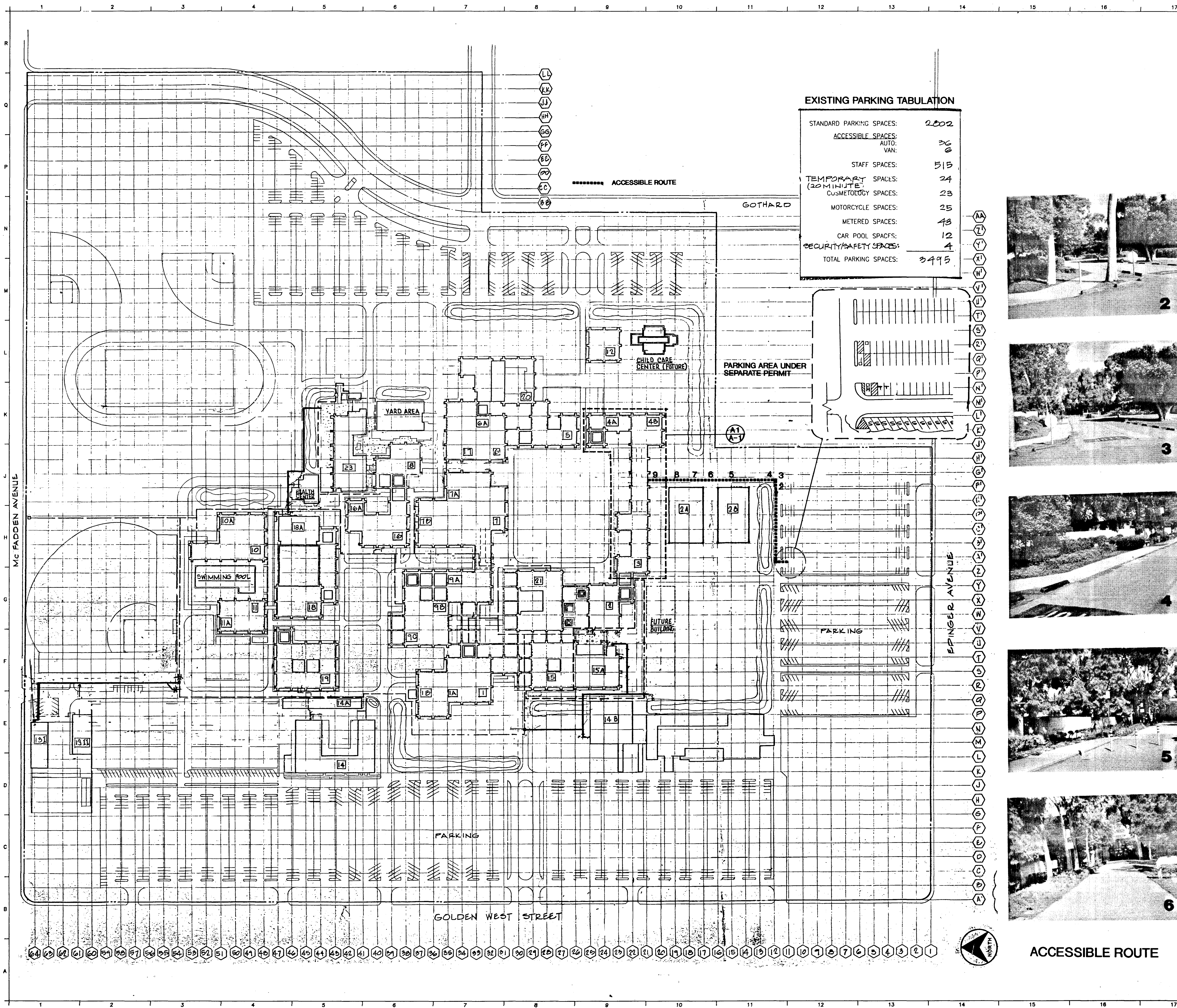
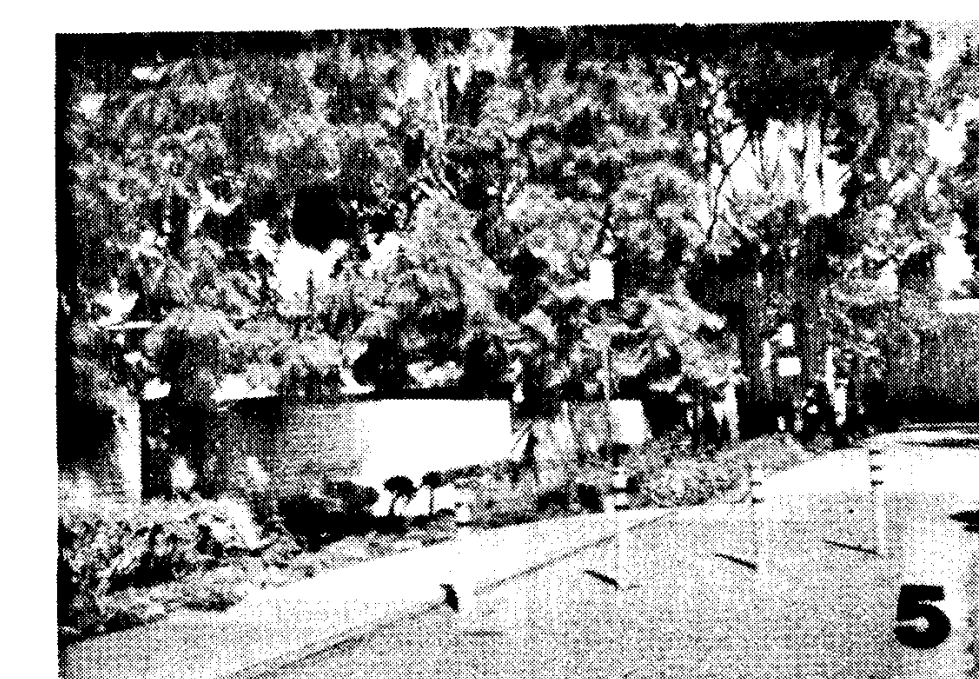
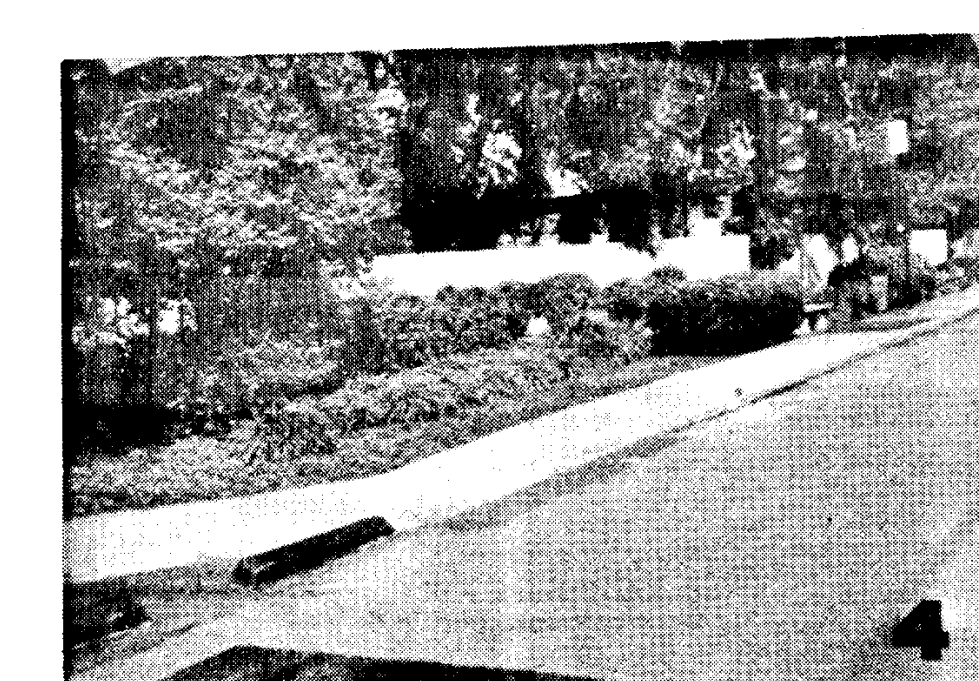
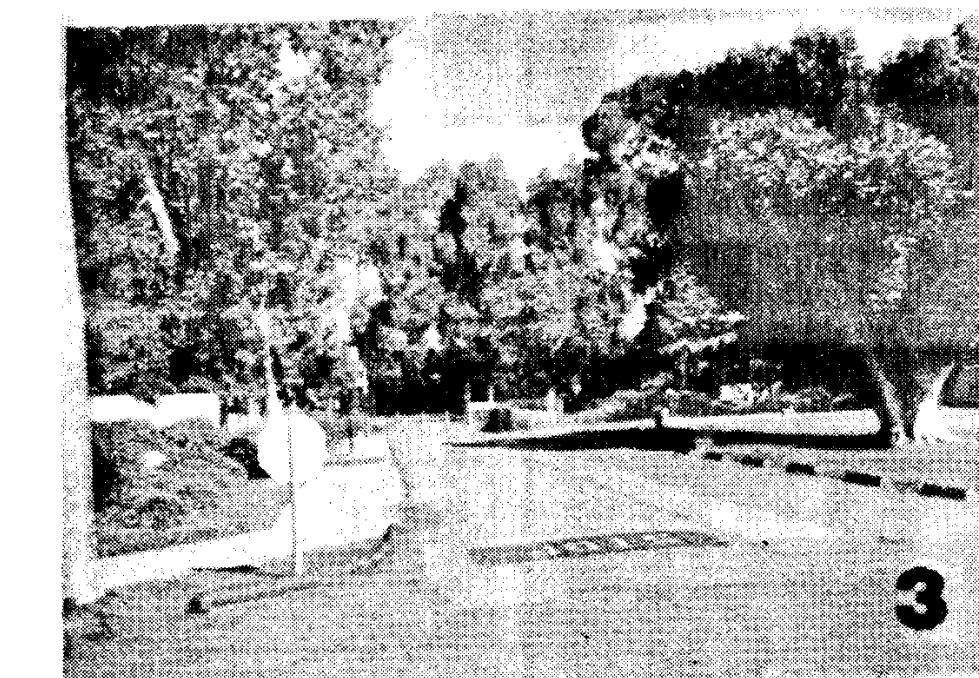
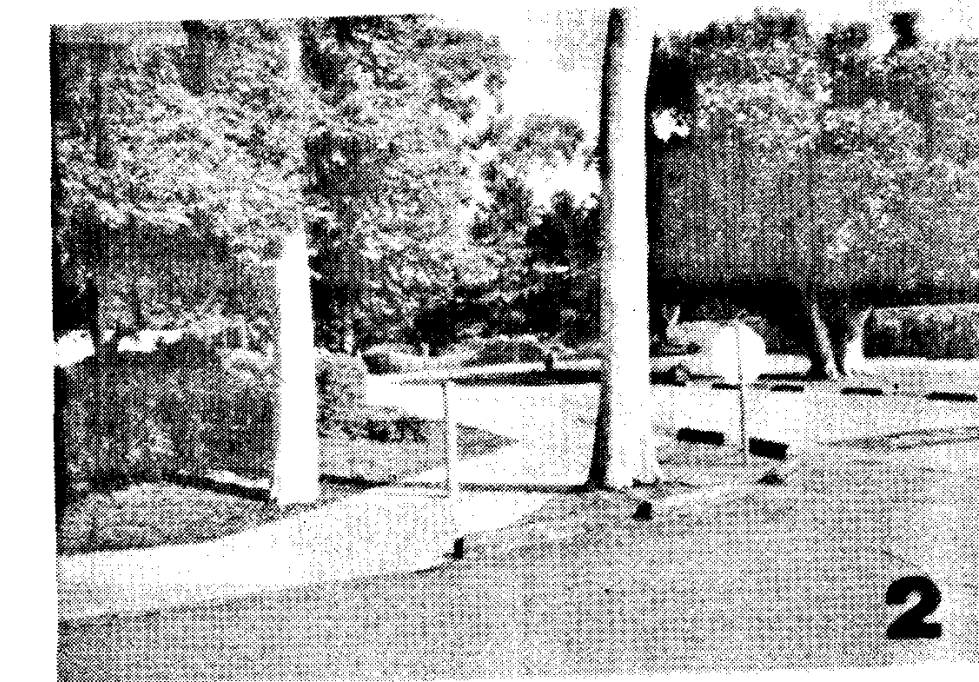


T-1



EXISTING PARKING TABULATION

STANDARD PARKING SPACES:	2502
ACCESSIBLE SPACES:	
AUTO:	36
VAN:	6
STAFF SPACES:	515
TEMPORARY SPACES:	24
(30 MINUTE)	
COSMETOLOGY SPACES:	23
MOTORCYCLE SPACES:	25
METERED SPACES:	48
CAR POOL SPACES:	12
SECURITY/SAFETY SPACES:	4
TOTAL PARKING SPACES:	3495



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NEWPORT BEACH, CALIFORNIA 92660
714.574.1325 FAX 714.574.1338
ARCHITECTURE AND INTERIOR DESIGN

CONSULTANT:
PROJECT ARCHITECT:
D. ELY
OWNER: GWC
AGENCY SUBMITTAL DATE:
ISSUED FOR BIDS:
2-28-90
ISSUED FOR CONSTRUCTION:
AGENCY APPROVALS:

PROJECT:
COAST COMMUNITY COLLEGE DISTRICT
GOLDEN WEST COLLEGE
HUNTINGTON BEACH, CALIFORNIA
ADMINISTRATION BUILDING REMODEL

SHEET TITLE:
SITE ACCESS PLAN

REVISIONS/SUBMITTALS:

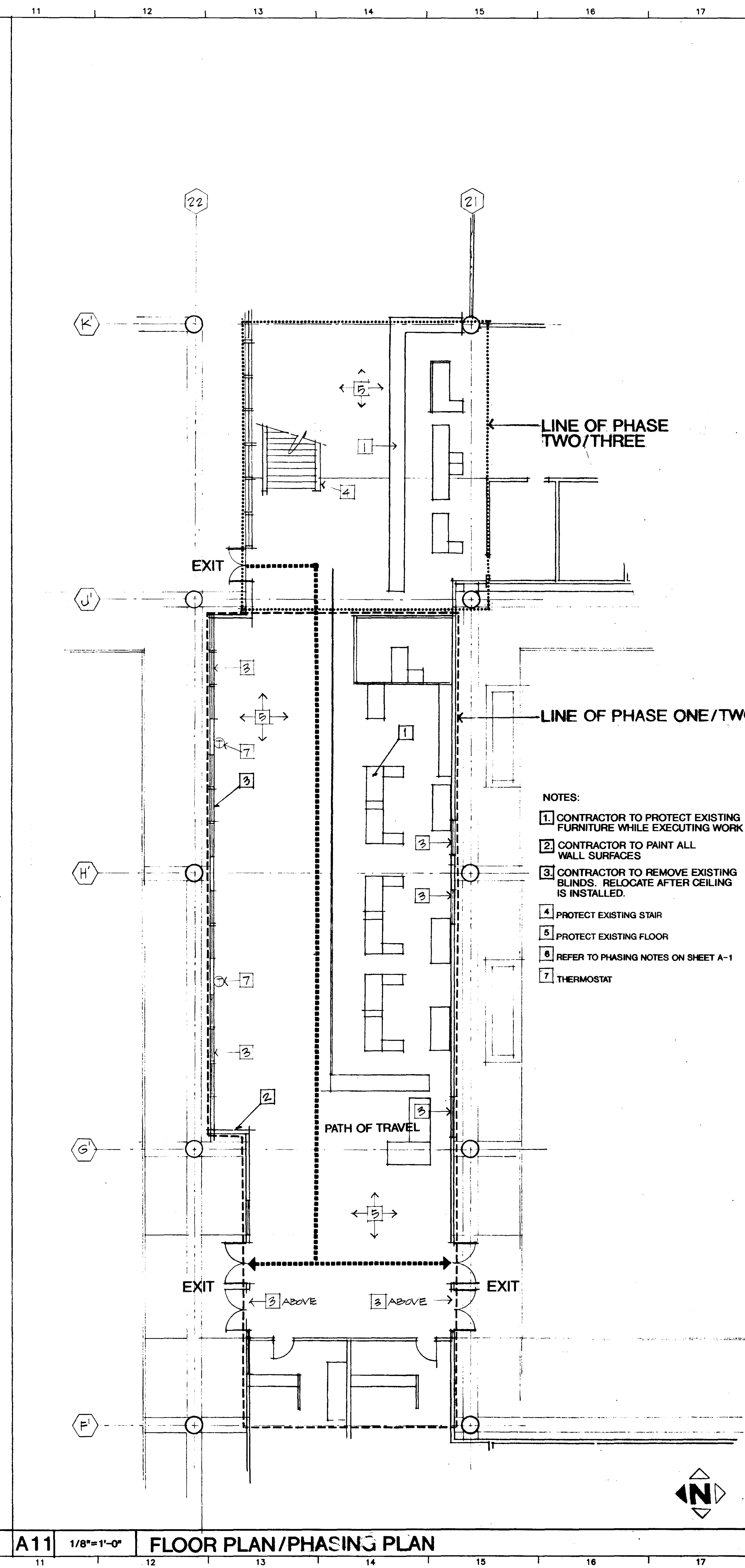
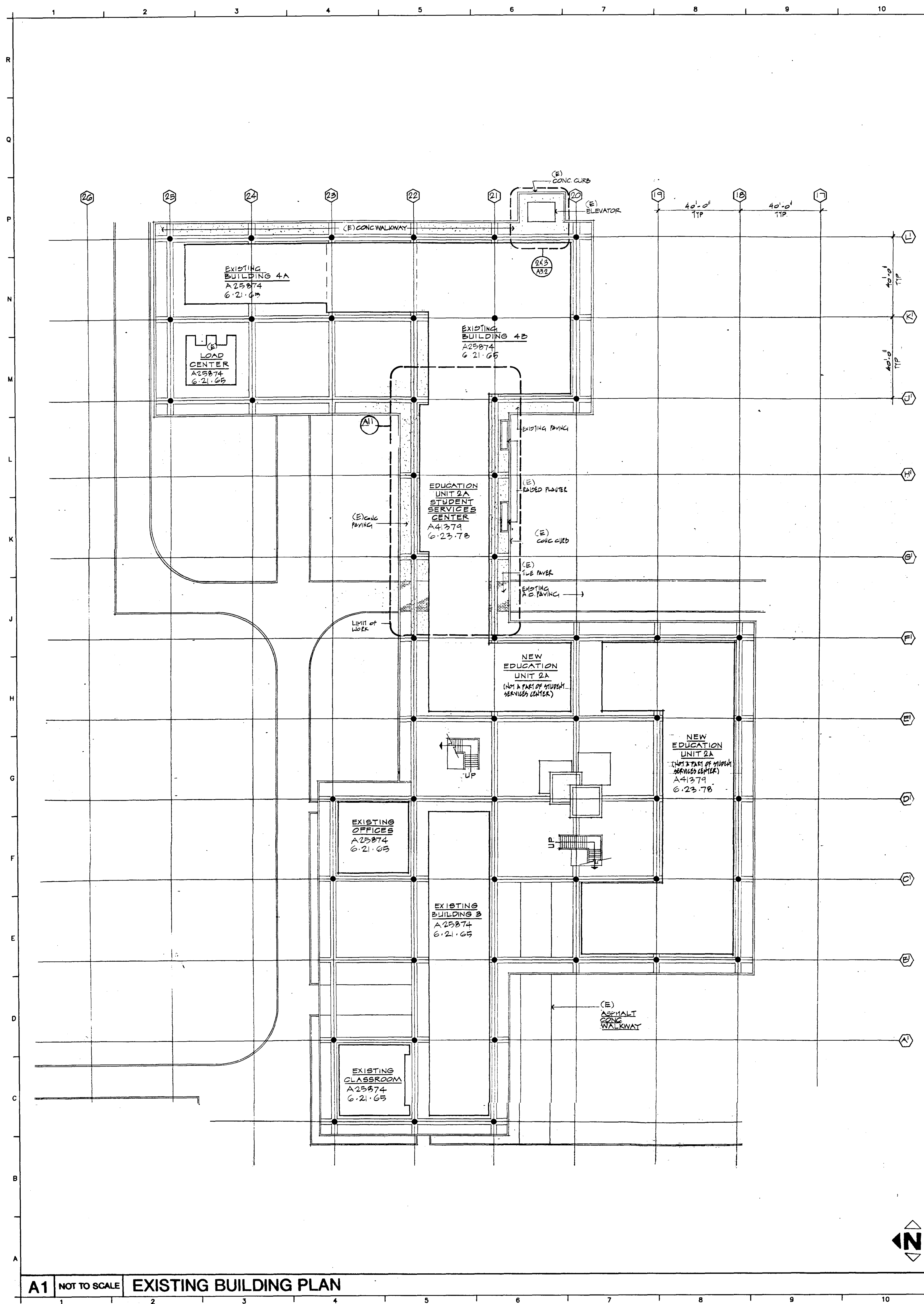
DATE:

PROJECT NUMBER:
854.00

SCALE:
1" = 100'-0"

SHEET NUMBER:
A-0

ACCESSIBLE ROUTE



- PHASING NOTES:**
1. THE SCHEDULE OF CONSTRUCTION ACTIVITY MUST BE COORDINATED WITH AND APPROVED BY GOLDEN WEST COLLEGE PLANT OPERATIONS, AND THE DISTRICT.
 2. THE PHASING PLAN REPRESENTS PHASING REQUESTED BY THE OWNER. COORDINATE THE REQUIREMENTS OF THE CONTRACT DOCUMENTS TO ALLOW THE PHASING AND OCCUPANCY OF THE AREAS INDICATED.
 3. MAINTAIN FULL POWER, LIGHTING, TELECOMMUNICATIONS, H.V.A.C., WATER AND SEWER TO AREAS INDICATED TO REMAIN AND COMPLETED PHASES DURING BUSINESS HOURS. NOTIFY THE OWNER A MINIMUM OF 48 HOURS IN ADVANCE IF TEMPORARY INTERRUPTION OF SERVICES BECOMES NECESSARY.
 4. MAINTAIN UNOBSTRUCTED ACCESS TO EXITS.
 5. COORDINATE AS REQUIRED WITH GOVERNING AUTHORITIES TO ALLOW OCCUPANCY OF COMPLETED PHASES.
 6. EXECUTE WORK BY METHODS TO AVOID DAMAGE TO COMPLETED WORK, AND WHICH WILL PROVIDE APPROPRIATE SURFACES TO RECEIVE PATCHING AND FINISHING.
 7. CUT RIGID MATERIALS USING MASONRY SAW OR CORE DRILL.
 8. AT PENETRATIONS OF ROOF CONSTRUCTION, COMPLETELY SEAL VOIDS WITH FIRE RATED MATERIAL TO FULL THICKNESS OF THE PENETRATED ELEMENT.
 9. FINISH SURFACES TO MATCH ADJACENT FINISHED SURFACES. FOR CONTINUOUS SURFACES, REFINISH TO NEAREST INTERSECTION OR NATURAL BREAK.
 10. REFER TO THE FLOOR PLAN/PHASING PLAN ON A11/A-1. THE FOLLOWING IS A DESCRIPTION OF THE PHASES:

- PHASE ONE:** CONSTRUCTION MAY COMMENCE WEST OF GRID J'. ADMINISTRATIVE AREA WILL BE VACATED FOR TWO WEEKS. AREA EAST OF GRID J' WILL BE OPERATIONAL WITH ADMINISTRATIVE STAFF.
TIME PERIOD: ONE WEEK
- PHASE TWO:** ENTIRE SPACE WILL BE VACATED AND IS OPEN FOR FULL CONSTRUCTION ACTIVITY.
TIME PERIOD: ONE WEEK
- PHASE THREE:** SPACE EAST OF GRID J' WILL BE VACATED. FULL CONSTRUCTION ACTIVITY PERMITTED HERE. SPACE WEST OF GRID J' WILL BE PARTIALLY USED. LIGHT CONSTRUCTION ACTIVITY WILL BE PERMITTED HERE.
- PHASE FOUR:** ENTIRE SPACE WILL BE OCCUPIED. LIGHT CONSTRUCTION ACTIVITY PERMITTED.

- GENERAL NOTES:**
1. REFER TO GENERAL NOTES ON SHEET A-3

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ARCHITECTURE AND INTERIOR DESIGN

CONSULTANT:

PROJECT:
**COAST COMMUNITY COLLEGE DISTRICT
GOLDEN WEST COLLEGE
HUNTINGTON BEACH, CALIFORNIA
ADMINISTRATION BUILDING REMODEL**

SHEET TITLE:
FLOOR PLAN

REVISIONS/SUBMITTALS:

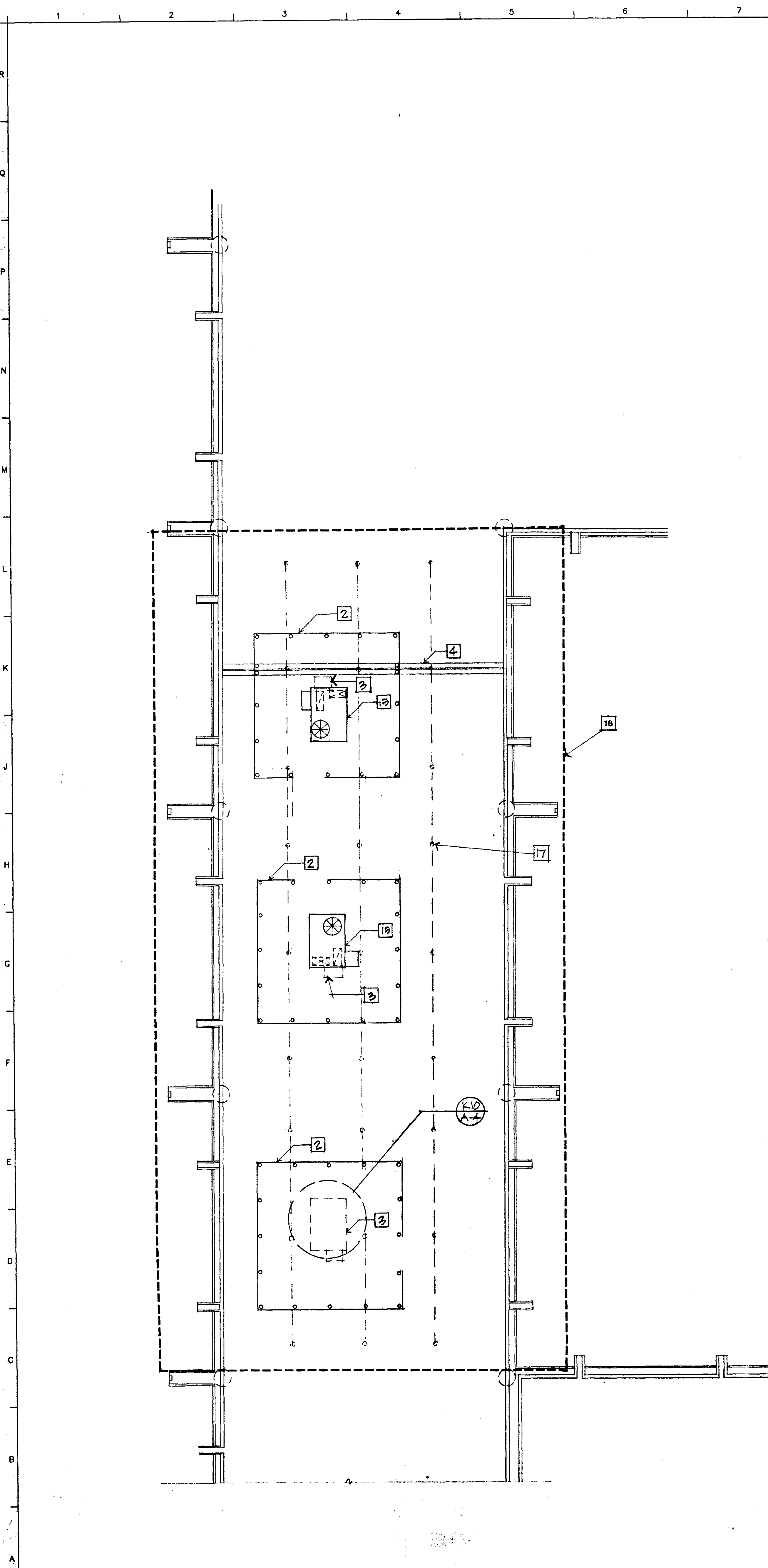
NO.	DATE	DESCRIPTION
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2	01.24.90	ISSUED FOR CONSTRUCTION

DATE: 01.24.90

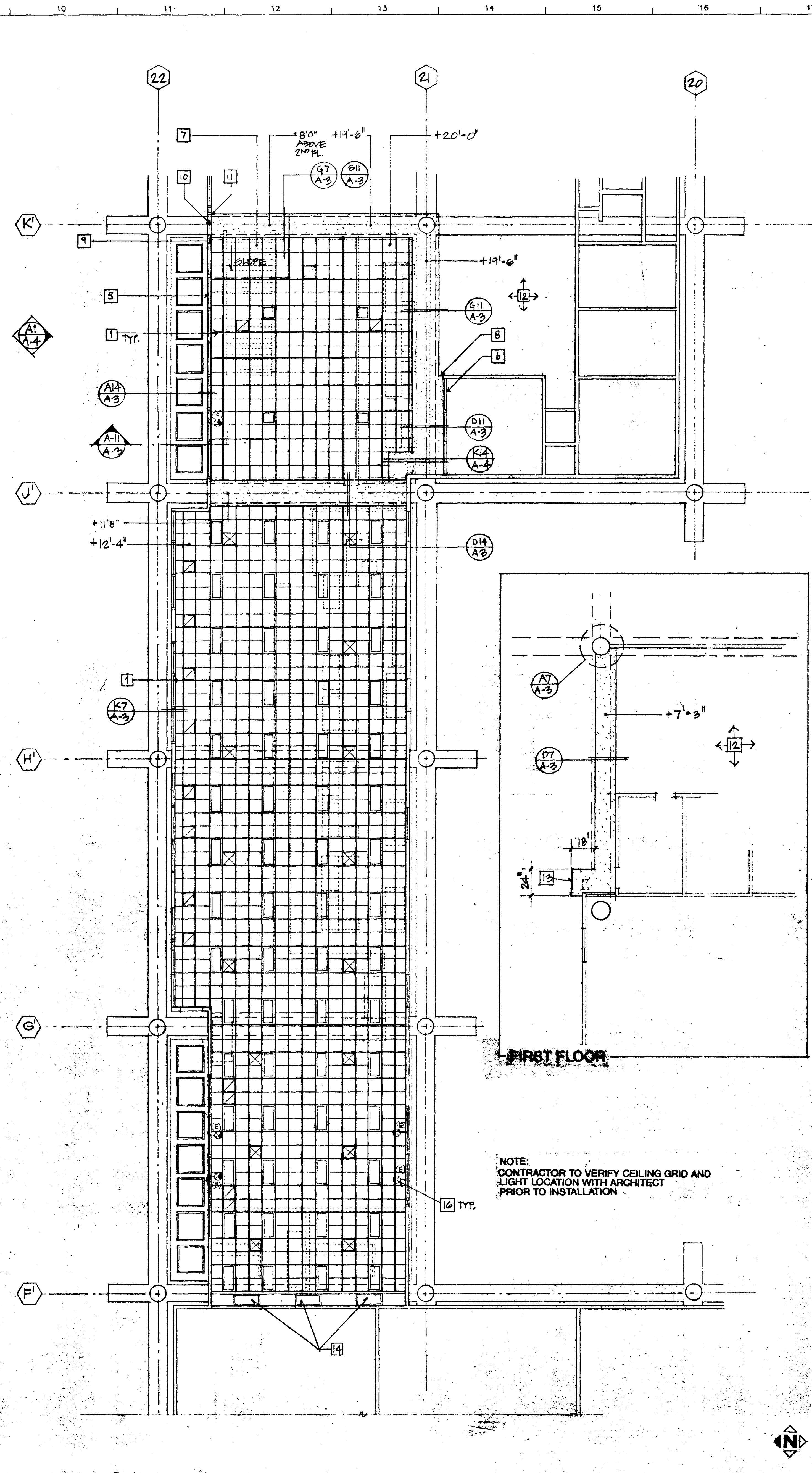
AGENCY APPROVALS:

PROJECT NUMBER: 854.00
PROJECT ARCHITECT: D. ELY
DRAWN BY:
AGENCY SUBMITTAL DATE:
ISSUED FOR BIDDING: 01.24.90
ISSUED FOR CONSTRUCTION: 01.24.90
SCALE: 1/8" = 1'-0"
SHEET NUMBER:

A-1



A1 1/8" = 1'-0" **ROOF PLAN**



A2 1/8" = 1'-0" **REFLECTED CEILING PLAN**

KEYNOTES

- ALIGN BOTTOM SURFACE OF CEILING TILE WITH BOTTOM EDGE OF MULLION. FIELD VERIFY HEIGHT. REFER TO A14/A-3 OR K7/A-3.
- REMOVE (E) MECHANICAL EQUIPMENT SCREEN.
- REMOVE (E) MECHANICAL UNITS.
- (E) SEPARATION JOINT.
- SPANDREL GLAZING ABOVE LINE OF CEILING.
- TINT GLAZING BLACK ABOVE LINE OF SOFFIT.
- SLOPE SUSPENDED LAY-IN CEILING TO BE FLUSH WITH BOTTOM OF SOFFIT.
- ALIGN JOG IN SOFFIT WITH (E) WALL.
- MULLION TO ALIGN WITH THE SUSPENDED LAY-IN CEILING. REFER TO A14/A-3.
- ALIGN BOTTOM SURFACE OF SOFFIT WITH BOTTOM OF MULLION. REFER TO A14/A-3.
- TERMINATE VERTICAL EDGE OF SOFFIT AT (E) MULLION. ADD VERTICAL PIECE OF MULLION AS REQUIRED.
- EXISTING CEILING TO REMAIN.
- VERTICAL SHAFT FOR DUCT.
- EXISTING FIXTURES TO REMAIN. REPLACE BULBS.
- NEW MECHANICAL UNIT. REFER TO 6/AC-1 FOR MECHANICAL CURB INFO.
- EXISTING EXIT SIGNS.
- ELECTRICAL CONDUITS TO BE REMOVED. FILL OPENINGS AND PATCH ROOF AS REQUIRED.
- REMOVE EXISTING ROOF AND REPLACE PER ALTERNATE #1.

LEGEND

2x4 SUSPENDED CEILING WITH LAY-IN TILES. REFER TO:

GYPSUM BOARD SOFFIT. REFER TO:

LIGHT FIXTURES

OUTLINE OF FURNISHINGS AND STAIRS

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714.574.1325 FAX 714.574.1338
ARCHITECTURE AND INTERIOR DESIGN

PROJECT: **COAST COMMUNITY COLLEGE DISTRICT
GOLDEN WEST COLLEGE
HUNTINGTON BEACH, CALIFORNIA
ADMINISTRATION BUILDING REMODEL**

SHEET TITLE: **ROOF PLAN AND REFLECTED CEILING PLAN**

REVISIONS/SUBMITTALS:

DATE:

PROJECT NUMBER: **854.00**

PROJECT ARCHITECT: **D. ELY**

DRAWN BY: **DME**

AGENCY SUBMITTAL DATE:

ISSUED FOR BIDDING: **9/24/96**

ISSUED FOR CONSTRUCTION:

AGENCY APPROVALS:

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

SHEET NUMBER: **A-2**

I. EXPANSION ANCHOR BOLTS

- All field installed concrete expansion anchors shall be approved for the type and installation for its application and materials. All bolts shall have an approved ICBO research report number.
- All anchors shall be tested as follows: (Hardrock or Lightweight Concrete).

ANCHOR		WEDGE		SLEEVE		SHELL	
DIA. (in.)		LOAD (LBS)	TORQUE (FT-LBS)	LOAD (LBS)	TORQUE (FT-LBS)	LOAD (LBS)	TORQUE (FT-LBS)
1/4		800	10	400	5	1000	N/A
5/16		N/A	N/A	400	5	1400	N/A
3/8		1100	25	700	10	2800	N/A
1/2		2000	50	900	20	2700	N/A
5/8		2300	80	1100	45	3700	N/A
3/4		3700	150	1400	90	5400	N/A
1		5800	250	N/A	N/A	N/A	N/A

Minimum anchor embedment and edge distance are as follows:

Bolt Diameter (d)	1/4"	3/8"	1/2"	5/8"	3/4"	1"
Min. Embedment (8d)	1 1/2"	2 1/4"	3"	3 3/4"	4 1/2"	6"
Min. Edge Distance (10d)	2 1/2"	3 3/4"	5"	6 1/4"	7 1/2"	10"

A. Anchor diameter refers to the thread size for a WEDGE and SHELL categories and to the anchor outside diameter for the SLEEVE category.

B. Apply proof test loads to WEDGE and SLEEVE anchors without removing the nut if possible. If not, remove the nut and install a threaded coupler nut to the same tightness of the original nut using a torque wrench and apply load.

C. For SLEEVE/SHELL internally threaded categories, verify that the anchor is not prevented from withdrawing by a dissolvable or other fixture. If restraint is found, loosen and shim or remove fixture(s) prior to testing.

D. Reaction loads from test fixtures may be applied close to the anchor being tested. Provided the anchor is not restrained from withdrawing by the fixture(s).

E. Shell type anchors should be tested as follows: Visually inspect 25% for full expansion as evidenced by the location of the expansion plug in the anchor body. (2) Location of a fully expanded anchor should be as recommended by the manufacturer, or in the absence of such recommendation, as determined on the job site following the manufacturer's installation instructions, and proof load 25% as indicated in the table above, but not less than three anchors per day for each different person or crew installing anchors, on test box of the anchor per J.

F. Test equipment shall be calibrated by an approved testing laboratory in accordance with standard recognized procedures. Torque tests for Shell type anchors are omitted due to lack of data. Torque testing can occur on an individual basis when test procedures are submitted and approved by the enforcement agency. Calibrated values may be used for testing of standard torque values.

G. The following criteria apply for the acceptance of installed anchors:

1. WEDGES: RAY METHOD: The anchor shall have no observable movement at the applicable test load. For wedge and sleeve type anchors, a practical way to determine anchor movement is that the washer under the nut becomes loose.

2. TORQUE WRENCH METHOD: The applicable test torque must be reached within the following limits:

For 1/2" turn of the nut, 0-40% over 1/2" turn of the nut. For 3/8" turn of the nut, 0-40% over 3/8" turn of the nut.

3. Testing should occur 24 hours minimum after installation of the subject anchors.

4. For WEDGE and SLEEVE type anchors test 50% of the anchors (alternate anchors or group arrangement). If any failures occur, the immediate adjacent anchors must then be tested.

5. When installing drilled-in anchors in existing non-prestressed reinforced concrete, use care and caution to avoid cutting or damaging the existing reinforcing bars. When installing them into existing prestressed concrete (pre- or post-tensioned), locate the prestressed tendons by using a non-destructive method prior to installation. Exercise extreme care and caution to avoid cutting or damaging the tendons during installation. Maintain a minimum clearance of one inch between the reinforcement and the drilled-in anchor.

6. For 1/2" turn of the nut, 0-40% over 1/2" turn of the nut. For 3/8" turn of the nut, 0-40% over 3/8" turn of the nut.

7. Testing should occur 24 hours minimum after installation of the subject anchors.

8. For WEDGE and SLEEVE type anchors test 50% of the anchors (alternate anchors or group arrangement). If any failures occur, the immediate adjacent anchors must then be tested.

9. When installing drilled-in anchors in existing non-prestressed reinforced concrete, use care and caution to avoid cutting or damaging the existing reinforcing bars. When installing them into existing prestressed concrete (pre- or post-tensioned), locate the prestressed tendons by using a non-destructive method prior to installation. Exercise extreme care and caution to avoid cutting or damaging the tendons during installation. Maintain a minimum clearance of one inch between the reinforcement and the drilled-in anchor.

10. For 1/2" turn of the nut, 0-40% over 1/2" turn of the nut. For 3/8" turn of the nut, 0-40% over 3/8" turn of the nut.

11. Testing should occur 24 hours minimum after installation of the subject anchors.

12. For WEDGE and SLEEVE type anchors test 50% of the anchors (alternate anchors or group arrangement). If any failures occur, the immediate adjacent anchors must then be tested.

13. When installing drilled-in anchors in existing non-prestressed reinforced concrete, use care and caution to avoid cutting or damaging the existing reinforcing bars. When installing them into existing prestressed concrete (pre- or post-tensioned), locate the prestressed tendons by using a non-destructive method prior to installation. Exercise extreme care and caution to avoid cutting or damaging the tendons during installation. Maintain a minimum clearance of one inch between the reinforcement and the drilled-in anchor.

14. For 1/2" turn of the nut, 0-40% over 1/2" turn of the nut. For 3/8" turn of the nut, 0-40% over 3/8" turn of the nut.

15. Testing should occur 24 hours minimum after installation of the subject anchors.

16. For WEDGE and SLEEVE type anchors test 50% of the anchors (alternate anchors or group arrangement). If any failures occur, the immediate adjacent anchors must then be tested.

17. When installing drilled-in anchors in existing non-prestressed reinforced concrete, use care and caution to avoid cutting or damaging the existing reinforcing bars. When installing them into existing prestressed concrete (pre- or post-tensioned), locate the prestressed tendons by using a non-destructive method prior to installation. Exercise extreme care and caution to avoid cutting or damaging the tendons during installation. Maintain a minimum clearance of one inch between the reinforcement and the drilled-in anchor.

18. For 1/2" turn of the nut, 0-40% over 1/2" turn of the nut. For 3/8" turn of the nut, 0-40% over 3/8" turn of the nut.

19. Testing should occur 24 hours minimum after installation of the subject anchors.

20. For WEDGE and SLEEVE type anchors test 50% of the anchors (alternate anchors or group arrangement). If any failures occur, the immediate adjacent anchors must then be tested.

21. When installing drilled-in anchors in existing non-prestressed reinforced concrete, use care and caution to avoid cutting or damaging the existing reinforcing bars. When installing them into existing prestressed concrete (pre- or post-tensioned), locate the prestressed tendons by using a non-destructive method prior to installation. Exercise extreme care and caution to avoid cutting or damaging the tendons during installation. Maintain a minimum clearance of one inch between the reinforcement and the drilled-in anchor.

22. For 1/2" turn of the nut, 0-40% over 1/2" turn of the nut. For 3/8" turn of the nut, 0-40% over 3/8" turn of the nut.

23. Testing should occur 24 hours minimum after installation of the subject anchors.

24. For WEDGE and SLEEVE type anchors test 50% of the anchors (alternate anchors or group arrangement). If any failures occur, the immediate adjacent anchors must then be tested.

25. When installing drilled-in anchors in existing non-prestressed reinforced concrete, use care and caution to avoid cutting or damaging the existing reinforcing bars. When installing them into existing prestressed concrete (pre- or post-tensioned), locate the prestressed tendons by using a non-destructive method prior to installation. Exercise extreme care and caution to avoid cutting or damaging the tendons during installation. Maintain a minimum clearance of one inch between the reinforcement and the drilled-in anchor.

26. For 1/2" turn of the nut, 0-40% over 1/2" turn of the nut. For 3/8" turn of the nut, 0-40% over 3/8" turn of the nut.

27. Testing should occur 24 hours minimum after installation of the subject anchors.

28. For WEDGE and SLEEVE type anchors test 50% of the anchors (alternate anchors or group arrangement). If any failures occur, the immediate adjacent anchors must then be tested.

29. When installing drilled-in anchors in existing non-prestressed reinforced concrete, use care and caution to avoid cutting or damaging the existing reinforcing bars. When installing them into existing prestressed concrete (pre- or post-tensioned), locate the prestressed tendons by using a non-destructive method prior to installation. Exercise extreme care and caution to avoid cutting or damaging the tendons during installation. Maintain a minimum clearance of one inch between the reinforcement and the drilled-in anchor.

30. For 1/2" turn of the nut, 0-40% over 1/2" turn of the nut. For 3/8" turn of the nut, 0-40% over 3/8" turn of the nut.

31. Testing should occur 24 hours minimum after installation of the subject anchors.

32. For WEDGE and SLEEVE type anchors test 50% of the anchors (alternate anchors or group arrangement). If any failures occur, the immediate adjacent anchors must then be tested.

II. STEEL STUD NOTES

- Steel studs shall be Angeles (ICBO Report No 1715) or approved equal.
- Studs shall be pointed U.N.O.
- Stud framing shall be in accordance with AISI "Specifications for Design of Cold Formed Steel Structural Members."
- Studs shall conform to ASTM A 570, Grade 50, Tracks shall conform to ASTM A 570, Grade 33.
- Studs shall have the following properties:

Stud Type	S in3	I in4	Channel Stud Type	S in3	I in4
C6X16	0.883	2.650	6X16	0.745	2.236
4X16	0.459	0.977	4X16	0.403	0.806
4X20	0.718	0.618			
6X20	0.540	1.642			

Track Type	S in3	I in4
TD6X16	0.817	2.527
TD4X16	0.466	0.977

TD6X16 0.817 2.527

TD4X16 0.466 0.977

III. POWDER ACTUATED FASTENERS - INSTALLATION & TESTING

- All powder actuated fasteners shall be approved for type, application and installation and shall have an approved ICBO research report number.
- The use of powder driven fasteners, in tension, is limited to support of minor loads such as acoustical ceilings, duct work, conduit, etc. In general, load should be limited to less than 100 pounds unless approved by the Structural Engineer.
- The minimum distance from the edge of concrete to center of anchor is 3 inches.
- Fasteners shall be installed, by a prequalified operator, according to the ICBO research report and tested as follows: Inspector shall observe the testing of the first 10 fastener installations. A test "pull-out" load of not less than 1,400 lbs. the design load, or 200 pounds, whichever is greater, shall be applied to the pin in such a manner as not to resist the spalling tendency of the concrete surrounding the pin. Random tests under the project inspector's supervision shall be made of approximately 1 in 10 pins, except when the design load is 100 pounds, one half of the pins shall be tested. Should failure occur on any pin tested, all of the next 20 installations must be tested and unfair pins replaced.
- When installing powder driven pins in existing non-prestressed reinforced concrete, use care and caution to avoid cutting or damaging the existing reinforcing bars. Maintain a minimum clearance of one inch between the reinforcement and the pin.

1. All powder actuated fasteners shall be approved for type, application and installation and shall have an approved ICBO research report number.

2. The use of powder driven fasteners, in tension, is limited to support of minor loads such as acoustical ceilings, duct work, conduit, etc. In general, load should be limited to less than 100 pounds unless approved by the Structural Engineer.

3. The minimum distance from the edge of concrete to center of anchor is 3 inches.

4. Fasteners shall be installed, by a prequalified operator, according to the ICBO research report and tested as follows: Inspector shall observe the testing of the first 10 fastener installations. A test "pull-out" load of not less than 1,400 lbs. the design load, or 200 pounds, whichever is greater, shall be applied to the pin in such a manner as not to resist the spalling tendency of the concrete surrounding the pin. Random tests under the project inspector's supervision shall be made of approximately 1 in 10 pins, except when the design load is 100 pounds, one half of the pins shall be tested. Should failure occur on any pin tested, all of the next 20 installations must be tested and unfair pins replaced.

5. When installing powder driven pins in existing non-prestressed reinforced concrete, use care and caution to avoid cutting or damaging the existing reinforcing bars. Maintain a minimum clearance of one inch between the reinforcement and the pin.

6. When installing powder driven pins in existing non-prestressed reinforced concrete, use care and caution to avoid cutting or damaging the existing reinforcing bars. Maintain a minimum clearance of one inch between the reinforcement and the pin.

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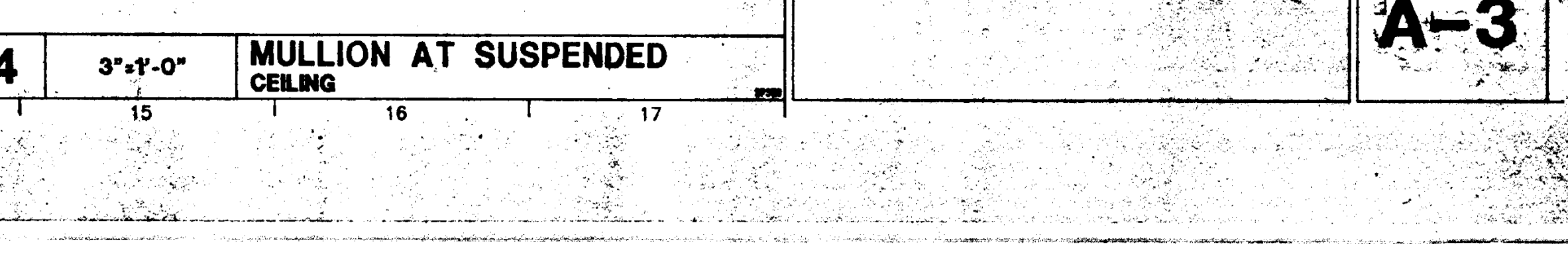
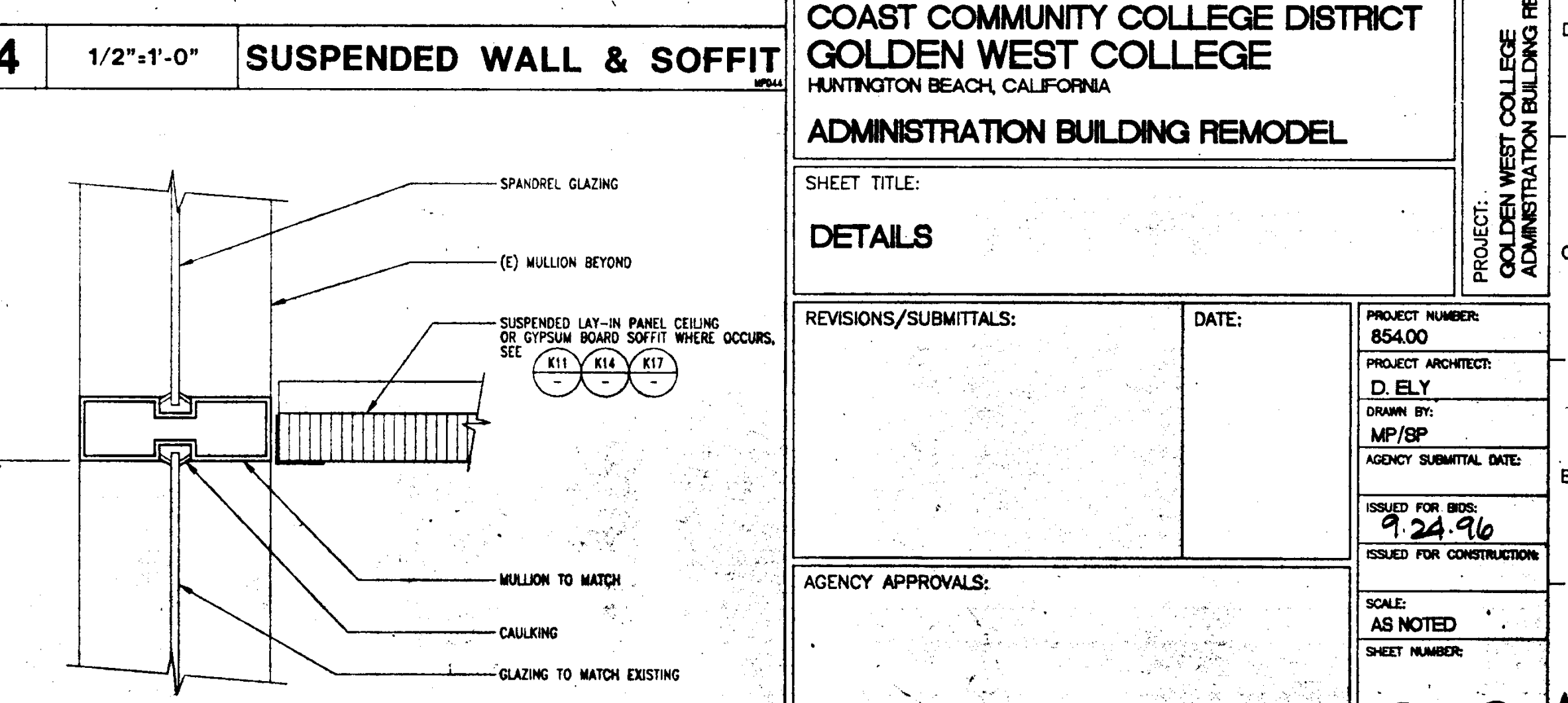
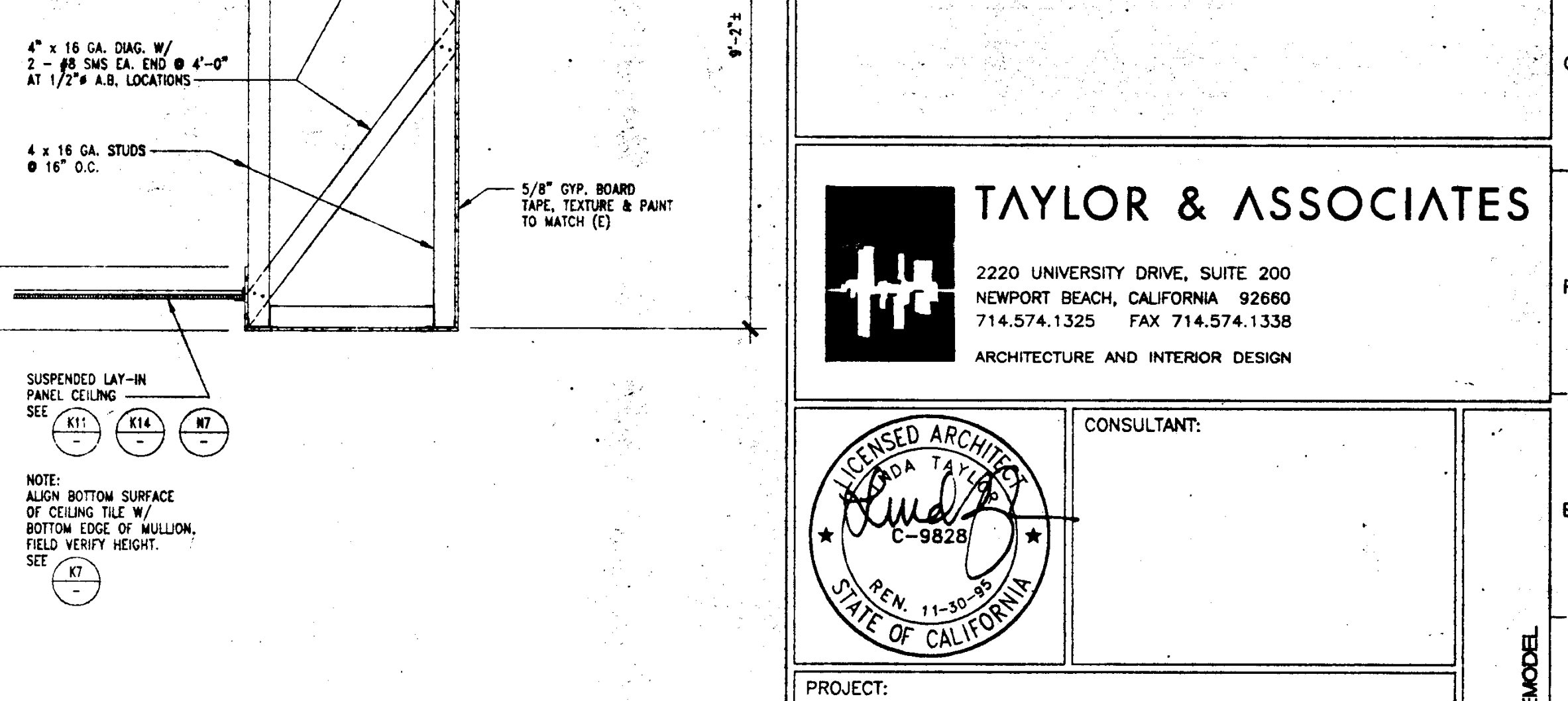
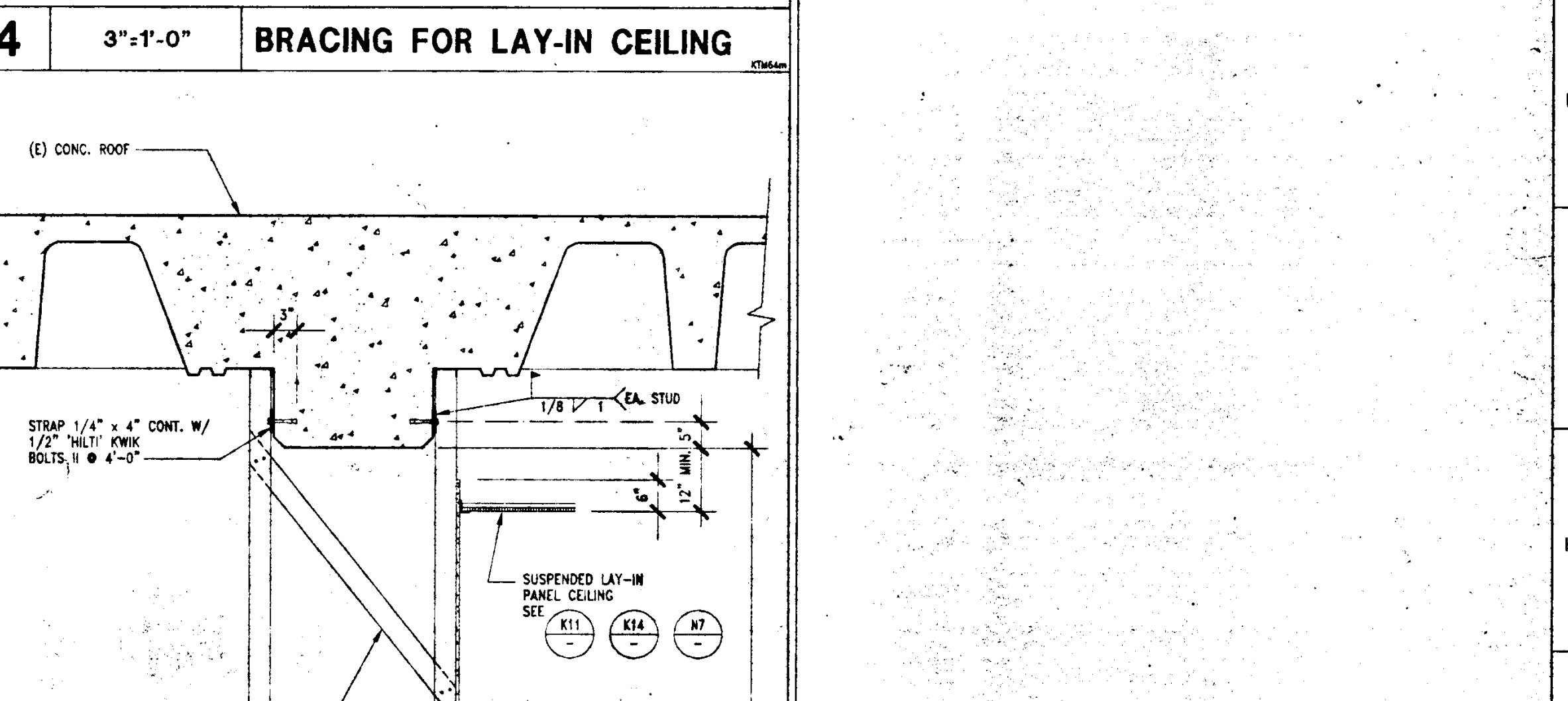
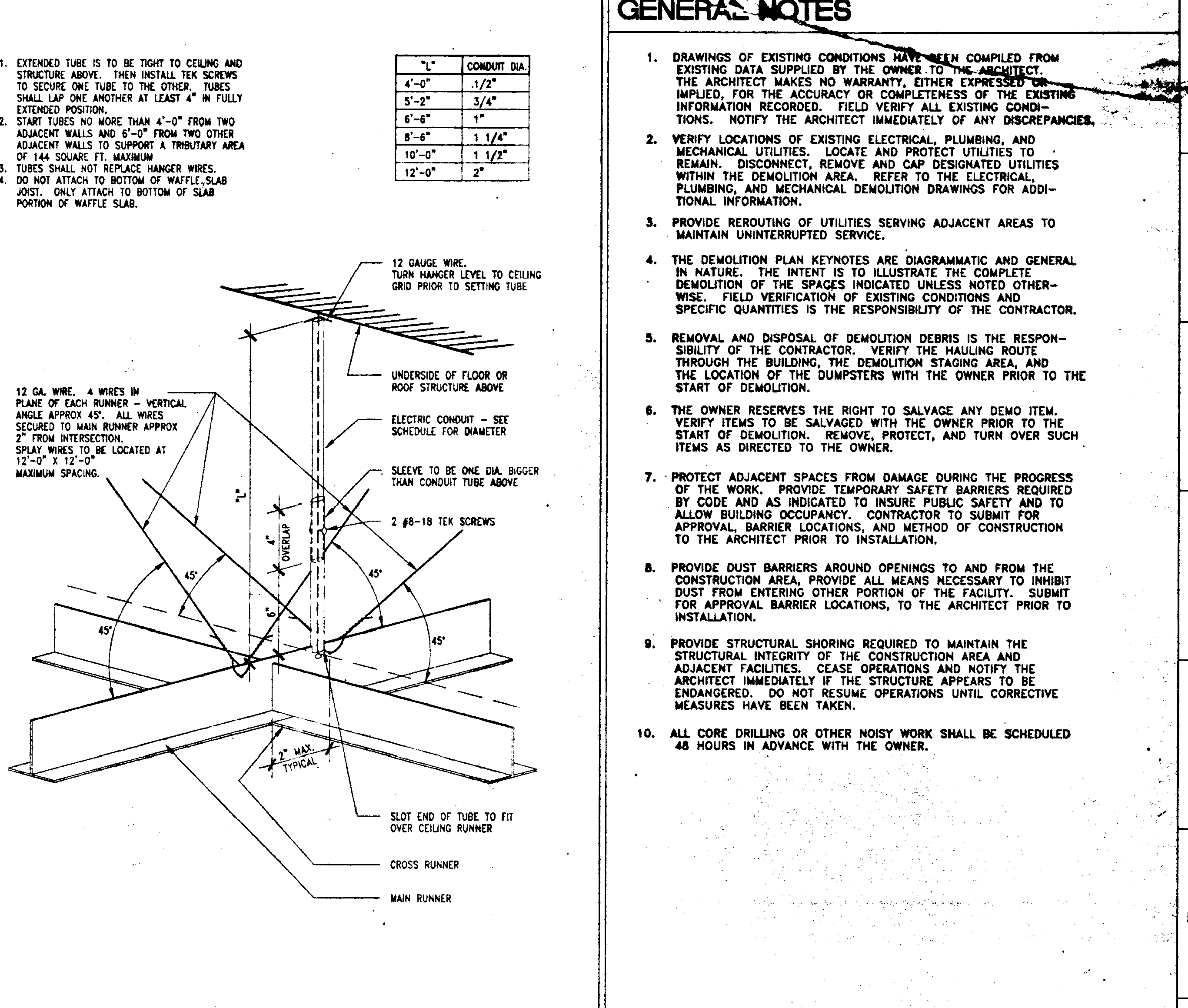
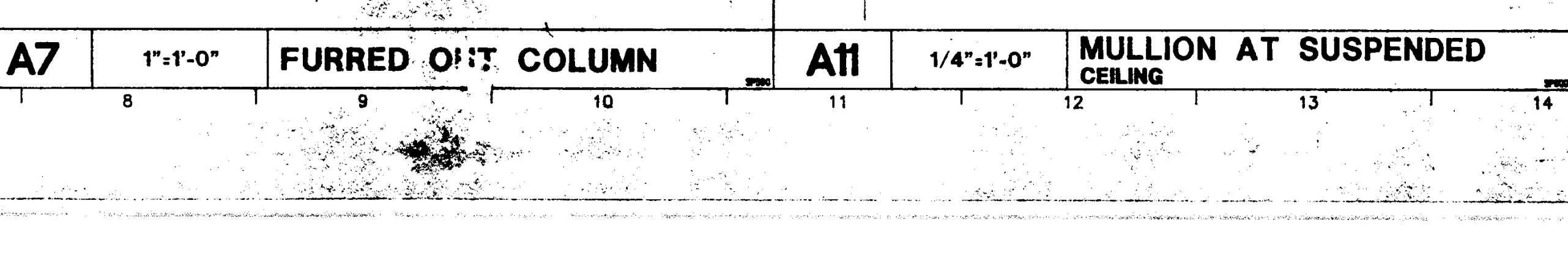
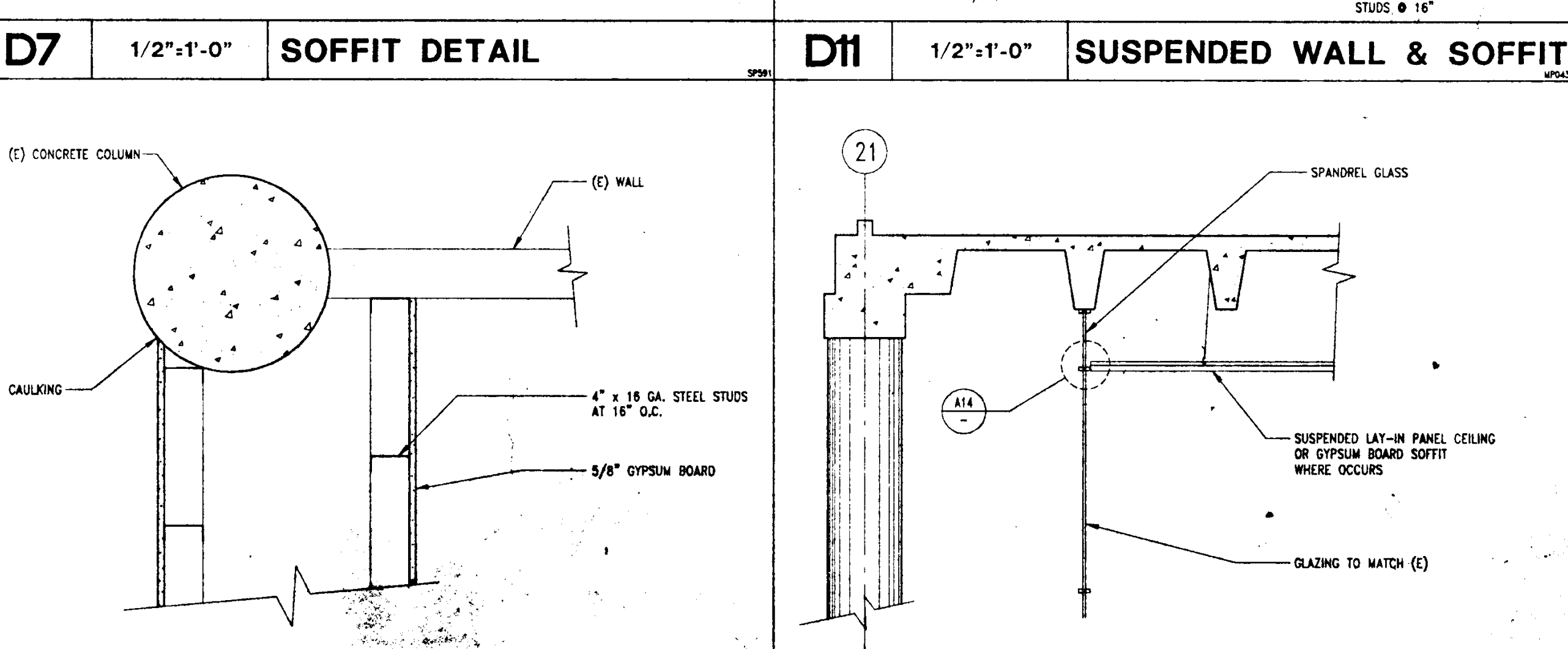
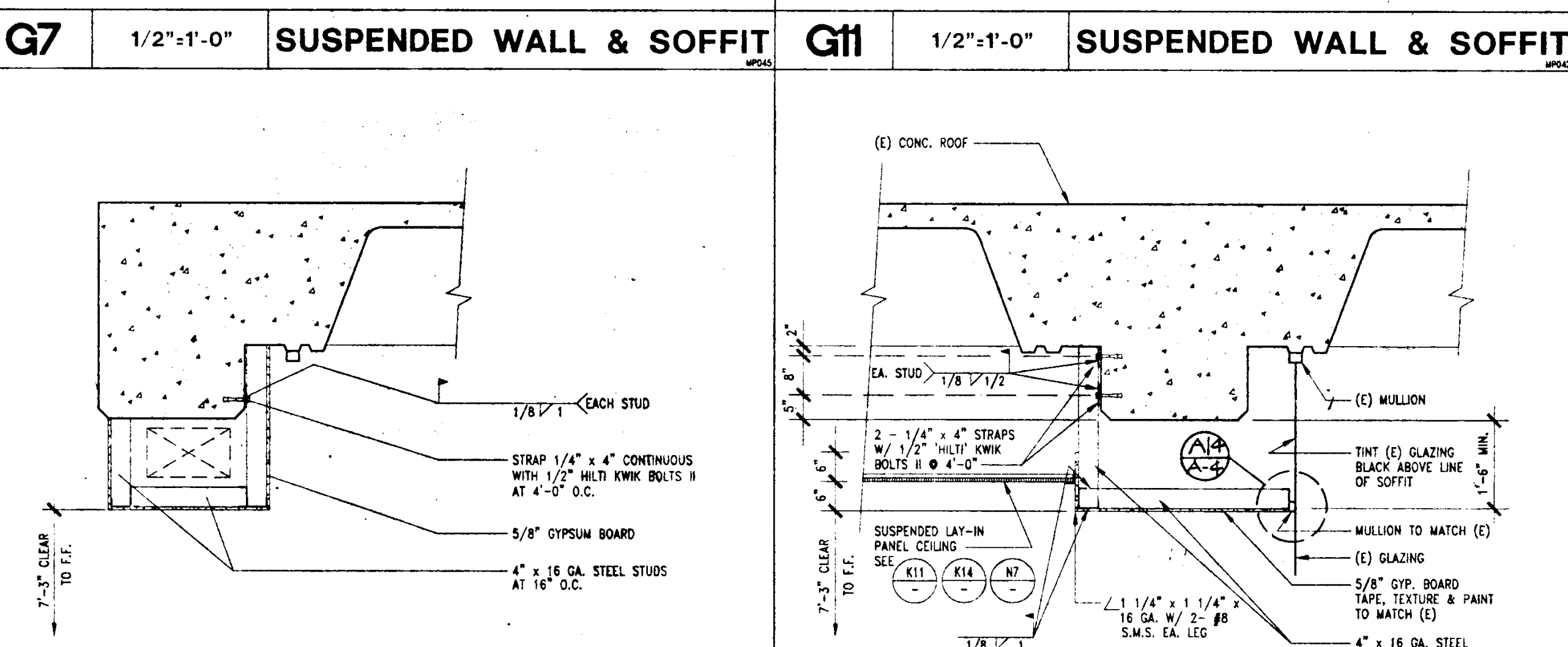
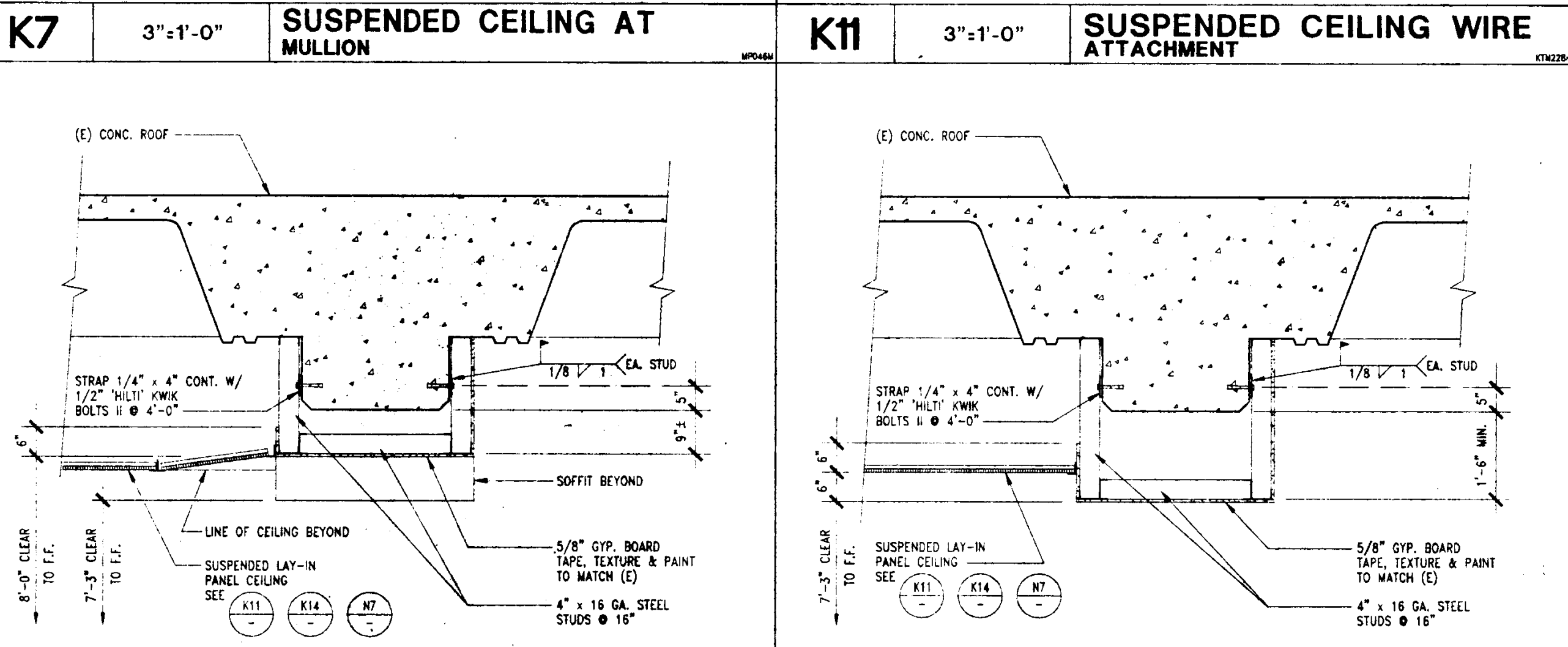
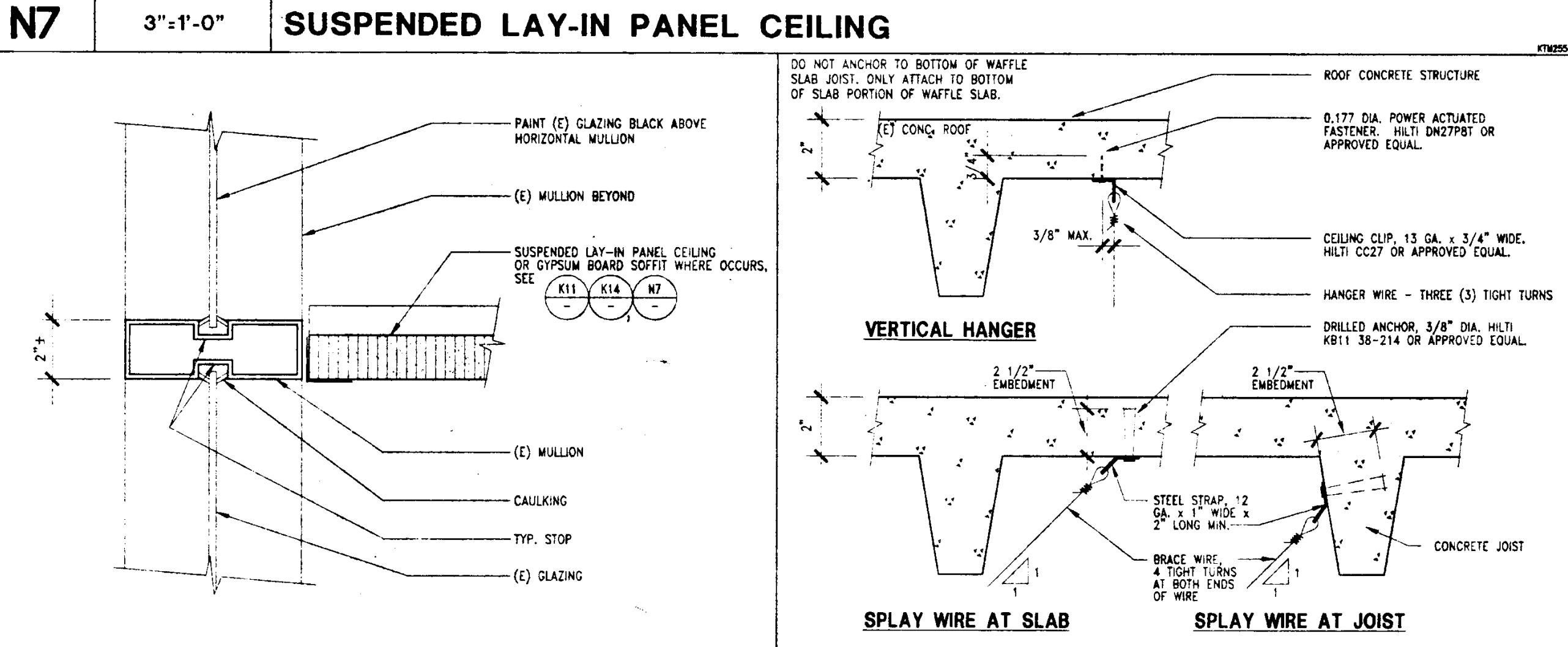
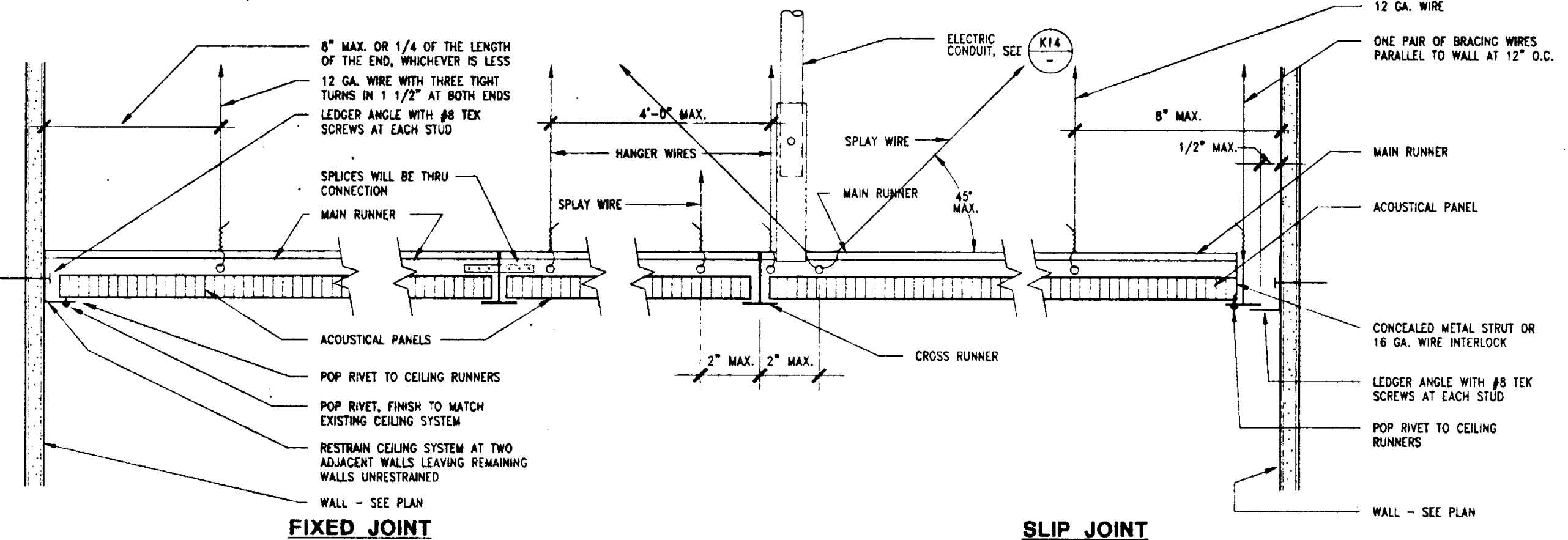
32. When installing powder driven pins in existing non-prestressed reinforced concrete, use care and caution to avoid cutting or damaging the existing reinforcing bars. Maintain a minimum clearance of one inch between the reinforcement and the pin.

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GENERAL NOTES

- DRAWINGS OF EXISTING CONDITIONS HAVE BEEN COMPILED FROM EXISTING DATA SUPPLIED BY THE OWNER TO THE ARCHITECT. THE ARCHITECT MAKES NO WARRANTY, EXPRESS OR IMPLIED, FOR THE ACCURACY OR COMPLETENESS OF THE EXISTING INFORMATION RECORDED. FIELD VERIFY ALL EXISTING CONDITIONS. NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES.
- VERIFY LOCATIONS OF EXISTING ELECTRICAL, PLUMBING, AND MECHANICAL UTILITIES. LOCATE AND PROTECT UTILITIES TO REMAIN. DISCONNECT, REMOVE AND CAP DESIGNATED UTILITIES WITHIN THE DEMOLITION AREA. REFER TO THE ELECTRICAL, PLUMBING, AND MECHANICAL DEMOLITION DRAWINGS FOR ADDITIONAL INFORMATION.
- PROVIDE REROUTING OF UTILITIES SERVING ADJACENT AREAS TO MAINTAIN UNINTERRUPTED SERVICE.
- THE DEMOLITION PLAN KEYNOTES ARE DIAGRAMMATIC AND GENERAL IN NATURE. THE INTENT IS TO ILLUSTRATE THE COMPLETE DEMOLITION OF THE SPACES INDICATED UNLESS NOTED OTHERWISE. FIELD VERIFICATION OF EXISTING CONDITIONS AND SPECIFIC QUANTITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.
- REMOVAL AND DISPOSAL OF DEMOLITION DEBRIS IS THE RESPONSIBILITY OF THE CONTRACTOR. VERIFY THE HAULING ROUTE THROUGH THE BUILDING, THE DEMOLITION STAGING AREA, AND THE LOCATION OF THE DUMPSTERS WITH THE OWNER PRIOR TO THE START OF DEMOLITION.
- THE OWNER RESERVES THE RIGHT TO SALVAGE ANY DEMO ITEM. VERIFY ITEMS TO BE SALVAGED WITH THE OWNER PRIOR TO THE START OF DEMOLITION. REMOVE, PROTECT, AND TURN OVER SUCH ITEMS AS DIRECTED TO THE OWNER.
- PROTECT ADJACENT SPACES FROM DAMAGE DURING THE PROGRESS OF THE WORK. PROVIDE TEMPORARY SAFETY BARRIERS REQUIRED BY CODE AND AS INDICATED TO INSURE PUBLIC SAFETY AND TO ALLOW BUILDING OCCUPANCY. CONTRACTOR TO SUBMIT FOR APPROVAL BARRIER LOCATIONS, AND METHOD OF CONSTRUCTION TO THE ARCHITECT PRIOR TO INSTALLATION.
- PROVIDE DUST BARRIERS AROUND OPENINGS TO AND FROM THE CONSTRUCTION AREA. PROVIDE ALL MEANS NECESSARY TO INHIBIT DUST FROM ENTERING OTHER PORTION OF THE FACILITY. SUBMIT FOR APPROVAL BARRIER LOCATIONS, TO THE ARCHITECT PRIOR TO INSTALLATION.
- PROVIDE STRUCTURAL SHORING REQUIRED TO MAINTAIN THE STRUCTURAL INTEGRITY OF THE CONSTRUCTION AREA AND ADJACENT FACILITIES. CEASE OPERATIONS AND NOTIFY THE ARCHITECT IMMEDIATELY IF THE STRUCTURE APPEARS TO BE ENDANGERED. DO NOT RESUME OPERATIONS UNTIL CORRECTIVE MEASURES HAVE BEEN TAKEN.
- ALL CORE DRILLING OR OTHER NOISY WORK SHALL BE SCHEDULED 48 HOURS IN ADVANCE WITH THE OWNER.

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SECTION 01000 - GENERAL REQUIREMENTS

SECTION 01000 - GENERAL REQUIREMENTS

- [illegible]

tured articles, materials, and equipment in accordance with manufacturer's cur-

- [illegible]

- continuous observation of the Project Inspection. He shall have five copies to him or all of the work at any time. The Contractor shall be responsible for the continuous observation for obtaining such information as may be necessary to keep fully informed regarding the progress and manner of construction and the character of the materials. Inspection of the work shall not relieve the Contractor of his responsibility to fulfill the Contract.
11. Required Tests
- a. Except as stated otherwise, these tests and inspections shall be performed by approved listing agency and for the job Inspector.
- b. Approved Inspector Bids
- 1) At concrete expansion anchors shall be Hilti Kwik Bolt or ISO approved equal (fused in either pull or shear) and shall have 5 percent of the anchors (alternate anchors in any group arrangement) pulled to test the ultimate tension or force as shown in the following table. If there are any failures, the immediately adjacent anchors must then also be tested to ensure that the capacities shall not exceed 80% of the values given in the published U.C.S.R. Report.
- 2) When installing drilled in expansion anchors in existing, non-prestressed, nonreinforced concrete, the minimum clearance shall be as follows:

DIVISION 4 SITEWORK

DIVISION 2 - SITEWORK

- SECTION 0700 - DEMOLITION FOR REMODELING**
- A. Work includes:
1. Refer to drawings for location of demolition which consists of removal and storage of existing materials to be retained and removal of existing HVAC units and associated electrical items.
 2. Protection of people and existing structures from injury and damage.
 3. Dust protection.
 4. Removal of all non-savagable products of demolition from the site.
- B. This project is within the confines of a working office environment.
- C. Contractor to coordinate the Owner for access.
- D. Conduct demolition with minimal interference with or damage to structures or surfaces.
- E. Conduct operations with minimal interference by public or private thoroughfares. Maintain protected legal access and access at all times.
- F. Do not close or obstruct thoroughfares when removing demolished materials from site.
- G. Protect existing materials and appearances which are not to be demolished.
- H. Adequately protect the site and the public from harm and accident during demolition operations by the erection of proper barricades, signs, and lighting.
- I. Adequately protect from damage surface adjacent to demolition operations.
- J. Specific areas of demolition are identified on drawings.
- K. Cease operations and notify Owner's Representative immediately if adjacent structures appear to be endangered. Do not proceed until corrective measures have been taken.
- L. Except where noted otherwise, immediately remove demolished material from site and dispose. Do not use the Owner's disposal system.
- M. When contaminated, worn, injured, or hazardous or hazardous materials are encountered, work that in immediate area and contact the Owner's Representative immediately for instruction.
- N. All new and existing work shall be protected from damage, dirt, debris, and dust during the work of the Contractor shall be restored to original condition and as indicated, specified and required. Workmanship and materials shall conform to the applicable provisions of all other sections and Sections of these specifications.
- N. Cutting Equipment: The use of jack-hammers and vibratory cutting may be used under the following conditions:
1. The time of day and duration of the work on each given day shall be coordinated with the Owner on the basis of 48 hours advance notice.
- O. All products of demolition, rubble and debris shall be hauled away from the site promptly legibly disposed of by the Contractor.
- P. Dust and Noise Management: During entire period of demolition operations keep area protected to reduce dust in air and annoyance to premises. Exercise all reasonable means to abate noise and to limit claims on the drawings deemed to be salvageable shall remain the property of the Owner. All such items to be removed from the site, on the day of removal, to the Contractor.

DIVISION 3 - CONCRETE

- Not Applicable

Not Applicable

- #### DIVISION 5 - METALS

Not Applicable

Not Applicable

Not Applicable

SECTION 07270 - FIRESTOPPING

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- | | |
|---|--|
| Work includes: | Through-penetration firestopping in fire rated construction. |
| References: | <ul style="list-style-type: none"> 1. Underwriters Laboratories, U.L. Fire Resistance Directory, Volume 2 2. Fire Protection 424.5 3. UBC, 300.6 (d) paragraph 3 |
| C. System Description: | <p>1. Smoke Barrier Construction, Mainbarrier wall and roof fire resistance ratings resistance to cold smoke at all penetrations, connections with other surfaces or other construction.</p> <p>2. Smoke Barrier Construction, Mainbarrier and structural floor fire resistance rating during resistance to cold smoke at all penetrations, connections with other surface or other construction.</p> |
| D. Submittals: | <p>1. Manufacturer's Data Submittal manufacturer's specifications and technical data.</p> <p>2. Drawings: Indicate dimensions, description of materials and finishes, general construction, specific modifications, component connections, anchorage methods and installation procedures. Provide details for firestop assembly for fire rated products and applicable U.L. System number, or U.L. Classified devices.</p> |
| E. Project Conditions: | <p>1. Verify listing conditions and substitutes before starting work. Correct unsatisfactory conditions before proceeding.</p> |
| F. Manufacturer's SM: | <p>1. Verify listing conditions and substitutes before starting work. Correct unsatisfactory conditions before proceeding.</p> |
| G. Provide systems listed in the U.L. Fire Resistance Directory, providing it conforms to the construction type, penetrant type, annual space requirements and fire rating involved in each case. | |
| H. Install penetration seal materials in accordance with printed instructions of the U.L. Fire Resistance Directory, providing it conforms to the construction type, penetrant type, annual space requirements and fire rating involved in each case. | |
| I. Field Quality Control: | <p>1. Examine penetration seal materials to ensure proper installation before concealment in areas.</p> <p>2. Perform audit of work accessible until inspection by applicable code authorities.</p> <p>3. Keep records by other trades for coordination and repairing of firestopping caused by cut penetrations by other trades.</p> |

SECTION 07510 BUILT UP BITUMINOUS ROOFING PATCHING

1. **Work Included:** Provide patching of built-up bluminox roofing in location of new mechanical equipment and/or new roof penetrations. Provide supervision of the patching of the bluminox in conjunction with roofing work. Provide protection of the building from moisture damage during the patching work.
2. **Work Excluded:** This contract is for patching work only. It does not include the following:
- Roof System Description:**
- a. Built-up bluminox roofing: base flashing, counterflashing, and flashings at mechanical equipment.
 - b. Bluminox roof membrane and roof flashing details.
 - c. 40-year roofing specification suitable for this specific application and the applicable provisions of the Uniform Building Code.
 - d. Bluminox roof membrane flashing system shall be a mineral surfaced built-up roofing, using glass fabric laps.
 - e. Gravel surfacing to match existing.
3. **Codes and Standards:**
- a. Building codes and standards and Installation shall meet or exceed the applicable requirements of the UBC, Chapter 32.
 - b. All work shall resist:
 - c. Roofing shall also meet U.C. requirements for Class A built-up roofing assemblies and Class B built-up roofing assemblies.
 - d. Roofing shall also meet Factory Mutual requirements for Class I or Noncombustible roof assemblies.
 - e. Roofing shall meet the standards of the National Roofing Contractors Association (N.R.C.A.) Quality Assurance.
4. **Drawings and Specifications for roofing and flashings** are diagrammatic and of a general nature only. Therefore, manufacturer's specifications for roofing and related flashing products shall be used as fully as possible. Where necessary, the contractor shall select alternatives. All work shall be performed and completed as required to obtain the best warranty and guarantee.
5. **Drawings and Specifications** for roofing and sheet metal subcontractors shall review the manufacturer's specifications with the built-up roofing manufacturer's manufacturer and sheet metal manufacturer's manufacturer. The manufacturer's manufacturer and sheet metal manufacturer's manufacturer shall be responsible for the design, proper, compatible, and adequate for this application, and that the conditions and installation specified do not conflict with the recommendations of the built-up roofing manufacturer.
6. **All work** to be performed under the full time observation of a roofing inspector hired by the Owner.
7. **Prior to commencement of work,** a pre-opening conference is to be held by the architect, specifications and to look at the area to be patched. Roofing Contractor, General Contractor, and Subcontractor.
8. **Submittals:**
- a. **Manufacturer's Data:** Submit manufacturer's specifications for roofing Contractor, General Contractor, and Subcontractor.
 - b. **Roofing Contractor's Data:** Submit flashing details, including flashing details, to the Architect.
 - c. **Roofing Contractor's Data:** Submit flashing details, including flashing details, to the Architect.
 - d. **Roofing Contractor's Data:** Submit flashing details, including flashing details, to the Architect.
 - e. **Roofing Contractor's Data:** Submit flashing details, including flashing details, to the Architect.
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 - z. **Roofing Contractor's Data:** Submit flashing details, including flashing details, to the Architect.
9. **Warranty and Guarantee:**
- a. Bluminox roofing and related flashing installations, including related metal work, shall be guaranteed against defective materials and work quality and against any leakage of water or interior or exterior air infiltration for a period of two (2) years from the date of acceptance of the building by the Owner. Provide in writing upon completion of the roofing work.

SECTION 07510 - BUILT UP BITUMINOUS ROOFING - ADDITIVE ALTERNATE 5



1. Work Included: Provide built-up bituminous roofing as indicated on the Drawings and as specified herein. Provide supervision of steel metalwork in conjunction with roofing. Provide protection of the building from moisture and rain until all roofing is complete.
2. a. 3 Ply Built-up bituminous roofing, base flashing, counterflashing, and flashings at all roof and roof-to-penetrations details must meet or exceed the requirements of an approved manufacturer's four-ply roofing specification suitable for this specific application and meet all applicable requirements of the Uniform Building Code. Roofing system shall be a minimum of three-ply built-up bituminous roofing.
- b. Mineral-Surfaced Cap Sheet: Johns-Manville "Glasflap" Mineral-Surfaced Cap Sheet Owens-Corning Fiberglas "Plema Cap" Mineral-Surfaced Cap Sheet, or approved equal.
- c. Flashing: Flashing and flashing details shall be installed in accordance with the manufacturer's Over-laps of asphalt shall be completely hidden in the finished work by embedding in granular drainage and firmly in the hot asphalt.
3. Codes and Standards: a. Provide bituminous materials and installation shall meet or exceed the applicable requirements of the UBC, Chapter 19B, Division 5, Section 05200.
- b. Roofing shall meet U.L. requirements for Class A built-up roofing assembly and Class wind-uplift resistance.
- c. Roofing shall also meet Florida Manual requirements for Class A or Noncombustible roof assembly and wind-uplift resistance.
- d. Roofing shall meet the standards of the National Roofing Contractors Association (NRCA).
4. a. Drawings and Specifications for roofing and flashings are diagrammatic and of a general nature only. Therefore, manufacturer's specifications for roofing and related flashing details shall be the Work as fully detailed on the drawings and specifications and shall be installed as shown, otherwise, all work shall be performed and completed as required to obtain the necessary warranty and performance.
- b. The contractor and the built-up roofing and steel metal subcontractors shall review Drawings and Specifications with the built-up roofing materials manufacturer and shall obtain the manufacturer's agreement that the selected roofing and flashing system will be compatible, and that the built-up roofing and steel metal work will be installed as indicated and specified do not conflict with the recommendations of the built-up roofing materials manufacturer.
5. Submittals: a. Manufacturer's Data: Submit manufacturer's specifications for materials and installation, roofing system and related flashings, including flashing details, to the Architect for review.
- b. Samples: Submit sample of mineral surfaced cap sheet to the Architect for approval.
6. Warranty: a. Provide bituminous roofing and related flashing installation, including related materials, shall be guaranteed against defective materials and work quality and against two years from the date of interior or exterior exposure to weather. Provide bituminous roofing, including related materials, and inadequate preparation of completed work for a period of two years from the date of acceptance of the building by the Owner. Provide in writing upon completion of the built-up roofing work.
- b. In addition to the above warranty, provide the roofing manufacturer's 10-year Roofing System Warranty.

SECTION 03600 - SHEET METAL AND FLASHING

1. Applicable Standards: Flashings and sheet metalwork shall be fabricated and installed in accordance with the "Architectural Sheet Metal Manual" of the Sheet Metal and Air Conditioning Contractors National Association (ACCA).
2. Shop Drawings: Submit fully detailed shop drawings for the Architect's review.
3. Sheet Metal: Sheet metalwork shall be galvanized steel sheet, meeting the requirements of AIAA, with minimum zinc coating of 1.25 oz/sq ft and 0.2% copper coating. Weights of 24, 26, 28, 30, 32, 34, 36, 40, 42, 44, 48, 50, 56, 60, 66, and 72 oz/sq ft are indicated; use the lightest weight galvanized steel sheet that be mill phosphatized to receive paint finish.
4. Sheet Lead: Standard 0.0624-inch thick sheet lead weighing 4 pounds per sq ft, as indicated, shall be used for lead lining. See ASTM B295 S519. Use sheet lead for flashing, vent pipes and other penetrations of the roof.
5. Solder: Grade A conforming to ASTM B32-86 (50% lead and 50% bismuth) shall be required. This shall be approved brand of soldering flux or mastic used with zinc in the form of a flux. Accessories for sheet metalwork shall be of the same material required for a complete and finished installation. Fasteners and accessories shall be non-ferrous.

SECTION 07900 - JOINT SEALERS

1. Provide caulking and sealing of joints as required to seal the flashing and sheet metal as required to weatherproof the building.
2. Joints around openings in exterior surfaces and joints of abutting materials shall be sealed continuously with sealant. Caulk and seal any other joints indicated or required to weatherproof complete the project, both exterior and interior.

		TAYLOR & ASSOCIATES 2220 UNIVERSITY DRIVE, SUITE 200 NEWPORT BEACH, CALIFORNIA 92660 714.574.1325 FAX 714.574.1338 ARCHITECTURE AND INTERIOR DESIGN	
		CONSULTANT:	
PROJECT: COAST COMMUNITY COLLEGE DISTRICT GOLDEN WEST COLLEGE HUNTINGTON BEACH, CALIFORNIA ADMINISTRATION BUILDING REMODEL		PROJECT: GOLDEN WEST COLLEGE ADMINISTRATION BUILDING REMODEL	
SHEET TITLE: SPECIFICATIONS			
REVISIONS/SUBMITTALS:		DATE:	
(Empty space for revisions)		(Empty space for date)	
AGENCY APPROVALS:		PROJECT NUMBER: 85400 PROJECT ARCHITECT: D. ELY DRAWN BY: AGENCY SUBMITTAL DATE: ISSUED FOR BIDS: 9-24-96 ISSUED FOR CONSTRUCTION: SCALE: SHEET NUMBER: A-5	

3. Coordinate the Work of this Section with the Work in other Sections specifying materials, systems and assemblies requiring caulking and sealing.
- Sealants shall be specifically designed for adhesion to the surfaces to which they will be applied, and shall be non-staining, non-shrinking, and non-sagging, meeting the following requirements:
- Sealant for exterior locations shall be polyurethane elastomeric sealant which cures at normal temperatures in a flexible form rubber, tack free, in gun grade consistency, such as Sika No. 14 Polyurethane Sealant or approved equal. Sealant shall meet or exceed the minimum requirements of Federal Specification TT-S-222, TT-S-227, TT-S-230, or TT-S-2020. Oil-and-resin based compounds and so-called architectural grade compounds will not be accepted.
- Primer when required, shall be a quick-drying, colorless, non-staining sealer of type and consistency as recommended by the manufacturer of the sealant for the particular type of surface to be sealed.
- Packing: Sealant backup or packing (backer rod) shall be a nonabrasive primed or preformed nonstaining resilient material, such as polyethylene foam rod, or neoprene, butyl, polyurethane, or other closed cell foam, or extruded rod, compatible with the sealant used. Material shall act as a bond breaker and be circular in cross section.
- Application and Installation:
- a. Cleaning and surface preparation of joints, application of primers, installation of packing, and installation of sealant material shall be in accordance with the sealant manufacturer's installation instructions and recommendations.
- b. Thickness of sealant shall be one-half the joint width, with a minimum thickness of 1/4 inch. Sealant shall bond the two opposing surfaces of the joint.
- c. Finish sealed surfaces shall be uniformly smooth and free from wrinkles.
- d. Clean surfaces adjacent to caulked and sealed joints of any smears of compound or other sealer due to sealing applications, as the Work progresses.

DIVISION 8 - DOORS AND WINDOWS

SECTION 0810 - ALUMINUM ENTRANCES AND STOREFRONT

1. Work includes all necessary materials, labor and equipment for the complete installation of a horizontal mullion of aluminum framing to match existing.
2. Air infiltration shall be tested in accordance with ASTM E283. Water infiltration shall be tested in accordance with ASTM E331.
3. Extrusions shall be 6063-T5 alloy and temper. Fasteners where exposed, shall be aluminum, stainless steel or zinc plated steel. Perimeter anchors shall be aluminum or steel, providing the steel is properly isolated from the aluminum. Glazing gaskets shall be elastomeric extrusions. Single ac-glass entrance frame weathering shall be non-corrosive, i.e., polymeric material.
4. All exposed framing surfaces shall be free of scratches and other serious blemishes. Aluminum moldings shall be given a caustic etch followed by an anodic oxide treatment to obtain an Architectural Class I anodic coating with color conforming to Aluminum Association Standard AA-M12 C22 A42/44. Color shall be Permanent Dark Bronze.
5. The framing system shall provide for flush glazing on all sides with no projecting stops. Vertical and horizontal framing members shall have a nominal face dimension of 1 3/4". Overall depth shall be 1 1/2" with a 5/8" glass pocket width.
6. All glass framing shall be set in correct locations as shown in the details and shall be level, square, plumb and in alignment with other work in accordance with the manufacturer's installation instructions and approved shop drawings. All joints between framing and the building structure shall be sealed in order to secure a watertight installation.
7. After installation protect exposed surfaces from damage.

SECTION 0880 - GLAZING

1. Work includes:
- a. Spigot Glass.
- b. Acrylic coating on existing glass to match spigot.
- c. Vision glass to match existing.
2. Related Sections:
- a. Section 0810 - Aluminum Entrances and Storefronts.
3. Quality Assurance:
- a. Comply with provisions of Flat Glass Marketing Association "Glazing Manual".
- b. Glazier Qualifications: Engage an experienced glazier who has completed glazing similar in material, design, and extent to that indicated for Project with record of successful in-service performance.
4. Materials:
- a. Match existing glazing tint and thickness and provide spigot to match with black ceramic fit.
- b. Vision Glass, match existing glazing tint and thickness.
- c. For existing glass to become spigot use acrylic coating to match ceramic fit above.
- d. Glazing Gaskets:
- 1) Locking Gaskets: Neoprene extrusions in size and shape indicated, fabricated into frames with molded corner units and slipper lock styles, complying with ASTM C642, Black.
- A. EPDM ASTM C684
- B. Silicone ASTM C1115
- 2) Seal Compression Gaskets: Extruded or molded closed-cell, integral-skinned gaskets of material indicated below, complying with ASTM C309, Type I, black, and of profile and hardness required to maintain watertight seal.
- A. EPDM ASTM C684
- B. Silicone ASTM C1115
- C. Thermoplastic polyolefin rubber, ASTM C1115
5. Fabrication of Glass and other glazing products: Fabricate glass and other glazing products in sizes required to glass openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with recommendations of product manufacturer and referenced glazing standard.
6. Examination: Examine glass framing with glazer present for compliance with the following:
- a. manufacturing and installation tolerances, including those for size, squareness, offsets at corners.
- b. Presence and functioning of weep system.
- c. Minimum required face or edge clearances.
- d. Effective sealing between joints of glass framing members.
- e. Do not proceed with glazing until unsatisfactory conditions have been corrected.
7. Preparation: Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings that are not firmly bonded to substrates.
8. Glazing:
- a. Comply with combined recommendations of manufacturers of glass, sealants, gaskets and other glazing materials, except where more stringent requirements are indicated, including those in referenced glazing publications.
- b. Provide necessary bite on glass, minimum edge and face clearances and adequate sealant thicknesses, with reasonable tolerances. Adjust as required by Project conditions during installation.
- c. Protect glass from edge damage during handling and installation.
- d. Remove damaged glass from Project site and legally dispose of it off site. Damaged glass is glass with edge damage and/or imperfections that when installed, weaken glass and impair performance and appearance.
- e. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.
- f. Provide spacers for glass sizes larger than 50 united inches (length plus height).
9. Gasket Glazing:
- a. Fabricate compression gaskets in lengths recommended by gasket manufacturer to fit openings exactly, with sufficient allowance during installation.
- b. Secure compression gaskets in place with joints at corners to compress gaskets uniformly. Use lightweight steel without deforming, bending stresses in glass. Seal gasket with sealant recommended by gasket manufacturer.
- c. Install gaskets so they protrude from glazing stops.
10. Protection and Cleaning:
- a. Protect exterior glazing from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surfaces.
- b. Remove nonpermanent labels, and clean surfaces.
- c. Protect glass from contact with contaminating substances resulting from construction operations. If despite such protection, contaminating substances do come into contact with glass, remove them immediately as recommended by glass manufacturer.
- d. Remove and replace glass that is broken, chipped, cracked, abraded, or damaged in any way, including natural causes, accidents and vandalism, during construction period.
- e. Wash glass on both faces in each area of Project not more than 4 days prior to date scheduled for inspections that establish date of Final Completion. Wash glass as recommended by glass manufacturer.

DIVISION 9 - FINISHES

SECTION 0910 - LIGHTGAZE METAL FRAMING

1. Work includes:
- a. Metal studs.
2. Related Sections:
- a. Section 0920 - Gypsum Wallboard Construction.
3. Quality Assurance:
- a. Reference specifications and standards: Comply with current editions of the following:
- 1) Local Building Code.
- 2) Plaster and Drywall Systems Manual, Third Edition, published by BNI Books, Division of Building News, Inc., Los Angeles, CA 90024.
- b. Flatness Tolerance: Install members true to lines and levels to provide surface flatness with maximum variation of 1/8 inch in 10 feet in any direction.
4. Product Handling:
- a. Protect materials from rusting and damage. Deliver in manufacturer's unopened containers or bundles fully identified. Store under cover in a dry, well ventilated space.
5. Materials:
- a. All metal framing materials shall be manufactured in the United States of America. All steel sections must conform to ASTM A 588. All studs to be screwable type, with 1-3/8 inch minimum flange width.
- b. 16 and 20 gage, 4" wide studs.
- c. Fasteners:
- 1) Screws: #10 Sheet Metal Screws.
6. Installation:
- a. Erect framing systems in strict accordance with manufacturer's printed recommendations, the reference standards, ASTM C234, the Drawings and these Specifications.
- 1) Tolerance limitations are specified in the Specifications Sections for the various finishes.
- 2) Remedial work involving framing and furring necessary to achieve specified tolerance shall be done as part of the work of this Section.
- 3) Joining of members not indicated to be welded. Attach with self-drilling screws. Wire tying of framing members is not acceptable.

SECTION 0920 - GYPSUM WALLBOARD CONSTRUCTION

- A. Work includes:
1. Non-load bearing steel framing for gypsum board assemblies.
2. Gypsum board soffits.
3. Finishing Gypsum Board Walls.
- B. Related Section:
1. Section 0900 - Painting.

- References:
1. Plaster and Drywall Systems Manual, Third Edition, published by BNI Books, Division of Building News, Inc., Los Angeles, CA 90024.
2. GA 214-90 Recommended Specification: Levels of Gypsum Board Finish.
3. American Society for Testing Materials (ASTM) References as indicated.
- D. Delivery, Handling and Storage:
1. Deliver materials to site in original unopened packages, containers or bundles bearing manufacturer's identifying label. Keep them dry, storing indoors under cover. Stack gypsum board flat, off floor to prevent sagging or damage to surfaces and edges.
- E. Project Conditions:
1. Temperature: During cold weather, in areas receiving wallboard installations, maintain temperature range between 55 degrees F. to 70 degrees F. for 24 hours before, during and after gypsum wallboard and joint treatment application.
2. Ventilation:
- a. Provide ventilation during and following adhesive and joint treatment application.
- b. Use temporary air circulators in enclosed areas lacking natural ventilation.
- c. Under slow drying conditions, allow additional drying time between coats of joint treatment.
- d. Protect installed materials from drafts during hot, dry weather.
- F. Materials:
1. Steel Studs: Refer to Section 0910.
2. Resilient Furring Channels:
- a. Manufacturer's standard product designed to reduce sound transmission, fabricated from steel sheet complying with ASTM A 603 or ASTM A 568 to form flat shaped channels with 1-1/2 inch wide face connected to flanges by double-slotted or expanded metal webs.
- b. Protective Coating: Manufacturer's standard corrosion-resistant coating.
3. Gypsum Board:
- a. Provide 5/8 inch thick gypsum board, in maximum permissible length(s), ends square cut, tapered edges, Fire-Resistant Type ASTM C36, Type X.
4. Metal Accessories: Unless otherwise specified, fabricate of 26 gage galvanized steel.
- a. Fasteners:
- 1) Self-drilling, self-tapping, countersunk bugle head, drywall screws, conforming to ASTM C346, for use with power driven tool.
- A) Type S for wallboard to sheet metal and wood applications.
- B) Type G for wallboard to wallboard application.
- 2) Fire-rated construction: Type and length of fasteners to comply with legal requirements.
5. Joint Treatment: Joint reinforcing tape, finishing tape, and joint adhesive shall be the wallboard manufacturer's recommended products, of best quality, conforming to ASTM C475.
6. Miscellaneous: Provide Z bars, stiffeners, bent plates, clips and other metal components as required. Minimum thickness shall be 20 gage, unless shown otherwise.
- G. Verification:
1. Examine and verify condition of substrate.
2. Report to Architect any faulty condition interfering with the proper installation of work of this Section, so that any such condition can be corrected before commencing work.
3. Failure to make such report to Architect shall be construed as acceptance of substrate conditions and approved shop drawings. All joints between framing and the building structure shall be sealed in order to secure a watertight installation.
4. Contractor shall be held responsible for all unsatisfactory conditions resulting from improper installation of work of this Section.
5. Framing shall not exceed maximum spacing, as required by Building Code.
6. The fastening surfaces of any framing or furring member shall not vary more than 1/8" from the plane of the faces of adjacent framing or furring members.
- H. Installation:
1. Gypsum Board Application:
- a. Framing members: Examine all surfaces to receive gypsum board. Make certain that framing is plumb and true.
- b. Cutting: Cut gypsum board by scoring or by sawing, working from the face side. When cutting by scoring, cut face paper with a sharp knife.
- 1) The gypsum board shall then be snapped back away from the cut face. The back paper may be broken by snapping the board in the reverse direction or the back paper can be cut.
- 2) All cut edges and ends shall be sealed, when necessary, to obtain neat jointing when gypsum board is erected.
- 3) Cuts or small openings in board shall be scored in outline on the face and back before knocking out, or shall be cut with a saw or other suitable tool. Openings shall not be made by punching.
- 4) Neatly cut board to fit around outlets and cut boxes. Where gypsum board meets projecting surfaces, it shall be scribed and neatly cut.
- 5) Cut gypsum board in such manner that vertical joints appear above door and window openings not occur within 8 inches of either jamb.
- 6) Cut and fit carefully at protrusions through partitions and ceilings.
- c. Board joints:
- 1) Boards shall be loosely butted and not forced into position.
- 2) Apply single-layer gypsum board with long dimension at right angles to framing members. All abutting ends over framing members. Stagger and joints.
- 3) Stagger screws on abutting edges and ends.
- 4) Screw spacing: Space screws at maximum of 8 inches on center around the perimeter and 12 inches o.c. on the intermediate studs.
- 5) End Joints: Use gypsum board of the maximum practical length to minimize joints. End joints shall be neatly fitted and staggered. Joint on opposite side of the partition shall be so arranged as to occur on different studs.

- I. Joint and Finish Treatment of Gypsum Board:
1. General:
- a. Inspect gypsum board installation prior to applying joint treatment. Correct defects before proceeding.
- b. Prepare and mix taping and finishing compounds in accord with manufacturer's printed directions, or use pre-mixed compounds.
- c. Exposed surfaces of gypsum board in place shall be fully acceptable for application of defined finishes to provide completed work free of flaws, with fasteners necessary and in place.
- d. Finish to comply with GA-213.90 the Recommended Specification Levels of Gypsum Board Finish level 5.
2. Spread joint compound evenly over joints using a suitable tool and fill screw depressions and metal trim.
3. Center reinforcing tape on joint and press into fresh taping compound. Wipe down with sufficient pressure to remove excess compound and to leave sufficient compound under tape for proper bond, feathering and leaving free from blisters and tape wrinkles. Allow to dry.
4. Fold reinforcing tape along center and apply to interior angles, following procedure for joints.
5. With fine sandpaper, lightly sand the dry compound between coats to remove any irregularities.
6. Second coat of taping compound shall be applied to joints, feathering approximately 4 inches beyond edges of tape. Apply another coat to screw heads, leaving flush with wallboard surface and appearance.
7. After sanding second coat, apply third coat of taping compound to be applied to joints, feathering approximately 3 inches beyond edges of tape.
8. After sanding third coat, apply final skim coat of joint compound, or a material manufactured especially for this purpose shall be applied to the entire surface to fill imperfections in the joint work, smooth the paper texture, and provide a uniform surface for decorating. Surface to be smooth and free of tool marks and imperfections.
- J. Clean-up:
1. Remove and replace defective work.
2. Leave surfaces free of dirt, gouges and imperfections. Clean adjacent surfaces soiled by this work. Remove equipment, surplus materials and debris from job site, and leave installation ready for succeeding work.

SECTION 0950 - ACOUSTICAL CEILINGS

- A. Work includes:
1. Suspended metal grid system complete with wall trim.
2. Lay-in ceiling panels.
- B. Related Sections:
1. HVAC Drawings: Air diffusers within ceiling system.
2. Electrical Drawings: Lighting fixtures within ceiling system.
- C. Submittals:
1. Make all submittals in accordance with Section 01000 General Requirements.
2. Shop Drawings: Submit complete reflected ceiling layout and setting drawings showing pattern and arrangement of acoustical units. Indicate by dimension the location of all openings required to accommodate the work of other trades.
3. Samples: Submit two, full-sized samples of each type of acoustical unit to show color and texture. Submit two full-sized samples of each suspension system member, all samples 12 inches long.
- D. Coordination:
1. Coordinate layout, detailing and schedule of ceiling installation with Mechanical and Electrical work.
2. Examine the pertinent portions of Mechanical and Electrical Specifications, Drawings, and Schedules.
- E. Quality Assurance:
1. Requirements of regulatory agencies:
- a. Underwriters Laboratories, Inc. (UL)
- b. National Electrical Code (NEC)
2. Sound absorbent materials shall have a flame-spread rating not to exceed 25, and a smoke density of not to exceed 450 when tested in accordance with U.B.C. Standard No. 424.
3. Seismic and other design requirements: Design of ceiling suspension system, including related components, shall meet or exceed the minimum requirement established by the State of California Title 24.
4. Except as otherwise indicated, ceiling systems shall not be designed to support materials or building components other than lighting fixtures, air intake or discharge units.
5. Materials, design and workmanship shall comply with applicable requirements for intermediate duty classification direct hung ceilings in ASTM C635 and C636.
6. Adequate lighting shall be in operation before inspection of work of this Section by Architect.
- F. Delivery, Storage and Handling:
1. Deliver materials to site in original unopened containers bearing manufacturer's identifying label.
2. Store indoors for at least 48 hours prior to installation.
3. Keep materials in an area where temperature and humidity closely approximate occupancy conditions.
- G. Project Conditions:
1. Do not install acoustical ceilings until building is enclosed, sufficient heat is provided, dust generating activities have terminated and overhead mechanical work is completed, tested and approved.
2. Permit wet work to dry prior to commencement of installation.
3. Maintain uniform temperatures of minimum 65 degrees F. and humidity of 20 percent to 40 percent prior to, during and after installation.
- H. Materials:
1. Exposed suspension system:
- a. Suspended Metal Grid System Manufacturer: Donn Corporation.

DIVISION 10 - SPECIALTIES

Not Applicable

DIVISION 11 - EQUIPMENT

Not Applicable

DIVISION 12 - FURNISHINGS

Not Applicable

Not Applicable

Not Applicable

Not Applicable

Not Applicable

Not Applicable

Not Applicable

Not Applicable

Not Applicable

Not Applicable

Not Applicable

Not Applicable

Not Applicable

Not Applicable

Not Applicable

Not Applicable

Not Applicable

Not Applicable

Not Applicable

SECTION 12512 - HORIZONTAL BLINDS

1. Work includes:
- a. Remove existing 1" miniblinds, carefully mark blinds for reinstallation in the same openings from which they were removed.
- b. Professionally clean and safety store during construction operations.
- c. Reinstall existing, cleaned 1" miniblinds after construction operations which cause soil and dust have been completed.

DIVISION 13 - SPECIAL CONSTRUCTION

Not Applicable

DIVISION 14 - CONVEYING SYSTEMS

Not Applicable

DIVISION 15 - MECHANICAL

Refer to the drawings.

DIVISION 16 - ELECTRICAL

Refer to drawings.

SECTION 0900 - PAINTING

- A. Work includes:
1. Job applied priming, undercoating and finish painting.
- B. Related Section:
1. Section 0910 - Steel Doors and Frames.
2. Section 0920 - Gypsum Board Construction.
- C. Submittals:
1. Make all submittals in accordance with Section 01000.
2. Product Data:
- a. Submit a complete list of materials proposed for use, together with manufacturer's specifications.
- b. Color Samples:
- 1) Prepare all color and finishes on samples, 8-1/2 inches by 11 inches in size.
- 2) Submit samples as requested until required sheen, color and texture is achieved.
- 3) Label and identify each sample as to location and application.
- D. Deliver paint materials in sealed original labeled containers, bearing manufacturer's name, type of paint, stock number, color and instructions for reducing or mixing where applicable. Store and mix materials in areas, as directed. Remove solvent and waste at the close of each working day, and in general take all precautions necessary to prevent fire and spontaneous combustion. Keep rubbing cloths and dry rags in tightly closed metal containers and remove completely from buildings at the close of each working day.
- E. Regulatory Requirements: All materials applied to the work must conform with California Air Resources Board CARB Rule, and federal lead level.
- F. Comply with manufacturer's recommendations as to environmental conditions under which coating and coating systems can be applied. Do not apply varnish or paint when temperature is below 50 degrees F. Do not apply interior paint in damp or rainy weather; ensure that the surface has dried thoroughly before proceeding.
- G. Do not apply finish in areas where dust is being generated.
- H. Manufacturer's:
1. Special Paint or approved equal.
- I. Materials:
1. Materials selected for coating systems for each type surface shall be the product of a single manufacturer.
2. Accessory materials such as turpentine, thinner, linseed oil, putty and shellac shall be of the highest quality and be approved manufacturer.
3. Unavailability of Specified Products: Claims concerning unavailability of any material specified (for its inability to satisfactorily produce the work) will not be entertained, unless such claim is made in writing to the Architect before the work is started.
4. Number of coats scheduled is minimum. Additional coat shall be applied at no additional cost if necessary to completely hide base materials, produce uniform color, and provide satisfactory finish result.
- K. Colors/Sheen:
1. Colors and Sheen to match existing.
- L. Paint Schedule:
1. Drywall Walls and Ceilings:
- 1st Coat: 1770 Pigmented PVA Sealer
- 2nd Coat: 1400 Sino Satin II (Semi-gloss)
2. Steel Casework:
- 1st Coat: 34 Com-Tac
- 2nd Coat: 1400 Sino Satin II (Semi-gloss)
3. 3rd Coat: 1400 Sino Satin II (Semi-gloss)
- M. Inspection:
1. Examine surfaces scheduled to receive paint and finishes for conditions that will adversely affect execution, permanence, or quality of work and which cannot be put into acceptable condition through preparatory work. Contractor shall notify General Contractor and Architect in writing of any defects or conditions which will prevent a satisfactory installation.
2. Do not proceed with surface preparation or coating application until conditions are suitable.
3. Commencement of installation construed as acceptance of surfaces.
4. All surfaces to receive paint shall be clean, dry, smooth, and free of dust before application of any material. Prepare surfaces as follows:
- a. GYPSUM BOARD: Remove all foreign matter. Fill all pits, flush, and smooth with spackles.
- b. PRIMED FERROUS METAL: Remove all foreign matter. Touch up abrasions with ferrous metal primer.
5. Surfaces which cannot be prepared or painted as specified shall be immediately brought to the attention of the Architect in writing.
- a. Starting of work without such notification will be considered acceptance by the Contractor of surfaces involved.
- b. The Contractor shall replace unsatisfactory work caused by improper or defective surfaces, as directed by the Architect at no additional cost to the Owner.
- N. Application:
1. Do not apply initial coating until moisture content of surface is within limitations recommended by paint manufacturer.
2. Apply paint with suitable brushes, rollers, or spraying equipment.
3. Apply stain in accordance with manufacturer's recommendations.
4. Rate of application shall not exceed that as recommended by paint manufacturer for surface involved.
5. Comply with recommendations of product manufacturer for drying time between succeeding coats.
6. Leave all parts of molding and ornaments clean and true to details with no undue amount of paint in corners and depressions.
7. Make edges of paint adjoining other material or colors clean and sharp with no overlapping.
8. Refresh whole wall where portion of finish is not acceptable.
9. All materials shall be applied evenly with proper film thickness and free of runs, sags, skips and other defects. External and vertical surfaces shall be sandpapered between coats, dusted and cleaned before recoating.
10. Hardware, hardware accessories, plates, lighting fixtures, and similar items in place shall be removed prior to not to exceed 480 when tested in accordance with U.B.C. Standard No. 424.
11. Heating and other equipment adjacent to walls shall be disconnected, using workman skilled in appropriate trades, and moved to permit wall surfaces to be painted. Following completion of painting, they shall be expertly replaced and reconnected.
12. Paint visible surfaces behind vents, registers, or grilles flat black.
13. Wash exposed metal with solvent, then prime and paint as scheduled.
14. Spray paint wherever practical.
15. Exposed Mechanical Items: Items without factory finish such as conduits, pipes, access panels, and items of similar nature are to be finished to match adjacent wall and ceiling surfaces unless otherwise directed.
- O. Clean-up:
1. Upon completion of the work, remove all equipment, excess material and debris, remove all spatters and leave area in a neat and orderly condition.

TAYLOR & ASSOCIATES

3220 UNIVERSITY DRIVE, SUITE 200
NEWPORT BEACH, CALIFORNIA 92660
714.574.1325 FAX 714.574.1338
ARCHITECTURE AND INTERIOR DESIGN

CONSULTANT:

PROJECT:

GOLDEN WEST COLLEGE
ADMINISTRATION BUILDING REMODEL

PROJECT:

GOLDEN WEST COLLEGE DISTRICT
GOLDEN WEST COLLEGE
HUNTINGTON BEACH, CALIFORNIA
ADMINISTRATION BUILDING REMODEL

SHEET TITLE:

SPECIFICATIONS

REVISIONS/SUBMITTALS:

DATE:

PROJECT NUMBER: 854 00

PROJECT ARCHITECT: D. ELY

DRAWN BY:

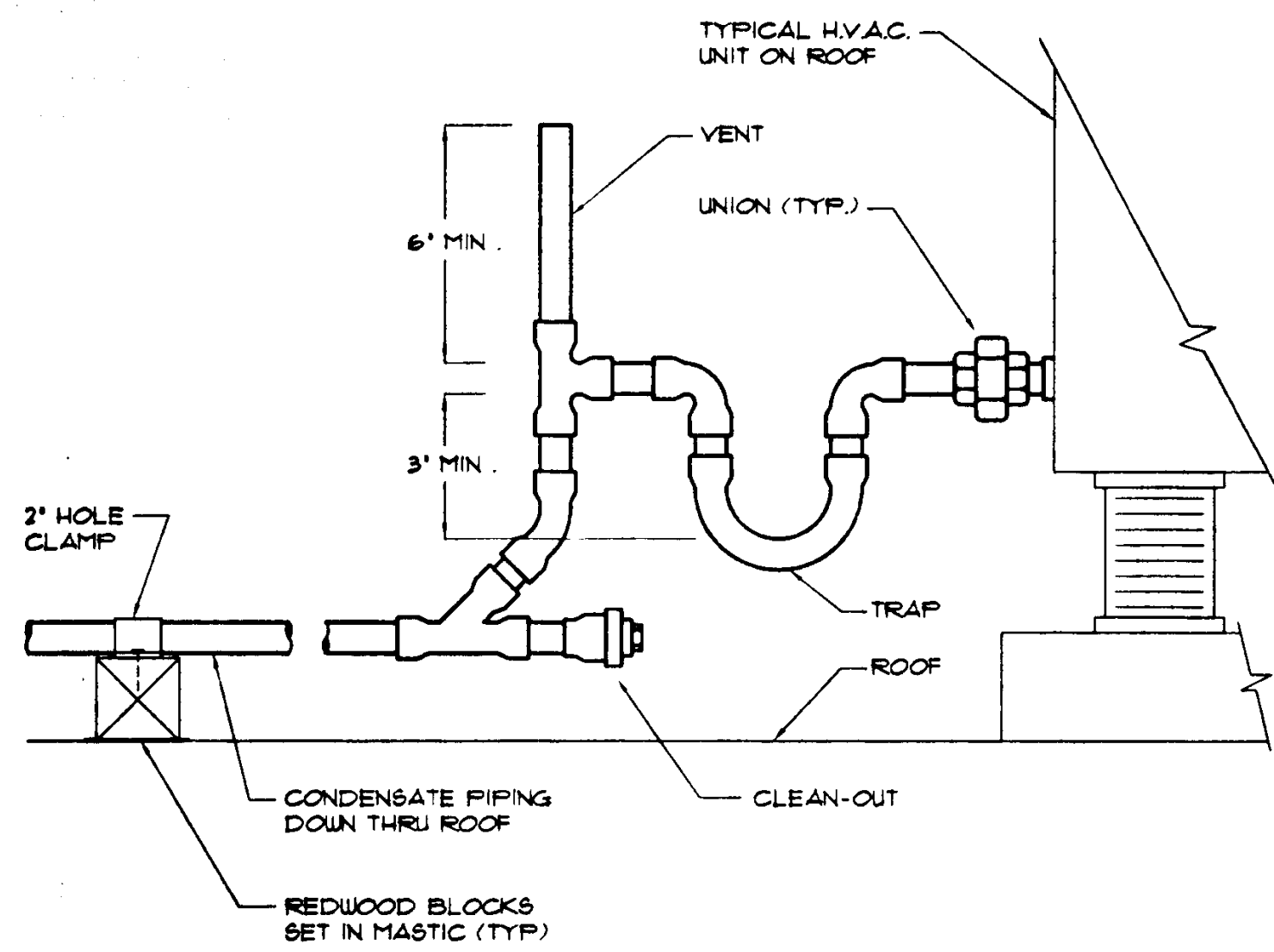
AGENCY SUBMITTAL DATE:

ISSUED FOR INFO: 12-24-96

ISSUED FOR CONSTRUCTION:

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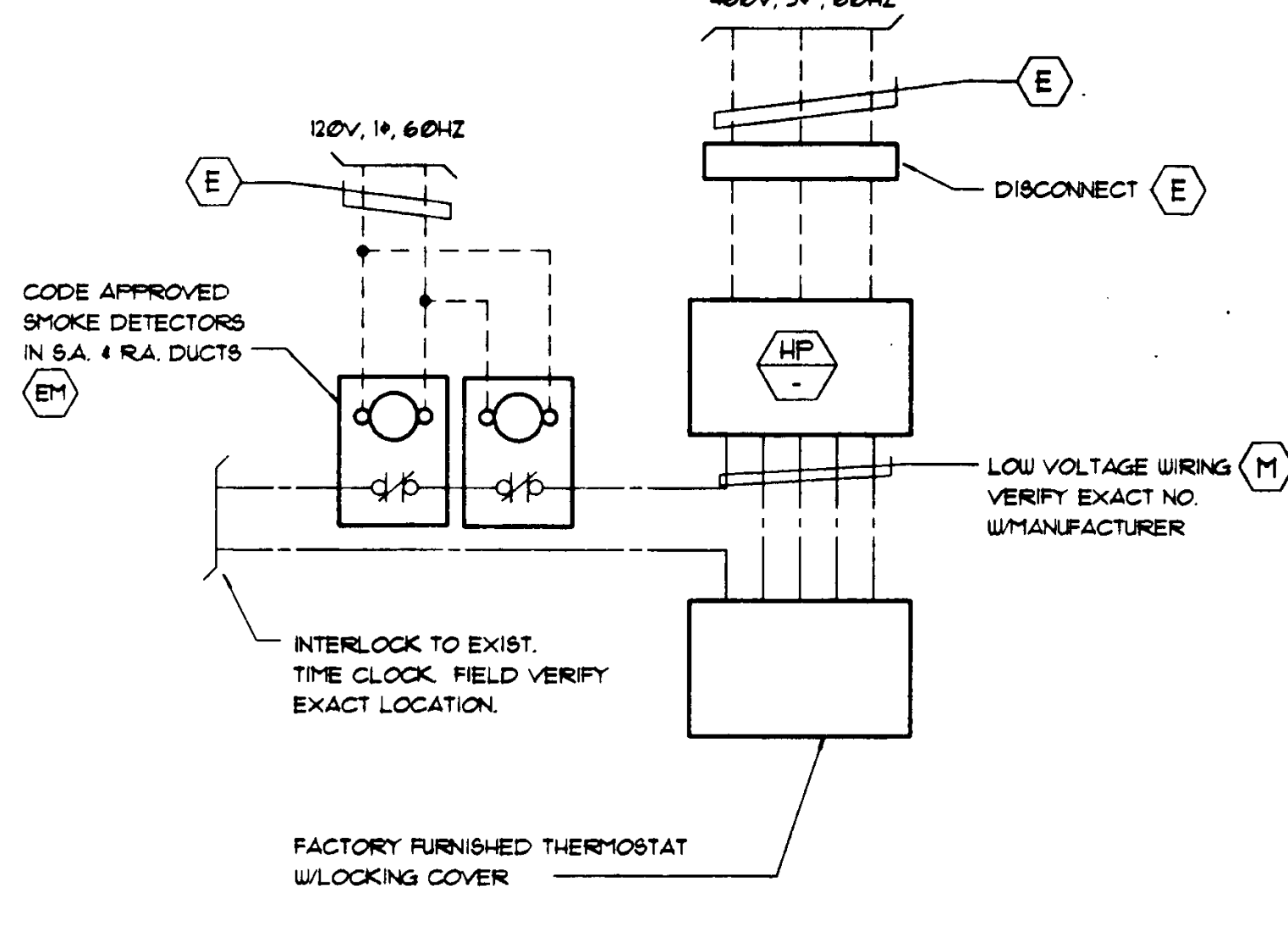
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CONDENSATE DRAIN TRAP DETAIL

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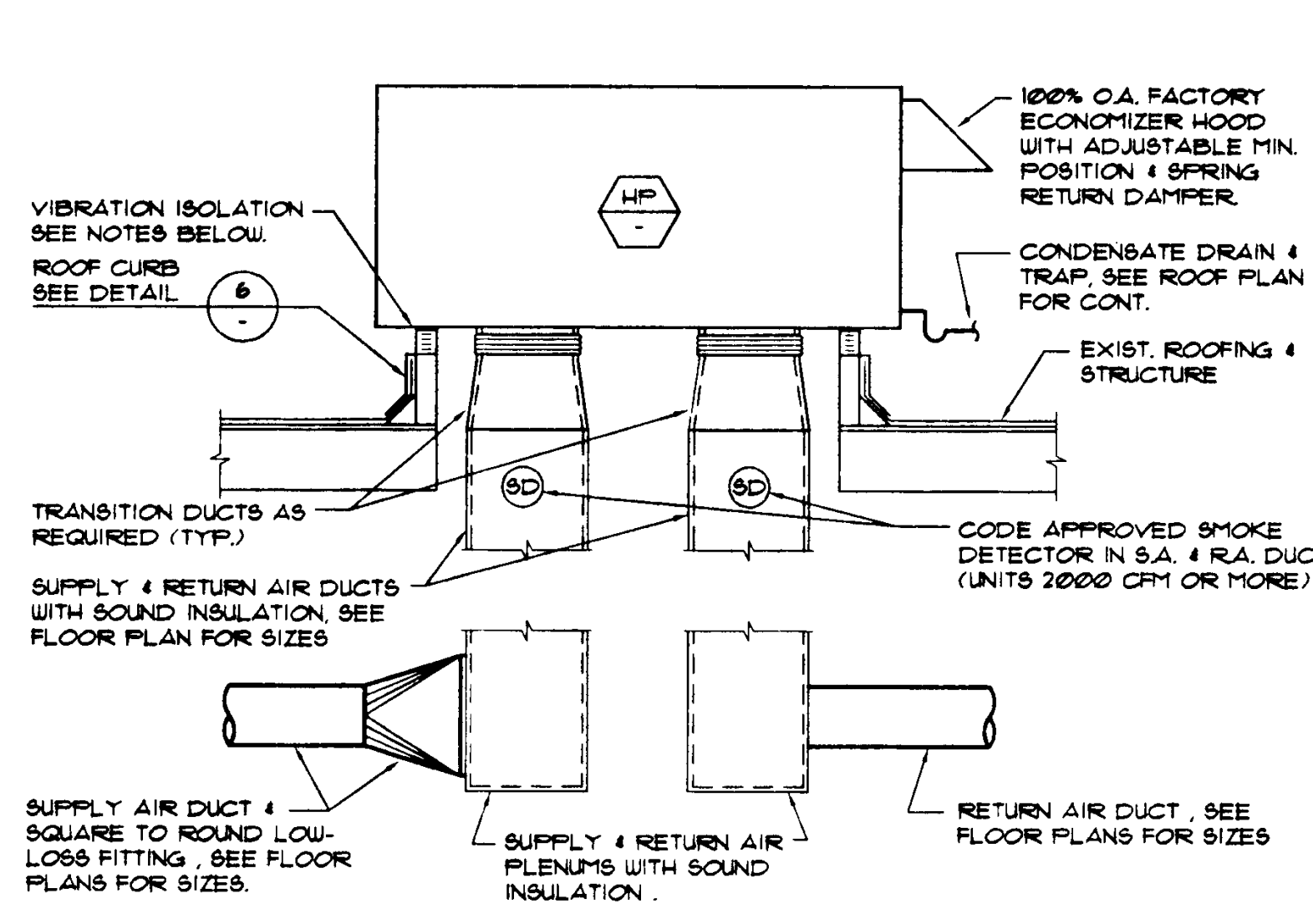
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ROOFTOP HEAT PUMP WIRING

SCALE
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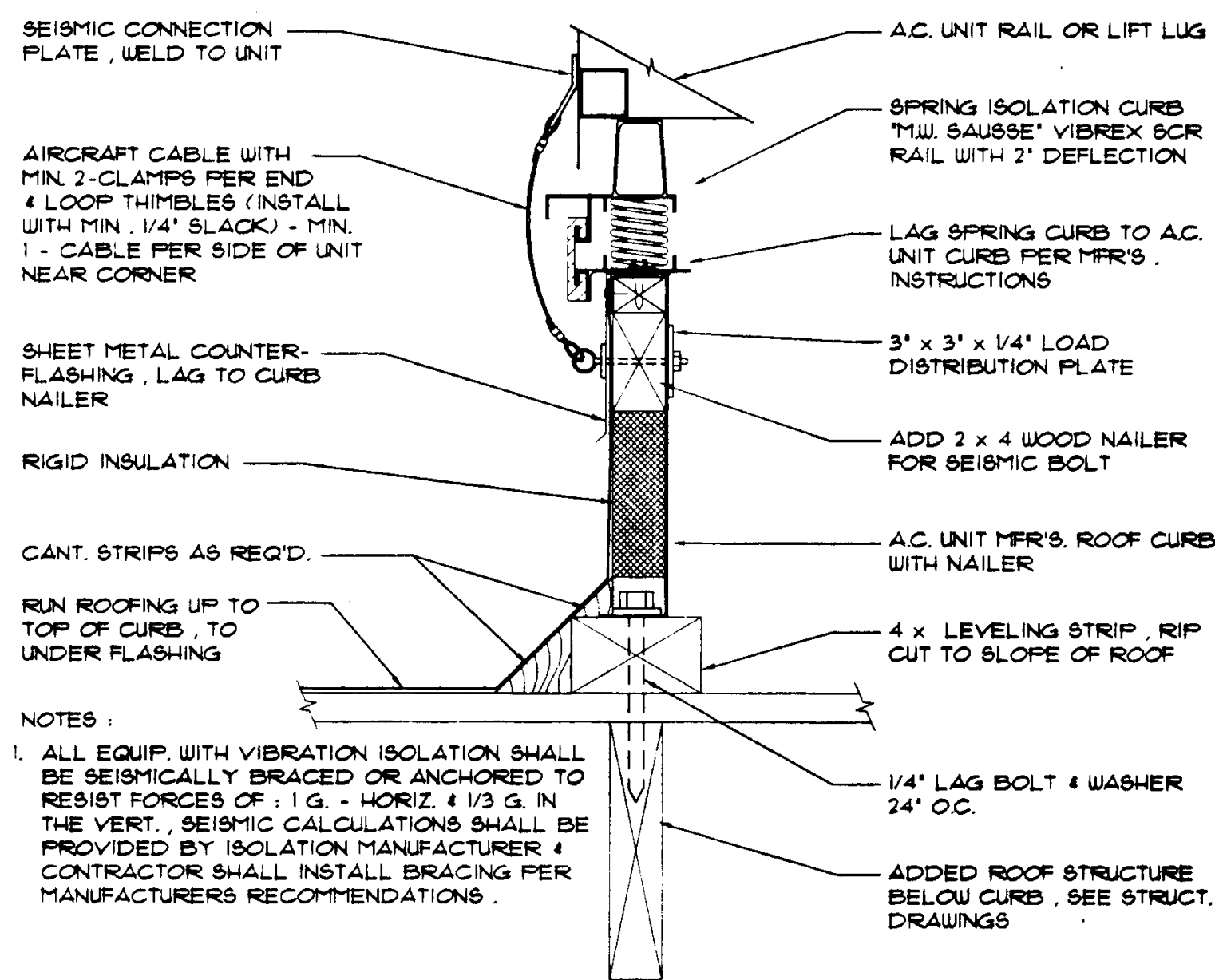
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ROOFTOP HEAT PUMP

SCALE
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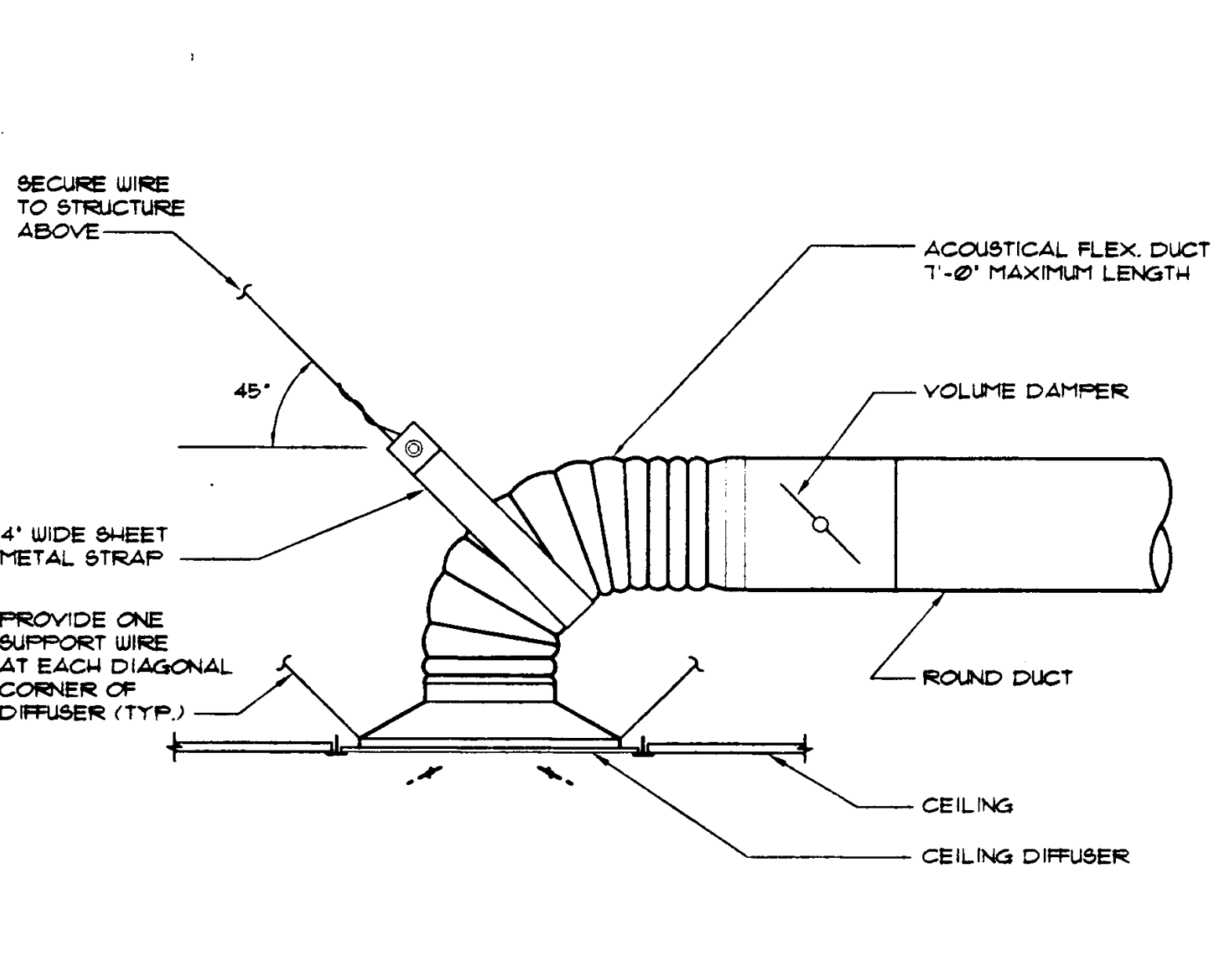
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SEISMIC SPRING ISOLATION CURB

SCALE
NONE

6



CEILING DIFFUSER

SCALE
NONE

3

CERTIFICATE OF COMPLIANCE (part 1 of 3) MECH-1 page 1 of 3
Project Name: Student Services, Golden West College
Address: Huntington Beach, California
Mechanical Designer: Tsuchiyama & Kaino
Documentation: Tsuchiyama & Kaino

GENERAL INFORMATION
Date of Plans: 4-21-15 Building Conditioned Floor Area: 7320 sf
Building Type: Nonresidential Climate Zone: 6
Phase of Construction: ☐ New Construction ☐ Addition ☒ Alteration
Method of Mechanical Compliance: Prescriptive
Proof of Envelope Compliance: ☒ Previous Permit ☐ Compliance Attached
STATEMENT OF COMPLIANCE
This Certificate of Compliance lists the building features and performance specifications needed to comply with Title 24, Part 6, Chapter 1 and Title 20, Chapter 2, Subchapter 4, Article 1 of the California Code of Regulations. This certificate applies only to building mechanical requirements.
The Principal Mechanical Designer hereby certifies that the proposed building design represented in this set of construction documents is consistent with the other compliance forms and worksheets, with the specifications, and with any other calculations submitted with this permit application. The proposed building has been designed to meet the mechanical requirements contained in sections 110 through 115, 120 through 124, 140 through 142, 144 and 145.
Please check one:
☒ I affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code to sign this document as the person responsible for its preparation and that I am a civil engineer, mechanical engineer, or architect.
☐ I affirm that I am eligible under the exemption to Division 3 of the Business and Professions Code to sign this document as the person responsible for its preparation and for the following reason:
PRINCIPAL MECHANICAL DESIGNER
Tsuchiyama & Kaino
(714) 756-2565 (Signature) (Lic. #) (Date)

MECHANICAL MANDATORY MEASURES
Indicate location on plans of Note Block for Mandatory Measures: KC-1

CERTIFICATE OF COMPLIANCE (part 2 of 3) MECH-1 page 2 of 3
Project Name: Student Services, Golden West College
Address: Huntington Beach, California
Documentation: Tsuchiyama & Kaino
COMPLY 24 USC 2945

SYSTEM FEATURES

Zone Name: ADMIN BUILDING
Time Control: None
Setback Control: n/a
* of Isolation Zones: n/a
HP Thermostat: Yes
Electric Heat: 0/0 kW
Fan Control: Constant Volume
VAV Min Position: n/a
Shut Heat/Cool: n/a
Heat Supply Reset: Constant Temp
Cool Supply Reset: Constant Temp
Ventilation: Fixed Enth (Integrated)
OA Damper Control: WPS
Economizer Type: Heat Pump
Cooling Type: CARRIER 50LQ-012
Cool Equip Type: DX
Make and Model: DX

Code Tables

Time Control: Ventilation: OA Damper
Bifrost Switch: B: Air Balance A: Auto
OCC Sensor: C: OA Ctrl G: Gravity
M-Man Timer: M: OA Measure
D-Demand Cont: D: Demand Cont
N-Natural

CERTIFICATE OF COMPLIANCE (part 3 of 3) MECH-1 page 3 of 3
Project Name: Student Services, Golden West College
Address: Huntington Beach, California
Documentation: Tsuchiyama & Kaino
COMPLY 24 USC 2945

DUCT INSULATION
System Name: Type: Duct Location: Duct Type Insul: Notes to Field
CARRIER 50LQ-012 Heating Ducts in Attic Y / N 42
Cooling Ducts in Attic Y / N 42

PIPE INSULATION
System Name: Pipe Type: Insul Required: Notes to Field
Domestic Hot Water Y / N

NOTES TO FIELD - For Building Department Use Only

APPLICABLE	TITLE 24 MANDATORY MEASURES
<input checked="" type="checkbox"/>	EQUIPMENT AND SYSTEMS EFFICIENCY ANY APPLIANCE FOR WHICH THERE IS A CALIFORNIA STANDARD ESTABLISHED IN THE APPLIANCE EFFICIENCY STANDARDS MAY BE INSTALLED ONLY IF THE MANUFACTURER HAS CERTIFIED TO THE REQUIREMENTS OF THE TITLE 24 STANDARDS AND ALL CODES HAVING JURISDICTION.
<input checked="" type="checkbox"/>	PIPING AND DUCTING SYSTEMS SHALL BE INSULATED IN ACCORDANCE WITH THE REQUIREMENTS OF THE TITLE 24 STANDARDS AND ALL CODES HAVING JURISDICTION.
<input checked="" type="checkbox"/>	CONTROLS EACH SPACE CONDITIONING SYSTEM SHALL BE INSTALLED WITH AN AUTOMATIC TIME SWITCH WITH AN ACCESSIBLE MANUAL OVERRIDE THAT ALLOWS OPERATION OF THE SYSTEM DURING OFF-HOURS FOR UP TO 4 HOURS. THE TIME SWITCH SHALL BE CAPABLE OF PROGRAMMING DIFFERENT SCHEDULES FOR WEEKDAYS AND WEEKENDS. INCORPORATE AN AUTOMATIC HOLIDAY "SHUT-OFF" FEATURE THAT TURNS OFF ALL LOADS FOR AT LEAST 24 HOURS. THEN RESUMES THE NORMALLY SCHEDULED OPERATION, AND HAS PROGRAM BACKUP CAPABILITIES THAT PREVENT THE LOSS OF THE DEVICE'S PROGRAM AND THE SETTING FOR AT LEAST 15 HOURS IF POWER IS INTERRUPTED.
<input checked="" type="checkbox"/>	EACH SPACE CONDITIONING SYSTEM SHALL BE INSTALLED WITH CONTROLS THAT TEMPORARILY RESTART AND TEMPORARILY OPERATE THE SYSTEM AS REQUIRED TO MAINTAIN A SETBACK HEATING AND COOLING THERMOSTAT SETPOINT.
<input checked="" type="checkbox"/>	EACH SPACE CONDITIONING ZONE SHALL BE CONTROLLED BY AN INDIVIDUAL THERMOSTATIC CONTROL THAT RESPONDS TO TEMPERATURE WITHIN THE ZONE. WHERE USED TO CONTROL HEATING, THE CONTROL SHALL BE ADJUSTABLE DOWN TO 55° F OR LOWER. FOR COOLING, THE CONTROL SHALL BE ADJUSTABLE UP TO 85° F OR HIGHER. WHERE USED TO CONTROL BOTH HEATING AND COOLING, THE CONTROL SHALL BE CAPABLE OF PROVIDING A DEAD BAND ON AT LEAST 3°F WITHIN WHICH THE SUPPLY OR HEATING AND COOLING IS SHUT OFF OR REDUCED TO A MINIMUM.
<input type="checkbox"/>	THERMOSTATS SHALL HAVE NUMERIC SETPOINTS IN °F.
<input type="checkbox"/>	THERMOSTATS SHALL HAVE ADJUSTABLE SETPOINT STOPS ACCESSIBLE ONLY TO AUTHORIZED PERSONNEL.
<input checked="" type="checkbox"/>	HEAT PUMPS SHALL BE INSTALLED WITH CONTROLS TO PREVENT ELECTRIC RESISTANCE SUPPLEMENTARY HEATER OPERATION WHEN THE HEATING LOAD CAN BE MET BY THE HEAT PUMP ALONE. ELECTRIC RESISTANCE SUPPLEMENTARY HEATING OPERATION IS PERMITTED DURING TRANSIENT PERIODS, SUCH AS START-UP AND FOLLOWING ROOM THERMOSTAT SETPOINT ADVANCE, WHEN CONTROLS ARE PROVIDED WHICH USE PREFERENTIAL RATE OF CONTROL, INTELLIGENT RECOVERY, STAGING, RAMPING, OR OTHER LAID-OUT CONTROL MECHANISMS DESIGNED TO PRECLUDE THE UNNECESSARY OPERATION OF SUPPLEMENTARY HEATING DURING THE RECOVERY PERIOD.
<input checked="" type="checkbox"/>	GRAVITY OR AUTOMATIC DAMPERS INTERLOCKED AND CLOSED ON FAN SHUTDOWN SHALL BE PROVIDED ON THE OUTSIDE AIR INTAKES AND DISCHARGES OF ALL SPACE CONDITIONING AND EXHAUST SYSTEMS.
<input type="checkbox"/>	ALL GRAVITY VENTILATING SYSTEMS SHALL BE PROVIDED WITH AUTOMATIC OR REMOTELY ACCESSIBLE MANUALLY OPERATED DAMPERS IN ALL OPENINGS TO THE OUTSIDE, EXCEPT FOR COMBUSTION AIR OPENINGS.
<input checked="" type="checkbox"/>	ALL SPACE CONDITIONING AND VENTILATION SYSTEMS SHALL BE BALANCED TO THE QUANTITIES SPECIFIED IN THESE PLANS, IN ACCORDANCE WITH AND PERFORMED BY A COMPANY CERTIFIED BY THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB) PROCEDURAL STANDARDS (1983), OR ASSOCIATED AIR BALANCE COUNCIL (AABC) NATIONAL STANDARDS (1986).
<input checked="" type="checkbox"/>	OUTSIDE AIR CERTIFICATION: THE SYSTEM SHALL PROVIDE THE MINIMUM OUTSIDE AIR AS SHOWN ON THE MECHANICAL DRAWINGS, AND SHALL BE MAINTAINED AND CERTIFIED BY THE INSTALLING LICENSED C-36 MECHANICAL CONTRACTOR.
<input checked="" type="checkbox"/>	THE AIR CONDITIONING SYSTEM SHALL BE ENERGIZED 1 HOUR IMMEDIATELY PRIOR TO OCCUPANCY TO PROVIDE THE MINIMUM REQUIRED VENTILATION RATE.

SYMBOL	ABBR.	DESCRIPTION
	P.O.C.	POINT OF CONNECTION
		REMOVE EXIST. EQUIP. OR PIPES SHOWN HATCHED
		DUCT RISE / DUCT DROP
		DUCT WITH SOUND INSULATION
		DUCT SECTION - SUPPLY
		DUCT SECTION - RETURN
		DUCT SECTION - EXHAUST
	D.L.O.U.	DOOR LOUVER / UNDERCUT
		ROOM THERMOSTAT & ZONE NUMBER
		SWITCH NUMBER
	CDWS	CONDENSER WATER SUPPLY
	CDWR	CONDENSER WATER RETURN
	CHWS	CHILLED WATER SUPPLY
	CHWR	CHILLED WATER RETURN
	HHWS	HEATING HOT WATER SUPPLY
	HHWR	HEATING HOT WATER RETURN
	RL	REFRIGERANT LIQUID
	RS	REFRIGERANT SUCTION
	RD	REFRIGERANT DISCHARGE
	AVD	AUTOMATIC VOLUME DAMPER
	VD	MANUAL VOLUME DAMPER
	GV	GATE VALVE
	GLV	GLOBE VALVE
	CHV	CHECK VALVE
	BV	BALL VALVE
	BFV	BUTTERFLY VALVE
	BC	BALANCING COCK
	RED	REDUCER
	STR	STRAINER
	U	UNION
	PG	PRESSURE GAUGE
	TH	THERMOMETER
	AV	AIR VENT VALVE
	CV	CONTROL VALVE
	PRV	PRESSURE REDUCING VALVE
	P.T. R.V.	PRESSURE & TEMPERATURE RELIEF VALVE
		PIPE ANCHOR
	SD	SMOKE DETECTOR
	A	COMPRESSED AIR
	AD	ACCESS DOOR
	AFF	ABOVE FINISHED FLOOR
	AP	ACCESS PANEL
	CD	CEILING DIFFUSER
	CA	COMBUSTION AIR
	EA	EXHAUST AIR
	EAG	EXHAUST AIR GRILLE
	EAR	EXHAUST AIR REGISTER
	EP	ELECTRIC - PNEUMATIC
	FLD	FUSIBLE LINK FIRE DAMPER
	H.O.A.	HAND - OFF - AUTOMATIC
	NC	NORMALLY CLOSED
	NO	NORMALLY OPEN
	N.I.C.	NOT IN CONTRACT
	MA	MIXED AIR
	OA	OUTSIDE AIR
	PE	PNEUMATIC - ELECTRIC
	RE. A.G.	RELIEF AIR GRILLE
	RA	RETURN AIR
	RAG	RETURN AIR GRILLE
	RAR	RETURN AIR REGISTER
	RE	REDUCING ELBOW
	SA	SUPPLY AIR
	SAG	SUPPLY AIR GRILLE
	SAR	SUPPLY AIR REGISTER
	S.F.D.	COMBINATION SMOKE & FIRE DAMPER
	SI	SOUND INSULATION
	T	THROAT
	UNO	UNLESS NOTED OTHERWISE
	U.T.R.	UP THRU ROOF
	V.A.V.	VARIABLE AIR VOLUME
	V.T.R.	VENT THRU ROOF
	M	FURNISHED & INSTALLED BY MECHANICAL
	ME	FURNISHED BY MECHANICAL, INSTALLED BY ELECTRICAL
	EM	FURNISHED BY ELECTRICAL, INSTALLED BY MECHANICAL
	E	FURNISHED & INSTALLED BY ELECTRICAL
		CEILING DIFFUSER
		NECK SIZE (N. 8Q) AIR QUANTITY (CFM)
		RETURN AIR REGISTER
		NECK SIZE (N. x IN.) AIR QUANTITY (CFM)
		SUPPLY & EXHAUST REGISTER
		NECK SIZE (N. x IN.) AIR QUANTITY (CFM)
		LINEAR SUPPLY NO. OF SLOTS - WIDTH CFM / FT. TOTAL LENGTH

LEGEND

SCALE
NONE

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REGULATIONS OF THE STATE OF CALIFORNIA
ENERGY CONSERVATION STANDARDS HAVE BEEN
REVIEWED AND THE DESIGN SUBMITTED CONFORMS
SUBSTANTIALLY WITH THESE REGULATIONS.

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PROJECT:
COAST COMMUNITY COLLEGE DISTRICT
GOLDEN WEST COLLEGE
HUNTINGTON BEACH, CALIFORNIA
ADMINISTRATION BUILDING REMODEL

SHEET TITLE:
LEGEND AND DETAILS

REVISIONS/SUBMITTALS:

DATE:

PROJECT NUMBER:

PROJECT ARCHITECT:

DRAWN BY:

AGENCY SUBMITTAL DATE:

ISSUED FOR BIDS: 9-24-96

ISSUED FOR CONSTRUCTION:

AGENCY APPROVALS:

SCALE:

SHEET NUMBER:

AC-1

SCALE
NONE

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PART 1 - GENERAL

1.01 GENERAL CONDITIONS AND DIVISION ONE: The general conditions, supplementary conditions and division one are hereby made a part of this section. All work of this section shall be in accordance with Title 24 of the California Code of Regulations.

1.02 DESCRIPTION:

A. Work Included: Furnish all labor, materials, equipment appliances and necessary incidentals for the complete installation of all heating, ventilation and air conditioning as shown on the Drawings and as specified herein.

1. Air conditioning and ventilation for all areas as indicated complete with ductwork, piping and controls.

B. Related work in this section includes the following:

- Furnishing electrical devices necessary for mechanical work, except disconnects unless indicated otherwise.
- Line and low voltage wiring for mechanical controls including final connections as indicated on wiring diagrams.
- Conduit for line and low voltage wiring for mechanical controls as indicated on wiring diagrams.
- Responsibility for obtaining clarification of discrepancies between mechanical and electrical work from Architect prior to proceeding with the work.
- Responsibility for proper operation of automatic pneumatic-electric controls and equipment, and of electric power driven equipment furnished under Division 15.
- Fire sifting of all pipe and duct penetrations through fire rated walls and floors.

C. Related Work Specified in Other Sections:

- Painting of exposed piping, ductwork, and unfinished portions of fixtures and equipment.
- Miscellaneous equipment furnished by Owner or under other Sections except touch-up and plumbing connections for the equipment shall be made under Section 15400.
- Electrical work as follows will be provided under Division 16:
 - Conduit for line wiring for equipment and devices as indicated or specified except conduit for line and low voltage wiring for mechanical controls specified under Division 15.
 - Line wiring for equipment and devices as indicated or specified herein except line and low voltage wiring for mechanical controls specified under Division 15.
 - Providing disconnect switches.
 - Installing electrical devices such as starters and disconnects, and, when indicated, furnishing all such devices.

1.03 QUALITY ASSURANCE:

A. Locations and Accessibility: Contractor shall fully inform himself regarding peculiarities and limitations of spaces available for installation of work under this Division. Drawings indicate desired location and arrangement of piping, equipment, and other items, and are to be followed as closely as possible. All effects and interferences may not be shown because of the scale of the drawings. In event changes in indicated locations and arrangements are deemed necessary by Architect, they shall be made by Contractor. No additional charges provided the change is ordered before Work is installed and no extra materials are required.

B. Regulations and Codes: When drawings or Specifications call for sizes or grades different than required by governing codes, provide the larger size or higher grade. Nothing in these Drawings or Specifications shall be construed to permit work in violation of governing codes. In addition to the requirements of all governing codes, ordinances and agencies, conform to the requirements of the following codes and standards:

ASHRAE Guide, latest edition.
ASME Codes, latest edition.
SMACNA Code, latest edition.
Health & Safety Code, State of California.
UBC, latest edition.
UFC, latest edition.
California Code of Regulations, Title 24.

1.04 SUBMITTALS:

A. Shop Drawings: Within 45 days after award of contract, and before any of the materials of this section are delivered at the jobsite, submit complete shop drawings to the Architect in accordance with the Provisions of Division 1 of these specifications. Show all details of all ductwork, piping and equipment plans.

B. Product Data:

- Submit six copies of all manufacturer's product data in accordance with Division 1 simultaneous with all shop drawing submittals.
- Product data to include all air conditioning equipment, hangers, fans, ductwork construction, and other standard items as required to complement shop drawings.
- Manufacturers and suppliers of equipment shall provide all data necessary for compliance with the State of California Energy Conservation Standards. Compliance certification for all equipment shall be included in equipment submittals.

C. Record Drawings: Maintain throughout the progress of the work project record drawings in accordance with Division 1 and submit to the Architect in compliance with the above section.

D. Operating Manuals and Maintenance Manuals:

- Submit four copies of all operating instructions and maintenance manuals in accordance with Division 1.
- Fully instruct Owner's operating personnel and demonstrate performance, operation and maintenance of equipment. Amount of time allocated for said instruction and demonstrations of equipment and systems shall be part of these obligations. Submit a letter to Architect signed by Owner's representative who will operate system stating that he has been fully instructed by contractor about operation and maintenance of equipment and system.

E. Guarantees: In addition to equipment warranties, furnish a written guarantee against defects in materials and workmanship for one year. Guarantee shall include repair of damage to or replacement of any part of equipment or premises caused by leaks or breaks in pipe or equipment provided under this section.

1.05 PRODUCT HANDLING:

- Protection: Take all precautions necessary to protect the materials of this section before, during, and after installation.
- Replacements: In the event of damage, immediately repair all damaged and defective work to the approval of the Architect at no additional cost to Owner.

1.06 JOB CONDITIONS:

A. Examination of the Site: Examine the site and include all conditions in bid proposal under which work is to be performed.

1.07 MISCELLANEOUS:

- Permits and Fees: Arrange, apply and pay for all necessary permits, inspections, examinations and fees or charges required by public authorities having jurisdiction.
- Locations and Accessibility: Contractor shall fully inform himself regarding peculiarities and limitations of spaces available for installation of work under this section. Valves, controls, motors and other devices requiring service, maintenance and adjustment shall be placed in fully accessible positions and locations. Provide access doors where required in ductwork or construction wherever specially detailed or not, and render all such devices accessible.
- Scaffolding: Furnish all scaffolding, rigging and hoisting as required for the proper execution of the work.

PART 2 - PRODUCTS

2.01 ROOFTOP PACKAGE HEAT PUMP UNITS

Furnish & install Carrier model 50LQ of sizes and capacities indicated. Units shall be completely assembled and tested complete with refrigerant charge and ready to operate. Total unit shall be U.L. listed and carry a U.L. label.

A. Cabinet shall be constructed of galvanized steel, bonderized and coated with a baked enamel finish. Cabinet interior shall be insulated with 1 inch thick neoprene coated fiberglass. Cabinet panels shall be easily removable for service to all operating components.

B. Indoor air fans shall be forward curve centrifugal, belt-driven multi-speed type. Outdoor fans shall be of propeller type with direct-driven permanently lubricated motors.

C. Indoor and outdoor coils shall be of nonferrous construction with aluminum plate fins mechanically bonded to seamless copper tubes with all joints brazed.

D. Compressors shall be welded, fully hermetic with crankcase heaters. Compressors shall have a five year warranty and be capable of operating to -20 degrees F outdoor temperature on a heating cycle and to +45 degrees F outdoor temperature on a cooling cycle.

E. Heating/cooling systems shall be protected with high pressure static, low pressure static, loss of charge protection, indoor coil freeze-stops and current and temperature sensitive overload devices. Time guard B circuit shall be provided to prevent compressor restart cycling and automatically prevent compressor restart if less than 5 minutes after shutdown.

F. Factory thermostats to provide staged heating and cooling, automatic changeover, fan control, with 7-day time clock and bypass timer.

G. Unit shall be provided with factory economizer hood and controls.

H. Provide unit with factory roof curb.

2.02 TURNING VANES:

- Both dimensions less than 48 inches: Barter-Colman air turns without splicing or approved double thickness arlal vanes.
- Either dimension greater than 48 inches: Double thickness arlal vanes of approved pattern.

2.03 DUCTS AND SHEET METAL WORK:

A. Provide ducts, plenums, access doors, fresh air intakes and exhausts as indicated and required. All ductwork shall be constructed, erected and tested in accordance with the most restrictive of local regulations, procedures detailed in the ASHRAE Handbook of Fundamentals or the applicable standards adopted by the Sheet Metal and Air Conditioning Contractors National Association. Provide prefabricated spiral lockseam ducts and fittings and rectangular ducts of galvanized steel. Supply air shall be low pressure, 1 inch S.P.

B. All ductwork shall be constructed and tested in accordance with the most restrictive local regulations, including chapter 10 of the U.M.C. Ductwork gauges and reinforcement shall be in strict accordance with Tables 10-A and 10-B of the U.M.C. Table 10-2-2 is not acceptable.

C. Provide prefabricated spiral lockseam ducts and fittings and rectangular ducts of galvanized steel.

D. Flexible ducts: Flexible ducts shall consist of an exterior, reinforced laminated vapor barrier, 1-1/2" thick fiber glass insulation (K = 25 @ 75 degrees F), encapsulated spring steel wire helix and impervious, smooth, non-perforated interior vinyl liner. Individual lengths of flexible ducts shall contain factory fabricated steel connection collars. Flexible ducts shall be supported at or near mid-length with 2" wide 28 Ga steel hanger color attached to the structure with an approved duct hanger. Installation shall minimize sharp radius turns or offsets. The maximum length will be seven feet and can be used at the terminal ends only.

E. All rectangular connections to main ducts shall be made with low loss fittings. All circular connections to branch ducts shall be made with conical low loss fittings.

F. Flat duct surfaces shall be crimped diagonally regardless of size. Longitudinal joints in all duct sizes must be flat lock joints. Transverse joints and intermediate bracing shall be constructed of galvanized sheet metal or galvanized structural angles in accordance with requirements of ASHRAE Guide and public authorities having jurisdiction.

G. Transverse joints on all ducts shall be sealed with 4" wide 4 ounce canvas saturated with arabal. Apply additional coats of arabal to make ductwork completely airtight.

H. Longitudinal joints on ducts with internal static pressures in excess of 0.75 inches of water pressure shall be sealed with canvas and arabal as described above.

I. Lock joints shall be hammered to move them airtight. Inside of duct shall present a smooth surface to flow air.

J. Changes in size of ducts shall increase gradually with a slope of not more than 12 inches in 5 feet where possible, but not more than 12 inches in 3 feet in any event.

K. Turns shall be made with a throat radius of not less than the duct width.

L. Horizontal ductwork shall be supported in accordance with the U.M.C., ASHRAE, SMACNA and public authorities having jurisdiction.

M. Plenums shall be made of 18 gauge galvanized steel sheet reinforced horizontally on a maximum of 48" centers by 1-1/2" x 1-1/4" x 1/8" galvanized angles and reinforced vertically by 1-1/2" standing seams.

N. Plenum access doors 24" x 24" minimum size, shall be galvanized sheet steel doors and frames properly sealed to prevent breathing. Door shall be of same grade as ductwork or casing and shall have 1" insulation with galvanized sheet steel on both sides. Each door shall be hung on 25 tee hangers, and with galvanized sheet steel on both sides and similar to Ventronics, Inc. Ventlock Latch. Doors shall be hung to open against pressure and shall be fitted with felt to insure air tightness.

O. Flexible connections for air ducts shall be 16-ounce airtight "Ventiglas" non-combustible fabric with fire retardant neoprene coating on outside. Attach to ductwork by lock seam. Install not more than 6' long. Provide where required and indicated.

P. Install inspection doors in ductwork on upstream and downstream sides of heating and cooling coils, and on downstream side of each motorized damper and where required for maintenance. Doors shall be airtight and insulated as hereinafter specified for exposed cold supply ducts and fan plenums. Inspection doors shall be the same gauge as the ductwork.

2.04 DIFFUSERS, REGISTERS AND GRILLES: Air distribution equipment shall be of sizes and capacities indicated.

- Colors: Air distribution equipment installed in ceilings shall be furnished in factory finished enamel of color to match ceiling. Submit paint samples for approval.
- Square Ceiling Diffusers: Krueger series 1100 and with extruded aluminum frame. Mounting shall be adapted to ceiling suspension system. Use 24" x 24" for all lay-in ceilings. Provide opposed blade volume dampers at all diffusers installed in inaccessible ceilings.

1. Supply air shall be introduced into conditioned space in such a manner that conditioned air and room air is rapidly and evenly mixed, resulting in equalization of temperature and draftless air distribution throughout zones of occupancy with temperature differentials up to 25 degrees F for both cooling and heating. Air quantities and throws shall be as indicated.

2. Velocity of moving air below 5 ft. level, during cooling cycle, shall not exceed limits of either 50 FPM at 15 degrees F below average room temperature of 70 FPM at 1 degree F below average room temperature. Velocity of moving air at 1 ft. level, during heating cycle, shall not be less than 10 FPM. Temperature difference at or below 5 ft. level shall not exceed the following: 2 degrees F below average room temperature at 50 FPM, 1 degree F below average room temperature at 70 FPM. Sound pressure level in all octave bands for each diffuser shall not exceed NC 30 noise criteria curve at task level when units operate at design capacities.

C. Ceiling Return, Exhaust, and Relief Air Grilles: Krueger model 1190 and 1190 with extruded frame to match ceiling diffusers. Provide opposed blade volume dampers for return and exhaust registers.

D. Wall Supply Air Registers: Titus series 300 with pattern blades and opposed blade damper.

E. Wall Return, Exhaust Air Grilles: Krueger series 880H with extruded frame and fixed horizontal blades.

2.05 DAMPERS:

A. Provide balancing volume dampers in each branch duct and in each main duct to provide for complete air balancing. Fit each manual volume damper with bearings and an adjusting device having a locking mechanism. If concealed or inaccessible through ceiling or wall, provide opposed blade volume dampers.

B. Balancing dampers shall be Air Balance AC-112 where neither dimension of duct exceeds 17 inches may be job fabricated butterfly type consisting of a blade constructed of 18 gauge galvanized steel securely riveted or welded at its center axis to a square operating rod.

C. Balancing dampers where either dimension exceeds 18 inches shall be Air Balance AC-2.

D. Fire dampers: Fusible link act of airstream type, manufactured in accordance with requirements of public authorities having jurisdiction, with permanent labeling identification. Provide suitable access for servicing dampers.

E. Smoke/Fire Dampers: Greenheck or equal, fusible link with pneumatic damper control manufactured in accordance with the requirements of the State Fire Marshal and public authorities jurisdiction, with permanent label identification. Provide suitable access for servicing damper. Leakage Class II.

2.06 INSULATION: All insulation shall comply with the California Energy Efficiency Code. Insulation thicknesses indicated are based on insulation having thermal resistances in the range of R-4.0 to 4.4 per inch of thickness on a flat surface at a mean temperature of 75 degrees F. Thicknesses indicated are minimum and shall be increased proportionately for materials having R values less than 4.0 per inch of thickness or may be reduced for materials having R values greater than 4.6 per inch thickness.

A. Thermal Duct Insulation: Insulate all concealed supply air and return air ducts, unless otherwise specified, with J-M Microtite fiberglass duct insulation, 1-1/2" pound density, 1" thick insulation with outside foil-vinyl facing, wrapped entirely around duct. All thermal duct insulation shall comply with the requirements of the U.M.C. and Title 24.

B. Exposed Supply and Return Air Ducts: Lined with J-M Linacoustic, 1" thick, 1-1/2" pound density coated fiber glass duct liner complying with NFPA 90A requirements. The cut liner shall have an air friction correction factor not greater than 1.1 at a velocity of 2000 fpm. Apply insulation to inside of ducts with an approved fire retardant adhesive to provide 100% coverage and a smooth surface. In ducts with one side made up of 12" square insulation with mechanical fasteners in addition to adhesive, spaced at 14" centers in both directions. Mechanical fasteners shall be flush with the liner surface and shall start within 2" of the leading edge of each section, and within 3" of the leading edge of all cross joints within the duct section. All exposed edges and the leading edges of all cross joints of the liner shall be heavily coated with an approved fire retardant adhesive. The duct liner shall be cut to assure snug closing corner joints, the back surface of the liner shall face the air stream, transverse joints shall be neatly butted, and all damaged areas shall be heavily coated with an approved adhesive.

C. Sound Duct Insulation: Where indicated, sound insulate air ducts as hereinbefore specified for exposed supply and return air ducts.

D. All duct insulation shall have a minimum thermal resistance of 4.0 exclusive of film resistance.

2.07 CONDENSATE DRAIN PIPING:

A. All condensate drain piping shall be type "M" copper tubing with wrought copper fittings, solder joint type, insulate all interior condensate drains 50-50-Soldered joints with non-corrosive paste flux.

2.08 EQUAL MATERIALS AND SUBSTITUTIONS: In addition to manufacturers specified, the following shall also be considered equal, provided corresponding models meet specified requirements. Equivalent substituted equipment named herein shall be submitted to Architect for approval. Submit alternate selections at time of Bid, listing major equipment.

Item	Manufacturer
Insulation:	Movvile, Gustin-Bacon, Fiberglas
Thermometers:	Palmer, Teric, Mueller
Diffusers, Register, Grilles:	Titus, Anemostat
Vibration Isolation:	Mason
Strainers:	Barley Walworth, Keeley, Mueller
Silencers:	Sillas, Fils
Valves:	Crane, Stockham, Nibco, Walworth
Pipe Hangers and Supports:	Fee & Mason, Elen
Pressure Gauges:	March, Marshmallow, Teric
Smoke & Fire Dampers:	Ruskin, Portoff

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS:

A. Inspection:

- Prior to commencing work required by this section, inspect the work of other trades and verify that such work has been properly completed and satisfied to allow for proper installation of all materials one methods required of this section.
- All heating, ventilation and air conditioning shall be installed in accordance with the requirements of all governing authorities, the original design, and the referenced standards.

B. Discrepancies:

- In the event of discrepancy, immediately notify the Architect.
- Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.02 PIPE IDENTIFICATION:

A. Mark each individual pipe in Mechanical Equipment Rooms and Areas only, for quick and easy identification with Seton Type 20A or 27B markers, installed as recommended by manufacturer, after completion of piping and finish otherwise specified. Coding shall conform to "Scheme for the Identification of Piping Systems" ANSI A13.1-1956. Color scheme shall be approved. Base color for markers shall be as follows:

Low Pressure Steam - Yellow and Black
Condensate Return Piping - Yellow and Black

3.03 PIPE JOINTS: Make screwed joints with a minimum amount of compound applied to the male thread only. All joints shall be made as per code requirements.

3.04 SAFETY PROVISIONS: Equipment and piping with temperatures above 140 degrees F or temperatures below 25 degrees F, located as to endanger personnel or create a fire hazard, shall be properly guarded or covered with insulation of type specified. Bolts, gears, chains, pulleys, couplings, projecting set screws, keys and other rotating or reciprocating parts shall be enclosed or properly guarded. Provide guard rails, etc., required for safe operation and maintenance of equipment.

3.05 EQUIPMENT AND MATERIALS: Install per manufacturer's recommendations.

3.06 ACCESSIBILITY: Install work readily accessible for normal operation, reading of instruments, adjustment, service, inspection and repair, provide access panels where indicated and required. Access panels shall be responsibility of respective Subcontractors.

3.07 EXCAVATION AND BACKFILLING: Perform excavation and backfilling required for Mechanical work under this Division unless otherwise specified. Conform to requirements of Division 2 and of public authorities having jurisdiction.

3.08 INITIAL LUBRICATION, ADJUSTING, AND FILLING SYSTEMS:

A. Before operating any mechanical systems, equipment bearings shall be lubricated and bolts, pulleys, and other moving parts checked for alignment and tolerances in accordance with manufacturer's operating instructions. Piping and liquid systems shall be flushed out and filled with operating fluids. After tests, valves and other parts of the work shall be adjusted for quiet operation. Strainers shall be cleaned out by removing and washing basket or screen. Vibrations and noise shall be suppressed.

3.09 CLEANING OF EQUIPMENT, MATERIALS, AND PREMISES:

A. Refer to Section "Clean Up and Dispose". Clean equipment and materials thoroughly. Leave surfaces to be painted smooth and clean, ready for painters. Clean entire premises of all unused materials, rubbish, debris, grease spots and dirt left by Subcontractors. Remove, clean and replace pipe line strainers after systems have been in operation for a period of 30 calendar days.

3.10 EQUIPMENT IDENTIFICATION:

A. All main equipment shall bear firmly attached metal nameplates which state name of manufacturer, model number, and electrical data. An additional permanent label shall be affixed to each equipment which will clearly indicate by number which operating and maintenance manual explains the maintenance requirements in detail.

3.11 VALVE IDENTIFICATION:

- Valve Charts: Two typewritten charts not less than 8" x 10" shall be made showing assigned numbers controlled in each system by each valve.
- Valve Tags: Provide a tag consisting of a 2" diameter 20 gauge stainless steel or copper disk for each main line shut-off valve or cock. Fasten tags in place with continuous steel ring or chain around stem of valves and around pipe for cocks. Two-inch letters and figures stenciled and contrasting colors on pipe or stamped with a number shown on valve chart and with service designation, with 1/4" high letters.

3.12 DAMAGE BY LEAKS:

A. Be responsible for damage to any part of the premises caused by leaks in the pipe or equipment installed under applicable section of acceptance of the work by the owner.

3.13 EXPANSION AND CONTRACTION: Install piping subject to expansion and contraction with expansion loops, expansion joints, expansion bellows or fittings, expansion joints, using approved methods or devices. Branch lines from mains subject to expansion and contraction shall have a swing joint at point of connection with the main. Risers which pass through one or more floors shall have swing joints at their base. Anchor lines subject to expansion and contraction by approved methods to restrict movements.

3.14 CORROSION PREVENTION: Make joint between cuprous, ferrous, and aluminum materials with approved nylon insulating couplings. Separate contact surfaces of dissimilar metals with nonconducting coating or sheet. Select materials exposed to water or other conductive fluid so that electrolytic action will not occur. Approved rust and scale-inhibiting compounds in proportions recommended by manufacturer shall be mixed into water used to fill circulating water systems.

3.15 PIPING:

A. Install piping to clear beams, etc., unless sleeving is indicated. Refer to Divisions 1 and 3. Constantly check work of other trades to prevent interference with this installation. Obtain approval of Architect if coring or cutting of concrete is necessary due to this installation. Install required sleeves prior to time of concrete pour. Cost of coring and cutting work shall be borne by this subcontractor.

B. Dielectric Unions: Make connections between two dissimilar metal pipes with dielectric unions.

C. Unions: Provide a union on one side of each shut-off valve, at both sides of automatic valves, at equipment connections, and elsewhere indicated or required.

D. Floor, Wall, and Ceiling Plates: Provide where pipes pierce finished surfaces.

3.16 HANGERS AND SUPPORTS:

A. Hold horizontal pipe runs firmly in place using approved steel and iron hangers, supports, and/or pipe rests, unless otherwise indicated. Suspend hanger rods from concrete inserts or from approved brackets, clamps, or clips. Hang pipes individually, or in groups if supporting structure is adequate to support weight of piping and fluid. Hang or support pipe runs so they may expand or contract freely without strain to pipe or equipment.

B. Horizontal Steel Piping: Provide hangers or supports every 10-feet, except every 8-feet for piping under 1" in diameter, unless otherwise specified.

C. Horizontal Copper Tubing: For 2" diameter and over, provide hangers every 10-feet; for 1-1/2" diameter and smaller, every 6-feet.

D. Vertical Piping: Support at floor with wrought iron pipe clamps.

E. Branches: Provide separate hangers or supports for branch lines 6-feet or more in length.

3.17 DUCTS:

A. No hangers, supports, or pipes shall pierce ducts. Secure duct hangers and supports to building structure. Install ducts to clear beams and other obstructions. Assemble, erect, and adjust duct systems to as to insure absolute minimum of noise and vibration in operation. Prove entire system duct to a degree satisfactory to Architect. Any adjustment required to produce quietness shall be made by Contractor before work will be considered finished and acceptable. Gasket air ducts piercing walls and floors where fire dampers are required and gasketing and caulking. Install ducts so that system can be readily balanced after completion of work.

3.18 TESTS:

A. Perform tests to Architect's satisfaction. Make tests in presence of Architect and at a time suitable to him if requested. Furnish necessary labor and equipment and bear costs for testing, balancing, and proving tight of all parts and systems of work under Division 15. Cost of making tests and repairing any or repairing damage resulting therefrom shall be borne by Contractor. Should the Contractor refuse or neglect to make tests necessary to satisfy Architect that requirements of Specifications and Drawings are met, such tests may be made by an independent testing company and Contractor charged for all expenses.

B. Hydrostatic Tests: Make by completely filling piping system with water and eliminating accumulations of air so that leakage, no matter how small, will be apparent on test gauge immediately. Maintain pressure until pipe under test has been examined, but in no case less than 24 hours. Test systems at following pressure:

System	Test Pressure
All Systems	125 psig

3.19 SYSTEM BALANCING:

A. Balancing Work Included:

- Complete testing and balancing of all systems, distribution piping, air testing and balancing of all exhaust systems, or handling units, and air distribution equipment complete as herein specified.
- System balancing shall be performed by independent agency, certified by A.A.B.C. Submit proof of qualifications for each Specialty Contractor certified to perform such.

B. Verification of Conditions: Prior to testing and balancing, inspect equipment and materials and arrange with Contractor for satisfactory correction of all defects in workmanship and/or material that could affect the Work specified herein.

C. Protection: As specified hereinbefore.

D. Agency: All system balancing shall be supervised by an Independent Agency which specializes in balancing and testing of mechanical systems, hereinafter referred to as the Agency.

E. System Operation: Contractor shall put all parts of systems in full operation and shall continue the operation of same during each working day of testing and balancing.

F. Submittals: Within 90 days after the start of construction, submit a complete testing and balancing procedure showing all test equipment that will be used, testing procedures, test data sheets, system schematics, and points of testing.

G. Test Data: Submit 10 copies of test data to Architect on completion of Work under this Section.

H. Certificate: Agency shall certify in writing that system has been adjusted and balanced and design conditions have been attained in all areas of building.

I. Instruments: Instruments used by Contractor shall be accurately calibrated and maintained in good working order. Instruments shall have been certified by the manufacturer or an approved test laboratory within one year of the testing date. Submit this certificate to Architect. Test instruments furnished by Contractor for delivery to Owner may be used to perform part of the system balancing.

J. Air Distribution Testing and Balancing:

- Test and adjust exhaust fan RPM to design requirements.
- Test and record motor full load amperes.
- Make pilot tube transverse of exhaust air ducts and obtain design CFM.
- Test and record system static pressures, suction and discharge.
- Test and adjust system for design exhaust air CFM.
- Adjust all supply and return air ducts to proper design CFM.
- Test and adjust each diffuser, grille and register to within plus-minus 5% of design requirements.
- Each grille, diffuser and register shall be identified as to location and area.
- Size type and manufacturer of diffusers, grilles, and registers shall include the required CFM velocity and test result velocity, required CFM, and test result CFM after adjustments.
- In cooperation with the control manufacturer's representative, the setting adjustment of automatically operated controls to operate as specified, indicated, and/or noted.
- All diffusers, registers and grilles and all equipment shall be adjusted to maintain the design conditions.


K. Witness: Notify Architect in writing two weeks prior to testing and balancing of all major equipment in order to arrange that Architect's representative will witness the tests.

3.20 INSTALLATION:

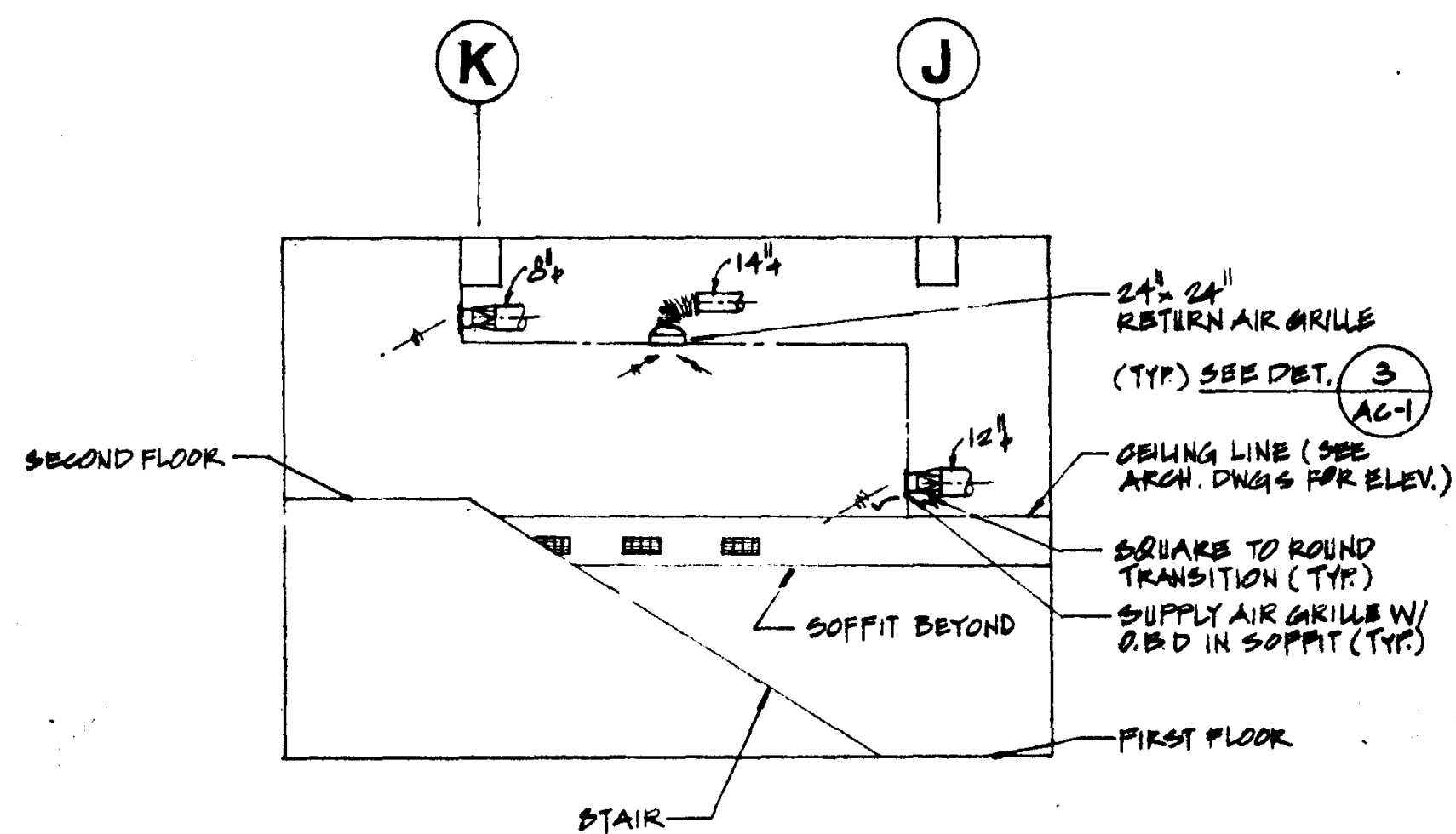
- Air Distribution Equipment Locations shall be coordinated with Architectural Drawings.
- Turning Vanes shall be installed in all the right angles sharp turns in ducts.
- Sound Insulation where indicated, specified duct dimensions or net clear dimensions, i.e., clear dimensions after sound insulation has been installed.
- Fire Dampers in supply and return air ducts shall be act of airstream type and shall have fusible links with melting temperature 50 degrees F above the maximum normal operating temperature. Fire Dampers shall be provided with adequate access doors to the Contractor.
- Cocks: Upon balancing of the system, all balancing cocks shall have the body plug permanently set to indicate the balance position of the plug.
- Connections between two dissimilar metal pipes shall be made with dielectric unions.
- Installation of Refrigeration Equipment shall comply with the requirements of the ASME Standard Safety Code for Mechanical Refrigeration and City requirements.

3.21 CERTIFICATION: Upon completion, the contractor shall inspect work of this Section and deliver to General Contractor a written certification that installed materials and workmanship conform to Specifications.

END OF SECTION

 TAYLOR & ASSOCIATES	
2320 UNIVERSITY DRIVE, SUITE 200 NEWPORT BEACH, CALIFORNIA 92660 714.574.1325 FAX 714.574.1338 ARCHITECTURE AND INTERIOR DESIGN	
CONSULTANT: TSUCHIYAMA & KANO CONSULTING ENGINEERS	
13877 VAN BUREN AVE. SUITE 2100 P.O. BOX 8774 DALLAS, TEXAS 75217-0874	
PROJECT: COAST COMMUNITY COLLEGE DISTRICT GOLDEN WEST COLLEGE HUNTINGTON BEACH, CALIFORNIA	
ADMINISTRATION BUILDING REMODEL	
SHEET TITLE: SPECIFICATIONS	
REVISIONS/SUBMITTALS:	DATE:
PROJECT NUMBER:	
PROJECT ARCHITECT:	
DRAWN BY:	
AGENCY SUBMITTAL DATE:	
ISSUED FOR BIDS:	
ISSUED FOR CONSTRUCTION:	
AGENCY APPROVALS:	
SCALE:	
SHEET NUMBER:	
AC-2	

ROOF TOP PACKAGED HEAT PUMP
 CARRIER MODEL 90-12A-012
 TOTAL CAP: 112,000 BTUH, 95% CAP: 92,000 BTUH
 AMB AIR 25°F, ENT. AIR 78°F DB, 65°F WB
 1000 CFM @ 0.8" E.S.P. EER = 2.0
 HEATING CAP: 110,000 BTUH, C.O.P. = 3.14
ELECTRICAL DATA:
 CONDENSERS: QUANT = 2, LRA = 123, KLA = 12.2
 208/230V - 34 - 60HZ
 MCA = 52, MOPF = 70
 INDOOR FAN: HP = 3/2, FLA = 5.8
 OUTDOOR FAN: FLA = 5.0, QUANT = 1
 FILTERS: (4) 20" 60" x 2"
 OPR. WT. = 1200 LBS
 PROVIDE UNIT WITH FACTORY FINISHED
 ROOF CURB, ECONOMIZER & ALTERNATE
 MOTOR & DRIVE.

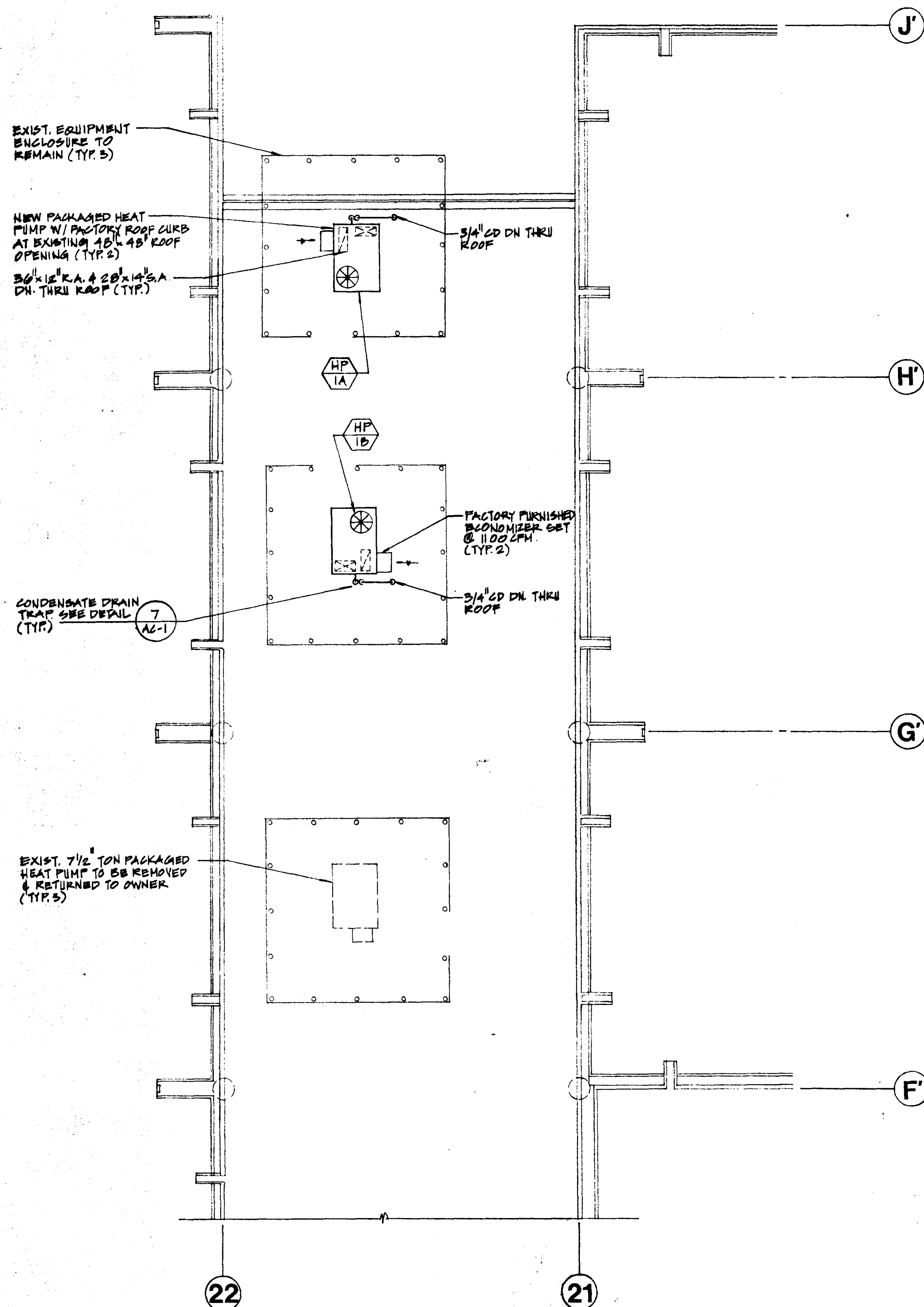


EQUIPMENT SCHEDULES

4

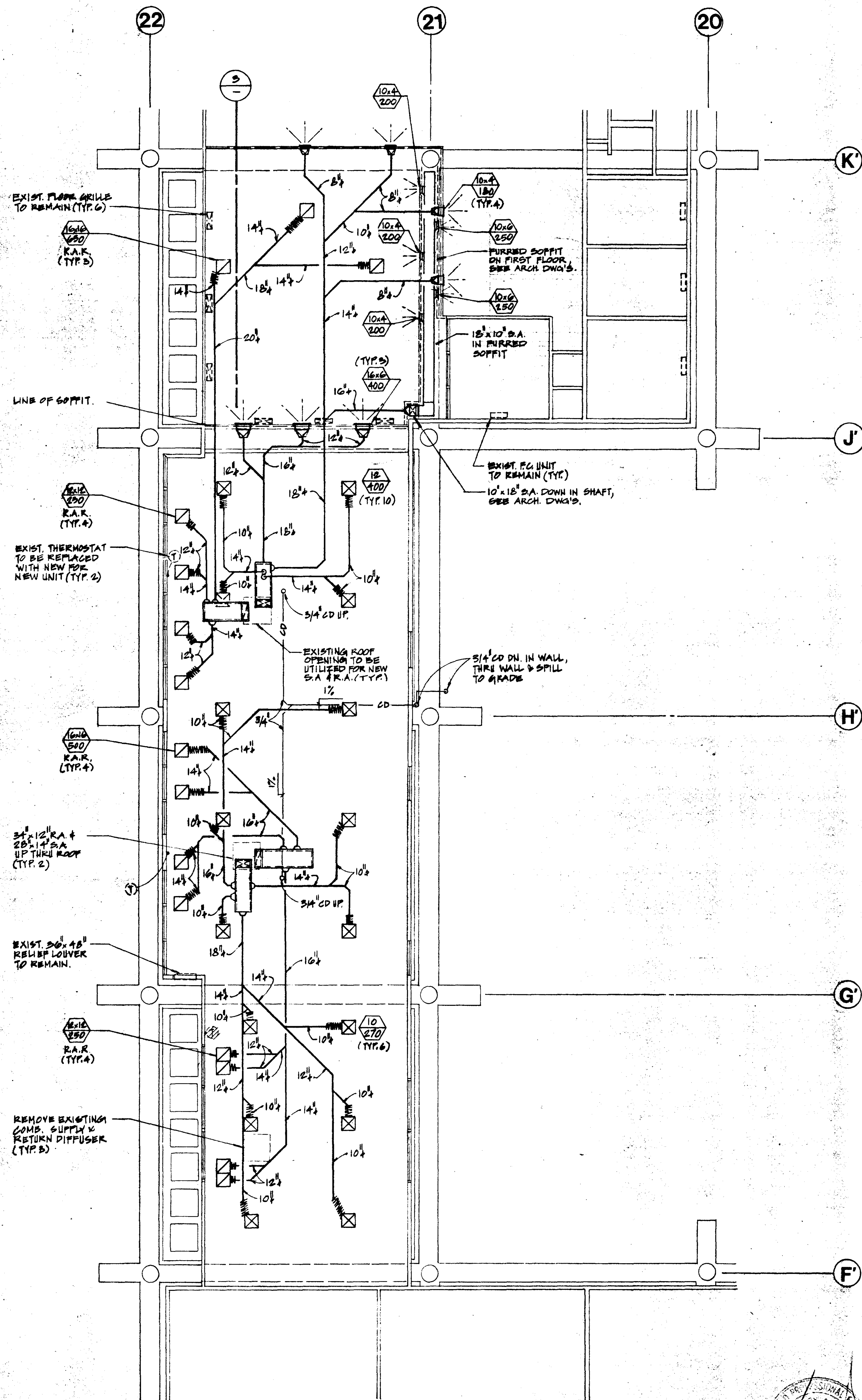
SECTION OF FLOOR PLAN

3



ROOF PLAN

2



FLOOR PLAN

1

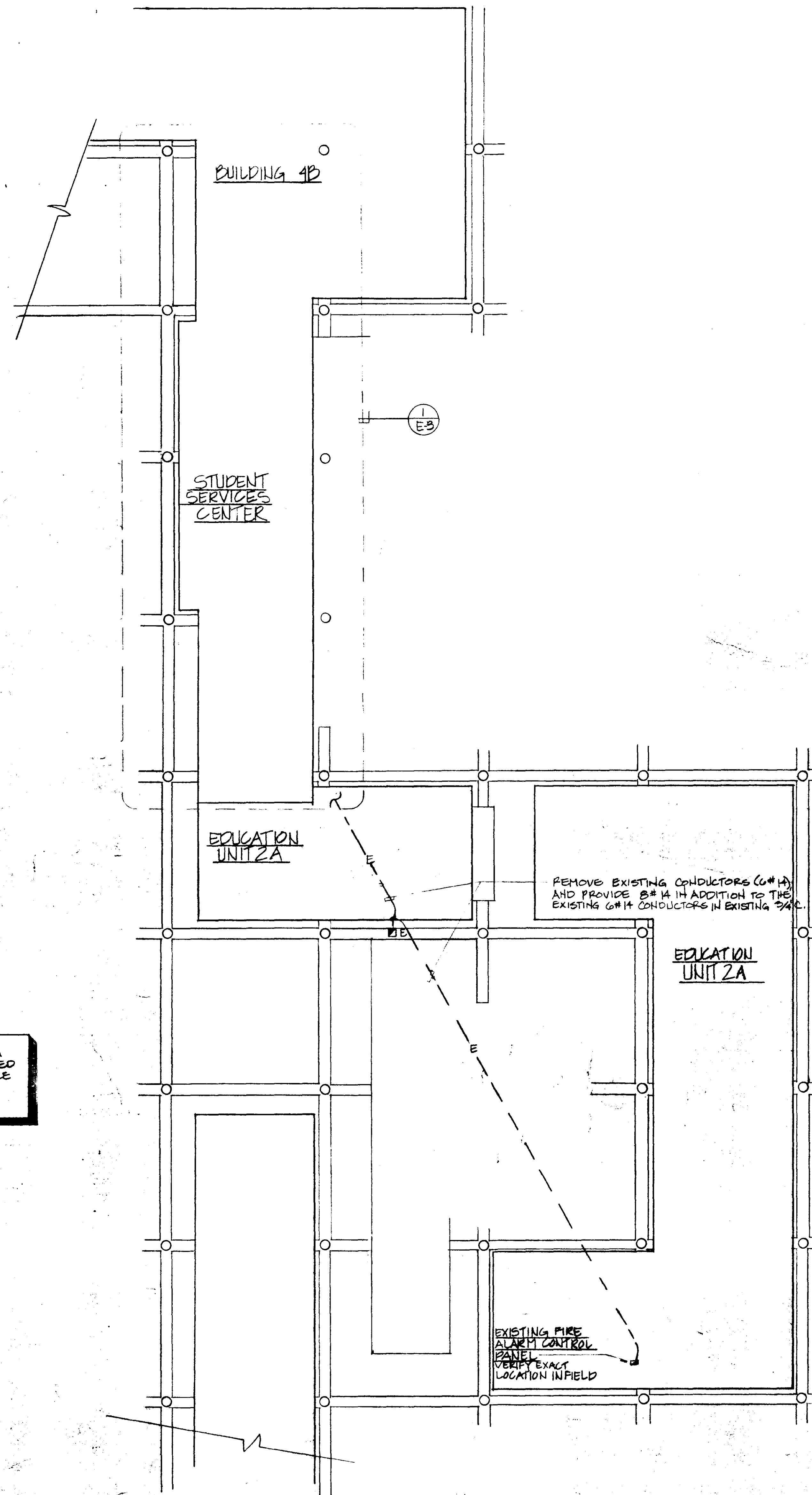
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 ARCHITECTURE AND INTERIOR DESIGN

CONSULTANT:
TSUCHIYAMA & KAINO
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 IRVINE, CA 92614
 (714) 754-0885
 FAX (714) 754-0827

PROJECT:
COAST COMMUNITY COLLEGE DISTRICT
GOLDEN WEST COLLEGE
HUNTINGTON BEACH, CALIFORNIA
ADMINISTRATION BUILDING REMODEL

SHEET TITLE:
FLOOR PLAN AND ROOF PLAN

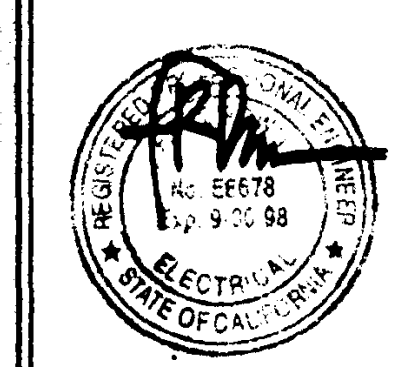
REVISIONS/SUBMITTALS:	DATE:	PROJECT NUMBER:
		PROJECT ARCHITECT:
		DRAWN BY:
		AGENCY SUBMITTAL DATE:
		ISSUED FOR BIDDING:
		ISSUED FOR CONSTRUCTION:
AGENCY APPROVALS:		SCALE:
		SHEET NUMBER:
		AC-3



FIRE ALARM SUBMITTAL IS A "DEFERRED APPROVAL REQUESTED PLAN SUBMITTAL" IN ACCORDANCE WITH DCA POLICY #95-03 (PLS) FEB. 1, 1995.



TAYLOR & ASSOCIATES
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 714.874.1328 FAX 714.574.1328
 ARCHITECTURE AND INTERIOR DESIGN



FBA
 Frederick Brown Associates
 Consulting Electrical Engineers
 1425 Irvine Avenue, Suite 200
 Newport Beach, California 92660-3169
 714.852.9900 FAX 714.852.1857

PROJECT:
**COAST COMMUNITY COLLEGE DISTRICT
 GOLDEN WEST COLLEGE
 HUNTINGTON BEACH, CALIFORNIA**

ADMINISTRATION BUILDING REMODEL
 SHEET TITLE:
ELECTRICAL SITE PLAN

REVISIONS/SUBMITTALS:	DATE:	PROJECT NUMBER: 85400
JBL		PROJECT MANAGER: JBL
		DRAWN BY: LMC/CBB
		AGENCY SUBMITTAL DATE: 9/28/96
		ISSUED FOR CONSTRUCTION:
AGENCY APPROVALS:		SCALE: 1/8" = 1'-0"
		SHEET NUMBER: E-2



- 11

E-3

ELECTRICAL SPECIFICATION

SECTION 16000

C. Timeswitches

1. All timeswitches shall have synchronous motor drive for operation on 120 or 277 volts, 60 Hertz, A.C. and shall be furnished with a ten-hour, spring-driven, reserve-power motor. Contacts shall be rated 40A per pole.

- Timeswitches for HVAC control shall be 7 day, 24 hour with day-on/night device, DPST, Torq 7200 Series or equal by Paragon or Intermatic.
- Timeswitches for lighting control shall be Astronomic, 7 day, 24 hour with day-on/night device, DPST, Torq 7200 series or equal by Paragon or Intermatic.

2. All timeswitches shall be mounted in separate section in top of panelboards under separate lockable door unless otherwise indicated on drawings. Clear opening for timeswitch shall be a minimum of 12" x 12".

D. Contactors and/or Relays/Timeswitch Cabinet

1. Contactors, relays, and/or timeswitches not indicated to be mounted in electrical panels shall be mounted in a cabinet, size as required, with hinged lockable door keyed same as panelboards. Construction of cabinet shall be similar to terminal cabinets.

2. Each contactor, relay or timeswitch mounted in the contactor cabinet shall be barriered in its own compartment, and shall be installed on Lord sound absorbing mounts.

3. Contactor cabinets shall be of the same manufacturer as the panelboards.

4. Where relays and/or contactors occupy the same enclosure as timeswitches they shall have a clear acrylic shield installed over each relay or contactor to guard line exposed parts from accidental contact by unauthorized personnel.

F. Control Power Transformer - Provide low voltage, 60Hz control power transformers, VA as required for HVAC controls.

2.12 PLATES

A. Provide plates for every switch, receptacle, telephone, television, computer, wall speaker outlet, etc. All plates shall be 0.040" stainless steel, Type 302 alloy composed of 18% chromium and 8% nickel. Plates shall be manufactured by P & S, Hubbell, Leviton, General Electric or equal.

B. Plates for freestanding and surface outlets shall be cadmium plated, pressed steel type. Plate shall fit tightly to outlet box and shall not overlap sides of box.

2.13 FLASHING ASSEMBLIES

Provide Senco Fig. #1100-4 Series or equal by Dady lead flashing assemblies at all roof penetrations. Seal the joint between flashing and pipe with waterproofing compound.

2.14 SAFETY SWITCHES

Switches shall be rated 600 or 250 volt A.C. as applicable, NEMA Type HD, quick-make, quick-break, h.p.-rated, nonfusable or fusible, Class "B", in NEMA Type I enclosure, lockable in the "open" and "closed" positions with number of poles and ampereage as indicated on the drawings. Where enclosure is located exterior, in kitchens, at HVAC and plumbing equipment, where water is present or indicated V.P. (weatherproof) switches shall be raintight NEMA Type 3R enclosure, lockable. Maximum voltage, current and horsepower rating clearly marked on the switch enclosure and switches having dual element fuses shall have rating indicated on the metal plate.

2.15 VANDALPROOF FASTENINGS

Provide approved vandalproof type screws, bolts, nuts where exposed to sight throughout the project. Provide Owner with six (6) screwdrivers for this type.

2.16 FIRE ALARM SYSTEM

A. All equipment shall match the existing FCI fire alarm control panel.

PART 3.00 EXECUTION

3.01 OUTLET AND JUNCTION BOXES

- Accurately place boxes and securely fasten to structural members.
- Flush mounted boxes shall be attached to two studs or structure members by means of metal supports.
- Boxes above accessible ceilings shall be attached to structural members.
- Provide pullboxes, pulling elts, junction boxes, and conduits on metallic conduit runs whose total number of bends is 360 degrees or greater.

3.02 CONDUIT

A. The sizes of the conduits for the various circuits shall be as indicated on the drawings and as required by code for the size and number of conductors to be pulled therein. Conduits to be concealed except as noted otherwise.

B. Rigid steel conduit shall be used in the following locations:

- Exposed on interior of buildings below nine feet.
- Exposed on exterior of building.
- Damp or wet locations.
- Exposed on roofs.
- Embedded in concrete or masonry walls.

Rigid galvanized steel conduit shall not be installed in direct contact with earth or sand.

2. Unless otherwise noted on the drawings, all manual starters for single phase motors, smaller than 1 h.p., shall be the compact toggle type. Manual starters for all single phase motors, 1 to 5 h.p., and all three phase motors up to 5 h.p. shall be the heavy duty type.

3. Where manual motor starter is shown with pilot light, the pilot light shall be installed in a separate outlet box adjacent to the starter outlet, and engraved nameplate to indicate function of pilot light.

4. Motor starters as manufactured by the following:

Manufacturer	Single Phase		Others
	1 h.p. and Below	Class C10, Class C20	
Arrow Hart	Type RL	Type LL	
General Electric	Class C10, Class C20	Class CR 1062	
I.T.E.	Class C10, Class C20	Class C20	
Square D Co.	Class 2510, Class 2510, Type A	Type B & C	
Westinghouse	Type MS	Type A100	
Allen Bradley	Equal	Equal	

2.09 MOTOR CONTROL INTERLOCKS AND CONTROL DEVICES

A. Refer to mechanical and plumbing drawings and specifications and provide all control devices including timeswitches, relays and interconnection of starters as required.

B. Mount all relays and timeswitches in a separate lockable enclosure unless otherwise indicated.

C. Whether shown on mechanical and plumbing drawings or control center schedules or not, where motors are controlled by external devices (i.e., thermostats, relays, float or pressure switches, etc.) or interlocked with other motors, each motor starter to be equipped with a "Hand-Off-Auto" selector switch in starter cover. Other starters equipped with a "Start-Stop" push-button station in starter cover.

D. Provide low voltage, 60Hz control power transformer(s), VA as required for HVAC controls.

2.10 FUSES

A. Fuses shall be dual element, current limiting type, U.L. Class RC-1 unless otherwise indicated on the drawings. Provide one spare set of fuses of each size and type in each motor control center.

B. Verify the full load amperes of all motors for which fuses are to be provided. Size fuses for the motor full load amps according to the recommendations of the fuse manufacturer.

2.11 RELAYS, CONTACTORS, AND TIMESWITCHES

A. Individual Control Relays (HVAC Plumbing of the Control Functions)

1. Individual control relays shall have convertible contacts rated a minimum of 10 amperes, 600 volts regardless of usage voltage. Coil voltage, number and type of contacts shall be verified and supplied to suit the specific usage as shown in the wiring diagrams and/or schedules on the electrical and mechanical drawings. Coil control circuit shall be independently fused, sized to protect coil. Relays shall be installed on prefabricated mounting strips. Each relay shall have a surge suppressor to limit coil transient voltages. Furnished in the NEMA Type I enclosure unless indicated otherwise.

2. The following relays are approved:

Manufacturer	Type
Arrow Hart	IMP
General Electric	Class CR 2811
Siemens	Class J10
Square D Co.	Class 8501, Type A
Westinghouse	Bul. 15-321, Type NH
Allen Bradley	Equal

B. Contactors and/or Relays

1. Contactors and/or relays for control of lighting and/or feeders and/or panels shall be 600 volt A.C., electrically operated, mechanically held units, open type for panel mounting with number of poles and of size as indicated on the drawings. Provide auxiliary control relay for operation of each contactor and/or relay with two-wire and/or three wire control circuit as described on the plans.

2. Contactors and/or relays shall be mounted in panelboards in barriered section under separate hinged lockable doors or in contactor and/or relay cabinets as called for on the drawings. Contactors and/or relays shall be installed on Lord sound absorbing rubber mounts.

3. Contactors and/or relays shall be Automatic Switch Co. Bulletin #920 Series for 2 and 3 pole, and Automatic Switch Co. Bulletin #17 Series for contactors and/or relays containing 4 or more poles. Coil control circuit shall be independently fused, sized to protect coil.

4. Contactors and/or relays shall be equipped with a switch, in the proper configuration, to disconnect the control circuit controlling the coil of the respective device. Control circuit disconnect switch shall be labeled showing function of device.

2.04 WIRE AND CABLE

A. All wire and cable shall be copper, 600 volt, #12 AWG minimum unless specifically noted otherwise on the drawings. Conductors #10 AWG and smaller shall be solid. Conductors #8 AWG and larger shall be stranded. Type of insulation as noted on drawings and as follows:

- Type THHN/THWN insulation.
- Type THHN/THWN insulation used for circuit conductors installed in fluorescent lighting fixture raceways, for conductors connected to the secondary of fluorescent or mercury vapor fixture ballast or other hot locations.
- Type THHN/THWN insulation shall be used where conductors are installed in conduit exposed to the weather.

4. The following color code for branch circuits:

Neutral White (Type feeder neutrals with white tape near connections)

a. Normal Power

120/208 Volt

Ground Green

Phase A Black

Phase B Red

Phase C Blue

5. Feeders identified as to phase or leg in each panelboard with printed identifying tape.

6. Fire alarm conductors: Use 600-volt, type THHN/THWN conductors and color-coded per equipment manufacturer's recommendations. Provide #14AWG minimum unless specifically noted otherwise on the drawings.

7. Color coding for mechanical and plumbing control wiring shall be as agreed upon color code between the Mechanical/Plumbing Contractor and the Electrical Contractor, and color code shall be submitted to the Architect in writing for approval prior to installation.

2.05 SWITCHES

A. Provide circuit switches totally enclosed, bakelite or composition base, toggle type with 277 volt A.C. rating for full capacity or contacts for incandescent or fluorescent lamp loads. Switch ratings shall be 20 ampere only. Color as selected by Architect. Switches controlling circuits connected to emergency power shall be red.

B. Switches shall be any of the following products. Catalog numbers shown below are to establish the quality of the device only and are not necessarily the color required by the Architect.

1. Single Pole Switches

Make	Toggle Type	Lock Type
	20 Amps	20 Amps
Hubbell	#1221	
P & S	#20AC1	#20AC1-KL
Sierra	#5021	
Leviton	#1221	
General Electric	#GE-5951	

2. Double Pole Switch

Make	Toggle Type	Lock Type
	20 Amps	20 Amps
Hubbell	#1222	
P & S	#20AC2	#20AC2-KL
Sierra	#5022	
Leviton	#1222	
General Electric	#GE-5952	

2.06 LIGHTING FIXTURES: Shall be type as noted on electrical plans and shall be underwriters' approved. All fluorescent fixtures shall be furnished with ETL approved C.B.M. certified rapid start integrated circuit electronic type ballasts with lowest sound rating available. Fluorescent fixtures shall be designed to accommodate both T-8 and T-12 lamps. Ballasts shall be manufactured by Magnetic, Triad-Ultra Ballast series, advance Mark V, Motorola or equal.

A. Lighting fixtures shall have all parts and fittings necessary to complete and properly install the fixture. All fixtures shall be equipped with lamps of size and type specified.

B. Fixtures shall be wired from outlet boxes supplied with fixture to socket with #14 AWG. Underwriters' Type "AF" or "GF" fixture wire.

C. Recessed fixtures where noted to have attached junction box shall have a junction box permanently attached to the plaster ring so that it is accessible when the fixture is removed. Connection between fixture and pull box to have flexible conduit and 2 #14 AWG "AF" wires. The flexible conduit to be sufficient length so that when the fixture is dropped, the pullbox is readily accessible.

D. Recessed fixtures must all have Underwriters' Laboratory approval for recessed installation with plaster frame and attached pull box. Lamp enclosure, reflectors and finish wiring shall not be installed until plastering is completed. Finish trim shall not be installed until finish painting of the adjacent surface is completed.

2.07 LAMPS: Shall be general electrical, Westinghouse or Sylvania. Type of lamp and wattage as shown on fixture schedule or drawings. All a-type lamps shall be 130 volt.

2.08 INDIVIDUAL STARTERS

A. Manual Motor Starters:

1. Provide flush or surface mounting manual motor starters with number of poles and size of thermal overload heaters as required for the motor being controlled (equipped with overload heaters, one for each motor lead). Back boxes shall be supplied with all flush mounting starters whether they are toggle type requiring only a 4" square outlet box or the larger type requiring a special box and cover designed to accept the particular unit.

1.06 POWER OUTAGE

A. All electrical services in all occupied facilities of the contract work are to remain operational during the entire contract period. Any interruption of the electrical power for the performance of this work shall be at the convenience of the District and performed only after consultation with the District. Work involving circuit outages shall be only at such a time and of such a duration as approved in writing. Work involving power outages for the work required to connect new equipment and disconnect existing equipment shall be performed at the convenience of the District.

B. Work involving system outages to the building fire alarm, intrusion detection, telephone, computer, intercommunications, energy management, television, or clock systems shall be performed only after consultation with the District and shall be only at such a time and of such a duration as approved in writing.

1.07 TESTING (FIRE ALARM SYSTEM)

A. The entire fire alarm system shall be tested in the presence of the local DSA Inspector and a representative of the manufacturer after the installation is complete.

1. Individually test each automatic initiating device and verify correct alarm operation, control panel response and remote equipment operation.

B. Perform all electrical and mechanical tests required by the equipment manufacturer's certification form. Measure and adjust each automatic detection detectors to the maximum stable sensitivity setting. Detector tests shall be performed with the detector at its operational location and under normal operational environmental conditions in the area. Bench settings are not acceptable. An operational check-out test and report shall be performed. The tests and report shall include, but not be limited to:

- A complete list of equipment installed and wired.
- Indication that all equipment is properly installed and functions and conforms with these specifications.
- Test of individual zones as applicable.

4. Serial numbers, locations by zone and model number for each installed detector.

5. Voltage (sensitivity) settings for each ionization and photoelectric detector as measured in place with the HVAC system operating.

6. Technician's name, certificate number and date.

7. The completed manual and automatic monitoring and control system shall be tested to insure that it is operating properly. This test will consist of exposing the installed units to a standard fire test.

1.08 ELECTRICAL WORK CLOSOUT

A. Prepare the following items and submit to the Architect before final acceptance.

- Two copies of all test results as required under this section.
- Copies of as-built record drawings.
- Two copies of all receipts transferring portable or detachable parts to the Owner when requested.
- Notify the Architect in writing when installation is complete and that a final inspection of this work can be corrected to the satisfaction of the Architect before final acceptance can be issued.

PART 2.00 PRODUCTS

2.01 GENERAL: All materials shall be new, conforming with A.N.S.I., I.E.E.C., N.E.M.A., N.B.F.U. and shall be U.L. labeled.

2.02 OUTLET AND JUNCTION BOXES

- Flush or concealed outlet and junction boxes: Pressed steel, hot-dip galvanized, knockout type with conduit entrances sized to match conduits. Provide boxes of proper code size for the number of wires or conduits passing through or terminating therein, but in no case shall box be less than 4 inches square, unless specified elsewhere or noted otherwise on the drawings. Provide extension rings on flush outlets to finish flush with finished surfaces.
- Surface mounted outlet boxes: Cast iron type FS or FD, with threaded hubs as required. Provide plugs in all unused openings. Provide weatherproof gaskets for all exterior boxes.

2.03 CONDUIT

A. Rigid galvanized steel conduit: Hot-dip galvanized, zinc coated. Threads shall be galvanized after fabrication. Couplings, connectors and fittings shall be threaded.

B. Electrical metallic tubing: Galvanized. Couplings and connectors, seamless steel construction and of the set screw or water-tight compression type with factory-applied permanently-attached insulated throat. Thomas & Betts Co. #5123 or #5031 Series or approved equal connectors and #5120 or #5030 series or equal couplings.

C. Flexible conduit: Galvanized steel. Connector shall be screw-in type with factory-applied permanently-attached insulated throat. Bridgeport #520-BC1/521-BC1 series or equal by EFCor.

D. Liquid-tight flexible conduit: Seal-tite Type U.A. with Appleton Series "ST" connectors.

E. Nonmetallic conduit: Polyvinyl chloride, Schedule 40.

F. Seismic deflection/expansion fittings with bonding jumper, D.Z. Type DX series or equal.

PART 1.00 GENERAL

1.01 The "General Conditions" are hereby made a part of this section. The words "shall be" are assumed into each paragraph. The word "provide" as noted herein and on the drawings shall mean "furnish, install and connect".

1.02 SCOPE: Under this heading is included labor, materials, equipment and appliances required to complete the electrical work.

1.03 SPECIAL REQUIREMENTS

A. Work and materials in full accordance with the latest rules and regulations of the National Electrical Code, The National Life Safety Code, and other applicable State and Local Laws and regulations. Nothing in plans or specifications shall be construed to permit work not conforming to the most stringent of codes. Should any changes be necessary in the drawings or specifications to make the work comply with these requirements, the Contractor shall notify the Engineer prior to bid.

B. Intent of Plans and Specifications

1. This specification and attendant drawings are intended to cover a complete installation of systems. The omission of expressed reference to any item of labor or material for the proper execution of the work in accordance with present practice of the trade shall not relieve the contractor from providing such additional labor and materials.

2. Refer to the drawings and shop drawings of other trades for additional details which affect the proper installation of this work. Diagrams and symbols showing electrical connections are diagrammatic only. Wiring diagrams do not necessarily show the exact physical arrangement of the equipment.

3. Before submitting a bid, the contractor shall familiarize himself with all features of the building and site which may affect the execution of the work. No extra payment will be allowed for failure to obtain this information.

4. If there are omissions or conflicts between the drawings and specifications, clarify these points with the architect before submitting a bid.

1.04 GENERAL REQUIREMENTS

A. The drawings indicate diagrammatically the desired locations or arrangements of conduit runs, outlets, equipment, etc., and are to be followed as closely as possible. Proper judgment must be exercised in executing the work so as to secure the best possible installation in the available space and to overcome local difficulties due to space limitations or interference of structure conditions encountered.

B. The locations of existing utilities, building equipment and conduit shown on the drawings is approximate. Verify exact locations and routing of existing systems in the field. Include all costs in contract price for adjustment required to accommodate existing conditions.

C. Coordinate electrical installation with other trades.

D. Provide as-built drawings.

E. Make necessary inspections of existing site within the scope of this work and make allowance for existing conditions before submitting bid.

F. Cut and patch the construction work as required for proper installation of the electrical work. All patching shall match the surrounding work to the satisfaction of the Architect.

G. All removed materials and equipment which in the opinion of the Owner are salvageable, shall remain the property of the Owner. Deliver such salvaged materials and equipment on premises as directed, neatly pile on store them and protect from damage. Do not reuse materials and equipment unless specifically indicated on plans or specified. Remove from premises and dispose of all materials considered by owner to be scrap.

H. All work and material indicated on the Drawings is new unless specifically indicated as existing.

I. Update circuit identification in panelboards. Circuit description shall include name or number of circuit, area, and connected load.

J. Junction and pull boxes shall have covers stenciled with circuit numbers according to single line diagram or panel schedule.

K. All parts of the equipment shall be thoroughly cleaned.

L. It is understood and agreed that this contract does not contemplate the handling of asbestos, PCB or any hazardous waste material. If asbestos, PCB or any hazardous waste material is encountered, notify the District immediately. Do not disturb, handle or attempt to remove.

1.05 AIR CONDITIONING, HEATING, PLUMBING EQUIPMENT WIRING

Provide electrical work, materials, and control components required for proper operation of the air conditioning, heating and plumbing systems as indicated on the electrical, mechanical, and plumbing drawings and specified herein.

Signature

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PROJECT:
**COAST COMMUNITY COLLEGE DISTRICT
GOLDEN WEST COLLEGE
HUNTINGTON BEACH, CALIFORNIA**

ADMINISTRATION BUILDING REMODEL

SHEET TITLE:

ELECTRICAL SPECIFICATIONS

REVISIONS/SUBMITTALS:

DATE:

PROJECT NUMBER:
85400

PROJECT MANAGER:
J.B.

DRAWN BY:
LUC/DF

AGENCY SUBMITTAL DATE:

ISSUED FOR BIDS:

ISSUED FOR CONSTRUCTION:

AGENCY APPROVALS:

SCALE:
NONE

SHEET NUMBER:
E-4

ELECTRICAL SPECIFICATION

B. Each panelboard, switchboard, pull box or any other enclosure in which several ground wires are terminated shall be equipped with a ground bus secured to the interior of the enclosure. The bus shall have a separate lug for each ground conductor. No more than one conductor shall be installed per lug.

C. Where an equipment bonding ground wire is installed or where nonmetallic or flexible conduit is used for feeder, subfeeder or branch circuit wiring, a green insulated, copper ground wire, sized in accordance with the following table, shall be installed. Install ground wire in each conduit with phase conductors.

Feeder, Subfeeder & Branch Circuit Protection	Minimum Ground Wire Size
15 Amp	#12
20 Amp	#12
30 to 60 Amp	#10
70 to 100 Amp	#8
101 to 200 Amp	#6
201 to 400 Amp	#4
401 to 600 Amp	#1
601 to 800 Amp	1/0
801 to 1000 Amp	2/0
1001 to 1200 Amp	3/0
1201 to 1600 Amp	4/0

D. Ground conductors for branch circuit wiring shall be attached at each outlet to the back of the box using drilled and tapped holes and washer head screws, 6-32 or larger.

E. Any enclosure in which several ground wires are terminated shall be equipped with a ground bus secured to the interior of the enclosure. The bus shall have a separate lug for each ground conductor. No more than one conductor shall be installed per lug.

--- END ---

15. All trenches shall be backfilled to within 12 inches of finished grade with damp sand. Remainder of backfill to be native having no stones or aggregate greater than 3". Do not backfill until installation has been approved and as-built drawings are up to date. Promptly install all conduits after excavation has been done, so as to keep the excavations open as short a time as possible. All excess soil from trenching shall be removed from the site.

16. Conduits which are installed at this time and left empty for future use shall have polyvinyl rope left in place for future use. Provide a 3/8" minimum rope for Utility Company conduits per their requirements.

3.03 WIRE AND CABLE

A. Branch circuit and fixture joints for #10 AWG and smaller wire shall be made with UL-approved connectors listed for 600 volts, approved for use with copper and/or aluminum wire. Connector to consist of a cone-shaped, expandable coil spring insert, insulated with a nylon shell and 2 wings placed opposite each other to serve as a built-in wrench or shall be molded one-piece as manufactured by "Scotchlok".

B. Branch circuit joints of #8 AWG and larger shall be made with screw pressure connectors made of high strength structural aluminum alloy and UL-approved for use with both copper and/or aluminum wire as manufactured by Thomas & Betts. Joints shall be insulated with plastic splicing tape, half-lapped and at least the thickness equivalent to the conductor insulation. Tapes shall be fresh and of quality equal to Scotch.

C. Use U.L. listed pulling compound for installation of conductors in conduits.

D. Correspond each circuit to the branch number indicated on the panel schedule shown on the drawings except where departures are approved by the Architect or the District's inspectors.

E. All wiring, including low voltage, shall be installed in conduit.

F. Control wiring to conform to the wiring diagrams shown on the mechanical drawings and the manufacturer's wiring diagrams.

G. All splices in exterior pull boxes and light poles shall be cast resin encapsulated. Power conductor splices - 3M Scotchcast Series 82/85/90; Plymouth or equal. No underground splices shall be made in control or signal circuits.

1. Power conductor splices - 3M Scotchcast Series 82/85/90; Plymouth or equal.

H. Neatly group and lace all wiring in panelboards, motor control centers and terminal cabinets with plastic ties at 3" on centers. Tag all spare conductors.

I. All terminations for signal, clock and fire alarm systems shall be made on terminal strips or punch down blocks.

3.04 LIGHT FIXTURE INSTALLATION

A. It is Contractor's responsibility to verify actual ceiling construction type as defined on the architectural drawings and furnish all lighting fixtures with the correct mounting devices and proper operating voltage whether or not such variations are indicated by fixture catalog number. The Contractor shall verify depth of all recessed lighting fixtures with architectural drawings prior to ordering fixtures. Any discrepancies that would cause recessed lighting fixtures not to fit into ceiling shall be reported to the Architect prior to ordering of the fixtures.

B. Lighting fixtures installed in ceiling grids, suspended lay-in "T-Bar" and concealed spline ceilings:

1. Provide two seismic clips at opposite ends of each recessed light fixture connected to the ceiling grid main runners and the light fixture.

2. Each light fixture weighing 50 pounds or less and where the ceiling grid system is "heavy duty" type, shall be suspended directly from the ceiling grid or suspended independent of the ceiling grid support system. Each light fixture weighing more than 50 pounds or where the ceiling grid system is not a "heavy duty" type, shall be supported independent of the ceiling grid support system.

3. Each light fixture required to be supported directly from the ceiling grid system shall be additionally connected with a minimum of two independent slack safety support wires. One wire at each opposite diagonal fixture corner. Each 4ft x 4ft light fixture shall be supported in the same manner, except provide a minimum of four independent slack safety wires, one at each fixture corner.

4. Each light fixture required to be supported independent of the ceiling grid system shall be supported with a minimum of four fast independent support wires, one wire at each fixture corner.

5. The support wires for light fixture support shall be 12 gauge steel (minimum). The wires including their building and light fixture attachments shall provide support capacity of not less than four times the weight of the light fixture assembly. Provide additional light fixture support wires and building anchors to meet these requirements, as part of the contract. The support wires shall be anchored to the building structural elements above the ceiling.

C. On acoustical tile ceilings, fixture outlets shall be accurately located in the center, at the intersection of the four corners or at the center of the joints of two tiles.

D. Lighting fixtures recessed in ceiling or wall which has a fire resistive rating of 1 hour or more shall be enclosed in a box which has a fire rating equal to that of the ceiling or wall. The space from the fixture to the enclosure to be a minimum of 3".

E. Specular, semi-specular, aluminum or any exposed finishes subject to fingerprints shall be installed with cotton gloves.

3.05 GROUNDING

A. Grounding shall be executed in accordance with all applicable codes and regulations, both of the State of California and local authorities having jurisdiction.

C. PVC Schedule 40 nonmetallic conduit shall be used for all underground runs unless specifically noted or specified otherwise.

D. Risers on underground conduit runs shall be PVC Schedule 40 below grade and rigid galvanized steel where the run turns up above finished floor.

E. Electrical metallic tubing up to and including 4 inch may be installed as permitted by codes except as otherwise referenced within these specifications.

F. Flexible Steel Conduit:

1. The use of flexible steel conduit above ceilings shall be limited to final connections to lighting fixture from outlet boxes or to clear obstructions above ceilings.

2. Flexible steel conduit may be used where concealed horizontally in metal stud walls. Vertical runs exceeding 36" shall be rigid conduit.

3. Homerun conduits shall not be flexible steel conduit.

G. Liquid-tight flexible conduit shall be used for final connection to motors, control devices mounted on vibrating or rotating equipment, mechanical, plumbing and kitchen equipment indicated on drawings to have flexible conduit connections, and in all areas where exposed flexible connections are required.

H. Conduit Installation:

1. Securely and rigidly support all conduits from building structure. Provide supports maximum of ten feet on centers and within three feet of all bends, outlets, junction boxes, cabinets, panels and fittings.

2. Individual suspended conduits shall be supported by means of hanger rods and pipe clamps. Multiple suspended conduits shall be supported by means of trapeze type hangers and pipe clamps.

3. Individual conduits placed against brick, masonry or concrete walls or slabs shall be secured with pipe clamps and expansion shields. Individual conduits placed against dry wall or plaster construction shall be secured by means of pipe clamps and screws attached to studs or other structural members. Provide preformed channel supports for all multiple conduits placed against walls or slabs.

4. Conduit run exposed shall be run at right angles or parallel to the walls or structures. All changes in directions, either horizontally or vertically, shall be made with conduit outlet bodies as manufactured by Crouse-Hinds or equal. Conduits run exposed shall be painted to match surrounding surfaces. Conduits run exposed on roofs shall be installed on 2x4 redwood sleepers, maximum 5 foot on centers. Sleepers shall be set in nonhardening mastic.

5. Provide lockout and an insulated bushing at threaded metallic conduit terminating at outlet boxes, junction boxes, terminal cabinets, switchboards and panelboards. Provide insulated bushing at each metallic conduit stub-up location. Bushings shall have ground lugs when installed on a metallic extension of PVC conduit run.

6. Individual conduits penetrating a fire-rated floor, wall, or ceiling shall be installed using an approved fire-stop sealant system equal to 3M Corporation FS-195/CP-25 or Hilti, Inc. CS240 Series.

7. Underground conduits entering concrete pullboxes shall enter the side walls of the pullbox unless indicated otherwise. Provide end bell fitting on the end of each conduit 2" or larger entering the pullbox. Provide waterproof sealant after conductors have been installed.

8. Provide expansion and deflection fittings, and bonding jumper at all building expansion crossings, seismic joint crossings, and where conduits cross the separation between adjacent relocatable classrooms.

9. Install underground conduit, except under buildings, not less than 24" below finished grade in nontraffic areas and 30" below finished grade in traffic areas, including roads and parking areas. Install long radius bends in all underground conduits in excess of 100 feet long.

10. Conduit below slab on grade or underground exterior to building shall be spaced a minimum of 3" between identical systems and 12" between power and all other systems except at termination points. Multiple conduits in common trenches shall be racked on prefabricated plastic spacers a minimum of 10 feet on center over the length of the trench. Utility company conduits shall be installed in a separate trench.

11. All conduits below grade shall be fully encased in concrete, except for conduits containing 120 or 277 volt branch circuits. Conduits carrying 120 volt or 277 volt branch circuits shall be set on a 6 inch bed of damp sand.

12. Utility company conduits shall be fully encased in concrete over their entire length, including under building slabs.

13. Where concrete encasement is specified, provide a minimum of 3" of concrete between each conduit, the top, bottom and sides of the duct bank.

14. Provide a yellow magnetic detector tape over the entire length of all underground conduits. Place tape in backfill at a depth not to exceed 12 inches below finish grade or as required by the manufacturer.

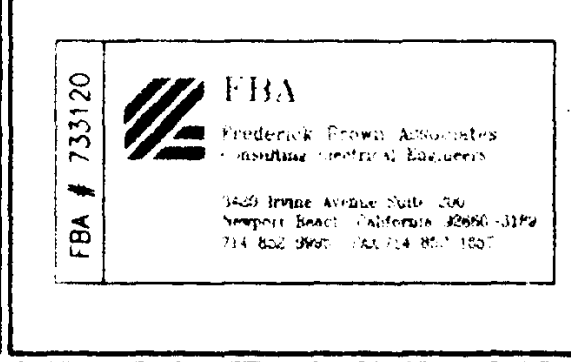
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