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DWG NO. AM2003-0600-G1 SH. REV

LOCATION MAP

PROJECT TITLE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
AMES RESEARCH CENTER

M003 CONFERENCE CENTER HVAC AND REROOFING

DRAWING INDEX

Table with drawing index entries for GENERAL, ARCHITECTURAL, MECHANICAL, ELECTRICAL, and STRUCTURAL categories, listing drawing numbers and titles.

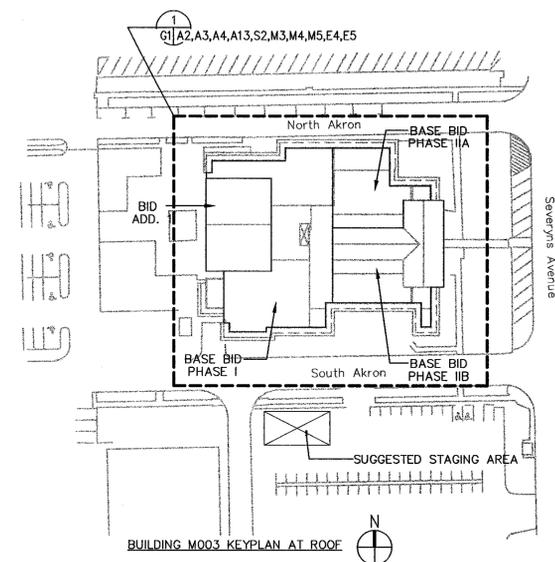
CODES AND STANDARDS

ALL WORK SHALL BE IN ACCORDANCE WITH THE CODES AND STANDARDS LISTED IN AMES CONSTRUCTION POLICY APD 8829.1, INCLUDING, BUT NOT LIMITED TO THE FOLLOWING: CALIFORNIA BUILDING CODE (CBC) - 2001, CALIFORNIA FIRE CODE (CFC) - 2001, CALIFORNIA MECHANICAL CODE (CMC) - 2001, CALIFORNIA PLUMBING CODE (CPC) - 2001, CALIFORNIA ELECTRICAL CODE (CEC) - 2004 (1999 NEC WITH CALIFORNIA AMENDMENTS), TITLE-24 CALIFORNIA STATE BUILDING CODE ACCESSIBILITY STANDARDS, TITLE-24 2005 CALIFORNIA STATE BUILDING ENERGY EFFICIENCY STANDARDS (REV. 9/2006) UNIFORM FEDERAL ACCESSIBILITY STANDARDS (UFAS), SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOC. (SMACNA), LATEST ED., NATIONAL FIRE PROTECTION ASSOC. STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS, NFPA 13 - 2002, NATIONAL FIRE PROTECTION ASSOC. NATIONAL FIRE ALARM CODE, NFPA 72 - 2002, NATIONAL FIRE PROTECTION ASSOC. LIFE SAFETY CODE, NFPA 101 - 2000, NATIONAL FIRE PROTECTION ASSOC. STANDARD FOR FIRE DOORS AND WINDOWS, NFPA 80 - 1999, AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) A117.1 - 1998

BUILDING INFORMATION

OCCUPANCY: A-2.1
CONSTRUCTION TYPE: V-N, PARTIALLY SPRINKLERED (PORTION OF ROOM 110)
NUMBER OF STORIES: ONE (1)
FIRST FLOOR: 21,503 SQ. FT.
APPROXIMATE AREA OF ROOF: 23,000 SQ. FT.

KEY PLAN



HEALTH, SAFETY AND ENVIRONMENTAL

- 1. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH CAL-OSHA, FED-OSHA, CAL-EPA, FED-EPA, SANTA CLARA COUNTY, BAAQMD (BAY AREA AIR QUALITY MANAGEMENT DISTRICT), RWQCB (REGIONAL WATER QUALITY CONTROL BOARD), AND THE SWPPP (STORM WATER POLLUTION PREVENTION PLAN) REQUIREMENTS.
- 2. IN ADDITION, ALL WORK ON AMES RESEARCH CENTER PROPERTY SHALL COMPLY WITH PROVISIONS OF THE AMES HEALTH AND SAFETY MANUAL (APR 1700.1) CHAPTERS 30 AND 35, AND THE AMES ENVIRONMENTAL MANAGEMENT HANDBOOK (APR 8800.3). BOTH DOCUMENTS ARE AVAILABLE ON-LINE AT: HTTP://SERVER-MPO.ARC.NASA.GOV/SEVICES/PROC/PROCDPCS/APG1700.1-R/REDACTEDHEALTHMANUAL.HTM HTTP://SERVER-MPO.ARC.NASA.GOV/SEVICES/PROC/PROCDPCS/APG8800.3-R/REDACTEDENVIRONMENTALMANUAL.HTM
- 3. ADHERE TO NASA AMES ASBESTOS AND LEAD MANAGEMENT PLANS, AND FEDERAL, STATE AND LOCAL REQUIREMENTS FOR REMOVAL AND DISPOSAL OF MATERIALS CONTAINING ASBESTOS OR LEAD. SEE SPECIFICATIONS SECTIONS 02080 AND 02090. A. ALL ROOF PATCHING MATERIALS CONTAIN ASBESTOS. B. PERIMETER ROOFING SHEETS AT THE WEST ASPHALT AND GRAVEL ROOF CONTAIN ASBESTOS. C. SPRAY-ON FIREPROOFING AT THE METAL DECK CEILING AND EXPOSED STRUCTURAL MEMBERS AT THE BALLROOM (RM. 122) AND CORRIDOR C108 CONTAIN ASBESTOS. D. ASSUME DETECTABLE AMOUNTS OF LEAD IN ALL PAINTED SURFACES WITHIN THE AREA OF PROPOSED WORK. E. ASSUME SOME CONDUITS BEING REMOVED CONTAIN LEAD CABLING.
- 4. OSHA REQUIRES THAT FUMES FROM ALL INDOOR WELDING OR CUTTING BE EXHAUSTED TO THE OUTSIDE WITH LOCALIZED EXHAUST VENTILATION, AND LEAD PAINT MUST BE REMOVED AT LEAST 6" AROUND WELD. HOT WORK PERMIT MUST BE OBTAINED PRIOR TO WELD. ALL ROOF PATCHING MATERIALS CONTAIN ASBESTOS.
- 5. FOR PROTECTION OF NASA STAFF AND THE PUBLIC VISITING ADJACENT FACILITIES, ERECT REQUIRED PROTECTIVE BARRICADES, SHIELDS, AND WALLS TO PROVIDE SAFE ACCESS TO THE FACILITY. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SECURITY AND CONTROLLED ACCESS TO WORK SITE.
- 6. EXERCISE EXTREME CARE AND TAKE ALL SAFETY PRECAUTIONS WHILE WORKING. CONTRACTOR'S PROCEDURES FOR PROTECTING PERSONNEL SHALL BE ADDRESSED IN THEIR SUBMITTED AND APPROVED PROJECT SAFETY PLAN. PROCEDURES FOR DEMOLISHING, HANDLING, STORING AND DISPOSING OF HAZARDOUS MATERIALS SHALL BE ADDRESSED IN THEIR SUBMITTED AND APPROVED PROJECT SAFETY PLAN.
- 7. NASA IS THE GENERATOR OF ALL HAZARDOUS WASTE TO BE DISPOSED ON THIS PROJECT. WHERE FEASIBLE, MINIMIZE HAZARDOUS WASTE DEBRIS THROUGH RECLAMATION OR RECYCLING TECHNOLOGIES.
- 8. ELECTRICAL ELEMENTS MAY BE CONCEALED BEHIND CEILINGS OR WALLS. PRIOR TO CUTTING IN CONCEALED CONSTRUCTION, CONTRACTOR SHALL SCAN TO LOCATE ALL LIVE ELECTRICAL ELEMENTS.

SCOPE OF WORK

- 1. REMOVE EXISTING HVAC EQUIPMENT, DUCTWORK, PIPING AND SUPPORTS TO FACILITATE REROOFING.
- 2. REMOVE AND REPLACE EXISTING ROOFING SYSTEM, INCLUDING INSULATION AND SHEET METAL FLASHING, WITH SINGLE PLY MEMBRANE ROOFING SYSTEM AND SHEET METAL FLASHING AT FLAT ROOF AND ASPHALT SHINGLES AT SLOPED ROOF.
- 3. REPAIR OR REPLACE (E) ROOF DECKING AS NECESSARY.
- 4. INSTALL NEW DUCTWORK AND PIPING WITH SUPPORTS.
- 5. REINSTALL EXISTING EQUIPMENT OR REPLACE WITH NEW EQUIPMENT AS NOTED ON PLANS.
- 6. REMOVE AND REPLACE ELECTRICAL ITEMS ASSOCIATED WITH THIS WORK.

BASE BID/BID ADDITIVE 1

BASE BID INCLUDES ALL WORK EXCEPT AS NOTED BELOW FOR BID ADDITIVE 1. BID ADDITIVE 1 INCLUDES ALL REROOFING WORK, STRUCTURAL WORK, MECHANICAL WORK AND ELECTRICAL WORK AT PITCHED ROOF (ABOVE BALLROOM 122) WITH THE EXCEPTION OF AHU-3 OR AS NOTED OTHERWISE IN CONSTRUCTION DOCUMENTS. SEQUENCE OF CONSTRUCTION: BASE BID PHASE 1 AND BID ADDITIVE 1 (IF IT IS TO BE DONE) SHALL BE DONE FIRST AND BE COMPLETED BEFORE PHASE II SHALL BEGIN. PHASE IIA SHALL BE DONE NEXT AND SHALL BE COMPLETED BEFORE PHASE IIB SHALL BEGIN.

SCOPE OF WORK

- 1. REMOVE EXISTING HVAC EQUIPMENT, DUCTWORK, PIPING AND SUPPORTS TO FACILITATE REROOFING.
- 2. REMOVE AND REPLACE EXISTING ROOFING SYSTEM, INCLUDING INSULATION AND SHEET METAL FLASHING, WITH SINGLE PLY MEMBRANE ROOFING SYSTEM AND SHEET METAL FLASHING AT FLAT ROOF AND ASPHALT SHINGLES AT SLOPED ROOF.
- 3. REPAIR OR REPLACE (E) ROOF DECKING AS NECESSARY.
- 4. INSTALL NEW DUCTWORK AND PIPING WITH SUPPORTS.
- 5. REINSTALL EXISTING EQUIPMENT OR REPLACE WITH NEW EQUIPMENT AS NOTED ON PLANS.
- 6. REMOVE AND REPLACE ELECTRICAL ITEMS ASSOCIATED WITH THIS WORK.

Table with drawing information including zone, letter, description, drawn, date, and approved fields, along with a title sheet section.

Approved for Construction
Moffett Field Permit Board
Permit No. 06P033

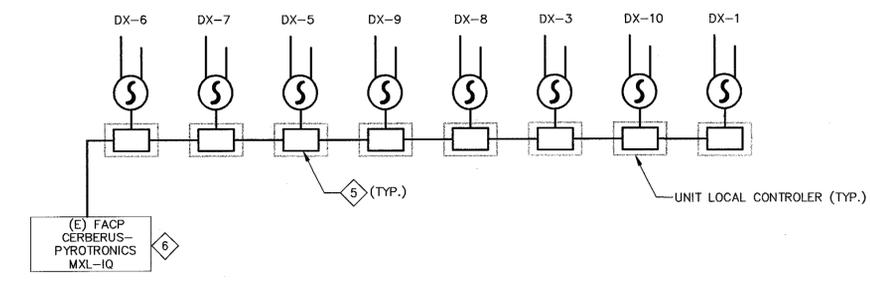
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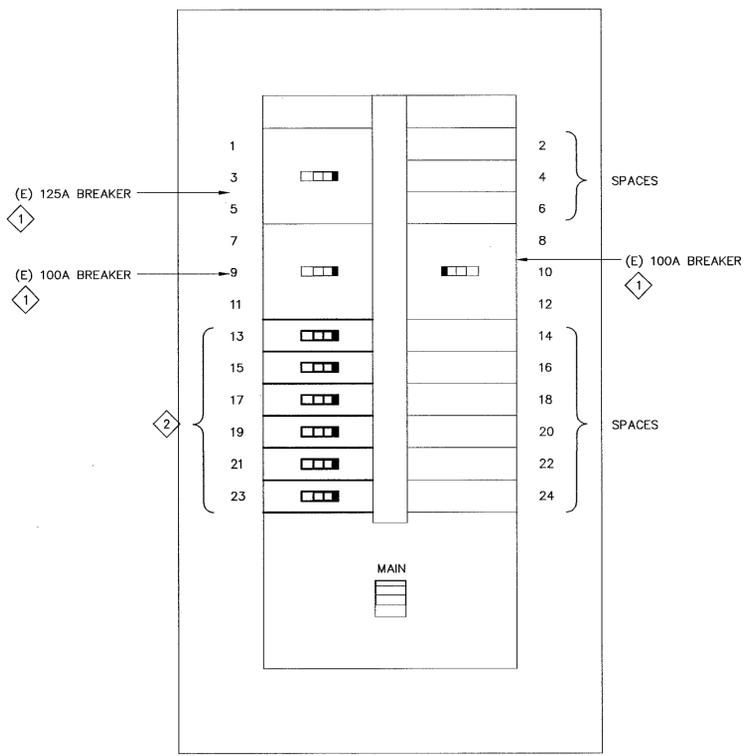
SHEET NOTES

KEY NOTES:

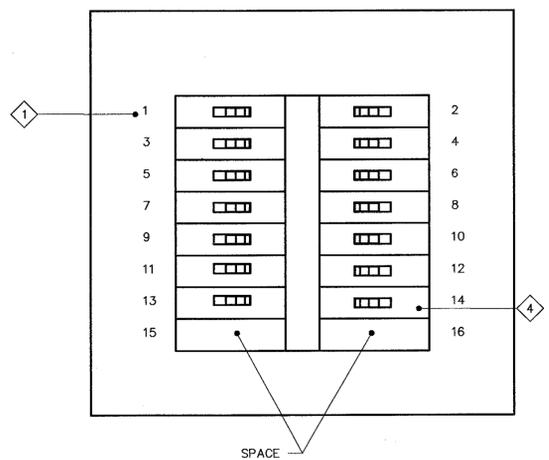
- 1 3-POLE CIRCUIT BREAKER, TYP. FOR 13.
- 2 PROVIDE AND INSTALL NEW 1-POLE BREAKERS AS SHOWN. SEE PANEL SCHEDULE ON DRAWING EB FOR BREAKER RATING.
- 3 REPLACE (E) 400A BREAKER WITH (N) 800A BREAKER.
- 4 1-POLE CIRCUIT BREAKER.
- 5 PROVIDE AND INSTALL ZONE ADDRESSABLE INTERFACE MODULE INSIDE UNIT LOCAL CONTROLLER FOR UNIT SMOKE DETECTOR. PROVIDE ALL NECESSARY WIRING AND INTERCONNECTIONS.
- 6 CONNECT EACH DX UNIT SMOKE DETECTORS TO (E) FACP VIA 1" C W/#16 TWISTED PAIR SHIELDED TYPE FPLR POWER LIMITED FIRE ALARM CABLE, APPROVED BY CALIFORNIA STATE FIRE MARSHAL, SIMILAR TO BELDEN CATALOG 9575 AS SHOWN ON THIS DRAWING. SEE DRAWING E5 FOR DX LOCATIONS. SEE DRAWING M7 FOR CONTROL DIAGRAMS. CONTRACTOR SHALL PROVIDE AND INSTALL ALL NECESSARY MODULES INSIDE FIRE ALARM CONTROL PANEL FOR CONNECTION OF NEW UNIT SMOKE DETECTORS. (E) FIRE ALARM CONTROL PANEL SHALL BE REPROGRAMMED TO INCLUDE NEW DEVICES. COMPLETE FIRE ALARM SYSTEM SHALL BE TESTED PER PROJECT SPECIFICATION.



1 PARTIAL FIRE ALARM RISER DIAGRAM - NEW WORK
NTS



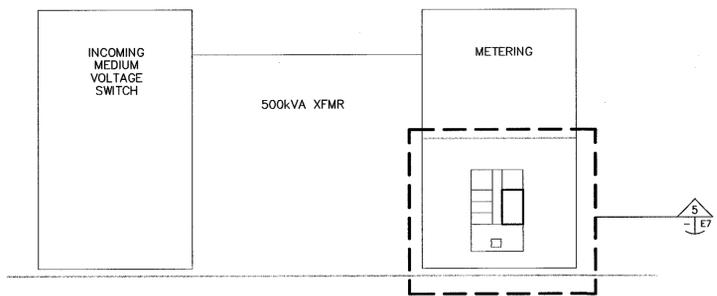
4 (E) PANEL MS1 ELEVATION
ES E7 NTS



2 (N) PANEL PP2 ELEVATION
NTS



5 MAIN BUILDING SWITCHBOARD
ES E7 NTS



3 MAIN SUBSTATION - ELEVATION
ES E7 NTS

Approved for Construction
Moffett Field Permit Board
Peter Blum
Chief Building Official
Permit No. 06P033

ZONE	LETTER	DESCRIPTION	DRAWN	DATE	APPRVD
REVISIONS					
DRAWN: J.SVALENZ <i>J.SVALENZ</i> DATE: 5/18/07 DESIGNED: <i>C. THOMPSON</i> DATE: 5/19/07 CHECKED: <i>D. KING</i> DATE: 5/19/07 PROJECT MGR: <i>M. CALLAHAN</i> DATE: 5/19/07 REQUESTER: <i>P. LEE</i> DATE: 5/11/07 R/O/A: <i>P. LEE</i> DATE: 5/11/07					
Ames Research Center Moffett Field, California		M003 CONFERENCE CENTER HVAC & REROOFING ELECTRICAL			
DETAILS					
SAFETY: _____ DATE: _____ SUPERVISOR: <i>P. CHAN</i> DATE: 5/11/07		SIZE: D CAGE CODE: 25307	M2003-0600-E7 SCALE: AS SHOWN INDEX SHEET OF _____		
FILE NAME: 03-E07 DATE: 5-10-2007					

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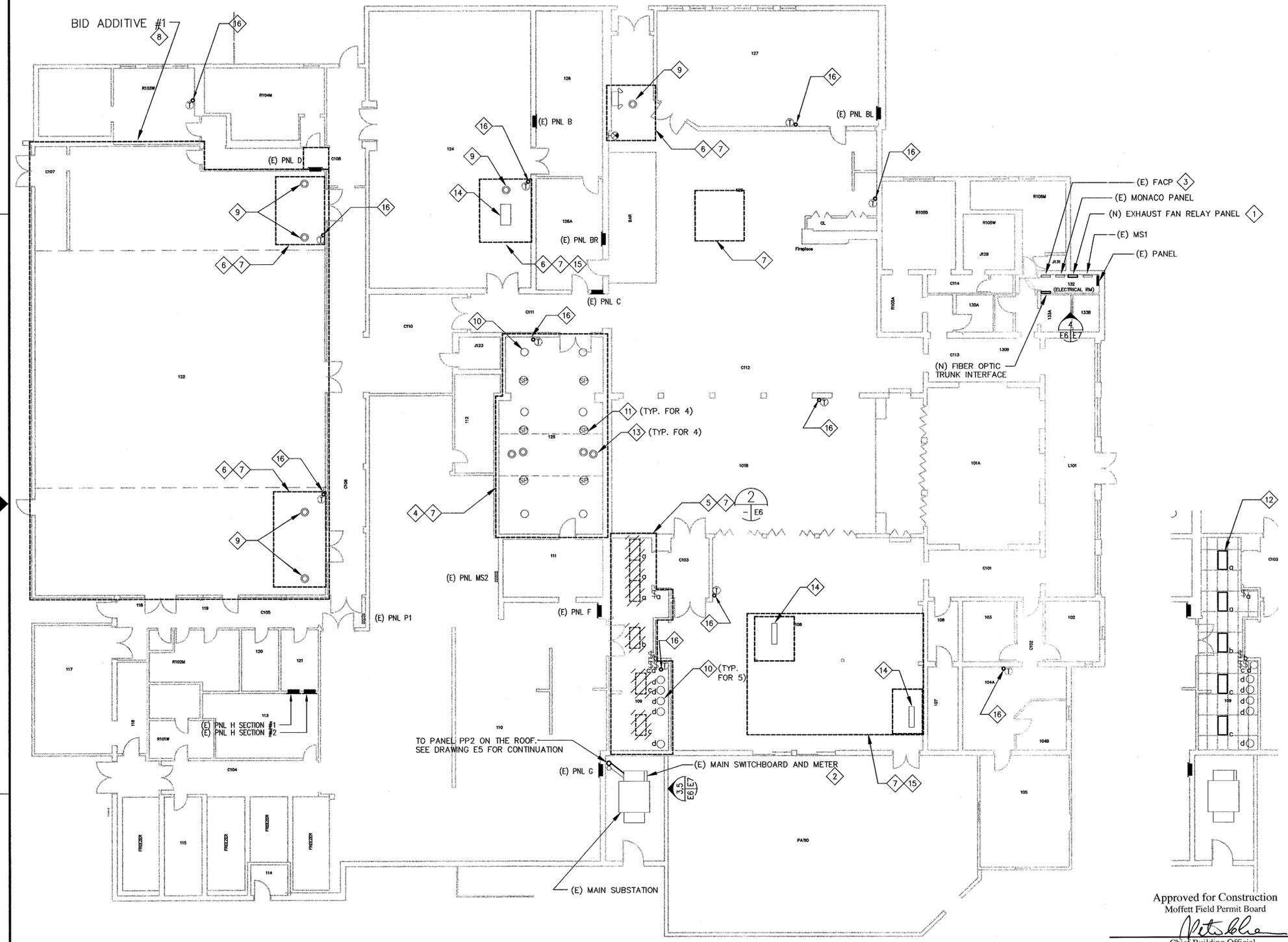
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SHEET NOTES

- SEE DRAWING E1 FOR GENERAL ELECTRICAL NOTES, SYMBOLS AND ABBREVIATIONS.
- PRIOR TO COMMENCING ELECTRICAL WORK, COORDINATE WITH ALL OTHER TRADES TO AVOID ANY CONFLICT OR INTERFERENCE WITH ELECTRICAL ITEMS THAT MAY BE AFFECTED BY ELECTRICAL DEMOLITION WORK.
- PRIOR TO DISCONNECTION OF ANY CIRCUIT, CONTRACTOR SHALL FIELD VERIFY, TRACE, IDENTIFY, AND CONFIRM ACTUAL CIRCUITING AND LOAD CONDITIONS OF EACH CIRCUIT TO BE USED IN NEW WORK.
- CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER TO SCHEDULE ANY POWER INTERRUPTION OR OUTAGE THAT MAY RESULT FROM PARTIAL CIRCUIT DEMOLITION.
- EXISTING FIRE ALARM SYSTEM SHALL BE KEPT OPERATIONAL. ANY REQUIRED DISRUPTION TO THE EXISTING SYSTEM SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.
- THE CONTRACTOR SHALL RESTORE, REPAIR AND PAINT ALL AREAS WHERE EQUIPMENT OR DEVICES ARE REMOVED TO MATCH SURROUNDING SURFACES. REPLACE CEILING TILES WHERE DEVICES ARE REMOVED OR PATCH TO MATCH EXISTING.
- THE CONTRACTOR SHALL TAKE EXTREME CARE AND NECESSARY PRECAUTIONS WHILE WORKING ON THE AREAS WHICH CONTAIN ASBESTOS MATERIALS AND ON OTHER INTERIOR SURFACES OF BUILDING WALLS AND STRUCTURE WHICH MAY CONTAIN LEAD BASED PAINTS. ANY PENETRATION OR DISTURBANCE TO THESE WALLS AND SURFACES WILL REQUIRE ABATEMENT PER PROJECT SPECIFICATIONS.
- THE CONTRACTOR, PRIOR TO BIDDING, SHALL VISIT THE JOB SITE TO BECOME ACQUAINTED WITH THE EXISTING INSTALLATION AND SYSTEMS RELATED TO HIS WORK AND SHALL INCLUDE IN HIS BID PRICE ALL LABOR AND MATERIALS REQUIRED FOR THE ELECTRICAL INSTALLATION TO BE COMPLETE AND OPERATIONAL.

KEY NOTES:

- PROVIDE AND INSTALL (N) PANEL WITH (N) 115 VAC, 1 POLE, SIZE 00 FVNR CONTACTORS, ADJACENT TO (E) PANEL MS1 IN ROOM 132. THERE SHALL BE ONE CONTACTOR FOR EACH 115V EXHAUST FAN. RUN CIRCUIT CONDUCTORS FROM EACH FAN TO ITS RESPECTIVE CONTACTOR, AND FROM CONTACTOR TO ASSOCIATED CIRCUIT BREAKER IN PANEL MS1.
- PROVIDE AND INSTALL 3#500kcmil & 1#1/0 GND FROM (N) PANEL PP2 TO (E) MAIN SUBSTATION SWITCHBOARD IN (E) 3" CONDUIT, AND PROVIDE NEW 3" C WITH 3#500kcmil & 1#1/0 GND PARALLEL TO (E) 3" C. SEE DRAWING E5 FOR LOCATION OF PANEL PP2 ON THE ROOF AND DRAWING E7 FOR MAIN BUILDING SWITCHBOARD ELEVATION.
- (E) FIRE ALARM CONTROL PANEL IS CERBERUS-PYROTRONICS 'MXL-1Q'. CONNECT EACH DX UNIT SMOKE DETECTORS TO (E) FACP VIA 1" C W/ #16 TWISTED PAIR SHIELDED TYPE FPLR POWER LIMITED FIRE ALARM CABLE, APPROVED BY CALIFORNIA STATE FIRE MARSHAL, SIMILAR TO BELDEN CATALOG 9576 AS SHOWN ON DRAWING E7. PROVIDE ZONE ADDRESSABLE INTERFACE MODULES, INSTALL MODULES INSIDE UNIT LOCAL CONTROLLER. SEE DRAWING E5 FOR DX LOCATIONS. SEE DRAWING M7 FOR CONTROL DIAGRAMS. CONTRACTOR SHALL PROVIDE AND INSTALL ALL NECESSARY MODULES INSIDE FIRE ALARM CONTROL PANEL FOR CONNECTION OF NEW UNIT SMOKE DETECTORS. (E) FIRE ALARM CONTROL PANEL SHALL BE REPROGRAMMED TO INCLUDE NEW DEVICES. COMPLETE FIRE ALARM SYSTEM SHALL BE TESTED PER SPECIFICATION.
- DISCONNECT AND REMOVE (E) PENDANT MOUNTED LIGHTING FIXTURE (10) AND SPEAKERS FROM (11) CONSTRUCTION AREA, PROTECT FROM DAMAGE. REMOVE WIRING UP TO THE NEAREST (E) RESPECTIVE JUNCTION BOX, THAT CONTAINS THE REQUIRED WIRING FOR RECONNECTION TAG, TAPE AND COIL WIRES IN JUNCTION BOX FOR REUSE IN THE NEW CONSTRUCTION. REINSTALL (E) LIGHTING FIXTURE AND SPEAKERS ON TO THE NEW CEILING.
- DISCONNECT AND REMOVE (E) LIGHTING FIXTURES. REMOVE WIRING UP TO THE NEAREST JUNCTION BOX THAT CONTAINS THE REQUIRED WIRING FOR RECONNECTION (HOT, SWITCH LEG AND GROUND), TAG, TAPE AND COIL WIRES IN JUNCTION BOX FOR REUSE IN THE NEW CONSTRUCTION.
- DISCONNECT AND REMOVE (E) RECESS MOUNTED LIGHTING FIXTURE FROM CONSTRUCTION AREA. REMOVE WIRING UP TO THE NEAREST (E) JUNCTION BOX THAT CONTAINS THE REQUIRED WIRING FOR RECONNECTION, TAG, TAPE AND COIL WIRES IN JUNCTION BOX FOR REUSE IN THE NEW CONSTRUCTION. REINSTALL (E) LIGHTING FIXTURE ON TO THE NEW CEILING.
- THE CONTRACTOR SHALL EXERCISE EXTREME CARE AND NECESSARY PRECAUTIONS WHILE WORKING IN THIS AREA. LIVE ELECTRICAL ITEMS MAY BE HIDDEN BEHIND THE CEILING OR WALLS. CONTRACTOR SHALL HAVE THESE AREAS SCANNED PRIOR TO ANY CUTTING. THE CONTRACTOR SHALL CHECK STRUCTURAL DRAWINGS FOR WORK IN THIS AREA AND INCLUDE IN HIS BID ANY ELECTRICAL WORK THAT MAY BE REQUIRED TO ACCOMMODATE THE STRUCTURAL WORK.
- BID ADDITIVE #1: DISCONNECT AND REMOVE (E) RECESS MOUNTED LIGHTING FIXTURES FROM CONSTRUCTION AREA, PROTECT FROM DAMAGE. REMOVE WIRING UP TO THE NEAREST (E) JUNCTION BOX, TAG, TAPE AND COIL WIRES IN JUNCTION BOX FOR RECONNECTION IN NEW CONSTRUCTION. REINSTALL (E) LIGHTING FIXTURES ON TO THE NEW CEILING.
- (E) RECESS MOUNTED LIGHTING FIXTURE TO BE REMOVED AND REINSTALLED ON TO THE NEW CEILING.
- (E) PENDANT MOUNTED LIGHTING FIXTURE TO BE REMOVED AND REINSTALLED ON TO THE NEW CEILING.
- (E) SPEAKER TO BE REMOVED AND REINSTALLED ON TO THE NEW CEILING.
- PROVIDE AND INSTALL 2'x4' RECESS MOUNTED LIGHTING FIXTURE WITH #12 PATTERN ACRYLIC DIFFUSER, FLUSH STEEL WHITE FRAME, (4) 32W T8 LAMP, ELECTRONIC BALLAST, MVOLTS. LITHONIA LIGHTING 2SP8 G 4 32 A12 MVOLT 1/4 GE81015 OR EQUAL. EXTEND CONDUIT AND WIRING AS NECESSARY AND CONNECT LIGHTING FIXTURES TO (E) CIRCUIT ACCORDING TO NEW LIGHTING LAYOUT SHOWN ON DETAIL #2 THIS DRAWING.
- (E) RECESS MOUNTED LIGHTING FIXTURE TO REMAIN.
- (E) CEILING MOUNTED LIGHTING FIXTURE TO BE REMOVED AND REINSTALLED ON TO THE NEW CEILING.
- DISCONNECT AND REMOVE (E) CEILING MOUNTED LIGHTING FIXTURE FROM CONSTRUCTION AREA. REMOVE WIRING UP TO THE NEAREST (E) JUNCTION BOX THAT CONTAINS THE REQUIRED WIRING FOR RECONNECTION, TAG, TAPE AND COIL WIRES IN JUNCTION BOX FOR REUSE IN THE NEW CONSTRUCTION. REINSTALL (E) LIGHTING FIXTURE ON TO THE NEW CEILING.
- PROVIDE AND INSTALL 3/4" DEDICATED CONDUIT WITH 3 PAIR OF #18 AWG TPS CABLE FROM ROOM TEMPERATURE SENSOR TO DX (AHU-3) ON THE ROOF. SEE DRAWING E5 FOR DX, AHU-3 LOCATION AND CONDUIT ROUTING ON THE ROOF.



1 FIRST FLOOR PLAN-EXISTING/DEMOLITION
SCALE 3/32"=1'-0"

Approved for Construction
Moffett Field Permit Board
[Signature]
Chief Building Official
Permit No. 06P033

2 PARTIAL FIRST FLOOR PLAN NEW WORK
SCALE 3/32"=1'-0"

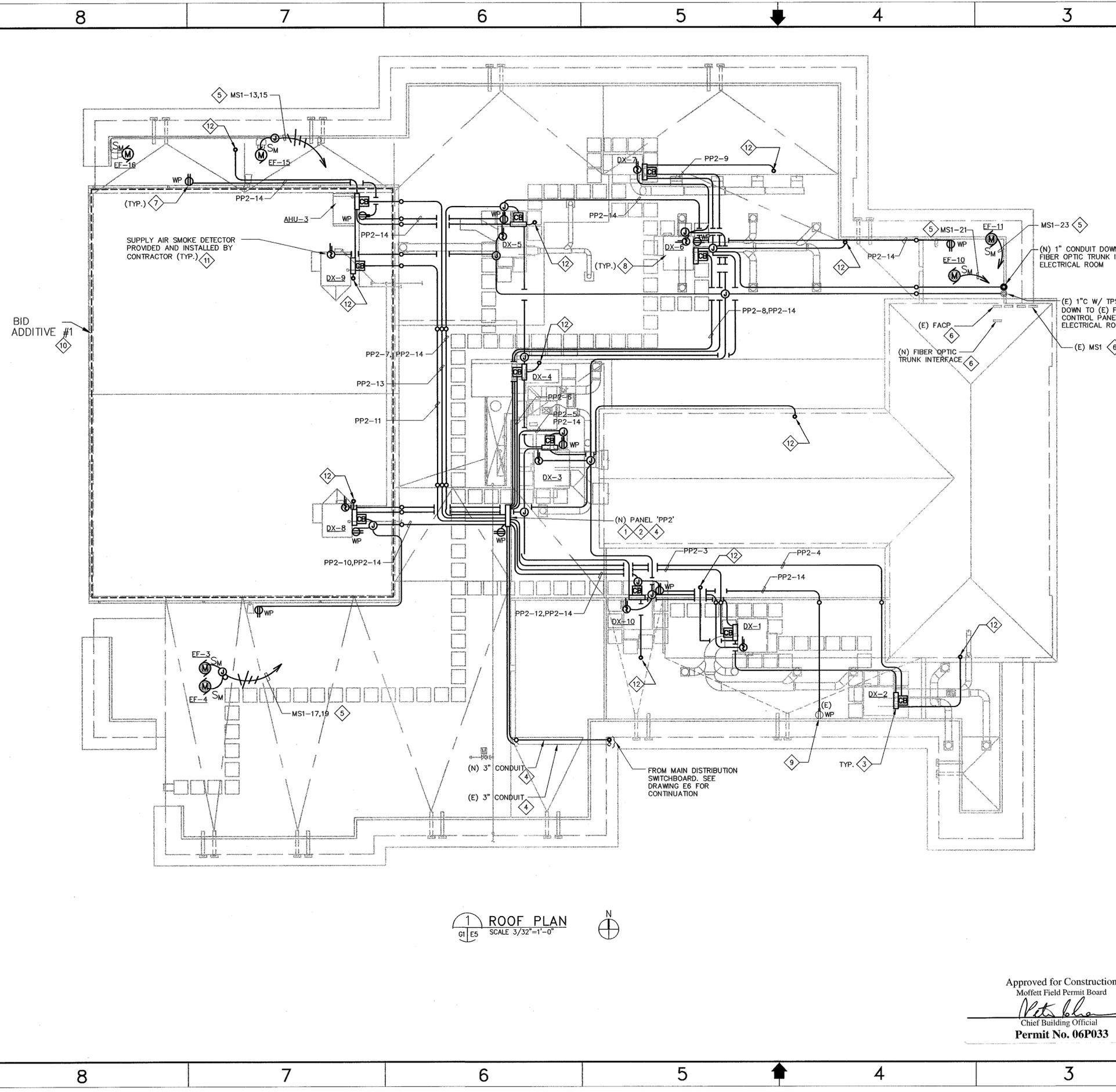
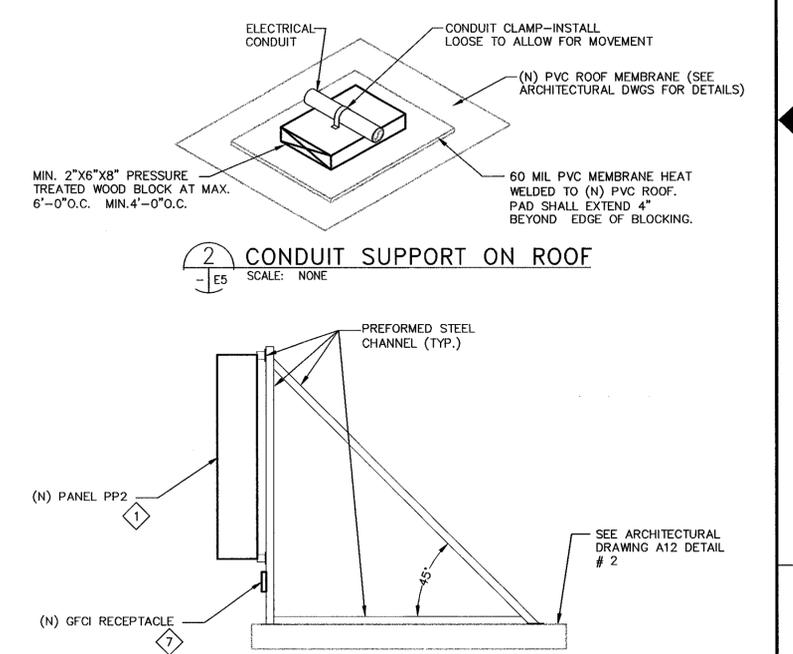
ZONE	LETTER	DESCRIPTION	DRAWN	DATE	APPRVD
REVISIONS					
DRAWN: C. VALENCIA DATE: 5/10/07					
DESIGNED: C. THOMPSON/N. NIZAMUSO DATE: 5/10/07					
CHECKED: D. KING DATE: 5/10/07					
PROGRAMMER: M. CALLAHAN DATE: 5/10/07					
REQUESTER: P. LEE DATE: 5/10/07					
R/OA: DATE: 5/10/07					
SAFETY: DATE: 5/10/07					
SUPERVISOR: P. CHAN DATE: 5/10/07					
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SHEET NOTES:

1. ALL EXTERIOR SURFACE MOUNTED CONDUITS ON THE ROOF SHALL BE RIGID STEEL.
- KEY NOTES:**
- 1 PROVIDE AND INSTALL (N) PANEL PP2 ON ROOF. PANEL SHALL BE SQUARE D MODEL NF OR EQUAL IN NEMA 3R ENCLOSURE, WITH LATCHING DOOR. SEE SINGLE LINE DIAGRAM ON DRAWING E3 FOR NUMBER AND RATING OF CIRCUITS. MOUNT PANEL ON UNISTRUT BRACING SIZED AND DESIGNED FOR SEISMIC ZONE 4 AND WIND SPEED APPROPRIATE TO SITE LOCATION. SEE ARCHITECTURAL DRAWING A12 FOR TYPICAL EQUIPMENT SUPPORT DETAIL AND DETAIL #3 ON THIS DRAWING.
 - 2 SEE SINGLE LINE DIAGRAM ON SHEET E3 FOR NUMBER AND SIZE OF CONDUIT AND CONDUCTORS OF EACH FEEDER.
 - 3 CONTROL PANEL PROVIDED WITH HVAC EQUIPMENT. SEE SHEET M7.
 - 4 EXTEND (E) CONDUIT, REMOVED BACK TO 6" ABOVE THE ROOF IN DEMOLITION WORK TO THE NEW PANEL PP2 LOCATION. PROVIDE AND INSTALL 3#500kcmil & 1#1/0 GND IN EXISTING 3" CONDUIT FROM (N) PANEL PP2 TO (E) MAIN SUBSTATION SWITCHBOARD. PROVIDE (N) 3" CONDUIT, 3#500kcmil & 1#1/0 GND PARALLEL TO EXISTING 3" CONDUIT. SEE SHEET E7 FOR ELEVATION OF MAIN SUBSTATION SWITCHBOARD.
 - 5 INTERCEPT EXISTING CONDUIT FOR EACH RESPECTIVE EXHAUST FAN, AND RE-ROUTE CONDUIT TO PANEL MS1. SEE DETAIL #3 ON DRAWING A10 AND DETAIL #3 ON DRAWING M6 FOR ROOF PENETRATION DETAILS.
 - 6 LOCATED ON THE FIRST FLOOR. SHOWN FOR COORDINATION ONLY. SEE FIRST FLOOR PLAN ON DRAWING E6.
 - 7 PROVIDE AND INSTALL GFCI DUPLEX RECEPTACLE, 20A, 125V, NEMA 5-20R, WEATHERPROOF, MOUNTED AT 18" AFF. PROVIDE ADEQUATE MOUNTING SUPPORT AS REQUIRED.
 - 8 CONTRACTOR SHALL INTERCEPT CONDUITS FROM THERMOSTATS LOCATED ON THE FIRST FLOOR TO THE RESPECTIVE ROOF TOP UNITS SAVED DURING DEMOLITION WORK AND EXTEND THEM AS NECESSARY TO PROVIDE CIRCUIT CONTINUATION. SEE DRAWING M7 FOR CONTROL DIAGRAMS.
 - 9 (E) GFCI RECEPTACLE. PROVIDE (N) CONDUIT W/ WIRING FROM PANEL 'PP2'. SEE DRAWING E3 FOR SINGLE LINE DIAGRAM.
 - 10 BID ADDITIVE #1: ELECTRICAL WORK INSIDE THIS AREA.
 - 11 PROVIDE AND INSTALL ZONE ADDRESSABLE INTERFACE MODULE IN UNIT LOCAL CONTROLLER FOR UNIT SMOKE DETECTOR. PROVIDE ALL NECESSARY WIRING AND INTERCONNECTIONS. SEE DRAWING E7 FOR PARTIAL FIRE ALARM RISER DIAGRAM.
 - 12 PROVIDE AND INSTALL 3/4" DEDICATED CONDUIT WITH 3 PAIR OF #18 AWG TPS CABLE FROM DX (AHU-3) TO ROOM TEMPERATURE SENSOR. SEE DRAWING E6 FOR TEMPERATURE SENSORS LOCATION.



1 ROOF PLAN
SCALE 3/32"=1'-0"

3 ELECTRICAL PANEL SUPPORT DETAIL-SIDE VIEW
SCALE: NONE

ZONE	LETTER	DESCRIPTION	DRAWN	DATE	APPRVD
REVISIONS					
DRAWN: <i>[Signature]</i> DATE: 5/17/07 DESIGNED: <i>[Signature]</i> DATE: 5/17/07 CHECKED: <i>[Signature]</i> DATE: 5/17/07 D.KING DATE: 5/17/07 PROJGR: <i>[Signature]</i> DATE: 5/17/07 REQUESTER: <i>[Signature]</i> DATE: 5/17/07 P.LEE DATE: 5/17/07 R&QA: <i>[Signature]</i> DATE: 5/17/07					
Ames Research Center Moffett Field, California M003 CONFERENCE CENTER HVAC & REROOFING ELECTRICAL ELECTRICAL NEW WORK PLAN - ROOF					
SAFETY DATE: _____ SUPERVISOR: <i>[Signature]</i> DATE: 5/17/07 P.CHAN DATE: 5/17/07		SIZE: D CAGE CODE: 25307 SCALE: AS SHOWN INDEX: _____ SHEET: _____ OF: _____ FILE NAME: 03-E05 5-10-2007			

Approved for Construction
Moffett Field Permit Board
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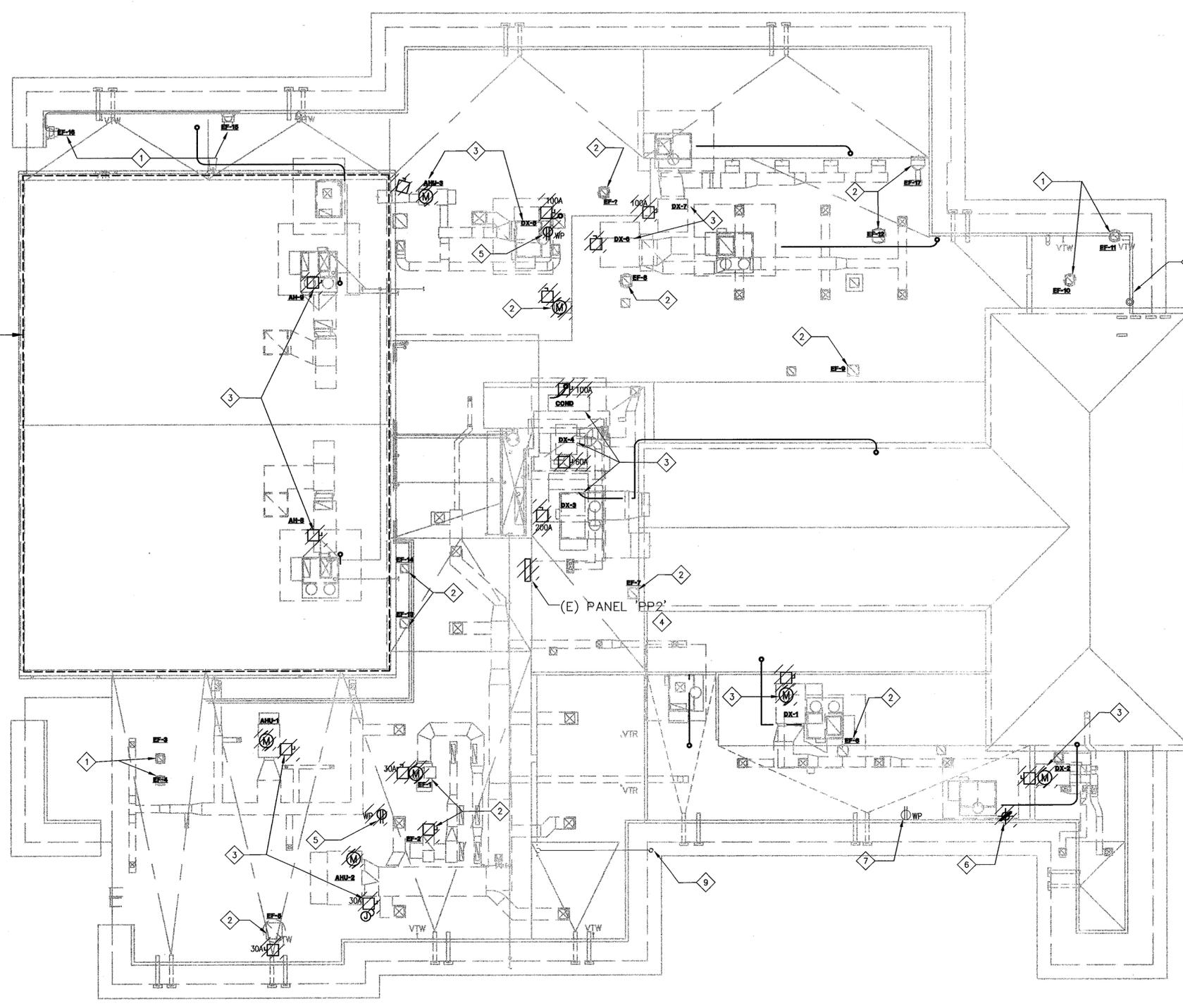
GENERAL NOTES

- 1. SEE DRAWING E-2 FOR CONDUIT AND FEEDER SIZES.
- 2. ALL EQUIPMENT IS EXISTING UNLESS OTHERWISE NOTED.

KEY NOTES:

- 1 EXISTING EXHAUST FAN TO BE REPLACED. LOCATE EXISTING POWER SOURCE, REMOVE EXISTING CONDUCTORS BACK TO RESPECTIVE POWER PANEL, REMOVE ASSOCIATED ELECTRICAL DEVICES AND REMOVE CONDUIT ON THE ROOF BACK TO 6" ABOVE ROOF.
- 2 EXISTING EXHAUST FAN TO BE REMOVED. LOCATE EXISTING POWER SOURCE, REMOVE EXISTING CONDUCTORS BACK TO RESPECTIVE POWER PANEL, REMOVE ASSOCIATED ELECTRICAL DEVICES, REMOVE CONDUIT ON ROOF AND COORDINATE WITH ROOFER TO ACCOMMODATE THE RE-ROOFING WORK.
- 3 DISCONNECT CONDUIT AND WIRES FROM (E) A/C UNITS, DISCONNECT ASSOCIATED CONTROL AND DUCT SMOKE DETECTOR WIRING, REMOVE POWER CONDUCTORS BACK TO RESPECTIVE PANEL, REMOVE ASSOCIATED ELECTRICAL DEVICES, REMOVE (E) CONTROL AND FACP WIRING BACK TO THERMOSTATS AND FIRE ALARM CONTROL PANEL, REMOVE FIRE ALARM CONDUITS BACK TO ROOF PENETRATIONS, REMOVE CONTROL CONDUITS BACK TO 6" ABOVE ROOF AND INSTALL WEATHERPROOF CAP ON CONDUIT, REMOVE CONDUITS ON ROOF AND COORDINATE WITH ROOFER TO ACCOMMODATE THE RE-ROOFING WORK.
- 4 DISCONNECT CONDUIT AND CONDUCTORS FROM (E) PANEL PP2, REMOVE ALL CONDUIT AND WIRES FROM PP2 TO (E) A/C UNITS, REMOVE FEEDER CONDUCTORS FROM PP2 TO (E) UPSTREAM SWITCHBOARD, REMOVE CONDUIT BACK TO 6" ABOVE ROOF AND INSTALL WEATHERPROOF CAP ON CONDUIT, REMOVE PANEL PP2.
- 5 EXISTING GFCI RECEPTACLE TO BE REMOVED, LOCATE EXISTING POWER SOURCE, REMOVE EXISTING CONDUCTORS BACK TO RESPECTIVE POWER PANEL, REMOVE CONDUIT ON ROOF AND COORDINATE WITH ROOFER TO ACCOMMODATE THE RE-ROOFING WORK.
- 6 EXISTING ANTENNA AND ANTENNA CABLE WILL BE REMOVED AND REINSTALLED.
- 7 EXISTING GFCI RECEPTACLES ON THE WALL TO REMAIN, LOCATE EXISTING POWER SOURCE, REMOVE EXISTING CONDUCTORS BACK TO THE RESPECTIVE POWER PANEL, REMOVE ASSOCIATED CONDUIT.
- 8 EXISTING FIRE ALARM CONDUIT ROOF PENETRATION.
- 9 (E) POWER CONDUIT DOWN TO (E) MAIN SWITCHBOARD.
- 10 BID ADDITIVE #1: DEMOLITION WORK SHOWN IN DESIGNATED AREA, DEMOLITION OF CONDUITS AND WIRES OUTSIDE THIS AREA WHICH ARE CURRENTLY CONNECTED TO DX-8 AND DX-9.

BID ADDITIVE #1



1 ELECTRICAL ROOF PLAN - DEMOLITION SCALE 3/32"=1'-0"

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ZONE	LETTER	DESCRIPTION	DRAWN	DATE	APPRVD
REVISIONS					
DRAWN <i>[Signature]</i> 5/11/07 DESIGNED <i>[Signature]</i> 5/11/07 CHECKED <i>[Signature]</i> 5/11/07 D.KING <i>[Signature]</i> 5/11/07 PROGRAMMER <i>[Signature]</i> 5/11/07 REQUESTER <i>[Signature]</i> 5/11/07 P.LEE <i>[Signature]</i> 5/11/07 R&QA <i>[Signature]</i> 5/11/07 SAFETY <i>[Signature]</i> 5/11/07 SUPERVISOR <i>[Signature]</i> 5/11/07					
 Ames Research Center Moffett Field, California		M003 CONFERENCE CENTER HVAC & REROOFING ELECTRICAL ELECTRICAL ROOF PLAN - DEMOLITION			
SIZE	D	CAGE CODE	25307	SCALE	AS SHOWN
INDEX		FILE NAME	M2003-0600-E4	SHEET	OF
			03-E04		5-10-2007

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SHEET NOTES

1. ALL CIRCUIT BREAKERS ARE 3-POLE, UNLESS OTHERWISE NOTED.
2. ALL EXTERIOR SURFACE MOUNTED CONDUITS ON THE ROOF SHALL BE RIGID STEEL.

KEY NOTES:

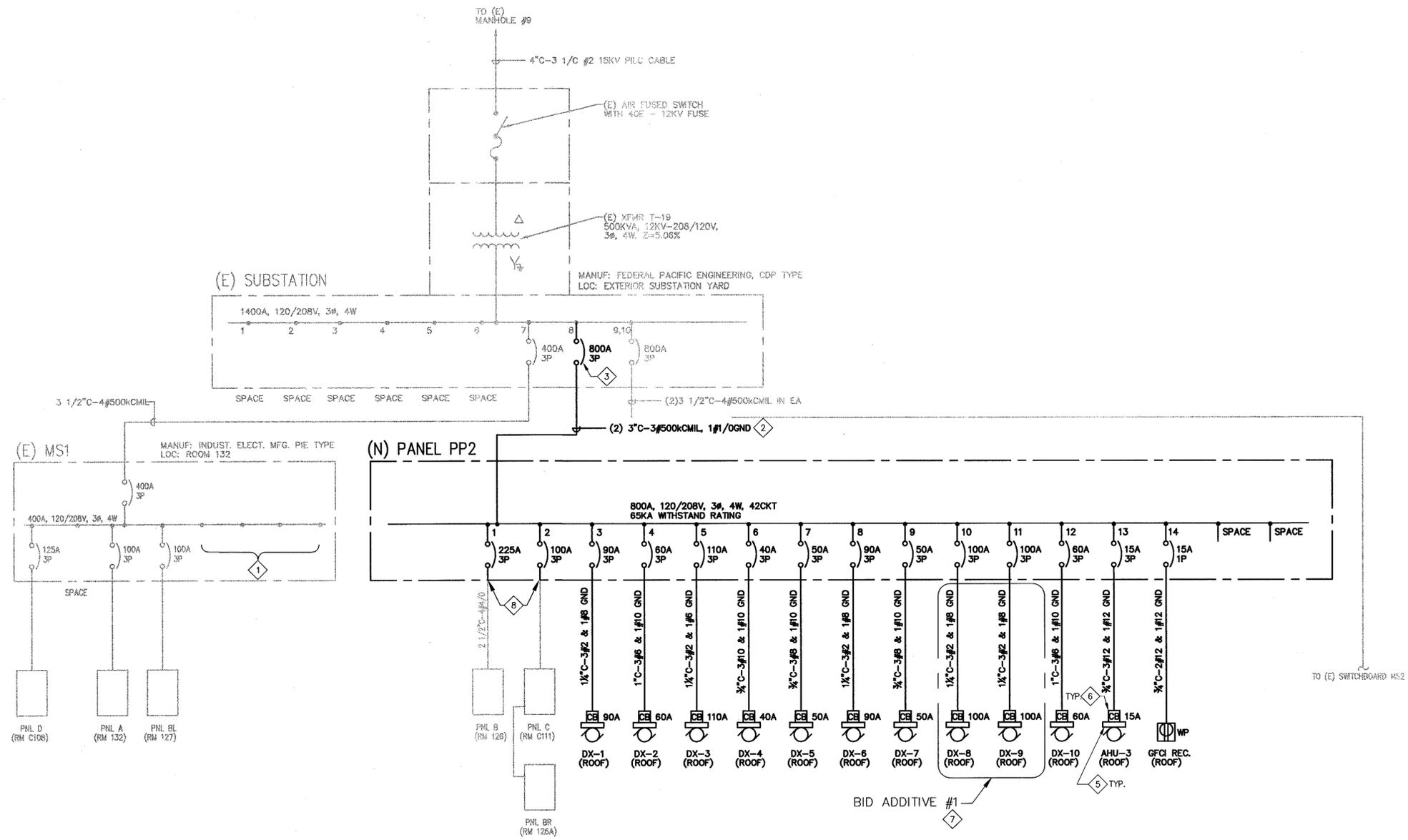
- 1 ADD (N) PROTECTIVE DEVICES FOR (N) EXHAUST FAN CIRCUITS AS PER PANEL SCHEDULE ON SHEET E8.
- 2 SEE NOTE #4 ON SHEET E5.
- 3 INSTALL (N) 800A, 3P, 208V BREAKER IN (E) SUBSTATION SWITCHBOARD. SEE DRAWING E7 FOR DETAILS.
- 4 ADDITION OF (N) AHU/DX UNIT LOADS TO (E) SUBSTATION IS BASED ON THE ASSUMPTION THAT THE KITCHEN LOADS CONNECTED TO (E) MS2 WILL NO LONGER BE USED.
- 5 UNIT LOCAL CONTROLLER PROVIDED WITH HVAC EQUIPMENT. SEE SHEET M7.
- 6 PROVIDE 24VAC SHUNT TRIP FOR EACH CIRCUIT BREAKER SERVING AS LOCAL DISCONNECT OF HVAC EQUIPMENT.
- 7 BID ADDITIVE #1: ELECTRICAL CONNECTION OF NEW DX-8 & DX-9 UNITS.
- 8 RECONNECT (E) FEEDER TO NEW PANEL PP2.

(E) LOAD TO BE REMOVED FROM (E) SUBSTATION:

208V, 3 ϕ LOADS :	491.3 AMPS
120V, 1 ϕ LOADS :	76.7 AMPS
(E) LOAD IN KVA :	186.2

NEW LOAD TO BE ADDED TO (E) SUBSTATION:

208V, 3 ϕ LOADS :	586 AMPS
120V, 1 ϕ LOADS :	16 AMPS
NEW LOAD IN KVA :	213.4



1 SINGLE LINE DIAGRAM
-E3 NTS

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Not Blue
Chief Building Official
Permit No. 06P033

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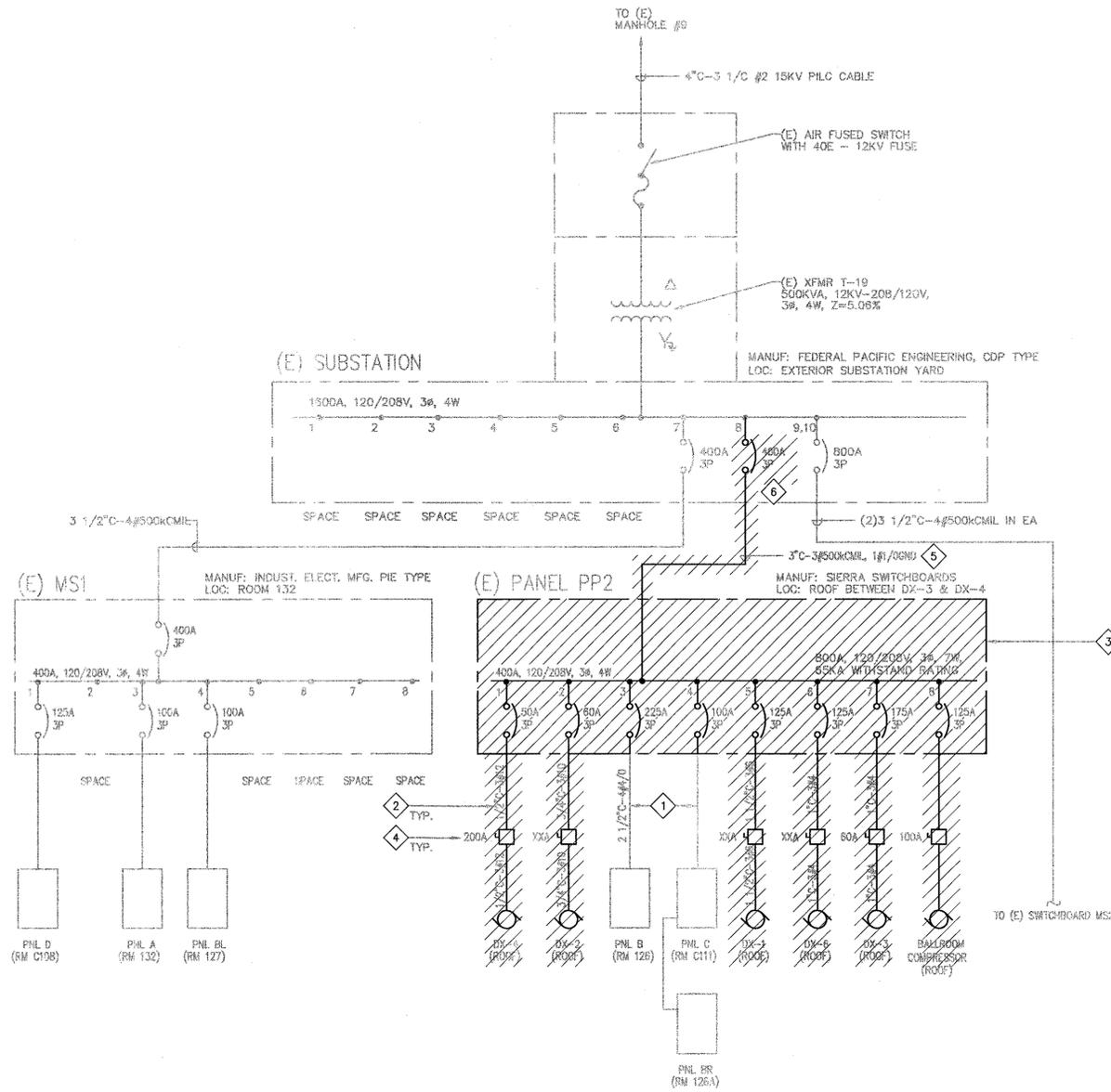
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SHEET NOTES

- 1. ALL CIRCUIT BREAKERS ARE 3-POLE UNLESS OTHERWISE NOTED.
- 2. -

KEY NOTES:

- 1 DISCONNECT (E) CONDUIT AND CIRCUIT CONDUCTORS FROM (E) POWER PANEL 2. TAPE ENDS OF CONDUCTORS AND SEAL CONDUITS. CONDUITS AND CONDUCTORS TO BE RECONNECTED TO (N) PANEL PP2.
- 2 DISCONNECT (E) CONDUIT AND CIRCUIT CONDUCTORS FROM (E) POWER PANEL 2. REMOVE CONDUIT AND CONDUCTORS.
- 3 (E) POWER PANEL 2 TO BE REMOVED.
- 4 (E) DISCONNECT SWITCH TO BE REMOVED, TYPICAL.
- 5 SEE NOTE 4 ON SHEET E4.
- 6 DISCONNECT AND REMOVE (E) 400A, 3P CIRCUIT BREAKER.



1 DEMOLITION SINGLE LINE DIAGRAM

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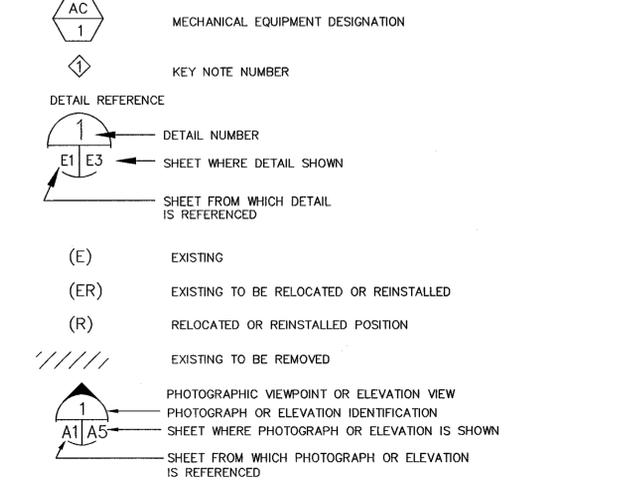
ELECTRICAL NOTES

- 1. THE COMPLETE ELECTRICAL INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE CALIFORNIA ELECTRICAL (CEC) CODE AND THE PROJECT SPECIFICATION.
2. EXISTING EQUIPMENT AND/OR ELECTRICAL WIRING WHICH IS TO REMAIN, BUT HAS TO BE REMOVED TO FACILITATE THE INSTALLATION OF THE NEW EQUIPMENT SHALL BE RESTORED TO ITS ORIGINAL OPERATING CONDITION.
3. ELECTRICAL EQUIPMENT AND FEEDERS SHALL BE SUPPORTED AND/OR ANCHORED IN ACCORDANCE WITH UNIFORM BUILDING CODE ZONE 4 SEISMIC REQUIREMENTS.
4. WHERE OUTLETS, SWITCHES AND OTHER ELECTRICAL EQUIPMENT ARE REMOVED AND/OR CONDUIT IS CUT OFF, ALL EXISTING CONDUCTORS SHALL BE REMOVED BACK TO THE PANELBOARD THAT IS TO REMAIN.
5. EXISTING CONDUCTORS REMOVED FROM SERVICE SHALL NOT BE USED FOR NEW WORK UNDER THIS CONTRACT.
6. EXISTING CONDUIT RUNS REMAINING IN PLACE MAY BE UTILIZED FOR THE RENOVATION WORK, PROVIDED THAT THE CONDUIT IS OF ADEQUATE SIZE PER THE CALIFORNIA ELECTRICAL CODE FOR THE NUMBER AND SIZE OF CONDUCTORS BEING INSTALLED. CONDUCTORS SHALL BE OF THE SAME VOLTAGE (480Y/277V OR 208Y/120V) AND CONNECTED TO THE SAME PANEL.
7. BLANK COVERS SHALL BE INSTALLED WHEREVER A DEVICE IS REMOVED AND OUTLET BOX REMAINS IN PLACE. PAINT TO MATCH COLOR OF WALL.
8. WHERE EXISTING CONDUIT AND/OR CIRCUIT HAS BEEN INTERRUPTED BY REMOVAL OF AN OUTLET, WALL, OR PORTION OF THE CIRCUIT, THE REMAINING CONDUIT AND/OR CIRCUIT SHALL BE REROUTED, EXTENDED AND RECONNECTED AS REQUIRED TO PROVIDE CONTINUITY OF THE CIRCUIT THAT IS TO REMAIN IN SERVICE.
9. THE CONSTRUCTION MANAGER RETAINS FIRST SALVAGE RIGHTS TO ALL EXISTING EQUIPMENT REMOVED UNDER THIS CONTRACT. THE CONTRACTOR SHALL CONSULT WITH THE CONTRACTING OFFICER FOR DISPOSITION OF THE EXISTING EQUIPMENT TO BE REMOVED. THE CONTRACTOR SHALL INCLUDE IN HIS BID PROPOSAL ALL COSTS RELATED TO THE DISPOSAL OF THE EXISTING EQUIPMENT REMOVED UNDER THIS CONTRACT.
10. ALL FEEDER AND BRANCH CIRCUIT CONDUITS SHALL BE INSTALLED CONCEALED IN FINISHED AREA, UNLESS OTHERWISE NOTED.
11. ALL PENETRATIONS THROUGH FIRE RATED WALLS SHALL BE TOTALLY SEALED TO PREVENT THE SPREAD OF SMOKE, FIRE, TOXIC GASES, AND WATER THROUGH THE PENETRATION BEFORE, DURING AND AFTER A FIRE CONDITION. THE FIRE RATING OF THE SEALED PENETRATION SHALL BE AT LEAST THAT OF THE WALL INTO WHICH IT IS INSTALLED. THE SEAL SHALL PERMIT THE VIBRATION, EXPANSION AND/OR CONTRACTION OF THE CONDUIT PASSING THROUGH THE PENETRATION WITHOUT THE SEAL CRACKING OR CRUMBLING.
12. THE CONTRACTOR SHALL MAINTAIN AT THE JOB SITE, AN UP-TO-DATE "AS-BUILT" DRAWING SET. THE "AS-BUILT" DRAWING SET SHALL BE RED-LINED TO REFLECT ALL APPROVED CHANGES TO THE DESIGN DRAWINGS. THE "AS-BUILT" DRAWING SET SHALL BE KEPT CLEAN AND IN GOOD CONDITION AND SHALL BE TURNED OVER TO THE CONSTRUCTION MANAGER AT THE COMPLETION OF THE PROJECT.
13. UPON COMPLETION OF HIS WORK, THE CONTRACTOR SHALL DEVELOP A TEST PROCEDURE AND PERFORM A COMPLETE FUNCTIONAL TEST TO DEMONSTRATE TO THE CONSTRUCTION MANAGER THAT THE NEW INSTALLATION IS OPERATING AS INTENDED. ANY DEFECTS OR DEFICIENCIES IN THE MATERIALS OR INSTALLATION WORK SHALL BE CORRECTED IMMEDIATELY.
14. FLUORESCENT LUMINAIRE'S BALLASTS CONTAIN PCB'S. BALLASTS SHALL BE REMOVED FROM THE LUMINAIRES, BAGGED, BOXED AND TURNED OVER TO THE GOVERNMENT FOR DISPOSAL.
15. FLUORESCENT LIGHT TUBES SHALL BE MANAGED AS A HAZARDOUS WASTE IN ACCORDANCE WITH THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL POLICY ON DISPOSAL OF FLUORESCENT LIGHT TUBES AT A FACILITY AUTHORIZED TO PERFORM SUCH OPERATIONS BY THE STATE OF CALIFORNIA.
16. IN ADDITION TO THE REQUIRED LIGHTING FIXTURE SUPPORT WIRES, LIGHTING FIXTURES IN SUSPENDED T-BAR CEILINGS SHALL BE SEISMICALLY BRACED WITH A MINIMUM OF TWO #12 WIRES AT ALTERNATE CORNERS OF THE LIGHTING FIXTURE HOUSING AT AN ANGLE OF 45 DEGREES OR LESS FROM HORIZONTAL AND SECURED TO A STRUCTURAL MEMBER OF THE BUILDING.
17. ALL SURFACES CONTAIN LEAD BASED PAINT. THE NASA LEAD MANAGEMENT PLAN AND ALL FEDERAL, STATE, AND LOCAL REGULATIONS PERTAINING TO THE HANDLING, DISTURBANCE, STORAGE, AND DISPOSAL OF LEAD MUST BE ADHERED TO.
18. THE EXISTING FIRE ALARM SYSTEM SHALL BE KEPT OPERATIONAL UNTIL THE NEW FIRE ALARM WORK HAS BEEN COMPLETED AND READY FOR HOOK-UP. ANY REQUIRED DISRUPTION TO THE EXISTING SYSTEM SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.
19. ANY ADDITION TO THE EXISTING FIRE ALARM SYSTEM SHALL CONFORM TO NFPA 72, CEC, AND THE PROJECT SPECIFICATION. NEW FIRE ALARM DEVICES SHALL BE UL LISTED AND SUITABLE TO MATCH THE EXISTING SYSTEM.
20. EXISTING FIRE ALARM CONTROL PANEL IS CERBERUS-PIROTRONICS 'MXL-IQ' LOCATED IN ELECTRICAL ROOM. PANEL SHALL BE REPROGRAMMED TO INCLUDE NEW DEVICES. COMPLETE FIRE ALARM SYSTEM SHALL BE TESTED PER SPECIFICATION.
21. FIRE ALARM CIRCUIT CONDUIT BOXES, FITTINGS AND DEVICES SHALL BE PAINTED RED TO INDICATE THEY ARE PART OF THE FIRE ALARM SYSTEM.
22. ALL FIRE ALARM CIRCUIT SPLICES SHALL BE MADE THROUGH TERMINAL DEVICES AND SHALL BE SECURED TO J-BOXES.
23. CONCEALED EMT CONDUITS THAT ARE INSTALLED IN CEILING WHICH IS CONSIDERED AS PLENUM SPACE SHALL HAVE COMPRESSION TYPE CONNECTIONS. WIRING SHALL BE RATED SUITABLE FOR THE OCCUPANCY TYPE PER CEC.
24. CEILINGS SHALL BE SUITABLY MARKED WITH RED DOTS TO INDICATE THE LOCATION OF FIRE ALARM DEVICES, BOXES OR JUNCTION BOXES, ETC, CONCEALED ABOVE THE CEILING. LABEL ALL FIRE ALARM DEVICES OR ANY INTERFACE CONTROL MODULE LOCATIONS.
25. ALL ELECTRICAL PENETRATIONS THROUGH ACOUSTICAL WALLS SHALL BE ACOUSTICALLY SEALED TO PROVIDE NO DEGRADATION OF THE SOUND TRANSMISSION CLASS (STC) OF THE WALLS IN WHICH THE PENETRATIONS OCCUR.
26. THE CONTRACTOR, PRIOR TO BIDDING, SHALL VISIT THE JOB SITE TO BECOME ACQUAINTED WITH THE EXISTING INSTALLATION AND SYSTEMS RELATED TO HIS WORK AND SHALL INCLUDE IN HIS BID PRICE ALL LABOR AND MATERIALS REQUIRED FOR THE ELECTRICAL INSTALLATION TO BE COMPLETE AND OPERATIONAL.

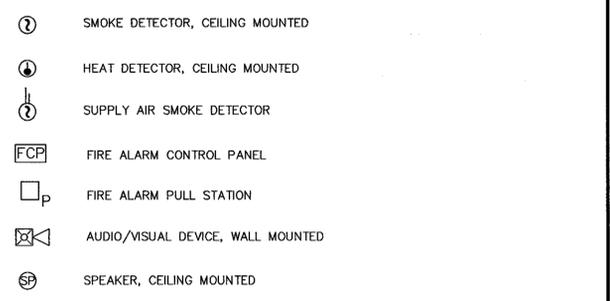
ABBREVIATIONS (NOT ALL ABBREVIATIONS HAVE BEEN USED)

Table with 2 columns: Abbreviation and Full Name. Includes entries for AMPERE, AIR CIRCUIT BREAKER, AMPERE FRAME OR FUSE RATING, ABOVE FINISHED FLOOR, AIR HANDLING UNIT, AMPERE INTERRUPTING CAPACITY, AMPERE TRIP BREAKER SETTING, BUILDING, CONDUIT, CIRCUIT BREAKER, CALIFORNIA ELECTRICAL CODE, CIRCUIT, CONTROL POWER TRANSFORMER, CONDUIT ONLY, COPPER, DUCT SMOKE DETECTOR, DRAWING, EXHAUST FAN, ELECTRIC(AL), ELECTRICAL METALLIC TUBING, EXISTING, FIRE ALARM CONTROL PANEL, FULL LOAD AMPERES, FLEXIBLE, FACILITIES MANAGEMENT CONTROL SYSTEM, FULL VOLTAGE NON-REVERSING, FIRE & SMOKE DAMPER, GROUND(ED), GROUND FAULT CIRCUIT INTERRUPTER, GOVERNMENT FURNISHED EQUIPMENT, HAND-OFF-AUTOMATIC SWITCH, HORSEPOWER, JUNCTION BOX, KILOVOLT AMPERE, MCC, MAIN LUGS ONLY, MILIMETERS, NEW, NATIONAL ELECTRICAL CODE, NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION, NON-FUSED DISCONNECT SWITCH, NOT IN CONTRACT, NOT TO LOAD, OVERLOAD, POLE, PULLBOX, PUSHBUTTON STATION, POLYCHLORINATED BIPHENYL, PHASE, PANEL, POWER, RELOCATED, REFERENCE, RIGID GALVANIZED STEEL, ROOM, RIGID STEEL CONDUIT, SPECIFICATION(S), TWISTED PAIR, TWISTED PAIR, SHIELDED, TYPICAL, UNLESS OTHERWISE NOTED, VOLT, VERIFY IN FIELD, WIRE, WITH, WITHOUT, WEATHERPROOF, TRANSFORMER.

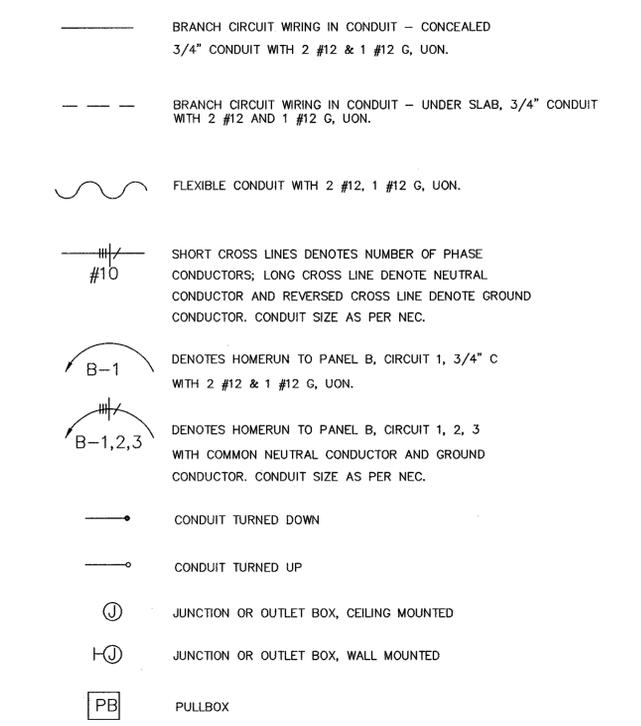
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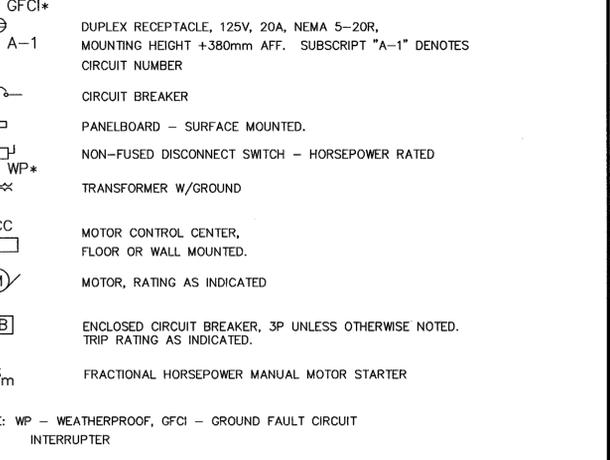
FIRE ALARM SYSTEM SYMBOLS



RACEWAY & GROUNDING SYSTEM SYMBOLS



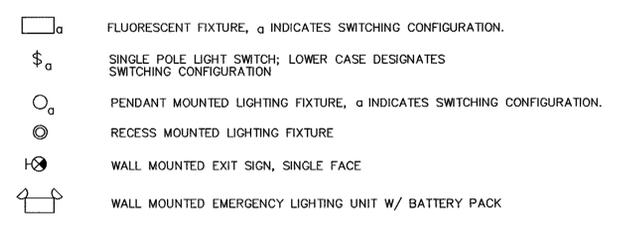
POWER DISTRIBUTION SYMBOLS



SEQUENCE OF OPERATION

- ACTIVATION OF ANY OF THE ROOFTOP UNIT SMOKE DETECTORS SHALL CAUSE THE FIRE ALARM CONTROL PANEL TO PROVIDE THE FOLLOWING OPERATIONS:
1. AN AUDIBLE AND VISUAL INDICATION AT THE FIRE ALARM CONTROL PANEL, AND VISUAL INDICATION ON FIRE SYSTEM ANNUNCIATOR.
2. TRANSMIT A SEPARATE AND DISTINCT FIRE ALARM SIGNAL TO THE EXISTING CENTRAL STATION RECEIVER VIA THE FIRE ALARM TRANSMITTER.
3. SEND A SIGNAL TO THE FACP TO ACTIVATE ALL THE BUILDING'S FIRE EVACUATION CIRCUITS.

LIGHTING SYMBOLS



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Moffett Field Permit Board
Chief Building Official
Permit No. 06P033

Table with columns: ZONE, LETTER, DESCRIPTION, DRAWN, DATE, APPRVD. Includes project information: Ames Research Center, Moffett Field, California, M003 CONFERENCE CENTER HVAC & REROOFING ELECTRICAL, ELECTRICAL NOTES, SYMBOLS & ABBREVIATIONS. Includes revision table and drawing details: DATE 5/11/07, SCALE N.T.S., SHEET OF.

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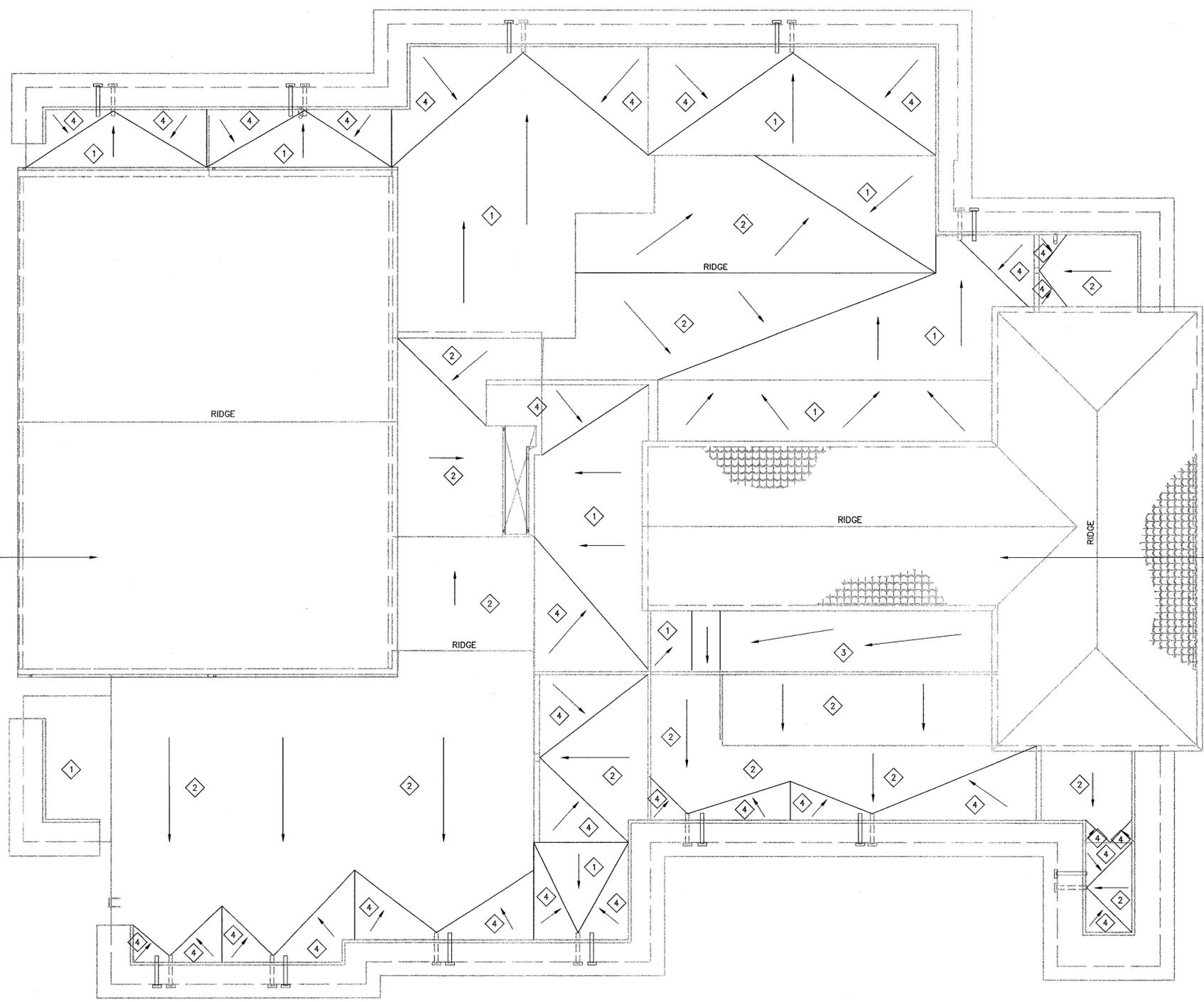
1. MECHANICAL EQUIPMENT NOT SHOWN FOR CLARITY. PROVIDE CRICKETS AT ALL MECHANICAL EQUIPMENT SUPPORTS.
2. PROVIDE SHOP DRAWINGS FOR TAPERED INSULATION AND CRICKET INSTALLATION.

LEGEND

- 1 SLOPE IS ACHIEVED FROM (E) SLOPING ROOF SUBSTRATE; NO TAPERED INSULATION IS REQUIRED.
- 2 PROVIDE 1/4" PER FOOT TAPERED INSULATION BETWEEN RIGID INSULATION AND 1/2" DENSDECK.
- 3 PROVIDE 1/8" PER FOOT TAPERED INSULATION BETWEEN RIGID INSULATION AND 1/2" DENSDECK.
- 4 PROVIDE CRICKETS SLOPING 1/2" PER FOOT.

PITCHED ROOF WITH ASPHALT SHINGLE APPLICATION, ROOF SLOPE AND TAPERED INSULATION IS NOT APPLICABLE

(E) MISSION TILE ROOF. ROOF SLOPE AND TAPERED INSULATION IS NOT APPLICABLE



1 CRICKETS AND TAPERED INSULATION PLAN
SCALE 3/32"=1'-0"

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Moffett Field Permit Board
[Signature]
Chief Building Official
Permit No. 06P033

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PROJ MGR	M.CALLAHAN	DATE	5/10/07		
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R&QA		DATE			
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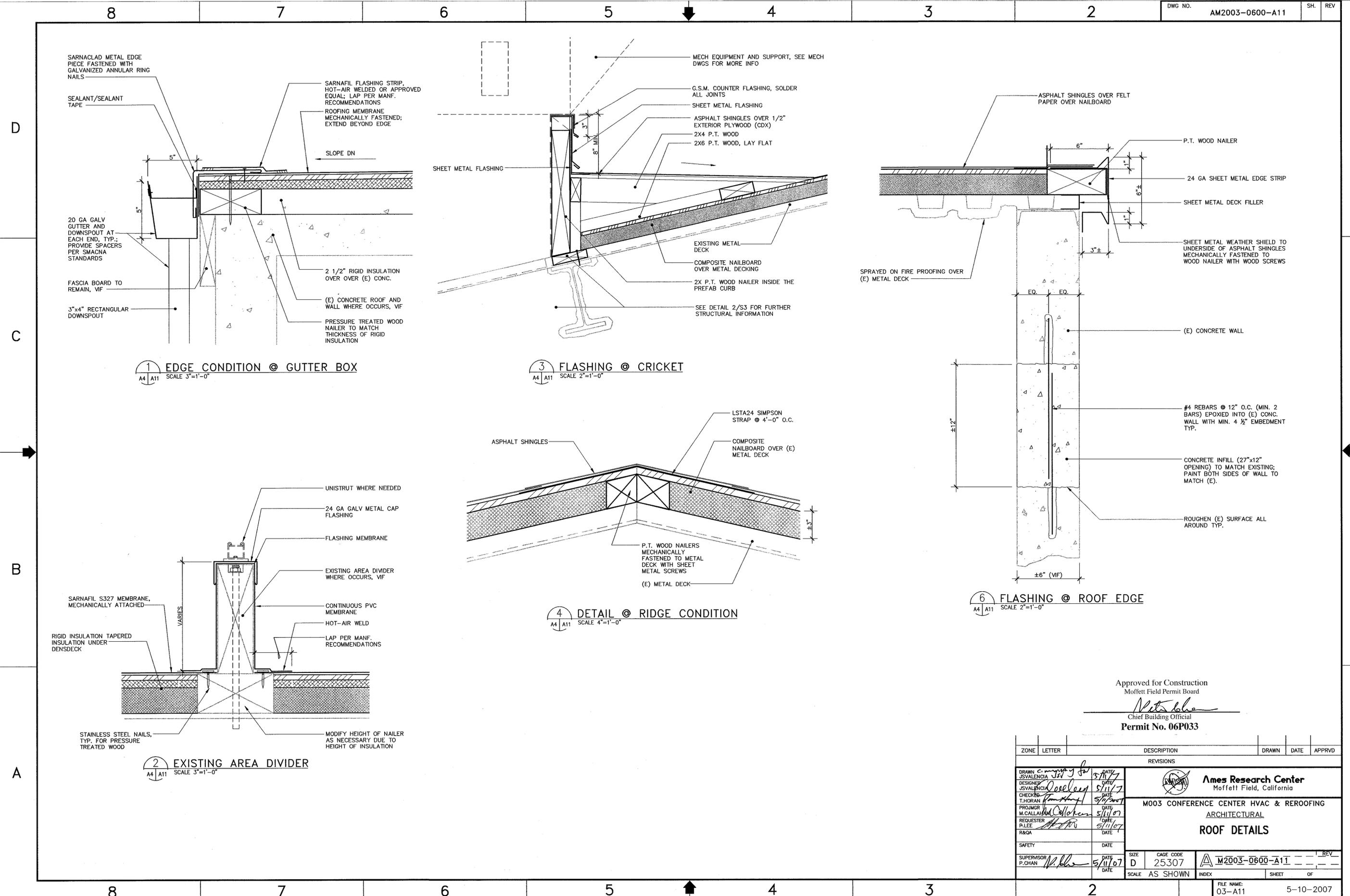
Ames Research Center
Moffett Field, California

MO03 CONFERENCE CENTER HVAC & REROOFING
ARCHITECTURAL

CRICKET AND TAPERED INSULATION PLAN

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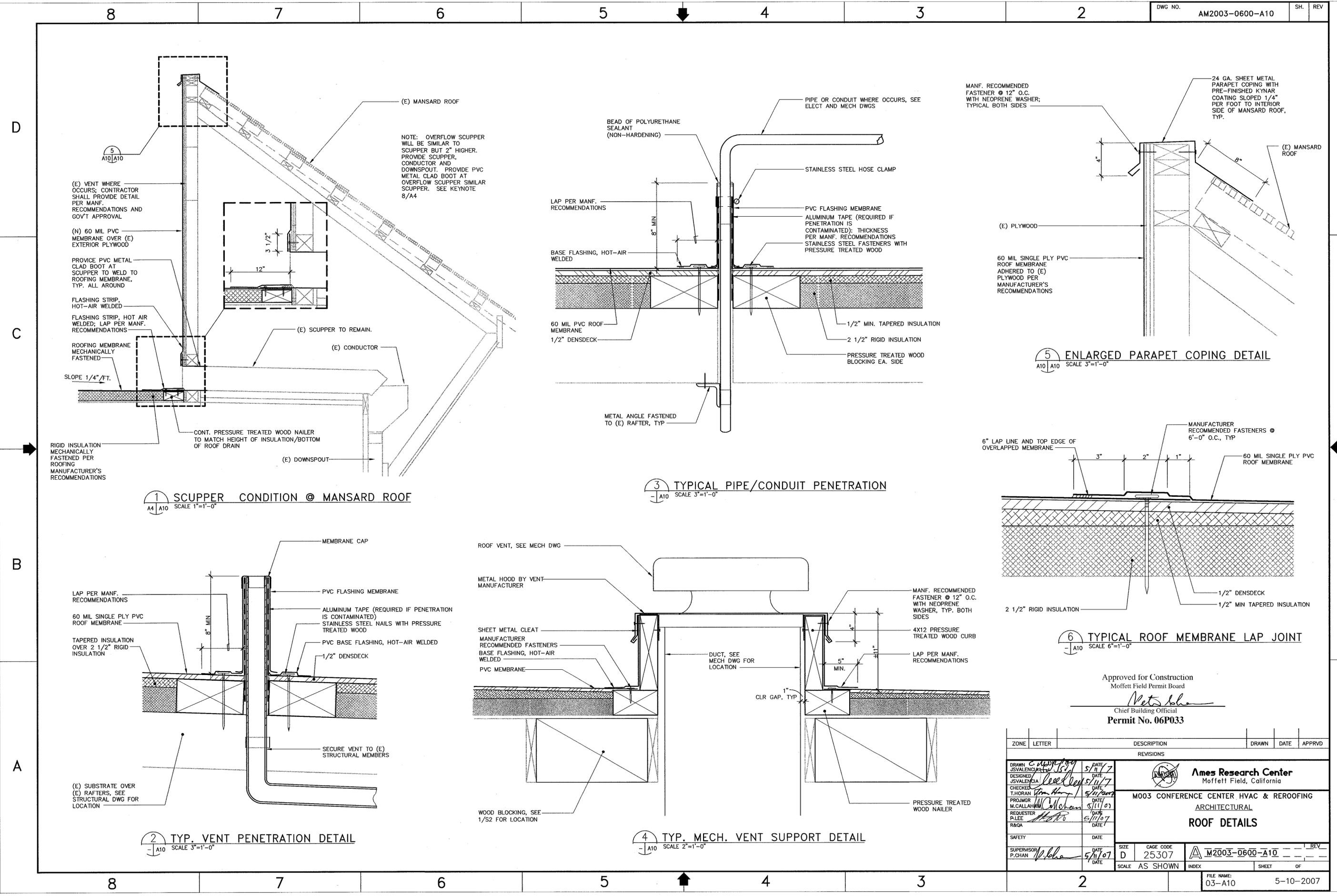


Approved for Construction
Moffett Field Permit Board
Nita Beha
Chief Building Official
Permit No. 06P033

ZONE	LETTER	DESCRIPTION	DRAWN	DATE	APPRVD
REVISIONS					
DESIGNED	J.S. VALENCIA	5/11/07			
CHECKED	T. HORAN	5/11/07			
PROJECTOR	M. CALLAHAN	5/11/07			
REQUESTER	P. LEE	5/11/07			
R&QA					
SAFETY					
SUPERVISOR	P. CHAN	5/11/07			
SIZE	D	CAGE CODE	25307		
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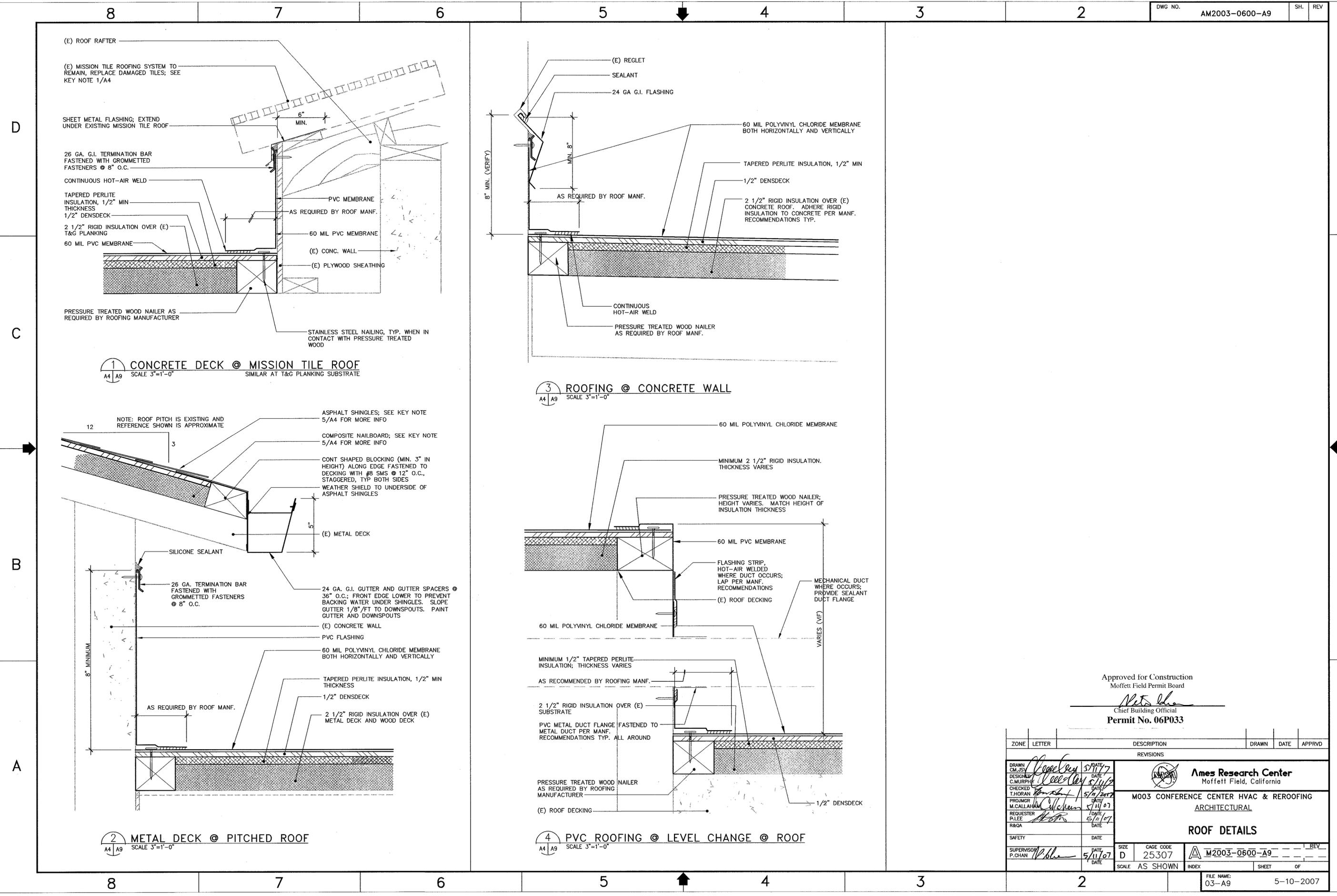


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Moffett Field Permit Board
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Permit No. 06P033

ZONE	LETTER	DESCRIPTION	DRAWN	DATE	APPRVD
REVISIONS					
DRAWN: <i>Chapman</i> 5/11/07 DESIGNER: <i>Chapman</i> 5/11/07 CHECKED: <i>Thoran</i> 5/14/07 PROJECTOR: <i>M. Callahan</i> 5/14/07 REQUESTER: <i>P. Lee</i> 5/14/07 R&QA: _____ SAFETY: _____ SUPERVISOR: <i>P. Chan</i> 5/11/07					
 Ames Research Center Moffett Field, California		M003 CONFERENCE CENTER HVAC & REROOFING ARCHITECTURAL			
ROOF DETAILS					
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		DATE: 5-10-2007			

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SHEET NOTES

- SEE SHEET A1 FOR LEGENDS, SYMBOLS AND ABBREVIATIONS.
- LEVEL ALL SLEEPERS/CURBS FOR NEW MECHANICAL EQUIPMENT.
- DIMENSIONS SHOWN ARE APPROXIMATE AND ARE FOR REFERENCE ONLY. CONTRACTOR IS RESPONSIBLE FOR DOING HIS OWN AREA TAKE-OFFS FOR ROOF REPLACEMENT.
- REFER TO SHEET A3 FOR ROOF DEMOLITION.
- REFER TO SHEET G1 FOR INFORMATION REGARDING HAZARDOUS MATERIALS.
- NEW ROOFING SYSTEM SHALL BE INSTALLED ONLY DURING DRY WEATHER CONDITIONS.
- TEAR-OFF AND INSTALL ONLY AS MUCH NEW ROOFING AS WILL BE MADE WEATHER-TIGHT EACH WORKDAY INCLUDING ALL FLASHING AND DETAIL WORK.
- ALL SEAMS SHALL BE HEAT-WELDED PRIOR TO LEAVING THE JOB SITE EACH DAY.
- NOTIFY THE COTR OF ANY DEFECTIVE DECKING OR STRUCTURAL MEMBERS NOTICED DURING ROOF TEAR-OFF INCLUDING METAL DECKING, PLYWOOD, WOOD PLANKING, ETC.
- SEE KEY PLAN SHEET G1 FOR CONSTRUCTION PHASING AND SEQUENCE OF CONSTRUCTION.
- NEW ROOF SYSTEMS SHALL BE A U.L. LISTED CLASS B OR CLASS C ROOFS.
- ALL EXPOSED SHEET METAL SUCH AS FLASHING, GUTTERS, DOWNSPOUTS, ETC. SHALL BE PRIMED AND PAINTED.
- SEE SHEET A-13 FOR INFORMATION REGARDING SLOPES, TAPERED INSULATION AND CRICKETS.

KEY NOTES:

- (E) MISSION TILE ROOF. REPLACE DAMAGED TILES; MATCH EXISTING WITH CONCEALED TYPE ATTACHMENT. PROVIDE SAMPLES FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION. ASSUME 100 TILES WILL BE REPLACED; COORDINATE WITH COTR TO DETERMINE WHICH TILES REQUIRE REPLACEMENT.
- (E) MANSARD ROOF TO REMAIN. REPLACE METAL COPING WITH 24 GA. METAL COPING WITH PRE-FINISHED KYNAR COATING, TYPICAL. PROVIDE COLOR SAMPLES FOR REVIEW AND APPROVAL.
- (E) OPENING TO STEAM PIT BELOW.
- PROVIDE AND INSTALL 60 MIL SINGLE PLY PVC ROOF MEMBRANE OVER 1/2" DENSDECK OVER TAPERED INSULATION OVER 2 1/2" POLYISOCYANURATE RIGID INSULATION MECHANICALLY FASTENED WITH MANUFACTURER'S RECOMMENDED FASTENERS TO (E) DECKING, TYP. MINIMUM THICKNESS OF TAPERED INSULATION SHALL BE 1/2"; SLOPE 1/4" PER FOOT.
- ASPHALT SHINGLES OVER BASE SHEET OVER NAILBOARD OVER METAL DECK. NAILBOARD SHALL CONSIST OF 2 1/2" POLYISOCYANURATE FOAM CORE BONDED TO 7/16" ORIENTED STRAND BOARD ON ONE SIDE AND FIBER GLASS REINFORCED FACER ON THE OTHER SIDE. NAILBOARD SHALL HAVE A MINIMUM R-VALUE OF 13. SECURE NAILBOARD TO METAL DECK WITH AN ADHESIVE PER MANUFACTURER'S RECOMMENDATIONS THAT IS ABLE TO WITHSTAND WIND LOAD OF I-90. (BID ADDITIVE 1)
- 24 GA. G.I. GUTTER AND DOWNSPOUT; SLOPE 1/8" PER FOOT; PAINT.
- 3'x3' POLYESTER REINFORCED SAND COATED WALK PADS WITH WELDABLE MEMBRANE. CONTRACTOR WILL BE REQUIRED TO CUT WALK PADS.
- OVERFLOW SCUPPERS (OVERFLOW ROOF DRAINS) AT EACH (E) ROOF DRAIN. OVERFLOW SCUPPERS SHALL BE 2" HIGHER THAN (E) ROOF DRAIN AND SHALL BE 12" WIDE x 6" HIGH WITH DRAIN SCREEN SIMILAR TO EXISTING ADJACENT ROOF DRAIN SCREENS. PROVIDE SUBMITTALS FOR REVIEW AND APPROVAL. PROVIDE INTERIOR SCUPPER, CONDUCTOR AND DOWNSPOUT SIMILAR TO (E) ROOF DRAIN; SEE DETAIL 1/A10. WATER FROM OVERFLOW SCUPPER WILL DAYLIGHT JUST BELOW MANSARD ROOF.
- CONCRETE SPLASH PAN.
- (E) LADDER TO REMAIN. CONTRACTOR SHALL PROVIDE A DETAIL WHERE PVC MEMBRANE TERMINATES AT (E) LADDER PER MANUFACTURER'S RECOMMENDATIONS AND PER GOVERNMENT APPROVAL.
- PROVIDE PVC CLAD METAL FLASHING AT VERTICAL AND HORIZONTAL PENETRATIONS FOR MECHANICAL EQUIPMENT.

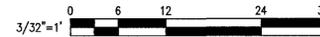
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Moffett Field Permit Board

M. S. Blos
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Permit No. 06P033

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G1 A4
ROOF PLAN
SCALE 3/32"=1'-0"



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SYMBOLS

- 1. ——— INDICATES SLOPED SURFACES/DRAINAGE DIRECTION.
- 2. INDICATES SURFACE DIFFERENCES/STEP DOWN.

SHEET NOTES

1. ARCHITECTURAL DEMOLITION IS SHOWN ON THIS DRAWING. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR THEIR DEMOLITION WORK.
2. SEE DRAWING A1 FOR LEGENDS, SYMBOLS AND ABBREVIATIONS.
3. SEE SHEET G1 FOR INFORMATION REGARDING HAZARDOUS MATERIALS AND PROCEDURES FOR DISPOSAL.
4. SEE DRAWING A4 FOR NEW ROOF PLAN.
5. COORDINATE WITH MECH CONTRACTOR FOR THE EXACT LOCATION AND SIZES OF EQUIPMENT PRIOR TO CUTTING SUBSTRATE. SEE STRUCTURAL DRAWINGS FOR STRUCTURAL REINFORCEMENT.
6. REMOVE AND DISPOSE OF ALL (E) MISCELLANEOUS ITEMS RELATED TO THE UTILITIES AND EQUIPMENT SUCH AS SUPPORTS, BRACKETS AND WOOD BLOCKING.
7. AT THE END OF EACH DAY, COVER ALL ROOF OPENINGS CREATED AS A RESULT OF ROOF DEMOLITION WORK. THE COVER SHALL BE WATERPROOF BALLASTED TO PREVENT IT FROM SHIFTING BY THE WIND.
8. SEAL ROOF AT THE END OF EACH DAY WHEN EQUIPMENT IS REMOVED FROM ROOF. DEMO ONLY AS MUCH AS CAN BE REPLACED THE SAME DAY.
9. BEFORE PROCEEDING WITH ANY ROOF WORK, DOCUMENT WITH ORANGE SPRAY PAINT, DIGITAL PHOTOGRAPHS AND A MARKED UP ROOF PLAN DRAWING THE LOCATION OF ANY BLISTERS, EVIDENCE OF PONDING OR ANY OTHER APPARENT DEFECTS IN THE EXISTING ROOF. PROVIDE THIS DOCUMENTATION TO THE CONTR.
10. REFER TO SHEET A4 FOR OVERALL ROOF DIMENSIONS. NOTE THAT DIMENSIONS GIVEN ARE APPROXIMATE AND ARE FOR REFERENCE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR DOING HIS OWN AREA TAKE-OFFS.
11. COORDINATE ROOF TEAR-OFF WITH CONSTRUCTION MANAGER.
12. SEE KEY PLAN SHEET G1 FOR CONSTRUCTION PHASING. SEE G1 FOR SEQUENCE OF CONSTRUCTION.

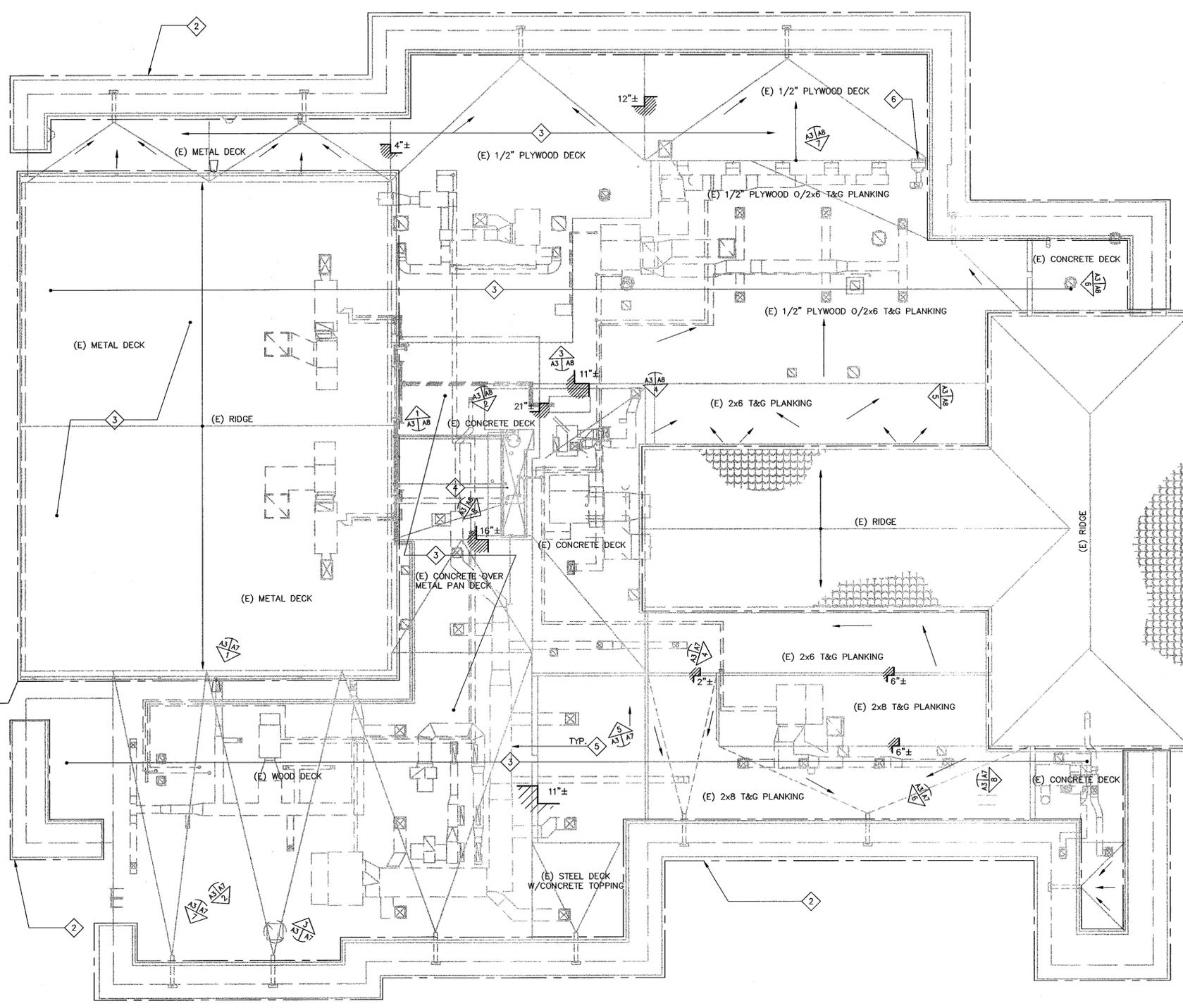
KEY NOTES:

- 1. (E) MISSION TILE ROOF TO REMAIN. REPLACE DAMAGED TILES; MATCH EXISTING WITH CONCEALED TYPE ATTACHMENT. PROVIDE SAMPLES FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION. ASSUME THAT 100 TILES WILL BE REPLACED; COORDINATE WITH CONTR TO DETERMINE WHICH TILES REQUIRE REPLACEMENT. (PART OF BASE BID)
- 2. (E) TILE MANSARD ROOF TO REMAIN; REMOVE COPING AND REPLACE WITH NEW, TYP. SEE DETAIL 5/A10
- 3. REMOVE AND DISPOSE (E) BUILT-UP ROOF, INSULATION, CANTS, WOOD NAILERS, SHEET METAL FLASHING, GUTTERS, DOWNSPOUTS AND METAL COPING AT PARAPET WALL. REMOVE ALL ROOFING MATERIALS AND ASSOCIATED MATERIALS BACK TO EXISTING WOOD, CONCRETE OR STEEL DECKING.
- 4. (E) OPENING TO STEAM PIT BELOW; SEE PHOTOGRAPH 8/SHEET A8.
- 5. (E) MECHANICAL EQUIPMENT TO BE DEMOLISHED; SEE MECHANICAL DRAWINGS.
- 6. INFILL OPENING WHERE MECHANICAL DUCT WAS REMOVED. MATCH EXISTING ADJACENT CONSTRUCTION.

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Ames Research Center Moffett Field, California					
M003 CONFERENCE CENTER HVAC & REROOFING ARCHITECTURAL					
DEMOLITION ROOF PLAN					
DRAWN: J.S. VALENZUELA DESIGNED: CM, JSV CHECKED: T. HORAN PROJECT MGR: M. CALLAHAN REQUESTER: P. LEE R/OA: [Signature]		DATE: 5/10/07 DATE: 5/10/07 DATE: 5/11/07 DATE: 5/19/07 DATE: 5/11/07 DATE: 5/11/07		DATE: 5/11/07	
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SUPERVISOR: P. CHAN		DATE: 5/11/07		DATE: 5/11/07	
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1 DEMOLITION ROOF PLAN
SCALE 3/32"=1'-0"



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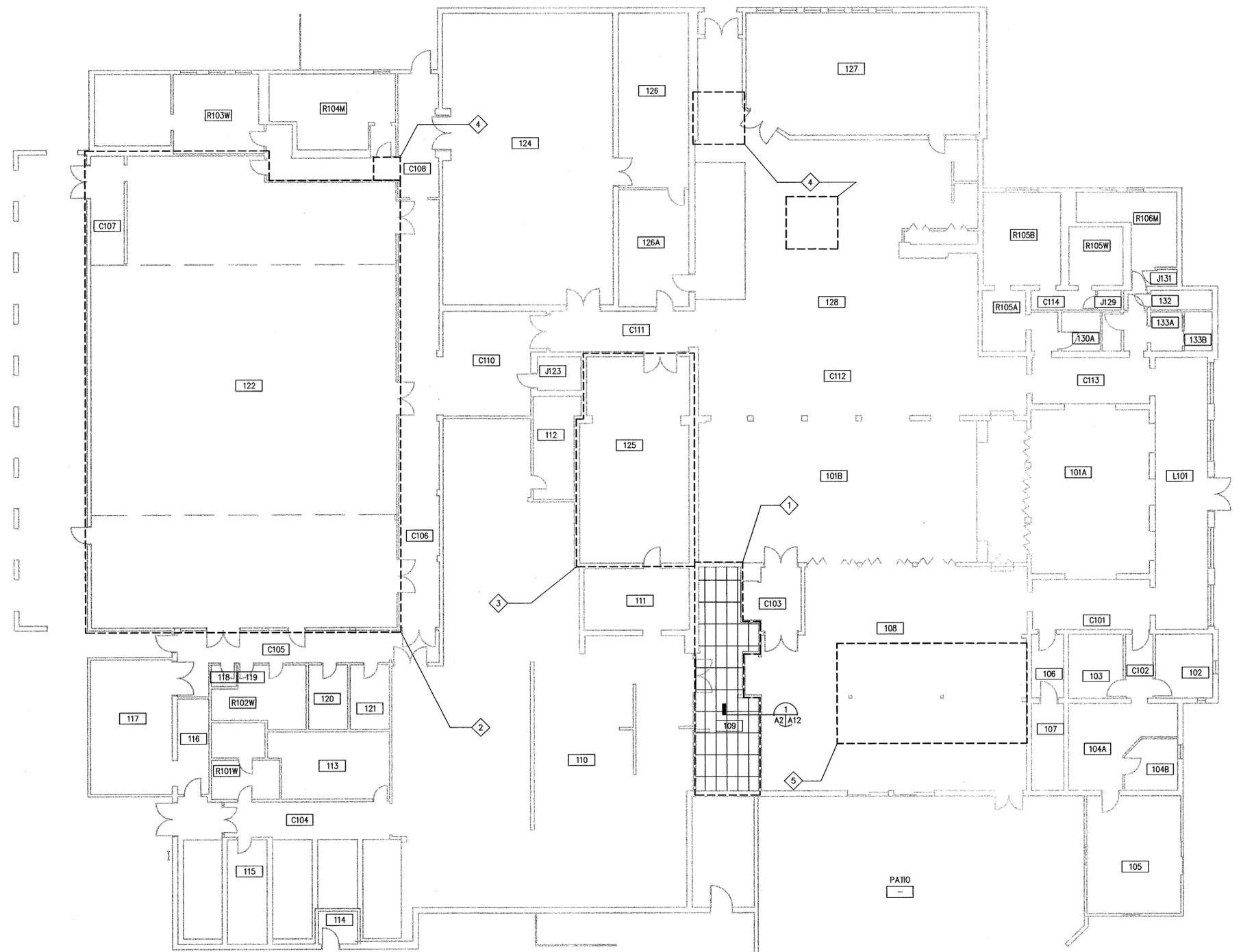
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SHEET NOTES

1. SEE ELECTRICAL DRAWINGS FOR PANEL LOCATIONS.
2. REFER TO SHEET G1 FOR INFORMATION REGARDING HAZARDOUS MATERIALS AND ITS DISPOSAL.
3. PATCH/REPAIR/PAINT CEILING TO MATCH (E) WHERE AFFECTED BY STRUCTURAL, MECHANICAL AND ELECTRICAL WORK, TYPICAL.
4. PROTECT WALLS, FLOORING AND OWNER'S FURNITURE/EQUIPMENT DURING INSTALLATION OF MECHANICAL EQUIPMENT, ELECTRICAL ITEMS AND STRUCTURAL MEMBERS.
5. CONTACT CONSTRUCTION MANAGER FOR INTERIOR PAINT COLOR NUMBERS.
6. SEE KEY PLAN SHEET G1 FOR CONSTRUCTION PHASING.
7. TYPE OF CONSTRUCTION VARIES DUE TO SEVERAL ADDITIONS TO THE BUILDING OVER THE YEARS. MODIFICATION TO (E) BUILDING SHALL MATCH WITH (E) TYPE OF CONSTRUCTION.
8. SEE ELECTRICAL DRAWINGS FOR LOCATION OF LIGHTING FIXTURES, SPEAKERS, HORNS, ETC. PRIOR TO ALTERATION OF (E) CEILING.
9. SEE SHEET G1 FOR INFORMATION REGARDING BAS BID AND BID ADDITIVE 1.

KEY NOTES:

1. REMOVE AND DISPOSE OF (E) T-BAR SUSPENDED CEILING SYSTEM AND REPLACE WITH NEW 2'x4' SUSPENDED CEILING SYSTEM. MATCH (E) CEILING HEIGHT. SEISMICALLY BRACE SUSPENDED CEILING INCLUDING LIGHT FIXTURES PER UBC STANDARD 25-2. REFER TO DETAILS ON A12. FOR REMOVAL AND INSTALLATION OF LIGHTING FIXTURES, SEE ELECTRICAL DRAWINGS.
2. AT ROOM 122 (BALLROOM), EXISTING CEILING HAS EXPOSED METAL DECKING AND STRUCTURAL STEEL WITH SPRAYED-ON FIRE-PROOFING. REMOVE FIRE-PROOFING WHERE NEW STRUCTURAL MEMBERS ARE CONNECTED TO EXISTING MEMBERS. SEE STRUCTURAL DRAWINGS FOR LOCATIONS. PROVIDE NEW FIRE-PROOFING AT NEW STEEL DECKING AND AT NEW STRUCTURAL MEMBERS AND CONNECTIONS. AT DROPPED CEILING AREAS, REMOVE CEILING AS NECESSARY IN ORDER TO PERFORM STRUCTURAL WORK AND INSTALLATION OF NEW FIRE-PROOFING.
3. REMOVE PORTION OF (E) PLASTERED CEILING AT ROOM 125 WHERE NEW STRUCTURAL MEMBERS ARE BEING INSTALLED; SEE STRUCTURAL DRAWINGS. PATCH, TEXTURE AND PAINT CEILING TO MATCH (E).
4. REMOVE PORTION OF (E) GYPSUM BOARD CEILING AT CORRIDOR C108 AND AND ROOM 128 (TWO LOCATIONS) WHERE NEW STRUCTURAL MEMBERS ARE BEING INSTALLED; SEE STRUCTURAL DRAWINGS. PATCH, TEXTURE AND PAINT CEILING TO MATCH (E). PAINT NEWLY EXPOSED STRUCTURAL BEAM TO MATCH (E) COLOR.
5. PREP AND PAINT NEW EXPOSED WOOD BEAMS IN ROOM 108. SEE STRUCTURAL DRAWINGS FOR LOCATIONS.



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A2
FLOOR PLAN
SCALE 3/32"=1'-0"



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ABBREVIATIONS (NOT ALL ABBREVIATIONS HAVE BEEN USED)

AT	LAMINATE	LAM	LAMINATE
ADJ	ADJUSTABLE	MAX	MAXIMUM
AFF	ABOVE FINISH FLOOR	MECH	MECHANICAL
ALUM	ALUMINUM	MIN	MINIMUM
ARCH	ARCHITECTURAL	MISC	MISCELLANEOUS
BD	BOARD	M.R.	MOISTURE RESISTANT
BLDG	BUILDING	(N)	NEW
BLK	BLOCK	N.I.C.	NOT IN CONTRACT
BLKG	BLOCKING	NTS, N.T.S.	NOT TO SCALE
CL	CENTERLINE	OC, O.C.	ON CENTER
CLG	CEILING	OPP	OPPOSITE
CLR	CLEAR	OPP. HAND	OPPOSITE HAND
COL	COLUMN	PLYWD	PLYWOOD
CONC	CONCRETE	PR	PAIR
CONT	CONTINUOUS	P.T.	PRESSURE TREATED
COTR	CONTRACTING OFFICER	PTD	POLYVINYL CHLORIDE
DEMO	DEMOLISH	PVC	PAINTED
DET	DETAIL	(R)	RELOCATED
DIA. Ø	DIAMETER	REF	REFERENCE
DIM	DIMENSION	REQ'D	REQUIRED
DN	DOWN	RGS	RIGID GALVANIZED STEEL
DS	DOWN SPOUT	RM	ROOM
DWG	DRAWING	R.O.	ROUGH OPENING
DWR	DRAWER	SCHED	SCHEDULE
(E)	EXISTING	SHT	SHEET
EA	EACH	SIM	SIMILAR
ELEC	ELECTRICAL	SPEC	SPECIFICATION
EQ	EQUAL	SQ	SQUARE
FD	FLOOR DRAIN	STC	SOUND TRANSMISSION CLASS
F.E.	FIRE EXTINGUISHER	STD	STANDARD
F.E.C.	FIRE EXTINGUISHER CAB	STOR	STORAGE
FIN	FINISH	STRUC	STRUCTURAL
FLR	FLOOR	SYM	SYMBOL
F.O.F.	FACE OF FINISH	TS	TUBE STEEL
F.O.C.	FACE OF CONC.	TYP	TYPICAL
F.O.S.	FACE OF STUD	UBC	UNIFORM BUILDING CODE
FURR	FURRING	VCT	VINYL COMPOSITION TILE
GA	GAUGE	VIF	VERIFY IN FIELD
GALV	GALVANIZED	W/	WITH
G.I.	GALVANIZED IRON	WC	WATER CLOSET
GND	GROUND	W/O	WITHOUT
GYP	GYP SUM	WP	WATER PROOF
H.B.	HOSE BIB	WR	WATER RESISTANT
HDWR	HARDWARE	WT	WEIGHT
HM	HOLLOW METAL		
INSUL	INSULATION		

SYMBOLS

WORK POINT / CONTROL POINT / DATUM POINT

REFERENCE NORTH ARROW

REVISION IDENTIFICATION

DETAIL NUMBER
STANDARD DETAIL IDENTIFICATION
SHEET WHERE DETAIL IS DRAWN
SHEET FROM WHICH DETAIL IS REFERENCED

ELEVATION IDENTIFICATION
SHEET WHERE ELEVATION IS DRAWN
SHEET FROM WHICH ELEVATION IS REFERENCED

PHOTO IDENTIFICATION
SHEET WHERE PHOTO SHOWN
SHEET FROM WHICH PHOTO IS REFERENCED

WALL LEGEND

(E) WALL/STRUCTURE TO REMAIN

ARCHITECTURAL NOTES

- ALL PENETRATIONS OF RATED PARTITIONS SHALL BE FIRESTOPPED WITH APPROPRIATE MATERIAL TO MAINTAIN FIRE-RATING.
- RETAIN WALL FIRE-RATINGS AT ALL ELECTRICAL, DATACOMM AND CONTROL BOXES.
- INSTALL FIRE SAFING WHERE REQUIRED TO MAINTAIN FIRE-RATING.
- ALL DIMENSIONS ARE SHOWN TO FACE OF FINISH UNLESS NOTED OTHERWISE.

DEMOLITION NOTES

- THE CONTRACTOR SHALL ATTEND A PRE-DEMOLITION JOBSITE MEETING CONDUCTED BY THE CONTRACTING OFFICER PRIOR TO DEMOLITION TO SCHEDULE THE WORK WITH THE USER SO AS NOT TO INTERFERE WITH USER'S NORMAL BUSINESS OPERATIONS.
- ERECT AND MAINTAIN TEMPORARY BRACING, BARRICADES, SIGNS, AND OTHER MEASURES AS NECESSARY TO PROTECT THE PUBLIC, WORKERS, PERSONS, AND ADJOINING PROPERTY FROM DAMAGE FROM DEMOLITION WORK IN ACCORDANCE WITH THE APPLICABLE CODES AND REGULATIONS.
- REMOVE DEBRIS FROM THE PREMISES DAILY. KEEP OCCUPIED AREAS ADJACENT TO DEMOLITION ZONES BROOM CLEAN AND FREE OF DEBRIS.
- PROTECT FROM DAMAGE MATERIALS NOT REQUIRED TO BE REMOVED OR DEMOLISHED. RESTORE TO ORIGINAL CONDITION SURFACES WHICH HAVE BEEN DISTURBED BY DEMOLITION AND ARE INDICATED TO REMAIN. PATCH, TO MATCH SIMILAR ADJACENT FINISHES. DAMAGED SURFACES WHICH WILL BE VISIBLE IN THE FINISHED WORK.
- REPAIR, PATCH AND FINISH ALL EXISTING SURFACES (WALL, FLOOR, CEILING) WHERE EXISTING ITEMS SUCH AS WALLS, UTILITIES AND FIXTURES HAVE BEEN REMOVED. FINISH AND PAINT SURFACE TO MATCH ADJACENT FINISHES.
- ALL (E) MECHANICAL, ELECTRICAL, LIGHTING AND SPECIAL EQUIPMENT WHICH ARE TO BE REMOVED SHALL EITHER BE SALVAGED OR DISPOSED OF AS DETERMINED BY THE CONTRACTING OFFICER IF NOT SHOWN.
- REMOVE, STORE AND REINSTALL ALL MECHANICAL WORK INDICATED TO BE RELOCATED. ALL OTHER MECHANICAL WORK SHALL REMAIN INTACT, U.O.N. AVOID DAMAGE TO ALL EXISTING EQUIPMENT, DUCTWORK, GRILLES, PIPING, ETC.
- REMOVE, STORE AND REINSTALL ALL ELECTRICAL WORK INDICATED TO BE RELOCATED. ALL OTHER ELECTRICAL WORK SHALL REMAIN INTACT, U.O.N. AVOID DAMAGE TO ALL (E) POWER, COMMUNICATIONS OUTLETS & LIGHT FIXTURES, ETC.
- MAINTAIN BUILDING POWER, TELECOMMUNICATIONS, PLUMBING, HVAC, SECURITY, FIRE ALARM, AND FIRE PROTECTION SYSTEMS OPERATIONAL AT ALL TIMES.
- EXTREME CARE SHALL BE TAKEN TO PREVENT ANY DISRUPTION OF COMMUNICATION NETWORK WIRING RUNNING THRU DEMOLITION/CONSTRUCTION ZONES.

GENERAL PROJECT NOTES

- VERIFICATION: VERIFY ALL DIMENSIONS, ELEVATIONS AND SITE CONDITIONS BEFORE STARTING WORK. NOTIFY THE COTR IMMEDIATELY OF ANY DISCREPANCIES.
- CONFLICTS: ALL DISCREPANCIES AND OMISSIONS ON THE DRAWINGS AND SPECIFICATIONS AND/OR CONFLICTS WITH EXISTING CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE COTR BEFORE PROCEEDING WITH ANY ELEMENT OF THIS PROJECT.
- SUBSTITUTIONS: PROVIDE MANUFACTURER'S APPROVED PRODUCT EVALUATION REPORTS, ICBO REPORTS, AND A LIST OF ALL PROPOSED SUBSTITUTIONS TO THE COTR FOR REVIEW AND WRITTEN APPROVAL BEFORE FABRICATION.
- SIMILAR WORK: DETAILS NOT SHOWN ARE SIMILAR IN CHARACTER TO THOSE DETAILED. WHERE SPECIFIC DIMENSIONS, DETAILS OR DESIGN INTENT CANNOT BE DETERMINED, CONSULT WITH THE COTR'S OFFICE BEFORE PROCEEDING WITH THE WORK. TYPICAL DETAILS APPLY AT ALL SIMILAR CONDITIONS WHETHER OR NOT CROSS REFERENCED.
- CONSTRUCTION METHODS AND PROJECT SAFETY: THE CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE AND DO NOT INDICATE METHODS, PROCEDURES OR SEQUENCE OF CONSTRUCTION. TAKE NECESSARY PRECAUTIONS TO MAINTAIN AND INSURE THE INTEGRITY OF THE STRUCTURE DURING CONSTRUCTION. CONTRACTOR SHALL DESIGN, CONSTRUCT AND MAINTAIN ALL SAFETY DEVICES, INCLUDING SHORING AND BRACING, AND SHALL BE SOLELY RESPONSIBLE FOR CONFORMING TO ALL LOCAL, STATE AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS AND REGULATIONS. BUILDING UNDER CONSTRUCTION, ALTERATION OR DEMOLITION SHALL BE IN ACCORDANCE WITH CFC SECTION 8701.
- MODIFICATIONS: ANY REQUEST FOR MODIFICATIONS TO THE PLANS AND SPECIFICATIONS MUST BE SUBMITTED TO THE COTR'S OFFICE IN WRITING.
- ALL MATERIALS AND EQUIPMENT ARE NEW UNLESS CALLED OUT AS EXISTING.
- DO NOT SCALE DRAWINGS TO DERIVE DIMENSIONAL INFORMATION.

PROJECT SPECIFICATIONS AND THE DRAWINGS CONSTITUTE THE CONTRACT DOCUMENTS FOR THIS PROJECT. SPECIFICATIONS ARE INCLUDED IN PROJECT MANUAL.

Approved for Construction
Moffett Field Permit Board
[Signature]
Chief Building Official
Permit No. 06P033

ZONE	LETTER	DESCRIPTION	DRAWN	DATE	APPRVD
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REVISIONS

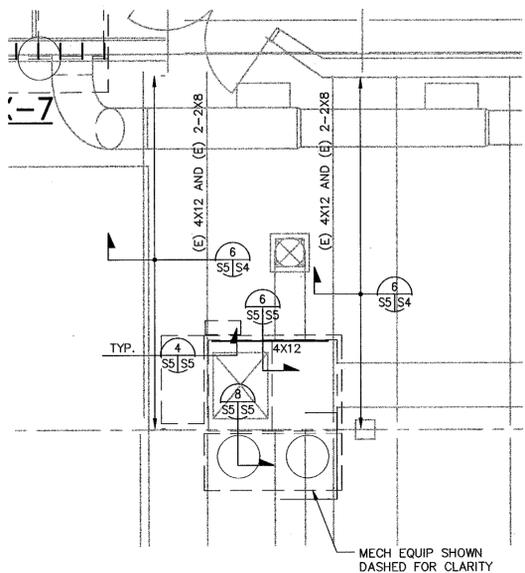
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CHECKED BY T. HORAN	DATE 5/11/2017	
PROJECT MGR M. CALLAHAN	DATE 5/10/17	<p>M003 CONFERENCE CENTER HVAC & ROOFING ARCHITECTURAL</p> <p>ARCHITECTURAL NOTES, ABBREVIATIONS, LEGENDS AND SYMBOLS</p>
REQUESTER P. LEE	DATE 5/10/17	
R&QA	DATE	
SUPervisor P. CHAN	DATE 5/11/07	<p>SIZE: D</p> <p>CAGE CODE: 25307</p> <p>SCALE: INDEX</p>

FILE NAME: 03-A1 5-10-2007

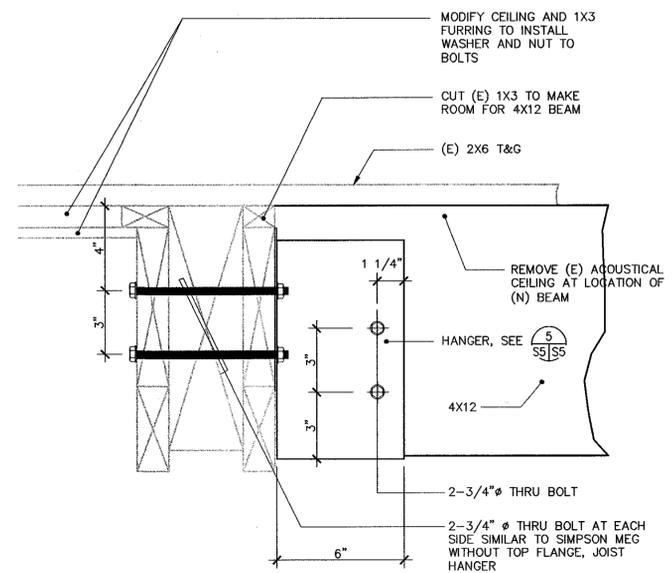
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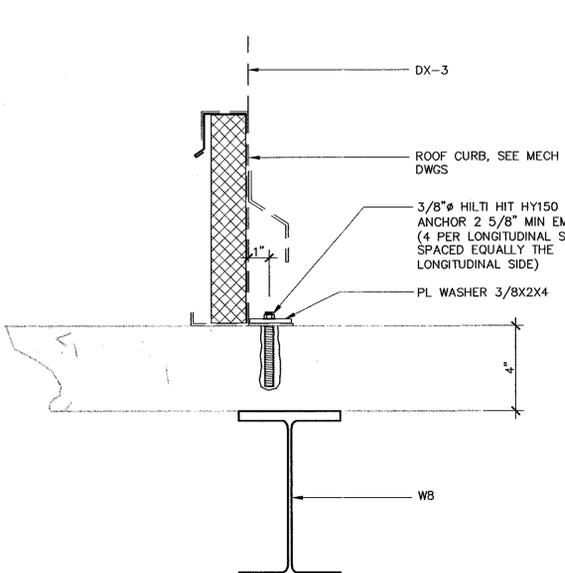
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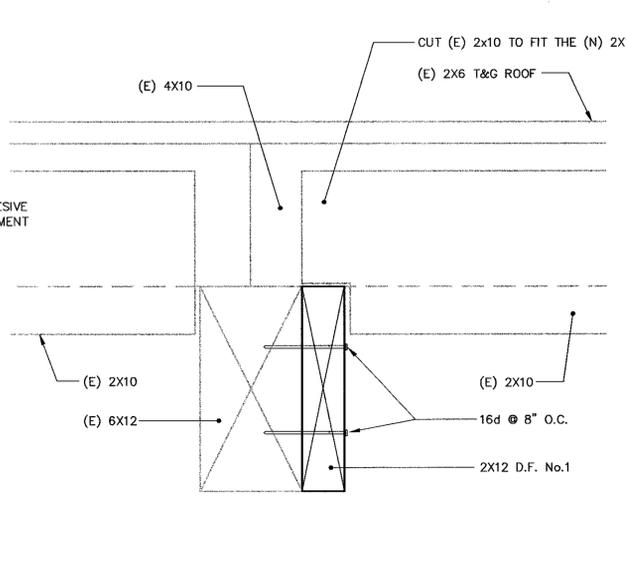
1 ENLARGED PLAN (DX-6)
SCALE 1/4"=1'-0"



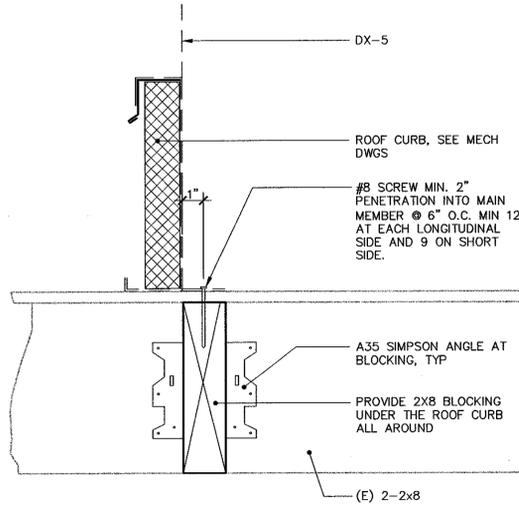
4 BEAM SUPPORT @ DX-6
SCALE 3"=1'-0"



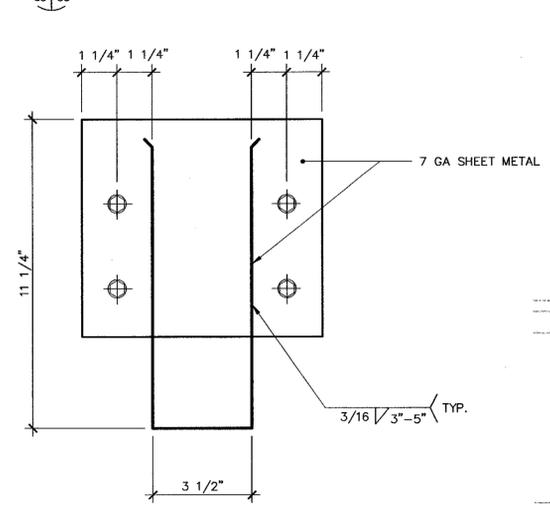
7 DX-3 ANCHORAGE
SCALE 3"=1'-0"



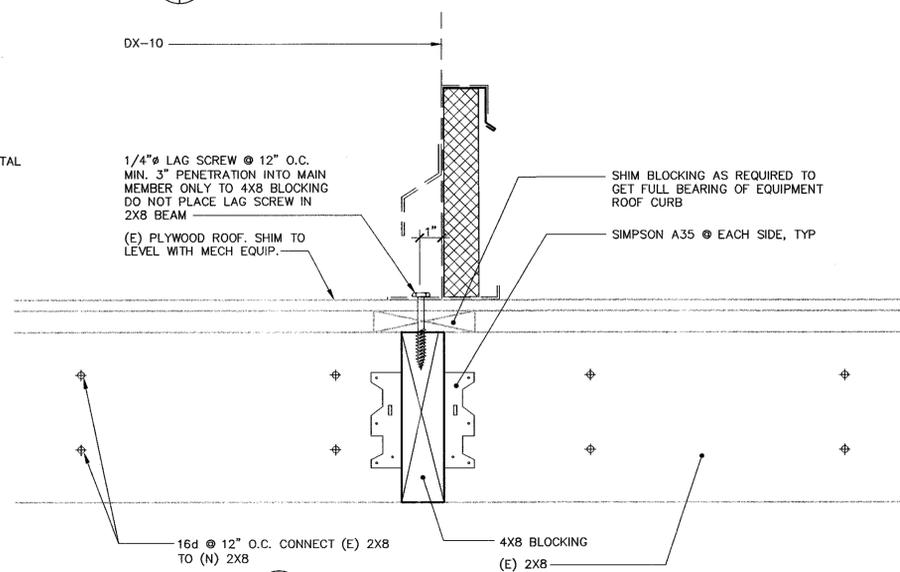
9 DX-1 ANCHORAGE
SCALE 3"=1'-0"



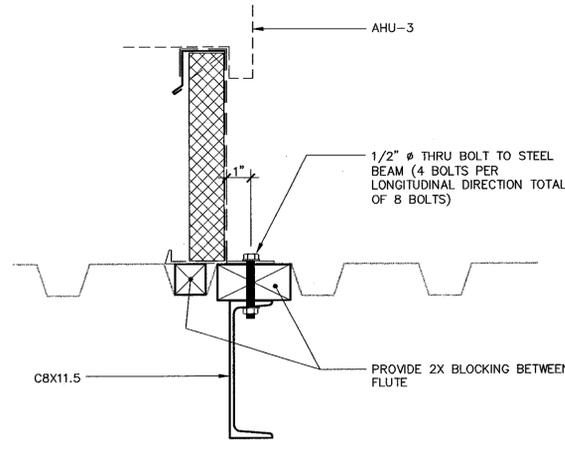
2 ANCHORAGE OF DX-5
SCALE 3"=1'-0"



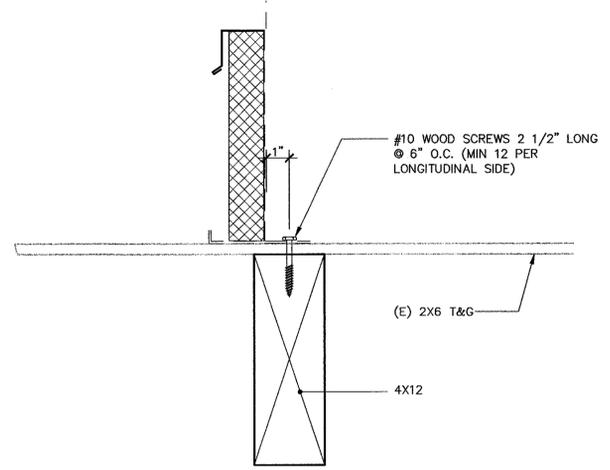
5 4X12 HANGER
SCALE 2"=1'-0"



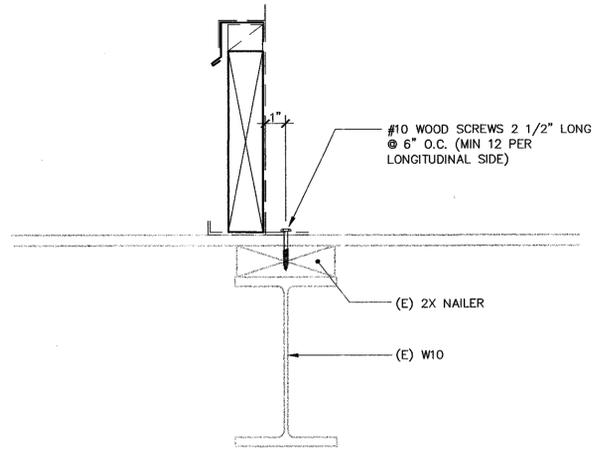
10 DX-10 ANCHORAGE
SCALE 3"=1'-0"



3 ANCHORAGE OF AHU-3
SCALE 3"=1'-0"



6 DX-6 ANCHORAGE
SCALE 3"=1'-0"



8 DETAIL
SCALE 3"=1'-0"

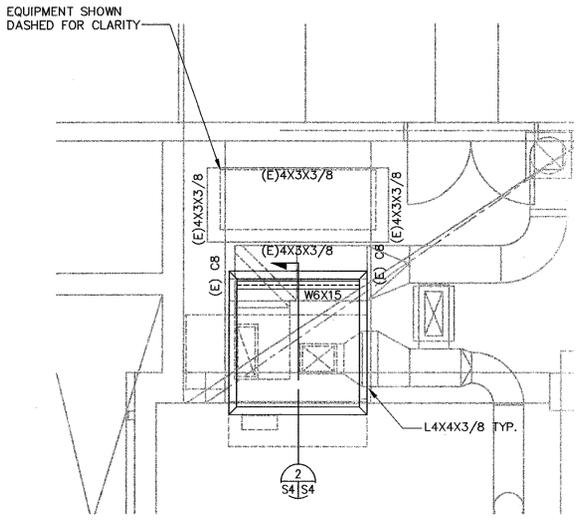
Approved for Construction
Moffett Field Permit Board
[Signature]
Chief Building Official
Permit No. 06P033

ZONE	LETTER	DESCRIPTION	DRAWN	DATE	APPRVD
REVISIONS					
<p>Ames Research Center Moffett Field, California</p> <p>M003 CONFERENCE CENTER HVAC & REROOFING STRUCTURAL</p> <p>ENLARGED PLAN AND DETAILS</p>					
DESIGNER	J. VALENCIA	DATE	5/11/07		
CHECKED	G. ALTBERG	DATE	5/10/07		
PROJ MGR	M. CALLAHAN	DATE	5/10/07		
REQUESTER	P. LEE	DATE	5/10/07		
R&QA		DATE			
SAFETY		DATE			
SUPERVISOR	P. CHAN	DATE	5/11/07	SIZE	D
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				SHEET	OF
				FILE NAME:	03-S05
					5-10-2007

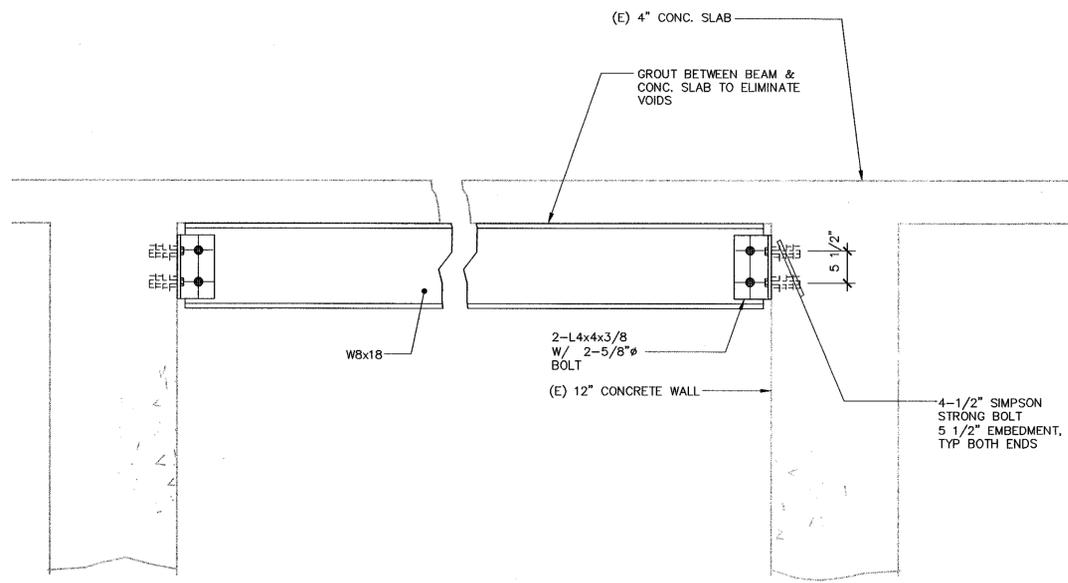
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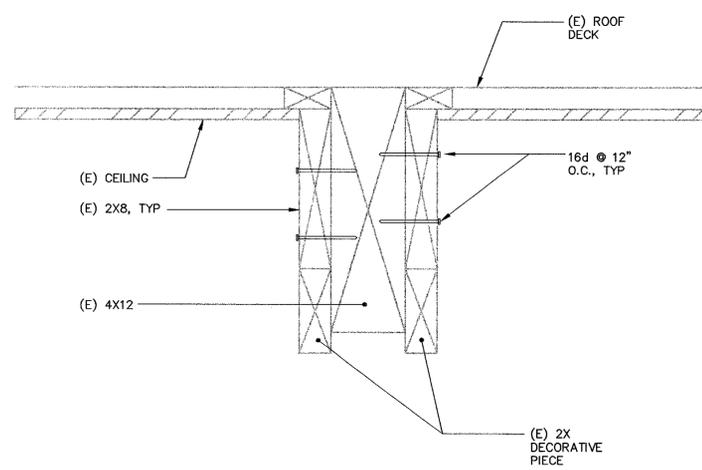
8 7 6 5 4 3 2



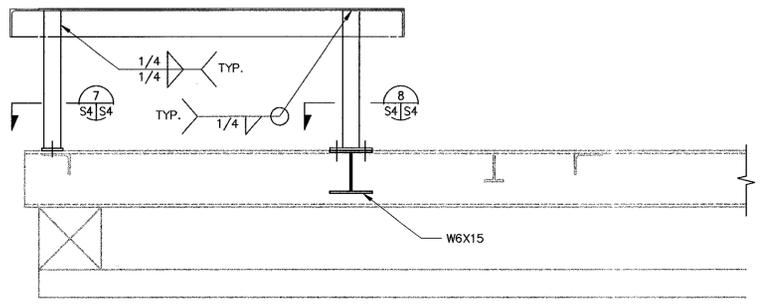
1 ENLARGED PLAN (DX-4)
SCALE 1/4"=1'-0"



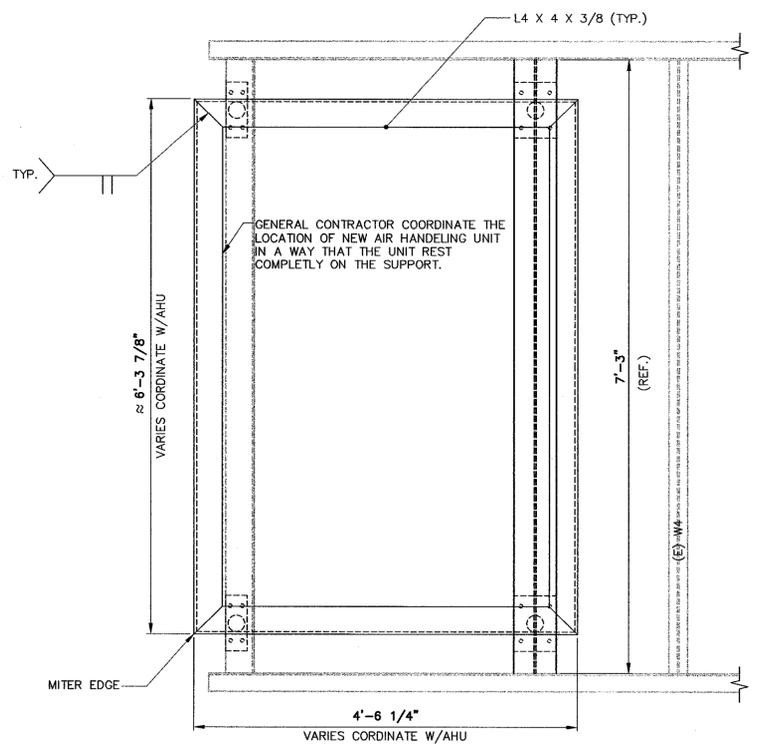
3 SECTION @ (N) BEAM/HVAC DX-3 EQUIPMENT
SCALE 1 1/2"=1'-0"



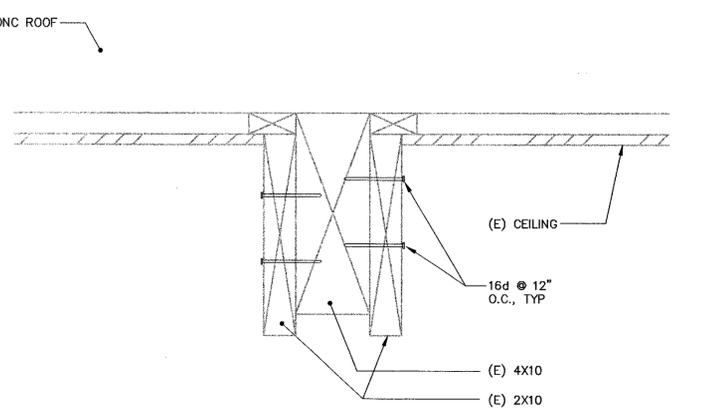
6 SECTION @ MAIN LOUNGE
SCALE 3"=1'-0"



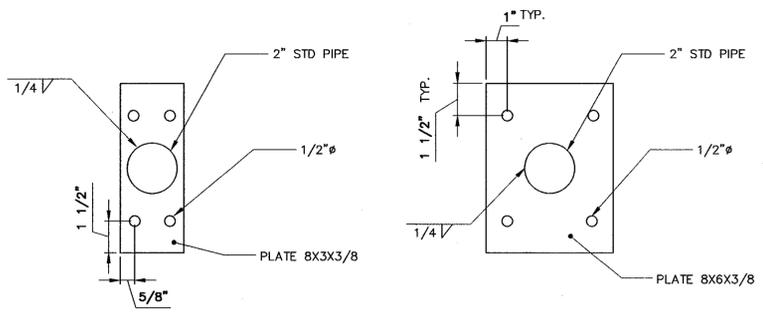
2 SECTION @ DX-4 PLATFORM
SCALE 1"=1'-0"



9 DX-4 PLATFORM
SCALE 1"=1'-0"



5 SECTION @ PATIO ROOM BEAM
SCALE 3"=1'-0"



7 SECTION SUPPORT
SCALE 3"=1'-0"

8 SECTION SUPPORT
SCALE 3"=1'-0"

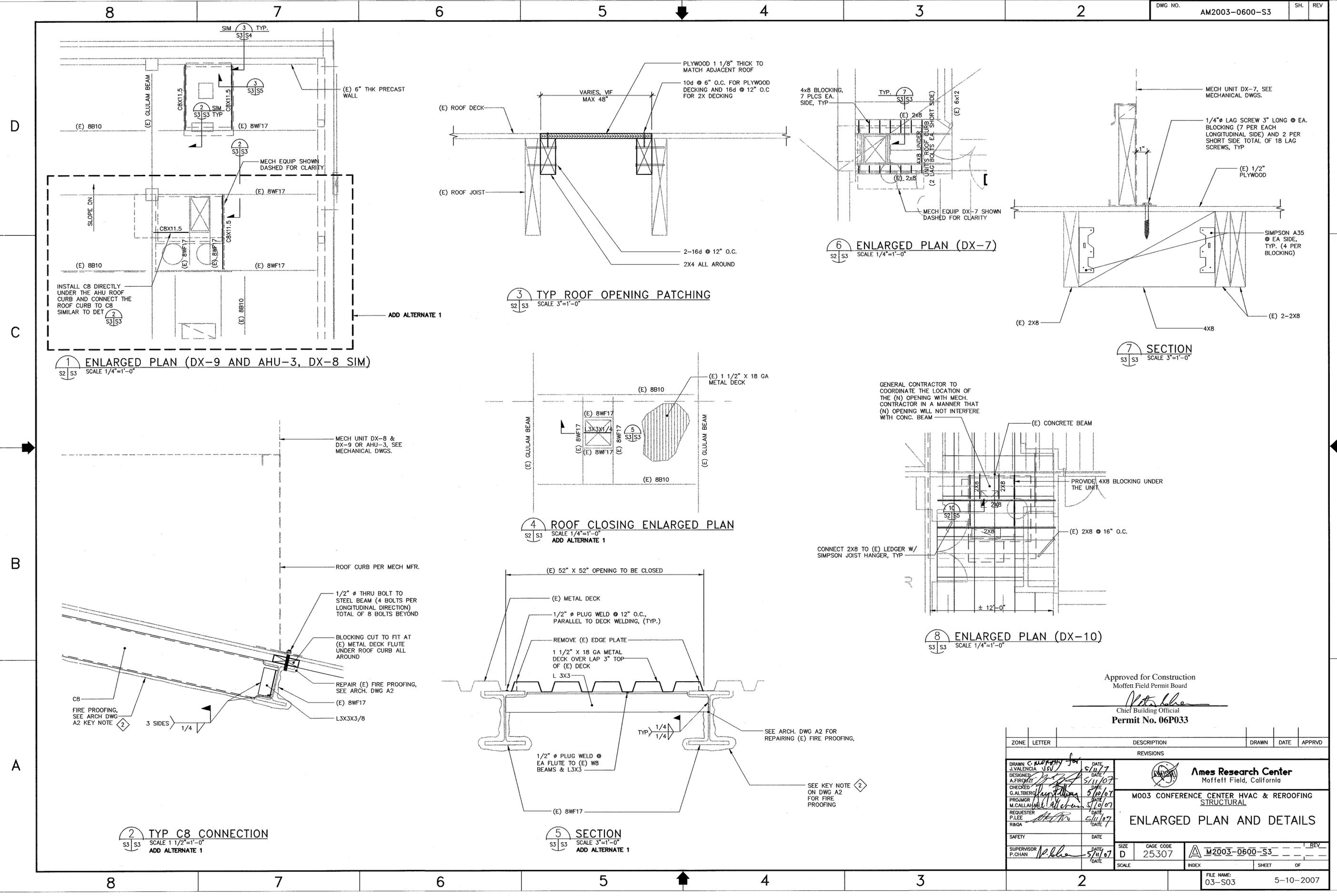
Approved for Construction
Moffett Field Permit Board
Nita Lohan
Chief Building Official
Permit No. 06P033

ZONE	LETTER	DESCRIPTION	DRAWN	DATE	APPRVD
REVISIONS					
DRAWN: J. VALENCIA/JR DESIGNED: A. FRIEDL CHECKED: G. ALTBERG PROJ MGR: M. CALLAHAN REQUESTER: P. LEE R&QA: [Signature] DATE: 5/11/07					
Ames Research Center Moffett Field, California M003 CONFERENCE CENTER HVAC & REROOFING STRUCTURAL					
MISCELLANEOUS DETAILS					
SAFETY		DATE			
SUPERVISOR: P. CHAN		DATE: 5/11/07		SCALE: D	
GAGE CODE: 25307		INDEX: M2003-0600-S4		SHEET: 5-10-2007	

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1 ENLARGED PLAN (DX-9 AND AHU-3, DX-8 SIM)
SCALE 1/4"=1'-0"
S2 S3

3 TYP ROOF OPENING PATCHING
SCALE 3"=1'-0"
S2 S3

6 ENLARGED PLAN (DX-7)
SCALE 1/4"=1'-0"
S2 S3

7 SECTION
SCALE 3"=1'-0"
S3 S3

4 ROOF CLOSING ENLARGED PLAN
SCALE 1/4"=1'-0"
ADD ALTERNATE 1
S2 S3

8 ENLARGED PLAN (DX-10)
SCALE 1/4"=1'-0"
S3 S3

2 TYP C8 CONNECTION
SCALE 1 1/2"=1'-0"
ADD ALTERNATE 1
S3 S3

5 SECTION
SCALE 3"=1'-0"
ADD ALTERNATE 1
S3 S3

GENERAL CONTRACTOR TO COORDINATE THE LOCATION OF THE (N) OPENING WITH MECH. CONTRACTOR IN A MANNER THAT (N) OPENING WILL NOT INTERFERE WITH CONC. BEAM

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Moffett Field Permit Board
[Signature]
Chief Building Official
Permit No. 06P033

ZONE	LETTER	DESCRIPTION	DRAWN	DATE	APPRVD
REVISIONS					
DRAWN: C. RUFFO DESIGNED: J. VALENCIA CHECKED: G. ALBERG PROMGR: M. CALLAHAN REQUESTER: P. LEE R&QA: [Signature]					
Ames Research Center Moffett Field, California M003 CONFERENCE CENTER HVAC & REROOFING STRUCTURAL					
ENLARGED PLAN AND DETAILS					
SAFETY		DATE	DATE		
SUPERVISOR		DATE	SIZE	CAGE CODE	REV
P. CHAN		5/11/07	D	25307	1
SCALE		INDEX	SHEET OF		
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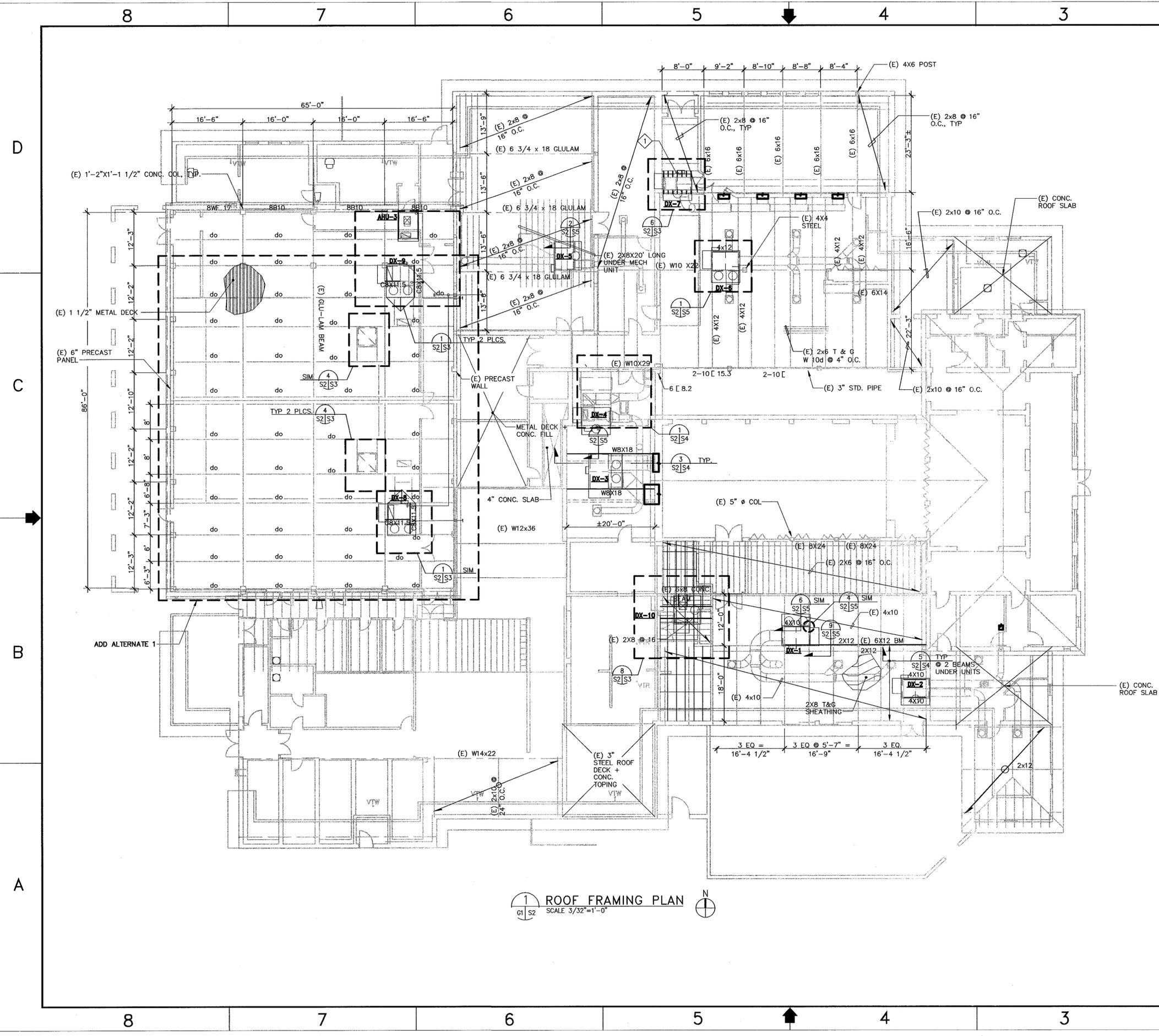
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SHEET NOTES

1. DIMENSIONS ARE FOR REFERENCED ONLY.
2. FOR TYPICAL ROOF CLOSING DETAIL, SEE $\frac{3}{S2/S3}$ U.N.O.

KEY NOTES:

- $\frac{1}{S2/S3}$ PROVIDE 4-4X8 BLOCKING UNDER THE UNIT, TYP BOTH SIDES.



1 ROOF FRAMING PLAN
SCALE 3/32"=1'-0"

Approved for Construction
Moffett Field Permit Board
Nita Lela
Chief Building Official
Permit No. 06P033

ZONE	LETTER	DESCRIPTION	DRAWN	DATE	APPRVD																										
REVISIONS																															
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DRAWN J. VALENCIA DATE 5/11/07	DATE 5/11/07	Ames Research Center Moffett Field, California M003 CONFERENCE CENTER HVAC & REROOFING STRUCTURAL ROOF FRAMING PLAN	SIZE D	CAGE CODE 25307	SCALE 																										
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PROMGR M. CALLAHAN	DATE 5/10/07		DATE 5-10-2007	1 REV	1 REV																										
REQUESTER P. LEE	DATE 5/10/07		SUPERVISOR P. CHAN	DATE 5/11/07	DATE 5/11/07																										

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7

6

5

4

3

2

GENERAL NOTES

- 1. ALL STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE SPECIFICATIONS AND ALL OTHER DRAWINGS RELATING TO THE WORK.
2. FOR LOCATIONS OF AND DIMENSIONS OF SLEEVES, CURBS, OPENINGS, DEPRESSIONS, AND EMBEDDED OR ATTACHED ITEMS NOT SHOWN ON THE STRUCTURAL DRAWINGS, REFER TO ARCHITECTURAL DRAWINGS.
3. BEFORE FABRICATION AND/OR CONSTRUCTION ALL DIMENSIONS TO AN EXISTING STRUCTURAL ELEMENT SHALL BE VERIFIED.
4. NO PIPES, DUCTS, OR CONDUITS FOR MECHANICAL, ELECTRICAL OR PLUMBING TRADES SHALL PASS THROUGH STRUCTURAL MEMBERS, UNLESS SHOWN ON STRUCTURAL DRAWINGS.
5. TEMPORARY BRACING REQUIREMENTS ARE THE RESPONSIBILITY OF THE CONTRACTOR.

QUALITY CONTROL

- 1. INSPECTIONS AND TESTING SHALL COMPLY WITH SPECIFICATIONS.
2. ALL INSPECTIONS INCLUDING SPECIAL INSPECTIONS AND CONTINUOUS INSPECTIONS SHALL BE DONE BY A QUALIFIED TESTING AGENCY AND QUALIFIED INSPECTORS AT THE EXPENSE OF THE CONTRACTOR. GOVERNMENT SHALL BE NOTIFIED IN ADVANCE TO WITNESS ALL THE TESTS. ALL TEST RESULTS DOCUMENTATIONS SHALL BE SUBMITTED TO THE GOVERNMENT.
3. SPECIAL INSPECTIONS SHALL COMPLY WITH CBC 2001, SECTION 1701. SPECIAL INSPECTION SHALL BE PROVIDED FOR THE FOLLOWING USE:
A) CONCRETE - DURING THE TAKING OF TEST SPECIMENS AND PLACING OF CONCRETE.
B) WELDING - WELDING SHALL BE DONE IN AN APPROVED SHOP. APPROVED FABRICATORS SHALL CONFORM TO UBC SECTION 1701. ALL FIELD WELDING SHALL HAVE CONTINUOUS INSPECTION.
C) EPOXY ANCHORS AND EXPANSION ANCHORS INTO EXISTING CONCRETE - DURING INSTALLATION.
D) HIGH STRENGTH BOLTS - DURING INSTALLATION.
E) REINFORCING STEEL - DURING PLACEMENT.

ROUGH CARPENTRY

- 1. GENERAL
1.1 UNLESS OTHERWISE NOTED, CARPENTRY CONSTRUCTION SHALL MEET THE 2001 C.B.C. SECTION 2320 "CONVENTIONAL LIGHT-FRAME CONSTRUCTION PROVISIONS".
1.2 ALL WOOD MATERIAL SHALL BE PROTECTED FROM WEATHER, SOIL, AND DAMAGE DURING DELIVERY, STORAGE, AND CONSTRUCTION.
2. PRODUCTS
2.1 LUMBER SHALL BE SEASONED (MOISTURE CONTENT LESS THAN 19%) AND SURFACED FOUR SIDES.
2.2 UNLESS OTHERWISE NOTED, GRADES OF LUMBER SHALL BE AS FOLLOWS:
CATEGORIES (BY GRADING RULES #16) GRADE
SILL PLATE PRESSURE TREATED DOUGLAS FIR LARCH No.1
STRUCTURAL LIGHT FRAMINGDOUGLAS FIR LARCH, NO. 1
STUDS, TOP PLATES, BLOCKING.....DOUGLAS FIR LARCH, NO.1 STUD
STRUCTURAL JOISTS AND PLANKSDOUGLAS FIR LARCH, NO. 1
2.3 BOLTS AND NUTS SHALL BE CARBON STEEL, GALVANIZED, CONFORMING TO ASTM A307, GRADE A.
2.4 ALL MEMBERS NOT RESTING ON OR FRAMING OVER THEIR SUPPORTING MEMBERS SHALL BE SUPPORTED BY MEANS OF "SIMPSON STRONG-TIE" LIGHT-GAUGE METAL JOIST HANGERS. HANGERS SHALL COMPLY WITH AND BE NAILED IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS. EQUIVALENT TYPE SIZE OF JOIST HANGERS MAY BE SUBSTITUTED, PROVIDING ICC EVALUATION REPORT CARD IS SUBMITTED TO CONTRACTING OFFICER FOR APPROVAL PRIOR TO INSTALLATION.
2.5 PLYWOOD
PLYWOOD TO BE 15/32-INCH THICK, C-D, 32/16 SPAN RATING, 5-PLY WITH EXTERIOR GLUE (EDGES BLOCKED) W/ 8d @ 6" O.C. ALL EDGES, 12" O.C. FIELD NAILING.
2.6 FRAMING HARDWARE SHALL BE AS MANUFACTURED BY "SIMPSON STRONG-TIE COMPANY, INC." OR EQUIVALENT TYPE SIZE OF JOIST HANGERS MAY BE SUBSTITUTED, PROVIDING ICC EVALUATION REPORT CARD IS SUBMITTED TO CONTRACTING OFFICER FOR APPROVAL PRIOR TO INSTALLATION. SIMPSON DESIGNATION USED IN THIS SET OF DRAWINGS.
3. LINTELS AND HEADERS:
3.1 WALL OPENINGS SHALL BE PROVIDED WITH LINTELS OR HEADERS. A TRIMMER EXTENDED TO SILL PLATE SHALL BE INSTALLED UNDER EACH END OF LINTEL OR HEADER AND SHALL PROVIDE BEARING LENGTH OF NO LESS THAN 1 1/2" INCHES FOR THE FULL WIDTH OF THE LINTEL, REFER TO TYPICAL WALL FRAMING DETAIL.
3.2 ALL BOLTED WOOD CONNECTIONS EXPOSED TO WEATHER SHALL HAVE STANDARD MALLEABLE IRON WASHERS BETWEEN BOLT HEAD, OR NUT, AND WOOD.
3.3 DO NOT ALLOW WORKERS ON JOISTS OR RAFTERS UNTIL ALL HANGARS, BLOCKING, AND BRACING HAVE BEEN INSTALLED. FOLLOW ALL MANUFACTURER'S SAFETY RECOMMENDATIONS. DO NOT PLACE LOADS ON JOISTS UNTIL ALL SHEETING IS COMPLETELY INSTALLED AND FASTENED. INSTALL I-JOISTS IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN RECOMMENDATIONS.
3.4 NAILING SHALL BE PER C.B.C TABLE 23-II-B-1 UNLESS OTHERWISE NOTE. WHERE POSSIBLE, NAILS DRIVEN PERPENDICULAR TO THE GRAIN SHALL BE USED INSTEAD OF TOE NAILS. SEE THE DRAWINGS FOR ADDITIONAL NAILING REQUIREMENTS.

ABBREVIATIONS

- A.B. ANCHOR BOLT
ACI AMERICAN CONCRETE INSTITUTE
AHL AIR HANDLING UNIT
ADD'L ADDITIONAL
AISC AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ASTM AMERICAN SOCIETY FOR TESTING MATERIALS
AWS AMERICAN WELDING SOCIETY
BOTT BOTTOM
BM BEAM
C CENTER LINE
CBC CALIFORNIA BUILDING CODE
CLR CLEARANCE
COL COLUMN
CONC CONCRETE
CONN CONNECTION
CONT CONTINUOUS
DIA OR Ø DIAMETER
E EXISTING
EA EACH
EL OR ELEV ELEVATION
EMBED EMBEDMENT
FLG FLANGE
FRMG FRAMING
F.S. FAR SIDE
FTG FOOTING
Fy YIELD STRENGTH
GA GAUGE
GYP GYPSUM
HVAC HEATING, VENTING, AIR CONDITIONING
L LENGTH
LLV LONG LEG VERTICAL
L.W.C. LIGHT WEIGHT CONCRETE
MAX MAXIMUM
MISC MISCELLANEOUS
MIN MINIMUM
mm MILLIMETER
N NEW
NO NUMBER
N.S. NEAR SIDE
N.T.S. NOT TO SCALE
O.C. ON CENTER
OPNG OPENING
OPP OPPOSITE
PL OR R PLATE
REF REFERENCE
REIN REINFORCEMENT
REQD REQUIRED
S.C. SLIP CRITICAL
SIM SIMILAR
S.S. STAINLESS STEEL
STD STANDARD
STIFF STIFFENER
STL STEEL
T & B TOP AND BOTTOM
THK THICK, THICKNESS
T.O.C. TOP OF CONCRETE
T.O.S. TOP OF STEEL
TYP TYPICAL
UBC UNIFORM BUILDING CODE
U.N.O. UNLESS NOTED OTHERWISE
U.T. ULTRASONIC TESTING
V.I.F. VERIFY IN FIELD
V.T. VISUAL TESTING
W WITH
WP WORKING POINT
X.S. EXTRA STRONG

TOLERANCES

- 1. TOLERANCE LIMITS FOR CONCRETE CONSTRUCTION SHALL BE AS SPECIFIED IN THE LATEST EDITION OF ACI 117.

DESIGN CRITERIA

- 1. LOADING CALCULATED
LIVE LOAD : PER CBC 2001 20 PSF
WIND LOAD : 75 MPH, EXPOSURE C
SEISMIC ZONE : ZONE 4, SOIL PROFILE D, DISTANCE TO SEISMIC SOURCE TYPE "A" IS 13 km, DISTANCE TO SEISMIC SOURCE TYPE "B" IS 8.75 km.

POST-INSTALLED CONCRETE ANCHORS

- 1. PRIOR TO DRILLING HOLES FOR THE ANCHORS, USE REINFORCING STEEL SCANNER, SUCH AS HILTI PS200S AND PS200M, TO DETECT THE EXISTING REINFORCING STEEL LOCATIONS. WHEN FEASIBLE, RELOCATING THE HOLES WITHIN ONE INCH OF THE DESIGNED LOCATION IS ALLOWED WITH MODIFICATION OF THE ANCHOR PLATE. WHERE THAT IS NOT WORKABLE, DRILL THROUGH EXISTING REINFORCEMENT WITH REBAR DRILLER.
2. EXPANSION ANCHORS SHALL BE CARBON STEEL THREADED STUD WITH AN INTEGRAL CONE EXPANDER AND THREE-SEGMENT EXPANSION CLIP. THE ANCHOR SHALL HAVE BEEN TESTED AND QUALIFIED FOR PERFORMANCE IN CRACKED CONCRETE PER ACI 308.4 AND ICC-ES AC193. ANCHORS SHALL BE STRONG-BOLTS FROM SIMPSON STRONG-TIE, PLEASANTON, CA.
3. ANCHORING ADHESIVE SHALL BE A TWO-COMPONENT 100% SOLIDS EPOXY BASED SYSTEM SUPPLIED IN MANUFACTURER'S STANDARD CARTRIDGE AND DISPENSED THROUGH THE STATIC-MIXING NOZZLE SUPPLIED BY THE MANUFACTURER. EPOXY SHALL MEET THE MINIMUM REQUIREMENT OF ASTM C-881 SPECIFICATION FOR TYPE III, IV, AND V GRADE 3, CLASS B AND C AND MUST DEVELOP A MINIMUM 12,850 PSI COMPRESSIVE YIELD STRENGTH AFTER 7 DAY CURE. EPOXY MUST HAVE A HEAT DEFLECTION TEMPERATURE OF A MINIMUM 136°F. ADHESIVE SHALL BE EPOXY-TIE SET FROM SIMPSON STRONG-TIE, PLEASANTON, CA.
4. ADHESIVE ANCHOR SHALL BE INSTALLED PER SIMPSON STRONG-TIE'S INSTRUCTION FOR EPOXY-TIE SET.
5. SPECIAL INSPECTION OF ADHESIVE ANCHOR SHALL BE IN ACCORDANCE WITH CBC SECTION 1701. ITEMS TO BE REPORTED ARE:
- ADHESIVE PRODUCT INCLUDING THE NAME AND EXPIRATION DATE.
- ANCHOR BOLT OR REBAR MATERIAL, GRADE DIAMETER, LENGTH & CLEANLINESS.
- DRILL BIT DIAMETER.
- HOLE DEPTH AND CLEANLINESS.

STRUCTURAL STEEL AND MISC. IRON

- 1. ALL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE THIRTEENTH EDITION AISC SPECIFICATIONS & STANDARDS.
2. UNLESS NOTED OTHERWISE ALL STRUCTURAL STEEL, SHALL CONFORM TO ASTM A992 Fy=50 Ksi, ALL STRUCTURAL ANGLES & PLATES SHALL CONFORM TO ASTM A36 fy=36Ksi
3. ANCHOR RODS SHALL CONFORM TO ASTM F1554 GRADE 60.
4. ALL CONNECTIONS SHALL BE MADE WITH A325-SC HIGH STRENGTH BOLTS WITH DIRECT TENSION INDICATION UNLESS OTHERWISE NOTED ON THE DRAWINGS.
5. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION.
6. THE CONTRACTOR SHALL PROVIDE EVIDENCE TO THE CONTRACTING OFFICER THAT STRUCTURAL STEEL WAS FABRICATED IN AN APPROVED MANNER (CERTIFICATE OF COMPLIANCE, APPROVED FABRICATED SPECIFICATIONS, MILL REPORT, ETC).
7. WELD LENGTHS SHOWN ARE EFFECTIVE LENGTH PER CODE. WHERE LENGTHS ARE NOT SHOWN, THE WELD SHALL BE FULL LENGTH OF JOINT.
8. ALL WELDING REQUIREMENTS SHOWN OR INDICATED ON THE DRAWINGS MAY BE FIELD OR SHOP WELDED AS REQUIRED FOR EFFICIENT ERECTION, SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER AND CONTRACTING OFFICER.
9. ALL WELDING SHALL CONFORM TO LATEST EDITION OF AWS D1.1. USING E70XX.
10. VISUAL INSPECTION IS REQUIRED FOR ALL SHOP WELDING AND SHALL BE PERFORMED BY CERTIFIED WELDERS.
11. CONTINUOUS INSPECTION IS REQUIRED FOR ALL WELDING BY CERTIFIED INSPECTOR HIRED BY CONTRACTOR.

STEEL ROOF DECK

- 1. STEEL ROOF DECK SHALL BE 18 GAGE THICK 1 1/2" DEEP METAL DECK, MATCH EXISTING METAL DECK PROFILE. THE MINIMUM YIELD STRENGTH IS 33000 PSI.

CODE AND STANDARD

- 1. ALL WORK SHALL BE IN ACCORDANCE W/:
• CALIFORNIA BUILDING CODE (CBC) 2001
• AMERICAN INSTITUTE OF STEEL CONSTRUCTION, THIRTEEN EDITION.

Approved for Construction
Moffett Field Permit Board
Chief Building Official
Permit No. 06P033

Table with columns: ZONE, LETTER, DESCRIPTION, DRAWN, DATE, APPRVD, REVISIONS

Table with columns: DRAWN, DESIGNED, CHECKED, PROJECTOR, REQUESTER, P.LEE, R&QA, SAFETY, SUPERVISOR, P.CHAN, DATE, DATE, DATE, DATE, DATE, DATE

Ames Research Center
Moffett Field, California
M003 CONFERENCE CENTER HVAC & REROOFING STRUCTURAL
STRUCTURAL NOTES, SYMBOLS AND ABBREVIATIONS
SIZE D GAGE CODE 25307
SCALE AS SHOWN INDEX SHEET OF
FILE NAME: 03-S01 5-10-2007

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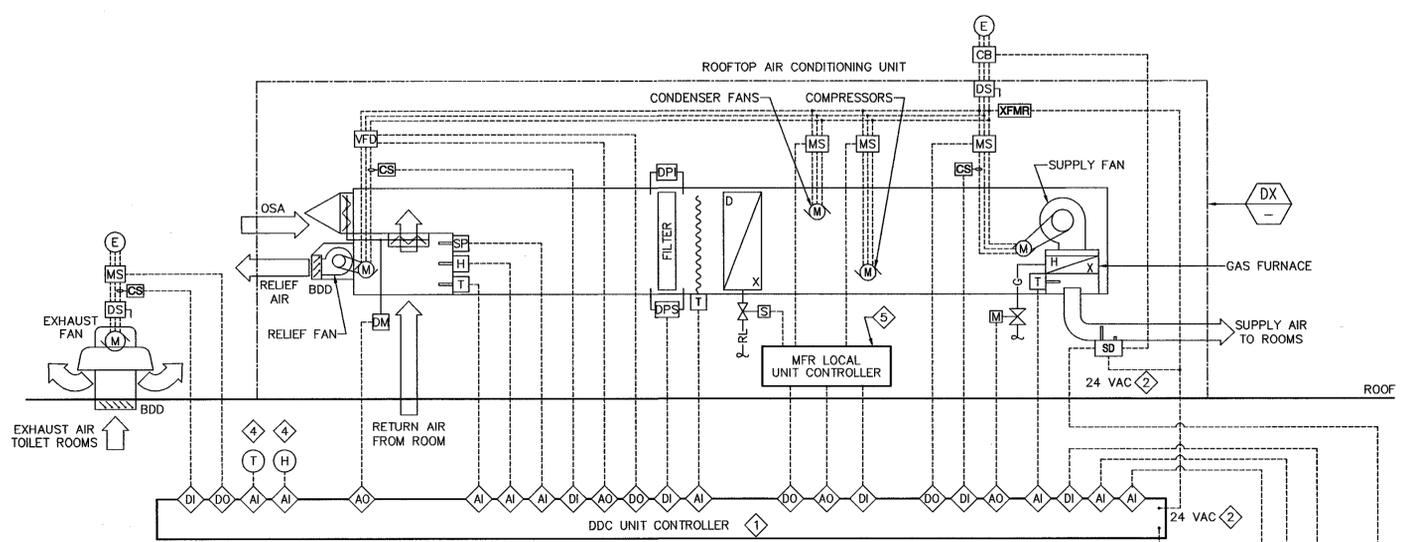
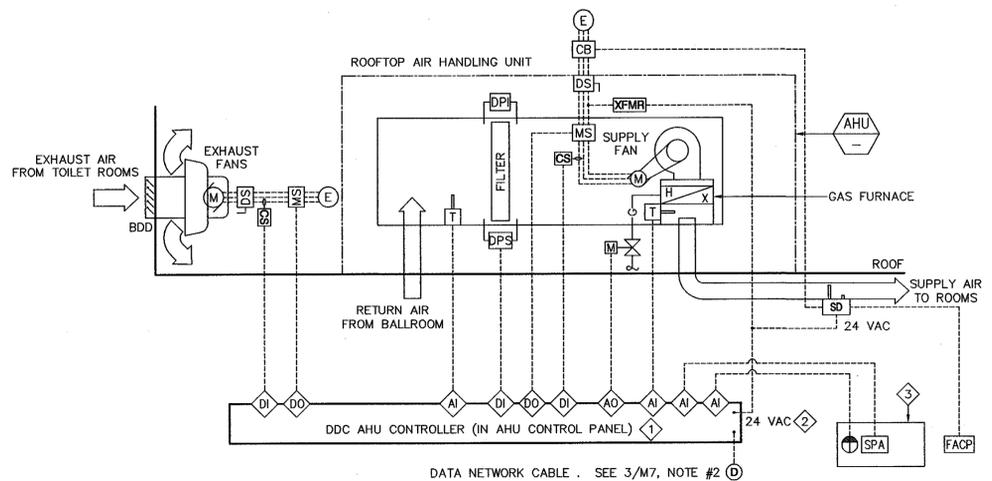


DIAGRAM NOTES:
 1. CONNECT ALL DDC CONTROL POINTS TO DDC UNIT CONTROLLER: SIEMENS PXC24 FOR ROOFTOP APPLICATION WITH COMMUNICATION COMPATIBLE WITH CONTROL SYSTEM. FACTORY MOUNT INSIDE UNIT CONTROL PANEL.
 2. CONNECT 24 VOLT POWER FROM STEP-DOWN TRANSFORMER IN UNIT CONTROL PANEL AND UNIT SMOKE DETECTOR
 3. WALL MOUNTED USER INTERFACE WITH TEMPERATURE SENSOR, DIGITAL TEMPERATURE DISPLAY, DIGITAL SETPOINT ADJUSTMENT (PROGRAM LIMIT USER ADJUSTMENT TO ±6°F): SIEMENS SERIES 1000 PART# 544-780-B. SEE PLANS FOR LOCATION.

DIAGRAM NOTES:
 1. CONNECT ALL DDC CONTROL POINTS TO DDC UNIT CONTROLLER: SIEMENS PXC24 FOR ROOFTOP APPLICATION WITH COMMUNICATION COMPATIBLE WITH CONTROL SYSTEM. FACTORY MOUNT INSIDE UNIT CONTROL PANEL. PROVIDE ADDITIONAL CONTROLLERS AS REQUIRED FOR NUMBER OF POINTS.
 2. CONNECT 24 VOLT POWER FROM STEP-DOWN TRANSFORMER IN UNIT CONTROL PANEL AND UNIT SMOKE DETECTOR
 3. WALL MOUNTED USER INTERFACE WITH TEMPERATURE SENSOR, DIGITAL TEMPERATURE DISPLAY, DIGITAL SETPOINT ADJUSTMENT (PROGRAM LIMIT USER ADJUSTMENT TO ±6°F), AND PUSHBUTTON OVERRIDE TO OPERATE ROOFTOP UNIT IN OCCUPIED MODE FOR PROGRAMMED DURATION ("BYPASS TIMER"): SIEMENS SERIES 1000 PART# 544-780-B. SEE PLANS FOR LOCATION OF USER INTERFACES.
 4. HOODED OSA TEMPERATURE AND HUMIDITY SENSORS ON DX-3 ONLY
 5. LOCAL CONTROLLER TO CONTROL SUPPLY FANS AND DX COOLING CAPACITY ON COOLING UNITS. DX CAPACITY CONTROL INCLUDES CONDENSER FANS, COMPRESSORS, REFRIGERANT CIRCUITS, AND ALL SAFETIES. SEE MFR SUBMITTAL FOR CONTROL WIRING

2 ROOFTOP UNIT (AHU-3) FLOW AND CONTROL DIAGRAM
 SCALE: NONE

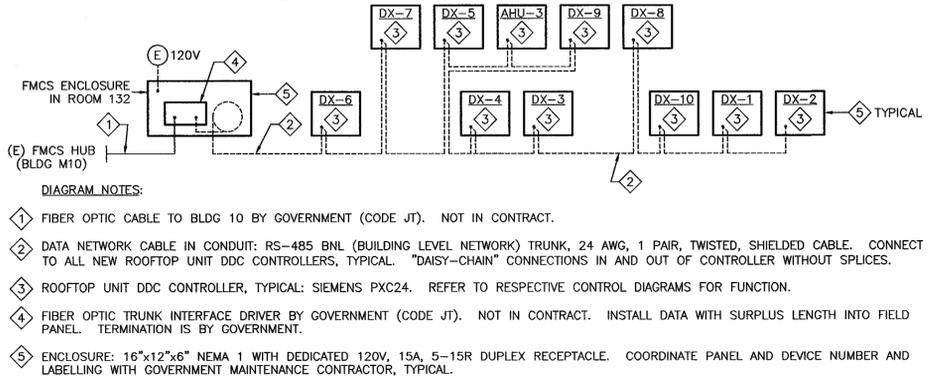
1 ROOFTOP UNIT (DX-1 TO DX-10) FLOW AND CONTROL DIAGRAM
 SCALE: NONE

CONTROL LEGEND

—A—	CONTROL AIR SUPPLY
—E—	ELECTRICAL WIRING
(M)	CONTROL AIR MAIN
(E)	ELECTRICAL POWER CONNECTION
(D)	DATA COMMUNICATION CABLE LINK
(M)	ELECTRICAL MOTOR
(MS)	MOTOR STARTER BY DIV. 16
(CB)	SHUNT TRIP CIRCUIT BREAKER
(VFD)	VARIABLE FREQUENCY DRIVE
(DS)	ELECTRICAL DISCONNECT SWITCH
(HOA)	MANUAL HAND-OFF-AUTOMATIC SWITCH
(BPT)	MANUAL BYPASS TIMER
(SPA)	SET POINT ADJUSTMENT
(DPI)	DIFFERENTIAL PRESSURE INDICATOR
(DPS)	DIFFERENTIAL PRESSURE SWITCH
(SP)	DUCT STATIC PRESSURE SENSOR
(FS)	FLOW SENSOR
(R)	CONTROL RELAY
(S)	MANUAL SWITCH
(V)	VELOCITY SENSOR
(CS)	CURRENT SENSOR
(WTS)	WALL TEMPERATURE SENSOR
(T)	OUTSIDE AIR TEMPERATURE SENSOR
(H)	OUTSIDE AIR HUMIDITY SENSOR
(T)	DUCT TEMPERATURE SENSOR
(H)	DUCT HUMIDITY SENSOR
(SD)	DUCT SMOKE DETECTOR
(XFMR)	STEP-DOWN CONTROLS TRANSFORMER
(FACP)	FIRE ALARM CONTROL PANEL
(DI)	FMCS DIGITAL INPUT
(DO)	FMCS DIGITAL OUTPUT
(AI)	FMCS ANALOG INPUT
(AO)	FMCS ANALOG OUTPUT

HVAC SEQUENCE OF OPERATION

- AIR HANDLING SYSTEM (GENERAL):**
 - SUPPLY AIR FAN:** OPERATE FAN DURING PROGRAMMABLE OCCUPANCY SCHEDULE, DURING WARM-UP, AND ONE HOUR PRIOR TO SCHEDULED OCCUPANCY. OCCUPANCY SCHEDULE CAN BE MANUALLY OVERRIDDEN BY BYPASS TIMER SWITCH. STOP FAN UPON DETECTION OF SMOKE BY DUCT SMOKE DETECTOR OR FIRE ALARM SYSTEM.
 - RELIEF AIR FAN:** INTERLOCK FAN TO OPERATE ONLY WHEN OUTSIDE AIR DAMPER IS OPEN. MODULATE FAN SPEED TO MAINTAIN RETURN PLENUM STATIC PRESSURE (ADJUSTABLE). CALIBRATE STATIC PRESSURE SET POINT FOR SLIGHT POSITIVE (+0.05"WG) IN ROOM SERVED WHEN ALL OTHER UNITS ARE ON, AND DOORS ARE CLOSED.
 - DX COOLING:** ENABLE DX CONTROL DURING OCCUPIED HOURS. CONTROL DX REFRIGERATION SYSTEM CAPACITY AS REQUIRED TO MAINTAIN ROOM AIR TEMPERATURE COOLING SET POINT. MFR LOCAL UNIT CONTROLLER SHALL SEQUENCE COMPRESSORS, CONDENSER FANS, HOT GAS REHEAT AND OTHER CONTROL DEVICES AS REQUIRED. STOP DX COOLING SYSTEM WHEN SUPPLY FAN IS OFF AND DURING WARM-UP.
 - GAS FURNACE:** ENABLE FURNACE WHEN SUPPLY FAN IS ON AND OSA DAMPER IS IN MINIMUM OR CLOSED POSITION. MODULATE GAS FLOW TO MAINTAIN ROOM AIR TEMPERATURE HEATING SET POINT. STOP FURNACE OPERATION WHEN SUPPLY FAN IS OFF.
 - OUTSIDE AIR DAMPER:** CLOSE DAMPER WHEN SUPPLY FAN IS OFF, AND DURING WARM-UP MODE. DURING HEATING MODE, MODULATE DAMPER TO OPEN FROM MINIMUM POSITION TO FULL OPEN TO MAINTAIN ROOM AIR TEMPERATURE HEATING SET POINT. DURING COOLING MODE, RETURN DAMPER TO MINIMUM POSITION WHEN OSA ENTHALPY IS HIGHER THAN RETURN AIR ENTHALPY.
 - RETURN AIR DAMPER:** CONTROL RETURN AIR DAMPER IN PARALLEL WITH OSA DAMPER OPERATION. DAMPER SHALL CLOSE AS OSA DAMPER OPENS.
 - FILTER BANK:** MONITOR DIFFERENTIAL PRESSURE ACROSS BANK, AND ALARM AT ADJUSTABLE HIGH PRESSURE SET POINT.
 - MORNING WARM-UP:** OPTIMIZE WARM-UP SEQUENCE START TIME BASED ON OUTSIDE AIR TEMPERATURE AND AVERAGE SPACE AIR TEMPERATURE RELATIVE TO ROOM HEATING SET POINT. COMPLETE AND STOP WARM-UP SEQUENCE ONE HOUR PRIOR TO SCHEDULED OCCUPANCY OF SPACE. WARM-UP SEQUENCE SHALL BE AS DESCRIBED FOR EACH COMPONENT.
 - NIGHT SETBACK RESTART:** WHEN AVERAGE ROOM TEMPERATURE FALLS BELOW HEATING SETBACK SET POINT (SPACE HEATING SET POINT MINUS 15°F), AUTOMATICALLY RESTART SYSTEM WITH MORNING WARM-UP SEQUENCE.
 - BYPASS TIMER:** OPERATE SYSTEM IN NORMAL OCCUPIED MODE (MAXIMUM 4 HOURS) DURING MANUAL OVERRIDE USING BYPASS TIMER.
 - KITCHEN TOILET EXHAUST FANS EF-3 AND EF-4:** OPERATE CONTINUOUSLY.
 - OTHER TOILET EXHAUST FANS:** INTERLOCK TO OPERATE WITH RESPECTIVE SUPPLY FAN. REFER TO AHU SCHEDULE FOR INTERLOCKS.



3 DDC SYSTEM ARCHITECTURE
 SCALE: NONE

DDC INPUT/OUTPUT TABLE

SYSTEM, APPARATUS, OR AREA POINT DESCRIPTION	INPUTS (MONITOR AND DISPLAY)				OUTPUTS & PROGRAMS											
	ANALOG		DIGITAL		COMMANDABLE		ALARM			PROGRAM						
	TEMPERATURE	HUMIDITY	TEMPERATURE	DIFFERENTIAL	START/STOP	STOP	START/STOP	START/STOP	FAILURE	FAILURE	SET POINT	CONTROL	RESTART	TIME	SCHEDULE	TRENDING
DX-1 TO DX-10	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
AHU-3	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
EF-3, 4, 10, 11	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
EF-15 TO EF-16	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

NOTE: ONLY ONE OUTSIDE AIR TEMPERATURE AND HUMIDITY SENSOR (AI) IS REQUIRED.

HVAC CONTROL NOTES

- DESIGN CONTROL SYSTEM TO PERFORM AS REQUIRED BY SEQUENCE OF OPERATION. DESIGN AND INSTALLATION SHALL CONFORM TO PROJECT SPECIFICATIONS 15900 THROUGH 15904. PROVIDE ALL EQUIPMENT, COMPONENTS, WIRING, CONDUIT AND CONNECTIONS NECESSARY FOR A FULLY FUNCTIONAL SYSTEM.
- ALL WIRING AND CABLES SHALL BE INSTALLED IN CONDUIT. ALL CONDUIT SHALL BE PROVIDED PER DIV. 16. LOW VOLTAGE POWER, CONTROL SIGNAL AND DATA WIRING AND CABLES SHALL BE PROVIDED BY DIV. 15. SEE ELECTRICAL DRAWINGS FOR OTHER WORK BY DIV. 16.
- SUBMIT CUT SHEETS FOR ALL PROPOSED FMCS EQUIPMENT, INCLUDING WIRING DIAGRAMS AND CONTROL DETAILS.
- ALL CONTROL DEVICES, WIRING AND CONDUIT SHALL BE NEW. SPLICING OF WIRES IS NOT ACCEPTABLE.
- EXTEND 24 VAC POWER TO ALL LOW VOLTAGE CONTROL DEVICES FROM LOCAL PANEL OR CONTROLLER.

Approved for Construction
 Moffett Field Permit Board
[Signature]
 Chief Building Official
Permit No. 06P033

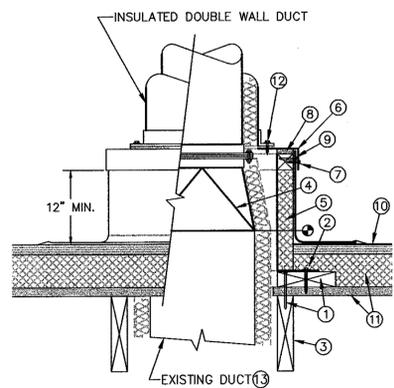
ZONE	LETTER	DESCRIPTION	DRAWN	DATE	APPRVD
REVISIONS					
DRAWN: M. Callahan 5/10/07 DESIGNED: M. Callahan 5/10/07 CHECKED: J. Leung 5/11/07 PROJECT: M. Callahan 5/10/07 REQUESTER: P. Lee 5/11/07 R&QA: [Signature] 5/11/07					
Ames Research Center Moffett Field, California M003 CONFERENCE CENTER HVAC & REROOFING MECHANICAL CONTROLS			SIZE: D CAGE CODE: 25307 SCALE: INDEX		
SUPERVISOR: P. Chan 5/11/07		FILE NAME: 03-M07 SHEET: 5-10-2007			

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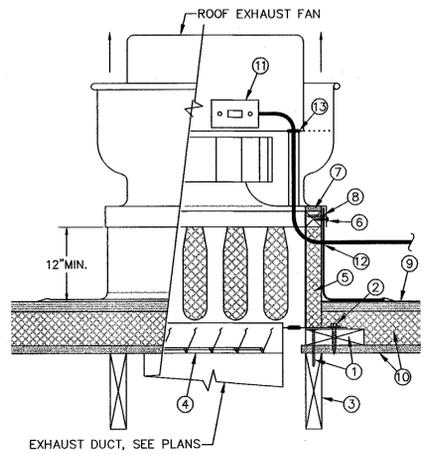
SHEET NOTES

- REFER TO SHEET M1 FOR MECHANICAL GENERAL NOTES.
- REFER TO SHEET M1 FOR TITLE 24 COMPLIANCE NOTES.



DETAIL NOTES:

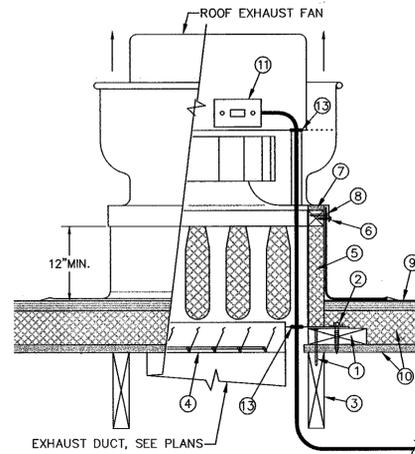
- 2X6 BASE PLATE: SECURE TO JOIST THROUGH DECK WITH 10d NAIL AT 6" ON CENTER, MINIMUM THREE EACH SIDE. USE COMMON NAIL THROUGH WOOD DECK. USE CONCRETE NAIL TO CONCRETE DECK.
- SECURE ROOF CURB BASE FLANGE TO 2X6 BASE PLATE WITH ONE 3/4"x3" LONG LAG BOLT EACH SIDE.
- EXISTING STRUCTURAL FRAMING.
- RECTANGULAR TO ROUND DUCT TRANSITION AS REQUIRED TO MATE DUCTS.
- PREFABRICATED ROOF CURB WITH RIGID INSULATION.
- 16 GA GALVANIZED SHEET METAL CURB CAP.
- SECURE CURB CAP TO CURB WITH ONE #10 SHEET METAL SCREW EACH SIDE.
- 1/2" THICK PVC FOAM GASKET TAPE BETWEEN CURB CAP AND CURB.
- SECURE MEMBRANE FLASHING TO TOP OF CURB.
- MEMBRANE ROOFING. SEE ARCHITECTURAL DWGS FOR CURB DETAIL.
- ROOF DECK AND INSULATION.
- SECURE COMPANION DUCT FLANGE WITH 3/8" THICK NEOPRENE GASKET TO CURB CAP WITH 3/16" SCREWS AT 8" ON CENTER MAXIMUM.
- EXISTING DUCT MUST BE INDEPENDENTLY SUPPORTED TO STRUCTURE.



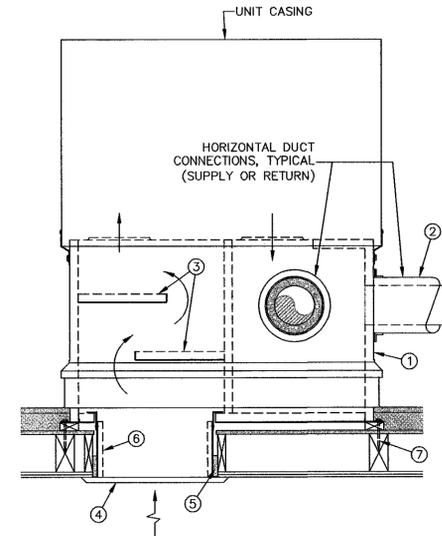
ELECTRIC SERVICE ABOVE ROOF

DETAIL NOTES:

- 2X6 BASE PLATE: SECURE TO JOIST THROUGH DECK WITH 10d NAIL AT 6" ON CENTER, MINIMUM THREE EACH SIDE. USE COMMON NAIL THROUGH WOOD DECK. USE CONCRETE NAIL TO CONCRETE DECK.
- SECURE ROOF CURB BASE FLANGE TO 2X6 BASE PLATE WITH ONE 3/4"x3" LONG LAG BOLT EACH SIDE.
- EXISTING STRUCTURAL FRAMING.
- BACKDRAFT DAMPER.
- PREFABRICATED SOUND ATTENUATING ROOF CURB WITH RIGID INSULATION.
- SECURE ROOF FAN TO CURB WITH ONE #10 SHEET METAL SCREW EACH SIDE.
- 1/2"x1.5" WIDE PVC FOAM GASKET TAPE BETWEEN FAN CURB ADAPTOR AND CURB.
- SECURE MEMBRANE FLASHING TO TOP OF CURB.
- MEMBRANE ROOFING. SEE ARCHITECTURAL DWGS FOR CURB DETAIL.
- ROOF DECK AND INSULATION.
- ELECTRIC SAFETY DISCONNECT SWITCH.
- SEAL ELECTRIC POWER ENTRY WEATHER TIGHT.
- SEAL ELECTRIC POWER ENTRY WITH GROMMET.

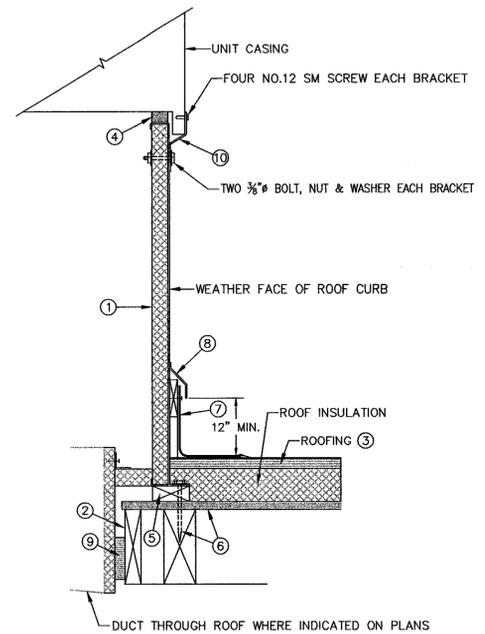


ELECTRIC SERVICE BELOW ROOF



DETAIL NOTES:

- PREFABRICATED INSULATED ACOUSTIC PLENUM ROOF CURB WITH SOLID FLOOR. REFER TO DETAIL 1/M6 FOR MOUNTING DETAILS.
- PROVIDE OPENINGS ABOVE ROOF FLASHING FOR HORIZONTAL DUCTS ABOVE ROOF. FIELD OR CUSTOM CUT OPENINGS FOR DUCT SIZES SHOWN ON ROOF PLAN.
- PROVIDE TWO INTERMEDIATE SOUND Baffles IN RETURN AIR PLENUM FOR DX-1, DX-6 AND DX-7. EACH Baffle CONSISTS OF STURDY SHEET METAL SHELF AND 2" THICK ACOUSTIC DUCT LINER WITH PROTECTIVE NOSING.
- (E) RETURN AIR INLET ON DX-1, DX-6 AND DX-7. SUPPORT AIR INLET INDEPENDENTLY FROM DUCTWORK.
- SEAL AROUND DUCT AND PIPE PENETRATIONS WITH ACOUSTIC FIRE STOPPING.
- ACOUSTICALLY LINED DUCT CONNECTION TO AIR INLET.
- REFER TO STRUCTURAL DRAWINGS FOR ANCHORAGE.



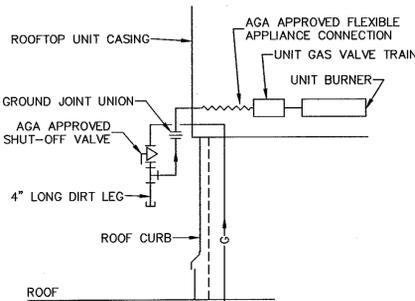
DETAIL NOTES:

- CUSTOM PREFABRICATED SOUND ATTENUATING ROOF CURB WITH RIGID INSULATION. SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL. PAINT METAL PARTS WHICH ARE EXPOSED TO WEATHER.
- ROOF SUPPORT AND FRAMING VARIES. REFER TO STRUCTURAL DRAWINGS FOR FRAMING DETAILS OF ROOF OPENINGS AND SUPPORT OF UNIT WEIGHT. REFER TO ARCH DWGS FOR ADDITIONAL ROOFING AND FLASHING DETAILS.
- 1/2" THICK PVC CLOSED CELL FOAM TAPE BETWEEN CURB CAP AND DUCT FLANGE.
- 2" MINIMUM LEVELING BLOCK: DOUGLAS FIR WOOD. SHAPE BLOCK TO LEVEL UNIT.
- ROOF TYPE VARIES. REFER TO STRUCTURAL DRAWINGS FOR ROOF CURB ANCHORAGE AT VARIOUS ROOF DECK TYPES.
- ATTACH MEMBRANE ROOF FLASHING TO NAILER ON CURB.
- 20 GA. SHEET METAL COUNTER FLASHING SCREWED TO FACE OF ROOF CURB. SEAL TOP WITH CAULKING.
- SEAL AROUND DUCT AND PIPE PENETRATIONS WITH ACOUSTIC FIRE STOPPING.
- SECURE UNIT TO ROOF CURB WITH 6"x3"x3/8" BENT PLATE BRACKETS MINIMUM ONE EACH SIDE.

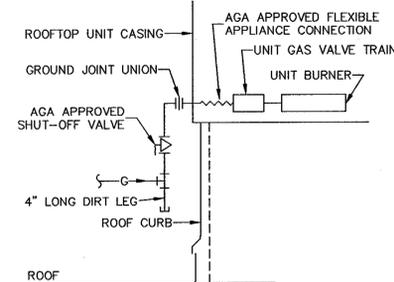
4 ROOF DUCT PENETRATION
SCALE: NONE

3 ROOF EXHAUST FAN
SCALE: NONE

2 PLENUM ROOF CURB & RETURN AIR CONNECTION
SCALE: NONE

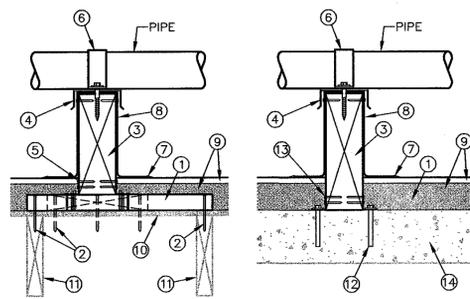


BELOW ROOF SUPPLY



ABOVE ROOF SUPPLY

8 GAS PIPE CONNECTION
SCALE: NONE



WOOD DECK

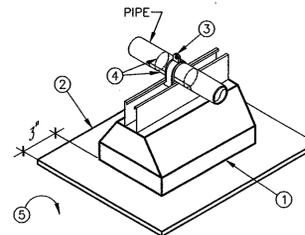
CONCRETE DECK

DETAIL NOTES:

- FLAT 2X10 SPANNING ROOF JOISTS.
- 16d SINKER NAIL AT 4" ON CENTER, MINIMUM 3 AT EACH END.
- 4X PRESSURE TREATED WOOD SUPPORT PIER. SHAVE PIER TO MATCH GRADE OF ADJACENT PIPE SUPPORTS. GAS PIPES: MINIMUM 6" ABOVE FINISH ROOF.
- 20 GAUGE GALV. SHEET METAL CAP SHEET OVER PIER.
- WOOD CONNECTOR ON BOTH SIDES AND EACH END OF PIER: SIMPSON A34 WITH FOUR 8d NAILS TO EACH CONNECTED MEMBER.
- PIPE GUIDE: B-LINE B3252 SERIES AND B3253 BASE PLATE WITH 3/4"x6" LONG LAG BOLT EACH SIDE. ALLOW GAP FOR LONGITUDINAL PIPE EXPANSION.
- HEAT WELD MEMBRANE ROOF FLASHING TO ROOF MEMBRANE.
- ATTACH MEMBRANE ROOF FLASHING TO TOP OF PIER. WRAP MEMBRANE OVER TOP SURFACE OF PIER.
- ROOFING: SEE ARCHITECTURAL DWGS. FOR ROOFING, INSULATION AND FLASHING DETAILS.
- EXISTING ROOF DECK (EXCEPT WHERE REPAIRED): REFER TO STRUCTURAL DWGS. FOR DECK TYPE.
- EXISTING ROOF JOISTS.
- ONE 3/4" ADHESIVE ANCHOR BOLTS THROUGH EACH WOOD CONNECTOR WITH 3/2" EMBEDMENT: HILTI HIT HY-150, OR EQUAL.
- WOOD CONNECTOR BOTH SIDES AND EACH END OF PIER: SIMPSON A34 OR EQUAL. CONNECT TO PIER WITH FOUR 8d NAILS EACH.
- EXISTING CONCRETE ROOF DECK.

7 PIPE BRACE PIER ON ROOF
SCALE: NONE

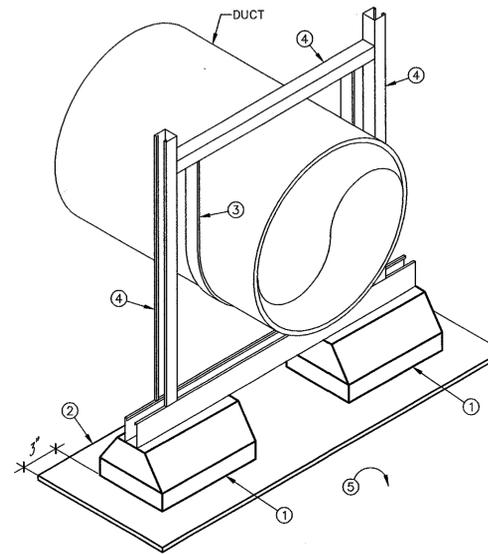
PIPE SIZE (IN)	SUPPORT SPACING GAS (STEEL) FT (MAX)
1/2"	8'
3/4"	9'
1"	9'
1 1/4"	10'
1 1/2"	12'
2"	13'
2 1/2"	14'
3"	15'



DETAIL NOTES:

- SUPPORT BASE WITH INTEGRAL FRAMING CHANNEL: B-LINE #C6 SERIES FOR GAS PIPING AND #C SERIES FOR OTHER PIPES, OR APPROVED EQUAL. BASE IS 100% RECYCLED RUBBER. INSTALL GAS PIPE MINIMUM 6" ABOVE FINISHED ROOF. REFER TO TABLE FOR SUPPORT SPACING OF GAS PIPE. REFER TO SECTION 15102 FOR SUPPORT SPACING OF PLUMBING PIPE. FOR MULTIPLE PIPES, ADJUST BASE LENGTH AS REQUIRED.
- ROOF PROTECTION PAD: EXTEND PAD 3" MINIMUM BEYOND ALL EDGES OF SUPPORT BASE. SET BASE ON PAD WITHOUT MASTIC. SEE ARCHITECTURAL DWGS FOR PAD SPECIFICATIONS.
- PIPE GUIDE: B-LINE #B2417, OR EQUAL. WITH 3/2" MINIMUM RADIAL CLEARANCE.
- PROVIDE INSULATION INSERT AND PIPE SHIELD AT SUPPORT FOR INSULATED PIPING.
- ROOFING: SEE ARCHITECTURAL DWGS. FOR ROOF AND INSULATION TYPE.

6 PIPE SUPPORT ON ROOF
SCALE: NONE



RECTANGULAR AND ROUND DUCTS (ROUND DUCT SHOWN)

DETAIL NOTES:

- SUPPORT BASE WITH INTEGRAL FRAMING CHANNEL: B-LINE #C10 SERIES, OR APPROVED EQUAL. BASE IS 100% RECYCLED RUBBER. SUPPORT SPACING IS 8" MAX.
- ROOF PROTECTION PAD: EXTEND PAD 3" MINIMUM BEYOND ALL EDGES OF SUPPORT BASE. SET BASE ON PAD WITH ADHESIVE COMPATIBLE WITH ROOFING. SEE ARCHITECTURAL DWGS (KEY NOTE #7/A4) FOR PAD SPECIFICATIONS.
- SUSPEND ROUND DUCT WITH PIPE CLAMP HANGER: B-LINE #B2400, OR EQUAL. CLAMP HANGER IS NOT USED FOR RECTANGULAR DUCT (SEE NOTE #4).
- PRE-FORMED FRAMING CHANNEL WITH BOLTED GUSSETTS. ADD ANOTHER HORIZONTAL FRAMING CHANNEL UNDER RECTANGULAR DUCTS FOR SUPPORT.
- ROOFING: SEE ARCHITECTURAL DWGS. FOR ROOF AND INSULATION TYPE.

5 DUCT SUPPORT ON ROOF
SCALE: NONE

1 ROOFTOP AC UNIT MOUNTING
SCALE: NONE

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Chief Building Official
Permit No. 06P033

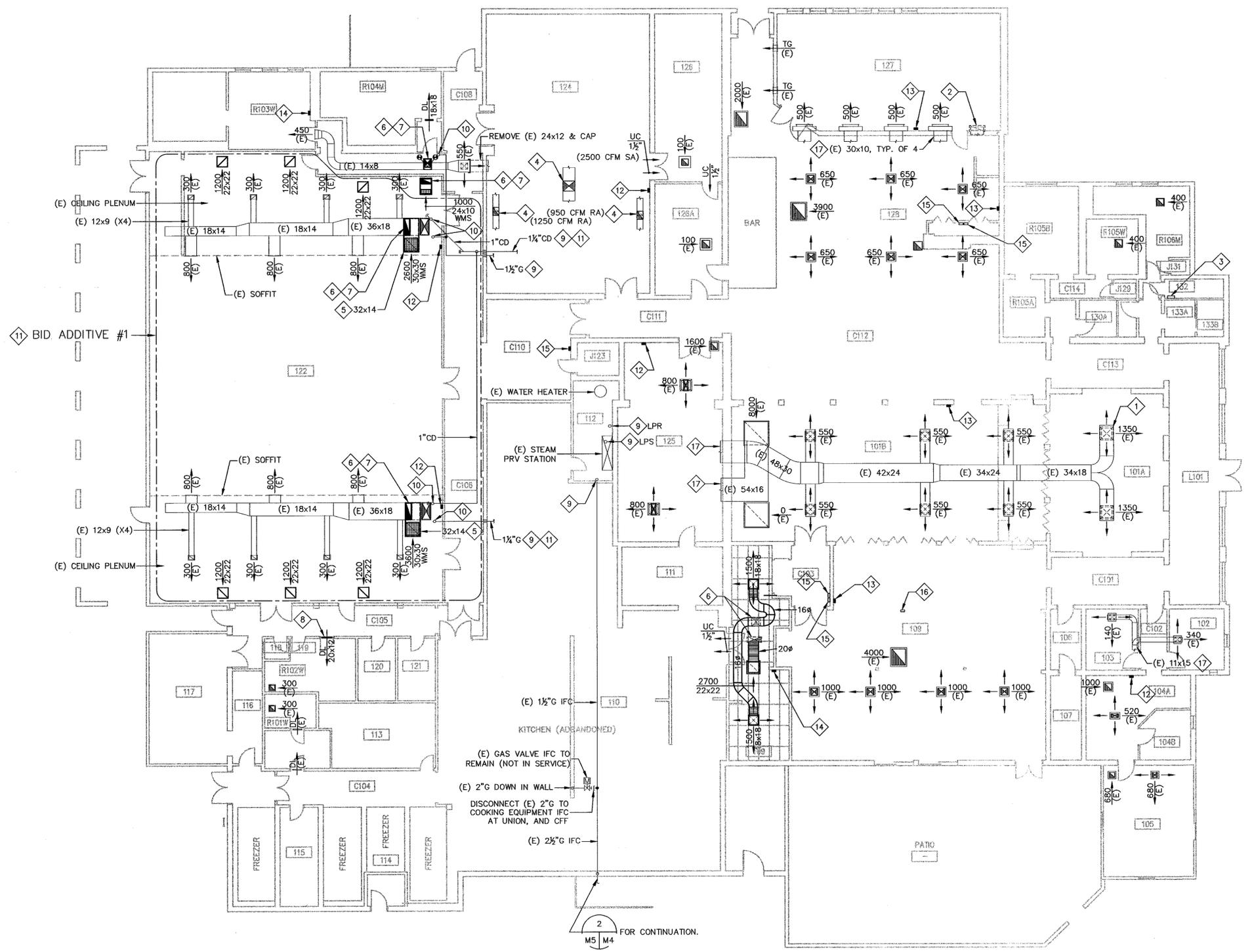
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DRAWN	M. Callahan	DATE	5/13/07		
CHECKED	P. Lee	DATE	5/16/07		
PROJECT MGR	M. Callahan	DATE	5/14/07		
REQUESTER	P. Lee	DATE	5/11/07		
R/O/A		DATE			
SAFETY		DATE			
SUPERVISOR	P. Chan	DATE	5/11/07		
SIZE	D	CAGE CODE	25307		
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Ames Research Center Moffett Field, California		M003 CONFERENCE CENTER HVAC & REROOFING MECHANICAL DETAILS			
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SHEET NOTES

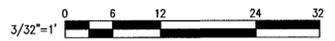
- REFER TO SHEET M1 FOR MECHANICAL GENERAL NOTES.
- REFER TO SHEET M1 FOR TITLE 24 COMPLIANCE NOTES.
- FOR EQUIPMENT PERFORMANCE REQUIREMENTS, REFER TO EQUIPMENT SCHEDULES ON SHEET M2.
- RE-USE EXISTING CONTROL CONDUITS BELOW ROOF FOR USER INTERFACE WIRING WHERE ROUTING IS COMPATIBLE WITH NEW LAYOUT. REMOVE ALL EXISTING WIRING BEFORE RE-USING EXISTING CONDUITS. MINIMIZE CONDUIT PENETRATIONS OF NEW ROOF AND LENGTH OF CONDUIT ABOVE NEW ROOF. PROVIDE NEW CONDUIT AND WIRING WHERE EXISTING CONDUITS CANNOT BE RE-USED. REMOVE EXISTING CONDUITS WHICH ARE NOT TO BE RE-USED, EXCEPT THOSE CONDUITS IN INACCESSIBLE CONCEALED SPACES MAY BE ABANDONED.

KEY NOTES:

- BALANCE NEW AND (E) SUPPLY AIR OUTLETS TO CFM INDICATED ON PLAN, TYPICAL. USE (E) BALANCING DAMPERS OR REGISTERS. NOTIFY COTR IF NO BALANCING DEVICE EXISTS.
- REMOVE (E) 36x14 CEILING EXHAUST REGISTER AND ASSOCIATED DUCTWORK. PATCH FINISHES TO MATCH (E). PATCH ROOF WALL PENETRATION AND SEAL WATER TIGHT PER DETAIL 5/A11.
- FMCS ENCLOSURE. SEE 3/M7 FOR SPECIFICATION. CONNECT TO ALL DDC AHU CONTROLLERS BY DATA NETWORK TRUNK CABLE. SEE ELECTRICAL DRAWINGS FOR CONDUIT FOR TRUNK CABLE.
- ALL (E) BRANCH DUCTWORK IN STORAGE ROOM IS NOT SHOWN. BALANCE DUCTS CONNECTED TO DUCT PENETRATION OF ROOF TO AGGREGATE AIR FLOW AS INDICATED IN PARENTHESIS. USE (E) BALANCING DAMPERS OR REGISTERS. NOTIFY COTR IF NO BALANCING DEVICE EXISTS.
- NEW RETURN DUCT ABOVE (E) SUPPLY DUCT.
- DUCT THROUGH NEW ROOF PENETRATION TO OR FROM AIR HANDLING UNIT ABOVE ROOF. SEE STRUCTURAL DWGS. FOR FRAMING.
- ABATE ASBESTOS IN FIREPROOFING PER REGULATIONS LISTED ON SHEET G1.
- REMOVE FILL AND INSTALL NEW SIGHT-PROOF DOOR LOUVER IN EXISTING DOOR OPENING.
- CAP LPS AND LPR AT TOP OF RISER FOR FUTURE CONNECTION. SEE SHEET M4, FOR POINT OF DISCONNECTION AND PIPING DEMOLITION ON ROOF.
- PIPING BELOW ROOF UP TO ROOFTOP UNIT ABOVE. SEE UNIT SCHEDULE FOR BRANCH PIPE SIZE. PAINT EXPOSED PIPING TO MATCH INTERIOR FINISHES.
- BID ADDITIVE #1: MECHANICAL WORK IN THE DESIGNATED AREA. MECHANICAL WORK OUTSIDE THE DESIGNATED AREA WHICH IS CONNECTED TO DX-8 AND DX-9.
- REPLACE EXISTING THERMOSTAT CONTROLLER WITH WALL MOUNTED USER INTERFACE WITH TEMPERATURE SENSOR. SEE M7 FOR ADDITIONAL CONTROL INFORMATION. SEE SHEET NOTE #4.
- REPLACE EXISTING TEMPERATURE SENSOR WITH WALL MOUNTED USER INTERFACE WITH TEMPERATURE SENSOR. SEE M7 FOR ADDITIONAL CONTROL INFORMATION. SEE KEY NOTE #15. SEE SHEET NOTE #4.
- WALL MOUNTED USER INTERFACE WITH TEMPERATURE SENSOR. SEE M7 FOR ADDITIONAL CONTROL INFORMATION.
- REMOVE EXISTING UNIT CONTROLLER. REMOVE ALL ASSOCIATED CONDUIT AND WIRING WHICH IS NOT NEEDED FOR RE-USE.
- REMOVE EXISTING TEMPERATURE SENSOR. REMOVE ALL ASSOCIATED CONDUIT AND WIRING WHICH IS NOT NEEDED FOR RE-USE.
- HORIZONTAL DUCT TO ROOF. SEE M3 AND M4 FOR CONTINUATION.



FLOOR PLAN
SCALE 3/32"=1'-0"



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Moffett Field Permit Board
[Signature]
Chief Building Official
Permit No. 06P033

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 Ames Research Center Moffett Field, California		M003 CONFERENCE CENTER HVAC & REROOFING MECHANICAL FLOOR PLAN																																							
DRAWN: M.CALLAHAN DESIGNED: M.CALLAHAN CHECKED: J.LEUNG JLEUNG PROMGR: M.CALLAHAN REQUESTER: P.LEE R&QA: P.LEE		DATE: 5/11/07 DATE: 5/11/07 DATE: 5/11/07 DATE: 5/11/07 DATE: 5/11/07 DATE: 5/11/07																																							
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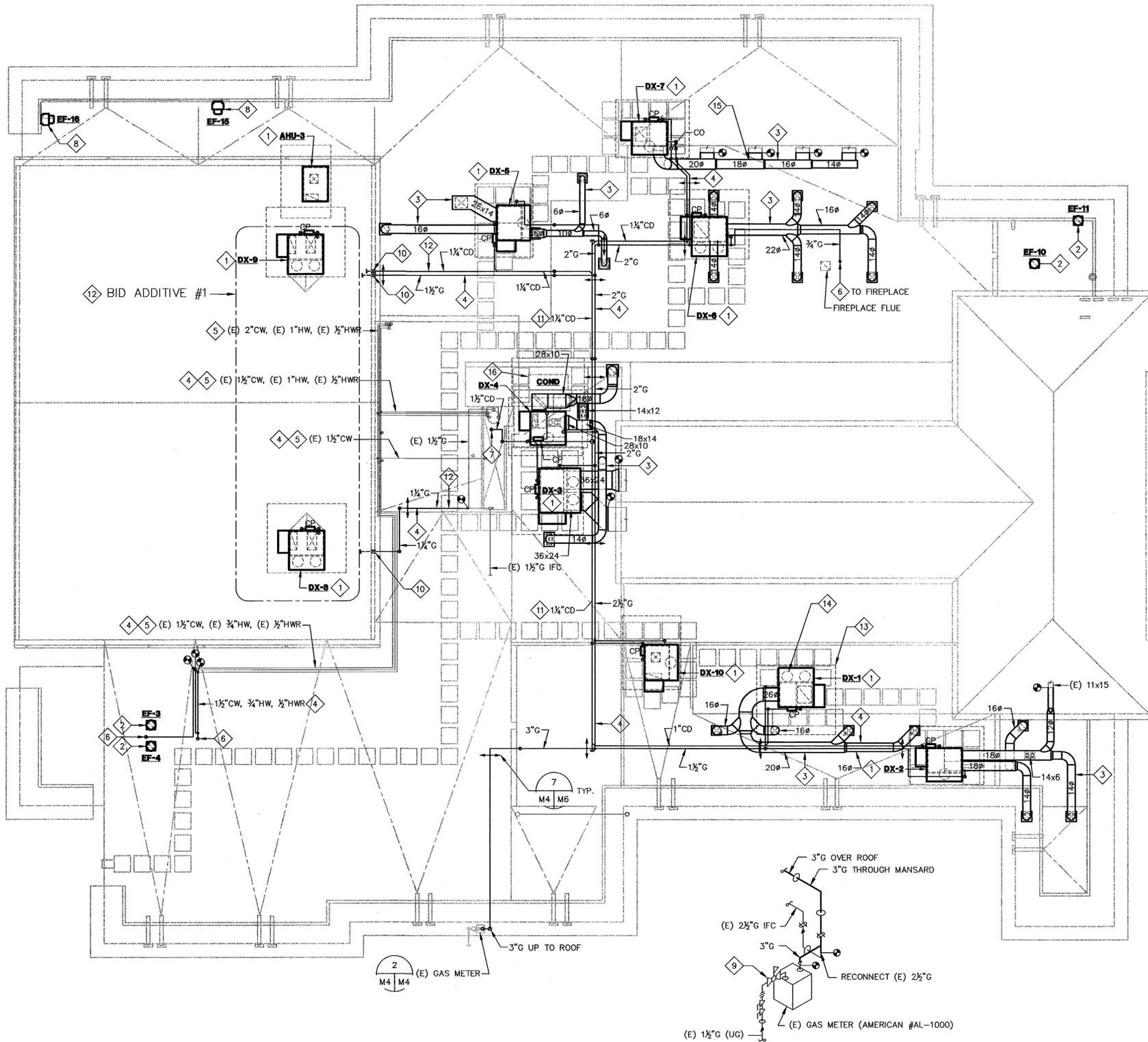
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SHEET NOTES

- 1. REFER TO SHEET M1 FOR MECHANICAL GENERAL NOTES.
- 2. REFER TO SHEET M1 FOR TITLE 24 COMPLIANCE NOTES.
- 3. REFER TO EQUIPMENT SCHEDULES ON SHEET M2 FOR EQUIPMENT PERFORMANCE REQUIREMENTS.
- 4. REFER TO EQUIPMENT SCHEDULES ON SHEET M2, FOR SIZE OF BRANCH PIPES CONNECTING TO EQUIPMENT.

KEY NOTES:

- 1 MOUNT AC-UNIT ON ROOF CURB PER DETAIL 1/M6. SEE STRUCTURAL DETAILS FOR ROOF REINFORCEMENT AND FRAMING, WHICH ARE REFERENCED ON STRUCTURAL ROOF PLAN SHEET S2.
- 2 MOUNT EXHAUST FAN ON NEW ROOF CURB PER DETAIL 3/M6. RE-USE EXISTING ROOF FRAMING OF DUCT PENETRATION.
- 3 CONNECT NEW DUCTWORK FROM AIR HANDLING EQUIPMENT TO EXISTING ROOF PENETRATION DUCTS AS SHOWN ON PLAN, TYPICAL. MOUNT DUCTWORK ON NEW SUPPORTS PER DETAIL 5/M6, TYPICAL. FLASH DUCT PENETRATION PER DETAIL 4/M6, TYPICAL.
- 4 MOUNT PIPE ON NEW SUPPORTS PER DETAIL 6/M6, TYPICAL. INSTALL PIPE BRACE WHERE SHOWN ON PLAN PER DETAIL 7/M6.
- 5 INSULATE EXISTING CW, HW AND HWR PIPES, TYPICAL.
- 6 CONNECT TO EXISTING PIPE THROUGH ROOF. FLASH PER DETAIL 3/A10.
- 7 TERMINATE 1 1/2" CD WITH AIR BREAK OVER EXISTING FLOOR DRAIN.
- 8 MOUNT NEW FAN TO EXISTING FRAMING. PROVIDE ADAPTOR OR MODIFICATIONS REQUIRED FOR MOUNTING. SEAL FAN CONNECTION TO DUCTWORK. FLASH WALL PER KN#11/A4.
- 9 ADJUST (E) PRESSURE REGULATOR ON INLET OF (E) GAS METER. SET REGULATOR OUTLET PRESSURE AT METER INLET TO 9"WG.
- 10 PIPING THROUGH WALL ABOVE LOWER ROOF. PAINT EXPOSED PIPING TO MATCH INTERIOR FINISHES.
- 11 CONDENSATE DRAIN PIPING NEED NOT BE SLOPED TO DISCHARGE TERMINATION, TYPICAL. PROVIDE DRAIN COCK AT ALL LOW POINTS, TYPICAL.
- 12 BID ADDITIVE #1: MECHANICAL WORK LOCATED INSIDE THIS AREA, PLUS EXTENSION OF GAS AND CONDENSATE DRAIN PIPING TO SERVE DX-8 AND DX-9. GAS PIPE TO AHU-3 IS IN BASE BID. SEE ALSO KEY NOTE #13.
- 13 MAINTAINED REQUIRED CLEAR ACCESS SPACE AROUND MECHANICAL EQUIPMENT AS RECOMMENDED BY MANUFACTURER, AND AS SHOWN WITH DASHED LINES, TYPICAL.
- 14 CONDENSER FAN INTEGRAL WITH AIR CONDITIONING UNIT, TYPICAL. CONDENSERS MAY OVERHANG SUPPORTING ROOF CURB.
- 15 RECTANGULAR DUCT TAKEOFF TO MATCH EXISTING BRANCH DUCT SIZE TO BE CONNECTED, TYPICAL.
- 16 IF BID ADDITIVE #1 IS NOT ELECTED, (E) CONDENSING UNIT WILL REMAIN IN THIS LOCATION. PROVIDE MFR RECOMMENDED CLEARANCE AROUND (E) UNIT.



1 ROOF PLAN
 SCALE 3/32"=1'-0"

2 GAS METER
 SCALE: NONE



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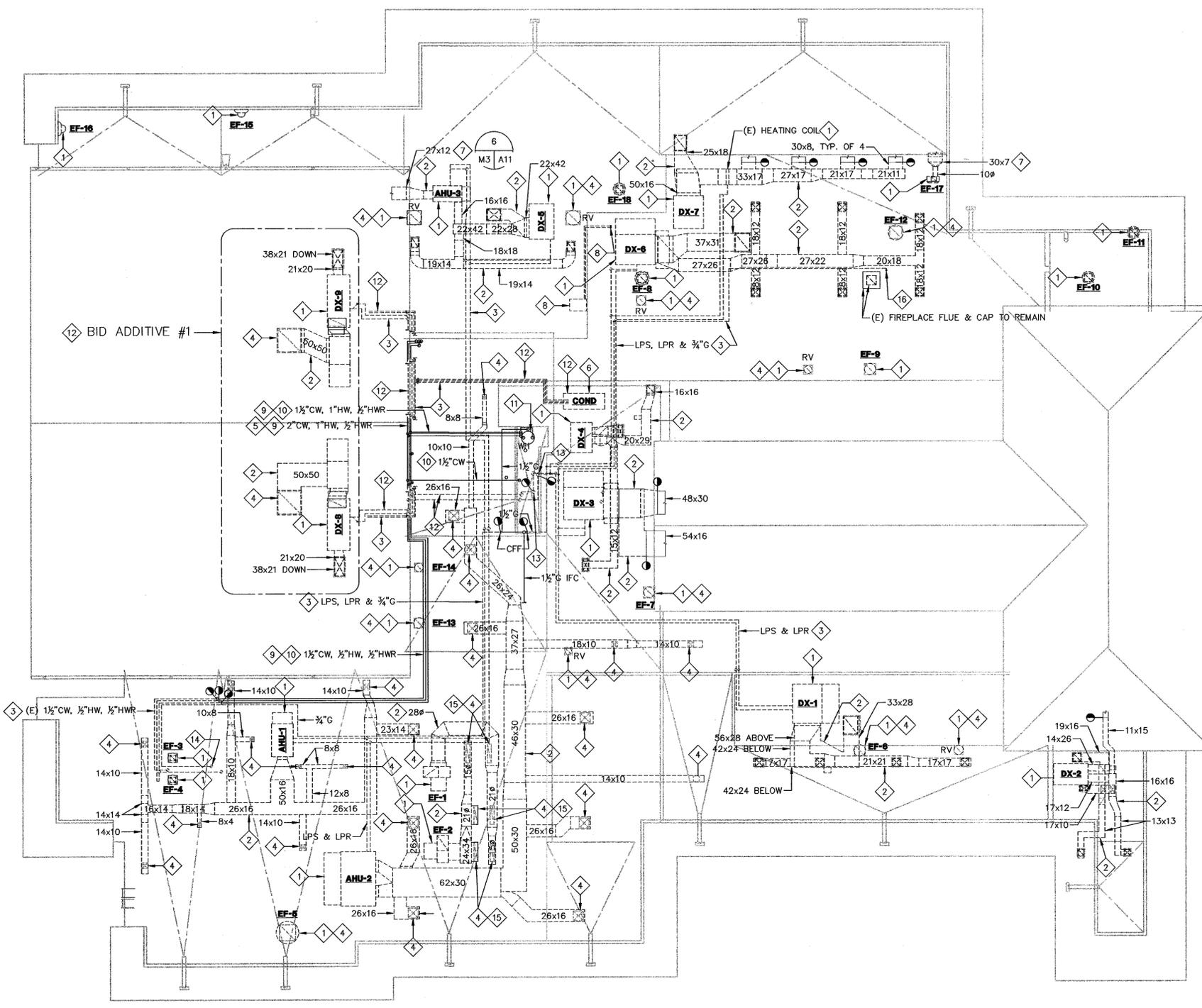
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SHEET NOTES

1. REFER TO SHEET M1 FOR HVAC GENERAL NOTES.
2. REFER TO SHEET M1 FOR TITLE 24 COMPLIANCE NOTES.
3. REFER TO EQUIPMENT SCHEDULES ON SHEET M2 FOR EQUIPMENT PERFORMANCE REQUIREMENTS.
4. REFER TO HVAC GENERAL NOTES REGARDING SEQUENCE OF WORK.
5. ALL EQUIPMENT, DUCTS AND PIPE ON DEMOLITION PLAN ARE EXISTING. DUCT AND PIPE SIZES SHOWN ARE EXISTING. NOT ALL SIZES ARE SHOWN. VERIFY EXISTING SIZES AND DIMENSIONS IN FIELD.
6. CAP ALL EXISTING PIPES TO REMAIN AT POINT OF DISCONNECTION FOR PIPING DEMOLITION.

KEY NOTES:

1. REMOVE (E) HVAC EQUIPMENT AND ASSOCIATED EQUIPMENT CURB TO PERMIT REROOFING OPERATION.
2. REMOVE (E) DUCTWORK AND SUPPORTS FROM HVAC EQUIPMENT TO POINT OF DISCONNECTION AT ROOF PENETRATIONS, TYPICAL. UNLESS OTHERWISE NOTED, CAP EXISTING DUCT THROUGH ROOF ABOVE PENETRATION FOR LATER RECONNECTION TO NEW DUCT.
3. REMOVE (E) PIPING AND SUPPORTS FROM HVAC EQUIPMENT TO POINT OF DISCONNECTION AT ROOF PENETRATION. UNLESS OTHERWISE NOTED, DISCONNECT AND CAP EXISTING PIPES AT 4" ABOVE FINAL FINISHED ELEVATION OF NEW ROOF FOR RECONNECTION TO NEW PIPE.
4. REMOVE (E) DUCT THROUGH ROOF AND ASSOCIATED CURB FLASHING. COVER ROOF OPENING WITH NEW ROOF DECK FLUSH WITH EXISTING ROOF SLOPE. REFER TO STRUCTURAL DETAIL FOR DECK REPLACEMENT. REFER TO ARCHITECTURAL DETAIL FOR REROOFING. REMOVE (E) AIR OUTLET OR INLET BELOW ROOF PENETRATION, UNLESS OTHERWISE NOTED.
5. (E) CW, HW AND HWR SUPPORTED BY WALL BRACKET TO REMAIN, TYPICAL.
6. REMOVE (E) DX REFRIGERATION CONDENSING UNIT AND ASSOCIATED REFRIGERANT PIPING TO DX-8 AND DX-9 AS BID ADDITIVE #1. SEE KEY NOTE #12.
7. REMOVE DUCT THROUGH WALL, AND PATCH WALL PENETRATION TO MATCH EXISTING. SEE KN#6/A3 FOR CLOSURE OF WALL PENETRATION. SEE M5 FOR CONTINUATION.
8. REMOVE (E) FREEZER CONDENSING UNIT AND ASSOCIATED REFRIGERANT PIPING TO POINT OF DISCONNECTION 6" BELOW ROOF. PATCH ROOF OPENING.
9. REMOVE INSULATION ON HW AND HWR FOR REPLACEMENT, TYPICAL.
10. REMOVE (E) PIPE SUPPORTS ON ROOF FOR REPLACEMENT AFTER RE-ROOF. SUPPORT PIPES TEMPORARILY DURING RE-ROOF.
11. EXISTING WATER HEATER TO REMAIN IN SERVICE.
12. BID ADDITIVE #1: DEMOLITION WORK SHOWN IN DESIGNATED AREA. DEMOLITION OF PIPING AND EQUIPMENT OUTSIDE THIS AREA WHICH ARE CURRENTLY CONNECTED TO DX-8 AND DX-9.
13. DISCONNECT AND CAP LPS AND LPR PIPING TO ROOF. LPS PIPING TO BUILDING INTERIOR TO REMAIN CONNECTED. LPR PIPING FROM BUILDING INTERIOR TO REMAIN CONNECTED.
14. DISCONNECT AND CAP (E) 3/4" GAS AT POINT OF DISCONNECTION 6" BELOW ROOF, AND PATCH ROOF.
15. DISCONNECT AND CAP (E) KITCHEN EXHAUST DUCT AT 6" BELOW ROOF DECK, TYPICAL OF 6.
16. DISCONNECT AND CAP (E) 3/4" GAS DOWN TO FIREPLACE AT 4" ABOVE FINAL FINISHED ELEVATION OF NEW ROOF FOR RECONNECTION TO NEW PIPE.



1 ROOF DEMOLITION PLAN
G1 M3 SCALE 3/32"=1'-0"



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Moffett Field Permit Board
M. Callahan
Chief Building Official
Permit No. 06P033

ZONE	LETTER	DESCRIPTION	DRAWN	DATE	APPRVD																																																
REVISIONS																																																					
<table border="1"> <tr> <td>DRAWN M. Callahan</td> <td>DATE 5/10/07</td> <td colspan="4"></td> </tr> <tr> <td>DESIGNED M. Callahan</td> <td>DATE 5/10/07</td> <td colspan="4"></td> </tr> <tr> <td>CHECKED J. Leung</td> <td>DATE 5/11/07</td> <td colspan="4"></td> </tr> <tr> <td>PROJECT M. Callahan</td> <td>DATE 5/10/07</td> <td colspan="4"></td> </tr> <tr> <td>REQUESTER P. Lee</td> <td>DATE 5/11/07</td> <td colspan="4"></td> </tr> <tr> <td>R/OA</td> <td>DATE</td> <td colspan="4"></td> </tr> <tr> <td>SAFETY</td> <td>DATE</td> <td colspan="4"></td> </tr> <tr> <td>SUPERVISOR P. Chan</td> <td>DATE 5/11/07</td> <td colspan="4"></td> </tr> </table>						DRAWN M. Callahan	DATE 5/10/07					DESIGNED M. Callahan	DATE 5/10/07					CHECKED J. Leung	DATE 5/11/07					PROJECT M. Callahan	DATE 5/10/07					REQUESTER P. Lee	DATE 5/11/07					R/OA	DATE					SAFETY	DATE					SUPERVISOR P. Chan	DATE 5/11/07				
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		M003 CONFERENCE CENTER HVAC & REROOFING MECHANICAL ROOF DEMOLITION PLAN																																																			
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ROOFTOP UNITS

Table with columns: AHU/DX, SUPPLY FAN, RELIEF FAN, NET SENSIBLE COOLING, HEATING (NAT. GAS), HEAT PUMP, FILTER BANK, ELECTRICAL DATA, UNIT WT, CURB WT, MFR & MODEL NO., R410a CHARGE, MIN. ROOM VOLUME, REMARKS, GOVERNMENT PM # OF (E) UNITS.

FANS

Table with columns: UNIT TAG, SERVICE, CFM, FSP, TYPE, WHEEL TYPE, DRIVE, OUTLET FPM, FAN RPM, MOTOR DATA, OPER WT LBS, MFR & MODEL NO., REMARKS, GOVERNMENT PM # OF (E) UNITS.

SHEET NOTES

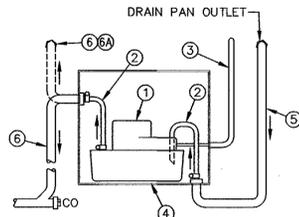
- 1. REFER TO SHEET M1 FOR MECHANICAL GENERAL NOTES.
2. REFER TO SHEET M1 FOR TITLE 24 COMPLIANCE NOTES.

KEY NOTES

- 1. ROOFTOP UNIT: UL OR ETL LISTED, INCLUDING, BUT NOT LIMITED TO, THESE FEATURES:
1) REFRIGERANT: R410A
2) FURNACE: STAINLESS STEEL HEAT EXCHANGER, MODULATING GAS VALVE
3) ECONOMIZER: FULL MODULATING, ENTHALPY CONTROL, POWER EXHAUST WITH VFD (OR RETURN FAN).

REFRIGERANT SAFETY DATA

SYSTEM DX-1 TO DX-10
REFRIGERANT TYPE: HFC-410a
REFRIGERANT CHARGE: SEE SCHEDULE
REFRIGERANT SAFETY GROUP: A1
REFRIGERANT OCCUPANCY CLASSIFICATION: COMMERCIAL
BUILDING OCCUPANCY GROUP: B
SYSTEM PROBABILITY: HIGH
SYSTEM APPLICATION: RULE 2
MAXIMUM PERMISSIBLE DENSITY: 9.4 LBS./1000 CUBIC FEET
ROOM VOLUME: SEE SCHEDULE
MAXIMUM PERMISSIBLE CHARGE: SEE SCHEDULE



DETAIL NOTES:

- 1. CONDENSATE PUMP: LITTLE GIANT #VCM-15UL, OR EQUAL, 3/8 HP, 25 GPH AT 10' WG, 15' WG SHUT-OFF HEAD, BUILT-IN CHECK VALVE, WEIGHT=4.4 LB, 115 VAC, SINGLE PHASE, UL LISTED, THERMAL OVERLOAD PROTECTION, 6' POWER CORD.
2. FLEXIBLE TUBE FROM SEALED ADAPTOR AT ENCLOSURE PENETRATION TO PUMP FILL AND TO PUMP DISCHARGE. SECURE WITH HOSE CLAMPS.
3. 3/4" CONDUIT FOR POWER WIRING FROM ROOFTOP UNIT. PROVIDE POWER FOR PUMP FROM ROOFTOP UNIT SERVICE.
4. NEMA 4X FIBERGLASS ENCLOSURE (MIN. 15.2"X13.2"X7.1"DEEP). PROVIDE 16 GA. SHEET METAL ZEE HANGER FOR MOUNTING TO TOP OF ROOF CURB, UNLESS TALL CURB INCLUDES ACCESSIBLE NAILER ABOVE ROOF FLASHING.
5. WASTE PIPING WITH 2" DEEP TRAP MINIMUM FROM ROOFTOP UNIT.
6. WASTE PIPING WITH CLEANOUTS PER CPC TO COMMON PIPE.
6A. FOR DX-8 AND DX-9: ROUTE WASTE PIPING OVER CURB AND DOWN INSIDE OF CURB. SEE M5 FOR CONTINUATION.

CONDENSATE PUMP
SCALE: NONE

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Permit No. 06P033

Table with columns: ZONE, LETTER, DESCRIPTION, DRAWN, DATE, APPRVD, REVISIONS, DRAWN, DATE, DESIGNED, DATE, CHECKED, DATE, PROJECTED, DATE, REQUESTER, DATE, P.L.E.E., DATE, SAFETY, DATE, SUPERVISOR, DATE, P.CHAN, DATE, SIZE, CAGE CODE, M2003-0600-M2, SCALE, AS SHOWN, INDEX, SHEET, OF, FILE NAME, 03-M02, 5-10-2007

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MECHANICAL GENERAL NOTES

ABBREVIATIONS (NOT ALL ABBREVIATIONS HAVE BEEN USED)

SYMBOLS

- MECHANICAL WORK SHALL CONFORM TO PROJECT CONSTRUCTION SPECIFICATIONS. ALL WORK SHALL BE NEW, UNLESS OTHERWISE INDICATED.
- WORK SHALL ACCOMMODATE USER CONFERENCE AND MEETING SCHEDULE IN A PARTIALLY OCCUPIED BUILDING. SUBMIT WORK SEQUENCE SCHEDULE FOR APPROVAL BY COTR, INCLUDING PROPOSED HVAC SHUTDOWNS AND UTILITY INTERRUPTIONS. PROVIDE TEMPORARY VENTILATION SYSTEMS DURING SHUTDOWN OF PERMANENT SYSTEMS, DURING SCHEDULED FACILITY OPERATION WHICH HAS BEEN MUTUALLY APPROVED.
- COORDINATE INSTALLATION WITH ALL TRADES.
- INSTALL ALL EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS AND WRITTEN INSTRUCTIONS, AND IN ACCORDANCE WITH LISTING REQUIREMENTS.
- SUPPORT AND BRACE ALL NEW PIPING AND DUCTWORK PER SMACNA "SEISMIC RESTRAINT MANUAL GUIDELINES FOR MECHANICAL SYSTEMS" ANSI/SMACNA 001-2000, SECOND EDITION. USE TABLES DESIGNATED FOR SEISMIC HAZARD LEVEL A (SHL-A).
- DUCT SIZES ARE CLEAR INSIDE DIMENSION. RECTANGULAR DUCT FIRST DIMENSION IS SIDE VIEWED, SECOND DIMENSION IS PERPENDICULAR TO VIEW.
- RECORD 13 DIGIT NASA EQUIPMENT NUMBER ON (E) EQUIPMENT TO BE DEMOLISHED AND SUBMIT TO COTR.
- PRE-CONSTRUCTION AIR MEASUREMENT: MEASURE AIR FLOW AT ALL EXISTING AIR OUTLETS AND INLETS PRIOR TO THE START OF ANY WORK (EXCEPT AHU-1 AND AHU-2). SUBMIT RECORD OF EXISTING CONDITION PER 15950.
- FIELD VERIFY EXISTENCE OF AIR BALANCING DEVICES IN EXISTING DUCT SYSTEMS, DURING PRE-CONSTRUCTION AIR MEASUREMENT. NOTIFY COTR IF THERE IS NO AIR BALANCING DEVICE TO BALANCE FLOW TO INDIVIDUAL AIR OUTLETS.
- INSTALL BALANCING DAMPER IN EACH NEW BRANCH DUCT CONNECTED TO AN AIR OUTLET OR INLET, WHETHER SHOWN ON PLAN OR NOT. BALANCING DAMPER SHALL BE INSTALLED AT MAXIMUM DISTANCE FROM AIR OUTLET OR INLET.
- BALANCE AIR SUPPLY, RETURN AND EXHAUST AIR SYSTEMS TO AIR FLOW QUANTITIES SHOWN ON PLAN. BALANCE OUTLETS AND INLETS TO +5% TO -5% TOLERANCE. BALANCE AIR DELIVERY EQUIPMENT TO +5% TO -0%.
- ALL VALVES AND PIPING SYSTEM SPECIALTIES SHALL BE FULL-LINE SIZE UNLESS OTHERWISE INDICATED.
- ALL REDUCTIONS IN PIPE SIZES SHALL BE MADE WITH ECCENTRIC REDUCERS WITH TOP SIDE LEVEL.
- PROVIDE ALUMINUM JACKET FOR INSULATED PIPE INSTALLED OUTDOORS.
- INSTALL CALCIUM SILICATE INSERT AND INSULATION SHIELD AT ALL INSULATED PIPE SUPPORTS.
- ALL SUPPLY DUCTS SHALL BE INSULATED. ALL RETURN DUCTS ABOVE ROOF SHALL BE INSULATED.
- PRESSURE TREATED WOOD: REFER TO STRUCTURAL GENERAL NOTES ON SHEET S1 FOR SPECIFICATION OF WOOD, FASTENING AND RE-TREATING REQUIREMENTS.
- APPROVED MANUFACTURERS: MANUFACTURERS NAMED ON DRAWINGS REFER TO ALL MANUFACTURERS FOR SIMILAR PRODUCTS LISTED BELOW. PRODUCT MUST BE EQUIVALENT IN MATERIAL, DIMENSIONS, FUNCTION AND APPLICATION AS THE NAMED PRODUCT.

ANCHOR BOLTS: HILTI, RAMSET/REDHEAD, SIMPSON, OR EQUAL. PRODUCTS MUST HAVE EQUIVALENT RATED LOADS PER ICC-ES EVALUATION REPORT.

METAL FRAMING CHANNEL, PIPE GUIDES, PIPE CLAMPS: COOPER B-LINE, UNISTRUT, POWERSTRUT, OR EQUAL. "B-LINE" REFERS TO COOPER B-LINE.

WOOD CONNECTORS: "SIMPSON" REFERS TO SIMPSON STRONG TIE AND OTHER APPROVED MANUFACTURERS LISTED ON STRUCTURAL DRAWINGS. PRODUCTS MUST HAVE EQUIVALENT RATED LOADS PER ICC-ES EVALUATION REPORT.

TITLE 24 COMPLIANCE SPECIFICATIONS

- CERTIFY THAT MECHANICAL SYSTEMS INSTALLATION MEETS ACCEPTANCE REQUIREMENTS FOR CODE COMPLIANCE, PER TITLE 24 SECTION 125. CERTIFICATIONS SHALL INCLUDE:
DUCT WORK AND PLENUMS PER SECTION 124(a) THROUGH 124(f)
ECONOMIZERS PER SECTION 144(e)
VAV SYSTEM (IF APPLICABLE)
HYDRONIC SYSTEM CONTROLS (IF APPLICABLE)
- BEFORE OCCUPANCY PERMIT IS GRANTED, SUBMIT CERTIFICATES OF ACCEPTANCE TO NASA ARC PERMIT REVIEW BOARD.

Ø	DIAMETER OR ROUND	MAX	MAXIMUM
ACM	ASBESTOS CONTAINING MATERIAL	m	METER
AC	AIR CONDITIONING	mm	MILLIMETER
AHU	ROOFTOP AIR HANDLING UNIT	m/s	METERS PER SECOND
AMP	AMPERE	MCA	MINIMUM CIRCUIT AMP
AI	ANALOG INPUT	MCC	MOTOR CONTROL CENTER
AO	ANALOG OUTPUT	MER	MECHANICAL EQUIPMENT ROOM
		MTD.	MOUNTED
		MIN	MINIMUM
		MOC	MAXIMUM OVER CURRENT PROTECTION
		MS	MOTOR STARTER
CA	COMPRESSED AIR		
CAP	CAPACITY	(N)	NEW
CC	COOLING COIL	N.O.	NORMALLY OPEN
CD	CONDENSATE DRAIN	N.T.S.	NOT TO SCALE
CER	CEILING EXHAUST REGISTER	N.I.C.	NOT IN CONTRACT
CFF	CAP FOR FUTURE CONNECTION		
CG	CEILING GRILLE	ODC	OZONE DEPLETING COMPOUND
CH	CHILLER	OSD	OPPOSED BLADE DAMPER
CHW	CHILLED WATER	OSA	OUTSIDE AIR
CHWR	CHILLED WATER RETURN		
CHWS	CHILLED WATER SUPPLY	Pa	PASCAL
CO	CLEAN OUT	PD	PRESSURE DIFFERENTIAL
CONC.	CONCRETE	PRV	PRESSURE REDUCING VALVE
COTR	CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE	(R)	RELOCATED
CP	CONDENSATE WASTE PUMP	RF	RETURN FAN
CW	DOMESTIC COLD WATER	RG	RETURN AIR GRILLE
		RH	RELATIVE HUMIDITY
		RPM	REVOLUTION PER MINUTE
		RV	ROOF VENT
DB	DRY BULB	SCH	SCHEDULE
DCW	DOMESTIC COLD WATER	S.D	SMOKE DETECTOR
DDC	DIRECT DIGITAL CONTROL	SEER	SEASONAL ENERGY EFFICIENCY RATIO
DEFL	DEFLECTION	SF	SUPPLY FAN
DIA	DIAMETER	SG	SENSIBLE
DI	DI-IONIZED WATER	SM	SUPPLY AIR GRILLE
DO	DIGITAL OUTPUT	SN	SHEET METAL
DN	DOWN	SP	SHEET NOTE
DP	DIFFERENTIAL PRESSURE	SR	STATIC PRESSURE
DPT	DIFFERENTIAL PRESSURE TRANSDUCER	SS	SUPPLY REGISTER
DPU	DIGITAL POINT UNIT	ST	SANITARY SEWER DRAIN
DSD	DUCT SMOKE DETECTOR		SOUND TRAP
DW	DEIONIZED WATER		
DWV	DRAIN, WASTE & VENT	T	THERMOSTAT
DX	ROOFTOP AIR CONDITIONING UNIT	TEC	TERMINAL EQUIPMENT CONTROLLER
(E)	EXISTING	TCC	TOTAL COOLING CAPACITY
EA	EACH	THC	TOTAL HEATING CAPACITY
EAT	ENTERING AIR TEMPERATURE	TP	TRAP PRIMER
EF	EXHAUST FAN	TYP	TYPICAL
EG	EXHAUST GRILLE		
ESP	EXTERNAL STATIC PRESSURE	UG	UNDERGROUND
ET	EXPANSION TANK		
EWT	ENTERING WATER TEMPERATURE	V	VENT PIPING
F	FIRE SPRINKLER LINE	VAC	VACUUM PIPING
FACP	FIRE ALARM CONTROL PANEL	VAV	VARIABLE AIR VOLUME
FAI	FRESH AIR INTAKE	VB	VARIABLE AIR BOX
FC	FLEXIBLE CONNECTION	VD	VOLUME DAMPER
FCO	FLOOR CLEAN OUT	VFD	VARIABLE FREQUENCY DRIVE
FD	FLOOR DRAIN, FIRE DAMPER	VTR	VENT THROUGH ROOF
FLA	FULL LOAD AMPERE	VTW	VENT THROUGH WALL
FLEX	FLEXIBLE		
FLR	FLOOR	W	SANITARY WASTE
FMCS	FACILITY MANAGEMENT CONTROL SYSTEM	WB	WET BULB
F&T	FLOAT & THERMOSTATIC TRAP	WC	WATER CLOSET
FTG	FITTING	WCO	WALL CLEAN OUT
		WH	WATER HEATER
G	GAS LINE	WMS	WIRE MESH SCREEN: (2 MESH SQUARE, 0.063"Ø WIRE)
GFE	GOVERNMENT FURNISHED EQUIPMENT		
GCO	GROUND CLEAN OUT		
GN	GENERAL NOTE		
GOV. F.C.I.	GOVERNMENT FURNISHED CONTRACTOR INSTALLED		
HDT	HORIZONTAL DRAW THRU		
HSPF	HEATING SEASONAL PERFORMANCE FACTOR		
HW	DOMESTIC HOT WATER		
HWP	HOT WATER PUMP		
HWR	HOT WATER RETURN		
HWS	HOT WATER SUPPLY		
IFC	IN FURRED CEILING		
IFS	IN FURRED SPACE		
IVB	INVERTED BUCKET STEAM TRAP		
IGV	INLET GUIDE VANES		
ISU	IN-SPACE AIRCONDITIONING UNIT		
KN	KEY NOTE		
kw	KILOWATT		
LF	LINEAR FOOT		
LRA	LOCKED ROTOR AMPERE		
LWT	LEAVING WATER TEMPERATURE		

- EXISTING MECHANICAL ITEM TO BE REMOVED
- EXISTING MECHANICAL ITEM TO REMAIN
- NEW MECHANICAL WORK
- ACOUSTICALLY LINED DUCT
- DUCT SIZE: FIRST DIMENSION FOR SIDE SHOWN
- SUPPLY DUCT UP
- SUPPLY DUCT DOWN
- RETURN DUCT UP
- RETURN DUCT DOWN
- EXHAUST DUCT UP
- EXHAUST DUCT DOWN
- CEILING SUPPLY AIR DIFFUSER (CFM/NECK SIZE) ARROWS INDICATE BLOW DIRECTIONS
- FLEXIBLE DUCT WITH TRANSITION TO NECK SIZE
- CEILING SUPPLY AIR DIFFUSER (CFM/NECK SIZE) ARROWS INDICATE BLOW DIRECTIONS
- FLEXIBLE DUCT CONNECTION TO LINED PLENUM BOX
- CEILING RETURN OR EXHAUST REGISTER (CFM/NECK SIZE)
- FLEXIBLE DUCT WITH TRANSITION TO NECK SIZE
- CEILING RETURN OR EXHAUST REGISTER
- FLEXIBLE DUCT CONNECTION TO LINED PLENUM BOX
- UNDUCTED RETURN AIR GRILLE (-/NECK SIZE)
- WALL SUPPLY REGISTER (CFM/NECK SIZE)
- WALL RETURN OR EXHAUST REGISTER (CFM/NECK SIZE)
- TRANSFER GRILLE BOTH SIDES (MINIMUM SIZE)
- DOOR LOUVER (MINIMUM SIZE)
- UNDERCUT (SIZE: 1/2" UON)
- AIR TERMINAL UNIT (WITH INTEGRAL SOUND ATTENUATOR)
- AIR TERMINAL UNIT WITH TERMINAL HEATING COIL
- MANUAL VOLUME BALANCING DAMPER
- AUTOMATIC MOTORIZED CONTROL DAMPER
- COMBINATION FIRE AND SMOKE DAMPER
- DUCT ELBOW WITH TURNING VANES
- EQUIPMENT TAG WITH SEQUENCE NO.
- KEY NOTE IDENTIFIER, DIAGRAM NOTE IDENTIFIER
- POINT OF CONNECTION
- POINT OF DISCONNECTION
- SPACE TEMPERATURE SENSOR

- CALIBRATED BALANCING VALVE (CIRCUIT SETTER)
- CHECK VALVE
- FLEXIBLE PIPE CONNECTION
- GATE VALVE
- GLOBE VALVE
- PUMP
- MANUAL AIR VENT
- PIPE REDUCER
- PRESSURE GAGE
- SHUT-OFF COCK
- STRAINER WITH BLOW-DOWN VALVE
- THERMOMETER
- UNION
- 3-WAY CONTROL VALVE
- 2-WAY CONTROL VALVE
- SOLENOID CONTROL VALVE
- RECTANGULAR TO ROUND TRANSITION
- PIPE UP
- PIPE DOWN
- DOMESTIC COLD WATER (DCW)
- DOMESTIC HOT WATER (DHW)
- SANITARY WASTE BELOW FLOOR (W)
- SANITARY WASTE UNDERGROUND (W)
- SANITARY VENT (V)
- REFRIGERANT LIQUID (RL)
- REFRIGERANT SUCTION (RS)
- REFRIGERANT HOT GAS (RG)
- LOW PRESSURE STEAM SUPPLY (LPS)
- LOW PRESSURE STEAM CONDENSATE RETURN (LPR)
- CONDENSATE DRAIN
- LATERAL PIPE BRACE (PIER). REFER TO DETAIL 7/M6.

Approved for Construction
Moffett Field Permit Board
Nita Blue
Chief Building Official
Permit No. 06P033

ZONE	LETTER	DESCRIPTION	DRAWN	DATE	APPRVD
REVISIONS					
DRAWN	M. Callahan	DATE	5/10/07		
DESIGNED	M. Callahan	DATE	5/10/07		
CHECKED	J. Leung	DATE	5/11/07		
PROJECT MGR	M. Callahan	DATE	5/19/07		
REQUESTER	P. Lee	DATE	5/11/07		
R&QA		DATE			
SUPV		DATE			
SAFETY		DATE			
SUPERVISOR	P. Chan	DATE	5/11/07		
SIZE	D	CAGE CODE	25307		
SCALE		INDEX			
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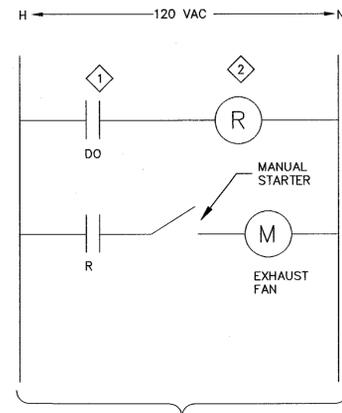
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SHEET NOTES

KEY NOTES:

- 1 DIGITAL OUTPUT FROM DDC AHU CONTROLLER. SEE DRAWING M7 FOR DETAILS.
- 2 RELAY COIL IN RELAY PANEL. SEE DRAWING E6 FOR LOCATION OF RELAY PANEL IN ELECTRICAL ROOM.

PANELBOARD MS1		MAIN BUS: 400		WRES: 4		MLG:		ENCLOS. NEMA 1			
LOCATION:		VOLT: 208/120		NO. OF CKTS: 24		MAIN BREAKER 400		C. BREAKER RMS:			
PHASE: 3		MOUNT: SURFACE									
DESCRIPTION	KVOLT	AMP	BREAKER	CKT	BUS	CKT	BREAKER	KVOLT	AMP	DESCRIPTION	
	A	B	C	POLE	NO.	NO.	POLE	A	B	C	
(E) PANEL D				3	125	1					SPACE
-				-	-	3					
-				-	-	4					
-				-	-	5					
(E) PANEL A				3	100	7					(E) PANEL BL
-				-	-	9					
-				-	-	11					
EF-15	.23			1	15	13					
EF-16	.23			1	15	15					
EF-3		.06		1	15	17					
EF-4	.06			1	15	19					
EF-10	.06			1	15	21					
EF-11		.06		1	15	23					
TOTALS (KVA)											
INSULATED NEUTRAL BUS - [SN]											
K VOLT AMPS: BUS A:		BUS B:		BUS C:		TOTAL: KVA					



FAN CIRCUIT CONDUCTORS FROM PANEL MS1

1 TYPICAL RELAY PANEL WIRING- EF-3, 4, 10, 11, 15 AND 16 CONTROL

2 (E) PANEL MS1 SCHEDULE

Approved for Construction
Moffett Field Permit Board
[Signature]
Chief Building Official
Permit No. 06P033

ZONE	LETTER	DESCRIPTION	DRAWN	DATE	APPRVD
REVISIONS					
DRAWN: C. W. [Signature] DATE: 5/31/07 DESIGNED: M. [Signature] DATE: 5/10/07 C. THOMPSON CHECKED: [Signature] DATE: 5/10/07 D. KING PROJ. MGR: M. CALLAHAN DATE: 5/10/07 REQUESTER: P. LEE DATE: 5/10/07 R&QA: [Signature] DATE: 5/10/07 SAFETY: DATE: _____ SUPERVISOR: P. CHAN DATE: 5/11/07 SIZE: D CAGE CODE: 25307 SCALE: AS SHOWN INDEX: M2003-0600-E8 SHEET OF _____ FILE NAME: 03-E08 5-10-2007					

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