

GENERAL NOTES - HVAC

1. INSTALL ALL MECHANICAL WORK TO AVOID ARCHITECTURAL FRAMING, STRUCTURAL MEMBERS, AND OTHER OBSTRUCTIONS. COORDINATE EQUIPMENT LOCATION WITH ALL APPLICABLE CONTRACT DRAWINGS PRIOR TO INSTALLATION.
2. INSTALL ALL DUCTWORK TO BEST SUIT FIELD CONDITIONS AND COORDINATE WITH THE INSTALLATION WORK OF OTHER TRADES. DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED TO DETERMINE EXACT LOCATION OF MECHANICAL WORK.
3. INSTALL ALL DUCTS, CONCEALED IN THE FURRED CEILING UNLESS OTHERWISE INDICATED.
4. PROVIDE ACCESS PANELS AT ALL CONCEALED VOLUME DAMPERS AND CONTROLS. REFER TO ARCHITECTURAL DRAWINGS FOR ALL LOUVERS AND DOOR GRILLES. MECHANICAL CONTRACTOR TO FURNISH ACCESS PANELS AND DOORS AND COORDINATE WITH OTHER TRADES.
5. ALL CEILING DIFFUSERS, REGISTERS AND OUTLETS SHALL BE COORDINATED WITH THE ARCHITECTURAL REFLECTED CEILING PLAN.
6. ALL DIFFUSER SIZES AND DUCT SIZES SHOWN ARE NET DIMENSIONS UNLESS OTHERWISE INDICATED.
7. CONTRACTOR SHALL REFER TO THE ELECTRICAL CONTRACT DOCUMENTS TO OBTAIN THE INFORMATION OF STARTERS, VOLTAGE PHASE, INTERLOCKING CONTROLS, AND MISCELLANEOUS EQUIPMENT SUCH AS RELAYS, STARTERS, ETC. SO THAT ALL ELECTRICAL APPARATUS SERVING MECHANICAL EQUIPMENT SHALL FULLY COMPLY WITH ELECTRICAL AND CONTROL REQUIREMENTS.
8. ALL SQUARE ELBOW TURNS IN LOW PRESSURE DUCTWORK SHALL HAVE TURNING VALVES.
9. ALL SUPPLY DUCTS SHALL BE TAPED WITH CANVAS AND ARABOL OR DUCT MASTIC.
10. ALL INTERNAL LININGS, FLEX DUCTS AND ADHESIVES SHALL BE LABELED IN ACCORDANCE WITH U.L. 181 STANDARD FOR SAFETY.
11. ALL DUCTWORK SHALL BE SUPPORTED AND BRACED IN ACCORDANCE WITH THE GUIDELINES FOR SEISMIC RESTRAINTS OF MECHANICAL PLUMBING AND PIPING SYSTEMS AS PUBLISHED BY SMACNA.
12. ALL MECHANICAL EQUIPMENT SHALL BE SECURELY FASTENED IN PLACE PER UMC SECTION 504. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR EQUIPMENT INSTALLATION.
13. ALL HVAC EQUIPMENT SHALL BE CERTIFIED BY ITS MANUFACTURER TO COMPLY WITH THE APPLICABLE ENERGY EFFICIENCY STANDARDS.
14. THERMOSTATS SHALL BE ABLE TO:
  - a. MAINTAIN SPACE TEMPERATURE SET POINT FROM 55°F TO 85°F.
  - b. SEQUENCE HEATING AND COOLING TO ASSURE THAT HEATING AND COOLING ARE NOT PROVIDED TO THE SPACE SIMULTANEOUSLY.
15. LOCATIONS FOR NEW DUCTWORK AND PIPING WERE ESTABLISHED FROM BEST AVAILABLE INFORMATION. ASSUME THAT THIS INFORMATION IS APPROXIMATE. CONTRACTOR SHOULD VERIFY EXACT LOCATION BEFORE STARTING WORK. SHOULD, DURING THE COURSE OF CONSTRUCTION CONDITIONS ARISE THAT INDICATE LOCATIONS OTHER THAN SHOWN, NOTIFY ARCHITECT IMMEDIATELY.
16. PRIOR TO SUBMISSION OF BID, VISIT THE SITE AND BECOME FAMILIAR WITH ALL CONDITIONS WITH RESPECT TO EXISTING CONDITIONS, CONNECTION POINTS, ELEVATIONS, CLEARANCES, ETC. NO EXTRA PAYMENT WILL BE ALLOWED FOR WORK RESULTING FROM LACK OF PROPER APPRAISAL OF EXISTING CONDITIONS. AS IN ALL CONSTRUCTION, SOME EXPLORATION WILL BE REQUIRED TO LOCATE EXACT CONNECTION POINTS AND OPTIMUM ROUTES FOR DUCTWORK AND PIPING. THIS IS THE CONTRACTOR'S RESPONSIBILITY.

ENERGY EFFICIENCY STANDARDS  
MANDATORY MEASURES - MECHANICAL

- ☒ SET POINTS FROM 55°F TO 85°F. THERMOSTAT SHALL BE ADJUSTABLE TO PROVIDE A TEMPERATURE RANGE OF UP TO 30°F. THERMOSTAT SHALL HAVE THE CAPABILITY OF TERMINATING ALL HEATING AT A TEMPERATURE NOT MORE THAN 70°F AND OF TERMINATING COOLING AT A TEMPERATURE NOT LESS THAN 78°F.
- ☒ THERMOSTAT SHALL BE CAPABLE OF BEING SET TO MAINTAIN SPACE TEMPERATURE ALL TRANSVERSE JOINTS SHALL BE SEALED WITH HARDCAST INC. P-301 PEEL-N-SEAL INSTANT TAPE SEALANT FOR ROUND DUCTS, AND HARDCAST AM-401 FOR RECTANGULAR DUCTWORK.
- ☒ ALL FLEXIBLE DUCTS SHALL BE U.L.-181 LISTED AND LABELED.
- ☒ A MAINTENANCE LABEL SHALL BE ATTACHED TO EACH MECHANICAL EQUIPMENT COOLING AND A MAINTENANCE MANUAL SHALL BE FURNISHED TO THE OWNER FOR EACH PIECE OF EQUIPMENT.
- ☒ ALL DUCTWORK SHALL BE CONSTRUCTED, ERECTED AND TESTED IN ACCORDANCE WITH ASHRAE AND SMACNA STANDARDS. DUCTWORK SHALL BE GALVANIZED SHEET METAL AND CONSTRUCTED IN ACCORDANCE WITH ASHRAE AND SMACNA STANDARDS.
- ☒ DUCT DIMENSIONS INDICATED ARE INSIDE CLEAR DIMENSIONS.
- ☒ ALL HVAC EQUIPMENT AND INSULATION SHALL BE CERTIFIED TO THE DUCT LINING, DUCT INSULATION AND PLENUM WALLS SHALL CONFORM TO U.L. 723.
- ☒ AIR HANDLING DUCT SYSTEMS SHALL BE CONSTRUCTED, INSTALLED, SEALED, AND INSULATED AS PROVIDED IN CHAPTER 10 OF THE 1991 UNIFORM MECHANICAL CODE.
- ☒ EACH HVAC SYSTEM SHALL BE STARTED AND STOPPED THROUGH A TIME CLOCK CALIFORNIA ENERGY COMMISSION AS MEETING THE LATEST TITLE 24 REQUIREMENTS, OR PROGRAMMABLE TIME CLOCK/THERMOSTAT.
- ☒ EACH HVAC SYSTEM SHALL BE ABLE TO OPERATE ZONE HEATING AND COOLING IN SEQUENCE IF BOTH ARE PROVIDED.
- ☒ VENTILATION SHALL BE PROVIDED PER SECTION 2-5316 AND 2-5343.

AIR CONDITIONING UNIT SCHEDULE

| MARK         | LOCATION | MFR     | MODEL    | AREA SERVED | SUPPLY FAN DATA |          |                |      |     | HEATING DATA |           |            | AIR COOLED REFRIGERATION DATA |      |                   |      |           |                       |                       |            |     |      |        | AMBIENT TEMP. | ELECTRICAL DATA |      |    | OPER. WEIGHT LBS | REMARKS   |
|--------------|----------|---------|----------|-------------|-----------------|----------|----------------|------|-----|--------------|-----------|------------|-------------------------------|------|-------------------|------|-----------|-----------------------|-----------------------|------------|-----|------|--------|---------------|-----------------|------|----|------------------|---|
|              |          |         |          |             | CFM TOTAL       | CFM O.A. | E.S.P. IN W.G. | RPM  | HP  | TYPE         | MBH INPUT | MBH OUTPUT | ENTERING AIR TEMP.            |      | LEAVING AIR TEMP. |      | TOTAL MBH | NOMINAL CAPACITY TONS | CONDENSER FAN HP EACH | COMPRESSOR |     |      | VOLT/Ø |               | MCA             | MFS  |    |                  |   |
|              |          |         |          |             |                 |          |                |      |     |              |           |            | DB°F                          | WB°F | DB°F              | WB°F |           |                       |                       | No.        | LRA | RLA  |        |               |                 |      |    |                  |   |
| AC-1<br>AC-2 | ROOF     | CARRIER | 48HJD017 | GYMNASIUM   | 6,000           | 1,100    | 1.2            | 1180 | 5.0 | GAS          | 270       | 216        | 80.8                          | 64.7 | 55.0              | 53.3 | 180       | 15                    | 3                     | 0.8 FLA    | 2   | 2x80 | 2x14.1 | 94            | 460/3           | 44   | 50 | 2,500            | FURNISH W/ ECONOMIZER, POWER EXHAUSTER (FIELD INSTALLED), PROGRAMMABLE ELECTRONIC T'STAT, SIDE RETURN/SUPPLY CURB |
| AC-3         | ROOF     | CARRIER | 48HJE004 | OFFICES     | 1,400           | 650      | 0.8            | 1180 | 1.0 | GAS          | 50        | 40         | 80.8                          | 64.7 | 55.0              | 53.3 | 36        | 3                     | 1                     | 0.4 FLA    | 1   | 39.0 | 5.1    | 94            | 460/3           | 11.7 | 15 | 700              | FURNISH W/ ECONOMIZER, ROOF CURB, PROGRAMMABLE ELECTRONIC T'STAT  |
|              |          |         |          |             |                 |          |                |      |     |              |           |            |                               |      |                   |      |           |                       |                       |            |     |      |        |               |                 |      |    |                  |   |

NOTE: PROVIDE AUTOMATIC SHUT-DOWN OF AC-1 & AC-2 UNITS UPON ACTIVATION OF DUCT SMOKE DETECTOR. REFER TO DETAIL 3/MP3.1.

GENERAL NOTES - PLUMBING

1. REFER TO THE SPECIFICATIONS AND PROJECT MANUAL FOR STANDARD DETAILS AND ALL INFORMATION NOT SHOWN ON THE DRAWINGS. SPECIFICATIONS GOVERN WHERE THEY EXCEED CODE REQUIREMENTS.
2. CONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF ALL APPLICABLE CODES.
3. INSTALL BACKFLOW PROTECTION DEVICES AS REQUIRED BY LOCAL CODE.
4. COORDINATE ALL WORK WITH ALL OTHER TRADES AND CONTRACTORS.
5. VERIFY SIZE, DEPTH, LOCATION AND ADEQUACY OF ALL UTILITIES, INCLUDING METER LOCATIONS AND SEWER INVERTS, BEFORE START OF WORK.
6. LINES BEYOND THE EXTERIOR OF BUILDING TO BE BURIED 24" MIN. TO CROWN UNLESS OTHERWISE NOTED.
7. SEWER AND STORM DRAIN LINES TO BE LAID WITH A SLOPE REQUIRED TO MAKE CONNECTION TO EXISTING SEWER AND STORM DRAIN LINES. COORDINATE WITH CIVIL DRAWINGS. MIN. SLOPE FOR NEW LINES IS 1/4" PER FOOT, WHERE POSSIBLE.
8. SEWER AND STORMWATER LINES ARE SEPARATE.
9. PROVIDE A CLEANOUT EVERY 50'-0" ON ALL SEWER LINES.
10. SET FLOOR DRAINS TO ELEVATIONS AND LOCATIONS SHOWN ON ARCHITECTURAL DRAWINGS.
11. PROVIDE AND INSTALL ACCESSIBLE TRAP PRIMERS WITH PIPING TO FLOOR DRAIN TRAPS. PROVIDE SHUTOFF VALVE UP STREAM OF TRAP-PRIMER UNIT.
12. ALL PLUMBING VENTS THROUGH ROOF SHALL TERMINATE NOT LESS THAN 10 FEET FROM ANY FRESH AIR INTAKE.
13. ALL PIPING IN FINISHED AREAS SHALL BE CONCEALED UNLESS SPECIFICALLY SHOWN OTHERWISE.
14. REFER TO MECHANICAL PLANS FOR DRAINS, COLD WATER SUPPLY, ETC., TO/FROM EQUIPMENT. COORDINATE AND INSTALL TRAPPED CONDENSATE DRAIN PIPING TO THE AIR CONDITIONING UNITS PER LOCAL CODE REQUIREMENTS.
15. INSTALL GATE VALVE ON WATER LINES TO EACH GROUP OF FIXTURES. ENDS OF COLD WATER LINES SHALL HAVE SHOCK ABSORBERS INSTALLED IN AN INCONSPICUOUS LOCATION. PROVIDE ACCESS PANEL FOR SERVING.
16. REFER TO MECHANICAL DRAWINGS FOR REQUIRED SUPPLEMENTAL INFORMATION AND CLARIFICATION.
17. COORDINATE ALL PLUMBING WORK WITH ALL OTHER WORK TO AVOID CONFLICTS. PIPING SHALL BE ROUTED TO AVOID ARCHITECTURAL OPENINGS, STRUCTURAL MEMBERS, FIXTURES AND/OR ANY OTHER OBSTRUCTIONS. DRAWINGS ARE SCHEMATIC IN NATURE AND MAY NOT SHOW THE ACTUAL ROUTING. OFFSET PIPING WHERE REQUIRED.
18. REFER TO MECHANICAL, ELECTRICAL, AND SITE WORK PLANS FOR COORDINATION OF PLUMBING UTILITIES WITH OTHER TRADES.
19. UNDERGROUND PIPES SHALL BE LOCATED MIN. 1'-6" AWAY FROM LOAD BEARING FOOTING, OR AS DIRECTED BY STRUCTURAL ENGINEER.
20. CONNECTIONS BETWEEN DISSIMILAR PIPES SUCH AS COPPER AND IRON OR STEEL SHALL BE MADE WITH DIELECTRIC ISOLATING UNIONS.
21. RUN NEW COLD & HOT WATER AND VENT LINES ABOVE CEILING.
22. ALL HOT WATER SUPPLY AND RETURN PIPING SHALL BE INSULATED. INSULATION SHALL COMPLY WITH TITLE 24 OF THE CALIFORNIA ADMINISTRATION CODE (MINIMUM R=4).
23. ALL PLUMBING FIXTURES AND WATER HEATERS SHALL BE CERTIFIED TO COMPLY WITH CAC TITLE 24 STANDARDS.
24. PLUMBING CONTRACTOR IS RESPONSIBLE FOR ALL TRENCHING, BACKFILLING, REPAVING, AND RESTORATION OF EXISTING SURFACES DUE TO THE PLUMBING WORK SPECIFIED.
25. PLUMBING CONTRACTOR IS RESPONSIBLE FOR CONDENSATE PIPING CONNECTIONS TO MECHANICAL EQUIPMENT.
26. LAY OUT CORE DRILLING ON THE STRUCTURAL SURFACES AND OBTAIN APPROVAL OF STRUCTURAL ENGINEER PRIOR TO ACTUAL CORE DRILLING.
27. SAW CUTTING, BREAKOUT AND DEBRIS DISPOSAL OF EXISTING FLOOR SLABS ARE BY PLUMBING CONTRACTOR.
28. PROVIDE SEISMIC RESTRAINT BRACING FOR PIPE SUPPORTS AS REQUIRED BY STATE AND LOCAL CODES.
29. THE LOCATION OF EXISTING UTILITIES WAS ESTABLISHED FROM BEST AVAILABLE INFORMATION. ASSUME THAT THIS INFORMATION IS APPROXIMATE. CONTRACTOR SHOULD VERIFY EXACT LOCATION BEFORE STARTING WORK. SHOULD, DURING THE COURSE OF CONSTRUCTION CONDITIONS ARISE THAT INDICATE LOCATIONS OTHER THAN SHOWN, NOTIFY ARCHITECT IMMEDIATELY.
30. PRIOR TO SUBMISSION OF BID, VISIT THE SITE AND BECOME FAMILIAR WITH ALL CONDITIONS IN RESPECT TO EXISTING UTILITIES, CONNECTION POINTS, ELEVATIONS, CLEARANCES, ETC. NO EXTRA PAYMENT WILL BE ALLOWED FOR WORK RESULTING FROM LACK OF PROPER APPRAISAL OF EXISTING CONDITIONS. AS IN ALL CONSTRUCTION, SOME EXPLORATION WILL BE REQUIRED TO LOCATE EXACT CONNECTION POINTS AND OPTIMUM ROUTES FOR PIPING. THIS IS CONTRACTOR'S RESPONSIBILITY.
31. NON-METALLIC DWV AND WATER PIPES ARE NOT PERMITTED INSIDE THE BUILDING.

AIR OUTLETS SCHEDULE

| MARK | MFR   | TYPE   | FACE SIZE | FRAME TYPE | MATERIAL | REMARKS        |
|------|-------|--------|-----------|------------|----------|----------------|
| CD-1 | TITUS | TMR    | AS NOTED  | SURFACE    | STEEL    | ROUND DIFFUSER |
| CD-2 | TITUS | PSS    | 24x24     | LAY-IN     | STEEL    |                |
| ER-1 | TITUS | 350ZFL | AS NOTED  | SURFACE    | STEEL    |                |
| RG-1 | TITUS | 350ZR  | AS NOTED  | SURFACE    | STEEL    | ROUND REGISTER |
| RR-1 | TITUS | TMR    | 24x24     | SURFACE    | STEEL    | ROUND REGISTER |
| RR-2 | TITUS | PAR    | 24x24     | LAY-IN     | STEEL    |                |
| SR-1 | TITUS | 300R   | AS NOTED  | SURFACE    | STEEL    |                |

NOTE: 1. ALL NECK SIZES & CFM'S ARE SHOWN ON PLANS

EXHAUST FAN SCHEDULE

| MARK | LOCATION SERVED | MFR       | MODEL   | CFM | S.P. IN.W.G. | RPM  | SONES | MOTOR |      |       | WEIGHT LB'S | REMARKS  |
|------|-----------------|-----------|---------|-----|--------------|------|-------|-------|------|-------|-------------|--|
|      |                 |           |         |     |              |      |       | HP    | VOLT | PHASE |             |  |
| EF-1 | TOILET EXHAUST  | GREENHECK | GB-90-4 | 750 | 0.25         | 1310 | 9.2   | 1/4   | 120  | 1     | 50          | ROOF MOUNT EXHAUST BLOWER. FURNISH W/ EDD, DISCONNECT SWITCH & ROOF CURB |

NOTE: CONNECT FAN EF-1 TO TIME CLOCK. SEE DIAGRAM 2/MP2.1.

GRAVITY HOOD

| MARK | SERVICE                      | MFR       | MODEL      | CFM | SP IN.W.G. | THROAT WXL IN. | REMARKS                      |
|------|------------------------------|-----------|------------|-----|------------|----------------|------------------------------|
| GH-1 | CUSTODIAN RM. ELECTRICAL RM. | GREENHECK | FABRA HOOD | 400 | 0.05       | 12x12          | FURNISH W/ CURB & BIRDSCREEN |

PLUMBING FIXTURE CONNECTION SCHEDULE

| SYM. | FIXTURE                               | CW       | HW       | W  | V      |
|------|---------------------------------------|----------|----------|----|--------|
| WC-1 | WATER CLOSET, WALL MOUNT, FLUSH VALVE | 1 1/4"   | ---      | 4" | 2"     |
| UR-1 | URINAL                                | 3/4"     | ---      | 2" | 1 1/2" |
| L-1  | LAVATORY, WALL HUNG (CW/HW)           | 1/2"     | 1/2"     | 2" | 1 1/2" |
| EW-1 | ELECTRIC WATER COOLER                 | 1/2"     | ---      | 2" | 1 1/2" |
| MS-1 | MOP SINK                              | 3/4"     | 3/4"     | 3" | 2"     |
| FD   | FLOOR DRAIN, FINISHED FLOOR           | 1/2" (1) | ---      | 2" | 1 1/2" |
| WH-1 | WATER HEATER                          | 3/4" IN  | 3/4" OUT | 3" | (2)    |

- (1) TRAP PRIMER CONNECTION  
(2) OVERFLOW DRAIN TO SPILL OVER MOP SINK

EQUIPMENT SCHEDULE

| MARK | DESCRIPTION  |
|------|--|
| WH 1 | ELECTRIC HOT WATER HEATER<br>CAPACITY: 15-GALLONS STORAGE TANK, 13 GPH RECOVERY RATE AT 80-DEGREES RISE.<br>ELECTRICAL: 3000 WATTS ELEMENT @ 480 VOLT, 3Ø.<br>WEIGHT: 250 LBS (WITH WATER).<br>SIZE: 26" HIGH, 18" DIAMETER.<br>*A.D. SMITH* MODEL DEL-15. |

ABBREVIATIONS - HVAC

|        |                                       |                              |
|--------|---------------------------------------|------------------------------|
| AC     | AIR CONDITIONING                      | LBOUND                       |
| AP     | ACCESS PANEL                          | LRA LOCKED ROTOR AMPS        |
| BDD    | BACK DRAFT DAMPER                     | MBH THOUSAND BRITISH UNITS   |
| BOR    | BOTTOM OF REGISTER                    | MFR MANUFACTURER             |
| BTUH   | BRITISH THERMAL UNITS PER HOUR        | MFS MAXIMUM FUSE SIZE        |
| CD     | CEILING DIFFUSER                      | MCA MINIMUM CIRCUIT AMPACITY |
| C.F.D. | CEILING FIRE DAMPER                   | MIN. MINIMUM                 |
| CFM    | CUBIC FEET PER MINUTE                 | N/A NOT APPLICABLE           |
| CLG.   | CEILING                               | NIC NOT IN CONTRACT          |
| CONN.  | CONNECTION (CONNECT)                  | NO. NUMBER                   |
| CONT.  | CONTINUATION                          | NOM. NOMINAL                 |
| DPFT   | DOUGLAS FIR PRESSURE TREATED (BLOCKS) | (N) NEW                      |
| DL     | DOOR LOUVER                           | O.A. OUTSIDE AIR             |
| DB     | DRY BULB                              | O.A.I. OUTSIDE AIR INTAKE    |
| DN     | DOWN                                  | O.C. ON CENTERS              |
| DWG.   | DRAWING                               | OPER. OPERATING              |
| EF     | EXHAUST FAN                           | R.A. RETURN AIR              |
| EA-    | EACH                                  | RPM REVOLUTIONS PER MINUTE   |
| (E)    | EXISTING                              | RLA RATED LOAD AMPS          |
| ER     | EXHAUST REGISTER                      | RR RETURN REGISTER           |
| EXH.   | EXHAUST                               | RTU ROOF TOP UNIT            |
| E.S.P. | EXTERNAL STATIC PRESSURE              | S.A. SUPPLY AIR              |
| F.D.   | FIRE DAMPER                           | S.M. SHEET METAL             |
| FLA    | FULL LOAD AMPS                        | S.P. STATIC PRESSURE         |
| FLR.   | FLOOR                                 | SR SUPPLY REGISTER           |
| FLEX.  | FLEXIBLE                              | TEMP. TEMPERATURE            |
| FT.    | FOOT                                  | T'STAT THERMOSTAT            |
| GA.    | GAUGE                                 | T.S.P. TOTAL STATIC PRESSURE |
| G.C.   | GENERAL CONTRACTOR                    | TS TUBE STEEL                |
| GF     | GAS FURNACE                           | TYP. TYPICAL                 |
| HP     | HORSE POWER                           | V.D. VOLUME DAMPER           |
| HZ     | HERTZ                                 | W/ WITH                      |
| IN.    | INCH                                  | WB WET BULB                  |
| KW     | THOUSAND WATTS                        | W.G. WATER GAUGE             |

NOT ALL ABBREVIATIONS SHOWN ABOVE MAY BE APPLICABLE TO THE DESIGN DOCUMENTS OF THIS PROJECT

LEGEND - PLUMBING

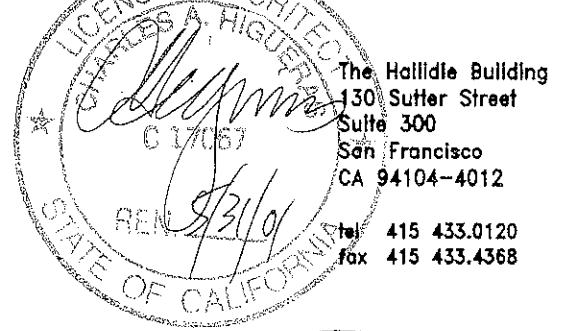
|        |       |                                   |
|--------|-------|-----------------------------------|
| ---    | W     | WASTE ABOVE FLOOR OR GRADE        |
| ---    | W     | WASTE BELOW FLOOR OR GRADE        |
| ----   | V     | VENT                              |
| ----   | CW    | COLD WATER                        |
| ----   | HW    | HOT WATER                         |
| ----   | HWR   | HOT WATER RETURN                  |
| —CD    | CD    | CONDENSATE DRAIN                  |
| —G     | G     | NATURAL GAS                       |
| —SD    | SD    | STORM (ROOF) DRAIN                |
| —FCO   | FCO   | FLOOR CLEANOUT                    |
| —GCO   | GCO   | GRADE CLEANOUT                    |
| —WCO   | WCO   | WALL CLEANOUT                     |
| —CO    | CO    | CLEANOUT                          |
| —FD    | FD    | FLOOR DRAIN                       |
| —HB    | HB    | HOSE BIBB                         |
| —WH    | WH    | WALL HYDRANT                      |
| —GV    | GV    | GATE OR GLOBE (SHUT-OFF) VALVE    |
| —CK    | CK    | CHECK VALVE                       |
| —      | —     | POINT OF CONNECTION               |
| —ABV.  | ABV.  | ABOVE                             |
| —AP    | AP    | ACCESS PANEL                      |
| —ASR   | ASR   | AUTOMATIC SPRINKLER RISER         |
| —B/F   | B/F   | BELOW FLOOR                       |
| —BOP   | BOP   | BOTTOM OF PIPE OR PIPE INSULATION |
| —CFH   | CFH   | CUBIC FOOT PER HOUR (GAS)         |
| —CLG.  | CLG.  | CEILING                           |
| —COND. | COND. | CONDENSATE                        |
| —CONN. | CONN. | CONNECT                           |
| —CONT. | CONT. | CONTINUATION                      |
| —DN    | DN    | DOWN                              |
| —DWG.  | DWG.  | DRAWING                           |
| —(E)   | (E)   | EXISTING                          |
| —FT    | FT    | FLASH TANK                        |
| —FV    | FV    | FLUSH VALVE                       |
| —LF    | LF    | LINEAR FOOT                       |
| —(N)   | (N)   | NEW                               |
| —OD    | OD    | OVERFLOW ROOF DRAIN               |
| —POC   | POC   | POINT OF CONNECTION               |
| —RWL   | RWL   | RAIN WATER LEADER                 |
| —RD    | RD    | ROOF DRAIN                        |
| —(R)   | (R)   | RELOCATED                         |
| —SA    | SA    | SHOCK ABSORBER                    |
| —SOV   | SOV   | SHUT-OFF VALVE                    |
| —TD    | TD    | TRENCH DRAIN                      |
| —U/G   | U/G   | UNDER GROUND                      |
| —VR    | VR    | VENT RISER                        |
| —VTR   | VTR   | VENT THRU ROOF                    |
| —WH    | WH    | WATER HEATER                      |

NOT ALL ABBREVIATIONS SHOWN ABOVE MAY BE APPLICABLE TO THE DESIGN DOCUMENTS OF THIS PROJECT

LEGEND - HVAC

|       |                                 |
|-------|---------------------------------|
| ---   | NEW DUCTWORK                    |
| —[X]— | SUPPLY DUCT - SECTION           |
| —[X]— | RETURN DUCT - SECTION           |
| —[X]— | EXHAUST DUCT - SECTION          |
| —[X]— | DUCT TURNING VANES              |
| —FC—  | DUCT FLEXIBLE CONNECTION        |
| —VD—  | MANUAL VOLUME DAMPER            |
| —[X]— | ROUND TO RECTANGULAR TRANSITION |
| —[X]— | CEILING SUPPLY DIFFUSER         |
| —[X]— | RETURN REGISTER                 |
| —[X]— | DUCT SIZE CHANGE                |
| —[X]— | FLEXIBLE DUCT                   |
| —[X]— | ROOM NUMBER                     |
| —[X]— | EQUIPMENT MARK                  |
| —[X]— | POINT OF CONNECTION             |
| —[X]— | T'STAT ROOM THERMOSTAT          |

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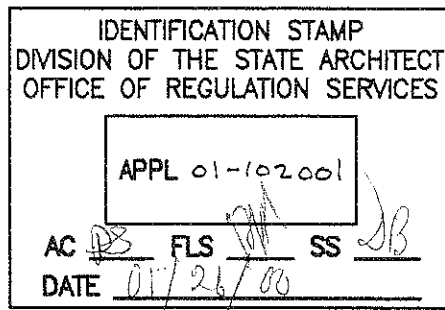
| NO. | ISSUES/REVISIONS           | DATE    |
|-----|----------------------------|---------|
| 1.  | 50% CONSTRUCTION DOCUMENTS | 5/26/99 |
| 2.  | DSA SUBMITTAL              | 9/01/99 |
| 3.  | DSA BACKCHECK              | 3/31/00 |

NEW GYMNASIUM  
AT  
PINE VALLEY  
MIDDLE SCHOOL

FOR THE

SAN RAMON VALLEY  
UNIFIED SCHOOL  
DISTRICT  
AND  
CITY OF SAN RAMON

KEY PLAN



PROJECT NO.: 98305.00 DRAWN BY: BZ  
DATE: 3/31/00 CHECKED BY: PK  
SCALE: NONE

SHEET TITLE:

NOTES, SCHEDULES,  
LEGEND, ABBREVIATIONS

DSA SUBMITTAL

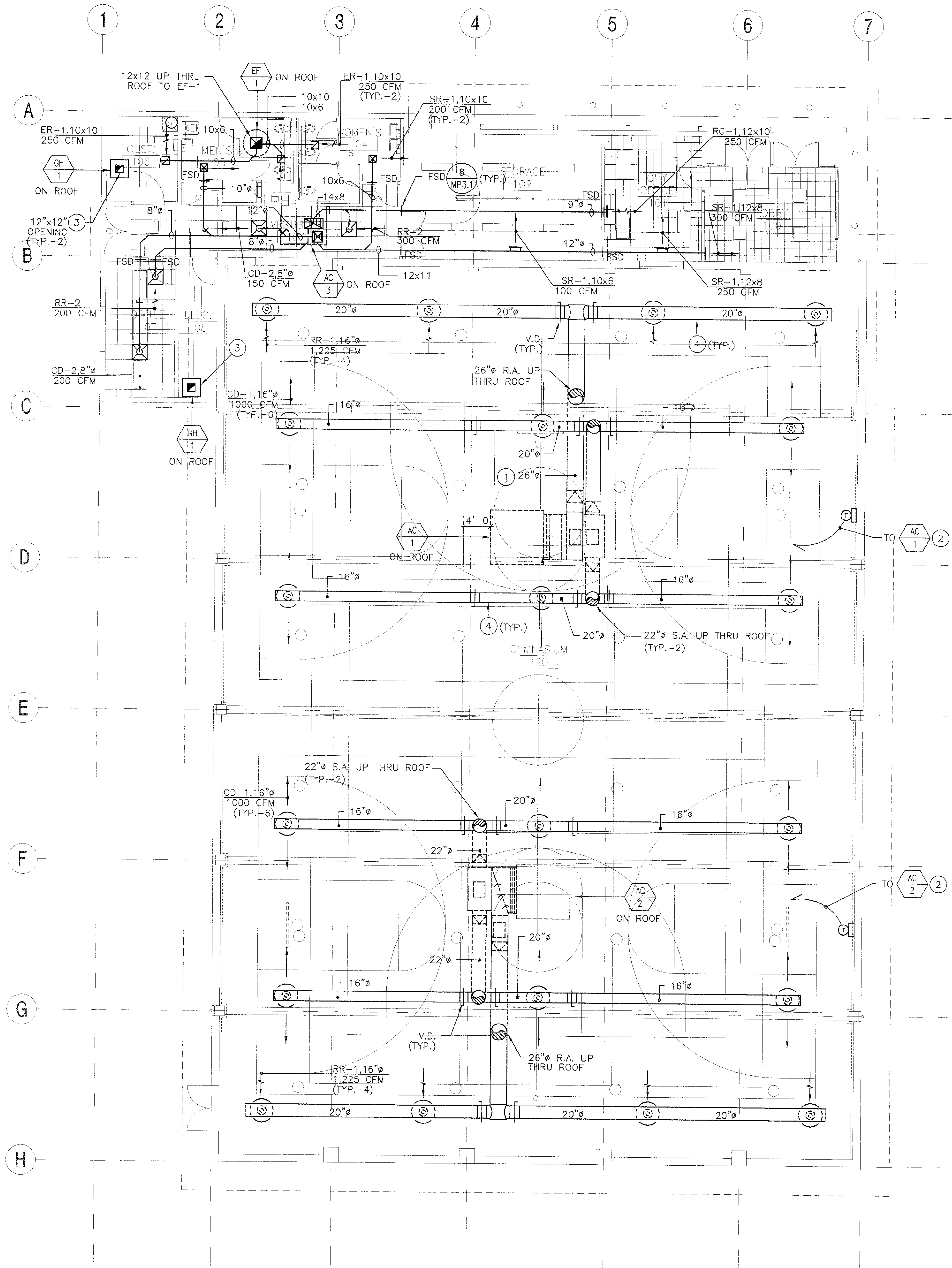
SHEET NO:

MP1.1

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If this drawing is not 30"x42", then the drawing has been revised from its original size. Noted scales must be adjusted. This line should be equal to one inch.





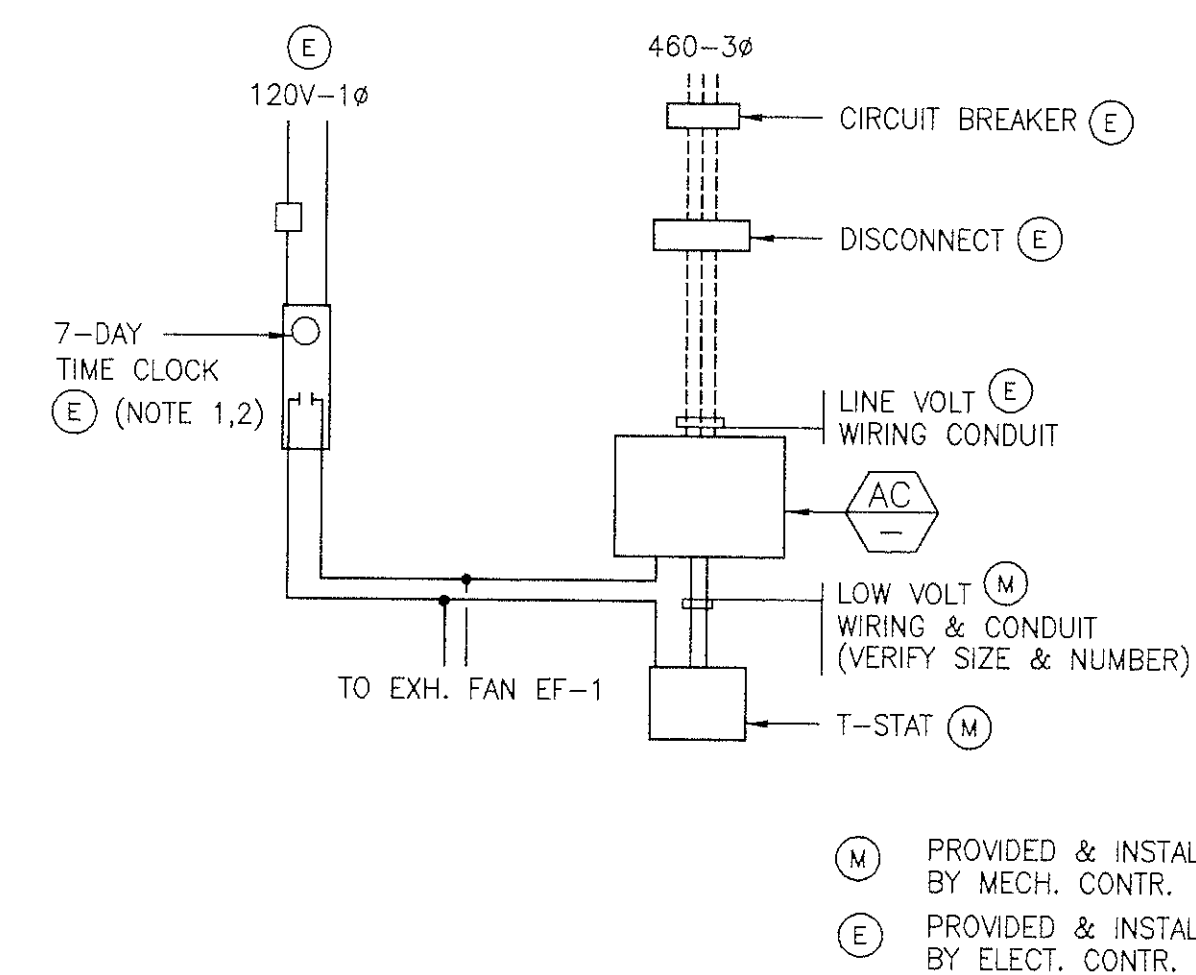
NOTE:  
1. DO NOT INSULATE EXPOSED DUCTWORK IN GYMNASIUM.

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

1  
MP2.1

### KEYED NOTES

- ① DUCTWORK ON ROOF.
- ② WALL-MOUNTED THERMOSTAT AT 48" AFF. UNDER LOCKABLE, HEAVY-DUTY STEEL COVER. PROVIDE MIN. 1" THICK INSULATED SUB-BASE.
- ③ 12"x12" DUCT OPENING INTO CUST. ROOM AND/OR TO ELECTRICAL ROOM, WITH 1/2" WMS.
- ④ BOTTOM OF DUCT TO BE APPROXIMATELY AT THE LEVEL OF BOTTOM OF ROOF JOISTS.

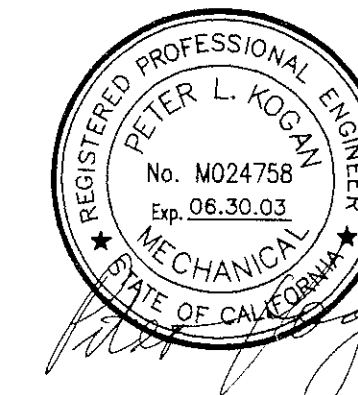


- NOTES:
1. SET TIME CLOCK TO OPERATE ALL (3) AC UNITS AND EXHAUST FAN EF-1 DURING NORMAL BUSINESS HOURS.
  2. TIME CLOCK TO BE WIRED BY ELECTRICAL CONTRACTOR.

**AC UNIT SCHEMATIC CONTROL DIAGRAM**  
NOT TO SCALE

2  
MP2.1

GORDON H. CHONG & Partner  
The Holiday Building  
130 Sutter Street  
Suite 300  
San Francisco, CA 94104-4012  
Tel: 415-435-0130  
Fax: 415-435-4568



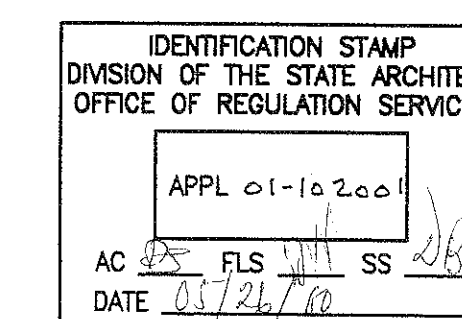
PETER KOGAN ASSOCIATES  
Consulting Engineers  
88 First Street, Suite #501  
San Francisco, CA 94105  
Tel: 415-512-7434  
Fax: 415-512-7456

| NO. | ISSUES/REVISIONS           | DATE    |
|-----|----------------------------|---------|
| 1.  | S&B CONSTRUCTION DOCUMENTS | 5/26/99 |
| 2.  | DSA SUBMITTAL              | 9/01/99 |
| 3.  | DSA BACKCHECK              | 3/31/00 |

## NEW GYMNASIUM AT PINE VALLEY MIDDLE SCHOOL

FOR THE  
SAN RAMON VALLEY  
UNIFIED SCHOOL  
DISTRICT  
AND  
CITY OF SAN RAMON

KEY PLAN



PROJECT NO.: 98305.00 DRAWN BY: BZ  
DATE: 3/31/00 CHECKED BY: PK  
SCALE:

SHEET TITLE:  
**MECHANICAL  
FLOOR PLAN,  
DIAGRAM**

DSA SUBMITTAL

SHEET NO.:

**MP2.1**

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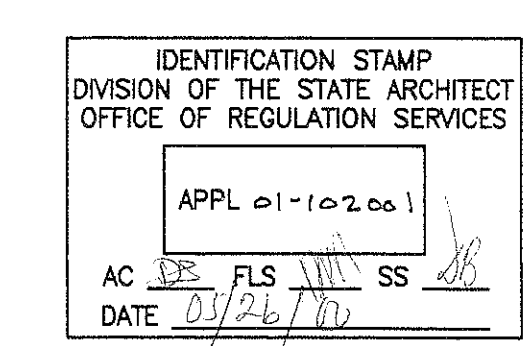
PETER KOGAN ASSOCIATES  
Consulting Engineers  
88 First Street, Suite #501  
San Francisco, CA 94105  
Tel: 415-512-7434  
Fax: 415-512-7456

| NO. | ISSUES/REVISIONS           | DATE    |
|-----|----------------------------|---------|
| 1.  | 50% CONSTRUCTION DOCUMENTS | 5/26/99 |
| 2.  | DSA SUBMITTAL              | 9/01/99 |
| 3.  | DSA BACKCHECK              | 3/31/00 |

## NEW GYMNASIUM AT PINE VALLEY MIDDLE SCHOOL

FOR THE  
SAN RAMON VALLEY  
UNIFIED SCHOOL  
DISTRICT  
AND  
CITY OF SAN RAMON

KEY PLAN



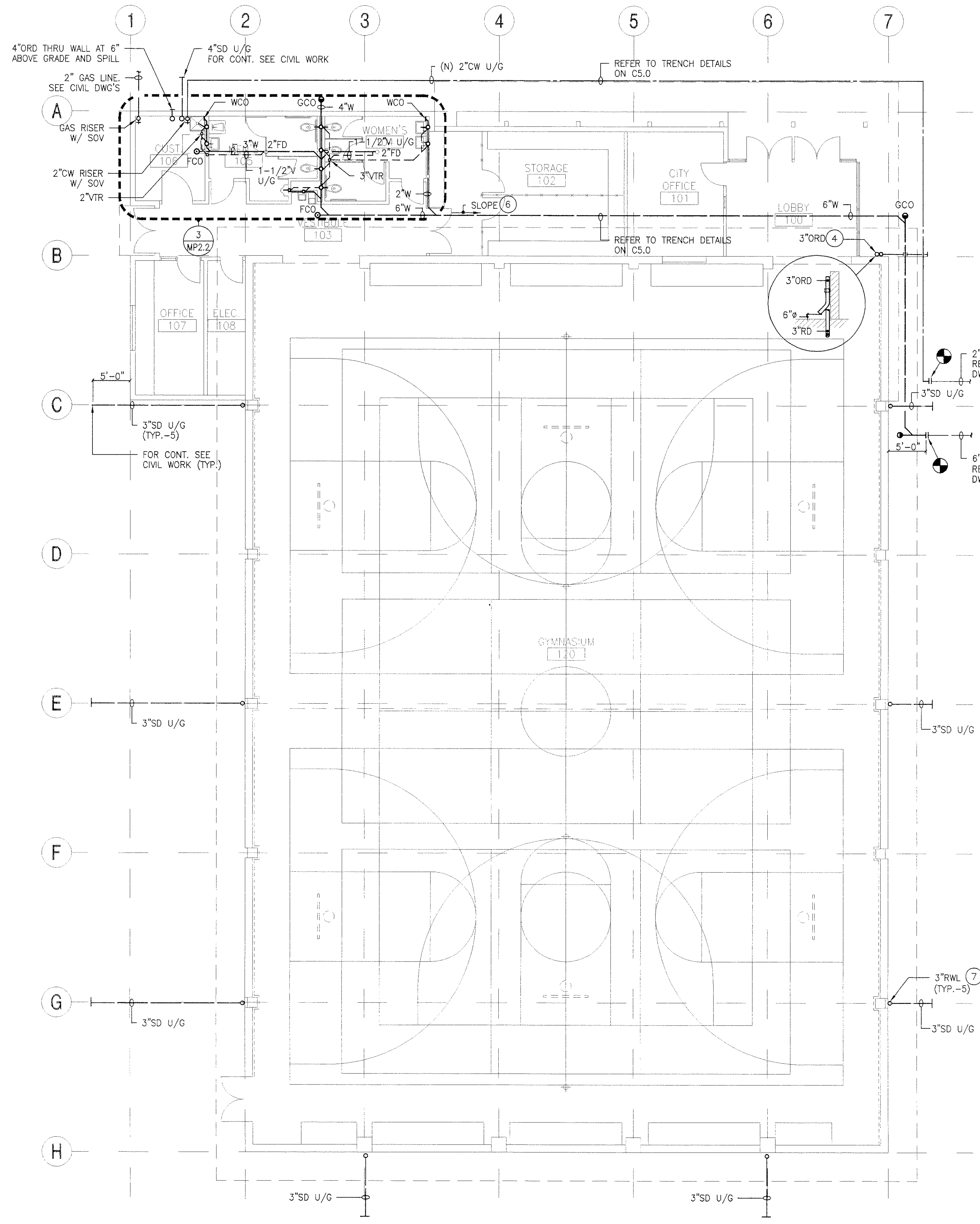
PROJECT NO.: 98305.00 DRAWN BY: BZ  
DATE: 3/31/00 CHECKED BY: PK  
SCALE:

SHEET TITLE:  
**PLUMBING**

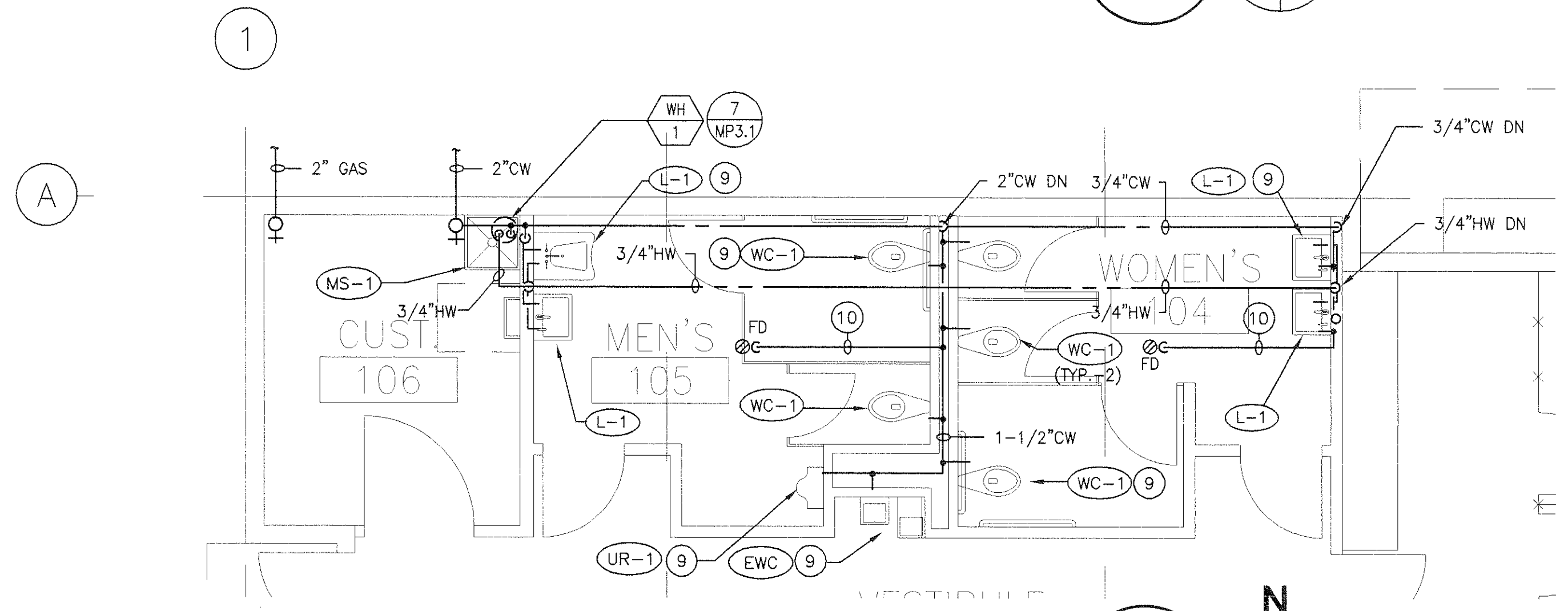
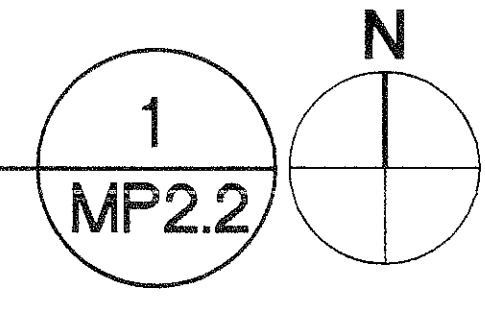
**FLOOR PLAN  
AND  
ROOF PLAN**

**DSA SUBMITTAL**

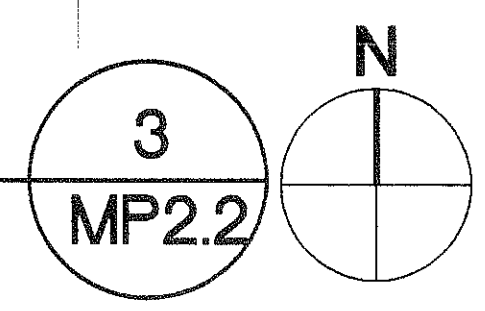
SHEET NO.:  
**MP2.2**



FLOOR PLAN - PLUMBING  
SCALE: 1/8"-1'-0"



PARTIAL FLOOR PLAN - TOILET ROOMS  
SCALE: 1/4"-1'-0"

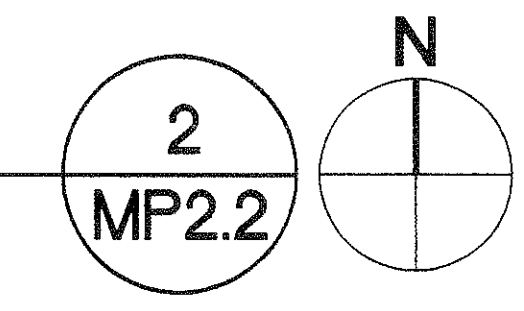


### KEYED NOTES

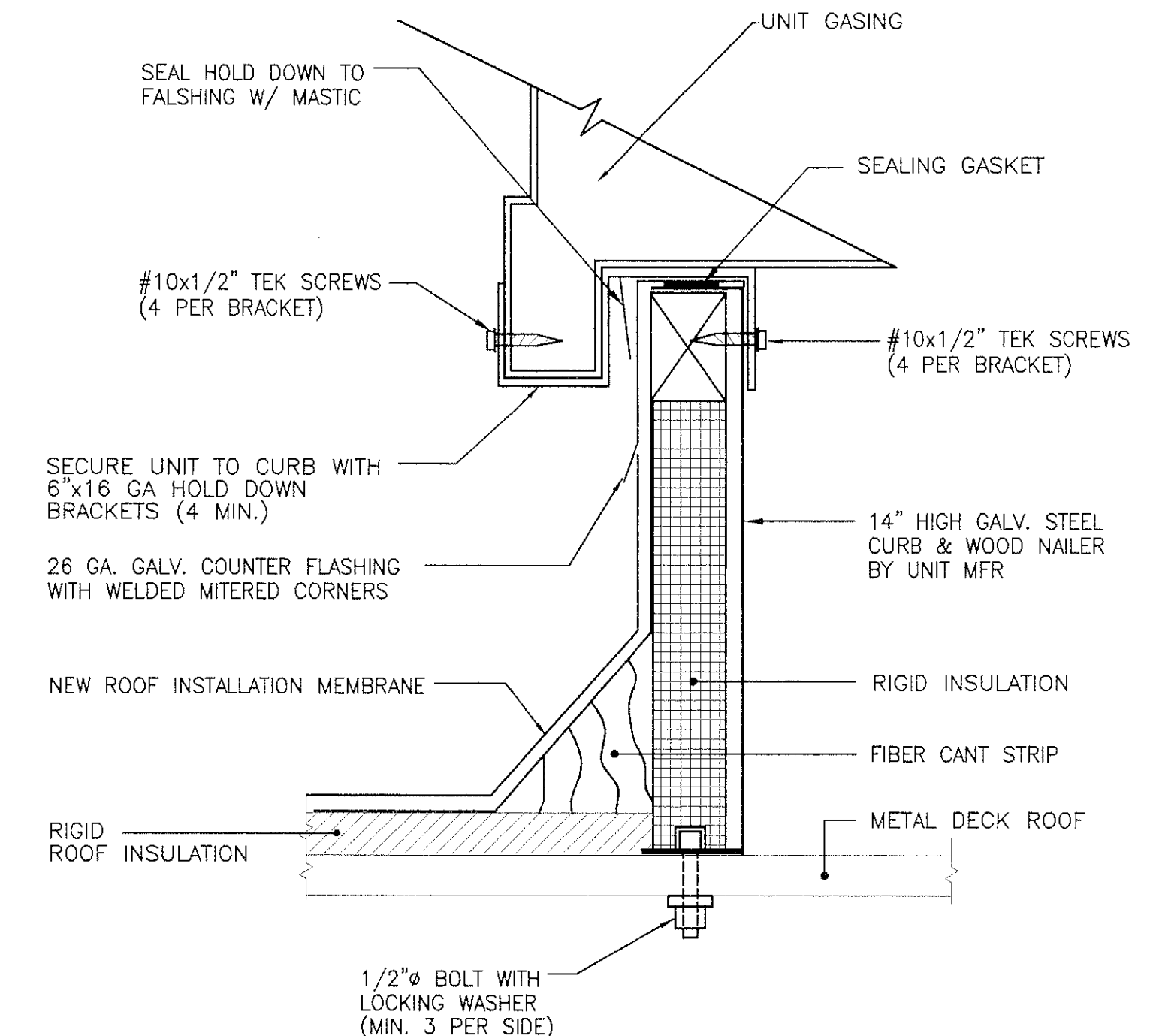
- RUN STORM (ROOF) DRAIN LINES IN THIS AREA EXPOSED BELOW STORAGE CEILING OR CUT THROUGH ROOF JOISTS - COORDINATE WITH STRUCTURAL ENGINEER.
- PROVIDE WIRE STRAINER (GUARD) OR CAST IRON DOME FOR ALL RAIN WATER LEADERS (RWL) AT GUTTERS.
- RAIN WATER LEADER TO SPILL ON LOW ROOF, ON SPLASH PLAN BELOW - SEE ARCHITECTURAL DRAWINGS.
- BOTH ROOF DRAIN LEADER AND OVERFLOW DRAIN RUN EXPOSED, TIGHT TO WALL. OVERFLOW LINE TO TERMINATE 6" ABOVE GRADE. MAIN ROOF DRAIN TO CONTINUE UNDERGROUND TO POINT OF CONNECTION WITH SITE STORM DRAIN LINE, FURNISHED UNDER CIVIL WORK.
- CONDENSATE DRAIN LINE FROM AC UNIT TO TERMINATE INTO ROOF DRAIN OR GUTTER WITH DOWNTURN ELBOW AND SPILL.
- VERIFY IN FIELD AVAILABLE SLOPE, BASED ON INVERT ELEVATION OF EXISTING 6" SANITARY SEWER. PREFERRED SLOPE IS 1/4" PER FOOT, BUT NOT LESS THAN 1/8" PER FOOT.
- RAIN WATER LEADER EXPOSED, TIGHT TO WALL. SEE DETAIL 16/AB.03.
- NOT USED.
- MOUNT FOR HANDICAPPED ACCESS. REFER TO ARCHITECTURAL DRAWINGS.
- 1/2" COLD WATER, UNDERGROUND, TO TRAP PRIMER.
- DUCT SMOKE DETECTOR ON SUPPLY DUCT PLENUM, IN WEATHERPROOF COVER. REFER TO DETAIL 3/MP3.1.
- FIELD-INSTALLED POWER EXHAUSTER. PROVIDE ALL REQUIRED FIELD ASSEMBLING, WIRING AND INTERCONNECTIONS.

- NOTES:
- CONDENSATE DRAIN PIPING SHALL BE COPPER TYPE "M" DWV PIPE, PER SECTION 15400.
  - PROVIDE SUPPORTS FOR HORIZONTAL GAS AND CONDENSATE PIPING PER UPC 1994, TABLE 3-1.  
CONDENSATE (COPPER): 1-1/2" & SMALLER - 6 FEET ON CENTERS  
1/2" - 6 FEET ON CENTERS  
3/4" & 1" - 8 FEET ON CENTERS  
1-1/4" & LARGER - 10 FEET ON CENTERS  
GAS (STEEL):

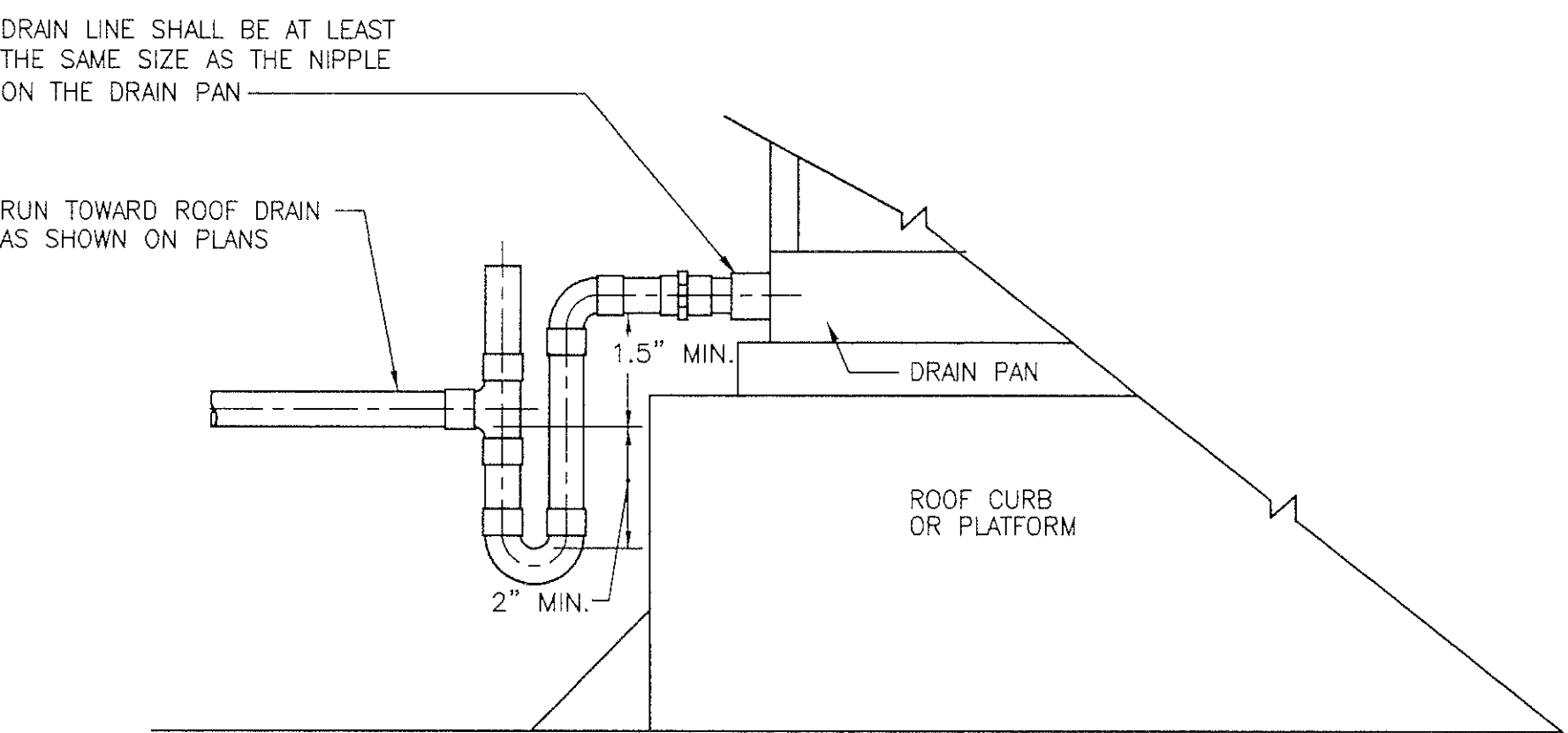
### ROOF PLAN SCALE: 1/8"-1'-0"



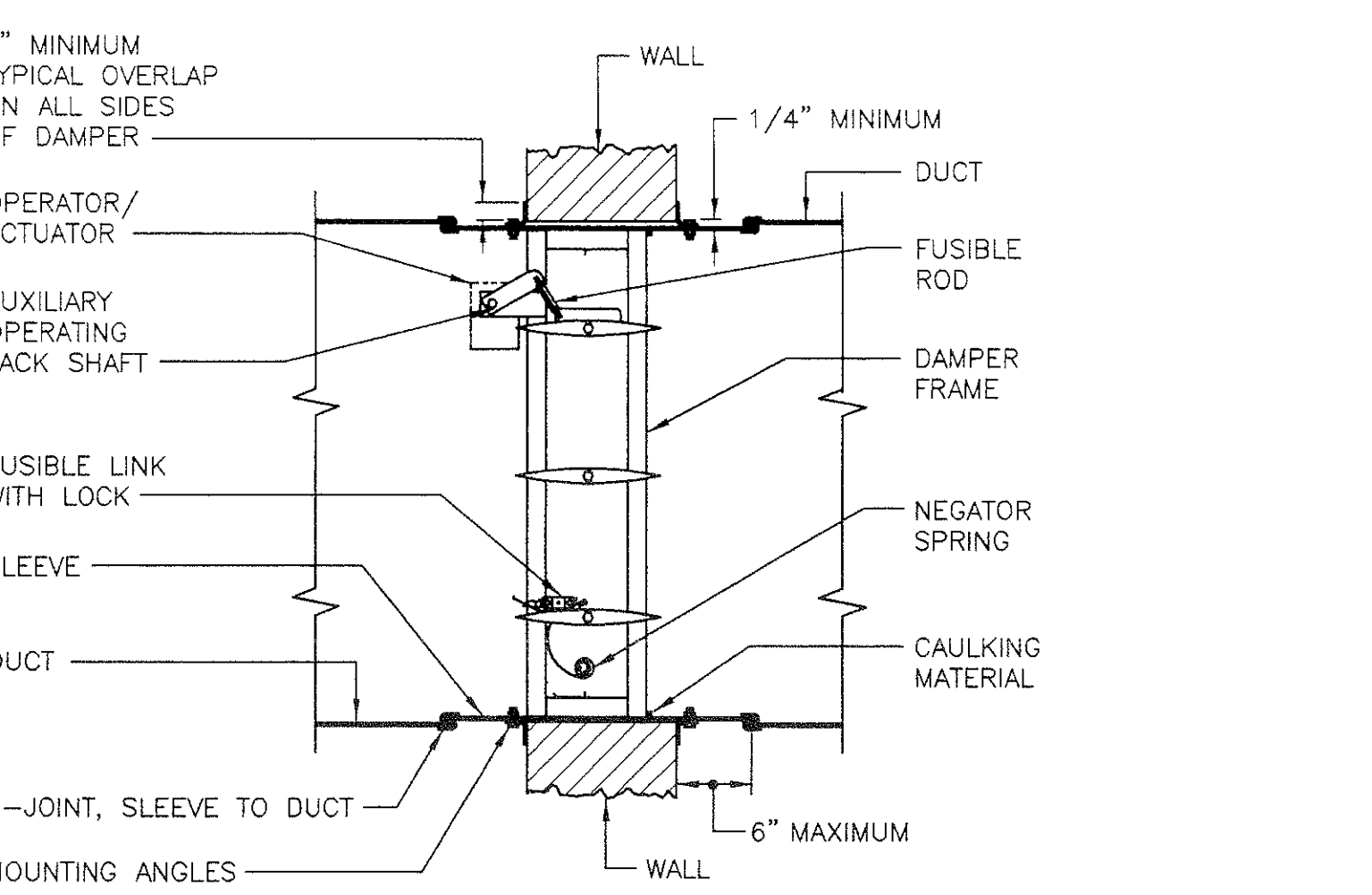




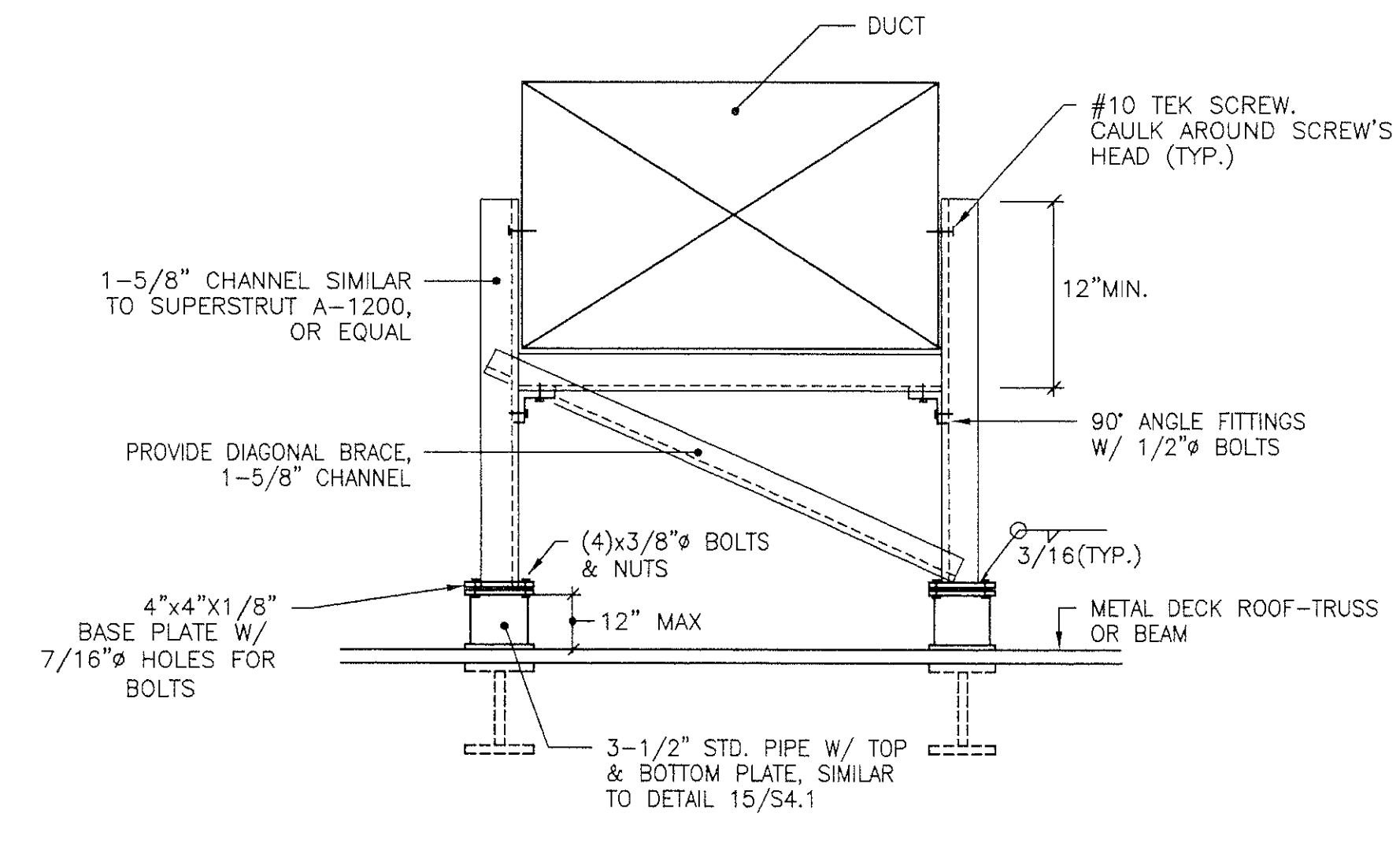
AC-3 UNIT MOUNTING DETAIL  
NOT TO SCALE



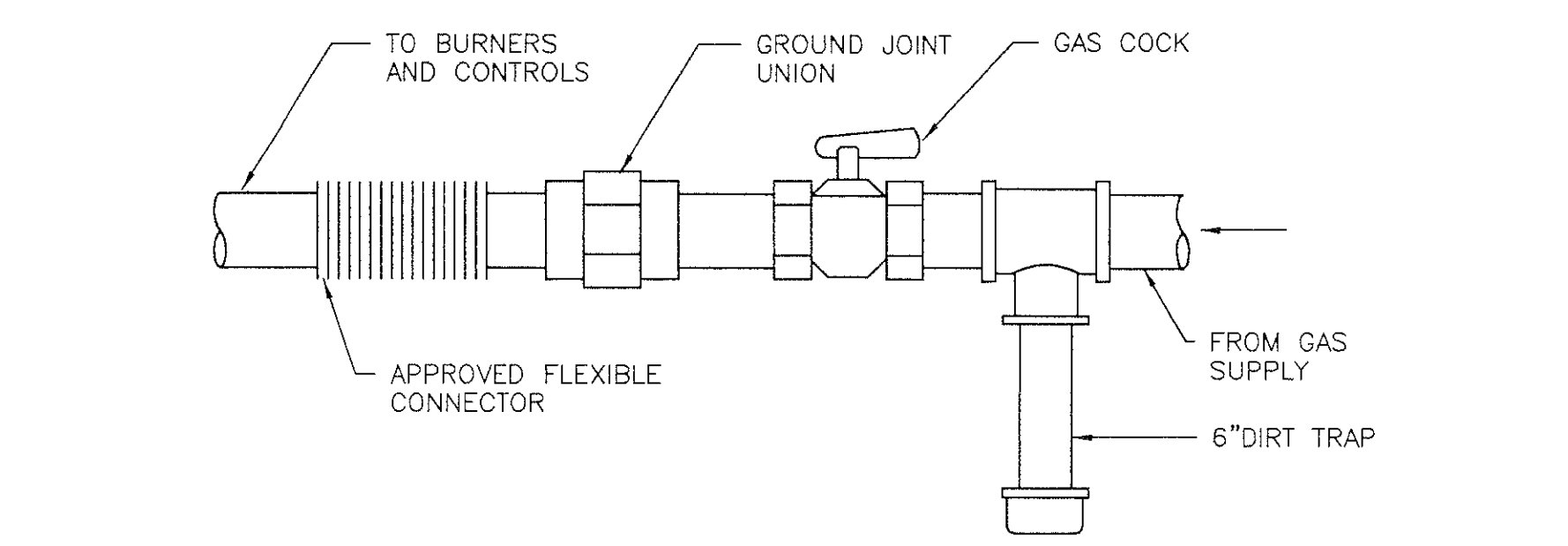
AIR CONDITIONING UNIT DRAIN DETAIL  
NOT TO SCALE



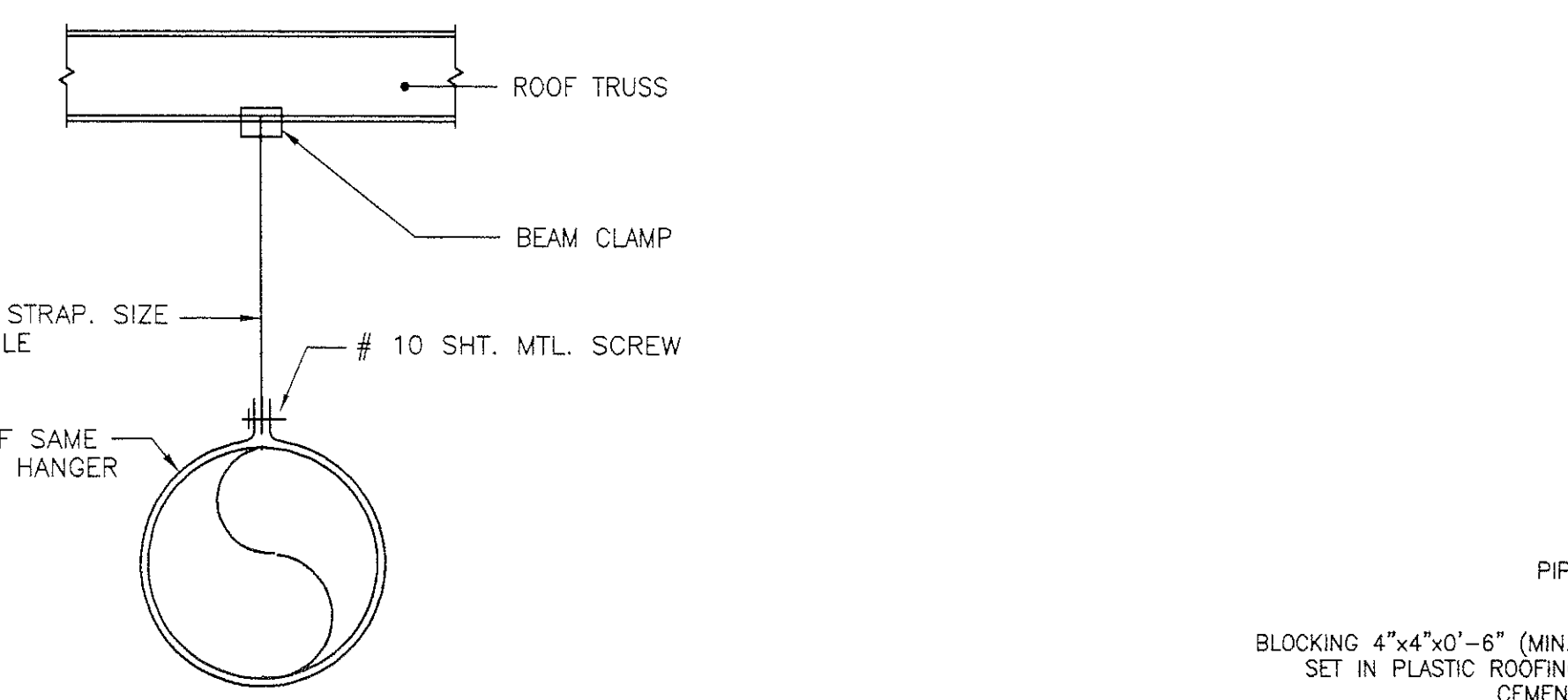
FIRE SMOKE DAMPER DETAIL  
NOT TO SCALE



DUCT SUPPORT ON ROOF  
NOT TO SCALE



GAS CONNECTION DETAIL  
NOT TO SCALE

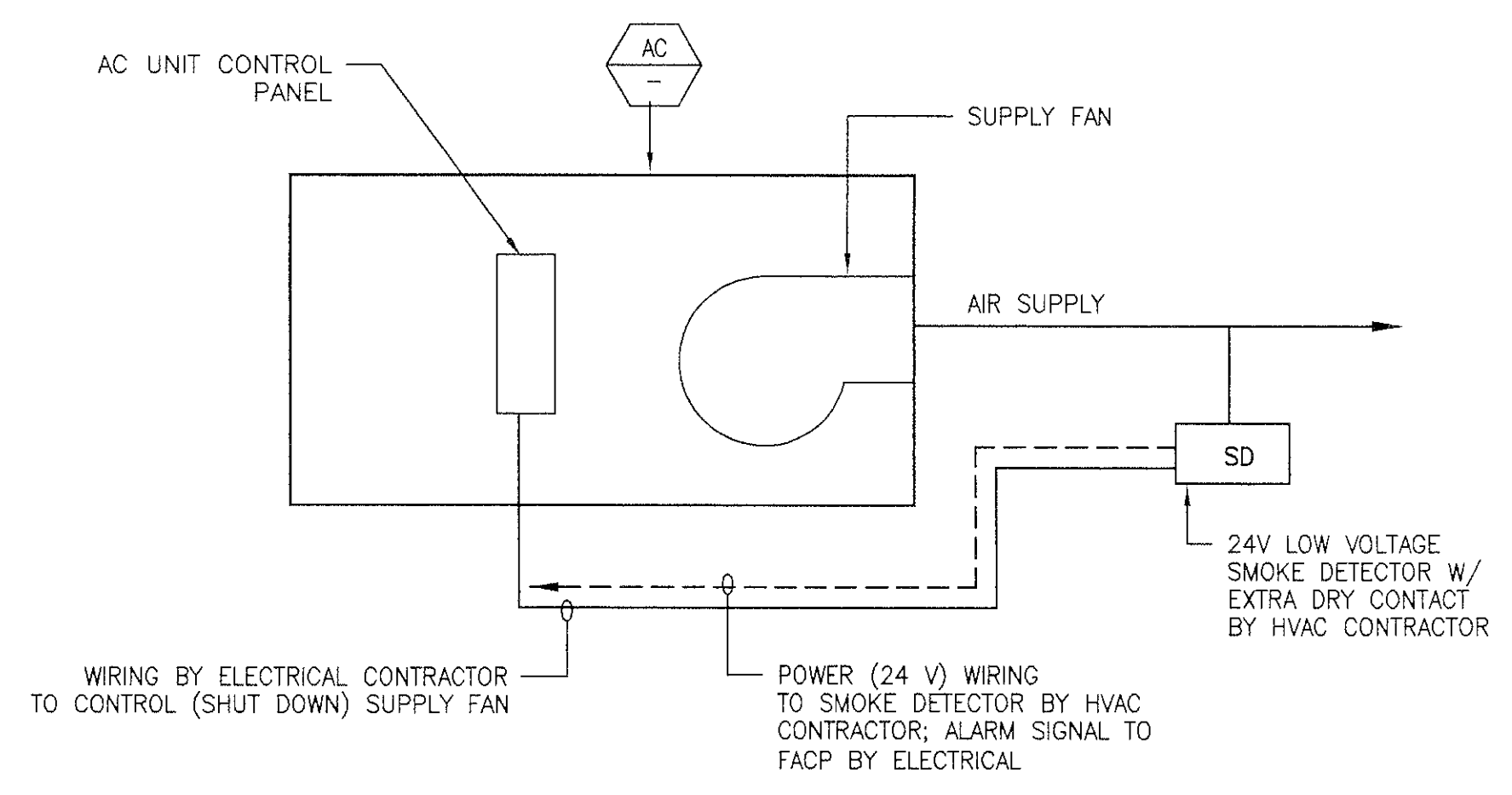


FOR DUCTS LESS THAN 6 SQ. FT. AREA OR 28" ATTACHED WITHIN 12" FROM (E) STRUCTURE, FOR SEISMIC REQUIREMENTS REFER TO SMACNA SEISMIC MANUAL

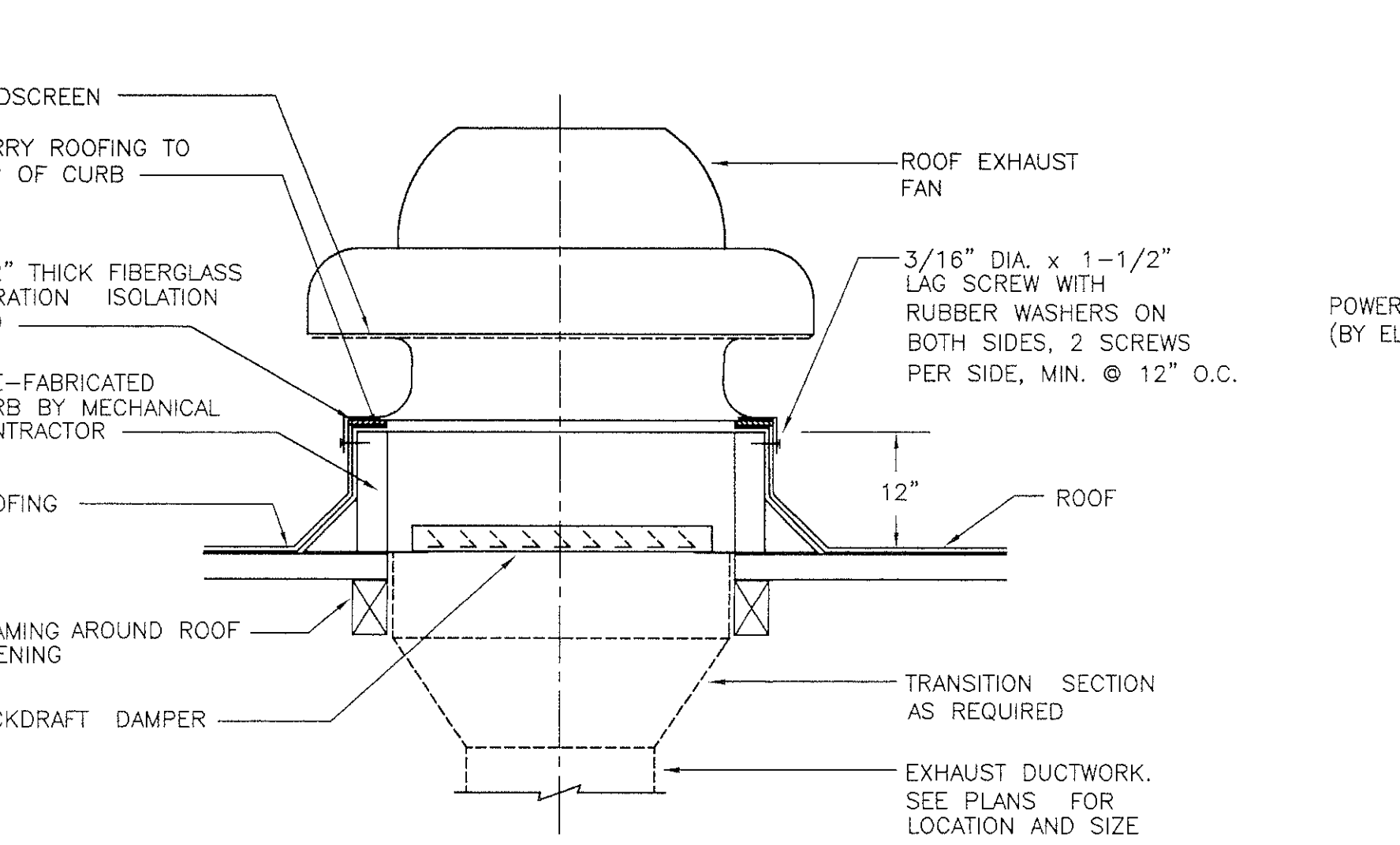
| DUCT SIZE         | STRAP SIZE   | HANGER SPACING |
|-------------------|--------------|----------------|
| 4 S.F. OR LESS    | 1-1/2"x1/16" | 8'-0"          |
| 4 S.F. TO 10 S.F. | 1-1/2"x1/8"  | 6'-0"          |
| OVER 10 S.F.      | 1-1/2"x1/8"  | 4'-0"          |

NOTE:  
1. FOR HANGERS SUPPORTING EXPOSED DUCTS IN GYMNASIUM REFER TO ARCHITECTURAL DETAIL 8/A9.03.

DUCT HANGER DETAIL  
NOT TO SCALE

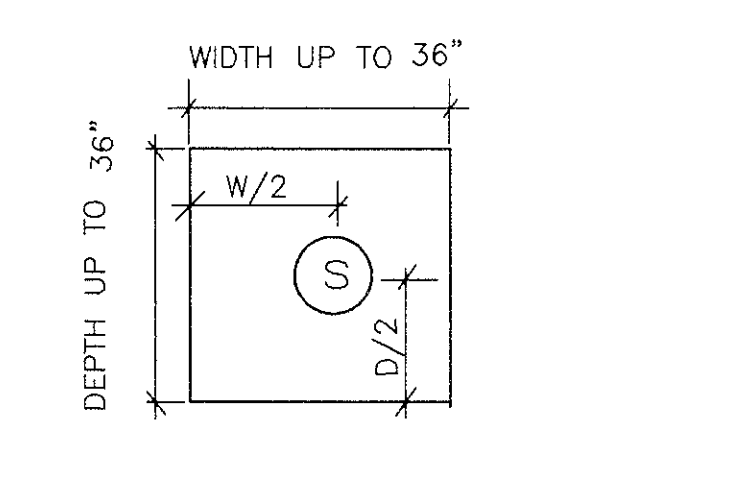


AC UNIT SMOKE DETECTOR SCHEMATIC (AC-1 AND AC-2)  
NOT TO SCALE



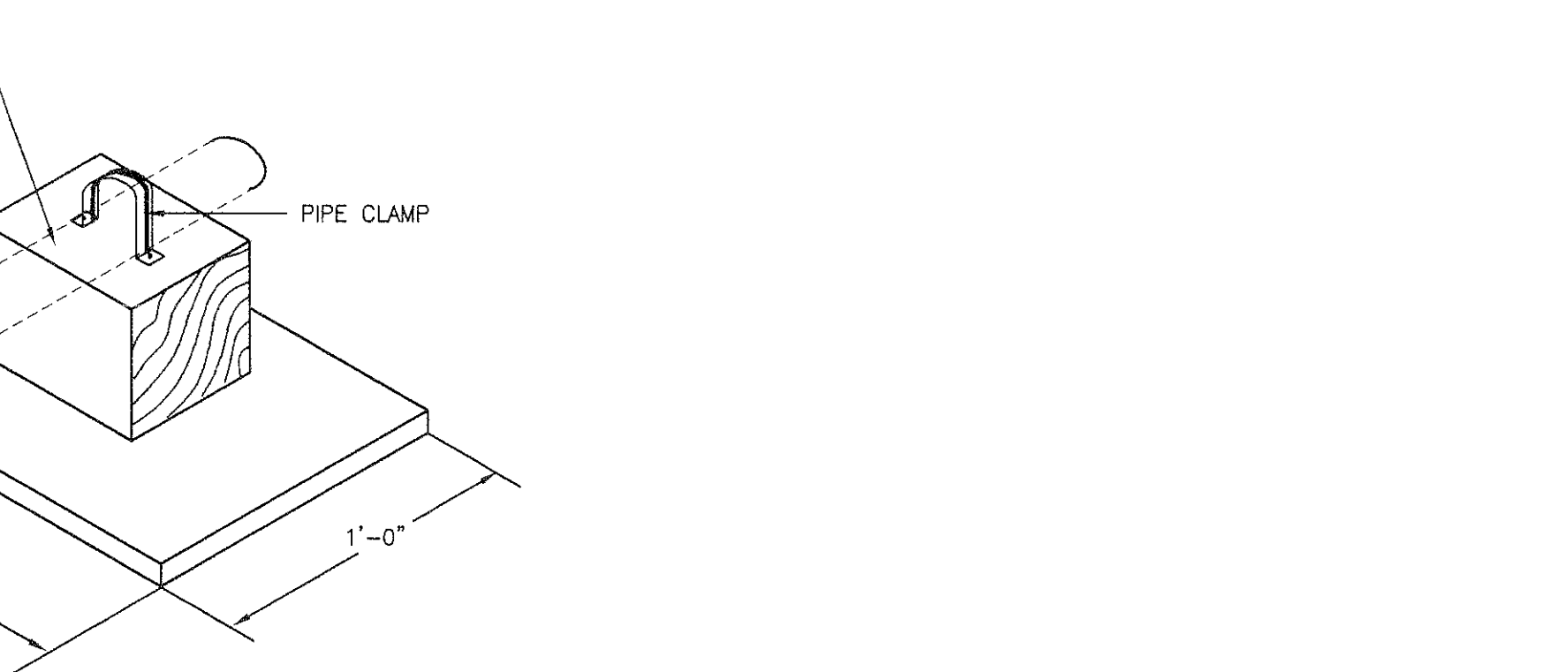
NOTE:  
1. TOP OF CURB MUST BE LEVELED. SHIM BOTTOM OF CURB AS REQUIRED.

EXHAUST FAN DETAIL  
NOT TO SCALE

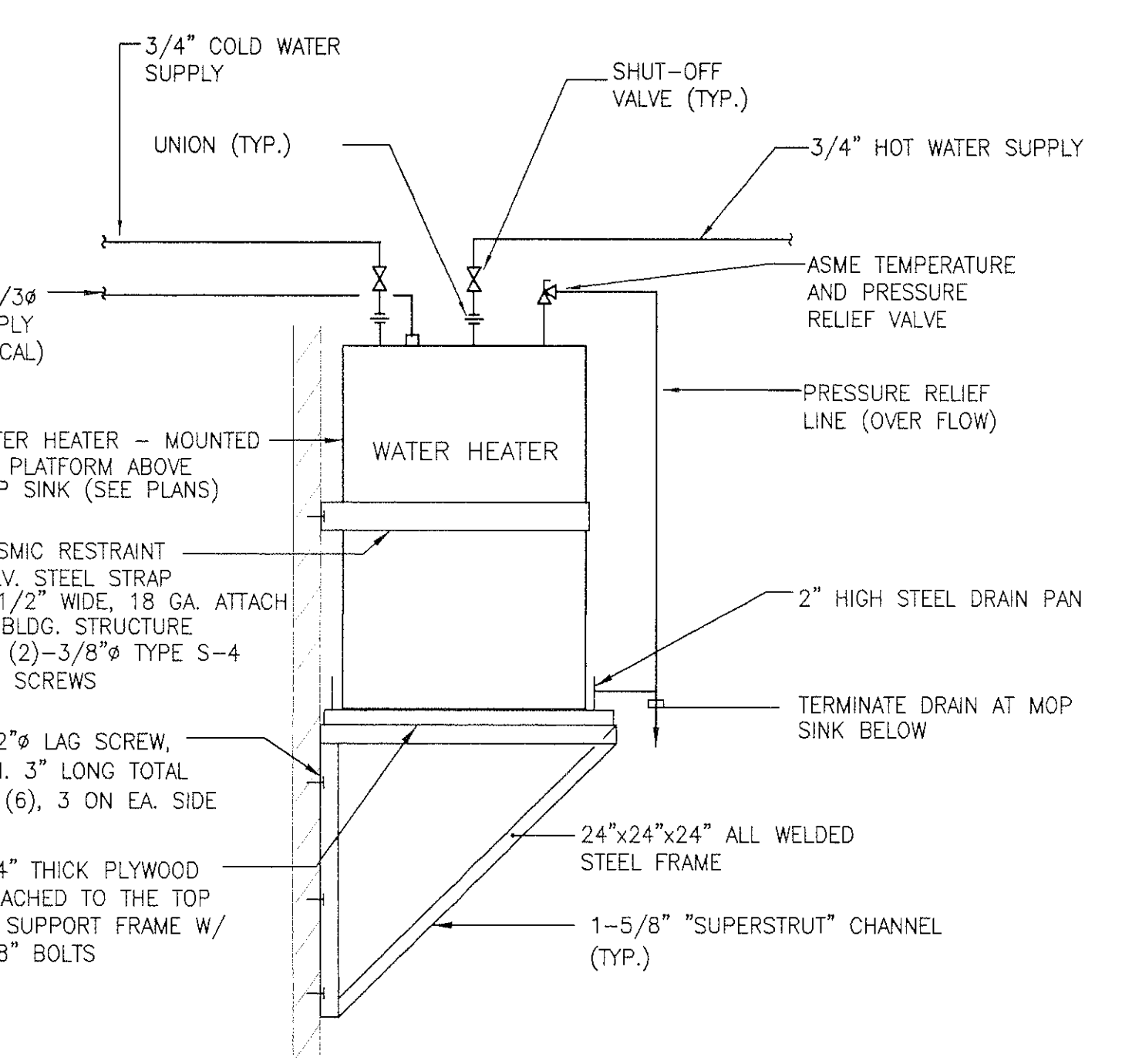


NOTE:  
DETECTORS SHOULD BE INSTALLED NO MORE THAN 12" IN FRONT OF OPENINGS & SPACED ACCORDING TO DETAIL BELOW.

ELECTRIC WATER HEATER WH-1  
NOT TO SCALE



PIPE SUPPORT BLOCK  
NOT TO SCALE



ELECTRIC WATER HEATER WH-1  
NOT TO SCALE

GORDON H. CHONG & Partners  
ARCHITECTURE

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PETER L. KOGAN  
REGISTERED PROFESSIONAL ENGINEER  
No. M024758  
Exp. 06/30/03  
MECHANICAL  
STATE OF CALIFORNIA

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| NO. | ISSUES/REVISIONS           | DATE    |
|-----|----------------------------|---------|
| 1.  | 50% CONSTRUCTION DOCUMENTS | 5/26/99 |
| 2.  | DSA SUBMITTAL              | 9/01/99 |
| 3.  | DSA BACKCHECK              | 3/31/00 |

NEW GYMNASIUM  
AT  
PINE VALLEY  
MIDDLE SCHOOL

FOR THE  
SAN RAMON VALLEY  
UNIFIED SCHOOL  
DISTRICT  
AND  
CITY OF SAN RAMON

KEY PLAN

IDENTIFICATION STAMP  
DIVISION OF THE STATE ARCHITECT  
OFFICE OF REGULATION SERVICES

APPL 01-1-2-0-01

AC 05 FLS 05 SS 06  
DATE 11/24/00

PROJECT NO.: 98305.00 DRAWN BY: BZ  
DATE: 3/31/00 CHECKED BY: PK  
SCALE: NONE  
SHEET TITLE:

DETAILS

DSA SUBMITTAL  
SHEET NO.:  
MP3.1

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| INSTRUCTION TO APPLICANT  |              |
|---|--------------|
| <p>For detailed instructions on the use of this and all Energy Efficiency Standards compliance forms, please refer to the Nonresidential Manual published by the California Energy Commission.</p> <p>MECH-1 Required on plans for all submitts. Parts 2 &amp; 3 may be incorporated in schedules on plans.</p> <p>MECH-2 Required for all submitts; choose appropriate version depending on method of mechanical compliance.</p> <p>MECH-3 and MECH-4: Required for all submitts</p> |              |
| Nonresidential Compliance Form  | January 1996 |

|  |  |
|--|--|
| NOTES TO FIELD--For Building Department Use Only   |  |
|  |  |
| <i>Nonresidential Compliance Form</i> <span style="float: right;"><i>January 1996</i></span> |  |

[illegible][illegible][illegible]Nonresidential Compliance Form December 1999

| NO. | ISSUES/REVISIONS           | DATE   |
|-----|----------------------------|--------|
| 1.  | 50% CONSTRUCTION DOCUMENTS | 5/26/9 |
| 2.  | DSA SUBMITTAL              | 9/01/9 |
| 3.  | DSA BACKCHECK              | 3/31/0 |

FOR THE  
SAN RAMON VALLEY  
UNIFIED SCHOOL  
DISTRICT  
AND  
CITY OF SAN RAMON

## KEY PLAN

IDENTIFICATION STAMP  
DIVISION OF THE STATE ARCHITECT  
OFFICE OF REGULATION SERVICES

APPL 01-102001

AC ~~DE~~ FLS ~~MA~~ SS 28  
DATE 05/26/08

PROJECT NO.: 98305.00 DRAWN BY: BZ  
DATE: 3/31/00 CHECKED BY: PK  
SCALE: NONE

SHEET TITLE:

**TITLE 24**  
**MECHANICAL**

DSA SUBMITTAL

SHEET NO: **MP4.1**

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