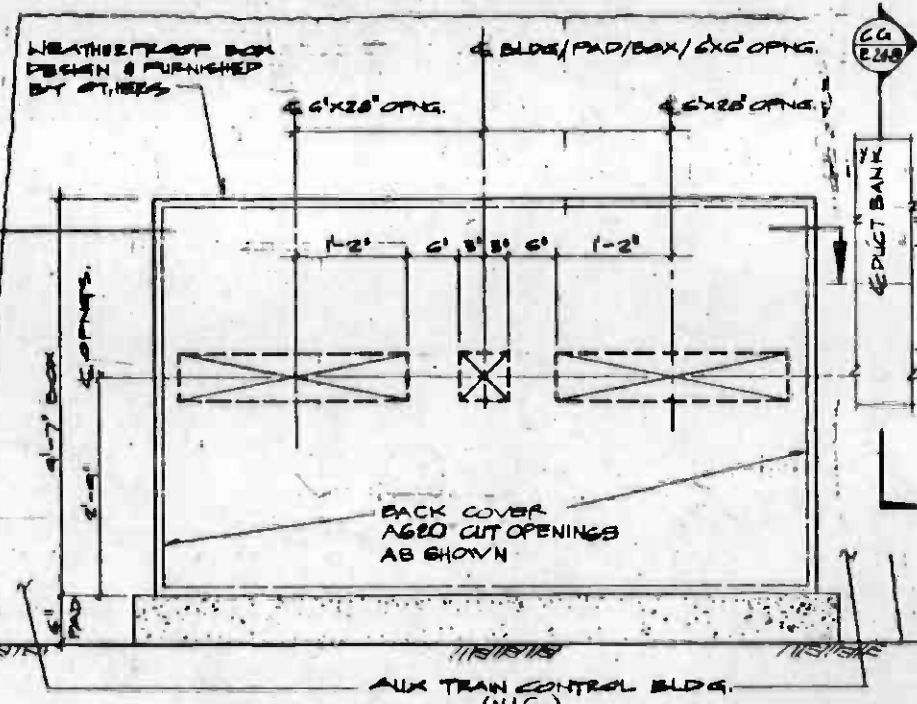
- 1 PROTECTIVE COVERBOARD NOT SHOWN FOR CLARITY
- 2 FOR TRACKWORK INSTALLATION AND BALLAST DETAILS SEE TRACKWORK DRAWING
- 3 FOR NUMBER OF CONDUIT/SIZES AND LOCATIONS SEE PLANS/COORDINATE COORDS
- 4 MINIMUM BENDING RADIUS SHALL BE 36" FOR 90° ELBOWS
- 5 CONCRETE SLAB ON GRADE 6" THICK W/ #4 @ 12" E.W.



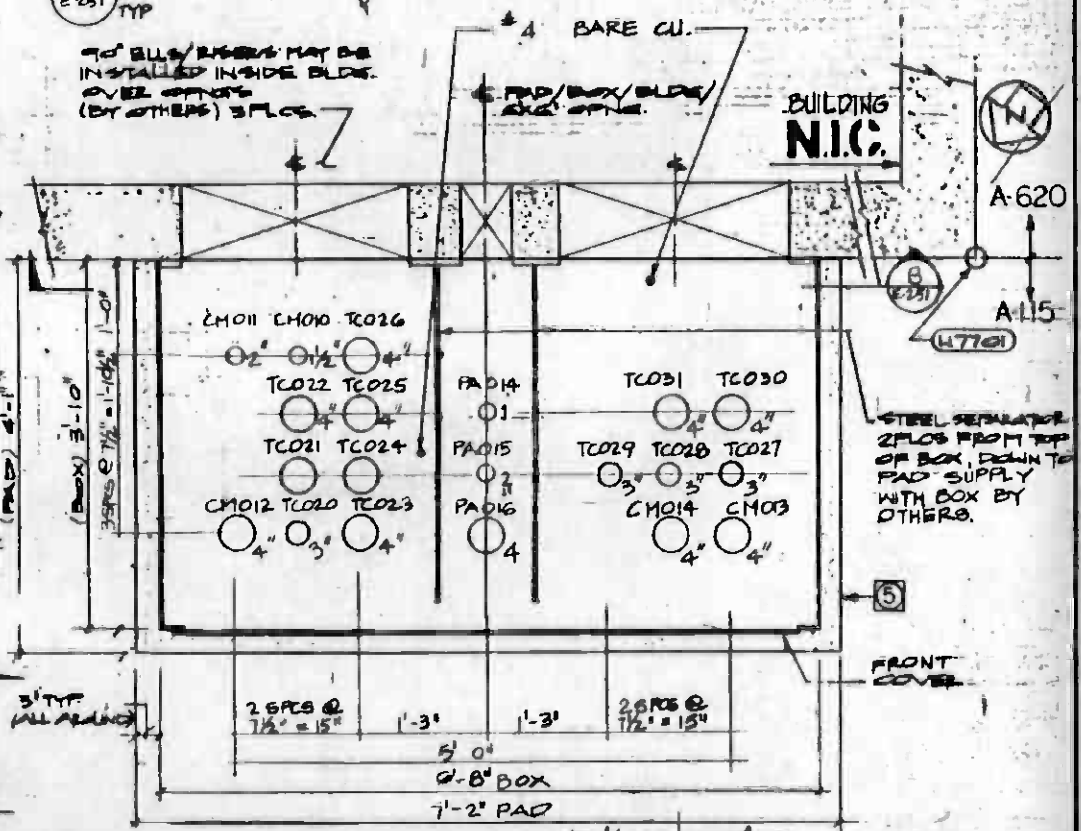
DUCT BANK INTERFACE DETAILS
SCALE NOT TO SCALE



PLAN DETAIL
SCALE NTS



SECTION (LOOKING SOUTHWEST)
SCALE 1\"/>



PLAN - SUBUPS/BOX
SCALE 1\"/>



REV.	DATE	BY	APP.	DESCRIPTION

REV.	DATE	BY	APP.	DESCRIPTION

DESIGNED BY
Jose Smith

DRAWN BY
[Signature]

CHECKED BY
[Signature]

DATE
28DEC84

NO. 7242
ELECTRICAL
STATE OF CALIFORNIA

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PB00
A 0001 1/2/84

DMJM/PB00/KE/HWA
A 0001 1/2/84
GENERAL CONSULTANTS

APPROVED
[Signature]

MAIN YARD AND SHOPS
MISCELLANEOUS ELECTRICAL
DETAILS

CONTRACT NO. A 115	REV. 1
DRAWING NO. E 251	
SCALE AS NOTED	
SHEET NO. A620/46	

CODE	NORTH	EAST
W8667	129340.18	217888.20
W8668	129330.93	217897.20
W8669	129325.43	217907.20
W8670	129344.74	217907.70
W8671	129348.38	217923.43
W8672	129410.01	217875.83
W8673	129741.03	217844.70
W8674	129808.49	217844.89
W8675	129854.38	217841.85
W8676	129774.50	217912.44
W8677	129771.20	217924.51
W8678	129760.29	217933.13
W8679	129219.29	217714.12
W8680	129045.47	217824.19
W8681	129130.01	217832.29
W8682	129144.21	217827.41
W8683	129321.38	217897.45
W8684	127341.93	218252.83
W8687	129458.45	217944.52
W8688	126354.87	218574.85
W8689	128411.17	217532.25
W8690	128405.22	217537.50
W8691	128391.78	217595.49
W8692	128394.35	217407.32
W8693	128403.04	217402.12
W8694	128413.88	217741.23
W8695	128420.54	217739.94
W8696	128419.70	217753.73
W8698	128392.81	217494.52
W8699	128434.04	217742.17
W8700	128424.57	217779.44
W8701	127879.32	217984.29
W8702	127882.13	217988.33
W8703	126798.83	218478.92
W8704	126875.14	218457.99
W8705	126899.37	218464.17
W8707	128477.03	217759.25
W8708	128340.53	217774.38
W8709	128345.47	217784.52
W8710	128340.97	217783.58
W8711	128352.57	217770.08
W8712	128344.84	217744.87
W8715	129434.17	217990.93
W8716	129445.10	217994.05
W8717	129419.39	218002.99
W8718	129424.34	217992.79
W8719	129442.82	217998.55
W8720	129449.44	217993.47
W8721	128404.94	218094.82
W8723	129472.85	217988.80
W8727	128908.71	217744.43

CODE	NORTH	EAST
W8728	129303.85	8004.68
W8729	129327.01	8020.47
W8730	129609.00	7779.12
W8731	129323.78	8413.18
W8732	128387.32	7748.59
W8733	128382.54	7775.40
W8734	129452.44	7875.83
W8735	129453.30	8024.34
W8736	128412.44	7743.84
W8741	128408.44	7749.48
W8742	128398.47	7772.11
W8743	128399.40	7744.27
W8744	126410.58	8544.73
W8745	126455.57	8545.89
W8750	129423.15	7784.70
W8751	129428.70	7988.42
W8758	129425.78	7979.25
W8753	129417.79	7980.98
W8754	129419.83	7994.14
W8755	129419.83	8032.23
W8756	129138.11	8035.94
W8757	129150.34	8040.77
W8758	129147.20	8028.51
W8759	129140.44	8089.08
W8760	129150.77	8049.23
W8761	129107.84	7771.56
W8762	129153.04	7530.89
W8763	129045.52	7757.97
W8764	129147.01	7547.23
W8765	128051.42	8127.08
W8766	128636.87	8130.79
W8767	128448.83	8191.82
W8768	128445.94	8123.34
W8769	128447.74	8182.83
W8770	128037.88	7948.16
W8771	128613.87	7921.47
W8772	128612.92	7913.20
W8773	128604.13	7914.83
W8774	128605.40	7923.82
W8775	128447.88	7758.32
W8776	128452.75	7741.44
W8777	128454.28	7753.45
W8778	128443.01	7755.00
W8779	128444.50	7763.19
W8780	129976.35	7734.42
W8781	129780.73	7937.41
W8782	129138.88	7932.58
W8783	129772.43	7933.89
W8784	129773.36	7938.88
W8785	129759.88	7888.74
W8786	129962.83	7891.25

CODE	NORTH	EAST
W8787	129702.83	817004.25
W8788	129955.13	217884.24
W8789	129955.33	217891.24
W8790	129958.74	218001.22
W8791	129387.74	218005.83
W8792	129386.70	218004.70
W8793	129374.52	217994.80
W8794	129370.83	218007.94
W8795	129370.83	217998.70
W8796	129363.59	217974.94
W8797	129364.88	218044.73
W8798	129351.70	217947.49
W8799	129353.43	217778.88
W8800	129149.99	218044.43
W8801	129147.20	218039.01
W8802	129138.08	218039.01
W8803	129138.08	218039.01
W8804	129123.14	217793.94
W8805	129119.44	217788.77
W8806	129115.73	217783.03
W8807	129113.77	217772.22
W8808	129113.77	217772.22
W8809	129113.77	217772.22
W8810	129113.77	217772.22
W8811	128447.04	218139.44
W8812	128447.04	218139.44
W8813	128447.04	218139.44
W8814	128447.04	218139.44
W8815	128447.04	218139.44
W8816	128447.04	218139.44
W8817	128447.04	218139.44
W8818	128447.04	218139.44
W8819	128447.04	218139.44
W8820	128447.04	218139.44
W8821	128447.04	218139.44
W8822	128447.04	218139.44
W8823	128447.04	218139.44
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W8825	128447.04	218139.44
W8826	128447.04	218139.44
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W8828	128447.04	218139.44
W8829	128447.04	218139.44
W8830	128447.04	218139.44
W8831	128447.04	218139.44
W8832	128447.04	218139.44
W8833	128447.04	218139.44
W8834	128447.04	218139.44
W8835	128447.04	218139.44
W8836	128447.04	218139.44
W8837	128447.04	218139.44

CODE	NORTH	EAST
W8838	127824.52	217914.28
W8839	127824.52	217922.49
W8840	127824.52	217933.99
W8841	127815.97	218334.88
W8842	127815.97	218334.88
W8843	127407.40	218331.04
W8844	127407.40	218331.04
W8845	127407.40	218331.04
W8846	127203.27	218414.98
W8847	127203.27	218414.98
W8848	127192.37	218407.55
W8849	127192.37	218407.55
W8850	127192.37	218407.55
W8851	127105.51	218349.19
W8852	127105.51	218349.19
W8853	127095.83	218345.47
W8854	127095.83	218345.47
W8855	127095.83	218345.47
W8856	127285.00	218284.70
W8857	127285.00	218284.70
W8858	127275.50	218282.52
W8859	127275.50	218282.52
W8860	127275.50	218282.52
W8861	127659.21	218097.64
W8862	127659.21	218097.64
W8863	127659.21	218097.64
W8864	127794.64	218024.57
W8865	127794.64	218024.57
W8866	127794.64	218024.57
W8867	127787.15	218020.48
W8868	127787.15	218020.48
W8869	127787.15	218020.48
W8870	127802.40	217980.84
W8871	127802.40	217980.84
W8872	127802.40	217980.84
W8873	127873.83	217975.00
W8874	127873.83	217975.00
W8875	127873.83	217975.00
W8876	129253.54	217720.29
W8877	129253.54	217720.29
W8878	129244.21	217712.95
W8879	129244.21	217712.95
W8880	129244.21	217712.95
W8881	128071.19	217990.24
W8882	128071.19	217990.24
W8883	128044.55	217987.42
W8884	128116.02	218232.5108
W8885	128116.02	218232.5108
W8886	128116.02	218232.5108
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W8888	128116.02	218232.5108
W8889	128116.02	218232.5108
W8890	128116.02	218232.5108

CODE	NORTH	EAST
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W8892	128391.08	217672.43
W8893	128385.43	217447.91
W8894	128385.43	217447.91
W8895	128385.43	217447.91
W8896	129405.50	217719.12
W8897	129405.50	217719.12
W8898	129400.50	217714.12
W8899	129400.50	217714.12
W8900	129400.50	217714.12
W8901	128430.92	217924.37
W8902	128430.92	217924.37
W8903	128414.44	217910.49
W8904	128097.18	218005.47
W8905	128097.18	218005.47
W8906	128097.18	218005.47
W8907	128084.27	217998.24
W8908	128084.27	217998.24
W8909	128084.27	217998.24
W8910	128071.22	217844.21
W8911	128071.22	217844.21
W8912	128071.22	217844.21
W8913	128071.22	217844.21
W8914	127640.71	218134.74
W8915	127640.71	218134.74
W8916	127640.71	218134.74
W8917	127644.83	218124.52
W8918	127652.28	218131.03
W8919	127654.80	218143.59
W8920	127654.80	218143.59
W8921	127391.50	218209.14
W8922	127391.50	218209.14
W8923	127379.17	218204.41
W8924	127379.17	218204.41
W8925	127379.17	218204.41
W8926	128430.54	217791.28
W8927	128430.54	217791.28
W8928	128422.10	217784.10
W8929	128422.10	217784.10
W8930	128422.10	217784.10
W8931	128292.02	217585.48
W8932	128292.02	217585.48
W8933	128283.04	217575.14
W8934	128283.04	217575.14
W8935	128283.04	217575.14
W8936	129088.43	217834.38
W8937	129088.43	217834.38
W8938	129074.14	217822.27
W8939	129074.14	217822.27
W8940	129074.14	217822.27

CODE	NORTH	EAST
W8941	129228.94	217711.42
W8942	129228.94	217711.42
W8943	129219.42	217702.29
W8944	129219.42	217702.29
W8945	129219.42	217702.29
W8946	129191.34	217840.82
W8947	129191.34	217840.82
W8948	129182.41	217830.92
W8949	129182.41	217830.92
W8950	129182.41	217830.92
W8951	129320.33	217840.91
W8952	129320.33	217840.91
W8953	129311.40	217851.03
W8954	129311.40	217851.03
W8955	129311.40	217851.03
W8956	129339.36	217972.74
W8957	129339.36	217972.74
W8958	129330.79	217944.91
W8959	129330.79	217944.91
W8960	129330.79	217944.91
W8961	129595.00	217880.50
W8962	129595.00	217880.50
W8963	129585.44	217871.

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M8998	128096.72	218230.05
M8999	128097.04	218235.06
M9000	127092.70	217725.75
M9001	128611.50	217729.12
M9002	127081.80	217720.10
M9003	129606.50	217724.12
M9004	120426.60	217720.10
M9005	120570.00	217742.03
M9006	128579.26	217942.95
M9007	120670.70	217740.00
M9008	128572.80	217941.11
M9009	120573.50	217744.00
M9010	128325.80	217703.44
M9011	128328.09	217786.33
M9012	120520.72	217779.13
M9013	128319.52	217780.49
M9014	120320.00	217707.70
M9015	127409.20	217823.86
M9016	129411.80	217976.43
M9017	120410.00	217779.54
M9018	129406.75	217971.28
M9019	120407.07	217779.18
M9020	120432.00	217769.40
M9021	129435.70	217971.39
M9022	120434.00	217769.40
M9023	129429.94	217967.41
M9024	120430.07	217779.32
M9025	120531.55	217764.44
M9026	129534.53	217957.77
M9027	120633.00	217763.03
M9028	129520.90	217953.50
M9029	120629.50	217760.44
M9030	120614.31	217762.00
M9031	128516.34	217949.76
M9032	120615.30	217761.02
M9033	128511.29	217944.61
M9034	120612.41	217760.80
M9035	120614.00	217761.45
M9036	128697.70	218066.44
M9037	120614.00	217761.02
M9038	128691.94	218062.46
M9039	120612.07	217760.87
M9040	128690.00	218060.82
M9041	128982.70	218012.51
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M9043	128976.93	218008.53
M9044	120577.00	217761.44

CODE	NORTH	EAST
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T7801	126585.44	218552.05
T7802	126594.47	218543.12
T7803	126616.60	218527.52
T7804	126618.47	218541.49
T7805	126693.79	218507.64
T7806	126712.49	218516.20
T7807	126748.95	218510.00
T7808	126746.28	218525.14
T7809	126824.97	218473.92
T7810	126786.80	218497.15
T7811	126922.04	218440.74
T7812	126926.39	218470.10
T7813	126960.43	218441.18
T7814	126961.74	218442.83
T7815	126965.15	218456.50
T7816	127049.44	218404.94
T7817	127055.43	218421.29
T7818	127116.87	218366.83
T7819	127108.69	218401.15
T7820	127130.59	218397.30
T7821	127131.71	218414.92
T7822	127173.31	218375.45
T7823	127200.43	218370.81
T7824	127205.23	218382.97
T7825	127199.80	218398.48
T7826	127187.53	218346.08
T7827	127356.04	218346.38
T7828	127365.48	218356.50
T7829	127399.52	218294.51
T7830	127410.40	218305.37
T7831	127329.19	218259.42
T7832	127371.14	218244.16
T7833	127382.24	218136.02
T7834	127376.21	218139.05
T7835	127495.30	218053.40
T7836	127524.54	218024.56
T7837	127549.15	218047.59
T7838	127599.72	218024.23
T7839	127552.70	218082.80
T7840	127600.13	218043.99
T7841	127550.89	218103.45
T7842	127599.50	218041.27
T7843	127553.11	218162.95
T7844	127604.11	218142.23
T7845	127626.59	218134.15
T7846	127642.38	218107.46
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T7848	127605.42	218157.42
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T7850	127798.52	218072.22

CODE	NORTH	EAST
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T7852	127896.29	218025.25
T7853	127893.58	218024.31
T7854	127838.11	218037.91
T7855	127809.57	217966.98
T7856	127807.74	217957.40
T7857	127804.55	217940.45
T7858	127803.17	217868.51
T7859	127855.71	217845.27
T7860	127853.29	217832.50
T7861	127795.99	217831.20
T7862	127792.71	217812.60
T7863	127559.22	218200.07
T7864	127611.10	218185.34
T7865	127560.80	218211.48
T7866	127611.71	218191.04
T7867	127565.42	218232.70
T7868	127617.25	218217.84
T7869	127564.99	218233.34
T7870	127617.26	218218.75
T7871	127569.59	218256.81
T7872	127622.92	218248.45
T7873	127571.27	218266.56
T7874	127623.41	218251.39
T7875	127576.36	218292.39
T7876	127629.38	218292.36
T7877	127576.61	218294.10
T7878	127629.52	218283.34
T7879	127572.83	218317.52
T7880	127642.86	218309.66
T7881	128109.78	218048.96
T7882	128156.94	218040.04
T7883	128111.44	218057.81
T7884	128158.62	218048.88
T7885	128235.55	218025.17
T7886	128302.00	218001.10
T7887	128307.00	217996.30
T7888	128300.00	217997.30
T7889	128428.36	217923.16
T7890	128117.40	218089.25
T7891	128164.57	218080.32
T7892	128117.59	218090.23
T7893	128164.75	218081.31
T7894	128109.54	218081.07
T7895	128170.70	218112.70
T7896	128123.73	218122.64
T7897	128170.89	218103.73
T7898	128129.60	218154.10
T7899	128176.84	218145.17
T7900	128129.86	218155.08
T7901	128177.03	218146.14

CODE	NORTH	EAST
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T7903	128182.90	218177.60
T7904	128136.00	218187.51
T7905	128183.16	218178.58
T7906	128125.74	218222.02
T7907	128205.33	218206.96
T7908	128599.01	217704.50
T7909	128507.95	217908.10
T7910	128514.02	217972.47
T7911	128599.10	217956.37
T7912	128446.26	217947.45
T7913	128600.77	217945.21
T7914	128647.93	217956.29
T7915	128606.72	217996.65
T7916	128653.88	217987.73
T7917	128606.91	217997.64
T7918	128654.07	217988.71
T7919	128612.86	218029.08
T7920	128660.02	218020.15
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T7922	128660.21	218021.14
T7923	128609.50	217720.74
T7924	128717.40	217726.94
T7925	128727.89	217743.20
T7926	128795.33	217769.48
T7927	128807.76	217784.49
T7928	128737.22	217833.14
T7929	128726.72	217849.40
T7930	128830.86	217750.01
T7931	128849.35	217766.25
T7932	128901.74	217761.94
T7933	128918.10	217776.88
T7934	128906.12	217797.84
T7935	128903.57	217811.28
T7936	128897.31	217845.25
T7937	128893.41	217845.01
T7938	128940.69	217855.66
T7939	128618.99	218061.50
T7940	128666.16	218052.58
T7941	128619.18	218062.49
T7942	128666.34	218053.58
T7943	128625.13	218093.93
T7944	128672.29	218085.00
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T7947	128615.06	218129.43
T7948	128694.64	218114.37
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T7950	128955.94	217792.78
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T7952	128950.51	217821.38

CODE	NORTH	EAST
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T7954	127165.72	218358.30
T7955	129005.09	217853.01
T7956	129041.65	217841.28
T7957	129088.41	217797.35
T7958	129137.18	217810.40
T7959	129095.89	217809.75
T7960	129144.14	217825.80
T7961	129092.19	217844.45
T7962	129140.04	217847.45
T7963	129092.36	217847.92
T7964	129140.23	217844.94
T7965	129092.71	217872.40
T7966	129140.54	217847.28
T7967	129098.05	217903.48
T7968	129151.08	217893.79
T7969	129098.24	217906.66
T7970	129151.47	217895.23
T7971	129104.19	217936.18
T7972	129157.23	217926.39
T7973	129104.37	217937.09
T7974	129157.74	217928.20
T7975	129297.00	217874.74
T7976	129307.87	217887.04
T7977	129433.99	217881.93
T7978	129390.51	217892.22
T7979	129433.99	217881.92
T7980	129439.83	217863.80
T7981	129446.87	217876.67
T7982	129118.32	217968.53
T7983	129163.38	217958.49
T7984	129118.51	217949.51
T7985	129165.98	217972.24
T7986	129116.45	218001.12
T7987	129167.74	217981.60
T7988	129116.42	218001.79
T7989	129172.23	218001.82
T7990	129117.72	218021.07
T7991	129183.84	218017.32
T7992	129207.01	217993.34
T7993	129203.47	217977.51
T7994	129319.80	217952.49
T7995	129356.11	217943.65
T7996	129367.45	217940.89
T7997	129403.77	217932.04
T7998	129439.35	217923.38
T7999	129493.02	217858.74
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T8001	129562.84	217841.12
T8002	129534.83	217886.89
T8003	129575.90	217885.34

CODE	NORTH	EAST
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T8005	129535.28	217903.90
T8006	129578.79	217914.22
T8007	129499.79	217933.57
T8008	129562.64	217932.49
T8009	129613.94	217896.99
T8010	129614.01	217897.99
T8011	129745.07	217874.80
T8012	129747.85	217888.66
T8013	129788.79	217885.11
T8014	129785.38	217893.37
T8015	129615.82	217882.85
T8016	129618.62	217911.73
T8017	129679.54	217879.82
T8018	128491.86	217726.29
T8019	128502.82	217779.96
T8020	128503.98	217779.59
T8021	128509.00	217806.12
T8022	128507.04	217806.49
T8023	128508.20	217812.63
T8024	128510.17	217812.24
T8025	128516.44	217845.42
T8026	128514.48	217845.80
T8027	128522.10	217886.08
T8028	128524.06	217885.71
T8029	128527.78	217905.34
T8030	127777.19	218078.93
T8031	127793.21	217982.77
T8032	127791.26	217983.24
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T8034	12	

CODE	NORTH	EAST
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C8321	125986.30	218669.16
C8322	126592.98	218548.57
C8323	126771.10	218501.20
C8324	126942.32	218467.28
C8325	126936.84	218452.78
C8326	127114.73	218326.03
C8327	127066.21	218418.36
C8328	127217.24	218334.17
C8329	127182.68	218376.98
C8330	127307.94	218223.63
C8331	127338.60	218247.98
C8332	127374.79	218244.55
C8333	127453.70	218249.98
C8334	127466.11	218247.55
C8335	127468.56	218255.58
C8336	127466.66	218287.83
C8337	127477.43	218334.57
C8338	127448.72	218309.04
C8339	127375.56	218300.90
C8340	127331.41	218349.74
C8341	127508.99	218043.84
C8342	127612.36	218021.65
C8343	127621.85	218042.15
C8344	127641.33	218132.58
C8345	127604.90	218158.25
C8346	127602.22	218186.24
C8347	127612.97	218217.79
C8348	127613.70	218249.02
C8349	127565.55	218262.25
C8350	127621.03	218282.92
C8351	127566.19	218324.81
C8352	127631.84	218311.39
C8353	127641.06	217896.42
C8354	127651.75	217912.63
C8355	127766.83	218046.20
C8356	127705.59	218099.69
C8357	127896.11	218026.39
C8358	127947.57	217992.78
C8359	128164.01	218115.04
C8360	128276.76	218005.81
C8361	128612.23	217966.61

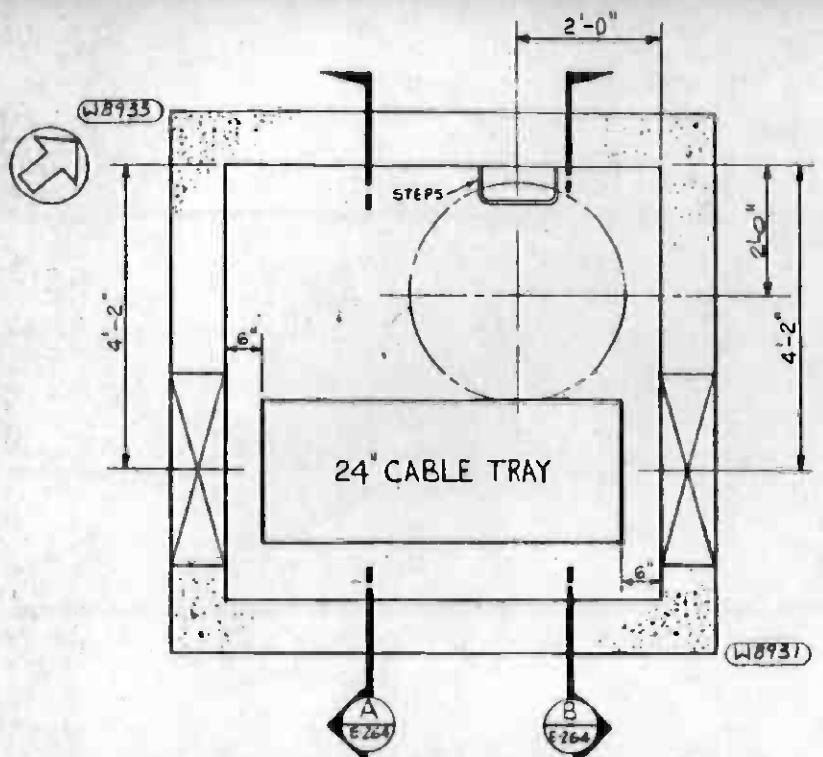
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C8364	128622.14	218050.07
C8365	128630.05	218082.51
C8366	128630.88	218116.25
C8367	128641.07	217713.50
C8368	128625.91	217788.56
C8369	128708.99	217856.82
C8370	128652.66	217935.55
C8371	128759.46	217735.96
C8372	128815.20	217846.68
C8373	128832.56	217788.22
C8374	128874.24	217773.63
C8375	129039.81	217804.73
C8376	129038.74	217821.69
C8377	129059.56	217857.18
C8378	129102.21	217882.62
C8379	129104.85	217891.20
C8380	129110.08	217924.11
C8381	129110.14	217959.52
C8382	129122.66	217987.57
C8383	129112.91	218035.93
C8384	129207.35	217835.69
C8385	129219.66	217864.97
C8386	129255.15	217964.64
C8387	129273.39	217886.88
C8388	129291.30	217889.00
C8389	129340.17	217917.85
C8390	129367.64	217953.20
C8391	129424.81	217877.85
C8392	129390.62	217897.37
C8393	129437.55	217799.95
C8394	129550.74	217859.38
C8395	129566.40	217900.46
C8396	129610.96	217799.45
C8397	129501.46	217698.45
C8398	129621.42	217667.54
C8399	129809.55	217801.45
C8400	129772.59	217889.12
C8401	129810.54	217907.47
C8402	129829.78	217866.77
C8403	129905.94	217884.99

CODE	NORTH	EAST
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T8356	128495.47	217703.31
T8357	128501.52	217703.22
T8358	128493.85	217726.00
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W9903	128789.81	217582.24
W9911	128381.00	217572.39
W9913	128335.66	217582.06
W9921	127784.71	217530.17
W9923	127800.37	217539.85
L7593	129171.88	217528.45
L7594	129316.58	217528.45
L7595	129467.00	217528.45
L7596	129390.54	217710.70
L7597	129591.75	218804.47
L7598	129238.07	217783.19
L7599	127665.61	218102.59
W9804	129049.09	217754.76
W9805	129042.28	217739.73
W9806	128977.66	217592.95
W9807	128950.09	217592.49
W9914	128933.00	217579.22
W9915	128307.06	217578.65
W9916	128102.94	217537.72
W9917	128097.00	217537.13
C8404	129388.84	218567.82
C8405	129584.57	217899.34
C8406	129452.39	217910.06
C8411	127219.25	218333.05
C8412	128426.61	217707.22
C8413	128515.09	217789.20
C8414	129133.19	217650.84
C8415	129348.19	217650.84
C8416	129391.31	217848.23
C8417	129567.25	217913.93
C8418	129680.27	217922.93
C8419	129474.68	217663.03
C8420	129579	217900
C8408	129424	217835
C8409	128428	217707
C8410	128310	217725
C8421		
C8422	128647	218002

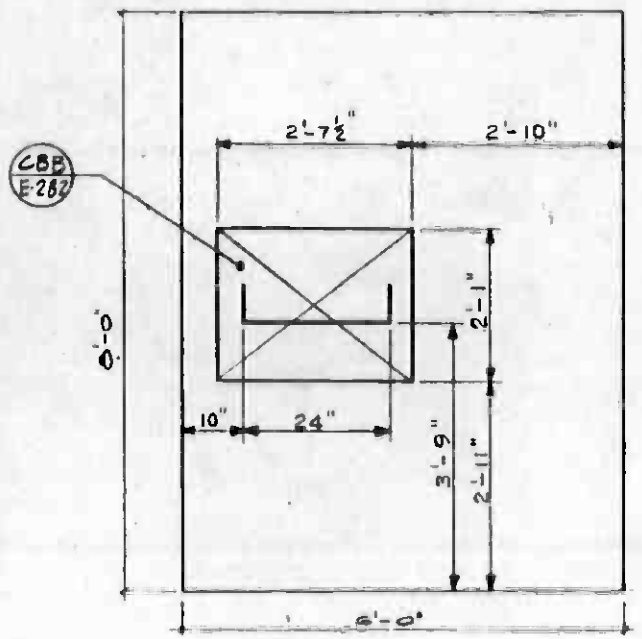
CODE	NORTH	EAST
W9930	129489.748	217980.2150
W9931	129498.3007	217997.2161
W9932	129499.2231	218001.1773
W9933	129449.4113	217998.9760
W9934	129488.7883	217986.7581
W9935	129466.7874	217980.4803
W9936	129546.7467	217977.5101
W9937	129550.7614	217978.8490
W9938	129579.7264	217974.8471
W9939	129578.7466	217979.8974
W9940	129547.4426	217981.1305
W9941	129549.4341	217977.2073
W9942	129558.1220	217982.1618
W9943	129568.7100	217987.3974
T8359	128413	217727
W9950	129578.7466	217979.8974
W9952	129491.4173	217979.8721
W9954	129549.4011	217981.1305
W9956	129551.4075	217981.1305
W9958	128416	218727
W9960	128420	218427
W9962	129039.67	217819.27
W9964	129028.57	217819.15
W9966	129600	217720
W9968	129593	217713
W9969	129584	217722
W9970	129771	217932
W9972	129087	217708
W9971	129217	217849
W9972	129039	217834
W9973	129314	217889
W9974	129323	217897
W9975	129248	217869
W9976	129315	217885
W9977	129315	217885
W9978	129307	217839
W9979	129315	217832
W9980	129159	217801
W9981	129159	217801
W9982	129159	217801
W9983	129159	217801
W9984	129159	217801
W9985	129159	217801
W9986	129159	217801
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W9994	129159	217801
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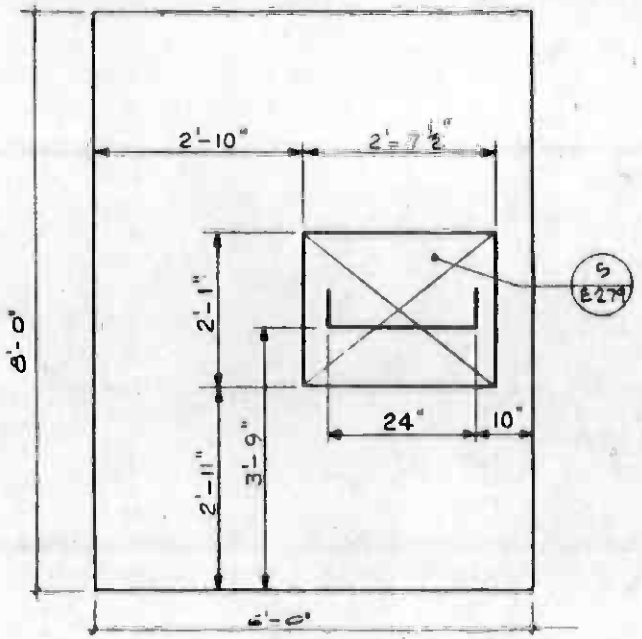
THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY <i>[Signature]</i> DRAWN BY <i>[Signature]</i> CHECKED BY <i>[Signature]</i> IN CHARGE <i>[Signature]</i> DATE 2-28-85		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT 		CONTRACT NO. A115	
REVISED PER CR6-58 INITIAL ISSUE				DMJM/PBDO A JOINT VENTURE GENERAL CONSULTANTS		MAIN YARD AND SHOPS COORDINATE CODES FOR COMMUNICATIONS DUCT BANK WORK POINTS		DRAWING NO. E261	
SCALE NONE				APPROVED <i>[Signature]</i>		SHEET NO. A620/49			



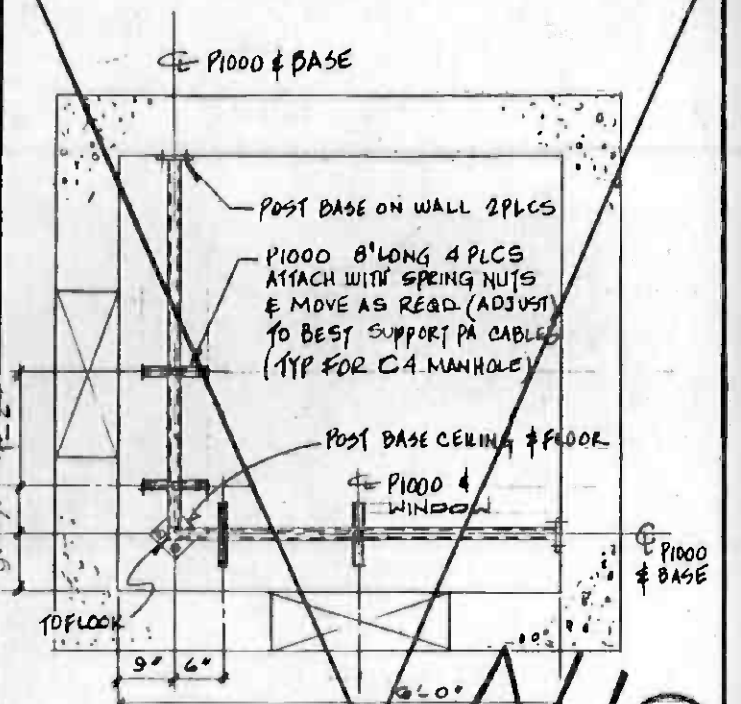
PLAN DETAIL N.T.S. C5 E264 E011



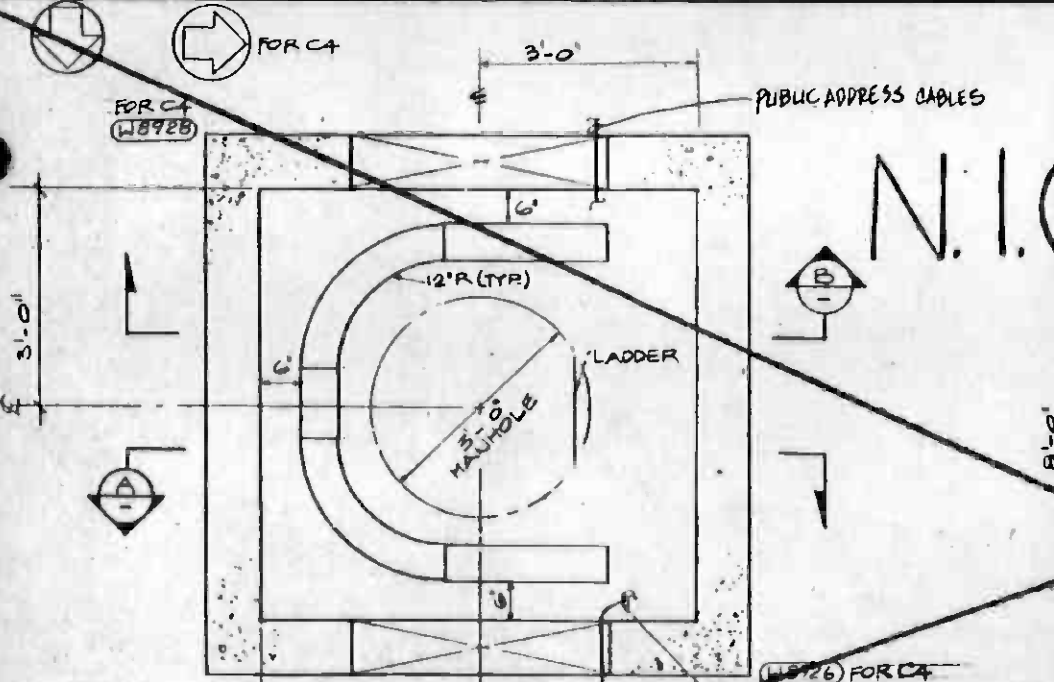
SECTION N.T.S. A E264 LOOKING SOUTHWEST



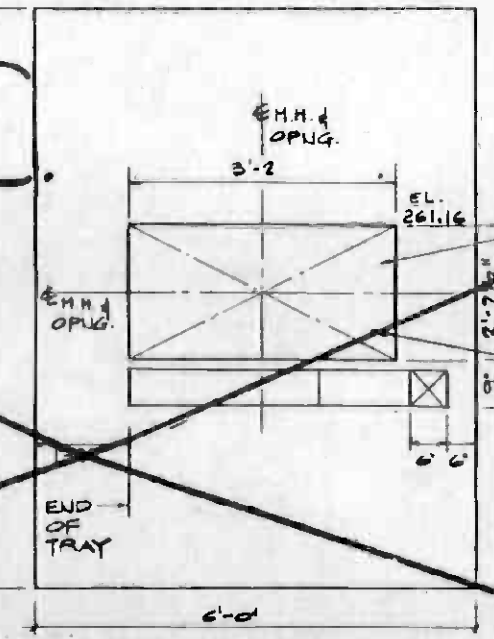
SECTION N.T.S. B E264 LOOKING NORTHEAST



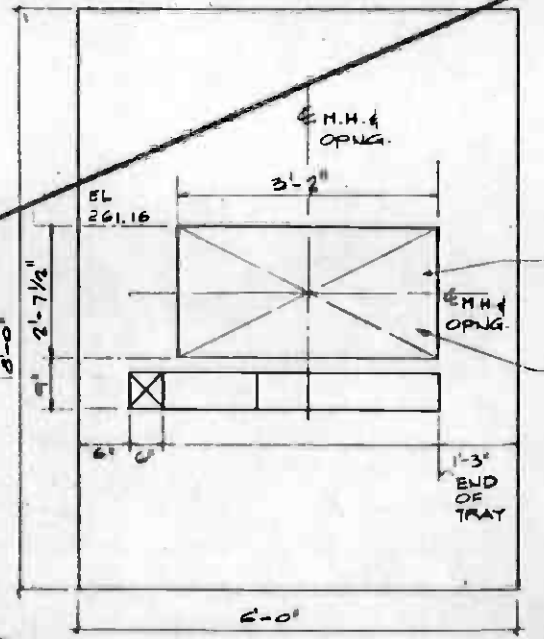
C5-PLAN HANGERS PUBLIC ADDRESS CABLES-ONLY N.T.S.



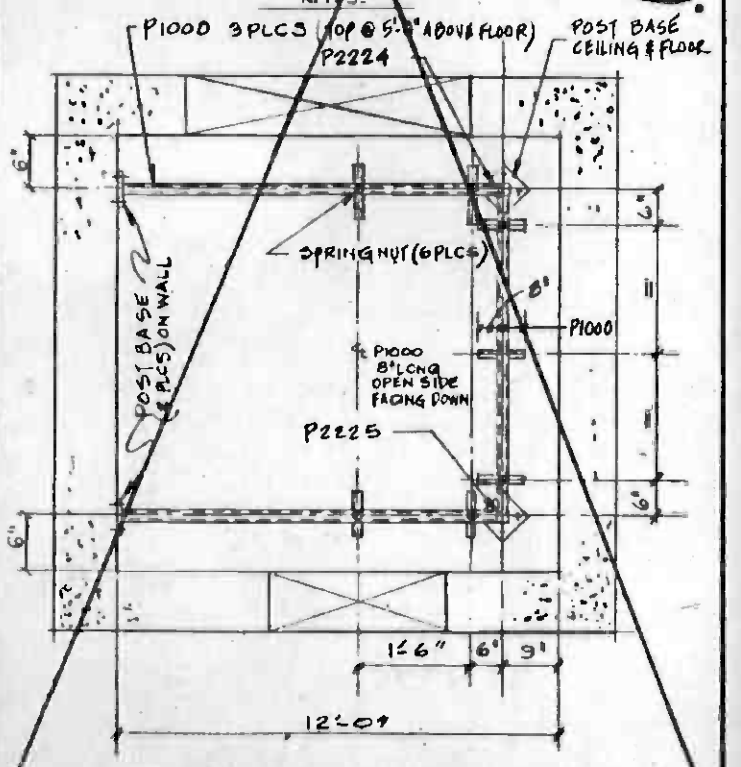
PLAN DETAIL SCALE 3/4" = 1'-0" C4 C5A E264 E264 E011 FOR B



SECTION SCALE 3/4" = 1'-0" A



SECTION SCALE 3/4" = 1'-0" B



C4+C5A PLAN HANGERS - PLAN PUBLIC ADDRESS CABLES-ONLY

NOTE 2 HANGERS FOR PA-NOT SHOWN IN SECTIONS.

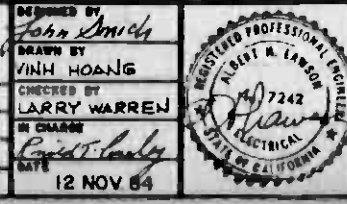
NOTES 1. FOR NOTES SEE DWG NO. E267

REV.	DATE	BY	SUB.	APP.	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY *John Smith*
 DRAWN BY VINH HOANG
 CHECKED BY LARRY WARREN
 IN CHARGE *Robert L. ...*
 DATE 12 NOV 84

REVISED PER CRG-518
 INITIAL ISSUE



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT

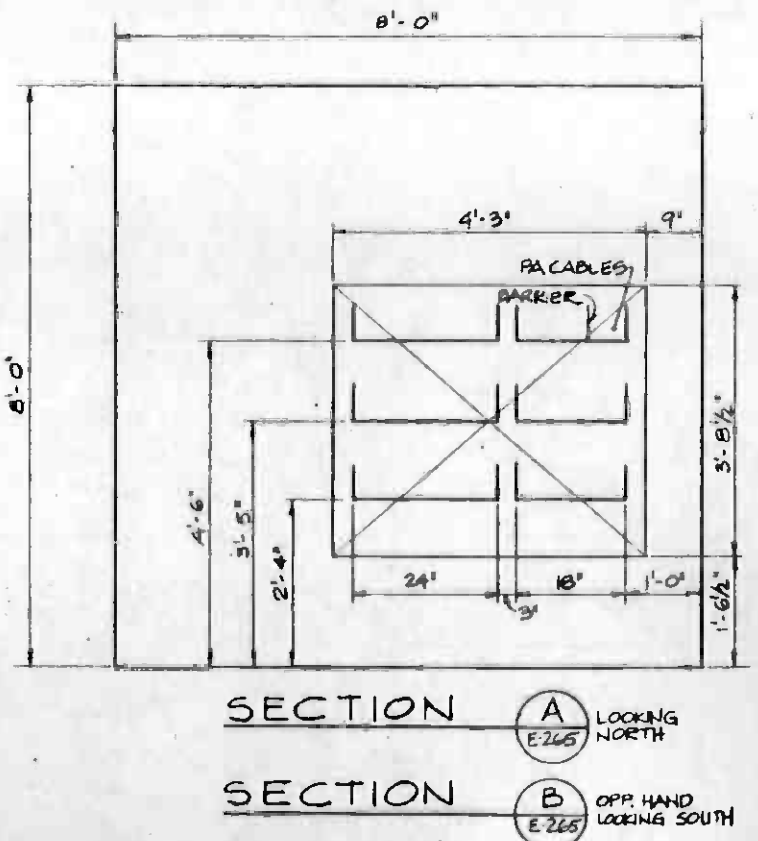
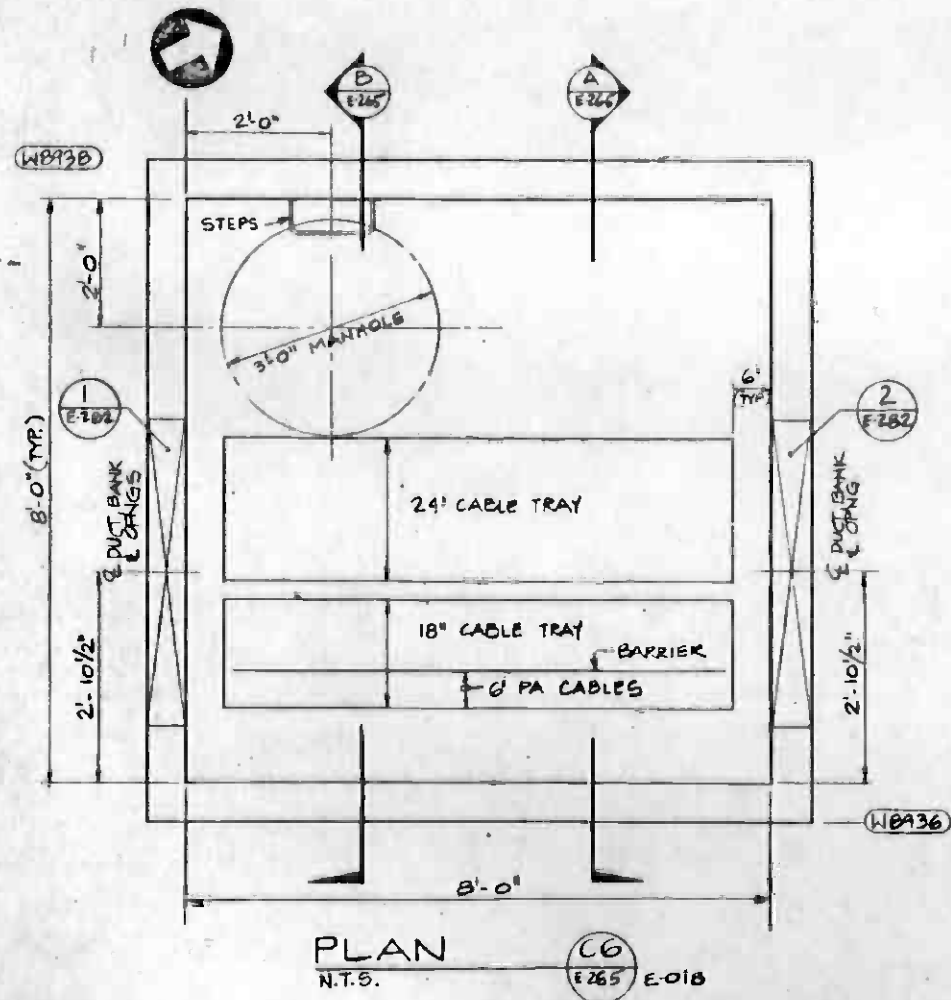
DMJM/PBOD
 A JOINT VENTURE

DMJM/PBOD/KE/HWA
 GENERAL CONSULTANTS

APPROVED *Robert L. ...*

MAIN YARD AND SHOPS
 MANHOLES C5
 & CABLE TRAYS

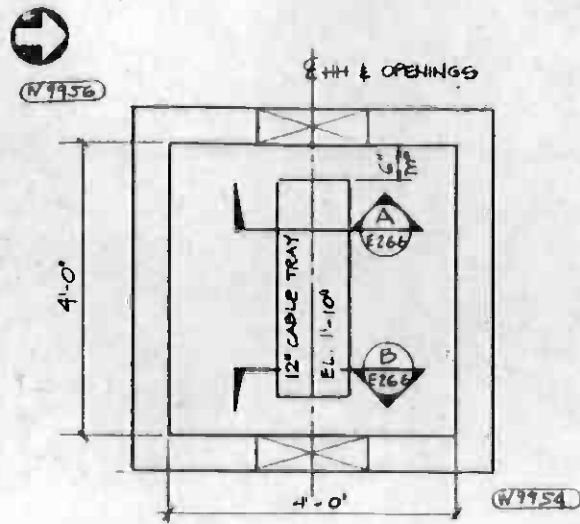
CONTRACT NO. A-115
 DRAWING NO. E-264
 SCALE AS NOTED
 SHEET NO. A620/50



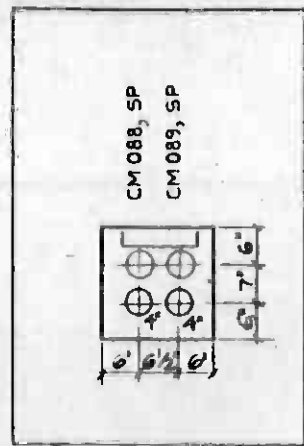
NOTES
 1. SEE DWG. E267 FOR NOTES



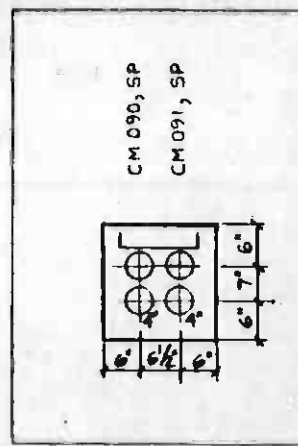
THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.										DESIGNED BY <i>Joan Ximera</i> DRAWN BY M. BROWN CHECKED BY LARRY WARREN IN CHARGE <i>Robert Smith</i> DATE 12 NOV. 84				SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT 		MAIN YARD AND SHOPS MANHOLE C6 AND CABLE TRAYS		CONTRACT NO. A-115 DRAWING NO. E265 SCALE AS NOTED SHEET NO. A620/51	
REVISED PER CRG-518 INITIAL ISSUE										DMJM/PBOD GENERAL CONSULTANTS SUBMITTED <i>Al Lawson</i> APPROVED <i>Samuel Khalaf</i>									
REV	DATE	BY	SUB	APP	DESCRIPTION	REV	DATE	BY	SUB	APP	DESCRIPTION								



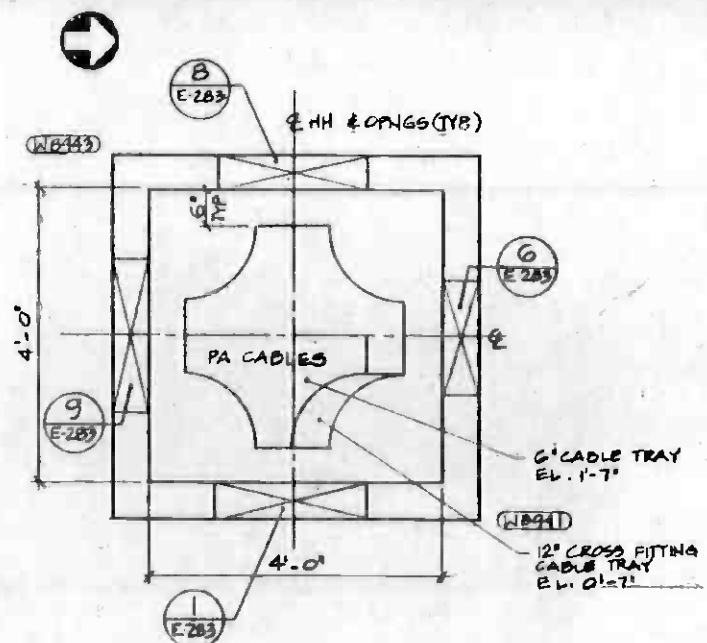
PLAN
N.T.S. CHH7A E-266 E-020



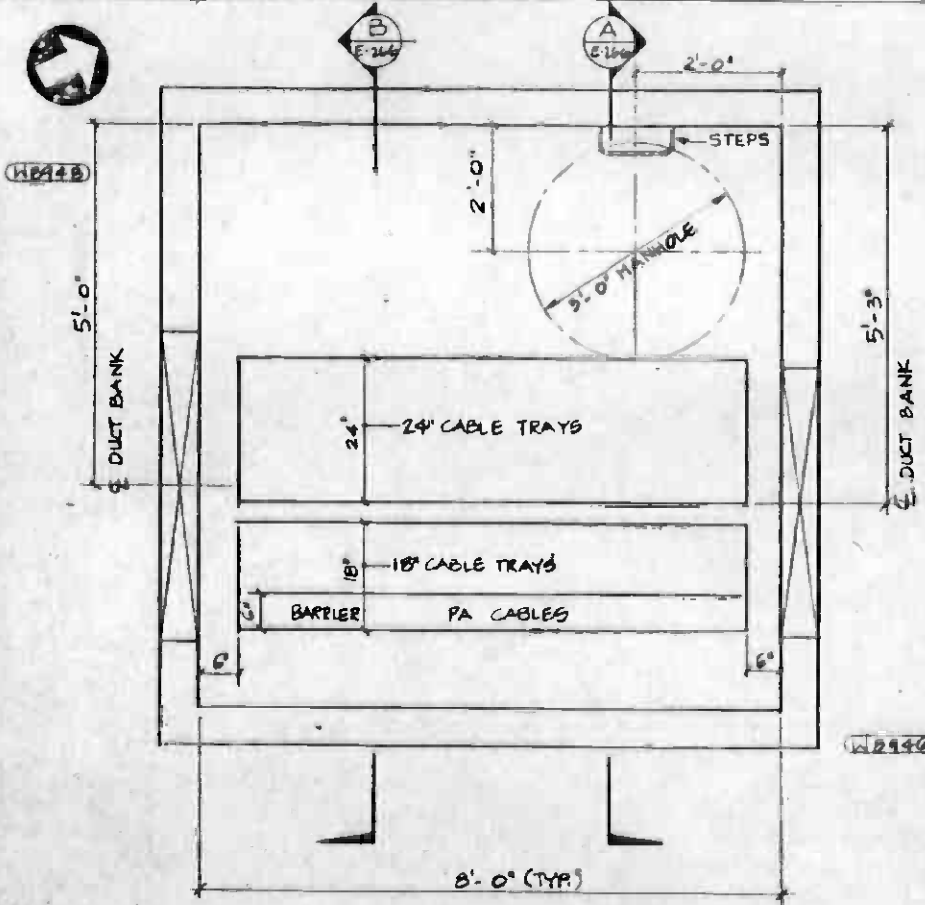
SECTION A
LOOKING WEST E-266



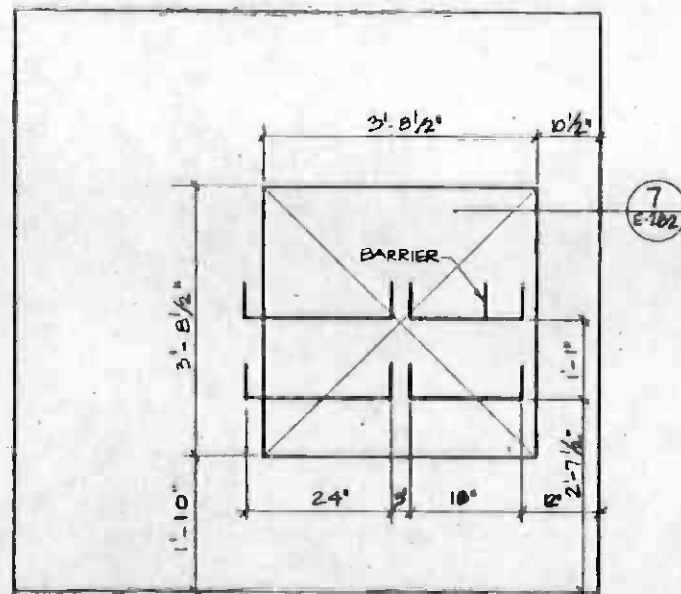
SECTION B
LOOKING EAST E-266



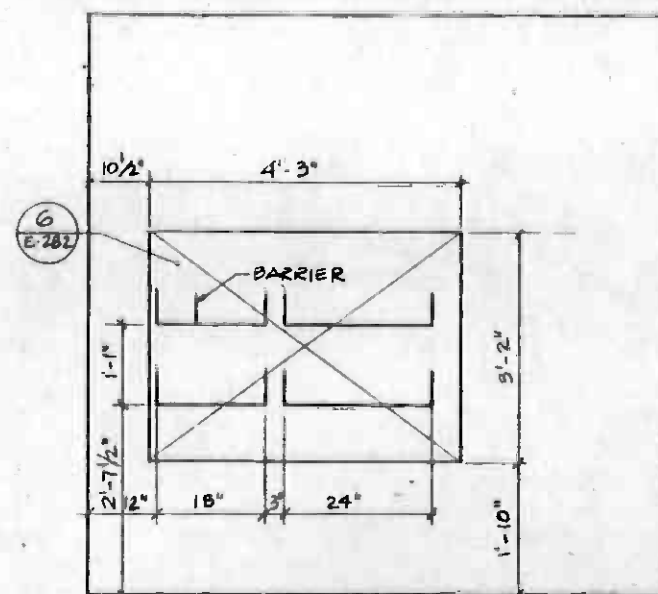
PLAN CHH7 E-266 E-018



PLAN N.T.S. CHH7B E-266 E-018



SECTION A
LOOKING NORTH E-266

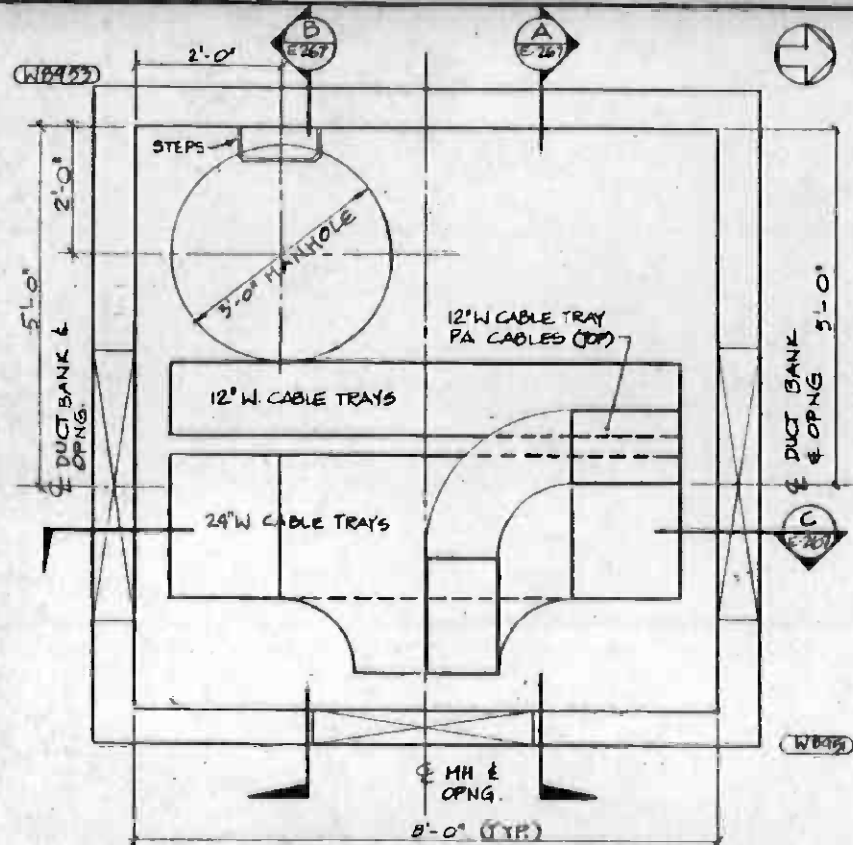


SECTION B
LOOKING SOUTH E-266

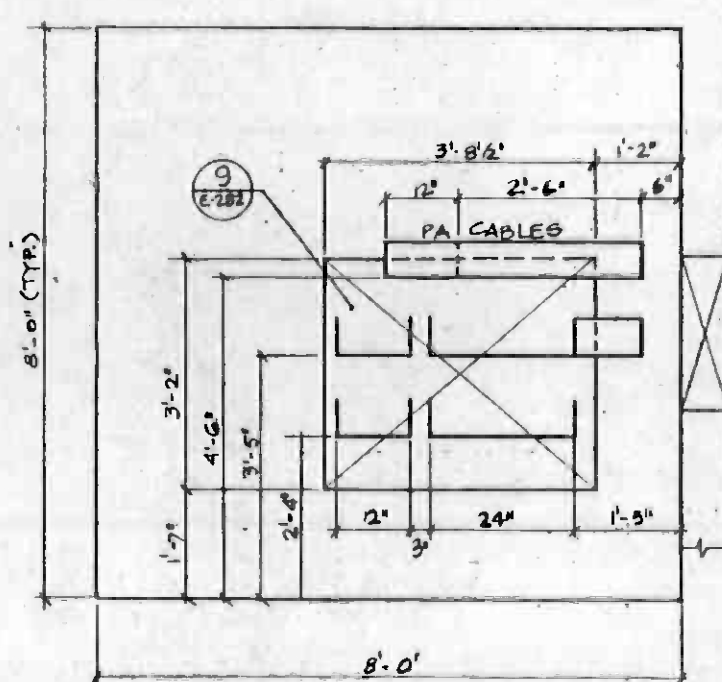
- NOTES:
1. CABLE TRAYS ARE MEDIUM-DUTY, LADDER-TYPE, 6" NOMINAL DEPTH, HOT-DIP GALVANIZED, WITH 4" RUNG SPACING.
 2. FOR DESCRIPTION OF HANDHOLES SEE DWG. ME-034.



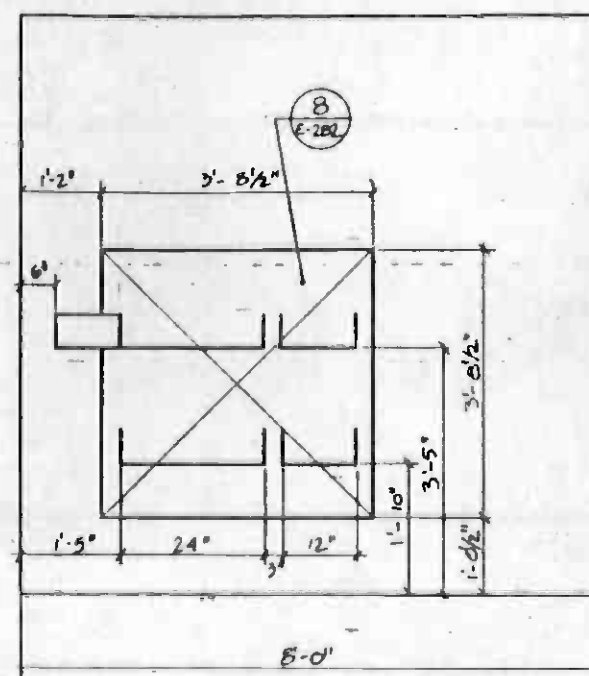
THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, UNDER MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY <i>John Finch</i> DRAWN BY <i>VINH HOANG</i> CHECKED BY <i>LARRY WARRIN</i> IN CHARGE <i>Robert S. Lundy</i> DATE 12 NOV. 84		REGISTERED PROFESSIONAL ELECTRICAL ENGINEER No. 7242 <i>Albert K. Lawton</i> STATE OF CALIFORNIA		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT DMJM/PBOD GENERAL CONSULTANTS APPROVED <i>Howard K. Shelton</i>		CONTRACT NO. A-115 DRAWING NO. E 266 REV. 1 SCALE 3/4" = 1'-0" SHEET NO. A620/52	
REV	DATE	BY	CHK	APP	DESCRIPTION	REV	DATE	BY	CHK	APP	DESCRIPTION
					INITIAL ISSUE						



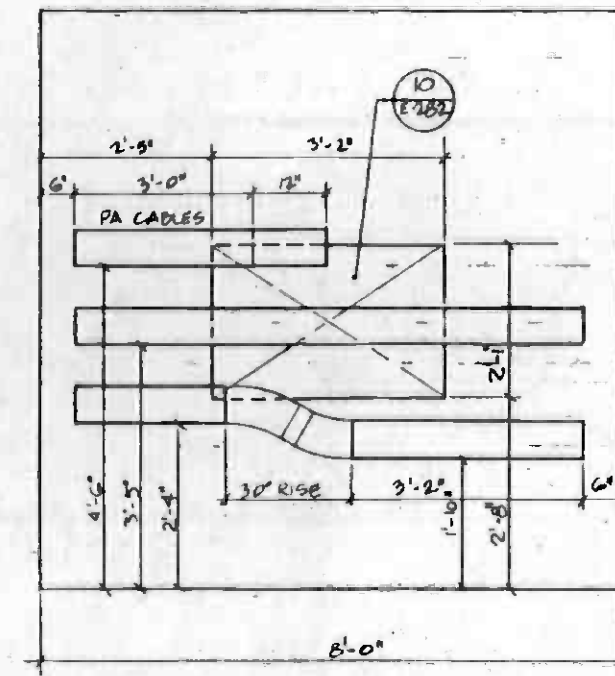
PLAN N.T.S. C9 E-267 E-018



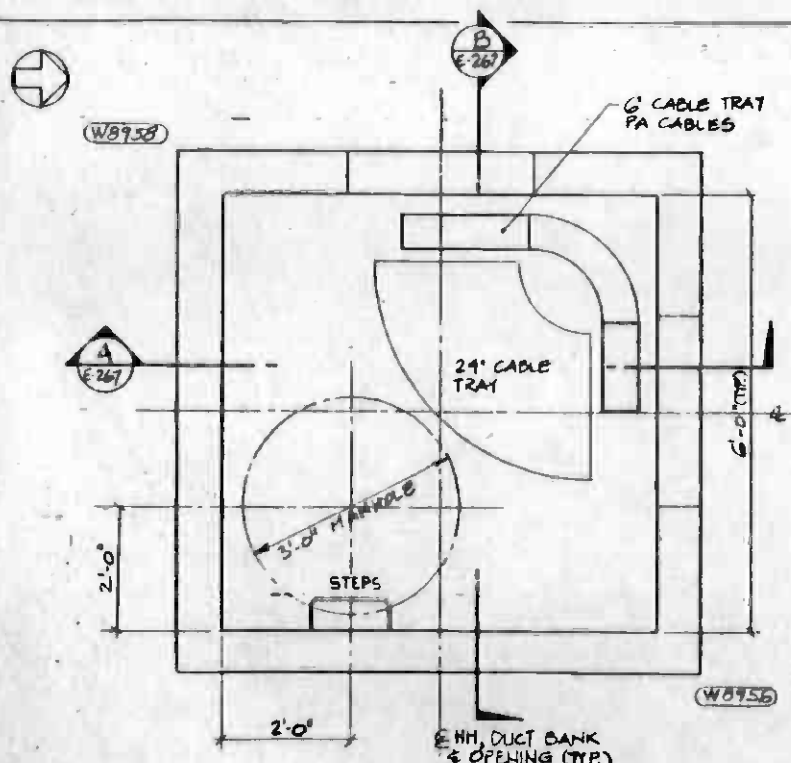
SECTION A E-267 E-018
LOOKING NORTH



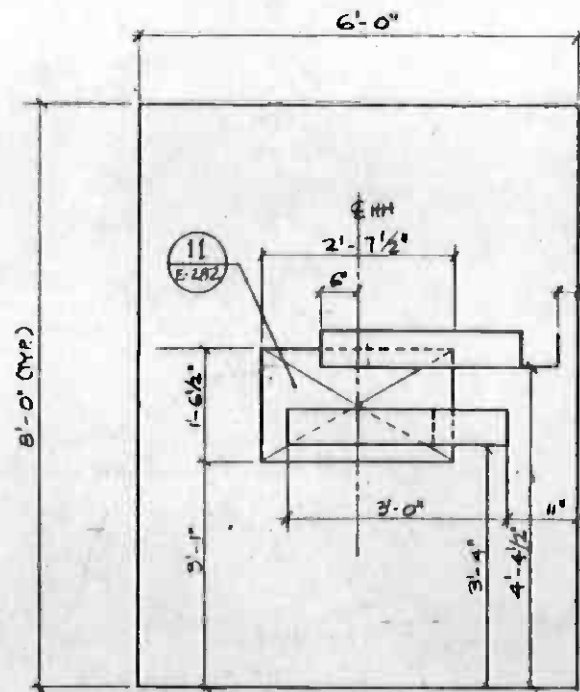
SECTION B E-267 E-018
LOOKING SOUTH



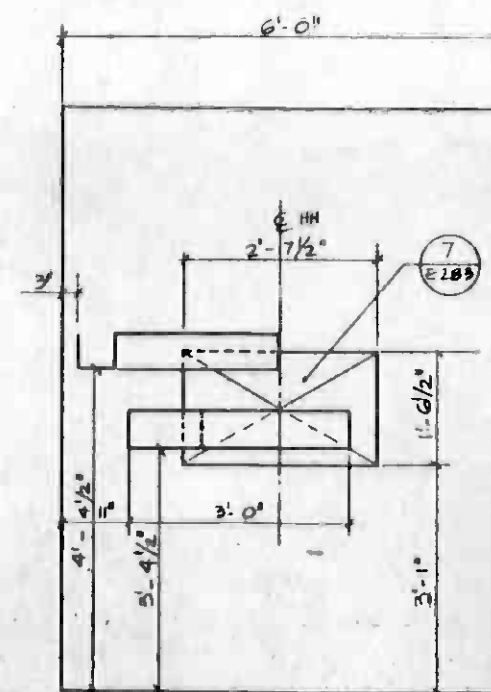
SECTION C E-267 E-018
LOOKING EAST



PLAN N.T.S. C10 E-267 E-019 E-255



SECTION A E-267 E-019
LOOKING WEST



SECTION B E-267 E-019
LOOKING NORTH



NOTES

- 1 CABLE TRAYS ARE MEDIUM DUTY, LADDER TYPE 6" NOMINAL DEPTH, HOT DIP GALVANIZED, WITH 9" RUNS SPACING.
- 2 ALL CABLE TRAYS TO HAVE 12" RADIUS FITTINGS
- 3 FOR MANHOLE CONSTRUCTION DETAILS SEE DWG. E029.

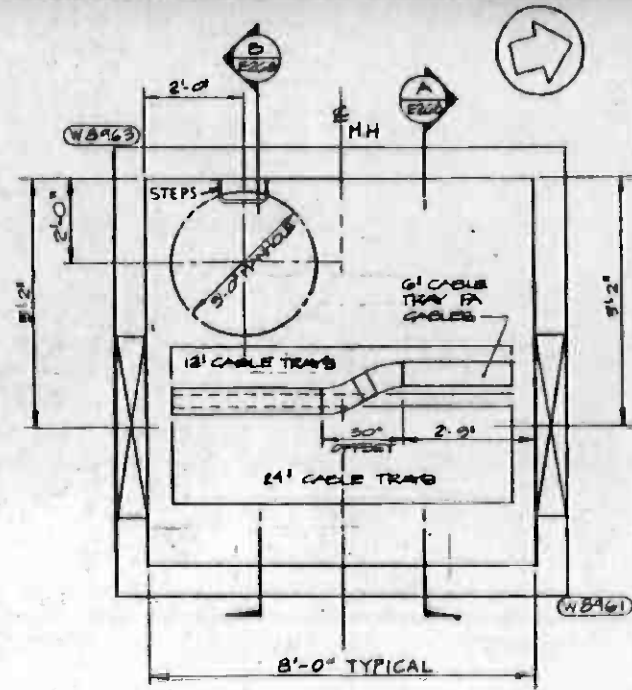
REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.					
DESIGNED BY	John Smell	DATE	28DEC84	CHECKED BY	REVISOR
DRAWN BY				IN CHARGE	

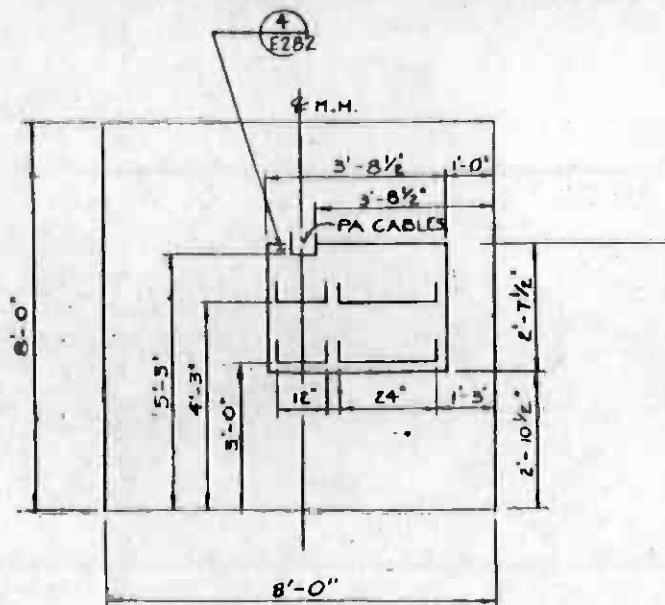
REGISTERED PROFESSIONAL ELECTRICAL ENGINEER
 ALBERT W. LAWSON
 No. 7242
 STATE OF CALIFORNIA
 ELECTRICAL

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT
 RTD
 DMJM/PBQD
 1 JOINT VENTURE
 DMJM/PBQD/KE/HWA
 GENERAL CONSULTANTS
 APPROVED: Howard J. Keuff

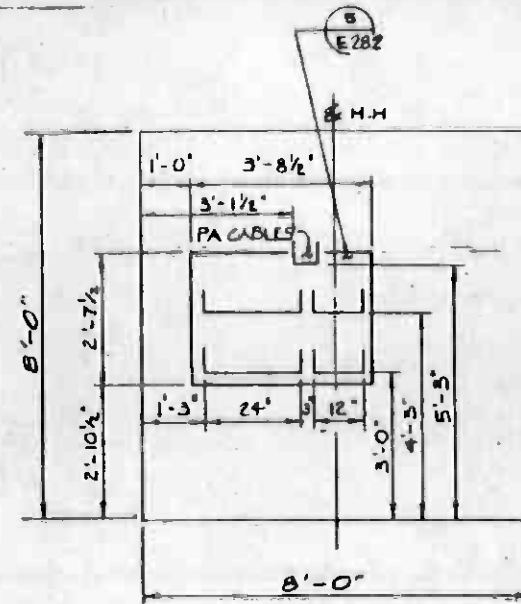
CONTRACT NO. A115
 DRAWING NO. E-267
 SCALE 3/4" = 1'-0"
 SHEET NO. A620/53
 MAIN YARD AND SHOPS
 MANHOLES C9 & C10
 & CABLE TRAYS



PLAN C11
N.T.S. E281

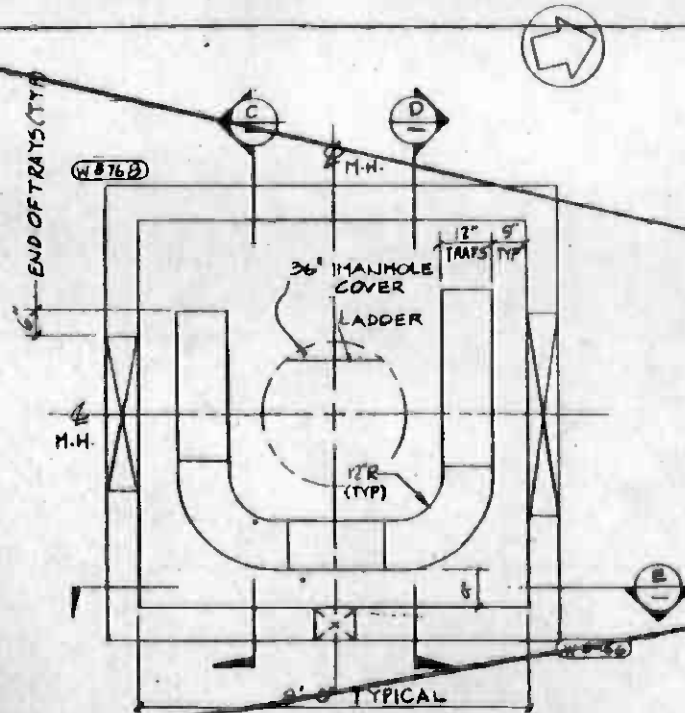


SECTION A
LOOKING NORTH E282

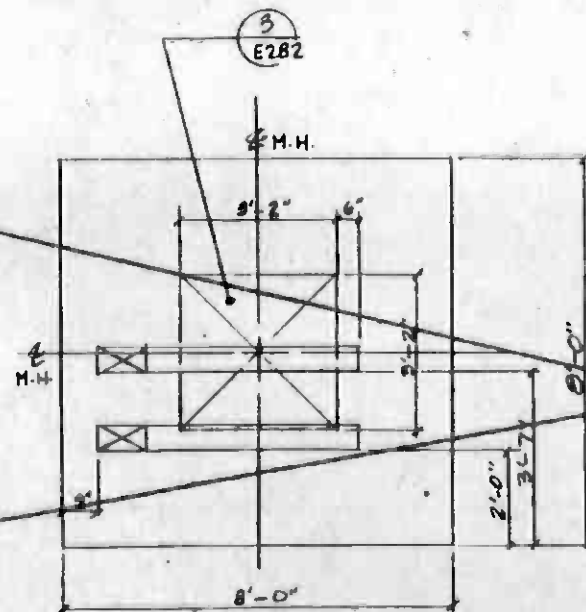


SECTION B
LOOKING SOUTH E282

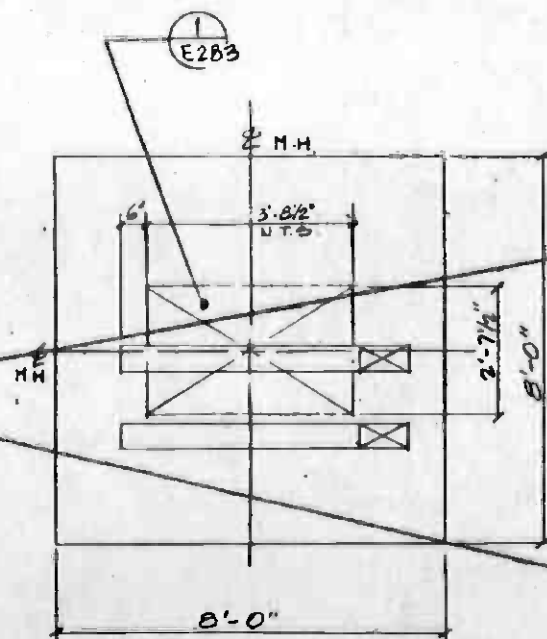
NOTE
1. SEE DWG. E267 FOR NOTES.
2. MANHOLE CR N.I.C.



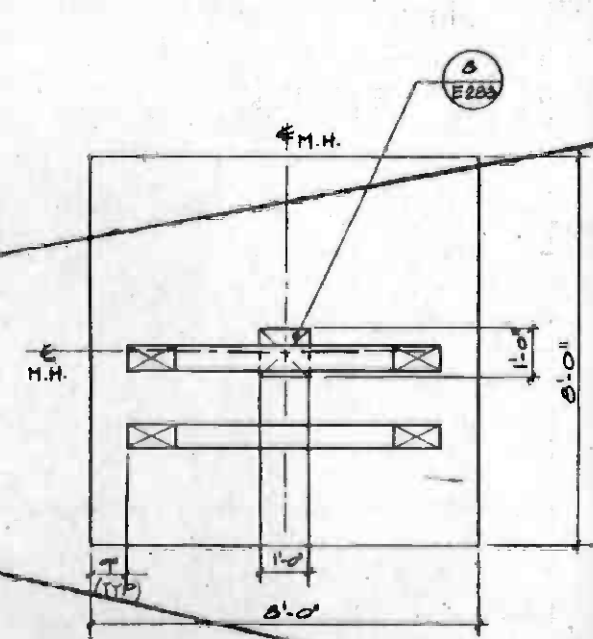
PLAN C12
SEE DWG E021 IN A130 E283



SECTION C
LOOKING SOUTHWEST E282



SECTION D
LOOKING NORTHEAST E283



SECTION E
LOOKING EAST E283



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY
J. SMICH
DRAWN BY
L. WARREN
CHECKED BY
R. KILLAMON
IN CHARGE
DATE
28DEC84



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT



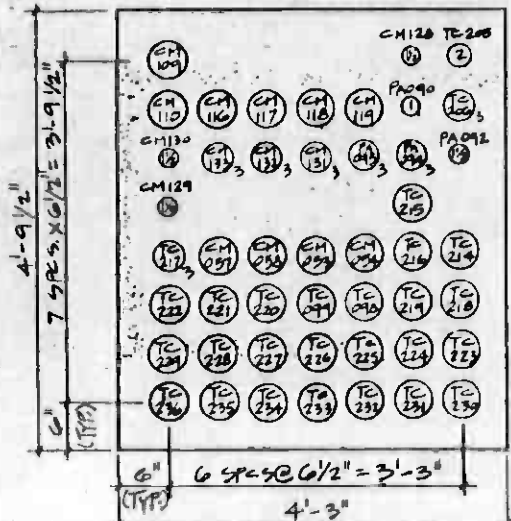
DMJM/PB00/KE/HWA
GENERAL CONSULTANTS
APPROVED

MAIN YARD AND SHOPS
MANHOLES C11
& CABLE TRAYS

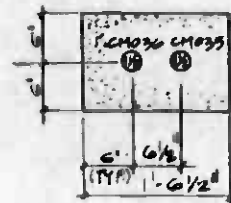
CONTRACT NO.
A 115.
DRAWING NO.
E268
SCALE
1/2" = 1'-0"
SHEET NO.
A620/54

REV.	DATE	BY	SUB.	APP.	DESCRIPTION

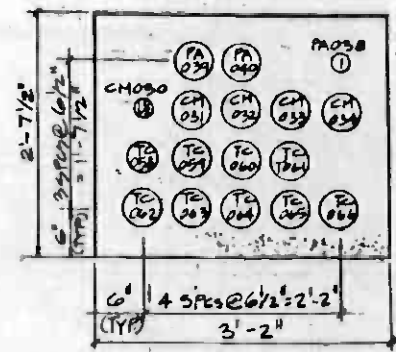
REVISED PER CRG-518
INITIAL ISSUE



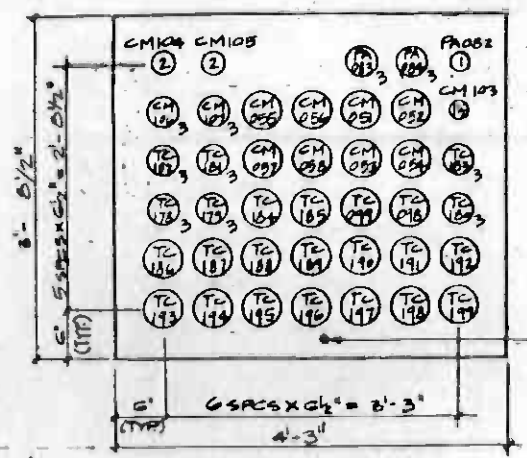
SECTION B
LOOKING NORTH FROM C1
E-279 E270



SECTION C
LOOKING EAST FROM C1
E-279 E270

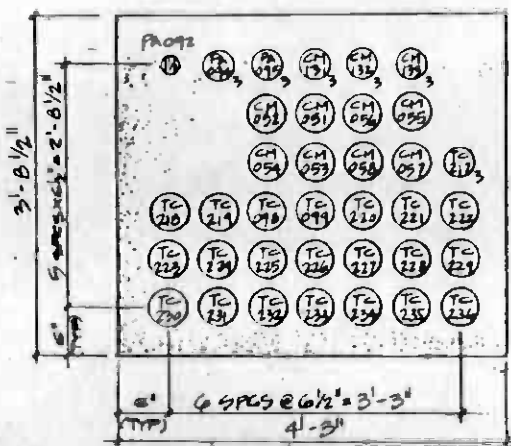


SECTION CT
LOOKING SOUTH FROM C1
E-279 E015 E012
DETAIL G
LOOKING NORTH FROM C1
E-279 E270

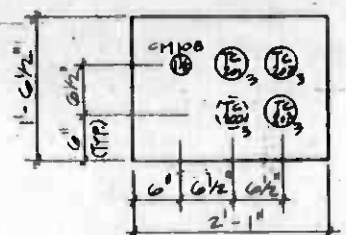


SECTION CY
LOOKING NORTH FROM C2
E-279 E015
DETAIL I
LOOKING NORTH FROM C2
E-279 E280

4 BC GROUND WIRE (TYP. ALL DUCT BANK SECTIONS)

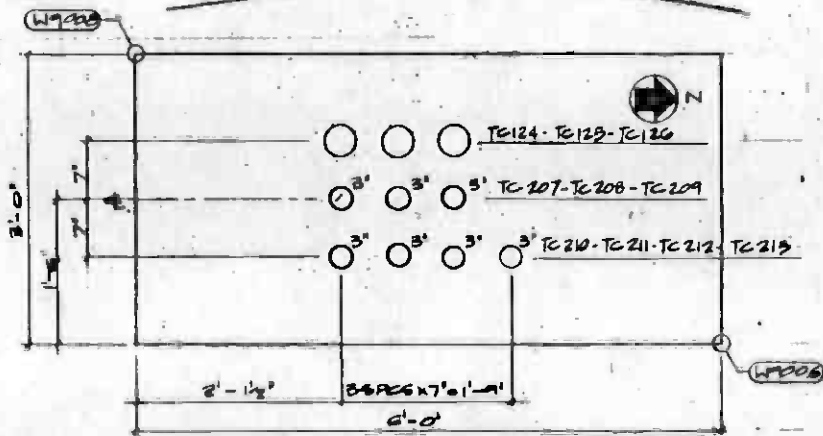


SECTION CX
LOOKING SOUTH FROM C2
E-279 E015
DETAIL 2
LOOKING SOUTH FROM C2
E-279 E280

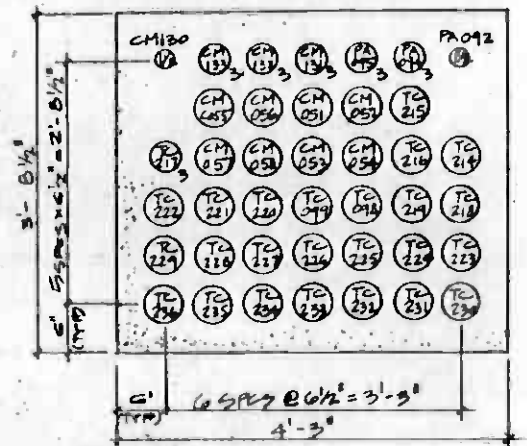


SECTION CE
E-279 E015

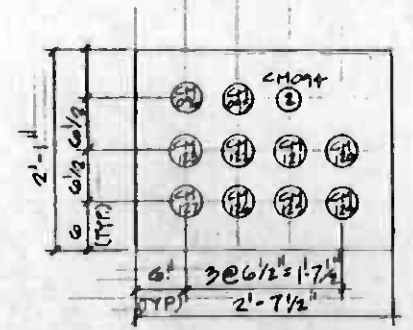
DETAIL 3
LOOKING WEST FROM C2
E-279 INCLUDE 2' TC 200 SHOWN IN DOTTED LINE



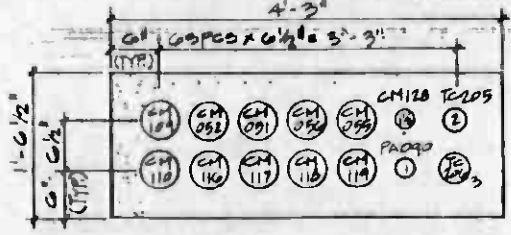
DETAIL (TCTD) PLAN 1
E-279 E015



SECTION CW
LOOKING NORTH MIDWAY BETWEEN C1 & C2
E-279 E015



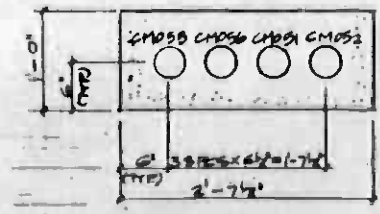
DETAIL 5
LOOKING NORTH EAST FROM C5
E-279 E264



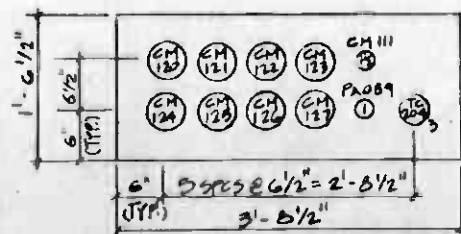
SECTION CU
E-279 E015

DETAIL 3
LOOKING EAST FROM C4
E-279 OPR HAND DELETE (E-264) 2' TC 205

DETAIL 4
LOOKING WEST FROM C4
E-279 DELETE 2' TC 205 (E-264)



SECTION CV
LOOKING NORTH
E-279 E015

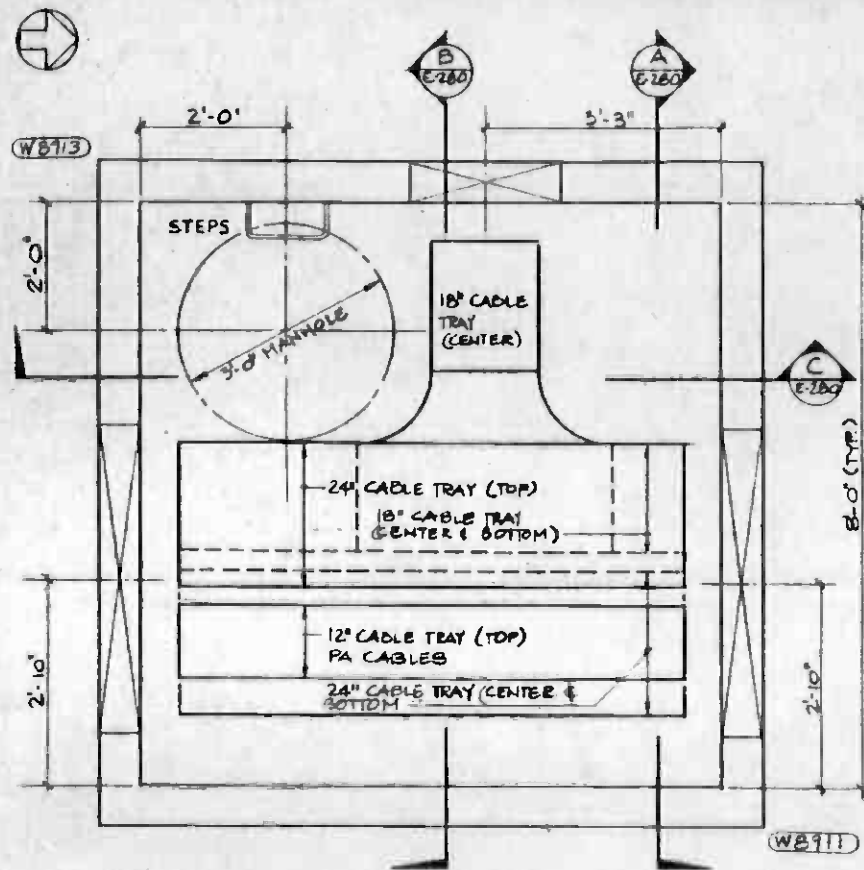


SECTION CA
E-279 E015
DETAIL 4
E-279 SHOWN LOOKING EAST
E264

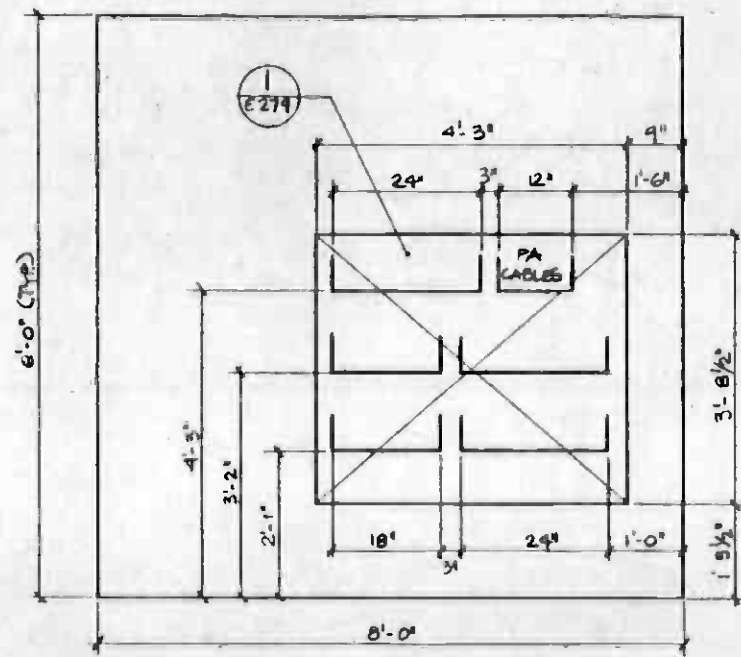
NOTE ALL CONDUITS ARE 4" PVC UNLESS OTHERWISE NOTED



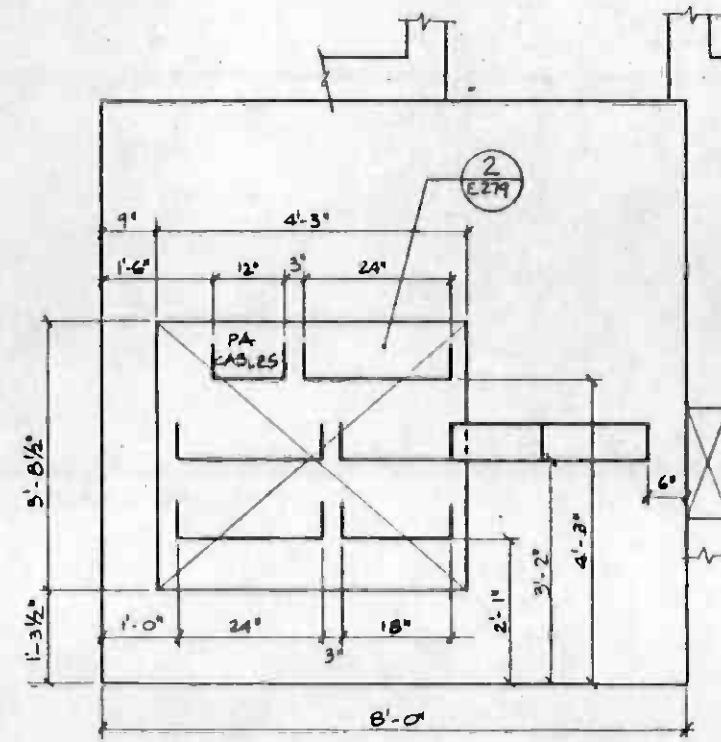
THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DESIGNED BY <i>John Smith</i> DRAWN BY CHAR. SIRIPAT. CHECKED BY LARRY WARREN IN CHARGE <i>Robert Kelly</i> DATE 12 NOV. 84		REGISTERED PROFESSIONAL ELECTRICAL ENGINEER ALBERT H. LAWRENCE No. 7142 STATE OF CALIFORNIA		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT DMJM/PBOD APPROVED <i>John Lawren</i>		RTO		CONTRACT NO. A-115 DRAWING NO. E279 SCALE N.T.S. SHEET NO. A620/57	
REV	DATE	BY	SUB.	APP.	DESCRIPTION	REV	DATE	BY	SUB.	APP.	DESCRIPTION
1	3/22/85	AS	DMJM	AP	REVISED PER CRG-518						
					INITIAL ISSUE						



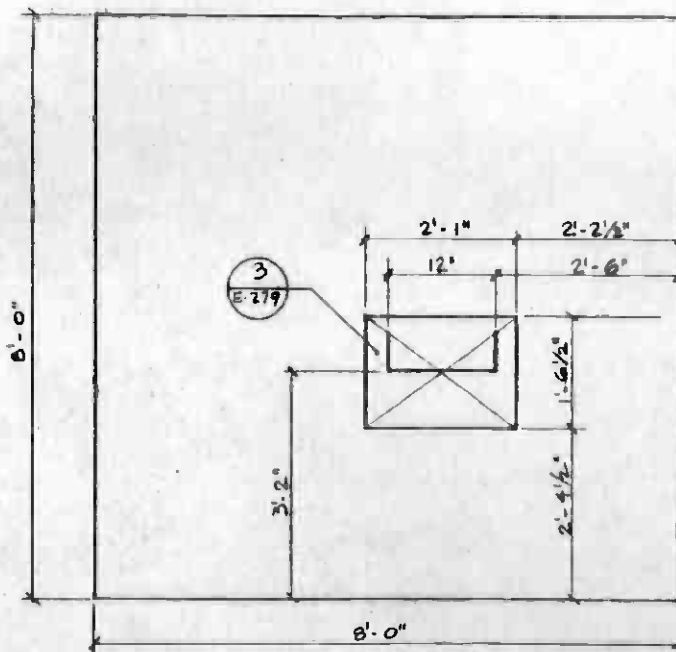
PLAN
N.T.S. C2
E-280 E-015



SECTION A
E-280



SECTION B
E-280



SECTION C
E-280

NOTES
1. SEE DWG. E-267 FOR NOTES.



REV.	DATE	BY	SUB	APP.	DESCRIPTION

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DESIGNED BY	MRTC				
DRAWN BY	M. A. UDRESCU				
CHECKED BY	<i>[Signature]</i>				
IN CHARGE	<i>[Signature]</i>				
DATE	3-6-87				
REV.	DATE	BY	SUB	APP.	DESCRIPTION

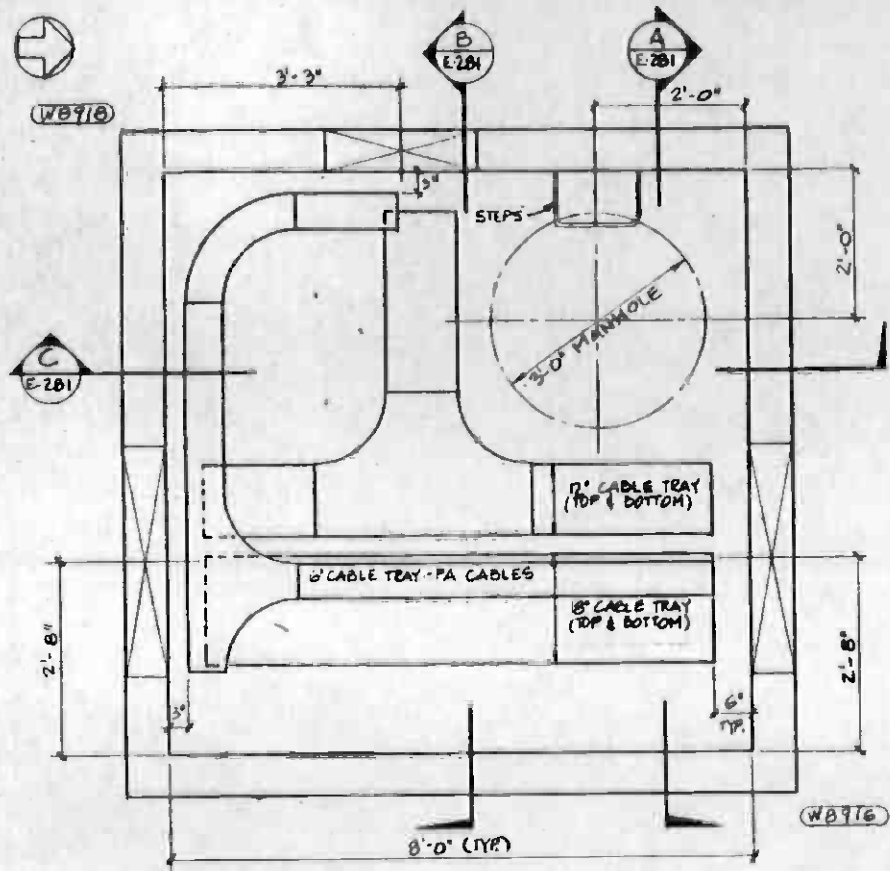
DESIGNED BY MRTC
 DRAWN BY M. A. UDRESCU
 CHECKED BY *[Signature]*
 IN CHARGE *[Signature]*
 DATE 3-6-87

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT

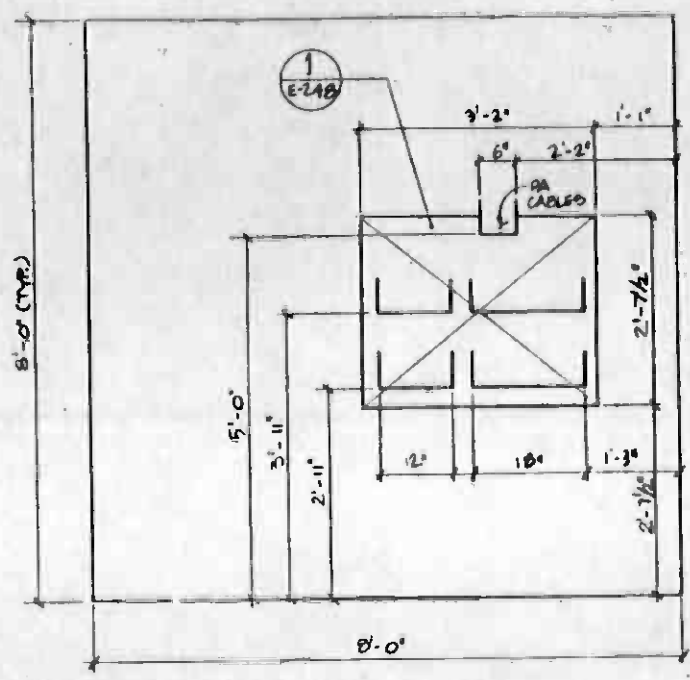
DMJM/PBQD/KE/HWA
 GENERAL CONSULTANTS
 APPROVED: *[Signature]*

MAIN YARD AND SHOPS
 TRAIN CONTROL
 MANHOLE C2 & CABLE TRAYS

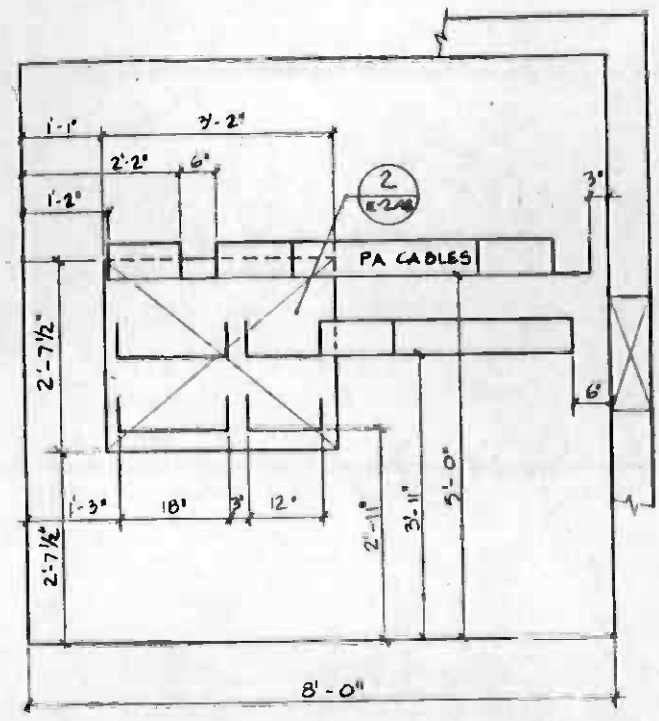
CONTRACT NO.	A115	
DRAWING NO.	E-280	REV. 2
SCALE	3/4" = 1'-0"	
SHEET NO.	A620/58	



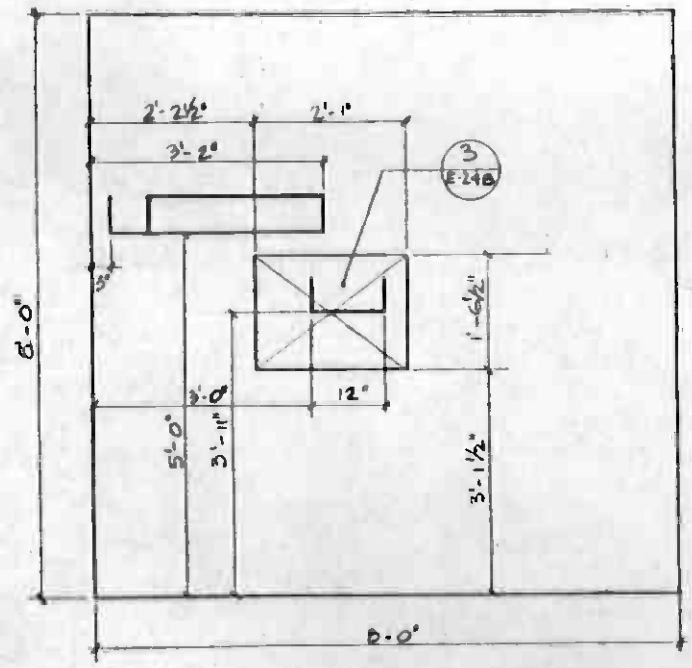
PLAN
C3
E-281 E-009



SECTION A
E-281



SECTION B
E-281

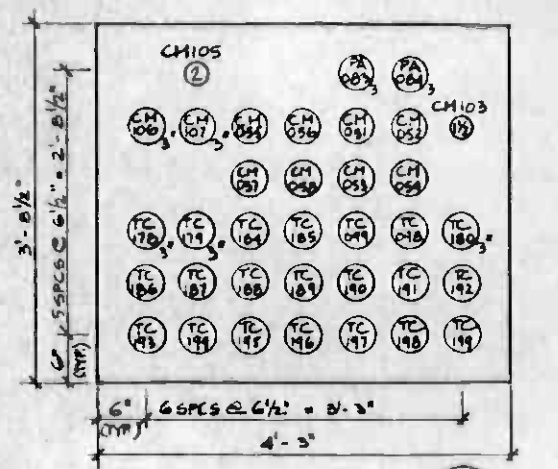


SECTION C
E-281

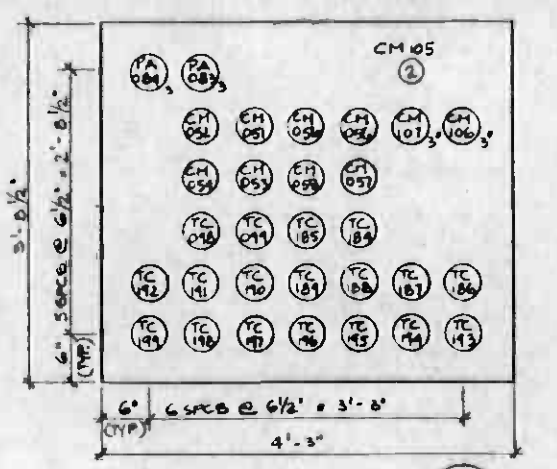
NOTES
1. SEE DWG E-267 FOR NOTE B.



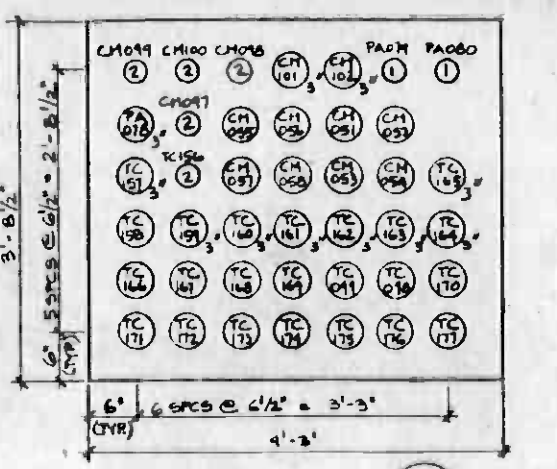
THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.					DESIGNED BY MRTC				CONTRACT NO. A115	
					DRAWN BY M.A. UDRESQU				DRAWING NO. E-281	
					CHECKED BY <i>[Signature]</i>		DMJM/PBOD/KE/HWA GENERAL CONSULTANTS		SCALE 3/4" = 1'-0"	
					IN CHARGE <i>[Signature]</i>				SHEET NO. A620/59	
REDRAWN CR 6-518					DATE 3-6-87		SUBMITTED <i>[Signature]</i>		APPROVED 	
REV	DATE	BY	SUB	APP	DESCRIPTION					



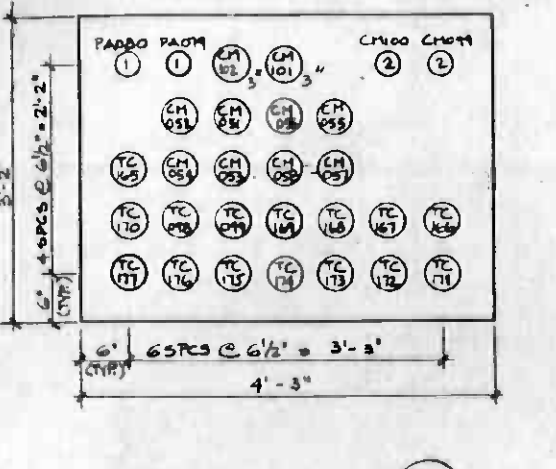
SECTION CAA
E-282 E-015
E-018



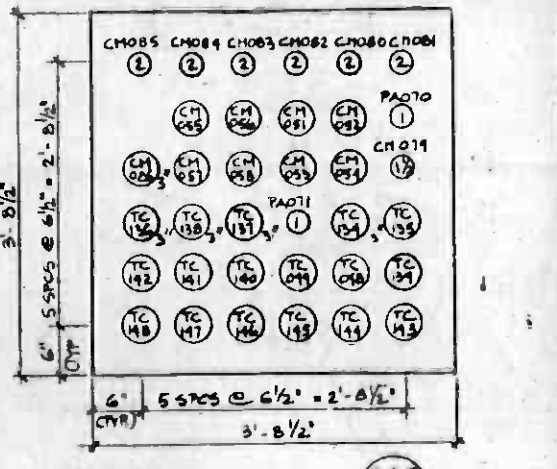
SECTION CAD
E-282 E-018
DETAIL 1
LOOKING SOUTH FROM C6
E-282 E-265



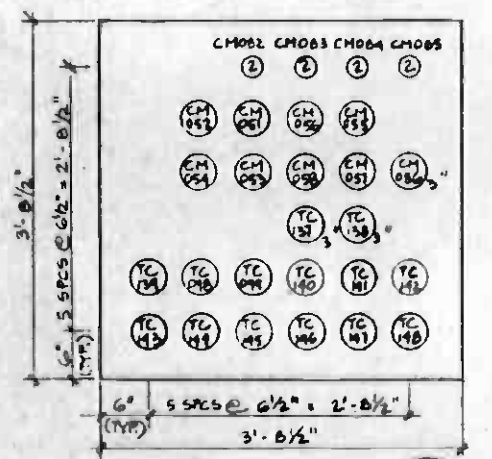
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E-282 E-018
DETAIL 2
LOOKING NORTH FROM C6
E-282 E-265



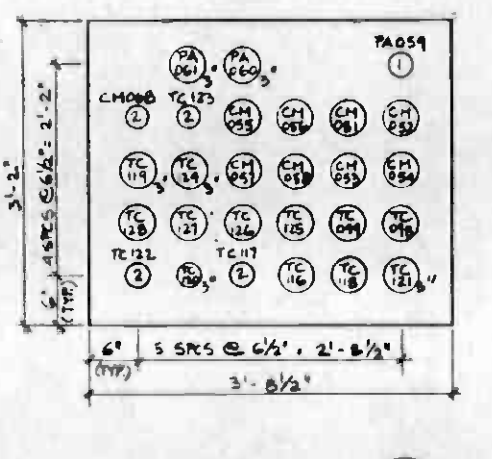
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DETAIL 6
LOOKING SOUTH FROM C8
E-282 E-266



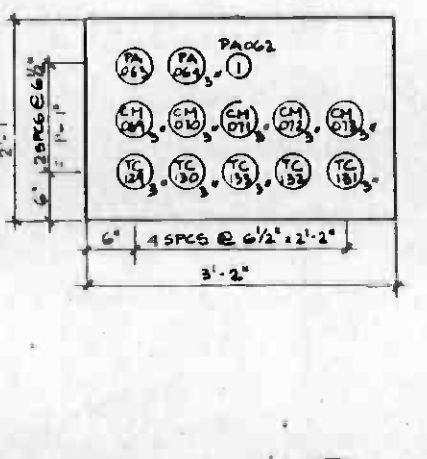
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E-282 E-018
DETAIL 7
LOOKING NORTH FROM C8
E-282 E-266



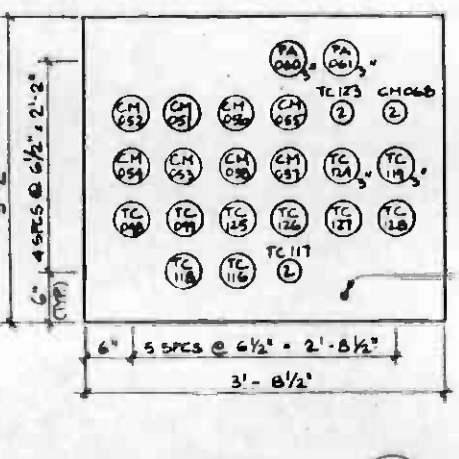
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E-282 E-018
DETAIL 8
LOOKING SOUTH FROM C9
E-282 E-267



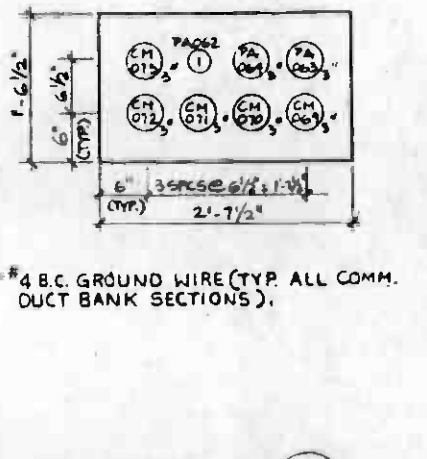
SECTION CAG
E-282 E-018
DETAIL 9
LOOKING NORTH FROM C9
E-282 E-267



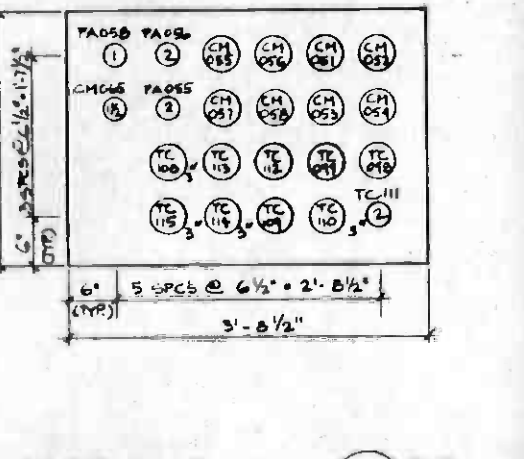
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E-282 E-018
DETAIL 10
LOOKING EAST FROM C9
E-282 E-267



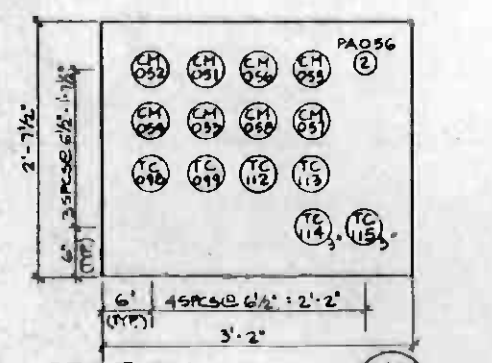
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DETAIL 11
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E-282 E-267



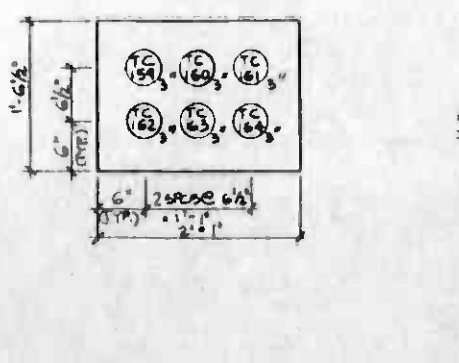
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DETAIL 11
LOOKING WEST FROM C10
E-282 E-267



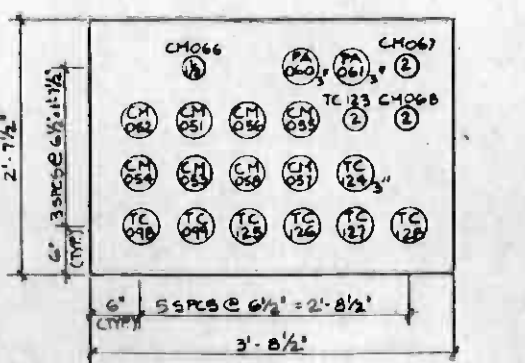
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DETAIL 4
LOOKING NORTH FROM C11
E-282 E-268



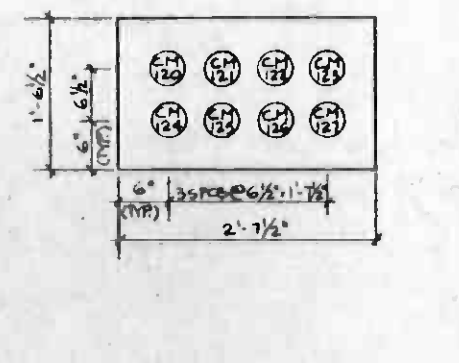
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DETAIL 3
LOOKING SOUTH FROM C12
REF ONLY
E-282 E-268

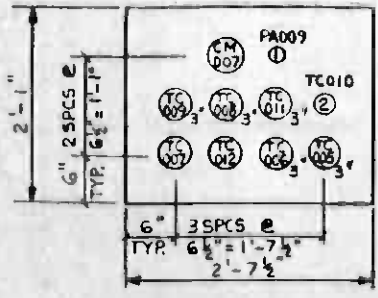


SECTION CAP
E-282 E-018

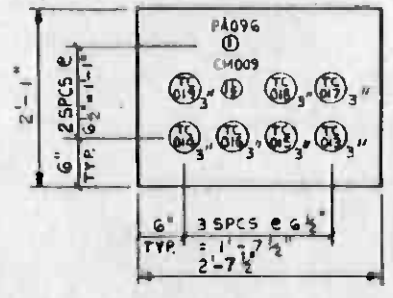


DETAIL 5
LOOKING SOUTH FROM C11
E-282 E-268

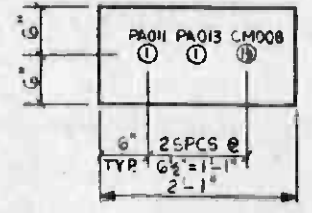




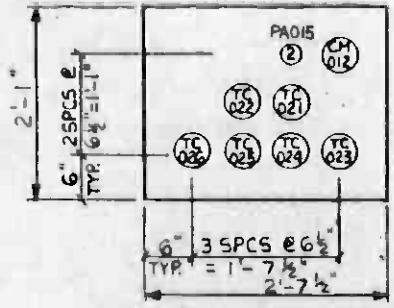
DETAIL 2
LOOKING SOUTH FROM C13
E-283 E-269



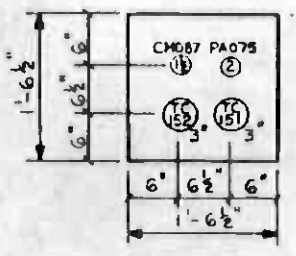
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E-283 E-007



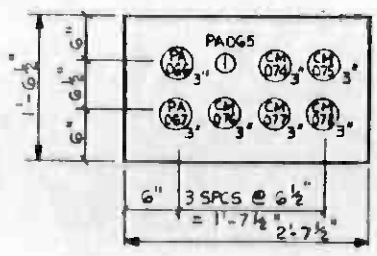
SECTION CBC
LOOKING EAST FROM C13
E-283 E-269



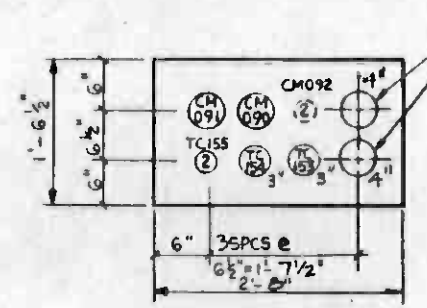
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E-283 E-269



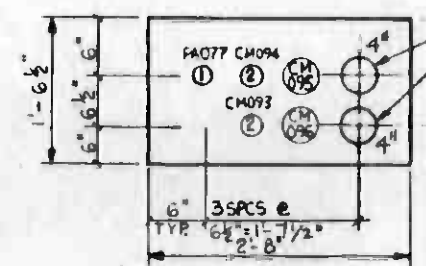
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LOOKING NORTH FROM CHH7
E-283 E-018



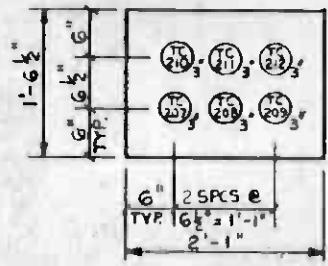
DETAIL 7
LOOKING NORTH FROM C10
E-283 E-267



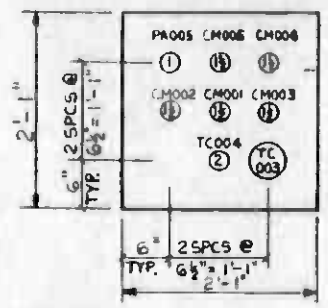
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E-283 E-018



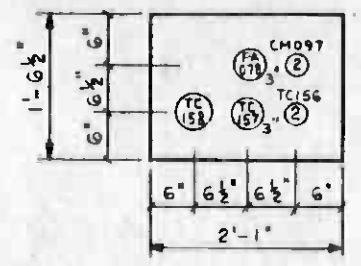
SECTION CAS
LOOKING SOUTH FROM CHH7
E-283 E-018 E-017 E-011 E-014



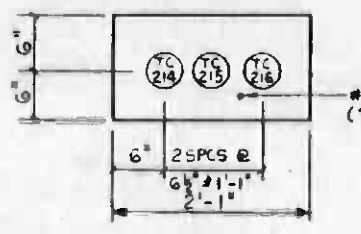
SECTION CAW
E-283 E-015



SECTION CAX
E-283 E-005



SECTION CAY
LOOKING EAST FROM CHH7
E-283 E-018



SECTION CBE
E-283 E-015



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REV.	DATE	BY	SUB	APP.	DESCRIPTION	REV.	DATE	BY	SUB	APP.	DESCRIPTION	SUBMITTED <i>[Signature]</i> APPROVED _____ DMJM/PBQD/KE/HWA GENERAL CONSULTANTS					
					REDRAWN - CR 6-518							APPROVED _____					

LIGHTING OUTLETS

CLG	WALL	
		OUTLET FOR INCANDESCENT OR HIGH INTENSITY DISCHARGE FIXTURE
		FLUORESCENT FIXTURE OUTLET
		EXIT LIGHT OUTLET, ARROW INDICATES DIRECTION.
		BLANKED OUTLET BOX.
		JUNCTION BOX, TYPE AS APPLICABLE.
		LETTER SUBSCRIPT ADJACENT TO FIXTURE OUTLET DESIGNATES SWITCH CONTROL
		FLOODLIGHT, ARROWS INDICATE DIRECTION OF BEAM
		EMERGENCY LIGHT OUTLET (FLUORESCENT SHOWN)

PANELBOARDS, SWITCHBOARDS, ETC.

	PANELBOARD M - 480/277V, L - 208/120V
	PULL BOX
	MOTOR CONTROLLER, SUBSCRIPT INDICATES NEMA SIZE
	FUSED DISCONNECT SWITCH, SUBSCRIPT INDICATES FUSE SIZE AND NO. OF POLES
	NON-FUSED DISCONNECT SWITCH, SUBSCRIPT INDICATES SIZE AND NO. OF POLES
	ELECTRICAL MANHOLE
	ELECTRICAL HANDHOLE
	COMBINATION MAGNETIC MOTOR STARTER, FUSIBLE SUBSCRIPT INDICATES NEMA SIZE
	COMBINATION MAGNETIC MOTOR STARTER NON-FUSIBLE. SUBSCRIPT INDICATES NEMA SIZE
	COMBINATION MAGNETIC MOTOR STARTER, WITH CIRCUIT BREAKER. SUBSCRIPT INDICATES NEMA SIZE
	MOTOR, WITH IDENTIFICATION, INSERT INDICATES HORSEPOWER. THREE PHASE OR SINGLE PHASE
	POWER PANEL
	SWITCHBOARD (SWBD) OR MOTOR CONTROL CENTER (MCC) MS - MAIN SWBD, HP - DISTRIBUTION, SWBD - 480/277V, LP - DISTRIBUTION SWBD - 208/120V
	CONTROL PANEL, TYPES AS FOLLOWS: HCP - HALON CONTROL PANEL FCP - FAN CONTROL PANEL EMP - EMERGENCY MANAGEMENT PANEL ACP - AUXILIARY CONTROL PANEL
	RCP - REFRIGERATION CONTROL PANEL ACCP - AIR CONDITIONING CONTROL PANEL

RECEPTACLE OUTLETS

	SINGLE RECEPTACLE OUTLET, 20 AMPERES (SEE NOTE)
	DUPLEX RECEPTACLE OUTLET, 20 AMP.
	SINGLE SPECIAL PURPOSE RECEPTACLE OUTLET (30 AMP, 2 POLE, OR AS NOTED)*
	DUPLEX SPECIAL PURPOSE RECEPTACLE OUTLET *
	*USE SUBSCRIPT LETTERS TO INDICATE FUNCTION.
	FLOOR BOX WITH SINGLE RECEPTACLE
	FLOOR BOX WITH DUPLEX RECEPTACLE
	FLOOR BOX WITH SERVICE FITTING AS NOTED
	FLOOR BOX - PUBLIC TELEPHONE
	FLOOR BOX - SCRTD TELEPHONE
	UNDERFLOOR DUCT WITH ASSOCIATED OUTLETS AS INDICATED
	TRENCH DUCT

NOTE: RECEPTACLE SHALL BE MOUNTED 12" AFF. UNLESS OTHERWISE NOTED ON PLAN

FOR DUCT BANK SYMBOLS AND ABBREVIATIONS SEE OWG E-074

SPECIAL IDENTIFICATION (USED NEXT TO SYMBOL)

WP - WEATHERPROOF	RT - RAIN TIGHT	G - GROUND
WT - WATERTIGHT	DT - DUST TIGHT	R - RECESSED
VT - VAPOR TIGHT	EP - EXPLOSION PROOF	F - FLUSH

CONDUCTORS & CONDUIT

	BRANCH CIRCUIT HOME RUN TO PANELBOARD. LL2 DENOTES PANEL LL2 AND NUMERALS IDENTIFY CIRCUIT NUMBERS.
	INDICATES NUMBER OF NO. 12 WIRES OR NO. CROSS LINES INDICATES 2 NO. 12 IN 3/4" CONDUIT UNLESS OTHERWISE NOTED.
	LIGHT LINES DESIGNATE CONDUIT OR EQUIPMENT INSTALLED IN STRUCTURAL CONTRACT (STAGE I) AND ARE EXISTING.
	CONDUIT EXPOSED OR CONCEALED IN CEILING. HEAVY LINES DENOTE CONDUITS OR EQUIPMENT TO BE INSTALLED IN THIS CONTRACT, NO IN ELIPSE INDICATE RACEWAY NUMBER: A - AUXILIARY POWER AND CONTROLS. T - TRACTION POWER SYSTEM YOS - YARD DISCONNECT SWITCH (POS) YNR - YARD NEGATIVE RETURN TC - TRAIN CONTROL SYSTEM C - COMMUNICATION (GENERAL) CE - EMERGENCY TELEPHONE (ETEL) CA - ADMINISTRATIVE TELEPHONE. FG - GAS DETECTOR FA - FIRE DETECTOR OR ALARM. PA - PUBLIC ADDRESS. IA - INTRUSION DETECTOR OR ALARM. SC - SUPERVISORY CONTROL. HC - COMMUNICATIONS TIE CABLE.
	RACEWAY TURNED UP OR TOWARD VIEWER.
	RACEWAY TURNED DOWN OR AWAY FROM VIEWER.
	CONDUIT CAPPED
	RACEWAY EMBEDDED IN FLOOR.
	RACEWAY EMBEDDED IN WALL OR CEILING.
	GROUND WIRE
	UNDERGROUND CONDUIT BANK (INDICATE TYPE, SIZE AND NUMBER OF CONDUITS BY CROSS SECTION IDENTIFICATION OF EACH RUN, DR BY NOTATION)
	GROUND ROD.
	GROUND RECEPTACLE

SWITCH OUTLETS

S	SINGLE POLE SINGLE THROW SWITCH, 20 AMP (SEE NOTE)
S ₂	DOUBLE POLE SWITCH, 20 AMP.
S ₃	THREE-WAY SWITCH, 20 AMP.
S ₄	FOUR-WAY SWITCH, 20 AMP.
S _K	KEY-OPERATED SWITCH, 20 AMP.
S _P	SWITCH WITH PILOT LAMP, 20 AMP.
S _D	DOOR SWITCH
S _T	TIME SWITCH
S _M	MANUAL MOTOR STARTER WITH OVERLOAD DEVICE
S _{MC}	MOMENTARY CONTACT SWITCH OR PUSHBUTTON FOR OTHER THAN SIGNALING SYSTEM
S ₀	SUBSCRIPT 0 DENOTES SWITCH CIRCUIT
NOTE	SWITCHES SHALL BE MOUNTED 4'-6" AFF. UNLESS OTHERWISE NOTED ON PLAN.

ONE-LINE DIAGRAM SYMBOLS

	CONTROL SWITCH
	ANNUNCIATION DEVICE-INDICATING TYPE
	ELECTRICAL RESET
	AUDIBLE ALARM
	SELECTOR SWITCH, VS - VOLTMETER, AS - AMMETER
	INDICATING TYPE METER, AM - AMMETER, VM - VOLTMETER
27	UNDervOLTAGE RELAY
49	THERMAL OVERLOAD DEVICE
50	AC INSTANTANEOUS OVERCURRENT TRIP SETTING
51	AC TIME OVERCURRENT TRIP SETTING OR RELAY
5IN	AC GROUND OVERCURRENT RELAY (RESIDUAL)
5IG	AC GROUND OVERCURRENT TRIP SETTING OR RELAY
52	AC CIRCUIT BREAKER
59	OVERVOLTAGE RELAY
62	TIME DELAYED RELAY
69	PERMISSIVE CONTROL DEVICE
74	ALARM RELAY
88	LOCK-OUT RELAY
	SHORTING TYPE TERMINAL BLOCK
	MOLDED CASE CIRCUIT BREAKER
	SERIES TRIP DEVICE
	CURRENT TRANSFORMER OR CURRENT SENSOR OF SOLID STATE TRIP DEVICE
	2-WINDING TRANSFORMER
	FUSE
	DELTA CONNECTION
	WYE CONNECTION
	CABLE TERMINATION
	CIRCUIT BREAKER WITH SOLID STATE TRIP DEVICE
	CIRCUIT BREAKER, MEDIUM VOLTAGE
	POWER BREAKER, 480VAC
	CONTACTOR OR STARTER
	DISCONNECT SW.

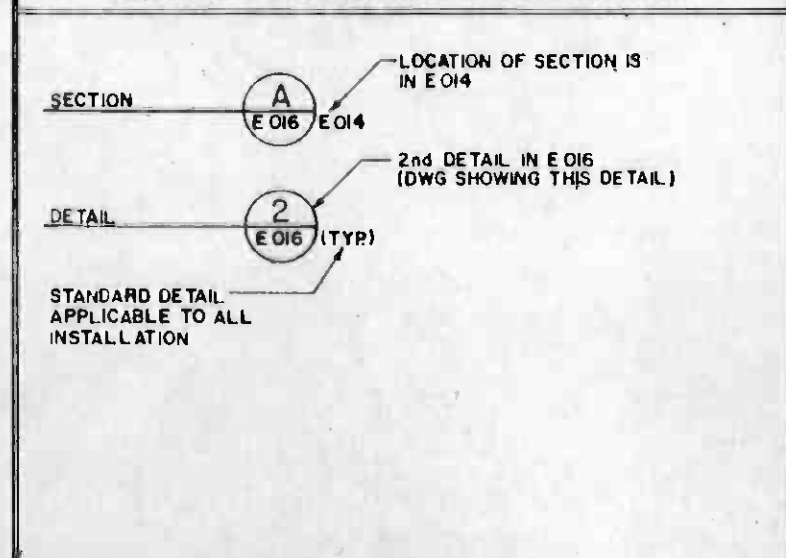
<p>THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA</p>	<p>DESIGNED BY: <i>[Signature]</i> DRAWN BY: <i>[Signature]</i> CHECKED BY: <i>[Signature]</i> IN CHARGE: <i>[Signature]</i> DATE: 2-20-65</p>	<p>SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT</p> <p>DMJM/PBOD GENERAL CONSULTANTS</p>	<p>MAIN YARD AND SHOPS YARD LEADS</p> <p>SYMBOL LIST AND ABBREVIATIONS-1</p>	<p>CONTRACT NO. A130 DRAWING NO. E 001 SCALE: NO SCALE SHEET NO. A620/66</p>																																				
<table border="1"> <tr> <th>REV</th> <th>DATE</th> <th>BY</th> <th>SUB</th> <th>APP</th> <th>DESCRIPTION</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	REV	DATE	BY	SUB	APP	DESCRIPTION							<table border="1"> <tr> <th>REV</th> <th>DATE</th> <th>BY</th> <th>SUB</th> <th>APP</th> <th>DESCRIPTION</th> </tr> <tr> <td>1</td> <td>10/28/64</td> <td>PSH</td> <td>A.S.</td> <td> </td> <td>REVISED PER CR5-114</td> </tr> <tr> <td>2</td> <td>10/28/64</td> <td>RCL</td> <td>A.S.</td> <td> </td> <td>REVISED PER CR5-202</td> </tr> <tr> <td>3</td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	REV	DATE	BY	SUB	APP	DESCRIPTION	1	10/28/64	PSH	A.S.		REVISED PER CR5-114	2	10/28/64	RCL	A.S.		REVISED PER CR5-202	3						<p>APPROVED: <i>[Signature]</i></p>	<p>APPROVED: <i>[Signature]</i></p>	<p>REVISIONS:</p>
REV	DATE	BY	SUB	APP	DESCRIPTION																																			
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1	10/28/64	PSH	A.S.		REVISED PER CR5-114																																			
2	10/28/64	RCL	A.S.		REVISED PER CR5-202																																			
3																																								

ELECTRICAL SCHEMATIC DIAGRAM SYMBOLS

SYMBOL	REPRESENTS
	TRANSFORMER
	PUSHBUTTON SWITCH, MOMENTARY CONTACT, N.C. LO INDICATES LOCK-OUT
	PUSHBUTTON SWITCH, MOMENTARY CONTACT, N.O.
	MECHANICAL CONNECTION
	SINGLE POLE CIRCUIT BREAKER, SIZE AS NOTED
	NORMALLY OPEN CONTACT, AUX. OR RELAY. TDE - TIME DELAY AFTER ENERGIZED TDD - TIME DELAY AFTER DE-ENERGIZED
	NORMALLY CLOSED CONTACT, AUX. OR RELAY. TDE - TIME DELAY AFTER ENERGIZED TDD - TIME DELAY AFTER DE-ENERGIZED
	COIL, OPERATING 42 - STARTER OR CONTACTOR OTHER NO. - RELAY PER IEEE DEVICE NO.
	OVERLOAD RELAY CONTACTS
	OVERLOAD RELAY WITH HEATER
	FUSE WITH RATING
	GROUND CONNECTION
	PILOT LIGHT: R = RED, G = GREEN, A = AMBER, W = WHITE, C = CLEAR, B = BLUE
	SOLENOID VALVE COIL
	LIMIT SWITCH, NORMALLY OPEN
	LIMIT SWITCH, NORMALLY CLOSED
	LIMIT SWITCH, N.O., HELD CLOSED BY ACTUATOR
	LIMIT SWITCH, N.C., HELD OPEN BY ACTUATOR
	PRESSURE SWITCH, NORMALLY OPEN, CLOSES ON RISING PRESSURE
	PRESSURE SWITCH, NORMALLY CLOSED, OPENS ON RISING PRESSURE
	FLOW SWITCH, NORMALLY OPEN, CLOSES WITH FLOW
	FLOW SWITCH, NORMALLY CLOSED, OPENS WITH FLOW
	TEMPERATURE SWITCH, NORMALLY OPEN, CLOSES ON RISING TEMPERATURE (COOLING THERMOSTAT)
	TEMPERATURE SWITCH, NORMALLY CLOSED, OPENS ON RISING TEMPERATURE (HEATING THERMOSTAT)
	LEVEL CONTROLLER (SWITCH), NORMALLY OPEN AT LOW POSITION, CLOSES ON RISE
	LEVEL CONTROLLER (SWITCH), NORMALLY CLOSED AT LOW POSITION, OPENS ON RISE
	SELECTOR SWITCH, HAND-OFF-AUTOMATIC, OR AS NOTED: K = KEY OPERATED, KK = KIRK KEY LOCK (STANDARD OR HEAVY DUTY INDUSTRIAL CONTROL)

SYMBOL	REPRESENTS
	MANUAL MOTOR STARTER
	SINGLE POLE SINGLE THROW SWITCH
	SINGLE POLE DOUBLE THROW SWITCH
	MULTICONDUCTOR CABLE
	SHIELDED 2 CONDUCTOR CABLE WITH SHIELD GROUNDING
	COAXIAL CABLE
	DISCONNECTING DEVICE
	CONDUCTORS, CONNECTED
	CONDUCTORS, NOT CONNECTED
	CURRENT TRANSFORMER WITH POLARITY MARKINGS
	POTENTIAL TRANSFORMER WITH POLARITY MARKINGS
	OUTLINE OF EQUIPMENT
	FUTURE OR N.I.C.
	TERMINAL STRIP
	WIRING TERMINAL
	BATTERY
	INSTRUMENT GROUNDING
	WIRE DESIGNATION SUFFIX COMPLETE DESIGNATION TO BE PRECEDED BY EQUIPMENT PREFIX VIZ: E/15
	RECTIFIER, DRY TYPE, FULL WAVE
	TRANSDUCER, E/I - VOLTAGE TO CURRENT I/E - CURRENT TO VOLTAGE

SECTION AND DETAIL IDENTIFICATION



GENERAL CONSTRUCTION NOTES

- CONTRACTOR SHALL INSTALL EMPTY RACEWAYS ONLY FOR THE FOLLOWING SUBSYSTEMS:
 - TRACTION POWER
 - 34.5 KV POWER
 - AUTOMATIC TRAIN CONTROL
 - COMMUNICATION INCLUDING FIRE PROTECTION AND GAS DETECTION (ALL AS DESIGNATED IN DWG. E 116)
 - MAIN 480 VOLT AND EMERGENCY FAN FEEDERS.
 - ALL SYSTEMS TO THE CARWASH LOCATION.
- ALL OTHER SYSTEMS SHALL INCLUDE FURNISHING, INSTALLING, WIRING, TERMINATING, AND TESTING, UNLESS OTHERWISE NOTED.
- ALL EMPTY CONDUITS SHALL BE PROPERLY TAGGED, EQUIPPED WITH PULLING CORDS, AND CAPPED OR OTHERWISE PROPERLY PROTECTED FROM DIRT, MOISTURE, AND OTHER INTRUSIONS.
- INTERFACE WITH ADJACENT CONTRACT (S):
 - EMPTY CONDUIT (S)-CAPPED AND TAGGED AT THE INTERFACE POINT.
 - CONDUITS WITH WIRING (UNDER 2 ABOVE)-CAPPED AND TAGGED AT THE INTERFACE POINT. COIL CONDUCTORS AT THE HANDHOLE, PULL BOX, JUNCTION BOX, OR LIGHTING FIXTURE CLOSEST TO THE INTERFACE POINT. COILED CONDUCTORS SHALL BE OF SUFFICIENT LENGTH TO PERMIT FUTURE SPLICING. (BY THE LATER CONTRACTOR)
 - LIGHTING AT THE PORTAL AND YARD AREA - (LIGHT FIXTURES AND POLES BY OTHERS)-PULL WIRING TO THE OPENING AT CONCRETE BASE OF LIGHT POLE, COIL 2 FT. (MIN.) OF CONDUCTOR AT EACH BASE AND TEMPORARILY SEAL THE CONDUITS AT THE CONCRETE BASE.
 - THE EARLIER CONSTRUCTION CONTRACTOR SHALL BE RESPONSIBLE FOR THE TESTING (TO THE EXTENT POSSIBLE) OF HIS PORTION OF THE SYSTEMS. THE LATER CONSTRUCTION CONTRACTOR SHALL BE RESPONSIBLE BOTH FOR TESTING OF HIS PORTIONS OF THE SYSTEMS AS WELL AS FOR THE OVERALL SYSTEM TESTING.
- GROUNDING: INSTALL PROTECTIVE SLEEVE (12" LONG METALLIC CONDUIT) OVER THE GROUND WIRE(S) WITH 36" PIGTAIL, PROPERLY COILED AND PROTECTED. INSTALL TEMPORARY MARKER AT THE EMBEDDED LOCATION(S).
- ALL EMBEDDED CONDUITS OR DUCT BANKS, EXCEPT FOR COMMUNICATION AND TRAIN CONTROL SUBSYSTEMS, SHALL BE 1" MINIMUM SIZE PVC CONDUITS UNLESS OTHERWISE NOTED. ALL EMBEDDED COMMUNICATION AND TRAIN CONTROL SUBSYSTEMS CONDUITS SHALL BE 1" MINIMUM SIZE GALVANIZED RIGID STEEL CONDUITS UNLESS OTHERWISE NOTED. ALL EXPOSED OR CONCEALED (IN CEILING) CONDUITS SHALL BE 3/4" MINIMUM SIZE GALVANIZED RIGID STEEL CONDUITS UNLESS OTHERWISE NOTED.
- ALL CONDUCTORS LEFT COILED SHALL HAVE THE ENDS WRAPPED WITH INSULATING AND MOISTURE-PROOF TAPE.
- OTHER CONTRACT DRAWINGS REFERENCED WHERE IN, MAY BE INSPECTED AT THE OFFICES OF THE DISTRICT OR ITS DESIGNEE.

FIXTURE TYPE SYMBOL

12'
A112
100
120

- LETTER - TYPE OF FIXTURE
- FIRST NO. - FIXTURE OPTION
- SECOND NO. - LAMP OPTION
- LAST NO. - MOUNTING HARDWARE OPTION
- NO. ABOVE SYMBOL - MOUNTING HEIGHT
- NO. UNDER SYMBOL - VOLTAGE OTHER THAN 277V
- NO. BELOW LINE IN HEXAGON - WATTAGE (IF USED)
- NUMBER ALONGSIDE SYMBOL (IF USED) INDICATES NUMBER OF FIXTURES.

HALF SIZE

ABBREVIATIONS

ACCP	AIR CONDITIONING CONTROL PANEL
ACP	AUXILIARY CONTROL PANEL
CIC	SUPERVISORY CONTROL INTERFACE CABINET
FACP	FIRE ALARM CONTROL PANEL
RCP	REFRIGERATION CONTROL PANEL
SCIC	SUPERVISORY CONTROL INTERFACE CABINET
AHU	AIR HANDLING UNIT
LP	LIGHTING PANEL
EBD	EMERGENCY BYPASS DAMPER
EFD	EMERGENCY FAN DAMPER
MCC	MOTOR CONTROL CENTER
LAP	LOCAL ANNUNCIATION PANEL
AHCP	AIR HANDLING CONTROL PANEL
AUX.	AUXILIARY
N.I.C.	NOT IN CONTACT
C OR CND.	CONDUIT
SPST	SINGLE POLE SINGLE THROW
SPDT	SINGLE POLE DOUBLE THROW
N.O., N.C.	NORMALLY OPEN, NORMALLY CLOSED
C.O.	RACEWAY ONLY
MC	METALLIC CONDUIT
NMC	NON-METALLIC CONDUIT
GRS	GALVANIZED RIGID STEEL CONDUIT
PVC	POLYVINYL CHLORIDE CONDUIT
IMC	INTERMEDIATE METAL CONDUIT
TEL	TELEPHONE
GND	GROUND
FUT	FUTURE
ELEV	ELEVATION, ELEVATOR
MTD	MOUNTED
MTG	MOUNTING
AFF	ABOVE FINISH FLOOR
FLR	FLOOR
RTU	REMOTE TERMINAL UNIT
ZC	ZONE CONTROL
4'-6"	MOUNTING HEIGHT TO C OF OUTLET ABOVE FINISHED FLOOR
IC	INTERCOM
OMPR	DAMPER
MTR	MOTOR
HTR	HEATER
EXH	EXHAUST
COMPT	COMPARTMENT
SW	SWITCH
FS	FLOW SWITCH
T	TEMPERATURE SWITCH
TS	TORQUE SWITCH
GDPC	GAS DETECTION CONTROL PANEL
GFI	GROUND FAULT INTERRUPTER
U.O.N.	UNLESS OTHERWISE NOTED

COMMUNICATIONS SYMBOL

	TRACTION POWER EMERGENCY TRIP STATION OUTLET.
	MAINTENANCE TELEPHONE JACK OUTLET 4"x4"x2 1/8" D
	ADMINISTRATIVE TELEPHONE
	FIRE TELEPHONE OUTLET - 4"x4"x2 1/8" D.
	EMERGENCY TELEPHONE OUTLET - 4"x4"x2 1/8" D.
	ADMINISTRATIVE TELEPHONE OUTLET - 4"x4"x2 1/8" D.
	INTERIOR SPEAKER BACKBOX PER LETTER AS FOLLOWS: F-FLUSH MTD, S-SURFACE MTD.
	HORN TYPE SPEAKER OUTLET.
	DETECTOR, OUTLET - 4"x4"x2 1/8" D TYPE PER LETTER AS FOLLOWS: S - SMOKE - IONIZATION R - THERMAL RATE OF RISE D - DUCT TYPE SMOKE DETECTOR. - GAS - METHANE.
	INTRUSION DETECTOR, OUTLET - 4"x4"x2 1/8" D TYPE PER LETTER AS FOLLOWS: H - HINGE DETECTOR.

DUPLICATE ORIGINAL

REV	DATE	BY	SUB.	APP.	DESCRIPTION
1	04-20-84	PLH	NO	APP	REVISED PER CRG-501
2	04-20-84	PLH	NO	APP	REVISED PER CRG-501

REV	DATE	BY	SUB.	APP.	DESCRIPTION
1	04-20-84	PLH	NO	APP	REVISED PER CRG-501
2	04-20-84	PLH	NO	APP	REVISED PER CRG-501

DESIGNED BY
W. Garcia

CHECKED BY
R. G. G. G.

DATE
2-26-85

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBQD
GENERAL CONSULTANTS

APPROVED
David J. Hall

MAIN YARD AND SHOPS
YARD LEADS

SYMBOL LIST AND ABBREVIATIONS-2

CONTRACT NO.
A130

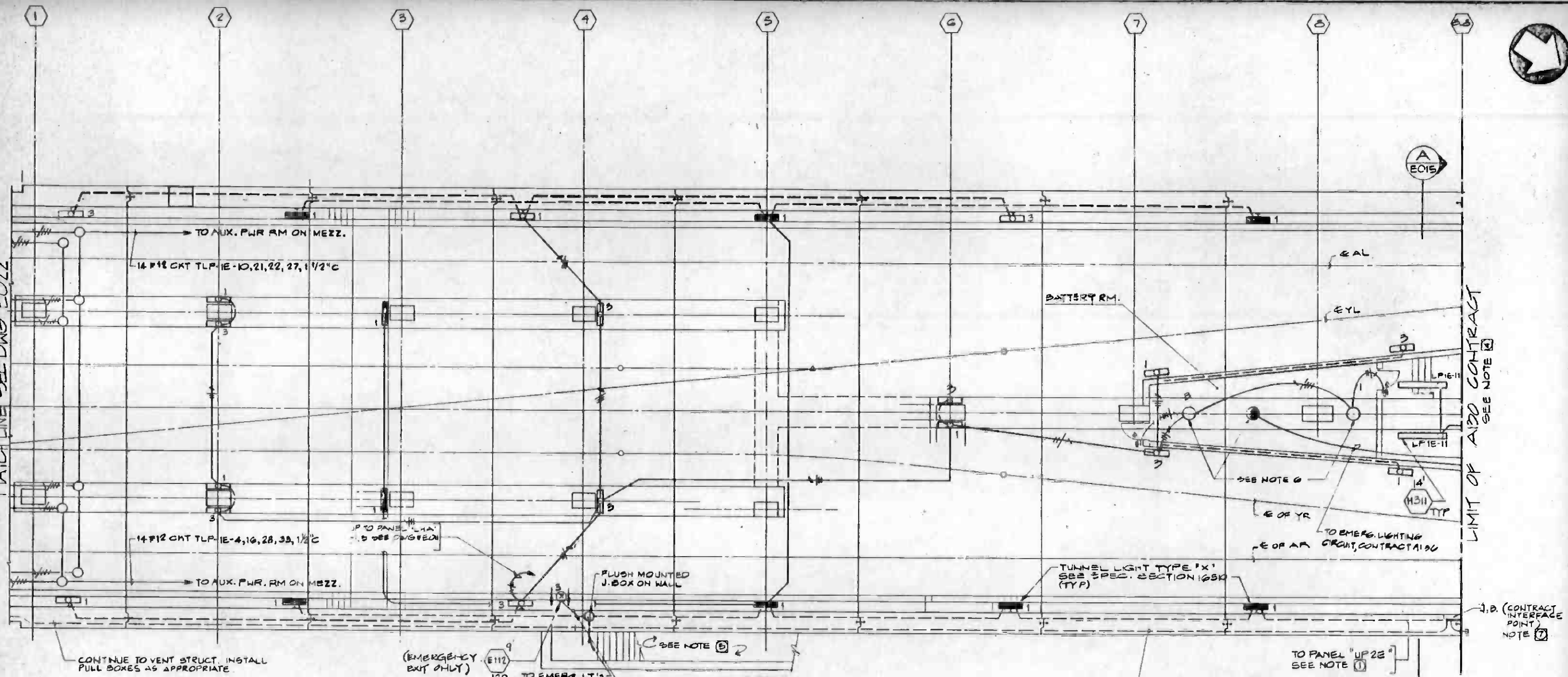
DRAWING NO.
E 002

SCALE
NO SCALE

SHEET NO.
A620/67



MATCH LINE SEE DWG E022



NOTES:

- ① PANEL "UP 2E" IS LOCATED IN A130 CONTRACT AREA. (SEE "GENERAL CONSTRUCTION NOTES" DWG E002)
- ② DELETED
- ③ DELETED
- ④ FOR COORDINATION SEE A130 CONTRACT DWG # E018P.
- ⑤ FOR LIGHTING IN THE EMERGENCY EXIT STAIR SEE DETAIL #4 ON DWG # E012.
- ⑥ CLASS I DIVISION II LIGHTING FIXTURE, EQUIVALENT TO CROUSE-HINCH type VMVC, SURFACE MOUNTED.
- ⑦ IF ADJACENT AREA CONTRACT HAS BEEN COMPLETED CONTINUE CONDUITS, WIRING ETC. AS SHOWN HEREON. IF ADJACENT AREA EFFORTS ARE NOT COMPLETED, PROVIDE JUNCTION BOXES FOR TEMPORARY TERMINATION OF CONDUIT RUNS, WIRING, ETC. (TYPICAL FOR ALL LIGHTING)



REV.	DATE	BY	SUB.	APP.	DESCRIPTION
300	1/14	NS			REVISED PER CR5-202

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

REV.	DATE	BY	SUB.	APP.	DESCRIPTION
1078	7/5	AS			REVISED PER CR5-214
1079	8/1	RCL	A 4		REVISED PER CR5-202

APPROVED BY: *W. Varian*
 DRAWN BY: *W. Varian*
 CHECKED BY: *R. J. ...*
 IN CHARGE: *R. J. ...*
 DATE: 2-28-85

REGISTERED PROFESSIONAL ELECTRICAL ENGINEER
 STATE OF CALIFORNIA

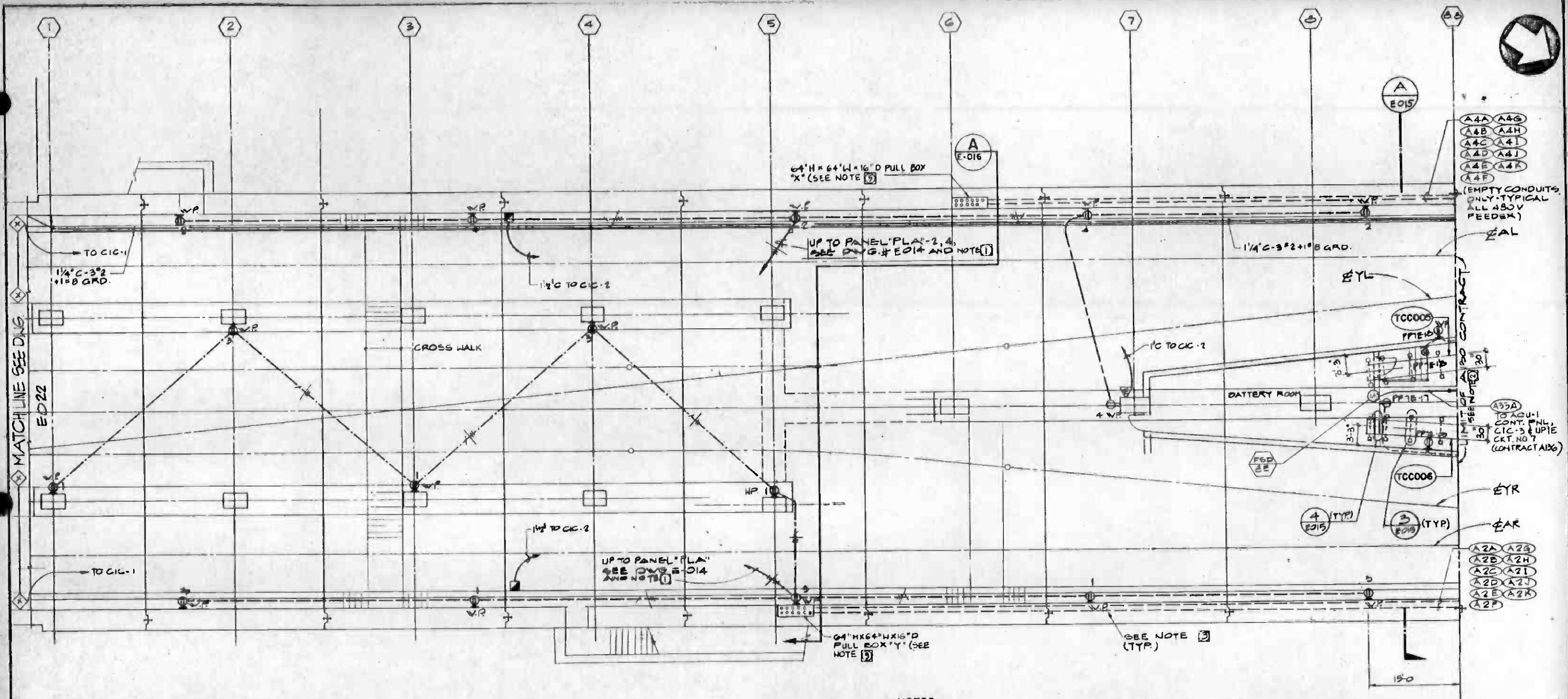
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT

DMJM/PBOD
 GENERAL CONSULTANTS

APPROVED: *[Signature]*

MAIN YARD AND SHOPS
 YARD LEADS
 TRACTION POWER SUBSTATION
 TRACK LEVEL PLAN-LIGHTING

CONTRACT NO. A130
 DRAWING NO. E010
 SCALE 1/8" = 1'-0"
 SHEET NO. A620/68



- NOTES:**
- ① SEE DWG. # E-023 FOR PANEL SCHEDULE
 - ② SEE A136 CONTRACT DWG # E-063F FOR COORDINATION.
 - ③ ALL RECEPTACLES SHALL BE WITH GROUND FAULT INTERRUPTOR PROTECTION
 - ④ DELETED
 - ⑤ BOX AND SCREW PLATE COVER SHALL BE CONSTRUCTED OF MINIMUM 12 GAUGE SHEET STEEL WITH AMPLE SUPPORT AND BRACING FOR STRENGTH AND RIGIDITY, AND SHALL BE SUITABLE AND LISTED FOR USE IN WET LOCATIONS AND SHALL BE CONSTRUCTED AND EQUIPPED ACCORDINGLY SO AS TO PREVENT MOISTURE FROM ENTERING OR ACCUMULATING WITHIN THE BOX OR CONDUITS. BOX AND COVER SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION

AND SHALL HAVE A MINIMUM ZINC COATING OF 3.4 MILS. THE ENTIRE OUTER SURFACES OF THE BOX ONLY SHALL BE COATED WITH AN ASPHALT COMPOUND BEFORE INSTALLATION. AFTER INSTALLATION, BOX AND COVER SHALL BE FIREPROOFED ACCORDING TO THE SPECIFICATIONS.



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REV	DATE	BY	SUB	APP.	DESCRIPTION	REV	DATE	BY	SUB	APP.	DESCRIPTION
1	1-17-85	FSH	AS	Q	REVISED PER CRS-214						
2	2-20-85	RCL	AS	Q	REVISED PER CRS-202						
3		CM			INITIAL ISSUE						

SYMBOLS

ABBREVIATIONS

CONDUCTORS AND RACEWAY

- CO ——— EMPTY CONDUIT
- CONDUIT EMBEDDED IN FLOOR SLAB OR UNDERGROUND (SHOWN HEAVY)
- CONDUIT EMBEDDED IN CEILING OR WALL
- _____ CONDUIT EXPOSED
- PA - RACEWAY IDENTIFICATION BETWEEN OUTLETS
 PA100 - RACEWAY IDENTIFICATION BETWEEN OUTLET AND TERMINATION POINT (IE FINAL STUB-UP TO TERMINAL CABINET, PANEL BOARD, SWITCHBOARD...)
- SYSTEMS IDENTIFICATION ABBREVIATIONS SHALL BE:

 - CA - ADMINISTRATIVE TELEPHONE (ATEL)
 - CC - CUSTOMER ASSISTANCE TELEPHONE
 - CE - EMERGENCY TELEPHONE (ETEL)
 - CF - FIRE TELEPHONE (FTEL)
 - CT - CABLE TRANSMISSION SYSTEM
 - CX - TELEPHONE COMPANY
 - F - POWER FEEDER (480/277V OR 208/120V)
 - FA - FIRE DETECTOR OR ALARM
 - FC - FARE COLLECTION
 - FG - GAS DETECTOR
 - FS - SEISMIC DETECTOR
 - HC - COMMUNICATIONS TIE CABLE (CIC TO ATC & C ROOM)
 - IA - INTRUSION DETECTOR OR ALARM
 - PA - PUBLIC ADDRESS
 - SC - SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA)
 - TV - CLOSED CIRCUIT TELEVISION
- HH HANDHOLE
 - MH MANHOLE
- TRENCH DUCT
 - UNDERGROUND DUCT BANK
 - FLEXIBLE RACEWAY CONNECTION
 - BARE GROUNDING CONDUCTOR
 - EXOTHERMIC WELD CONNECTION
- CONDUIT TURNED UP OR TOWARDS VIEWER
 - CONDUIT TURNED DOWN OR AWAY FROM VIEWER
 - CONDUIT CAPPED

MISCELLANEOUS

- CCTV CAMERA OUTLET
- CCTV MONITOR
- BUZZER
- INTRUSION SENSOR
- PHOTO CELL
- CLOCK OUTLET
- TRACTION POWER EMERGENCY TRIP STATION (ETS)
- CABLEWAY
- TERMINAL CABINET, TYPE AS FOLLOWS:
 TTC - TELEPHONE TERMINAL CABINET
 FTC - FACILITIES TERMINAL CABINET
 CIC - COMMUNICATIONS INTERFACE CABINET
- TELEPHONE

 - MAINTENANCE TELEPHONE JACK (MTEL)
 - FIRE TELEPHONE JACK (FTEL)
 - EMERGENCY TELEPHONE OUTLET (ETEL)
 - CUSTOMER ASSISTANCE TELEPHONE
 - ADMINISTRATIVE TELEPHONE OUTLET (ATEL)
 - PUBLIC PAY TELEPHONE OUTLET
 - TELEPHONE BACK BOARD
 - WEATHERPROOF TELEPHONE

ALL TELEPHONE OUTLETS SHALL BE MOUNTED 12" AFF UNLESS OTHERWISE NOTED IE 48F TELEPHONE OUTLET (48" AFF - FLUSH MOUNT)

PUBLIC ADDRESS

- MICROPHONE
- AMPLIFIER
- INTERIOR SPEAKER BACKBOX PER LETTER AS FOLLOWS: F-FLUSH MTD, S-SURFACE MTD, SC - SUSPENDED CEILING
- EXTERIOR SPEAKER BACKBOX
- HORN TYPE SPEAKER OUTLET
- NOISE MONITOR
- MONITOR SPEAKER

FIRE AND INTRUSION

- PULL STATION FIRE ALARM
- PUSH BUTTON FIRE ALARM
- BELL
- HORN
- STANDPIPE FLOW MONITOR
- FIRE HOSE CABINET MONITOR
- DETECTOR, TYPE PER LETTER AS FOLLOWS:
 L - HEAT, LINE TYPE
 S - SMOKE - IONIZATION
 R - THERMAL RATE OF RISE AND FIXED TEMPERATURE
 P - SMOKE PHOTO-ELECTRIC
 D - DUCT TYPE SMOKE DETECTOR
 E - SEISMIC
 Q - SEISMIC EVENT RECORDER
 X - GAS - METHANE
 Y - GAS - HYDROGEN SULFIDE
 VALVE POSITION MONITOR
- ADD 'F' FOR FIRE ALARM SYSTEM I.E. FOR FIRE HORN

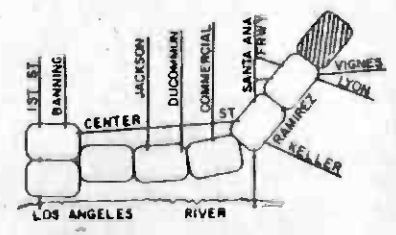
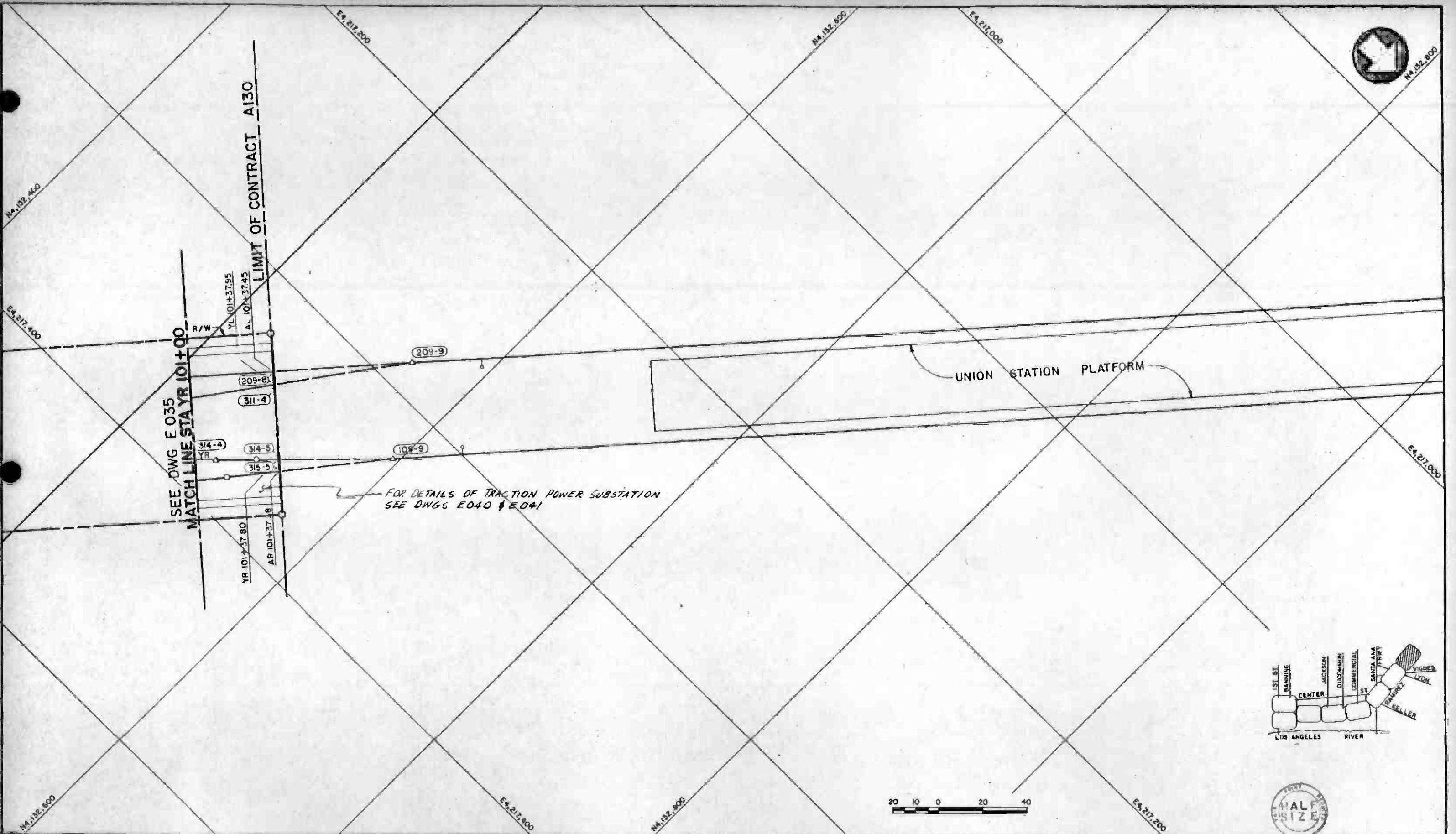
 - DETECTOR, TYPE PER LETTER AS FOLLOWS:
 H - HINGE DETECTOR
 E - ELECTRIC DOOR LOCK
 M - MAGNETIC SWITCH DETECTOR
 P - PLUNGER SWITCH (FLUSH IN DOOR JAMB) DETECTOR
 L - DOOR LATCH DETECTOR
 K - KEY BYPASS SWITCH
 C - CARD OR BADGE READER
- HALON DISCHARGE PANEL
- HALON ABORT SWITCH
- FIRE ALARM CONTROL PANEL



- A/D ANALOG TO DIGITAL
- ACD AUTOMATIC CALL DISTRIBUTOR
- AFF ABOVE FINISHED FLOOR
- ATEL ADMINISTRATIVE TELEPHONE
- BCD BINARY CODED DECIMAL
- CA CABLE
- CATEL CUSTOMER ASSISTANCE TELEPHONE
- CCU COMMUNICATIONS CONTROL UNIT
- CCTV CLOSED CIRCUIT TELEVISION
- CIC COMMUNICATIONS INTERFACE CABINET
- C P FIRE COMMAND POST
- CPU CENTRAL PROCESSING UNIT
- CRT CATHODE RAY TUBE
- CTS CABLE TRANSMISSION SUBSYSTEM
- D/A DIGITAL TO ANALOG
- DID DIRECT INWARD DIALING
- DOD DIRECT OUTWARD DIALING
- DTMF DUAL TONE MULTI-FREQUENCY
- EMP EMERGENCY MANAGEMENT PANEL
- ETEL EMERGENCY TELEPHONE
- ETS EMERGENCY TRIP STATION - TRACTION POWER
- FSCP FIRE / SECURITY CONTROL PANEL
- FTEL FIRE TELEPHONE
- FXO FOREIGN EXCHANGE OFFICE
- FXS FOREIGN EXCHANGE SUBSCRIBER
- GRS GALVANIZED RIGID STEEL
- HH HANDHOLE
- HSM HYDROGEN SULFIDE MONITOR
- INT INTRUSION
- I/O INPUT/OUTPUT
- JB JUNCTION BOX
- MDF MAIN DISTRIBUTION FRAME
- MD METHANE DETECTOR
- MH MANHOLE
- MTEL MAINTENANCE TELEPHONE
- NIC NOT IN CONTRACT
- PA PUBLIC ADDRESS
- PABX PRIVATE AUTOMATIC BRANCH EXCHANGE
- PCM PULSE CODED MODULATION
- PR PAIR
- PROT PROTECTOR TERMINAL
- REA RURAL ELECTRIFICATION ADMINISTRATION
- SCADA SUPERVISORY CONTROL AND DATA ACQUISITION
- SER SEISMIC EVENT RECORDER
- SCRTD SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
- SPL SOUND PRESSURE LEVEL
- SS SEISMIC SWITCH
- SST SPECIAL SERVICES TELEPHONE
- TB TERMINAL BOARD
- TBK TERMINAL BLOCK
- ATC & C AUTOMATIC TRAIN CONTROL & COMMUNICATIONS
- TERM TERMINAL
- TPSS TRACTION POWER SUBSTATION
- TTC TELEPHONE TERMINAL CABINET
- UPS UNINTERRUPTIBLE POWER SUPPLY
- VTR VIDEO TAPE RECORDER

DUPLICATE ORIGINAL

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SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT										DMJM/PROQ/KE/HWA GENERAL CONSULTANTS		SUBMITTED <i>Philip S. Aldine</i> APPROVED <i>PH</i>		CONTRACT NO. A130 DRAWING NO. E116 SCALE NO SCALE SHEET NO. A620/70					
MAIN YARD AND SHOPS YARD LEADS COMMUNICATIONS SYSTEM SYMBOL LIST AND ABBREVIATIONS-3										REV. DATE BY SUB APP DESCRIPTION		REV. DATE BY SUB APP DESCRIPTION		REV. DATE BY SUB APP DESCRIPTION		REV. DATE BY SUB APP DESCRIPTION			



REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY
L.W. SMICH

DRAWN BY
C. SIRIPAT

CHECKED BY
[Signature]

IN CHARGE
[Signature]

DATE
2-20-85

CM

INITIAL ISSUE

REGISTERED PROFESSIONAL ELECTRICIAN
ALBERT H. LAWSON
No. 2242
STATE OF CALIFORNIA

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT

DMJM/PBOD
SUBMITTED *[Signature]*

DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS
APPROVED *[Signature]*

ATQ

MAIN YARD AND SHOPS YARD LEADS

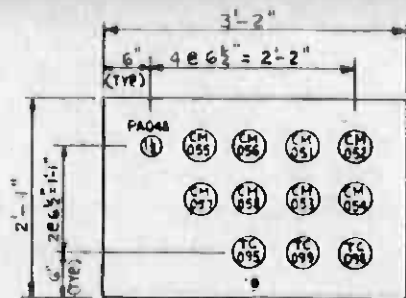
UNDERGROUND DUCT BANKS-8

CONTRACT NO. **A130**

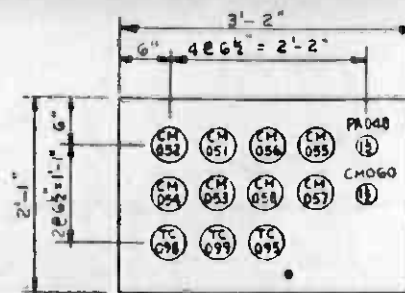
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SCALE **1" = 20'**

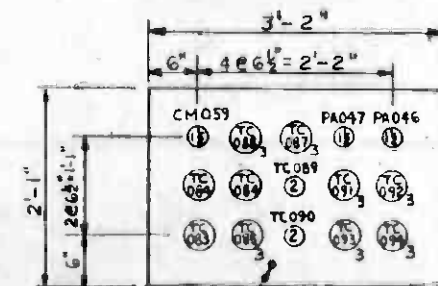
SHEET NO. **A620 / 78**



DETAIL 2
 LOOKING NORTH FROM C15 E-044, E-053
 SECTION CO
 LOOKING NORTH FROM C15 E-044, E-031



DETAIL 3
 LOOKING SOUTH FROM C16 E044, E054
 SECTION CP
 LOOKING SOUTH FROM C16 E044, E031
 E052

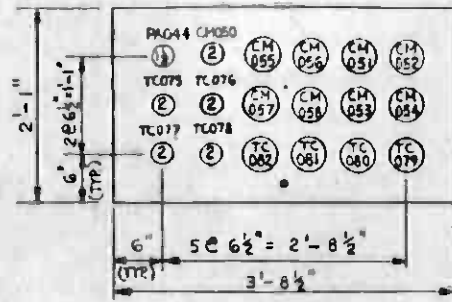


DETAIL 4
 LOOKING WEST FROM C16 E044, E054
 SECTION CR
 LOOKING WEST FROM C16 E044, E032

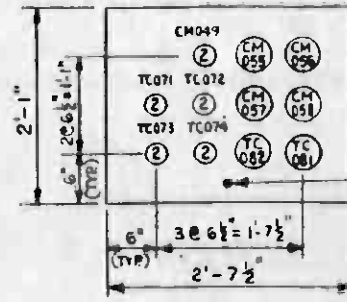
* BARE COPPER
 GND. LOOP (TYPICAL
 IN ALL DUCT BANKS)



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REV.	DATE	BY	SUB.	APP.	DESCRIPTION	REV.	DATE	BY	SUB.	APP.	DESCRIPTION	11-1-85 PSH AS Q REVISED PER CR 5-214 10-6-85 RCL AS Q REVISED PER CR 5-202 CM INITIAL ISSUE		DMJM/PBQD GENERAL CONSULTANTS <i>[Signature]</i> APPROVED		REV B					

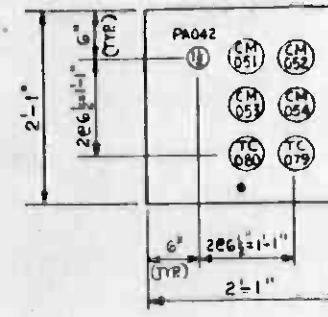


DETAIL 1
LOOKING NORTH FROM C16
SECTION
LOOKING NORTH FROM C16

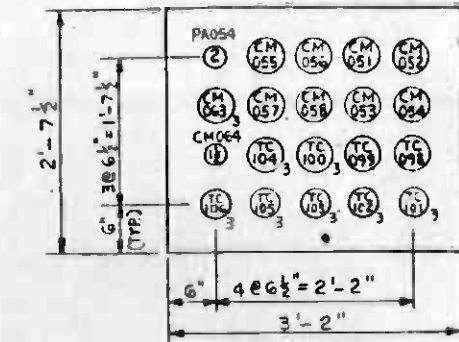


DETAIL 3
LOOKING WEST FROM C17
SECTION
LOOKING EAST

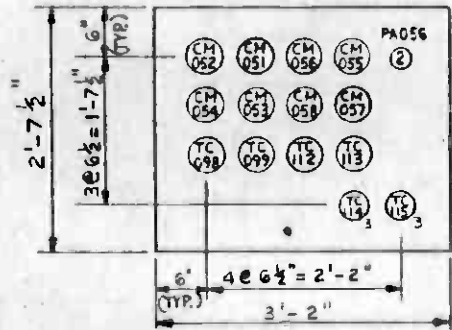
*4 BARE COPPER
GRD LOOP TYP.
IN ALL DUCTBANK



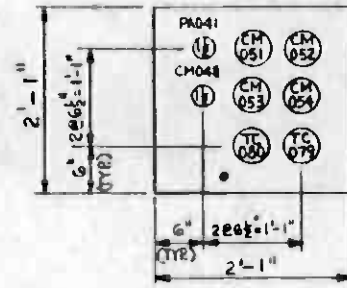
DETAIL 4
LOOKING NORTH FROM C17
SECTION
LOOKING NORTH



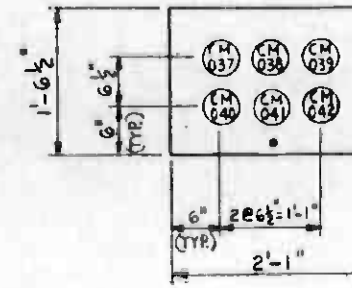
DETAIL 5
LOOKING NORTH FROM C12
SECTION
LOOKING NORTH



DETAIL 6
LOOKING SOUTH FROM C12
SECTION
LOOKING SOUTH



DETAIL 7
LOOKING WEST FROM C18
DETAIL 8
LOOKING SOUTH FROM C18
SECTION
LOOKING SOUTH



SECTION CW
LOOKING NORTH

NOTE

FOR CONDUIT DUCTBANK REINFORCEMENT SEE STRUCTURAL DWA. S-087.



REV	DATE	BY	SUB	APP	DESCRIPTION
0-000					REVISED PER CAG-001

REV	DATE	BY	SUB	APP	DESCRIPTION
0-000					REVISED PER CAG-202
0-000					ISSUE

DESIGNED BY
J. SMICH
DRAWN BY
VINH V. HOANG
CHECKED BY
Robert T. Buckley
DATE
2-28-85

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

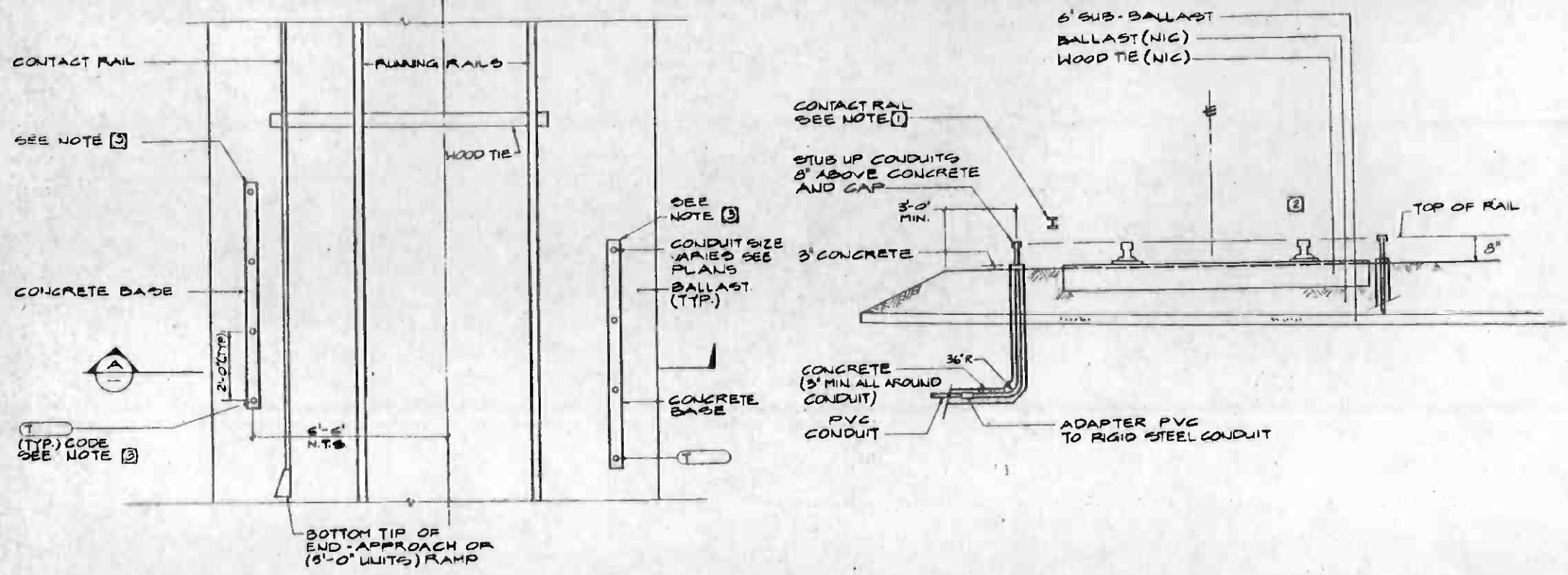
DMJM/PBOD
SUBMITTER

DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS
APPROVED

MAIN YARD AND SHOPS
YARD LEADS

P.A. & COMMUNICATIONS DUCT BANK
DETAILS & SECTIONS-3

CONTRACT NO.
A 130
DRAWING NO.
E 045
SCALE
N.T.S.
SHEET NO.
A620/81

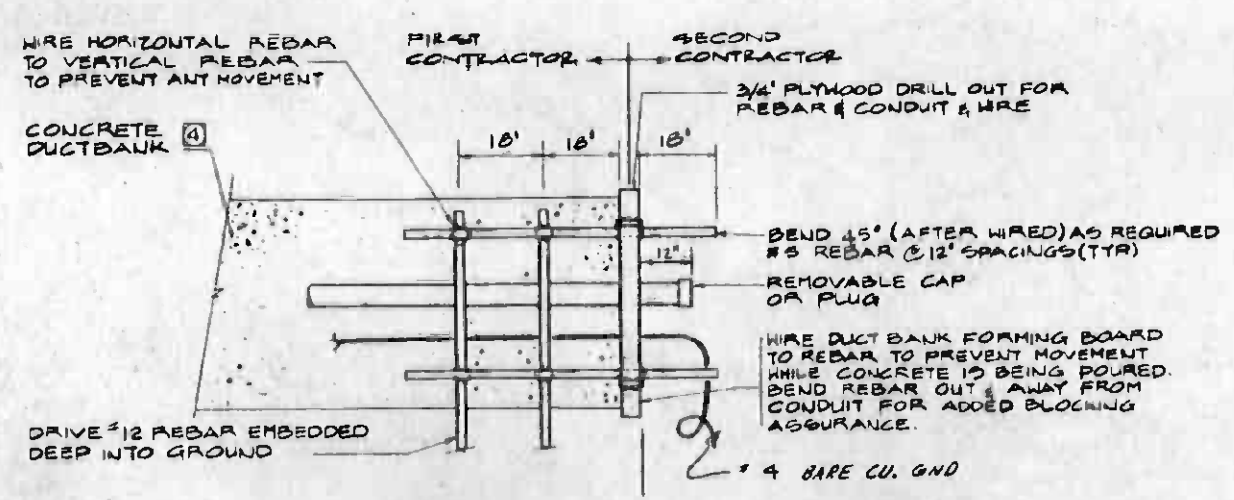


NOTES:

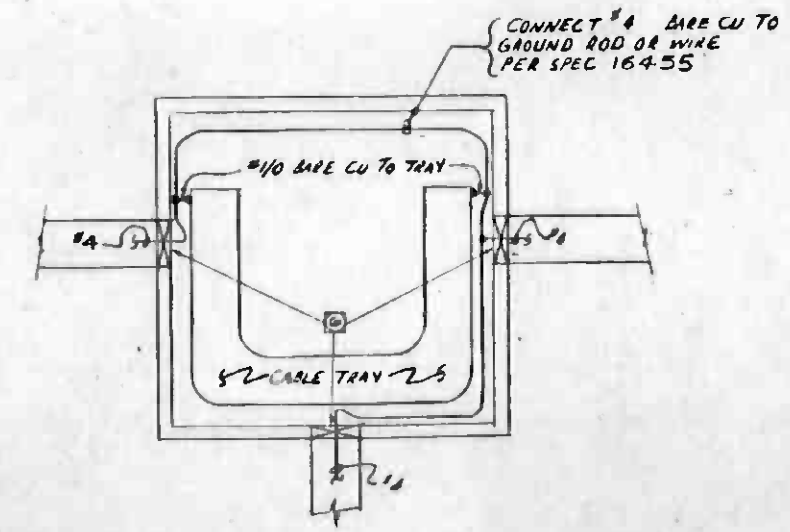
- ① PROTECTIVE COVERBOARD NOT SHOWN FOR CLARITY.
- ② FOR TRACKWORK INSTALLATION AND BALLAST DETAILS SEE TRACKWORK DRAWING
- ③ FOR NUMBER OF CONDUIT/SIZES AND LOCATIONS SEE PLANS (COORDINATE CODES) PARALLEL TO TRACK E
- ④ FOR DUCTBANK REINFORCEMENT SEE STRUCTURAL DWG. 5087
- ⑤ FOR CONSTRUCTION OF MANHOLES SEE STRUCTURAL DWG. 5087
- ⑥ ALL CONDUITS SHALL HAVE END BELLS WHERE ENTERING MANHOLES & HANDHOLES

PLAN DETAIL
SCALE 1/2" = 1'-0"
① TYP

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



DUCT BANK INTERFACE DETAIL
NOT TO SCALE
② TYP



TYPICAL MANHOLE GROUNDING
NOT TO SCALE
③



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA		DESIGNED BY J. SMICH DRAWN BY VINH V. HOANG CHECKED BY <i>[Signature]</i> IN CHARGE <i>[Signature]</i> DATE 2-28-85	REGISTERED PROFESSIONAL ENGINEER ALBERT W. LARSON No. 2442 ELECTRICAL STATE OF CALIFORNIA	SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT DMJM/PBQD SUBMITTED <i>[Signature]</i>	DMJM/PBQD/KE/HWA GENERAL CONSULTANTS APPROVED <i>[Signature]</i>	CONTRACT NO. A 130 DRAWING NO. E 046 SCALE AS NOTED SHEET NO. A 620/82	MAIN YARD AND SHOPS YARD LEADS MISCELLANEOUS ELECTRICAL DETAILS
REV. DATE BY SUB APP DESCRIPTION	REV. DATE BY SUB APP DESCRIPTION	13-17-85 <i>[Signature]</i> AS @ REVISED PER CRS-214 10-28-85 <i>[Signature]</i> AS @ REVISED PER CRS-507 10-28-85 <i>[Signature]</i> AS @ REVISED PER CRS-214					

MANHOLE/HANDHOLE LOCATION TABULATION					
M.H. OR H.H. NO.	PLAN DWG.	CO-ORDINATE CODES		VOLTAGE LEVEL	VEHICLE CAT. NO. OR EQUAL
		SW	NE		
AHH8	E030	W1708	W1708	34.5KV	4'-0" X 6'-0" X 6'-0" DP BLOCKS 500MM SELES
AHH9	E030	W1733	W1731		4'-0" X 6'-0" X 6'-0" DP BLOCKS 500MM SELES
AHH10	E031	W1748	W1746		4'-0" X 6'-0" X 6'-0" DP BLOCKS 500MM SELES
AHH11	E032	W1758	W1756		4'-0" X 6'-0" X 6'-0" DP BLOCKS 500MM SELES
AHH12	E032	W1776	W1776		4'-0" X 6'-0" X 6'-0" DP BLOCKS 500MM SELES
AHH13	E033	W1793	W1791		4'-0" X 6'-0" X 6'-0" DP BLOCKS 500MM SELES
A14	E034	W1823	W1821	34.5KV	
A15	E034	W1798	W1796		
A16	E035	W1603	W1801		
A17	E041	W1813	W1811		
C12	E030	W1708	W1701	COMM.	
C14	E031	W1728	W1726		
C15	E031	W1743	W1741		
C16	E032	W1768	W1766		
C17	E032	W1773	W1771		
C18	E032	W1783	W1781		
CHH8	E030	W1718	W1716	COMM.	4'-0" X 6'-0" X 6'-0" DP BLOCKS 500MM SELES
L11	E031	W1753	W1751	480V	
LH12	E030	W1713	W1711		
LH13	E030	W1723	W1721		
LH14	E031	W1738	W1736		

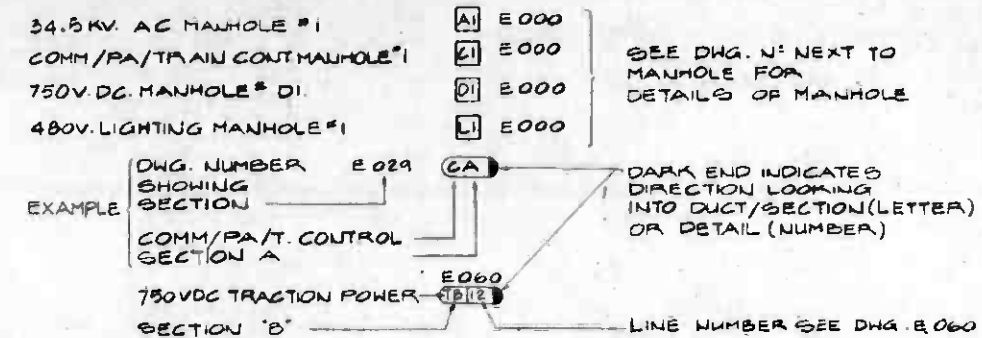
CONCRETE CONTRACTOR SHALL MAINTAIN HORIZ & VERTICAL SEPARATION BETWEEN DUCTBANKS AS SHOWN BELOW.

DUCT BANK HORIZ & VERTICAL SEPARATION CRITERIA

VOLTAGE	PA	COMM	TC	480	750	34.5
PA 70V. AC	-	15*	0	2'	3'	4'
COMM. 480V. DC	10*	-	0	2'	3'	4'
TRAIN CONTROL 130/24V DC	0	0	-	2'	3'	4'
480V. LTG.	2'	2'	2'	-	2'	4'
750V. DC	3'	3'	3'	2'	-	2'
34.5 KV AC	4'	4'	4'	3'	2'	-

EXCEPT:
1'-0" IS OK FOR VERTICAL SEPARATION, WHERE DUCTBANKS CROSS @ 90° FOR MINIMUM (-) 15°
* WHERE NOT IN DUCTBANK

DUCT BANK LEGEND	
EXPLANATION	SYMBOL
34.5 KV. DUCT BANK	—(A)—
750V. DC. DUCT BANK	---(D)---
480V. LTG. DUCT BANK	---(L)---
COMMUNICATION/PA & TRAIN CONTROL	---(C)---

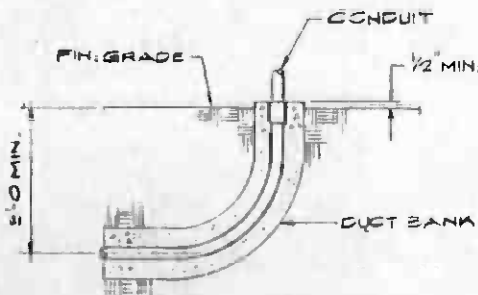


NOTES

- A FOUR DIGIT CODE IS USED TO LOCATE ALL MANHOLES, DUCTBANKS, & CONDUIT STUB-UPS, AS SHOWN BELOW.
 - (A)XXXX A = 34.5KV. LOCATIONS
 - (C)XXXX C = COMMUNICATIONS/TRAIN CONTROL OR PUBLIC ADDRESS LOCATIONS
 - (D)XXXX D = 750V. DC. LOCATIONS
 - (L)XXXX L = 480V. LIGHTING LOCATIONS
 - (T)XXXX T = 750V. DC. TRACTION POWER STUB-UPS
 - (W)XXXX W = INDICATES A CO-ORDINATE FOR WORK POINTS OF DUCTBANKS WHERE CHANGE IN DIRECTION OR ELEVATION IS REQUIRED.
- ALL CABLE TRAYS TO BE STEEL TYPE PER SPECIFICATION SECTION 16050.
- FOR DUCTBANK REINFORCEMENT SEE STRUCTURAL Q&A 6087.
- DELETED

ABBREVIATIONS

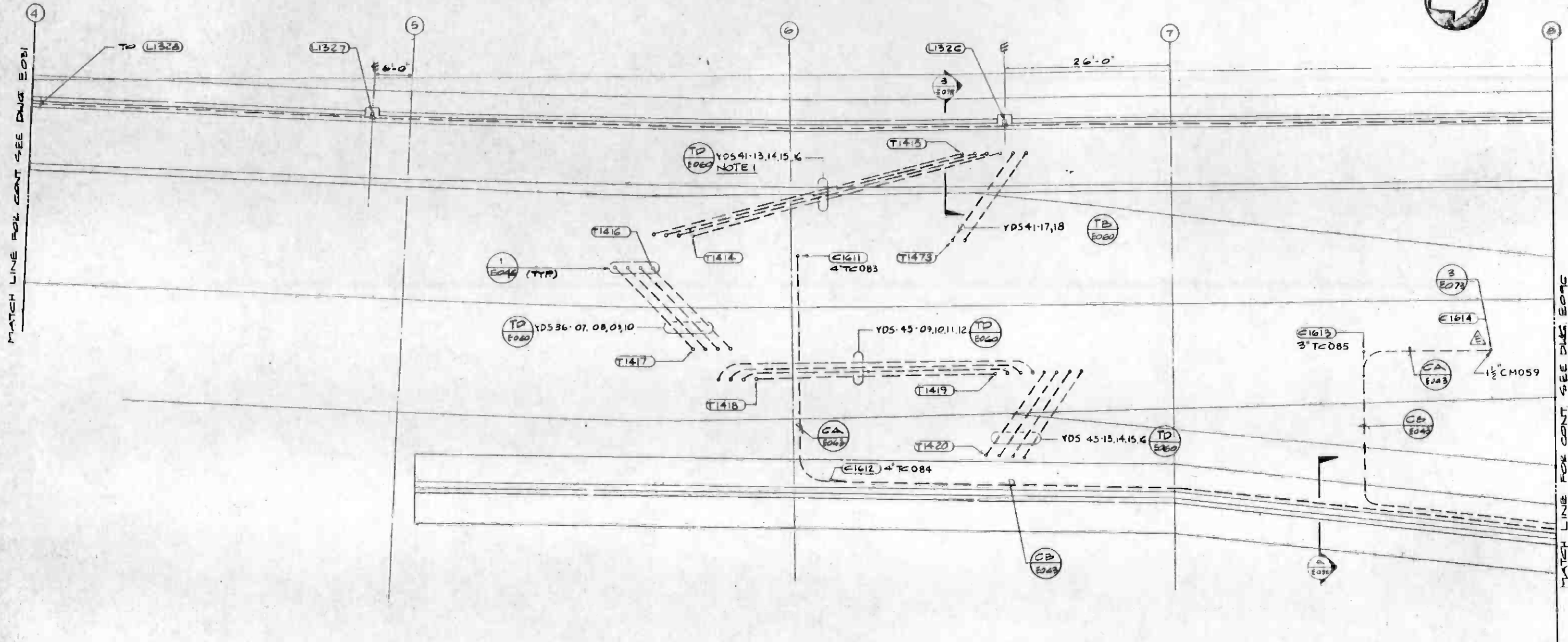
PA = PUBLIC ADDRESS SPEAKER (USUALLY ON LTG. POLES)



DUCT BANK RISER 1 E074



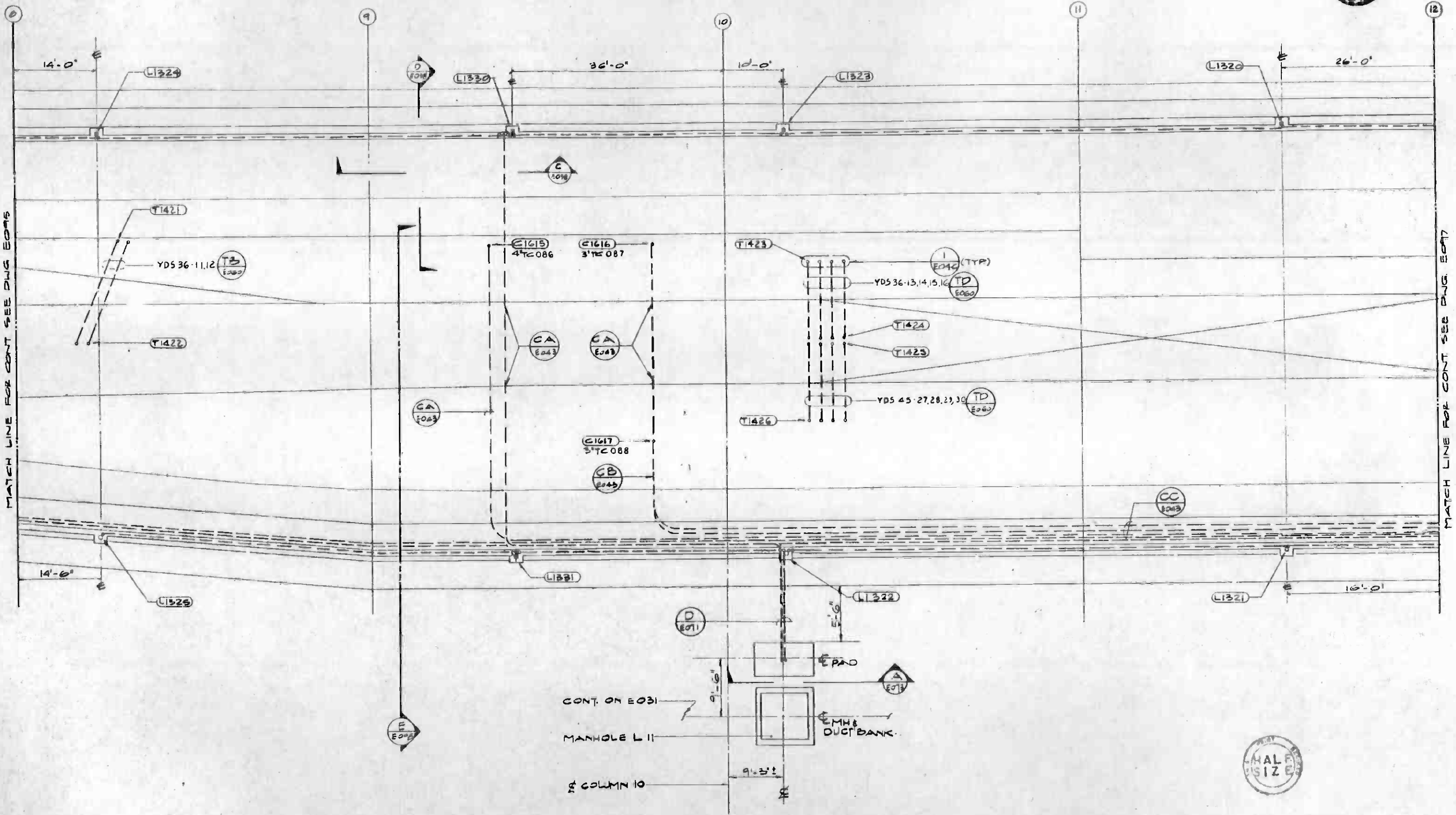
THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DESIGNED BY J. SMICH DRAWN BY VINH V. HOANG CHECKED BY F. W. WILSON IN CHARGE DATE 2-28-85	SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT DMJM/PBOD GENERAL CONSULTANTS APPROVED: [Signature]	MAIN YARD AND SHOPS YARD LEADS UNDERGROUND YARD FACILITIES LEGEND-SYMBOLS-NOTES	CONTRACT NO. A A130 DRAWING NO. E 074 REV 2 SCALE NONE SHEET NO. A620/92
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NOTE
 1. CONTRACTOR TO INSTALL PERMANENT MARKER AT THE CAP OF STUB-UP CONDUITS.



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY J. SMICH DRAWN BY G. SIRIPAT		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT				CONTRACT NO. A 130	
10-17-84 PSH AS 11-17-84 RCL AS 1-17-85 CM				CHECKED BY <i>[Signature]</i> IN CHARGE <i>[Signature]</i> DATE 2-28-85		DMJM/PBQD A JOINT VENTURE <i>[Signature]</i> SUBMITTED		DMJM/PBQD/KE/HWA A JOINT VENTURE GENERAL CONSULTANTS <i>[Signature]</i> APPROVED		DRAWING NO. E 095	
REVISED PER CR6-507				REVISED PER CR5-214 REVISED PER CR5-202 INITIAL ISSUE		MAIN YARD AND SHOPS YARD LEADS		DRAWING NO. E 095		REV. 3	
REV. DATE BY SUB APP DESCRIPTION				REV. DATE BY SUB APP DESCRIPTION		PLAN-EMBEDDED CONDUIT - 1		SCALE 1/8" = 1'-0"		SHEET NO. A620/93	



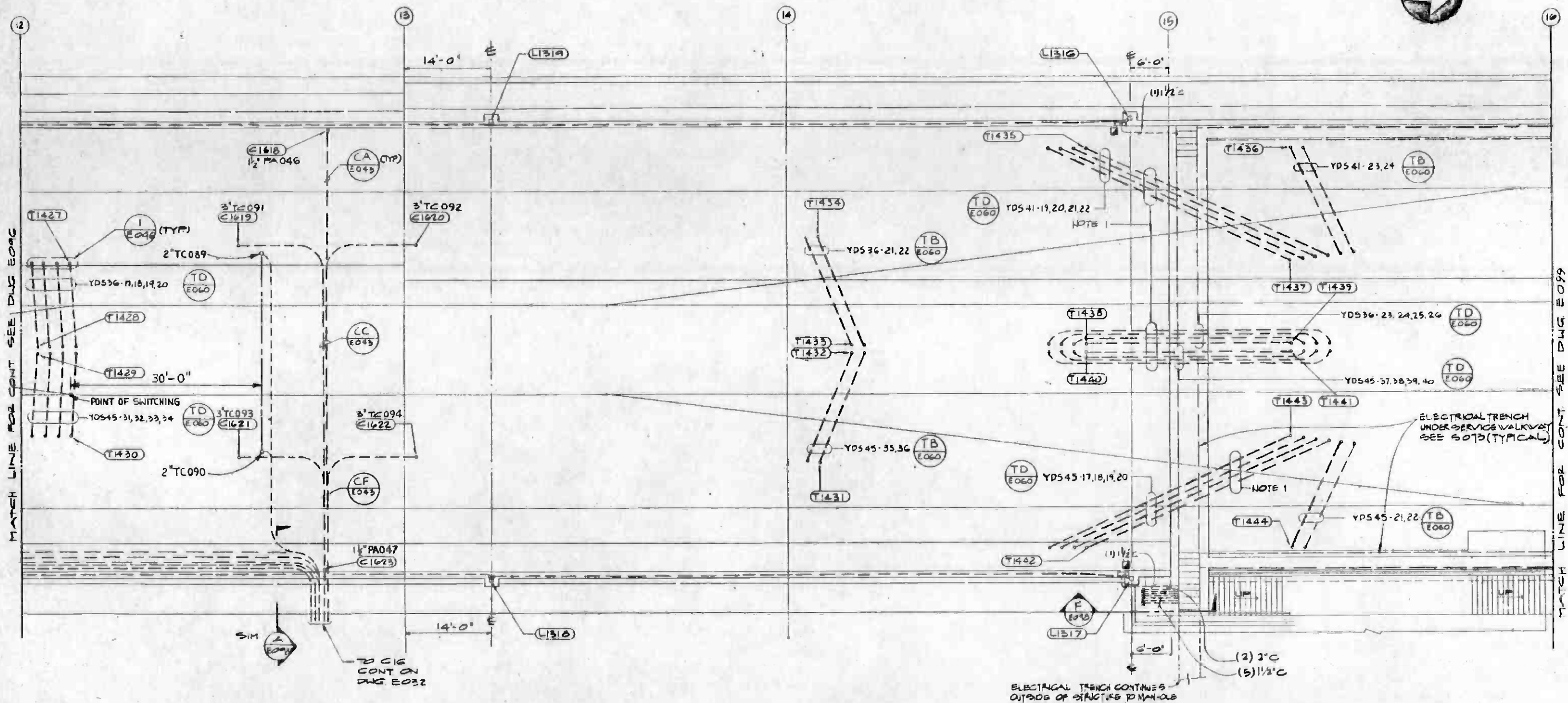
MATCH LINE FOR CONT SEE DWG E075

MATCH LINE FOR CONT SEE DWG E077

CONT. ON E031
 MANHOLE L II
 2ND COLUMN 10



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DESIGNED BY J. SMICH DRAWN BY COHIPAT. CHECKED BY <i>[Signature]</i> IN CHARGE <i>[Signature]</i> DATE 2-28-85	REGISTERED PROFESSIONAL ELECTRICAL ENGINEER 7242 Law STATE OF CALIFORNIA	SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT DMJM/PBQD A 4017 2570		MAIN YARD AND SHOPS YARD LEADS PLAN - EMBEDDED CONDUIT - 2	CONTRACT NO. A 130 DRAWING NO. E 096 SCALE 1/8" = 1' - 0" SHEET NO. A620/94
REV. DATE BY SUB APP DESCRIPTION	REV. DATE BY SUB APP DESCRIPTION	WEM 2-28-85 RCL A S REVISED PER CRG-507 REVISED PER CR5-202 INITIAL ISSUE	APPROVED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	GENERAL CONSULTANTS	REV. 2	



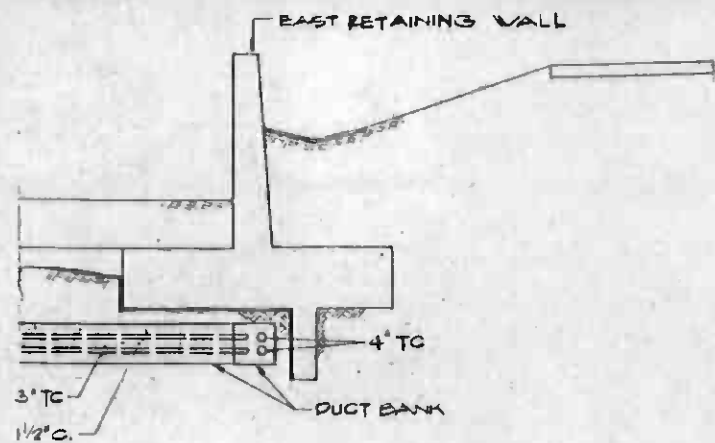
MATCH LINE FOR CONT SEE DWG E096

MATCH LINE FOR CONT SEE DWG E099

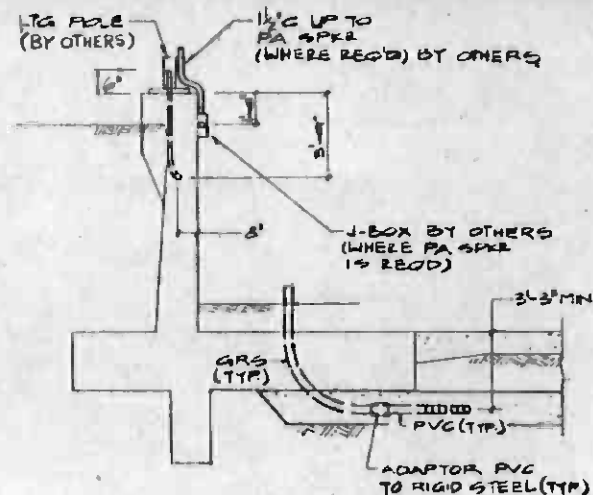
NOTES
 1. THESE FOUR SETS OF CONDUITS ARE TO CROSS UNDER THE CROSSWALK STRUCTURES.



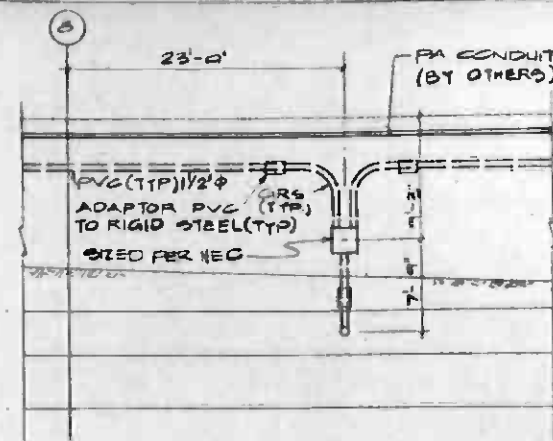
THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.										DESIGNED BY J. SMICH			SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT			MAIN YARD AND SHOPS YARD LEADS		CONTRACT NO. A 130	
REVISED PER CAG-507										DRAWN BY CSIRIPAT.			DRAWING NO. E097			REV. 2			
REVISED PER CR5-202										CHECKED BY Larry W...			SCALE 1/8" = 1'-0"			SHEET NO. A620/95			
INITIAL ISSUE										IN CHARGE Robert K. Larson			APPROVED [Signature]			DATE 2-26-85			
REV	DATE	BY	SUB	APP	DESCRIPTION	REV	DATE	BY	SUB	APP	DESCRIPTION	SUBMITTED [Signature]		APPROVED [Signature]		GENERAL CONSULTANTS DMJM/PBOD/KE/HWA		PLAN-EMBEDDED CONDUIT- 3	



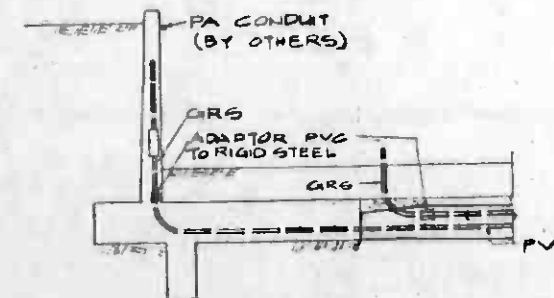
SECTION **A** LOOKING NORTH
HTB E093 E095 E097



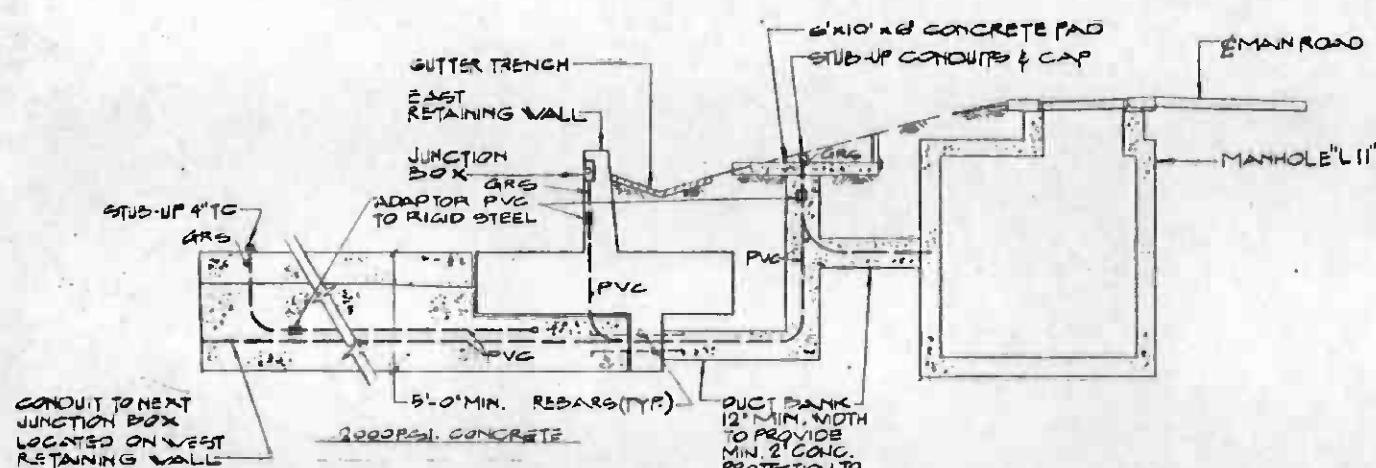
SECTION **B** LOOKING NORTH
HTB E097 E095
OPPOSITE HAND FOR EAST RETAINING WALL



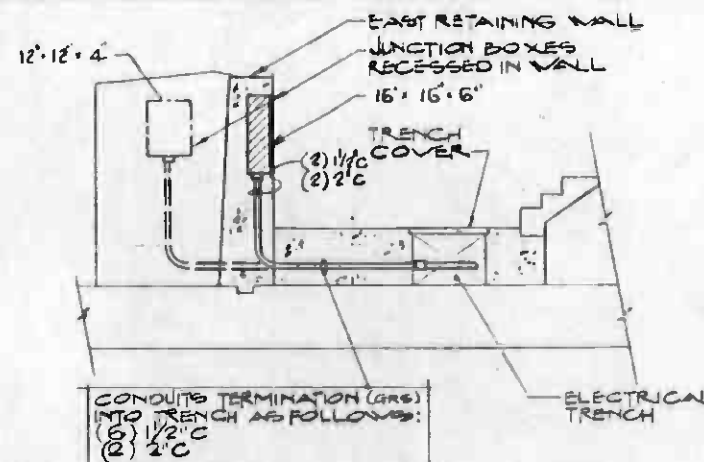
SECTION **C** SCALE 1/2"=1'-0"
E095 E096



SECTION **D**
HTB E095 E096



SECTION **E** (TYP) NOT TO SCALE
E095 E096 E071



SECTION **F** NOT TO SCALE
E095 E097



REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.					
DESIGNED BY	J. SMITH	REVISED PER	CRG-907	CHECKED BY	
DRAWN BY	C. S. RIPAT	REVISED PER	CRG-202	IN CHARGE	
DATE	2-28-85	INITIAL	12312	DATE	

DESIGNED BY
J. SMITH
DRAWN BY
C. S. RIPAT
CHECKED BY

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

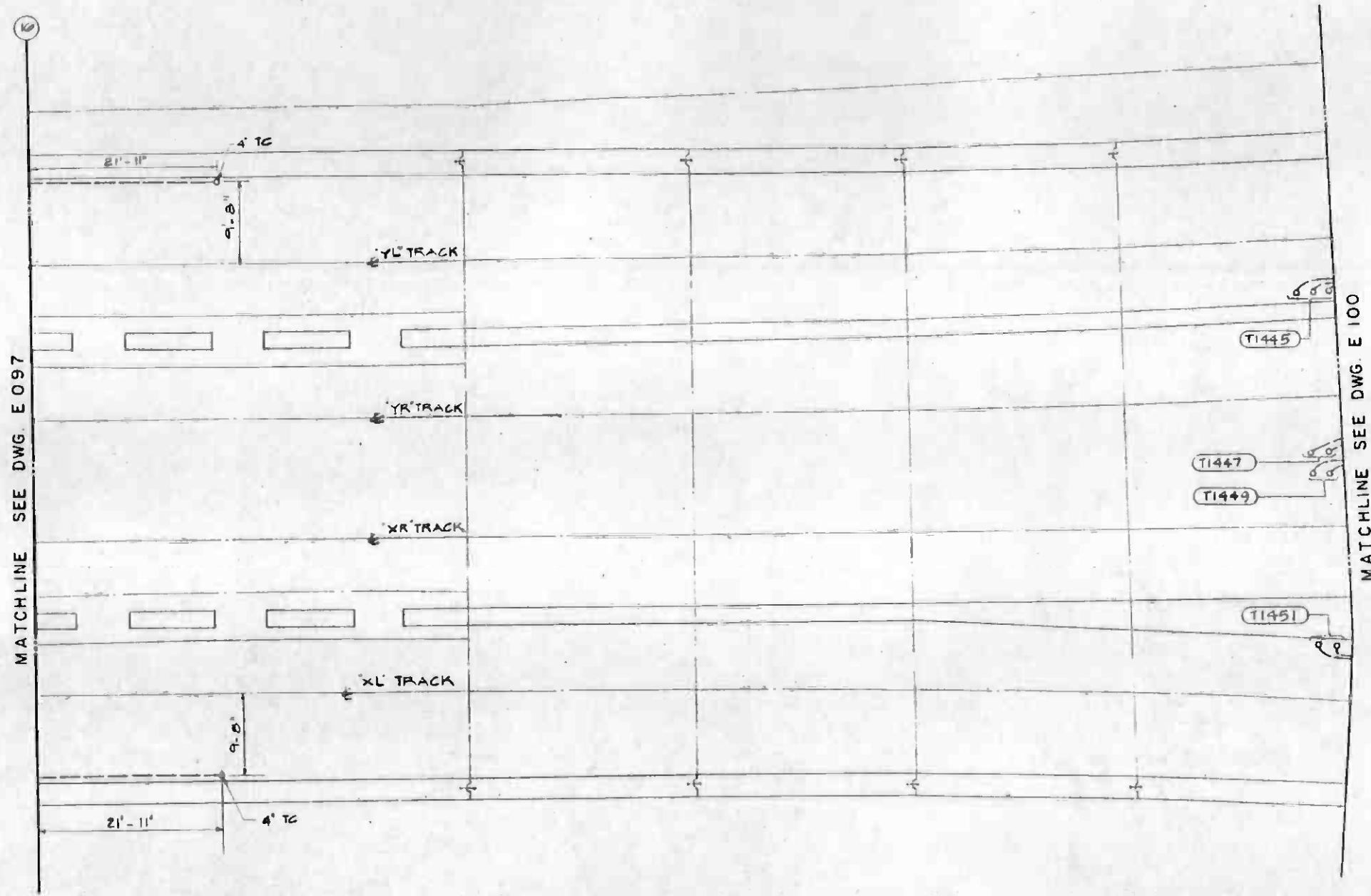
DMJM/PBOD
GENERAL CONSULTANTS

APPROVED: *[Signature]*

MAIN YARD AND SHOPS
YARD LEADS

EMBEDDED CONDUIT SECTIONS

CONTRACT NO.	A 130
DRAWING NO.	E 098
SCALE	AS NOTED
SHEET NO.	A620/96



REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA

DESIGNED BY
J SMICH

DRAWN BY
VINNY HOANG

CHECKED BY
[Signature]

IN CHARGE
[Signature]

DATE
2-28-95

REVISD PER CR5-214

INITIAL ISSU:

ALBERT H. LANDAU
REGISTERED ELECTRICAL ENGINEER
No. 7242
STATE OF CALIFORNIA

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBQD
GENERAL CONSULTANTS

DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

APPROVED
[Signature]

MAIN YARD AND SHOPS
YARD LEADS

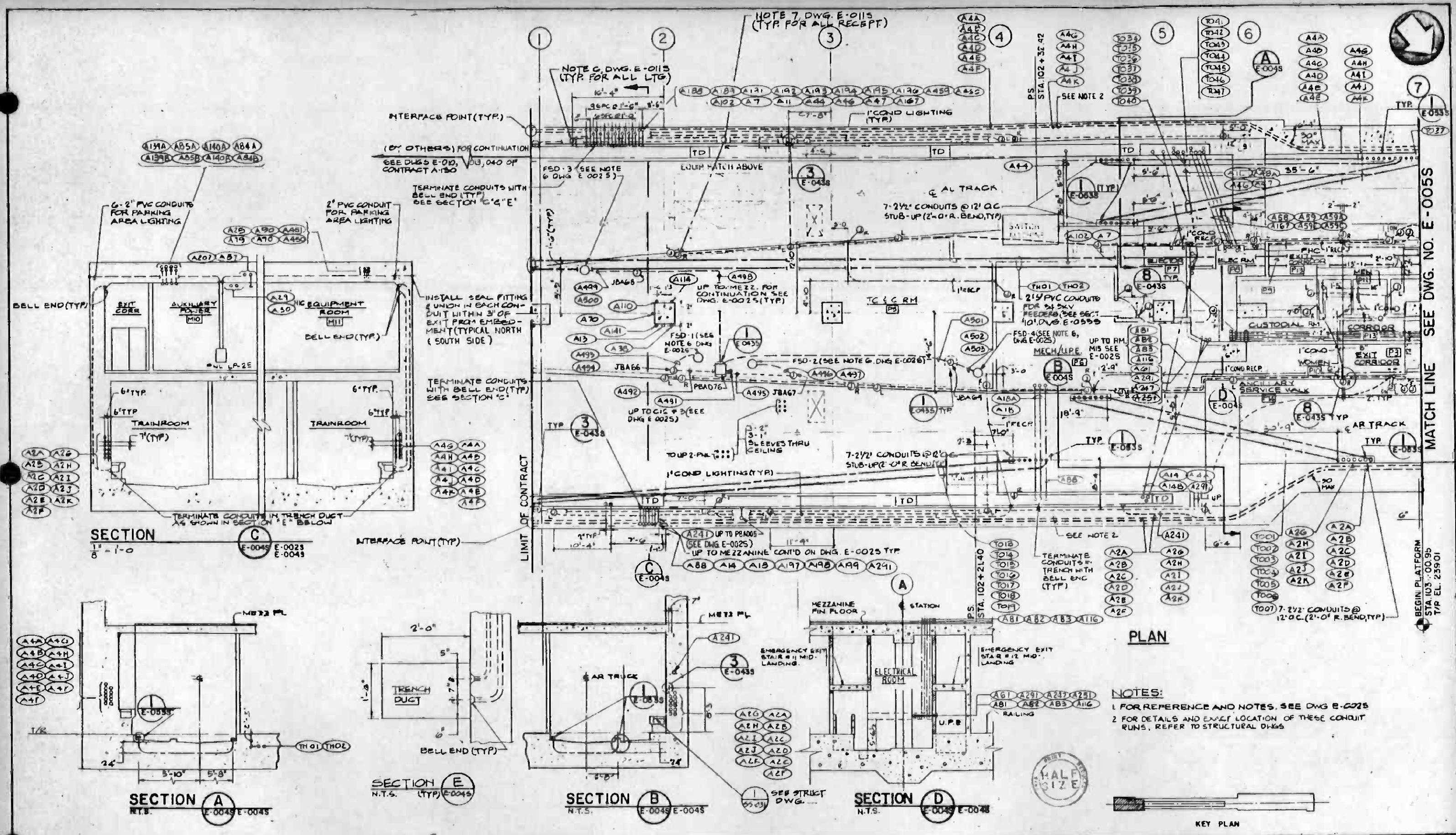
PLAN-EMBEDDED CONDUIT - 4

CONTRACT NO.
A 130

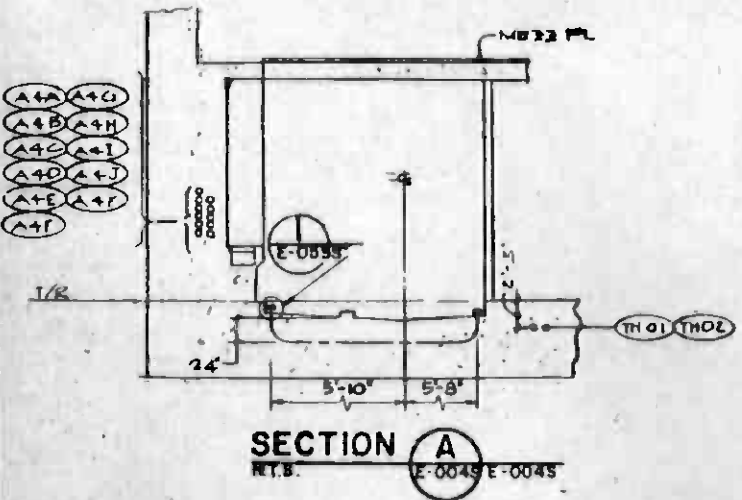
DRAWING NO.
E 099

SCALE
1/8" = 1' - 0"

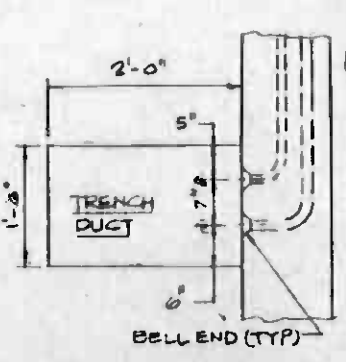
SHEET NO.
A620/97



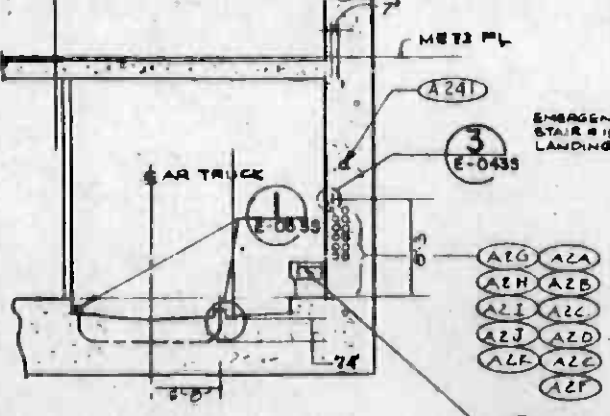
SECTION C
1 1/8" = 1'-0"
E-0045 E-0023
E-0049 E-0043



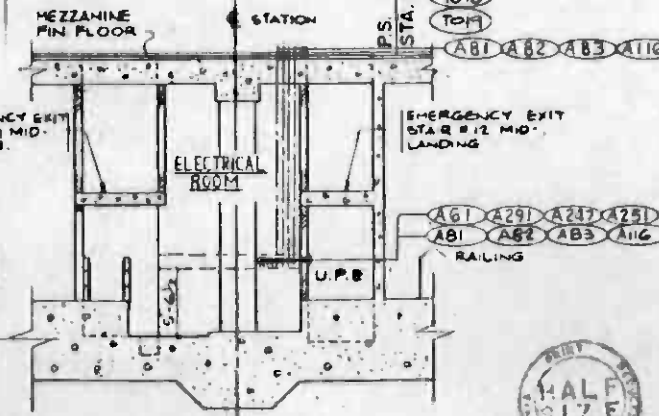
SECTION A
N.T.S.
E-0049 E-0045



SECTION E
N.T.S. (TYP) E-0045



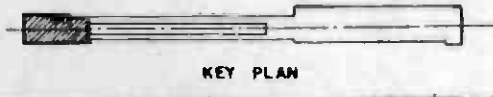
SECTION B
N.T.S. E-0045 E-0045



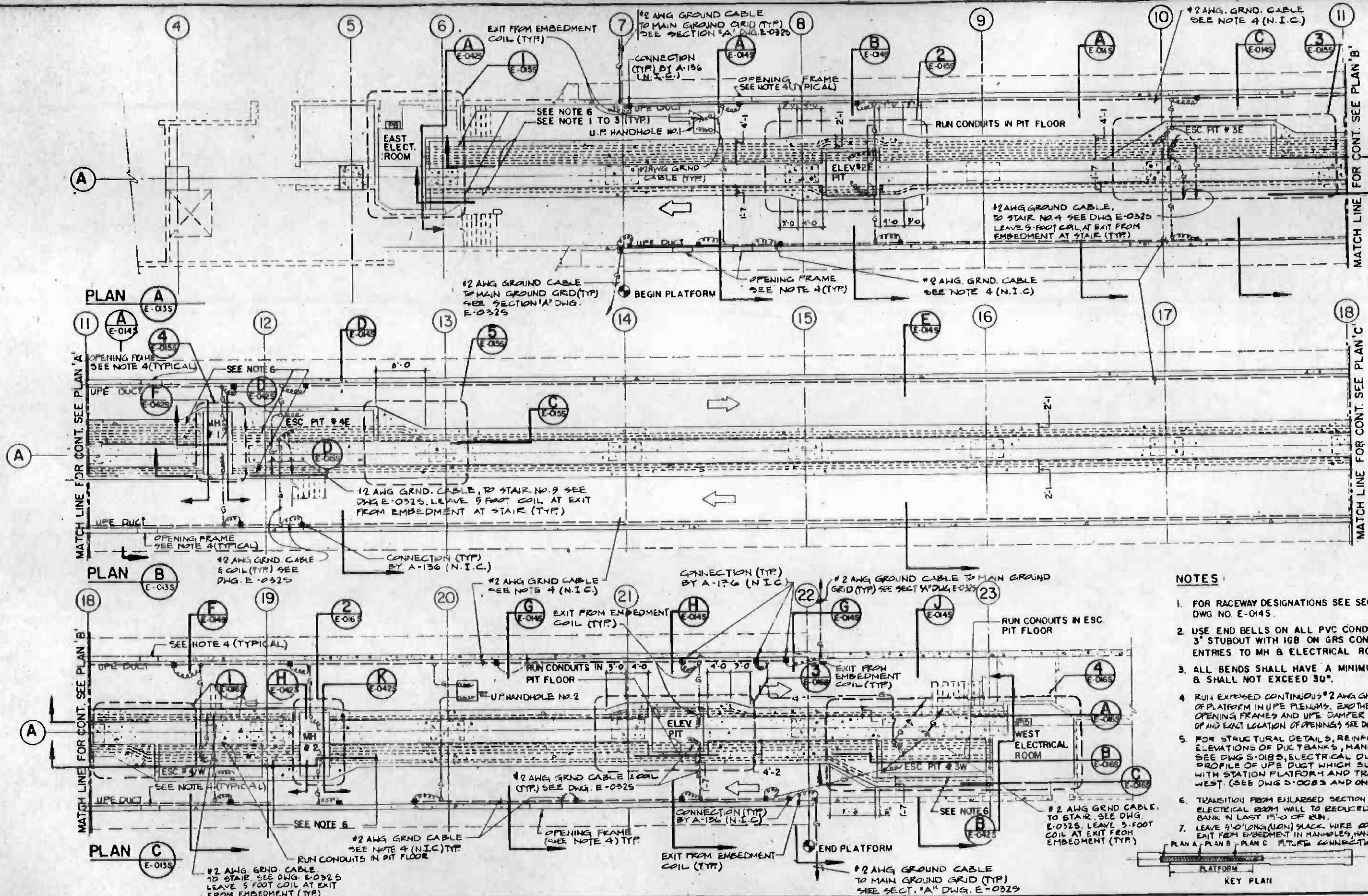
SECTION D
N.T.S. E-0045 E-0045

PLAN

- NOTES:**
1 FOR REFERENCE AND NOTES, SEE DWG E-0025
2 FOR DETAILS AND EXACT LOCATION OF THESE CONDUIT RUNS, REFER TO STRUCTURAL DWGS



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REV	DATE	BY	SUB	APP	DESCRIPTION	REV	DATE	BY	SUB	APP	DESCRIPTION
1		WEM			REVISED PER CRG-529	1		WEM			REVISED PER CRG-529
2		WEM			REVISED PER CRG-025	2		WEM			REVISED PER CRG-025
					INITIAL ISSUE						



- NOTES:**
- FOR RACEWAY DESIGNATIONS SEE SECTIONS ON DWG NO. E-0145.
 - USE END BELLS ON ALL PVC CONDUITS & PROVIDE 3" STUBOUT WITH IGB ON GRS CONDUITS AT ENTRIES TO MH & ELECTRICAL ROOMS.
 - ALL BENDS SHALL HAVE A MINIMUM RADIUS OF 4'-0" & SHALL NOT EXCEED 30°.
 - RUN EXPOSED CONTINUOUS #2 AWG GND CABLE FOR FULL LENGTH OF PLATFORM IN UPE PLENUMS. EXOTHERMIC WELD TO ALL ACCESS OPENING FRAMES AND UPE DAMPER OPENING FRAMES FOR NUMBER OF AND EXACT LOCATION OF OPENINGS SEE DWG. A-018 BY A-136 CONTRACT (N.I.C.)
 - FOR STRUCTURAL DETAILS, REINFORCING AND FOR ELEVATIONS OF DUCT BANKS, MANHOLE DIMENSIONS SEE DWG. S-0183, ELECTRICAL DUCT BANK FOLLOWS PROFILE OF UPE DUCT WHICH SLOPES FROM ALONG WITH STATION PLATFORM AND TRACK FROM EAST TO WEST. (SEE DWG. S-0083 AND ON)
 - TRANSITION FROM ENLARGED SECTION AT MANHOLE AND ELECTRICAL ROOM WALL TO REDUCED SECTION IN DUCT BANK IN LAST 15'-0" OF RUN.
 - LEAVE 5'-0" LONG (MIN) SLACK WIRE COIL OF GROUND CABLE AT EVERY EXIT FROM EMBEDMENT IN MANHOLES, HANDHOLES, ROOMS, ETC. FOR PLAN A - PLAN B - PLAN C. FUTURE CONNECTION TO GROUND BUS BY OTHERS.
- KEY PLAN

REV.	DATE	BY	APP.	DESCRIPTION

REV.	DATE	BY	APP.	DESCRIPTION

DESIGNED BY J.M. SHANNON	
DRAWN BY M.A. UDRESCU	
CHECKED BY J.C. CHANG	
IN CHARGE J.C. CHANG	
DATE 17 APRIL 85	

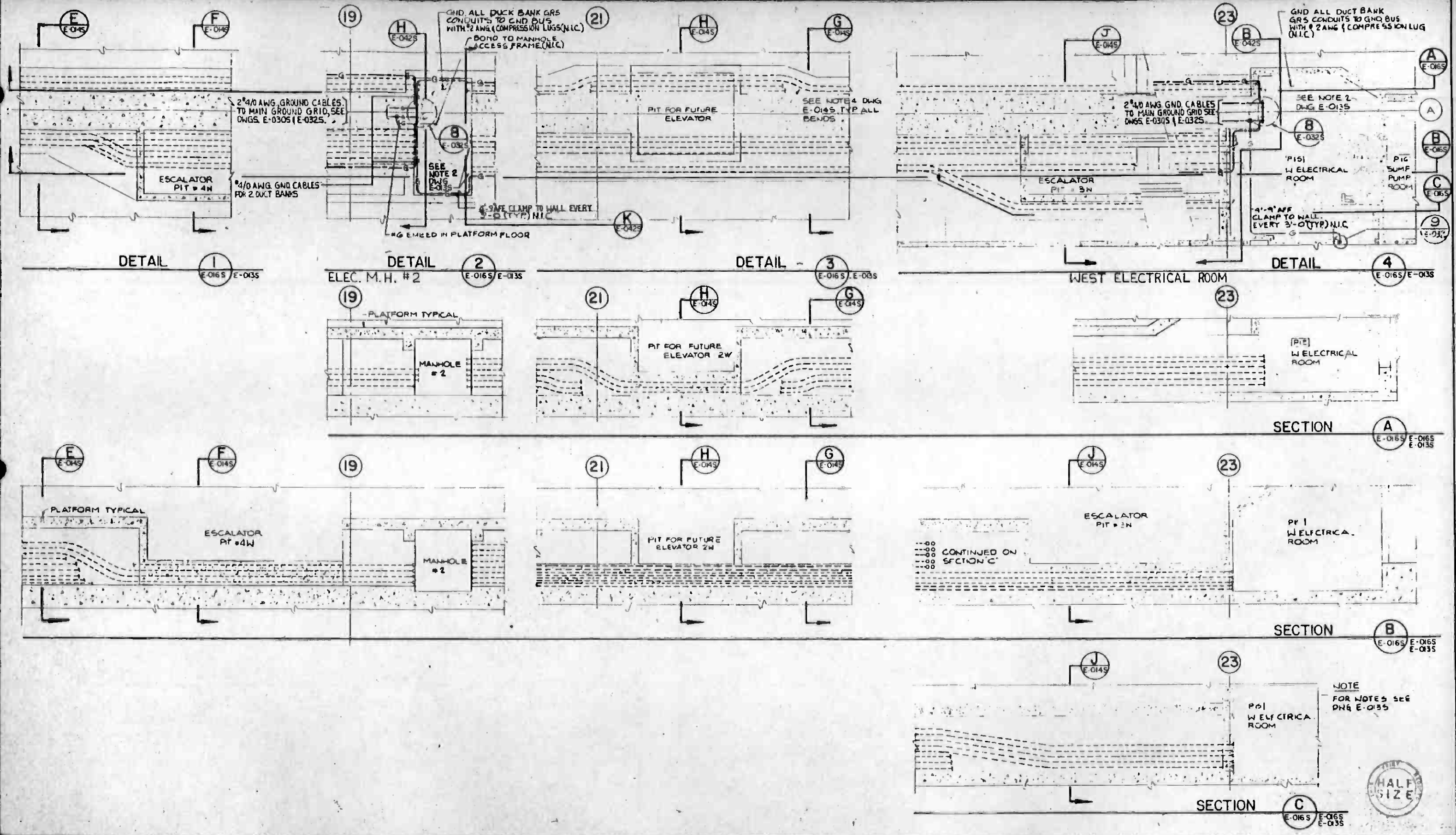
**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

HARRY WESE & ASSOCIATES
TIMOTHY - ARBETT - MCCARTHY - STRATTON
ENVIRONMENTAL COLLABORATIVE, INC.
GIM WONG ASSOCIATES

DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

APPROVED: *[Signature]*

CONTRACT NO. A135	
DRAWING NO. E-0138	
REV. 3	
SCALE 1" = 1'-0"	
SHEET NO. A620/106	



REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1954, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

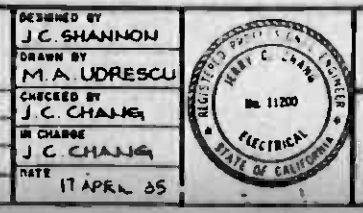
DESIGNED BY
J.C. SHANNON

DRAWN BY
M.A. UDRESCU

CHECKED BY
J.C. CHANG

IN CHARGE
J.C. CHANG

DATE
17 APRIL 85



**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

HARRY WEESE & ASSOCIATES
TIPPETTS-ABBETT-MCCARTHY-STRAITON
ENVIRONMENTAL COLLABORATIVE, INC.
GIN WONG ASSOCIATES.

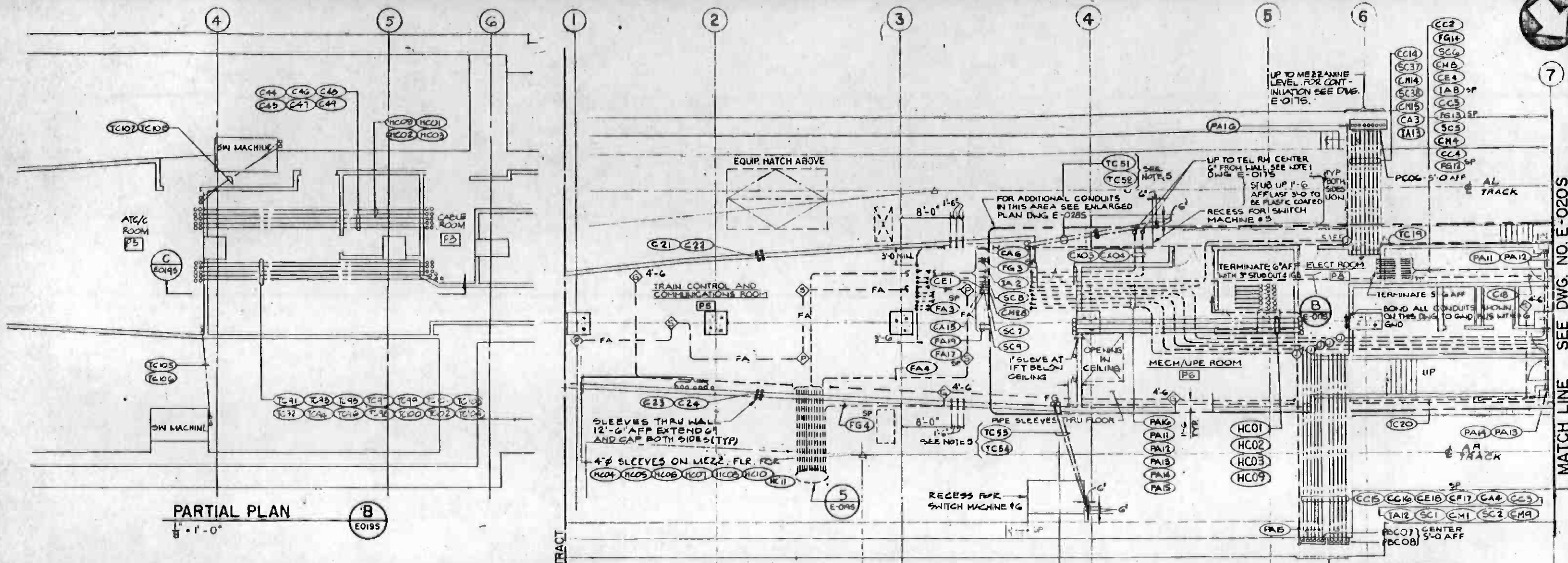
DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

APPROVED

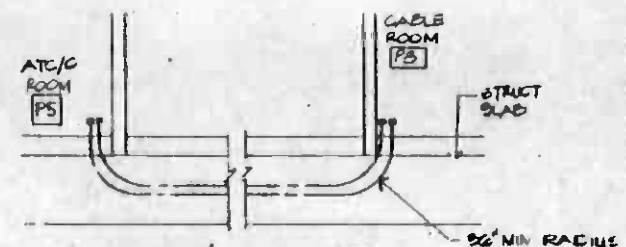
**LA CBD TO NORTH HOLLYWOOD
UNION STATION**

UNDER PLATFORM DUCT BANK
SECTIONS AND DETAILS SHEET 3

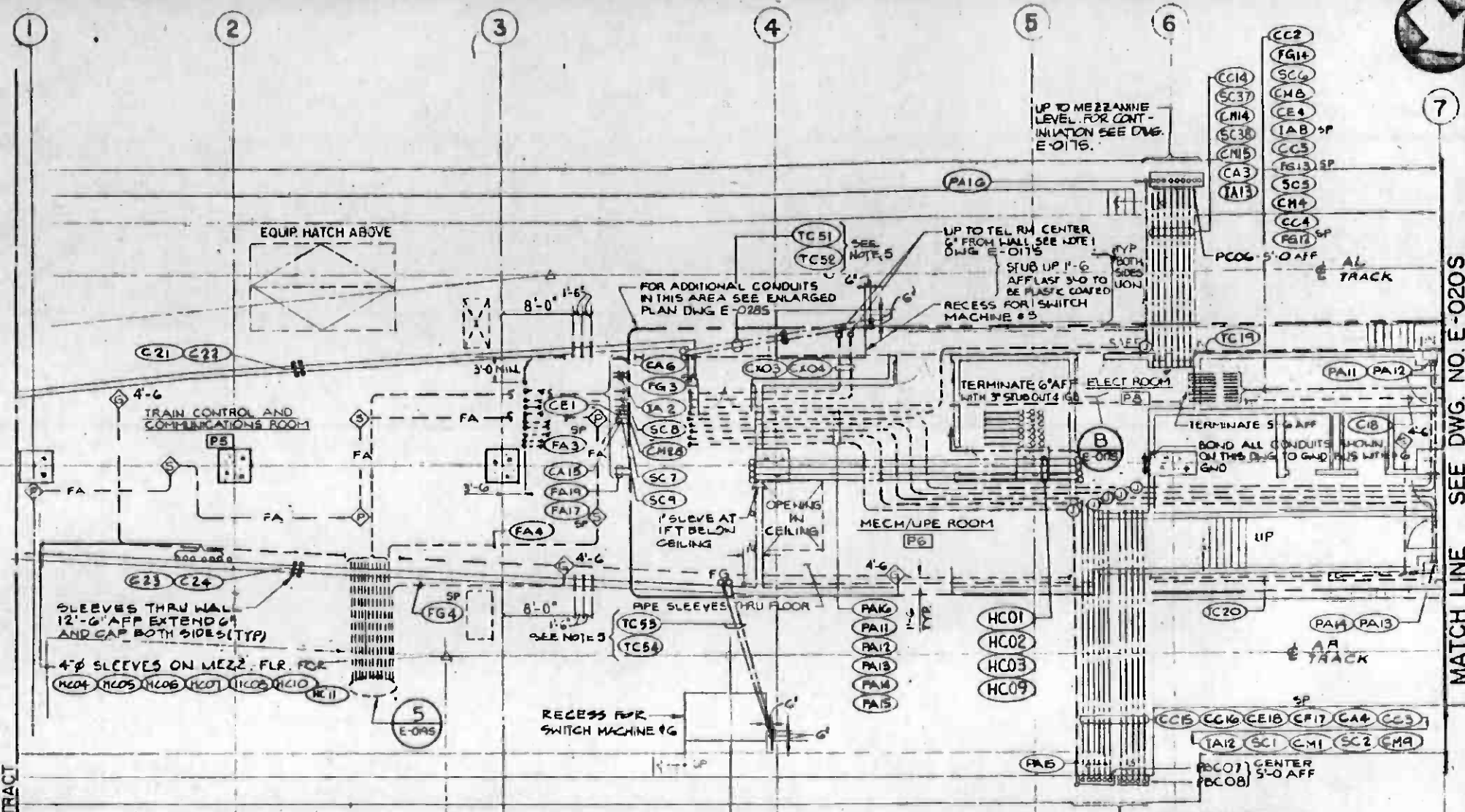
CONTRACT NO.	A135
DRAWING NO.	E-016 S
SCALE	1/4" = 1'-0"
SHEET NO.	A620/109



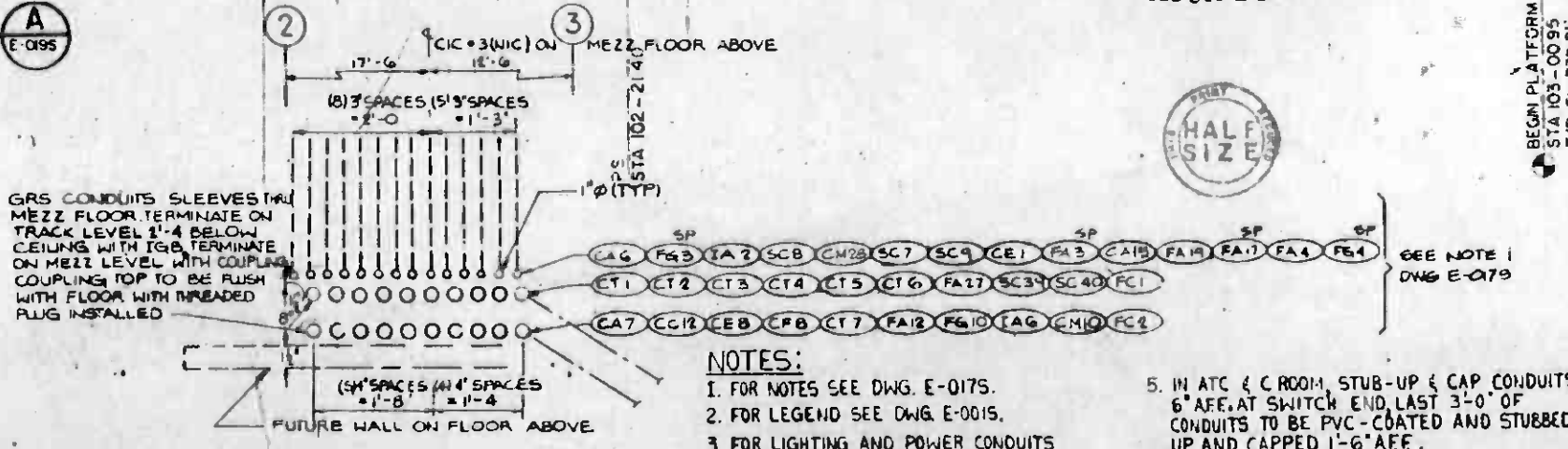
PARTIAL PLAN B
1/8" = 1'-0"
E-019S



SECTION C
NTS
E-019S

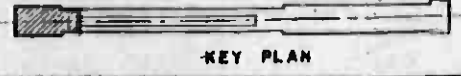


PLAN A
1/8" = 1'-0"
E-019S



DETAIL 5
3/4" = 1'-0"
E-019S
E-019S
E-019S

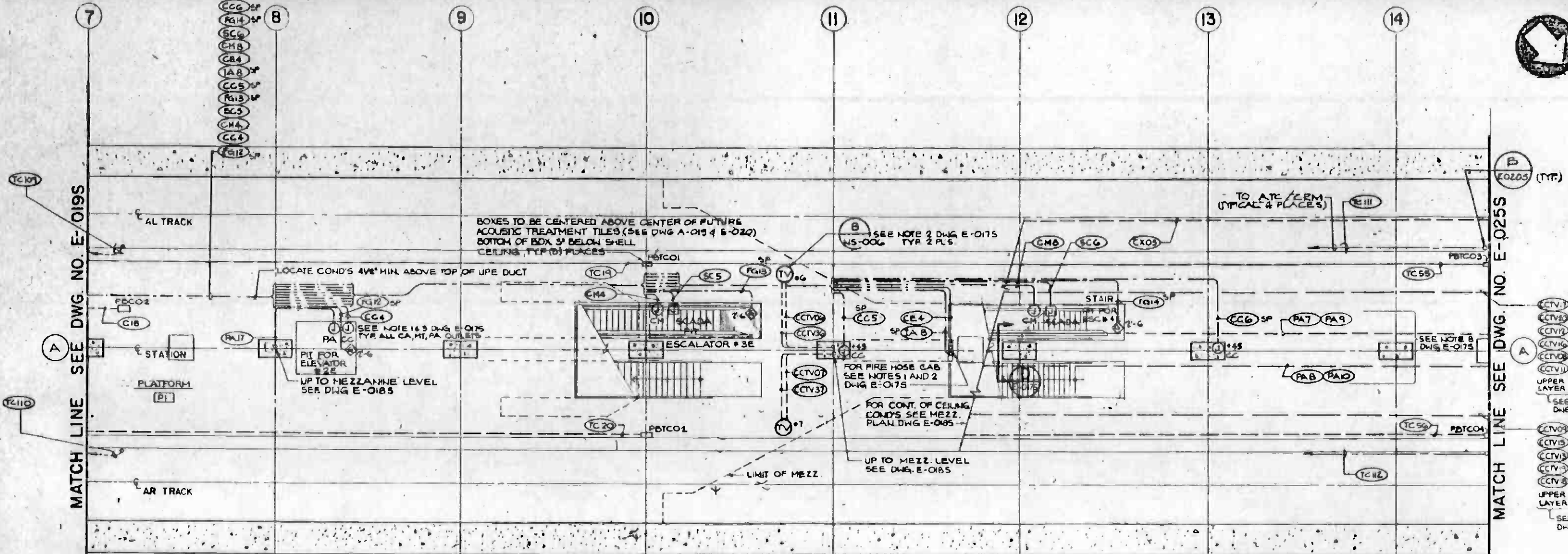
- NOTES:**
- FOR NOTES SEE DWG. E-017S.
 - FOR LEGEND SEE DWG. E-001S.
 - FOR LIGHTING AND POWER CONDUITS THIS AREA SEE DWG. E-004S.
 - FOR RACEWAY SCHEDULE SEE DWG. E-037S THRU E-041S & E-047S THRU E-050S.
 - IN ATC & C ROOM, STUB-UP & CAP CONDUITS 6" AFF. AT SWITCH END, LAST 3'-0" OF CONDUITS TO BE PVC-COATED AND STUBBED-UP AND CAPPED 1'-6" AFF.



MATCH LINE SEE DWG. NO. E-020S

BEGIN PLATFORM STA 103+00.95 T/R EL. 239.01

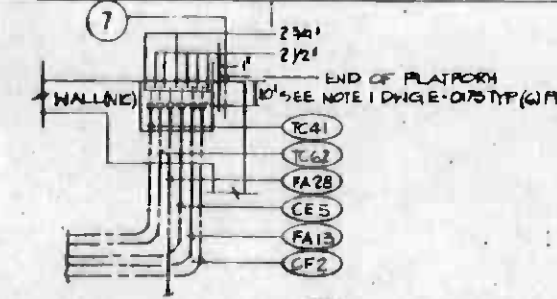
THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY J.W. SHANNON DRAWN BY J.K. CLECH CHECKED BY V.T. DIE IN CHARGE J.C. CHANG DATE 17 APRIL 85		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT 		LA CBD TO NORTH HOLLYWOOD UNION STATION EAST ANCILLARY ROOMS TRACK LEVEL TRAIN CONTROL & COMM. RACEWAY PLAN		CONTRACT NO. A135 DRAWING NO. E-019 S REV. 4 SCALE AS NOTED SHEET NO. A620/III	
REVISED PER CRG-529 REVISED PER CRG-007				DESIGNED BY J.W. SHANNON DRAWN BY J.K. CLECH CHECKED BY V.T. DIE IN CHARGE J.C. CHANG DATE 17 APRIL 85		HARRY WEESE & ASSOCIATES TIPPETTS-ABBETT-McCARTNEY-STRATTON ENVIRONMENTAL COLLABORATIVE, INC. GIN WONG ASSOCIATES SUBMITTED: <i>[Signature]</i>		DMJM/PBOD/KE/HWA GENERAL CONSULTANTS APPROVED: <i>[Signature]</i>		CONTRACT NO. A135 DRAWING NO. E-019 S REV. 4 SCALE AS NOTED SHEET NO. A620/III	
REVISIONS:				REVISIONS:		REVISIONS:		REVISIONS:		REVISIONS:	



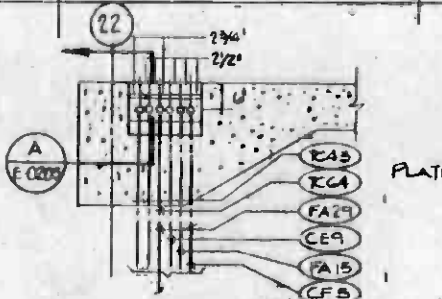
MATCH LINE SEE DWG. NO. E-0195

MATCH LINE SEE DWG. NO. E-0255

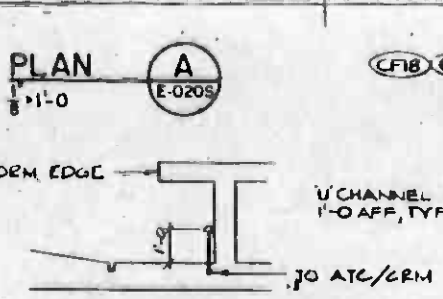
- CTV1 CTV9
- CTV2 CTV3
- CTV3 CTV4
- CTV4 CTV5
- CTV5 CTV6
- CTV6 CTV7
- CTV7 CTV8
- CTV8 CTV9
- UPPER LOWER LAYER
- SEE NOTE B DWG E-0175
- CTV10 CTV11
- CTV12 CTV13
- CTV14 CTV15
- CTV16 CTV17
- CTV18 CTV19
- CTV20 CTV21
- UPPER LOWER LAYER
- SEE NOTE B DWG E-0175



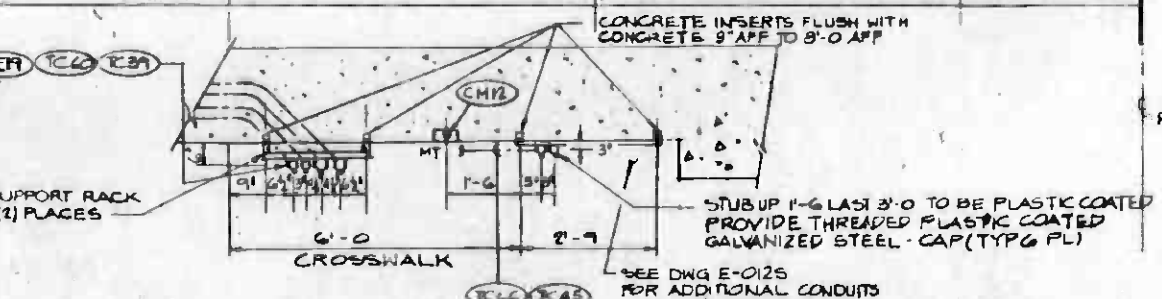
DETAIL 1
1/2" = 1'-0"
E-0205 E-0288



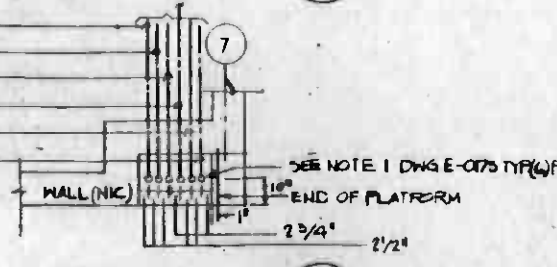
DETAIL 3
1/2" = 1'-0"
E-0205 E-0288



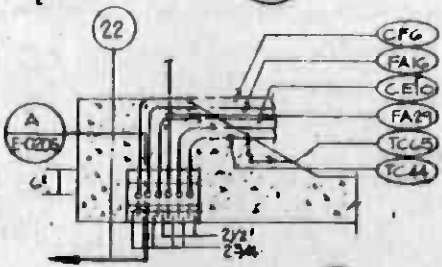
SECTION A
1'-0"
E-0205



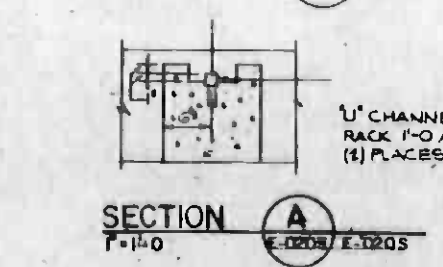
DETAIL 5
1/2" = 1'-0"
E-0205 E-0275



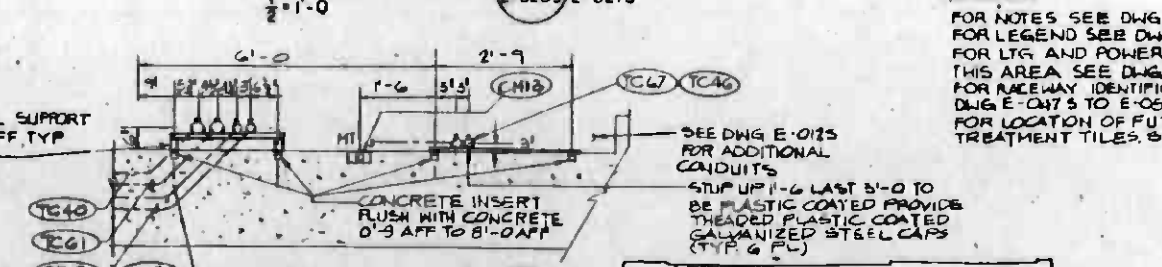
DETAIL 2
1/2" = 1'-0"
E-0205 E-0288



DETAIL 4
1/2" = 1'-0"
E-0205 E-0288



SECTION B
1'-0"
E-0205 E-0205



DETAIL 6
1/2" = 1'-0"
E-0205 E-0275

NOTE:
FOR NOTES SEE DWG E-0175;
FOR LEGEND SEE DWG E-0015;
FOR LTG AND POWER CONDUITS IN
THIS AREA SEE DWG E-0055; AND
FOR RACEWAY IDENTIFICATION SEE
DWG E-0175 TO E-0505
FOR LOCATION OF FUTURE ACOUSTICAL
TREATMENT TILES SEE A-021.



REV.	DATE	BY	APP.	DESCRIPTION
1				
2				
3				
4				
5				

REV.	DATE	BY	APP.	DESCRIPTION
1				
2				
3				
4				
5				

DESIGNED BY J.W. SHANNON	
DRAWN BY J.K. CRECH	
CHECKED BY K.T. DJE	
IN CHARGE J.C. CHANG	
DATE 17 APRIL 85	

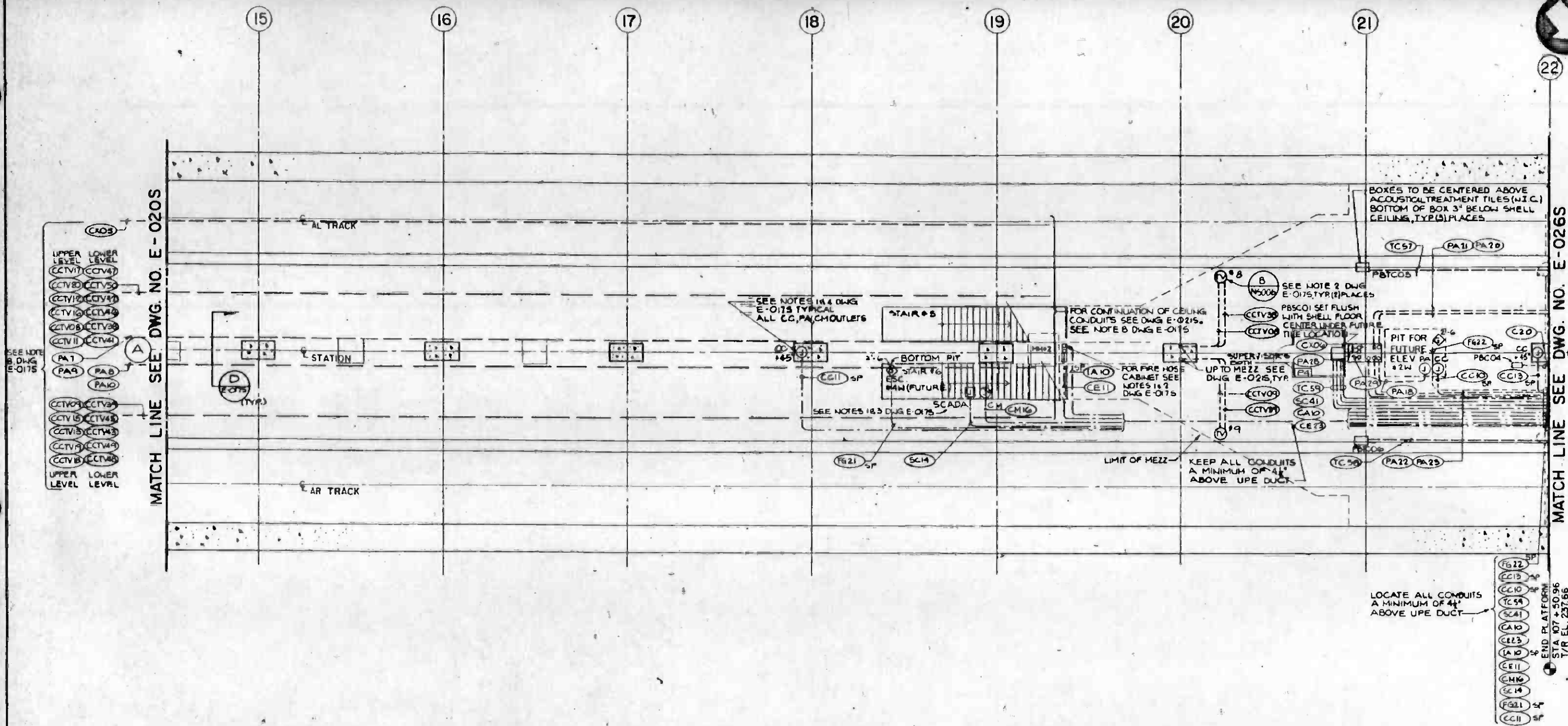
**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

HARRY WEESE & ASSOCIATES TIPPETTS - ABBETT - MCCARTHY - STRATTON ENVIRONMENTAL COLLABORATIVE, INC. GIN WONG ASSOCIATES	DMJM/PBQD/KE/HWA GENERAL CONSULTANTS
SUBMITTED	APPROVED

**LA CBD TO NORTH HOLLYWOOD
UNION STATION**

**EAST PORTION PLATFORM LEVEL
TRAIN CONTROL & COMM RACEWAY PLAN**

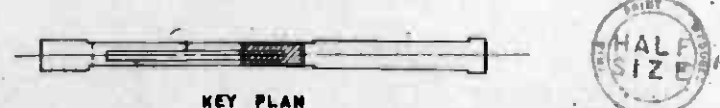
CONTRACT NO. A135	REV. 4
DRAWING NO. E-0205	SCALE AS NOTED
SHEET NO. A620/112	



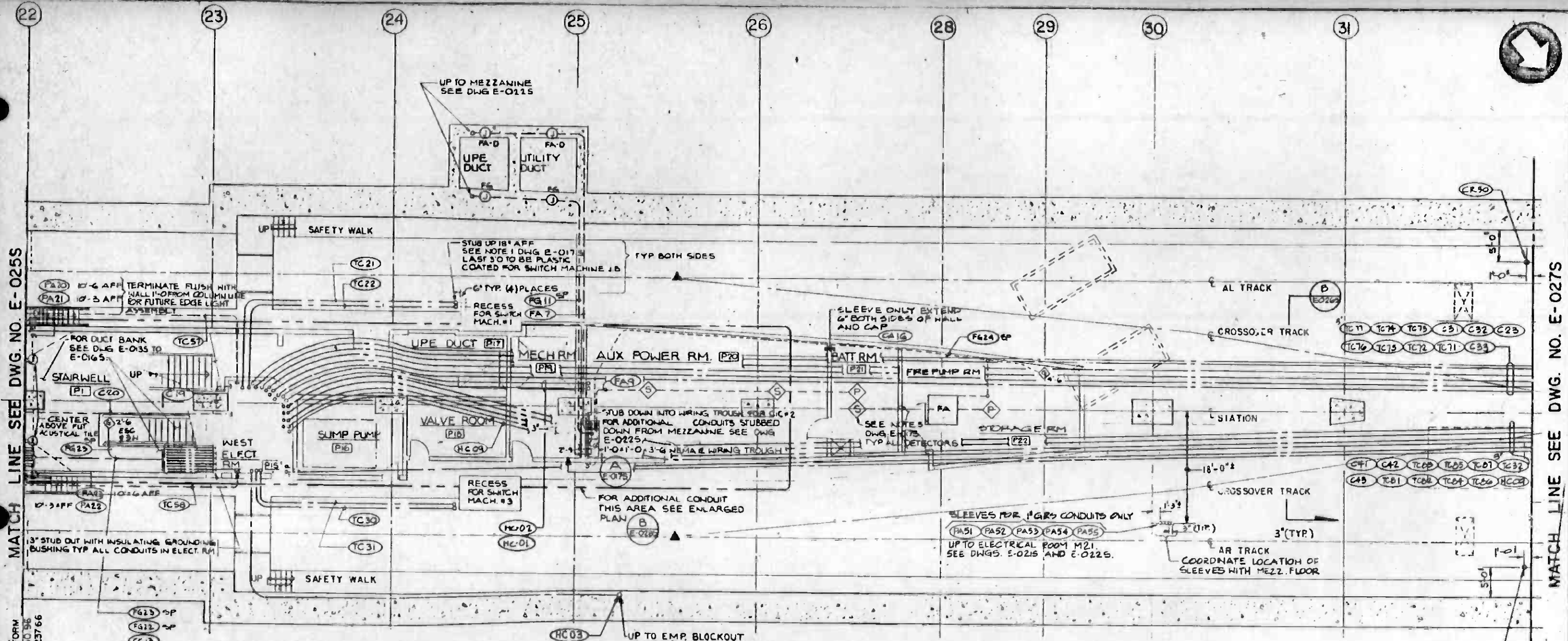
- SEE NOTE B DWG E-015
- | |
|-------------|
| CA03 |
| UPPER LEVEL |
| LOWER LEVEL |
| CCTV17 |
| CCTV18 |
| CCTV19 |
| CCTV20 |
| CCTV21 |
| CCTV22 |
| CCTV23 |
| CCTV24 |
| CCTV25 |
| CCTV26 |
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| CCTV91 |
| CCTV92 |
| CCTV93 |
| CCTV94 |
| CCTV95 |
| CCTV96 |
| CCTV97 |
| CCTV98 |
| CCTV99 |
| CCTV100 |

- LOCATE ALL CONDUITS A MINIMUM OF 4" ABOVE UPE DUCT
- | |
|------|
| FG22 |
| CC13 |
| CC10 |
| TC59 |
| SC41 |
| CA10 |
| CE23 |
| LA10 |
| CE11 |
| CM16 |
| SC14 |
| FG21 |
| CC11 |
- END PLATFORM STA 107 + 50.96 1/4 R EL. 257.66

- NOTE:**
- FOR NOTES SEE DWG E-015;
 - FOR LEGEND SEE DWG E-0015;
 - FOR LIGHTING AND POWER CONDUITS IN THIS AREA SEE DWG E-0105;
 - FOR RACEWAY AND CABLE SCHEDULE SEE DWG E-0475 TO E-0505.



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DESIGNED BY J.W. SHANNON DRAWN BY J.K. CEBCH CHECKED BY K.T. DIE IN CHARGE J.C. CHANG DATE 17 APRIL 85				SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT 		LA CBD TO NORTH HOLLYWOOD UNION STATION WEST PORTION PLATFORM LEVEL TRAIN CONTROL & COMM. RACEWAY PLAN		CONTRACT NO. A135 DRAWING NO. E-025 S SCALE 1/8" = 1'-0" SHEET NO. A620/113				
REV.	DATE	BY	APP.	DESCRIPTION	REV.	DATE	BY	APP.	DESCRIPTION	REV.	DATE	BY	APP.	DESCRIPTION
				REVISD PER CRG-529					REVISD PER CRG-208					INITIAL ISSUE

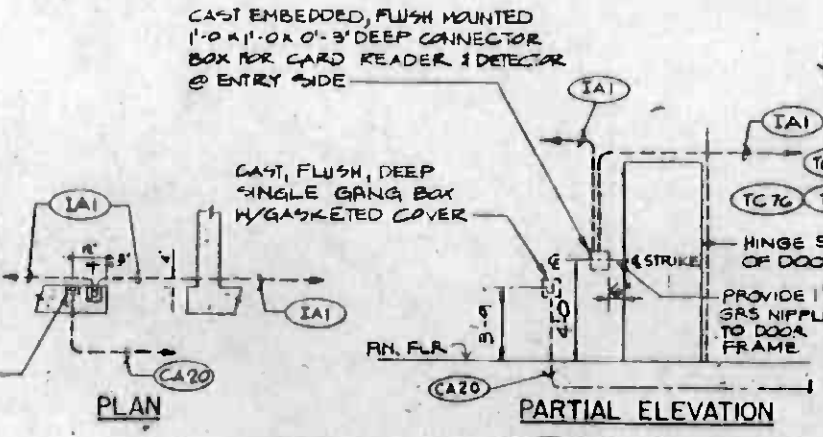


MATCH LINE SEE DWG. NO. E-0255

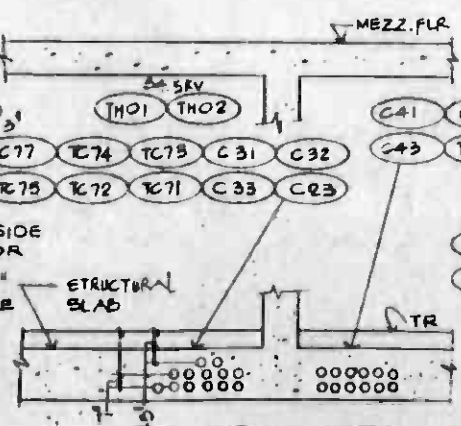
MATCH LINE SEE DWG. NO. E-0275

END PLATFORM
STA 107+50.96
TOR EL. 237.66

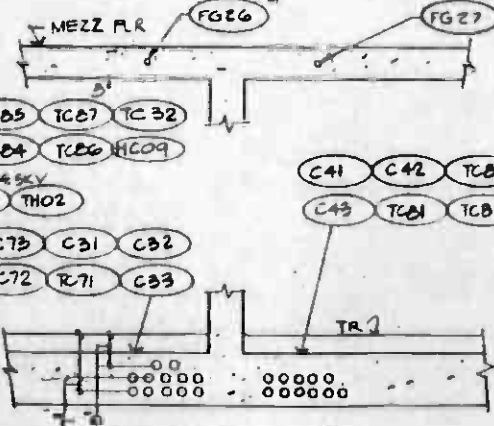
- FG23 EP
- FG12 EP
- CC13
- CC10
- TC59
- SC41
- CA10
- EE23
- IA10 EP
- CB11
- CA16
- SC14
- FG21 EP
- CC11



DETAIL I
1'-0
E-0265, E-0265



SECTION B
E0265
E-0115
E-0265



SECTION C
E0265
E0275
E0125

NOTE
SEE DWG E-0115 FOR NOTES;
SEE DWG E-0013 FOR LEGEND;
SEE DWG E-0115 FOR POWER AND
LIGHTING CONDUITS THIS AREA;
SEE DWG E-0415 TO E-0605
FOR RACEWAY SCHEDULE.



KEY PLAN

REV.	DATE	BY	APP.	DESCRIPTION
MEM				REVISED PER CRG-529
PA-26				REVISED PER CRG-007

REV.	DATE	BY	APP.	DESCRIPTION
1H-25	PSH	AS		REVISED PER CRG-215
7A-18	WER	AS		REVISED PER CRG-206
4-18	CM			INITIAL ISSUE

DESIGNED BY
J.W. SHANNON
DRAWN BY
J.K. CZECH
CHECKED BY
K.T. DJIE
IN CHARGE
J.C. CHANG
DATE
17 APRIL 85



**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

HARRY WEESE & ASSOCIATES
TIPPETTS-ABBETT-McCARTHY-STRATTON
ENVIRONMENTAL COLLABORATIVE, INC.
ON BEHALF OF
GENERAL CONSULTANTS

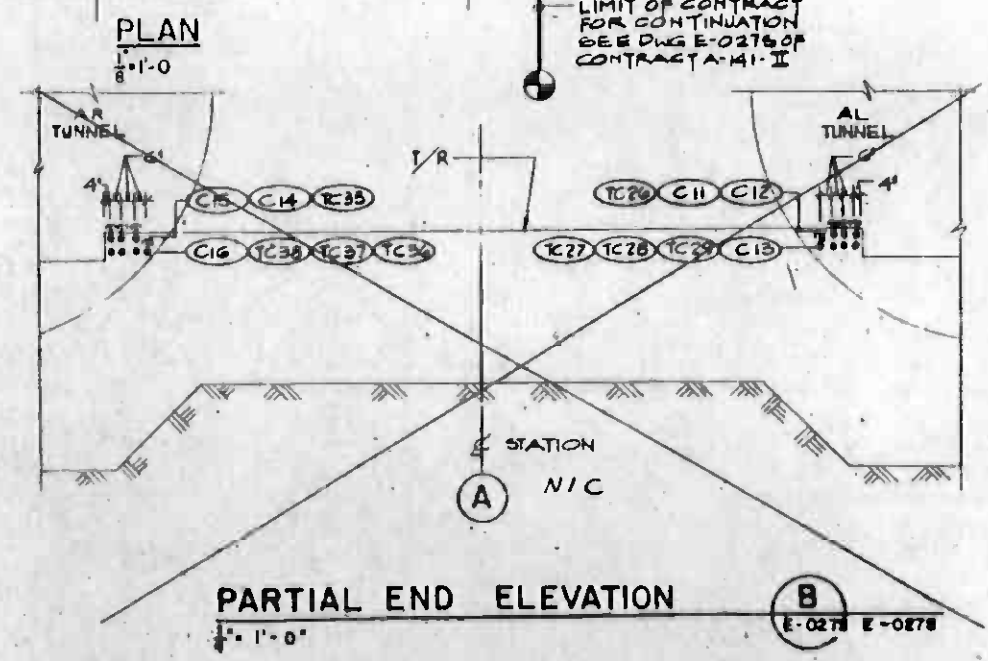
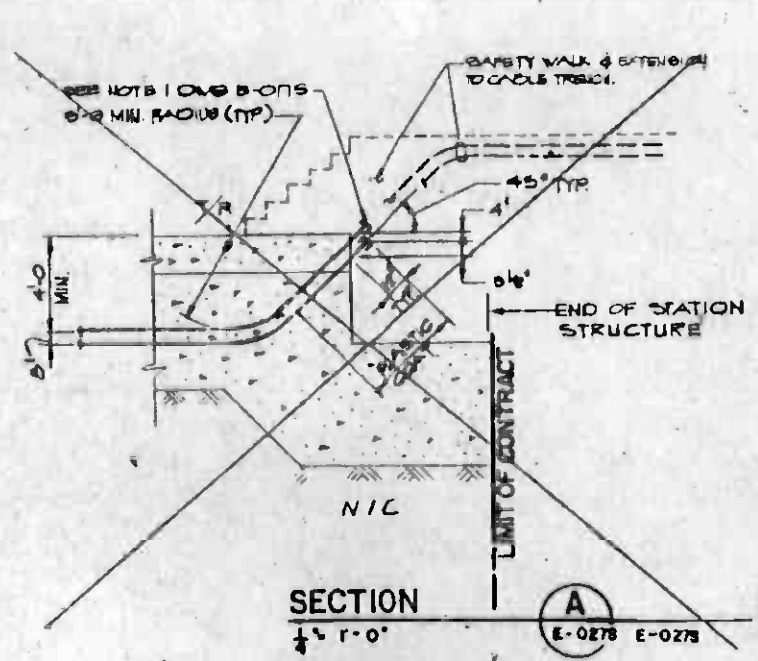
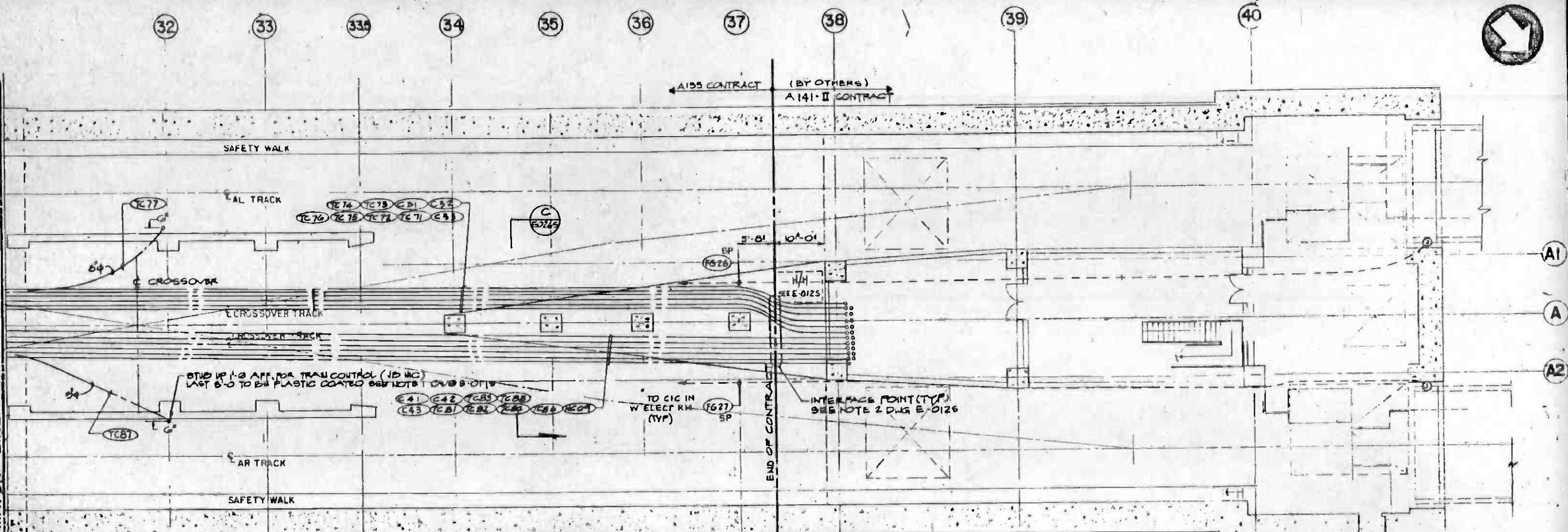
DMJM/PROB/KE/HWA
APPROVED: *[Signature]*

**LA CBD TO NORTH HOLLYWOOD
UNION STATION**

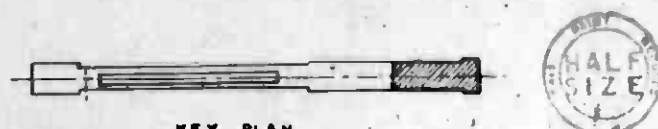
**WEST ANCILLARY RMS, TRACK LEVEL
TRAIN CONTROL & COMM RACEWAY PLAN**

CONTRACT NO. A135
DRAWING NO. E-026 S 4
SCALE 1/8" = 1'-0"
SHEET NO. A620/114

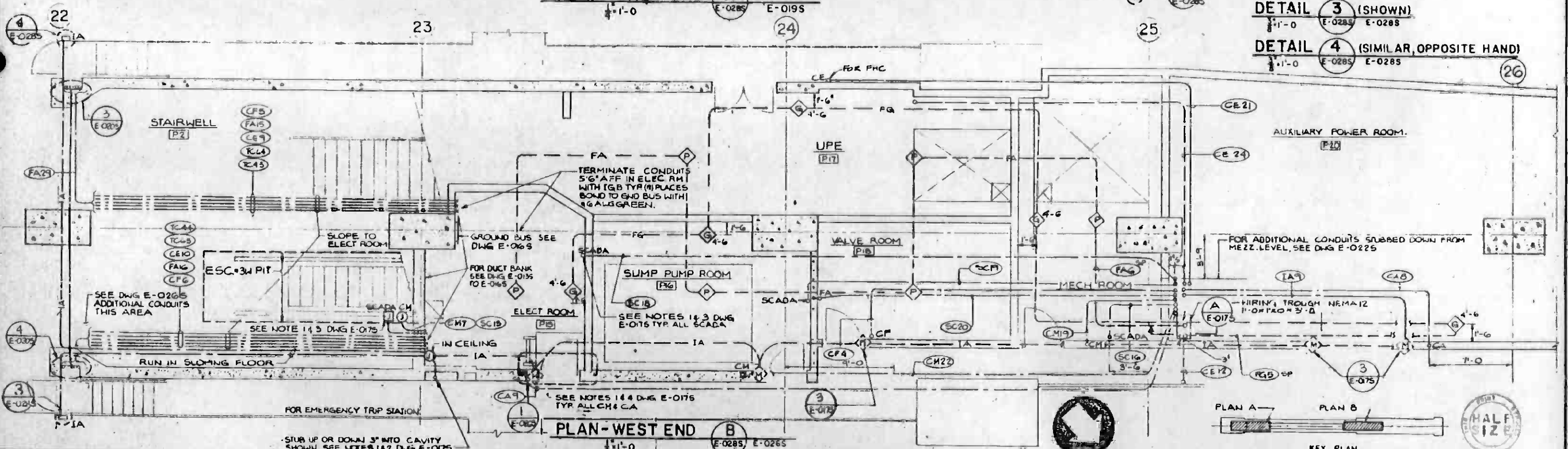
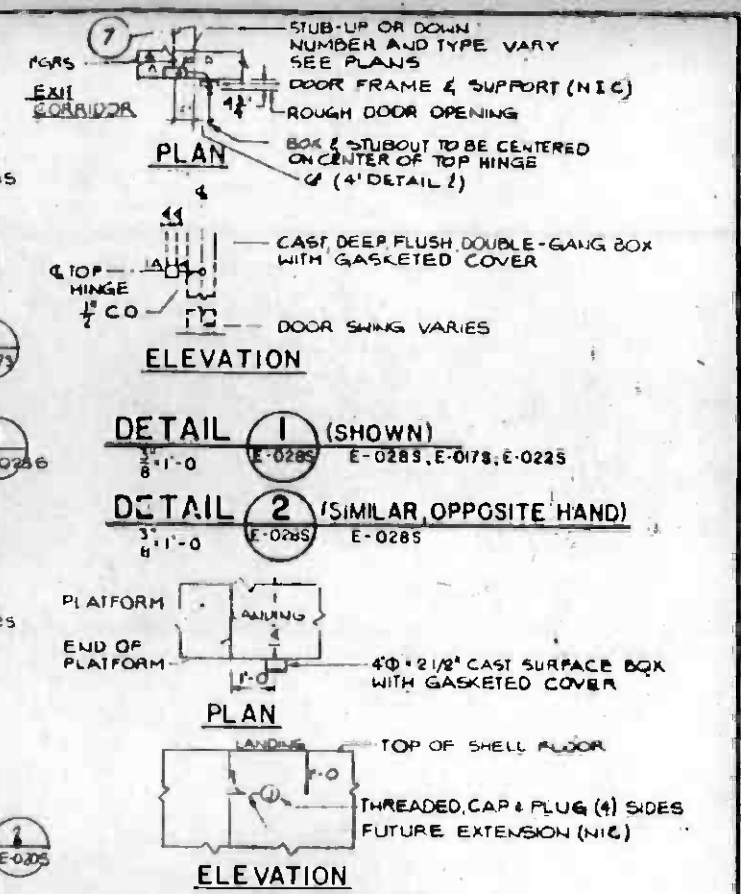
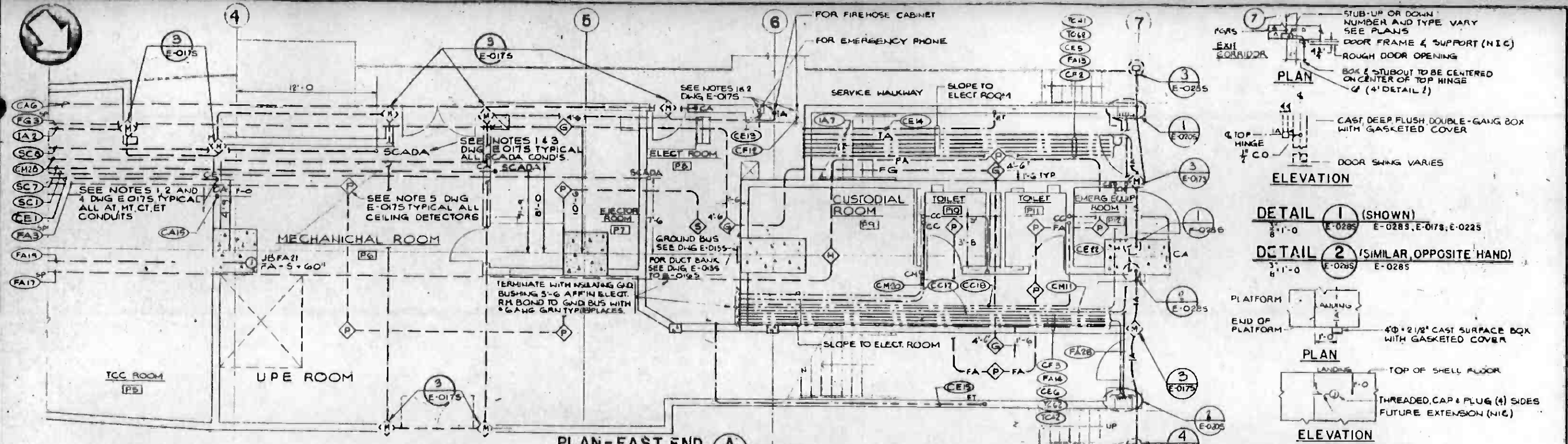
MATCH LINE SEE DWG. NO. E-0265



- NOTES:**
- 1 FOR NOTES SEE DWG E-015
 - 2 FOR LEGEND SEE DWG E-0015
 - 3 FOR LIGHTING AND POWER CONDUIT SEE DWG E-0125
 - 4 FOR RACEWAY SCHEDULE SEE DWG. NO E-0475 TO E-0505.



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DESIGNED BY J.W. SHANNON DRAWN BY K. ILASZ CHECKED BY K.T. DJIE IN CHARGE J.C. CHANG DATE 17 APRIL 85		REGISTERED PROFESSIONAL ENGINEER HARRY C. CHANG ELECTRICAL No. 11280 STATE OF CALIFORNIA		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT HARRY WEESE & ASSOCIATES TIPPETTE - ABBETT - MCCARTHY - STRATTON ENVIRONMENTAL COLLABORATIVE, INC. GIM MEMO ASSOCIATES DATE 17 APRIL 85		CONTRACT NO. A135 DRAWING NO. E-0279 SCALE AS NOTED SHEET NO. A620/115	
REV.	DATE	BY	APP.	DESCRIPTION	REV.	DATE	BY	APP.	DESCRIPTION
				REVISED PER CR 6-329					REVISED PER CR 5-218
				REVISED PER CR 6-007					REVISED PER CR 5-208
				INITIAL ISSUE					



REV.	DATE	BY	APP.	DESCRIPTION
1	11/05/85	AS	AK	REVISED PER CR 5-215
2	1/10/86	AK	AK	REVISED PER CR 5-208
3	4/17/85	AK	AK	INITIAL ISSUE

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY
J.W. SHANNON
DRAWN BY
J.K. CZECH
CHECKED BY
K.T. OJIE
IN CHARGE
J.C. CHANG
DATE
17 APRIL 85

**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

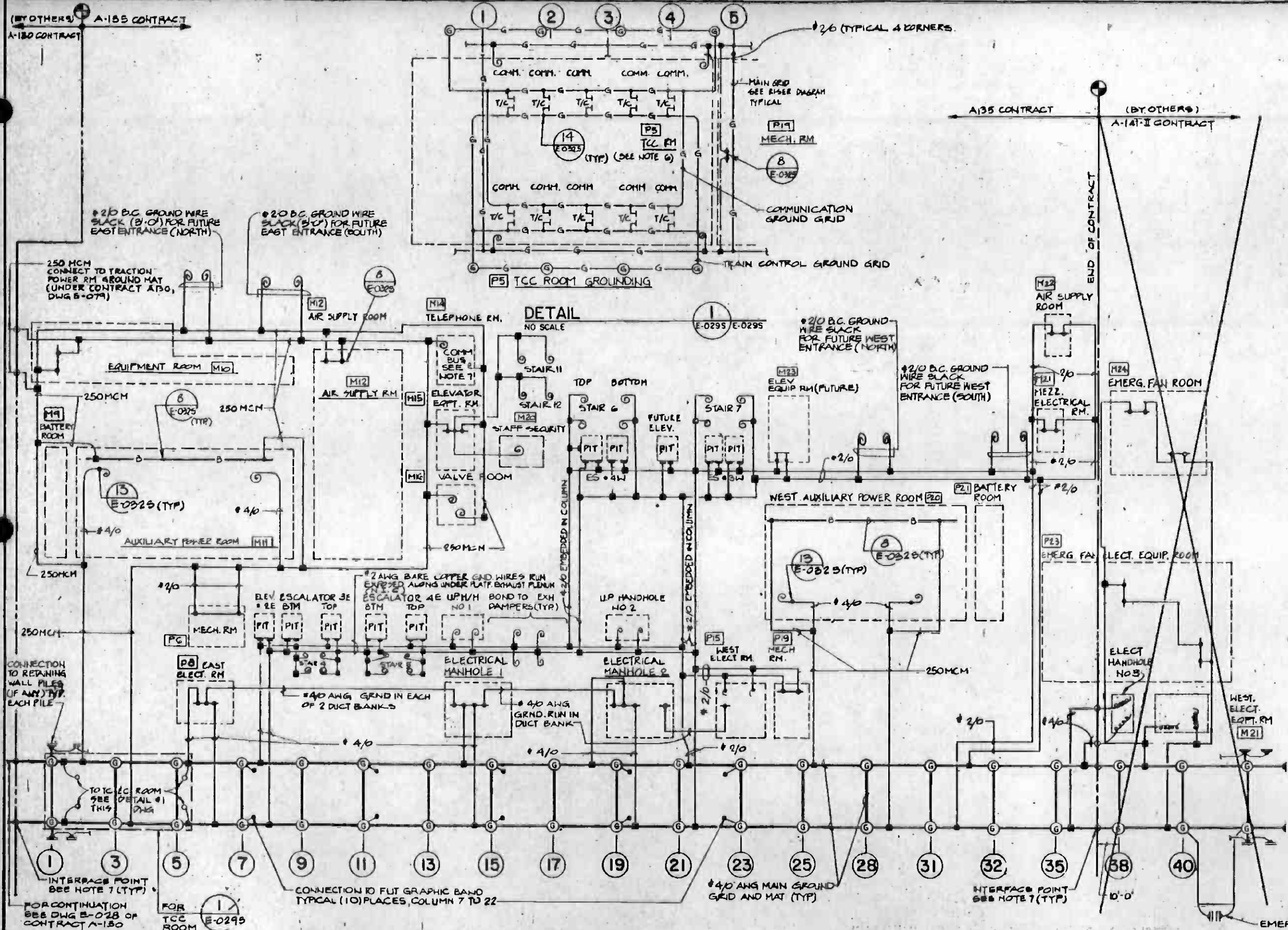
HARRY WEESE & ASSOCIATES
TIPPLETT-ABBETT-McCARTHY-STRAITON
ENVIRONMENTAL COLLABORATIVE, INC.
GUY WONG ASSOCIATES

DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS
APPROVED: *David J. Kelly*

**LA CBD TO NORTH HOLLYWOOD
UNION STATION**

ANCILLARY RMS. TRACK LEVEL - ENLARGED
TRAIN CONTROL & COMM. RACEWAY PLAN

CONTRACT NO. A135
DRAWING NO. E-028S
SCALE AS NOTED
SHEET NO. A620/116



- NOTES:**
- ALL GROUND CABLES SHALL BE #2 AWG U.O.N. EXPOSED GROUND WIRES SHALL BE IN 1" CRS COND. EXCEPT WITHIN THE AIR HANDLING ROOM, AUXILIARY POWER ROOM UNDER PLATFORM EXHAUST PLENUMS, CHILLER ROOM, ELECTRICAL EQUIPMENT ROOM, ELECT. ROOMS, MANHOLES OR TELEPHONE ROOMS. EXPOSED GND. WIRES SMALLER THAN 4/0 SHALL BE AT LEAST 2'6" AFF.
 - EMBEDDED CONNECTIONS SHALL BE EXOTHERMIC WELD. OTHER CONNECTIONS SHALL BE EXOTHERMIC WELD OR CRIMPED COMPRESSION. RUN CABLES WITHOUT SPLICES BETWEEN CONNECTIONS.
 - GROUND ROD TO BE 1" x 15'-0" LONG SECTIONAL COPPER CLAD CARBON STEEL. IF BOULDERS ARE ENCOUNTERED, REMOVE & REDRIVE IF LESS THAN 8'-0" HAS BEEN DRIVEN. IF 8'-0" OR MORE HAS BEEN DRIVEN BEFORE ENCOUNTERING BOULDER, CUT OFF AND USE AS IS.
 - TEST GND. RESISTANCE OF MAIN GROUND GRID PRIOR TO EMBEDMENT IF MORE THAN 2 Ω BY FALL OF POTENTIAL METHOD. INSTALL ADDITIONAL GROUND RODS SPACED MIDWAY BETWEEN RODS SHOWN. INSTALL AN EQUAL NO. OF ADDITIONAL RODS ON BOTH SIDES OF THE STATION & ALSO ON BOTH ENDS OF THE STATION.
 - AFTER COMPLETION, TEST CONTINUITY OF GROUND BUSES TO MAIN GROUND GRID. RECHECK MAT. RESISTANCE TO INSURE INTEGRITY.
 - T/C & COMM GROUND BUSES TO BE ISOLATED FROM EACH OTHER AND FROM MAIN GROUND GRID. GROUND CABLE FOR T/C & COMM GROUND GRIDS SHALL BE #2/0 AWG STRANDED COPPER CABLE WITH GREEN INSULATION. INSTALL T/C & COMM GROUND RODS WITH TOP 2'-0" BELOW BOTTOM OF SLAB AND RUN ENCIRCLING CABLE FOR THEM 2'-0" BELOW BOTTOM OF FLOOR SLAB.
 - LEAVE FIVE-FOOT GROUND CABLE SLACK AT LIMIT OF CONTRACT FOR EXOTHERMIC WELD BY ADJACENT CONTRACTOR.
 - FOR DETERMINATION OF EMBEDDED OR EXPOSED GROUND CABLE REFER TO PLAN & DETAIL DRAWINGS.

- LEGEND**
- MAIN GROUND GRID #4/0 AWG U.O.N.
 - RISERS TO GND. PADS & BUSES #2 AWG U.O.N.
 - ⊥ CONNECTION TO STRUCTURE OR PIPE.
 - ⊕ GND. PAD
 - ⊙ GND. ROD
 - GND BUS ALONG THE WALL
 - ⊕ EXPOSED GND. BUS - N.I.C.
 - ⊕ GND. BUS IN EQUIPMENT - N.I.C.
 - ⊕ CONNECTION
 - ⊕ EXIT FROM EMBEDMENT WITH COIL OF CABLE FOR FUTURE CONN. LENGTH 5'-0" U.O.N.

REV.	DATE	BY	SUB.	APP.	DESCRIPTION
1					REVIS. PER CRG-529
2					REVIS. PER CRG-025

REV.	DATE	BY	SUB.	APP.	DESCRIPTION
1					REVIS. PER CR 5-215
2					REVIS. PER CR 5-208
3					INITIAL ISSUE

DESIGNED BY
J.W. SHANNON
DRAWN BY
M.A. UDRESCU
CHECKED BY
J.C. CHANG
IN CHARGE
J.C. CHANG
DATE
17 APRIL 85

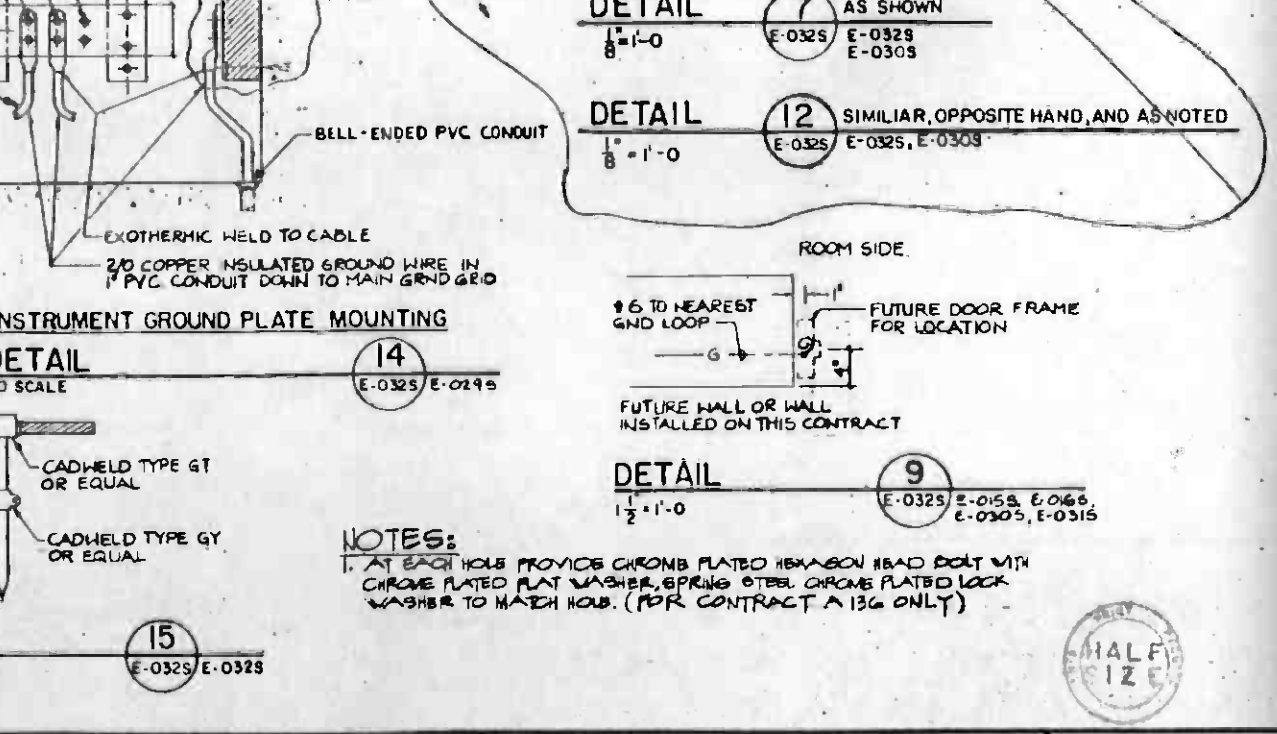
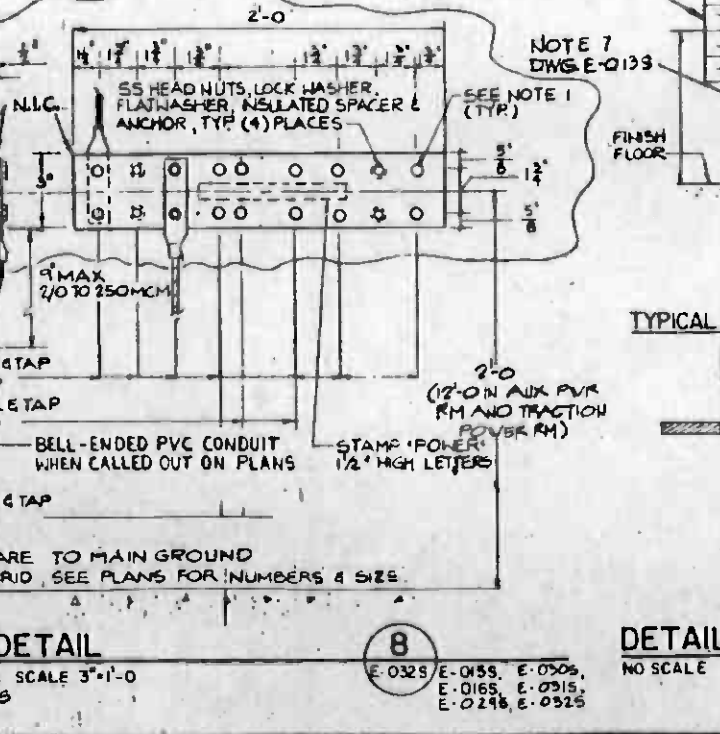
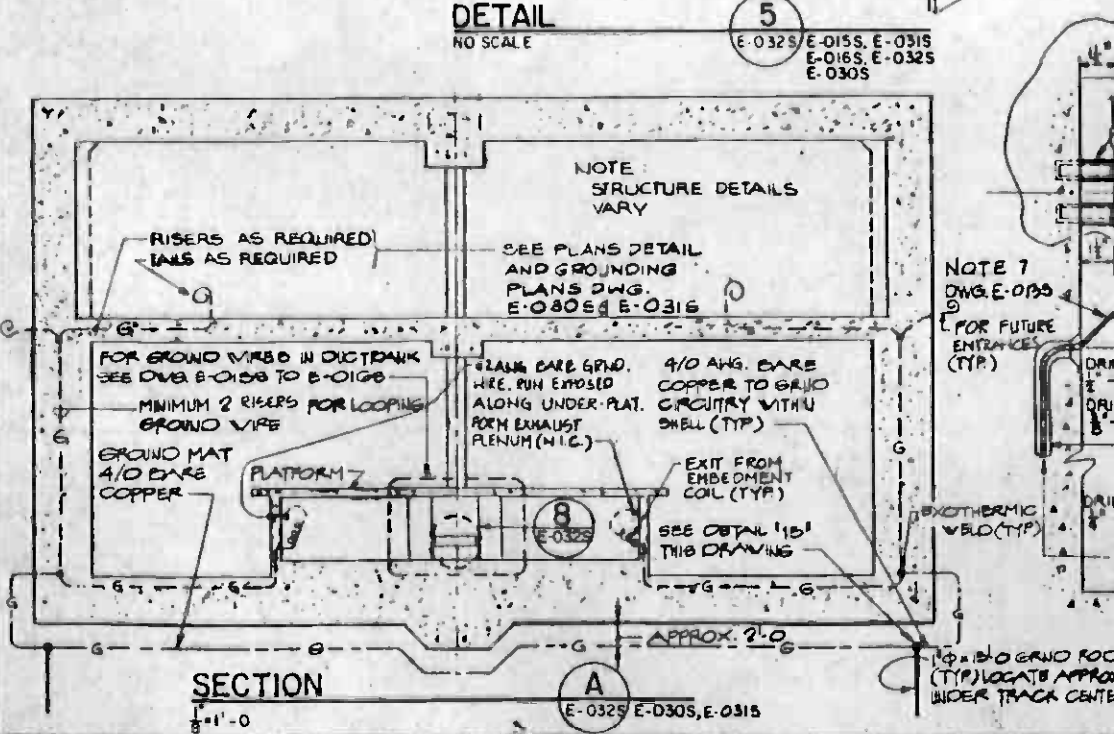
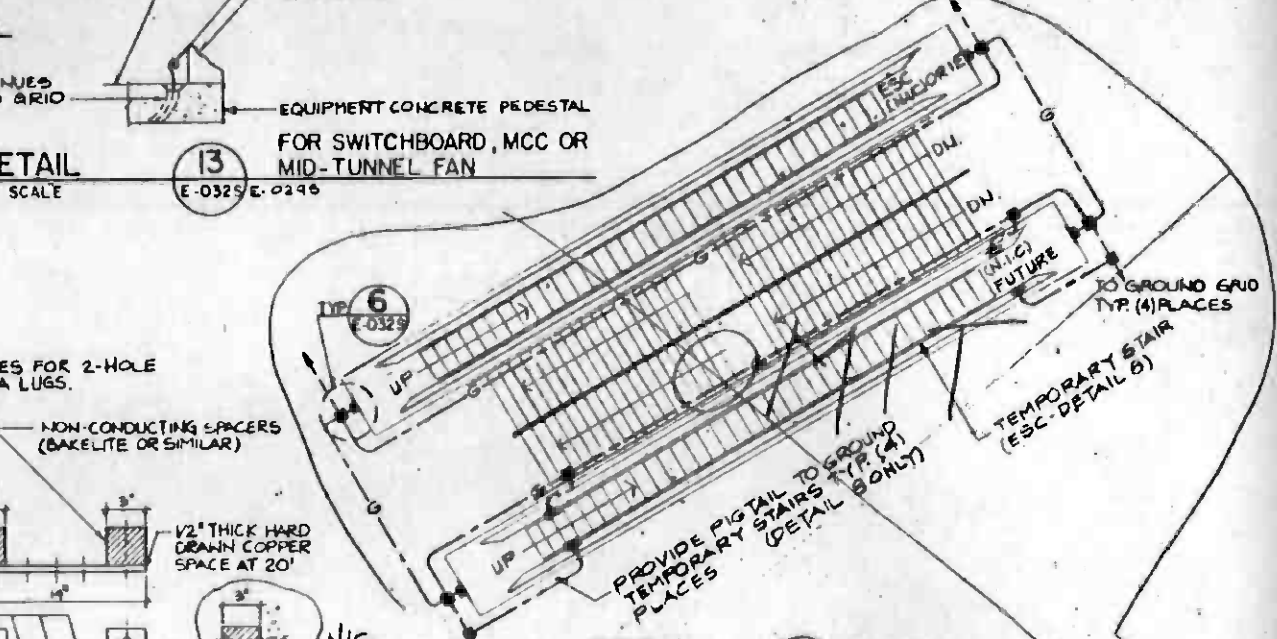
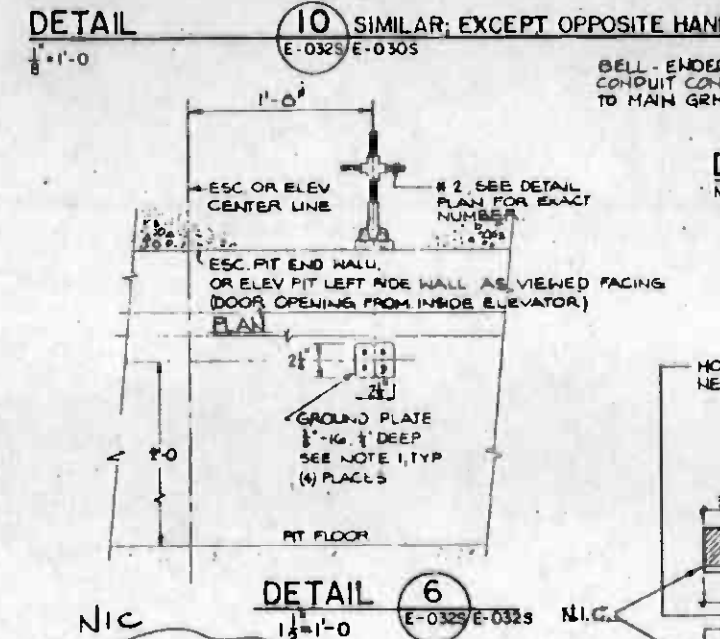
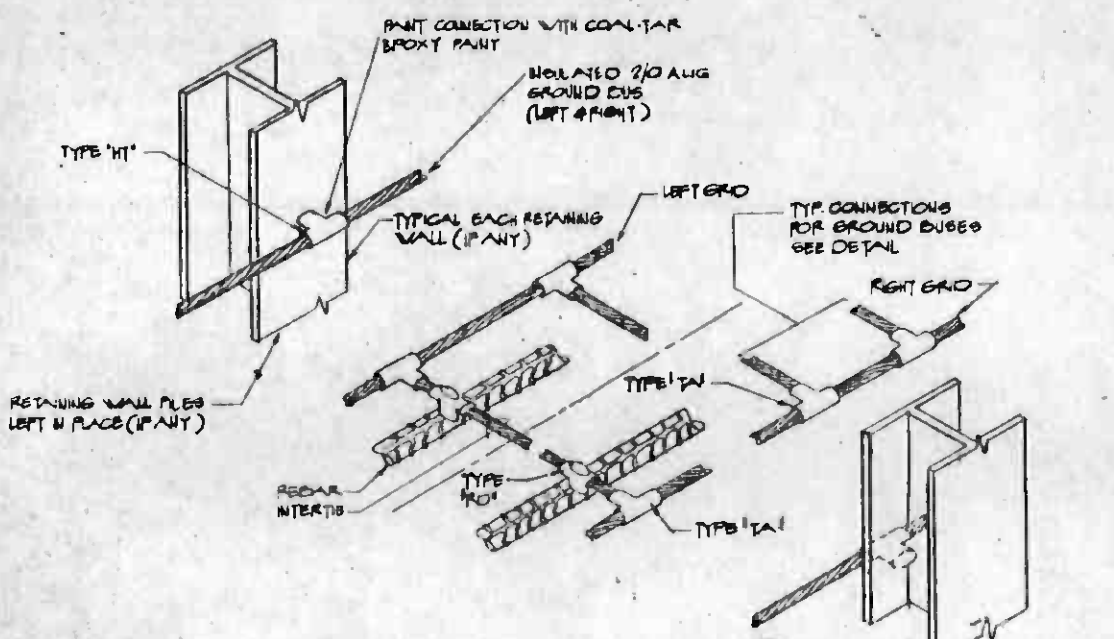
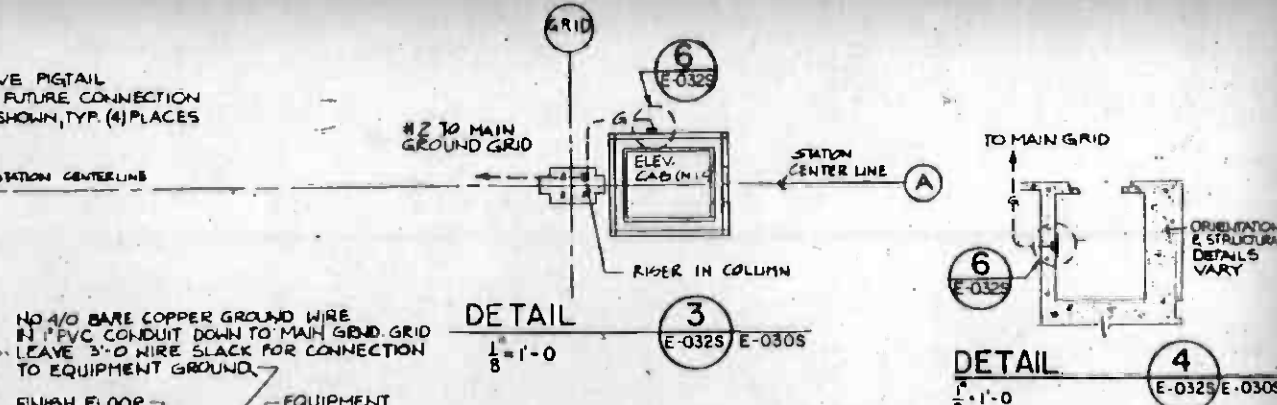
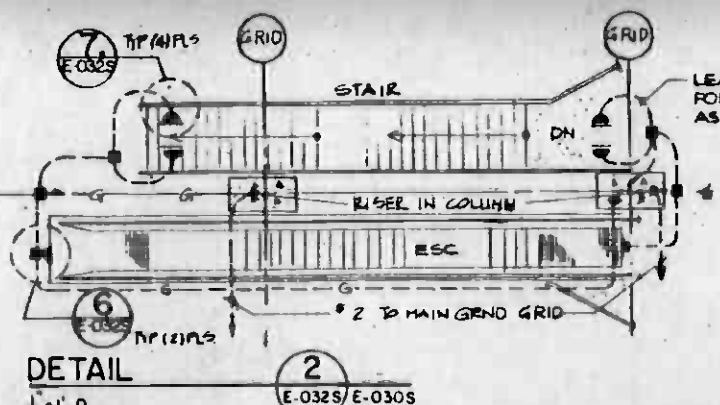
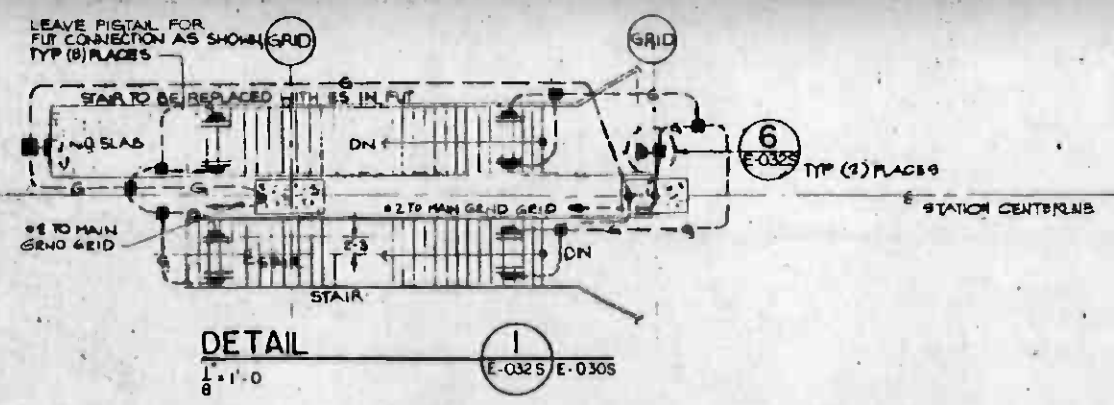
**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

HARRY WEESE & ASSOCIATES
TIPPETT - ABBETT - MCCARTHY - STRATTON
ENVIRONMENTAL COLLABORATIVE, INC.
GIN WONG ASSOCIATES

DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

APPROVED: *[Signature]*

LA CBD TO NORTH HOLLYWOOD UNION STATION GROUNDING RISER DIAGRAM		CONTRACT NO. A135
		DRAWING NO. E-029S
		REV. 4
		SCALE NO SCALE
		SHEET NO. A620/117



REV.	DATE	BY	APP.	DESCRIPTION
1				
2				
3				
4				
5				
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12				
13				
14				
15				

DESIGNED BY J.W. SHANNON
DRAWN BY H. SUVIT
CHECKED BY J.C. CHANG
IN CHARGE J.C. CHANG
DATE 17 APRIL 85

**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

HARRY WEESE & ASSOCIATES
TIPPETTS - ABSETT - MCCARTHY - STRATTON
ENVIRONMENTAL COLLABORATIVE, INC.
DIM WONG ASSOCIATES

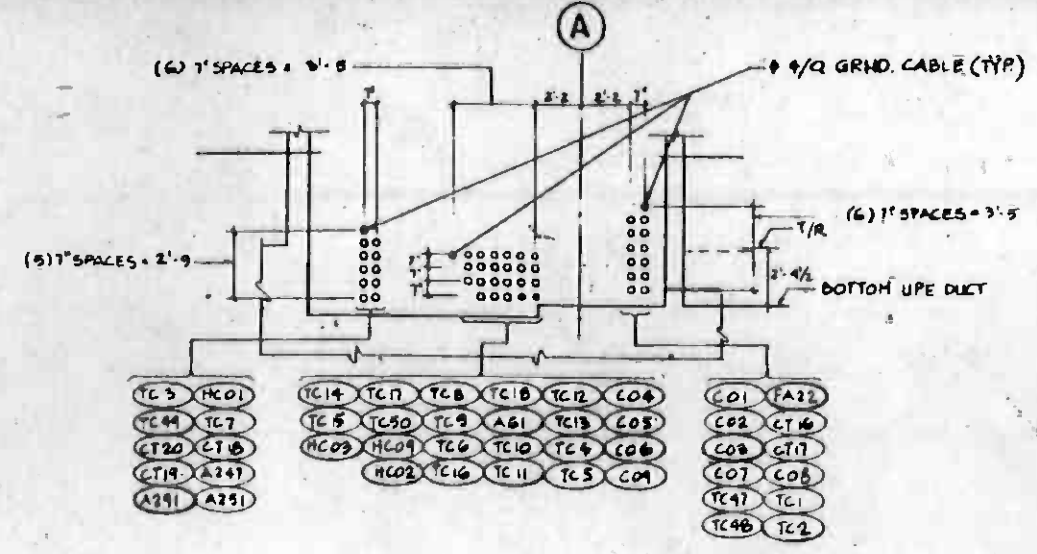
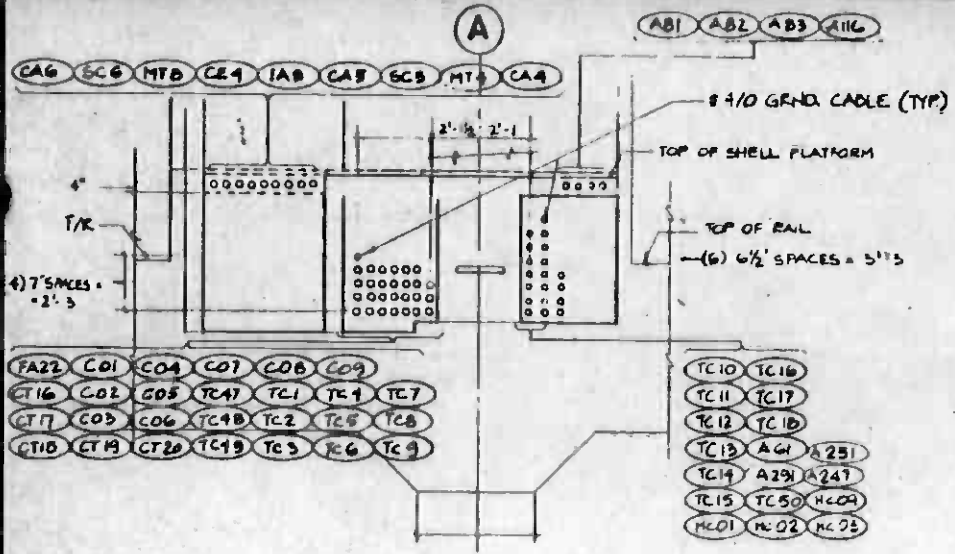
DNJM/PBQD/KE/HWA
GENERAL CONSULTANTS

APPROVED: *Howard Khaliff*

**LA CBD TO NORTH HOLLYWOOD
UNION STATION
GROUNDING DETAILS**

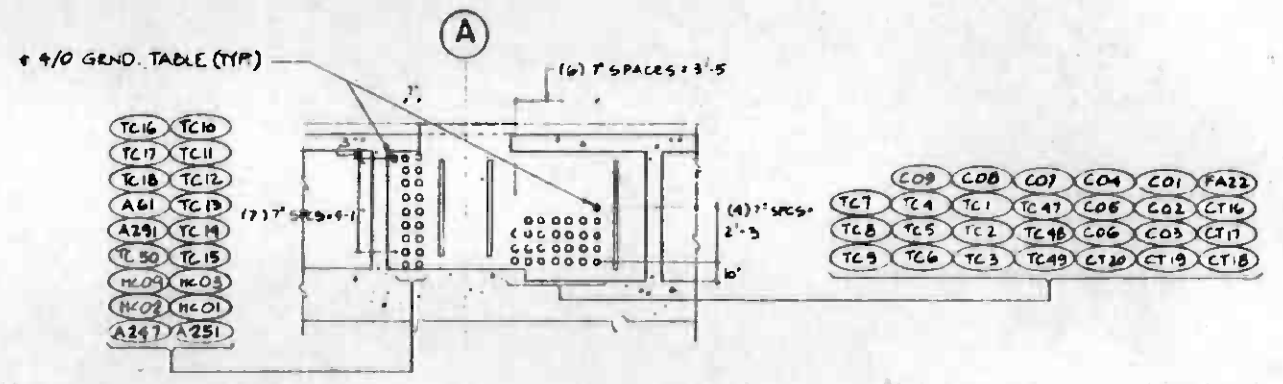
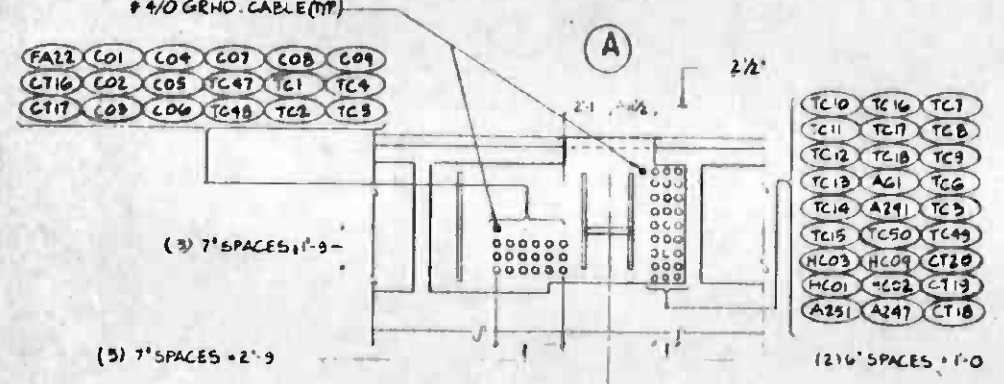
CONTRACT NO. **A135**
DRAWING NO. **E-032 S 4**
SCALE **AS NOTED**
SHEET NO. **A620/120**





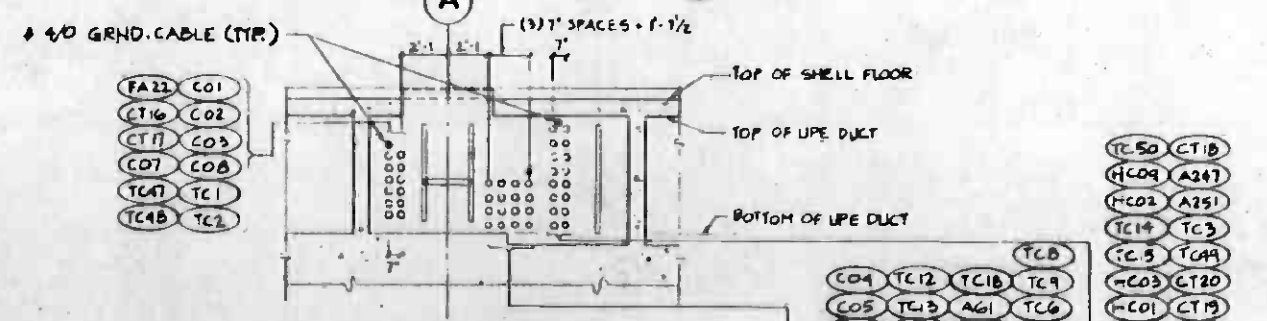
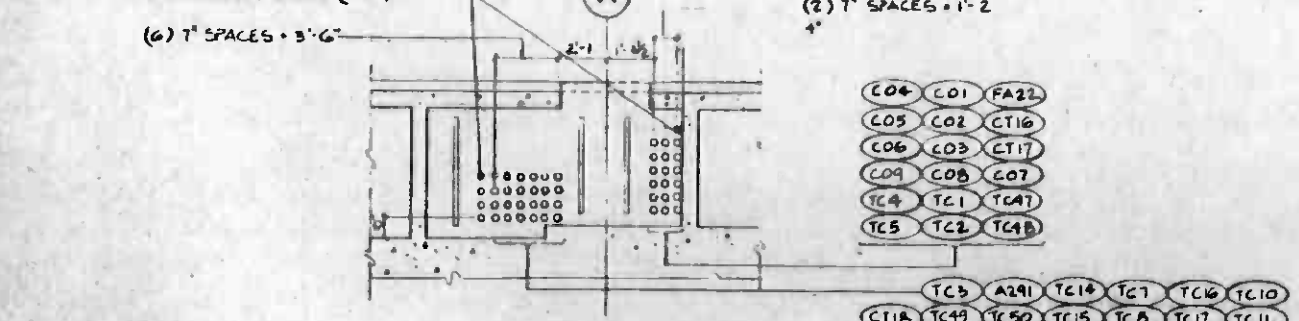
EAST ELECTRICAL RM SECTION A
E-0425 E-0135 E-0155

WEST ELECTRICAL RM SECTION B
E-0425 E-0135 E-0165



MANHOLE 1 (WEST SIDE) SECTION D
E-0425 E-0135 E-0155

MANHOLE 1 (EAST SIDE) SECTION F
E-0425 E-0135 E-0155



MANHOLE 2 (EAST SIDE) SECTION H
E-0425 E-0135 E-0165

MANHOLE 2 (WEST SIDE) SECTION K
E-0425 E-0135 E-0165

REV.	DATE	BY	APP.	DESCRIPTION
1				REVISD PER CRG-529

REV.	DATE	BY	APP.	DESCRIPTION
1				REVISD PER CRG-007
2				REVISD PER CR5-215
3				INITIAL ISSUE

DESIGNED BY J.H. SHANON	
DRAWN BY M.A. UDRESCU	
CHECKED BY K. DING	
IN CHARGE J.C. CHANG	
DATE 17 APRIL 85	

**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

HARRY WEESE & ASSOCIATES
TIPPETTS-ARRETT-McCARTHY-STRATTON
ENVIRONMENTAL COLLABORATIVE, INC.
GIN WORMS ASSOCIATES

DMJM/PROD/KE/HWA
GENERAL CONSULTANTS

SUBMITTED: *[Signature]* APPROVED: *[Signature]*

**LA CBD TO NORTH HOLLYWOOD
UNION STATION
ELECTRICAL ROOMS AND MANHOLES
SECTIONS AND DETAIL**

CONTRACT NO. A135
DRAWING NO. E-0425
REV. 3
SCALE 1/4" = 1'-0"
SHEET NO. A620/121



ELECTRICAL

BOX

SCHEDULE

Table with columns: BOX NO, TYPE, MOUNTING, SIZE, LAYOUT DWG. NUMBER, PAGE, REMARKS. Contains entries for electrical boxes like JBAC02, JBAC03, JBAC04, etc.

Table with columns: BOX NO, TYPE, MOUNTING, SIZE, LAYOUT DWG. NUMBER, PAGE, REMARKS. Contains entries for electrical boxes like JBFC01, JBFC02, JBFC03, etc.

Table with columns: BOX NO, TYPE, MOUNTING, SIZE, LAYOUT DWG. NUMBER, PAGE, REMARKS. Contains entries for electrical boxes like PBCK01, PBCK02, PBCT01, etc.

NOTES:
1. BOX AND SCREW PLATE COVER SHALL BE CONSTRUCTED OF MINIMUM 12 GAUGE SHEET STEEL WITH AMPLE SUPPORT AND BRACING FOR STRENGTH AND RIGIDITY...

2. WITH 1" DIA THREADED HUB AND GASKETED COVER.
DING TO THE SPECIFICATIONS.

Revision table with columns: REV, DATE, BY, APP, DESCRIPTION. Includes entries for revisions CR6-529 and CR6-025.

Professional Engineer seal for Harry C. Chang, State of California, No. 11805.

Southern California Rapid Transit District Metro Rail Project logo and project details including HARRY WESE & ASSOCIATES.

LA CBD TO NORTH HOLLYWOOD UNION STATION JUNCTION & PULL BOX SCHEDULE. Contract No. A135, Drawing No. E-044S, Sheet No. 4.

ELECTRICAL RACEWAY AND CABLE SCHEDULE

ELECTRICAL RACEWAY AND CABLE SCHEDULE

NO	FROM	TO	CKTS	CONDUIT			CONDUCTOR			DWG. NO.	SHT. NO.	REMARKS	NO	FROM	TO	CKTS	CONDUIT			CONDUCTOR			DWG. NO.	SHT. NO.	REMARKS
				METHOD	SIZE	TYPE	NO & SIZE	TYPE	GND.								METHOD	SIZE	TYPE	NO & SIZE	TYPE	GND.			
CA 1	BATTERY ROOM, (M9)	CIC #3 SEE NOTE 4		EMBEDDED	1"	GRS				E-0175		CC 6	PASS ASST PHONE COL 14	CIC #3 (M-11)		EMBEDDED	1"	GRS				E-0185 E-0195		SPARE	
CA 2	AUX. POWER ROOM, (M11)	CIC #3 SEE NOTE 4		EMBEDDED	1"	GRS				E-0175		CC 7	STUB-OUT AT COL. 29, SOUTH WALL	CIC #2 (P-20)		EMBEDDED	1"	GRS				E-0225			
CA 3	FUTURE E. ENTRANCE S. SIDE	E. ELECT. ROOM, (P8)		EMBEDDED	1"	GRS				-0175 -0195		CC 8	STATION CONTROL PNL	CIC #2		EMBEDDED	1"	GRS				E-0225			
CA 4	↓ ↓ ↓ N. ↓ ↓ ↓	↓ ↓ ↓ ↓ ↓		EMBEDDED	1"	GRS				-017 -019		CC 9	PASS ASST/INSTR REA, (M3)	CIC #2 ↓		EMBEDDED	1"	GRS				E-0225			
CA 5	STAFF SECURITY ROOM, (M20)	CIC #3 SEE NOTE 4		EMBEDDED	1"	GRS				E-017		CC 10	ELEV. 2W (FUTURE)	W. ELECT. RM. (P15)		EMBEDDED	1"	GRS				E-0255 E-0265		SPARE	
CA 6	ELECTRICAL ROOM, (P8)	CIC #3		EMBEDDED	1"	GRS				E-019 E-028		CC 11	PASS ASST PHONE PLATF COL 14	W. ELECT. RM. (P15)		EMBEDDED	1"	GRS				E-0255 E-0265		SPARE	
CA 7	E. ELECT. ROOM, (P8)	CIC #3		EMBEDDED	2"	GRS				E-019		CC 12	CIC #3	CABLE TRAY		EMBEDDED	3"	GRS				E-0185		CA 4 THRU CA 6, CA 5	
CA 8	AUXILIARY ROOM, (P20)	CIC #2		EMBEDDED	1"	GRS				-026 -028		CC 13	PASS ASST PHONE PLATF COL 22	W. ELECT. RM. (P15)		EMBEDDED	1"	GRS				E-0185 E-0265		SPARE	
CA 9	ELECTRICAL ROOM, (P15)	CIC #2		EMBEDDED	1"	GRS				-026 -028		CC 14	E. ELECT. RM. (P8)	STUB-OUT AT COL. 6, SOUTH WALL		EMBEDDED	1"	GRS				E-0175 E-0195			
CA 10	SUPERVISORS BOOTH, (P4)	W. ELECT. ROOM, (P8)		EMBEDDED	1"	GRS				-025 -026		CC 15	E. ELECT. RM. (P8)	STUB-OUT AT COL. 6, SOUTH WALL		EMBEDDED	1"	GRS							
CA 11	EMP-MEZZ. FREE ZONE, (M2)	CIC #2 SEE NOTE 4		EMBEDDED	1"	GRS				E-022		CC 16	E. ELECT. RM. (P8)	STUB-OUT AT COL. 6, NORTH WALL		EMBEDDED	1"	GRS							
CA 12	ELECT. EQUIP ROOM, (P23)	CIC #4		EMBEDDED	1"	GRS				E-027		CC 17	E. ELECT. RM. (P8)	TOILET (P10)		EMBEDDED	1"	GRS				E-0285		RETURN VIA CABLE TRAY @ CA 2	
CA 13	EMERG. FAN ROOM, N. (M24)	CIC #4 SEE NOTE 4		EMBEDDED	1"	GRS				-024 -027		CC 18	E. ELECT. RM. (P8)	TOILET (P11)		EMBEDDED	1"	GRS				E-0285		RETURN VIA CABLE TRAY @ CA 2	
CA 14	EMERG. FAN ROOM, S. (M24)	CIC #4 SEE NOTE 4		EMBEDDED	1"	GRS				-024 -027		CC 19	E. ELECT. RM. (P8)	TOILET (P11)		EMBEDDED	1"	GRS				E-0285		RETURN VIA CABLE TRAY @ CA 2	
CA 15	TCC ROOM (P5)	CIC #3		EMBEDDED	1"	GRS				-019 -025	ATG, AT 7	CC 20	PBCCTV1	STUB-OUT AT COL. 7-6 SOUTH WALL		EMBEDDED	1"	GRS				E-0175			
CA 16	BATTERY ROOM (P21)	CIC #2		EMBEDDED	1"	GRS				E-026		CC 21	PBCCTV1	STUB-OUT AT COL. 7, SOUTH WALL		EMBEDDED	1"	GRS				E-0175		FOR FUTURE N. SIDE E. ENTRY	
	ELEV. EQUIP ROOM, (M23)	CIC #2		EMBEDDED	1"	GRS				E-025		CC 22	PBCCTV1	STUB-OUT AT COL. 6, NORTH WALL		EMBEDDED	1"	GRS				E-0175			
	AUX. POWER ROOM, (P20)	CIC #2		EMBEDDED	1"	GRS				E-025		CC 23	PBCCTV1	CAM OUTLET FOR CCTV 4		EMBEDDED	1"	GRS				E-0175			
	MECHANICAL ROOM, (M4)	CIC #2		EMBEDDED	1"	GRS				E-025		CC 24	PBCCTV1	CAM OUTLET FOR CCTV 5		EMBEDDED	1"	GRS				E-0185			
	ELECTRICAL ROOM, (P8)	CIC #2		EMBEDDED	1"	GRS				E-025		CC 25	PBCCTV1	CAM OUTLET FOR CCTV 6		EMBEDDED	1"	GRS				E-0175		VIA PBCCTV2	
	SUPERVISORS BOOTH, (P4)	W. ELECT. ROOM		EMBEDDED	1"	GRS				E-025		CC 26	PBCCTV1	CAM OUTLET FOR CCTV 7		EMBEDDED	1"	GRS				E-0185 E-0205		VIA PBCCTV3	
	EMP-MEZZ FREE ZONE, (M2)	CIC #2 (RM P20)		EMBEDDED	1"	GRS				E-025		CC 27	PBCCTV1	CAM OUTLET FOR CCTV 8		EMBEDDED	1"	GRS				E-0175, E-0185 E-0205, E-0215 E-0255		VIA PBCCTV2, PBCCTV4	
	SUNR-SUNR ROOM, (P6)	CIC #2		EMBEDDED	1"	GRS				E-025		CC 28	PBCCTV1	CAM OUTLET FOR CCTV 9		EMBEDDED	1"	GRS				E-0175 & E-0185		VIA PBCCTV2	
	ELECT. EQUIP RM, (P23)	CIC #4		EMBEDDED	1"	GRS				E-025		CC 29	PBCCTV1	CAM OUTLET FOR CCTV 10		EMBEDDED	1"	GRS				E-0175 & E-0185		VIA PBCCTV1, PBCCTV4	
	EMERG. FAN RM, N. (M24)	CIC #4		EMBEDDED	1"	GRS				E-025		CC 30	PBCCTV1	STUB-OUT AT COL. 28, SOUTH WALL		EMBEDDED	1"	GRS				E-0175, E-0185, E-0205, E-0215 E-0255, E-0265		VIA PBCCTV3, PBCCTV5	
	EMERG. FAN RM, S. (M24)	CIC #4		EMBEDDED	1"	GRS				E-025		CC 31	PBCCTV1	CAM OUTLET FOR CCTV 11		EMBEDDED	1"	GRS				E-0175 & E-0185		VIA PBCCTV1, PBCCTV4	
	TCC RM, (P5)	CIC #3 (RM M-11)		EMBEDDED	1"	GRS				E-025		CC 32	PBCCTV1	STUB-OUT AT COL. 28, SOUTH WALL		EMBEDDED	1"	GRS				E-0175 E-0185		VIA PBCCTV2	
	BATTERY ROOM (P21)	CIC #2 (RM P-20)		EMBEDDED	1"	GRS				E-026	EXPOSED SLEEVES REQUIRED FOR ENTRY TO BATT. RM.	CC 33	PBCCTV1	CAM OUTLET FOR CCTV 12		EMBEDDED	1"	GRS				E-0175		VIA PBCCTV3, PBCCTV6	
CO 1	E. END ELECT. RM. (P8)	W. END ELECT. RM. (P15)		DUCT BANK	4"	GRS				E-035 E-045	CONDUITS CO3 & CO6 ARE FOR GAS MONITORING SYSTEM.	CC 34	PBCCTV1	CAM OUTLET FOR CCTV 13		EMBEDDED	1"	GRS				E-0185		VIA PBCCTV2, PBCCTV4	
CO 2	E. END ELECT. RM. (P8)	W. END ELECT. RM. (P15)		DUCT BANK	4"	GRS				E-035 E-045		CC 35	PBCCTV1	CAM OUTLET FOR CCTV 14		EMBEDDED	1"	GRS				E-0185 E-0205 E-0255		VIA PBCCTV2, PBCCTV4	
CO 3	E. END ELECT. RM. (P8)	W. END ELECT. RM. (P15)		DUCT BANK	4"	GRS				E-035 E-045		CC 36	PBCCTV1	STUB-OUT AT COL. 28, NORTH WALL		EMBEDDED	1"	GRS				E-0215 E-0255		VIA PBCCTV3, PBCCTV5	
CO 4	E. END ELECT. RM. (P8)	W. END ELECT. RM. (P15)		DUCT BANK	4"	GRS				E-035 E-045		CC 37	PBCCTV1	CAM OUTLET FOR CCTV 15		EMBEDDED	1"	GRS				E-0215 E-0255		VIA PBCCTV3, PBCCTV5	
CO 5	EAST END ELECT. RM. (P8)	W. END ELECT. RM. (P15)		DUCT BANK	4"	GRS				E-035 E-045		CC 38	PBCCTV1	STUB-OUT AT COL. 29, SOUTH WALL		EMBEDDED	1"	GRS				**		VIA PBCCTV1, PBCCTV4, PBCCTV5 SPARE ENTRY	
CO 6	EAST END ELECT. RM. (P8)	W. END ELECT. RM. (P15)		DUCT BANK	4"	GRS				E-035 E-045	VIA MANHOLE 1 & 2	CC 39	PBCCTV1	PBCCTV8		EMBEDDED	1"	GRS				E-0175		SPARE & ENTRY	
CO 7	EAST END ELECT. RM. (P8)	W. END ELECT. RM. (P15)		DUCT BANK	4"	GRS				E-035 E-045		CC 40	PBCCTV1	PBCCTV9		EMBEDDED	1"	GRS				E-0175		SPARE & ENTRY	
CO 8	EAST END ELECT. RM. (P8)	W. END ELECT. RM. (P15)		DUCT BANK	4"	GRS				E-035 E-045		CC 41	PBCCTV1	CAM OUTLET FOR CCTV 16		EMBEDDED	1"	GRS				E-0175		* E-0175, E-0185, E-0205, E-0215, E-0255	
CO 9	EAST END ELECT. RM. (P8)	W. END ELECT. RM. (P15)		DUCT BANK	4"	GRS				E-035 E-045		CC 42	PBCCTV1	CAM OUTLET FOR CCTV 17		EMBEDDED	1"	GRS				E-0175		* E-0175, E-0185, E-0205, E-0215, E-0255	
CO 10	MANHOLE 2	W. END ELECT. RM. (P15)		DUCT BANK	4"	GRS				E-035 E-045		CC 43	PBCCTV1	CAM OUTLET FOR CCTV 18		EMBEDDED	1"	GRS				E-0175		* E-0175, E-0185, E-0205, E-0215, E-0255	
CA 44	E. ELECT. RM. (P8)	ATC/CRM (P5)		EMBEDDED	4"	GRS				E-0195		CC 44	PBCCTV1	CAM OUTLET FOR CCTV 19		EMBEDDED	1"	GRS				E-0175			
CA 45	↓ ↓ ↓	↓ ↓ ↓		↓ ↓ ↓	↓ ↓ ↓	↓ ↓ ↓						CC 45	EJECTOR ROOM	PBCCTV01		EMBEDDED	3"	GRS				E-0175			
CA 46	↓ ↓ ↓	↓ ↓ ↓		↓ ↓ ↓	↓ ↓ ↓	↓ ↓ ↓						CC 46	EJECTOR ROOM	PBCCTV01		EXPOSED	3"	GRS				E-045			
CA 47	↓ ↓ ↓	↓ ↓ ↓		↓ ↓ ↓	↓ ↓ ↓	↓ ↓ ↓						CC 47	EJECTOR ROOM	PBCCTV01		EXPOSED	3"	GRS							
CA 48	↓ ↓ ↓	↓ ↓ ↓		↓ ↓ ↓	↓ ↓ ↓	↓ ↓ ↓						CC 48	↓ ↓ ↓	↓ ↓ ↓		↓ ↓ ↓	↓ ↓ ↓	↓ ↓ ↓							
CA 49	↓ ↓ ↓	↓ ↓ ↓		↓ ↓ ↓	↓ ↓ ↓	↓ ↓ ↓						CC 49	↓ ↓ ↓	↓ ↓ ↓		↓ ↓ ↓	↓ ↓ ↓	↓ ↓ ↓							
C17	TCC ROOM (P5)	PBCO1		EMBEDDED	2"	GRS				E-0185 E-0215		CC 50	PBCCTV1	STUB-OUT AT COL. 7-6 SOUTH WALL		EMBEDDED	1"	GRS				E-0175			
C18	TCC ROOM (P5)	PBCO2		EMBEDDED	2"	GRS				E-0185 E-0215		CC 51	PBCCTV1	STUB-OUT AT COL. 7, NORTH WALL		EMBEDDED	1"	GRS				E-0175		FOR FUTURE N. SIDE E. ENTRY	
C19	W. ELECT. ROOM, (P15)	PBCO3		EMBEDDED	2"	GRS				E-0215 E-0225		CC 52	PBCCTV1	STUB-OUT AT COL. 6, NORTH WALL		EMBEDDED	1"	GRS				E-0175			
C20	W. ELECT. ROOM, (P15)	PBCO4		EMBEDDED	2"	GRS				E-0215 E-0225		CC 53	PBCCTV1	CAM OUTLET FOR CCTV 4		EMBEDDED	1"	GRS				E-0175			
C31	W. ELECT. RM. (P15)	EMERG. FAN ELECT. RM. (P24)		EMBEDDED	4"	GRS				E-0255 E-0275		CC 54	PBCCTV1	CAM OUTLET FOR CCTV 5		EMBEDDED	1"	GRS				E-0185		VIA PBCCTV1	
C32	↓ ↓ ↓	↓ ↓ ↓		↓ ↓ ↓	↓ ↓ ↓	↓ ↓ ↓						CC 55	PBCCTV1	CAM OUTLET FOR CCTV 6		EMBEDDED	1"	GRS				E-0185 E-0205		VIA PBCCTV3	
C33	↓ ↓ ↓	↓ ↓ ↓		↓ ↓ ↓	↓ ↓ ↓	↓ ↓ ↓						CC 56	PBCCTV1	CAM OUTLET FOR CCTV 7		EMBEDDED	1"	GRS				E-0175, E-0185 E-0205, E-0215 E-0255		VIA PBCCTV2, PBCCTV4	
CA 1	↓ ↓ ↓	↓ ↓ ↓		↓ ↓ ↓	↓ ↓ ↓	↓ ↓ ↓						CC 57	PBCCTV1	CAM OUTLET FOR CCTV 8		EMBEDDED	1"	GRS				E-0175, E-0185 E-0205, E-0215 E-0255		VIA PBCCTV3, PBCCTV5	
CA 2	↓ ↓ ↓	↓ ↓ ↓		↓ ↓ ↓	↓ ↓ ↓	↓ ↓ ↓						CC 58	PBCCTV1	CAM OUTLET FOR CCTV 9		EMBEDDED	1"	GRS				E-0175 & E-0185 E-0205		VIA PBCCTV2	
CA 3	↓ ↓ ↓	↓ ↓ ↓		↓ ↓ ↓	↓ ↓ ↓	↓ ↓ ↓						CC 59	PBCCTV1	CAM OUTLET FOR CCTV 10		EMBEDDED	1"	GRS				E-0175 & E-0185		VIA PBCCTV1, PBCCTV4	
CC 1	STATION CONTROL PNL	CIC #3 (M-11)		EMBEDDED	1"	GRS				E-0175 E-0185		CC 40	PBCCTV1	CAM OUTLET FOR CCTV 10		EMBEDDED	1"	GRS				*		VIA PBCCTV2, PBCCTV4	
CC 3	ST																								

ELECTRICAL RACEWAY AND CABLE SCHEDULE

ELECTRICAL RACEWAY AND CABLE SCHEDULE

NO	FROM	TO	CKTS	CONDUIT			CONDUCTOR			DWG. NO.	SHT. NO.	REMARKS	NO	FROM	TO	CKTS	CONDUIT			CONDUCTOR			DWG. NO.	SHT. NO.	REMARKS
				METHOD	SIZE	TYPE	NO & SIZE	TYPE	GND.								METHOD	SIZE	TYPE	NO & SIZE	TYPE	GND.			
CCTV 47	PBCCTVI	CAN OUTLET FOR CCTV		EMBEDDED	1"	GRS					VIA PBCCTV2, PBCCTV4	CT3	CIC #3 RM M-11	CEILING BELOW C/C		EMBEDDED	2"	GRS				E-0196		CONDUIT SLEEVE ONLY	
CCTV 48	PBCCTVI	STUB-OUT AT COL. 28, NORTH WALL		EMBEDDED	1"	GRS					VIA PBCCTV3, PBCCTV5	CT4	CIC #3	CEILING BELOW C/C		EMBEDDED	2"	GRS				E-0196		CONDUIT SLEEVE ONLY	
CCTV 49	PBCCTVI	CAN OUTLET FOR CCTV		EMBEDDED	1"	GRS					VIA PBCCTV3, PBCCTV5	CT5	CIC #3	CEILING BELOW C/C		EMBEDDED	2"	GRS				E-0195		CONDUIT SLEEVE ONLY	
CCTV 50	PBCCTVI	STUB-OUT AT COL. 29, SOUTH WALL		EMBEDDED	1"	GRS					VIA PBCCTV2, PBCCTV4, PBCCTV6 SPARE W ENTRY	CT6	CIC #3	CEILING BELOW C/C		EMBEDDED	2"	GRS				E-0195		CONDUIT SLEEVE ONLY	
CCTV 51	PBCCTVI	P8TV 8		EMBEDDED	1"	GRS			E-0175		SPARE E ENTRY	CT7	E ELECT RM, (P8)	CEILING BELOW C/C		EMBEDDED	2"	GRS				E-0195		VIA MANHOLE 1 & 2	
CCTV 52	PBCCTVI	P8TV 9		EMBEDDED	1"	GRS			E-0175		SPARE E ENTRY	CT16	E ELECT RM, (P8)	W ELECT RM, (P15)		DUCT BANK	4"	PVC				E-0195		VIA MANHOLE 1 & 2	
											*E-0175, E-0185, E-0205	CT17	E ELECT RM, (P8)	W ELECT RM, (P15)		DUCT BANK	4"	PVC				E-0195		VIA MANHOLE 1 & 2	
CE 21	EMERG TEL AT FHC - COL. 24	CIC #2		EMBEDDED	1"	GRS			E-0285		E-0215, E-0225, E-0235, E-0255	CT18	E ELECT RM, (P8)	W ELECT RM, (P15)		DUCT BANK	4"	PVC				E-0195		VIA MANHOLE 1 & 2	
CE 19	ETS AL TRACK COL. 40	CIC #4		SLEEVES	1"	GRS			E-0275		LISTED OUT OF SEQUENCE	CT19	E ELECT RM, (P8)	W ELECT RM, (P15)		DUCT BANK	3"	PVC				E-0195		VIA MANHOLE 1 & 2	
CE 20	FAR			THRU WALL	1"	GRS						CT20	E ELECT RM, (P8)	W ELECT RM, (P15)		DUCT BANK	3"	PVC				E-0195		VIA MANHOLE 1 & 2	
CCTV 87	EJECTOR RM, (P7)	PBCCTV1		EMBEDDED	3"	GRS			E-0195																
CCTV 88	EJECTOR RM, (P7)	PBCCTV1		EMBEDDED	3"	GRS			E-0195																
CB 1	TCC RM, (P5)	CIC #3 (M-11)		EMBEDDED	1"	GRS			E-0185																
CB 2	ET AT FHC MEZZ. COL 9	CIC #3		EMBEDDED	1"	GRS			E-0185		INCLUDES PTEL														
CB 3	ET AT FHC COL 6	E ELECT RM, (P8)		EMBEDDED	1"	GRS			E-0185																
CB 4	FHC PLATF LEVEL, COL 11	E ELECT RM, (P8)		EMBEDDED	1"	GRS			E-0185																
CB 5	ETS AL TRACK, COL 7	E ELECT RM, (P8)		EMBEDDED	1"	GRS			E-0285																
CB 6	ETS AL TRACK, COL 7	E ELECT RM, (P8)		EMBEDDED	1"	GRS			E-0285																
CB 7	NEAR FHC WEST MEZZ (M3)	CIC #2 (P-20)		EMBEDDED	1"	GRS			E-0225																
CB 8	CABLE TRAY LOCATION BELOW CIC #3	CABLE TRAY CIC #3		EMBEDDED	3"	GRS			E-0185		CB4, CB5, CB6, CB4, CB15														
CB 9	ETS AL TRACK, COL 12	W ELECT RM, (P15)		EMBEDDED	1"	GRS			E-0285																
CB 10	ETS AL TRACK, COL 12	W ELECT RM, (P15)		EMBEDDED	1"	GRS			E-0285																
CB 11	FHC PLATF LEVEL COM	W ELECT RM, (P15)		EMBEDDED	1"	GRS			E-0185		INCLUDES PTEL														
CB 12	NEAR FHC TRACK COL 23	W ELECT RM, (P15)		EMBEDDED	1"	GRS			E-0285																
CB 13	CORRIDOR, (S2)	CIC #3 (M-11)		EMBEDDED	1"	GRS			E-0175																
CB 14	CORRIDOR, (P3)	E ELECT RM, (P8)		EMBEDDED	1"	GRS			E-0285		RETURN THRU CB6 & CABLE TRAY														
CB 15	CORRIDOR, (P3)	E ELECT RM, (P8)		EMBEDDED	1"	GRS			E-0285		RETURN THRU CB6 & CABLE TRAY														
CB 16	FIRE COMMAND POST	CIC #3 (M-11)		EMBEDDED	1"	GRS			E-0175		INCLUDES PTEL														
CB 17	STUB-OUT AT COL. 30, SOUTH WALL	CIC #2 (P-20)		EMBEDDED	1"	GRS			E-0225																
CB 18	STUB-OUT AT COL. 6, NORTH WALL	E ELECT RM, (P8)		EMBEDDED	1"	GRS			E-0175																
CE 24	ETEL AT FHC PLATF. COL 24	CIC #2 (P-20)		EMBEDDED	1"	GRS			E-0275																
CE 25	ETEL AT FHC PLATF. COL 24	CIC #4		EMBEDDED	1"	GRS			E-0285																
CE 21	EMERG. EQUIP RM, (M19)	CIC #3 (M-11)		EMBEDDED	1"	GRS			E-0175																
CE 22	EMERG. EQUIP RM, (P12)	E ELECT RM, (P8)		EMBEDDED	1"	GRS			E-0185																
CE 23	SUPERVISOR'S BOOTH, (P4)	W ELECT RM, (P15)		EMBEDDED	1"	GRS			E-0185																
CF 1	VALVE RM, (M16)	CIC #3 (M-11)		EMBEDDED	2"	GRS			E-0175																
CF 2	ETS AL TRACK, COL 7	E ELECT RM, (P8)		EMBEDDED	2"	GRS			E-0285																
CF 3	ETS AL TRACK, COL 7	E ELECT RM, (P8)		EMBEDDED	1"	GRS			E-0285																
CF 4	VALVE RM, (P18)	CIC #2 (P-20)		EMBEDDED	1"	GRS			E-0285																
CF 5	ETS AL TRACK, COL 22	W ELECT RM, (P15)		EMBEDDED	1"	GRS			E-0285																
CF 6	ETS AL TRACK, COL 22	W ELECT RM, (P15)		EMBEDDED	1"	GRS			E-0285																
CF 7	EMP MEZZ LEVEL	CIC #2 (P-20)		EMBEDDED	1"	GRS			E-0275		INCLUDES ETEL														
CF 8	CABLE TRAY BELOW CIC #3	CIC #3 (M-11)		EMBEDDED	3"	GRS			E-0185		INCLUDES CF2, CF3 & CF12														
CF 9	SECURITY STAFF ROOM, (M10)	CIC #3		EMBEDDED	1"	GRS			E-0175		INCLUDES ETEL														
CF 10	ROOF ABOVE E UTILITY SHAFT	CIC #3		EMBEDDED	1"	GRS			E-0175																
CF 11	FHC TRACK LEVEL, COL 16	E ELECT RM, (P4)		EMBEDDED	1"	GRS			E-0285		SPARE														
CF 13	FHC MEZZ. LEVEL, COL 9	CIC #3 (M-11)		EMBEDDED	1"	GRS			E-0175		SPARE														
CF 14	FHC MEZZ LEVEL, COL 24	CIC #2 (P-20)		EMBEDDED	1"	GRS			E-0225		SPARE														
CF 15	FHC TRACK LEVEL, COL 23	W ELECT RM, (P15)		EMBEDDED	1"	GRS			E-0285		SPARE														
CF 16	STUB-OUT AT COL. 30, SOUTH WALL	CIC #2 (P-20)		EMBEDDED	1"	GRS			E-0225																
CF 17	STUB-OUT AT COL. 6, NORTH WALL	E ELECT RM, (P8)		EMBEDDED	1"	GRS			E-0175																
CF 18	ETS AL TRACK, COL 24	CIC #4		EMBEDDED	1"	GRS			E-0285																
CF 19	ETS AL TRACK, COL 24	EIG #4		EMBEDDED	1"	GRS			E-0285																
CF 20	EMERG. EQUIP RM, (P12)	CIC #4		EMBEDDED	1"	GRS			E-0285																
CT 1	CIC #3	CEILING BELOW C/C		EMBEDDED	2"	GRS			E-0195		CONDUIT SLEEVE ONLY														
CT 2	CIC #3	CEILING BELOW C/C		EMBEDDED	2"	GRS			E-0195		CONDUIT SLEEVE ONLY														

22 CONDUITS LISTED ON DWG E-0255



FA CONTD ON DWG E-0255

NOTES:

- 1. CONDUCTORS INSTALLED ON SEPERATE CONTRACT, INSTALL 1/2" DIAMETER NYLON PULL CORD IN EACH CONDUIT, LEAVE 3'-0" EXCESS LENGTH OF CORD AT EACH END.

<p>THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.</p>				<p>DESIGNED BY J. W. SHANNON</p> <p>DRAWN BY J. K. CZECH</p> <p>CHECKED BY K. ILASZ</p> <p>IN CHARGE J. C. CHANG</p> <p>DATE 17 APRIL 85</p>		<p>SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT</p> <p>HARRY WESE & ASSOCIATES TIPPLETS - ARSEY - MCCARTHY - STRATTON ENVIRONMENTAL COLLABORATIVE, INC. ONE WOOD ASSOCIATES</p> <p>DALIM/POOD/KE/MWA GENERAL CONSULTANTS Harry Weese & Associates</p>		<p>CONTRACT NO. A135</p> <p>DRAWING NO. E-0485</p> <p>SCALE NO SCALE</p> <p>SHEET NO. A620/124</p>	
<p>REV. DATE BY SUB APP DESCRIPTION</p>				<p>REV. DATE BY SUB APP DESCRIPTION</p>		<p>REV. DATE BY SUB APP DESCRIPTION</p>		<p>REV. DATE BY SUB APP DESCRIPTION</p>	
<p>REVISOR: 11-85 PER AS/AM REVISED PER CRG-007</p>				<p>INITIAL ISSUE</p>		<p>REVISOR: 11-85 PER AS/AM REVISED PER CRG-215</p>		<p>REVISOR: 11-85 PER AS/AM REVISED PER CRG-529</p>	

ELECTRICAL RACEWAY AND CABLE SCHEDULE

NO	FROM	TO	CKTS	CONDUIT			CONDUCTOR			DWG NO.	SHT. NO.	REMARKS
				METHOD	SIZE	TYPE	NO & SIZE	TYPE	GND.			
SC 1	STUB-OUT AT COL. 6, NORTH WALL	E ELECT RM (PB)		EMBEDDED	1 1/2"	GRS			E-0175		RETURN TO CC-3 THRU	
SC 2	STUB-OUT AT COL. 6 NORTH WALL	E ELECT RM (PB)		EMBEDDED	1 1/2"	GRS			E-0195		CABLE TRAY & SC 40	
SC 4	VALVE RM. (M16)	CC-3		EMBEDDED	1 1/2"	GRS			E-0175			
SC 5	ES #36, BOTTOM PIT	E ELECT RM (PB)		EMBEDDED	1 1/2"	GRS			E-0196			
SC 6	ES #4E	CIC-3		EMBEDDED	1 1/2"	GRS			E-0205			
SC 7	EJECTOR RM. (P7)	CIC-3		EMBEDDED	1 1/2"	GRS			E-0195			
SC 8	E MECH/UPE RM (P6)	CIC-3		EMBEDDED	1 1/2"	GRS			E-0185			
SC 9	E ELECT RM. (PB)	CIC-3		EMBEDDED	1 1/2"	GRS						
SC 11	ELEV EQUIP RM (M23)	CIC-3		EMBEDDED	1 1/2"	GRS			E-0175			
SC 14	ES #4W, BOTTOM PIT	W ELECT RM (PB)		EMBEDDED	1 1/2"	GRS			E-0255			
SC 15	ES #3W, BOTTOM PIT	W ELECT RM (PB)		EMBEDDED	1 1/2"	GRS			E-0285			
SC 16	W MECH RM. (P19)	CIC-2		EMBEDDED	2"	GRS			E-0285			
SC 18	W ELECT RM (P15)	CIC-2		EMBEDDED	1 1/2"	GRS			E-0285			
SC 19	SUMP PUMP RM (P16)	CIC-2		EMBEDDED	1"	GRS			E-0285			
SC 20	W VALVE RM (P15)	CIC-2		EMBEDDED	1"	GRS			E-0285			
SC 21	EMP W MEZZ.	CIC-2		EMBEDDED	2"	GRS			E-0225			
SC 22	EMP W MEZZ	CIC-2		EMBEDDED	2"	GRS			E-0275			
SC 23	W ELEV EQUIP RM. (M13)	CIC-2		EMBEDDED	1 1/2"	GRS			E-0225			
SC 24	STUB-OUT AT COL. 29, SOUTH WALL	CIC-2		EMBEDDED	1 1/2"	GRS			E-0275			
SC 25	STUB-OUT AT COL. 30, SOUTH WALL	CIC-2		EMBEDDED	1 1/2"	GRS			E-0225			
SC 26	EMERG. FAN RM (M14)	CIC-2		EMBEDDED	1 1/2"	GRS			E-0275			
SC 27	EMERG. FAN RM (M14)	CIC-2		EMBEDDED	1 1/2"	GRS			E-0275			
SC 30	EMERG. EQUIP RM. (M19)	CIC-3		EMBEDDED	1"	GRS			E-0175			
SC 31	EQUIP RM. (M10)	CIC-3		EMBEDDED	1"	GRS			E-0175			
SC 33	E AIR SUPPLY RM (M12)	CIC-3		EMBEDDED	1"	GRS			E-0175			
SC 34	W MEZZ. ELECT RM (M21)	CIC-2		EMBEDDED	1"	GRS			E-0225			
SC 35	W AIR SUPPLY RM (M12)	CIC-2		EMBEDDED	1 1/2"	GRS			E-0225			
SC 37	STUB-OUT AT COL. 6, SOUTH WALL	E ELECT RM (PB)		EMBEDDED	1 1/2"	GRS			E-0175		RETURN THRU CABLE TRAY &	
SC 38	STUB-OUT AT COL. 6, SOUTH WALL	E ELECT RM (PB)		EMBEDDED	1 1/2"	GRS			E-0195		SC 40 FOR FUT. S. SIDE E. ENTRIES	
SC 39	CABLE TRAY BELOW CIC-3	CIC-3		EMBEDDED	3"	GRS			E-0196		SC 1, SC 2	
SC 40	CABLE TRAY BELOW CIC-3	CIC-3		EMBEDDED	3"	GRS			E-0196		SC 5, SC 6, SC 37, SC 38	
SC 41	SUPERVISOR'S BOOTH, (P4)	E ELECT RM (PB)		EMBEDDED	1 1/2"	GRS			E-0255		RETURN TO CIC-3 VIA CABLE TRAY	
TC 1	E ELECT RM. (PB)	W ELECT RM (P15)		DUCT BANK	3"	PVC			E-0255		VIA MANHOLES 1 & 2	
TC 2	E ELECT RM. (PB)	W ELECT RM (P15)		DUCT BANK	3"	PVC			E-0654		VIA MANHOLES 1 & 2	
TC 3	E ELECT RM. (PB)	W ELECT RM (P15)		DUCT BANK	3"	PVC					VIA MANHOLES 1 & 2	
TC 4	E ELECT RM. (PB)	W ELECT RM (P15)		DUCT BANK	3"	PVC					VIA MANHOLES 1 & 2	
TC 5	E ELECT RM. (PB)	W ELECT RM (P15)		DUCT BANK	3"	PVC					VIA MANHOLES 1 & 2	
TC 6	E ELECT RM. (PB)	W ELECT RM (P15)		DUCT BANK	3"	PVC					VIA MANHOLES 1 & 2	
TC 7	E ELECT RM. (PB)	W ELECT RM (P15)		DUCT BANK	3"	PVC					VIA MANHOLES 1 & 2	
TC 8	E ELECT RM. (PB)	W ELECT RM (P15)		DUCT BANK	3"	PVC					VIA MANHOLES 1 & 2	
TC 9	E ELECT RM. (PB)	W ELECT RM (P15)		DUCT BANK	3"	PVC					VIA MANHOLES 1 & 2	
TC 10	E ELECT RM. (PB)	W ELECT RM (P15)		DUCT BANK	3"	PVC					VIA MANHOLES 1 & 2	
TC 11	E ELECT RM. (PB)	W ELECT RM (P15)		DUCT BANK	3"	PVC					VIA MANHOLES 1 & 2	
TC 12	E ELECT RM. (PB)	W ELECT RM (P15)		DUCT BANK	3"	PVC					VIA MANHOLES 1 & 2	
TC 13	E ELECT RM. (PB)	W ELECT RM (P15)		DUCT BANK	3"	PVC					VIA MANHOLES 1 & 2	
TC 14	E ELECT RM. (PB)	W ELECT RM (P15)		DUCT BANK	3"	PVC					VIA MANHOLES 1 & 2	
TC 15	E ELECT RM. (PB)	W ELECT RM (P15)		DUCT BANK	3"	PVC					VIA MANHOLES 1 & 2	
TC 16	E ELECT RM. (PB)	W ELECT RM (P15)		DUCT BANK	3"	PVC					VIA MANHOLES 1 & 2	
TC 17	E ELECT RM. (PB)	W ELECT RM (P15)		DUCT BANK	3"	PVC					VIA MANHOLES 1 & 2	
TC 18	E ELECT RM. (PB)	W ELECT RM (P15)		DUCT BANK	3"	PVC					VIA MANHOLES 1 & 2	
TC 19	E ELECT RM. (PB)	W ELECT RM (P15)		EMBEDDED	2"	GRS			E-0175		VIA MANHOLES 1 & 2	

ELECTRICAL RACEWAY AND CABLE SCHEDULE

NO.	FROM	TO	CKTS	CONDUIT			CONDUCTOR			DWG NO.	SHT NO	REMARKS
				METHOD	SIZE	TYPE	NO & SIZE	TYPE	GND.			
TC 20	E ELECT RM (PB)	PBTC 02		EMBEDDED	2"	GRS			E-045			
TC 21	W ELECT RM (P15)	W CROSSOVER SW MACHINE #1		EMBEDDED	3"	GRS			E-0269			
TC 22	W ELECT RM. (P15)	W CROSSOVER SW MACHINE #1		EMBEDDED	3"	GRS			E-0165			
TC 23	COMM CABLE TRAY LOCATION ON OUTSIDE WALL	W CROSSOVER SW MACHINE #1		EMBEDDED	3"	GRS			E-0175			
TC 24	COLUMN # 39A	W CROSSOVER SW MACHINE #2		EMBEDDED	3"	GRS			E-0175			
TC 25	COLUMN # 39A	W CROSSOVER SW MACHINE #2		EMBEDDED	3"	GRS			E-0175			
TC 26	COLUMN # 39A	W AL TC DUCT		EMBEDDED	3"	GRS			E-0175			
TC 27	COLUMN # 39A	W AL TC DUCT		EMBEDDED	3"	GRS			E-0175			
TC 28	COLUMN # 39A	W AL TC DUCT		EMBEDDED	3"	GRS			E-0175			
TC 29	COLUMN # 39A	W AL TC DUCT		EMBEDDED	3"	GRS			E-0175			
TC 30	W ELECT RM (P15)	W CROSSOVER SW MACHINE #3		EMBEDDED	3"	GRS			E-0165			
TC 31	W ELECT RM (P15)	W CROSSOVER SW MACHINE #3		EMBEDDED	3"	GRS			E-0268			
TC 32	COMM CABLE TRAY LOCATION ON OUTSIDE WALL	W CROSSOVER SW MACHINE #3		EMBEDDED	3"	GRS			E-0268			
TC 33	COLUMN # 39A	W CROSSOVER SW MACHINE #4		EMBEDDED	3"	GRS			E-0175			
TC 34	COLUMN # 39A	W CROSSOVER SW MACHINE #4		EMBEDDED	3"	GRS			E-0175			
TC 35	COLUMN # 39A	W AL TC DUCT		EMBEDDED	3"	GRS			E-0175			
TC 36	COLUMN # 39A	W AL TC DUCT		EMBEDDED	3"	GRS			E-0175			
TC 37	COLUMN # 39A	W AL TC DUCT		EMBEDDED	3"	GRS			E-0175			
TC 38	COLUMN # 39A	W AL TC DUCT		EMBEDDED	3"	GRS			E-0175			
TC 39	ETS AL TRACK COLUMN # 40	W ELECT RM (P15)		EMBEDDED	1 1/2"	GRS			E-0275			
TC 40	ETS AL TRACK COLUMN # 40	W ELECT RM (P15)		EMBEDDED	1 1/2"	GRS			E-0175			
TC 41	ETS AL TRACK COLUMN # 7	E ELECT RM (PB)		EMBEDDED	1 1/2"	GRS			E-0268			
TC 42	ETS AL TRACK COLUMN # 7	E ELECT RM (PB)		EMBEDDED	1 1/2"	GRS			E-0268			
TC 43	ETS AL TRACK COLUMN # 22	W ELECT RM (P15)		EMBEDDED	1 1/2"	GRS			E-0285			
TC 44	ETS AL TRACK COLUMN # 22	W ELECT RM (P15)		EMBEDDED	1 1/2"	GRS			E-0285			
TC 45	GAP AIR BREAKER SW	COLUMN # 39A		EMBEDDED	1"	GRS			E-0175			
TC 46	GAP AIR BREAKER SW	COLUMN # 39A		EMBEDDED	1"	GRS			E-0175			
TC 47	E ELECT RM (P9)	W ELECT RM (P15)		DUCT BANK	3"	GRS			E-0155 TO E-0166		VIA MANHOLES 1 & 2	
TC 48	E ELECT RM (PB)	W ELECT RM (P15)		DUCT BANK	3"	GRS					VIA MANHOLES 1 & 2	
TC 49	E ELECT RM (PB)	W ELECT RM (P15)		DUCT BANK	3"	GRS					VIA MANHOLES 1 & 2	
TC 50	E ELECT RM (PB)	W ELECT RM (P15)		DUCT BANK	3"	GRS					VIA MANHOLES 1 & 2	
TC 51	SW MACHINE # 5	TC C ROOM (P5)		EMBEDDED	3"	GRS			E-0195		SEE NOTE 5, DWG. E-0195	
TC 52	SW MACHINE # 5			EMBEDDED	3"	GRS						
TC 53	SW MACHINE # 6			EMBEDDED	3"	GRS						
TC 54	SW MACHINE # 6			EMBEDDED	3"	GRS						
TC 55	EJECTOR RM (P7)	PBTC 03		EMBEDDED	2"	GRS			E-0175			
TC 56	EJECTOR RM (P7)	PBTC 04		EMBEDDED	2"	GRS			E-0275			
TC 57	W ELECT RM (P15)	PBTC 05		EMBEDDED	2"	GRS			E-0175			
TC 58	W ELECT RM (P15)	PBTC 06		EMBEDDED	2"	GRS			E-0175			
TC 59	JBSCO1	W ELECT RM (P15)		EMBEDDED	2"	GRS			E-0255			
TC 60	ETS AL TRACK COLUMN # 40	W ELECT RM (P15)		EMBEDDED	1 1/2"	GRS			E-0275			
TC 61	ETS AL TRACK COLUMN # 40	W ELECT RM (P15)		EMBEDDED	1 1/2"	GRS			E-0275			
TC 62	ETS, AL TRACK, COLUMN # 7	W ELECT RM (P15)		EMBEDDED	1 1/2"	GRS			E-0268			
TC 63	ETS, AL TRACK, COLUMN # 7	W ELECT RM (P15)		EMBEDDED	1 1/2"	GRS			E-0285			
TC 64	ETS, AL TRACK, COLUMN # 22	W ELECT RM (P15)		EMBEDDED	1 1/2"	GRS			E-0285			
TC 65	ETS, AL TRACK, COLUMN # 22	W ELECT RM (P15)		EMBEDDED	1 1/2"	GRS			E-0285			
TC 66	GAP AIR BREAKER	W ELECT RM (P15)		EMBEDDED	1"	GRS			E-0175			
TC 67	GAP AIR BREAKER	W ELECT RM (P15)		EMBEDDED	1"	GRS			E-0175			

NOTES:

1- CONDUCTORS INSTALLED ON SEPERATE CONTRACT, INSTALL 1/2" DIAMETER NYLON PULL CORD IN EACH CONDUIT, LEAVE 3'-0" EXCESS LENGTH OF CORD AT EACH END.



REV. DATE	BY	APP.	DESCRIPTION

DESIGNED BY J.W. SHANNON	DRAWN BY J.K. CZECH	CHECKED BY K. DJIE	IN CHARGE J.C. CHANG
DATE 17 APRIL 85			

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

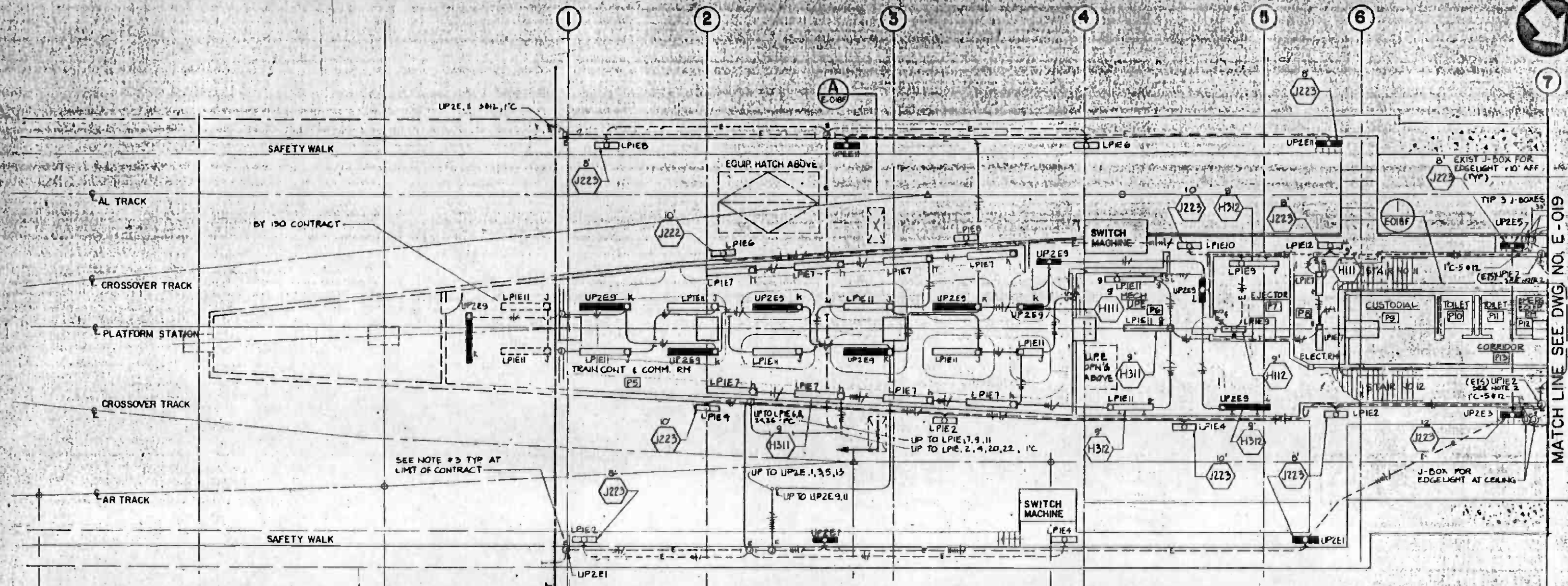
HARRY WEESE & ASSOCIATES
TYPEYTS-ABRETT-MCCARTHY-BRAYTON
ENVIRONMENTAL COLLABORATIVE, INC.
GIM WONG ASSOCIATES

DRAWM/PROD/KE/HWA
GENERAL CONSULTANTS
Howard Schelliff

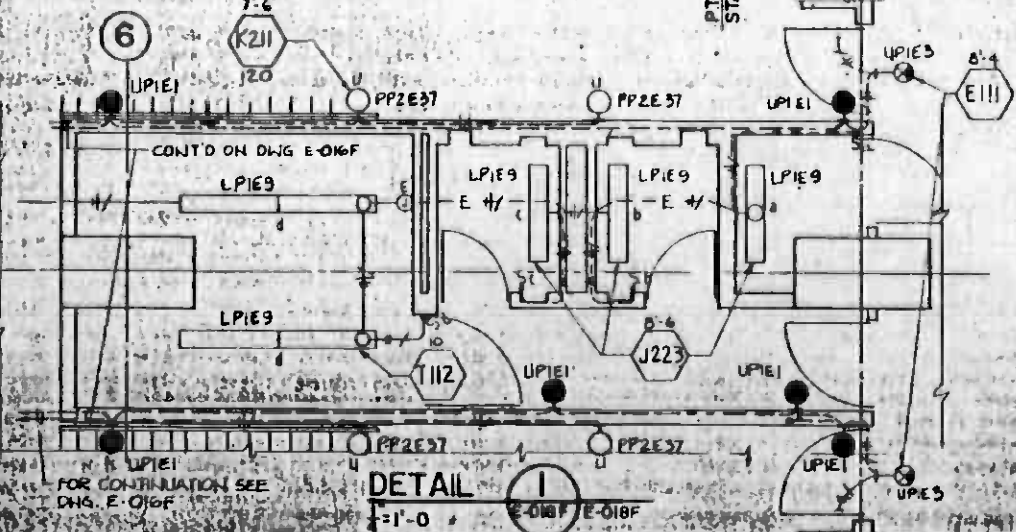
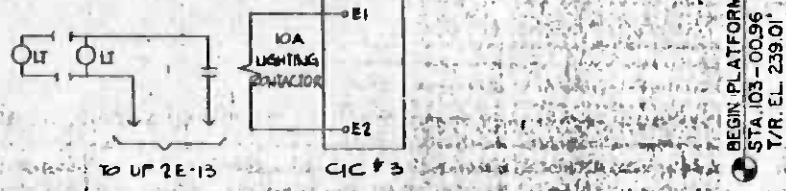
LA CBD TO NORTH HOLLYWOOD
UNION STATION

ELECTRICAL RACEWAY & CABLE SCHEDULE
TRAIN CONTROL & COMMUNICATION-SHEET 4

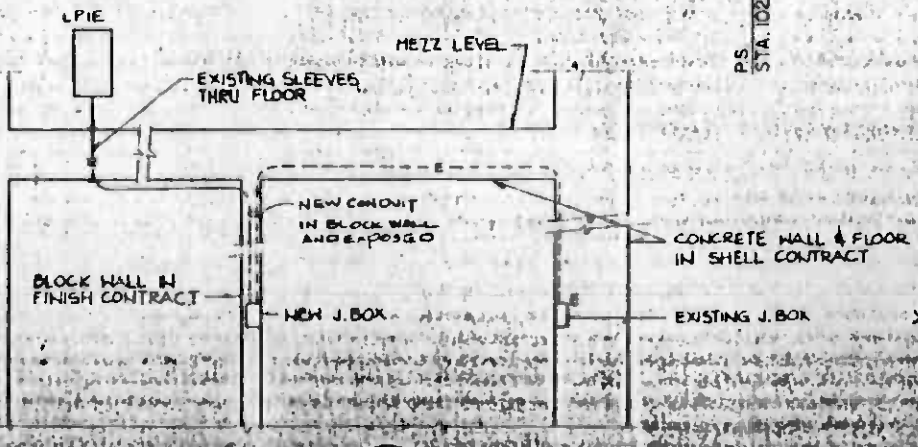
CONTRACT NO. A135
DRAWING NO. E-050S
SCALE: NO SCALE
SHEET NO. A620/126



PLAN
1/8"=1'-0"



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



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

- NOTES:
1. SEE DWG. E-016F FOR GENERAL LIGHTING NOTES
 2. PROVIDE WALL MOUNTED VAPOR TIGHT INCANDESCENT LIGHTING FIXTURE WITH GLOBE, GUARD AND BLUE BULB FOR ETS
 3. TAPE AND COIL WIRE IN J.B. AT LIMIT OF CONTRACT.

FINAL REVIEW
 HALF SIZE

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.															
DESIGNED BY C.M. SATCHER					DRAWN BY M.A. UDRESCU					CHECKED BY J.C. CHANG					
IN CHARGE J.C. CHANG					DATE 17 APR 85					DESIGNED BY C.M. SATCHER					
DRAWN BY M.A. UDRESCU					CHECKED BY J.C. CHANG					IN CHARGE J.C. CHANG					
DATE 17 APR 85					REVISED PER CR 9-208					INITIAL ISSUE					
REVISIONS:															
REV.	DATE	BY	SUB.	APP.	DESCRIPTION	REV.	DATE	BY	SUB.	APP.	DESCRIPTION	REV.	DATE	BY	APP.

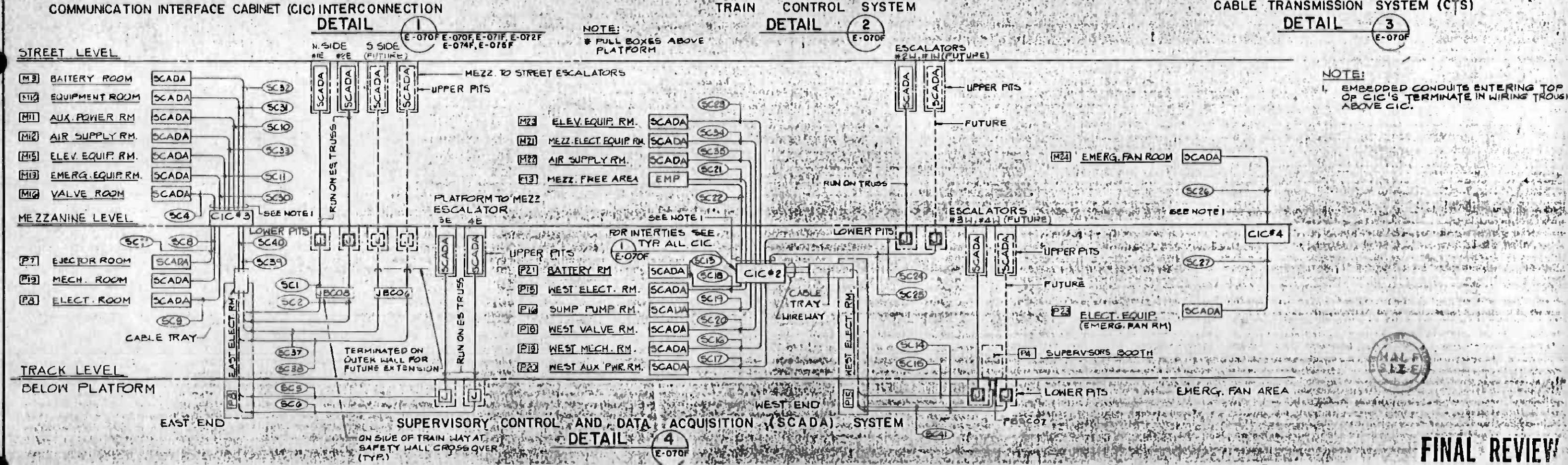
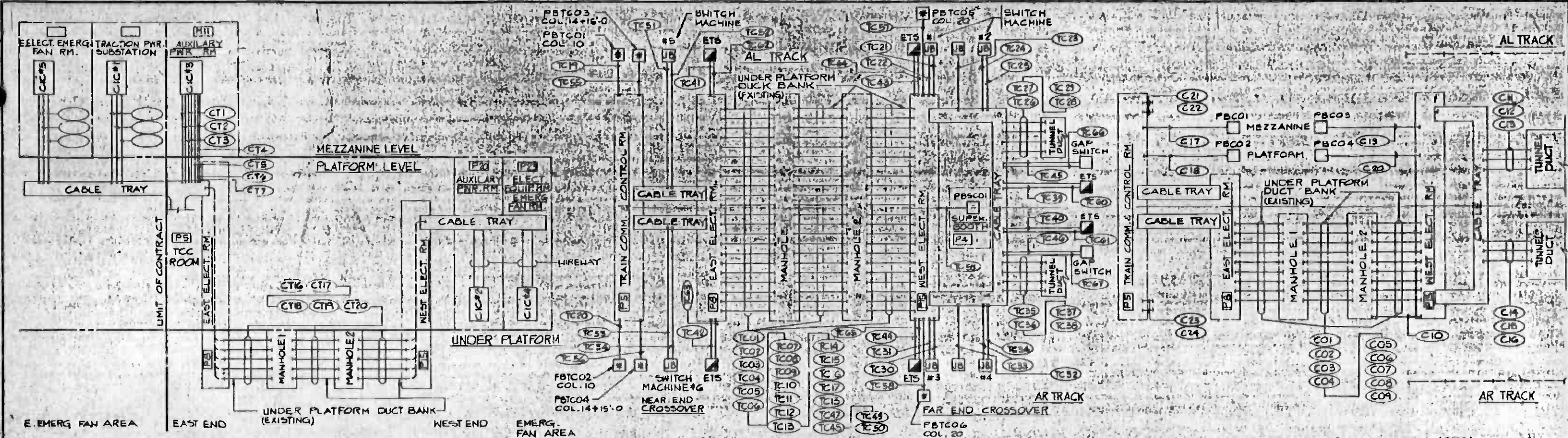
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT

HARRY WEESE & ASSOCIATES
 TIPPETTS-ABBOTT-MCCARTHY-STRATTON
 ENVIRONMENTAL COLLABORATIVE, INC.
 GIM WONG ASSOCIATES

DMJM/PBOD/KE/HWA
 GENERAL CONSULTANTS

CONTRACT NO. A136
 DRAWING NO. E-016F
 SCALE AS NOTED
 SHEET NO. A620/133

LA CBD TO NORTH HOLLYWOOD
 UNION STATION
 EAST ANCILLARY ROOMS TRACK LEVEL
 LIGHTING PLAN



FINAL REVIEW

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DESIGNED BY J.W. SHANNON DRAWN BY K. ILASZ CHECKED BY J.C. CHANG IN CHARGE J.C. CHANG DATE 17 APR 85		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT		HARRY WESE & ASSOCIATES TIPPETT-ABBETT-MCCARTHY-STANTON ENVIRONMENTAL COLLABORATIVE, INC. GUY WONG ASSOCIATES		DMJM/PBQD/KE/HWA GENERAL CONSULTANTS		CONTRACT NO. A136 DRAWING NO. E-070F SCALE NO SCALE SHEET NO. A620/135	
REV.	DATE	BY	SUB.	APP.	DESCRIPTION	REV.	DATE	BY	SUB.	APP.	DESCRIPTION
					INITIAL ISSUE						

ELECTRICAL SCHEMATIC DIAGRAM SYMBOLS

ONE-LINE DIAGRAM SYMBOLS

ABBREVIATIONS

SYMBOL	REPRESENTS
	MECHANICAL CONNECTION
	SINGLE POLE CIRCUIT BREAKER, SIZE AS NOTED.
	NORMALLY OPEN CONTACT, AUX OR RELAY. TDC - TIME DELAY AFTER ENERGIZED TDD - TIME DELAY AFTER DE-ENERGIZED.
	NORMALLY CLOSED CONTACT, AUX OR RELAY TDC - TIME DELAY AFTER ENERGIZED TDD - TIME DELAY AFTER DE-ENERGIZED.
	MOTOR HEATER
	COIL OPERATING 42 - STARTER OR CONTACTOR OTHER NO. - RELAY PER IEEE DEVICE NO.1
	OVERLOAD RELAY CONTACTS.
	THERMAL OVERLOAD RELAY
	FUSE WITH RATING.
	GROUND CONNECTION.
	PILOT LIGHT. R - RED, G - GREEN, A - AMBER, N - WHITE, C - CLEAR, B - BLUE.
	CAPACITOR
	SOLENOID COIL
	LIMIT SWITCH, NORMALLY OPEN
	LIMIT SWITCH, NORMALLY CLOSED.
	LIMIT SWITCH, N.O. HELD CLOSED BY ACTUATOR.
	LIMIT SWITCH, N.C. HELD OPEN BY ACTUATOR.
	PRESSURE SWITCH, NORMALLY OPEN, CLOSING ON RISING PRESSURE.
	PRESSURE SWITCH, NORMALLY CLOSED, OPENS ON RISING PRESSURE.
	FLOW SWITCH, NORMALLY OPEN, CLOSING WITH FLOW.
	FLOW SWITCH, NORMALLY CLOSED, OPENS WITH FLOW.
	TEMPERATURE SWITCH, NORMALLY OPEN, CLOSING ON RISING TEMPERATURE (COOLING THERMOSTAT)
	TEMPERATURE SWITCH, NORMALLY CLOSED, OPENS ON RISING TEMPERATURE (HEATING THERMOSTAT)
	LEVEL CONTROLLER (SWITCH), NORMALLY OPEN AT LOW POSITION, CLOSING ON RISE.
	LEVEL CONTROLLER (SWITCH), NORMALLY CLOSED AT LOW POSITION, OPENS ON RISE.
	SELECTOR SWITCH, HAND-OP. AUTOMATIC, OR AS NOTED: K - KEY OPERATED, KK - KEYS KEY LOCK (STANDARD OR HEAVY DUTY INDUSTRIAL CONTROL)
	SINGLE POLE SINGLE THROW SWITCH.
	SINGLE POLE DOUBLE THROW SWITCH.
	PUSHBUTTON SWITCH, MOMENTARY CONTACT, N.C. NO INDICATED LOCK-OUT
	PUSHBUTTON SWITCH, MOMENTARY CONTACT, N.O.

SYMBOL	REPRESENTS
	DISCONNECTING DEVICE
	CURRENT TRANSFORMER WITH POLARITY MARKINGS.
	POTENTIAL TRANSFORMER WITH POLARITY MARKINGS.
	OUTLINE OF EQUIPMENT
	FUTURE OR N.I.C.
	TERMINAL STRIP
	WIRING TERMINAL
	BATTERY
	INSTRUMENT GROUNDING
	RECTIFIER, DRY TYPE, FULL WAVE.
	TRANSDUCER. E/I - VOLTAGE TO CURRENT I/E - CURRENT TO VOLTAGE
	CIRCUIT BREAKER WITH SOLID STATE TRIP DEVICE
	CIRCUIT BREAKER, 100 VAC, P.W.G. IN TYPE.
	CONDUCTORS, CONNECTED
	CONDUCTORS, NOT CONNECTED.

GENERAL NOTES

- ALL EMBEDDED IN SLABS AND CONCRETE WALLS CONDUITS AND SLEEVES, RECESSED PULL AND JUNCTION BOXES, PANEL AND OTHER ELECTRICAL EQUIPMENT BLOCK-OUTS, HANDHOLES AND WALL OPENINGS ARE IN CONTRACT A141.
- ALL EMBEDDED IN MASONRY WALLS, EXPOSED OR CONCEALED IN CEILING SPACES OR OTHER SPACES ELECTRICAL WORK IS IN CONTRACT A147.
- ALL WIRING IS IN CONTRACT A147, EXCEPT IN TUNNEL & CROSS PASSAGES.
- STATION WORK INCLUDED IN CONTRACT A141 IS INDICATED AS EMBEDDED IN THE RACEWAY AND CABLE SCHEDULES SEE SYMBOLS ON E-002 AND ON THE PLANS.

GENERAL CONSTRUCTION NOTES

- CONTRACTOR SHALL INSTALL EMPTY RACEWAYS ONLY FOR THE FOLLOWING SUBSYSTEMS:
 - TRACTION POWER.
 - 34.5 KV POWER.
 - AUTOMATIC TRAIN CONTROL
 - COMMUNICATION, INCLUDING FIRE PROTECTION AND GAS DETECTION
 - MAIN 400 VOLT AND EMERGENCY FAN FEEDERS
 - POWER AND LIGHTING.
 - GROUNDING - RACEWAYS AND GROUND WIRES: LEAVE PIGTAILS FOR EXPOSED PORTIONS TO BE INSTALLED BY OTHERS.
- ALL EMPTY CONDUITS SHALL BE PROPERLY TAGGED, EQUIPPED WITH PULLING CORDS AND CAPPED OR OTHERWISE PROPERLY PROTECTED FROM INTRUSIONS. INTERFACE WITH ADJACENT CONTRACTS:
 - EMPTY CONDUITS - CAPPED AND TAGGED AT THE INTERFACE POINT.
 - THE EARLIER CONSTRUCTION CONTRACTOR SHALL BE RESPONSIBLE FOR THE TESTING (TO THE EXTENT POSSIBLE) OF HIS PORTIONS OF THE SYSTEMS. THE LATER CONSTRUCTION CONTRACTOR SHALL BE RESPONSIBLE BOTH FOR TESTING OF HIS PORTIONS OF THE SYSTEMS AS WELL AS FOR THE OVERALL SYSTEM TESTING.
- GROUNDING: INSTALL PROTECTIVE SLEEVE (12" LONG METALLIC CONDUIT) OVER THE GROUND WIRES WITH 36" PIGTAIL PROPERLY COILED AND PROTECTED. INSTALL TEMPORARY MARKER AT THE EMBEDDED LOCATIONS.
- ALL EMBEDDED CONDUITS OR DUCT BANKS, EXCEPT FOR COMMUNICATION AND TRAIN CONTROL SUBSYSTEMS, SHALL BE 1" MINIMUM DIA. NON-METALLIC CONDUITS, U.O.N. ALL CONDUITS FOR COMMUNICATIONS AND TRAIN CONTROL SUBSYSTEMS SHALL BE GALVANIZED RIGID STEEL, 3/4" MINIMUM (EXPOSED), AND 1" MIN. (EMBEDDED), U.O.N.
- WHERE EXPOSED CONDUITS PENETRATE POURED CONCRETE FLOORS, WALLS OR CEILINGS, CONTRACTOR SHALL INSTALL CONDUIT NIPPLES PRIOR TO THE POUR. SAID NIPPLES SHALL BE THREADED, CAPPED AND TAGGED WITH CONDUIT NUMBER AT EACH END, AND SHALL EXTEND BEYOND THE POURED SURFACES BY 2" FOR 2" & SMALLER AND BY 6" FOR 2" & LARGER CONDUITS. U.O.N. WHERE CONDUITS HAVE NO NUMBER (AS FOR LIGHTING), CONTRACTOR SHALL PROVIDE APPROPRIATE INFORMATION TAGGING.

SYMBOL	REPRESENTS
	SHORTING TYPE TERMINAL BLOCK
	SELECTOR SWITCH, VS. VOLTMETER AG - AMMETER
	INDICATING TYPE METER, AM - AMMETER VM - VOLTMETER
27	UNDERVOLTAGE RELAY
49	THERMAL OVERLOAD DEVICE
50	AC INSTANTANEOUS OVERCURRENT TRIP SETTING OR RELAY
51	AC TIME OVERCURRENT TRIP SETTING OR RELAY.
51N	AC GROUND OVERCURRENT RELAY (RESIDUAL).
51G	AC GROUND OVERCURRENT TRIP SETTING OR RELAY.
52	AC CIRCUIT BREAKER
59	OVERVOLTAGE RELAY
62	TIME-DELAY RELAY
69	PERMISSIVE CONTROL DEVICE
74	ALARM RELAY
86	LOCK-OUT RELAY
	CONTROL SWITCH
	ANNUNCIATION DEVICE - INDICATING TYPE
	AUDIBLE ALARM
	MOLDED CASE CIRCUIT BREAKER
	SERIES TRIP DEVICE
	CURRENT TRANSFORMER OR CURRENT SENSOR OF SOLID STATE TRIP DEVICE
	2-WINDING TRANSFORMER
	FUSE
	DELTA CONNECTION
	WYE CONNECTION
	CABLE TERMINATION
	INDICATING LIGHT: R - RED - OPERATING, FLOWING, INCREASING CONDITION G - GREEN - NOT OPERATING, NOT FLOWING, DECREASING CONDITION A - AMBER - AUTOMATIC STAND BY W - WHITE - TROUBLE AT THE SYSTEM B - BLUE - SPECIAL CONDITION. C - CLEAR - POWER AVAILABLE.

TDD	TO BE DETERMINED
TEMP	TEMPERATURE
TEL	TELEPHONE
T	TEMPERATURE SWITCH
VIB	VIBRATION
WD-P	WIRING DIAGRAM NO P
XPMA	TRANSFORMER
ZC	ZONE CONTROL
14'-0"	MOUNTING HEIGHT TO $\frac{1}{2}$ OF OUTLET ABOVE FIN. FLOOR.
TDC	TIME DELAY AFTER ENERGIZED
TDS	CLOSE WITH TIME DELAY AFTER ENERGIZED
TDD	TIME DELAY AFTER DEENERGIZED
MG	MOTORIZED GRILLE.

ACCP	AIR CONDITIONING CONTROL PANEL
ACP	AUXILIARY CONTROL PANEL
AHU	AIR HANDLING UNIT
AHCP	AIR HANDLING CONTROL PANEL
AUX.	AUXILIARY
APP	ABOVE FINISHED FLOOR
AIC	AMPERES INTERRUPTING CAPACITY
BKR.	BREAKER
CIC	COMMUNICATIONS INTERFACE CABINET
CONDU	CONDUIT.
C.O	RACEWAY ONLY (CONDUIT ONLY)
COMPT.	COMPARTMENT
CKT.	CIRCUIT
CONT.	CONTROL.
C.C.	CENTRAL CONTROL
DMPR.	DAMPER
EMP	EMERGENCY MANAGEMENT PANEL
ESD	EMERGENCY BYPASS DAMPER
EPD	EMERGENCY PAN DAMPER
ELEV	ELEVATION, ELEVATOR
EXH	EXHAUST
ETS	EMERGENCY TRIP STATION
FACE	FACE/SECURITY CONTROL PANEL
FUT	FUTURE
FLR	FLOOR
FS	FLOW SWITCH
FACECU	FARE COLLECTION STATION CONTROL UNIT
GRS	GALVANIZED RIGID STEEL CONDUIT
GRD	GROUND
GDSP	GAS DETECTION CONTROL PANEL
HTR	HEATER
IC	INTERCOM
LP	LIGHTING PANEL
LAP	LOCAL ANNUNCIATION PANEL
LCS	LOCAL CONTROL STATION
MCC	MOTOR CONTROL CENTER
MC	METALLIC CONDUIT
MTD.	MOUNTED
MAINT	MAINTENANCE
MDF	MAIN DISTRIBUTION FRAME
MLO	MAIN LUGS ONLY
MB	MAIN BREAKER
N.I.C.	NOT IN CONTRACT
N.O.N.C	NORMALLY OPEN, NORMALLY CLOSED
NMC	NON-METALLIC CONDUIT
PVC	POLYVINYL CHLORIDE CONDUIT
PWR	POWER
RCP	REFRIGERATION CONTROL PANEL
RTU	REMOTE TERMINAL UNIT
SPST	SINGLE POLE, SINGLE THROW
SPDT	SINGLE POLE, DOUBLE THROW
SW	SWITCH
SUP	SUPPLY
SWGR	SWITCHGEAR
SWPD	SWITCHBOARD
TS	TORQUE SWITCH
T/R	TOP OF RAIL
TYP.	TYPICAL
TC	THERMO COUPE CONTACT.

ABBREVIATIONS FOR TUNNELS

L	TUNNEL LIGHT
R	TUNNEL AUX. POWER
P	TUNNEL PUMP STATION
BR	TUNNEL CONVENIENCE OUTLET
SL	TUNNEL SUMP LEVEL
GA	TUNNEL GAS MONITORING

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<p>REV. DATE BY SUB APP DESCRIPTION</p>				<p>REV. DATE BY SUB APP DESCRIPTION</p>		<p>REVISED PER CR 6-516</p>		<p>INITIAL ISSUE</p>			

RECEPTACLE OUTLETS	CONDUCTORS AND CONDUIT	EQUIPMENT IDENTIFICATION	FIXTURE TYPE SYMBOL
SINGLE RECEPTACLE OUTLET DUPLEX RECEPTACLE OUTLET RECESSED SINGLE SPECIAL-PURPOSE RECEPTACLE OUTLET (30 AMP, 2 POLE, OR AS NOTED) R DUPLEX SPECIAL-PURPOSE RECEPTACLE OUTLET R * USE SUBSCRIPT LETTERS TO INDICATE FUNCTION (PC - PAPER COLLECTION, ETC.) FLOOR BOX WITH SINGLE RECEPTACLE FLOOR BOX WITH DUPLEX RECEPTACLE FLOOR BOX WITH SERVICE FITTING AS NOTED. FLOOR BOX - PUBLIC TELEPHONE FLOOR BOX - PRIVATE TELEPHONE UNDERFLOOR OUTLET TRENCH OUTLET UNDERGROUND OUTLET BANK FLEXIBLE RACEWAY CONNECTION CABLE TRAY	RACEWAY EMBEDDED IN FLOOR OR UNDERGROUND RACEWAY EMBEDDED IN CEILING OR WALL RACEWAY EXPOSED BRANCH CIRCUIT HOME RUN TO PANELBOARD LP - IN DENOTES LIGHTING PANEL NO 1 NORTH, NUMERALS IDENTIFY CIRCUIT NUMBERS INDICATES NUMBER OF WIRES. NO CROSS LINES INDICATES 2012 WIRES UNLESS NOTED. WIRE & RACEWAY SIZE FOR 1/2" AND LARGER. FEEDER OR HOME RUN RACEWAY IDENTIFICATION AS FOLLOWS: A - AUXILIARY, T - TRACTION POWER, TC - TRAIN CONTROL, G - GROUNDING, C - COMM. (SEE COMMUNICATION SYMBOLS FOR SUB SYSTEM), DP - 24.5 KV DEDICATED FEEDER. GROUND WIRE EXOTHERMIC WELD CONNECTION RACEWAY TURNING UP OR TOWARDS VIEWERS RACEWAY TURNING DOWN OR AWAY FROM VIEWERS UNDERGROUND CONDUIT BANK (INDICATE TYPE, SIZE AND NUMBER OF CONDUITS BY CROSS SECTION. (IDENTIFICATION OF EACH RUN, OR BY NOTATION.) GROUND ROD RACEWAY CAPPED. SLEEVE	PP POWER PANEL LP LIGHTING PANEL TPF TUNNEL POWER PANEL TLF TUNNEL LIGHTING PANEL ES ESCALATOR EL ELEVATOR MCC MOTOR CONTROL CENTER SWPD SWITCHBOARD SWGR SWITCHGEAR LGS LOCAL CONTROL SWITCH ATS AUTOMATIC TRANSFER SWITCH DKR BREAKER STR STARTER HTR HEATER MCP MOTOR CIRCUIT PROTECTOR ETS EMERGENCY TRIP STATION CIC COMMUNICATION INTERFACE CABINET MG MOTORIZED GRILL	a. LETTER - TYPE OF FIXTURE b. FIRST NO. - FIXTURE OPTION c. SECOND NO. - LAMP OPTION d. LAST NO. - MOUNTING HARDWARE OPTION e. NO. ABOVE SYMBOL - MOUNTING HEIGHT FROM FLOOR TO FIXTURE BOTTOM f. NO. UNDER SYMBOL - VOLTAGE OTHER THAN 277V.
			MISCELLANEOUS
			TRAIN DESTINATION SIGN PUSH BUTTON PHOTO CELL SELECTOR SWITCH H.O.A. (HAND-OFF-AUTOMATIC) ELECTRICALLY OPERATED DEVICES TYPE PER LETTERS AS FOLLOWS: S - SOLENOID D - DAMPER OPERATOR R - RELAY DO - DOOR OPERATOR EF - ELECTRO-PNEUMATIC RELAY. DOOR POSITION INDICATOR DISABLED SWITCH DISABLED SWITCH WITH AUDIBLE ALARM. ELECTRIC DEAD BOLT ELECTRO-MECHANICAL BOLT

PANELBOARDS, SWITCHBOARDS, ETC.	
	PANELBOARD
	FULL BOX
	MOTOR CONTROLLER, SUBSCRIPT INDICATES NEMA SIZE.
	FUSED DISC. SWITCH SUBSCRIPT INDICATES FUSE SIZE AND NO. OF POLES.
	NON-FUSED DISCONNECT SWITCH SUBSCRIPT INDICATES SIZE AND NO. OF POLES.
	MANHOLE
	HANDHOLE
	COMBINATION MAGNETIC MOTOR STARTER, FUSIBLE. SUBSCRIPT INDICATES SIZE AND NO. OF POLES.
	COMBINATION MAGNETIC MOTOR STARTER, NON-FUSIBLE. SUBSCRIPT INDICATES NEMA SIZE.
	COMBINATION MAGNETIC STARTER WITH CIRCUIT BREAKER, SUBSCRIPT INDICATES NEMA SIZE.
	MOTOR WITH IDENTIFICATION, INSERT INDICATES HORSE POWER, THREE PHASE OR SINGLE PHASE.
	POWER PANEL
	SWITCHBOARD (SWPD) OR MOTOR CONTROL CENTER (MCC)
	CONTROL PANEL, TYPES AS FOLLOWS: HCP - MAIN CONTROL PANEL FCP - FAN CONTROL PANEL EMP - EMERGENCY MANAGEMENT PANEL ACP - AUXILIARY CONTROL PANEL AHCP - AIR HANDLING UNIT CONTROL PANEL ACCP - AIR CONDITIONING CONTROL PANEL

EQUIPMENT IDENTIFICATION	
EF	EMERGENCY FAN OR EXHAUST FAN
UP	UNDER PLATFORM EXHAUST FAN
AHU	STATION SUPPLY FAN AT AIR HANDLING UNIT
SOP	TPOSS SUPPLY FAN
SP	SUPPLY FAN
AC	AIR CONDITIONING UNIT
C	CONDENSER
EH	ELECTRICAL HEATER
MD	MOTORIZED DAMPER
ED	PAN DAMPER
TD	TRACK DAMPER
DD	BY-PASS DAMPER
P	WATER PUMP
OP	QUIMP PUMP
EP	EJECTOR PUMP
EC	EJECTOR COMPRESSOR
UD	UNDERPLATFORM DAMPER
RF	ROLL FILTER
AHU-RF	AHU-ROLL FILTER
SS RF	TPOSS ROLL FILTER

SWITCH OUTLETS	
S	SINGLE-POLE SWITCH
S ²	DOUBLE-POLE SWITCH
S ³	THREE-WAY SWITCH
S ⁴	FOUR-WAY SWITCH
SK	KEY-OPERATED SWITCH
SP	SWITCH FOR PLOT LAMP
SD	DOOR SWITCH
ST	TIME SWITCH
SM	MANUAL MOTOR STARTER W/ OVERLOAD DEVICE
SMC	MOMENTARY CONTACT SWITCH OR PUSHBUTTON FOR OTHER THAN SIGNALLING SYSTEM
SA	SUBSCRIPT A DENOTES SWITCH CIRCUIT
SCS	CONTROL SWITCH

LIGHTING OUTLETS	
CLG WALL	
	OUTLET FOR INCANDESCENT OR HIGH INTENSITY DISCHARGE FIXTURE
	FLUORESCENT FIXTURE OUTLET (INCLUDES J-BOX)
	EXIT LIGHT OUTLET
	PLANKED OUTLET
	JUNCTION BOX
	LETTER SUBSCRIPT ADJACENT TO FIXTURE OUTLET DESIGNATES SWITCH CONTROL.
	FLOODLIGHT, ARROWS INDICATE DIRECTION OF BEAM
	EMERGENCY LIGHT OUTLET (INCLUDES J-BOX)

SPECIAL IDENTIFICATION (USED NEXT TO SYMBOL)			
W.P.	WEATHER PROOF	RT - RAIN TIGHT	
W.T.	WATER TIGHT	DT - DUST TIGHT	
V.T.	VAPOR TIGHT	EP - EXPLOSION PROOF	
G.	GROUND	R.	RECESSED
P.	PUSH		

ABBREVIATIONS	
A.P.F.	ABOVE FINISHED FLOOR
C.O.	RACEWAY ONLY
CORND.	CONDUIT
ELEV.	ELEVATION, ELEVATOR
FUT.	FUTURE
FL.	FLOOR
FVNA.	FULL VOLTAGE, NON REVERSIBLE
FVR.	FULL VOLTAGE, REVERSIBLE
GND.	GROUND
GRS.	GALVANIZED RIGID STEEL CONDUIT
MTD, MTG.	MOUNTED, MOUNTING
MC.	METALLIC CONDUIT
NO, NC.	NORMALLY OPEN, NORMALLY CLOSED
NIC.	NOT IN THIS CONTRACT
NMC.	NON-METALLIC CONDUIT
P.V.C.	POLYVINYL CHLORIDE CONDUIT
R.T.U.	REMOTE TERMINAL UNIT
SPST.	SINGLE POLE SINGLE THROW
SPDT.	SINGLE POLE DOUBLE THROW
TEL.	TELEPHONE
EC.	ZONE CONTROL
H'-6'	MOUNTING HEIGHT TO 1/2 OF OUTLET ABOVE FIN. FL.

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SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT								DELON HAMPTON & ASSOCIATES, INCORPORATED SYDRA & HENNESSY, INC. ENGINEERS		DNJM/PBQD/KE/HWA GENERAL CONSULTANTS 	
LA CBD TO NORTH HOLLYWOOD CIVIC CENTER STATION						CONTRACT NO. A141		DRAWING NO. E-002		REV. 0	
ELECTRICAL PLAN SYMBOLS AND ABBREVIATIONS						NO SCALE		SHEET NO. A620/142			

S Y M B O L S

ABBREVIATIONS

CONDUCTORS AND RACEWAY

- CONDUIT EMBEDDED IN FLOOR AND UNDERGROUND
- CONDUIT EMBEDDED IN CEILING OR WALL
- CONDUIT EXPOSED
- PA-RACEWAY IDENTIFICATION BETWEEN OUTLETS
- PA-100-RACEWAY IDENTIFICATION BETWEEN OUTLET AND TERMINATION POINT (IE FINAL SHUT-UP TO TERMINAL CABINET, PANEL BOARD, SWITCHBOARD)
- SYSTEM IDENTIFICATION ABBREVIATIONS:
- C - COMMUNICATION
- CA - ADMINISTRATIVE TELEPHONE (ATEL)
- CC - CUSTOMER ASSISTANCE TELEPHONE
- CE - EMERGENCY TELEPHONE (ETEL)
- CF - FIRE TELEPHONE (FTEL)
- CM - MAINTENANCE TELEPHONE
- CT - CABLE TRANSMISSION SYSTEM
- CX - TELEPHONE COMPANY
- F - POWER FEEDER (400/277V OR 208/120V)
- FA - FIRE DETECTOR OR ALARM
- FC - FARE COLLECTION
- FS - SEISMIC DETECTOR
- IA - INTRUSION DETECTOR OR ALARM
- PA - PUBLIC ADDRESS
- SC - SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA)
- TV - CLOSED CIRCUIT TELEVISION
- HC - COMMUNICATIONS TIE CABLE (FROM CIC TO ATC & C ROOM)
- PX - METHANE GAS DETECTOR
- HY - HYDROGEN SULFIDE GAS DETECTOR
- TC - TRAIN CONTROL

MISCELLANEOUS

- Ⓜ CCTV CAMERA OUTLET
- Ⓜ CCTV MONITOR
- Ⓜ BUZZER
- Ⓜ INTRUSION SENSOR
- Ⓜ TRACTION POWER EMERGENCY TRIP STATION (ETS)
- Ⓜ TFC - TERMINAL CABINET, TYPE AS FOLLOWS
- Ⓜ TTC - TELEPHONE TERMINAL CABINET
- Ⓜ TFC - FACILITIES TERMINAL CABINET
- Ⓜ CIC - COMMUNICATIONS INTERFACE CABINET
- Ⓜ SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA)

TELEPHONE

- Ⓜ MAINTENANCE TELEPHONE JACK (MTEL)
- Ⓜ FIRE TELEPHONE JACK (FTEL)
- Ⓜ EMERGENCY TELEPHONE OUTLET (ETEL)
- Ⓜ CUSTOMER ASSISTANCE TELEPHONE
- Ⓜ ADMINISTRATIVE TELEPHONE OUTLET (ATEL)
- Ⓜ PUBLIC PAY TELEPHONE OUTLET
- Ⓜ TELEPHONE BACKBOARD
- Ⓜ WEATHER PROOF TELEPHONE

ALL TELEPHONE OUTLETS SHALL BE MOUNTED 12" A.F.F. UNLESS OTHERWISE NOTED IE (40" TELEPHONE OUTLET (48" APP FLUSH MOUNT))

PUBLIC ADDRESS

- Ⓜ MICROPHONE
- Ⓜ AMPLIFIER
- Ⓜ INTERIOR SPEAKER PACKBOX PER LETTER AS FOLLOWS: P - FLUSH MTD, S - SURFACE MTD, SC - SUSPENDED CLG
- Ⓜ EXTERIOR SPEAKER PACKBOX
- Ⓜ HORN TYPE SPEAKER OUTLET
- Ⓜ NOISE MONITOR
- Ⓜ MONITOR SPEAKER

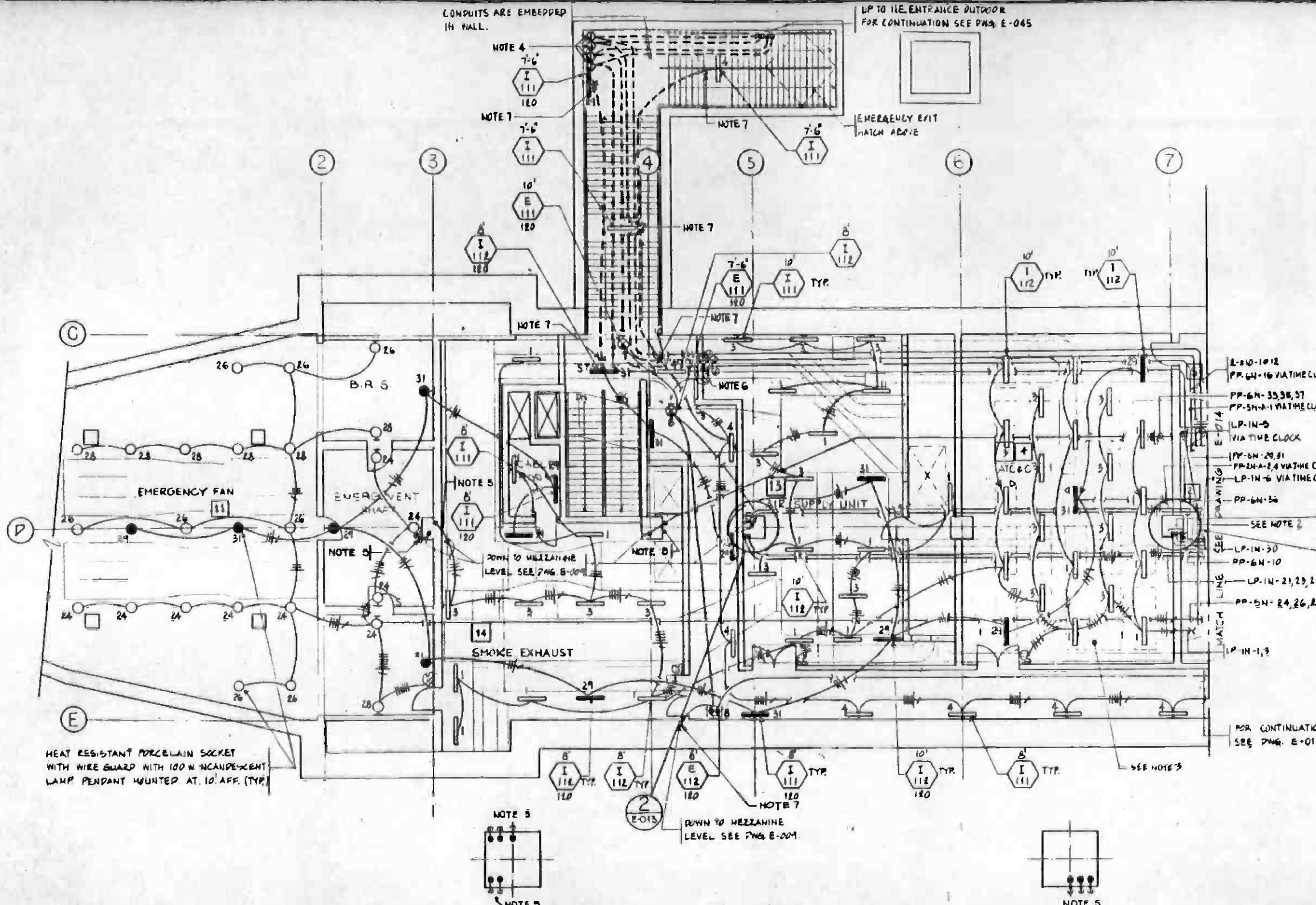
FIRE AND INTRUSION

- Ⓜ FULL STATION FIRE ALARM
- Ⓜ PUSH BUTTON FIRE ALARM
- Ⓜ BELL
- Ⓜ HORN
- Ⓜ STANDPIPE FLOW MONITOR
- Ⓜ FIRE HOSE CABINET MONITOR
- Ⓜ DETECTOR, TYPE PER LETTER AS FOLLOWS:
 - L - HEAT, LINE TYPE
 - S - SMOKE - IONIZATION
 - R - THERMAL RATE OF RISE AND FIXED TEMPERATURE
 - P - SMOKE PHOTO-ELECTRIC
 - D - DUCT TYPE SMOKE DETECTOR
 - E - SEISMIC
 - Q - SEISMIC EVENT RECORDER
 - X - GAS - METHANE
 - Y - GAS - HYDROGEN SULFIDE
- Ⓜ VALVE POSITION MONITOR
- ADD 'P' FOR FIRE ALARM SYSTEM, I.E. Ⓜ FOR FIRE HORN.
- Ⓜ DETECTOR, TYPE PER LETTER AS FOLLOWS:
 - H - HINGE DETECTOR
 - E - ELECTRIC DOOR LOCK
 - M - MAGNETIC SWITCH DETECTOR
 - P - PLUNGER, SWITCH (FLUSH IN DOOR JAMB) DETECTOR
 - L - DOOR LATCH DETECTOR
 - K - KEY BY PASS SWITCH
 - C - CARD OR BADGE READER
- Ⓜ HALON DISCHARGE PANEL
- Ⓜ HALON ADAPT SWITCH



- A/D ANALOG TO DIGITAL
- ACD AUTOMATIC CALL DISTRIBUTOR
- APP ABOVE FINISHED FLOOR
- ATEL ADMINISTRATIVE TELEPHONE
- CA CABLE
- CATEL CUSTOMER ASSISTANCE TELEPHONE
- CCU COMMUNICATIONS CONTROL UNIT
- CCTV CLOSED CIRCUIT TELEVISION
- CIC COMMUNICATIONS INTERFACE CABINET
- CP FIRE COMMAND POST
- CPU CENTRAL PROCESSING UNIT
- CRT CATHODE RAY TUBE
- CTS CABLE TRANSMISSION SUBSYSTEM
- D/A DIGITAL TO ANALOG
- DID DIRECT INWARD DIALING
- DOO DIRECT OUTWARD DIALING
- DTMF DUAL TONE MULTI-FREQUENCY
- EMP EMERGENCY MANAGEMENT PANEL
- ETEL EMERGENCY TELEPHONE
- ETS EMERGENCY TRIP STATION - TRACTION POWER
- FSCP FIRE/SECURITY CONTROL PANEL
- FTEL FIRE TELEPHONE
- FCCSU FARE COLLECTION STATION CONTROL UNIT
- PXO FOREIGN EXCHANGE OFFICE
- PXS FOREIGN EXCHANGE SUBSCRIBER
- GRS GALVANIZED RIGID STEEL
- HH HANDHOLE
- HSM HYDROGEN SULFIDE MONITOR
- INT INTRUSION
- I/O INPUT/OUTPUT
- JB JUNCTION BOX
- MDF MAIN DISTRIBUTION FRAME
- MD METHANE DETECTOR
- MH MANHOLE
- MTEL MAINTENANCE TELEPHONE
- NIC NOT IN CONTRACT
- PA PUBLIC ADDRESS
- PAPX PRIVATE AUTOMATIC BRANCH EXCHANGE
- PCM PULSE CODED MODULATION
- PR PAIR
- PROT PROTECTOR TERMINAL
- SCADA SUPERVISORY CONTROL AND DATA ACQUISITION
- SER SEISMIC EVENT RECORDER
- SCRTO SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
- SPL SOUND PRESSURE LEVEL
- SS SEISMIC SWITCH
- SST SPECIAL SERVICE TELEPHONE
- TD TERMINAL BOARD
- TOK TERMINAL BLOCK
- ATC & C AUTOMATIC TRAIN CONTROL & COMMUNICATION
- TERM TERMINAL
- TPESS TRACTION POWER SUBSTATION
- TTC TELEPHONE TERMINAL CABINET
- UPS UNINTERRUPTIBLE POWER SUPPLY
- VTR VIDEO TAPE RECORDER

	THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1954, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.	DESIGNED BY DRAWN BY CHECKED BY IN CHARGE DATE 8-20-88		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT DELON HAMPTON & ASSOCIATES, Chartered SYKA & HENNESSY, INC. ENGINEERS SUBMITTED <i>A. Shabaly</i>	DMJM/PSQD/KB/HWA GENERAL CONSULTANTS APPROVED <i>Howard K. Shabaly</i>	LA CBD TO NORTH HOLLYWOOD CIVIC CENTER STATION COMMUNICATIONS SYMBOLS AND ABBREVIATIONS	CONTRACT NO. A141 DRAWING NO. E-003 REV. 0 SCALE NO SCALE SHEET NO. A620/143
REV. DATE BY SUB. APP. DESCRIPTION	INITIAL ISSUE						

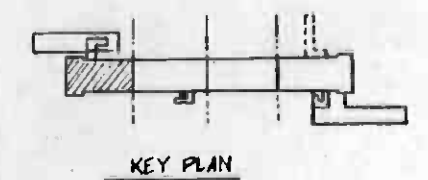


- NOTES**
- SEE NOTES 1, 2 AND 3 ON DRAWING E-008.
 - ALL POWER RUN ARE BROUGHT TO THE AUXILIARY POWER ROOM NO. 2 AND SHALL BE CONNECTED TO THE RELEVANT PANELS IN THIS ROOM.
 - CONTRACTOR SHALL INSTALL FUTURE IN THIS ROOM IN COORDINATION WITH EQUIPMENT RACKS LAYOUT.
 - SEE NOTE 8 ON DRAWING E-005
 - STUB-OUT 4" FROM COLUMN AND 1" UNDER THE CEILING, THREAD AND CAP FOR FUTURE COUPLING WITH EXPOSED CONDUITS.
 - J-BOX TO BE EMBEDDED FLUSH CEILING SURFACE FOR FUTURE EXTENSION.
 - J-BOX TO BE EMBEDDED FLUSH WITH CEILING SURFACE, 2 1/2" AND LARGER CONDUITS TO BE STUBBED DOWN 6", THREADED AND CAPPED.

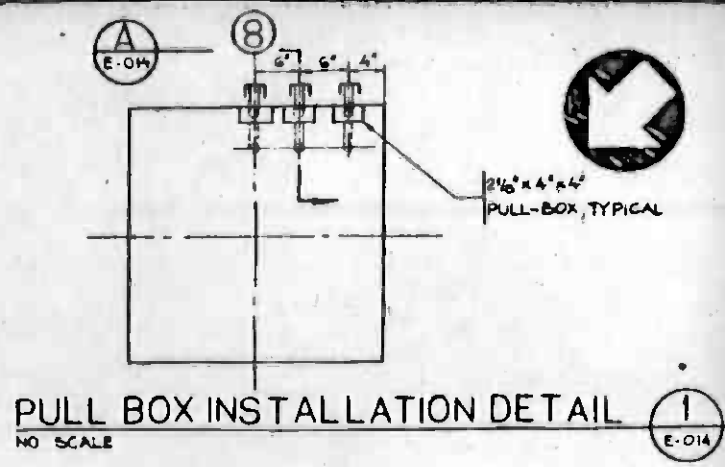
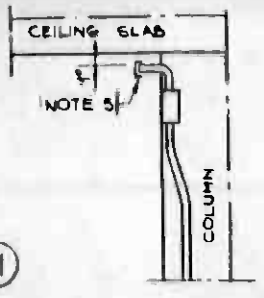
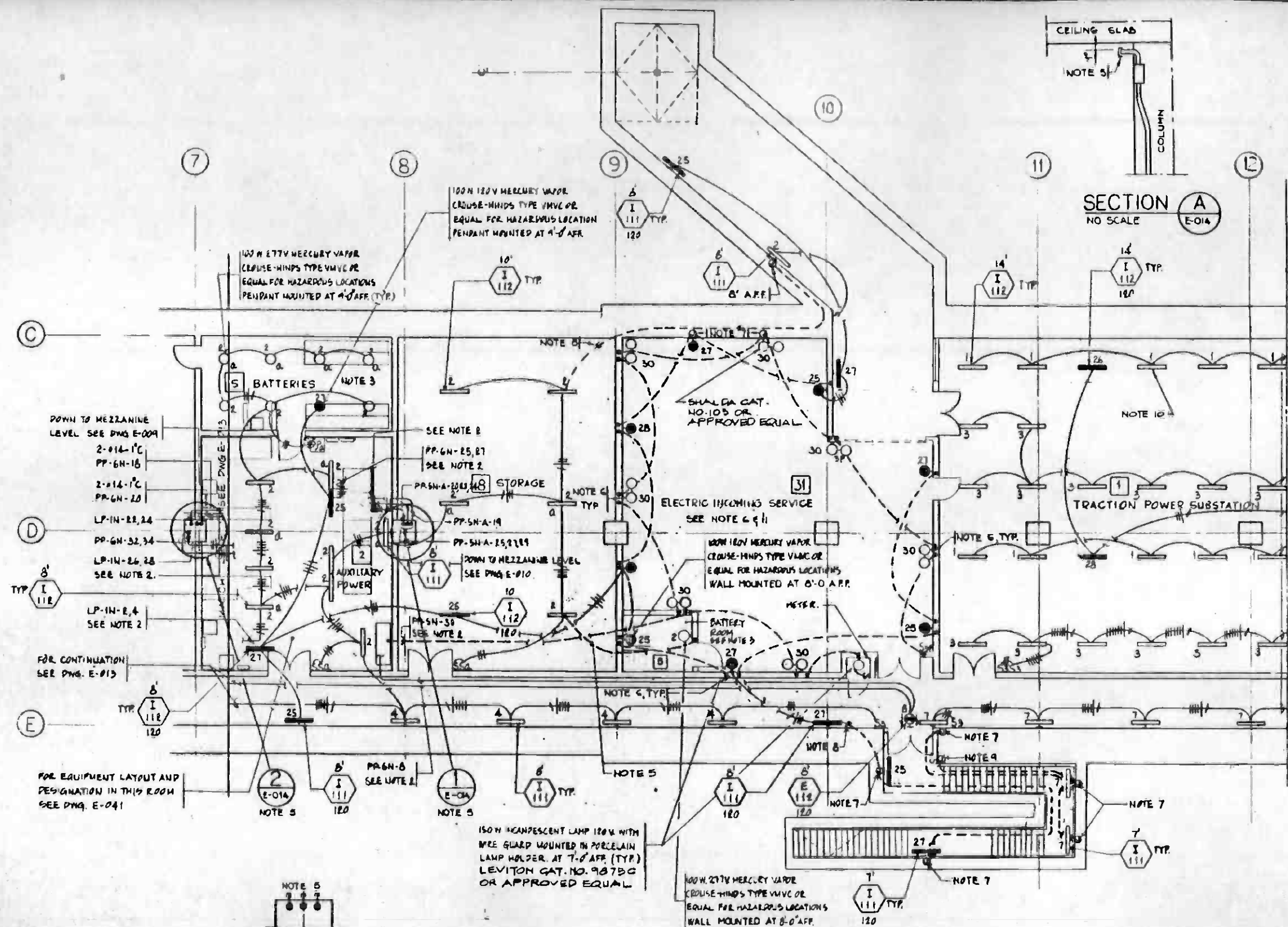
HEAT RESISTANT PORCELAIN SOCKET WITH WIRE GUARD WITH 100 W. INCANDESCENT LAMP PENDANT MOUNTED AT 10' AFF. (TYP.)

DETAIL 2
NO SCALE
E-013

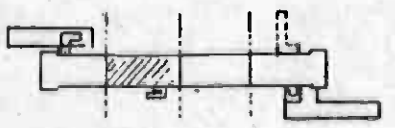
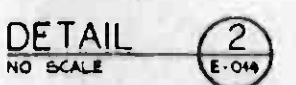
DETAIL 1
NO SCALE
E-013



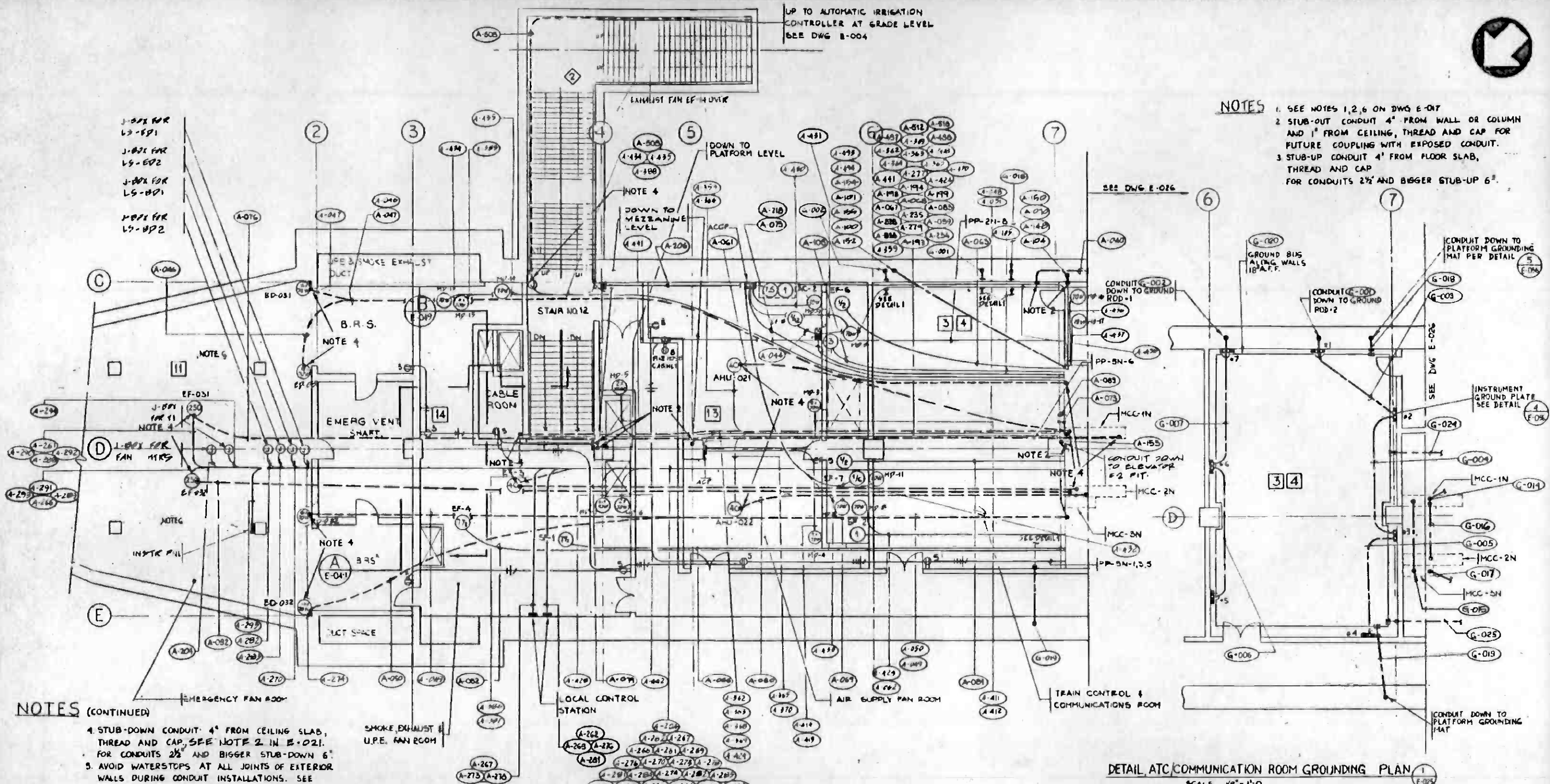
THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY Y. K. L. DRAWN BY Y. K. L. CHECKED BY N. J. G. [Signature] IN CHARGE G. Schabery DATE 8-20-88		PROFESSIONAL ENGINEER No. 11881 STATE OF CALIFORNIA		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT 		CONTRACT NO. A141 DRAWING NO. E-013 SCALE 1/8" = 1'-0" SHEET NO. A620/144	
REV.	DATE	BY	APP.	DESCRIPTION	REV.	DATE	BY	APP.	DESCRIPTION	DELON HAMPTON & ASSOCIATES, Chartered BYSRA & HENNESSY, INC. ENGINEERS SUBMITTED BY G. Schabery DMJM/PBOD/KE/HWA GENERAL CONSULTANTS APPROVED 	LA CBD TO NORTH HOLLYWOOD CIVIC CENTER STATION ANCILLARY ROOM LIGHTING - I
				INITIAL ISSUE					REVISED PER CR 6-516		



- NOTES:**
- SEE NOTES 1, 2 AND 5 ON DRAWING E-005
 - SEE NOTE 2 ON DRAWING E-013
 - CONDUITS ENTERING LIGHTING FIXTURES AND SWITCHES IN BATTERIES ROOM NO 5 SHALL BE SEALED AS REQUIRED FOR CLASS I DIVISION 2 LOCATIONS.
 - SEE NOTE 8 ON DRAWING E-005.
 - STUB-OUT CONDUITS 4" FROM WALL OR COLUMN AND 1" UNDER THE CEILING SLAB, THREAD AND CAP FOR FUTURE CONNECTION WITH EXPOSED CONDUITS.
 - CONDUITS ARE EMBEDDED IN THE CEILING SLAB AND STUBBED DOWN 4" FROM THE SLAB AT THE CENTER LINE OF THE FUTURE MASONRY WALL FOR FUTURE CONNECTION TO FIXTURE J-BOX.
 - SEE NOTE 6 ON DRAWING E-005
 - STUB-OUT CONDUITS 4" FROM WALL AT 8'-0" AFF. FOR FUTURE CONNECTION TO FIXTURE J-BOX.
 - SEE NOTE 8 ON DWG. E-005. INSTALL WALL RECESS J-BOX AT 3'-6" AFF.
 - LIGHTING LAYOUTS TO BE REARRANGED TO SUIT SHOP DWG. OF EQUIPMENT LAYOUT UNDER SYSTEMWIDE CONTRACT A651
 - LIGHTING LAYOUT PER BS-109



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY <i>Y. H. H.</i> DRAWN BY <i>Y. H. H.</i> CHECKED BY <i>N. J. Schabely</i> IN CHARGE <i>B. Schabely</i> DATE 8-20-83		PROFESSIONAL SEAL STATE OF CALIFORNIA No. 11881		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT DELON HAMPTON & ASSOCIATES, Chartered SYRKA & HENNESSY, INC. CONSULTANTS SUBMITTER <i>B. Schabely</i>		LA CBD TO NORTH HOLLYWOOD CIVIC CENTER STATION ANCILLARY ROOM LIGHTING - 2 CONTRACT NO. A141 DRAWING NO. E-014 SCALE 1/8" = 1'-0" SHEET NO. A620/145													
REV.	DATE	BY	SUB.	APP.	DESCRIPTION	REV.	DATE	BY	SUB.	APP.	DESCRIPTION	REV.	DATE	BY	SUB.	APP.	DESCRIPTION	REV.	DATE	BY	SUB.	APP.	DESCRIPTION
2	8-20-83	Y. H. H.			REVISED PER CRG-324	1	7-30-83	Y. H. H.			REVISED PER CRG-516	1	7-30-83	Y. H. H.			INITIAL ISSUE	1	7-30-83	Y. H. H.			



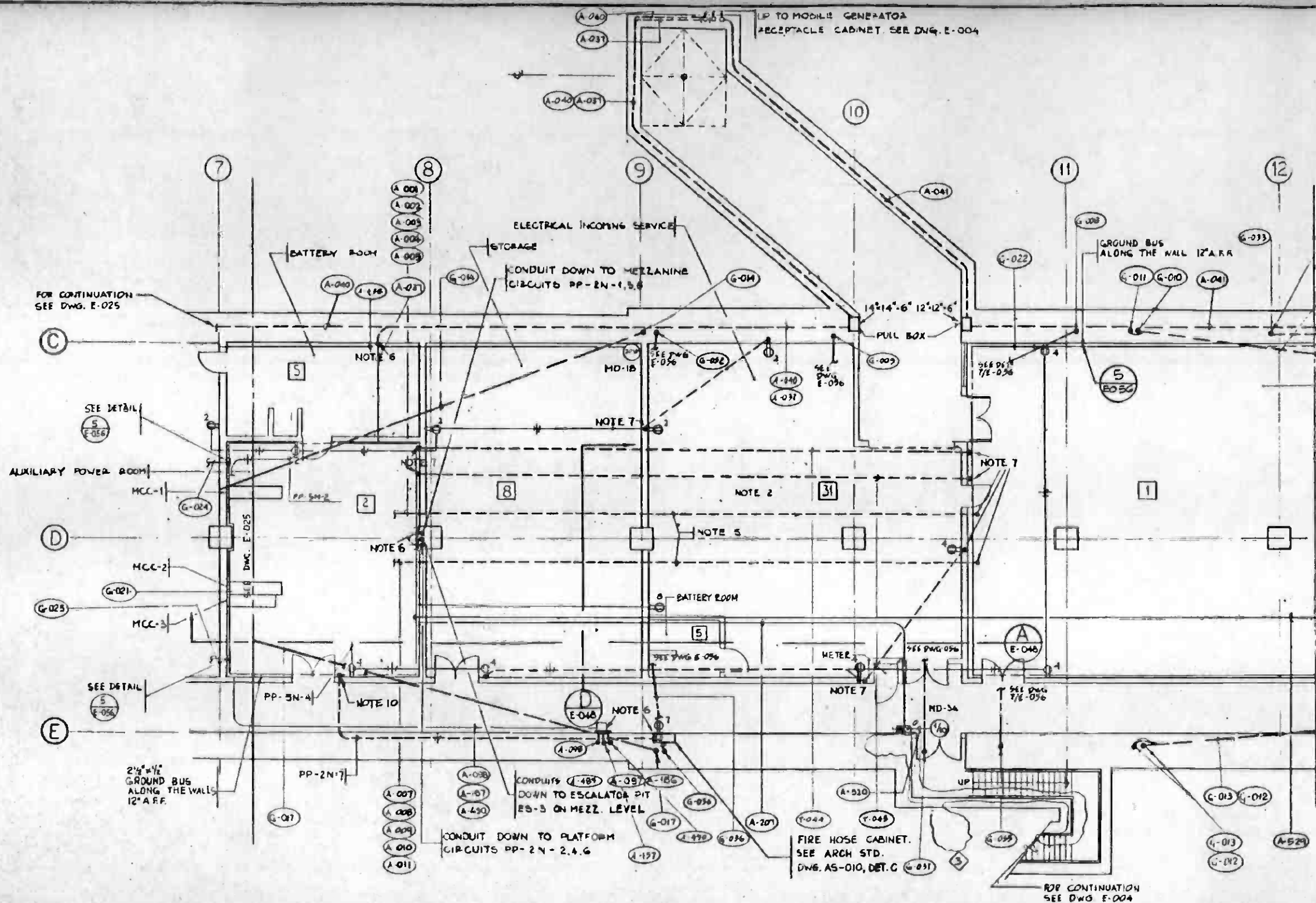
- NOTES**
- SEE NOTES 1,2,6 ON DWG E-017
 - STUB-OUT CONDUIT 4" FROM WALL OR COLUMN AND 1" FROM CEILING, THREAD AND CAP FOR FUTURE COUPLING WITH EXPOSED CONDUIT.
 - STUB-UP CONDUIT 4" FROM FLOOR SLAB, THREAD AND CAP FOR CONDUITS 2 1/2" AND BIGGER STUB-UP 6".

- NOTES (CONTINUED)**
- STUB-DOWN CONDUIT 4" FROM CEILING SLAB, THREAD AND CAP, SEE NOTE 2 IN E-021. FOR CONDUITS 2 1/2" AND BIGGER STUB-DOWN 6".
 - AVOID WATERSTOPS AT ALL JOINTS OF EXTERIOR WALLS DURING CONDUIT INSTALLATIONS. SEE STRUCTURAL DWG. S-085.

DETAIL ATC/COMMUNICATION ROOM GROUNDING PLAN
SCALE 1/8" = 1'-0"



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIES OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DRAWN BY: J. Kelly CHECKED BY: J. Schabel IN CHARGE: J. Schabel DATE: 6-20-85		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT DHA - DELON HAMPTON & ASSOCIATES, Chartered BYSNA & HENNESSY, INC. ENGINEERS SUBMITTED: J. Schabel		DMJM/PBQD/KE/HWA GENERAL CONSULTANTS APPROVED: Howard J. Kelly		CONTRACT NO. A14J DRAWING NO. E-025 SCALE 1/8" = 1'-0" SHEET NO. 1A620/146			
REV.	DATE	BY	SUB.	APP.	DESCRIPTION	REV.	DATE	BY	SUB.	APP.	DESCRIPTION
2	2/5/86	WEM	A	WEM	REVISED PER APPENDUM 141-3						
1	7/3/85	WEM	AS	WEM	REVISED PER CR 6-516						
1	1/8/85	WEM	CM	WEM	INITIAL ISSUE						



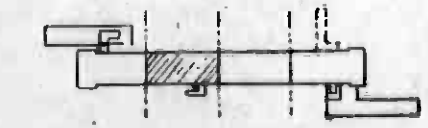
FOR CONTINUATION SEE DWG. E-025

FOR CONTINUATION SEE DWG. E-027

TRACTION POWER SUBSTATION FOR GROUNDING SYSTEM INSTALLATION SEE DWG. E-056. DETAIL 7/E-056

- NOTES**
- BOND STEEL DOORS IN ROOMS #1 AND #1 TO GROUND NOT SHOWN ON DWG. E-056.
 - SEE DRAWING ES-109 FOR EQUIPMENT AND CONDUIT ARRANGEMENTS INSIDE INCOMING SERVICE RM.
 - SEE NOTES 1,2,6 ON DWG. E-017
 - FOR GROUND MAT INSTALLATION IN ROOM #1 SEE DWG. E-056.
 - MAIN FEEDER S GOING BETWEEN COLUMNS 6 AND 9 OVER THE ROOF SLAB AND BETWEEN COLUMNS 9 AND 10 S IN THE IN THE ROOF SLAB, SEE A/E-040
 - STUB-OUT CONDUIT 4" FROM WALL OR COLUMN AND 1" FROM CEILING, THREAD AND CAP FOR FUTURE COUPLING WITH EXPOSED CONDUIT. FOR CONDUITS 2 1/2" AND BIGGER STUB-OUT 6".
 - STUB-DOWN CONDUITS 4" FROM CEILING, THREAD AND CAP. FOR CONDUITS 2 1/2" & BIGGER STUB-DOWN 6", U.O.N.
 - AVOID WATERSTOPS AT ALL JOINTS OF EXTERIOR WALLS DURING CONDUIT INSTALLATION. SEE STRUCTURAL DWG. S-083.
 - STUB-OUT COND. 2" INTO THE BLOCKOUT AT 1" ABOVE BLOCKOUT BOTTOM, THREAD AND CAP.
 - STUB-DOWN AT 6" FROM WALL SURFACE.

SEE DRAWING E-027



KEY PLAN



REV.	DATE	BY	APP.	DESCRIPTION
3	11/19/08	KJM	REVISED PER ADDENDUM 141-3	

REV.	DATE	BY	APP.	DESCRIPTION
1	7-14-08	AS	REVISED PER CRG-524	
2	7-14-08	AS	REVISED PER CR G-516	
3	8-20-08	AS	INITIAL ISSUE	

DESIGNED BY: *[Signature]*

DRAWN BY: *[Signature]*

CHECKED BY: *[Signature]*

IN CHARGE: *[Signature]*

DATE: 8-20-08

**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

DELOH HAMPTON & ASSOCIATES, Chartered
BYENA & HENNESSY, INC.
ENGINEERS

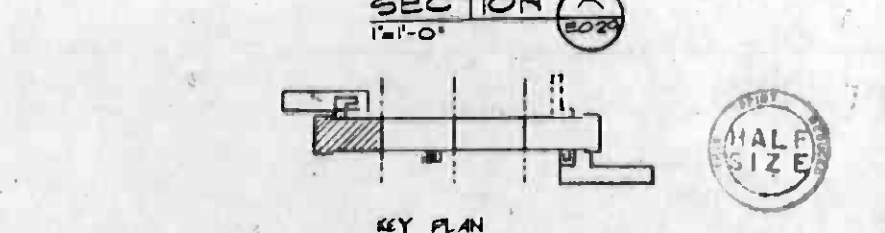
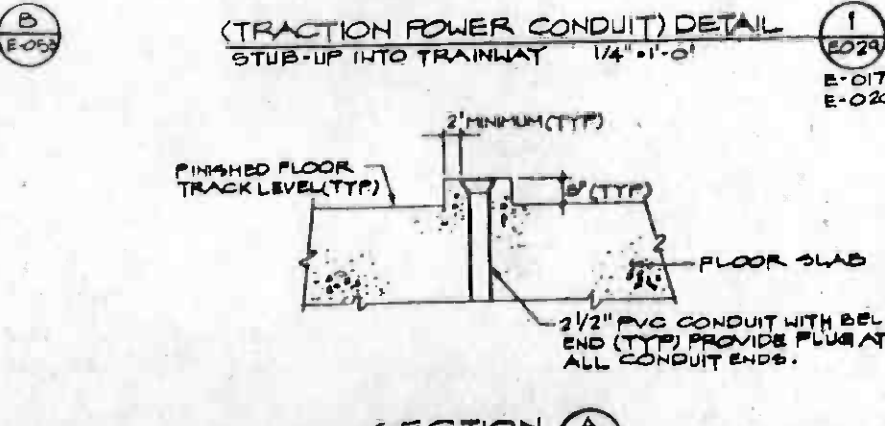
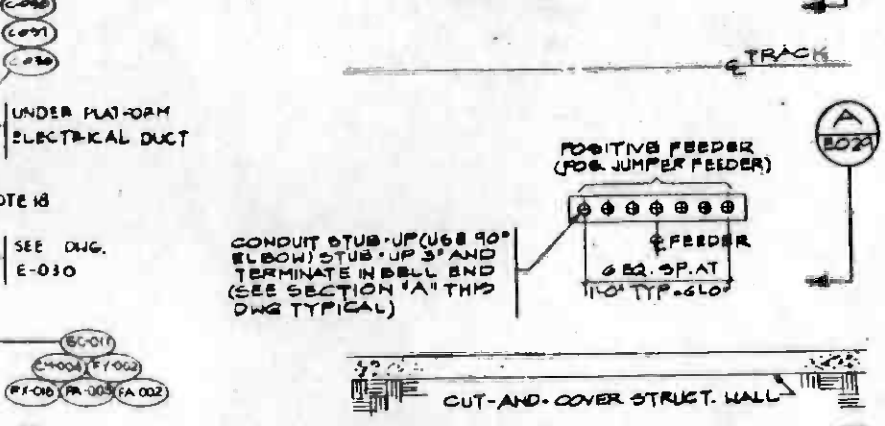
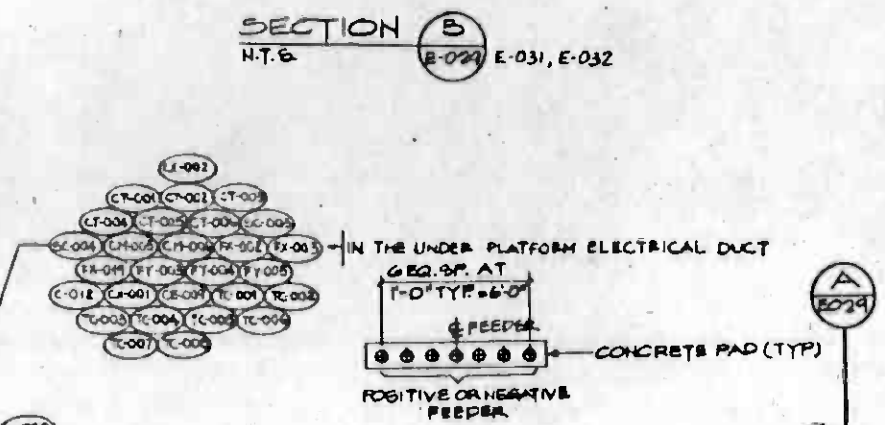
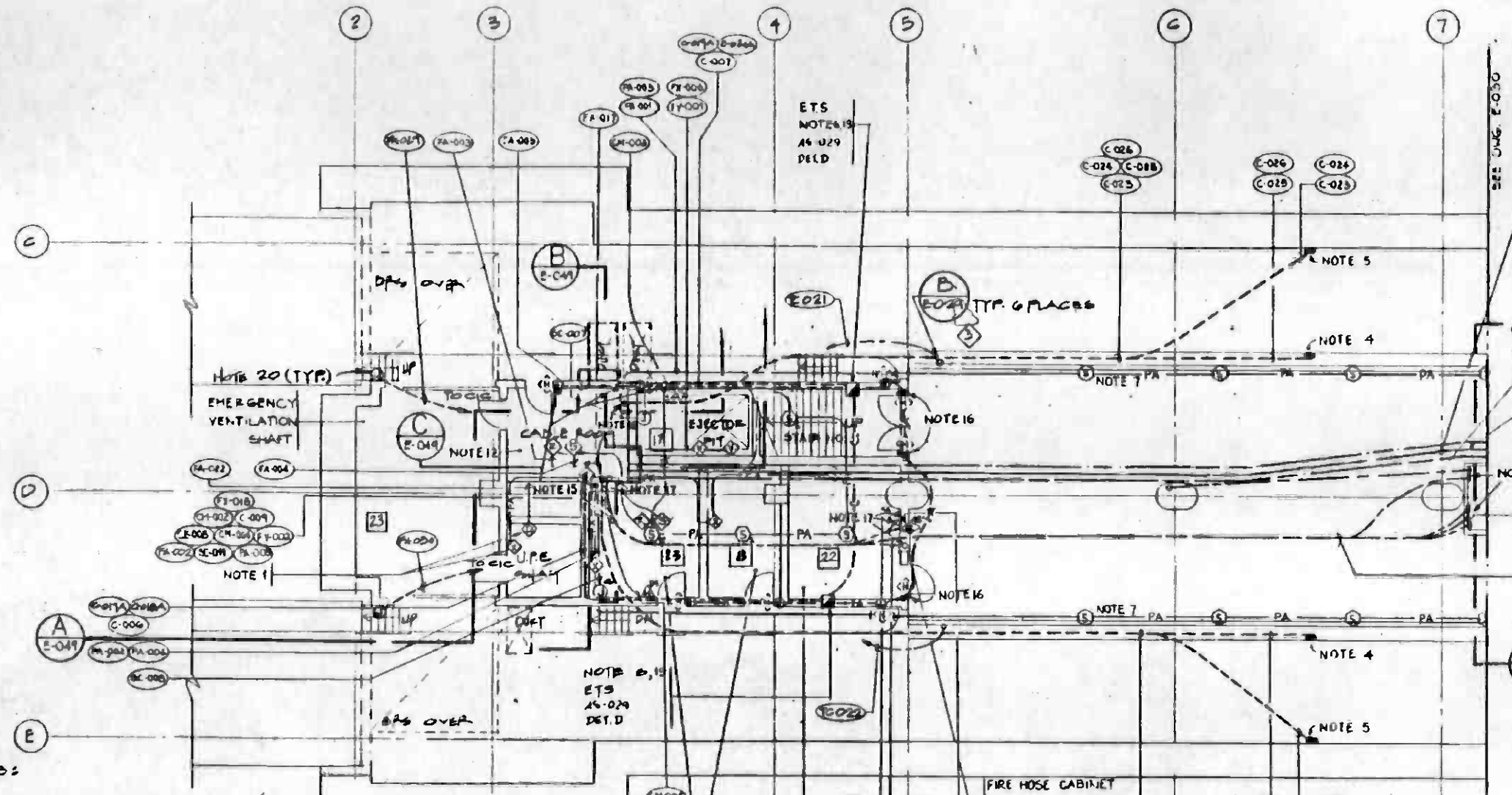
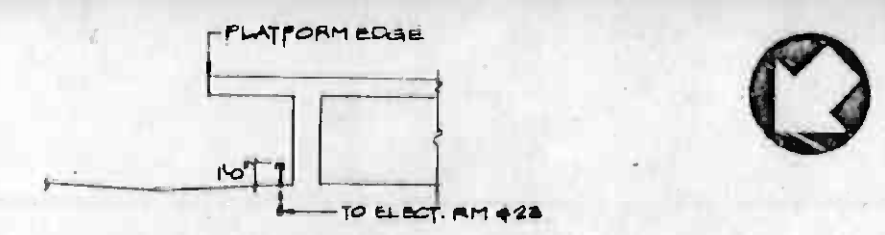
DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

APPROVED: *[Signature]*

**LA CBD TO NORTH HOLLYWOOD
CIVIC CENTER STATION**

ANCILLARY POWER & CONTROL - 2

CONTRACT NO.	A141
DRAWING NO.	E-026
REV.	3
SCALE	1/8" = 1'-0"
SHEET NO.	A620/147



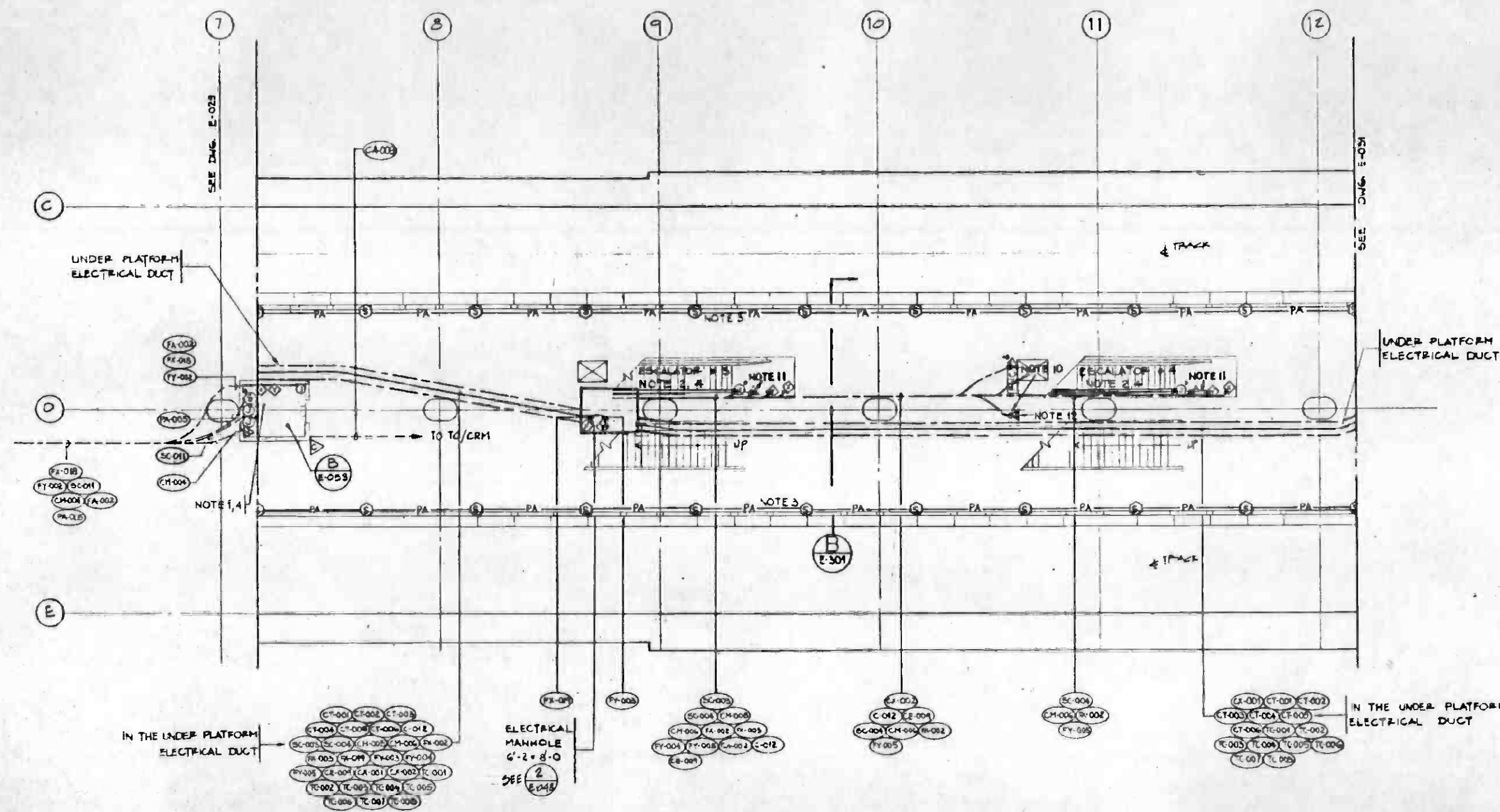
- NOTES:
- GAS SENSOR TO BE LOCATED IN THE UPE SPACE NEAR THE ACCESS HATCH AT EACH END OF THE STATION.
 - ① - SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA).
 - 24-NORTH AUXILIARY POWER ROOM #2, 25-SOUTH AUXILIARY POWER ROOM #2.
 - 2" CONDUITS STUB DOWN FROM CEILING NEAR CONTINUOUS ROW OF EDGE LIGHT.
 - 2" CONDUITS STUB DOWN FROM CEILING FOR BLOCKOUT DIMENSIONS AND MOUNTING DETAILS REFER TO ARCH. DWGS. AS-010 AND AS-029.
 - P.A. SPEAKERS FOR OPEN PLATFORM AREA ARE TO BE MOUNTED IN RECESS LIGHT ASSEMBLY FOR MOUNTING DETAILS REFER TO ARCH. DWG. AS-024.
 - SEE RACEWAY AND CABLE SCHEDULES ON DWGS. E-060, E-061, E-062 AND E-065.

- PROVIDE CONDUITS FROM CIC IN EJECTOR RM FOR TOXIC GAS SENSORS MOUNTED AT 4'-6" A.F.F. NEAR TOP OF EJECTOR PIT.
- FOR STATION TO TUNNEL TRANSITION DETAILS REFER TO DWG. E-051.
- UNLESS OTHERWISE NOTED PROVIDE CONDUITS FROM CIC FOR GAS SENSORS MOUNTED AT 4'-6" A.F.F.
- FOR CONDUIT ROUTING TO CABLE ROOM SEE DWG. E-049.
- ALL BOXES EMBEDDED IN CONCRETE SHOULD BE APPROVED CAST METAL BOXES. CONSTRUCTION TO PROVIDE BLANK COVERS ON ALL BOXES MIN INSIDE DIMENSIONS 4" x 4" x 2". EACH BOX SHOULD BE IDENTIFIED AS TO FUNCTION OR USE.

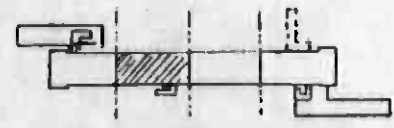
- ALL CONDUITS SHOULD BE 1" DIA. GKS UNLESS OTHERWISE NOTED.
- STUB-OUT CONDUIT 4" FROM WALL OR COLUMN AND 1" FROM CEILING, THREAD AND CAP FOR FUTURE COUPLING WITH EXPOSED CONDUIT. FOR 4", 3" AND 2 1/2" DIAMETER CONDUITS, STUB OUT 6".
- EMBED J-BOX FLUSH WITH CEILING SURFACE, FOR 2 1/8" AND LARGER CONDUITS STUB-OUT 6", THREAD, AND CAP.
- STUB-UP CONDUIT 4" FROM FLOOR SLAB OR CONCRETE FILL, THREAD AND CAP FOR CONDUITS 4", 3" AND 2 1/2" STUB-UP 6".

- STUB-OUT CONDUIT 4" INTO THE ELEVATOR PIT, THREAD AND CAP.
- STUB-OUT CONDUIT 2" INTO THE MIDDLE OF THE BLOCKOUT, THREAD AND CAP.
- INSTALL J-BOX AT 7'-0" ABOVE WALKWAY LEVEL (FOR GAS SAMPLING TUBE).

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY: J. P. ... DRAWN BY: ... CHECKED BY: ... IN CHARGE: ... DATE: 6-20-88		REGISTERED PROFESSIONAL ENGINEER No. 11881 STATE OF CALIFORNIA		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT DELON HAMPTON & ASSOCIATES, Chartered BYSKA & HENNEBERY, INC. ENGINEERS SUBMITTED: ... APPROVED: ...		LA CBD TO NORTH HOLLYWOOD CIVIC CENTER STATION PLATFORM COMMUNICATIONS CONDUITS - 1 CONTRACT NO. A141 DRAWING NO. E-029 SCALE 1/8" = 1'-0" SHEET NO. A620/148	
REVISED PER CRG-524 REVISED PER CRG-516 INITIAL ISSUE				REVISED PER ADDENDUM 141-3		REVISED PER CRG-524 REVISED PER CRG-516 INITIAL ISSUE		REVISED PER ADDENDUM 141-3		REVISED PER ADDENDUM 141-3	



- NOTES**
- ① - OUTLET FOR SPEAKERS
 - ② - OUTLET FOR CATEL, ALL DEVICES ARE LOCATED IN THE ELEVATOR PIT, ONE 1" C FOR CATEL AND ATEL
 - CONDUITS FOR MTEL AND SCADA SHALL BE EXTENDED FROM THE TOP PIT TO THE BOTTOM PIT AND CONTINUED TO THE NEAREST CIC.
 - P.A. SPEAKERS FOR OPEN PLATFORM AREA ARE TO BE MOUNTED IN EDGE LIGHT ASSEMBLY FOR MOUNTING DETAILS REFER TO ARCH. DWG AB-024.
 - PROVIDE CONDUITS IN ESCALATOR AND ELEVATOR PITS FOR SENSORS, 2'-6" ABOVE PIT FLOOR AND CENTERED OVER PIT DRAIN.
 - REFER TO FACEWAY AND CABLE SCHEDULES, DWG. E-060, E-061, E-062, E-063.
 - UNLESS OTHERWISE NOTED, PROVIDE CONDUITS FROM CIC TO GAS SENSORS MOUNTED AT 4'-6" A.F.F.
 - SEE NOTES 13, 14 ON DWG E-029.
 - STUB-OUT CONDUIT 4" FROM WALL OR COLUMN AND 1" FROM CEILING. THREAD AND CAP FOR FUTURE COUPLING WITH EXPOSED CONDUIT. FOR 4", 3" AND 2 1/2" DIAMETER CONDUITS, STUB-OUT 6".
 - EMBED J-BOX FLUSH WITH CEILING SURFACE AND 2 1/2" AND LARGER CONDUITS STUB-DOWN 6", THREAD, AND CAP.
 - STUB-UP CONDUIT 4" FROM FLOOR SLAB OR CONCRETE FILL. THREAD AND CAP. FOR CONDUITS 4", 3" AND 2 1/2" STUB-UP 6".
 - STUB-OUT CONDUIT 4" INTO THE ESC. PIT, THREAD AND CAP.
 - CONTRACTOR TO VERIFY EXACT LOCATION OF ANY TELEPHONE WITH THE DISTRICT OR ITS DESIGNEE.

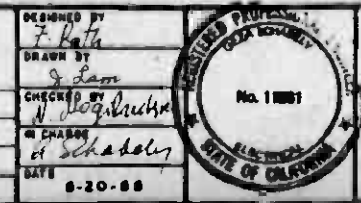


REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY: *F. Bata*
 DRAWN BY: *J. Lam*
 CHECKED BY: *J. Schabady*
 IN CHARGE: *J. Schabady*
 DATE: 8-20-88

1986 CM
 138 BA AS
 INITIAL ISSUE
 REVISED PER CR 6-316.



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT

DELON HAMPTON & ASSOCIATES, CHAIRMAN
 SYSKA & HENNESSY, INC. ENGINEERS

DMJM/PBOD/KE/HWA
 GENERAL CONSULTANTS

APPROVED: *Howard Schaff*

LA CBD TO NORTH HOLLYWOOD CIVIC CENTER STATION

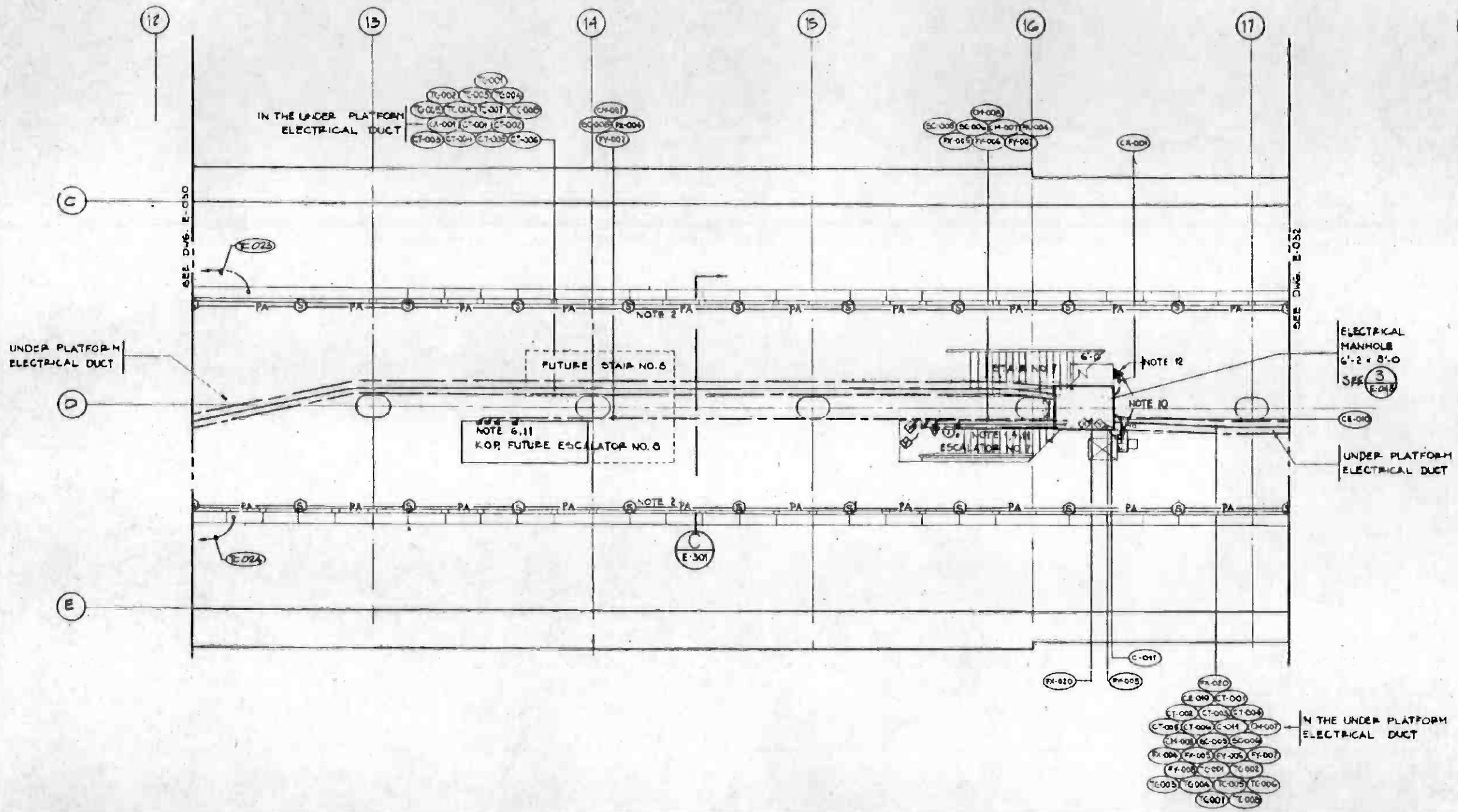
PLATFORM COMMUNICATIONS CONDUITS - 2

CONTRACT NO.	A141
DRAWING NO.	E-030
REV.	1
SCALE	1/8" = 1'-0"
SHEET NO.	A620/149



NOTES

1. CONDUITS FOR MTEL AND SCADA SHALL BE EXTENDED FROM THE TOP PIT TO THE BOTTOM PIT AND CONTINUED TO THE NEAREST CIC AS SHOWN ON THE DRAWINGS
2. P.A. SPEAKERS FOR OPEN PLATFORM AREA ARE TO BE MOUNTED IN EDGE LIGHT ASSEMBLY. FOR MOUNTING DETAILS REFER TO DWG AS-02
3. REFER TO FACEWAY AND CABLE SCHEDULES, DWG. E-060, E-061, E-062, E-063.
4. PROVIDE CONDUITS IN ELEVATOR AND ESCALATOR FOR SENSORS, 2'-6" ABOVE PIT FLOOR AND CENTERED OVER PIT DRAIN.
5. UNLESS OTHERWISE NOTED, PROVIDE CONDUITS FROM CG TO GAS SENSORS MOUNTED AT 4'-6" AFF
6. CONDUITS SHALL BE CAPPED IN ESCALATOR NO. 6 PIT
7. SEE NOTES 13, 14 ON DWG E-029.
8. STUB-OUT CONDUIT 4" FROM WALL OR COLUMN AND 1" FROM CEILING. THREAD AND CAP FOR FUTURE COUPLING WITH EXPOSED CONDUIT. FOR 4", 3" AND 2 1/2" DIAMETER CONDUITS, STUB-OUT 6".
9. EDGE J-BOX FLUSH WITH CEILING SURFACE. FOR 2 1/2" AND LARGER CONDUITS STUB-DOWN 6"; THREAD, AND CAP.
10. STUB-UP CONDUIT 4" FROM FLOOR SLAB OR CONCRETE FILL. THREAD AND CAP. FOR CONDUITS 4", 3" AND 2 1/2" STUB-UP 6".
11. STUB-OUT CONDUIT 4" INTO THE ESCALATOR PIT, THREAD AND CAP.
12. CONTRACTOR TO VERIFY EXACT LOCATION OF PAY TELEPHONE WITH THE DISTRICT OR ITS DESIGNEE.

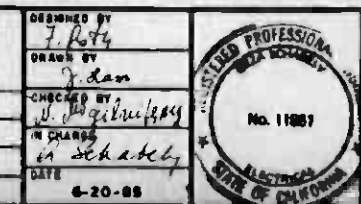


REV.	DATE	BY	CHKD.	APP.	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA

DESIGNED BY: J. P. ...
 DRAWN BY: J. ...
 CHECKED BY: J. ...
 IN CHARGE: J. ...
 DATE: 6-20-88

REVISIONS:
 1. REVISED PER CR 6-524
 2. REVISED PER CR 6-516
 3. INITIAL ISSUE



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DELON HAMPTON & ASSOCIATES, Chartered
 BYSBA & HENNESSY, INC.
 ENGINEERS

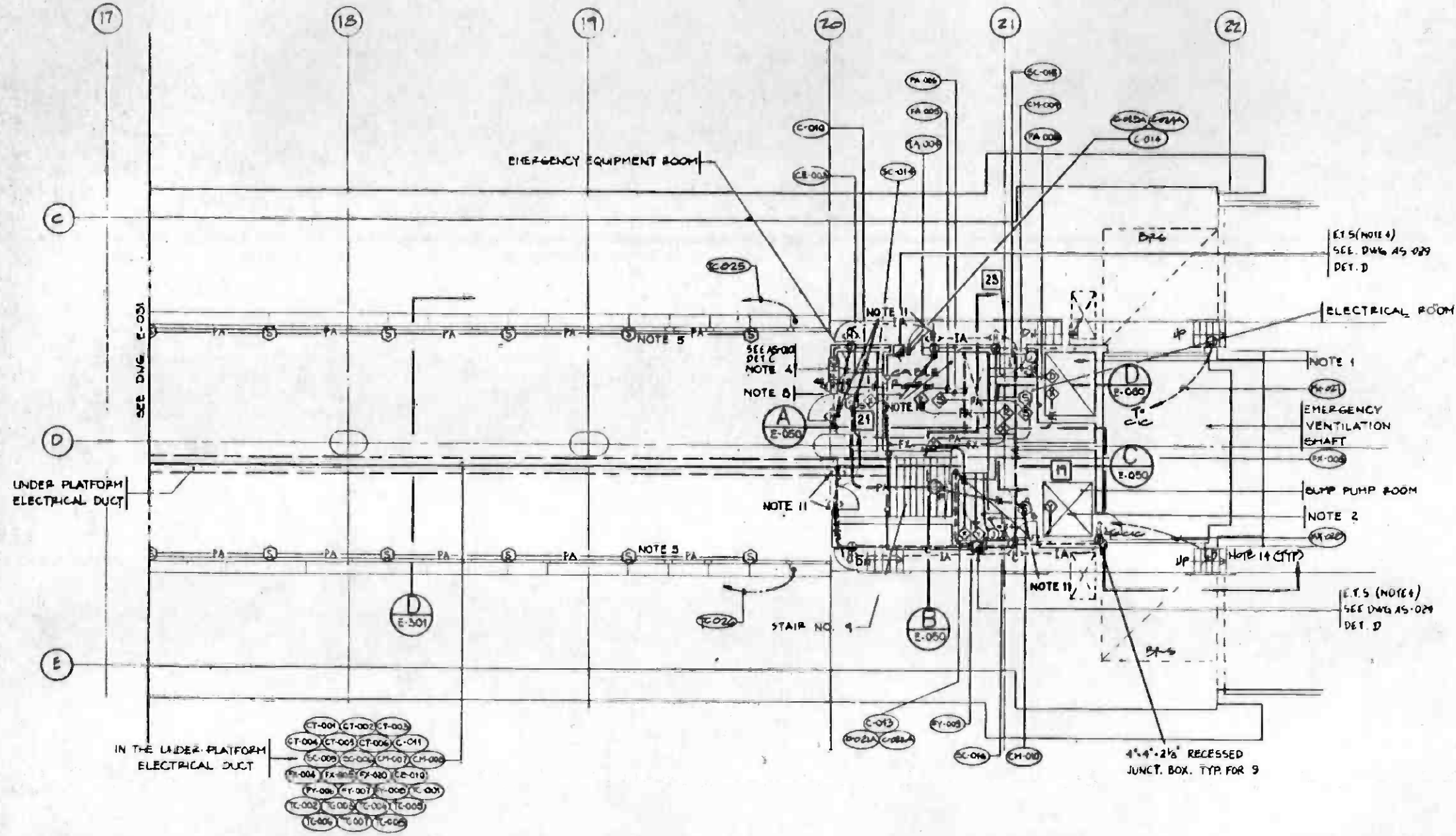
DMJM/PBQD/KE/HWA
 GENERAL CONSULTANTS

APPROVED: Howard Khaliff

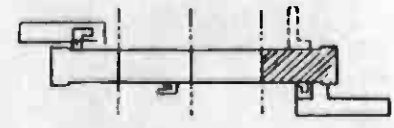
LA CBD TO NORTH HOLLYWOOD
CIVIC CENTER STATION

PLATFORM COMMUNICATIONS CONDUITS - 3

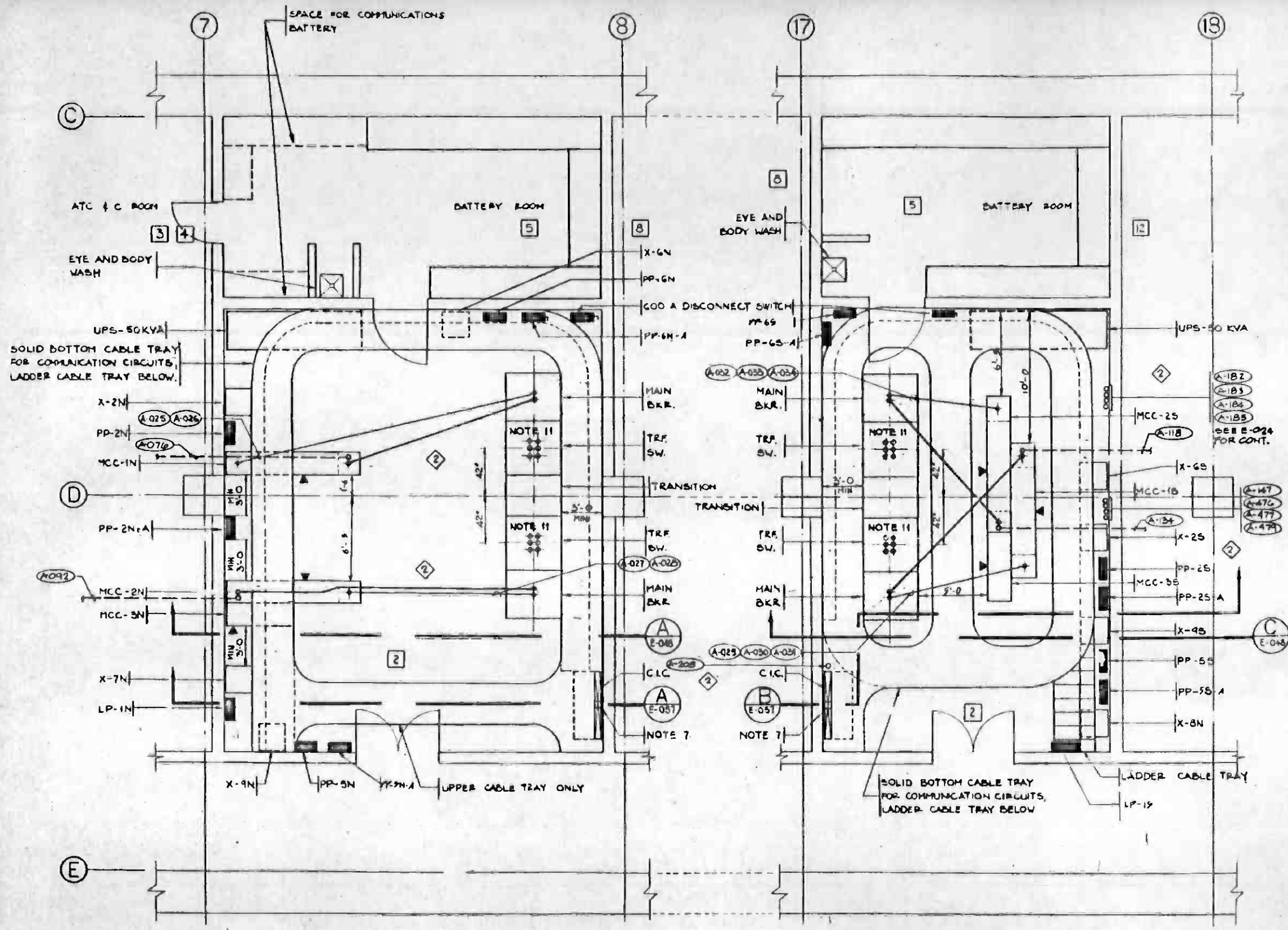
CONTRACT NO.	A141
DRAWING NO.	E-031
SCALE	1/8" = 1'-0"
SHEET NO.	A620/150



- NOTES:**
1. PROVIDE CONDUITS FROM CIC TO GAS SENSORS TO BE LOCATED IN THE UPE SPACE NEAR THE ACCESS HATCH AT EACH END OF THE STATION.
 2. PROVIDE CONDUITS IN SUMP PUMP ROOM FROM CIC TO AN ACCESSIBLE LOCATION 4'-6" A.F.F. (SENSOR CALIBRATION POINT); CONDUIT 4" 3/8" CALIBRATION TUBING TO BE RUN FROM THIS POINT INTO SUMP PIT FOR SENSOR WIRING NEAR ACCESS LADDER.
 3. REFER TO RACEWAY AND CABLE SCHEDULE DWG E-060, E-061, E-062, E-063.
 4. FOR BLOCKOUT DIMENSIONS AND MOUNTING DETAILS REFER TO DRAWINGS AS-010, AS-029.
 5. PA SPEAKERS FOR OPEN PLATFORM AREA ARE TO BE MOUNTED IN EDGE LIGHT ASSEMBLY. REFER TO ARCH. STANDARD DWG AS-024.
 6. FOR STATION TO TUNNEL TRANSITION DETAILS REFER TO DWG. E-051.
 7. UNLESS OTHERWISE NOTED PROVIDE CONDUITS FROM CIC TO GAS SENSORS MOUNTED AT 4'-6" A.F.F.
 8. FOR CONDUIT ROUTING TO CABLE ROOM SEE DWG E-050.
 9. SEE NOTES 13, 14 ON DWG E-029.
 10. STUB-OUT CONDUIT 4" FROM WALL OR COLUMN AND 1" FROM CEILING. THREAD AND CAP. FOR 4", 3" AND 2 1/2" DIAMETER CONDUITS, STUB-OUT 6".
 11. EMBED J-BOX FLUSH WITH CEILING SURFACE. FOR 2 1/2" AND LARGER CONDUITS STUB-DOWN 6", THREAD, AND CAP.
 12. STUB-UP CONDUIT 4" FROM FLOOR SLAB OR CONCRETE FILL. THREAD AND CAP. FOR CONDUITS 4", 3" AND 2 1/2" STUB-UP 6".
 13. FOR PA SPEAKER MOUNTING DETAILS REFER TO COMMUNICATION STANDARD DRAWING NS-005.
 14. INSTALL EXPOSED J-BOX AT 7'-0" ABOVE WALKWAY LEVEL FOR GAS SAMPLING USE.



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY <i>F. R. [Signature]</i> DRAWN BY <i>J. [Signature]</i> CHECKED BY <i>[Signature]</i> IN CHARGE <i>[Signature]</i> DATE 8-20-88		CONTRACT NO. A141 DRAWING NO. E-032 REV. 2 SCALE 1/8" = 1'-0" SHEET NO. A620/151	
INITIAL ISSUE REVISED PAR CR 6-324 REVISED PAR CR 6-516				SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT ATD		LA CBD TO NORTH HOLLYWOOD CIVIC CENTER STATION PLATFORM COMMUNICATIONS CONDUITS - 4	
REVISIONS 1. B. B. [Signature] [Date] [Description] 2. [Signature] [Date] [Description] 3. [Signature] [Date] [Description]				DHA DELON HAMPTON & ASSOCIATES, Chartered SYSEA & HENNESSY, INC. ENGINEERS MONITORED BY <i>[Signature]</i>		DMJM/PBQD/KE/HWA GENERAL CONSULTANTS APPROVED <i>[Signature]</i>	
REV.	DATE	BY	APP.	DESCRIPTION	DATE	BY	APP.



ABBREVIATIONS

- LP-1N LIGHTING PANEL 480/277 V, NONESSENTIAL LOADS, AND ISOLATING XFMR 480 V - 480/277 V.
- X-7N
- PP-5N POWER PANEL 208/120 V, NONESSENTIAL LOADS, AND XFMR 480 V - 208/120 V.
- X-9N
- PP-6N VITAL POWER PANEL 208/120 V, FED FROM UPS, AND UPS BYPASS XFMR, 480 V - 208/120 V.
- X-6N
- PP-2N POWER PANEL 208/120 V, ESSENTIAL LOADS, AND XFMR 480 V - 208/120 V.
- X-2N
- MCC-1N MOTOR CONTROL CENTER NO. 1 NORTH, 480 VOLTS, ESSENTIAL LOADS.
- MCC-2N MOTOR CONTROL CENTER NO. 2 NORTH, 480 VOLTS, ESSENTIAL LOADS.
- MCC-3N MOTOR CONTROL CENTER NO. 3 NORTH, 480 VOLTS, NONESSENTIAL LOADS.
- LP-1S LIGHTING PANEL 480/277 V, NONESSENTIAL LOADS, AND ISOLATING XFMR 480 V - 480/277 V.
- X-8N
- PP-5S POWER PANEL 208/120 V, NONESSENTIAL LOADS, AND XFMR 480 V - 208/120 V.
- X-1S
- PP-6S VITAL POWER PANEL 208/120 V, FED FROM UPS, AND UPS BYPASS XFMR, 480 V - 208/120 V.
- X-6S
- PP-2S POWER PANEL 208/120 V, ESSENTIAL LOADS, AND XFMR 480 V - 208/120 V.
- X-2S
- MCC-1S MOTOR CONTROL CENTER NO. 1 SOUTH, 480 VOLTS, ESSENTIAL LOADS.
- MCC-2S MOTOR CONTROL CENTER NO. 2 SOUTH, 480 VOLTS, ESSENTIAL LOADS.
- MCC-3S MOTOR CONTROL CENTER NO. 3 SOUTH, 480 VOLTS, NONESSENTIAL LOADS.

NOTES

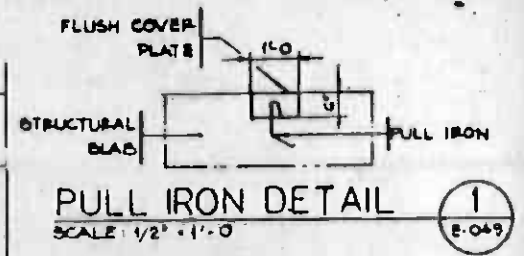
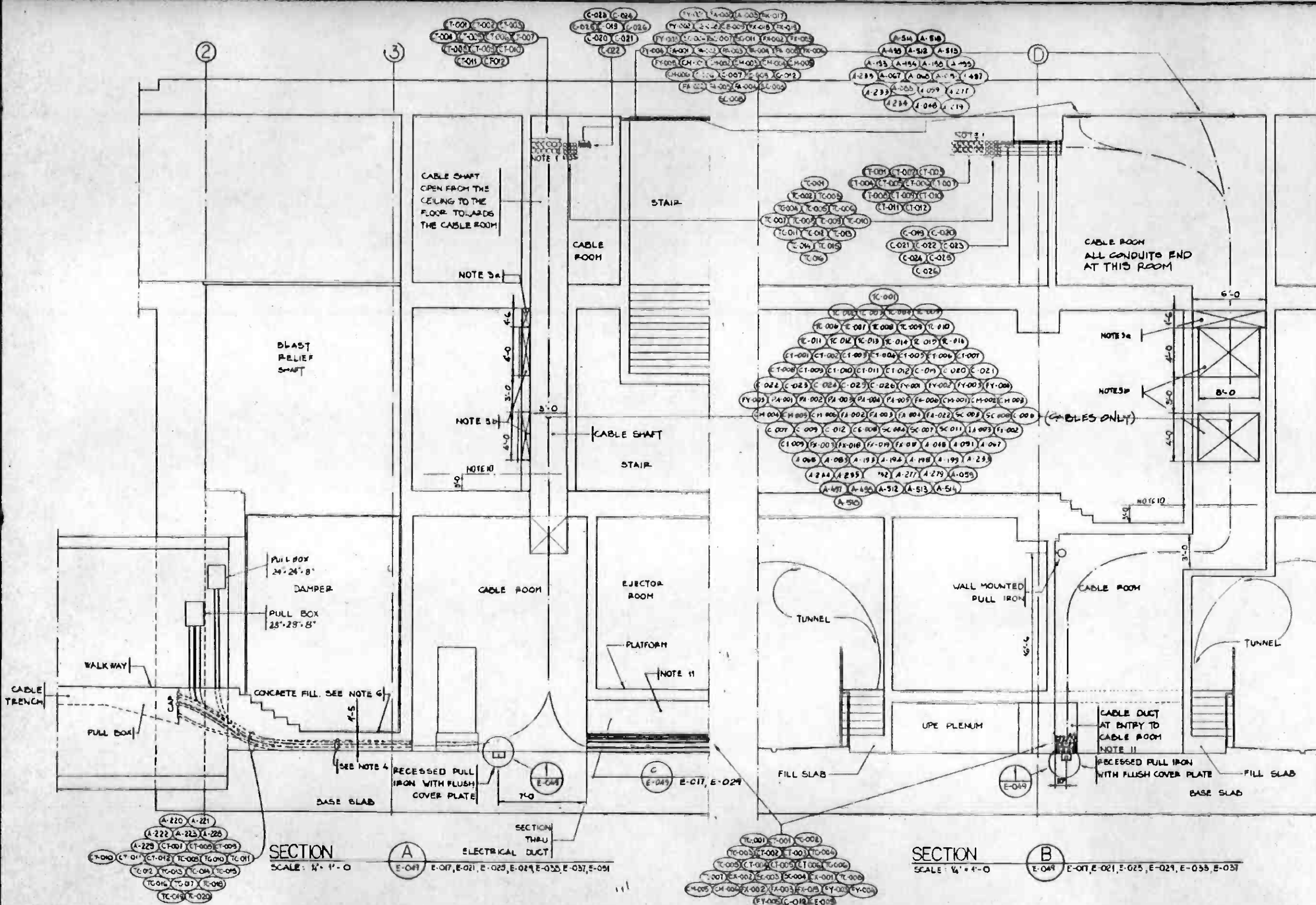
1. PULL BOX INSTALLATION FOR POWER FEEDERS AND POWER FEEDER ROUTING DETAILS SEE ON DRAWING E-040.
2. NORTH SWITCHBOARDS AND MCC SINGLE LINE DIAGRAM SEE ON DRAWING E-058.
3. SOUTH SWITCHBOARDS AND MCC SINGLE LINE DIAGRAM SEE ON DRAWING E-059.
4. THE DRY TYPE TRANSFORMERS MAY BE INSTALLED ON BRACKETS 3 FEET A.F.F. OR ON THE FLOOR.
5. WALL MOUNTED PANELS SHALL BE INSTALLED WITH TOP 6'-6" A.F.F. AND BOTTOM NOT LESS THAN 12" A.F.F.
6. THE FLOOR STANDING ELECTRICAL EQUIPMENT SHALL BE MOUNTED ON 6'-6" CONCRETE CURBS.
7. WIREWAY TRANSITION OPENING SHALL BE WATERPROOF SEALED AFTER CONDUCTORS ARE INSTALLED. SEE DETAIL 1/E-057.
8. UPS ENCLOSURE AND BATTERY DISCONNECT SWITCH ENCLOSURE SHALL BE WEATHERPROOF NEMA TYPE 1 WITH GASKETED DOORS AND WITH DRIP SHIELDS.
9. FOR CABLE TRAY DETAILS SEE DRAWING E-057.
10. STUB-UP CONDUIT 4" FROM FLOOR SLAB, THREAD AND CAP.
11. FOR CONDUIT IDENTIFICATION FOR TRANSFER SWITCHES REFER TO A/E-040 AND 6/E-040.
12. INCLUDED IN THIS CONTRACT ARE CONDUIT STUB-UPS / STUB-DOWNS ONLY. OTHER EQUIPMENT AND CABLE TRAYS ARE FOR INFORMATION ONLY.

NORTH AUXILIARY POWER ROOM AND BATTERY ROOM

SOUTH AUXILIARY POWER ROOM AND BATTERY ROOM



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT				LA CBD TO NORTH HOLLYWOOD CIVIC CENTER STATION AUXILIARY POWER ROOM & BATTERY ROOM		CONTRACT NO. A141 DRAWING NO. E-041 SCALE 1/4" = 1'-0" SHEET NO. A620/153
DESIGNED BY <i>F. Holt</i> DRAWN BY <i>J. San</i> CHECKED BY <i>H. Schabert</i> DATE 8-20-88	REVISED PER ADDENDUM 141-3 REVISED PER CR 0-510 INITIAL ISSUE		DELON HAMPTON & ASSOCIATES, Chartered 5700 W. CENTURY BLVD. SUITE 200 LOS ANGELES, CALIF. 90045 SUBMITTED BY <i>Delon Hampton</i>		DMJM/PBQO/KE/MWA GENERAL CONSULTANTS APPROVED BY <i>Howard Schabert</i>					



- NOTES**
1. INSTALL CONDUITS WITH 2" CLEARANCE FROM CEILING TO AVOID BEAM CROSSING.
 2. THE CONDUITS IN THE CABLE ROOMS SHALL BE ARRANGED IN CABLE TRAYS OR ON RACKS AS REQUIRED.
 - 3a. 1'-6" x 6'-0" OPENING IMMEDIATELY BELOW THE CEILING SLAB SHALL BE SEALED AFTER COMMUNICATIONS AND POWER CONDUITS ARE INSTALLED UNDER CONTRACT A 147.
 - 3b. 4'-0" x 6'-0" PERMANENT ACCESS OPENING WITH A FIRE RATED STEEL COVER, UNDER CONTRACT A 147.
 4. FOR CONDUIT LAYOUT AND DETAILS REFER TO DWG E-051.
 5. MINIMUM BENDING RADIUS FOR COMMUNICATION CONDUITS IS 36".
 6. AFTER CONDUIT INSTALLATION CAST CONCRETE FILL 1'-5" ABOVE BASE SLAB.
 7. COMMUNICATION CONDUITS IN CABLE ROOM SHALL BE SEPARATED AT LEAST BY TWO INCH SPACING FROM LIGHTING AND POWER CONDUITS.
 8. CONDUITS IN VERTICAL SHAFTS SHALL HAVE FIRE-RESISTANT BARRIERS PREVENTING THE CARRYING OF FIRE FROM FLOOR TO FLOOR.
 9. SEE NOTE 19 ON DWG E-029.
 10. INSTALL CONDUITS DOWN TO THIS LEVEL ONLY.
 11. CAST CONCRETE BETWEEN CONDUITS DURING INSTALLATION IN ELECTRICAL DUCTS, UNDER CONTRACT A 141.

SECTION A
SCALE: 1/2" = 1'-0"
ELECTRICAL DUCT
E-049, E-017, E-021, E-023, E-029, E-033, E-037, E-051

SECTION B
SCALE: 1/4" = 1'-0"
E-049, E-017, E-021, E-023, E-029, E-033, E-037

REV.	DATE	BY	SUB.	APP.	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY: J. J. GIBLIN & ASSOCIATES
 DRAWN BY: J. J. GIBLIN
 CHECKED BY: J. J. GIBLIN
 IN CHARGE: A. Schabely
 DATE: 6-20-88

REVISOR PER CRG-516
 INITIAL ISSUE

REGISTERED PROFESSIONAL ENGINEER
 No. 19861
 STATE OF CALIFORNIA

**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT**

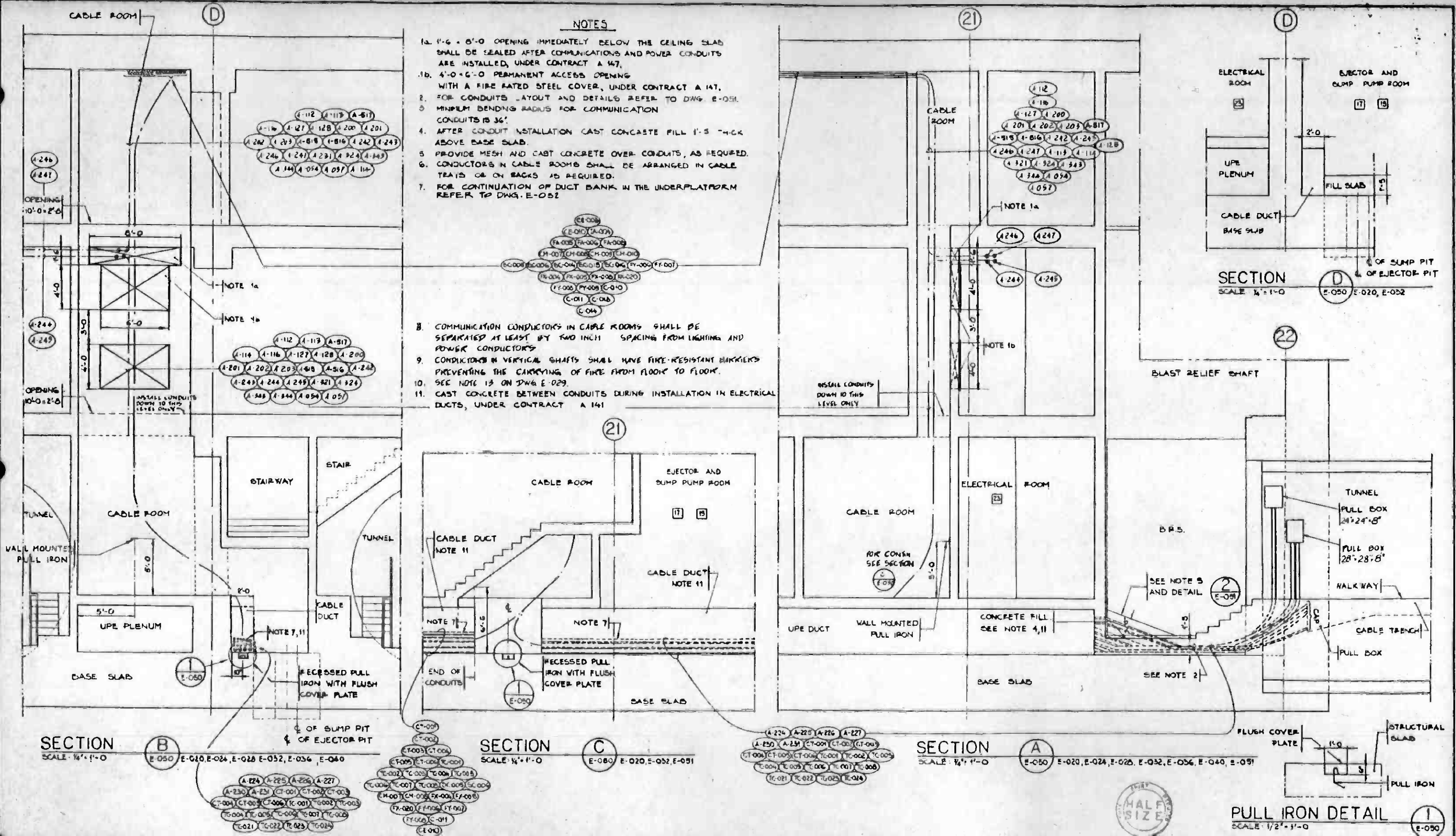
DELON HAMPTON & ASSOCIATES, Chartered
 SYSKA & HENNESSY, INC.
 ENGINEERS

DMJM/FBOD/KE/HWA
 GENERAL CONSULTANTS
 APPROVED: Howard Schaff

**LA CBD TO NORTH HOLLYWOOD
 CIVIC CENTER STATION**

SECTIONS & DETAILS - 2
 NORTH CABLE ROOMS & SHAFT

CONTRACT NO. A141
 DRAWING NO. E-049
 SCALE: 1/4" = 1'-0"
 SHEET NO. A620/154



NOTES

1. 1'-6" x 6'-0" OPENING IMMEDIATELY BELOW THE CEILING SLAB SHALL BE SEALED AFTER COMMUNICATIONS AND POWER CONDUITS ARE INSTALLED, UNDER CONTRACT A 147.
 - 1b. 4'-0" x 6'-0" PERMANENT ACCESS OPENING WITH A FIRE RATED STEEL COVER, UNDER CONTRACT A 147.
 2. FOR CONDUITS LAYOUT AND DETAILS REFER TO DWG. E-051.
 3. MINIMUM BENDING RADIUS FOR COMMUNICATION CONDUITS IS 36'.
 4. AFTER CONDUIT INSTALLATION CAST CONCRETE FILL 1'-3" THICK ABOVE BASE SLAB.
 5. PROVIDE MESH AND CAST CONCRETE OVER CONDUITS, AS REQUIRED.
 6. CONDUCTORS IN CABLE ROOMS SHALL BE ARRANGED IN CABLE TRAYS OR ON BACKS AS REQUIRED.
 7. FOR CONTINUATION OF DUCT BANK IN THE UNDERPLATFORM REFER TO DWG. E-052.
8. COMMUNICATION CONDUCTORS IN CABLE ROOMS SHALL BE SEPARATED AT LEAST BY TWO INCH SPACING FROM LIGHTING AND POWER CONDUCTORS.
 9. CONDUCTORS IN VERTICAL SHAFTS SHALL HAVE FIRE-RESISTANT BARRIERS PREVENTING THE CARRYING OF FIRE FROM FLOOR TO FLOOR.
 10. SEE NOTE 13 ON DWG. E-029.
 11. CAST CONCRETE BETWEEN CONDUITS DURING INSTALLATION IN ELECTRICAL DUCTS, UNDER CONTRACT A 141.

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

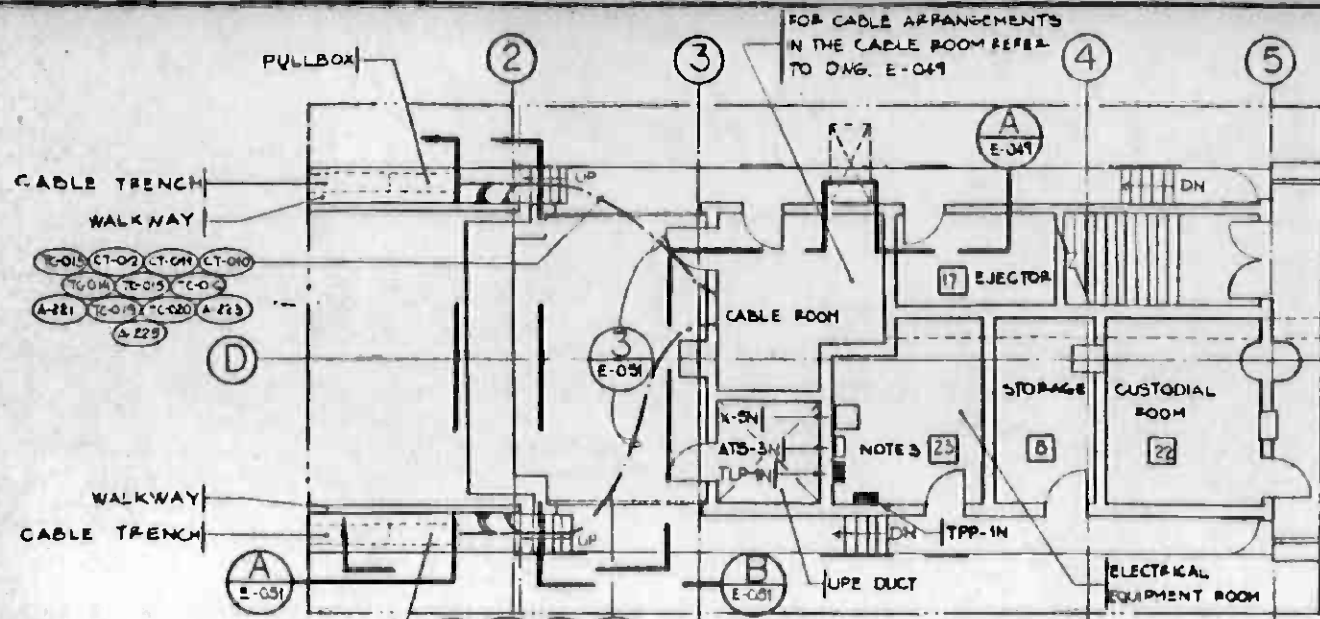
SECTION C
SCALE: 1/4" = 1'-0"

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

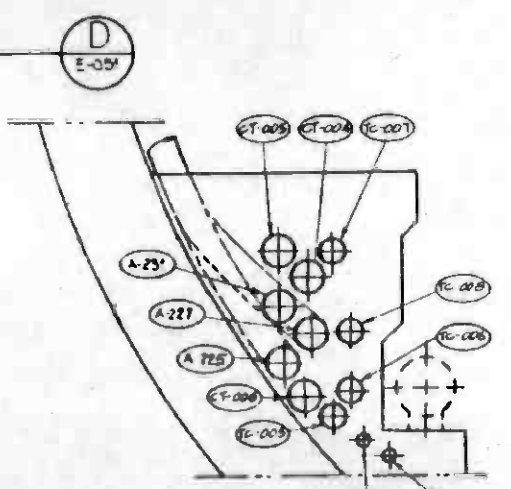
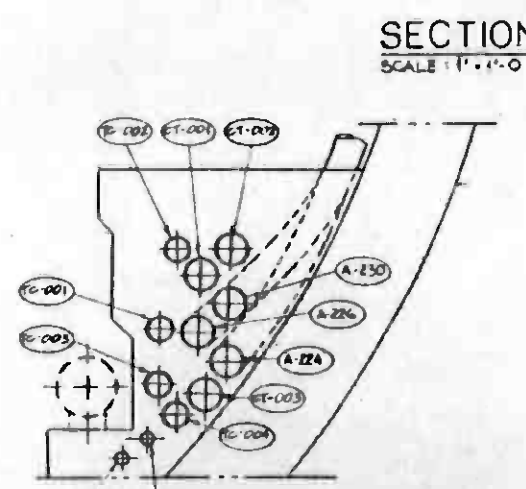
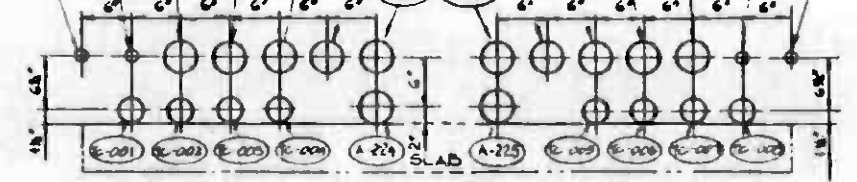
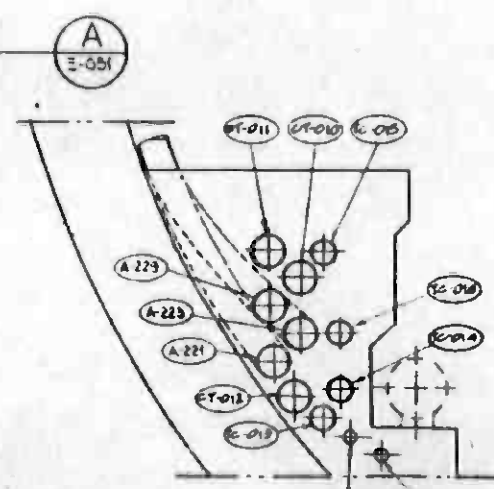
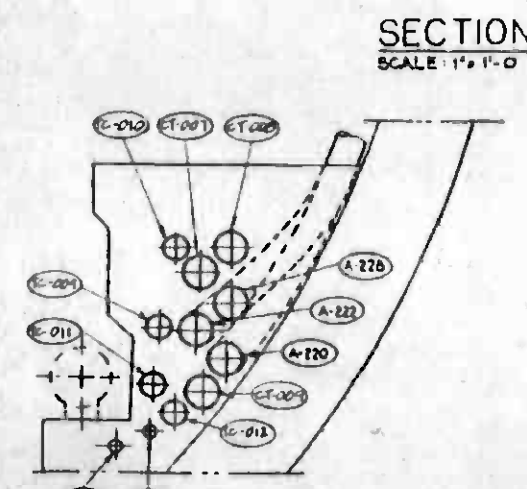
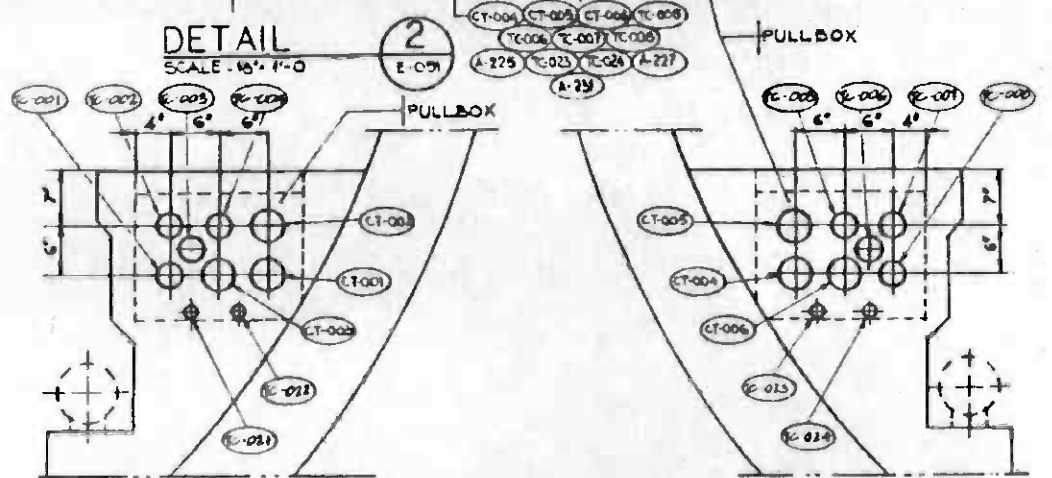
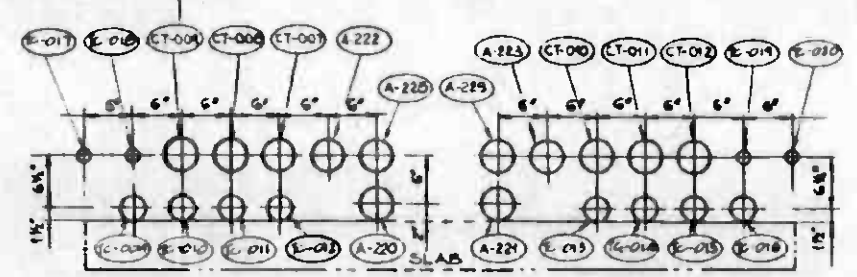
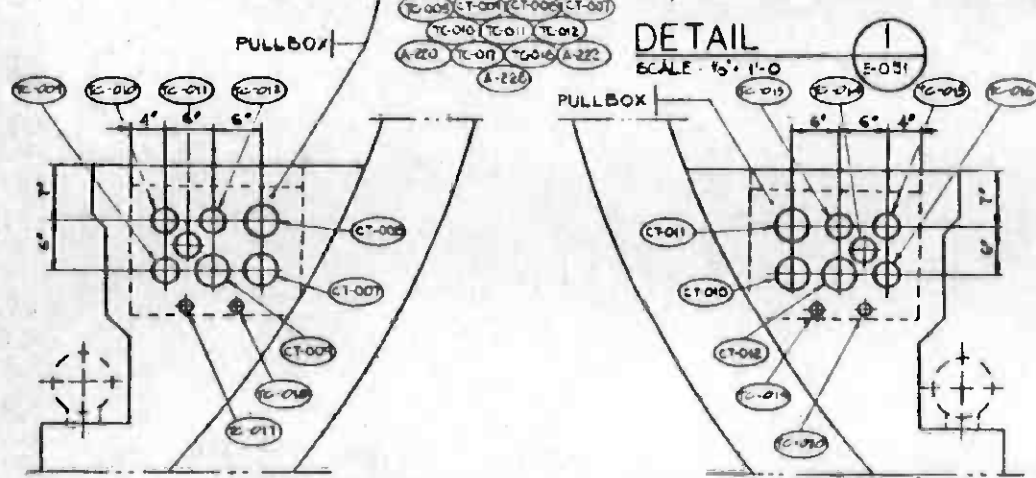
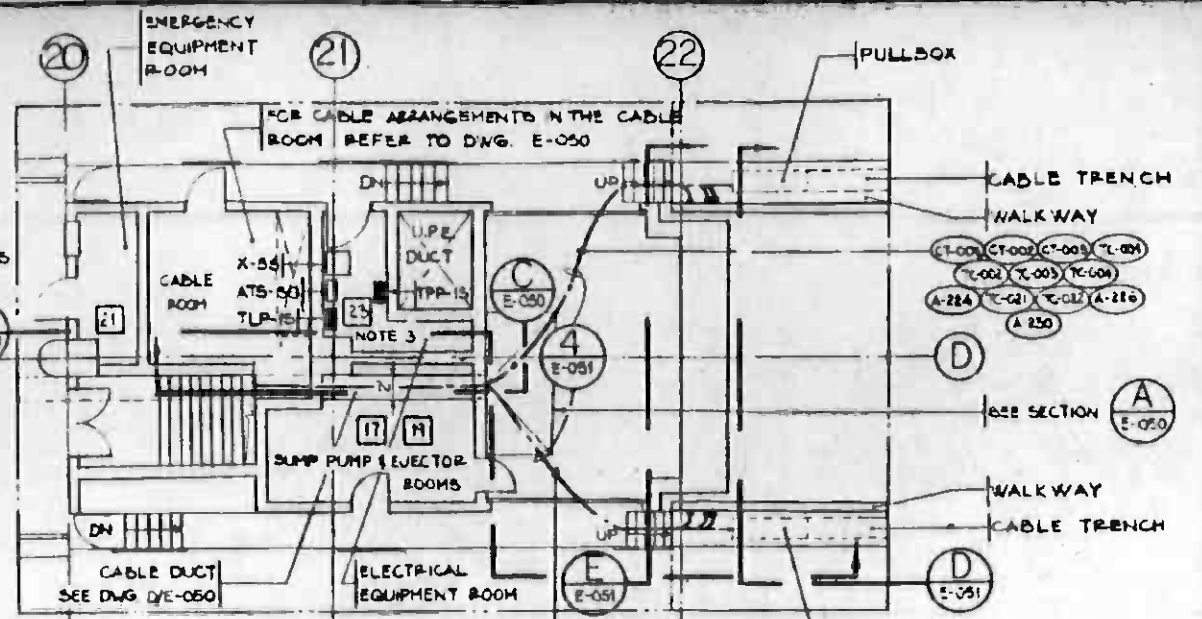
SECTION D
SCALE: 1/4" = 1'-0"

PULL IRON DETAIL
SCALE: 1/2" = 1'-0"

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URSAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URSAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY <i>[Signature]</i> DRAWN BY <i>[Signature]</i> CHECKED BY <i>[Signature]</i> IN CHARGE <i>[Signature]</i> DATE 6-20-85		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT 		LA CBD TO NORTH HOLLYWOOD CIVIC CENTER STATION SECTIONS & DETAILS-3 SOUTH CABLE ROOMS & SHAFT		CONTRACT NO. A141 DRAWING NO. E-050 SCALE AS NOTED SHEET NO. A620/155	
REVISIONS: 7-3-86 [Signature] AS [Signature] REVISED PER CRG-51G 1-8-86 [Signature] [Signature] INITIAL ISSUE				DELON HAMPTON & ASSOCIATES, Chartered BYSKA & HENNESSY, INC. ENGINEERS		DMJM/PBOD/KE/MWA GENERAL CONSULTANTS APPROVED <i>[Signature]</i>					



- NOTES**
1. MINIMUM BENDING RADIUS FOR COMMUNICATION CONDUITS IS 3G.
 2. MAINTAIN 6" CLEARANCE BETWEEN COMMUNICATION TRAIN CONTROL CONDUITS AND POWER CONDUITS ALONG THE DUCT BANK FOR TUNNEL LIGHTING AND POWER CIRCUIT INFORMATION SEE TUP AND TPP PANEL SCHEDULES ON DWG E-076
 3. THESE CIRCUITS ARE RIGID FROM ROOM 23 THROUGH CABLE ROOMS ON BACKS OF CABLE TRAYS AND THEN THROUGH CONDUITS IN THE CONCRETE FILL OF THE LAST RELIEF SHAFTS.
 4. SEE NOTE 13 ON DWG E-029.



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1954, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DESIGNED BY: <i>[Signature]</i> DRAWN BY: <i>[Signature]</i> CHECKED BY: <i>[Signature]</i> IN CHARGE: <i>[Signature]</i> DATE: 8-20-88		REGISTERED PROFESSIONAL ENGINEER No. 11881 ELECTRICAL STATE OF CALIFORNIA		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT DELDM HAMPTON & ASSOCIATES, Chartered SYSKA & HENNESSY, INC. ENGINEERS SUBMITTED: <i>[Signature]</i>				CONTRACT NO. A141 DRAWING NO. E-051 SCALE AS NOTED SHEET NO. 1620/156	
REV. DATE BY DWS APP DESCRIPTION		7-30-88 AS REVISED PER CRG-516 INITIAL ISSUE		APPROVED: <i>[Signature]</i>		DMJM/PBQD/KE/HWA SENIOR CONSULTANTS		LA CBD TO NORTH HOLLYWOOD CIVIC CENTER STATION SECTIONS & DETAILS-4 STATION TO TUNNEL TRANSITION		REV. 1	

ELECTRICAL CONDUIT AND CABLE SCHEDULE

NO.	FROM	TO	CKTS.	CONDUIT			CONDUCTOR				DWS NO.	REMARKS
				METHOD	SIZE	TYPE	NO & SIZE	GND	TYPE	CABLE#		
AC-001	CIC, RM 29	ATC & C		EMBEDDED	4"	PVC				E-000		
AC-002												
AC-003												
AC-004	CIC, RM 1											
AC-005												
AC-006	CIC, RM 2N				4"							
AC-007												
AC-008												
IA-001	INTRUSION DETECTOR (M)	CIC, RM 2N		EMBEDDED	1"	GRS				E-009		
IA-002		CIC, RM 2S								E-010		
IA-003		CIC, RM 2H								E-011		
IA-004		CIC, RM 2S								E-012		
IA-005		CIC, RM 2N								E-013		
IA-006		"								E-014		
IA-007		CIC, RM 1								E-015		
IA-008		CIC, RM 2S		EXPOSED						E-016		
IA-009		"								E-017		
IA-010		(M) CIC, RM 2N		EMBEDDED						E-018		
IA-011		CIC, RM 2S								E-019		
PA-001	PUBLIC ADDRESS (P)	ATC & C		EXPOSED	2"	GRS				E-020		
PA-002										E-021		
PA-003										E-022		
PA-004										E-023		
PA-005				EMBEDDED	1"					E-024		
PA-006		(M)		CONCEALED						E-025		
PA-007										E-026		
PA-008				EMBEDDED						E-027		
PA-009										E-028		
PA-010										E-029		
PA-011										E-030		
PA-012				CONCEALED						E-031		
PA-013										E-032		
PA-014										E-033		
PA-015				CONCEALED						E-034		
PA-016										E-035		
PA-017		(A)		EXPOSED						E-036		
PA-018				EMBEDDED						E-037		
PA-019				EXPOSED						E-038		
PA-020										E-039		
PA-021				EMBEDDED						E-040		
PA-022										E-041		
PA-023										E-042		
PA-024										E-043		
PA-025										E-044		
PA-026		(M)								E-045		
PA-027										E-046		
PA-028										E-047		
PA-029										E-048		
PA-030										E-049		
PA-031										E-050		
PA-032										E-051		
PA-033										E-052		
PA-034										E-053		
PA-035										E-054		

ELECTRICAL CONDUIT AND CABLE SCHEDULE

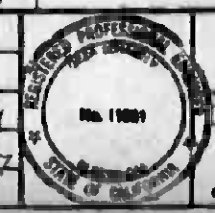
NO.	FROM	TO	CKTS.	CONDUIT			CONDUCTOR				DWS NO.	REMARKS
				METHOD	SIZE	TYPE	NO & SIZE	GND	TYPE	CABLE#		
SC-001	SCADA RM 22 (M)	CIC, RM 2N		EMBEDDED	1"	GRS				E-055		
SC-002	RM 10N	"								E-056		
SC-003	ESC #3 (P)									E-057		
SC-004	ESC #4									E-058		
SC-005	ESC #8	CIC, RM 2S								E-059		
SC-006	ESC #7	"								E-060		
SC-007	RM 17	CIC, RM 2N		EXPOSED						E-061		
SC-008	RM #28	"								E-062		
SC-009	ESC #1 (M)			EMBEDDED						E-063		
SC-010	ESC #2	"								E-064		
SC-011	ELEV 2 PIT (P)	CIC, RM 2N								E-065		
SC-012	ESC #6 (M)	"								E-066		
SC-013	ESC #5	"								E-067		
SC-014	RM 21 (P)	CIC, RM 2S		EXPOSED						E-068		
SC-015	RM 20	"								E-069		
SC-016	RM 19	"								E-070		
SC-017	RM 11 (A)	CIC, RM 2N								E-071		
SC-018	RM 14	"								E-072		
SC-019	RM 10	"								E-073		
SC-020	RM 2N	"								E-074		
SC-021	RM 2H	"		EMBEDDED	1"					E-075		
SC-022	RM 10	CIC, RM 2S		EXPOSED	1"					E-076		
SC-023	RM 20	"			2"					E-077		
SC-024	RM 2S	"			1"					E-078		
SC-025	RM 11	"			1"					E-079		
SC-026	RM 12	"			1"					E-080		
SC-027	RM 14	"			2"					E-081		
SC-028	RM 5N	CIC, RM 2N			1"					E-082		
SC-029	RM 6 (M)	"		EMBEDDED	2"					E-083		
SC-030	PWT. ENTRANCE	"			1"					E-084		
SC-031		"								E-085		
SC-032		CIC, RM 2S								E-086		
SC-033		"								E-087		
SC-034	ELEV 1 PIT (M)	CIC, RM 2N								E-088		
SC-035	SCADA RM 18G	RM 2S		EMBEDDED	1"	GRS				E-089		
TC-001	TUNNEL SOUTH IN	ATC & C		EXPOSED/EMBEDDED	2"	GRS				E-090		
TC-002										E-091		
TC-003										E-092		
TC-004										E-093		
TC-005	TUNNEL SOUTH OUT									E-094		
TC-006										E-095		
TC-007										E-096		
TC-008										E-097		
TC-009	TUNNEL NORTH OUT									E-098		
TC-010										E-099		
TC-011										E-100		
TC-012										E-101		
TC-013	TUNNEL NORTH IN									E-102		
TC-014										E-103		
TC-015										E-104		
TC-016										E-105		
C-017A	TUNNEL NORTH IN	ETS NORTH IN		EMBEDDED	1/2"					E-106	COMM CONDUITS	
C-018A	"	"								E-107		
C-019A	TUNNEL NORTH OUT	NORTH OUT								E-108		
C-020A	"	"								E-109		
C-021A	TUNNEL NORTH IN	SOUTH IN								E-110		
C-022A	"	"								E-111		

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY: *[Signature]*
 DRAWN BY: *[Signature]*
 CHECKED BY: *[Signature]*
 IN CHARGE: *[Signature]*

REVISED PER CRG-52A
 REVISED PER CRG-51G
 INITIAL ISSUE

6-30-88



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT

DELON HAMPTON & ASSOCIATES, Chartered
 SYSKA & HENNESSY, INC.
 ENGINEERS

DMJM/PBOD/KE/HWA
 GENERAL CONSULTANTS

APPROVED: *[Signature]*

LA CBD TO NORTH HOLLYWOOD
 CIVIC CENTER STATION
 RACEWAY & CABLE SCHEDULES-3
 COMMUNICATION

CONTRACT NO. A141
 DRAWING NO. E-062
 REV. 2
 SCALE: NO SCALE
 SHEET NO. A620/158

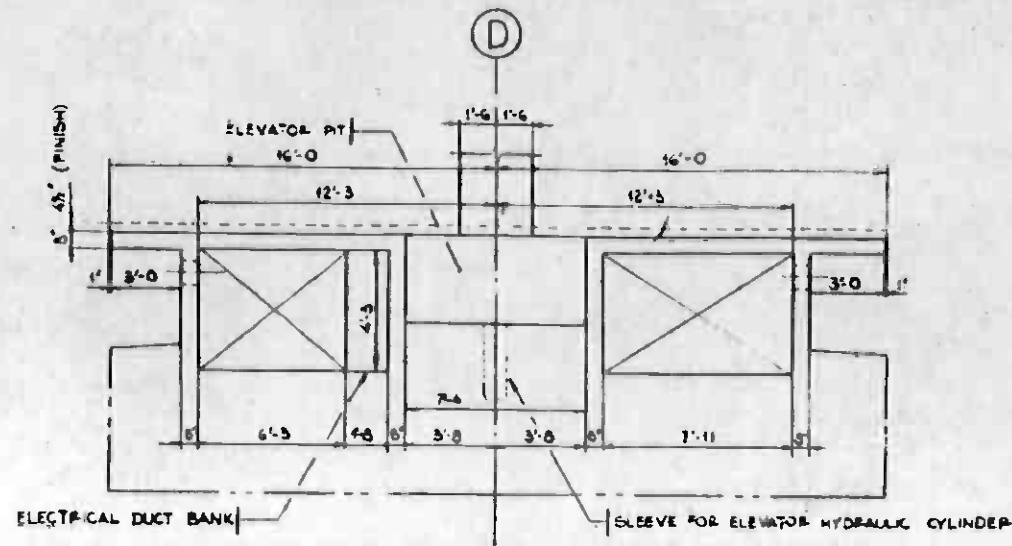
ELECTRICAL CONDUIT AND CABLE SCHEDULE

ELECTRICAL CONDUIT AND CABLE SCHEDULE

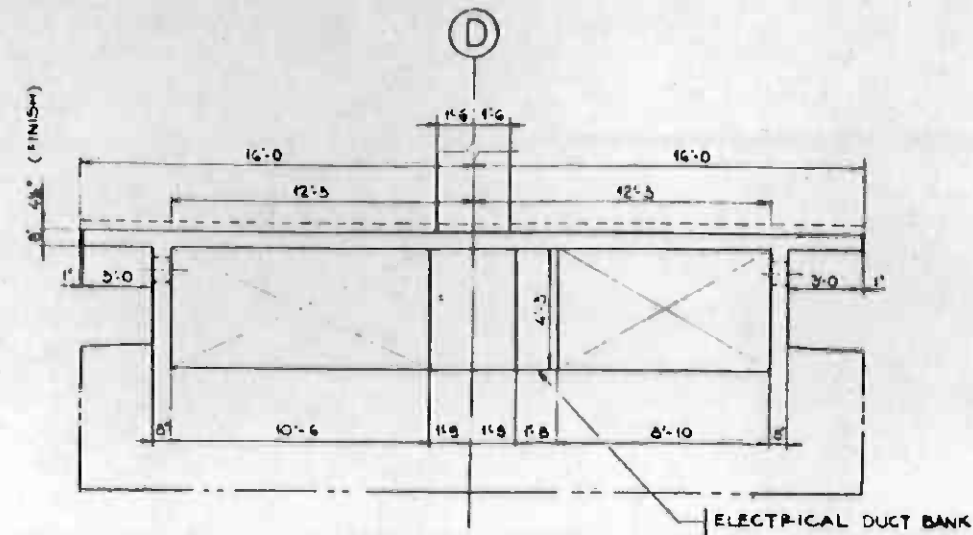
NO.	FROM	TO	CKTS	CONDUIT				CONDUCTOR				DWG. NO.	REMARKS	NO.	FROM	TO	CKTS	CONDUIT				CONDUCTOR				DWG. NO.	REMARKS
				METHOD	SIZE	TYPE	NO. & SIZE	GND.	TYPE	CABLE NO.	METHOD							SIZE	TYPE	NO. & SIZE	GND.	TYPE	CABLE NO.				
E-023A	TUNNEL SOUTH OUT	ETS SOUTH OUT		EMBEDDED	1/2"	GRS					E-022							EMBEDDED	2"	GRS					E-029		
E-024A	"	"			"	"					"															E-029	
																										E-031	
																										E-031	
																										E-032	
																										E-032	
N-001	CCTV #1	(M) ATC & C		EMBEDDED	1"	GRS					E-033																
N-002	"										"																
N-003	CCTV #13										E-034																
N-004	"										E-034																
N-005	CCTV #4																										
N-006	"																										
N-007	CCTV #5																										
N-008	"																										
N-009	CCTV #14																										
N-010	"																										
N-011	CCTV #8										E-035																
N-012	"																										
N-013	CCTV #9																										
N-014	"																										
N-015	CCTV #7																										
N-016	"																										
N-017	CCTV #15																										
N-018	"																										
N-019	CCTV #16																										
N-020	"																										
N-021	CCTV #6																										
N-022	"																										
N-023	CCTV #10										E-036																
N-024	"																										
N-025	CCTV #11										E-035																
N-026	"																										
N-027	CCTV #12																										
N-028	"																										
N-029	CCTV #2										E-034																
N-030	"																										
N-031	CCTV #3																										
N-032	"																										
N-033	CCTV PUT. ENTRANCE										E-035																
N-034	"																										
N-035	"										E-036																
N-036	"																										
N-037	CCTV RM #29				2"						E-035																



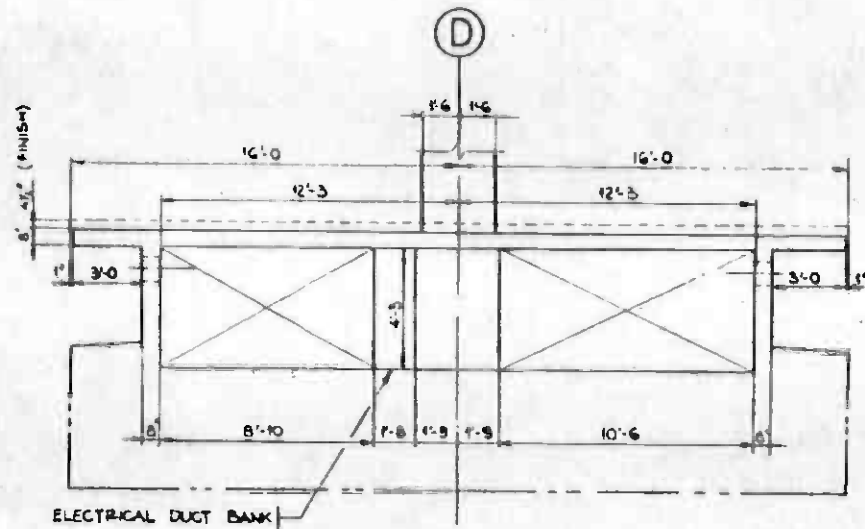
<p>THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA</p>				<p>DESIGNED BY <i>J. Kelly</i> DRAWN BY <i>J. Lee</i> CHECKED BY <i>H. Schickel</i> IN CHARGE <i>G. Schickel</i> DATE 8-20-88</p>		<p>SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT</p> <p>DELON HAMPTON & ASSOCIATES, Chartered SYSKA & HENNESSY, INC. ENGINEERS</p>		<p>LA CBD TO NORTH HOLLYWOOD CIVIC CENTER STATION RACEWAY & CABLE SCHEDULES-4 COMMUNICATIONS</p>		<p>CONTRACT NO. A 141 DRAWING NO. E-063 REV. 2 SCALE NO SCALE SHEET NO. A620 / 159</p>	
<p>REV. DATE BY SUB. APP. DESCRIPTION</p>				<p>REV. DATE BY SUB. APP. DESCRIPTION</p>		<p>APPROVED <i>Howard Khaliff</i></p>					



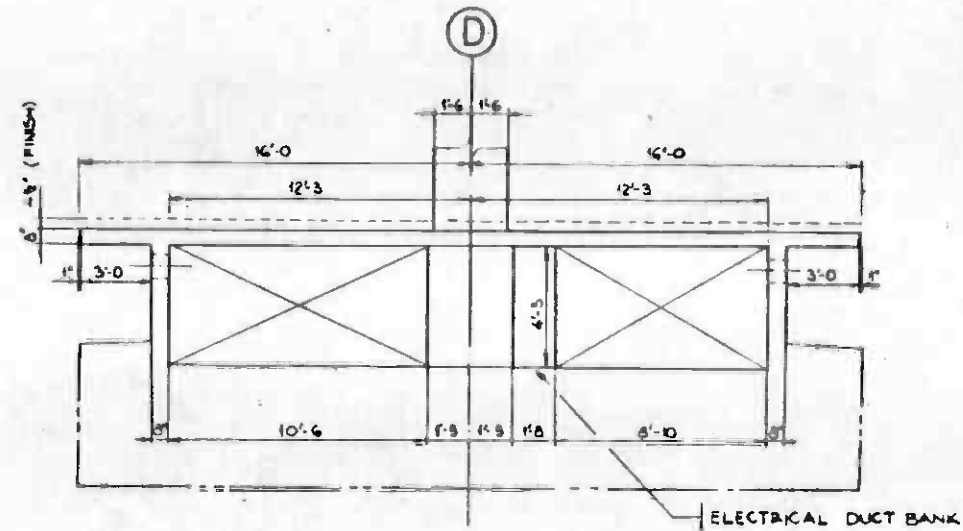
SECTION **A**
SCALE: 1/4" = 1'-0"
E-301 E-017, E-029



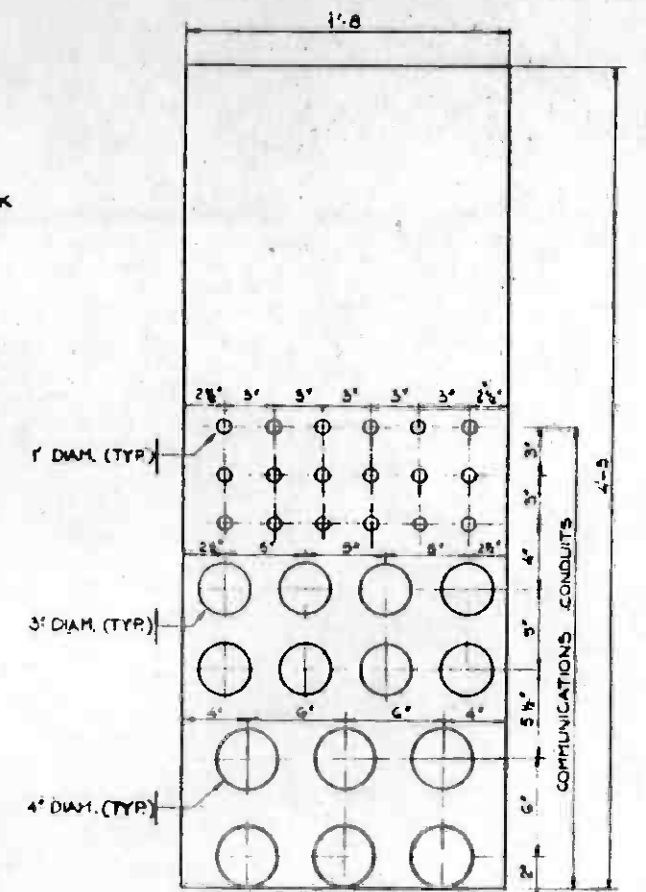
SECTION **B**
SCALE: 1/4" = 1'-0"
E-301 E-018, E-030



SECTION **C**
SCALE: 1/4" = 1'-0"
E-301 E-019, E-031



SECTION **D**
SCALE: 1/4" = 1'-0"
E-301 E-020, E-032



UNDERPLATFORM ELECTRICAL
DUCT BANK TYPICAL ARRANGEMENT
SCALE: 1" = 0'-6"

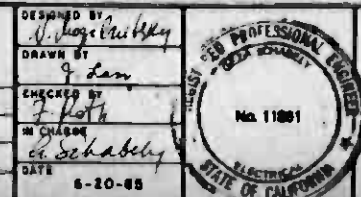


REV.	DATE	BY	SUB.	APP.	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY: *A. J. Schabely*
 DRAWN BY: *J. Roth*
 CHECKED BY: *A. Schabely*
 DATE: 6-20-65

INITIAL ISSUE



**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

DELOH HAMPTON & ASSOCIATES, Chartered
 SYSKA & HENNESSY, INC.
 ENGINEERS

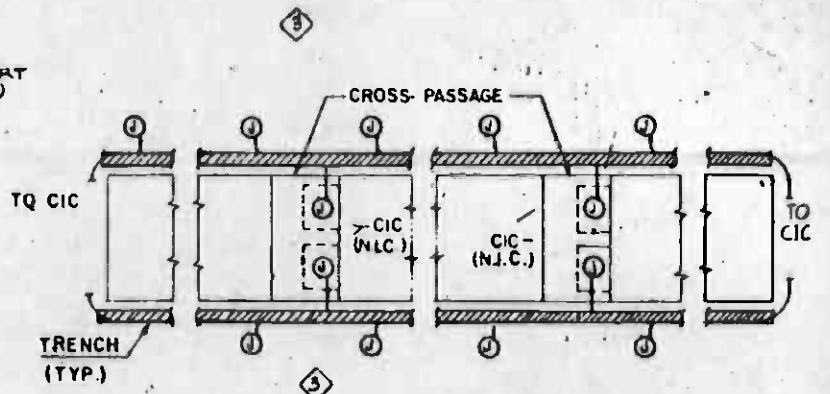
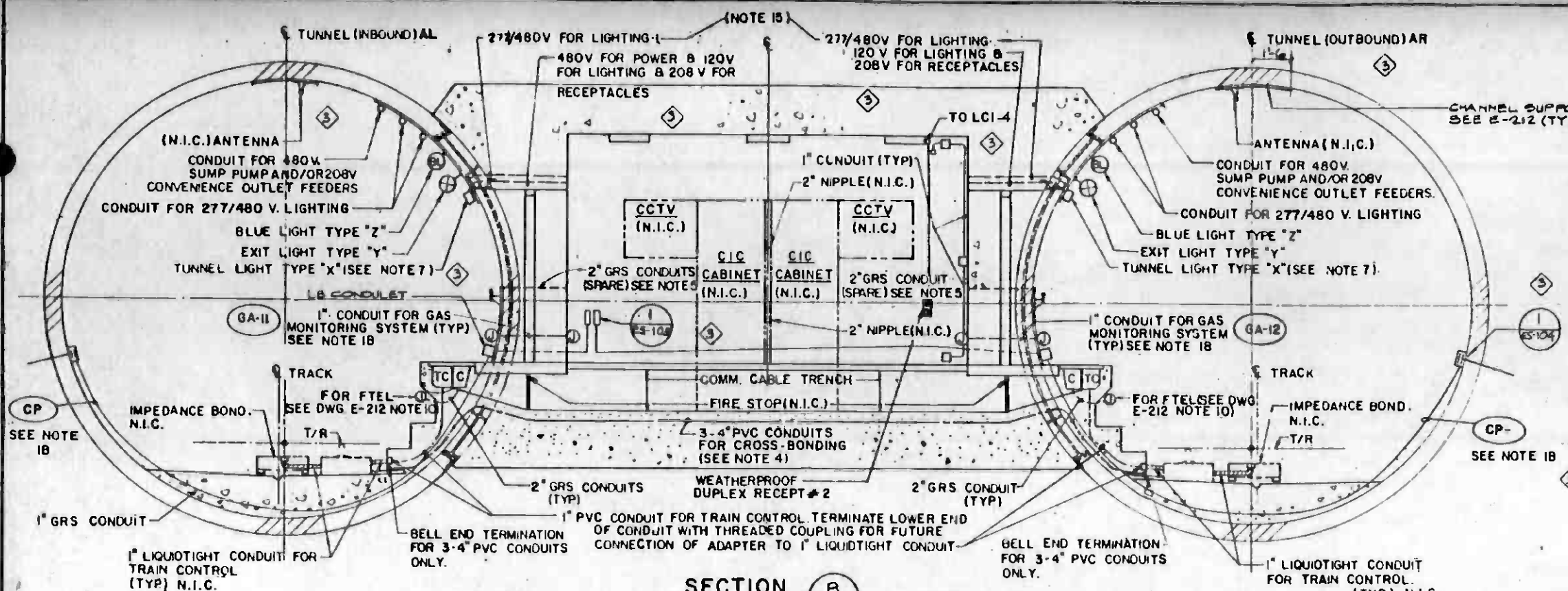
DMJM/PBOD/KE/HWA
 GENERAL CONSULTANTS

APPROVED: *Howard Schabely*

**LA CBD TO NORTH HOLLYWOOD
CIVIC CENTER STATION**

UNDERPLATFORM ELECTRICAL DUCTS

CONTRACT NO. A141
 DRAWING NO. E-301
 SCALE: AS NOTED
 SHEET NO. A620/150



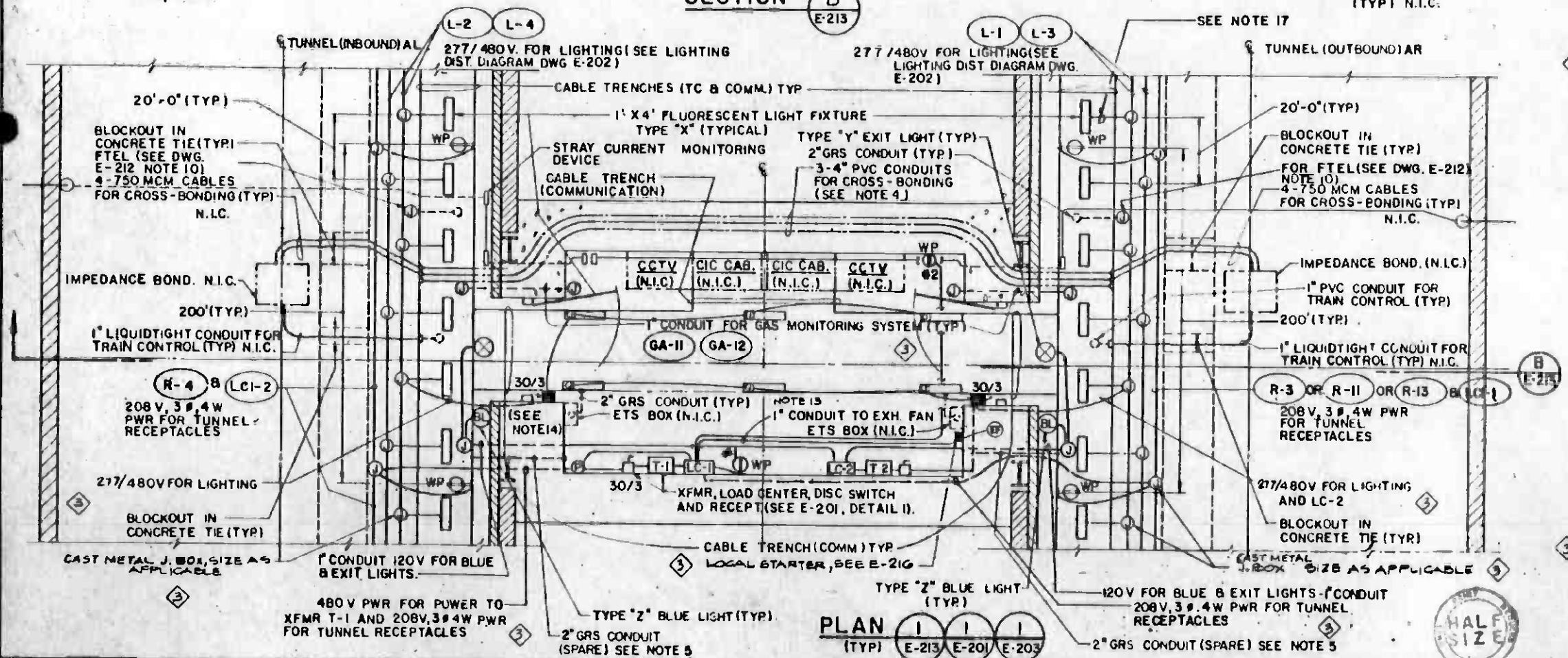
FIRE TELEPHONE JACK SCHEMATIC (F TEL)

NOTES (CONTINUED)

- 16. DELETED
- 17. USE 2#14 CABLE FOR TAP TO LIGHT FIXTURE.
- 18. FOR GA & CP CONDUIT & CABLE NUMBERS SEE DWG. E-215
- 19. USE 2#12 CABLE FOR BRANCH CIRCUIT FEEDER TO RECEPTACLES IN PUMPING STATION AND CROSS PASSAGES. USE 2#10 FOR FEEDER TO RECEPTACLES IN TUNNELS.

NOTES:

- 1. DELETED
- 2. THIS PLAN IS APPLICABLE TO ALL THE CROSS PASSAGES EXCEPT AS INDICATED ON DWG. E-201 DETAILS #1 & #2.
- 3. EQUIPMENT GROUNDING ARE TO BE PROVIDED BY THE GROUND CONDUCTOR CARRIED IN EACH CONDUIT, THEY ARE TO BE ISOLATED FROM THE STRAY CURRENT AND THE TRACTION POWER BONDINGS.
- 4. MINIMUM BENDING RADIUS OF COMM/ATC CONDUITS IS 40". POSITION CENTER OF CONDUIT RUNS HIGH AND SLOPE CONDUITS MINIMUM OF 0.5% TOWARD ENDS FOR PROPER DRAINAGE.
- 5. TERMINATE CONDUIT ENDS WITH THREADED PLUG, FLUSH WITH FINISHED WALL.
- 6. SEE SS-094, SS-102, SS-103 & SS-125 FOR APPLICABLE STRUCTURAL DIMENSIONS AND DETAILS.
- 7. FOR LIGHTING DISTRIBUTION DIAGRAM SEE DWG. E-202
- 8. FOR CROSS-PASSAGES, THE 480 VOLT, THREE PHASE FEEDER SHALL ORIGINATE DIRECTLY FROM THE NEAREST PASSENGER STATION.
- 9. ALL RACEWAY SYSTEMS INCLUDING JUNCTION BOXES IN THE TUNNELS SHALL BE WEATHERPROOF.
- 10. DELETED.
- 11. FOR LIGHTING FIXTURE DETAILS REFER TO SPECIFICATIONS.
- 12. SEE M-202 FOR EXACT LOCATION OF T-1 AND LC-182, ENSURE FREE OPENING OF THE FRONT COVERS OF THESE PANELS.
- 13. MINIMUM BENDING RADIUS OF ETS CONDUIT IS 12"
- 14. LOCATE THE 30 A/3 POLE DISCONNECT SWITCH AS NOT TO OBSTRUCT DOOR SWING.
- 15. THESE LIGHTING AND POWER CONDUITS ARE ON THE OPPOSITE SIDE OF THE CROSS PASSAGE, SEE PLAN VIEW.



PLAN E-213 E-201 E-203

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TREASURY OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY: <i>H.C. Mack</i> DRAWN BY: <i>J.D. Smith</i> CHECKED BY: <i>H.C. Mack</i> IN CHARGE: <i>J. Tatta</i> DATE: 23 AUG 85				SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT DHA DELOR HAMPTON & ASSOCIATES, CHARtered DMJM PBQD/KE/HWA GENERAL CONSULTANTS				LA CBD TO NORTH HOLLYWOOD TUNNEL LIGHTING & POWER LIGHTING AND RACEWAY ARRANGEMENT IN TUNNEL AND AT CROSS-PASSAGE				CONTRACT NO. A-141 DRAWING NO. E-213 SCALE NONE SHEET NO. A620/161	
REVISED PER ADDENDUM #1-3		REVISED PER CRG-516 GENERAL REVISION/SIGNATURE ISSUE		REVISED PER CRG-524		INITIAL ISSUE		DESCRIPTION		DESCRIPTION		DESCRIPTION		DESCRIPTION			

ELECTRICAL SCHEMATIC DIAGRAM SYMBOLS

ONE-LINE DIAGRAM SYMBOLS

ABBREVIATIONS

SYMBOL	REPRESENTS
	MECHANICAL CONNECTION
	SINGLE POLE CIRCUIT BREAKER, SIZE AS NOTED.
	NORMALLY OPEN CONTACT, AUX OR RELAY. TDE - TIME DELAY AFTER ENERGIZED TDD - TIME DELAY AFTER DE-ENERGIZED.
	NORMALLY CLOSED CONTACT, AUX OR RELAY TCE - TIME DELAY AFTER ENERGIZED TCD - TIME DELAY AFTER DE-ENERGIZED.
	MOTOR HEATER
	CFL OPERATING
	42- STARTER OR CONTACTOR OTHER NO. - RELAY PER IEEE DEVICE NO.
	OVERLOAD RELAY CONTACTS.
	THERMAL OVERLOAD RELAY
	FUSE WITH RATING.
	GROUND CONNECTION.
	PILOT LIGHT. R-RED, G-GREEN, A-AMBER, W-WHITE, C-CLEAR, B-BLUE.
	CAPACITOR
	SOLENOID COIL
	LIMIT SWITCH, NORMALLY OPEN
	LIMIT SWITCH, NORMALLY CLOSED.
	LIMIT SWITCH, N.O. HELD CLOSED BY ACTUATOR
	LIMIT SWITCH, N.C. HELD OPEN BY ACTUATOR.
	PRESSURE SWITCH, NORMALLY OPEN, CLOSURE ON RISING PRESSURE.
	PRESSURE SWITCH, NORMALLY CLOSED, OPENS ON RISING PRESSURE.
	FLOW SWITCH, NORMALLY OPEN, CLOSURE WITH FLOW.
	FLOW SWITCH, NORMALLY CLOSED, OPENS WITH FLOW.
	TEMPERATURE SWITCH, NORMALLY OPEN, CLOSURE ON RISING TEMPERATURE (COOLING THERMOSTAT)
	TEMPERATURE SWITCH, NORMALLY CLOSED, OPENS ON RISING TEMPERATURE (HEATING THERMOSTAT)
	LEVEL CONTROLLER (SWITCH), NORMALLY OPEN AT LOW POSITION, CLOSURE ON RISE.
	LEVEL CONTROLLER (SWITCH), NORMALLY CLOSED AT LOW POSITION, OPENS ON RISE
	SELECTOR SWITCH, HAND-OFF-AUTOMATIC, OR AS NOTED: K-KEY OPERATED, KK-KICK KEY LOCK (STANDARD OR HEAVY DUTY INDUSTRIAL CONTROL)
	SINGLE POLE SINGLE THROW SWITCH.
	SINGLE POLE DOUBLE THROW SWITCH.
	PUSHBUTTON SWITCH, MOMENTARY CONTACT, N.C. LO INDICATES LOCK-OUT
	PUSHBUTTON SWITCH, MOMENTARY CONTACT, N.O.

SYMBOL	REPRESENTS
	DISCONNECTING DEVICE
	CURRENT TRANSFORMER WITH POLARITY MARKINGS.
	POTENTIAL TRANSFORMER WITH POLARITY MARKINGS.
	OUTLINE OF EQUIPMENT
	FUTURE OR N.I.C.
	TERMINAL STRIP
	WIRING TERMINAL
	BATTERY
	COMMUNICATION GROUNDING
	RECTIFIER, DRY TYPE, FULL WAVE.
	TRANSDUCER E/I - VOLTAGE TO CURRENT I/E - CURRENT TO VOLTAGE
	CIRCUIT BREAKER WITH SOLID STATE TRIP DEVICE.
	CIRCUIT BREAKER, 100 VAC DRAW-OUT TYPE.
	CONDUCTORS, CONNECTED
	CONDUCTORS, NOT CONNECTED.

GENERAL CONSTRUCTION NOTES

- CONTRACTOR SHALL INSTALL EMBEDDED CONDUITS AND ASSOCIATED EMBEDDED JUNCTION/PULLBOXES, CONDUIT SLEEVES, INCLUDING SLEEVES THROUGH CONCRETE WALLS FOR FUTURE EXPOSED RACEWAYS, & DUCT BANKS/MAN-HOLE/HANDHOLE ONLY, FOR ALL ELECTRICAL, TRACTION POWER, TRAIN CONTROL AND COMMUNICATIONS.
- ALL EMBEDDED CONDUITS SHALL BE PROPERLY TAGGED, EQUIPPED WITH PULLING CORDS, AND CAPPED AT THE STUB-OUT, OR OTHERWISE PROPERLY PROTECTED FROM DIRT, MOISTURE, AND OTHER INTRUSIONS.
- INTERFACE WITH ADJACENT CONTRACTS AT TUNNEL ENTRY:
 - INSTALL EMBEDDED CONDUITS STUB-UP TO TUNNELS, CLEAN AND INSTALL PULL WIRE AND CAP AT STUB-UP. THE EXPOSED CONNECTING TO PULL BOXES WILL BE BY OTHER CONTRACTS.
- GROUNDING:
 - INSTALL ALL DIRECT BURIAL GROUND WIRE, GROUND RODS AND GROUND WIRES INSTALLED IN EMBEDDED CONDUITS. COIL SUFFICIENT LENGTH OF GROUND WIRES AT STUB-OUT, STUB-UP FOR FUTURE CONNECTION BY OTHERS.
 - FOR GROUNDING TO BE CONNECTED BY THE LATER CONTRACTOR, INSTALL PROTECTIVE SLEEVE (1/2" LONG METALLIC CONDUITS) OVER THE GROUND WIRE(S) WITH 36" PIGTAIL, PROPERLY COILED AND PROTECTED. INSTALL MARKER AT THE EMBEDDED LOCATIONS.
 - FOR GROUND PENETRATION THROUGH CONCRETE, INSTALL GROUND PIGTAIL IN THE CONDUIT AND LEAVE SUFFICIENT LENGTH OF PIGTAILS AS INDICATED IN DWG. E-032S
- ALL EMBEDDED CONDUITS AND DUCTBANKS FOR COMMUNICATIONS AND TRAIN CONTROL SUBSYSTEM, AS SHOWN IN TRAIN CONTROL AND COMMUNICATIONS PLANS, SHALL BE GALVANIZED RIGID STEEL, 1" MINIMUM SIZE, UNLESS OTHERWISE NOTED.
- ALL EMBEDDED CONDUITS FOR OTHER ELECTRICAL SUBSYSTEMS SHALL BE PVC, 1" MINIMUM SIZE, UNLESS OTHERWISE NOTED.
- ALL UNSCHEDULED RACEWAY FOR SUBSYSTEMS SUCH AS LIGHTING AND RECEPTACLES, SHALL BE TAGGED AT EACH END WITH THE POWER SOURCE AND CIRCUIT NUMBER WHICH SHALL BE PROVIDED TO THE CONTRACTOR AT A LATER DATE BY THE DISTRICT OR ITS DESIGNEE.
- COORDINATE WITH MECHANICAL SHOP DRAWINGS AND/OR CONTRACT A157 FOR LOCATION OF MOTORS, DAMPERS, ETC SUPPLIED WITH MECHANICAL EQUIPMENT.

SYMBOL	REPRESENTS
	SHORTING TYPE TERMINAL BLOCK
	SELECTOR SWITCH, VS - VOLTMETER AS - AMMETER
	INDICATING TYPE METER, AM - AMMETER VM - VOLTMETER
27	UNDERVOLTAGE RELAY
43	THERMAL OVERLOAD DEVICE
50	AC INSTANTANEOUS OVERCURRENT TRIP SETTING OR RELAY
51	AC TIME OVER CURRENT TRIP SETTING OR RELAY.
51N	AC GROUND OVERCURRENT RELAY (RESIDUAL)
51G	AC GROUND OVERCURRENT TRIP SETTING OR RELAY.
52	AC CIRCUIT BREAKER
59	OVERVOLTAGE RELAY
62	TIME-DELAY RELAY
69	PERMISSIVE CONTROL DEVICE
74	ALARM RELAY
86	LOCK-OUT RELAY
	CONTROL SWITCH
	ANNUNCIATION DEVICE - INDICATING TYPE
	AUDIBLE ALARM
	MOLDED CASE CIRCUIT BREAKER
	SERIES TRIP DEVICE
	CURRENT TRANSFORMER OR CURRENT SENSOR OF SOLID STATE TRIP DEVICE.
	2-WINDING TRANSFORMER
	FUSE
	DELTA CONNECTION
	WYE CONNECTION
	CABLE TERMINATION
	INDICATING LIGHT: R - RED - OPERATING, FLOWING, INCREASING CONDITION G - GREEN - NOT OPERATING, NOT FLOWING, DECREASING CONDITION. A - AMBER - AUTOMATIC STAND BY W - WHITE - TROUBLE AT THE SYSTEM C - CLEAR - SPECIAL CONDITION. C - CLEAR - POWER AVAILABLE.

TDD	TO BE DETERMINED
TEMP	TEMPERATURE
TEL	TELEPHONE
T	TEMPERATURE SWITCH
VIB	VIBRATION
WD-P	WIRING DIAGRAM NO P
XRMA	TRANSFORMER
ZC	ZONE CONTROL
14'6"	MOUNTING HEIGHT TO C OF OUTLET ABOVE FIN. FLOOR.
TDE	TIME DELAY AFTER ENERGIZED
TDC	CLOSE WITH TIME DELAY AFTER ENERGIZED
TDD	TIME DELAY AFTER DEENERGIZED
MG	MOTORIZED GRILLE.

ACCP	AIR CONDITIONING CONTROL PANEL
ACP	AUXILIARY CONTROL PANEL
AHU	AIR HANDLING UNIT
AHCP	AIR HANDLING CONTROL PANEL
AUX	AUXILIARY
APP	ABOVE FINISHED FLOOR
AIC	AMPERES INTERRUPTING CAPACITY
BR	BREAKER
CIC	COMMUNICATIONS INTERFACE CABINET
CORND	CONDUIT.
C.O	RACEWAY ONLY (CONDUIT ONLY)
COMP.	COMPARTMENT
CKT.	CIRCUIT
CONT.	CONTROL.
C.C.	CENTRAL CONTROL
DMPR.	DAMPER
EMP	EMERGENCY MANAGEMENT PANEL
ED	EMERGENCY BYPASS DAMPER
ED	EMERGENCY FAN DAMPER
ELEV	ELEVATION, ELEVATOR
EXH	EXHAUST
ETS	EMERGENCY TRIP STATION
FSCP	FIRE/SECURITY CONTROL PANEL
FUT	FUTURE
FLR	FLOOR
FS	FLOW SWITCH
SFCCU	STATION FARE COLLECTION CONTROL UNIT
GRS	GALVANIZED RIGID STEEL CONDUIT
GND	GROUND
GDSP	GAS DETECTION CONTROL PANEL
HTR	HEATER
IC	INTERCOM
LP	LIGHTING PANEL
LAP	LOCAL ANNUNCIATION PANEL
LCS	LOCAL CONTROL STATION
MCC	MOTOR CONTROL CENTER
MC	METALLIC CONDUIT
MTD	MOUNTED
MAINT	MAINTENANCE
MDF	MAIN DISTRIBUTION FRAME
MLO	MAIN LUGS ONLY
MB	MAIN BREAKER
N.I.C.	NOT IN CONTRACT
N.O./N.C	NORMALLY OPEN, NORMALLY CLOSED
NMC	NON-METALLIC CONDUIT
PVC	POLYVINYL CHLORIDE CONDUIT
PWR	POWER
RCP	REFRIGERATION CONTROL PANEL
RTU	REMOTE TERMINAL UNIT
SPST	SINGLE POLE, SINGLE THROW
SPDT	SINGLE POLE, DOUBLE THROW
SW	SWITCH
SUP	SUPPLY
SWGR	SWITCHGEAR
SWPD	SWITCHBOARD
TS	TORQUE SWITCH
T/R	TOP OF RAIL
TYP.	TYPICAL
TC	THERMO COUPE CONTACT.

REV.	DATE	BY	SUB	APP.	DESCRIPTION
1	11/78	WM		WM	REVISED PER CRG-530
2	5/86				INITIAL ISSUE

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA

DESIGNED BY
J. Roth
DRAWN BY
J. Roth
CHECKED BY
A. Stuber
IN CHARGE
K. Chigilun
DATE
7-21-85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DELON HAMPTON & ASSOCIATES, Chartered
SYMA & HENNESSY, INC.
ENGINEERS

DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

APPROVED: *Thomas K. Kelly*

LA CBD TO NORTH HOLLYWOOD
5TH & HILL STATION

SCHMATIC DIAGRAM
SYMBOLS AND ABBREVIATIONS

CONTRACT NO. AMS
DRAWING NO. E-101
SCALE: NO SCALE
SHEET NO. A620/167

RECEPTACLE OUTLETS	
	SINGLE RECEPTACLE OUTLET
	DUPLEX RECEPTACLE OUTLET RECESSED
	SINGLE SPECIAL-PURPOSE RECEPTACLE OUTLET (30 AMP, 2 POLE, OR AS NOTED) * * USE SUBSCRIPT LETTERS TO INDICATE FUNCTION (PC - PARE COLLECTION, ETC.)
	DUPLEX SPECIAL-PURPOSE RECEPTACLE OUTLET * * USE SUBSCRIPT LETTERS TO INDICATE FUNCTION (PC - PARE COLLECTION, ETC.)
	FLOOR BOX WITH SINGLE RECEPTACLE
	FLOOR BOX WITH DUPLEX RECEPTACLE
	FLOOR BOX WITH SERVICE FITTING AS NOTED.
	UNDERFLOOR DUCT
	TRENCH DUCT
	UNDERGROUND DUCT BANK
	FLEXIBLE RACEWAY CONNECTION
	CABLE TRAY

CONDUCTORS AND CONDUIT	
	RACEWAY EMBEDDED IN FLOOR OR UNDERGROUND
	RACEWAY EMBEDDED IN CEILING OR WALL
	RACEWAY EXPOSED OR CONCEALED - N.I.C.
	BRANCH CIRCUIT HOMERUN TO PANELBOARD. LP- IN DENOTES LIGHTING PANEL NO. 1 NORTH, NUMERALS IDENTIFY CIRCUIT NUMBERS.
	INDICATES NUMBER OF WIRES. NO CROSS LINES INDICATES 2 OR 3 WIRES UNLESS NOTED.
	WIRE & RACEWAY SIZE FOR 1/2 AND LARGER.
	FEEDER OR HOMERUN RACEWAY IDENTIFICATION AS FOLLOWS: A - AUXILIARY, T - TRACTION POWER, TC - TRAIN CONTROL, G - GROUNDING, C - COMM. (SEE COMMUNICATION SYMBOLS FOR SUB SYSTEM), DF - 24.5 KV DEDICATED FEEDER.
	GROUND WIRE
	EXOTHERMIC WELD CONNECTION
	RACEWAY TURNING UP OR TOWARDS VIEWERS
	RACEWAY TURNING DOWN OR AWAY FROM VIEWERS
	UNDERGROUND CONDUIT BANK (INDICATE TYPE, SIZE AND NUMBER OF CONDUITS BY CROSS SECTION. (IDENTIFICATION OF EACH RUN, OR BY NOTATION.)
	GROUND ROD
	RACEWAY CAPPED
	SLEEVE

EQUIPMENT IDENTIFICATION	
PP	POWER PANEL
LP	LIGHTING PANEL
TFF	TUNNEL POWER PANEL
TLP	TUNNEL LIGHTING PANEL
ES	ESCALATOR
EL	ELEVATOR
MCC	MOTOR CONTROL CENTER
SWPD	SWITCHBOARD
SWGR	SWITCHGEAR
LCS	LOCAL CONTROL SWITCH
ATS	AUTOMATIC TRANSFER SWITCH
DKR	BREAKER
STR	STARTER
HTR	HEATER
MCP	MOTOR CIRCUIT PROTECTOR
ETS	EMERGENCY TRIP STATION
CIC	COMMUNICATION INTERFACE CABINET
MG	MOTORIZED GRILL

FIXTURE TYPE SYMBOL	
	A. LETTER - TYPE OF FIXTURE B. FIRST NO. - FIXTURE OPTION C. SECOND NO. - LAMP OPTION D. LAST NO. - MOUNTING HARDWARE OPTION E. NO. ABOVE SYMBOL - MOUNTING HEIGHT FROM FLOOR TO FIXTURE BOTTOM F. NO. UNDER SYMBOL - VOLTAGE OTHER THAN 277V.

PANELBOARDS, SWITCHBOARDS, ETC.

	PANELBOARD
	PULL BOX
	MOTOR CONTROLLER, SUBSCRIPT INDICATES NEMA SIZE.
	FUSED DISC. SWITCH SUBSCRIPT INDICATES FUSE SIZE AND NO. OF POLES.
	NON-FUSED DISCONNECT SWITCH SUBSCRIPT INDICATES SIZE AND NO. OF POLES.
	MANHOLE
	HANDHOLE
	COMBINATION MAGNETIC MOTOR STARTER, FUSIBLE. SUBSCRIPT INDICATES SIZE AND NO. OF POLES.
	COMBINATION MAGNETIC MOTOR STARTER, NON-FUSIBLE. SUBSCRIPT INDICATES NEMA SIZE.
	COMBINATION MAGNETIC STARTER WITH CIRCUIT BREAKER, SUBSCRIPT INDICATES NEMA SIZE.
	MOTOR WITH IDENTIFICATION, INSERT INDICATES HORSE POWER, THREE PHASE OR SINGLE PHASE.
	POWER PANEL
	SWITCHBOARD (SWPD) OR MOTOR CONTROL CENTER (MCC)
	CONTROL PANEL, TYPES AS FOLLOWS: HCP - HALL CONTROL PANEL FCP - FAN CONTROL PANEL EMP - EMERGENCY MANAGEMENT PANEL ACP - AUXILIARY CONTROL PANEL AHCP - AIR HANDLING UNIT CONTROL PANEL ACCP - AIR CONDITIONING CONTROL PANEL

EQUIPMENT IDENTIFICATION	
EF	EMERGENCY FAN OR EXHAUST FAN
UF	UNDERPLATFORM EXHAUST FAN
AHU	STATION SUPPLY FAN AT AIR HANDLING UNIT
SSP	TPOSS SUPPLY FAN
SF	SUPPLY FAN
AC	AIR CONDITIONING UNIT
C	CONDENSER
EH	ELECTRICAL HEATER
MD	MOTORIZED DAMPER
ED	FAN DAMPER
TD	TRACK DAMPER
DD	DY-PASS DAMPER
P	WATER PUMP
DP	SUMP PUMP
EP	EJECTOR PUMP
EC	EJECTOR COMPRESSOR
UD	UNDERPLATFORM DAMPER
RF	ROLL FILTER
AHU-RF	AHU-ROLL FILTER
SS RF	TPOSS ROLL FILTER

SWITCH - OUTLETS

S	SINGLE-POLE SWITCH
S ²	DOUBLE-POLE SWITCH
S ³	THREE-WAY SWITCH
S ⁴	FOUR-WAY SWITCH
SK	KEY-OPERATED SWITCH
SP	SWITCH FOR PILOT LAMP
SD	DOOR SWITCH
ST	TIME SWITCH
SM	MANUAL MOTOR STARTER W/OVERLOAD DEVICE
SMC	MOMENTARY CONTACT SWITCH OR PUSHBUTTON FOR OTHER THAN SIGNALING SYSTEM
SA	SUBSCRIPT A DENOTES SWITCH CIRCUIT
SCS	CONTROL SWITCH

LIGHTING - OUTLETS

	HALL
	OUTLET FOR INCANDESCENT OR HIGH INTENSITY DISCHARGE FIXTURE
	FLUORESCENT FIXTURE OUTLET (INCLUDES J-BOX)
	EXIT LIGHT OUTLET - ARROW INDICATES DIRECTION.
	PLANKED OUTLET
	JUNCTION BOX
	LETTER SUBSCRIPT ADJACENT TO FIXTURE OUTLET DESIGNATES SWITCH CONTROL.
	FLOODLIGHT, ARROWS INDICATE DIRECTION OF BEAM
	EMERGENCY LIGHT OUTLET (INCLUDES J-BOX)

MISCELLANEOUS

	TRAIN DESTINATION SIGN
	PUSH BUTTON
	PHOTO CELL
	SELECTOR SWITCH H.O.A. (HAND-OPP. AUTOMATIC)
	ELECTRICALLY OPERATED DEVICE TYPE PER LETTERS AS FOLLOWS: S - SOLENOID D - DAMPER OPERATOR R - RELAY DO - DOOR OPERATOR EP - ELECTRO-PNEUMATIC RELAY.
	DOOR POSITION INDICATOR
	DISABLED SWITCH
	DISABLED SWITCH WITH AUDIBLE ALARM
	ELECTRIC DEAD BOLT
	ELECTRO-MECHANICAL BOLT

SPECIAL IDENTIFICATION (USED NEXT TO SYMBOL)

W.P.	WEATHER PROOF	RT	RAIN TIGHT	G	GROUND
WT	WATER TIGHT	OT	DUST TIGHT	R	RECESSED
VT	VAPOR TIGHT	EP	EXPLOSION PROOF	F	FLUSH

ABBREVIATIONS

A.F.F.	ABOVE FINISHED FLOOR
C.O.	RACEWAY ONLY
CONC	CONDUIT
ELEV	ELEVATION, ELEVATOR
FUT	FUTURE
FL	FLOOR
FVR	FULL VOLTAGE, NON REVERSIBLE
FVR	FULL VOLTAGE, REVERSIBLE
GRD	GROUND
GRS	GALVANIZED RIGID STEEL CONDUIT
HTD, MTG	MOUNTED, MOUNTING
MC	METALLIC CONDUIT
NO, N.C.	NORMALLY OPEN, NORMALLY CLOSED
N.I.C.	NOT IN THIS CONTRACT
NMC	NON-METALLIC CONDUIT
P.V.C.	POLYVINYL CHLORIDE CONDUIT
R.T.U.	REMOTE TERMINAL UNIT
SPST	SINGLE POLE SINGLE THROW
SPDT	SINGLE POLE DOUBLE THROW
TBL	TELEPHONE
ZC	ZONE CONTROL
H-G	MOUNTING HEIGHT TO 1/2 OF OUTLET ABOVE FIN. FL.

REV	DATE	BY	APP.	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA	DESIGNED BY <i>N. Logothetis</i>
	DRAWN BY <i>A. Stoly</i>
	CHECKED BY <i>J. Kelly</i>
	IN CHARGE <i>N. Logothetis</i>
	DATE 7-31-83

REVISOR	DATE	BY	APP.	DESCRIPTION



**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

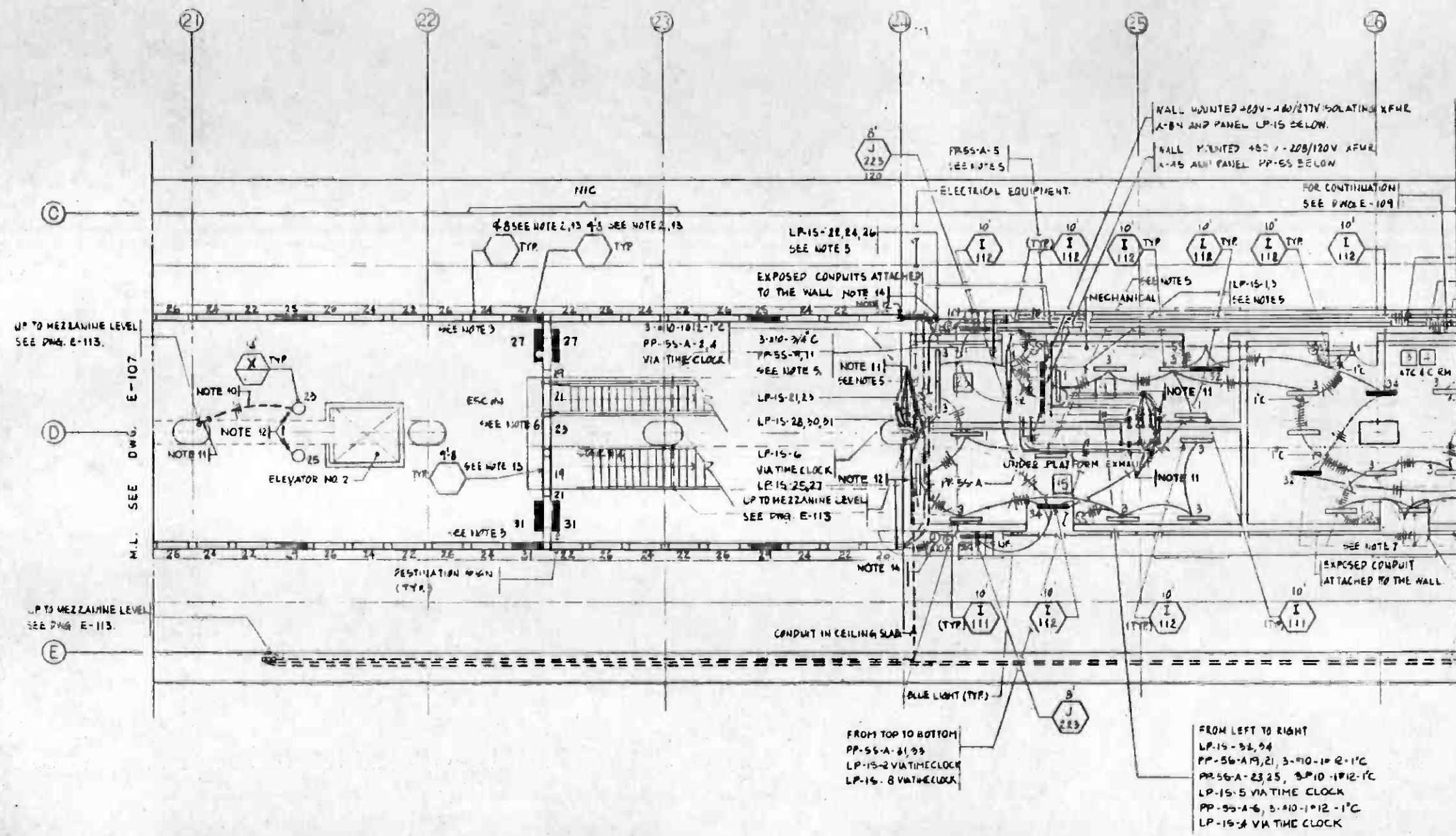
DELON HAMPTON & ASSOCIATES, CONSULTING ENGINEERS
SYSKA & HENNESSY, INC. CONSULTANTS

APPROVED: *Howard J. Kelly*

**LA CBD TO NORTH HOLLYWOOD
5TH & HILL STATION**

ELECTRICAL PLAN
SYMBOLS AND ABBREVIATIONS

CONTRACT NO.	AK45
DRAWING NO.	E-102
REV.	1
SCALE	NO SCALE
HEET NO.	4620/168

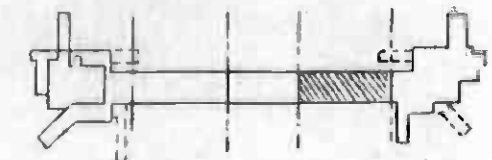


NOTES

1. SEE NOTES 1, 2 AND 5 ON DRAWING E-105.
2. SEE NOTE 3 ON DRAWING E-105.
3. SEE NOTES 3 AND 4 ON DRAWING E-105.
4. DRY TYPE TRANSFORMERS ARE INSTALLED IN ROOM 23 ON BRACKETS 8'-0" APP.
5. ALL HOMERUNS ARE BROUGHT TO THE ELECTRICAL EQUIPMENT ROOM NO 23 AND SHALL BE CONNECTED TO THE RELEVANT PANELS IN THIS ROOM.
6. CIRCUITS PP-25-A-14, 21, 23 FOR TRANSVERSE SIGN FIXTURES ARE RUNNING IN PLATFORM EDGE LIGHTING WIREWAY.
7. WHERE THE EXHAUST DUCT PASSES THROUGH ROOM 3, 4 FIXTURES SHALL BE MOUNTED UNDER THE DUCT AT ELEVATION 4'-0".
8. SEE NOTE 8 ON DRAWING E-105.
9. CONDUIT RUN ATTACHED TO THE CONCRETE SLAB IN THE SUSPENDED CEILING SPACE.
10. STUB-OUT CONDUIT 4" FROM WALL OR COLUMN AND 1" UNDER THE CEILING SLAB, THREAD AND CAP FOR FUTURE COUPLING WITH EXPOSED CONDUIT.
11. STUB-DOWN CONDUIT 2" FROM CEILING SLAB FOR FUTURE CONNECTION TO FIXTURE J-BOX.
12. FOR INSERTS TO SUPPORT 1" TYPE EDGE LIGHT AND TRANSVERSE LIGHT FIXTURES. SEE ARCHITECTURAL STANDARD DRAWING AS-024.
13. STUB-DOWN CONDUIT 4" FROM CEILING SLAB, THREAD AND CAP.
14. AVOID WATERSTOPS AT ALL JOINTS OF EXTERIOR WALLS DURING CONDUIT INSTALLATION. SEE STRUCTURAL DWG. S-191.
15. FOR FIXTURE TYPE 'X' SEE ARCH. SPEC.

FROM TOP TO BOTTOM
 PP-55-A-31, 33
 LP-15-2 VIA TIME CLOCK
 LP-15-8 VIA TIME CLOCK

FROM LEFT TO RIGHT
 LP-15-22, 24
 PP-55-A-19, 21, 3-110-10 R-1'C
 PP-55-A-23, 25, 3-110-10 R-1'C
 LP-15-5 VIA TIME CLOCK
 PP-55-A-6, 3-110-10 R-1'C
 LP-15-4 VIA TIME CLOCK



REV.	DATE	BY	SUB.	APP.	DESCRIPTION

DESIGNED BY
 DRAWN BY
 CHECKED BY
 IN CHARGE
 DATE 7-31-85

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DELOH HAMPTON & ASSOCIATES, CONSULTANTS
 BYSKA & HENNESSY, INC.
 ENGINEERS

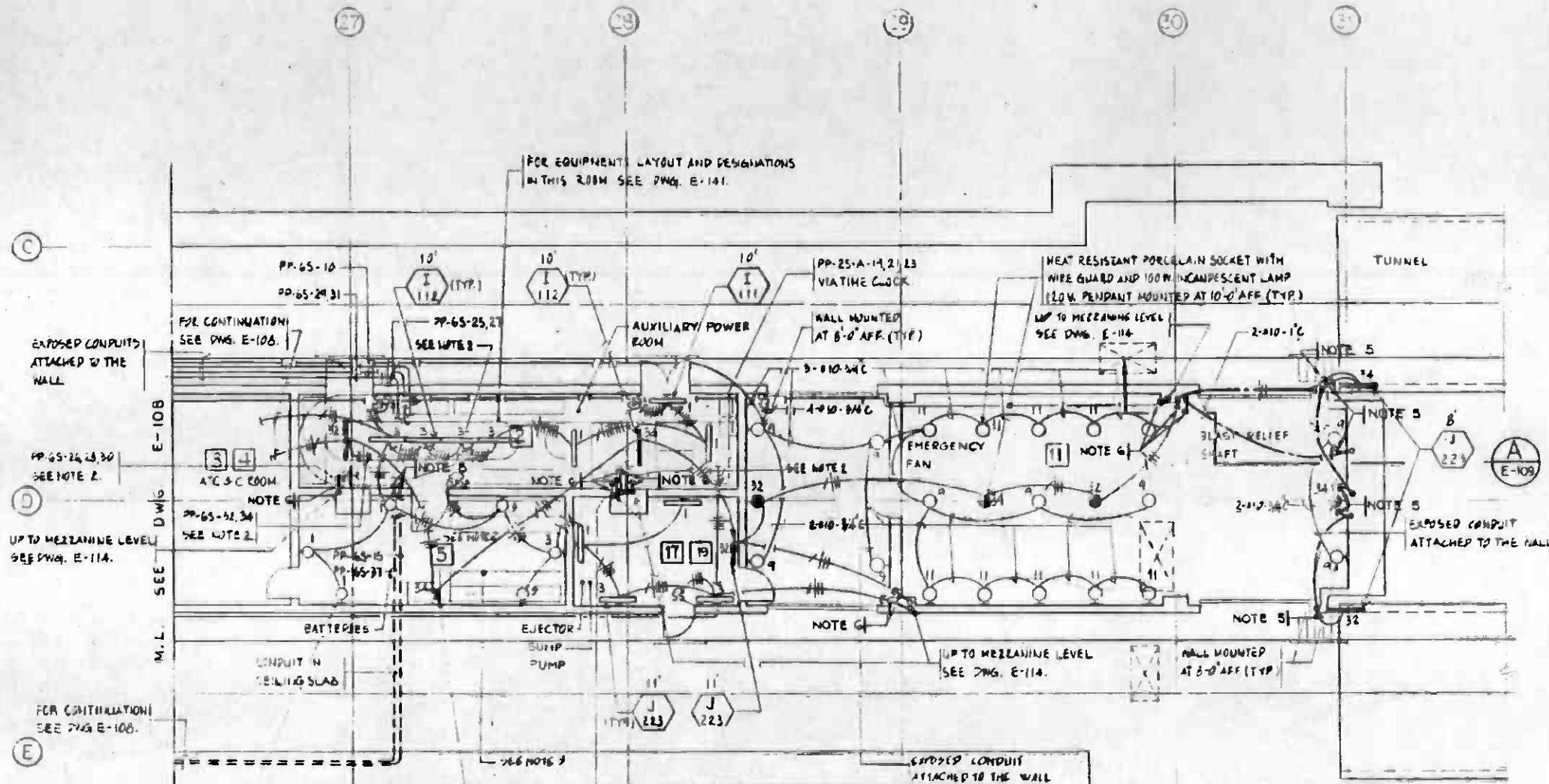
DMJM/PBQD/KE/MWA
 GENERAL CONSULTANTS

APPROVED: *Howard J. Kelly*

LA CBD TO NORTH HOLLYWOOD
5TH/HILL STATION

PLATFORM LIGHTING & ILLUMINATED SIGNS - 4

CONTRACT NO.	A145
DRAWING NO.	E-108
SCALE	1/8" = 1'-0"
SHEET NO.	A620/170



NOTES

1. SEE NOTES 1, 2 AND 5 ON DRAWING E-105
2. ALL HOMERUNS ARE BROUGHT TO THE AUXILIARY POWER ROOM NO. 2 AND SHALL BE CONNECTED TO THE RELEVANT PANELS IN THIS ROOM.
3. CONDUITS ENTERING LIGHTING FIXTURES AND SWITCHES IN BATTERY ROOM SHALL BE SEALED AS REQUIRED FOR CLASS 1 DIVISION 2 LOCATION
4. SEE NOTE B ON DRAWING E-105
5. STUB-OUT CONDUIT 4" FROM WALL OR COLUMN AND AT 8" G. AFF. THREAD AND CAP FOR FUTURE COUPLING WITH EXPOSED CONDUITS
6. STUB-OUT CONDUIT 4" FROM WALL OR COLUMN AND 1" UNDER THE CEILING, THREAD AND CAP FOR FUTURE COUPLING WITH EXPOSED CONDUITS.
7. AVOID WATERSTOPS AT ALL JOINTS OF EXTERIOR WALLS DURING CONDUIT INSTALLATION. SEE STRUCTURAL DWG. S-197.
8. STUB-DOWN CONDUITS 2" FROM CEILING SLAB, THREAD AND CAP.

FOR EQUIPMENT LAYOUT AND DESIGNATIONS IN THIS ROOM SEE DWG. E-141.

FOR CONTINUATION SEE DWG. E-106.

EXPOSED CONDUITS ATTACHED TO THE WALL

PP-65-24,30 SEE NOTE 2.

UP TO MEZZANINE LEVEL SEE DWG. E-114.

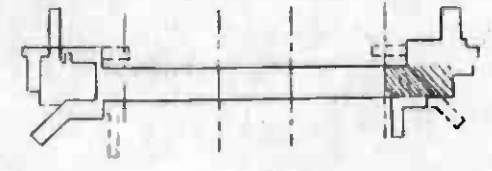
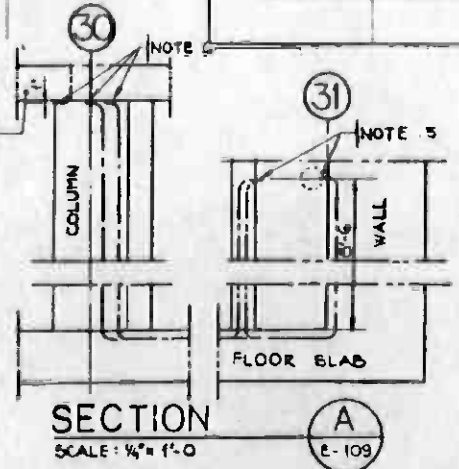
M.L. SEE DWG. E-108.

FOR CONTINUATION SEE DWG. E-106.

100W, 220V MERCURY VAPOR CROUSE-HINDS TYPE VHX OR EQUAL FOR HAZARDOUS LOCATION WILL MOUNTED AT 8" AFF (TYP)

100W, 120V MERCURY VAPOR CROUSE-HINDS TYPE VHX OR EQUAL FOR HAZARDOUS LOCATION WILL MOUNTED AT 8" AFF.

FROM LEFT TO RIGHT:
 PP-65-06
 PP-65-11, 2-014-1C.
 PP-65-19, 2-014-1C.
 PP-65-22, 25
 PP-65-6 VIA TIME CLOCK.

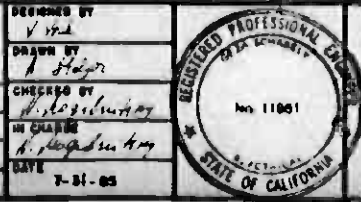


REV.	DATE	BY	CHKD.	APP.	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA

DESIGNED BY: *V. Schabely*
 DRAWN BY: *A. Hagan*
 CHECKED BY: *H. Schabely*
 IN CHARGE: *H. Schabely*
 DATE: 7-31-85

REVISOR: *WH*
 DATE: 5-28-86
 REVISION: REVISED PER CRG-530
 INITIAL ISSUE



**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT**

DELOM HAMPTON & ASSOCIATES, Chartered
 SYSKA & HENNESSY, INC.
 ENGINEERS

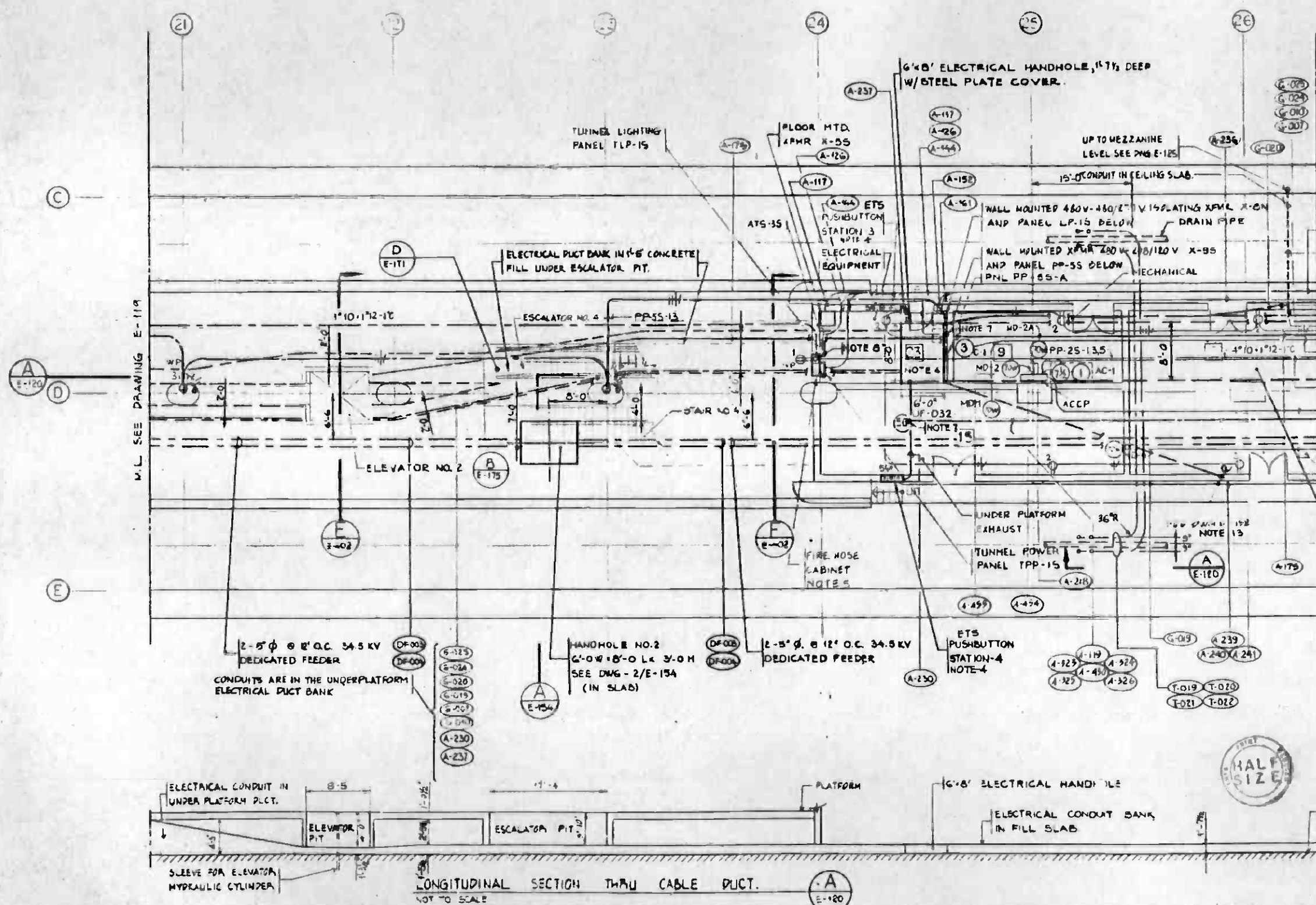
DMJM/PBQO/KE/HWA
 GENERAL CONSULTANTS

SUBMITTED: *V. Schabely*
 APPROVED: *Harold Schaff*

**LA CBD TO NORTH HOLLYWOOD
 5TH/HILL STATION**

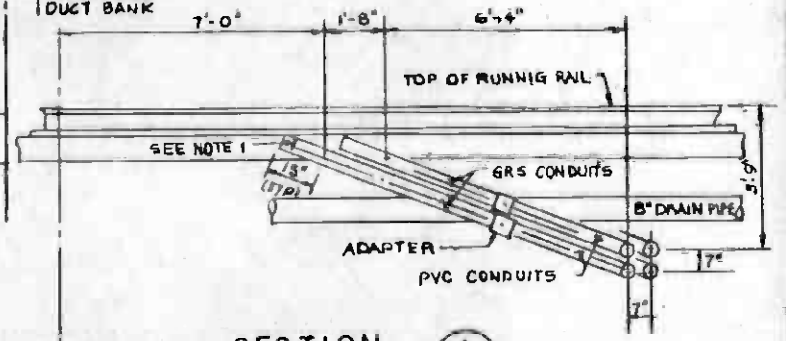
PLATFORM LIGHTING & ILLUMINATED
 SIGNS - 5

CONTRACT NO. A145
 DRAWING NO. E-109
 SCALE: 1/8" = 1'-0"
 SHEET NO. A620/171



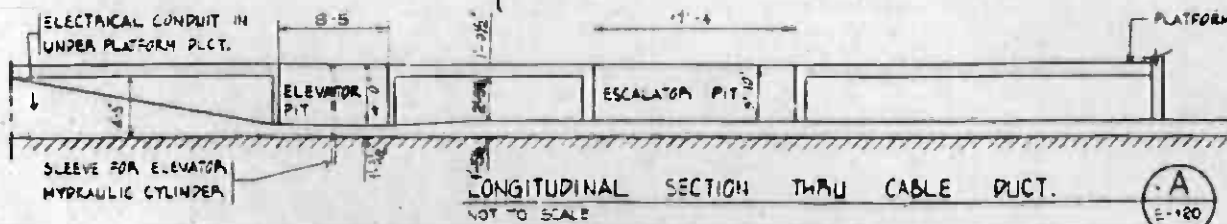
NOTES

1. FOR ATC/COMMUNICATION ROOM GROUNDING PLAN SEE DWG. E-102, P. 141K
2. 34.5 KV FEEDER CABLES RUN IN PVC CONDUITS EMBEDDED IN BASE SLAB.
3. REFER TO RACEWAY AND CABLE SCHEDULES DWG. E-102, E-103, E-108
4. PUSHBUTTON STATIONS SERVE FOR TRACKWAY DEFLECT VALVE ACTIVATION. BLOCKOUT DIM. 5"X10"X5" DEEP. FOR BLOCKOUT DIMENSIONS AND MOUNTING DETAILS REFER TO ARCHITECTURAL STANDARD DWG. A7-010 DET. C.
5. REFER TO NOTES 7, 8, 9 ON DWG. E-117
6. STUB-UP CONDUIT 4" FROM FLOOR SLAB OR CONCRETE FILL. THREAD AND CAP.
7. STUB-UP CONDUIT 2" INTO THE BLOCKOUT, THREAD AND CAP.



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

NOTE:
1. STUB-UP CONDUITS AS INDICATED, THREAD AND CAP



LONGITUDINAL SECTION THRU CABLE DUCT.
NOT TO SCALE

REV.	DATE	BY	SUB.	APP.	DESCRIPTION

REV.	DATE	BY	SUB.	APP.	DESCRIPTION

DESIGNED BY
A. Rogobetsky

DRAWN BY
A. Rogobetsky

CHECKED BY
A. Rogobetsky

IN CHARGE
A. Rogobetsky

DATE
7-31-85

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

REGISTERED PROFESSIONAL ENGINEER
NOV 1981
STATE OF CALIFORNIA

DELOM HAMPTON & ASSOCIATES, Chartered
SYSKA & HENNESSY, INC.

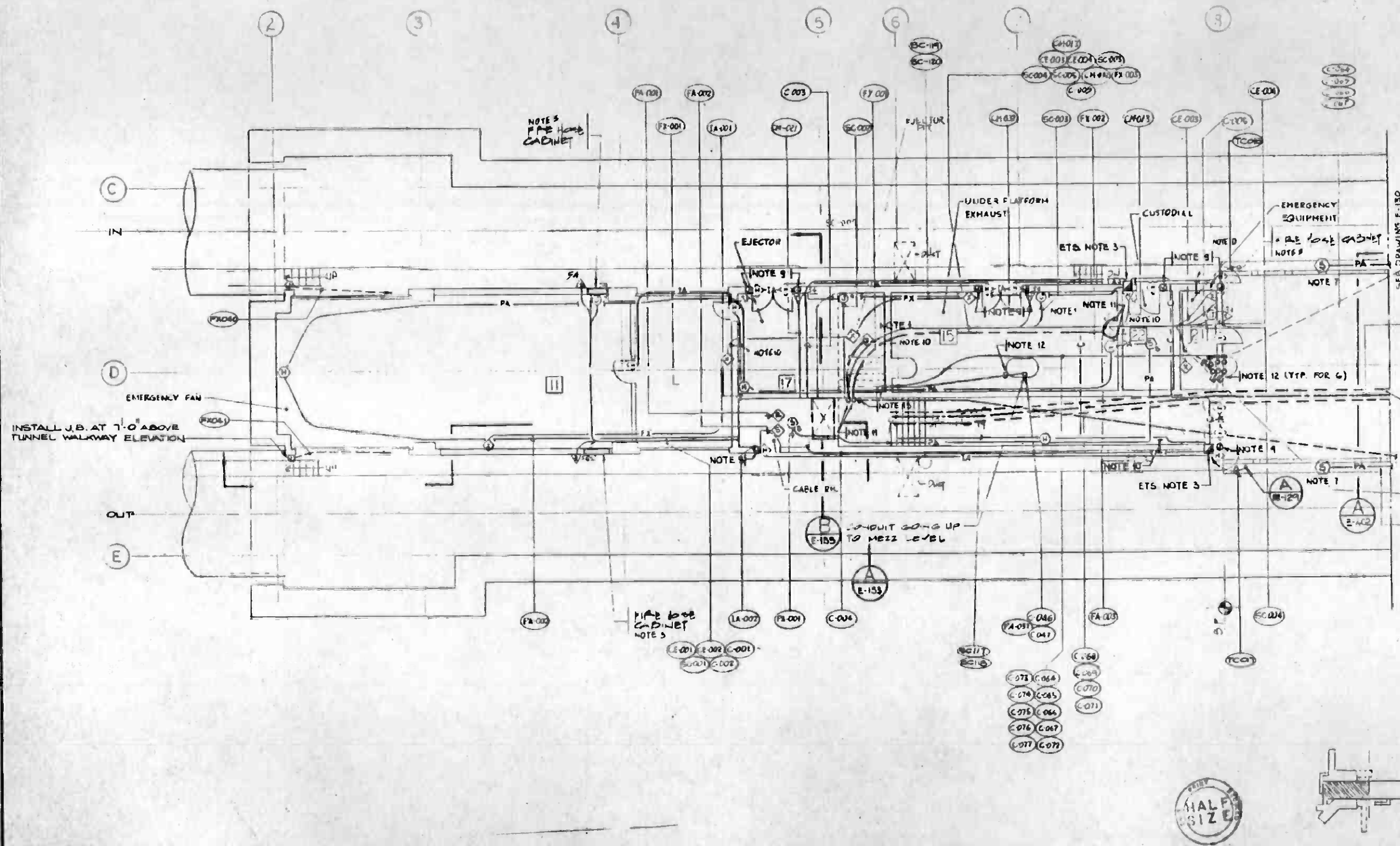
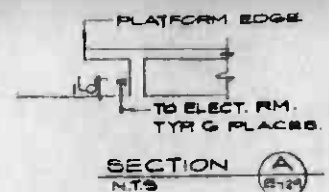
DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

APPROVED
David J. Haddad

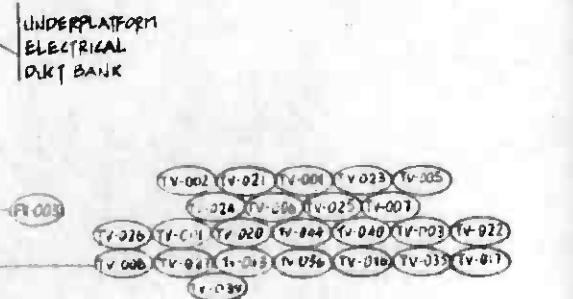
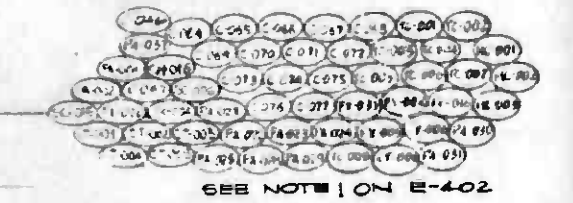
LA CBD TO NORTH HOLLYWOOD
5TH/HILL STATION

PLATFORM POWER & CONTROL - 4

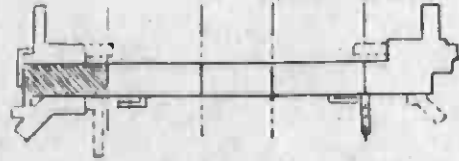
CONTRACT NO. A145	REV. 1
DRAWING NO. E-120	
SCALE 1/8" = 1'-0"	
SHEET NO. A620/172	



- NOTES**
1. (1) SMOKE SENSOR AND PULS TYPE SMOKE DETECTOR TO BE LOCATED IN 1" ELEV. SPACE NEAR THE ACCESS MATCH AT EACH END OF THE STATION.
 2. (1) SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA)
 3. FOR BLOCKOUT DIMENSIONS AND MOUNTING DETAILS REFER TO DWG AS-010 AND AS-029
 4. IN EJECTOR ROOM PROVIDE CONDUIT FROM CLK TO CURT LASH VENTURE MOUNT D 1'-0" A.F.F. NEAR TOP OF EJECTOR PIT
 5. SEE MAKEWAY AND CABLE SCHEDULE ON DWG E-104, E-105, E-106, E-107.
 6. UNLESS OTHERWISE NOTED PROVIDE CONDUIT FROM CLK TO GAS SENSORS MOUNTED AT 4'-0" A.F.F.
 7. PA SPEAKERS FOR OPEN PLATFORM AREA TO BE MOUNTED IN LINEAR ELEMENT FOR MOUNTING DETAILS REFER TO DWG AS-024.



8. ALL CONDUITS SHOULD BE 1" DIA. ERS UNLESS OTHERWISE NOTED.
9. ALL BOXES EMBEDDED IN CONCRETE SHOULD BE APPROVED CAST METAL BOXES. CONTRACTOR TO PROVIDE BLANK COVERS ON ALL BOXES INSTALLED IN STAGE 1
10. EACH BOX SHOULD BE IDENTIFIED AS TO FUNCTION OR USE. INSIDE DIM. 4" x 4" x 2 1/2" DEEP.
11. 2" NON METALLIC SLEEVE BELOW CEILING
12. STUB UP CONDUIT 4" FROM FLOOR SLAB OR CONCRETE PILL, THREAD AND CAP.
13. STUB OUT CONDUIT 4" FROM COLUMN AT 1" BELOW CEILING SLAB, THREAD AND CAP.
14. STUB DOWN CONDUIT 4" FROM CEILING SLAB, THREAD AND CAP.



REV.	DATE	BY	CHK.	APP.	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE 7-31-85

REVISIONS
 1. 11-17-85 WM KNM REVISED PER CR G-830
 2. 5/2/86 INITIAL ISSUE

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE 7-31-85



**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

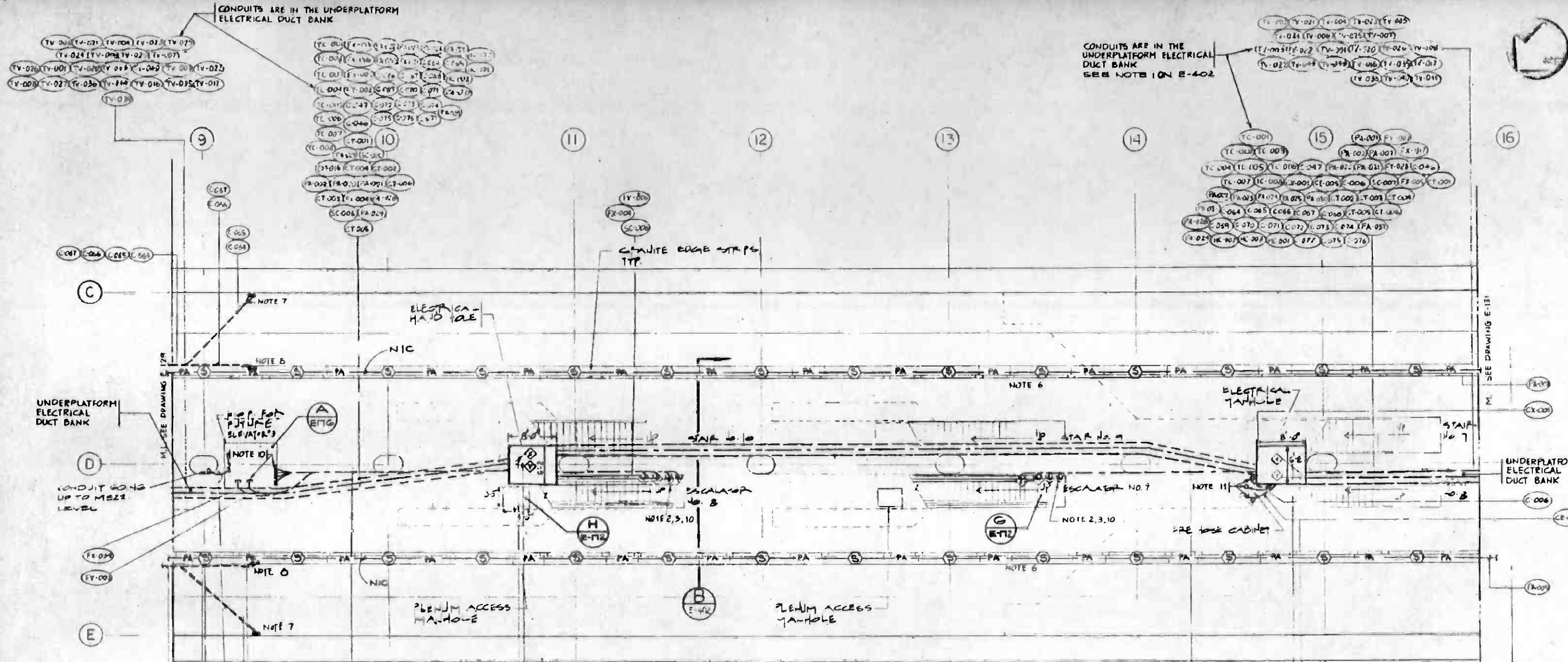
DELON HAMPTON & ASSOCIATES, Chartered
BYRON & KENNEDY, INC.
GENERAL CONSULTANTS

DMJM/PROG/KE/HWA
GENERAL CONSULTANTS
APPROVED: Howard J. Cheliff

**LA CBD TO NORTH HOLLYWOOD
5TH/HILL STATION**

PLATFORM COMMUNICATIONS CONDUITS - I

CONTRACT NO. A145
DRAWING NO. E-129
SCALE 1/8" = 1'-0"
SHEET NO. A620/174

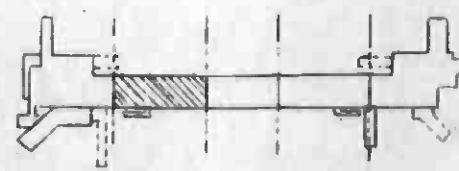


NOTES (CONT'D)

- 10. STUB-OUT CONDUIT 4" INTO THE ELEVATOR (ESCALATOR) PIT. THREAD AND CAP.
- 11. STUB-UP CONDUIT 4" FROM FLOOR SLAB. THREAD AND CAP.

NOTES

- 1. ① - OUTLET FOR THE SPEAKER
- 2. ② - OUTLET FOR CAMEL. ALL DEVICES ARE LOCATED IN THE ELEVATOR PIT.
- 3. CONDUITS FOR MEL AND SCADA SHALL BE EXTENDED FROM THE BOTTOM PIT AND CONTINUED TO THE HIGHEST C/C.
- 4. IN ESCALATOR AND ELEVATOR PITS PROVIDE CONDUIT FOR SENSORS 2'-6" ABOVE PIT FLOOR AND CENTERED OVER PIT DRAIN.
- 5. UNLESS OTHERWISE NOTED, PROVIDE CONDUITS FROM C/C TO GAS SENSORS MOUNTED AT 2'-6" A.F.F.
- 6. REFER TO RACEWAY AND CABLE SCHEDULE DWG E-104, E-105, E-106, E-107.
- 7. P.A. SPEAKERS FOR OPEN PLATFORM AREA ARE TO BE MOUNTED IN LINEAR ELEMENT. FOR MOUNTING DETAILS REFER TO DWG. A2-024.
- 8. 2" CONDUITS 15'-0" ABOVE TOP OF RAIL.
- 9. 2" CONDUITS STUB DOWN FROM CEILING NEAR LINEAR ELEMENT.
- 10. REFER TO NOTES 8, 9 ON DWG E-29.



REV.	DATE	BY	APP.	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				
DESIGNED BY				
DRAWN BY				
CHECKED BY				
IN CHARGE				
DATE	7-31-85			

REGISTERED PROFESSIONAL ENGINEER
 No. 11081
 STATE OF CALIFORNIA

**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT**

DELON HAMPTON & ASSOCIATES, CONSULTING ENGINEERS
 SYRKA & HENNESSY, INC. ENGINEERS

DMJM/PROD/KE/HWA
 GENERAL CONSULTANTS

APPROVED: *Edward Schelliff*

**LA CBD TO NORTH HOLLYWOOD
 5TH/HILL STATION**

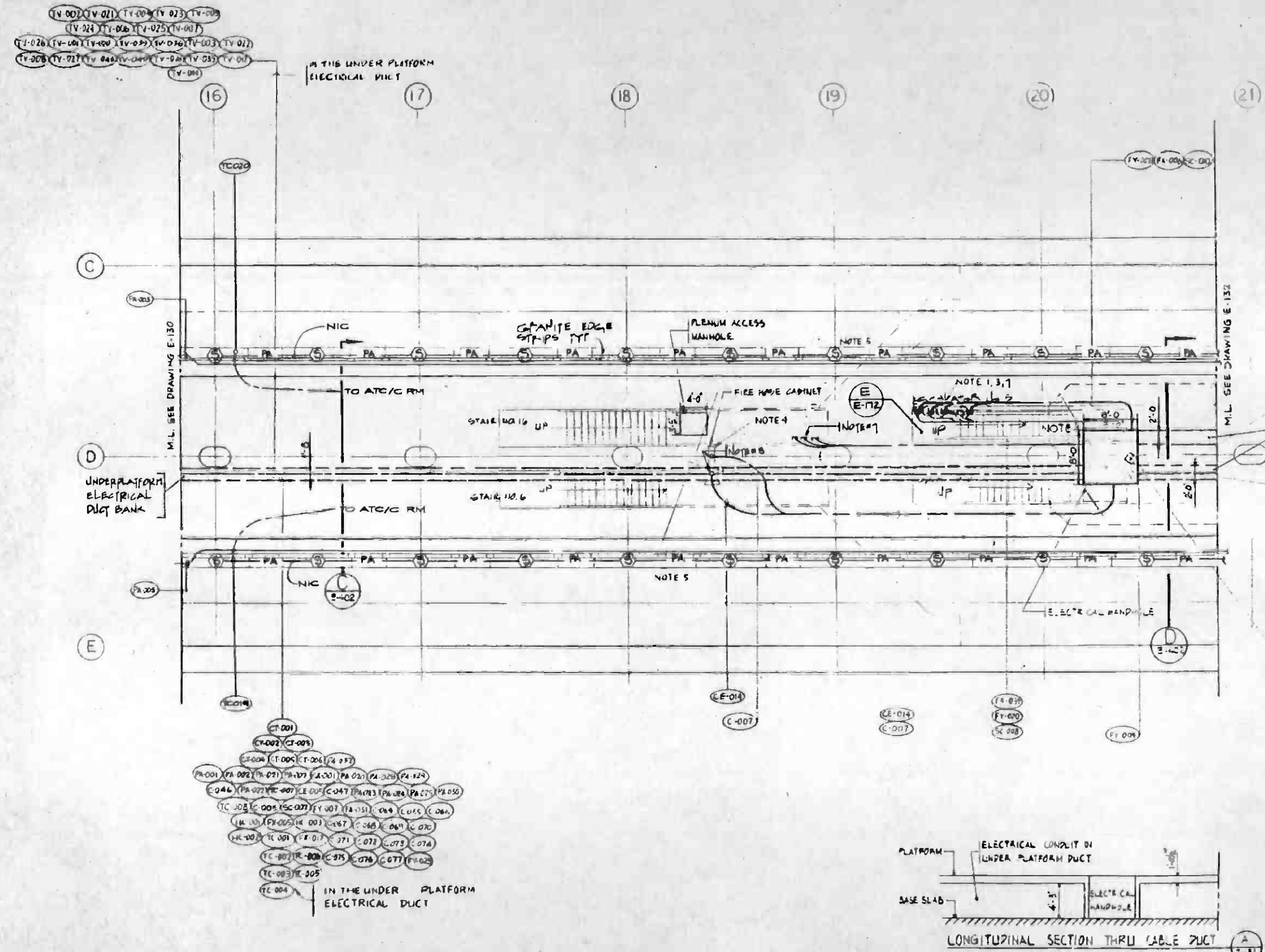
PLATFORM COMMUNICATIONS CONDUITS - 2

CONTRACT NO. A145
 DRAWING NO. E-130
 SCALE 1/8" = 1'-0"
 SHEET NO. A620/175



NOTES

- 1. CONDUITS FOR MTEL AND SCADA SHALL BE EXTENDED FROM THE TOP PIT TO THE BOTTOM PIT AND CONTINUED TO THE NEAREST CIC.
- 2. REFER TO THE RACEWAY AND CABLE SCHEDULE DWG. E-104, E-105, E-106, E-107
- 3. IN ESCALATOR PIT PROVIDE CONDUITS FOR SENSORS 2'-0" ABOVE 1ST FLOOR AND CENTERED OVER PIT DRAIN
- 4. FOR BLOCKOUT DIMENSIONS AND MOUNTING DETAILS REFER TO DWG. AS-00 AND AS-029
- 5. PA SPEAKERS FOR OPEN PLATFORM AREA ARE TO BE MOUNTED IN LINEAR ELEMENT. FOR MOUNTING DETAILS REFER TO DWG. AS-029.
- 6. REFER TO NOTES 8, 9 ON DWG. E-129
- 7. STUB OUT CONDUIT INTO THE ESCALATOR PIT, THREAD AND CAP.
- 8. STUB UP CONDUIT FROM FLOOR SLAB, THREAD AND CAP.

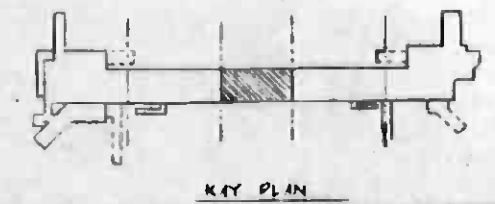
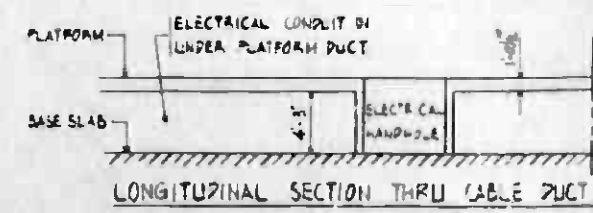


M.L. SEE DRAWING E-132

UNDERPLATFORM ELECTRICAL DUCT BANK

IN THE UNDER PLATFORM ELECTRICAL DUCT SEE NOTE 1 ON E-402

IN THE UNDER PLATFORM ELECTRICAL DUCT



REV.	DATE	BY	APP.	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA

DESIGNED BY: *F. Roth*

DRAWN BY: *A. Stuber*

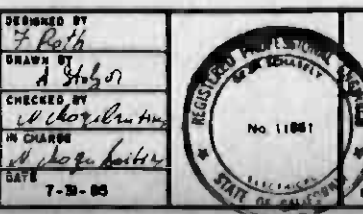
CHECKED BY: *W. Hampton*

IN CHARGE: *A. Stuber*

DATE: 7-31-83

REVISOR PER CR 6-530

INITIAL ISSUE



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT

DELON HAMPTON & ASSOCIATES, CHARTERED

SYRBA & HENNESSY, INC. ENGINEERS

DMJM/PBQD/KE/HWA

GENERAL CONSULTANTS

APPROVED: *Harold Schreff*

LA CBD TO NORTH HOLLYWOOD

5TH/HILL STATION

PLATFORM COMMUNICATIONS CONDUITS - 3

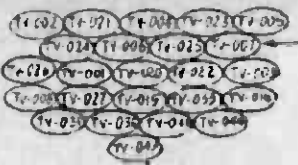
CONTRACT NO. A140

DRAWING NO. E-131

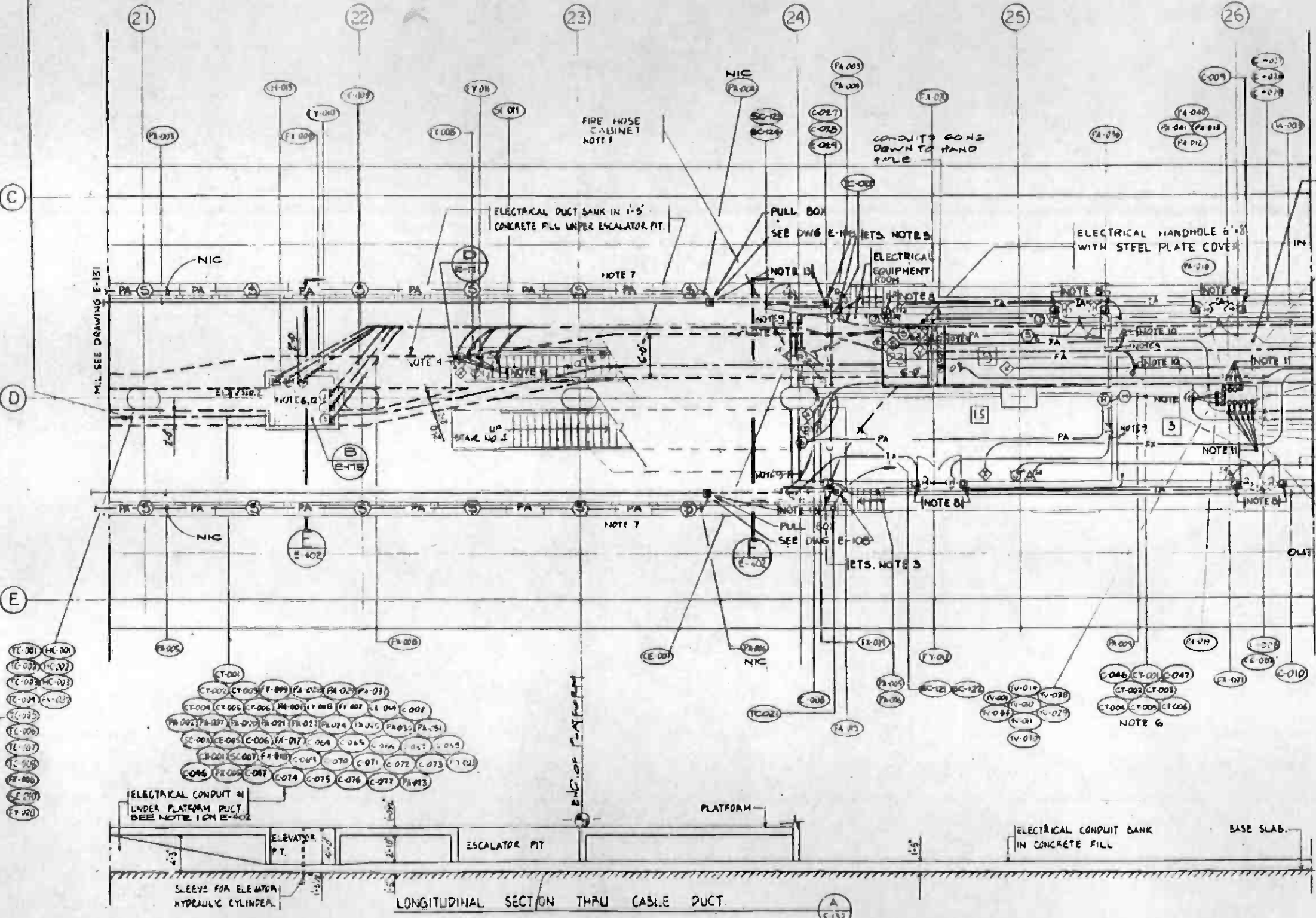
REV. 1

SCALE 1/8" = 1'-0"

SHEET NO. A620/176

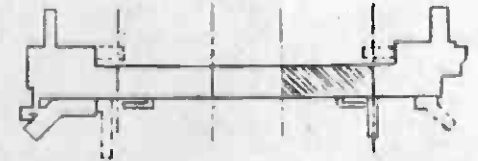


IN THE UNDERPLATFORM ELECTRICAL DUCT BANK



NOTES

1. PROVIDE CONDUITS FROM CIC FOR GAS SENSORS TO BE LOCATED IN THE UPS SPACE NEAR THE ACCESS MATCH AT EACH END OF THE STATION
2. REFER TO THE RACEWAY AND CABLE SCHEDULE DWG E-104, E-105, E-106, E-107
3. FOR BLOCKOUT DIMENSIONS AND MOUNTING DETAILS REFER TO DWG AS-010 AND AS-024
4. UNLESS OTHERWISE NOTED PROVIDE CONDUIT FROM CIC TO GAS SENSORS LOCATED AT 4'-0" A.F.F. CONDUITS FOR MIBL AND SCADA SHALL BE EXTENDED FROM THE TOP PIT TO THE BOTTOM PIT AND CONTINUED TO THE NEAREST CIC
5. IN THE ELEVATOR AND ESCALATOR PITS PROVIDE CONDUITS FOR SENSORS 2'-6" ABOVE PIT FLOOR AND CENTERED OVER PA DRAIN
6. PA SPEAKERS FOR OPEN PLATFORM AREA ARE TO BE MOUNTED IN LINEAR ELEMENT FOR MOUNTING DETAILS REFER TO DWG AS-024
7. REFER TO NOTES B, 9 ON DWG E-129
8. 2" NON METALLIC SLEEVE BELOW CEILING
9. STUB-UP CONDUIT 4" FROM FLOOR SLAB OR CONCRETE FILL, THREAD AND CAP. FOR CONDUITS 2 1/2" AND BIGGER STUB-UP 6"
10. STUB-OUT CONDUIT 4" FROM COLUMN AT 1" FROM CEILING SLAB, THREAD AND CAP.
11. STUB-OUT CONDUIT 4" INTO THE ELEVATOR (ESCALATOR) PIT, THREAD AND CAP. FOR CONDUITS 2 1/2" AND BIGGER STUB-OUT 6"
12. STUB-DOWN CONDUIT 4" FROM CEILING, THREAD AND CAP.



IN THE UNDER PLATFORM ELECTRICAL DUCT

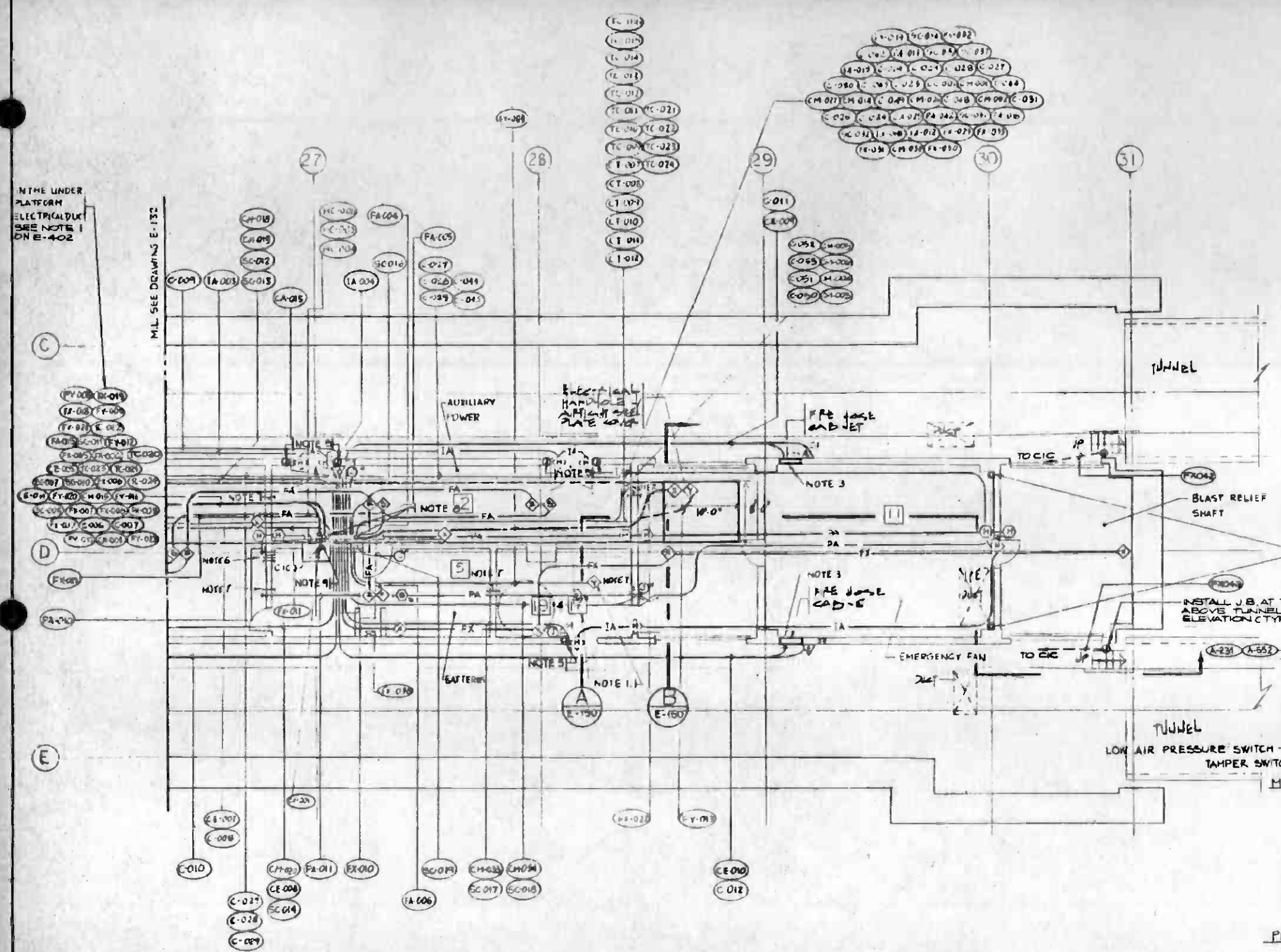
IN THE UNDER PLATFORM ELECTRICAL DUCT SEE NOTE 1 ON E-402

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1984, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA		DESIGNED BY <i>F. Roth</i> DRAWN BY <i>A. Stryker</i> CHECKED BY <i>A. Stryker</i> IN CHARGE <i>A. Stryker</i> DATE 7-31-95	REGISTERED PROFESSIONAL ENGINEER No. 11881 STATE OF CALIFORNIA	SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT DELON HAMPTON & ASSOCIATES, Chartered SYRKA & HENNESSY, INC. ENGINEERS	DMJM/PROD/KE/HWA GENERAL CONSULTANTS APPROVED <i>David Kelly</i>	LA CBD TO NORTH HOLLYWOOD 5TH / HILL STATION PLATFORM COMMUNICATIONS CONDUITS - 4	CONTRACT NO. A145 DRAWING NO. E-132 SCALE 1/8" = 1'-0" SHEET NO. A620/177
REV.	DATE	BY	APP.	DESCRIPTION			
	11-17-94	WH	A	WMM	REVISED PER CR G-530		
	5/2/95				INITIAL ISSUE		



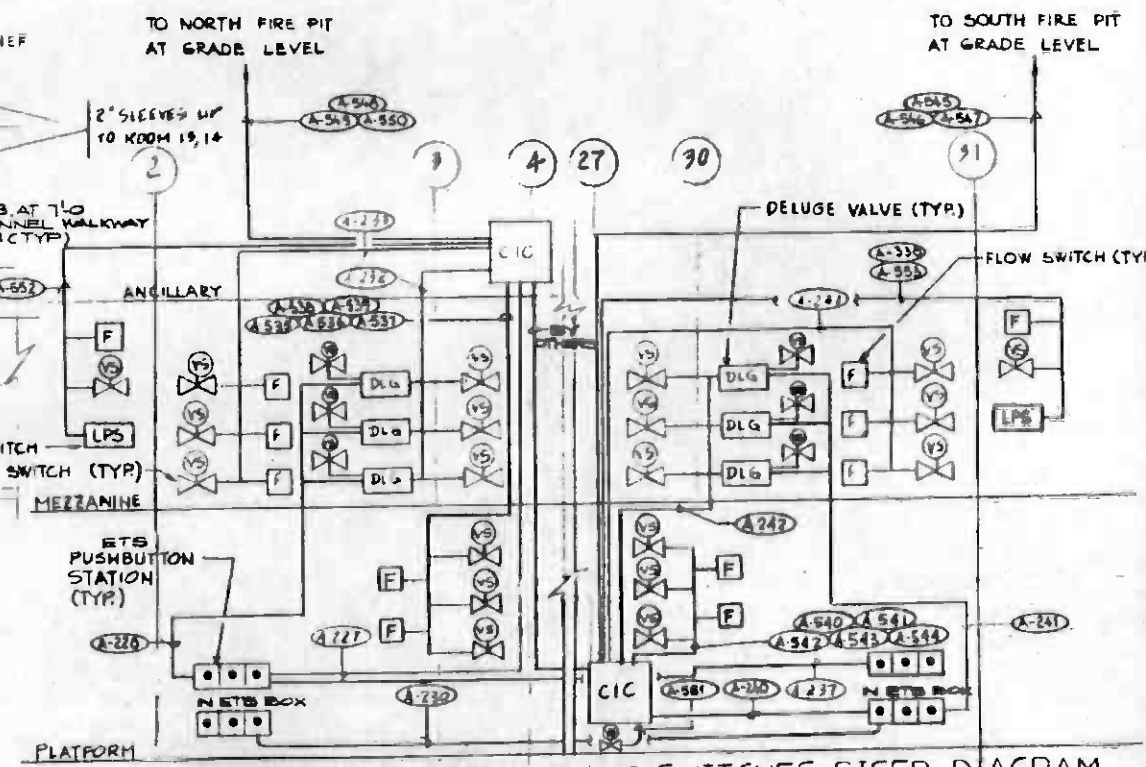
NOTE UNDER PLATFORM ELECTRICAL DUCT SEE NOTE 1 ON E-402

ML SEE DRAWING E-132



NOTES

1. PROVIDE CONDUIT FROM CIC TO AN ACCESSIBLE LOCATION IN SUMP PUMP ROOM, 4'-6" A.F.F. (SENSOR CALIBRATION POINT). THE CONDUIT & A 3/8" CALIBRATION TUBING TO BE RUN FROM THIS POINT INTO SUMP PUMP ROOM FOR WIRING SENSOR NEAR ACCESS LADDER.
2. REFER TO THE RACEWAY AND CABLE SCHEDULE DWG. E-164, E-165, E-166, E-167
3. FOR BLOCKOUT DIMENSIONS AND MOUNTING DETAILS REFER TO DWG. AS-010 AND AS-029
4. UNLESS OTHERWISE NOTED PROVIDE CONDUIT FROM CIC FOR WIRING GAS SENSORS AT LOCATION SHOWN, 4'-6" A.F.F.
5. REFER TO NOTES 8, 9 ON DWG. E-129.
6. FOLK 4" SLEEVES BELOW CEILING.
7. 2" NON-METALLIC SLEEVE BELOW THE CEILING.
8. STUB-UP CONDUIT 4" FROM FLOOR SLAB, THREAD AND CAP.
9. STUB-UP CONDUIT 4" FROM COLUMN AT UNDER CEILING, THREAD AND CAP.



SPRINKLER SYSTEM VALVE SWITCHES RISER DIAGRAM

FOR INFORMATION ONLY

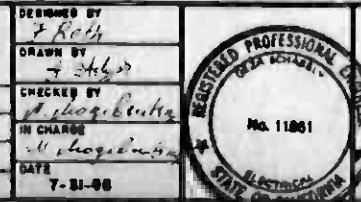


REV.	DATE	BY	SUB.	APP.	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA

DESIGNED BY: *F. Roth*
 DRAWN BY: *F. Roth*
 CHECKED BY: *A. J. Schmitt*
 IN CHARGE: *A. J. Schmitt*
 DATE: 7-31-88

REVISIONS:
 11-17-88 WM AS WMM REVISED PER CR G-530
 5-28-89 INITIAL ISSUE



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT

DELON HAMPTON & ASSOCIATES, Chartered
 SYSKA & HENNESSY, INC.
 ENGINEERS

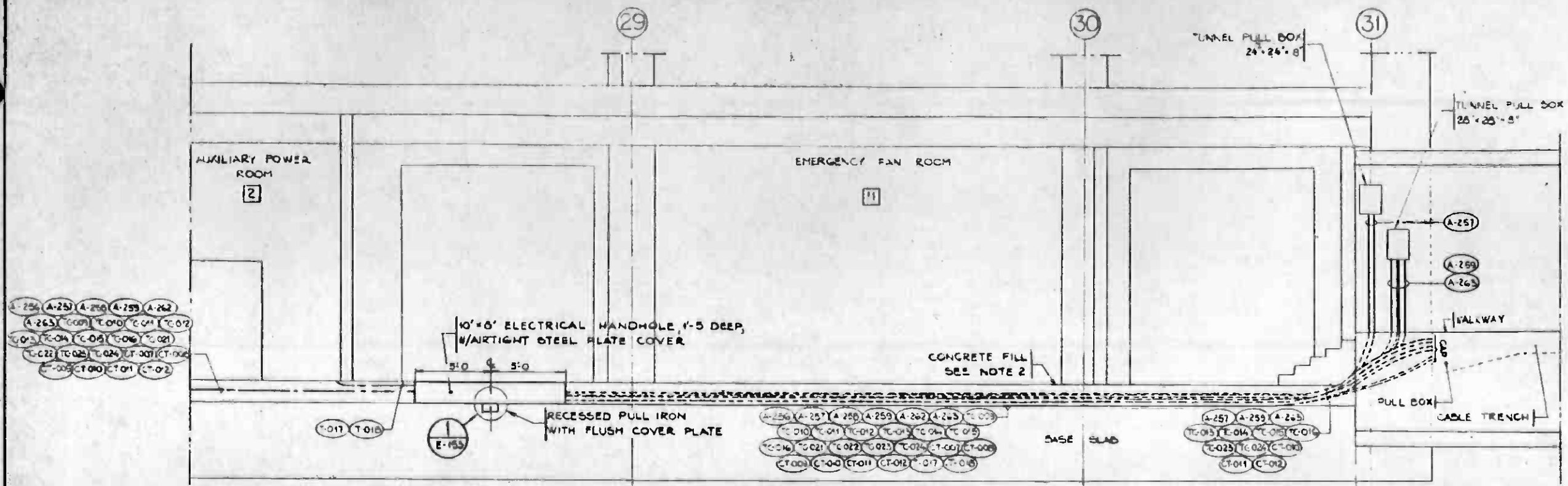
DMJM/PBOD/KE/HWA
 GENERAL CONSULTANTS

APPROVED: *[Signature]*

LA CBD TO NORTH HOLLYWOOD 5TH/HILL STATION

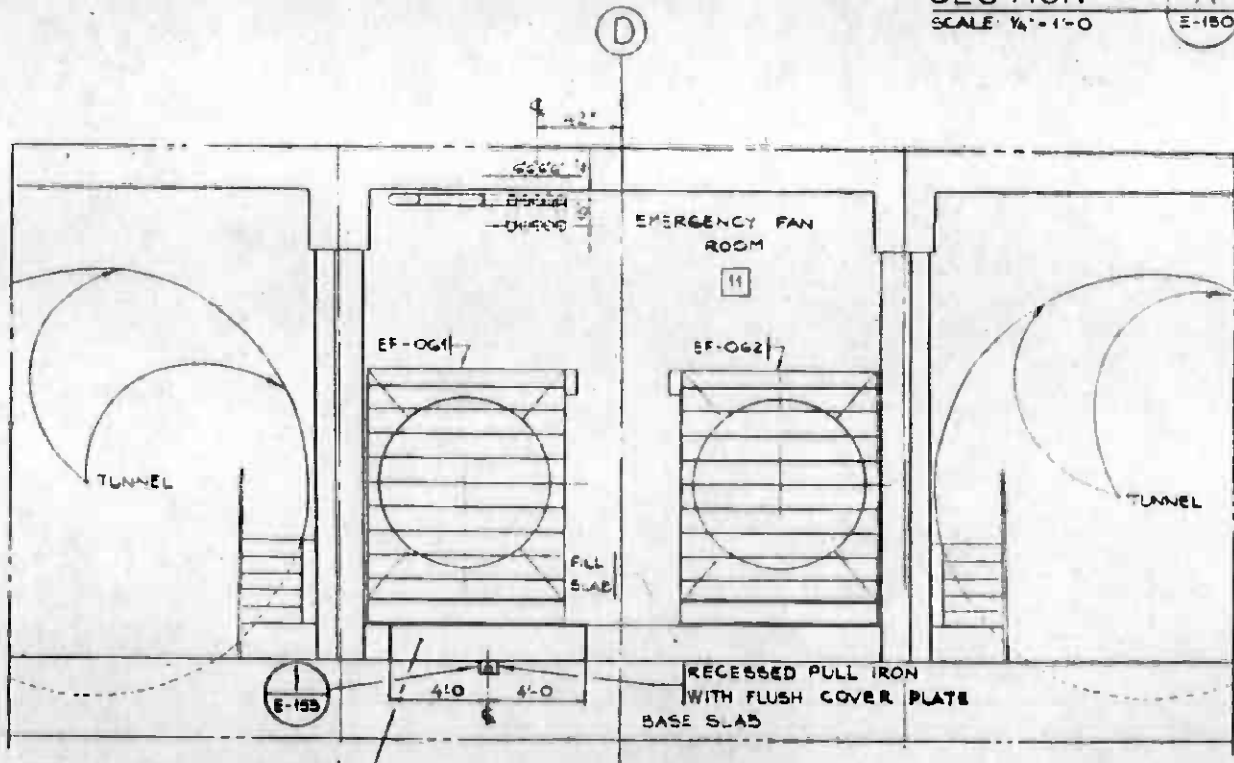
PLATFORM COMMUNICATIONS CONDUITS - 5

CONTRACT NO.	A145
DRAWING NO.	E-133
REV.	1
SCALE	1/8" = 1'-0"
SHEET NO.	A620/178

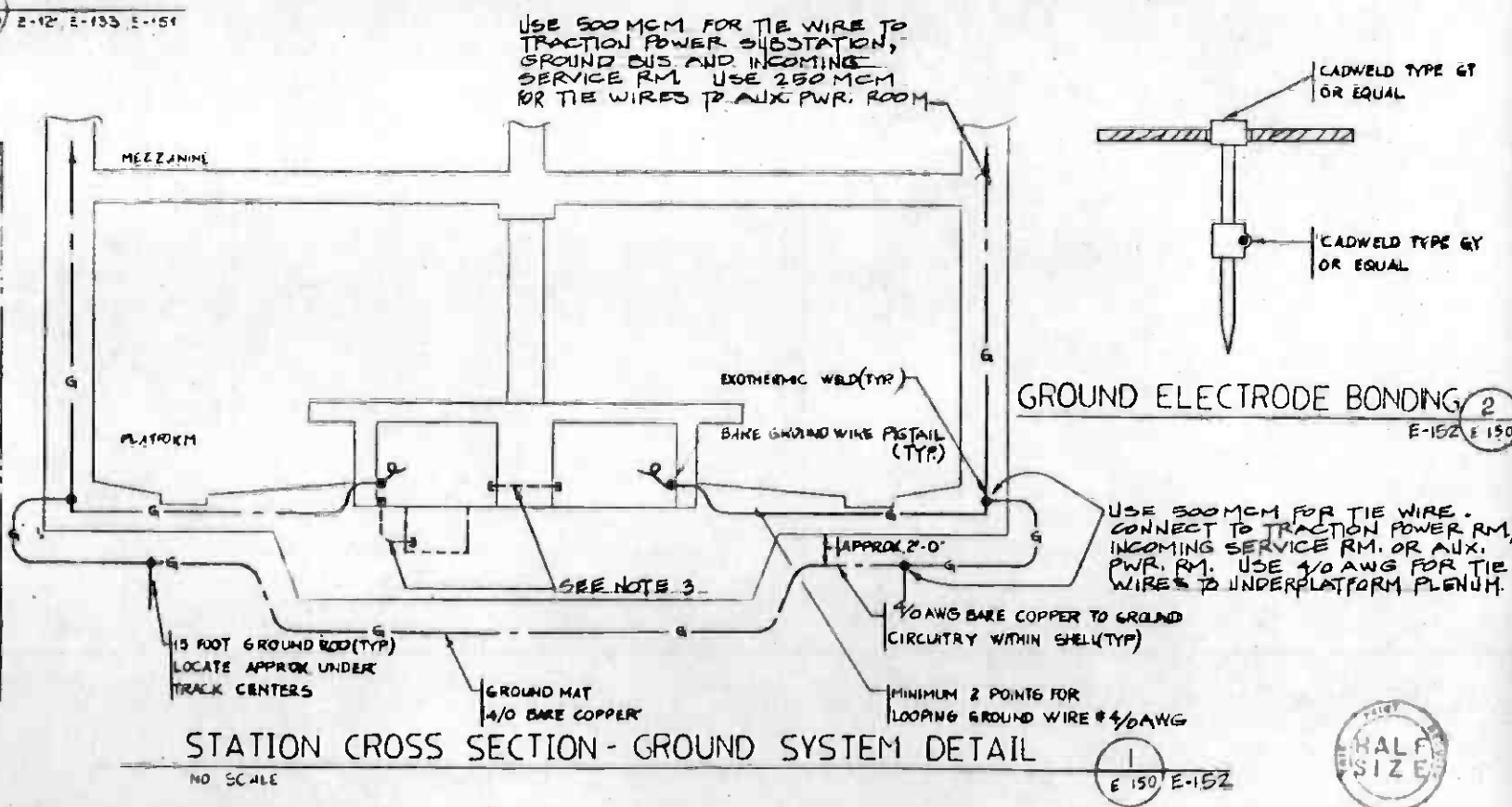


- NOTES**
1. MINIMUM BENDING RADIUS FOR 4" CONDUITS 3 1/2' AND FOR 5" CONDUITS 26'
 2. AFTER CONDUIT INSTALLATION CAST CONCRETE FILL 1-5" THICK ABOVE BASE SLAB. SCOPE OF WORK IN CONTRACT A 145.
 3. INSTALL SLEEVES AT WALL OF ESCALATOR PIT, ELEVATOR PIT & HANDHOLE CONNECTING TO UNDER PLATFORM AIR PLENUM, FOR EXTENDING GROUND WIRES INTO THESE PITS (BY OTHERS)

SECTION A
SCALE: 1/4" = 1'-0"
E-150 E-121 E-133 E-151



SECTION B
SCALE: 1/4" = 1'-0"
E-150 E-121 E-133 E-151



STATION CROSS SECTION - GROUND SYSTEM DETAIL
NO SCALE
E-150 E-152

REV	DATE	BY	SUB	APP	DESCRIPTION

REV	DATE	BY	SUB	APP	DESCRIPTION

DESIGNED BY
[Signature]
DRAWN BY
[Signature]
CHECKED BY
[Signature]
IN CHARGE
[Signature]
DATE 7-31-88



**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

DELON HAMPTON & ASSOCIATES, Chartered
SYSKA & HENNESSY, INC
Engineers

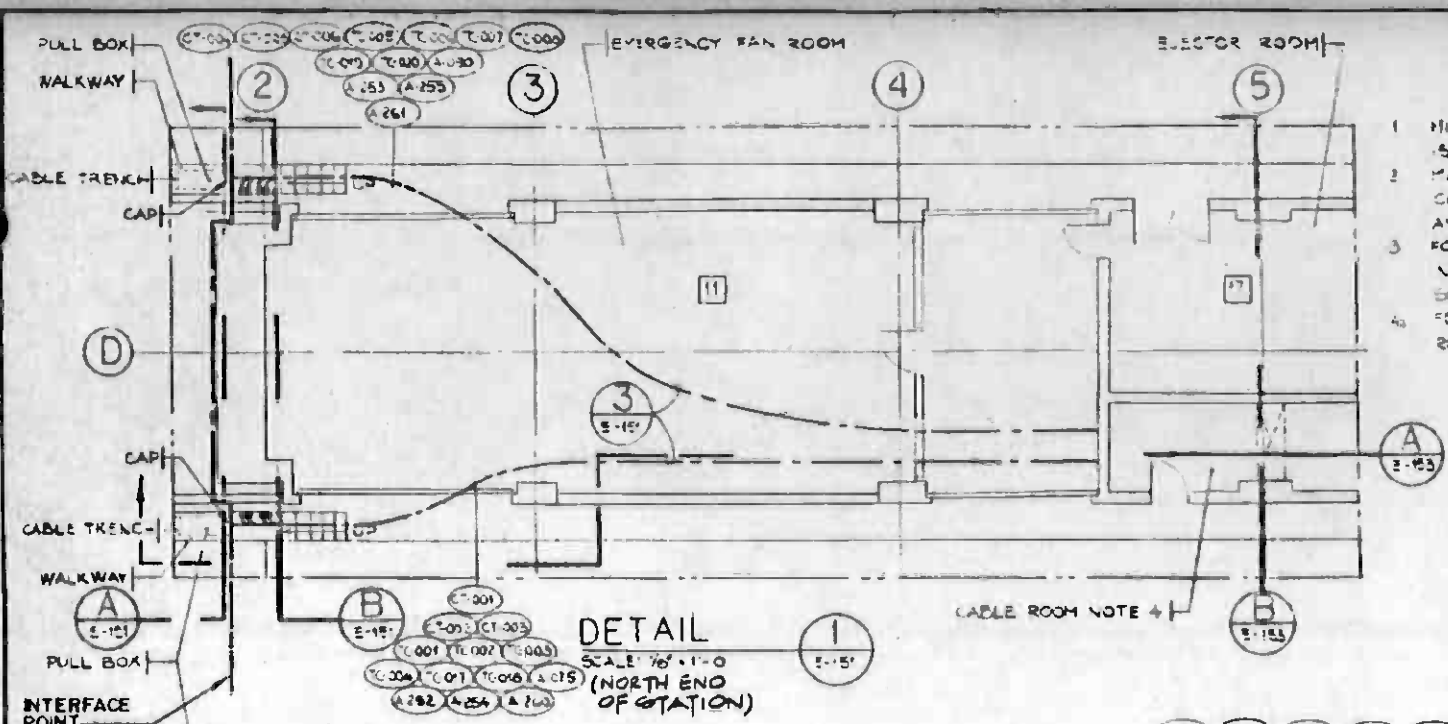
DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

APPROVED *[Signature]*

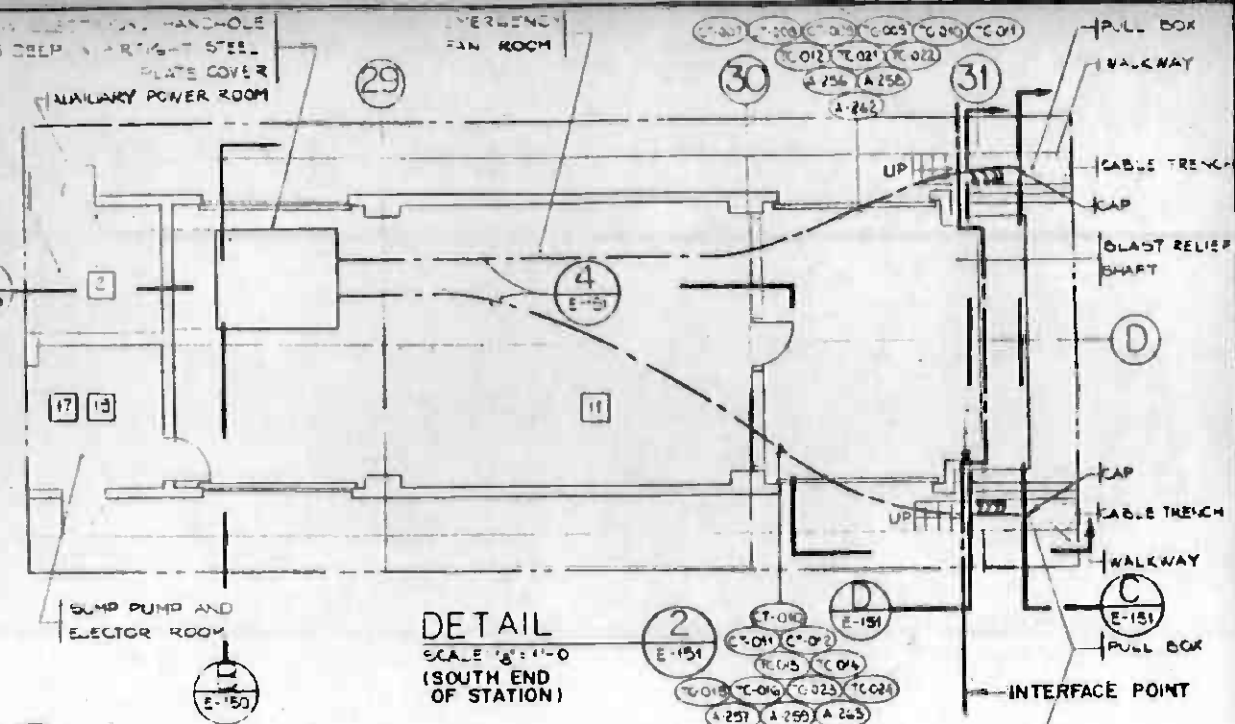
**LA CBD TO NORTH HOLLYWOOD
5TH AND HILL STATION**

SOUTH END CABLE ROUTING
SECTION AND DETAILS

CONTRACT NO.	A145
DRAWING NO.	E-150
SCALE	1/4" = 1'-0"
SHEET NO.	A620/179

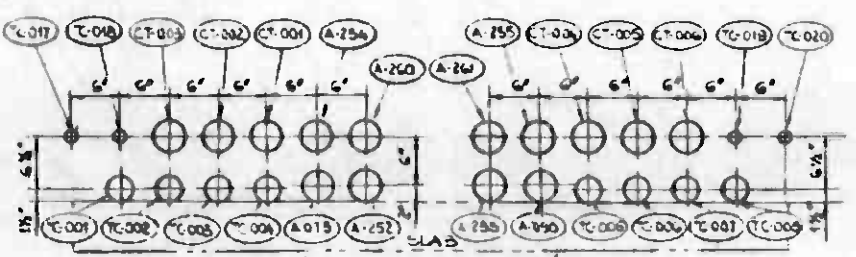
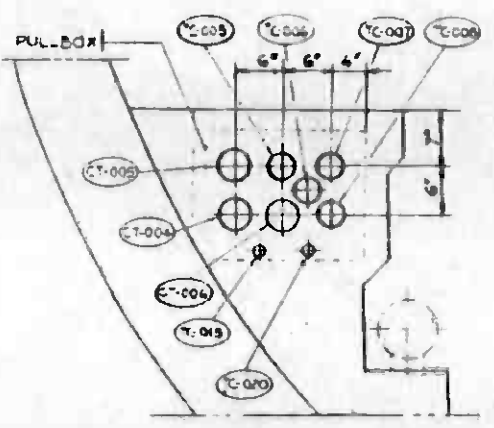
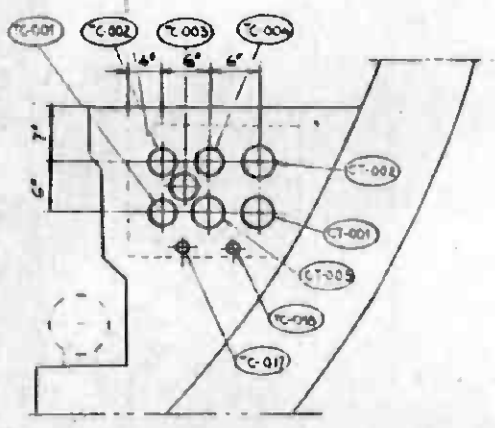


- NOTES**
1. MINIMUM BENDING RADIUS FOR 4" CONDUITS IS 42" AND FOR 3" CONDUITS 30"
 2. MAINTAIN MINIMUM 6" SEPARATION BETWEEN COMMUNICATIONS TRAN CONTROL CONDUITS AND POWER CONDUITS
 3. FOR TUNNEL LIGHTING AND POWER CIRCUIT INFORMATION SEE TLP AND TAP PANEL SCHEDULES DWG E-72
 4. FOR CABLE ARRANGEMENTS IN THE CABLE ROOM REFER TO DWG E-55.

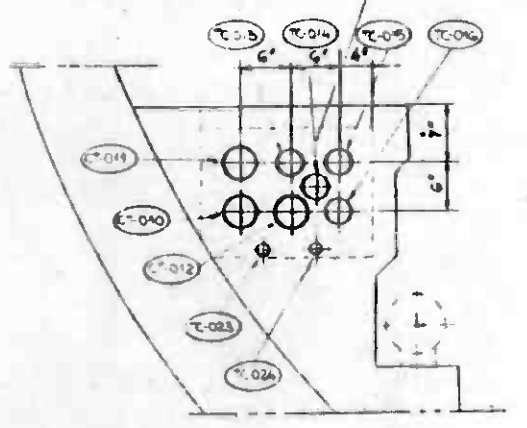
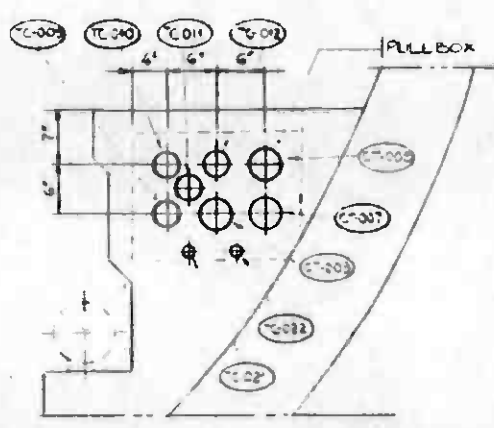


DETAIL 1
SCALE: 1/8" = 1'-0"
(NORTH END OF STATION)

DETAIL 2
SCALE: 1/8" = 1'-0"
(SOUTH END OF STATION)

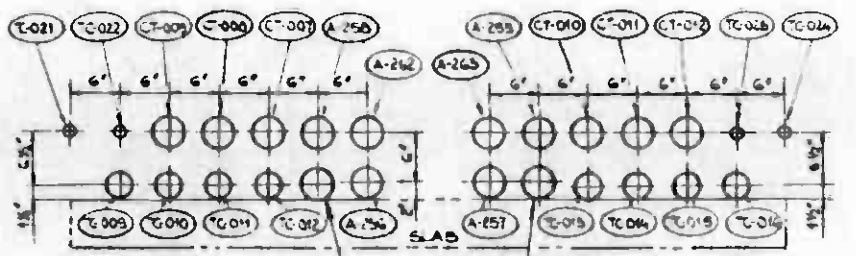
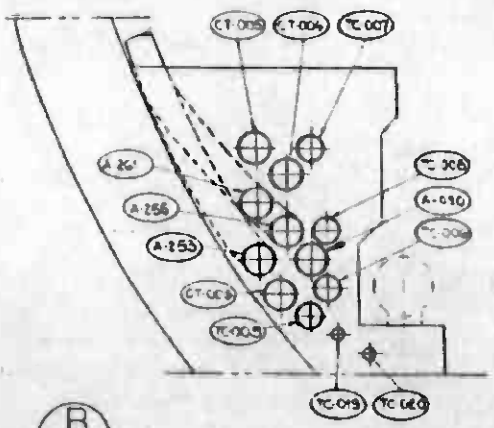
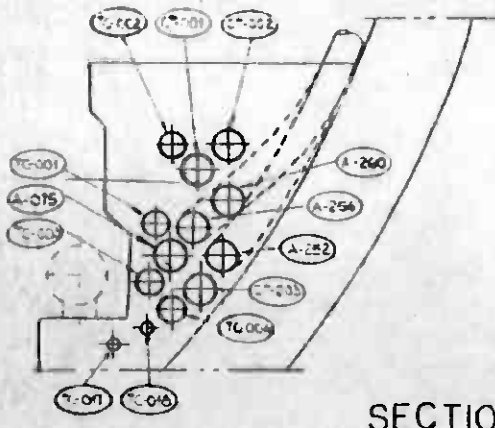


CONDUIT ARRANGEMENT DETAIL 3
SCALE: 1" = 1'-0"

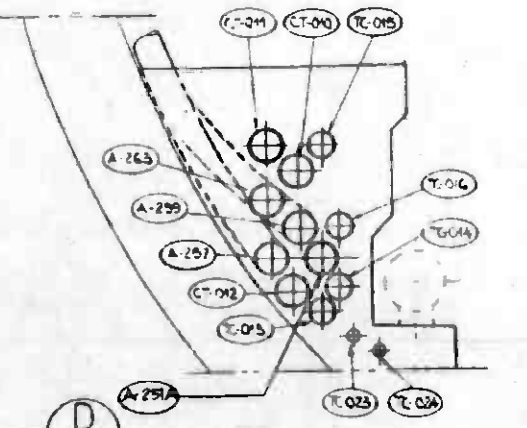
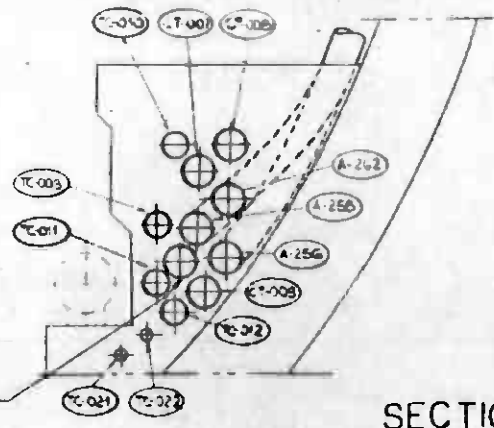


SECTION A
SCALE: 1" = 1'-0"

SECTION C
SCALE: 1" = 1'-0"



CONDUIT ARRANGEMENT DETAIL 4
SCALE: 1" = 1'-0"



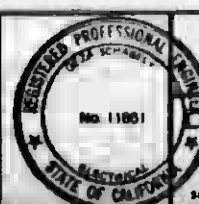
SECTION B
SCALE: 1" = 1'-0"

SECTION D
SCALE: 1" = 1'-0"

REV.	DATE	BY	SUB.	APP.	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.					
DESIGNED BY					
DRAWN BY					
CHECKED BY					
IN CHARGE					
DATE	7-31-05				

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE 7-31-05



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

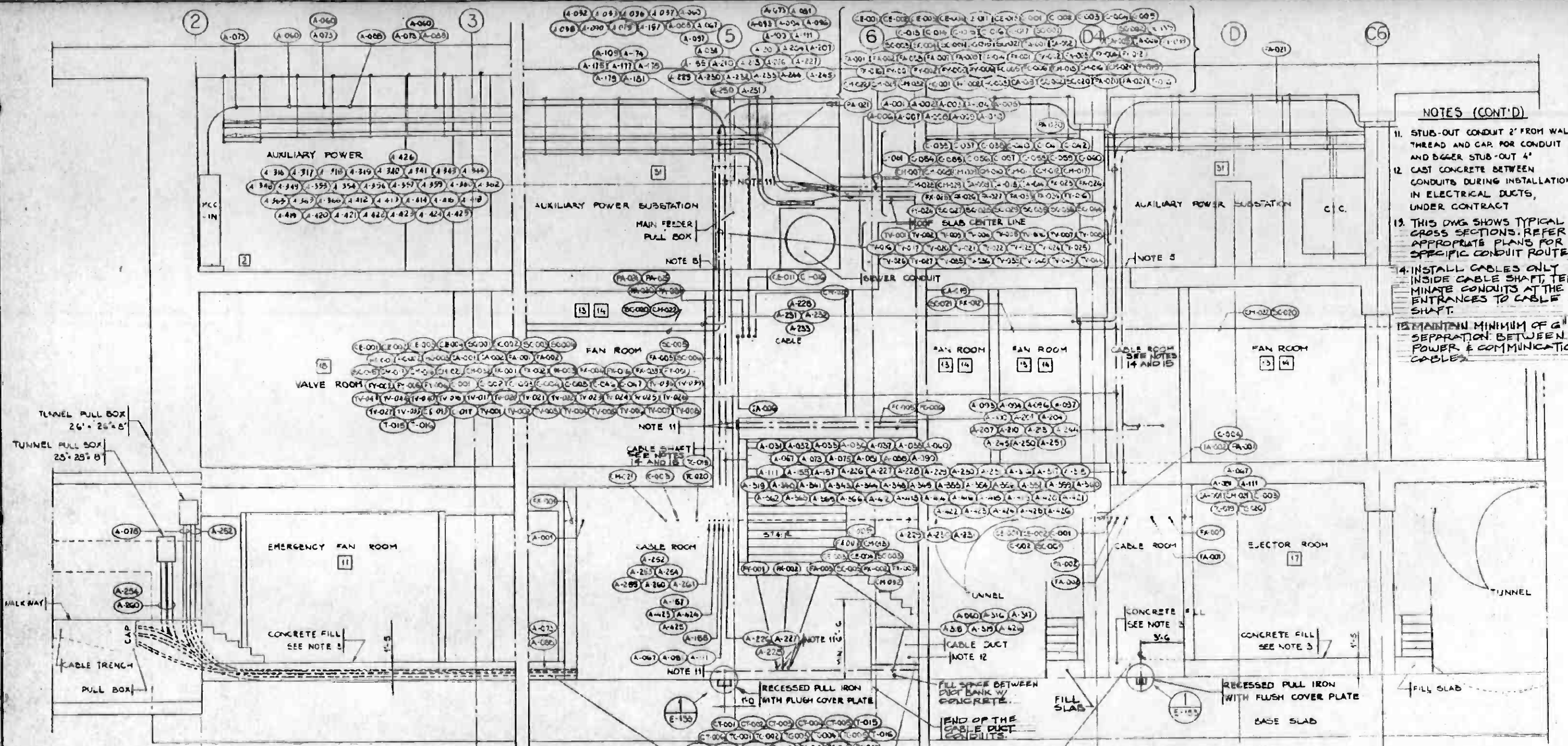
DELON HAMPTON & ASSOCIATES, Chartered
SYSKA & HENNESSY, INC.
SUBMITTED BY: *Delon Hampton*

DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS
APPROVED BY: *Delon Hampton*

LA CBD TO NORTH HOLLYWOOD
5TH AND HILL STATION

STATION TO TUNNEL TRANSITION
SECTION B DETAILS

CONTRACT NO.	A148
DRAWING NO.	E-151
REV.	1
SCALE	AS NOTED
SHEET NO.	A620/180



- NOTES (CONT'D)**
11. STUB-OUT CONDUIT 2' FROM WALL. THREAD AND CAP FOR CONDUIT 2 1/2" AND BIGGER STUB-OUT 4"
 12. CAST CONCRETE BETWEEN CONDUITS DURING INSTALLATION IN ELECTRICAL DUCTS, UNDER CONTRACT
 13. THIS DWG SHOWS TYPICAL CROSS SECTIONS. REFER TO APPROPRIATE PLANS FOR SPECIFIC CONDUIT ROUTES.
 14. INSTALL CABLES ONLY INSIDE CABLE SHAFT. TERMINATE CONDUITS AT THE ENTRANCES TO CABLE SHAFT.
 15. MAINTAIN MINIMUM OF 6" SEPARATION BETWEEN POWER & COMMUNICATIONS CABLES.

TUNNEL PULL BOX
26' x 25' x 8'

TUNNEL PULL BOX
25' x 25' x 8'

MALKWAY

CABLE TRENCH

PULL BOX

EMERGENCY FAN ROOM

CONCRETE FILL
SEE NOTE 5

CABLE ROOM

NOTE 11

CABLE ROOM

NOTE 11

CABLE ROOM

NOTE 12

CABLE ROOM

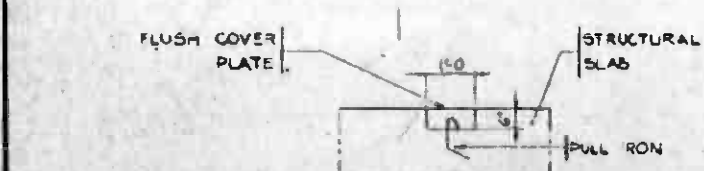
NOTE 3

EJECTOR ROOM

CONCRETE FILL
SEE NOTE 3

TUNNEL

FILL SLAB



PULL IRON DETAIL
SCALE: 1/2" = 1'-0"
E-153

SECTION A
SCALE: 1/4" = 1'-0"
E-155 (TYP)

- NOTES**
1. CONDUCTORS IN CABLE ROOM SHALL BE ARRANGED IN CABLE TRAYS OR ON RACKS AS REQUIRED.
 2. MINIMUM BENDING RADIUS FOR 4" CONDUITS IS 42" AND FOR 3" CONDUITS 26".
 3. AFTER CONDUIT INSTALLATION CAST CONCRETE FILL 1'-5" THICK ABOVE BASE SLAB. FOR CONDUIT ARRANGEMENT SEE DETAIL 1/2"=1'-0" SCOPE OF WORK IN CONTRACT A 145.
 4. FOR CABLE TRAYS LAYOUT AND DETAILS SEE DWG E-140.

SECTION B
SCALE: 1/4" = 1'-0"
E-156 (TYP)

5. AFTER CONDUITS WILL BE INSTALLED, OPENING SHALL BE SEALED
6. FOR CONDUIT ROUTING THRU CABLE ROOM ALSO REFER TO PLAN DRAWINGS
7. FOR STATION TO TUNNEL TRANSITION DETAILS REFER TO DWG E-151
8. REFER TO NOTE 5 ON DWG 129



REV.	DATE	BY	APP.	DESCRIPTION

DESIGNED BY
C. Linton

DRAWN BY
F. P. ...

CHECKED BY
A. ...

IN CHARGE
A. ...

DATE
7-21-88

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DELOH HAMPTON & ASSOCIATES, Chartered
SYSLA & HENNESSY, INC.

DMJM/PROD/KE/HWA
GENERAL CONSULTANTS

APPROVED
Howard Khalil

CONTRACT NO. A145	
DRAWING NO. E-153	REV. 1
SCALE AS NOTED	
SHEET NO. A620/182	

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA

ELECTRICAL CONDUIT AND CABLE SCHEDULE

ELECTRICAL CONDUIT AND CABLE SCHEDULE

NO.	FROM	TO	CKTS.	CONDUIT			CONDUCTOR			DWG. NO.	SHT. NO.	REMARKS	NO.	FROM	TO	CKTS.	CONDUIT			CONDUCTOR			DWG. NO.	SHT. NO.	REMARKS
				METHOD	SIZE	TYPE	NO. & SIZE	GND.	TYPE								METHOD	SIZE	TYPE	NO. & SIZE	GND.	TYPE			
CM-019	MTEL RM #9 (P)	CIC RM #25		EXPOSED	1"	GRS			E-132			FA-012	S DETECTOR (A)	CIC RM #2N		EXPOSED	1"	GRS			E-139				
CM-020	MTEL RM #15 (PI)											FA-013	P DETECTOR (A)												
CM-021	MTEL RMS #19 & 17 (P)	CIC RM #2N							E-129			FA-016	R DETECTOR RM 6 S/E ENTR	CIC RM #25		EMBEDDED	1"				E-158				
CM-022	MTEL RM #12 (M)								E-134			FA-017	S DETECTOR RM 6 S/E ENTR												
CM-023	MTEL RM #9 (M)	CIC RM #25		EMBEDDED	1"				E-138			FA-015	D DETECTOR (P)												
CM-024	MTEL RMS #13 & 14 (M)											FA-016	D DETECTOR	CIC RM #2N		EXPOSED	1"				E-134				
CM-025	MTEL RM #21 (M)	CIC RM #2N		EXPOSED	1"				E-184			FA-018	D DETECTOR, N.W. ENTR.	CIC RM #2N		EMBEDDED	1"				E-153				
CM-026	MTEL RM #6 S/E ENTR	CIC RM #25		EXPOSED/EMBEDDED	1"				E-156			FX-001	GAS DETECTOR (P)	CIC RM #2N		EXPOSED	1"				E-129				
CM-027	MTEL RM #22 S/E ENTR											FX-002				EMBEDDED/EXPOSED	1"								
CM-028	MTEL N/W FUT ENTR	CIC RM #2N		EMBEDDED	1"				E-155			FX-003				EXPOSED	1"				E-129				
CM-029	MTEL N/E FUT ENTR											FX-004	ESC #8 (P)			EMBEDDED/EXPOSED	1"				E-130				
CM-030	MTEL S/E FUT ENTR	CIC RM #25							E-198			FX-005	ESC #7 (P)	CIC RM #25		EMBEDDED	1"								
CM-031	MTEL S/W FUT ENTR								E-157			FX-006	ESC #5 (P)												
CM-032	MTEL RM #15 (P)	CIC RM #2N		EXPOSED	1"				E-129			FX-008	ESC #4 (P)												
CM-033	MTEL RM #19 & 17 (P)	CIC RM #25							E-153			FX-009	ELEV #2 (P)												
CM-034	MTEL RM #11 (P)											FX-010				EXPOSED	1"								
CF-001	COMMAND POST (M)	CIC RM #25		EMBEDDED	1"				E-131			FX-011													
CF-002												FX-012		CIC RM #2N											
CF-003	FTEL FIRE PIT SOUTH								E-104			FX-013		CIC RM #25		EMBEDDED	1"								
CF-004	FTEL FIRE PIT NORTH	CIC RM #2N										FX-014		CIC RM #2N											
CF-005	FTEL RM #18S (M)	CIC RM #25							E-136			FX-015													
CF-006	FTEL RM #18N (M)	CIC RM #2N		EXPOSED/EMBEDDED	1"				E-134			FX-016													
CT-001	TUNNEL NORTH IN (P)	ATC & C		EXPOSED/EMBEDDED	4"	GRS			E-132			FX-017	ESC #9 N/W ENTR			EMBEDDED/EXPOSED	1"								
CT-002												FX-018	ELEV #4 N/W ENTR												
CT-003												FX-019	ESC #11 N/E ENTR												
CT-004	TUNNEL NORTH OUT (P)											FX-020	RM 21												
CT-005												FX-021	ESC #3 S/W ENTR	CIC RM #25											
CT-006												FX-022	ELEV #1												
CT-007	TUNNEL SOUTH IN (P)											FX-023	ESC #1 S/E ENTR												
CT-008												FX-024	ESC #2 S/E ENTR												
CT-009												FX-025	RM 6 S/E ENTR												
CT-010	TUNNEL SOUTH OUT (P)											FX-026	N/W FUT ENTR	CIC RM #2N											
CT-011												FX-027	N/E FUT ENTR												
CT-012												FX-028	S/W FUT ENTR												
CE-018	E TEL RM #31 (A)	CIC RM #2N		EMBEDDED	1"	GRS			E-139			FX-029													
CX-001	PUB TEL FMC (P)	TTC RM 29		EMBEDDED	1"	GRS			E-130			FX-030	ESC #0 N/W ENTR	CIC RM #2N											
CX-002	PUB TEL MAP CASE (M)								E-134			FX-031	ESC #6 (P)	CIC RM #25											
CX-003									E-135			FX-032	RM #25			EXPOSED	1"								
CX-004									E-137			FX-033	6" S (FUT) (P)	CIC RM #2N		EXPOSED/EMBEDDED	1"								
CX-005									E-138			FX-034	GAS DETECTOR NORTH TUNNEL	CIC RM #2N		EMBEDDED	1 1/2"								
CX-006	PUB TEL CABINET RM #29	MANHOLE AT GRADE (SEE REMARK)			2"				E-158			FX-035	GAS DETECTOR SOUTH TUNNEL	CIC RM #25											
FA-019	D DETECTOR S.E. ENTR.	CIC RM #25		EMBEDDED	1"	GRS			E-158			FX-036	GAS DETECTOR SOUTH TUNNEL												
FA-001	R DETECTOR (P)	CIC RM #2N		EXPOSED	1"				E-129			HC-001	CIC RM #2N	ATC & C		EXPOSED/EMBEDDED	4"	GRS							
FA-002	S DETECTOR (P)											HC-002													
FA-003	D DETECTOR (P)			EMBEDDED/EXPOSED	1"							HC-003													
FA-004	R DETECTOR (P)	CIC RM #25		EXPOSED	1"				E-133			HC-004	CIC RM #25			EXPOSED	4"								
FA-005	S DETECTOR (P)											HC-005													
FA-006	P DETECTOR (P)											HC-006													
FA-007	S DETECTOR (M)	CIC RM #2N							E-134																
FA-008	R DETECTOR (M)																								
FA-009									E-139																
FA-010																									
FA-011	S DETECTOR (A)																								

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA

DESIGNED BY: *J. Roth*
 DRAWN BY: *A. J. ...*
 CHECKED BY: *A. J. ...*
 IN CHARGE: *A. J. ...*
 DATE: 7-21-88

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DELON HAMPTON & ASSOCIATES, Chartered
 SYSKA & HENNESSY, INC.
 ENGINEERS

REGISTERED PROFESSIONAL ENGINEER
 No. 11881
 STATE OF CALIFORNIA

DMJM/PBQD/KE/HWA
 GENERAL CONSULTANTS
 APPROVED: *Harold K. ...*

LA CBD TO NORTH HOLLYWOOD
5TH / HILL STATION

RACEWAY & CABLE SCHEDULES - 4

CONTRACT NO. A145
 DRAWING NO. E-165
 SCALE: NO SCALE
 SHEET NO. A620/183

ELECTRICAL CONDUIT AND CABLE SCHEDULE

NO.	FROM	TO	CKTS	CONDUIT			CONDUCTOR			DWG. NO.	SHT. NO.	REMARKS
				METHOD	SIZE	TYPE	NO. & SIZE	GND.	TYPE			
IA-001	INTRUSION DETECTOR	(P) CIC, RM #2N		EXPOSED	1"	GRS			E-129			
IA-002		(P) ↓			1"				↓			
IA-003		(P) CIC, RM #2S			1"				E-132			
IA-004		(P) ↓			1"				↓			
IA-005		(M) CIC, RM #2N			1"				E-133			
IA-006		(M) ↓			1"				E-134			
IA-007		(M) CIC, RM #2S		EMBEDDED	1"				E-138			
IA-008		(A) CIC, RM #2N		EXPOSED	1"				E-139			
IA-009	N/W ENTR	↓		EMBEDDED	1"				E-155			
IA-011	S/W ENTR	CIC, RM #2S			1"				E-157			
IA-012	RM 22	↓			1"				E-158			
IA-013	N/W ENTR	CIC, RM #2N			1"				E-155	FUTURE ENTRANCE CONTRACTOR TO INSTALL EMBEDDED CONDUITS ONLY		
IA-014	N/E FUT ENTR	↓			1"				E-156			
IA-015	S/E FUT ENTR	CIC, RM #2S			1"				E-158			
IA-016	S/W FUT ENTR	↓			1"				E-138			
IA-017	(A) CIC, RM #2N			EXPOSED	1"				E-139			
IA-018	S/E ENTR	CIC, RM #2S		EMBEDDED	1"				E-158			
PA-042	PUBLIC ADDRESS EL #1	ATC & C		EMBEDDED	1"	GRS			E-158			
PA-001	PUBLIC ADDRESS	(P) ATC & C		EMBEDDED/EXPOSED	1"	GRS			E-129			
PA-002		(P) ↓			1"				↓			
PA-003		(P) ↓		EXPOSED	1"				E-130			
PA-004		(P) ↓			1"				E-132			
PA-005		(P) ↓			1"				E-130			
PA-006		(P) ↓			1"				E-132			
PA-007		(P) ↓		EXPOSED/EMBEDDED	1"				E-130			
PA-008		(P) ↓			1"				E-132			
PA-009		(P) ↓			1"				E-132			
PA-010		(P) ↓		EXPOSED	1"				E-133			
PA-011		(P) ↓			1"				E-133			
PA-012		(M) ↓		CONCEALED/EXPOSED	1"				E-132			
PA-013		(M) ↓			1"				E-132			
PA-014		(M) ↓			1"				E-132			
PA-015		(M) ↓			1"				E-132			
PA-016		(M) ↓			1"				E-132			
PA-017		(M) ↓			1"				E-132			
PA-018		(M) ↓			1"				E-132			
PA-019		(M) ↓			1"				E-132			
PA-020		(A) ↓		EMBEDDED/EXPOSED	1"				E-139			
PA-021		(A) ↓			1"				E-139			
PA-022	N/W ENTR	↓		EMBEDDED	1"				E-155			
PA-023	N/W ENTR	↓			1"				E-155			
PA-024	N/E ENTR	↓			1"				E-156			
PA-025	N/E ENTR	↓			1"				E-158			
PA-026	S/E ENTR	↓			1"				E-158			
PA-027	S/E ENTR	↓			1"				E-158			
PA-028	N/W FUT ENTR	↓			1"				E-155	FUTURE ENTRANCE CONTRACTOR TO INSTALL EMBEDDED CONDUITS ONLY		
PA-029	N/W FUT ENTR	↓			1"				E-155			
PA-030	N/E FUT ENTR	↓			1"				E-156			
PA-031	N/E FUT ENTR	↓			1"				E-158			
PA-032	S/E FUT ENTR	↓			1"				E-158			
PA-033	S/E FUT ENTR	↓			1"				E-158			
PA-034	S/W FUT ENTR	↓			1"				E-138			

ELECTRICAL CONDUIT AND CABLE SCHEDULE

NO.	FROM	TO	CKTS	CONDUIT			CONDUCTOR			DWG. NO.	SHT. NO.	REMARKS
				METHOD	SIZE	TYPE	NO. & SIZE	GND.	TYPE			
PA-035	PUBLIC ADDRESS S/W FUT ENTR	ATC & C		EMBEDDED	1"	GRS			E-138			
PA-036	PUBLIC ADDRESS (P)	ATC & C			1"				E-132			
PA-037	PUBLIC ADDRESS (M)	ATC & C			1"				E-135			
PA-038		(M) ↓		CONCEALED	1"				E-135			
PA-039		(M) ↓			1"				E-135			
SC-001	SCADA RM 11	(P) CIC, RM #2N		EXPOSED	1"	GRS			E-129			
SC-002	RM 17	(P) ↓			1"				↓			
SC-003	RM 15	(P) ↓			1"				↓			
SC-004	RM 21	(P) ↓			1"				↓			
SC-006	ESC #8	(P) ↓		EMBEDDED/EXPOSED	1"				E-130			
SC-007	ESC #7	(P) CIC, RM #2S		EMBEDDED	1"				E-131		FUTURE ESCALATOR CONTRACTOR TO INSTALL EMBEDDED CONDUITS ONLY	
SC-008	ESC #6	(P) ↓			1"				E-132			
SC-009	ELEV #2	(P) ↓			1"				E-132			
SC-010	ESC #5	(P) ↓			1"				E-131			
SC-011	ESC #4	(P) ↓			1"				E-132			
SC-012	RM 23	(P) ↓		EXPOSED	1"				E-132			
SC-013	RM 9	(P) ↓			2"				↓			
SC-014	RM 15	(P) ↓			1"				↓			
SC-015	FUT ELEV #3	(P) CIC, RM #2N		EMBEDDED/EXPOSED	1"				E-130			
SC-016	RM #23	(P) CIC, RM #2S		EXPOSED	2"				E-133			
SC-017	RM 17 & 19	(P) ↓			1"				↓			
SC-018	RM 11	(P) ↓			1"				↓			
SC-019	RM 5	(P) ↓			1"				↓			
SC-020	RM 12	(M) CIC, RM #2N			1"				E-134			
SC-021	RMS 13 & 14	(M) ↓			1"				↓			
SC-022	RM 9	(M) CIC, RM #2S		EMBEDDED	2"				E-138			
SC-023	RMS 13 & 14	(M) ↓			1"				↓			
SC-024	RM 5	(A) CIC, RM #2N			1"				E-139			
SC-025	RM 31	(A) ↓		EXPOSED	1"				E-139			
SC-026	RM #2N	(A) ↓		EXPOSED	2"				↓			
SC-028	ESC #9 N/W ENTR	↓		EMBEDDED	1"				E-155			
SC-029	ESC #11 N/E ENTR	↓			1"				E-156			
SC-030	ESC #3 S/W ENTR	CIC, RM #2S			1"				E-157			
SC-031	ELEV #1 S/E ENTR	↓			1"				E-158			
SC-032	ESC #1	↓			1"				↓			
SC-033	ESC #2 S/E ENTR	↓			1"				↓		FUTURE ESCALATOR CONTRACTOR TO INSTALL EMBEDDED CONDUITS ONLY	
SC-034	RM 6 S/E ENTR	↓			2"				↓			
SC-035	N/W FUT ENTR	CIC, RM #2N			1"				E-155		FUTURE ENTRANCE CONTRACTOR TO INSTALL EMBEDDED CONDUITS ONLY	
SC-036	N/E FUT ENTR	↓			1"				E-156			
SC-037	S/E FUT ENTR	CIC, RM #2S			1"				E-158			
SC-038	S/W FUT ENTR	↓			1"				E-138			
SC-039	ESC #10 N/W ENTR	CIC, RM #2N			1"				E-155		FUTURE ESCALATOR CONTRACTOR TO INSTALL EMBEDDED CONDUITS ONLY	
SC-044	FUTURE ELEV #4	↓			1"				↓		FUTURE ESCALATOR CONTRACTOR TO INSTALL EMBEDDED CONDUITS ONLY	
PA-040	PUBLIC ADDRESS (M)	ATC & C		CONCEALED	1"				E-135			
PA-041		(M) ↓			1"				↓			
TC-001	TUNNEL NORTH OUT	ATC & C		EXPOSED/EMBEDDED	3"	PVC			E-132			
TC-002		↓			3"				↓			
TC-003		↓			3"				↓			
TC-004		↓			3"				↓			
TC-005	TUNNEL NORTH IN	↓			3"				↓			
TC-006		↓			3"				↓			
TC-007		↓			3"				↓			
TC-008		↓			3"				↓			
TC-009	TUNNEL SOUTH IN	↓			3"				↓			
TC-010		↓			3"				↓			
TC-011		↓			3"				↓			

SC CONDUITS CONTINUE ON E-167

<p>THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA</p>				<p>DESIGNED BY <i>F. Roth</i> DRAWN BY <i>C. Linton</i> CHECKED BY <i>A. Lopez</i> IN CHARGE <i>A. Lopez</i> DATE 7-31-88</p>		<p>SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT</p> <p>DELON HAMPTON & ASSOCIATES, Chartered SYDIA & HENNESSY, INC. ENGINEERS</p>		<p>LA CBD TO NORTH HOLLYWOOD 5TH/HILL STATION RACEWAY & CABLE SCHEDULES-5</p>		<p>CONTRACT NO. A145 DRAWING NO. E-166 SCALE NO SCALE SHEET NO. A620/184</p>	
<p>REV. DATE BY SUB APP DESCRIPTION</p>				<p>REV. DATE BY SUB APP DESCRIPTION</p>		<p>REV. DATE BY SUB APP DESCRIPTION</p>		<p>REV. DATE BY SUB APP DESCRIPTION</p>		<p>REV. DATE BY SUB APP DESCRIPTION</p>	



ELECTRICAL CONDUIT AND CABLE SCHEDULE

NO.	FROM	TO	CKTS	CONDUIT			CONDUITOR			DWG. NO.	SHT. NO.	REMARKS
				METHOD	SIZE	TYPE	NO. & SIZE	GND.	TYPE			
EC-012	TUNNEL SOUTH IN	ATC & C		EXPOSED/EMBEDDED	3"	PVC			E-132			
EC-013	TUNNEL SOUTH OUT				3"							
TC-014					3"							
TC-015					3"							
TC-016					3"							
SC-117	TUNNEL NORTH OUT	ETS NORTH OUT		EMBEDDED/EMBEDDED	1 1/2"	GRS			E-129			
SC-118					1 1/2"							
SC-119	TUNNEL NORTH IN	ETS NORTH IN			1 1/2"							
SC-120					1 1/2"							
SC-121	TUNNEL SOUTH OUT	ETS SOUTH OUT			1 1/2"				E-132			
SC-122					1 1/2"							
SC-123	TUNNEL SOUTH IN	ETS SOUTH IN			1 1/2"							
SC-124					1 1/2"							
MORE TC CONDUITS ON LOWER RIGHT.												

ELECTRICAL CONDUIT AND CABLE SCHEDULE

NO.	FROM	TO	CKTS	CONDUIT			CONDUITOR			DWG. NO.	SHT. NO.	REMARKS
				METHOD	SIZE	TYPE	NO. & SIZE	GND.	TYPE			
TV-042	CTTV	S/W FUT ENTR	ATC & C	EMBEDDED	1"	GRS			E-138			
TV-043		NW FUT ENTR			1"				E-155			
TV-044		N/E FUT ENTR			1"				E-156			
FC-001	J-BOX	(M)	VENDING MACHINE	EMBEDDED	2"	GRS			E-134			
FC-002					2"							
FC-003	SFCCU	(M)	J-BOX		2"							
FC-004		(M)			2"							
FC-005		(M)	CIG, RM #2N		2"							
FC-006		(M)			2"							
FC-007	J-BOX	(M)	VENDING MACHINE		2"				E-137			
FC-008		(M)			2"							
FC-009	SFCCU	(M)	J-BOX		2"							
FC-010		(M)			2"							
FC-011		(M)	CIG, RM #2S		2"							
FC-012		(M)			2"							
FY-001	GAS DETECTOR	(P)	CIG, RM #2N	EXPOSED/EMBEDDED	1"	GRS			E-129			
FY-002	6L #10(P)	(P)		↓	1"				E-130			
FY-004		(P)	CIG, RM #2S	EXPOSED	1"				E-133			
FY-005		(P)	CIG, RM #2N	EMBEDDED/EXPOSED	1"				E-130			
FY-006	6X #8	(P)			1"							
FY-007		(P)	CIG, RM #2S	EMBEDDED	1"							
FY-008	ESC #5	(P)			1"				E-131			
FY-009		(P)			1"							
FY-010	ELEV #2	(P)			1"				E-132			
FY-011	ESC #4	(P)			1"							
FY-012		(P)			1"							
FY-013		(P)			1"							
FY-016	ELEV #4 NW ENTR	(P)	CIG, RM #2N	EMBEDDED	1"				E-133		FUTURE ELEVATOR CONTRACTOR TO INSTALL EMBEDDED CONDUITS ONLY	
FY-019	ELEV #1	(P)	CIG, RM #2S		1"				E-158			
FY-020	FUT ESC #6	(P)			1"				E-131		FUTURE ESCALATOR CONTRACTOR TO INSTALL EMBEDDED CONDUITS ONLY	
FY-022	GAS DETECTOR	(P)	CIG, RM #2S	EXPOSED	1"	GRS			E-133			
FY-023	6X #7	(P)		EMBEDDED	1"				E-130			
FY-024	NW(FUT) ENTR	(P)	CIG, RM #2N	EMBEDDED	1"				E-155		FUTURE ESCALATOR CONTRACTOR TO INSTALL EMBEDDED CONDUITS ONLY	
CA-016	ATEL RM #2S	(P)	CIG, RM #2S	EXPOSED	1"	GRS			E-133			
CA-022	RM #31	(A)	CK, RM #2S	EMBEDDED	1"	GRS			E-139			
CA-023	RM #2N	(A)		EXPOSED	1"							
CA-025	RM #29 S/E ENTR	(A)	CIG, RM #2S	EMBEDDED	1"	GRS			E-158			
TC-017	NORTH-OUT	NORTH CABLE RM		EMBEDDED	2"	GRS			E-129			
TC-018	NORTH-IN											
TC-019	CENTER PLATF-OUT	E&C RM #3 & 4							E-131			
TC-020	CENTER-PLATF-IN											
TC-021	SOUTH-OUT								E-152			
TC-022	SOUTH-IN											

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1954, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA

DESIGNED BY: *F. Roth*
 DRAWN BY: *C. Linton*
 CHECKED BY: *A. G. K. Smith*
 IN CHARGE: *A. G. K. Smith*
 DATE: 7-21-88

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

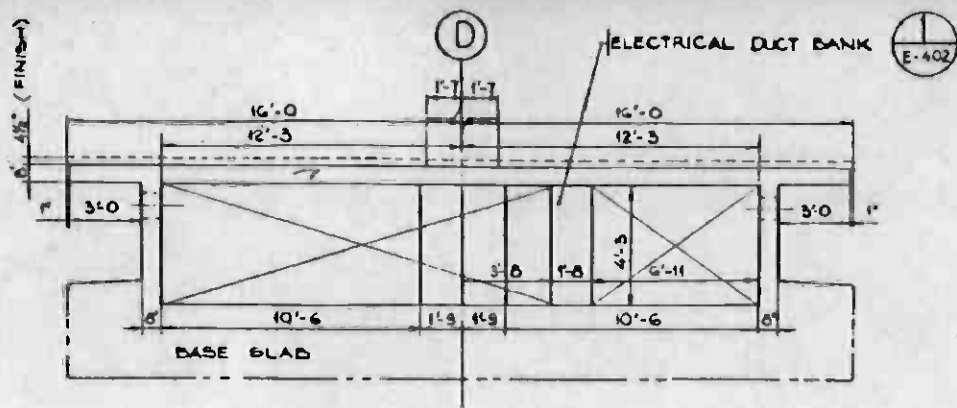
DELOH HAMPTON & ASSOCIATES, Chartered
 SYSKA & HENNESSY, INC.

DMJM/PBOD/KE/HWA
 GENERAL CONSULTANTS

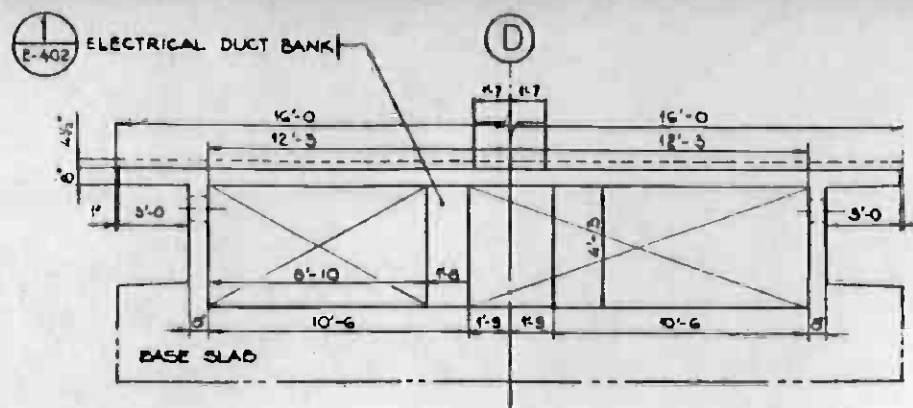
APPROVED: *Howard J. Schaff*

LA CBD TO NORTH HOLLYWOOD
5TH/HILL STATION
RACEWAY & CABLE SCHEDULES-6

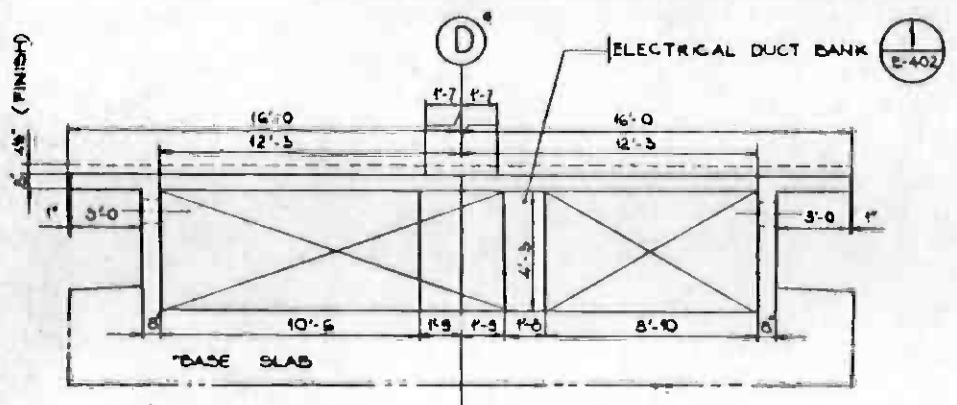
CONTRACT NO. A145
 DRAWING NO. E-167
 SCALE: NO SCALE
 SHEET NO. A620/185



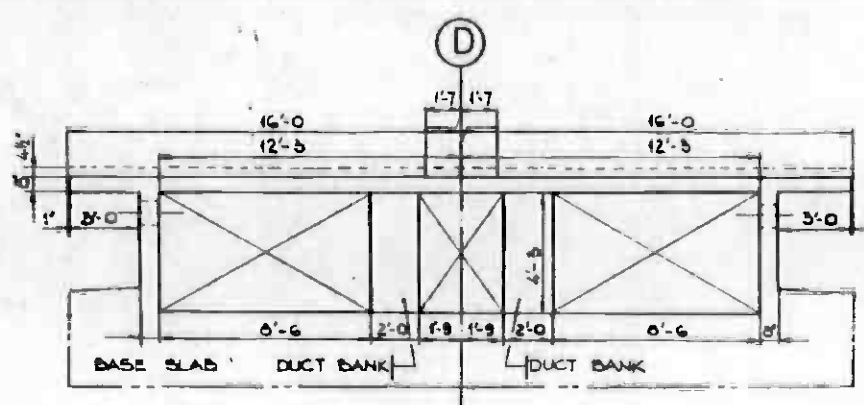
SECTION A
SCALE: 1/4" = 1'-0"
E-402 E-117, E-129



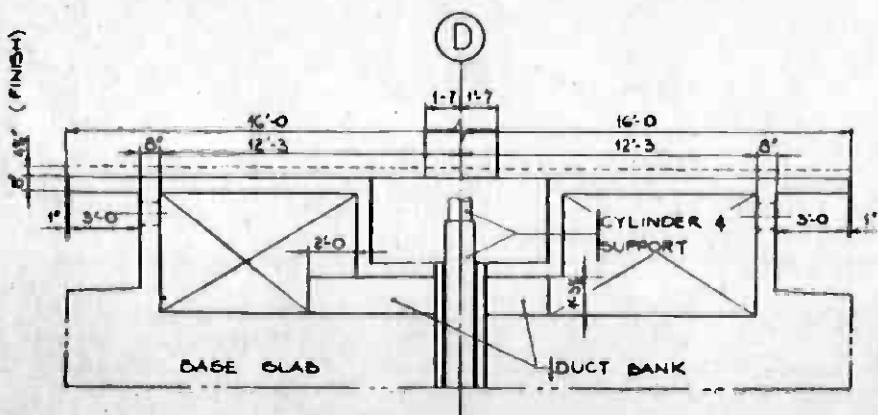
SECTION B
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E-402 E-118, E-130



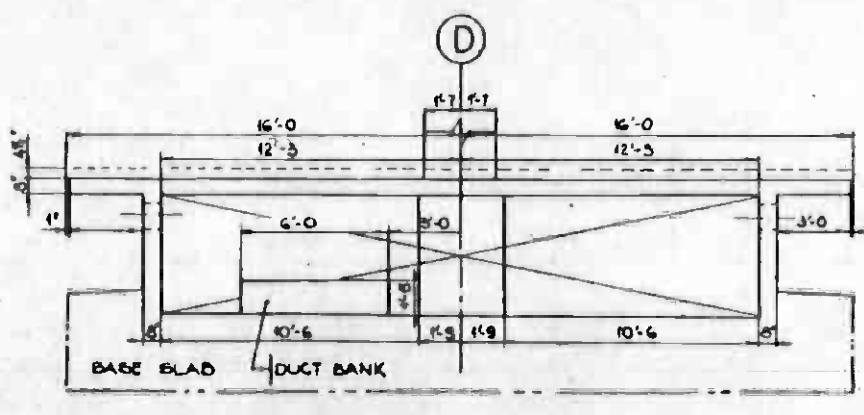
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E-402 E-119, E-131



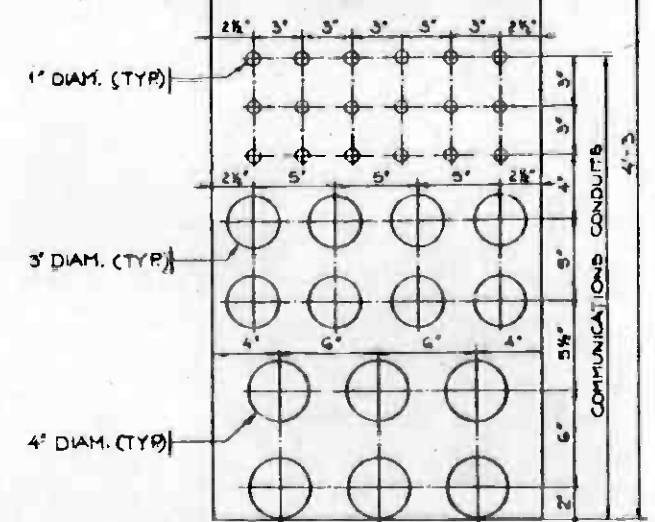
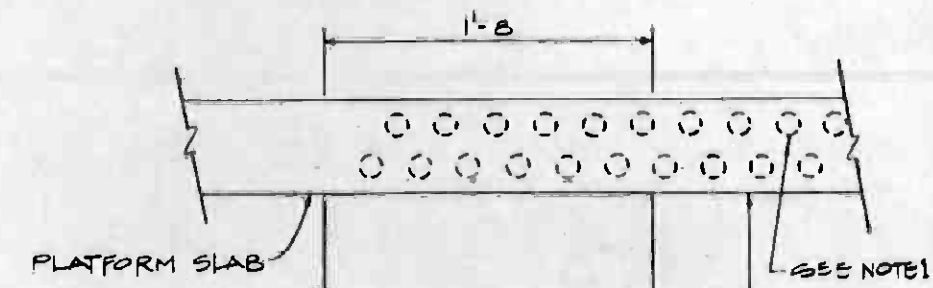
SECTION D
SCALE: 1/4" = 1'-0"
E-402 E-119, E-131



SECTION E
SCALE: 1/4" = 1'-0"
E-402 E-120, E-132



SECTION F
SCALE: 1/4" = 1'-0"
E-402 E-120, E-132



UNDERPLATFORM ELECTRICAL DUCT BANK DETAIL: TYPICAL ARRANGEMENT
E-402

NOTE:
1. IF DUCTBANK SPACE IS INSUFFICIENT TO ACCOMMODATE ALL CONDUITS AT CERTAIN LOCATIONS, BEND EXCESS 1"Ø CONDUITS ONLY UP AND EMBED IN PLATFORM SLAB. THESE CONDUITS MAY BE TERMINATED IN THE HANDHOLE FROM THE BOTTOM RATHER THAN FROM THE SIDES, AS NECESSARY. CONTRACTOR MUST COORDINATE THESE CONDUIT RUNS WITH THE STRUCTURAL REINFORCEMENT AND MUST SUBMIT FOR APPROVAL A COMPLETE AND DETAILED LAYOUT OF HOW HE INTENDS TO RUN AND TERMINATE THESE CONDUITS.



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY <i>W. Schaefer</i> DRAWN BY <i>C. Lumban</i> CHECKED BY <i>J. Roth</i> IN CHARGE <i>W. Schaefer</i> DATE 7-31-88				SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT DELOM HAMPTON & ASSOCIATES, CHIEF ENGINEER SYBKA & HENNESSY, INC. REGISTERED PROFESSIONAL ENGINEER No. 11261 STATE OF CALIFORNIA				CONTRACT NO. A145 DRAWING NO. E-402 REV. 1 SCALE AS NOTED SHEET NO. A620/186			
REVISED PER CRG-530 INITIAL ISSUE				DMJM/PBQD/KE/HWA GENERAL CONSULTANTS APPROVED: <i>Harold J. Schaefer</i>				LA CBD TO NORTH HOLLYWOOD 5TH AND HILL STATION UNDERPLATFORM ELECTRICAL DUCTS							
REV.	DATE	BY	DWG. APP.	DESCRIPTION	REV.	DATE	BY	DWG. APP.	DESCRIPTION	REV.	DATE	BY	DWG. APP.	DESCRIPTION	

ELECTRICAL SCHEMATIC DIAGRAM SYMBOLS

ONE-LINE AND LOGIC DIAGRAM SYMBOLS

ABBREVIATIONS

SYMBOL	REPRESENTS
	TRANSFORMER
	PUSHBUTTON SWITCH, MOMENTARY CONTACT, N.C. LO INDICATES LOCK-OUT
	PUSHBUTTON SWITCH, MOMENTARY CONTACT, N.O.
	MECHANICAL CONNECTION
	SINGLE POLE CIRCUIT BREAKER, SIZE AS NOTED
	NORMALLY OPEN CONTACT, AUX. OR RELAY. TDE - TIME DELAY AFTER ENERGIZED TDD - TIME DELAY AFTER DE-ENERGIZED
	NORMALLY CLOSED CONTACT, AUX. OR RELAY. TDE - TIME DELAY AFTER ENERGIZED TDD - TIME DELAY AFTER DE-ENERGIZED.
	COIL, OPERATING 42 - STARTER OR CONTACTOR OTHER NO. - RELAY PER IEEE DEVICE NO.
	OVERLOAD RELAY CONTACTS
	OVERLOAD RELAY WITH HEATER
	FUSE WITH RATING
	GROUND CONNECTION
	PILOT LIGHT - R-RED, G-GREEN, A-AMBER, W-WHITE, C-CLEAR, B-BLUE
	SOLENOID COIL
	LIMIT SWITCH, NORMALLY OPEN
	LIMIT SWITCH, NORMALLY CLOSED
	LIMIT SWITCH, N.O., HELD CLOSED BY ACTUATOR
	LIMIT SWITCH, N.C., HELD OPEN BY ACTUATOR
	PRESSURE SWITCH, NORMALLY OPEN, CLOSES ON RISING PRESSURE
	PRESSURE SWITCH, NORMALLY CLOSED, OPENS ON RISING PRESSURE
	FLOW SWITCH, NORMALLY OPEN, CLOSES WITH FLOW
	FLOW SWITCH, NORMALLY CLOSED, OPENS WITH FLOW
	TEMPERATURE SWITCH, NORMALLY OPEN, CLOSES ON RISING TEMPERATURE (COOLING THERMOSTAT)
	TEMPERATURE SWITCH, NORMALLY CLOSED, OPENS ON RISING TEMPERATURE (HEATING THERMOSTAT)
	LEVEL CONTROLLER (SWITCH), NORMALLY OPEN AT LOW POSITION, CLOSES ON RISE
	LEVEL CONTROLLER (SWITCH), NORMALLY CLOSED AT LOW POSITION, OPENS ON RISE
	SELECTOR SWITCH, HAND-OFF-AUTOMATIC, OR AS NOTED: K=KEY OPERATED, KK=KIRK KEY LOCK (STANDARD OR HEAVY DUTY INDUSTRIAL CONTROL)

SYMBOL	REPRESENTS
	MANUAL MOTOR STARTER
	SINGLE POLE SINGLE THROW SWITCH
	SINGLE POLE DOUBLE THROW SWITCH
	MULTICONDUCTOR CABLE
	SHIELDED 2 CONDUCTOR CABLE WITH SHIELD GROUNDED
	COAXIAL CABLE
	DISCONNECTING DEVICE
	CONDUCTORS, CONNECTED
	CONDUCTORS, NOT CONNECTED
	CURRENT TRANSFORMER WITH POLARITY MARKINGS
	POTENTIAL TRANSFORMER WITH POLARITY MARKINGS
	OUTLINE OF EQUIPMENT
	FUTURE OR N.I.C.
	TERMINAL STRIP
	WIRING TERMINAL
	BATTERY
	AUDIBLE SIGNAL
	INSTRUMENT GROUNDING
	WIRE DESIGNATION SUFFIX COMPLETE DESIGNATION TO BE PRECEDED BY EQUIPMENT PREFIX VIZ: EF1-5
	RECTIFIER, DRY TYPE, FULL WAVE
	TRANSDUCER, E/I - VOLTAGE TO CURRENT I/E - CURRENT TO VOLTAGE
	CIRCUIT BREAKER WITH SOLID STATE TRIP DEVICE
	CIRCUIT BREAKER, MEDIUM VOLTAGE
	POWER BREAKER, 480 VAC

SYMBOL	REPRESENTS
	SHORTING TYPE TERMINAL BLOCK
	SELECTOR SWITCH, VS - VOLTMETER, AS - AMMETER
	INDICATING TYPE METER, AM - AMMETER, VM - VOLTMETER
	UNDERVOLTAGE RELAY
	THERMAL OVERLOAD DEVICE
	AC INSTANTANEOUS OVERCURRENT TRIP SETTING
	AC TIME OVERCURRENT TRIP SETTING OR RELAY
	AC GROUND OVERCURRENT RELAY (RESIDUAL)
	AC GROUND OVERCURRENT TRIP SETTING OR RELAY
	AC CIRCUIT BREAKER
	OVERVOLTAGE RELAY
	TIME DELAYED RELAY
	PERMISSIVE CONTROL DEVICE
	ALARM RELAY
	LOCK-OUT RELAY
	CONTROL SWITCH
	ANNUNCIATION DEVICE - INDICATING TYPE
	AUDIBLE ALARM
	MOLDED CASE CIRCUIT BREAKER
	SERIES TRIP DEVICE
	CURRENT TRANSFORMER OR CURRENT SENSOR OF SOLID STATE TRIP DEVICE
	2-WINDING TRANSFORMER
	FUSE
	DELTA CONNECTION
	WYE CONNECTION
	CABLE TERMINATION
	LOGIC DIAGRAM
	AND GATE
	OR GATE
	NOT GATE
	ON-DELAY
	OFF-DELAY
	COINCIDENCE MATRIX (TWO-THIRD)
	TEST DEVICE
	BISTABLE FOR ANALOG INPUT/DIGITAL OUTPUT L - WHEN INPUT IS LOWER H - WHEN INPUT IS HIGHER.
	INDICATING LIGHT: R-RED-OPERATING, FLOWING, INCREASING CONDITION G-GREEN-NOT OPERATING, NOT FLOWING, DECREASING CONDITION A-AMBER-AUTOMATIC STANDBY W-WHITE-TROUBLE AT THE SYSTEM B-BLUE-SPECIAL CONDITION C-CLEAR-POWER AVAILABLE
	MANUAL FUSED DISCONNECT SWITCH

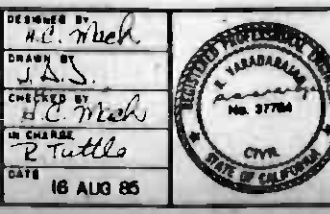
ACCP	AIR CONDITIONING CONTROL PANEL
ACP	AUXILLIARY CONTROL PANEL
FSCP	FIRE/SECURITY CONTROL PANEL
EMP	EMERGENCY MANAGEMENT PANEL
RCP	REFRIGERATION CONTROL PANEL
CIC	COMMUNICATIONS INTERFACE CABINET
AHU	AIR HANDLING UNIT
LP	LIGHTING PANEL
EBD	EMERGENCY BYPASS DAMPER
EFD	EMERGENCY FAN DAMPER
MCC	MOTOR CONTROL CENTER
LAP	LOCAL ANNUNCIATION PANEL
AHCP	AIR HANDLING CONTROL PANEL
AUX.	AUXILIARY
N.I.C.	NOT IN CONTRACT
CORCND.	CONDUIT
SPST	SINGLE POLE SINGLE THROW
SPDT	SINGLE POLE DOUBLE THROW
N.O.,N.C.	NORMALLY OPEN, NORMALLY CLOSED
C.O.	RACEWAY ONLY (CONDUIT ONLY)
MC	METALLIC CONDUIT
NMC	NON-METALLIC CONDUIT
GRS	GALVANIZED RIGID STEEL CONDUIT
PVC	POLYVINYL CHLORIDE CONDUIT
IMC	INTERMEDIATE METAL CONDUIT
TEL	TELEPHONE
GND	GROUND
FUT	FUTURE
ELEV	ELEVATION, ELEVATOR
MTD	MOUNTED
MTG	MOUNTING
A.F.F.	ABOVE FINISHED FLOOR
FLR	FLOOR
RTU	REMOTE TERMINAL UNIT
ZC	ZONE CONTROL
+4'-6"	MOUNTING HEIGHT TO C OF OUTLET ABOVE FINISHED FLOOR
IC	INTERCOM
OMPR	DAMPER
MTR	MOTOR
HTR	HEATER
EXH	EXHAUST
COMPT	COMPARTMENT
SW	SWITCH
FS	FLOW SWITCH
T	TEMPERATURE SWITCH
TS	TORQUE SWITCH
GOCP	GAS DETECTION CONTROL PANEL
AIC	AMPERES INTERRUPTING CAPACITY
SUP	SUPPLY
VIB	VIBRATION
BKR	BREAKER
MAINT	MAINTENANCE
CKT	CIRCUIT
XFMR	TRANSFORMER
CONT	CONTROL
PWR	POWER
SWGR	SWITCHGEAR
TEMP	TEMPERATURE
ETS	EMERGENCY TRIP STATION
T/R	TOP OF RAIL
TYP	TYPICAL
TBD	TO BE DETERMINE
MDF	MAIN DISTRIBUTION FRAME
WD-P	WIRING DIAGRAM NO. P
LCS	LOCAL CONTROL STATION
M.L.O.	MAIN LUGS ONLY
M.B.	MAIN BREAKER
C.C.	CENTRAL CONTROL
DISC. SW.	DISCONNECT SWITCH
XFMR	TRANSFORMER
A	AMPERE
V	VOLT

REV.	DATE	BY	SUB.	APP.	DESCRIPTION

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DESIGNED BY: *H.C. Mehl*
 DRAWN BY: *J.S.S.*
 CHECKED BY: *H.C. Mehl*
 IN CHARGE: *R. Tuttle*
 DATE: 16 AUG 85

REVISED PER CR6-528.
 INITIAL ISSUE



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DELON HAMPTON & ASSOCIATES, CHARTERED
 DMJM/PBQD/KE/HWA
 GENERAL CONSULTANTS

APPROVED: *[Signature]*

LA CBD TO NORTH HOLLYWOOD

SCHEMATIC DIAGRAM
 SYMBOLS AND ABBREVIATIONS

CONTRACT NO. A-146
 DRAWING NO. E-101
 SHEET NO. A620/192

RECEPTACLE OUTLETS

PANELBOARDS, SWITCHBOARDS, ETC.

GENERAL CONSTRUCTION NOTES

- SINGLE RECEPTACLE OUTLET
- DUPLEX RECEPTACLE OUTLET, GFI TYPE
- SINGLE SPECIAL-PURPOSE RECEPTACLE OUTLET (30 AMP, 2 POLE, OR AS NOTED) *
- DUPLEX SPECIAL-PURPOSE RECEPTACLE OUTLET *
- * USE SUBSCRIPT LETTERS TO INDICATE FUNCTION (FC - FARE COLLECTION, ETC.)
- FLOOR BOX WITH SINGLE RECEPTACLE
- FLOOR BOX WITH DUPLEX RECEPTACLE
- FLOOR BOX WITH SERVICE FITTING AS NOTED
- FLOOR BOX - PUBLIC TELEPHONE
- FLOOR BOX - PRIVATE TELEPHONE
- UNDERFLOOR DUCT WITH ASSOCIATED OUTLETS AS INDICATED
- TRENCH DUCT

- AHCP - AIR HANDLING UNIT CONTROL PANEL
 - ACCP - AIR CONDITIONING CONTROL PANEL
- CONDUCTORS & CONDUIT**
- RACEWAY EMBEDDED IN FLOOR.
 - RACEWAY EMBEDDED IN CEILING OR WALL.
 - RACEWAY EXPOSED OR CONCEALED IN DROP CEILING.
 - BRANCH CIRCUIT HOME RUN TO PANELBOARD. LL2 DENOTES PANEL LL2 AND NUMERALS IDENTIFY CIRCUIT NUMBERS.
 - INDICATES NUMBER OF #12 WIRES. NO CROSS LINES INDICATES 2#12 WIRES UNLESS NOTED
 - WIRE & RACEWAY SIZE FOR #10 AND LARGER
 - CF - FIRE TELEPHONE (F-TEL)
 - L - TUNNEL LIGHT
 - R - TUNNEL AUXILIARY POWER
 - P - TUNNEL PUMP STATION
 - BR - TUNNEL CONVENIENT OUTLET
 - FEEDER OR HOME RUN RACEWAY IDENTIFICATION AS FOLLOWS: A-AUXILIARY, T-TRACTION POWER, TC-TRAIN CONTROL, EM-EMERGENCY, C-COMMUNICATION (SEE MD-DWG FOR SPECIFIC SYMBOL OF EACH SUBSYSTEM.)
 - SL - TUNNEL SUMP LEVEL
 - GA - TUNNEL GAS MONITORING

1. CONTRACTOR SHALL INSTALL EMPTY RACEWAY SYSTEMS ONLY FOR THE FOLLOWING SUBSYSTEMS.
 - a. AUTOMATIC TRAIN CONTROL.
 - b. COMMUNICATION INCLUDING FIRE PROTECTION AND GAS DETECTION.
 - c. TRACTION POWER (ETS).
2. ALL OTHER SYSTEMS SHALL INCLUDE FURNISHING, INSTALLING, WIRING, TERMINATING AND TESTING, UNLESS OTHERWISE NOTED.
3. ALL EMPTY CONDUITS SHALL BE PROPERLY TAGGED, EQUIPPED WITH PULLING CORDS AND CAPPED OR OTHERWISE PROPERLY PROTECTED FROM DIRT, MOISTURE AND OTHER INTRUSIONS.
4. INTERFACE WITH ADJACENT CONTRACT (S):
 - d. EMPTY CONDUIT (S)-CAPPED AND TAGGED AT THE INTERFACE POINT.
 - e. CONDUITS WITH (WIRING UNDER 2 ABOVE)- CAPPED AND TAGGED AT THE INTERFACE POINT. COIL CONDUCTORS AT THE HANDHOLE, PULL BOX, JUNCTION BOX, OR LIGHTING FIXTURE CLOSEST TO THE INTERFACE POINT. COILED CONDUCTORS SHALL BE OF SUFFICIENT LENGTH TO PERMIT FUTURE SPLICING. (BY THE LATER CONTRACTOR).
 - f. THE EARLIER CONSTRUCTION CONTRACTOR SHALL BE RESPONSIBLE FOR THE TESTING (TO THE EXTENT POSSIBLE) OF HIS PORTION OF THE SYSTEMS. THE LATER CONSTRUCTION CONTRACTOR SHALL BE RESPONSIBLE BOTH FOR TESTING OF HIS PORTIONS OF THE SYSTEMS AS WELL AS FOR THE OVERALL SYSTEM TESTING.
5. GROUNDING: INSTALL PROTECTIVE SLEEVE (12" LONG METALLIC CONDUIT) OVER THE GROUND WIRE (S) WITH 36" PIGTAIL, PROPERLY COILED AND PROTECTED. INSTALL TEMPORARY MARKER AT THE EMBEDDED LOCATION (S).
6. ALL EMBEDDED CONDUITS OR DUCT BANKS, EXCEPT FOR COMMUNICATION AND TRAIN CONTROL SUBSYSTEMS, SHALL BE 1" MINIMUM SIZE PVC CONDUITS UNLESS OTHERWISE NOTED. ALL EMBEDDED COMMUNICATION AND TRAIN CONTROL SUBSYSTEMS CONDUITS SHALL BE 1" MINIMUM SIZE GALVANIZED RIGID STEEL CONDUITS UNLESS OTHERWISE NOTED. ALL EXPOSED OR CONCEALED (IN CEILING) CONDUITS SHALL BE 3/4" MINIMUM SIZE GALVANIZED RIGID STEEL CONDUITS UNLESS OTHERWISE NOTED.
7. ALL CONDUCTORS LEFT COILED SHALL HAVE THE ENDS WRAPPED WITH INSULATING AND MOISTURE-PROOF TAPE.
8. OTHER CONTRACT DRAWINGS REFERENCED WHERE IN MAY BE INSPECTED AT THE OFFICES OF THE DISTRICT OR ITS DESIGNEE.

PANELBOARDS, SWITCHBOARDS, ETC.

- PANELBOARD
- TERMINAL CABINET, TYPES AS FOLLOWS:
 - CIC - COMMUNICATION INTERFACE CABINET
 - TTC - TELEPHONE TERMINAL CABINET
- TRANSFORMER
- LOAD CENTER
- PULL BOX
- MOTOR CONTROLLER, SUBSCRIPT INDICATES NEMA SIZE
- FUSED DISCONNECT SWITCH SUBSCRIPT INDICATES FUSE SIZE AND NO. OF POLES
- NON-FUSED DISCONNECT SWITCH SUBSCRIPT INDICATES SIZE AND NO. OF POLES
- ELECTRICAL MANHOLE
- ELECTRICAL HANDHOLE
- COMBINATION MAGNETIC MOTOR STARTER, FUSIBLE SUBSCRIPT INDICATES NEMA SIZE
- COMBINATION MAGNETIC MOTOR STARTER NON-FUSIBLE. SUBSCRIPT INDICATES NEMA SIZE
- COMBINATION MAGNETIC MOTOR STARTER, WITH CIRCUIT BREAKER. SUBSCRIPT INDICATES NEMA SIZE
- MOTOR, WITH IDENTIFICATION, INSERT INDICATES HORSEPOWER. THREE PHASE OR SINGLE PHASE
- POWER PANEL
- SWITCHBOARD (SWBD) OR MOTOR CONTROL CENTER (MCC)
- CONTROL PANEL, TYPES AS FOLLOWS:
 - HCP - HALON CONTROL PANEL
 - FCP - FAN CONTROL PANEL
 - EMP - EMERGENCY MANAGEMENT PANEL
 - ACP - AUXILIARY CONTROL PANEL

- GROUND WIRE
- RACEWAY TURNED UP OR TOWARDS VIEWER
- RACEWAY TURNED DOWN OR AWAY FROM VIEWER
- UNDERGROUND CONDUIT BANK (INDICATE TYPE, SIZE AND NUMBER OF CONDUITS BY CROSS SECTION IDENTIFICATION OF EACH RUN, OR BY NOTATION).
- GROUND ROD
- RACEWAY CAPPED

EQUIPMENT IDENTIFICATION

- EM - IE EMERGENCY FAN NO.1 AT EAST END
- UF - IE UNDER PLATFORM EXHAUST FAN NO.1 AT EAST END.
- AHU - IE STATION SUPPLY FAN AT AIR HANDING UNIT NO.1 EAST END
- SF - IE AUX. POWER ROOM SUPPLY FAN NO.1, EAST END
- MF - IE SMOKE EXHAUST FAN NO.1 AT EAST END
- FD - IE FAN DAMPER NO.1, EAST END
- TD - IE TRACK DAMPER NO.1, EAST END
- BD - IE BY-PASS DAMPER NO.1, EAST END
- P - IE PUMP NO.1, EAST END
- DH - IE DUCT HEATER NO.1, EAST END
- PP - POWER PANEL
- LTP - LIGHTING PANEL
- TLP - TUNNEL LIGHTING PANEL
- ES - IE ESCALATOR NO.1, EAST END
- MCC - MOTOR CONTROL CENTER
- EL - IE ELEVATOR NO.1, EAST END
- LCS - LOCAL CONTROL STATION
- SWBD - SWITCHBOARD
- ATS - AUTOMATIC TRANSFER SWITCH
- BKR - BREAKER
- STR - STARTER
- HTR - HEATER

LIGHTING OUTLETS

- OUTLET FOR INCANDESCENT OR HIGH INTENSITY DISCHARGE FIXTURE
- FLUORESCENT FIXTURE OUTLET
- EXIT LIGHT OUTLET, TYPE Y
- EST BLUE LIGHT OUTLET, TYPE Z
- JUNCTION BOX
- LETTER SUBSCRIPT ADJACENT TO FIXTURE OUTLET DESIGNATES SWITCH CONTROL
- FLOODLIGHT, ARROWS INDICATE DIRECTION OF BEAM
- EMERGENCY LIGHT OUTLET, TYPE X

SPECIAL IDENTIFICATION (USED NEXT TO SYMBOL)

- WP - WEATHER PROOF
- RT - RAIN TIGHT
- G - GROUND
- WT - WATER TIGHT
- DT - DUST TIGHT
- R - RECESSED
- VT - VAPOR TIGHT
- EP - EXPLOSION PROOF
- F - FLUSH

ABBREVIATIONS

- C OR CND - CONDUIT
- SPST - SINGLE POLE SINGLE THROW
- SPDT - SINGLE POLE DOUBLE THROW
- N.O., N.C. - NORMALLY OPEN, NORMALLY CLOSED
- NIC - NOT IN THIS CONTRACT
- C.O - RACEWAY ONLY
- MC - METALLIC CONDUIT
- NMC - NON-METALLIC CONDUIT
- GRS - GALVANIZED RIGID STEEL CONDUIT
- P.V.C. - POLYVINYL CHLORIDE CONDUIT
- IMC - INTERMEDIATE METAL CONDUIT
- TEL - TELEPHONE
- GND - GROUND
- FUT - FUTURE
- ELEV - ELEVATION, ELEVATOR
- MTD, MTG - MOUNTED, MOUNTING
- A.F.F. - ABOVE FINISHED FLOOR
- +4'-6" MOUNTING HEIGHT TO C OF OUTLET ABOVE FINISH FLOOR
- FL - FLOOR
- ZC - ZONE CONTROL
- RTU - REMOTE TERMINAL UNIT
- FVNR - FULL VOLTAGE, NON-REVERSIBLE
- FVR - FULL VOLTAGE, REVERSIBLE



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DESIGNED BY
H.C. Mehl
DRAWN BY
J.A. Jones
CHECKED BY
H.C. Mehl
IN CHARGE
R. Tuttle
DATE
16 AUG 85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DELOH HAMPTON & ASSOCIATES, CONSULTANTS

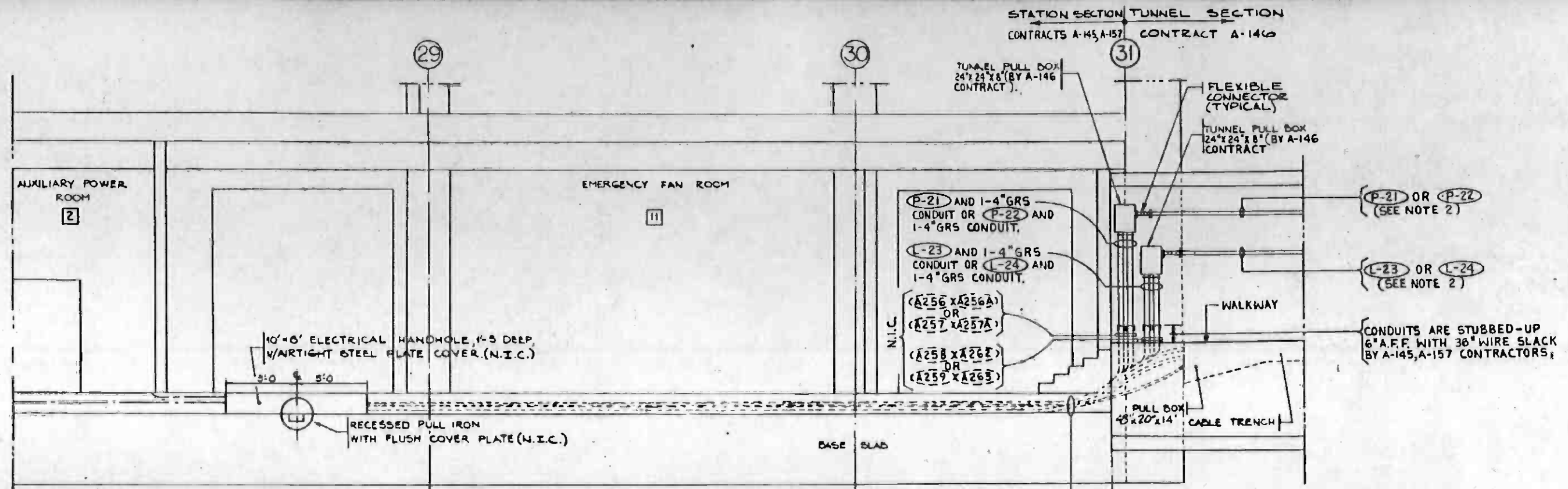
DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

APPROVED: *[Signature]*

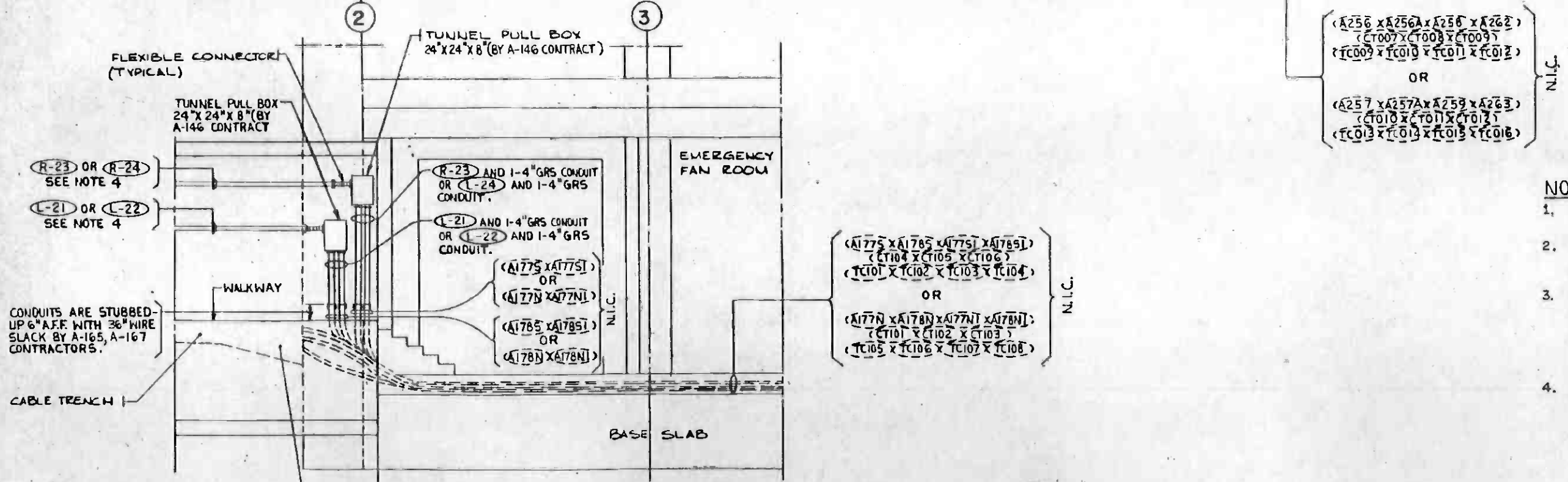
LA CBD TO NORTH HOLLYWOOD
ELECTRICAL PLAN
SYMBOLS AND ABBREVIATIONS

CONTRACT NO. A-146
DRAWING NO. E-102
SCALE NONE
SHEET NO. A620/193

REV.	DATE	BY	SUB.	APP.	DESCRIPTION
1	11-10-84	BALEEM			REVISED PER CRG-528.
2	11-25-84	G.M.			INITIAL ISSUE



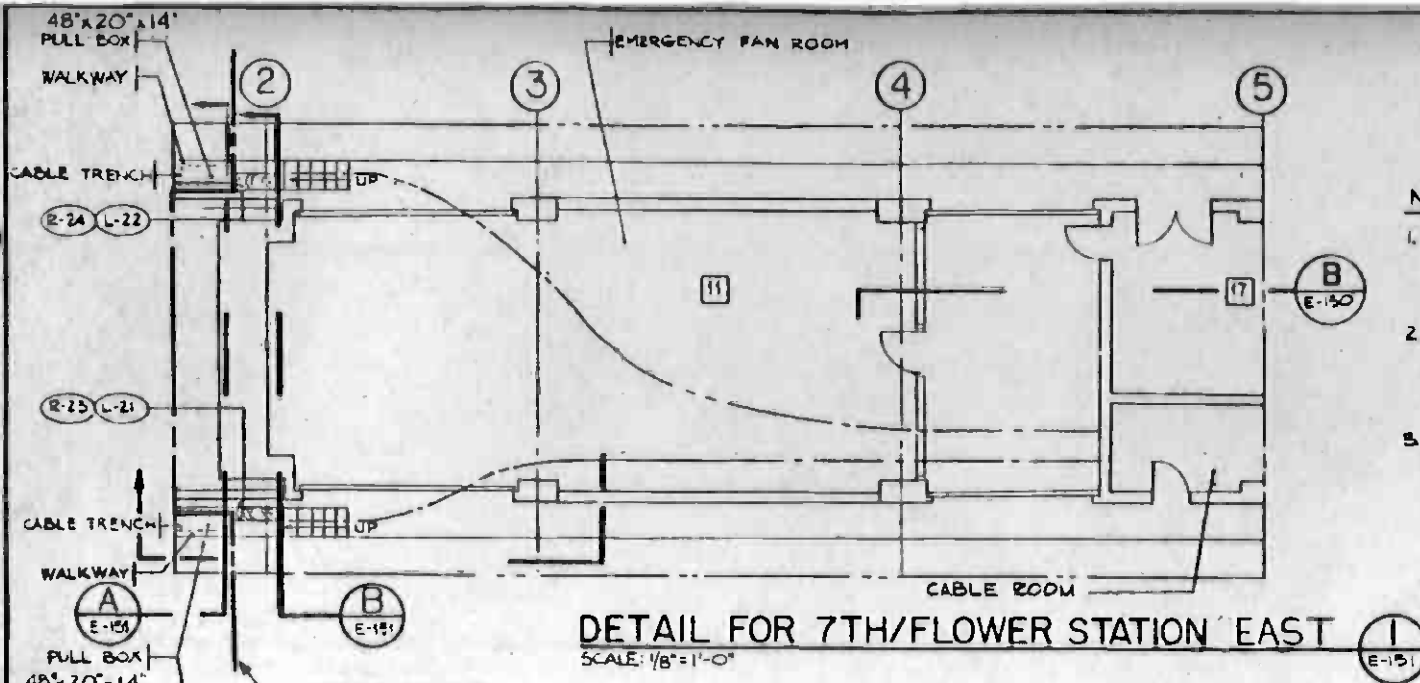
SECTION FOR 5TH/HILL STATION
SCALE: 1/4" = 1'-0" (WEST SIDE OF STATION)



SECTION FOR 7TH/FLOWER STATION
SCALE: 1/4" = 1'-0" (EAST SIDE OF STATION)

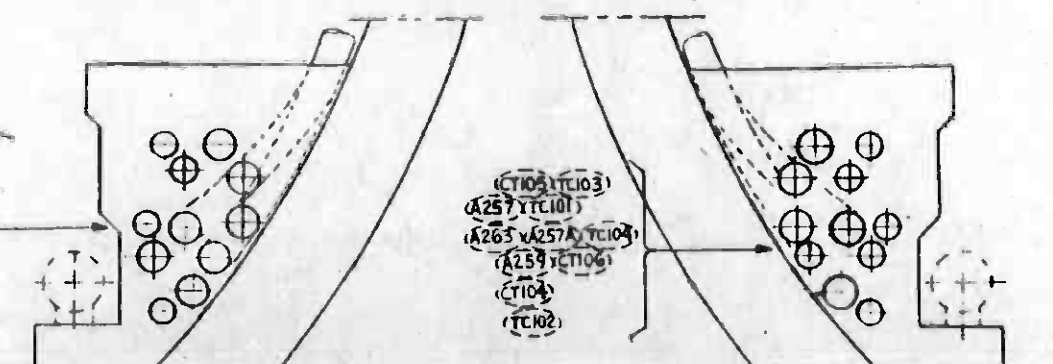
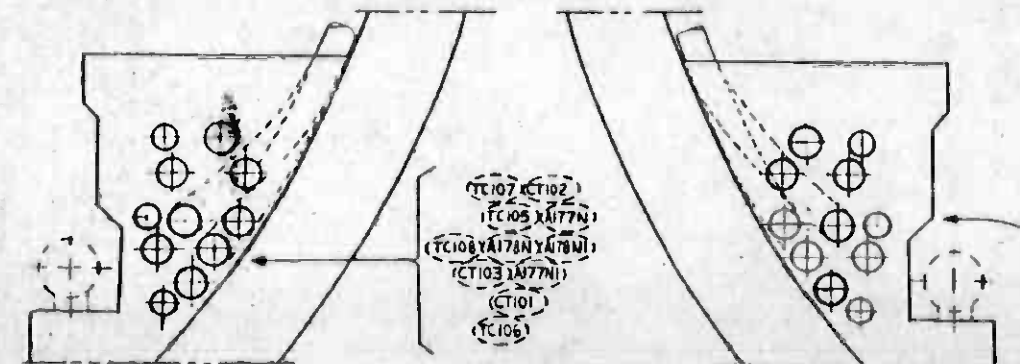
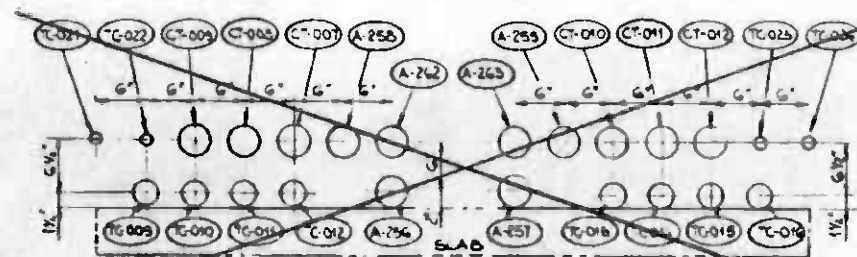
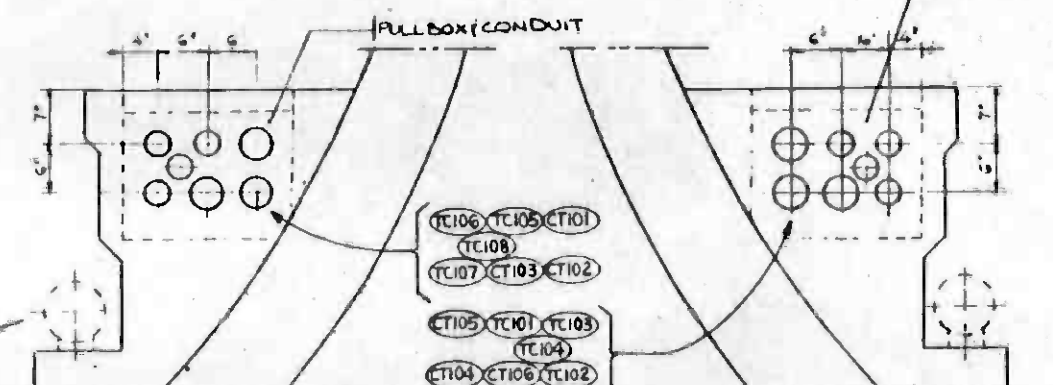
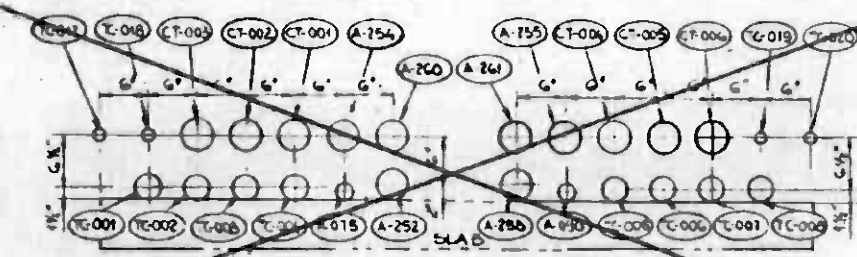
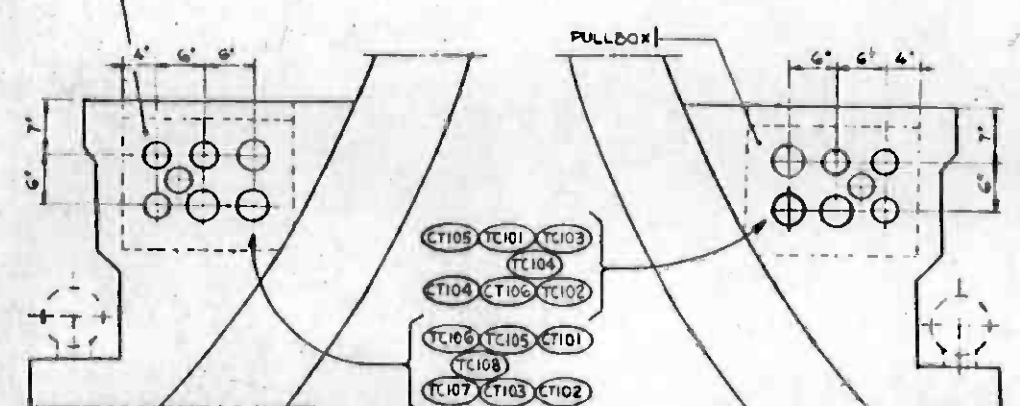
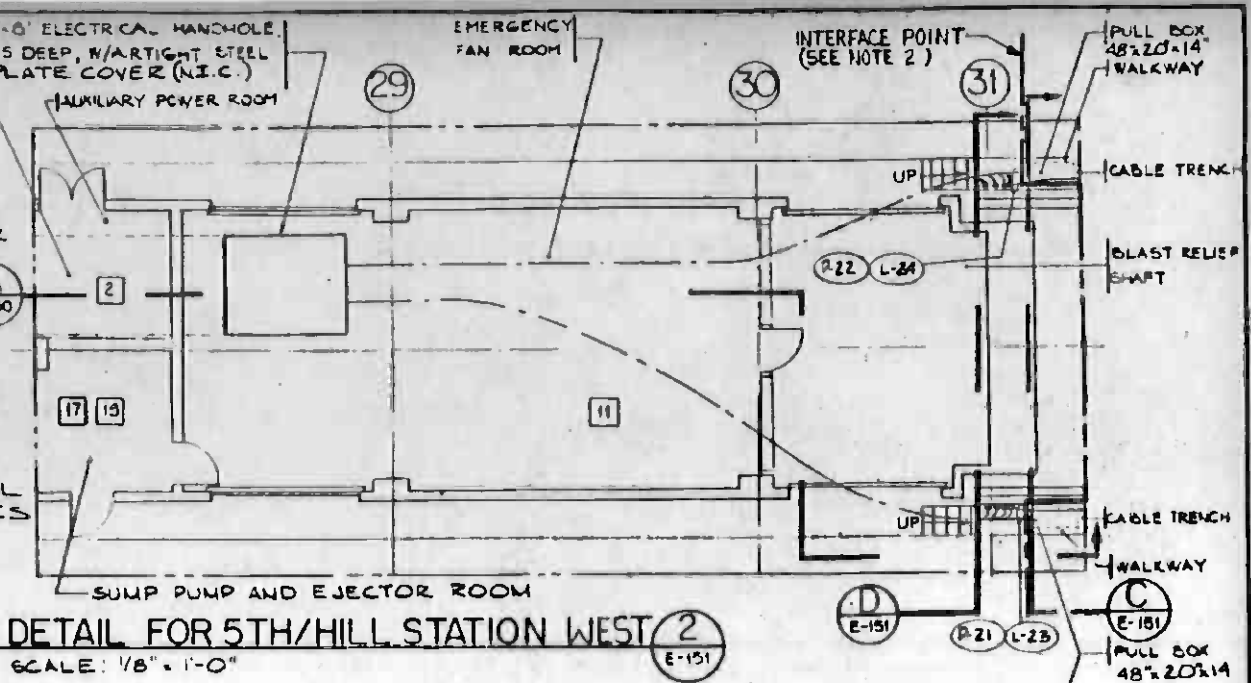
- NOTES:**
1. () MEANS CONDUIT AND/OR CABLES BY OTHERS.
 2. CABLE P-21 (A-256A) & L-23 ARE FOR THE OUTBOUND TUNNEL. CABLE P-22 (A-257A) & L-24 ARE FOR THE INBOUND TUNNEL.
 3. CONDUIT AND WIRES FROM PANELS T1P AND TPP AND SWITCHGEAR TO TUNNEL STUB-UPS WILL BE FURNISHED AND INSTALLED BY STATION CONTRACTOR. PROVIDE PULL BOXES AND SPLICING OF WIRES IN TUNNEL PULL BOXES UNDER THIS CONTRACT.
 4. CABLES R-23 & L-21 ARE FOR THE OUTBOUND TUNNEL. CABLES R-24 & L-22 ARE FOR THE INBOUND TUNNEL.

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REV. DATE BY SUB APP. DESCRIPTION	REV. DATE BY SUB APP. DESCRIPTION	REVISED PER CRG-52B INITIAL ISSUE	PROFESSIONAL ENGINEER STATE OF CALIFORNIA No. 37784 CIVIL	RTD	REV. 1

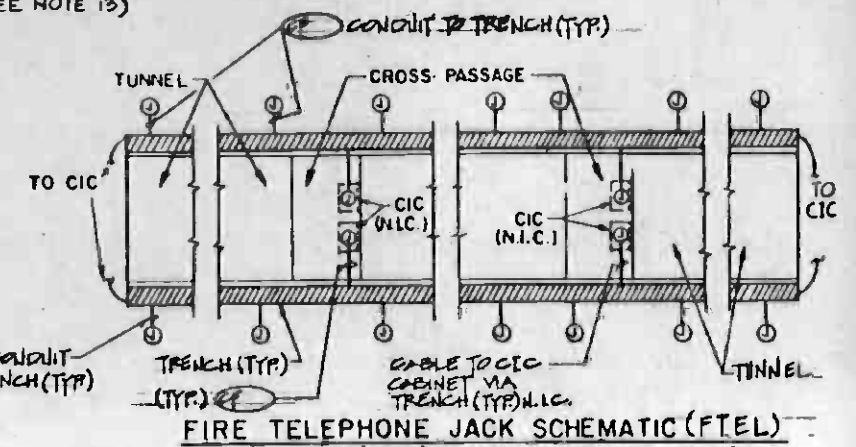
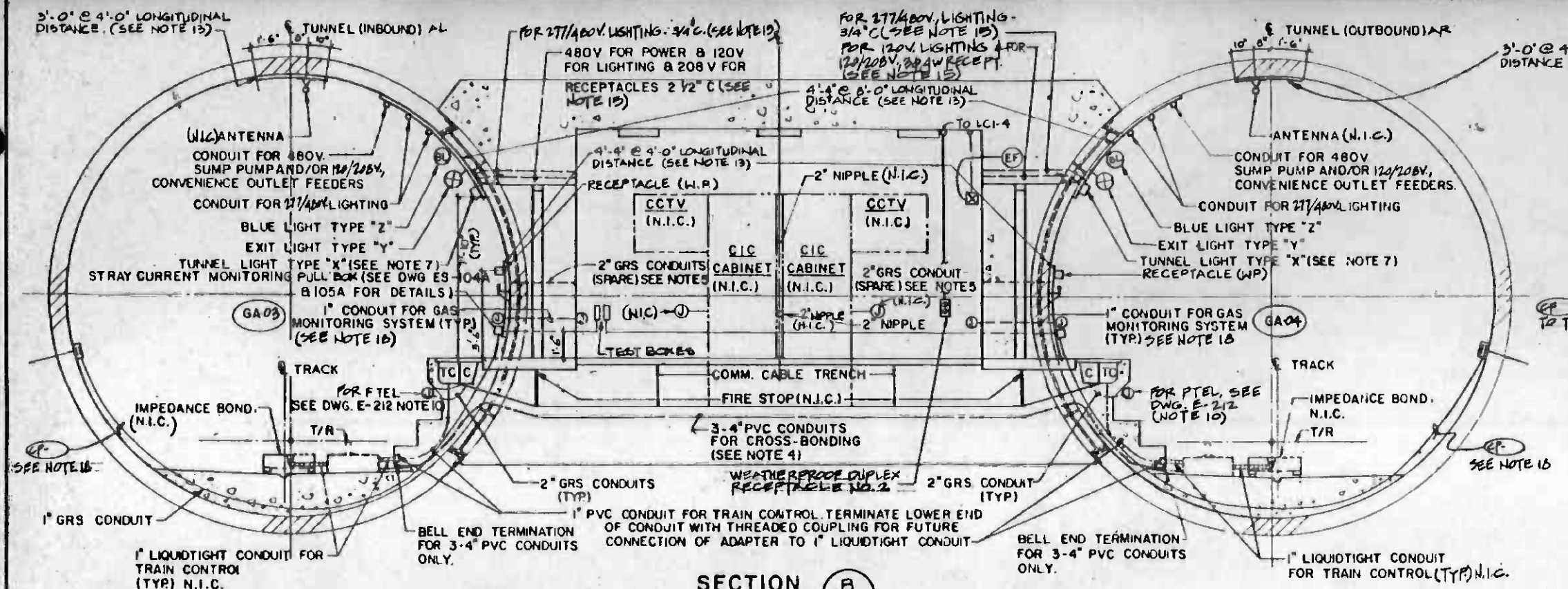


NOTES:

- FOR TUNNEL LIGHTING AND POWER CIRCUIT INFORMATION SEE TLP AND TPP PANEL SCHEDULES DWG E-210
- SEE E-190 FOR MATCHLINE BETWEEN CONTRACT A-145 & A-146, AND DIVIDER BETWEEN CONTRACT A-146 & A-165.
- TUNNEL CONTRACTOR IS TO PROVIDE CABLE TRENCH AND PULL BOX. ALL THE CONTROL AND COMMUNICATION CABLES ARE BY OTHERS.

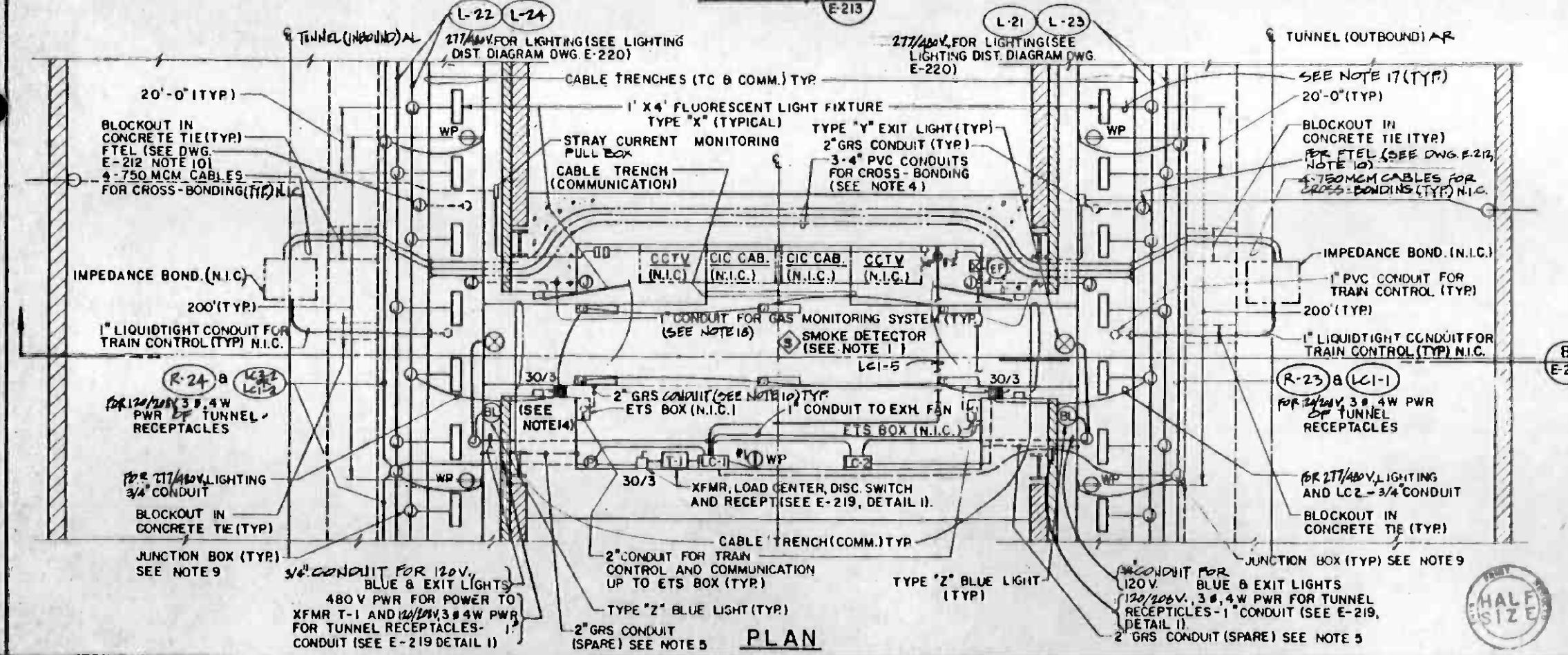


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- NOTES: (CONTINUED)**
16. EXTEND CONDUIT SUPPORT 1'-6" BEYOND CENTER LINE OF TUNNEL FOR INSTALLATION OF ANTENNA BY OTHERS.
 17. USE 2#14 CABLE FOR FEEDER TAP TO LIGHT FIXTURE
 18. FOR GA CONDUIT & CABLE NUMBERS SEE DWG. E-218.
 19. USE 2#12 CABLE FOR BRANCH CIRCUIT FEEDER TO RECEPTACLES IN PUMP STATION & CROSS-PASSAGES. USE 2#10 FOR FEEDER TO RECEPTACLES IN TUNNELS.

- NOTES:**
1. PROVIDE 4/C #18AWG. WIRES FROM SMOKE DETECTOR TO SMOKE DAMPER CONTROL CIRCUIT.
 2. THIS PLAN IS APPLICABLE TO ALL CROSS-PASSAGES EXCEPT AS INDICATED ON DWG. E-219, DETAILS '1' & '2'.
 3. EQUIPMENT GROUNDING ARE TO BE PROVIDED BY THE GROUND CONDUCTOR CARRIED IN EACH CONDUIT SEE DWG. E-217 & E-218. THEY ARE TO BE ISOLATED FROM THE STRAY CURRENT AND THE TRACTION POWER BONDINGS.
 4. MINIMUM BENDING RADIUS OF COMM/ATC CONDUITS IS 40". POSITION CENTER OF CONDUIT RUNS HIGH AND SLOPE CONDUITS MINIMUM OF 0.5% TOWARD ENDS FOR PROPER DRAINAGE.
 5. TERMINATE CONDUIT ENDS WITH THREADED PLUG, FLUSH WITH FINISHED WALL
 6. SEE SS-094, SS-102, SS-103, & SS-125 FOR APPLICABLE STRUCTURAL DIMENSIONS AND DETAILS.
 7. FOR LIGHTING DISTRIBUTION DIAGRAM SEE DWG. E-220
 8. FOR CROSS-PASSAGES WITHOUT SUMP PUMPS, THE 480 VOLT, THREE PHASE FEEDER SHALL ORIGINATE DIRECTLY FROM THE NEAREST PASSENGER STATION.
 9. ALL RACEWAY SYSTEMS INCLUDING JUNCTION BOXES IN THE TUNNELS SHALL BE WEATHERPROOF.
 10. MINIMUM BENDING RADIUS OF ETS CONDUIT IS 12".
 11. FOR LIGHTING FIXTURE DETAILS REFER TO ELECTRICAL SPECIFICATIONS.
 12. SEE M-202 FOR EXACT LOCATION OF T-1 AND LC-1B2, ENSURE FREE OPENING OF THE FRONT COVERS OF THESE PANELS.
 13. 1 1/2" x 1 1/8" 12 GA. CHANNEL FRAMING, PARTS SCREWS & NUTS SHALL BE HOT DIPPED GALVANIZED (UNISTRUT OR EQUAL). FRAMING TO BE FASTENED TO TUNNEL USING THE 1/2" x 2 1/2" LONG FERRULE INSERTS (SEE SS-055, SS-056 & SS-088)
 14. LOCATE THE 30 A/3 POLE DISCONNECT SWITCH AS NOT TO OBSTRUCT DOOR SWING.
 15. THESE LIGHTING AND POWER CONDUITS ARE ON THE OPPOSITE SIDE OF THE CROSS-PASSAGE. SEE PLAN VIEW. (NOTES CONTINUE ABOVE)



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ELECTRICAL SCHEMATIC DIAGRAM SYMBOLS

ONE-LINE AND LOGIC DIAGRAM SYMBOLS

ABBREVIATIONS

SYMBOL	REPRESENTS	SYMBOL	REPRESENTS	SYMBOL	REPRESENTS
	TRANSFORMER ¹		MANUAL MOTOR STARTER		SHORTING TYPE TERMINAL BLOCK
	PUSHBUTTON SWITCH, MOMENTARY CONTACT, N.C. LO INDICATES LOCK-OUT		SINGLE POLE SINGLE THROW SWITCH		SELECTOR SWITCH, VS - VOLTMETER, AS - AMMETER
	PUSHBUTTON SWITCH, MOMENTARY CONTACT, N.O.		SINGLE POLE DOUBLE THROW SWITCH		INDICATING TYPE METER, AM - AMMETER, VM - VOLTMETER
	MECHANICAL CONNECTION		MULTICONDUCTOR CABLE		UNDERVOLTAGE RELAY
	SINGLE POLE CIRCUIT BREAKER, SIZE AS NOTED		SHIELDED 2 CONDUCTOR CABLE WITH SHIELD GROUNDING		THERMAL OVERLOAD DEVICE
	NORMALLY OPEN CONTACT, AUX. OR RELAY OR SWITCH		COAXIAL CABLE		AC INSTANTANEOUS OVERCURRENT TRIP SETTING
	NORMALLY CLOSED CONTACT, AUX. OR RELAY.		DISCONNECTING DEVICE		AC TIME OVERCURRENT TRIP SETTING OR RELAY
	COIL, OPERATING		CONDUCTORS, CONNECTED		AC GROUND OVERCURRENT RELAY (RESIDUAL)
	OVERLOAD RELAY CONTACTS		CONDUCTORS, NOT CONNECTED		AC GROUND OVERCURRENT TRIP SETTING OR RELAY
	OVERLOAD RELAY WITH HEATER		CURRENT TRANSFORMER WITH POLARITY MARKINGS		AC CIRCUIT BREAKER
	FUSE WITH RATING		POTENTIAL TRANSFORMER WITH POLARITY MARKINGS		OVERVOLTAGE RELAY
	GROUND CONNECTION		OUTLINE OF EQUIPMENT		TIME DELAYED RELAY
	PILOT LIGHT: R=RED, G=GREEN, A=AMBER, W=WHITE, C=CLEAR, B=BLUE		FUTURE OR N.I.C.		PERMISSIVE CONTROL DEVICE
	SOLENOID COIL		TERMINAL STRIP		ALARM RELAY
	LIMIT SWITCH, NORMALLY OPEN		BATTERY		LOCK-OUT RELAY
	LIMIT SWITCH, NORMALLY CLOSED		AUDIBLE SIGNAL		CONTROL SWITCH
	LIMIT SWITCH, N.O., HELD CLOSED BY ACTUATOR		INSTRUMENT GROUNDING		ANNUNCIATION DEVICE - INDICATING TYPE
	LIMIT SWITCH, N.C., HELD OPEN BY ACTUATOR		WIRE DESIGNATION SUFFIX COMPLETE DESIGNATION TO BE PRECEDED BY EQUIPMENT PREFIX VIZ: EF1-5		AUDIBLE ALARM
	FLOW SWITCH, NORMALLY OPEN, CLOSSES WITH FLOW		RECTIFIER, DRY TYPE, FULL WAVE		MOLDED CASE CIRCUIT BREAKER 3 POLE UON
	FLOW SWITCH, NORMALLY CLOSED, OPENS WITH FLOW		TRANSDUCER, E/I - VOLTAGE TO CURRENT I/E - CURRENT TO VOLTAGE		SERIES TRIP DEVICE
			CIRCUIT BREAKER WITH SOLID STATE TRIP DEVICE		CURRENT TRANSFORMER OR CURRENT SENSOR OF SOLID STATE TRIP DEVICE
			CIRCUIT BREAKER, MEDIUM VOLTAGE		2 - WINDING TRANSFORMER
			POWER BREAKER, 480 VAC		FUSE

ACCP	AIR CONDITIONING CONTROL PANEL
ACP	AUXILLIARY CONTROL PANEL
FSCP	FIRE/SECURITY CONTROL PANEL
EMP	EMERGENCY MANAGEMENT PANEL
RCP	REFRIGERATION CONTROL PANEL
CIC	COMMUNICATIONS INTERFACE CABINET
AHU	AIR HANDLING UNIT
LP	LIGHTING PANEL
EBD	EMERGENCY BYPASS DAMPER
EFD	EMERGENCY FAN DAMPER
MCC	MOTOR CONTROL CENTER
LAP	LOCAL ANNUNCIATION PANEL
AHCP	AIR HANDLING CONTROL PANEL
AUX.	AUXILIARY
N.I.C.	NOT IN CONTRACT
CORCND.	CONDUIT
SPST	SINGLE POLE SINGLE THROW
SPDT	SINGLE POLE DOUBLE THROW
N.O.,N.C.	NORMALLY OPEN, NORMALLY CLOSED
C.O.	RACEWAY ONLY (CONDUIT ONLY)
MC	METALLIC CONDUIT
NMC	NON-METALLIC CONDUIT
GRS	GALVANIZED RIGID STEEL CONDUIT
PVC	POLYVINYL CHLORIDE CONDUIT
IMC	INTERMEDIATE METAL CONDUIT
TEL	TELEPHONE
GND	GROUND
FUT	FUTURE
ELEV	ELEVATION, ELEVATOR
MTD	MOUNTED
MTG	MOUNTING
A.F.F.	ABOVE FINISHED FLOOR
FLR	FLOOR
RTU	REMOTE TERMINAL UNIT
ZC	ZONE CONTROL
+ 4'-6"	MOUNTING HEIGHT TO C OF OUTLET ABOVE FINISHED FLOOR
IC	INTERCOM
DMPR	DAMPER
MTR	MOTOR
HTR	HEATER
EXH	EXHAUST
COMPT	COMPARTMENT
SW	SWITCH
FS	FLOW SWITCH
TS	TEMPERATURE SWITCH
GDCP	GAS DETECTION CONTROL PANEL
AIC	AMPERES INTERRUPTING CAPACITY
SUP	SUPPLY
VIB	VIBRATION
BKR	BREAKER
MAINT	MAINTENANCE
CKT	CIRCUIT
XFMR	TRANSFORMER
CONT	CONTROL
PWR	POWER
SWGR	SWITCHGEAR
TEMP	TEMPERATURE
ETS	EMERGENCY TRIP STATION
T/R	TOP OF RAIL
TYP	TYPICAL
TBD	TO BE DETERMINE
MDF	MAIN DISTRIBUTION FRAME
WD-P	WIRING DIAGRAM NO. P
LCS	LOCAL CONTROL STATION
M.L.O.	MAIN LUGS ONLY
M.B.	MAIN BREAKER
C.C.	CENTRAL CONTROL
UON	UNLESS OTHERWISE NOTED
BC	BARE COPPER GROUND WIRE

EQUIPMENT MOUNTING HEIGHT

1. ALL PANEL BOARDS (WALL MTG) 7'-6" TOP OF PANELS.
2. WALL MOUNTED TRANSFORMERS. 8'-0" BOTTOM OF XFMR.
3. LOCAL CONTROL STATIONS (WALL MTG.) OR LOCAL CONTROL PANELS. 4'-0" BOTTOM OF PANELS. 7'-6" MAX. AT TOP.
4. LOCAL MOTOR STARTERS, DISCONNECT SWITCH & CIRCUIT BREAKERS. 5'-0" AT SWITCH HANDLE.
5. POWER RECEPTACLES. 4'-6" CENTER.

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<p>REVISED PER CRG-511. CR 5-208 INITIAL ISSUE</p>				<p>General Fleming / Dworsky Hoyt & Associates CONSULTING ENGINEERS</p>		<p>DMJM/PBOD/KE/HWA GENERAL CONSULTANTS</p>		<p>L.A. CBD TO N. HOLLYWOOD 7TH. / FLOWER STATION SCHEMATIC DIAGRAM SYMBOLS, ABBREVIATIONS, AND NOTES</p>	

RECEPTACLE OUTLETS	
	SINGLE RECEPTACLE OUTLET
	DUPLEX RECEPTACLE OUTLET RECESSED
	SINGLE SPECIAL-PURPOSE RECEPTACLE OUTLET (30 AMP, 2 POLE, OR AS NOTED) *
	DUPLEX SPECIAL-PURPOSE RECEPTACLE OUTLET *
	* USE SUBSCRIPT LETTERS TO INDICATE FUNCTION (FC - FARE COLLECTION, ETC.)
	FLOOR BOX WITH SINGLE RECEPTACLE
	FLOOR BOX WITH DUPLEX RECEPTACLE
	FLOOR BOX WITH SERVICE FITTING AS NOTED
	FLOOR BOX - PUBLIC TELEPHONE
	FLOOR BOX - PRIVATE TELEPHONE
	UNDERFLOOR DUCT WITH ASSOCIATED OUTLETS AS INDICATED
	TRENCH DUCT
	DUCT BANK

PANELBOARDS, SWITCHBOARDS, ETC.	
	AHCP - AIR HANDLING UNIT CONTROL PANEL ACCP - AIR CONDITIONING CONTROL PANEL
CONDUCTORS & CONDUIT	
	RACEWAY EMBEDDED IN FLOOR
	RACEWAY EMBEDDED IN CEILING OR WALL
	RACEWAY EXPOSED OR CONCEALED IN CEILING.
	BRANCH CIRCUIT HOME RUN TO PANELBOARD. LL2 DENOTES PANEL LL2 AND NUMERALS IDENTIFY CIRCUIT NUMBERS.
	INDICATES NUMBER OF #12 WIRES. NO CROSS LINES INDICATES 2*#12 WIRES UNLESS NOTED OTHERWISE WIRE & RACEWAY SIZE FOR #8 AND LARGER
	INDICATES NUMBER OF #10 WIRES, SIMILAR TO DESIGNATIONS FOR #12 WIRES.
	FEEDER OR HOME RUN RACEWAY IDENTIFICATION AS FOLLOWS: A-AUXILIARY, T-TRACTION POWER, HV - 34.5KV FDR, EM-EMERGENCY, C-COMMUNICATION SUBSYSTEM. *L - AT THE END OF EACH RACEWAY NUMBER INDICATES LIGHT RAIL PORTION.
	CONDUIT SLEEVE
	GROUND WIRE
	RACEWAY TURNED UP OR TOWARDS VIEWER
	RACEWAY TURNED DOWN OR AWAY FROM VIEWER
	UNDERGROUND CONDUIT BANK (INDICATE TYPE, SIZE AND NUMBER OF CONDUITS BY CROSS SECTION IDENTIFICATION OF EACH RUN, OR BY NOTATION)
	GROUND ROD
	RACEWAY CAPPED
	CONDUIT SEAL

EQUIPMENT IDENTIFICATION	
MCP- ETS- CIC - SWGR- TP-	MOTOR CIRCUIT PROTECTOR EMERGENCY TRIP STATION COMMUNICATION INTERFACE CABINET SWITCHGEAR TUNNEL SUMP PUMP *L - AT THE END OF EACH EQUIPMENT NO. INDICATES LIGHT RAIL PORTION (TYPICAL) EMERGENCY VENT FAN NO.1 (NO 2, EM-2L; NO3, EM-3L; NO4, EM-4L) SUBWAY VENT FAN NO.1 (NO 2, SEM-2L) OVERHEAD TRAIN EXHAUST FAN NO.1 (NO 2, OTE-2L) EXHAUST FAN BATTERY RM EXHAUST FAN HALON/GAS EXHAUST FAN VALVE ROOM EXHAUST FAN EMERGENCY FAN ROOM (TAILTRACK) EXHAUST FAN ELECTRICAL AND MECHANICAL ROOM AIR CONDITION UNIT SIGNAL / COMMUNICATION ROOM AIR COOLED CONDENSER SIGNAL / COMMUNICATION ROOM TUNNEL LIGHTING PANEL TUNNEL POWER PANEL STATION FARE COLLECTION CONTROL UNIT.
EM-IL SEM-IL OTE-IL EF-IL EF-2L EF-3L EF-4L EF-5L AC-IL CA-IL TLP- TPP- SFCCU	

GENERAL CONSTRUCTION NOTES	
1.	CONTRACTOR SHALL INSTALL EMBEDDED CONDUITS AND ASSOCIATED EMBEDDED JUNCTION/PULLBOXES, CONDUIT SLEEVES & DUCT BANKS/MANHOLE/HANDHOLE ONLY, FOR ALL ELECTRICAL AND COMMUNICATIONS SUBSYSTEMS.
2.	ALL EMBEDDED CONDUITS SHALL BE PROPERLY TAGGED, EQUIPPED WITH PULLING CORDS, AND CAPPED AT THE STUB-OUT, OR OTHERWISE PROPERLY PROTECTED FROM DIRT, MOISTURE, AND OTHER INTRUSIONS.
3.	INTERFACE WITH ADJACENT CONTRACT (S) a. LOCATE CONDUIT STUB-OUT (S) INSTALLED BY THE EARLIER CONTRACTOR, UNCAP AND TAG AT THE INTERFACE POINT. b. FOR EMBEDDED CONDUIT (S) AT THE INTERFACE POINT (S) TO THE LATER CONSTRUCTION, CAP AND TAG AT THE INTERFACE POINT.
4.	GROUNDING: a. LOCATE MARKER OF GROUND WIRE LOCATION (S) INSTALLED BY THE EARLIER CONTRACTOR. UNCOVER GROUND WIRE AND CONNECT TO THE NEW GROUNDING SYSTEM BY EXOTHERMIC WELDING. b. FOR GROUNDING TO BE CONNECTED BY THE LATER CONTRACTOR, INSTALL PROTECTIVE SLEEVE (12" LONG METALLIC CONDUITS) OVER THE GROUND WIRE (S) WITH 3/8" PIGTAIL, PROPERLY COILED AND PROTECTED. INSTALL MARKER AT THE EMBEDDED LOCATION (S). c. FOR GROUND PENETRATION THROUGH CONCRETE, INSTALL GROUND WIRE (S) AND LEAVE SUFFICIENT LENGTH OF PIGTAILS AS INDICATED ON DRAWING E-017
5.	ALL EMBEDDED CONDUITS AND DUCTBANKS FOR COMMUNICATIONS AND TRAIN CONTROL SUBSYSTEM, AS SHOWN IN TRAIN CONTROL AND COMMUNICATIONS PLANS, SHALL BE GALVANIZED RIGID STEEL, 1" MINIMUM SIZE, UNLESS OTHERWISE NOTED.
6.	ALL EMBEDDED CONDUITS FOR OTHER ELECTRICAL SUBSYSTEMS SHALL BE PVC, 1" MINIMUM SIZE, UNLESS OTHERWISE NOTED.
7.	ALL UNSCHEDULED RACEWAY FOR SUBSYSTEMS SUCH AS LIGHTING AND RECEPTACLES, SHALL BE TAGGED AT EACH END WITH THE POWER SOURCE AND CIRCUIT NUMBER WHICH SHALL BE PROVIDED TO THE CONTRACTOR AT A LATER DATE BY THE DISTRICT OR ITS DESIGNEE.

PANELBOARDS, SWITCHBOARDS, ETC.	
	PANELBOARD
	TERMINAL CABINET, TYPES AS FOLLOWS: CIC - COMMUNICATION INTERFACE CABINET TTC - TELEPHONE TERMINAL CABINET
	LIGHTING PANEL
	TRANSFORMER
	PULL BOX
	MOTOR CONTROLLER, SUBSCRIPT INDICATES NEMA SIZE
	FUSED DISCONNECT SWITCH SUBSCRIPT INDICATES FUSE SIZE AND NO. OF POLES
	NON-FUSED DISCONNECT SWITCH SUBSCRIPT INDICATES SIZE AND NO. OF POLES
	ELECTRICAL MANHOLE
	ELECTRICAL HANDHOLE
	COMBINATION MAGNETIC MOTOR STARTER, FUSIBLE SUBSCRIPT INDICATES NEMA SIZE
	COMBINATION MAGNETIC MOTOR STARTER NON-FUSIBLE. SUBSCRIPT INDICATES NEMA SIZE
	COMBINATION MAGNETIC MOTOR STARTER, WITH CIRCUIT BREAKER. SUBSCRIPT INDICATES NEMA SIZE
	MOTOR, WITH IDENTIFICATION, INSERT INDICATES HORSEPOWER. THREE PHASE OR SINGLE PHASE
	POWER PANEL
	SWITCHBOARD (SWBD) OR MOTOR CONTROL CENTER (MCC)
	CONTROL PANEL, TYPES AS FOLLOWS: HCP - HALON CONTROL PANEL FCP - FAN CONTROL PANEL EMP - EMERGENCY MANAGEMENT PANEL ACP - AUXILIARY CONTROL PANEL

EQUIPMENT IDENTIFICATION	
EM - IE	EMERGENCY FAN NO.1 AT EAST END
UF - IE	UNDER PLATFORM EXHAUST FAN NO.1 AT EAST END
AHU - IE	STATION SUPPLY FAN AT AIR HANDLING UNIT NO.1 EAST END
SF - IE	AUX. POWER ROOM SUPPLY FAN NO.1, EAST END
MF - IE	SMOKE EXHAUST FAN NO.1 AT EAST END
FD - IE	FAN DAMPER NO.1, EAST END
TD - IE	TRACK DAMPER NO.1, EAST END
BD - IE	BY-PASS DAMPER NO.1, EAST END
P - IE	PUMP NO.1, EAST END
DH - IE	DUCT HEATER NO.1, EAST END
PP -	POWER PANEL
LP -	LIGHTING PANEL
SLP -	SUBWAY LIGHTING PANEL
ES - IE	ESCALATOR NO.1, EAST END
MCC -	MOTOR CONTROL CENTER
EL - IE	ELEVATOR NO.1 EAST END
LCS -	LOCAL CONTROL STATION
SWBD -	SWITCHBOARD
ATS -	AUTOMATIC TRANSFER SWITCH
BKR -	BREAKER
STR -	STARTER
HTR -	HEATER

SWITCH OUTLETS	
S	SINGLE-POLE SWITCH
S ₂	DOUBLE-POLE SWITCH
S ₃	THREE-WAY SWITCH
S ₄	FOUR-WAY SWITCH
S _K	KEY-OPERATED SWITCH
S _P	SWITCH WITH PILOT LAMP
S _D	DOOR SWITCH
S _T	TIME SWITCH
S _M	MANUAL MOTOR STARTER WITH OVERLOAD DEVICE
S _{MC}	MOMENTARY CONTACT SWITCH OR PUSHBUTTON FOR OTHER THAN SIGNALLING SYSTEM
S _o	SUBSCRIPT a DENOTES SWITCH CIRCUIT

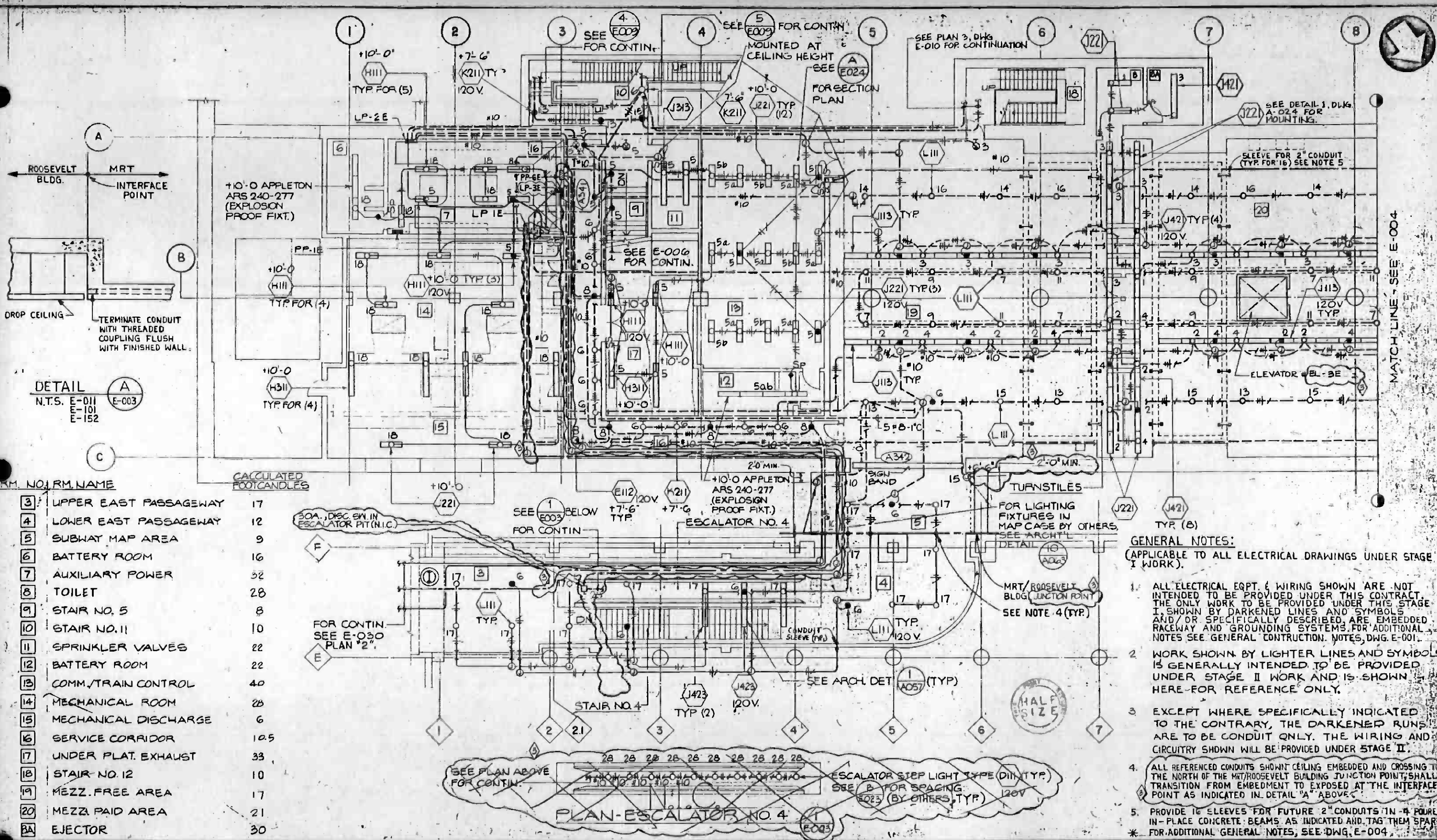
LIGHTING OUTLETS	
CLG	WALL
	OUTLET FOR INCANDESCENT OR HIGH INTENSITY DISCHARGE FIXTURE
	FLUORESCENT FIXTURE OUTLET
	EXIT LIGHT OUTLET, ARROW INDICATES DIRECTION.
	BLANKED OUTLET
	JUNCTION BOX
	LETTER SUBSCRIPT ADJACENT TO FIXTURE OUTLET DESIGNATES SWITCH CONTROL
	FLOODLIGHT, ARROWS INDICATE DIRECTION OF BEAM
	EMERGENCY LIGHT OUTLET

FIXTURE TYPE SYMBOL	
	a. LETTER - TYPE OF FIXTURE b. FIRST NO. - FIXTURE OPTION c. SECOND NO. - LAMP OPTION d. LAST NO. - MOUNTING HARDWARE OPTION e. NO. ABOVE SYMBOL - MOUNTING HEIGHT f. NO. UNDER SYMBOL - VOLTAGE OTHER THAN 277V

SPECIAL IDENTIFICATION (USED NEXT TO SYMBOL)		
WP - WEATHER PROOF	RT - RAIN TIGHT	G - GROUND
WT - WATER TIGHT	DT - DUST TIGHT	R - RECESSED
VT - VAPOR TIGHT	EP - EXPLOSION PROOF	F - FLUSH

ABBREVIATIONS		
C OR CND - CONDUIT		
SPST - SINGLE POLE SINGLE THROW		
SPDT - SINGLE POLE DOUBLE THROW		
N.O., N.C. - NORMALLY OPEN, NORMALLY CLOSED		
NIC - NOT IN THIS CONTRACT		
C.O. - RACEWAY ONLY		
MC - METALLIC CONDUIT		
NMC - NON-METALLIC CONDUIT		
GRS - GALVANIZED RIGID STEEL CONDUIT		
P.V.C. - POLYVINYL CHLORIDE CONDUIT		
IMC - INTERMEDIATE METAL CONDUIT		
TEL - TELEPHONE		
GND - GROUND		
FUT - FUTURE		
ELEV - ELEVATION, ELEVATOR		
MTD, MTG - MOUNTED, MOUNTING		
A.F.F. - ABOVE FINISHED FLOOR		
+4'-6" MOUNTING HEIGHT TO O OF OUTLET ABOVE FINISH FLOOR		
FL - FLOOR		
ZC - ZONE CONTROL		
RTU - REMOTE TERMINAL UNIT		
FVNR - FULL VOLTAGE, NON-REVERSIBLE		
FVR - FULL VOLTAGE, REVERSIBLE		

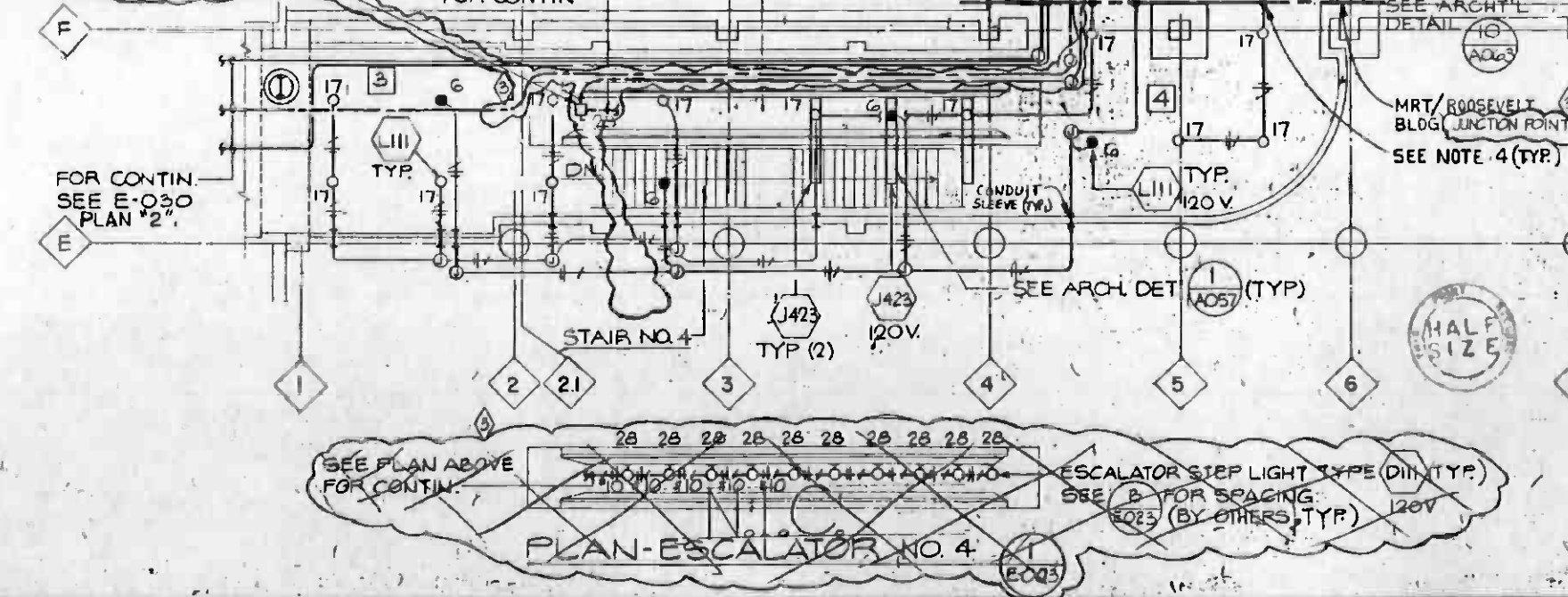
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REVISED PER CRG-506 (CR6-511) INITIAL ISSUE									



DETAIL A
 N.T.S. E-011
 E-101
 E-152
 E-003

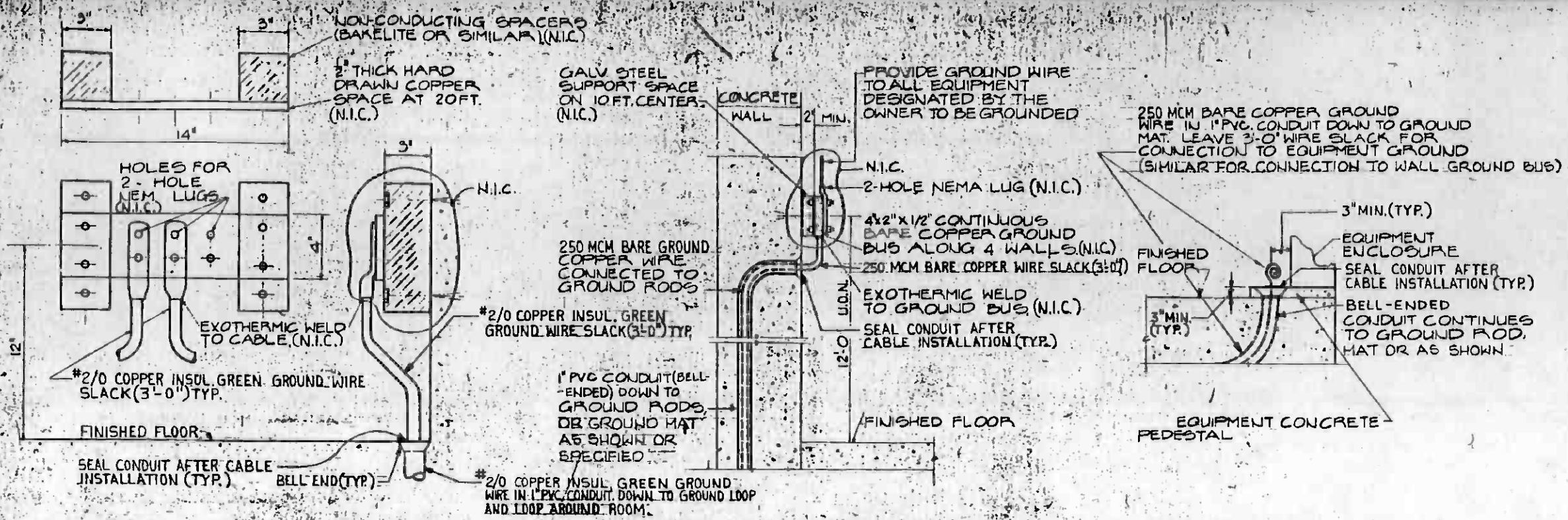
RM. NO.	RM. NAME	FOOTCANDLES
3	UPPER EAST PASSAGEWAY	17
4	LOWER EAST PASSAGEWAY	12
5	SUBWAY MAP AREA	9
6	BATTERY ROOM	16
7	AUXILIARY POWER	32
8	TOILET	28
9	STAIR NO. 5	8
10	STAIR NO. 11	10
11	SPRINKLER VALVES	22
12	BATTERY ROOM	22
13	COMM. TRAIN CONTROL	40
14	MECHANICAL ROOM	28
15	MECHANICAL DISCHARGE	6
16	SERVICE CORRIDOR	10.5
17	UNDER PLAT. EXHAUST	33
18	STAIR NO. 12	10
19	MEZZ. FREE AREA	17
20	MEZZ. PAID AREA	21
2A	EJECTOR	30

30A. DISC SW IN ESCALATOR PIT (N.I.C.)



- GENERAL NOTES:**
 (APPLICABLE TO ALL ELECTRICAL DRAWINGS UNDER STAGE I WORK).
- ALL ELECTRICAL EQPT. & WIRING SHOWN ARE NOT INTENDED TO BE PROVIDED UNDER THIS CONTRACT. THE ONLY WORK TO BE PROVIDED UNDER THIS STAGE I, SHOWN BY DARKENED LINES AND SYMBOLS AND/OR SPECIFICALLY DESCRIBED, ARE EMBEDDED RACEWAY AND GROUNDING SYSTEMS. FOR ADDITIONAL NOTES SEE GENERAL CONSTRUCTION NOTES, DWG. E-001.
 - WORK SHOWN BY LIGHTER LINES AND SYMBOLS IS GENERALLY INTENDED TO BE PROVIDED UNDER STAGE II WORK AND IS SHOWN HERE FOR REFERENCE ONLY.
 - EXCEPT WHERE SPECIFICALLY INDICATED TO THE CONTRARY, THE DARKENED RUNS ARE TO BE CONDUIT ONLY. THE WIRING AND CIRCUITRY SHOWN WILL BE PROVIDED UNDER STAGE II.
 - ALL REFERENCED CONDUITS SHOWN CEILING EMBEDDED AND CROSSING TO THE NORTH OF THE MRT/ROOSEVELT BUILDING JUNCTION POINT, SHALL TRANSITION FROM EMBEDMENT TO EXPOSED AT THE INTERFACE POINT AS INDICATED IN DETAIL "A" ABOVE.
 - PROVIDE 16 SLEEVES FOR FUTURE 2" CONDUITS IN 4" POURED IN-PLACE CONCRETE BEAMS AS INDICATED AND TAG THEM SPARE. * FOR ADDITIONAL GENERAL NOTES, SEE DWG. E-004.

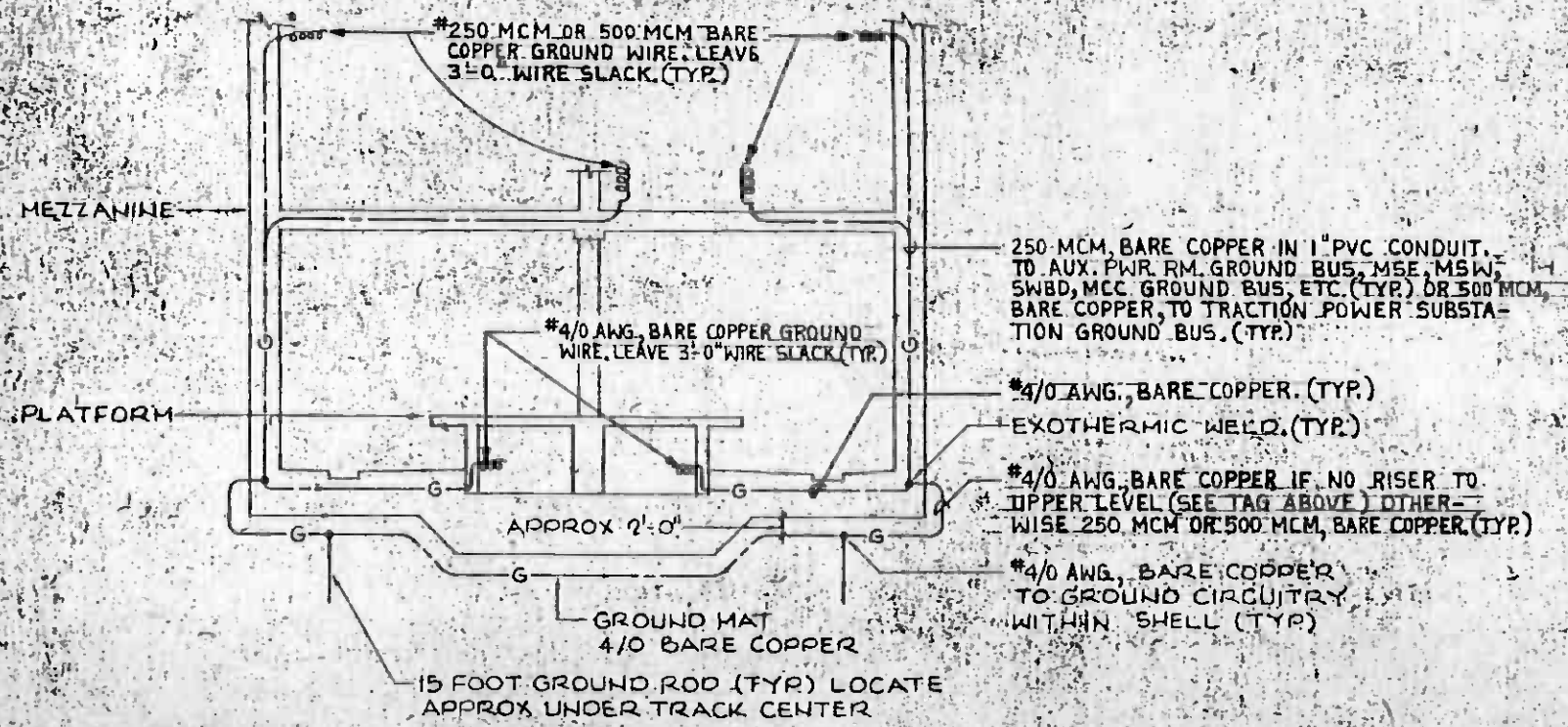
THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DESIGNED BY HAYAKAWA ASSOC. DRAWN BY R. BRIGGS CHECKED BY J. MITSUMORI IN CHARGE S.B. DATE 1 MAR 85		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT. Gannett Fleming/Dworsky • a joint venture Hayakawa Associates SUBMITTED Samuel J. Tschudy		L.A. CBD TO N. HOLLYWOOD 7TH. / FLOWER STATION MEZZANINE EAST LIGHTING		CONTRACT NO. STAGE I A-155 DRAWING NO. E-003 3 SCALE 1/8" = 1'-0" SHEET NO. A620/204	
REV. DATE RT SUB APP. DESCRIPTION	REV. DATE BY SUB APP. DESCRIPTION	3-3-85 NEM AS SUM. REVISED PER CRG-506 3-18-85 CM INITIAL ISSUE		DMJM/PBOD/KE/HWA GENERAL CONSULTANTS APPROVED		REVISED PER ACR 165-1			



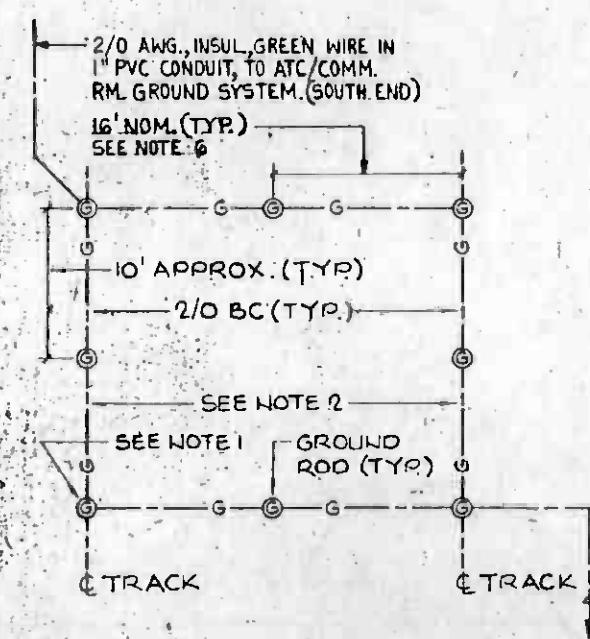
TYPICAL COMMUNICATION GROUND PLATE MOUNTING DETAIL (1)
E-011, E-017

TYPICAL GROUND BUS MOUNTING DETAIL (2)
E-011, E-016, E-018, E-019, E-017

GROUNDING DETAIL FOR SWITCHBOARDS 1L & 2L (3)
E-153, E-155, E-017



STATION CROSS SECTION - TYPICAL SYSTEM GROUND (4)
E-014, E-015, E-016, E-017



COMMUNICATION GROUND MAT & GROUND ROD INSTALLATION (5)
E-017

- NOTES
1. LOCATE UNDER STATION SHELL AWAY FROM PLATFORM & AT END OF STATION WITH ATC/COMMUNICATION ROOM.
 2. LOCATE THESE ROWS NOMINALLY UNDER TRACK &
 3. DO NOT LOCATE UNDER PASSENGER PLATFORM.
 4. NOT USED.
 5. DETAILS NOT SHOWN, HEREON SIMILAR TO SYSTEM.
 6. HALF OF TRACK & SPACING OR AS SHOWN

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DESIGNED BY HAYAKAWA ASSOC. DRAWN BY A. BRIGGS CHECKED BY J. MITSUMORI IN CHARGE J. BOENSTEIN DATE MAR 65	SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT Gannett Fleming/Dworsky • a joint venture DMJM/PBQD/KE/HWA GENERAL CONSULTANTS APPROVED Howard Schell	CONTRACT NO. STAGE I A-155 DRAWING NO. E-017 SCALE NONE SHEET NO. A620/205
REV. DATE BY SUB. APP. DESCRIPTION	REV. DATE BY SUB. APP. DESCRIPTION	REVISED PER CRG-506 INITIAL ISSUE	L.A. CBD TO N. HOLLYWOOD 7TH./FLOWER STATION STATION GROUNDING SYSTEM DETAILS	CONTRACT NO. STAGE I A-155 DRAWING NO. E-017 SCALE NONE SHEET NO. A620/205

SYMBOLS

ABBREVIATIONS

CONDUCTORS AND RACEWAY

MISCELLANEOUS

FIRE AND INTRUSION

A/D	ANALOG TO DIGITAL
AFF	ABOVE FINISHED FLOOR
ACD	AUTOMATIC CALL DISTRIBUTOR
ATEL	ADMINISTRATIVE TELEPHONE
BCD	BINARY CODED DECIMAL
CA	CABLE
CATEL	CUSTOMER ASSISTANCE TELEPHONE
CCU	COMMUNICATIONS CONTROL UNIT
CCTV	CLOSED CIRCUIT TELEVISION
CIC	COMMUNICATIONS INTERFACE CABINET
CP	FIRE COMMAND POST
CPU	CENTRAL PROCESSING UNIT
CRT	CATHODE RAY TUBE
CTS	CABLE TRANSMISSION SUBSYSTEM
D/A	DIGITAL TO ANALOG
DID	DIRECT INWARD DIALING
DOD	DIRECT OUTWARD DIALING
DTMF	DUAL TONE MULTI-FREQUENCY
ETEL	EMERGENCY TELEPHONE
FACP	FIRE ALARM CONTROL PANEL
EMP	EMERGENCY MANAGEMENT PANEL
FTEL	FIRE TELEPHONE
FHC	FIRE HOSE CABINET
FXO	FOREIGN EXCHANGE OFFICE
FXS	FOREIGN EXCHANGE SUBSCRIBER
GRS	GALVANIZED RIGID STEEL CONDUIT
HH	HANDHOLE
HSM	HYDROGEN SULFIDE MONITOR
I/O	INPUT / OUTPUT
INT	INTRUSION
JB	JUNCTION BOX
MD	METHANE DETECTOR
MDF	MAIN DISTRIBUTION FRAME
MH	MANHOLE
MTEL	MAINTENANCE TELEPHONE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
PA	PUBLIC ADDRESS
PABX	PRIVATE AUTOMATIC BRANCH EXCHANGE
PCM	PULSE CODED MODULATION
PR	PAIR
PROT	PROTECTOR TERMINAL
REA	RURAL ELECTRIFICATION ADMINISTRATION
SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
SCRTD	SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
SER	SEISMIC EVENT RECORDER
SPL	SOUND PRESSURE LEVEL
SST	SPECIAL SERVICES TELEPHONE
TB	TERMINAL BOARD
TBK	TERMINAL BLOCK
TPSS	TRACTION POWER SUBSTATION
ATC & C	AUTOMATIC TRAIN CONTROL & COMMUNICATIONS
TERM	TERMINAL
TTC	TELEPHONE TERMINAL CABINET
UNO, UNO UPS	UNLESS OTHERWISE NOTED UNINTERRUPTIBLE POWER SUPPLY
VTR	VIDEO TAPE RECORDER
PB	PULL BOX
PTEC	PATRON ASSIST TELEPHONE (FOR LRT)

	RACEWAY EMBEDDED IN CEILING OR WALL.
	RACEWAY EXPOSED.
	RACEWAY EMBEDDED IN FLOOR.
	PA - RACEWAY IDENTIFICATION BETWEEN OUTLETS PA100 - RACEWAY IDENTIFICATION BETWEEN OUTLET AND TERMINATION POINT (IE FINAL STUB-UP TO TERMINAL CABINET, PANEL BOARD, SWITCHBOARD.)
	SYSTEMS IDENTIFICATION ABBREVIATIONS SHALL BE: CC - CUSTOMER ASSISTANCE TELEPHONE TV - CLOSED CIRCUIT TELEVISION CE - EMERGENCY TELEPHONE CF - FIRE TELEPHONE HC - COMMUNICATIONS TIE CABLE (HOUSE CABLE) (CIC TO ATC & C ROOM) CT - CABLE TRANSMISSION SYSTEM CX - TELEPHONE COMPANY F - POWER FEEDER (480/277V. DR 20B/120V) FA - FIRE DETECTOR OR ALARM FC - FARE COLLECTION FG - GAS DETECTOR R - RADIO IA - INTRUSION DETECTOR OR ALARM PA - PUBLIC ADDRESS SC - SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA) OR COMBINATION SYSTEMS CONDUIT. CA - ADMINISTRATIVE TELEPHONE TC - TRAIN CONTROL
	JUNCTION BOX.
	HANDHOLE
	MANHOLE
	TRENCH DUCT
	UNDERPLATFORM DUCT BANK OR UNDERGROUND DUCT BANK
	FLEXIBLE RACEWAY CONNECTION
	BARE GROUNDING CONDUCTOR
	EXOTHERMIC WELD CONNECTION
	INSULATED GROUNDING CONDUCTOR
	GROUND ROD WITH EXOTHERMIC WELD CONNECTION
	LIGHTNING PROTECTION SYSTEM ROOF CONDUCTOR
	CONDUIT TURNED UP OR TOWARDS VIEWER
	CONDUIT TURNED DOWN OR AWAY FROM VIEWER
	CONDUIT CAPPED

	CCTV CAMERA OUTLET - 4 1/16" X 4 1/16" X 2 1/8" DEEP BOX
	CCTV MONITOR
	BUZZER
	INTRUSION SENSOR
	PHOTO CELL
	CLOCK OUTLET
	TRACTION POWER EMERGENCY TRIP STATION OUTLET BOX
	CABLEWAY
	TERMINAL CABINET, TYPE AS FOLLOWS TTC - TELEPHONE TERMINAL CABINET FTC - FACILITIES TERMINAL CABINET J-BOX, SUPERVISORY CONTROL & DATA ACQUISITION (SCADA)
	TELEPHONE
	MAINTENANCE TELEPHONE JACK OUTLET 4"X4"X2-1/8" (ADMINISTRATIVE TELEPHONE)
	FIRE TELEPHONE OUTLET - 4"X4"X2 1/8" D
	EMERGENCY TELEPHONE OUTLET - 4"X4"X2 1/8" D
	CUSTOMER ASSISTANCE TELEPHONE OUTLET 4"X4"X2 1/8" D
	ADMINISTRATIVE TELEPHONE OUTLET - 4"X4"X2 1/8" D
	PUBLIC PAY TELEPHONE OUTLET - 4"X4"X2 1/8" D
	TELEPHONE BACK BOARD - 8"X3 1/4" DX LENGTH AS SHOWN
	WEATHERPROOF TELEPHONE OUTLET - 4"X4"X2 1/8" D

	PULL STATION FIRE ALARM
	PUSH BUTTON FIRE ALARM
	BELL
	HORN
	STANDPIPE FLOW MONITOR
	FIRE HOSE CABINET MONITOR DETECTOR, OUTLET - 4"X4"X2 1/8" D TYPE PER LETTER AS FOLLOWS L - HEAT, LINE TYPE S - SMOKE - IONIZATION R - THERMAL RATE OF RISE AND FIXED TEMPERATURE P - SMOKE PHOTO-ELECTRIC D - DUCT TYPE SMOKE DETECTOR. E - SEISMIC G - GAS - METHANE - MOUNTING HEIGHT 4'-6" AFF VALVE POSITION MONITOR
	INTRUSION DETECTOR, OUTLET - 4"X4"X2 1/8" D TYPE PER LETTER AS FOLLOWS H - HINGE DETECTOR E - ELECTRIC DOOR LOCK M - MAGNETIC SWITCH DETECTOR P - PLUNGER SWITCH (FLUSH IN DOOR JAM) DETECTOR L - DOOR LATCH DETECTOR K - KEY BY-PASS SWITCH C - CARD OR BADGE READER
	HALON DISCHARGE PANEL
	HALON ABORT SWITCH

ALL TELEPHONE OUTLETS SHALL BE MOUNTED AS FOLLOWS:
PUBLIC AREAS : + 48" AFF
ANCILLARY AREAS : + 54" AFF

	HALON DISCHARGE PANEL
	HALON ABORT SWITCH
	GRS SLEEVE (1 1/2" U.O.N)

PUBLIC ADDRESS

	MICROPHONE
	AMPLIFIER
	INTERIOR SPEAKER BACKBOX PER LETTER AS FOLLOWS: F-FLUSH MTD, S-SURFACE MTD, SC-SUSPENDED CEILING
	EXTERIOR SPEAKER BACKBOX
	HORN TYPE SPEAKER OUTLET
	NOISE MONITOR
	MONITOR SPEAKER

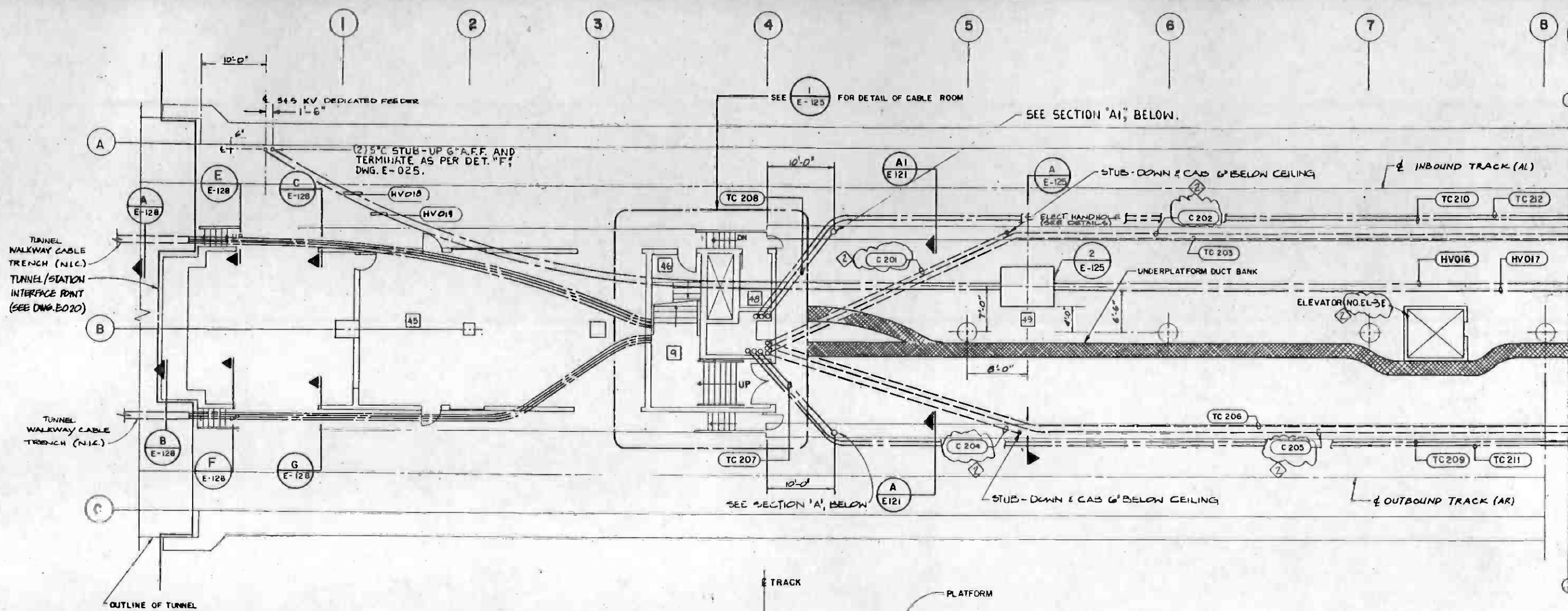
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<p>REVISED PER CRG - 511. CR 5-209 INITIAL ISSUE</p>		<p>APPROVED _____</p>		<p>LA. CBD TO N HOLLYWOOD 7 TH / FLOWER STATION</p> <p>SYMBOLS AND ABBREVIATIONS SYSTEMWIDE CONDUITS</p>		<p>HALF SIZE</p>	

ELECTRICAL RACEWAY AND CABLE SCHEDULE

ELECTRICAL RACEWAY AND CABLE SCHEDULE

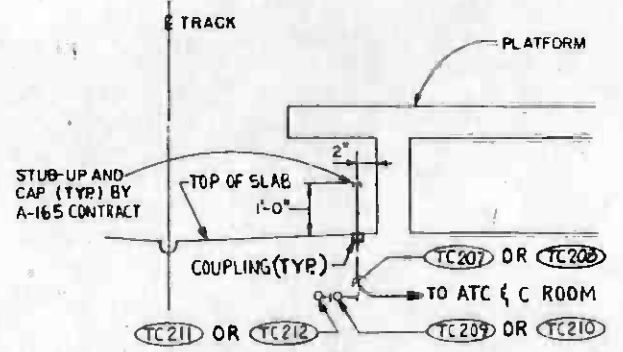
NO.	FROM	TO	CKTS.	RACEWAY			CONDUCTOR			DWG. NO.	SHT. NO.	REMARKS	NO.	FROM	TO	CKTS.	RACEWAY			CONDUCTOR			DWG. NO.	SHT. NO.	REMARKS
				METHOD	SIZE	TYPE	NO. & SIZE	TYPE	GND.								METHOD	SIZE	TYPE	NO. & SIZE	TYPE	GND.			
CCTV SYSTEM												RADIO													
TV102	ATC + C ROOM	STAIR NO. 1 EAST ENTRANCE CAMERA	1	EMBEDDED	2-1" C	GRS	---	---	---	E-101	1	101	ATC + C ROOM	OUTBOUND TRAYWAY NEAR WALL	1	SLEEVE	2-2" C	GRS	---	---	---	E-111	1		
TV103	ATC + C ROOM	WEST MEZZANINE COLUMN 3 CAMERA	1	EMBEDDED	2-1" C	GRS	---	---	---	E-101	2	102	ATC + C ROOM	OUTBOUND TRAYWAY FAR WALL	1		2-2" C	GRS	---	---	---	E-111	1		
TV104	ATC + C ROOM	WEST MEZZANINE COLUMN 6 CAMERA	1	EMBEDDED	2-1" C	GRS	---	---	---	E-101	3	103	ATC + C ROOM	INBOUND TRAYWAY NEAR WALL	1		2-2" C	GRS	---	---	---	E-111	1		
TV105	ATC + C ROOM	CENTER MEZZANINE COLUMN 8 CAMERA	1	EMBEDDED	2-1" C	GRS	---	---	---	E-101	4	104	ATC + C ROOM	INBOUND TRAYWAY FAR WALL	1		2-2" C	GRS	---	---	---	E-111	1		
TV106	ATC + C ROOM	CENTER MEZZANINE COLUMN 9 CAMERA	1	EMBEDDED	2-1" C	GRS	---	---	---	E-101	5	105	ATC + C ROOM	MEZZANINE AREAS	1		2-2" C	GRS	---	---	---	E-111	1	ROUTED ABOVE AIR PLENUM	
TV107	ATC + C ROOM	EAST STAIR NO. 4 CAMERA	1	EMBEDDED	2-1" C	GRS	---	---	---	E-101	6	106	ATC + C ROOM	PLATFORM AREAS	1		2-2" C	GRS	---	---	---	E-111	1		
TV108	ATC + C ROOM	CENTER MEZZANINE COLUMN 9 CAMERA	1	EMBEDDED	2-1" C	GRS	---	---	---	E-101	7	107	ANCILLARY ROOMS	ANCILLARY ROOMS	1		1 1/2" C	GRS	---	---	---	E-111	1	SCEEVES THRU ANCILLARY AREAS	
TV109	ATC + C ROOM	CENTER MEZZANINE COLUMN 10 CAMERA	1	EMBEDDED	2-1" C	GRS	---	---	---	E-101	8	108										E-111	1		
TV110	ATC + C ROOM	CENTER MEZZANINE COLUMN 14 CAMERA	1	EMBEDDED	2-1" C	GRS	---	---	---	E-101	9	109										E-111	1		
TV111	ATC + C ROOM	CENTER MEZZANINE COLUMN 16 CAMERA	1	EMBEDDED	2-1" C	GRS	---	---	---	E-101	10	110										E-111	1		
TV112	ATC + C ROOM	CENTER MEZZANINE COLUMN 16 CAMERA	1	EMBEDDED	2-1" C	GRS	---	---	---	E-101	11	111										E-111	1		
TV113	ATC + C ROOM	WEST MEZZANINE COLUMN 19 CAMERA	1	EMBEDDED	2-1" C	GRS	---	---	---	E-101	12	112										E-111	1		
TV114	ATC + C ROOM	WEST CONCOURSE LEVEL CAMERA	1	EMBED/EXPOSED	2-1" C	GRS	---	---	---	E-101	13	113										E-111	1		
TV115	ATC + C ROOM	CENTER MEZZANINE COLUMN 15/16 CAMERA	1	EMBEDDED	2-1" C	GRS	---	---	---	E-101	14	114										E-111	1		
TV116	ATC + C ROOM	CENTER MEZZANINE COLUMN 15/16 CAMERA	1	EMBEDDED	2-1" C	GRS	---	---	---	E-101	15	115										E-111	1		
TV117	ATC + C ROOM	WEST ENTRY CAMERA STREET LEVEL	1	EMBED/EXPOSED	2-1" C	GRS	---	---	---	E-101	16	116										E-111	1		
TV118	ATC + C ROOM	CENTER PLATFORM CAMERA	1	EMBEDDED	2-1" C	GRS	---	---	---	E-101	17	117										E-111	1	(HOME SAVINGS SIDE)	
TV119	ATC + C ROOM	CENTER PLATFORM CAMERA	1	EMBEDDED	2-1" C	GRS	---	---	---	E-101	18	118										E-111	1		
TV120	ATC + C ROOM	CENTER PLATFORM CAMERA	1	EMBEDDED	2-1" C	GRS	---	---	---	E-101	19	119										E-111	1		
TV121	ATC + C ROOM	CENTER PLATFORM CAMERA	1	EMBEDDED	2-1" C	GRS	---	---	---	E-101	20	120										E-111	1		
TV122	ATC + C ROOM	SECURITY ROOM	1	EMBED/EXPOSED	2-1" C	GRS	---	---	---	E-101	21	121										E-111	1	TV MONITOR (HOME SAVINGS SIDE)	
PUBLIC ADDRESS SYSTEM												CABLE TRANSMISSION SUBSYSTEM													
PA 101	ATC + C ROOM	SPEAKERS MEZZ EAST	1	EMBEDDED	1-1" C	GRS	---	---	---	E-101			CT 101	MAIN DISTRIBUTION FRAME	OUTBOUND TUNNEL (AL) EAST END	1	EMBEDDED	1-4" C	GRS	---	---	---	E-121		TERMINATE IN TUNNEL TRENCH VIA CABLE ROOM
PA 102			1	EMBEDDED	1-1" C	GRS	---	---	---	E-101			CT 102			1	EMBEDDED	1-4" C	GRS	---	---	---	E-121		
PA 103			1	EMBEDDED	1-1" C	GRS	---	---	---	E-101			CT 103			1	EMBEDDED	1-4" C	GRS	---	---	---	E-121		
PA 104			1	EMBEDDED	1-1" C	GRS	---	---	---	E-101			CT 104	MAIN DISTRIBUTION FRAME	INBOUND TUNNEL (AL) EAST END	1	EMBEDDED	1-4" C	GRS	---	---	---	E-121		
PA 105		ELEV. #3 ROOM	1	EMBEDDED	1-1" C	GRS	---	---	---	E-101			CT 105			1	EMBEDDED	1-4" C	GRS	---	---	---	E-121		
PA 201	ATC + C ROOM	SPEAKERS-MEZZ CENTER	1	EMBEDDED	1-1" C	GRS	---	---	---	E-102			CT 106			1	EMBEDDED	1-4" C	GRS	---	---	---	E-123		
PA 202		SPEAKERS	1				---	---	---	E-102			CT 107	MAIN DISTRIBUTION FRAME	INBOUND TUNNEL (AL) WEST END	1	EMBEDDED	1-4" C	GRS	---	---	---	E-123		
PA 203		MONITOR	1				---	---	---	E-102			CT 108			1	EMBEDDED	1-4" C	GRS	---	---	---	E-123		
PA 204		SPEAKERS	1				---	---	---	E-102			CT 109			1	EMBEDDED	1-4" C	GRS	---	---	---	E-123		
PA 205		SPEAKERS	1				---	---	---	E-102			CT 110	MAIN DISTRIBUTION FRAME	OUTBOUND TUNNEL (AL) WEST END	1	EMBEDDED	1-4" C	GRS	---	---	---	E-123		
PA 206		MONITOR	1				---	---	---	E-102			CT 111			1	EMBEDDED	1-4" C	GRS	---	---	---	E-123		
PA 301	ATC + C ROOM	SPEAKERS-MEZZ WEST	1	EMBEDDED	1-1" C	GRS	---	---	---	E-103			CT 112			1	EMBEDDED	1-4" C	GRS	---	---	---	E-123		
PA 302			1				---	---	---	E-103												E-123			
PA 303			1				---	---	---	E-103												E-123			
PA 304			1				---	---	---	E-103												E-123			
PA 305			1				---	---	---	E-103												E-123			
PA 401	ATC + C ROOM	SPEAKERS-PLATE EAST	1	EMBEDDED	1-1" C	GRS	---	---	---	E-104												E-123			
PA 402		SPEAKERS	1				---	---	---	E-104												E-123			
PA 403		MONITOR	1				---	---	---	E-104												E-123			
PA 404		SPEAKERS	1				---	---	---	E-104												E-123			
PA 501	ATC + C ROOM	SPEAKERS	1				---	---	---	E-105												E-123			
PA 502		SPEAKERS	1				---	---	---	E-105												E-123			
PA 503		MONITOR	1				---	---	---	E-105												E-123			
PA 601	ATC + C ROOM	CABLE ROOM	1	EMBEDDED/EXP.	2-2" C		---	---	---	E-103												E-123		(HOME SAVINGS SIDE)	
PA 602		ELEVATOR / ST-9	1	EMBEDDED	1-1" C		---	---	---	E-106												E-123			
PA 701		SPEAKERS-EAST ENTRANCE	1				---	---	---	E-101												E-123			
PA 801	CABLE ROOM (CONDUITS PA 601)	SPEAKERS	1	EXP/EMBEDDED			---	---	---	E-411												E-123		(HOME SAVINGS SIDE)	
PA 802			1				---	---	---	E-411												E-123			
PA 803			1				---	---	---	E-411												E-123			
PA 804			1				---	---	---	E-411												E-123			
PA 805			1				---	---	---	E-411												E-123			

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DESIGNED BY L.S. JUNG DRAWN BY P. CHAIVEERA CHECKED BY A.R. BERGER IN CHARGE L.S. JUNG DATE 1 MAR 85		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT Gannett Fleming/Dworak... DMJM/PBOD/KE/HWA GENERAL CONSULTANTS		CONTRACT NO. A-165 DRAWING NO. E-117 SCALE NONE SHEET NO. A620/209	
REVISED PER CRG-511, 506 INITIAL ISSUE CR 5204		1/15/85 WEM 5/15/85 CM WILL CM		APPROVED DATE		CONDUIT SCHEDULE COMMUNICATIONS-1	



SEE SHEET E-122 FOR CONTINUATION

RM NAME
49 STAIR NO.5
45 EMERGENCY FAN
46 ELECTRICAL EQUIPMENT (CABLE ROOM)
47 FUTURE ELEVATOR EQUIPMENT ROOM (BELOW STAIRS)
48 EMERGENCY EQUIPMENT
49 PLATFORM



SECTION A A1
 N.T.S. E121 E121 E121
 E122 E122 E122
 E123 E123 E123

(SECTION "A1" IS SIMILAR TO "A" EXCEPT OPPOSITE HAND AND DIFFERENT CONDUIT NUMBERS).



REV.	DATE	BY	SUR.	APP.	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

3/13/87 WEM A CM REVISED PER ACRI 05-1
 1/25/87 WEM A CM REVISED PER CR-0-511
 CM INITIAL ISSUE

DESIGNED BY
L. S. JUNG

DRAWN BY
P. CHAVEERA

CHECKED BY
A. R. BERGER

IN CHARGE
L. S. JUNG

DATE
1 MAR 85

**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

Gannett Fleming/Dworsky • a joint venture

DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

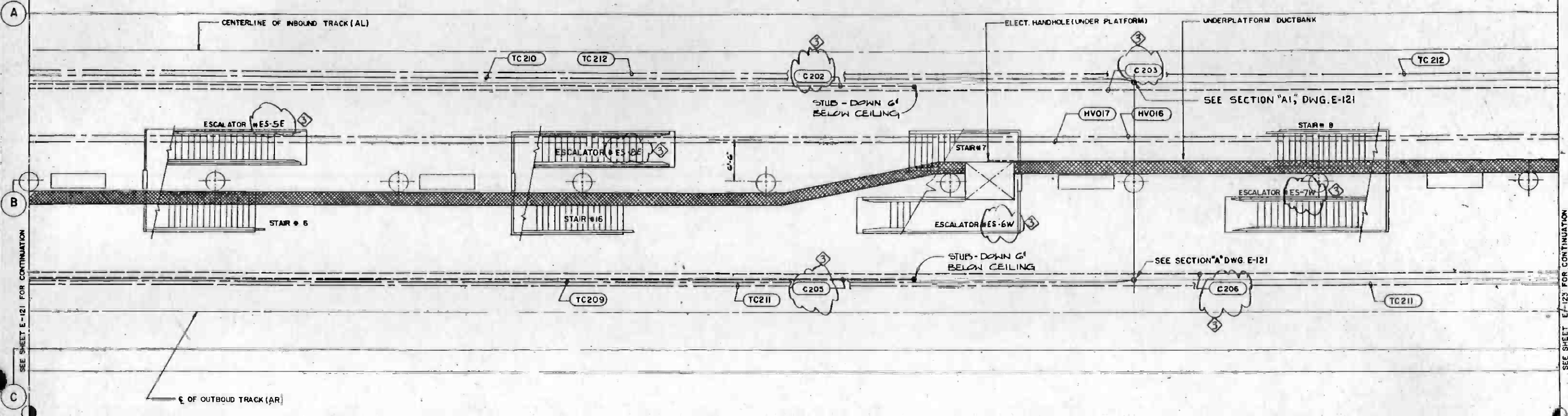
APPROVED: *[Signature]*

**LA. CBD TO N. HOLLYWOOD
7 TH./ FLOWER STATION**

**SYSTEMWIDE INTERFACE PLAN
EAST PLATFORM LEVEL**

CONTRACT NO.	A-165
DRAWING NO.	E-121
SCALE	1/8" = 1'-0"
SHEET NO.	1620 / 210

9 10 11 12 13 14 15 16



SEE SHEET E-121 FOR CONTINUATION

SEE SHEET E-123 FOR CONTINUATION



REV.	DATE	BY	SUB.	APP.	DESCRIPTION
3	13-87	WEM			REVISED PER ACR 165-1

REV.	DATE	BY	SUB.	APP.	DESCRIPTION
1	1/5/87	WEM			REVISED PER CR 5-11
2	5/11/87	PH	AS		REVISED PER CR 5-109
		CM			INITIAL ISSUE

DESIGNED BY
L.S. JUNG
DRAWN BY
P. CHAIVEERA
CHECKED BY
A.R. BERGER
IN CHARGE
L.S. JUNG
DATE
1 MAR 85



**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

Gannett Fleming/Dworsky • a joint venture

DMJM/PBQD/KE/HWA
A JOINT VENTURE
GENERAL CONSULTANTS

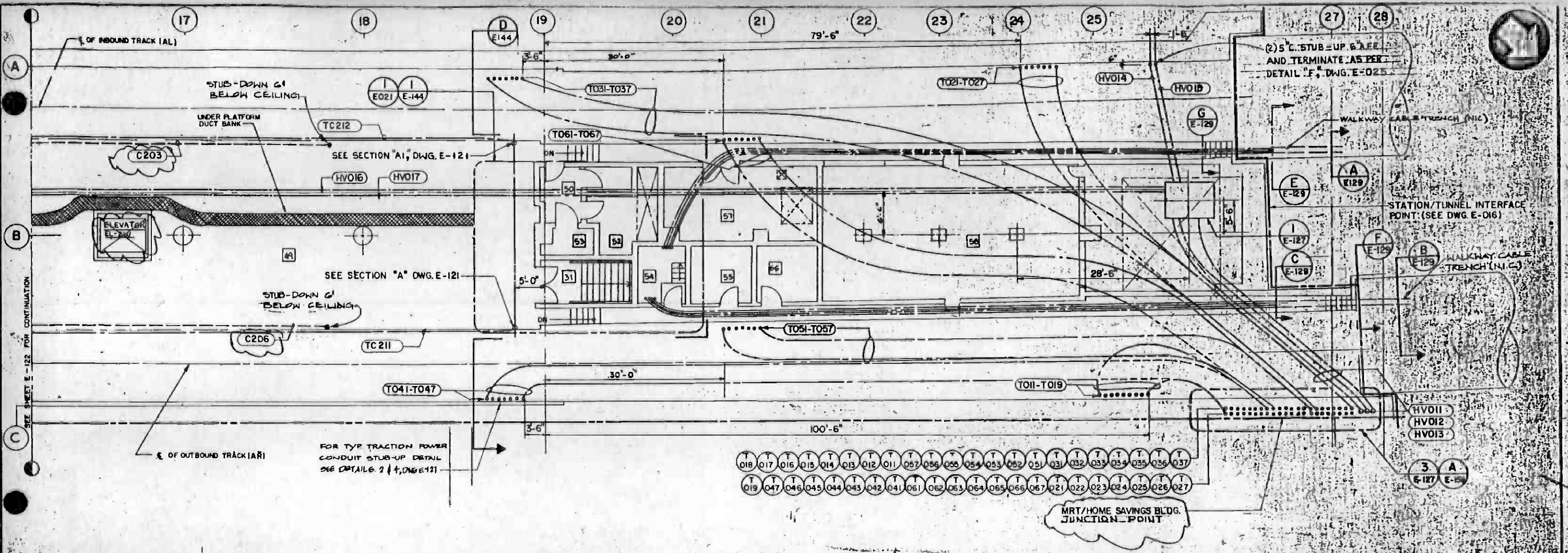
APPROVED: *Theresa M. [Signature]*



**LA. CBD TO N. HOLLYWOOD
7 TH. / FLOWER STATION**

SYSTEMWIDE INTERFACE PLAN
CENTRAL PLATFORM LEVEL

CONTRACT NO.	A-165
DRAWING NO.	E-122
SCALE	1/8" = 1'-0"
SHEET NO.	AG20/211



SEE SHEET E-122 FOR CONTINUATION

RM NO	RM NAME
51	STAIR NO. 9
52	PLATFORM
53	SERVICE CORRIDOR
54	EMERGENCY EQUIPMENT
55	CUSTODIAL CLOSET
56	ELEVATOR EQUIPMENT
57	ELECTRICAL EQUIPMENT
58	SUMP PUMP
59	EJECTOR
60	UNDER PLATFORM EXHAUST
61	EMERGENCY FAN

REV.	DATE	BY	CHKD.	APP.	DESCRIPTION

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DESIGNED BY
A. R. BERGER

DRAWN BY
P. CHAVEERA

CHECKED BY
L. S. JUNG

IN CHARGE
L. S. JUNG


DATE
1 MAR 85

REVISIONS:
 1. 5/13/84 WEM A. JUNG REVISED PER ACR 105-1
 2. 1/14/85 WEM A. JUNG REVISED PER CAG 506
 3. CM INITIAL ISSUE

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

Gannett Fleming/Dworsky - a joint venture

DMJM/PBQO/KE/HWA
GENERAL CONSULTANTS



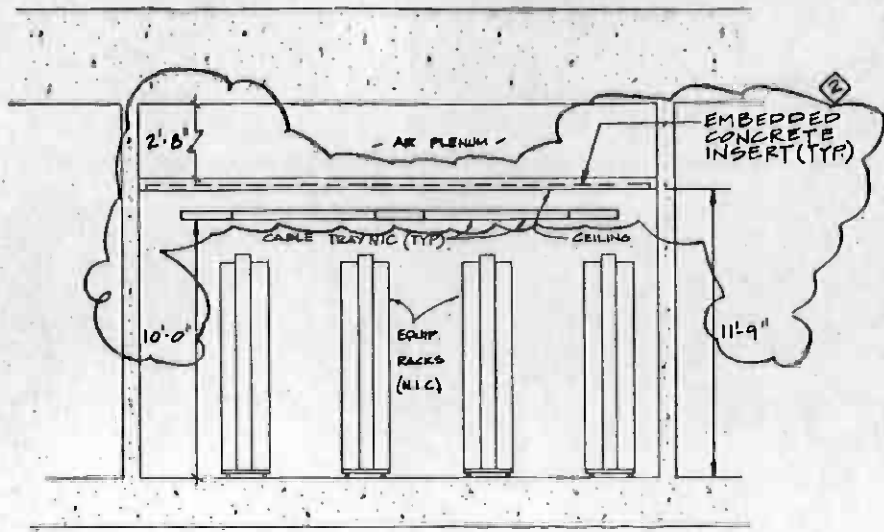
LA, CBD TO N. HOLLYWOOD
7 TH./FLOWER STATION
SYSTEMWIDE INTERFACE PLAN
WEST PLATFORM LEVEL

CONTRACT NO. A-165
DRAWING NO. E-123
SCALE: 1/8" = 1'-0"
SHEET NO. A620 / 212

APPROVED: [Signature]

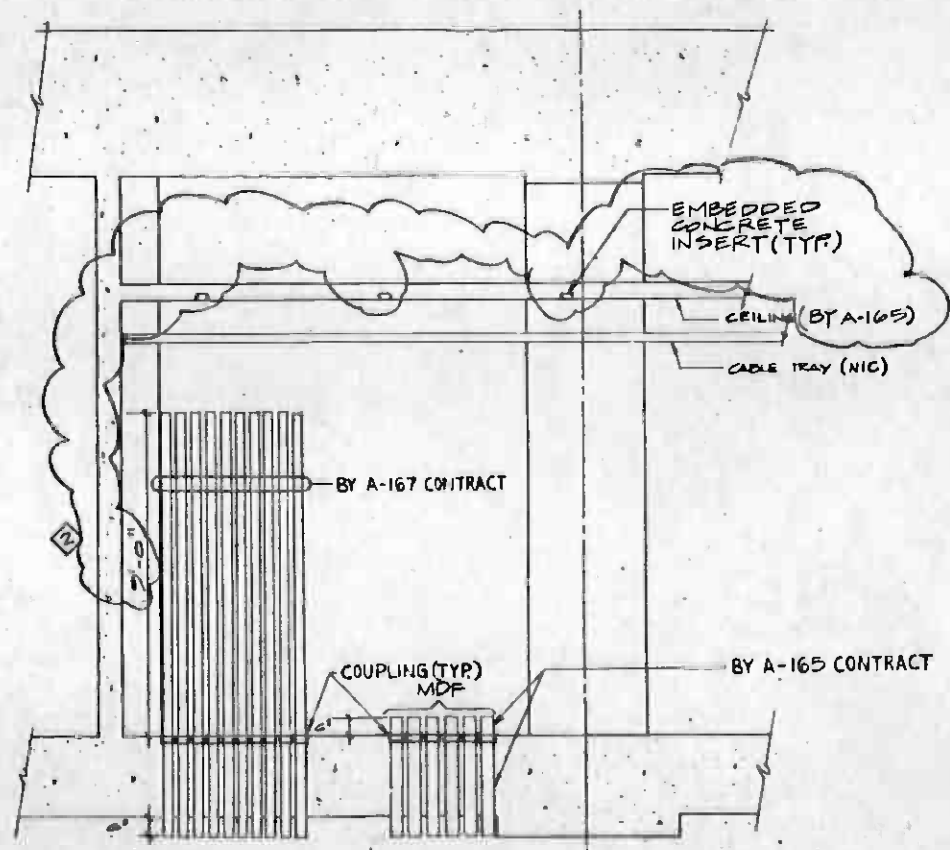
DATE: 1 MAR 85

1



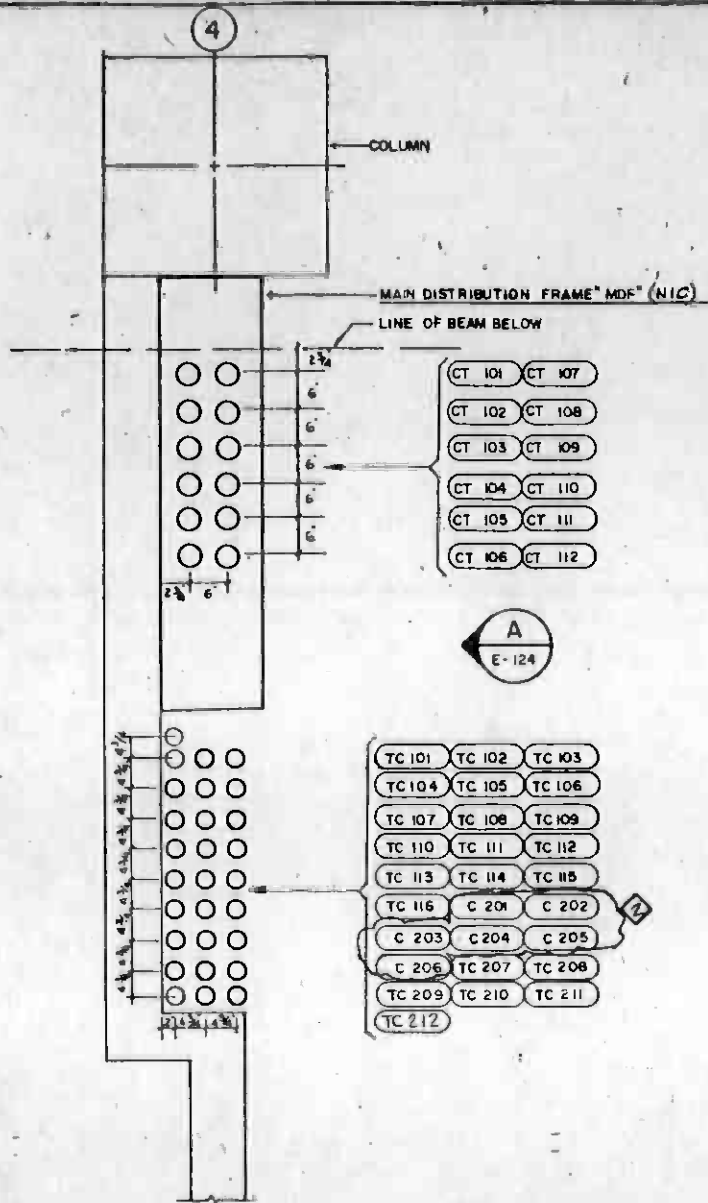
ATC & C ROOM SECTION
SCALE: 1/4" = 1'-0"

B
E-124 124



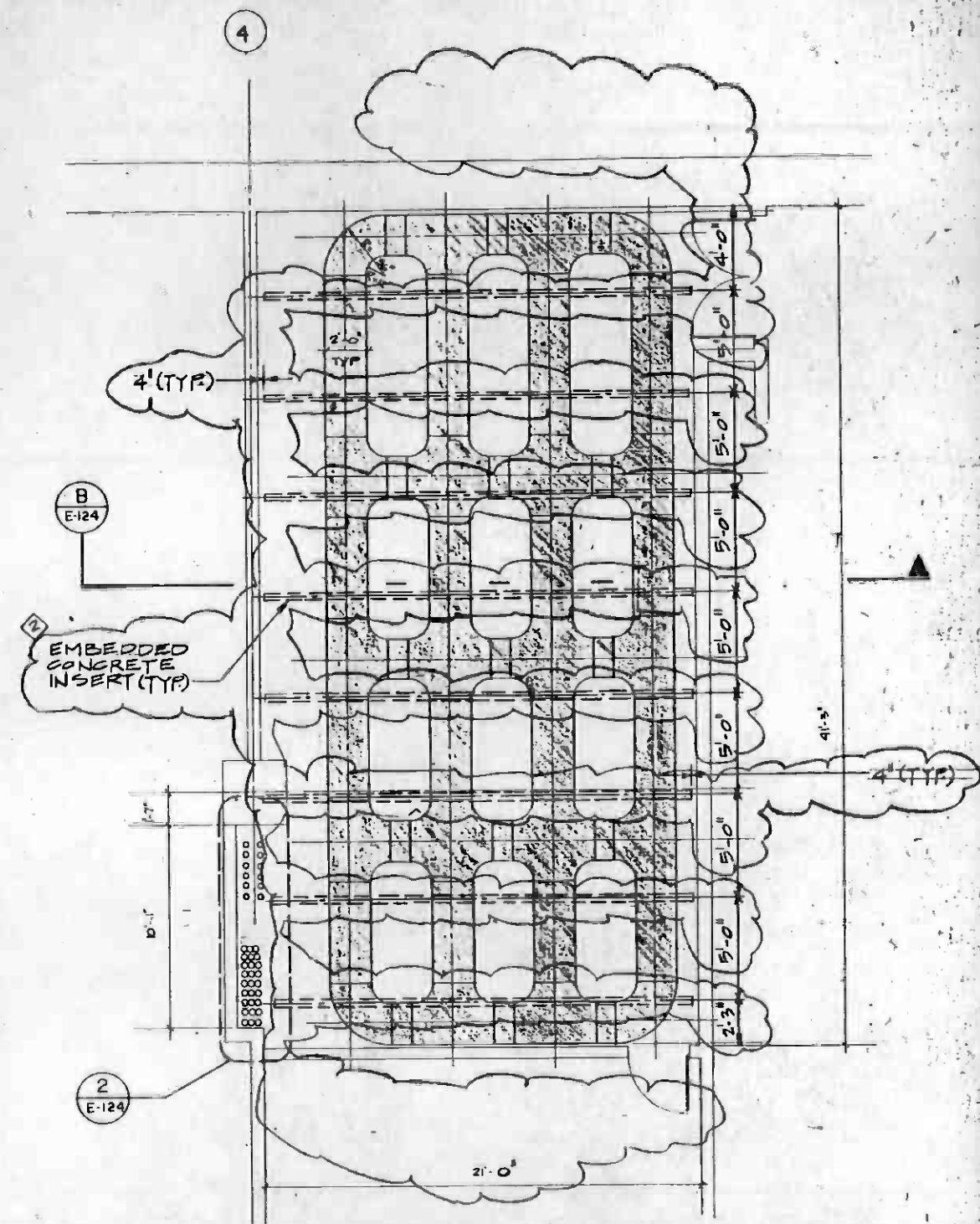
PARTIAL ATC & C ROOM ELEVATION
SCALE: 3/8" = 1'-0"

A
E-124 124



PARTIAL ATC & COMM. ROOM PLAN
SCALE: 3/4" = 1'-0"

2
E-124 124



ATC & C ROOM PLAN
SCALE: 1/4" = 1'-0"

3
E-101, E-143 E-124

REV.	DATE	BY	SUB	APP.	DESCRIPTION
1	11/13/87	WEM			REVISED PER ACR 105-1
2	1/15/88	WEM			REVISED PER CRG-511
3	02/16/88	CM			INITIAL ISSUE CR 5204

DESIGNED BY
L. S. JUNG

DRAWN BY
A. R. BERGER

CHECKED BY
A. R. BERGER

IN CHARGE
L. S. JUNG

DATE
1 MAR 85

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

Gannett Fleming/Dworsky - a joint venture

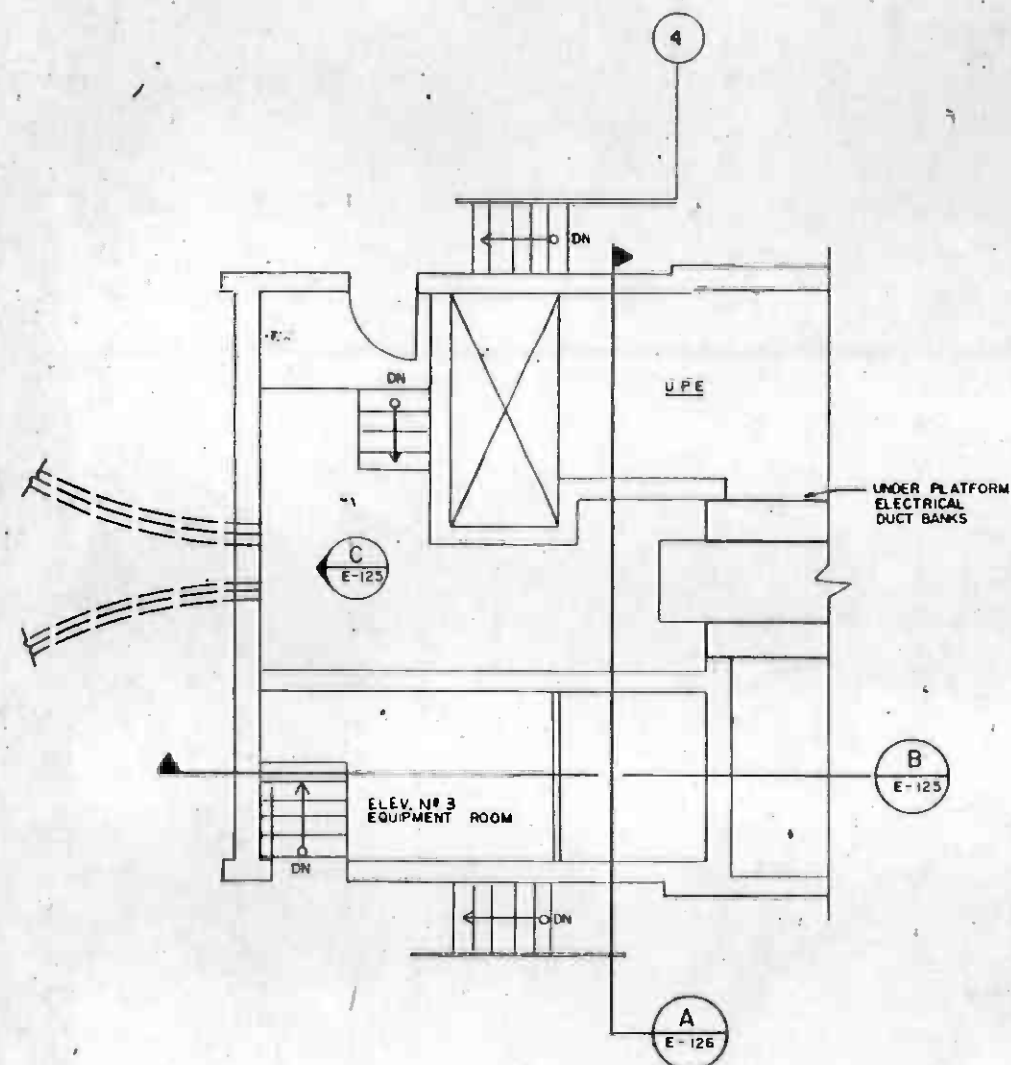
DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

APPROVED

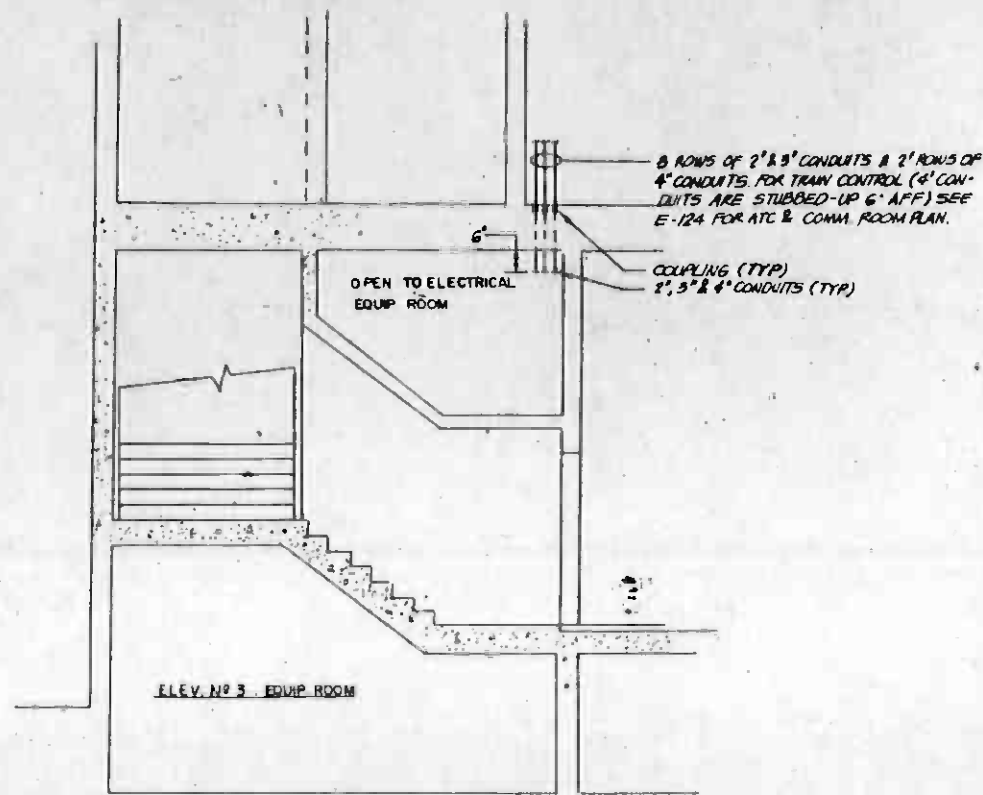
L.A. CBD TO N. HOLLYWOOD
7 TH./ FLOWER STATION

SYSTEMWIDE INTERFACE - MRT
DETAILS-1

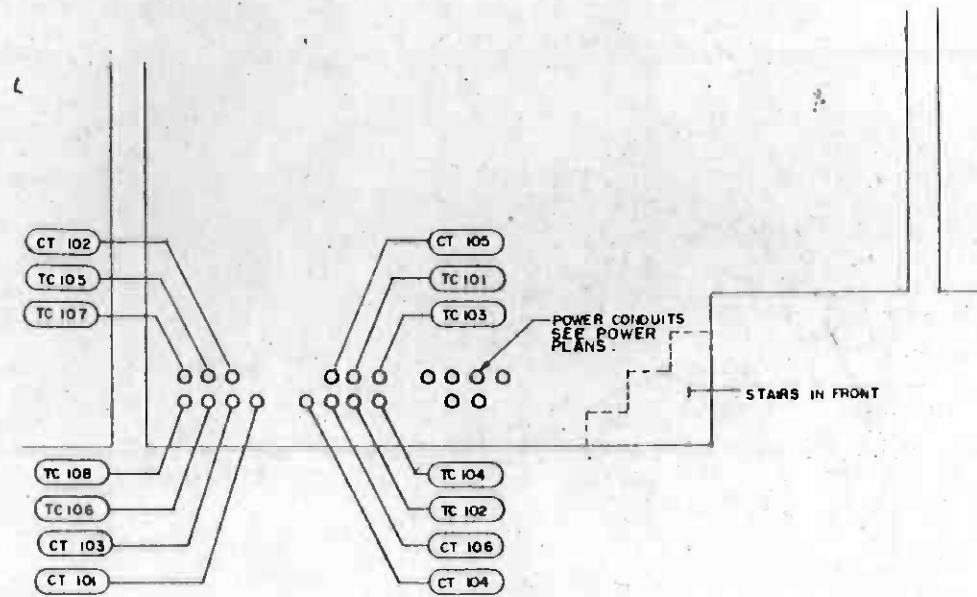
CONTRACT NO.	A-165
DRAWING NO.	E-124
SCALE	AS NOTED
SHEET NO.	AG20/213



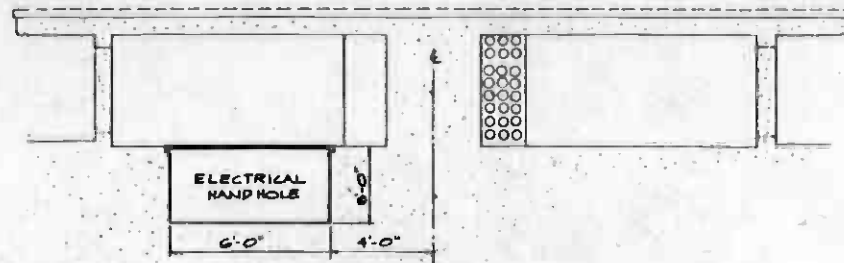
EAST CABLE ROOM PLAN
SCALE: 1/4" = 1'-0"
E-125 121



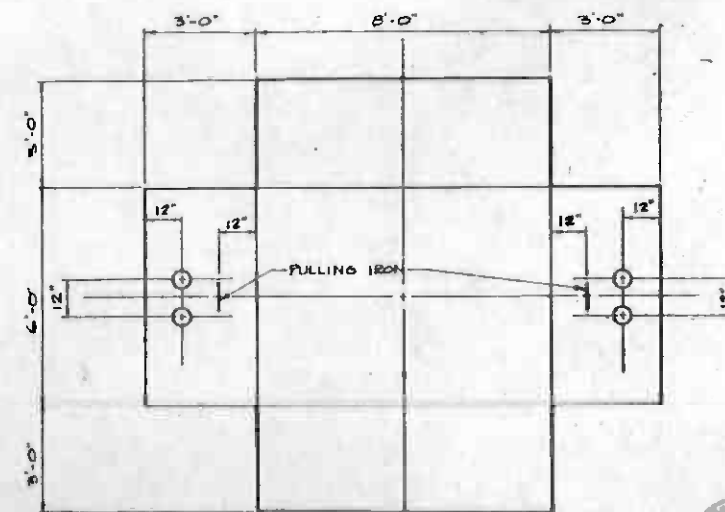
COMMUNICATIONS CONDUIT SECTION PLAN
SCALE: 1/4" = 1'-0"
E-125 125



EAST CABLE ROOM ELEVATION
SCALE: 1/2" = 1'-0"
E-125 125



HANDHOLE SECTION
N.T.S.
E-125 E-121



ELECTRICAL HANDHOLE
N.T.S.
E-125 E-121



REV.	DATE	BY	SUB.	APP.	DESCRIPTION

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DESIGNED BY	L. S. JUNG	REVISION	1	REVISED PER CR6-S11	INITIAL ISSUE CR 5-204
DRAWN BY	P. CHAIVEERA	NO. 125	CM		
CHECKED BY	A. R. BERGER	DATE	1 MAR 85		
IN CHARGE	L. S. JUNG				

REGISTERED PROFESSIONAL ENGINEER
LESTER JUNG
No. 1197
Exp. 12/31/88

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT

Gannett Fleming/Dworsky • a joint venture

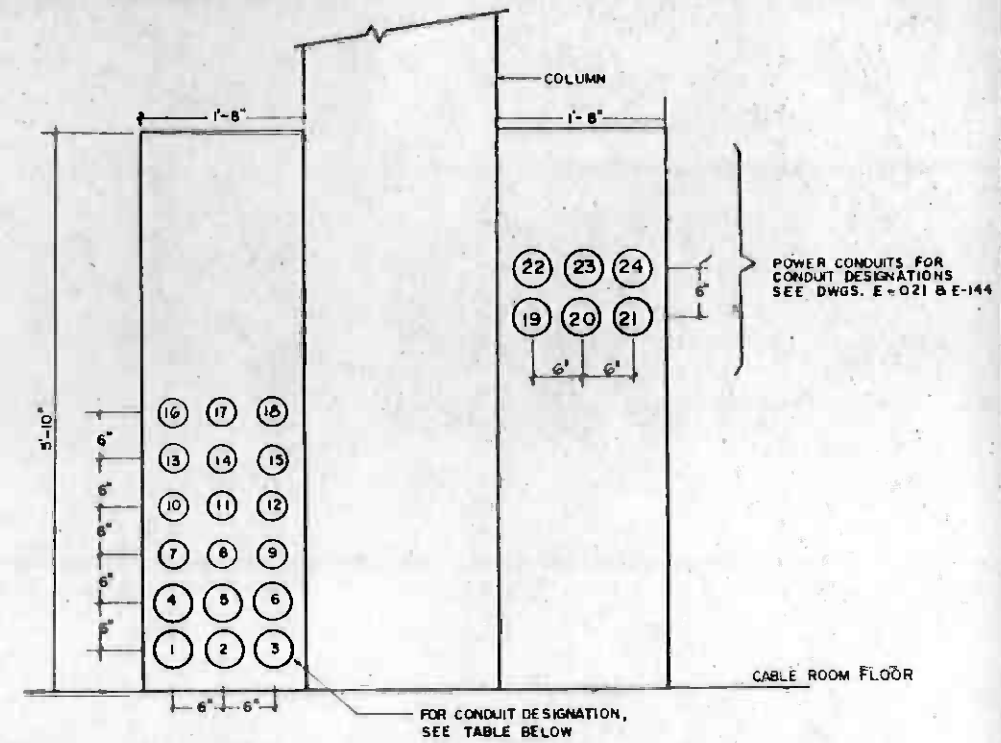
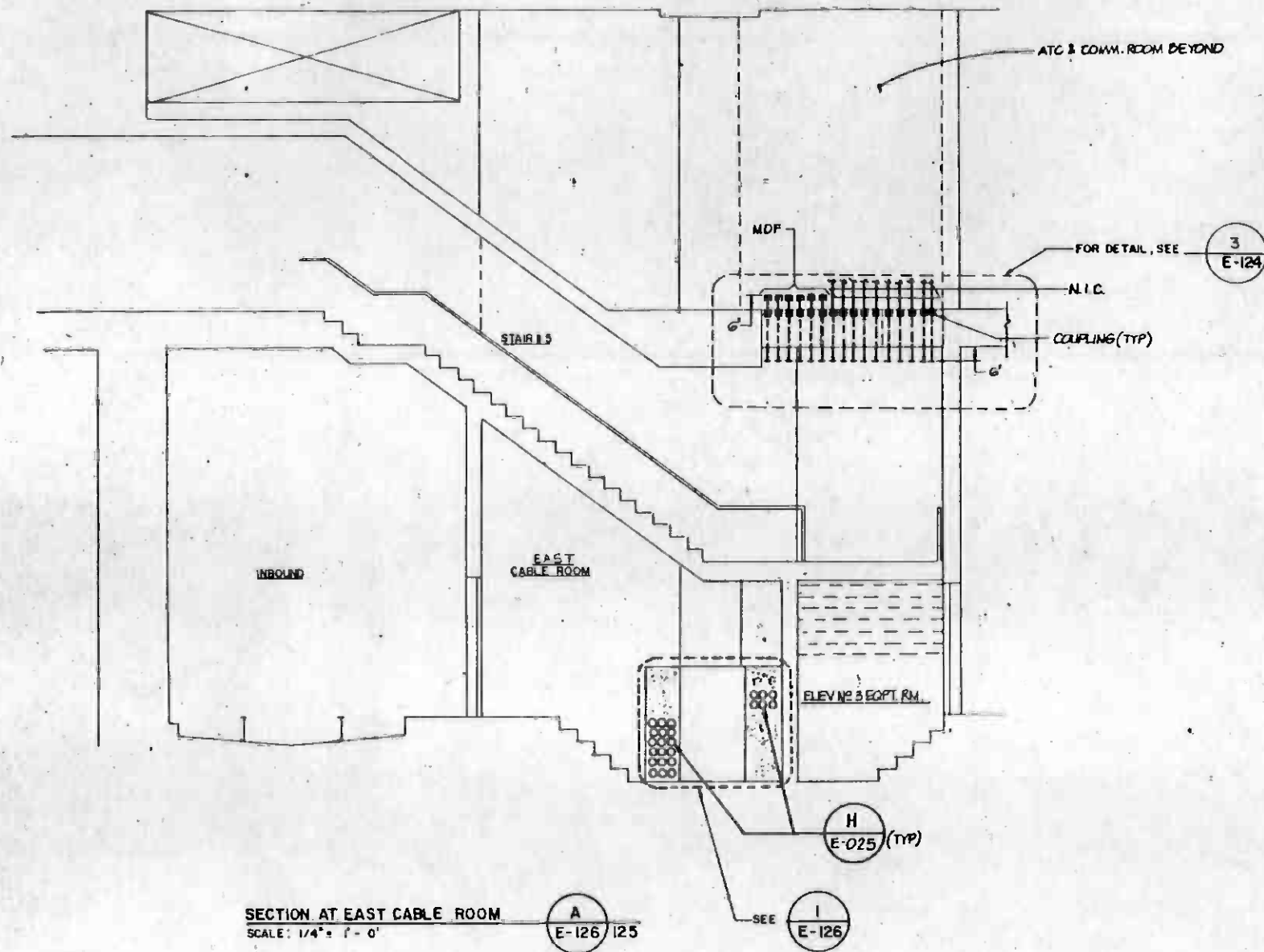
DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

APPROVED: *[Signature]*

LA. CBD TO N. HOLLYWOOD 7 TH./ FLOWER STATION

SYSTEMWIDE INTERFACE
DETAILS-2

CONTRACT NO.	A-165
DRAWING NO.	E-125
SCALE	AS NOTED
SHEET NO.	A620/214



CONDUIT #	CONDUIT DESIGNATION
1	CT - 107
2	CT - 108
3	CT - 109
4	CT - 110
5	CT - 111
6	CT - 112
7	TC - 109
8	TC - 110
9	TC - 111
10	TC - 112
11	TC - 113
12	TC - 114
13	TC - 115
14	TC - 116
15	HC - 002
16	HC - 002
17	HC - 002
18	HC - 002

CONDUIT DUCT BANK DETAIL AT WEST CABLE ROOM
SCALE: 1" = 1'-0"



REV.	DATE	BY	SUB.	APP.	DESCRIPTION
1	1/15/85	WEM	As	(Signature)	REVISED PER CR 6-511
2	0-11	CM			INITIAL ISSUE CR 5204

DESIGNED BY
L.S. JUNG

DRAWN BY
P. CHAIVEERA

CHECKED BY
A.R. BERGER

IN CHARGE
L.S. JUNG

DATE
1 MAR 85

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

Gannett Fleming/Dworsky • a joint venture

DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

APPROVED (Signature)

LA. CBD TO N. HOLLYWOOD
7 TH./FLOWER STATION

SYSTEMWIDE INTERFACE
DETAILS-3

CONTRACT NO.
A-165

DRAWING NO.
E-126

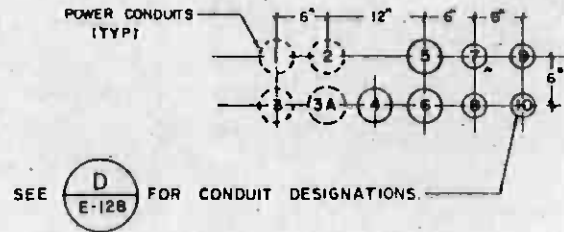
SCALE
AS SHOWN

SHEET NO.
A610/215

#	SIZE	CONDUIT DESIGNATION	#	SIZE	CONDUIT DESIGNATION
1	4"	A177S	21	4"	A177N
2	4"	A178S	22	4"	A178N
3	4"	A177SI	23	4"	A177NI
3A	4"	A178SI	23A	4"	A178NI
4	4"	CT 104	24	4"	CT 101
5	4"	CT 105	25	4"	CT 102
6	4"	CT 106	26	4"	CT 103
7	3"	TC 101	27	3"	TC 105
8	3"	TC 102	28	3"	TC 106
9	3"	TC 103	29	3"	TC 107
10	3"	TC 104	30	3"	TC 108

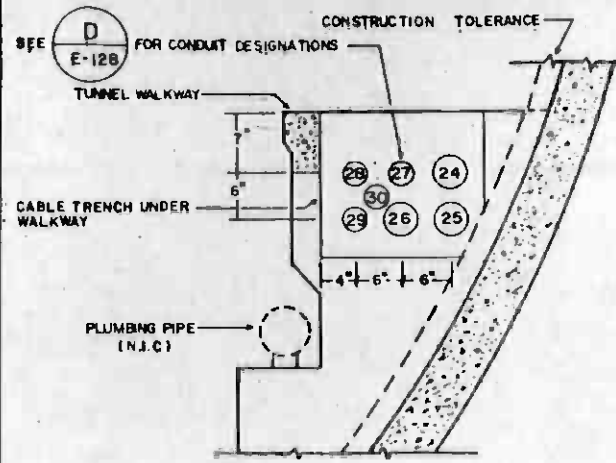
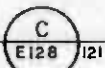
SEE CONDUIT SCHEDULES FOR CONDUIT TYPES
 * THESE CONDUITS TERMINATE AT TUNNEL PULL BOXES. SEE DWG'S E-014 & E-020.

CONDUIT DESIGNATIONS



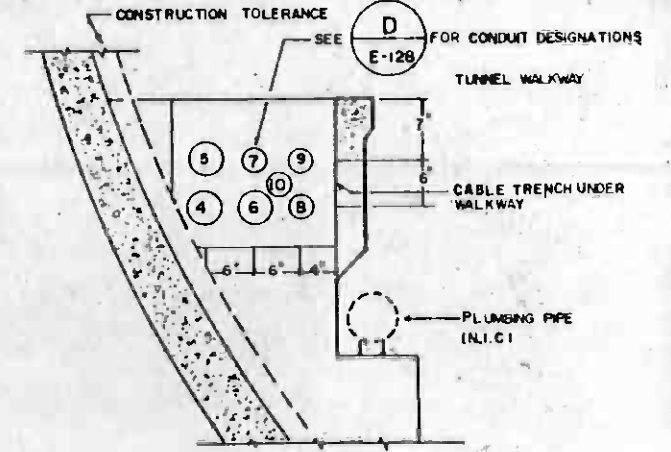
CONDUIT ARRANGEMENT AT STATION - INBOUND (AL)

SCALE 1" = 1'-0"



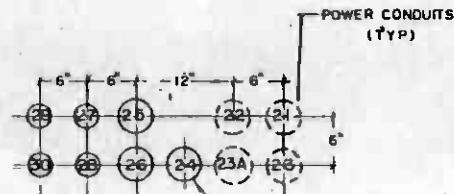
SECTION AT TRENCH - OUTBOUND TUNNEL (AR)

SCALE 1" = 1'-0"



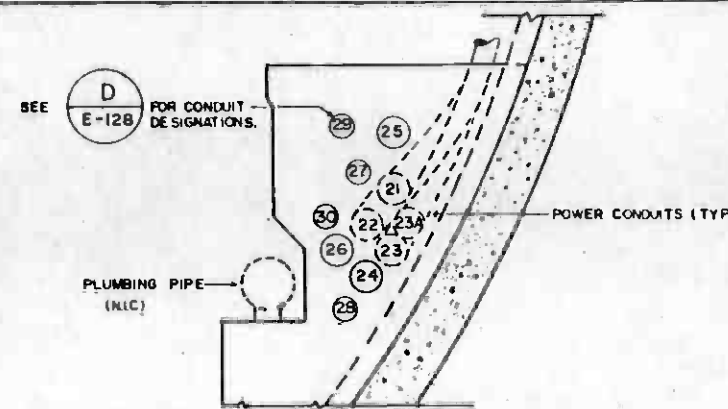
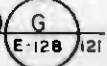
SECTION AT TRENCH - INBOUND TUNNEL (AL)

SCALE 1" = 1'-0"



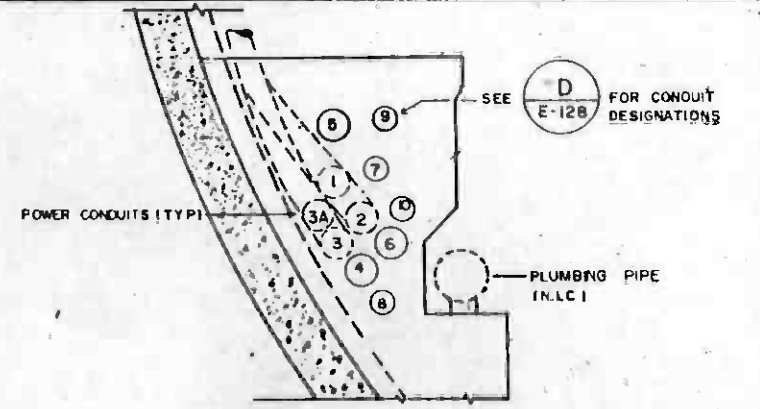
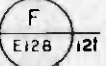
CONDUIT ARRANGEMENT AT STATION - OUTBOUND (AR)

SCALE 1" = 1'-0"



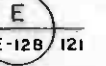
SECTION AT END OF OUTBOUND TUNNEL (AR)

SCALE 1" = 1'-0"



SECTION AT END OF INBOUND TUNNEL (AL)

SCALE 1" = 1'-0"



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DESIGNED BY	L.S. JUNG
DRAWN BY	P. CHAIVEERA
CHECKED BY	A.R. BERGER
IN CHARGE	L.S. JUNG
DATE	1 MAR 85

REV.	DATE	BY	SUB.	APP.	DESCRIPTION
1					INITIAL ISSUE
2					REVISED PER CRS-209

DESIGNED BY
L.S. JUNG

DRAWN BY
P. CHAIVEERA

CHECKED BY
A.R. BERGER

IN CHARGE
L.S. JUNG

DATE
1 MAR 85

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

Gannett Fleming/Dworsky • a joint venture

DMJM/PBQD/KE/HWA
 GENERAL CONSULTANTS

LA. CBD TO N. HOLLYWOOD
 7 TH./ FLOWER STATION

EAST END-CONDUIT &
 SYSTEMWIDE INTERFACE SECTIONS

CONTRACT NO.	A-165
DRAWING NO.	E-128
SCALE	AS NOTED
SHEET NO.	2

AG20/216

REV.	DATE	BY	SUB.	APP.	DESCRIPTION

#	SIZE	CONDUIT DESIGNATION	#	SIZE	CONDUIT DESIGNATION
1	4"	(A179B)	21	4"	(A179N)
2	4"	(A180B)	22	4"	(A180N)
3	4"	(A181B)	23	4"	(A181N)
3A	4"	(A019)	23A	4"	(A046)
4	4"	(CT 107)	24	4"	(CT 110)
5	4"	(CT 108)	25	4"	(CT 111)
6	4"	(CT 109)	26	4"	(CT 112)
7	3"	(TC 109)	27	3"	(TC 113)
8	3"	(TC 110)	28	3"	(TC 114)
9	3"	(TC 111)	29	3"	(TC 115)
10	3"	(TC 112)	30	3"	(TC 116)

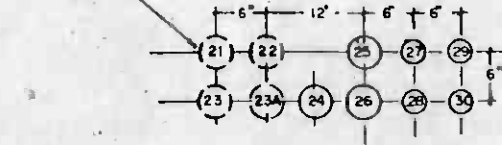
SEE CONDUIT SCHEDULES FOR CONDUIT TYPES

* THESE CONDUITS TERMINATE AT TUNNEL PULL BOXES SEE DWGS E016 & E020.

CONDUIT DESIGNATIONS



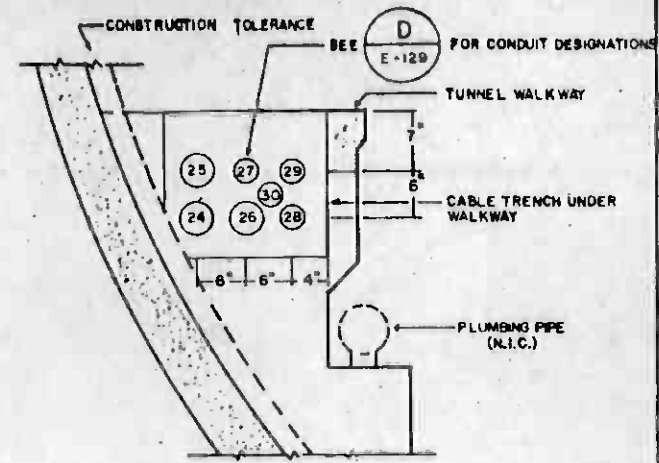
SEE FOR CONDUIT DESIGNATIONS



CONDUIT ARRANGEMENT AT STATION - OUTBOUND (AR)



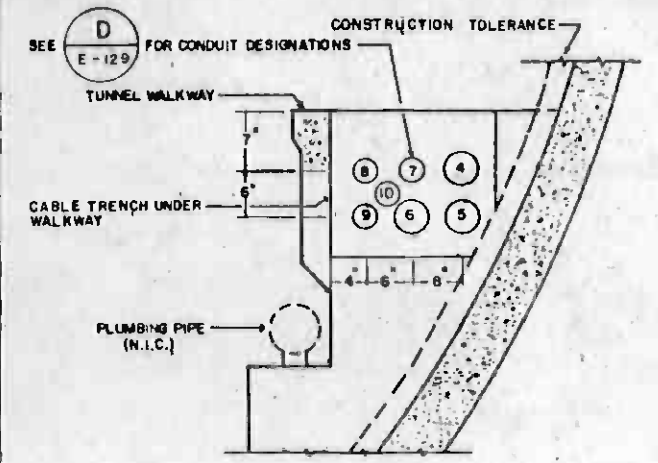
SCALE 1" = 1'-0"



SECTION AT TRENCH - OUT BOUND TUNNEL (AR)



SCALE 1" = 1'-0"

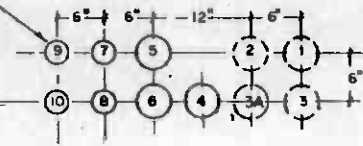


SECTION AT TRENCH - INBOUND TUNNEL (AL)



SCALE 1" = 1'-0"

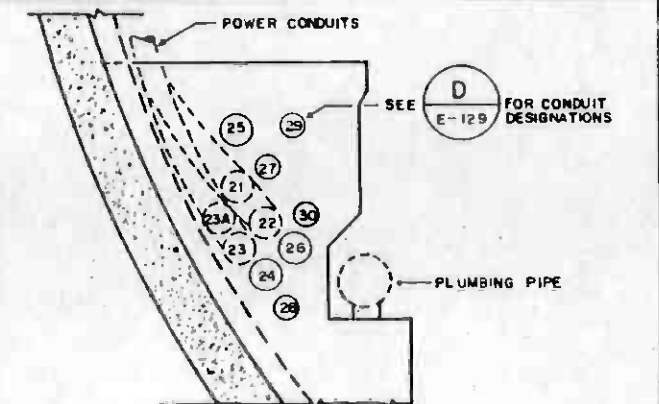
SEE FOR CONDUIT DESIGNATIONS



CONDUIT ARRANGEMENT AT STATION - INBOUND (AL)



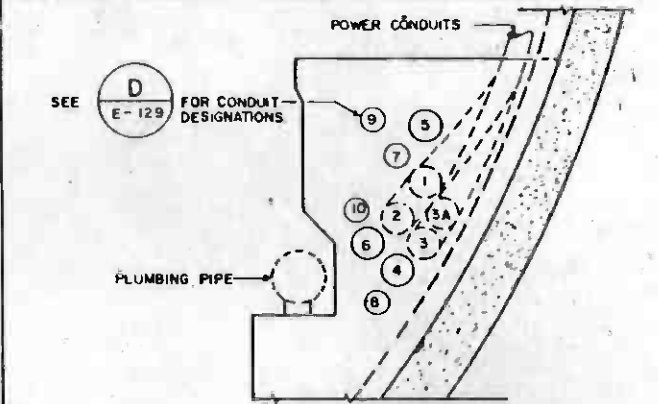
SCALE 1" = 1'-0"



SECTION AT END OF OUTBOUND TUNNEL (AR)



SCALE 1" = 1'-0"



SECTION AT END OF INBOUND TUNNEL (AL)



SCALE 1" = 1'-0"



<p>THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA</p>				<p>DESIGNED BY L.S. JUNG</p>		<p>SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT</p>		<p>CONTRACT NO. A-165</p>	
<p>1/15/87 WEM AS JWS 1/15/87 PH AS 12/31/87 CM</p>				<p>DRAWN BY P. CHAIWEERA</p>		<p>Gannett Fleming/Dworsky • a joint venture</p>		<p>DRAWING NO. E-129</p>	
<p>REVISED PER CR6-511 REVISED PER CR5-109 INITIAL ISSUE</p>				<p>CHECKED BY A.R. BERGER</p>		<p>DMJM/PBQD/KE/HWA GENERAL CONSULTANTS</p>		<p>REV. 2</p>	
<p>REV. DATE BY SUB APP. DESCRIPTION</p>				<p>CHARGE L.S. JUNG</p>		<p>DATE 1 MAR 85</p>		<p>SCALE AS NOTED</p>	
<p>REV. DATE BY SUB APP. DESCRIPTION</p>				<p>DATE 1 MAR 85</p>		<p>APPROVED <i>[Signature]</i></p>		<p>SHEET NO. 20/217</p>	

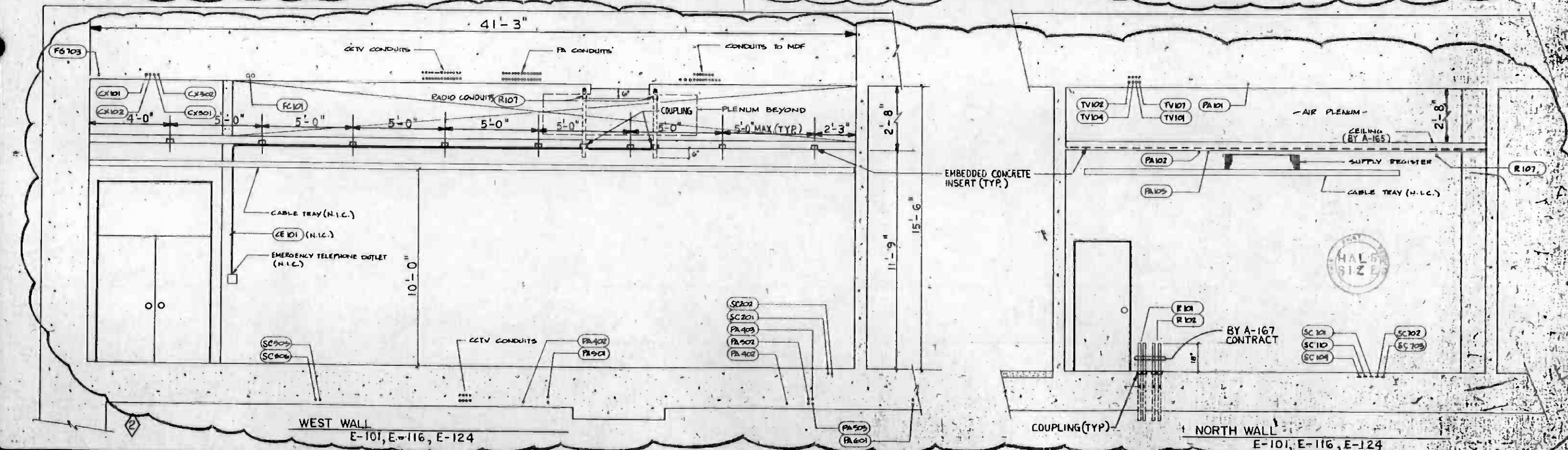
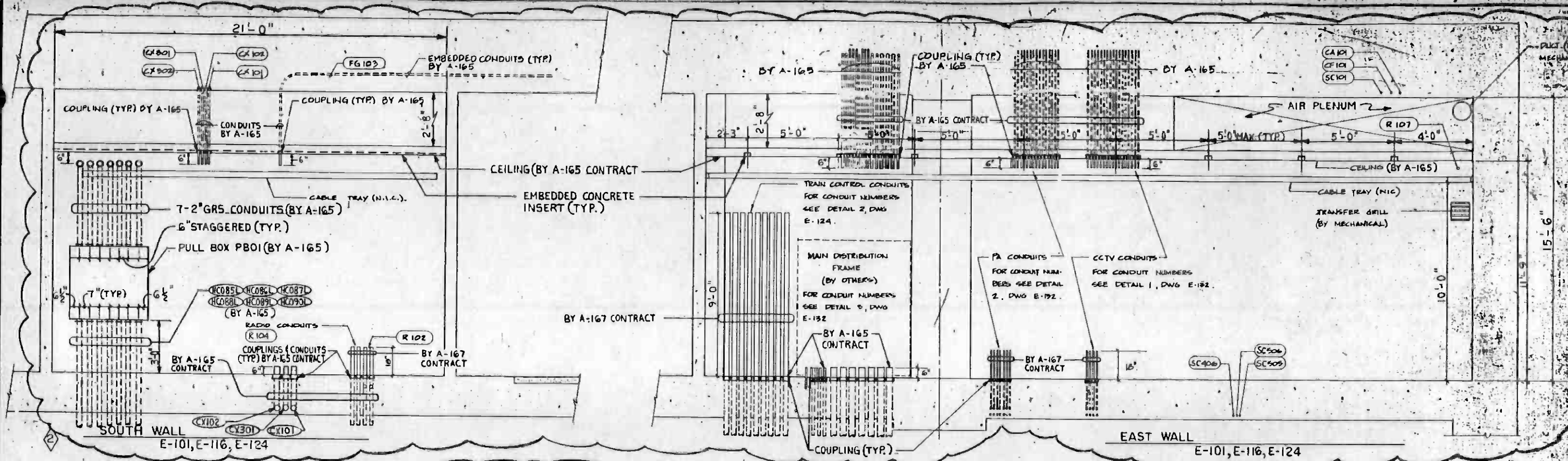
ELECTRICAL RACEWAY AND CABLE SCHEDULE

ELECTRICAL RACEWAY AND CABLE SCHEDULE

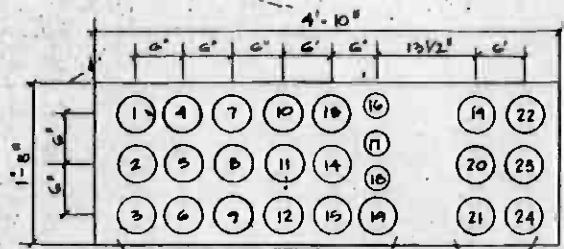
NO.	FROM	TO	CKTS.	RACEWAY			CONDUCTOR			DWG. NO.	SHT. NO.	REMARKS	NO.	FROM	TO	CKTS.	RACEWAY			CONDUCTOR			DWG. NO.	SHT. NO.	REMARKS
				METHOD	SIZE	TYPE	NO. & SIZE	TYPE	GND.								METHOD	SIZE	TYPE	NO. & SIZE	TYPE	GND.			
TRACTION POWER SYSTEM												TRAIN CONTROL SYSTEM													
POSITIVE FEEDERS																									
T011	ELECTRICAL ROOM - COL. C WALL	AR TRACK COL. 25		EMBEDDED	2 1/2"	PVC				E-123 E-153		TC 101	ATC + C ROOM	EAST INBOUND TUNNEL (AL)		EMBEDDED	1-3"					E-128		TERMINATE AT TUNNEL TRENCH	
T012												TC 102													
T013												TC 103													
T014												TC 104													
T015												TC 105	ATC + C ROOM	EAST OUTBOUND TUNNEL (AR)		EMBEDDED	1-3"								
T016												TC 106													
T017												TC 107													
T018												TC 108													
T019												TC 109	ATC + C ROOM	WEST INBOUND TUNNEL (AL)		EMBEDDED	1-3"					E-129			
T020												TC 110													
T021		AL TRACK COL. 24										TC 111													
T022												TC 112													
T023												TC 113	ATC + C ROOM	WEST OUTBOUND TUNNEL (AR)		EMBEDDED	1-3"								
T024												TC 114													
T025												TC 115													
T026												TC 116													
T027																									
T031		AL TRACK COL. 19																							
T032																									
T033																									
T034																									
T035																									
T036																									
T037																									
T041		AR TRACK COL. 19																							
T042																									
T043																									
T044																									
T045												TC 207	ATC + C ROOM	UNDER PLATFORM COL. 4		EXP/EMBED.	1-2"					E-121, E-122 & E-123			SPARE CONDUIT
T046												TC 208													
T047												TC 209		COL. 14			1-2"								
												TC 210					1-2"								
												TC 211		COL. 19			1-2"								
												TC 212					1-2"								
NEGATIVE FEEDERS																									
T051	ELECTRICAL ROOM - COL. C WALL	AR TRACK - COL. 20		EMBEDDED	2 1/2"	PVC				E-123 E-153															
T052																									
T053																									
T054																									
T055																									
T056																									
T057																									
T061		AL TRACK COL. 20																							
T062																									
T063																									
T064																									
T065																									
T066																									
T067																									



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.										DESIGNED BY L. S. JUNG DRAWN BY P. CHAVEERA CHECKED BY A. R. BERGER IN CHARGE L. S. JUNG DATE 1 MAR 85					SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT 					L.A. CBD TO N. HOLLYWOOD 7 TH./ FLOWER STATION CONDUIT SCHEDULE TRACTION POWER AND TRAIN CONTROL					CONTRACT NO. A-165 DRAWING NO. E-130 REV. 2 SCALE NONE SHEET NO. 1620 / 218				
REVISED PER ACR 105-1 INITIAL ISSUE										DMJM/PBQD/KE/HWA GENERAL CONSULTANTS APPROVED: <i>[Signature]</i>																			



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY A.R. BERGER DRAWN BY A.R. BERGER CHECKED BY L.S. JUNG IN CHARGE L.S. JUNG DATE 1 MAR 85		REGISTERED PROFESSIONAL ENGINEER LESTER JUNG No 10979 Exp. 9/30/85 ELECTRICAL STATE OF CALIFORNIA		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT Gannett Fleming/Dworsky - a joint venture DMJM/PBQD/KE/HWA GENERAL CONSULTANTS APPROVED: <i>[Signature]</i>		L.A. CBD TO N. HOLLYWOOD 7TH./FLOWER STATION CONDUIT DETAILS COMMUNICATIONS ROOM ELEVATIONS CONTRACT NO. A-165 DRAWING NO. E-143 SCALE 3/8" = 1'-0" SHEET NO. A620/219	
REV.	DATE	BY	SUB.	APP.	DESCRIPTION	REV.	DATE	BY	SUB.	APP.	DESCRIPTION
						3-13-85	WEM	A			REVISED PER ACR 165-1
						7/5/87	WEM	A			REVISED PER CRG-511
							WEM	CM			INITIAL ISSUE



TRAIN CONTROL AND COMMUNICATION CONDUITS. FOR CONDUIT DESIGNATIONS SEE DETAIL I, SHEET E-126

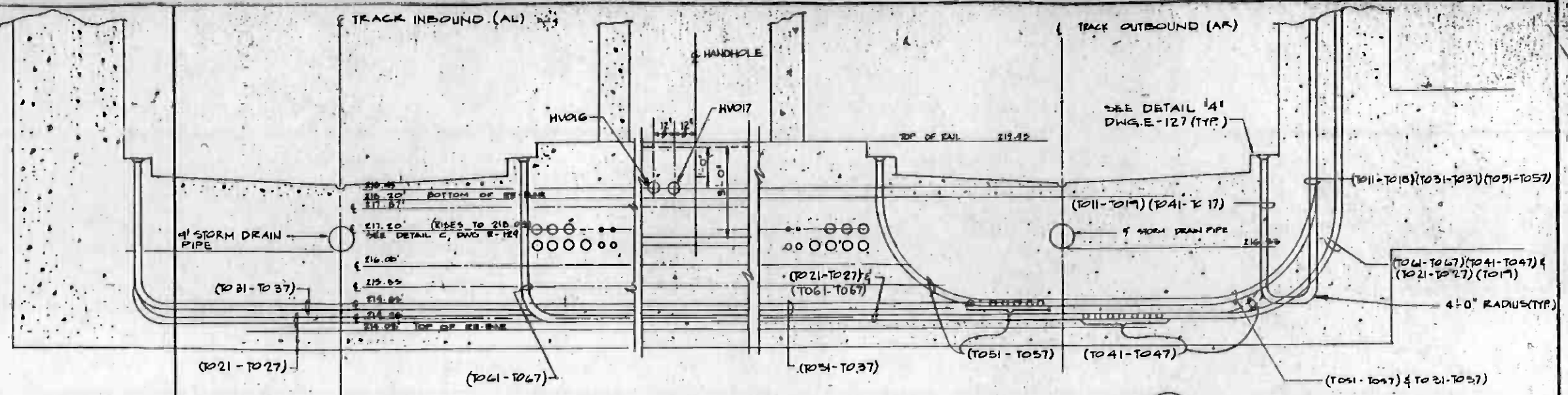
POWER CONDUITS. FOR CONDUIT DESIGNATION SEE DWG. E-021

DUCT BANK SECTION

SCALE: 1" = 1'-0"

C

E-144 E-144, E-126

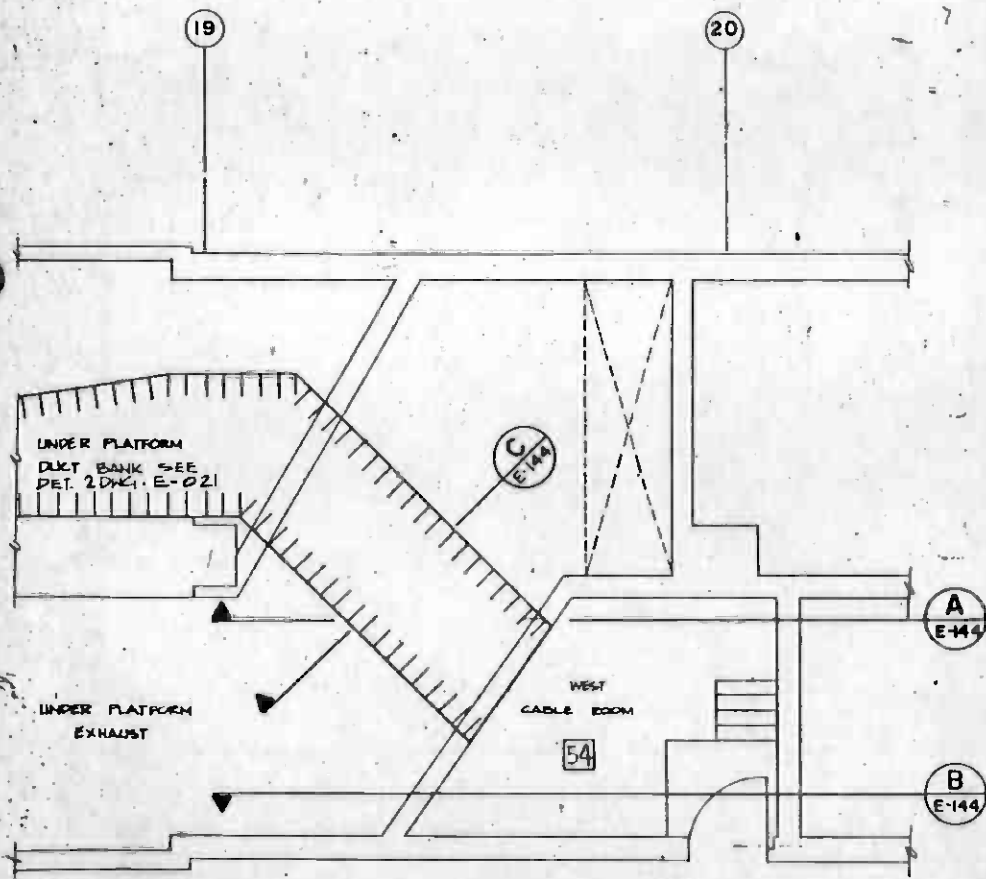


OUTBOUND TRACK SECTION

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

D

E-144 E-123

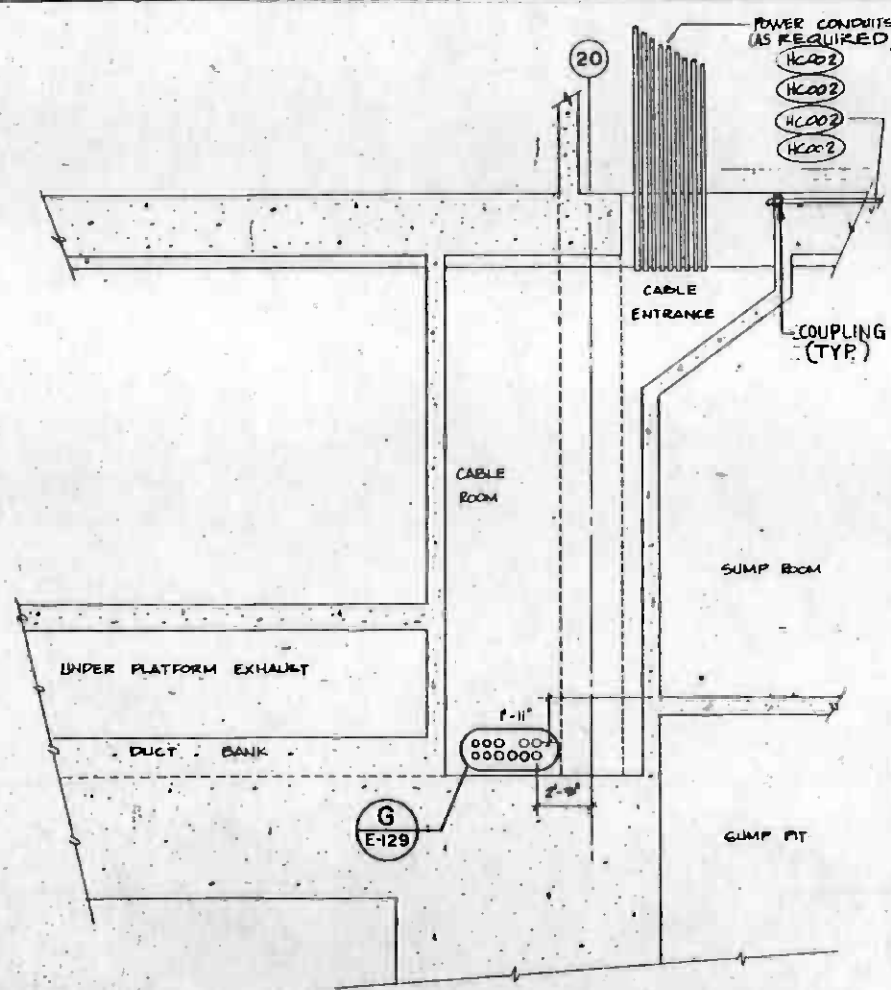


PARTIAL PLAN AT WEST CABLE ROOM

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

I

E-144 E-123

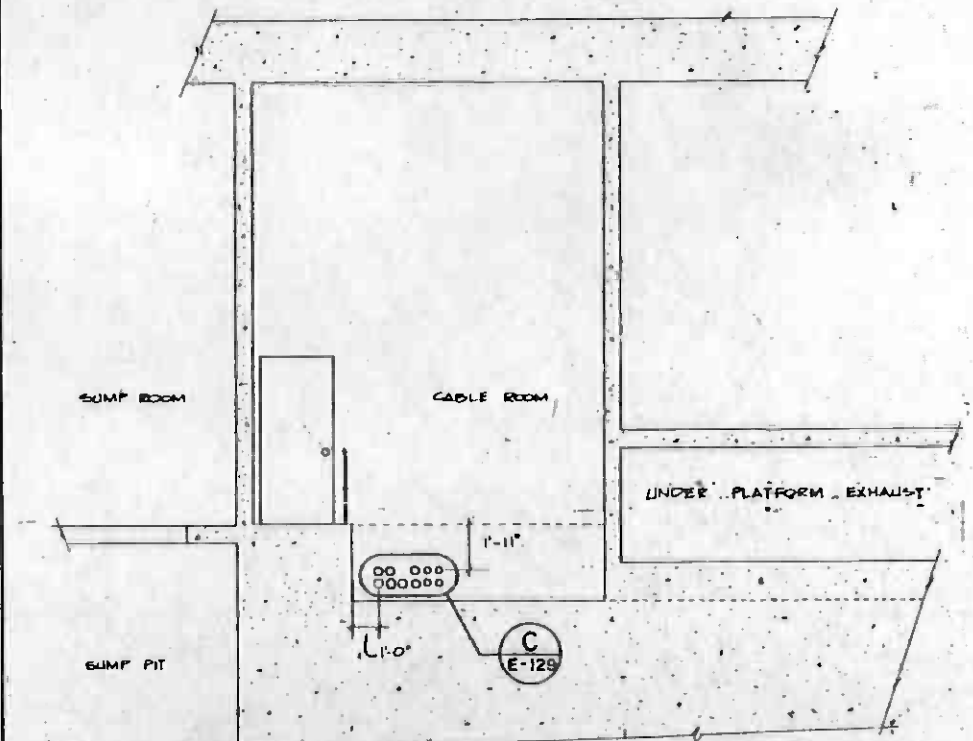


WEST CABLE ROOM SECTION

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

A

E-144 E-144



WEST CABLE ROOM SECTION

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

B

E-144 E-144

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DESIGNED BY
L. S. JUNG

DRAWN BY
A. R. BERGER

CHECKED BY
A. R. BERGER

IN CHARGE
L. S. JUNG

DATE
1 MAR '85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT



Gannett Fleming/Dworsky • a joint venture

DMJM/PBOD/KE/HWA

GENERAL CONSULTANTS

SUBMITTER: Lester Jung

APPROVED: Howard Schaff

L.A. CBD TO N. HOLLYWOOD
7TH./FLOWER STATION

CONDUIT DETAILS
WEST CABLE ROOM

CONTRACT NO. A-165

DRAWING NO. E-144

SCALE: AS NOTED

SHEET NO. 4620/220

REV.	DATE	BY	APP.	DESCRIPTION
		WEM		REVISED PER CR6-506
		CM		INITIAL ISSUE

ELECTRICAL SCHEMATIC DIAGRAM SYMBOLS

ONE-LINE AND LOGIC DIAGRAM SYMBOLS

ABBREVIATIONS

SYMBOL	REPRESENTS
	TRANSFORMER
	PUSHBUTTON SWITCH, MOMENTARY CONTACT, N.C. LO INDICATES LOCK-OUT
	PUSHBUTTON SWITCH, MOMENTARY CONTACT, N.O.
	MECHANICAL CONNECTION
	SINGLE POLE CIRCUIT BREAKER, SIZE AS NOTED
	NORMALLY OPEN CONTACT, AUX. OR RELAY. TDE - TIME DELAY AFTER ENERGIZED TDD - TIME DELAY AFTER OE-ENERGIZED
	NORMALLY CLOSED CONTACT, AUX. OR RELAY. TDE - TIME DELAY AFTER ENERGIZED TDD - TIME DELAY AFTER DE-ENERGIZED.
	COIL, OPERATING 42 - STARTER OR CONTACTOR OTHER NO. - RELAY PER IEEE DEVICE NO.
	OVERLOAD RELAY CONTACTS
	OVERLOAD RELAY WITH HEATER
	FUSE WITH RATING
	GROUND CONNECTION
	PILOT LIGHT: R-RED, G-GREEN, A-AMBER, W-WHITE, C-CLEAR, B-BLUE
	SOLENOID COIL
	LIMIT SWITCH, NORMALLY OPEN
	LIMIT SWITCH, NORMALLY CLOSED
	LIMIT SWITCH, N.O., HELD CLOSED BY ACTUATOR
	LIMIT SWITCH, N.C., HELD OPEN BY ACTUATOR
	PRESSURE SWITCH, NORMALLY OPEN, CLOSSES ON RISING PRESSURE
	PRESSURE SWITCH, NORMALLY CLOSED, OPENS ON RISING PRESSURE
	FLOW SWITCH, NORMALLY OPEN, CLOSSES WITH FLOW
	FLOW SWITCH, NORMALLY CLOSED, OPENS WITH FLOW
	TEMPERATURE SWITCH, NORMALLY OPEN, CLOSSES ON RISING TEMPERATURE (COOLING THERMOSTAT)
	TEMPERATURE SWITCH, NORMALLY CLOSED, OPENS ON RISING TEMPERATURE (HEATING THERMOSTAT)
	LEVEL CONTROLLER (SWITCH), NORMALLY OPEN AT LOW POSITION, CLOSSES ON RISE
	LEVEL CONTROLLER (SWITCH), NORMALLY CLOSED AT LOW POSITION, OPENS ON RISE
	SELECTOR SWITCH, HAND-OFF-AUTOMATIC, OR AS NOTED: K-KEY OPERATED, KK-KIRK KEY LOCK (STANDARD OR HEAVY DUTY INDUSTRIAL CONTROL)

SYMBOL	REPRESENTS
	MANUAL MOTOR STARTER
	SINGLE POLE SINGLE THROW SWITCH
	SINGLE POLE DOUBLE THROW SWITCH
	MULTICONDUCTOR CABLE
	SHIELDED 2 CONDUCTOR CABLE WITH SHIELD GROUNDED
	COAXIAL CABLE
	DISCONNECTING DEVICE
	CONDUCTORS, CONNECTED
	CONDUCTORS, NOT CONNECTED
	CURRENT TRANSFORMER WITH POLARITY MARKINGS
	POTENTIAL TRANSFORMER WITH POLARITY MARKINGS
	OUTLINE OF EQUIPMENT
	FUTURE OR N.I.C.
	TERMINAL STRIP
	WIRING TERMINAL
	BATTERY
	AUDIBLE SIGNAL
	INSTRUMENT GROUNDING
	WIRE DESIGNATION SUFFIX COMPLETE DESIGNATION TO BE PRECEDED BY EQUIPMENT PREFIX VIZ: EFI-5
	RECTIFIER, DRY TYPE, FULL WAVE
	TRANSDUCER, E/I - VOLTAGE TO CURRENT I/E - CURRENT TO VOLTAGE
	CIRCUIT BREAKER WITH SOLID STATE TRIP DEVICE
	CIRCUIT BREAKER, MEDIUM VOLTAGE
	POWER BREAKER, 480 VAC

SYMBOL	REPRESENTS
	SHORTING TYPE TERMINAL BLOCK
	SELECTOR SWITCH, VS - VOLTMETER, AS - AMMETER
	INDICATING TYPE METER, AM - AMMETER, VM - VOLTMETER
	UNDERVOLTAGE RELAY
	THERMAL OVERLOAD DEVICE
	AC INSTANTANEOUS OVERCURRENT TRIP SETTING
	AC TIME OVERCURRENT TRIP SETTING OR RELAY
	AC GROUND OVERCURRENT RELAY (RESIDUAL)
	AC GROUND OVERCURRENT TRIP SETTING OR RELAY
	AC CIRCUIT BREAKER
	OVERVOLTAGE RELAY
	TIME DELAYED RELAY
	PERMISSIVE CONTROL DEVICE
	ALARM RELAY
	LOCK-OUT RELAY
	CONTROL SWITCH
	ANNUNCIATION DEVICE - INDICATING TYPE
	AUDIBLE ALARM
	MOLDED CASE CIRCUIT BREAKER
	SERIES TRIP DEVICE
	CURRENT TRANSFORMER OR CURRENT SENSOR OF SOLID STATE TRIP DEVICE
	2-WINDING TRANSFORMER
	FUSE
	DELTA CONNECTION
	WYE CONNECTION
	CABLE TERMINATION
	LOGIC DIAGRAM
	AND GATE
	OR GATE
	NOT GATE
	DN-DELAY
	OFF-DELAY
	COINCIDENCE MATRIX (TWO-THIRD)
	TEST DEVICE
	BISTABLE FOR ANALOG INPUT/DIGITAL OUTPUT L - WHEN INPUT IS LOWER H - WHEN INPUT IS HIGHER.
	INDICATING LIGHT: R-RED-OPERATING, FLOWING, INCREASING CONDITION G-GREEN-NOT OPERATING, NOT FLOWING, DECREASING CONDITION A-AMBER-AUTOMATIC STANDBY W-WHITE-TROUBLE AT THE SYSTEM B-BLUE-SPECIAL CONDITION C-CLEAR-POWER AVAILABLE

ABBREVIATIONS	ABBREVIATIONS
ACCP	AIR CONDITIONING CONTROL PANEL
ACP	AUXILLIARY CONTROL PANEL
FSCP	FIRE/SECURITY CONTROL PANEL
EMP	EMERGENCY MANAGEMENT PANEL
RCP	REFRIGERATION CONTROL PANEL
CIC	COMMUNICATIONS INTERFACE CABINET
AHU	AIR HANDLING UNIT
LP	LIGHTING PANEL
EBD	EMERGENCY BYPASS DAMPER
EFO	EMERGENCY FAN DAMPER
MCC	MOTOR CONTROL CENTER
LAP	LOCAL ANNUNCIATION PANEL
AHCP	AIR HANDLING CONTROL PANEL
AUX.	AUXILIARY
N.I.C.	NOT IN CONTRACT
CORCND.	CONDUIT
SPST	SINGLE POLE SINGLE THROW
SPDT	SINGLE POLE DOUBLE THROW
N.O.,N.C.	NORMALLY OPEN, NORMALLY CLOSED
C.O.	RACEWAY ONLY (CONDUIT ONLY)
MC	METALLIC CONDUIT
NMC	NON-METALLIC CONDUIT
GRS	GALVANIZED RIGID STEEL CONDUIT
PVC	POLYVINYL CHLORIDE CONDUIT
IMC	INTERMEDIATE METAL CONDUIT
TEL	TELEPHONE
GND	GROUND
FUT	FUTURE
ELEV	ELEVATION, ELEVATOR
MTD	MOUNTED
MTG	MOUNTING
A.F.F.	ABOVE FINISHED FLOOR
FLR	FLOOR
RTU	REMOTE TERMINAL UNIT
ZC	ZONE CONTROL
+ 4'-6"	MOUNTING HEIGHT TO C OF OUTLET ABOVE FINISHED FLOOR
IC	INTERCOM
DMPR	DAMPER
MTR	MOTOR
HTR	HEATER
EXH	EXHAUST
COMPT	COMPARTMENT
SW	SWITCH
FS	FLOW SWITCH
T	TEMPERATURE SWITCH
TS	TORQUE SWITCH
GDGP	GAS DETECTION CONTROL PANEL
AIC	AMPERES INTERRUPTING CAPACITY
SUP	SUPPLY
VIB	VIBRATION
BKR	BREAKER
MAINT	MAINTENANCE
CKT	CIRCUIT
XFMR	TRANSFORMER
CONT	CONTROL
PWR	POWER
SWGR	SWITCHGEAR
TEMP	TEMPERATURE
ETS	EMERGENCY TRIP STATION
T/R	TOP OF RAIL
TYP	TYPICAL
TBD	TO BE DETERMINE
MDF	MAIN DISTRIBUTION FRAME
WD-P	WIRING DIAGRAM NO. P
LCS	LOCAL CONTROL STATION
MLQ	MAIN LUGS ONLY
M.B.	MAIN BREAKER
C.C.	CENTRAL CONTROL

SECTION AND DETAIL IDENTIFICATION

SECTION — A — E016 — E014 — LOCATION OF SECTION IS IN E014

DETAIL — 2 — E016 (TYP) — STANDARD DETAIL APPLICABLE TO ALL INSTALLATION

NOTE: NOT ALL SYMBOLS ARE USED

REV	DATE	BY	APP	DESCRIPTION

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DESIGNED BY: MRTC

DRAWN BY: [Signature]

CHECKED BY: [Signature]

IN CHARGE: [Signature]

DATE: 9 MAR 95

REVISED PER CRG-50A

INCORPORATED REVISIONS AFTER 3/9/95

INITIAL ISSUE

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT

SVERDRUP & PARCEL AND ASSOCIATES, INC.

REGISTERED ARCHITECTS AND ENGINEERS

REGISTERED PROFESSIONAL ELECTRICAL ENGINEERS

REGISTERED PROFESSIONAL MECHANICAL ENGINEERS

REGISTERED PROFESSIONAL CIVIL ENGINEERS

REGISTERED PROFESSIONAL CHEMICAL ENGINEERS

REGISTERED PROFESSIONAL INDUSTRIAL ENGINEERS

REGISTERED PROFESSIONAL AERONAUTICAL ENGINEERS

REGISTERED PROFESSIONAL METALLURGICAL ENGINEERS

REGISTERED PROFESSIONAL NUCLEAR ENGINEERS

REGISTERED PROFESSIONAL SAFETY ENGINEERS

REGISTERED PROFESSIONAL SURVEYORS

REGISTERED PROFESSIONAL TRANSPORTATION ENGINEERS

REGISTERED PROFESSIONAL WATER RESOURCES ENGINEERS

REGISTERED PROFESSIONAL WIND ENGINEERS

REGISTERED PROFESSIONAL ACOUSTICAL ENGINEERS

REGISTERED PROFESSIONAL ENVIRONMENTAL ENGINEERS

REGISTERED PROFESSIONAL FOOD ENGINEERS

REGISTERED PROFESSIONAL FIBER OPTIC ENGINEERS

REGISTERED PROFESSIONAL POLYMER ENGINEERS

REGISTERED PROFESSIONAL RADIATION ENGINEERS

REGISTERED PROFESSIONAL THERMAL ENGINEERS

REGISTERED PROFESSIONAL VIBRATION ENGINEERS

REGISTERED PROFESSIONAL WELDING ENGINEERS

REGISTERED PROFESSIONAL YACHT ENGINEERS

REGISTERED PROFESSIONAL ZOOLOGICAL ENGINEERS

LA CBD TO NORTH HOLLYWOOD WILSHIRE / ALVARADO LINE

SCHMATIC DIAGRAM SYMBOLS AND NOTES

CONTRACT NO. A-171

DRAWING NO. E-001

SCALE: NO SCALE

SHEET NO. A620/226

RECEPTACLE OUTLETS	
	SINGLE RECEPTACLE OUTLET
	DUPLEX RECEPTACLE OUTLET RECESSED
	SINGLE SPECIAL-PURPOSE RECEPTACLE OUTLET (30 AMP, 2 POLE, OR AS NOTED) *
	DUPLEX SPECIAL-PURPOSE RECEPTACLE OUTLET *
	* USE SUBSCRIPT LETTERS TO INDICATE FUNCTION (FC - FARE COLLECTION, ETC.)
	FLOOR BOX WITH SINGLE RECEPTACLE
	FLOOR BOX WITH DUPLEX RECEPTACLE
	FLOOR BOX WITH SERVICE FITTING AS NOTED
	FLOOR BOX - PUBLIC TELEPHONE
	FLOOR BOX - PRIVATE TELEPHONE
	UNDERFLOOR DUCT WITH ASSOCIATED OUTLETS AS INDICATED
	TRENCH DUCT

PANELBOARDS, SWITCHBOARDS, ETC.	
	AHCP - AIR HANDLING UNIT CONTROL PANEL ACCP - AIR CONDITIONING CONTROL PANEL
CONDUCTORS & CONDUIT	
	RACEWAY CONCEALED IN FLOOR
	RACEWAY CONCEALED IN CEILING OR WALL
	RACEWAY EXPOSED
	BRANCH CIRCUIT HOME RUN TO PANELBOARD. LL2 DENOTES PANEL LL2 AND NUMERALS IDENTIFY CIRCUIT NUMBERS.
	INDICATES NUMBER OF #12 WIRES. NO CROSS LINES INDICATES 2#12 WIRES UNLESS NOTED
	WIRE & RACEWAY SIZE FOR #10 AND LARGER
	FEEDER OR HOME RUN RACEWAY IDENTIFICATION AS FOLLOWS: A-AUXILIARY, T-TRACTION POWER, TC-TRAIN CONTROL, EM-EMERGENCY, C-COMMUNICATION (SEE MD-DWG FOR SPECIFIC SYMBOL OF EACH SUBSYSTEM.)
	GROUND WIRE
	RACEWAY TURNED UP OR TOWARDS VIEWER
	RACEWAY TURNED DOWN OR AWAY FROM VIEWER
	UNDERGROUND CONDUIT BANK (INDICATE TYPE, SIZE AND NUMBER OF CONDUITS BY CROSS SECTION IDENTIFICATION OF EACH RUN, OR BY NOTATION)
	GROUND ROD
	RACEWAY CAPPED

EQUIPMENT IDENTIFICATION	
MCP -	MOTOR CIRCUIT PROTECTOR
ETS -	EMERGENCY TRIP STATION
CIC -	COMMUNICATION INTERFACE CABINET
SWG -	SWITCHGEAR
TP -	TUNNEL SUMP PUMP
	EXHAUST FANS
EF-1E	TRACTION POWER RM
EF-2E	AUX POWER RM
EF-3E	BATT RM
EF-4E	AHU RM
EF-5E	MECH RM
EF-6E	CHILLER RM
EF-7E	ELEVATOR RM
EF-8E	TOILET RM
EF-9E	GENERAL ANCILARY AREA
AC-1E	ATC/COMM RM A/C

MISCELLANEOUS	
	TRAIN DESTINATION SIGN
	CCTV MONITOR
	BUZZER
	BELL
	PUSHBUTTON
	DOOR OPENER
	ALARM TRIP
	HORN
	PHOTO CELL
	SELECTOR SWITCH, HOA UNLESS OTHERWISE NOTED
	CLOCK OUTLET
	TRACTION POWER EMERGENCY TRIP STATION
	ELECTRICALLY OPERATED DEVICE, TYPE PER LETTERS AS FOLLOWS: S - SOLENOID D - DAMPER OPERATOR R - RELAY DO - DOOR OPERATOR EP - ELECTRO-PNEUMATIC RELAY
	DOOR POSITION INDICATOR
	DISABLE SWITCH
	DISABLE SWITCH WITH AUDIBLE ALARM
	ELECTRIC DEAD BOLT
	ELECTRO-MECHANICAL BOLT
	LIGHTNING PROTECTION AIR TERMINAL

PANELBOARDS, SWITCHBOARDS, ETC.	
	PANELBOARD
	TERMINAL CABINET, TYPES AS FOLLOWS: CIC - COMMUNICATION INTERFACE CABINET TTC - TELEPHONE TERMINAL CABINET
	PULL BOX
	MOTOR CONTROLLER, SUBSCRIPT INDICATES NEMA SIZE
	FUSED DISCONNECT SWITCH SUBSCRIPT INDICATES FUSE SIZE AND NO. OF POLES
	NON-FUSED DISCONNECT SWITCH SUBSCRIPT INDICATES SIZE AND NO. OF POLES
	ELECTRICAL MANHOLE
	ELECTRICAL HANDHOLE
	COMBINATION MAGNETIC MOTOR STARTER, FUSIBLE SUBSCRIPT INDICATES NEMA SIZE
	COMBINATION MAGNETIC MOTOR STARTER NON-FUSIBLE. SUBSCRIPT INDICATES NEMA SIZE
	COMBINATION MAGNETIC MOTOR STARTER, WITH CIRCUIT BREAKER. SUBSCRIPT INDICATES NEMA SIZE
	MOTOR, WITH IDENTIFICATION, INSERT INDICATES HORSEPOWER. THREE PHASE OR SINGLE PHASE
	POWER PANEL
	SWITCHBOARD (SWBD) OR MOTOR CONTROL CENTER (MCC)
	CONTROL PANEL, TYPES AS FOLLOWS: HCP - HALON CONTROL PANEL FCP - FAN CONTROL PANEL EMP - EMERGENCY MANAGEMENT PANEL ACP - AUXILIARY CONTROL PANEL

SWITCH OUTLETS	
S	SINGLE - POLE SWITCH
S ₂	DOUBLE - POLE SWITCH
S ₃	THREE - WAY SWITCH
S ₄	FOUR - WAY SWITCH
S _K	KEY - OPERATED SWITCH
S _p	SWITCH WITH PILOT LAMP
S _D	DOOR SWITCH
S _t	TIME SWITCH
S _M	MANUAL MOTOR STARTER WITH OVERLOAD DEVICE
S _{MC}	MOMENTARY CONTACT SWITCH OR PUSHBUTTON FOR OTHER THAN SIGNALLING SYSTEM
S _o	SUBSCRIPT _o DENOTES SWITCH CIRCUIT

LIGHTING OUTLETS	
	WALL
	OUTLET FOR INCANDESCENT OR HIGH INTENSITY DISCHARGE FIXTURE
	FLUORESCENT FIXTURE OUTLET
	EXIT LIGHT OUTLET
	BLANKED OUTLET
	JUNCTION BOX
	LETTER SUBSCRIPT ADJACENT TO FIXTURE OUTLET DESIGNATES SWITCH CONTROL
	FLOODLIGHT, ARROWS INDICATE DIRECTION OF BEAM
	EMERGENCY LIGHT OUTLET

SPECIAL IDENTIFICATION (USED NEXT TO SYMBOL)		
WP - WEATHER PROOF	RT - RAIN TIGHT	G - GROUND
WT - WATER TIGHT	DT - DUST TIGHT	R - RECESSED
VT - VAPOR TIGHT	EP - EXPLOSION PROOF	F - FLUSH

FIXTURE TYPE SYMBOL	
	a. LETTER - TYPE OF FIXTURE
	b. FIRST NO. - FIXTURE OPTION
	c. SECOND NO. - LAMP OPTION
	d. LAST NO. - MOUNTING HARDWARE OPTION
	e. NO. ABOVE SYMBOL - MOUNTING HEIGHT
	f. NO. UNDER SYMBOL - VOLTAGE OTHER THAN 277V

ABBREVIATIONS	
C OR CNO - CONDUIT	
SPST - SINGLE POLE SINGLE THROW	
SPDT - SINGLE POLE DOUBLE THROW	
NO, NC - NORMALLY OPEN, NORMALLY CLOSED	
NIC - NOT IN THIS CONTRACT	
C.O. - RACEWAY ONLY	
MC - METALLIC CONDUIT	
NMC - NON-METALLIC CONDUIT	
GRS - GALVANIZED RIGID STEEL CONDUIT	
PVC - POLYVINYL CHLORIDE CONDUIT	
IMC - INTERMEDIATE METAL CONDUIT	
TEL - TELEPHONE	
GND - GROUND	
FUT - FUTURE	
ELEV - ELEVATION, ELEVATOR	
MTD, MTG - MOUNTED, MOUNTING	
A.F.F. - ABOVE FINISHED FLOOR	
+4'-6" MOUNTING HEIGHT TO C OF OUTLET ABOVE FINISH FLOOR	
FL - FLOOR	
ZC - ZONE CONTROL	
RTU - REMOTE TERMINAL UNIT	
FVNR - FULL VOLTAGE, NON-REVERSIBLE	
FVR - FULL VOLTAGE, REVERSIBLE	

REV.	DATE	BY	SUB.	APP.	DESCRIPTION

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DESIGNED BY	MRTC	DRAWN BY	S. RIZZO	CHECKED BY	H. P. Lee
DATE	3 MAR 83				

**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

SVERDRUP & PARCEL AND ASSOCIATES, INC. DMJM/PBOD/KE/HWA

REGISTERED PROFESSIONAL ENGINEERS REGISTERED PROFESSIONAL ARCHITECTS

INCORPORATED IN CALIFORNIA INCORPORATED IN CALIFORNIA

SUBMITTED: *George de Lee* APPROVED: *Howard J. Belliff*

CONTRACT NO. A-171	
DRAWING NO. E-002	REV. 1
SCALE: NO SCALE	
SHEET NO. A620/227	

**LA CBD TO NORTH HOLLYWOOD
WILSHIRE / ALVARADO LINE
PLAN SYMBOLS AND ABBREVIATIONS**

SYMBOLS

ABBREVIATIONS

MISCELLANEOUS

- CCTV CAMERA OUTLET
- CCTV MONITOR
- BUZZER
- INTRUSION SENSOR
- PHOTO CELL
- CLOCK OUTLET
- TRACTION POWER EMERGENCY TRIP STATION
- CABLEWAY
- TERMINAL CABINET, TYPE AS FOLLOWS:
TTC - TELEPHONE TERMINAL CABINET
FTC - FACILITIES TERMINAL CABINET
CIC - COMMUNICATIONS INTERFACE CABINET

TELEPHONE

- MAINTENANCE TELEPHONE JACK (MTEL)
- FIRE TELEPHONE JACK (FTEL)
- EMERGENCY TELEPHONE OUTLET (ETEL)
- CUSTOMER ASSISTANCE TELEPHONE
- ADMINISTRATIVE TELEPHONE OUTLET (ATEL)
- PUBLIC PAY TELEPHONE OUTLET
- TELEPHONE BACK BOARD
- WEATHERPROOF TELEPHONE

UNLESS NOTED MTD-HEIGHT IN PUBLIC AREA 48" AFF.
IN NON PUBLIC AREA 54" AFF.

PUBLIC ADDRESS

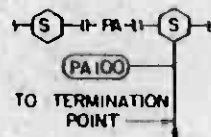
- MICROPHONE
- AMPLIFIER
- INTERIOR SPEAKER BACKBOX PER LETTER AS FOLLOWS: F-FLUSH MTD, S-SURFACE MTD, SC-SUSPENDED CEILING
- EXTERIOR SPEAKER BACKBOX
- HORN TYPE SPEAKER OUTLET
- NOISE MONITOR
- MONITOR SPEAKER

FIRE AND INTRUSION

- PULL STATION FIRE ALARM
- PUSH BUTTON FIRE ALARM
- BELL
- HOR.
- STANDPIPE FLOW MONITOR
- FIRE HOSE CABINET MONITOR
- DETECTOR, TYPE PER LETTER AS FOLLOWS:
L - HEAT, LINE TYPE
S - SMOKE - IONIZATION
R - THERMAL RATE OF RISE AND FIXED TEMPERATURE
P - SMOKE PHOTO-ELECTRIC
X - GAS - METHANE
- GAS - HYDROGEN SULFIDE
VALVE POSITION MONITOR
- ADD "F" FOR FIRE ALARM SYSTEM IE FOR FIRE HORN
- DETECTOR, TYPE PER LETTER AS FOLLOWS:
H - HINGE DETECTOR
E - ELECTRIC DOOR LOCK
M - MAGNETIC SWITCH DETECTOR
P - PLUNGER SWITCH (FLUSH IN DOOR JAM) DETECTOR
L - DOOR LATCH DETECTOR
K - KEY BY-PASS SWITCH
C - CARD OR BADGE READER
- HALON DISCHARGE PANEL
- HALON ABORT SWITCH

RADIO

- A/D ANALOG TO DIGITAL
- ACD AUTOMATIC CALL DISTRIBUTOR
- ATEL ADMINISTRATIVE TELEPHONE
- AFF ABOVE FINISHED FLOOR
- CA CABLE
- CATEL CUSTOMER ASSISTANCE TELEPHONE
- CCU COMMUNICATIONS CONTROL UNIT
- CCTV CLOSED CIRCUIT TELEVISION
- CIC COMMUNICATIONS INTERFACE CABINET
- CPU CENTRAL PROCESSING UNIT
- CRT CATHODE RAY TUBE
- CTS CABLE TRANSMISSION SUBSYSTEM
- DET DETECTOR
- DID DIRECT INWARD DIALING
- DOO DIRECT OUTWARD DIALING
- DTMF DUAL TONE MULTI-FREQUENCY
- ETEL EMERGENCY TELEPHONE
- FACP FIRE ALARM CONTROL PANEL
- FMP FIRE MANAGEMENT PANEL
- FTEL FIRE TELEPHONE
- FXO FOREIGN EXCHANGE OFFICE
- FXS FOREIGN EXCHANGE SUBSCRIBER
- HH HANDHOLE
- I/O INPUT / OUTPUT
- JB JUNCTION BOX
- MDF MAIN DISTRIBUTION FRAME
- MH MANHOLE
- MTEL MAINTENANCE TELEPHONE
- NIC NOT IN CONTRACT
- PA PUBLIC ADDRESS
- PABX PRIVATE AUTOMATIC BRANCH EXCHANGE
- PCM PULSE CODED MODULATION
- PR PAIR
- PROT PROTECTOR TERMINAL
- REA RURAL ELECTRIFICATION ADMINISTRATION
- SCADA SUPERVISORY CONTROL AND DATA ACQUISITION
- SCRD SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
- SPL SOUND PRESSURE LEVEL
- SST SPECIAL SERVICES TELEPHONE
- TB TERMINAL BOARD
- TBK TERMINAL BLOCK
- ATC & C AUTOMATIC TRAIN CONTROL & COMMUNICATIONS
- TERM TERMINAL
- TTC TELEPHONE TERMINAL CABINET
- UPS UNINTERRUPTIBLE POWER SUPPLY
- VTR VIDEO TAPE RECORDER



PA - RACEWAY IDENTIFICATION BETWEEN OUTLETS
PA100 - RACEWAY IDENTIFICATION BETWEEN OUTLET AND TERMINATION POINT (IE FINAL STUB-UP TO TERMINAL CABINET, PANEL BOARD, SWITCHBOARD)

SYSTEMS IDENTIFICATION ABBREVIATIONS SHALL BE:

- CC - CUSTOMER ASSISTANCE TELEPHONE
- TV - CLOSED CIRCUIT TELEVISION
- CE - EMERGENCY TELEPHONE (E TEL)
- CF - FIRE TELEPHONE (FTEL)
- HC - COMMUNICATIONS TIE CABLE (CIC TO ATC B & C ROOM)
- C1 - CABLE TRANSMISSION SYSTEM
- CX - TELEPHONE COMPANY
- F - POWER FEEDER (480/277V OR 208/120V)
- FA - FIRE DETECTOR OR ALARM
- FC - FARE COLLECTION
- FG - GAS DETECTOR
- FS - SEISMIC DETECTOR
- IA - INTRUSION DETECTOR OR ALARM
- PA - PUBLIC ADDRESS
- SC - SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA)
- CA - ADMINISTRATIVE TELEPHONE (ATEL) & MAINTENANCE TELEPHONE (MTEL)
- JUNCTION BOX

JUNCTION BOX

HANDHOLE

MANHOLE

TRENCH DUCT

UNDERGROUND DUCT BANK

FLEXIBLE RACEWAY CONNECTION

BARE GROUNDING CONDUCTOR

EXOTHERMIC WELD CONNECTION

INSULATED GROUNDING CONDUCTOR

GROUND ROD WITH EXOTHERMIC WELD CONNECTION

LIGHTING PROTECTION SYSTEM ROOF CONDUCTOR

CONDUIT TURNED UP OR TOWARDS VIEWER

CONDUIT TURNED DOWN OR AWAY FROM VIEWER

CONDUIT CAPPED

NOTE: NOT ALL SYMBOLS ARE USED

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA

DESIGNED BY
MRTC
DRAWN BY
CHECKED BY
IN CHARGE
DATE
8 MAR 85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

BYERDRUP & PARCEL AND ASSOCIATES, INC.
REGISTERED PROFESSIONAL ENGINEER
11000 WILSHIRE BLVD., SUITE 200, LOS ANGELES, CALIF. 90024
TELEPHONE (213) 475-1100

DM/M/PROG/KE/MEA
APPROVED: *Thomas J. Keefe*

LA CBD TO NORTH HOLLYWOOD
WILSHIRE / ALVARADO LINE
COMMUNICATIONS
SYMBOLS AND ABBREVIATIONS

CONTRACT NO
A-171
DRAWING NO
E-003
SCALE
NO SCALE
SHEET NO
A620/228

REV	DATE	BY	CHKD	APP	DESCRIPTION
1	11/01/85	SPA	AS		INCORPORATED REVISIONS AFTER 30/11/85
2	03/08/85	CM			INITIAL ISSUE



GENERAL NOTES

1. ALL ELECTRICAL WORK SHALL BE COORDINATED WITH THE BUILDING STRUCTURE, MECHANICAL PIPING SYSTEMS AND HEATING AND VENTILATING EQUIPMENT TO AVOID INTERFERENCES.
2. CONDUIT LAYOUTS ARE DIAGRAMMATIC. EXACT ROUTING SHALL BE GOVERNED BY THE BUILDING STRUCTURE AND THE EQUIPMENT SERVED.
3. MINIMUM EXPOSED CONDUIT SIZE SHALL BE 3/4" AND 1" FOR EMBEDDED. CONDUITS SHALL BE SIZED FOR CONDUCTOR FILL IN ACCORDANCE WITH NEC.
4. ALL CONDUITS SHOULD BE IDENTIFIED WITH NUMBERS AND TAGGED.
5. STUB UP CONDUITS AT BASE OF SWITCHBOARDS, MOTOR CONTROL CENTERS, TRANSFORMERS AND ALL OTHER EQUIPMENT WHERE CONDUITS WILL ENTER FROM BOTTOM. SHOULD HAVE ALLOWANCE FOR MAINTENANCE PADS.
6. CONNECTIONS TO EQUIPMENT SUBJECT TO VIBRATION SHALL BE MADE WITH FLEXIBLE STEEL CONDUIT EXTENDED FROM OUTLET BOXES OR RIGID CONDUIT STUBS.
7. MINIMUM CONDUCTOR SIZE SHALL BE NO. 12 AWG. FOR POWER AND 14 AWG FOR CONTROL CIRCUIT.
8. ALL CONDUCTORS SHALL BE COPPER.
9. MINIMUM BENDING RADIUS OF COMMUNICATION CABLE IS 40".
10. COMMUNICATION CABLES ARE TO BE INSTALLED BY COMMUNICATION CONTRACTOR.
11. MAINTAIN MINIMUM CLEARANCE OF 6" BETWEEN COMM/ATC RACEWAYS AND POWER/CONTROLS RACEWAYS.
12. SPARE EMBEDDED CONDUITS SHALL TERMINATE WITH AN EMBEDDED COUPLING FLUSH WITH FACE OF CONCRETE AND PLUGGED.
13. ALL EXPOSED, NONCURRENT-CARRYING METAL PARTS OF ELECTRICAL EQUIPMENT AND ALL BUILDING METAL STRUCTURAL FRAMING MEMBERS SHALL BE GROUNDED.
14. A GROUNDING CONDUCTOR SHALL BE CARRIED WITH ALL POWER AND LIGHTING FEEDERS AND ALL 3-PHASE BRANCH CIRCUITS.
15. SEE STRUCTURAL STANDARD DRAWINGS FOR EARTHQUAKE BRACING OF SUPPORTS.
16. ALL EQUIPMENT INSTALLATION SHALL CONFORM TO UBC SEISMIC ZONE 4 REQUIREMENTS.
- *17. EACH RUN AT CABLE TRAYS SHALL BE GROUNDED BY CONTINUOUS BARE #2/0 COPPER CONDUCTOR ATTACHED TO EACH TRAY SUPPORT ALONG THE RUN. THE GROUND CONDUCTOR SHALL BE TIED TO GROUND INSERTS.
- *18. CABLE TRAYS SHALL BE SECURELY FASTENED TO THE SUPPORT BRACKETS WITH ROUND HEAD SCREWS.
- *19. ELEVATIONS ARE SHOWN TO THE BOTTOM OF TRAYS.
- *20. PROVIDE ADEQUATE SUPPORTS AT ALL TRAYS AND SECURE CABLES TO LADDER RUNGS ON VERTICAL TRAY RISERS.
- *21. PROVIDE APPROPRIATE COVERS FOR VERTICAL TRAYS, PROPERLY SECURED TO TRAY STRUCTURAL MEMBERS.

- *22. EQUIPMENT MOUNTING HEIGHT UNLESS OTHERWISE NOTED.
 - A. 7'-6" TOP OF WALL MOUNTED PANEL BOARDS, LIMIT HEIGHT OF TOPMOST 3/4" HANDLE IS 2'-3"
 - B. 8'-0" BOTTOM OF WALL MOUNTED TRANSFORMER.
 - C. 5'-0" AT SWITCH HANDLE OF LOCAL MOTOR STARTER AND LOCAL SWITCH.
23. LIGHTING FIXTURES SHALL BE PROVIDED WITH ALL NECESSARY STRUCTURAL SUPPORTS, CANOPY, ALIGNERS, AND SUSPENSION OR MOUNTING ACCESSORIES.
24. USE TYPE FD CONDULET AT BOXES CONNECTED TO EACH TUNNEL LIGHTING FIXTURE. JUNCTION BOXES AT THE END OF TUNNEL SHALL BE WEATHER PROOF SHEET METAL BOX.
25. WALL OUTLET BOXES SHALL NOT BE SMALLER THAN 4" SQUARE BY 1-1/2" DEEP. CAST IRON BOXES, EXCEPT THAT BOXES LOCATED IN OUTDOOR OR WET LOCATIONS SHALL BE OF THE TYPE FD CAST METAL TYPE.
- *26. EMERGENCY LIGHTING IN THE ELEVATOR WILL BE OBTAINED FROM AN INTEGRAL BATTERY UNIT MOUNTED ON THE ELEVATOR AND SUPPLIED BY THE ELEVATOR CONTRACTOR.
27. CERTAIN MANUFACTURER'S EQUIPMENT TYPES OR CATALOG NUMBERS ARE SHOWN FOR CLARITY AND TO ESTABLISH MINIMUM QUALITY LEVEL. EQUAL CONSIDERATION WILL BE GIVEN TO ALL SUPPLIERS AND MANUFACTURERS OF SIMILAR EQUIPMENT.
- *28. AT STATION PLATFORMS, FINISHES, FIXTURES, SIGNS, PANELS, ETC. AND THEIR MOUNTING DEVICES OR SUPPORTS SHALL BE DESIGNED TO WITHSTAND PRESSURE WAVES OF PLUS 20 PSF TO MINUS 20 PSF RESPECTIVELY WITH EACH ARRIVING AND DEPARTING TRAIN.
29. IN TUNNELS: FIXTURES, PANELS, DOORS, ETC. AND THEIR MOUNTING DEVICES OR SUPPORTS SHALL BE DESIGNED TO WITHSTAND PRESSURE WAVES RANGING FROM PLUS 80 PSF TO MINUS 80 PSF.
30. IN TUNNELS, ALL CONDUITS AND METALLIC ENCLOSURES SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 1/4" TO SURFACE OF THE TUNNEL LINING.
- *31. ALL CABLES WITH CONDUCTORS SMALLER THAN 250 MCM SHALL BE MULTICONDUCTOR TYPE FOR ENTIRE LENGTH OF RUN UNLESS OTHERWISE NOTED
32. LIGHT FIXTURES SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS.

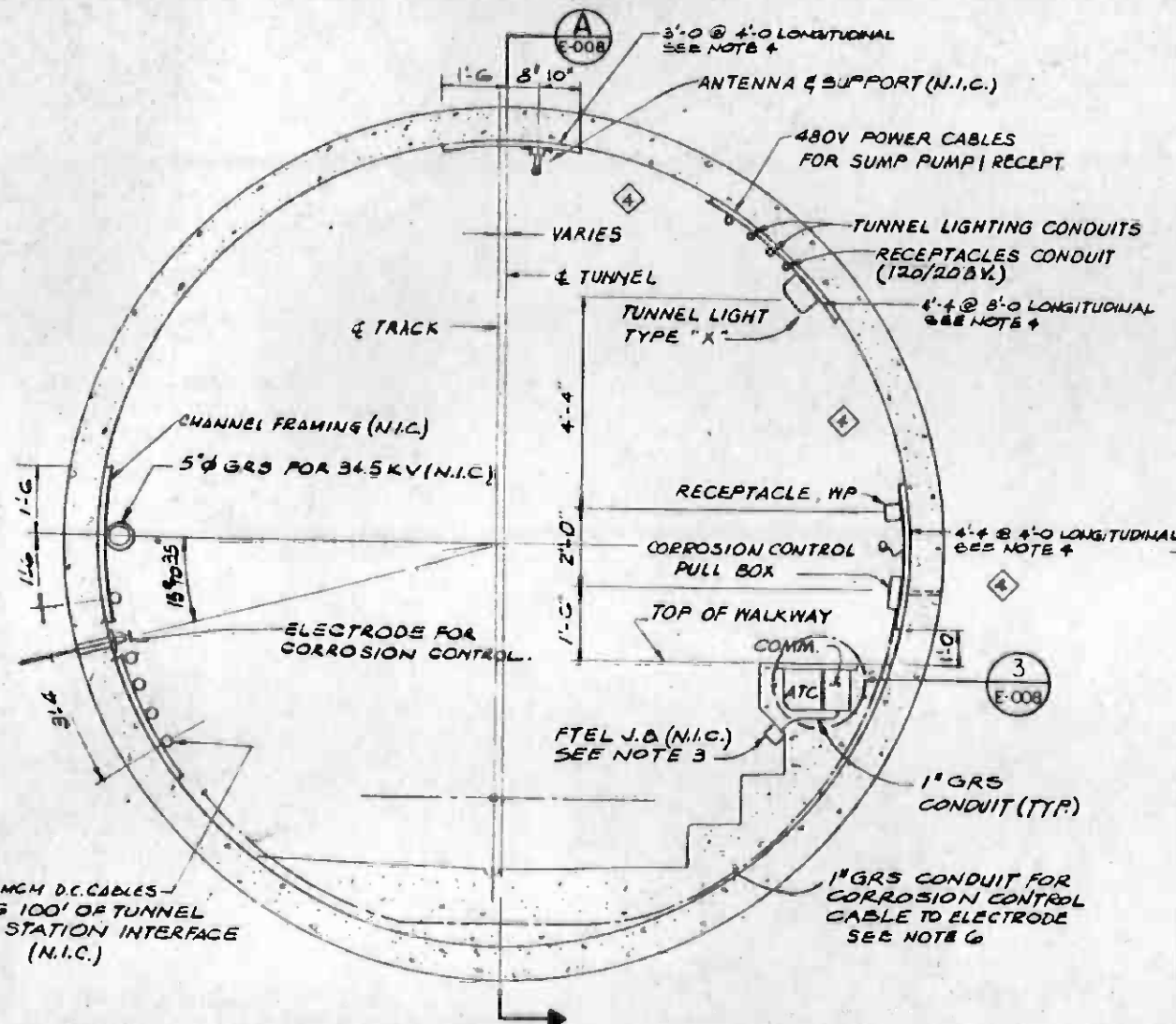
* NOT APPLICABLE

* ROOM NO. INDEX

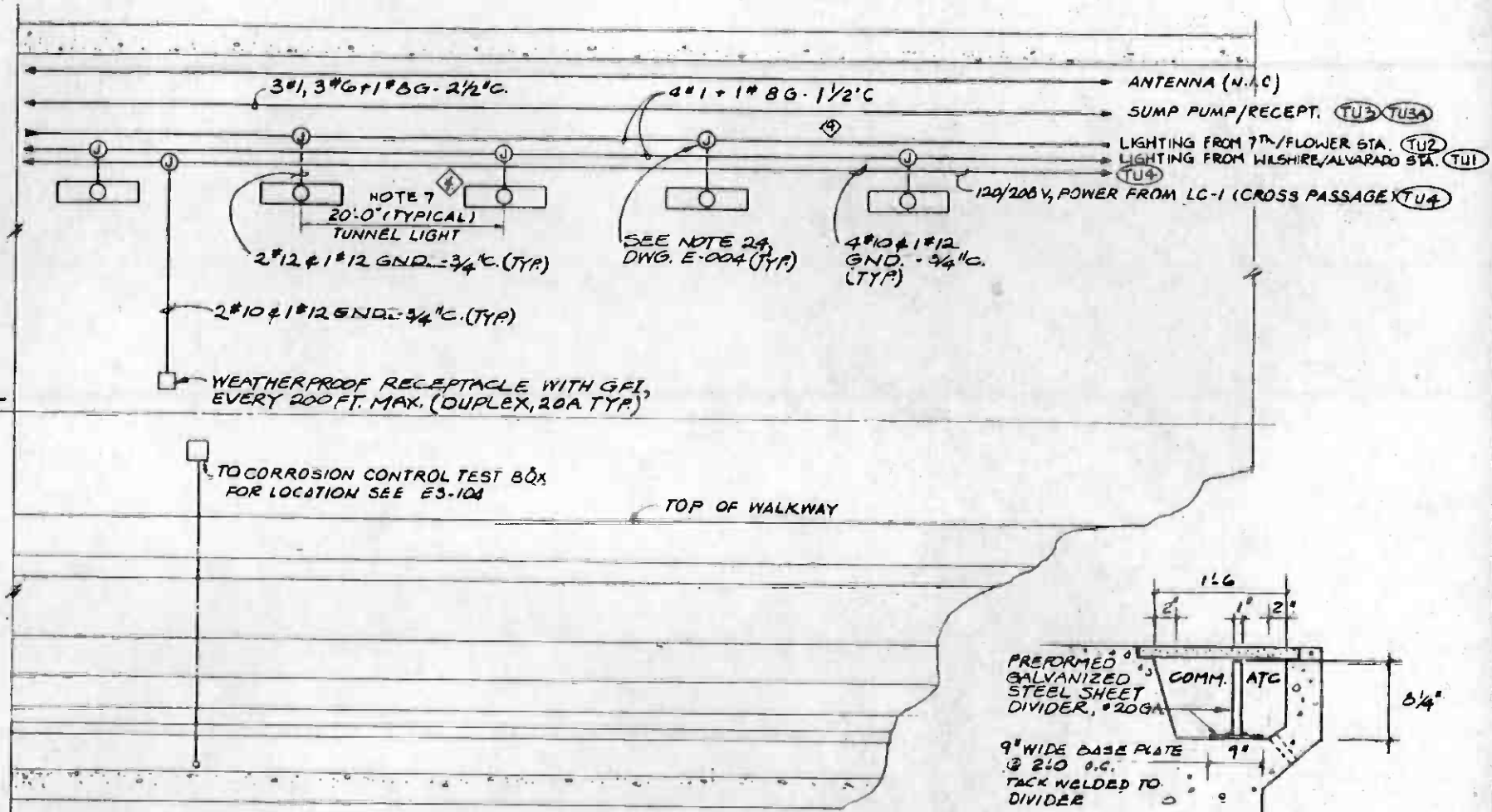
ROOM NO.	ROOM NAME
1	SOUTH PASSAGEWAY
2	MEZZANINE PUBLIC LEVEL
3	NORTH PASSAGEWAY
4	ELEVATOR EQUIPMENT ROOM
5	CUSTODIAL ROOM "A"
6	TRASH ROOM
7	STAFF/SECURITY ROOM
8	CORRIDOR
9	TOILET
11	EQUIPMENT ACCESS ROOM
12	NOT ASSIGNED
13	EAST EMERGENCY FAN ROOM
14	NOT ASSIGNED
15	STAIR NO. 10
16	NOT ASSIGNED
17	STORAGE
18	INCOMING ELECTRICAL SERVICES
19	TRACTION POWER SUBSTATION
20	EMERGENCY EXIT NO. 9
21.1	CORRIDOR
21.2	CORRIDOR
22	T.P.S. & OTHER SUPPLY FANS
23	STORAGE
24	EAST U.P.S. BATTERY ROOM
25	EAST AUXILIARY POWER ROOM
26	EMERGENCY EXIT NO. 8
27	CHILLER ROOM
28	STAIR NO. 8
29	EAST SPRINKLER VALVE ROOM
30	TRAIN CONTROL & COMMUNICATIONS
31	TRAIN CONTROL BATTERY ROOM
32	EAST FAN ROOM
33	WEST U.P.S. BATTERY ROOM
34	WEST AUXILIARY POWER ROOM
35	WEST FAN ROOM
36	NOT ASSIGNED
37	CORRIDOR
38	WEST SPRINKLER VALVE ROOM
39	WEST EMERGENCY FAN ROOM
40	NOT ASSIGNED
41	NOT ASSIGNED
42	NOT ASSIGNED
43	NOT ASSIGNED
44	STAIR NO. 7
45	EMERGENCY EXIT NO. 7
46	EQUIPMENT ACCESS ROOM
47	ELECTRICAL EQUIPMENT ROOM
48	STAIR NO. 10
49.1	STORAGE
49.2	STORAGE
50	CUSTODIAL ROOM "B"
51	U.P.E. FAN ROOM
52	ELECTRICAL ACCESS ROOM
53	STAIR NO. 8
54	EMERGENCY EQUIPMENT ROOM
55	NOT ASSIGNED
56	NOT ASSIGNED
57	NOT ASSIGNED
58	NOT ASSIGNED
59	PLATFORM PUBLIC LEVEL
60	NOT ASSIGNED
61	NOT ASSIGNED
62	NOT ASSIGNED
63	STAIR NO. 7
64	SUMP PUMP & EJECTOR ROOM
65	ELECTRICAL EQUIPMENT ROOM
66	EMERGENCY EQUIPMENT ROOM



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DRAWN BY P. Lee				CHECKED BY B. P. Lee		IN CHARGE B. P. Lee		SUBMITTED BY George S. Rosen		APPROVED Thomas J. Schilff		DRAWING NO. E-004	
REVISED PER CRG-504 INCORPORATED REVISIONS AFTER 3/8/85				DATE 8 MAR 85		SVERDRUP & PARCEL AND ASSOCIATES, INC. ENGINEERS & ARCHITECTS 2200 WEST 10TH STREET, SUITE 200 LOS ANGELES, CALIF. 90007		DML / PBD / KEMWA GENERAL CONSULTANTS		LA CBD TO NORTH HOLLYWOOD WILSHIRE / ALVARADO LINE		SHEET NO. A620/229	
INITIAL ISSUE										ELECTRICAL GENERAL NOTES		SCALE NO SCALE	

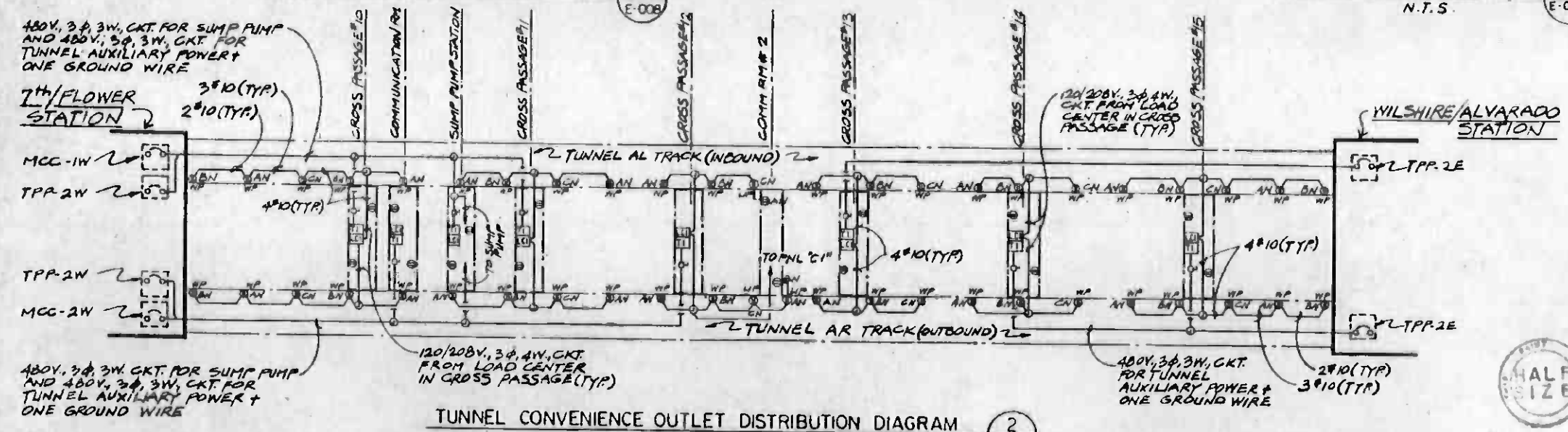


TYPICAL TUNNEL CROSS SECTION 1 E-008



TYPICAL SECTION A N.T.S. E-008

STEEL DIVIDER DETAIL 3 E-008



TUNNEL CONVENIENCE OUTLET DISTRIBUTION DIAGRAM 2 E-008

NOTES:

- FOR LIGHTING FIXTURES DETAILS REFER TO TUNNEL LIGHTING SPECIFICATIONS.
- ALL RACEWAY SYSTEMS INCLUDING JUNCTION BOXES IN THE TUNNELS SHALL BE WEATHERPROOF.
- LOCATE FTCL JUNCTION BOX WITHIN 2 FEET OF FIRE HOSE OUTLETS ALONG TUNNELS. FIRE HOSE OUTLETS ARE SHOWN ON M-004. MINIMUM BENDING RADIUS OF FTCL CONDUIT (1" GRS) IS 12".
- 1 1/2" @ 1 1/8" 12 GA. CHANNEL FRAMING, PARTS, SCREWS & NUTS SHALL BE HOT DIPPED GALVANIZED (UNISTRUT OR SIMILAR) FRAMING TO BE FASTENED TO TUNNEL USING THE 1/2" @ X 1/2" LONG FEZULE INSERTS (SEE SS-055, SS-056 & SS-088).
- FOR CORROSION CONTROL DETAILS SEE ES-101, ES-104 & ES-105.
- ALL EXPOSED CONDUITS IN THE TUNNELS SHALL BE GALVANIZED RIGID STEEL CONDUITS AND SHALL BE INSTALLED WITH A MINIMUM CLEARANCE OF 1/4" TO THE CONCRETE SURFACE.
- ADJUST LIGHT FIXTURE SPACING SUCH THAT ONE FIXTURE IS LOCATED AT ENTRANCE OF CROSS PASSAGE OR COMM RM.

REV	DATE	BY	SUB	APP	DESCRIPTION
4	11-10-84	MM			REVISED PER ACR 171-2
3	9-16-84	JK			REVISED PER CRG-526

REV	DATE	BY	SUB	APP	DESCRIPTION
1	5-5-84	PH			REVISED PER CRG-504
2	11/8/85	SPA			INCORPORATED REVISIONS AFTER 3/8/85
3	3/8/85	cm			INITIAL ISSUE

DESIGNED BY SM	CHECKED BY E. Rosenberg	DATE 8 MAR 85
DRAWN BY M LEW	IN CHARGE G. Lee	

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

SVERDRUP & PARCEL AND ASSOCIATES, INC.

DMJM/PBOD/KE/HWA

GENERAL CONSULTANTS

THOMAS J. KELLY

LA CBD TO NORTH HOLLYWOOD
WILSHIRE/ALVARADO LINE

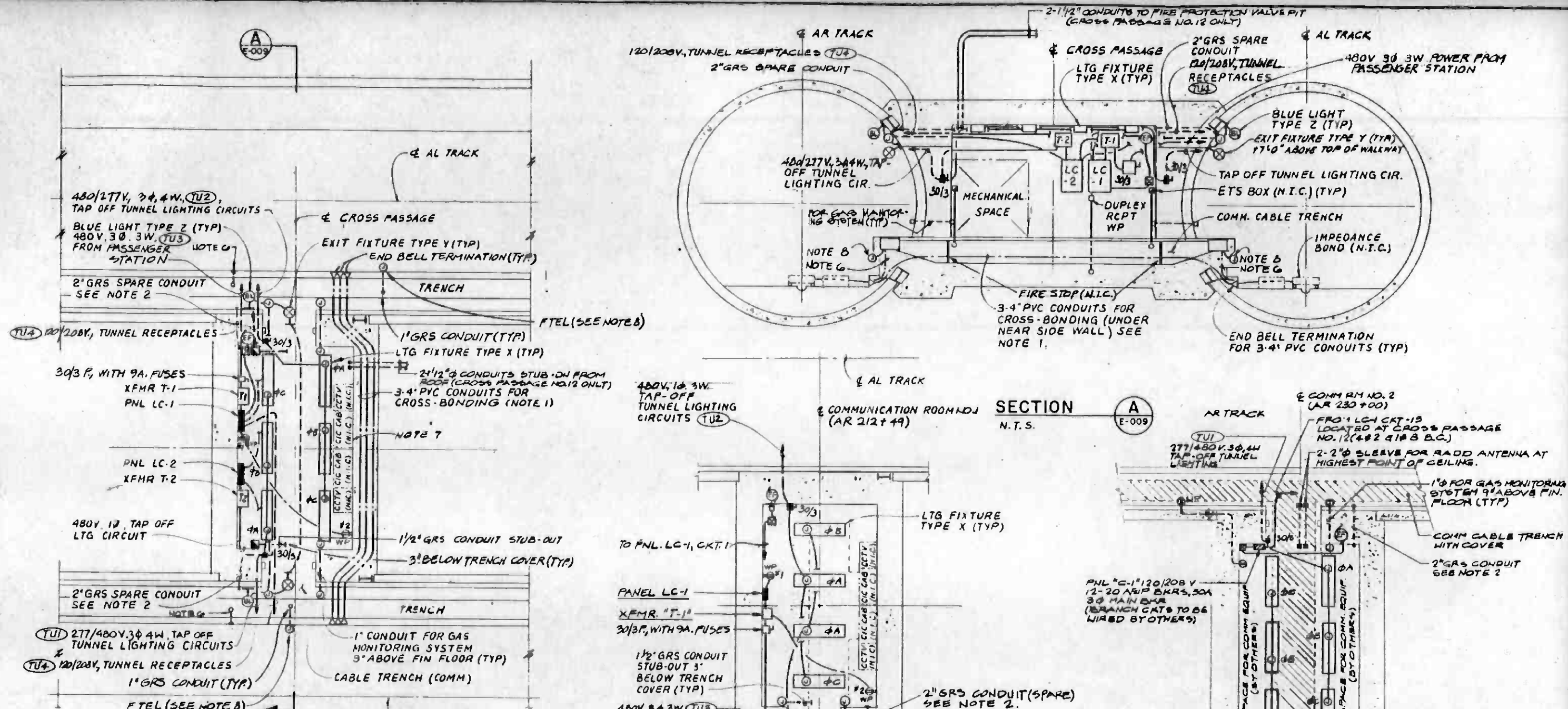
POWER AND LIGHTING
TUNNEL CROSS SECTION

CONTRACT NO. A-171

DRAWING NO. E-008

SCALE: NO SCALE

SHEET NO. A620/230



- NOTES:**
1. MINIMUM BENDING RADIUS OF CROSS BONDING CONDUITS IS 40" POSITION CENTER OF CONDUIT RUNS HIGH AND SLOPE CONDUITS MINIMUM OF 0.5% TOWARD END FOR PROPER DRAINAGE.
 2. TERMINATE CONDUIT ENDS WITH THREADED PLUG, FLUSH WITH FINISHED WALL.
 3. FOR ONE LINE DIAGRAM, TUNNEL LIGHTING AND FIRE TELEPHONE JACK SCHEMATICS SEE DWG E-005.
 4. ALL RACEWAY SYSTEMS INCLUDING JUNCTION BOXES SHALL BE WEATHER PROOF UNLESS OTHERWISE NOTED.
 5. FOR LIGHTING FIXTURES DETAILS REFER TO LIGHTING SPECIFICATIONS.
 6. 1" PVC CONDUIT FOR TRAIN CONTROL TERMINATE LOWER END OF CONDUIT WITH THREADED COUPLING FOR FUTURE CONNECTION OF ADAPTER TO 1" LIQUIDTIGHT CONDUIT.
 7. FOR CROSS PASSAGE NO. 10 WITH AN ADJACENT COMMUNICATION ROOM, ALL COMM. EQUIPMENT SHOWN AS N.I.C. WILL BE RELOCATED INTO THE COMM. ROOM.
 8. LOCATE FTTEL JUNCTION BOX WITHIN 2 FEET OF FIRE HOSE OUTLETS ALONG TUNNEL. REFER TO DWG. M-001 MINIMUM BENDING RADIUS OF FTTEL CONDUIT (1" GRS) IS 12'.

REV	DATE	BY	SUB	APP	DESCRIPTION
3	11/06/88	MJM			REVISED PER ACR 171-2

REV	DATE	BY	SUB	APP	DESCRIPTION
1	3/5/85	PH	A		REVISION PER CR 6-504
2	4/10/85	SPA			INCORPORATED REVISIONS AFTER 8/10/85
3	3/6/85	LSH			INITIAL ISSUE

DESIGNED BY
M. Lew

DRAWN BY
M. Lew

CHECKED BY
E. Reganberry

IN CHARGE
B. L. Lee

DATE
8 MAR 85

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

SYVERDRUP & PARCEL AND ASSOCIATES, INC.

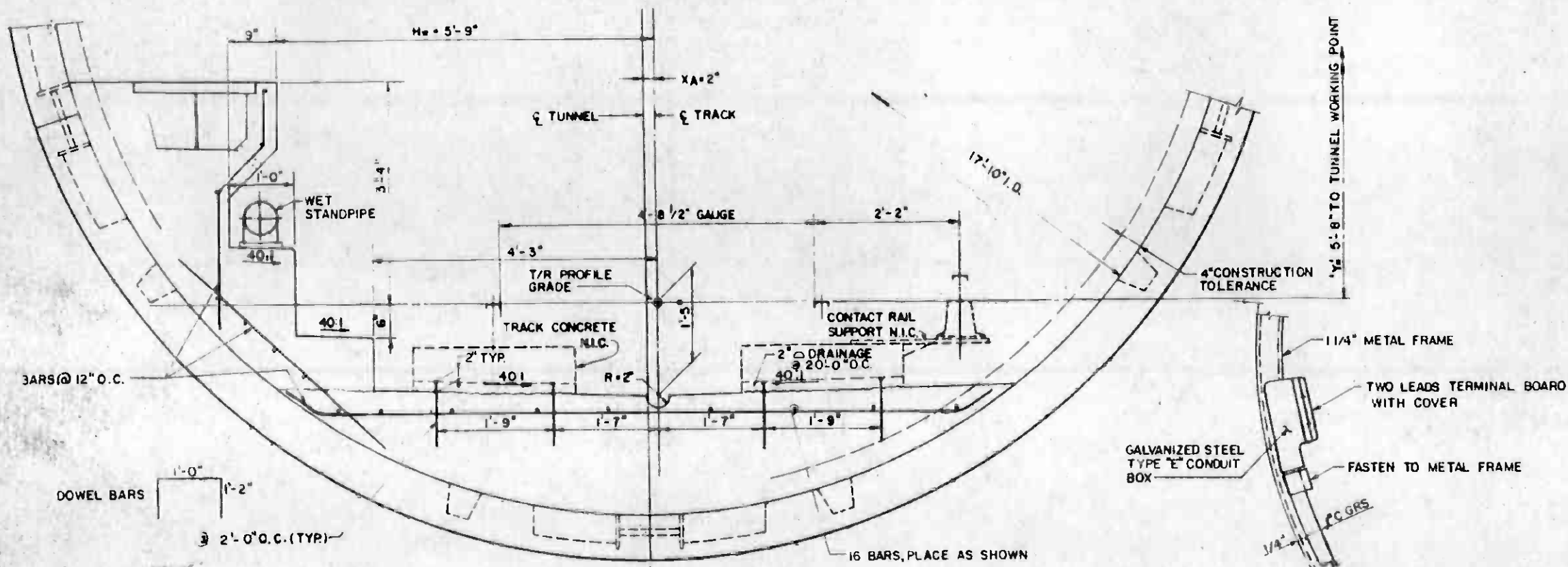
DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

APPROVED
Edward J. Sheliff

LA CBD TO NORTH HOLLYWOOD
WILSHIRE/ALVARADO LINE

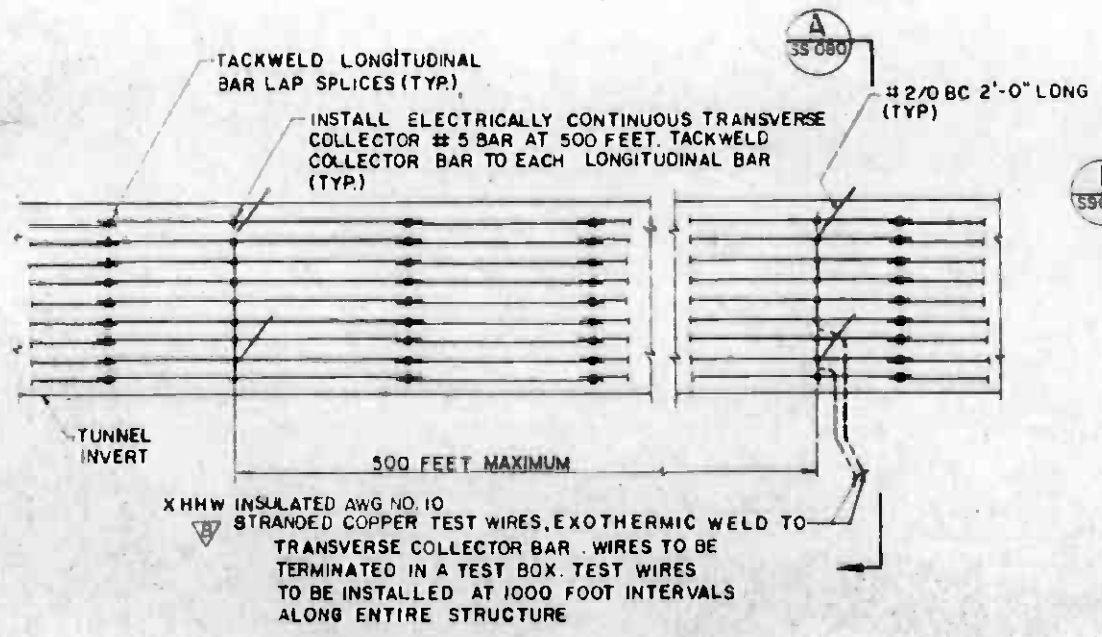
POWER AND LIGHTING
TYPICAL TUNNEL CROSS PASSAGE SECTION
AND COMMUNICATION ROOM

CONTRACT NO. A-171	REV 3
DRAWING NO. E-009	SCALE NO SCALE
SHEET NO. A620/231	



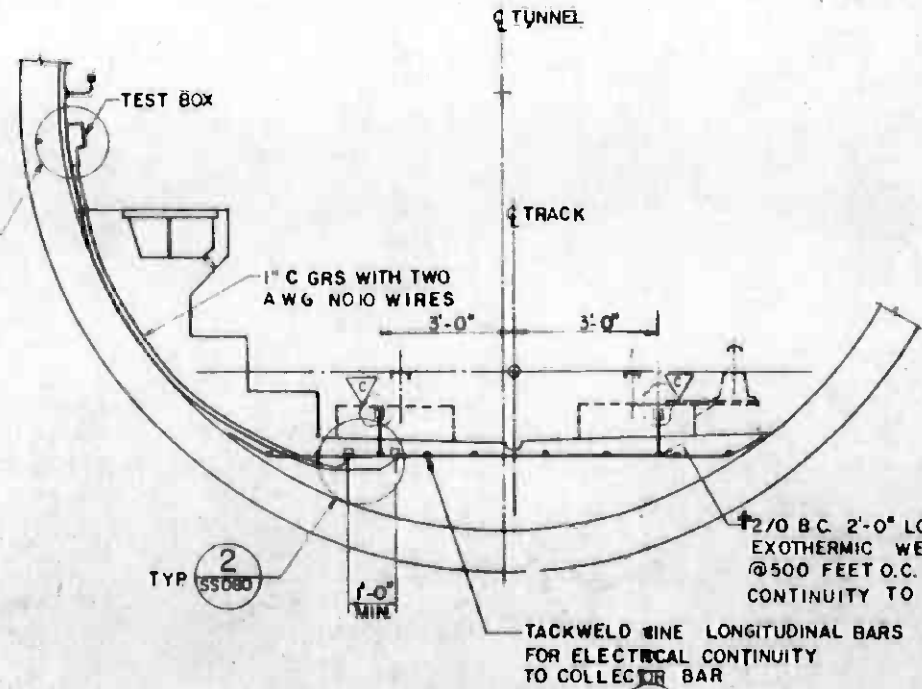
DETAIL 1
N.T.S. 55080

TANGENT TRACK
SCALE 1"=1'-0"



PLAN
N.T.S.

INVERT COLLECTOR GRID

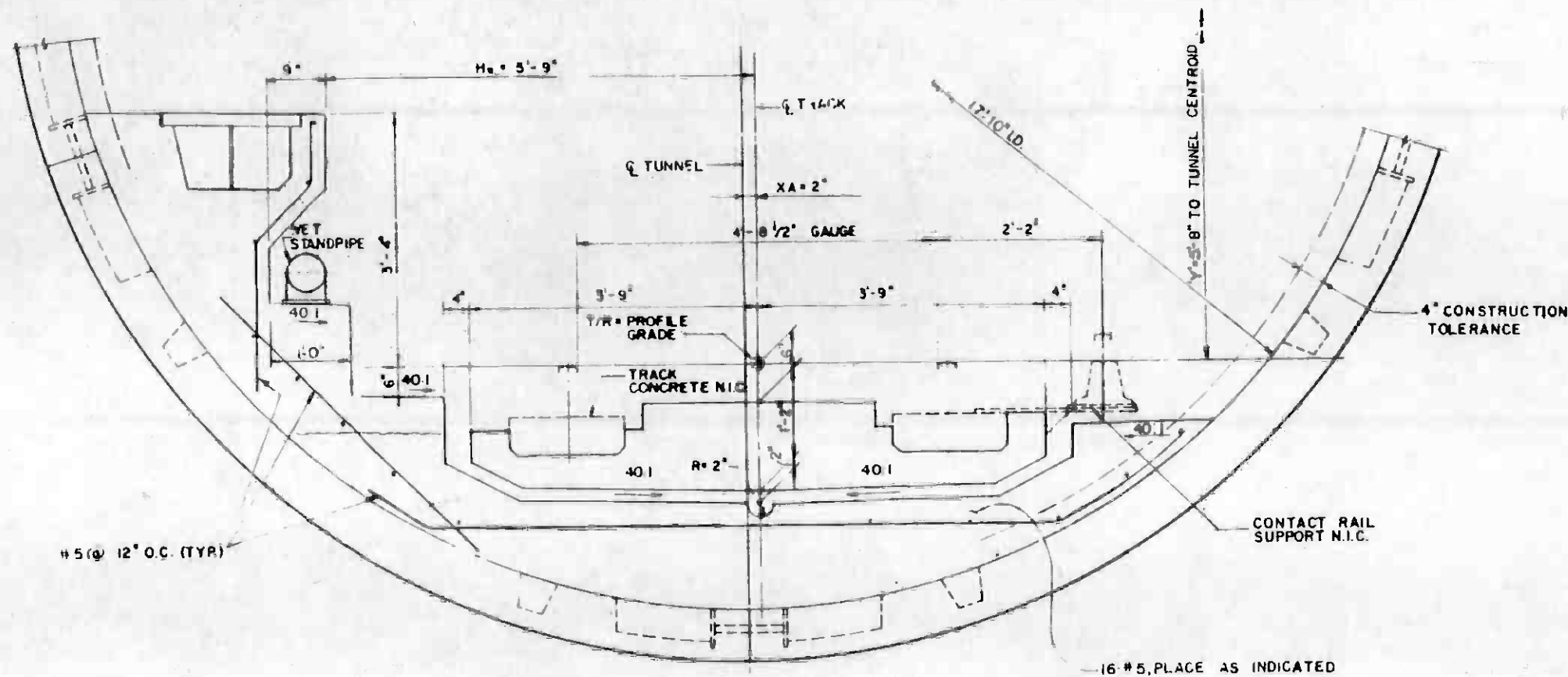


SECTION A
SCALE 1/2"=1'-0" 55080

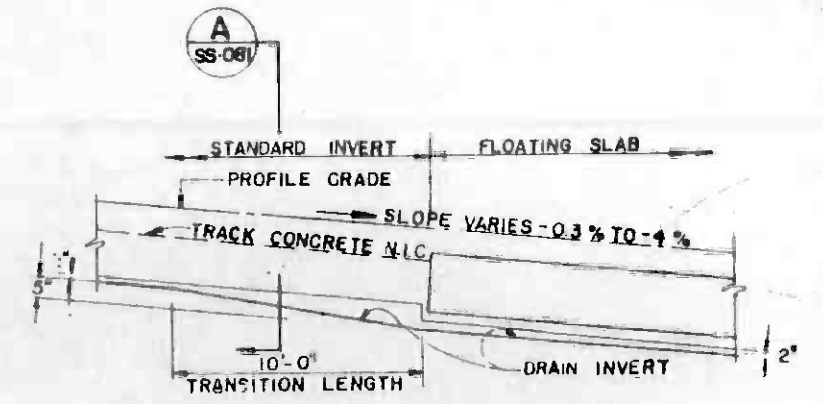
- NOTES:**
1. X & Y DIMENSIONS SHALL BE USED ONLY TO DETERMINE TUNNEL ALIGNMENT.
 2. Hw = MINIMUM DISTANCE BETWEEN ϵ OF TRACK AND EDGE OF WALKWAY.
 3. ALL REINFORCING BARS ARE #5 EXCEPT AS NOTED.
 4. TRACK CONCRETE, RUNNING RAILS AND FASTENERS, CONTACT RAIL, PEDESTAL AND CONCRETE SUPPORT, ARE NOT INCLUDED IN THIS CONTRACT.
- DETAIL 2**
N.T.S. 55080
- #2/O BC
TACKWELD PLATE TO BAR IN FIELD
- EXOTHERMIC WELD CABLE TO 2X2X1/4 PLATE IN SHOP
- AWG NO.10 INSULATED WIRE



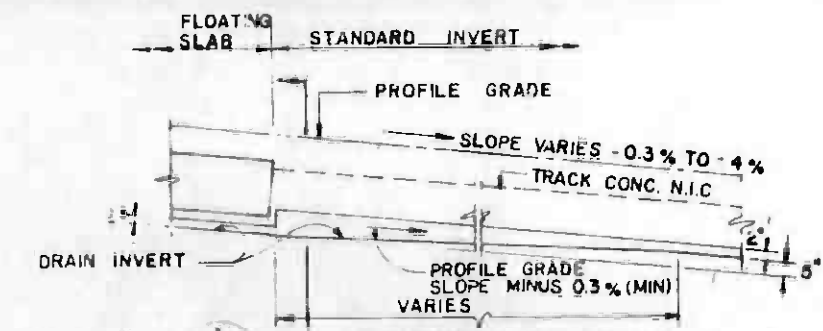
THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY MRTC DRAWN BY <i>[Signature]</i> CHECKED BY <i>[Signature]</i> IN CHARGE <i>[Signature]</i> DATE 12/3/84		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT DMJM/PBDD/KE/NBA GENERAL CONTRACTOR SUBMITTED <i>[Signature]</i> APPROVED <i>[Signature]</i>		STRUCTURAL STANDARD TUNNEL SUBWAY INVERT CONCRETE & WALKWAY DIRECT FIXATION - TANGENT TRACKS FOR CONCRETE LINERS		CONTRACT NO. A-171 DRAWING NO. SS-080C REV 0 SCALE AS SHOWN SHEET NO. A620/233	
REV	DATE	BY	SUB	APP	DESCRIPTION	REV	DATE	BY	SUB	APP	DESCRIPTION
1	2-6-85	[Signature]			CR 4-123						
2	12-3-84	[Signature]			SIGNATURE ISSUE						
3	1-9-85	[Signature]			CORROSION DETAILS ADDED						
4					ADDED PLATE CR 4-123						



TANGENT TRACK
SCALE 1" = 1'-0"

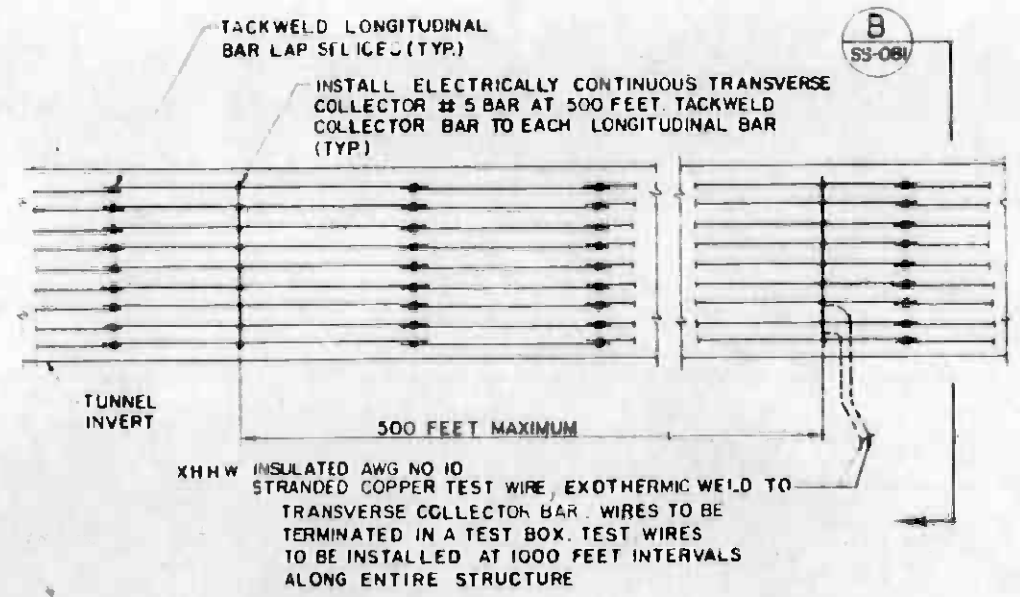


FLOATING SLAB DOWN GRADE
N.T.S.



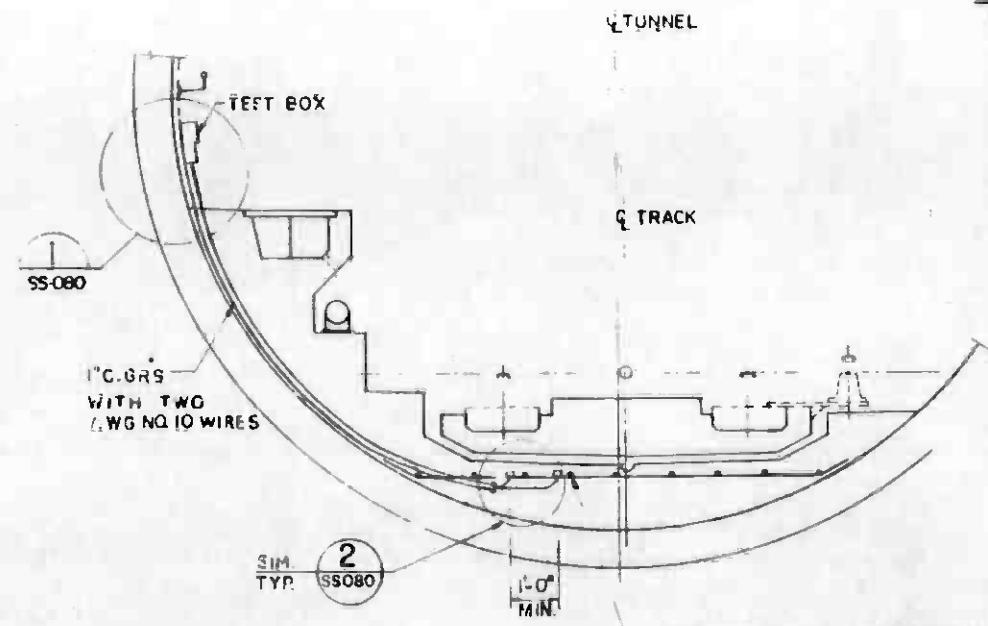
FLOATING SLAB UP GRADE
N.T.S.

STANDARD INVERT TO FLOATING SLAB TRANSITION
N.T.S.

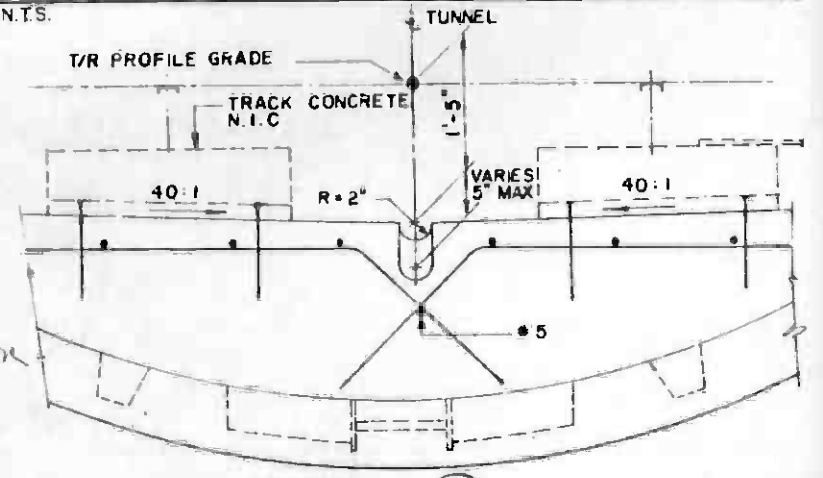


PLAN
N.T.S.

INVERT COLLECTOR GRID



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



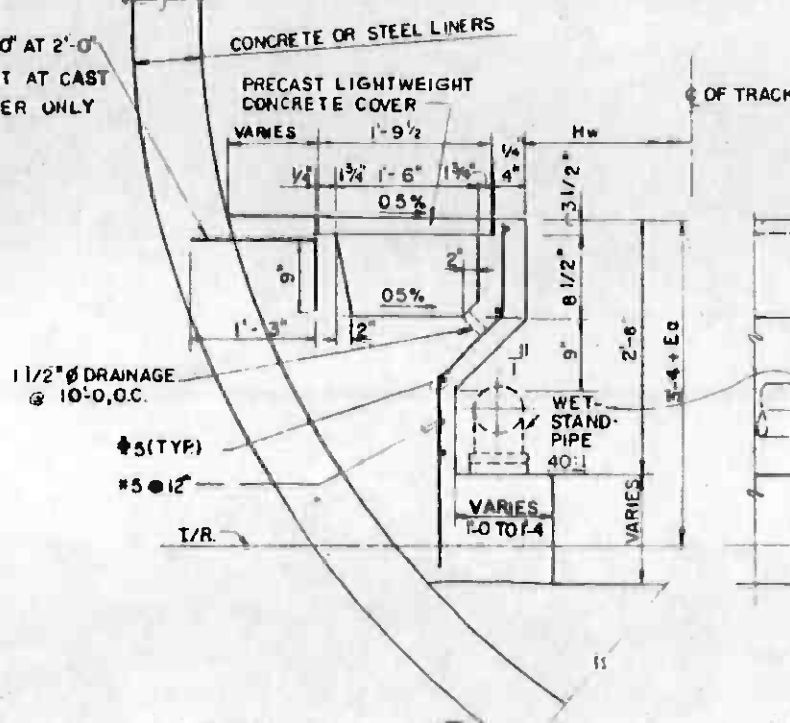
SECTION A
SCALE 1" = 1'-0"

- NOTES:**
- Hw = MINIMUM DISTANCE BETWEEN Q OF TRACK AND EDGE OF WALKWAY.
 - TRACK CONCRETE, RUNNING RAILS AND FASTENERS, CONTACT RAIL, PEDESTAL AND CONCRETE SUPPORT, ARE NOT INCLUDED IN THIS CONTRACT.
 - X AND Y DIMENSIONS SHALL BE USED ONLY TO DETERMINE TUNNEL ALIGNMENT.

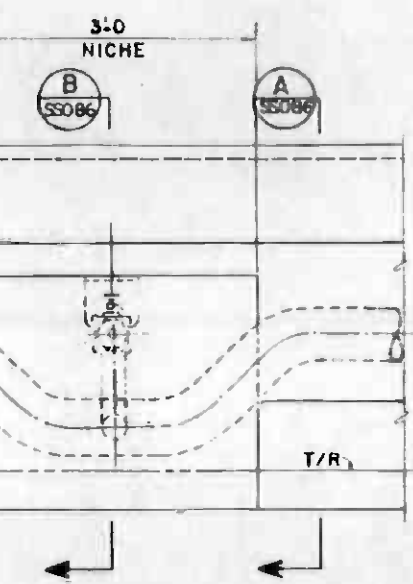


THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.	DESIGNED BY MRTC	SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT		STRUCTURAL STANDARD TUNNEL SUBWAY	CONTRACT NO. A-171
	DRAWN BY CHECKED BY IN CHARGE DATE 12-3-84				No. C015687
CR 4-123 SIGNATURE - ISSUE REVISION DETAILS ALSO	SUBMITTED APPROVED	APPROVED	APPROVED	INVERT CONCRETE & WALKWAY FLOATING SLAB TANGENT TRACKS FOR CONCRETE LINERS	SHEET NO. A620/234

#5 DOWELS X 2'-0" AT 2'-0"
DRILL & GROUT AT CAST
IN PLACE LINER ONLY

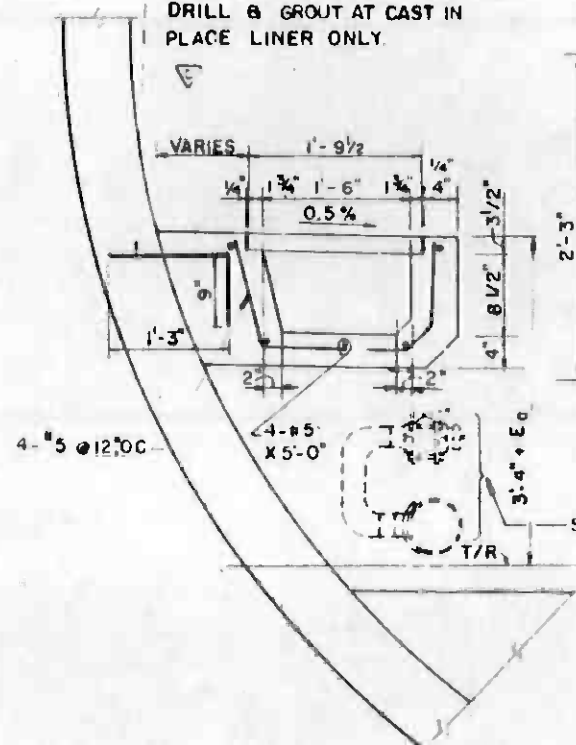


SECTION A
SCALE 1"=1'-0"
CONCRETE OR STEEL LINERS

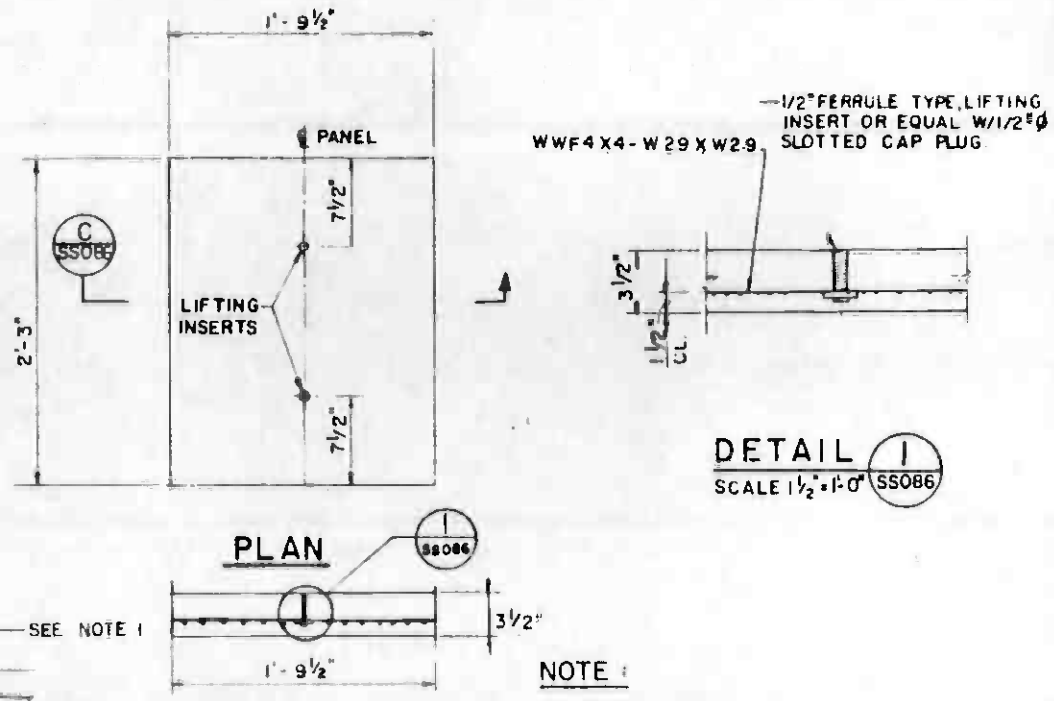


NICHE ELEVATION
(AT VALVE LOCATION)
SCALE 1"=1'-0"

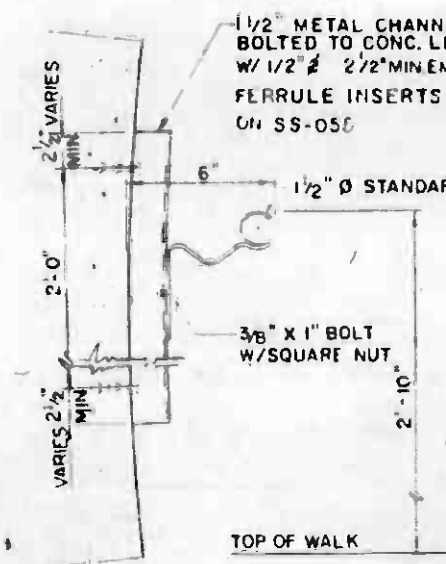
#5 DOWELS X 2'-0" AT 2'-0" O.C.
DRILL & GROUT AT CAST IN
PLACE LINER ONLY



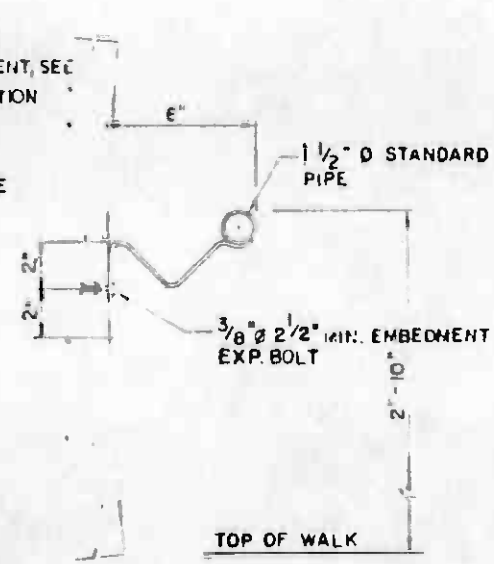
SECTION B
SCALE 1"=1'-0"
PRECAST CONCRETE COVER



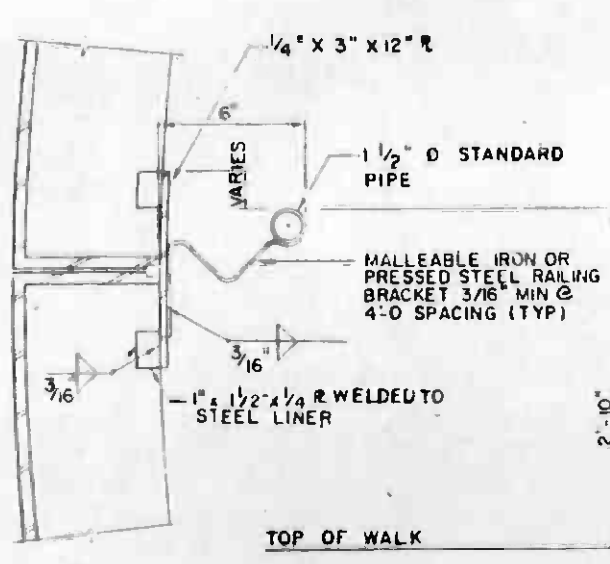
DETAIL I
SCALE 1/2"=1'-0"
NOTE 1:
WET STANDPIPE & ASSOCIATED VALVING SHALL NOT PROJECT BEYOND OUTSIDE EDGE OF SAFETY WALK.



PRECAST CONCRETE LINERS



CAST IN PLACE LINERS



STEEL LINERS

TUNNEL HANDRAIL BRACKETS
FOR OTHER DETAILS SEE SS-023
SCALE 1"=3'-0"



REV	DATE	BY	SUB	APP	DESCRIPTION
1	7/28/84	S.F.	R.I.		RE/USED PER CR6-024

REV	DATE	BY	SUB	APP	DESCRIPTION
1	6/10/85				ADDED HANDRAIL @ 5' LOW IN CR5-024
2	2-8-85				CR4-123 COMMENT1 RESOL.
3	2-3-84				SIGNATURE ISSUE

DESIGNED BY MRTC	No. C019687
DRAWN BY	
CHECKED BY J. Adunata	
DATE 12-3-84	

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT		
SUBMITTED		
DMJM/PBOD/KE/HWA GENERAL CONSULTANTS		APPROVED

STRUCTURAL STANDARD TUNNEL SUBWAY		CONTRACT NO. A-171
WALKWAY DETAILS		DRAWING NO. SS-086D
SCALE AS SHOWN		REV 0
SHEET NO.		A620/235

GENERAL NOTES

1. ALL ELECTRICAL WORK SHALL BE COORDINATED WITH THE BUILDING STRUCTURE, MECHANICAL PIPING SYSTEMS AND HEATING AND VENTILATING EQUIPMENT TO AVOID INTERFERENCES.
2. CONDUIT LAYOUTS ARE DIAGRAMMATIC. EXACT ROUTING SHALL BE GOVERNED BY THE BUILDING STRUCTURE AND THE EQUIPMENT SERVED.
3. MINIMUM EXPOSED CONDUIT SIZE SHALL BE 3/4" AND 1" FDR EMBEDDED. CONDUITS SHALL BE SIZED FOR CONDUCTOR FILL IN ACCORDANCE WITH NEC.
4. ALL CONDUITS SHOULD BE IDENTIFIED WITH NUMBERS AND TAGGED.
5. STUB UP CONDUITS AT BASE OF SWITCHBOARDS, MOTOR CONTROL CENTERS, TRANSFORMERS AND ALL OTHER EQUIPMENT WHERE CONDUITS WILL ENTER FROM BOTTOM. SHOULD HAVE ALLOWANCE FOR MAINTENANCE PADS.
6. SPARE EMBEDDED CONDUITS SHALL TERMINATE WITH AN EMBEDDED COUPLING FLUSH WITH FACE OF CONCRETE AND PLUGGED.
7. ALL EXPOSED, NONCURRENT - CARRYING METAL PARTS OF ELECTRICAL EQUIPMENT SHALL BE GROUNDED.
8. MAINTAIN MINIMUM CLEARANCE OF 6" BETWEEN COMM/A/C RACEWAYS AND POWER/CONTROLS RACEWAYS.
9. SEE SPECIFICATION SECTION 16050 FOR TYPE OF OUTLET BOXES.
10. ALL EMBEDDED CONDUITS FOR POWER, CONTROL, GROUNDING SHALL BE PVC, ALL EMBEDDED CONDUITS FOR COMMUNICATIONS SHALL BE GRS.
11. SEE STRUCTURAL STANDARD DRAWINGS FOR EARTHQUAKE BRACING OF SUPPORTS.
12. ALL EQUIPMENT INSTALLATION SHALL CONFORM TO UBC SEISMIC ZONE 4 REQUIREMENTS.
13. MINIMUM BENDING RADIUS OF COMMUNICATIONS CONDUIT IS 40".
14. AT STATION PLATFORMS, FINISHES, FIXTURES, SIGNS, PANELS, ETC. AND THEIR MOUNTING DEVICES OR SUPPORTS SHALL BE DESIGNED TO WITHSTAND PRESSURE WAVES OF PLUS 20 PSF TO MINUS 20 PSF RESPECTIVELY WITH EACH ARRIVING AND DEPARTING TRAIN.
15. IN TUNNELS: FIXTURES, PANELS, DOORS, ETC. AND THEIR MOUNTING DEVICES OR SUPPORTS SHALL BE DESIGNED TO WITHSTAND PRESSURE WAVES RANGING FROM PLUS 80 PSF TO MINUS 80 PSF.
16. DELETED
17. THE LOCATION OF STUB UPS AND STUB DOWNS SHOULD BE COORDINATED WITH SHOP DRAWINGS. FOR OWNER FURNISHED ITEMS THESE SHOP DRAWINGS ARE THRU DISTRICT OR ITS DESIGNEE.

ROOM NO. INDEX

ROOM NO.	ROOM NAME
1	SOUTH PASSAGEWAY
2	MEZZANINE PUBLIC LEVEL
3	NORTH PASSAGEWAY
4	ELEVATOR EQUIPMENT ROOM
5	CUSTODIAL ROOM "A"
6	TRASH ROOM
7	STAFF/SECURITY ROOM
8	CORRIDOR
9	TOILET
11	EQUIPMENT ACCESS ROOM
12	NOT ASSIGNED
13	EAST EMERGENCY FAN ROOM
14	NOT ASSIGNED
15	STAIR NO. 10
16	NOT ASSIGNED
17	STORAGE
18	INCOMING ELECTRICAL SERVICES - 1B-1 BATTERY RM.
19	TRACTION POWER SUBSTATION
20	EMERGENCY EXIT NO. 9 - 20.1 METER
21.1	CORRIDOR
21.2	CORRIDOR - 21.3 VESTIBULE - 21.4 FAN RM.
22	T.P.S.S. & OTHER SUPPLY FANS
22.1	AIR LOCK
24	EAST U.P.S. BATTERY ROOM
25	EAST AUXILIARY POWER ROOM
26	EMERGENCY EXIT NO. 8
27	CHILLER ROOM
28	STAIR NO. 8
29	EAST SPRINKLER VALVE ROOM
30	TRAIN CONTROL & COMMUNICATIONS
31	TRAIN CONTROL BATTERY ROOM
32	EAST FAN ROOM
33	WEST U.P.S. BATTERY ROOM
34	WEST AUXILIARY POWER ROOM
35	WEST FAN ROOM
36	NOT ASSIGNED
37	CORRIDOR
38	WEST SPRINKLER VALVE ROOM
39	WEST EMERGENCY FAN ROOM
40	NOT ASSIGNED
41	NOT ASSIGNED
42	NOT ASSIGNED
43	NOT ASSIGNED
44	STAIR NO. 7
45	EMERGENCY EXIT NO. 7
46	EQUIPMENT ACCESS ROOM
47	ELECTRICAL EQUIPMENT ROOM
48	STAIR NO. 10
49.1	STORAGE
49.2	STORAGE
50	CUSTODIAL ROOM "B"
51	U.P.E. FAN ROOM
52	ELECTRICAL ACCESS ROOM
53	STAIR NO. 8
54	EMERGENCY EQUIPMENT ROOM
55	NOT ASSIGNED
56	NOT ASSIGNED
57	NOT ASSIGNED
58	NOT ASSIGNED
59	PLATFORM PUBLIC LEVEL
60	NOT ASSIGNED
61	NOT ASSIGNED
62	NOT ASSIGNED
63	STAIR NO. 7
64	SUMP PUMP & EJECTOR ROOM
65	ELECTRICAL EQUIPMENT ROOM
66	CUSTODIAL ROOM

REV.	DATE	BY	SUB.	APP.	DESCRIPTION

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DESIGNED BY
E. Rosenberg

DRAWN BY
P. Lee

CHECKED BY
S. Ryznar

IN CHARGE
B. Lee

DATE
8 MAR 85

REGISTERED PROFESSIONAL ENGINEER
No. E-5143
STATE OF CALIFORNIA

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT



SVERDRUP & PARCEL AND ASSOCIATES, INC.
REGISTERED PROFESSIONAL ARCHITECTS
PAUL & GARDNER, INC.

DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

APPROVED
Howard Khaliff

LA CBD TO NORTH HOLLYWOOD
WILSHIRE/ALVARADO STATION

ELECTRICAL
GENERAL NOTES

CONTRACT NO.	A-175
DRAWING NO.	E-001
SCALE	NO SCALE
SHEET NO.	A620 / 241



RECEPTACLE OUTLETS	
	SINGLE RECEPTACLE OUTLET
	DUPLEX RECEPTACLE OUTLET RECESSED
	SINGLE SPECIAL-PURPOSE RECEPTACLE OUTLET (30 AMP, 2 POLE, OR AS NOTED) *
	DUPLEX SPECIAL-PURPOSE RECEPTACLE OUTLET *
* USE SUBSCRIPT LETTERS TO INDICATE FUNCTION (FC - FARE COLLECTION, ETC.)	
	FLOOR BOX WITH SINGLE RECEPTACLE
	FLOOR BOX WITH DUPLEX RECEPTACLE
	FLOOR BOX WITH SERVICE FITTING AS NOTED
	FLOOR BOX - PUBLIC TELEPHONE
	FLOOR BOX - PRIVATE TELEPHONE
	UNDERFLOOR DUCT WITH ASSOCIATED OUTLETS AS INDICATED
	TRENCH DUCT

PANELBOARDS, SWITCHBOARDS, ETC.	
	AHCP - AIR HANDLING UNIT CONTROL PANEL
	ACCP - AIR CONDITIONING CONTROL PANEL
CONDUCTORS & CONDUIT	
	RACEWAY EMBEDDED IN FLOOR
	RACEWAY EMBEDDED IN CEILING OR WALL
	RACEWAY EXPOSED
	BRANCH CIRCUIT HOME RUN TO PANELBOARD. LL2 DENOTES PANEL LL2 AND NUMERALS IDENTIFY CIRCUIT NUMBERS.
	INDICATES NUMBER OF #12 WIRES. NO CROSS LINES INDICATES 2#12 WIRES UNLESS NOTED
	WIRE & RACEWAY SIZE FOR #10 AND LARGER
	EMBEDDED EMERG. CKT. FOR UNSCHEDULE LTG. PWR.
	FEEDER OR HOME RUN RACEWAY IDENTIFICATION AS FOLLOWS: A-AUXILIARY, T-TRACTION POWER, TC-TRAIN CONTROL, EM-EMERGENCY, C-COMMUNICATION (SEE MD-DWG FOR SPECIFIC SYMBOL OF EACH SUBSYSTEM.) CP-CORROSION CONTROL CONDUIT DF-34.5KV CONDUIT
	GROUND WIRE
	RACEWAY TURNED UP OR TOWARDS VIEWER
	RACEWAY TURNED DOWN OR AWAY FROM VIEWER
	UNDERGROUND CONDUIT BANK (INDICATE TYPE, SIZE AND NUMBER OF CONDUITS BY CROSS SECTION IDENTIFICATION OF EACH RUN, OR BY NOTATION)
	GROUND RECEPTACLE
	GROUND ROD
	RACEWAY CAPPED

EQUIPMENT IDENTIFICATION	
MCP	MOTOR CIRCUIT PROTECTDR
ETS	EMERGENCY TRIP STATION
CIC	COMMUNICATION INTERFACE CABINET
SWG	SWITCHGEAR
TP	TUNNEL SUMP PUMP
EF	EXHAUST FAN
SF	SUPPLY FAN
AC	AIR CONDITION UNIT FOR ATC/C RM

MISCELLANEOUS	
	TRAIN DESTINATION SIGN
	CCTV MONITOR
	BUZZER
	BELL
	PUSHBUTTON
	DOOR OPENER
	ALARM TRIP
	HORN
	PHOTO CELL
	SELECTOR SWITCH, H.O.A. UNLESS OTHERWISE NOTED
	CLOCK OUTLET
	TRACTION POWER EMERGENCY TRIP STATION
ELECTRICALLY OPERATED DEVICE, TYPE PER LETTERS AS FOLLOWS: S - SOLENOID D - DAMPER OPERATOR R - RELAY OO - DOOR OPERATOR EP - ELECTRO-PNEUMATIC RELAY	
	DOOR POSITION INDICATOR
	DISABLE SWITCH
	DISABLE SWITCH WITH AUDIBLE ALARM
	ELECTRIC DEAD BOLT
	ELECTRO-MECHANICAL BOLT
	LIGHTNING PROTECTION AIR TERMINAL

PANELBOARDS, SWITCHBOARDS, ETC.	
	PANELBOARD
TERMINAL CABINET, TYPES AS FOLLOWS: CIC - COMMUNICATION INTERFACE CABINET TTC - TELEPHONE TERMINAL CABINET	
	PULL BOX
	MOTOR CONTROLLER, SUBSCRIPT INDICATES NEMA SIZE
	FUSED DISCONNECT SWITCH SUBSCRIPT INDICATES FUSE SIZE AND NO. OF POLES
	NON-FUSED DISCONNECT SWITCH SUBSCRIPT INDICATES SIZE AND NO. OF POLES
	ELECTRICAL MANHOLE
	ELECTRICAL HANDHOLE
	COMBINATION MAGNETIC MOTOR STARTER, FUSIBLE SUBSCRIPT INDICATES NEMA SIZE
	COMBINATION MAGNETIC MOTOR STARTER NON-FUSIBLE. SUBSCRIPT INDICATES NEMA SIZE
	COMBINATION MAGNETIC MOTOR STARTER, WITH CIRCUIT BREAKER. SUBSCRIPT INDICATES NEMA SIZE
	MOTOR, WITH IDENTIFICATION, INSERT INDICATES HORSEPOWER. THREE PHASE OR SINGLE PHASE
	POWER PANEL
	SWITCHBOARD (SWBD) OR MOTOR CONTROL CENTER (MCC)
CONTROL PANEL, TYPES AS FOLLOWS: HCP - HALON CONTROL PANEL FCP - FAN CONTROL PANEL EMP - EMERGENCY MANAGEMENT PANEL ACP - AUXILIARY CONTROL PANEL	

ELECT. EQUIPMENT IDENTIFICATION	
EM - IE	EMERGENCY FAN NO.1 AT EAST END
UF - IE	UNDER PLATFORM EXHAUST FAN NO.1 AT EAST END
AHU - IE	STATION SUPPLY FAN AT AIR HANDLING UNIT NO.1 EAST END
SF - IE	AUX. POWER ROOM SUPPLY FAN NO.1, EAST END
MF - IE	SMOKE EXHAUST FAN NO.1 AT EAST END
FD - IE	FAN DAMPER NO.1, EAST END
TD - IE	TRACK DAMPER NO.1, EAST END
BD - IE	BY-PASS DAMPER NO.1, EAST END
P - IE	PUMP NO.1, EAST END
DH - IE	DUCT HEATER NO.1, EAST END
PP -	POWER PANEL
LP -	LIGHTING PANEL
TLP -	TUNNEL LIGHTING PANEL
ES - IE	ESCALATOR NO.1, EAST END
MCC -	MOTOR CONTROL CENTER
EL - IE	ELEVATOR NO.1, EAST END
LCS -	LOCAL CONTROL STATION
SWBD -	SWITCHBOARD
ATS -	AUTOMATIC TRANSFER SWITCH
BKR -	BREAKER
STR -	STARTER
HTR -	HEATER

SWITCH OUTLETS	
S	SINGLE - POLE SWITCH
S2	DOUBLE - POLE SWITCH
S3	THREE - WAY SWITCH
S4	FOUR - WAY SWITCH
SK	KEY - OPERATED SWITCH
Sp	SWITCH WITH PILOT LAMP
SD	DOOR SWITCH
ST	TIME SWITCH
SM	MANUAL MOTOR STARTER WITH OVERLOAD DEVICE
SMD	MOMENTARY CONTACT SWITCH OR PUSHBUTTON FOR OTHER THAN SIGNALLING SYSTEM
Sa	SUBSCRIPT a DENOTES SWITCH CIRCUIT

LIGHTING OUTLETS	
CLG	WALL
	OUTLET FOR INCANDESCENT OR HIGH INTENSITY DISCHARGE FIXTURE
	FLUORESCENT FIXTURE OUTLET
	EXIT LIGHT OUTLET
	BLANKED OUTLET
	JUNCTION BOX
	LETTER SUBSCRIPT ADJACENT TO FIXTURE OUTLET DESIGNATES SWITCH CONTROL
	FLOODLIGHT, ARROWS INDICATE DIRECTION OF BEAM
	EMERGENCY LIGHT OUTLET
	OUTLET BOX

SPECIAL IDENTIFICATION (USED NEXT TO SYMBOL)		
WP - WEATHER PROOF	RT - RAIN TIGHT	G - GROUND
WT - WATER TIGHT	DT - DUST TIGHT	R - RECESSED
VT - VAPOR TIGHT	EP - EXPLOSION PROOF	F - FLUSH

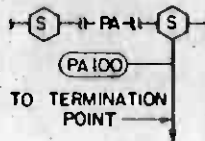
FIXTURE TYPE SYMBOL	
	a. LETTER - TYPE OF FIXTURE
	b. FIRST NO. - FIXTURE OPTION
	c. SECOND NO. - LAMP OPTION
	d. LAST NO. - MOUNTING HARDWARE OPTION
	e. NO. ABOVE SYMBOL - MOUNTING HEIGHT
	f. NO. UNDER SYMBOL - VOLTAGE OTHER THAN 277V

ABBREVIATIONS	
C OR CND	CONDUIT
SPST	SINGLE POLE SINGLE THROW
SPDT	SINGLE POLE DOUBLE THROW
N.O., N.C.	NORMALLY OPEN, NORMALLY CLOSED
NIC	NOT IN THIS CONTRACT
C.O.	RACEWAY ONLY
MC	METALLIC CONDUIT
NMC	NON-METALLIC CONDUIT
GRS	GALVANIZED RIGID STEEL CONDUIT
P.V.C.	POLYVINYL CHLORIDE CONDUIT
IMC	INTERMEDIATE METAL CONDUIT
TEL	TELEPHONE
GND	GROUND
FUT	FUTURE
ELEV	ELEVATION, ELEVATOR
MTD, MTG	MOUNTED, MOUNTING
A.F.F.	ABOVE FINISHED FLOOR
+4'-6"	MOUNTING HEIGHT TO C OF OUTLET ABOVE FINISH FLOOR
FL	FLDOR
ZC	ZONE CONTROL
RTU	REMOTE TERMINAL UNIT
FVNR	FULL VOLTAGE, NON-REVERSIBLE
FVR	FULL VOLTAGE, REVERSIBLE

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REV. DATE BY SUB. APP. DESCRIPTION	REV. DATE BY SUB. APP. DESCRIPTION	DRAWN BY CHECKED BY IN CHARGE DATE		SVERDRUP & PARCEL AND ASSOCIATES, INC. REGISTERED PROFESSIONAL ENGINEERS 1000 WILSON BLVD., SUITE 2000 LOS ANGELES, CALIF. 90017		DMJM/PBOD/KE/HWA A JOE MORAN GENERAL CONSULTANTS	DRAWING NO. E-002

SYMBOLS

ABBREVIATIONS



PA - RACEWAY IDENTIFICATION BETWEEN OUTLETS
 PA100 - RACEWAY IDENTIFICATION BETWEEN OUTLET AND TERMINATION POINT (IE FINAL STUB-UP TO TERMINAL CABINET, PANEL BOARD, SWITCHBOARD.)

SYSTEMS IDENTIFICATION ABBREVIATIONS SHALL BE:

- CC - CUSTOMER ASSISTANCE TELEPHONE
- TV - CLOSED CIRCUIT TELEVISION
- CE - EMERGENCY TELEPHONE (ETEL)
- CF - FIRE TELEPHONE (FTEL)
- HC - COMMUNICATIONS TIE CABLE (CIC TO ATC & C ROOM)
- CT - CABLE TRANSMISSION SYSTEM
- CX - TELEPHONE COMPANY
- F - POWER FEEDER (480/277V OR 208/120V)
- FA - FIRE DETECTOR OR ALARM
- FC - FARE COLLECTION
- FG - GAS MONITORING
- FS - SEISMIC DETECTOR
- IA - INTRUSION DETECTOR OR ALARM
- PA - PUBLIC ADDRESS
- SC - SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA)
- CA - ADMINISTRATIVE TELEPHONE (ATEL) & MAINTENANCE TELEPHONE (MTEL)
- JUNCTION BOX

J

HH HANDHOLE

MH MANHOLE

TB, TD TRENCH DUCT

UNDERGROUND DUCT BANK

FLEXIBLE RACEWAY CONNECTION

BARE GROUNDING CONDUCTOR

EXOTHERMIC WELD CONNECTION

GND INSULATED GROUNDING CONDUCTOR

GROUND ROD WITH EXOTHERMIC WELD CONNECTION

R LIGHTNING PROTECTION SYSTEM ROOF CONDUCTOR

CONDUIT TURNED UP OR TOWARDS VIEWER

CONDUIT TURNED DOWN OR AWAY FROM VIEWER

CONDUIT CAPPED

MISCELLANEOUS

- TV CCTV CAMERA OUTLET
- TV CCTV MONITOR
- Buzzer
- INTRUSION SENSOR
- PC PHOTO CELL
- CLOCK OUTLET
- TRACTION POWER EMERGENCY TRIP STATION



CABLEWAY

TTC

TERMINAL CABINET, TYPE AS FOLLOWS:
 TTC - TELEPHONE TERMINAL CABINET
 FTC - FACILITIES TERMINAL CABINET
 CIC - COMMUNICATIONS INTERFACE CABINET

TELEPHONE

- M MAINTENANCE TELEPHONE JACK (MTEL)
- F FIRE TELEPHONE JACK (FTEL)
- ETEL EMERGENCY TELEPHONE OUTLET (ETEL)
- C CUSTOMER ASSISTANCE TELEPHONE
- A ADMINISTRATIVE TELEPHONE OUTLET (ATEL)
- PUBLIC PAY TELEPHONE OUTLET
- TELEPHONE BACK BOARD
- WP WEATHERPROOF TELEPHONE

UNLESS NOTED MTD-HEIGHT IS 48" AFF. AT PUBLIC AREAS, 42"6" AT ANCILLARY AREAS. 1'-0" AT OFFICE AREA (STAFF RM.).

PUBLIC ADDRESS

- M MICROPHONE
- A AMPLIFIER
- S, S.C. INTERIOR SPEAKER BACKBOX PER LETTER AS FOLLOWS: F-FLUSH MTD, S-SURFACE MTD, SC-SUSPENDED CEILING
- E EXTERIOR SPEAKER BACKBOX
- H HORN TYPE SPEAKER OUTLET
- M NOISE MONITOR
- MS MONITOR SPEAKER

FIRE AND INTRUSION

- F PULL STATION FIRE ALARM
- Fp PUSH BUTTON FIRE ALARM
- BELL
- HOR
- FL STANDPIPE FLOW MONITOR
- FIRE HOSE CABINET MONITOR
- DETECTOR, TYPE PER LETTER AS FOLLOWS:
 L - HEAT, LINE TYPE
 S - SMOKE - IONIZATION
 R - THERMAL RATE OF RISE AND FIXED TEMPERATURE
 P - SMOKE PHOTO-ELECTRIC
 X - GAS - METHANE
 Y - GAS - HYDROGEN SULFIDE
 VALVE POSITION MONITOR

V

ADD "F" FOR FIRE ALARM SYSTEM I.E. F FOR FIRE HORN

H

DETECTOR, TYPE PER LETTER AS FOLLOWS:
 H - HINGE DETECTOR
 E - ELECTRIC DOOR LOCK
 M - MAGNETIC SWITCH DETECTOR
 P - PLUNGER SWITCH (FLUSH IN DOOR JAM) DETECTOR
 L - DOOR LATCH DETECTOR
 K - KEY-BY-PASS SWITCH
 C - CARD OR BADGE READER

HOP HALON DISCHARGE PANEL

HAB HALON ABORT SWITCH

RADIO

NOTE: NOT ALL SYMBOLS ARE USED

- A/D ANALOG TO DIGITAL
- ACD AUTOMATIC CALL DISTRIBUTOR
- ATEL ADMINISTRATIVE TELEPHONE
- AFF ABOVE FINISHED FLOOR
- CA CABLE
- CATEL CUSTOMER ASSISTANCE TELEPHONE
- CCU COMMUNICATIONS CONTROL UNIT
- CCTV CLOSED CIRCUIT TELEVISION
- CIC COMMUNICATIONS INTERFACE CABINET
- CPU CENTRAL PROCESSING UNIT
- CRT CATHODE RAY TUBE
- CTS CABLE TRANSMISSION SUBSYSTEM
- OET DETECTOR
- DID DIRECT INWARD DIALING
- DOD DIRECT OUTWARD DIALING
- DTMF DUAL TONE MULTI-FREQUENCY
- ETEL EMERGENCY TELEPHONE
- FSCP FIRE SECURITY CONTROL PANEL
- FMP FIRE MANAGEMENT PANEL
- FTEL FIRE TELEPHONE
- FXO FOREIGN EXCHANGE OFFICE
- FXS FOREIGN EXCHANGE SUBSCRIBER
- HH HANDHOLE
- I/O INPUT / OUTPUT
- JB JUNCTION BOX
- MDF MAIN DISTRIBUTION FRAME
- MH MANHOLE
- MTEL MAINTENANCE TELEPHONE
- NIC NOT IN CONTRACT
- PA PUBLIC ADDRESS
- PABX PRIVATE AUTOMATIC BRANCH EXCHANGE
- PCM PULSE CODED MODULATION
- PR PAIR
- PROT PROTECTOR TERMINAL
- REA RURAL ELECTRIFICATION ADMINISTRATION
- SCADA SUPERVISORY CONTROL AND DATA ACQUISITION
- SCRTO SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
- SPL SOUND PRESSURE LEVEL
- SST SPECIAL SERVICES TELEPHONE
- TB TERMINAL BOARD
- TBK TERMINAL BLOCK
- ATC & C AUTOMATIC TRAIN CONTROL & COMMUNICATIONS
- TERM TERMINAL
- TTC TELEPHONE TERMINAL CABINET
- UPS UNINTERRUPTIBLE POWER SUPPLY
- VTR VIDED TAPE RECORDER



REV	DATE	BY	SUB	APP	DESCRIPTION

REV	DATE	BY	SUB	APP	DESCRIPTION

DESIGNED BY: MRTC
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 IN CHARGE: [Signature]
 DATE: 8 MAR 86

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

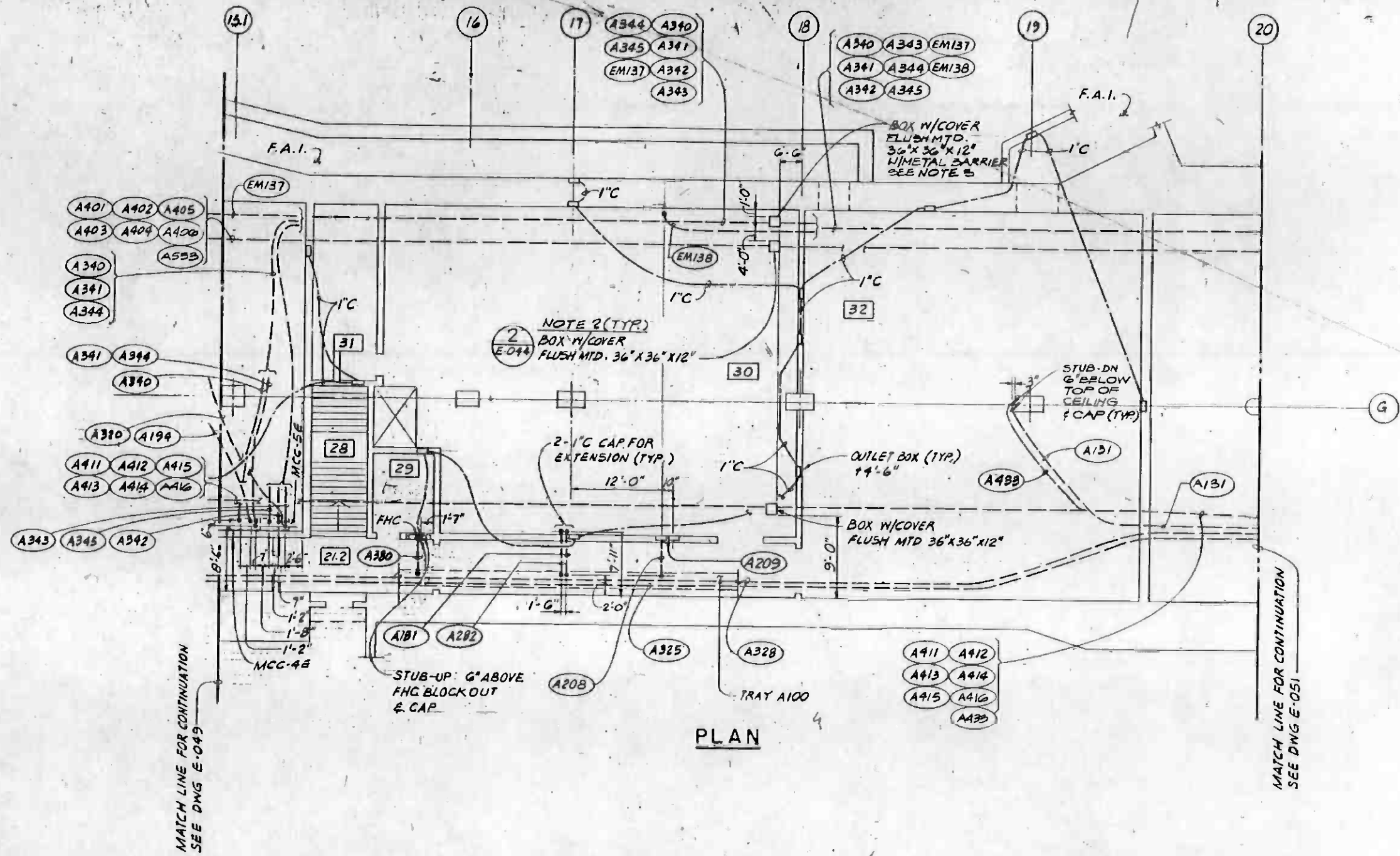
SVERDRUP CORP. AND ASSOCIATES, INC.
 1500 WEST 10TH AVENUE, SUITE 200
 DENVER, COLORADO 80202
 PHONE: 303-733-1100
 FAX: 303-733-1101

DMJM/PBQD/KE/HWA
 GENERAL CONSULTANTS

APPROVED: [Signature]

CONTRACT NO. A-175
 DRAWING NO. E-003 12
 SCALE: NO SCALE
 SHEET NO. A620/243

LA CBD TO NORTH HOLLYWOOD
 WILSHIRE / ALVARADO STATION
 COMMUNICATIONS
 SYMBOLS AND ABBREVIATIONS



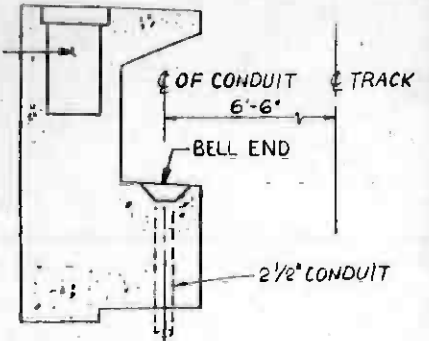
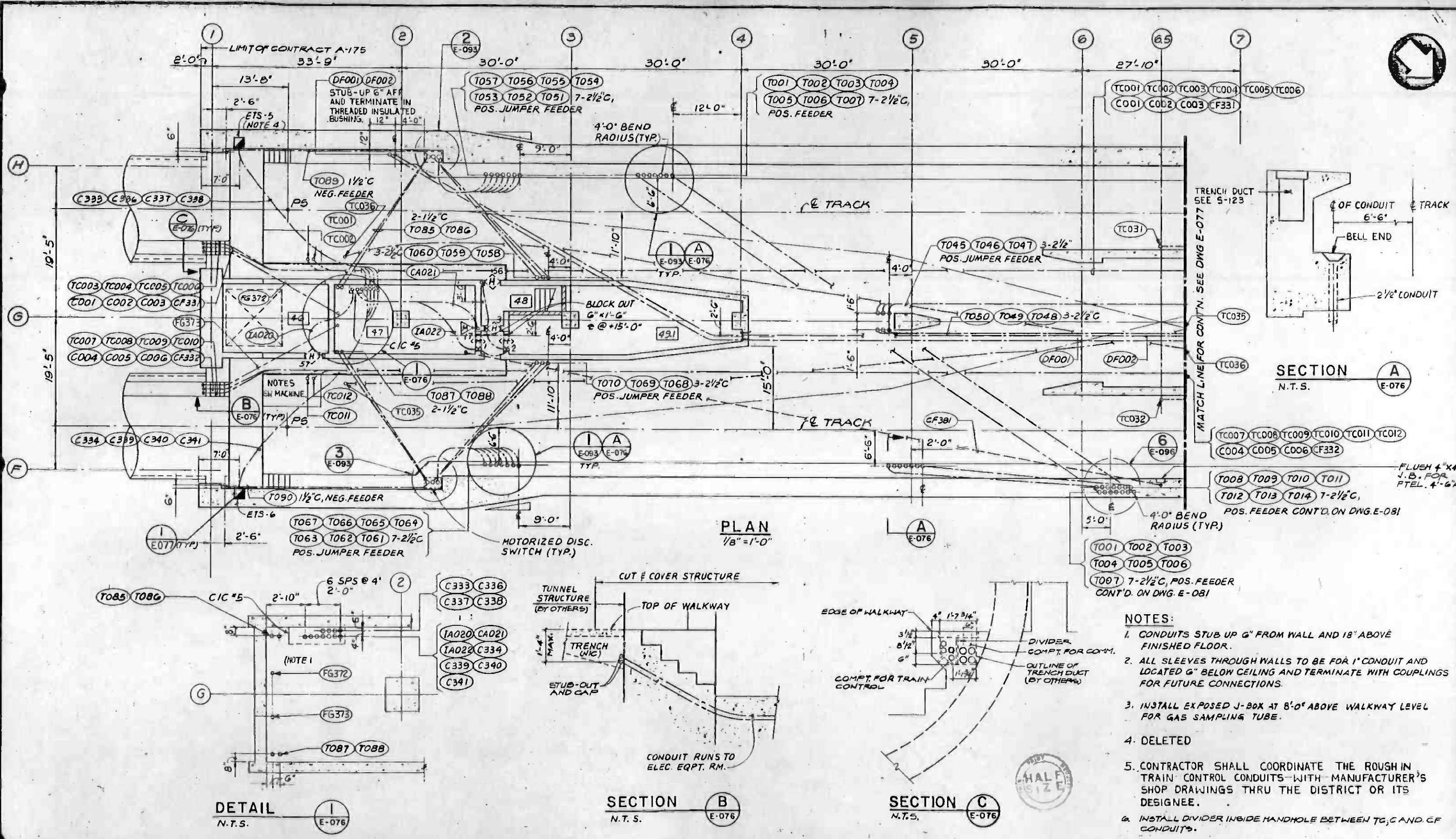
PLAN

NOTES:

1. SEE DWG. E-043 FOR NOTES.
2. ALL FLUSH MOUNTED BOXES AT THE SHELL STRUCTURE (WITH DIRECT CONTACT TO EARTH) SHALL BE COATED WITH MOISTURE PROOFED MATERIAL.
3. METAL BARRIER SHALL BE PROVIDED WHEN EM CONDUITS ARE ROUTED IN THE SAME BOX WITH A-CONDUITS TYPICAL AT ALL DRAWINGS.

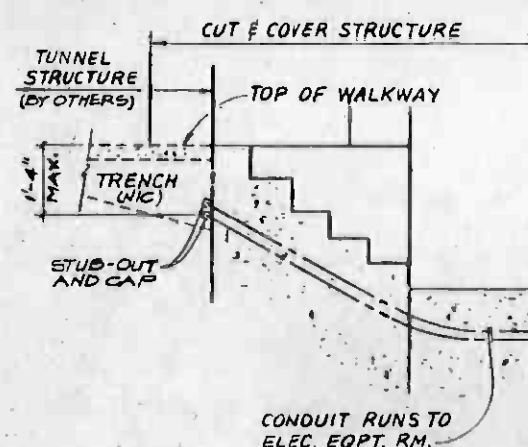


THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY Z. Rosen DRAWN BY M. LEW CHECKED BY S. Rosen IN CHARGE G. Soler DATE 8 MAR 85		REGISTERED PROFESSIONAL ENGINEER SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT BVERDRUP & PARCEL AND ASSOCIATES, INC. 2500 W. 10TH ST. SUITE 200 LOS ANGELES, CALIF. 90020 PHOENIX & ASSOC. ENGINEERS & ARCHT. 1100 W. 10TH ST. SUITE 200 LOS ANGELES, CALIF. 90020		 DMJM/PBQD/KE/HWA GENERAL CONSULTANTS APPROVED 		CONTRACT NO. A-175 DRAWING NO. E-050 REV. 2 SCALE 1/8" = 1'-0" SHEET NO. A620/244	
REVISED PER CR 6-531 AMENDMENT 10 ISSUE INITIAL ISSUE				2/22/85 2/7/85 SPA 2/1/85		2/22/85 2/7/85 2/1/85		LA CBD TO NORTH HOLLYWOOD WILSHIRE / ALVARADO STATION POWER MEZZANINE GRID 15.1 TO 20			

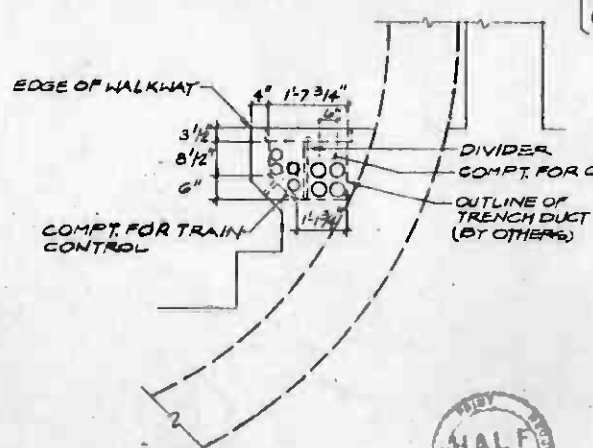


SECTION A
N.T.S.
E-076

PLAN
1/8" = 1'-0"



SECTION B
N.T.S.
E-076

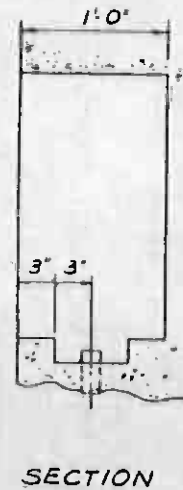
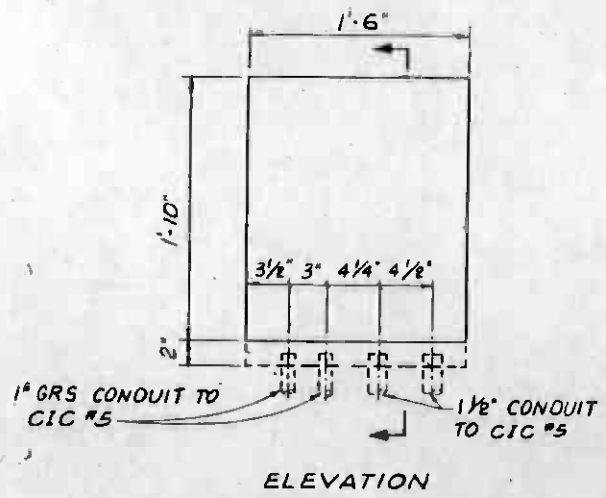
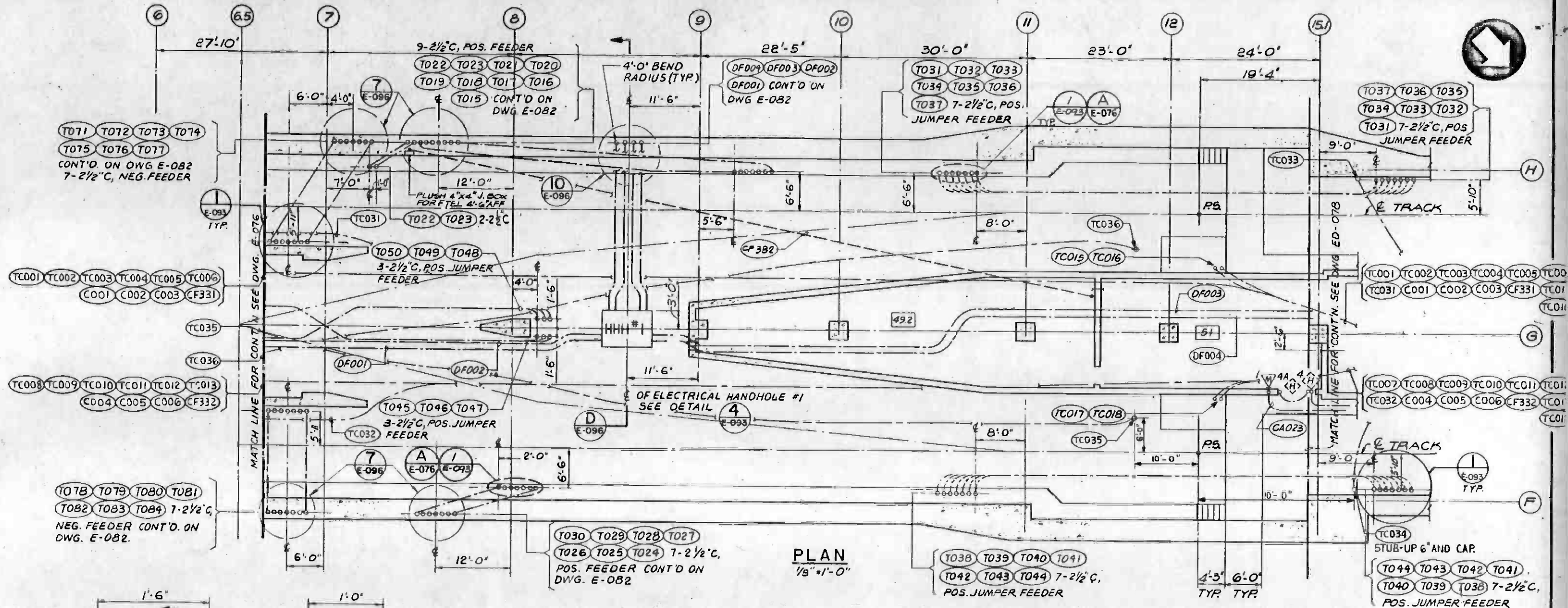


SECTION C
N.T.S.
E-076

DETAIL I
N.T.S.
E-076

- NOTES:**
1. CONDUITS STUB UP 6" FROM WALL AND 18" ABOVE FINISHED FLOOR.
 2. ALL SLEEVES THROUGH WALLS TO BE FOR 1" CONDUIT AND LOCATED 6" BELOW CEILING AND TERMINATE WITH COUPLINGS FOR FUTURE CONNECTIONS.
 3. INSTALL EXPOSED J-BOX AT 8'-0" ABOVE WALKWAY LEVEL FOR GAS SAMPLING TUBE.
 4. DELETED
 5. CONTRACTOR SHALL COORDINATE THE ROUGH IN TRAIN CONTROL CONDUITS WITH MANUFACTURER'S SHOP DRAWINGS THRU THE DISTRICT OR ITS DESIGNEE.
 6. INSTALL DIVIDER INSIDE HANDHOLE BETWEEN TC, C AND CF CONDUITS.

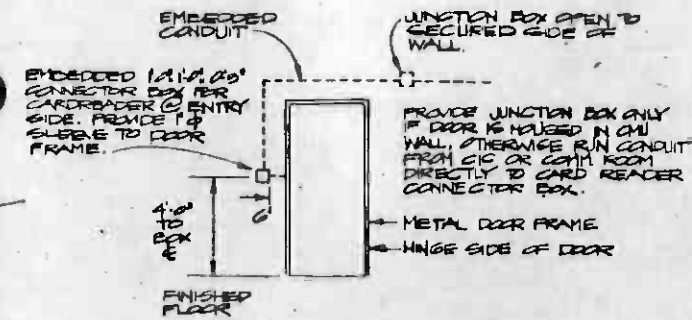
THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY <i>[Signature]</i> DRAWN BY <i>[Signature]</i> CHECKED BY <i>[Signature]</i> IN CHARGE <i>[Signature]</i> DATE 8 MAR 85		REGISTERED PROFESSIONAL ENGINEER GEORGE S. LEE E-5148 ELECTRICAL STATE OF CALIFORNIA		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT SVERDRUP & PARCEL AND ASSOCIATES, INC. 10000 WILSHIRE BLVD., SUITE 200 BEVERLY HILLS, CALIF. 90210 PH: 310-207-1100 FAX: 310-207-1101		OMM/PROB/KE/HWA & JEFF WELSH - SENIOR CONSULTANTS APPROVED: <i>[Signature]</i>		CONTRACT NO. A-175 DRAWING NO. E-D76 REV. 1 SCALE AS NOTED SHEET NO. A620/245	
REV. DATE	BY	APP.	DESCRIPTION	REV. DATE	BY	APP.	DESCRIPTION	DATE	APPROVED	SCALE	SHEET NO.		
				2/20/85	SPA	SMC	REVISED PER CRG-531	8 MAR 85	<i>[Signature]</i>	AS NOTED	A620/245		
				2/7/85	SPA		AMENDMENT 10 ISSUE						



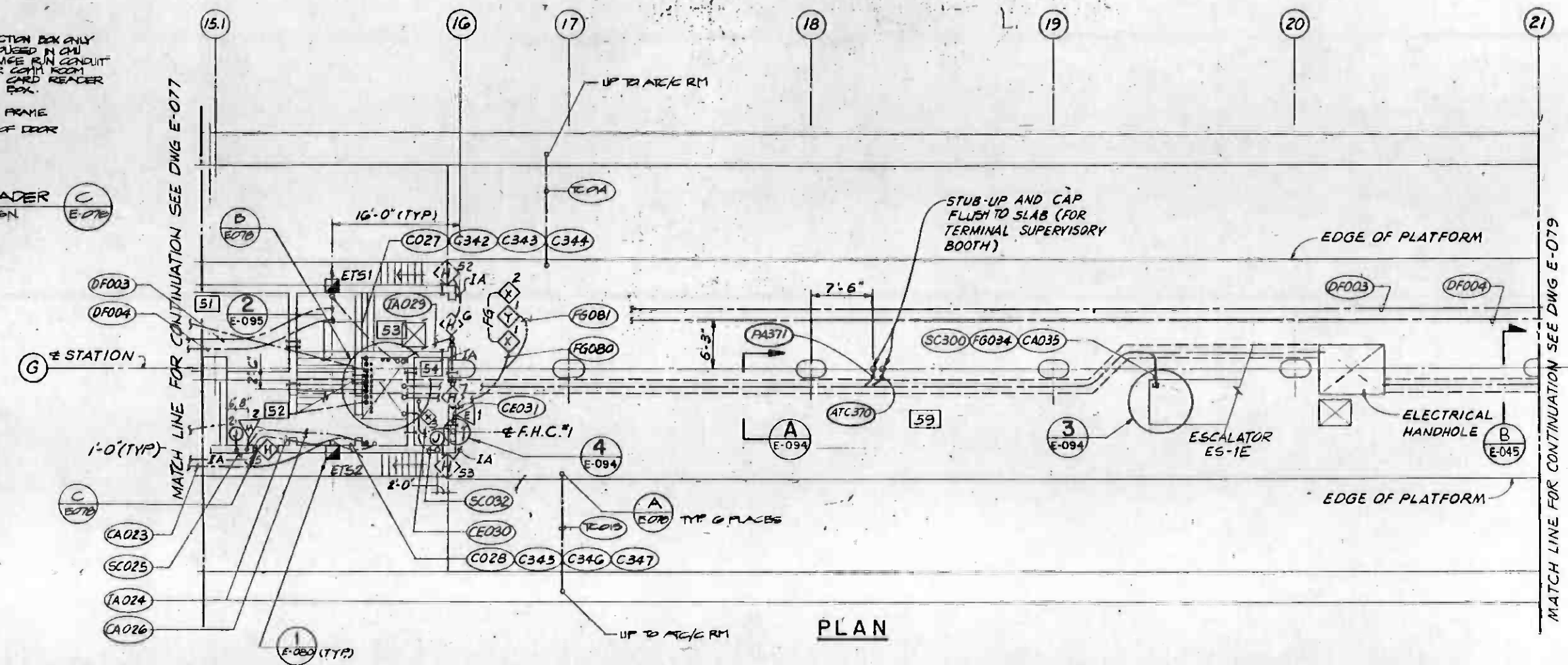
- NOTES:**
- CONDUITS FOR TRACTION POWER FEEDERS SHALL HAVE 48" BEND RADIUS UNLESS OTHERWISE NOTED.
 - ALL SLEEVES THROUGH WALLS TO BE FOR 1" CONDUIT AND LOCATED 6" BELOW CEILING AND TERMINATE WITH COUPLINGS FOR FUTURE CONNECTIONS.
 - CONDUITS STUB UP 6" FROM WALL AND 18" ABOVE FINISHED FLOOR.

BLOCK OUT FOR ETS TUNNEL ENTRANCE AT PORTAL ETS-1 & ETS-2
N.T.S. (NOTE 2)

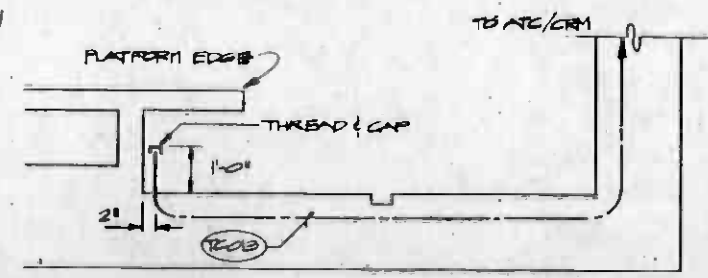
THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, UNDER THE MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DESIGNED BY <i>L. B. Gue</i> DRAWN BY <i>M. G. Smith</i> CHECKED BY <i>George S. Lee</i> IN CHARGE <i>George S. Lee</i> DATE 8 MAR 85		REGISTERED PROFESSIONAL ENGINEER GEORGE S. LEE ELECTRICAL		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT 		CONTRACT NO. A-175 DRAWING NO. E-077 SCALE AS NOTED SHEET NO. A620/246									
REV.	DATE	BY	SUB.	APP.	DESCRIPTION	REV.	DATE	BY	SUB.	APP.	DESCRIPTION	SVERDRUP & PARCEL AND ASSOCIATES, INC. 12011 WILSHIRE BLVD., SUITE 200, LOS ANGELES, CA 90024 PHOENIX & ASSOC. PITS CONSULTANTS, INC. 2400 W. WASHINGTON ST., PHOENIX, AZ 85016		DMJM/PBQD/KE/HWA GENERAL CONSULTANTS APPROVED <i>Howard K. ...</i>		LA CBD TO NORTH HOLLYWOOD WILSHIRE / ALVARADO STATION SYSTEMWIDE SERVICES TRACK LEVEL GRID 6.5 TO 15.1	



INTRUSION DETECTOR & CARDREADER
NOTE: FOR DOUBLE DOOR USE SAME DESIGN

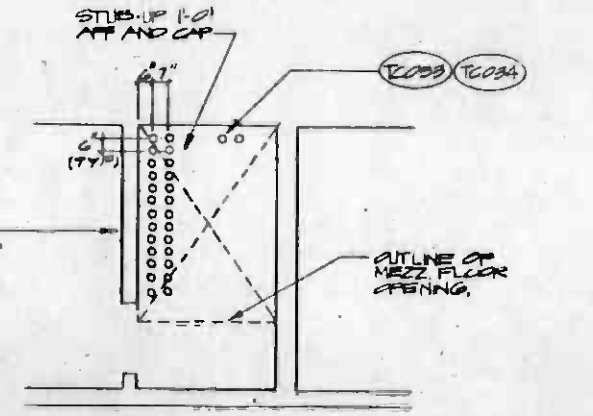


PLAN



SECTION A
NTS. E-078, E-079, E-080

- TE001 TE001
- TE002 TE004
- TE003 TE006
- TE005 TE010
- TE006 TE002
- TE007 TE008
- TE008 TE009
- TE009 TE000
- TE007 TE008
- TE003
- TE002
- TE004
- TE005
- TE007
- TE008
- TE009
- TE000
- TE007
- TE008



CONDUIT STUB-UPS DETAIL B
E-078

NOTES:
1. ALL SLEEVES THROUGH WALLS TO BE FOR 1" CONDUIT AND LOCATED 6" BELOW CEILING AND TERMINATE WITH COUPLINGS FOR FUTURE CONNECTIONS.



REV.	DATE	BY	SUB	APP	DESCRIPTION

REV.	DATE	BY	SUB	APP	DESCRIPTION

DESIGNED BY
W. P. Lee

CHECKED BY
S. R. Lee

IN CHARGE
W. P. Lee

DATE
8 MAR 85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

SVERDRUP & PARCEL AND ASSOCIATES, INC.
REGISTERED PROFESSIONAL ENGINEERS
10000 WILSHIRE AVENUE, SUITE 1000, BEVERLY HILLS, CALIF. 90210

DMJM/PBQ/KE/HWA
GENERAL CONSULTANTS

APPROVED: *Howard J. Lee*

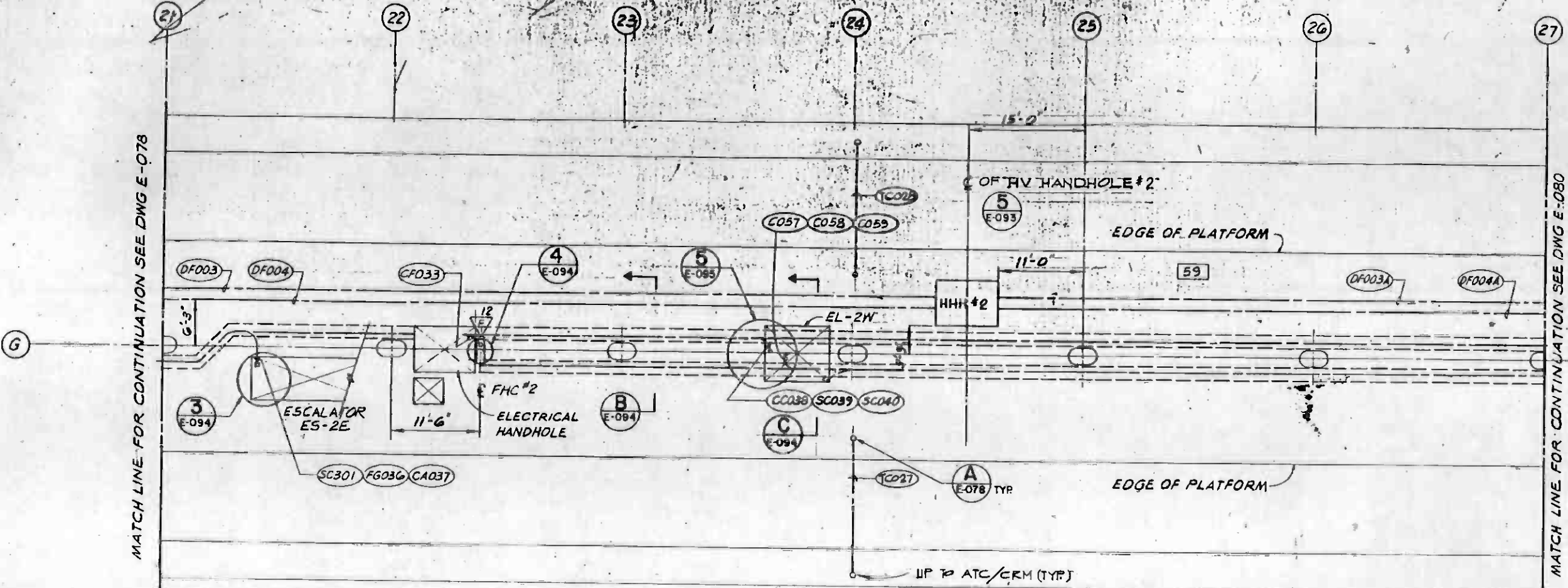
LA CBD TO NORTH HOLLYWOOD
WILSHIRE / ALVARADO STATION
SYSTEMWIDE SERVICES
PLATFORM GRID 15.1 TO 21

CONTRACT NO.	A-175
DRAWING NO.	E-078
REV.	2
SCALE	1/8" = 1'-0"
SHEET NO.	A620/247



MATCH LINE FOR CONTINUATION SEE DWG E-078

MATCH LINE FOR CONTINUATION SEE DWG E-080



PLAN

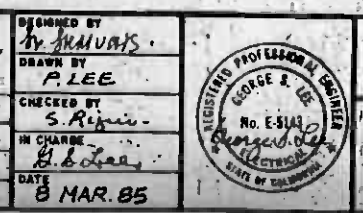


REV.	DATE	BY	SUB.	APP.	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY: *ANNUNZIS*
 DRAWN BY: *P. LEE*
 CHECKED BY: *S. Rippe*
 IN CHARGE: *B. Lee*
 DATE: *8 MAR. 85*

REVISOR: *2/28/85 SPA* REVISION: *REVISED PER CR6-531*
4/1/85 DM REVISION: *AMENDMENT 10 ISSUE*
4/1/85 DM REVISION: *INITIAL ISSUE*



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

SVERDRUP & PARCEL AND ASSOCIATES, INC.
 REGISTERED PROFESSIONAL ENGINEERS
 10000 WILSHIRE BLVD., SUITE 200, BEVERLY HILLS, CALIF. 90210
 PH: 310-206-1100

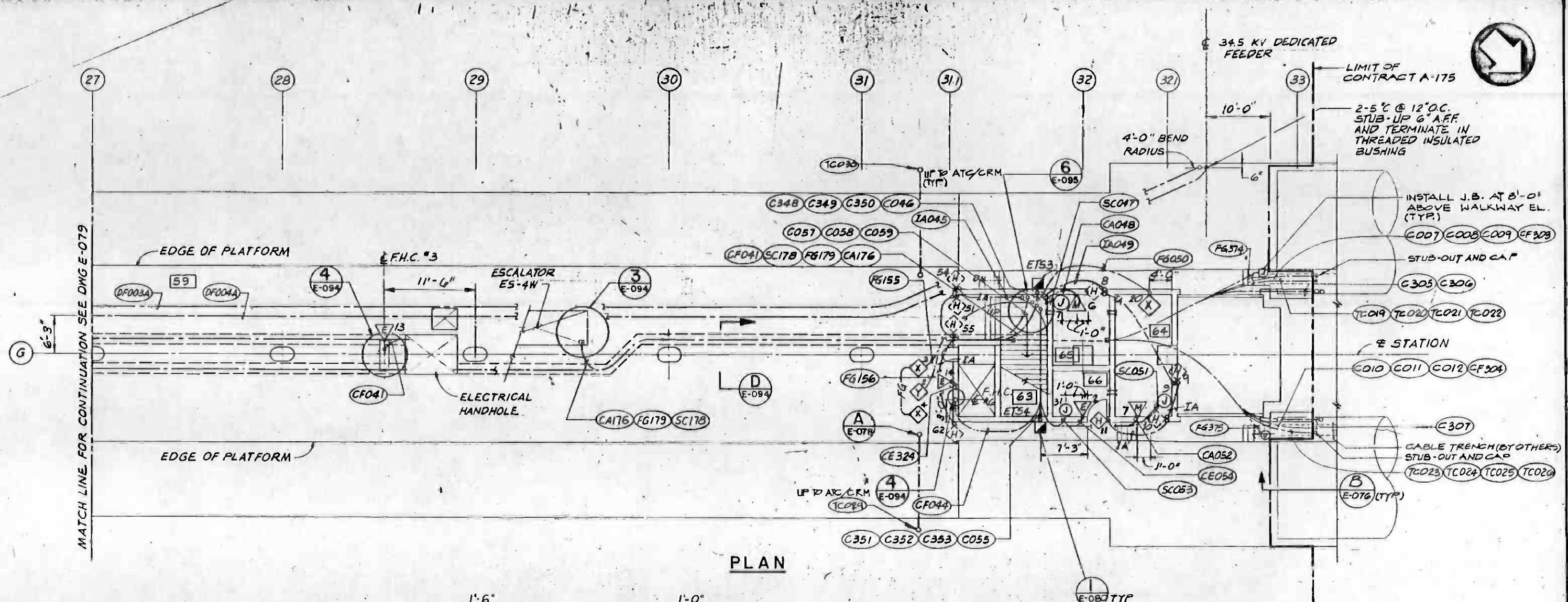
DMJM/PBOD/KE/HWA
 A JOINT VENTURE
 GENERAL CONSULTANTS
 10000 WILSHIRE BLVD., SUITE 200, BEVERLY HILLS, CALIF. 90210
 PH: 310-206-1100

APPROVED: *Howard J. ...*

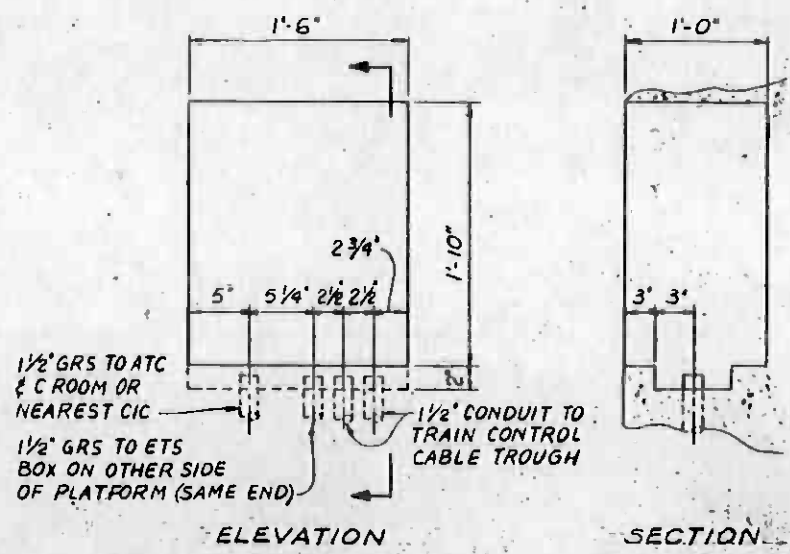
LA CBD TO NORTH HOLLYWOOD
WILSHIRE / ALVARADO STATION

SYSTEMWIDE SERVICES
 PLATFORM GRID 21 TO 27

CONTRACT NO.	A-175
DRAWING NO.	E-079
REV.	2
SCALE	1/8" = 1'-0"
SHEET NO.	2620 / 248



PLAN



ELEVATION

SECTION

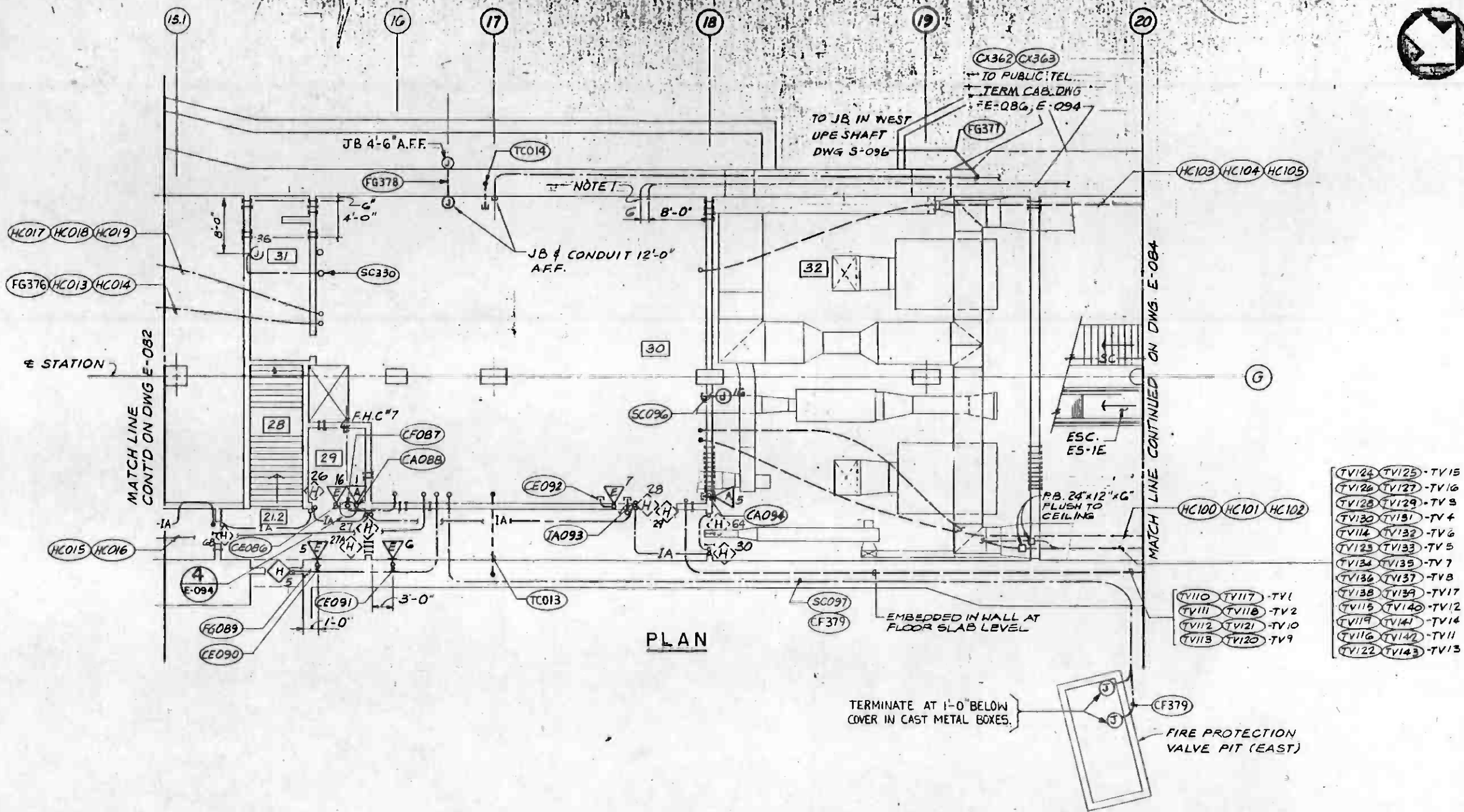
NOTES:

1. INSTALL EXPOSED J-BOX AT 7'-0" ABOVE WALKWAY LEVEL FOR GAS SAMPLING TUBE.

BLOCK OUT FOR ETS AT END OF STATION PLATFORM ETS-1 THRU 4

N.T.S.

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1954, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY <i>W. HUMPHREYS</i> DRAWN BY <i>P. LEE</i> CHECKED BY <i>S.R.</i> IN CHARGE <i>R. S. LEE</i> DATE 8 MAR. 85		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT SVERDRUP & PARCEL AND ASSOCIATES, INC. REGISTERED PROFESSIONAL ENGINEERS No. E-5141 DMJM/PBOD/KE/HWA GENERAL CONSULTANTS APPROVED <i>Howard J. Lee</i>		CONTRACT NO. A-175 DRAWING NO. E-080 SCALE 1/8" = 1'-0" SHEET NO. A620/249			
REV.	DATE	BY	SUB.	APP.	DESCRIPTION	REV.	DATE	BY	SUB.	APP.	DESCRIPTION
2	2/20/85	W.H.	A	GMAC	REVISED PER CR6-531						
1	2/7/85	SPA			AMENDMENT 10 ISSUE						
1	3/4/85	CM			INITIAL ISSUE						

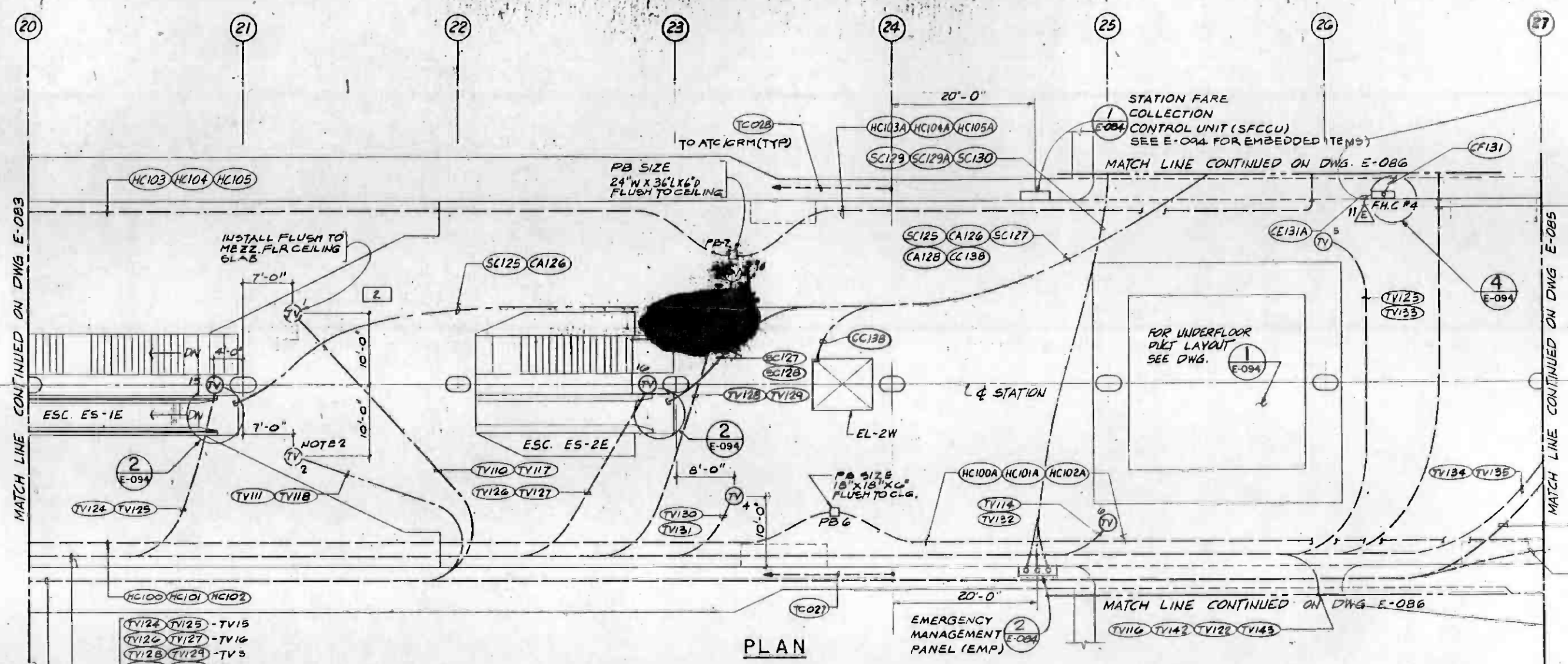


PLAN

NOTES:
 1. ALL SLEEVES THROUGH WALLS TO BE FOR 1" CONDUIT AND LOCATED 6" BELOW CEILING AND TERMINATE WITH COUPLINGS FOR FUTURE CONNECTIONS.



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.									
DESIGNED BY <i>W. MUMFORDS</i>	SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT								
DRAWN BY <i>P. LEE</i>	SVERDRUP & PARCEL AND ASSOCIATES, INC. GENERAL & ASSOC. ENGINEERS & ARCHITECTS 2500 WILSHIRE BLVD., SUITE 200, BERKELEY, CALIF. 94704 (415) 841-1100								
CHECKED BY <i>S. RIZZI</i>	DMJM/PBQD/KE/HWA GENERAL CONSULTANTS 1000 WILSHIRE BLVD., SUITE 200, BERKELEY, CALIF. 94704 (415) 841-1100								
IN CHARGE <i>G. S. Lee</i>	REGISTERED PROFESSIONAL ENGINEER No. E-514 STATE OF CALIFORNIA								
DATE 8 MAR 85	LA CBD TO NORTH HOLLYWOOD WILSHIRE/ALVARADO STATION SYSTEMWIDE SERVICES MEZZANINE GRID 15.1 TO 20								
REV. DATE BY SUB APP. DESCRIPTION	CONTRACT NO. A-175 DRAWING NO. E-083 REV. 2 SCALE 1/8" = 1'-0" SHEET NO. A6.0/250								



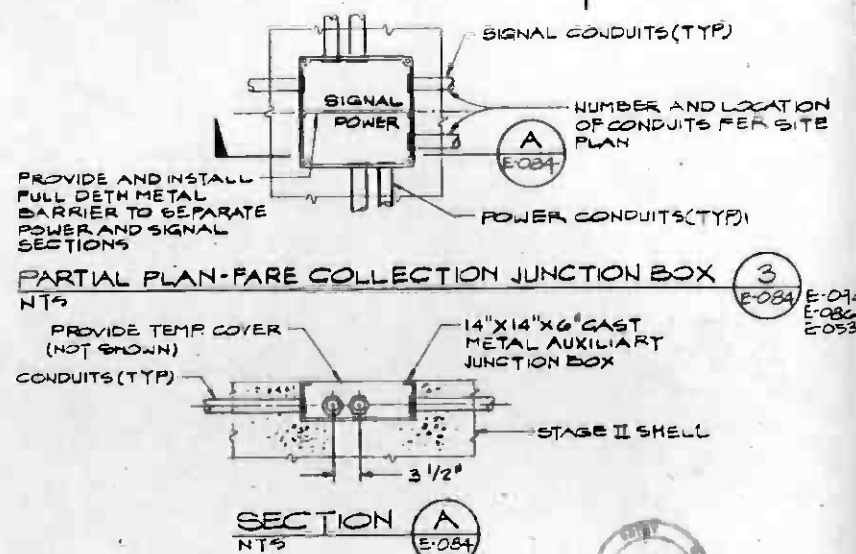
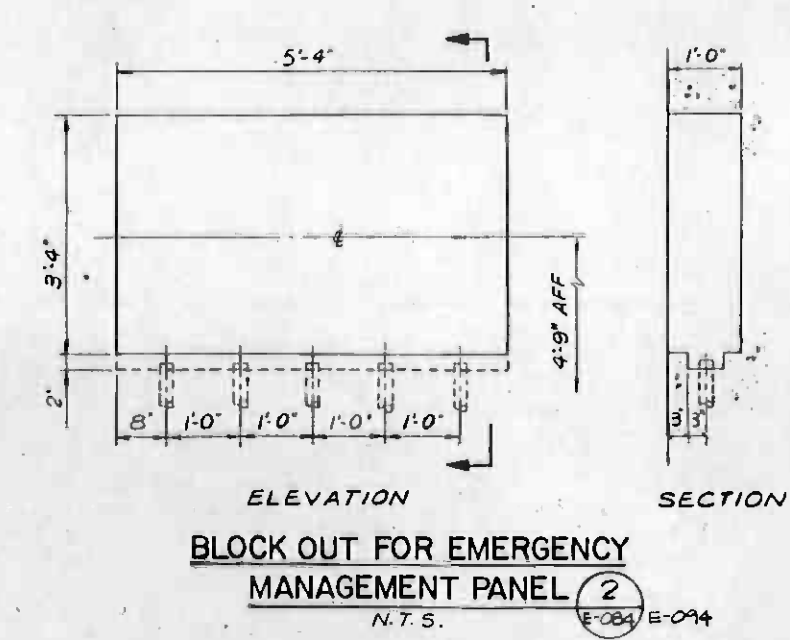
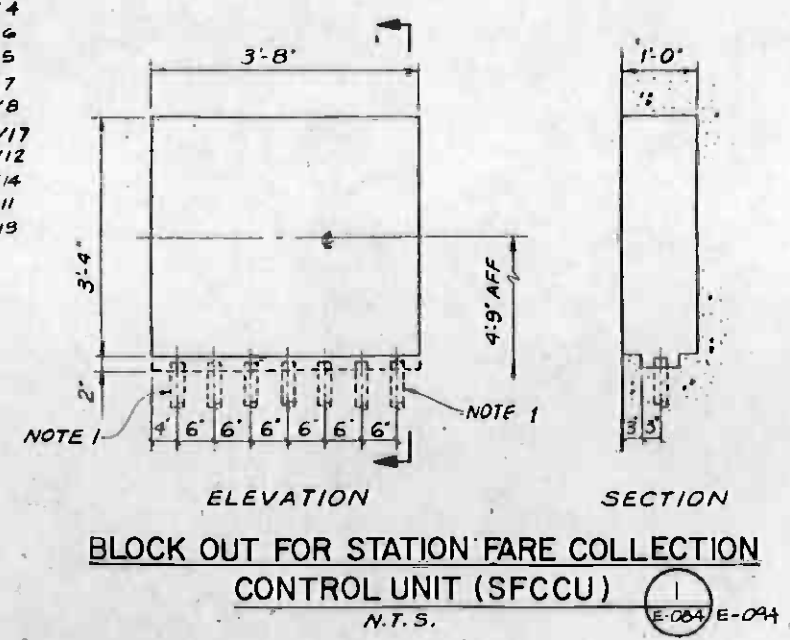
MATCH LINE CONTINUED ON DWG E-083

MATCH LINE CONTINUED ON DWG E-085

PLAN

- TV124 TV125 - TV15
- TV126 TV127 - TV16
- TV128 TV129 - TV3
- TV130 TV131 - TV4
- TV114 TV115 - TV6
- TV123 TV123 - TV5
- TV134 TV135 - TV7
- TV136 TV137 - TV8
- TV138 TV139 - TV17
- TV119 TV140 - TV12
- TV119 TV141 - TV14
- TV122 TV143 - TV13

- NOTES:**
- 2" SPARE CONDUIT, STUB-OUT 1 1/2" ABOVE STRUCTURAL SLAB AND CAP.
 - REFER TO ARCHITECTURAL REFLECT CEILING PLANS FOR EXACT LOCATION OF ALL CCTV CAMERAS.



REV.	DATE	BY	SUB.	APP.	DESCRIPTION

REV.	DATE	BY	SUB.	APP.	DESCRIPTION
2	12-07-87	SEA		Gmc	REVISED FOR CRG-531
1	07/18/86	SEA			AMENDMENT 10 ISSUE
					INITIAL ISSUE

DESIGNED BY
W. HAWES

DRAWN BY
G. Brine

CHECKED BY
S. Rippe

IN CHARGE
D. Lee

DATE
8 MAR 85

**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

SYERDRUP & PARCEL AND ASSOCIATES, INC.
REGISTERED PROFESSIONAL ENGINEER
No. E-5143
REGISTERED ELECTRICAL ENGINEER

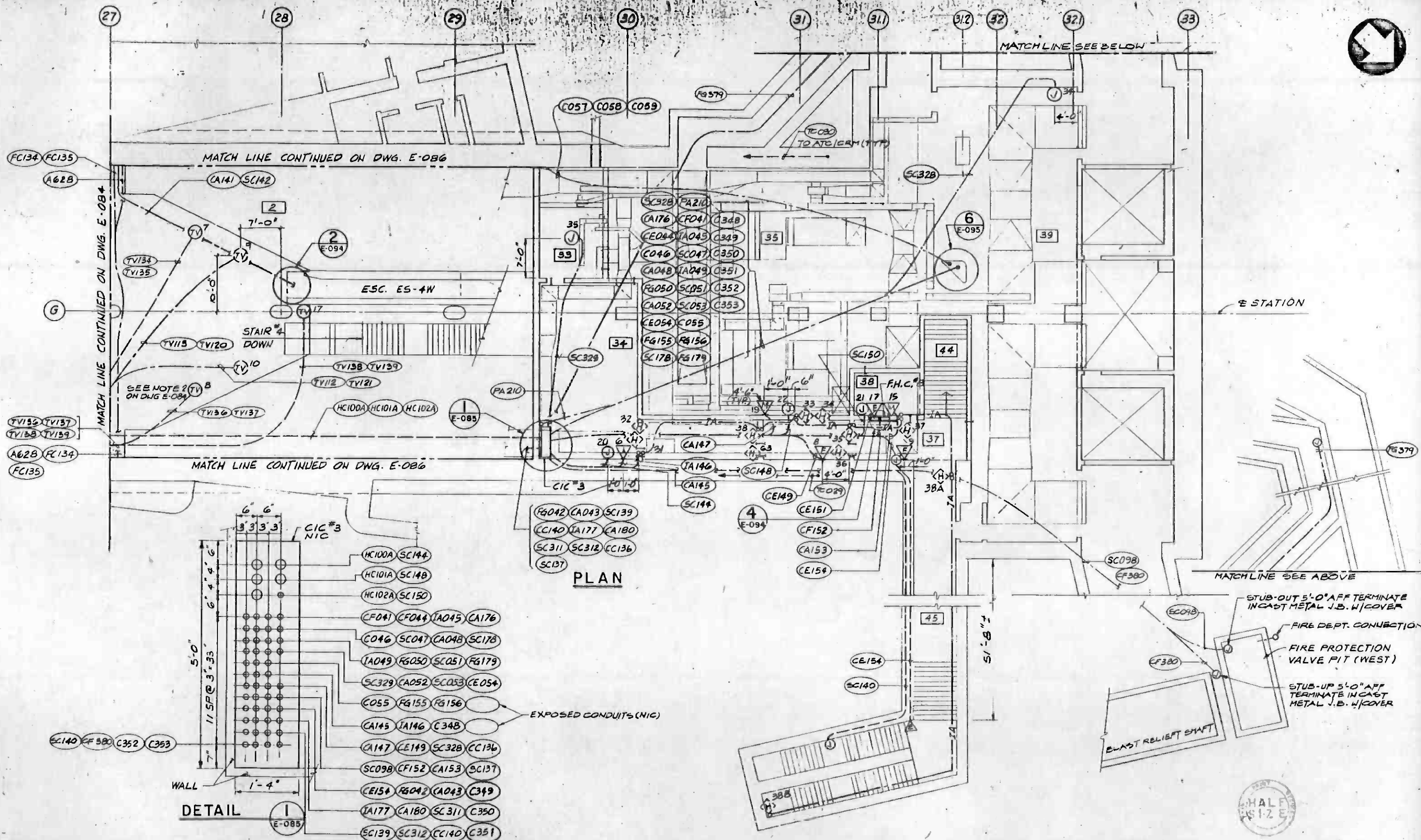
DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

Howard Scheliff

**LA CBD TO NORTH HOLLYWOOD
WILSHIRE / ALVARADO STATION**

SYSTEMWIDE SERVICES
MEZZANINE GRID 20 TO 27

CONTRACT NO.	A-175
DRAWING NO.	E-084
REV.	2
SCALE	1/8" = 1'-0"
SHEET NO.	A620/251



PLAN

DETAIL

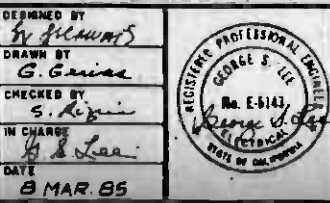
EXPOSED CONDUITS (NIC)

REV.	DATE	BY	SUB	APP.	DESCRIPTION

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DESIGNED BY *G. Garcia*
 DRAWN BY *G. Garcia*
 CHECKED BY *S. Lopez*
 IN CHARGE *B. & Lee*
 DATE **8 MAR 85**

REVISIONS:
 2/20/85 JEA GNC REVISED PER CR 6-531
 2/17/86 SPA AMENDMENT 10 ISSUE
 2/18/85 CAM INITIAL ISSUE



**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

SYVERDRUP & PARCEL AND ASSOCIATES, INC.
 GENERAL CONSULTANTS

DMJM/PBOD/KE/HWA
 GENERAL CONSULTANTS

APPROVED: *Howard Phillips*

**LA CBD TO NORTH HOLLYWOOD
WILSHIRE/ALVARADO STATION**

SYSTEMWIDE SERVICES
MEZZANINE GRID 27 TO 33

CONTRACT NO. A-175
 DRAWING NO. E-085 REV 2
 SCALE 1/8" = 1'-0"
 SHEET NO. A207/252

ELECTRICAL RACEWAY AND CABLE SCHEDULE

ELECTRICAL RACEWAY AND CABLE SCHEDULE

NO.	FROM	TO	CKTS.	RACEWAY			CONDUCTOR			FDR. NO.	DWG. NO.	SHT. NO.	REMARKS	NO.	FROM	TO	CKTS.	RACEWAY			CONDUCTOR			FDR. NO.	DWG. NO.	SHT. NO.	REMARKS		
				METHOD	SIZE	TYPE	NO. & SIZE	TYPE	GND.									METHOD	SIZE	TYPE	NO. & SIZE	TYPE	GND.						
TC001	ATC & COM. RM.	SWITCH MACHINE		EMBEDDED	3"	PVC							HCO18	ATC & COM. RM.	CIC #2				EMBEDDED	2"	GRS					E-082	E-083		
TC002	ATC & COM. RM.	SWITCH MACHINE		EMBEDDED	3"	PVC							HCO19	ATC & COM. RM.	CIC #2				EMBEDDED	2"	GRS								
TC003	ATC & COM. RM.	EAST HH#1		EMBEDDED	3"	PVC							IA020	CIC #5	INTRUSION ALARM #57				EMBEDDED	1"	GRS					E-076			
TC004	ATC & COM. RM.	EAST		EMBEDDED		PVC							CA021	CIC #5	MTEL #17				EMBEDDED	1"	GRS					E-076			
TC005	ATC & COM. RM.	EAST		EMBEDDED		PVC							IA022	CIC #5	INTRUSION ALARM #1 & #56				EMBEDDED	1"	GRS								
TC006	ATC & COM. RM.	EAST		EMBEDDED		PVC							CA023	ATC & COM. RM.	MTEL #1				EMBEDDED	1"	GRS					E-077	E-078		
TC007	ATC & COM. RM.	EAST HH#2		EMBEDDED		PVC							IA024	ATC & COM. RM.	INTRUSION ALARM #5				EMBEDDED	1"	GRS					E-078	E-095		
TC008	ATC & COM. RM.	EAST		EMBEDDED		PVC							SC025	ATC & COM. RM.	JB #2				EMBEDDED	1"	GRS								
TC009	ATC & COM. RM.	EAST		EMBEDDED		PVC							CA026	ATC & COM. RM.	MTEL #2				EMBEDDED	1"	GRS								
TC010	ATC & COM. RM.	EAST		EMBEDDED		PVC							CO27	ATC & COM. RM.	ETS #1				EMBEDDED	1.5"	GRS								
TC011	ATC & COM. RM.	SWITCH MACHINE		EMBEDDED	3"	PVC							CO28	ATC & COM. RM.	ETS #2				EMBEDDED	1.5"	GRS								
TC012	ATC & COM. RM.	SWITCH MACHINE		EMBEDDED	3"	PVC							IA029	ATC & COM. RM.	INTRUSION ALARM #6				EMBEDDED	1"	GRS								
TC013	ATC & COM. RM.	UNDER PLAT. COL-17		EMBEDDED	2"	PVC						E-078	CE030	ATC & COM. RM.	F.H.C.#1 (PL.EAST)				EMBEDDED	1"	GRS						E-095		
TC014	ATC & COM. RM.				2"	PVC							CE031	F.H.C.#1	ETEL #1				EMBEDDED	1"	GRS								
TC015	ATC & COM. RM.	SWITCH MACHINE		EMBEDDED	3"	PVC						E-077	SC032	ATC & COM. RM.	JB #3				EMBEDDED	1"	GRS						E-095		
TC016	ATC & COM. RM.	SWITCH MACHINE		EMBEDDED	3"	PVC							CF033	ATC & COM. RM.	F.H.C.#2 (PL.EAST)				EMBEDDED	1"	GRS					E-078	E-079, 094		
TC017	ATC & COM. RM.	SWITCH MACHINE		EMBEDDED	3"	PVC							FG034		METHANE GAS DET. NEAR ESC. ES-1E				EMBEDDED	1"	GRS					E-078	E-094, E-095		
TC018	ATC & COM. RM.	SWITCH MACHINE		EMBEDDED	3"	PVC																							
TC019	ATC & COM. RM.	WEST HH#3		EMBEDDED		PVC						E-078	CA035		MTEL IN PLATF. LEVEL NEAR ESC. ES-1E				EMBEDDED	1"	GRS					E-078	E-094		
TC020	ATC & COM. RM.	WEST		EMBEDDED		PVC																							
TC021	ATC & COM. RM.	WEST		EMBEDDED		PVC							FG036		METHANE GAS DET. NEAR ESC. ES-2E				EMBEDDED	1"	GRS					E-078	E-079, E-094, E-095		
TC022	ATC & COM. RM.	WEST		EMBEDDED		PVC																							
TC023	ATC & COM. RM.	WEST HH#4		EMBEDDED		PVC							CA037		MTEL IN PLATF. LEVEL NEAR ESC. ES-2E				EMBEDDED	1"	GRS					E-078	E-079, 094, E-095		
TC024	ATC & COM. RM.	WEST		EMBEDDED		PVC																							
TC025	ATC & COM. RM.	WEST		EMBEDDED		PVC							GC038	ATC & COM. RM.	CUSTOMER ASSISTANCE TEL. IN PLATF. LEVEL NEAR EL-2W				EMBEDDED	1"	GRS					E-078	E-079, 095, E-094		
TC026	ATC & COM. RM.	WEST		EMBEDDED		PVC																							
TC027		CENTRAL UNDER PLAT. COL-24		EMBEDDED	2"	PVC						E-079	SC039		JB IN PLATFORM LEVEL NEAR EL-2W				EMBEDDED	1"	GRS					E-078	E-079, 095, E-094		
TC028																													
TC029		UNDER PLAT. COL-31										E-080	SC040							EMBEDDED	1"	GRS					E-078	E-079, 095, E-094	
TC030																													
CO01	ATC & COM. RM.	PULL BOX (AL TRACK)		EMBEDDED	4"	PVC						E-076	CF041	CIC #3	FTEL #3				EMBEDDED	1"	GRS					E-080	E-085, 094		
CO02	ATC & COM. RM.			EMBEDDED	4"	PVC							FG042	CIC #3	METHANE GAS DET. NEAR ESC. ES-1W					1"	GRS					E-085	E-086, 094		
CO03	ATC & COM. RM.			EMBEDDED	4"	PVC																							
CO04	ATC & COM. RM.	PULL BOX (AR TRACK)		EMBEDDED	4"	PVC								CA043	CIC #3	MTEL IN CTR. MEZ. NEAR ESC. ES-1W				EMBEDDED	1"	GRS					E-085	E-086, 094	
CO05	ATC & COM. RM.			EMBEDDED	4"	PVC																							
CO06	ATC & COM. RM.			EMBEDDED	4"	PVC								CF044	CIC #3	FTEL #6				EMBEDDED	1"	GRS					E-080	E-085	
CO07	ATC & COM. RM.	WEST HH#3		EMBEDDED	4"	PVC						E-078	IA045	CIC #3	INTRUSION ALARM #51				EMBEDDED	1"	GRS								
CO08	ATC & COM. RM.	WEST HH#3		EMBEDDED	4"	PVC						E-078	CO46	CIC #3	ETS #3				EMBEDDED	1.5"	GRS								
CO09	ATC & COM. RM.	WEST HH#3		EMBEDDED	4"	PVC						E-078	SC047	CIC #3	JB #7				EMBEDDED	1"	GRS								
CO10	ATC & COM. RM.	WEST HH#4		EMBEDDED	4"	PVC						E-078	CA048	CIC #3	MTEL #6				EMBEDDED	1"	GRS								
CO11	ATC & COM. RM.	WEST HH#4		EMBEDDED	4"	PVC						E-078	IA049	CIC #3	INTRUSION ALARM #8				EMBEDDED	1.5"	GRS								
CO12	ATC & COM. RM.	WEST HH#4		EMBEDDED	4"	PVC						E-078	FG050	CIC #3	METHANE GAS DET. #20				EMBEDDED	1"	GRS								
CF379	ATC & COM. RM.	EAST FIRE PROT. VALVE PIT			1"	GRS						E-083	SC051	CIC #3	JB #9				EMBEDDED	1"	GRS								
CF380	CIC #3	WEST FIRE PROT. VALVE PIT			1"							E-085	CA052	CIC #3	MTEL #7				EMBEDDED	1"	GRS								
SC125	CIC #4	JB IN MEZ. LEVEL NEAR ESC. ES-1E			1 1/2"							E-084	SC053	CIC #3	JB #31				EMBEDDED	1"	GRS								
CA126		MTEL IN MEZ. LEVEL NEAR ESC. ES-1E			1"								CE054	CIC #3	ETEL #2				EMBEDDED	1"	GRS								
SC127		JB IN MEZ. LEVEL NEAR ESC. ES-2E			1 1/2"								CO55	CIC #3	ETS 4				EMBEDDED	1.5"	GRS								
CA128		MTEL IN MEZ. LEVEL NEAR ESC. ES-2E			1"																								
SC129		EMP.			2"								CO57	ELEVATOR EQPT RM	EL-2W				EMBEDDED	2"	GRS					E-086	E-085, E-080, E-095		
SC129A													CO58	ELEVATOR EQPT RM	EL-2W				EMBEDDED	2"	GRS						E-080, E-085		
SC130													CO59	ELEVATOR EQPT RM	EL-2W				EMBEDDED	2"	GRS						E-080, E-085		
HCO13	CIC #5	PB2		EMBEDDED	2"	GRS						E-081	E-082																
HCO14	PB2	ATC & COM. RM.		EMBEDDED	2"	GRS						E-082	E-083																
HCO15	CIC #5	PB2		EMBEDDED	2"	GRS						E-081	E-082	CA060	CIC #5	MTEL #18				EMBEDDED	1"	GRS					E-081		
HCO16	ATC & COM. RM.	CIC #1		EMBEDDED	4"	PVC						E-082	E-083	SC061	CIC #5	JB #10				EMBEDDED	1"	GRS							
HCO17	ATC & COM. RM.	CIC #1		EMBEDDED	4"	PVC						E-082	E-083	CA062	CIC #1	MTEL #8				EMBEDDED	1"	GRS					E-082	E-081	
HCO18	ATC & COM. RM.	CIC #2		EMBEDDED	2"	GRS								SC063	CIC #1	JB #11				EMBEDDED	1"	GRS							
HCO19														IA064	CIC #1	INTRUSION ALARM #12				EMBEDDED	1"	GRS					E-082	E-081	

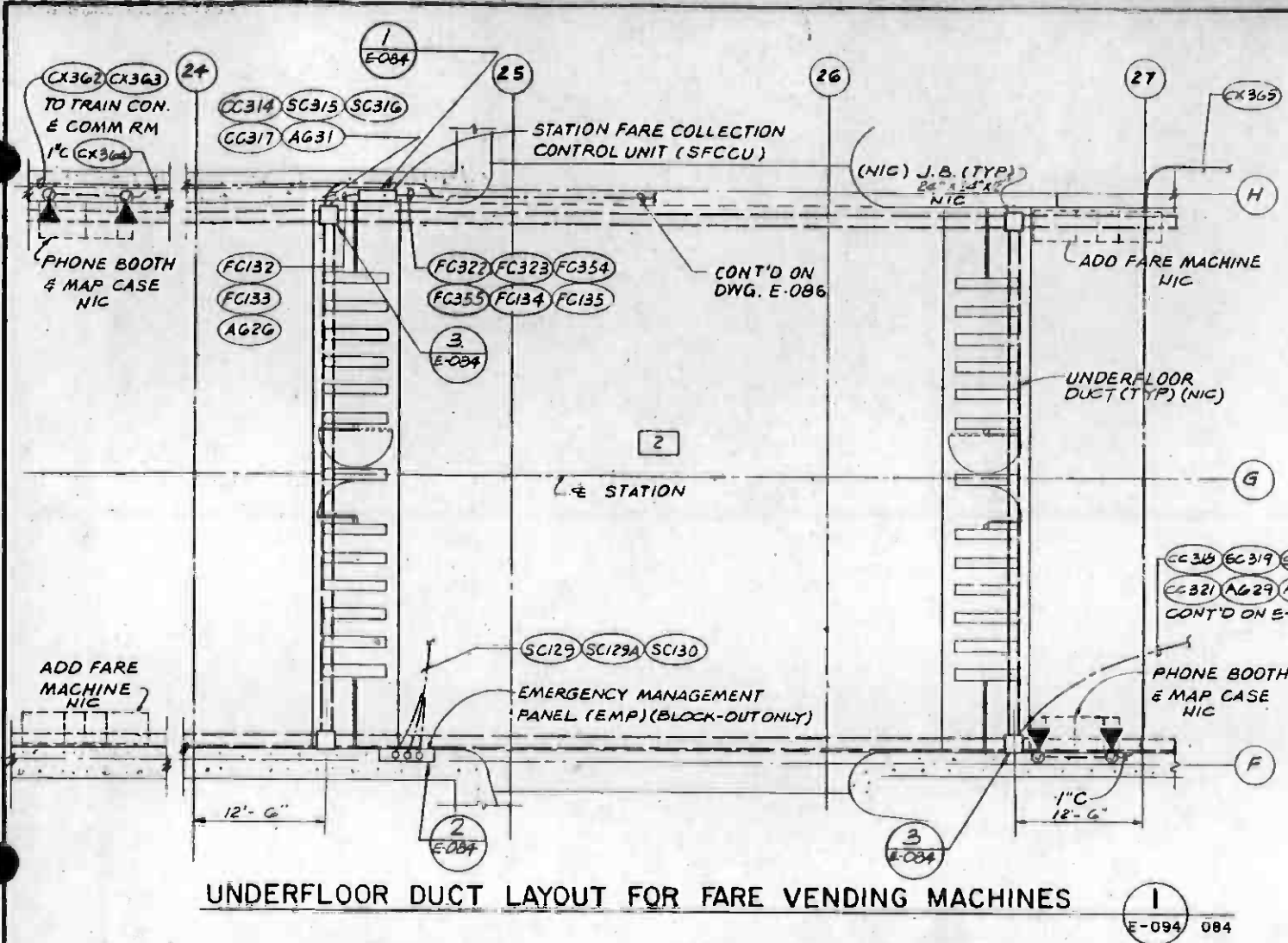
<p>THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA</p>										<p>DESIGNED BY <i>Tr. Mazzotto</i> DRAWN BY <i>M. Lazzarotto</i> CHECKED BY <i>S. Kizer</i> IN CHARGE <i>R. & L. Lee</i> DATE 8 MAR 85</p>					<p>SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT</p> <p>SVERDRUP & PARCEL AND ASSOCIATES,</p>				
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ELECTRICAL RACEWAY AND CABLE SCHEDULE

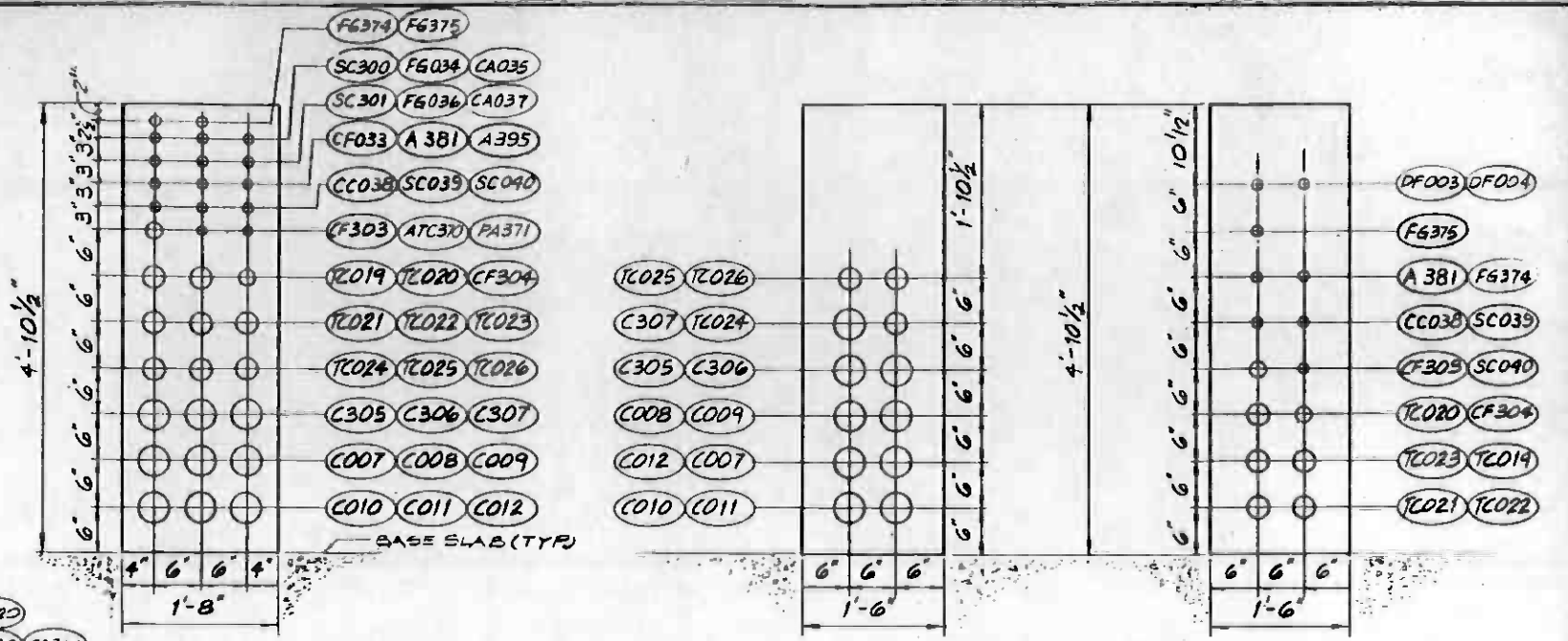
ELECTRICAL RACEWAY AND CABLE SCHEDULE

NO.	FROM	TD	CKTS.	RACEWAY			CONDUCTOR			FDR. NO.	DWG. NO.	SHT. NO.	REMARKS	NO.	FROM	TO	CKTS.	RACEWAY			CONDUCTOR			FDR. NO.	DWG. NO.	SHT. NO.	REMARKS
				METHOD	SIZE	TYPE	NO. & SIZE	TYPE	GND.									METHOD	SIZE	TYPE	NO. & SIZE	TYPE	GND.				
CE065	CIC#1	ETEL #3		EMBEDDED	1"	GRS				E-082			TC031	ATC & COM RM.	CENTER-X-OVER			EMBEDDED	3"	GRS				E-076			
CF066	CIC#2	FTEL #5		EMBEDDED	1"	GRS						E-081	TC032					EMBEDDED	1"	GRS							
IA067	CIC#2	INTRUSION ALARM #16		EMBEDDED	1"	GRS						E-081	TC033		CENTER INSULATED JOINT			EMBEDDED	1"	GRS				E-077			
CE068	CIC#2	ETEL #4		EMBEDDED	1"	GRS						E-081	TC034					EMBEDDED	1"	GRS							
IA069	CIC#1	INTRUSION ALARM #18		EMBEDDED	1"	GRS							TC035	NE SW MACHINE	SW SW MACHINE			EMBEDDED	2"	GRS				E-076			
SC070	CIC#2	JB #12		EMBEDDED	2"	GRS							TC036	SE SW MACHINE	NW SW MACHINE			EMBEDDED	2"	GRS				E-077			
CA071	CIC#2	MTEL #9		EMBEDDED	1"	GRS							TV110	ATC & COM. RM.	TV #1			EMBEDDED	1"	GRS				E-083	E-084		
CA072	CIC#2	ATEL #4		EMBEDDED	1"	GRS							TV111		TV #2			EMBEDDED	1"	GRS				E-083	E-084		
IA073	CIC#2	INTRUSION ALARM #23		EMBEDDED	1"	GRS							TV112		TV #10			EMBEDDED	1"	GRS				E-083	E-084, 085		
SC074	CIC#2	JB #13		EMBEDDED	1"	GRS							TV113		TV #9			EMBEDDED	1"	GRS				E-083	E-084, 085		
SC075	CIC#2	JB #14		EMBEDDED	2"	GRS							TV114		TV #6			EMBEDDED	1"	GRS				E-084	E-084		
SC076	CIC#2	JB #15		EMBEDDED	1"	GRS							TV115		TV #12			EMBEDDED	1"	GRS				E-083	E-084, 086		
CA077	CIC#2	MTEL #10		EMBEDDED	1"	GRS							TV116		TV #11			EMBEDDED	1"	GRS				E-083	E-084, 086		
IA078	CIC#2	INTRUSION ALARM #7		EMBEDDED	1"	GRS							TV117		TV #1			EMBEDDED	1"	GRS				E-083	E-084		
IA079	CIC#2	INTRUSION ALARM #48		EMBEDDED	1"	GRS							TV118		TV #2			EMBEDDED	1"	GRS				E-083	E-084		
FG080	ATC & COM. RM.	METHANE GAS DET #1		EMBEDDED	1"	GRS				E-078		E-95	TV119		TV #14			EMBEDDED	1"	GRS				E-083	E-084, 086		
FG081	ATC & COM. RM.	HYDROGEN SULFIDE GAS DET #1		EMBEDDED	1"	GRS				E-078		E-95	TV120		TV #9			EMBEDDED	1"	GRS				E-083	E-084, 085		
IA082	CIC#1	INTRUSION ALARMS #59 & #60		EMBEDDED	1"	GRS				E-081		E-082	TV121		TV #10			EMBEDDED	1"	GRS				E-083	E-084, 085		
DF001	TP35 RM #17	EAST TUNNEL C14.2		EMBEDDED	5"	PVC				E-076		VIA. HHH#1(3+5KV)	TV122		TV #13			EMBEDDED	1"	GRS				E-083	E-084, 086		
DF002										E-077			TV123		TV #5			EMBEDDED	1"	GRS				E-083	E-084		
DF003		HHH#2 COL. 24								E-077			TV124		TV #15			EMBEDDED	1"	GRS				E-084			
DF004										E-077			TV125		TV #15			EMBEDDED	1"	GRS							
DF003A	HHH#2 COL. 24	WEST TUNNEL C21.3								E-077			TV126		TV #16			EMBEDDED	1"	GRS							
DF004A										E-077			TV127		TV #16			EMBEDDED	1"	GRS							
GE086	F.H.C.#7	ETEL #16		EMBEDDED	1"	GRS				E-083			TV128		TV #3			EMBEDDED	1"	GRS							
CF087	ATC & COM. RM.	FTEL #7		EMBEDDED	1"	GRS							TV129		TV #3			EMBEDDED	1"	GRS							
CA088	ATC & COM. RM.	ATEL #1		EMBEDDED	1"	GRS				E-083			TV130		TV #4			EMBEDDED	1"	GRS							
FG089	ATC & COM. RM.	METHANE GAS DET #5		EMBEDDED	1"	GRS							TV131		TV #4			EMBEDDED	1"	GRS							
CE090	ATC & COM. RM.	ETEL #5		EMBEDDED	1"	GRS							TV132		TV #6			EMBEDDED	1"	GRS							
CE091	ATC & COM. RM.	ETEL #6		EMBEDDED	1"	GRS							TV133		TV #5			EMBEDDED	1"	GRS							
CE092	ATC & COM. RM.	ETEL #7		EMBEDDED	1"	GRS							TV134		TV #7			EMBEDDED	1"	GRS							
IA093	ATC & COM. RM.	INTRUSION ALARM #28		EMBEDDED	1"	GRS							TV135		TV #7			EMBEDDED	1"	GRS					E-085		
CA094	ATC & COM. RM.	ATEL #5		EMBEDDED	1"	GRS							TV136		TV #8			EMBEDDED	1"	GRS							
SC140	CIC#3 RM 34	J.BOX		EMBEDDED	1"	GRS				E-085			TV137		TV #8			EMBEDDED	1"	GRS							
SC096	ATC & COM. RM.	JB #16		EMBEDDED	2"	GRS				E-083			TV138		TV #17			EMBEDDED	1"	GRS							
SC097	ATC & COM. RM.	FIRE PROTECTION VALVE PIT (EAST)		EMBEDDED	1"	GRS				E-083			TV139		TV #17			EMBEDDED	1"	GRS					E-086		
SC098	CIC#3	FIRE PROTECTION VALVE PIT (WEST)		EMBEDDED	1"	GRS				E-085			TV140		TV #12			EMBEDDED	1"	GRS							
GE326	CIC#2	ETEL								E-082			TV141		TV #14			EMBEDDED	1"	GRS							
CF381	J.BOX FTEL. GRID 6.5	RM 47								E-076			TV142		TV #11			EMBEDDED	1"	GRS							
CF382	J.BOX FTEL.	RM 49.2								E-077			TV143		TV #13			EMBEDDED	1"	GRS							
HC100	ATC & COM. RM.	PB6		EMBEDDED	2"	GRS				E-083		E-084	CF131	CIC #4	FTEL #4			EMBEDDED	1"	GRS				E-084	E-086		
HC100A	PB6	CIC #3		EMBEDDED	2"	GRS				E-084		E-085	CE131A	ETEL #11	F.H.C #4			EMBEDDED	1"	GRS				E-084			
HC101	ATC & COM. RM.	PB6		EMBEDDED	2"	GRS				E-083		E-084	FC132	SFCCL	CTR. MEZ. UNDERFLOOR DUCT			EMBEDDED	2"	GRS				E-094			
HC101A	PB6	CIC #3		EMBEDDED	2"	GRS				E-084		E-085	FC133					EMBEDDED	1"	GRS							
HC102	ATC & COM. RM.	PB6		EMBEDDED	2"	GRS				E-083		E-084	FC134		NORTH PASSAGE UNDERFLOOR DUCT			EMBEDDED	1"	GRS					E-085		
HC102A	PB6	CIC #3		EMBEDDED	2"	GRS				E-084		E-085	FC135					EMBEDDED	1"	GRS				E-086			
HC103	ATC & COM. RM.	PB7		EMBEDDED	4"	GRS				E-083		E-084	CC136	CIC #3				EMBEDDED	1"	GRS					E-085, E-086		
HC103A	PB7	CIC #4		EMBEDDED	4"	GRS				E-084		E-086	SC137					EMBEDDED	1 1/2"	GRS				E-086	E-085		
HC104	ATC & COM. RM.	PB7		EMBEDDED	4"	GRS				E-083		E-084	CC138	CIC #4	CUSTOMER ASSISTANCE TEL. NEAR EL-2W			EMBEDDED	1 1/2"	GRS				E-084	E-086, 094		
HC104A	PB7	CIC #4		EMBEDDED	4"	GRS				E-084		E-086	SC139	CIC #3	NORTH PASSAGE UNDERFLOOR DUCT			EMBEDDED	1"	GRS				E-085	E-086		
HC105	ATC & COM. RM.	PB7		EMBEDDED	4"	GRS				E-083		E-084	CC140					EMBEDDED	1 1/2"	GRS							
HC105A	PB7	CIC #4		EMBEDDED	4"	GRS				E-084		E-086	CA141	CIC #4	MTEL IN CTR. MEZ. LEVEL NEAR ESC. ES-4W			EMBEDDED	1"	GRS				E-085	E-086, 094		
													SC142	CIC #4	JB IN CTR. MEZ. LEVEL NEAR ESC. ES-4W			EMBEDDED	1 1/2"	GRS							
NOTE	TRACTION POWER (...) CONDUIT CANNOT LISTED IN THIS SCHEDULE, SEE DETAILS IN PLAN DWG. E-076, 077, 081 & E-082																										

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REV.	DATE	BY	CHK	APP.	DESCRIPTION	REV.	DATE	BY	CHK	APP.	DESCRIPTION	REV.	DATE	BY	CHK	APP.	DESCRIPTION	REV.	DATE	BY	CHK	APP.	DESCRIPTION	REV.	DATE	BY	CHK	APP.	DESCRIPTION							

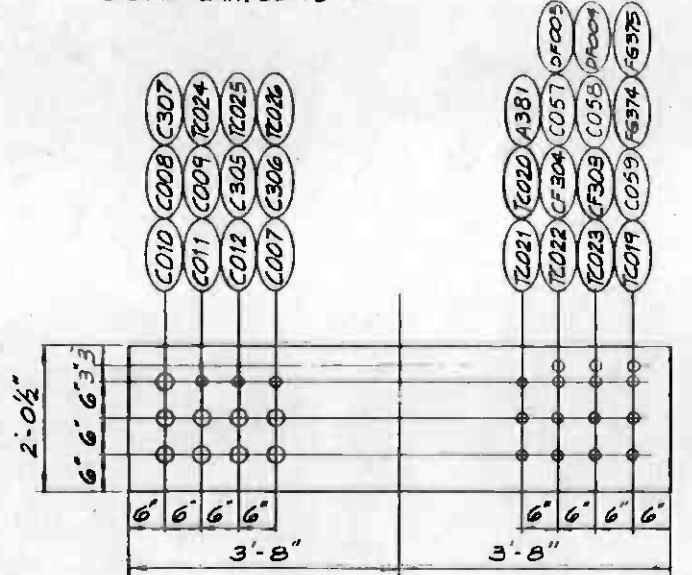


UNDERFLOOR DUCT LAYOUT FOR FARE VENDING MACHINES
E-094 084



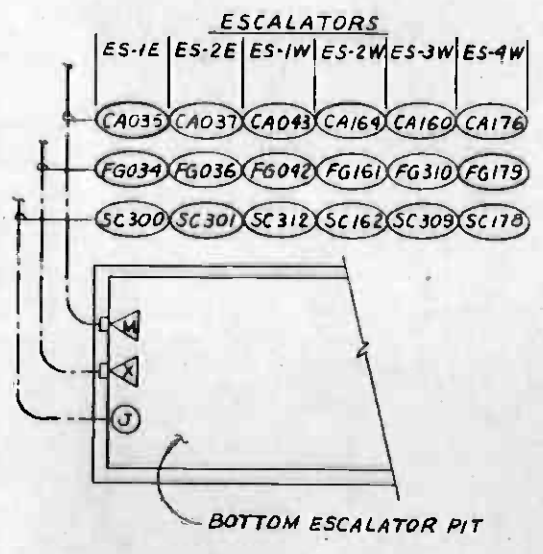
SECTION A
1" = 1'-0"
UNDER PLATF. DUCTS
E-094 045, 078

SECTION B
1" = 1'-0"
UNDER PLATF. DUCTS
E-094 046, 079

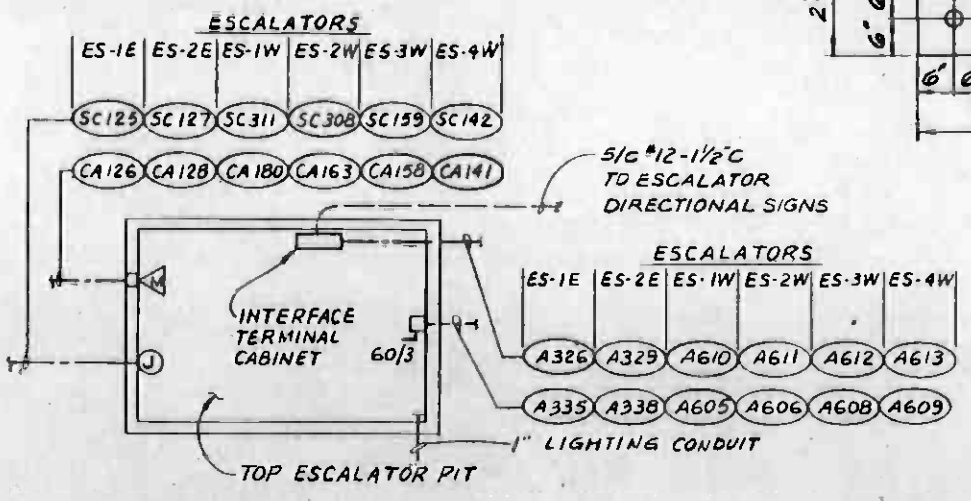


SECTION C
3/4" = 1'-0"
UNDER PLATF. DUCTS
E-094 046, 079

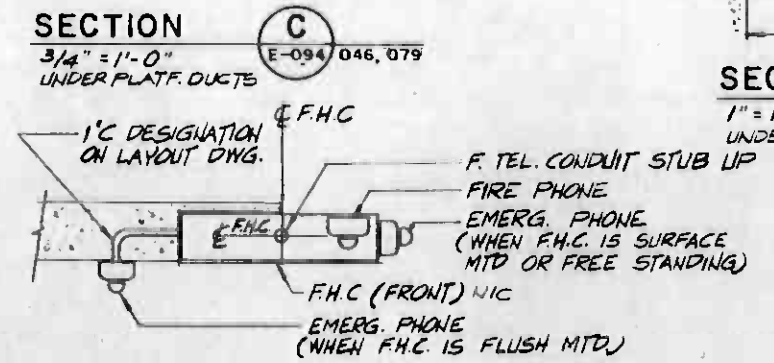
SECTION D
1" = 1'-0"
UNDER PLATF. DUCTS
E-094 047, 080



DETAIL 3
N.T.S. E-094 032, 033, 078, 079, 080, 086



DETAIL 2
N.T.S. E-094 051, 052, 053, 084, 085, 086, 038, 039, 040



DETAIL 4
N.T.S. E-094 078, 079, 080, 081, 083, 084, 085

REV.	DATE	BY	SUB.	APP.	DESCRIPTION

REV.	DATE	BY	SUB.	APP.	DESCRIPTION

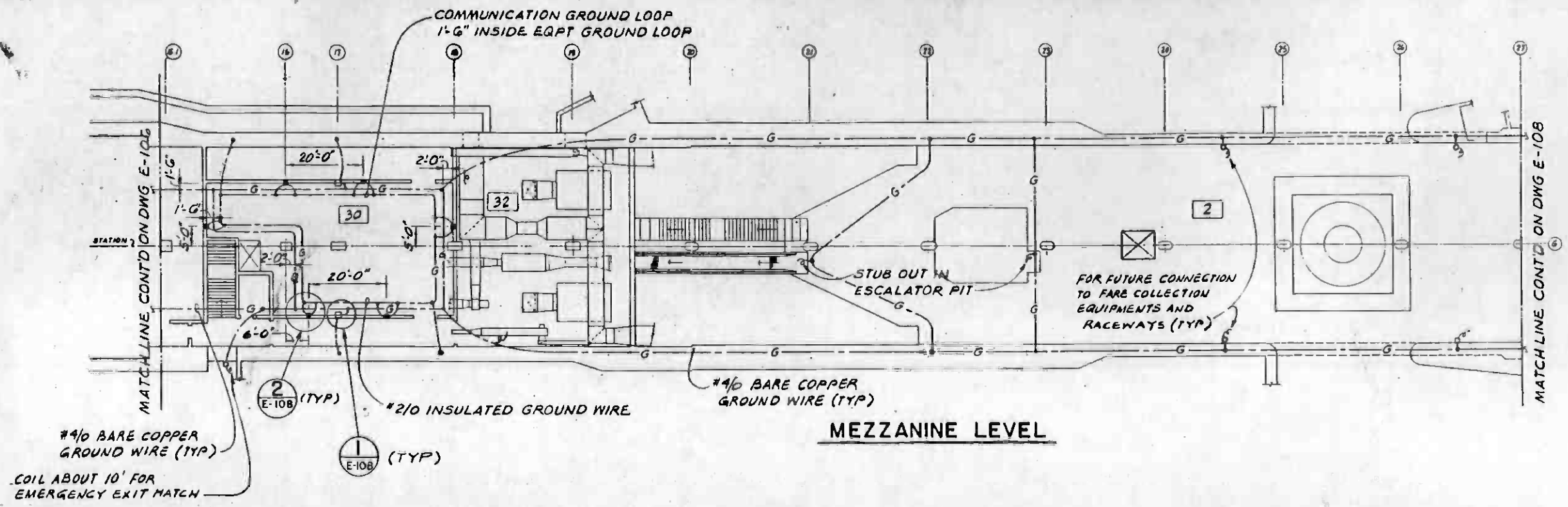
DESIGNED BY
H. Fabrycky
DRAWN BY
P. Lee
CHECKED BY
S. Rye
IN CHARGE
H. A. Lee
DATE
8 MAR 85

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
SVERDRUP & PARCEL AND ASSOCIATES, INC.
REGISTERED PROFESSIONAL ENGINEER
No. E-5143
DATE OF EXPIRATION
12/31/85

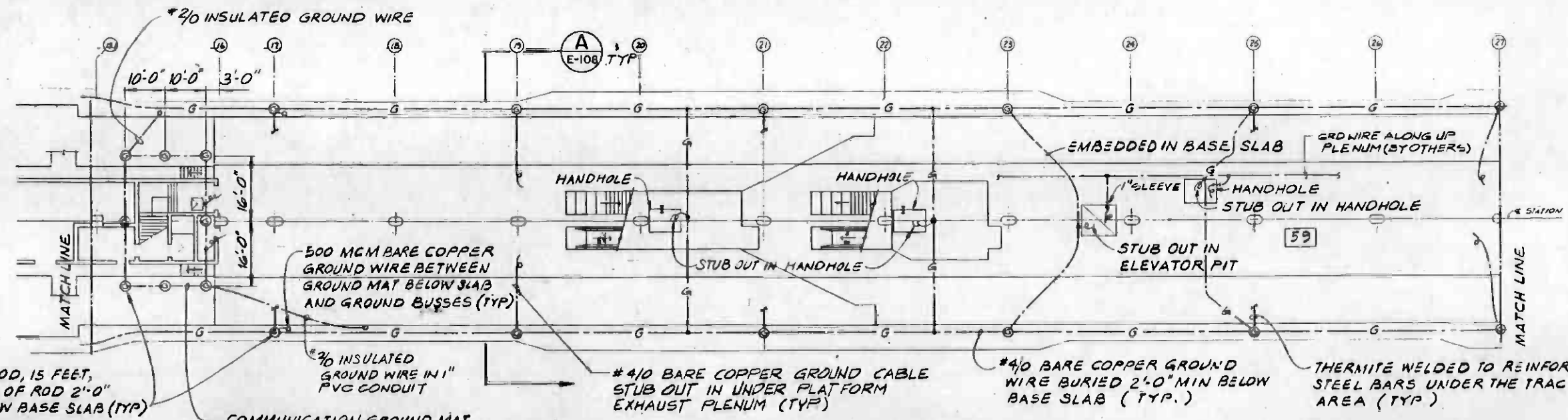
DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS
APPROVED
Howard J. Kelly

LA CBD TO NORTH HOLLYWOOD
WILSHIRE / ALVARADO STATION
MISCELLANEOUS DETAILS SHEET I

CONTRACT NO.	A-175
DRAWING NO.	E-094
SCALE	AS NOTED
SHEET NO.	AL20/255



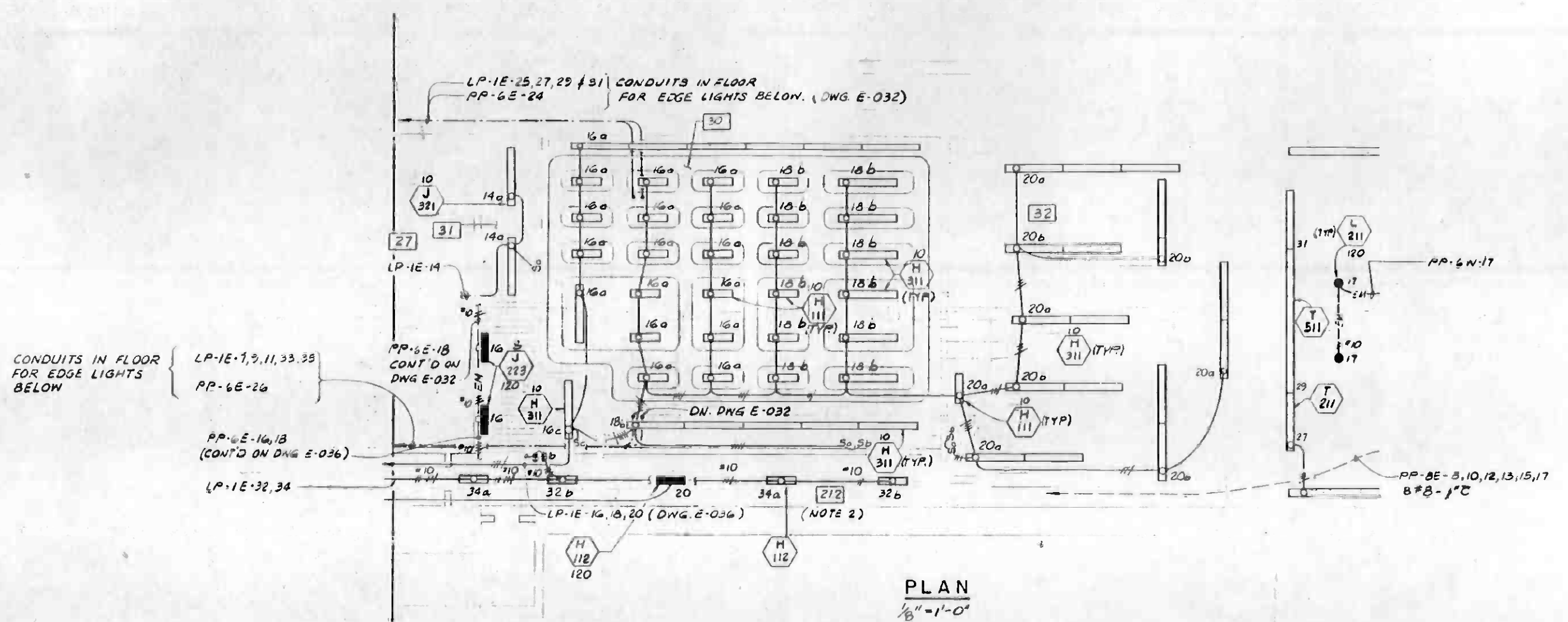
MEZZANINE LEVEL



PLATFORM LEVEL



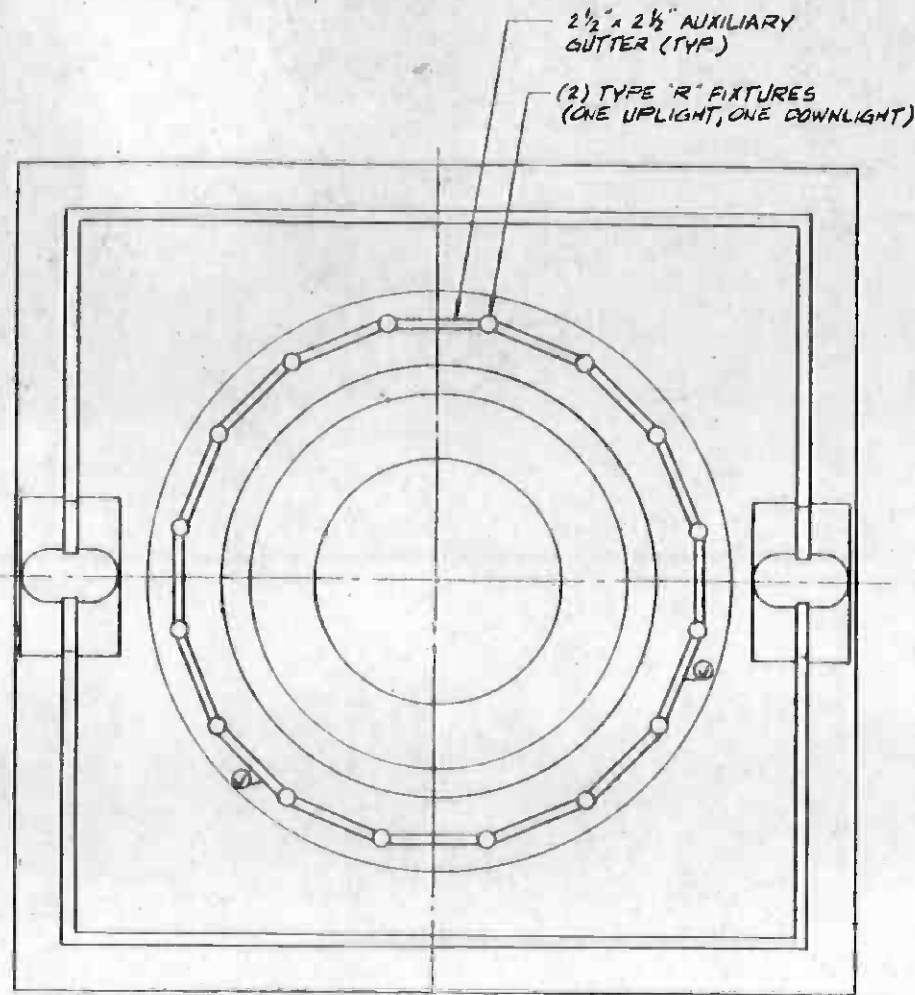
THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY <i>A.K. Miller</i> DRAWN BY <i>P. LEE</i> CHECKED BY <i>S. Rep...</i> IN CHARGE <i>R. L. Lee</i> DATE <i>8 MAR 85</i>		REGISTERED PROFESSIONAL ENGINEER No. E-5143 GEORGE S. LEE ELECTRICAL STATE OF CALIFORNIA		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT SYVERDRUP & PARCEL AND ASSOCIATES, INC. <small>IN ASSOCIATION WITH:</small> SHENSLER & ASSOC. P.O. BOX 27000, LOS ANGELES, CA 90025 PETERA BUNTON & CO. 18000 S. WILSHIRE, LOS ANGELES, CA 90024 FROMBET & ASSOC. 1115 COMMERCE, LOS ANGELES, CA 90014 BARTON-SCHUMER ASSOC., INC. 12000 WILSHIRE, LOS ANGELES, CA 90025 SUBMITTED <i>George Lee</i>				LA CBD TO NORTH HOLLYWOOD WILSHIRE/ALVARADO STATION GROUNDING STATION GRID 15.1 TO 27		CONTRACT NO. A-175 DRAWING NO. E-107 REV. 2 SCALE 1/16" = 1'-0" SHEET NO. A620/256	
REV.	DATE	BY	SUB.	APP.	DESCRIPTION	REV.	DATE	BY	SUB.	APP.	DESCRIPTION				
1	2/20/85	SPA			REVISED PER CRG-531	2	3/7/85	SPA			AMENDMENT 10 ISSUE				
3	3/14/85	CLM			INITIAL ISSUE										



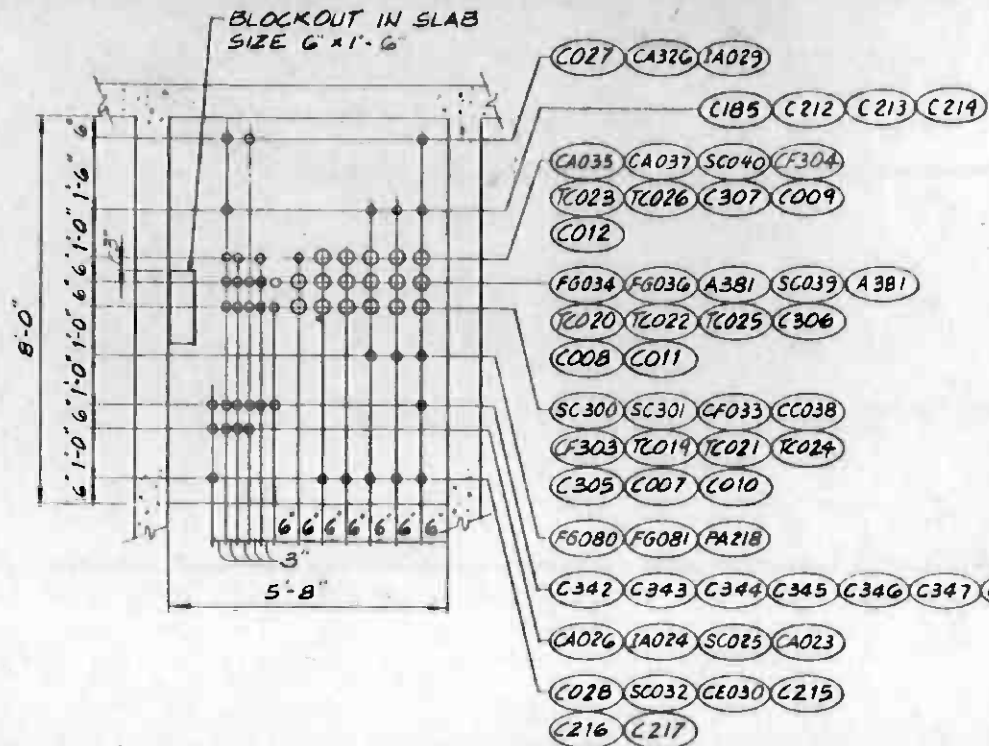
- NOTES:**
1. REFER TO NOTES 1 TO 4 ON DWG E-030.
 2. MOUNT FIXTURES ON THE UNDERSIDE OF AIR DUCT.



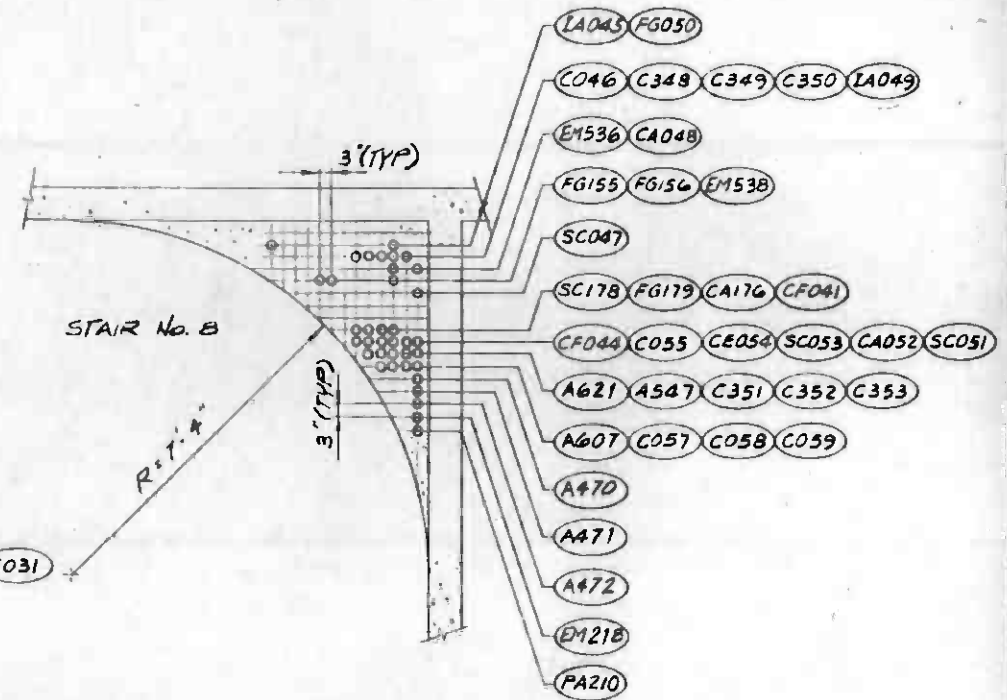
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REV DATE BY SUB APP DESCRIPTION	REV DATE BY SUB APP DESCRIPTION	AMENDMENT 10 ISSUE INITIAL ISSUE	APPROVED <i>George S. Lee</i>	LA CBD TO NORTH HOLLYWOOD WILSHIRE / ALVARADO STATION LIGHTING MEZZANINE GRID 15.1 TO 20



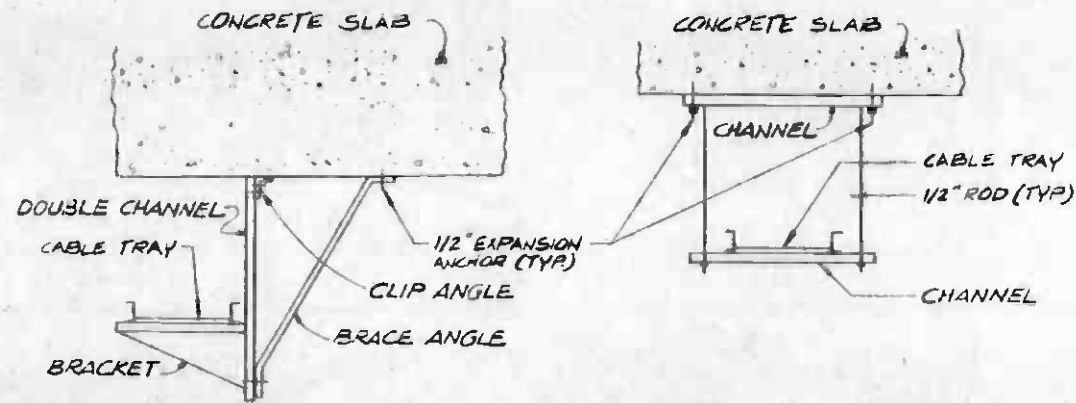
DETAIL 1
N.T.S. E-095 038



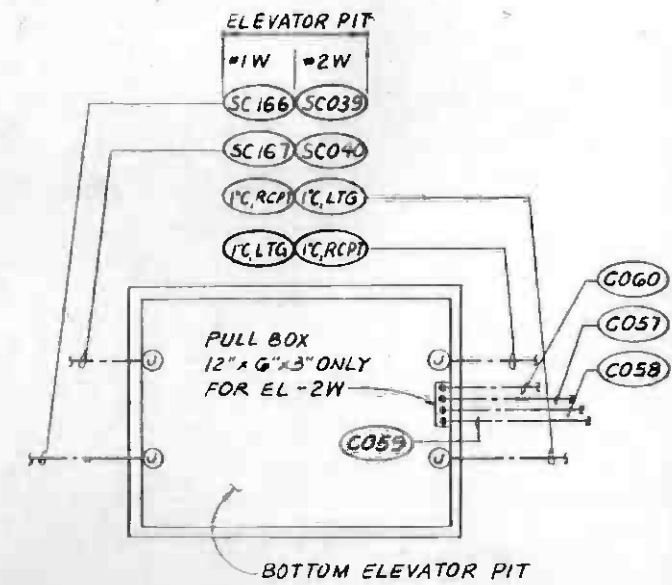
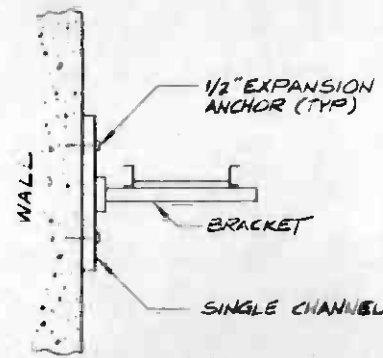
DETAIL 2
1/2" = 1'-0" E-095 045



DETAIL 6
1/2" = 1'-0" E-095 039, 047, 080, 085



TYPICAL CABLE TRAY SUPPORT DETAILS
N.T.S.



DETAIL 5
N.T.S. E-095 046, 053, 075, 086



REV	DATE	BY	SUB	APP	DESCRIPTION

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DESIGNED BY	S. J. Tolson				
DRAWN BY	P. LEE				
CHECKED BY	S. J. Tolson				
IN CHARGE	K. S. Lee				
DATE	8 MAR 85				

REGISTERED PROFESSIONAL ENGINEER
No. L5143
STATE OF CALIFORNIA

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

SVERDRUP & PARCEL AND ASSOCIATES, INC.
REGISTERED PROFESSIONAL ENGINEERS
1201 W. 10TH ST. SUITE 200
LOS ANGELES, CALIF. 90006

DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

APPROVED

LA CBD TO NORTH HOLLYWOOD
WILSHIRE / ALVARADO STATION
MISCELLANEOUS DETAILS SHEET 2

CONTRACT NO.	A-187
DRAWING NO.	E-095
SCALE	AS NOTED
SHEET NO.	A620/263

ABBREVIATIONS

TRACK ALIGNMENT

HORIZONTAL

I	TOTAL CENTRAL ANGLE OR TOTAL INTERSECTION ANGLE
Δ	TOTAL CENTRAL ANGLE OF CIRCULAR CURVE
PI	POINT OF INTERSECTION OF TWO TANGENTS
TS	POINT OF CHANGE FROM TANGENT TO SPIRAL
SC	POINT OF CHANGE FROM SPIRAL TO CIRCULAR CURVE
CS	POINT OF CHANGE FROM CIRCULAR CURVE TO SPIRAL
ST	POINT OF CHANGE FROM SPIRAL TO TANGENT
SS	POINT OF CHANGE FROM ONE SPIRAL TO ANOTHER
PC	POINT OF CHANGE FROM TANGENT TO CIRCULAR CURVE
PT	POINT OF CHANGE FROM CIRCULAR CURVE TO TANGENT
BC	BEGINNING OF CIRCULAR CURVE
EC	END OF CIRCULAR CURVE
R	RADIUS
L	TOTAL CURVE LENGTH
L _c	TOTAL LENGTH OF CIRCULAR CURVE
L _s	TOTAL LENGTH OF SPIRAL
L _{s1}	TOTAL LENGTH OF SPIRAL DOWN STATION
L _{s2}	TOTAL LENGTH OF SPIRAL UP STATION
T	TANGENT LENGTH
E _a	ACTUAL SUPERELEVATION
E _u	UNBALANCED SUPERELEVATION
PITO	POINT OF INTERSECTION OF TURNOUT

AC	ASPHALT CONCRETE AND
⊙	AT
AL	LEFT TRACK-LINE A
AHD	AHEAD
AR	RIGHT TRACK-LINE A
AREA	AMERICAN RAILWAY ENGINEERING ASSOCIATION
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
A/R	AS REQUIRED
APPROX	APPROXIMATE
ATC	AUTOMATIC TRAIN CONTROL

BC	BARE COPPER
BEG	BEGIN
BK	BACK
BLDG	BUILDING

⊕	CENTERLINE
CBD	CENTRAL BUSINESS DISTRICT
C TO C	CENTER TO CENTER
CLR	CLEAR, CLEARANCE
COND	CONDUIT
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CWR	CONTINUOUS WELDED RAIL

DF	DIRECT FIXATION
DIA, φ	DIAMETER
DWG	DRAWING

EA	EACH
ELEV	ELEVATION
EQ	EQUAL, EQUATION
ET	END OF TRACK
EXIST	EXISTING
EOR	END OF ROAD

FL	FLOW LINE
FG	FROG GAUGE PLATE
FIN GR	FINISH GRADE
FT	FOOT OR FEET
FS	FINISHED SURFACE
GALV	GALVANIZED
GP	GAUGE PLATE
GR	GUARD RAIL PLATE

HD	HEAD
HL	HEEL LENGTH
HP	HEEL PLATE
HS	HIGH STRENGTH

IO	INSIDE DIAMETER
IN	INCH OR INCHES
IJ	INSULATED JOINT

JT	JOINT
LA	LOS ANGELES
LACFCD	LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
LB, #	POUND
LH	LEFT HAND
LG	LONG
MAX	MAXIMUM
MCM	THOUSAND CIRCULAR MIL
MIN	MINIMUM
MPH	MILES PER HOUR
MRTC	METRO RAIL TRANSIT CONSULTANTS

NIC	NOT IN CONTRACT
NO (S), #	NUMBER, NUMBERS
NTS	NOT TO SCALE

OC	ON CENTER OR ON CENTERS
OD	OUTSIDE DIAMETER

PF	POINT OF FROG
PGL	PROFILE GRADE LINE
PS	POINT OF SWITCH
PVMT	PAVEMENT

QTY	QUANTITY
-----	----------

R	RADIUS
RBM	RAILBOUND MANGANESE
RD	ROAD
REF	REFERENCE
REINF	REINFORCING
RH	RIGHT HAND
REQ'D	REQUIRED
RR	RAILROAD
R/W	RIGHT OF WAY

SA	SERVICE AISLE
SCRTD	SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
SD	STORM DRAIN
SP	SPACE, SPACING
STA	STATION, SANTA
STD	STANDARD
SW	SWITCH
SQ	SQUARE

TC	TRACK CENTER, TOP OF CURB
TEMP	TEMPORARY
THEO	THEORETICAL
TL	TOE LENGTH
TO	TURNOUT
T/R	TOP OF RAIL ELEVATION
TRK	TRACK
TYP	TYPICAL

UNC	UNIFIED INCH COARSE THREAD
-----	----------------------------

W/	WITH
W/O	WITHOUT

X-ING	CROSSING
X-OVER, X	CROSSOVER

TRACK SYMBOLS

	GAUGE LINE
	CENTERLINE
	STANDARD RAIL
	HIGH STRENGTH RAIL
	LEFT HAND CURVE
	RIGHT HAND CURVE
	POINT OF SWITCH-LOCATION OF SWITCH MACHINE
	TURNOUT
	SINGLE CROSSOVER
	DOUBLE CROSSOVER
	CONTACT RAIL END APPROACH-MAINLINE
	CONTACT RAIL END APPROACH-YARD
	CONTACT RAIL EXPANSION JOINT
	CONTACT RAIL ANCHOR
	CONTINUOUS WELDED RAIL
	BUMPING POST
	PITO
	PI/PVI
	COORDINATE NUMBER
	CURVE NUMBER
	EXISTING RAILROAD (NON-METRO RAIL)
	EXISTING TRACK, FUTURE TRACKS
	CONTACT RAIL DIP SECTION
	CONTACT RAIL SIDE APPROACH
	CONTACT RAIL INSULATOR
	PROFILE GRADE LINE
	AR 233+45.29 BK ⁺ STATION EQUATION
	AR 234+00 AHD
	02
	CONTACT RAIL TRACTION POWER CIRCUIT DESIGNATION
	(235)
	CONDUIT RUN NUMBER
	STANDARD JOINT
	BONDED STANDARD JOINT
	BONDED INSULATED JOINT
	BONDED STANDARD JOINT
	BONDED INSULATED JOINT
	STANDARD JOINT
	RAIL ANCHOR
	INSULATED JOINTS ON BOTH RAILS (TRACK CHARTS)
	DERAIL
	HINGED WHEEL STOPS

MATERIAL SYMBOLS

	CONCRETE
	ELASTOMER
	INSULATING MATERIAL
	TIMBER
	ASPHALT
	STEEL
	SUBGRADE EARTH
	WELDING
	BASE COURSE
	BALLAST
	SUBBALLAST

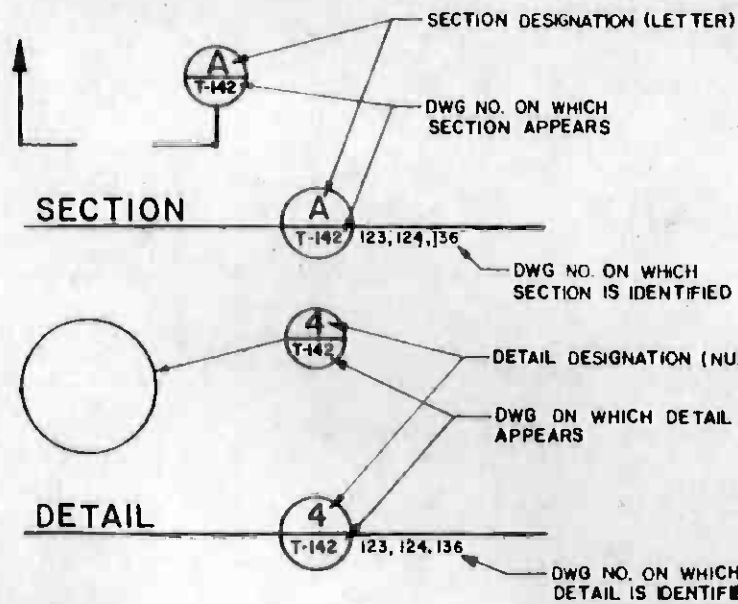
GENERAL SYMBOLS

	A/B	DOWN GRADE IN DIRECTION OF ARROW A=RUN B=RISE
		DIMENSION LINE CONTINUES
		BREAK IN DRAWING
		BREAK IN DIMENSION
		1/4" FILLET WELD
		SWITCH POINT DERAIL

VERTICAL

V _C	VERTICAL CURVE
L _{V_C}	LENGTH OF VERTICAL CURVE (PVC TO PVT)
PVC	BEGIN VERTICAL CURVE
PVI	POINT OF INTERSECTION OF TWO PROFILE TANGENTS
PVT	POINT OF VERTICAL TANGENT
POVC	POINT ON VERTICAL CURVE

SECTIONS & DETAILS



REV	DATE	BY	SUB	APP	DESCRIPTION

DESIGNED BY	J. L. ...
DRAWN BY	M. ...
CHECKED BY	P. ...
IN CHARGE	L. ...
DATE	15 JUL 85

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

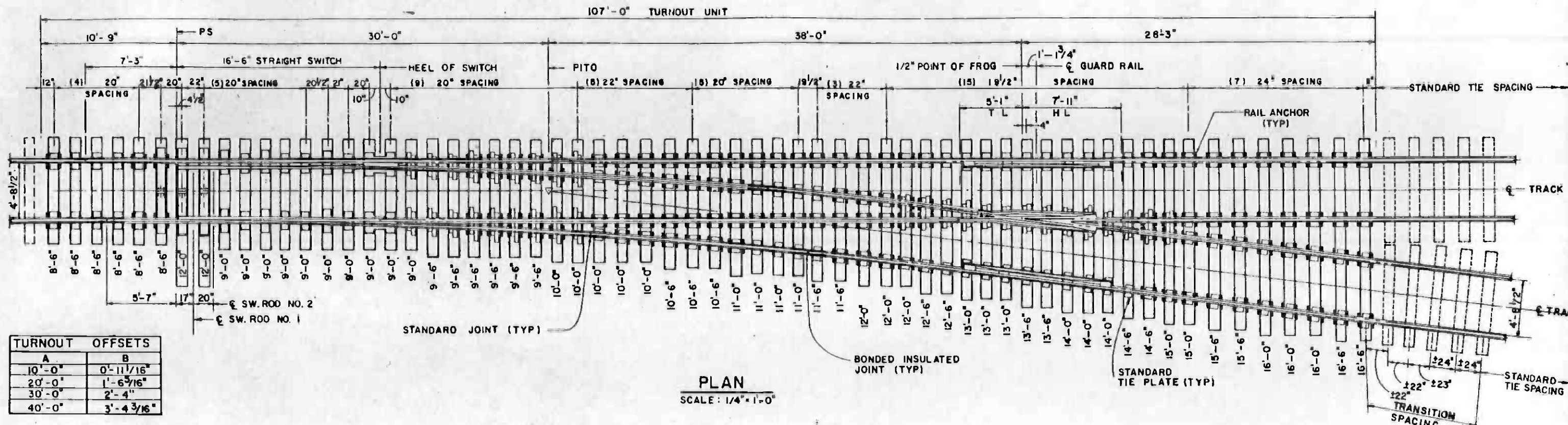
DMJM/PBQO/KE/HWA
GENERAL CONSULTANTS

APPROVED

LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION

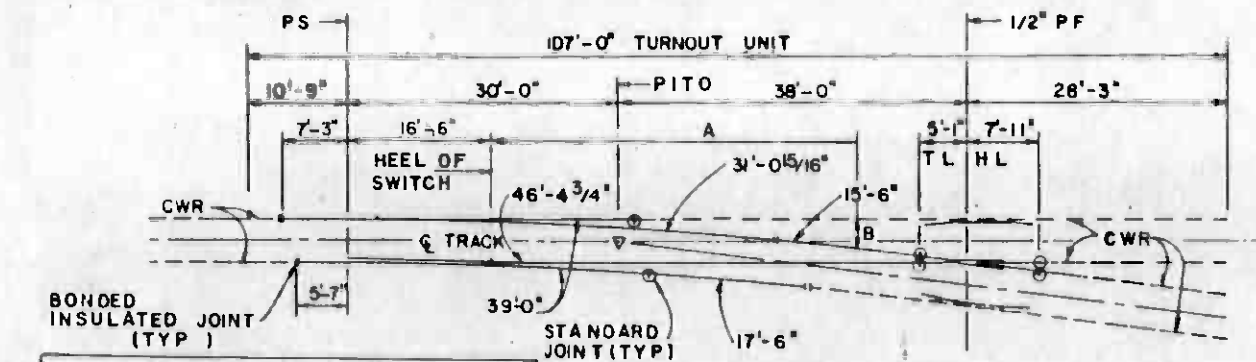
ABBREVIATIONS AND SYMBOLS

CONTRACT NO. A610
DRAWING NO. T-103
SCALE NO SCALE
SHEET NO. A620/269



TURNOUT OFFSETS	
A	B
10'-0"	0'-11 1/16"
20'-0"	1'-6 7/16"
30'-0"	2'-4"
40'-0"	3'-4 3/16"

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



RAIL LAYOUT DIAGRAM
SCALE: 3/32" = 1'-0"

TURNOUT DATA		
FROG	NUMBER	8
	ANGLE	7°-09'-10"
	TOE LENGTH	5'-1"
	HEEL LENGTH	7'-11"
SWITCH	TOTAL LENGTH	13'-0"
	TOE SPREAD	7 1/8"
	HEEL SPREAD	12 3/8"
	LENGTH OF SWITCH RAIL	16'-6"
	THICKNESS OF POINT	0"
	HEEL ANGLE	1°-48'-32"
	HEEL SPREAD	6 1/4"
	ANGLE AT POINT	-
ACTUAL LEAD		68'-0"
STRAIGHT CLOSURE LENGTH		48'-5"
CURVED CLOSURE LENGTH		46'-7 3/8"
CENTERLINE RADIUS		487'-2 1/4"
DEGREE OF CURVE		11°-42'-12"
TANGENT AT HEEL OF SWITCH		11 1/2"
TANGENT AT TOE OF FROG		0"

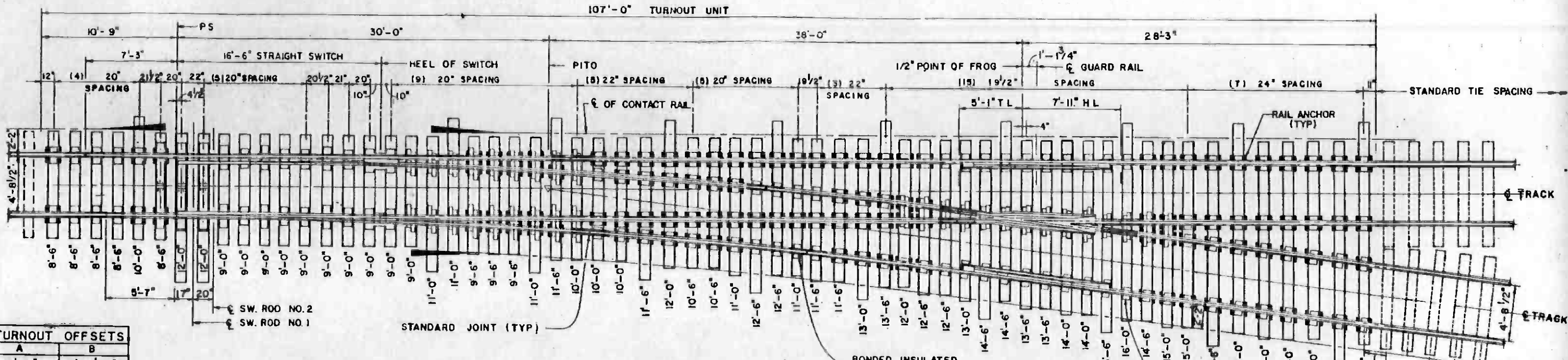
SWITCH TIES	
LENGTH	QTY
8'-6"	6
9'-0"	10
9'-6"	6
10'-0"	5
10'-6"	3
11'-0"	4
11'-6"	2
12'-0"	8
12'-6"	2
13'-0"	3
13'-6"	2
14'-0"	3
14'-6"	2
15'-0"	2
15'-6"	2
16'-0"	3
16'-6"	2
TOTAL	62

- NOTES:
- FOR ADDITIONAL DETAILS, SEE DWG. NO. (S) T-163, T-164 & T-104
 - TWO OF THE 12'-0" SWITCH TIES ARE DAPPED FOR SWITCH MACHINE INSTALLATION

BILL OF MATERIAL	
QTY	DESCRIPTION
1	NO. 8 LATERAL SWITCH, COMPLETE, PER CONTRACT DRAWING NO. T-163
1	NO. 8 LATERAL FROG, COMPLETE, PER CONTRACT DRAWING NO. T-164
2	12'-0" TEE RAIL DESIGN GUARD RAIL BALLASTED, COMPLETE, PER CONTRACT DRAWING NO. T-165
1 EA	46'-4 3/4", 31'-0 15/16", 15'-6" CLOSURE RAILS.
1	17'-6" BUFFER RAIL.
1 SET	7" X 9" TIMBER SWITCH TIES.
4	BONDED INSULATED JOINTS (SEE GENERAL NOTE NO 16 ON DWG NO T-104)
8	STANDARD JOINTS
236	RAIL ANCHORS
110	STANDARD TIE PLATES
3KEGS	TRACK SPIKES
4KEGS	LOCK SPIKES
A/R	CWR

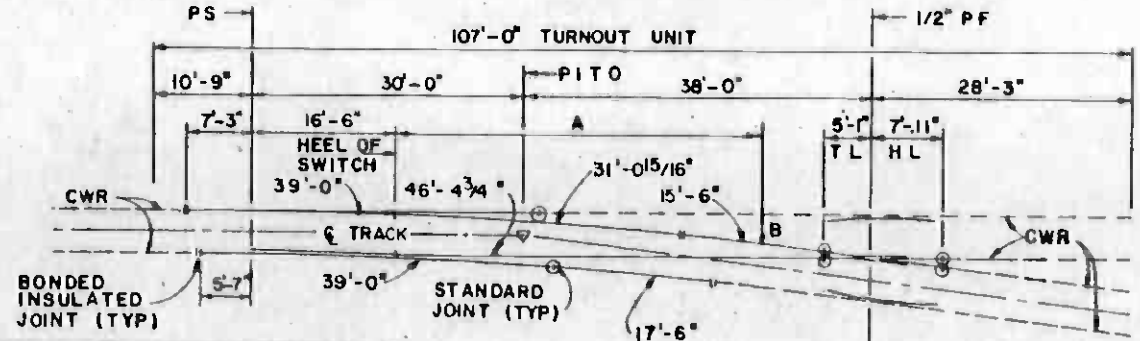


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SUBMITTED <i>George P. Valenzuela</i>	LA CBD TO NORTH HOLLYWOOD TRACKWORK INSTALLATION NO. 8 LATERAL TURNOUT - BALLASTED NON-ELECTRIFIED				



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

TURNOUT OFFSETS	
A	B
10'-0"	0'-11 1/16"
20'-0"	1'-6 5/16"
30'-0"	2'-4"
40'-0"	3'-4 3/16"



RAIL LAYOUT DIAGRAM
SCALE: 3/32" = 1'-0"

TURNOUT DATA		
NUMBER	8	
ANGLE	7°-09'-10"	
TOE LENGTH	5'-1"	
HEEL LENGTH	7'-11"	
TOTAL LENGTH	13'-0"	
TOE SPREAD	7 7/8"	
HEEL SPREAD	12 3/8"	
LENGTH OF SWITCH RAIL	16'-6"	
THICKNESS OF POINT	0"	
HEEL ANGLE	1°-48'-32"	
HEEL SPREAD	6 1/4"	
ANGLE AT POINT	-	
ACTUAL LEAD	68'-0"	
STRAIGHT CLOSURE LENGTH	46'-5"	
CURVED CLOSURE LENGTH	46'-7 3/8"	
CENTERLINE RADIUS	487'-2 1/4"	
DEGREE OF CURVE	11°-42'-12"	
TANGENT AT HEEL OF SWITCH	11 1/2"	
TANGENT AT TOE OF FROG	0"	

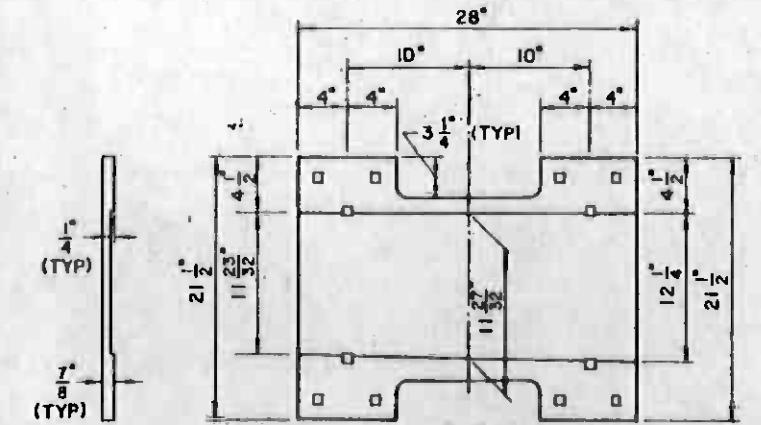
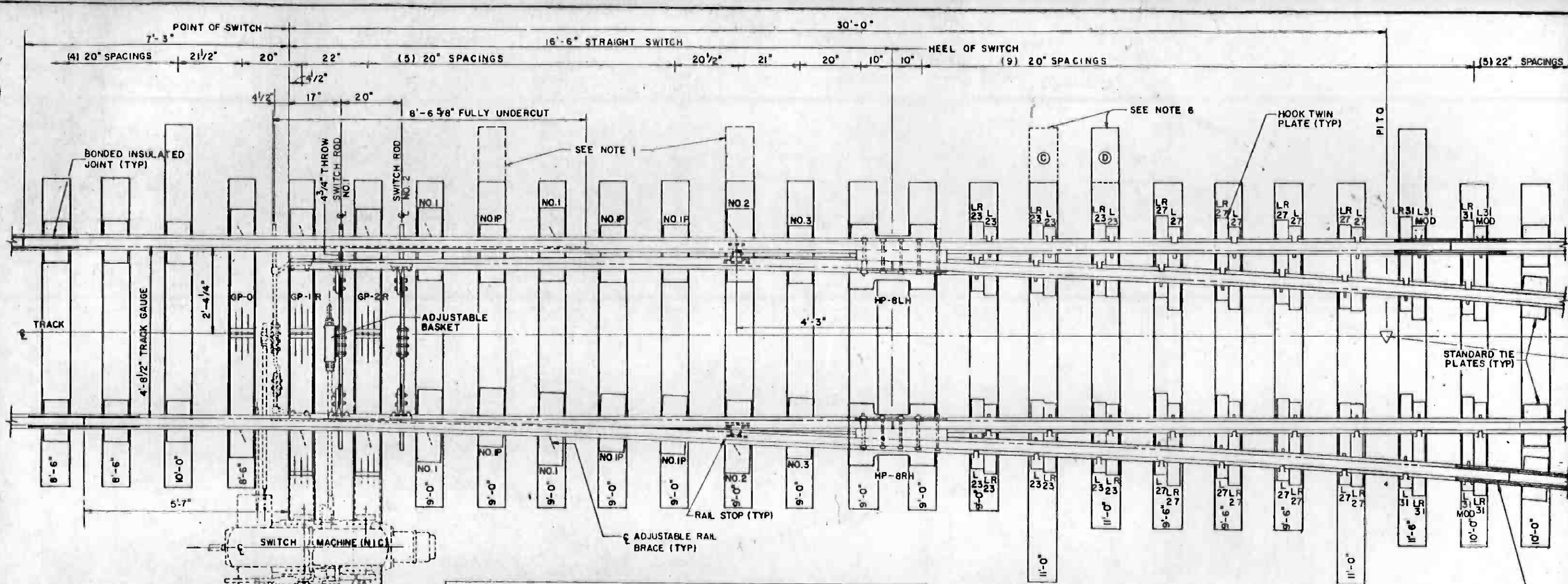
SWITCH TIES	
LENGTH	QTY
8'-6"	5
9'-0"	10
9'-6"	3
10'-0"	4
10'-6"	2
11'-0"	5
11'-6"	4
12'-0"	4
12'-6"	4
13'-0"	2
13'-6"	3
14'-0"	2
14'-6"	3
15'-0"	2
15'-6"	1
16'-0"	4
16'-6"	1
17'-0"	1
18'-0"	2
TOTAL	62

- NOTES:
- FOR ADDITIONAL DETAILS, SEE DWG NO(S) T-163, T-164 & T-104
 - TIMBER SWITCH TIE LIST TO BE ADJUSTED AS REQUIRED BY CONTACT RAIL INSTALLATION. SEE DWG NO(S) T-233
 - TWO OF THE 12'-0" TIES ARE DAPPED FOR SWITCH MACHINE INSTALLATION.

BILL OF MATERIAL	
QTY	DESCRIPTION
1	NO. 8 LATERAL SWITCH, COMPLETE, PER CONTRACT DRAWING NO. T-163
1	NO. 8 LATERAL FROG, COMPLETE, PER CONTRACT DRAWING NO. T-164
2	12'-0" TEE RAIL DESIGN GUARD RAIL BALLASTED, COMPLETE, PER CONTRACT DRAWING NO. T-185
1 EA	46'-4 3/4", 31'-0 15/16", 15'-6" CLOSURE RAILS
1	17'-6" BUFFER RAIL
1 SET	7" X 9" TIMBER SWITCH TIES
4	BONDED INSULATED JOINTS (SEE GENERAL NOTE NO 16 ON DWG NO T-104)
6	STANDARD JOINTS
236	RAIL ANCHORS
110	STANDARD TIE PLATES
3 KEGS	TRACK SPIKES
4 KEGS	LOCK SPIKES
A/R	CWR



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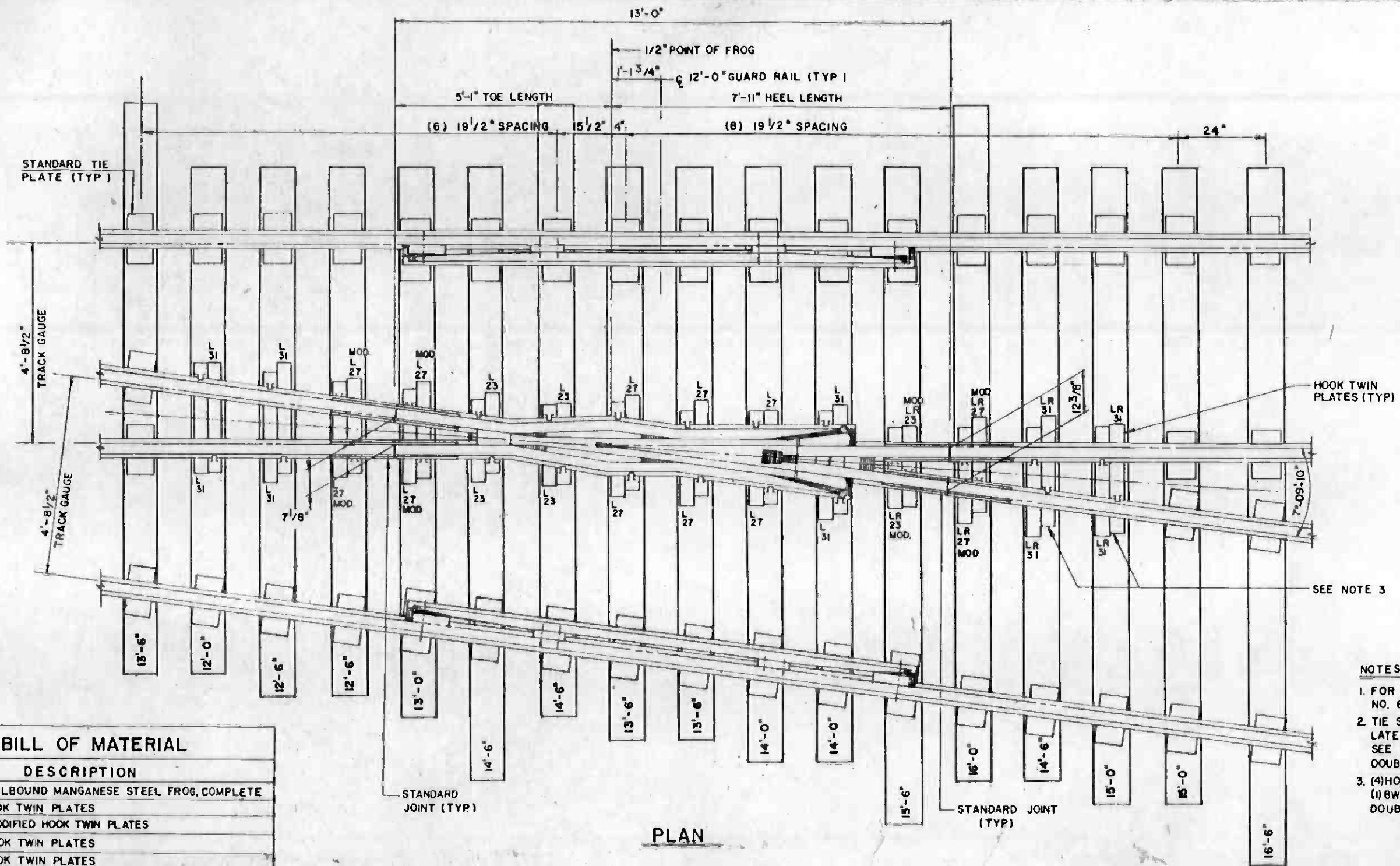
BILL OF MATERIAL	
QTY.	DESCRIPTION
1 EA	16'-6" SWITCH RAILS, LEFT HAND AND RIGHT HAND COMPLETE WITH REINFORCING BARS AND RAIL STOPS ATTACHED (POINT DETAIL 5100 PER AREA PLAN NO. 221)
1 EA	39'-0" UNDERCUT STOCK RAIL, ONE BENT AND ONE STRAIGHT
1	INSULATED VERTICAL SWITCH ROD NO. 1 WITH CLIPS, BOLTS, NUTS, LOCKS AND ADJUSTABLE BASKET FOR THROW ROD
1	INSULATED VERTICAL SWITCH ROD NO. 2 WITH CLIPS, BOLTS, NUTS AND LOCKS
4	NO. 1 SOLID BASE SLIDE PLATES WITH ADJUSTABLE RAIL BRACES
6	NO. 1P SOLID BASE SHOULDER SLIDE PLATES
2	NO. 2 SOLID BASE SLIDE PLATES WITH ADJUSTABLE RAIL BRACES
2	NO. 3 SOLID BASE SHOULDER SLIDE PLATES
1 EA	GP-0, GP-1R & GP-2R INSULATED GAUGE PLATES WITH ADJUSTABLE RAIL BRACES
2	HEEL BLOCK ASSEMBLY COMPLETE WITH BOLTS, NUTS & WASHERS
1 EA	HP-8LH SPECIAL HEEL PLATE LEFT (SEE NOTE 4)
1 EA	HP-8RH SPECIAL HEEL PLATE RIGHT (SEE NOTE 4)
6 EA	L23 AND LR 23 HOOK TWIN TIE PLATES
6 EA	L27 AND LR 27 HOOK TWIN TIE PLATES
1	L31 HOOK TWIN TIE PLATE
3	L31 MOD HOOK TWIN TIE PLATES
4	LR 31 HOOK TWIN TIE PLATES

PLAN

- NOTES:
- REPLACE 9'-0" SWITCH TIES WITH 10'-6" SWITCH TIES WHEN REQUIRED TO SUPPORT CONTACT RAIL DIP SECTIONS AND SIDE APPROACHES SEE CONTRACT DRAWING NO. T-233
 - PLAN SHOWN IS FOR A RIGHT HAND TURNOUT, A LEFT HAND TURNOUT IS SIMILAR BUT OF OPPOSITE CONSTRUCTION, SEE CONTRACT DRAWING T-104
 - FOR ADDITIONAL DETAILS SEE AREA PLAN 112 AND CONTRACT DRAWINGS T-161 & T-162
 - RIGHT HAND AND LEFT HAND HEEL PLATES CORRESPOND TO RIGHT HAND AND LEFT HAND SWITCH RAILS REGARDLESS OF HAND OF THE TURNOUT.
 - BEND JOINT BAR TO ALIGNMENT OF FULLY OPENED SWITCH POINT AND MACHINE TOP CORNER OF JOINT BAR PARALLEL TO RAIL.
 - EXTEND TIE (C) TO 12'-6" AND REDUCE TIE (D) TO 9'-6" TO SUPPORT CONTACT RAIL DIP SECTIONS, SEE CONTRACT DRAWING NO. T-233.
 - FOR RAIL ANCHOR INSTALLATION, SEE CONTRACT DRAWINGS NO. T-161 & T-162



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PLAN

BILL OF MATERIAL	
QTY	DESCRIPTION
1	NO. 8 RAILBOUND MANGANESE STEEL FROG, COMPLETE
4	L23 HOOK TWIN PLATES
2	LR23 MODIFIED HOOK TWIN PLATES
6	L27 HOOK TWIN PLATES
6	L31 HOOK TWIN PLATES
4	L27 MODIFIED HOOK TWIN PLATES
2	LR27 MODIFIED HOOK TWIN PLATES
4	LR31 HOOK TWIN PLATES

HOOK TWIN PLATES (TYP)

SEE NOTE 3

NOTES:

- FOR ADDITIONAL DETAILS SEE AREA PLAN NO. 622, & CONTRACT DRAWING NO. T-162
- TIE SPACING SHOWN IS FOR STANDARD NO 8 LATERAL TURNOUT AND SINGLE CROSSOVERS, SEE CONTRACT DRAWINGS NO T-175 & T-176 FOR DOUBLE CROSSOVERS
- (4) HOOK TWINS LR31 ARE REPLACED BY (1) BWS-7R, (1) BWS-1L & (1) STANDARD TIE PLATE IN NO 8 DOUBLE CROSSOVER, 14" TC, BALLASTED



REV	DATE	BY	SUB.	APP.	DESCRIPTION

DESIGNED BY
P.T. Baker
DRAWN BY
R.C. Sprent
CHECKED BY
Joseph B. Valera
Joseph B. Valera
DATE
15 JUL 85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

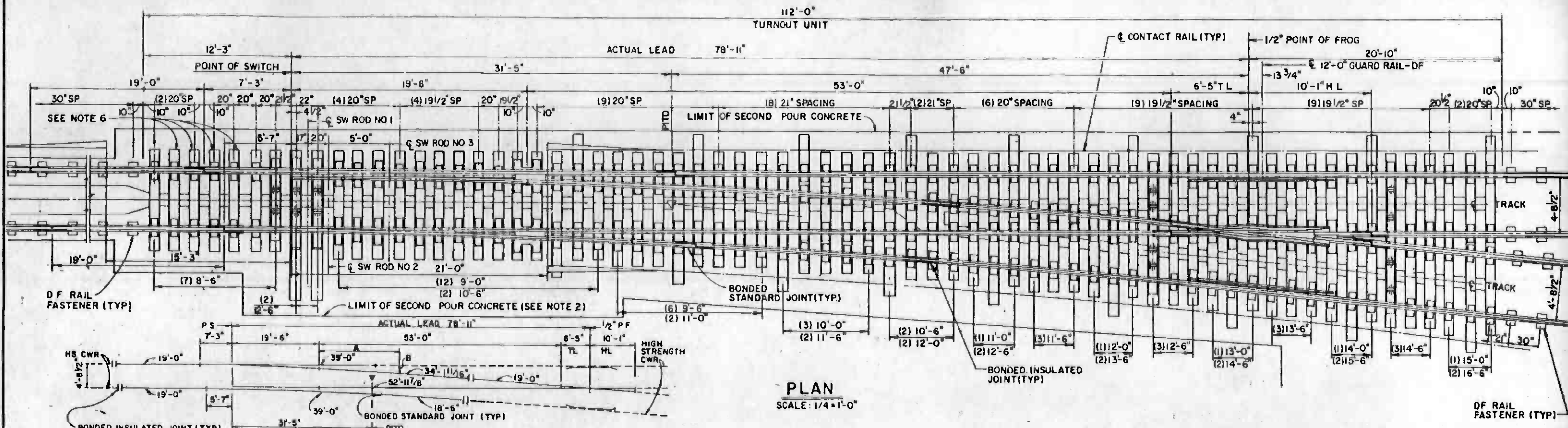
DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

APPROVED
Joseph B. Valera

LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION

NO. 8 LATERAL FROG
BALLASTED

CONTRACT NO.	A610
DRAWING NO.	T-164
SCALE	3/4" = 1'-0"
SHEET NO.	A620/275



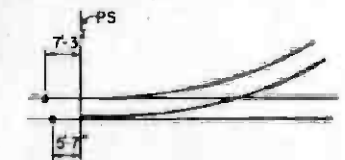
RAIL LAYOUT DIAGRAM

SCALE: 3/32" = 1'-0"

TURNOUT OFFSETS	
A	B
10'-0"	0'-11 3/16"
20'-0"	1'-5 9/16"
30'-0"	2'-1 7/16"
40'-0"	2'-10 13/16"

NOTES:

- FOR TURNOUTS ADJOINING STATION PLATFORMS 19'-0" BUFFER RAILS ARE NOT INCLUDED. THE BONDED INSULATED JOINTS ARE MOVED TO THE END OF THE STOCK RAILS AND QUANTITY OF BONDED STANDARD RAIL JOINTS IS 6. SEE SKETCH BELOW:



- SECOND POUR CONCRETE LIMITS MAY VARY AT SOME LOCATIONS. FOR FURTHER DETAILS, SEE CONTRACT DRAWING NO T-218 THRU T-222
- INSULATING PADS ARE NOT SHOWN, FOR DETAILS, SEE DWG NO T-166, T-167 & T-168
- SWITCH TIE LIST IS TO BE ADJUSTED AS REQUIRED BY CONTACT RAIL INSTALLATION SEE DWG NO(S) T-173 THRU T-180.
- DAP TWO 12'-6" SWITCH TIES FOR SWITCH MACHINE INSTALLATION.
- AT ENDS OF NO 10 DOUBLE CROSSOVERS WITH TYPE 2 TRACK CROSSWALK REPLACE FOUR 8'-6" TIES WITH 11'-0" TIES FOR CROSSWALK SUPPORT.
- ONE OF THE NO 10 LATERAL TURNOUTS, DF, USED FOR THE NO 10 SINGLE CROSSOVER, 14" TC, TYPE 2 DF, USES NON-STANDARD RAIL LAYOUT AND INSULATED JOINT ARRANGEMENT. SEE DWG. NO. T-174 FOR DETAILS.

TURNOUT DATA		
	NUMBER	ID
FROG	ANGLE	5°-43'-29"
	TOE LENGTH	6'-5"
	HEEL LENGTH	10'-1"
	TOTAL LENGTH	16'-6"
	TOE SPREAD	7 7/8"
SWITCH	HEEL SPREAD	12 5/8"
	LENGTH OF SWITCH RAIL	19'-6"
	THICKNESS OF POINT	0"
	HEEL ANGLE	1°-59'-15"
	HEEL SPREAD	6 3/4"
ANGLE AT POINT		1°-04'-24"
ACTUAL LEAD		78'-11"
STRAIGHT CLOSURE LENGTH		53'-0"
CURVED CLOSURE LENGTH		53'-2"
CENTERLINE RADIUS		806'-3 1/16"
DEGREE OF CURVE		7°-06'-22"
TANGENT AT HEEL OF SWITCH		0"
TANGENT AT TOE OF FROG		5 1/8"

NO. 10 LATERAL TURNOUT DIRECT FIXATION BILL OF MATERIAL		
QTY	DESCRIPTION	
1	NO. 10 LATERAL SWITCH, D F, COMPLETE, PER DWG. NO. T-166	
1	NO. 10 LATERAL FROG, D F, COMPLETE, PER DWG. NO. T-168	
1	NO. 10 LATERAL TURNOUT CLOSURE RAIL SECTION, D F, COMPLETE PER DWG. NO. T-167	
2	12'-0" TEE RAIL DESIGN GUARD RAIL-DF, COMPLETE PER DWG. NO. T-186	
1	18'-6" BUFFER RAIL	
1 EA	34'-11 1/16", 52'-11 7/8", 19'-0" CLOSURE RAILS	
2	19'-0" BUFFER RAIL (SEE NOTE 1)	
1 SET	7"x10" TIMBER SWITCH TIES	
A/R	RUBBER BOOTS FOR TIMBER SWITCH TIES PER DWG NO T-248	
8	BONDED STANDARD JOINTS (SEE NOTE 1)	
4	BONDED INSULATED JOINTS	
94	10-SP-1 SPECIAL PLATES, COMPLETE WITH RAIL CLAMP ASSEMBLIES WELDED TO PLATES	
86	INSULATING PADS FOR SPECIAL PLATES 10-SP-1	
188	SPECIAL PLATE ANCHORAGE ASSEMBLIES FOR 10-SP-1 SPECIAL PLATES	
A/R	HIGH STRENGTH CWR	

SWITCH TIES		
LENGTH	QTY	
8'-6"	7	(SEE NOTE 6)
9'-0"	12	
9'-6"	6	
10'-0"	3	
10'-6"	4	
11'-0"	3	(SEE NOTE 6)
11'-6"	5	
12'-0"	3	(SEE NOTE 6)
12'-6"	7	
13'-0"	1	
13'-6"	5	
14'-0"	1	
14'-6"	5	
15'-0"	1	
15'-6"	2	
16'-6"	2	
TOTAL	67	(SEE NOTE 4)

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, UNDER THE NATIONAL TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA

DESIGNED BY: *L.P. Johnson*

DRAWN BY: *R.P. Johnson*

CHECKED BY: *R.P. Johnson*

IN CHARGE: *Joseph B. Volante*

DATE: 5 JUL 85

REVISIONS:

REV	DATE	BY	SUB	APP	DESCRIPTION

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBQD/KE/MWA
GENERAL COORDINATOR

APPROVED: *Joseph B. Volante*

LA CBD TO NORTH HOLLYWOOD TRACKWORK INSTALLATION

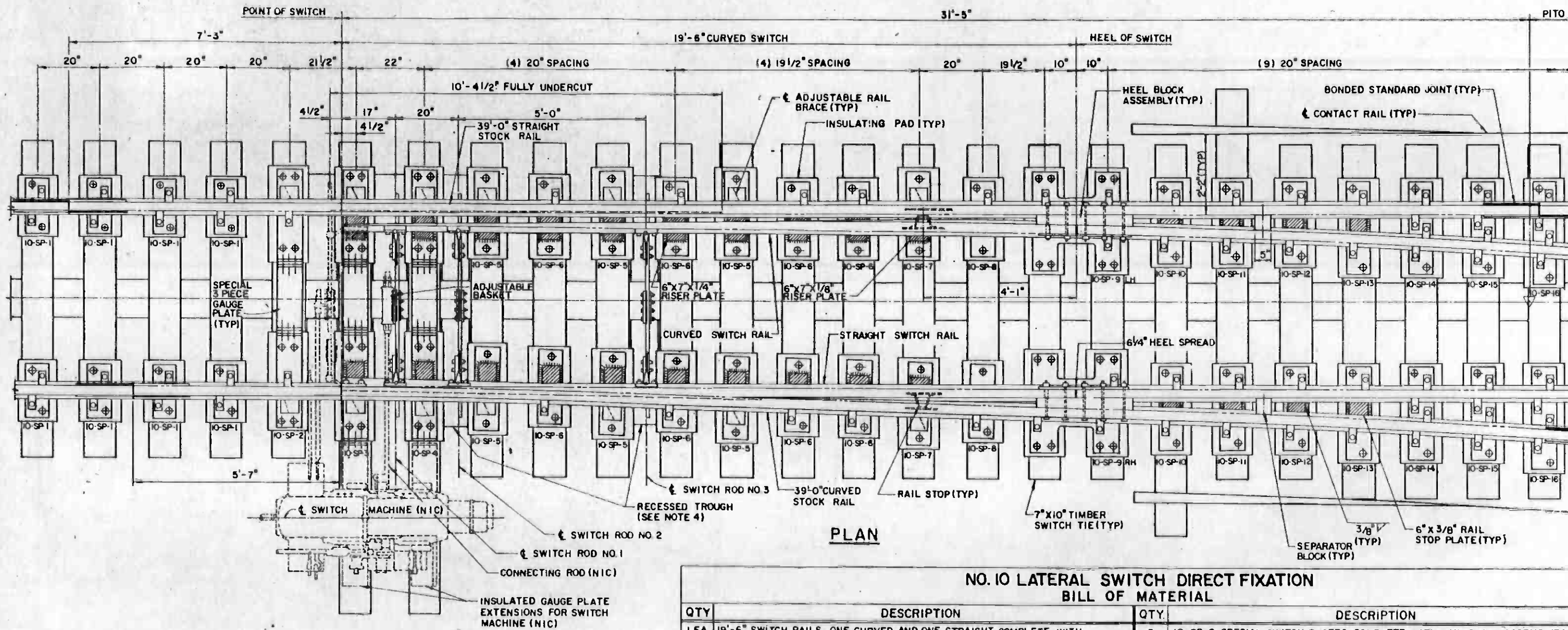
NO. 10 LATERAL TURNOUT DIRECT FIXATION

CONTRACT NO. A610

DRAWING NO. T-165

SCALE: AS NOTED

SHEET NO. A620/276



PLAN

NOTES:

1. DETAIL SHOWN IS FOR A RIGHT HAND TURNOUT. A LEFT HAND TURNOUT IS SIMILAR BUT OF OPPOSITE CONSTRUCTION, SEE CONTRACT DWG T-104.
2. FOR ADDITIONAL DETAILS SEE AREA PLAN I24.
3. FOR TIMBER SWITCH TIE INSTALLATION SEE DWG NO T-165.
4. FOR DETAILS OF SWITCH TROUGH SEE DWG NO T-218.
5. FOR SPECIAL PLATE DETAILS, SEE DWG NOS T-187 AND T-189.
6. RUBBER BOOTS FOR SWITCH TIES NOT SHOWN. FOR DETAILS SEE DWG NO. T-248.

NO. 10 LATERAL SWITCH DIRECT FIXATION BILL OF MATERIAL			
QTY	DESCRIPTION	QTY	DESCRIPTION
1 EA	19'-6" SWITCH RAILS, ONE CURVED AND ONE STRAIGHT COMPLETE WITH REINFORCING BARS AND RAIL STOPS ATTACHED (POINT DETAIL 5100 PER AREA NO.221)	2	10-SP-8 SPECIAL SWITCH PLATES, COMPLETE WITH RAIL CLAMP ASSEMBLIES WELDED TO PLATES.
1 EA	39'-0" UNDERCUT STOCK RAIL, ONE CURVED AND ONE STRAIGHT.	1 EA	10-SP-9LH AND 10-SP-9 RH SPECIAL HEEL PLATES, COMPLETE WITH RAIL CLAMP ASSEMBLIES WELDED TO PLATES.
1	INSULATED VERTICAL SWITCH ROD NO.1 WITH CLIPS, BOLTS, NUTS, LOCKS AND ADJUSTABLE BASKET FOR THROW ROD.	2 EA	10-SP-10 THRU 10-SP-13 SPECIAL PLATES, COMPLETE WITH RAIL STOP PLATES AND RAIL CLAMP ASSEMBLIES WELDED TO PLATES.
1 EA	INSULATED VERTICAL SWITCH RODS NO.2 & NO.3 WITH CLIPS, BOLTS, NUTS AND LOCKS.	2 EA	10-SP-14 THRU 10-SP-16 SPECIAL PLATES, COMPLETE WITH RAIL CLAMP ASSEMBLIES WELDED TO PLATES.
2	HEEL BLOCK ASSEMBLIES, COMPLETE WITH BOLTS, NUTS AND WASHERS.	42	INSULATING PADS FOR SPECIAL PLATES, 10-SP-2 THRU 10-SP-16.
2	SEPARATOR BLOCKS, COMPLETE WITH BOLTS, NUTS AND WASHERS.	84	SPECIAL PLATE ANCHORAGE ASSEMBLIES FOR SPECIAL PLATES 10-SP-2 THRU 10-SP-16.
1	10-SP-2 SPECIAL INSULATED 3 PIECE SWITCH GAUGE PLATE, COMPLETE WITH ADJUSTABLE RAIL BRACES AND RAIL CLAMP ASSEMBLIES WELDED TO PLATE, GAUGE PLATE INSULATION, BOLTS AND NUTS.		
1 EA	10-SP-3 AND 10-SP-4 SPECIAL INSULATED 3 PIECE SWITCH GAUGE PLATES, COMPLETE WITH ADJUSTABLE RAIL BRACES AND RISER PLATES WELDED TO PLATE, GAUGE PLATE INSULATION, BOLTS AND NUTS.		
6	10-SP-5 SPECIAL SWITCH PLATES, COMPLETE WITH ADJUSTABLE RAIL BRACES, RISER PLATES AND RAIL CLAMP ASSEMBLIES WELDED TO PLATES.		
8	10-SP-6 SPECIAL SWITCH PLATES, COMPLETE WITH RISER PLATES AND RAIL CLAMP ASSEMBLIES WELDED TO PLATES.		
2	10-SP-7 SPECIAL SWITCH PLATES, COMPLETE WITH RISER PLATES, ADJUSTABLE RAIL BRACES AND RAIL CLAMP ASSEMBLIES WELDED TO PLATES.		



REV.	DATE	BY	SUB.	APP.	DESCRIPTION

DESIGNED BY
L.D. Johnson

DRAWN BY
R.S. Meyer

CHECKED BY
R.T. Baker

IN CHARGE
Joseph B. Valentin

DATE
15 JUL 85

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

SUBMITTED *Joseph B. Valentin*

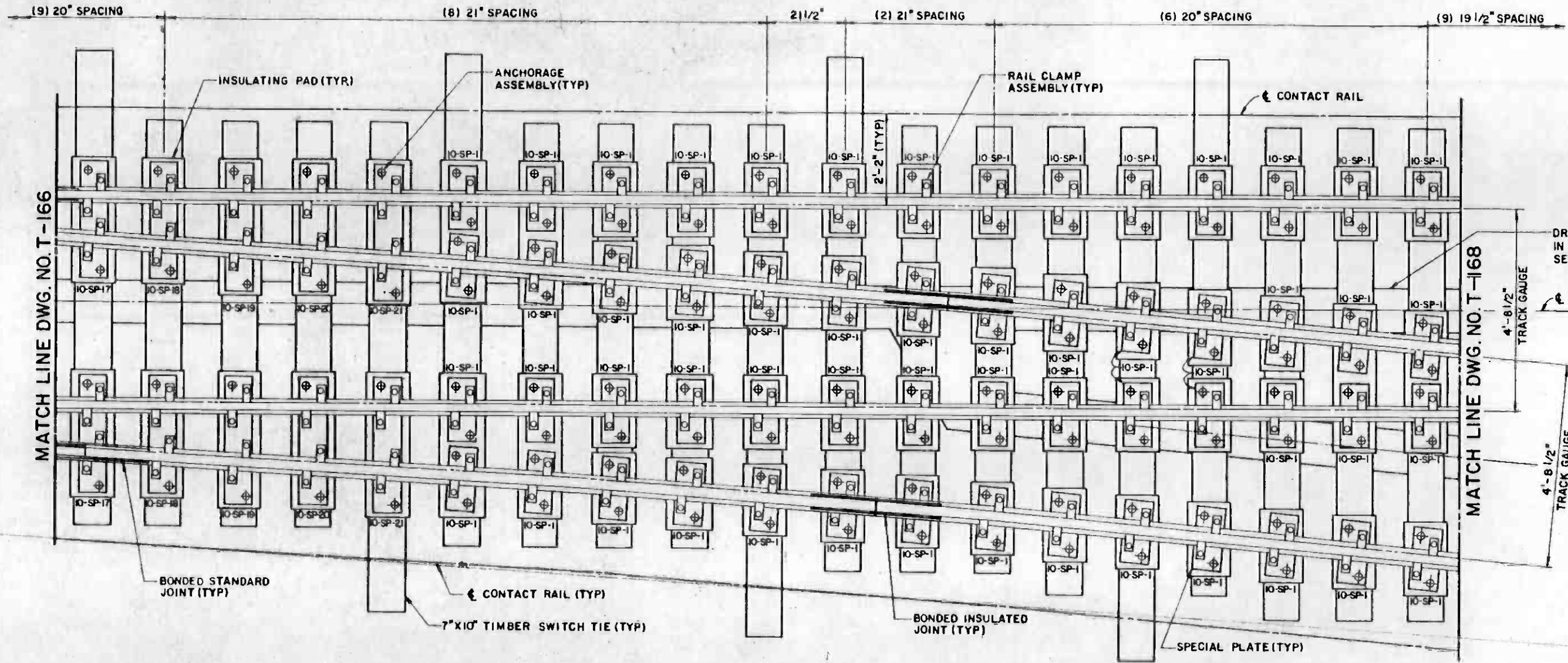
APPROVED

LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION

NO. 10 LATERAL SWITCH
DIRECT FIXATION

CONTRACT NO. A 610	REV.
DRAWING NO. T-166	
SCALE 3/4" = 1'-0"	
SHEET NO. A620/277	

MATCH LINE DWG. NO. T-167



PLAN

**NO. 10 LATERAL TURNOUT
CLOSURE RAIL SECTION-DIRECT FIXATION
BILL OF MATERIAL**

QTY.	DESCRIPTION
2EA.	10-SP-17 THRU 10-SP-21 SPECIAL PLATES, COMPLETE WITH RAIL CLAMP ASSEMBLIES WELDED TO PLATES.
10	INSULATING PADS FOR SPECIAL PLATES 10-SP-17 THRU 10-SP-21.
20	SPECIAL PLATE ANCHORAGE ASSEMBLIES FOR SPECIAL PLATES 10-SP-17 THRU 10-SP-21 (TWO PER SPECIAL PLATE)

NOTES:

1. FOR ADDITIONAL INFORMATION, SEE NO 10 LATERAL TURNOUT DWG. NO. T-165.
2. RIGHT HAND TURNOUT CLOSURE RAIL SECTION. LEFT HAND TURNOUT DETAILS MAY VARY.
3. FOR TIMBER SWITCH TIE INSTALLATION, SEE DWG NO T-165
4. CENTERLINE TRACK DRAINAGE TROUGH VARIES AT CERTAIN LOCATIONS. FOR SECOND POUR CONCRETE DETAILS, SEE DWG NOS T-216 THROUGH T-222
5. FOR SPECIAL PLATE DETAILS, SEE DWG NO T-189
6. RUBBER BOOTS FOR SWITCH TIES NOT SHOWN. FOR DETAILS SEE DWG NO T-248



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY
S. P. Johnson
DRAWN BY
R. G. Hays
CHECKED BY
Paul J. Baker
IN CHARGE
Joseph B. Valania
DATE
15 JUL 85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT



DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

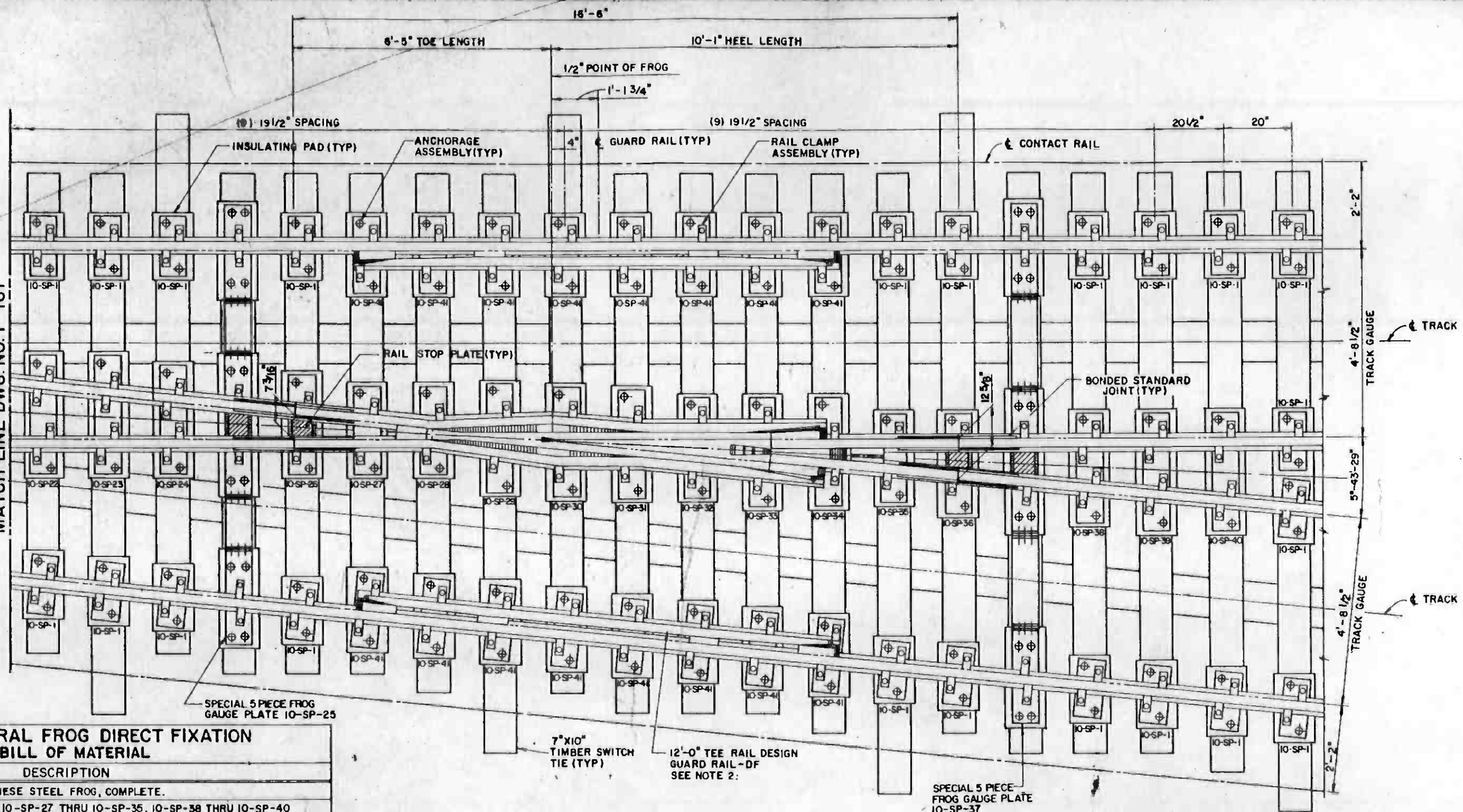
LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION

NO. 10 LATERAL TURNOUT
CLOSURE RAIL SECTION-DIRECT FIXATION

CONTRACT NO.	A 610
DRAWING NO.	T-167
SCALE	3/4" = 1'-0"
SHEET NO.	A620 / 278

REV.	DATE	BY	SUB.	APP.	DESCRIPTION

MATCH LINE DWG. NO. T-167



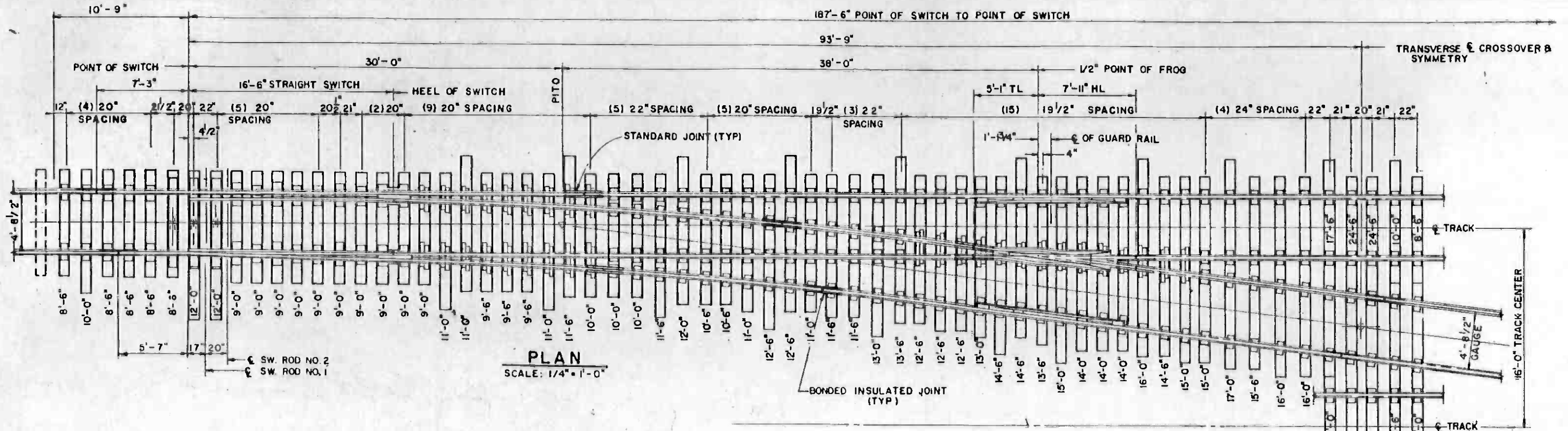
NO. 10 LATERAL FROG DIRECT FIXATION BILL OF MATERIAL	
QTY	DESCRIPTION
1	NO. 10 RAILBOUND MANGANESE STEEL FROG, COMPLETE.
1EA	10-SP-22 THRU 10-SP-24, 10-SP-27 THRU 10-SP-35, 10-SP-38 THRU 10-SP-40 SPECIAL PLATES, COMPLETE, WITH RAIL CLAMP ASSEMBLIES WELDED TO PLATES.
1EA	10-SP-26 AND 10-SP-36 SPECIAL PLATES, COMPLETE WITH RAIL STOP PLATES AND RAIL CLAMP ASSEMBLIES WELDED TO PLATES.
1EA	10-SP-25 AND 10-SP-37 SPECIAL 5 PIECE FROG GAUGE PLATES, COMPLETE, WITH RAIL CLAMP ASSEMBLIES AND RAIL STOP PLATES WELDED TO PLATES, GAUGE PLATE INSULATION, BOLTS & NUTS.
23	INSULATING PADS FOR SPECIAL PLATES 10-SP-22 THRU 10-SP-40
46	SPECIAL PLATE ANCHORAGE ASSEMBLIES. (TWO PER SPECIAL PLATE)

PLAN

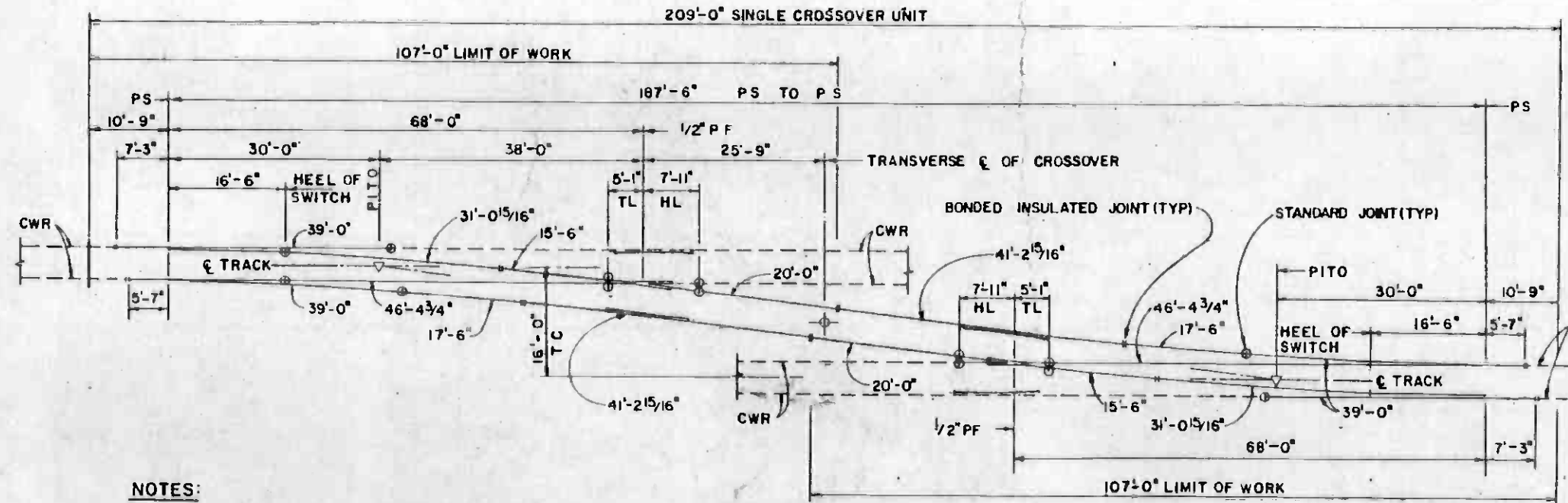
- NOTES:**
- FOR ADDITIONAL NO. 10 FROG DETAILS, SEE AREA PLAN NO. 623.
 - FOR 12'-0" TEE RAIL DESIGN GUARD RAIL-DF -DETAILS SEE DWG. NO. T-186
 - FOR SPECIAL FROG PLATE AND SPECIAL FROG GAUGE PLATE DETAILS, SEE DWG. NO. (S) T-188 AND T-189.
 - FOR SPECIAL PLATE ANCHORAGE ASSEMBLY DETAILS, SEE DWG. NO. T-191
 - RIGHT HAND TURNOUT FROG SECTION SHOWN. LEFT HAND TURNOUT DETAILS MAY VARY.
 - RUBBER BOOTS FOR SWITCH TIES NOT SHOWN. FOR DETAILS SEE DWG. NO. T-238.



	THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.	DESIGNED BY <i>[Signature]</i> DRAWN BY <i>[Signature]</i> CHECKED BY <i>[Signature]</i> IN CHARGE <i>[Signature]</i> DATE 5-JUL-85		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT 	DMJM/PBDD/KC/HWA GENERAL CONSULTANTS APPROVED <i>[Signature]</i>	LA CBD TO NORTH HOLLYWOOD TRACKWORK INSTALLATION NO. 10 LATERAL FROG DIRECT FIXATION	CONTRACT NO. A 610 DRAWING NO. T-168 SCALE 3/4" = 1'-0" SHEET NO. A620/279																									
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>REV.</th> <th>DATE</th> <th>BY</th> <th>APP.</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	REV.	DATE	BY	APP.	DESCRIPTION																											
REV.	DATE	BY	APP.	DESCRIPTION																												



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



RAIL LAYOUT DIAGRAM
SCALE: 3/32" = 1'-0"

SWITCH TIES	
LENGTH	QTY
8'-6"	10
9'-0"	20
9'-6"	6
10'-0"	10
10'-6"	4
11'-0"	10
11'-6"	8
12'-0"	6
12'-6"	10
13'-0"	4
13'-6"	4
14'-0"	6
14'-6"	6
15'-0"	6
15'-6"	2
16'-0"	6
17'-0"	2
17'-6"	2
24'-6"	2
TOTAL	124

BILL OF MATERIAL	
QTY	DESCRIPTION
2	NO. 8 LATERAL SWITCH, COMPLETE, PER CONTRACT DRAWING NO. T-163 (RIGHT HAND)
2	NO. 8 LATERAL SWITCH, COMPLETE, PER CONTRACT DRAWING NO. T-164
4	12'-0" TEE RAIL DESIGN GUARD RAIL BALLASTED, COMPLETE, PER CONTRACT DRAWING NO. T-185
10	BONDED INSULATED JOINTS
12	STANDARD JOINTS
1 SET	7" X 9" TIMBER SWITCH TIES
216	STANDARD TIE PLATES
460	RAIL ANCHORS
6 KEGS	TRACK SPIKES
8 KEGS	LOCK SPIKES
2EA	20'-0", 41'-2 15/16" CROSSOVER CONNECTING RAILS
2EA	31'-0 15/16", 46'-4 3/4", 15'-6" CLOSURE RAILS
2	17'-6" BUFFER RAILS
A/R	CWR

NOTES:
1. TIMBER SWITCH TIE LIST GIVEN IS FOR END APPROACHES ON BOTH ENDS. ADJUST TIMBER TIE INSTALLATION AS REQUIRED FOR SPECIFIC CONTACT RAIL INSTALLATION REQUIREMENTS. SEE CONTRACT DRAWING NO. T-233

REV	DATE	BY	SUB	APP	DESCRIPTION

DESIGNED BY
PTBL
DRAWN BY
R.C. Spier
CHECKED BY
Joseph P. Valerini
IN CHARGE
Joseph P. Valerini
15 JUL 85

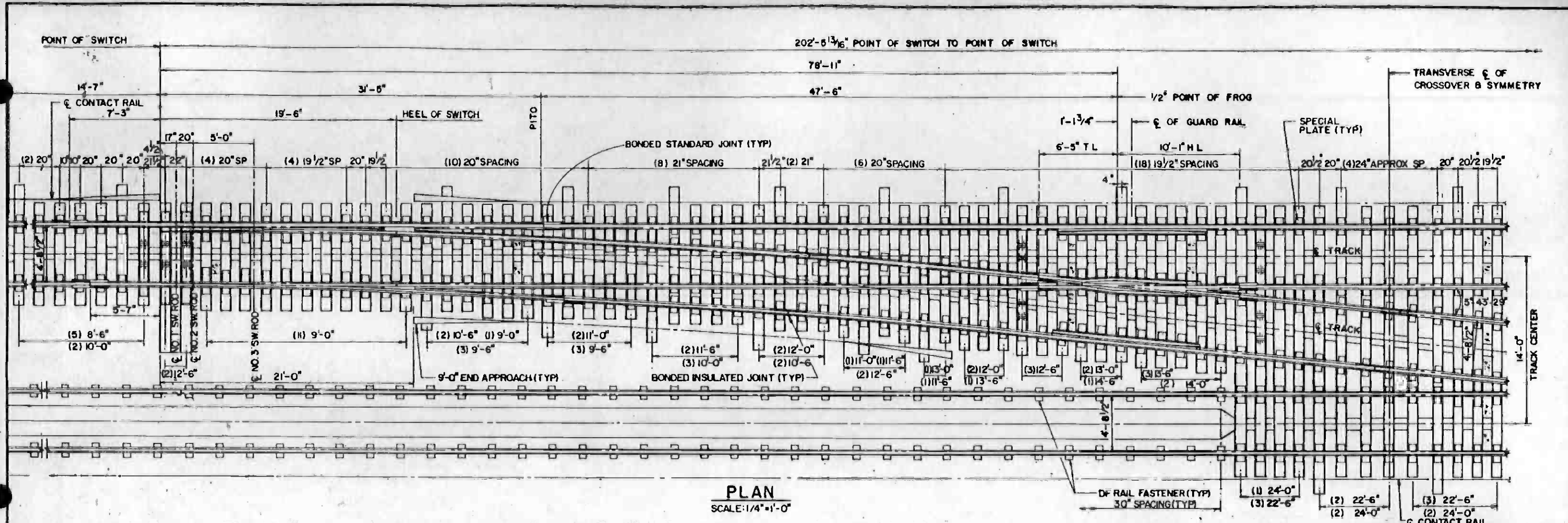
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

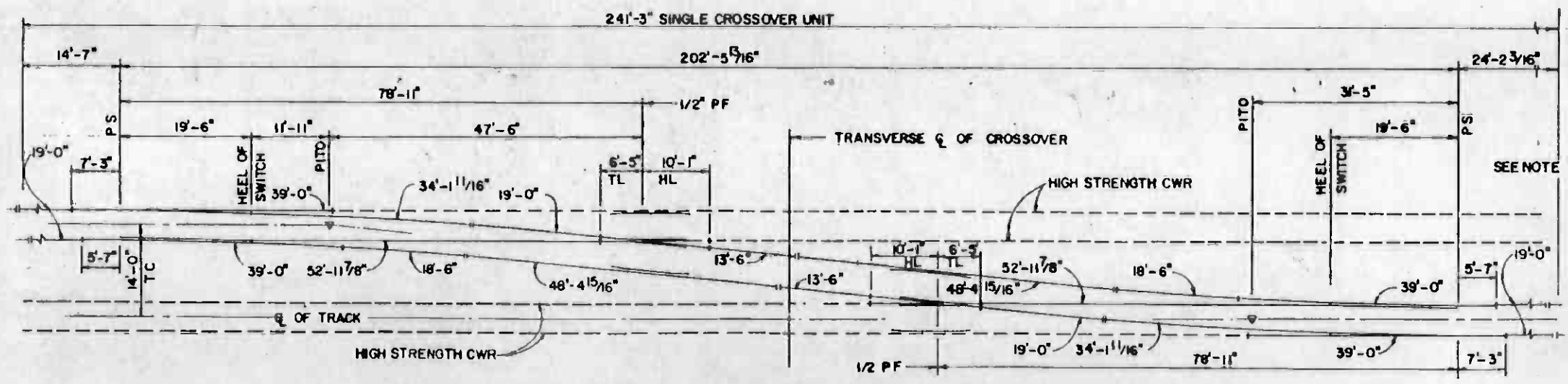
APPROVED

LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION
NO. 8 SINGLE CROSSOVER,
16' T.C., TYPE I BALLASTED

CONTRACT NO.	A610
DRAWING NO.	T-169
SCALE	AS NOTED
SHEET NO.	A620/280



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



RAIL LAYOUT DIAGRAM
SCALE: 3/32" = 1'-0"

SWITCH TIES	
LENGTH	QTY
8'-6"	10
9'-0"	24
9'-6"	12
10'-0"	10
10'-6"	8
11'-0"	6
11'-6"	8
12'-0"	8
12'-6"	14
13'-0"	6
13'-6"	8
14'-0"	4
14'-6"	2
22'-0"	9
24'-0"	8
TOTAL	135

BILL OF MATERIAL	
QTY	DESCRIPTION
2	NO 10 LATERAL SWITCH, DF, COMPLETE PER CONTRACT DRAWING NO T-166
2	NO 10 LATERAL FROG, DF, COMPLETE PER CONTRACT DRAWING NO T-168
2	NO 10 LATERAL TURNOUT CLOSURE RAIL SECTION, DF, COMPLETE PER CONTRACT DRAWING NO T-167
4	12'-0" TEE RAIL DESIGN GUARD RAIL-DF, COMPLETE PER CONTRACT DRAWING NO T-186
10	BONDED INSULATED JOINTS
16	BONDED STANDARD JOINTS
A/R	CWR
226	10-SP-1 SPECIAL PLATES, COMPLETE WITH RAIL CLAMP ASSEMBLIES WELDED TO PLATES
210	INSULATING PADS FOR SPECIAL PLATES, 10-SP-1
452	SPECIAL PLATE ANCHORAGE ASSEMBLIES FOR 10-SP-1 SPECIAL PLATES
1 SET	7"x10" TIMBER SWITCH TIES
2 EA	48'-4 1/16"x13'-6" CROSSOVER CONNECTING RAILS
2	18'-6" BUFFER RAILS
2 EA	34'-1 1/16", 19'-0", 52'-11 7/8" CLOSURE RAILS
4	19'-0" BUFFER RAILS
A/R	RUBBER BOOTS FOR TIMBER SWITCH TIES PER DRAWING NO T-248
100	DF RAIL FASTENER ASSEMBLIES COMPLETE
A/R	SECOND POUR CONCRETE WITHIN X-OVER UNIT

NOTE:
1. DAP TWO 12'-6" SWITCH TIES FOR SWITCH MACHINE INSTALLATION.



REV	DATE	BY	SUN	APP	DESCRIPTION

DESIGNED BY
[Signature]
DRAWN BY
[Signature]
CHECKED BY
[Signature]
IN CHARGE
[Signature]
15 JUL 85

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

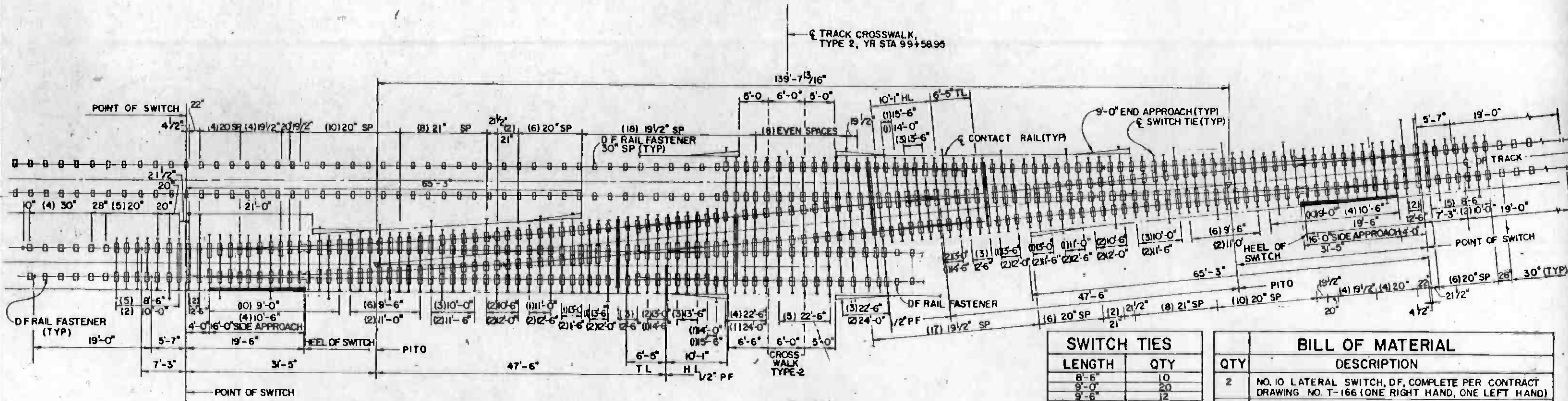
DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

APPROVED: *[Signature]*

LA CBD TO NORTH HOLLYWOOD TRACKWORK INSTALLATION

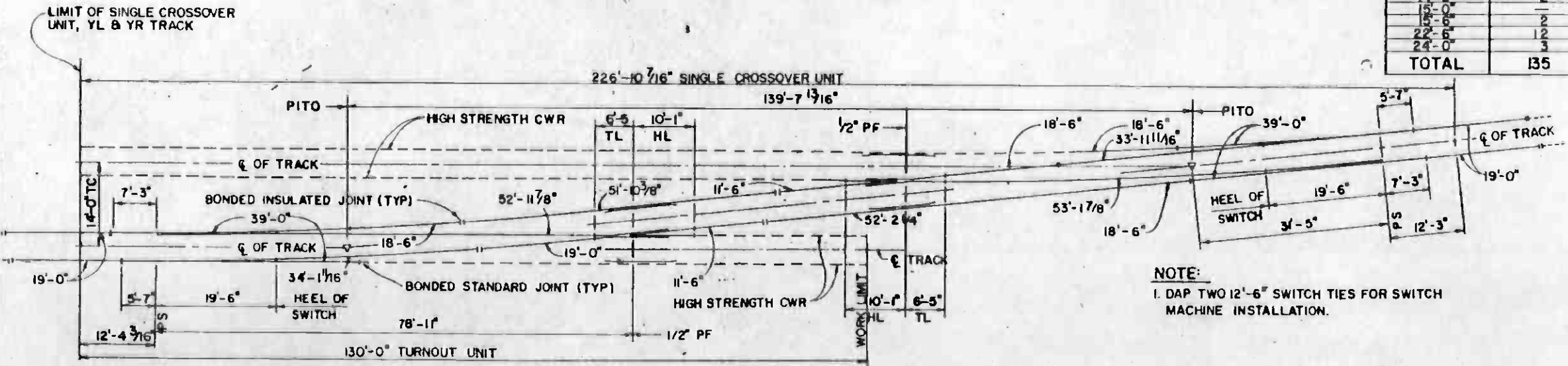
NO. 10 SINGLE CROSSOVER, 14' TC, TYPE I-DIRECT FIXATION

CONTRACT NO. **A610**
DRAWING NO. **T-173**
SCALE **AS NOTED**
SHEET NO. **A620/284**



SWITCH TIES	
LENGTH	QTY
8'-6"	10
9'-0"	20
9'-6"	12
10'-0"	10
10'-6"	12
11'-0"	6
11'-6"	8
12'-0"	14
13'-0"	6
13'-6"	8
14'-0"	2
14'-6"	2
15'-0"	—
15'-6"	2
22'-6"	12
24'-0"	3
TOTAL	135

BILL OF MATERIAL	
QTY	DESCRIPTION
2	NO. 10 LATERAL SWITCH, DF, COMPLETE PER CONTRACT DRAWING NO. T-166 (ONE RIGHT HAND, ONE LEFT HAND)
2	NO. 10 LATERAL FROG, DF, COMPLETE PER CONTRACT DRAWING NO. T-168
2	NO. 10 LATERAL TURNOUT CLOSURE RAIL SECTION, DF, COMPLETE PER CONTRACT DRAWING NO. T-167
4	12'-0" TEE RAIL DESIGN GUARD RAIL-DF, COMPLETE PER CONTRACT DRAWING NO. T-186
17	BONDED STANDARD JOINTS
10	BONDED INSULATED JOINTS
1 SET	7" X 10" TIMBER SWITCH TIES
1 EA	18'-6", 52'-2 1/4", 51'-10 3/8" CROSSOVER CONNECTING RAILS
2	11'-6" CROSSOVER CONNECTING RAILS
1 EA	18'-6", 33'-11 1/16", 53'-17 7/8", 34'-11 1/16", 52'-11 7/8", 19'-0" CLOSURE RAILS
2	18'-6" BUFFER RAILS
4	19'-0" BUFFER RAILS
221	10-SP-1 SPECIAL PLATES, COMPLETE WITH RAIL CLAMP ASSEMBLIES WELDED TO PLATES
205	INSULATING PADS FOR 10-SP-1 SPECIAL PLATES
442	SPECIAL PLATE ANCHORAGE ASSEMBLIES FOR 10-SP-1 SPECIAL PLATES
A/R	CWR WITHIN SINGLE CROSSOVER UNIT
A/R	RUBBER BOOTS FOR TIMBER SWITCH TIES PER DWG NO. T-248
62	DF RAIL FASTENER
A/R	SECOND POUR CONCRETE WITHIN SINGLE X-OVER UNIT



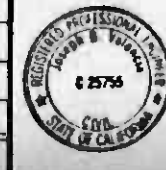
NOTE:
1. DAP TWO 12'-6" SWITCH TIES FOR SWITCH MACHINE INSTALLATION.

RAIL LAYOUT DIAGRAM
SCALE: 3/32" = 1'-0"



REV	DATE	BY	SUB	APP	DESCRIPTION

DESIGNED BY
[Signature]
DRAWN BY
[Signature]
CHECKED BY
[Signature]
IN CHARGE
[Signature]
DATE
15 JUL 85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

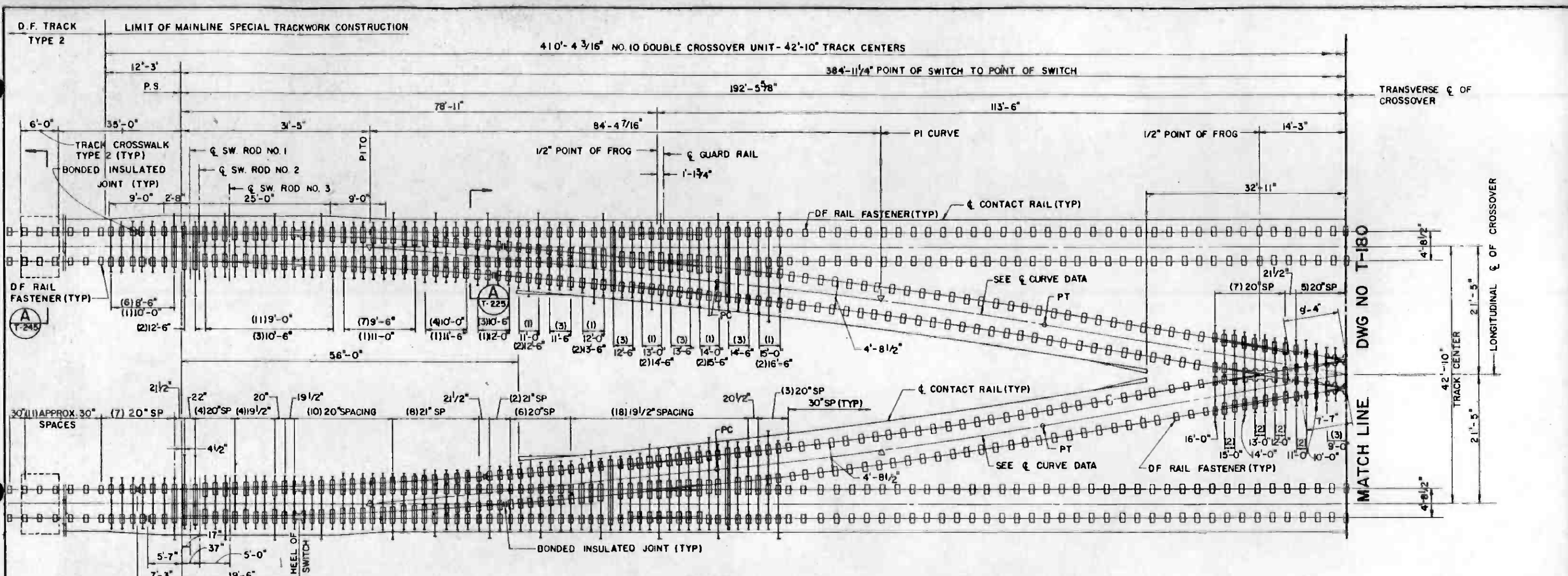
DMJM/PBOD/KE/MWA
GENERAL CONSULTANTS

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LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION

NO 10 SINGLE CROSSOVER,
14' TC., TYPE 2 DIRECT FIXATION

CONTRACT NO. A 610
DRAWING NO. T-174
SCALE AS NOTED
SHEET NO. A620/285

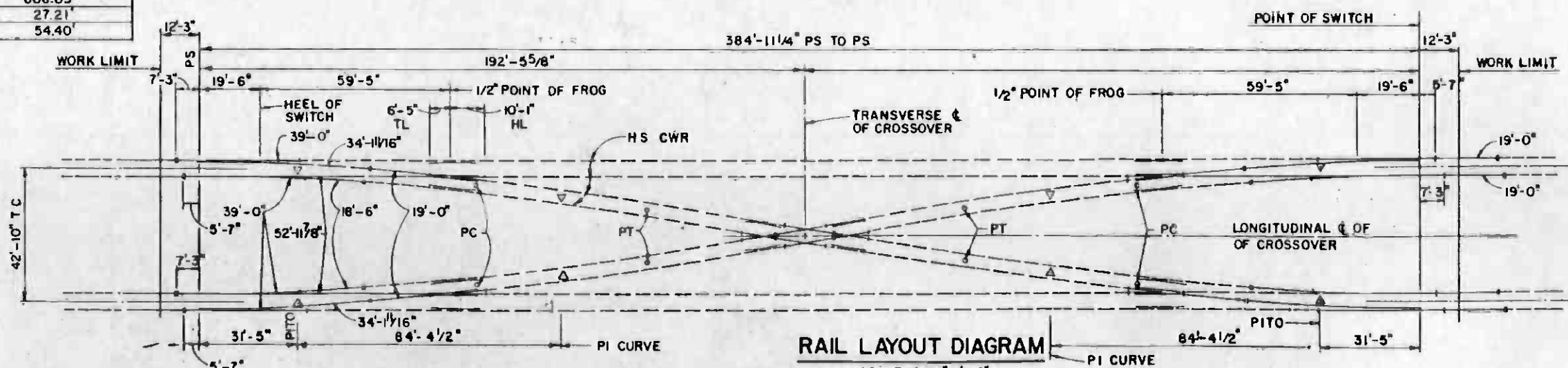


PLAN
SCALE: 1/8" = 1'-0"

CURVE DATA

Δ	3° 52' 01"
R	806.09'
T	27.21'
L	54.40'

NOTES:
1. FOR ADDITIONAL DETAILS, SEE DRAWING NOS T-180 & T-165



RAIL LAYOUT DIAGRAM
SCALE: 3/64" = 1'-0"



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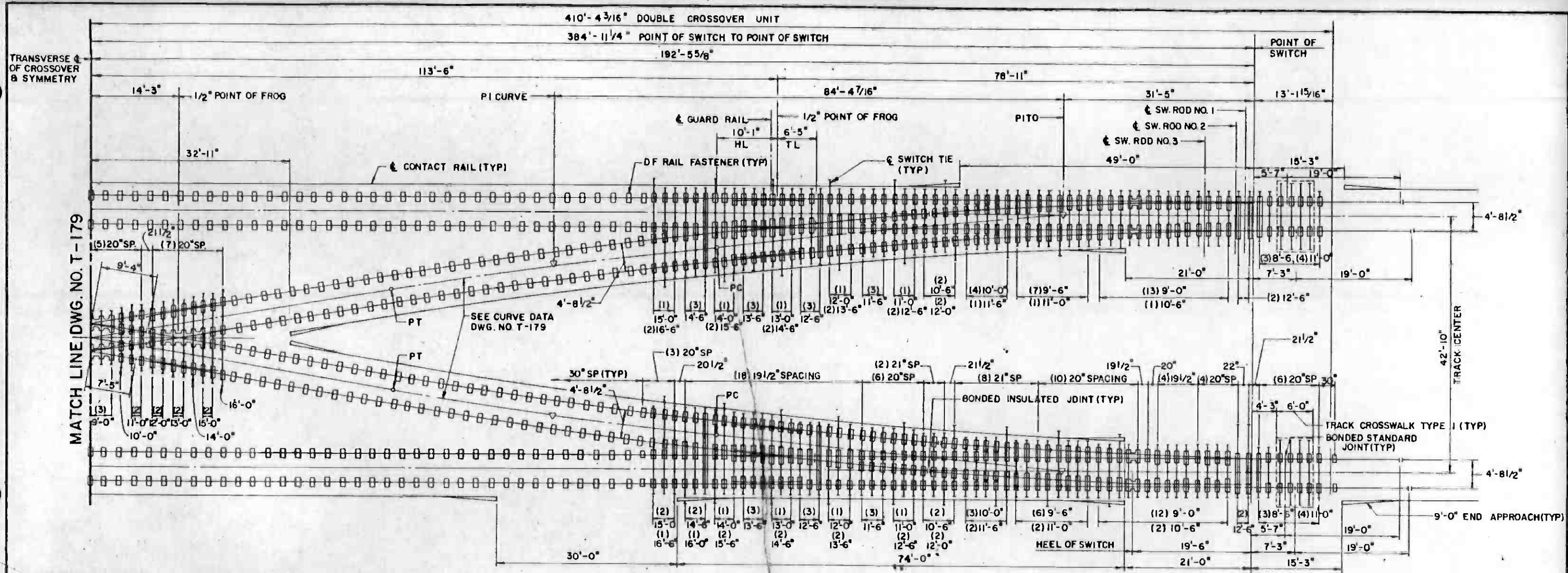
**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

SUBMITTED *[Signature]* APPROVED

**LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION**
NO. 10 DOUBLE CROSSOVER, 42'-10" TC
DIRECT FIXATION
SHEET 1 OF 2

CONTRACT NO.	A 610
DRAWING NO.	T-179
SCALE	AS NOTED
SHEET NO.	A620/290



**NO. 10 DOUBLE CROSSOVER 42'-10" TRACK CENTERS
BILL OF MATERIAL**

QTY.	DESCRIPTION
4	NO. 10 LATERAL SWITCH, DF, TWO RIGHT HAND AND TWO LEFT HAND, COMPLETE PER DWG. NO. T-166
4	NO. 10 LATERAL FROG, DF, COMPLETE PER DRAWING NO. T-168.
4	NO. 10 LATERAL TURNOUT CLOSURE RAIL SECTION, DF, COMPLETE PER DWG. T-167
8	12'-0" TEE RAIL DESIGN GUARD RAIL, DF, COMPLETE PER DRAWING NO. T-186
1	DIAMOND DETAILS, 19°-11'-00", DF, COMPLETE PER DRAWING NO. T-183
36	BONDED STANDARD JOINT
20	BONDED INSULATED JOINT
376	10-SP-1 SPECIAL PLATES, COMPLETE WITH RAIL CLAMP ASSEMBLIES WELDED TO PLATES
752	SPECIAL PLATE ANCHORAGE ASSEMBLIES FOR 10-SP-1 SPECIAL PLATES (TWO PER PLATE)
348	INSULATING PADS FOR 10-SP-1 SPECIAL PLATES
1 SET	7"X10" TIMBER SWITCH TIES
A/R	HIGH STRENGTH CWR WITHIN DOUBLE CROSSOVER UNIT
4 EA	34'-11 1/16", 19'-0", 52'-11 7/8" CLOSURE RAILS
4 EA	18'-6", 19'-0" BUFFER RAILS
532	DIRECT FIXATION RAIL FASTENERS
A/R	RUBBER BOOTS FOR TIMBER SWITCH TIES PER DWG. NO. T-248
A/R	SECOND POUR CONCRETE WITHIN DOUBLE CROSSOVER UNIT

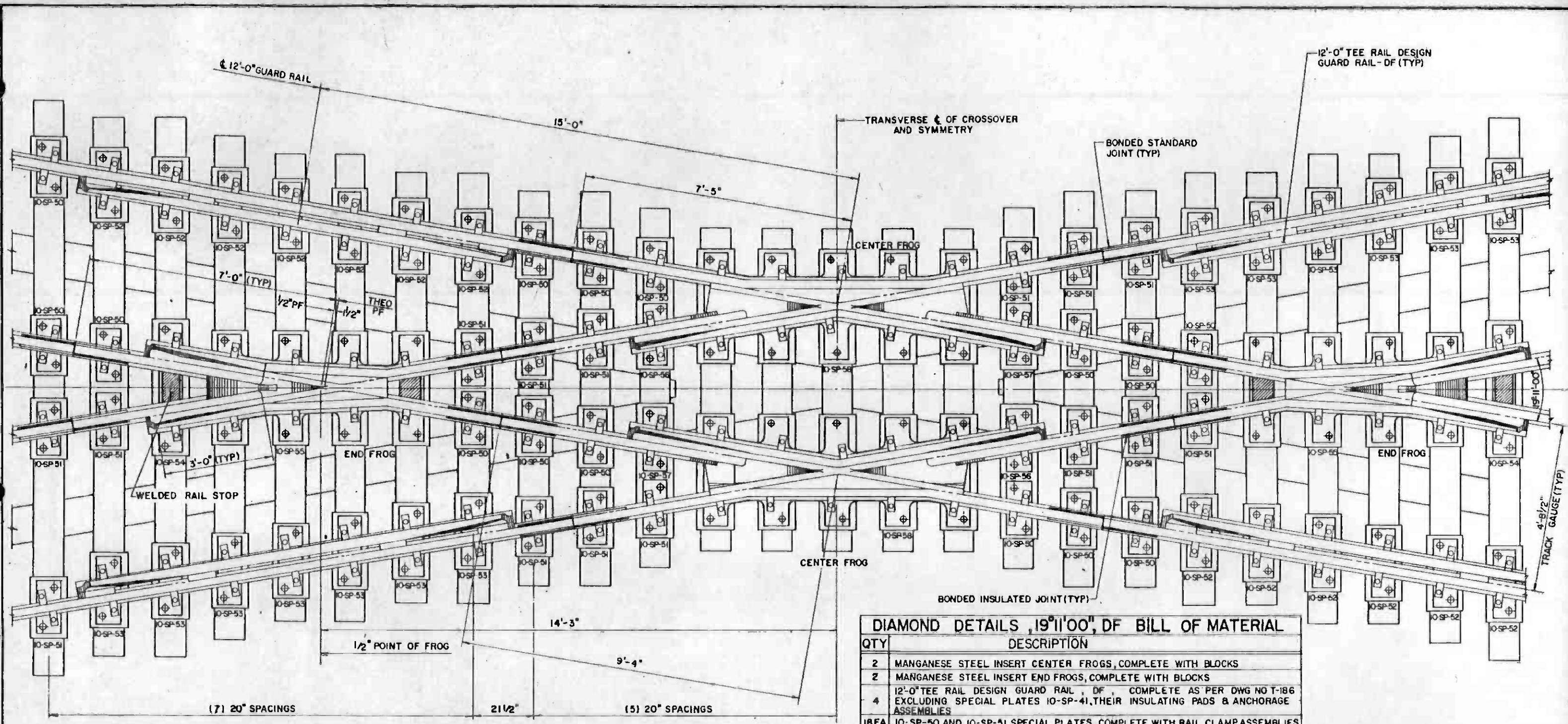
SWITCH TIES	
LENGTH	QTY
8'-6"	18
9'-0"	52
9'-6"	27
10'-0"	19
10'-6"	19
11'-0"	21
11'-6"	17
12'-0"	14
12'-6"	28
13'-0"	8
13'-6"	20
14'-0"	6
14'-6"	19
15'-0"	9
15'-6"	8
16'-0"	3
16'-6"	7
TOTAL	295

PLAN

- NOTE:**
- FOR RAIL LAYOUT DIAGRAM, SEE DWG. NO. T-179
 - DAP EIGHT 12'-6" SWITCH TIES FOR SWITCH MACHINE.



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DESIGNED BY: <i>[Signature]</i> DRAWN BY: <i>[Signature]</i> CHECKED BY: <i>[Signature]</i> IN CHARGE: <i>[Signature]</i> DATE: 15 JUL 85		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT DM-1/PBOD/KE/HWA GENERAL CONSULTANTS		LA CBD TO NORTH HOLLYWOOD TRACKWORK INSTALLATION NO. 10 DOUBLE CROSSOVER, 42'-10" TC DIRECT FIXATION SHEET 2 OF 2		CONTRACT NO. A 610 DRAWING NO. T-180 SCALE 1/8"=1'-0" SHEET NO. A620/291			
REV	DATE	BY	SUB	APP	DESCRIPTION	REV	DATE	BY	SUB	APP	DESCRIPTION



PLAN

NOTES:

- 1. 4'-8 1/2" TRACK GAUGE SHALL BE MAINTAINED THROUGHOUT THE CROSSOVER.
- 2. FOR ADDITIONAL DETAILS SEE AREA PLANS 700H AND 750.
- 3. FOR SPECIAL PLATE DETAILS SEE DWG NO T-190
- 4. RUBBER BOOTS FOR TIMBER SWITCH TIES ARE NOT SHOWN. FOR ADDITIONAL DETAILS SEE DWG NO T-248

DIAMOND DETAILS, 19°11'00", DF BILL OF MATERIAL	
QTY	DESCRIPTION
2	MANGANESE STEEL INSERT CENTER FROGS, COMPLETE WITH BLOCKS
2	MANGANESE STEEL INSERT END FROGS, COMPLETE WITH BLOCKS
4	12'-0" TEE RAIL DESIGN GUARD RAIL, DF, COMPLETE AS PER DWG NO T-186 EXCLUDING SPECIAL PLATES 10-SP-41, THEIR INSULATING PADS & ANCHORAGE ASSEMBLIES
18 EA.	10-SP-50 AND 10-SP-51 SPECIAL PLATES, COMPLETE WITH RAIL CLAMP ASSEMBLIES WELDED TO PLATES.
14 EA.	10-SP-52 AND 10-SP-53 SPECIAL GUARD RAIL PLATES, COMPLETE WITH RAIL CLAMP ASSEMBLIES WELDED TO PLATES.
2	10-SP-54 SPECIAL END FROG PLATES, COMPLETE WITH RAIL STOP PLATES AND RAIL CLAMP ASSEMBLIES WELDED TO PLATES.
2	10-SP-55 SPECIAL END FROG PLATES, COMPLETE WITH RAIL STOP PLATE AND RAIL CLAMP ASSEMBLIES WELDED TO PLATES.
2 EA.	10-SP-56 AND 10-SP-57 SPECIAL PLATES, COMPLETE WITH RAIL CLAMP ASSEMBLIES WELDED TO PLATES.
2	10-SP-58 SPECIAL CENTER FROG PLATES, COMPLETE WITH RAIL CLAMP ASSEMBLIES WELDED TO PLATES.
64	INSULATING PADS FOR SPECIAL PLATES.
176	SPECIAL PLATE ANCHORAGE ASSEMBLIES, PER DWG NO T-191



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SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

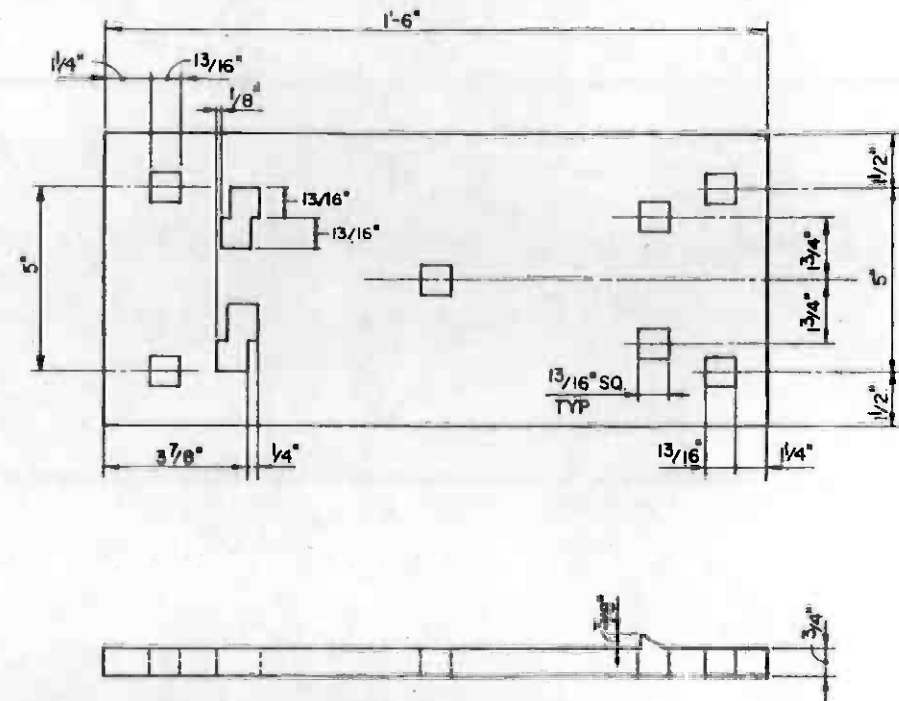
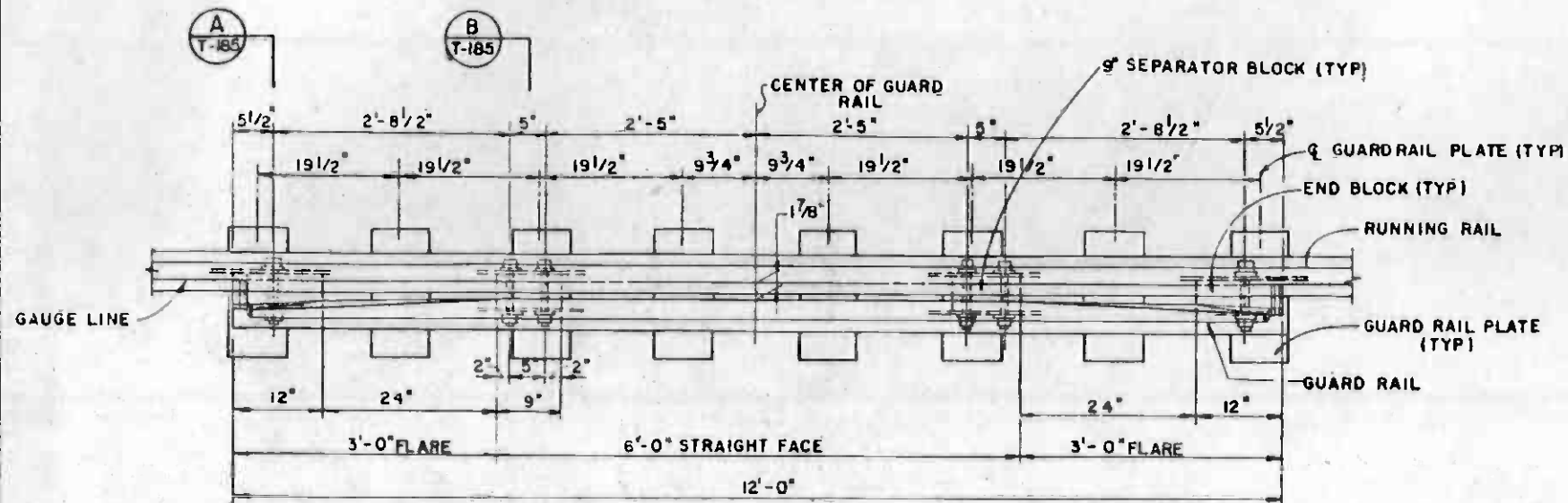
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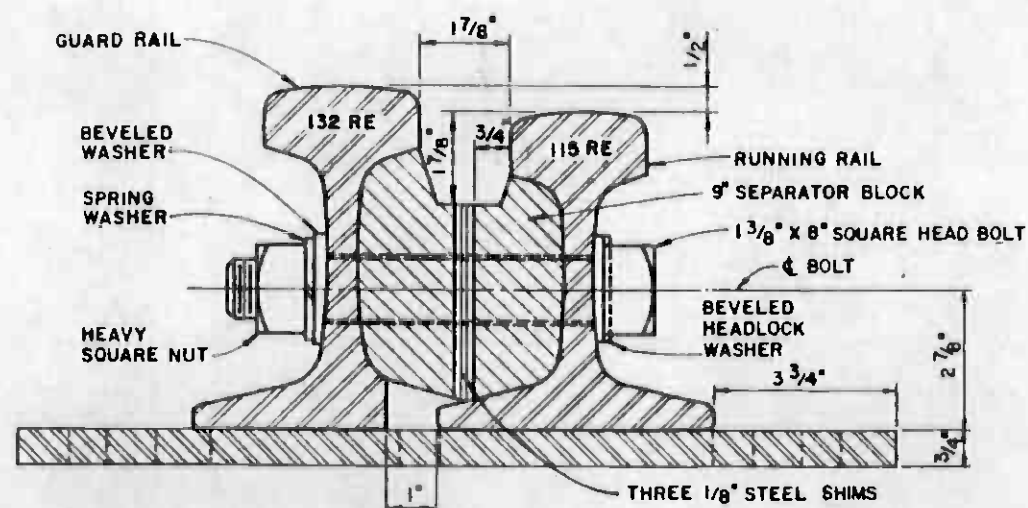
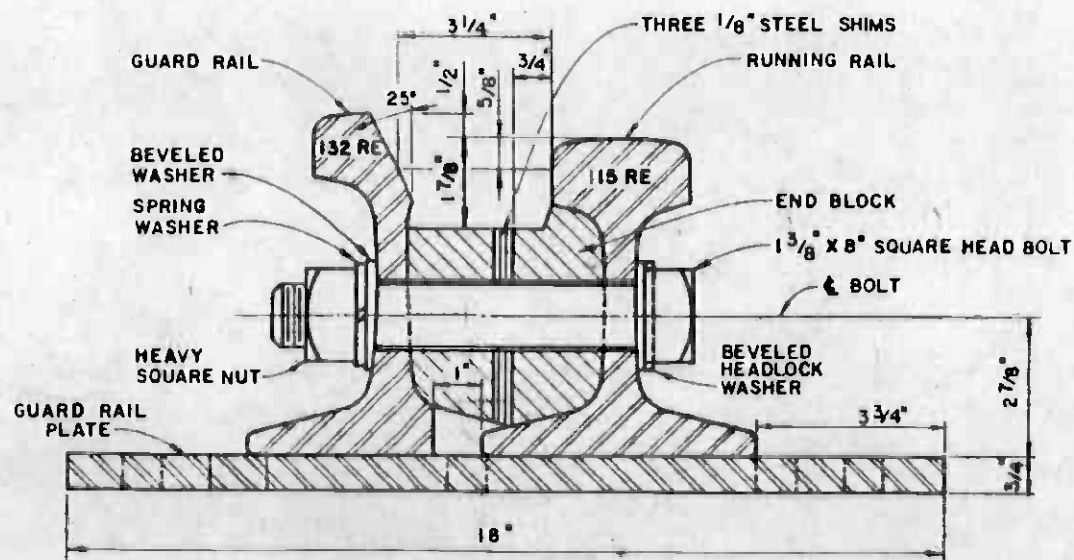
LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION

DIAMOND DETAILS, 19°11'00"
DIRECT FIXATION

CONTRACT NO.	A610
DRAWING NO.	T-183
SCALE	3/4" = 1'-0"
SHEET NO.	A620/294



BILL OF MATERIAL	
QTY	DESCRIPTION
1	12'-0" TEE RAIL DESIGN GUARD RAIL
1EA	END BLOCKS, LEFT AND RIGHT HAND, WITH SHIMS
2	SEPARATOR BLOCKS, WITH SHIMS
6 EA	1 3/8" X 8" SQUARE HEAD BOLT, SQUARE NUT, SPRING WASHER, BEVELED WASHER AND BEVELED HEADLOCK
8	8" X 3/4" X 18" GUARD RAIL PLATES



- NOTES:
1. ENDS OF GUARD RAIL AND END BLOCKS SHALL BE BEVELED AT 45° ANGLE PER AREA PLAN NO. 504.
 2. END AND SEPARATOR BLOCK STEEL SHIMS SHALL BE FURNISHED 1/8" THICK, THREE PER BLOCK, AND SHALL BE OF THE SAME CONFIGURATION AS THE END AND SEPARATOR BLOCKS.
 3. FOR ADDITIONAL DETAILS SEE AREA PLAN NO. 504, GUARD RAILS, TEE RAIL DESIGN WITH PLANED FLARES AND FLAT PLATES.



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Joseph B. Valencia
DATE
15 JUL 85

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

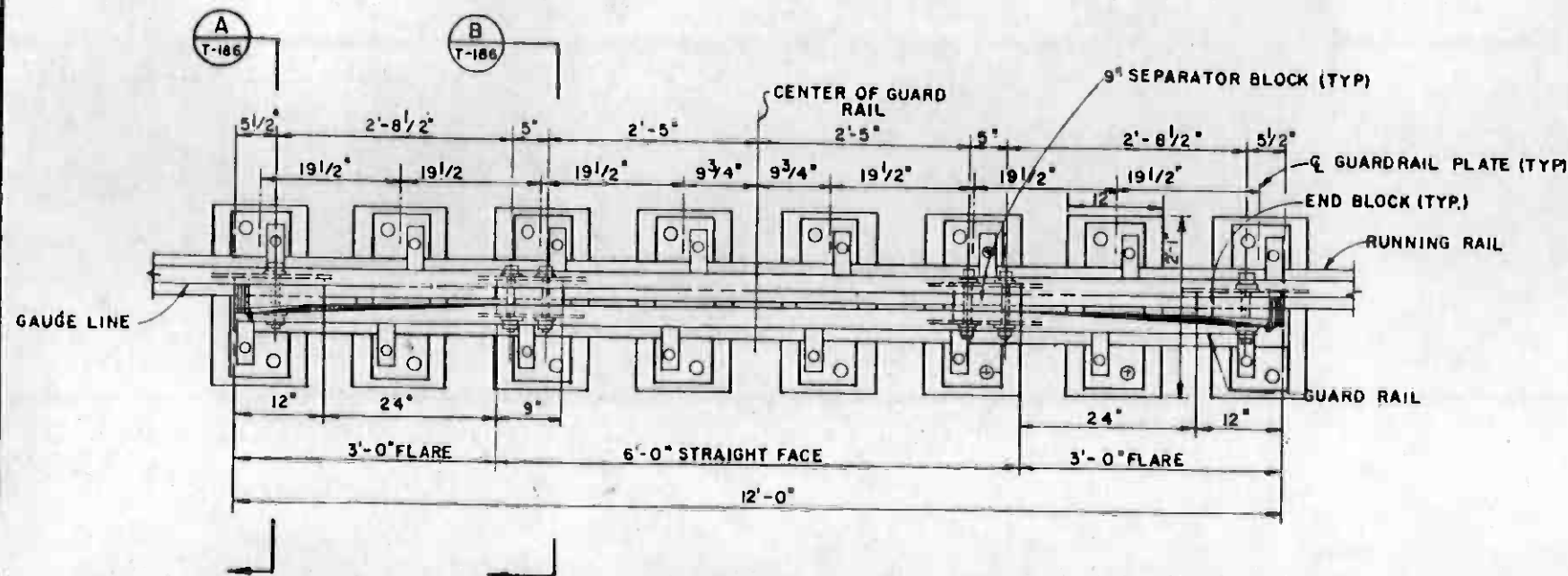
DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

SUBMITTED *Joseph B. Valencia*
APPROVED

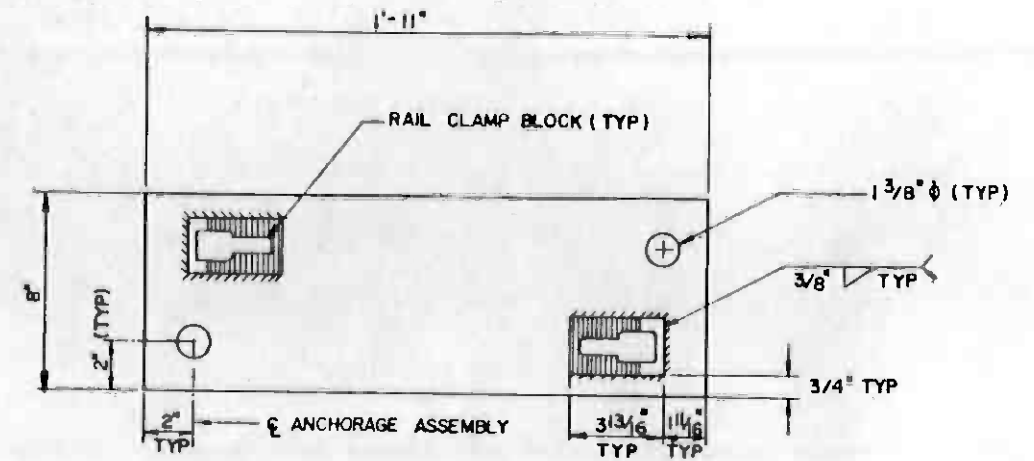
LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION

12'-0" TEE RAIL DESIGN GUARD RAIL
BALLASTED

CONTRACT NO. A-610
DRAWING NO. T-185
SCALE AS NOTED
SHEET NO. A620/295



PLAN
SCALE: 1" = 1'-0"

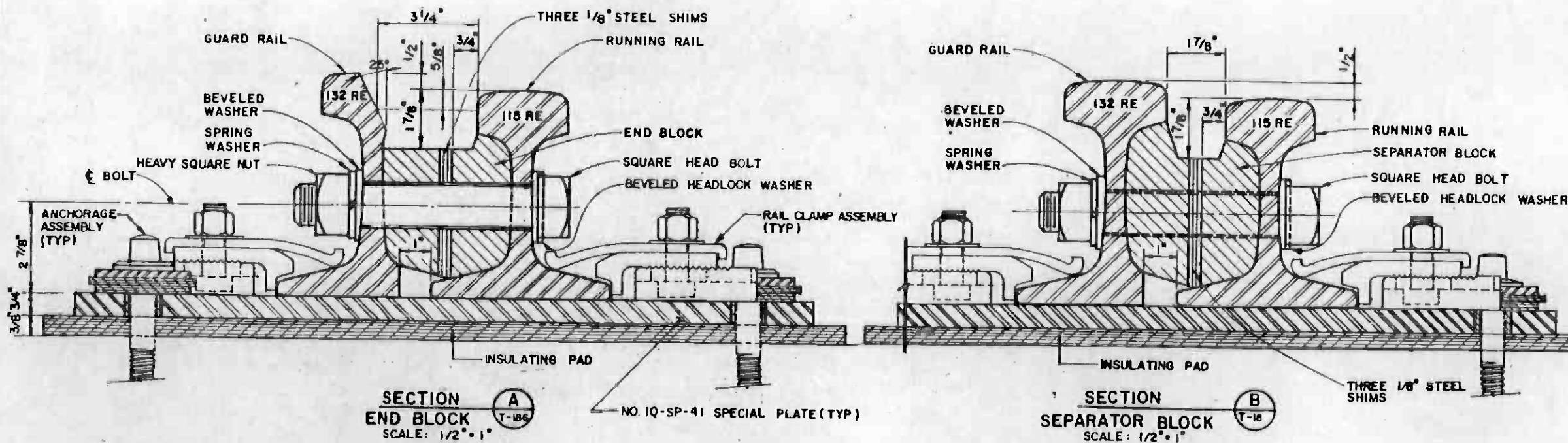


SPECIAL PLATE NO. 10-SP-41 DETAIL
NTS

12'-0" TEE RAIL DESIGN GUARD RAIL-DIRECT FIXATION

BILL OF MATERIAL

QTY.	DESCRIPTION
1	12'-0" TEE RAIL DESIGN GUARD RAIL
1EA	END BLOCKS, LEFT AND RIGHT HAND, WITH SHIMS
2	SEPARATOR BLOCKS, WITH SHIMS
6EA	1 3/8" X 8" SQUARE HEAD BOLT, SQUARE NUT, SPRING WASHER, BEVELED WASHER AND BEVELED HEADLOCK
8	SPECIAL PLATE NO. 10-SP-41 COMPLETE WITH RAIL CLAMP ASSEMBLIES WELDED TO PLATE
8	INSULATING PADS FOR SPECIAL PLATES
16	SPECIAL PLATE ANCHORAGE ASSEMBLIES



SECTION A
END BLOCK
SCALE: 1/2" = 1"

SECTION B
SEPARATOR BLOCK
SCALE: 1/2" = 1"

- NOTES:
1. ENDS OF GUARD RAIL AND END BLOCKS SHALL BE BEVELED AT 45° ANGLE PER AREA PLAN NO. 504.
 2. END AND SEPARATOR BLOCK STEEL SHIMS SHALL BE FURNISHED IN THICKNESS OF 1/8", THREE PER BLOCK, AND SHALL BE OF THE SAME CONFIGURATION AS THE END AND SEPARATOR BLOCKS.
 3. FOR ADDITIONAL DETAILS SEE AREA PLAN NO. 504, GUARD RAILS, TEE RAIL DESIGN WITH PLANED FLARES
 4. FOR RAIL CLAMP ASSEMBLY DETAILS, SEE DWG NO T-192
 5. FOR ANCHORAGE ASSEMBLY DETAILS, SEE DWG NO T-191

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REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA
C 25755

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

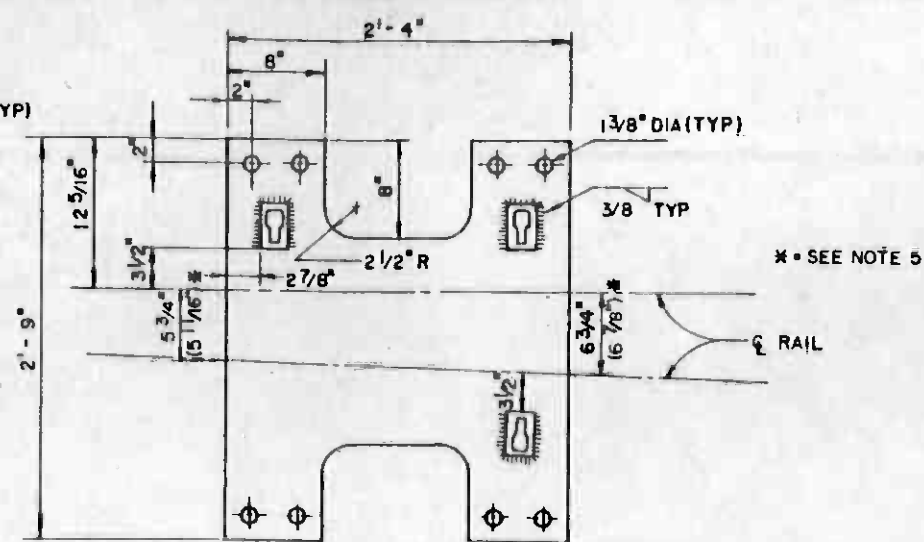
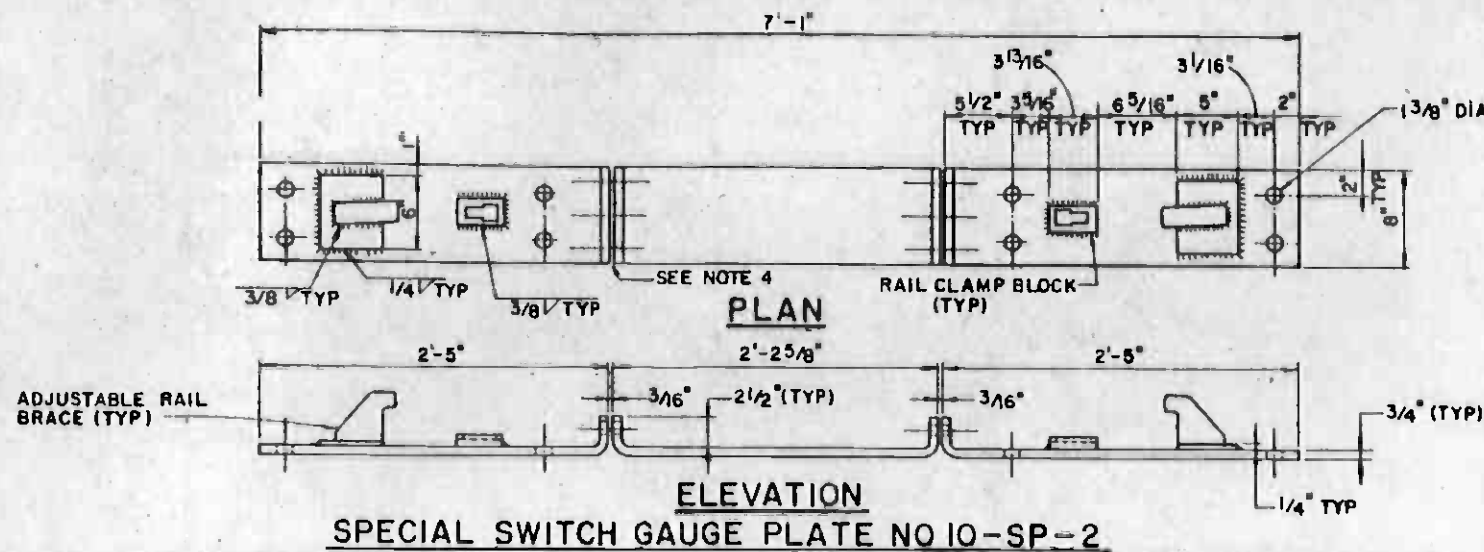
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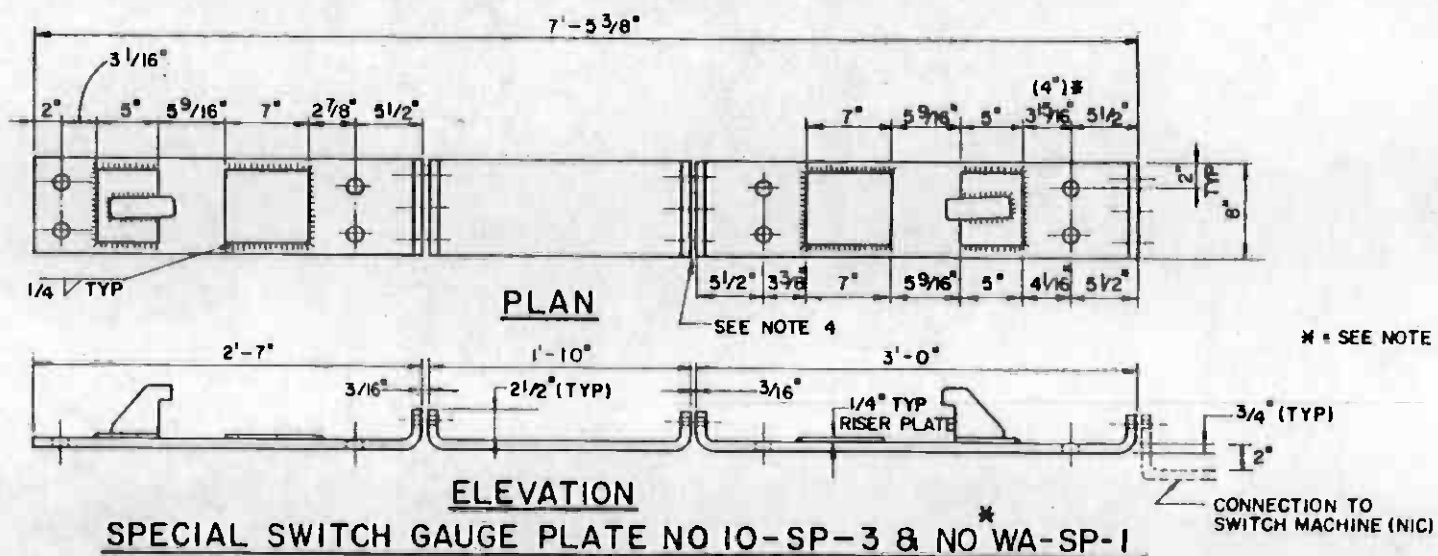
LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION

12'-0" TEE RAIL DESIGN GUARD RAIL -
DIRECT FIXATION

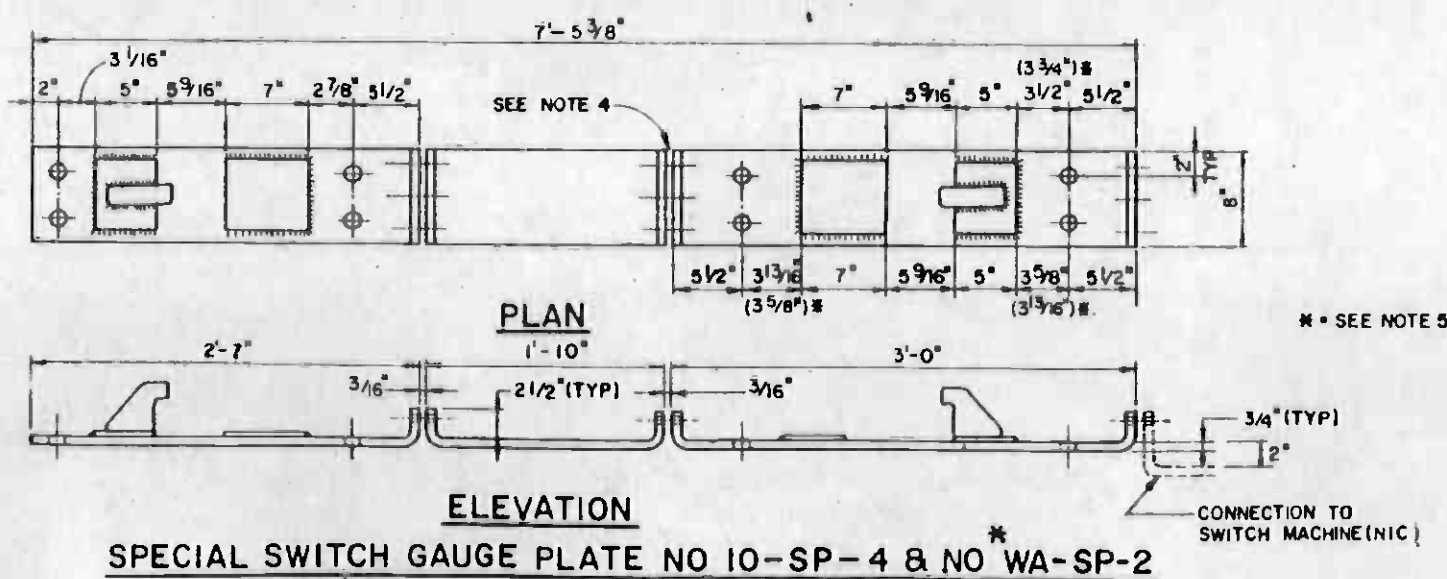
PROJECT NO. A610
DRAWING NO. T-186
SCALE AS NOTED
SHEET NO. A620/296



SPECIAL HEEL PLATE
 NOS. 10-SP-9LH & *WA-SP-3LH SHOWN
 NOS. 10-SP-9RH & *WA-SP-3RH SIMILAR



SPECIAL SWITCH GAUGE PLATE NO 10-SP-3 & NO WA-SP-1



SPECIAL SWITCH GAUGE PLATE NO 10-SP-4 & NO WA-SP-2

NOTES:

1. FOR DETAILS OF SPECIAL PLATE ANCHORAGE ASSEMBLY, SEE DWG NO T-191.
2. FOR DETAILS OF RAIL CLAMP ASSEMBLY, SEE DWG NO T-192.
3. SPECIAL PLATE DETAILS SHOWN ARE FOR RIGHT HAND TURNOUT LEFT HAND TURNOUT PLATES MAY VARY.
4. SPECIAL SWITCH GAUGE PLATE NOS 10-SP-2, 10-SP-3 AND 10-SP-4 ARE INSULATED AS PER AREA PLAN NO.223 DETAIL 4103.
5. WA-SP PLATE DIMENSIONS ARE THE SAME AS FOR THE 10-SP PLATES SHOWN, EXCEPT WHERE INDICATED IN PARENTHESIS.



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SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
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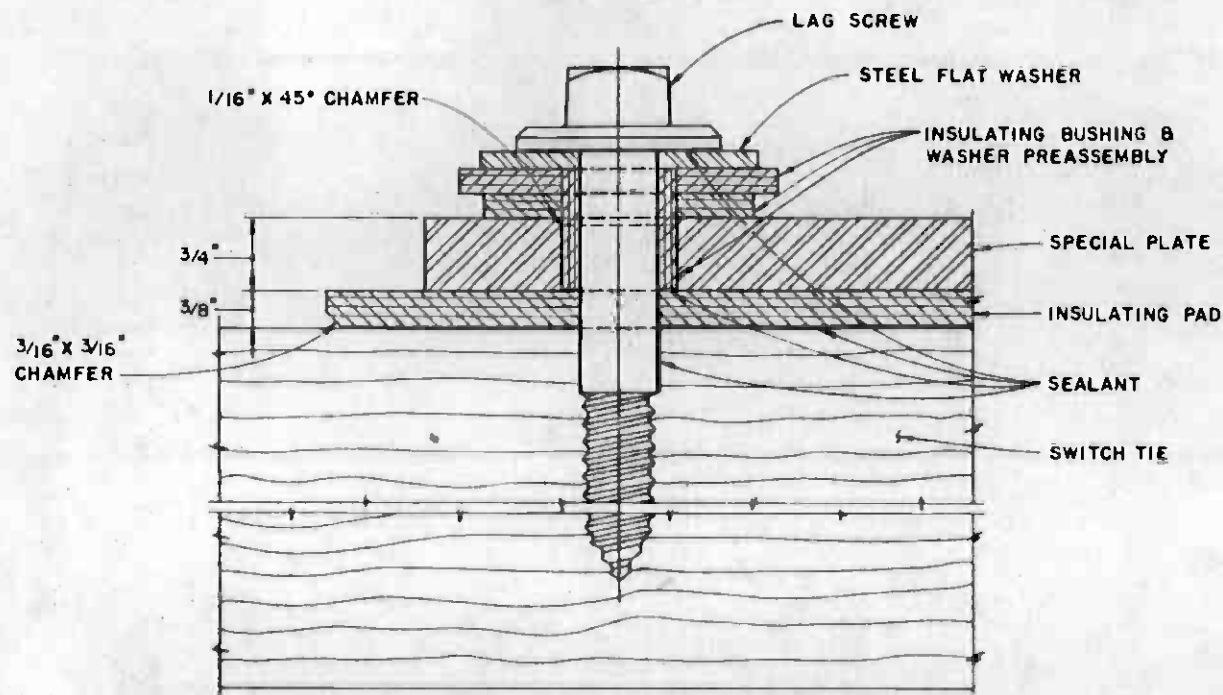
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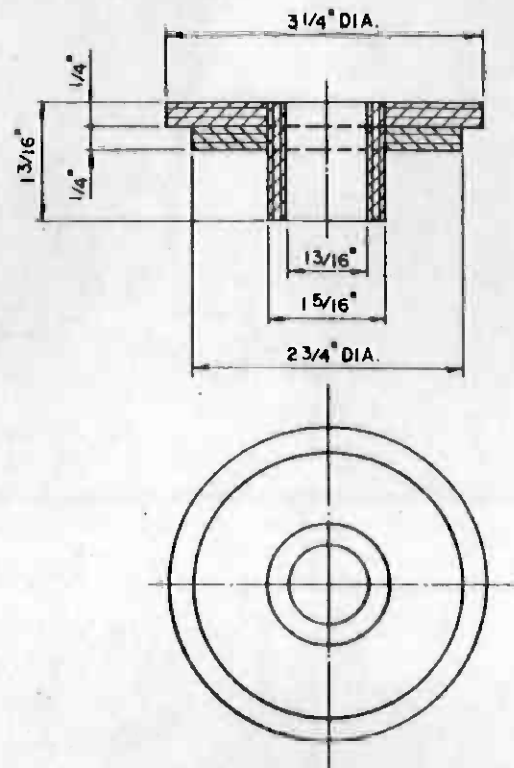
LA CBD TO NORTH HOLLYWOOD
 TRACKWORK INSTALLATION

SPECIAL PLATE DETAILS
 SHEET 1 OF 4

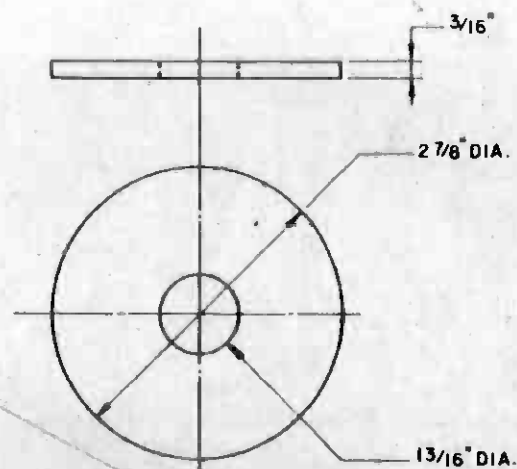
CONTRACT NO.	A 610
DRAWING NO.	T-187
SCALE	NTS
SHEET NO.	A620/297



ANCHORAGE ASSEMBLY DETAIL
FULL SCALE



INSULATING BUSHING & WASHER PREASSEMBLY
FULL SCALE



STEEL FLAT WASHER
FULL SCALE

**SPECIAL PLATE ANCHORAGE ASSEMBLY
BILL OF MATERIAL**

QTY.	DESCRIPTION
1	3/4" X 8" STEEL WASHER-HEAD LAG SCREW
1	INSULATING BUSHING & WASHER PREASSEMBLY, COMPLETE.
1	STEEL FLAT WASHER



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SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
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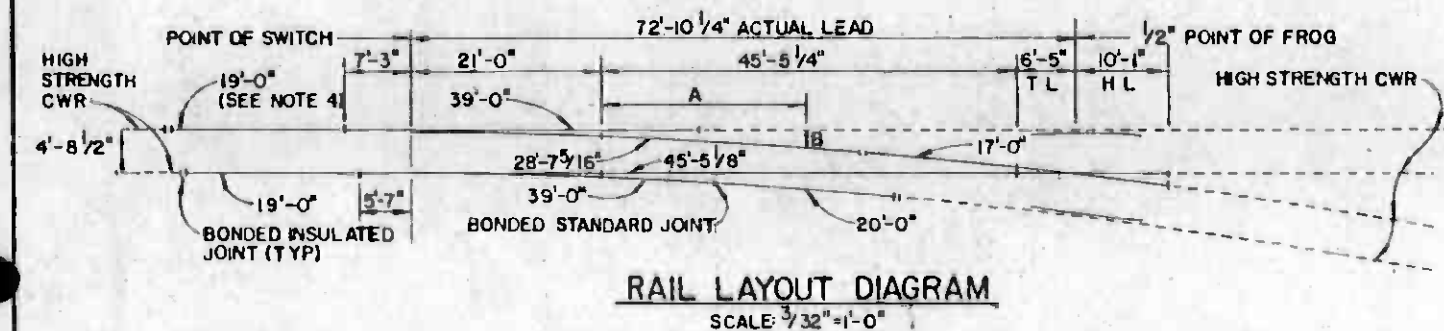
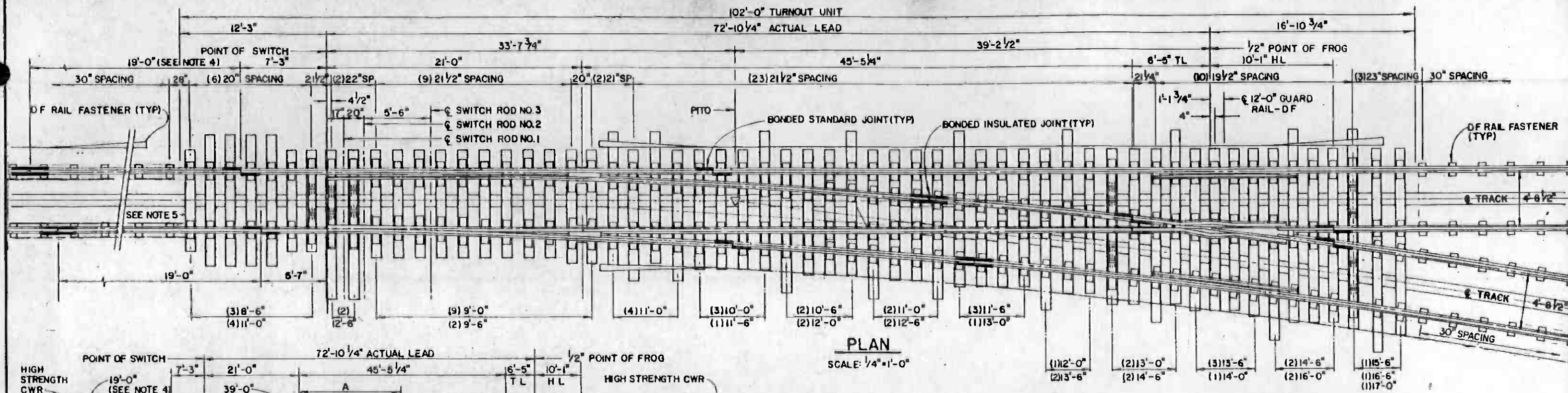
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LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION

SPECIAL PLATE ANCHORAGE ASSEMBLY

CONTRACT NO.	A 610
DRAWING NO.	T-191
SCALE	AS NOTED
SHEET NO.	A620/301



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

RAIL LAYOUT DIAGRAM
SCALE: 3/32" = 1'-0"

- NOTES:**
- INSULATING PADS ARE NOT SHOWN. FOR DETAILS SEE DWG NOS. T-195, T-196 & T-197.
 - CONTACT RAIL LAYOUT VARIES BY TURNOUT LOCATION. ADJUST SWITCH TIES AS SHOWN ON DWG NOS. T-198 & T-199.
 - DAP TWO 12'-6" SWITCH TIES FOR SWITCH MACHINE.
 - PROVIDE 17'-4" RAILS IN LIEU OF 19'-0" BUFFER RAILS FOR BOTH TURNOUTS AT SOUTH END OF DOUBLE CROSSOVER. SEE DWG T-198 FOR DETAILS.
 - FOR EACH TURNOUT AT THE END OF TUNNEL SUBWAY, SUPPLY TWO 3'-3" TIE BLOCKS IN LIEU OF THE END 8'-6" TIE. SEE FLOATING SLAB DWG NO T-215 FOR DETAILS.

TURNOUT DATA		
FROG	ANGLE	6°-55'-57"
	TOE LENGTH	6'-5"
	HEEL LENGTH	10'-1"
	TOTAL LENGTH	16'-6"
	TOE SPREAD	8 1/2"
SWITCH	HEEL SPREAD	1'-4 1/8"
	LENGTH OF SWITCH RAIL	21'-0"
	THICKNESS OF POINT	0"
	HEEL ANGLE	2°-21'-56"
	HEEL SPREAD	6 9/32"
	ANGLE AT POINT	0°-30'-00"
	ACTUAL LEAD	72'-10 1/4"
STRAIGHT CLOSURE LENGTH		45'-5 1/8"
CURVED CLOSURE LENGTH		45'-7 5/8"
CENTERLINE RADIUS		645'-00"
DEGREE OF CURVE		8°-52'-59"
TANGENT AT HEEL OF SWITCH		0"
TANGENT AT TOE OF FROG		0"

TURNOUT OFFSETS	
A	B
10'-0"	1'-0 1/8"
20'-0"	1'-7 7/8"
30'-0"	2'-5 1/2"
40'-0"	3'-4 15/16"

(SEE NOTE 5)

(SEE NOTE 3)

(SEE NOTE 2)

SWITCH TIES	
LENGTH	QUANTITY
8'-6"	3
9'-0"	9
9'-6"	2
10'-0"	3
10'-6"	2
11'-0"	10
11'-6"	4
12'-0"	3
12'-6"	4
13'-0"	3
13'-6"	5
14'-0"	1
14'-6"	4
15'-6"	1
16'-0"	2
16'-6"	1
17'-0"	1
TOTAL	58

WILSHIRE/ALVARADO LATERAL TURNOUT, DF	
BILL OF MATERIAL	
QTY	DESCRIPTION
1	WILSHIRE/ALVARADO LATERAL SWITCH, DF, COMPLETE PER DWG NO. T-195
1	WILSHIRE/ALVARADO LATERAL FROG, DF, COMPLETE PER DWG NO. T-197
1	WILSHIRE/ALVARADO TURNOUT CLOSURE RAIL SECTION, DF, COMPLETE PER DWG NO. T-196
2	12'-0" TEE RAIL DESIGN GUARD RAIL, DF, COMPLETE PER DWG NO. T-186
2	19'-0" BUFFER RAIL (SEE NOTE 4)
1 EA.	28'-7 5/16", 17'-0", 45'-5 1/8" CLOSURE RAILS.
1	20'-0" BUFFER RAIL
1 SET	7"x10" TIMBER SWITCH TIES
A/R	RUBBER BOOTS FOR TIMBER SWITCH TIES PER DWG NO T-248
8	BONDED STANDARD JOINTS
4	BONDED INSULATED JOINTS
74	10-SP-1 SPECIAL PLATES, COMPLETE WITH RAIL CLAMP ASSEMBLIES WELDED TO PLATES
70	INSULATING PADS FOR 10-SP-1 SPECIAL PLATES
152	SPECIAL PLATES ANCHORAGE ASSEMBLIES FOR 10-SP-1 SPECIAL PLATES
A/R	HIGH STRENGTH CWR



REV.	DATE	BY	SUB.	APP.	DESCRIPTION

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 IN CHARGE: *[Signature]*
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SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

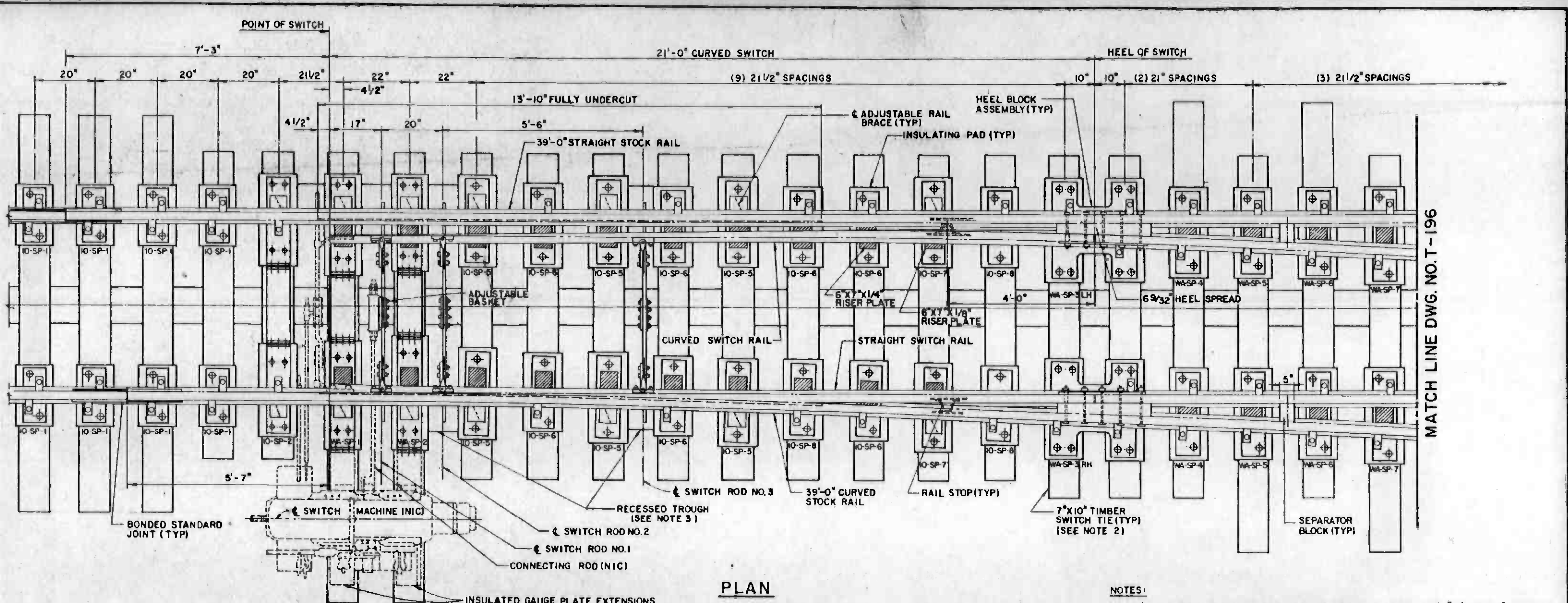
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 GENERAL CONSULTANTS

APPROVED: *[Signature]*

LA CBD TO NORTH HOLLYWOOD TRACKWORK INSTALLATION

WILSHIRE/ALVARADO LATERAL TURNOUT DIRECT FIXATION

CONTRACT NO. A610
 DRAWING NO. T-194
 SCALE AS NOTED
 SHEET NO. A620/304



PLAN

WILSHIRE/ALVARADO LATERAL SWITCH
BILL OF MATERIAL

QTY.	DESCRIPTION	QTY.	DESCRIPTION
1 EA	21'-0" SWITCH RAILS, ONE CURVED AND ONE STRAIGHT, COMPLETE WITH REINFORCING BARS AND RAIL STOPS ATTACHED. (POINT DETAIL 5100 PER AREA PLAN NO. 221.)	8	10-SP-6 SPECIAL SWITCH PLATES, COMPLETE WITH RISER PLATES AND RAIL CLAMP ASSEMBLIES WELDED TO PLATES PER DWG. NO. T-189.
1 EA	39'-0" UNDERCUT STOCK RAILS, ONE CURVED AND ONE STRAIGHT.	2	10-SP-7 SPECIAL SWITCH PLATES, COMPLETE WITH RISER PLATES, ADJUSTABLE RAIL BRACES AND RAIL CLAMP ASSEMBLIES WELDED TO PLATES PER DWG. NO. T-189.
1	INSULATED VERTICAL SWITCH ROD NO. 1 WITH CLIPS, BOLTS, NUTS, LOCKS AND ADJUSTABLE BASKET.	2	10-SP-8 SPECIAL SWITCH PLATES, COMPLETE WITH RAIL CLAMP ASSEMBLIES WELDED TO PLATES.
1 EA	INSULATED VERTICAL SWITCH RODS NO. 2 & 3 WITH CLIPS, BOLTS, NUTS & LOCKS.	1 EA	WA-SP-3 LH AND WA-SP-3 RH SPECIAL HEEL PLATES, COMPLETE WITH RAIL CLAMP ASSEMBLIES WELDED TO PLATES PER DWG. NO. T-187.
2	HEEL BLOCK ASSEMBLIES, COMPLETE WITH BOLTS, NUTS AND WASHERS.	2 EA	WA-SP-4 THROUGH WA-SP-7 SPECIAL PLATES, COMPLETE WITH RAIL STOP PLATES AND RAIL CLAMP ASSEMBLIES WELDED TO PLATES PER DWG. NO. T-189.
2	SEPARATOR BLOCKS, COMPLETE WITH BOLTS, NUTS AND WASHERS.	36	INSULATING PADS FOR SPECIAL PLATES, 10-SP-2 THROUGH 10-SP-8 AND WA-SP-1 THROUGH WA-SP-7 PER DWG. NO. T-248.
1	10-SP-2 SPECIAL INSULATED 3 PIECE SWITCH GAUGE PLATE, COMPLETE WITH ADJUSTABLE RAIL BRACES AND RAIL CLAMP ASSEMBLIES WELDED TO PLATE, GAUGE PLATE INSULATION, BOLTS AND NUTS PER DWG. NO. T-187.	72	SPECIAL PLATE ANCHORAGE ASSEMBLIES FOR SPECIAL PLATES 10-SP-2 THROUGH 10-SP-8 AND WA-SP-1 THROUGH WA-SP-7 PER DWG. NO. T-191.
1 EA	WA-SP-1 AND WA-SP-2 SPECIAL INSULATED 3 PIECE SWITCH GAUGE PLATES, COMPLETE WITH ADJUSTABLE RAIL BRACES AND RISER PLATES WELDED TO PLATE, GAUGE PLATE INSULATION, BOLTS AND NUTS PER DWG. NO. T-201.		
6	10-SP-5 SPECIAL SWITCH PLATES, COMPLETE WITH ADJUSTABLE RAIL BRACES, RISER PLATES AND RAIL CLAMP ASSEMBLIES WELDED TO PLATES.		

NOTES:

1. DETAIL SHOWN IS FOR A RIGHT HAND TURNOUT. A LEFT HAND TURNOUT IS SIMILAR BUT OF OPPOSITE CONSTRUCTION, SEE DWG. NO. T-104.
2. FOR TIMBER SWITCH TIE INSTALLATION SEE DWG. NO. T-194.
3. FOR DETAILS OF SWITCH TROUGH SEE DWG. NO. T-218.
4. RUBBER BOOTS FOR SWITCH TIES NOT SHOWN. FOR DETAILS SEE DWG. NO. T-248.

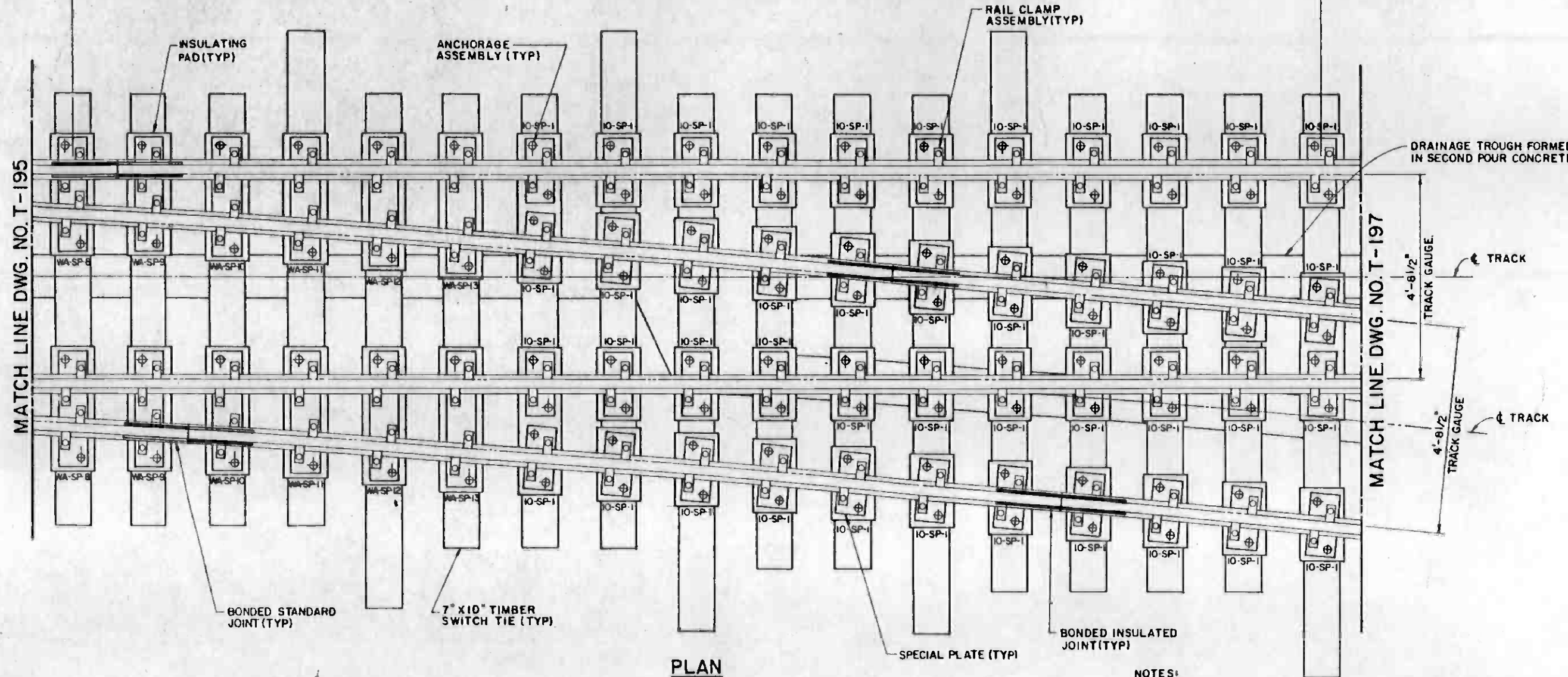


THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DESIGNED BY <i>[Signature]</i> DRAWN BY <i>[Signature]</i> CHECKED BY <i>[Signature]</i> IN CHARGE <i>[Signature]</i> DATE 15 JUL 85	REGISTERED PROFESSIONAL ENGINEER CIVIL & STRUCTURAL No. 25755 STATE OF CALIFORNIA	SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT		LA CBD TO NORTH HOLLYWOOD TRACKWORK INSTALLATION WILSHIRE / ALVARADO LATERAL SWITCH, DIRECT FIXATION	CONTRACT NO. A 610 DRAWING NO. T-195 SCALE 3/4" = 1'-0" SHEET NO. A620 / 305
REV. DATE BY SUR APP DESCRIPTION	REV. DATE BY SUR APP DESCRIPTION	APPROVED <i>[Signature]</i>	DMJM/PBQD/KE/HWA GENERAL CONSULTANTS				

(3) 2 1/2" SPACINGS

(16) 2 1/2" SPACINGS

(4) 2 1/2" SPACINGS



PLAN

NOTES:

1. FOR ADDITIONAL INFORMATION, SEE WILSHIRE/ALVARADO LATERAL TURNOUT DWG. NO. T-194.
2. RIGHT HAND TURNOUT CLOSURE RAIL SECTION SHOWN, LEFT HAND TURNOUT DETAILS VARY.
3. FOR SPECIAL PLATE DETAILS, SEE DWG. NO. T-189.
4. RUBBER BOOTS FOR SWITCH TIES NOT SHOWN. FOR DETAILS SEE DWG. NO. T-248.

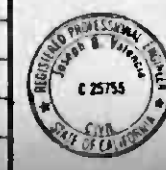
WILSHIRE/ALVARADO LATERAL TURNOUT CLOSURE RAIL SECTION-DIRECT FIXATION BILL OF MATERIAL	
QTY	DESCRIPTION
2EA.	WA-SP-8 THROUGH WA-SP-13 SPECIAL PLATES, COMPLETE WITH RAIL CLAMP ASSEMBLIES WELDED TO PLATES.
12	INSULATING PADS FOR SPECIAL PLATES WA-SP-8 THROUGH WA-SP-13.
24	SPECIAL PLATE ANCHORAGE ASSEMBLIES FOR SPECIAL PLATES WA-SP-8 THROUGH WA-SP-13 (TWO PER SPECIAL PLATE)



REV.	DATE	BY	SUB	APP.	DESCRIPTION

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DESIGNED BY
[Signature]
DRAWN BY
[Signature]
CHECKED BY
[Signature]
IN CHARGE
[Signature]
DATE
15 JUL 85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

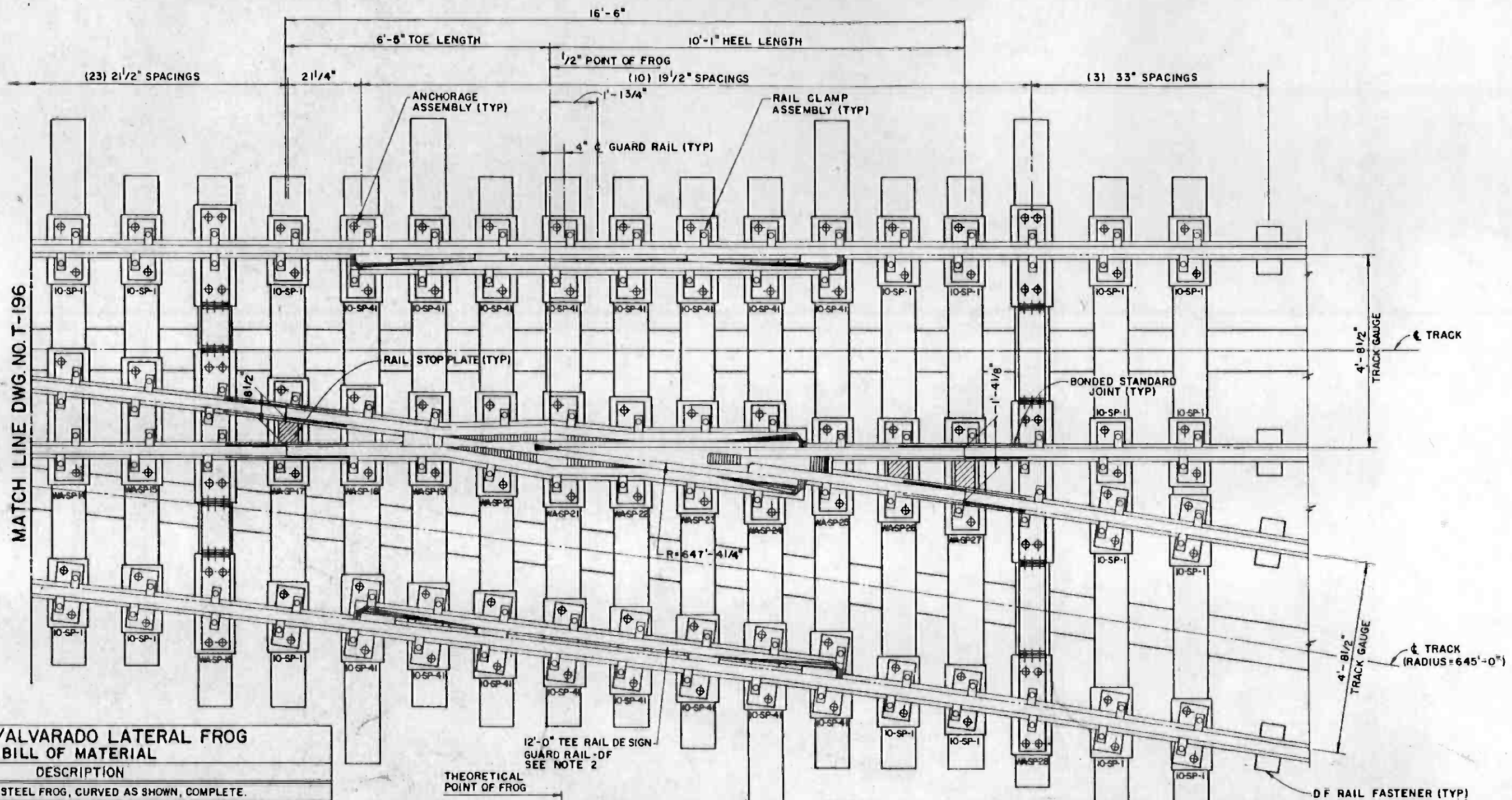
APPROVED
[Signature]



LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION

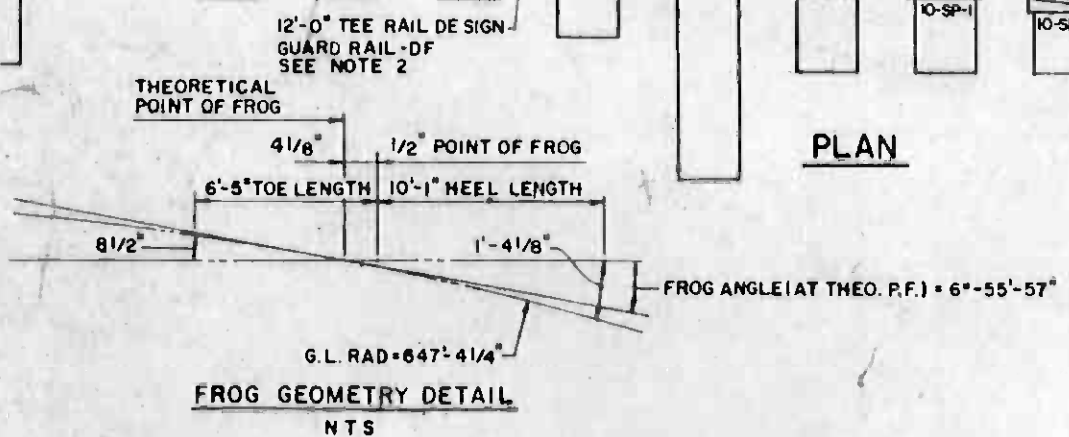
WILSHIRE/ALVARADO LATERAL TURNOUT
CLOSURE RAIL SECTION-DIRECT FIXATION

CONTRACT NO.	A 610
DRAWING NO.	T-196
SCALE	3/4" = 1'-0"
SHEET NO.	A620/306



MATCH LINE DWG. NO. T-196

WILSHIRE/ALVARADO LATERAL FROG	
BILL OF MATERIAL	
QTY.	DESCRIPTION
1	RAILBOUND MANGANESE STEEL FROG, CURVED AS SHOWN, COMPLETE.
1EA	WA-SP-14, WA-SP-15 AND WA-SP-18 THROUGH WA-SP-25 SPECIAL PLATES, COMPLETE WITH RAIL CLAMP ASSEMBLIES WELDED TO PLATES.
1EA	WA-SP-17, WA-SP-26 AND WA-SP-27 SPECIAL PLATES, COMPLETE WITH RAIL STOP PLATES AND RAIL CLAMP ASSEMBLIES WELDED TO PLATES.
1EA	WA-SP-16 AND WA-SP-28 SPECIAL 5 PIECE FROG GAUGE PLATES, COMPLETE WITH RAIL CLAMP ASSEMBLIES AND RAIL STOP PLATES WELDED TO PLATES, GAUGE PLATE INSULATION, BOLTS AND NUTS.
19	INSULATING PADS FOR SPECIAL PLATES WA-SP-14 THROUGH WA-SP-28.
38	SPECIAL PLATE ANCHORAGE ASSEMBLIES (TWO PER SPECIAL PLATE)



PLAN

- NOTES:**
1. FOR ADDITIONAL FROG DETAILS, SEE AREA PLAN NO. 623.
 2. FOR 12'-0" TEE RAIL DESIGN GUARD RAIL - DF, DETAILS SEE DWG. NO. T-186.
 3. FOR SPECIAL FROG PLATE AND SPECIAL FROG GAUGE PLATE DETAILS, SEE DWG. NO'S T-188 AND T-189.
 4. FOR SPECIAL PLATE ANCHORAGE ASSEMBLY DETAILS, SEE DWG. NO. T-191.
 5. RIGHT HAND TURNOUT FROG SECTION SHOWN. LEFT HAND FROG DETAILS VARY.
 6. RUBBER BOOTS FOR SWITCH TIES NOT SHOWN. FOR DETAILS SEE DWG. NO. T-248.



REV.	DATE	BY	SUB	APP	DESCRIPTION

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DESIGNED BY
DRAWN BY
CHECKED BY
DATE
15 JUL 85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

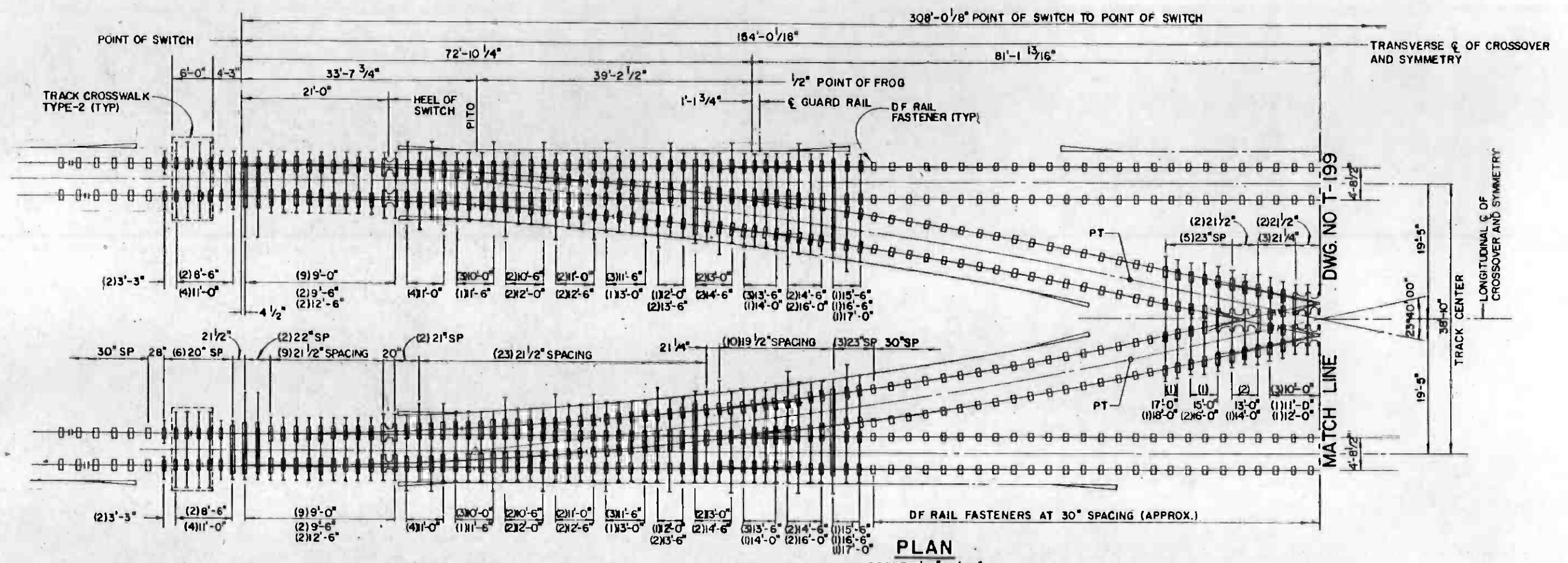
DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

APPROVED: *[Signature]*

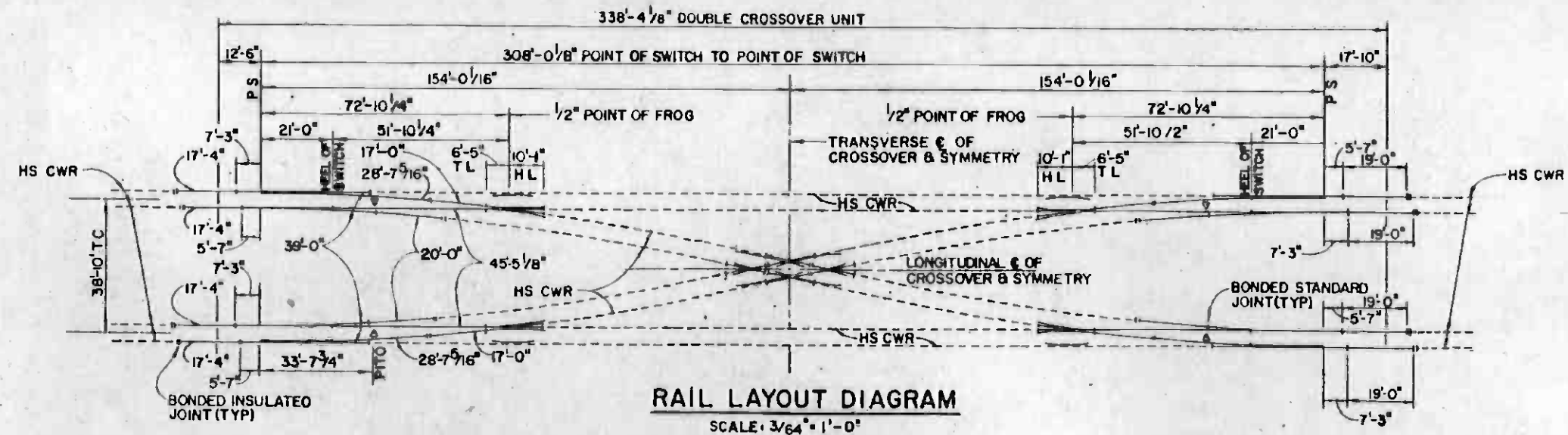
LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION

WILSHIRE/ALVARADO LATERAL FROG
DIRECT FIXATION

CONTRACT NO.	A 610
DRAWING NO.	T-197
SCALE	3/4" = 1'-0"
SHEET NO.	A620/307



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



RAIL LAYOUT DIAGRAM
SCALE: 3/64" = 1'-0"

NOTES:
1. FOR ADDITIONAL DETAILS, SEE DRAWING NO'S T-194, T-195 & T-200



REV	DATE	BY	SUB	APP	DESCRIPTION

REV	DATE	BY	SUB	APP	DESCRIPTION

DESIGNED BY
[Signature]
DRAWN BY
[Signature]
CHECKED BY
[Signature]
DATE
15 JUL 85



**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

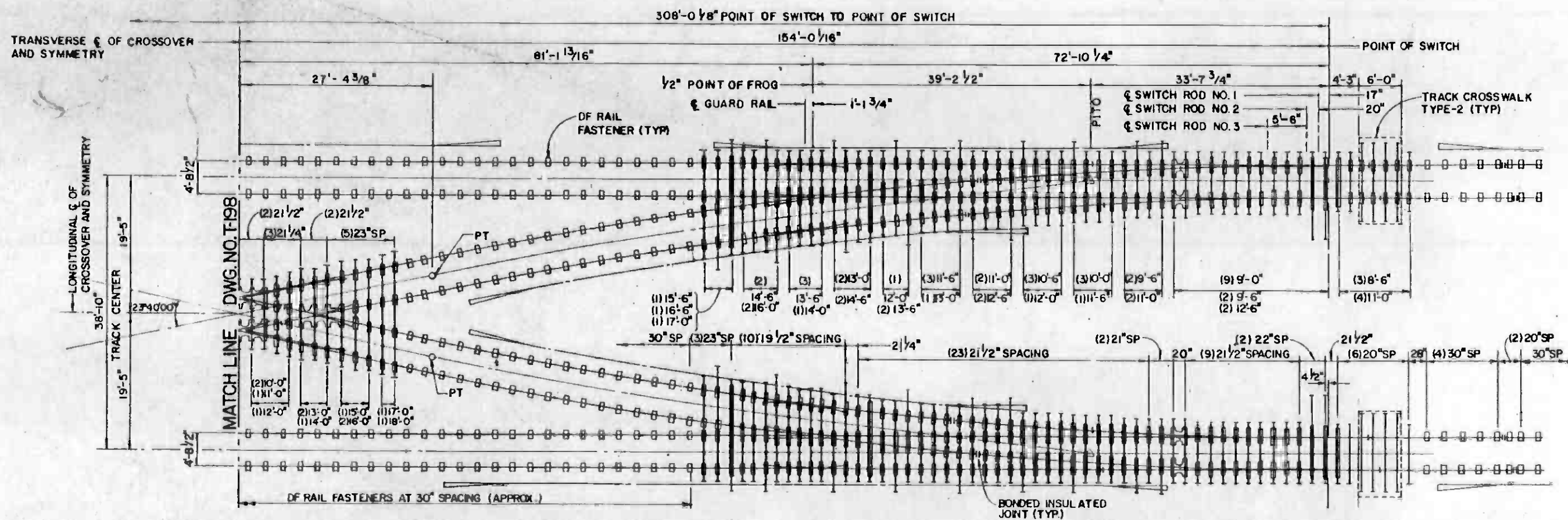
ATD

DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

SUBMITTED *[Signature]* APPROVED

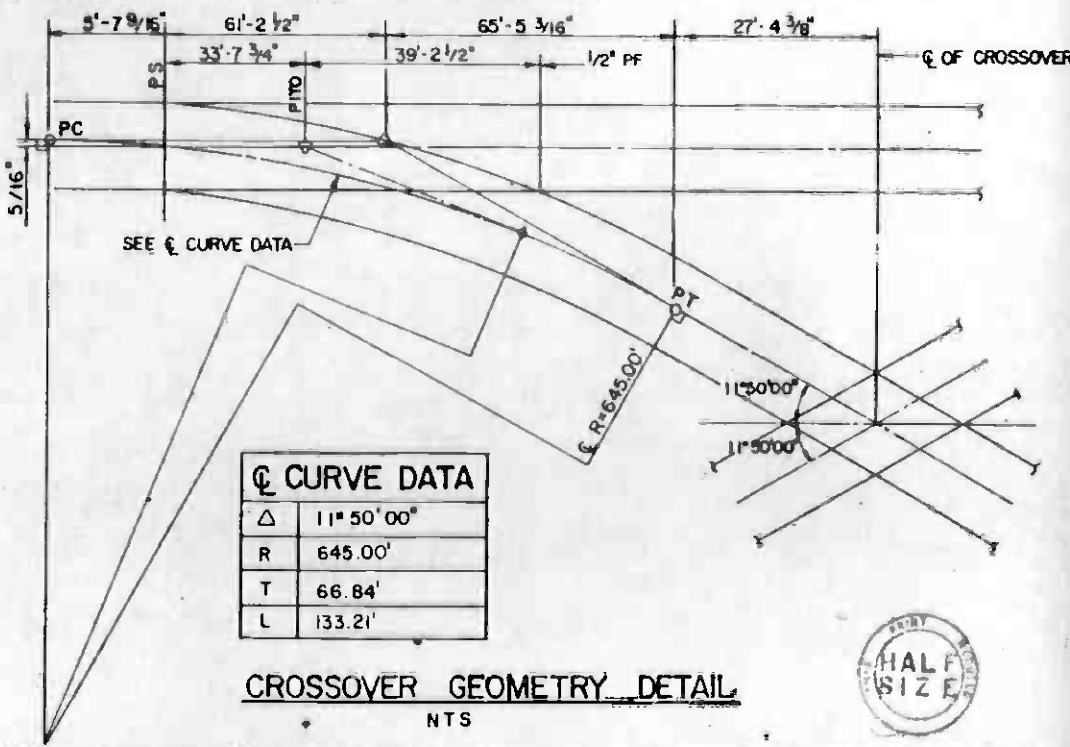
**LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION**
WILSHIRE/ALVARADO DOUBLE CROSSOVER
38'-10" TC, DIRECT FIXATION
SHEET 1 OF 2

CONTRACT NO.	A610
DRAWING NO.	T-198
SCALE	AS NOTED
SHEET NO.	A620 / 308



PLAN

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



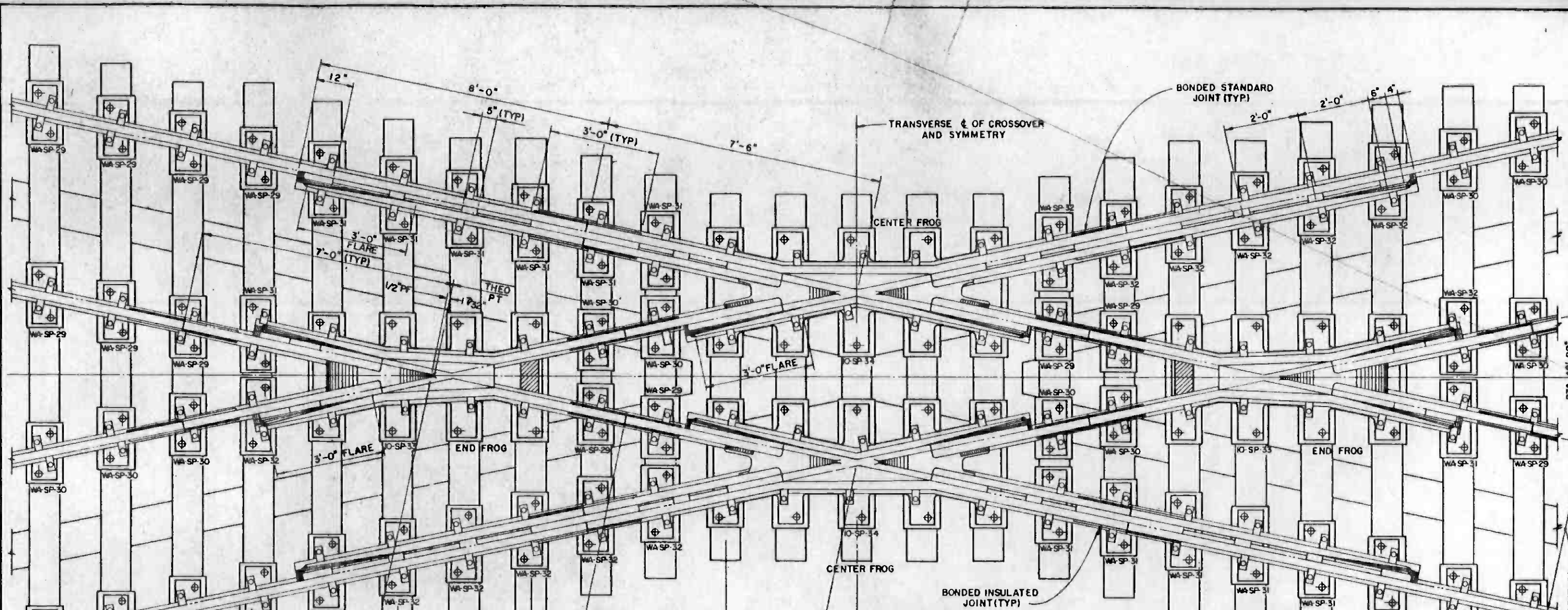
CROSSOVER GEOMETRY DETAIL

NTS

WILSHIRE/ALVARADO DOUBLE CROSSOVER, 38'-10" TC, DIRECT FIXATION BILL OF MATERIAL			
QTY	DESCRIPTION	QTY	DESCRIPTION
4	WILSHIRE/ALVARADO LATERAL SWITCH, DF, TWO RIGHT HAND AND TWO LEFT HAND, COMPLETE PER DWG NO. T-195	292	INSULATING PADS FOR 10-SP-1 SPECIAL PLATES PER DWG NOS T-191 & T-248
4	WILSHIRE/ALVARADO LATERAL TURNOUT CLOSURE RAIL SECTION, DF, COMPLETE PER DWG NO. T-196	1 SET	7"x10" TIMBER SWITCH TIES
4	WILSHIRE/ALVARADO LATERAL FROG, DF, COMPLETE PER DWG NO. T-197	A/R	RUBBER BOOTS FOR TIMBER SWITCH TIES PER DWG NO. T-248
8	12'-0" TEE RAIL DESIGN GUARD RAIL, DF, COMPLETE PER DWG NO. T-186	352	DIRECT FIXATION RAIL FASTENERS
1	DIAMOND CROSSING, 23°-40'-00", DF, COMPLETE PER DWG NO. T-200	A/R	SECOND POUR CONCRETE WITHIN DOUBLE CROSSOVER UNIT
4 EA.	17'-0", 28'-7 1/16", 45'-5 1/8" CLOSURE RAILS	2	STEEL TIE STRAPS PER DWG NO. T-215
4 EA.	19'-0" AND 17'-4" BUFFER RAILS	A/R	TRANSVERSE FLOATING SLAB SEPARATION BOARD PER DWG NOS. T-227 & T-228
4	20'-0" BUFFER RAILS		
A/R	HIGH STRENGTH CWR WITHIN DOUBLE CROSSOVER UNIT		
40	BONDED STANDARD JOINTS		
20	BONDED INSULATED JOINTS		
296	10-SP-1 SPECIAL PLATES, COMPLETE WITH RAIL CLAMP ASSEMBLIES WELDED TO PLATES, PER DWG NO. T-189		
592	SPECIAL PLATE ANCHORAGE ASSEMBLIES FOR 10-SP-1 SPECIAL PLATES, PER DWG NO. T-191		

SWITCH TIES	
LENGTH	QUANTITY
3'-3"	4
8'-6"	10
9'-0"	36
9'-6"	12
10'-0"	17
10'-6"	10
11'-0"	38
11'-6"	16
12'-0"	12
12'-6"	16
13'-0"	16
13'-6"	20
14'-0"	6
14'-6"	16
15'-0"	2
15'-6"	4
16'-0"	12
16'-6"	4
17'-0"	6
18'-0"	2
TOTAL	259

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DIAMOND CROSSING, 23°40'00", DF, BILL OF MATERIAL

QTY	DESCRIPTION
2	MANGANESE STEEL INSERT CENTER FROGS, COMPLETE WITH EXTENDED GUARD RAILS AND BLOCKS.
2	MANGANESE STEEL INSERT END FROGS, COMPLETE WITH BLOCKS.
18EA	WA-SP-29 AND WA-SP-30 SPECIAL PLATES, COMPLETE WITH RAIL CLAMP ASSEMBLIES WELDED TO PLATES.
14EA	WA-SP-31 AND WA-SP-32 SPECIAL GUARD RAIL PLATES, COMPLETE WITH RAIL CLAMP ASSEMBLIES WELDED TO PLATES.
2	WA-SP-33 SPECIAL END FROG PLATES, COMPLETE WITH RAIL STOP PLATE AND RAIL CLAMP ASSEMBLIES WELDED TO PLATES.
2	WA-SP-34 SPECIAL CENTER FROG PLATES, COMPLETE WITH RAIL CLAMP ASSEMBLIES WELDED TO PLATES.
82	INSULATING PADS FOR SPECIAL PLATES.
164	SPECIAL PLATE ANCHORAGE ASSEMBLIES.

- NOTES:**
- 4'-8 1/2" TRACK GAUGE SHALL BE MAINTAINED THROUGHOUT THE CROSSOVER.
 - FOR ADDITIONAL DETAILS SEE AREA PLAN 700H.
 - FOR SPECIAL PLATE DETAILS, SEE DWG. NO. T-190.
 - RUBBER BOOTS FOR TIMBER SWITCH TIES ARE NOT SHOWN. FOR ADDITIONAL DETAILS, SEE DWG. NO. T-248.
 - FOR SPECIAL PLATE ANCHORAGE ASSEMBLY DETAILS, SEE DWG. NO. T-191.
 - FOR RAIL CLAMP ASSEMBLY DETAILS, SEE DWG. NO. T-192.

REV.	DATE	BY	SUB.	APP.	DESCRIPTION

DESIGNED BY
R. J. Clayton
 DRAWN BY
Paul P. Volen
 CHECKED BY
Paul P. Volen
 DATE
 15 JUL 85

**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT**



DMJM/PBOD/KE/HWA
 GENERAL CONSULTANTS

APPROVED
Paul P. Volen

**LA CBD TO NORTH HOLLYWOOD
 TRACKWORK INSTALLATION**

**DIAMOND DETAILS, 23°40'00"
 DIRECT FIXATION**

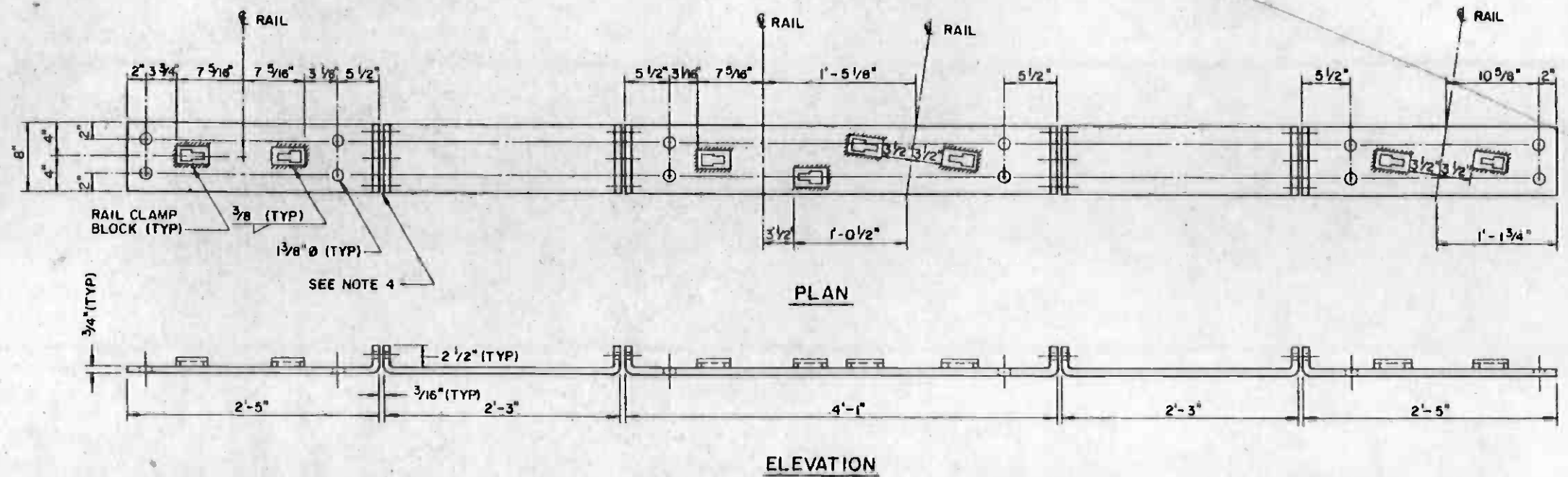
CONTRACT NO.
A 610

DRAWING NO.
T-200

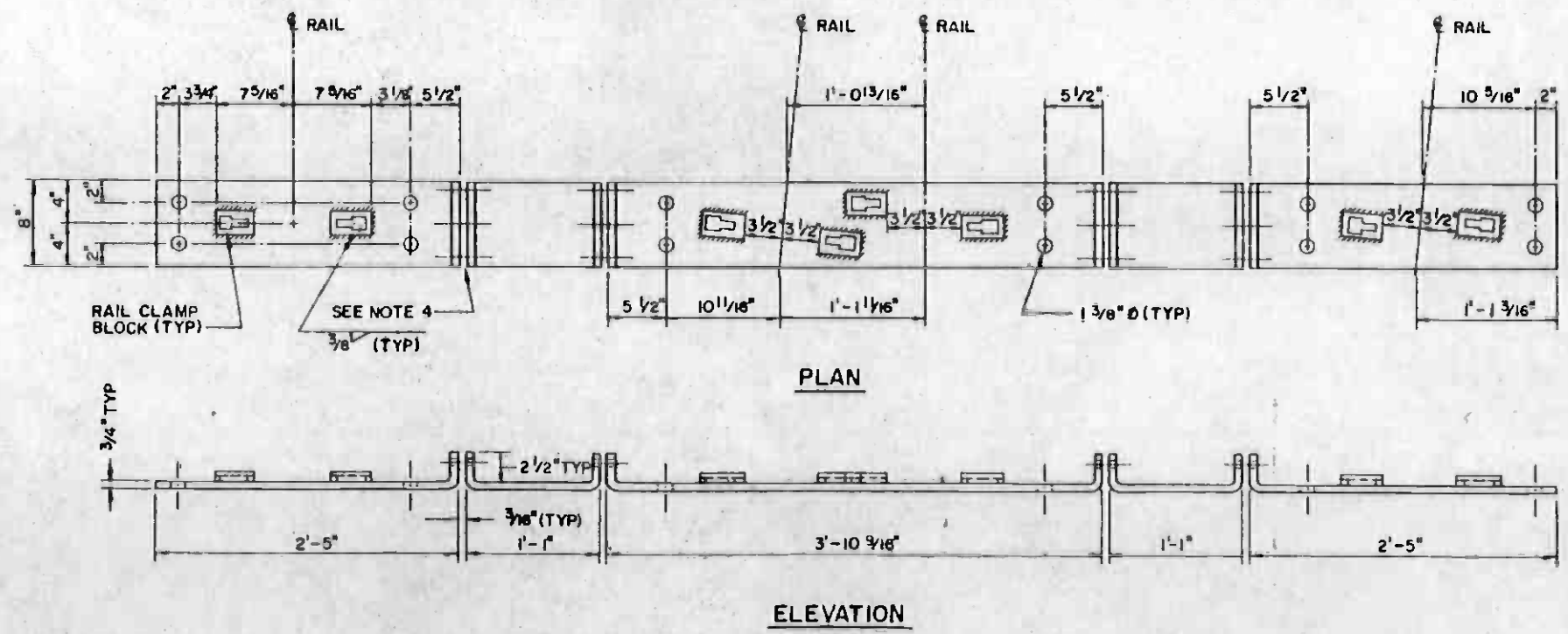
SCALE
3/4" = 1'-0"

SHEET NO.
A620 / 310





SPECIAL FROG GAUGE PLATE NO. WA-SP-28



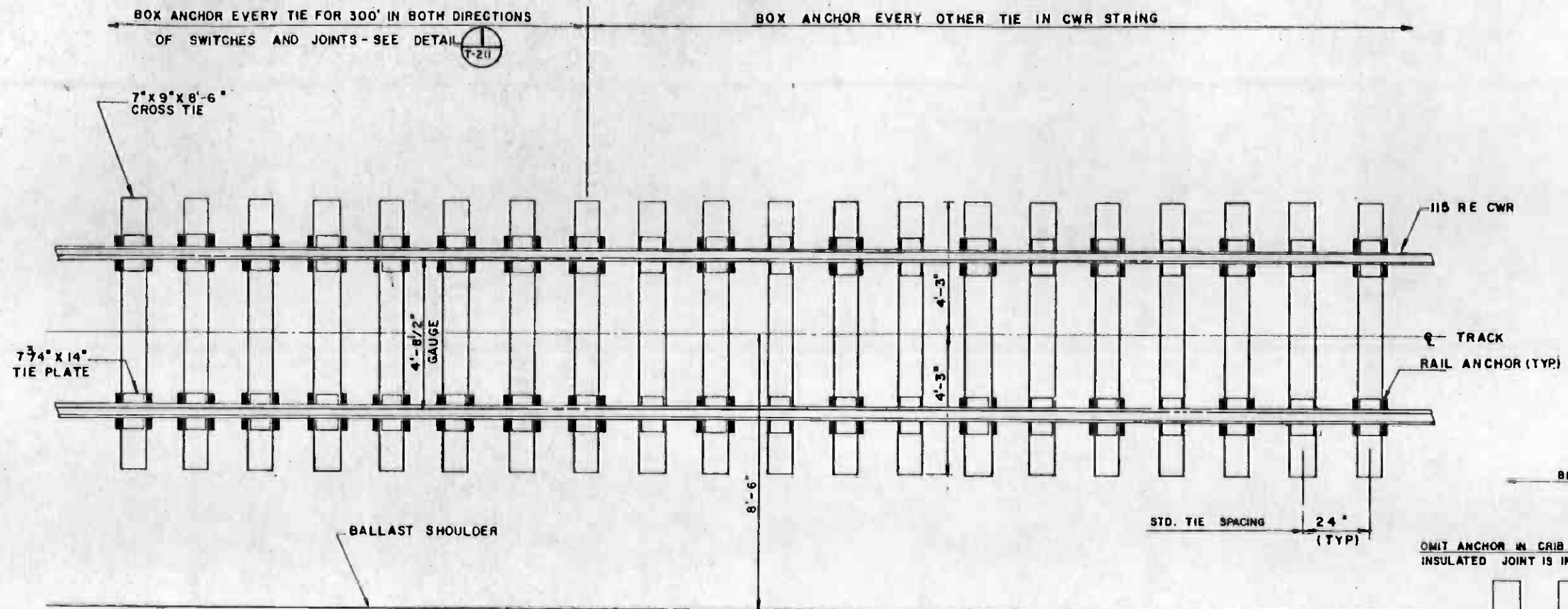
SPECIAL FROG GAUGE PLATE NO. WA-SP-16

NOTES:

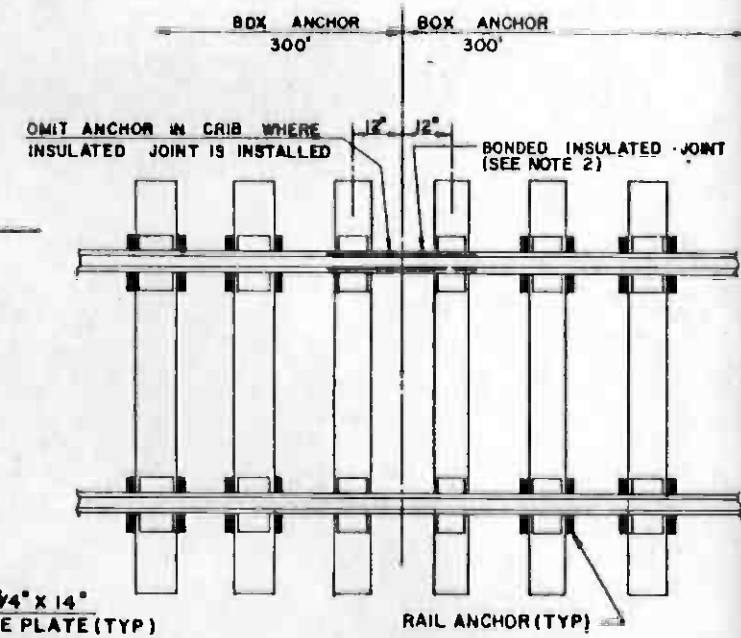
- 1 FOR DETAILS OF SPECIAL PLATE ANCHORAGE ASSEMBLY, SEE DRAWING NO. T-191.
- 2 FOR DETAILS OF RAIL CLAMP ASSEMBLY, SEE DRAWING NO. T-192.
- 3. SPECIAL PLATE DETAILS SHOWN ARE FOR RIGHT HAND TURNOUT. LEFT HAND TURNOUT PLATES VARY.
- 4. SPECIAL FROG GAUGE PLATES NOS. WA-SP-16 AND WA-SP-28 ARE BOTH INSULATED AS PER AREA PLAN NO. 223, DETAIL 4103.



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REV.	DATE	BY	SUB	APP	DESCRIPTION	REV.	DATE	BY	SUB	APP	DESCRIPTION

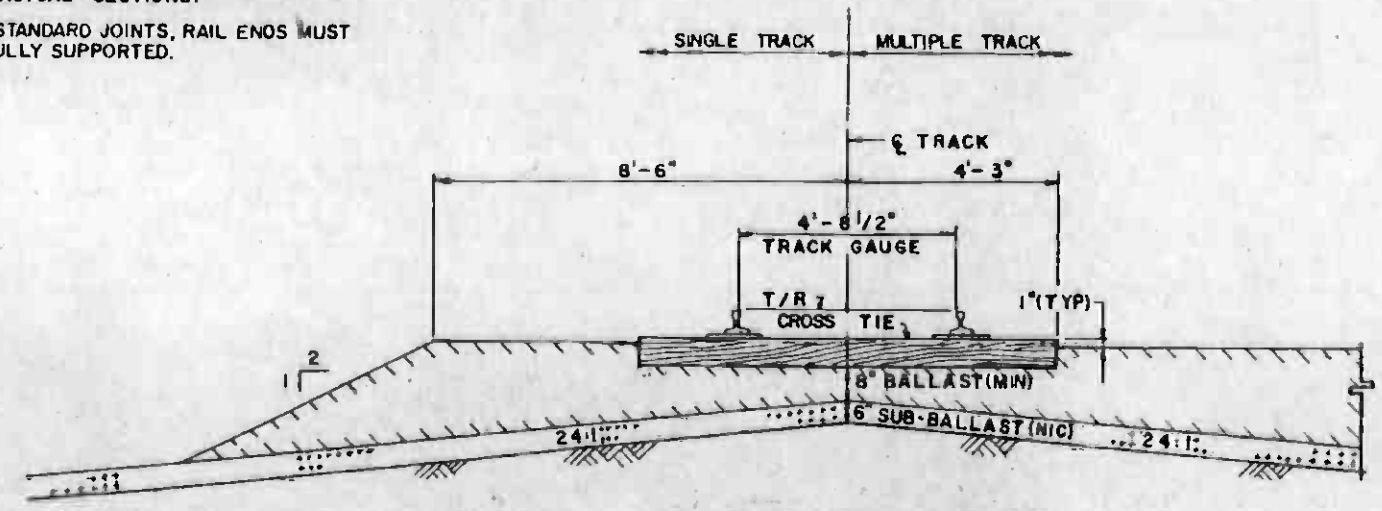


PLAN
SCALE: 1/2" = 1'-0"

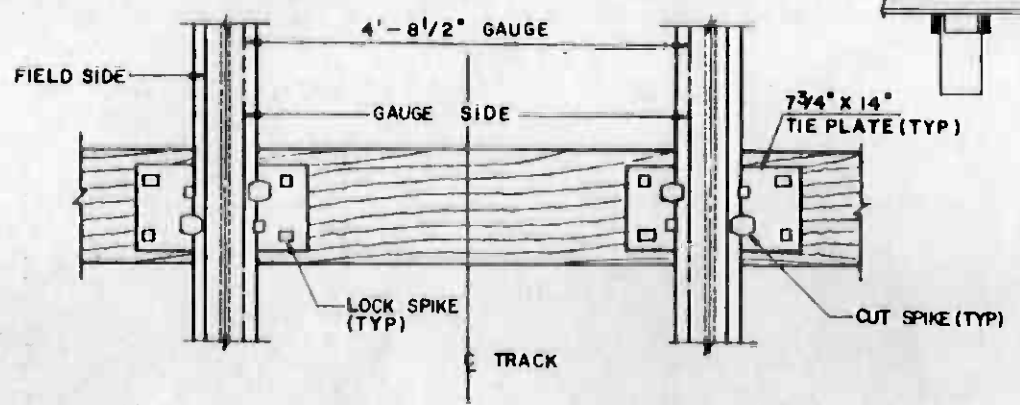


DETAIL 1
SCALE: 1/2" = 1'-0" T-211

- NOTES:**
- 1 THE DIMENSIONS AND QUANTITIES SHOWN ON THE TYPICAL SECTION ARE THE MINIMAL DIMENSIONS AND QUANTITIES. DO NOT USE FOR ESTIMATING PURPOSES. SEE INFORMATION DRAWINGS FOR ACTUAL SECTIONS.
 - 2 FOR STANDARD JOINTS, RAIL ENDS MUST BE FULLY SUPPORTED.



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



SPIKING FOR TIMBER TIES
N T S



REV	DATE	BY	SUB	APP	DESCRIPTION

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DESIGNED BY
J. Leclair
DRAWN BY
R. C. Smith
CHECKED BY
Paul T. Baker
IN CHARGE
Joseph B. Kaban
DATE
15 JUL 85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT



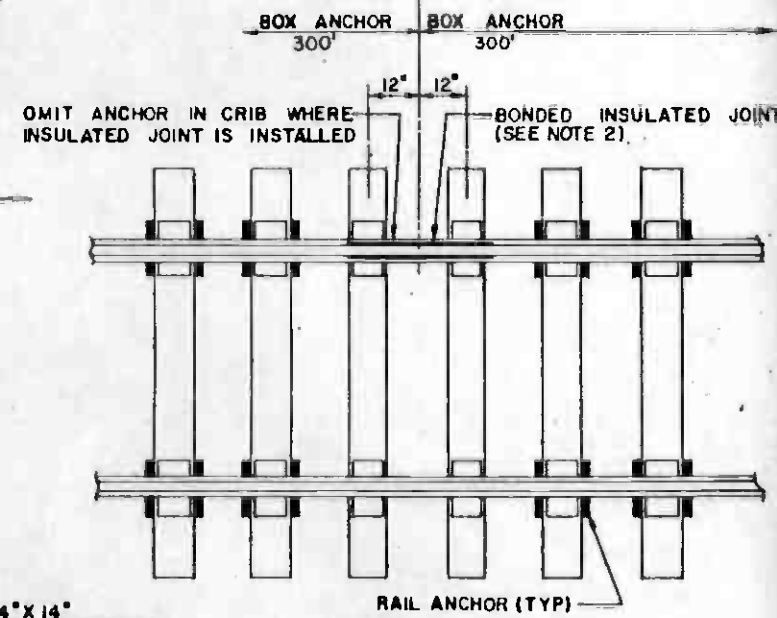
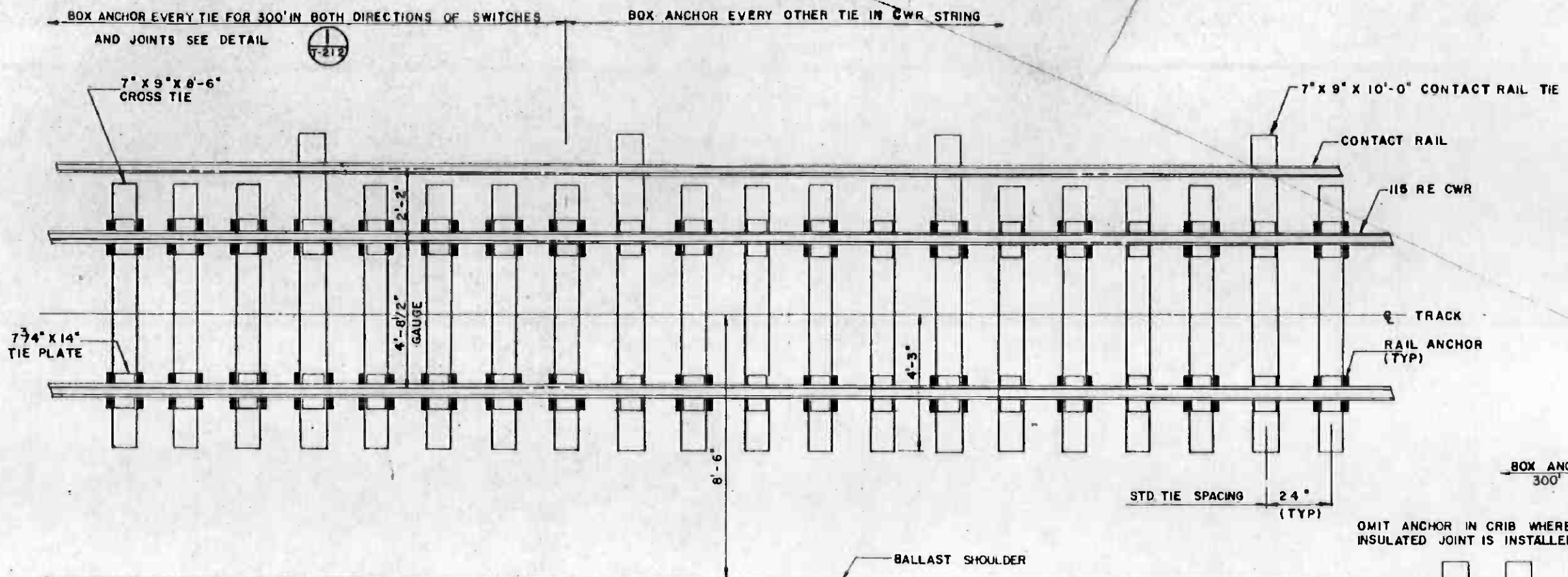
DMJM/PBOD/KE/MWA
GENERAL CONSULTANTS

SUBMITTED *Joseph B. Kaban*

APPROVED

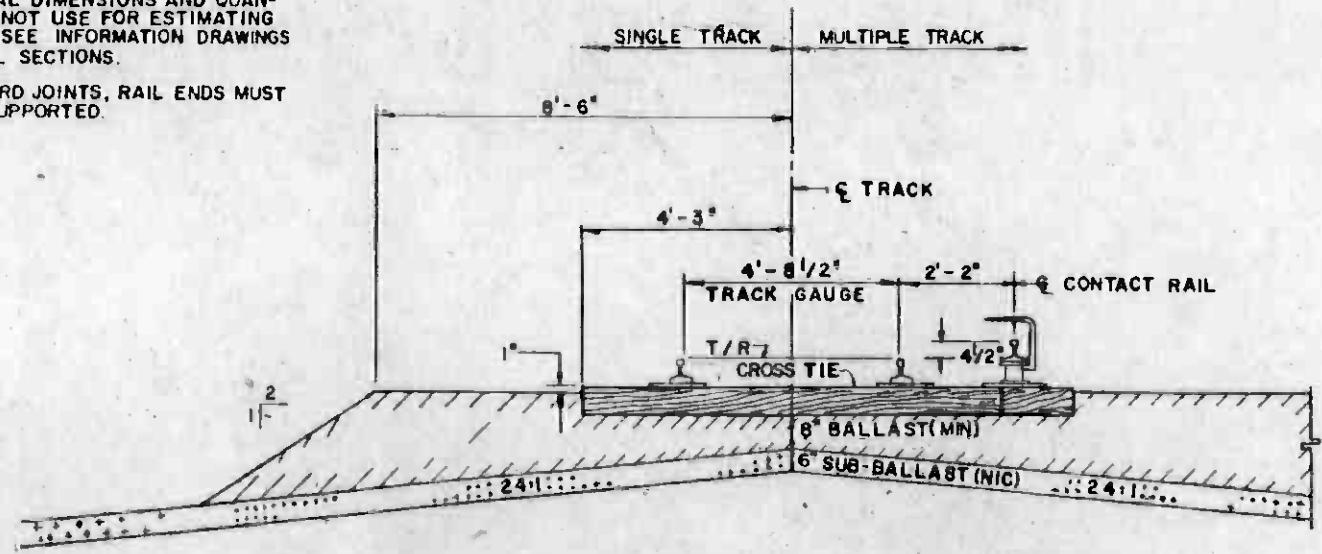
LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION
STANDARD YARD TRACK CONSTRUCTION
NON ELECTRIFIED

CONTRACT NO	AG10
DRAWING NO	T-211
SCALE	AS NOTED
SHEET NO	A620/312

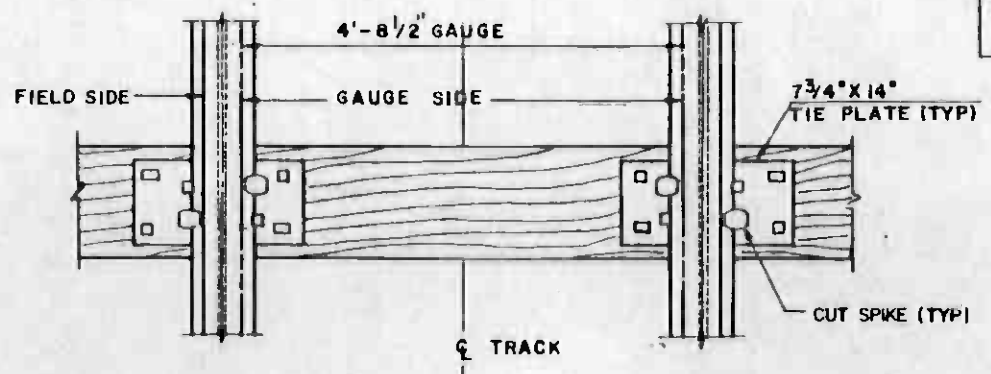


NOTES:
 1 THE DIMENSIONS AND QUANTITIES SHOWN ON THE TYPICAL SECTION ARE THE MINIMAL DIMENSIONS AND QUANTITIES. DO NOT USE FOR ESTIMATING PURPOSES. SEE INFORMATION DRAWINGS FOR ACTUAL SECTIONS.
 2 FOR STANDARD JOINTS, RAIL ENDS MUST BE FULLY SUPPORTED.

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



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



SPIKING FOR TIMBER TIES
 N T S

DETAIL
 SCALE: 1/2" = 1'-0" (1)
 T-212



REV.	DATE	BY	SUB.	APP.	DESCRIPTION

REV.	DATE	BY	SUB.	APP.	DESCRIPTION

DESIGNED BY
J. Leclair
 CHECKED BY
Paul Baker
 IN CHARGE
Joseph S. Valenzuela
 DATE
 15 JUL 85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBQD/KE/HWA
 GENERAL CONSULTANTS

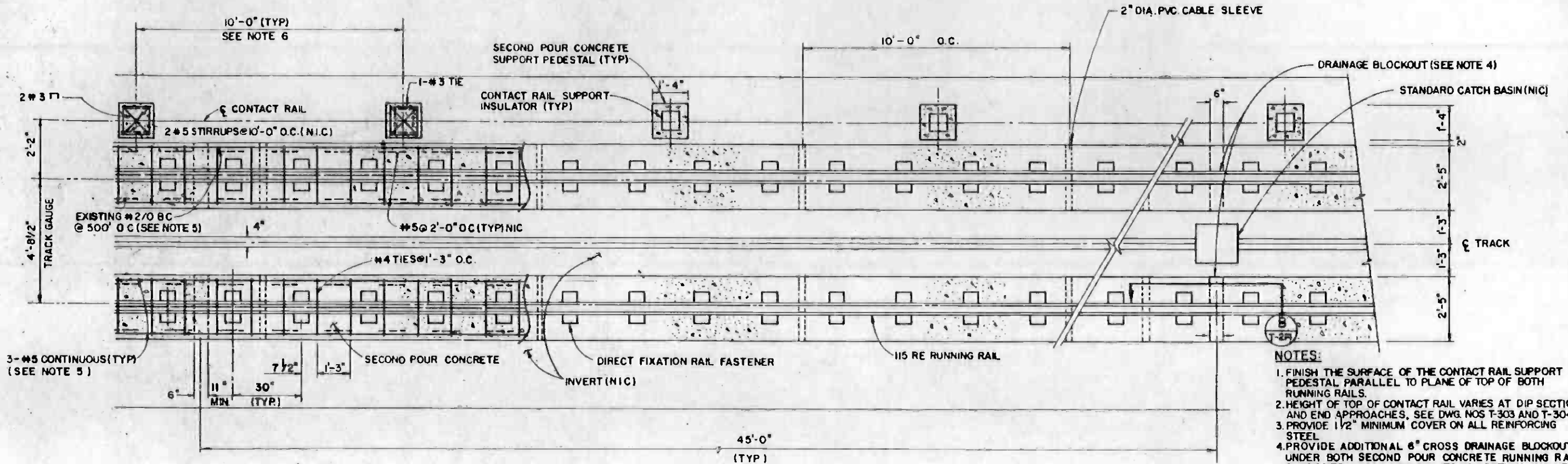
APPROVED: *Joseph S. Valenzuela*



LA CBD TO NORTH HOLLYWOOD
 TRACKWORK INSTALLATION

STANDARD YARD TRACK CONSTRUCTION
 ELECTRIFIED

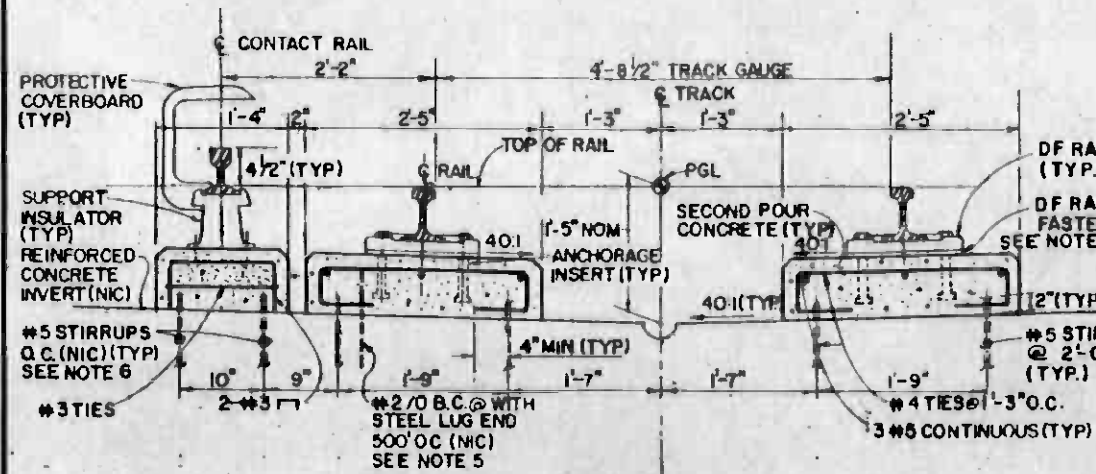
CONTRACT NO.	A610
DRAWING NO.	T-212
SCALE	AS NOTED
SHEET NO.	A620/313



DIRECT FIXATION TRACK-CUT & COVER TYPES 1, 2 & 3
PLAN

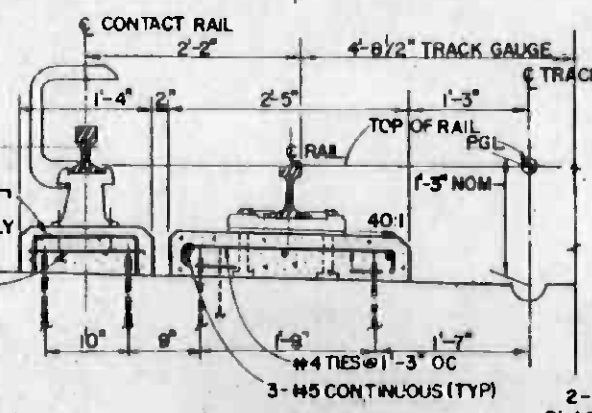
SCALE: 1/2"=1'-0"

- NOTES:**
1. FINISH THE SURFACE OF THE CONTACT RAIL SUPPORT PEDESTAL PARALLEL TO PLANE OF TOP OF BOTH RUNNING RAILS.
 2. HEIGHT OF TOP OF CONTACT RAIL VARIES AT DIP SECTIONS AND END APPROACHES. SEE DWG NOS T-303 AND T-304
 3. PROVIDE 1/2" MINIMUM COVER ON ALL REINFORCING STEEL.
 4. PROVIDE ADDITIONAL 6" CROSS DRAINAGE BLOCKOUTS UNDER BOTH SECOND POUR CONCRETE RUNNING RAIL SUPPORTS AT ALL LOW POINTS OF VERTICAL CURVES.
 5. WELD STEEL REINFORCEMENT AS SHOWN ON DWG NO. T-249.
 6. PROVIDE EXTRA CONTACT RAIL SUPPORT PEDESTALS AT LIMITS OF CUT AND COVER DIRECT FIXATION TRACK, AND AT CONTACT RAIL DISRUPTIONS SHOWN ON THE TRACK CHARTS AS NECESSARY, TO MAINTAIN 10'-0" MAXIMUM SUPPORT PEDESTAL SPACING. AT SUCH LOCATIONS, DRILL AND GROUT #5 STIRRUPS INTO INVERT.
 7. DRILL AND GROUT #5 STIRRUPS INTO INVERT WHERE SHOWN, TO 6" MINIMUM DEPTH.
 8. SET ELEVATION OF TOP OF SECOND POUR CONCRETE IN ACCORDANCE WITH CONTRACT SPECIFICATIONS.
 9. TOTAL THICKNESS OF DF RAIL FASTENER SHIMS TO BE USED FOR HEIGHT ADJUSTMENT VARIES FROM 1/8" MINIMUM TO 1/2" MAXIMUM.



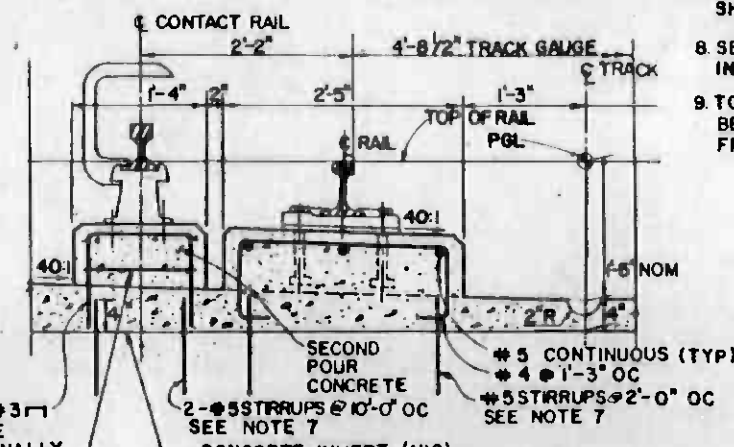
DIRECT FIXATION TRACK CUT & COVER TYPE 1

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



DIRECT FIXATION TRACK CUT & COVER TYPE 2

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



DIRECT FIXATION TRACK CUT & COVER TYPE 3

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



REV.	DATE	BY	SUB.	APP.	DESCRIPTION

REV.	DATE	BY	SUB.	APP.	DESCRIPTION

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IN CHARGE
[Signature]
DATE
15 JUL 85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

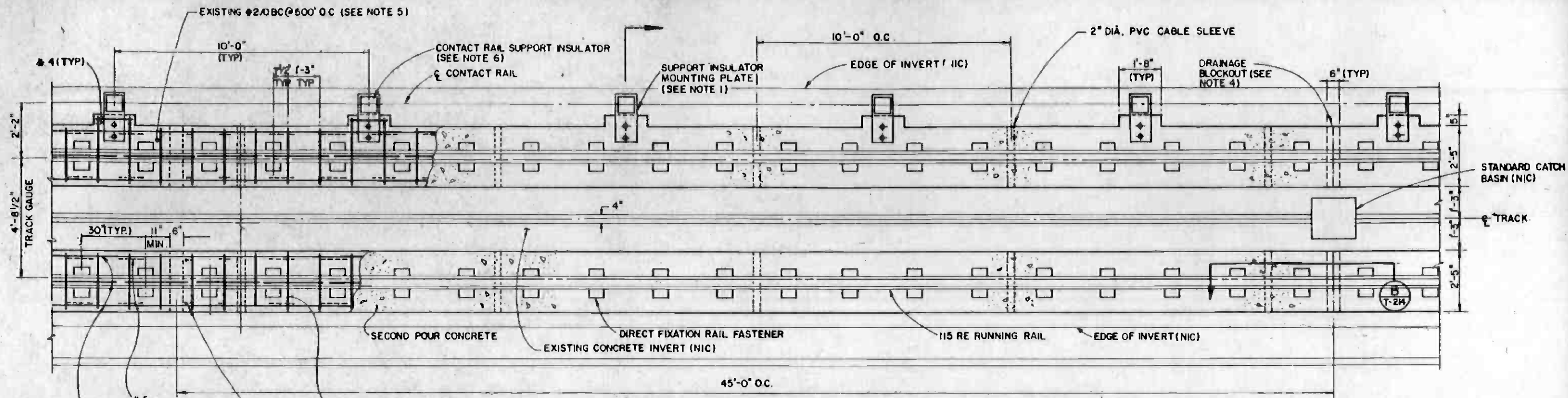
DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

APPROVED
[Signature]

LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION

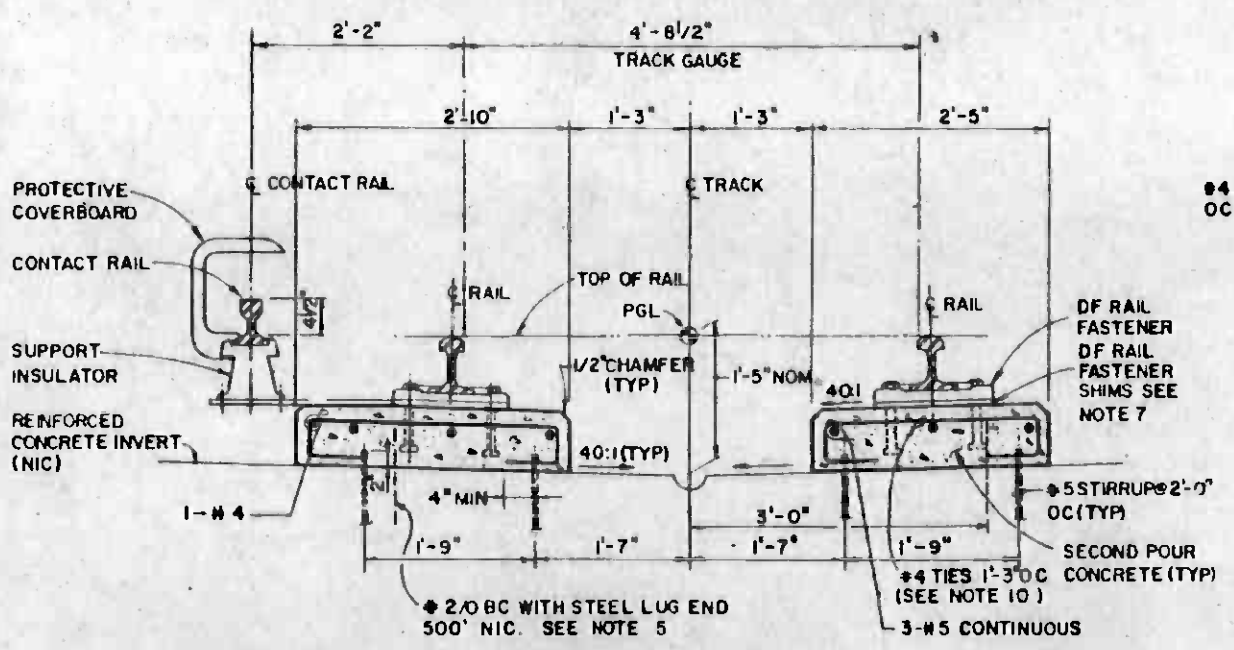
DIRECT FIXATION TRACK CONSTRUCTION
CUT & COVER TYPES 1, 2 & 3

CONTRACT NO. A 610	REV.
DRAWING NO. T-213	
SCALE AS NOTED	
SHEET NO. A620/314	

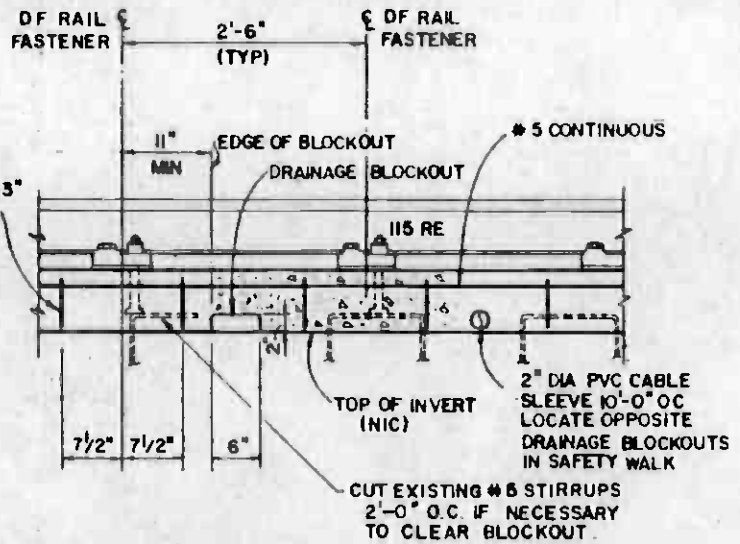


PLAN
SCALE: 1/2" = 1'-0"

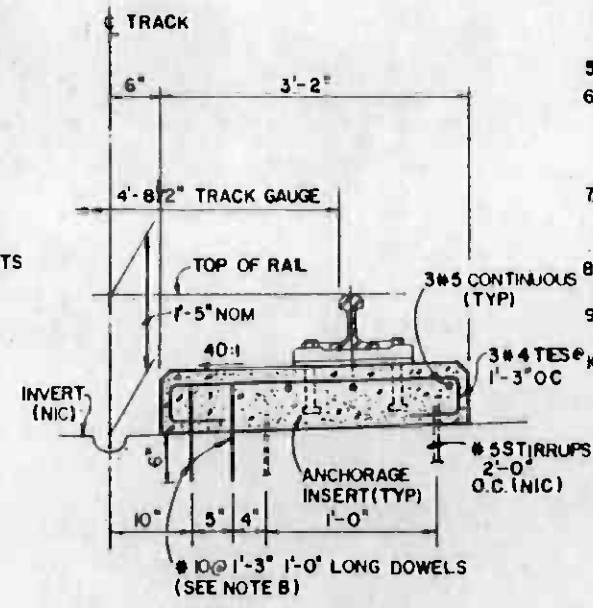
- NOTES:**
1. FINISH THE SURFACE OF THE SECOND POUR CONCRETE UNDER THE SUPPORT INSULATOR MOUNTING PLATE PARALLEL TO PLANE OF TOP OF BOTH RUNNING RAILS.
 2. HEIGHT OF TOP OF CONTACT RAIL VARIES AT DIP SECTIONS AND END APPROACHES, SEE DWG. NOS. T-303 AND T-304 FOR DETAILS.
 3. PROVIDE 1/2" MINIMUM COVER ON ALL REINFORCING STEEL.
 4. PROVIDE ADDITIONAL 6" CROSS DRAINAGE BLOCKOUTS UNDER BOTH SECOND POUR CONCRETE RUNNING RAIL SUPPORTS AT ALL LOW POINTS OF VERTICAL CURVES.
 5. WELD STEEL REINFORCING AS SHOWN ON DWG. NO. T-249
 6. PROVIDE EXTRA CONTACT RAIL SUPPORT PEDESTALS AT LIMITS OF TUNNEL SUBWAY DF TRACK, AS NECESSARY TO MAINTAIN 10'-0" MAXIMUM SUPPORT PEDESTAL SPACING.
 7. TOTAL THICKNESS OF DF RAIL FASTENER SHIMS TO BE USED FOR HEIGHT ADJUSTMENT VARIES FROM 1/8" MINIMUM TO 1/2" MAXIMUM.
 8. FOR #10 DOWELS DRILL 2 1/2" DIAMETER x 6" DEEP HOLES IN EXISTING INVERT AND SET IN GROUT.
 9. SET ELEVATION OF TOP OF SECOND POUR CONCRETE IN ACCORDANCE WITH CONTRACT SPECIFICATIONS.
 10. ADJUST SIZE OF #4 TIES AT 1'-3" O.C. AND HEIGHT OF SECOND POUR CONCRETE AS NECESSARY AT SUPERELEVATED TRACK LOCATIONS. FOR DETAILS OF SUPERELEVATED TRACK ORIENTATION, SEE DWG. NO. 223



TANGENT TRACK
SECTION A
SCALE: 1" = 1'-0"



SECTION B
SCALE: 1" = 1'-0"



SECTION C
SCALE: 1" = 1'-0"

REV	DATE	BY	SUB	APP	DESCRIPTION

DESIGNED BY
J. Lang
DRAWN BY
J. Lang
CHECKED BY
Paul T. Baker
IN CHARGE
Joseph B. Volante
15 JUL 85

**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

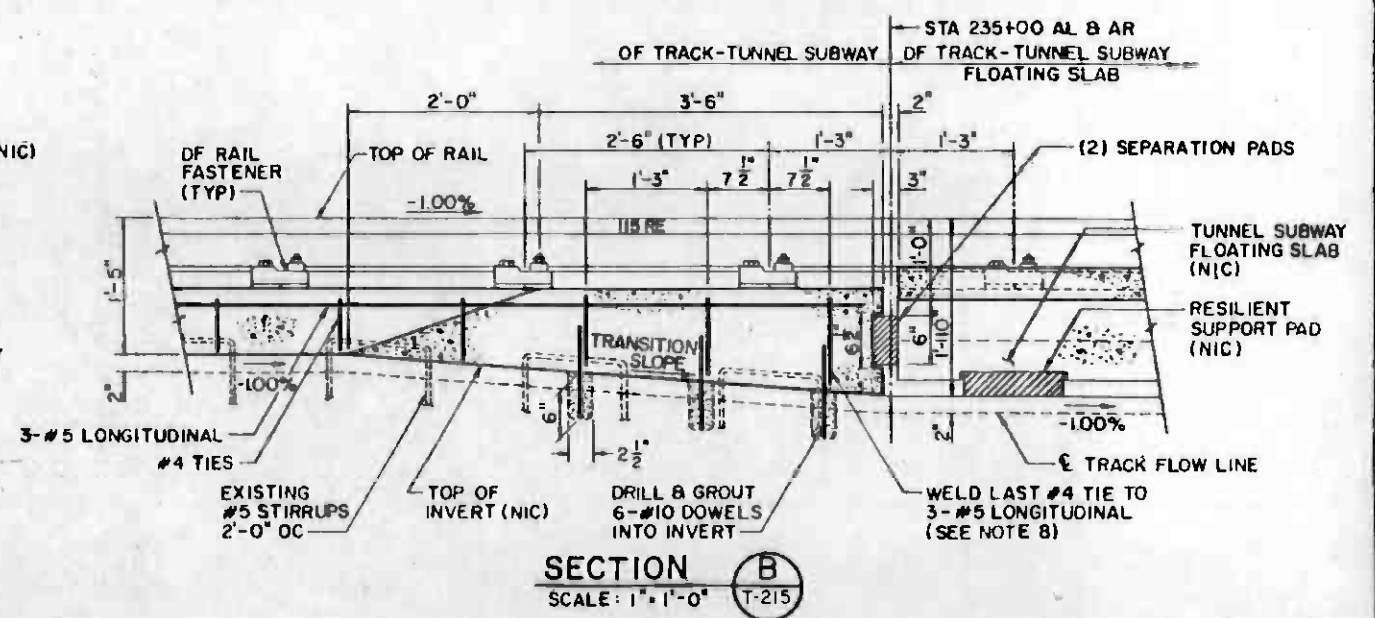
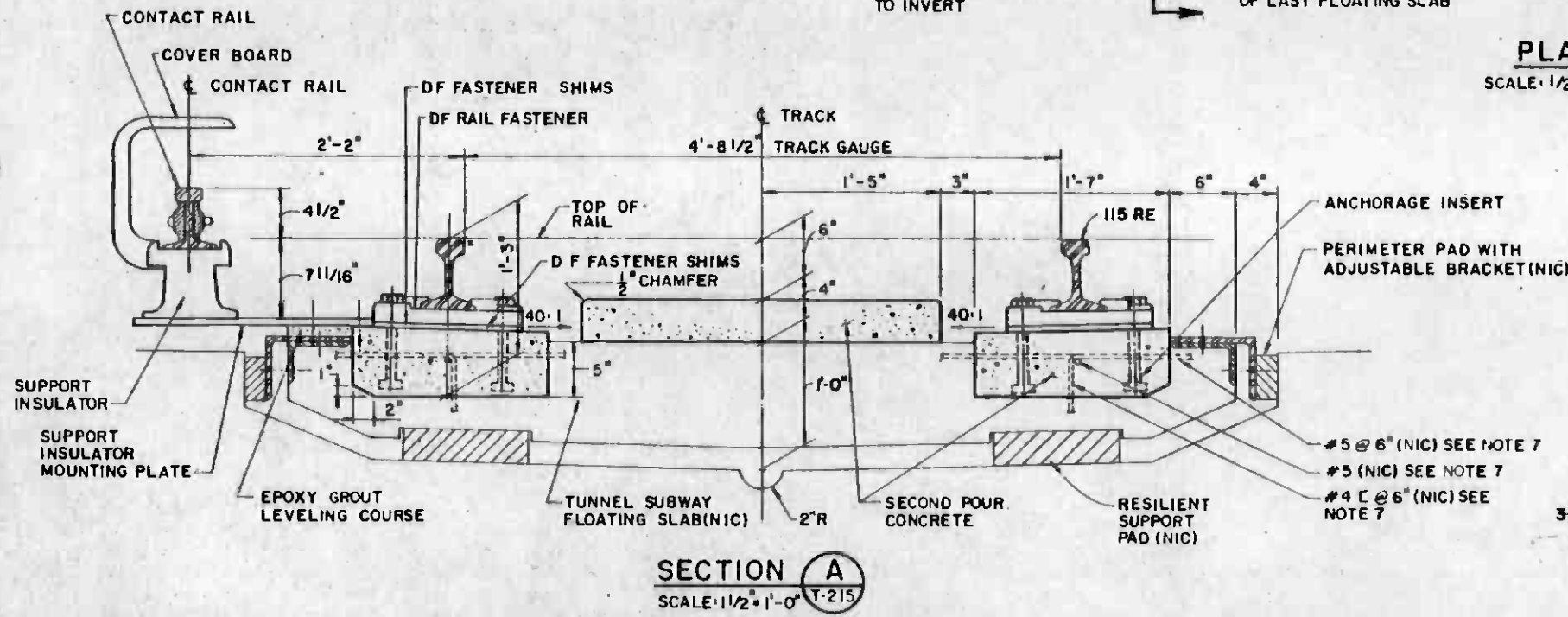
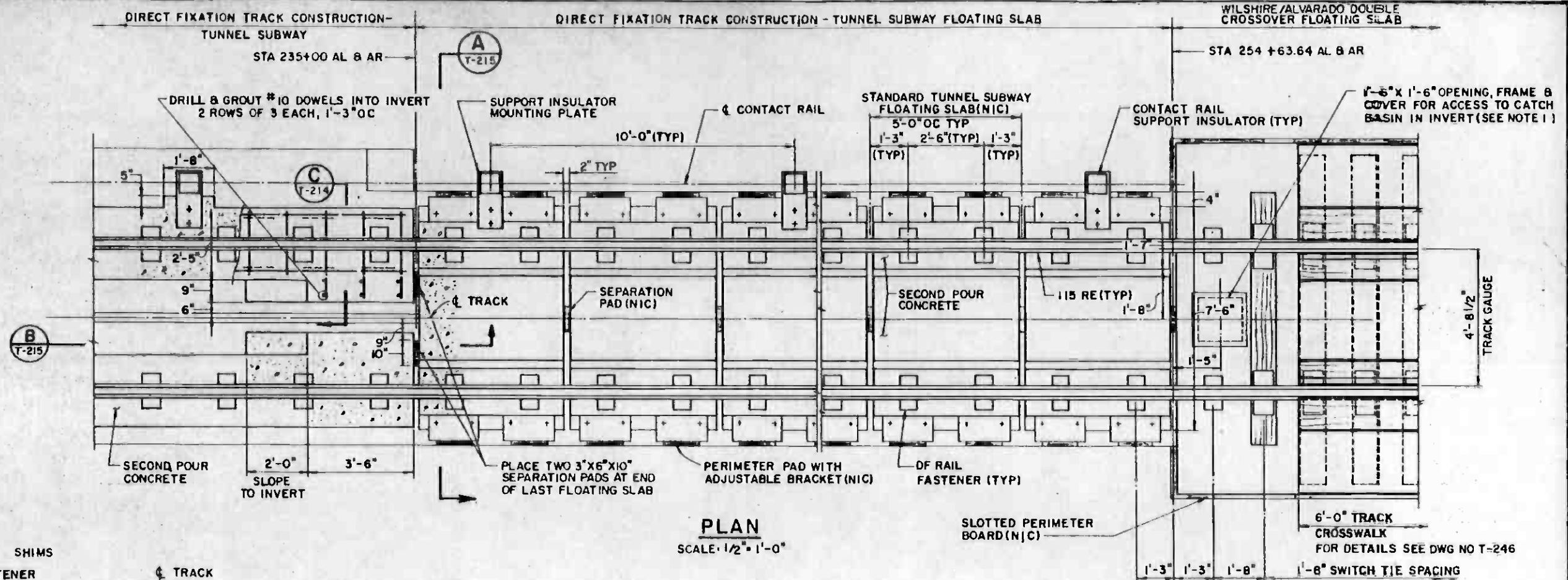
FTD

DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

APPROVED
Joseph B. Volante

CONTRACT NO. A-610	
DRAWING NO. T-214	REV.
SCALE AS NOTED	
SHEET NO. A620 / 315	





- NOTES:**
- 1 FOR WILSHIRE/ALVARADO DOUBLE CROSSOVER FLOATING SLAB DETAILS, SEE DRAWING NOS. T-216, T-217 AND T-226.
 - 2 FOR DETAILS OF TUNNEL SUBWAY FLOATING SLAB, SEE INFORMATION DRAWINGS.
 - 3 SET ELEVATION OF TOP OF SECOND POUR CONCRETE IN ACCORDANCE WITH CONTRACT SPECIFICATIONS.
 - 4 TOTAL THICKNESS OF DF RAIL FASTENER SHIMS TO BE USED FOR HEIGHT ADJUSTMENT VARIES FROM 1/8" MINIMUM TO 1/2" MAXIMUM.
 - 5 INSTALL SUPPORT INSULATOR MOUNTING PLATE AS PER DETAIL ON DRAWING NO.

- 6 TANGENT TRACK CONDITION SHOWN. TRACK CONSTRUCTION FOR SUPERELEVATED SIMILAR EXCEPT HEIGHT OF SECOND POUR CONCRETE AND CONTACT RAIL INSTALLATION ARE ADJUSTED FOR GIVEN SUPERELEVATION.
7. EXISTING REINFORCING STEEL MAY BE BENT OR CUT, UPON APPROVAL BY THE DISTRICT OR ITS DESIGNEE, ONLY AS NECESSARY TO CLEAR DIRECT FIXATION RAIL FASTENER ANCHORAGE INSERTS.
- 8 WELD REINFORCING STEEL AS PER DRAWING NO. T-249



REV	DATE	BY	SUB	APP	DESCRIPTION

DESIGNED BY
[Signature]
DRAWN BY
[Signature]
CHECKED BY
[Signature]
DATE
15 JUL 85

**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

ATD

DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

SUBMITTER *Joseph S. Valera*

APPROVED

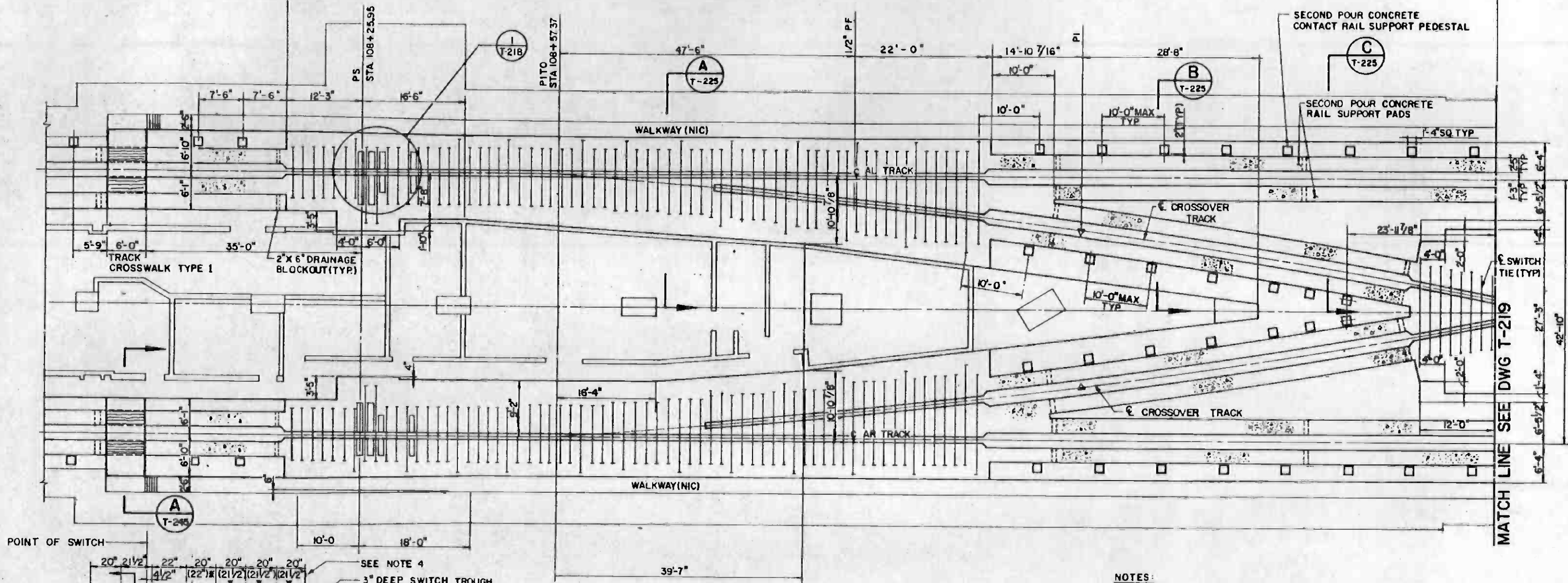
**LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION**

**DIRECT FIXATION TRACK CONSTRUCTION
TUNNEL SUBWAY FLOATING SLAB**

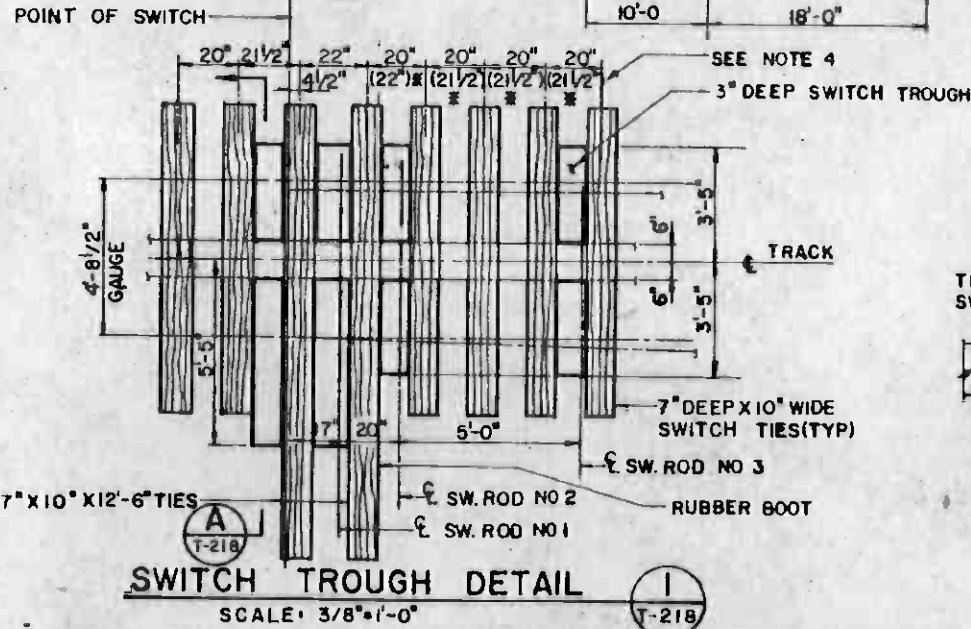
CONTRACT NO. A 610
DRAWING NO. T-215
SCALE AS NOTED
SHEET NO. 4620/316

OF TRACK - CUT & COVER
TYPE 2

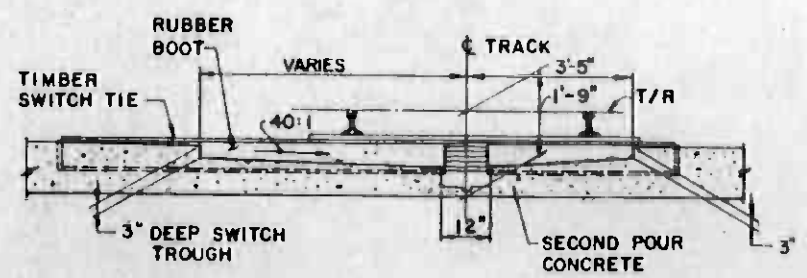
410'-4 13/16" DOUBLE CROSSOVER UNIT



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



SWITCH TROUGH DETAIL
SCALE: 3/8" = 1'-0"



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

- NOTES:
1. DIRECT FIXATION FASTENERS AND RAILS NOT SHOWN. FOR SPECIAL TRACKWORK AND TRACK GEOMETRY DETAILS SEE DWG. NO. T-179.
 2. FOR DETAILS OF TYPE 1 TRACK CROSSWALK, SEE DWG. NO. T-245.
 3. FOR STRUCTURAL DIMENSIONS SEE INFORMATION DRAWINGS.
 - * 4. DIMENSIONS SHOWN IN PARENTHESIS IN THE SWITCH TROUGH DETAIL ARE TO BE USED FOR THE WILSHIRE /ALVARDO SWITCH.



REV.	DATE	BY	SUB.	APP.	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION. URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND BY THE STATE OF CALIFORNIA.

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE
15 JUL 85

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

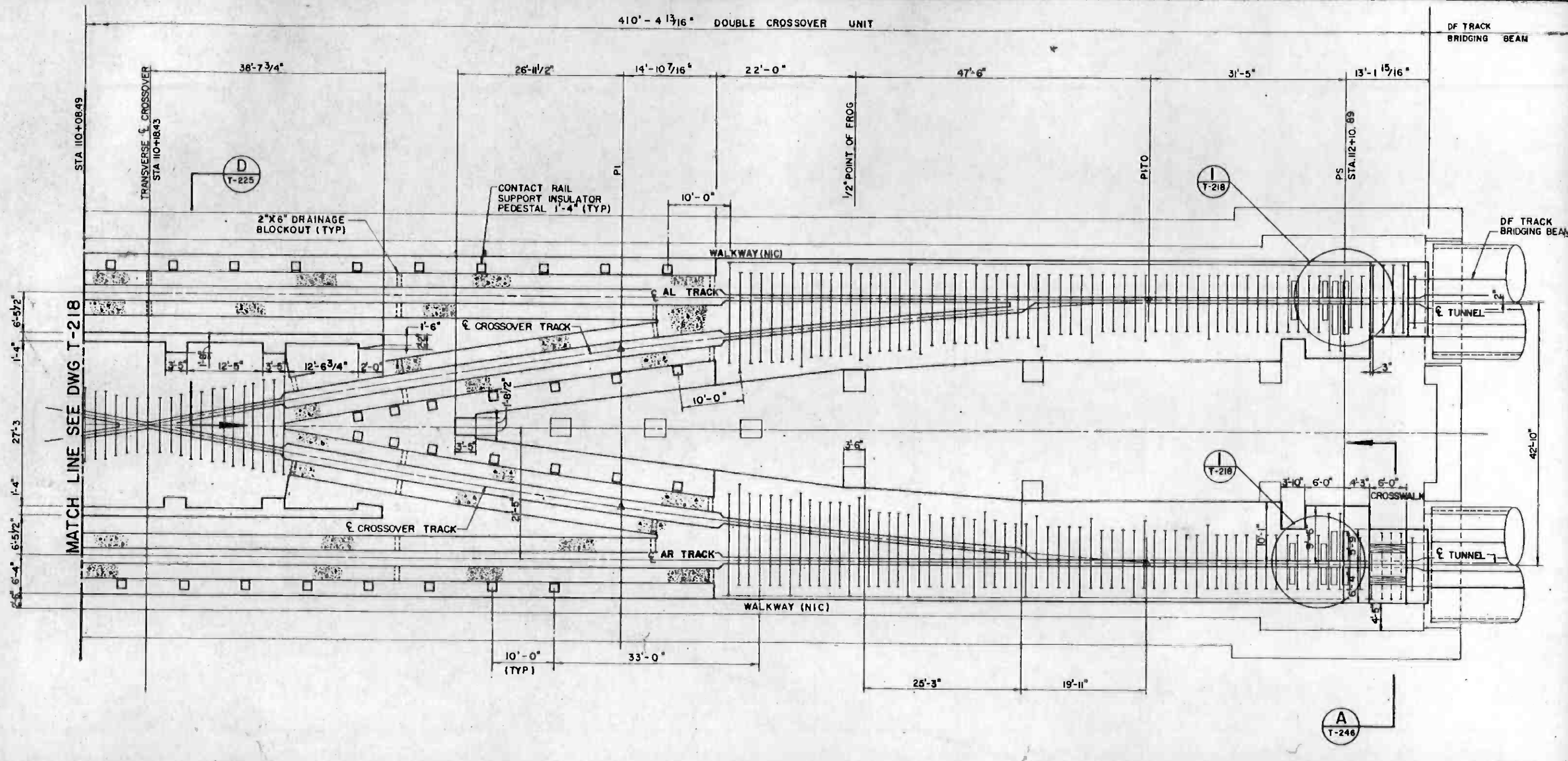
SUBMITTED: *Joseph B. Volkmann*
APPROVED: _____

LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION

SECOND POUR CONCRETE LAYOUT
42'10" TC DOUBLE CROSSOVER PLAN. SHEET 1

CONTRACT NO.	A-610
DRAWING NO.	T-218
SCALE	AS NOTED
SHEET NO.	A620 / 319

410' - 4 13/16" DOUBLE CROSSOVER UNIT



PLAN

REV.	DATE	BY	SUB.	APP.	DESCRIPTION

DESIGNED BY
J. Leclair
DRAWN BY
V. ...
CHECKED BY
...
IN CHARGE
...
DATE
15 JUL 85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

SUBMITTER: Joseph B. Volkman

APPROVED:

LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION

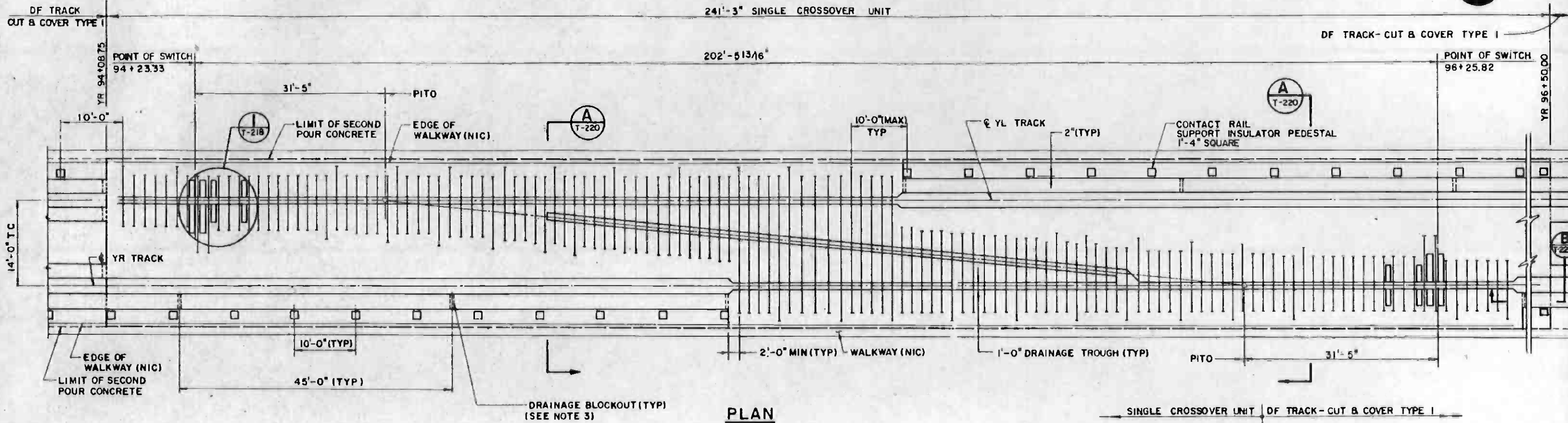
SECOND POUR CONCRETE LAYOUT
42'-10" TC DOUBLE CROSSOVER PLAN SHEET 2

CONTRACT NO.
A610

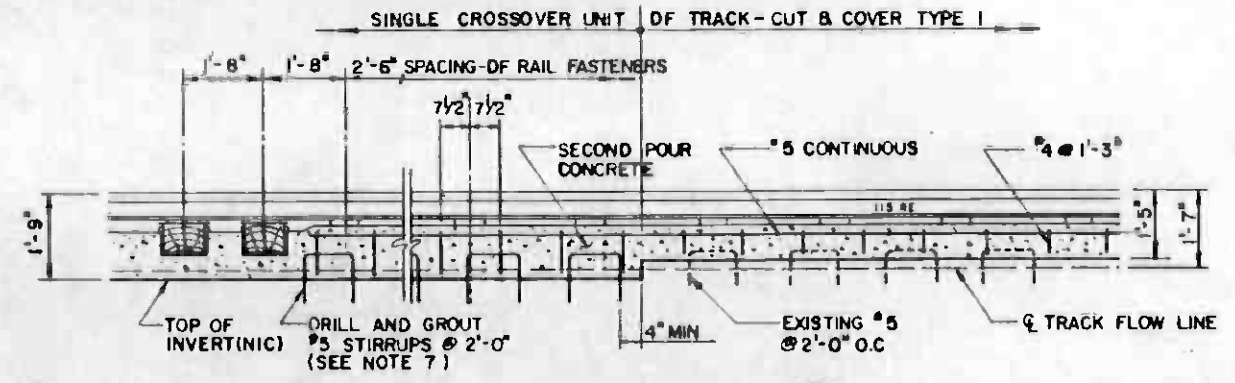
DRAWING NO.
T-219

SCALE
1/8" = 1'-0"

SHEET NO.
A620/320

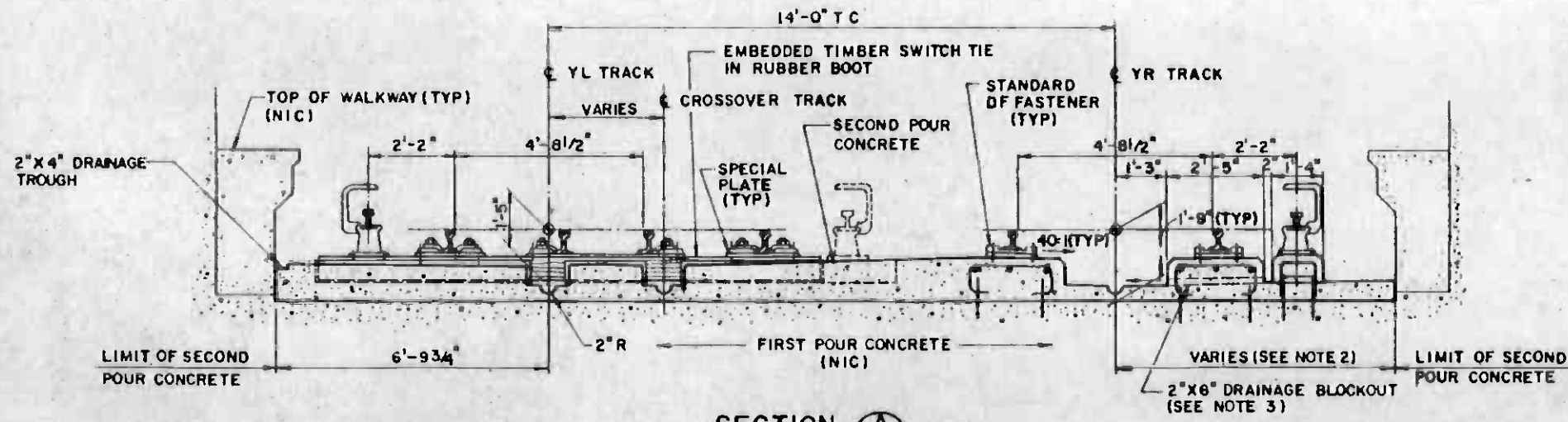


PLAN
SCALE: 1/8" = 1'-0"



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

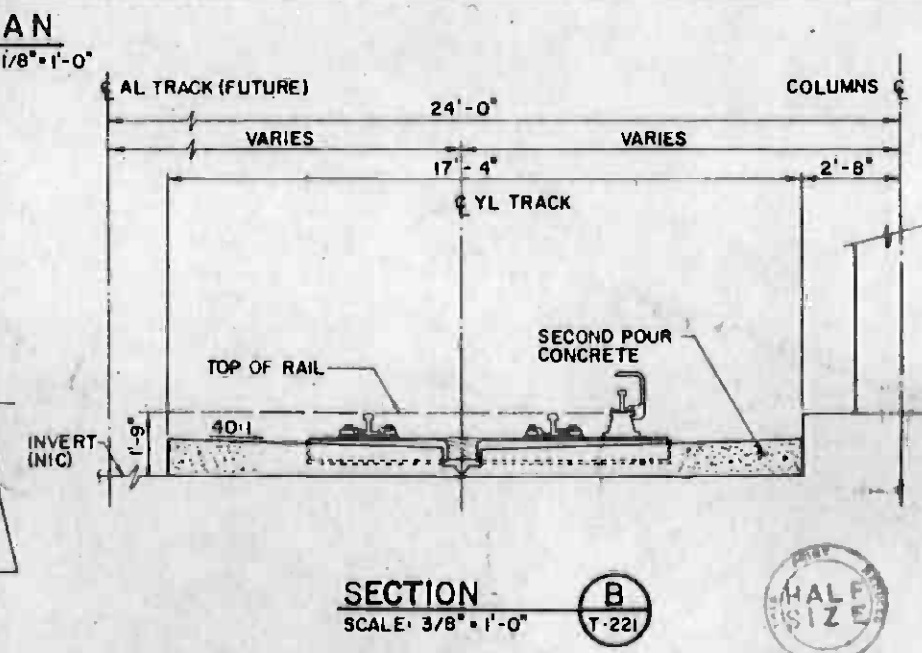
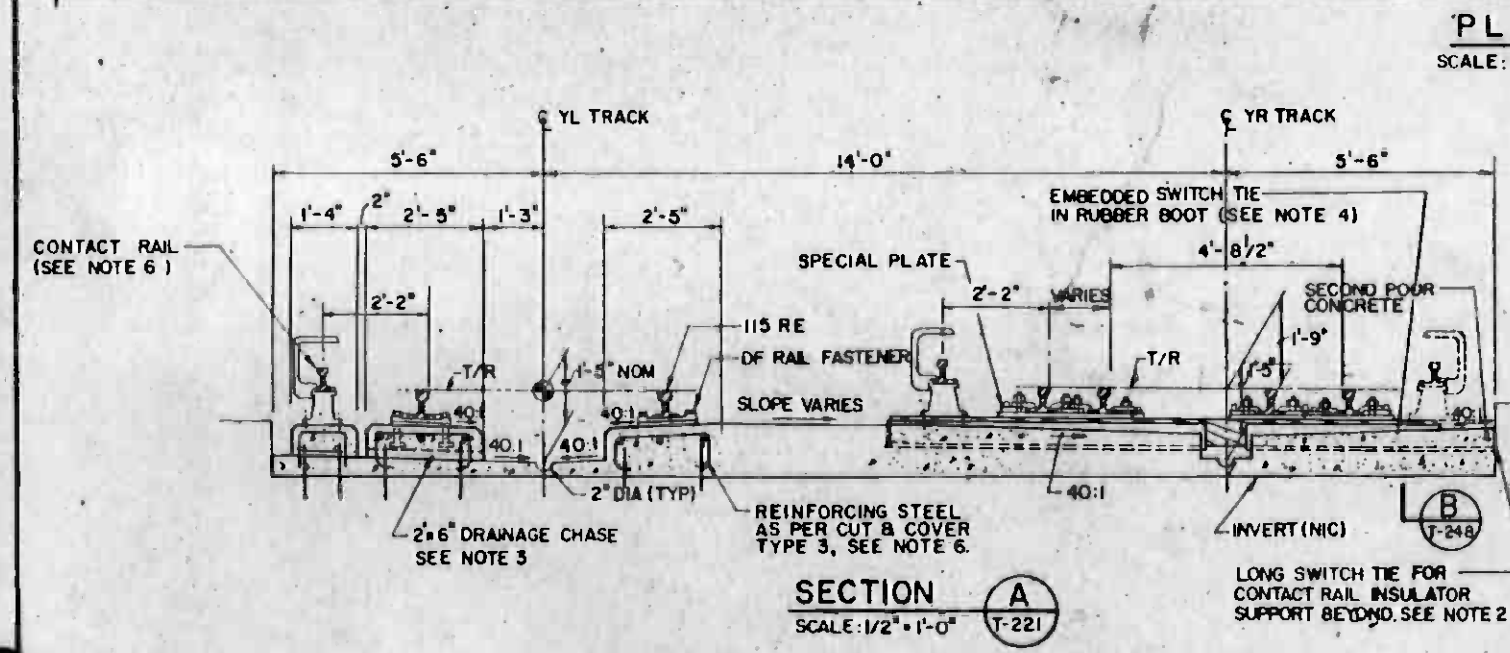
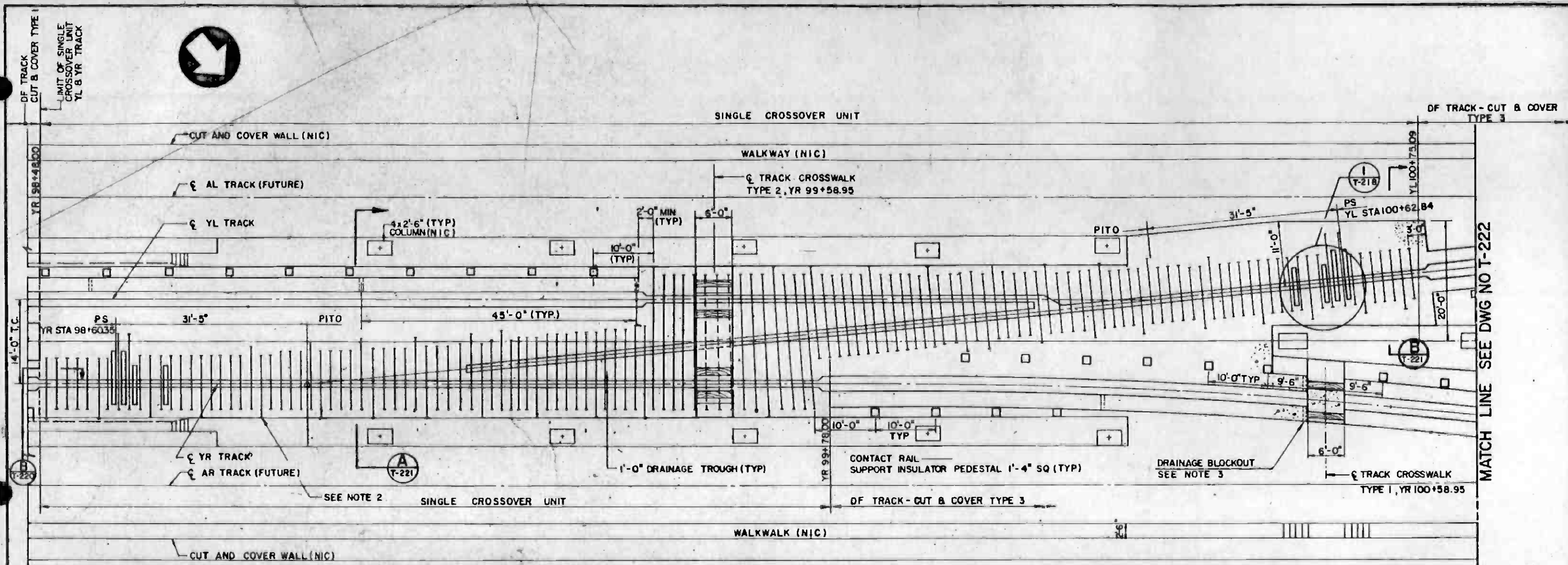
- NOTE:**
1. RAILS AND DIRECT FIXATION FASTENERS NOT SHOWN ON PLAN. FOR DETAILS SEE DWG. NO. T-173.
 2. CENTERLINE OF YR TRACK TO LIMIT OF SECOND POUR CONCRETE DIMENSION VARIES. FOR DETAILS SEE INFORMATION DWG. NO. S-015 & S-027 IN CONTRACT A130.
 3. DRAINAGE BLOCKOUT SIMILAR TO SECTION B DWG. NO. T-214.
 4. PROVIDE 40 TO 1 MIN TRANSVERSE SLOPE TOWARD TRACK CENTERLINE FOR ALL SECOND POUR CONCRETE SURFACES EXCEPT PEDESTALS FOR CONTACT RAIL SUPPORT INSULATORS, WHICH ARE TO BE SET LEVEL. ENSURE THAT ALL TRACK CONCRETE SURFACES WILL DRAIN FREELY WITHOUT PONDING.
 5. FOR DETAILS DF DF TRACK, CUT & COVER TYPE 1, SEE DWG. NO. T-213.
 6. FOR EMBEDDED TIMBER TIE INSTALLATION DETAILS, SEE DWG. NO. T-24B.
 7. REINFORCING STEEL SHALL BE PROVIDED AS PER DWG. T-213: DIRECT FIXATION TRACK, CUT & COVER TYPE 3.



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

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION DEMONSTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY <i>[Signature]</i> CHECKED BY <i>[Signature]</i> IN CHARGE <i>[Signature]</i> DATE 15 JUL 85		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT SUBMITTER <i>[Signature]</i>				LA CBD TO NORTH HOLLYWOOD TRACKWORK INSTALLATION SECOND POUR CONCRETE LAYOUT NO. 10 SINGLE CROSSOVER-TYPE 1		CONTRACT NO. A-610 DRAWING NO. T-220 SCALE AS NOTED SHEET NO. A620/321	
REV.	DATE	BY	APP.	DESCRIPTION	REV.	DATE	BY	APP.	DESCRIPTION	DATE	APPROVED		

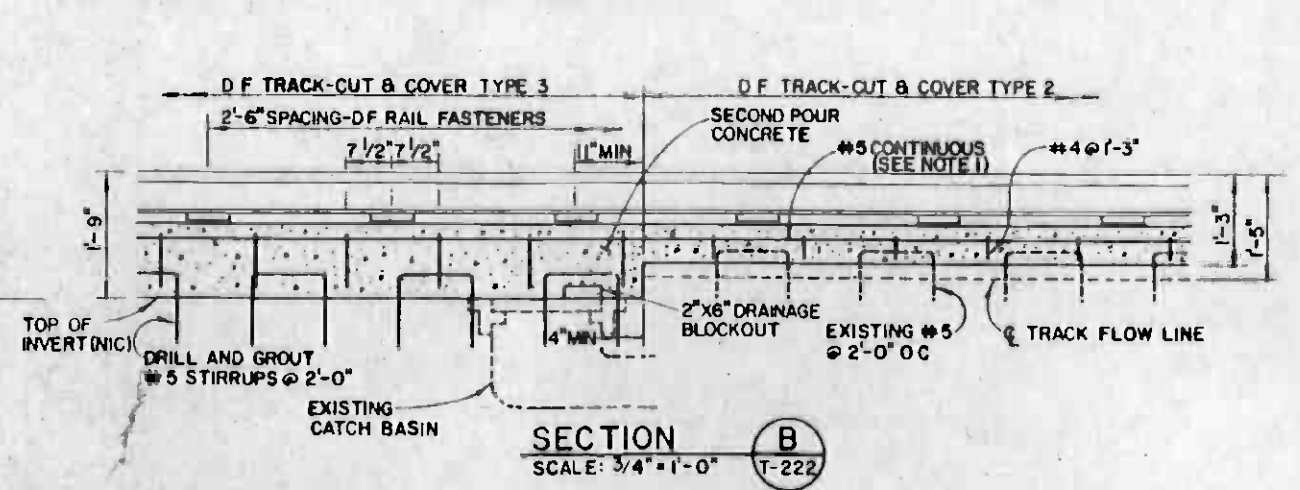
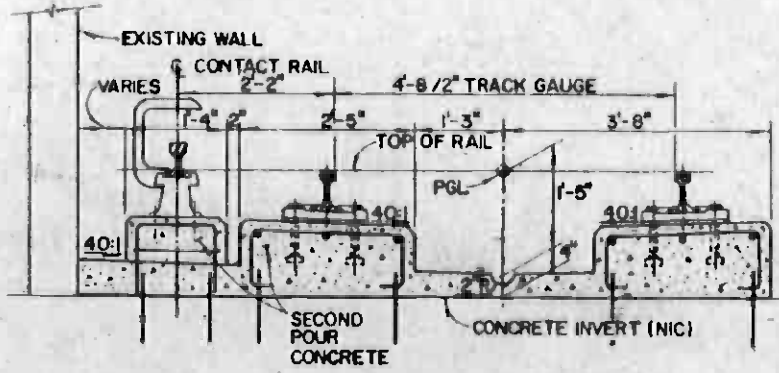
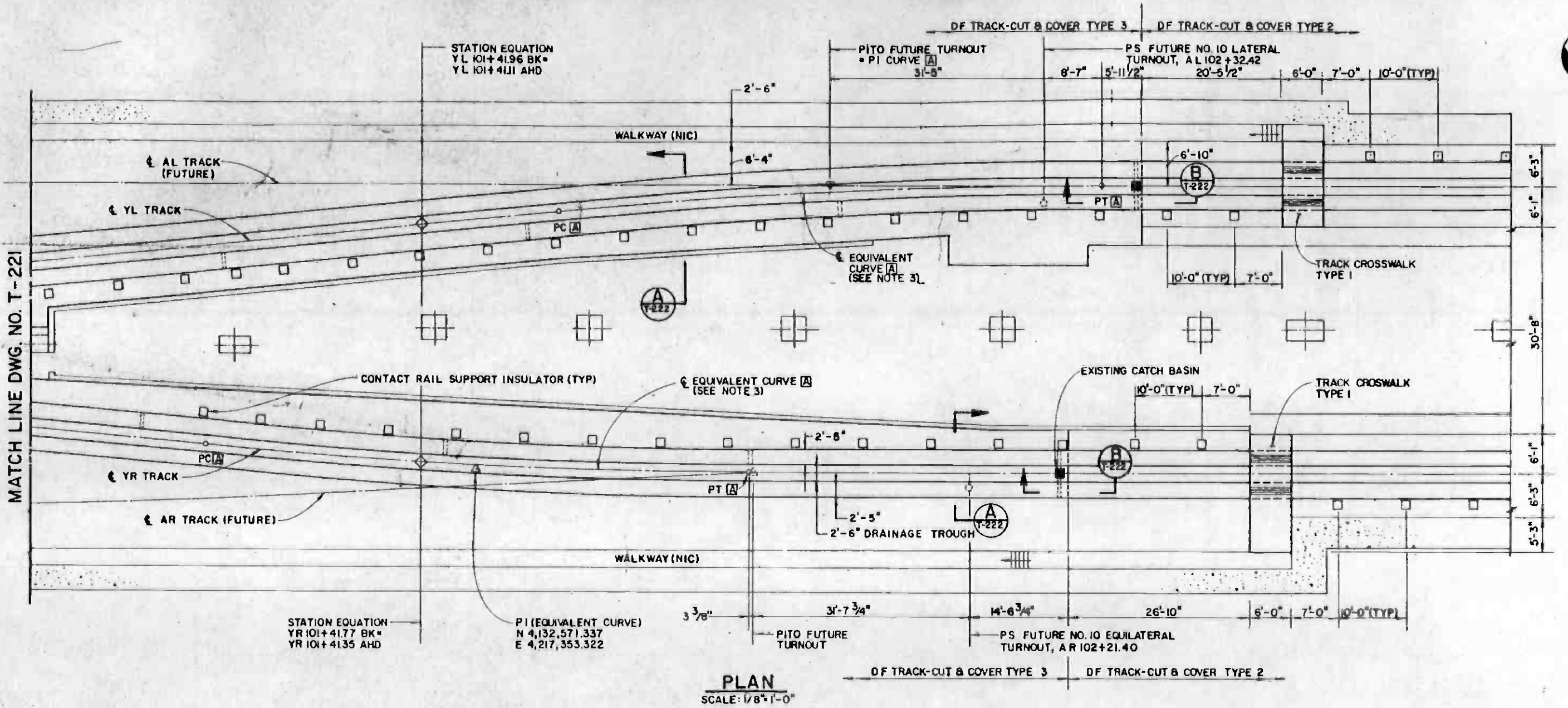




- NOTES**
- RAILS AND DIRECT FIXATION RAIL FASTENERS NOT SHOWN. FOR DETAILS OF SPECIAL TRACKWORK SEE DWG. NO. T-174
 - ADJUST SWITCH TIES SUPPORTING CONTACT RAIL INSULATORS AS NECESSARY TO CLEAR OUTSIDE EDGE OF INVERT.
 - DRAINAGE BLOCKOUT SIMILAR TO SECTION B DWG. NO. T-214
 - FOR EMBEDDED TIMBER TIE INSTALLATION DETAILS, SEE DWG. NO. T-248.
 - FOR CONTACT RAIL MOUNTING DETAILS, SEE DWG. NO. T-308
 - REINFORCING STEEL SHALL BE PROVIDED AS PER DIRECT FIXATION TRACK, CUT & COVER TYPE 3, AS SHOWN ON DWG. NO. T-213.
 - FOR DETAILS OF DF TRACK, CUT & COVER TYPE 1, SEE DWG. NO. T-213.
 - PROVIDE 40 TO 1 (MIN) TRANSVERSE SLOPE TOWARD TRACK CENTERLINE FOR ALL SECOND POUR CONCRETE SURFACES EXCEPT PEDESTALS FOR CONTACT RAIL SUPPORT INSULATORS, WHICH ARE TO BE SET LEVEL. ENSURE THAT ALL TRACK CONCRETE SURFACES WILL DRAIN FREELY WITHOUT PONDING.

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIES OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA				DESIGNED BY <i>J. L. ...</i> DRAWN BY <i>J. ...</i> CHECKED BY <i>...</i> DATE 15 JUL 85		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT 	DMJM/PBOD/KE/HWA GENERAL CONSULTANTS APPROVED <i>Joseph B. Valencia</i>	LA CBD TO NORTH HOLLYWOOD TRACKWORK INSTALLATION SECOND POUR CONCRETE LAYOUT NO. 10 SINGLE CROSSOVER-TYPE 2 SHEET 1 OF 2	CONTRACT NO. A-610 DRAWING NO. T-221 SCALE AS NOTED SHEET NO. A620/322
---	--	--	--	---	--	--	--	--	---

MATCH LINE DWG. NO. T-221



CURVE DATA - CURVE A	
R	800'
I	5°-43'-29"
T	40.00'
Ea	0"
Lc	79.932'

- NOTES:**
1. WELD REINFORCING STEEL AS PER DWG T-249.
 2. SEE NOTES ON DWG NO T-221
 3. REPLACE DEFERRED NO. 10 LATERAL & EQUILATERAL TURNOUTS WITH EQUIVALENT CURVE A, USING CURVE DATA SHOWN AT LEFT.



REV	DATE	BY	SUB	APP	DESCRIPTION

DESIGNED BY: J. Leclair
 DRAWN BY: J. Valera
 CHECKED BY: J. Valera
 IN CHARGE: Joseph B. Valera
 DATE: 15 JUL 85

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

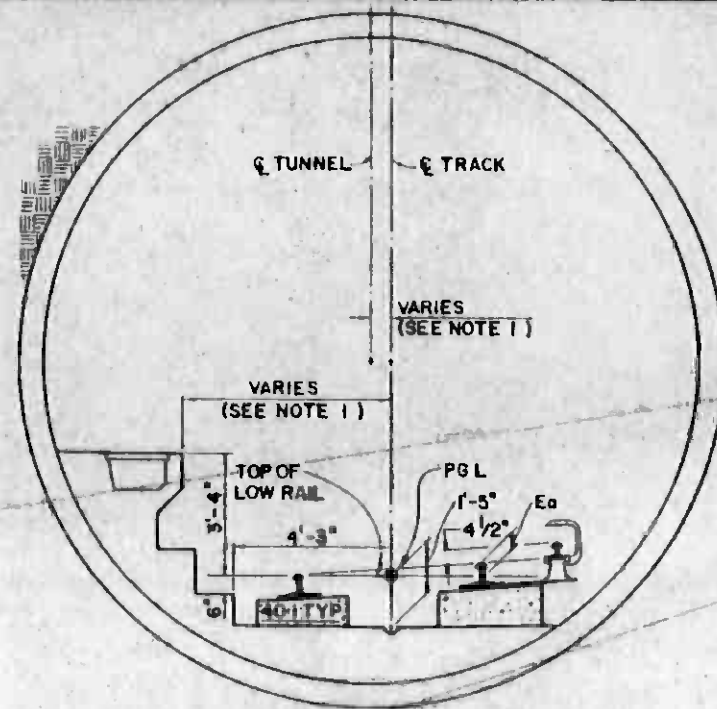
DMJM/PROG/KE/HWA
 GENERAL CONSULTANTS

APPROVED: *Joseph B. Valera*

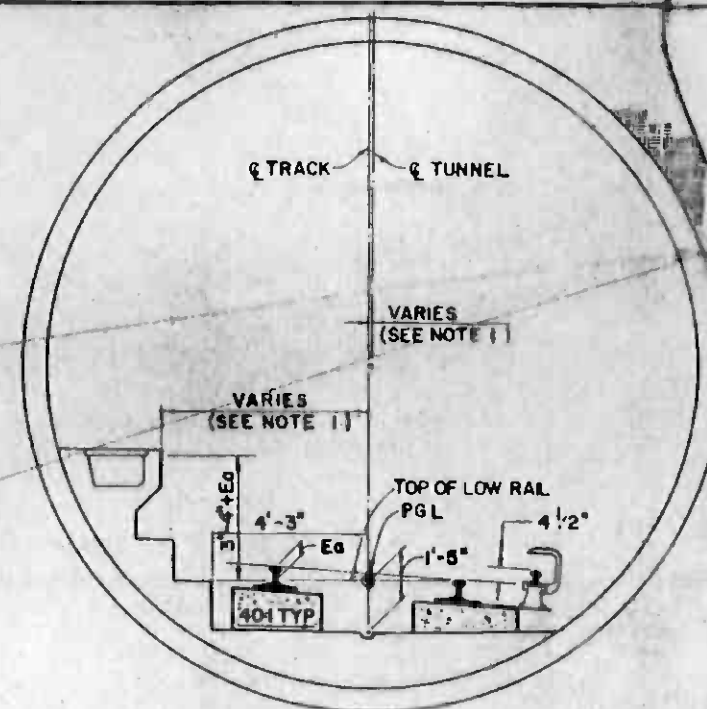
LA CBD TO NORTH HOLLYWOOD
 TRACKWORK INSTALLATION

SECOND POUR CONCRETE LAYOUT
 NO. 10 SINGLE CROSSOVER - TYPE 2
 SHEET 2 OF 2

CONTRACT NO. A 610
 DRAWING NO. T-222
 SCALE AS NOTED
 SHEET NO. A 620/323

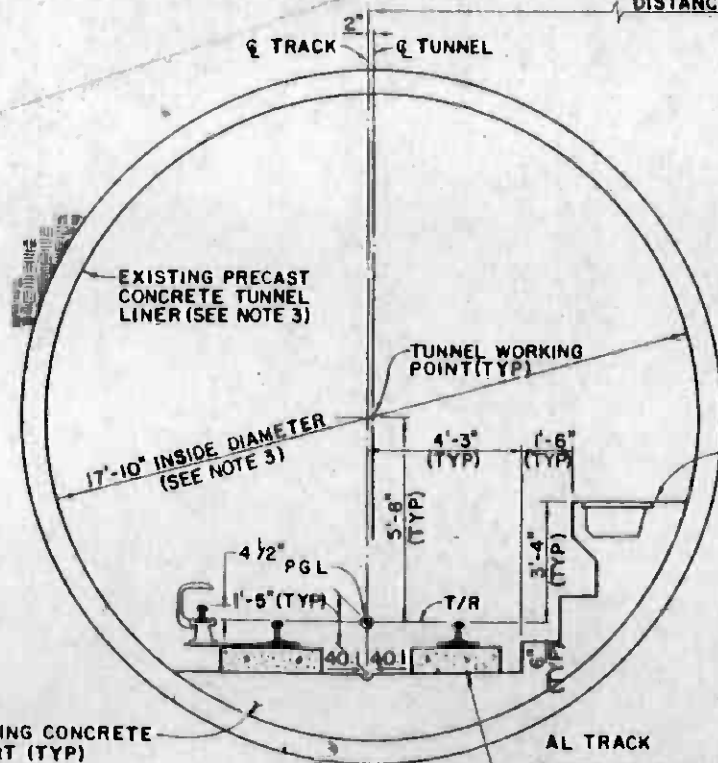


**SINGLE TRACK - SUPERELEVATED
LOW-RAIL NEXT TO WALKWAY**

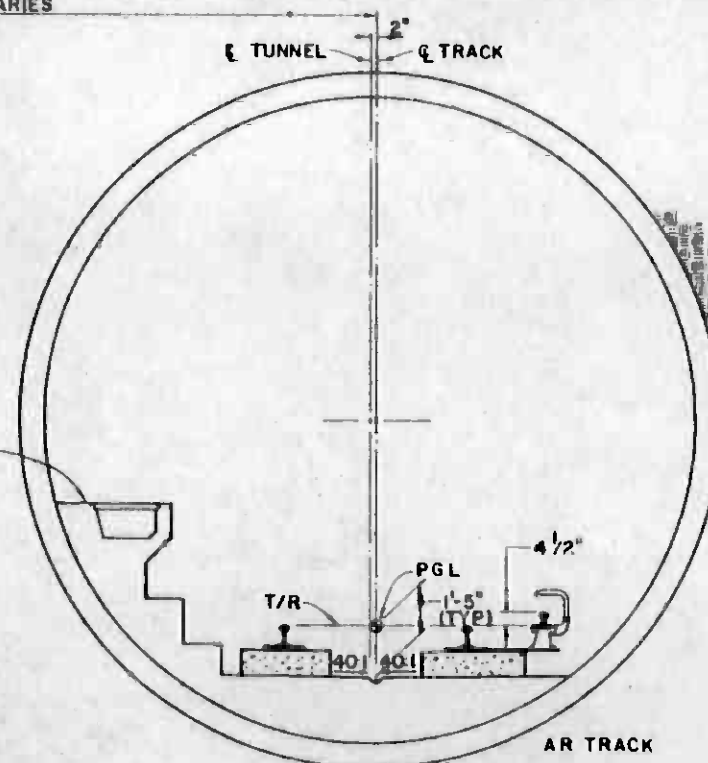


**SINGLE TRACK - SUPERELEVATED
LOW-RAIL OPPOSITE WALKWAY**

DISTANCE BETWEEN TRACK CENTERS VARIES
- SEE TRACK CHARTS -



DOUBLE TRACK-TANGENT



NOTES:

1. THE ORIENTATION AND DIMENSIONS OF Q OF TUNNEL TO Q TRACK AND WALKWAY OFFSETS VARY BY LOCATION. FOR MORE INFORMATION, REFER TO INFORMATION DRAWINGS.
2. FOR REINFORCING DETAILS, SEE DWG NO T-214.
3. PRECAST TUNNEL LINER SHOWN. TUNNEL LINER DESIGN AND INSIDE DIAMETER MAY VARY. REFER TO INFORMATION DRAWINGS FOR DETAILS OF TUNNEL CONSTRUCTION.



REV.	DATE	BY	SUB	APP	DESCRIPTION

DESIGNED BY
J. D. [Signature]
DRAWN BY
J. K. [Signature]
CHECKED BY
P. J. [Signature]
IN CHARGE
Joseph B. [Signature]
DATE
15 JUL 85



**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

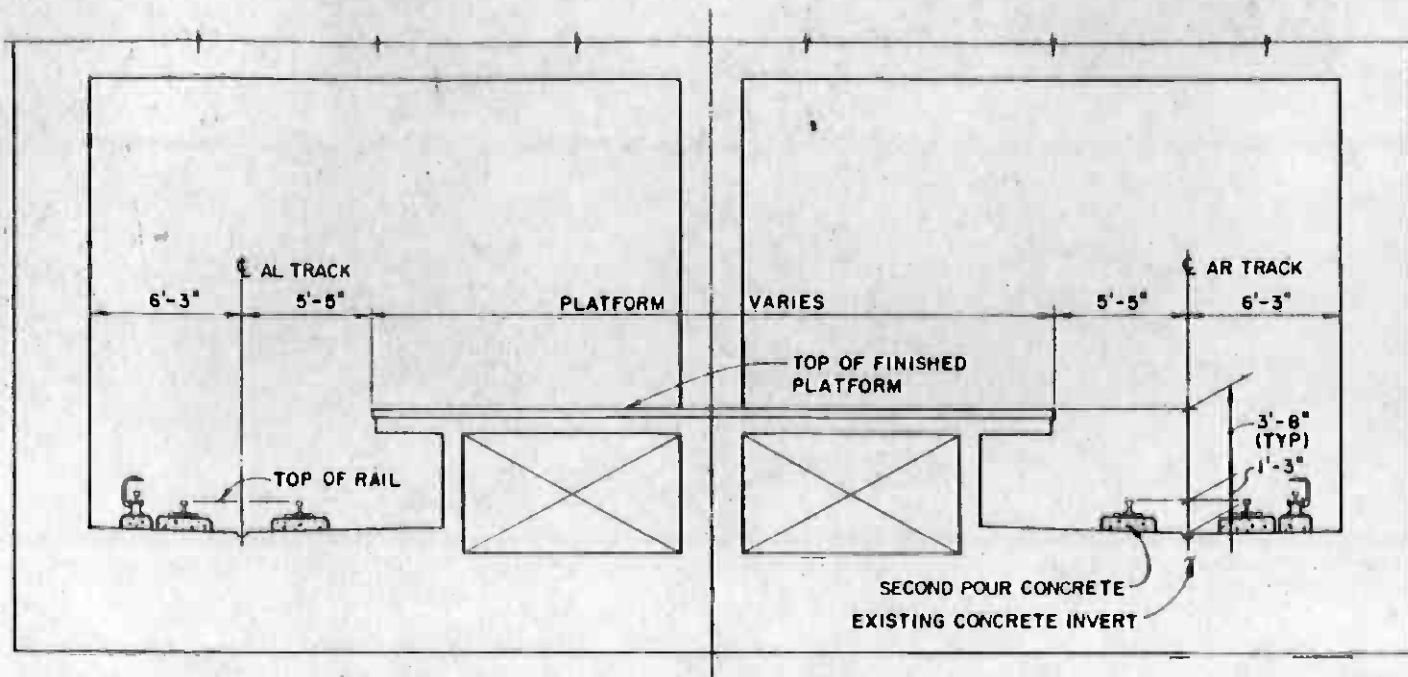
DMJM/PBQO/KE/HWA
GENERAL CONSULTANTS

APPROVED: _____

**LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION**

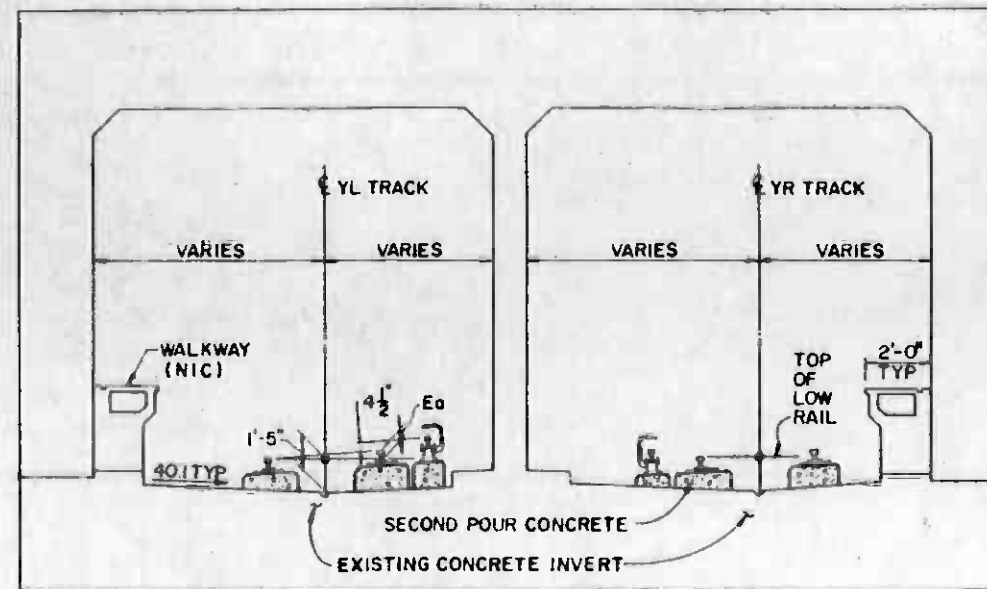
TYPICAL SECTIONS-TUNNEL SUBWAY

CONTRACT NO.	A 610
DRAWING NO.	T-223
SCALE	3/8" = 1'-0"
SHEET NO.	A620/324



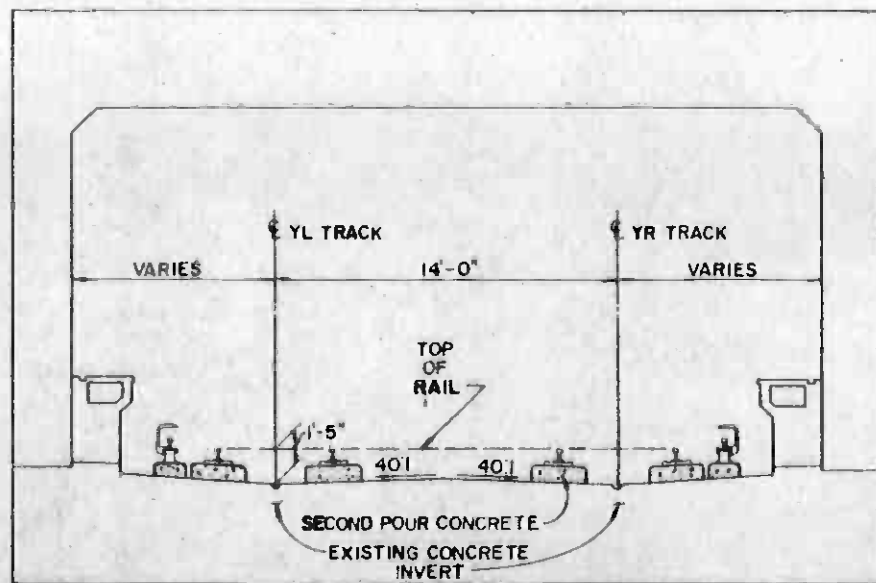
STATION PLATFORM

SCALE: $\frac{1}{4} = 1'-0"$



YARD LEAD TRACKS - SUPERELEVATED

SCALE: $\frac{1}{4} = 1'-0"$



YARD LEAD TRACKS - TANGENT

SCALE: $\frac{1}{4} = 1'-0"$

NOTES:

- 1 OFFSET DIMENSIONS FROM ϵ TRACK TO ADJACENT WALLS AND WALKWAYS VARY BY LOCATION. FOR MORE INFORMATION, REFER TO INFORMATION DRAWINGS.
- 2 FOR FURTHER DETAILS OF DIRECT FIXATION TRACK CONSTRUCTION IN CUT & COVER SUBWAY STRUCTURES, SEE DRAWING NO. T-213.



REV	DATE	BY	SUB	APP	DESCRIPTION

DESIGNED BY
[Signature]
DRAWN BY
[Signature]
CHECKED BY
[Signature]
IN CHARGE
[Signature]
DATE
15 JUL 85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

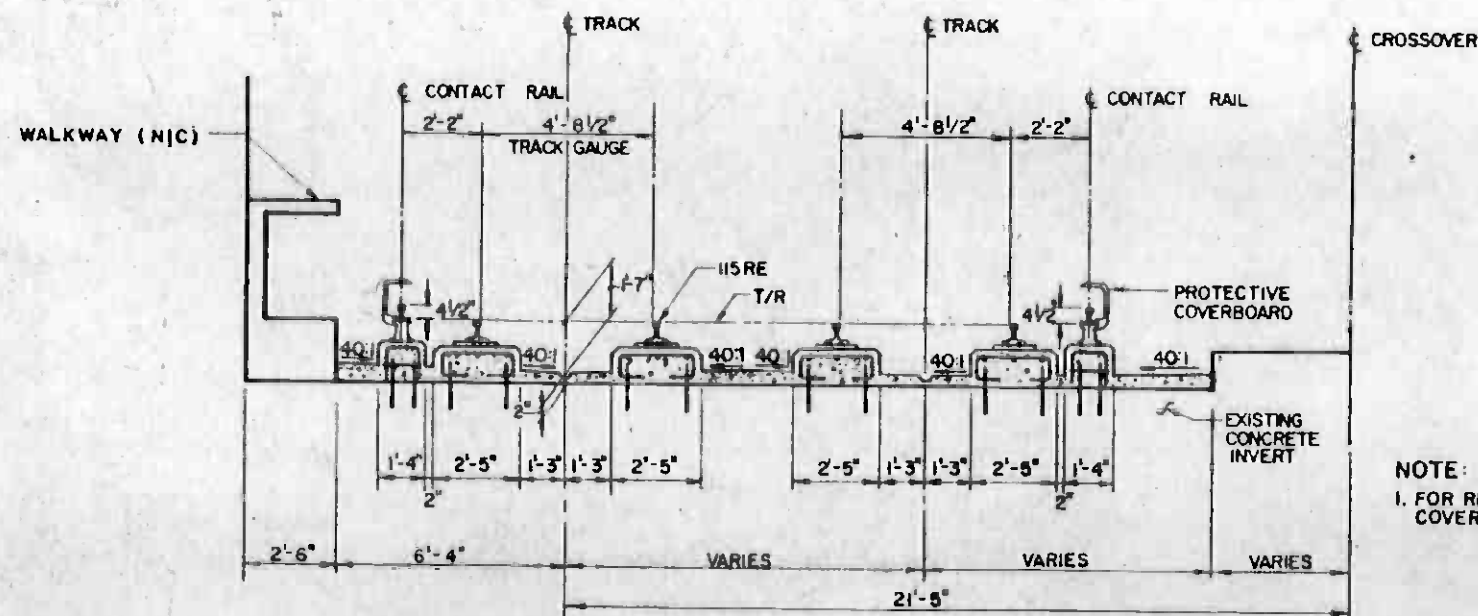
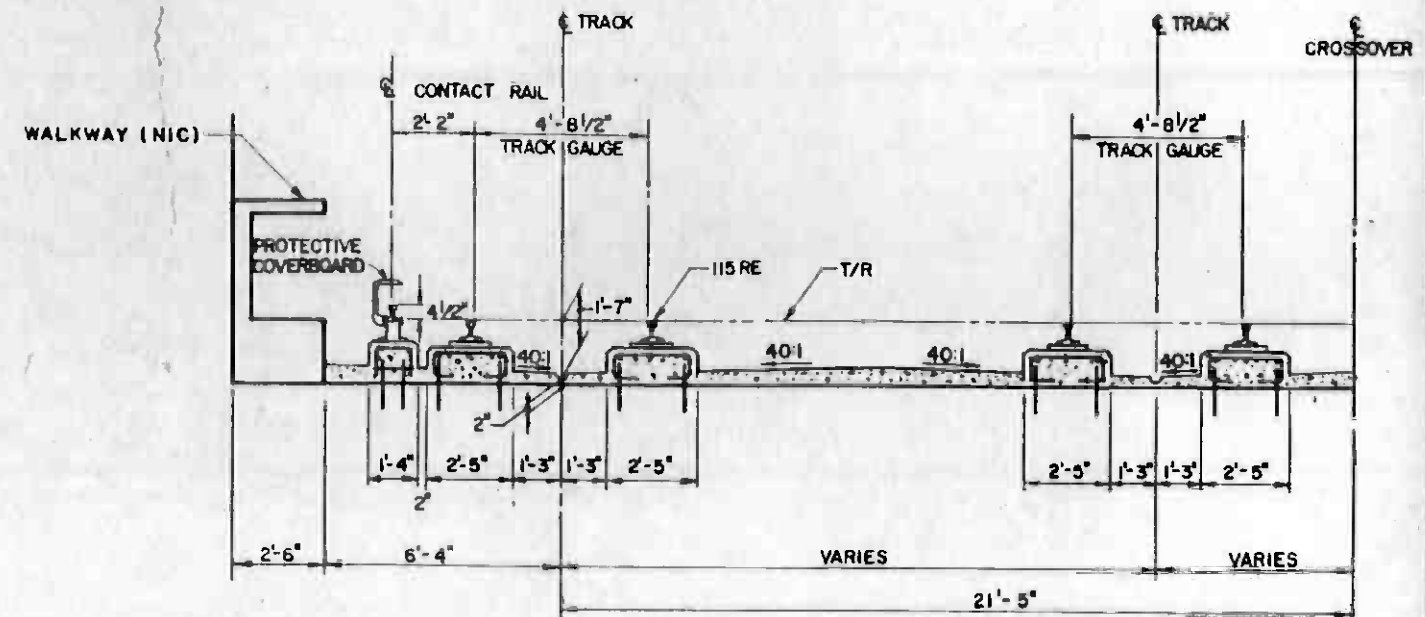
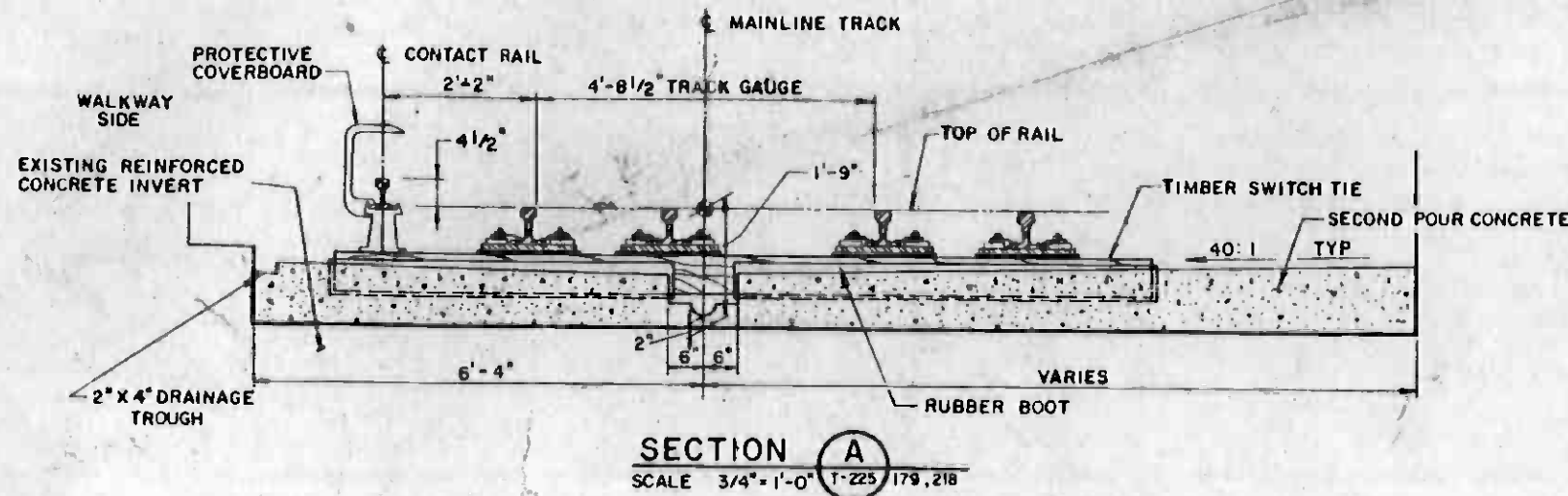
DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

SUBMITTED *Joseph B. Valera*
APPROVED _____

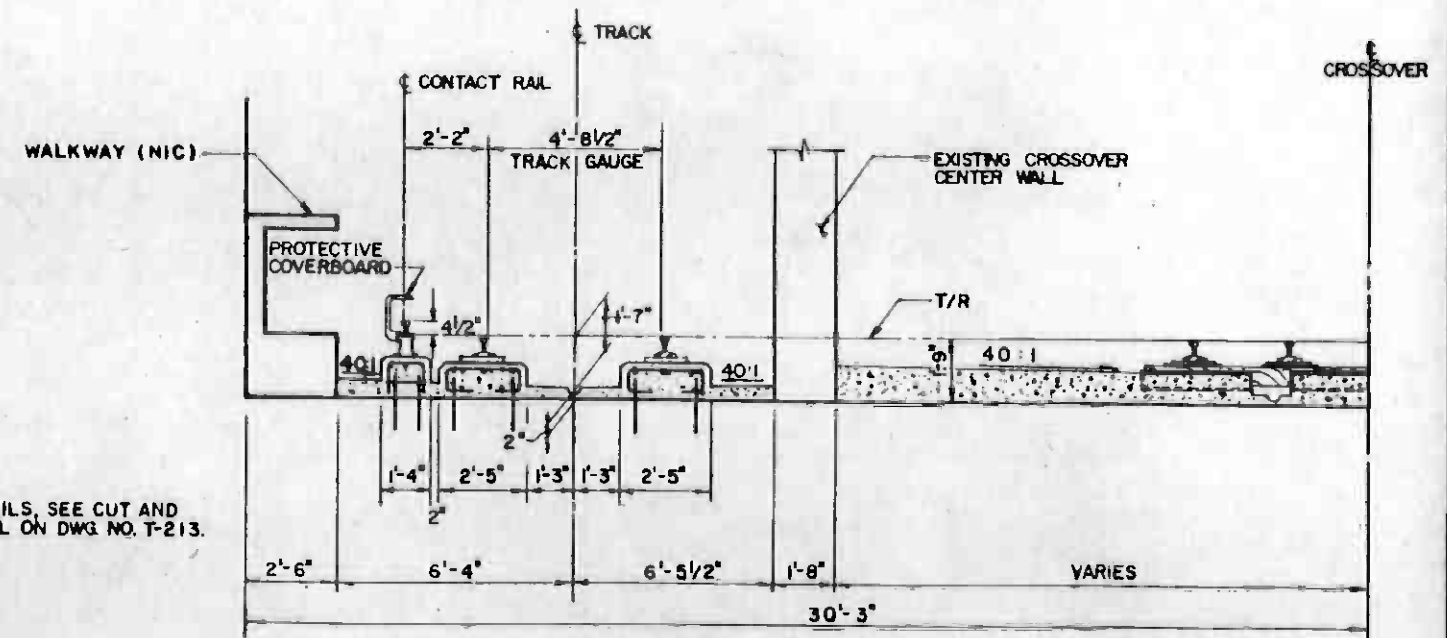
LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION

TYPICAL SECTIONS
CUT AND COVER SUBWAY STRUCTURE

CONTRACT NO. A 610
DRAWING NO. T-224
SCALE AS NOTED
SHEET NO. A 620 / 326



NOTE:
1. FOR REINFORCING DETAILS, SEE CUT AND COVER TYPE 3 DETAIL ON DWG NO. T-213.



REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY
3. Ledger
DRAWN BY
Nelson C. Day
CHECKED BY
L. P. Johnson
IN CHARGE
Luis B. Valera
DATE
15 JUL 85



**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

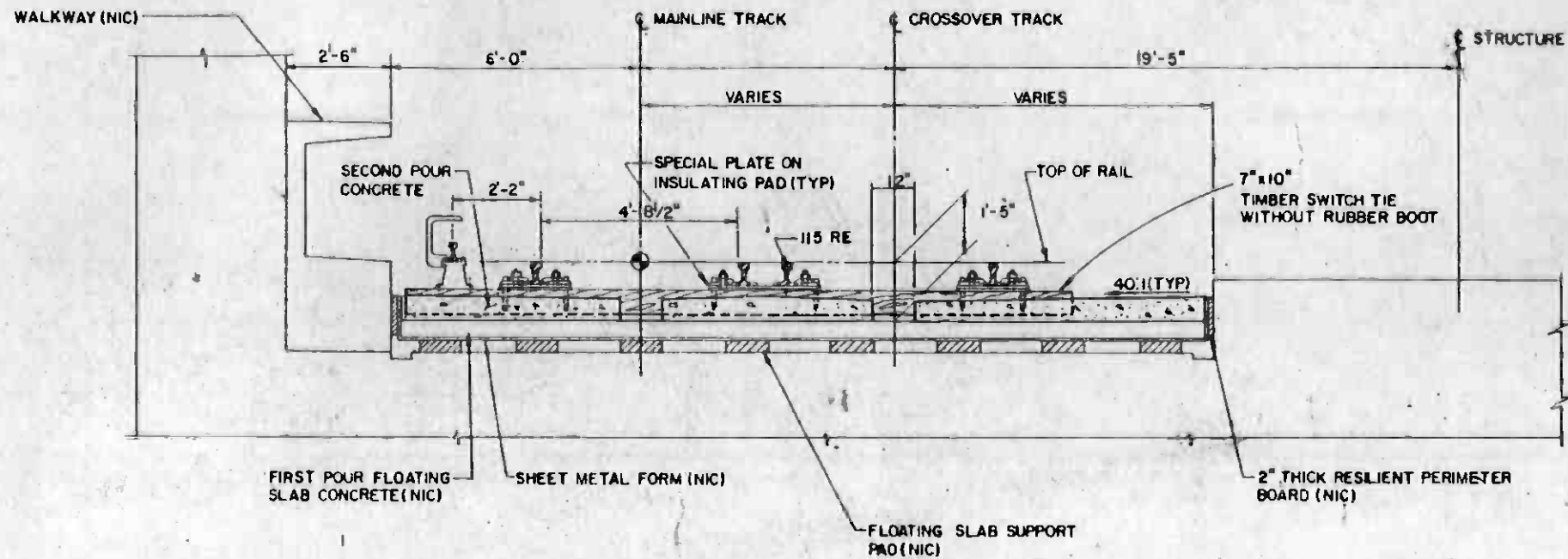
DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

APPROVED _____

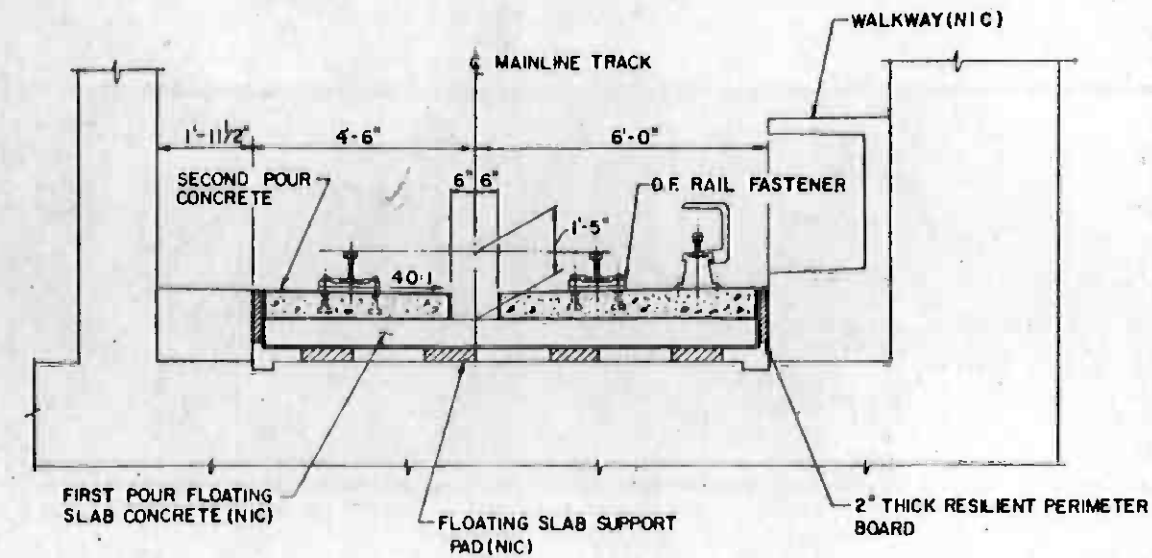
**LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION**

TYPICAL SECTIONS
SPECIAL TRACKWORK

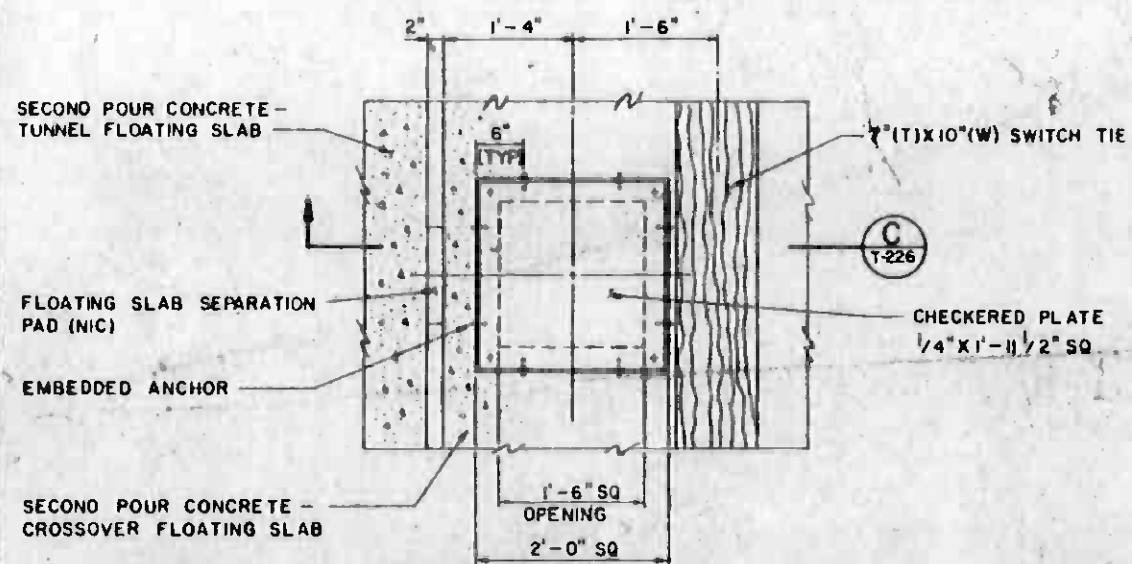
CONTRACT NO. A610
DRAWING NO. T-225
SCALE AS NOTED
SHEET NO. A620/326



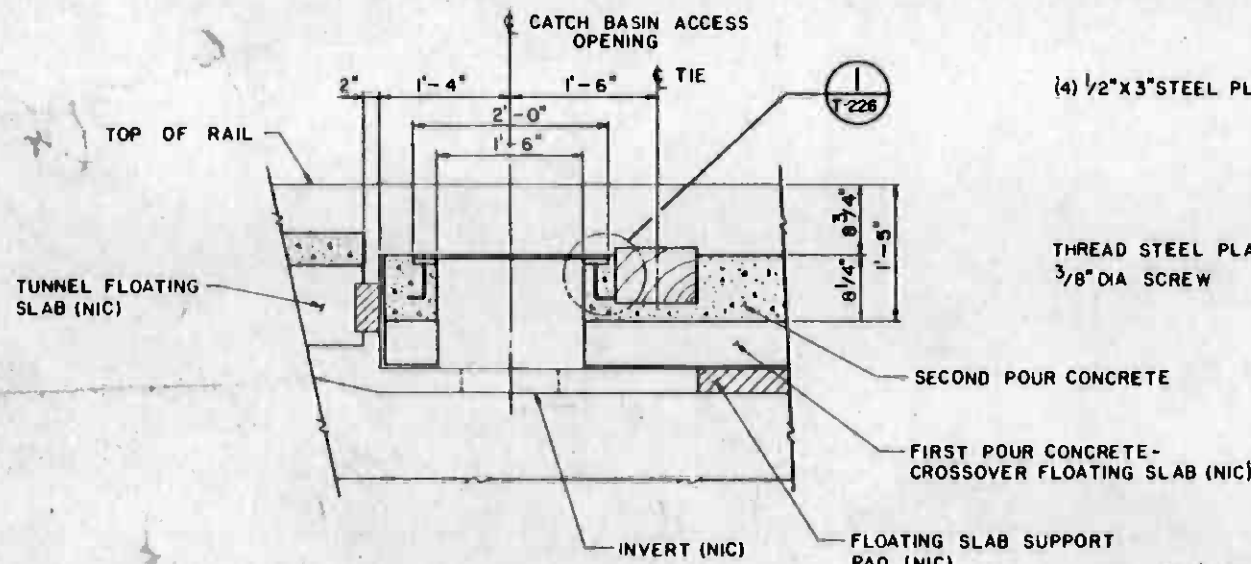
SECTION **A**
SCALE: 1/2" = 1'-0" T-226 216, 217



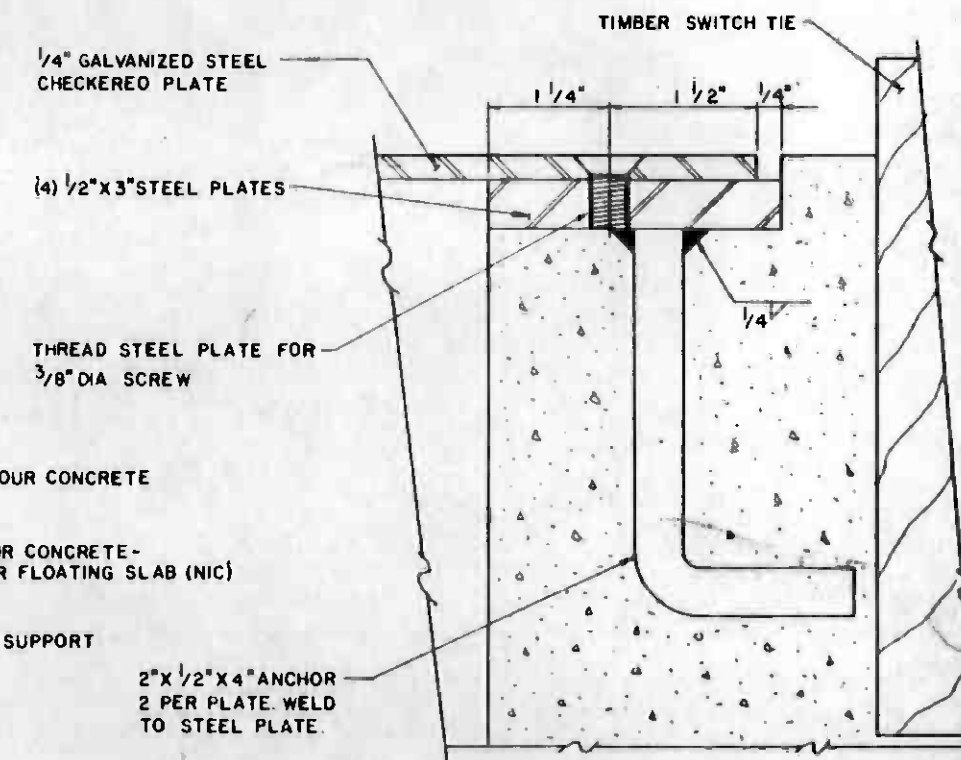
SECTION **B**
SCALE: 1/2" = 1'-0" T-226 216



DETAIL **2**
SCALE: 1" = 1'-0" T-226 216



SECTION **C**
SCALE: 1" = 1'-0" T-226



DETAIL **1**
FULL SCALE T-226



REV	DATE	BY	SUB	APP	DESCRIPTION

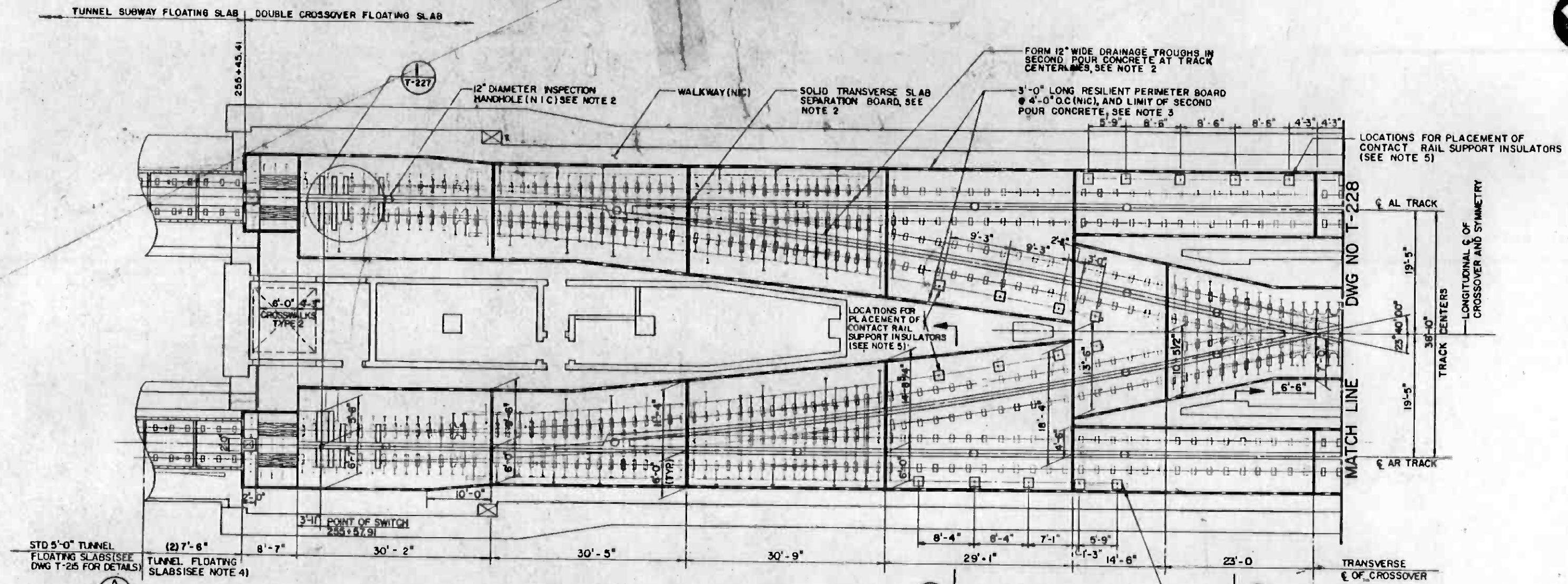
DESIGNED BY
J. D. Johnson
DRAWN BY
J. King
CHECKED BY
Paul J. Adams
IN CHARGE
Joseph K. Valentin
DATE
15 JUL 85



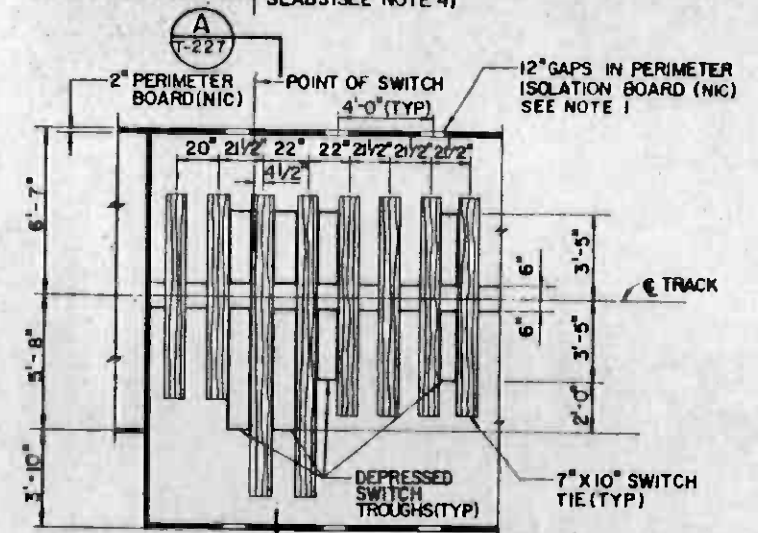
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
ATD
DAJM/PBOD/KE/HWA
GENERAL CONTRACTORS
SUBMITTED: *Joseph K. Valentin*
APPROVED: _____

LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION
TYPICAL SECTIONS & DETAILS
FLOATING SLAB

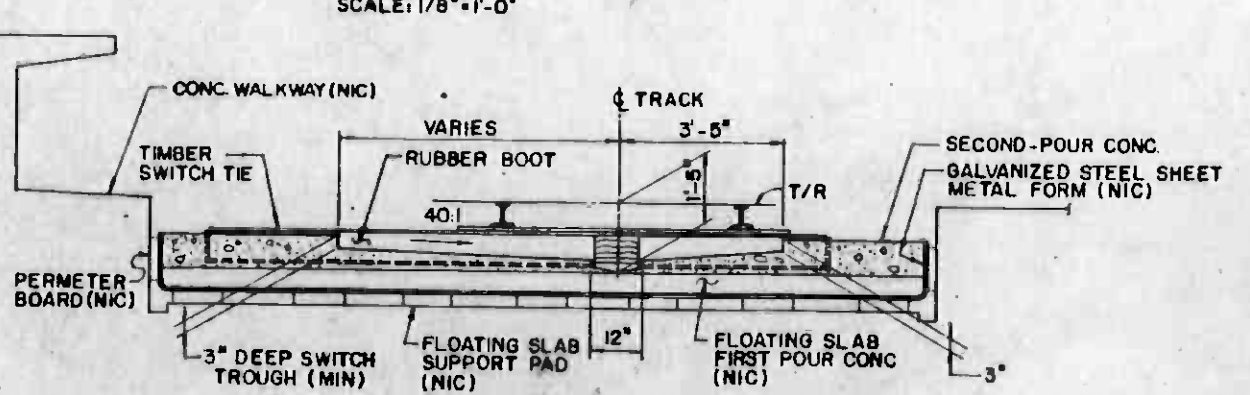
CONTRACT NO. A-610
DRAWING NO. T-226
SCALE AS NOTED
SHEET NO. A620/327



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



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



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

NOTE:
REFER TO DWG NO T-228 FOR NOTES.



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				
DESIGNED BY	<i>[Signature]</i>			
DRAWN BY	<i>[Signature]</i>			
CHECKED BY				
IN CHARGE				
DATE				
REV.	DATE	BY	APP.	DESCRIPTION

DESIGNED BY	<i>[Signature]</i>			
DRAWN BY	<i>[Signature]</i>			
CHECKED BY				
IN CHARGE				
DATE				

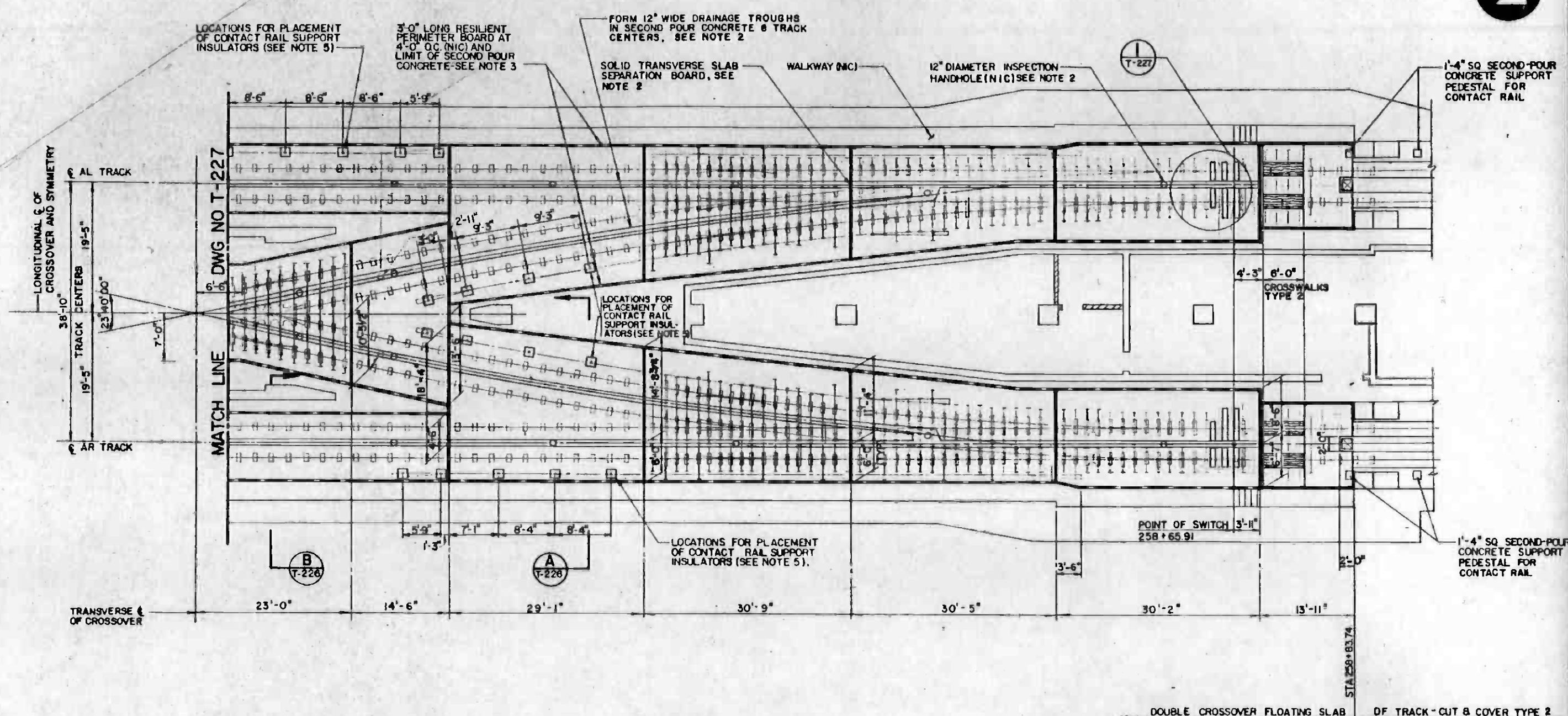
**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

DMJM/PBOD IN CHARGE	DMJM/PBOD/KE/HWA GENERAL CONSULTANTS
SUBMITTED	APPROVED

**LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION**

SECOND POUR CONCRETE LAYOUT
WILSHIRE/ALVARADO DOUBLE CROSSOVER
FLOATING SLAB SHEET 1 OF 2

CONTRACT NO.	A610
DRAWING NO.	T-227
SCALE	AS NOTED
SHEET NO.	A 620/328



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

- NOTES:**
- FOR DETAILS OF RAILS, FASTENERS AND TIES, REFER TO DWG T-198 AND T-199.
 - SLOPE AND FLOAT FINISH SECOND POUR CONCRETE SURFACES TO ENSURE FREE DRAINING TRACK. CUT TRANSVERSE SLAB SEPARATION BOARD AT TRACK CENTERLINES TO MATCH SHAPE OF DRAINAGE TROUGHS. KEEP SECOND POUR CONCRETE CLEAR OF EXISTING 12" DIA INSPECTION HAND HOLES.
 - COVER GAPS IN EXISTING PERIMETER BOARD BEFORE POURING SECOND POUR CONCRETE TO ENSURE THAT NO SPILLOVER BLOCKS THE GAPS OR FALLS ONTO FLOATING SLAB INVERT.
 - FOR DETAILS OF TUNNEL SUBWAY FLOATING SLABS AND END SECTIONS OF DOUBLE CROSSOVER FLOATING SLABS, REFER TO DWG NO T-215.
 - AT LOCATION SHOWN, FINISH THE SURFACE OF THE SECOND-POUR CONCRETE PER



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DESIGNED BY
[Signature]
DRAWN BY
[Signature]
CHECKED BY
IN CHARGE
DATE

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBQD
SUBMITTER

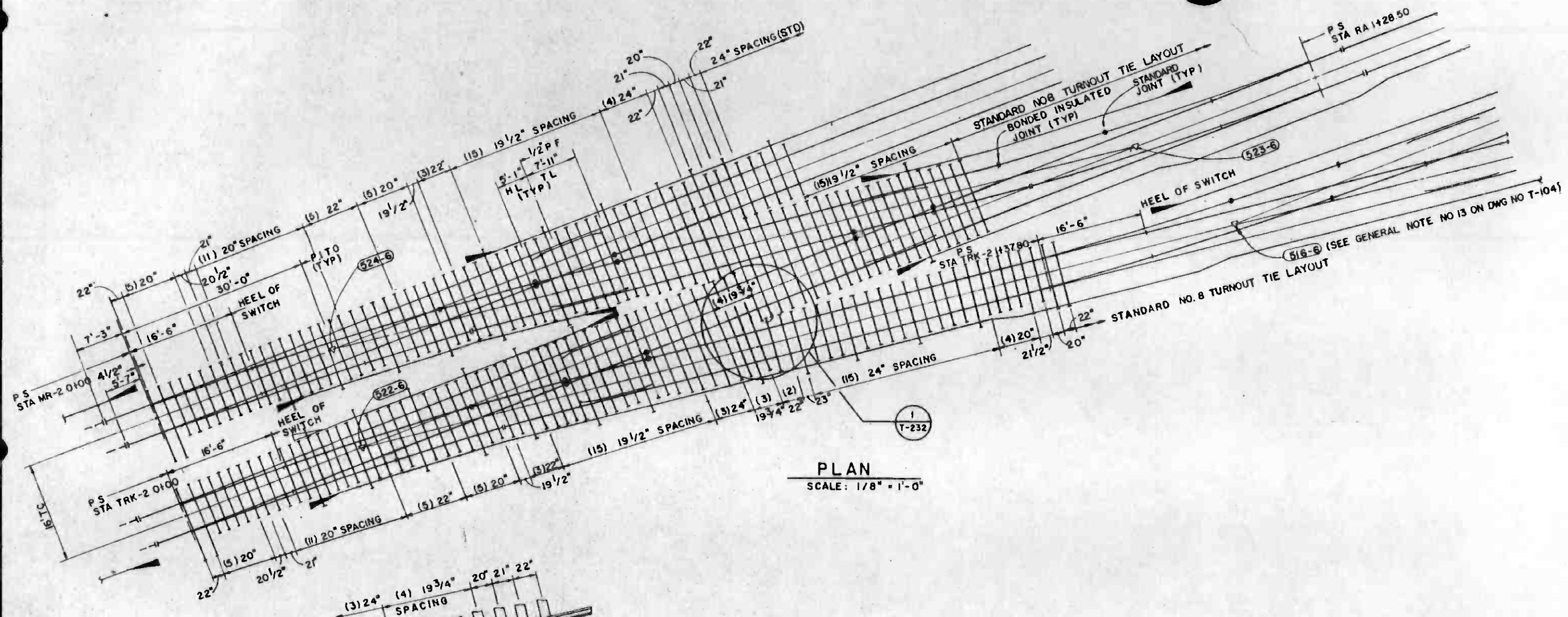
DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

APPROVED

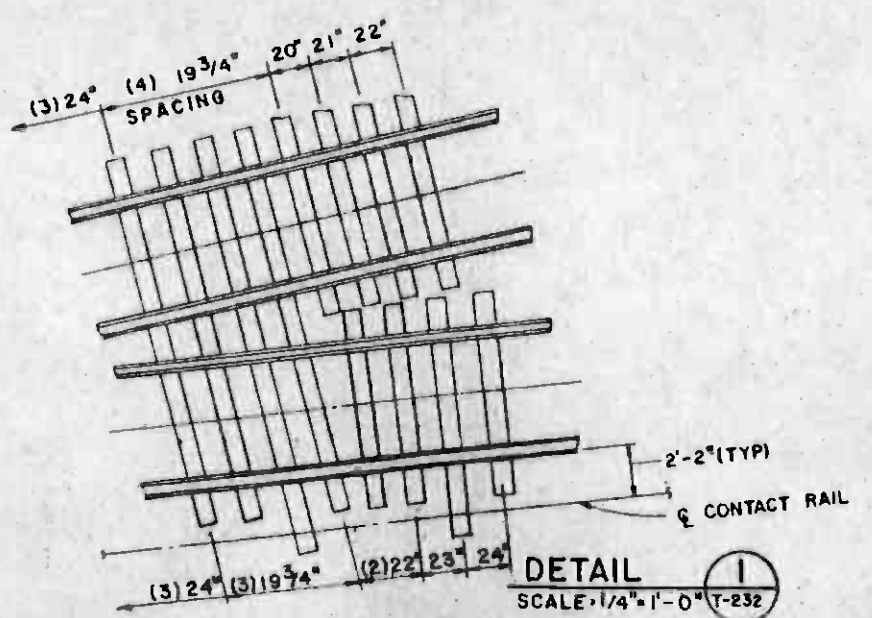
LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION
SECOND POUR CONCRETE LAYOUT
WILSHIRE/ALVARADO DOUBLE CROSSOVER
FLOATING SLAB SHEET 2 OF 2

CONTRACT NO. A610
DRAWING NO. T-228
SCALE AS NOTED
SHEET NO. A620/329

REV	DATE	BY	APP	DESCRIPTION



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



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

NOTES:
1. FOR LOCATION IN THE YARD, SEE DWG NO T-128
2. FOR ADDITIONAL INFORMATION ON CONTACT RAIL INSTALLATION, SEE DWG NO T-329



REV	DATE	BY	SUB	APP	DESCRIPTION

REV	DATE	BY	SUB	APP	DESCRIPTION

DESIGNED BY
J. Leclair
DRAWN BY
[Signature]
CHECKED BY
[Signature]
DATE
15 JUL 85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

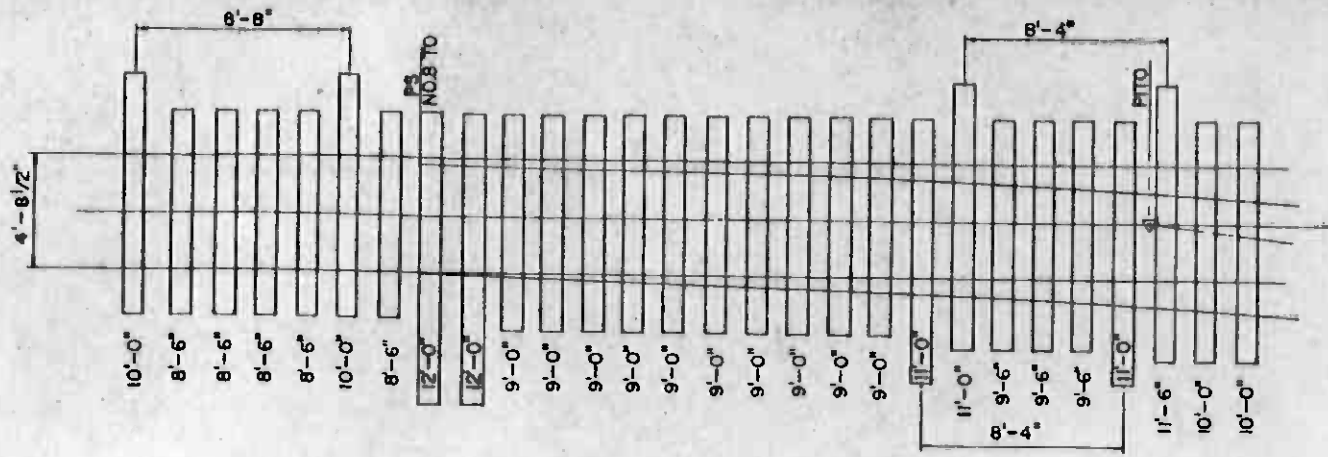
DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

SUBMITTED *[Signature]*
APPROVED _____

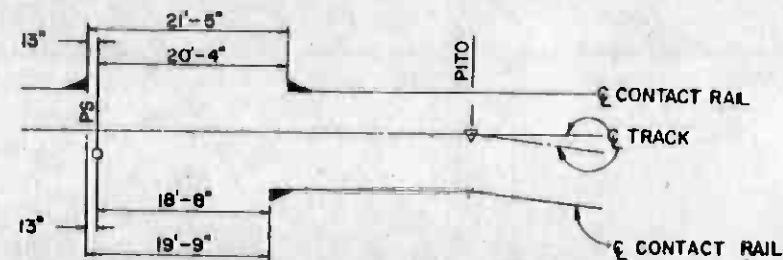


LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION
MISCELLANEOUS TRACKWORK
INSTALLATION DETAILS - SHEET NO 2

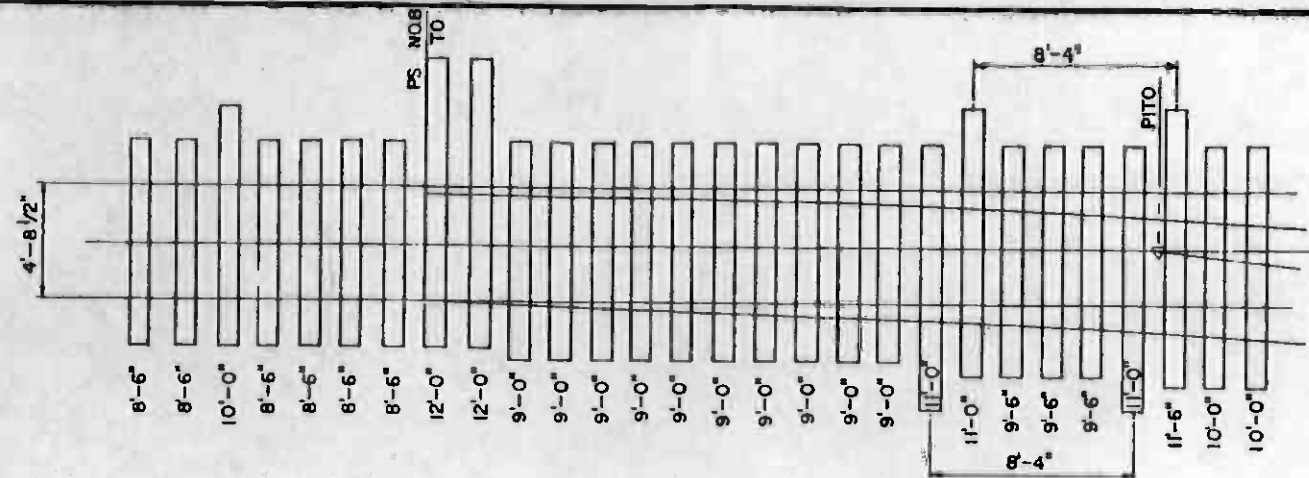
CONTRACT NO.	A 610
DRAWING NO.	T-232
SCALE	AS NOTED
SHEET NO.	A620/331



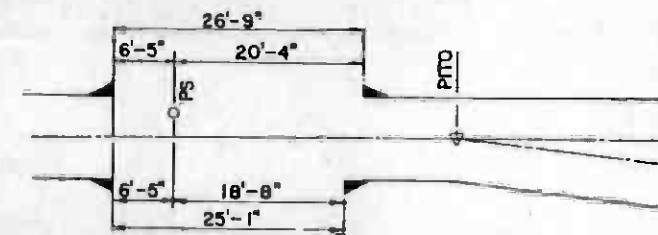
PLAN
SCALE: 1/4"=1'-0"



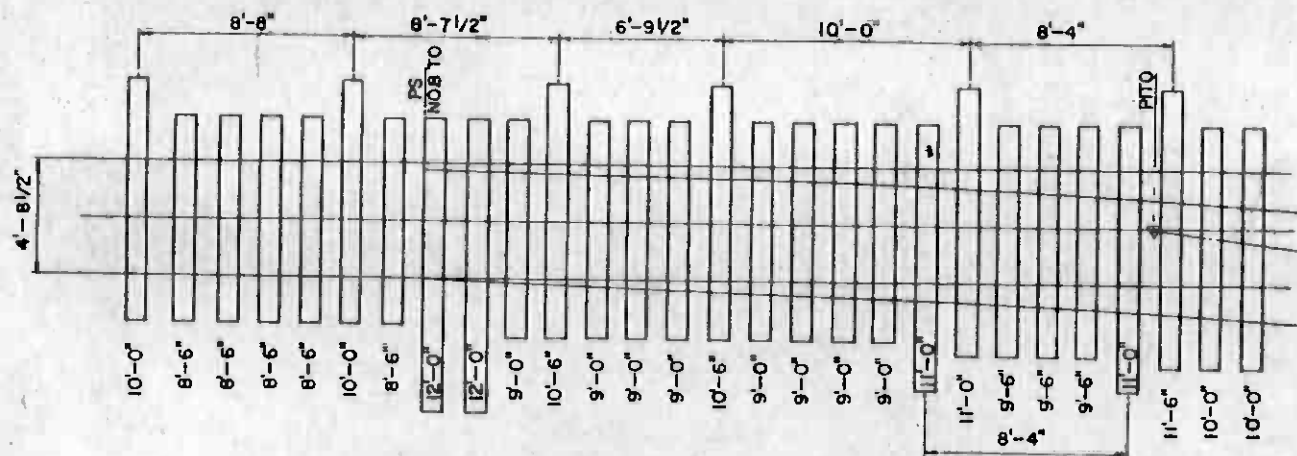
END APPROACH SCHEMATIC A
NTS
T-233 329,340,343,346



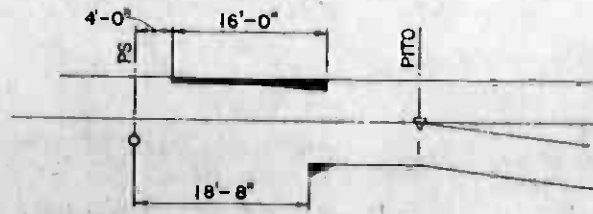
PLAN
SCALE: 1/4"=1'-0"



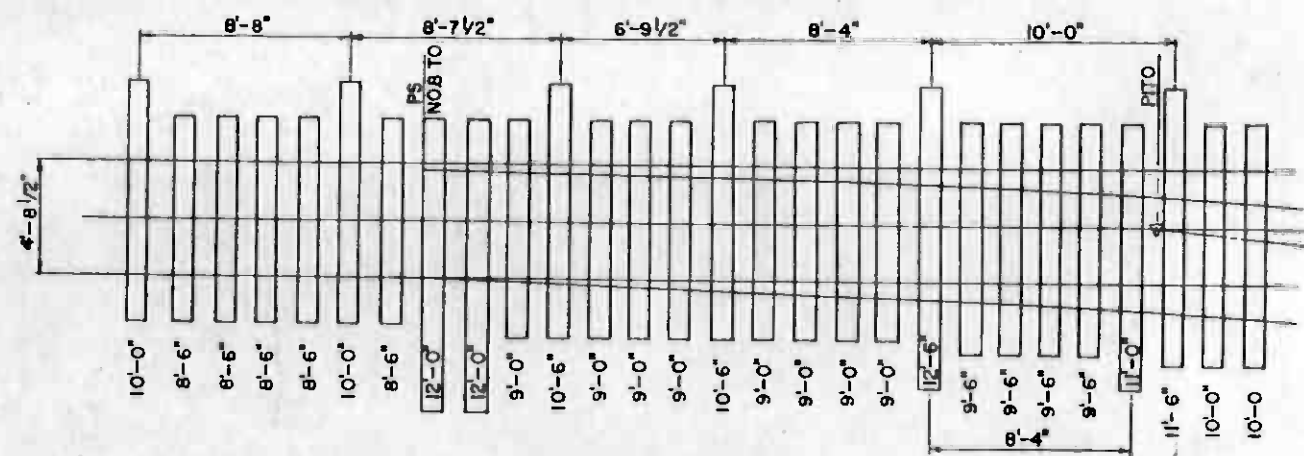
END APPROACH SCHEMATIC C
NTS
T-233 327,328,329,331,340,343,346



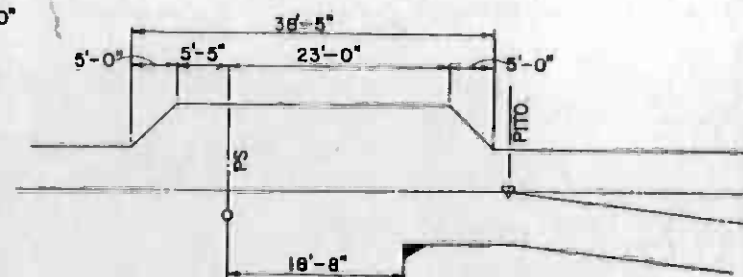
PLAN
SCALE: 1/4"=1'-0"



SIDE APPROACH SCHEMATIC B
NTS
T-233 340,343,346,347



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



DIP SECTION SCHEMATIC D
NTS
T-233 327,328,329,337,340,343,346

REV.	DATE	BY	SUB.	APP.	DESCRIPTION

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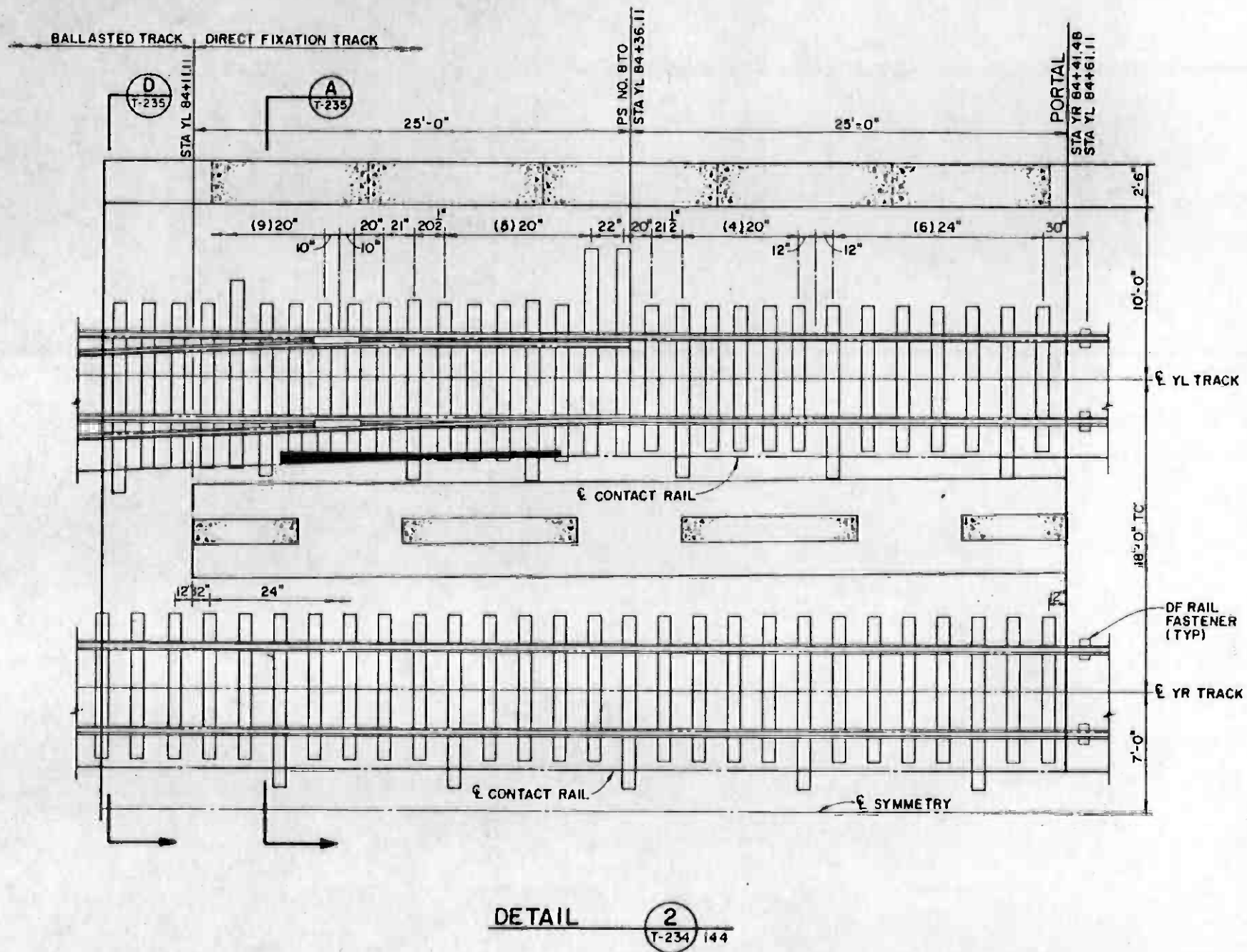
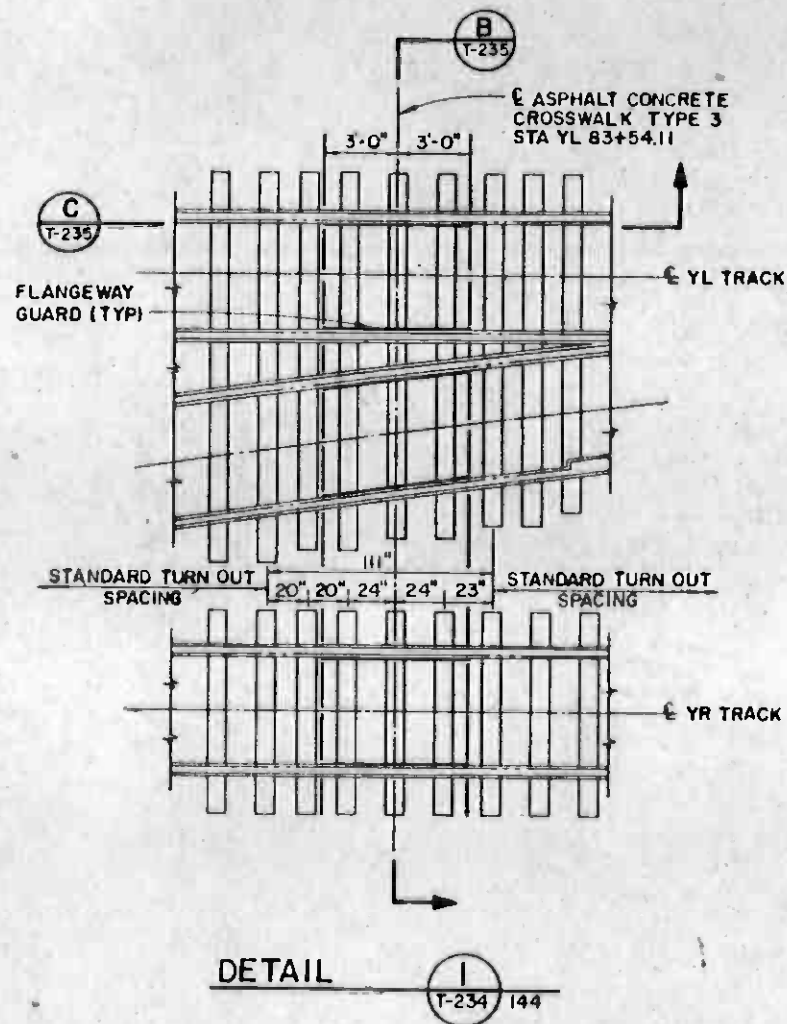
DESIGNED BY: *W. S. ...*
 DRAWN BY: RUDY C.
 CHECKED BY: *Paul ...*
 IN CHARGE: *Joseph B. Volman*
 DATE: 15 JUL 85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
 DMJM/PBQD/KE/HWA
 GENERAL CONSULTANTS
 APPROVED: *Joseph B. Volman*

LA CBD TO NORTH HOLLYWOOD
 TRACKWORK INSTALLATION
 MISCELLANEOUS TRACKWORK
 INSTALLATION DETAILS - SHEET NO 3

CONTRACT NO. A610
 DRAWING NO. T-233
 SCALE: AS NOTED
 SHEET NO. 4620/332

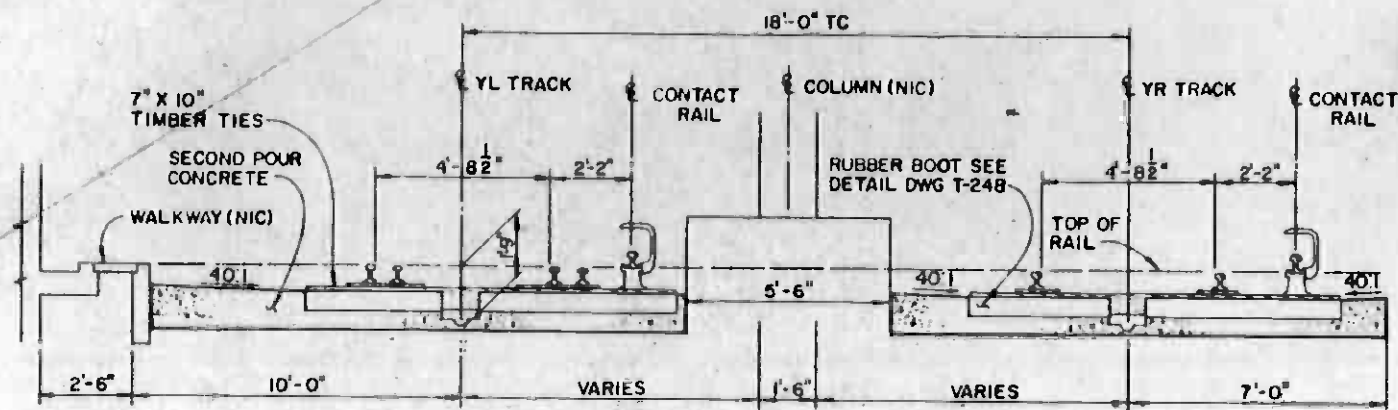


NOTE:

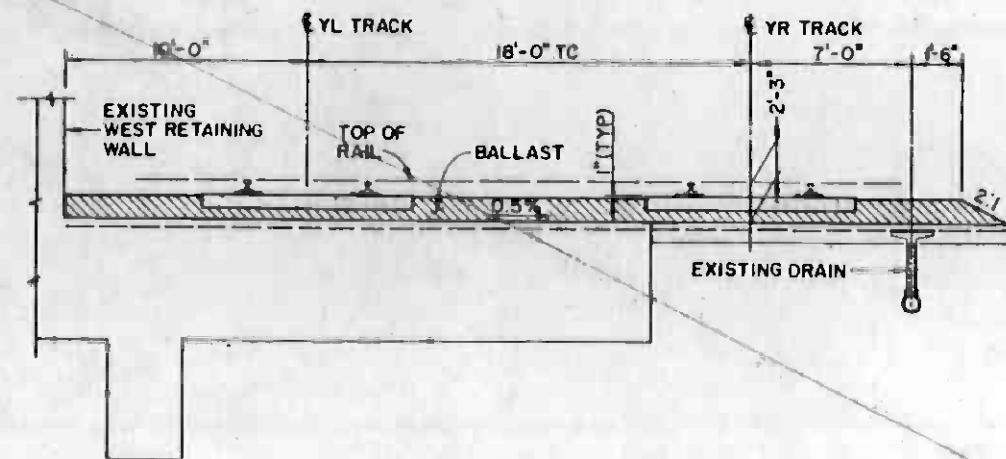
1. EXCEPT AS FOLLOWS, ALL TIMBER TIES SHOWN SHALL BE 7" X 9" TIES IN EMBEDDED SECTION FROM STA YL 84+11.11 TO THE PORTAL SHALL BE 7" X 10" TIES IN THE CROSSWALK, YL STA 83+54.11, SHALL BE 6" X 10".



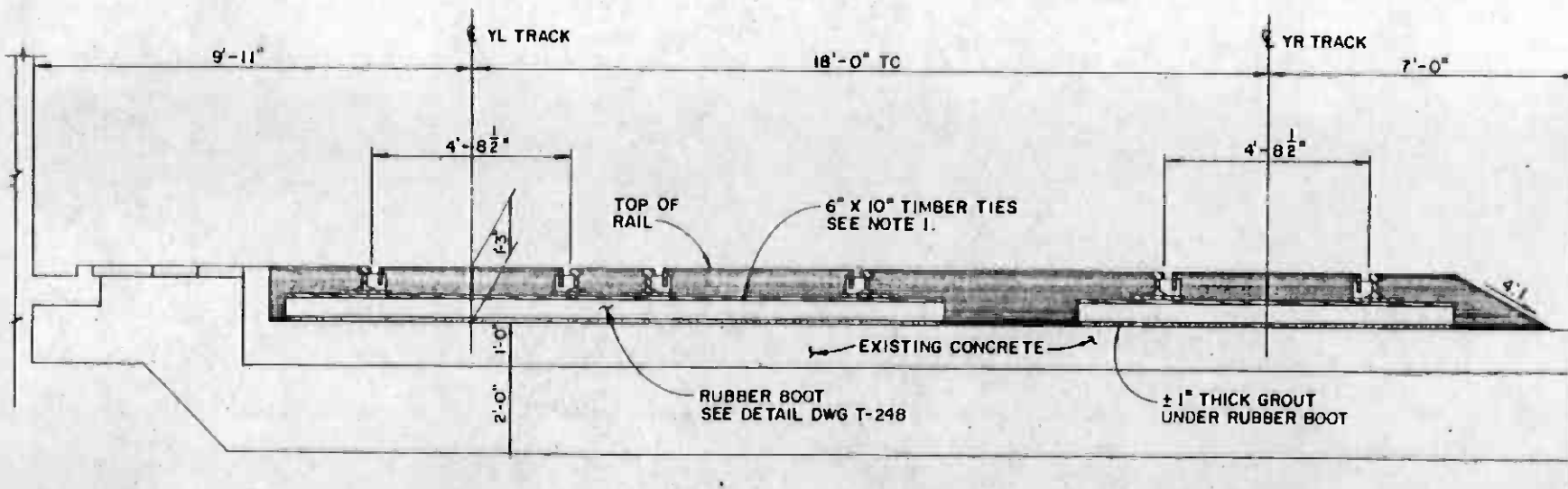
THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY J. Hector			SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT			LA CBD TO NORTH HOLLYWOOD TRACKWORK INSTALLATION		CONTRACT NO. A610
REV. DATE BY SUB APP. DESCRIPTION				CHECKED BY R. J. [Signature]			DMJM/PBQD/KE/HWA GENERAL CONSULTANTS			MISCELLANEOUS TRACKWORK INSTALLATION DETAILS - SHEET NO 4		DRAWING NO. T-234
10 JUL 89				SUBMITTED L. J. [Signature]		APPROVED		SHEET NO. A620/333				



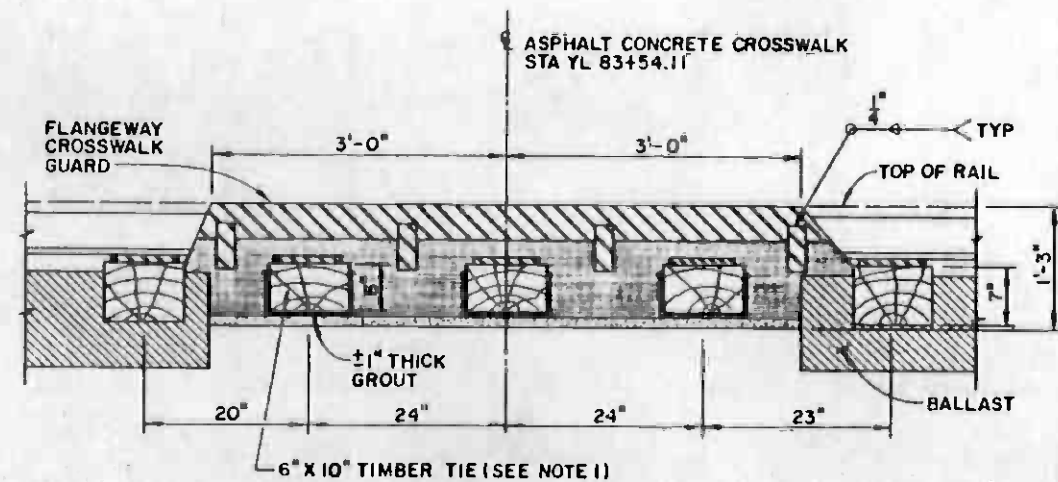
SECTION **A**
SCALE: 3/8" = 1'-0" T-235 234



SECTION **D**
SCALE: 1/4" = 1'-0" T-235 234



SECTION **B**
SCALE: 1/2" = 1'-0" T-235 234



SECTION **C**
SCALE: 1" = 1'-0" T-235 234

NOTE:
1. PROVIDE 6" X 10" TIES IN THE CROSSWALK AS SHOWN.
DO NOT DAP 7" X 10" TIES FOR THIS INSTALLATION.



REV	DATE	BY	SUB	APP	DESCRIPTION

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DESIGNED BY
[Signature]
CHECKED BY
[Signature]
IN CHARGE
[Signature]
DATE
15 JUL 85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT



DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

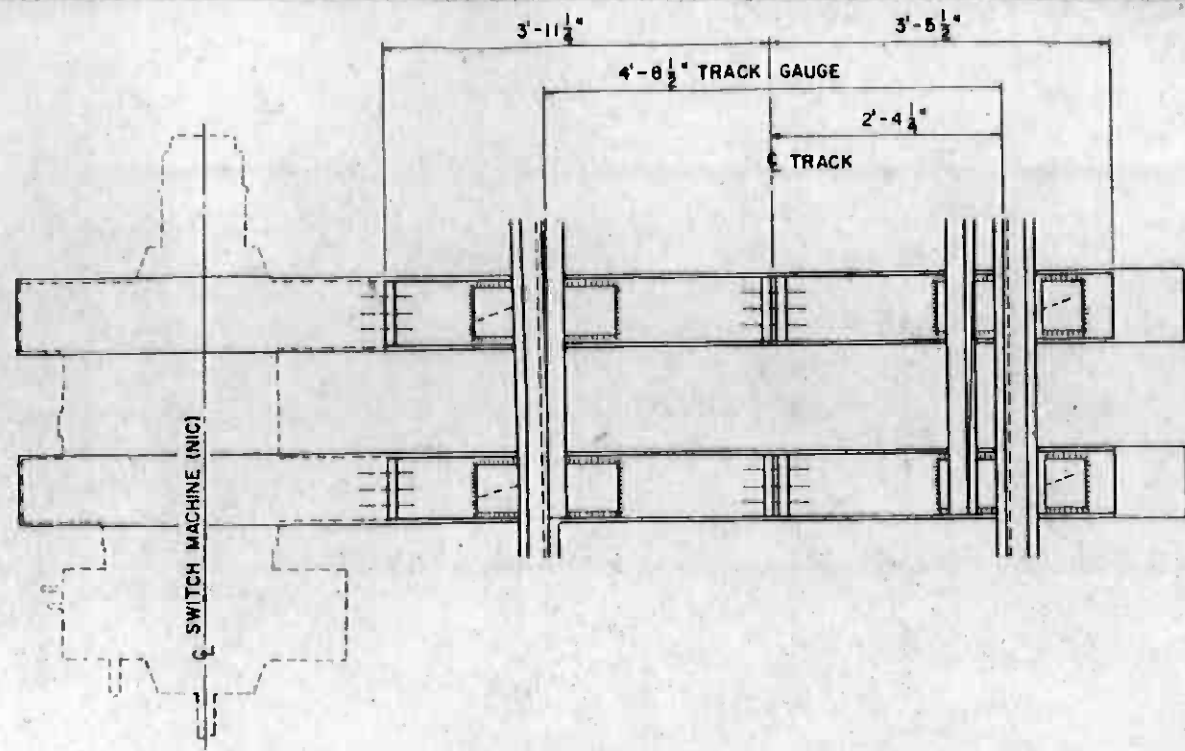
SUBMITTED *[Signature]*

APPROVED

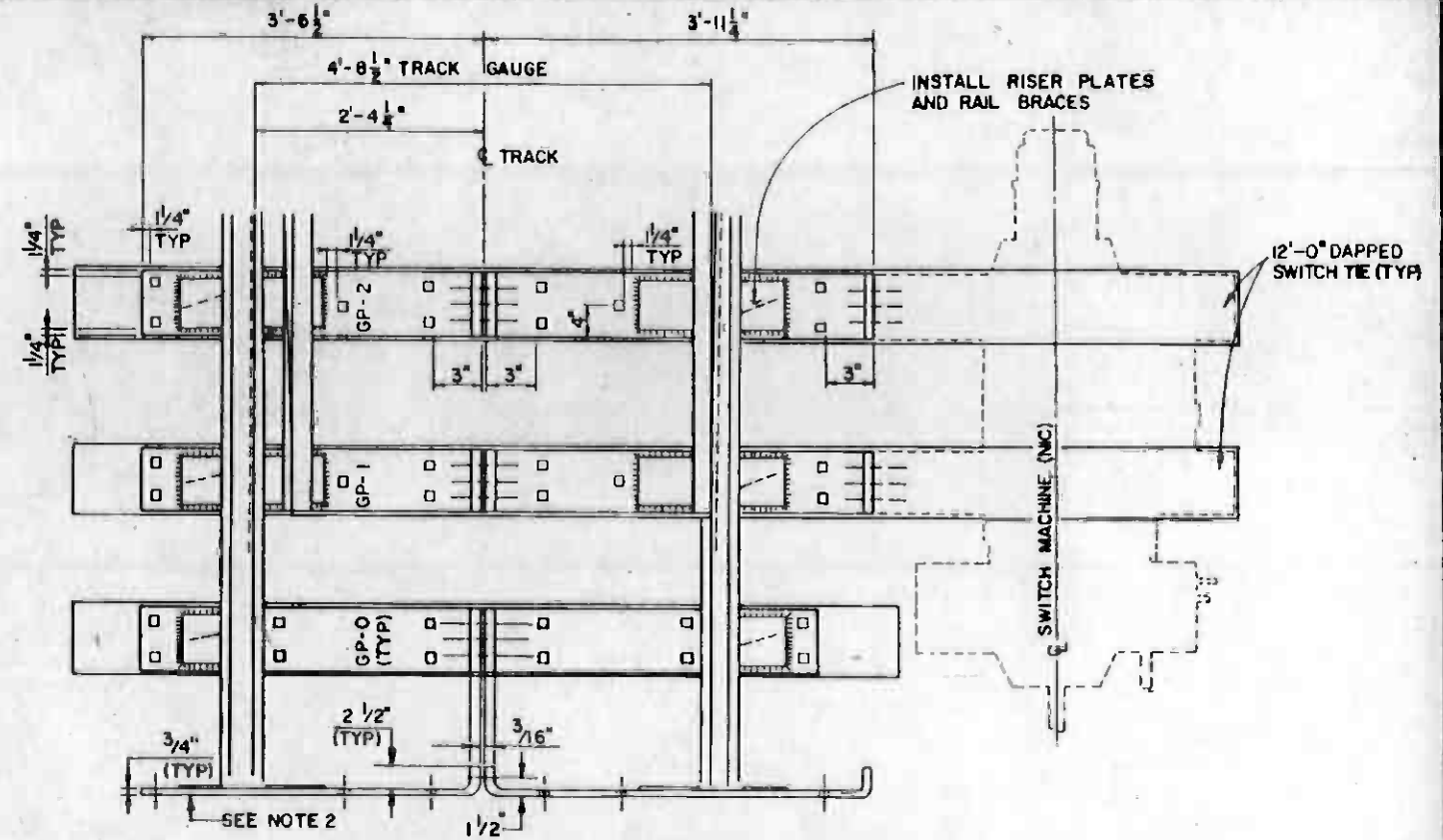
LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION

MISCELLANEOUS TRACKWORK
INSTALLATION DETAILS - SHEET NO 5

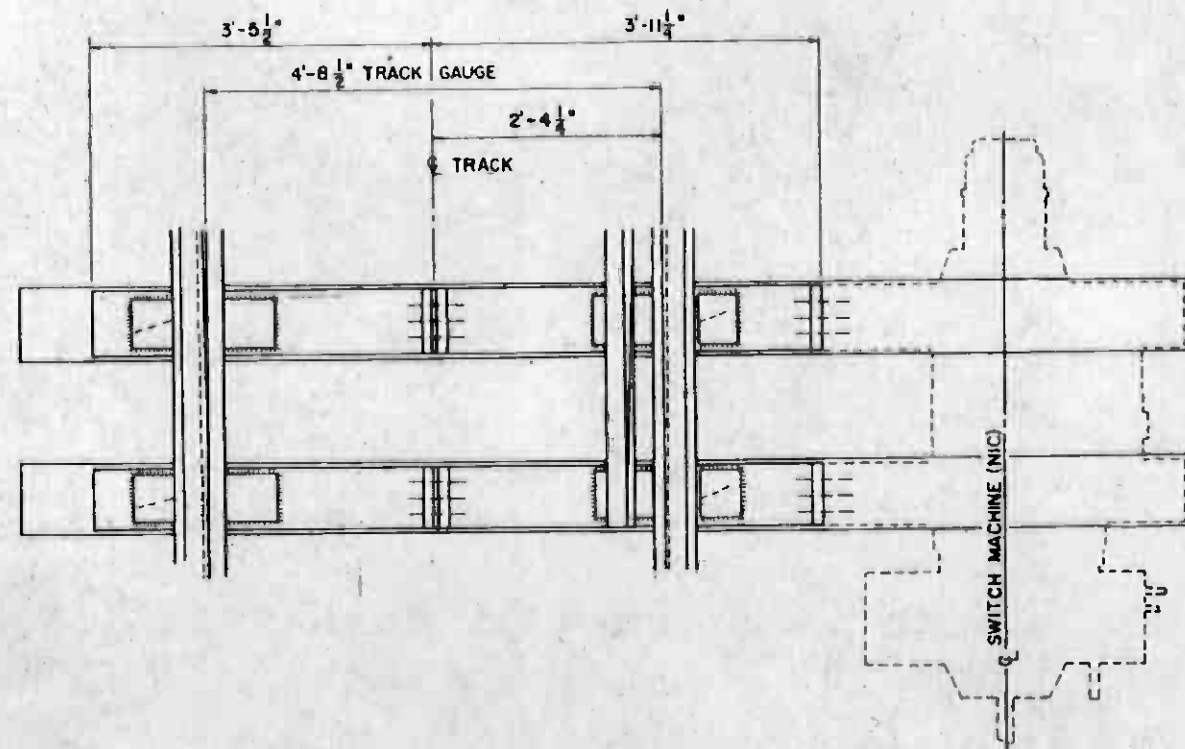
CONTRACT NO.	A610
DRAWING NO.	T-235
SCALE	AS NOTED
SHEET NO.	A620/334



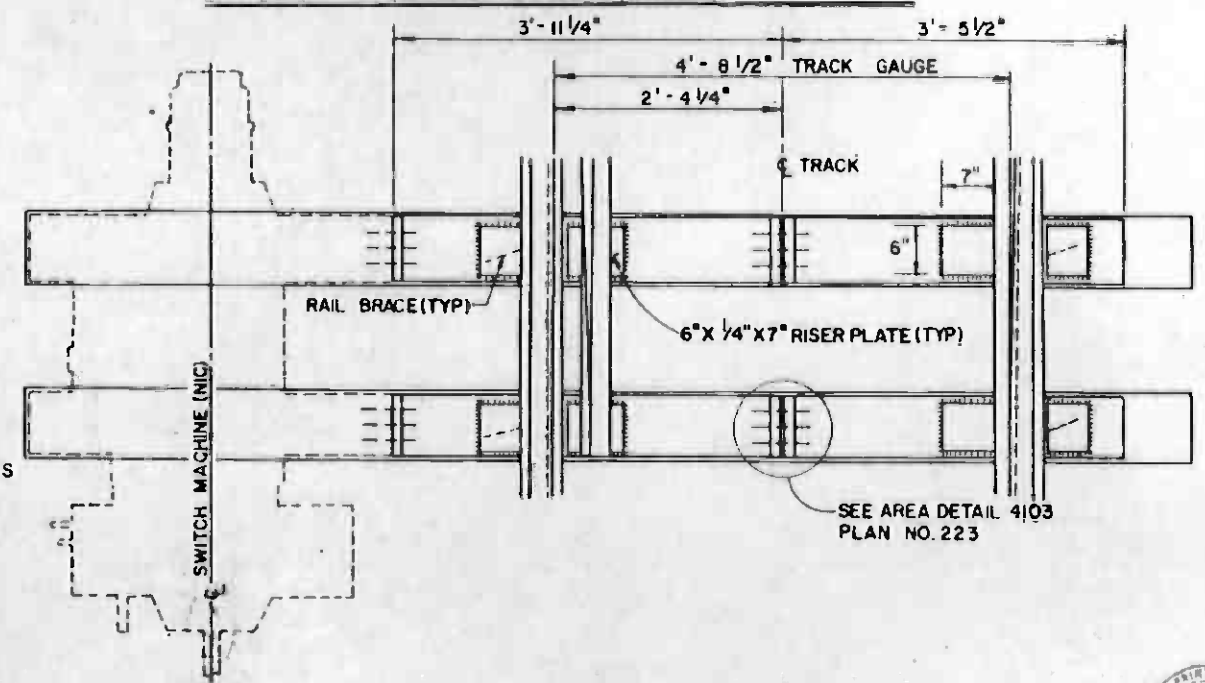
LEFT HAND TURNOUT REVERSE POSITION
BALLASTED TRACK



RIGHT HAND TURNOUT NORMAL POSITION
BALLASTED TRACK



LEFT HAND TURNOUT NORMAL POSITION
BALLASTED TRACK



RIGHT HAND TURNOUT REVERSE POSITION
BALLASTED TRACK

- NOTES:
1. PROVIDE RISER PLATES AND RAIL BRACES PER DWG NO T-187
 2. ELEVATION AND DRILLING SHOWN IS TYPICAL FOR ALL FOUR CASES.



REV	DATE	BY	SUB	APP	DESCRIPTION

DESIGNED BY
J. Medlar

DRAWN BY
N.H. Nichols

CHECKED BY
Paul T. Bohlen

IN CHARGE
Joseph P. Volman

DATE
15 JUL 85

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

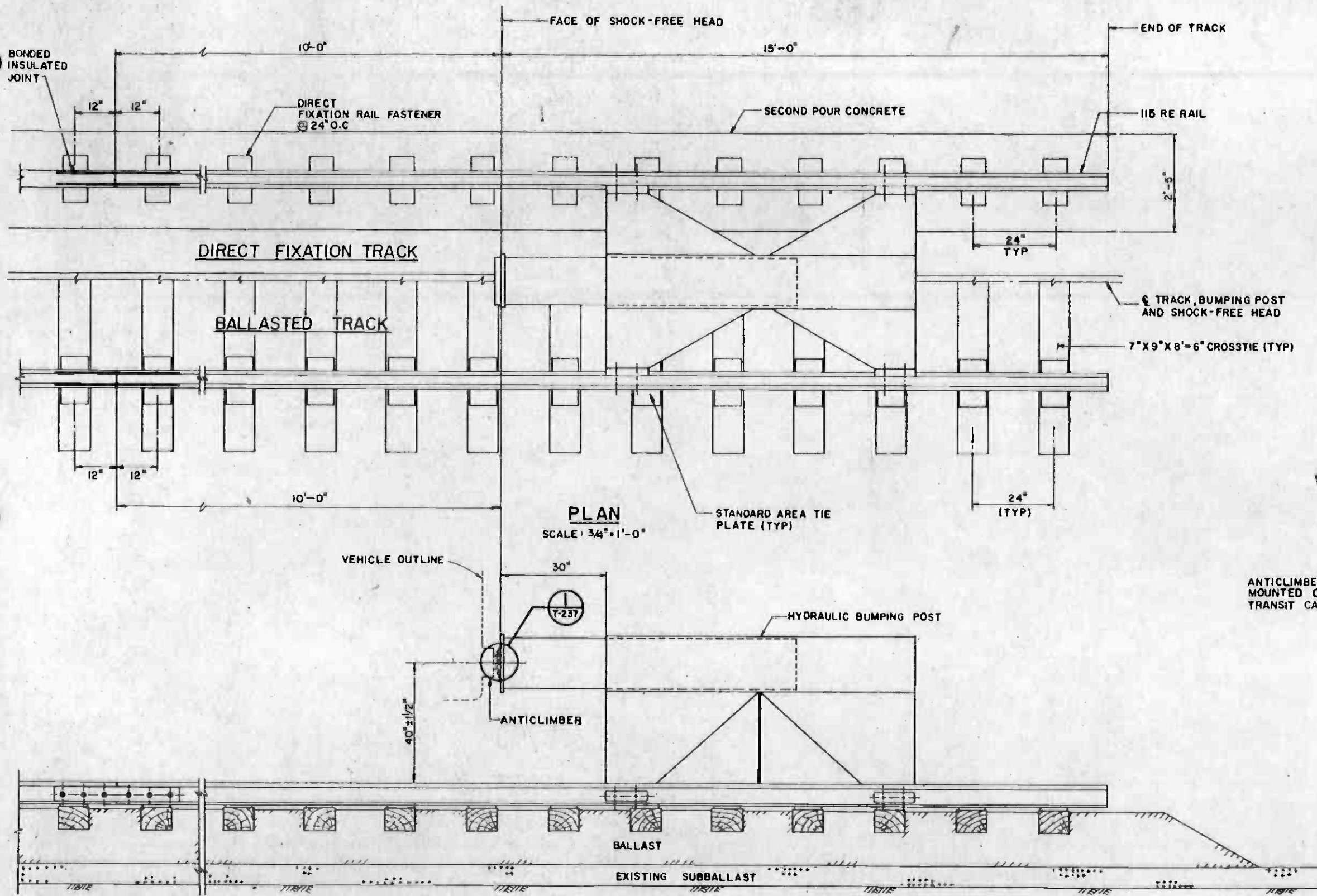
DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

APPROVED
Joseph P. Volman

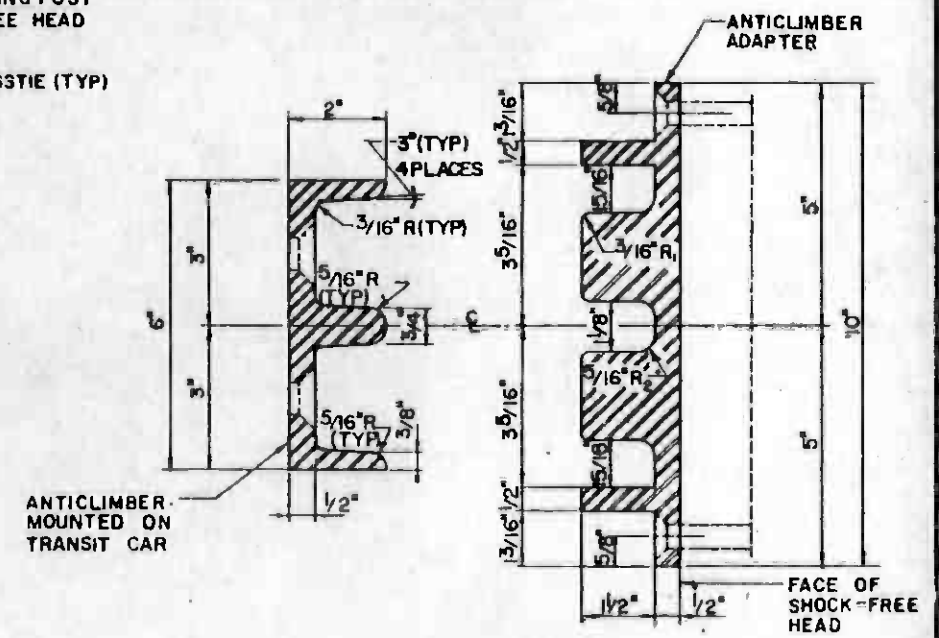
LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION

MISCELLANEOUS TRACKWORK
INSTALLATION DETAILS-SHEET NO 6

CONTRACT NO.	A610
DRAWING NO.	T-236
SCALE	1" = 10'
SHEET NO.	A620 / 335



BILL OF MATERIAL	
QTY.	DESCRIPTION
1	HYDRAULIC BUMPING POST ASSEMBLY, COMPLETE WITH ANTICLIMBER ADAPTER
2	BONDED INSULATED JOINTS

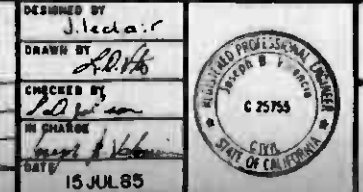


ANTICLIMBER DETAIL (SEE NOTE 2)
 HALF SCALE

- NOTES:**
- FOR SPECIFIC LOCATIONS OF BUMPING POST SEE CONTRACT DRAWING NO'S T-123 & T-158.
 - ANTICLIMBER DETAIL IS SHOWN FOR INFORMATION ONLY AND IS SUBJECT TO CHANGE BY VEHICLE MANUFACTURER. VERIFY ACTUAL DESIGN DETAILS WITH THE DISTRICT OR ITS DESIGNER PRIOR TO PRODUCTION OF ANTICLIMBER ADAPTER.

ELEVATION
 SCALE: 3/4" = 1'-0"

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DESIGNED BY <i>J. Leclair</i>	CHECKED BY <i>[Signature]</i>
DRAWN BY <i>[Signature]</i>	DATE 15 JUL 85
CHECKED BY <i>[Signature]</i>	
IN CHARGE <i>[Signature]</i>	
DATE	



**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT**

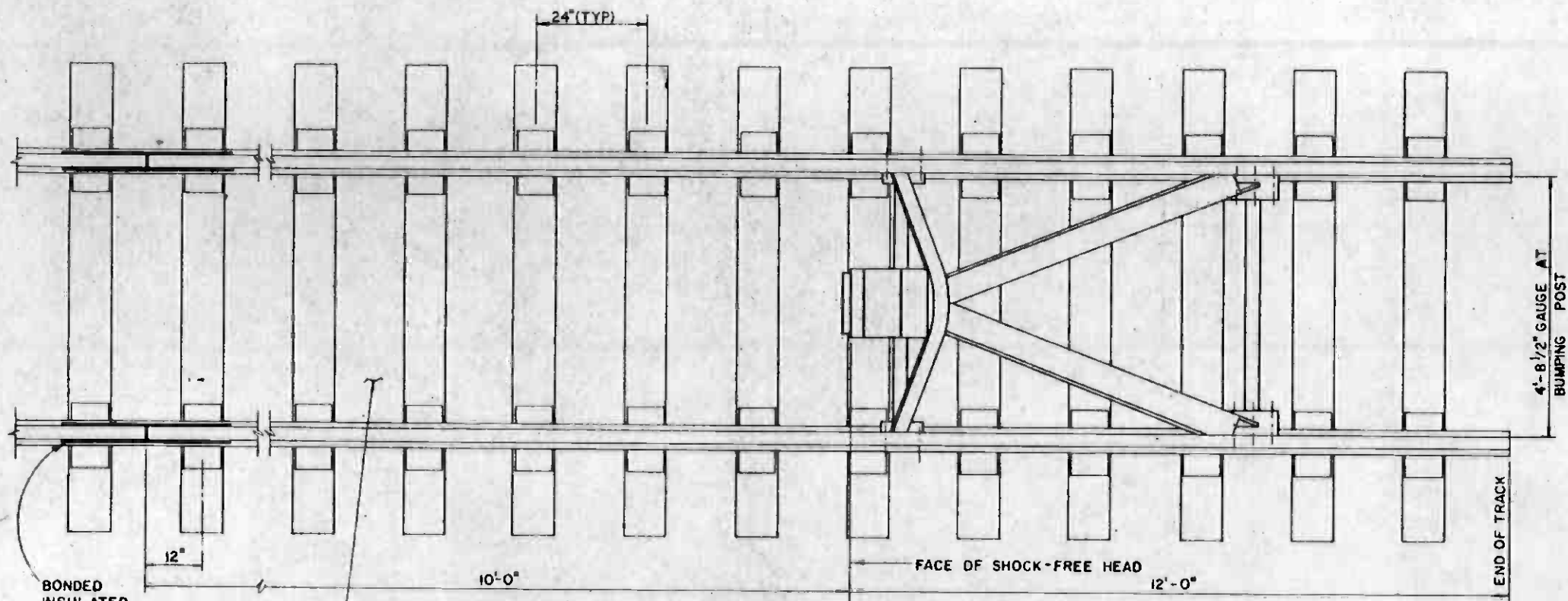
DMJM/PBOD/KE/HWA
 GENERAL CONSULTANTS

APPROVED: *[Signature]*

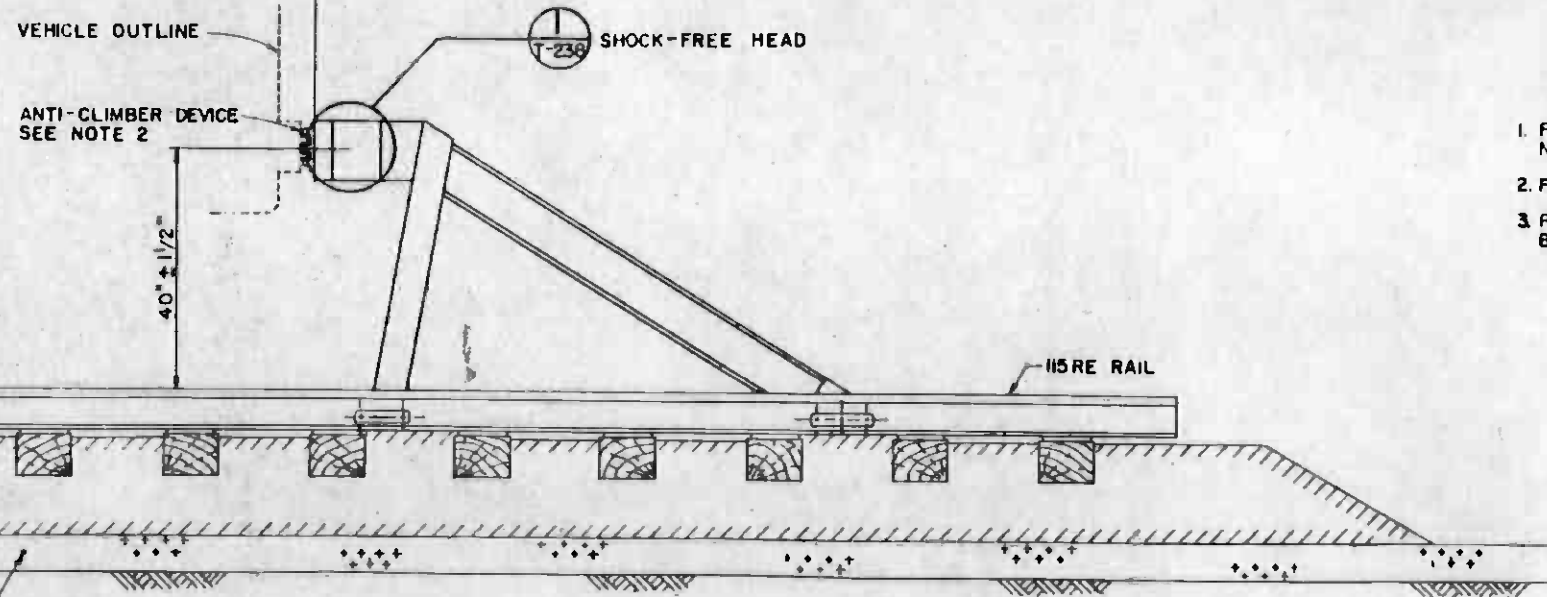
**LA CBD TO NORTH HOLLYWOOD
 TRACKWORK INSTALLATION**

BUMPING POST DETAIL HYDRAULIC

CONTRACT NO. A 610
DRAWING NO. T-237
SCALE AS NOTED
SHEET NO. A620/336

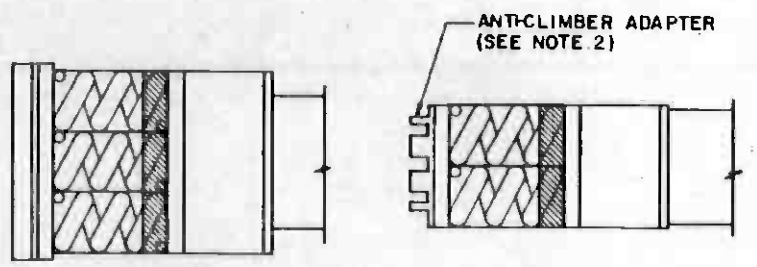


PLAN
SCALE: 3/4" = 1'-0"



ELEVATION
SCALE: 3/4" = 1'-0"

BILL OF MATERIAL	
QTY	DESCRIPTION
1	STANDARD BUMPING POST ASSEMBLY, COMPLETE WITH SHOCK-FREE HEAD AND ANTI-CLIMBER ADAPTER (SEE NOTE 3)
2	BONDED INSULATED JOINTS



SHOCK-FREE HEAD BUMPING POST
SCALE: NTS

NOTES:

- FOR SPECIFIC LOCATIONS OF STANDARD BUMPING POST, SEE DWG NOS. T-134, T-137 AND T-139.
- FOR DETAIL OF ANTI-CLIMBER ADAPTER, SEE DWG. NO. T-237
- PROVIDE SMOOTH FACE HEAD WITHOUT ANTI-CLIMBER ADAPTER FOR BUMPING POST-STANDARD APPEARING ON DWG. NOS. T-137 AND T-139



REV	DATE	BY	SUB	APP	DESCRIPTION

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DESIGNED BY
J. Veclac
DRAWN BY
2076
CHECKED BY
127 Babin
IN CHARGE
James B. Volante
DATE
15 JUL 85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

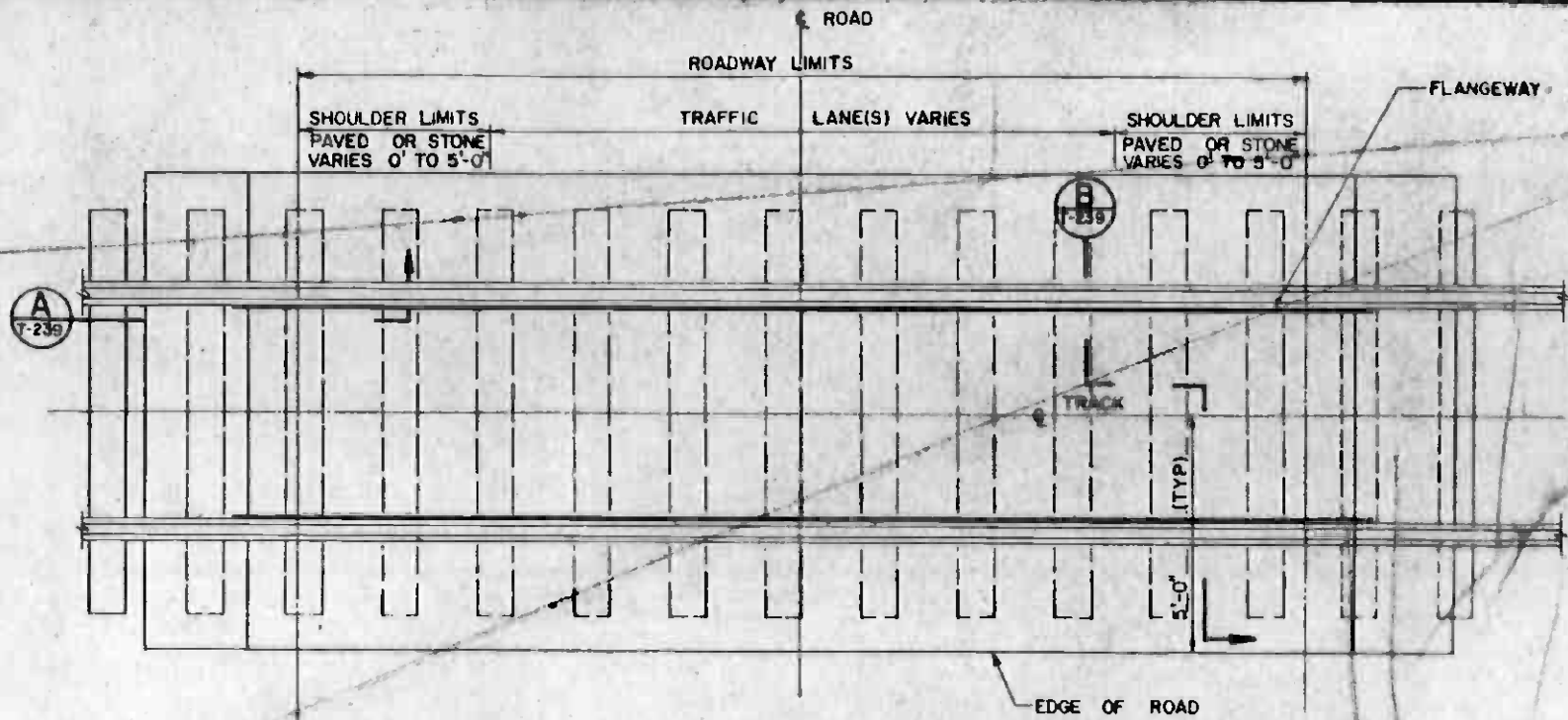
DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

APPROVED: *James P. Valentin*

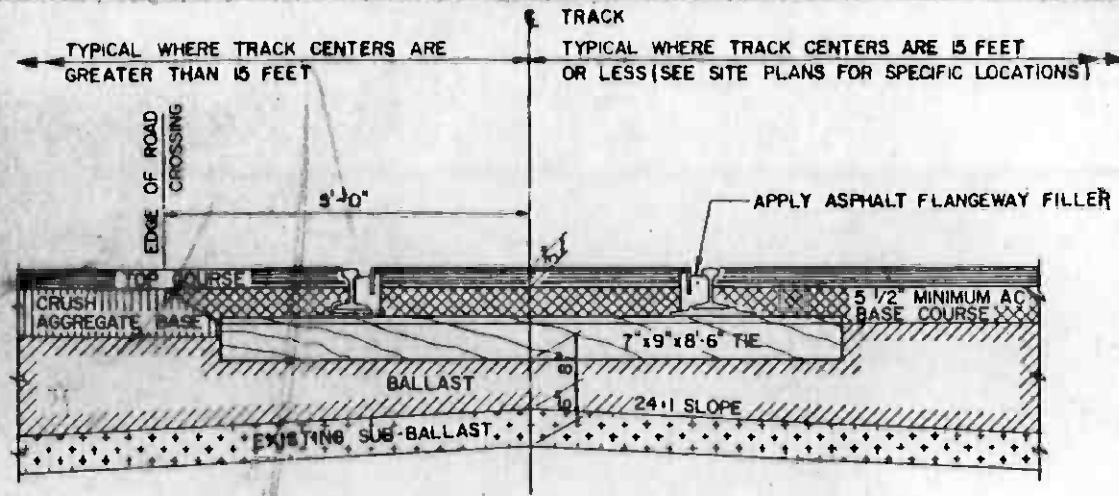
LA CBD TO NORTH HOLLYWOOD TRACKWORK INSTALLATION

BUMPING POST DETAIL - STANDARD

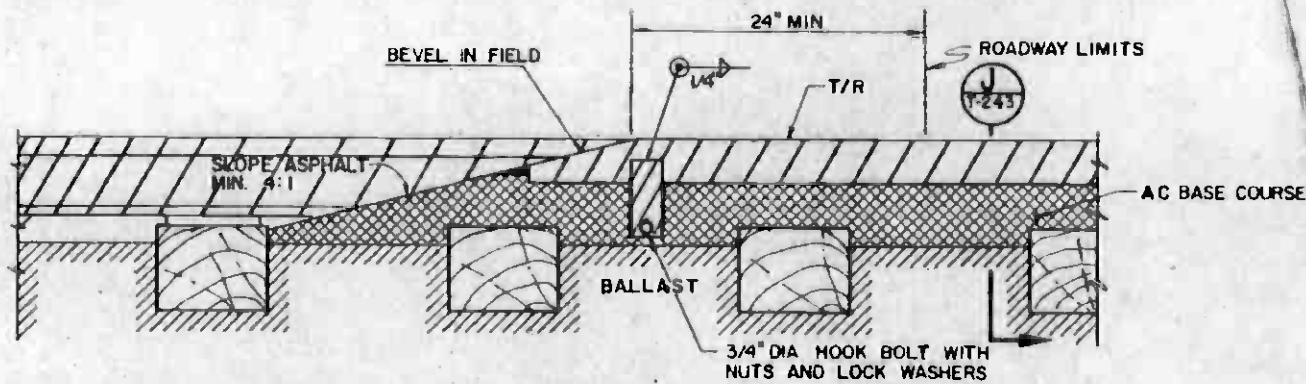
CONTRACT NO.	A610
DRAWING NO.	T-238
SCALE	AS NOTED
SHEET NO.	A620/337



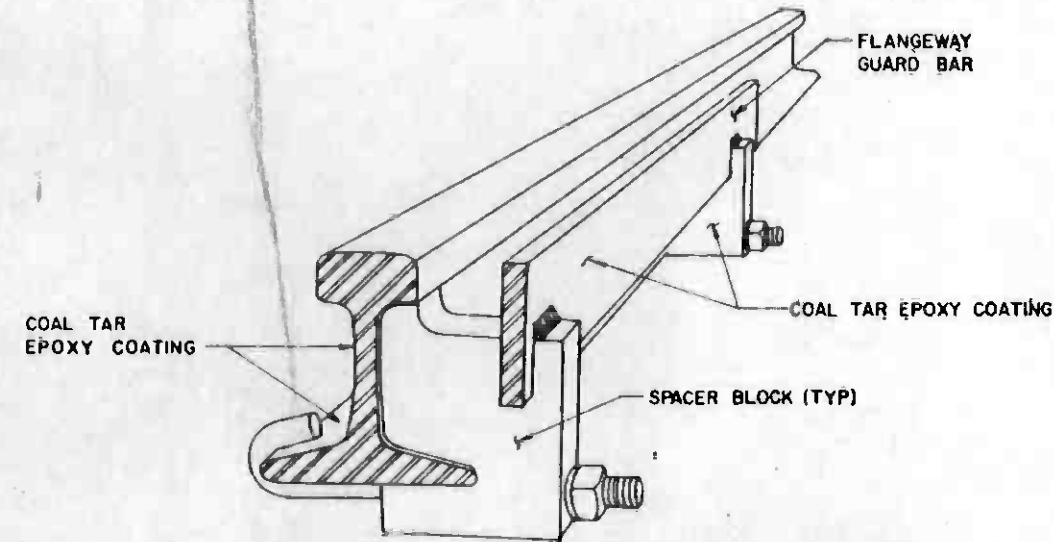
PLAN
SCALE 1/2" = 1'-0"



SECTION B
SCALE 3/4" = 1'-0" T-239 126,127,128,129,131,132,133,134,137,132



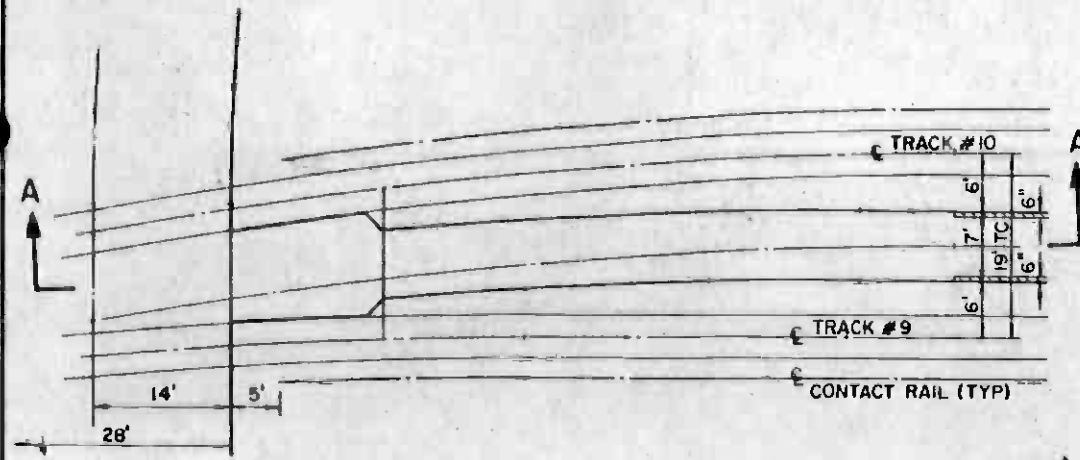
SECTION A
SCALE 1/2" = 1'-0" T-239



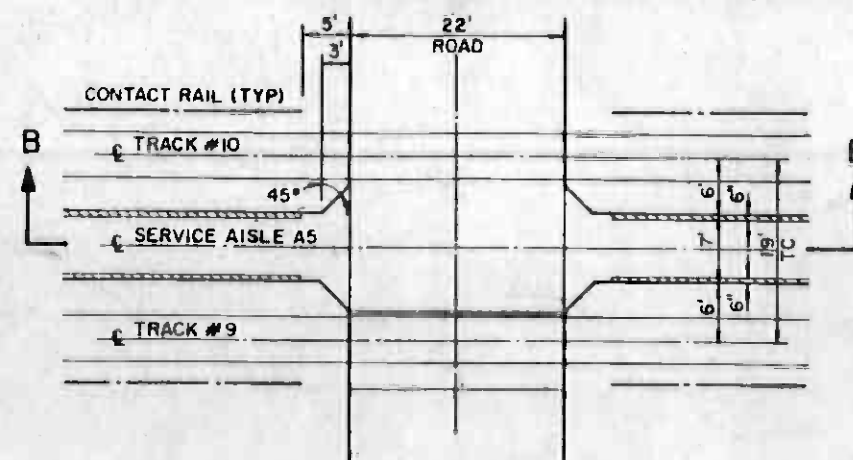
FLANGEWAY ROAD CROSSING GUARD
NTS

- NOTES:**
1. FLANGEWAY SPACER BLOCKS ARE TO BE INSTALLED AT EACH END OF THE ROAD CROSSING AND SPACED A MAXIMUM OF EVERY OTHER TIE.
 2. FLANGEWAY ROAD CROSSING GUARD IS TO BE L.B. FOSTER FLANGEMASTER OR EQUAL.
 3. ADJUST FLANGEWAY GUARD BAR TO SAME PLANE AS THE TOP OF RAIL PRIOR TO WELDING.
 4. CHIP OFF WELD SLAG AND WIRE BRUSH WELDS, THEN APPLY TWO COATS OF COAL TAR EPOXY TO RUNNING RAILS, RAIL FASTENINGS, AND FLANGEWAY GUARD COVERING ALL METALLIC SURFACES.
 5. POSITION BUTT JOINTS IN FLANGEWAY GUARD BAR IN THE CENTER OF SPACER BLOCK AND WELD VERTICAL SEAM.
 6. DO NOT GROUND WELDING LEADS TO THE RUNNING RAILS.

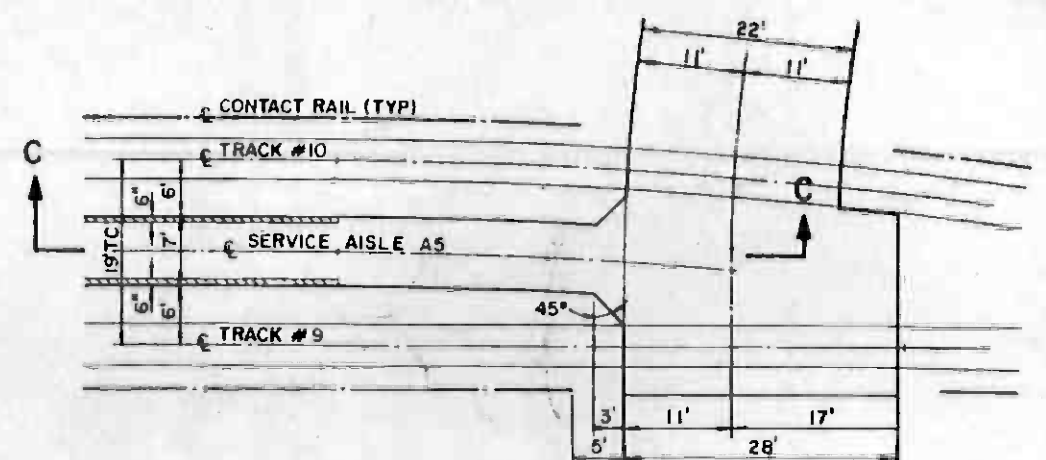
THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DESIGNED BY PT Baker DRAWN BY J. Macaluso CHECKED BY J. P. Johnson IN CHARGE Joseph P. Johnson DATE 15 JUL 85	REGISTERED PROFESSIONAL ENGINEER JAMES B. THOMAS C 25755 CIVIL STATE OF CALIFORNIA	SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT DMJM/PBQD/KE/HWA GENERAL CONSULTANTS	LA CBD TO NORTH HOLLYWOOD TRACKWORK INSTALLATION TYPICAL GRADE CROSSING	CONTRACT NO. A-610 DRAWING NO. T-239 SCALE AS NOTED SHEET NO. A620 / 338					
REV.	DATE	BY	SUB	APP.	DESCRIPTION	REV.	DATE	BY	SUB	APP.	DESCRIPTION



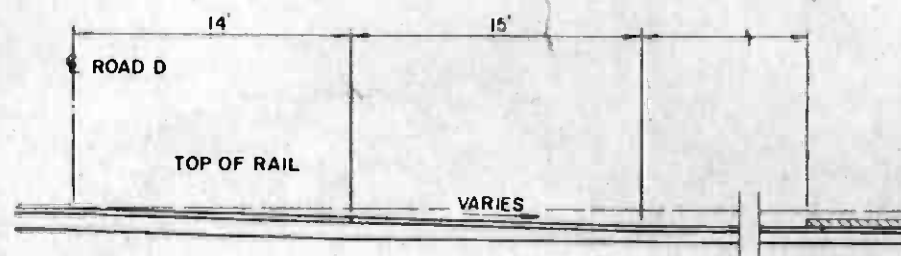
DETAIL 1
T-240 128



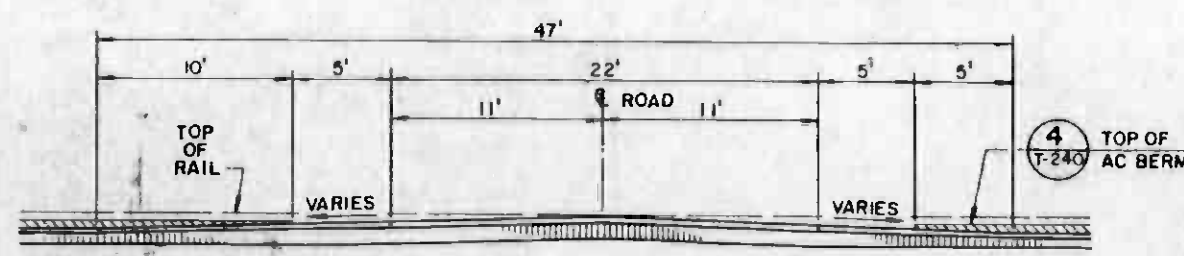
DETAIL 2
T-240 131, 134



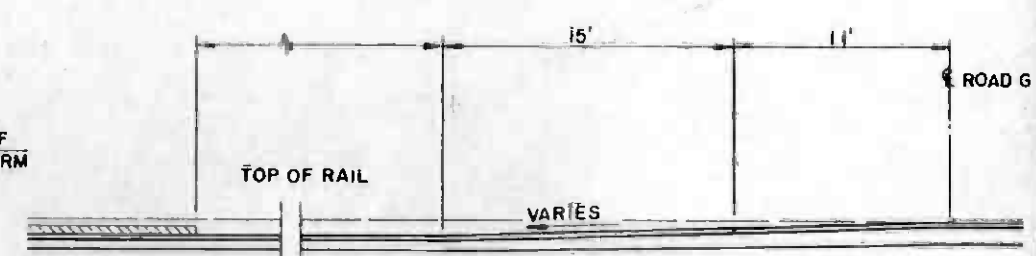
DETAIL 3
T-240 137



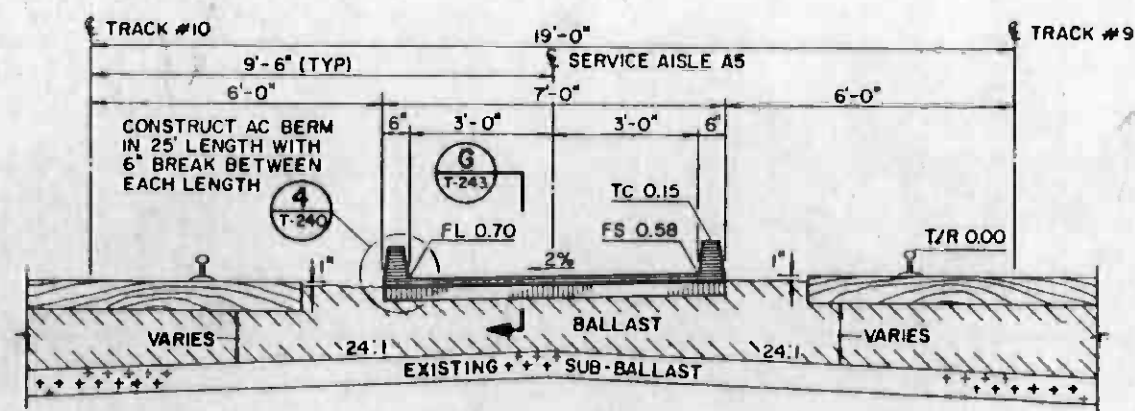
SECTION A-A



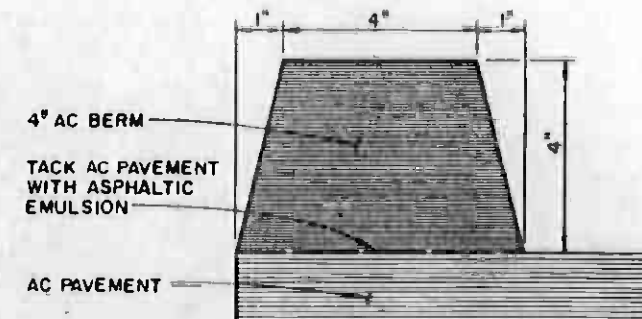
SECTION B-B



SECTION C-C



TYPICAL SECTION SERVICE AISLE A
T-240 128, 131, 134, 137



4" AC BERM 4
T-240

REV		DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY
J. Cedar

DRAWN BY
Paul J. Baker

CHECKED BY
James P. Kahan

DATE
15 JUL 85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PB00/KE/HWA
GENERAL CONSULTANTS

APPROVED
James P. Kahan



LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION

CONTRACT NO. A610

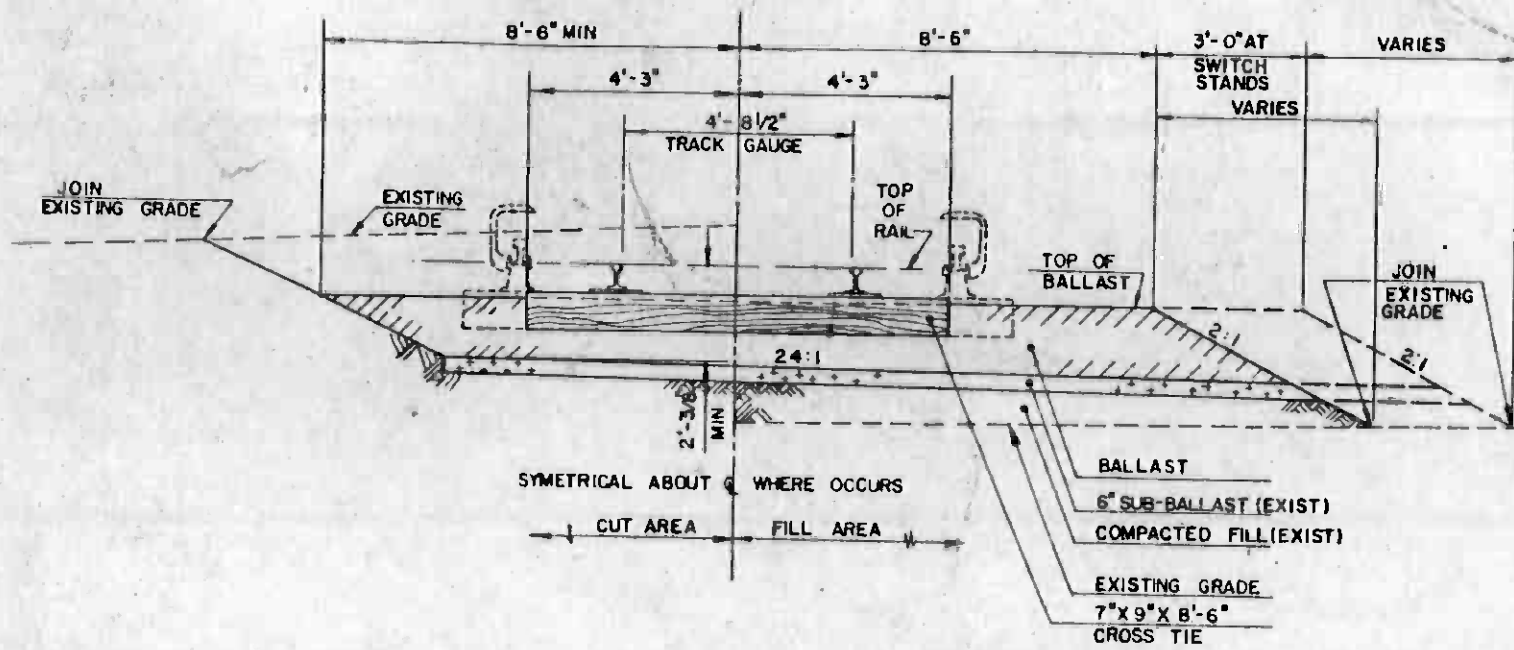
DRAWING NO. T-240

SCALE NONE

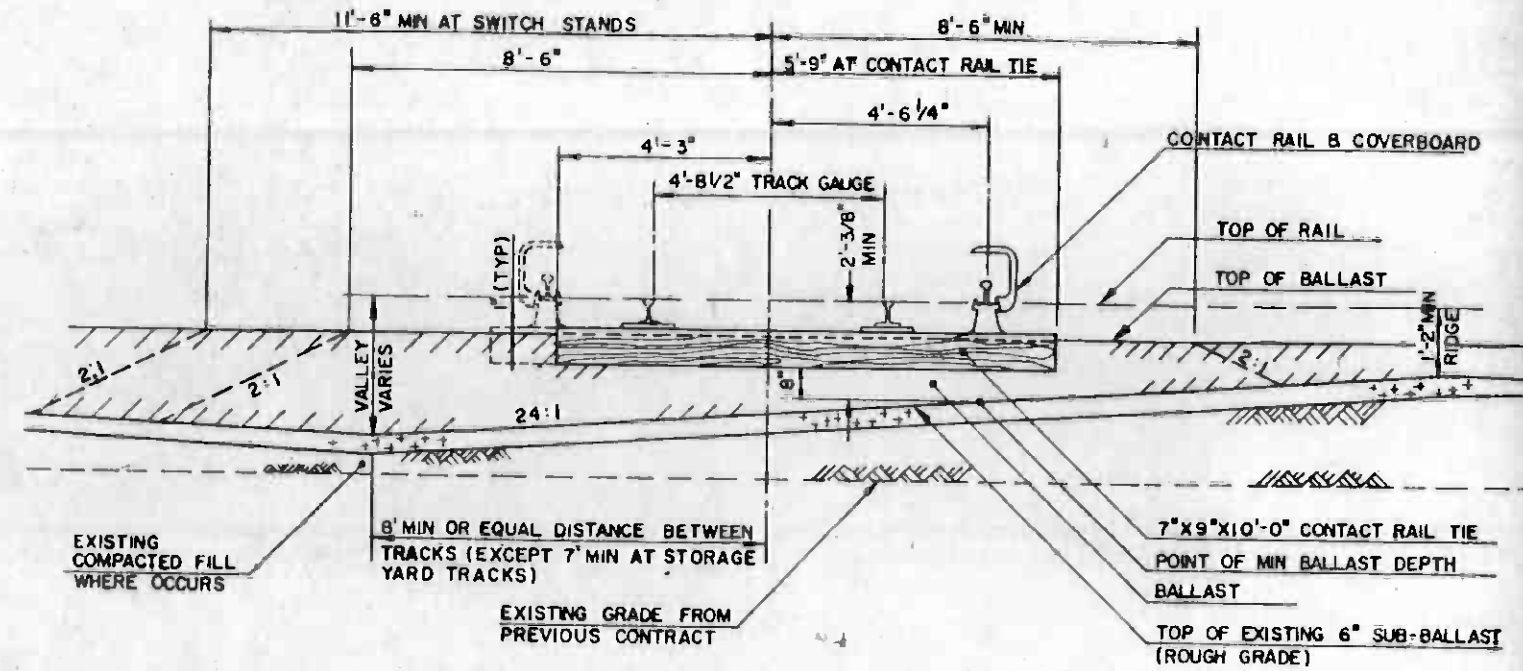
SHEET NO. A6207 339

SERVICE AISLE DETAILS

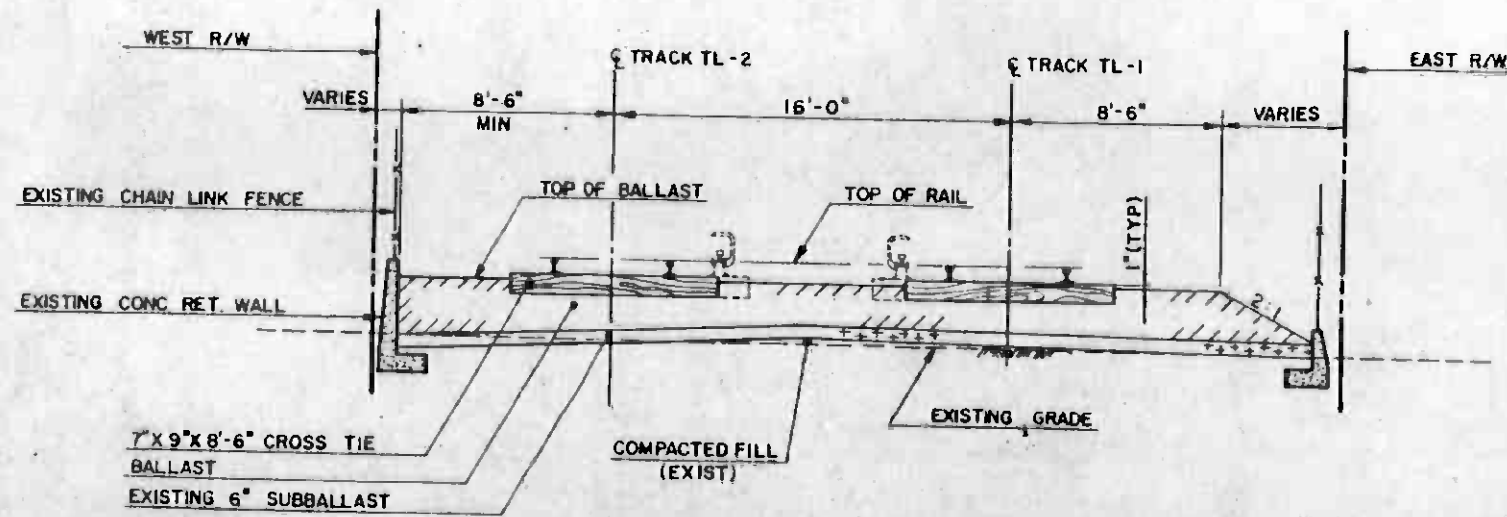




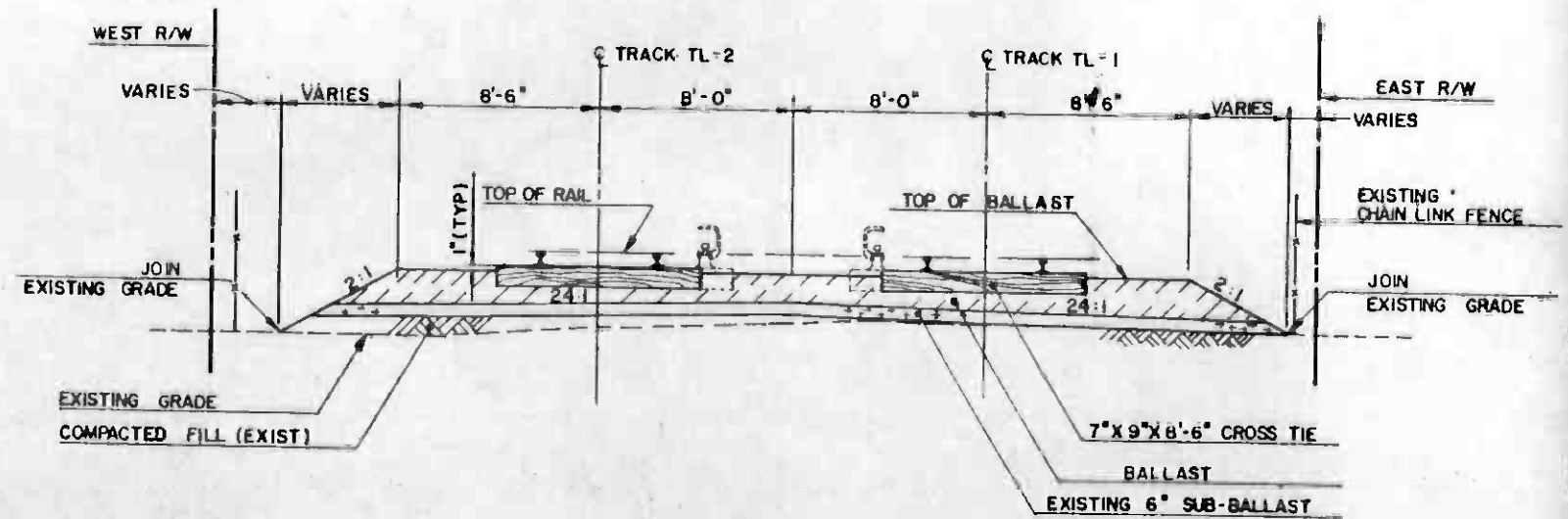
TYPICAL TRACK SECTION **A**
T-244



TYPICAL TRACK SECTION **B**
T-244/125



TYPICAL TRACK SECTION **C**
T-244/123,124



TYPICAL TRACK SECTION **D**
T-244/123,124



REV.	DATE	BY	SUB.	APP.	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

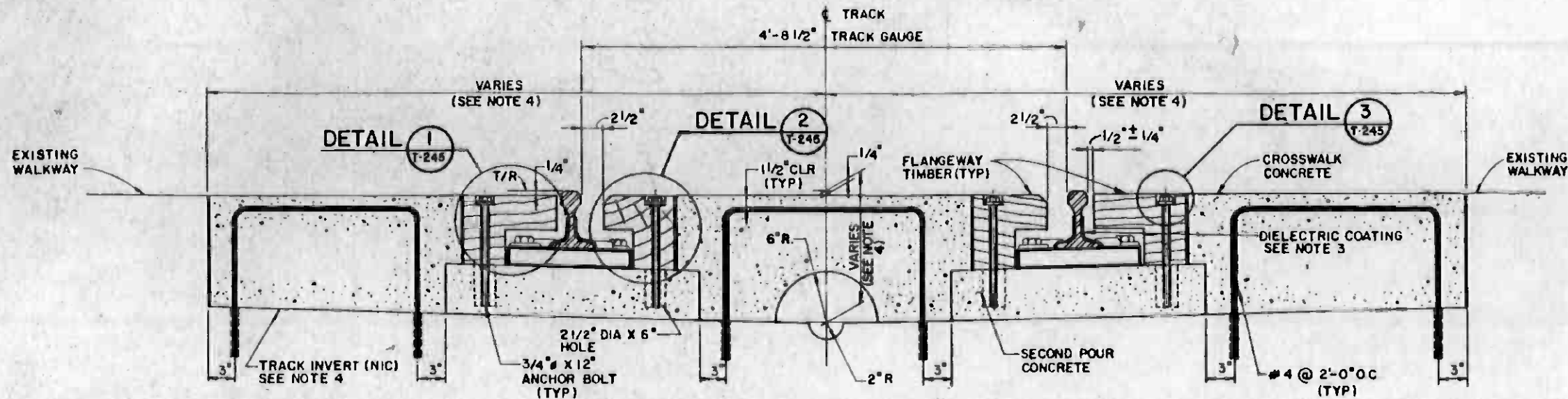
DESIGNED BY
J. L. ...
DRAWN BY
N. C. ...
CHECKED BY
R. J. ...
IN CHARGE
L. P. ...
DATE
15 JUL 85



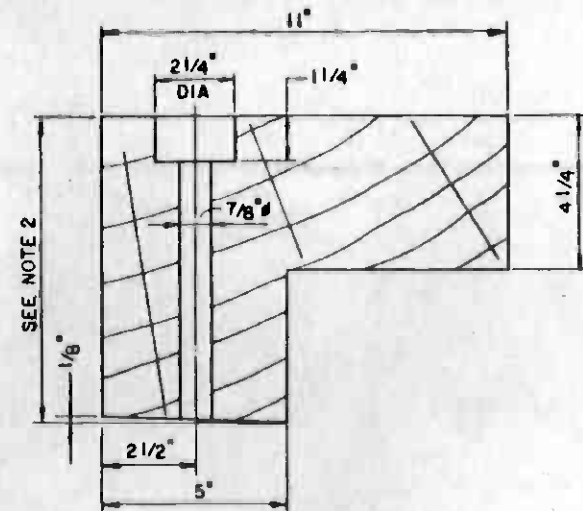
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS
APPROVED

LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION
MISCELLANEOUS TRACK SECTIONS

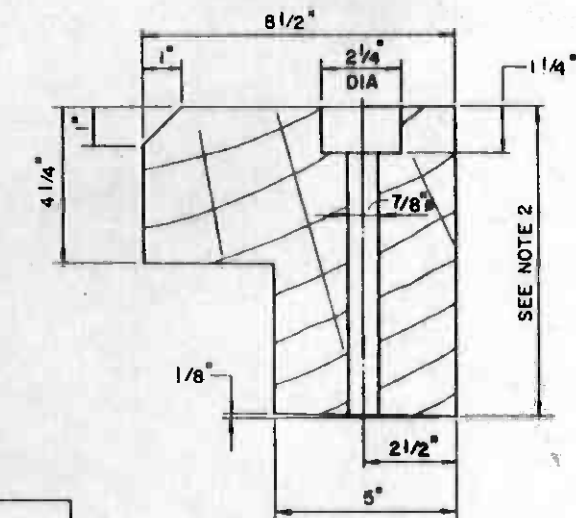
CONTRACT NO.
A-610
DRAWING NO.
T-244
SCALE
NO SCALE
SHEET NO.
4620/340



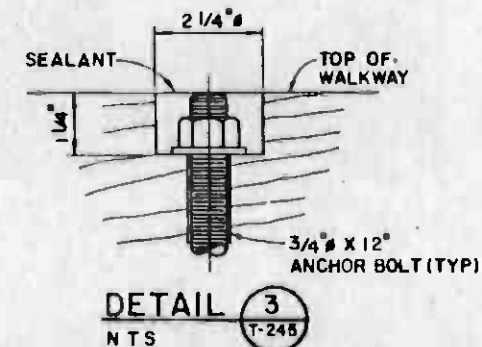
SECTION A
NTS



DETAIL 1
SCALE: 3/8" = 1"
LEFT HAND SHOWN
RIGHT HAND OPPOSITE



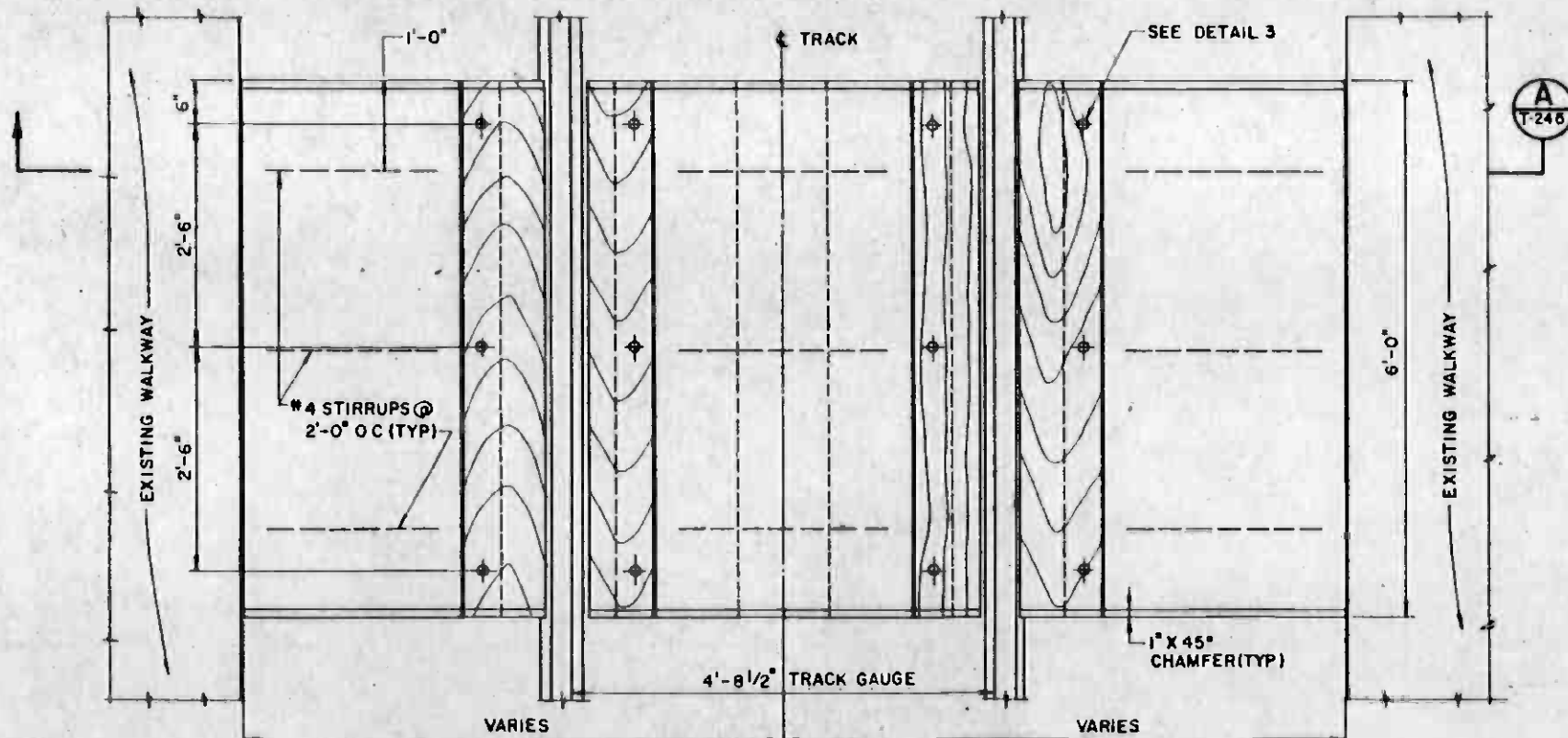
DETAIL 2
SCALE: 3/8" = 1"
LEFT HAND SHOWN
RIGHT HAND OPPOSITE



DETAIL 3
NTS

TRACK CROSSWALK TYPE I BILL OF MATERIAL	
QTY	DESCRIPTION
2 EA	FLANGWAY TIMBERS, GAUGE SIDE AND FIELD SIDE AS SHOWN
AS REQ'D	SECOND POUR CONCRETE W #4 REINFORCING STEEL
12 EA	3/4" DIA. X 12" ANCHOR BOLTS W/HEX. NUTS & PLAIN WASHERS
AS REQ'D	SEALANT
AS REQ'D	DIELECTRIC COATING

- NOTES:
1. TIMBER PORTIONS OF THE CROSSWALK SHALL BE REMOVABLE.
 2. ELEVATION OF SECOND POUR CONCRETE SUPPORTING FLANGWAY TIMBER VARIES WITH CONSTRUCTION TOLERANCE. CUT FLANGWAY TIMBER AT DEPTH TO MATCH, SO THAT TIMBER IS 1/4 INCH BELOW TOP OF RAIL.
 3. APPLY DIELECTRIC COATING TO TOP AND SIDES OF RAIL WEB AND BASE, DIRECT FIXATION FASTENERS, AND SECOND POUR CONCRETE EXTENDING AT LEAST 6 INCHES OUTSIDE OF THE CROSSWALK.
 4. DEPTH AND WIDTH OF EXISTING INVERT MAY VARY. SEE TRACK CHARTS FOR TRACK CROSSWALK LOCATIONS AND INFORMATION DRAWINGS FOR STRUCTURAL DETAILS.



PLAN
SCALE: 1" = 1'-0"

REV	DATE	BY	SUB	APP.	DESCRIPTION

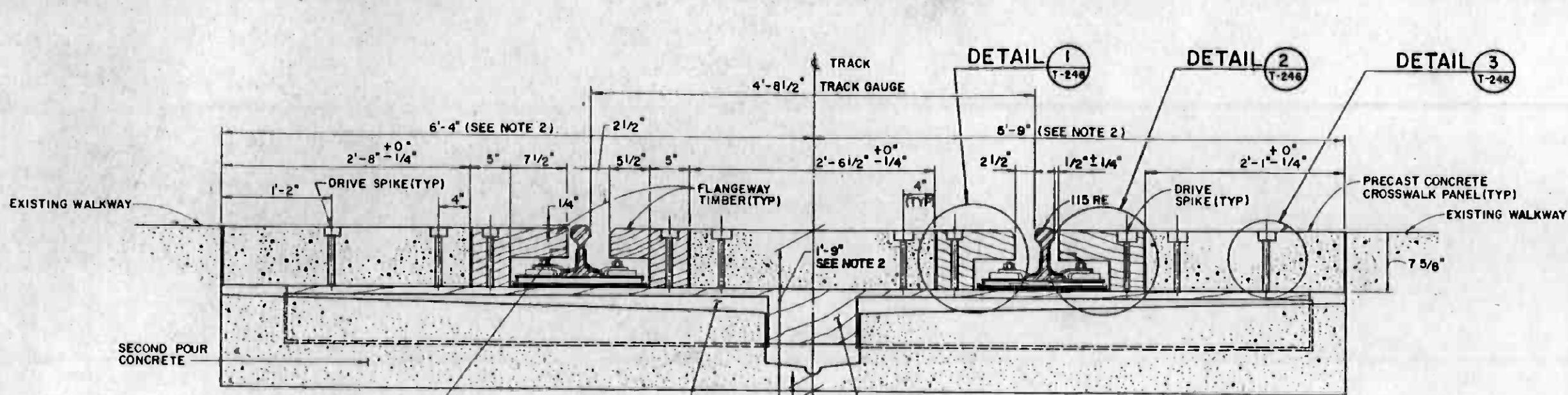
DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE
15 JUL 85



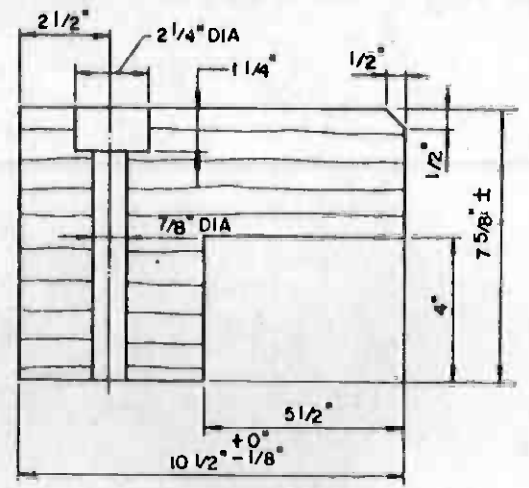
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS
SUBMITTED: Joseph B. Valera
APPROVED:

LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION
TRACK CROSSWALK - TYPE I
DETAILS

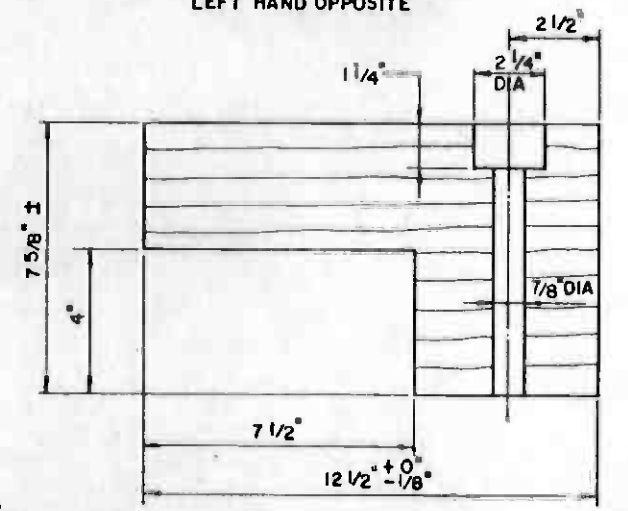
CONTRACT NO.	A 610
DRAWING NO.	T-245
SCALE	AS NOTED
SHEET NO.	A620/341



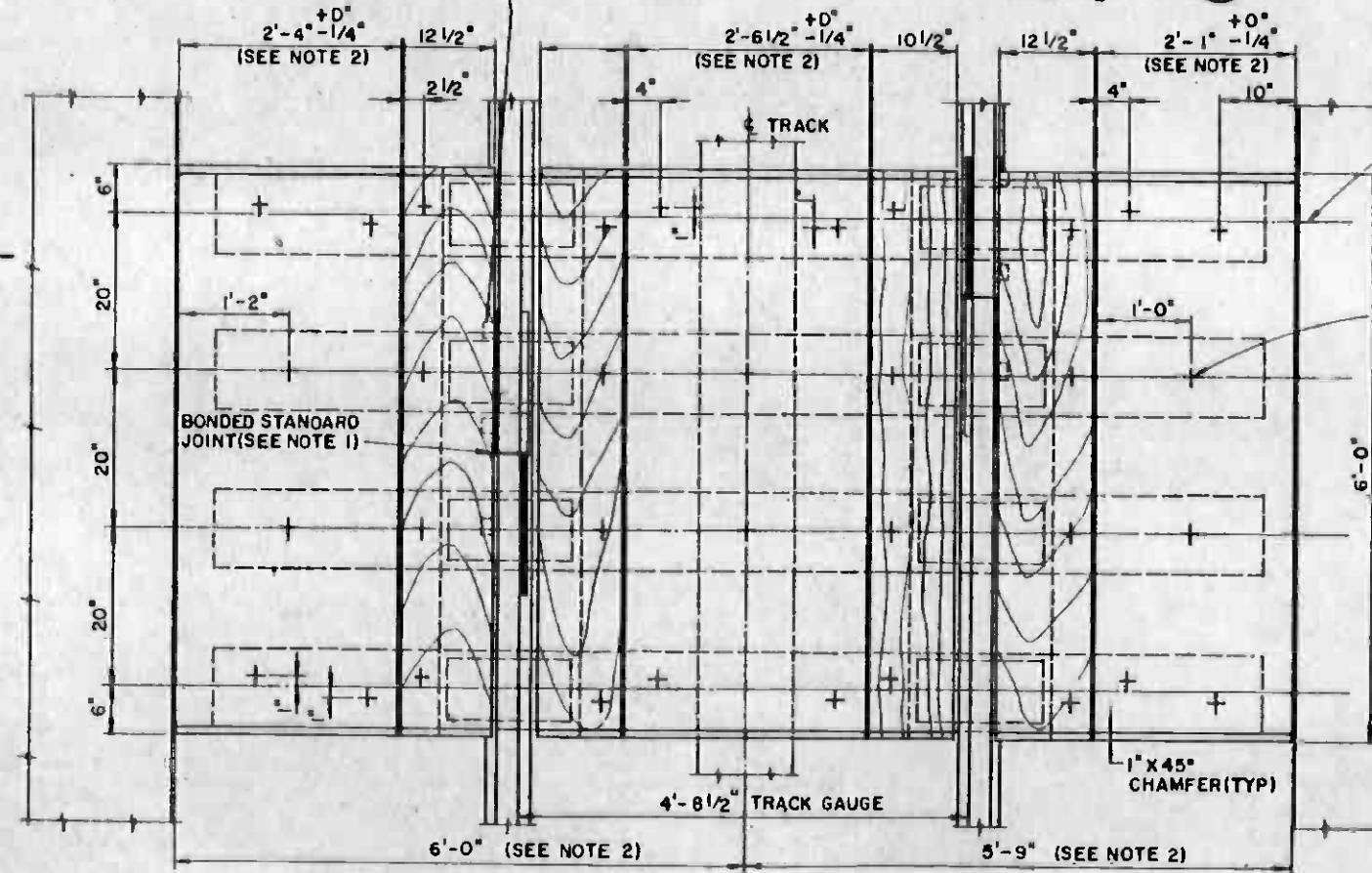
SECTION A
SCALE: 1 1/2" = 1'-0"
T-246 T-219



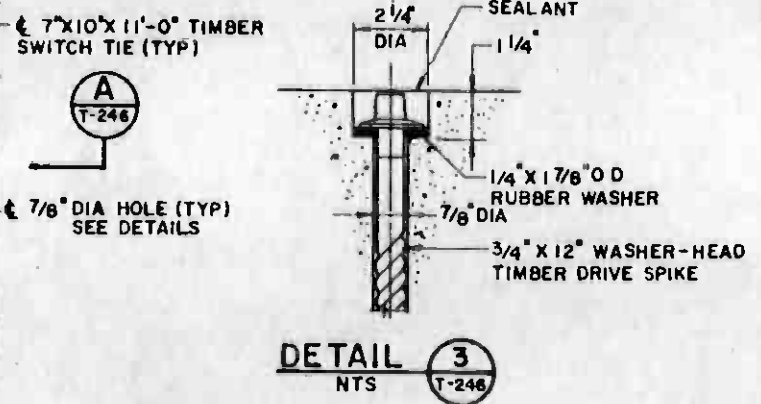
DETAIL 1
SCALE: 3/8" = 1"
RIGHT HAND SHOWN
LEFT HAND OPPOSITE
T-246



DETAIL 2
SCALE: 3/8" = 1"
RIGHT HAND SHOWN
LEFT HAND OPPOSITE
T-246



PLAN
SCALE: 1" = 1'-0"



DETAIL 3
NTS
T-246

**TRACK CROSSWALK TYPE 2
BILL OF MATERIAL**

QTY	DESCRIPTION
1 EA	PRECAST CONCRETE CROSSWALK PANELS, 2'-1", 2'-4" AND 2'-6 1/2" WIDE, AS SHOWN (SEE NOTE 2)
2 EA	FLANGWAY TIMBERS, GAUGE SIDE AND FIELD SIDE, AS SHOWN
34	3/4" X 12" WASHER-HEAD TIMBER DRIVE SPIKE
34	1/4" X 17/8" O.D. RUBBER WASHER
A/R	SEALANT
A/R	DIELECTRIC COATING

- NOTES:**
- TIMBER PORTION OF THE CROSSWALK SHALL BE REMOVABLE.
 - CROSSWALK AT UNION STATION DOUBLE CROSSOVER SHOWN. CROSSWALK LENGTH AND TYPE OF INVERT MAY VARY AT OTHER LOCATIONS. ADJUST PRECAST PANEL LENGTHS AS REQUIRED TO FIT LOCATION. SEE TRACK CHART FOR TRACK CROSSWALK LOCATIONS AND INFORMATION DRAWINGS FOR STRUCTURAL DETAILS.
 - APPLY DIELECTRIC COATING TO TOP AND SIDES OF RAIL WEB AND BASE, DIRECT FIXATION FASTENERS AND SECOND FOUR CONCRETE, EXTENDING AT LEAST 6 INCHES OUTSIDE CROSSWALKS.



REV	DATE	BY	SUB	APP	DESCRIPTION

DESIGNED BY: J.P. Valera
 DRAWN BY: R. J. Lopez
 CHECKED BY: R. J. Lopez
 IN CHARGE: Joseph P. Valera
 DATE: 15 JUL 85

**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

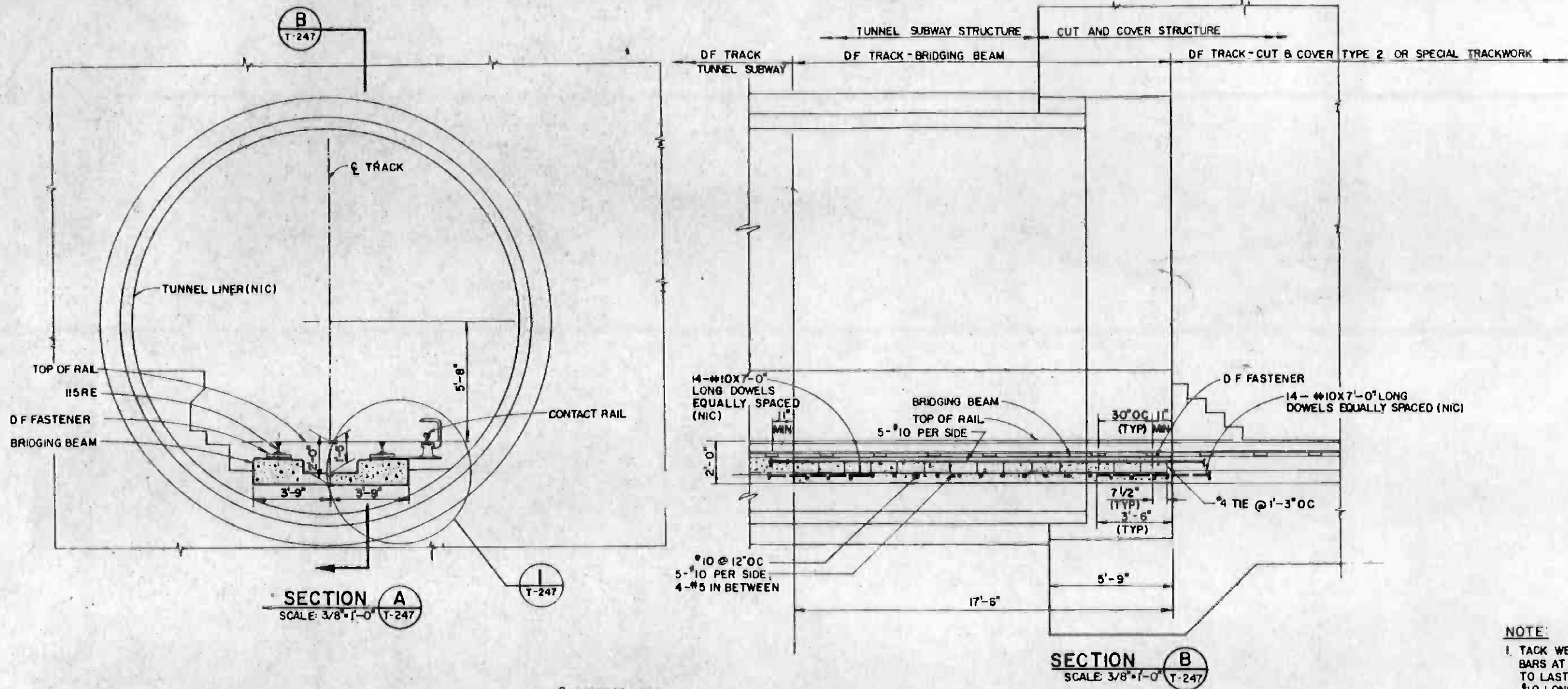
DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

APPROVED: Joseph P. Valera

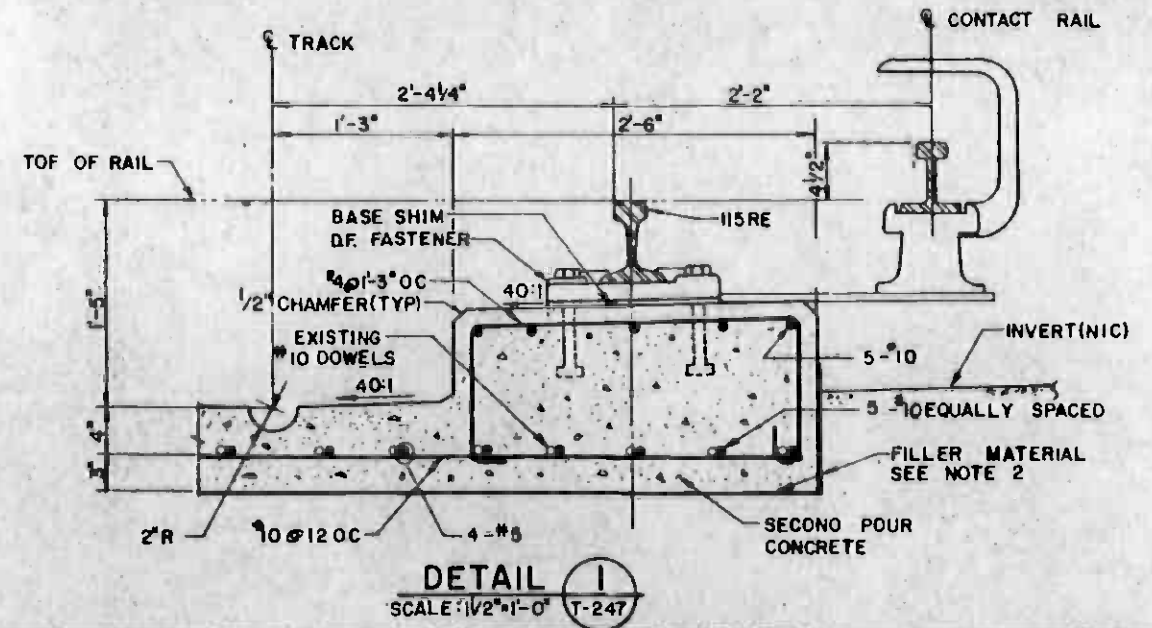
**LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION**

**TRACK CROSSWALK - TYPE 2
DETAILS**

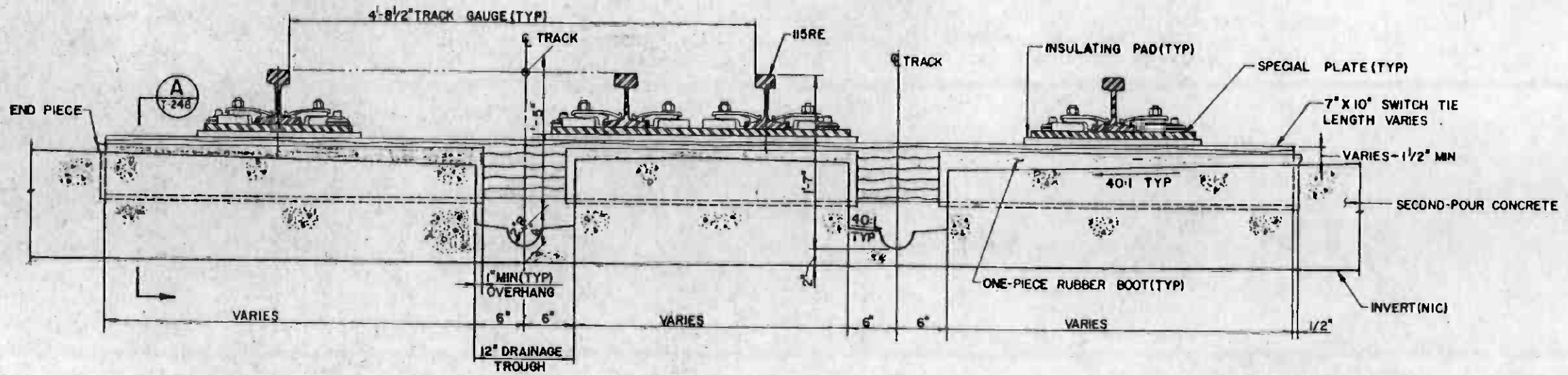
CONTRACT NO. A 610
 DRAWING NO. T-246
 SCALE AS NOTED
 SHEET NO. A620/342



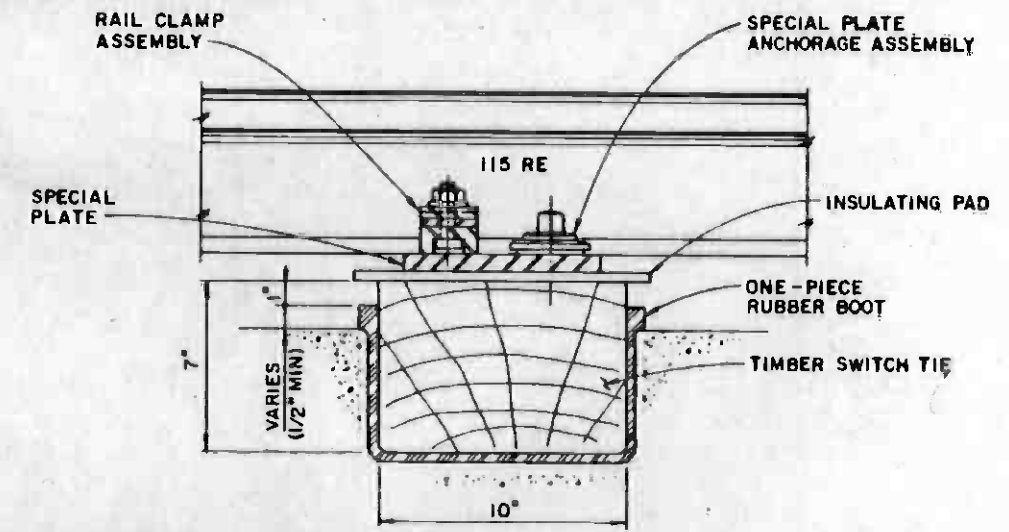
- NOTE:**
- TACK WELD EACH NEW #10 LONGITUDINAL REINFORCING BARS AT BOTTOM OF SLAB TO EXISTING #10 DOWELS AND TO LAST #4 TIES AT ENDS OF BRIDGING BEAM. TACKWELD #10 LONGITUDINAL REINFORCING BARS AT TOP OF SLAB TO LAST #4 TIES AND TO 5 LONGITUDINAL BARS OF ADJACENT DIRECT FIXATION TRACK.
 - FILLER MATERIAL UNDER BRIDGING BEAM TO BE 1/4" THICK NEOPRENE RUBBER SHEET, COVERING ALL OF EMBEDDED BOTTOM AND SIDE SURFACES.
 - FOR TUNNEL SUBWAY CONSTRUCTION DETAILS AT BRIDGING BEAM, SEE INFORMATION DWG. NO SS-060
 - FOR CONTACT RAIL MOUNTING DETAILS, SEE DWG NO. T-317.



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DESIGNED BY <i>J. B. Baker</i> DRAWN BY <i>F. P. Haines</i> CHECKED BY <i>Paul T. Baker</i> IN CHARGE <i>Joseph B. Valeri</i> DATE 15 JUL 85	REGISTERED PROFESSIONAL ENGINEER J. B. BAKER C 25753 STATE OF CALIFORNIA	SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT DMJM/PBQD/KE/HWA GENERAL CONSULTANTS SUBMITTED <i>Joseph B. Valeri</i> APPROVED _____	FTD LA CBD TO NORTH HOLLYWOOD TRACKWORK INSTALLATION DIRECT FIXATION TRACK CONSTRUCTION BRIDGING BEAM CONTRACT NO. A 610 DRAWING NO. T-247 SCALE AS SHOWN SHEET NO. A620/343
REV. DATE BY SUB. APP. DESCRIPTION	REV. DATE BY SUB. APP. DESCRIPTION				

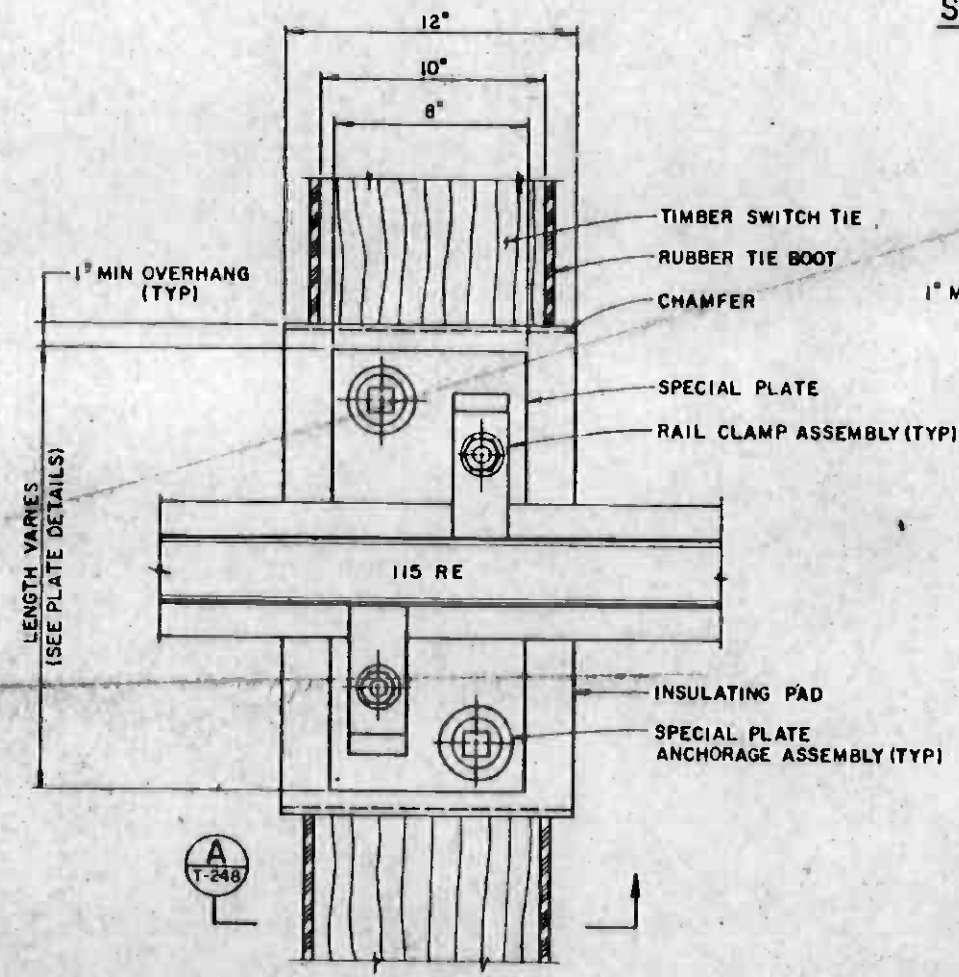


SECTION B
NTS
T-248

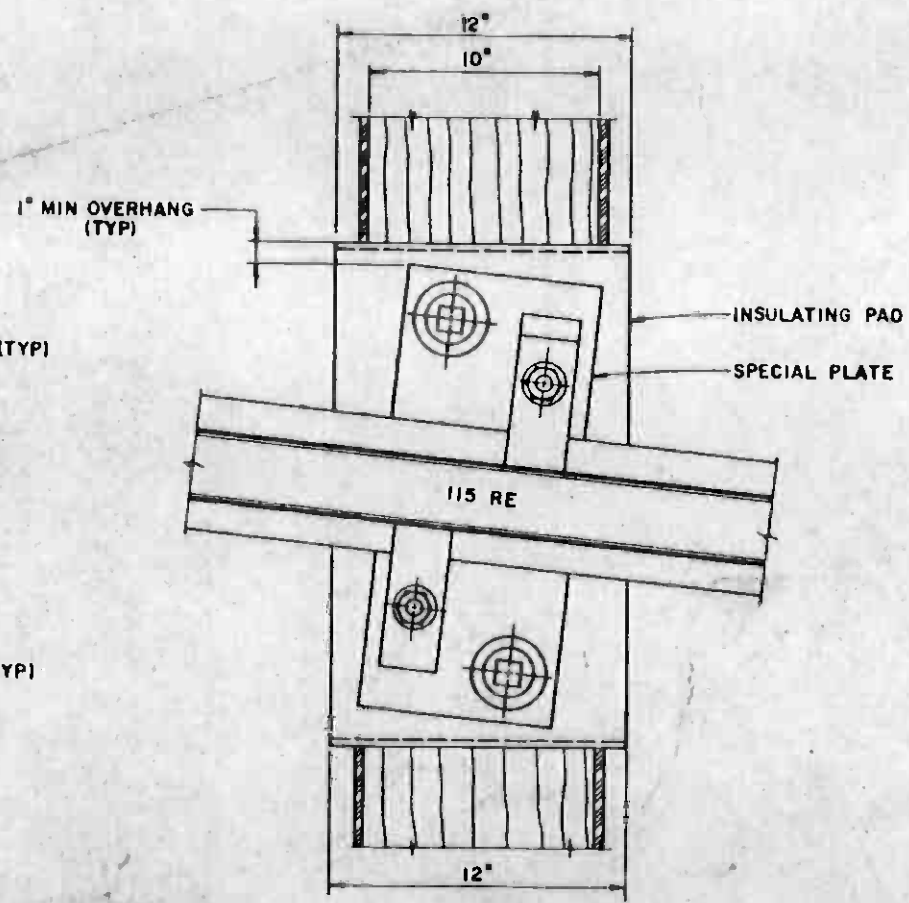


SECTION A
T-248

NOTE:
1. FOR ADDITIONAL DETAILS SEE DWG NOS. T-191 AND T-192



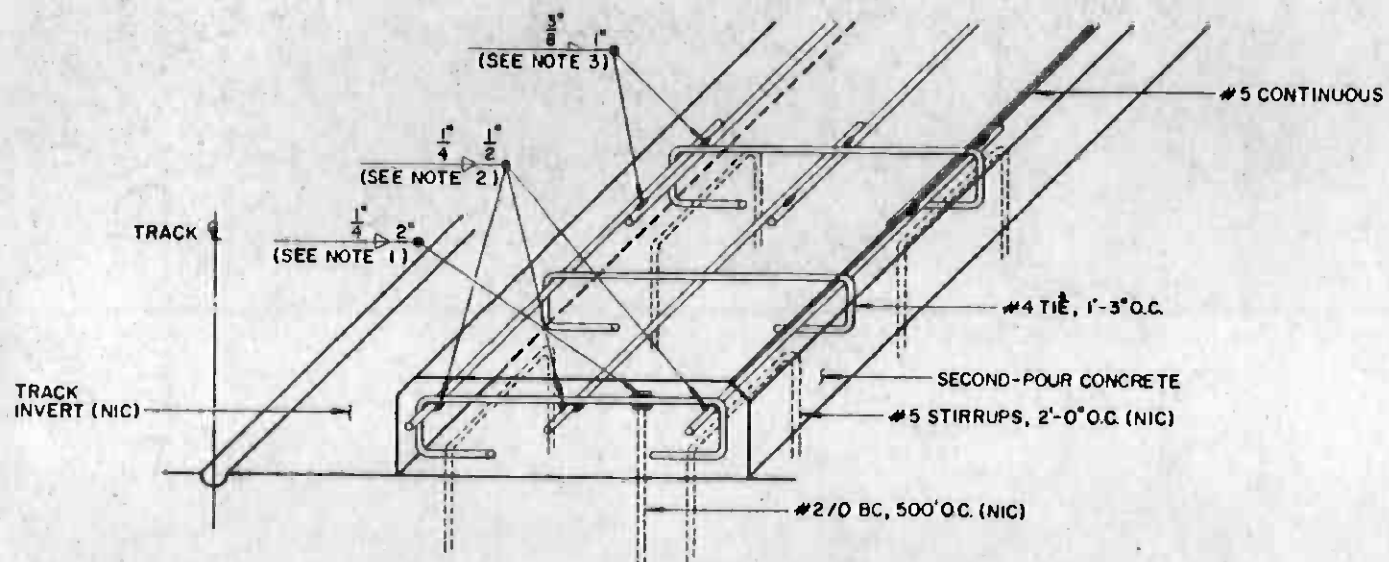
PLAN
INSULATING PAD LAYOUT
(SPECIAL PLATE PARALLEL TO TIE)
NTS



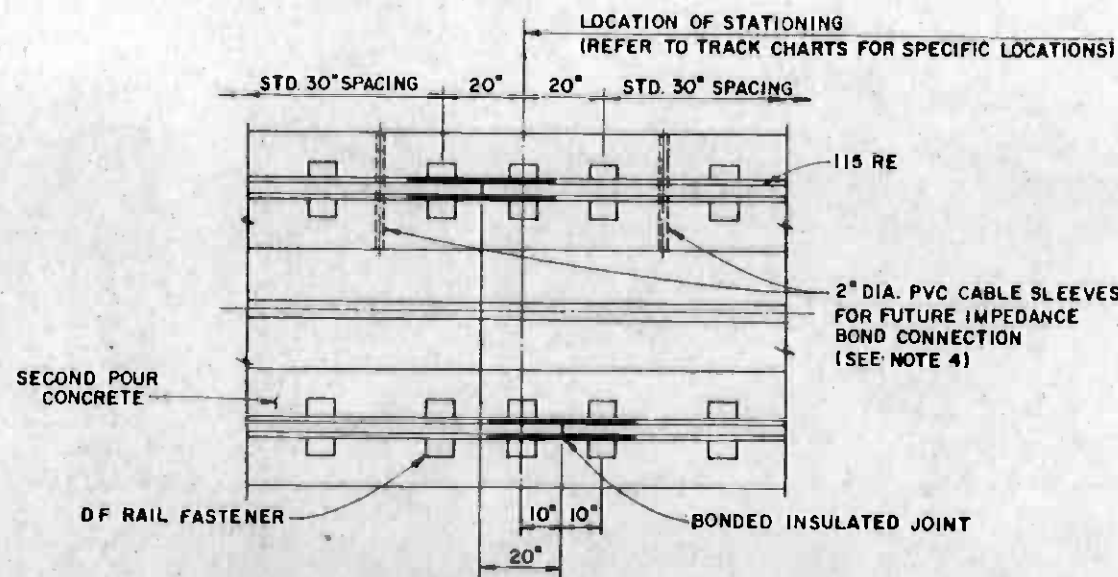
PLAN
INSULATING PAD LAYOUT
(SPECIAL PLATE ON ANGLE TO TIE)
NTS



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY: [Signature] DRAWN BY: [Signature] CHECKED BY: [Signature] IN CHARGE: [Signature] DATE: 15 JUL 85		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT 		LA CBD TO NORTH HOLLYWOOD TRACKWORK INSTALLATION		CONTRACT NO. A610 DRAWING NO. T-248 SCALE: NO SCALE SHEET NO. A620/344	
REV. DATE BY SUB APP DESCRIPTION				REV. DATE BY SUB APP DESCRIPTION		DMJM/PBOD/KE/HWA GENERAL CONSULTANTS		EMBEDDED TIMBER TIE INSTALLATION DETAIL		APPROVED: [Signature]	



STEEL REINFORCEMENT WELDING DETAIL
DIRECT FIXATION TRACK
 N.T.S.



BONDED INSULATED JOINT DETAIL
 N.T.S.

NOTES:

1. WELD STEEL LUG END OF #2/O BC (500' OC) TO NEAREST #4 LATERAL TIE BAR OR #5 LONGITUDINAL BAR.
2. AT EVERY #2/O BC LOCATION (500' OC), WELD EACH #5 LONGITUDINAL BAR TO #4 LATERAL TIE BAR.
3. WELD ALL LAPS OF #5 LONGITUDINAL BARS TWICE, ONCE AT EACH END.
4. ADDITIONAL CABLE SLEEVES ARE REQUIRED IN SECOND POUR CONCRETE AT SOME BONDED INSULATED JOINT LOCATIONS, FOR NEGATIVE RETURN CABLES. SEE DWG. NO. T-321 FOR ADDITIONAL DETAILS. CONFIRM NUMBER AND LOCATION OF CABLE SLEEVES WITH THE DISTRICT OR ITS DESIGNER BEFORE POURING SECOND POUR CONCRETE.



REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY
[Signature]
 CHECKED BY
[Signature]
 IN CHARGE
[Signature]
 15 JUL 85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT



DMJM/PBOD/KE/HWA
 GENERAL CONSULTANTS

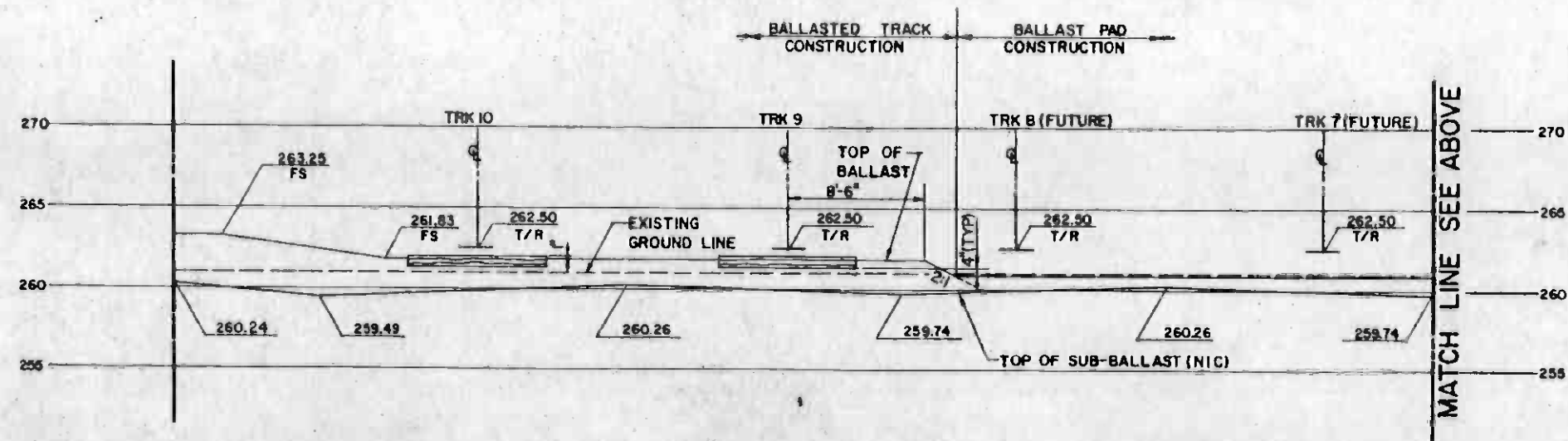
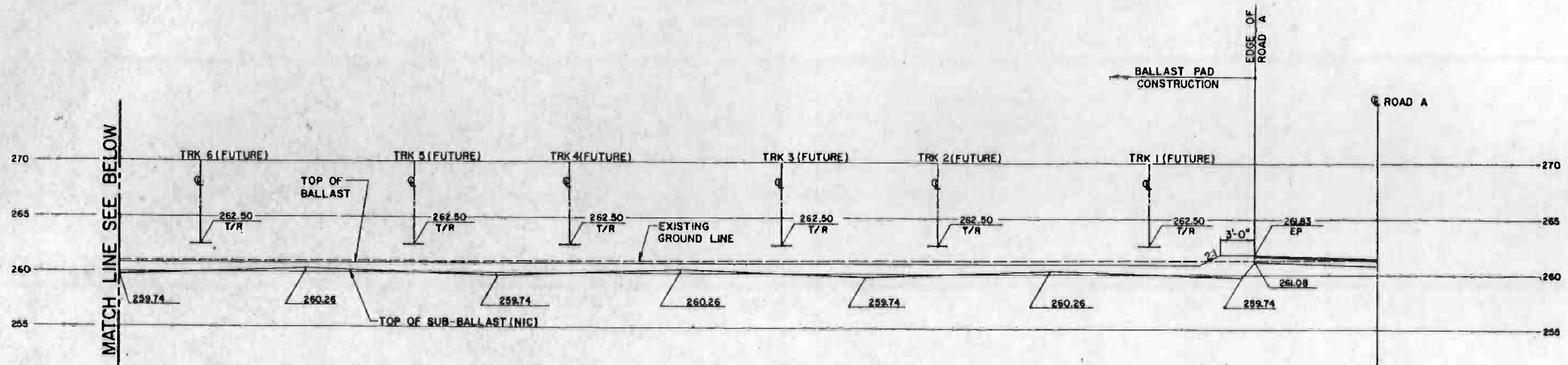
SUBMITTED *[Signature]*

APPROVED _____

LA CBD TO NORTH HOLLYWOOD
 TRACKWORK INSTALLATION

MISCELLANEOUS DETAILS

CONTRACT NO.	A610
DRAWING NO.	T-249
SCALE	AS NOTED
SHEET NO.	A620/345



NOTES:
 1. ELEVATIONS SHOWN ARE FOR BL 27+00.
 TOP OF BALLAST PAD IS 4"(TYP) BELOW
 BOTTOM OF CROSS TIE



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1984, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA

DESIGNED BY
 DRAWN BY
 CHECKED BY
 IN CHARGE
 DATE
 15 JUL 85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT
 DMJM/PBOD/KE/HWA
 GENERAL CONSULTANTS
 APPROVED

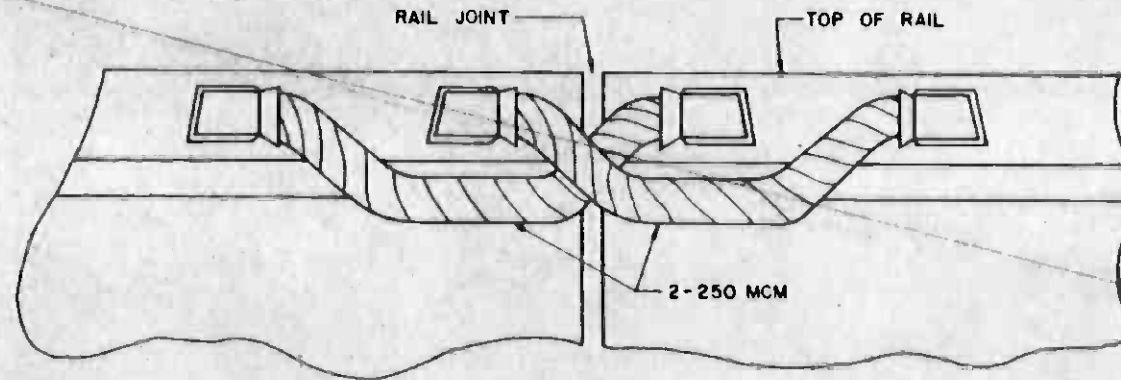
LA CBD TO NORTH HOLLYWOOD
 TRACKWORK INSTALLATION
 BALLAST PAD - CONSTRUCTION LIMITS

CONTRACT NO.	A610
DRAWING NO.	T-250
SCALE	HOR: 1" = 5' VER: 1" = 5'
SHEET NO.	A620/346

REV.	DATE	BY	APP.	DESCRIPTION

NOTE :

1. CONTRACTOR SHALL BOND ALL NON-INSULATED JOINTS.
2. 250 MCM BONDS SHALL BE EXOTHERMICALLY WELDED TO THE FIELD SIDE OF THE RAIL HEAD WITHIN THE LIMITS OF A JOINT BAR.
3. RAIL HEAD SHALL BE GROUND CLEAN WITH A VITRIFIED GRINDING WHEEL AND CLEANED WITH INHIBISOL OR OTHER APPROVED NONTOXIC SOLVENT TO REMOVE DIRT AND DEBRIS PRIOR TO WELDING THE BOND.



(BOND - TYPE "C-250 MCM, 13")



REV	DATE	BY	CHK	APP	DESCRIPTION

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DESIGNED BY
Isaac Shafer
DRAWN BY
A. Vasquez
CHECKED BY
[Signature]
IN CHARGE
[Signature]
DATE
15 JUL 85



**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**



SUBMITTED *Jonas Shafer*

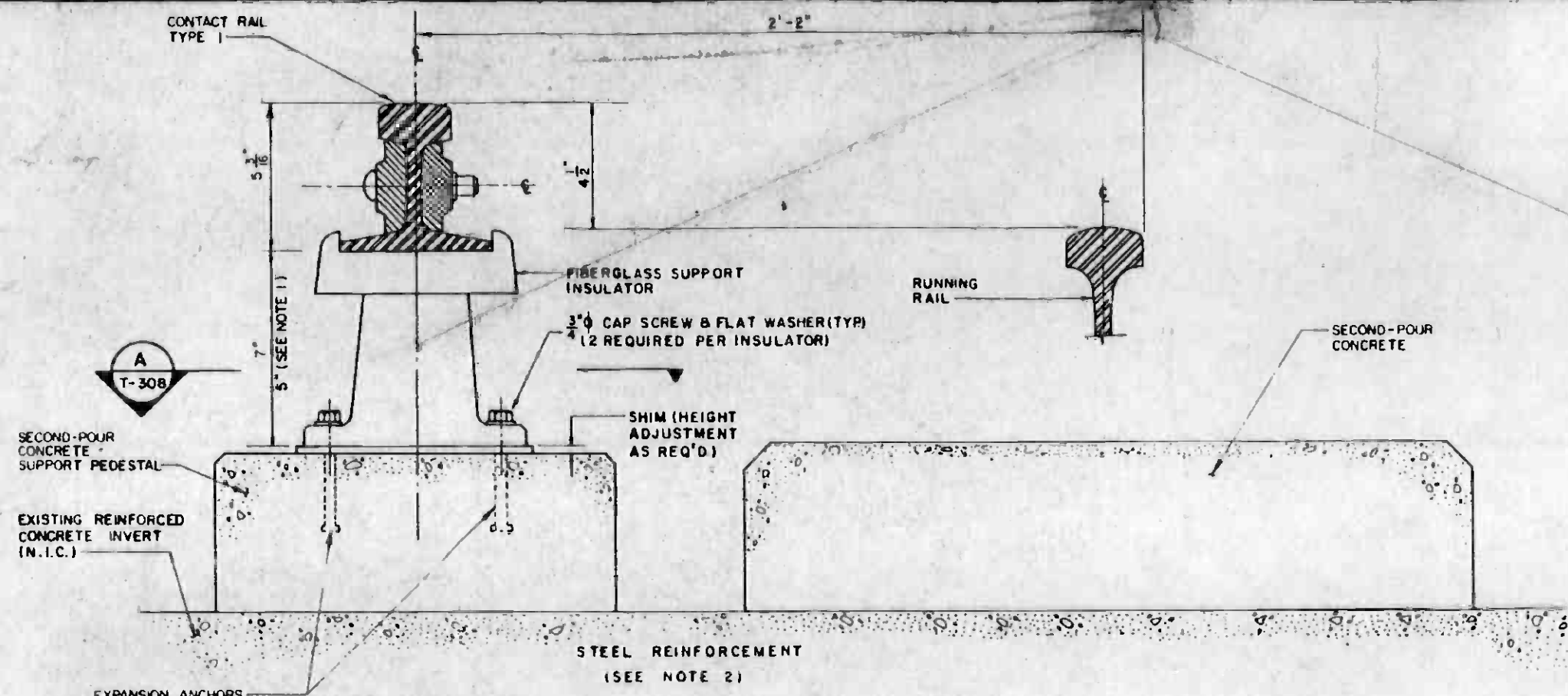
DRUM/PROD/KE/HWA
GENERAL CONSULTANTS
APPROVED

**LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION
NEGATIVE RETURN JOINT BONDING**

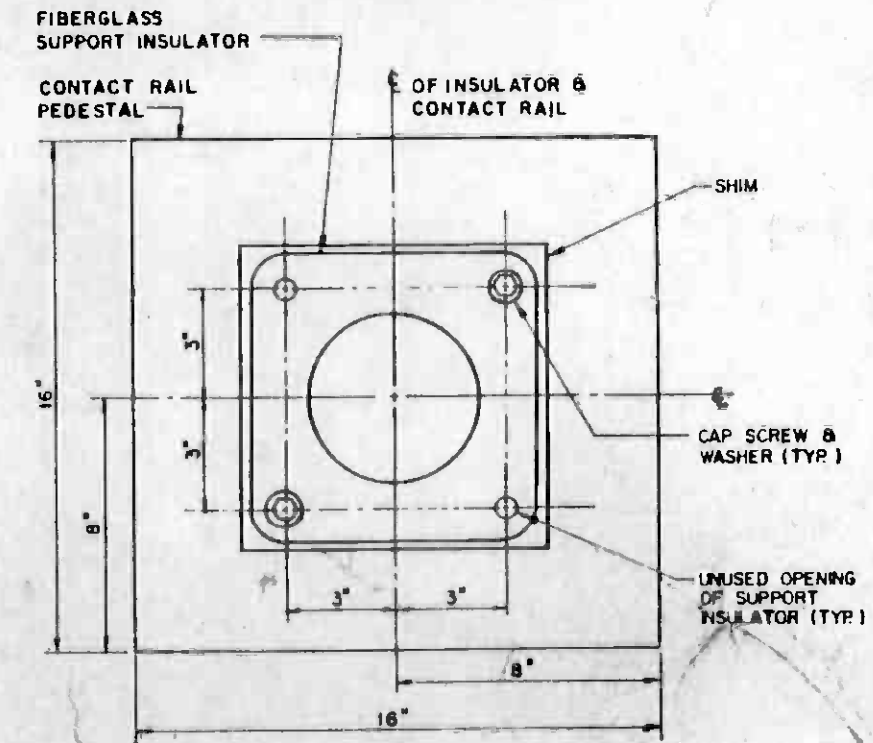
CONTRACT NO. A-610	
DRAWING NO. T-251	REV.
SCALE AS NOTED	
SHEET NO. A620 / 347	

NOTES:

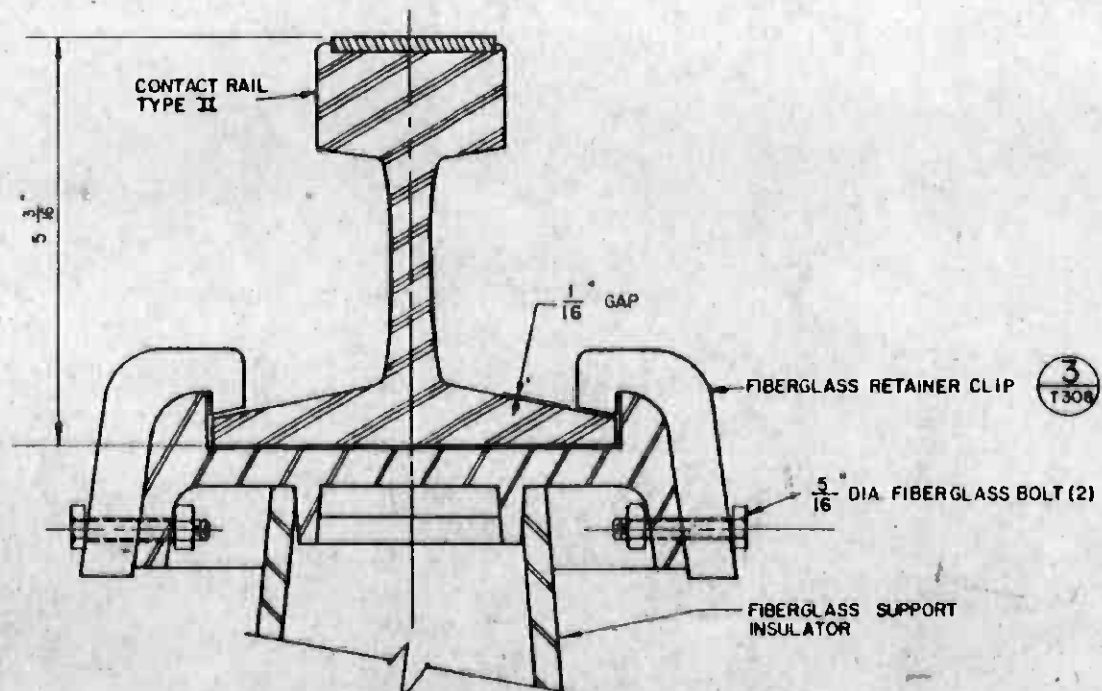
1. DIMENSIONS SHOWN IN PARENTHESIS, REFERS TO INSULATORS FOR USE UNDER DIPPED RAIL SECTIONS ONLY.
2. FOR STEEL REINFORCEMENT, SEE DRAWING NO. T-213.



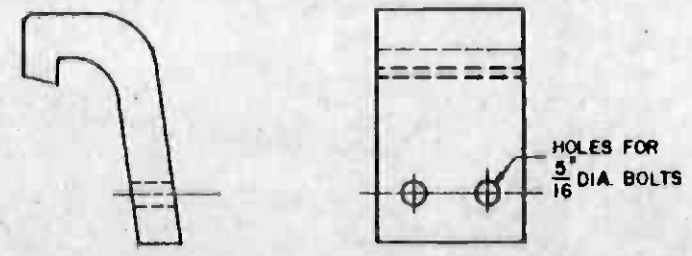
CONTACT RAIL TYPE I MOUNTING DETAIL (1) T308



SECTION A T308



CONTACT RAIL TYPE II MOUNTING DETAIL (2) T308



RETAINER CLIP DETAIL (3) T308

REV.	DATE	BY	CHK.	APP.	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY
A. K. Paul

DRAWN BY
A. D. Paul

CHECKED BY
J. Shafir

IN CHARGE
M. Duran

DATE
15 JUL 85

REGISTERED PROFESSIONAL ENGINEER
ISAAC SHAFIR
No. 11810
ELECTRICAL
STATE OF CALIFORNIA

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT

DMJM/PBDD/KE/HWA
GENERAL CONSULTANTS

APPROVED

SUBMITTED *Yoram A. Shafir*

LA CBD TO NORTH HOLLYWOOD TRACKWORK INSTALLATION

CONTACT RAIL MOUNTING DETAILS

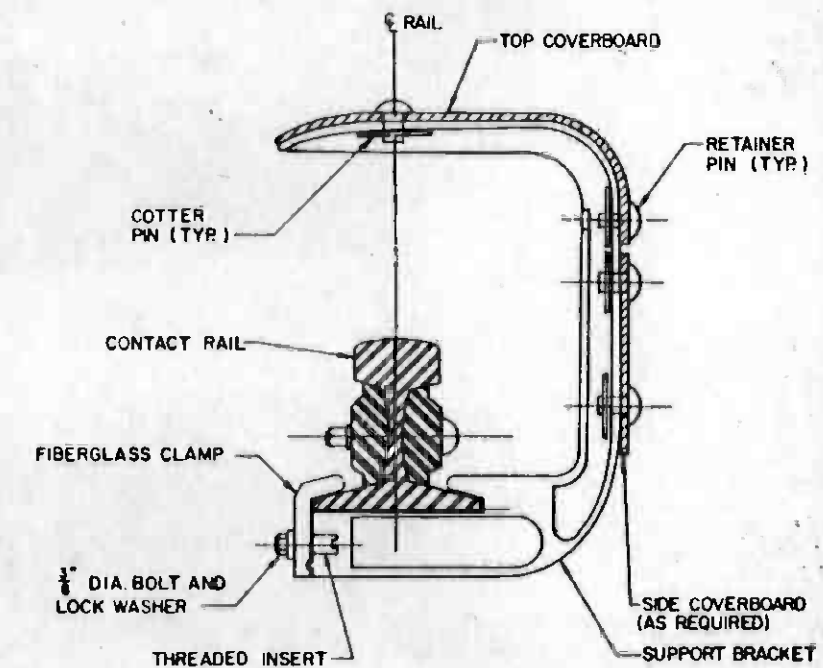
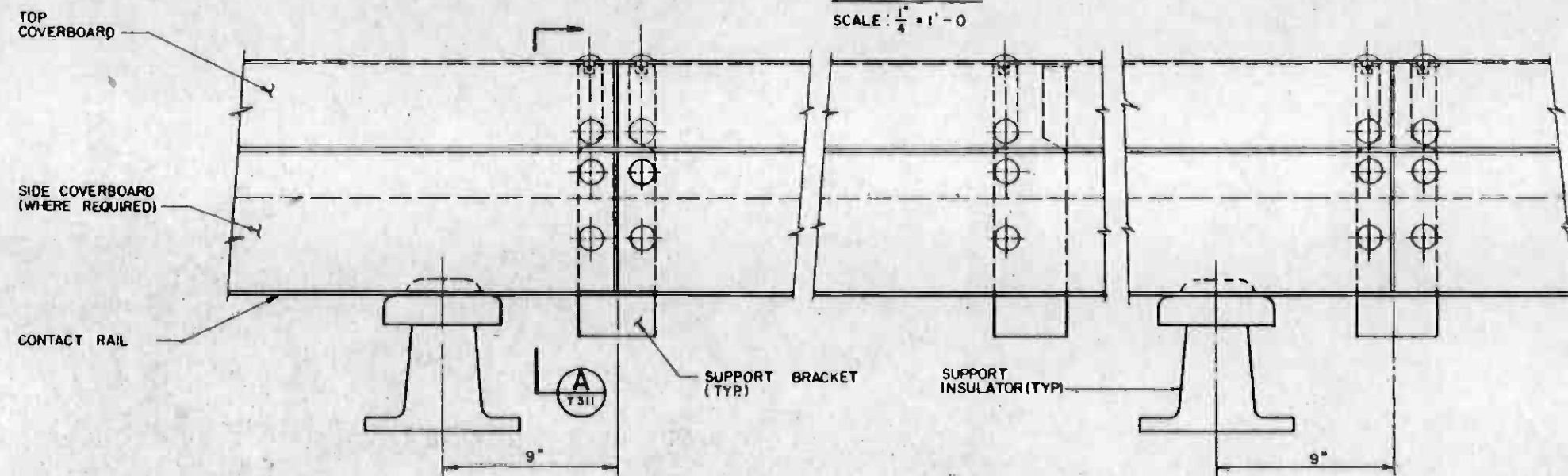
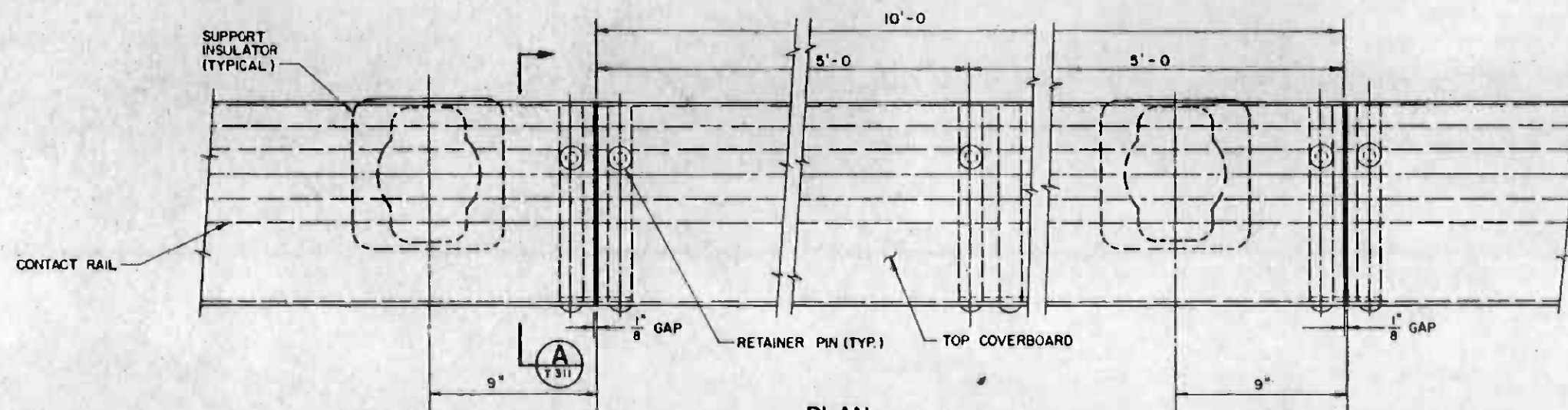
DIRECT FIXATION TRACK IN CUT & COVER

CONTRACT NO. A610

DRAWING NO. T-308

SCALE: NO SCALE

SHEET NO. A620 / 355



REV.	DATE	BY	SUB	APP	DESCRIPTION

REV.	DATE	BY	SUB	APP	DESCRIPTION

DESIGNED BY
J. Shafir

DRAWN BY
J. Shafir

CHECKED BY
J. Shafir

DATE
15 JUL 85

ISAIAK SHAFIR
No. 11816
ELECTRICAL
STATE OF CALIFORNIA

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

KAISER ENGINEERS (CALIFORNIA) CORPORATION

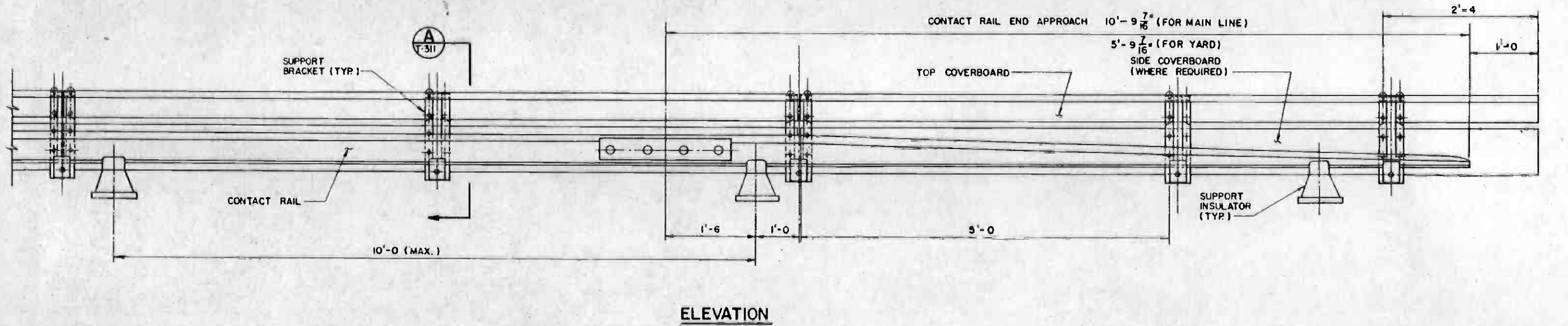
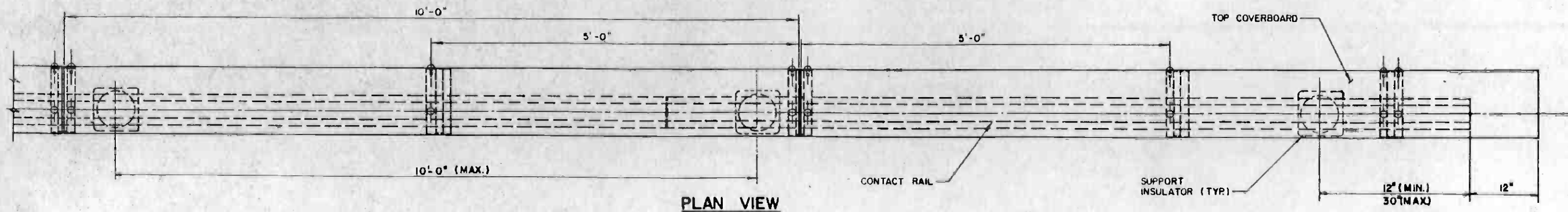
DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

APPROVED

ATD

LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION
COVERBOARD DETAILS
COVERBOARD ASSEMBLY

CONTRACT NO.	A610
DRAWING NO.	T-311
SCALE	AS NOTED
SHEET NO.	A620 / 358



REV	DATE	BY	SUB.	APP.	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY
[Signature]

DRAWN BY
A. VINSKUROV

CHECKED BY
[Signature]

IN CHARGE
[Signature]

DATE
15 JUL 85

**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

SUBMITTED *Isaac Shafiq*

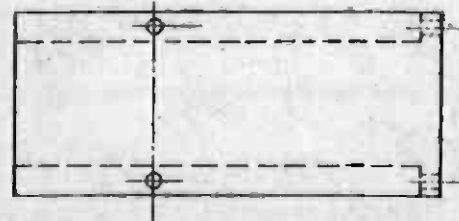
APPROVED _____

**LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION
COVERBOARD DETAILS
ASSEMBLY AT END APPROACH**

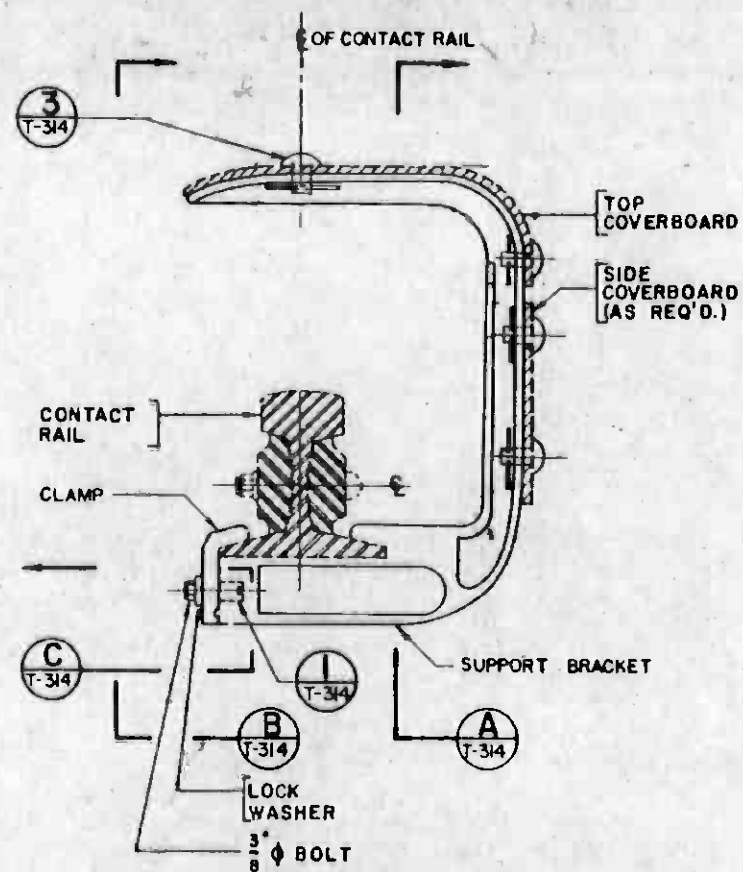
CONTRACT NO.	A610
DRAWING NO.	T-312
SCALE	NO SCALE
SHEET NO.	A620 / 359

NOTE:

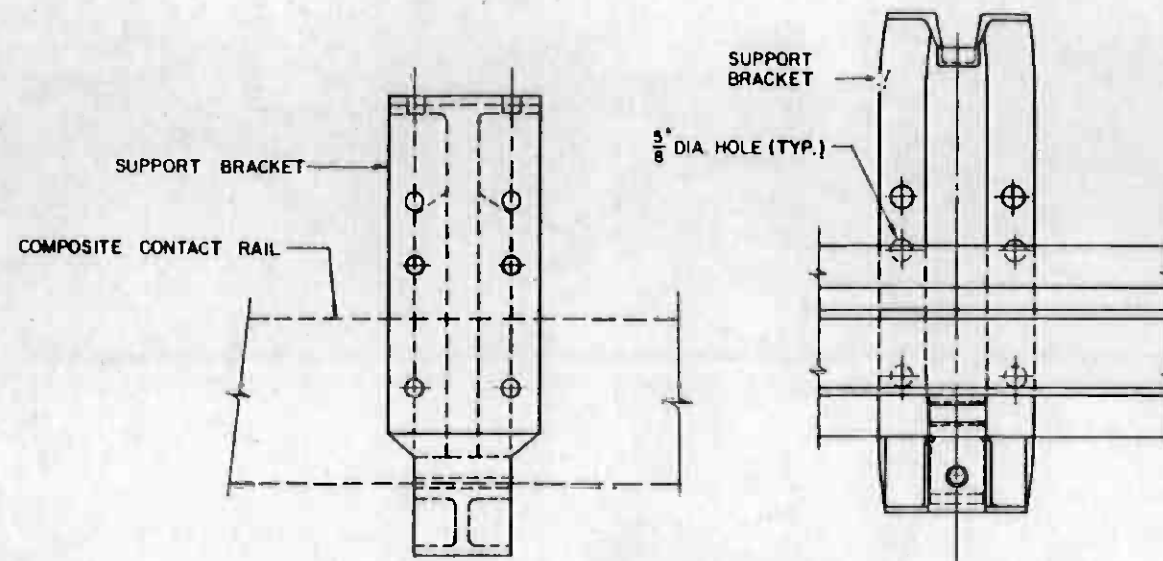
1. DIMENSION AS REQUIRED BY THICKNESS OF COVERBOARD AND BRACKET.



SUPPORT BRACKET - TOP VIEW



BRACKET ASSEMBLY



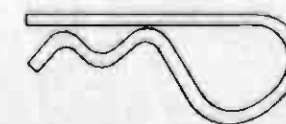
SECTION A
T-314

SECTION B
T-314

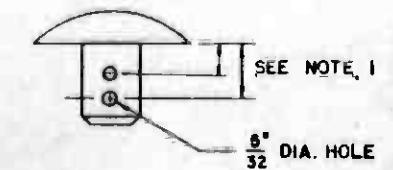
SECTION C
T-314



DETAIL 1
THREADED INSERT
T-314



DETAIL 2
COTTER PIN
T-314



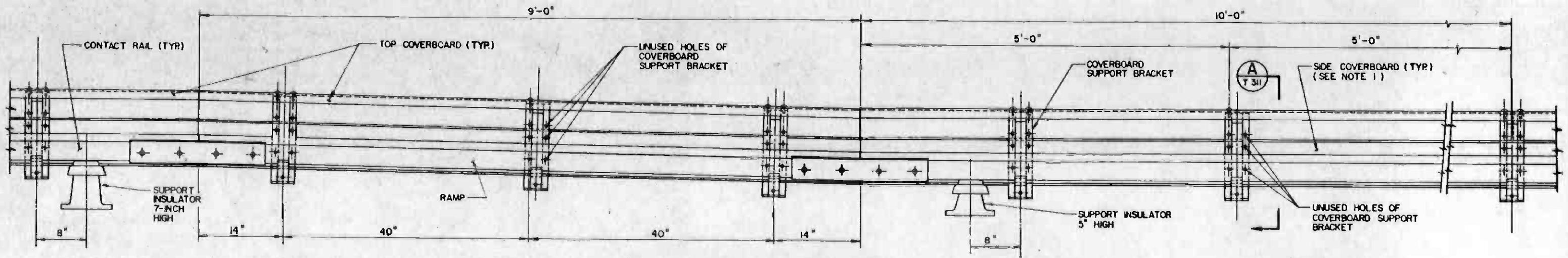
DETAIL 3
RETAINING PIN
T-314



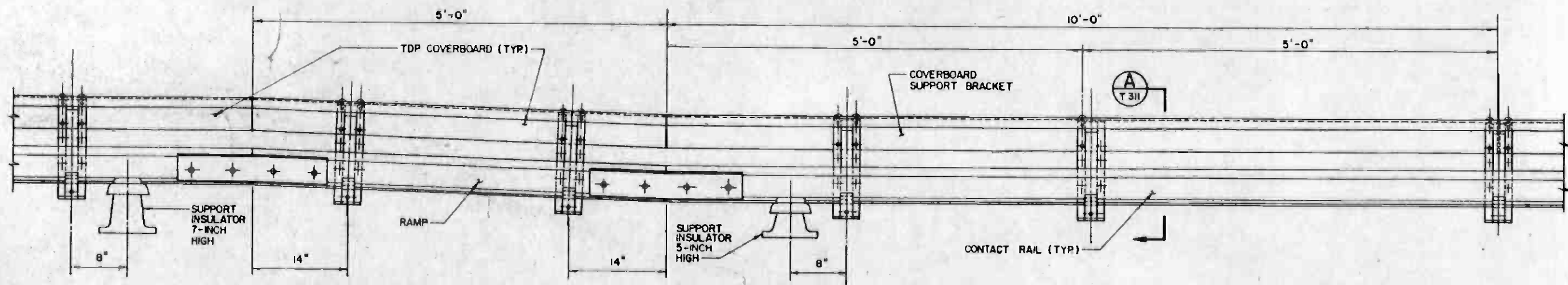
THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DESIGNED BY <i>A. J. ...</i> CHECKED BY <i>J. Shafir</i> IN CHARGE <i>J. Shafir</i> DATE 15 JUL 85		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT 	DMLM/PBOD/KE/HWA GENERAL CONSULTANTS APPROVED _____	LA CBD TO NORTH HOLLYWOOD TRACKWORK INSTALLATION COVERBOARD DETAILS COVERBOARD SUPPORT BRACKET ASSEMBLY	CONTRACT NO. A610 DRAWING NO. T-314 SCALE NO SCALE SHEET NO. A620 / 361
--	--	---	--	--	---	--	--

NOTES:

1. INSTALL SIDE COVERBOARD WHERE CONTACT RAIL IS INSTALLED ALONG MAINTENANCE & SAFETY WALKWAYS.
2. SEE DRAWING NOS. T-304 & T-319, FOR CONTACT RAIL TYPE I & TYPE II DIP SECTION ASSEMBLIES.



**COVERBOARD ASSEMBLY FOR MAIN LINE
CONTACT RAIL DIP SECTION ASSEMBLY**



**COVERBOARD ASSEMBLY FOR YARD
CONTACT RAIL DIP SECTION ASSEMBLY**



REV.	DATE	BY	SUB.	APP.	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY
[Signature]
DRAWN BY
[Signature]
CHECKED BY
[Signature]
IN CHARGE
[Signature]
DATE
15 JUL 85



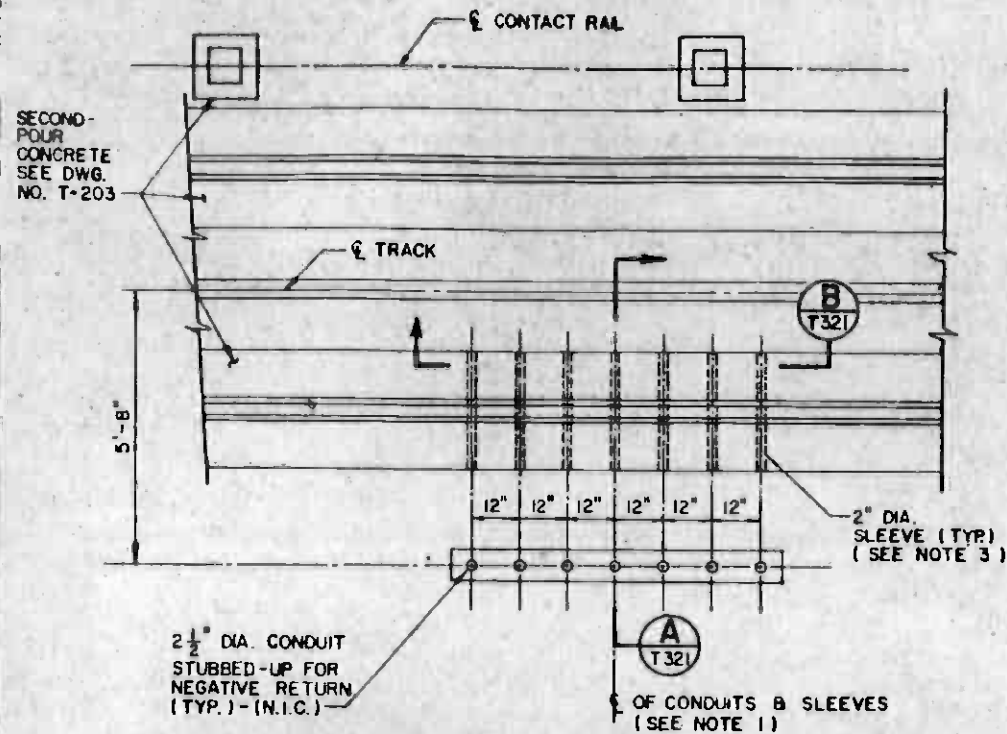
**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

DMJM/PBOD/KE/MWA
GENERAL CONSULTANTS

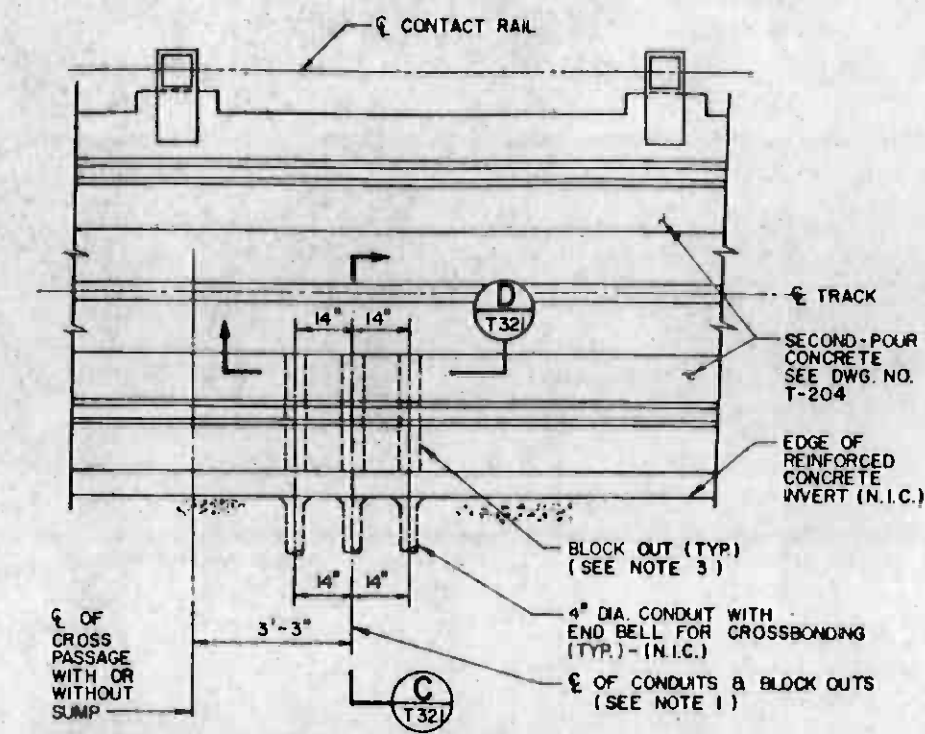
APPROVED
[Signature]

**LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION
COVERBOARD DETAILS
ASSEMBLY AT CONTACT RAIL DIP SECTION**

CONTRACT NO. A610
DRAWING NO. T-318
SCALE 1/8" = 1"
SHEET NO. A620/365



SLEEVES FOR NEGATIVE RETURN CABLE AT SUBSTATION
SCALE: 1/2" = 1'-0"



BLOCKOUTS FOR RAIL CROSSBONDING AT CROSS PASSAGE
SCALE: 1/2" = 1'-0"

NOTES:

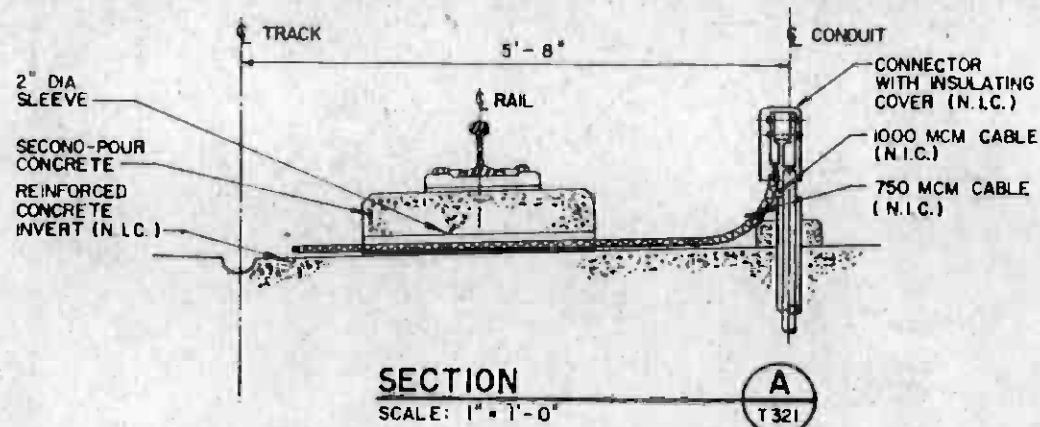
- SEE TABLE BELOW FOR LOCATIONS OF SLEEVES AND BLOCK OUTS IN THE SECOND-POUR CONCRETE ALONG THE TRACKS.
- ADJUST SPACINGS OF DIRECT FIXATION RAIL FASTENERS AND ANCHORAGE INSERTS TO CLEAR SLEEVES AND BLOCK OUTS.
- ADJUST LOCATION OF SLEEVES AND BLOCK OUTS DURING INSTALLATION, SO AS TO ALIGN WITH CONDUIT STUB UPS.

SLEEVES FOR NEGATIVE RETURN

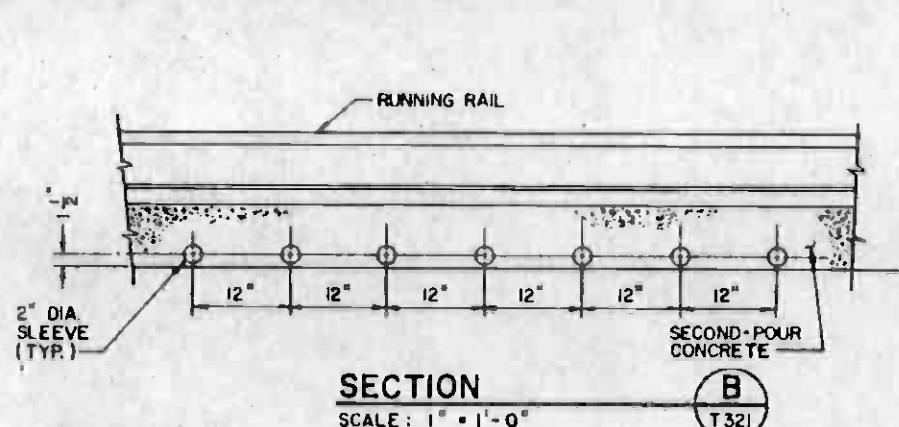
YR 92 + 20.50	YL 92 + 12.00	WEST RAIL
YR 92 + 23.50	YL 92 + 15.00	EAST RAIL
AR 100 + 95.80	AL 102 + 81.84	
AR 102 + 31.40		
AR 146 + 91.00	AL 146 + 91.00	
AR 204 + 96.04	AL 204 + 96.04	
AR 258 + 55.91	AL 258 + 55.91	

BLOCK OUTS FOR RAIL CROSSBONDING

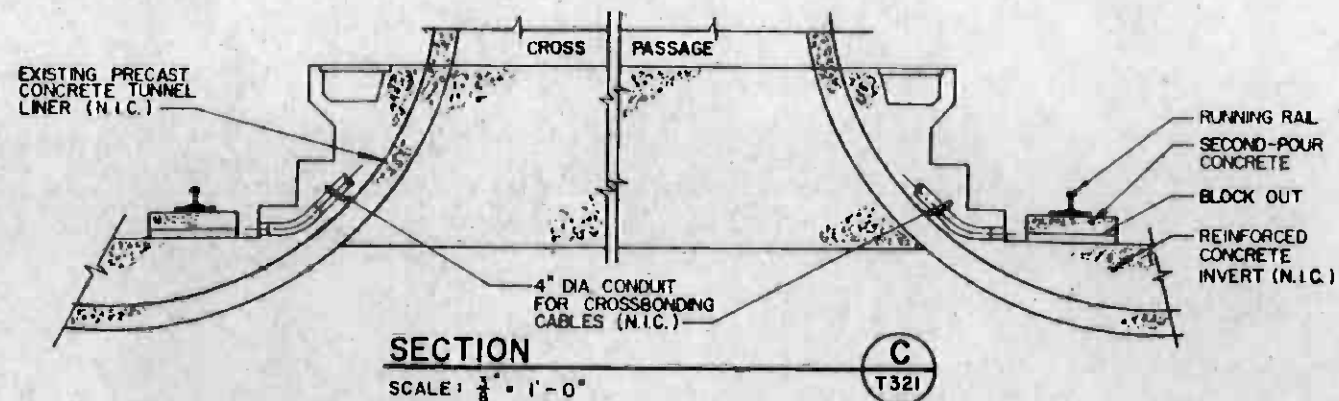
AR TRACE	AL TRACE
119+19.22	118+96.25
119+73.25	119+88.25
126+39.25	126+39.25
133+33.25	133+25.25
140+27.25	140+03.25
158+28.25	158+28.25
164+85.25	164+85.25
184+18.25	184+32.25
186+78.35	187+03.25
190+03.25	190+45.25
195+03.25	195+66.25
212+74.25	212+64.25
216+78.25	216+67.24
219+22.25	219+15.25
226+70.25	226+64.25
233+68.25	233+58.25
240+66.25	240+58.25
247+64.25	247+60.25



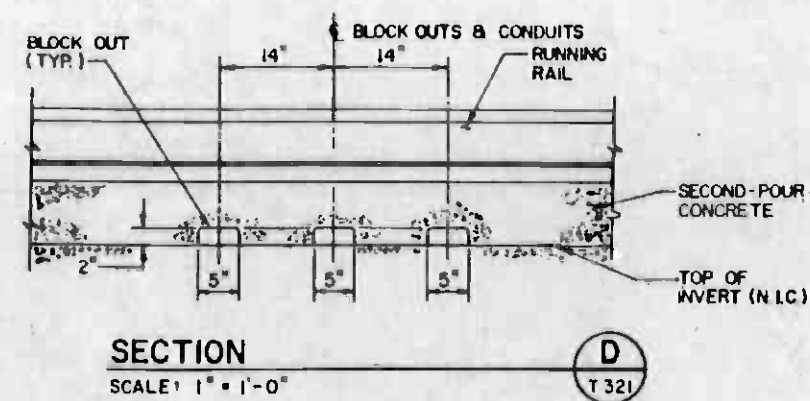
SECTION A
SCALE: 1" = 1'-0"



SECTION B
SCALE: 1" = 1'-0"



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



SECTION D
SCALE: 1" = 1'-0"



REV.	DATE	BY	CHK.	APP.	DESCRIPTION

DESIGNED BY
J. Shafir

DRAWN BY
J. Shafir

CHECKED BY
J. Shafir

IN CHARGE
J. Shafir

DATE
15 JUL 85

REGISTERED PROFESSIONAL ENGINEER
ISAIAK SHAFIR
No. 11916
ELECTRICAL
STATE OF CALIFORNIA

**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT**

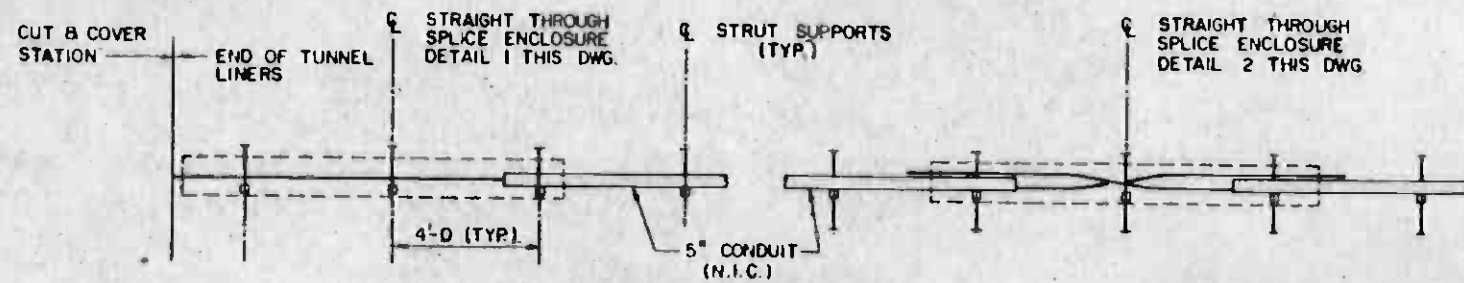
DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

APPROVED

SUBMITTED *Isaiah Shafir*

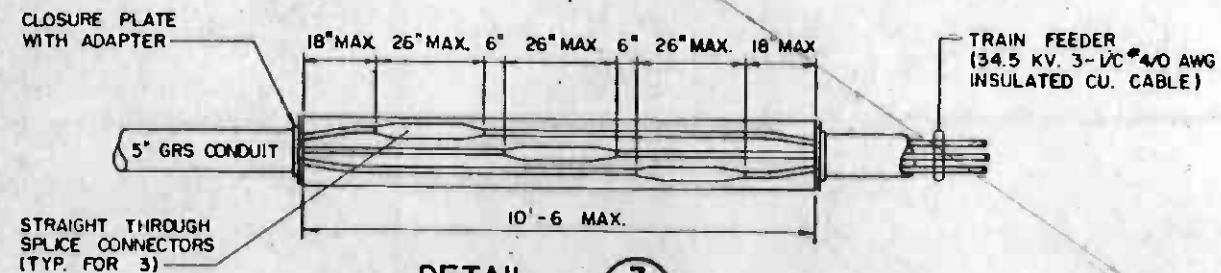
**LA CBD TO NORTH HOLLYWOOD
TRACKWORK INSTALLATION
SLEEVES & BLOCK OUTS FOR
NEGATIVE RETURN & RAIL CROSSBONDING**

CONTRACT NO.	A 610
DRAWING NO.	T-321
SCALE	AS NOTED
SHEET NO.	A 620 / 368

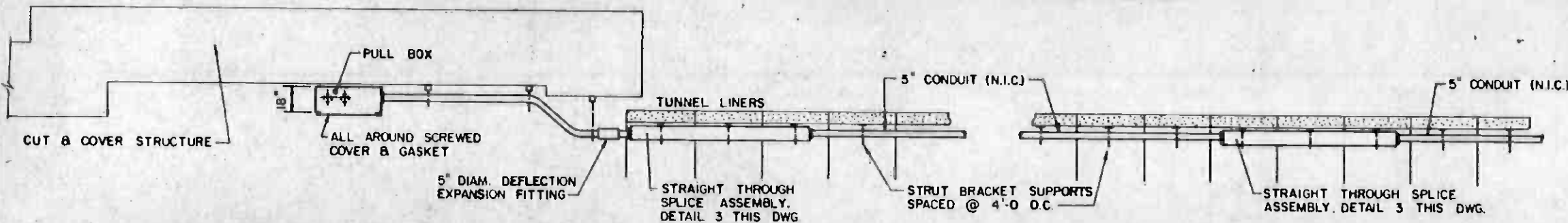


CABLE SPLICE INSTALLATION
NOT TO SCALE

CONTRACTOR TO ROLL CUT PREVIOUSLY INSTALLED CONDUIT TO THE REQUIRED LENGTH NEEDED TO INSTALL CABLE SPLICE ENCLOSURE AS PER MANUFACTURER'S INSTRUCTIONS.
CONTRACTOR TO REARRANGE ELEVATION OF THE 3 BRACKET SUPPORTS WITHIN THE CABLE SPLICE ENCLOSURE AREA TO THE PROPER LEVEL REQUIRED TO SUPPORT THE CABLE SPLICE ASSEMBLY ENCLOSURE.



DETAIL 3
STRAIGHT THROUGH SPLICE ASSEMBLY

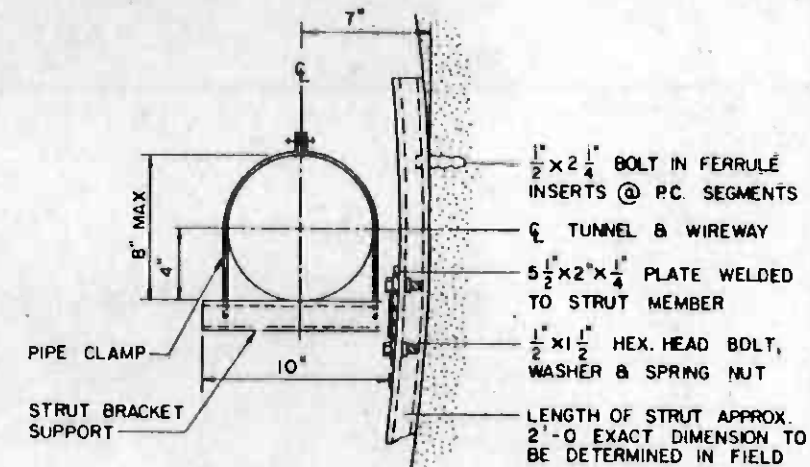


TRANSITION INSTALLATION

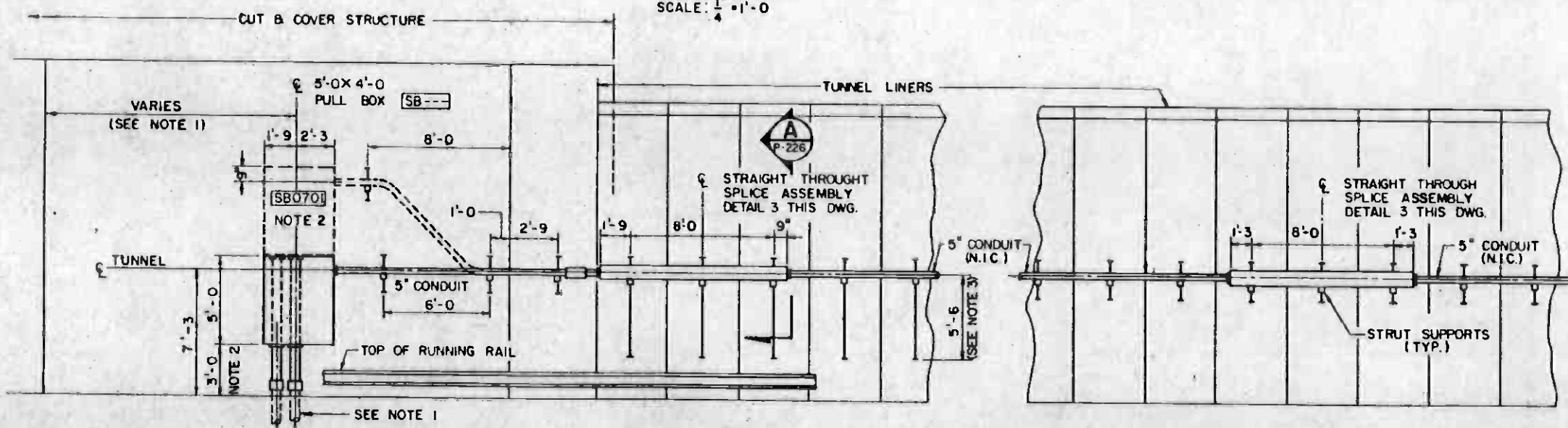
DETAIL 1
P-226 P-227

DETAIL 2
P-226 P-227

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



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



TRANSITION INSTALLATION

DETAIL 1
P-226 P-227

DETAIL 2
P-226 P-227

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

NOTES:

- FOR EMBEDDED CONDUIT STUB-UP LOCATIONS SEE:

SB 0301	DWG	E012	CONTRACT	A135
SB 0401		E020		A147
SB 0402		E017		A157
SB 0501		E121		A157
SB 0502		E117		A165
SB 0601		E123		A165
SB 0602		E121		A170
SB 0701		E076		A170
SB 0702		E076		A170
- ELEVATION OF SB0701 PULL BOX AT WILSHIRE / ALVARADO STATION TO BE 8'-0" AS SHOWN.
- STRUT MEMBER LENGTH REQUIRED TO SUPPORT EXPOSED DC CABLES TO CONTACT RAIL. FOR LOCATIONS SEE KEY PLAN IN DWG. P-359.



JUN 29 1986

REV.	DATE	BY	SUB	APP.	DESCRIPTION

DESIGNED BY
A. V. ...

DRAWN BY
I. Shafir

CHECKED BY
I. Shafir

IN CHARGE
I. Shafir

DATE
30 MAY 86

REGISTERED PROFESSIONAL ENGINEER
ISAAC SHAFIR
No. 11818
ELECTRICAL
STATE OF CALIFORNIA

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DLJM/PBQD/KE/HWA
GENERAL CONSULTANTS

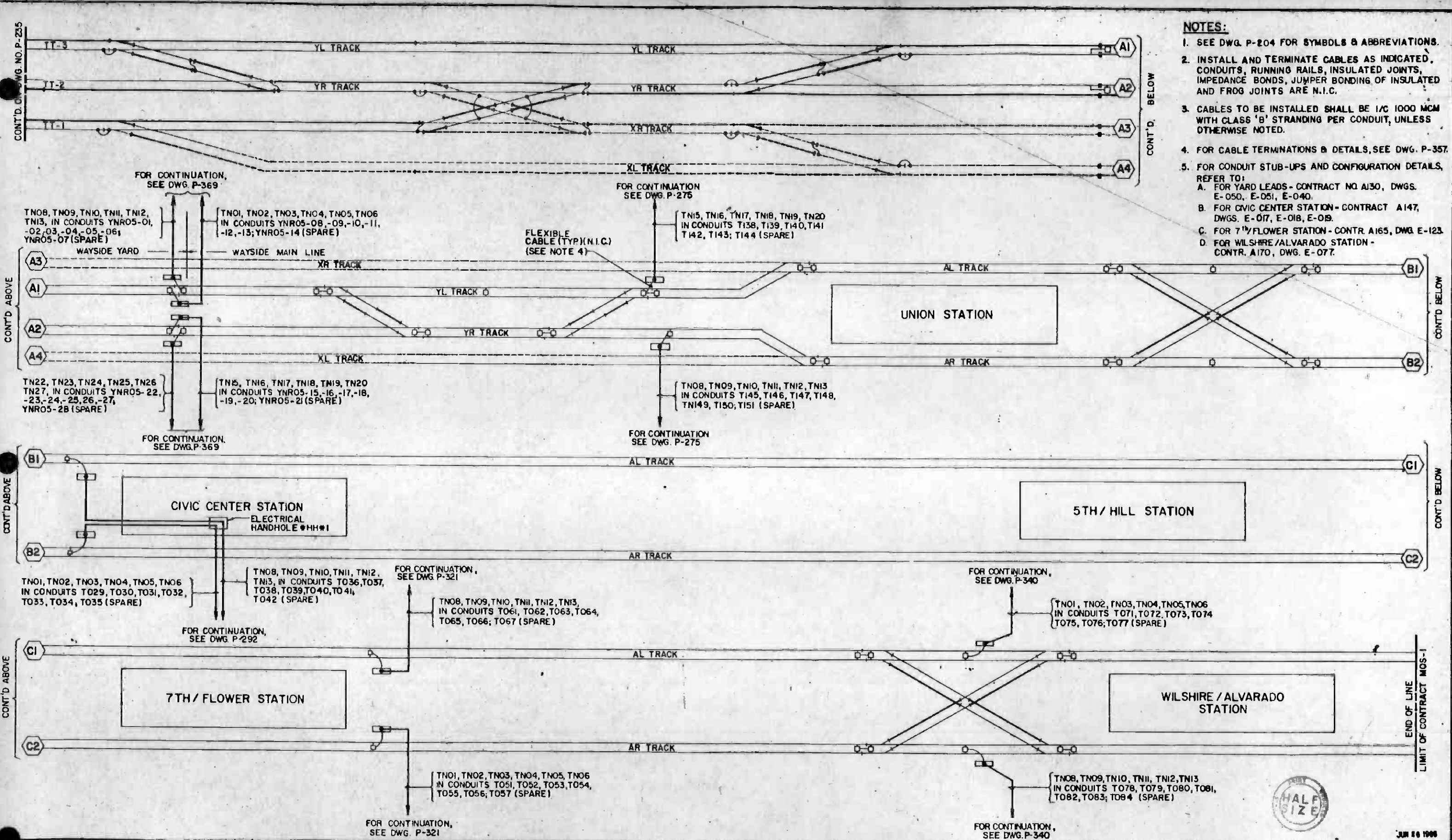
APPROVED

CONTRACT NO.
A631

DRAWING NO.
P-226 B

SCALE
AS SHOWN

SHEET NO.
A 620/376



- NOTES:**
- SEE DWG. P-204 FOR SYMBOLS & ABBREVIATIONS.
 - INSTALL AND TERMINATE CABLES AS INDICATED. CONDUITS, RUNNING RAILS, INSULATED JOINTS, IMPEDANCE BONDS, JUMPER BONDING OF INSULATED AND FROG JOINTS ARE N.I.C.
 - CABLES TO BE INSTALLED SHALL BE 1/2 1000 MCM WITH CLASS 'B' STRANDING PER CONDUIT, UNLESS OTHERWISE NOTED.
 - FOR CABLE TERMINATIONS & DETAILS, SEE DWG. P-357.
 - FOR CONDUIT STUB-UPS AND CONFIGURATION DETAILS, REFER TO:
 - FOR YARD LEADS - CONTRACT NO. A130, DWGS. E-050, E-051, E-040.
 - FOR CIVIC CENTER STATION - CONTRACT A147, DWGS. E-017, E-018, E-09.
 - FOR 7TH/FLOWER STATION - CONTR. A165, DWG. E-123.
 - FOR WILSHIRE/ALVARADO STATION - CONTR. A170, DWG. E-077.

CONT'D. OF DWG. NO. P-235

CONT'D ABOVE

CONT'D ABOVE

CONT'D ABOVE

CONT'D ABOVE

CONT'D. BELOW

CONT'D BELOW

CONT'D BELOW

CONT'D BELOW

LIMIT OF CONTRACT NOS. 1



JUN 28 1985

REV.	DATE	BY	SUB.	APP.	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY
A. L. ...

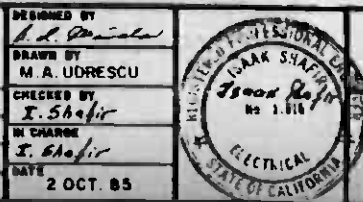
DRAWN BY
M. A. UDRESCU

CHECKED BY
I. Shafir

IN CHARGE
I. Shafir

DATE
2 OCT. 85

SIGNATURE ISSUE
GENERAL REVISION



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

APPROVED

DATE
2 OCT. 85

**TRACTION POWER INSTALLATION
RUNNING RAIL**

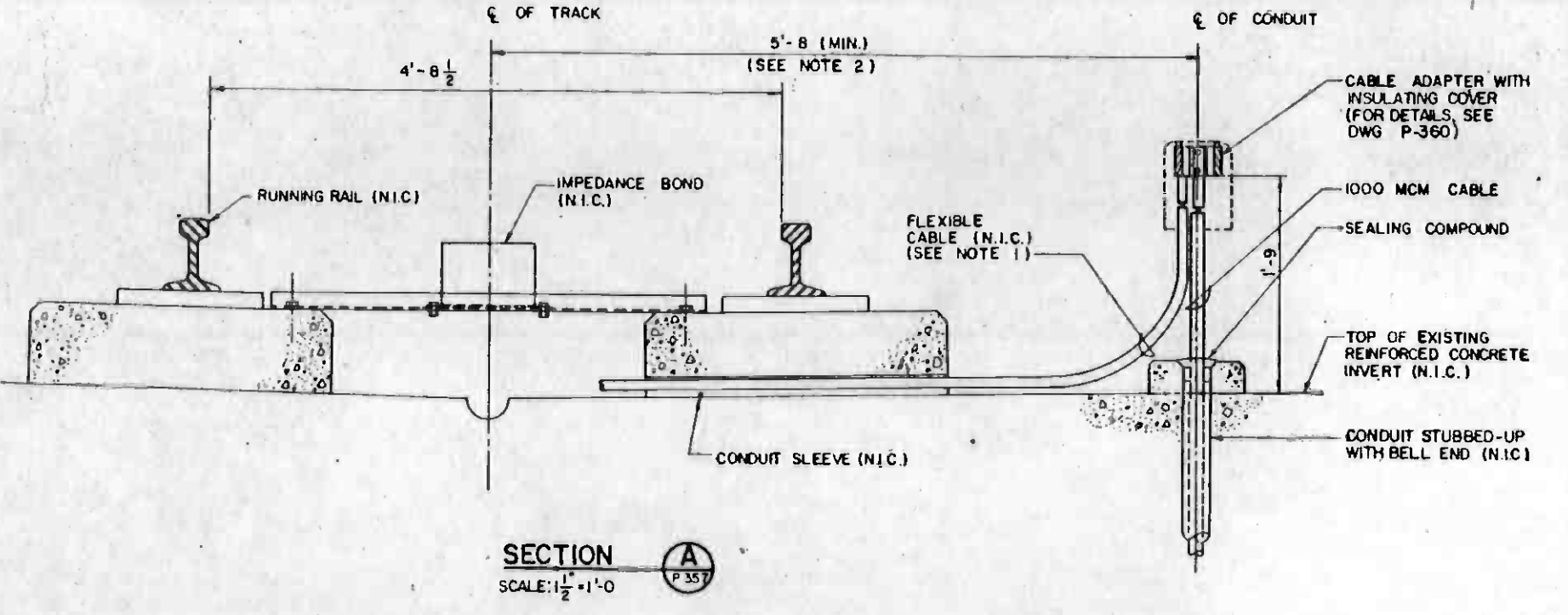
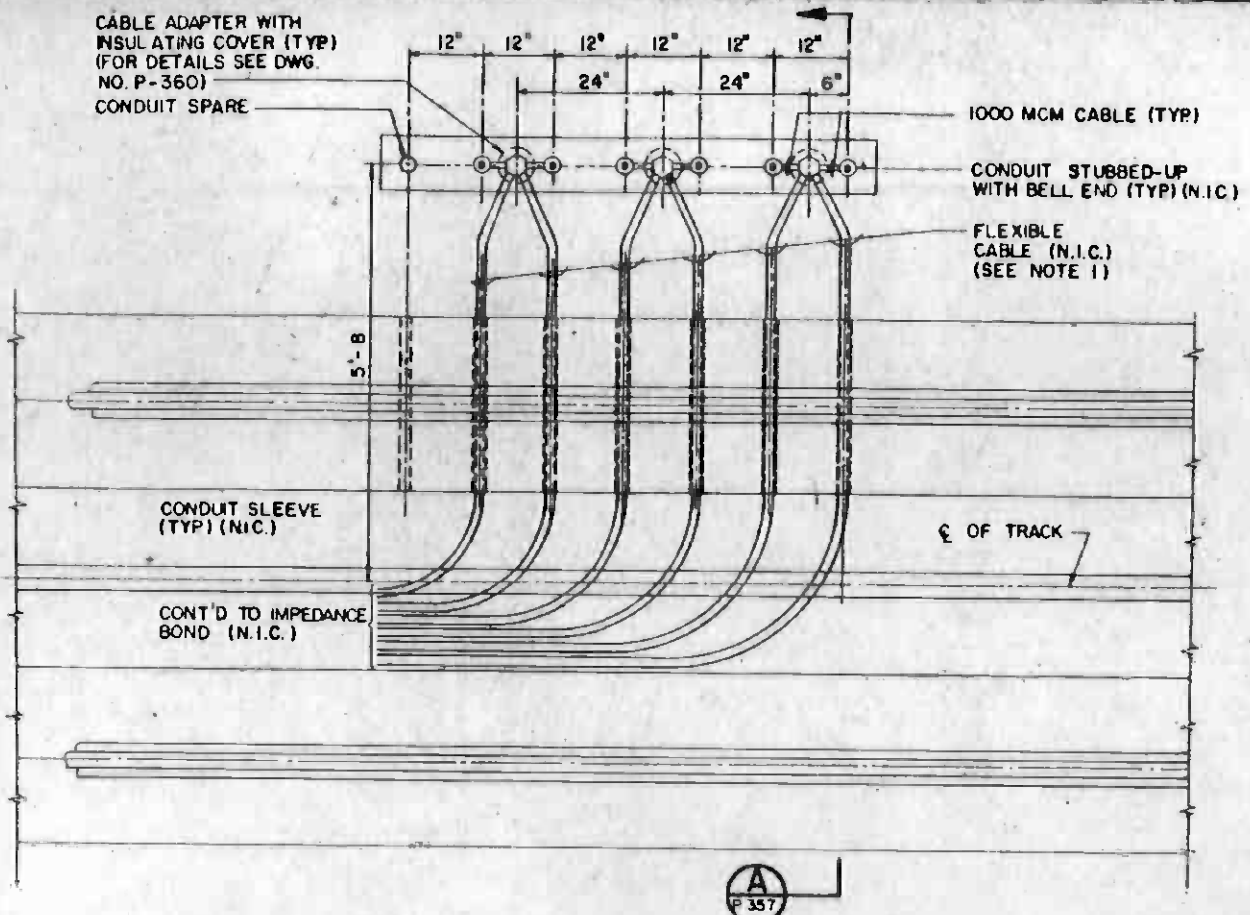
INTERCONNECTION DIAGRAM
SHEET 3 OF 3

CONTRACT NO. A631

DRAWING NO. P-236B

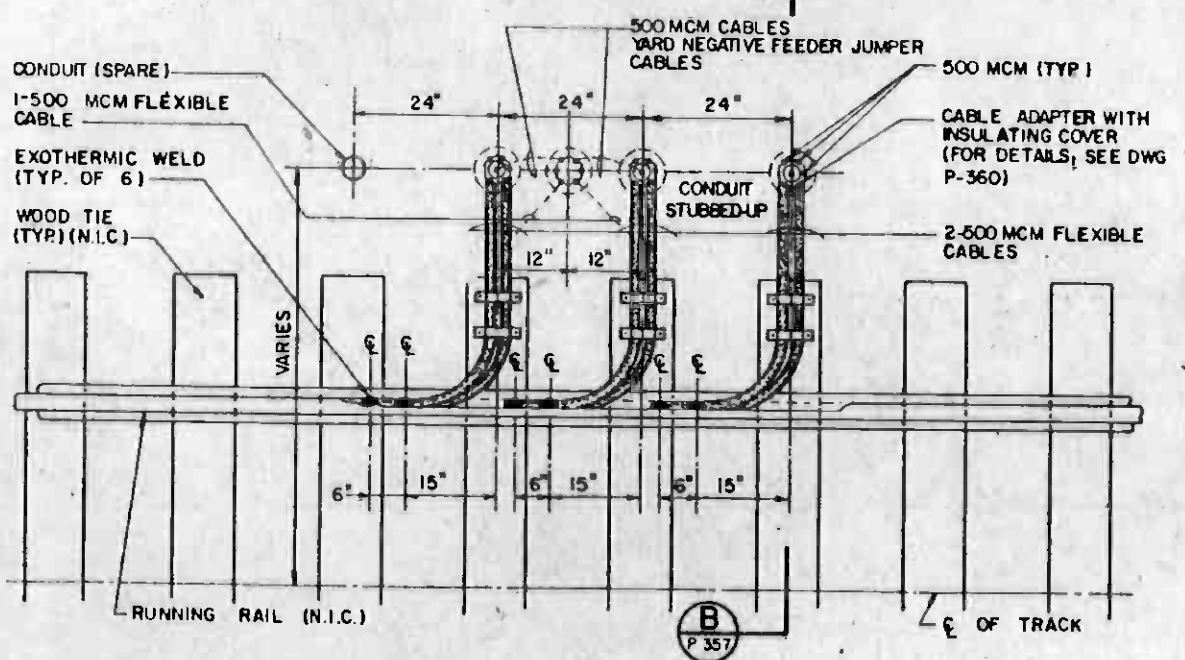
SCALE NO SCALE

SHEET NO. A620/377



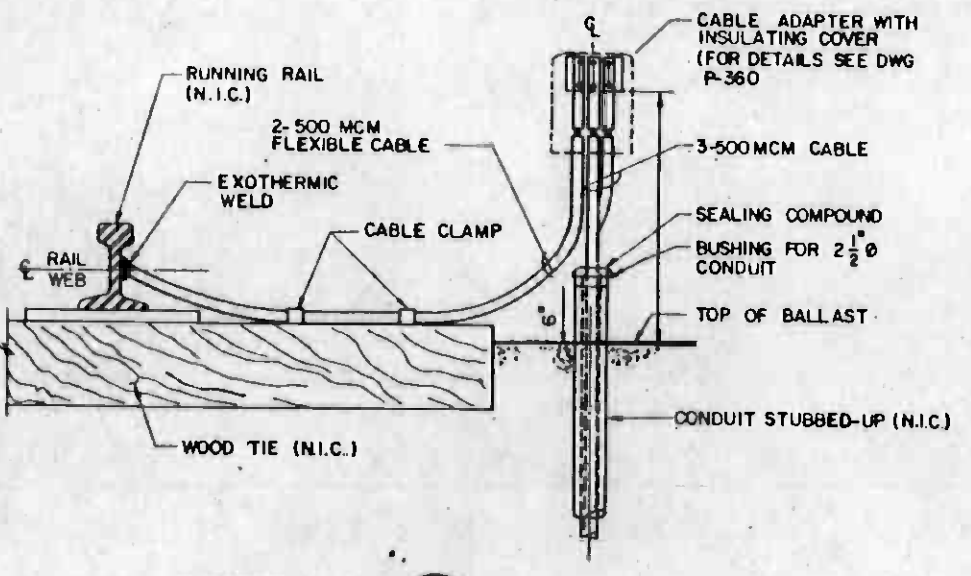
PLAN
MAIN LINE NEGATIVE FEEDER CABLE TERMINATIONS

SCALE: 3/4" = 1'-0"



SECTION B
YARD NEGATIVE FEEDER CABLE TERMINATIONS

SCALE: 3/4" = 1'-0"



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

NOTES:

1. CABLES WILL BE FURNISHED, INSTALLED AND TERMINATED BY AUTOMATIC TRAIN CONTROL CONTRACTOR FROM CABLE ADAPTER TO IMPEDANCE BOND.
2. THE DISTANCE BETWEEN CENTERLINES OF TRACK AND CONDUIT STUBBED-UPS VARIES.



JUN 28 1988

REV	DATE	BY	SUB	APP	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.					
DESIGNED BY	<i>J. L. ...</i>				
DRAWN BY	<i>A. ...</i>				
CHECKED BY	<i>I. ...</i>				
IN CHARGE	<i>E. ...</i>				
DATE	11 DEC 85				
SIGNATURE ISSUE					
GENERAL REVISION					

DESIGNED BY
J. L. ...
DRAWN BY
A. ...
CHECKED BY
I. ...
IN CHARGE
E. ...
DATE
11 DEC 85



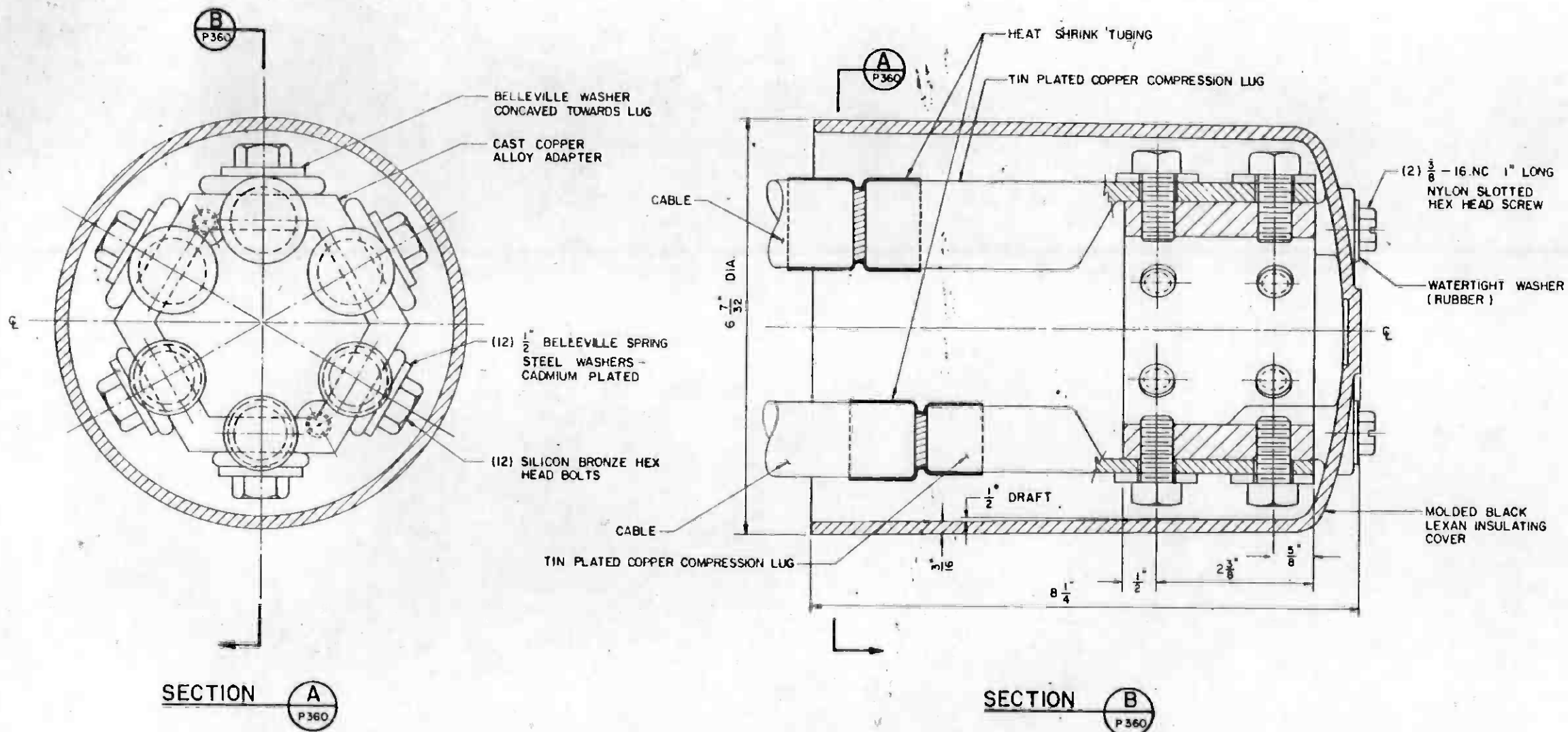
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

APPROVED: _____

TRACTION POWER INSTALLATION
CABLE TERMINATION
DETAILS
SHEET 2 OF 2

CONTRACT NO.	A631	
DRAWING NO.	P-357 B	REV. 0
SCALE	AS NOTED	
SHEET NO.	A620 / 378	



HALF SIZE

JAN 20 1990

REV	DATE	BY	SUB	APP.	DESCRIPTION

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DESIGNED BY
[Signature]

DRAWN BY
A. Vasquez

CHECKED BY
I. Shafir

IN CHARGE
I. Shafir

DATE
5 DEC 85

SIGNATURE ISSUE

REGISTERED PROFESSIONAL ENGINEER
ISAAC SHAFIR
No. 11816
ELECTRICAL
STATE OF CALIFORNIA

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS

APPROVED

TRACTION POWER INSTALLATION
CABLE ADAPTER ASSEMBLY
DETAILS

CONTRACT NO.
A631

DRAWING NO.
P-360 A

SCALE
FULL SCALE

SHEET NO.
A620 / 379

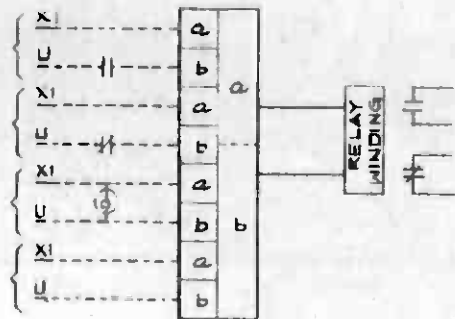


FIG. 1 (A THRU F)

FIG.	XI VOLTS
A	12 Vac
B	24 Vac
C	48 Vac
D	120 Vac
E	240 Vac
F	FUTURE

NOTE:
RELAY FURNISHED BY CONTRACT
A 640

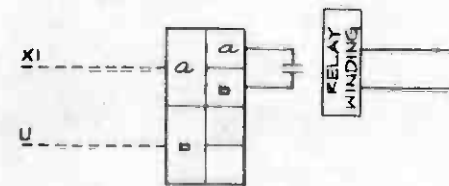


FIG. 2 (A THRU F)

FIG.	XI VOLTS	a/b AMP RATING
A	12 Vac	
B	24 Vac	
C	48 Vac	
D	120 Vac	
E	120 Vac	
F	125 Vdc	1.5 a (INDUCTIVE)

NOTE:
RELAY FURNISHED BY CONTRACT
A 640

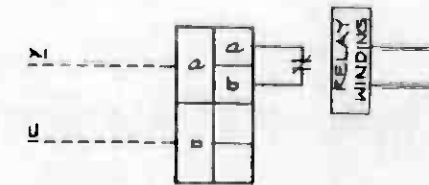


FIG. 3 (A THRU F)

FIG.	XI VOLTS	a/b AMP RATING
A	12 Vac	
B	24 Vac	
C	48 Vac	
D	120 Vac	
E	120 Vac	
F	FUTURE	

NOTE:
RELAY FURNISHED BY CONTRACT
A 640

TYPICAL INTERPOSING RELAY MONITORING CONNECTION

TYPICAL INTERPOSING RELAY SIGNALLING CONNECTION
NORMALLY OPEN CONTACT

TYPICAL INTERPOSING RELAY SIGNALLING CONNECTION
NORMALLY CLOSED CONTACT



FIG. 4 (A AND B)

FIG.	DESCRIPTION
A	EXTERNAL CONTACTS NORMALLY CLOSED
B	EXTERNAL CONTACTS NORMALLY OPEN

TYPICAL DRY CONTACT SIGNALLING
TOWARD COMMUNICATIONS (SCADA)



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DESIGNED BY
[Signature]
DRAWN BY
K. ILASZ
CHECKED BY
[Signature]
IN CHARGE
[Signature]
DATE
10 NOV 85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT



DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

SUBMITTED *[Signature]*

APPROVED *[Signature]*

LA CBD TO NORTH HOLLYWOOD
COMMUNICATIONS
STANDARD
INTERPOSING RELAY INTERFACES

CONTRACT NO.	A640
DRAWING NO.	NS-007
SCALE	NO SCALE
SHEET NO.	4620/385

SYMBOLS

ABBREVIATIONS

CONDUCTORS AND RACEWAY

	EMPTY CONDUIT
	CONDUIT CONCEALED IN FLOOR SLAB OR UNDERGROUND (SHOWN HEAVY)
	CONDUIT CONCEALED IN CEILING OR WALL
	CONDUIT EXPOSED
	PA - RACEWAY IDENTIFICATION BETWEEN OUTLETS
	PA100 - RACEWAY IDENTIFICATION BETWEEN OUTLET AND TERMINATION POINT (IE FINAL STUB-UP TO TERMINAL CABINET, PANEL BOARD, SWITCHBOARD)
	SYSTEMS IDENTIFICATION ABBREVIATIONS SHALL BE:
	CA - ADMINISTRATIVE TELEPHONE (ATEL)
	CC - CUSTOMER ASSISTANCE TELEPHONE
	CE - EMERGENCY TELEPHONE (ETEL)
	CF - FIRE TELEPHONE (FTEL)
	CT - CABLE TRANSMISSION SYSTEM
	CX - TELEPHONE COMPANY
	F - POWER FEEDER (480/277V OR 208/120V)
	FA - FIRE DETECTOR OR ALARM
	FC - FARE COLLECTION
	FG - GAS DETECTOR
	FS - SEISMIC DETECTOR
	HC - COMMUNICATIONS TIE CABLE (CIC TO ATC B C ROOM)
	IA - INTRUSION DETECTOR OR ALARM
	PA - PUBLIC ADDRESS
	SC - SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA)
	TV - CLOSED CIRCUIT TELEVISION
	JUNCTION BOX
	HANDHOLE
	MANHOLE
	TRENCH DUCT
	UNDERGROUND DUCT BANK
	FLEXIBLE RACEWAY CONNECTION
	BARE GROUNDING CONDUCTOR
	EXOTHERMIC WELD CONNECTION
	INSULATED GROUNDING CONDUCTOR
	GROUND ROD WITH EXOTHERMIC WELD CONNECTION
	LIGHTING PROTECTION SYSTEM ROOF CONDUCTOR
	CONDUIT TURNED UP OR TOWARDS VIEWER
	CONDUIT TURNED DOWN OR AWAY FROM VIEWER
	CONDUIT CAPPED

MISCELLANEOUS

	CCTV CAMERA OUTLET
	CCTV MONITOR
	BUZZER
	INTRUSION SENSOR
	PHOTO CELL
	CLOCK OUTLET
	TRACTION POWER EMERGENCY TRIP STATION (ETS)
	CABLEWAY
	TERMINAL CABINET, TYPE AS FOLLOWS:
	TTC - TELEPHONE TERMINAL CABINET
	FTC - FACILITIES TERMINAL CABINET
	CIC - COMMUNICATIONS INTERFACE CABINET

TELEPHONE

	MAINTENANCE TELEPHONE JACK (MTEL)
	FIRE TELEPHONE JACK (FTEL)
	EMERGENCY TELEPHONE OUTLET (ETEL)
	CUSTOMER ASSISTANCE TELEPHONE
	ADMINISTRATIVE TELEPHONE OUTLET (ATEL)
	PUBLIC PAY TELEPHONE OUTLET
	TELEPHONE BACK BOARD
	WEATHERPROOF TELEPHONE

ALL TELEPHONE OUTLETS SHALL BE MOUNTED 12" AFF UNLESS OTHERWISE NOTED I.E. 48F TELEPHONE OUTLET (48" AFF - FLUSH MOUNT)

PUBLIC ADDRESS

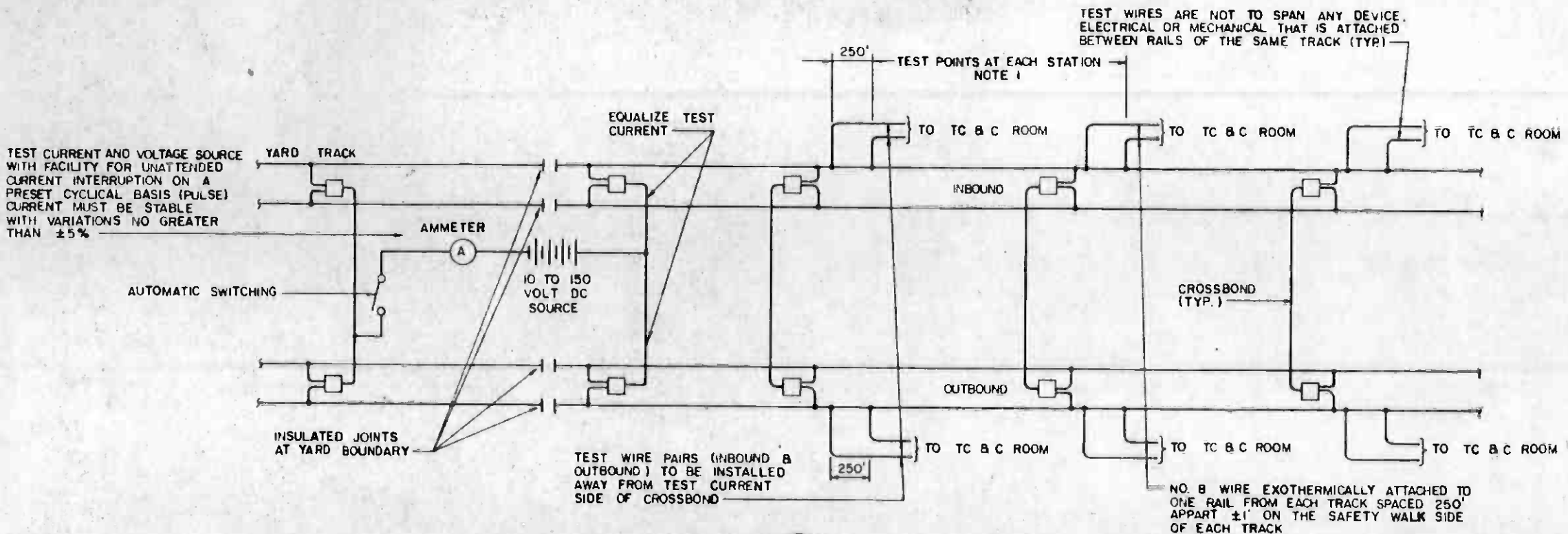
	MICROPHONE
	AMPLIFIER
	INTERIOR SPEAKER BACKBOX PER LETTER AS FOLLOWS: F-FLUSH MTD, S-SURFACE MTD, SC-SUSPENDED CEILING
	EXTERIOR SPEAKER BACKBOX
	HORN TYPE SPEAKER OUTLET
	NOISE MONITOR
	MONITOR SPEAKER

FIRE AND INTRUSION

	PULL STATION FIRE ALARM
	PUSH BUTTON FIRE ALARM
	BELL
	HORN
	STANDPIPE FLOW MONITOR
	FIRE HOSE CABINET MONITOR
	DETECTOR, TYPE PER LETTER AS FOLLOWS:
	L - HEAT, LINE TYPE
	S - SMOKE - IONIZATION
	R - THERMAL RATE OF RISE AND FIXED TEMPERATURE
	P - SMOKE PHOTO-ELECTRIC
	D - DUCT TYPE SMOKE DETECTOR
	E - SEISMIC
	Q - SEISMIC EVENT RECORDER
	X - GAS - METHANE
	Y - GAS - HYDROGEN SULFIDE
	V - VALVE POSITION MONITOR
	ADD "F" FOR FIRE ALARM SYSTEM I.E. FOR FIRE HORN
	DETECTOR, TYPE PER LETTER AS FOLLOWS:
	H - HINGE DETECTOR
	E - ELECTRIC DOOR LOCK
	M - MAGNETIC SWITCH DETECTOR
	P - PLUNGER SWITCH (FLUSH IN DOOR JAM) DETECTOR
	L - DOOR LATCH DETECTOR
	K - KEY BYPASS SWITCH
	C - CARD OR BADGE READER
	HALON DISCHARGE PANEL
	HALON ABORT SWITCH

A/D	ANALOG TO DIGITAL
ACD	AUTOMATIC CALL DISTRIBUTOR
AFF	ABOVE FINISHED FLOOR
ATEL	ADMINISTRATIVE TELEPHONE
BCD	BINARY CODED DECIMAL
CA	CABLE
CCU	COMMUNICATIONS CONTROL UNIT
CCTV	CLOSED CIRCUIT TELEVISION
CIC	COMMUNICATIONS INTERFACE CABINET
C P	FIRE COMMAND POST
CPU	CENTRAL PROCESSING UNIT
CRT	CATHODE RAY TUBE
CTS	CABLE TRANSMISSION SUBSYSTEM
D/A	DIGITAL TO ANALOG
DID	DIRECT INWARD DIALING
DOD	DIRECT OUTWARD DIALING
DTMF	DUAL TONE MULTI-FREQUENCY
EMP	EMERGENCY MANAGEMENT PANEL
ETEL	EMERGENCY TELEPHONE
ETS	EMERGENCY TRIP STATION - TRACTION POWER
FSCP	FIRE/SECURITY CONTROL PANEL
FTEL	FIRE TELEPHONE
FXD	FOREIGN EXCHANGE OFFICE
FXS	FOREIGN EXCHANGE SUBSCRIBER
GRS	GALVANIZED RIGID STEEL
HH	HANDHOLE
HSM	HYDROGEN SULFIDE MONITOR
INT	INTRUSION
I/O	INPUT/OUTPUT
JB	JUNCTION BOX
MDF	MAIN DISTRIBUTION FRAME
MD	METHANE DETECTOR
MH	MANHOLE
MTEL	MAINTENANCE TELEPHONE
NIC	NOT IN CONTRACT
PA	PUBLIC ADDRESS
PABX	PRIVATE AUTOMATIC BRANCH EXCHANGE
PAI	PASSENGER ASSISTANCE INTERCOM
PCM	PULSE CODED MODULATION
PR	PAIR
PROT	PROTECTOR TERMINAL
REA	RURAL ELECTRIFICATION ADMINISTRATION
SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
SER	SEISMIC EVENT RECORDER
SCRTO	SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
SPL	SOUND PRESSURE LEVEL
S S	SEISMIC SWITCH
SST	SPECIAL SERVICES TELEPHONE
TB	TERMINAL BOARD
TBK	TERMINAL BLOCK
ATC & C	AUTOMATIC TRAIN CONTROL & COMMUNICATIONS
TERM	TERMINAL
TPSS	TRACTION POWER SUBSTATION
TTC	TELEPHONE TERMINAL CABINET
UPS	UNINTERRUPTIBLE POWER SUPPLY
VTR	VIDEO TAPE RECORDER

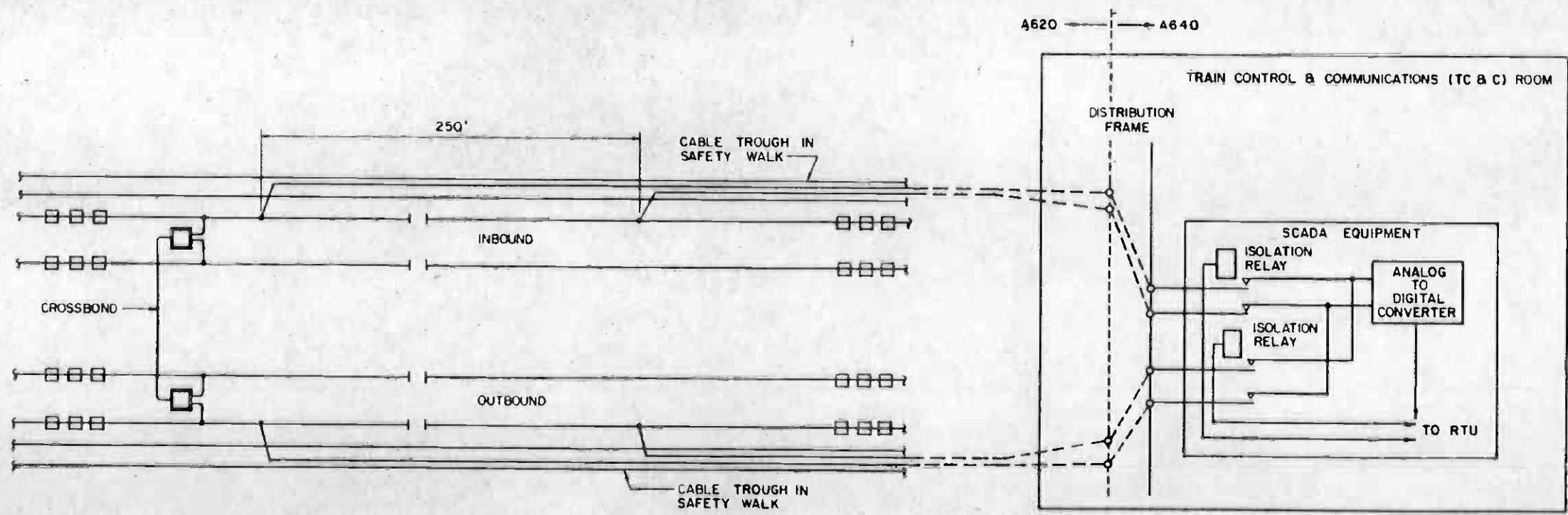
<p>THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA</p>				<p>DESIGNED BY <i>[Signature]</i> DRAWN BY <i>[Signature]</i> CHECKED BY <i>[Signature]</i> IN CHARGE <i>[Signature]</i> DATE 10 FEB 1984</p>		<p>REGISTERED PROFESSIONAL ENGINEER LICENSE NO. 4011880 STATE OF CALIFORNIA</p>		<p>SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT</p>		<p>LA CBD TO NORTH HOLLYWOOD COMMUNICATIONS SYMBOLS AND ABBREVIATIONS</p>		<p>CONTRACT NO. A640 DRAWING NO. N-019 SCALE NO SCALE SHEET NO. A620/886</p>	
REV	DATE	BY	SUB	APP	DESCRIPTION	REV	DATE	BY	SUB	APP	DESCRIPTION	APPROVED <i>[Signature]</i>	APPROVED <i>[Signature]</i>
					PROPOSAL ISSUE								



NOTE:

1. AT STATIONS WITH ASSOCIATED INTERLOCKINGS INSTALL TWO ADDITIONAL SETS OF TEST POINTS. ONE SET TO BE INSTALLED BEYOND END OF INTERLOCKING AWAY FROM STATION AND THE OTHER SET TO BE INSTALLED BEYOND END OF PLATFORM AT THE OPPOSITE END OF STATION (STUB TERMINALS DO NOT NEED TEST POINTS AT THE STUB END OF THE PLATFORM).

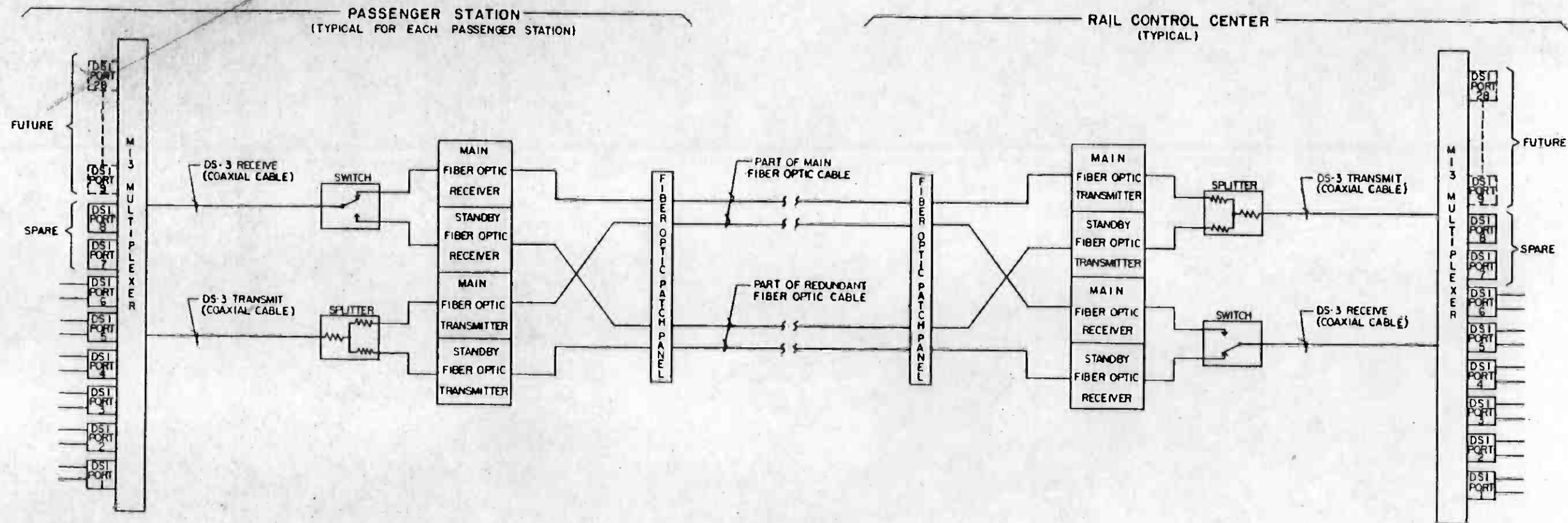
DETAIL 26



DETAIL 27



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.										DESIGNED BY R.A. HAWLON			SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT				LA CBD TO NORTH HOLLYWOOD COMMUNICATIONS CORROSION CONTROL SCHEMATIC			CONTRACT NO. A640
DRAWN BY <i>[Signature]</i> CHECKED BY <i>[Signature]</i> IN CHARGE <i>[Signature]</i> DATE 7 NOV 85										SUBMITTED <i>[Signature]</i>			GENERAL CONSULTANTS DMJM/PB00/KE/HWA		DRAWING NO. N-049		REV. 0			
PROPOSAL ISSUE										APPROVED <i>[Signature]</i>		SCALE NO SCALE		SHEET NO. A620/367						



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY
M.R.T.C.
DRAWN BY
Edward A. Cook
CHECKED BY
B. B. ...
IN CHARGE
R. M. ...
DATE
20 AUG 86



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS
APPROVED *Edward A. Cook*

LA CBD TO NORTH HOLLYWOOD COMMUNICATIONS CTS BLOCK DIAGRAM FIBER OPTIC AND MULTIPLEX EQPT.

CONTRACT NO. A640
DRAWING NO. N-III 0
SCALE NO SCALE
SHEET NO. A620 / 388

REV	DATE	BY	DWG	APP.	DESCRIPTION

REV.	DATE	BY	SUB	APP.	DESCRIPTION
1	1-6-87	B			PROPOSAL ISSUE

(SEE INTERFACE DWG. NS-007)

LEAD DESIGNATION

TC/C CIR
TERMINAL STRIP

- TRAFFIC NORMAL - AR TRACK INDICATION
- TRAFFIC REVERSE - AR TRACK INDICATION
- TRAFFIC NORMAL - AL TRACK INDICATION
- TRAFFIC REVERSE - AL TRACK INDICATION
- AC POWER FAILURE INDICATION
- DC POWER FAILURE INDICATION
- CONTACT RAIL DE-ENERGIZED AR TRACK EASTBOUND INDICATION
- CONTACT RAIL DE-ENERGIZED AR TRACK WESTBOUND INDICATION
- CONTACT RAIL DE-ENERGIZED AL TRACK EASTBOUND INDICATION
- CONTACT RAIL DE-ENERGIZED AL TRACK WESTBOUND INDICATION
- ALARM ACKNOWLEDGE
- ALARM ACKNOWLEDGE INDICATION
- BLOWN FUSE INDICATION
- GROUND FAULT INDICATION
- TRACK OCCUPIED INDICATION
- (20 INDICATIONS)

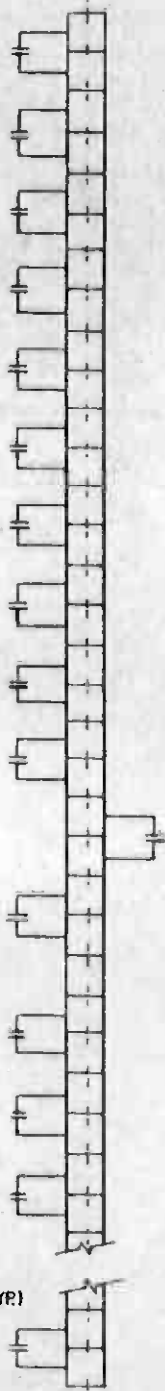


FIGURE	TERMINAL
4B	a
4B	b
4B	a
4B	b
4B	a
4B	b
4B	a
4B	b
4B	a
4B	b
4B	a
4B	b
4B	a
4B	b
4B	a
4B	b
2B	a
4B	b
4B	a
4B	b
4B	a
4B	b
4B	a
4B	b
4B	a
4B	b

SEE NOTE 1 (TYR)

NOTE:
1. SEE DWG. N-036 FOR NOTES.

CIVIC CENTER, 5 TH./HILL, 7 TH./FLOWER STATIONS



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY <i>R. Harkin</i> DRAWN BY <i>Acosta / VINOGRAD</i> CHECKED BY <i>B. Blakely</i> IN CHARGE <i>MBurgin</i> DATE 14 MAY 86		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT 	LA CBD TO NORTH HOLLYWOOD COMMUNICATIONS AUTOMATIC TRAIN CONTROL INTERFACES	CONTRACT NO. A640 DRAWING NO. N-135 SCALE NO SCALE SHEET NO. A620/689
REV. DATE BY SUB APP DESCRIPTION	REV. DATE BY SUB APP DESCRIPTION	PROPOSAL ISSUE	SUBMITTED <i>Ellyin</i>	GENERAL CONSULTANTS APPROVED <i>Howard J. Schaff</i>				

(SEE INTERFACE
DWG. NS-007)

LEAD DESIGNATION

TC/C CIR FIGURE TERMINAL
TERMINAL STRIP

LOCAL PANEL CONTROL ENABLE

2B a

LOCAL CONTROL REQUEST
INDICATION

4B a

LOCAL CONTROL INDICATION

4B a

EMERGENCY LOCAL CONTROL
INDICATION

4B a

RCC CONTROL

2B a

RCC CONTROL REQUEST
INDICATION

4B a

RCC CONTROL INDICATION

4B a

TRAIN STOP NORMAL - AR
INDICATION

4B a

TRAIN STOP REVERSE - AR
INDICATION

4B a

TRAIN STOP NORMAL - AL
INDICATION

4B a

TRAIN STOP REVERSE - AL
INDICATION

4B a

AC POWER FAILURE INDICATION

4B a

DC POWER FAILURE INDICATION

4B a

BLOWN FUSE INDICATION

4B a

GROUND FAULT INDICATION

4B a

SEE NOTE 1 (TYP)

LEAD DESIGNATION

TC/C CIR FIGURE TERMINAL
TERMINAL STRIP

CONTACT RAIL DE-ENERGIZED
AR TRACK EASTBOUND INDICATION

4B a

CONTACT RAIL DE-ENERGIZED
AR TRACK WESTBOUND INDICATION

4B a

CONTACT RAIL DE-ENERGIZED
AL TRACK EASTBOUND INDICATION

4B a

CONTACT RAIL DE-ENERGIZED
AL TRACK WESTBOUND INDICATION

4B a

ALARM ACKNOWLEDGE

2B a

ALARM ACKNOWLEDGE
INDICATION

4B a

TRACK OCCUPIED
INDICATION

4B a

(42 INDICATIONS)

4B a

4B a

4B a

WILSHIRE / ALVARADO STATION

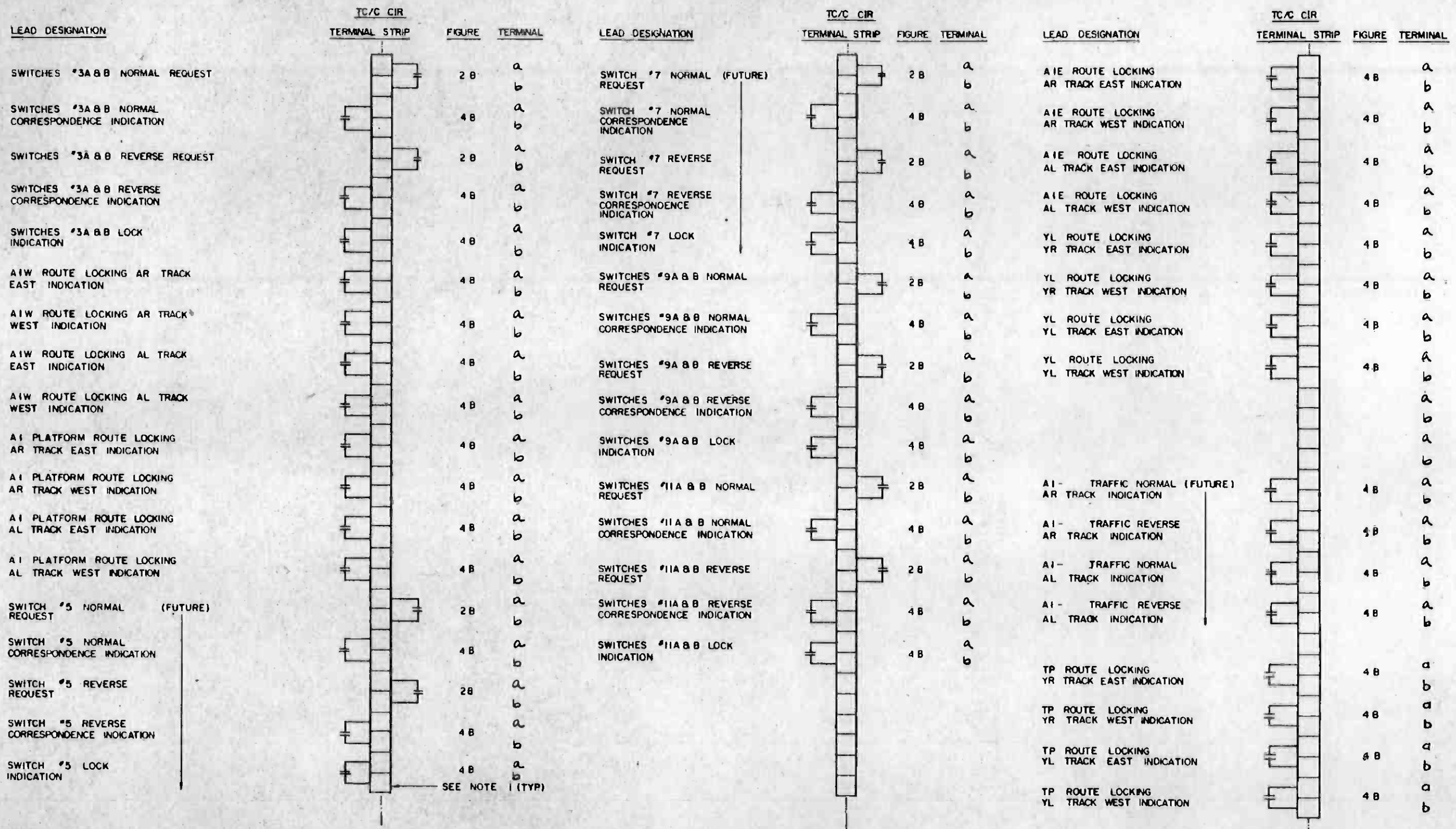
NOTE:

1. SEE DWG. N-036 FOR NOTES.



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY <i>R. Heaton</i> DRAWN BY <i>Acosta/Miner/Roby</i> CHECKED BY <i>R. Blakely</i> IN CHARGE <i>M. Bergman</i> DATE 14 MAY 86		REGISTERED PROFESSIONAL ENGINEER CHARLES K. LINDEN No. 50119 Exp. 5-2-87 ELECTRICAL STATE OF CALIFORNIA		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT 		LA CBD TO NORTH HOLLYWOOD COMMUNICATIONS AUTOMATIC TRAIN CONTROL INTERFACES DMJM/PBOD/KE/HWA GENERAL CONSULTANTS APPROVED: <i>Howard J. Schaff</i>		CONTRACT NO. A640 DRAWING NO. N-137 SCALE NO SCALE SHEET NO. A620 / 391	
REV	DATE	BY	SUB	APP	DESCRIPTION	REV	DATE	BY	SUB	APP	DESCRIPTION		
					PROPOSAL ISSUE								

(SEE INTERFACE
DWG. NS-007)



SEE NOTE 1 (TYP)

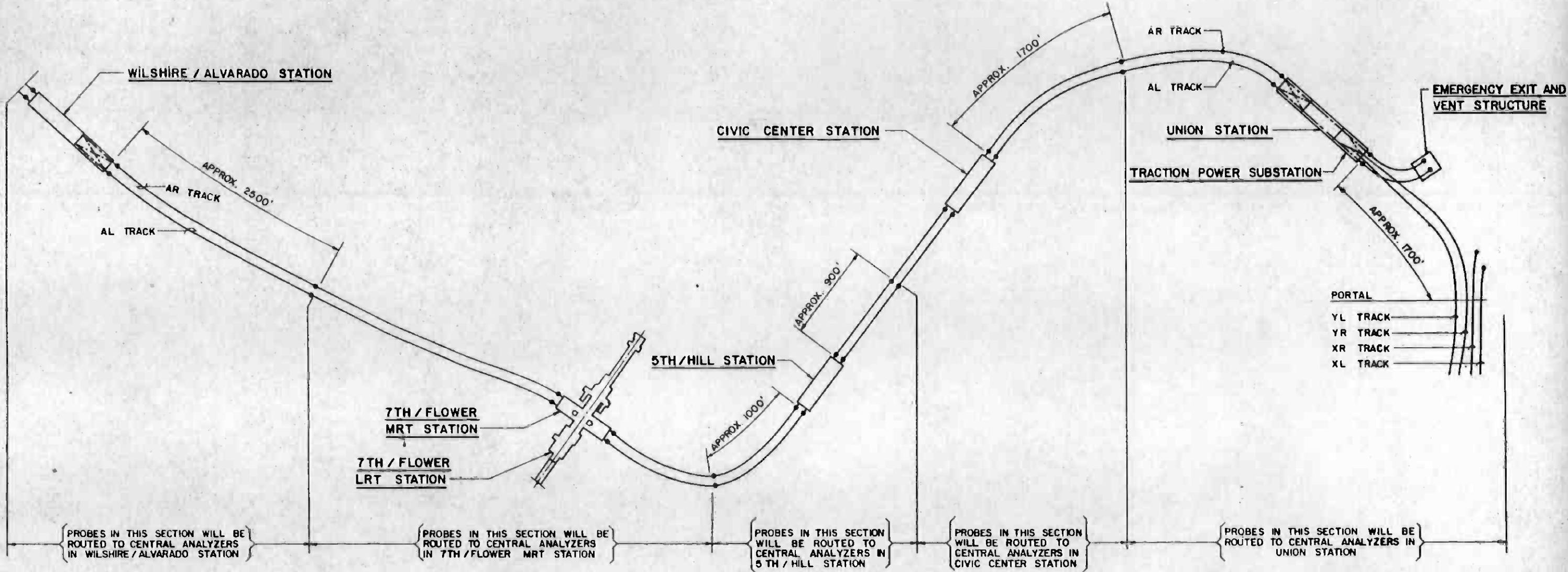
U N I O N S T A T I O N

NOTE:
1. SEE DWG. N-036 FOR NOTES.



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY <i>R. Hahn</i> DRAWN BY <i>ACOSTA / VANDERKROON</i> CHECKED BY <i>D. J. Stahel</i> IN CHARGE <i>P. M. Duggan</i> DATE 15 MAY 86		REGISTERED PROFESSIONAL ENGINEER CHARLES R. FISHER No. E011990 Exp. 1-22-87 ELECTRICAL STATE OF CALIFORNIA		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT 		LA CBD TO NORTH HOLLYWOOD COMMUNICATIONS AUTOMATIC TRAIN CONTROL INTERFACES		CONTRACT NO. A640 DRAWING NO. N-139 SCALE NO SCALE SHEET NO. A620/393	
REV	DATE	BY	SUB	APP	DESCRIPTION	REV	DATE	BY	SUB	APP	DESCRIPTION		
					PROPOSAL ISSUE								

DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS
APPROVED *Edward J. Shelton*



PROBES IN THIS SECTION WILL BE ROUTED TO CENTRAL ANALYZERS IN WILSHIRE / ALVARADO STATION



PROBES IN THIS SECTION WILL BE ROUTED TO CENTRAL ANALYZERS IN 7TH / FLOWER MRT STATION

PROBES IN THIS SECTION WILL BE ROUTED TO CENTRAL ANALYZERS IN 5TH / HILL STATION

PROBES IN THIS SECTION WILL BE ROUTED TO CENTRAL ANALYZERS IN CIVIC CENTER STATION

PROBES IN THIS SECTION WILL BE ROUTED TO CENTRAL ANALYZERS IN UNION STATION

LEGEND:

- PROBE
-  CROSSOVER
-  STATION



REV.	DATE	BY	SUB.	APP.	DESCRIPTION

THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.					

DESIGNED BY
T. MCCRANIE

DRAWN BY
[Signature]

CHECKED BY
[Signature]

IN CHARGE
[Signature]

DATE
18 AUG 86

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT

DMJM/PB00/KE/HWA
GENERAL CONSULTANTS

APPROVED: *[Signature]*

LA CBD TO NORTH HOLLYWOOD

COMMUNICATIONS

GAS MONITORING

MOS - 1

TUNNEL PROBE LOCATION DIAGRAM

CONTRACT NO.	A640	
DRAWING NO.	N-150	REV. 0
SCALE	NO SCALE	
SHEET NO.	A620/395	

CENTRAL ANALYZER UNIT NO.1
(SEE NOTES 1 & 2)

CENTRAL ANALYZER UNIT NO.2
(SEE NOTES 1 & 2)

CENTRAL ANALYZER UNIT NO.3
(SEE NOTES 1 & 2)

PROBE NO.	LOCATION SEE DWG. N-152	TYPE OF CONN. (NOTE 3)	CONDUIT USED FROM TC & C RM (NOTE 4)	TUBING LENGTH (NOTE 5)	REMARKS	PROBE NO.	LOCATION SEE DWG. N-152	TYPE OF CONN. (NOTE 3)	CONDUIT USED FROM TC & C RM (NOTE 4)	TUBING LENGTH (NOTE 5)	REMARKS	PROBE NO.	LOCATION SEE DWG. N-152	TYPE OF CONN. (NOTE 3)	CONDUIT USED FROM TC & C RM (NOTE 4)	TUBING LENGTH (NOTE 5)	REMARKS
1-1	TOP OF CEILING, AT CL OF TRACK	3	1-4" Ø CONDUIT, CABLE TRENCH	2000'	A640 CONTRACTOR TO PROVIDE APPROX. 30' OF 1" Ø CONDUIT IN TUNNEL	2-1	TOP OF TUNNEL AT CL OF AL TRACK	3	1-4" Ø CONDUIT TO CIC 2, 1" Ø CONDUIT TO PROBE	500'	A640 CONTRACTOR TO PROVIDE APPROX. 20' OF 1" Ø COND. IN TUNNEL	3-1	2'-0" BELOW TOP OF GRATING	AS APPROVED	CT 18 TO CIC 2, FG 18 TO PROBE	1100'	
1-2	SAME AS 1-1	3	SAME AS 1-1	2000'	SAME AS 1-1	2-2	2'-0" BELOW TOP OF GRATING	AS APPROVED	1-4" Ø CONDUIT TO CIC 1, 1" Ø CONDUIT TO PROBE	300'		3-2	SAME AS 3-1	AS APPROVED	A457 TO A471	1000'	
1-3	TOP OF CEILING	3	1-4" Ø CONDUIT, CABLE TRENCH, 1-2" Ø CONDUIT TO CIC 3, 1" Ø COND TO PROBE	1100'		2-3	1'-0" BELOW TOP OF CEILING	AS APPROVED	SAME AS 2-1	300'		3-3	SAME AS 3-1	AS APPROVED	A459 TO A470	1000'	
1-4	SAME AS 1-3	3	SAME AS 1-3	1100'	EXCEPT USE SEPARATE 1" Ø CONDUIT FROM CIC 3	2-4	AT DUCT CL 2'-0" ABOVE FIN. FLR.	1	FG10 TO CIC 3, FG1 TO PROBE	100'		3-4	TOP OF TUNNEL, 4'-0" FROM EDGE, AT CL OF TRACK	AS APPROVED	CT 20 TO CIC 4 1" Ø CONDUIT TO PROBE	1400'	A640 CONTRACTOR TO PROVIDE APPROX. 30' OF 1" Ø CONDUIT IN TUNNEL
1-5	TOP OF CEILING	AS APPROVED	1-4" Ø CONDUIT CABLE TRENCH 1-2" Ø CONDUIT TO CIC 1, 1" Ø CONDUIT TO PROBE	1300'		2-5	7'-0" ABOVE FIN. FLOOR	2	FG10 TO CIC 3, FG 2 TO PROBE	200'		3-5	SAME AS 3-4	AS APPROVED	CT 20 TO CIC 4 1" Ø CONDUIT TO PROBE	1400'	SAME AS 3-4
1-6	2'-0" BELOW TOP OF GRATING	AS APPROVED	SAME AS 1-5	1300'	EXCEPT USE SEPARATE 1" Ø CONDUIT FROM CIC 1	2-6	2'-0" BELOW TOP OF GRATING	AS APPROVED	SAME AS 2-5	200'		3-6	TOP OF TUNNEL, AT STA. YR 92+20 (APPROX.), AT CL OF TRACK	AS APPROVED	1-4" Ø CONDUIT TO CABLE TRENCH TO STUB-UP AT STA. YR 92+20, APPROX.	1900'	A640 CONTRACTOR TO PROVIDE APPROX. 30' OF 1" Ø CONDUIT IN TUNNEL
1-7	EL. 252.50'	AS APPROVED	SAME AS 1-5	1100'	EXCEPT USE SEPARATE 1" Ø CONDUIT FROM CIC 1	2-7	AT END OF DUCTWORK	1	FG10 TO CIC 3 A455 TO PROBE	300'		3-7	SAME AS 3-6	AS APPROVED	SAME AS 3-6	1900'	SAME AS 3-6
1-8	TOP OF TUNNEL, AT CL OF AR TRACK	3	1-4" Ø CONDUIT, CABLE TRENCH	400'	A640 CONTRACTOR TO PROVIDE APPROX. 30' OF 1" Ø CONDUIT IN TUNNEL	2-8	SAME AS 2-7	1	FG10 TO CIC 3, A451 TO PROBE	300'							

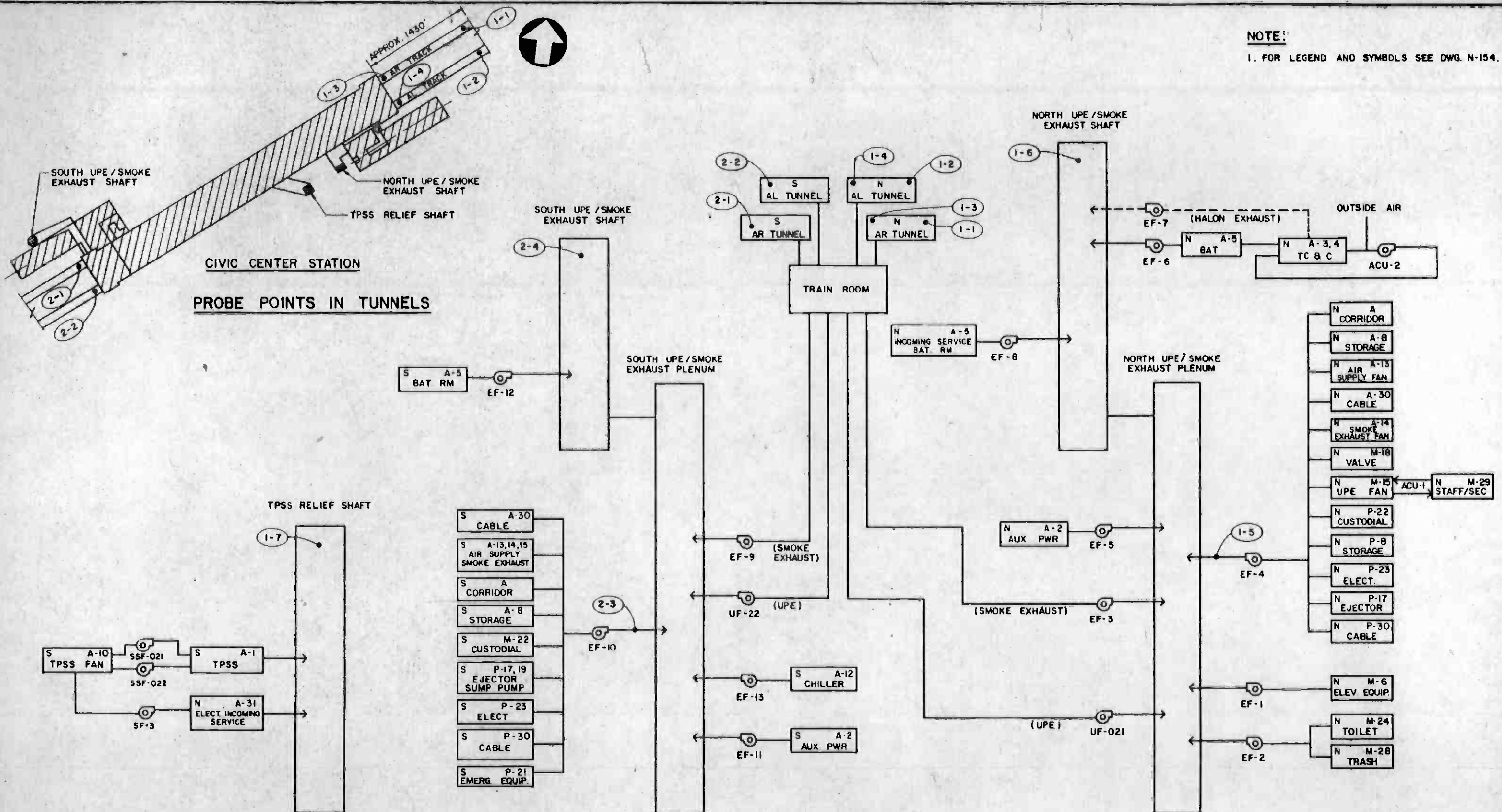
NOTES:

- CENTRAL ANALYZER VENT SHALL BE ROUTED TO EXHAUST DUCT OF UNDERPLATFORM EXHAUST FAN UF-011 (TYPICAL).
- CENTRAL ANALYZER CONDENSATE DRAIN SHALL BE ROUTED TO NEAREST FLOOR DRAIN (TYPICAL).
- FOR PROBE CONNECTION DETAILS, SEE DWG. N-167.
- FOR LEGEND AND SYMBOLS SEE DWG. N-151.
- TUBING LENGTHS SHOWN ARE APPROXIMATE.



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY BILL HOWING DRAWN BY <i>A. V. ...</i> CHECKED BY <i>J. ...</i> IN CHARGE <i>M. ...</i> DATE 4 AUG 86		REGISTERED PROFESSIONAL ENGINEER No. 22744 JOHN NICHOLAS MECHANICAL STATE OF CALIFORNIA		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT		LA CBD TO NORTH HOLLYWOOD COMMUNICATIONS GAS MONITORING UNION STATION PROBE SCHEDULE		CONTRACT NO. A640 DRAWING NO. N-153 SCALE NO SCALE SHEET NO. A620 / 397			
REV.	DATE	BY	SUB.	APP.	DESCRIPTION	REV.	DATE	BY	SUB.	APP.	DESCRIPTION	DATE	APPROVED		

NOTE:
1. FOR LEGEND AND SYMBOLS SEE DWG. N-154.



PROBE POINTS IN TUNNELS

PROBE POINTS IN CIVIC CENTER STATION



DESIGNED BY S. GOLDSMITH DRAWN BY <i>[Signature]</i> CHECKED BY <i>[Signature]</i> IN CHARGE <i>[Signature]</i> DATE 20 AUG 86		REGISTERED PROFESSIONAL ENGINEER JOHN NICHOLAS BROWN No. 22744 MECHANICAL STATE OF CALIFORNIA		SUBMITTED <i>[Signature]</i> APPROVED <i>[Signature]</i>		DMJM/PBOD/KE/HWA GENERAL CONSULTANTS		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT		LA CBD TO NORTH HOLLYWOOD COMMUNICATIONS GAS MONITORING CIVIC CENTER STATION PROBE LOCATION SCHEMATIC SHEET 2 OF 2		CONTRACT NO. A640 DRAWING NO. N-155 SCALE NO SCALE SHEET NO. A620/398	
REV	DATE	BY	SUB.	APP.	DESCRIPTION	REV	DATE	BY	SUB.	APP.	DESCRIPTION	REV	DATE
					PROPOSAL ISSUE								

CENTRAL ANALYZER UNIT NO. 1

CENTRAL ANALYZER UNIT NO. 2

PROBE NO.	LOCATION SEE DWG. N-155	TYPE OF CONN. (NOTE 1)	CONDUIT USED FROM TC&C ROOM (NOTE 2)	TUBING LENGTH (NOTE 3)	REMARKS	PROBE NO.	LOCATION SEE DWG. N-155	TYPE OF CONN. (NOTE 1)	CONDUIT USED FROM TC&C ROOM (NOTE 2)	TUBING LENGTH (NOTE 3)	REMARKS
1-1	TOP OF TUNNEL, STA. AR 129+00 (APPROX.) AT $\frac{1}{2}$ OF TRACK	3	C7001 TO CABLE TRENCH TO CIC IN CROSS-PASSAGE AT STA. AR 132+13	2300'	A640 CONTRACTOR TO FURNISH APPROX. 400' OF 1" ϕ CONDUIT FROM CIC IN CROSS-PASSAGE TO PROBE LOCATION	2-1	TOP OF TUNNEL, AT $\frac{1}{2}$ OF TRACK, 4'-0" FROM EDGE	3	HC-003 FX-028	600'	A640 CONTRACTOR TO PROVIDE APPROX. 30' OF 1" ϕ CONDUIT IN TUNNEL
1-2	SAME AS 1-1	3	SAME AS 1-1	2300'	SAME AS 1-1	2-2	SAME AS 2-1	3	HC-003 FX-028	600'	SAME AS 2-1
1-3	TOP OF TUNNEL, AT $\frac{1}{2}$ OF TRACK, 4'-0" FROM EDGE	3	HC-008 FX-030	300'	A640 CONTRACTOR TO PROVIDE APPROX. 30' OF 1" ϕ CONDUIT IN TUNNEL	2-3	AT EF-10 DUCT $\frac{1}{2}$, 6'-0" FROM $\frac{1}{2}$ OF DISCH. ELBOW	1	HC-003 FX-015	500'	
1-4	SAME AS 1-3	3	HC-008 FX-029	300'	SAME AS 1-3	2-4	2'-0" BELOW TOP OF GRATING, AT $\frac{1}{2}$ OF VERT. SHAFT	AS APPROVED	HC-003 FX-015	700'	
1-5	AT EF-4 DUCT $\frac{1}{2}$, 8'-0" FROM COL. C	1	HC-008 FX-009	400'							
1-6	2'-0" BELOW TOP OF GRATING	AS APPROVED	EXPOSED CONDUIT IN TC&C TO CONDUIT AT WALL, RUN NEW CONDUIT IN SHAFT TO PROBE	200'	A640 CONTRACTOR TO PROVIDE EXPOSED CONDUIT IN TC&C AND NEW CONDUIT IN SHAFT						
1-7	4'-6" ABOVE FINISHED FLOOR, 10'-0" FROM $\frac{1}{2}$ OF VERTICAL SHAFT	AS APPROVED	HC-008 FX-010	300'							

NOTES:

1. FOR PROBE CONNECTION DETAILS, SEE DWG. N-167.
2. FOR LEGEND AND SYMBOLS SEE DWG. N-154.
3. TUBING LENGTHS SHOWN ARE APPROXIMATE.



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA				DESIGNED BY BILL HOWING DRAWN BY <i>[Signature]</i> CHECKED BY <i>[Signature]</i> IN CHARGE <i>[Signature]</i> DATE 21 AUG 88		REGISTERED PROFESSIONAL ENGINEER JOHN NICHOLAS BROWN No. 22744 MECHANICAL STATE OF CALIFORNIA		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT				CONTRACT NO. A640	
PROPOSAL ISSUE				SUBMITTED <i>[Signature]</i>		APPROVED <i>[Signature]</i>		LA CBD TO NORTH HOLLYWOOD COMMUNICATIONS GAS MONITORING CIVIC CENTER STATION PROBE SCHEDULE		DRAWING NO. N-156			
REV. DATE BY SUB. APP. DESCRIPTION				REV. DATE BY SUB. APP. DESCRIPTION		DMJM/PBQD/KE/HWA GENERAL CONSULTANTS		SCALE NO SCALE		SHEET NO. 0			
										A620/399			

CENTRAL ANALYZER UNIT NO. 1
(NOTES 1 & 2)

CENTRAL ANALYZER UNIT NO. 2
(NOTES 1 & 2)

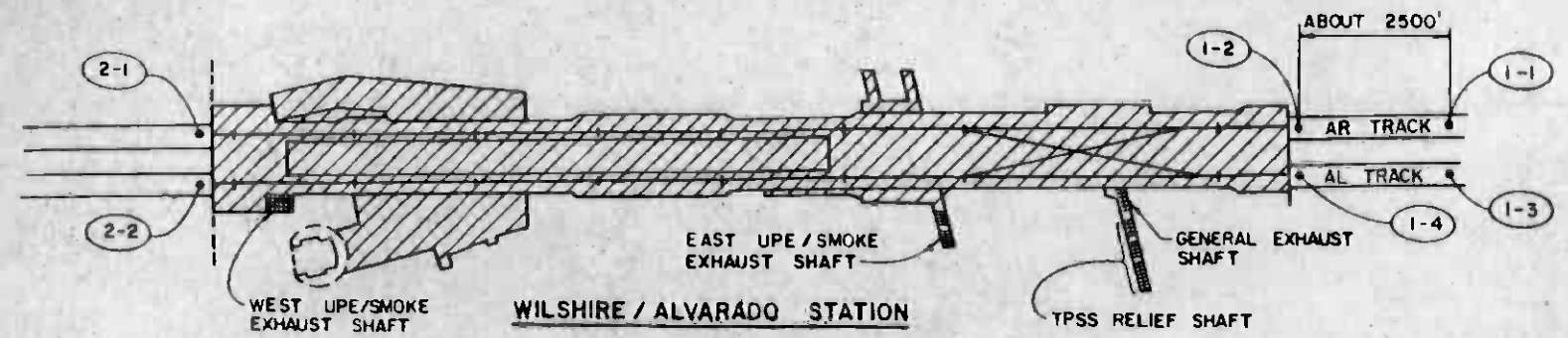
PROBE NO.	LOCATION SEE DWG. N-158	TYPE OF CONN. (NOTE 3)	CONDUIT USED FROM TC & C RM (NOTE 4)	TUBING LENGTH (NOTE 5)	REMARKS	PROBE NO.	LOCATION SEE DWG. N-158	TYPE OF CONN. (NOTE 3)	CONDUIT USED FROM TC & C RM (NOTE 4)	TUBING LENGTH (NOTE 5)	REMARKS
1-1	TOP OF TUNNEL, STA AR 185 + 88.83 (APPROX) AT \bar{C} OF TRACK	3	CT-011 TO CABLE TRENCH, GA-71	1500'	A640 CONTRACTOR TO PROVIDE APPROX. 310' OF 1" \bar{O} CONDUIT IN TUNNEL FROM GA-71 TO PROBE	2-1	TOP OF TUNNEL, STA AR 162 + 38.83 (APPROX) AT \bar{C} OF TRACK	3	CT-002 TO CABLE TRENCH, GA-62	2000'	A640 CONTRACTOR TO PROVIDE APPROX. 450' OF 1" \bar{O} CONDUIT IN TUNNEL FROM GA-62 TO PROBE
1-2	TOP OF TUNNEL, AT \bar{C} OF TRACK, 4'-0" FROM EDGE	3	HC-006 FX-010	300'	A640 CONTRACTOR TO PROVIDE APPROX. 30' OF 1" \bar{O} CONDUIT IN TUNNEL	2-2	TOP OF TUNNEL, AT \bar{C} OF TRACK, 4'-0" FROM EDGE	3	HC-003 FX-001	1000'	A640 CONTRACTOR TO PROVIDE APPROX. 30' OF 1" \bar{O} CONDUIT IN TUNNEL
1-3	SAME AS 1-1	3	CT-008 TO CABLE TRENCH, GA-72	1500'	SAME AS 1-1	2-3	SAME AS 2-1	3	CT-005 TO CABLE TRENCH, GA-61	2000'	SAME AS 2-1
1-4	SAME AS 1-2	3	HC-006 FX-010	300'	SAME AS 1-2	2-4	SAME AS 2-2	3	HC-003 FX-	1000'	SAME AS 2-2
1-5	1'-0" BELOW TOP OF OPENING	AS APPROVED	HC-006 FX-013	300'		2-5	AT DUCT \bar{C} , 2'-0" FROM MD-12	1	HC-003 FX-012	1000'	
1-6	2'-0" BELOW TOP OF GRATING	AS APPROVED	HC-006 FX-013	300'		2-6	14'-0" ABOVE FINISHED FLOOR	2	HC-003 FX-015	1100'	
						2-7	SAME AS 2-6	AS APPROVED	HC-003 FX-015	1100'	

NOTES:

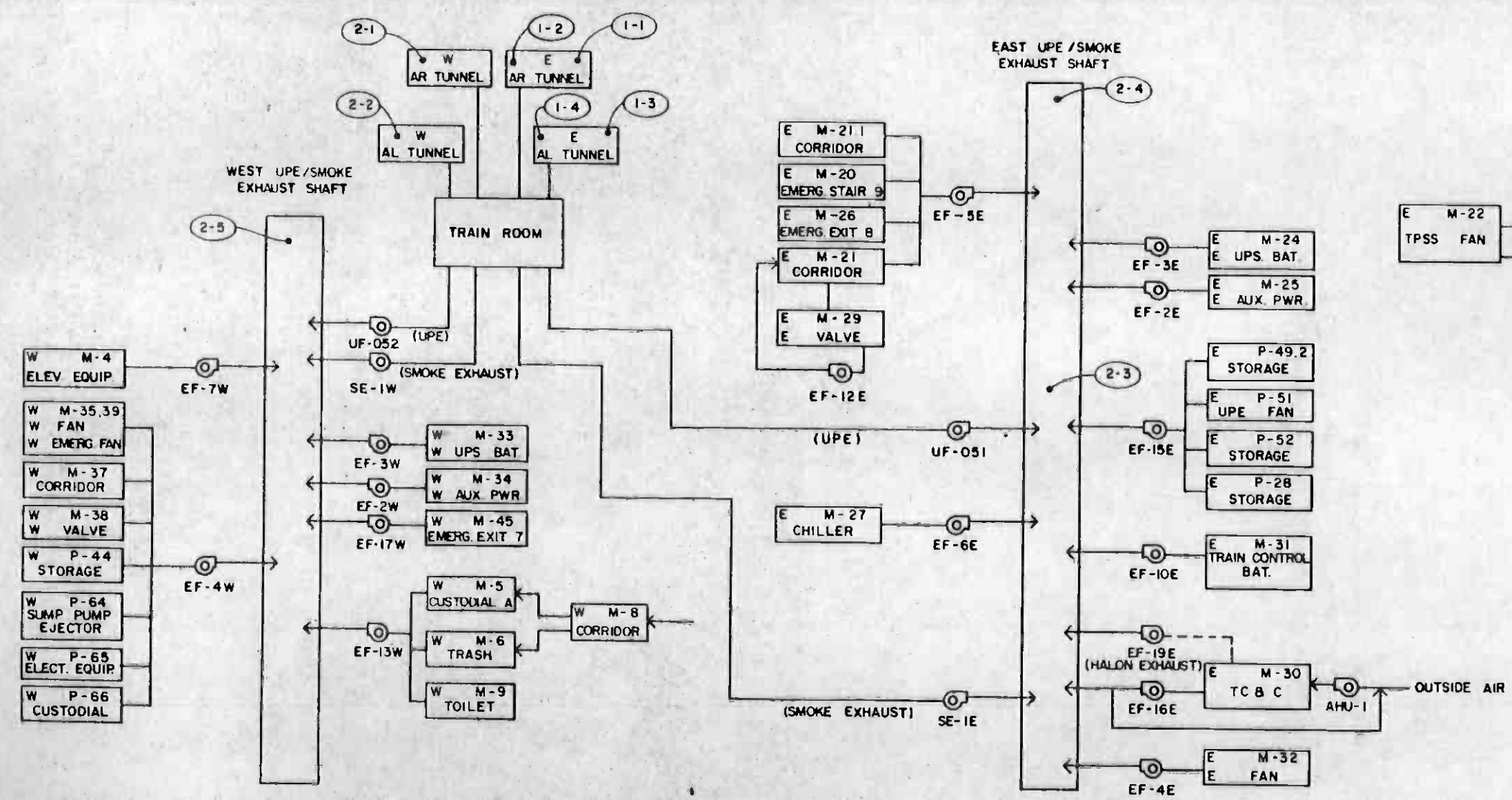
- CENTRAL ANALYZER VENT SHALL BE ROUTED TO BATTERY ROOM (TYPICAL).
- CENTRAL ANALYZER CONDOENSATE DRAIN SHALL BE ROUTED TO NEAREST FLOOR DRAIN (TYPICAL)
- FOR PROBE CONNECTION DETAILS, SEE DWG. N-167.
- FOR LEGEND AND SYMBOLS SEE DWG. N-187.
- TUBING LENGTHS SHOWN ARE APPROXIMATE.



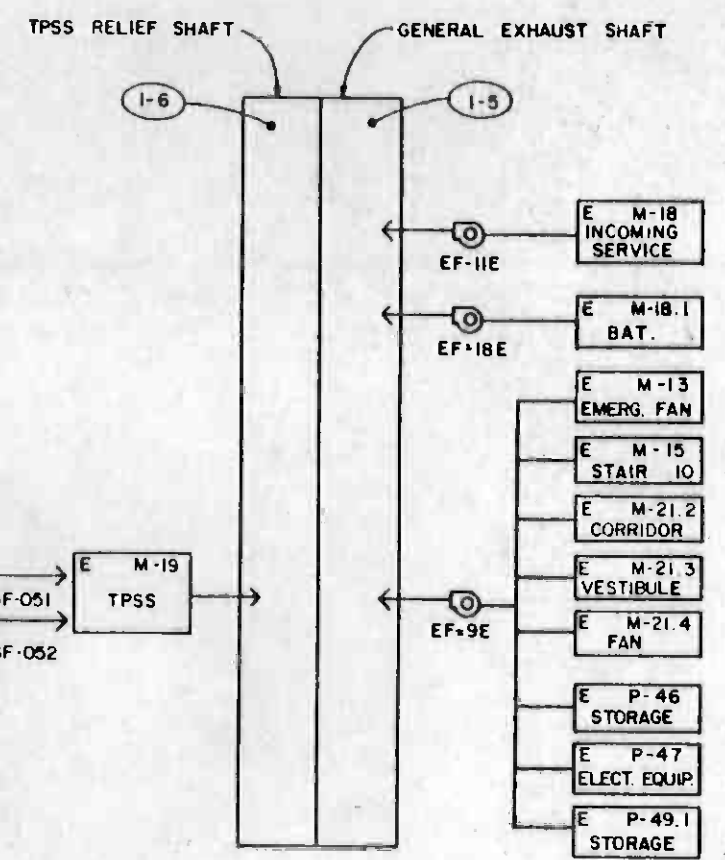
<p>THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.</p>		<p>DESIGNED BY S. GOLDSMITH</p> <p>DRAWN BY <i>A. [Signature]</i></p> <p>CHECKED BY <i>[Signature]</i></p> <p>IN CHARGE <i>[Signature]</i></p> <p>DATE 26 AUG 88</p>	<p>SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT</p> <p>METRO RAIL PROJECT</p> <p>DMJM/PBGD/KE/HWA GENERAL CONSULTANTS</p> <p>APPROVED <i>[Signature]</i></p>	<p>LA CBD TO NORTH HOLLYWOOD</p> <p>COMMUNICATIONS</p> <p>GAS MONITORING</p> <p>5TH/HILL STATION</p> <p>PROBE SCHEDULE</p>	<p>CONTRACT NO. A640</p> <p>DRAWING NO. N-159</p> <p>SCALE NO SCALE</p> <p>SHEET NO. 4620/401</p>
REV. DATE BY SUB. APP. DESCRIPTION	REV. DATE BY SUB. APP. DESCRIPTION	<p>PROPOSAL ISSUE</p>			



PROBE POINTS IN TUNNELS



PROBE POINTS IN WILSHIRE / ALVARADO STATION



NOTE:
1. FOR LEGEND AND SYMBOLS SEE DWG. N-164.



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DESIGNED BY S. GOLDSMITH DRAWN BY A. V. ... CHECKED BY J. ... IN CHARGE P.M. ... DATE 22 SEP 86	REGISTERED PROFESSIONAL ENGINEER JOHN NICHOLAS BROWN No. 22744 MECHANICAL STATE OF CALIFORNIA	SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT DMJM/PBQD/KE/HWA GENERAL CONSULTANTS APPROVED: <i>[Signature]</i>	LA CBD TO NORTH HOLLYWOOD COMMUNICATIONS GAS MONITORING WILSHIRE / ALVARADO STATION PROBE LOCATION SCHEMATIC	CONTRACT NO. A640 DRAWING NO. N-165 SCALE NO SCALE SHEET NO. A620/402
REV. DATE BY SUB APP DESCRIPTION	REV. DATE BY SUB APP DESCRIPTION	PROPOSAL ISSUE		SUBMITTED <i>[Signature]</i>		

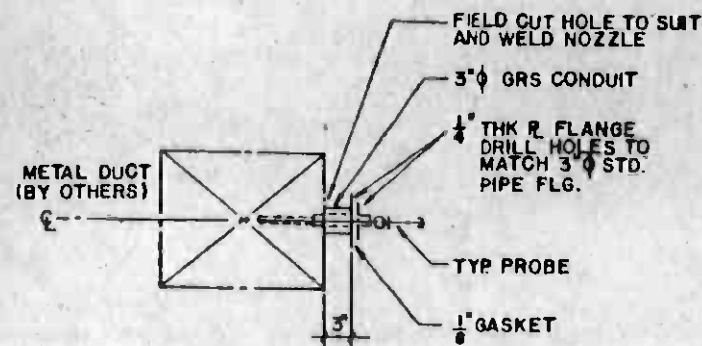
CENTRAL ANALYZER UNIT NO 1 (SEE NOTES 1 & 2)						CENTRAL ANALYZER UNIT NO 2 (SEE NOTES 1 & 2)					
PROBE NO.	LOCATION SEE DWG. N-165	TYPE OF CONN.	CONDUIT USED FROM TC & C RM	TUBING LENGTH	REMARKS	PROBE NO.	LOCATION SEE DWG. N-165	TYPE OF CONN.	CONDUIT USED FROM TC & C RM	TUBING LENGTH	REMARKS
1-1	1'-0" BELOW TOP OF TUNNEL AT C OF TRACK AT STA. 230+00	3	C-006	3000'	A640 CONTRACTOR TO PROVIDE APPROX 400' OF 1" Ø CONDUIT FROM CROSSPASSAGE AT STA. 233+65	2-1	1'-0" BELOW TOP OF TUNNEL AT C OF TRACK 4'-0" FROM EDGE	3	CONDUIT FG 375 TO J-BOX AT TUNNEL OPENING	700'	A640 CONTRACTOR TO PROVIDE APPROX. 30' OF 1" Ø CONDUIT IN TUNNEL.
1-2	1'-0" BELOW TOP OF TUNNEL AT C OF TRACK 4'-0" FROM EDGE	3	CONDUIT FG 372 TO J-BOX AT TUNNEL OPENING	500'	A640 CONTRACTOR TO PROVIDE APPROX 30' OF 1" Ø CONDUIT IN TUNNEL	2-2	1'-0" BELOW TOP OF TUNNEL AT C OF TRACK 4'-0" FROM EDGE.	3	CONDUIT FG 374 TO J-BOX AT TUNNEL OPENING	700'	A640 CONTRACTOR TO PROVIDE APPROX. 30' OF 1" Ø CONDUIT IN TUNNEL.
1-3	1'-0" BELOW TOP OF TUNNEL AT C OF TRACK AT STA. 230+00	3	C-003	3000'	A640 CONTRACTOR TO PROVIDE APPROX 400' OF 1" Ø CONDUIT FROM CROSSPASSAGE AT STA. 233+65	2-3	9'-0" ABOVE E. UPE SHAFT FLOOR AT STA. GRID LINE 11.7	AS APPROVED	EMBEDDED CONDUIT THROUGH WALL FROM TC & C ROOM INTO E. UPE SHAFT	200'	A640 CONTRACTOR TO PROVIDE APPROX 150' OF 1" Ø CONDUIT FROM J-BOX TO PROBE LOCATION
1-4	1'-0" BELOW TOP OF TUNNEL AT C OF TRACK 4'-0" FROM EDGE.		CONDUIT FG 373 TO J-BOX AT TUNNEL OPENING	500'	A640 CONTRACTOR TO PROVIDE APPROX. 30' OF 1" Ø CONDUIT IN TUNNEL.	2-4	15'-0" FROM END OF E UPE SHAFT AT 2'-0" BELOW GRATING.	AS APPROVED	EMBEDDED CONDUIT THROUGH WALL FROM TC & C ROOM INTO E. UPE SHAFT	300'	A640 CONTRACTOR TO PROVIDE J-BOX AND APPROX 100' OF 1" Ø CONDUIT BEYOND PROBE 2-3
1-5	2'-0" BELOW GRATING AT C OF EIS EXHAUST SHAFT	2	CONDUIT FG 376 TO J-BOX IN TPSS EXHAUST SHAFT	400'	A640 CONTRACTOR TO MAKE CONNECTION FROM J-BOX TO PROBE LOCATION	2-5	4'-6" ABOVE FLOOR LEVEL IN W UPE SHAFT AT MIDPOINT OF COMMON WALL BETWEEN UPE & BLAST RELIEF SHAFT	AS APPROVED	CONDUIT FG 377 TO J-BOX IN W UPE SHAFT.	600'	
1-6	2'-0" BELOW GRATING AT C OF TPSS EXHAUST SHAFT	AS APPROVED	CONDUIT FG 376 TO PROBE LOCATION	400'							

NOTES:

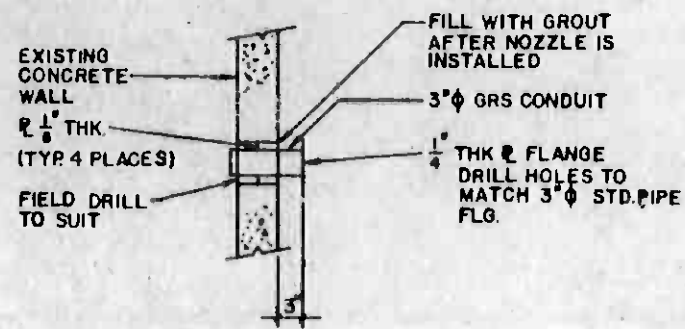
- CENTRAL ANALYZER VENT SHALL BE ROUTED TO 2" Ø VENT LINE IN BATTERY ROOM NO. 31 (TYP).
- FOR PROBE CONNECTION DETAILS, SEE DWG. N-167.
- FOR LEGEND AND SYMBOLS SEE DWG. N-164.
- TUBING LENGTHS SHOWN ARE APPROXIMATE.



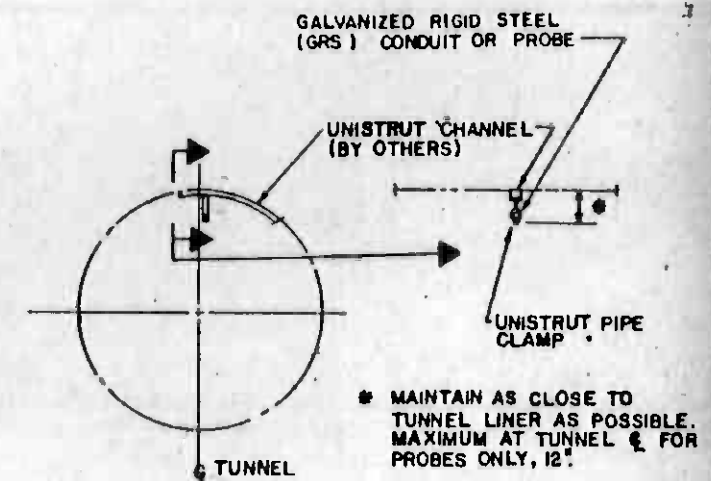
THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY M.R.T.C. DRAWN BY MARTHA LDRESCU CHECKED BY [Signature] IN CHARGE [Signature] DATE 27 OCT 86		REGISTERED PROFESSIONAL ENGINEER JOHN NICHOLAS BROWN No. 22744 Mechanical STATE OF CALIFORNIA		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT 		LA CBD TO NORTH HOLLYWOOD COMMUNICATIONS GAS MONITORING WILSHIRE / ALVARADO STATION PROBE SCHEDULE		CONTRACT NO. A 640 B DRAWING NO. N-166 SCALE NO SCALE SHEET NO. A620/403	
REV	DATE	BY	SUB.	APP.	DESCRIPTION	REV	DATE	BY	SUB.	APP.	DESCRIPTION		
					PROPOSAL ISSUE								



DETAIL 1
DUCT CONNECTION



DETAIL 2
WALL CONNECTION



DETAIL 3
TUNNEL CONNECTION

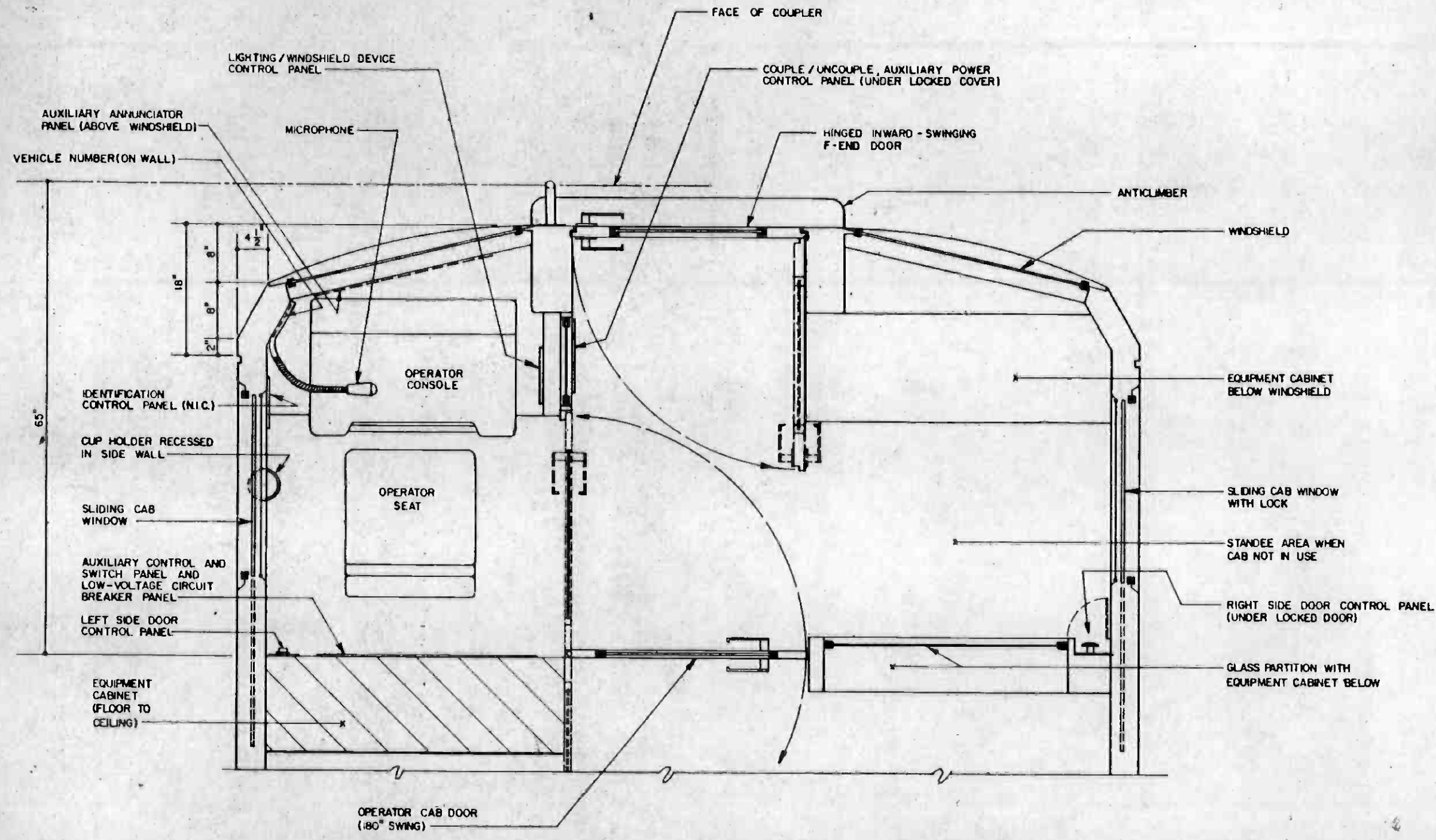
NOTES:

1. OTHER CONFIGURATIONS MAY BE SUBMITTED FOR APPROVAL OF THE DISTRICT.



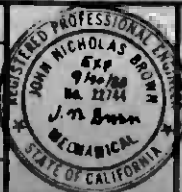
THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.				DESIGNED BY BILL HOWING DRAWN BY ED ACOSTA CHECKED BY <i>[Signature]</i> IN CHARGE <i>[Signature]</i> DATE 21 AUG 88		REGISTERED PROFESSIONAL ENGINEER JOHN NICHOLAS BROWN No. 22744 MECHANICAL STATE OF CALIFORNIA		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT DMJM/PBQO/KE/HWA GENERAL CONSULTANTS APPROVED: <i>[Signature]</i>		LA CBD TO NORTH HOLLYWOOD COMMUNICATIONS GAS MONITORING PROBE LOCATION DETAILS		CONTRACT NO. A640 DRAWING NO. N-167 SCALE NO SCALE SHEET NO. A620/404	
REV.	DATE	BY	SUB. APP.	DESCRIPTION	REV.	DATE	BY	SUB. APP.	DESCRIPTION				
				PROPOSAL ISSUE									

This drawing shows the conventional vehicle general arrangement required to meet the Technical Provisions. Other configurations which are also in accordance may be proposed, for approval of the District.



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA

DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE
9 JAN 85



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS
APPROVED: *Howard Khalaf*

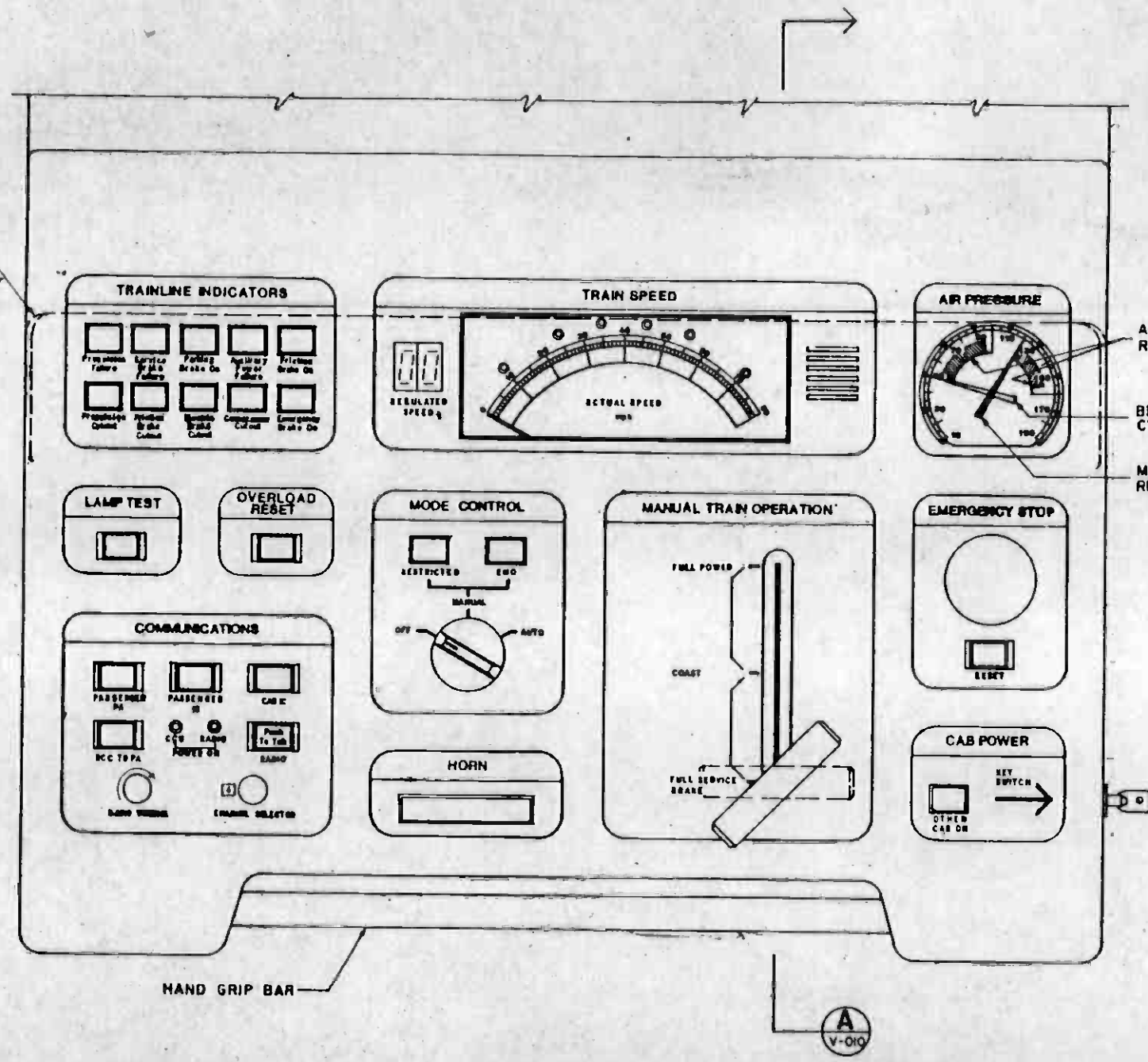
PASSENGER VEHICLE
OPERATOR CAB PLAN

CONTRACT NO. A 650
DRAWING NO. V-009
SCALE: NO SCALE
SHEET NO. A62Q/41D

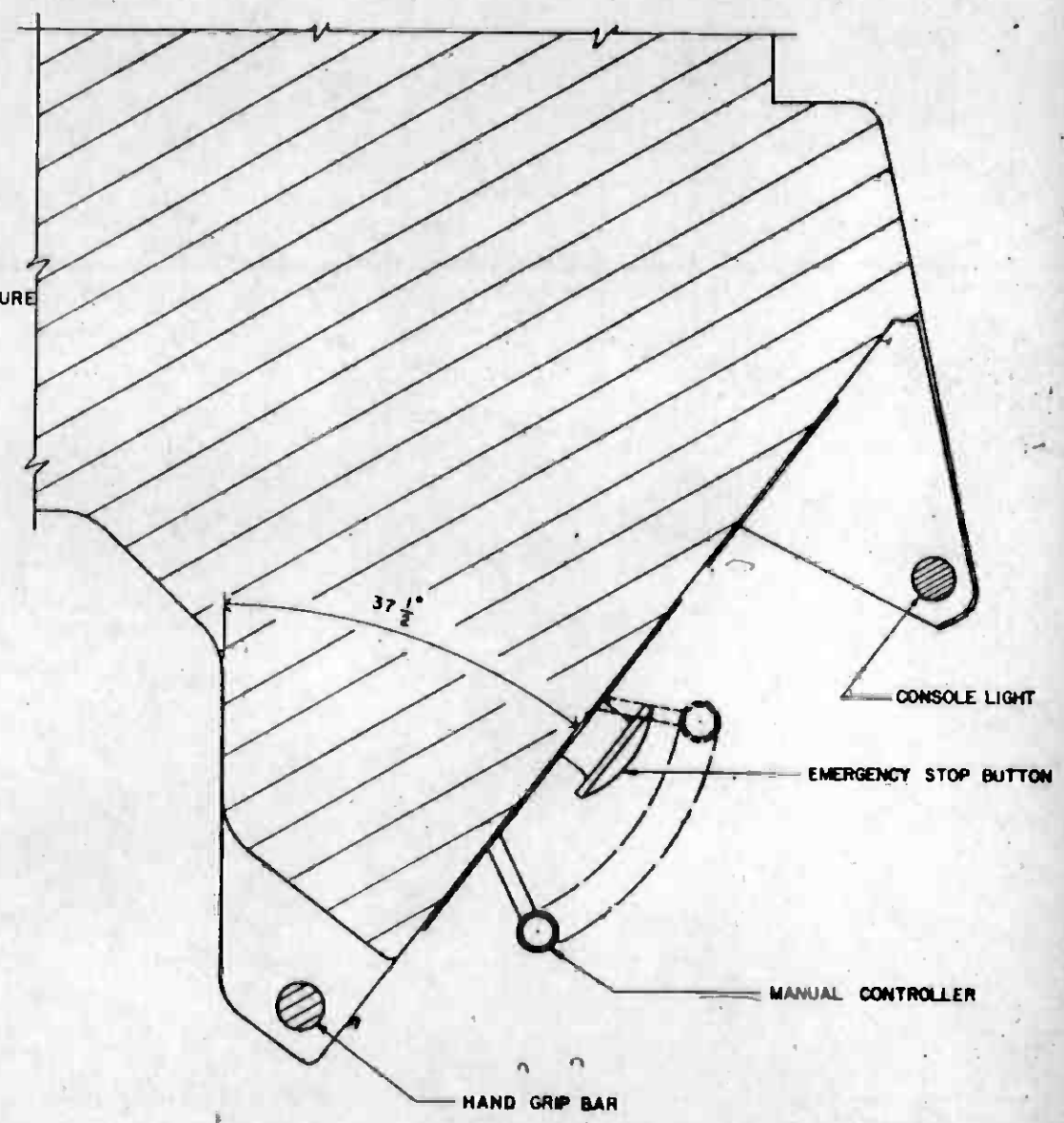
REV.	DATE	BY	SUB.	APP.	DESCRIPTION
0	3/16/85				PROPOSAL ISSUE

This drawing shows the conceptual vehicle general arrangement required to meet the Technical Protocols. Other configurations which are in accordance may be prepared, at approval of the Client.

OUTLINE OF HOOD ABOVE - TO SHIELD CONTROLS FROM LIGHT COMING THROUGH WINDSHIELD AND/OR CAB SIDE WINDOW.




PLAN VIEW



SECTION A

HALF SIZE

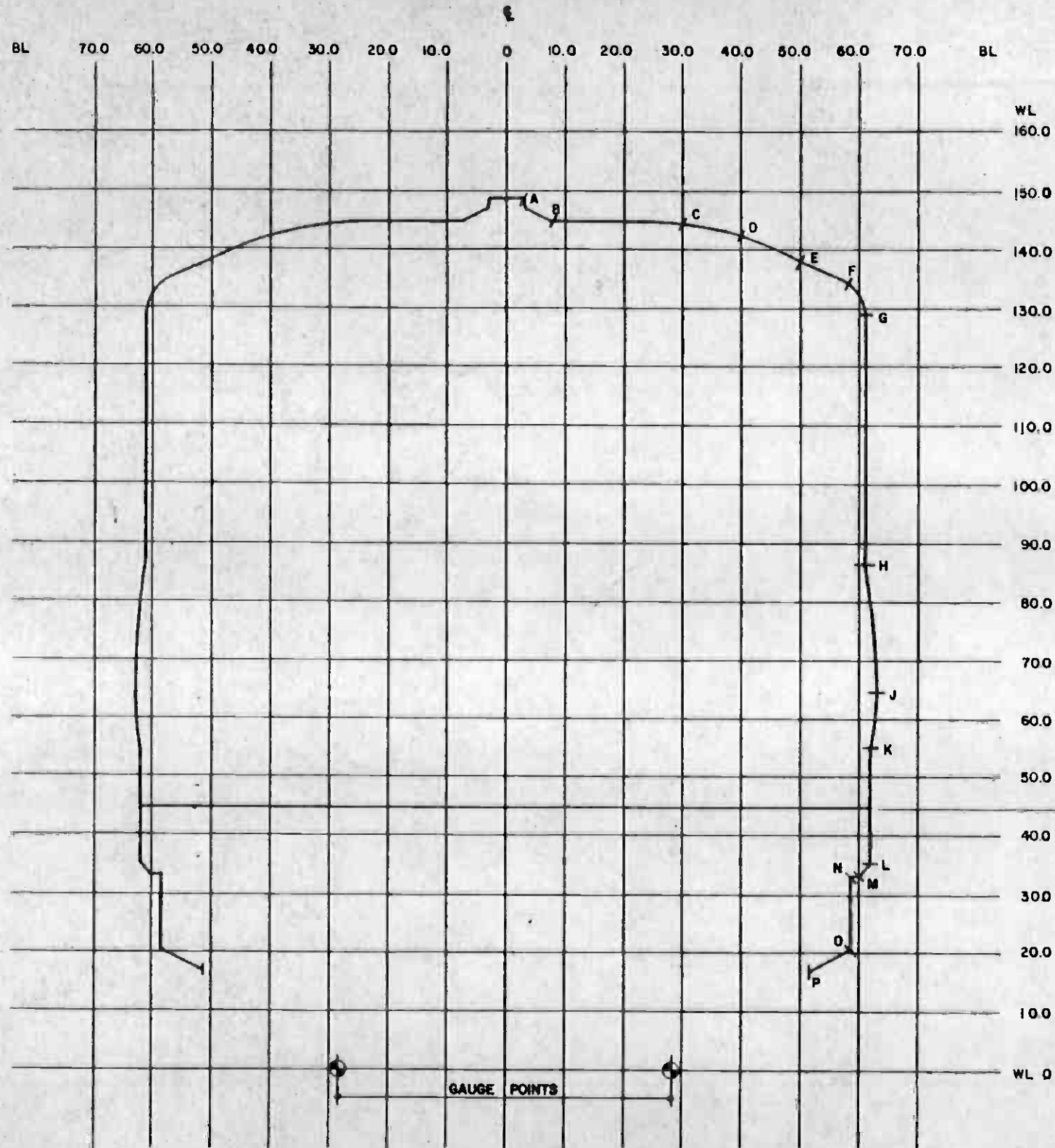
THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.		DESIGNED BY <i>[Signature]</i> DRAWN BY <i>[Signature]</i> CHECKED BY <i>[Signature]</i> IN CHARGE <i>[Signature]</i> DATE 12 FEB 85	SEAL NOT APPLICABLE	SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT 	DMJM/PBOD/KE/HWA GENERAL CONSULTANTS APPROVED <i>[Signature]</i>	CONTRACT NO. A 650 DRAWING NO. V-010 SCALE HALF SIZE SHEET NO. A620/411					
REV.	DATE	BY	SUB.	APP.	DESCRIPTION	REV.	DATE	BY	SUB.	APP.	DESCRIPTION
0	3/16/85				PROPOSAL ISSUE						

COORDINATES		
POINT	BL	WL
A	3.0	148.687
B	8.0	144.75
C	30.0	144.5
D	40.0	142.25
E	50.0	138.0
F	58.0	134.5
G	61.0	129.0
H	61.0	86.5
J	63.0	64.38
K	62.0	55.0
L	62.0	35.37
M	60.187	33.0
N	58.625	33.0
O	58.625	20.25
P	51.56	16.625

ALL DIMENSIONS IN INCHES

BL = BUTT LINE - DISTANCE FROM VEHICLE CENTERLINE

WL = WATER LINE - DISTANCE FROM TOP OF RUNNING RAIL



NOTE:

1. THIS REPRESENTS THE MAXIMUM ALLOWABLE OUTLINE WITH THE VEHICLE STATIONARY ON LEVEL TANGENT TRACK.
2. DOES NOT INCLUDE CONSIDERATION OF RAIL WEAR, RAIL TOLERANCES OR WHEEL GAUGE / RAIL GAUGE DIFFERENTIAL.
3. DOES INCLUDE LATERAL WHEEL WEAR OF $\frac{1}{4}$ INCH.



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY
P. Lander
DRAWN BY
W. H. ...
CHECKED BY
R. ...
IN CHARGE
...
DATE
21 OCT 83



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT



DMJM/PBOD/KE/HWA
GENERAL CONSULTANTS
APPROVED *Howard Khaliff*

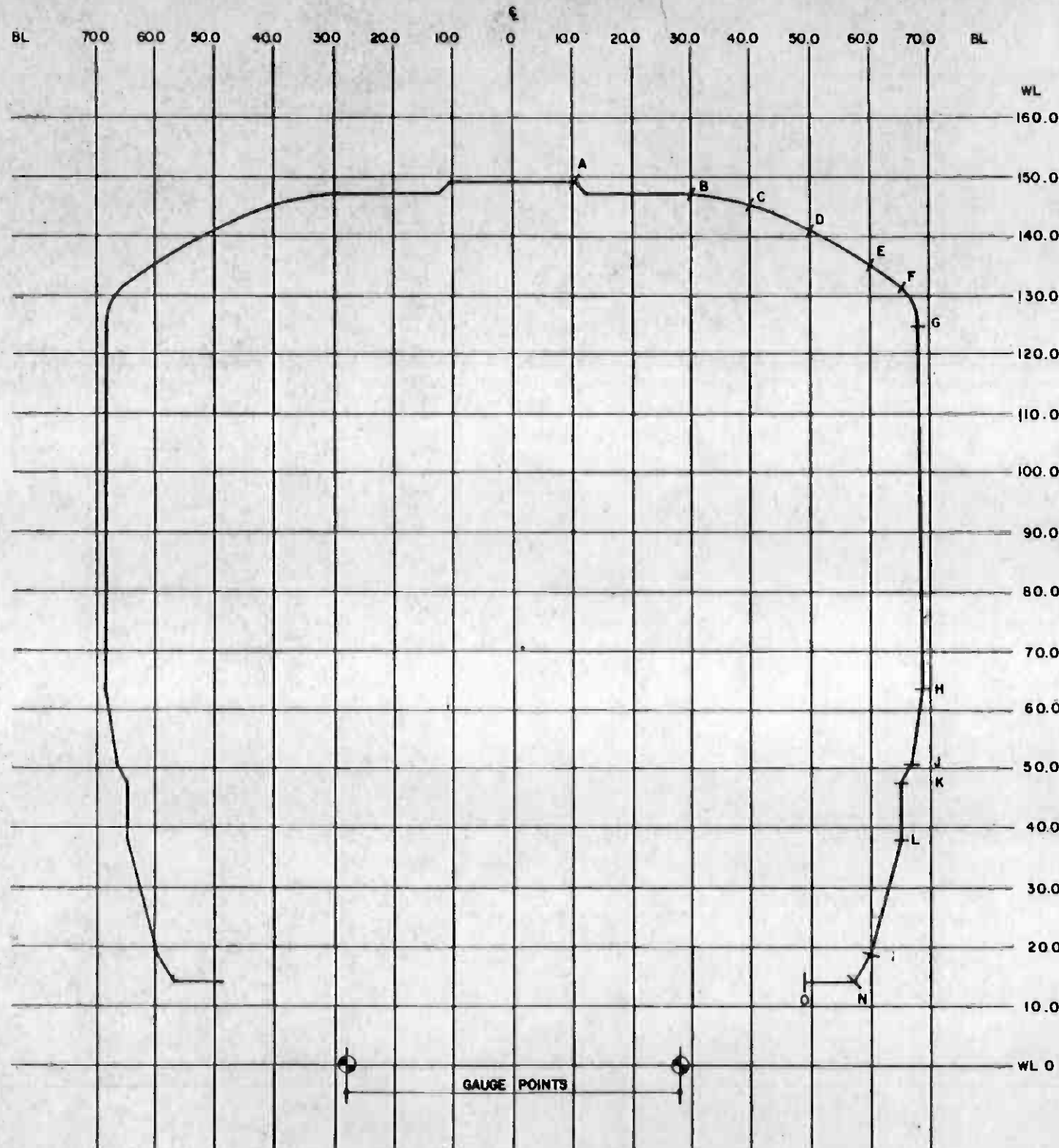
PASSENGER VEHICLE
MAXIMUM STATIC OUTLINE

CONTRACT NO.	A 650
DRAWING NO.	V-018
SCALE	1"=1'-0"
SHEET NO.	A620/412

REV.	DATE	BY	SUB.	APP.	DESCRIPTION
0	01/16/87				PROPOSAL ISSUE

COORDINATES		
POINT	BL	WL
A	10.8	149.625
B	30.0	147.25
C	40.0	145.5
D	50.0	141.0
E	60.0	135.35
F	65.25	131.5
G	68.0	125.0
H	68.5	63.5
J	66.75	51.0
K	65.0	47.5
L	65.0	38.0
M	59.75	18.675
N	57.0	14.130
O	48.8	14.130

ALL DIMENSIONS IN INCHES
 BL - BUTT LINE - DISTANCE FROM VEHICLE CENTERLINE
 WL - WATER LINE - DISTANCE FROM TOP OF RUNNING RAIL



NOTES:

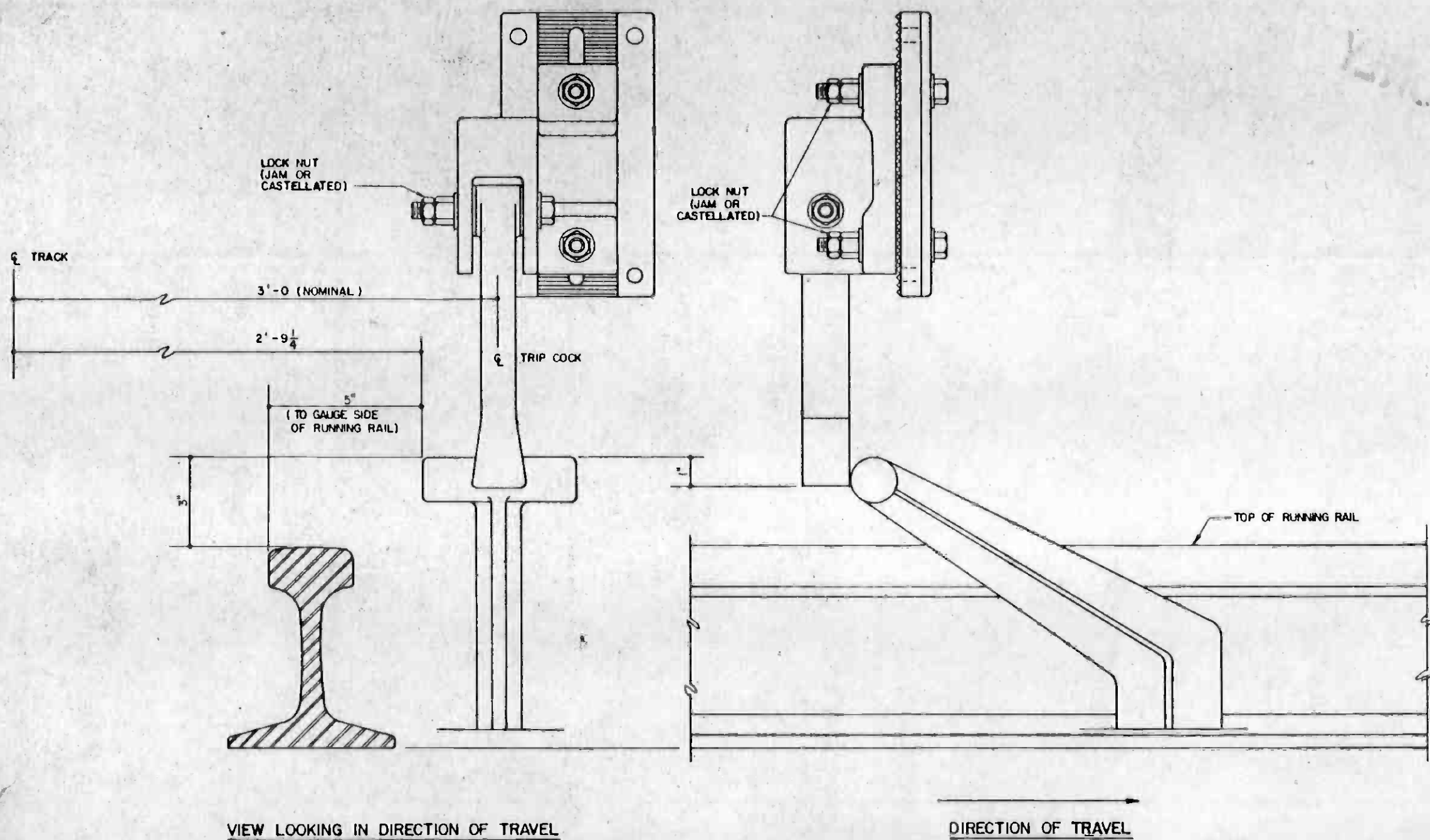
- THIS DYNAMIC OUTLINE REPRESENTS THE MAXIMUM ALLOWED EXCURSION WITH MAXIMUM DIAMETER WHEELS ON NEW TANGENT TRACK.
- THIS DYNAMIC OUTLINE INCLUDES THE SUM OF ALL MAXIMUM VERTICAL (UP AND DOWN), LATERAL, YAW & ROLL MOTIONS OF THE COMPOSITE VEHICLE WITH WHEELS WORN LATERALLY $\frac{1}{4}$ INCH.
- DOES NOT INCLUDE CONSIDERATION OF RAIL WEAR, RAIL TOLERANCES OR WHEEL GAUGE / RAIL GAUGE DIFFERENTIAL.
- CLEARANCE (BETWEEN EQUIPMENT AND PLANE OF TOP OF RAILS) FOR WORST CASE FAILURE OF SECONDARY SUSPENSION SHALL BE:

a. UNDER TRUCK	2 IN. MIN.
b. UNDER VEHICLE	4 IN. MIN.



	THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA	DESIGNED BY <i>[Signature]</i> DRAWN BY <i>[Signature]</i> CHECKED BY <i>[Signature]</i> IN CHARGE <i>[Signature]</i> DATE 12 SEPT 84		SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT 	DMJM/PSOO/KE/HWA GENERAL CONSULTANTS APPROVED <i>[Signature]</i>	PASSENGER VEHICLE MAXIMUM DYNAMIC OUTLINE	CONTRACT NO. A 650 DRAWING NO. V-019 SCALE 1"=1'-0" SHEET NO. A620/413	
REV. DATE BY SUB. APP. DESCRIPTION	0 3/1/87 PROPOSAL ISSUE	SUBMITTED <i>[Signature]</i>						

The drawing depicts the construction which cannot be represented, required to meet the Technical Provisions. Other supplementary notes are also in accordance may be prepared, for approval of the District.



VIEW LOOKING IN DIRECTION OF TRAVEL

DIRECTION OF TRAVEL



THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U. S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

DESIGNED BY
P. Kallen
DRAWN BY
R. D. Vega
CHECKED BY
Paul Cook
IN CHARGE
Paul Cook
DATE
21 OCT 83

SEAL NOT APPLICABLE

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT



SUBMITTED *J. N. Brown*

DMJM/PBOD/KE/MWA
GENERAL CONSULTANTS
APPROVED *Thomas J. Schell*

PASSENGER VEHICLE
TRIP COCK INSTALLATION

CONTRACT NO.		A 650	
DRAWING NO.	V-022	REV	0
SCALE		NO SCALE	
SHEET NO.		A620/414	

REV.	DATE	BY	SUB.	APP.	DESCRIPTION
0	10/21/83				PROPOSAL ISSUE