Card Key Implementation Plan

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CARD KEY IMPLEMENTATION PLAN

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1. Introduction

This plan recommends a lock and keying system for the Los Angeles Metro Rail Subway Project. The keying plan is based on the Security Access Control Report (January 1985) prepared by MRTC which identified the minimum number of doors requiring card access control, and subsequently led to the issuance and approval of Change Request 4-088. Change Request 4-088 required that critical access areas of Metro Rail have electronic card access control which can be monitored from a central point. Non-critical access rooms need only have a hard key (cylinder) lock.

Four keying plan working sessions were held with District representatives from operations, maintenance, security, systems design, fire/life safety, and facility design, to reach agreement on the proper application of a card access control system for the Metro Rail Project. The recommendation of a mixed hard key-card key system is based on general concurrence of the group during the Third Keying Plan Working Session that the basis of Change Request 4-088 is still applicable and necessary.

All MOS-1 stations, the Main Shop, and the Maintenance-of-Way Building are included in the keying plan. An area control principle is used as the guideline for determining which doors require card access control. Simply stated, corridor doors leading to critical access rooms (herein identified) are card access controlled instead of the doors on these individual rooms. This normally minimizes the number of card readers required on the Metro Rail System. However, in cases where card keying corridor doors actually requires more card readers than card keying individual critical access rooms (due to station corridor configuration), the individual doors are card keyed. In some cases,

no corridor door exists and so there is no alternative but to card key the individual critical access rooms.

All intrusion alarms associated with the card access control system will be sent to the Transit Police headquarters at Imperial for monitoring. A dedicated console and printer will be provided there. Monitoring capability will also be provided at the Rail Control Center in the Main Shop, where a multi-function terminal and printer will be incorporated into the communications console. Validation/invalidation of card keys will be performed at the Maintenance-of-Way building, by the Facilities Maintenance Department, via a terminal. Software programming will provide this capability also to the Transit Police headquarters and Rail Control Center, if required.

The use of a card access control system on critical access areas improves security compared to a conventional hard key locking system. The primary benefits of a card control access system are effective security of property, monitoring of individual employee activity, automatic validation of door alarms, multiple access levels with a single card, and flexibility in changing and controlling access. A computer printout is available showing door usage as an added security measure. Unlike a hard key system, a card access control system can be used to secure areas from any persons by time of day, and can accommodate changes in unauthorized persons to any area almost immediately without having to replace door locks or issue keys simply by making an entry change on a video display terminal. The system can be used to unlock (or lock) a series of doors at any time of the day. Compared with a conventional hard key system with intrusion alarms, the card access control system will indicate fewer (if any) false alarms. All authorized entries

into rooms do not activate alarms. (The Security Access Control Report discusses this system in more detail.) Finally, innumerable keying hierarchies are available through a card access control system at all times.

Rooms are classified into three security levels: Critical - requiring card access control and intrusion alarm either directly on the room's door or the corridor door leading to the room; Sensitive - requiring hard key lock and intrusion alarm; and Moderate - requiring a hard key lock. A limited number of doors such as those leading to the emergency stairs at each station platform end will be intrusion alarmed and equipped with panic hardware on the public side. Most hard keyed doors without card access control will not have an intrusion alarm, eliminating the commonplace problem of responding to numerous false alarms.

A master keying hierarchy is required to ensure that only authorized personnel have access to specifically designated areas. The fare collection equipment is not included in this proposed master keying system since access to this equipment and fare media/cash will be subject to a separate security system. Removable core locks are recommended for all Metro Rail facility doors during construction and system operation due to the ease of removal and replacement when a change of locks is required.

The card access control system will include card readers, card keys, and a local controller. Specifications for this system are contained in the A640 Communications Contract.

The proposed transition of room locks between the construction phase, equipment installation phase, and system operational phase is described in Section 6 of this plan to show when locks are replaced and who performs the replacement.

Construction and annual O&M costs are provided in Section 8 for the mixed hard key-card key and all card key alternatives.

Recommendations are made to ensure successful implementation of a lock and key system. Minimal changes are required for facility contracts. The recommendations are as follows:

- Ensure facility contract drawings contain provision of required intrusion alarm conduit, junction boxes, and other required electrical items.

- Initiate change request to obtain District approval to revise Volume III, Section 18.9, and Table III-13-1 of Volume III, Section 13.4.4.C, of System Design Criteria and Standards to eliminate requirement of intrusion alarm to protect all ancillary (non-public) station areas. Also, revise criteria to allow train control, traction power, and elevator keys to be included in master keying.

- Ensure Communications Contract A640 provides for master keyed locks on Emergency Management Panel, Auxiliary Emergency Management Panel, and Command Post.

- Provide card readers and door hardware at locations shown in Attachment 3 drawings, and verify inclusion in Contract A640.

- At the Main Shop, provide means to notify Division Dispatcher of desired entry into Transportation section of building during off-hours. A telephone is acceptable. Remote door unlatching from Division Dispatcher's office is recommended.

- At the Main Shop, provide means to notify Yard Dispatcher of desired entry into Yard Tower during off-hours. A telephone is acceptable. Remote unlatching of ground floor entrance door from the Yard Tower is recommended.

- Provide terminal at Maintenance-of-Way Building to permit Facilities Maintenance staff to validate/invalidate card keys.

- Provide a coverplate on card access controlled doors that swing outward from the secured side, in order to protect the electric strike.

2. Identification of Room Security Levels

Three security levels are identified for Metro Rail facilities as described in the Security Access Control Report. Each level indicates the extent of security required to protect a room or space in a facility, dependent on the nature of equipment or material inside the area. The three levels of security are: critical, sensitive, and moderate. These levels are defined as follows:

A. Critical Access

Critical access areas are those that can be extremely hazardous, essential to the system's safe operation, or require restricted access due to the nature of the equipment or value of the product in the area. These areas shall have a card access control system including an intrusion alarm, either on an access corridor door or on the individual room doors.

B. Sensitive Access

Sensitive access areas need to be secured to maintain the integrity of the equipment located therein. These areas shall have a hard key locking system with each discipline keyed differently, unless shared use of areas requires otherwise. These areas shall have an intrusion alarm, either on an access corridor door or on their own doors. The number of locations in this category is minimal. Included here are street level emergency exit hatches which accommodate a key wrench to open.

C. Moderate Access

Moderate access areas are used by various employees. A hard key locking system shall be provided giving access to employees of several disciplines. No intrusion alarm is planned for these areas.

Section 18.9 of Volume III of the Metro Rail System Design Criteria and Standards requires intrusion alarm protection on all ancillary station areas, or on common corridor doors leading to these areas. Such a requirement imposes an operational problem as alarms are likely to be activated frequently, many being false. The use of a card access control system on critical access areas and elimination of this requirement on the remaining areas would solve this problem. Consequently, a change request should be initiated to delete the requirement for intrusion alarms on all ancillary station areas. Other non-station areas should be examined for intrusion alarm requirements on an individual basis.

3. Identification of Facility Areas and Required Security Level

This section lists the various rooms in Metro Rail facilities and identifies an appropriate security level for each one. Metro Rail facilities are classified into two groups for this report: stations/mid-line vent structures and Yard/Shops buildings. All public and non-public rooms which require locks are listed. Proposed security levels of the station and mid-line vent structure rooms, Main Shop rooms, and Maintenance-of-Way and Yard Substation Building rooms are shown in Figures 1, 2, and 3, respectively. Some doors are not included because they do not require any lock.

Tunnel cross-passage doors require a latch but shall not have a lock. This also applies to cross-passages containing a sump pump. Thus, they are not included in the room security designations. Similarly, various rooms in the yard shop buildings, such as locker rooms and washrooms which do not require a lock are not included.

The end-of-platform gates at stations will have a thumb-turn latch without any intrusion alarm. A closer and a self-latching mechanism is recommended to be added to these gates. Gate swing should be only towards the platform. Table III-13-1 of Volume III, Section 13.4.4.C of Design Criteria requires an intrusion alarm without a lock for these gates. Revision to this criterion is recommended to delete the intrusion alarm requirement, so that the potential problem of excessive false alarms can be avoided.

The Incoming Electrical Service Room at each station will be secured by the Department of Water and Power (DWP), and

thus are not included in the room security designations of Figure 1.

4. Keying Hierarchy - Grand Master Plan

A proposed keying hierarchy is shown in Figure 4 which in cludes stations, mid-line vent structures, Main Shop, Maintenance-of-Way Building, Yard Traction Power Substation, and ATC bungalows. Although MOS-1 does not contain any mid-line vent structures, they are included here for future reference.

The station Emergency Management Panel (EMP), Auxiliary Emergency Management Panel (AEMP), and Command Post (CP) are included in the master keying system. The EMP has two front panels, one for emergency ventilation controls and fire telephone among other items, and another for P.A., telephone and alarm panel. The former will have a lockset that will be masterkeyed to a more secure level than the latter. Both panels will be a part of the masterkeying system. The CP will have the fire telephone masterkeyed at a more secure level than the remainder of the panel. The AEMP only has one panel and it will be masterkeyed. Fire Department personnel will have access to the EMP, AEMP, and CP.

Elevator, escalator, Traction Power, and Train Control keys are included in the master key system. This permits equipment control by authorized staff without having to issue additional keys. The Metro Rail Design Criteria (Volume I, Section 4.9.2 and Volume III, Section 18.9c) which currently prohibit elevator, Traction Power, and Train Control keys from being a part of the master key system, need to be revised via a change request. Security of the facilities

will be ensured by permitting only authorized personnel entry into non-public areas of stations.

The keying hierarchy (Figure 4) identifies rooms that will have a card access control system in addition to a hard key lock. These critical access areas will normally be entered using the card readers. The hard key lock can serve as a backup security mechanism in the event of a card key system failure. The hard keys to these rooms will not be circulated. Transit Police will control all hard and card keys.

The keying hierarchy is organized by discipline, with similarly designated keys being interchangeable. Thus, Key J can be used to access janitorial rooms at stations, Main Shop, and Maintenance-of-Way Building.

5. Access Provisions to Outside Agencies

It is the responsibility of the managers of the individual disciplines to determine the appropriate employees requiring room keys. The keying hierarchy shown in Section 4 classifies facility rooms according to each discipline. Outside agencies will have different procedures to enter Metro Rail facilities but most will be required to be accompanied by Metro Rail personnel for appropriate access.

The Fire Department and Transit Police will access the stations through the main entrances. During non-revenue hours, a card key will be required to raise the station entrance rolling grille. A master hard key will also be required to provide access to hard-keyed ancillary rooms (without card readers), and the Emergency Management Panel (EMP), auxiliary EMP (AEMP), and Command Post (CP).

The city and county police personnel will have un-escorted access into the system.

The Department of Water and Power (DWP) personnel will enter stations through a street level access hatch nearest the Incoming Electrical Service Room. An L.A. Fire Department wrench will be required to open the intrusion alarmed hatch. Since DWP personnel require unescorted access into Metro Rail facilities, they will be required to use the telephone near the hatch to call into the Rail Control Center (RCC) to notify of their presence and respond to the alarm.

Pacific Bill telephone maintenance personnel may access stations during revenue hours through the public entrances. They do not require station keys since the public telephone switchboard panels are typically located in the free area of the station. Union Station has a telephone room in a non-public area which will require escorted access (by station agent or other authorized persons) to provide the telephone repair person access to this room.

6. Transition of Keying Hardware Between Facility Construction, Equipment Installation and System Operational Phases

Hard Key Locksets

The facility construction, equipment installation, and system operational phases should have removable core locks to control access during the various phases of construction. This ensures that lost or misplaced keys from one phase are not used illegally to enter rooms during a later phase. Key cores can be removed and new ones installed without requiring cylinder removal. (Cylinder houses removable core.)

It is advantageous to have interchangeable cores for all Metro Rail facilities. This will permit any core to fit every lock cylinder and also enable any control key to replace every core. Baseline facility specifications currently provide for removable core locks, but do not currently provide for interchangeability throughout the system.

The Stage II station contractor is responsible for installing the doors and preparing the equipment rooms for beneficial occupancy by installation contractors. As such, no door hardware is usually required in the Stage I construction phase. Once a room is approaching Stage II completion, the door and door hardware (hard key lockset) are then installed. The District takes acceptance of the facility upon satisfactory completion of the contract.

The equipment installation contractor(s) will then take possession of the room for the installation period. If any Stage II work remains to be performed within a room, it would have to be done in coordination and under authorization of the equipment installation contractor. The equipment contractor would be responsible for control of keys and thus reasonable security of the room containing his equipment.

Typically, the equipment contractor retains occupancy of the room through pre-revenue testing. General provisions of all specifications allow the District to take possession or to use any completed or partially completed part of the contract work. When this occurs, the equipment contractor is relieved of the responsibility for loss or damage to that part of the work. Station non-equipment rooms will be made available to the District by the Stage II contractor

for acceptance, without any equipment contractor involved thereafter.

Card Access Control System

Rooms designated as "critical access" areas shall require a card reader equipped with an intrusion alarm. The procedure to install these items is dependent upon the type of wall housing the doorway. In either case, the Stage I contractor provides conduit from the nearest Communications Interface Cabinet (CIC) or Train Control and Communications (TC & C) Room to the frame of the doorway, and the Stage II contractor provides the door frame and door hardware. Architectural Directive Drawing AD-023 shows guidelines for terminating conduit to door locations, and is included in Figure 5.

Cast-in-place concrete walls are built by the Stage I contractor and therefore, the conduit leading from the frame of the doorway to the intrusion alarm and card reader locations is also provided by the Stage I contractor.

In the typical case of a Concrete Masonry Unit (CMU) wall housing the doorway, the Stage II contractor who builds the wall also provides the conduit leading from the base of the doorway up around the door frame to connect to the intrusion alarm and card reader locations.

The card control access system including the contact switch intrusion alarm is provided in the Communications A640 Contract. On card access controlled doors that swing outward from the protected side, a coverplate is needed to secure the electric strike. This will be installed by the Stage II contractor. The card readers must be the same brand and model from station to station. It will be powered from the

48 V dc Communications Battery System. This battery system has an eight-hour rating.

7. Analyses of Card Key Failure Mode: Locked vs. Unlocked

In the event of a card key system failure, the card key lock can be designated either to fail locked or unlocked. A failure in the unlocked position permits entry and exit through the doorway. This may lead to unauthorized entry during such periods. A failure in the locked position permits exit from inside the room (simply by turning the interior doorknob or pushing the panic bar handle) and precludes entry from outside unless a master hard key (when provided) is used to open the door. The advantage of the latter method is that secured access is maintained at all times. Each card reader except at rolling grilles, will be equipped with a switch to set the failure mode, either locked or unlocked, which can be set or changed at any time.

The station entrance rolling grille which is controlled by a card access control system, is currently planned to unlock (deadbolt retracted) in the event of a card system failure. This method is acceptable since it does not impact station operations and passenger evacuation procedures. A card system failure during non-revenue hours when the rolling grille is in the down position permits District personnel to manually raise the grille to open the station to the public in the morning. A failure during revenue hours will not impact station operations since the rolling grille will be in the up position permitting entry and exit. Therefore, it is recommended that the currently planned rolling grille failure mode (unlocked) remains intact. A switch to permit the failure mode to revert back to locked will not be provided.

8. Costs of Locking Scheme

This section presents construction and annual O&M costs for the mixed hard key-card key system. Vendors of hard key and card key systems were contacted to obtain the cost estimates. A cost comparison of three alternative locking schemes considered in the keying plan working sessions is shown in Attachment 1.

Change Request 4-088 which was approved listed a cost of $263,400 for a limited application of the card access control system. The current estimate is $569,000 for the 18-station alignment, of which $48,750 is associated with the LA-Long Beach LRT System. Table 1 shows the construction and annual O&M costs of the card access control system, as configured as part of an overall mixed hard key-card key system. Backup cost data are contained in Attachment 2.

The recommendation listed in Section 1 to delete the intrusion alarm requirement on ancillary station areas would result in a cost savings of approximately $250 per door. This would occur with hard keyed doors only, as card keyed doors require intrusion alarms.

Table 1

Construction and Annual O&M Costs of Card Key System

	MOS-1	18-Station
1. Construction Costs	$266,300	$569,000
2. Annual O&M Costs	19,400[A]	47,100[A]

A - These costs remain the same from previous estimates.

9. Recommended Locking Scheme

The keying plan working group representing operations, maintenance, security, systems design, fire/life safety, and facilities design, recommends a mixed hard key-card key system. This is consistent with the intent of approved Change Request 4-008 stating a minimum requirement for card access control on critical access areas of the Metro Rail System.

A total application of the card access control system was considered and would cost $1,330,100 for the 18-station alignment. The working group found this to be unjustifiably expensive relative to current project funding constraints. However, such an extensive system would provide improved security and keying convenience when compared with the mixed system.

The proposed card keying of rooms in MOS-1 stations and the Main Shop is shown in Attachment 3. The locking scheme reflects the use of area control principle. Rather than card keying individual critical access rooms, the number of readers can be reduced and/or greater area can be protected with the same number of readers if common corridor doors leading to these critical access areas are card keyed. In a few cases, where card keying corridor doors requires a greater number of readers compared with card keying individual rooms, the latter is chosen. The main intent is to minimize the number of required card readers and still adequately protect critical access areas.

Some doors are listed in Attachment 3 drawings as "exit only" with an arrow. This means that no locking hardware is recommended except to allow exiting in the direction shown by the arrow. Entry shall not be permitted. Other

doors are marked "IA" which means that an intrusion alarm is required (no card key). Card readers are listed with the prefix "CR" followed by the number associated with that particular location (e.g., CR5). Some card readers at 7th/ Flower Station are noted with "LCR," meaning that they are associated with the LRT portion of the station.

10. Design Implementation Actions

The following actions must be completed to ensure successful implementation of the card access control system:

- Conduct contract review to ensure intrusion alarm conduit is provided to all card keyed door locations in facility contract drawings.

- Initiate change request to seek District approval to revise Volume III, Section 18.9, of System Design Criteria and Standards and eliminate requirement of intrusion alarm on all ancillary station areas. Revise this section to allow train control and traction power substations to be part of the master keying system. Also seek District approval to change Volume I, Section 4.9.2 to enable elevator keys to be included in master keying system.

- Add closer and self-latching provisions to end-of-platform gates. Provide only one-way swing towards platform.

- Ensure Communications Contract A640 provides for masterkeyed locksets on EMP, AEMP, and CP.

- Provide card readers and door hardware at locations shown on Attachment 3 drawings and verify inclusion in Contract A640.

- At the Main Shop, provide means to notify Division Dispatcher of desired entry into Transportation section of building during off-hours. A telephone is acceptable. A remote door unlatching capability is recommended from the Division Dispatcher's office.

- At the Main Shop, provide means to notify Yard Dispatcher of desired entry into Tower during off-hours. A telephone is acceptable.

- Provide terminal at Maintenance-of-Way Building to permit Facilities Maintenance staff to validate/invalidate card keys.

- Provide coverplate on card access controlled doors that swing outward from the secured side, in order to protect the electric strike.

FIGURE 1 - SECURITY LEVEL OF STATION AND MID-LINE VENT STRUCTURE ROOMS

Discipline/Room or Door	Security
Stations	
Automatic Train Control and Communications (TC & C)	
TC & C and Battery Room	Critical
Janitorial	
Custodial Room (Platform Level)	Moderate
Custodial Closet (Mezzanine Level)	Moderate
Trash Room	Moderate
Mechanical and Electrical	
Emergency Fan Room	Moderate
Fan Room	Moderate
Air Supply Room	Moderate
Smoke Exhaust Room	Moderate
UPE Room	Moderate
Chiller Room	Moderate
Ejector Room	Moderate
Sump Pump Room	Moderate
Sprinkler Valve Room	Critical
Mechanical Room	Moderate
Storage	Moderate
Traction Power Fan Room	Moderate
Blast Relief Shaft	Moderate
Emergency Vent Shaft	Moderate
Fire Pump Room (Union Station)	Moderate
Elevator Equipment Room	Moderate
Electrical Room (Cable Room)	Critical
Electrical Equipment	Critical
Operations	
Emergency Equipment Room	Moderate
Staff/Security Room	Moderate (provision to upgrade)
Lunch Room (Union Station)	Moderate
Supervisor's Booth (Union Station)	Moderate
Station Entrance Rolling Grille	Critical
Telephone	
Telephone Room (Union Station)	Moderate
Power	
Auxiliary Power Room	Critical
Traction Power Substation and Battery Room (TPSS)	Critical
Auxiliary Power Substation	Critical
Other	
Mezzanine Level Toilet Room	Moderate
Platform Level Toilet Room (Union Station)	Moderate
Emergency Exit Hatch	Sensitive (intrusion alarm w/o lock)
End-of-Platform Gate	Moderate (latch only)
End-of-Platform Emergency Exits	Sensitive
Mid-line Vent Structures	
Automatic Train Control and Communications (TC & C)	
TC & C and Battery Room	Critical
Mechanical and Electrical	
Fan Rooms	Moderate
Electrical Room (Cable Room)	Critical
Power	
Traction Power Substation	Critical
Auxiliary Power Room	Critical

Note: No mid-line vent structures in MOS-1

FIGURE 2 - SECURITY LEVEL OF YARD AND SHOPS FACILITIES - I

Discipline/Room	Security
Main Shop	
Automatic Train Control and Communications (TC & C)	
Telecommunication Maintenance and Parts Storage Room	Moderate
Janitorial	
Janitor Room	Moderate
Janitor Closet	Moderate
Maintenance	
Managerial Offices	Moderate
Air Brake Shop	Moderate
Air Conditioning Shop	Moderate
Electrical Repair Shop	Moderate
Tool Room	Moderate
Storage	Moderate
Copier/Supply Room	Moderate
Electric Equipment	Moderate
Equipment Room	Moderate
Conference Room	Moderate
Battery Shop	Moderate
Welding Shop	Moderate
Metal Shop	Moderate
Parts Cleaning	Moderate
Mechanical/Electrical	
Electric Closet	Moderate
Elevator Machine	Moderate
Power	
Traction Power Substation	Moderate
Stores & Secured Storage	
Security Storage	Moderate
Stores Issue	Moderate
System Stores	Moderate
Shipping and Receiving	Moderate
Telephone	
Telephone Closet	Moderate
Rail Control Center	
Communications Equipment	Critical
Data Processing	Critical
Operations Control Room	Critical
CCTV	Critical
Administration	Moderate
Transportation	
Operations Computer Room	Critical
Crew Reporting	Moderate
Manager	Moderate
Assistant Manager	Moderate
Copier/Supplies	Moderate
Dispatcher	Moderate
Dispatch Storage	Moderate
Janitor	Moderate
Training/Meeting	Moderate
Instruction	Moderate
T.V. Room	Moderate
Lunchroom	Moderate
Yard Control Tower	
Yard Control Tower Room	Critical
Train Control Room	Critical
Communications Room	Critical
(All three rooms protected on stairway entrance door.)	

Note: Rooms designated as Moderate are equipped with hard key locks which normally are left unlocked.

FIGURE 3 - SECURITY LEVEL OF YARD AND SHOPS FACILITIES - II

Discipline/Room	Security
Maintenance-of Way Shop	
Automatic Train Control and Communication	
Telecommunications Room	Moderate
Maintenance	
Managerial Offices	Moderate
Copier/Supplies	Moderate
Electrical Room	Moderate
Secured Tool Room	Moderate
Tool Room	Moderate
Storage	Moderate
Lunch/Training Room	Moderate
Janitorial	
Janitor Room	Moderate
Mechanical/Electrical	
Mechanical Room	Moderate
Compressor Room	Moderate
Elevator Equipment Room	Moderate
Yard Traction Power Substation	
Traction Power Substation	Moderate (additional security by surrounding fence)
Automatic Train Control Bungalows	
ATC Bungalows	Moderate

FIGURE 4 - KEYING HIERARCHY

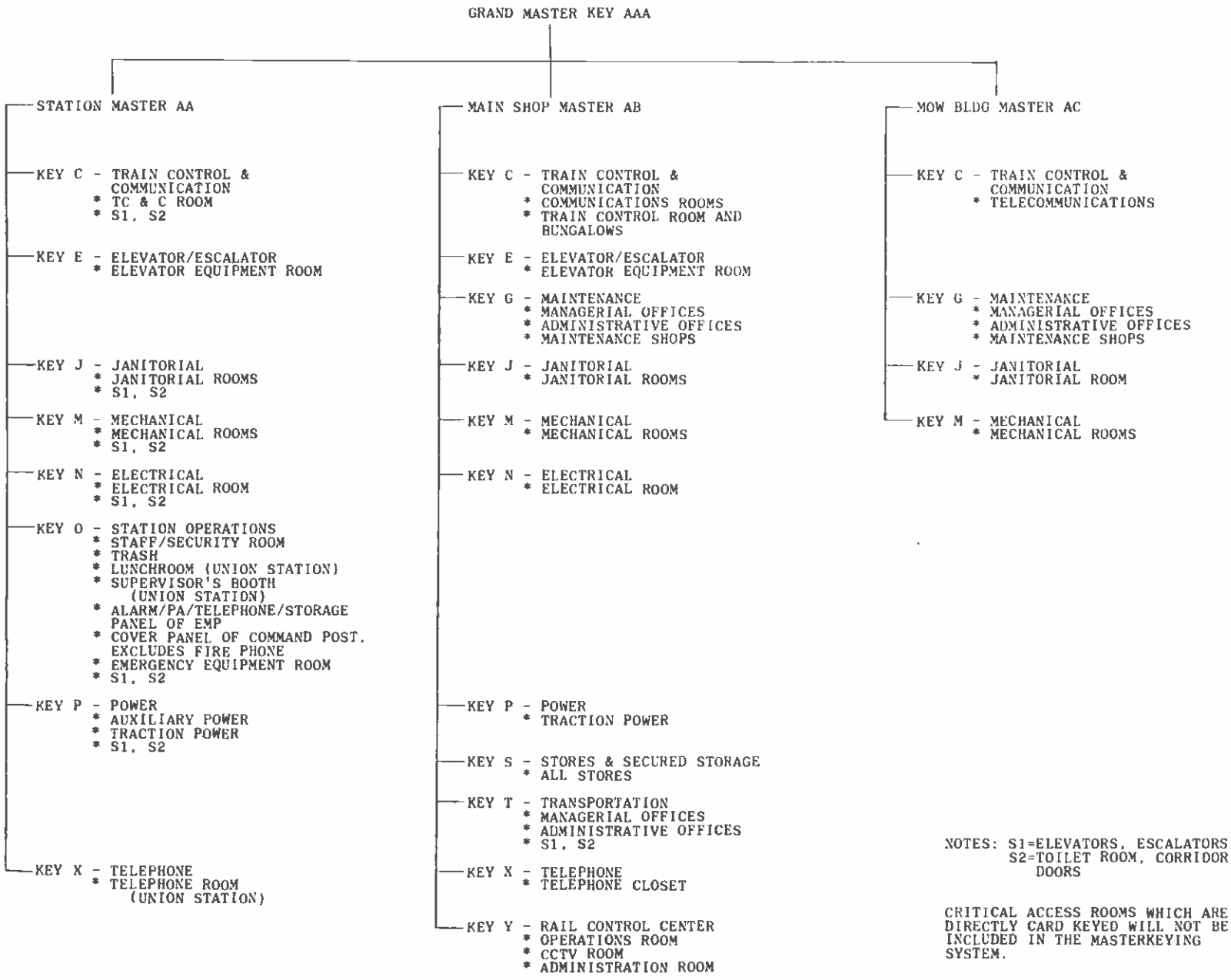


FIGURE 5 - INTRUSION ALARM CONDUIT TERMINATION

THE SCHEDULE SHOWN BELOW IS PROVIDED AS A FORMAT FOR USE BY THE A/E IN DEVELOPING THE FULL DOOR SCHEDULE ON A SITE SPECIFIC BASIS.

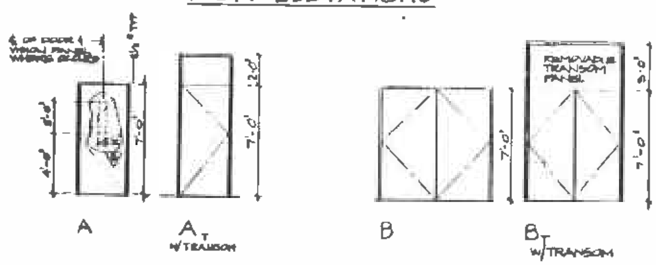
DOOR SCHEDULE

DOOR NUMBER	LOCATION OR ROOM NO	SINGLE	PAIR		THICKNESS	WIDTH	HEIGHT	MATERIAL	HARDWARE	INTRUSION	FIRE RATING	REFERENCE	REMARKS
(1)	[illegible]	A			1¾"	3'-0"	7'-0"	HM	1	[illegible]	X	AD-014 AD-015	NOTE 3, 4 @ BATTERY ROOM ONLY NOTE 10 @ TOILET ONLY
(2)	[illegible]	A			1¾"	3'-0"	7'-0"	HM	2		X	AD-014 AD-015	NOTE 6, NOTE 7 BETWEEN EMERGENCY FAN RM & EXIT CORRIDOR ONLY
(3)	[illegible]	A			1¾"	3'-6"	7'-0"	HM	3	[illegible]	X	AD-014 AD-015	NOTE 5,6,7 & ELEVATOR EQUIP RM ONLY
(4)	[illegible]	A_T			1¾"	3'-0"	7'-0"	HM	4	X	X	AD-005	NOTE 6
(5)	[illegible]	A			1¾"	3'-0"	7'-0"	HM	5		X	AD-014	W/ VISION PANEL
(7)	[illegible]		B_T		1¾"	6'-0"	7'-0"	HM	7		X	AD-014	NOTE 6, 7
(8)	[illegible]		B_T		1¾"	6'-0"	7'-0"	HM	7		X	AD-014 AD-015	NOTE 6, 7 @ CHILLER ROOM ONLY
(10)	[illegible]		B_T		1¾"	6'-0"	7'-0"	HM	7		X	AD-014 AD-015	NOTE 6, 7
(11)	STAIR EXIT		B		1¾"	7'-0"	7'-0"	HM	8		X	AD-014 AD-015	NOTE 6 W/METAL ASTRAGAL
(12)	[illegible]			X		[illegible]	11'-0"	HM	9	X		AD-014	NOTE 5,9 & SAME AS 005 FOR DETAIL
(13)	PLATFORM EXIT GATE	X				2'-0"	3'-0"	SS	10	X		AD-014 AD-015	NOTE 6L SEE 7/AD005 FOR DETAILS
(14)	[illegible]	A			1¾"	2'-6"	5'-0"	HM	11		X	AD-014 AD-015	ACCESS DOOR

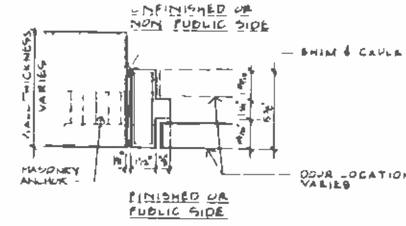
(1) IDENTIFICATION IS FOR A SPECIFIC TYPE OF DOOR(S) OF SAME SIZE, RATING HARDWARE ETC
(2) REFER TO DESIGN CRITERIA FOR UL HOUR RATING
(3) REFER TO DESIGN CRITERIA FOR HARDWARE. HARDWARE SET NUMBERS WILL BE DEVELOPED & PROVIDED IN THE SPECIFICATIONS.

(5) INTRUSION DEVICE – SEE DETAILS THIS SHEET
(6) AIR TIGHT GASKETED DOOR
(7) SOUND RATED DOOR
(8) EXIT DEVICE WITH ALARM
(9) POWER OPERATED
(10) ELECTRIC STRIKE

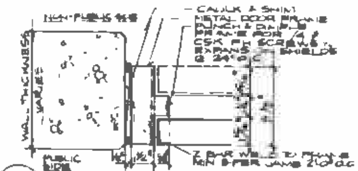
DOOR ELEVATIONS



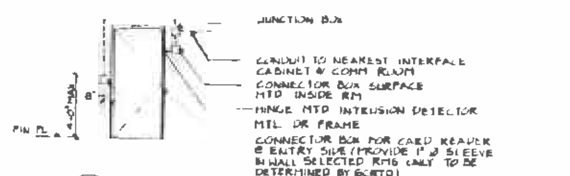
GENERAL NOTES:
1 ALL DOORS FLUSH FACE H M
2 ALL FRAMES H M ONE PIECE, SEE DETAIL 6
3 FILL JAMBS SOLID W/GROUT
4 MITER, WELD & GRIND SMOOTH FRAME CORNERS
5 PROVIDE ADJUSTABLE ANCHORS AT NON LABEL OR LABEL FRAMES AT MASONRY SURFACES.
6 AT CONC SURFACES THRU-BOLT EXP ANCHOR AT DOOR STOP, FILL BOLT HOLE RECESS & GRIND SMOOTH



6 TYPICAL H M FRAME PROFILE DOUBLE RABBET ON CMU

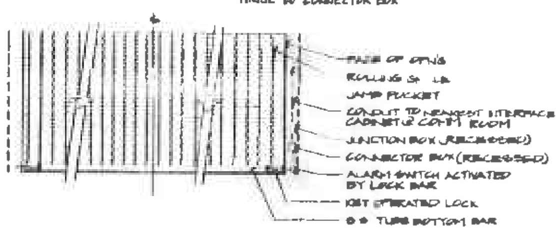


6A TYPICAL H M FRAME PROFILE DOUBLE RABBET ON CONC



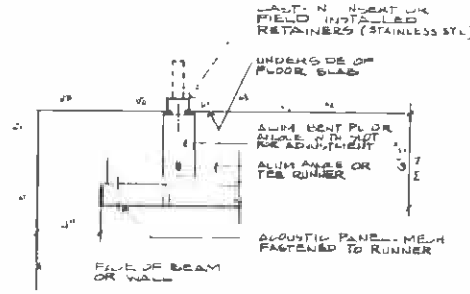
5 INTRUSION DETECTOR & CARD READER
SCALE: NONE

NOTE: FOR DOUBLE DOOR USE 1 JUNCTION BOX & PROVIDE HINGE INTRUSION DETECTOR FOR EACH TOP HINGE W/ CONNECTOR BOX

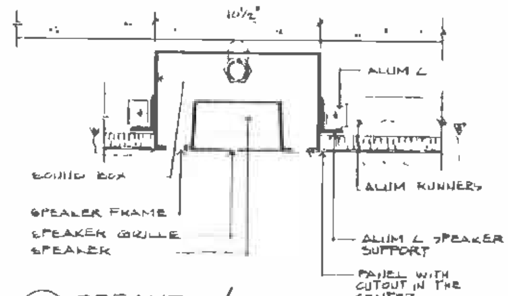


4 INTRUSION - ROLLING GRILLE
SCALE: NONE

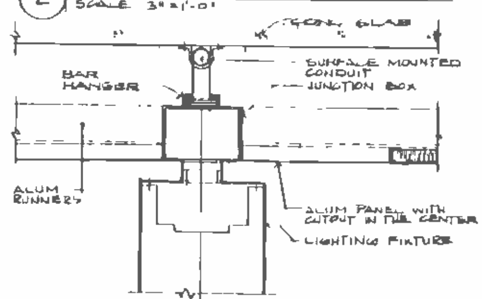
ACOUSTIC MATERIAL MOUNTING CONDITIONS



1 ACOUSTIC PANEL END CONDITION
SCALE 3" = 1'-0"



2 SPEAKER / SECTION
SCALE 3" = 1'-0"



3 LIGHT FIXTURE / SECTION
SCALE 3" = 1'-0"

REV	DATE	BY	CHK	APP	DESCRIPTION
					CR4 059 COMMENTS
					INITIAL ISSUE / SIGNATURE

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 MF, R&J.
CHECKED BY PC./RAP
IN CHARGE M.A.R
DATE 25 JUN 84

22

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
RTD

DMJM/PBQD/KE/HWA GENERAL CONSULTANTS

ARCHITECTURAL DIRECTIVE
DOOR SCHEDULE & DETAILS
ACOUSTIC PANEL DETAILS

DRAWING NO AD-023B REV 0
SCALE AS NOTED

ATTACHMENT 1

COST COMPARISON OF ALTERNATIVE

LOCKING SCHEMES

METRO RAIL TRANSIT CONSULTANTS
DMJM PBQD/KE/HWA

MEMORANDUM

DATE: August 15, 1986

TO: Distribution

FROM: T. Eng TE

SUBJECT: Construction and O&M Costs of Lock and Keying Alternatives

FILE: S350X024
X045

Attached are construction and estimated annual O&M costs for an all hard key, mixed hard key-card key, and all card key system, for use in determining extent of an access control system on the Metro Rail Project. This is in response to Action Item #1 of Agenda Item #1 assigned to the author during the second Keying Plan Working Session on June 23, 1986. The Action Item stated the author is to "confirm construction costs of a card access control system, and perform cost trade-off with hard key system including O&M costs." The calculation of some O&M cost estimates reflect comments received from Art Peterson such as locksmith salary.

Change Request 4-088, which authorized card access to the project, identified an associated cost of $263,400 for 17 stations. The updated cost is now $466,400 for the same number of card readers per station for 18 stations. Additional cost figures are for the remainder of doors which require locks and intrusion alarm that will not have card access control. These costs were excluded in the Change Request.

In response to Action Item #2, "to obtain reliability figures of a card access control system from vendors," several vendors were contacted for information. Almost all did not publish such data, except that some did estimate that proximity card readers should last 3-5 years between failures. Users of card access systems have reported very few reliability problems, with proximity systems being significantly more reliable than other types of access systems. Schlage is the only known manufacturer that publishes reliability data. Considering that they have been in the card access business for 15 years, some of the data are perhaps theoretical and not based on experience, such as the card reader failure frequency. According to them, the following components fail as stated (mean time between failures):

Proximity Card Reader - 30 Years
Microprocessor (local) - 5.6 Years
Cards (warranty) - 5 Years

Action Item #3 of Agenda Item #6 assigned to the author "to prepare layout drawings of MOS-1 stations for use in keying doors" has been completed.

Please review the cost estimates to aid in deciding the extent of a card access control system on the Metro Rail Project. Interested individuals are requested to attend the next Keying Plan Working Session on August ~~20~~ 21, 1986, at RTD (time and place to be announced) to reach a decision on this matter. Development of the Keying Plan cannot proceed until this issue is resolved.

TE:mc

Attachments (8)

cc:

BAH	MRTC	RTD	Other
L. Elliott	B. Blakesley	M. Becher	D. Bartlett (LAFD)
G. Schulman	N. Brown	R. Beuermann	D. Schiehl (LACoFD)
	T. Clawson	L. Boyden	
	~~A.~~ A. Dale	H. Budds	
	H. Chaliff*	J. Burgess	
	K. Murthy*	J. Crawley*	
		A. Peterson	
		W. Rhine*	
		J. Sandberg	
		H. Storey	

DCC (2)
Chron
Subject (2)
*w/o attachments

TABLE 1

CONSTRUCTION AND O&M COSTS - HARD KEY VS. CARD KEY

Item	MOS-1			18-STATION		
	All Hard Key ($)	Mixed Hard Key-Card ($)	All Card ($)	All Hard Key ($)	Mixed Hard Key-Card ($)	All Card ($)
Construction Costs						
1. All Hard Key System 30 Drs/Station, 12 Drs in Yard	32,400	———	———	110,400	———	———
2. Intrusion Alarm for #1	91,500	———	———	199,400	———	———
3. Proximity System 8 Drs/Station	———	195,000	———	———	466,400	———
4. Hard Key 22 Drs/Station	———	22,000	———	———	79,200	———
5. Intrusion alarm for #4 22 Drs/Station	———	67,100	———	———	146,200	———
6. All Proximity Card 30 Drs/Station	———	———	420,200	———	———	1,281,300
7. Optional Hard Key w/#3	———	8,000	———	———	28,800	———
8. TOTAL	$123,900	$294,500	$420,200	$309,800	$723,000	$1,281,300
9. Annual O&M Costs	$ 15,800	$ 19,400	$ 12,600	$ 39,200	$ 47,100	$ 38,400

Notes: Items #3 and #6 include an intrusion alarm.
See Attachments 1 thru 7 for explanation of assumptions used to derive the costs.
Costs have been rounded off.

SNT11337

ATTACHMENT 1

Construction Costs: All Hard Key

	Cost ($)	Source[A]
MOS-1		
Item 1. All Hard Key System[B]		
$200/lock x (30 locks/station x 5 stations + 12 locks/yard x 1 yard) = $32,400	$32,400	1.2
Item 2. Intrusion Alarm for All Hard Key System		
Software: $50,000 Door Contact: $62/dr x 30 dr/station x 5 stations = $9,300 I/O Ports: $60/port x 30 port/station x 5 stations[C] = $9,000 Wire and Hook-up: $23,200	$91,500	9
Item 8. Total	$123,900	
18-Station		
Item 1. All Hard Key System[B]		
$200/lock x (30 locks/station x 18 stations + 12 locks/yard x 1 yard) = $110,400	$110,400	1,2
Item 2. Intrusion Alarm for All Hard Key System		
Software: $50,000 Door Contact: $62/dr x 30 dr/station x 18 stations = $33,480 I/O Port: $60/port x 30 port/station x 18 stations = $32,400 Wire and Hook-up: $83,520	$199,400	9
Item 8. Total	$309,800	

A - Sources are listed in Attachment 7.
B - Average number of locks per station is 30 based upon typical station layouts. Exact number may vary slightly among individual stations. Excludes cost of maintenance equipment.
C - Interface with SCADA.

ATTACHMENT 2

Construction Costs: Mixed Hard Key-Card

		Cost ($)	Source[A]
	MOS-1		
Item 3.	Proximity system for 8 doors/station[B] $195,000 is estimate based on average of costs quoted by API Alarms Systems, Card Key Systems, Honeywell, and Wells Fargo Alarm Services. Applied to 8 doors/station x 5 stations	$195,000	3,4,5,6
Item 4.	Hard Key Lock for 22 doors/station $200/lock x (22 locks/station x 5 stations + 12 locks/yard x 1 yard) = $24,400	$24,400	1,2
Item 5.	Intrusion alarm for 22 Hard Keyed doors/station 73.3% (22 doors out of 30 doors) of intrusion alarm costs for 30 doors $91,500 (listed in Item 2, all hard key for MOS-1) 0.733 x $91,500 = $67,070	$67,100	9
Item 7.	Optional Hard Key on 8 proximity doors/station as backup security. $200/lock x 8 locks/station x 5 stations = $8,000	$ 8,000	1,2
Item 8.	Total	$294,500	
	18-Station		
Item 3.	Proximity System for 8 doors/station[B] $466,400 is estimate based on average cost quoted by same firms listed in Item 3 for MOS-1.	$466,400	3,4,5,6
Item 4.	Hard Key Lock for 22 doors/station $200/lock x (22 locks/station x 18 stations + 12 locks/yard x 1 yard) = $81,600	$81,600	1,2
Item 5.	Intrusion Alarm for 22 Hard Keyed doors/station 73.3% x $199,400 (Item 2 all Hard Key for 18-station) = $146,160	$146,200	6
Item 7.	Optional Hard Key on 8 proximity doors/station as backup security. $200/lock x 8 locks/station x 18 stations = $28,800	$ 28,800	1,2
Item 8.	Total	$723,000	

A - Sources are listed in Attachment 7

B - Based on the following areas being access controlled: Traction Power Room, Train Control and Communications Room, Auxiliary Power Room, Electrical (Cable) Room, and Station Entrances. Exact number of access controlled rooms may vary slightly among individual stations.

ATTACHMENT 3

Construction Costs: All Card

	Cost ($)	Source[A]
MOS-1		
Item 6. All Proximity Card $420,200 is average of costs quoted by API Alarm Systems, Card Key Systems, Honeywell, and Wells Fargo Alarm Services. Applied to 30 doors in all MOS-1 stations. Includes intrusion alarm.	$420,200	3,4,5,6
Item 8. Total	$420,200	
18-Station		
Item 6. All Proximity Card $1,281,300 is average of costs quoted by same firms listed in Item 6 for MOS-1. Applied to 30 doors/station in all 18 stations. Includes intrusion alarm.	$1,281,300	3,4,5,6
Item 8. Total	$1,281,300	

A - Sources are listed in Attachment 7.

ATTACHMENT 4

Annual O&M Costs

MOS-1: All Hard Key

1.	Intrusion Alarm Maintenance (3% of System Costs)	
	0.03 x $91,500 = $2,745	$ 2,745
2.	False Alarm Inspection	
	10 false alarms/wk x 1/2 hr. inspection/ alarm x $12.35/hr. x 52 wk/yr = $3,211	$3,200
3.	Locksmith (1/4 time)	
	0.25 x $33,000/yr = $8,250	$ 8,250
4.	Spare Parts	
	5% of System Costs 0.05 x $32,400 = $1,620	$ 1,620
	TOTAL	$15,815
	Round Off	$15,800

Explanation/Source

Item #1 Intrusion Alarm Maintenance based on in-house maintenance. Source: #4,7

Item #2 Estimate of anticipated false alarms. Hourly wage of transit police officer obtained from "Operating and Maintenance Cost Estimate MOS-1," March, 1985 prepared by Booz-Allen & Hamilton. Inspection time includes access time and actual inspection.

Item #3 Locksmith salary provided by Source #8. Excludes fringe benefits.

Item #4 Spare Parts 5-10% quoted by locksmith. Author uses low figure. Source: #1

ATTACHMENT 5

Annual O&M Costs

18-Station: All Hard Key

1.	Intrusion Alarm Maintenance (3% of System Costs) 0.03 x $199,400 = $5,982	$ 5,980
2.	False Alarm Inspection 35 false alarms/wk x 1/2 hr inspection/ alarm x $12.35/yr. x 52 wk/yr = $11,239	$11,240
3.	Locksmith (half-time) 0.5 x $33,000/yr = $16,500	$16,500
4.	Spare Parts 5% of System Costs 0.05 x $110,400 = $5,520	$ 5,520
	TOTAL	$39,240
	Round Off	$39,200

Explanation/Source

(See MOS-1 Estimates in Attachment 4)

ATTACHMENT 6

Annual O&M Costs

Mixed Hard Key-Card and All Card

MOS-1

Item 9.	Mixed Hard Key-Card	
	73.3% (22 doors out of 30 doors) of cost of all hard key O&M costs plus 3% of card system costs + 3% instrusion alarm costs. Source: #4,7 0.733 x $15,800 + 0.03 x $195,000 + 0.03 x $67,100 = $19,444	$19,400
Item 9.	All Card	
	3% of card system costs. Source: #4,7 0.03 x $420,200 = $12,606	$12,600

18-Station

Item 9.	Mixed Hard Key-Card	
	Same as above. 0.733 x $39,200 + 0.03 x $466,400 + 0.03 x $146,200 = $47,111	$47,100
Item 9.	All Card	
	Same as above. 0.03 x $1,281,300 = $38,439	$38,400

ATTACHMENT 7

List of Sources

#1 Robert Skeels & Co.
Compton, CA
(213) 639-7240
Contact: Ed Jeffry

#2 Specialty Installation
Bell Gardens, CA
(213) 928-2545
Contact: Larry Peterson

#3 API Alarm Systems
Long Beach, CA
(714) 821-1325
Contact: Gil Gonzales

#4 Card Key Systems
Chatsworth, CA
(818) 998-7560
Contact: Micky Mickens

#5 Honeywell
Los Angeles, CA
(213) 934-8964
Contact: Troy Miller

#6 Wells Fargo Alarm Services
Los Angeles, CA
(213) 758-3103
Contact: John Piccininni

#7 SensorNet
Fullerton, CA
(714) 738-4306
Contact: Erwin Ackerman

#8 RTD
Los Angeles, CA
(213) 237-2053
Contact: Art Peterson

#9 MRTC
Los Angeles, CA
(213) 612-7153
Contact: Charlie Fisher

ATTACHMENT 2

Number of Card Readers for MOS-1: Former and Current

Location	Number of Card Readers	
	Former	Current
Main Shop	12	3
Union	8	11
Civic	8	10
5th/Hill	8	11
7th/Flower	8	12 MR + 13 LRT
Alvarado	8	11
Total	52	58 MR + 13 LRT

Derivation of Construction Costs of Locking Schemes

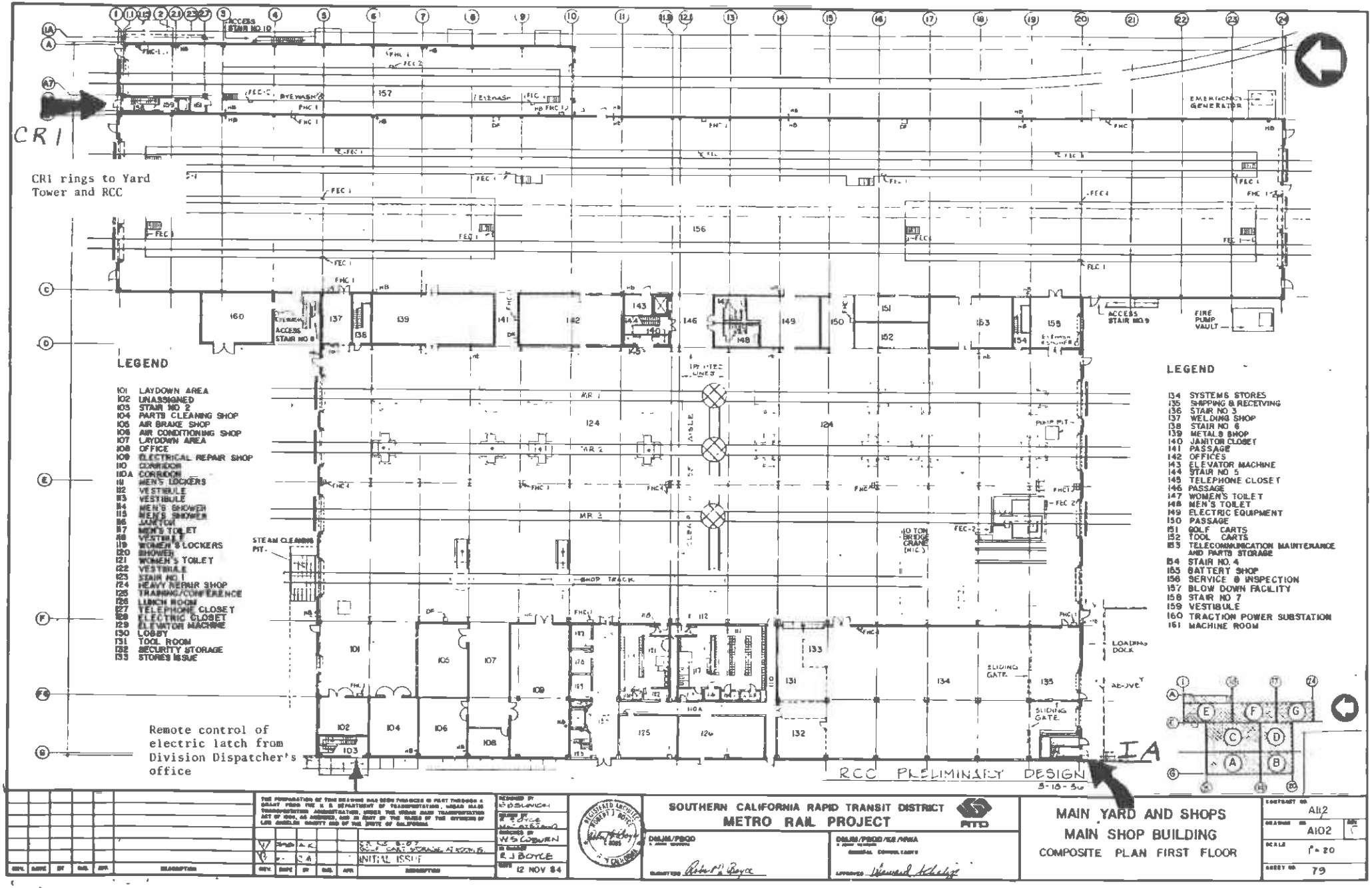
Locking Scheme	Former Construction Cost	Current Construction Cost	
MOS-1, Mixed Hard Key-Card Key	$195,000	MR: $\frac{58}{52}$ x $195,000 = $217,500 LRT: $\frac{13}{52}$ x $195,000 = $ 48,750 Total: $266,250	$266,300 (MR + LRT)
18-Station, Mixed Hard Key-Card Key	$466,400	$\frac{\text{MOS-1}}{\text{18-Station}} = \frac{\text{(MOS-1 w/o LRT)}}{\text{(18-Station) current}}$ $\frac{\$195,000}{\$466,400} = \frac{\$217,500}{x}$ x = $520,215 + 48,750 (LRT) $568,965 (MR + LRT)	→ $569,000 (MR + LRT)
MOS-1 All Card Key	$420,200	$420,200 + $48,750 (LRT) = $468,950	→ $469,000
18-Station, All Card Key	$1,281,300	$1,281,300 + $48,750 (LRT) = $1,330,050	→ $1,330,100

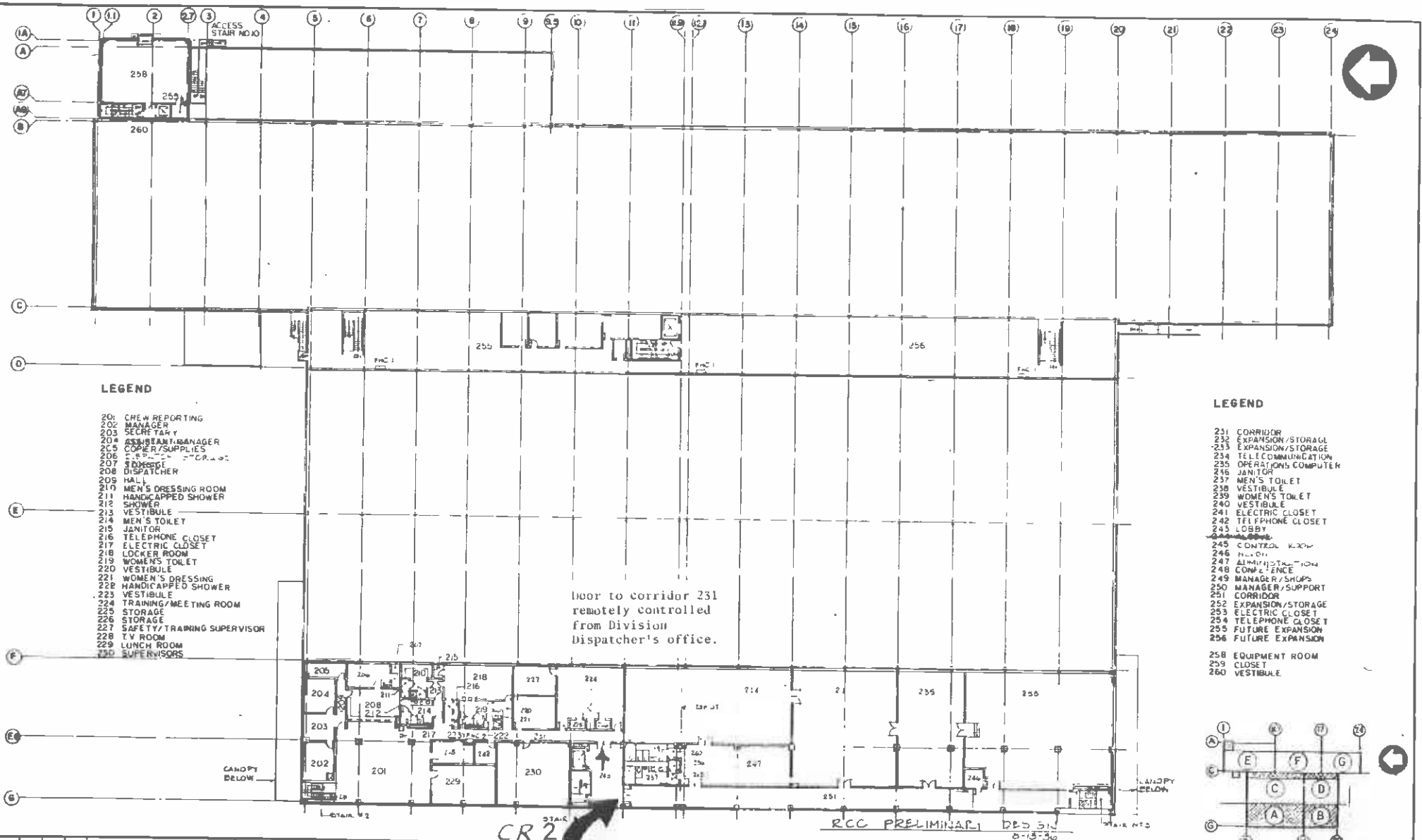
Construction and Annual O&M Costs of Mixed Hard Key-Card Key and All Card Key Systems

Cost/Locking Scheme	MOS-1		18-Station	
	Mixed Hard Key-Card Key	All Card	Mixed Hard Key-Card Key	All Card
1. Construction Cost	$266,300	$469,000	$569,000	$1,330,100
2. Annual O&M Costs	$ 19,400	$ 12,600	$ 47,100	$ 38,400

ATTACHMENT 3

FACILITY DRAWINGS OF MOS-1 STATIONS
AND MAIN SHOP SHOWING CARD READER LOCATIONS


CR1
CR1 rings to Yard Tower and RCC
LEGEND
101 LAYDOWN AREA
102 UNASSIGNED
103 STAIR NO 2
104 PARTS CLEANING SHOP
105 AIR BRAKE SHOP
106 AIR CONDITIONING SHOP
107 LAYDOWN AREA
108 OFFICE
109 ELECTRICAL REPAIR SHOP
110 CORRIDOR
110A CORRIDOR
111 MEN'S LOCKERS
112 VESTIBULE
113 VESTIBULE
114 MEN'S SHOWER
115 MEN'S SHOWER
116 JANITOR
117 MEN'S TOILET
118 VESTIBULE
119 WOMEN'S LOCKERS
120 SHOWER
121 WOMEN'S TOILET
122 VESTIBULE
123 STAIR NO 1
124 HEAVY REPAIR SHOP
125 TRAINING/CONFERENCE
126 LUNCH ROOM
127 TELEPHONE CLOSET
128 ELECTRIC CLOSET
129 ELEVATOR MACHINE
130 LOBBY
131 TOOL ROOM
132 SECURITY STORAGE
133 STORES ISSUE
LEGEND
134 SYSTEMS STORES
135 SHIPPING & RECEIVING
136 STAIR NO 3
137 WELDING SHOP
138 STAIR NO 6
139 METALS SHOP
140 JANITOR CLOSET
141 PASSAGE
142 OFFICES
143 ELEVATOR MACHINE
144 STAIR NO 5
145 TELEPHONE CLOSET
146 PASSAGE
147 WOMEN'S TOILET
148 MEN'S TOILET
149 ELECTRIC EQUIPMENT
150 PASSAGE
151 GOLF CARTS
152 TOOL CARTS
153 TELECOMMUNICATION MAINTENANCE AND PARTS STORAGE
154 STAIR NO. 4
155 BATTERY SHOP
156 SERVICE & INSPECTION
157 BLOW DOWN FACILITY
158 STAIR NO 7
159 VESTIBULE
160 TRACTION POWER SUBSTATION
161 MACHINE ROOM
Remote control of electric latch from Division Dispatcher's office
RCC PRELIMINARY DESIGN 5-18-84
1A
ACCESS STAIR NO.10
ACCESS STAIR NO.9
ACCESS STAIR NO.8
EMERGENCY GENERATOR
FIRE PUMP VAULT
STEAM CLEANING PIT
SHOP TRACK
10 TON BRIDGE CRANE (TYP.)
LOADING DOCK
SLIDING GATE
PUMP PIT
MR 1
MR 2
MR 3
AISLE
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
RTD
MAIN YARD AND SHOPS
MAIN SHOP BUILDING
COMPOSITE PLAN FIRST FLOOR
CONTRACT NO. Alt2
DRAWING NO. A102
SCALE 1" = 20'
SHEET NO. 79
INITIAL ISSUE
12 NOV 84
R.J BOYLE
W.S COBURN



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.B. ELLINGER
DRAWN BY	BOYCE/LOPEZ
CHECKED BY	W.B. COBURN
IN CHARGE	R.J. BOYCE
DATE	12 NOV 84

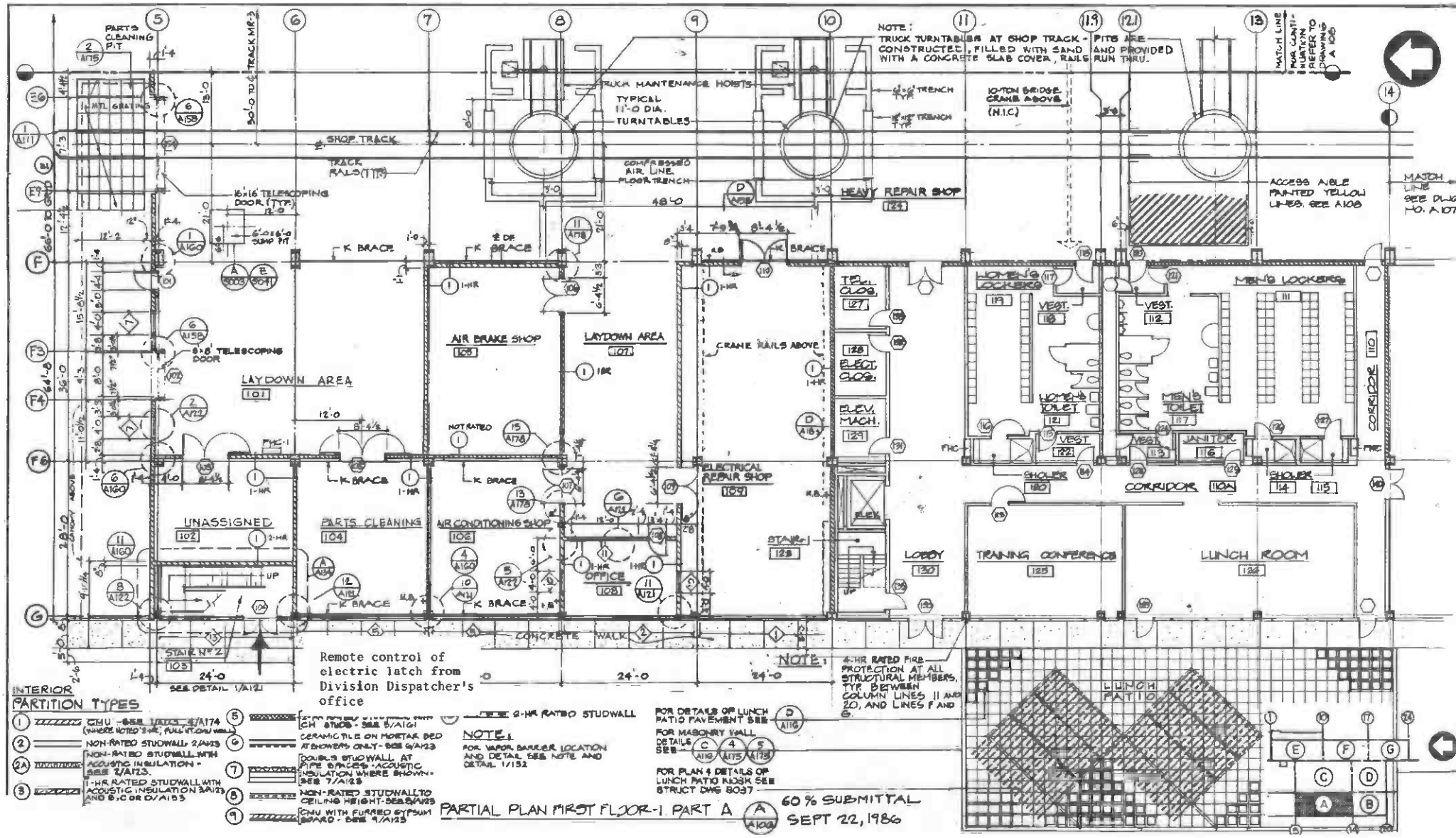
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBQD

DMJM/PBQD/KE/HNBA

MAIN YARD AND SHOPS
MAIN SHOP BUILDING
COMPOSITE PLAN SECOND FLOOR

CONTRACT NO.	A112
DRAWING NO.	A103
SCALE	1" = 20'
SHEET NO.	80

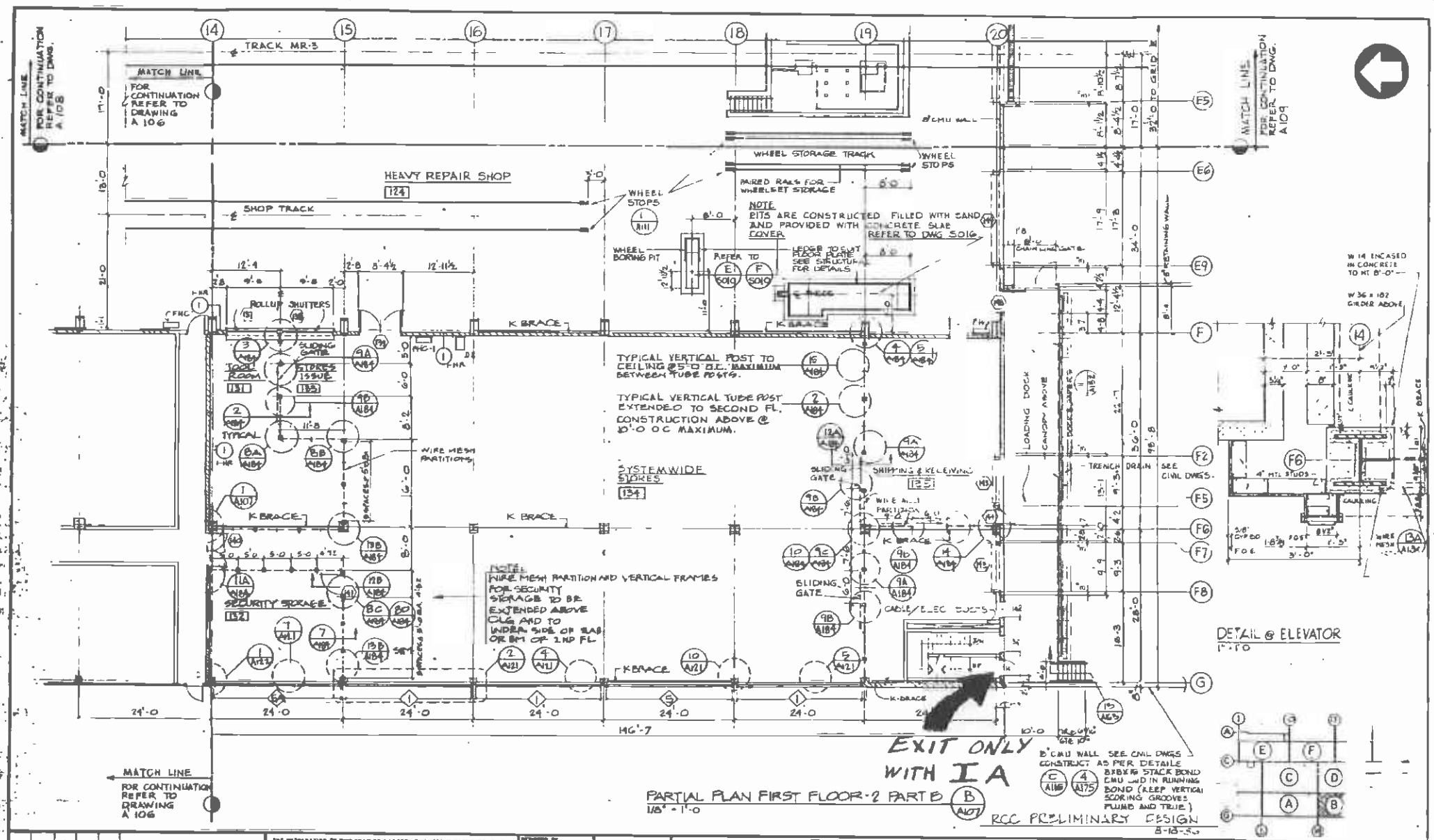


GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IN PART BY THE TAXES OF THE CITIZENS OF

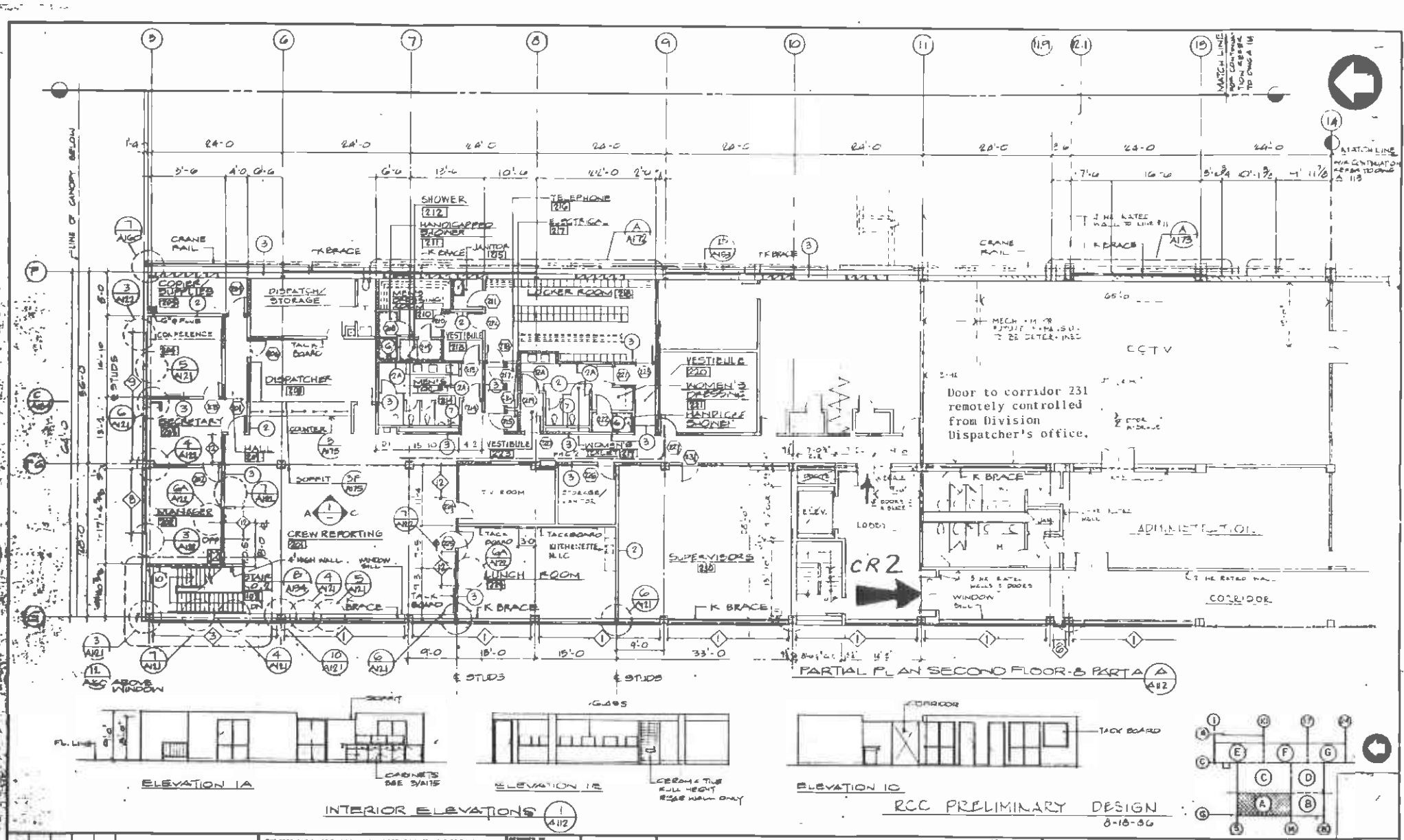
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

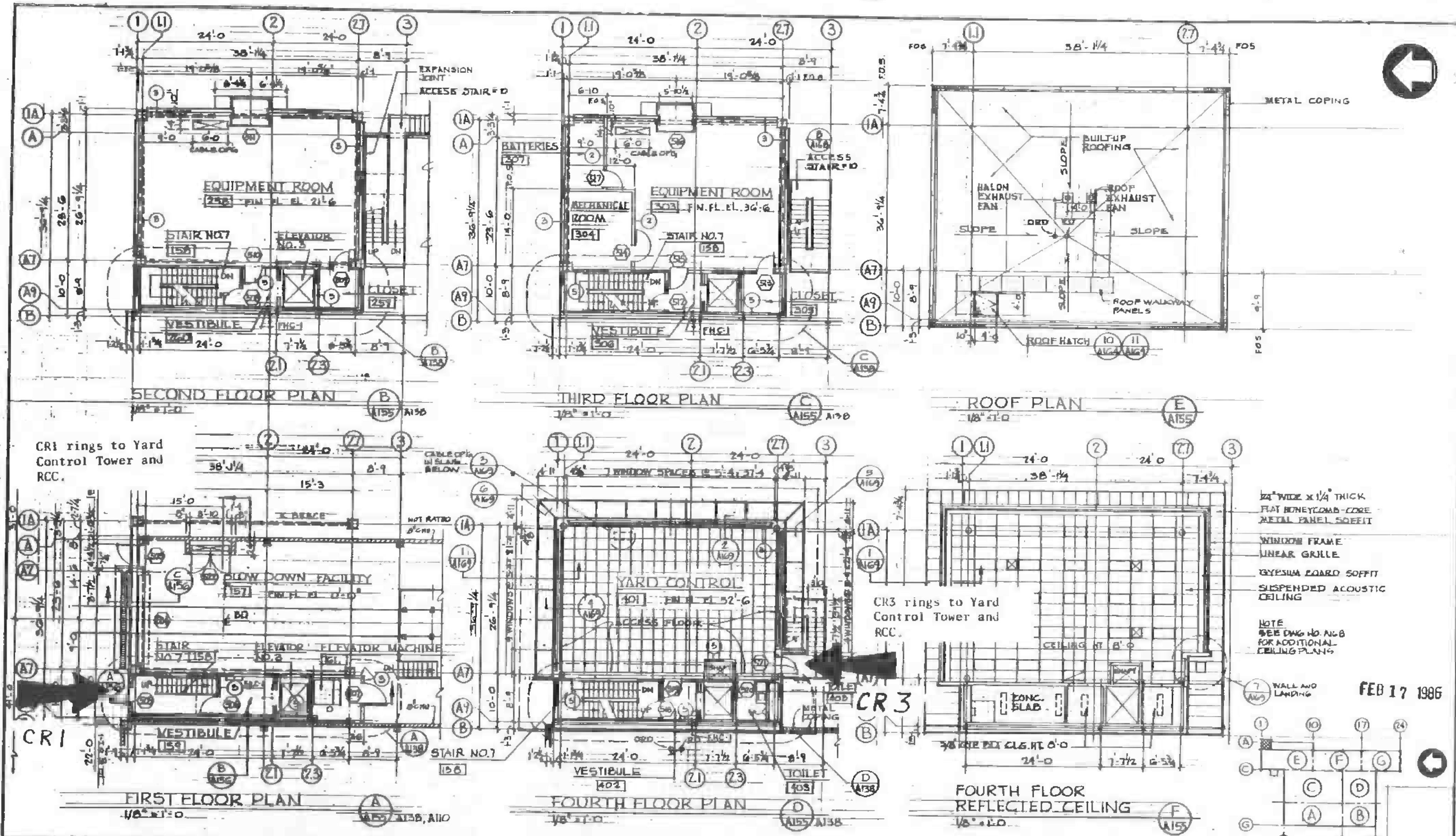
MAIN YARD AND SHOPS
MAIN SHOP BUILDING
PARTIAL PLAN FIRST FLOOR - 1
PART A

A112
A10B
1"=1'-0"



DESIGNED BY	B.D.SLINACKI	SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT	MAIN Y..RD AND SHOPS
DRAWN BY	C WONG	METRO RAIL PROJECT	MAIN SHOP BUILDING
CHECKED BY	W.S.COBURN	RTD	PARTIAL PLAN FIRST FLOOR-2
APPROVED BY	K J BOYCE		PART B
DATE	12 NOV 84		CONTRACT NO A112
REV.	INITIAL ISSUE		DRAWING NO A107
			SCALE AS NOTED
			SHEET NO 84


Door to corridor 231 remotely controlled from Division Dispatcher's office.
CCTV
CR2
PARTIAL PLAN SECOND FLOOR-B PART A
ELEVATION 1A
ELEVATION 1B
ELEVATION 1C
INTERIOR ELEVATIONS
RCC PRELIMINARY DESIGN
8-18-86
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
MAIN YARD AND SHOPS
MAIN SHOP BUILDING
PARTIAL PLAN SECOND FLOOR - B, PART - A
A112
INITIAL ISSUE
12 NOV. 86



FEB 17 1986

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

INITIAL ISSUE

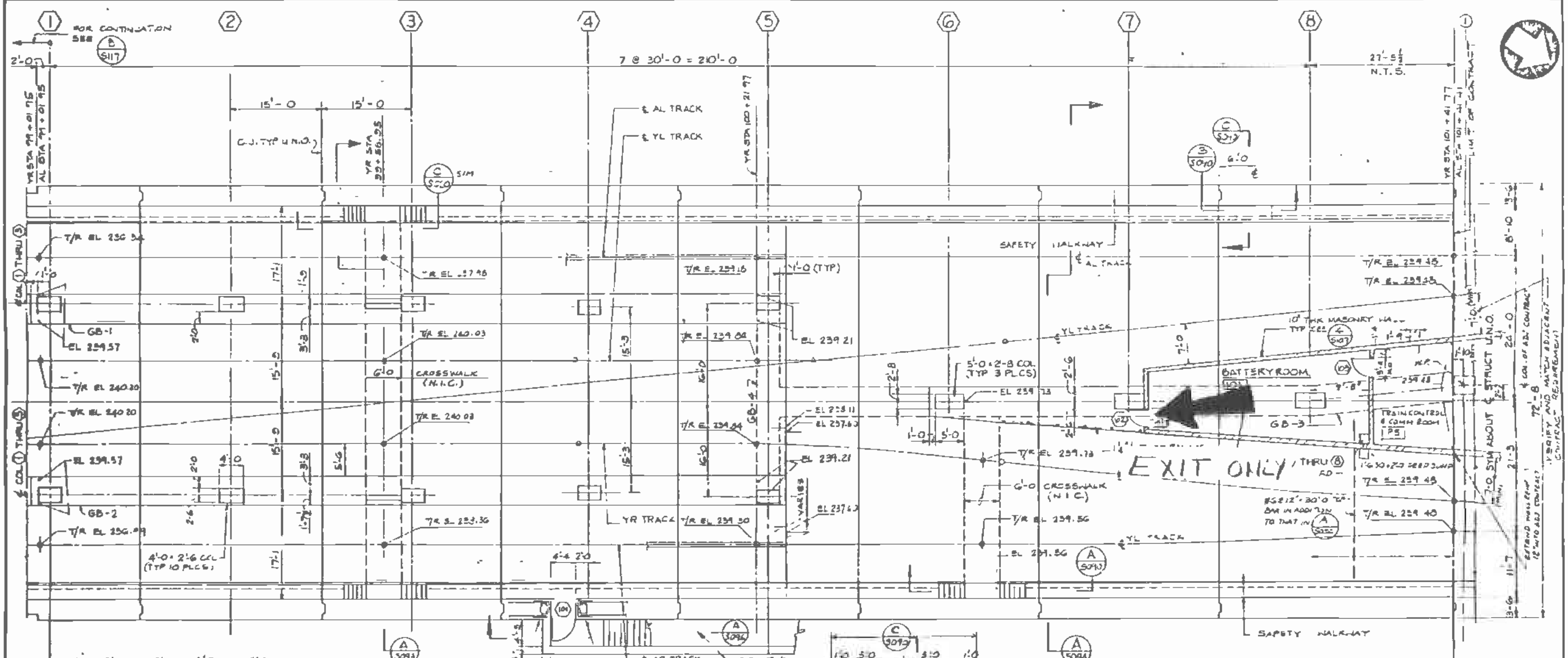
DESIGNED BY S.B. SLIWICKI
DRAWN BY R.J. BOYCE
CHECKED BY W.E. COBURN
IN CHARGE R.J. BOYCE
DATE 12 NOV. 84

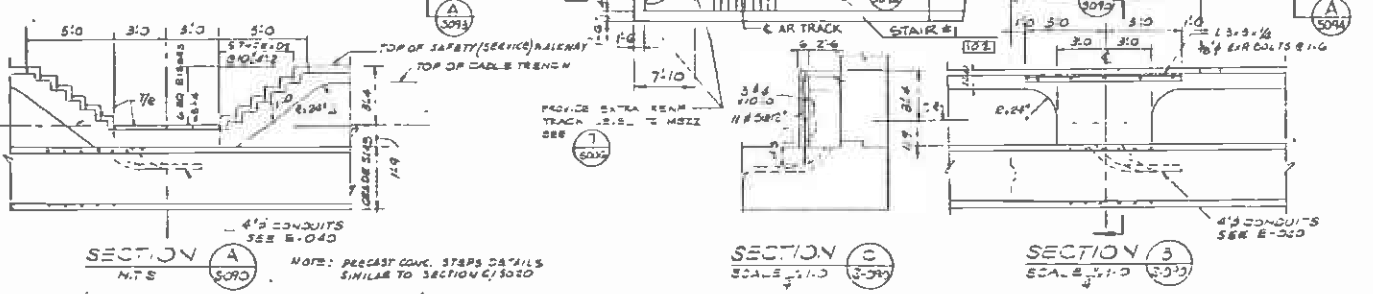
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBQD
DMJM/PBQD/KE/HNA

MAIN YARD AND SHOPS
MAIN SHOP BUILDING
CONTROL TOWER PLANS

CONTRACT NO. A112
DRAWING NO. A155
SCALE 1/8" = 1'-0
SHEET NO. 147





NOTES.

1. FOR GENERAL NOTES SEE S100, SEE NOTES ALSO ON S005
2. SEE CIVIL DRAWINGS FOR T/R ELEVATIONS. T/R ELEV SHOWN ARE FOR REFERENCE ONLY (WHICH IS A BASIS FOR THE CONCRETE ELEVATIONS INDICATED) ANY VARIATIONS ON THESE ELEVATIONS WILL AFFECT THE CONCRETE ELEVATIONS ACCORDINGLY AND THEREFORE MUST BE REDESIGNED TO MATCH.
3. FOR TOP OF SLAB ELEVATION FROM COL ⑤ TO END OF CONTRACT USE AR TRACK T/R ELEVATION PLUS 1'-9. ALL OTHER T/R ELS SHOWN ARE SHOWN FOR REFERENCE ONLY
4. FOR BEAM SCHEDULE GB-1 TO GB-4 SEE DWG NO S099.
5. FOR DOOR AND FRAME SCHEDULE AND DETAILS SEE DWG NO S105
6. FOR ALL FLOOR DRAINS AND SUMP PITS SIZES REFER TO PLUMBING DRAWINGS

MAY 29 1986

7. FINISH TC & COMMUNICATION ROOM FLOOR WITH 12" × 12" VINYL COMP TILE. WALLS TO BE SEALED AS SPECIFIED AND PAINTED
8. BATTERY ROOM TO HAVE ACID RESISTANT FUSED COATING AT FLOOR

REV	DATE	BY	SUB	APP	DESCRIPTION
4					REVISED PER CRS-307
3					REVISED PER CRS-264
2		MS			REVISED PER CRS-202
1					REVISED PER CRS-202
0					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 SSU/EYE/NC
DRAWN BY KHM/ROV
CHECKED BY MSY/AZARIAN
DATE 1 MAR 85

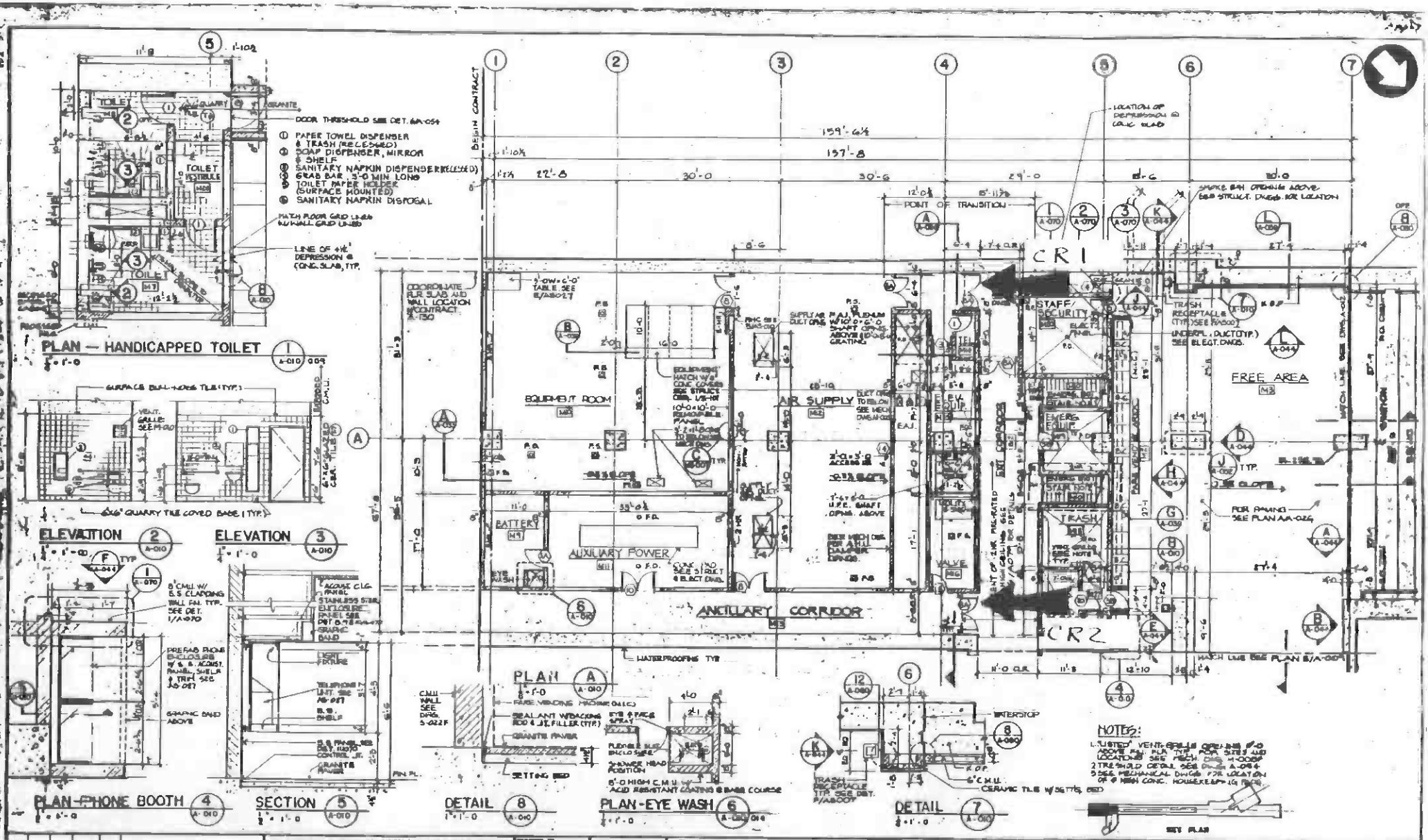
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
RTD

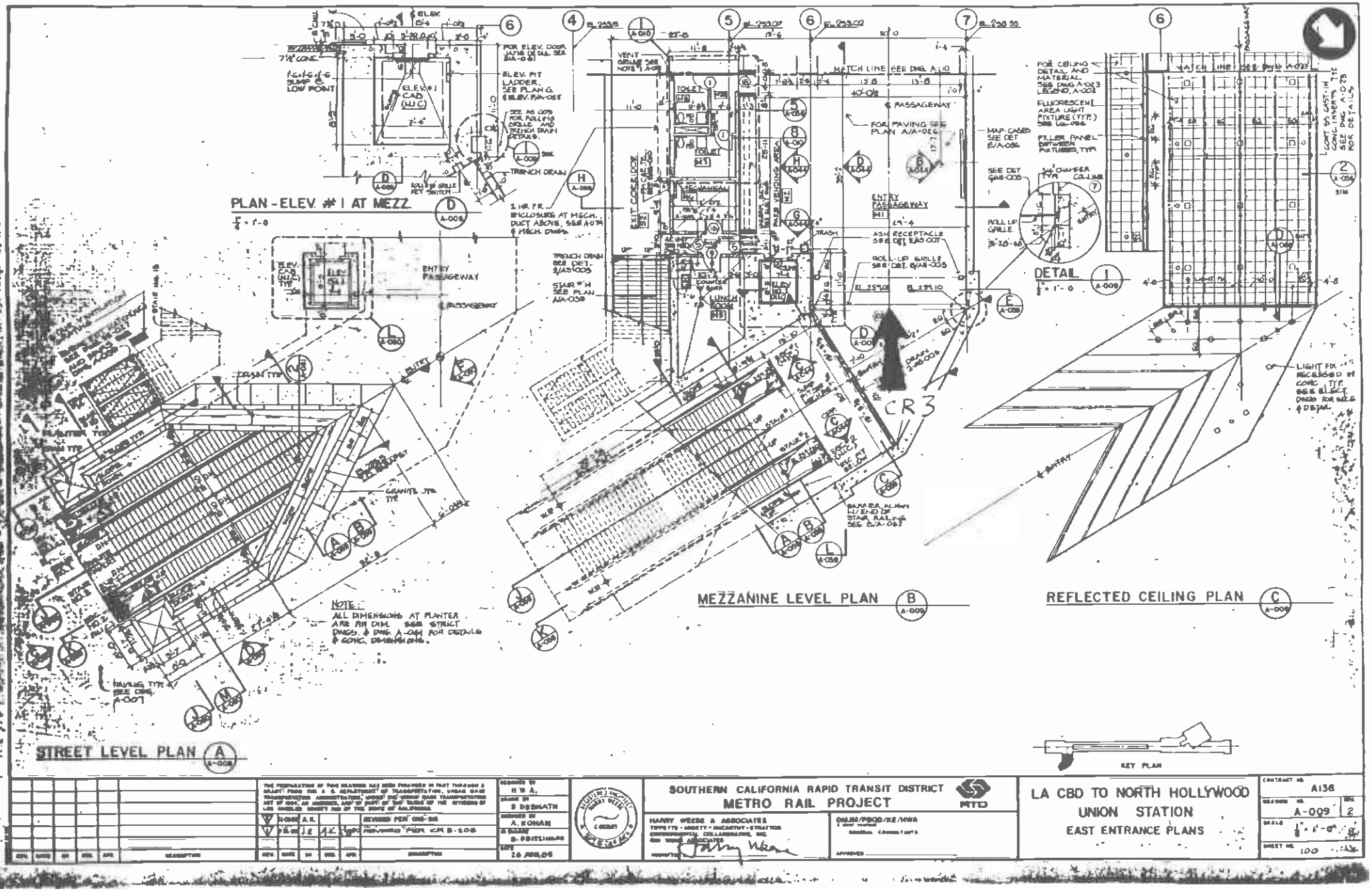
DMJM/PBQD
SUBMITTED [illegible]

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

MAIN YARD AND SHOPS
YARD LEADS
TRACTION POWER SUBSTATION-1
TRACK LEVEL PLAN

CONTRACT NO A130
DRAWING NO S090 REV 4
SCALE 1/8" = 1'-0
SHEET NO 198


PLAN — HANDICAPPED TOILET
ELEVATION
ELEVATION
PLAN-PHONE BOOTH
SECTION
DETAIL
PLAN-EYE WASH
DETAIL
PLAN
EQUIPMENT ROOM
AIR SUPPLY
STAFF/ SECURITY
FREE AREA
TRASH
BATTERY
AUXILIARY POWER
ANCILLARY CORRIDOR
EXIT CORRIDOR
CR1
CR2
NOTES:
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
LA CBD TO NORTH HOLLYWOOD
UNION STATION
PARTIAL MEZZANINE LEVEL PLAN
EAST ENTRANCE

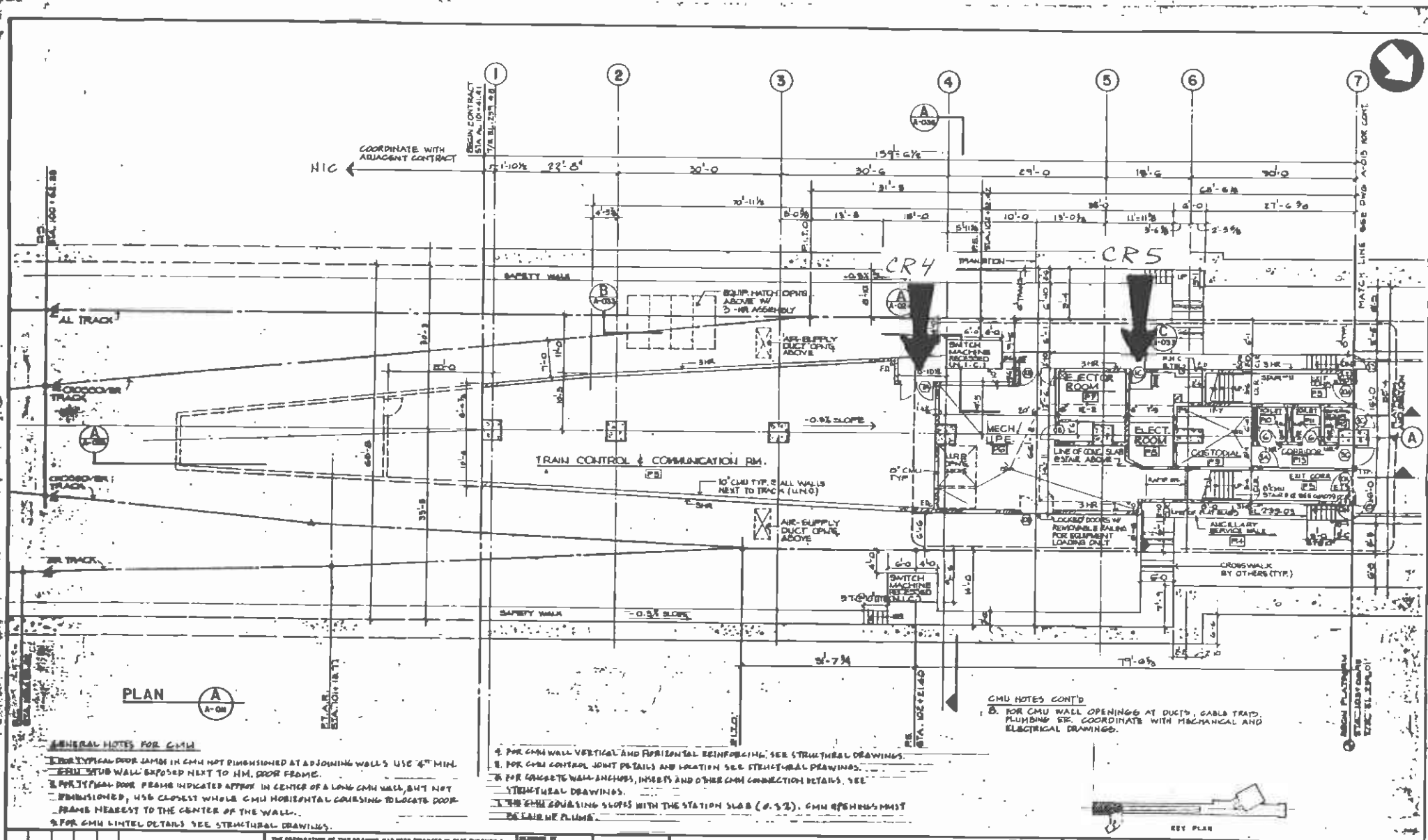


SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
MTD

HARRY WEESE & ASSOCIATES

LA CBD TO NORTH HOLLYWOOD
UNION STATION
EAST ENTRANCE PLANS

CONTRACT NO. A136
DRAWING NO. A-009 REV. 2
SCALE 1" = 1'-0"
SHEET NO. 100



GENERAL NOTES FOR CMU

1. FOR TYPICAL DOOR JAMBS IN CMU NOT DIMENSIONED AT ADJOINING WALLS USE 4" MIN. CMU STUB WALL EXPOSED NEXT TO HM. DOOR FRAME.
2. FOR TYPICAL DOOR FRAME INDICATED APPROX. IN CENTER OF A LONG CMU WALL, BUT NOT DIMENSIONED, USE CLOSEST WHOLE CMU HORIZONTAL COURSING TO LOCATE DOOR FRAME NEAREST TO THE CENTER OF THE WALL.
3. FOR CMU LINTEL DETAILS SEE STRUCTURAL DRAWINGS.
4. FOR CMU WALL VERTICAL AND HORIZONTAL REINFORCING, SEE STRUCTURAL DRAWINGS.
5. FOR CMU CONTROL JOINT DETAILS AND LOCATION SEE STRUCTURAL DRAWINGS.
6. FOR CONCRETE WALL ANCHORS, INSERTS AND OTHER CMU CONNECTION DETAILS, SEE STRUCTURAL DRAWINGS.
7. THE CMU COURSING SLOPES WITH THE STATION SLAB (0.5%). CMU OPENINGS MUST BE LAID UP PLUMB.

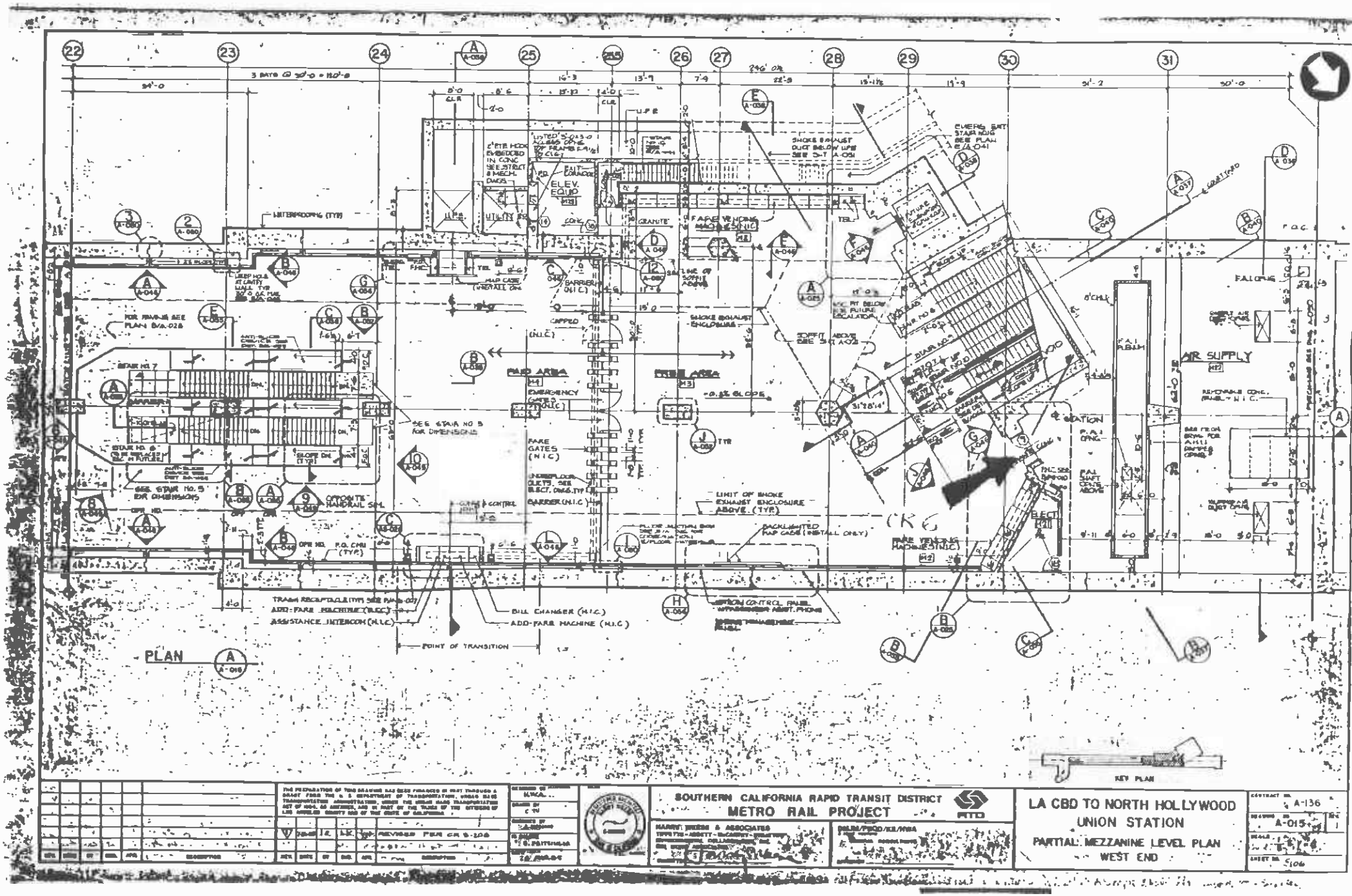
CMU NOTES CONT'D

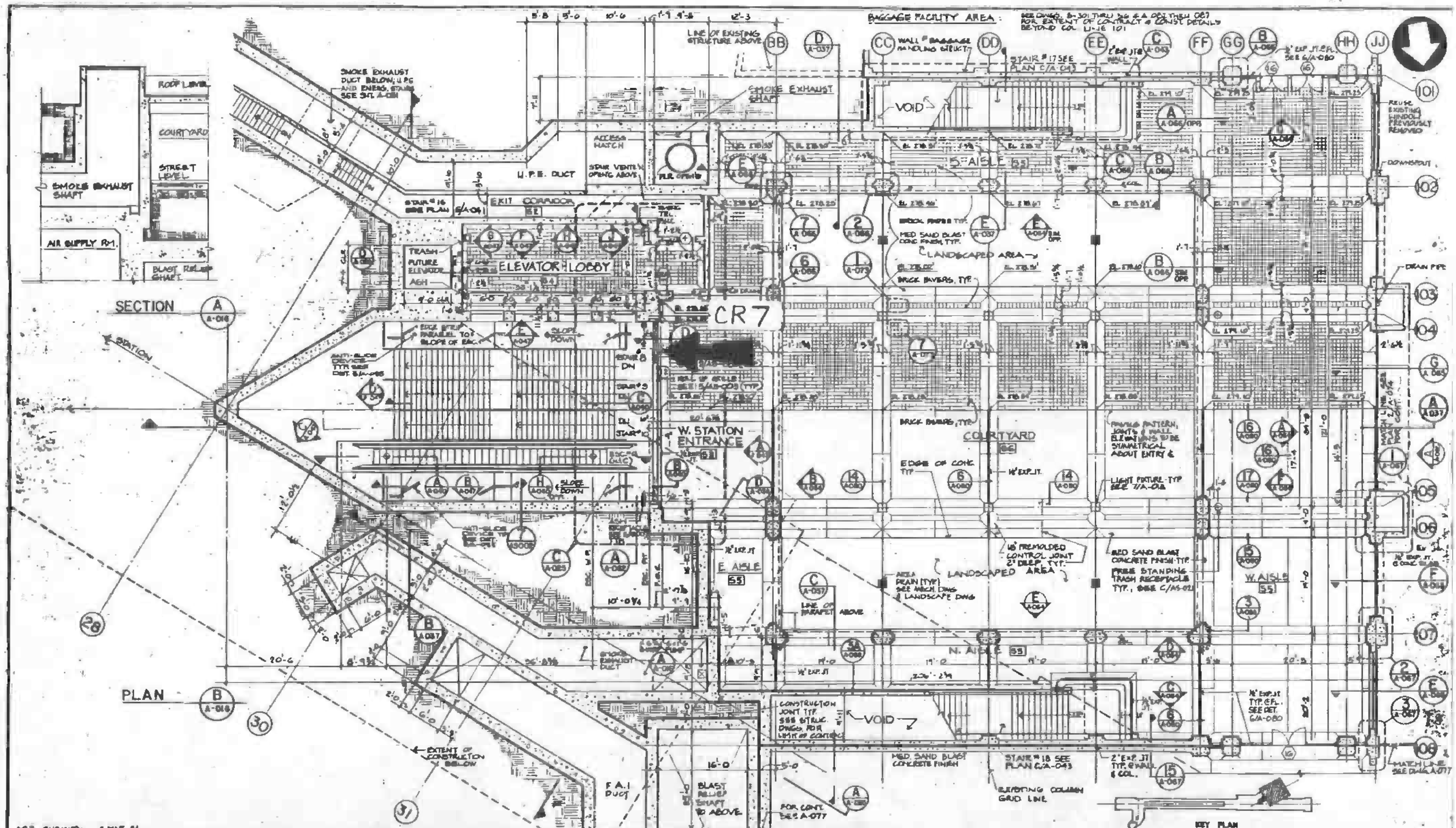
8. FOR CMU WALL OPENINGS AT DUCTS, CABLE TRAYS, PLUMBING ETC. COORDINATE WITH MECHANICAL AND ELECTRICAL DRAWINGS.

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
HARRY WEESE & ASSOCIATES

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

CONTRACT NO. A136
DRAWING NO. A-011
SHEET NO. 105


PLAN
KEY PLAN
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
LA CBD TO NORTH HOLLYWOOD
UNION STATION
PARTIAL MEZZANINE LEVEL PLAN
WEST END
A-136
A-015
5106



90% SUBMITTAL 9 MAR 81

REV.	DATE	BY	CHK.	APP.	DESCRIPTION
1	9-?-85	A.K.			REVISED PER CR9-215
2	7-?-86	J.R.	A.K.		REVISED PER CR S-208

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

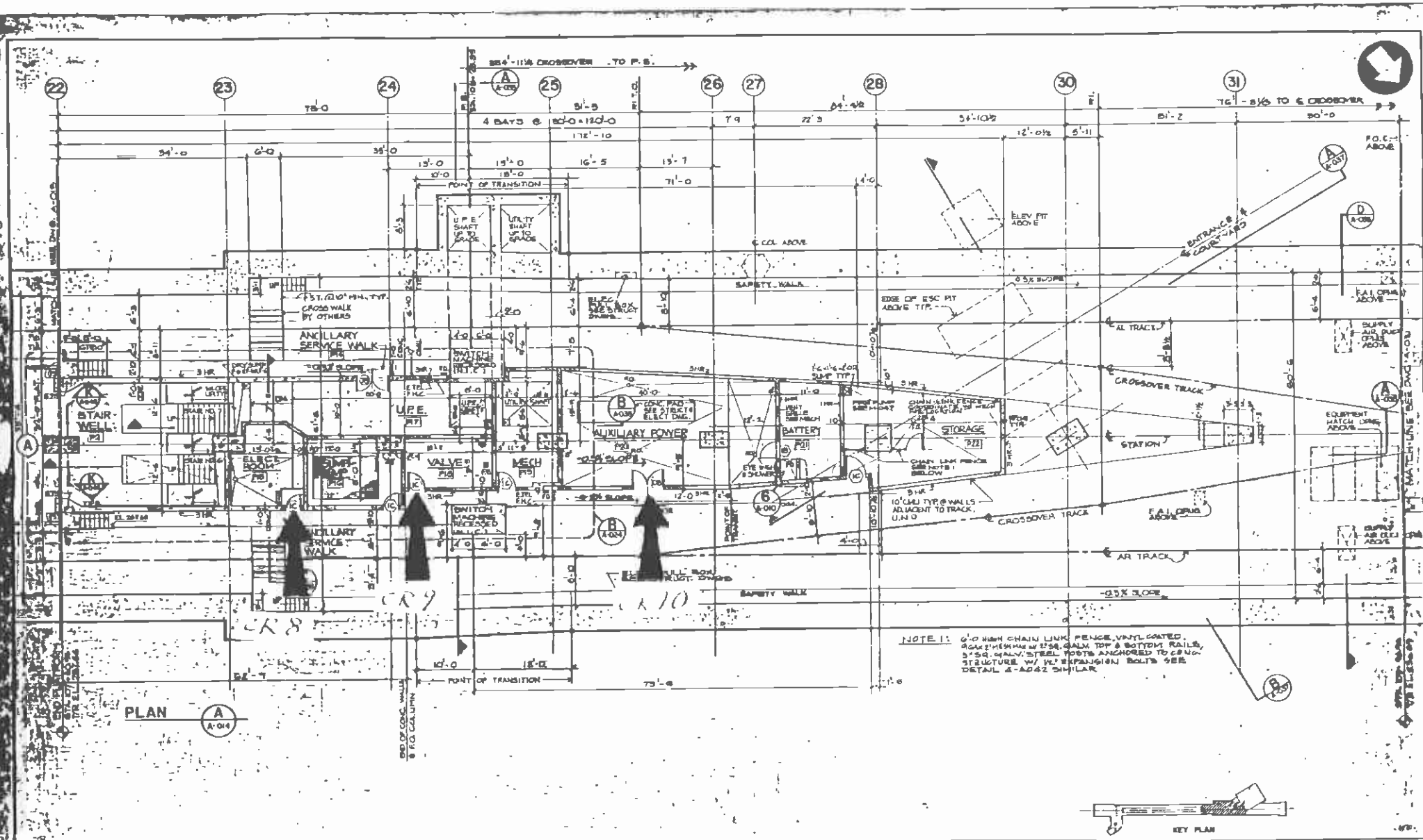
DESIGNED BY H.W.A.
DRAWN BY A. ROMAN
CHECKED BY C.TU
IN CHARGE D. [illegible]
DATE 26 FEB 81

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
RTD

HARRY WEESE & ASSOCIATES
TIPPETTS - ABBETT - McCARTHY - STRATTON
ENVIRONMENTAL COLLABORATIVE, INC.
DMJM/PBQD/KE/HWA
SUBMITTED [illegible]
APPROVED

LA CBD TO NORTH HOLLYWOOD
UNION STATION
WEST ENTRANCE PLAN
STREET LEVEL

CONTRACT NO. A136
DRAWING NO. A-016
REV. 2
SCALE 1/8" = 1'-0
SHEET NO. 107



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

NO.	DATE	BY	CHK	APP	DESCRIPTION
2	10 FEB 84	AK			REVISED PER CPS-218
1	7 DEC 83	AK			REVISED PER CR 8-208

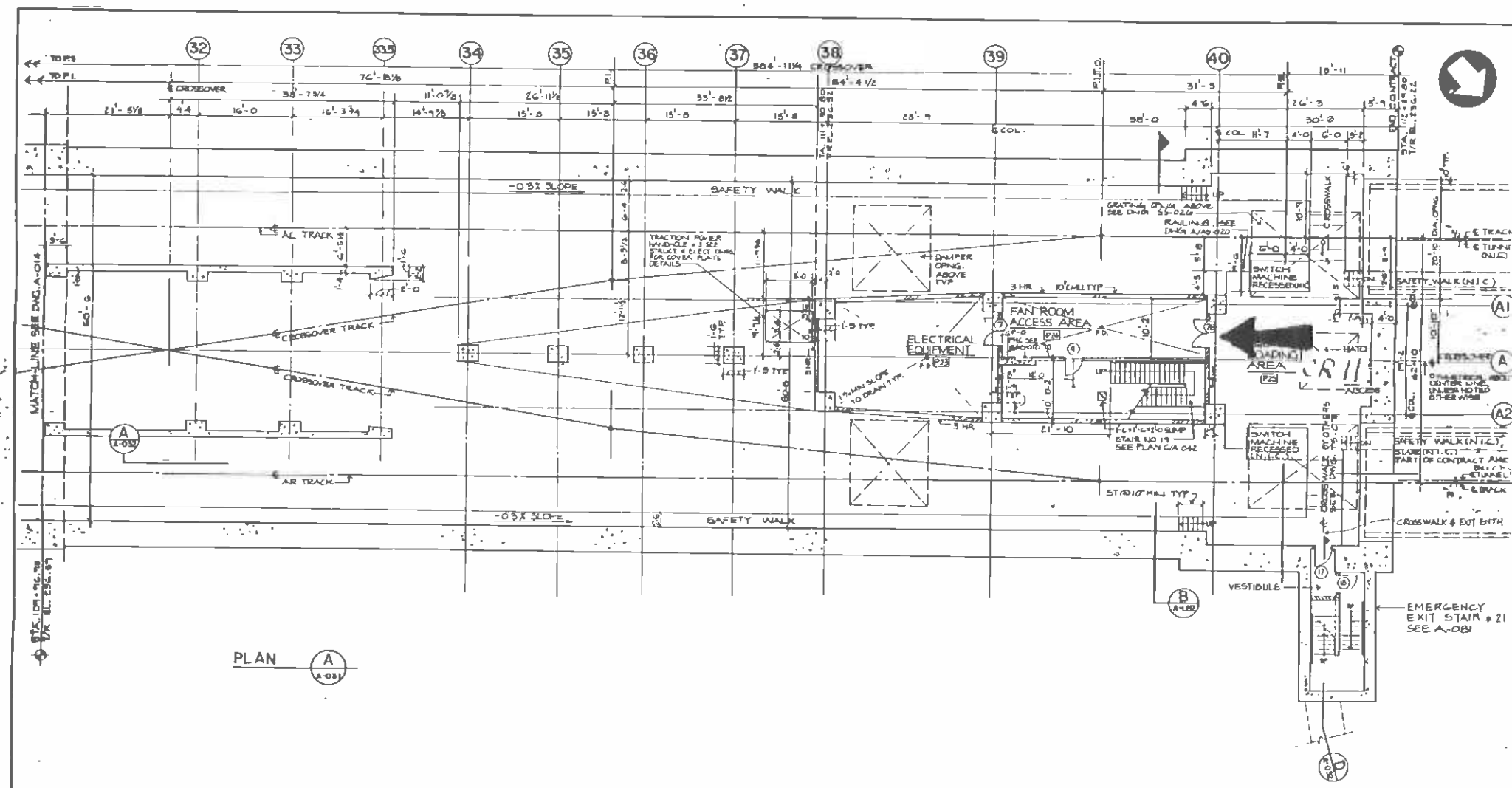
DESIGNED BY H.M.A.
DRAWN BY C.YU
CHECKED BY A.GRAHAM
QUANTITIES B.WHITEMARSH
DATE 10 FEB 84

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
RTD

HARRY WEESE & ASSOCIATES
TIPPETTS - ABBETT - McCARTHY - STRATTON
ENVIRONMENTAL COLLABORATIVE, INC.
DAIN/PB&D/KE/HWA

LA CBD TO NORTH HOLLYWOOD
UNION STATION
WEST ANCILLARY ROOM PLAN PLATFORM LEVEL

CONTRACT NO. A136
DRAWING NO. A-014
REV. 2
SCALE 1/8" = 1'-0"
SHEET NO. 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

REV	DATE	BY	BUS	APP	DESCRIPTION
B	08-85	A K			REVISED PER CRS 218
A	08-85	JR			REVISED PER CRS 208

DESIGNED BY M.W.A.
DRAWN BY C. YU
CHECKED BY A. MORAN
IN CHARGE D. PRITCHARD
DATE 10 FEB 85

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
RTD

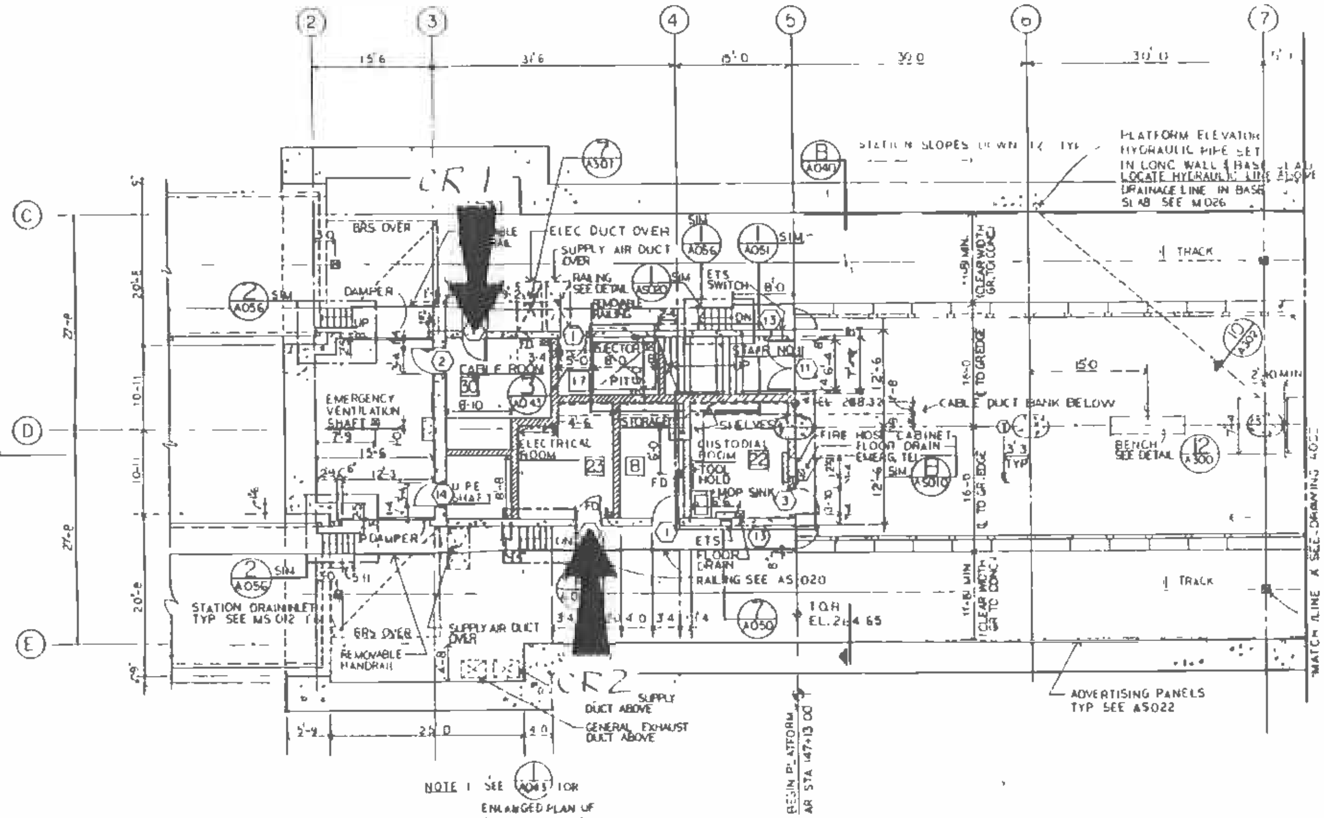
HARRY WEESE & ASSOCIATES
TIPPETTS – ABBETT – McCARTHY – STRATTON
ENVIRONMENTAL COLLABORATIVE, INC.
GAN WONG ASSOCIATES

DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

APPROVED

LA CBD TO NORTH HOLLYWOOD UNION STATION
WEST EMERGENCY FAN ROOM PLAN TRACK LEVEL

CONTRACT NO. A136
DRAWING NO. A-031
REV. 1
SCALE 1/4"-1'-0
SHEET NO. 122



NOTE 1 SEE 1/A043 FOR ENLARGED PLAN OF ANCILLARY AREA
2 SEE A040 FOR FLOOR FINISH PLAN
3 SEE A020 FOR REFLECTED CEILING PLAN
4 SEE A043 FOR E.T.S. LOCATIONS

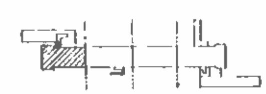
(WALL AND SYMBOL LEGEND)

TYPICAL TO ALL PLANS AND SECTIONS

- CONCRETE WALLS AND COLUMNS
- 8" CONCRETE MASONRY WALLS ALL CELLS SOLID GROUTED W/4 HR. FIRE RATING
- TRASH RECEPTACLES (FLOOR MOUNTED ROUND) C/AS007
- TRASH RECEPTACLES (WALL MOUNTED ROUND) C/AS007
- ASH RECEPTACLES A/AS007
- MOUNTING HEIGHT
- LIGHTING FIXTURE
- VOLTAGE OTHER THAN 277

NOTES TYP TO ALL ARCH DRAWINGS

1. ALL DOOR AND BLOCKOUT DIMENSIONS ARE ROUGH OPENINGS (TYPICAL FOR ALL ARCH DRAWINGS)
2. ALL STREET AND SIDEWALK ELEVATIONS ARE TO BE COORDINATED WITH EXISTING LEVELS SHOWN ON EXISTING DRAWINGS AND FIELD VERIFIED.
3. WHERE BACKFACE OF EQUIPMENT IN FIREPROOF WALLS IS EXPOSED, CONSTRUCT 6" CMU WALLS TO MAINTAIN REQUIRED FIRE RATING
4. SEE STRUCTURAL DRAWINGS FOR CMU WALLS WHICH HAVE BEEN CONSTRUCTED IN FIRST STAGE CONTRACT A141.
5. ALL C.I.P. CONCRETE WILL HAVE BEEN COMPLETED IN FIRST STAGE CONTRACT A141.
6. CONTRACTOR TO COORDINATE STAGE TWO (A147) DRAWINGS WITH STAGE ONE (A141) DRAWINGS AND RECORD DRAWINGS
7. WORK THE ARCHITECTURAL SET OF DRAWINGS IN COORDINATION WITH THE ARCHITECTURAL STANDARD DRAWINGS



KEY 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

DATE 30 AUG 85

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

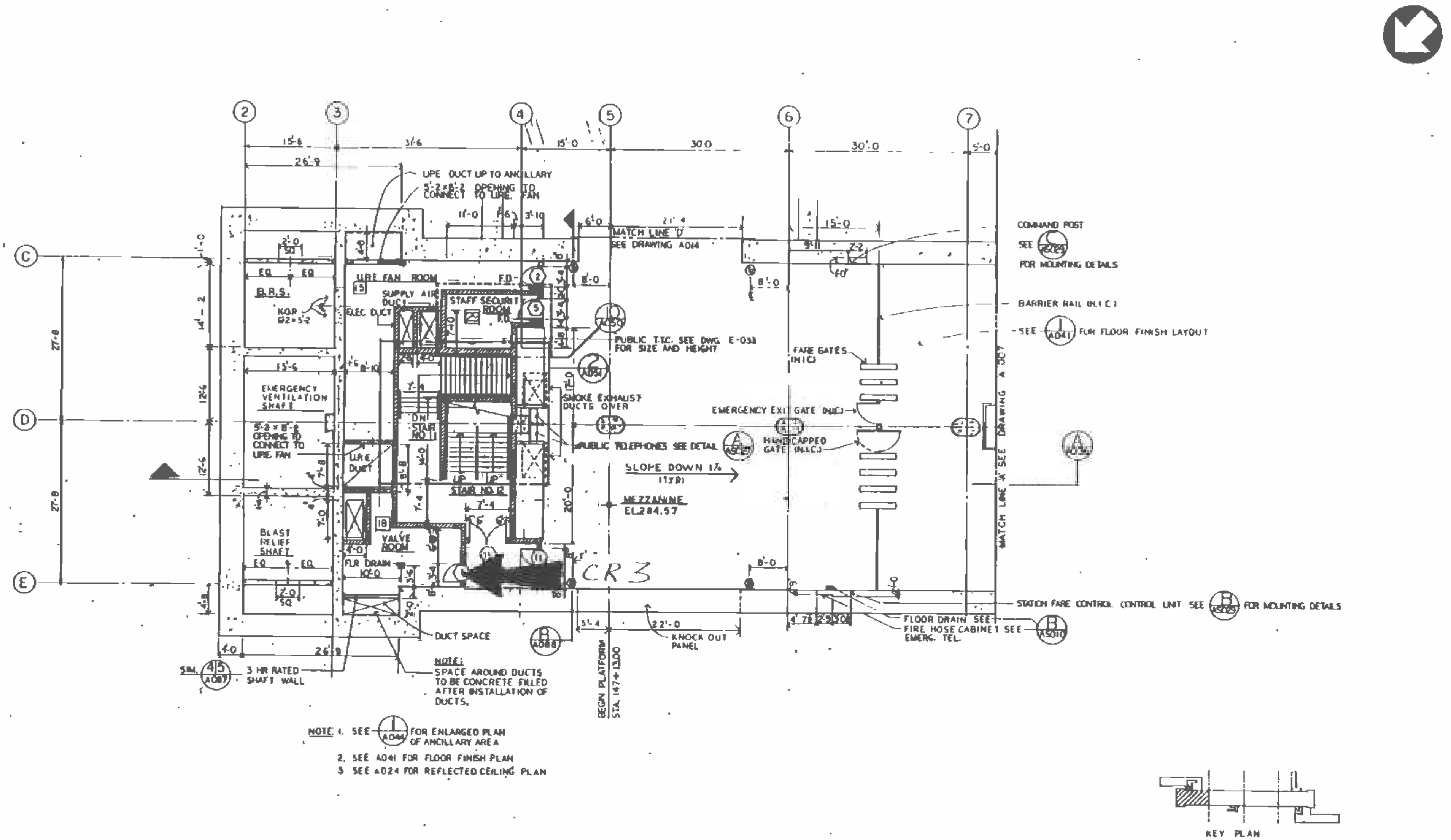
DHR — ARTHUR ERICKSON ARCHITECTS INC.

DMJM/PBQD/KE/HWA — GENERAL CONSULTANTS

LA CBD TO NORTH HOLLYWOOD
CIVIC CENTER STATION

PLATFORM PLAN 1

CONTRACT NO. A-147
DRAWING NO. A-002
SCALE 1/8" = 1'-0
SHEET NO. 25



NOTE 1. SEE A044 FOR ENLARGED PLAN OF ANCILLARY AREA
2. SEE A041 FOR FLOOR FINISH PLAN
3. SEE A024 FOR REFLECTED CEILING PLAN

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

RTD

DHR

ARTHUR ERICKSON ARCHITECTS INC

DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

30 AUG 85

LA CBD TO NORTH HOLLYWOOD
CIVIC CENTER STATION

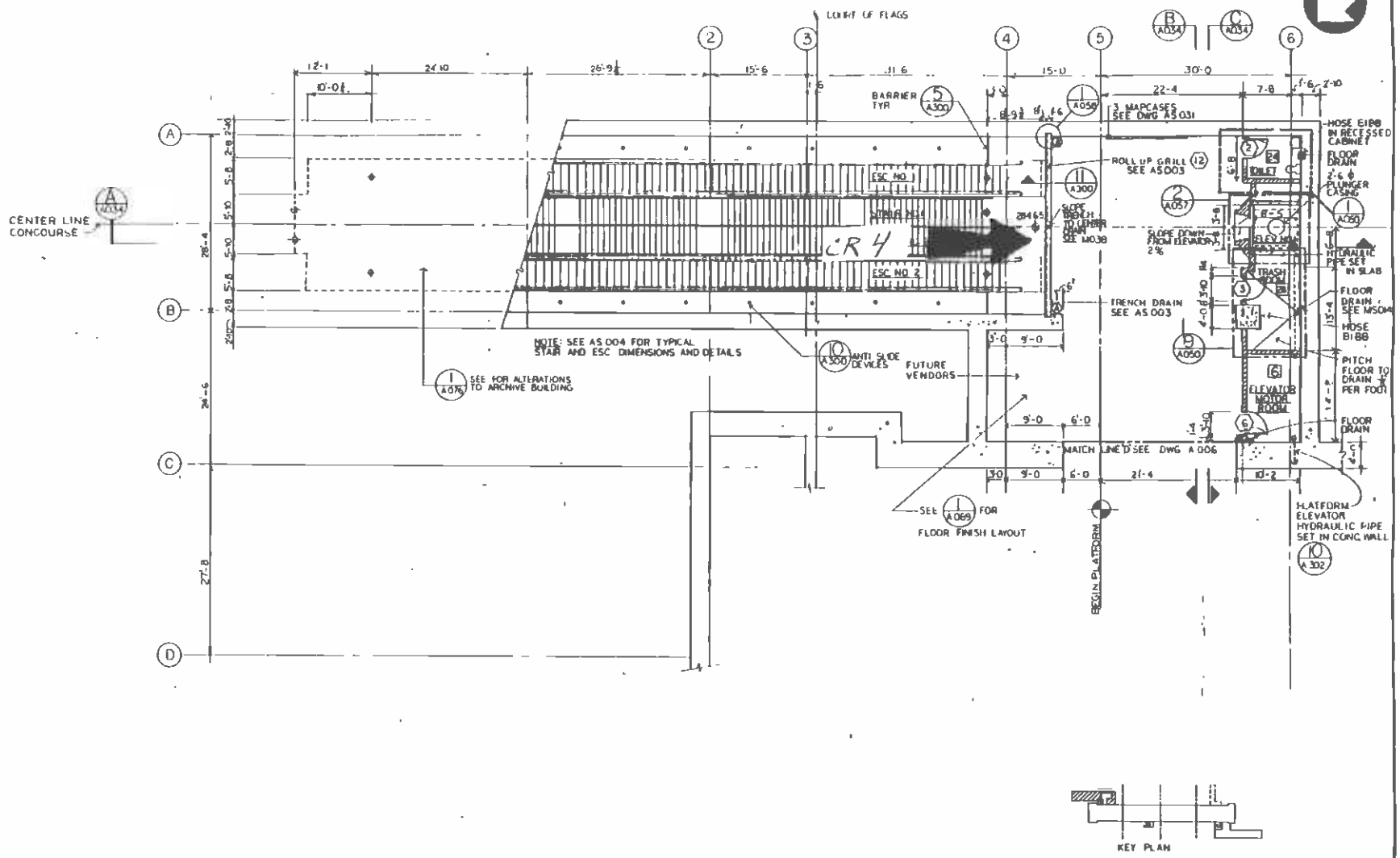
MEZZANINE PLAN 1

CONTRACT NO. A 147

DRAWING NO. A-006

SCALE 1/8" = 1'-0

SHEET NO. 29



REV.	DATE	BY	ENG.	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 IS SUBJECT TO THE TERMS OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF CALIFORNIA.

REV.	DATE	BY	ENG.	APP.	DESCRIPTION

DRAWN
CHECKED BY
DESIGNED BY
DATE 30 AUG 85

REGISTERED ARCHITECT — STATE OF CALIFORNIA

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DHA — ARTHUR DIXON ASSOCIATES INC.

DMJM/PB00/KE/HWA

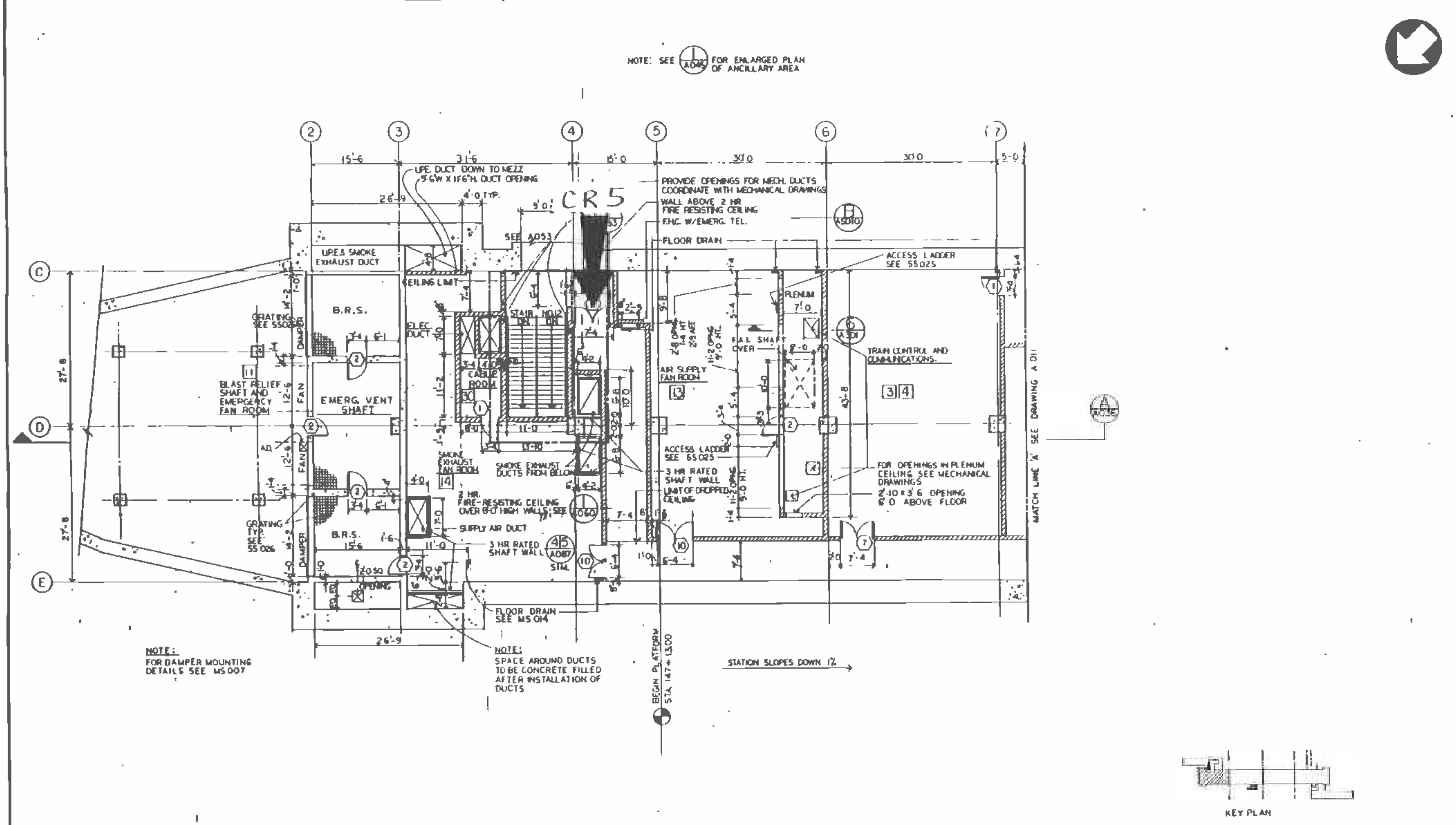
SUBMITTED

APPROVED

LA CBD TO NORTH HOLLYWOOD
CIVIC CENTER STATION

N E ENTRANCE PLAN I

CONTRACT NO. A 147
DRAWING NO. A-014 REV.
SCALE 1/8" = 1'-0"
SHEET NO. 37



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

RTD

ARTHUR ERICKSON ARCHITECT INC.

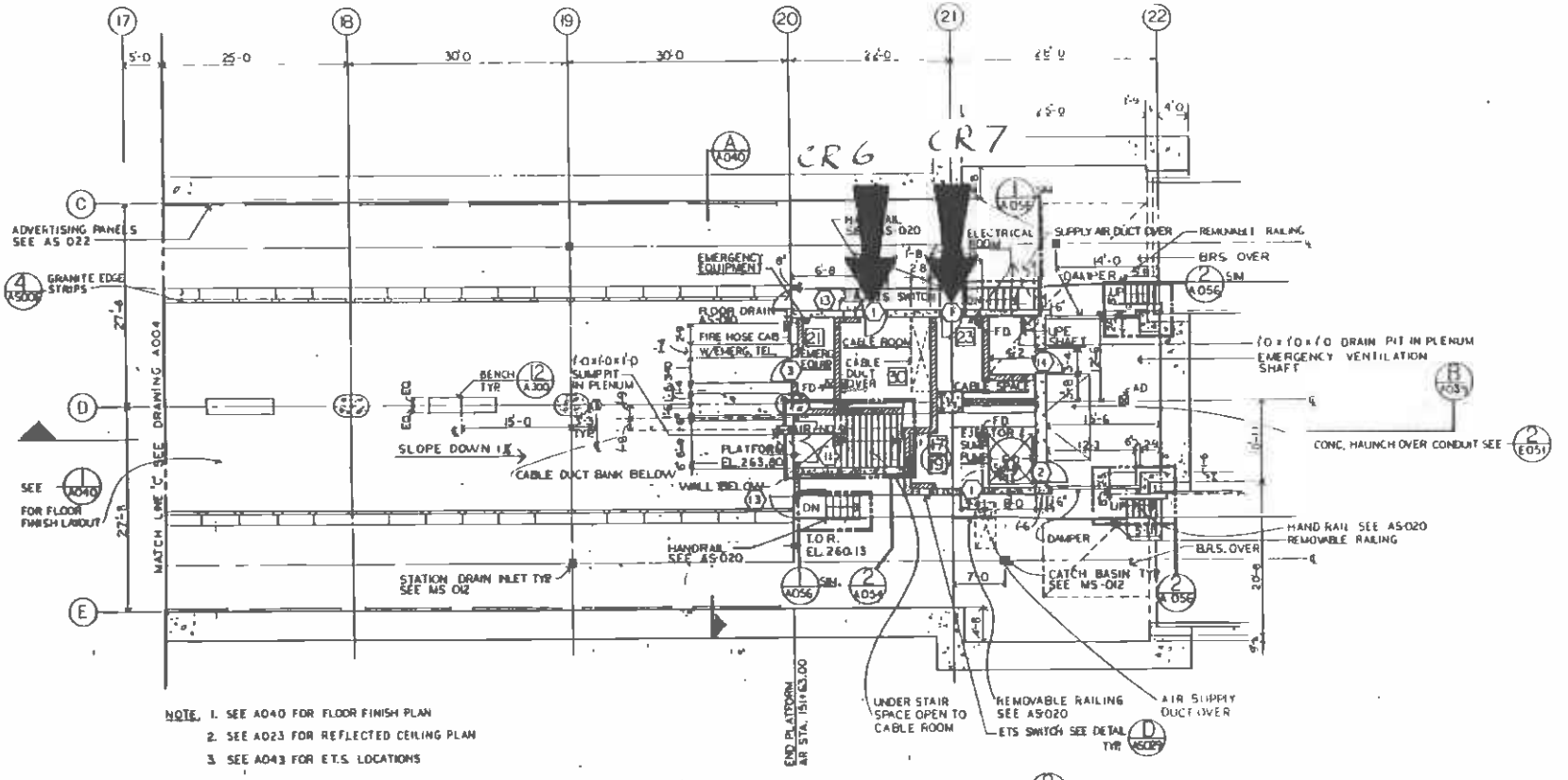
DMJM/PBQD/KE/HWA GENERAL CONSULTANTS

30 AUG 85

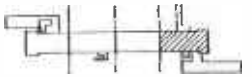
LA CBD TO NORTH HOLLYWOOD
CIVIC CENTER STATION

ANCILLARY PLAN 1

CONTRACT NO. A 147
DRAWING NO. A-010
SCALE 1/8" = 1'-0"
SHEET NO. 33



NOTE. 1. SEE A040 FOR FLOOR FINISH PLAN
2. SEE A023 FOR REFLECTED CEILING PLAN
3. SEE A043 FOR E.T.S. LOCATIONS



KEY PLAN

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	CHK	APP	DESCRIPTION

APPROVED
DESIGNED BY
DRAWN BY
CHECKED BY
DATE 30 AUG 85

REGISTERED ARCHITECT STATE OF CALIFORNIA

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
SCRTD

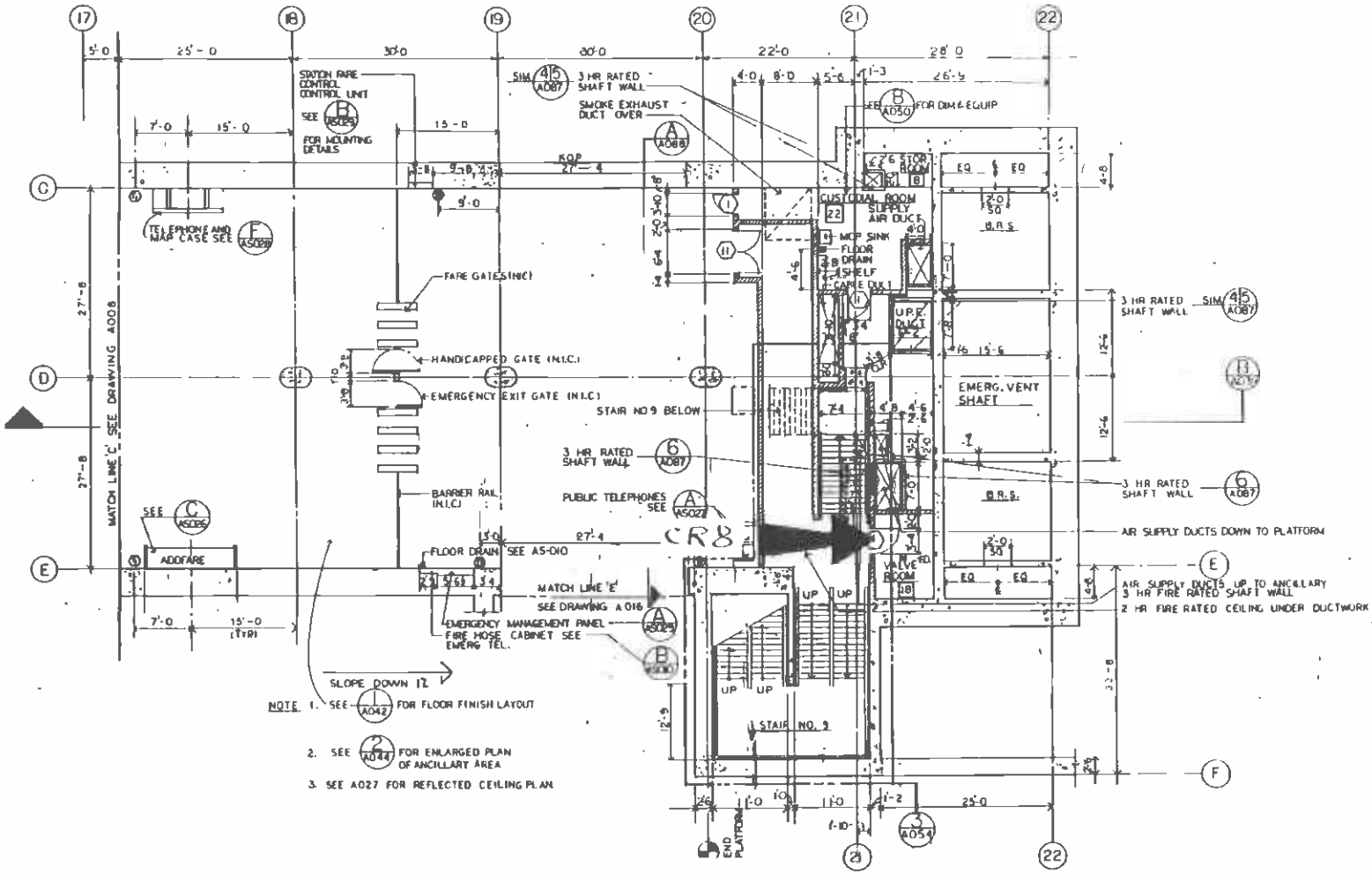
DHA ARTHUR BECKENHAUPT ARCHITECTS INC
SUBMITTED

DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS
APPROVED

L.A. CBD TO NORTH HOLLYWOOD
CIVIC CENTER STATION

PLATFORM PLAN 4

CONTRACT NO. A 147
DRAWING NO. A-005 REV.
SCALE 1/8" = 1'-0"
SHEET NO. 28



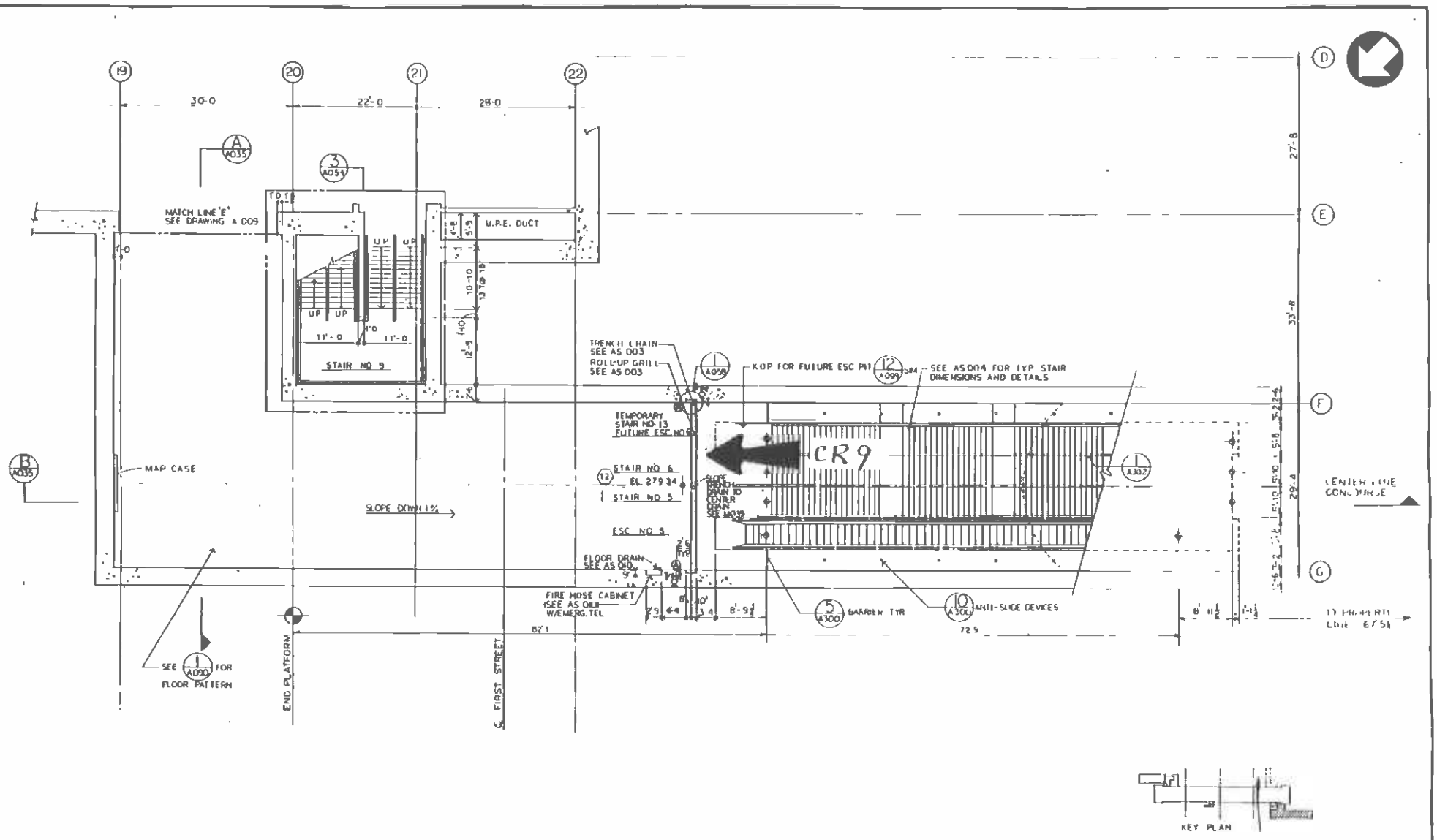
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

LA CBD TO NORTH HOLLYWOOD
CIVIC CENTER STATION

MEZZANINE PLAN 4

A 147

1/8" = 1'-0



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DESIGNED BY
DRAWN BY
CHECKED BY
DATE 30 AUG 85

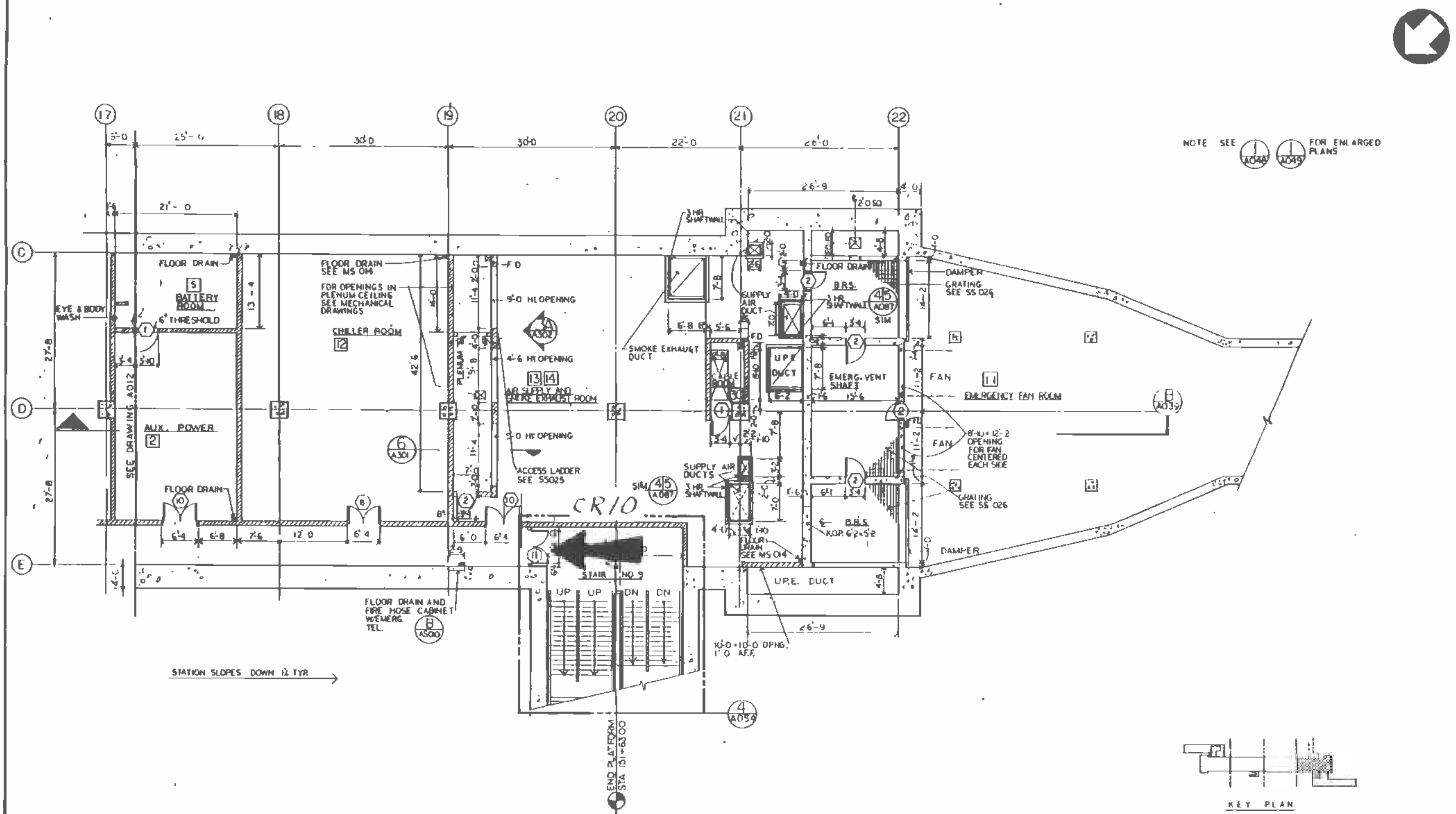
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
RTD

DMJM/FBDD/KE/HWA

LA CBD TO NORTH HOLLYWOOD
CIVIC CENTER STATION

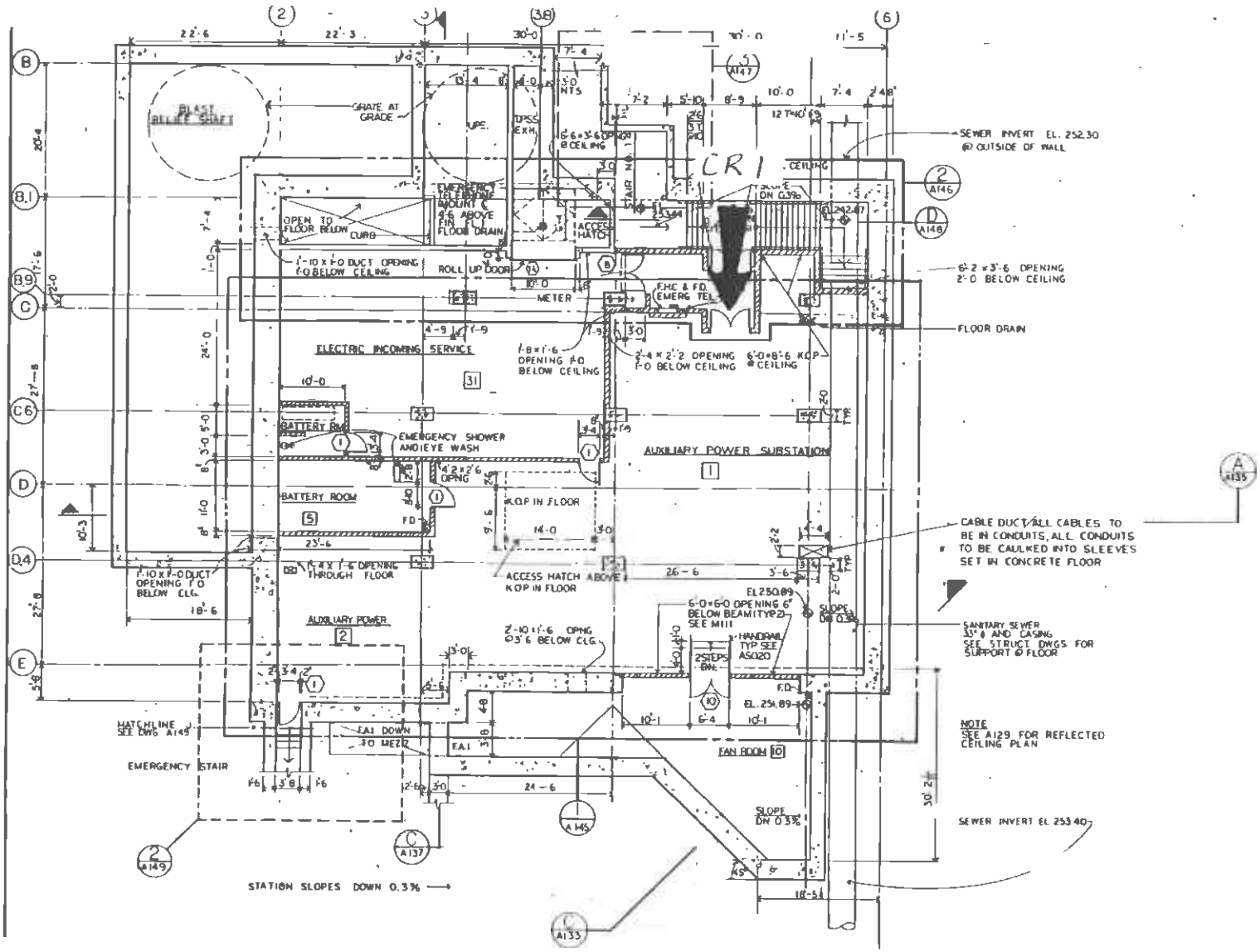
S.W. ENTRANCE PLAN 1

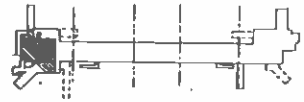
CONTRACT NO A 147
DRAWING NO A-016
SCALE 3/8" = 1'-0
SHEET NO 39



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT METRO RAIL PROJECT	RTD
DHR ARTHUR ERICKSON ARCHITECTS INC.	DMJM/PBQD/KE/HWA GENERAL CONSULTANTS
LA CBD TO NORTH HOLLYWOOD CIVIC CENTER STATION	ANCILLARY PLAN 4
CONTRACT NO.	A 147
DRAWING NO.	A-013
SCALE	1/8" = 1'-0
SHEET NO.	36
DATE	30 AUG 85

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.





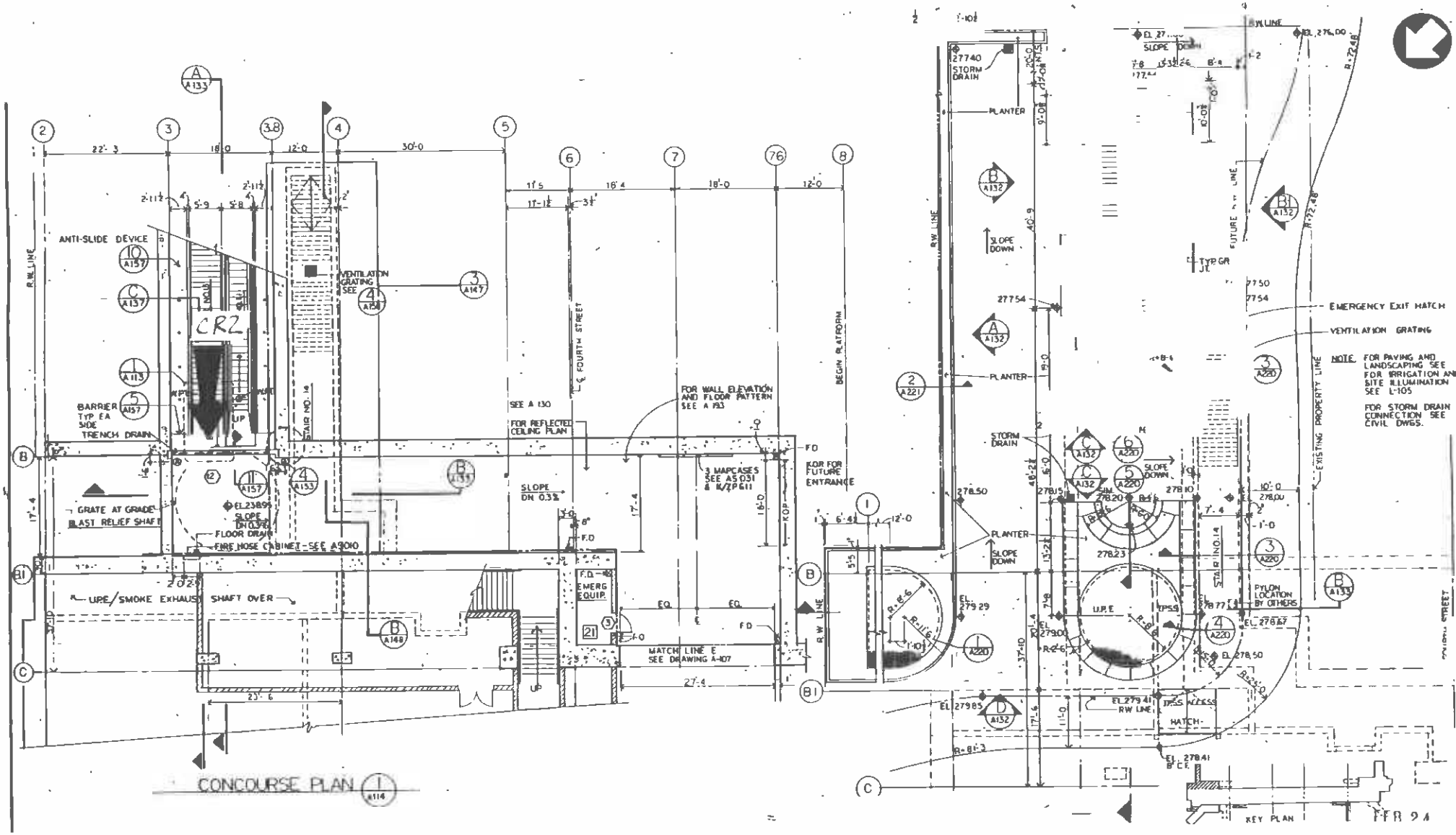
KEY PLAN

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

LA CBD TO NORTH HOLLYWOOD
5TH/ HILL STATION

ANCILLARY PLAN 1

FEB 24 19

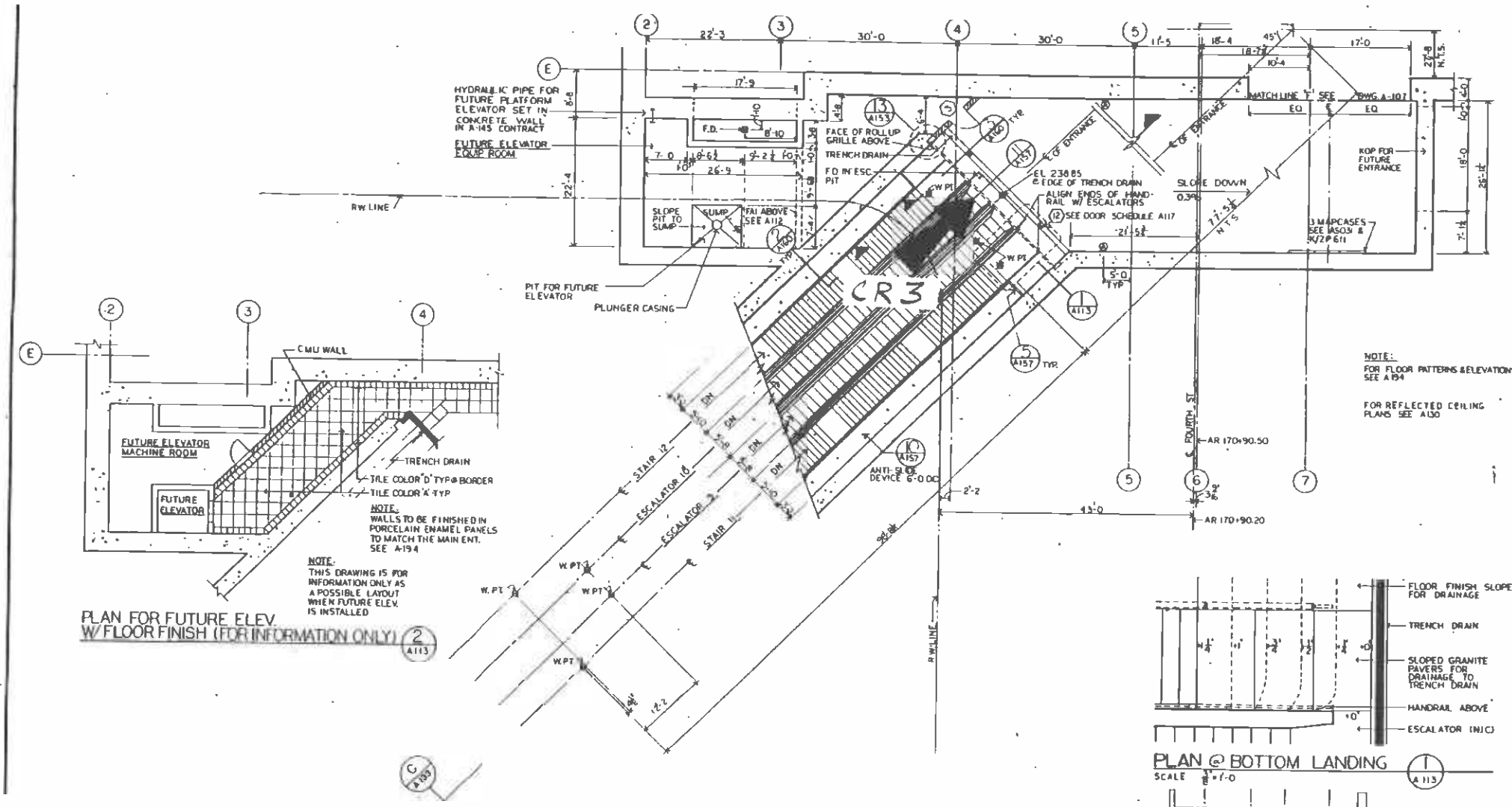


SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

LA CBD TO NORTH HOLLYWOOD
5TH/ HILL STATION

N.E. ENTRANCE : PLAN

FEB 94



PLAN FOR FUTURE ELEV. W/ FLOOR FINISH (FOR INFORMATION ONLY) (2 / A113)

PLAN @ BOTTOM LANDING (1 / A113)
SCALE 1/8" = 1'-0"

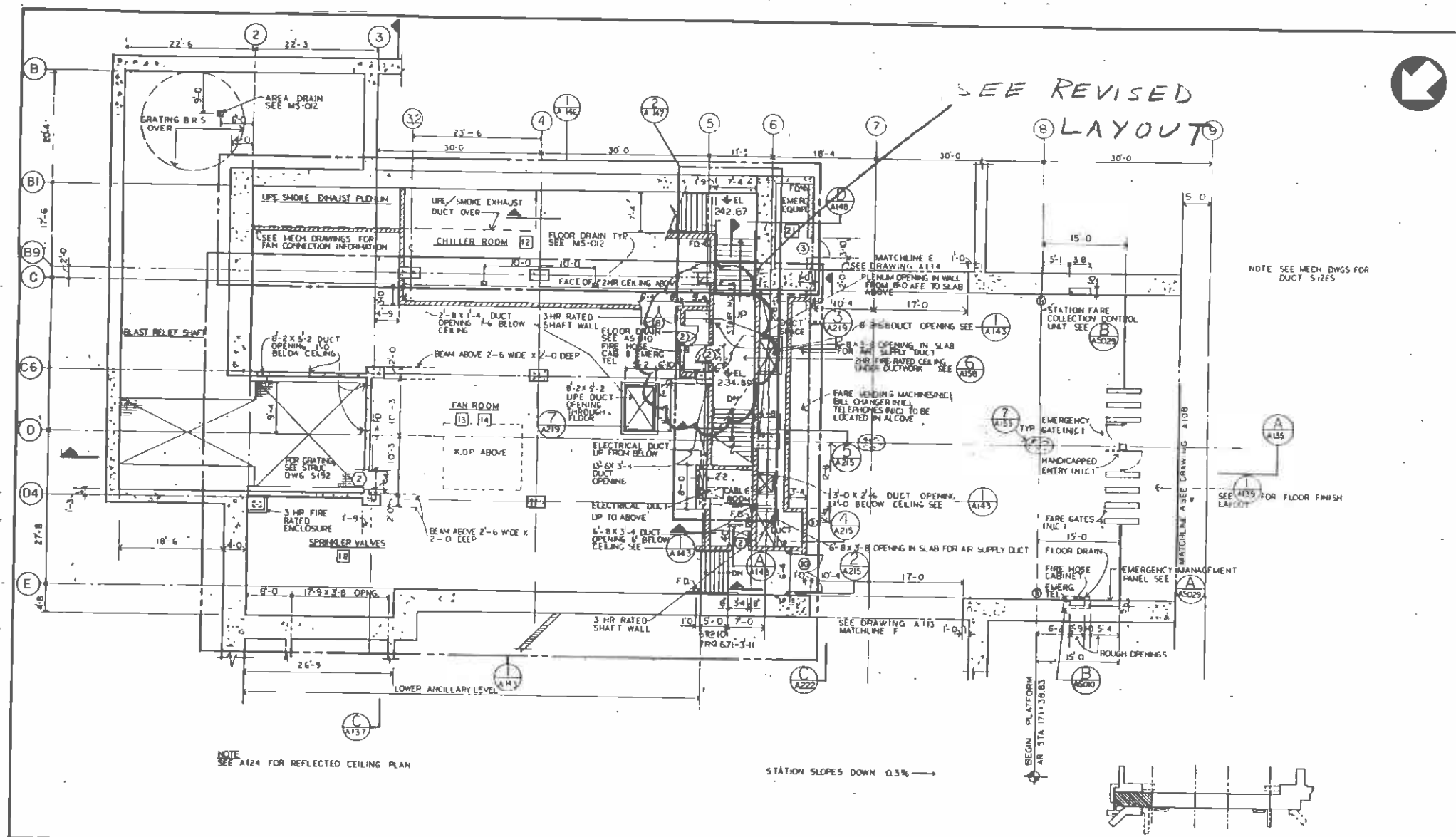
KEY PLAN

FEB 24 1986

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

LA CBD TO NORTH HOLLYWOOD
5TH/HILL STATION

N.W. ENTRANCE PLAN 2



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REV.	DATE	BY	CHD	APP	DESCRIPTION

DESIGNED BY V.T.O.
DRAWN BY
CHECKED BY
DATE 23 SEPT 85

REGISTERED ARCHITECT STATE OF CALIFORNIA

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
SCRTD

DHA ARTHUR ERICKSON ARCHITECTS, INC.

DMJM/PBQD/KE/NWA GENERAL CONSULTANTS

APPROVED

LA CBD TO NORTH HOLLYWOOD
5TH/HILL STATION
MEZZANINE PLAN 1

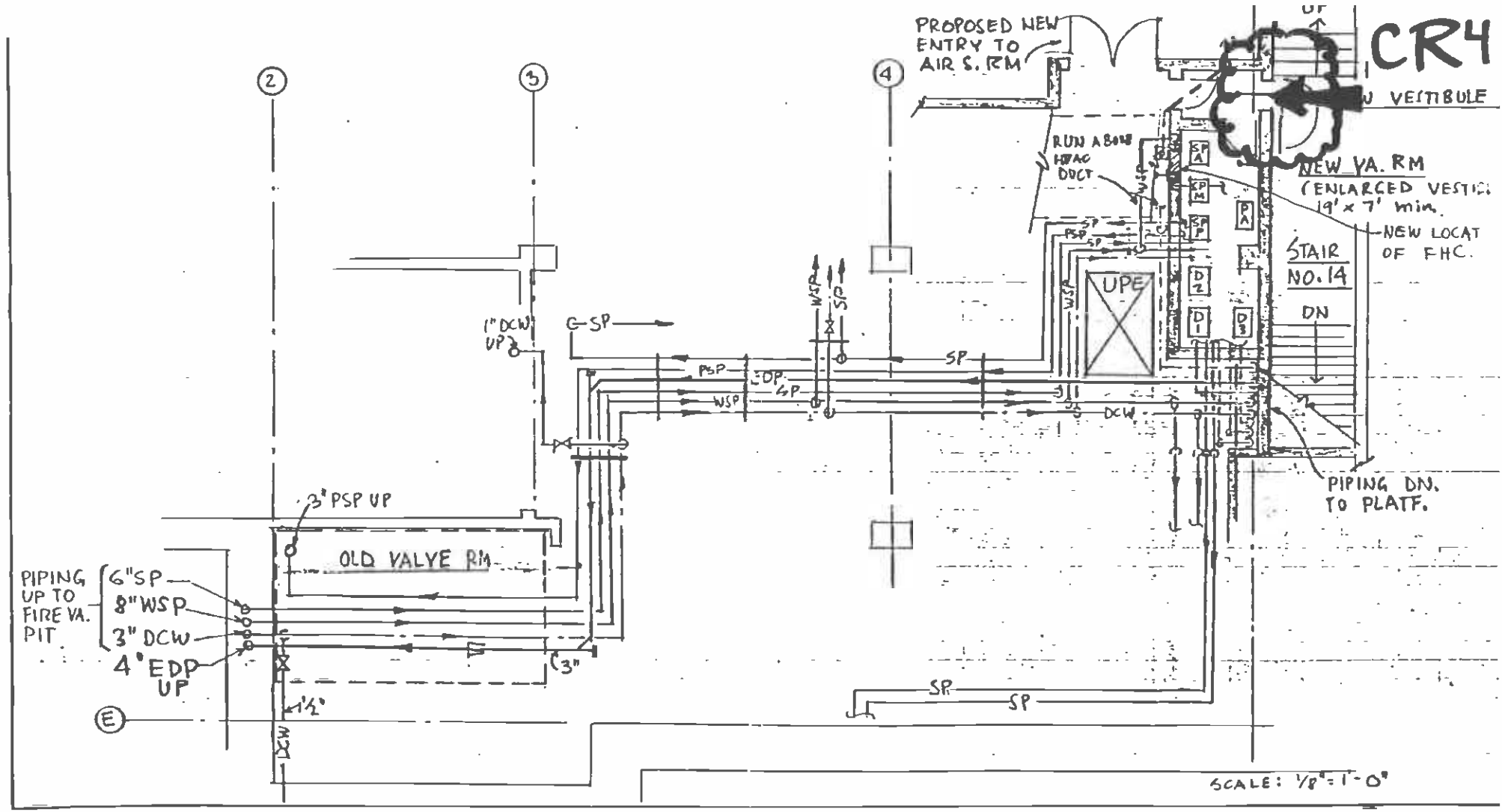
FEB 24 1986

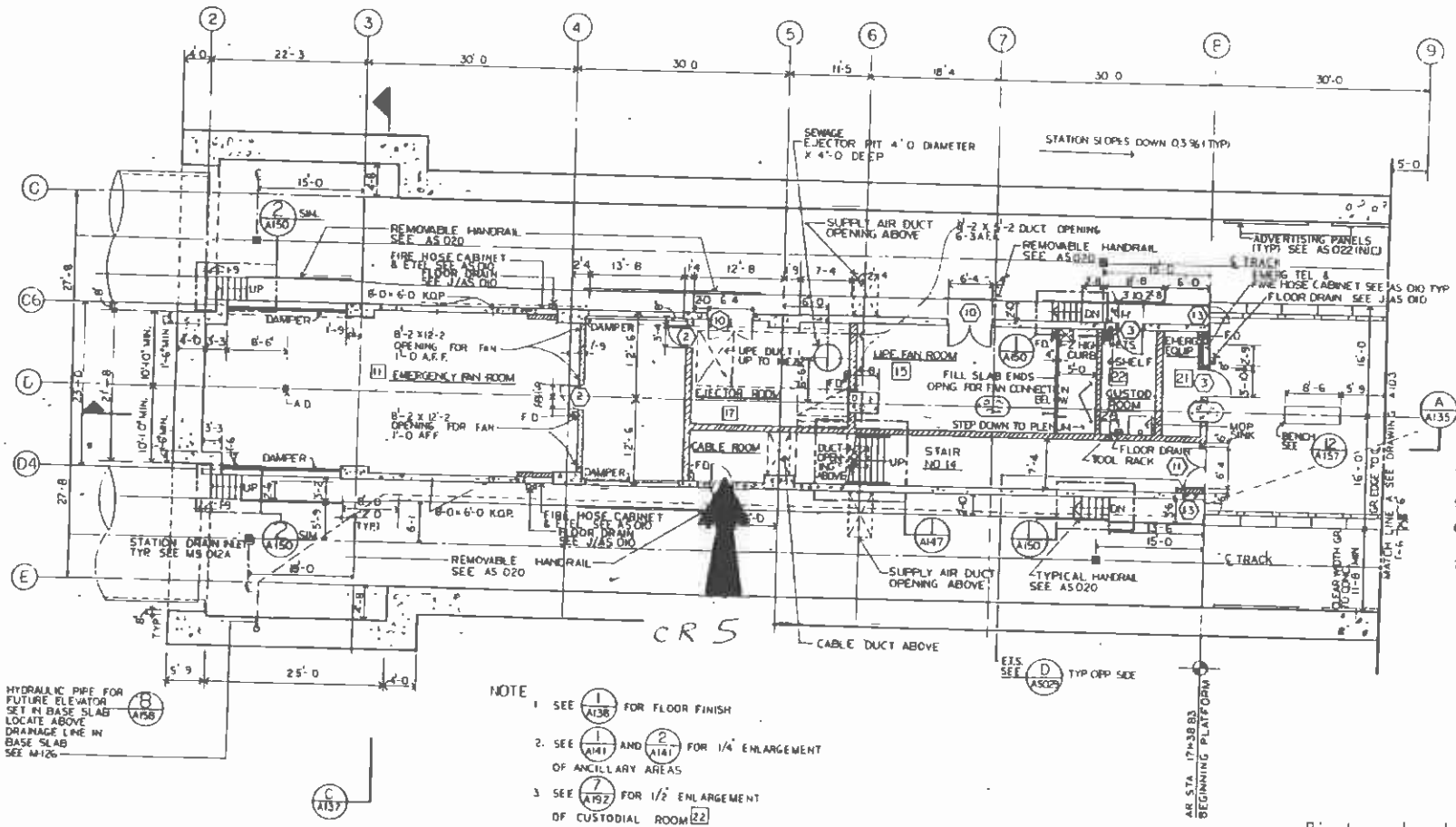
CONTRACT NO. A-157
DRAWING NO. A-107
REV.
SCALE 1/8"-0"
SHEET NO. 30

METRO RAIL TRANSIT CONSULTANTS
DMJM / PBQD / KE / HWA

5 & HILL ...ATION
NO. VALVE RM. RELOCATION - E.B ... 12/31/85

PARTIAL MEZZANINE PLAN - NORTH VALVE ROOM





NOTE

1. SEE (1/A138) FOR FLOOR FINISH
2. SEE (1/A141) AND (2/A141) FOR 1/4" ENLARGEMENT OF ANCILLARY AREAS
3. SEE (7/A192) FOR 1/2" ENLARGEMENT OF CUSTODIAL ROOM 22

WALL AND SYMBOL LEGEND

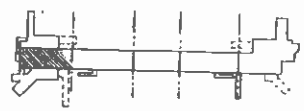
TYPICAL TO ALL PLANS AND SECTIONS

- CONCRETE WALLS AND COLUMNS
- 8" CONCRETE MASONRY WALL ALL CELLS SOLID GROUTED
- (T) TRASH RECEPTACLES (FLOOR MOUNTED, ROUND) — C/A5007
- (P) TRASH RECEPTACLES (WALL MOUNTED, ROUND) — C/A5007
- (A) ASH RECEPTACLES — A/A5007
- MOUNTING HEIGHT
- LIGHTING FIXTURE
- VOLTAGE OTHER THAN 277

NOTES TYPICAL TO ALL ARCHITECTURAL DWGS.

1. ALL DOORS AND BLOCKOUT DIMENSIONS ARE ROUGH OPENINGS
2. ALL STREET AND SIDEWALK ELEVATIONS ARE TO BE COORDINATED WITH EXISTING LEVELS SHOWN ON EXISTING DRAWINGS AND FIELD VERIFIED
3. WHERE BACKFACE OF EQUIPMENT IN FIREPROOF WALLS IS EXPOSED INSTALL 6" C.M.U. WALLS SOLID GROUTED TO MAINTAIN REQUIRED FIRE RATING
4. SEE STRUCTURAL DRAWINGS FOR C.M.U. WALLS WHICH HAVE BEEN CONSTRUCTED IN FIRST STAGE CONTRACT (A145)
5. ALL CIP CONCRETE WILL HAVE BEEN COMPLETED IN FIRST STAGE CONTRACT (A145)
6. CONTRACTOR TO COORDINATE SECOND STAGE (A157) WITH FIRST STAGE (A145) DRAWINGS AND RECORD DRAWINGS
7. WORK THE ARCHITECTURAL SET OF DRAWINGS IN COORDINATION WITH THE ARCHITECTURAL STANDARD DRAWINGS

KEY PLAN



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

NO	DATE	BY	CHD.	APP	DESCRIPTION

REV	DATE	BY	CHD.	APP	DESCRIPTION

DRAWN BY: AS SHOWN
CHECKED BY: T.R. Lambert
DATE: 23 SEPT 85

REGISTERED ARCHITECT — STATE OF CALIFORNIA

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

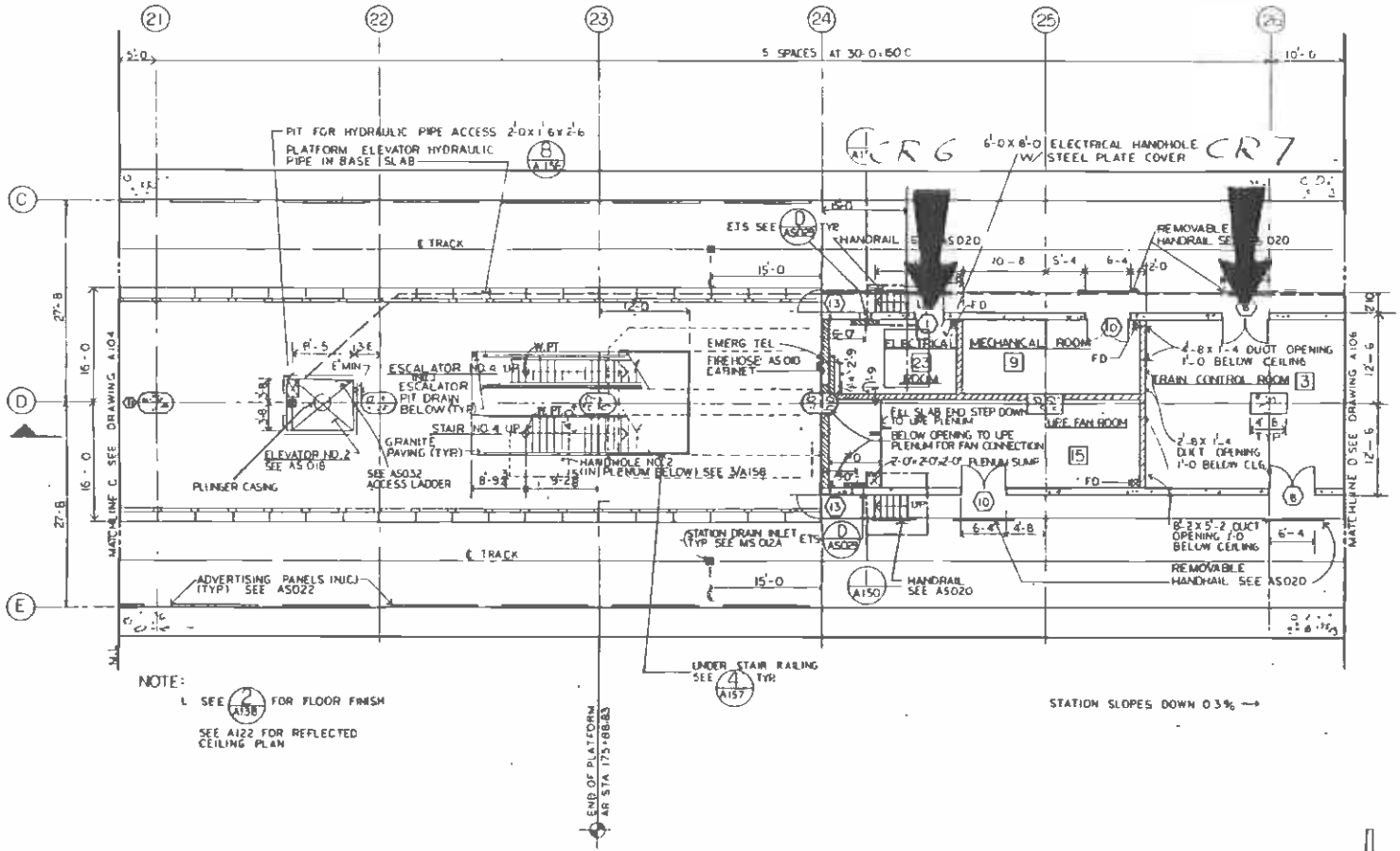
DHA — ARTHUR BECKHARDT ARCHITECTS, INC

DAUM/PBQD/KE/NRM

LA CBD TO NORTH HOLLYWOOD
5TH/HILL STATION
PLATFORM PLAN I

FEB 24 1986

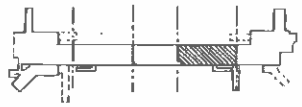
CONTRACT NO A-157
DRAWING NO A-102
SCALE 1/8"-1'-0"
SHEET NO 25



NOTE:

1. SEE (2/A138) FOR FLOOR FINISH

SEE A122 FOR REFLECTED CEILING PLAN



KEY PLAN

THE PREPARATION OF THIS DRAWING WAS AIDED BY A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION, URBAN MASS TRANSPORTATION ADMINISTRATION, UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED, AND IS PART OF THE TAXES OF THE CITIZENS OF

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

ARTHUR ERICKSON ARCHITECTS, INC

LA CBD TO NORTH HOLLYWOOD
5TH/HILL STATION

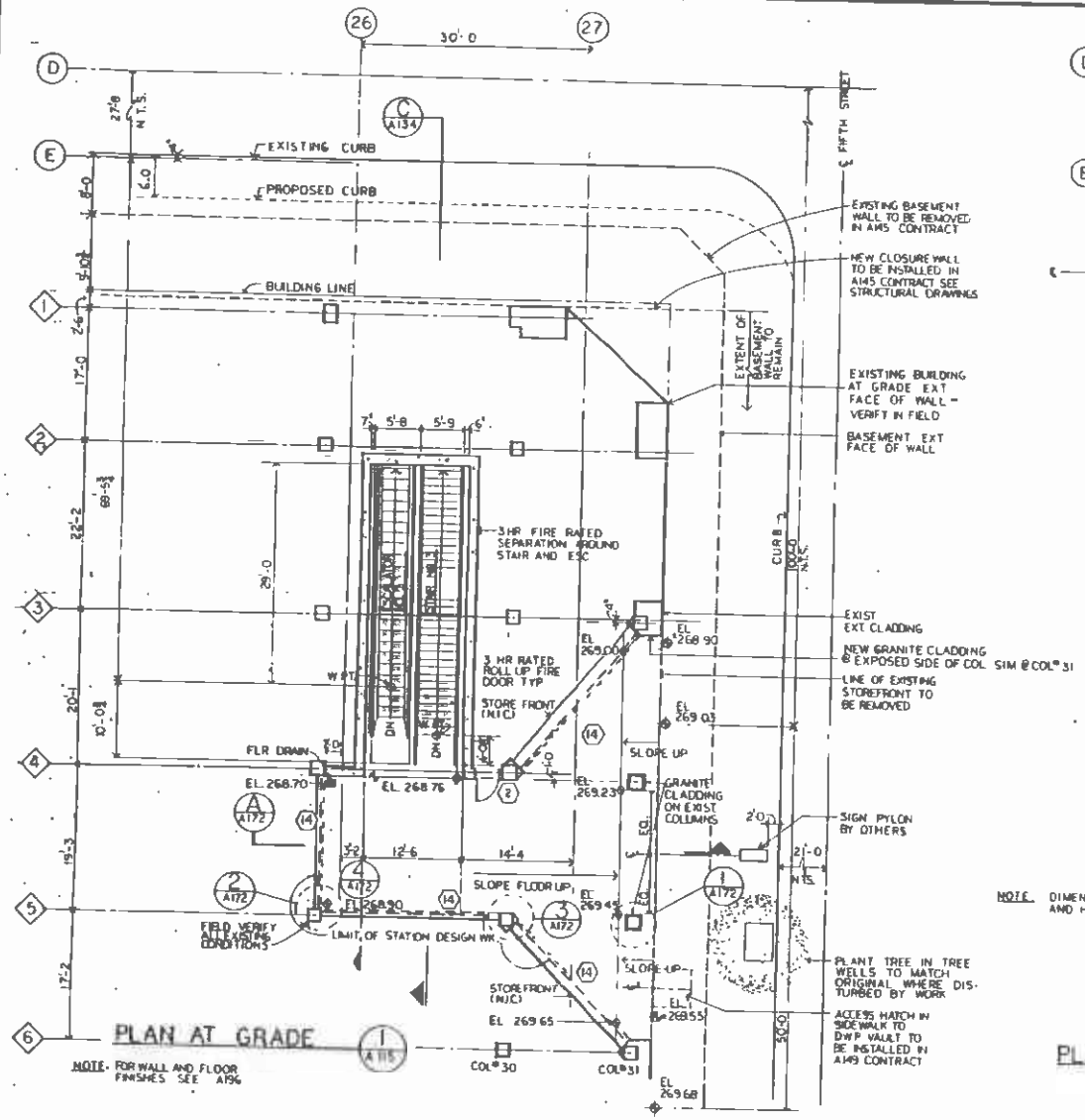
PLATFORM PLAN 4

FEB 24 1988

A-157

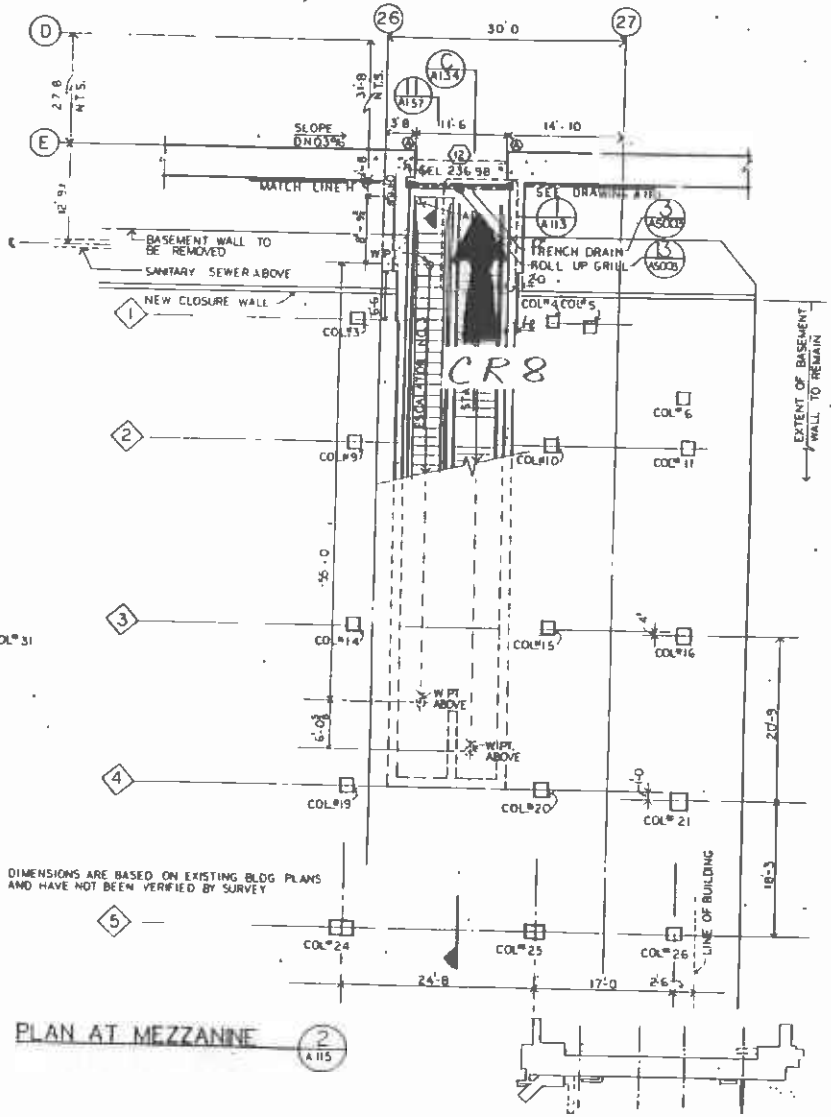
A-105

1/8"=1'-0



PLAN AT GRADE (1 / A115)

NOTE: FOR WALL AND FLOOR FINISHES SEE A196



NOTE: DIMENSIONS ARE BASED ON EXISTING BLDG PLANS AND HAVE NOT BEEN VERIFIED BY SURVEY

PLAN AT MEZZANINE (2 / A115)

KEY PLAN

FEB 24 1986

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

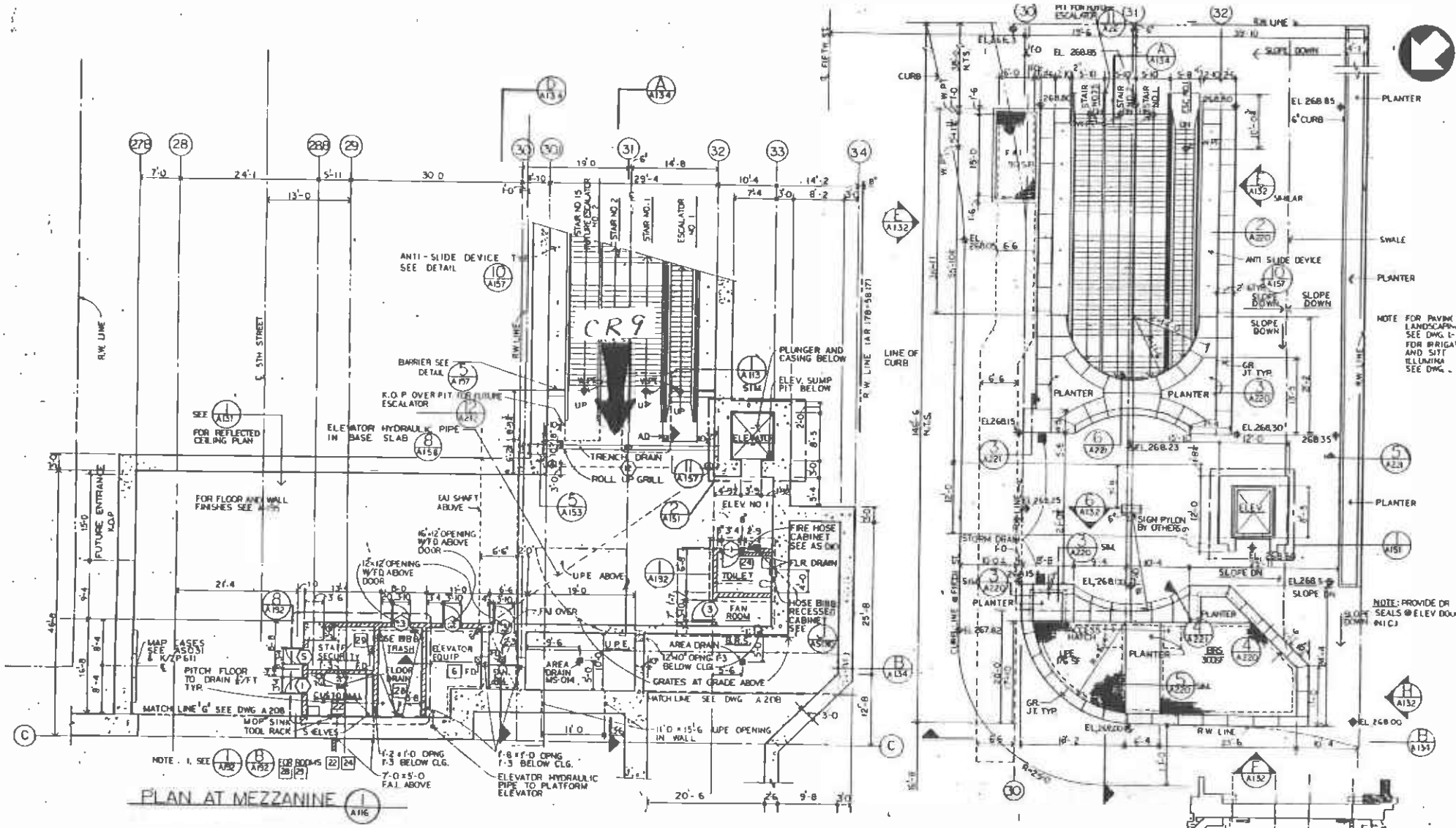
23 SEPT 86

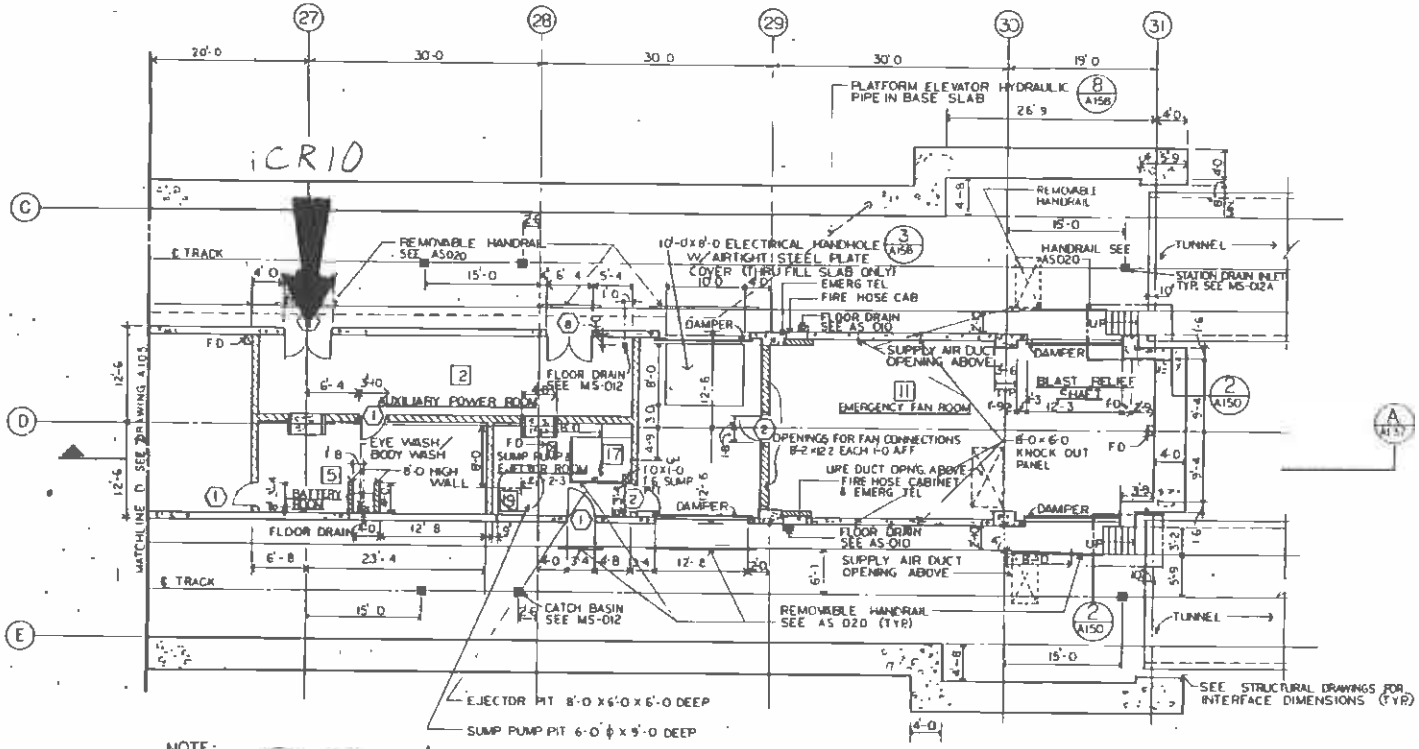
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

DMJM/PBQD/KE/MWA

LA CBD TO NORTH HOLLYWOOD
5TH/HILL STATION
S.W. ENTRANCE PLAN

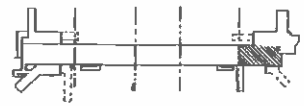
CONTRACT NO. A-157
DRAWING NO. A-115
SCALE 1/8" = 1'-0"
SHEET NO. 39


PLAN AT MEZZANINE 1
A116
5TH/ HILL STATION
S.E. ENTRANCE PLAN
LA CBD TO NORTH HOLLYWOOD
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
FEB 24 1986
CR9
ANTI - SLIDE DEVICE
SEE DETAIL
PLUNGER AND CASING BELOW
ELEV. SUMP PIT BELOW
TRENCH DRAIN
ROLL UP GRILL
ELEVATOR HYDRAULIC PIPE IN BASE SLAB
FOR REFLECTED CEILING PLAN
FOR FLOOR AND WALL FINISHES SEE
FUTURE ENTRANCE
FAI SHAFT ABOVE
FIRE HOSE CABINET SEE AS OK
FLR DRAIN
TOILET
FAN ROOM
HOSE BIBB RECESSED CABINET SEE
AREA DRAIN
GRATES AT GRADE ABOVE
MATCH LINE SEE DWG A208
MOP SINK
TOOL RACK
5 ELVES
ELEVATOR HYDRAULIC PIPE TO PLATFORM ELEVATOR
PLANTER
SWALE
SLOPE DOWN
SIGN PYLON BY OTHERS
ELEV.
LINE OF CURB
CURB
6" CURB
EL 268.85
EL 268.30
EL 268.23
EL 268.25
EL 268.15
EL 268.00
SLOPE DN
GR JT TYP
SIM
NOTE: PROVIDE DR
SEALS @ ELEV DOO
(N.I.C.)
NOTE FOR PAVIN
LANDSCAPIN
SEE DWG L-
FOR IRRIGA
AND SIT
ILLUMINA
SEE DWG
FIFTH ST
E 5TH STREET
R/W LINE
KEY PLAN



NOTE:

1. SEE (1 / A142) AND (2 / A142) FOR 1/4" ENLARGEMENTS OF ANCILLARY AREAS
SEE A123 FOR REFLECTED CEILING PLAN



KEY PLAN

FFR 9

REGISTERED ARCHITECT ARTHUR ERICKSON STATE OF CALIFORNIA

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

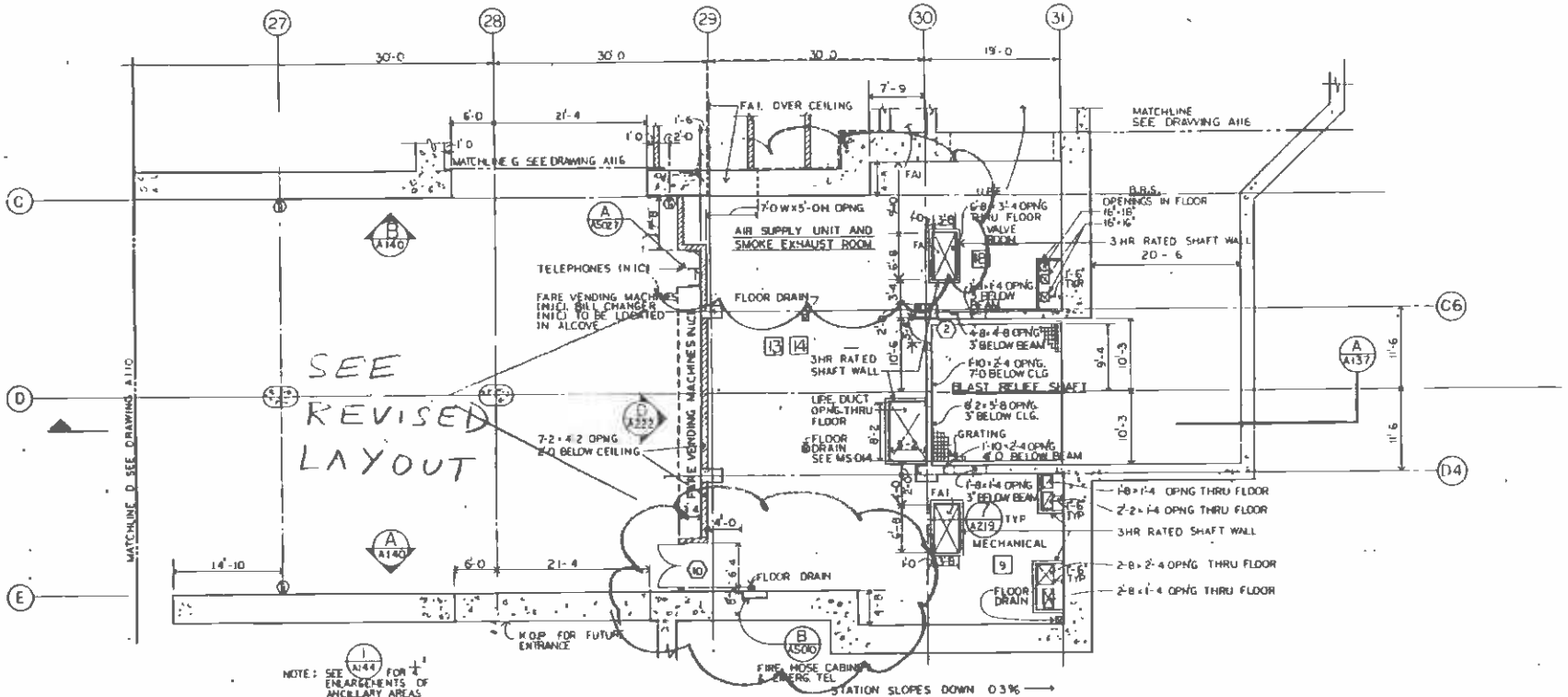
DMJM/PBQD/KE/HWA

L.A. CBD TO NORTH HOLLYWOOD
5TH/HILL STATION

PLATFORM PLAN 5

A-157

1/4" = 1'-0



MEZZANINE PLAN 5 — A208

KEY PLAN

FEB 24 198

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

LA CBD TO NORTH HOLLYWOOD
5TH/HILL STATION

MEZZANINE PLAN 5

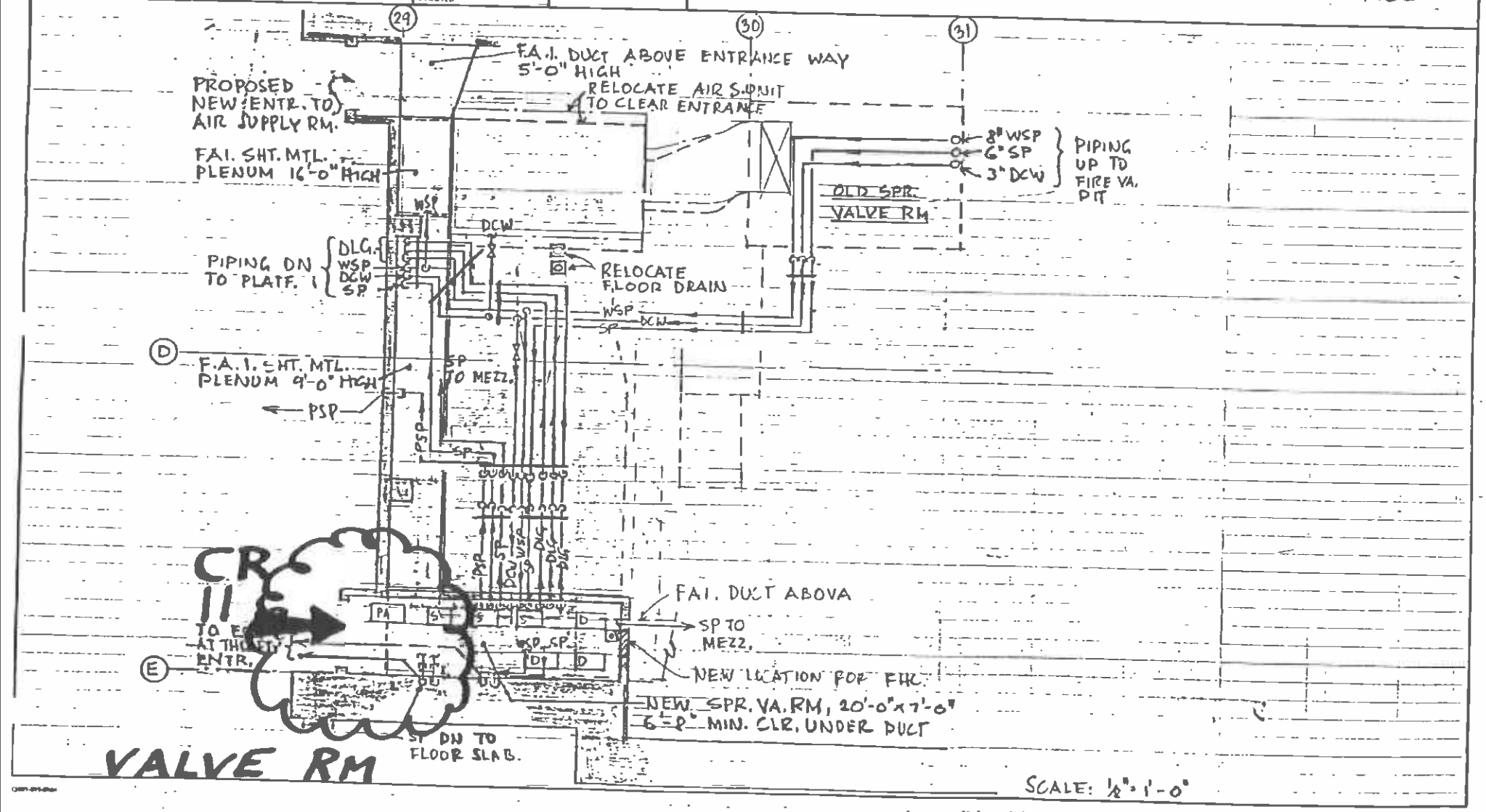
METRO RAIL TRANSIT CONSULTANTS
DMJM / PBQD / KE / HWA

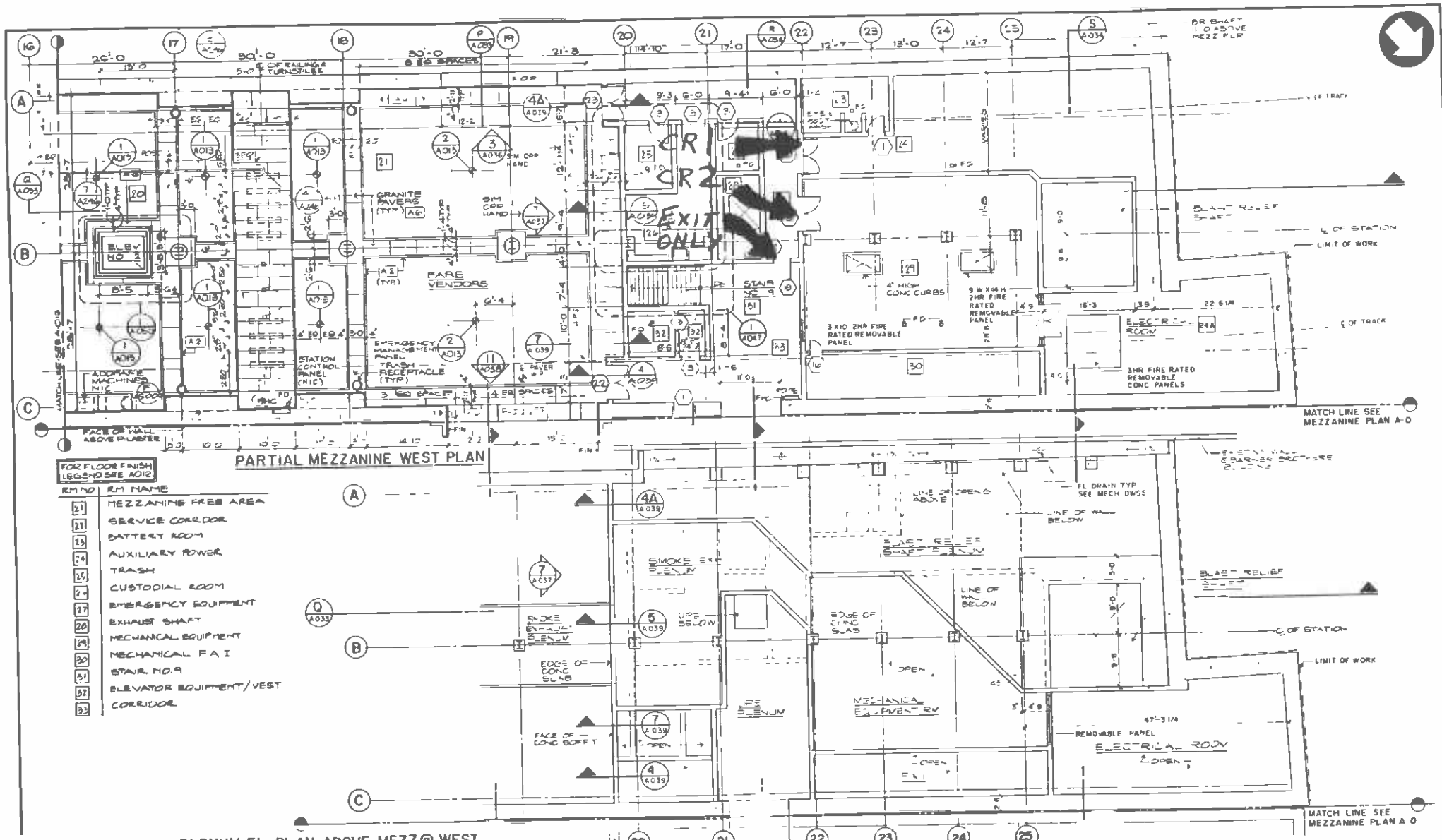
5/5

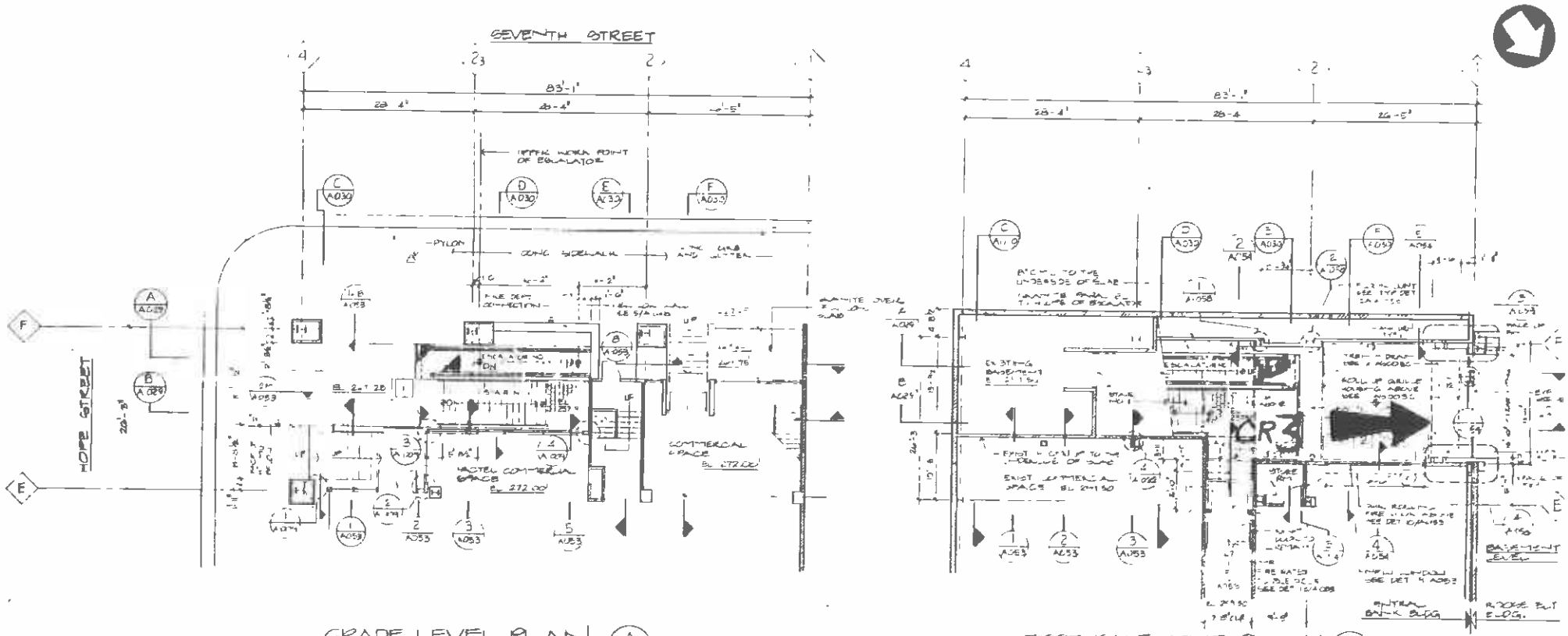
5th & HILL STATION
SO VALVE RM. RELOCATION

JOB NO	SHEET NO
DESIGNED BY E.B	DATE 1/21/85
APPROVED	

PARTIAL MEZZANINE PLAN - SOUTH VALVE ROOM

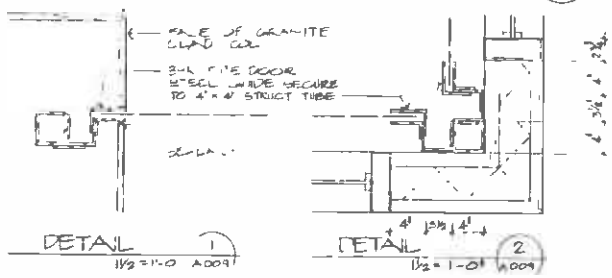


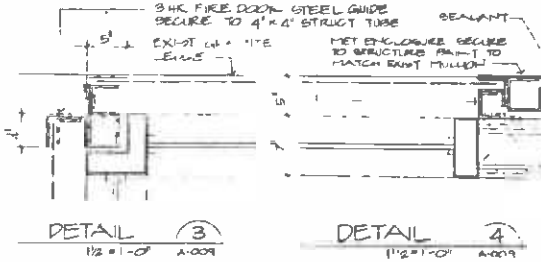

CR1
CR2
EXIT ONLY
ELEV NO 1
ADDRESS MACHINES (NIC)
GRANITE PAVERS (TYP)
FARE VENDORS
STATION CONTROL PANEL (NIC)
EMERGENCY MANAGEMENT PANEL
TRASH RECEPTACLE (TYP)
3 EQ SPACES
4 EQ SPACES
4" HIGH CONC CURBS
3 X 10 2HR FIRE RATED REMOVABLE PANEL
8 W X 4 H 2HR FIRE RATED REMOVABLE PANEL
ELECTRICAL ROOM
3HR FIRE RATED REMOVABLE CONC PANELS
BLAST RELIEF SHAFT
℄ OF STATION
LIMIT OF WORK
℄ OF TRACK
MATCH LINE SEE MEZZANINE PLAN A-D
FACE OF WALL ABOVE PLASTER
PARTIAL MEZZANINE WEST PLAN
FOR FLOOR FINISH LEGEND SEE A012
RM NO | RM NAME
21 MEZZANINE FREE AREA
22 SERVICE CORRIDOR
23 BATTERY ROOM
24 AUXILIARY POWER
25 TRASH
26 CUSTODIAL ROOM
27 EMERGENCY EQUIPMENT
28 EXHAUST SHAFT
29 MECHANICAL EQUIPMENT
30 MECHANICAL F A I
31 STAIR NO 9
32 ELEVATOR EQUIPMENT/VEST
33 CORRIDOR
SMOKE EXHAUST PLENUM
EDGE OF CONC SLAB
FACE OF CONC SOFFIT
LINE OF WALL BELOW
LINE OF WALL ABOVE
FL DRAIN TYP SEE MECH DWGS
MECHANICAL EQUIPMENT
REMOVABLE PANEL
ELECTRICAL ROOM
OPEN
PLENUM FL. PLAN ABOVE MEZZ @ WEST
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
L.A. CBD TO N. HOLLYWOOD
7TH./ FLOWER STATION
PARTIAL MEZZANINE WEST PLAN &
PLENUM FL PLAN ABOVE MEZZ @ WEST
A-157



GRADE LEVEL PLAN (A) 1/8"=1'-0" A-009

FIRST BASEMENT PLAN (B) 1/8"=1'-0" A-009





LEGEND

- EXISTING CONSTRUCTION
- NEW CONSTRUCTION
- NEW 3 HR. FIRE RATED WALL

NOTE

STEEL GUIDE GLAT CLEARANCE 1/8" (NO. 4) PER COOKSON RECOMMENDATION

PAINT STEEL GUIDE TO MATCH EXIST MULLION

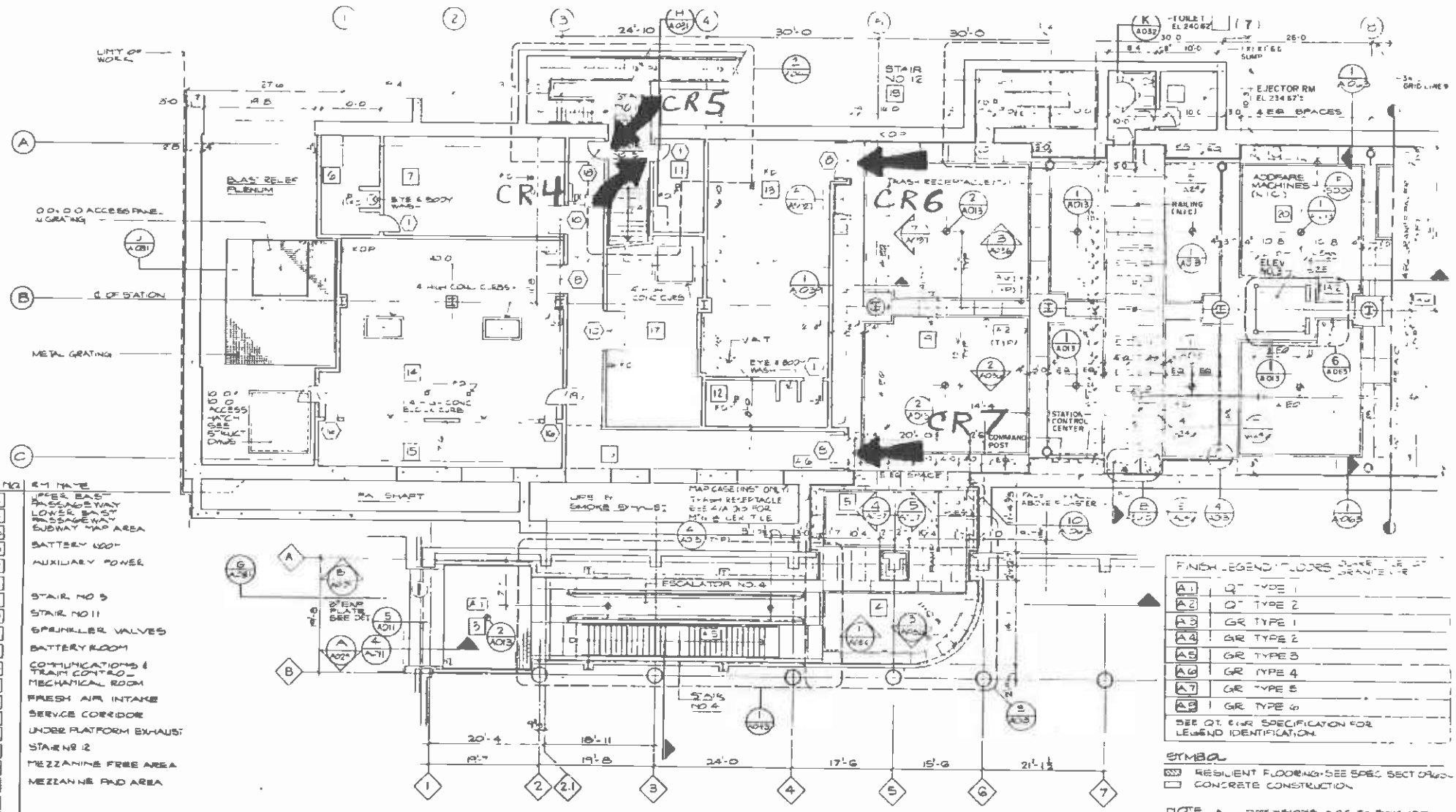
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

Gannett Fleming/Dworsky
THE TAMMANN ASSOCIATES
DMJM PBQD/KE/HWA

L.A. CBD TO N. HOLLYWOOD
7TH./FLOWER STATION

GRADE & FIRST BASEMENT PLANS - EAST ENTRY

A-165
A 009
REV 1
SCALE 1/8"-1'-0"
SHEET NO 242



RM NO	RM NAME
3	UPPER EAST PASSAGEWAY
4	LOWER EAST PASSAGEWAY
5	SUBWAY MAP AREA
6	BATTERY 600±
7	AUXILIARY POWER
9	STAIR NO 5
10	STAIR NO 11
11	SPRINKLER VALVES
12	BATTERY ROOM
13	COMMUNICATIONS & TRAIN CONTROL MECHANICAL ROOM
14	FRESH AIR INTAKE
15	SERVICE CORRIDOR
16	UNDER PLATFORM EXHAUST
17	STAIR NO 12
18	MEZZANINE FREE AREA
19	MEZZANINE PAID AREA

FINISH LEGEND: FLOORS (SEE ARCH'L DWGS FOR GRANITE TILE)

A1	QT TYPE 1
A2	QT TYPE 2
A3	GR TYPE 1
A4	GR TYPE 2
A5	GR TYPE 3
A6	GR TYPE 4
A7	GR TYPE 5
A8	GR TYPE 6

SEE QT & GR SPECIFICATION FOR LEGEND IDENTIFICATION.

SYMBOL

RESILIENT FLOORING - SEE SPEC SECT 09650

CONCRETE CONSTRUCTION

NOTE ALL DIMENSIONS ARE TO FINISHED FACE UNLESS OTHERWISE NOTED

REV	DATE	BY	CHK	APP	DESCRIPTION
1	11/85	J			REVISE PER CR 5-511
2	3/86	J.K.	4/2		REVISE PER CR 5-209
					INITIAL ISSUE

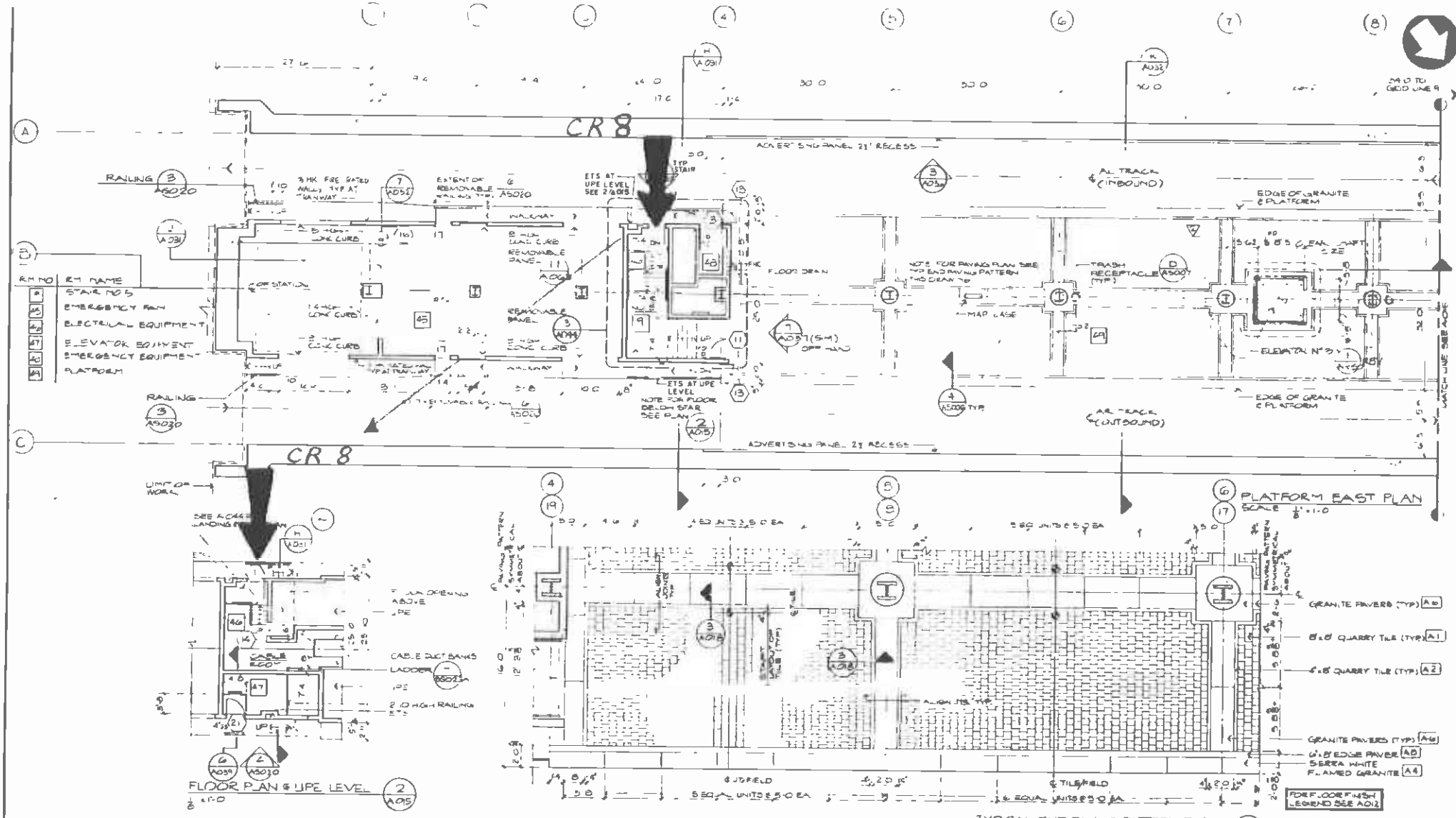
THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION URBAN MASS TRANSPORTATION ADMINISTRATION UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964 AS AMENDED, AND IN PART BY FUNDS TAXED OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF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

DESIGNED BY F. BERTRAM
DRAWN BY D. DE AMPO
CHECKED BY C. MCKEE / J. SOTO
IN CHARGE G. BERRAO
DATE 1 MAR '85

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
RTD
Gannett Fleming/Dworsky
DMJM/PBQD/RE/MWA
GENERAL CONSULTANTS
SUBMITTED _____ DATE
APPROVED _____

L.A. CBD TO N. HOLLYWOOD
7TH./FLOWER STATION
MEZZANINE EAST PLAN

CONTRACT NO A-167
DRAWING NO A-012
REV 1
SCALE 1/8"=1'-0"
SHEET NO 5/



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REV	DATE	BY	CHKD	APP	DESCRIPTION
7	6/7/85				REVISE PER CR S 209
6	4/8/85				REVISE PER CR S 209
5	3/1/85				REVISE PER CR S 209
4	2/15/85				REVISE PER CR S 209
3	1/15/85				REVISE PER CR S 209
2	12/14/84				REVISE PER CR S 209
1	11/16/84				REVISE PER CR S 209

DESIGNED BY
DRAWN BY
CHECKED BY
NO CHECK
DATE 1 MAR '85

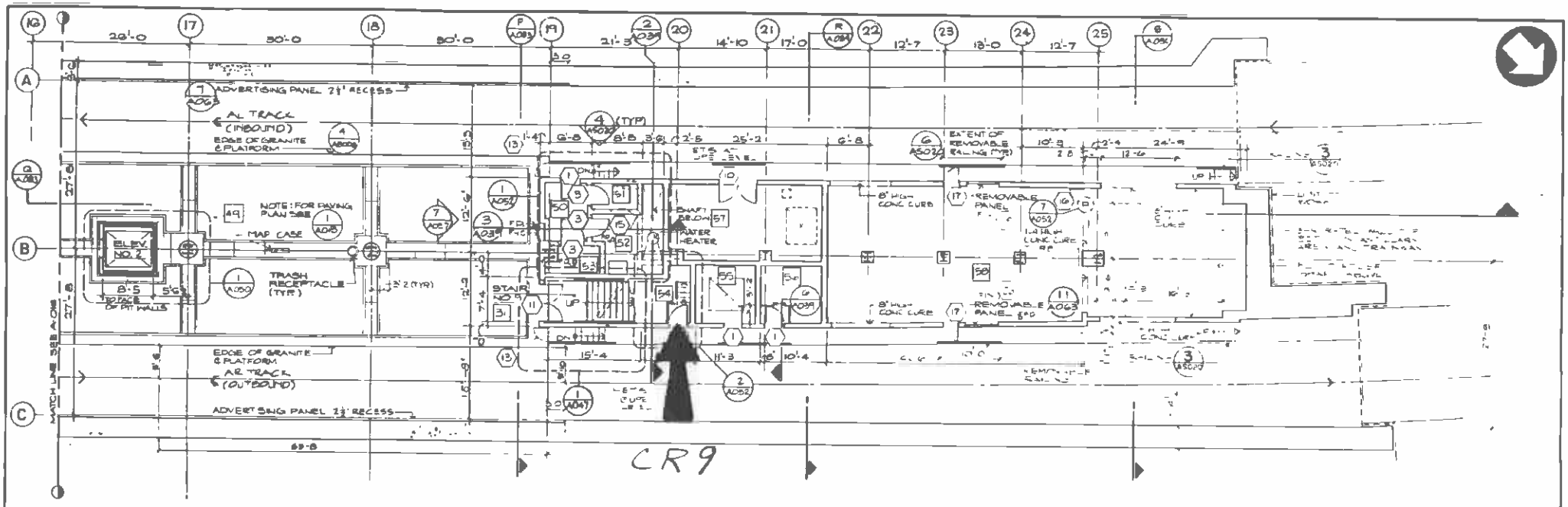
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
RTD

Gannett Fleming/Dworsky
DMJM/PBQD KE/NWA
GENERAL CONSULTANTS

SUBMITTED _____ C.1900
APPROVED _____

L.A. CBD TO N. HOLLYWOOD
7TH./FLOWER STATION
PLATFORM EAST PLAN, PAVING PATTERN DETAILS

CONTRACT NO A-167
DRAWING NO A-015
REV 7
SCALE AS NOTED
SHEET NO 54



RM NO	RM NAME
31	STAIR NO 9
32	STAIR NO 10
33	STAIR NO 11
34	PLATFORM
35	SERVICE CORRIDOR
36	EMERGENCY EQUIPMENT
37	CUSTODIAL CLOSET
38	ELEVATOR EQUIPMENT
39	ELECTRICAL EQUIPMENT
40	SUMP PUMP
41	EJECTOR
42	UNDER PLATFORM EXHAUST
43	EMERGENCY FAN

REV	DATE	BY	CHK	APP	DESCRIPTION
5					REVISED PER CR 6-506
4					REVISE PER CR 6-505
3		JR	AE	Q	REVISE PER CR 5-209
2		CM			INITIAL ISSUE

THE PREPARATION OF THIS DRAWING WAS AIDED 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 BERTRAM
DRAWN BY: C OCAMPO
CHECKED BY: C HOWE, J BOTO
IN CHARGE: G SERRAO
DATE: 1 MAR '85

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

RTD

Gannett Fleming/Dworsky

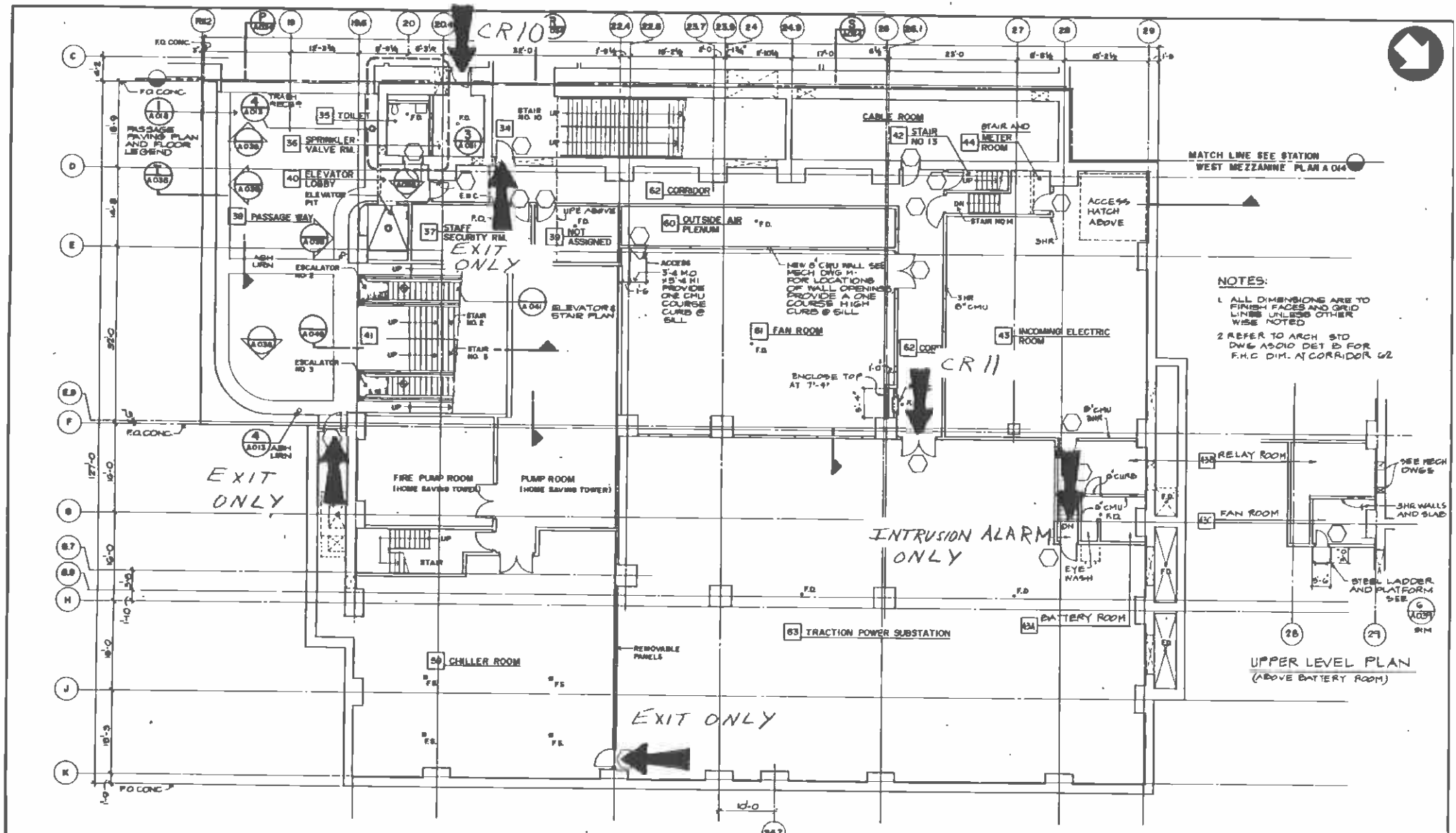
DMJM/PBQD/KE/HWA

SUBMITTED _____ DATE _____

APPROVED _____ DATE _____

L.A. CBD TO N. HOLLYWOOD
7TH. / FLOWER STATION
PLATFORM WEST PLAN

CONTRACT NO: A-167
DRAWING NO: A-017
REV: 1
SCALE: 1" = 1'-0"
SHEET NO: 35



THE PREPARATION OF THIS DRAWING WAS 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

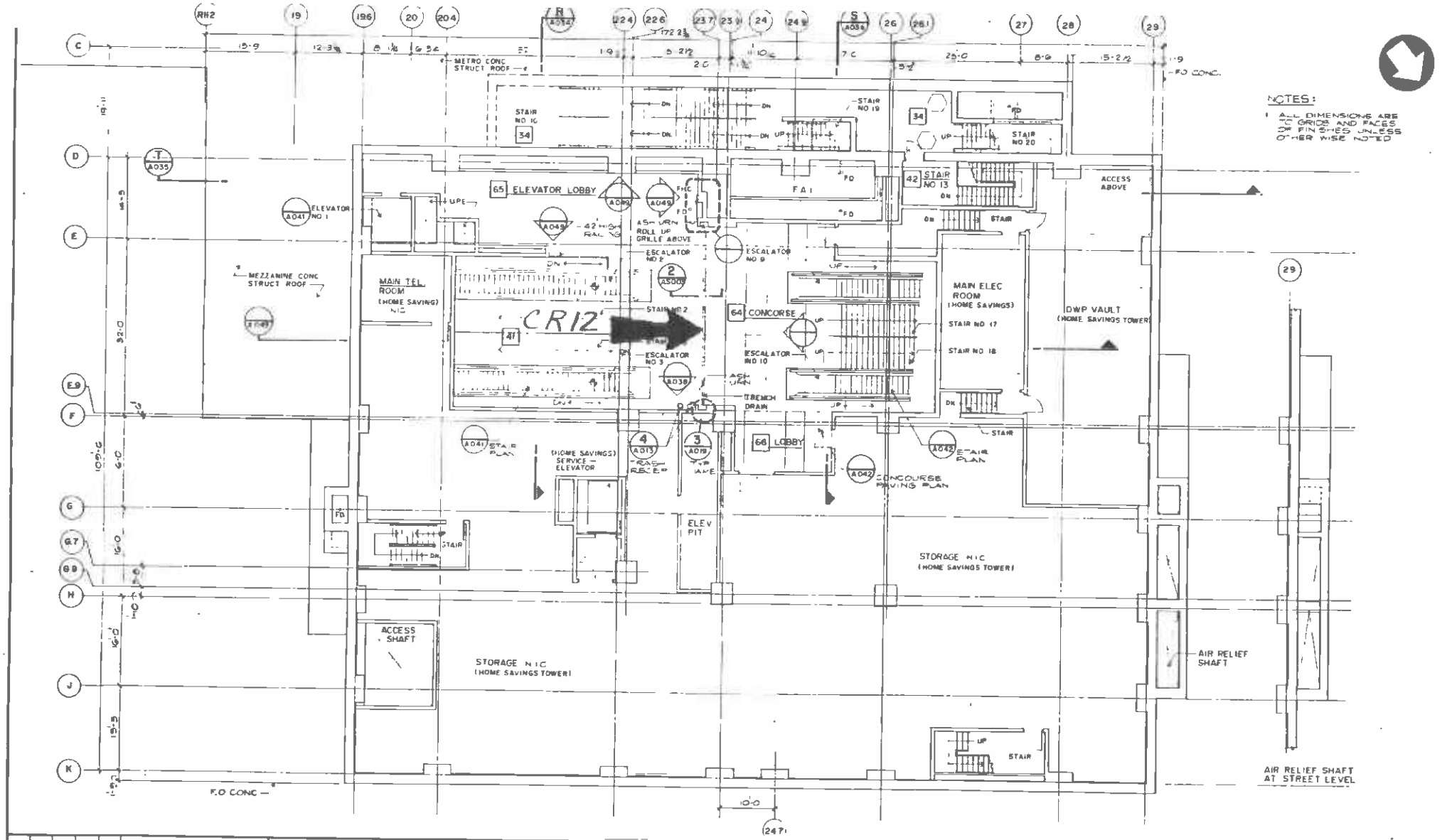
CR 6-506

DESIGNED BY M.D., S.J.

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

LA CBD TO NORTH HOLLYWOOD
7TH/FLOWER STATION
MEZZANINE WEST ENTRANCE

CONTRACT NO. A-167
DRAWING NO. A-010
SCALE 1/8"=1'-0"



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CR-6-506

DESIGNED BY
DRAWN BY P.S.
CHECKED BY
IN CHARGE
DATE

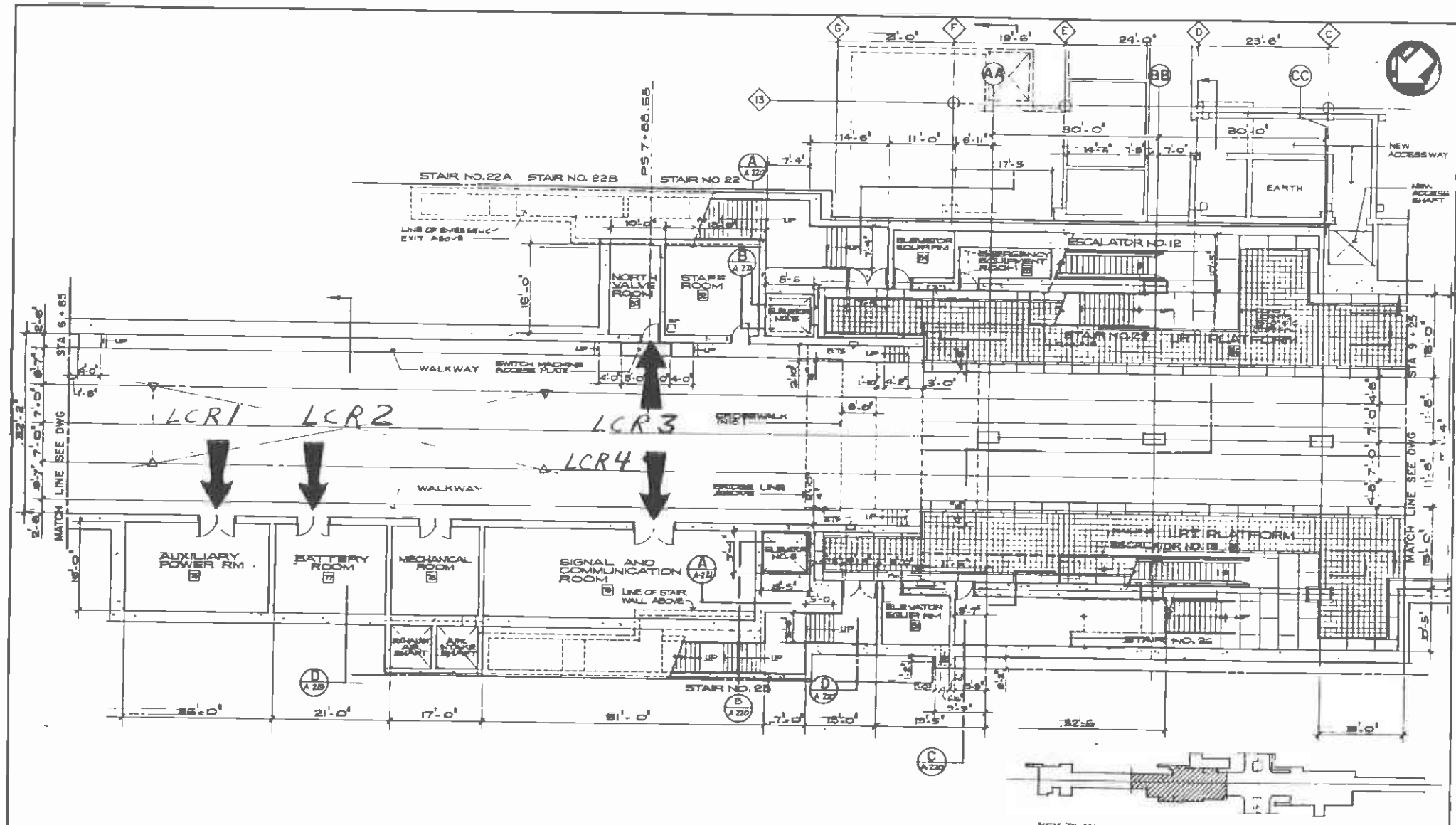
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
RTD

DMJM/PBQD/KE/HWA
GENERAL CONSULTANTS

SUBMITTED _____
APPROVED _____

LA CBD TO NORTH HOLLYWOOD
7TH/FLOWER STATION
CONCOURSE WEST ENTRANCE

CONTRACT NO
DRAWING NO A-008
REV
SCALE 1/8" = 1'-0"
SHEET NO



KEY PLAN

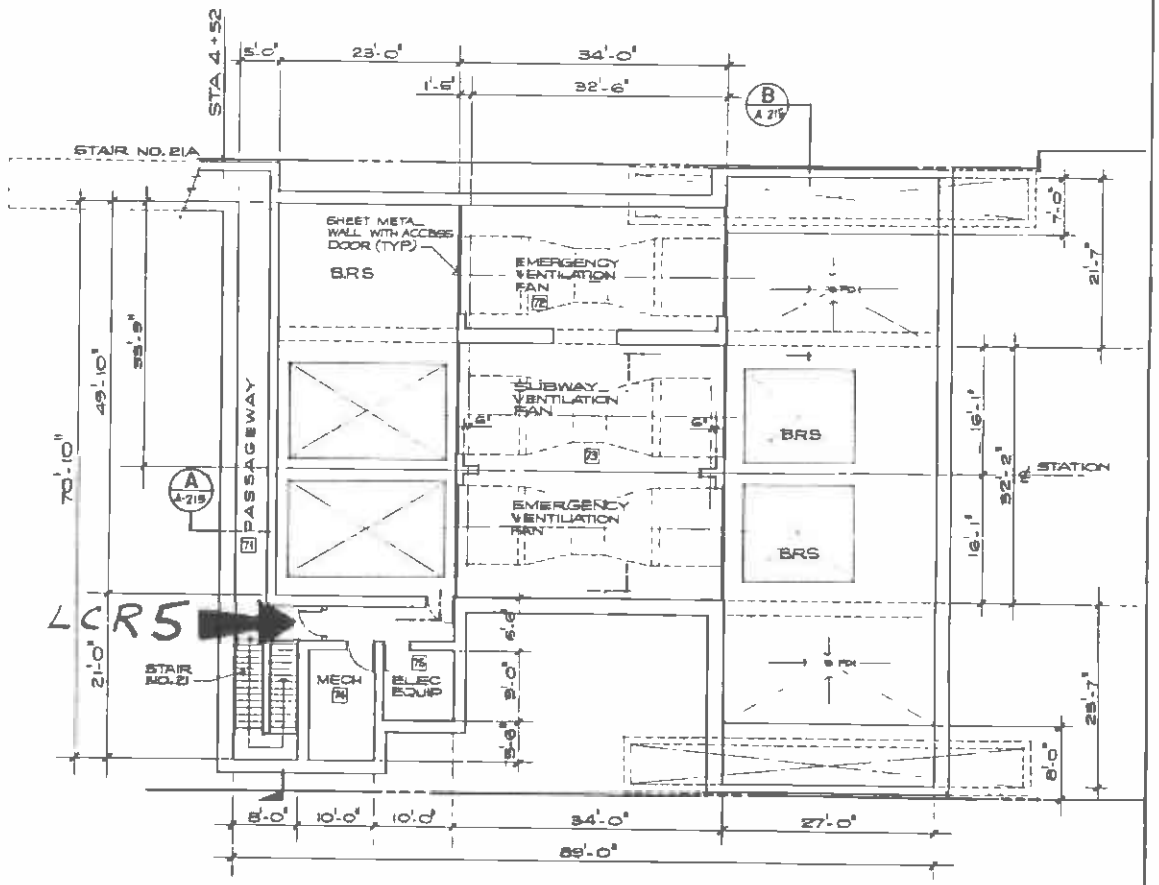
THE PREPARATION OF THIS DRAWING HAS BEEN FINANCED IN PART THROUGH A GRANT FROM THE U.S. DEPARTMENT OF TRANSPORTATION URBAN MASS TRANSPORTATION ADMINISTRATION UNDER THE URBAN MASS TRANSPORTATION ACT OF 1964, AS AMENDED AND IN PART BY THE TAXES OF THE CITIZENS OF LOS ANGELES COUNTY AND OF THE STATE OF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

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
RTD

L A CBD TO N HOLLYWOOD
7TH/FLOWER STATION

NORTH LRT PLATFORM LEVEL PLAN

CONTRACT NO. A-165
DRAWING NO. A-20
SCALE 1/8" = 1'-0"



KEY 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
DRAWN BY
CHECKED BY
IN CHARGE
DATE

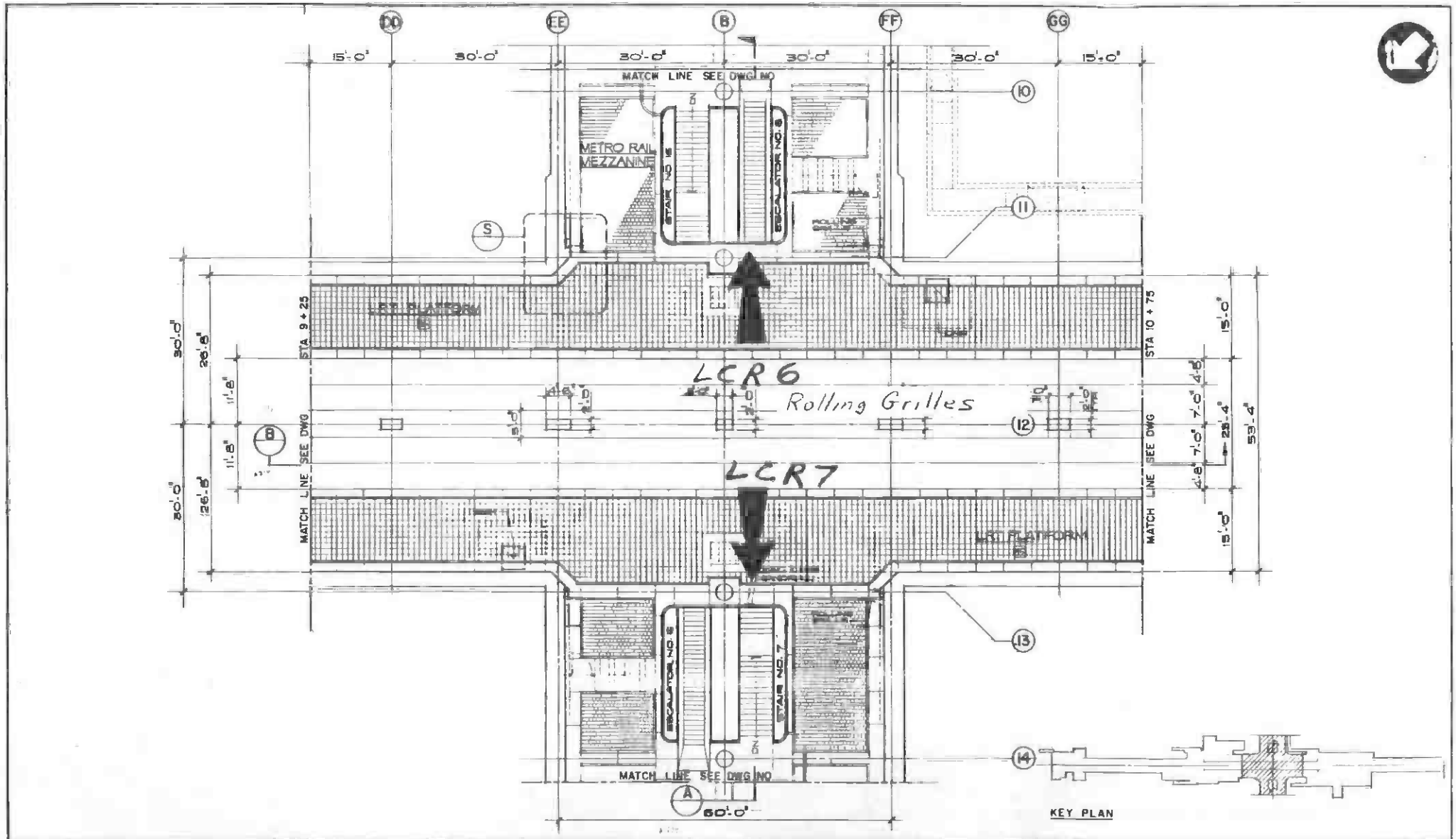
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
RTD

SUBMITTED
DMJM/PBQD KE/HWA
GENERAL CONSULTANTS
APPROVED

L A CBD TO N HOLLYWOOD
7TH/FLOWER STATION

TAILTRACK FAN ROOM PLAN

CONTRACT NO. A-165
DRAWING NO. A 209
REV.
SCALE 1/8" = 1'-0"
SHEET NO. 72



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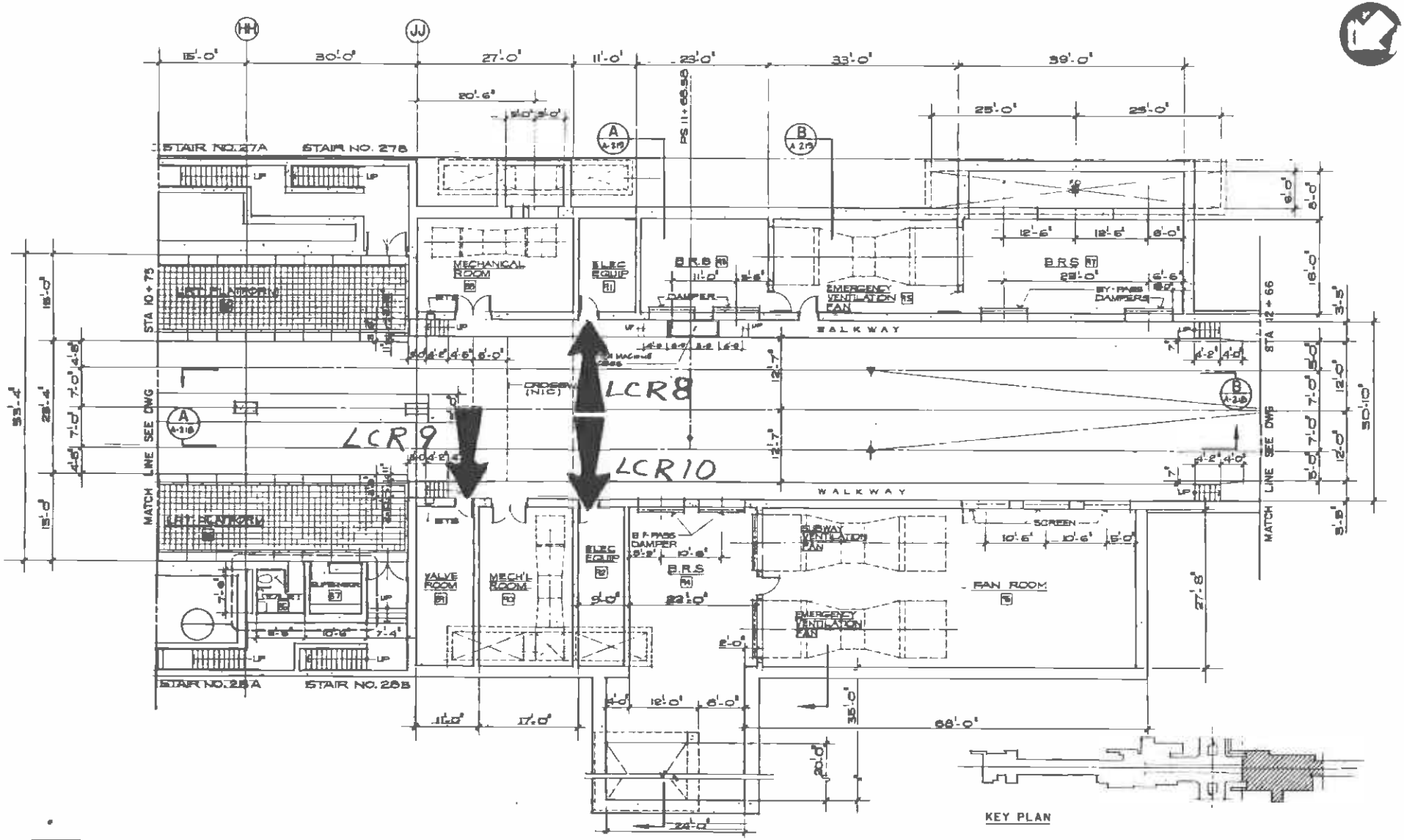
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
RTD

DMJM/PBQD/KE MWA

L A CBD TO N HOLLYWOOD 7TH/FLOWER STATION

CENTRAL LRT PLATFORM PLAN

CONTRACT NO. A-165
DRAWING NO. A-206
SCALE 1/8" = 1'-0"
SHEET NO. 72



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DESIGNED BY
DRAWN BY
CHECKED BY
QC CHECK
DATE

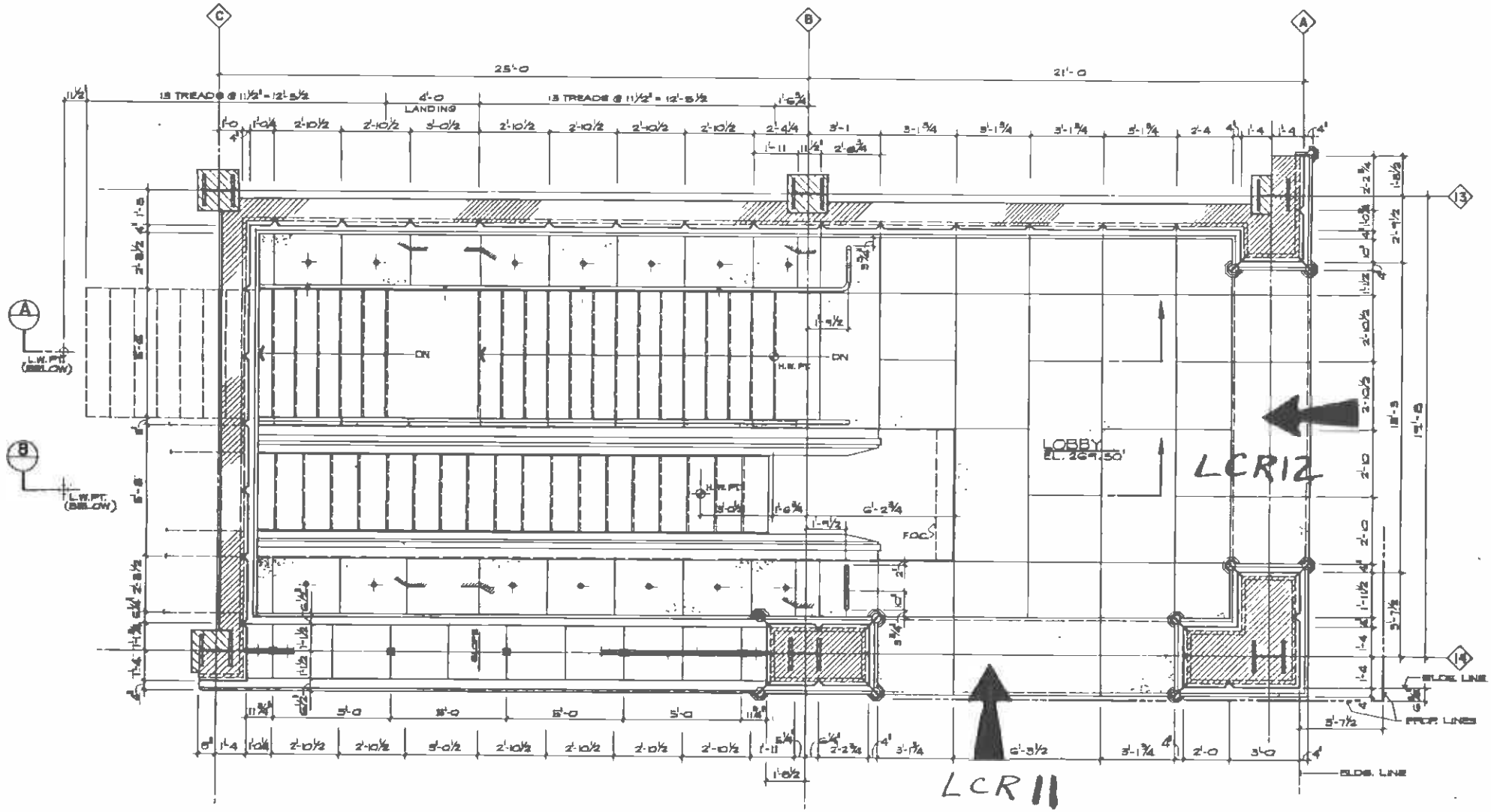
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
RTD

DMJM/PBQD/KE/HWA
* GENERAL CONSULTANTS

SUBMITTED
APPROVED

L.A. CBD TO N HOLLYWOOD
7TH/FLOWER STATION

PLATFORM / CROSSOVER PLAN



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DESIGNED BY
DRAWN BY
CHECKED BY
IN CHARGE
DATE

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
RTD

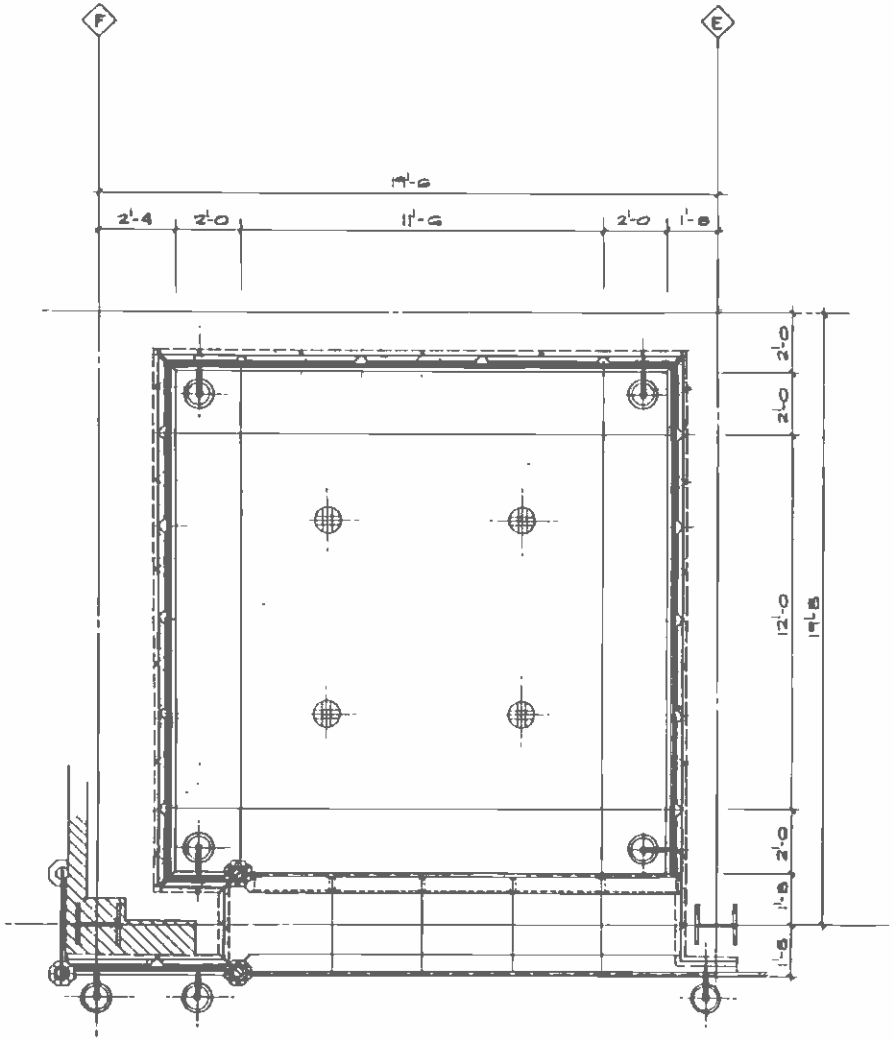
DMJM/PBQD/KE/MWA

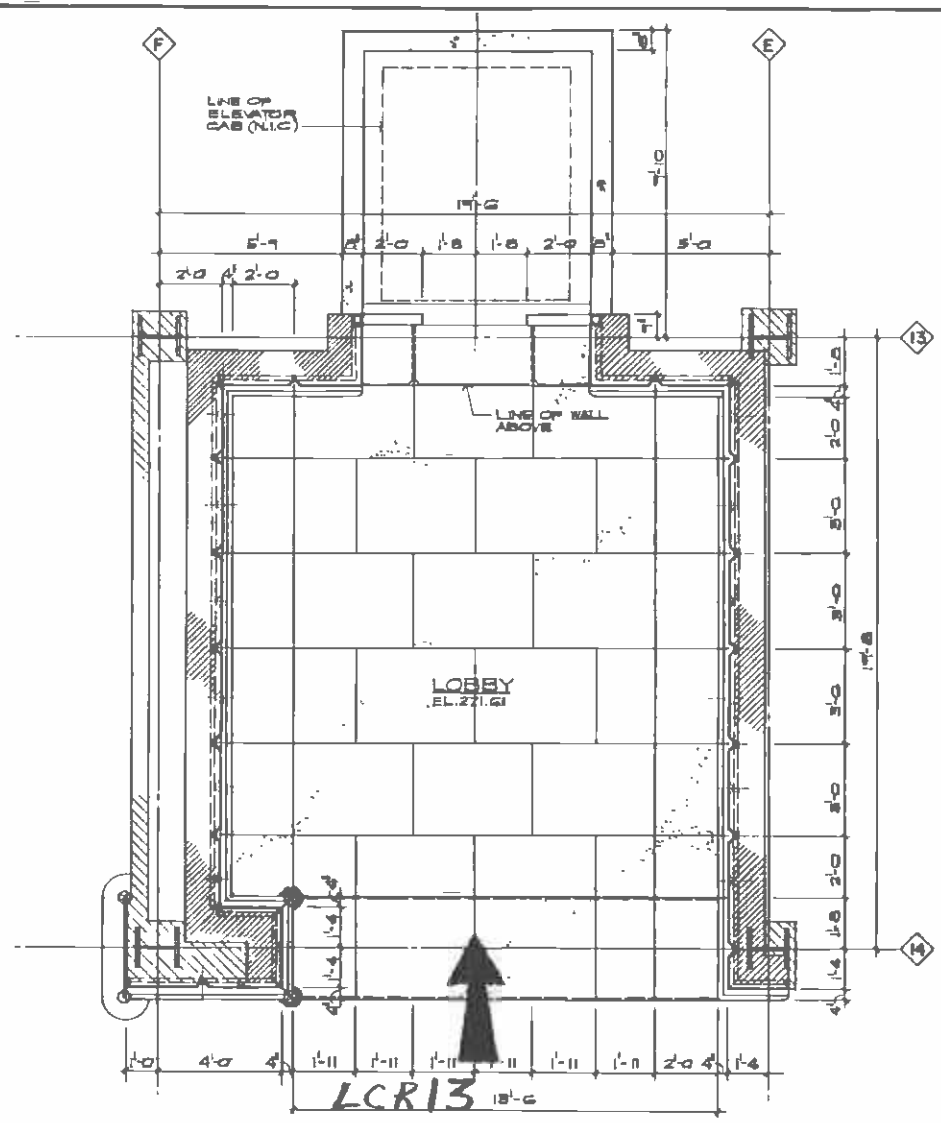
L.A. CBD TO N. HOLLYWOOD
7TH./FLOWER STATION

PLAN-STAIR NO. 24 AND ESC. NO. 11
AT SIDEWALK LEVEL

CONTRACT NO. 165

2"=1'-0





REV	DATE	BY	PAR.	APP	DESCRIPTION

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REV	DATE	BY	PAR.	APP	DESCRIPTION

DESIGNED BY

DRAWN BY

CHECKED BY

QC CHECK

DATE

SUBMITTED _____

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

RTD

DMJM/PBQD/KE/HMA
GENERAL CONSULTANTS

APPROVED _____

L.A. CBD TO N. HOLLYWOOD 7TH/FLOWER STATION

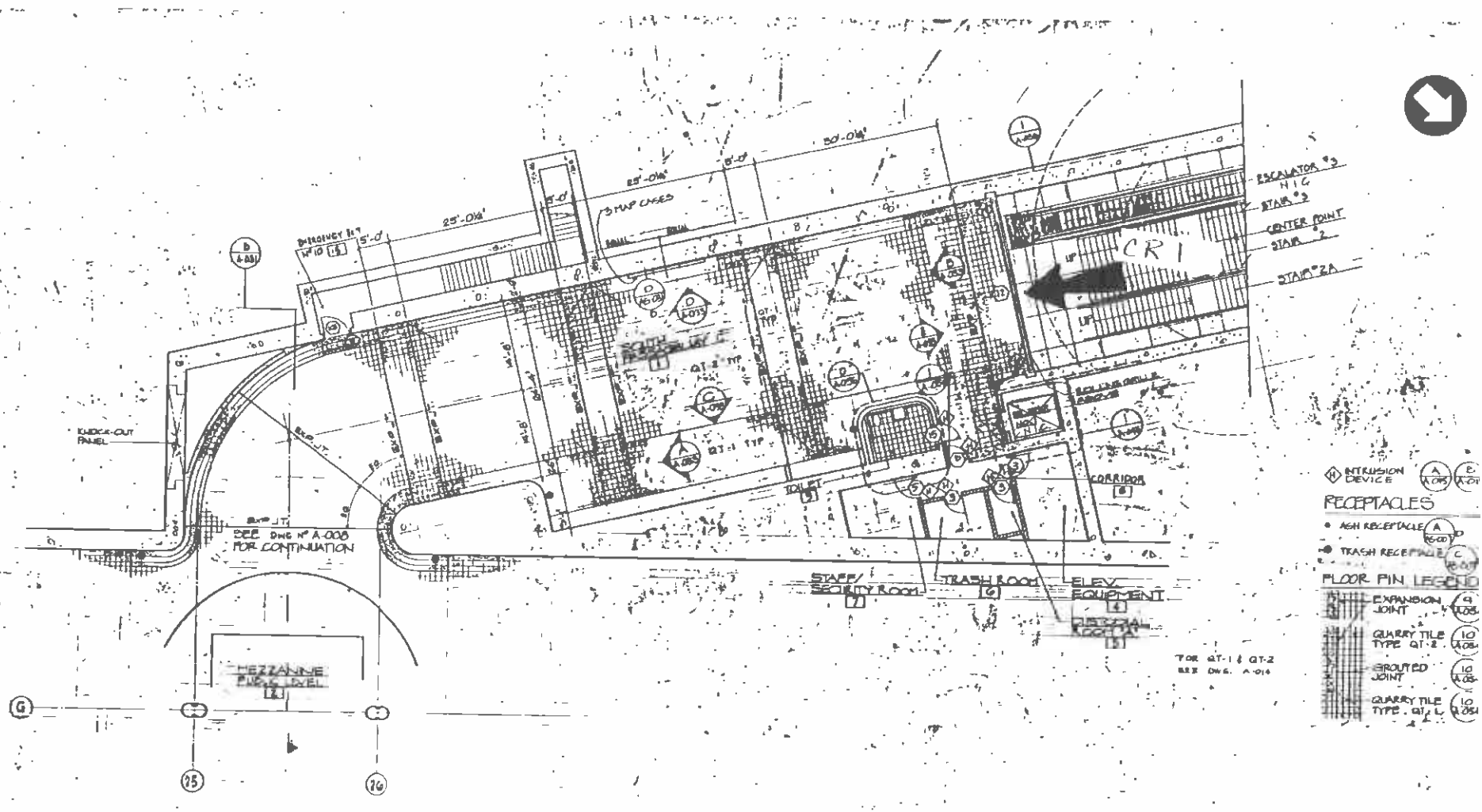
PLAN - ELEVATOR LOBBY AND REFLECTED CEILING AT SIDEWALK LEVEL

CONTRACT NO. A-165

DRAWING NO. _____ REV. _____

SCALE 1/2"=1'-0"

SHEET NO. _____



FEB 2 0 1996

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REV	DATE	BY	CHK	APP	DESCRIPTION
					AMENDMENT 186 & 10
					INITIAL ISSUE

DESIGNED BY
DRAWN BY
CHECKED BY
DATE MAR 8 1995

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

SVERDRUP & PARCEL AND ASSOCIATES, INC

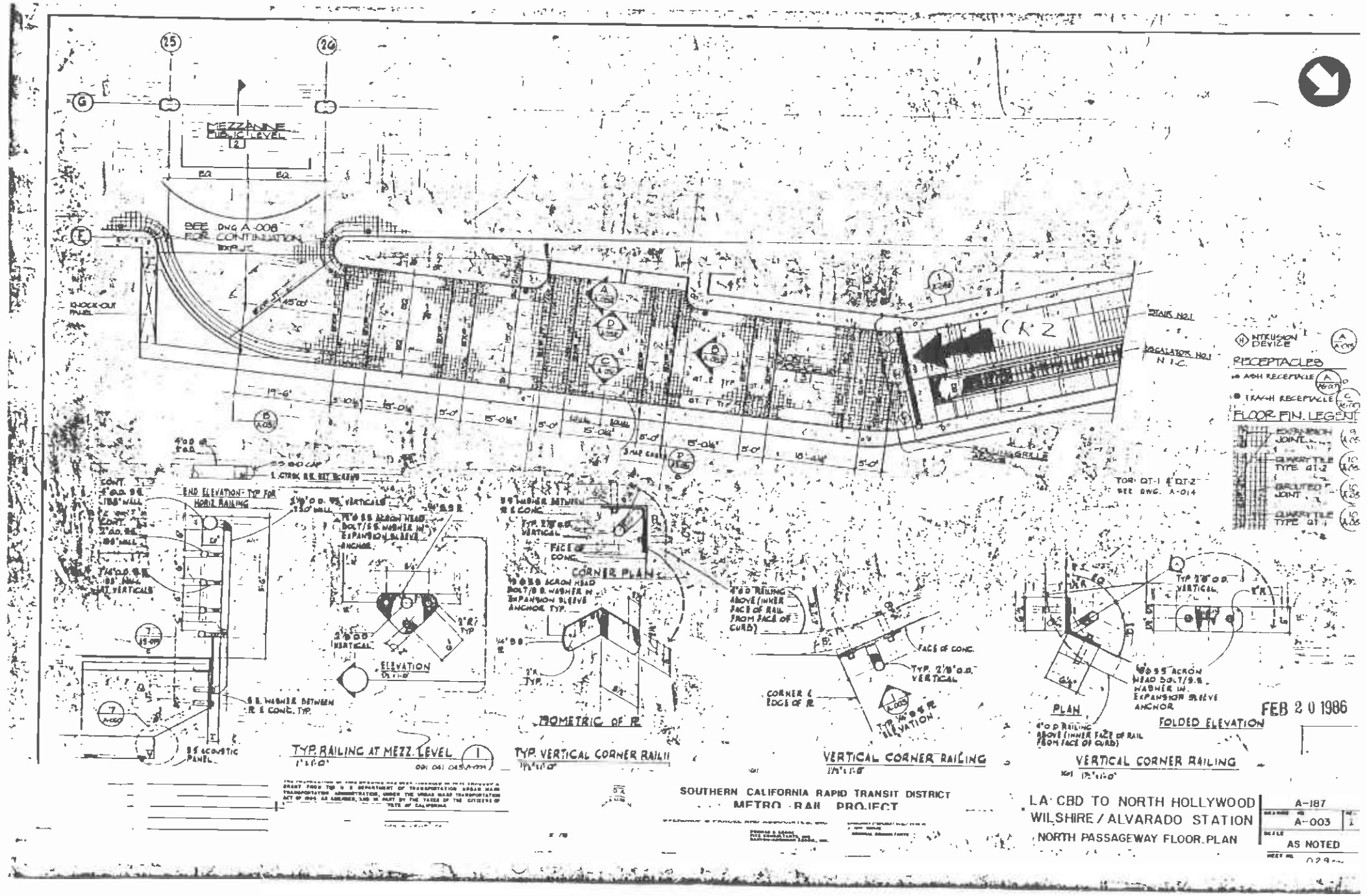
DMJM/PBQD/RE/HWA

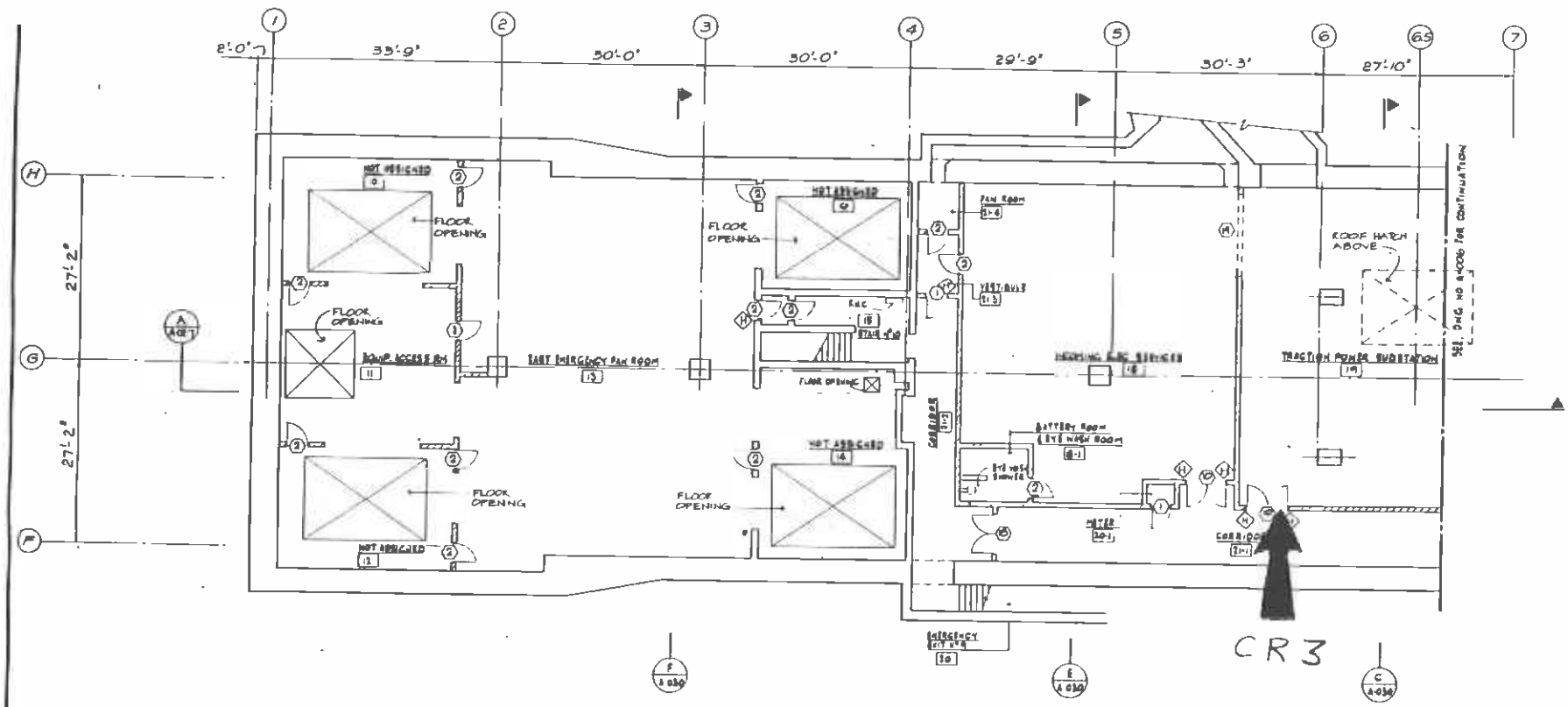
SUBMITTED

APPROVED

LA CBD TO NORTH HOLLYWOOD
WILSHIRE / ALVARADO STATION
SOUTH PASSAGEWAY FLOOR PLAN

CONTRACT NO. A-187
DRAWING NO. A-004
REV 1
SCALE 1/8"=1'-0"
SHEET NO. 030


MEZZANINE PUBLIC LEVEL
SEE DWG A-008 FOR CONTINUATION
STAIR NO.1
ESCALATOR NO.1 N.I.C.
INTRUSION DEVICE
RECEPTACLES
ADA RECEPTACLE
TRASH RECEPTACLE
FLOOR FIN. LEGEND
EXPANSION JOINT
QUARRY TILE TYPE QT-2
GROUTED JOINT
QUARRY TILE TYPE QT-1
TOP QT-1 & QT-2 SEE DWG. A-014
END ELEVATION- TYP FOR HORIZ RAILING
ELEVATION
CORNER PLAN
ISOMETRIC OF R
PLAN
FOLDED ELEVATION
TYP. RAILING AT MEZZ. LEVEL
TYP. VERTICAL CORNER RAIL
VERTICAL CORNER RAILING
VERTICAL CORNER RAILING
FEB 2 0 1986
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
LA CBD TO NORTH HOLLYWOOD
WILSHIRE / ALVARADO STATION
NORTH PASSAGEWAY FLOOR PLAN
A-187
A-003
AS NOTED



INTRUSION DEVICE, SEE P/A-015

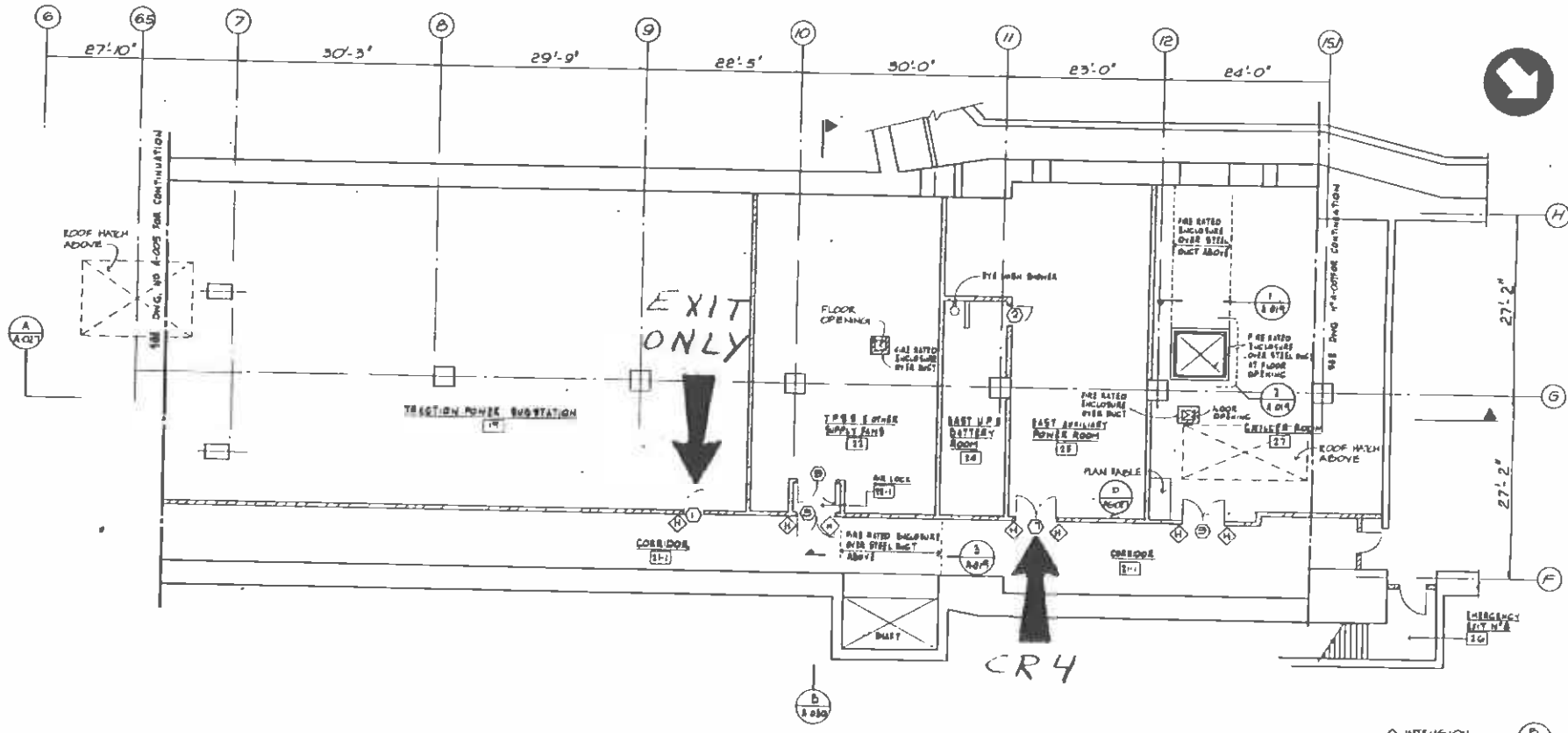
FEB 2 0 198

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

LA CBD TO NORTH HOLLYWOOD
WILSHIRE / ALVARADO STATION

PARTIAL MEZZ. LEVEL FLOOR PLAN.
(GRIDLINE NO'S 1 THROUGH 6.5)

A-107
A-106
1/8"=1'-0"



* FOR FIRE RATED ENCLOSURE DETAILS, SEE ARCHITECTURAL & STRUCTURAL DRAWINGS S-114 & S-115

FEB 2 0 1986

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REV	DATE	BY	SUB	APP	DESCRIPTION
1	2/18/86				AMENDMENT ISSUE 10

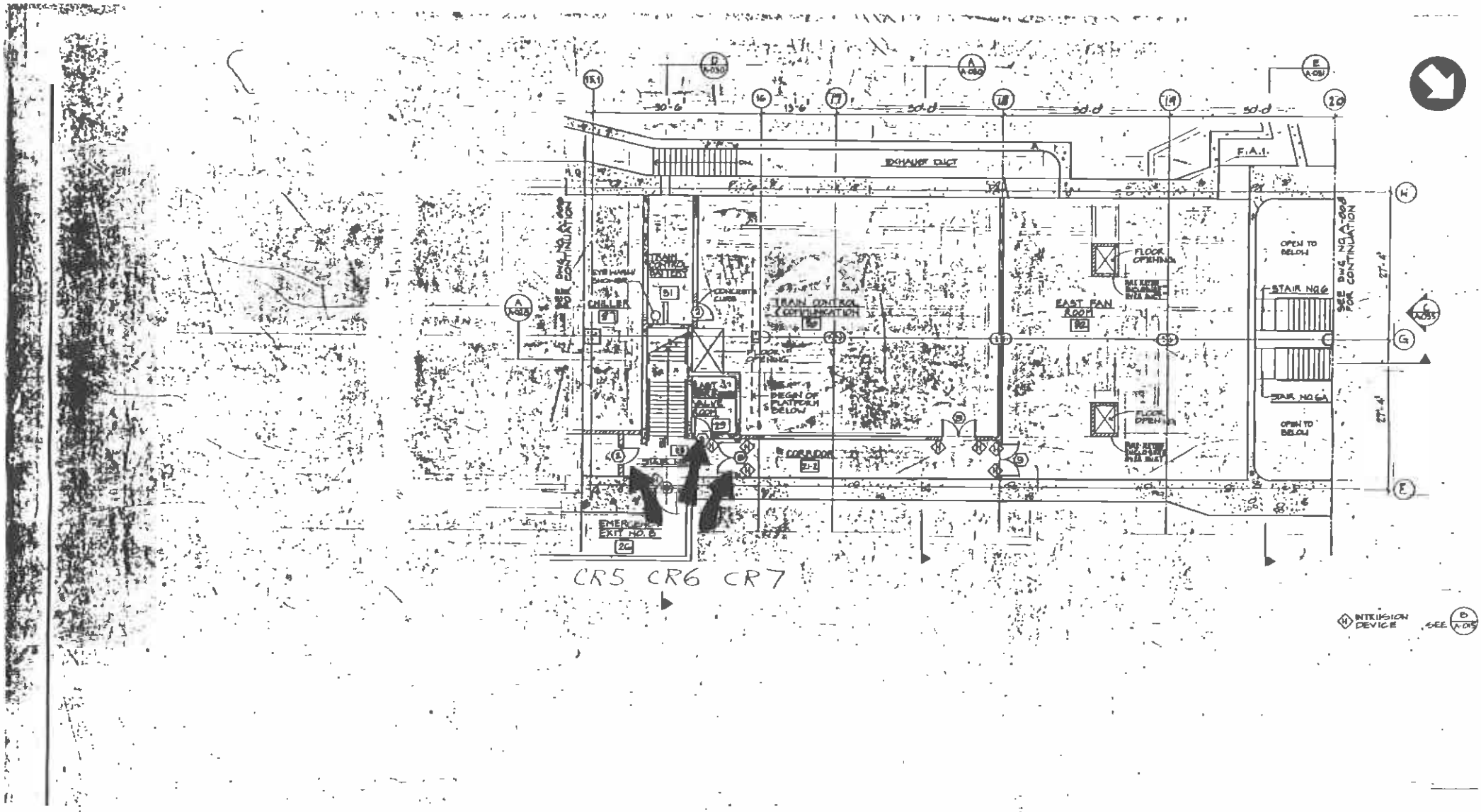
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

SYSTEMWIDE & PARCEL AND ASSOCIATES, INC.

PALMER/FOOD/KE/NWA

LA CBD TO NORTH HOLLYWOOD
WILSHIRE / ALVARADO STATION
PARTIAL MEZZ LEVEL FLOOR PLAN
(GRIDLINE NO'S 6.5 THROUGH 15.1)

CONTRACT NO A-187
DRAWING NO A-008 REV 1
SCALE 1/8"=1'-0"
SHEET NO 032

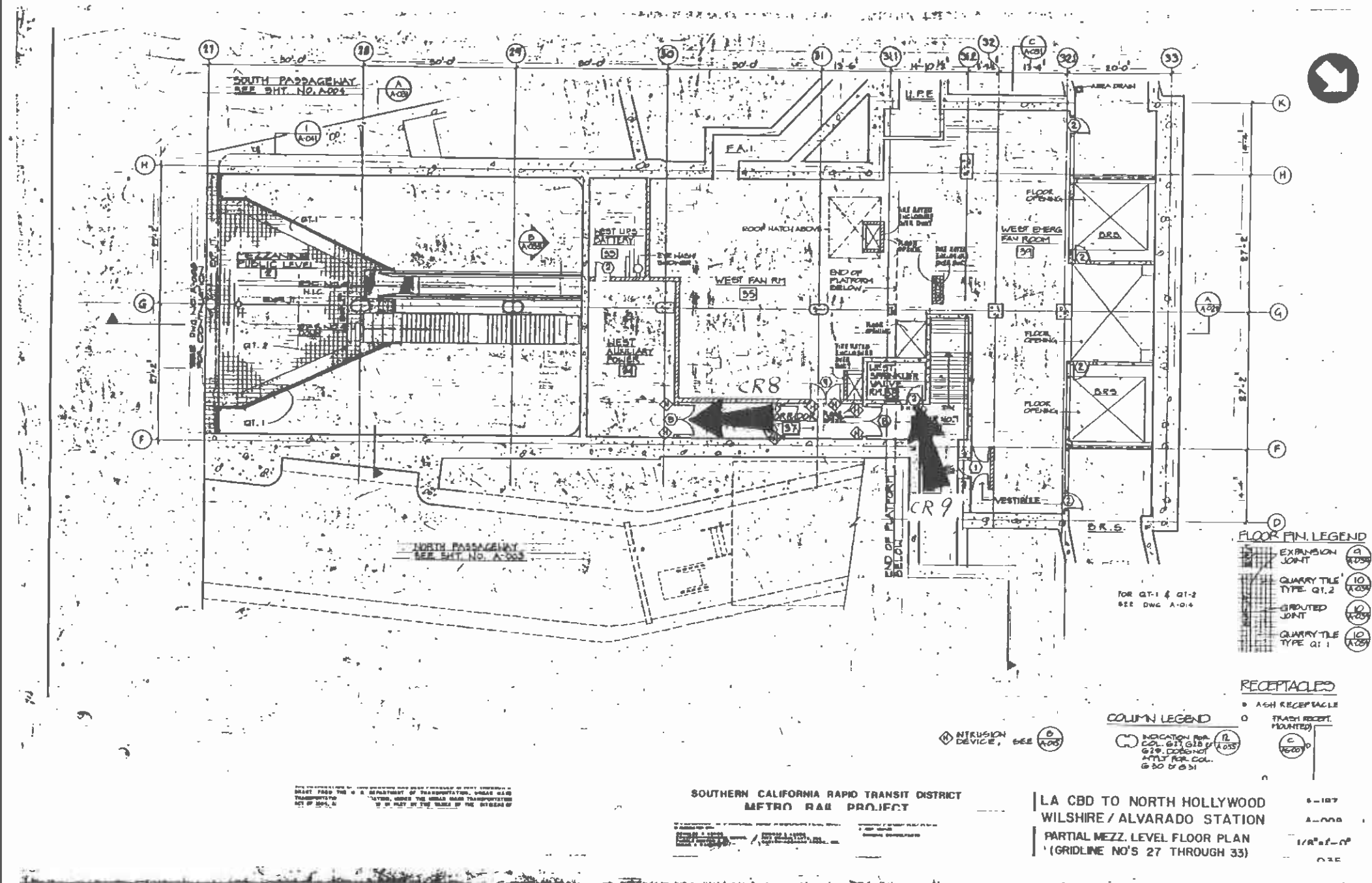


FEB 2 0 1986

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

LA CBD TO NORTH HOLLYWOOD
WILSHIRE / ALVARADO STATION
PARTIAL MEZZ LEVEL FLOOR PLAN
(GRIDLINE NO'S 15 THROUGH 20)

A-187
A-007
1/8"=1'-0"

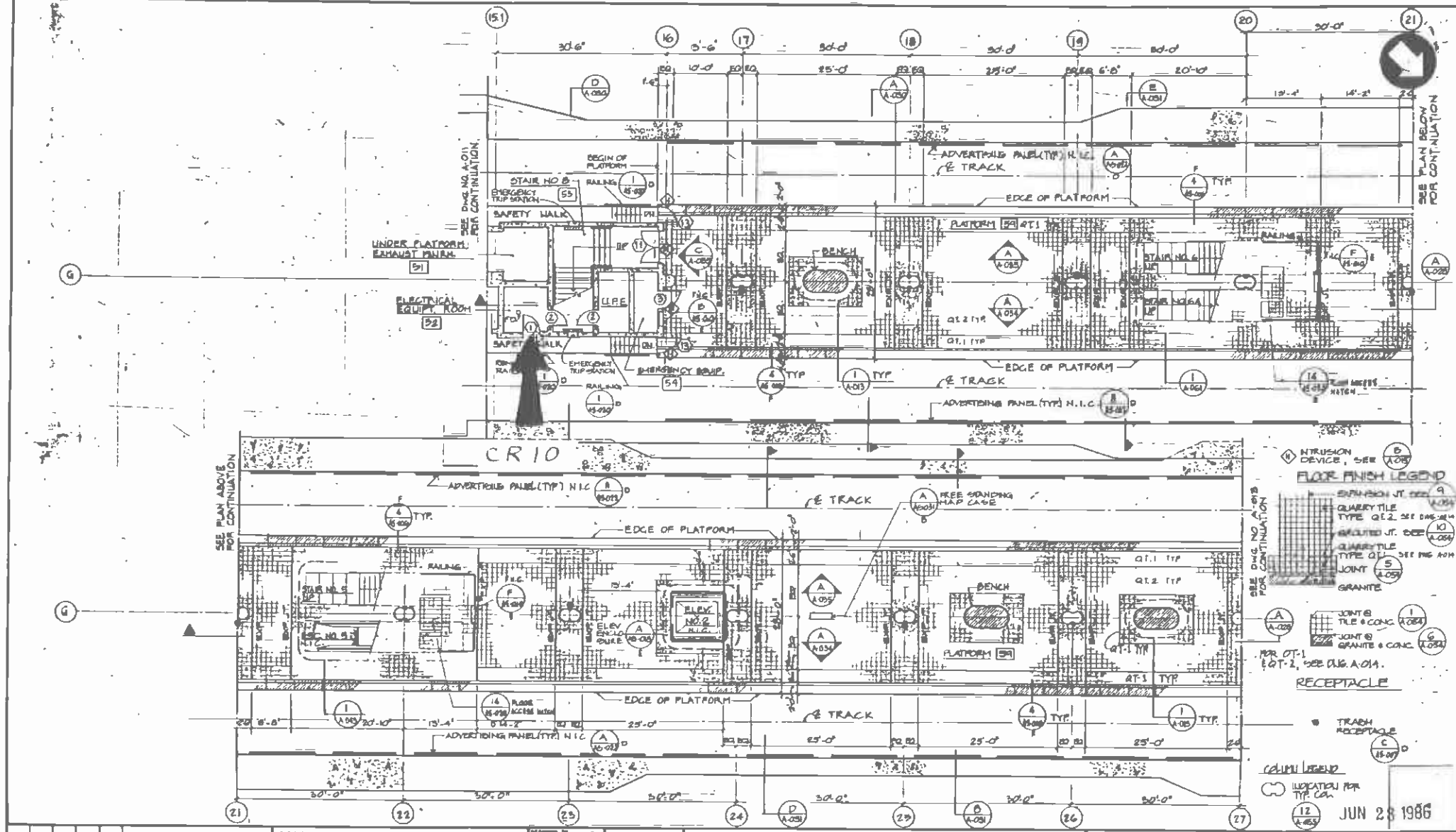


SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

LA CBD TO NORTH HOLLYWOOD
WILSHIRE / ALVARADO STATION

PARTIAL MEZZ. LEVEL FLOOR PLAN
(GRIDLINE NO'S 27 THROUGH 33)

S-187
A-009
1/8"=1'-0"
035



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NO.	DATE	BY	CHKD.	APP'D	DESCRIPTION
2	6/19/86	JH			REVISED PER CR G-010
1	2/19/86				ADJUSTMENT 1986-10
0	3/19/85	CA			INITIAL ISSUE

DESIGNED BY
DRAWN BY
CHECKED BY
DATE MAR 8 1985

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
RTD

SVERDRUP & PARCEL AND ASSOCIATES, INC.

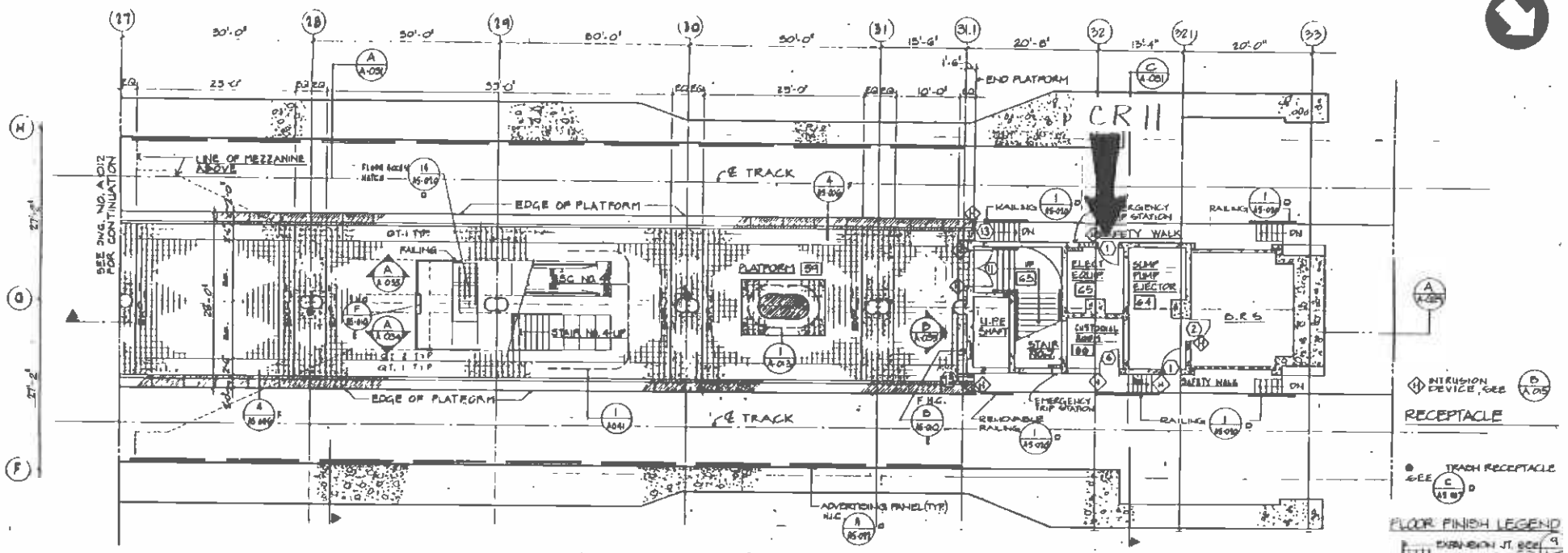
DMJM/PBQD/KE/HWA

APPROVED

LA CBD TO NORTH HOLLYWOOD
WILSHIRE / ALVARADO STATION
PARTIAL PLATFORM LEVEL FLOOR PLAN
(GRIDLINE NO'S 15 THROUGH 27)

CONTRACT NO. A-187
DRAWING NO. A-012
REV. 2
SCALE 1/8"=1'-0"
SHEET NO. 038

JUN 28 1986

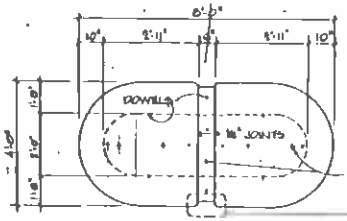


FLOOR FINISH LEGEND

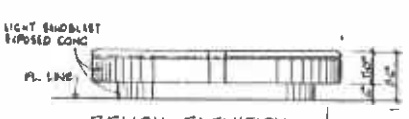
- EXPANSION JT. SEE 9 A-05
- QUARRY TILE TYPE QT. 2 10 A-054
- GROUTED JT. SEE 10 A-054
- QUARRY TILE TYPE QT. 10 A-054
- JOINT 5 A-054
- GRANITE
- JOINT @ TILE & CONC 1 A-054
- JOINT @ GRANITE & CONC 6 A-054

COLUMN LEGEND

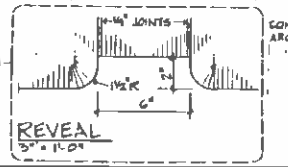
- INDICATION FOR TYP. COL. 12 A-054



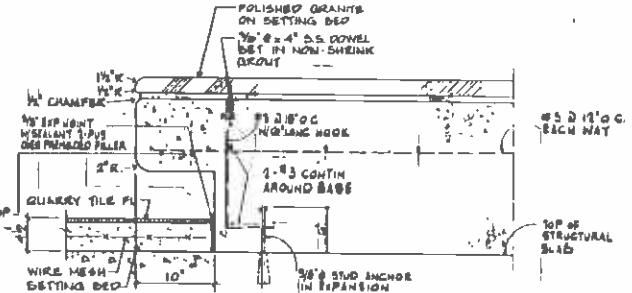
BENCH PLAN
1/2" = 1'-0"



BENCH ELEVATION
1/2" = 1'-0"



REVEAL
3" = 1'-0"



BENCH SECTION
1½" = 1'-0"

PLATFORM BENCH 1 A-03 A 012

JUN 28 1986

NO'S	DATE	BY	CHK	APP	DESCRIPTION
2	6/7/86	JN			REVISED PER CR G-010
1	2/7/86				AMENDMENT 1986 10
0	7-1-85	M			INITIAL ISSUE

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DESIGNED BY
DRAWN BY
CHECKED BY
DATE MAR 8,1985

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
RTD

PARSONS BRINCKERHOFF QUADE & DOUGLAS, INC.
EVERDRIP & PARCEL AND ASSOCIATES, INC.

DMJM/PBQD/KE/HWA

SUBMITTED
APPROVED

LA CBD TO NORTH HOLLYWOOD
WILSHIRE / ALVARADO STATION
PARTIAL PLATFORM LEVEL FLOOR PLAN
(GRIDLINE NO'S 27 THROUGH 33)

CONTRACT NO A-187
DRAWING NO A-013 REV 2
SCALE AS NOTED
SHEET NO 039