

Department of Transportation  
Federal Aviation Administration

# Control Wing Basement and Chiller/ Cooling Tower Modernization Oakland Air Route Traffic Control Center Fremont, California



Final Submission  
June 2015



FOR OFFICIAL USE ONLY  
PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>									
REV.	APPROVED DATE	DESCRIPTION	JCN	REQLINE DATE	APVD				
		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA							
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER COVER SHEET OAKLAND (ZOA) ARTCC							
		FREMONT OAKLAND (ZOA) ARTCC		APPROVED BY <i>[Signature]</i>					
		SUBMITTED BY <i>R. Bradfisch</i>		APPROVER'S TITLE <i>[Signature]</i>					
		SUBMITTER'S TITLE ARCHITECT		DESIGNED BY E. ROLAF		ISSUED BY AIRWAY FACILITY DIVISION		DATE 07/08/2015 JCN	
		OAKLAND ARTCC FREMONT, CALIFORNIA		DRAWN BY E. ROLAF		CHECKED BY W. STEVENS		DRAWING NO. ZOA - D - CWBMMS - G001	

INDEX OF DRAWINGS

GENERAL NOTES

BASIS OF DESIGN AND SUBSTITUTIONS

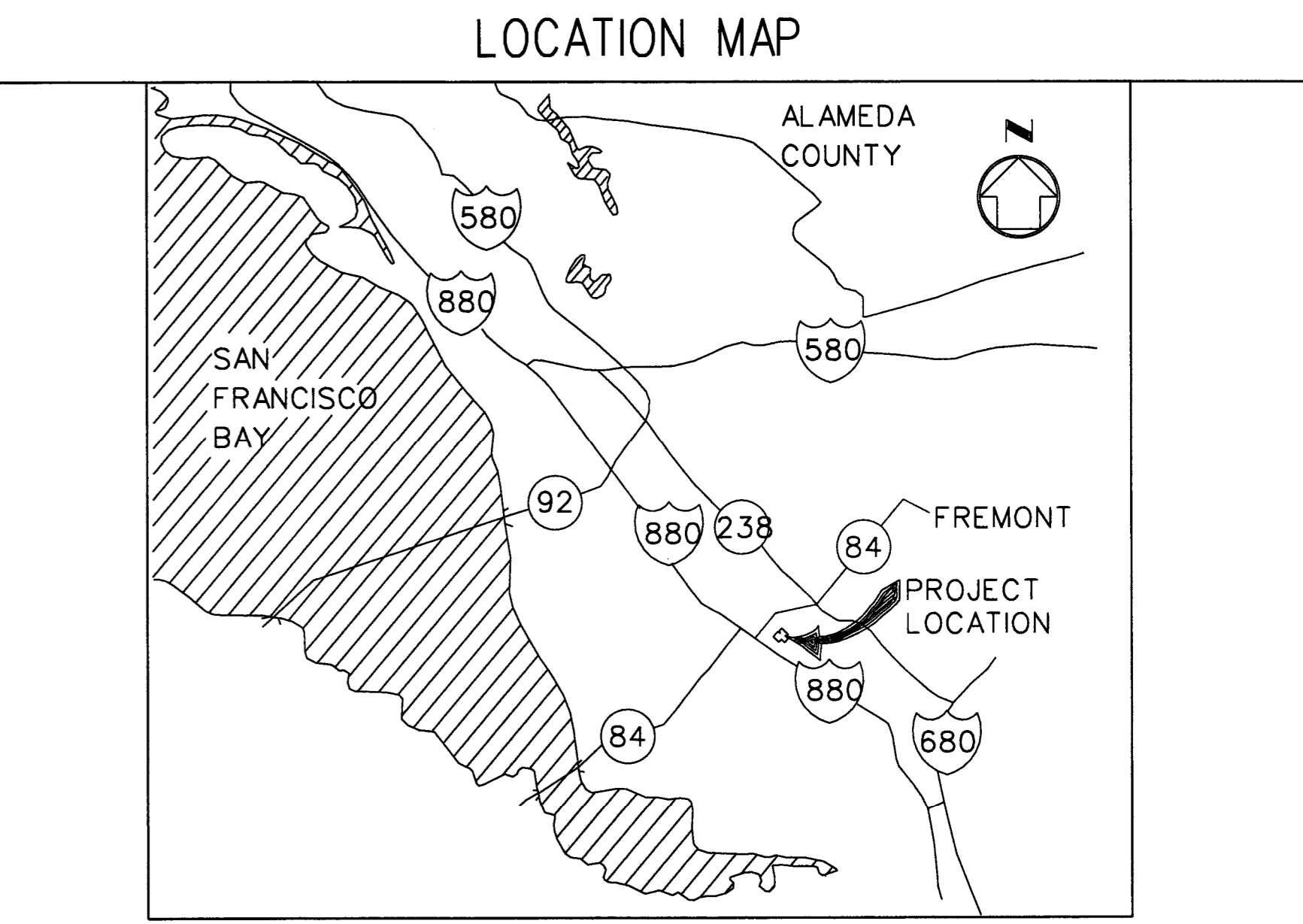
Table with columns: REV LTR, DRAWING NUMBER, DRAWING TITLE. Lists drawing titles such as COVER SHEET, INDEX OF DRAWINGS, GENERAL NOTES, LOCATION MAP & BUILDING CODE ANALYSIS, ABBREVIATIONS, etc.

Table with columns: REV LTR, DRAWING NUMBER, DRAWING TITLE. Lists drawing titles such as CONDENSER WATER SYSTEM SCHEMATIC DIAGRAM, COOLING TOWER WATER SYSTEM SCHEMATIC DIAGRAM, etc.

Table titled 'BUILDING CODE ANALYSIS' with columns for applicable codes and regulations, occupancy classification, construction type, and seismic design category.

- A. DIMENSION LINES SHOWN ON ARCHITECTURAL SHEETS ARE FROM COLUMN CENTER LINES AND FACE OF MASONRY, CONCRETE OR FINISHED FACE OF WALL, UNLESS OTHERWISE NOTED.
B. FIELD VERIFY EXISTING CONDITIONS & DIMENSIONS BEFORE DEMOLITION OF BUILDING SYSTEMS.
C. FINISHES & ASSOCIATED ADJACENT FINISHES AFFECTED BY THE WORK SHALL BE PATCHED AND REPAIRED TO MATCH EXISTING FINISHES.
D. VERIFY DEMOLITION REQUIRED TO FACILITATE ROUTING OF MECHANICAL AND ELECTRICAL SYSTEMS.
E. THE BUILDING SHALL BE OCCUPIED BY FAA DURING CONSTRUCTION.
I. EXISTING FAA COMPUTER AND OTHER SENSITIVE EQUIPMENT SHALL REMAIN OPERATIONAL DURING CONSTRUCTION.
J. PROVIDE OPENINGS THROUGH EXISTING WALLS (GWB, MASONRY AND CONCRETE) FOR PROVISION OF ARCHITECTURAL, MECHANICAL, ELECTRICAL & FIRE PROTECTION EQUIPMENT.
K. WORK AREA(S) AND BUILDING(S) CONTAIN HAZARDOUS MATERIALS (HAZMAT).
L. REMOVE AND REINSTALL, AS REQUIRED, FURNITURE THAT IS AFFECTED BY THE WORK.
M. UNSCHEDULED INTERRUPTIONS TO BUILDING UTILITIES/SERVICES SHALL NOT BE TOLERATED.
N. EXISTING BUILDING FLOOR PLANS AND SITE PLANS FOR THE EXISTING BUILDING CONSTRUCTION PRESENTED IN THIS DOCUMENT WERE OBTAINED FROM THE FAA.
O. PROVIDE TEMPORARY DUST PROOF PARTITIONS (DP) WITH ACCESS DOORS WHERE INDICATED ON DRAWINGS.
P. SPRINKLER SYSTEM PIPING SHALL NOT BE INSTALLED DIRECTLY ABOVE CRITICAL ELECTRONIC EQUIPMENT.
Q. SECURITY RELATED WORK SHALL BE DONE BY THE FAA'S APPROVED SECURITY CONTRACTOR (SSDI) WHO SHALL BE RETAINED FOR THIS PROJECT.
R. PROVIDE AIR BARRIERS AS RECOMMENDED BY ACCESS FLOOR MANUFACTURER IN LOCATIONS WHERE THREE (3) OR MORE FLOOR PANELS HAVE BEEN REMOVED UNLESS DUSTPROOF STRUCTURES BLOCKS AIR LEAKAGE.
S. WORK SPECIFIED IN ROOMS/AREAS WITH BREAKLINES INCLUDES WORK FOR ENTIRE AREA, UNLESS OTHERWISE NOTED.
T. ONLY FAA PERSONNEL MAY OPERATE CIRCUIT BREAKERS OR PIPE VALVES.
U. WORK IN CONFINED SPACES OR AREAS SHALL BE DONE IN ACCORDANCE WITH OSHA REQUIREMENTS.
V. PRIOR TO CUTTING CONCRETE, USE MAGNETIC STEEL LOCATOR TO LOCATE ELECTRICAL CONDUITS EMBEDDED IN CONCRETE.
W. DIMENSIONS (LAYOUTS, MOUNTING HEIGHTS, HEIGHTS ABOVE FINISH FLOOR, ETC.) AND CLEARANCES SHOWN ON THE DRAWINGS, IDENTIFIED IN SPECIFICATIONS, IDENTIFIED IN MANUFACTURERS' PRODUCT DATA, OR REFERENCED IN APPLICABLE ADA/ABA DOCUMENTS, CODES, AND CRITERIA FOR THE HANDICAPPED ACCESSIBILITY ARE TO BE HELD TRUE; PLUS OR MINUS TOLERANCES FROM THESE DIMENSIONS ARE NOT ALLOWED.

- A. IN GENERAL, MANUFACTURER'S NAMES, BRAND NAMES, OR MODEL NUMBERS MAY BE SPECIFIED FOR ITEMS AS A BASIS OF DESIGN IN A SCHEDULE, DETAIL OR IN A LIST OF APPROVED PRODUCTS.
1. EQUAL OR SUPERIOR IN CONSTRUCTION, EFFICIENCY, UTILITY, OR FUNCTION TO THE PRODUCT(S) SPECIFIED.
2. OF A SIMILAR PROFILE, SHAPE, SIZE, STYLE, AND CONFIGURATION AND CAN BE INCORPORATED INTO THE WORK IN THE SPACE ALLOCATED IN A REASONABLE MANNER REFLECTIVE OF GOOD DESIGN AND ENGINEERING PRACTICES.
3. ACCEPTED BY THE ARCHITECT/ENGINEER OF RECORD, CONTRACTING OFFICER (CO) AND CONTRACTING OFFICER'S REPRESENTATIVE (COR), IN WRITING, AS MEETING THE SPECIFIED CRITERIA AND FIT (BOTH PHYSICAL AND FUNCTIONAL) WITHIN THE PROJECT.
4. SUBMITTED FOR APPROVAL AS A SUBSTITUTION.
B. THE CONTRACTOR'S SUBMITTAL FOR APPROVAL OF MATERIAL OR PRODUCTS OF HIGHER QUALITY THAN THAT SPECIFIED WILL NOT OBLIGATE THE GOVERNMENT TO PAY ANY ADDITIONAL COSTS THAT MAY BE ASSOCIATED WITH FURNISHING AND INSTALLING THE SUBSTITUTE MATERIAL.
C. THE CONTRACTOR, WHEN SUBMITTING FOR APPROVAL OF MATERIALS WHICH ARE OTHER THAN THAT CITED IN THE CONTRACT DOCUMENTS, MUST SUBMIT THE NECESSARY SCALE DRAWINGS, PRODUCT DATA, AND PERFORMANCE AND TEST DATA OF BOTH THE MATERIALS SPECIFIED AND THE PROPOSED SUBSTITUTION MATERIALS.
D. THE CONTRACTOR BEARS ALL RESPONSIBILITY FOR THE ADJUSTMENT OF AFFECTED DRAWINGS AS A RESULT OF ANY FAA-APPROVED MATERIAL OR EQUIPMENT "AS EQUAL" SUBSTITUTIONS.




JACOBS logo, DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION, CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER INDEX OF DRAWINGS, GENERAL NOTES, LOCATION MAP & BUILDING CODE ANALYSIS. Includes review table and project details.

ABBREVIATIONS

A	AA	AAV	AC	ACC	ACD	ACM	ACT	ACU	A/C	AD	ADJ	ADR	ADTN	AED	AF	AF	AFMS	AH/AHU	AIC	AID	AIF	AL	ALT	AM	AMM	ANN	AO	AP	APC	APPROX	ARCH	ARTCC	ARTS	AS	ASSY	AT	ATB	ATS	AUX	AV	AVG	AWG	AWP	AWR	&	@	B	BAT CHGR	BC	BD	BEL	BF	BFP	BFV	BFW	BHP	BKR	BLDG	BLKG	BLO	BLV	BM	BOD	BOP	BOT, BOTT	BPU	BRG	BSMT	BTU	BTU/H	BV	BWP	BWV	C	CA	CAB	CB	CC	CCMS	CD	CENT	CFH	CFM	CFT	CG	CH	CI	CL	CLF	CLG	CLR	CMP	CMU	CO	COL	COMB	COMM	COMP	CONC	COND	CONN	CONST	CONT	CONTR	COR	COTR	CP	CPC	CPT	CPU	CR	CRU	CS	CT	CTR	CTS	CU	CW	CWR	CWS	CWV	CV	CYD	D	DB	DBL	DC	DDCP	DEG	DET	DGP	DI	DIA	DIAG	DISC	DISP	DIST	DL	DM	DN	DO	DOM	DP	DPDT	DPNL	DPST	DR	DRG(S)	E	EA	EAT	ECP	EDAM	EF	EFF	EG	EH	EHC	EL, ELEV	ELEC	EMD	EMERG	EMT	ENT, ENTR	EP	EQ	EQUIP	ER	ERMS	ES	ET	EWC	EPH	EXH	EXIST, EX	EXP	EXPN	EXT	F	FA	FAA	FC	FCO	FCV	FD	FD/SD	FDR	FE	FEC	FEPC	FFE	FHC	FI	FIN	FIX, FIXT	FL, FLR	FLA	FLEX	FLG	FLUOR	FM	FO	FOL	FOR	FOS	FOT	FOV	FPM	FPU	FRP	FS	FT, '	FTR	FV	FZ	G	GA	GALV	GEN	GFE	GFM	GL	GND	GPH	GPM	GR	GRV	GS	GV	GW	GWB	GWH	H	HAZMAT	HB	HC	HCS	HDW	HE	HERM	HM	HORIZ	HP	HPL	HPS	HPT	HR	HS	HT	HTG	HTP	HTR	HU	HVAC	HW	HWL	HWR	HWS	HZ	HWY	I	ID	IEWH	IF	IN, "	INCH	INST	INSUL	INT	INV	J	JB	K	KCMIL	KVA	KW	L	LAN	LBS, *	LCP	LCV	LF	LG	LL	LLH	LLV	LONG	LP	LPS	LS	LT	LTG	M	MAS	MAT	MAX	MCC	MECH	MET	MFGR, MFG	MG	MIL	MIN	MO	MOD	MS	MTG	N	NAM	NARACS	NFPA	NIC	NO, *	NOM	NPT	NTS	O	OA	OC	OD	OF	OH	OPNG	OPP	OSHA	OSW	P	P	PBX	PC	PCB	PCF	PHC	PD	PDI	PDS	PH	PI	PIV	PL	PLF	PNL	POC	PRV	PS	PSF	PSI	PSM	PT	PTVC	PVC	PVDS	PVI	PVT	R	R	RA	RAD, R	RCP	RCRA	RECEPT	RPTS	REF	REG	REINF	REQ'D	REV	RF	RGS	RHC	RM	RO	RV	S	S	SA	SAN	SAP	SCH, SCHED	SD	SEC	SHT	SIG	SIM	SM	SP	SPEC	SQ	SRF	SRG	SSDI	SSTL, SS	ST	STA	STD	STE	STGP	STL	STOR	STR	SUCT	SUSP	SW	SYM	T	T	TBD	T&B	T&G	TC	TELECO	TEMP	TI	TIC	TK	TM&O	TOC	TOS	TOW	TRANS	TS	TYP	U	UBC	UH	UL	UON	UPS	UTIL	UV	V	VAT	VAV	VB	VBT	VC	VCT	VD	VERT	VF	VFD	VGWB	VIF	VP	VS	W	W	W/	WD	WG	W/O	WP	WT	X	Y	YH
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FOR OFFICIAL USE ONLY  
PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552



DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION  
WESTERN SERVICE AREA  
RENTON, WA

**CONTROL WING BASEMENT  
AND CHILLER/COOLING TOWER MODERNIZATION  
OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER**

ABBREVIATIONS

FREMONT      OAKLAND (ZOA) ARTCC

REVISED BY	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD

COMMONWEALTH OF CALIFORNIA

*William Michael Stevens*

WILLIAM MICHAEL STEVENS  
Lic. No. 8494  
7.8.15  
ARCHITECT

DESIGNED BY: E.ROLAF  
DRAWN BY: E.ROLAF  
CHECKED BY: W.STEVENS

SUBMITTED BY: *RSBradfish*

APPROVED BY: *[Signature]*

DATE: 07/08/2015

DRAWING NO.: ZOA - D - CWBMS - G003

DEDUCT ALTERNATE 1

THIS PROJECT'S BASE BID AND WORK INCLUDES REPLACEMENT OF THE TWO EXISTING 12-INCH UNDERGROUND CONDENSER WATER MAINS AND ASSOCIATED EXCAVATION AND SITE RESTORATION FROM THE COOLING TOWER YARD TO INSIDE THE MAIN BUILDING'S CHILLER ROOM. AS AN INITIAL ON SITE ACTIVITY, THE CONTRACTOR IS TO EXCAVATE A LIMITED AREA ON SITE AS SHOWN ON THE DRAWINGS FOR ULTRASONIC TESTING OF THE UNDERGROUND WATER MAIN PIPING BY A CONSULTANT TESTING FIRM PROVIDED BY THE FAA. THE CONTRACTOR IS TO PROVIDE A 30-DAY PRIOR NOTICE TO THE COR BEFORE BEGINNING THE EXCAVATION AND TESTING WORK. IF THE TEST RESULTS INDICATE THE 12-INCH UNDERGROUND CONDENSER WATER MAINS NEED BE REPLACED, THE BASE WORK TO DO SO WILL PROCEED. AT COMPLETION OF TESTING, BACKFILL EXCAVATION AND PAVE SURFACE TO BE FLUSH WITH ADJACENT SURFACES.

IF THE ULTRASONIC TEST RESULTS INDICATE THE 12-INCH UNDERGROUND CONDENSER WATER MAINS NEED NOT BE REPLACED, THE FAA WILL DIRECT THE CONTRACTOR WITHIN NO MORE THAN 30 DAYS AFTER THE FAA'S RECEIPT OF THE TEST RESULTS TO RESTORE THE EXCAVATED AREA AND INITIATE THE DEDUCT ALTERNATE.

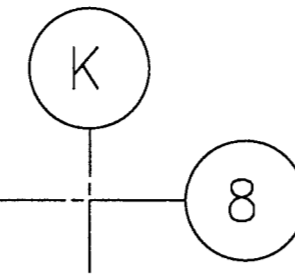
THE DEDUCT ALTERNATE BID AND WORK CONSISTS OF:

- REPLACEMENT OF THE 12" UNDERGROUND CONDENSER WATER MAINS FROM THE COOLING TOWER YARD TO INSIDE THE EXTERIOR WALL IN THE CHILLER ROOM AS INDICATED ON DRAWINGS IDENTIFYING THE TRANSITION BETWEEN BASE BID AND ALTERNATE BID;
- EXISTING UTILITY LOCATION, EXCAVATION, BACKFILL, AND PATCHING/REPAIRS DISTURBANCES DIRECTLY RELATED TO THE REPLACEMENT OF THE 12" UNDERGROUND CONDENSER WATER MAINS;
- PRESSURE TESTING, CLEANING AND FLUSHING OF 12" UNDERGROUND CONDENSER WATER MAINS AND 6" BRANCH TAKEOFF TO ENGINE GENERATOR BUILDING UP TO 6" ISOLATION VALVES;
- SEALING WEATHERTIGHT CONDENSER WATER MAIN PENETRATION THROUGH BASEMENT FOUNDATION WALL;

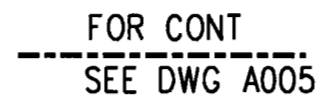
GENERAL LEGEND

REFERENCE

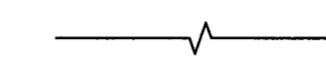
COLUMN LINE GRID DESIGNATION



CENTER LINES

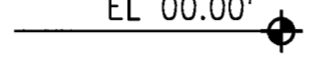


MATCH LINE SYMBOL

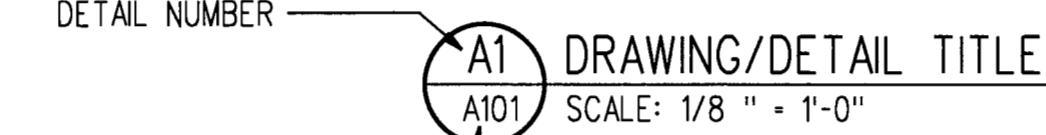


BREAK LINES

ELEVATION SYMBOL

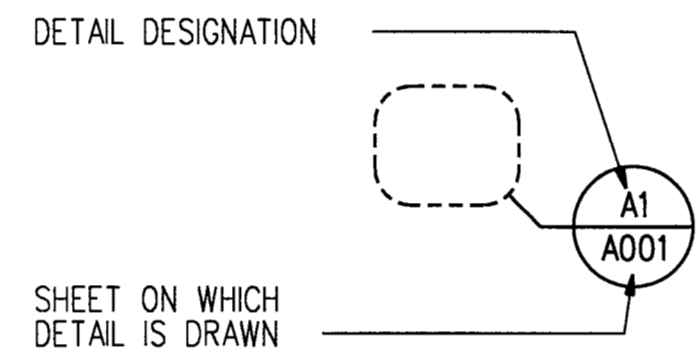


DRAWING/DETAIL TITLE

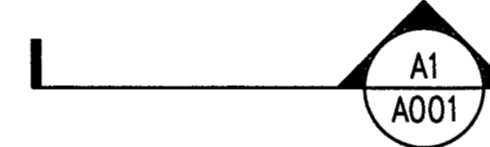


SHEET ON WHICH DETAIL IS DRAWN OR SCHEDULED

DETAIL TITLE REFERENCE



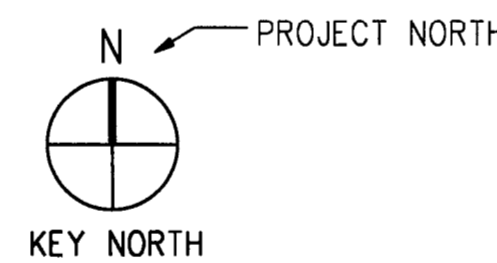
SECTION CUT



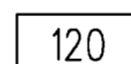
ELEVATION REFERENCE



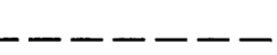
PLAN NORTH/PROJECT NORTH



NEW ROOM/AREA NUMBER



DEMOLITION



REVISION



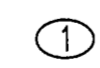
REVISION DESIGNATION



SHEET NOTE NUMBER



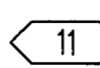
DEMOLITION NOTE



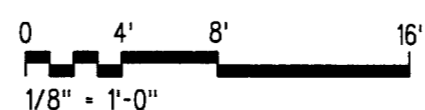
HAZMAT NOTE, ASBESTOS REFER TO HAZMAT DWGS FOR SPECIFIC INFORMATION.



HAZMAT NOTE, LEAD PAINT REFER TO HAZMAT DWGS FOR SPECIFIC INFORMATION



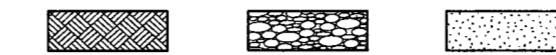
GRAPHIC SCALE



ARCHITECTURAL/STRUCTURAL LEGEND

MATERIALS

EARTH, ETC



CONCRETE, ETC



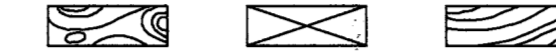
METALS



MASONRY



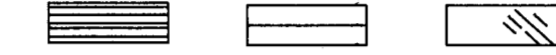
WOOD



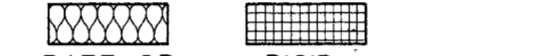
GYPSUM



GLASS

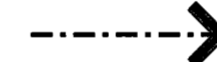


INSULATION

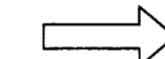


SYMBOLS

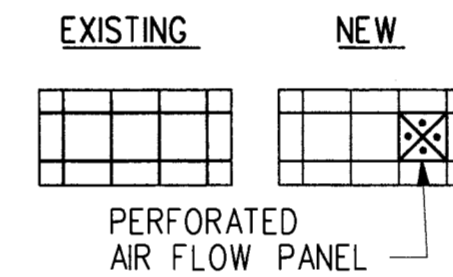
CONTRACTOR'S ACCESS ROUTE



VEHICULAR TRAFFIC DIRECTION



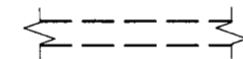
RAISED FLOOR PANELS AND/OR CEILING GRID



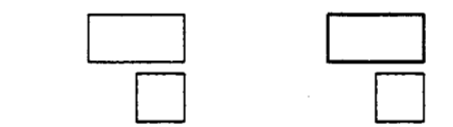
WALL



DEMOLITION WALL



ATC PANEL (NOT SHOWN)



RECESSED LIGHT FIXTURE (NOT SHOWN)



FUTURE ATC PANEL



SUPPLY AIR CEILING DIFFUSER



RETURN AIR CEILING REGISTER



TRANSFER AIR GRILLE



SERVICE SINK



LAVATORY



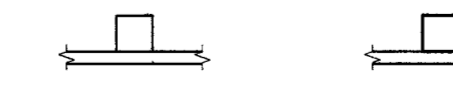
URINAL



WATER CLOSET



ELECTRIC WATER COOLER

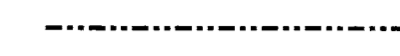


WATER COOLER

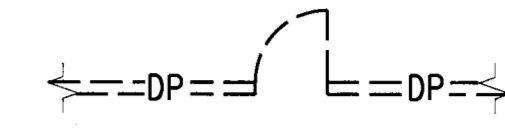


SYMBOLS

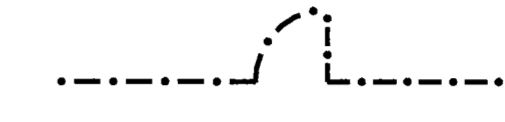
AREA DESIGNATION



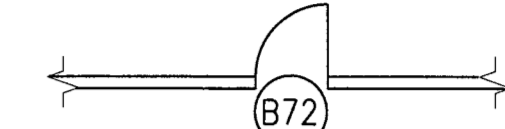
TEMPORARY DUSTPROOF PARTITION WITH DOOR



TEMPORARY INTERIOR WALL WITH DOOR



DOOR NUMBER



LOUVER NUMBER



FINISH SYMBOL



WALL TYPE NUMBER



ELECTRICAL PANEL



SUPPLY AIR DUCT



EMERGENCY SHOWER AND EYEWASH



FLOOR DRAIN



FLOOR SINK



FLOOR HATCH



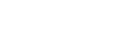
ROOF HATCH



STEEL LADDER



SUMP



LOCKERS



FIRE EXTINGUISHER



FIRE EXTINGUISHER CABINET



INDIRECT PENDANT LIGHT FIXTURE

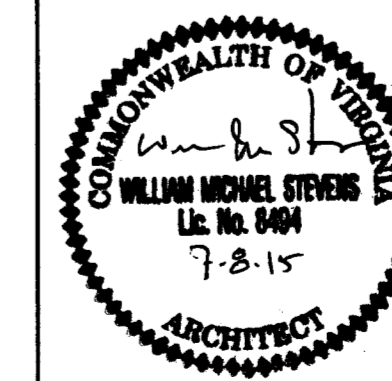


ACOUSTICAL BAFFLES



FOR OFFICIAL USE ONLY  
PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

JACOBS



REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
<b>DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION</b> WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>					
<b>CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER DEDUCT ALTERNATE 1; GENERAL, ARCHITECTURAL, STRUCTURAL - LEGENDS</b>					
FREMONT <span style="float: right;">OAKLAND (ZOA) ARTCC</span>					
REVIEWED BY	SUBMITTED BY	APPROVED BY			
	RSBradfish				
SUBMITTER'S TITLE		APPROVER'S TITLE			
DESIGNED BY E. ROLAF		ISSUED BY		DATE 07/08/2015	JCN
DRAWN BY E. ROLAF		AIRWAY FACILITY DIVISION		DRAWING NO.	REV.
CHECKED BY W. STEVENS				ZOA - D - CWBMS - G004	

# GENERAL CONSTRUCTION STAGING NOTES

THE FOLLOWING NOTES REPRESENT MANY OF THE MAJOR REQUIREMENTS STATED IN "DIVISION 1 GENERAL REQUIREMENTS" OF THE SPECIFICATIONS. THESE NOTES PARAPHRASE DIVISION 1 REQUIREMENTS AND ARE NOT INTENDED TO MODIFY OR REPLACE DIVISION 1 REQUIREMENTS.

CONSTRUCTION ACCESS, PARKING, OFFICES AND EXTENT/SIZE OF CONSTRUCTION STAGING AREA SHALL BE COORDINATED WITH SITE PERSONNEL VIA COR. PARTICULARLY IN CONJUNCTION WITH ONGOING PROJECTS. LOCATION OF CONSTRUCTION STAGING AREA TO BE DETERMINED AT PRECONSTRUCTION CONFERENCE.

ARTCC IS A 24 HOUR 7 DAY PER WEEK OPERATING FACILITY AND IT IS REQUIRED TO COORDINATE CONSTRUCTION ACTIVITY WITH COR SO AS NOT TO INTERFERE WITH FUNCTIONS OF THE ARTCC.

### A. CONSTRUCTION ACCESS

- A.1 CONTRACTOR'S VISITORS AND DELIVERIES TO SITE SHALL BE THROUGH THE MAIN ENTRANCE SECURITY GATE. ALTERNATE SITE ACCESS THROUGH SERVICE ENTRANCE GATE SHALL BE DETERMINED AND COORDINATED WITH COR.
- A.2 PROVIDE SIGNAGE TO INDICATE ACCESS ROUTE FOR CONSTRUCTION EMPLOYEES AND DELIVERIES ON SITE. PROVIDE NECESSARY BARRICADES, LIGHTS, SIGNAGE AND FENCING TO PROTECT, WARN AND DIRECT PERSONS NEAR CONSTRUCTION AREAS.
- A.3 CONTRACTOR'S ACCESS TO BUILDING SHALL BE LIMITED TO THE FOLLOWING: CHILLER ROOM ENTRANCE IN AREAWAY, BOILER ROOM ENTRANCE IN AREAWAY, AND STAIR #3.
- A.4 USE OF BUILDING'S FREIGHT ELEVATOR AND LOADING DOCK SHALL BE COORDINATED WITH COR.
- A.5 CONTRACTOR SHALL KEEP LOADING DOCK AND CAFETERIA ACCESSIBLE AT ALL TIMES FOR FAA DELIVERIES.
- A.6 DELIVERIES SHALL BE SCHEDULED AND APPROVED IN ADVANCE WITH COR AND AT TIMES OTHER THAN FAA EMPLOYEES SHIFT CHANGES TO AVOID CONGESTION. FAA SHIFT CHANGES OCCUR AT: 6:30 - 8:00 AM AND 2:00 - 4:00 PM. VERIFY TIME WITH COR. DELIVERY VEHICLES SHALL ONLY CONTAIN ITEMS BEING DELIVERED TO FAA. IF VEHICLE CONTAINS OTHER DELIVERIES, VEHICLE SHALL NOT BE ALLOWED ON SITE.
- A.7 DO NOT BLOCK ACCESS OR EGRESS FROM BUILDING EXITS. COORDINATE WITH COR RISK MITIGATION PLAN IF THE FOLLOWING EXITS WILL BE TEMPORARILY BLOCKED: EMPLOYEE ENTRANCE/EXIT, CAFETERIA ENTRANCE/EXIT, STAIR-6 EXIT, OR AREAWAY.
- A.8 COORDINATE TIME, DURATION, AND RISK MITIGATION PLAN WITH COR IF "NORTH BUILDING DRIVE" SHALL BE BLOCKED, OR MADE IMPASSABLE FOR ANY LENGTH OF TIME. NOTIFY AND COORDINATE WITH COR AT LEAST 45 DAYS IN ADVANCE OF WORK IN THIS AREA.

### B. CONTRACTOR PARKING

- B.1 CONTRACTOR'S PARKING SHALL BE LIMITED TO CONSTRUCTION STAGING AREA AND AS NOTED. ADDITIONAL PARKING SHALL BE OFF-SITE AND PROVIDED BY CONTRACTOR. EXISTING PARKING SPACES AT ARTCC ARE OFF-LIMITS FOR CONTRACTOR PARKING.

### C. FAA SECURITY REQUIREMENTS

- C.1 AN ADVANCE LIST AND WEEKLY LOG OF CONTRACTOR'S PERSONNEL SHALL BE PROVIDED TO COR. TEMPORARY SECURITY BADGES WILL BE ISSUED TO QUALIFIED CONSTRUCTION PERSONNEL. CONTRACTOR'S SUPERVISORY PERSONNEL SHALL BE RESPONSIBLE FOR CONDUCT OF THEIR PERSONNEL WHILE IN THE BUILDING. CONTRACTOR'S VEHICLES SHALL BE MARKED. REFER TO DIVISION 1 FOR MORE DETAILED REQUIREMENTS.
- C.2 SITE IS A SECURE AREA AND CONSTRUCTION PERSONNEL SHALL REMAIN IN CONSTRUCTION AREAS AND COMPLY WITH FAA'S SECURITY REQUIREMENTS.
- C.3 FAA VISITORS BADGES SHALL BE REQUIRED FOR CONSTRUCTION PERSONNEL WORKING WITHIN THE BUILDING. THE CONTRACTOR SHALL BE REQUIRED TO OBTAIN FAA SECURITY BADGES FOR PROJECT SUPERINTENDENT AND ONE REPRESENTATIVE FOR EACH SUB CONTRACTOR ON SITE FOR MORE THAN 60 DAYS. THE BADGED CONTRACTOR SHALL ESCORT SUB CONTRACTORS AND OTHER WORKERS ON THE SITE. TEMPORARY BADGES SHALL BE REQUIRED FOR CONTRACTORS AND OTHER WORKERS FOR DURATION LESS THAN 60 DAYS.
- C.4 CONTRACTOR SHALL USE GREAT CARE AND CAUTION WHILE WORKING IN ALL AREAS OF THIS FACILITY. WORK SHALL BE COORDINATED WITH COR. DISRUPTION OF THIS FACILITY SHALL NOT BE PERMITTED.
- C.5 EXISTING FAA AIR TRAFFIC EQUIPMENT SHALL REMAIN OPERATIONAL THROUGHOUT DURATION OF THIS CONTRACT. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTINUOUS PROTECTION OF THIS EQUIPMENT FROM PHYSICAL OR ELECTRICAL DAMAGE AS A RESULT OF INCIDENTAL OR ACCIDENTAL NEGLIGENCE SUCH AS, BUT NOT LIMITED TO, DISRUPTION OF POWER TO UNITS. CONTRACTOR SHALL NOTIFY COR IMMEDIATELY OF DAMAGE OR DISRUPTION OF ELECTRICAL SERVICES. REPAIRS AND RESTORATIONS ARE AT NO COST TO THE FAA.

### D. CONSTRUCTION MATERIAL STORAGE

- D.1 STORAGE OF CONSTRUCTION MATERIALS AND TRAILERS ON SITE SHALL BE LIMITED TO THE CONSTRUCTION STAGING AREA. THE CONSTRUCTION STAGING AREA SHALL BE SURROUNDED BY A FENCE. MATERIALS SHALL BE NEATLY STORED AND PROTECTED. LIGHTING SHALL BE INSTALLED BY THE CONTRACTOR AT THE DISCRETION OF COR. CONTRACTOR SHALL DO NO DIGGING WITHOUT PRIOR PERMISSION FROM COR. BURIED CABLES (UNDERGROUND UTILITIES) MAY RUN THROUGH STAGING AREA AND ELSEWHERE. CONTRACTOR SHALL INSTALL A PADLOCK ON GATE FOR CONSTRUCTION STAGING AREA. PROVIDE KEY TO COR.
- D.2 DELIVERY OF MATERIALS WILL BE COORDINATED THROUGH THE COR. CONTRACTOR MUST HAVE PERSONNEL ON SITE TO RECEIVE DELIVERIES.

### E. CONSTRUCTION DEBRIS

- E.1 ENCLOSED DUMPSTERS FOR DISPOSAL OF CONSTRUCTION DEBRIS SHALL BE PROVIDED BY CONTRACTOR WITHIN THE CONSTRUCTION STAGING AREA. COORDINATE LOCATIONS WITH COR. AREAS AROUND DUMPSTERS SHALL BE KEPT CLEAN AND FREE OF EXCESS DEBRIS AND DUST DURING CONSTRUCTION. DEBRIS SHALL BE REMOVED BY CONTRACTOR DAILY.

- E.2 CONTRACTOR SHALL NOT USE FAA DUMPSTERS. CONTRACTOR'S DUMPSTER LOCATIONS SHALL BE COORDINATED W/ COR.

### F. CONSTRUCTION OFFICE

- F.1 CONTRACTOR'S TRAILERS FOR OFFICE SHALL BE LOCATED IN CONSTRUCTION STAGING AREA. MATERIALS AND EQUIPMENT STORAGE SHALL BE LOCATED IN CONSTRUCTION STAGING AREA. COORDINATE TELEPHONE SERVICES WITH COR. TEMPORARY POWER IS AVAILABLE AT ARTCC, IF REQUIRED FOR CONSTRUCTION PURPOSES. POINT OF CONNECTION SHALL BE DETERMINED AT PRE CONSTRUCTION CONFERENCE. HOOK-UPS SHALL BE THE RESPONSIBILITY OF CONTRACTOR.
- F.2 COMMERCIAL POWER IS AVAILABLE AT THE POWER PANEL AS INDICATED, VERIFY EXACT LOCATION W/ COR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ELECTRICAL CONNECTION FROM THE POWER PANEL TO HIS CONSTRUCTION TRAILERS.
- F.3 COORDINATE WITH COR USE OF MOBILE CELL PHONE USE INSIDE AND OUTSIDE BUILDING. CERTAIN AREAS OF THE FACILITY ARE SENSITIVE TO CELL PHONE USAGE.

### G. CONSTRUCTION TOILET FACILITIES

- G.1 CONTRACTOR MAY USE TOILETS INSIDE THE WORK AREA PROVIDED THAT IT IS KEPT IN A NEAT AND CLEAN MANNER. CONTRACTOR SHALL COORDINATE WITH COR FOR THE LOCATION OF TOILETS PERMITTED FOR USE. USE OF FAA TOILET FACILITIES IS A PRIVILEGE AND CAN BE REVOKED AT ANY TIME.
- G.2 PORTABLE CHEMICAL TOILETS SHALL BE PROVIDED, PAID FOR AND MAINTAINED BY THE CONTRACTOR AS REQUIRED AT THE TEMPORARY CONSTRUCTION STAGING AREA. COORDINATE WITH THE COR FOR SCHEDULING OF SERVICE.
- G.3 PROVIDE WASH STATIONS IN ADDITION TO PORTABLE TOILETS TO CONSTRUCTION STAGING AREA.

### H. DEMOLITION AND CONSTRUCTION HOURS

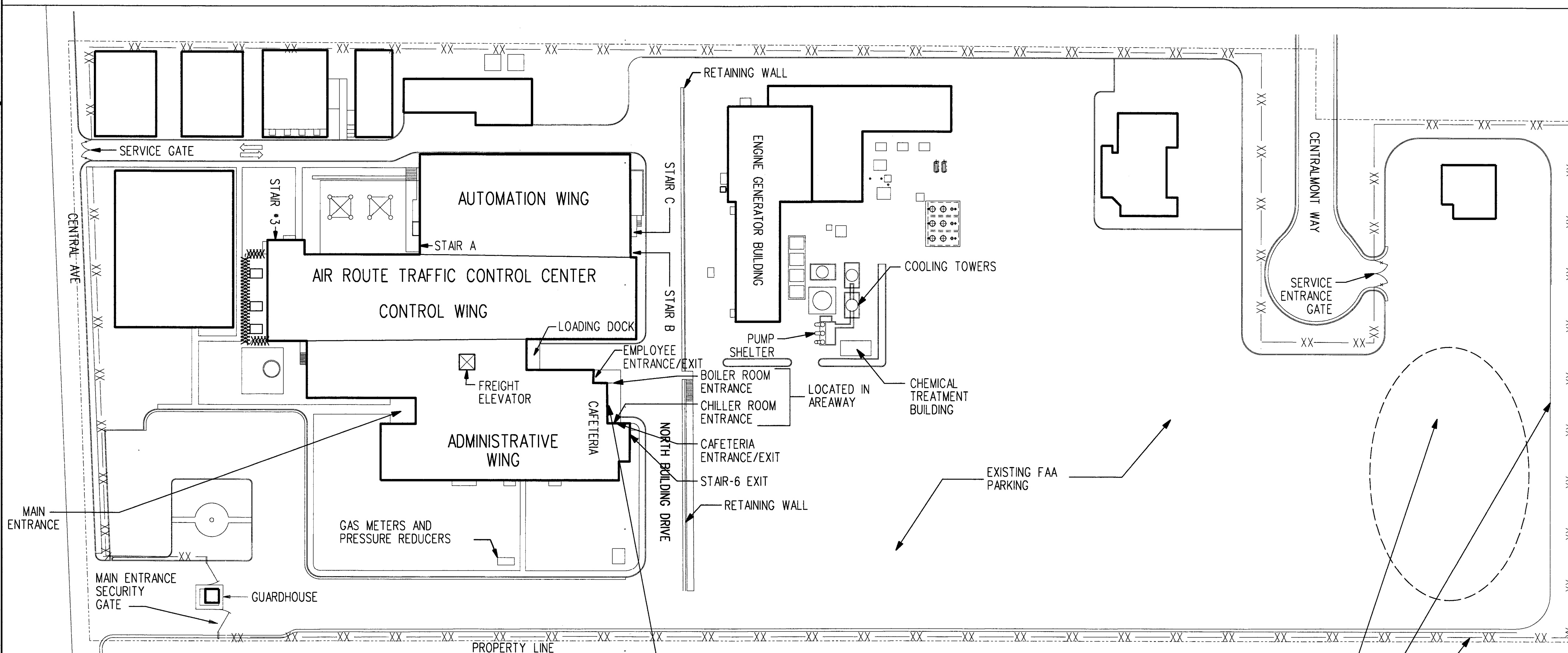
- H.1 CONTRACTOR SHALL NOT INTERFERE WITH AIR TRAFFIC CONTROL FUNCTION OF THIS FACILITY. DEMOLITION AND CONSTRUCTION NOISE SHALL BE MINIMIZED BETWEEN 6:00 AM TO 11:00 PM, OR AS DIRECTED BY COR.
- H.2 COORDINATE WORK WITH COR ON CRITICAL EQUIPMENT WITHIN THE ARTCC & SUPPORTING BUILDINGS MODIFICATION WORK AREA. WORK ON CRITICAL EQUIPMENT SHALL BE ACCOMPLISHED DURING OFF-HOURS OF 11:00 PM TO 6:00 AM, OR AS DIRECTED BY COR.
- H.3 NOISY DEMOLITION (INSIDE OR OUTSIDE) AND OFF-HOURS CONSTRUCTION ACTIVITIES SHALL BE SCHEDULED, COORDINATED AND APPROVED IN WRITING BY COR WITH A MINIMUM OF 10 WORKING DAYS NOTICE IN ADVANCE OF PERFORMANCE OF THE WORK.
- H.4 CONCRETE SAWING, CORE DRILLING, CONCRETE DEMOLITION AND ANCHOR DRILLING SHALL BE ALLOWED ONLY AT PREARRANGED TIMES APPROVED BY COR. SCHEDULE, COORDINATE AND HAVE APPROVAL BY COR IN WRITING, A MINIMUM OF 10 WORKING DAYS BEFORE THE PERFORMANCE OF THE WORK IF ACTIVITY INTERRUPTS NORMAL OPERATIONS.

### I. PARKING LOT AND DRIVEWAY REPAIR

- I.1 UPON COMPLETION OF WORK, CONTRACTOR SHALL REPAIR PAVED SURFACES TO ORIGINAL CONDITION, INCLUDING ANY PAVEMENT STRIPING, AT THE CONSTRUCTION STAGING AREA(S).
- I.2 DISTURBED LAWNS AND LANDSCAPING INCLUDING BUT NOT LIMITED TO SPRINKLER SYSTEM, SIDEWALKS AND CURBS, SHALL BE RESTORED TO ORIGINAL CONDITION BY CONTRACTOR TO THE SATISFACTION OF COR.

### J. EQUIPMENT PROTECTION

- J.1 CONTRACTOR SHALL PROTECT FAA EQUIPMENT, BOTH INSIDE AND OUTSIDE BUILDING, FROM DAMAGE, INCLUDING BUT NOT LIMITED TO, DAMAGE CAUSED BY IMPACT, WATER, ASBESTOS, DEBRIS AND DUST, INCLUDING CORE DRILLING.
- J.2 SHUTDOWNS AND SWITCH OVERS OF MECHANICAL AND ELECTRICAL SYSTEMS SHALL BE ACCOMPLISHED DURING OFF-HOURS AS INDICATED IN NOTE H.2 THIS SHEET UNDER DEMOLITION AND CONSTRUCTION HOURS. PREPARATORY WORK SHALL BE COMPLETED PRIOR TO SHUTDOWN AND SWITCH OVER. SCHEDULE, COORDINATE AND HAVE APPROVAL IN WRITING BY COR WITH A MINIMUM OF 10 WORKING DAYS NOTICE IN ADVANCE OF PERFORMANCE OF WORK. ONLY FAA PERSONNEL MAY OPERATE CIRCUIT BREAKERS. CONTRACTOR SHALL REQUEST PERMISSION OF FAA IN ADVANCE AND IN WRITING FOR EACH CASE OF BREAKER OPERATION. CONTRACTOR SHALL NOT OPEN (DE-ENERGIZE) OR CLOSE (ENERGIZE) ANY CIRCUIT BREAKER AT ANY TIME.
- J.3 ARTCC IS A 24 HOUR 7 DAY PER WEEK OPERATING FACILITY. IT WILL BE NECESSARY TO COORDINATE CONSTRUCTION ACTIVITY SO AS NOT TO INTERFERE WITH FUNCTIONS OF THE ARTCC.
- J.4 NO WELDING EQUIPMENT SHALL BE POWERED BY THE FACILITY ELECTRICAL SYSTEM. WELDING SHALL NOT BE PERMITTED IN FAA OCCUPIED AREAS UNLESS APPROVED IN WRITING BY COR. REVIEW WITH COR TYPE OF WELDING CUTTING TO BE PERFORMED AT FACILITY 10 DAYS PRIOR TO USE.

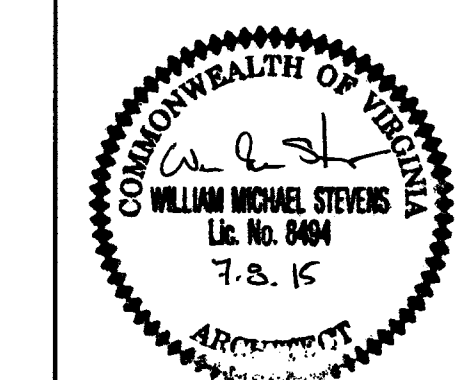


**A8** CONSTRUCTION STAGING PLAN  
G005 SCALE: NOT TO SCALE

NOTE: CONSTRUCTION STAGING AREA SHALL BE DETERMINED AT PRECONSTRUCTION MEETING.

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<b>JACOBS</b>					
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>					
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER CONSTRUCTION STAGING PLAN					
FREMONT			OAKLAND (ZOA) ARTCC		
REVIEWED BY	SUBMITTED BY	APPROVED BY			
SUBMITTER'S TITLE		APPROVER'S TITLE			
DESIGNED BY	E. ROLAF	ISSUED BY	DATE 07/08/2015	JCN	
DRAWN BY	E. ROLAF	AIRWAY FACILITY DIVISION		DRAWING NO.	
CHECKED BY	M. STEVENS			ZOA - D - CWBMS - G005	REV.
OAKLAND ARTCC FREMONT, CALIFORNIA					

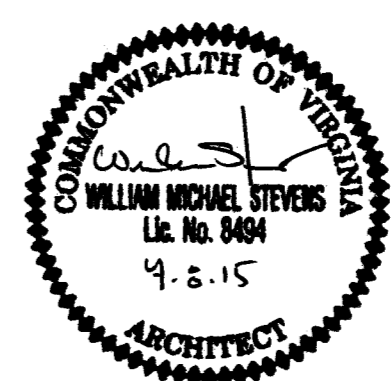
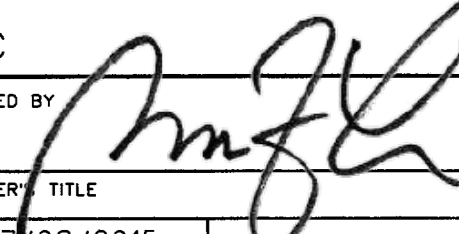


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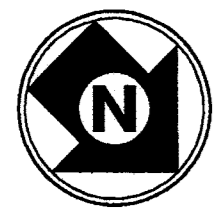
H  
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F  
E  
D  
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A

THE FOLLOWING "FACILITY BASELINE LAYOUT" DRAWINGS ARE PROVIDED AS REFERENCE BY THE FAA AS INFORMATION ON THE GENERAL CONGESTION OF EQUIPMENT IN ROOMS: B120 NORTH, B120 SOUTH, B134, AND ELSEWHERE IN THE BASEMENT. THE WORK IN THESE AREAS SHALL NOT IMPACT FAA OPERATIONS AND NECESSARY PRECAUTIONS, AS NOTED ELSEWHERE, SHALL BE TAKEN. SINCE THESE DRAWINGS WERE CREATED, ADDITIONAL EQUIPMENT HAS BEEN ADDED, AND IN SOME LOCATIONS EQUIPMENT HAS BEEN REMOVED. VERIFY IN FIELD QUANTITY, TYPE, LOCATION, AND LAYOUT OF EXISTING EQUIPMENT.

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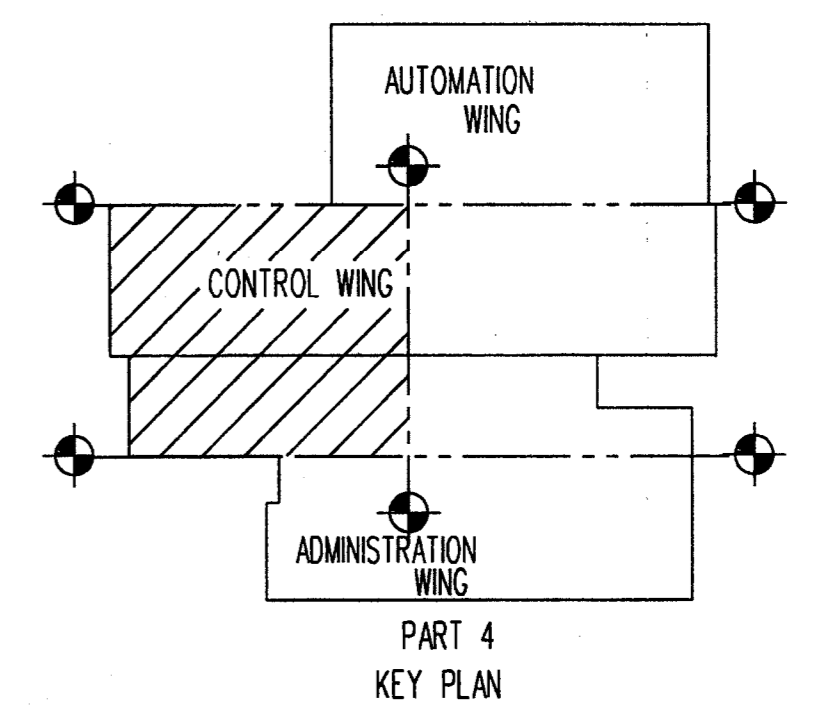
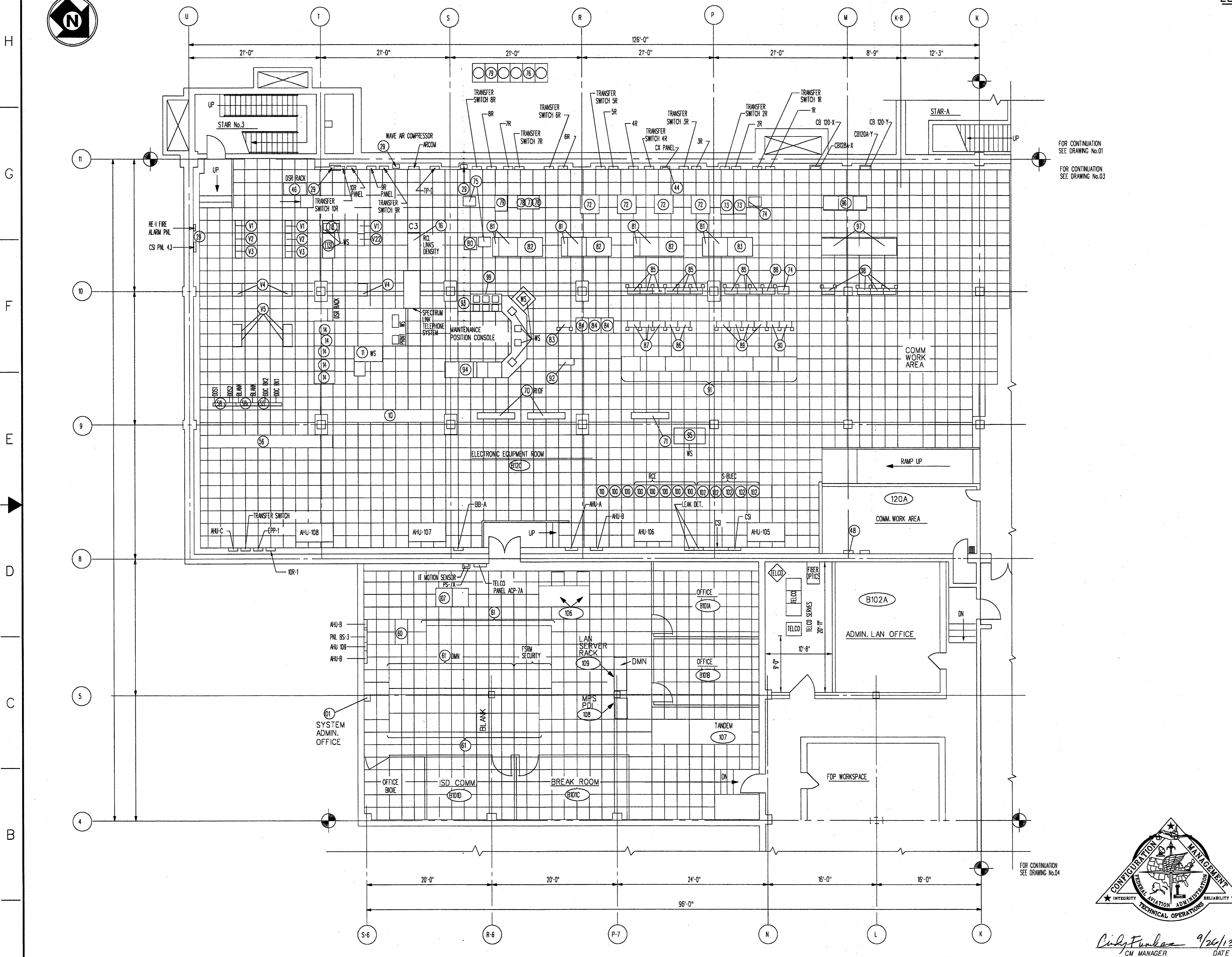
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		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA											
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER FACILITY BASELINE LAYOUT REFERENCE DRAWINGS											
		FREMONT					OAKLAND (ZOA) ARTCC						
		REVIEWED BY		SUBMITTED BY		APPROVED BY		DATE		JCN		REV.	
		RSBradfish				07/08/2015							
OAKLAND ARTCC FREMONT, CALIFORNIA		DESIGNED BY E. ROLF		ISSUED BY AIRWAY FACILITY DIVISION		DRAWING NO. ZOA - D - CWBMS - G006							
		DRAWN BY E. ROLF											
		CHECKED BY W. STEVENS											

8 | 7 | 6 | 5 | 4 | 3 | 2 | 1  
DATE: 8/24/2015 TIME: 8:58 AM USER: BRUSER



**LEGEND:**

- VOICE TELEPHONE SYSTEM (VTS)
  - (10) VTS EQUIPMENT
  - (11) VTS WORK STATION
  - (12) ADTN EQUIPMENT
  - (13) ACORN NETWORK CONTROLLER SW
  - (14) BANDWIDTH MANAGER (BWN)
  - (15) BWM DSX RACK
- RADAR MICROWAVE LINK (RML)
  - (16) RCLT GRANGER RACK
  - (29) WAVEGUIDE AIR COMPRESSOR
- COMMUNICATIONS EQUIPMENT
  - (31) TRANSFER SWITCH & POWER PANEL (11-10R)
  - (32) TRANSFER SWITCH
  - (40) TEST POSITION
  - (44) POWER TRANSFER SW (18A5)
  - (45) DSR RACK 522
  - (49) TELEPHONE TERMINAL PANEL
- MASTER DEMARCATION SYSTEM (MDS)
  - (58) MASTER DEMARC FRAME
  - (59) DIGITAL DEMARC
- DATA MULTIPLEX NETWORK
  - (60) PDI BMN-1 - DMN-2 PNL
  - (61) DMN
- ENHANCED COMMUNICATIONS GATEWAY (ECG)
  - (62) INTERFACILITY COMMUNICATIONS TRANSITION SWITCH RACK
- RADIO COMMUNICATIONS LINK (RCL)
  - (V1) POWER RACK
  - (V2) RADIO RACK
  - (V3) SWITCH & SUPPORT RACK
  - (V4) CHANNEL BANK
  - (V5) CHANNEL GROUP RACK (CG)
  - (V6) VOICE FREQUENCY PATCH RACK (VFP)
  - (V21) RCL MONITOR EQUIPMENT
  - (V22) FTI-MW RADIO RACK
- VSCS
  - (70) RIFD
  - (71) VDF
  - (72) POWER CONDITIONERS
  - (73) ANCILLIARY RACK
  - (74) MULTIPORT RACK ASSEMBLY
  - (75) SINGLE PORT RACK ASSEMBLY
  - (76) WORKSTATION PC
  - (77) PRINTER
  - (78) VSCU PROCESSOR
  - (79) WORKSTATION PC
  - (80) TIMING EQUIPMENT RACK
  - (81) A/G CONTROL CABINET
  - (82) A/G PERIPHERAL CABINET
  - (83) CUTOVER ADAPTATION RACK
  - (84) CUTOVER SWITCH
  - (85) VSCS RIFD
  - (86) VSCS POSITION IDF
  - (87) VSCS BUFC IDF
  - (88) VSCS MISC IDF
  - (89) VSCS G/G IDF
  - (90) VSCS RECORD IDF
  - (91) G/G CABINET (SWITCHES)
  - (92) CUTOVER IDF
  - (93) TEST EQUIPMENT RACK
  - (94) MPES
  - (95) CMT WORKSTATION
  - (96) UPS (PECCO)
  - (97) VTABS SWITCH (BACKUP/TRAINING)
  - (98) IDF's (BACKUP/TRAINING)
  - (99) TRAINING/MAINT WORKSTATION
- RADIO CONTROL EQUIPMENT (RCE)
  - (100) RCE LAN
  - (101) LAN-ADMIN-LAN OFFICE
  - (102) S-BUEC
  - (103) PRINTERS FOR TANDEM
  - (104) TANDEM
  - (105) POWER DIST. (PDI)
  - (106) MONITOR RACK
  - (107) ERMS EQUIPMENT RACK



SUPERCEDES WP-D-501-41411-FBP-02  
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REV	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
C	9/26/2013	2012 CM UPDATE PER CCD 34626		06/25/2012	CP
B	05/16/2012	2011 CM UPDATE PER CCD 34272 (FIXED YR)	T00241		BL
A	11/05/2010	2007 CM UPDATE PER CCD 31989		02/15/2008	GVP

**DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION  
ATO - TECHNICAL OPERATIONS WESTERN SERVICE AREA  
ARTCC**

**FACILITY BASELINE LAYOUT  
BASEMENT PLAN - PART 2  
CONTROL WING - SOUTHEAST**

FREMONT OAKLAND CTR CA

REVIEWED BY	SUBMITTED BY	APPROVED BY
<b>ORIGINAL SIGNED BY</b>		<b>ORIGINAL SIGNED BY</b>
PROJECT ENGINEER	R.O.	MGR: OPERATIONS SUPPORT
DESIGNED	ISSUED BY	DATE 12/03/2007 JCN
DRAWN	CADD	DRAWING NO
CHECKED	A.A.	ZOA-D-ARTCC-G003-BL

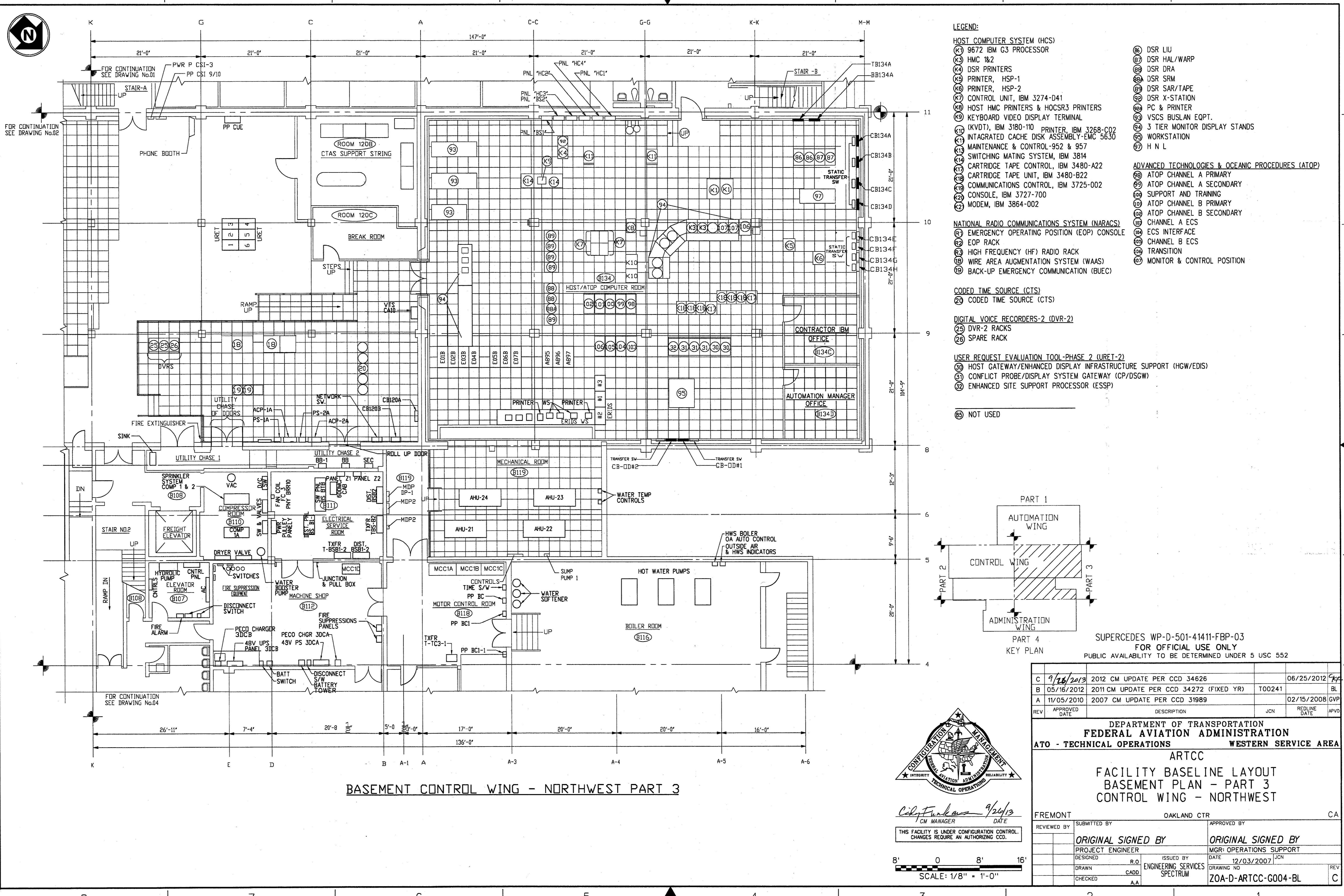
*Cheryl Funder* 9/26/13  
CM MANAGER DATE

THIS FACILITY IS UNDER CONFIGURATION CONTROL. CHANGES REQUIRE AN AUTHORIZING CCD.

8' 0 8' 16'  
SCALE: 1/8" = 1'-0"

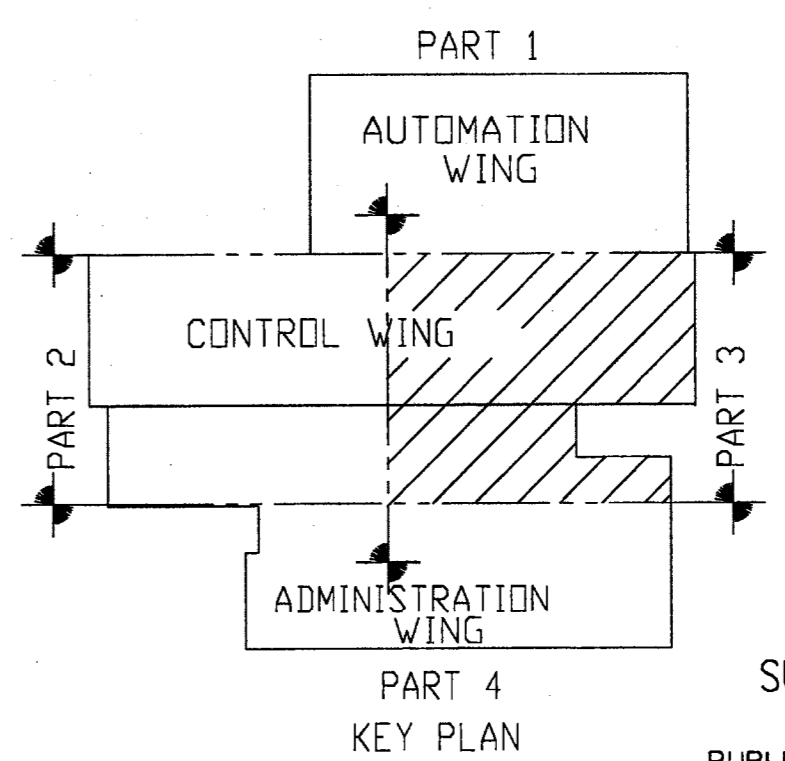
3/24/2013 3:43:43 PM lert@fhwa

**BASEMENT CONTROL WING - SOUTHEAST PART 2**



LEGEND:

- HOST COMPUTER SYSTEM (HCS)
  - (K1) 9672 IBM G3 PROCESSOR
  - (K2) HMC 1&2
  - (K3) DSR PRINTERS
  - (K4) PRINTER, HSP-1
  - (K5) PRINTER, HSP-2
  - (K6) CONTROL UNIT, IBM 3274-D41
  - (K7) HOST HMC PRINTERS & HOC3R3 PRINTERS
  - (K8) KEYBOARD VIDEO DISPLAY TERMINAL (KVDT), IBM 3180-110
  - (K9) PRINTER, IBM 3268-C02
  - (K10) INTEGRATED CACHE DISK ASSEMBLY-EMC 5630
  - (K11) MAINTENANCE & CONTROL-952 & 957
  - (K12) PC & PRINTER
  - (K13) VSCS BUSLAN EQPT.
  - (K14) 3 TIER MONITOR DISPLAY STANDS
  - (K15) WORKSTATION
  - (K16) H N L
- NATIONAL RADIO COMMUNICATIONS SYSTEM (NARACS)
  - (R1) ATOP CHANNEL A PRIMARY
  - (R2) ATOP CHANNEL A SECONDARY
  - (R3) SUPPORT AND TRAINING
  - (R4) ATOP CHANNEL B PRIMARY
  - (R5) ATOP CHANNEL B SECONDARY
  - (R6) CHANNEL A ECS
  - (R7) ECS INTERFACE
  - (R8) CHANNEL B ECS
  - (R9) TRANSITION
  - (R10) MONITOR & CONTROL POSITION
- ADVANCED TECHNOLOGIES & OCEANIC PROCEDURES (ATOP)
  - (88) ATOP CHANNEL A PRIMARY
  - (89) ATOP CHANNEL A SECONDARY
  - (90) SUPPORT AND TRAINING
  - (91) ATOP CHANNEL B PRIMARY
  - (92) ATOP CHANNEL B SECONDARY
  - (93) CHANNEL A ECS
  - (94) ECS INTERFACE
  - (95) CHANNEL B ECS
  - (96) TRANSITION
  - (97) MONITOR & CONTROL POSITION
- CODED TIME SOURCE (CTS)
  - (21) CODED TIME SOURCE (CTS)
- DIGITAL VOICE RECORDERS-2 (DVR-2)
  - (25) DVR-2 RACKS
  - (26) SPARE RACK
- USER REQUEST EVALUATION TOOL-PHASE 2 (URET-2)
  - (30) HOST GATEWAY/ENHANCED DISPLAY INFRASTRUCTURE SUPPORT (HWG/EDIS)
  - (31) CONFLICT PROBE/DISPLAY SYSTEM GATEWAY (CP/DSGW)
  - (32) ENHANCED SITE SUPPORT PROCESSOR (ESSP)
- (89) NOT USED



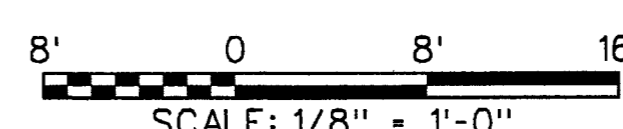
SUPERCEDES WP-D-501-41411-FBP-03  
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BASEMENT CONTROL WING - NORTHWEST PART 3



*Colin Furkas* 9/26/13  
CM MANAGER DATE

THIS FACILITY IS UNDER CONFIGURATION CONTROL.  
CHANGES REQUIRE AN AUTHORIZING CCD.



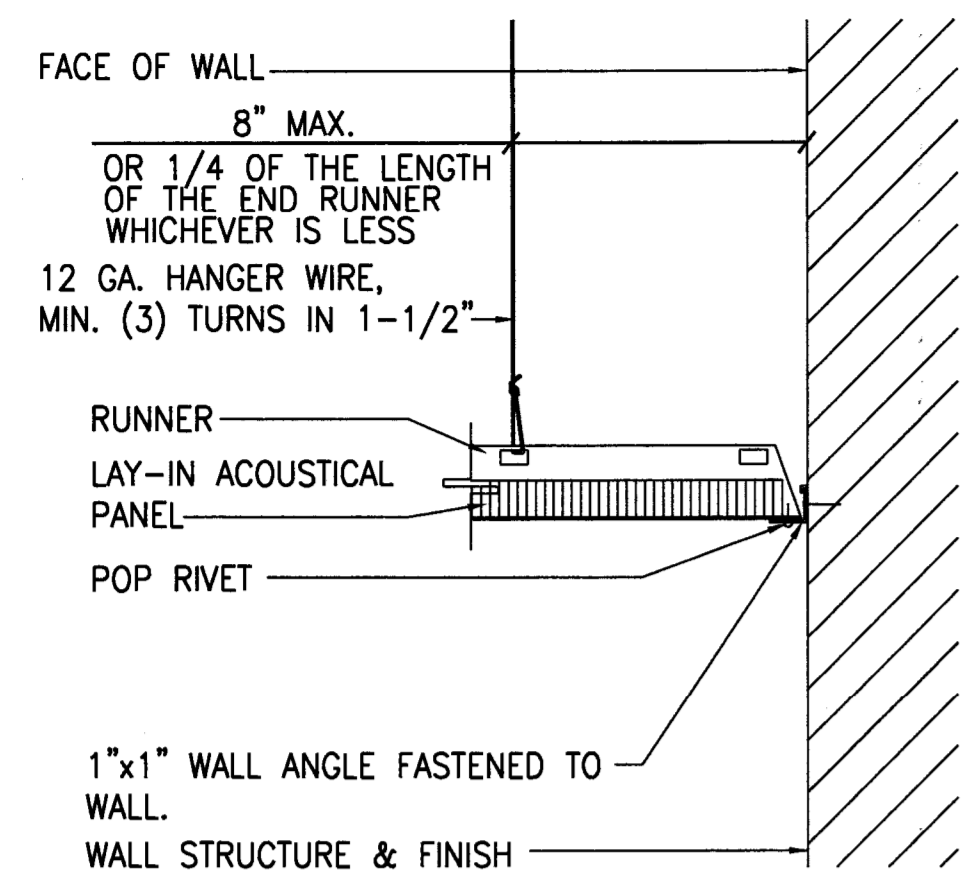
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DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION  
ATO - TECHNICAL OPERATIONS WESTERN SERVICE AREA

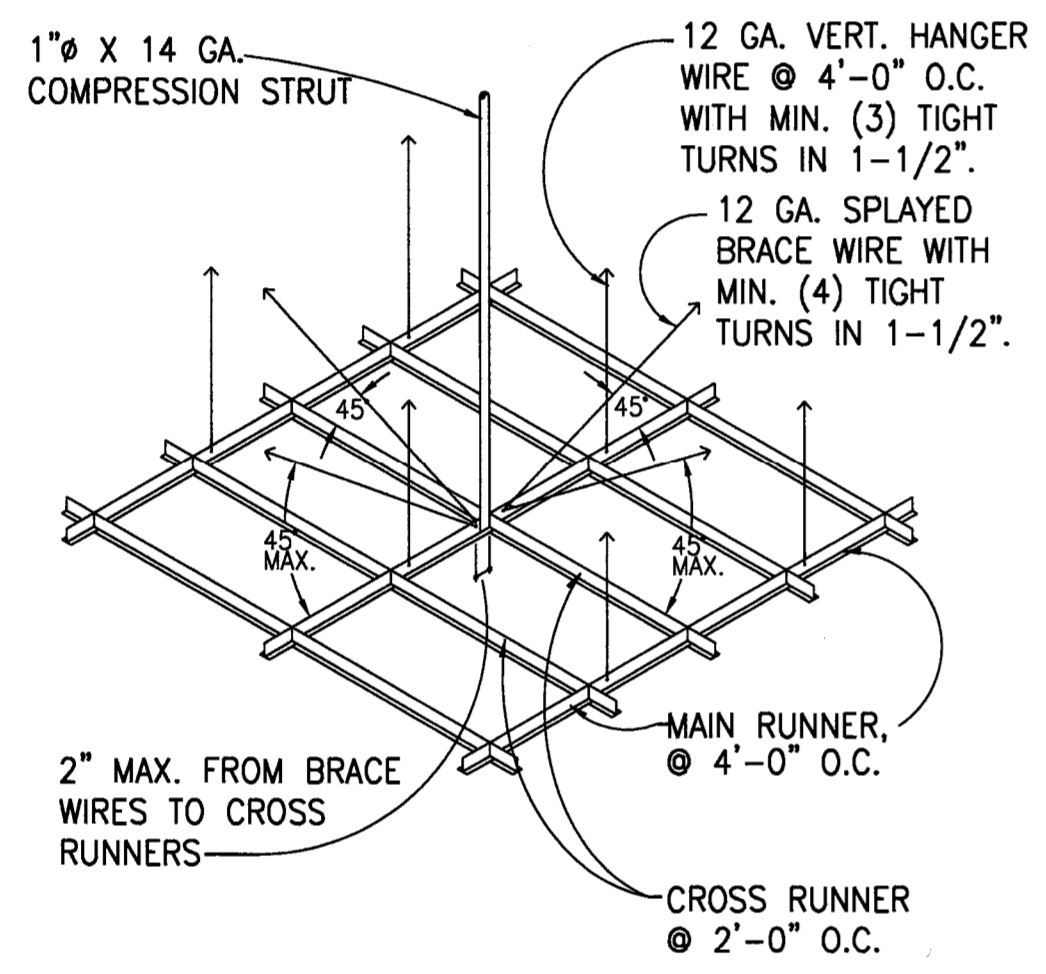
ARTCC  
FACILITY BASELINE LAYOUT  
BASEMENT PLAN - PART 3  
CONTROL WING - NORTHWEST

FREMONT	OAKLAND CTR	CA
REVIEWED BY	SUBMITTED BY	APPROVED BY
	<b>ORIGINAL SIGNED BY</b>	<b>ORIGINAL SIGNED BY</b>
DESIGNED	R.O	ISSUED BY
DRAWN	CADD	ENGINEERING SERVICES
CHECKED	AA	SPECTRUM
		DATE 12/03/2007
		DRAWING NO
		ZOA-D-ARTCC-G004-BL



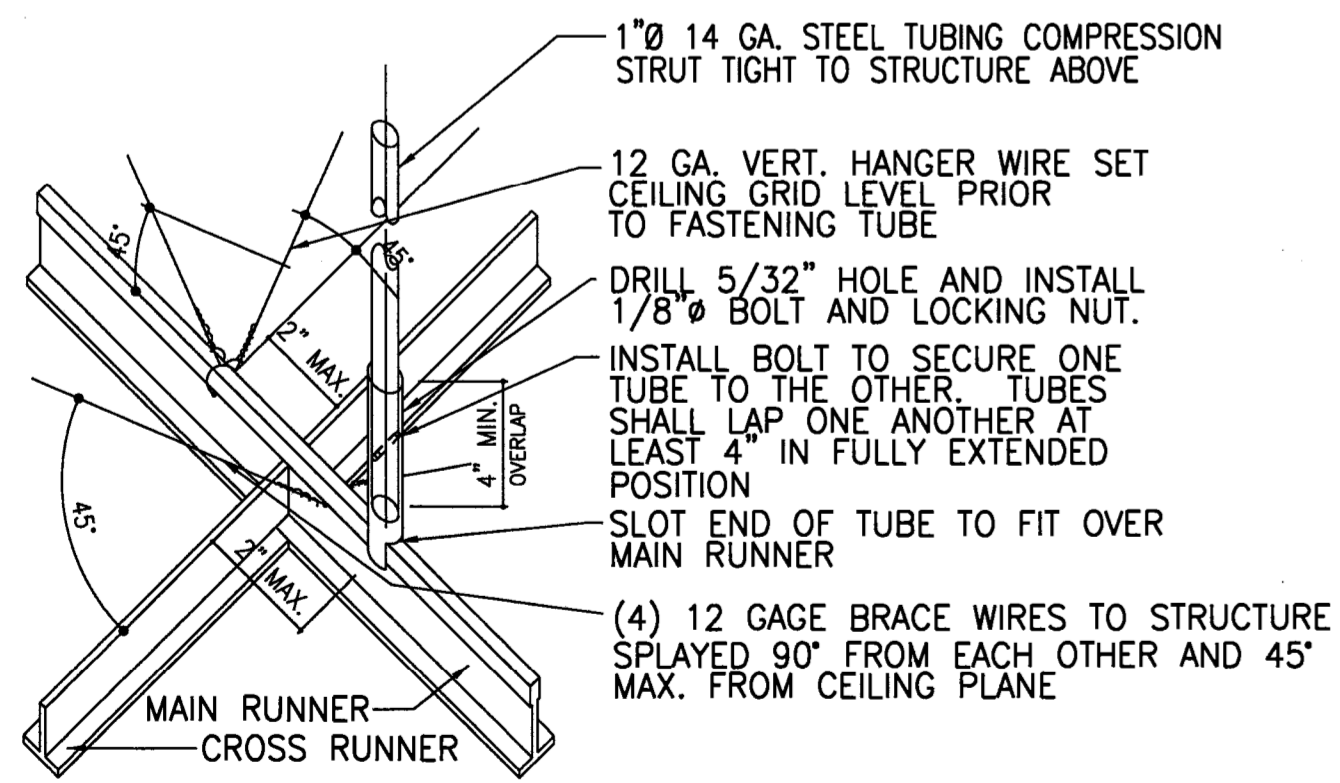


**F8 CEILING PERIMETER SEISMIC RESTRAINT (FIXED END)**  
A000 SCALE: NTS



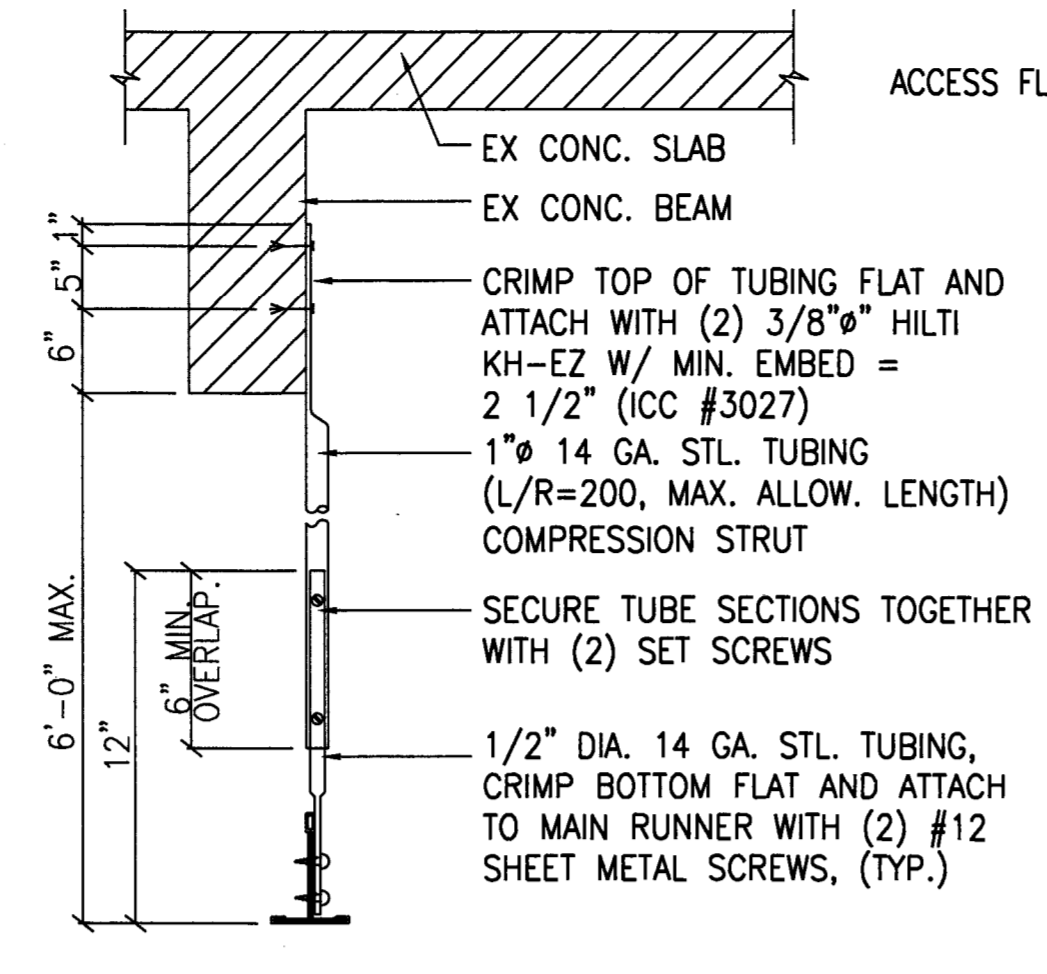
(REFER TO A8/A000 FOR DETAIL VIEW)

**D8 CEILING GRID SEISMIC RESTRAINT LAYOUT**  
A000 SCALE: NTS

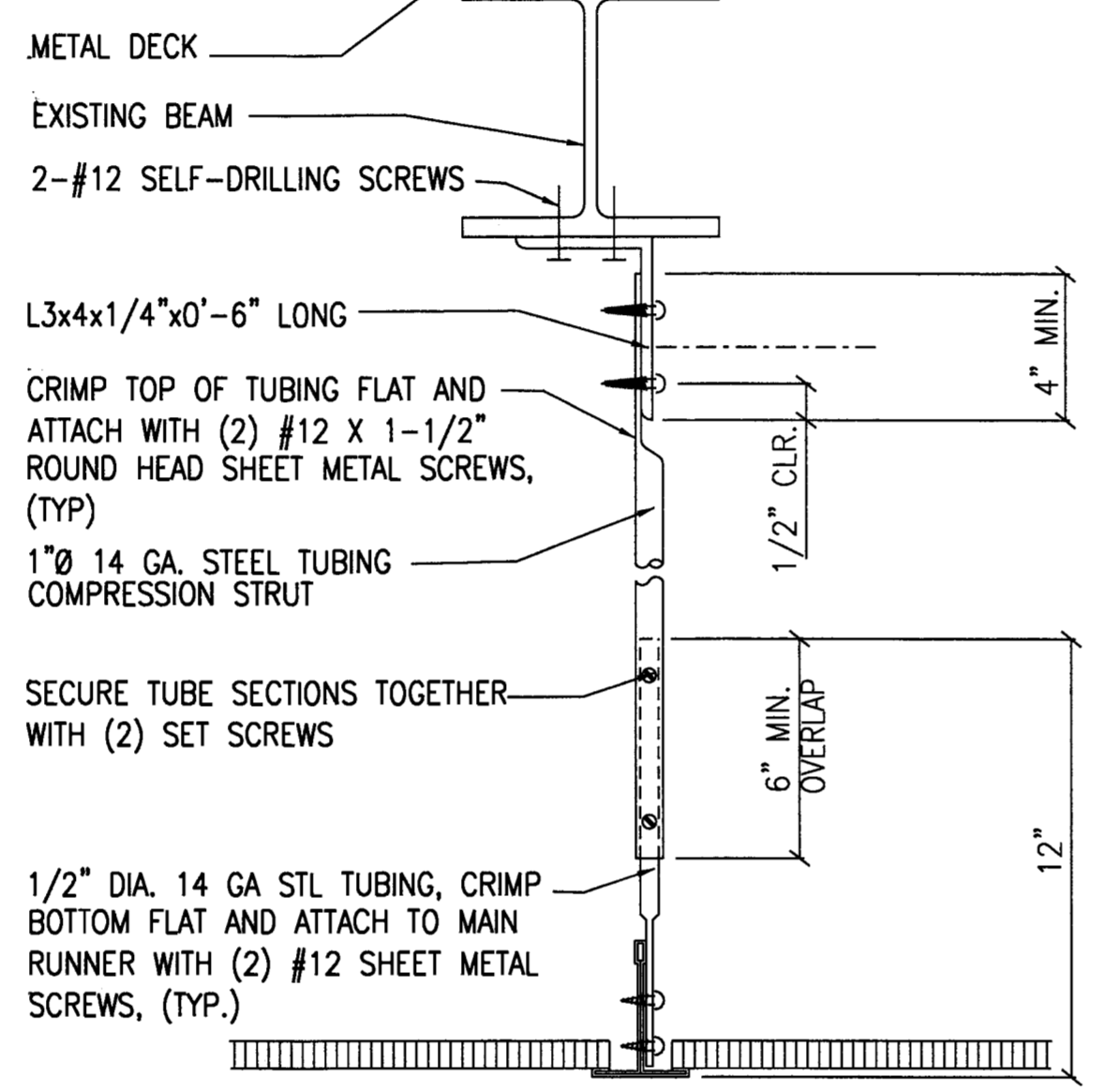


- NOTES**
- STRUTS OTHER THAN EMT (ELECTRICAL METALLIC TUBING) REQUIRES ENGINEERING CALCULATIONS. CONTRACTOR IS RESPONSIBLE TO CONTRACT A LICENSED STRUCTURAL ENGINEER AND SUBMIT THE CALCULATIONS.
  - CEILING LIGHT FIXTURES AND HVAC DIFFUSERS, REGISTERS, AND GRILLES SHALL BE SUPPORTED INDEPENDENTLY FROM THE CEILING SYSTEM.
  - SECURE CEILING PANELS IN EXITS AND CORRIDORS WITH CLIPS.
  - LOCATION OF COMPRESSION STRUTS SHALL BE PER SPECIFICATION, TYP.

**A8 SUSPENDED ACOUSTICAL CEILING SEISMIC RESTRAINT**  
A000 SCALE: NTS

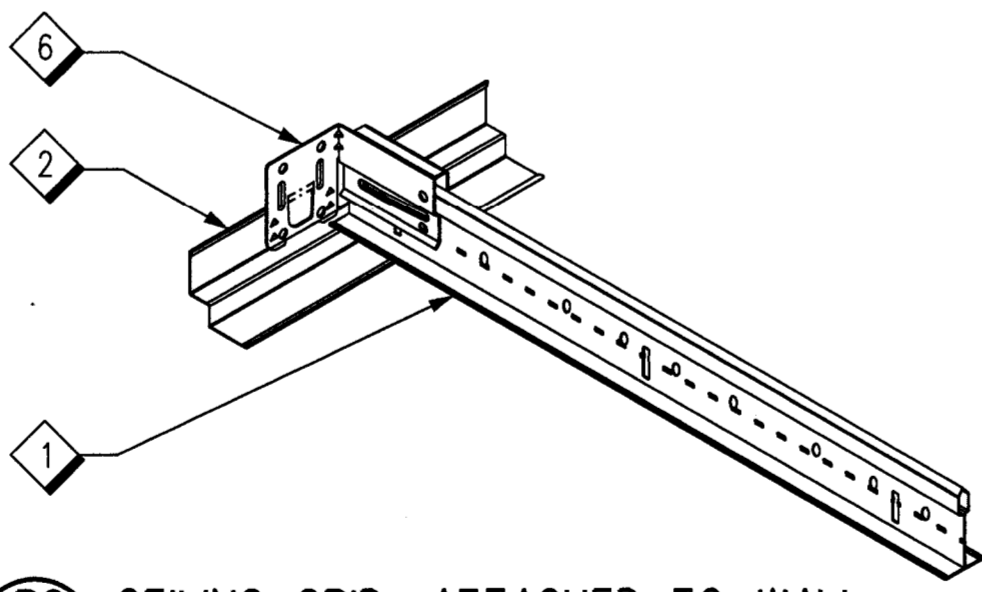


**AT CONCRETE BEAM**

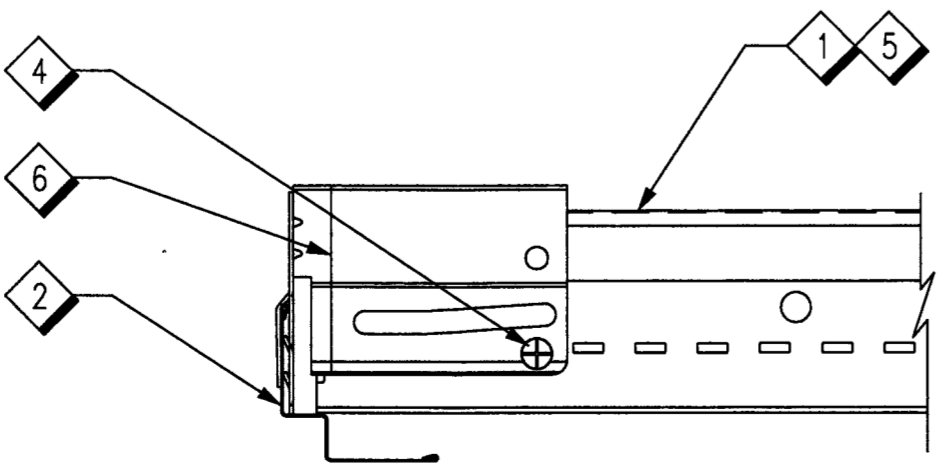


**AT STEEL BEAM**

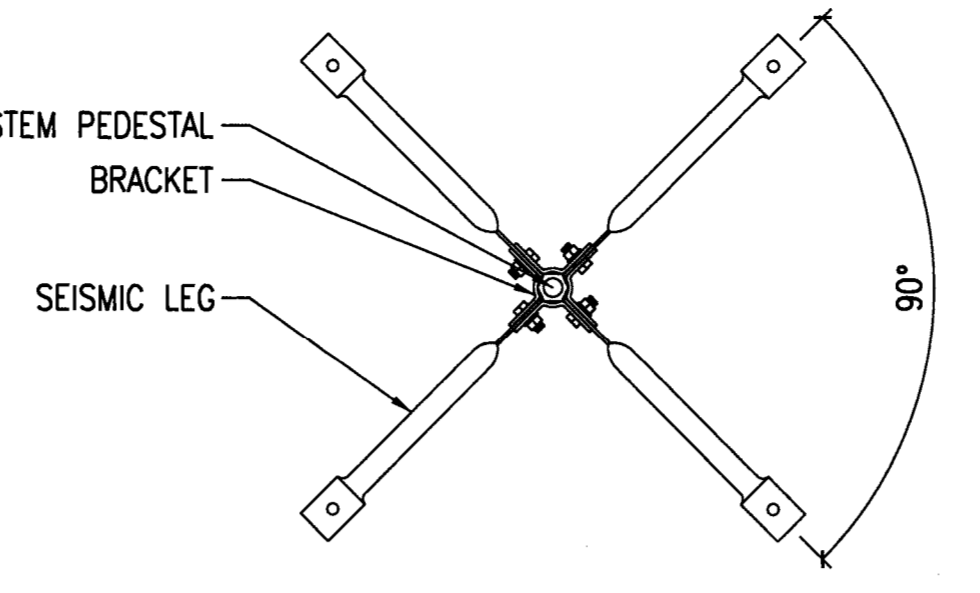
**D6 SUSPENDED ACOUSTICAL CEILING SEISMIC RESTRAINT**  
A000 SCALE: NTS



**B6 CEILING GRID- ATTACHED TO WALL**  
A000 SCALE: NTS

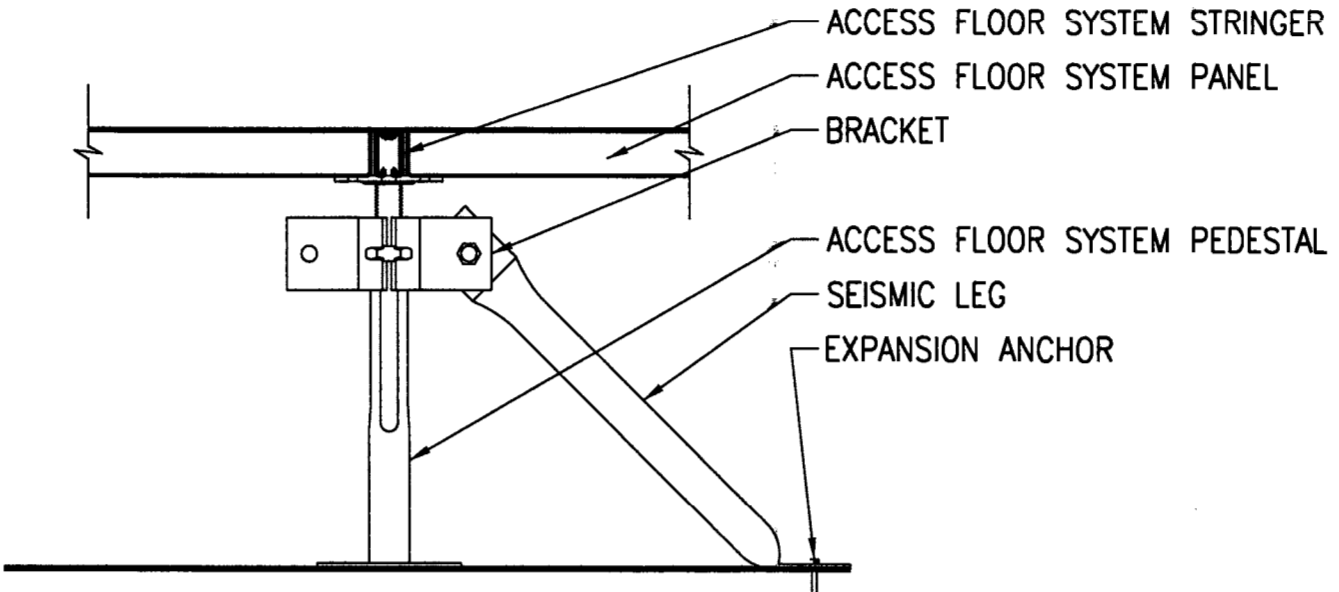


**A6 CEILING GRID- ATTACHED TO WALL**  
A000 SCALE: NTS



**PLAN**

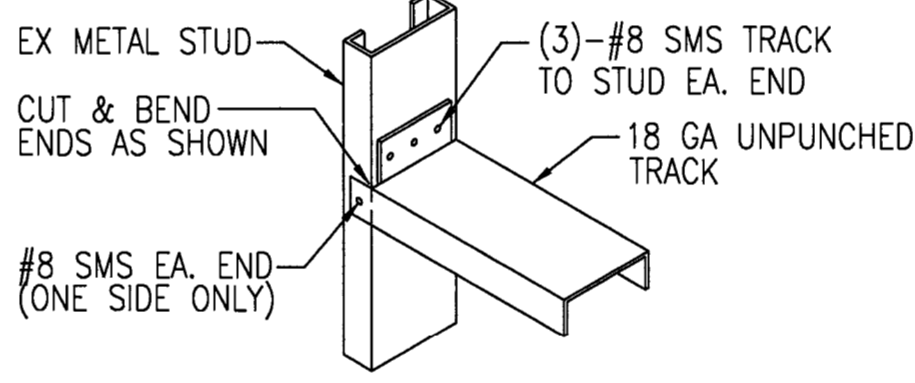
**NOTE:**  
1. PEDESTAL BASE NOT SHOWN FOR CLARITY.



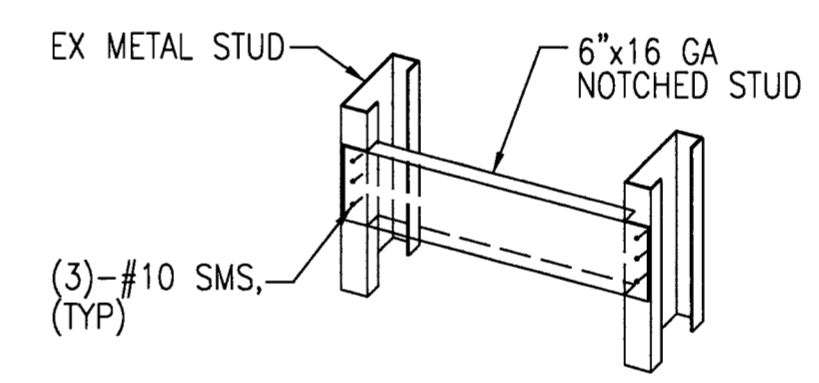
**ELEVATION**

**NOTE:**  
1. SPACING OF BRACES WILL DEPEND UPON PROJECT REQUIREMENTS.  
2. ONE LEG SHOWN FOR CLARITY.

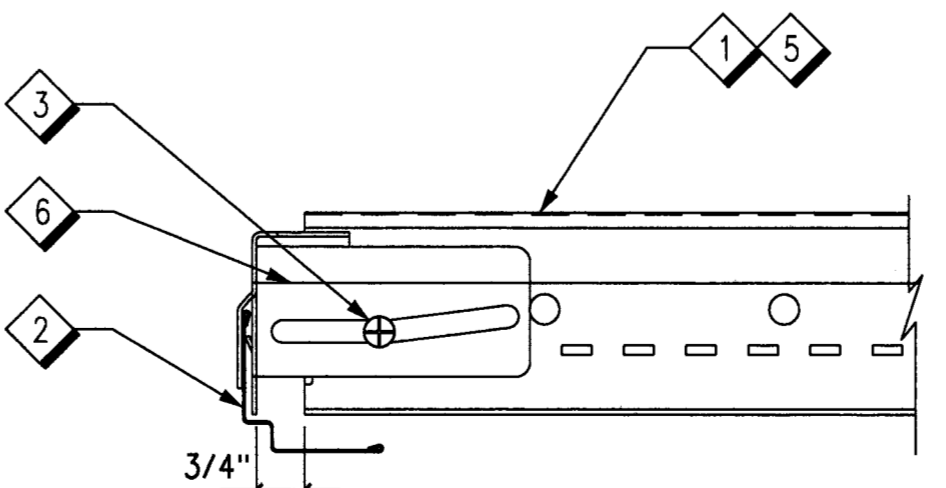
**E4 ACF SEISMIC BRACING DETAILS**  
A000 SCALE: NTS



**D4 STUD BLOCKING DETAIL**  
A000 SCALE: NTS



**D3 BACKING AT METAL STUDS**  
A000 SCALE: NTS



**A4 CEILING GRID- UNATTACHED TO WALL**  
A000 SCALE: NTS

**GENERAL SHEET NOTES**

- REFER TO 0002, STRUCTURAL, OTHER DISCIPLINES, AND SPECIFICATIONS FOR ADDITIONAL SEISMIC BRACING REQUIREMENTS.
- TALL NARROW CONTENTS OVER 4'-0" HEIGHT WITH A HEIGHT-TO-DEPTH OR HEIGHT-TO-WIDTH RATIO GREATER THAN 3-TO-1 SHALL BE ANCHORED TO FLOOR SLAB OR ADJACENT STRUCTURAL WALLS.
- LAY-IN TILES USED IN CEILING PANELS LOCATED AT EXITS AND CORRIDORS SHALL BE SECURED WITH CLIPS.
- LATERAL RESTRAINT OF NON-STRUCTURAL COMPONENTS FOR SEISMIC LOADS IS REQUIRED. DETAILS ARE FOR REFERENCE ONLY. SHOP DRAWINGS AND DESIGN CALCULATIONS SATISFYING THE REQUIREMENTS OF THE SPECIFICATION SHALL BE SUBMITTED BY THE CONTRACTOR'S DESIGNATED LICENSED PROFESSIONAL ENGINEER.

**SHEET NOTES**

- SUSPENDED CEILING GRID MAIN BEAM
- MOLDING
- LOOSE SCREW
- TIGHT SCREW
- SUSPENDED CEILING GRID CROSS TEES
- SEISMIC CLIP

FOR OFFICIAL USE ONLY  
PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>									
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD				
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA									
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER SEISMIC DETAILS FREMONT OAKLAND (ZOA) ARTCC									
REVIEWED BY		SUBMITTED BY		APPROVED BY					
		R. Bradfish		[Signature]					
SUBMITTER'S TITLE					APPROVER'S TITLE				
DESIGNED BY E. ROLAF					ISSUED BY AIRWAY FACILITY DIVISION				
DRAWN BY E. ROLAF					DATE 07/08/2015 JCN				
CHECKED BY W. STEVENS					DRAWING NO. ZOA - D - CWBMS - A000				
OAKLAND ARTCC FREMONT, CALIFORNIA					REV.				

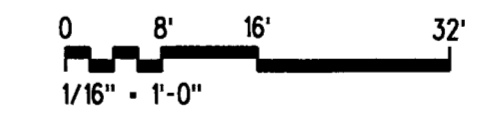


**GENERAL SHEET NOTES**

- A. FIRST FLOOR SLAB ABOVE BOILER AND CHILLER ROOM SHALL BE 1-HOUR FIRE RATED CONSTRUCTION.
- B. UTILITY CHASE PARTITIONS ARE 2-HOUR FIRE RATED CONSTRUCTION.
- C. CONTROL AND AUTOMATION WINGS, PER FAA DIRECTION, SHALL BE TREATED AS IBC TYPE IIA CONSTRUCTION. THE FIRST FLOOR CONCRETE WAFFLE SLAB SHALL BE TREATED AS AN 1-HOUR FIRE RATED ASSEMBLY. SMOKE AND FIRE STOP FLOOR PENETRATIONS WITH AN 1-HOUR FIRE RATED ASSEMBLY.
- D. ADMINISTRATION WING IS TYPE IIB CONSTRUCTION PER IBC. SMOKE AND FIRE STOP FLOOR PENETRATIONS WITH AN 1-HOUR FIRE RATED ASSEMBLY.
- E. ELECTRICAL VAULT, ROOM 13A, CONCRETE CEILING IS A 2-HOUR FIRE RATED CONSTRUCTION. CONCRETE CEILING IS APPROXIMATELY 4'-0" BELOW FIRST FLOOR SLAB.
- F. THIS DRAWING ILLUSTRATES THE EXTENT AND LAYOUT OF FIRE-RATED PARTITIONS AS REQUIRED BY CODE. THIS DRAWING DOES NOT REPRESENT THAT THESE EXISTING PARTITIONS, IN FACT, CURRENTLY PROVIDE THE REQUIRED FIRE RATING, BUT ONLY THAT THE PARTITIONS AS SHOWN SHOULD BE RATED AS INDICATED.  
  
UNLESS SPECIFICALLY INDICATED OTHERWISE IN THIS DRAWING PACKAGE, THIS PROJECT SCOPE DOES NOT INCLUDE REPLACING OR UPGRADING ANY OF THESE EXISTING PARTITIONS THAT DO NOT CURRENTLY PROVIDE THE REQUIRED FIRE RATING.  
  
THE PROJECT SCOPE INCLUDES:  
FIRE AND SMOKE-STOPPING TO COMPLY WITH THE INDICATED RATINGS AT NEW PENETRATIONS IN THESE PARTITIONS MADE BY THE WORK OF THIS PROJECT;  
FIRE AND SMOKE STOPPING TO COMPLY WITH THE INDICATED RATINGS AT NEW OPENINGS/HOLES MADE BY THE WORK OF THIS PROJECT (REMOVALS OF EXISTING ITEMS LEAVING OPENINGS/HOLES).
- G. WALLS AT COLUMN LINES 8 AND 11 ARE TYPICALLY 1'-6" THICK CIP CONCRETE WALLS.

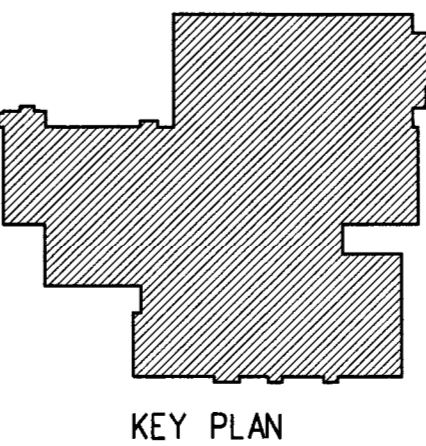
**LEGEND**

- 2-HOUR RATED WALL
- 1-HOUR RATED WALL



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PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

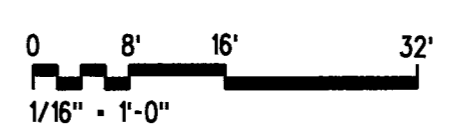
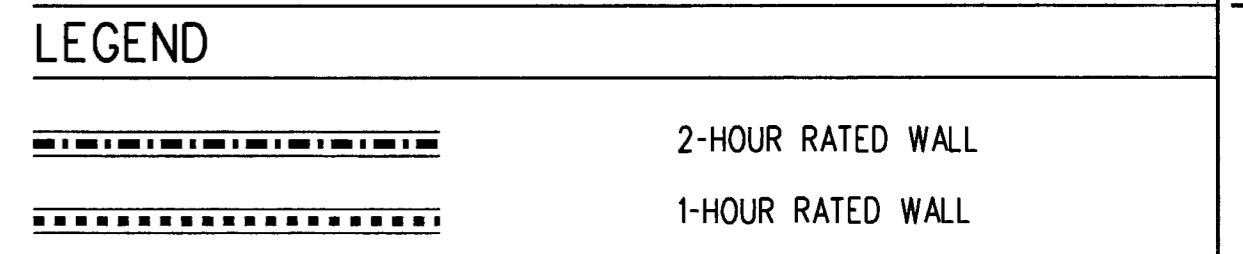
**A8** GUIDE PLAN - BASEMENT  
A001 SCALE: 1/16" = 1'-0"



		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>			
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER GUIDE PLAN - BASEMENT			
FREMONT		OAKLAND (ZOA) ARTCC			
REVIEWED BY:	SUBMITTED BY: <i>RSBradfish</i>	APPROVED BY: <i>[Signature]</i>			
SUBMITTER'S TITLE:		APPROVER'S TITLE:			
DESIGNED BY: E. ROLAF	DRAWN BY: E. ROLAF	ISSUED BY:	DATE: 07/28/2015	JCN:	REV:
OAKLAND ARTCC FREMONT, CALIFORNIA		AIRWAY FACILITY DIVISION		ZOA - D - CWBMS - A001	

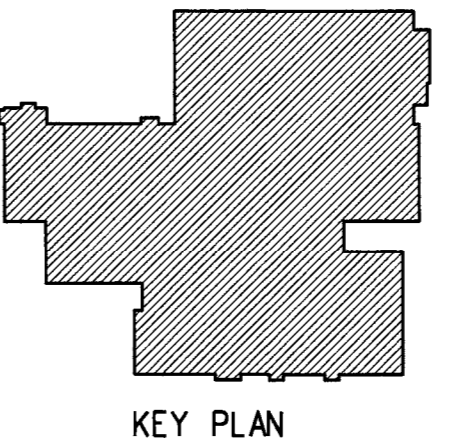


- GENERAL SHEET NOTES**
- A. FIRST FLOOR SLAB ABOVE BOILER AND CHILLER ROOM SHALL BE 1-HOUR FIRE RATED CONSTRUCTION.
  - B. UTILITY CHASE PARTITIONS ARE 2-HOUR FIRE RATED CONSTRUCTION.
  - C. CONTROL AND AUTOMATION WINGS, PER FAA DIRECTION, SHALL BE TREATED AS IBC TYPE IIA CONSTRUCTION. THE FIRST FLOOR CONCRETE WAFFLE SLAB SHALL BE TREATED AS AN 1-HOUR FIRE RATED ASSEMBLY. SMOKE AND FIRE STOP FLOOR PENETRATIONS WITH AN 1-HOUR FIRE RATED ASSEMBLY.
  - D. ADMINISTRATION WING IS TYPE IIB CONSTRUCTION PER IBC. SMOKE AND FIRE STOP FLOOR PENETRATIONS WITH AN 1-HOUR FIRE RATED ASSEMBLY.
  - E. THIS DRAWING ILLUSTRATES THE EXTENT AND LAYOUT OF FIRE-RATED PARTITIONS AS REQUIRED BY CODE. THIS DRAWING DOES NOT REPRESENT THAT THESE EXISTING PARTITIONS, IN FACT, CURRENTLY PROVIDE THE REQUIRED FIRE RATING, BUT ONLY THAT THE PARTITIONS AS SHOWN SHOULD BE RATED AS INDICATED.
- UNLESS SPECIFICALLY INDICATED OTHERWISE IN THIS DRAWING PACKAGE, THIS PROJECT SCOPE DOES NOT INCLUDE REPLACING OR UPGRADING ANY OF THESE EXISTING PARTITIONS THAT DO NOT CURRENTLY PROVIDE THE REQUIRED FIRE RATING.
- THE PROJECT SCOPE INCLUDES:  
 FIRE AND SMOKE-STOPPING TO COMPLY WITH THE INDICATED RATINGS AT NEW PENETRATIONS IN THESE PARTITIONS MADE BY THE WORK OF THIS PROJECT;  
 FIRE AND SMOKE STOPPING TO COMPLY WITH THE INDICATED RATINGS AT NEW OPENINGS/HOLES MADE BY THE WORK OF THIS PROJECT (REMOVALS OF EXISTING ITEMS LEAVING OPENINGS/HOLES).



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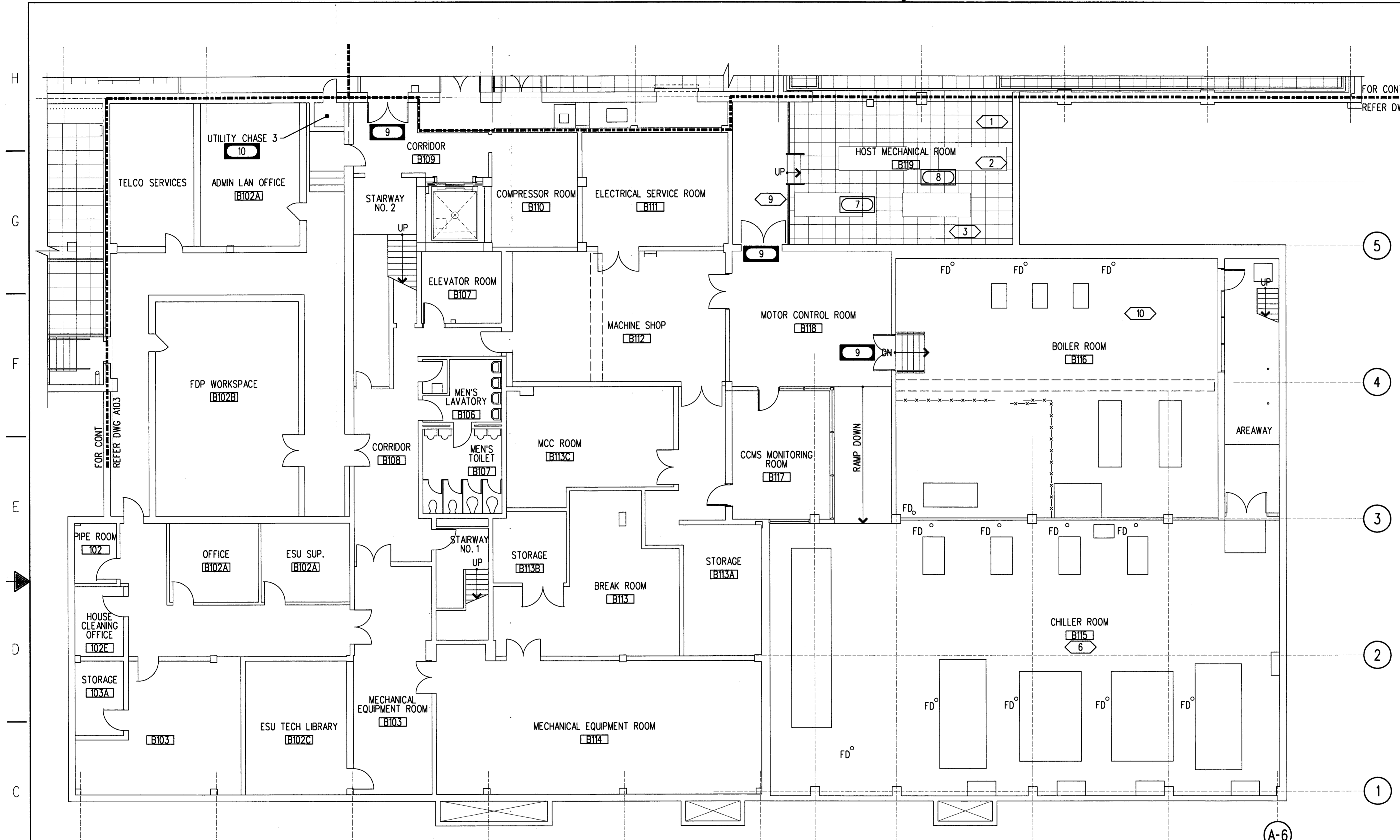
**A8** GUIDE PLAN - FIRST FLOOR  
**A002** SCALE: 1/16" = 1'-0"



		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA				RENTON, WA
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER GUIDE PLAN - FIRST FLOOR				
FREMONT		OAKLAND (ZOA) ARTCC				
REVIEWED BY	SUBMITTED BY <i>RSBradfish</i>	APPROVED BY 				
SUBMITTER'S TITLE		APPROVER'S TITLE				
DESIGNED BY E. ROLAF	ISSUED BY AIRWAY FACILITY DIVISION	DATE 07/08/2015	JCN			
DRAWN BY E. ROLAF		DRAWING NO. ZOA - D - CWBMS - A002	REV.			
CHECKED BY W. STEVENS						



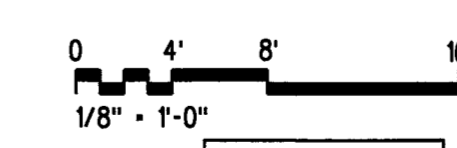
OAKLAND ARTCC  
 FREMONT,  
 CALIFORNIA



- HAZMAT GENERAL SHEET NOTES:**
- A. WORK AREA AND BUILDING CONTAIN ASBESTOS CONTAINING MATERIALS (ACM) AND LEAD CONTAINING COATINGS (LCC). REFER TO HAZMAT AND DEMOLITION DRAWINGS AND SPECIFICATIONS 02 82 00 AND 02 84 33 FOR ABATEMENT WORK, CAUTIONS AND SPECIFIC AREAS WHERE ASBESTOS CONTAINING MATERIALS AND LEAD COATINGS OCCUR.
  - B. COORDINATE PHASING OF HAZARDOUS MATERIAL REMOVAL WITH COR AND DEMOLITION DRAWINGS.
  - C. CONTRACTOR TO COORDINATE WITH THE COR TO COMPLETE FORM 3900-8, FAA PRE-CONSTRUCTION & MAINTENANCE PROJECT SAFETY & HEALTH CHECKLIST AND THE FAA ASBESTOS CONTROL WORK FORM.
  - D. LEAD BASED PAINT IS PRESENT. REFER TO SPECIFICATIONS IN 02 82 00 FOR CONCENTRATIONS. COORDINATE REMOVAL WITH SPECIFICATIONS.
  - E. THE ASBESTOS ABATEMENT CONTRACTOR SHALL PROVIDE ONE CLEAN HEPA VACUUM WITH UNUSED HEPA FILTER FOR FAA USE DURING THE ABATEMENT PROJECT.

- HAZMAT KEY NOTES:**
- ASBESTOS**
- REMOVE ASBESTOS CONTAINING MATERIAL IN ACCORDANCE WITH SPECIFICATION SECTION 02 82 00.
  - EXISTING IDENTIFIED ACM TO REMAIN IN PLACE. DO NOT DISTURB. PROVIDE WARNING LABELS IDENTIFYING REMAINING ACM IN ACCORDANCE WITH SPECIFICATION SECTION 02 82 00.
1. MUDDIED TSI FITTINGS
  2. PIPE HANGER BLOCK
  3. STRAIGHT RUN PIPE INSULATION BLOCK
  4. TAR PIPE WRAP
  5. PIPE WRAP PATCHES - ON PIPE INSULATION
  6. FIBERGLASS MUD
  7. STANCHION MASTIC
  8. REMNANT TILE MASTIC
  9. FIRE DOORS
  10. BASEBOARD MASTIC
- LEAD PAINT**
- LEAD PAINT IDENTIFIED TO BE REMOVED IN TOTAL OR SPOT REMOVED TO MAKE ATTACHMENTS, CONNECTIONS OR PENETRATIONS.
1. CEILING PAINT
  2. WALL PAINT
  3. COLUMN PAINT
  4. WALL PAINT (YELLOW)
  5. YELLOW PAINT - AHU
  6. BLUE PAINT
  7. DUCT PAINT
  8. DOOR FRAME PAINT (GREY)
  9. HANDRAIL PAINT
  10. PAINT - I-BEAM TANK SUPPORTS
  11. WALL PAINT (BEIGE, WHITE, AND YELLOW)

**B8 HAZMAT ABATEMENT PLAN - BASEMENT - PART 1**  
**A101 SCALE: 1/8" = 1'-0"**



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 PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

**JACOBS**

REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD

DEPARTMENT OF TRANSPORTATION  
 FEDERAL AVIATION ADMINISTRATION  
 WESTERN SERVICE AREA RENTON, WA

**CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION  
 OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER  
 HAZMAT ABATEMENT PLAN - BASEMENT - PART 1**

FREMONT OAKLAND (ZOA) ARTCC

DESIGNED BY C. KOLATOWICZ	ISSUED BY AIRWAY FACILITY DIVISION	DATE 07/08/2015	JCN
DRAWN BY E. ROLAT	CHECKED BY J. HACKETT	DRAWING NO. ZOA - D - CWBMM5 - A101	REV.

OAKLAND ARTCC  
 FREMONT, CALIFORNIA

7/2/2015

HAZMAT GENERAL SHEET NOTES:

- A. WORK AREA AND BUILDING CONTAIN ASBESTOS CONTAINING MATERIALS (ACM) AND LEAD CONTAINING COATINGS (LCC). REFER TO HAZMAT AND DEMOLITION DRAWINGS AND SPECIFICATIONS 02 82 00 AND 02 84 33 FOR ABATEMENT WORK, CAUTIONS AND SPECIFIC AREAS WHERE ASBESTOS CONTAINING MATERIALS AND LEAD COATINGS OCCUR.
- B. COORDINATE PHASING OF HAZARDOUS MATERIAL REMOVAL WITH COR AND DEMOLITION DRAWINGS.
- C. CONTRACTOR TO COORDINATE WITH THE COR TO COMPLETE FORM 3900-8, FAA PRE-CONSTRUCTION & MAINTENANCE PROJECT SAFETY & HEALTH CHECKLIST AND THE FAA ASBESTOS CONTROL WORK FORM.
- D. LEAD BASED PAINT IS PRESENT. REFER TO SPECIFICATIONS IN 02 82 00 FOR CONCENTRATIONS. COORDINATE REMOVAL WITH SPECIFICATIONS.
- E. THE ASBESTOS ABATEMENT CONTRACTOR SHALL PROVIDE ONE CLEAN HEPA VACUUM WITH UNUSED HEPA FILTER FOR FAA USE DURING THE ABATEMENT PROJECT.

HAZMAT KEY NOTES:

ASBESTOS

REMOVE ASBESTOS CONTAINING MATERIAL IN ACCORDANCE WITH SPECIFICATION SECTION 02 82 00.

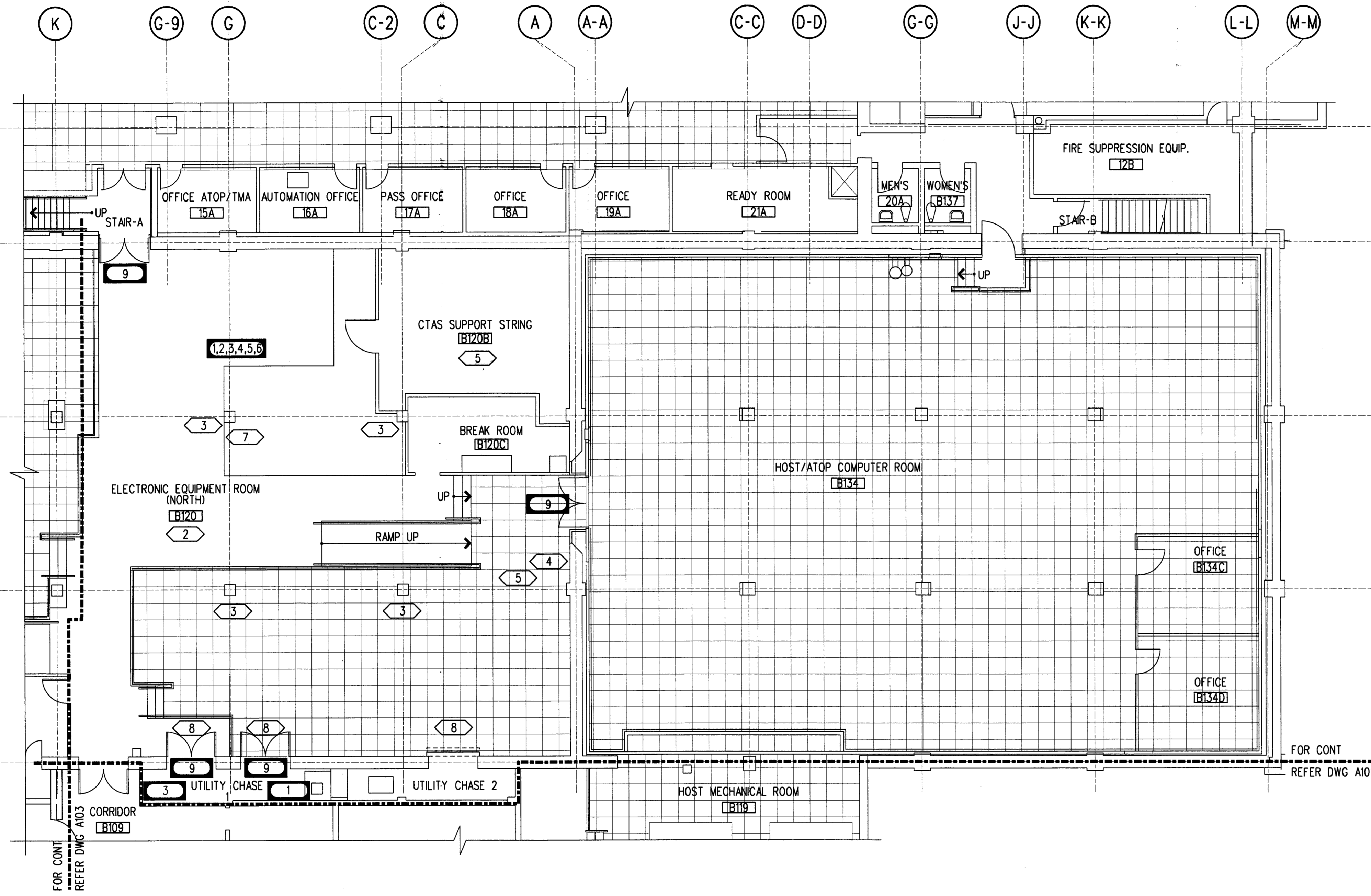
EXISTING IDENTIFIED ACM TO REMAIN IN PLACE. DO NOT DISTURB. PROVIDE WARNING LABELS IDENTIFYING REMAINING ACM IN ACCORDANCE WITH SPECIFICATION SECTION 02 82 00.

- 1. MUDDIED TSI FITTINGS
- 2. PIPE HANGER BLOCK
- 3. STRAIGHT RUN PIPE INSULATION BLOCK
- 4. TAR PIPE WRAP
- 5. PIPE WRAP PATCHES - ON PIPE INSULATION
- 6. FIBERGLASS MUD
- 7. STANCHION MASTIC
- 8. REMNANT TILE MASTIC
- 9. FIRE DOORS
- 10. BASEBOARD MASTIC

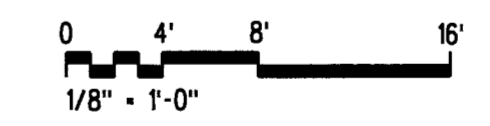
LEAD PAINT

LEAD PAINT IDENTIFIED TO BE REMOVED IN TOTAL OR SPOT REMOVED TO MAKE ATTACHMENTS, CONNECTIONS OR PENETRATIONS.

- 1. CEILING PAINT
- 2. WALL PAINT
- 3. COLUMN PAINT
- 4. WALL PAINT (YELLOW)
- 5. YELLOW PAINT - AHU
- 6. BLUE PAINT
- 7. DUCT PAINT
- 8. DOOR FRAME PAINT (GREY)
- 9. HANDRAIL PAINT
- 10. PAINT - I-BEAM TANK SUPPORTS
- 11. WALL PAINT (BEIGE, WHITE, AND YELLOW)

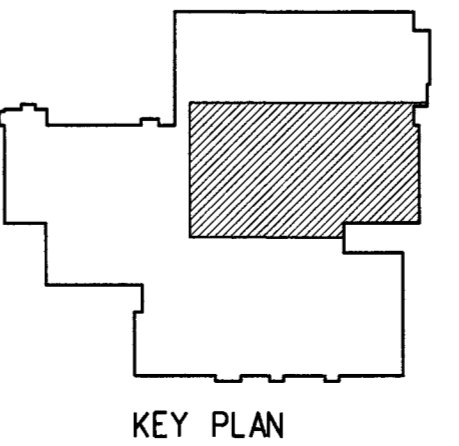


**C8** HAZMAT ABATEMENT PLAN - BASEMENT - PART 2  
**A102** SCALE: 1/8" = 1'-0"



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 PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA			
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER HAZMAT ABATEMENT PLAN - BASEMENT - PART 2 FREMONT OAKLAND (ZOA) ARTCC			
REVIEWED BY DESIGNED BY DRAWN BY CHECKED BY	SUBMITTED BY RBradfish	APPROVED BY 	DATE 07/08/2015	JCN JCN	REV. ZOA - D - CWBMMS - A102
OAKLAND ARTCC FREMONT, CALIFORNIA		ISSUED BY AIRWAY FACILITY DIVISION		DATE 7/2/2015	


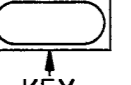


HAZMAT GENERAL SHEET NOTES:

- A. WORK AREA AND BUILDING CONTAIN ASBESTOS CONTAINING MATERIALS (ACM) AND LEAD CONTAINING COATINGS (LCC). REFER TO HAZMAT AND DEMOLITION DRAWINGS AND SPECIFICATIONS 02 82 00 AND 02 84 33 FOR ABATEMENT WORK, CAUTIONS AND SPECIFIC AREAS WHERE ASBESTOS CONTAINING MATERIALS AND LEAD COATINGS OCCUR.
- B. COORDINATE PHASING OF HAZARDOUS MATERIAL REMOVAL WITH COR AND DEMOLITION DRAWINGS.
- C. CONTRACTOR TO COORDINATE WITH THE COR TO COMPLETE FORM 3900-8, FAA PRE-CONSTRUCTION & MAINTENANCE PROJECT SAFETY & HEALTH CHECKLIST AND THE FAA ASBESTOS CONTROL WORK FORM.
- D. LEAD BASED PAINT IS PRESENT. REFER TO SPECIFICATIONS IN 02 82 00 FOR CONCENTRATIONS. COORDINATE REMOVAL WITH SPECIFICATIONS.
- E. THE ASBESTOS ABATEMENT CONTRACTOR SHALL PROVIDE ONE CLEAN HEPA VACUUM WITH UNUSED HEPA FILTER FOR FAA USE DURING THE ABATEMENT PROJECT.


HAZMAT KEY NOTES:

ASBESTOS


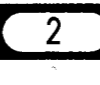
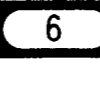
-  REMOVE ASBESTOS CONTAINING MATERIAL IN ACCORDANCE WITH SPECIFICATION SECTION 02 82 00.
-  EXISTING IDENTIFIED ACM TO REMAIN IN PLACE. DO NOT DISTURB. PROVIDE WARNING LABELS IDENTIFYING REMAINING ACM IN ACCORDANCE WITH SPECIFICATION SECTION 02 82 00.

1. MUDDIED TSI FITTINGS
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3. STRAIGHT RUN PIPE INSULATION BLOCK
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5. PIPE WRAP PATCHES - ON PIPE INSULATION
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7. STANCHION MASTIC
8. REMNANT TILE MASTIC
9. FIRE DOORS
10. BASEBOARD MASTIC

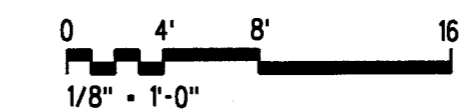
LEAD PAINT

-  LEAD PAINT IDENTIFIED TO BE REMOVED IN TOTAL OR SPOT REMOVED TO MAKE ATTACHMENTS, CONNECTIONS OR PENETRATIONS.
1. CEILING PAINT
  2. WALL PAINT
  3. COLUMN PAINT
  4. WALL PAINT (YELLOW)
  5. YELLOW PAINT - AHU
  6. BLUE PAINT
  7. DUCT PAINT
  8. DOOR FRAME PAINT (GREY)
  9. HANDRAIL PAINT
  10. PAINT - I-BEAM TANK SUPPORTS
  11. WALL PAINT (BEIGE, WHITE, AND YELLOW)


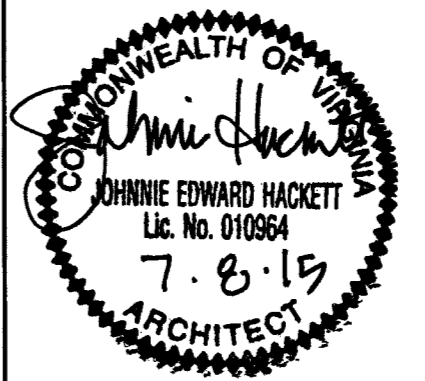
SHEET NOTES

-  PER INFORMATION PROVIDED BY THE FAA, THE CONCRETE WALL FINISH COATING HAS BEEN IDENTIFIED AS ACM. TAKE REQUIRED PRECAUTIONS AND ABATE AS REQUIRED TO PERFORM THE WORK. (TOTAL ASBESTOS: 3%)
-  PER INFORMATION PROVIDED BY THE FAA, REMOVE (92) ASBESTOS CONTAINING FRIABLE PIPE HANGER BLOCKS. (TOTAL ASBESTOS: 50%)
-  PER INFORMATION PROVIDED BY THE FAA, REMOVE FRIABLE FIBERGLASS MUD. (TOTAL ASBESTOS: 27.3%)

**A8** HAZMAT ABATEMENT PLAN - BASEMENT - PART 3  
**A103** SCALE: 1/8" = 1'-0"

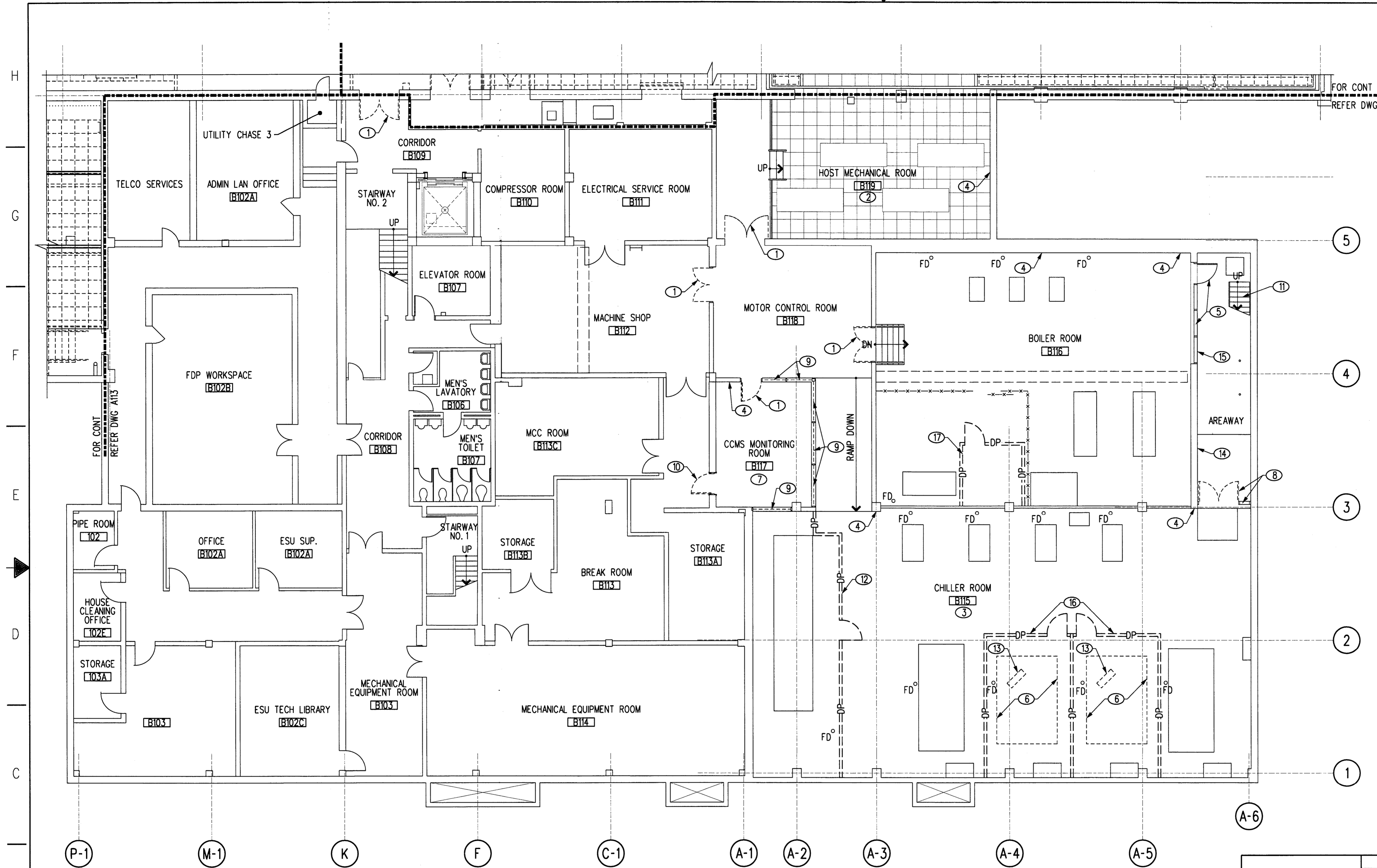


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 PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

		REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA					
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER HAZMAT ABATEMENT PLAN - BASEMENT - PART 3 FREMONT OAKLAND (ZOA) ARTCC					
		REVIEWED BY	SUBMITTED BY	APPROVED BY			
OAKLAND ARTCC FREMONT, CALIFORNIA		SUBMITTER'S TITLE		APPROVER'S TITLE			
DESIGNED BY C. KOLATOWICZ DRAWN BY E. ROLAF CHECKED BY J. HACKETT		ISSUED BY AIRWAY FACILITY DIVISION		DATE 07/08/2015	JCN	DRAWING NO. ZOA - D - CWBMM5 - A103	



KEY PLAN



**GENERAL SHEET NOTES**

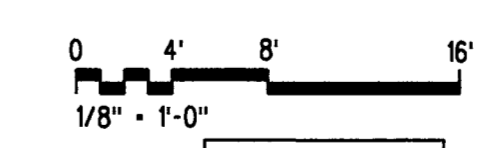
- A. PROVIDE DUSTPROOF PARTITIONS AROUND AREAS REQUIRING DEMOLITION PRIOR TO THE START OF WORK TO PROTECT EQUIPMENT FROM DIRT AND DEBRIS. COORDINATE WITH COR.
- B. PROTECT EQUIPMENT TO REMAIN IN THE AREA OR WORK. COORDINATE WITH COR.
- C. FIRE ALARM/FIRE SUPPRESSION EQUIPMENT AND COMPONENTS ARE EXISTING AND ARE TO REMAIN, REFER TO FIRE ALARM AND FIRE SUPPRESSION DRAWINGS.
- D. DEVELOP RISK MITIGATION PLAN TO ACCOMMODATE REMOVING AND PROVIDING EQUIPMENT AS PART OF THE WORK. COORDINATE FINAL PLAN REQUIREMENTS WITH COR AND DIVISION 1 SPECIFICATIONS. RISK MITIGATION PLAN SHALL AT A MINIMUM ADDRESS: PROTECTION OF BUILDING OCCUPANTS, BUILDING SECURITY, AND BUILDING.  
  
CHILLER ROOM AND BOILER ROOM AREAWAY IS CURRENTLY USED AS A MEANS OF EGRESS. RISK MITIGATION PLAN SHALL ADDRESS ALTERNATIVE MEANS OF EGRESS FOR BUILDING OCCUPANTS, SIGNAGE, AND, IF REQUIRED PER COR, TRAINING WHEN AREAWAY CANNOT BE ACCESSED.  
  
PLAN SHOULD MINIMIZE TIME THAT AREAWAY STAIR (IF REQUIRED) IS REMOVED, AND TEMPORARY REMOVAL OF CHILLER ROOM AREAWAY LOUVER/DOOR ASSEMBLY.
- E. RETAIN THE FAA'S SECURITY SYSTEM DESIGN INTEGRATION (SSDI) CONTRACTOR TO REMOVE AND SAVE FOR REUSE/REINSTALL AS REQUIRED ACCESS CONTROL DOOR HARDWARE.

**SHEET NOTES**

- 1 REMOVE DOOR AND DOOR HARDWARE, COORDINATE W/ HAZMAT.
- 2 EXISTING ACCESS FLOOR SYSTEM, STEPS, GUARDRAIL, AND HANDRAIL TO REMAIN. PROTECT FROM DAMAGE. COORDINATE WITH MECH THE WORK.
- 3 REMOVE WALL AND CEILING COATINGS SCHEDULED TO RECEIVE NEW COATINGS.
- 4 SALVAGE FIRE EXTINGUISHER AND DELIVER TO COR.
- 5 EXISTING DOOR/LOUVER ASSEMBLY TO REMAIN. PROTECT FROM DAMAGE.
- 6 REMOVE CONCRETE MAINTENANCE PAD.
- 7 REMOVE VCT AND MASTIC. REMOVE WALL COATINGS SCHEDULED TO RECEIVE NEW COATINGS. REMOVE SUSPENDED CEILING SYSTEM. NOTE LOCATION OF EXISTING GRID STARTING POINT AS NEW CEILING GRID IS TO BE INSTALLED IN SAME LOCATION.
- 8 REMOVEABLE DOOR/LOUVER ASSEMBLY. REMOVE DOOR AND AIR FILTERS. SAVE FOR REUSE LOUVER, DOOR FRAME, AND METAL FRAMING. COORDINATE W/ COR REMOVAL AND SECURITY REQUIREMENTS.
- 9 REMOVE GLAZING. PROTECT FRAME FROM DAMAGE.
- 10 REMOVE DOOR, DOOR FRAME, DOOR HARDWARE, AND WOOD TRIM.
- 11 REMOVE AND SAVE FOR REUSE METAL AND CONCRETE STAIR ASSEMBLY AS REQUIRED FOR THE WORK. COORDINATE W/ COR RISK MITIGATION AS STAIR IS AN EGRESS ROUTE.
- 12 DUSTPROOF ENCLOSURE TO PROTECT EXISTING ELECTRICAL SWITCHGEAR FROM DUST ACCUMULATION AND ASSOCIATED PROBLEMS DURING THE WORK. FINAL CONFIGURATION TO BE APPROVED BY COR. ENCLOSURE SHALL PROVIDE ACCESS FOR FAA PERSONNEL AND SHALL NOT RESTRICT PERSONNEL ACCESS TO SWITCHGEAR MODULES. PROVIDE POSITIVE PRESSURE AND DUST FREE VENTILATION WITHIN PROTECTED AREA. MAINTENANCE AND SUBSEQUENT REMOVAL OF ENCLOSURE SHALL BE BY CONTRACTOR.
- 13 REMOVE CONCRETE SLAB BELOW CONCRETE MAINTENANCE PAD TO ALLOW FOR WORK, COORD W/ MECH.
- 14 COORD W/ MECH OPENING REQUIRED FOR EQUIP IN CIP CONCRETE WALL.
- 15 COORD W/ MECH OPENING REQUIRED FOR EQUIP IN FIXED LOUVER.
- 16 DUSTPROOF ENCLOSURE TO PROTECT ADJACENT EQUIPMENT FROM DUST ACCUMULATION AND ASSOCIATED PROBLEMS DURING THE WORK. FINAL CONFIGURATION TO BE APPROVED BY COR. PROVIDE DP FOR EACH CHILLER AS IT IS REPLACED. AT COMPLETION OF FIRST CHILLER REPLACEMENT, REMOVE DP AND CONSTRUCT NEW DP FOR SECOND CHILLER REPLACEMENT. MAINTENANCE AND SUBSEQUENT REMOVAL OF DP SHALL BE BY CONTRACTOR.
- 17 DUSTPROOF PARTITION. COORDINATE WITH COR OTHER LOCATIONS REQUIRED AND AS SPECIFIED.

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**B8 DEMOLITION - BASEMENT PLAN - PART 1**  
A111 SCALE: 1/8" = 1'-0"



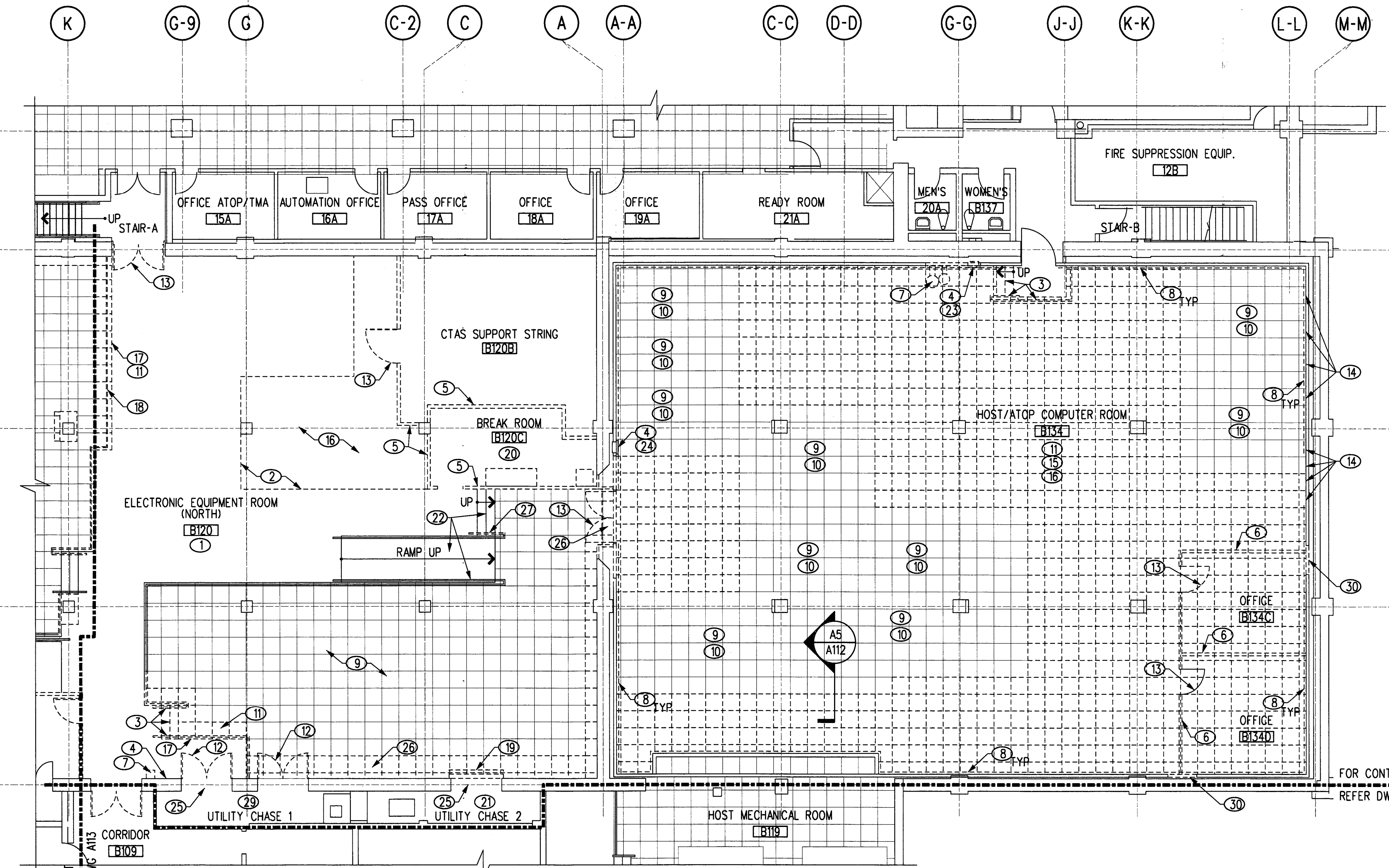
		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA	
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER DEMOLITION - BASEMENT PLAN - PART 1 FREMONT OAKLAND (ZOA) ARTCC	
REVIEWED BY:	SUBMITTED BY: <i>RBradfish</i>	APPROVED BY: <i>[Signature]</i>	DATE: 07/08/2015
DESIGNED BY: E. ROLAF	DRAWN BY: E. ROLAF	ISSUED BY: AIRWAY FACILITY DIVISION	DRAWING NO.: ZOA - D - CWBMM5 - A111
OAKLAND ARTCC FREMONT, CALIFORNIA		7/8/15 ARCHITECT	

GENERAL SHEET NOTES

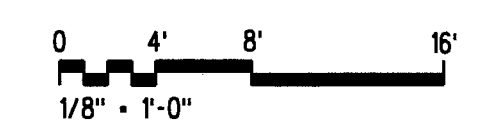
- A. PROVIDE DUSTPROOF PARTITIONS AROUND AREAS REQUIRING DEMOLITION PRIOR TO THE START OF WORK TO PROTECT EQUIPMENT FROM DIRT AND DEBRIS. MAINTAIN FLOOR PLENUM PRESSURIZATION. COORDINATE WITH COR.
- B. PROTECT EQUIPMENT TO REMAIN IN THE AREA OF WORK. COORDINATE WITH COR.
- C. REFER TO GENERAL NOTES I AND R ON SHEET G002 FOR ADDITIONAL INFORMATION REGARDING THE WORK WHEN REMOVING ACCESS FLOOR SYSTEM. MAINTAIN AIR PRESSURIZATION/COOLING TO EQUIPMENT. COORDINATE RISK MITIGATION PLAN WITH COR.
- D. FIRE ALARM/FIRE SUPPRESSION EQUIPMENT AND COMPONENTS ARE EXISTING AND ARE TO REMAIN, REFER TO FIRE ALARM AND FIRE SUPPRESSION DRAWINGS.
- E. PROTECT FURRED OUT, WALL MOUNTED EQUIPMENT TO REMAIN AND ASSOCIATED WALL MOUNTED STRUCTURE FROM DAMAGE IN THE AREA OF WORK. COORDINATE WITH COR.
- F. RETAIN THE FAA'S SECURITY SYSTEM DESIGN INTEGRATION (SSDI) CONTRACTOR TO REMOVE AND SAVE FOR REUSE/REINSTALL AS REQUIRED ACCESS CONTROL DOOR HARDWARE.

SHEET NOTES

- 1 REMOVE CARPET AND MASTIC.
- 2 REMOVE CARPET, VCT BELOW CARPET, AND MASTIC.
- 3 REMOVE ACCESS FLOOR SYSTEM STEPS, GUARDRAIL, AND HANDRAIL.
- 4 SALVAGE FIRE EXTINGUISHER AND DELIVER TO COR.
- 5 REMOVE METAL STUD AND GWB PARTITION.
- 6 REMOVE SHAFT LINER AND METAL TRACK PARTITION. PARTITION TIES INTO EXISTING CEILING GRID AND RESTS ON TOP OF EXISTING ACCESS FLOOR SYSTEM.
- 7 REMOVE EWC. COORDINATE WITH MECHANICAL.
- 8 REMOVE SOUND ABSORBING PANELS.
- 9 EXISTING ACCESS FLOOR SYSTEM TO REMAIN WITH SENSITIVE, OPERATIONAL EQUIPMENT LOCATED ON IT. PROTECT EXISTING ACCESS FLOOR SYSTEM AND EXISTING EQUIPMENT FROM DAMAGE.
- 10 EXISTING SENSITIVE OPERATIONAL EQUIPMENT TO REMAIN. EQUIPMENT IS SHOWN IN APPROXIMATE LOCATION. VIF LOCATION.
- 11 REMOVE ACCESS FLOOR SYSTEM AS INDICATED. DEVELOP WORK PLAN WITH COR ON HOW FLOOR SYSTEM SHALL BE REMOVED AND REPLACED. EXISTING ACCESS FLOOR SYSTEM IN HOST/ATOP COMPUTER ROOM (B134) HAS 4" X 4" PEDESTAL BASE PLATES ADHERED TO CONCRETE FLOOR SLAB. EXISTING ACCESS FLOOR SYSTEM IN ELECTRONIC EQUIPMENT ROOM (NORTH) (B120) HAS 6" X 6" PEDESTAL BASE PLATES BOLTED TO CONCRETE FLOOR SLAB. COORDINATE WITH ELEC WORK BEING DONE IN ACCESS FLOOR PLENUM.
- 12 REMOVE DOOR AND DOOR HARDWARE, COORDINATE W/ HAZMAT.
- 13 REMOVE DOOR, DOOR FRAME, AND DOOR HARDWARE. COORDINATE W/ HAZMAT.
- 14 EXISTING OPERATIONAL WALL MOUNTED EQUIP TO REMAIN. VIF LOCATION. PROTECT FROM DAMAGE.
- 15 REMOVE SUSPENDED CEILING SYSTEM. NOTE LOCATION OF EXISTING GRID STARTING POINT AS NEW CEILING GRID IS TO BE INSTALLED IN SAME LOCATION. HEPA VACUUM TOP OF CEILING PANELS PRIOR TO THEIR REMOVAL TO REMOVE DUST AND DEBRIS.
- 16 TEMPORARILY REMOVE FURNITURE TO ALLOW FOR WORK. COORDINATE W/ COR WHERE TO TEMPORARILY LOCATE FURNITURE.
- 17 REMOVE ACCESS FLOOR SYSTEM METAL FASCIA.
- 18 REMOVE ACCESS FLOOR SYSTEM GUARDRAIL AS INDICATED.
- 19 REMOVE ROLL-UP OVERHEAD FIRE DOOR, DOOR TRACKS, AND HARDWARE.
- 20 REMOVE CERAMIC TILE FLOOR, MILLWORK, AND SUSPENDED CEILING SYSTEM.
- 21 REMOVE VCT AND MASTIC
- 22 EXISTING ACCESS FLOOR RAMP, STAIR, HANDRAIL, AND GUARDRAIL TO REMAIN. PROTECT FROM DAMAGE.



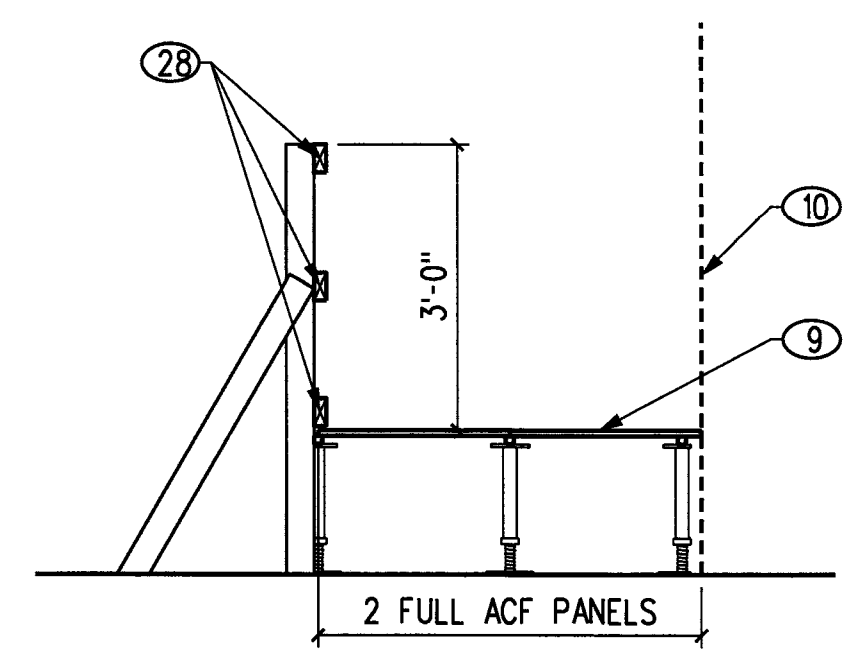
**C8** DEMOLITION - BASEMENT PLAN - PART 2  
**A112** SCALE: 1/8" = 1'-0"



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SHEET NOTES, CONTINUED

- 23 REMOVE FEC
- 24 REMOVE AND SAVE FOR REUSE FEC.
- 25 REMOVE LOUVER IN 3'-6" X 7'-0" VIF OPENING IN CONCRETE WALL. PROTECT EXISTING PIPES AND CONDUITS PASSING THROUGH OPENING FROM DAMAGE. PROTECT ADJACENT ELEC EQUIP FROM DAMAGE.
- 26 REMOVE AND SAVE FOR REUSE ACCESS FLOOR SYSTEM AS INDICATED. EXISTING ACCESS FLOOR SYSTEM IS ELECTRONIC EQUIPMENT ROOM (NORTH) B120 HAS 6" X 6" PEDESTAL BASE PLATES BOLTED TO CONCRETE FLOOR SLAB. PROTECT EXISTING EQUIP BELOW ACCESS FLOOR FROM DAMAGE.
- 27 REMOVE ACCESS FLOOR SYSTEM HANDRAIL AS INDICATED.
- 28 TEMPORARY FALL PROTECTION
- 29 REMOVE BASEBOARD MASTIC
- 30 REMOVE METAL STUD AND GWB PARTITION AS INDICATED TO ALLOW FOR THE WORK. PROTECT ADJACENT PARTITIONS FROM DAMAGE.

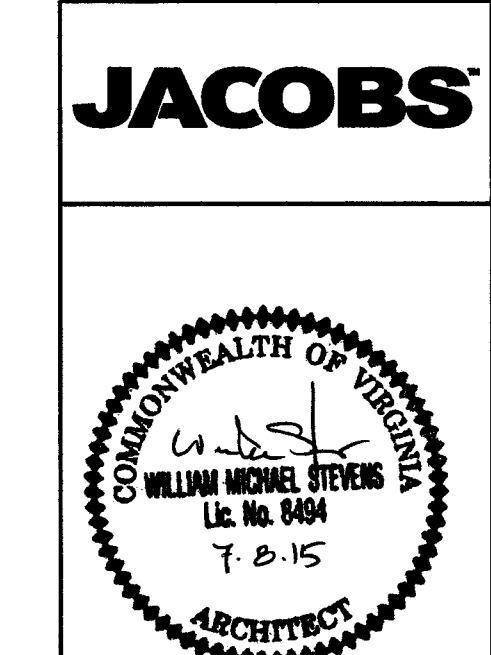
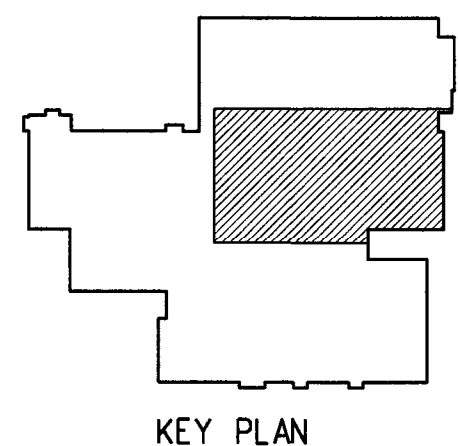


**A5** FALL PROTECTION DETAIL  
**A112** SCALE: 1/2" = 1'-0"

NOTE:  
 COORDINATE W/ COR WHERE FALL PROTECTION AT EDGE OF ACCESS FLOOR SYSTEM IS REQUIRED.



KEY NORTH



<b>JACOBS</b> DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA					
REV.	APPROVED DATE	DESCRIPTION	JCN	REQLINE DATE	APVD
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER DEMOLITION - BASEMENT PLAN - PART 2 FREMONT OAKLAND (Z0A) ARTCC					
DESIGNED BY E. ROLAF	ISSUED BY AIRWAY FACILITY DIVISION	DATE 07/08/2015	JCN	APPROVED BY 	
DRAWN BY E. ROLAF	CHECKED BY W. STEVENS	DRAWING NO. ZOA - D - CWBMS - A112		REV.	

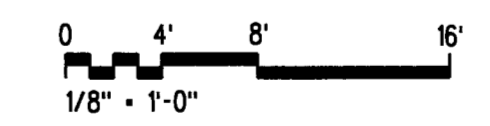


**GENERAL SHEET NOTES**

- A. PROVIDE DUSTPROOF PARTITIONS AROUND AREAS REQUIRING DEMOLITION PRIOR TO THE START OF WORK TO PROTECT EQUIPMENT FROM DIRT AND DEBRIS. MAINTAIN FLOOR PLENUM PRESSURIZATION.
- B. PROTECT EQUIPMENT TO REMAIN IN THE AREA OF WORK. COORDINATE WITH COR.
- C. REFER TO GENERAL NOTES I AND R ON SHEET G002 FOR ADDITIONAL INFORMATION REGARDING THE WORK WHEN REMOVING ACCESS FLOOR SYSTEM. MAINTAIN AIR PRESSURIZATION/COOLING TO EQUIPMENT. COORDINATE RISK MITIGATION PLAN WITH COR.
- D. FIRE ALARM/FIRE SUPPRESSION EQUIPMENT AND COMPONENTS ARE EXISTING AND ARE TO REMAIN. REFER TO FIRE ALARM AND FIRE SUPPRESSION DRAWINGS.
- E. PROTECT FURRED OUT, WALL MOUNTED EQUIPMENT TO REMAIN AND ASSOCIATED WALL MOUNTED STRUCTURE FROM DAMAGE IN THE AREA OF WORK. COORDINATE WITH COR.
- F. RETAIN THE FAA'S SECURITY SYSTEM DESIGN INTEGRATION (SSDI) CONTRACTOR TO REMOVE AND SAVE FOR REUSE/REINSTALL AS REQUIRED ACCESS CONTROL DOOR HARDWARE.

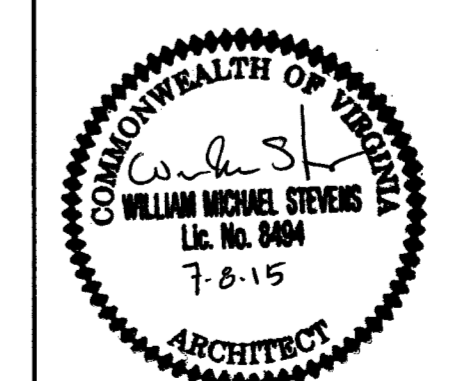
**SHEET NOTES**

- 1 REMOVE ACCESS FLOOR SYSTEM STEPS, GUARDRAIL AND HANDRAILS.
- 2 SALVAGE FIRE EXTINGUISHER AND DELIVER TO COR.
- 3 REMOVE DOOR FRAME AND GWB AND STUD PARTITION.
- 4 REMOVE GUARDRAIL AND HANDRAIL.
- 5 REMOVE DOOR, DOOR FRAME, AND DOOR HARDWARE. COORDINATE WITH HAZMAT.
- 6 EXISTING ACCESS FLOOR SYSTEM TO REMAIN WITH SENSITIVE, OPERATIONAL EQUIPMENT LOCATED ON IT. PROTECT ACCESS FLOOR SYSTEM AND EXISTING EQUIPMENT FROM DAMAGE.
- 7 REMOVE ACCESS FLOOR SYSTEM AS INDICATED. DEVELOP WORK PLAN WITH COR ON HOW FLOOR SYSTEM SHALL BE REMOVED AND REPLACED. EXISTING ACCESS FLOOR SYSTEM IN ELECTRONIC EQUIPMENT ROOM (SOUTH) HAS 6" X 6" PEDESTAL BASE PLATES BOLTED TO CONCRETE FLOOR SLAB.
- 8 REMOVE SUSPENDED CEILING SYSTEM.
- 9 REMOVE RUBBER TILE FLOOR FINISH.
- 10 REMOVE PARTITION AS INDICATED.
- 11 EXISTING ACCESS FLOOR SYSTEM RAMP, STAIR, HANDRAIL, AND GUARDRAIL TO REMAIN. PROTECT FROM DAMAGE.
- 12 REMOVE PLYWOOD FLOORING. PROTECT METAL STUD STRUCTURE AND GWB BELOW PLYWOOD FROM DAMAGE.
- 13 REMOVE FLOOR COATING SCHEDULED TO RECEIVE NEW COATINGS.
- 14 REMOVE WOOD AND GWB CONSTRUCTION FROM OPENING IN EXISTING CONCRETE WALL. PROTECT EXISTING CABLE TRAYS AND CONDUITS TO REMAIN PASSING THROUGH OPENING FROM DAMAGE.
- 15 REMOVE CARPET AND MASTIC.
- 16 REMOVE AND SAVE FOR REUSE AUTOMATED EXTERNAL DEFIBRILLATOR (AED), AED CABINET, AND AED SIGNAGE.
- 17 TEMPORARILY REMOVE FURNITURE TO ALLOW FOR WORK. COORDINATE W/ COR WHERE TO TEMPORARILY LOCATE FURNITURE.
- 18 EXISTING ACCESS FLOOR RAMP AND HANDRAIL TO REMAIN. PROTECT FROM DAMAGE.
- 19 REMOVE ACCESS FLOOR SYSTEM GUARDRAIL/HANDRAIL AS INDICATED.
- 20 REMOVE RAILING (SWING) GATE, SAVE FOR REUSE MAGNETIC HOLD OPEN DEVICE.
- 21 REMOVE AND SAVE FOR REUSE ACCESS FLOOR SYSTEM. COORD W/ MECH. DEVELOP WORK PLAN W/ COR ON HOW FLOOR SYSTEM SHALL BE REMOVED AND REPLACED.
- 22 REMOVE AS REQUIRED FURRED GWB TO ALLOW FOR THE WORK.
- 23 PROVIDE OPENING IN 1'-6" THICK CIP CONCRETE WALL FOR GROUNDING CABLE. GROUNDING CABLE SHALL PASS THROUGH NEW PARTITION WALL AT EXISTING CONCRETE FLOOR SLAB/LEDGE. REFER TO ELEC.
- 24 REMOVE AND SAVE FOR REUSE ACCESS FLOOR SYSTEM TO ALLOW FOR THE WORK. DEVELOP WORK PLAN W/ COR ON HOW FLOOR SYSTEM SHALL BE REMOVED AND REINSTALLED. PROTECT EXISTING UNDERFLOOR EQUIPMENT FROM DAMAGE.
- 25 EXISTING CONCRETE FLOOR SLAB/LEDGE
- 26 EXISTING PIPE. PROTECT FROM DAMAGE.
- 27 PROTECT FROM DAMAGE CABLE TRAY AND CABLING RECENTLY RELOCATED BY FAA.



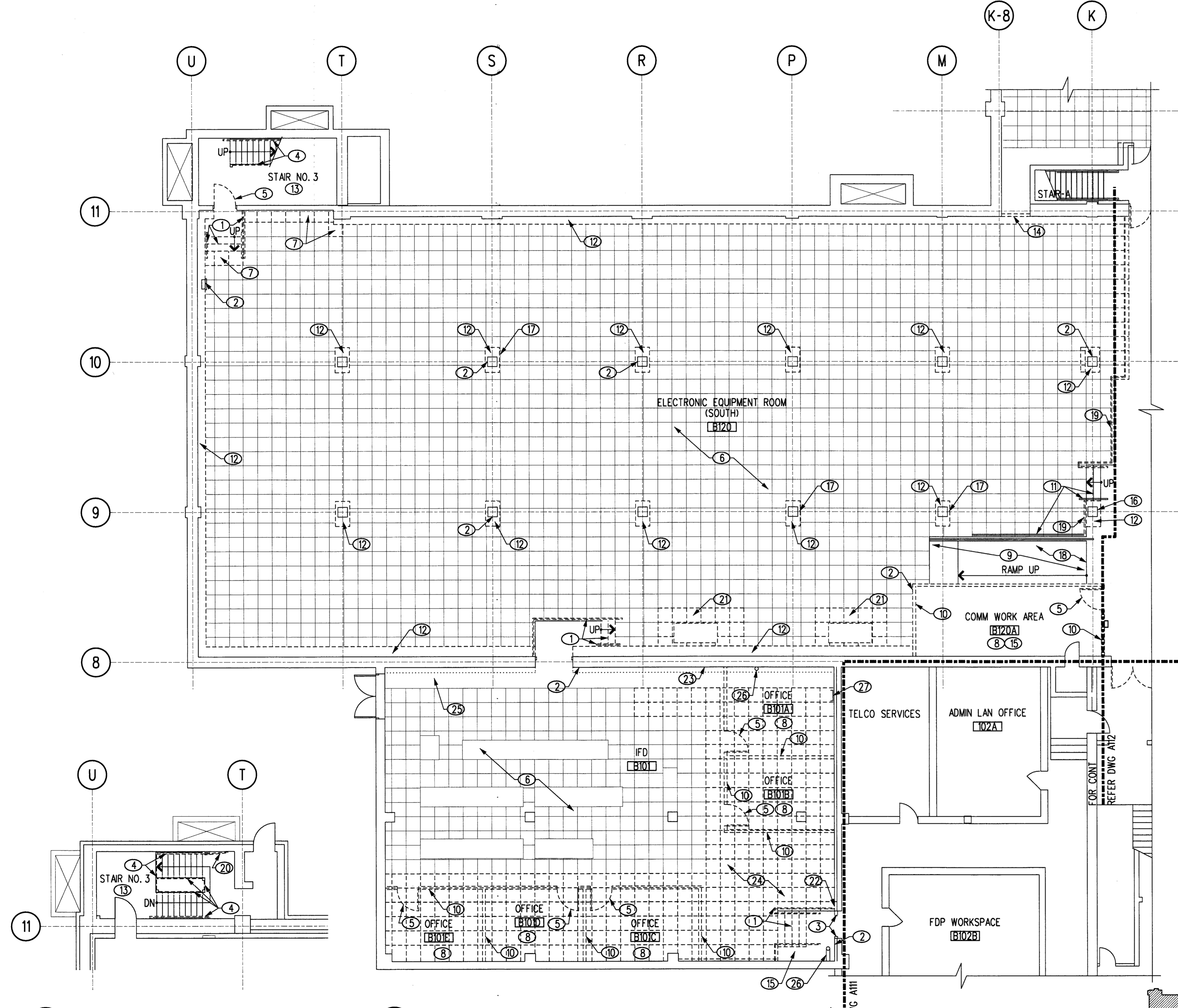
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PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

**JACOBS**



REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
<b>DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION</b> WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>					
<b>CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER</b> DEMOLITION - BASEMENT PLAN - PART 3					
FREMONT			OAKLAND (ZOA) ARTCC		
REVIEWED BY	SUBMITTED BY	APPROVED BY			
	RSBradfish	<i>[Signature]</i>			
SUBMITTER'S TITLE		APPROVER'S TITLE			
DESIGNED BY	ISSUED BY	DATE	JCN		
E. ROLAF	AIRWAY FACILITY DIVISION	07/08/2015			
DRAWN BY	CHECKED BY	DRAWING NO.	REV.		
E. ROLAF	W. STEVENS	ZOA - D - CWBMM5 - A113			

OAKLAND ARTCC  
FREMONT, CALIFORNIA



**A7** DEMOLITION - FIRST FLOOR PLAN - STAIR 3  
A113 SCALE: 1/8" = 1'-0"

**A7** DEMOLITION - BASEMENT PLAN - PART 3  
A113 SCALE: 1/8" = 1'-0"

FOR CONT. REFER DWG A111



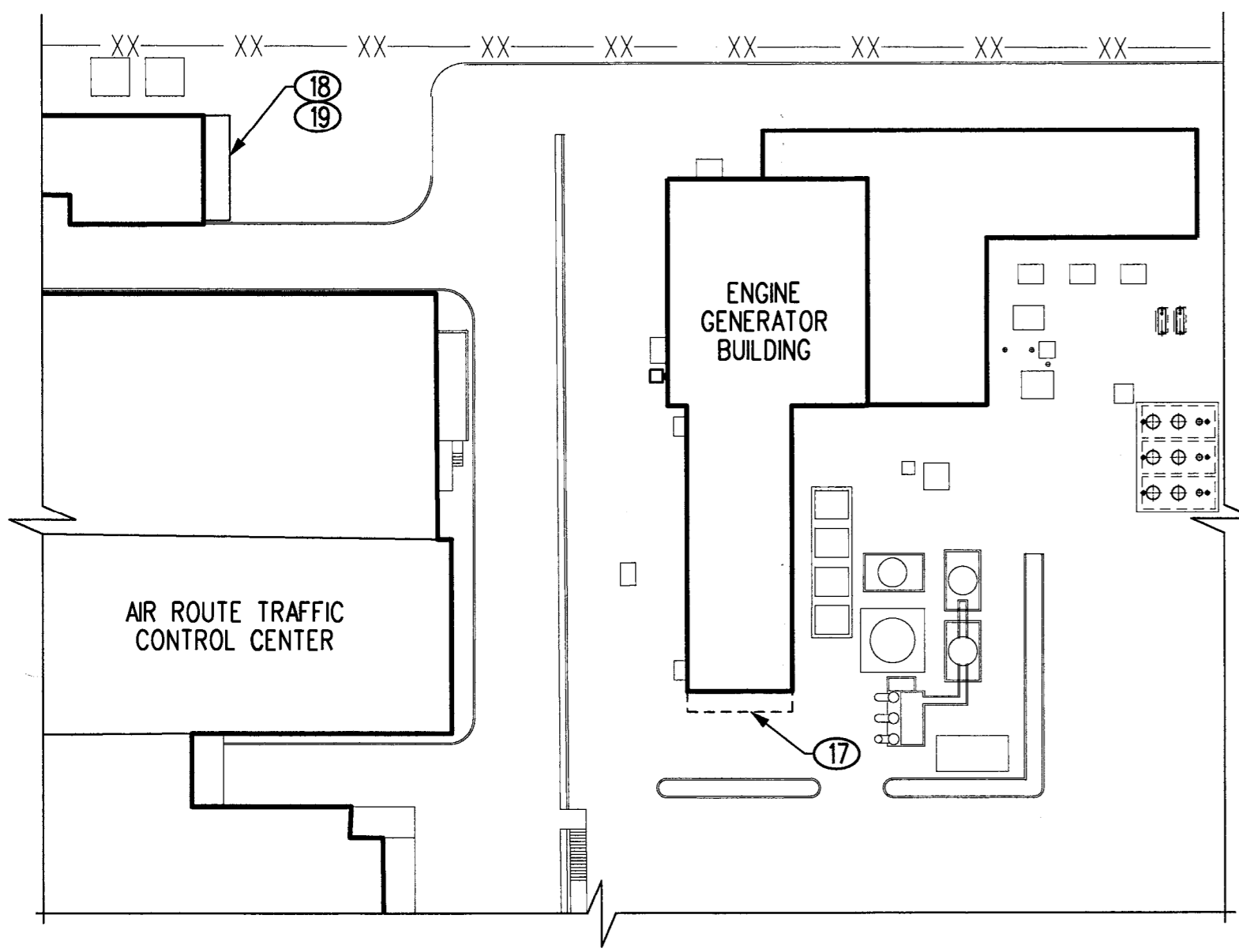
KEY PLAN

GENERAL SHEET NOTES

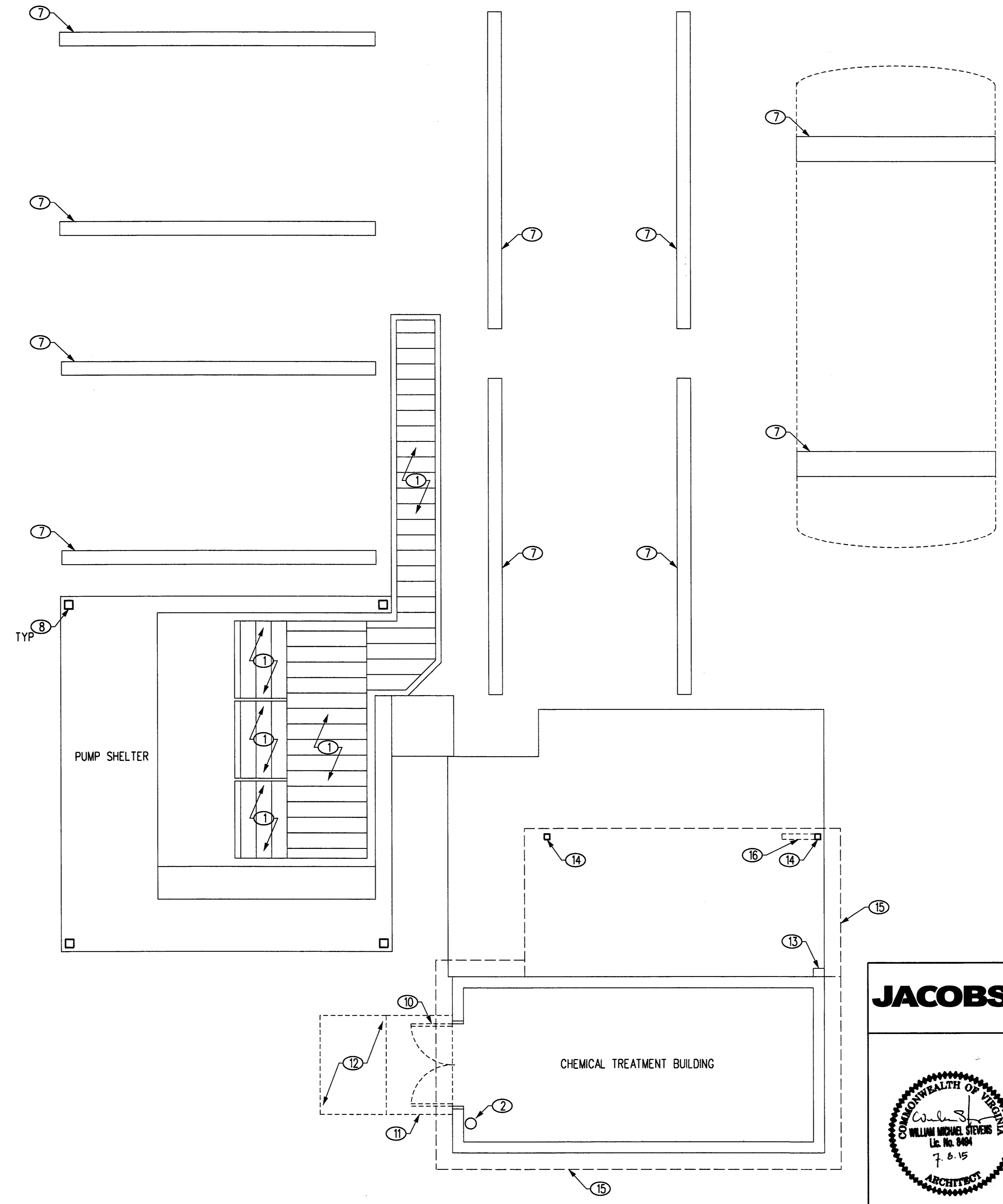
A. THE ROOF OF THE CHEMICAL TREATMENT BUILDING SHALL BE TESTED FOR ACM PRIOR TO DEMOLITION. CORE SAMPLES ANALYZING EACH ROOF LAYER ARE REQUIRED TO VERIFY THE PRESENCE OR ABSENCE OF ASBESTOS IN THE ROOFING MATERIAL. ARRANGE TO HAVE A REPRESENTATIVE NUMBER OF SAMPLES COLLECTED BY A CAL-OSHA CERTIFIED ASBESTOS CONSULTANT (CAC). THE SAMPLE NUMBER AND LOCATIONS TO BE DETERMINED BY THE CAC. SAMPLES SHALL BE ANALYZED TO A DETECTION LIMIT OF 0.1% AS DEFINED BY CALIFORNIA STATE REQUIREMENTS. SAMPLES MUST BE ANALYZED BY A LABORATORY ACCREDITED BY THE AMERICAN INDUSTRIAL HYGIENE ASSOCIATION (AIHA) FOR THE ANALYSIS OF ASBESTOS.

SHEET NOTES

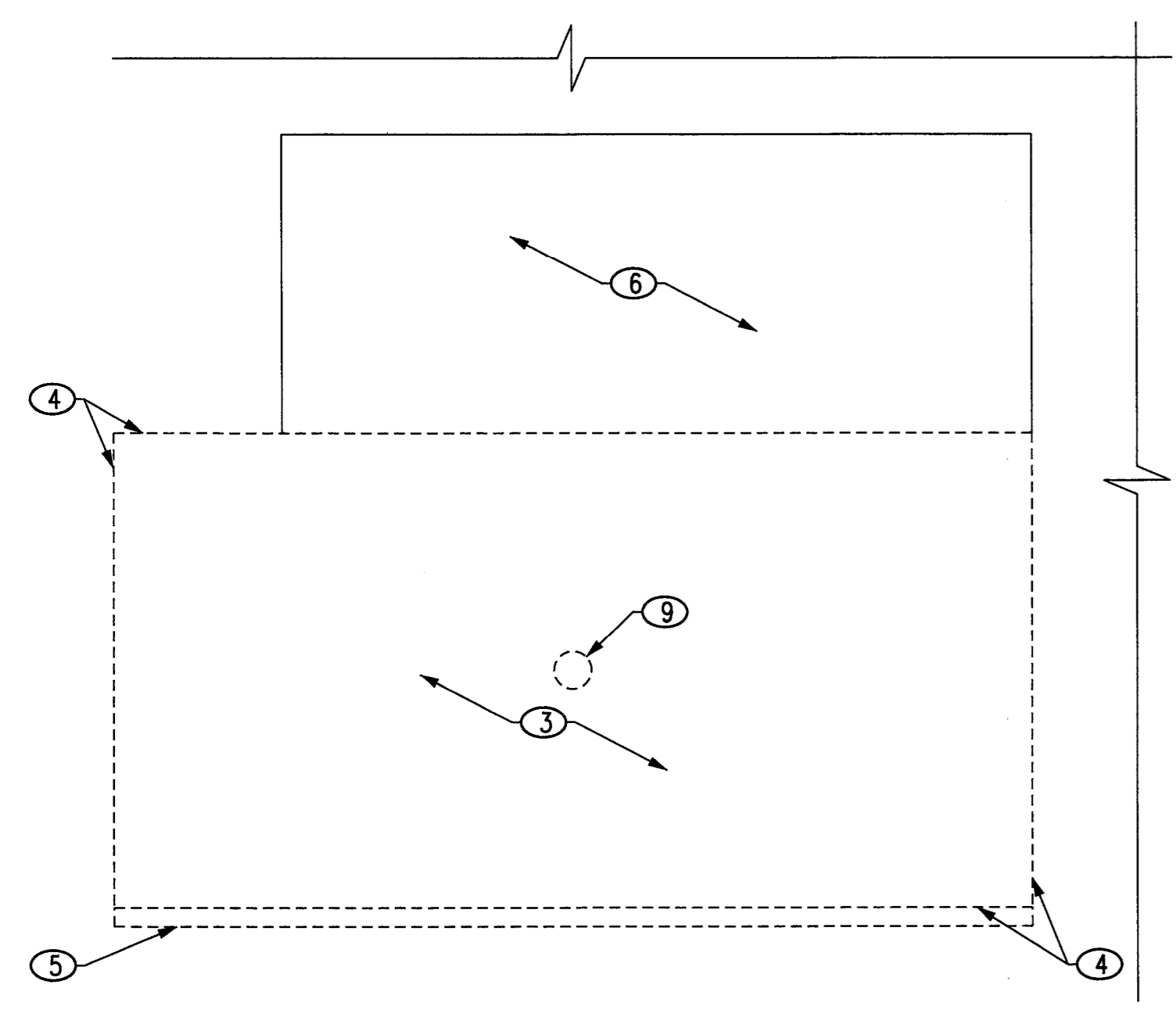
- ① EXISTING WOOD PLANK COVERING TO REMAIN. PROTECT FROM DAMAGE.
  - ② SALVAGE FIRE EXTINGUISHER AND DELIVER TO COR.
  - ③ REMOVE BUILT-UP ROOF SYSTEM AND PLYWOOD ROOF DECK. PROTECT JOISTS AND BRIDGING FROM DAMAGE.
  - ④ REMOVE WOOD SOFFIT AND FASCIA.
  - ⑤ REMOVE AND SAVE FOR REUSE GUTTER AND DOWN SPOUT.
  - ⑥ EXISTING LEAN-TO BELOW CHEMICAL TREATMENT BUILDING SOFFIT TO REMAIN. PROTECT FROM DAMAGE.
  - ⑦ EXISTING COOLING TOWER STRUCTURE. REFER TO STRUC.
  - ⑧ EXISTING PUMP SHELTER ROOF STRUCTURE TO REMAIN. PROTECT FROM DAMAGE.
  - ⑨ MECH EQUIP, REFER TO MECH.
  - ⑩ REMOVE DOOR AND DOOR HARDWARE
  - ⑪ REMOVE CONCRETE RAMP
  - ⑫ REMOVE ASPHALT PAVING TO ALLOW FOR THE WORK
  - ⑬ EXISTING ELEC EQUIP, PROTECT FROM DAMAGE.
  - ⑭ EXISTING LEAN-TO POST TO REMAIN. PROTECT FROM DAMAGE.
  - ⑮ DASHED LINE INDICATES EXTENT OF ROOF ABOVE
  - ⑯ REMOVE BRACING AS INDICATED.
  - ⑰ REMOVE AND RELOCATE BIKE RACK TO ALLOW FOR THE WORK. PROTECT EXISTING BIKE RACK AWNING FROM DAMAGE. MAINTAIN ACCESS TO ROOF ACCESS LADDER AT EAST WALL OF ENGINE GENERATOR BUILDING DURING THE WORK.
  - ⑱ RELOCATE BIKE RACK TO LOCATION INDICATED. TEMPORARILY ANCHOR BIKE RACK AS REQUIRED. COORDINATE WITH COR EXACT LOCATION.
  - ⑲ PROVIDE TEMPORARY CANOPY TO PROTECT BIKE RACK AND PARKED BIKES FROM RAIN. ANCHOR AS REQUIRED CANOPY TO GROUND.
- BASIS OF DESIGN: KING CANOPY UNIVERSAL CANOPY IN WHITE, MODEL C81027PC. COORD W/ COR FINAL SELECTION AND LOCATION.



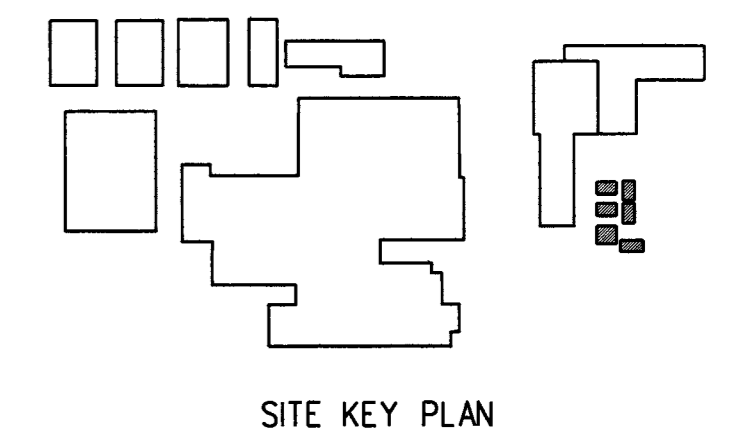
Ⓔ BIKE RACK - TEMPORARY RELOCATION  
A114 SCALE: NTS



Ⓐ DEMOLITION - PUMP HOUSE AND COOLING TOWER YARD PLAN  
A114 SCALE: 1/4" = 1'-0"



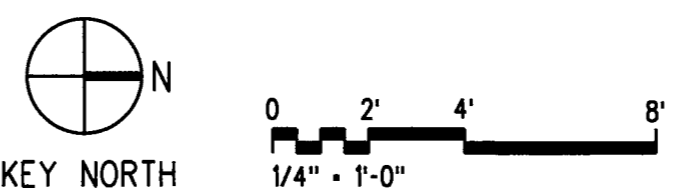
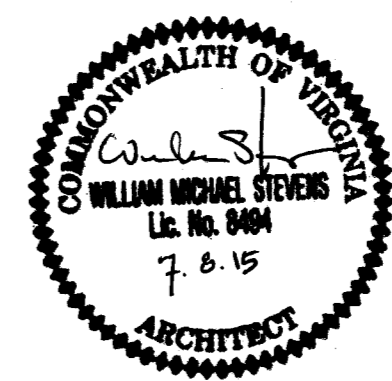
Ⓑ DEMOLITION - CHEMICAL TREATMENT BUILDING ROOF PLAN  
A114 SCALE: 1/4" = 1'-0"



SITE KEY PLAN

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PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>					
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA REMTONT, WA					
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER DEMOLITION - COOLING TOWER YARD PLAN AND CHEMICAL TREATMENT BUILDING ROOF PLAN FREMONT OAKLAND (ZOA) ARTCC					
DESIGNED BY	E. ROLAF	ISSUED BY	DATE 07/08/2015	JCN	
DRAWN BY	E. ROLAF	AIRWAY FACILITY DIVISION	DRAWING NO.	ZOA - D - CWBMM5 - A114	REV.
CHECKED BY	W. STEVENS				



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**GENERAL SHEET NOTES**

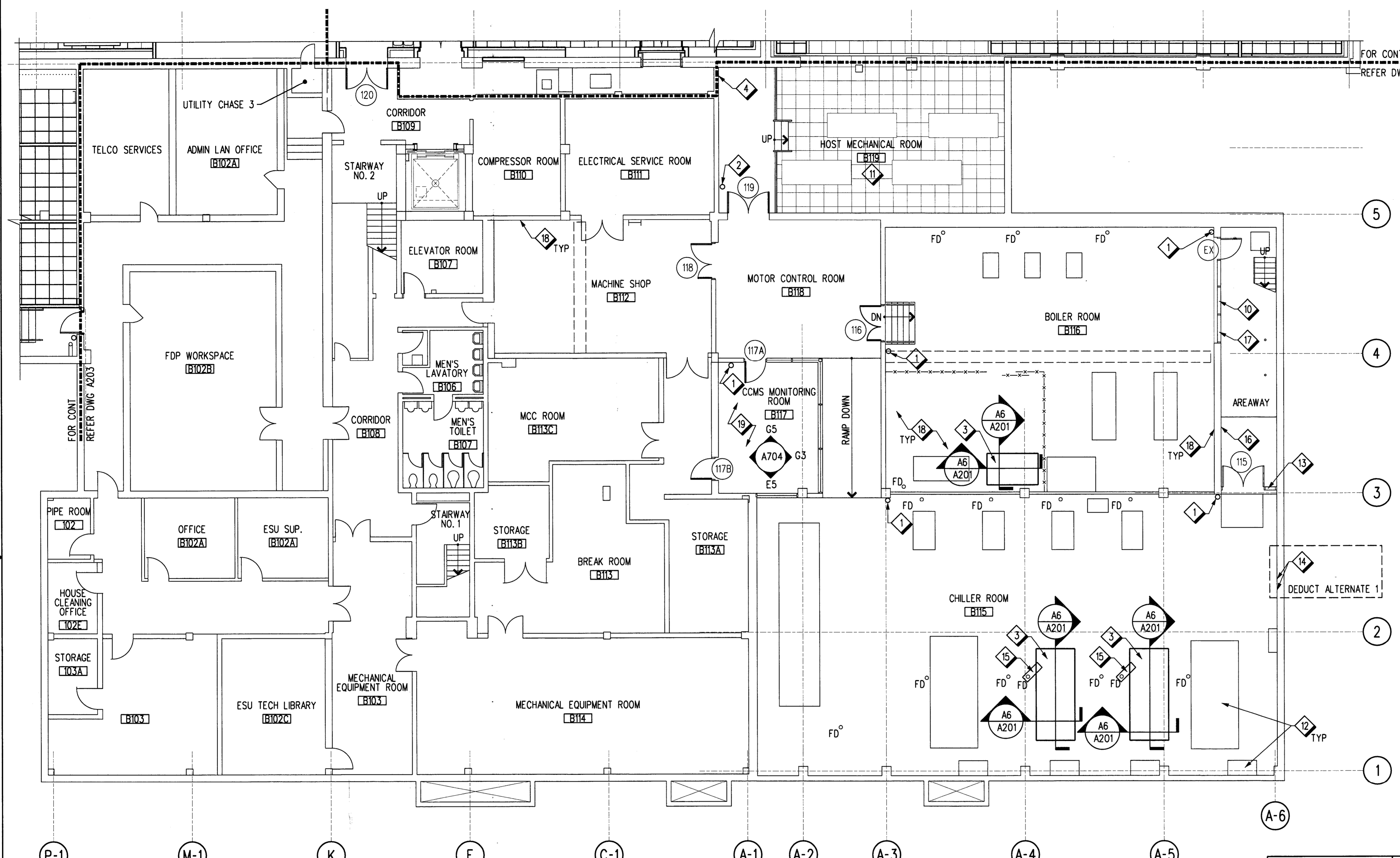
- A. PROTECT ADJACENT FINISHES.
- B. SMOKE AND FIRE STOP PENETRATIONS IN FIRE RATED WALLS AND CEILINGS.

**SHEET NOTES**

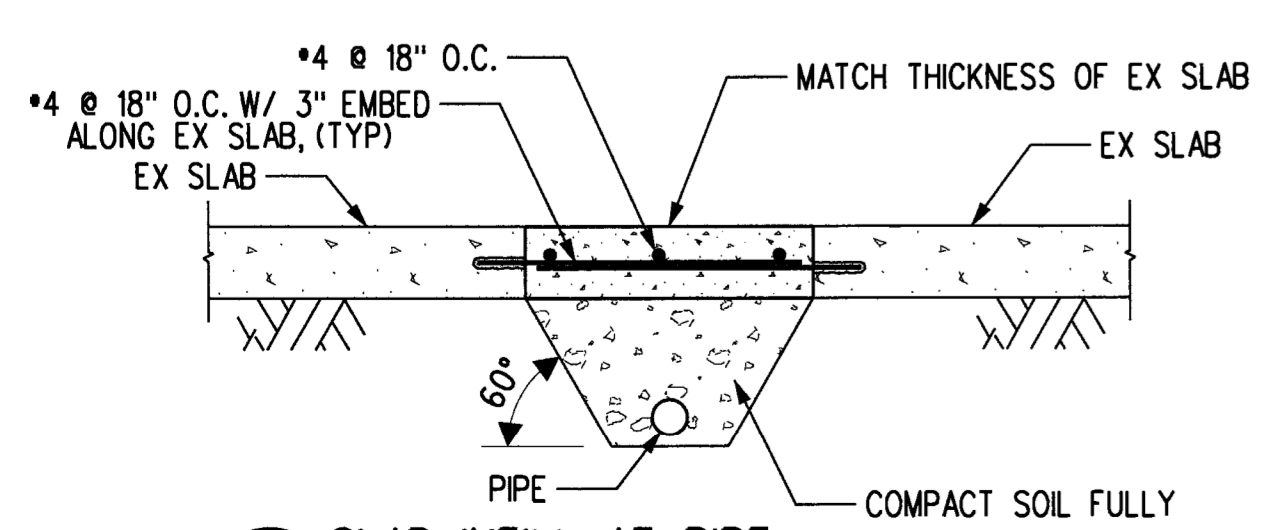
- 1 PROVIDE WALL MOUNTED DRY CHEMICAL FE.
- 2 PROVIDE WALL MOUNTED HALOTRON-1FE.
- 3 CONCRETE MAINTENANCE PAD WITH EPOXY COATING. COORDINATE SIZE AND LOCATION W/ MECH.
- 4 SMOKE AND FIRE STOP 1'-6" X 1'-6" OPENING IN CMU BLOCK WALL. PROTECT EXISTING PIPE AND CONDUIT PASSING THROUGH OPENING FROM DAMAGE.
- 5 EDGE OF EQUIP
- 6 EXISTING SLAB REINFORCEMENT
- 7 #3 REBAR AT 12" OC AROUND PERIMETER (TYP) EPOXIED INTO EXISTING SLAB W/ HILTI HIT-HY 200 ADHESIVE.
- 8 #3 REBAR AT 12" OC REINFORCING
- 9 ROUGHEN SURFACE FOR BOND
- 10 EXISTING LOUVER AND DOOR ASSEMBLY TO REMAIN. PROTECT FROM DAMAGE.
- 11 EXISTING ACCESS FLOOR SYSTEM, STAIR, AND HANDRAIL TO REMAIN. PROTECT FROM DAMAGE. COORD W/ MECH REPLACEMENT OF AHU AND MODIFY EXISTING ACF AS REQUIRED. PROVIDE COMPRESSIBLE GASKET BETWEEN ACF AND AHU SUPPORT STAND.
- 12 EXISTING MAINTENANCE PAD TO REMAIN. PROTECT FROM DAMAGE.
- 13 REINSTALL REMOVABLE DOOR AND LOUVER ASSEMBLY. MAINTAIN BUILDING SECURITY WHILE ASSEMBLY IS REMOVED, COORDINATE WITH COR.
- 14 SEAL WEATHERTIGHT MECH PENETRATION BELOW GRADE IN EXTERIOR CIP CONCRETE WALL. COORD W/ MECH.
- 15 PATCH AND REPAIR CONCRETE SLAB PRIOR TO PLACING CONCRETE MAINTENANCE PAD TO ALLOW FOR FLOOR DRAIN. REFER AB/A201 AND MECH.
- 16 SEAL WEATHERTIGHT PENETRATION THROUGH CIP CONCRETE WALL. COORD W/ MECH.
- 17 PATCH AND REPAIR LOUVER ASSEMBLY FOR A NEAT AND CLEAN APPEARANCE. COORD W/ MECH
- 18 PATCH, REPAIR, AND PAINT WALL AND FLOOR DAMAGED BY THE WORK TO MATCH ADJACENT SURFACES. COORD W/ COR.
- 19 PROTECT EXISTING FLOOR MOUNTED HONEYWELL SERVER FROM DAMAGE. TEMPORARILY RELOCATE SERVER CONSOLE, COORD W/ COR.

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PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

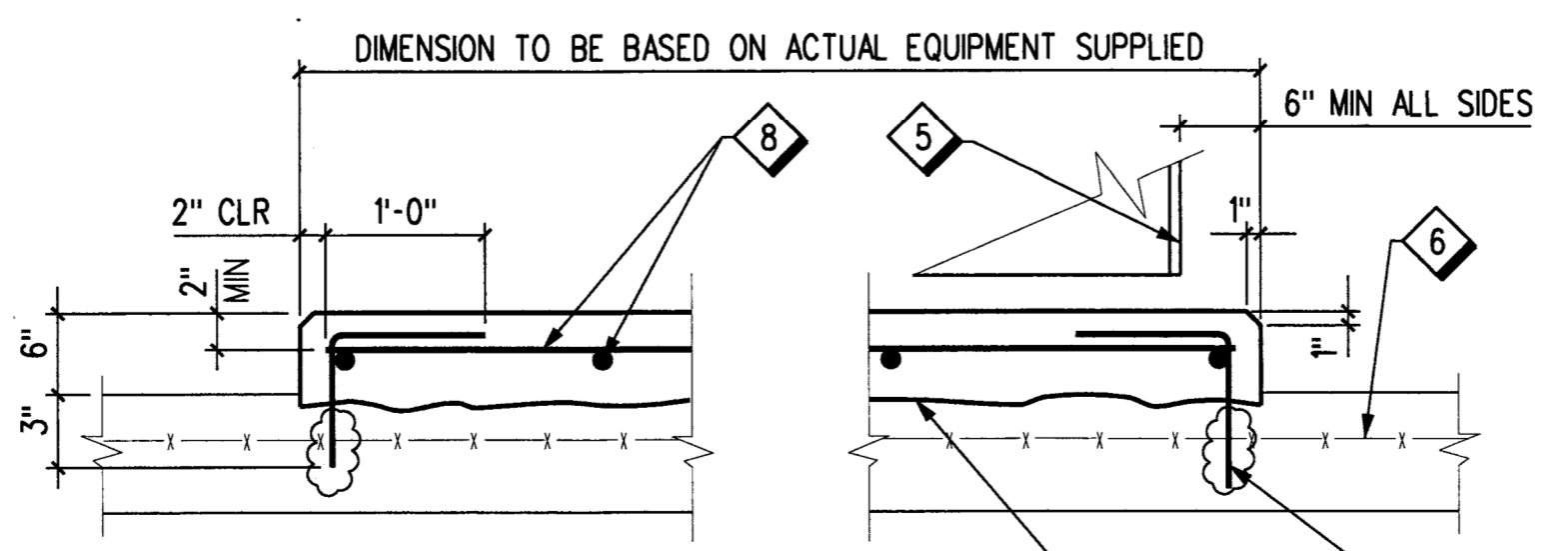
<b>JACOBS</b>		REV. APPROVED DATE DESCRIPTION JCN REVISION DATE APVD	
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA			
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER BASEMENT PLAN - PART 1			
FREMONT		OAKLAND (ZOA) ARTCC	
DESIGNED BY E. ROLAT	ISSUED BY AIRWAY FACILITY DIVISION	DATE 07/08/2015	JCN
DRAWN BY E. ROLAT	CHECKED BY E. STEVENS	DRAWING NO. ZOA - D - CWBMS - A201	REV.
OAKLAND ARTCC FREMONT, CALIFORNIA		APPROVED BY: <i>[Signature]</i> 7/2/2015	



**B8 BASEMENT PLAN - PART 1**  
A201 SCALE: 1/8" = 1'-0"

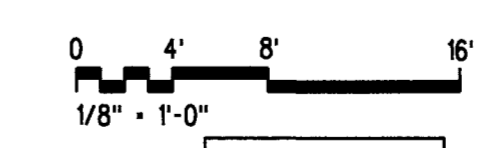


**A8 SLAB INFILL AT PIPE**  
A201 SCALE: NTS



**A6 MAINTENANCE PAD DETAIL**  
A201 SCALE: NTS

NOTES:  
PATCH AND REPAIR CONCRETE SLAB WHERE DAMAGED BY THE WORK. CONCRETE TO BE 4000 PSI CONCRETE TO HAVE A TROWELED FINISH. PREPARE SUBSTRATE BEFORE PLACING THE NEW PAD. PAD HEIGHT SHALL MATCH EXISTING.



KEY PLAN

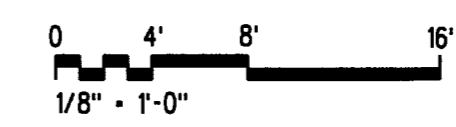
GENERAL SHEET NOTES

- A. RELOCATE FURNITURE TO ALLOW FOR THE WORK. REINSTALL FURNITURE AT COMPLETION OF WORK. COORD WITH FAA THE RELOCATION OF ELECTRONIC EQUIPMENT ON FURNITURE.
- B. ROOM B134, ROOM B120, AND ELSEWHERE IN THE BUILDING HAVE SENSITIVE OPERATIONAL EQUIPMENT THAT CONTROLS AIR TRAFFIC. PROTECT EQUIPMENT FROM DAMAGE, VIBRATION, DUST, AND DISRUPTION OF SERVICE.
- C. DEVELOP A RISK MITIGATION PLAN TO PROTECT FAA EQUIPMENT FROM DAMAGE. PLAN SHALL INCLUDE HOW ACCESS FLOOR IS REMOVED AND INSTALLED. COORD WITH COR OTHER REQUIREMENTS THAT SHALL BE INCLUDED IN PLAN.
- D. PROVIDE SIGNAGE OR STENCIL ON WALLS BELOW ACCESS FLOOR SYSTEM AND ABOVE SUSPENDED CEILING IN ROOM B134 AND BEHIND FURRED OUT PARTITIONS IN B120-NORTH, B120B, AND B120C AT FIRE RATED WALLS WITH THE FOLLOWING WORDING:  
"FIRE AND SMOKE BARRIER - PROTECT ALL OPENINGS."  
TEXT SHALL BE 3" IN HEIGHT WITH 3/8" STROKE WIDTH AND SIGNAGE SHALL BE REPEATED AT 30'-0" OC MAX AND WITHIN 15'-0" OF END OF PARTITION OR WALL.  
REFER TO GUIDE PLAN A001 FOR LOCATION OF RATED WALLS.
- E. SMOKE AND FIRE STOP PENETRATIONS AND ABANDONED PENETRATIONS THROUGH FIRE RATED WALLS.

SHEET NOTES

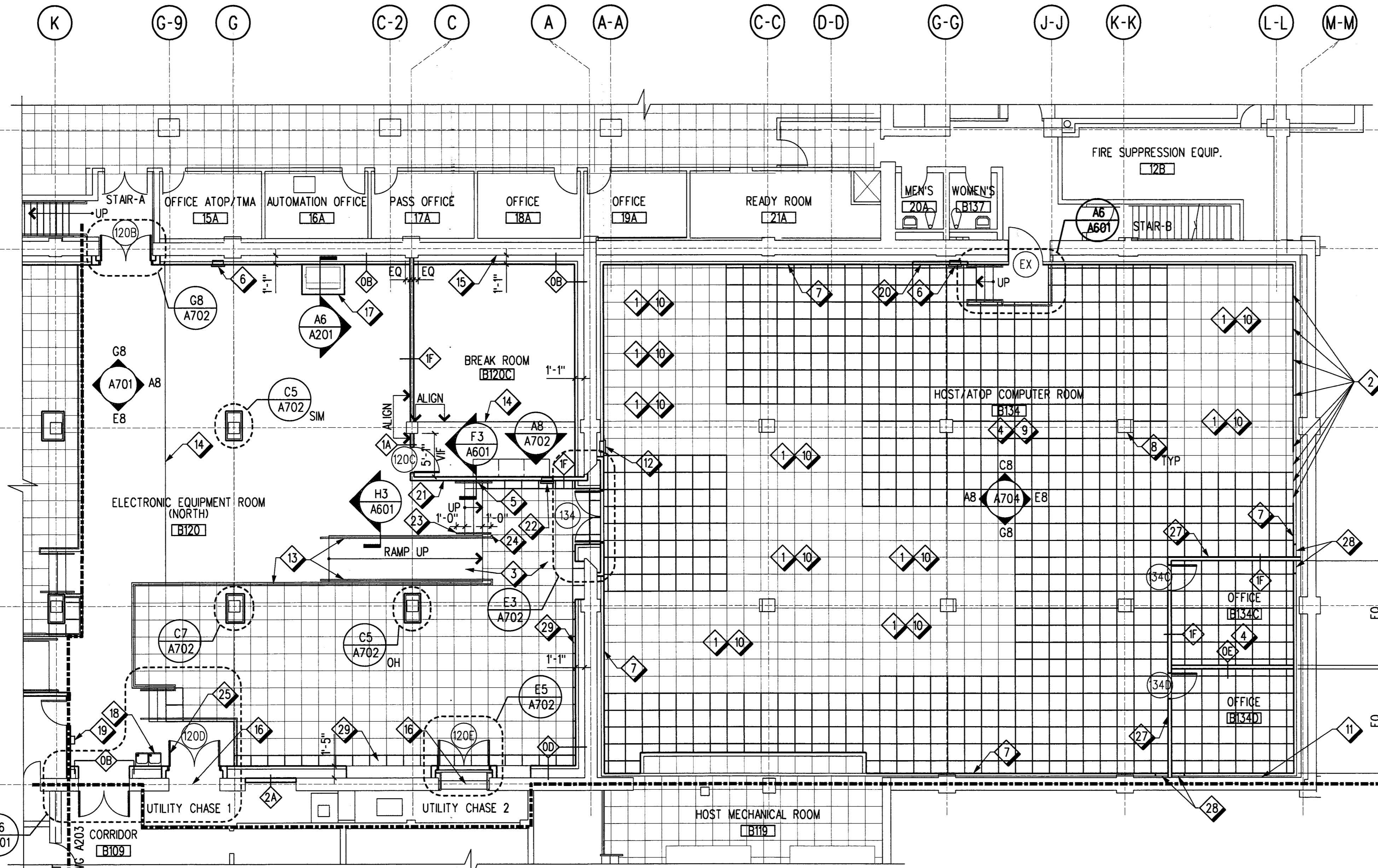
- 1 EXISTING ACCESS FLOOR SYSTEM TO REMAIN WITH SENSITIVE OPERATIONAL EQUIPMENT LOCATED ON IT. PROTECT FROM DAMAGE, VIBRATION, AND DUST.
- 2 EXISTING WALL MOUNTED EQUIP TO REMAIN. PROTECT FROM DAMAGE.
- 3 EXISTING ACCESS FLOOR SYSTEM, STEPS, AND RAMP TO REMAIN. PROTECT FROM DAMAGE.
- 4 ACCESS FLOOR SYSTEM. ALIGN WITH EXISTING FLOOR GRID AND HEIGHT. COORD WITH COR DUST CONTROL MEASURES AND WORK PLAN FOR INSTALLATION.
- 5 WALL MOUNTED HANDRAIL
- 6 RECESSED FEC WITH HALOTRON-1 FE.
- 7 SOUND ABSORBING PANELS
- 8 SEAL AIRTIGHT BASE OF EXISTING COLUMN ENCLOSURES FROM PRESSURIZED FLOOR PLENUM.
- 9 PROVIDE 40 PERFORATED ACCESS FLOOR PANELS. COORD LOCATION W/ COR.
- 10 EXISTING FAA OPERATIONAL AND SENSITIVE EQUIP. PROTECT FROM DAMAGE. VIF EXACT LOCATION. EQUIP IS SHOWN IN APPROXIMATE LOCATION.
- 11 BLANK OFF ABANDONED LOUVER (3'-0" X 2'-6" VIF) W/ 2" INSULATED METAL PNL. COORD W/ MECH.
- 12 REINSTALL FEC WITH HALOTRON-1 FE.
- 13 EXISTING ACCESS FLOOR SYSTEM HANDRAIL TO REMAIN. PROTECT FROM DAMAGE.
- 14 VINYL TRANSITION STRIP
- 15 SMOKE AND FIRE STOP ABANDONED AHU PENETRATION (3'-0" X 7'-0" VIF) IN 1'-6" THICK CIP CONCRETE WALL. COORDINATE WITH MECH.
- 16 SMOKE AND FIRE STOP ABANDONED LOUVER OPENING (3'-6" X 7'-0" VIF) IN 1'-6" THICK CIP CONCRETE WALL. THERE ARE NUMEROUS PIPES AND CONDUITS PASSING THROUGH THE OPENING. PROTECT OPERATIONAL PIPE AND CONDUIT ADJACENT TO AND PASSING THROUGH OPENING FROM DAMAGE. INFILL SHALL REQUIRE A FIRESTOP ENGINEERING JUDGMENT/FIRESTOP CUSTOM DETAIL BY A FIRE PROTECTION ENGINEER.
- 17 CONCRETE MAINTENANCE PAD WITH EPOXY COATING. COORDINATE SIZE AND LOCATION W/ MECH.
- 18 EWC, REFER TO MECH.

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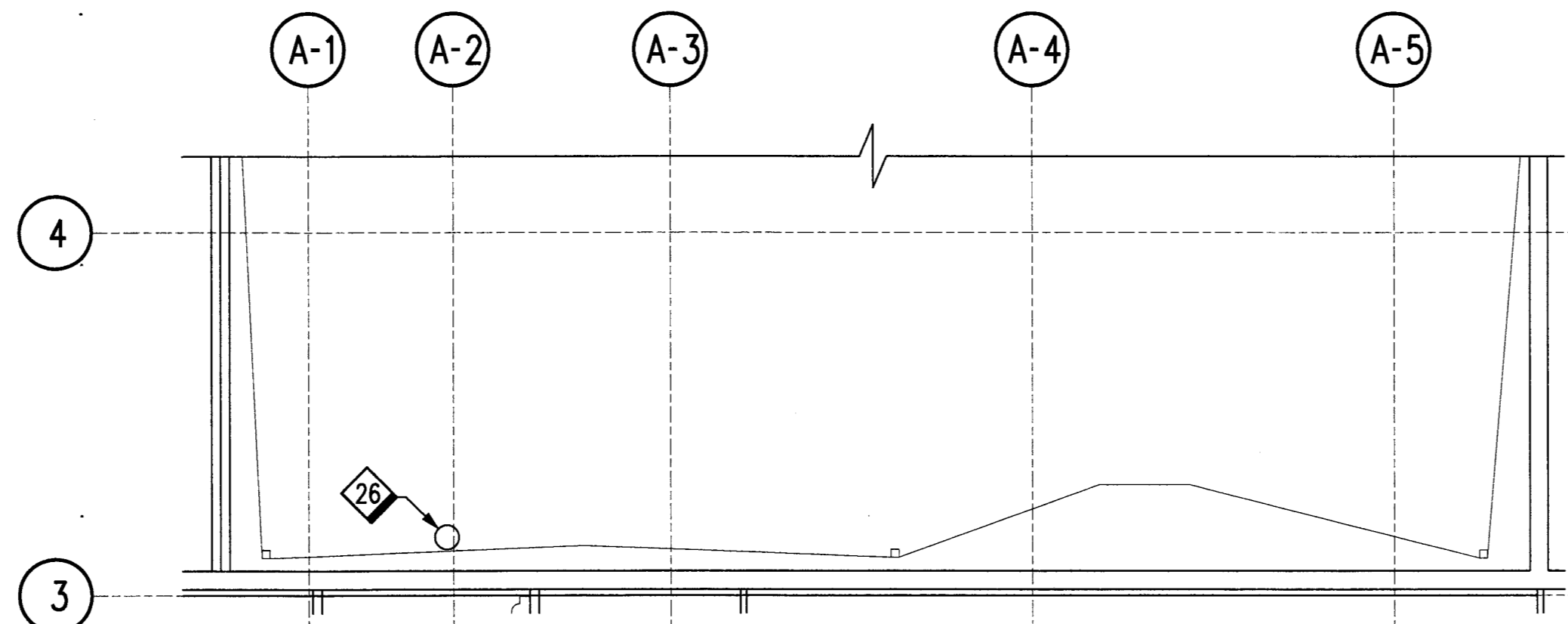


**JACOBS**

REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>					
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER BASEMENT PLAN - PART 2					
FREMONT			OAKLAND (ZOA) ARTCC		
REVIEWED BY	SUBMITTED BY	APPROVED BY			
	RSBradfish	<i>[Signature]</i>			
SUBMITTER'S TITLE		APPROVER'S TITLE			
DESIGNED BY	ISSUED BY	DATE	JCN		
E.ROLAF	AIRWAY FACILITY DIVISION	07/08/2015			
DRAWN BY	DRAWING NO.		REV.		
E.ROLAF	ZOA - D - CWBMS - A202				
CHECKED BY					
W. STEVENS					



**C8 BASEMENT PLAN - PART 2**  
A202 SCALE: 1/8" = 1'-0"



**A6 PARTIAL ROOF PLAN**  
A202 SCALE: 1/8" = 1'-0"

SHEET NOTES, CONT'D

- 19 REINSTALL AED, AED CABINET, AND PROVIDE AED SIGNAGE.
- 20 PATCH AND REPAIR GWB BEHIND SOUND ABSORBING PANELS TO MATCH ADJACENT SURFACES.
- 21 ALIGN CENTERLINE OF PARTITION WITH CENTERLINE OF WAFFLESLAB RIB ABOVE.
- 22 SEMI-RECESSED FEC W/ HALOTRON-1 FE
- 23 HANDRAIL
- 24 ALUMINUM RAILING CAP
- 25 INACTIVE DOOR
- 26 SEAL ABANDONED ROOF OPENING (1'-4" DIA VIF) PER ROOF WARRANTY. EXISTING ROOF SYSTEM IS THE CARLISLE GOLDEN SEAL TOTAL ROOFING SYSTEM (CARLISLE TOTAL ROOFING SYSTEM). PRIOR TO ANY WORK ON THE ROOFING SYSTEM, OBTAIN WRITTEN AUTHORIZATION FROM CARLISLE. COORD W/ MECH.
- 27 ALIGN PARTITION W/ EDGE OF FULL ACCESS FLOOR PANEL. SEAL AIRTIGHT BETWEEN PARTITION AND FLOOR PANELS WITH COMPRESSIBLE GASKET.
- 28 PATCH AND REPAIR PARTITION TO MATCH ADJACENT SURFACES.
- 29 REINSTALL ACF. COORD W/ PARTITION AND MODIFY ACF AS REQUIRED. SEAL AIRTIGHT BETWEEN PARTITION AND FLOOR PANELS W/ COMPRESSIBLE GASKET.



KEY NORTH  
KEY PLAN

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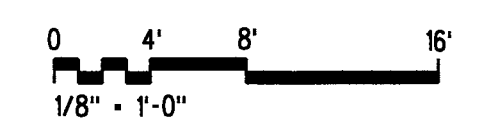
8 7 6 5 4 3 2 1

GENERAL SHEET NOTES

- A. RELOCATE FURNITURE TO ALLOW FOR THE WORK. REINSTALL FURNITURE AT COMPLETION OF WORK. COORD WITH FAA THE RELOCATION OF ELECTRONIC EQUIPMENT ON FURNITURE.
- B. ROOM B120 AND ELSEWHERE IN THE BUILDING HAS SENSITIVE OPERATIONAL EQUIPMENT THAT CONTROLS AIR TRAFFIC. PROTECT EQUIPMENT FROM DAMAGE, VIBRATION, DUST, AND DISRUPTION OF SERVICE.
- C. DEVELOP A WORK PLAN TO PROTECT FAA EQUIPMENT FROM DAMAGE. PLAN SHALL INCLUDE HOW ACCESS FLOOR IS REMOVED AND INSTALLED. COORD WITH COR OTHER REQUIREMENTS THAT SHALL BE INCLUDED IN PLAN.
- D. PROVIDE SIGNAGE OR STENCIL ON WALLS BEHIND FURRED OUT PARTITIONS IN B120-SOUTH AT FIRE RATED WALLS WITH THE FOLLOWING WORDING:  
"FIRE AND SMOKE BARRIER - PROTECT ALL OPENINGS."  
TEXT SHALL BE 1/2" IN HEIGHT AND SIGNAGE SHALL BE REPEATED AT 30'-0" OC MAX.  
REFER TO GUIDE PLAN A001 FOR LOCATION OF RATED WALLS.
- E. SMOKE AND FIRE STOP PENETRATIONS AND ABANDONED PENETRATIONS THROUGH FIRE RATED WALLS.

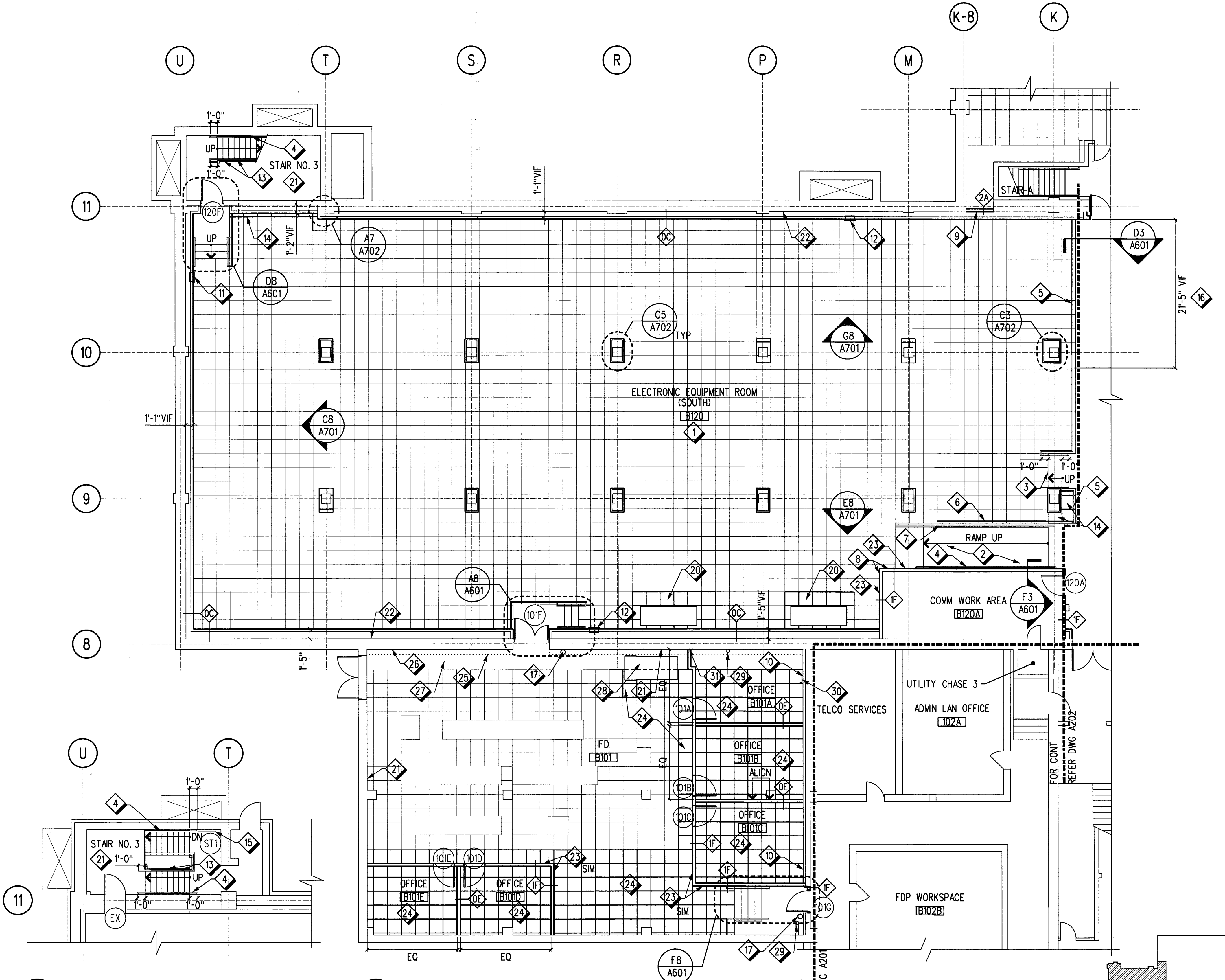
SHEET NOTES

- 1 EXISTING ACCESS FLOOR SYSTEM TO REMAIN WITH SENSITIVE OPERATIONAL EQUIPMENT LOCATED ON IT. PROTECT FROM DAMAGE, VIBRATION, AND DUST
- 2 EXISTING RAMP TO REMAIN. PROTECT FROM DAMAGE.
- 3 EXISTING ACCESS FLOOR SYSTEM STAIR TO REMAIN. PROTECT FROM DAMAGE.
- 4 WALL MOUNTED HANDRAIL
- 5 ACCESS FLOOR SYSTEM HANDRAIL.
- 6 EXISTING ACCESS FLOOR SYSTEM HANDRAIL TO REMAIN. PROTECT FROM DAMAGE.
- 7 PROVIDE ATTACHMENT RAIL TO EXISTING HANDRAIL FOR EDGE PROTECTION AT 4" ABOVE RAMP FINISH SURFACE.
- 8 SOUND ABSORBING PANELS.
- 9 SMOKE AND FIRESTOP EXISTING CONDUITS AND CABLE TRAYS TO REMAIN PASSING THROUGH NEW PARTITION. INFILL WILL LIKELY REQUIRE A FIRESTOP ENGINEERING JUDGMENT/FIRESTOP CUSTOM DETAIL BY A FIRE PROTECTION ENGINEER.
- 10 SMOKE AND FIRESTOP OPENING (3'-0" X 1'-6" VIF) IN 8" THICK CIP CONCRETE WALL APPROXIMATELY 11'-6" AFF.
- 11 EXISTING FEC TO REMAIN. PROVIDE HALOTRON-1FE.
- 12 RECESSED FEC WITH HALOTRON-1FE.
- 13 HANDRAIL AND GUARDRAIL
- 14 ACCESS FLOOR SYSTEM. PROVIDE FLOOR PANELS, STRINGERS, AND PEDESTALS, BOLTING PEDESTALS TO FLOOR SLAB ALIGN WITH EXISTING FLOOR GRID AND HEIGHT. COORD WITH COR DUST CONTROL MEASURES AND WORK PLAN FOR INSTALLATION.
- 15 RAILING (SWING) GATE. CONNECT TO EXISTING MAGNETIC HOLD OPEN DEVICE.
- 16 ACCESS FLOOR METAL FASCIA PLATE
- 17 WALL MOUNTED HALOTRON-1FE
- 18 HANDRAIL EXTENSION
- 19 INACTIVE DOOR
- 20 REINSTALL ACCESS FLOOR SYSTEM. COORD W/ MECH REPLACEMENT OF AHUS AND MODIFY EXISTING ACF AS REQUIRED. SEAL AIRTIGHT BETWEEN AHU AND FLOOR PANELS WITH COMPRESSIBLE GASKET.
- 21 PATCH, REPAIR AND PAINT WALL AND CEILING SURFACES TO MATCH ADJACENT SURFACES.
- 22 1'-6" THICK CIP CONCRETE WALL
- 23 ALIGN PARTITION W/ EDGE OF EXISTING CUT ACCESS FLOOR PANELS/RAMP. SEAL AIRTIGHT BETWEEN PARTITION AND FLOOR PANELS/RAMP WITH COMPRESSIBLE GASKET.
- 24 REINSTALL ACCESS FLOOR SYSTEM. COORD W/ RECONFIGURED PARTITIONS AND MECH AND MODIFY EXISTING ACF AS REQUIRED. SEISMICALLY BRACE REINSTALLED ACF PER MANUFACTURER'S INSTRUCTIONS. COORD W/ COR IF FAA STOCKPILE ACF FLOOR PANELS ARE AVAILABLE.
- 25 EXISTING 9" PROJECTING CONCRETE LEDGE AT 5'-8" AFF.
- 26 SMOKE AND FIRESTOP OPENINGS IN 1'-6" THICK CIP CONCRETE WALL. THERE ARE APPROXIMATELY: (1) 2" DIA PENETRATION, (1) 1" DIA PENETRATION, AND (7) 5" DIA PENETRATIONS.
- 27 EXISTING CONCRETE FLOOR SLAB/LEDGE
- 28 MECH EQUIP. REFER TO MECH
- 29 EXIST PIPE. PROTECT FROM DAMAGE.
- 30 EXISTING CABLE TRAY TO HAVE BEEN RELOCATED BY FAA.
- 31 GROUNDING CABLE SHALL PASS THROUGH NEW PARTITION WALL AT EXISTING CONCRETE FLOOR SLAB/LEDGE.



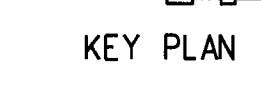
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PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>			
REV.	APPROVED DATE	DESCRIPTION	JCN
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA			
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER BASEMENT PLAN - PART 3			
FREMONT		OAKLAND (ZO) ARTCC	
REVIEWED BY	SUBMITTED BY	APPROVED BY	
	RSBradfish	<i>[Signature]</i>	
SUBMITTER'S TITLE		APPROVER'S TITLE	
DESIGNED BY		ISSUED BY	
DRAWN BY		DATE 07/08/2015	
CHECKED BY		DRAWING NO.	
W. STEVENS		ZO - D - CWBMS - A203	
OAKLAND ARTCC FREMONT, CALIFORNIA		AIRWAY FACILITY DIVISION	



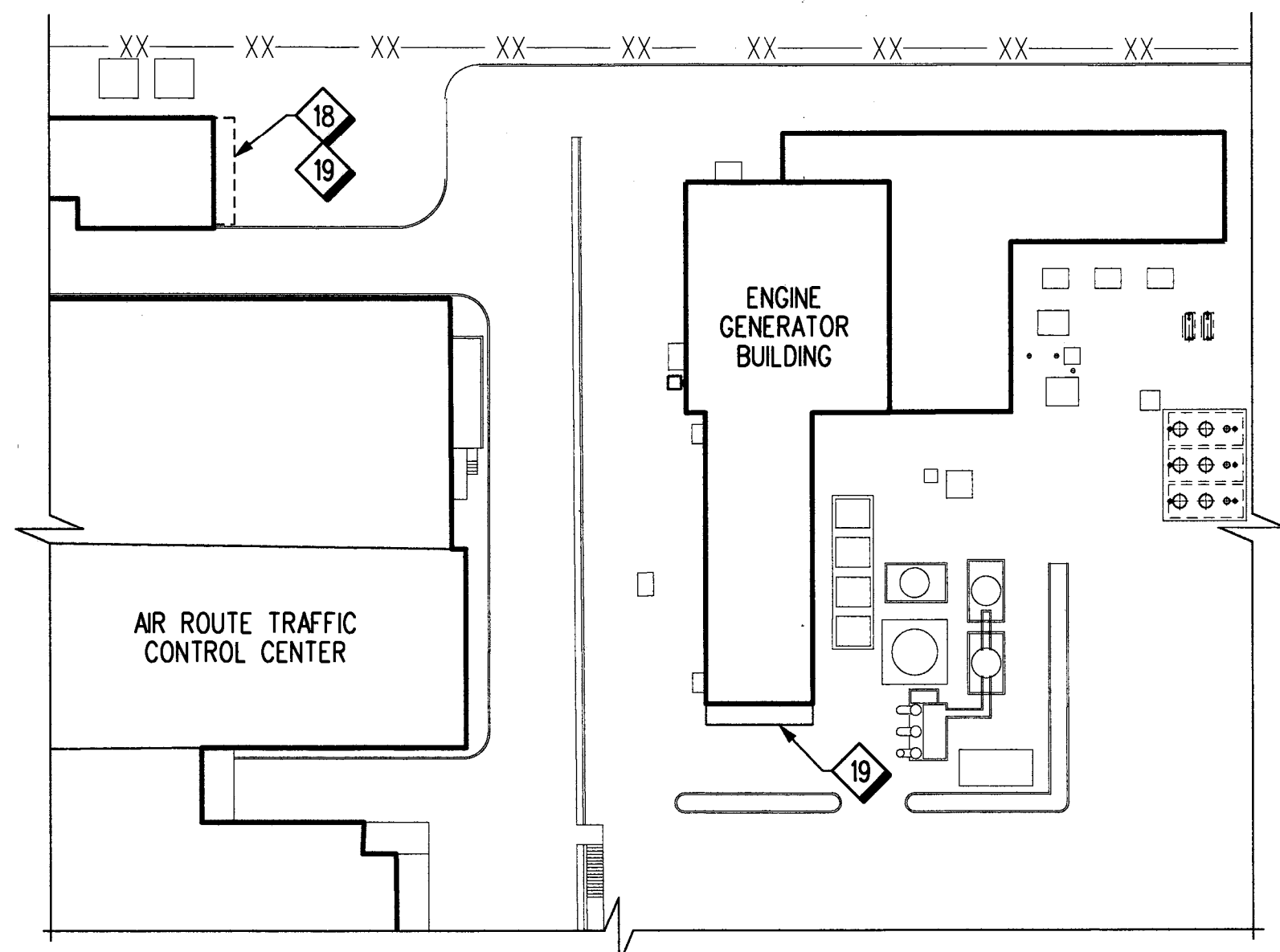
A8 FIRST FLOOR PLAN - STAIR 3  
A203 SCALE: 1/8" = 1'-0"

A7 BASEMENT PLAN - PART 3  
A203 SCALE: 1/8" = 1'-0"

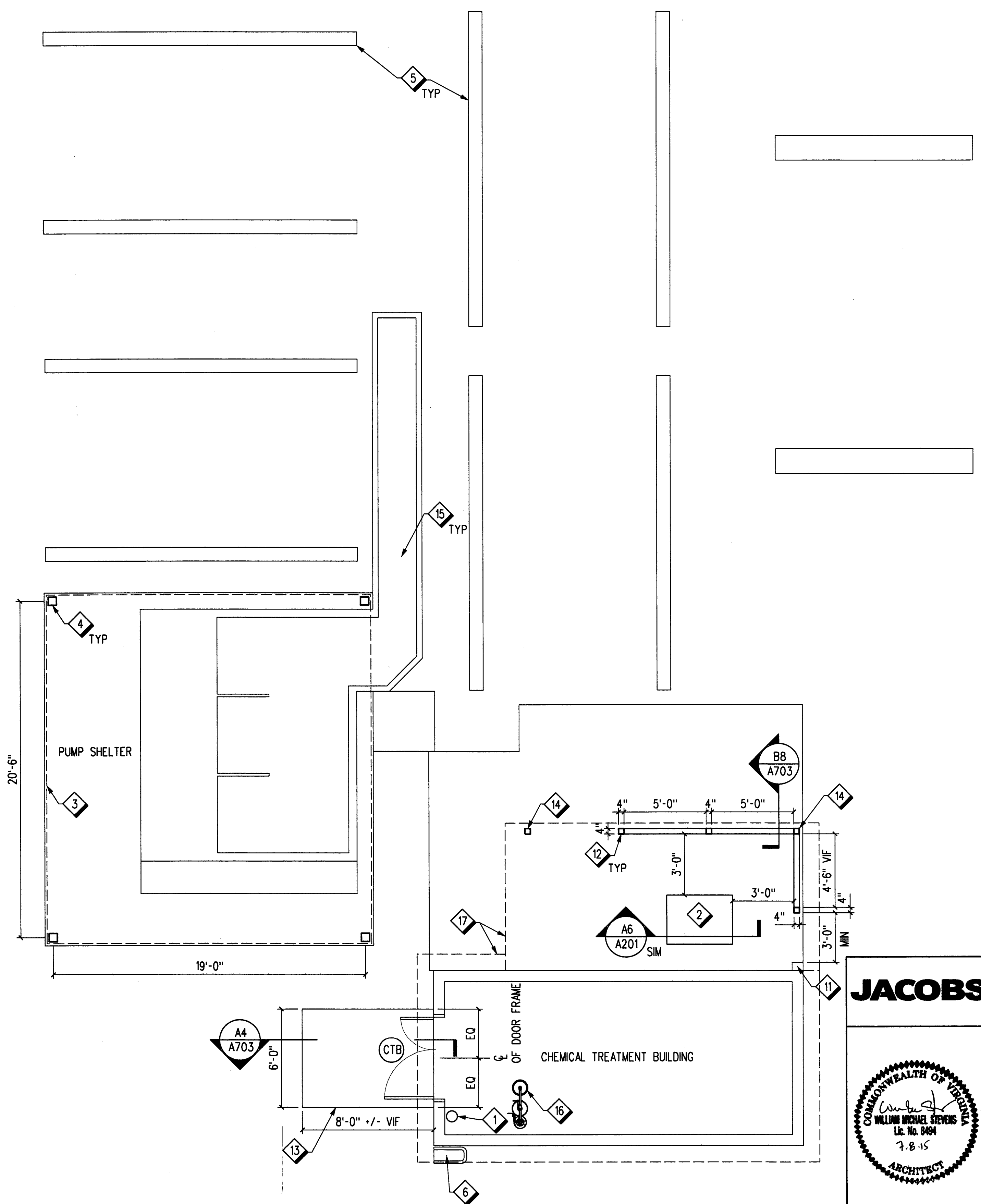


**SHEET NOTES**

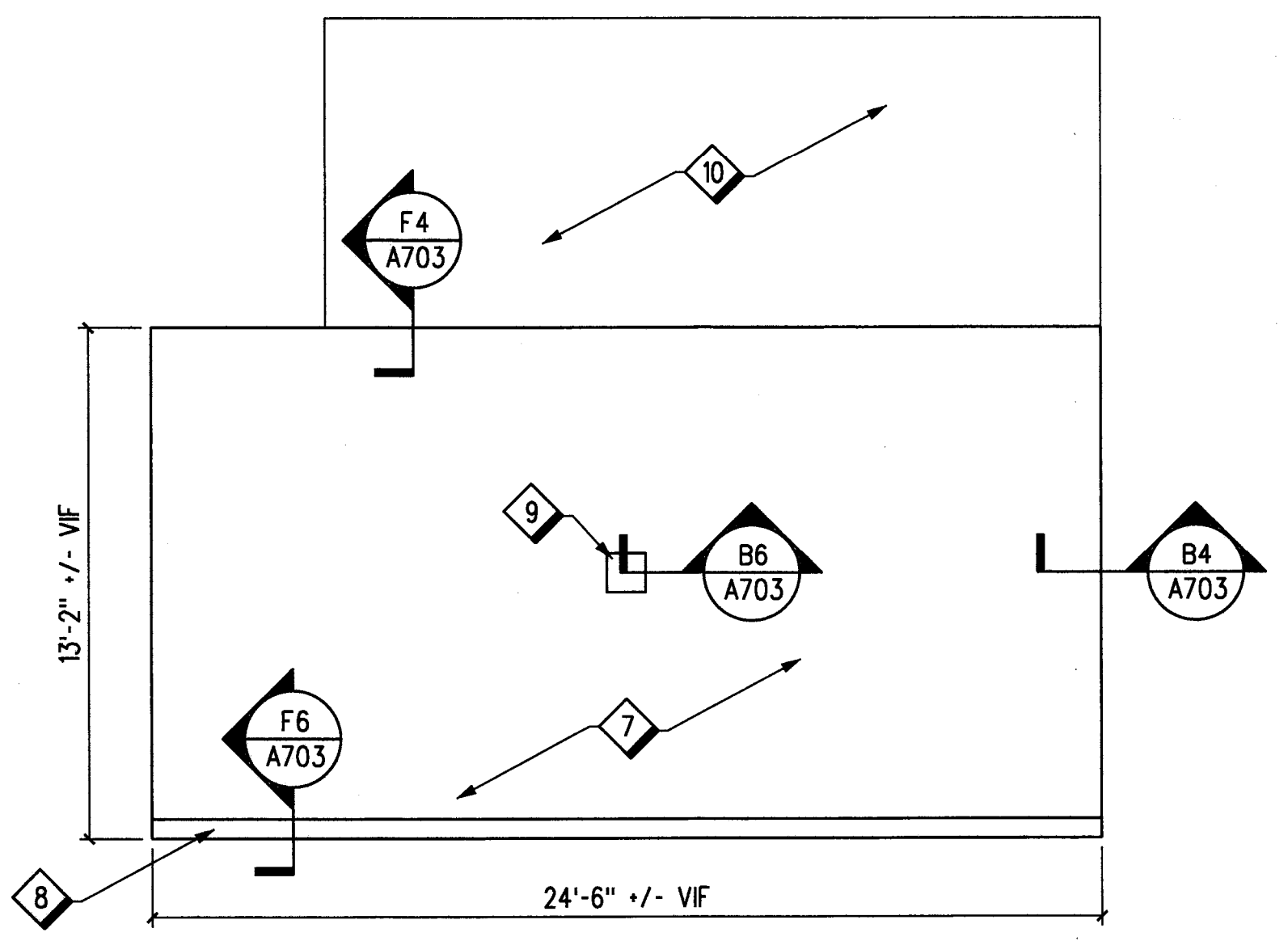
- 1 WALL MOUNTED DRY CHEMICAL FE
- 2 CONCRETE MAINTENANCE PAD
- 3 BIRD NETTING ATTACHED TO UNDERSIDE OF PUMP HOUSE ROOF STRUCTURE. PROTECT ROOF PANELS FROM DAMAGE. DASHED LINE INDICATES EXTENT OF PUMP SHELTER ROOF.
- 4 EXISTING PUMP HOUSE STRUCTURE TO REMAIN, PROTECT FROM DAMAGE
- 5 EXISTING COOLING TOWER STRUCTURE, REFER TO STRUC.
- 6 CONCRETE SPLASH BLOCK
- 7 TPO MEMBRANE ROOF SYSTEM
- 8 REINSTALL GUTTER AND DOWNSPOUT
- 9 MECH EQUIP, REFER TO MECH FOR SIZE AND LOCATION
- 10 EXISTING LEAN-TO ROOF TO REMAIN, PROTECT FROM DAMAGE.
- 11 EXISTING ELEC EQUIP, PROTECT FROM DAMAGE.
- 12 4x4 WOOD POST
- 13 CONCRETE RAMP, WITH BROOM FINISH
- 14 EXISTING LEAN-TO POST TO REMAIN. PROTECT FROM DAMAGE.
- 15 PROTECT FROM DAMAGE WOOD PLANK FLUME COVER ASSEMBLY.
- 16 EMERGENCY SHOWER, REFER TO MECH
- 17 DASHED LINE INDICATES EXTENT OF ROOF ABOVE.
- 18 REMOVE TEMPORARY BIKE RACK CANOPY AT COMPLETION OF WORK IN AREA OF THE ENGINE GENERATOR BUILDING. COORDINATE WITH COR.
- 19 RETURN BIKE RACK TO ORIGINAL LOCATION. ANCHOR BIKE RACK AS REQUIRED AND TO THE SATISFACTION OF COR.



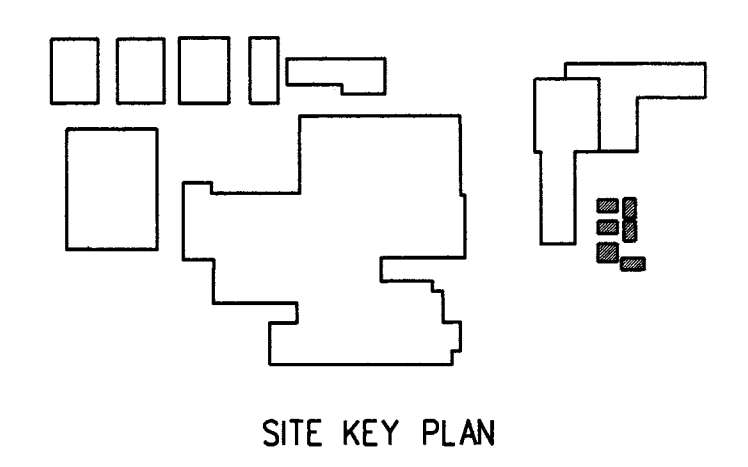
**E8 BIKE RACK - REINSTALLATION**  
A204 SCALE: NTS



**A6 PUMP HOUSE AND COOLING TOWER YARD PLAN**  
A204 SCALE: 1/4" = 1'-0"

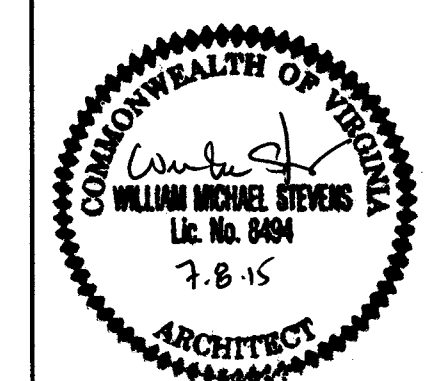


**A8 CHEMICAL TREATMENT BUILDING ROOF PLAN**  
A204 SCALE: 1/4" = 1'-0"

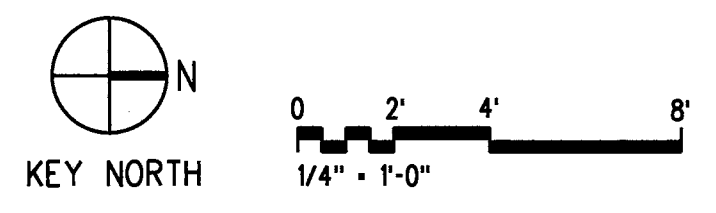


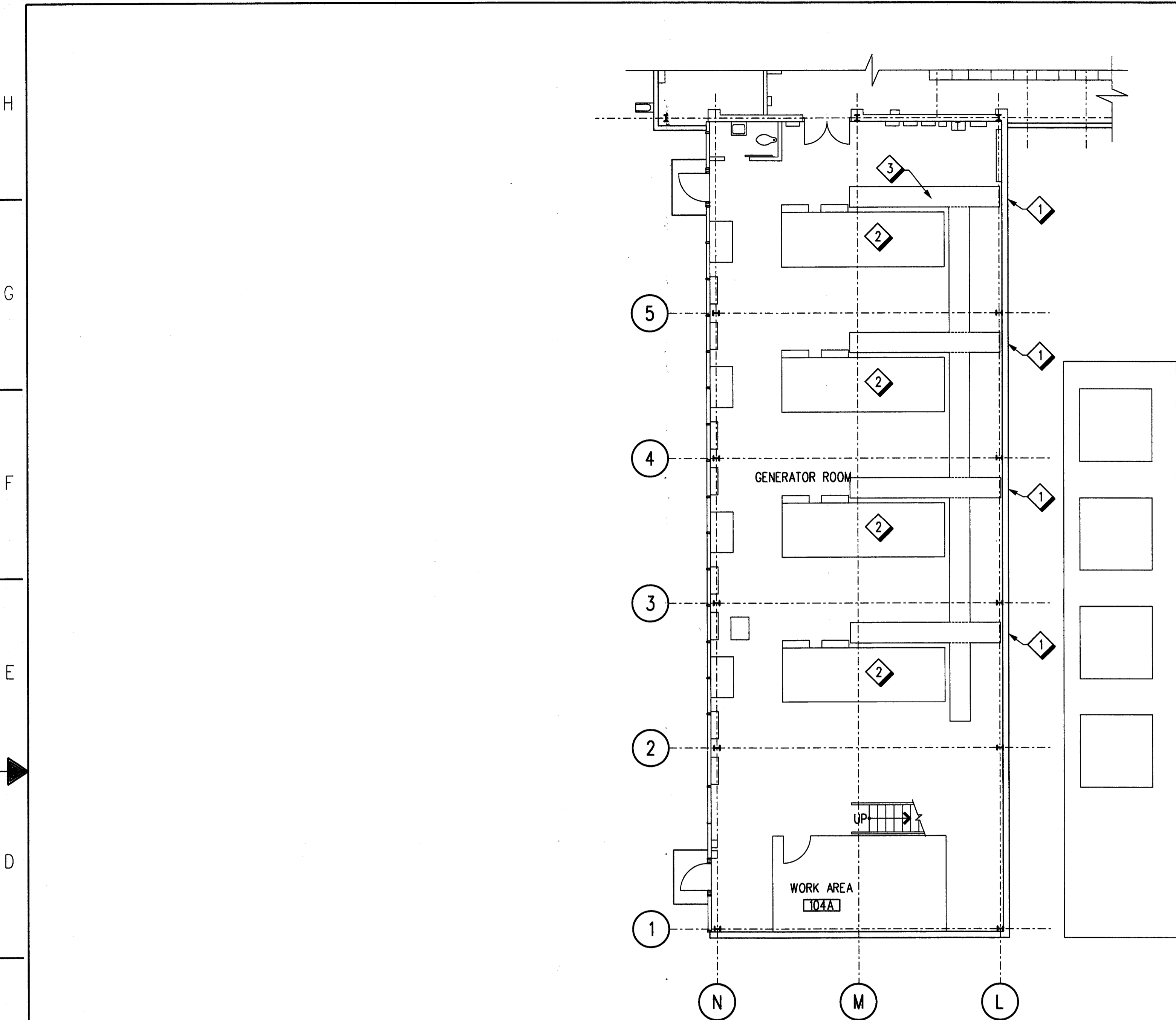
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**JACOBS**

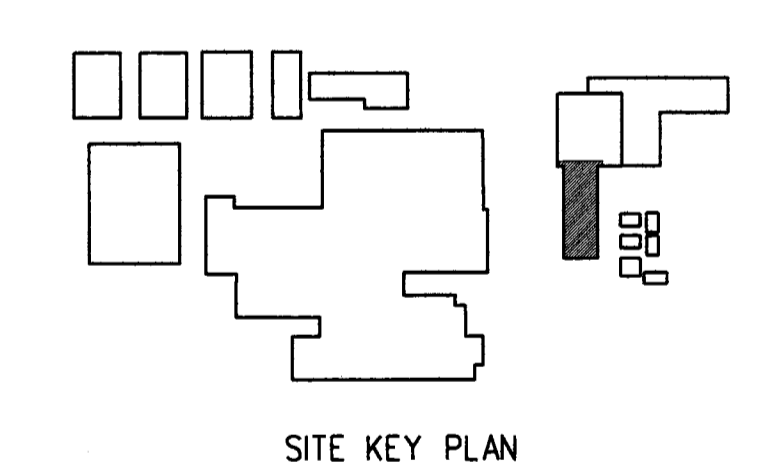


REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA OAKLAND (ZOA) ARTCC CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER COOLING TOWER YARD PLAN AND CHEMICAL TREATMENT BUILDING ROOF PLAN					
DESIGNED BY	E. ROLAF	ISSUED BY	RAYWAY FACILITY DIVISION	DATE	07/08/2015
DRAWN BY	E. ROLAF	CHECKED BY	W. STEVENS	DRAWING NO.	ZOA - D - CWBMS - A204
REVIEWED BY		SUBMITTED BY	R. Braafisch	APPROVED BY	
OAKLAND ARTCC FREMONT, CALIFORNIA					





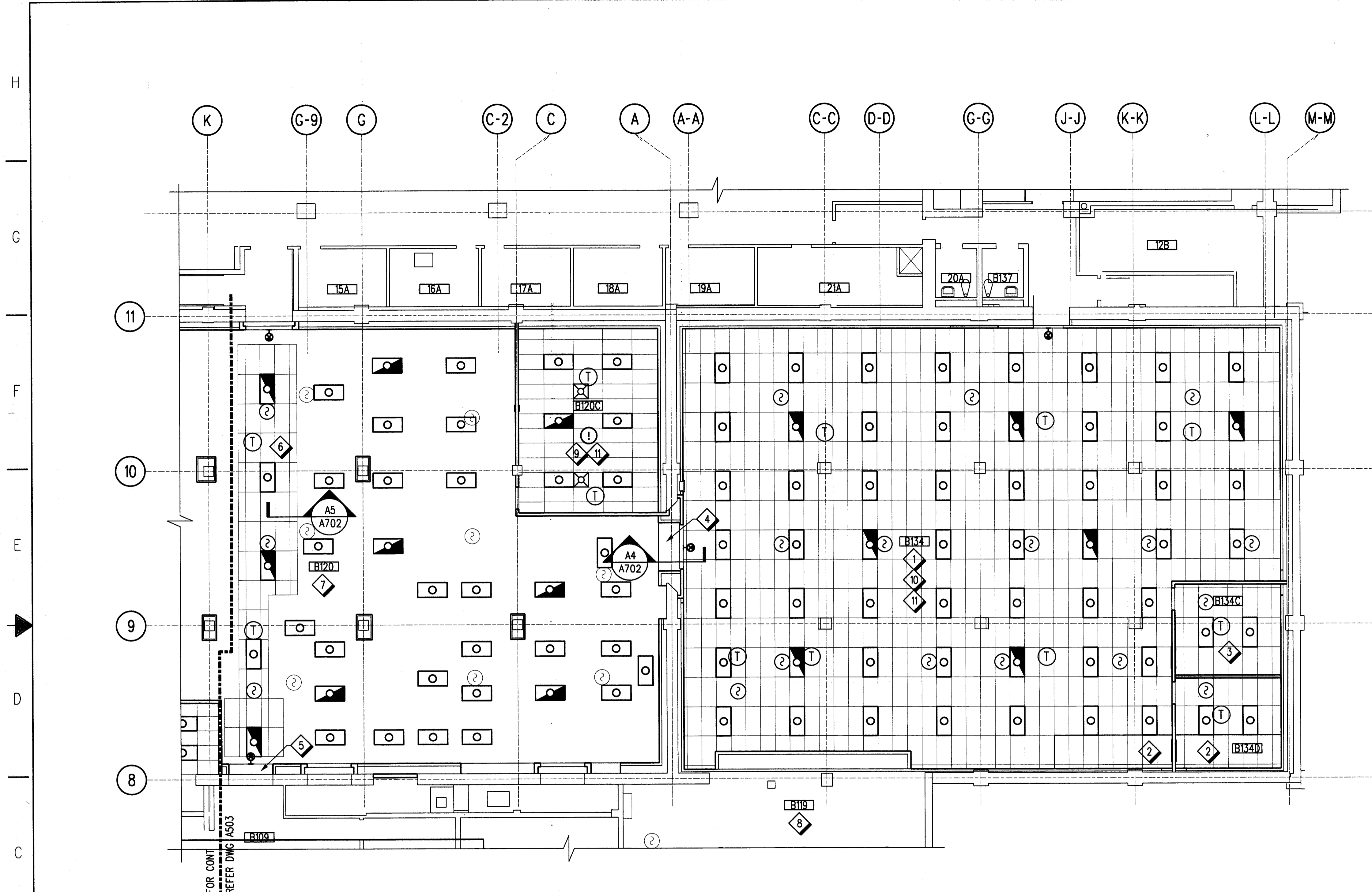
- SHEET NOTES**
- 1 SEAL WEATHERTIGHT PENETRATIONS RESULTING FROM MECH WORK IN EXTERIOR CONCRETE WALL BELOW GRADE. REFER TO MECH.
  - 2 EXISTING ELEC EQUIP
  - 3 EXISTING TRENCH W/ STEEL DIAMOND PLATE COVERING



**B8 ENGINE GENERATOR ROOM PLAN**  
 A205 SCALE: 1/8" = 1'-0"

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 PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>	DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA					
	CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER ENGINE GENERATOR BUILDING PLAN FREMONT OAKLAND (ZOA) ARTCC					
	REVIEWED BY SUBMITTED BY SUBMITTER'S TITLE	APPROVED BY <i>[Signature]</i> APPROVER'S TITLE	DATE 07/08/2015 JCN	REV.		
	DESIGNED BY DRAWN BY CHECKED BY	ISSUED BY AIRWAY FACILITY DIVISION	DATE 07/08/2015 JCN	DRAWING NO. ZOA - D - CWBMS - A205	REV.	
	OAKLAND ARTCC FREMONT, CALIFORNIA		AIRWAY FACILITY DIVISION		DATE: 7/2/2015 TIME: 11:51 AM USER: WJUSER	
	KEY NORTH				DATE: 7/2/2015 TIME: 11:51 AM USER: WJUSER	



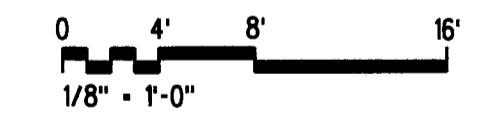
**GENERAL SHEET NOTES**

- A. MOUNT CEILING FIXTURES (FIRE SPRINKLER HEADS, SMOKE AND HEAT DETECTORS, CEILING REGISTERS, ETC.) IN CENTER OF ACOUSTICAL CEILING PANEL.
- B. REFER TO MECH, FIRE PROTECTION, AND ELEC FOR CEILING FIXTURE LEGENDS.
- C. PROVIDE SIGNAGE OR STENCIL ON WALLS ABOVE SUSPENDED CEILING SYSTEM IN ROOM B134 AND B120C AT FIRE RATED WALLS WITH THE FOLLOWING WORDING:  
"FIRE AND SMOKE BARRIER - PROTECT ALL OPENINGS."  
TEXT SHALL BE 1/2" IN HEIGHT AND SIGNAGE SHALL BE REPEATED AT 30'-0" OC MAX.  
REFER TO GUIDE PLAN A001 FOR LOCATION OF RATED WALLS.
- D. PROVIDE OVERSIZED RINGS FOR SUSPENDED CEILING SYSTEM PENETRATIONS PER SEISMIC CRITERIA.

**SHEET NOTES**

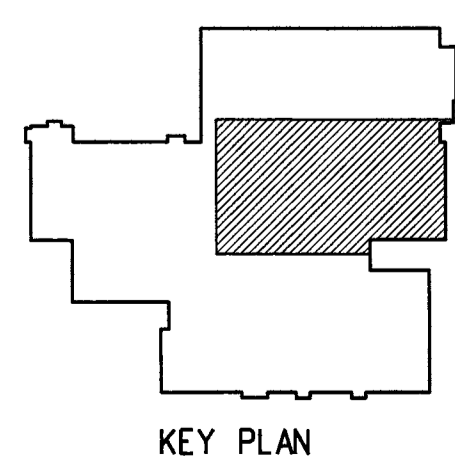
- 1 2 X 4 ACOUSTICAL SUSPENDED CEILING SYSTEM AT 9'-0" AFF. ALIGN CEILING GRID WITH ORIGINAL CEILING GRID SYSTEM THAT WAS DEMOLISHED.
- 2 2 X 4 ACOUSTICAL SUSPENDED CEILING SYSTEM AT 8'-0" AFF. ALIGN CEILING GRID WITH ORIGINAL CEILING GRID SYSTEM THAT WAS DEMOLISHED.
- 3 2 X 4 ACOUSTICAL SUSPENDED CEILING SYSTEM AT 9'-0" AFF.
- 4 VGWB SOFFIT AT 7'-2" AFF
- 5 VGWB SOFFIT AT 7'-0" AFF
- 6 2 X 4 ACOUSTICAL SUSPENDED CEILING SYSTEM AT 8'-0" AFF
- 7 EXPOSED TO STRUCTURE ABOVE.
- 8 EXISTING CEILING TILE TO REMAIN. PROTECT FROM DAMAGE.
- 9 2 X 4 ACOUSTICAL SUSPENDED CEILING SYSTEM AT 8'-6" AFF
- 10 COORD LOCATION OF SUSPENDED CEILING SYSTEM SEISMIC GAP W/ COR IN ROOMS LARGER THAN 2500SF.
- 11 OBSERVE W/ COR PRIOR TO INSTALLATION OF SUSPENDED CEILING SYSTEM ANY PENETRATIONS/OPENINGS IN FIRST FLOOR SLAB. SMOKE AND FIRESTOP ANY OPENINGS/PENETRATIONS.

**C8** BASEMENT REFLECTED CEILING PLAN - PART 2  
A502 SCALE: 1/8" = 1'-0"

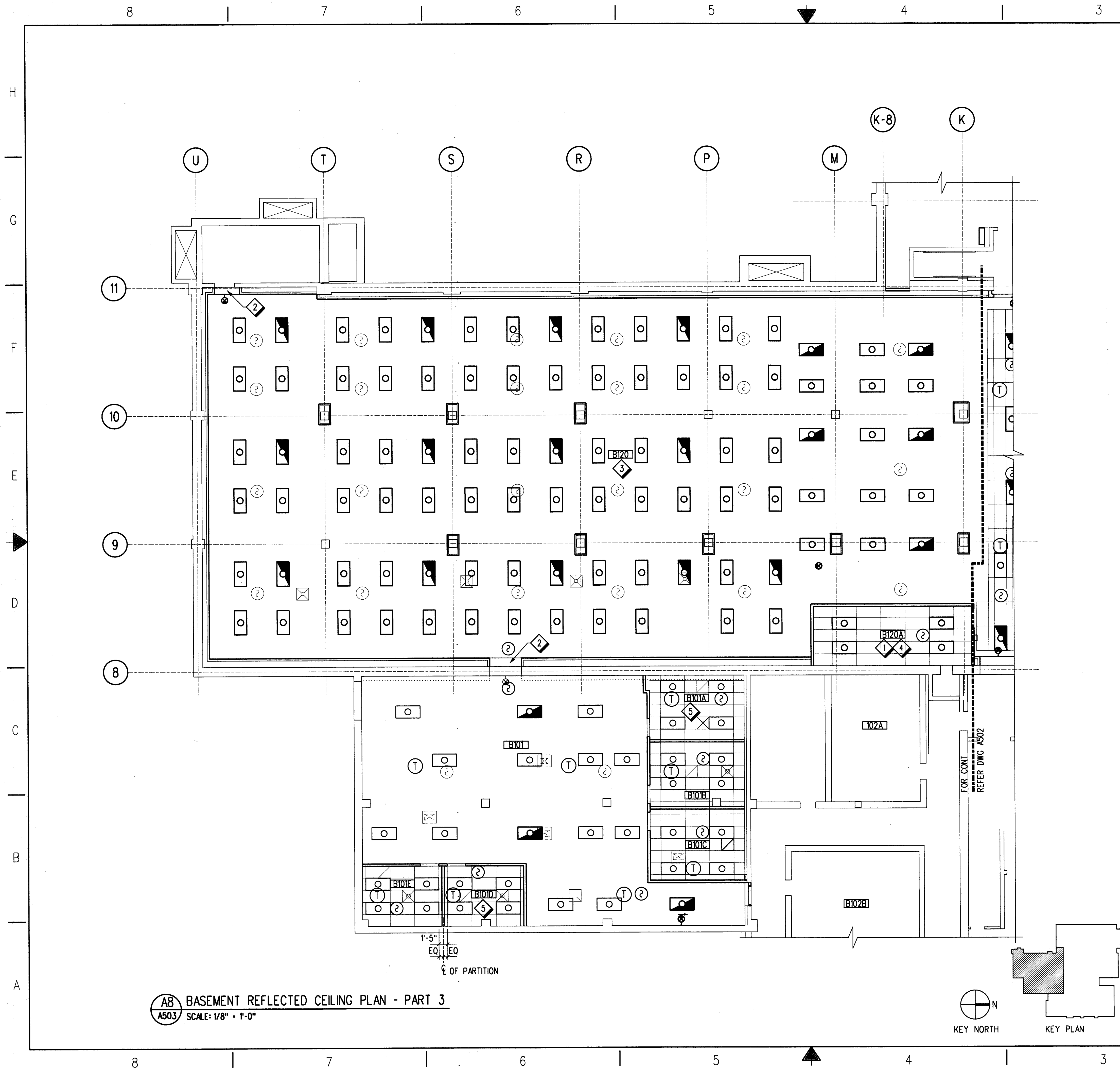


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PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

		REV.		APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
		<p align="center">DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA</p> <p align="center"><b>CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER</b></p> <p align="center"><b>BASEMENT REFLECTED CEILING PLAN - PART 2</b></p> <p align="center">FREMONT OAKLAND (ZOA) ARTCC</p>						
		REVIEWED BY	SUBMITTED BY	APPROVED BY				
		SUBMITTER'S TITLE		APPROVER'S TITLE				
OAKLAND ARTCC FREMONT, CALIFORNIA		DESIGNED BY E. ROLAF	ISSUED BY AIRWAY FACILITY DIVISION	DATE 07/08/2015	JCN			
		DRAWN BY E. ROLAF	CHECKED BY W. STEVENS	DRAWING NO. ZOA - D - CWBMS - A502		REV.		







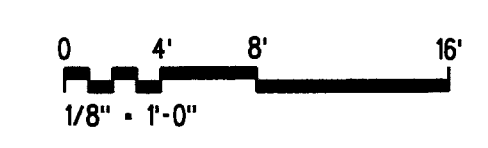
**GENERAL SHEET NOTES**

- A. MOUNT CEILING FIXTURES (FIRE SPRINKLER HEADS, SMOKE AND HEAT DETECTORS, CEILING REGISTERS, ETC.) IN CENTER OF ACOUSTICAL CEILING PANEL.
- B. REFER TO MECH, FIRE PROTECTION, AND ELEC FOR CEILING FIXTURE LEGENDS.
- C. PROVIDE SIGNAGE OR STENCIL ON WALLS ABOVE SUSPENDED CEILING SYSTEM IN ROOM B120A WITH THE FOLLOWING WORDING:  
 "FIRE AND SMOKE BARRIER - PROTECT ALL OPENINGS."  
 TEXT SHALL BE 1/2" IN HEIGHT AND SIGNAGE SHALL BE REPEATED AT 30'-0" OC MAX.  
 REFER TO GUIDE PLAN A001 FOR LOCATION OF RATED WALLS.
- D. PROVIDE OVERSIZED RINGS FOR SUSPENDED CEILING SYSTEM PENETRATIONS PER SEISMIC CRITERIA.

**SHEET NOTES**

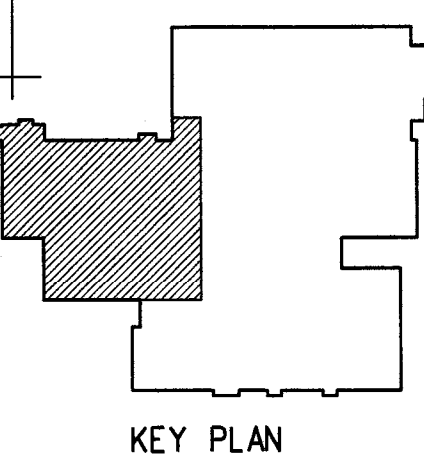
- 1 2 X 4 ACOUSTICAL SUSPENDED CEILING SYSTEM AT 7'-10" AFF. ALIGN CEILING GRID WITH ORIGINAL CEILING GRID SYSTEM THAT WAS DEMOLISHED.
- 2 VGWB SOFFIT AT 7'-2" AFF
- 3 EXPOSED TO STRUCTURE ABOVE
- 4 OBSERVE W/ COR PRIOR TO INSTALLATION OF SUSPENDED CEILING SYSTEM ANY PENETRATIONS/OPENINGS IN FIRST FLOOR SLAB. SMOKE AND FIRESTOP ANY OPENINGS/PENETRATIONS.
- 5 2 X 4 ACOUSTICAL SUSPENDED CEILING SYSTEM AT 8'-0" AFF.

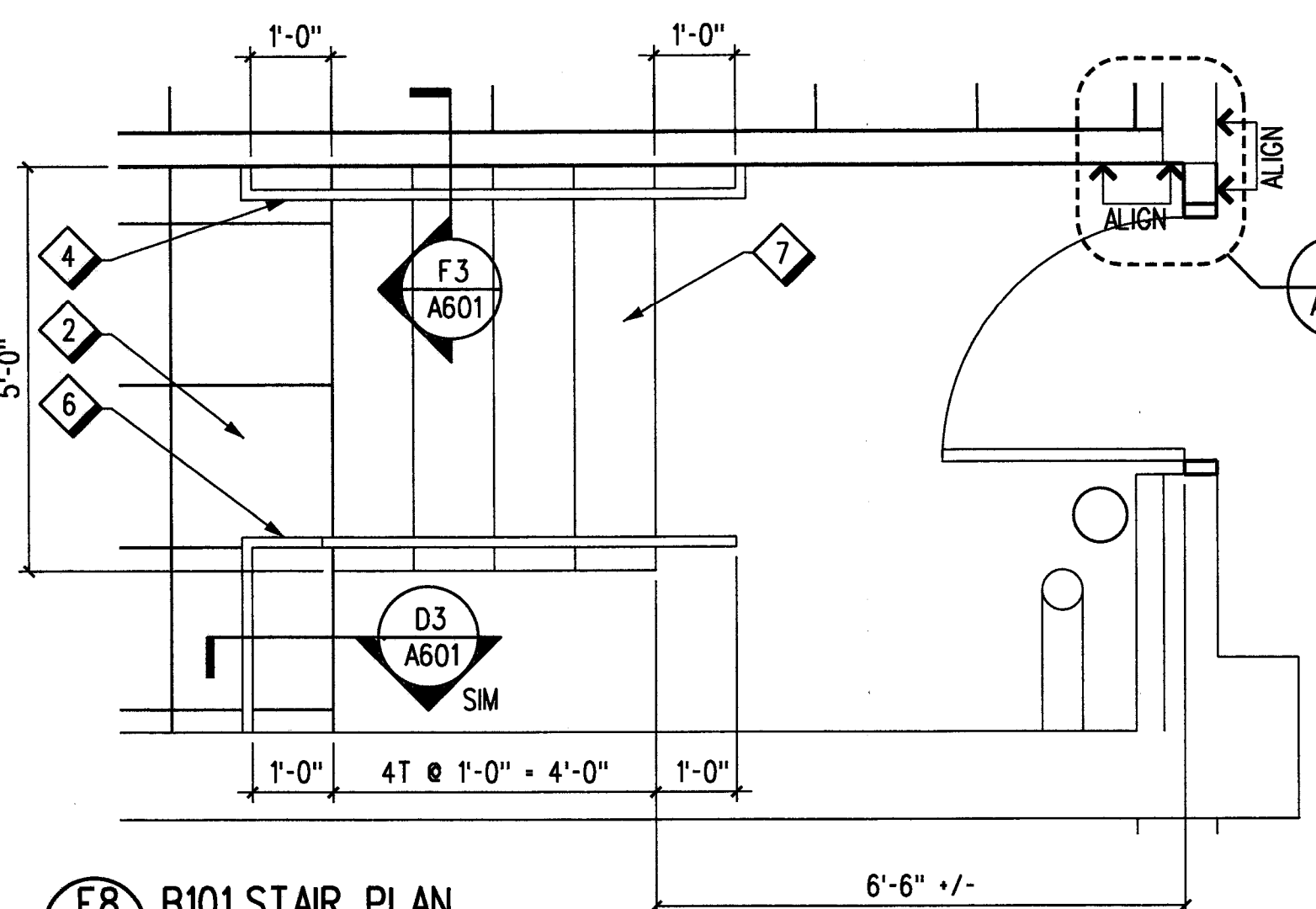
**AB BASEMENT REFLECTED CEILING PLAN - PART 3**  
 A503 SCALE: 1/8" = 1'-0"



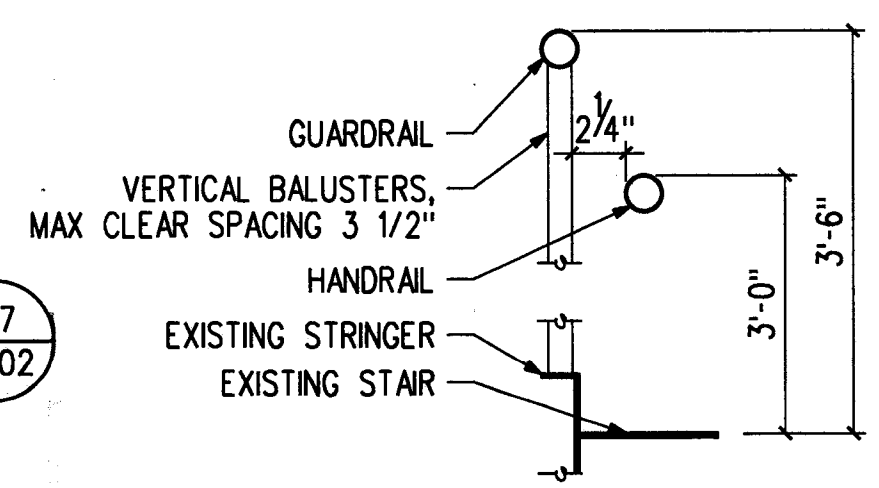
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		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA	
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER BASEMENT REFLECTED CEILING PLAN - PART 3 FREMONT OAKLAND (ZOA) ARTCC	
	REVIEWED BY: _____ SUBMITTED BY: <i>RSBradfish</i> SUBMITTER'S TITLE: _____ DESIGNED BY: E. ROLAF DRAWN BY: E. ROLAF CHECKED BY: W. STEVENS	APPROVED BY: <i>[Signature]</i> APPROVER'S TITLE: _____ ISSUED BY: AIRWAY FACILITY DIVISION DATE: 07/08/2015 DRAWING NO.: ZOA - D - CWBMS - A503	JCN: _____ REDLINE DATE: _____ APVD: _____ DATE: 7/2/2015 USER: \$USER

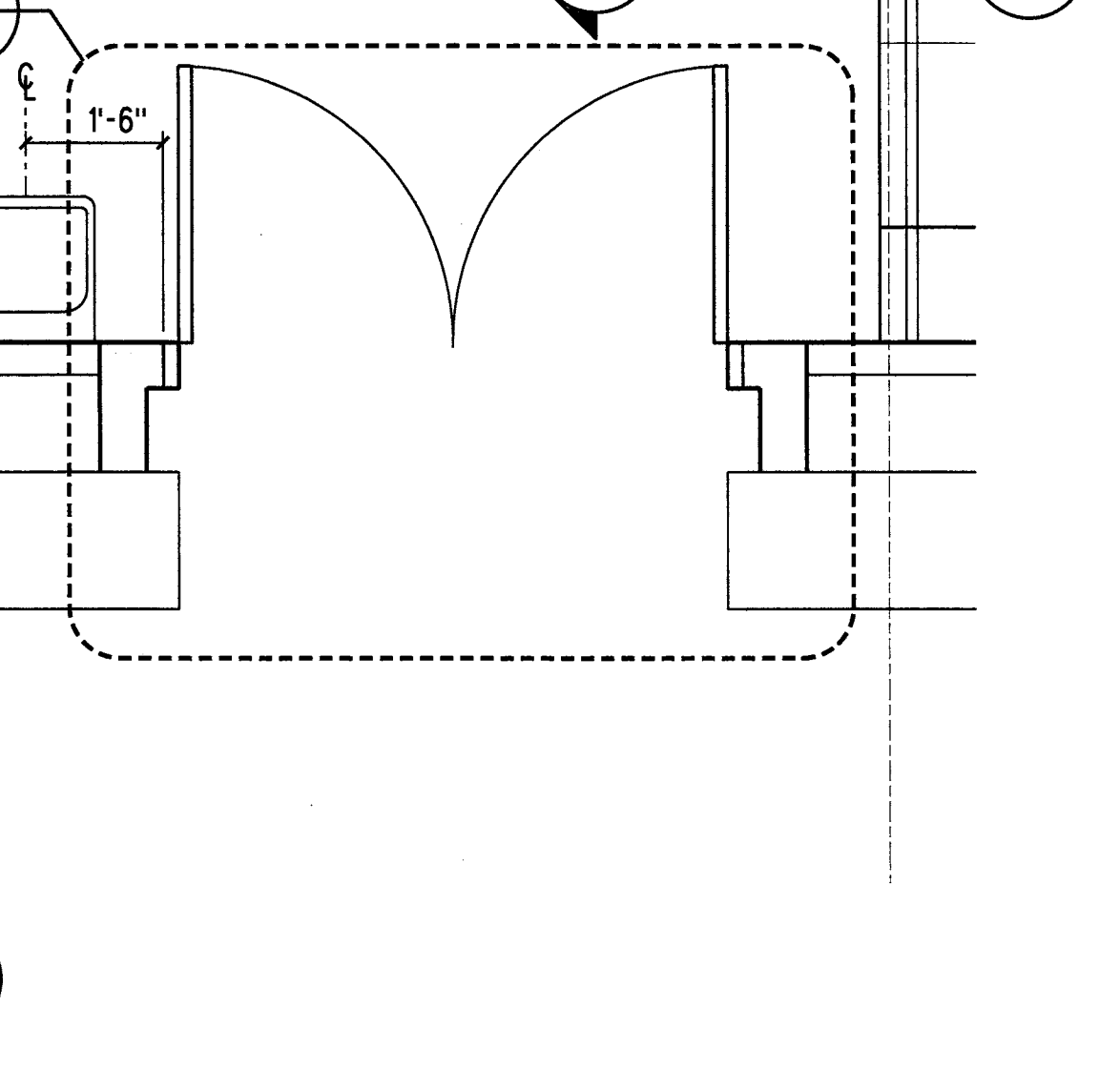
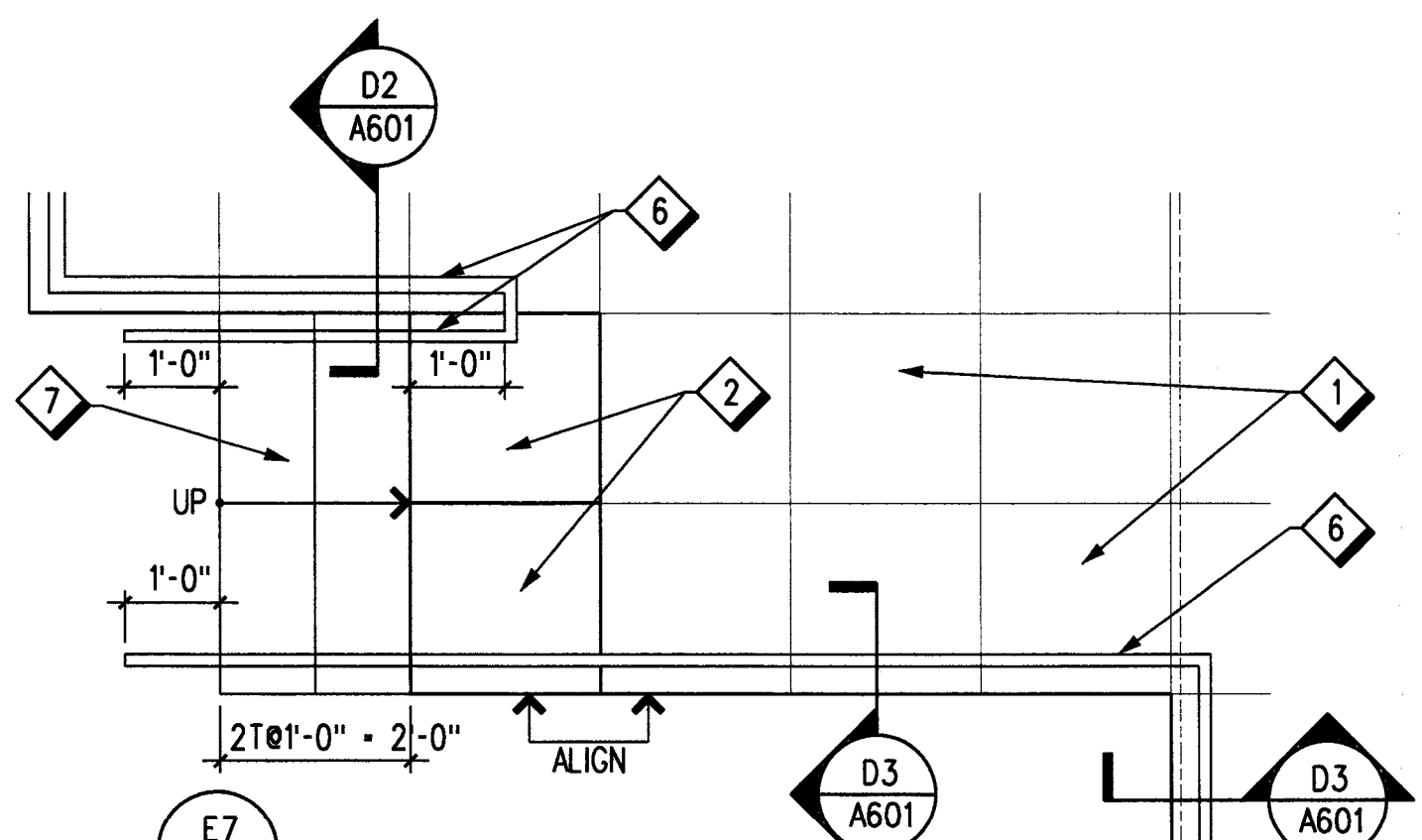




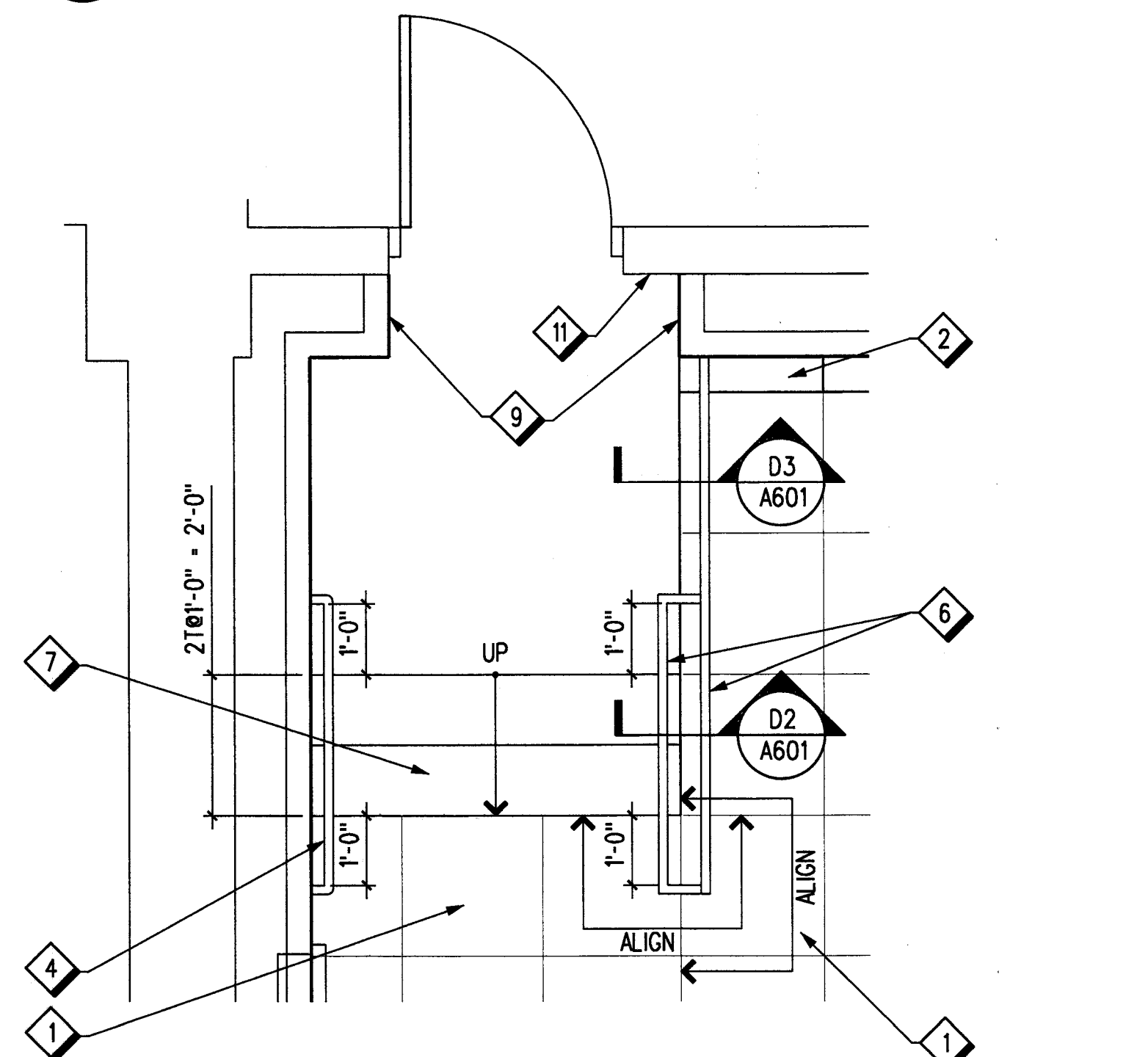
**F8 B101 STAIR PLAN**  
A601 SCALE: 1/2" = 1'-0"



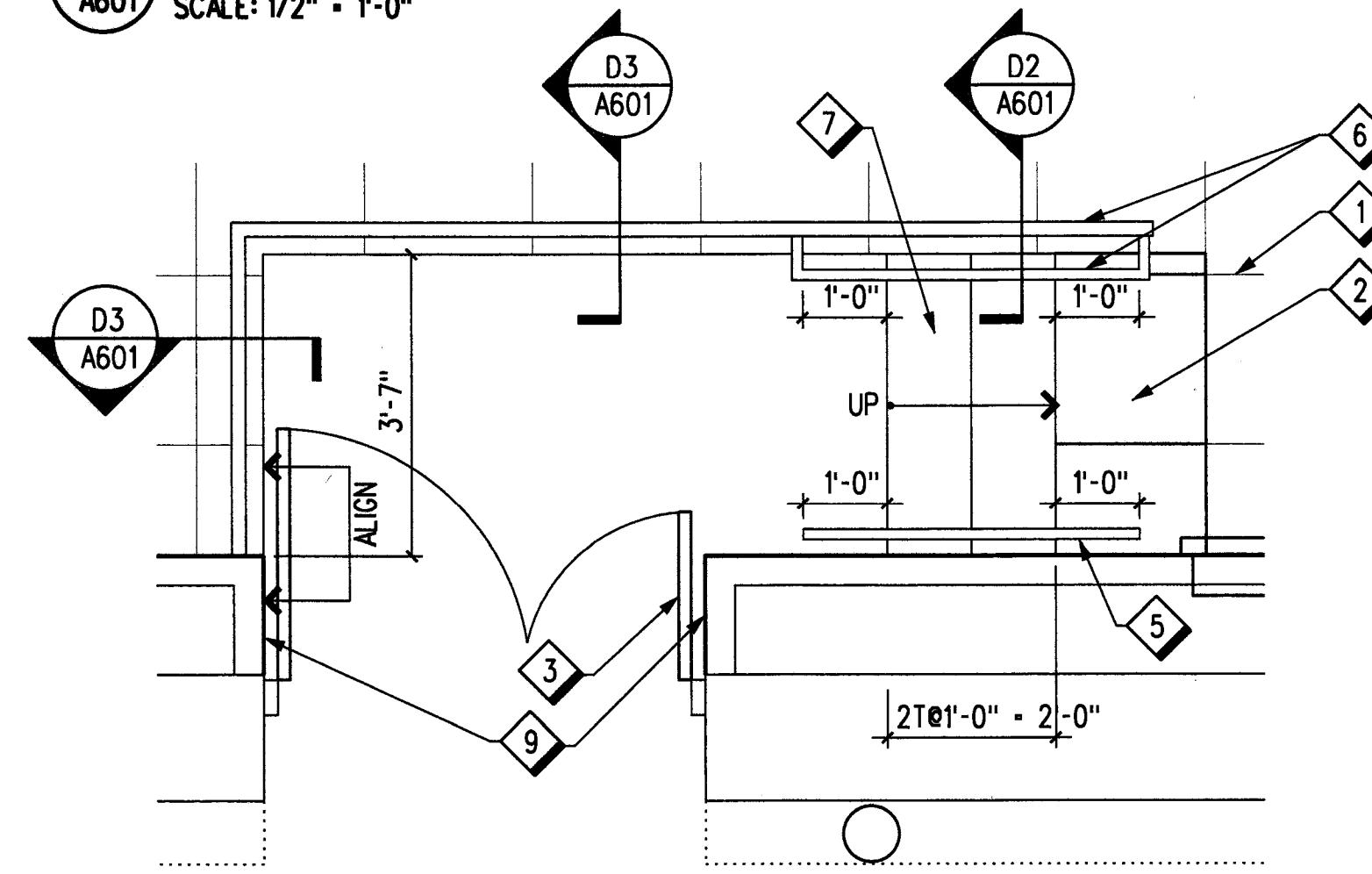
**H6 STAIR NO.3 RAILING DETAIL**  
A601 SCALE: 1/2" = 1'-0"



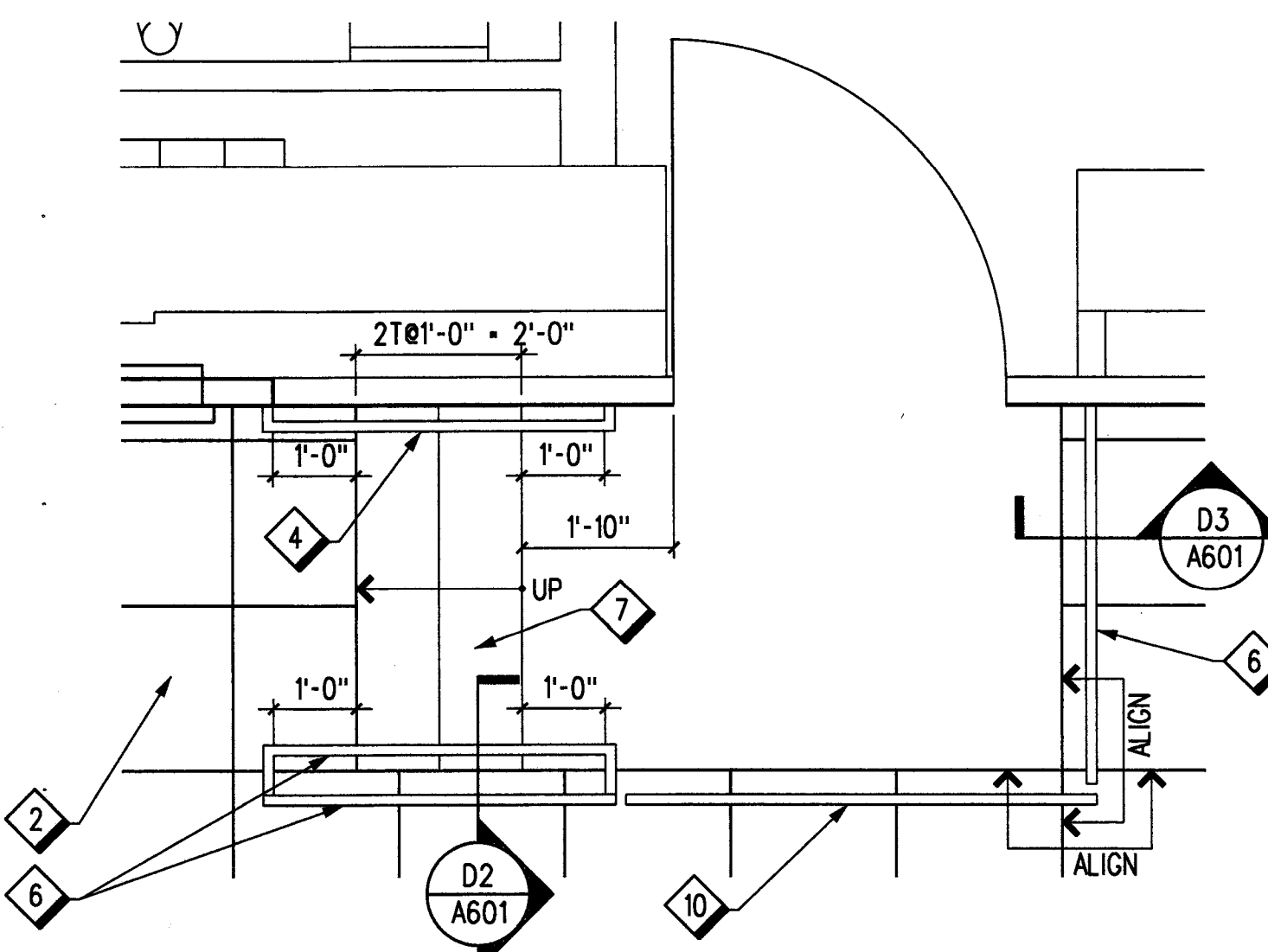
**D6 B120 (NORTH) STAIR PLAN**  
A601 SCALE: 1/2" = 1'-0"



**D8 B120 STAIR AT DOOR 120F PLAN**  
A601 SCALE: 1/2" = 1'-0"

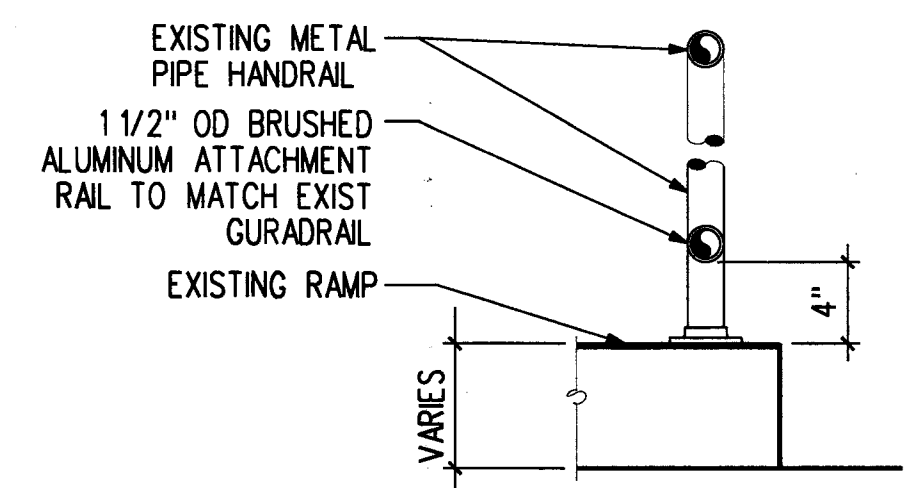


**A8 B120 STAIR AT DOOR 101A PLAN**  
A601 SCALE: 1/2" = 1'-0"

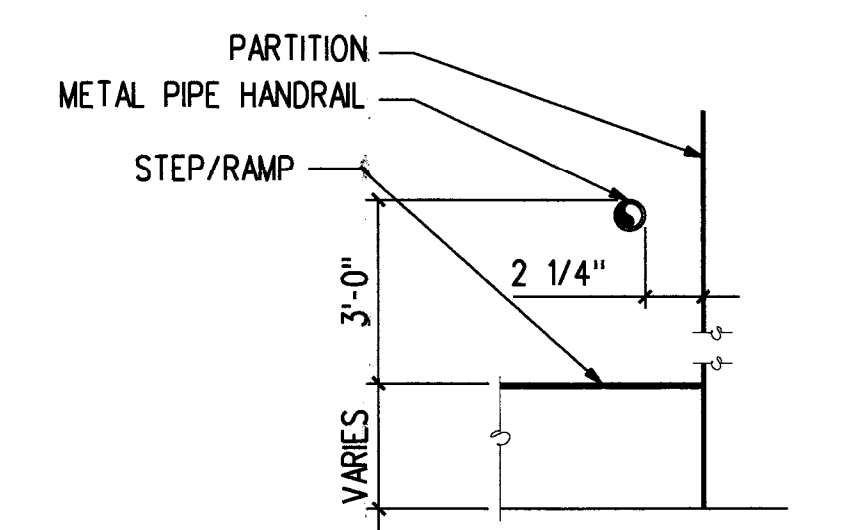


**A6 B134 STAIR PLAN**  
A601 SCALE: 1/2" = 1'-0"

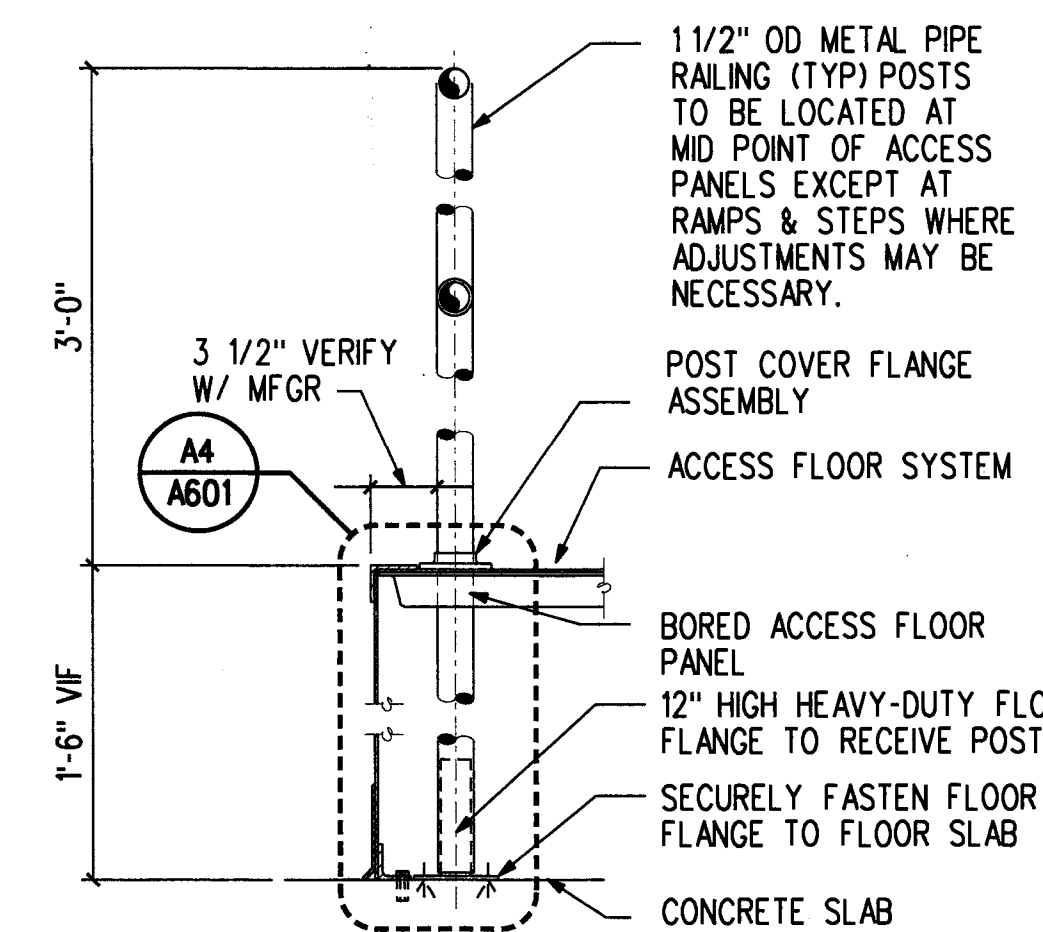
NOTE:  
AREA BELOW ACCESS FLOOR SYSTEM IS CONGESTED. PROTECT ALL CONDUIT, PIPE, AND EQUIP BELOW ACCESS FLOOR FROM DAMAGE.



**H3 ATTACHMENT RAILING DETAIL**  
A601 SCALE: 1/2" = 1'-0"



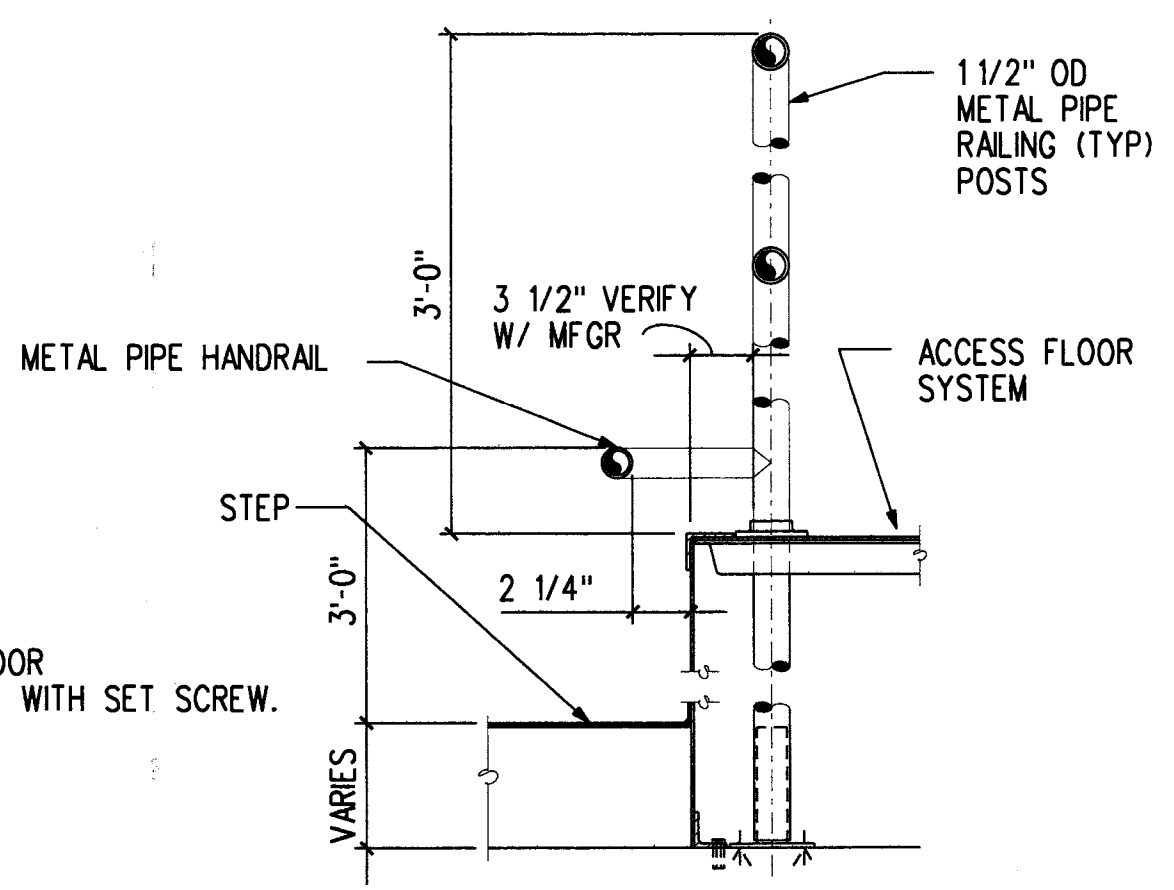
**F3 TYPICAL HANDRAIL DETAIL**  
A601 SCALE: 1/2" = 1'-0"



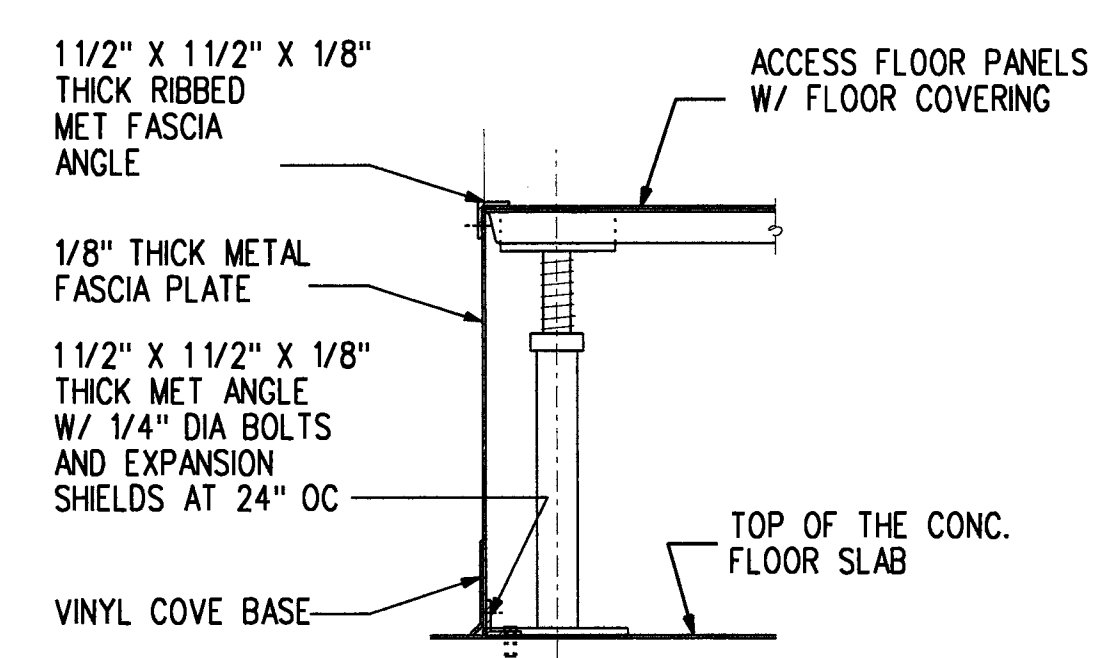
**D3 TYPICAL RAILING AT FASCIA**  
A601 SCALE: 1/2" = 1'-0"

**SHEET NOTES**

- 1 EXISTING ACCESS FLOOR SYSTEM
- 2 ACCESS FLOOR SYSTEM
- 3 INACTIVE LEAF
- 4 WALL MOUNTED HANDRAIL
- 5 FLOOR MOUNTED HANDRAIL
- 6 ACCESS FLOOR SYSTEM HANDRAIL/GUARDRAIL
- 7 ACCESS FLOOR SYSTEM STAIR
- 8 EWC, REFER TO MECH
- 9 VGWB CLOSURE PANELS
- 10 REMOVABLE FIBERGLASS GUARDRAIL
- 11 ADHERE VGWB TO MASONRY WALL. SHIM AS REQ'D.



**D2 ACCESS FLOOR RAILING AT STAIR**  
A601 SCALE: 1/2" = 1'-0"



**A4 TYPICAL ACCESS FLOOR PEDESTAL AND FASCIA ASSEMBLY SECTION**  
A601 SCALE: 1/2" = 1'-0"

NOTE:  
HEIGHT OF ACCESS FLOOR TO MATCH EXISTING ACCESS FLOOR. HEIGHT OF THE EXISTING ACCESS FLOOR IS APPROXIMATELY 18" V.F.

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**JACOBS**

DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION  
WESTERN SERVICE AREA  
RENTON, WA

CONTROL WING BASEMENT  
AND CHILLER/COOLING TOWER MODERNIZATION  
OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER  
ENLARGED PLANS AND SECTIONS

FREMONT OAKLAND (ZOA) ARTCC

REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD

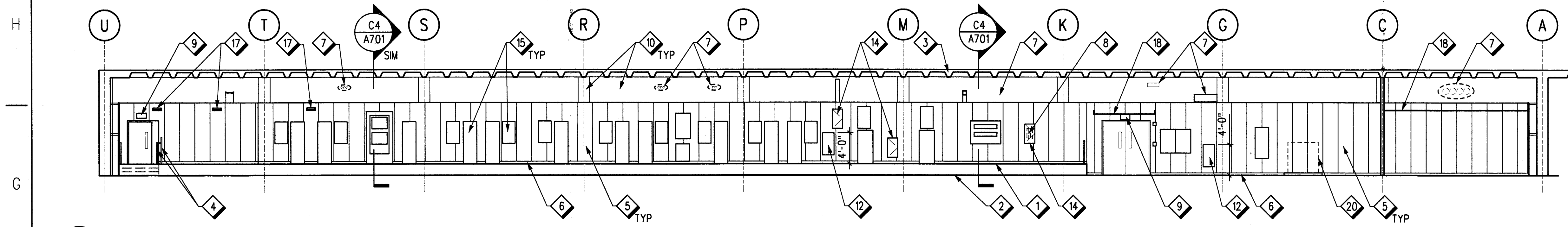
DESIGNED BY: E.ROLAF  
DRAWN BY: E.ROLAF  
CHECKED BY: W.STEVENS

ISSUED BY: AIRWAY FACILITY DIVISION

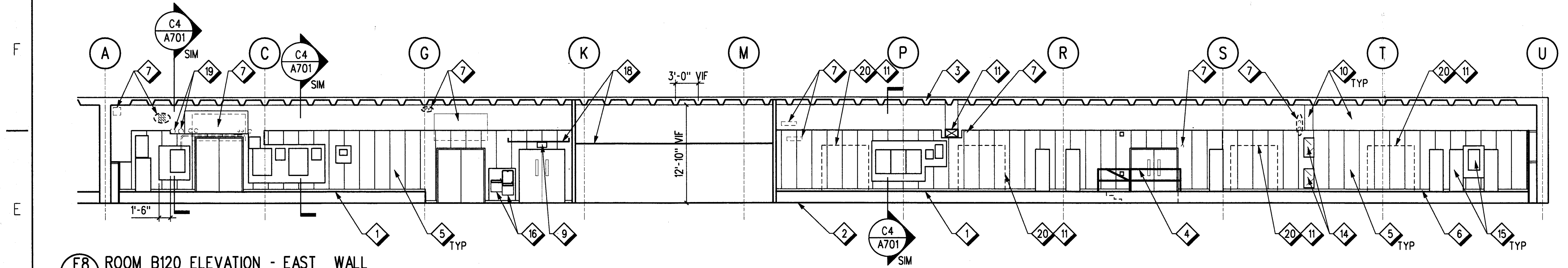
DATE: 07/08/2015  
JCN

OAKLAND ARTCC  
FREMONT,  
CALIFORNIA

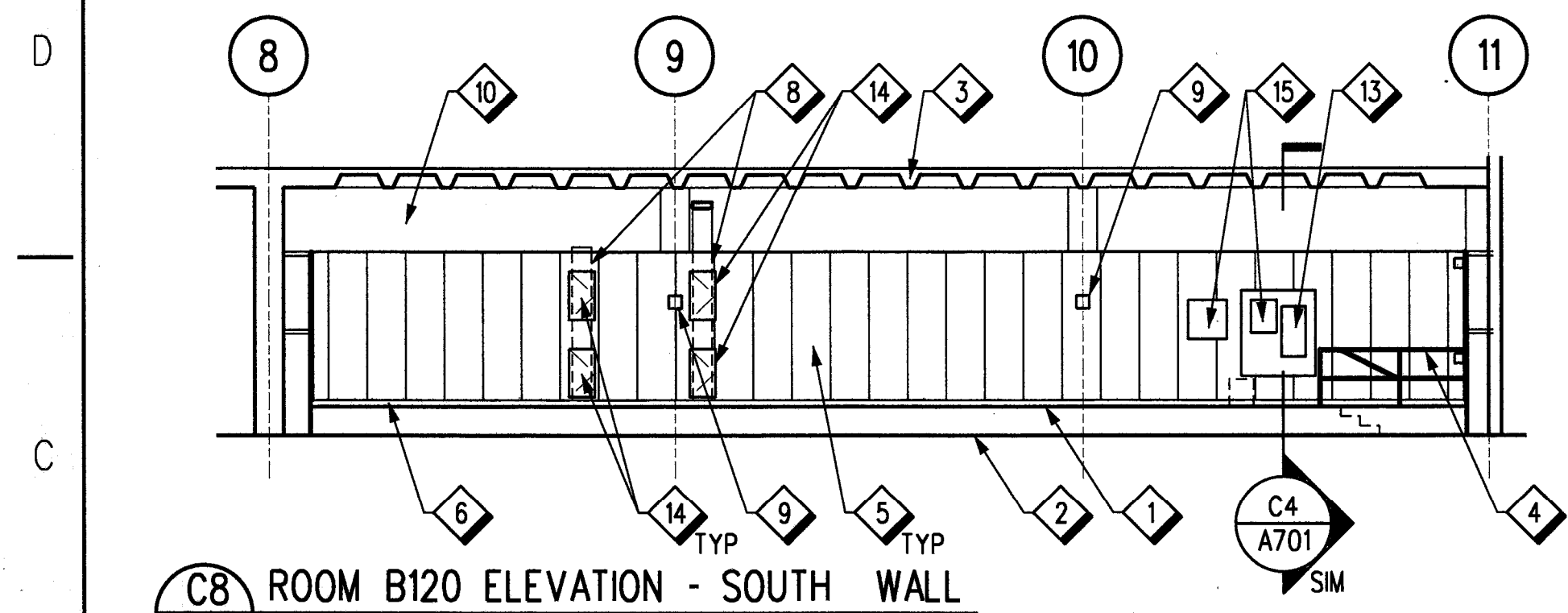
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TIME: 10:15 AM  
USER: JSUSER



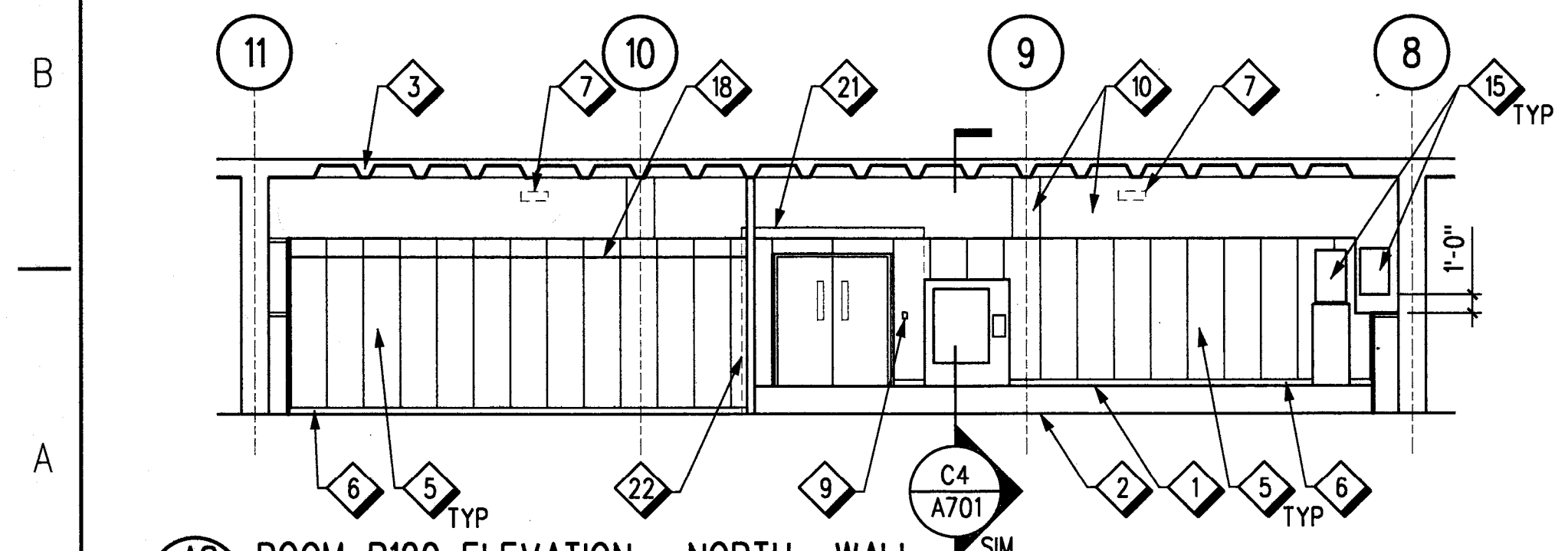
**G8 ROOM B120 ELEVATION - WEST WALL**  
A701 SCALE: 1/8" = 1'-0"



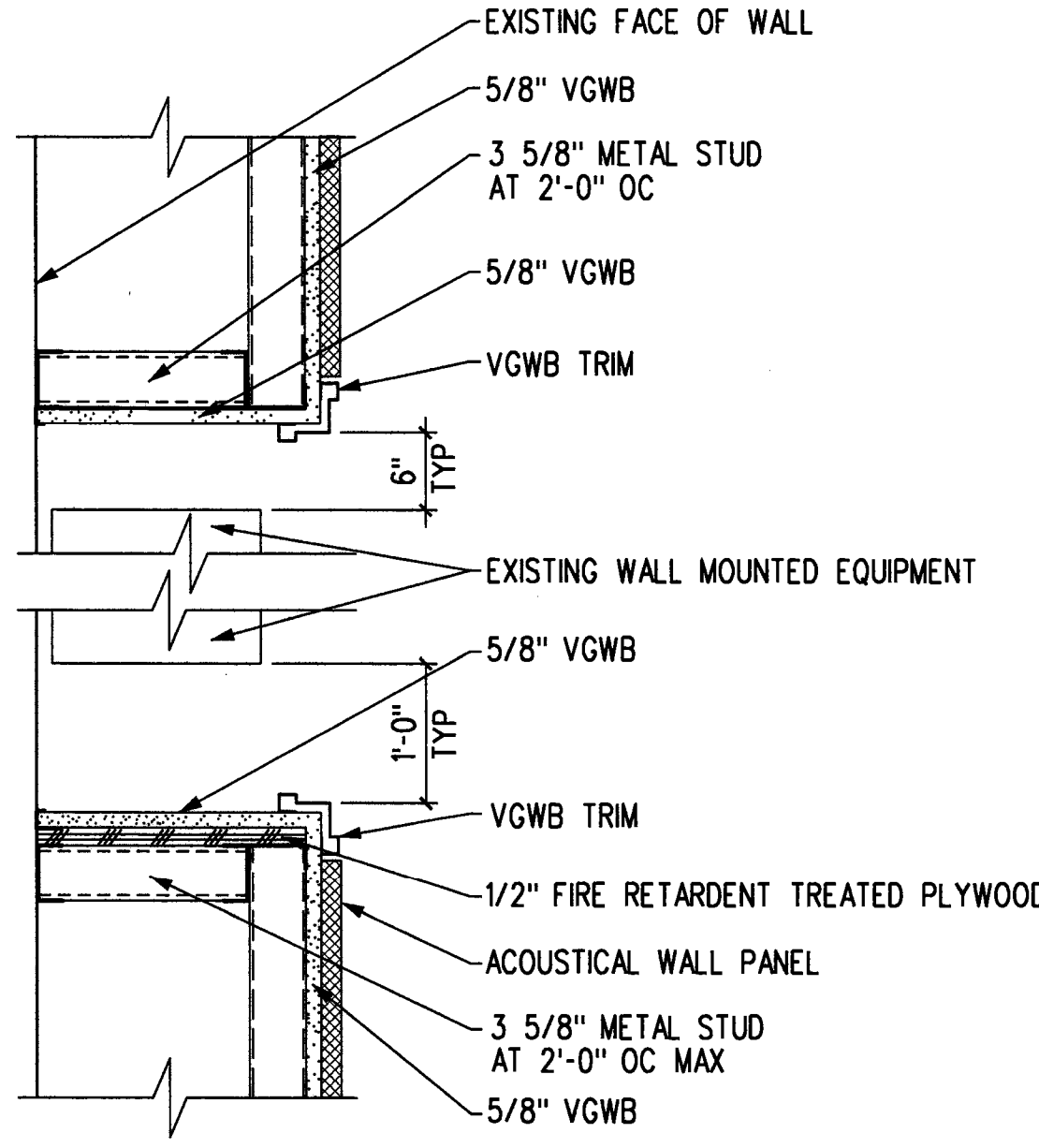
**E8 ROOM B120 ELEVATION - EAST WALL**  
A701 SCALE: 1/8" = 1'-0"



**C8 ROOM B120 ELEVATION - SOUTH WALL**  
A701 SCALE: 1/8" = 1'-0"



**A8 ROOM B120 ELEVATION - NORTH WALL**  
A701 SCALE: 1/8" = 1'-0"

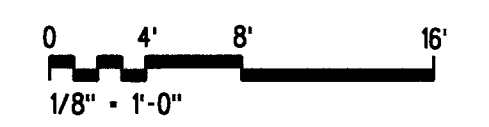


NOTE:  
1. JAMB OF RECESS SIMILAR TO HEAD DETAIL.  
2. COORD CLR DIMENSIONS FOR OPERATIONAL EQUIPMENT W/ COR AND FAA MAINTENANCE, TYP.

**C4 TYPICAL DETAIL AT WALL MOUNTED EQUIPMENT**  
A701 SCALE: 1 1/2" = 1'-0"

**SHEET NOTES**

- 1 EXISTING ACCESS FLOOR SYSTEM
- 2 EXISTING FLOOR SLAB
- 3 EXISTING FIRST FLOOR WAFFLE SLAB
- 4 ACCESS FLOOR SYSTEM HANDRAIL AT 3'-0"
- 5 2'-0" WIDE ACOUSTICAL WALL PANEL
- 6 FLOOR BASE
- 7 SMOKE AND FIRE STOP ALL OPENINGS, VIF QUANTITY AND TYPE
- 8 DASHED LINE INDICATES EXISTING EQUIPMENT BEHIND FURRED OUT PARTITION
- 9 ELEC FIXTURE, COORD W/ ELEC LOCATION OF EQUIP ON PARTITION
- 10 PAINT VISIBLE PORTIONS OF CONCRETE WALLS AND COLUMNS
- 11 EXISTING MECHANICAL EQUIPMENT, PROTECT EQUIPMENT FROM DAMAGE.
- 12 FEC
- 13 EXISTING FEC
- 14 METAL ACCESS DOOR (1'-4" X 2'-6")
- 15 EXISTING WALL MOUNTED EQUIPMENT, PROTECT FROM DAMAGE.
- 16 ABLE BODIED AND ACCESSIBLE EWC, REFER TO MECH
- 17 EXISTING CABLE TRAY. CUT AWP TIGHT TO CABLE TRAY. DO NOT DAMAGE CABLE TRAY.
- 18 SUSPENDED CEILING SYSTEM
- 19 EXISTING PIPE AND CONDUIT. CUT AWP TIGHT TO PIPE AND CONDUIT.
- 20 DASHED LINE INDICATES MECH EQUIP IN FRONT OF FURRED OUT PARTITION
- 21 VGWB
- 22 DASHED LINE INDICATES EXISTING OPENING IN CIP CONCRETE WALL



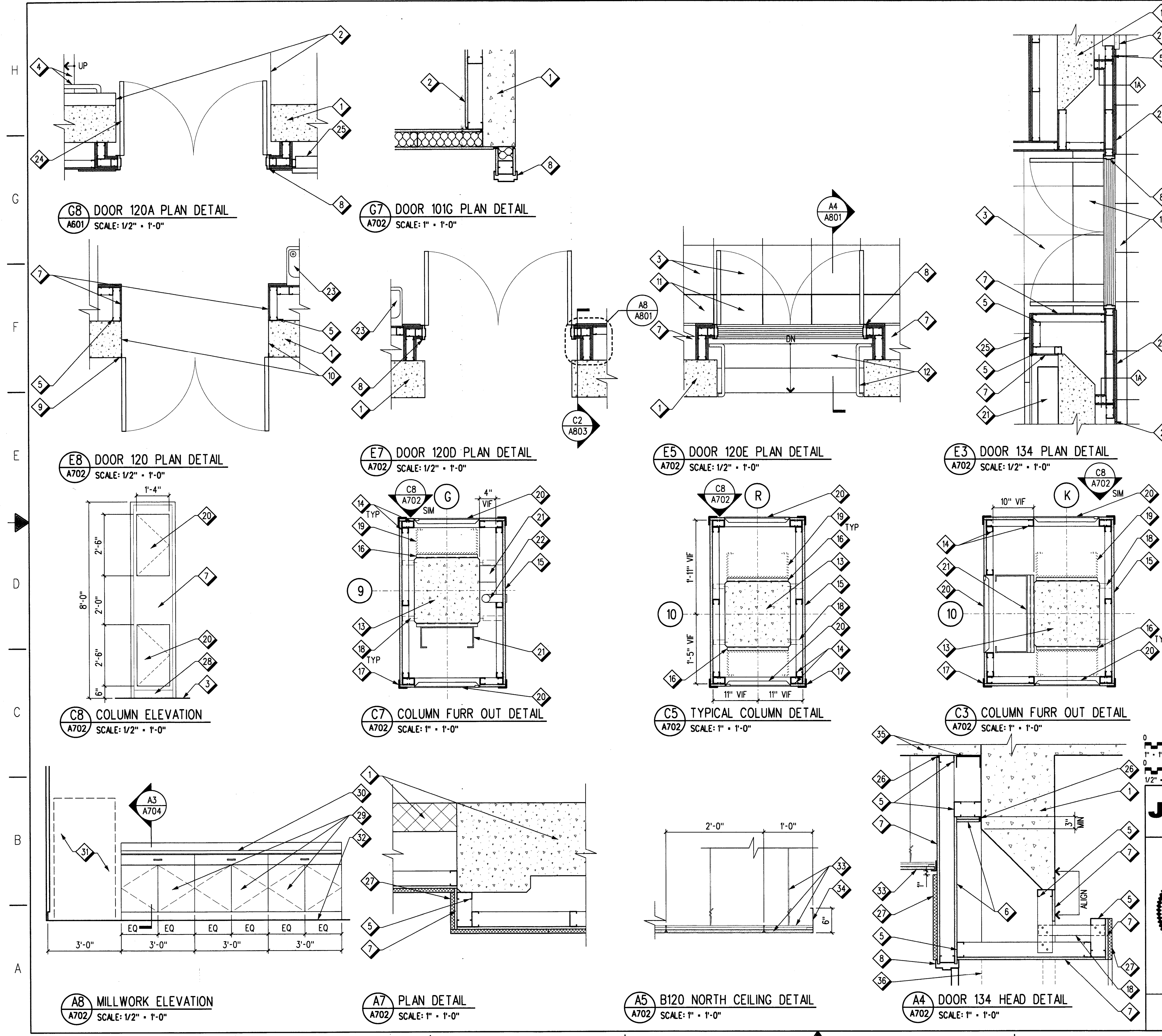
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**JACOBS**



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DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER INTERIOR ELEVATIONS AND DETAILS FREMONT OAKLAND (ZOA) ARTCC					
DESIGNED BY	E.ROLAF	ISSUED BY	AIRWAY FACILITY DIVISION	DATE	07/08/2015
DRAWN BY	E.ROLAF	CHECKED BY	W. STEVENS	DRAWING NO.	ZOA - D - CWBMS - A701

OAKLAND ARTCC  
FREMONT,  
CALIFORNIA



- SHEET NOTES**
- 1 EXISTING WALL
  - 2 EXISTING PARTITION. PATCH AND REPAIR AND PAINT TO MATCH ADJACENT SURFACES
  - 3 EXISTING ACCESS FLOOR SYSTEM
  - 4 EXISTING STAIR AND HANDRAIL
  - 5 3 5/8" METAL STUD AT 2'-0" OC MAX
  - 6 5/8" GWB
  - 7 5/8" VGWB
  - 8 DOOR FRAME
  - 9 EXISTING EMBEDDED STEEL ANGLE DOOR FRAME
  - 10 PAINT WALL TO MATCH VGWB
  - 11 ACCESS FLOOR SYSTEM
  - 12 ACCESS FLOOR SYSTEM STAIR AND HANDRAIL
  - 13 EXISTING CONCRETE COLUMN
  - 14 15/8" METAL STUD W/ RUNNER TOP AND BOTTOM
  - 15 REMOVABLE VGWB, TYP
  - 16 SLOTTED CHANNEL FRAMING AT 4'-0" OC BEHIND COLUMN ENCLOSURE
  - 17 METAL CORNER RETAINER W/ VINYL FACING
  - 18 METAL STUD BRACING
  - 19 VERTICAL CABLE TRAY/FUTURE VERTICAL CABLE TRAY (NIC), VIF
  - 20 METAL ACCESS DOOR
  - 21 EXIST ELEC EQUIP
  - 22 EXIST MECH EQUIP, REFER TO MECH
  - 23 EWC, REFER TO MECH
  - 24 INACTIVE LEAF
  - 25 FEC
  - 26 SEALANT
  - 27 ACOUSTICAL WALL PANEL
  - 28 FLOOR BASE
  - 29 BASE CABINET
  - 30 COUNTER TOP
  - 31 REFRIGERATOR, NIC
  - 32 FINISH FLOOR, REFER TO FINISH SCHEDULE
  - 33 SUSPENDED CEILING SYSTEM
  - 34 SUSPENDED CEILING SYSTEM METAL TRIM
  - 35 EXISTING FIRST FLOOR SLAB STRUCTURE
  - 36 DASHED LINE INDICATES CONCRETE WALL BEHIND PARTITION

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**JACOBS**

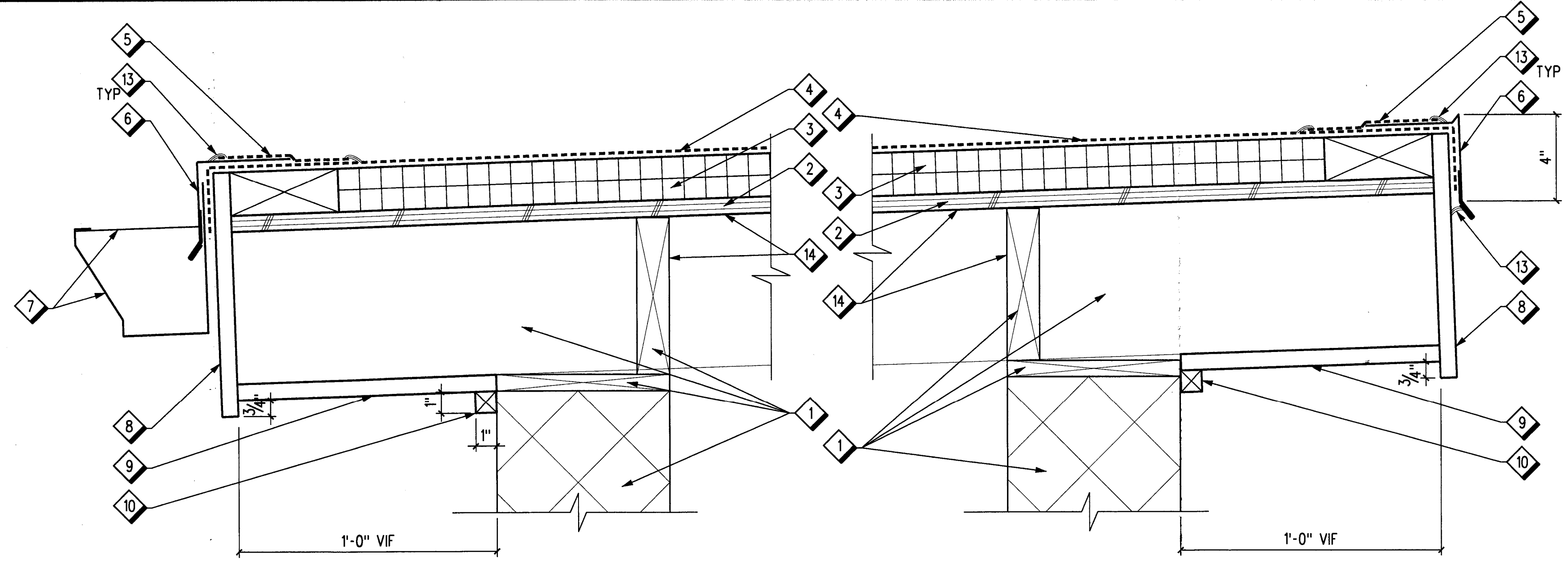
**DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**  
WESTERN SERVICE AREA RENTON, WA

**CONTROL WING BASEMENT  
AND CHILLER/COOLING TOWER MODERNIZATION  
OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER**  
ENLARGED DETAILS

FREMONT OAKLAND (ZOA) ARTCC

REVIEWED BY	SUBMITTED BY	APPROVED BY
	RS Braafisch	<i>[Signature]</i>
DESIGNED BY	ISSUED BY	DATE
E. ROLAF	AIRWAY FACILITY DIVISION	07/08/2015
DRAWN BY	CHECKED BY	DRAWING NO.
E. ROLAF	W. STEVENS	ZOA - D - CWBMS - A702

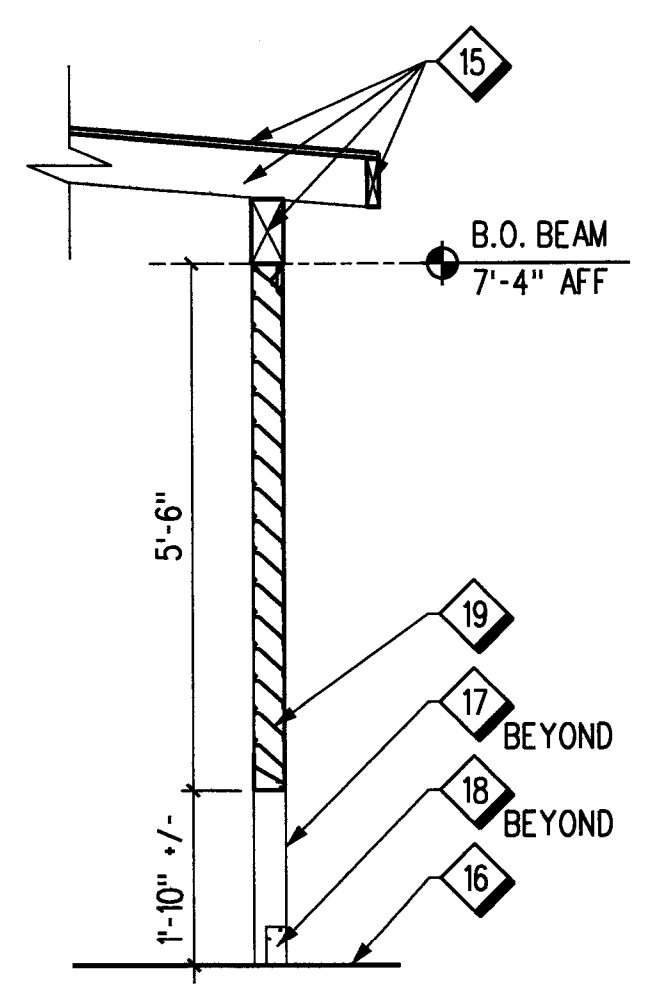
7/2/2015



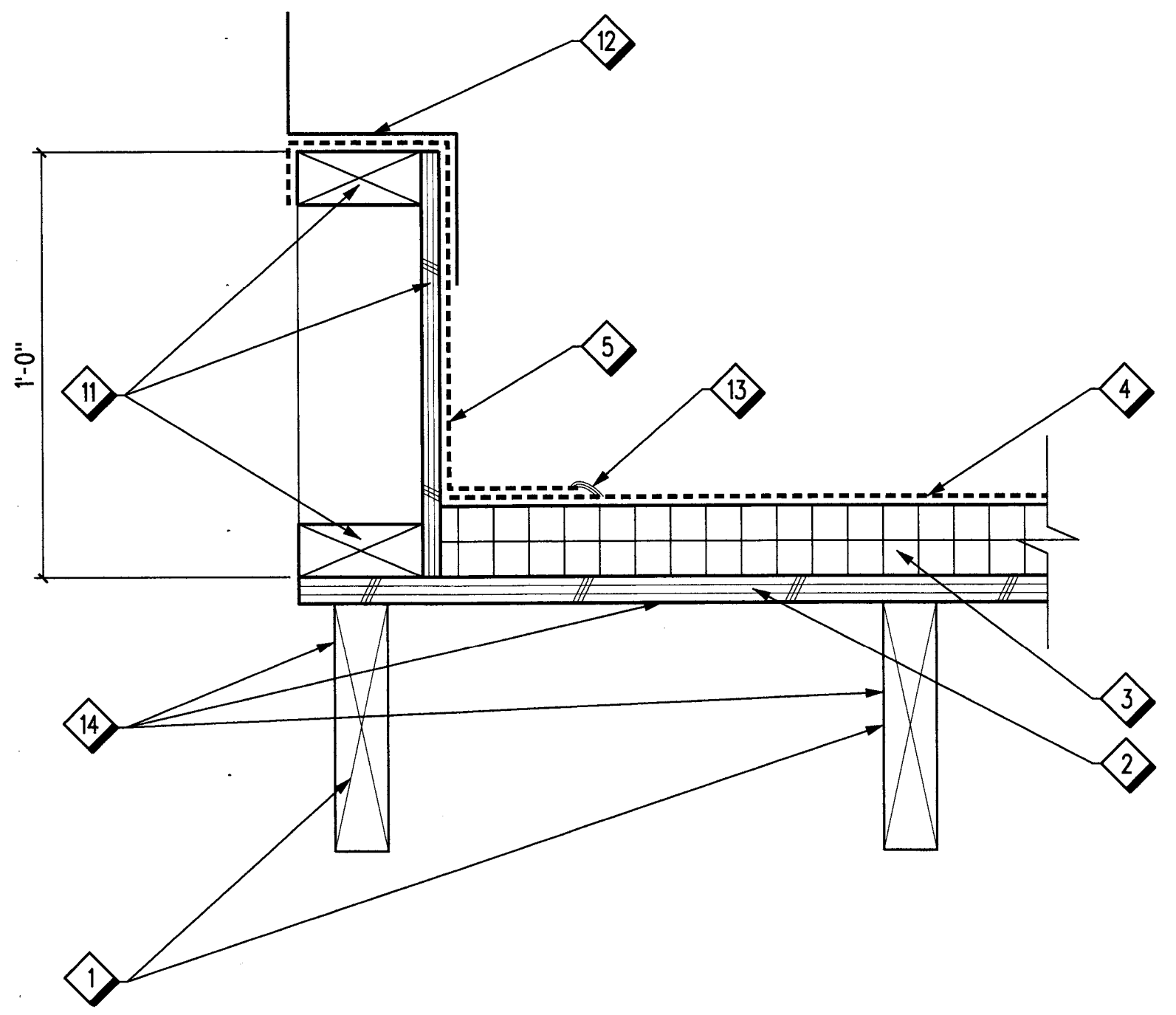
**F6** CHEMICAL TREATMENT BUILDING ROOF DETAIL  
A703 SCALE: 3" = 1'-0"

**F4** CHEMICAL TREATMENT BUILDING ROOF DETAIL  
A703 SCALE: 3" = 1'-0"

- SHEET NOTES**
- 1 EXISTING STRUCTURE
  - 2 3/4" PRESERVATIVE TREATED PLYWOOD
  - 3 2" RIGID INSULATION
  - 4 ROOF MEMBRANE
  - 5 ROOF MEMBRANE FLASHING
  - 6 METAL DRIP EDGE
  - 7 REINSTALL GUTTER AND GUTTER STRAP
  - 8 PVC FASCIA
  - 9 PVC SOFFIT
  - 10 PVC TRIM
  - 11 ROOF CURB ASSEMBLY: PRESSURE TREATED 2 X 4 FRAMING W/ 1/2" PLYWOOD SHEATHING ON EXTERIOR FACES.
  - 12 MECH EQUIP, REFER TO MECH
  - 13 SEALANT
  - 14 PAINT UNDERSIDE OF ROOF, PT3
  - 15 EXISTING LEAN-TO ROOF AND STRUCTURE, PROTECT FROM DAMAGE.
  - 16 EXISTING CONCRETE SLAB
  - 17 4X4 WOOD POST
  - 18 12 GA POST BASE W/ ZMAX COATING (ZMAX G185 TRIPLE ZINC COATING). BASIS OF DESIGN: SIMPSON STRONG-TIE RPBZ RETROFIT POST BASE.
  - 19 BENT METAL LOUVER
  - 20 18 GA POST CAP W/ ZMAX COATING (ZMAX G185 TRIPLE ZINC COATING). BASIS OF DESIGN: SIMPSON STRONG-TIE AC4.
  - 21 3/8" DIA ADHESIVE ANCHOR BOLT W/ 3/8" EMBEDMENT
  - 22 CLIP AND FASTENERS
  - 23 BACKER ROD AND SEALANT

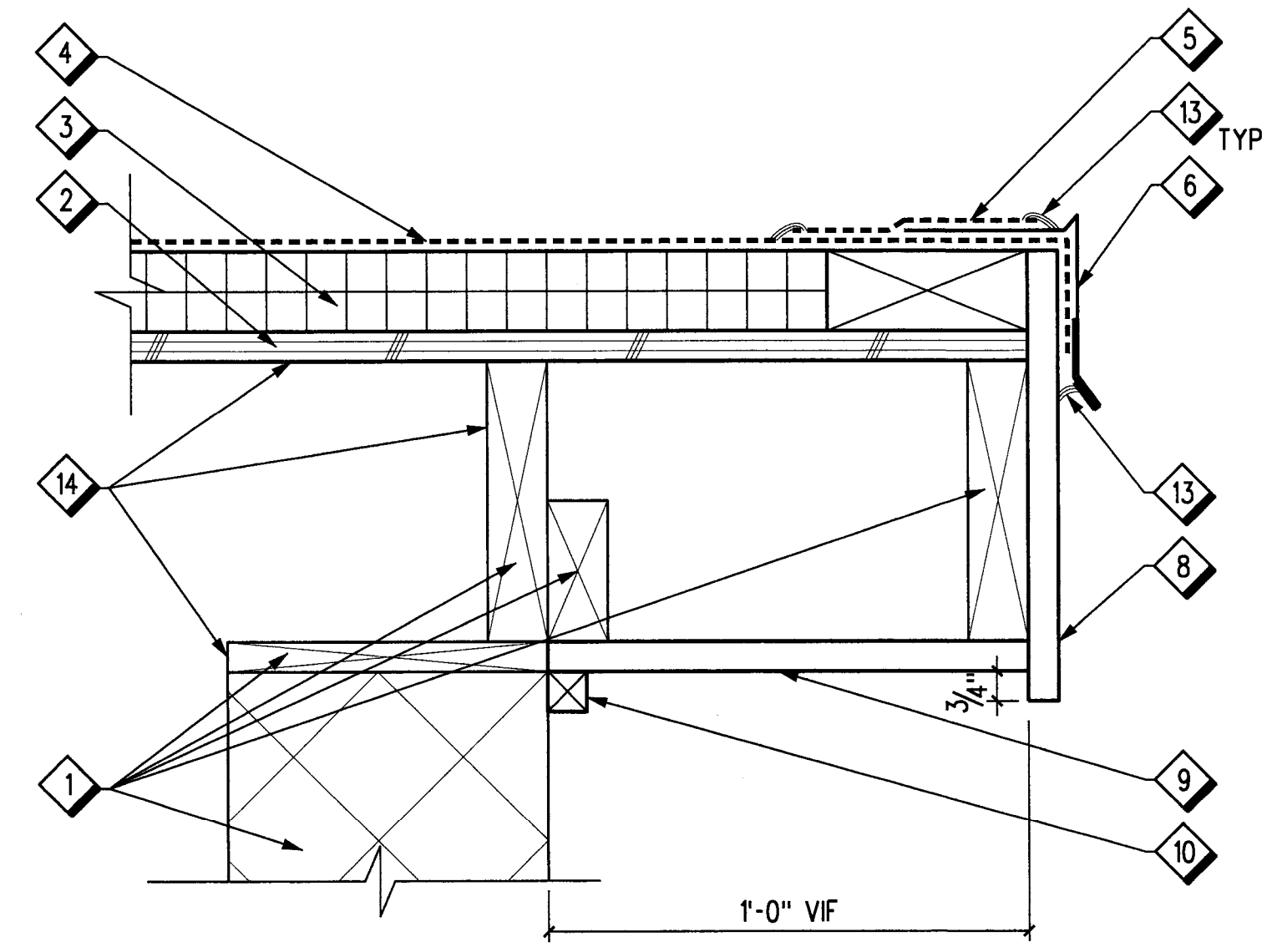


**B8** LOUVER DETAIL  
A703 SCALE: 1/2" = 1'-0"

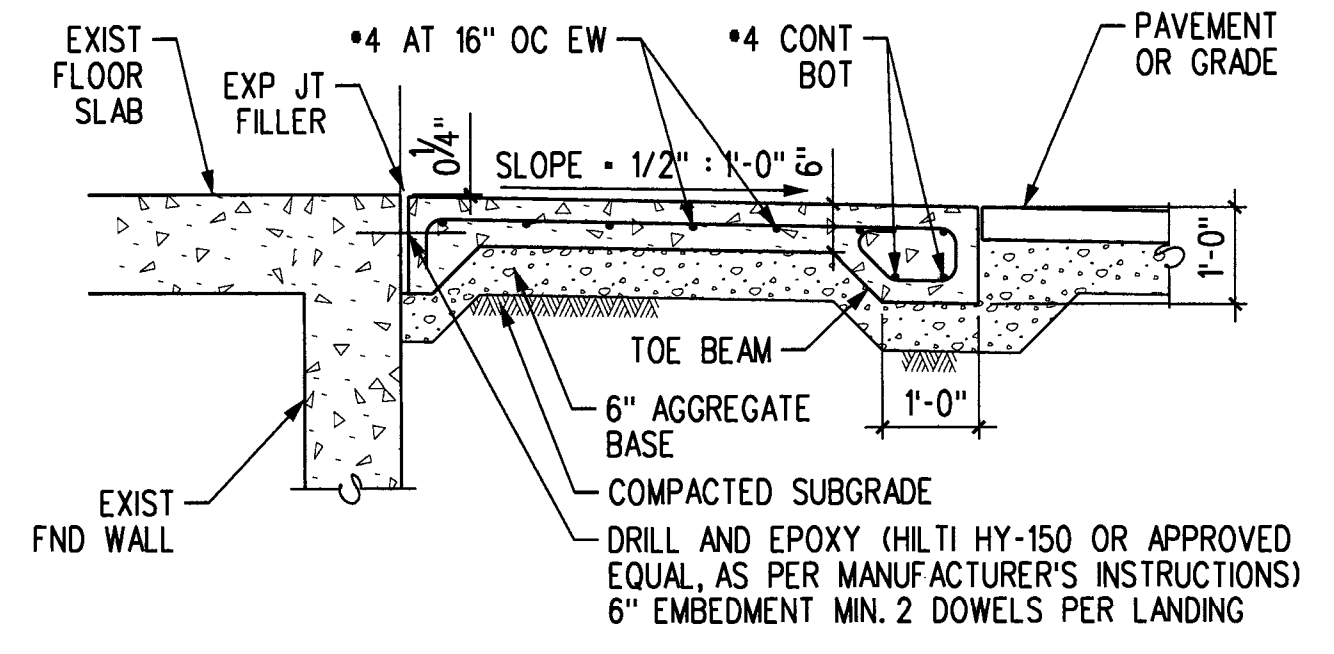


**B6** CHEMICAL TREATMENT BUILDING ROOF CURB  
A703 SCALE: 3" = 1'-0"

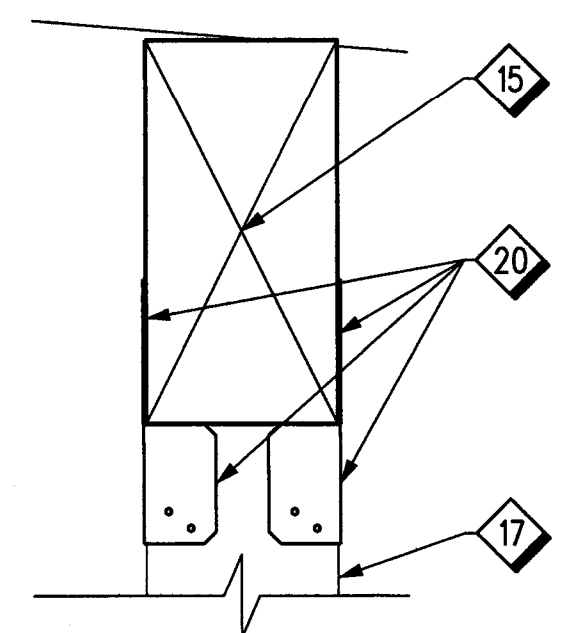
NOTE:  
ADD ADDITIONAL SUPPORT FOR ROOF CURB BELOW PLYWOOD DECKING IF REQUIRED.



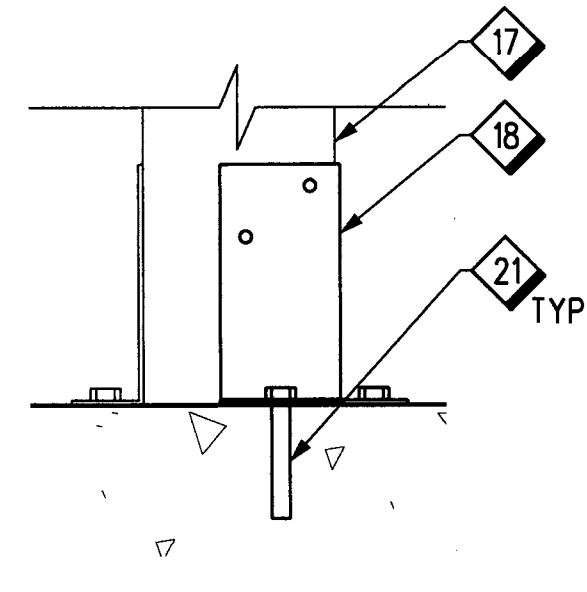
**B4** CHEMICAL TREATMENT BUILDING ROOF DETAIL  
A703 SCALE: 3" = 1'-0"



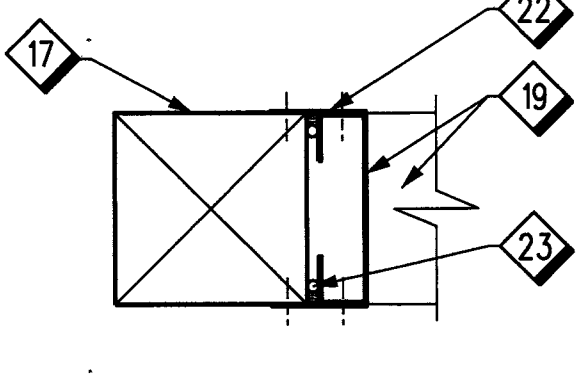
**A4** CHEMICAL TREATMENT BUILDING RAMP DETAIL  
A703 SCALE: 1/2" = 1'-0"



**A8** WOOD POST CAP DETAIL  
A703 SCALE: 3" = 1'-0"



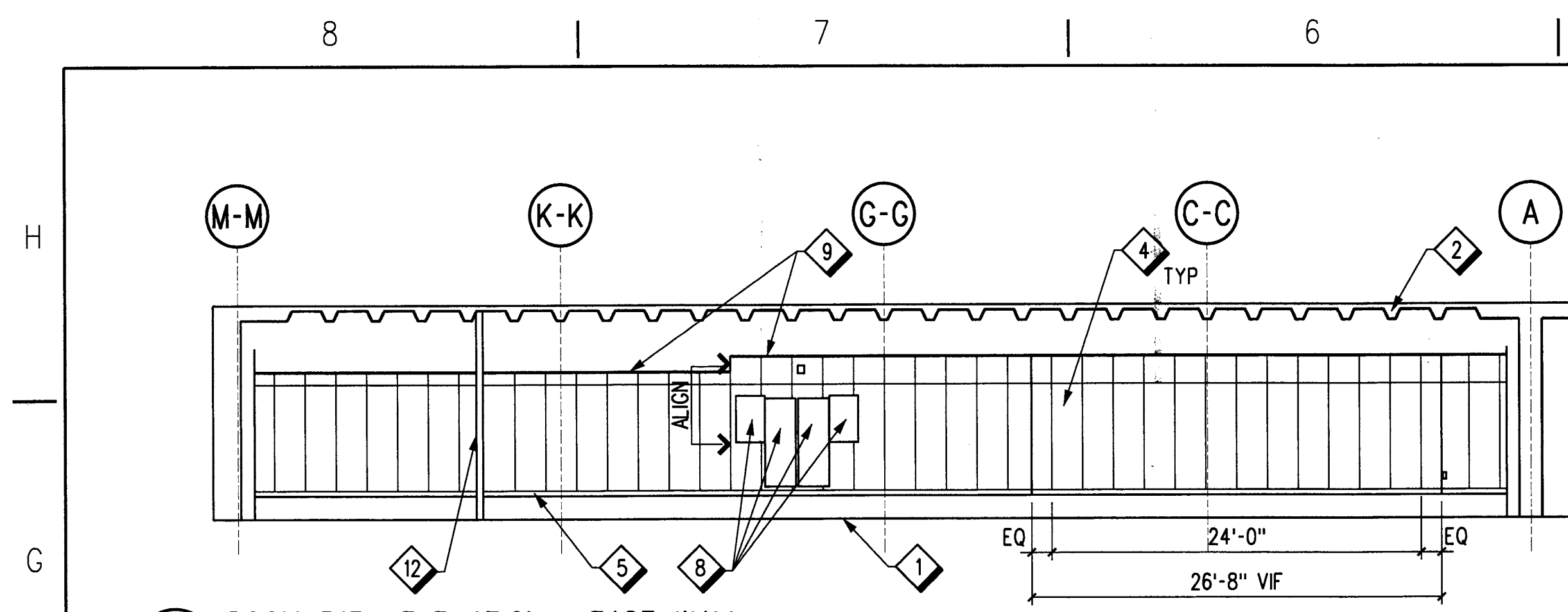
**A7** WOOD POST BASE DETAIL  
A703 SCALE: 3" = 1'-0"



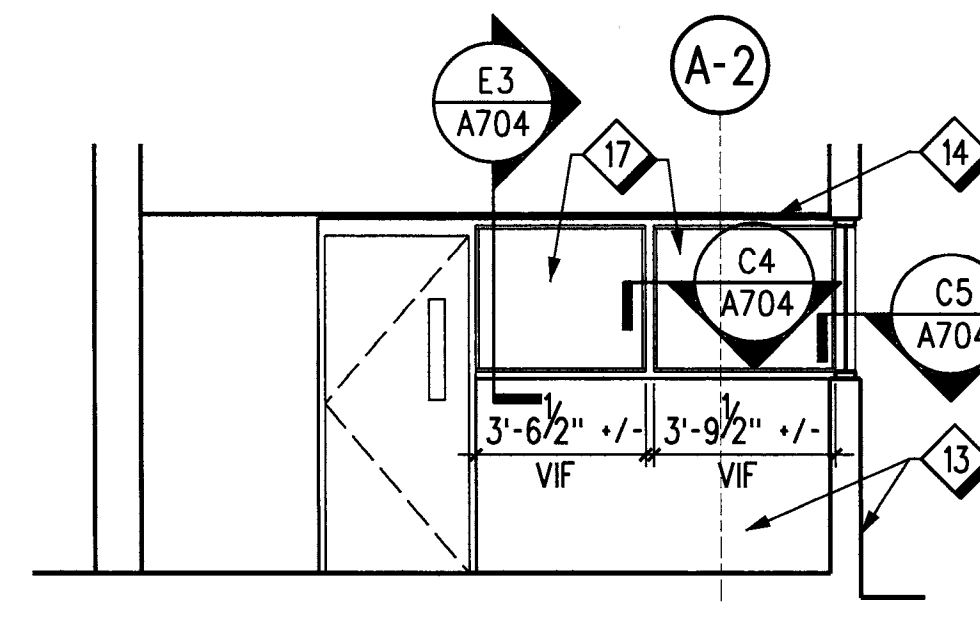
**A6** LOUVER JAMB  
A703 SCALE: 3" = 1'-0"

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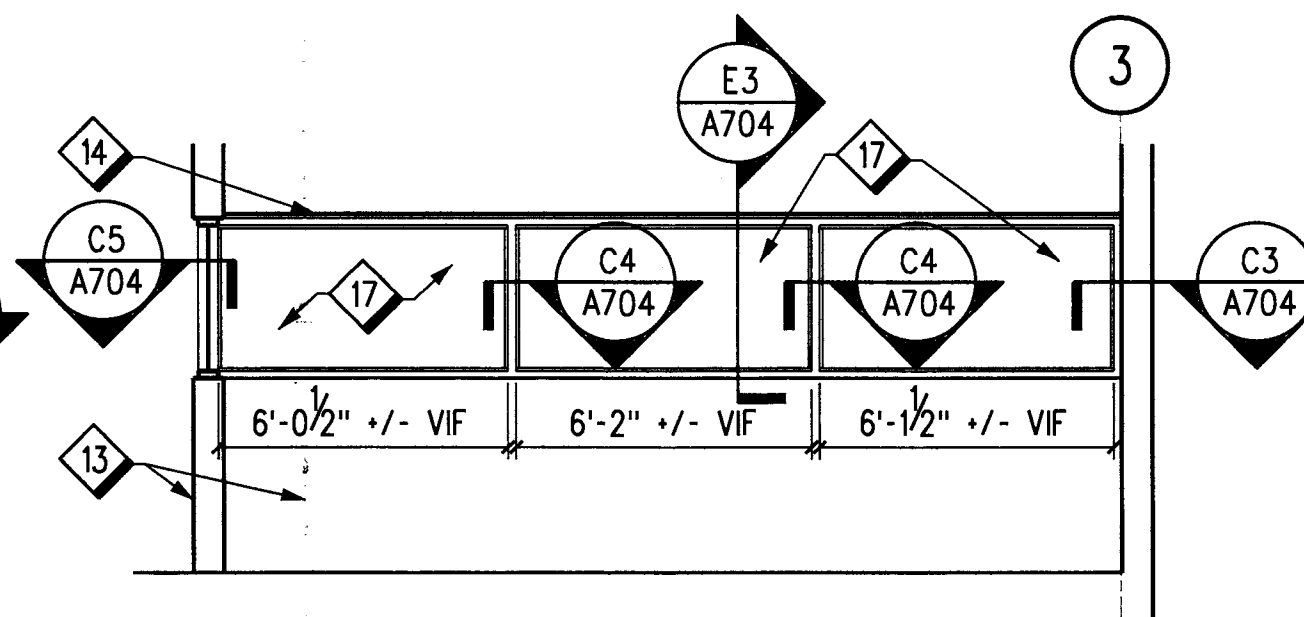
<b>JACOBS</b>									
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD				
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA									
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER CHEMICAL TREATMENT BUILDING DETAILS									
FREMONT					OAKLAND (ZOA) ARTCC				
REVIEWED BY	SUBMITTED BY	APPROVED BY							
	RSBradfish								
SUBMITTER'S TITLE		APPROVER'S TITLE							
DESIGNED BY	E.ROLAF	ISSUED BY	DATE 07/08/2015	JCN					
DRAWN BY	E.ROLAF	AIRWAY FACILITY DIVISION	DRAWING NO.	REV.					
CHECKED BY	W.STEVENS	ZOA - D - CWBMS - A703							
OAKLAND ARTCC, FREMONT, CALIFORNIA									
7/2/2015									



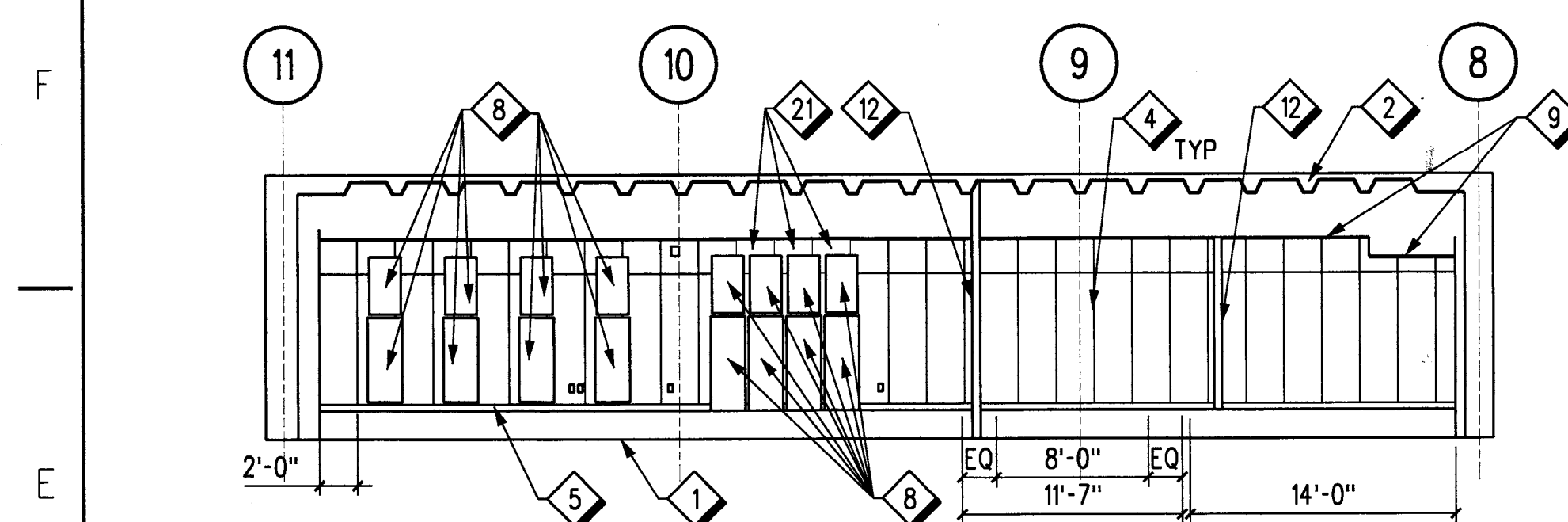
**G8 ROOM B134 ELEVATION - EAST WALL**  
A704 SCALE: 1/8" = 1'-0"



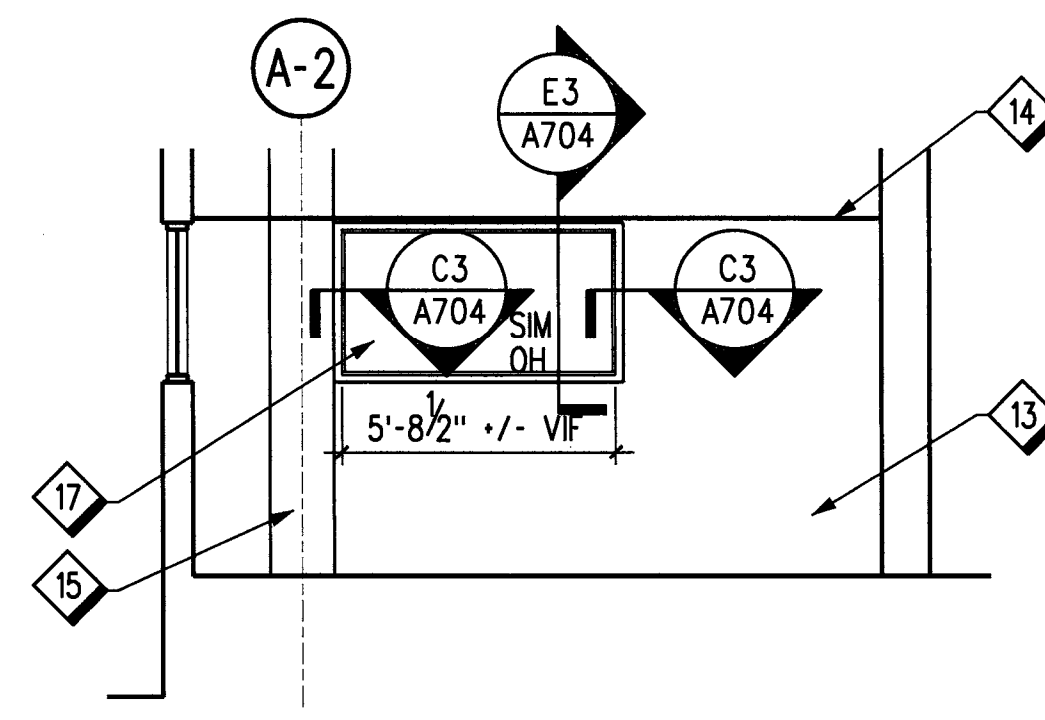
**G5 ROOM B117 ELEVATION - WEST WALL**  
A704 SCALE: 1/4" = 1'-0"



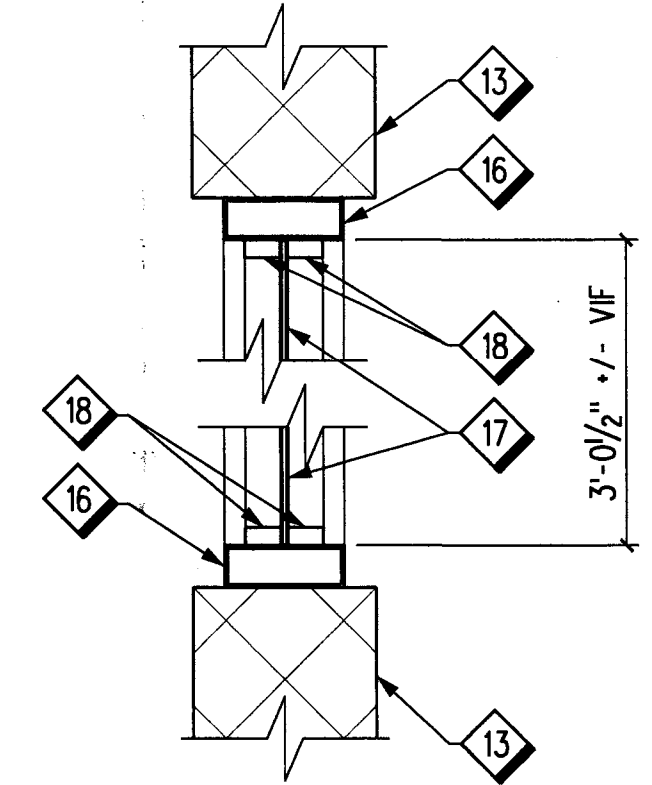
**G3 ROOM B117 ELEVATION - NORTH WALL**  
A704 SCALE: 1/4" = 1'-0"



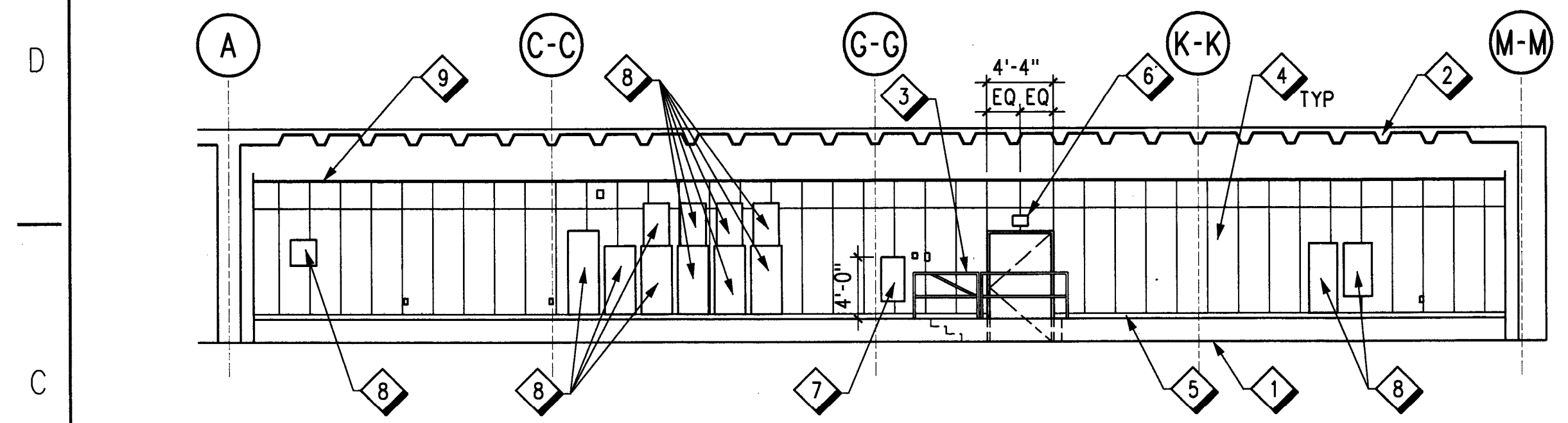
**E8 ROOM B134 ELEVATION - NORTH WALL**  
A704 SCALE: 1/8" = 1'-0"



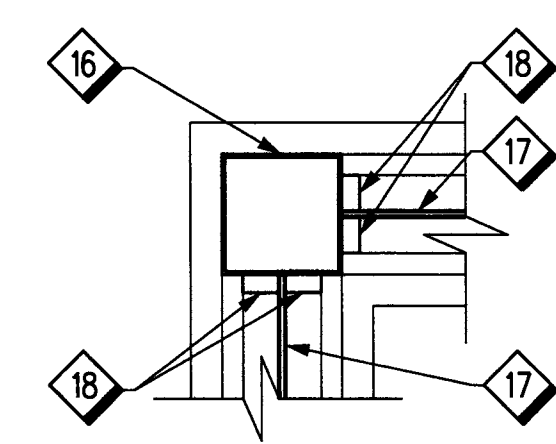
**E5 ROOM B117 ELEVATION - EAST WALL**  
A704 SCALE: 1/4" = 1'-0"



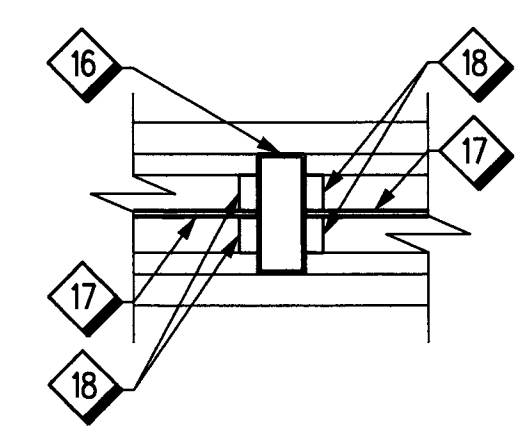
**E3 WINDOW SILL/HEAD DETAIL**  
A704 SCALE: 1 1/2" = 1'-0"



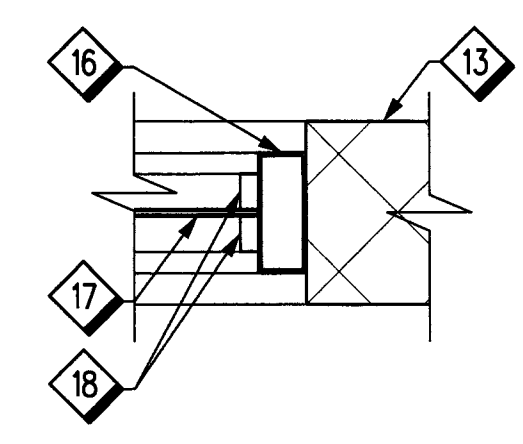
**C8 ROOM B134 ELEVATION - WEST WALL**  
A704 SCALE: 1/8" = 1'-0"



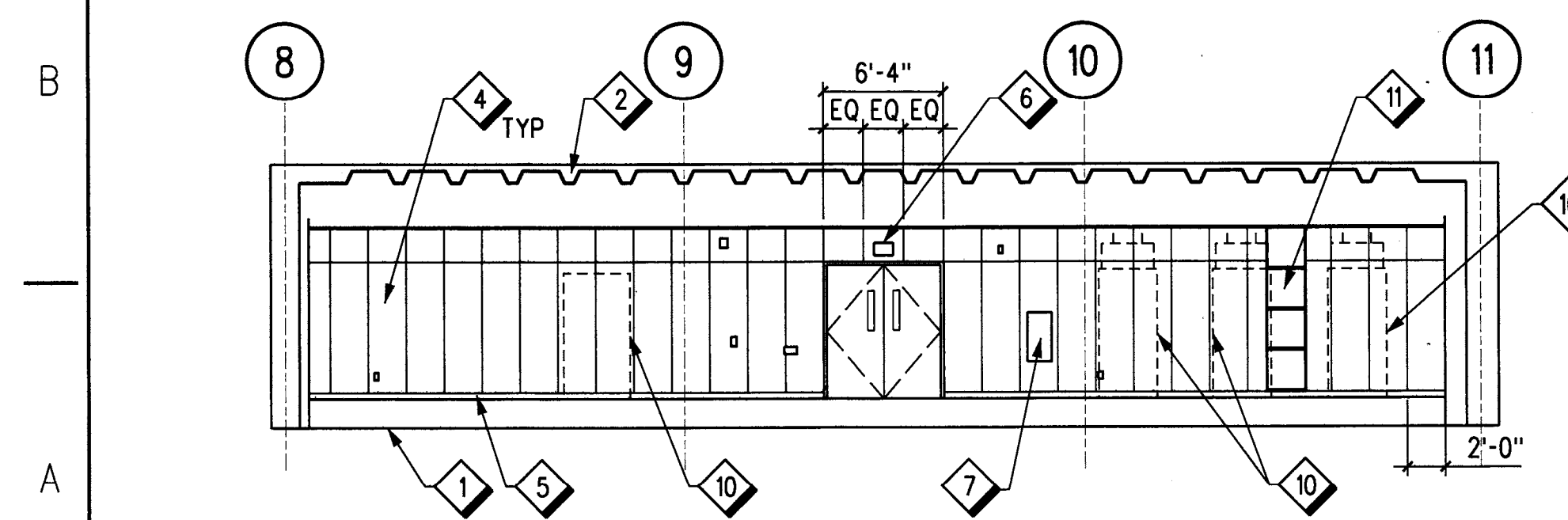
**C5 WINDOW JAMB**  
A704 SCALE: 1 1/2" = 1'-0"



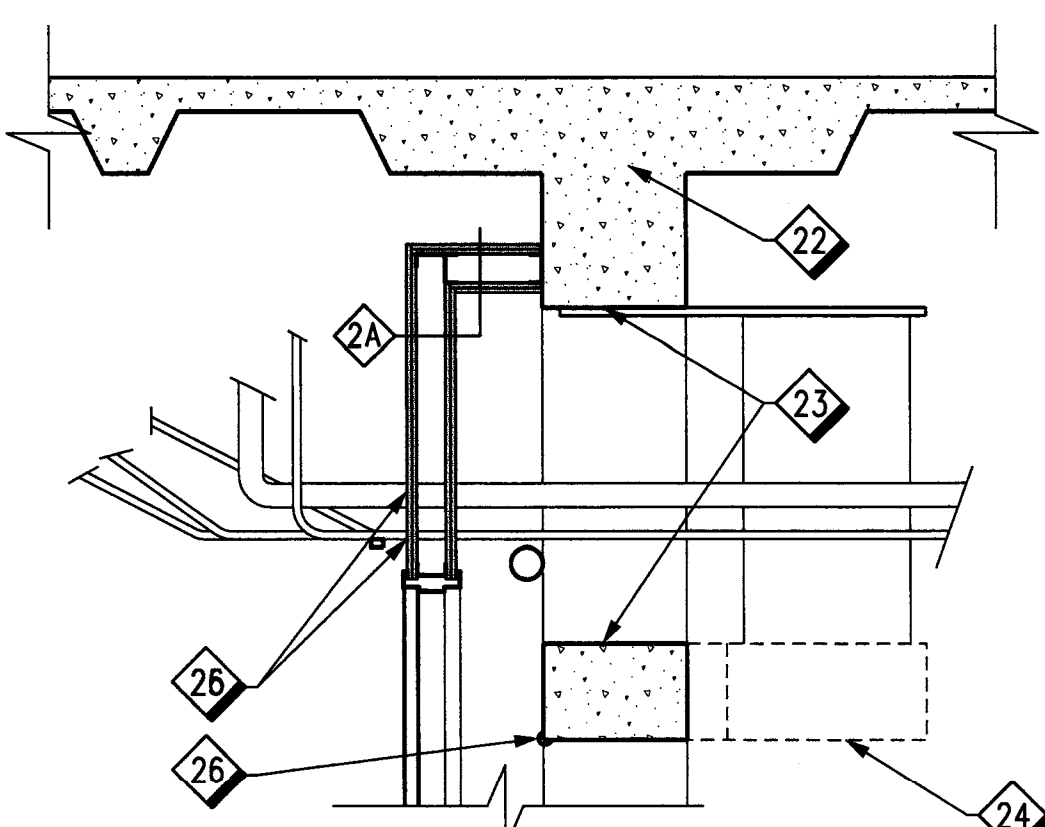
**C4 WINDOW JAMB**  
A704 SCALE: 1 1/2" = 1'-0"



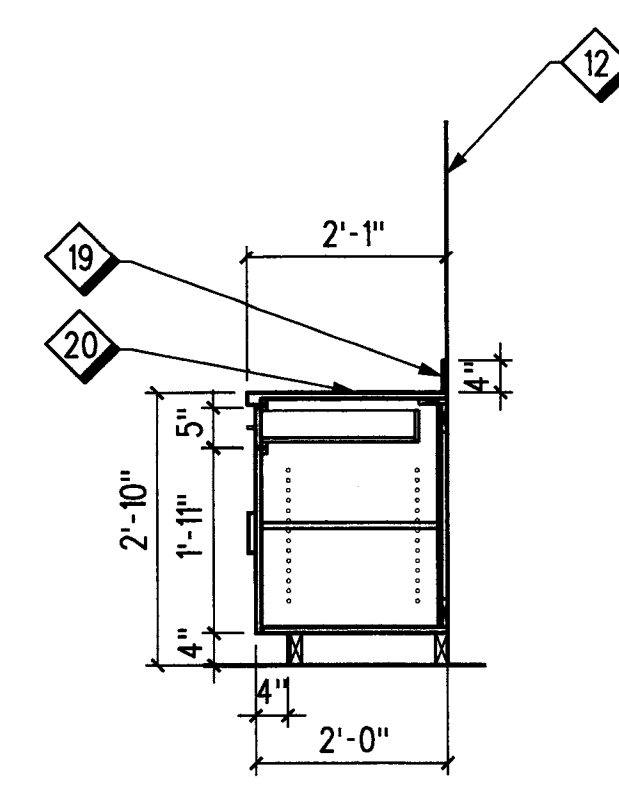
**C3 WINDOW JAMB**  
A704 SCALE: 1 1/2" = 1'-0"



**AB ROOM B134 ELEVATION - SOUTH WALL**  
A704 SCALE: 1/8" = 1'-0"



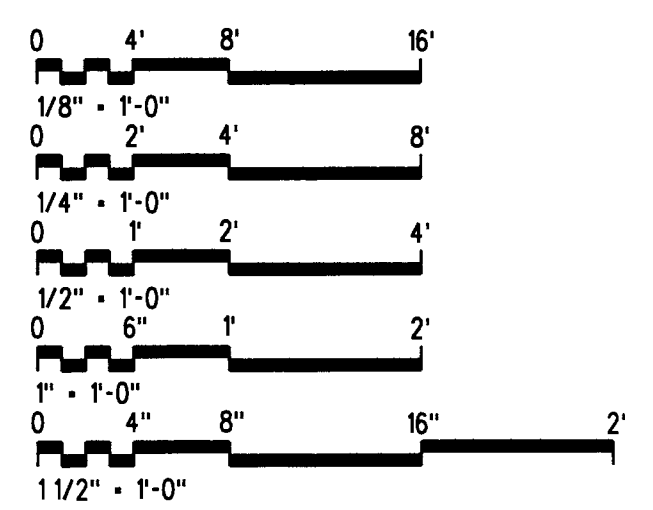
**A3 DOOR 120E HEAD**  
A704 SCALE: 1/2" = 1'-0"



**A3 MILLWORK DETAIL**  
A704 SCALE: 1/2" = 1'-0"

**SHEET NOTES**

- 1 EXISTING FLOOR SLAB
- 2 EXISTING FIRST FLOOR WAFFLE SLAB
- 3 ACCESS FLOOR SYSTEM HANDRAIL AT 3'-0"
- 4 2'-0" WIDE ACOUSTICAL WALL PANEL
- 5 FLOOR BASE
- 6 ELEC FIXTURE, COORD W/ ELEC LOCATION OF EQUIP ON PARTITION
- 7 FEC
- 8 EXISTING WALL MOUNTED EQUIPMENT, PROTECT FROM DAMAGE.
- 9 SUSPENDED CEILING SYSTEM
- 10 DASHED LINE INDICATES EQUIP IN FRONT OF FURRED OUT PARTITION, PROTECT FROM DAMAGE.
- 11 EXISTING METAL PANEL
- 12 PARTITION
- 13 EXISTING CMU WALL
- 14 EXISTING SUSPENDED CEILING SYSTEM
- 15 EXISTING CONCRETE COLUMN
- 16 EXISTING FRAME
- 17 SAFETY GLAZING
- 18 EXISTING REMOVABLE STOP
- 19 BACKSPLASH
- 20 COUNTERTOP
- 21 EXISTING ACOUSTICAL WALL PANEL TO REMAIN
- 22 EXISTING CIP CONCRETE WALL
- 23 EXISTING ABANDONED DAMPER OPENING
- 24 EXISTING SENSITIVE EQUIP TO REMAIN, PROTECT FROM DAMAGE.
- 25 EXISTING PIPE AND CONDUIT, SMOKE AND FIRESTOP ALL PENETRATIONS, VIF EXACT QUANTITY AND TYPE.
- 26 FOAM BUMPER GUARD ENTIRE LENGTH OF EXISTING OPENING.



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<b>JACOBS</b>		REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA							
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER INTERIOR ELEVATIONS AND DETAILS							
FREMONT				OAKLAND (ZOA) ARTCC			
REVIEWED BY	SUBMITTED BY	APPROVED BY					
	RSBradfish	[Signature]					
SUBMITTER'S TITLE				APPROVER'S TITLE			
DESIGNED BY E.ROLAF				ISSUED BY			
DRAWN BY E.ROLAF				DATE 07/08/2015			
CHECKED BY W.STEVENS				DRAWING NO. ZOA - D - CWBMS - A704			
OAKLAND ARTCC FREMONT, CALIFORNIA				AIRWAY FACILITY DIVISION			

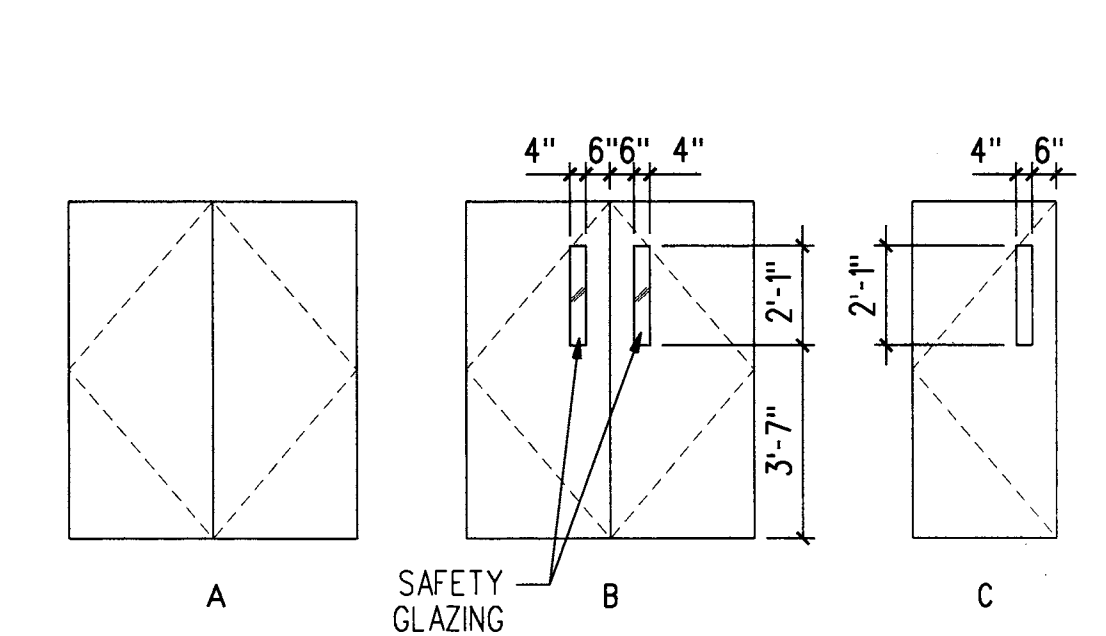
DOOR SCHEDULE

NUMBER DESIGNATION	TYPE	WXHXTH	MATERIAL	FIRE RATING	FRAME					HARDWARE	REMARKS
					MATERIAL	TYPE	HEAD	JAMB	SILL		
101A	D	3'-0" X 7'-0" X 13/4"	HM	45	HM	F1	H1	J1	A6/A801	7	
101B	D	3'-0" X 7'-0" X 13/4"	HM	45	HM	F1	H1	J1	A6/A801	7	
101C	D	3'-0" X 7'-0" X 13/4"	HM	45	HM	F1	H1	J1	A6/A801	7	
101D	D	3'-0" X 7'-0" X 13/4"	HM	45	HM	F1	H1	J1	A6/A801	7	
101E	D	3'-0" X 7'-0" X 13/4"	HM	45	HM	F1	H1	J1	A6/A801	7	
101F	B	3'-0" & 2'-0" X 7'-0" X 13/4"	HM	90	EXIST	EXIST	-	-	-	9	
101G	C	3'-0" X 7'-0" X 13/4"	HM	45	HM	F1	H1	J1/J2	-	10	
115	A	PR 3'-0" X 7'-0" X 13/4"	HM	-	EXIST	EXIST	-	-	-	11	NOTE 6, 7, 9
116	B	2'-0" & 3'-0" X 7'-0" X 13/4"	HM	45	EXIST	EXIST	-	-	-	12	NOTE 5
117A	C	3'-0" X 7'-0" X 13/4"	HM	45	EXIST	EXIST	-	-	-	14	NOTE 5
117B	C	3'-0" X 7'-0" X 13/4"	HM	45	HM	F1	H2	J2	-	15	NOTE 5
118	B	2'-0" & 3'-0" X 7'-0" X 13/4"	HM	45	EXIST	EXIST	-	-	-	12	NOTE 5
119	A	PR 3'-0" X 7'-0" X 13/4"	HM	90	EXIST	EXIST	-	-	-	13	NOTE 5
120	B	PR 3'-0" X 7'-0" X 13/4"	HM	90	EXIST	EXIST	-	-	-	1	NOTE 2, 3, 9
120A	C	3'-0" X 7'-0" X 13/4"	HM	45	HM	F1	H1	J1	-	7	
120B	B	PR 3'-0" X 7'-0" X 13/4"	HM	90	HM	F1	A8/A801 SIM	A8/A801	-	2	NOTE 2, 9
120C	C	3'-0" X 7'-0" X 13/4"	HM	45	HM	F1	H1	J1	-	5	
120D	A	PR 3'-0" X 7'-0" X 13/4"	HM	90	HM	F1	A8/A801 SIM	A8/A801	-	4	
120E	A	PR 3'-0" X 7'-0" X 13/4"	HM	90	HM	F1	A3/A704	A8/A801	A4/A801	4	NOTE 4
120F	C	3'-0" X 7'-0" X 13/4"	HM	60	HM	F1	H2	J2	-	6	NOTE 2
134	B	PR 3'-0" X 7'-0" X 13/4"	HM	45	HM	F1	H1	J1	A6/A801	3	NOTE 2, 9
134C	D	3'-0" X 7'-0" X 13/4"	HM	45	HM	F1	H1	J1	-	7	
134D	D	3'-0" X 7'-0" X 13/4"	HM	45	HM	F1	H1	J1	-	7	
ST1	NOTE 8	E6/A801	HM	-	-	-	-	-	-	8	
CTB	E	2'-0" & 3'-0" X 7'-0" X 13/4"	HM	-	EXIST	EXIST	-	-	-	16	NOTE 6, 9

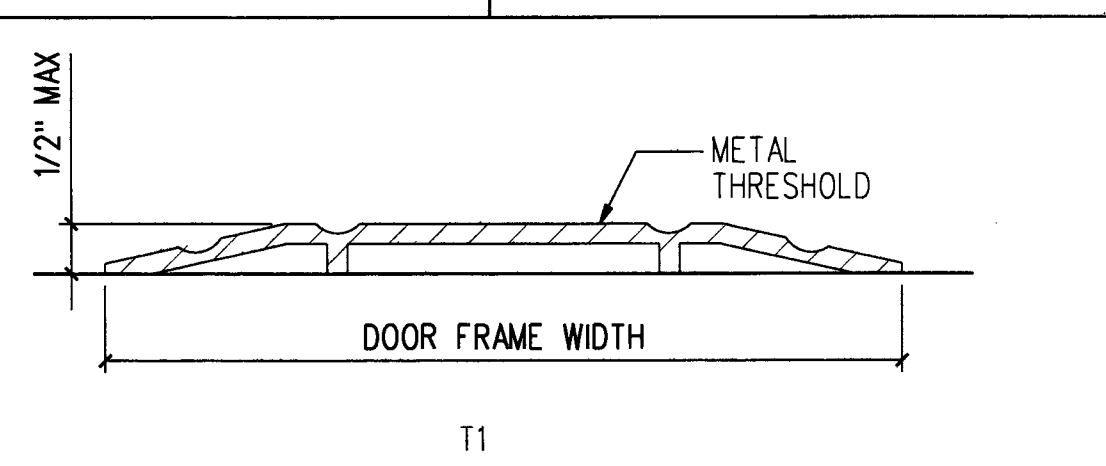
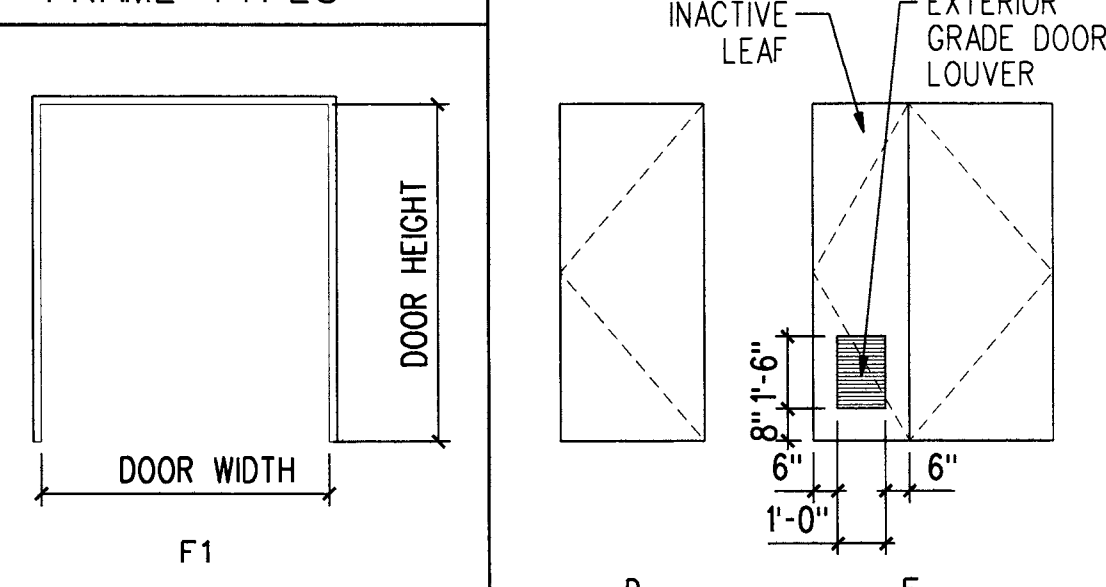
DOOR SCHEDULE NOTES

1. PAINT DOORS AND DOOR FRAMES PT2, UON.
2. RETAIN THE FAA'S SECURITY SYSTEM DESIGN INTEGRATION (SSDI) CONTRACTOR TO RELOCATE AS REQUIRED ACCESS CONTROL DOOR HARDWARE.
3. EXISTING FRAME IS EMBEDDED STEEL ANGLE
4. PROVIDE 8" X 12" SIGN STATING: "CAUTION-LOW HEAD ROOM AND STAIR"
5. CONNECT TO EXISTING REFRIGERANT LEAK DETECTION SYSTEM.
6. EXTERIOR INSULATED DOOR
7. EXISTING FRAME IS REMOVABLE LOUVER/DOOR ASSEMBLY
8. RAILING (SWING) GATE. REUSE EXISTING MAGNETIC HOLD-OPEN DEVICE.
9. PROVIDE DOOR WITH METAL DOOR ASTRAGAL. COORDINATE WITH DOOR HARDWARE.

DOOR TYPES



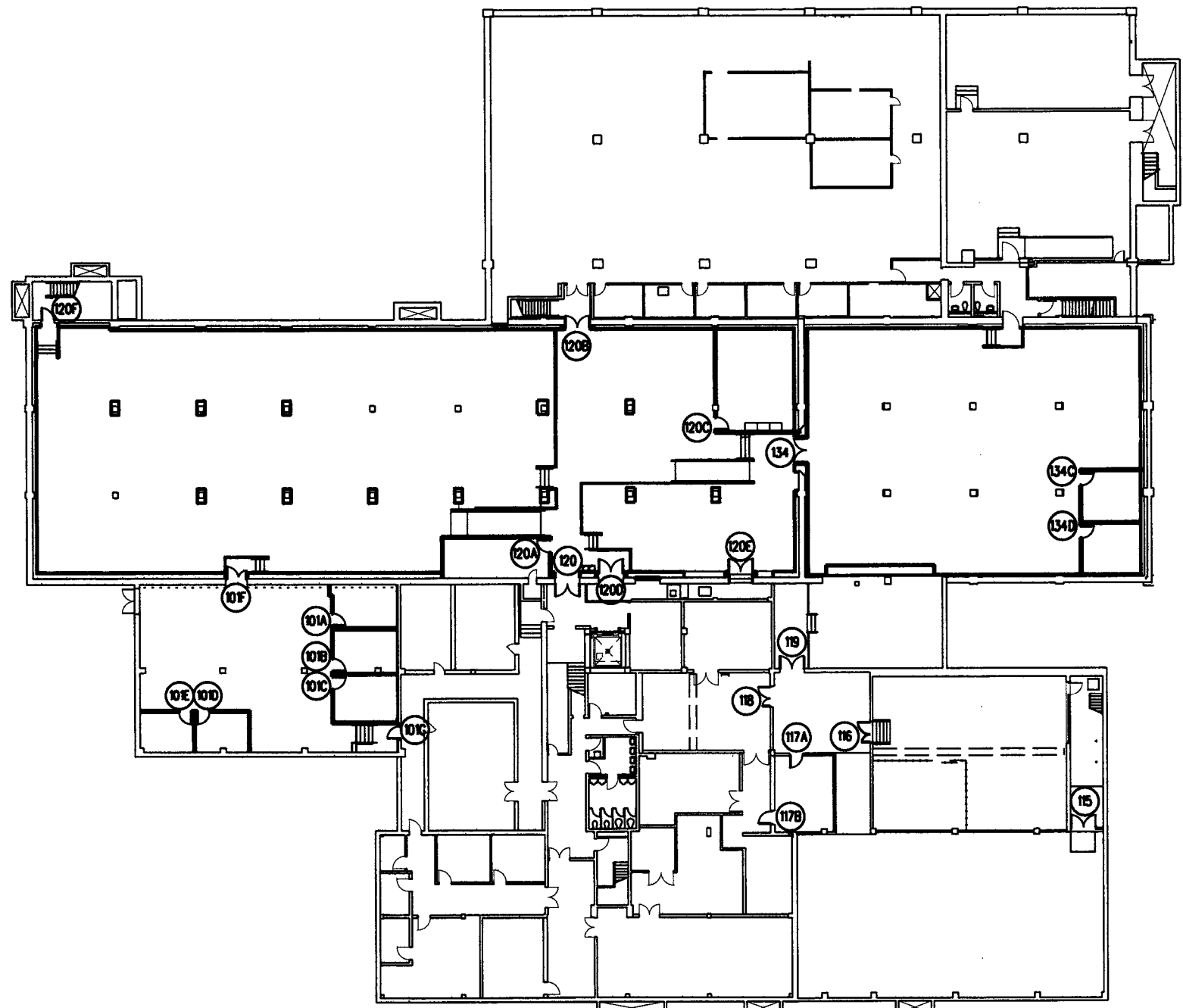
FRAME TYPES



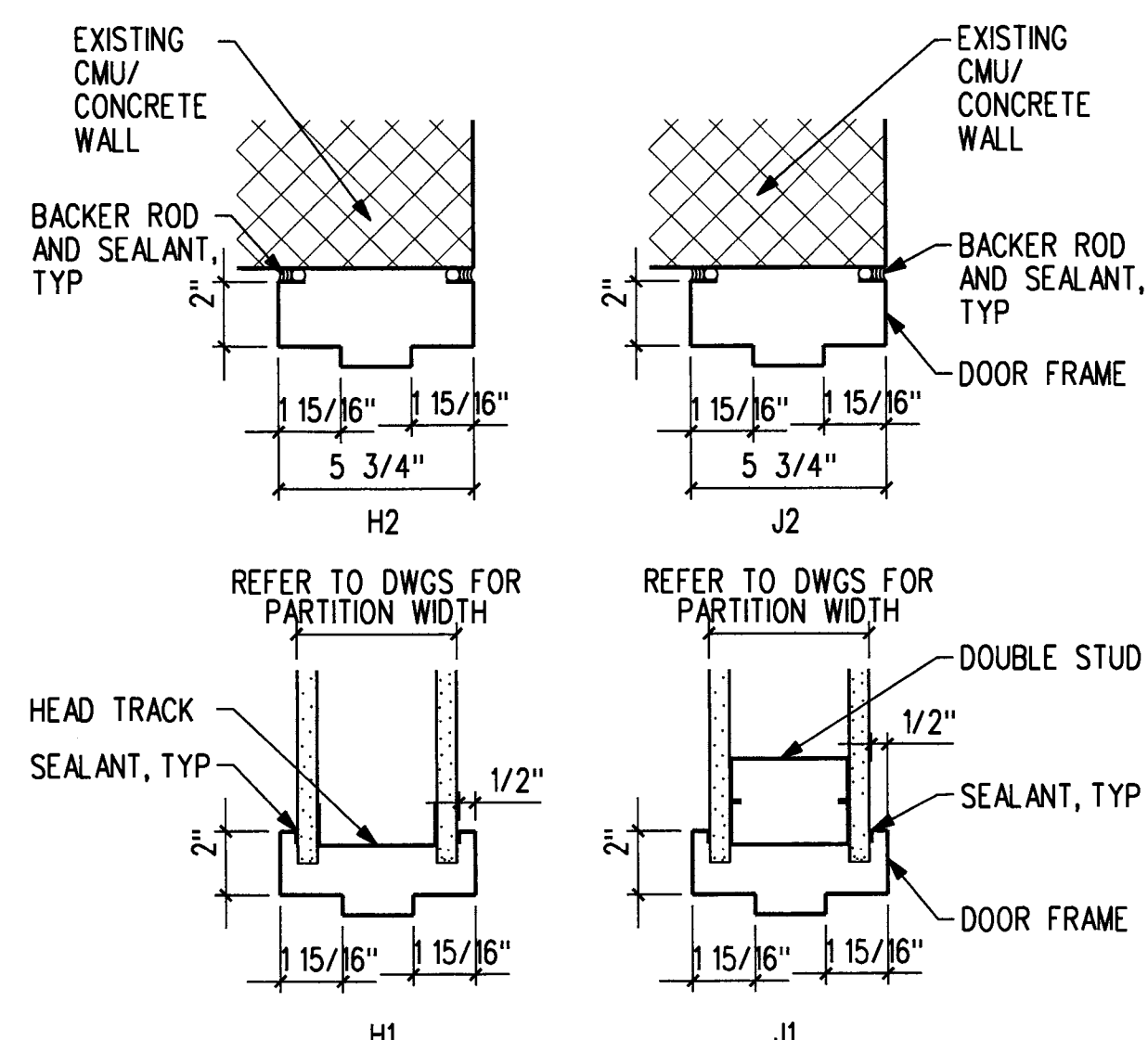
SHEET NOTES

- 1 DRY WALL HM FRAME
- 2 FURRED OUT PARTITION WITH 2'-0" WIDE ACOUSTICAL WALL PANELS (AWP). COLOR TO BE DETERMINED BY COTR.
- 3 METAL TRIM
- 4 SEALANT
- 5 5/8" VGWB
- 6 METAL THRESHOLD T1
- 7 1/2" CEMENT BOARD. ALIGN TOP OF BOARD WITH TOP OF ADJACENT ACCESS FLOOR SYSTEM
- 8 ACCESS FLOOR SYSTEM
- 9 ALIGN FACE OF GWB WITH ADJACENT PARTITION
- 10 CONCRETE FLOOR SLAB
- 11 14 GA METAL TRACK AT DOOR SILL

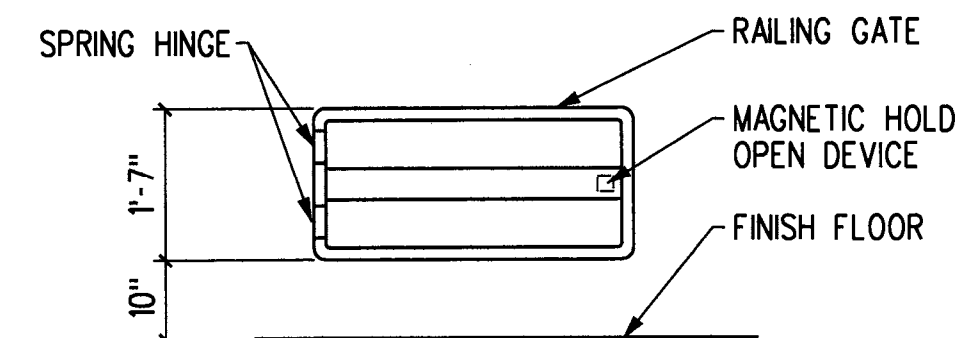
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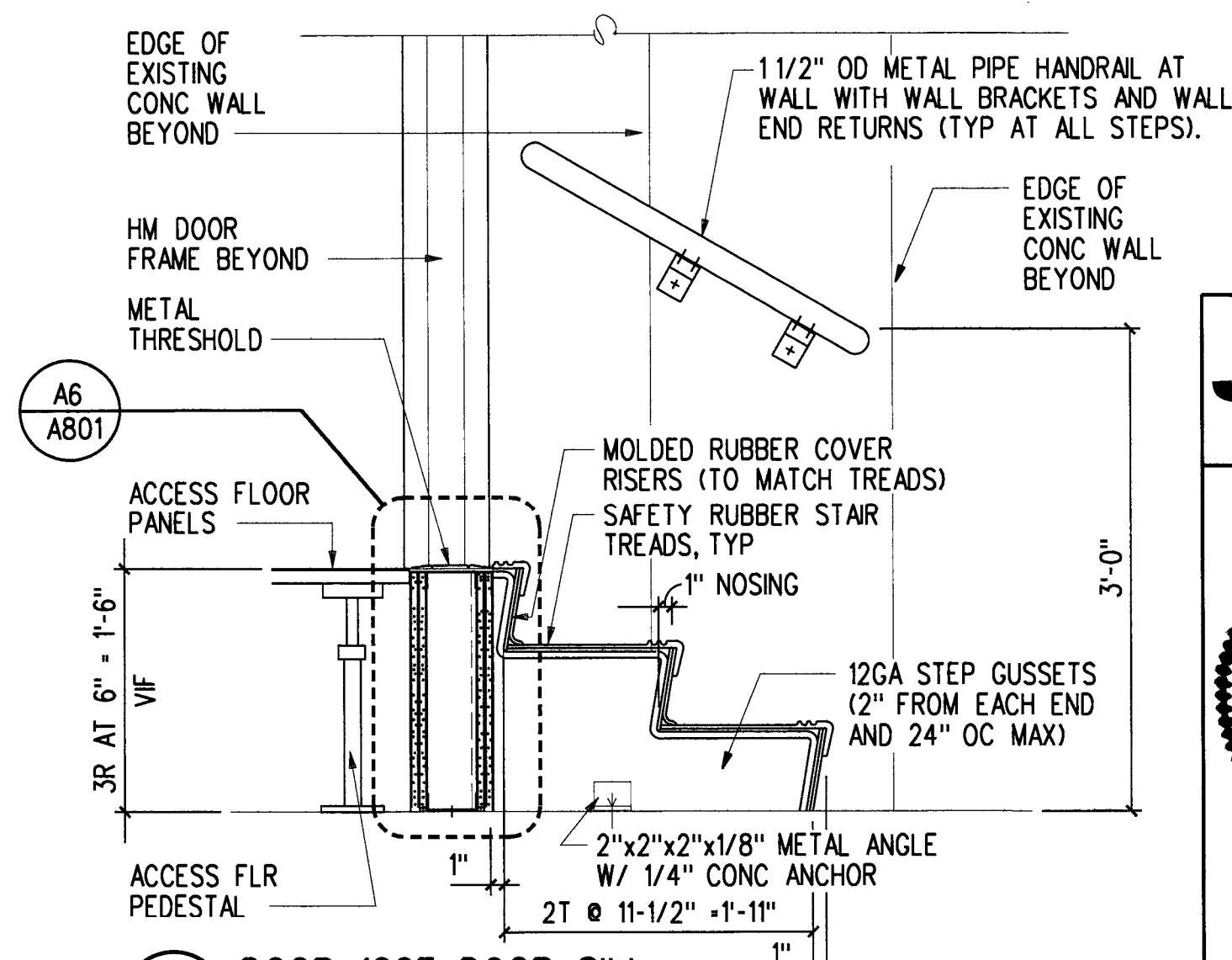
**D8** BASEMENT PLAN  
A801 NTS



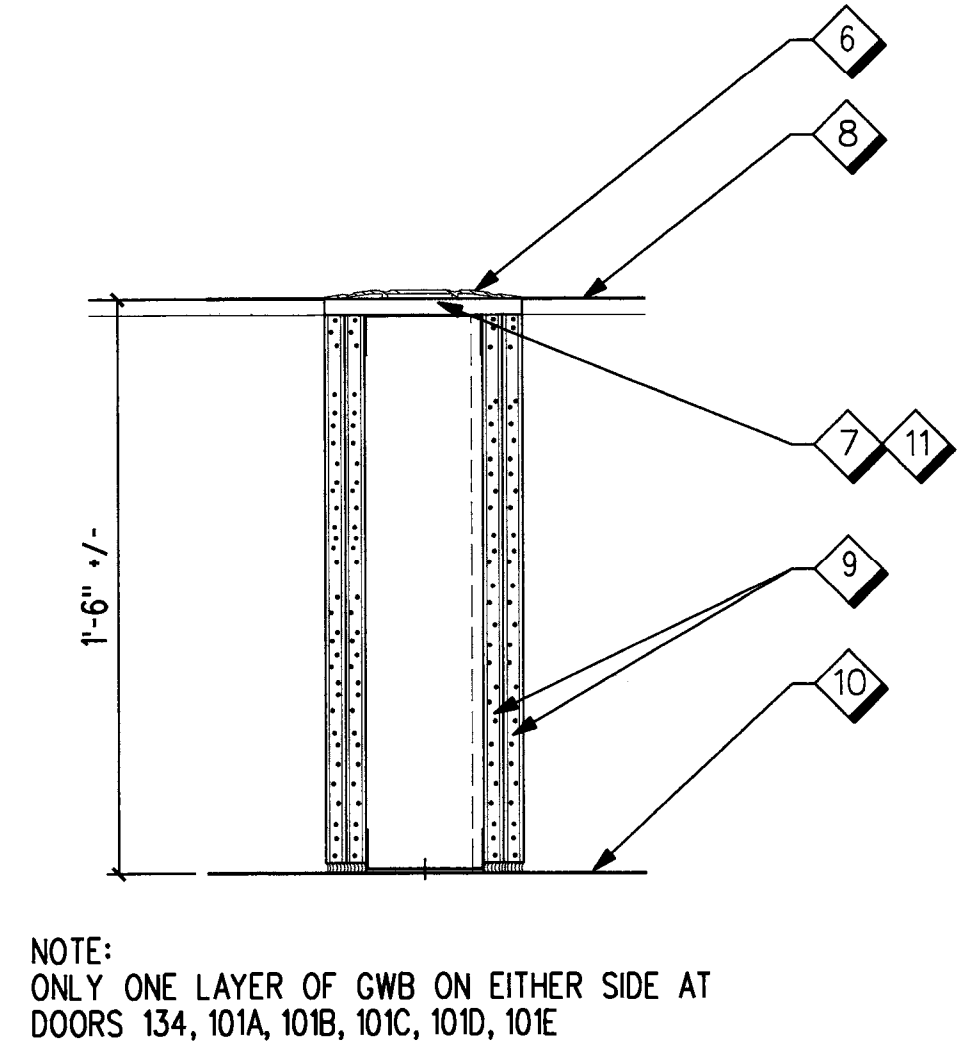
**E4** DOOR FRAME DETAILS  
A801 NTS



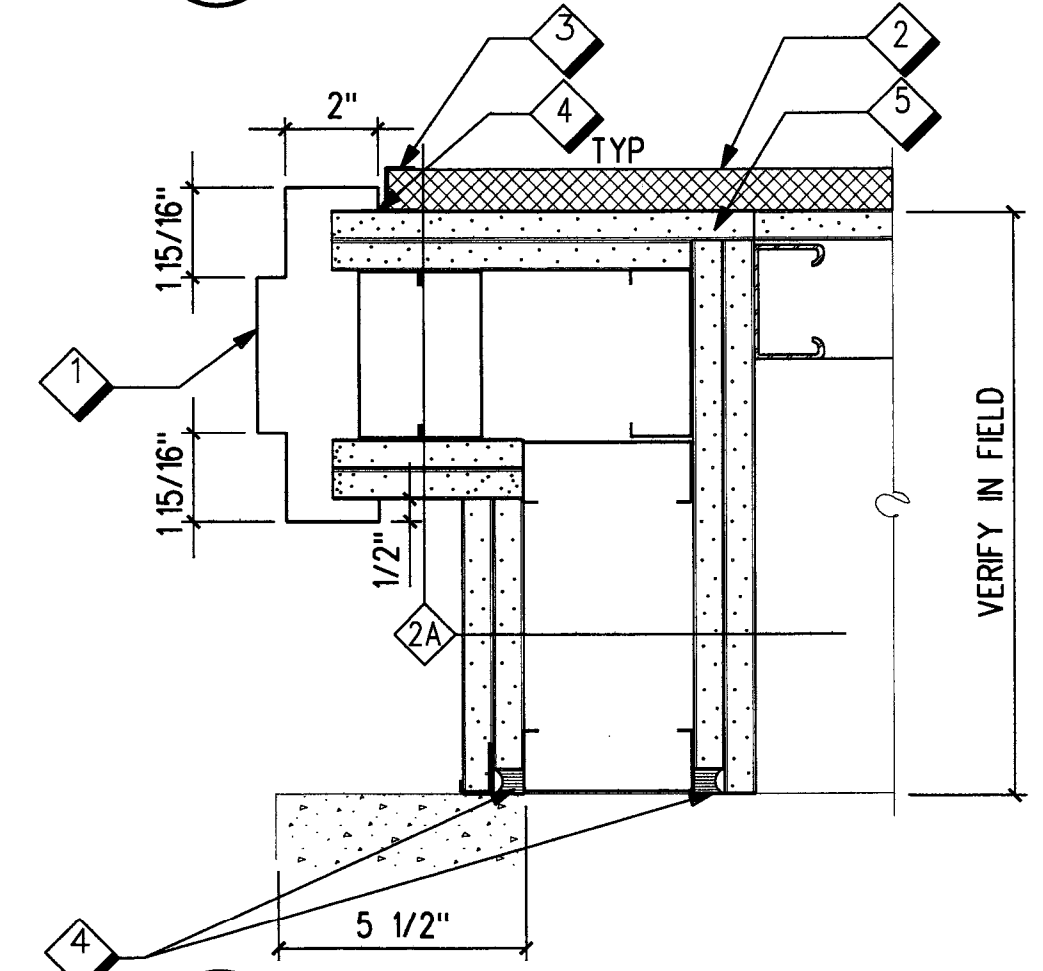
**E6** RAILING (SWING) GATE ELEVATION  
A801 SCALE: NTS



**A4** DOOR 120E DOOR SILL  
A801 1" x 1'-0"



**A6** FIRE RATED DOOR SILL SECTION  
A801 NTS



**A8** DOOR JAMB (HEAD SIMILAR)  
A801 3" x 1'-0"

NOTE:  
ONLY ONE LAYER OF GWB ON EITHER SIDE AT DOORS 134, 101A, 101B, 101C, 101D, 101E

**JACOBS**

REV. APPROVED DATE DESCRIPTION JCN REDLINE DATE APVD

DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION  
WESTERN SERVICE AREA RENTON, WA

CONTROL WING BASEMENT  
AND CHILLER/COOLING TOWER MODERNIZATION  
OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER

SCHEDULES

FREMONT OAKLAND (ZOA) ARTCC

REVIEWED BY SUBMITTED BY APPROVED BY  
RBradfish

SUBMITTER'S TITLE APPROVER'S TITLE

DESIGNED BY E.ROLAF ISSUED BY DATE 07/08/2015 JCN  
DRAWN BY E.ROLAF AIRWAY FACILITY DIVISION DRAWING NO.  
CHECKED BY W.STEVENS ZOA - D - CWBMS - A801 REV.

OAKLAND ARTCC  
FREMONT,  
CALIFORNIA

7/2/2015

ROOM FINISH SCHEDULE

ROOM FINISH SCHEDULE NOTES

ROOM NUMBER	ROOM NAME	FLOOR FINISH	BASE FINISH	WALLS				CEILING FINISH	NOTES
				NORTH	EAST	SOUTH	WEST		
B101	IFD	EXISTING	VB	PT1	PT1	PT1	PT1	EXISTING	NOTE 9
B101A	OFFICE	EXISTING	VB	PT1	PT1	PT1	PT1	ACP1	
B101B	OFFICE	EXISTING	VB	PT1	PT1	PT1	PT1	ACP1	
B101C	OFFICE	EXISTING	VB	PT1	PT1	PT1	PT1	ACP1	
B101D	OFFICE	EXISTING	VB	PT1	PT1	PT1	PT1	ACP1	
B101E	OFFICE	EXISTING	VB	PT1	PT1	PT1	PT1	ACP1	
B115	CHILLER ROOM	EXISTING/NOTE 11	-	PT4	PT4	PT4	PT4	EXISTING	NOTE 3, 4
B116	BOILER ROOM	EXISTING	-	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	NOTE 3, 4
B117	CCMS MONITORING ROOM	VCT1	VB1	PT4	PT4	PT4	PT4	ACP2	NOTE 8
B119	HOST MECHANICAL ROOM	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	
B120	ELECTRONIC EQUIPMENT ROOM (NORTH)	VCT1/CPT2	VB1	AWP1	AWP1	-	AWP1	EXP/PT3	NOTE 1, 2, 3
B120	ELECTRONIC EQUIPMENT ROOM (SOUTH)	-	VB1	-	AWP1	AWP1	AWP1	EXP/PT3	NOTE 1, 2, 5
B120A	COMM WORK AREA	VCT1	VB1	PT1	PT1	PT1	PT1	ACP1	
B120C	BREAK ROOM	VCT1/CPT2	VB1	PT1	PT1	PT1	PT1	ACP1	
B134	HOST/ATOP COMPUTER ROOM	ACF1/CPT1	EXISTING	AWP1	AWP1	AWP1	AWP1	ACP1	NOTE 6
B134C	OFFICE	ACF1/CPT1	VB1	AWP1	VGWB	VGWB	VGWB	ACP1	
B134D	OFFICE	ACF1/CPT1	VB1	AWP1	AWP1	VGWB	VGWB	ACP1	
-	STAIR NO. 3	SRF	VB1	NOTE 10	NOTE 10	NOTE 10	NOTE 10	NOTE 10	RUBBER RISERS AND TREADS, NOTE 7

1. PAINT WALLS AND COLUMNS ABOVE FURRED OUT WALLS AND NOT COVERED BY VGWB PT1. REFER TO G006, G003-BL, AND G004-BL FOR APPROXIMATE EXISTING EQUIPMENT LAYOUT. PROTECT EXISTING EQUIPMENT FROM DAMAGE AND MAINTAIN REQUIRED EQUIPMENT VENTILATION.
2. PAINT EXPOSED CEILING STRUCTURE IN ROOM B120 PT3.
3. PROVIDE EPX AT NEW AND EXIST CONCRETE MAINTENANCE PADS.
4. PROVIDE 12" X 8" SIGN AT DOORS STATING: "ACCESS TO ROOM RESTRICTED TO AUTHORIZED PERSONNEL."
5. SRF AT RAMP SURFACE INTO B120 SOUTH
6. REFER TO ELEVATIONS FOR LOCATION OF AWP
7. SRF AT TREADS
8. PAINT WINDOW FRAMES. COORDINATE COLOR W/ COR.
9. SRF AT STEPS AND LANDINGS
10. PATCH, REPAIR AND PAINT WALL AND CEILING FINISHES TO MATCH ADJACENT SURFACES.
11. PATCH AND REPAIR VCT FLOORING TO MATCH EXISTING.

INTERIOR MATERIALS FINISH SCHEDULE

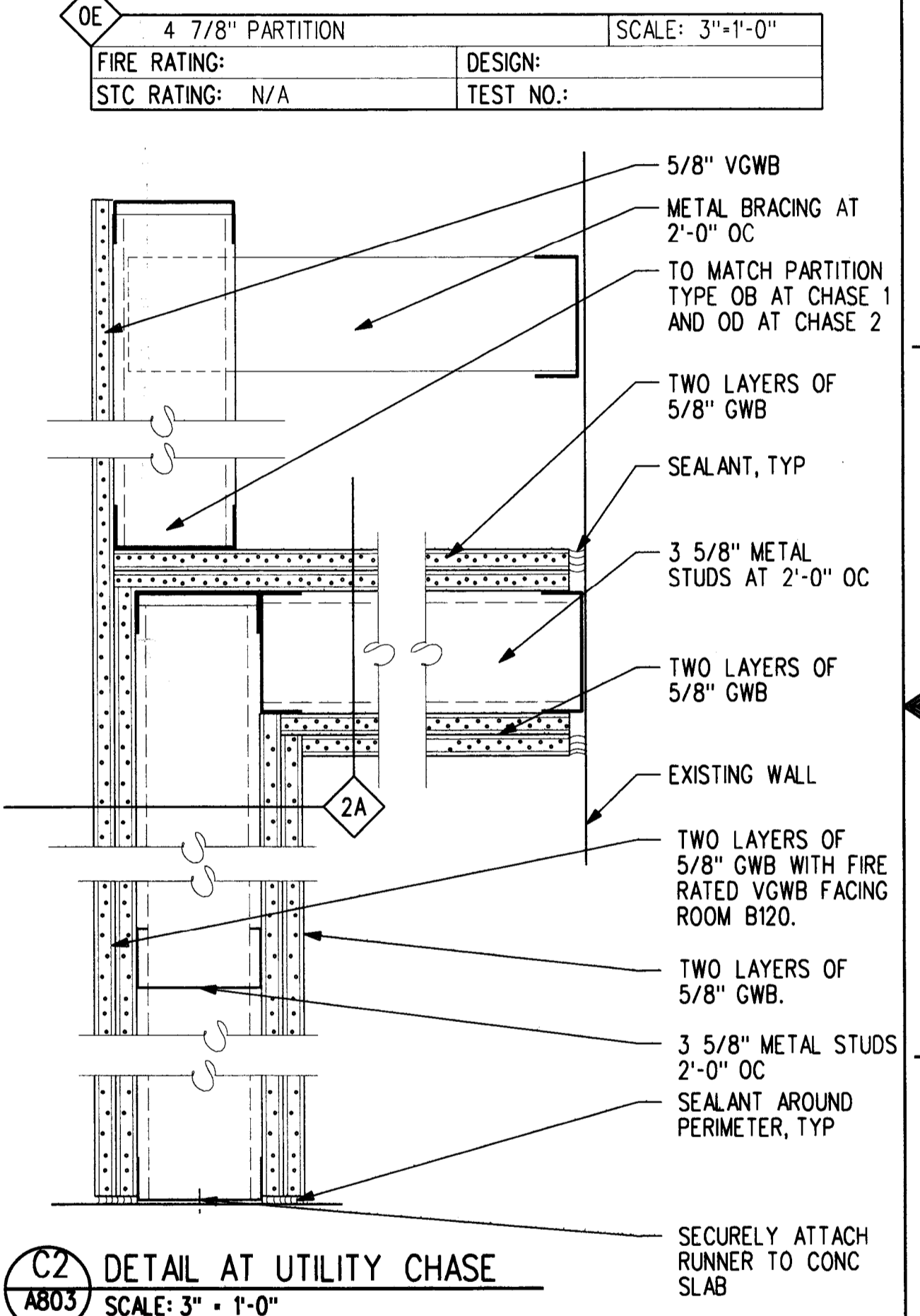
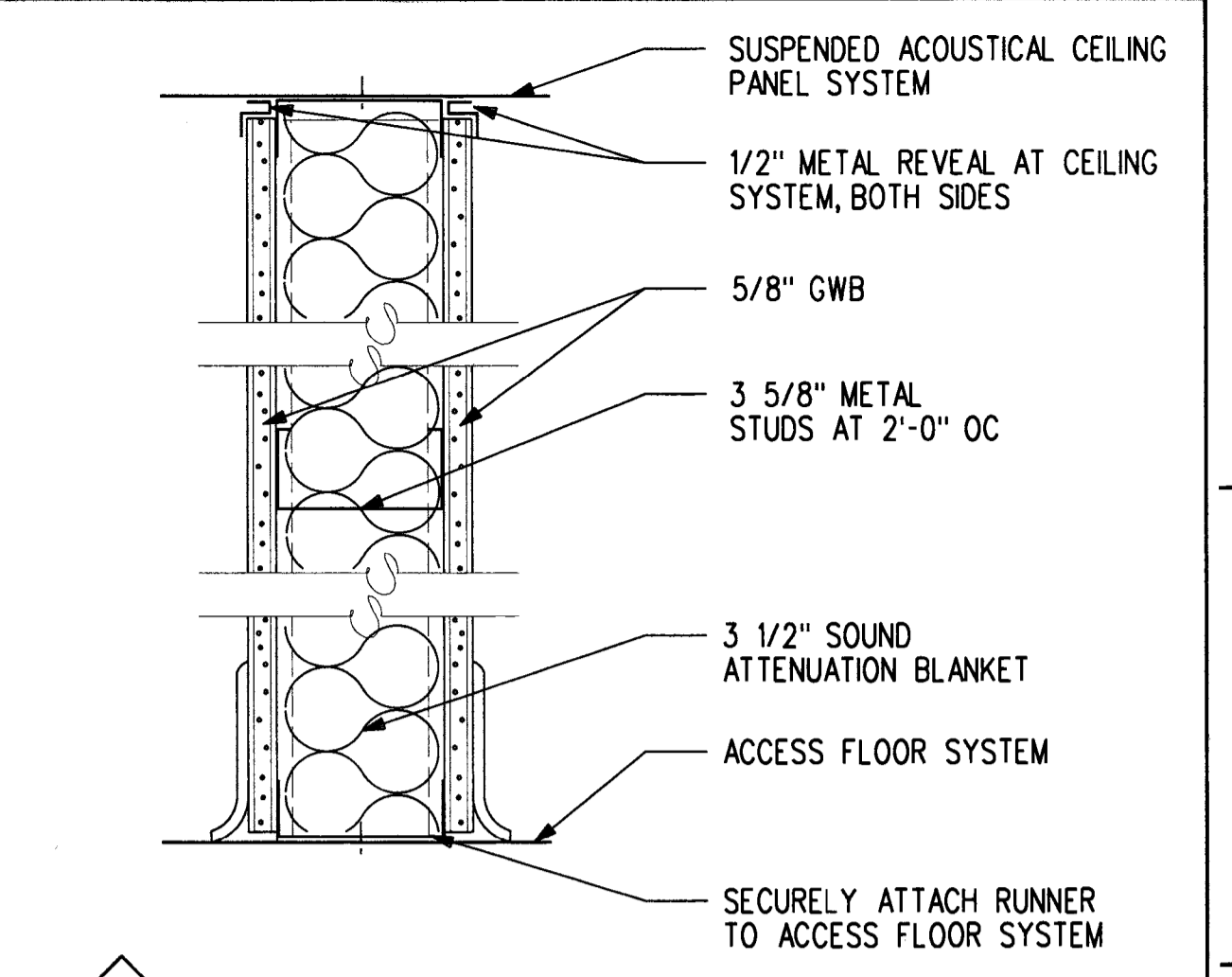
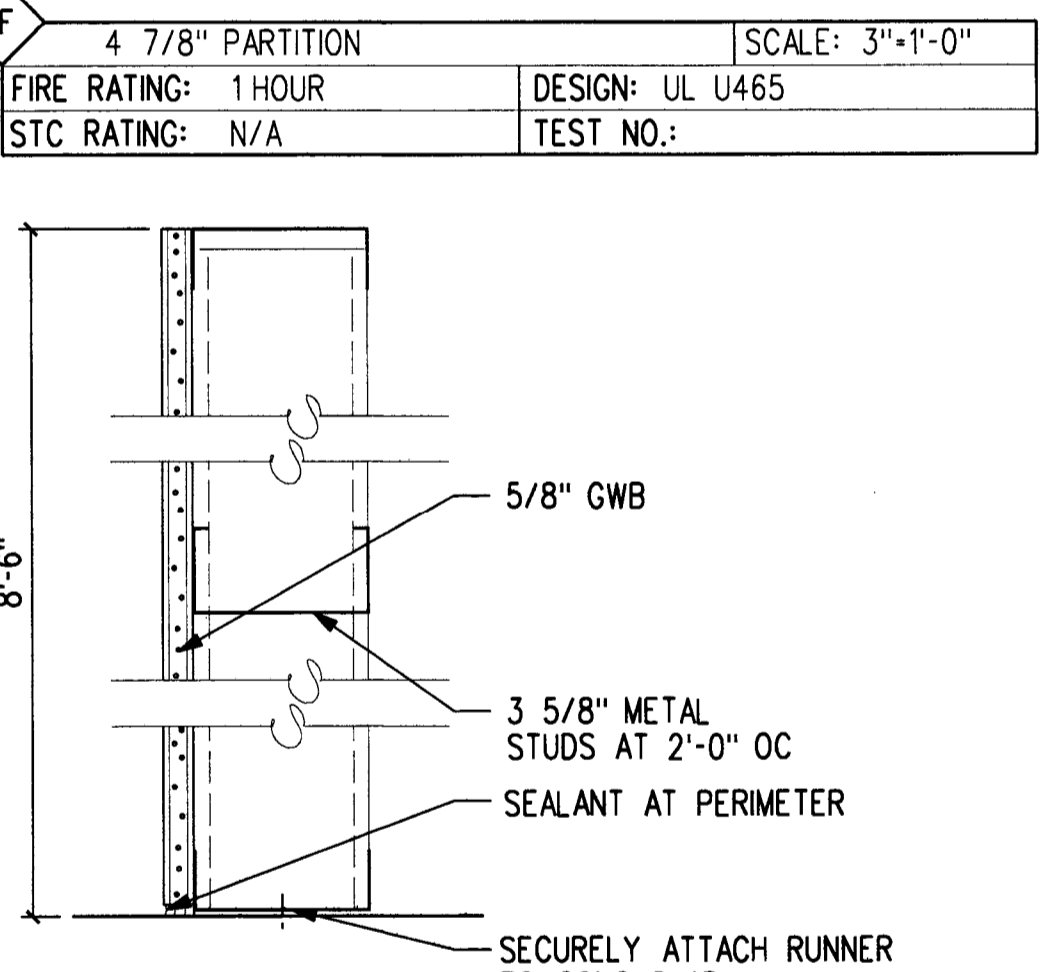
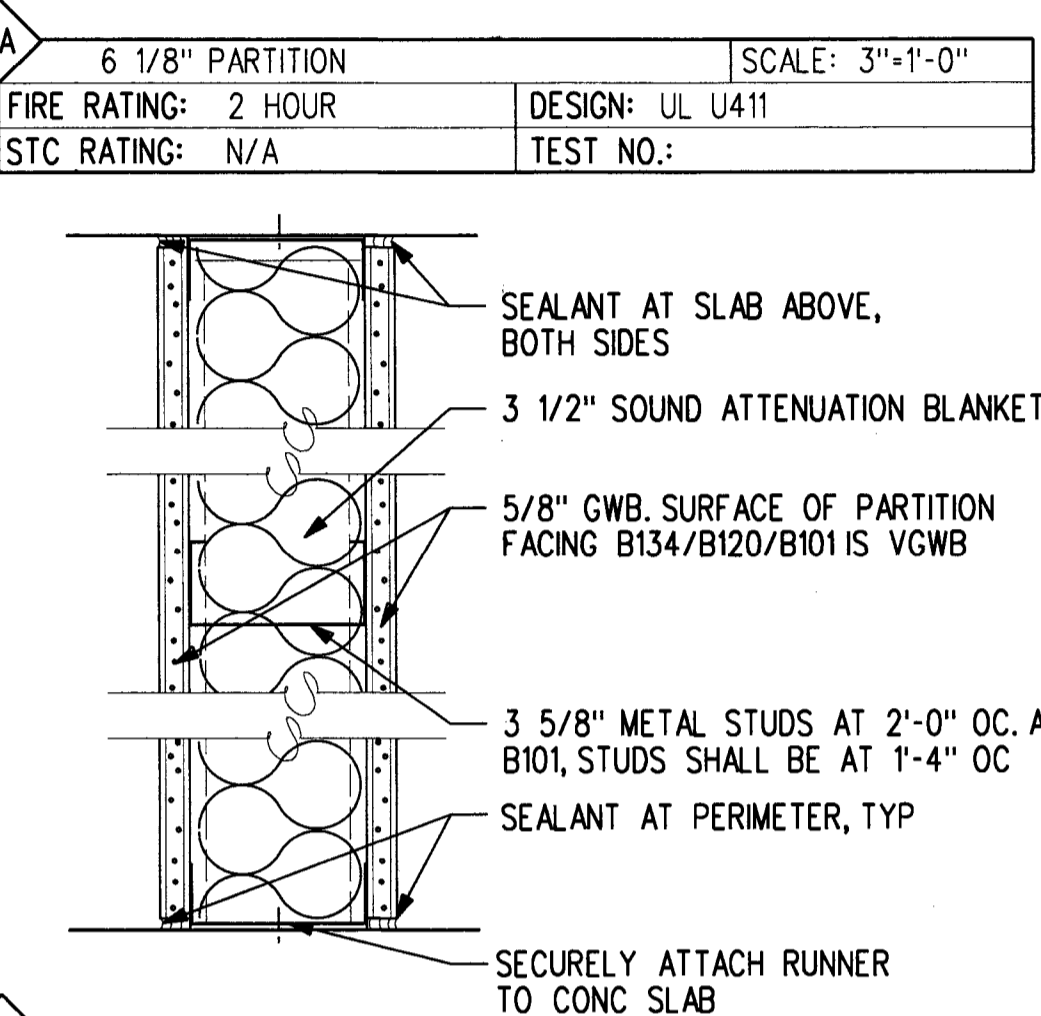
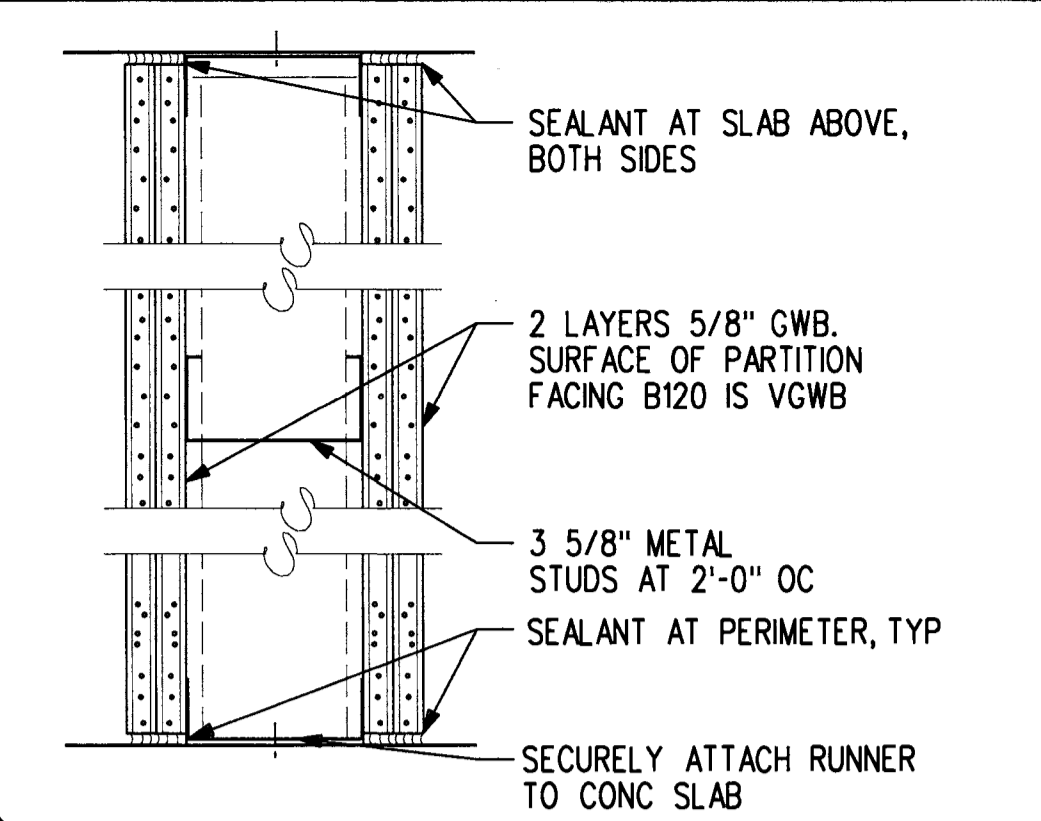
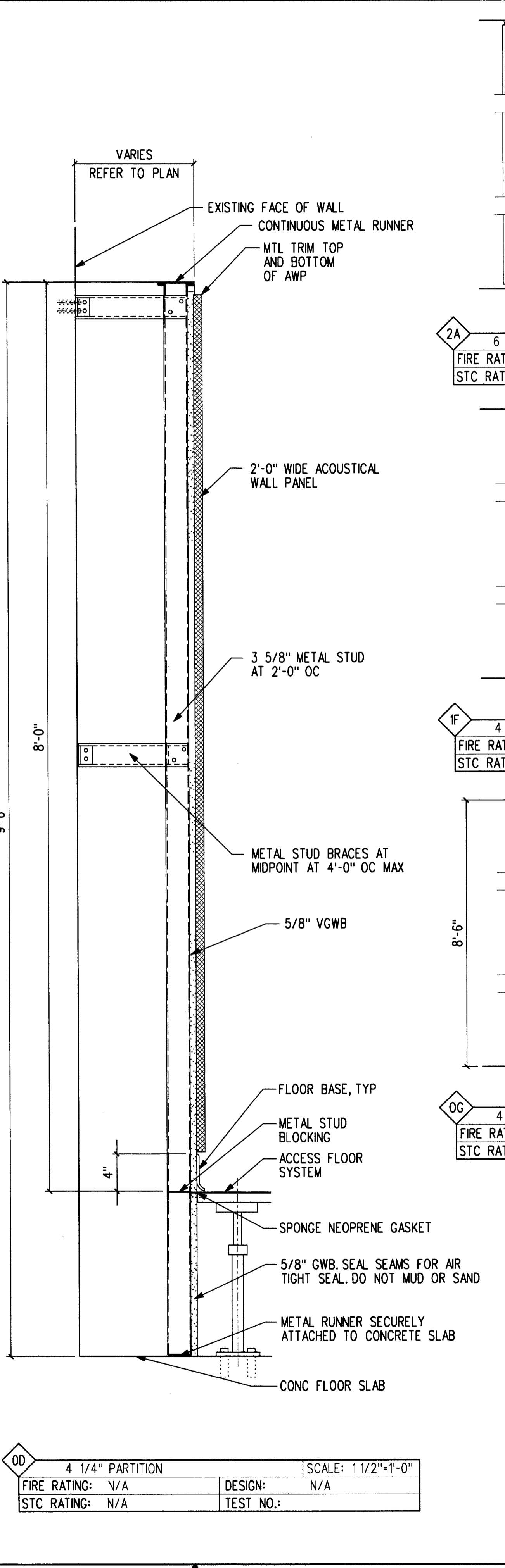
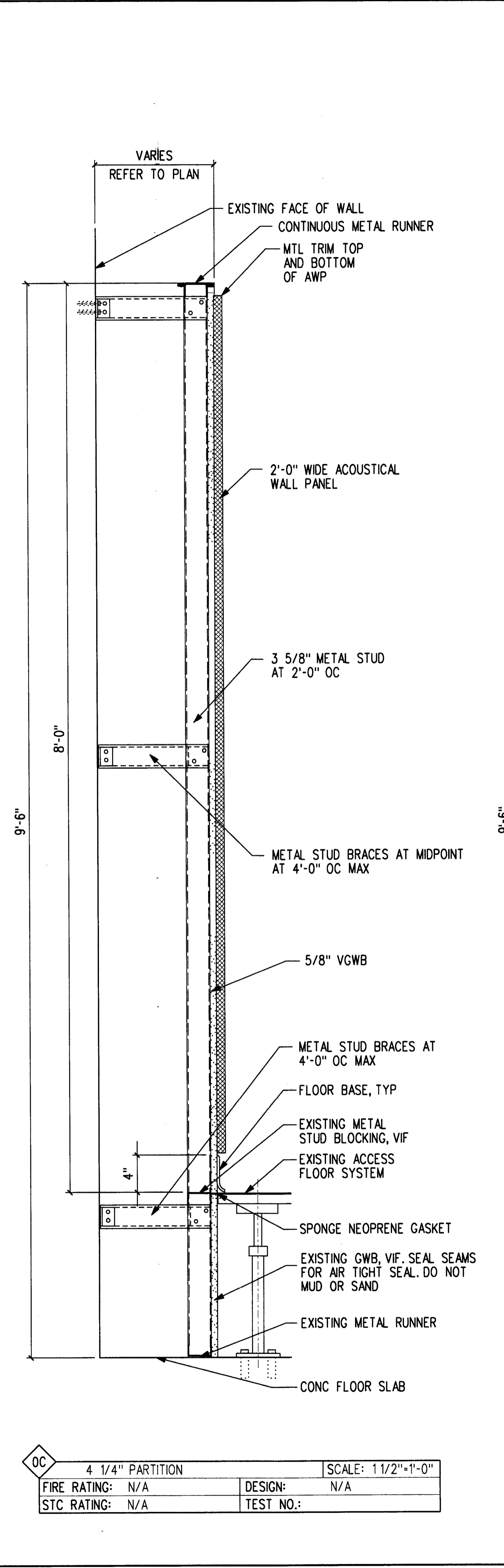
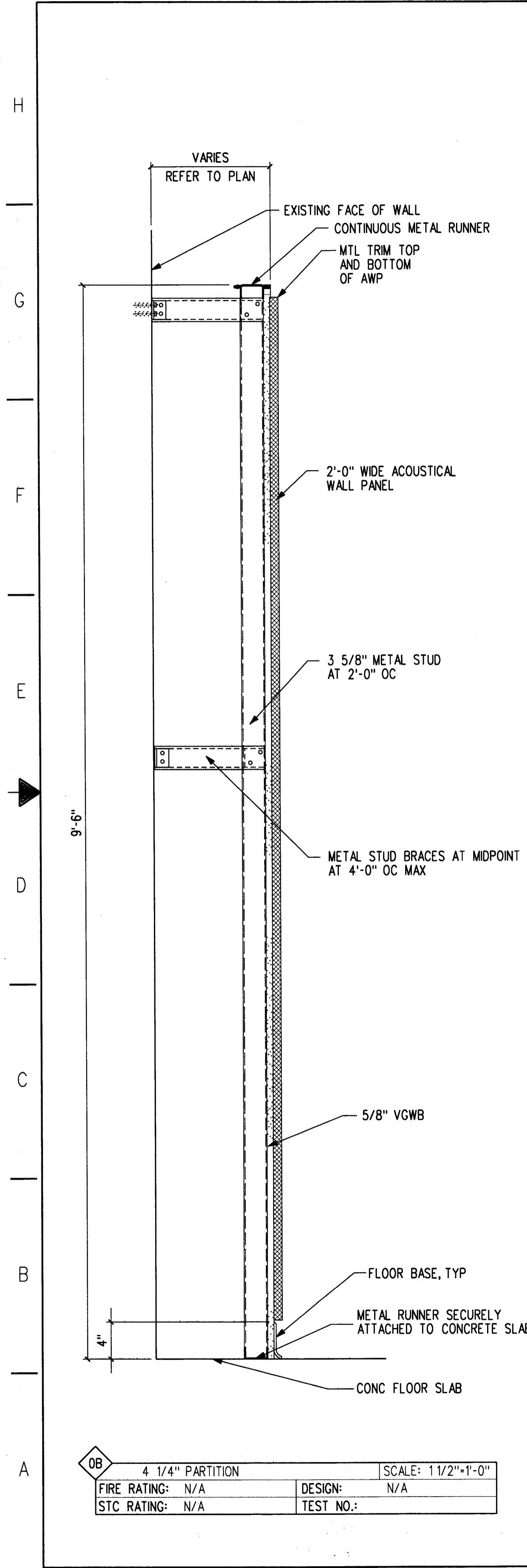
CODE	SURFACE	MATERIAL	MANUFACTURER	MODEL NUMBER	COLOR	REMARKS
ACF	FLOOR	ACCESS FLOOR SYSTEM	TATE	CC1250	N/A	
CPT1	FLOOR	MODULAR CARPET TILE	JULIE INDUSTRIES	STATIC SMART ESD CARPET TILE, PRESIDENTIAL SERIES, 24" X 24"	ROOSEVELT	CONDUCTIVE ESD CARPET - POSITILE
CPT2	FLOOR	CARPET TILE	MANNINGTON COMMERCIAL	ALLEGIAN COLLECTION, MEANS III	APPROPRIATIONS 63001	2'-0" X 2'-0"
HPL1	FLOOR	HPL PERFORATED PANEL	NEVAMAR	VS2001, V LINE SERIES	GA2001FT BEIGE GRAPHITE	ARMOR PROTECTION, CONDUCTIVE/PERFORATED PANELS
VCT1	FLOOR	VINYL COMPOSITION FLOOR TILE	ARMSTRONG	IMPERIAL TEXTURE STANDARD EXCELONT, 12" X 12"	51901, TAUPE	
SRF	FLOOR, STEPS AND RAMPS	RUBBER	ROPPE	RAISED DESIGN RUBBER TILE, 992 LOW PROFILE CIRCULAR DESIGN	140 FAWN	
VB1	BASE	VINYL BASE	ROPPE	TRADITIONAL WALL BASE, VINYL (DC), 4" HIGH, TOE PROFILE	140 FAWN	
VGWB	WALLS	PRE-DECORATED GYPSUM WALL BOARD	DURASAN	PREFINISHED GYPSUM BOARD	CHIFFON	UL RATED WHERE REQUIRED
AWP1	ACOUSTICAL WALL PANEL	FABRIC WRAPPED	DECOUSTICS	2'-0" WIDE PANELS	GUILFORD 380 QUARTZ	MECHANICALLY FASTENED WITH CLIPS
PT1	WALLS	PAINT	-	BENJAMIN MOORE, EGGSHELL	OC-37 GLACIER WHITE	
PT2	DOOR AND DOOR FRAME, UON	PAINT	-	BENJAMIN MOORE, SEMI-GLOSS	AC-32 PRISMO DUNES	
PT3	CEILING	PAINT	-	BENJAMIN MOORE, FLAT	I-01 WHITE	
PT4	WALLS/CEILING	PAINT	-	BENJAMIN MOORE, ULTRA SPEC 500, SEMI-GLOSS, N539	01-WHITE	BOILER AND CHILLER ROOM WALLS AND CEILING
EPX	FLOOR	EPOXY	STONCLAD, INC.	STONCLAD GS COATED WITH STONKOTE SEC2400		NEW AND EXISTING CONCRETE MAINTENANCE PADS
ACP1	CEILING SYSTEM	ACOUSTICAL CEILING PANEL	ARMSTRONG	CORTEGA - 769	WHITE	2'-0" X 4'-0"
ACP2	CEILING SYSTEM	ACOUSTICAL CEILING PANEL	ARMSTRONG	CORTEGA - 770	WHITE	2'-0" X 2'-0"
CG1	CEILING SUSPENSION SYSTEM	METAL	ARMSTRONG	PRELUDE 15/16" EXPOSED TEE GRID	WHITE	USED WITH ACP1
EXP	CEILING	EXPOSED TO STRUCTURE ABOVE	-	-	-	-

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<b>JACOBS</b>		REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>							
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER SCHEDULES							
FREMONT				OAKLAND (ZOA) ARTCC			
REVIEWED BY	SUBMITTED BY <i>RSBradfish</i>			APPROVED BY <i>[Signature]</i>			
SUBMITTER'S TITLE				APPROVER'S TITLE			
DESIGNED BY	DRAWN BY			ISSUED BY		DATE 07/08/2015	
OAKLAND ARTCC FREMONT, CALIFORNIA				AIRWAY FACILITY DIVISION		DRAWING NO. ZOA - D - CWBMS - A802	
CHECKED BY				REV.			

7/2/2015





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**JACOBS**

DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION  
WESTERN SERVICE AREA RENTON, WA

CONTROL WING BASEMENT  
AND CHILLER/COOLING TOWER MODERNIZATION  
OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER  
PARTITION TYPES

FREMONT OAKLAND (ZOA) ARTCC

REVIEWED BY: SUBMITTED BY: *RBradfish* APPROVED BY: *[Signature]*

DESIGNED BY: E. ROLAF ISSUED BY: AIRWAY FACILITY DIVISION DATE 07/08/2015

DRAWN BY: E. ROLAF DRAWING NO. ZOA - D - CWBMS - A803

CHECKED BY: W. STEVENS

OAKLAND ARTCC  
FREMONT,  
CALIFORNIA

7/2/2015

STRUCTURAL GENERAL NOTES

A. GENERAL

- TAKE ALL NECESSARY PRECAUTION TO ENSURE THE INTEGRITY OF THE STRUCTURE AND SAFETY OF WORKERS DURING ALL PHASES OF CONSTRUCTION.
- REVIEW AND VERIFY ALL AS-BUILT CONDITIONS AND ACTUAL EQUIPMENT DIMENSIONS USING APPROVED MANUFACTURER/VENDOR DRAWINGS THAT AFFECT CONSTRUCTION PRIOR TO SUBMISSION OF SHOP DRAWINGS.
- COORDINATE ALL REVISIONS TO THE STRUCTURAL SYSTEM AS A RESULT OF ACCEPTANCE OF CONTRACTOR-PROPOSED ALTERNATIVES OR SUBSTITUTIONS.
- ALL COLUMNS ARE CENTERED ON GRID LINES, UNLESS NOTED OTHERWISE.
- SCALES SHOWN ON THE DRAWINGS ARE FOR GENERAL INFORMATION ONLY. DIMENSIONAL INFORMATION SHALL NOT BE OBTAINED BY MEASURING OFF THE DRAWINGS.
- PRIOR TO BID, CONDUCT A SITE WALK-THROUGH TO VERIFY QUANTITIES OF MATERIALS TO BE DEMOLISHED OR REMOVED.
- PRIOR TO CONSTRUCTION VERIFY MATERIAL CONDITION OF EXISTING CONCRETE WALLS THAT WILL BE USED TO SUPPORT NEW COOLING TOWERS. IMMEDIATELY REPORT ANY DAMAGE OR UNUSUAL CONDITIONS TO THE COTR.

B. DESIGN CODES AND STANDARDS

- 2012 INTERNATIONAL BUILDING CODE (IBC)
- AMERICAN CONCRETE INSTITUTE'S (ACI) "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" 318-11
- AMERICAN INSTITUTE OF STEEL CONSTRUCTION "LOAD AND RESISTANCE FACTOR DESIGN" (LRFD) 13TH EDITION.
- AMERICAN WELDING SOCIETY 2002 STRUCTURAL WELDING CODE (AWS D1.1)

C. DESIGN LOADS

- RISK CATEGORY (FOR DETERMINATION OF LOADING PARAMETERS) IV
- COOLING TOWER MAXIMUM OPERATING WEIGHTS:  
PERMANENT COOLING TOWERS 8,220 LBS EACH
- LIVE LOADS  
PLATFORMS AND CATWALKS 60 PSF  
STAIRS 100 PSF
- WIND LOAD PARAMETERS:  
BASIC WIND SPEED 115 MPH  
EXPOSURE C
- SNOW LOAD PARAMETERS:  
GROUND SNOW LOAD 0 PSF  
EXPOSURE FACTOR 1.0  
THERMAL FACTOR 1.2  
IMPORTANCE FACTOR 1.2
- SEISMIC LOAD PARAMETERS:  
S<sub>s</sub> 1.784  
S<sub>1</sub> 0.711  
SDS 1.189  
SDI 0.711  
SITE CLASS (ASSUMED) D  
IMPORTANCE FACTOR 1.5  
SEISMIC DESIGN CATEGORY D

D. CONCRETE

- CONCRETE CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", AMERICAN CONCRETE INSTITUTE (ACI) 318.
- CONCRETE SHALL HAVE NORMAL WEIGHT COARSE AGGREGATES CONFORMING TO ASTM C150, TYPE II OR I/II AND SHALL HAVE THE FOLLOWING COMPRESSIVE STRENGTH (F<sub>c</sub>) OF 4,000 PSI AT 28 DAYS UON.
- DETAILING OF CONCRETE REINFORCEMENT BARS AND ACCESSORIES SHALL CONFORM TO THE RECOMMENDATIONS OF ACI 315 "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT" AND ACI SP-66 "DETAILING MANUAL". PLACING OF REINFORCING BARS SHALL CONFORM TO THE RECOMMENDATIONS OF ACI 315R "MANUAL OF ENGINEERING AND PLACING DRAWINGS FOR REINFORCED CONCRETE STRUCTURES" AND CRSI "MANUAL OF STANDARD PRACTICE".
- MIXING, TRANSPORTING, AND PLACING OF CONCRETE SHALL CONFORM TO ACI 301.
- MINIMUM CONCRETE COVER PROTECTION FOR REINFORCEMENT BARS SHALL BE IN ACCORDANCE WITH ACI 318, SECTION 7.7 REQUIREMENTS SHOWN BELOW UON.
  - A. CONCRETE CAST AGAINST & PERMANENTLY EXPOSED TO EARTH 3 IN
  - B. EXPOSED TO EARTH OR WEATHER WHERE FORMS ARE USED:  
NO. 6 BARS AND LARGER 2 IN  
NO. 5 BARS AND SMALLER 1 1/2 IN
- CONCRETE REINFORCEMENT BARS SHALL BE ASTM A 615, GRADE 60, DEFORMED.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE REQUIREMENTS OF THE CONCRETE SUPPLIER AND PUMPER TO ENSURE A PUMPABLE AND WORKABLE MIX WITHOUT THE ADDITION OF WATER AT THE JOB SITE. THE USE OF PLASTICIZERS, RETARDANTS AND OTHER ADDITIVES SHALL BE AT THE OPTION OF THE CONTRACTOR SUBJECT TO THE APPROVAL OF THE COTR. FOLLOW THE RECOMMENDATIONS OF THE MANUFACTURER FOR THE PROPER USE OF ADDITIVES.
- THE CONTRACTOR SHALL SUBMIT PROPOSED MIX DESIGNS FOR REVIEW BY THE COTR. MIX DESIGNS SHALL SHOW WEIGHT PROPORTIONS FOR ALL COMPONENTS OF THE MIX. THE CONTRACTOR SHALL NOT VARY FROM THE MIX DESIGN WITHOUT APPROVAL OF THE COTR.

E. STRUCTURAL STEEL

- STRUCTURAL STEEL DETAILING, FABRICATION AND ERECTION SHALL CONFORM TO THE AISC "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" THIRTEENTH EDITION AND THE AISC "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES". WHERE THE FABRICATOR MUST SELECT OR COMPLETE CONNECTION DETAILS, OR WHERE THE FABRICATOR INTENDS TO CHANGE A CONNECTION THAT IS FULLY DETAILED IN THE CONTRACT DOCUMENTS, THE FABRICATOR IS RESPONSIBLE FOR THE STRUCTURAL ADEQUACY OF SUCH CONNECTIONS. APPROVAL OF THE FABRICATOR'S SHOP DRAWINGS BY THE COTR DOES NOT CONSTITUTE ACCEPTANCE BY THE COTR DESIGN RESPONSIBILITY FOR THE STRUCTURAL ADEQUACY OF THE CONNECTIONS.
- MATERIALS SHALL CONFORM TO THE STANDARDS LISTED:  
W-SHAPES: ASTM A992  
PLATES, ANGLES AND CHANNELS: ASTM A36  
COLD-FORMED HSS: ASTM A500 GRADE C  
ANCHOR RODS: ASTM F1554, GRADE 36  
STRUCTURAL BOLTS: ASTM A325
- USE STANDARD FRAMED OR SEATED CONNECTIONS AS SHOWN IN THE AISC STEEL CONSTRUCTION MANUAL UNLESS OTHERWISE NOTED. THE FABRICATOR SHALL DESIGN ALL CONNECTIONS NOT SPECIFICALLY DETAILED ON THE DRAWINGS, UNLESS REACTIONS ARE INDICATED ON THE DRAWINGS, PROVIDE SHEAR CONNECTIONS WITH A SERVICE LOAD CAPACITY OF 20 KIPS. IN ADDITION TO THE REQUIREMENTS ABOVE, USE AT LEAST TWO (2) 3/4 IN DIA BOLTS PER CONNECTION. CONTRACTOR SHALL SUBMIT CONNECTION DESIGN CALCULATION AND SHOP DRAWINGS TO COTR FOR REVIEW AND APPROVAL. ALL CALCULATIONS AND DRAWINGS SHALL BE SIGNED AND SEALED BY A LICENSED PROFESSIONAL STRUCTURAL ENGINEER.
- TYPICAL CONNECTION DETAILS ARE INDICATED ON THE DRAWINGS. THE FABRICATOR SHALL PREPARE THE SHOP DRAWINGS FOR THE PROJECT BASED ON THE CONNECTION DESIGN INFORMATION. IF ALTERNATE CONNECTION DESIGNS ARE USED, THE FABRICATOR SHALL HAVE A REGISTERED PROFESSIONAL ENGINEER PREPARE THE CONNECTION DESIGNS. SUCH DESIGNS SHALL BE SUBMITTED WITH THE SHOP DRAWINGS AND SHALL BEAR THE SEAL OF A PROFESSIONAL ENGINEER.
- WELDING SHALL CONFORM TO THE AMERICAN WELDING SOCIETY STANDARD D1.1. ELECTRODES FOR SHOP AND FIELD WELDS SHALL CONFORM TO AWS A5.1 OR AWS A5.5, CLASS E70XX, LOW HYDROGEN.
- PROVIDE WELDED JOINTS THAT MEET THE REQUIREMENTS FOR A PREQUALIFIED DESIGNATION. PROVIDE COMPLETE PENETRATION WELDS FOR ALL BUTT AND GROOVE WELDS. FILLET WELDS SHALL BE A MINIMUM SIZE OF 3/16" AND CONTINUOUS UNLESS OTHERWISE SHOWN BY THE WELD SYMBOL. REMOVE RUN ON AND RUN OFF TABS.
- SPLICING OF STRUCTURAL STEEL MEMBERS WHERE NOT DETAILED ON THE CONTRACT DOCUMENTS IS PROHIBITED WITHOUT THE PRIOR APPROVAL OF THE COTR AS TO LOCATION, TYPE OF SPLICE AND CONNECTION TO BE MADE.
- THE CONTRACTOR SHALL NOTIFY COTR OF ANY MISFABRICATED STRUCTURAL STEEL PRIOR TO ERECTION OF SAME.
- PENETRATIONS SHALL NOT BE CUT IN STRUCTURAL STEEL MEMBERS UNLESS SO INDICATED IN THE DRAWINGS OR AS APPROVED BY THE COTR.
- ALL STEEL MEMBERS AND CONNECTIONS SHALL BE HOT DIP GALVANIZED. STEEL MEMBERS, FABRICATIONS AND ASSEMBLIES INDICATED ON THE DRAWINGS TO BE GALVANIZED SHALL BE GALVANIZED AFTER FABRICATION BY HOT DIP PROCESS IN ACCORDANCE WITH ASTM A123. WEIGHT OF ZINC COATING TO CONFORM TO THE REQUIREMENTS SPECIFIED UNDER "WEIGHT OF COATING" IN ASTM A123 OR ASTM A386, AS APPLICABLE.
- USE 3/8" MINIMUM GUSSETT PLATE THICKNESS, UNLESS OTHERWISE NOTED.
- PROVIDE DRAINAGE WEEP HOLES AT THE BASES OF HSS COLUMNS.

F. INSPECTIONS

- THE CONTRACTOR WILL PROVIDE SPECIAL INSPECTION PER 2012 IBC SECTION 1704 FOR THE FOLLOWING ITEMS:
  - A. REINFORCING STEEL PLACEMENT 1705.2

G. STEEL STAIRS

- STAIRS SHALL BE INDUSTRIAL TYPE STAIRS WITH STEEL GRATING TREADS.
- ALL CONNECTIONS AND STEEL SHALL BE GALVANIZED UNLESS NOTED OTHERWISE.
- CONTRACTOR SHALL COORDINATE STAIR CONSTRUCTION WITH EXISTING CONDITIONS AND EQUIPMENT TO BE INSTALLED TO ENSURE STAIRS FULLY COMPLY WITH CODE REQUIREMENTS.
- METAL RAILING SYSTEMS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM E 985.

H. POST-INSTALLED ANCHORS

- DRILLED AND EPOXY CONCRETE ANCHORS SHALL USE HILTI HIT-HY 200 EPOXY ICC ESR-3187 OR APPROVED EQUIVALENT. EXPANSION ANCHORS SHALL BE GALVANIZED OR STAINLESS STEEL HILTI KWIK BOLT TZ (ICC ESR-1917) OR APPROVED EQUIVALENT.

I. COOLING TOWERS

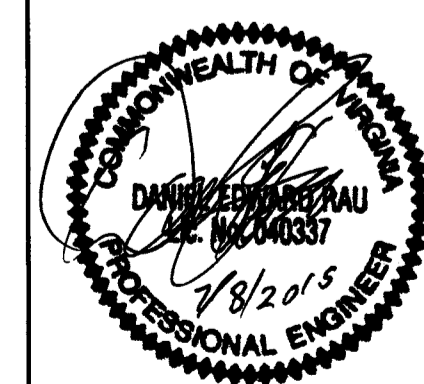
- THE STRUCTURES ARE DESIGNED TO SUPPORT PERMANENT COOLING TOWERS WITH MAXIMUM OPERATING WEIGHTS INDICATED ON THIS DRAWING. DESIGN IS BASED ON EVAPCO USS-19-311 TOWER. ENSURE THAT EQUIPMENT WEIGHT DOES NOT EXCEED THESE VALUES. THE TEMPORARY COOLING TOWER STRUCTURES ARE DESIGNED BASED ON THE AGGREGO AG-6 MODULAR INDUSTRIAL COOLING TOWER.

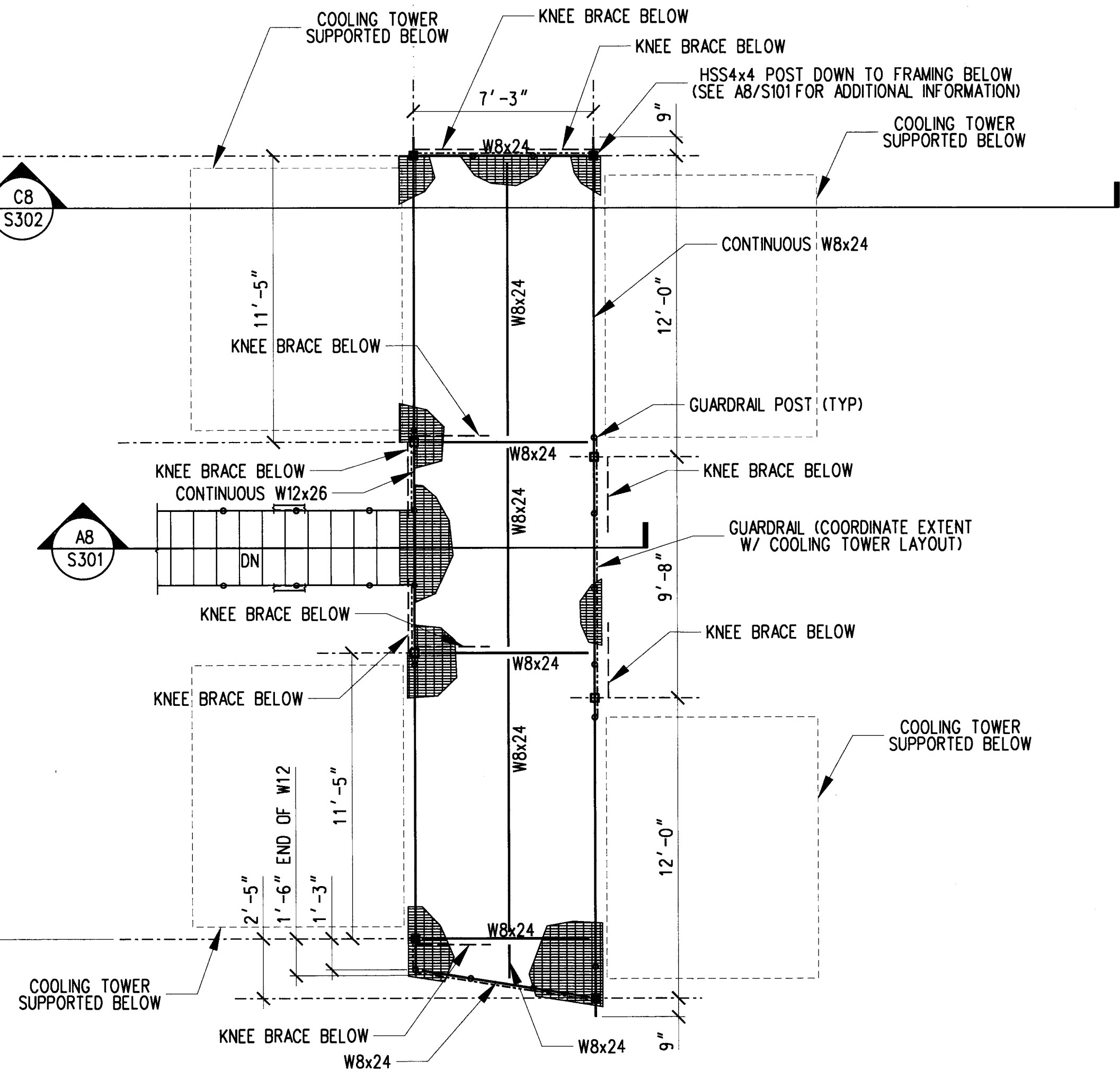
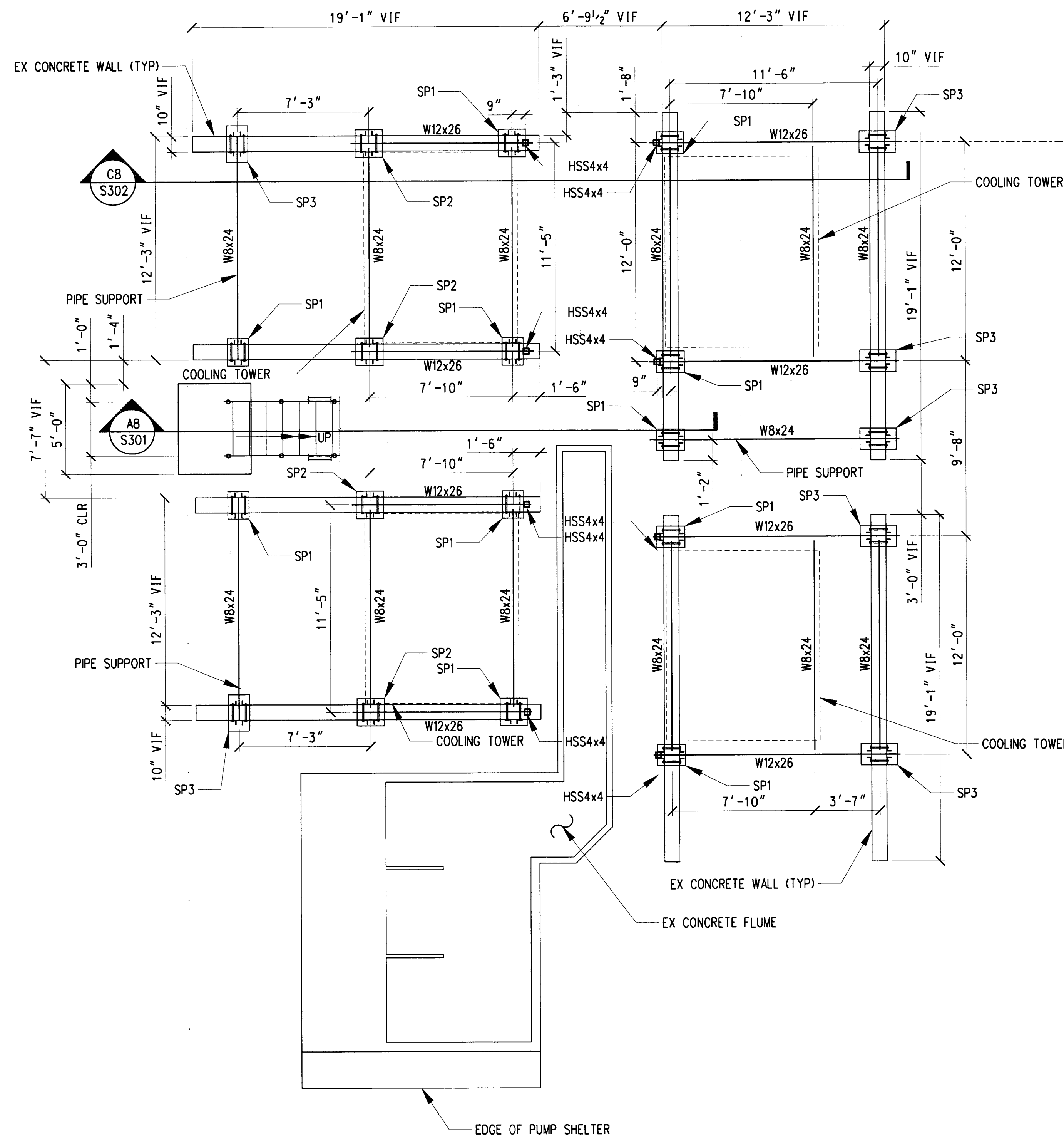
STRUCTURAL ABBREVIATIONS

ACI	A	AMERICAN CONCRETE INSTITUTE
ADDL		ADDITIONAL
BRCG	B	BRACING
	C	
CL		CENTER LINE
CLR		CLEAR
CONN		CONNECTION
COTR		CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE
	D	
DIA		DIAMETER
	E	
EE		EACH END
DF		EACH FACE
EL		ELEVATION
EW		EACH WAY
	F	
FDN		FOUNDATION
FTG		FOOTING
	G	
GALV		GALVANIZED
	H	
HCA		HEADED CONCRETE ANCHORS
	I	
IF		INSIDE FACE
	K	
KB		KNEE BRACE
	L	
LLH		LONG LEG HORIZONTAL
LLV		LONG LEG VERTICAL
LL		LIVE LOAD
LP		LOW POINT
LSH		LONG SIDE HORIZONTAL
LW		LIGHT WEIGHT
Ld		REINFORCEMENT DEVELOPMENT LENGTH
	N	
NF		NEAR FACE
	O	
OF		OUTSIDE FACE
OV5		OVERSIZED
	P	
PC		PIECE
PL		PLATE
PROJ		PROJECTION
	R	
REINF		REINFORCEMENT
	S	
SOG		SLAB ON GRADE
SPA		SPACE
	T	
T		TENSION
T&B		TOP AND BOTTOM
THD		THREAD
TOC		TOP OF CONCRETE
TOS		TOP OF STEEL
	U	
UON		UNLESS OTHERWISE NOTED
	V	
VIF		VERIFY IN FIELD

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PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>					
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA					
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER STRUCTURAL GENERAL NOTES AND ABBREVIATIONS					
FREMONT		OAKLAND (ZOA) ARTCC			
REVIEWED BY	SUBMITTED BY	APPROVED BY			
	<i>RSBradfish</i>	<i>[Signature]</i>			
SUBMITTER'S TITLE		APPROVER'S TITLE			
OAKLAND ARTCC FREMONT, CALIFORNIA		DESIGNED BY D. RAU	ISSUED BY	DATE 07/08/2015	JCN
		DRAWN BY J. GALLAGHER	AIRWAY FACILITY DIVISION	DRAWING NO. ZOA - D - CWBMS - S001	REV.
6/29/2015					





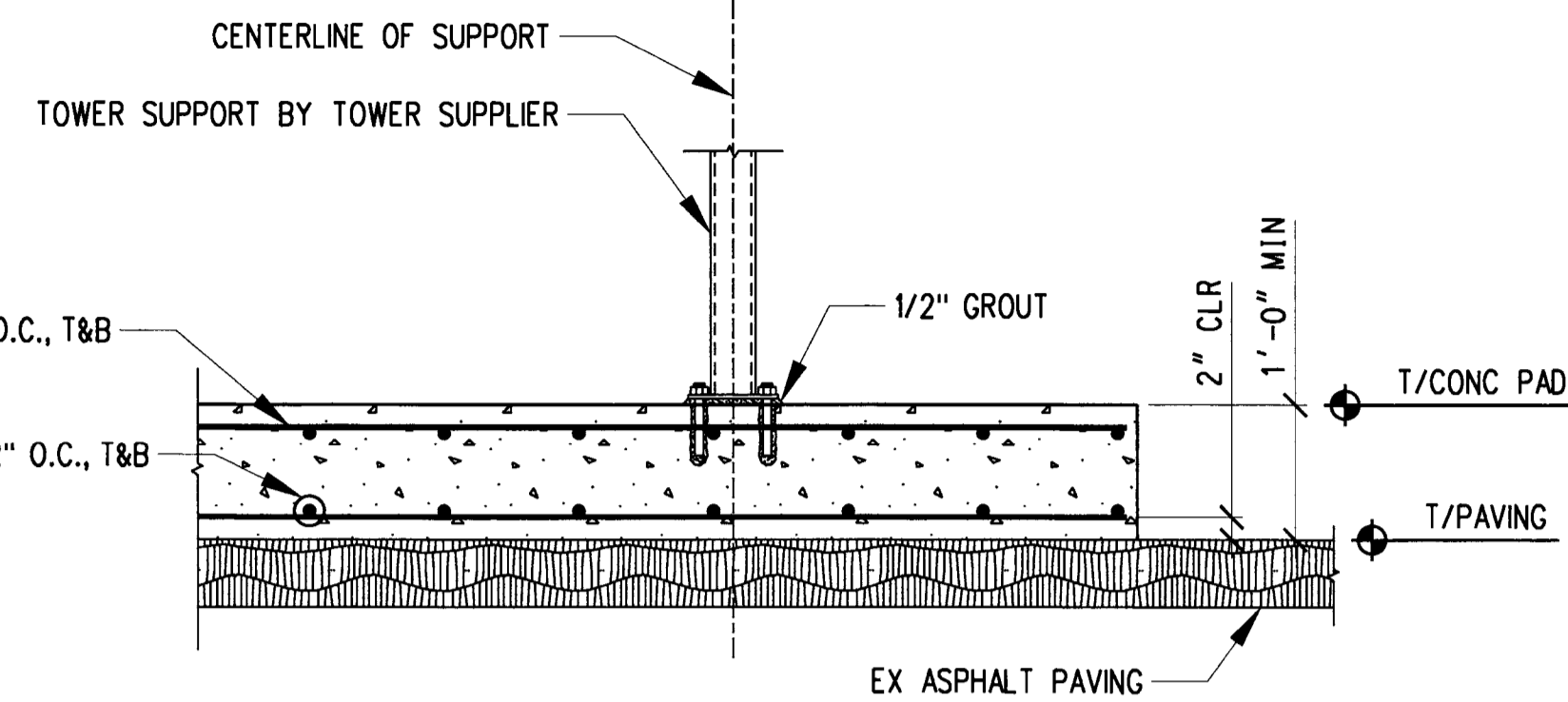
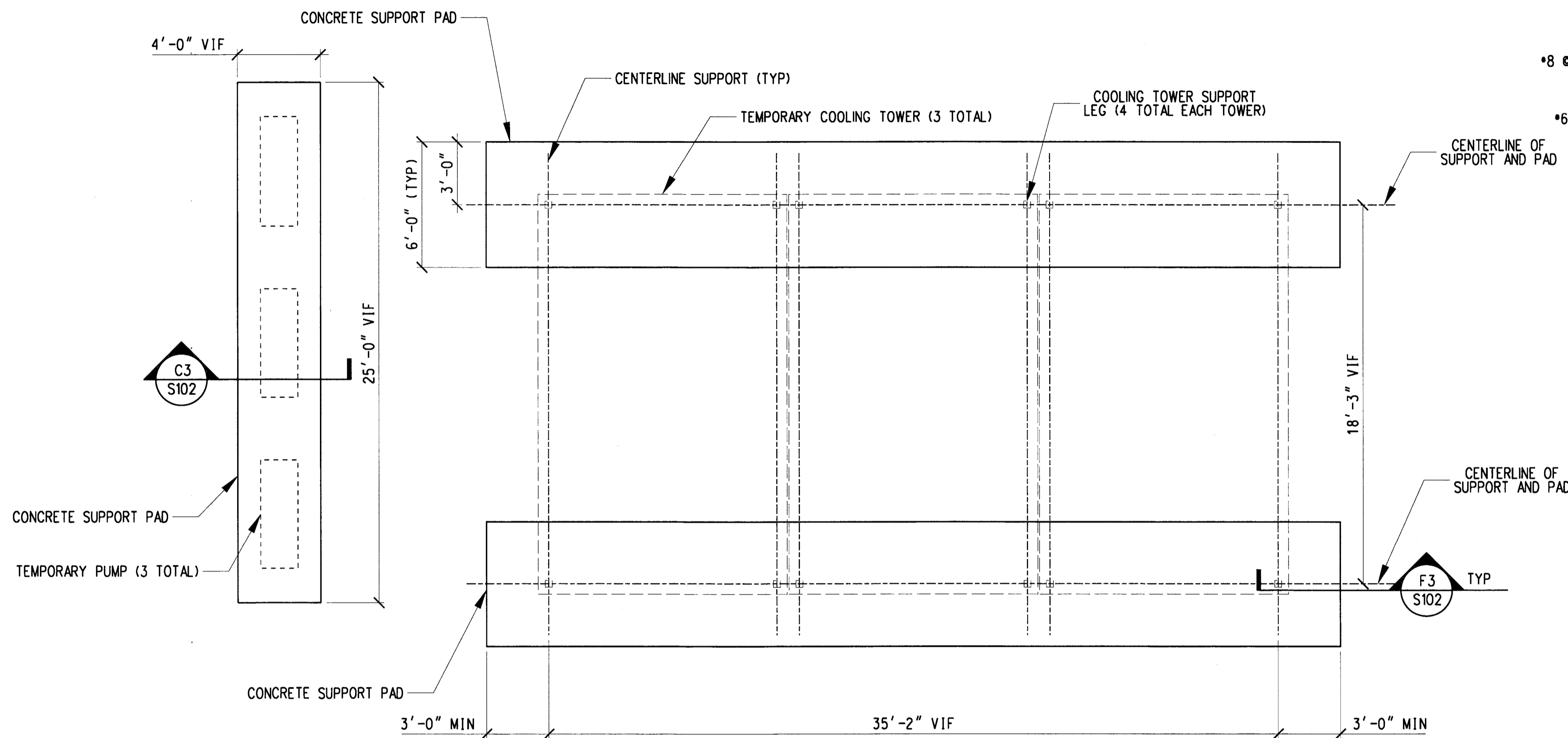
**C4** CATWALK FRAMING PLAN  
**S101** SCALE: 1/4" = 1'-0"

NOTE: SP1 DENOTES SUPPORT PLATE TYPE, REFER TO DETAILS ON S302 FOR ADDITIONAL INFORMATION.

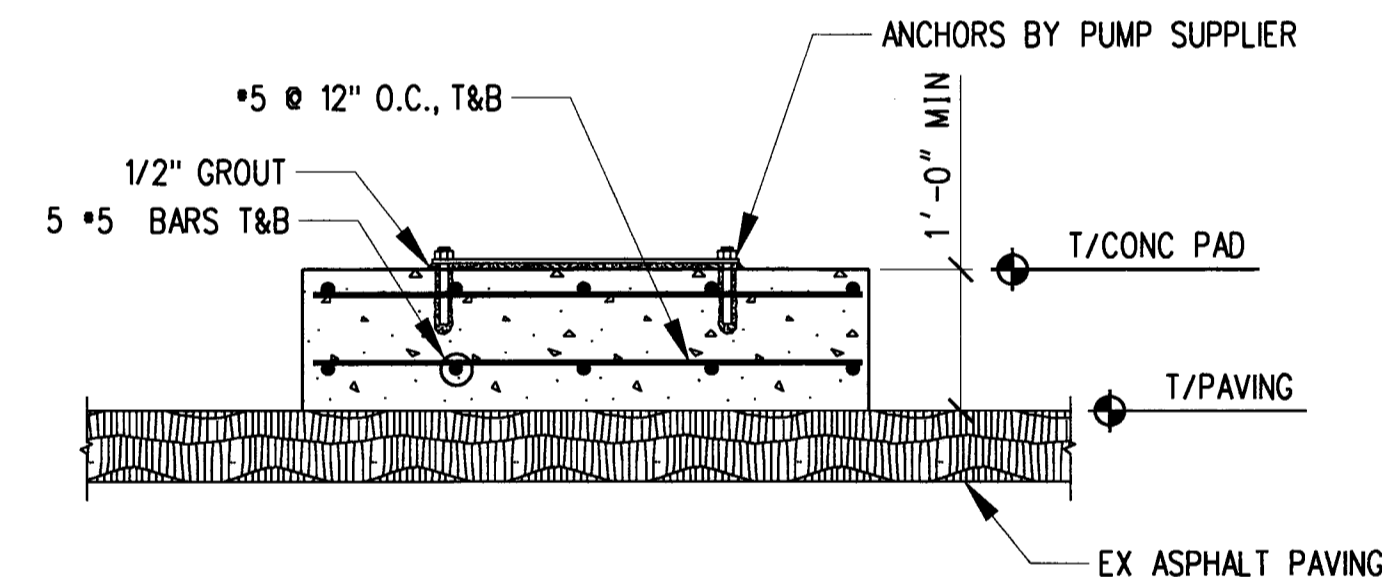
**A8** COOLING TOWER SUPPORT FRAMING PLAN  
**S101** SCALE: 1/4" = 1'-0"

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<b>JACOBS</b>					
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>					
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER COOLING TOWER AND CATWALK FRAMING PLANS FREMONT <span style="float: right;">OAKLAND (ZOA) ARTCC</span>					
DESIGNED BY	D. RAU	ISSUED BY	D. RAU	DATE	07/08/2015
DRAWN BY	D. RAU	CHECKED BY	J. GALLAGHER	DRAWING NO.	ZOA - D - CWBMS - S101
REVIEWED BY		SUBMITTED BY	RSBradfish	APPROVED BY	<i>[Signature]</i>
OAKLAND ARTCC FREMONT, CALIFORNIA			OAKLAND ARTCC FREMONT, CALIFORNIA		



**F3** TEMPORARY COOLING TOWER SUPPORT PADS  
**S102** SCALE: 3/4" = 1'-0"



**C3** TEMPORARY PUMP SUPPORT PADS  
**S102** SCALE: 3/4" = 1'-0"

- NOTES: 1. COORDINATE SIZE AND LOCATIONS OF CONCRETE PADS WITH ACTUAL EQUIPMENT INSTALLED.  
 2. DEMOLISH CONCRETE PADS AND REPAIR ASPHALT PAVING AFTER TEMPORARY COOLING TOWERS AND PUMPS ARE REMOVED.  
 3. MAXIMUM HEIGHT OF TEMPORARY COOLING TOWER STEEL SUPPORTS SHALL BE 8'-6".

**A8** TEMPORARY COOLING TOWERS AND PUMPS FOUNDATION PLAN  
**S102** SCALE: 1/4" = 1'-0"

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<b>JACOBS</b>					
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA					
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER TEMPORARY COOLING TOWER FOUNDATION PLAN FREMONT OAKLAND (ZOA) ARTCC					
DESIGNED BY	SUBMITTED BY		APPROVED BY		
D. RAJ	RBradfish		<i>[Signature]</i>		
DRAWN BY	SUBMITTER'S TITLE		APPROVER'S TITLE		
D. RAJ	OAKLAND ARTCC		AIRWAY FACILITY DIVISION		
CHECKED BY	ISSUED BY	DATE	JCN	REV.	
K. LECHNER		07/08/2015			
6/29/2015					

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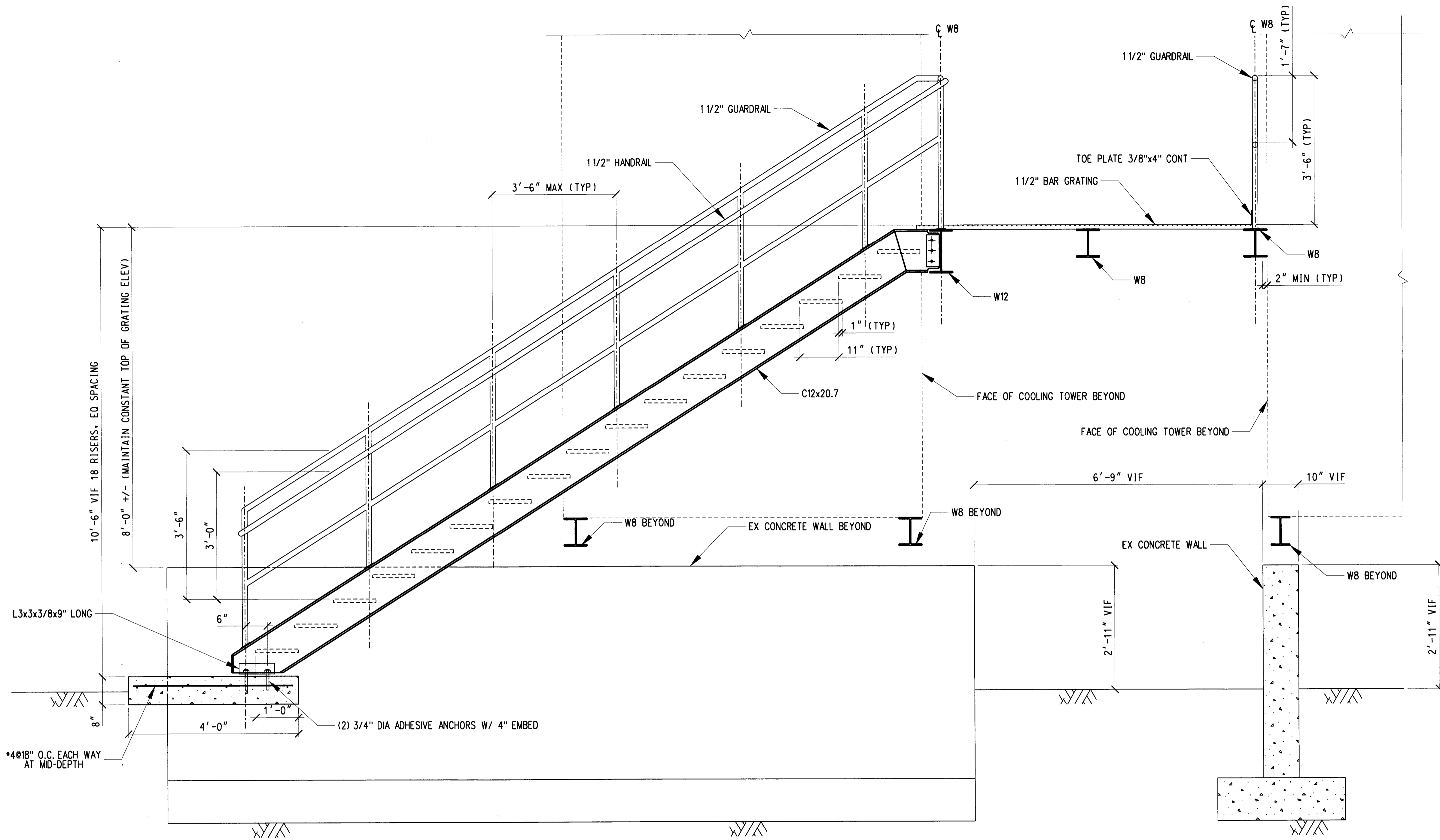
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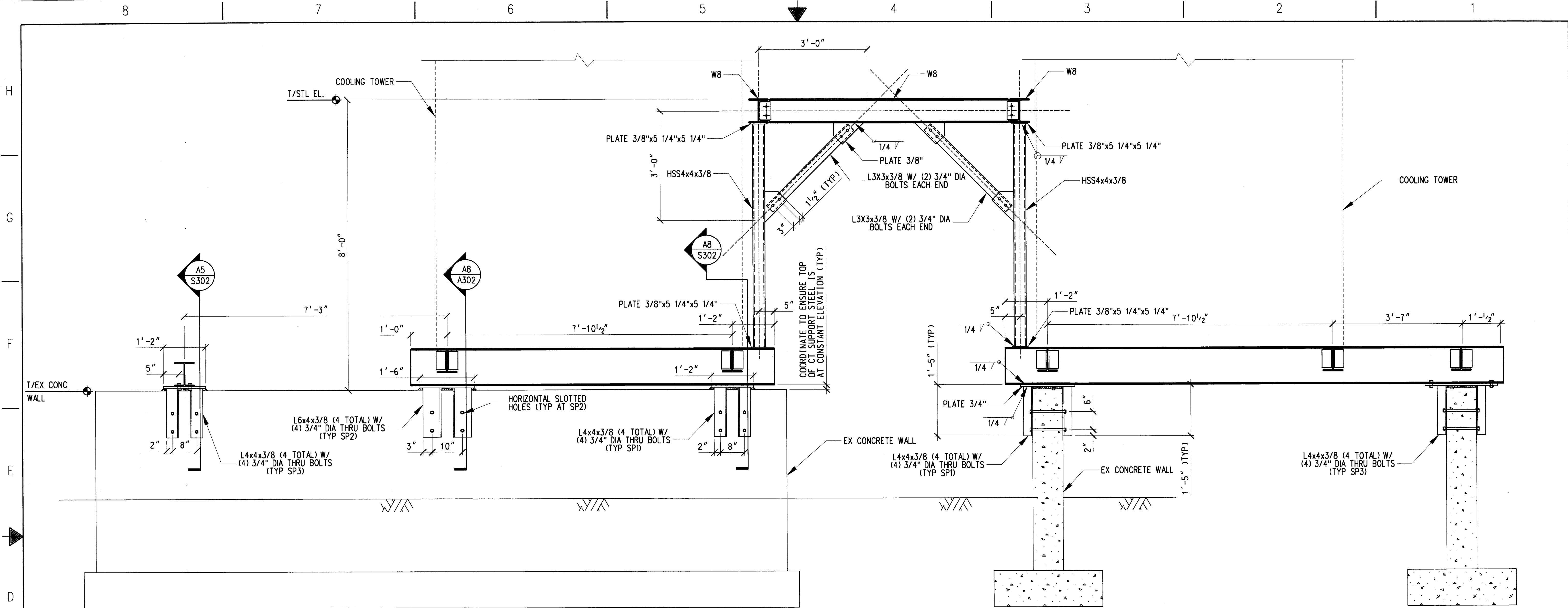
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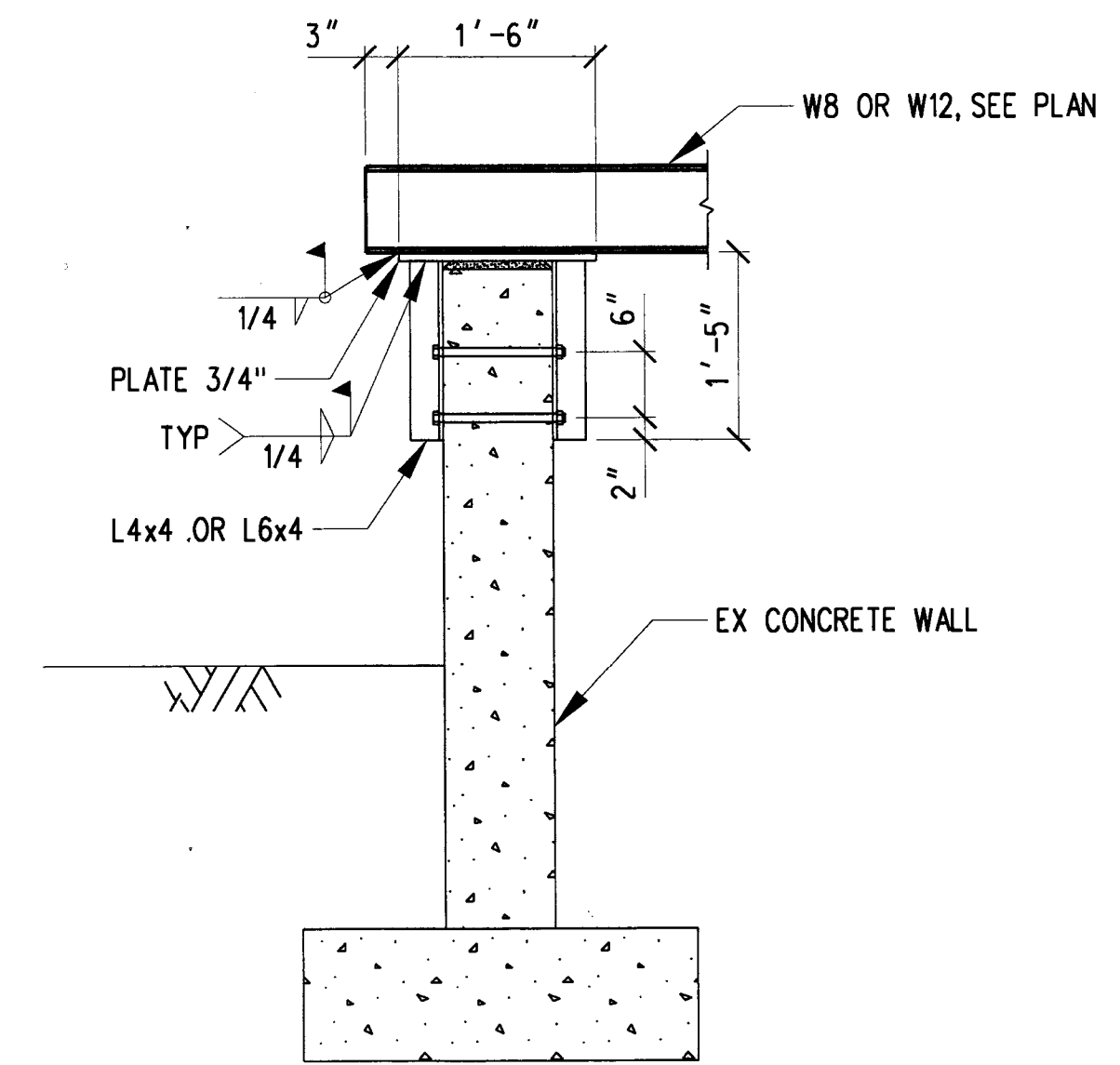
**A8 STAIR SECTION**  
 S301 SCALE: 3/4" = 1'-0"

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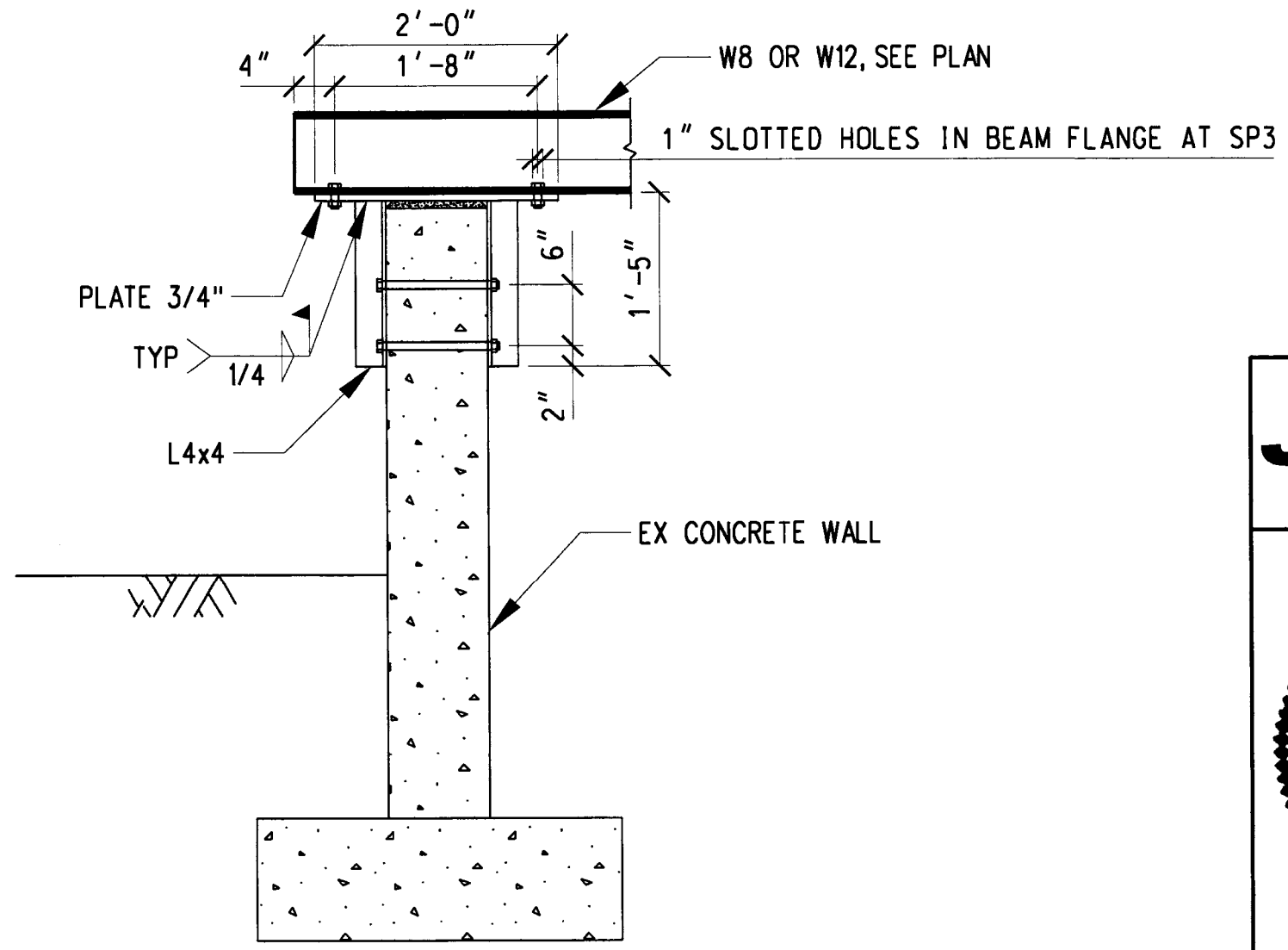
<b>JACOBS</b>		REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA							
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER							
STAIR SECTION OAKLAND (ZOA) ARTCC							
FREMONT							
REVIEWED BY	SUBMITTED BY <i>RSBradfish</i>			APPROVED BY <i>[Signature]</i>			
DESIGNED BY	SUBMITTER'S TITLE			APPROVER'S TITLE			
DRAWN BY	ISSUED BY			DATE 07/08/2015 JCN			
CHECKED BY	OAKLAND ARTCC FREMONT, CALIFORNIA			DRAWING NO. ZOA - D - CWBMS - S301			



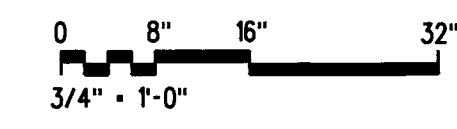
**C8** EQUIPMENT SUPPORT AND CATWALK FRAMING  
S302 SCALE: 3/4" = 1'-0"



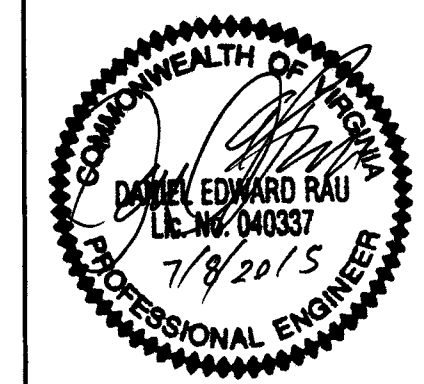
**A8** SP1 AND SP2 BEAM SUPPORT DETAIL  
S302 SCALE: 3/4" = 1'-0"



**A5** SP3 BEAM SUPPORT DETAIL  
S302 SCALE: 3/4" = 1'-0"



**JACOBS**



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FREMONT,  
CALIFORNIA

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REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>					
<b>CONTROL WING BASEMENT            AND CHILLER/COOLING TOWER MODERNIZATION            OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER</b>					
<b>SECTIONS AND DETAILS</b>					
FREMONT			OAKLAND (ZOA) ARTCC		
REVIEWED BY	SUBMITTED BY	APPROVED BY			
	RSBradfish				
DESIGNED BY	SUBMITTER'S TITLE	APPROVER'S TITLE	DATE	JCN	REV.
D. RAU			07/08/2015		
DRAWN BY	ISSUED BY	AIRWAY FACILITY DIVISION			
D. RAU					
CHECKED BY	DRAWING NO. ZOA - D - CWBMS - S302				
J. GALLAGHER					

SCHEDULE 1 - BRACING PIPES ON TRAPEZE								
PIPE SIZE (SEE NOTE A)	MAX DEAD LOAD ON TRAPEZE (LBS)	BOLTS TO ANGLE (SEE NOTE B)	VERTICAL TRANSVERSE & LONGITUDINAL ANGLES (SEE NOTE C)	MAXIMUM TRAPEZE SPAN	TRAPEZE SIZE (DOUBLE STRUT CHANNEL)	TOP CONNECTION OF DIAGONAL & LONGITUDINAL ANGLE	ROD SIZE	MAX LENGTH FOR RODS
2-1/2	320	5/8" DIA	3"x3"x1/2 GA (1/4" CABLE)	4'-0"	1-5/8" x3-1/4" x16 GA	TYPE E	5/8" DIA	31"
3	440	5/8" DIA	3"x3"x1/4 IN(1/2" CABLE)	4'-0"	1-5/8" x3-1/4" x16 GA	TYPE F	5/8" DIA	31"
3-1/2	540	5/8" DIA	3"x3"x1/4 IN(1/2" CABLE)	4'-0"	1-5/8" x3-1/4" x16 GA	TYPE F	3/4" DIA	37"
4	660	7/8" DIA	3"x3"x1/4 IN(1/2" CABLE)	4'-0"	1-5/8" x3-1/4" x16 GA	TYPE G	7/8" DIA	43"
5	940	3/4" DIA	3"x3"x1/4 IN(1/2" CABLE)	4'-0"	1-5/8" x3-1/4" x16 GA	TYPE F	1" DIA	50"
6	945	3/4" DIA	3"x3"x1/4 IN(1/2" CABLE)	3'-10"	1-5/8" x3-1/4" x16 GA	TYPE F	1" DIA	50"
8	1010	3/4" DIA	3"x3"x1/4 IN(1/2" CABLE)	3'-6"	1-5/8" x3-1/4" x16 GA	TYPE F	1" DIA	62"

SCHEDULE 2 - BRACING PIPES										
PIPE SIZE (SEE NOTE B)	BOLTS TO L'S (B) (SEE NOTE C)	VERTICAL L'S (C) (SEE NOTE C)	TRANSVERSE L'S	LONGITUDINAL L'S	MAX. SPACING (FT)		TOP CONNECTION OF DIAGONAL & LONGITUDINAL L'S (A) (SEE NOTE A)	ROD SIZE	MAX LENGTH FOR RODS	
					TRANSV	LONGIT				
2-1/2	3/8" DIA	2-1/2x2-1/2x12 GA	3x3x16 GA (1/4" CABLE)	3x3x12 GA (1/4" CABLE)	40	80	TYPE C	5/8" DIA	31"	
3	1/2" DIA	2-1/2x2-1/2x12 GA	3x3x16 GA (1/4" CABLE)	3x3x12 GA (1/4" CABLE)	40	80	TYPE D	3/4" DIA	37"	
4	5/8" DIA	3x3x12 GA	3x3x12 GA (1/4" CABLE)	3x3x12 GA (1/4" CABLE)	40	80	TYPE E	7/8" DIA	43"	
5	5/8" DIA	2x2x1/4 IN	3x3x12 GA (1/4" CABLE)	3x3x12 GA (1/4" CABLE)	40	80	TYPE F	1" DIA	50"	
6	3/4" DIA	2-1/2x2-1/2x1/4 IN	3x3x12 GA (1/4" CABLE)	3x3x1/4 IN (1/2" CABLE)	40	80	TYPE G	1 1/8" DIA	56"	
8	3/4" DIA	2x2x1/4 IN	3x3x1/4 IN (1/2" CABLE)	3x3x1/4 IN (1/2" CABLE)	40	40	TYPE F	1" DIA	50"	

SCHEDULE 1 NOTES

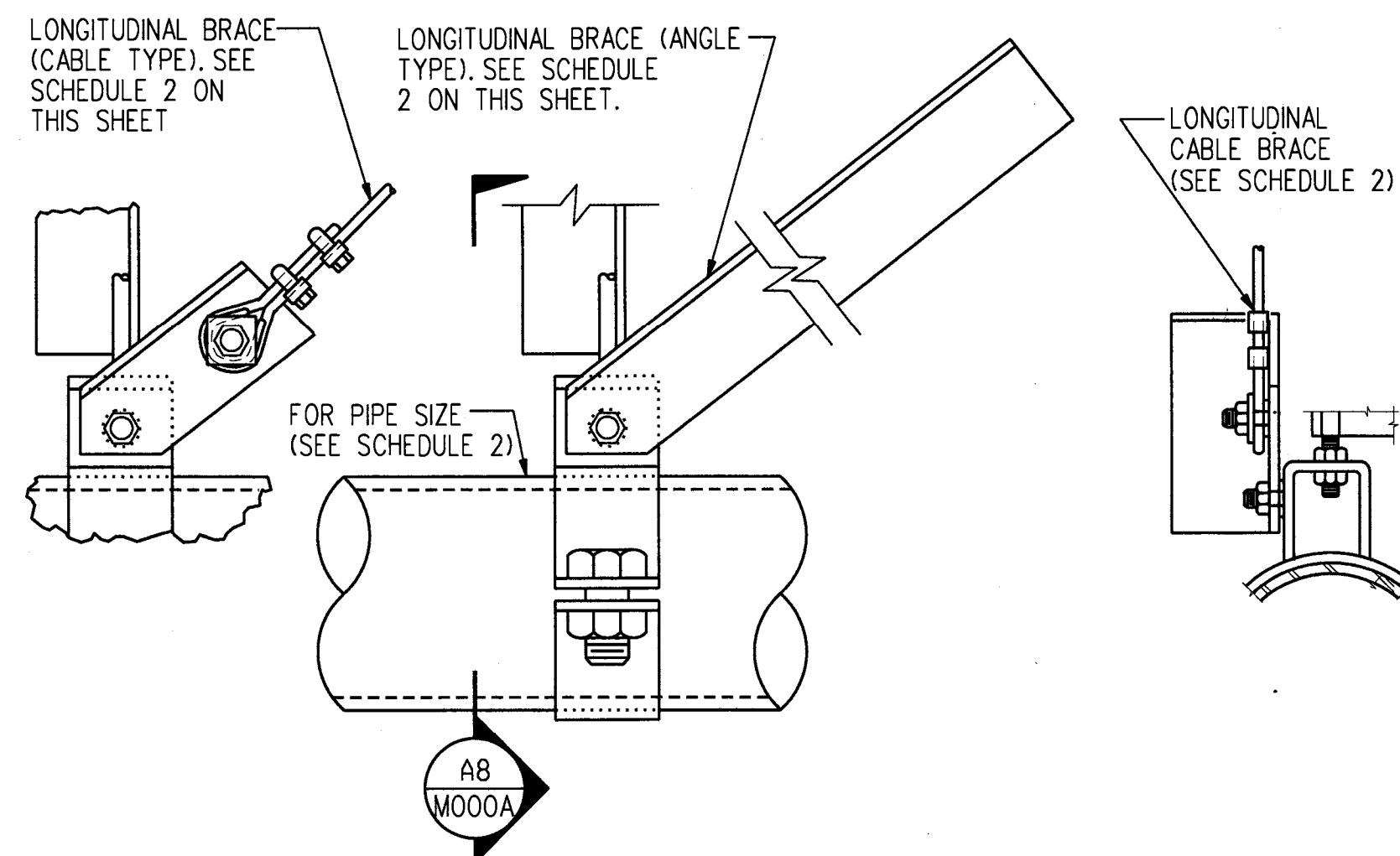
- A. THIS SCHEDULE IS BASED ON FOUR EQUAL SIZED PIPE ARRANGEMENT FOR PIPE 5" AND SMALLER. THE SCHEDULE ALSO LIMITS THE NUMBER OF 6" PIPES TO THREE, AND 8" PIPES TO TWO. HOWEVER, ANY COMBINATION OF PIPES CAN BE USED IF THE TOTAL COMBINED WEIGHT OF THE PIPES ON A TRAPEZE IS EQUAL TO OR LESS THAN THE "MAX DEAD LOAD" NOTED AND THAT THE MAXIMUM TRAPEZE SPAN AND SIZE AT DIAGONAL BRACES NOTED IN THE SCHEDULE ARE MAINTAINED.
- B. PLACE STANDARD FLAT WASHERS BETWEEN SHEET METAL ANGLE AND NUT.
- C. PROVIDE TRANSVERSE AND LONGITUDINAL BRACES FOR TRAPEZE SUPPORTS AS FOLLOWS:  

PIPE SIZE	DIAGONAL (TRANSVERSE) BRACE SPACING	LONGITUDINAL BRACE SPACING
3-1/2" & SMALLER	40'-0" OC MAXIMUM	40'-0" OC MAXIMUM
4" THRU 6"	20'-0" OC MAXIMUM	20'-0" OC MAXIMUM

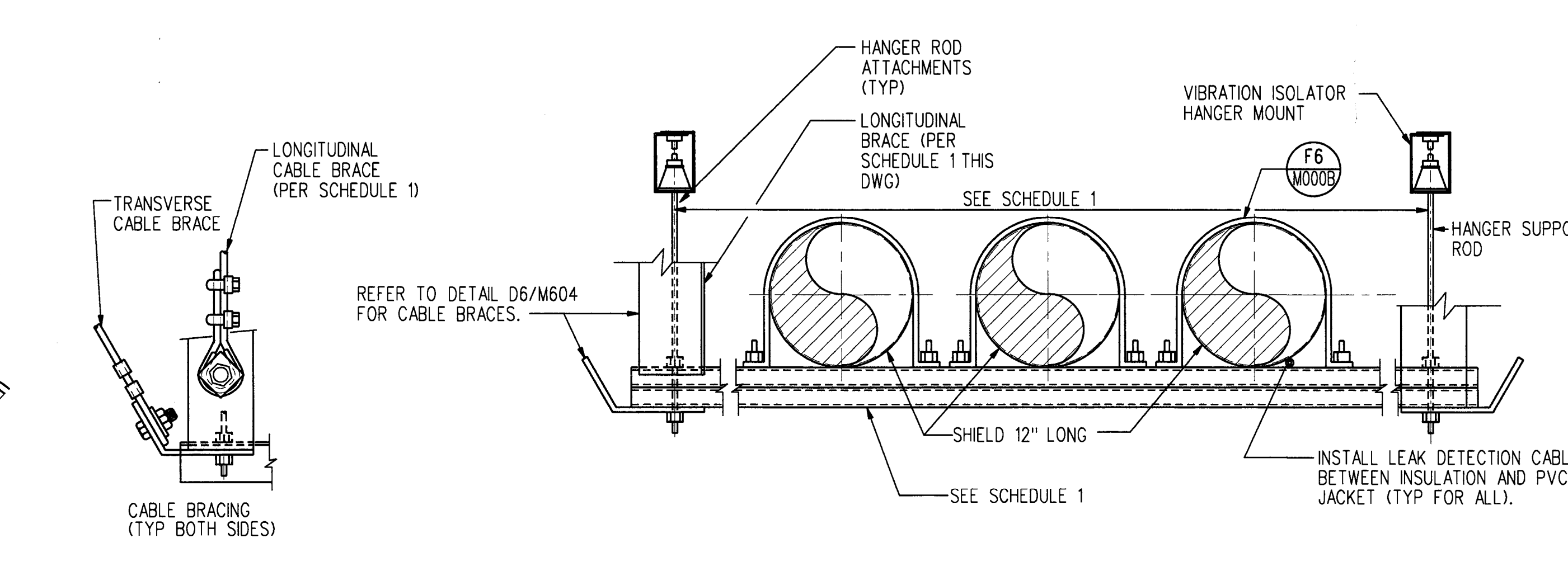
 INSTALL ONE TRANSVERSE BRACE AND ONE LONGITUDINAL BRACE AT EACH END OF THE TRAPEZE.
- D. TABLE BASED ON SMACNA TABLE AA-8. RESTRAINT SYSTEMS ENGINEERED BY LICENSED PROFESSIONAL ENGINEER THAT ARE EQUIVALENT TO SMACNA REQUIREMENTS MAY BE SUBSTITUTED.

SCHEDULE 2 NOTES

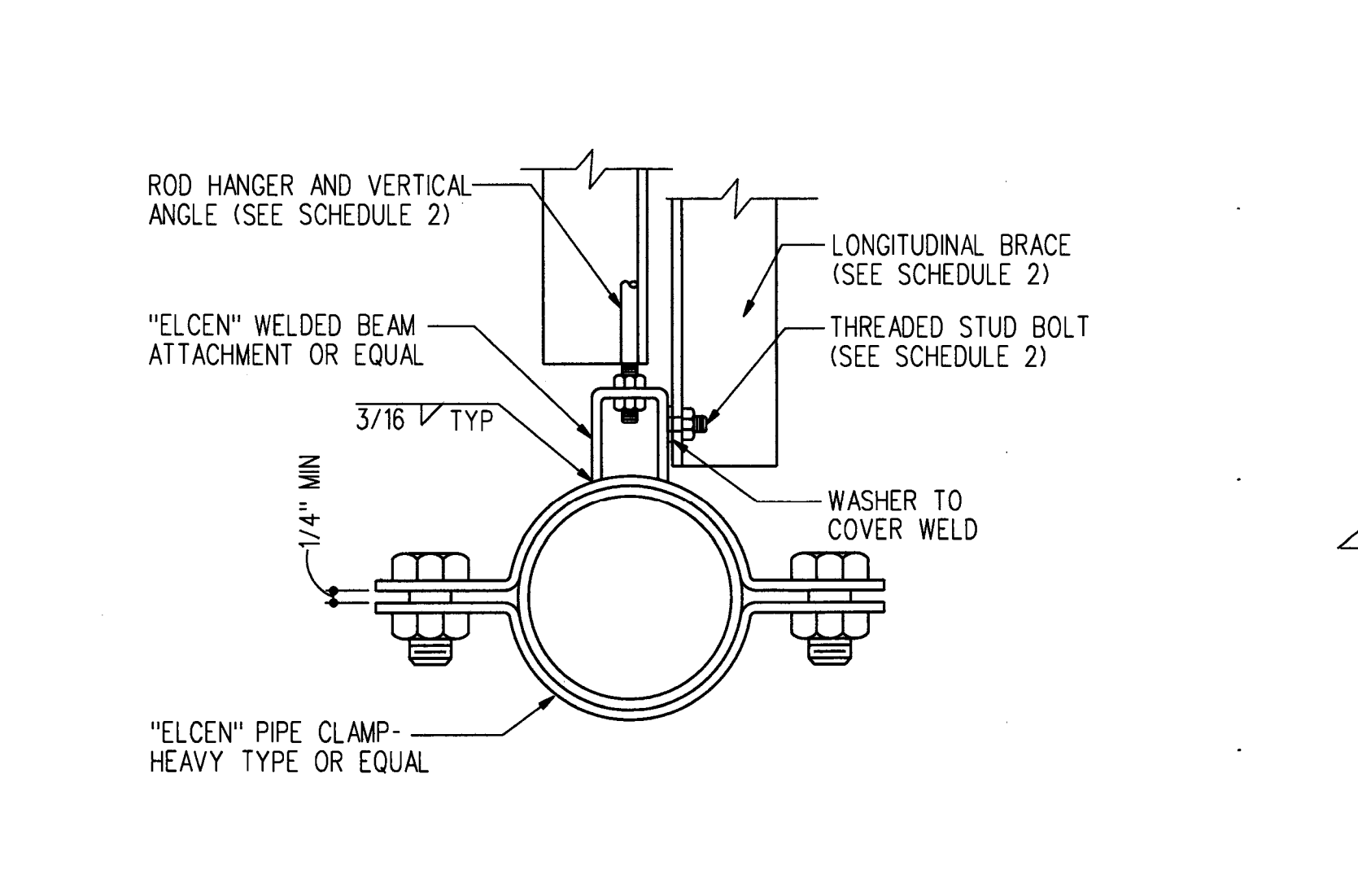
- A. SEE SCHEDULE 1 ON M000B.
- B. PLACE STANDARD FLAT WASHERS BETWEEN SHEET METAL L'S AND NUT
- C. "VERTICAL ANGLE" IN THE SCHEDULE IS REQUIRED IN ADDITION THE HANGER ROD ONLY WHEN "MAXIMUM LENGTH FOR RODS" IS EXCEEDED
- D. TABLE BASED ON SMACNA TABLE AA-7. RESTRAINT SYSTEMS ENGINEERED BY LICENSED PROFESSIONAL ENGINEER THAT ARE EQUIVALENT TO SMACNA REQUIREMENTS MAY BE SUBSTITUTED.



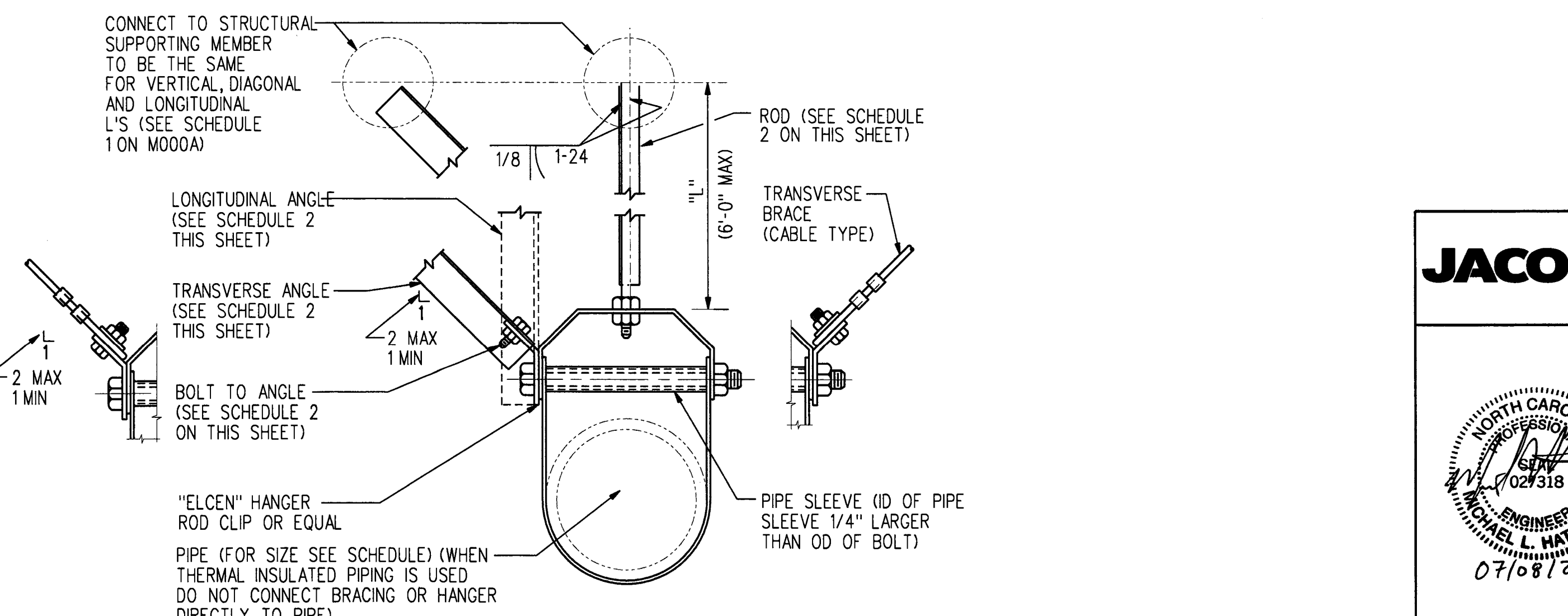
D8 TYPICAL LONGITUDINAL PIPE BRACING DETAIL  
M000A NTS



D5 TRAPEZE TYPE PIPE HANGER DETAIL-W/BRACING  
M000A NTS



A8 PARTIAL SECTION  
M000A NTS



A6 TYPICAL TRANSVERSE PIPE BRACING DETAIL  
M000A NTS

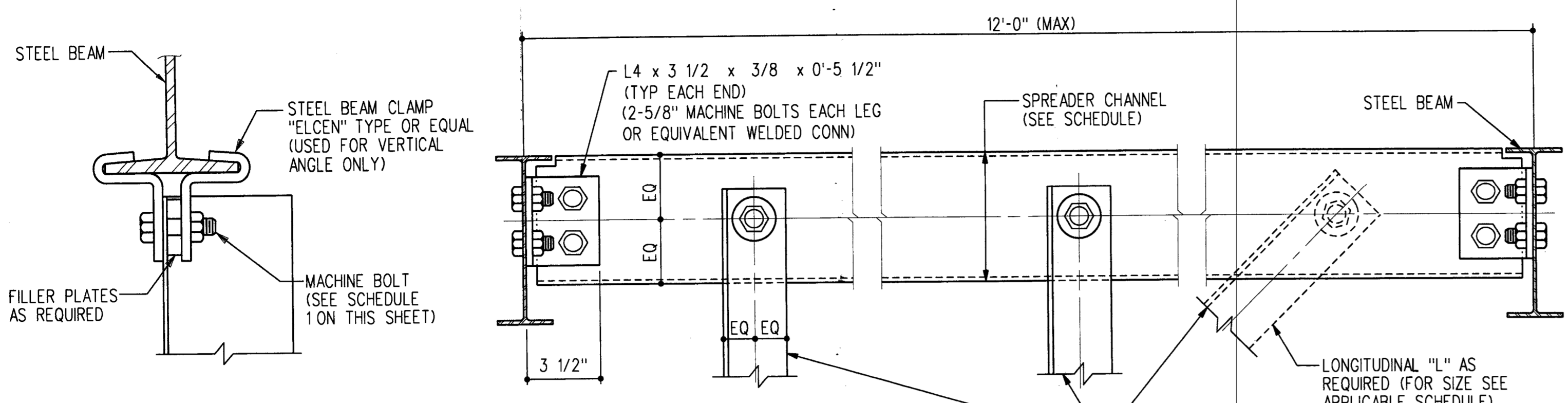
GENERAL NOTES FOR BRACING PIPES:

- A. DETAILS AND SCHEDULES ON THIS SHEET DEPICT BOTH STEEL ANGLE TYPE AND CABLE TYPE BRACING. PROPRIETARY BRACING SYSTEMS APPROVED BY THE COR MAY BE USED IN PLACE OF THE BRACES SHOWN IN THESE DETAILS AND SCHEDULES.
- B. BRACING AND CONNECTION SCHEDULES AND DETAILS ARE FOR REFERENCE ONLY. SHOP DRAWINGS AND DESIGN CALCULATIONS SATISFYING THE REQUIREMENTS OF THE SPECIFICATIONS SHALL BE SUBMITTED INDICATING BRACING FOR BOTH NEW AND EXISTING TO REMAIN PIPING.
- C. BRACE PIPES 2 1/2" DIAMETER AND LARGER:  
EXCEPTIONS:  
 1. BRACE PIPING 1 1/4" AND LARGER LOCATED IN BOILER ROOMS AND MECHANICAL EQUIPMENT ROOMS. BRACING REQUIREMENTS FOR PIPES LESS THAN 2 1/2" IN DIAMETER SHALL BE THE SAME AS FOR 2 1/2" PIPES.  
 2. SEISMIC BRACES MAY BE OMITTED: WHEN THE TOP OF THE PIPE IS SUSPENDED 12" OR LESS FROM THE SUPPORTING STRUCTURAL MEMBER AND THE PIPE IS SUSPENDED BY AN INDIVIDUAL HANGER.
- D. DETAILS SHOWN PROVIDE A LATERAL BRACING SYSTEM. A TYPICAL VERTICAL SUPPORT SYSTEM CONFORMING TO THE FOLLOWING REQUIREMENTS MUST ALSO BE USED.
  - 1. VERTICAL PIPING
    - (A) ATTACHMENT - VERTICAL PIPING SHALL BE SECURED AT SUFFICIENTLY CLOSE INTERVALS TO KEEP THE PIPE IN ALIGNMENT AND CARRY THE WEIGHT OF THE PIPE AND CONTENTS. STACKS SHALL BE SUPPORTED AT THEIR BASES AND IF OVER 2 STORES IN HEIGHT, AT EACH FLOOR BY APPROVED METAL FLOOR CLAMPS.
    - (B) SCREWED PIPE - SCREWED PIPE SHALL BE SUPPORTED AT NOT LESS THAN EVERY OTHER STORY HEIGHT.
    - (C) COPPER TUBING - COPPER TUBING SHALL BE SUPPORTED AT EACH STORY FOR PIPING 1 1/2" AND LARGER DIAMETER AND AT NOT MORE THAN 6 FOOT INTERVALS FOR PIPING 1 1/2" AND SMALLER IN DIAMETER.
    - (D) PIPES OF OTHER APPROVED MATERIAL SHALL BE SUPPORTED IN ACCORDANCE WITH THEIR APPROVED INSTALLATION STANDARDS.
  - 2. HORIZONTAL PIPING
    - (A) SUPPORTS - HORIZONTAL PIPING SHALL BE SUPPORTED AT SUFFICIENTLY CLOSE INTERVALS TO KEEP IT IN ALIGNMENT AND PREVENT SAGGING.
- E. DIAGONAL (TRANSVERSE) BRACINGS SHALL BE AT 40'-0" OC MAXIMUM UNLESS OTHERWISE NOTED.
- F. LONGITUDINAL BRACINGS SHALL BE AT 40'-0" OC MAXIMUM UNLESS OTHERWISE NOTED. WHEN THERMAL EXPANSION OR CONTRACTION IS INVOLVED, PROVIDE LONGITUDINAL BRACINGS AT ANCHOR POINTS. THE LONGITUDINAL BRACES AND THE CONNECTIONS MUST BE CAPABLE OF RESISTING THE FORCE INDUCED BY EXPANSION AND CONTRACTION.
- G. DIAGONAL (TRANSVERSE) BRACING FOR ONE PIPE SECTION MAY ALSO ACT AS LONGITUDINAL BRACING FOR THE PIPE SECTION CONNECTED PERPENDICULAR TO IT IF THE BRACING IS INSTALLED WITHIN 24" OF THE ELBOW OR TEE OF SIMILAR SIZE.
- H. FOR THREADED PIPING, THE FLEXIBILITY MAY BE PROVIDED BY THE INSTALLATION OF SWING JOINTS. IN WELDED OR SOLDER JOINT PIPING, THE FLEXIBILITY SHALL BE PROVIDED BY EXPANSION LOOPS OR MANUFACTURED FLEXIBLE CONNECTORS.
  - 1. FOR PIPING WITH MANUFACTURED BALL JOINTS, SELECT LENGTH OF PIPING OFFSET USING "SEISMIC DRIFT IN PLACE OF EXPANSION PER JOINT MANUFACTURER'S RECOMMENDATION. SEISMIC DRIFT - 0.015 FT PER FOOT OF HEIGHT.
  - J. DO NOT USE BRANCH LINES TO BRACE MAIN LINES.
  - K. TRAPEZE HANGERS MAY BE USED. PROVIDE FLEXIBILITY IN JOINTS WHERE PIPES PASS THROUGH BUILDING SEISMIC OR EXPANSION JOINTS OR WHERE RIGIDLY SUPPORTED PIPES CONNECT TO EQUIPMENT WITH VIBRATION ISOLATORS.
  - L. A RIGID PIPING SYSTEM SHALL NOT BE BRACED TO DISSIMILAR PARTS OF A BUILDING OR TWO DISSIMILAR BUILDING SYSTEMS THAT MAY RESPOND IN A DIFFERENT MODE DURING AN EARTHQUAKE. EXAMPLES: WALL AND A ROOF; SOLID CONCRETE WALL AND A METAL DECK WITH LIGHTWEIGHT CONCRETE FILL.
  - M. FOR PIPE SLEEVES THROUGH WALLS AND FLOORS, MINIMUM CLEARANCE ON ALL SIDES SHALL NOT BE LESS THAN 1 INCH. NO CLEARANCE IS NECESSARY FOR PIPING PASSING THROUGH GYPSUM BOARD OR EQUALLY FRANGIBLE CONSTRUCTION THAT IS NOT REQUIRED TO HAVE A FIRE RESISTANCE RATING.
  - N. PROVIDE THROUGH APPROVED SUBMITTAL, AT VERTICAL PIPE RISERS, WHEREVER POSSIBLE, SUPPORT THE WEIGHT OF THE RISER AT A POINT OR POINTS ABOVE THE CENTER OF GRAVITY OF THE RISER. PROVIDE LATERAL GUIDES AT THE TOP AND BOTTOM OF THE RISER AND AT INTERMEDIATE POINTS NOT TO EXCEED 30'-0" ON CENTER.
  - O. CAST IRON PIPE OF ALL TYPES AND PIPES JOINED WITH A SHIELD AND CLAMP ASSEMBLY, WHERE THE TOP OF THE PIPE IS 12" OR MORE FROM SUPPORTING STRUCTURE, SHALL BE BRACED ON EACH SIDE OF A CHANGE IN DIRECTION OF 90° OR MORE. RISER JOINTS SHALL BE BRACED OR STABILIZED BETWEEN FLOORS.
  - P. SEE SPECIFICATIONS FOR SEISMIC RESTRAINTS FOR FIRE SPRINKLERS.

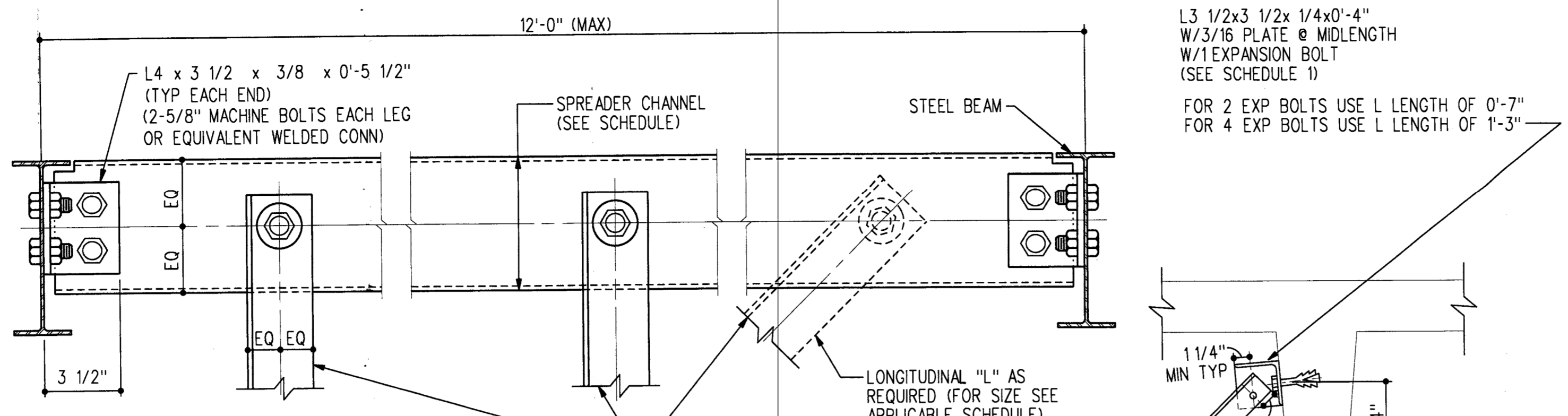
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PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>					
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
<b>DEPARTMENT OF TRANSPORTATION</b> <b>FEDERAL AVIATION ADMINISTRATION</b> WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>					
<b>CONTROL WING BASEMENT</b> <b>AND CHILLER/COOLING TOWER MODERNIZATION</b> <b>OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER</b> <b>MECHANICAL</b> <b>SEISMIC DETAILS</b> OAKLAND (ZO) ARTCC					
FREMONT					
DESIGNED BY M. HATHORNE	ISSUED BY AIRWAY FACILITY DIVISION	DATE 07/08/2015	JCN		
DRAWN BY A. STURDIVANT	CHECKED BY D. LUKASZEWICZ	DRAWING NO. ZO - D - CWBMS - M000A	REV.		

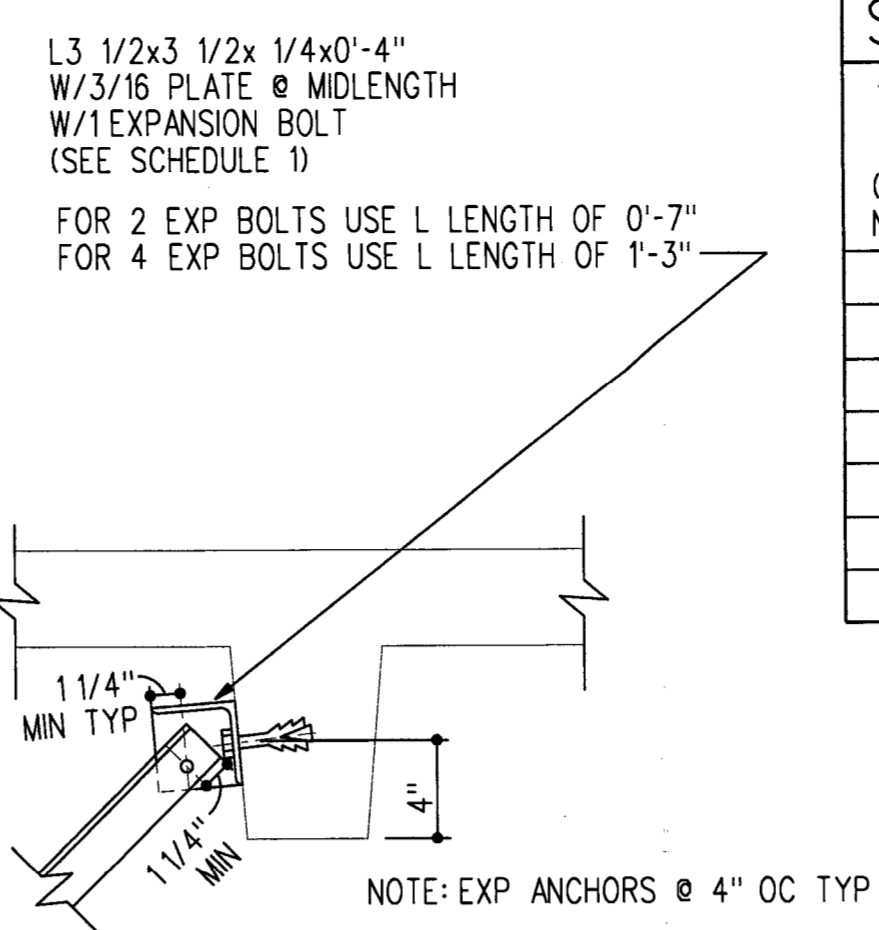
7/2/2015



**DETAIL F**  
CONNECTION TO STEEL BEAMS



**DETAIL G**  
CONNECTIONS TO SPREADERS  
USE WITH VERTICAL, DIAGONAL  
AND LONGITUDINAL ANGLES



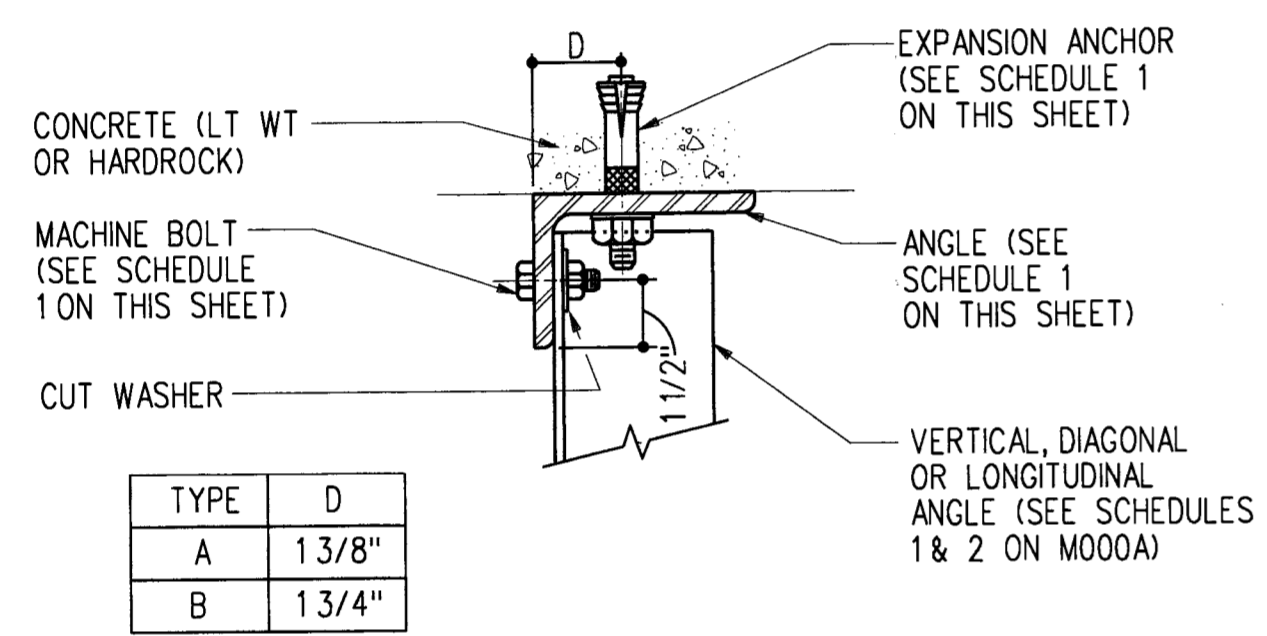
**F4**  
TYPICAL SEISMIC DETAIL FOR  
SWAY BRACING ANCHORAGE

**SCHEDULE 1 - TYP CONNECTIONS TO STRUCTURAL SUPPORTING MEMBERS**

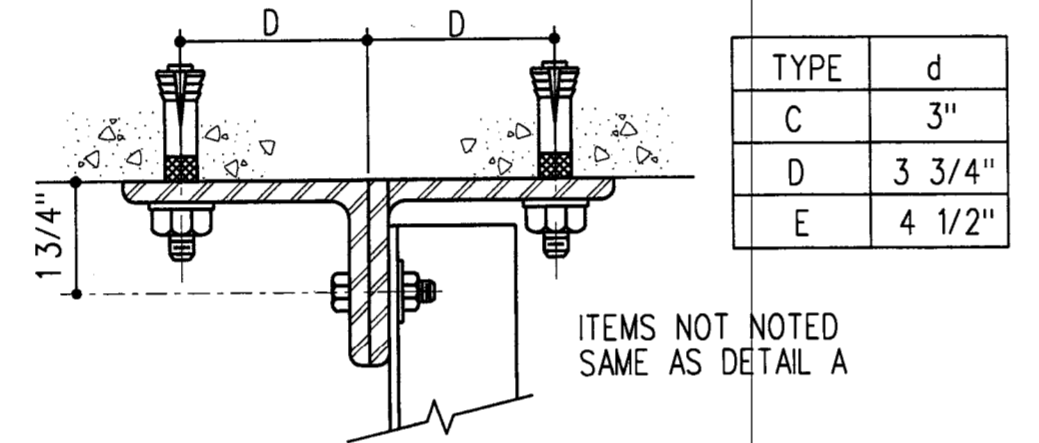
TYPE (SEE NOTE 1)	MAX LOAD CAPACITY POUNDS	EXPANSION ANCHORS TO LT. WT CONC (DIA&QTY) (SEE NOTE 3)	TEST LOAD SMACNA TABLE 8.2 (LBS)	TEST TORQUE SMACNA TABLE 8.2 (FT-LBS)	BOLT SIZE AT END OF BRACE (DIA)	SPREADER SIZE (SEE NOTE 2)	SIZE OF ANGLE TO SUPPORTING STRUCTURAL MEMBER
A	1040	1/2"	2000	50	3/8"	C4x5.4	L3-1/2x2-1/2x3/8x0'-3" LLH
B	1415	5/8"	2300	80	3/8"	C4x5.4	L5x3x3/8x0'-3" LLH
C	1586	1/2"x2	2000 EACH	50 EACH	1/2"	C5x6.7	2-L4x3x3/8x0'-4" LLH
D	2020	5/8"x2	2300 EACH	80 EACH	1/2"	C6x8.5	2-L5x3x3/8x0'-4" LLH
E	2870	3/4"x2	3700 EACH	150 EACH	5/8"	C8x11.5	2-L6x3-1/2x3/8x0'-4" LLH
F	4600	5/8"x4	2300 EACH	80 EACH	3/4"	C9x13.4	2-L5x3x3/8x0'-10" LLH
G	7040	3/4"x4	3700 EACH	150 EACH	7/8"	C10x15.3	2-L6x3-1/2x1/2x0'-11 1/2" LLH

- SCHEDULE NOTES:**
- SEE D5/M000B FOR APPROPRIATE DETAIL
  - SEE F7/M000B
  - 50 PERCENT OF EXPANSION TYPE ANCHORS USED FOR SEISMIC BRACING (ALTERNATE ANCHORS IN ANY GROUP ARRANGEMENT) SHALL BE PROOF TESTED IN ACCORDANCE W/SMACNA TABLE 8-2. IF ANY ANCHOR FAILS, IMMEDIATELY ADJACENT ANCHORS MUST THEN ALSO BE TESTED. TEST LOAD AND TEST TORQUE VALUES LISTED ARE FOR WEDGE TYPE ANCHORS.
  - THE DIAMETERS OF EXPANSION ANCHORS ARE INDICATED IN THIS SCHEDULE. ANCHOR EMBEDMENT LENGTH SHALL BE DETERMINED FROM MANUFACTURER'S RECOMMENDATIONS ON ANCHOR CAPACITY.

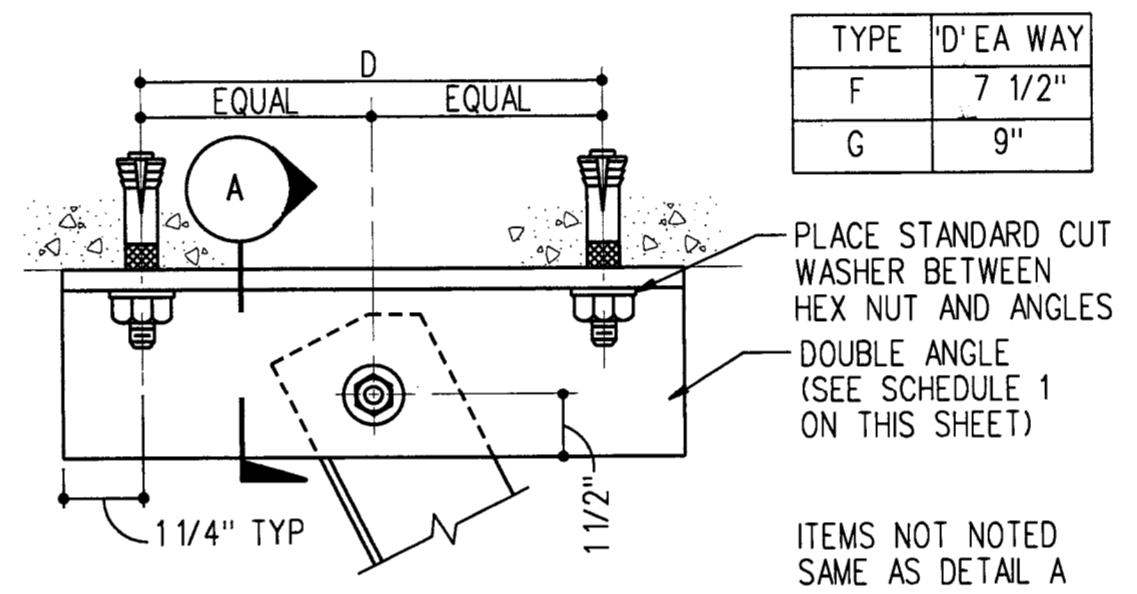
**F7**  
CONNECTION TO STEEL DETAIL



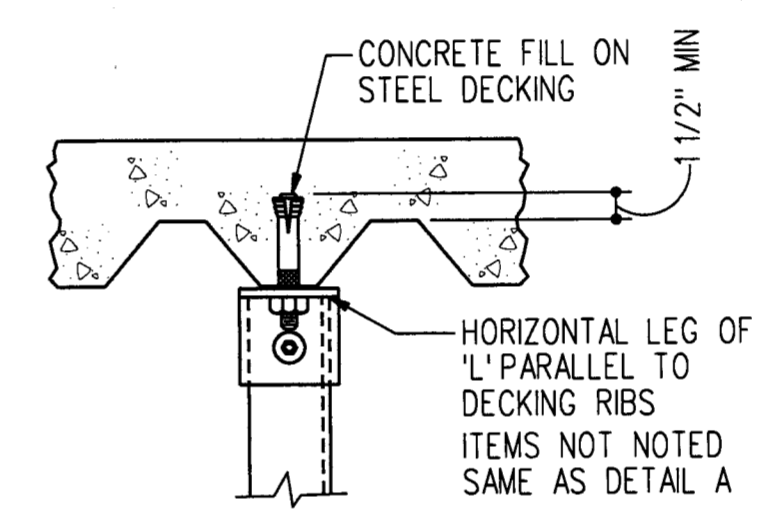
**DETAIL A**  
TYPE A & B



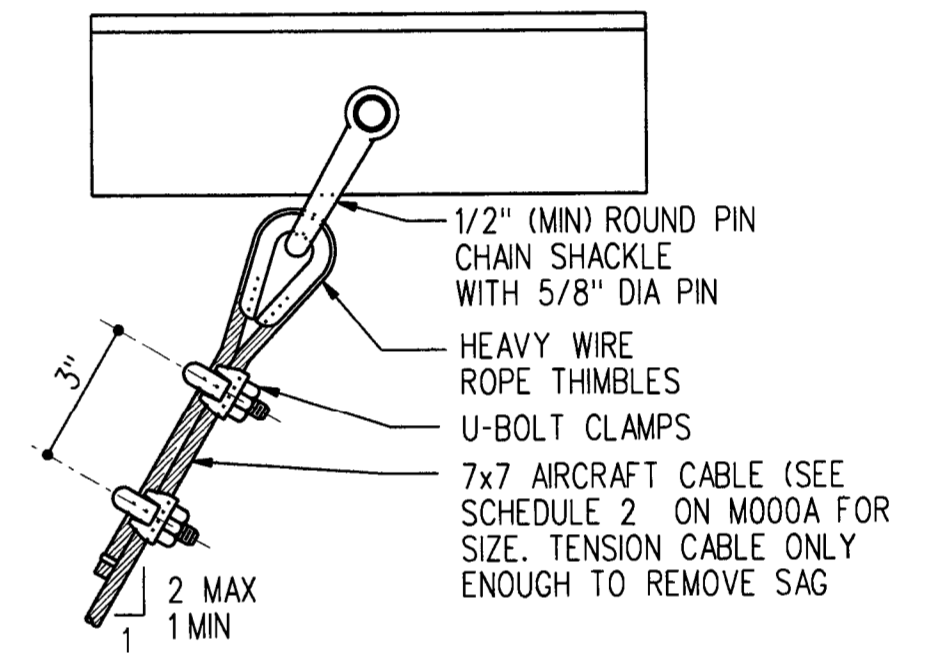
**DETAIL B**  
TYPE C, D & E



**DETAIL C**  
TYPE F & G



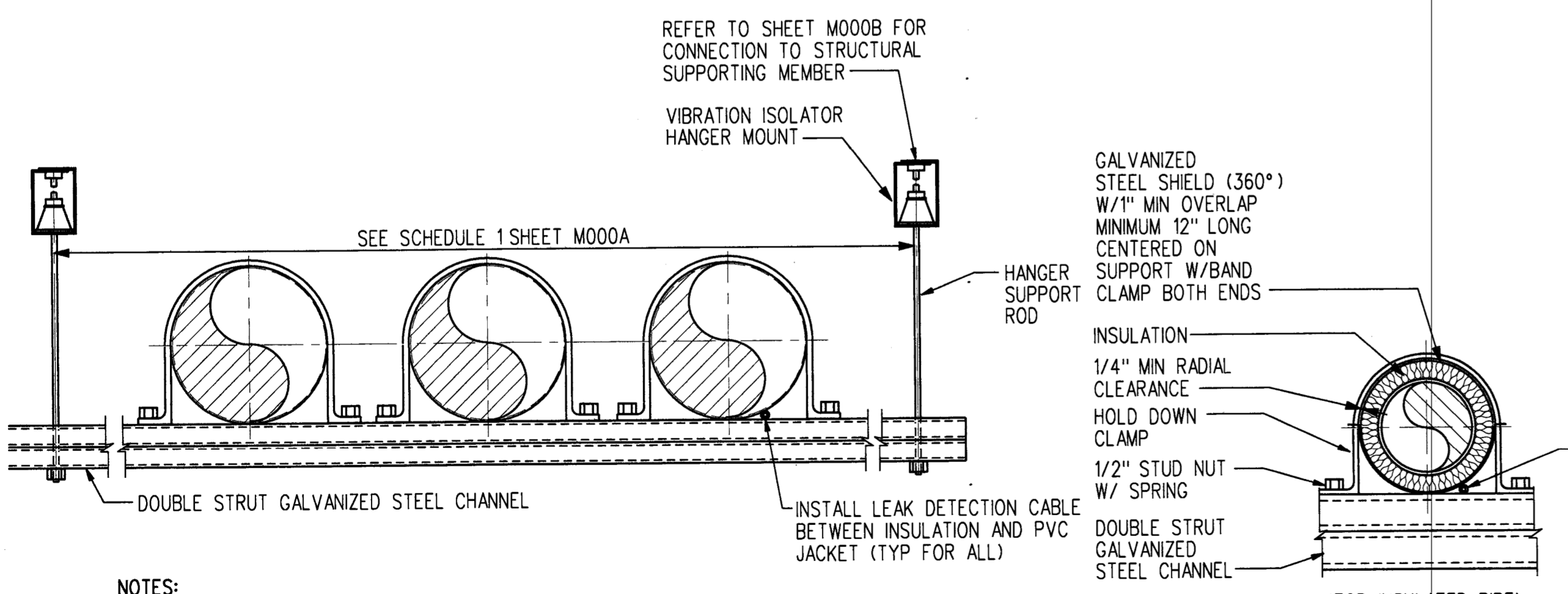
**DETAIL D**  
TYPE A & B



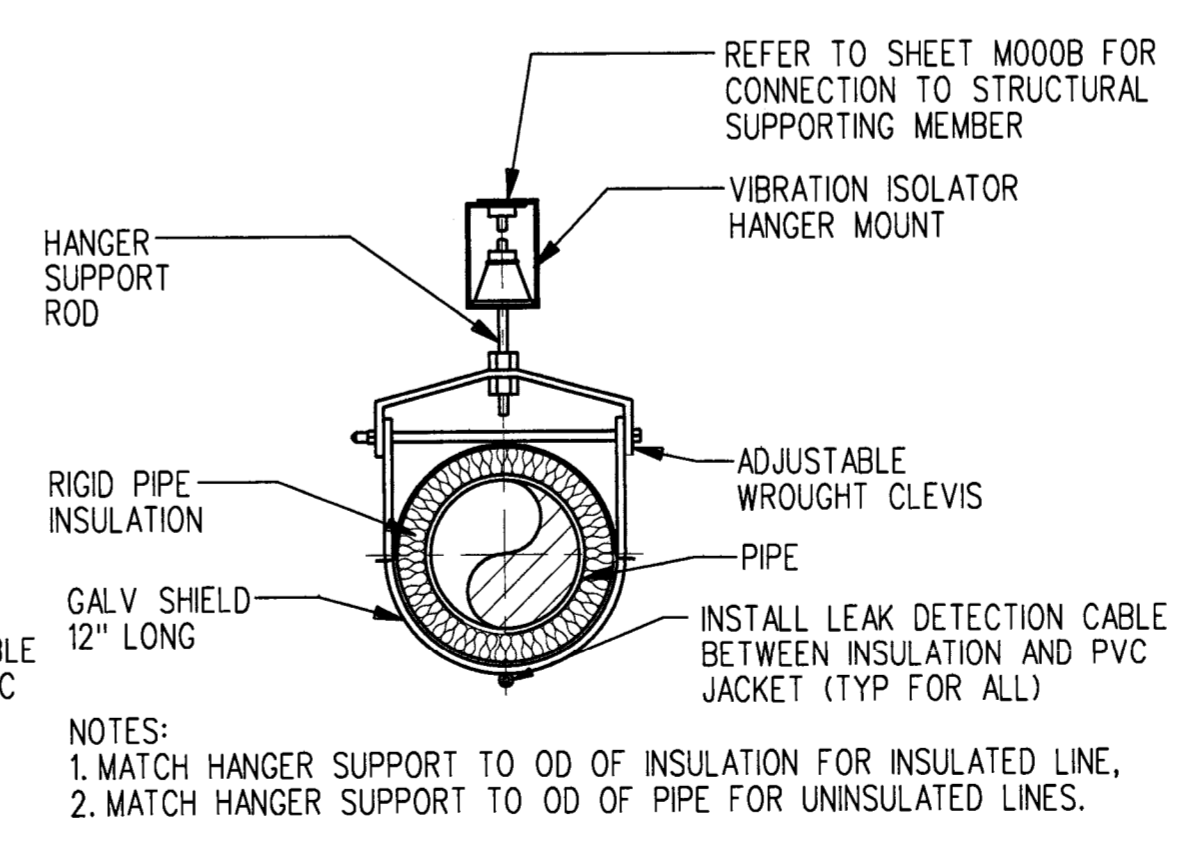
**DETAIL E**  
TYPICAL TOP CONNECTION  
FOR CABLE BRACING

**D5**  
CONNECTIONS TO CONCRETE DETAIL

- NOTES:  
1. IN LIEU OF ANGLE, CABLE BRACING MAY BE USED. SEE DETAIL E



**F6**  
PIPE CLAMP ASSEMBLY



**F8**  
TRAPEZE TYPE PIPE HANGER DETAIL W/O BRACING

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**JACOBS**

REVISIONS:

REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD

**DEPARTMENT OF TRANSPORTATION**  
FEDERAL AVIATION ADMINISTRATION  
WESTERN SERVICE AREA  
RENTON, WA

**CONTROL WING BASEMENT  
AND CHILLER/COOLING TOWER MODERNIZATION  
OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER**

**MECHANICAL  
SEISMIC DETAILS**  
OAKLAND (ZOA) ARTCC

FREMONT

DESIGNED BY: M. HATHORNE  
DRAWN BY: A. STURDANT  
CHECKED BY: D. LUKASZEWICZ

ISSUED BY: AIRWAY FACILITY DIVISION

DATE: 07/08/2015

APPROVED BY: [Signature]

APPROVER'S TITLE: [Signature]

DRAWING NO.: ZOA - D - CWBMS - M000B

DATE: 7/2/2015

- NOTES:  
1. ANCHOR BOLT SIZE AND QUANTITY FOR SPECIFIED SEISMIC FORCES.

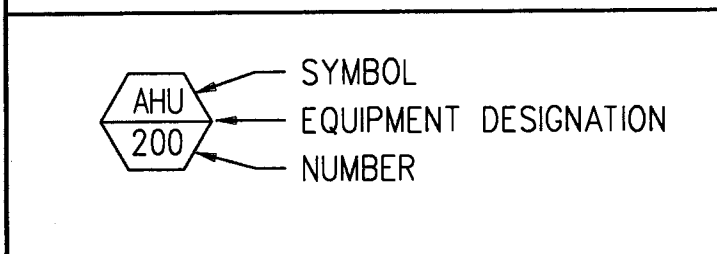
- NOTES:  
1. MATCH HANGER SUPPORT TO OD OF INSULATION FOR INSULATED LINE.  
2. MATCH HANGER SUPPORT TO OD OF PIPE FOR UNINSULATED LINES.



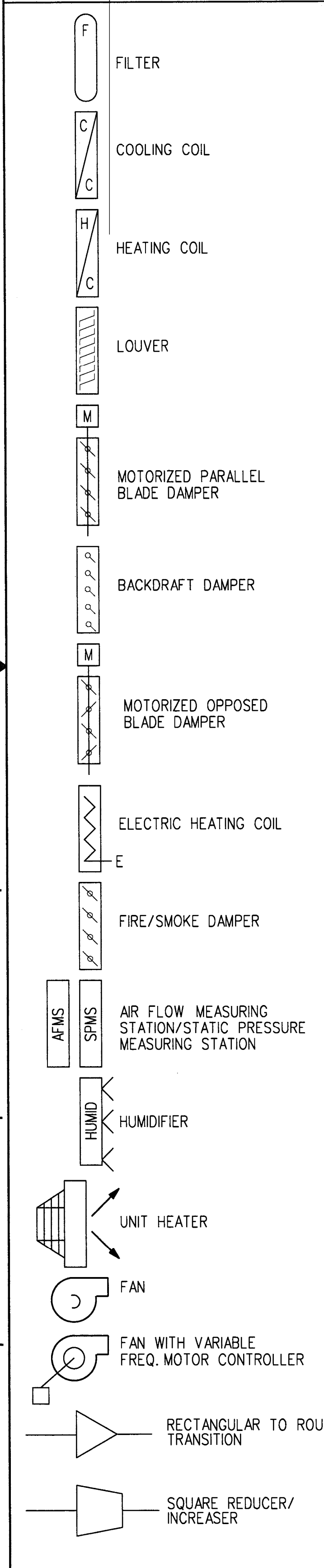
HVAC LEGEND

GENERAL NOTES

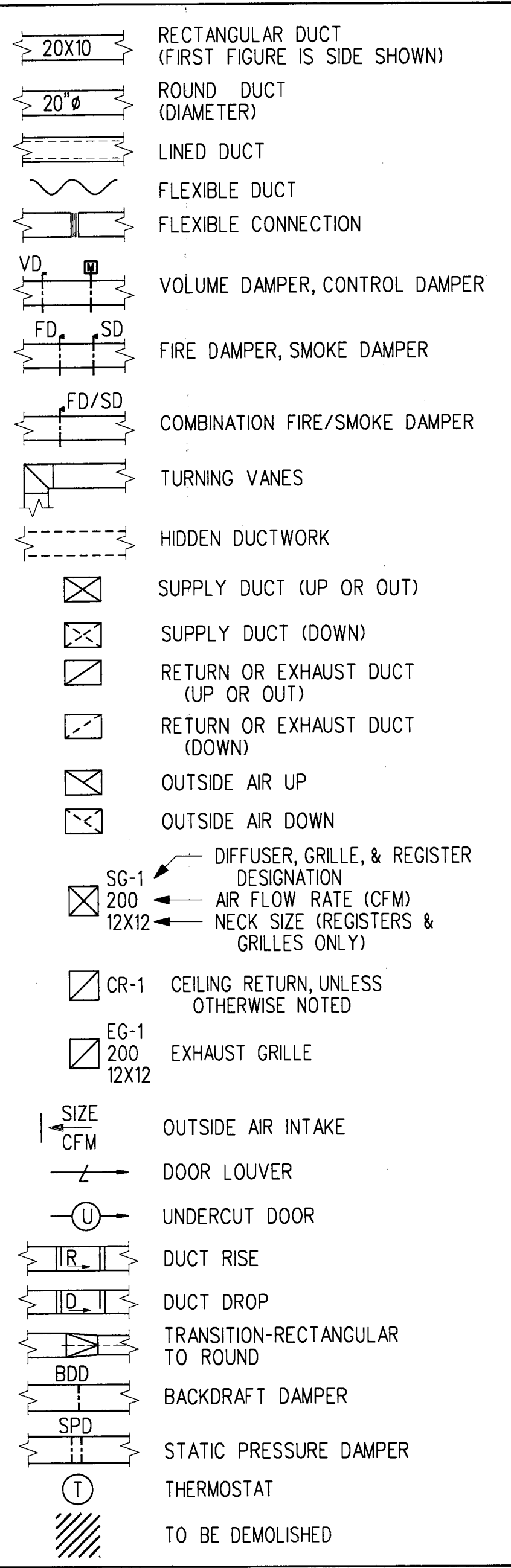
EQUIPMENT



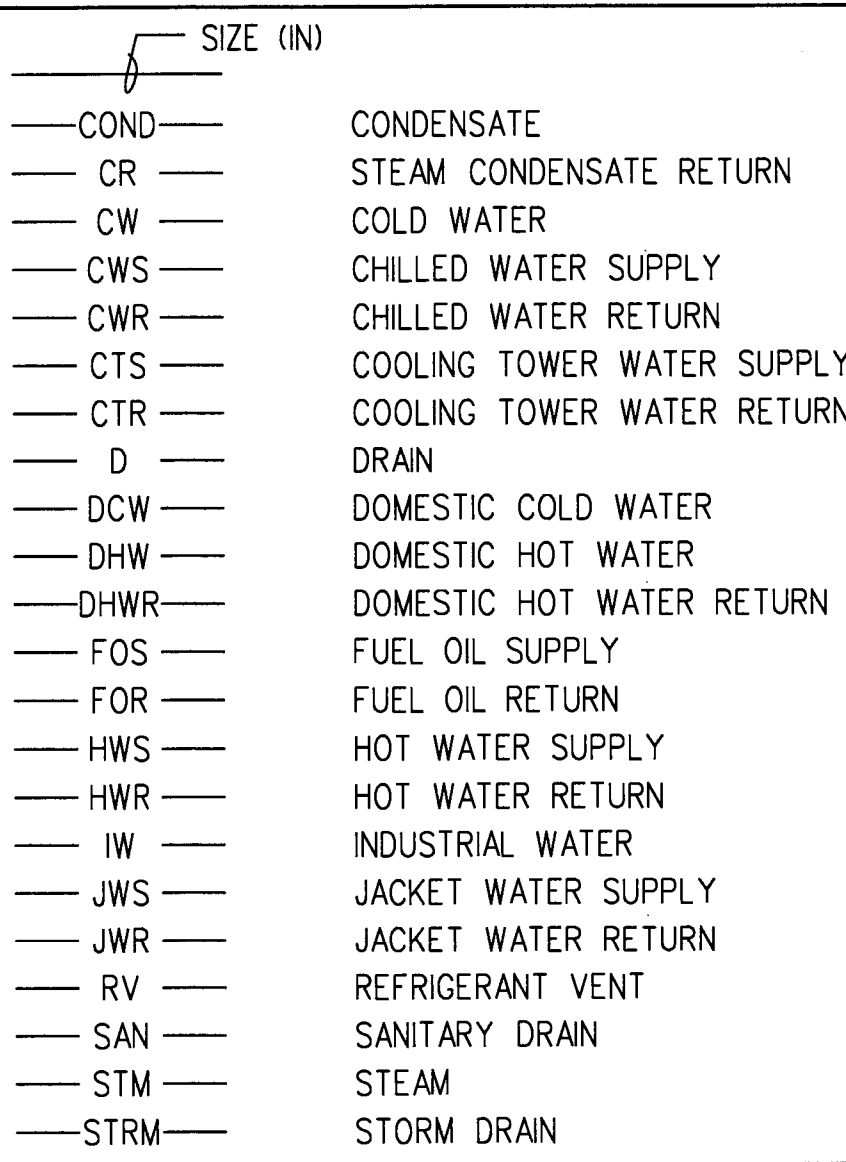
SINGLE LINE DUCTWORK



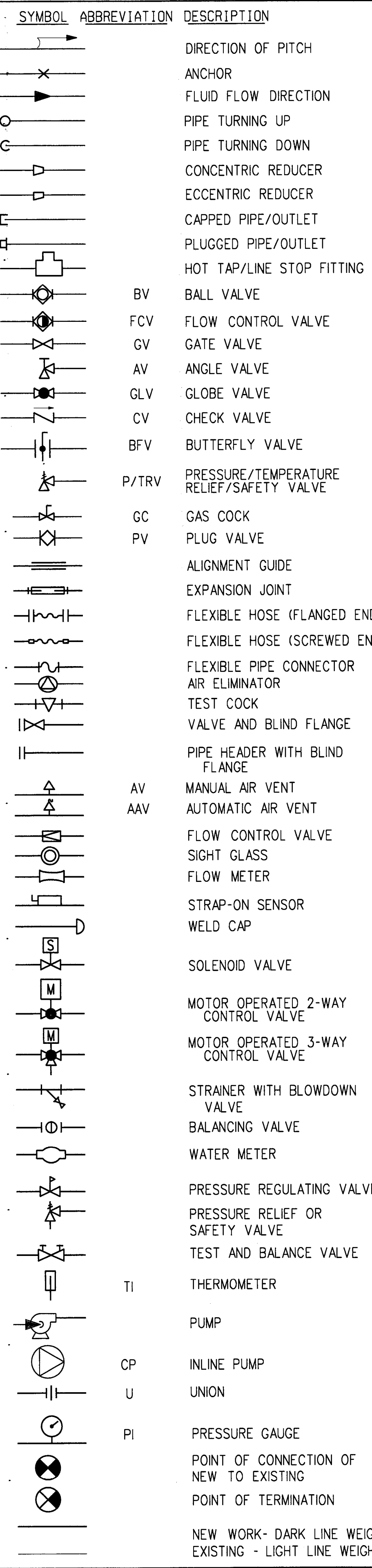
DOUBLE LINE DUCTWORK



PIPING



PIPING (CONT.)



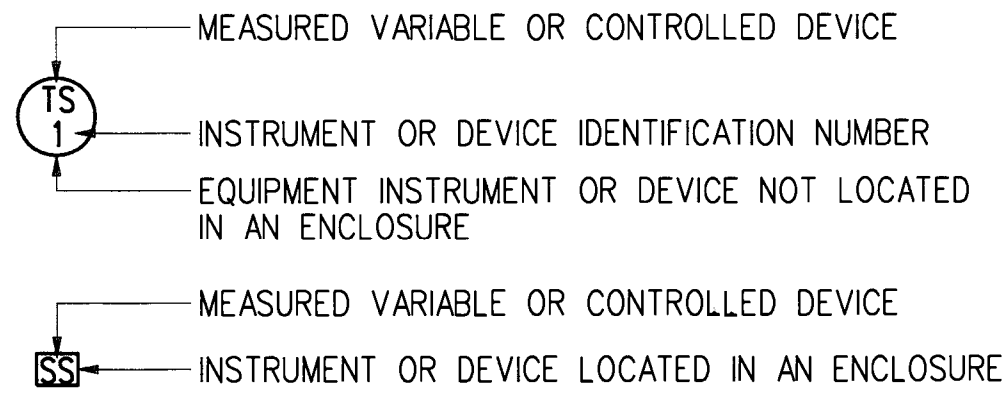
ABBREVIATIONS

Table with columns for SYMBOL, ABBREVIATION, and DESCRIPTION. Symbols include letters and standard electrical symbols for components like valves, pumps, gauges, and ductwork.

A. HVAC LEGEND IS THE STANDARD LEGEND WHICH IS USED FOR FAA FACILITIES DESIGN. NOT ALL SYMBOLS AND ABBREVIATIONS WILL BE USED ON THIS PROJECT.
B. FOR LOCATIONS AND SIZES OF WALL OPENINGS SEE ARCHITECTURAL DRAWINGS.
C. INSTALLATION SHALL PROVIDE READY ACCESS TO VALVES, DAMPERS, COILS AIR FILTERS, AND OTHER DEVICES. ACCESS DOORS SHALL BE INSTALLED TO PROVIDE ADEQUATE CLEARANCES FOR DIRECT ACCESS.
D. FOR LOCATION OF CEILING DIFFUSERS AND GRILLES SEE ARCHITECTURAL REFLECTED CEILING PLANS.
E. DESIGNATE A PERSON TO BE RESPONSIBLE FOR FIRE PROTECTION DURING WELDING AND CUTTING OPERATIONS. PERSON PERFORMING FIRE PROTECTION DUTIES SHALL NOT BE SAME INDIVIDUAL THAT IS PERFORMING WELDING OPERATIONS. COMPLY WITH OSHA STANDARDS FOR WELDING IN 29 CFR-1910 AND 29 CFR-1926. PROVIDE TEMPORARY FIRE EXTINGUISHERS DURING CONSTRUCTION. WELDING SHALL BE SCHEDULED IN WRITING WITH COR AND SHALL BE PERFORMED OUTSIDE OF FACILITY OR IN SAFE LOCATION TO BE DETERMINED BY COR.
F. FOR WELDING THAT MUST BE PERFORMED INSIDE THE BUILDING, PROVIDE LOCAL MECHANICAL VENTILATION DURING WELDING DUCTED TO OUTSIDE, APPROVED BY FAA AND ACGH.
G. NO WELDING SHALL BE POWERED FROM FACILITY ELECTRICAL SYSTEMS. CONNECT METAL TO BE WELDED TO A GOOD EARTH GROUND. FACILITY STRUCTURAL STEEL OR PIPING SHALL NOT BE USED AS A GROUND PATH.
H. AIR FLOW QUANTITIES SHOWN ARE ACTUAL FLOW QUANTITIES AT SITE ELEVATION.
I. EQUIPMENT SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS.
J. LOCATIONS, SIZES, CLEARANCES AND CONFIGURATIONS OF EQUIPMENT SHOWN ARE BASED ON SPECIFIC SCHEDULED MANUFACTURERS AND MODEL NUMBERS. SUBSTITUTION OF A COMPETING PRODUCT WILL REQUIRE THE CONTRACTORS PRIOR VERIFICATION OF CONFORMANCE PER THE REQUIREMENTS OF LOCATION, SIZE CLEARANCES AND CONFIGURATION AS COMPARED TO SPACE ALLOCATED TO HOUSE SPECIFIC EQUIPMENT. RESUBMIT PROPOSED EQUIPMENT TO CONTRACTING OFFICER'S REPRESENTATIVE (COR) FOR APPROVAL, PRIOR TO INSTALLATION.
K. SUPPLY AND RETURN AIR DUCTWORK SHALL BE CONSTRUCTED, INSTALLED, AND INSULATED AS SPECIFIED; INSPECT DUCTWORK, SUPPORTS AND INSULATION (NEW AND EXISTING) FOR DAMAGE OR FAULTY INSTALLATION. REPLACE, OR REPAIR AS REQUIRED SO THAT FINAL INSTALLATION IS ADEQUATELY SEALED FROM LEAKS, FREE OF DEFECTS, AND IN ACCORDANCE WITH SPECIFICATIONS.
L. PROVIDE LOCAL VENTILATION OF THE CONSTRUCTION AREA DURING APPLICATION OF PRODUCTS WHICH MAY CAUSE ACUTE OR CHRONIC HEALTH OR SAFETY EFFECTS TO FACILITY OCCUPANTS IN ACCORDANCE WITH OSHA AND ACGH REQUIREMENTS. SUBMIT VENTILATION PLAN TO COR FOR APPROVAL.
M. BUILDING CONTAINS HAZARDOUS MATERIALS. REFER TO HAZMAT ABATEMENT SHEETS A101, A102 AND A103 FOR CAUTIONS AND SPECIFIC AREAS WHERE HAZARDOUS MATERIALS OCCUR.
N. PROVIDE FIRE DAMPERS IN PENETRATIONS OF FIRE RATED FLOORS, WALLS AND PARTITIONS IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE.
O. PROVIDE 2 INCH THICK INSULATED METAL BLANK OFF PANELS FOR UNUSED PORTIONS OF LOUVERS.
P. FLEXIBLE DUCTS SHALL BE LIMITED TO AIR OUTLET CONNECTIONS LESS THAN 5'-0" IN LENGTH.
Q. PROVIDE WIRE MESH SCREENS FOR DUCT OPENINGS THAT ARE WITHOUT SCHEDULED GRILLES.
R. FOR AREAS WITH INACCESSIBLE VOLUME DAMPERS, PROVIDE DAMPER WITH FLEXIBLE METAL CABLE OPERATORS FOR REMOTE OPERATION OF THE DAMPER THROUGH FACE OF DIFFUSER, GRILLE OR REGISTER.
S. PROVIDE A DETAILED SCHEDULE FOR DEMOLITION OF HVAC EQUIPMENT AND INSTALLATION OF NEW HVAC SYSTEMS. COORDINATE WITH COR PRIOR TO REMOVAL OF EQUIPMENT. HVAC SYSTEMS MUST REMAIN IN OPERATION THROUGHOUT REMOVAL AND REPLACEMENT OF EQUIPMENT.
T. PRIOR TO THE DEMOLITION OF ITEMS WHICH HAVE UTILITY CONNECTIONS (WATER, ELECTRICITY, GAS ETC.) ARRANGE WITH COR TO LOCATE SHUT-OFF VALVES, PANEL BOXES AND OTHER CONTROL ELEMENTS. FAA PERSONNEL SHALL SHUT OFF, ISOLATE EQUIPMENT AND BRING EQUIPMENT BACK ONLINE.
U. REFER TO STRUCTURAL SHEET S001 FOR APPLICABLE WIND LOAD CRITERIA.
V. HOT TAPS MUST BE PERFORMED AT TIMES OF LOW AIR TRAFFIC AND WITH ALL MATERIALS ON HAND FOR TASK. COORDINATE SCHEDULE TIMES WITH COR.

JACOBS logo. Department of Transportation Federal Aviation Administration. CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER MECHANICAL ABBREVIATIONS, SYMBOLS, AND GENERAL NOTES. Includes revision table and approval signatures.

# CONTROLS & INSTRUMENTATION



AFMS	AIR FLOW MEASURING STATION	H	HORN
AFS	AIR FLOW SWITCH	H	HUMIDISTAT
AX	AUXILIARY CONTACT	HS	HUMIDITY SENSOR
C	COMMON	M	MOTOR/ACTUATOR
CD	CONTROL DAMPER		
CI	CURRENT INPUT	N.C.	NORMALLY CLOSED
CR	CURRENT RELAY	N.O.	NORMALLY OPEN
CV	CONTROL VALVE		
DC	DIRECT CURRENT	PD	PRESSURE DIFFERENTIAL SENSOR /POWER DEMAND
DDCP	DIRECT DIGITAL CONTROL PANEL	PDI	PRESSURE DIFFERENTIAL INDICATOR
DI	DAMPER POSITION INDICATOR	PI	PRESSURE INDICATOR
DP	DI. PRESSURE SWITCH		
ECMS	ENERGY CONTROL AND MONITORING SYSTEM	S	SMOKE DETECTOR
		SL	STROBE LIGHT
		SS	START/STOP SWITCH
		SW	SWITCH
FACP	FIRE ALARM CONTROL PANEL	T	THERMOSTAT
FCV	FLOW CONTROL VALVE	TI	TEMPERATURE INDICATOR
FEPC	FRONT END PERSONAL COMPUTER	TS	TEMPERATURE SENSOR
FR	FIELD MOUNTED RELAY		
FZ	FREEZESTAT	WD	WATER DETECTOR

..... ELECTRONIC INTERLOCK WIRING

- - - DDC CONTROL SYSTEM WIRING

**AID** ADDRESSABLE INTERFACE MODULE

**X** DDCP DATA INPUT/OUTPUT TO CENTRAL FEPC

**DI** DIGITAL INPUT TO DDCP

**DO** DIGITAL OUTPUT FROM DDCP

**AI** ANALOG INPUT TO DDCP

**AO** ANALOG OUTPUT FROM DDCP

# CONSTRUCTION SEQUENCE

## I. NOTES AND PREPARATION

### DEMOLITION

- REMOVAL OF EQUIPMENT SHALL INCLUDE THE REMOVAL OF ASSOCIATED PIPING, SUPPORT, INSULATION, MOTORS ELECTRICAL CONNECTIONS, AUTOMATIC CONTROL WIRING AND ITS COMPONENTS (UON).
- EXISTING CONTROLS, UNLESS NOTED OTHERWISE, SHALL REMAIN AND SHALL BE MODIFIED TO ACCOMMODATE THE NEW CHILLER, COOLING TOWER AND PUMP INSTALLATION.
- DEMOLITION DRAWINGS INDICATE PIPING AND EQUIPMENT WITHIN THE WORK AREA. REMOVE AND REINSTALL (AS REQUIRED) PIPING, ELECTRICAL WIRING AND CONDUITS NOT INDICATED AND NOT RELATED TO THE COOLING TOWER OR PUMP INSTALLATION WHERE THEY INTERFERE WITH THE WORK. OBTAIN PRIOR APPROVAL FROM COR FOR SUCH WORK.

### NEW WORK

- PHYSICAL SIZES AND LOCATION OF EQUIPMENT AND ASSOCIATED PIPING ARE APPROXIMATE. VERIFY SIZES AND DIMENSIONS AFFECTING THE WORK.
- DRAWINGS DO NOT SHOW ALL REQUIRED FITTINGS, ELBOWS, AND/OR OFFSETS. FINAL INSTALLATION OF ALL FITTINGS, ELBOWS, AND OFFSETS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND SHALL BE PROVIDED TO THE FAA AT NO ADDITIONAL COST.
- VERIFY AND COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT PRIOR TO ORDERING AND SUBMIT THIS INFORMATION WITH SHOP DRAWINGS.
- COORDINATE THE INSTALLATION OF MECHANICAL WORK WITH THE WORK OF OTHER TRADES.
- EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE CODES, THE PRINTED INSTALLATION INSTRUCTIONS OF THE MANUFACTURER, THE SPECIFICATIONS, AND APPROVED SHOP DRAWINGS.
- WHERE WORK IS DESIGNATED TO BE "TEMPORARY", IT WILL EVENTUALLY BE REMOVED IN A SUBSEQUENT STEP. SOME TEMPORARY WORK MAY NOT BE SHOWN ON DWGS (E.G. SOME BLIND FLANGES).

**THE ARTCC IS A 24 HOUR FACILITY AND CAN NOT TOLERATE THE LOSS OF POWER OR CHILLED WATER. A CONSTRUCTION SEQUENCE SHALL BE PROVIDED BY THE CONTRACTOR WHICH MINIMIZES THE RISK OF A FAILURE TO ANY MECHANICAL OR ELECTRICAL SYSTEMS. HEATING HOT WATER SYSTEM MAY HAVE SERVICE INTERRUPTED AS APPROVED AND SCHEDULED WITH COR.**

### PREPARATION

- DEDUCTIVE ALTERNATE 1: EXCAVATION TO FACILITATE ULTRASONIC TESTING OF THE UNDERGROUND 12" CONDENSER WATER PIPING TESTING MUST OCCUR PRIOR TO THE START OF ANY OTHER WORK. FOR LOCATION REFER TO NOTE 5 ON SHEET M003. UPON COMPLETION OF TESTING, BACKFILL AND COMPACT THE EXCAVATION AND PAVE WITH PERMANENT ASPHALT, REFER TO DETAIL F2/M005. FAA WILL THEN MAKE A DETERMINATION ON DEDUCT ALTERNATE.
- VERIFY LOCATIONS AND DIMENSIONS OF EXISTING EQUIPMENT AND COORDINATE WORK PRIOR TO THE START OF CONSTRUCTION. BEFORE THE START OF DEMOLITION AND CONSTRUCTION FOR COOLING TOWERS, PUMPS, GENERATOR PIPING AND ACCESSORIES SHALL BE APPROVED AND ON SITE. APPROVED CONSTRUCTION PLANS SHOWING FABRICATED LENGTH OF PIPING AND PLACEMENT OF EQUIPMENT SHALL BE COMPLETED AND APPROVED BEFORE START OF WORK. THIS MUST INCLUDE ELEVATIONS AND ANY MODIFICATION DUE TO CONFLICTS AND "AS IS" CONDITIONS.
- EQUIPMENT INCLUDING VALVES, PIPING AND ACCESSORIES FOR THE NEXT STEP SEQUENCE MUST BE ON SITE BEFORE START OF WORK OF THAT STEP.
- EXISTING REFRIGERANT LEAK DETECTION AND ALARM SYSTEM MUST REMAIN OPERATIONAL AT ALL TIMES. REFRIGERANT LEAK ALARM HORNS, LIGHT STROBES, MANUAL OVERRIDE AND SILENCE SWITCHES, AND REFRIGERANT LEAK SENSING TUBES SHALL REMAIN IN PLACE. CARE SHALL BE TAKEN TO PROTECT AND MAINTAIN REFRIGERANT LEAK DETECTION AND ALARM SYSTEM, ASSOCIATED DEVICES, CONDUIT AND WIRING DURING CONSTRUCTION WORK. IF AT ANY POINT THE DETECTION AND/OR VENTILATION SYSTEM IS SHUT DOWN, A TEMPORARY DETECTION/ALARM/VENTILATION SYSTEM IS REQUIRED.
- PROTECT FLOOR DRAINS AND STORM DRAINS FROM DAMAGE AND DEBRIS AT ALL TIMES.
- SHUTDOWN AND REMOVAL OF THE EQUIPMENT AND PIPING SHALL BE ACCOMPLISHED BY LINES TOPS, CLOSING SHUT-OFF VALVES AND DE-ENERGIZING ELECTRICAL SUPPLY. THIS WORK SHALL BE SCHEDULED AND COORDINATED WITH THE COR BEFORE START OF WORK. MECHANICAL AND ELECTRICAL ISOLATION FOR WORK SHALL BE ACCOMPLISHED BY FAA PERSONNEL.
- WHERE WORK IS DESIGNATED TO BE "TEMPORARY", IT WILL EVENTUALLY BE REMOVED IN A SUBSEQUENT STEP. SOME TEMPORARY WORK MAY NOT BE SHOWN ON DRAWINGS (E.G. SOME BLIND FLANGES).
- CONSTRUCTION SEQUENCE IS PROVIDED AS A GUIDE TO THE LEVEL AND DETAIL OF THE SEQUENCE TO BE SUBMITTED BY THE CONTRACTOR AS PART OF THEIR CONSTRUCTION PHASING PLAN.

## II. TEMPORARY COOLING TOWERS AND PUMPS

### STEP 1 - TEMPORARY COOLING TOWERS AND PUMPS

- THE INTENT OF THIS PHASE IS TO INSTALL TEMPORARY COOLING TOWERS AND PUMPS TO ALLOW FOR THE COMPLETE SHUTDOWN OF THE EXISTING COOLING TOWER YARD.

### STEP 2 - TEMPORARY EQUIPMENT MINIMUM REQUIREMENTS

- THREE (3) COOLING TOWERS AND THE ASSOCIATED CONDENSER WATER PUMPS ARE REQUIRED FOR LOAD CAPACITY AND REDUNDANCY. EACH TOWER WILL REQUIRE A MINIMUM OF 300 TONS CAPACITY AT 84°F ENTERING WATER, 95°F LEAVING WATER AND 74°F AMBIENT AIR WETBULB. PACKAGED CONTROLS, MAKEUP WATER AND CHEMICAL TREATMENT ARE TO BE INCLUDED. LOW NPSH TOWER WATER PUMPS, MATCHING GPM OF CHILLERS, WILL ALLOW FOR SIMPLIFIED BALANCE AND OPERATION. ANCHOR TOWERS TO PREVENT OVERTURNING IN A WIND EVENT AND INSTALL LIGHTNING PROTECTION.
- TEMPORARY EQUIPMENT WILL BE OPERATED BY THE FAA AND MAINTAINED BY THE CONTRACTOR. MAINTENANCE ON THE EQUIPMENT WILL BE COORDINATED IN ADVANCE WITH THE COR. AFTER INITIAL SETUP AND STARTUP, THE CONTRACTOR IS NOT TO OPERATE THE TOWERS OR PUMPS.

### STEP 3 - INSTALLATION OF TEMPORARY EQUIPMENT

- ONCE TEMPORARY TOWER SYSTEM HAS BEEN PLACED ON SITE, BLOCK OFF TOWER SITE AND UNDERGROUND PIPING REPLACEMENT PHASE I WORK AREA WITH CHAIN LINK FENCING AND HIGHWAY BARRICADES. REFER TO M005 AND M006 FOR LOCATION OF WORK AREAS.
- TEMPORARY CONDENSER WATER PIPING SHALL BE ROUTED ABOVE GROUND ON SUPPORTS TO THE CHILLED WATER PLANT AND CONNECTED TO THE EXISTING CONDENSER WATER HEADER. GROOVED PIPING IS ALLOWED ONLY FOR TEMPORARY PIPING. COORDINATE GROUNDING REQUIREMENT OF TEMPORARY PIPING WITH COR. REFER TO M005 AND M006 FOR INITIAL PIPING CONFIGURATION.

- CONNECT TEMPORARY ELECTRICAL, TEMPORARY MAKE-UP WATER, BLOWDOWN, AND TEMPORARY CHEMICAL TREATMENT.
- VALVES IN THE CONDENSER WATER MAINS WITHIN THE PLANT WILL ALLOW FOR THE ISOLATION OF THE CHILLERS, ALONG WITH THE CONDENSER WATER BRIDGE BYPASS AND COOLING TOWER YARD. LIKE ALL OTHER ISOLATION VALVES, FAA PERSONNEL WILL OPERATE THESE VALVES BETWEEN THE OPEN AND CLOSED POSITIONS.
- NO DEMOLITION WORK SHALL COMMENCE UNTIL THE TEMPORARY SYSTEM IS PROVEN AND ACCEPTED BY FAA. PERMANENT TOWER YARD SHALL REMAIN PRESSURIZED AND OPERATIONAL IN STANDBY MODE DURING PROVING PERIOD. AFTER TEMPORARY SYSTEM IS OPERATIONAL AND PROVEN FOR SEVEN (7) DAYS RUNTIME, PROCEED TO NEXT STEP.
- DEMOLITION OF TEMPORARY SYSTEMS SHALL NOT OCCUR UNTIL ONE WEEK OF OPERATION OF EACH OF THE NEW TOWERS AND PUMPS AFTER TAB AND COMMISSIONING IS COMPLETED FOR THE SITE.

## III. CHILLER VALVE REPLACEMENT

- ISOLATE EACH CHILLER IN PREPARATION FOR WORK. ONLY ONE CHILLER MAY BE SHUT DOWN AT ANY TIME.
- PROCEED TO THE NEXT CHILLER ONCE VALVES ARE PROVEN WITH ONE (1) DAY OF CONTINUOUS OPERATION. PROVE FLOW VOLUME AND NO LEAKAGE.

### STEP 1 - CHILLER CH-100 VALVE REPLACEMENT

- INSTALL CONDENSER WATER HEADER HOT TAP/LINES TOPS BETWEEN CH-100 AND CH-200 TO ISOLATE CH-100, BY-PASS VALVE ASSEMBLY, AND PERMANENT TOWER YARD.
- DEMOLISH CONDENSER WATER HEADERS FROM WALL TO BY-PASS BRANCH TAKEOFFS AND DEMOLISH BY-PASS VALVE ASSEMBLY.
- INSTALL NEW VALVES ON CONDENSER WATER HEADERS AND CH-100 BRANCHES. HEADER VALVES SHALL REMAIN IN CLOSED POSITION TO ISOLATE UNDERGROUND PIPING TO PERMANENT TOWER YARD. CH-100 VALVES SHALL REMAIN IN OPEN POSITION.
- INSTALL CHILLED WATER BRANCH HOT TAP/LINES TOPS TO ISOLATE CH-100. DEMOLISH AND INSTALL NEW ISOLATION VALVES FOR CH-100. VALVES SHALL REMAIN IN OPEN POSITION. REMOVE LINES TOPS FROM BRANCHES.

### STEP 2 - CHILLER CH-200 VALVE REPLACEMENT

- INSTALL CONDENSER WATER HEADER HOT TAP/LINES TOPS BETWEEN CH-200 AND CH-300 TO BYPASS AND ISOLATE CH-200.
- INSTALL NEW CONDENSER WATER MAIN ISOLATION VALVES BETWEEN CH-200 AND CH-300.
- DEMOLISH AND INSTALL NEW ISOLATION VALVES FOR CH-200. VALVES SHALL REMAIN IN OPEN POSITION. REMOVE BY-PASSES.
- INSTALL CHILLED WATER BRANCH HOT TAP/LINES TOPS TO ISOLATE CH-200.
- DEMOLISH AND INSTALL NEW ISOLATION VALVES FOR CH-200. VALVES SHALL REMAIN IN OPEN POSITION. REMOVE LINES TOPS FROM BRANCHES.

### STEP 3 - CHILLER CH-300 VALVE REPLACEMENT

- INSTALL NEW CONDENSER WATER HEADER HOT TAPS BETWEEN CH-300 AND CH-400 TO BYPASS AND ISOLATE CH-300.
- DEMOLISH EXISTING, CORRODED TAKEOFFS BETWEEN CH-300 AND CH-400.
- DEMOLISH AND INSTALL NEW ISOLATION VALVES FOR CH-300. VALVES SHALL REMAIN IN OPEN POSITION. REMOVE BY-PASSES.
- INSTALL CHILLED WATER BRANCH HOT TAPS TO ISOLATE CH-300.
- DEMOLISH AND INSTALL NEW ISOLATION VALVES FOR CH-300. VALVES SHALL REMAIN IN OPEN POSITION. REMOVE LINES TOPS FROM BRANCHES.

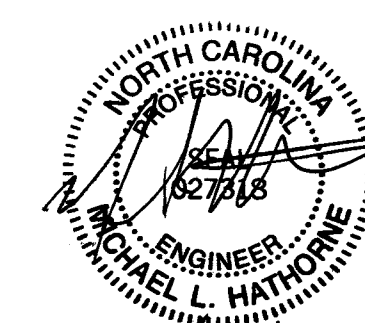
## IV. UNDERGROUND CONDENSER WATER PIPE REPLACEMENT.

### STEP 1 - PHASE I REPLACEMENT

- ONCE THE 12" CONDENSER WATER ISOLATION VALVES WITHIN THE CHILLER PLANT HAVE BEEN PROVEN PHASE I OF THE UNDERGROUND PIPING REPLACEMENT MAY BEGIN.
- EXCAVATE 12" CONDENSER WATER PIPING WITHIN THE PHASE I DEMOLITION AREA AND REPLACE PIPING. PRESSURE TEST AND INSPECT FOR LEAKS. CLEAN AND FLUSH PIPING IN PREPARATION FOR RETURNING PIPING TO SERVICE. BACK FILL WITH COMPACTED STRUCTURAL FILL AND PAVE TO RESTORE AREA INCLUDING CONCRETE SIDEWALK AND CURB/GUTTER.
- CONNECT PHASE II TEMPORARY TOWER PIPING TO VALVED CONNECTIONS ON NEW CONDENSER WATER PIPING. PHASE I PIPING SHALL REMAIN CONNECTED TO CONDENSER WATER HEADER WITHIN THE CHILLER PLANT.

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PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>		REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA							
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER MECHANICAL INSTRUMENTATION AND CONSTRUCTION SEQUENCE OAKLAND (ZOA) ARTCC FREMONT							
DESIGNED BY M. HATHORNE	ISSUED BY AIRWAY FACILITY DIVISION	DATE 07/08/2015	JCN				
DRAWN BY A. STURDIVANT	CHECKED BY D. LUKASZEWICZ	DRAWING NO. ZOA - D - CWBMM5 - M002A	REV.				



07/08/2015

REVIEWED BY: SUBMITTED BY: RSBrafisch APPROVED BY: [Signature]

OAKLAND ARTCC FREMONT, CALIFORNIA

CONSTRUCTION SEQUENCE (CONT.)

IV. UNDERGROUND CONDENSER WATER PIPE REPLACEMENT (CONT.)

STEP 1 - PHASE I REPLACEMENT CONT.

- D. RETURN PERMANENT PHASE I PIPING TO SERVICE: OPEN NEW 12" ISOLATION VALVES ON THE CONDENSER WATER HEADER WITHIN THE CHILLER PLANT AND CLOSE ISOLATION VALVES FOR TEMPORARY CONNECTIONS AT TEMPORARY TOWER YARD. ALLOW 48 HRS RUNTIME UTILIZING PHASE II TEMPORARY TOWER PIPING TO PROVE NEW PIPING.
- E. ONCE NEW PIPING HAS BEEN PROVEN, DEMOLISH PHASE I TEMPORARY TOWER PIPING AND REPAIR SITE PAVING AND CURB AND GUTTER WITHIN DEMOLITION AREA TO MATCH EXISTING. REFER TO DETAIL F2/501.
- F. ONCE SITE REPAIR HAS BEEN ACCEPTED BY COR, TRANSITION TEMPORARY FENCING AND HIGHWAY BARRICADES TO PHASE II LOCATIONS. PHASE I DRIVE LANE AND PEDESTRIAN ACCESS MUST BE COMPLETED PRIOR TO PHASE II CLOSURES.

STEP 2 - PHASE II REPLACEMENT

- A. EXCAVATE 12" CONDENSER WATER PIPING WITHIN THE PHASE II DEMOLITION AREA AND REPLACE PIPING. PIPING SHALL EXTEND 24" ABOVE GRADE AND BE BLIND FLANGED IN THE TOWER YARD. PRESSURE TEST AND INSPECT FOR LEAKS. CLEAN AND FLUSH PIPING IN PREPARATION FOR RETURN TO SERVICE. UNDERGROUND 12" PHASE I CONDENSER WATER ISOLATION VALVES SHALL REMAIN IN THE CLOSED POSITION.
- B. ONCE PHASE II PIPING HAS BEEN TESTED, INSPECTED AND CLEANED AND FLUSHED, RESTORE SITE PAVING, CURB AND GUTTER AND MARKINGS WITHIN DEMOLITION AREA TO MATCH EXISTING. REFER TO DETAIL F2/501.
- C. TEMPORARY TOWERS, FENCING AND HIGHWAY BARRICADES TO REMAIN IN PHASE II LOCATIONS.

V. COOLING TOWER REPLACEMENT

STEP 1 - TOWER YARD REPLACEMENT

- A. ONCE THE TEMPORARY TOWER SYSTEM IS PROVEN, THE SCOPE OF WORK IN THE TOWER YARD CAN BE COMPLETED AS A SINGLE PHASE.
- B. DRAIN HEADERS AND BASIN.
- C. CONFIRM ELECTRICAL FEEDERS AND CONTROLS ARE DISCONNECTED FROM SOURCES AND ARE READY FOR SAFE DEMOLITION.
- D. DEMOLISH TOWERS AND PIPING.
- E. REMOVE BASIN SCREENS TO BE USED AS TEMPLATES FOR FABRICATION OF NEW SCREENS AND CLEAN BASIN AND FLUME.
- F. INSPECT CONCRETE BASIN AND FLUME FOR CRACKS, SPALLING AND OTHER DEFECTS. REPORT ANY DEFICIENCIES TO COR.
- G. INSTALL NEW TOWERS, PIPING AND ACCESS PLATFORMS.
- H. ONCE NEW TOWERS ARE INSTALLED, OPEN ISOLATION VALVES ON PHASE I UNDERGROUND CONDENSER WATER PIPING AND TRANSITION FROM TEMPORARY TOWERS TO PERMANENT TOWERS.
- I. ONCE EACH NEW TOWER HAS BEEN PROVEN WITH SEVEN (7) DAYS OF CONTINUOUS OPERATION, TEMPORARY TOWER YARD, PIPING, FENCING AND HIGHWAY BARRICADES MAY BE DEMOBILIZED.

VI. GENERATOR BYPASS

STEP 1 - INSTALLATION OF INTERCOOLER PIPING

- A. INSTALL BYPASS VALVE AND PIPING. COORDINATE WORK WITH COOLING TOWER YARD SHUTDOWN.

VII. CHILLER AND PUMP REPLACEMENT

STEP 1 - CHILLER CH-200 REPLACEMENT

- A. CLOSE NEW ISOLATION VALVES FOR CONDENSER AND CHILLED WATER TO ISOLATE CH-200.
- B. DEMOLISH CH-200 AND PIPING.
- C. INSTALL NEW CHILLER CH-300 AND PIPING. NEW ISOLATION VALVES ON BRANCH PIPING FROM CONDENSER AND CHILLED WATER HEADERS SHALL NOW BE IN OPEN POSITION.

STEP 2 - CHILLER CH-300 REPLACEMENT

- A. ONCE CHILLER CH-200 IS PROVEN WITH SEVEN (7) DAYS OF CONTINUOUS OPERATION, ISOLATE CH-300 BY CLOSING NEW ISOLATION VALVES FOR CONDENSER AND CHILLED WATER.
- B. DEMOLISH CH-300 AND PIPING.
- C. INSTALL NEW CHILLER CH-300 AND PIPING. NEW ISOLATION VALVES ON BRANCH PIPING FROM CONDENSER AND CHILLED WATER HEADERS SHALL NOW BE IN OPEN POSITION.

STEP 3 - PUMP REPLACEMENT

- A. ISOLATE EACH PUMP IN PREPARATION FOR WORK. ONLY ONE PUMP MAY BE SHUTDOWN AT ANY TIME.
- B. DEMOLISH AND INSTALL PUMP AND PIPING ONE AT A TIME.
- C. PROCEED TO NEXT PUMP ONCE PREVIOUS REPLACEMENT IS PROVEN WITH SEVEN (7) DAYS OF CONTINUOUS OPERATION.

STEP 4 - TEMPORARY TOWER YARD DEMOLITION

- A. UPON COMPLETION OF PERMANENT TOWER REPLACEMENT AND CH-300, PROVE WITH SEVEN (7) DAYS OF CONTINUOUS OPERATION EACH. OPEN NEW ISOLATION VALVES ON THE CONDENSER WATER HEADERS AND THEN CLOSE THE ISOLATION VALVES TO THE TEMPORARY TOWER YARD. DEMOLISH TEMPORARY TOWER YARD.

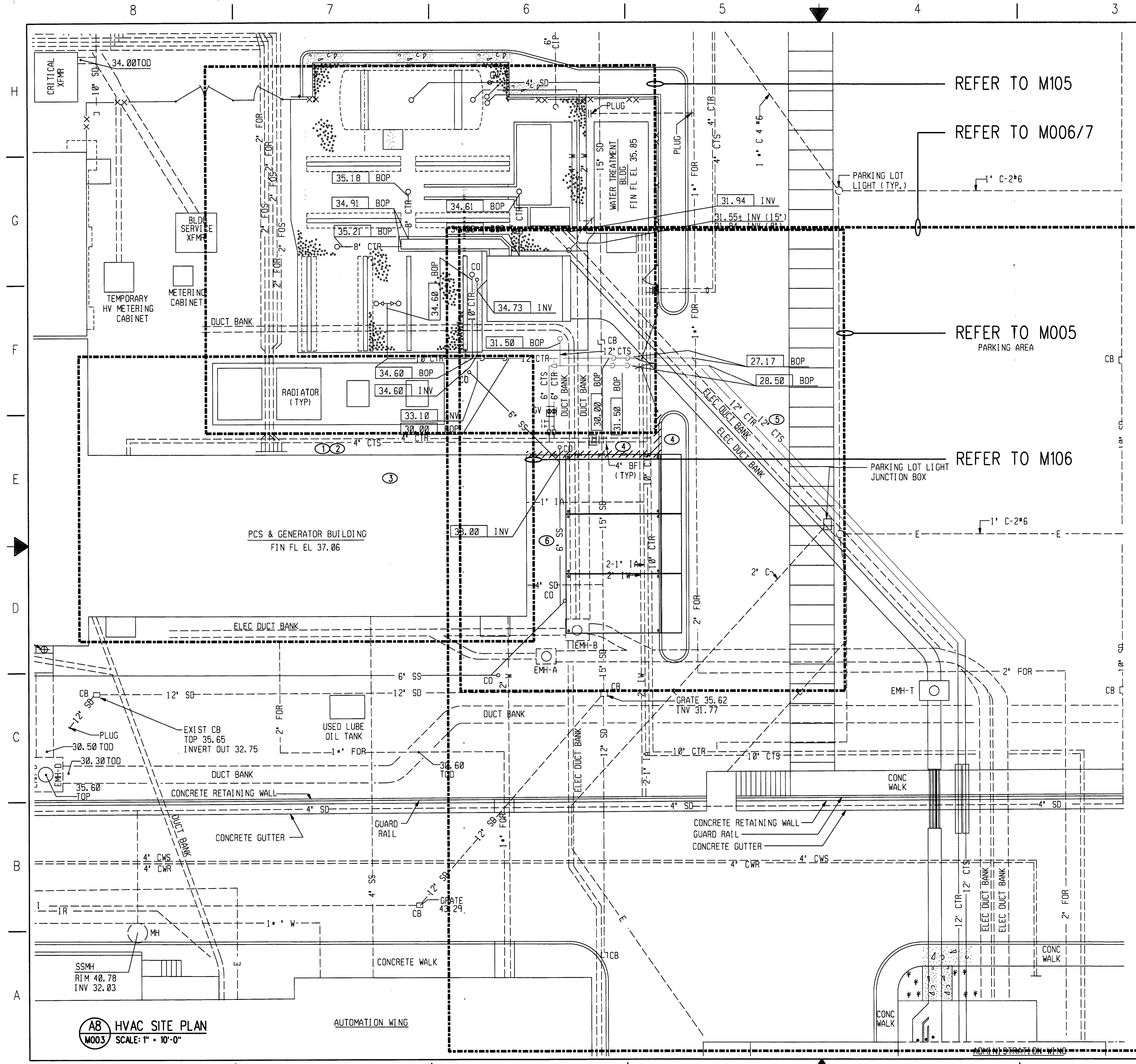
VIII. FACILITY-WIDE CHILLED WATER BALANCING

- A. ONCE CHILLER PLANT RENOVATIONS ARE COMPLETE, CONDUCT TAB ACTIVITIES FOR BUILDING CHILLED WATER SYSTEM. REFER TO SPECIFICATION SECTION 23 05 93, TESTING, ADJUSTING AND BALANCING FOR HVAC.

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<b>JACOBS</b>									
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD				
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>									
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER MECHANICAL CONSTRUCTION SEQUENCE FREMONT <span style="float: right;">OAKLAND (ZOA) ARTCC</span>									
DESIGNED BY M. HATHORNE	ISSUED BY AIRWAY FACILITY DIVISION	DATE 07/08/2015	JCN						
DRAWN BY A. STURDIVANT	CHECKED BY D. LUKASZEWICZ	DRAWING NO. ZOA - D - CWBMMS - M002B	REV.						

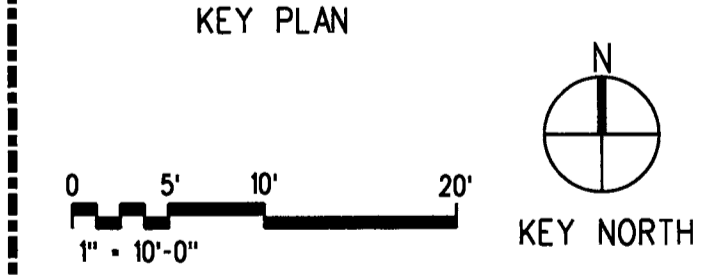
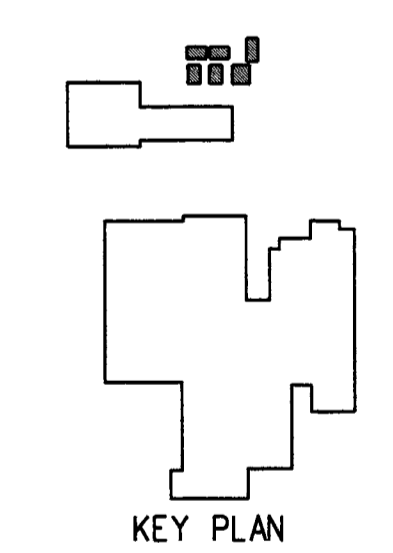




**GENERAL SHEET NOTES:**

- A. REFER TO SHEET M001 FOR HVAC ABBREVIATIONS, SYMBOLS AND GENERAL NOTES.
- B. EXISTING UNDERGROUND INFORMATION ON SHEET IS PROVIDED FOR REFERENCE ONLY. CONTRACTOR SHALL HIRE A UTILITY LOCATOR PRIOR TO DEMOLITION/EXCAVATION ACTIVITY.
- C. EXISTING LANDSCAPING IS TO BE PROTECTED AND AVOIDED TO THE GREATEST EXTENT POSSIBLE.

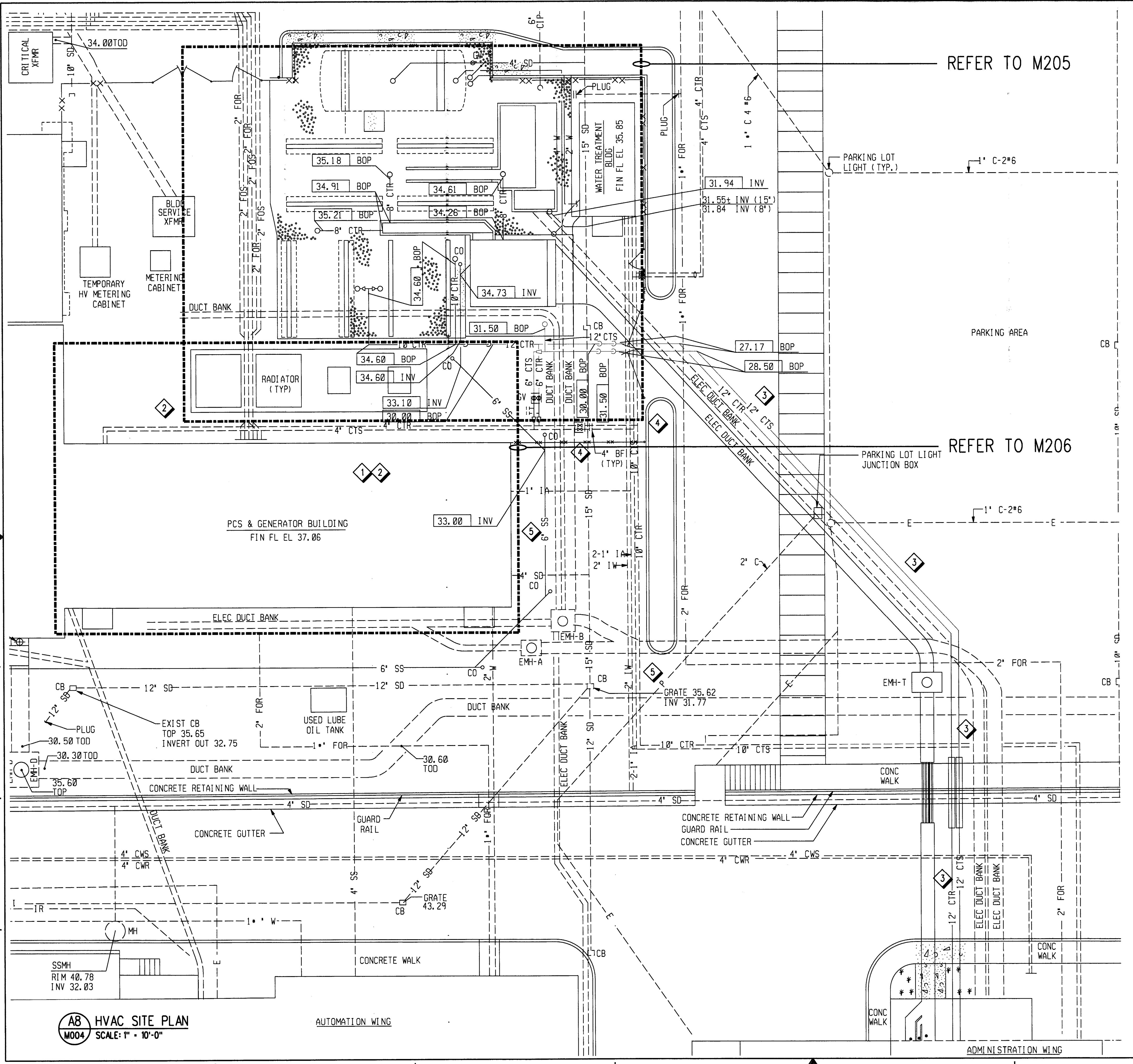
- SHEET NOTES**
- ① ABANDON 4" CTS/R IN PLACE.
  - ② ABANDON 4" CTS/R PIPING FROM EDGE OF UPS AND GENERATOR BUILDING RADIATORS ON IN PLACE. DO NOT DISTURB UNDERGROUND RADIATOR PIPING.
  - ③ SAW CUT PAVEMENT AND DEMOLISH 4" CTS/R PIPING FROM BRANCH ELBOW OFF 12" CTS/R MAIN TO EDGE OF UPS AND GENERATOR BUILDING RADIATORS. DO NOT DISTURB UNDERGROUND RADIATOR PIPING.
  - ④ REMOVE FENCE FOR FUTURE REINSTALLATION.
  - ⑤ EXCAVATE FOR UNDERGROUND CONDENSER WATER PIPE TESTING. BACKFILL WITH PEA GRAVEL AND ASPHALT. REFER TO DETAIL F2/M501 AND PHASING PLAN M002.
  - ⑥ RELOCATE BIKE STORAGE TO NEW LOCATION DETERMINED BY FAA COR.



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REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
<b>DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION</b> WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>					
<b>CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER HVAC SITE PLAN - DEMOLITION</b>					
FREMONT			OAKLAND (ZOA) ARTCC		
DESIGNED BY M. HATHORNE	ISSUED BY AIRWAY FACILITY DIVISION	DATE 07/08/2015	JCN		
DRAWN BY J.A. STURDIVANT	CHECKED BY D. LUKASZEWICZ	DRAWING NO. ZOA - D - CWBMM5 - M003	REV.		
OAKLAND ARTCC FREMONT, CALIFORNIA		7/2/2015 DATE: 88DATE TIME: 88TIME USER: 88USER			

**AB HVAC SITE PLAN**  
M003 SCALE: 1" = 10'-0"

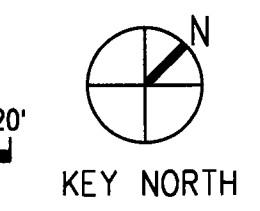
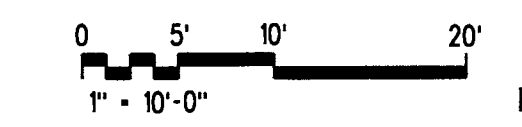
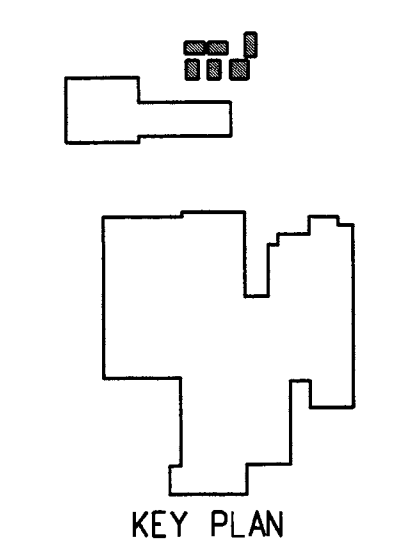


**GENERAL SHEET NOTES:**

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- EXISTING LANDSCAPING IS TO BE PROTECTED AND AVOIDED TO THE GREATEST EXTENT POSSIBLE. DAMAGED LANDSCAPING SHALL BE REPLACED BY THE CONTRACTOR.

**SHEET NOTES**

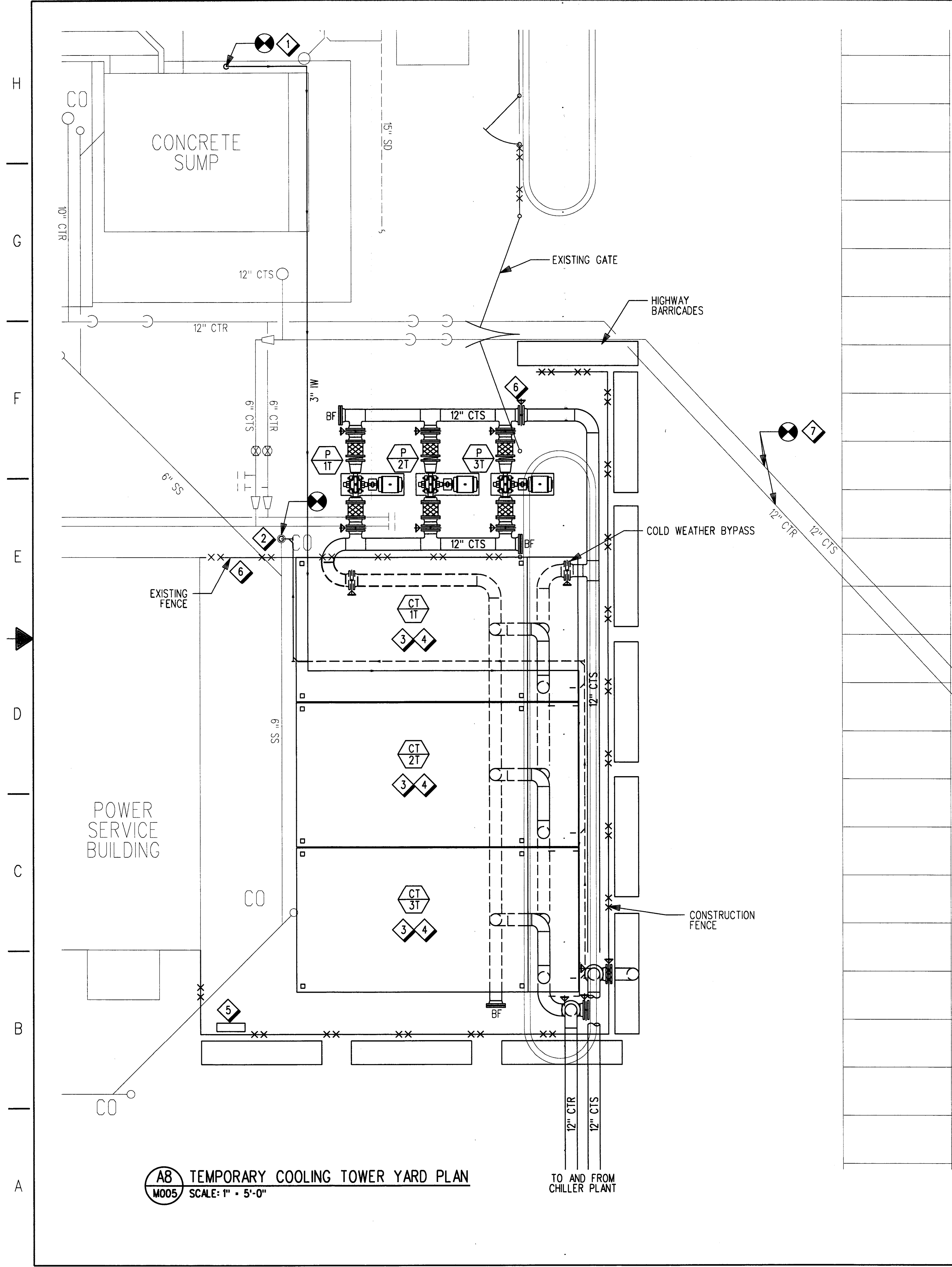
- REFER TO SHEET M206 FOR CONTINUATION OF PIPING WITHIN THE UPS AND GENERATOR BUILDING.
- PATCH AND REPAIR PAVEMENT TO MATCH EXISTING.
- COMPACT BACKFILL AND RESTORE ANY DISTURBED AREAS TO MATCH EXISTING, INCLUDING THICKNESSES. REFER TO DETAIL F2/M501.
- REINSTALL FENCE AND TOP RAIL.
- ONCE TEMPORARY TOWERS AND PUMPS HAVE BEEN REMOVED, RELOCATE BIKE STORAGE BACK TO ORIGINAL LOCATION.



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<b>JACOBS</b>					
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
<b>DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION</b> WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>					
<b>CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER HVAC SITE PLAN</b>					
FREMONT			OAKLAND (ZOA) ARTCC		
REVIEWED BY	SUBMITTED BY	APPROVED BY			
	R. Bradfish				
SUBMITTER'S TITLE		APPROVER'S TITLE			
DESIGNED BY M. HATHORNE		ISSUED BY AIRWAY FACILITY DIVISION		DATE 07/08/2015 JCN	
DRAWN BY A. STURDIVANT				DRAWING NO.	
CHECKED BY D. LUKASZEWICZ				ZOA - D - CWBMS - M004	
OAKLAND ARTCC FREMONT, CALIFORNIA					
7/2/2015					

**A8 HVAC SITE PLAN**  
M004 SCALE: 1" = 10'-0"



**AB** TEMPORARY COOLING TOWER YARD PLAN  
**M005** SCALE: 1" = 5'-0"

**TEMPORARY EQUIPMENT REQUIREMENTS:**

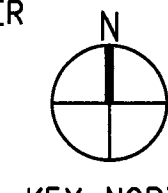
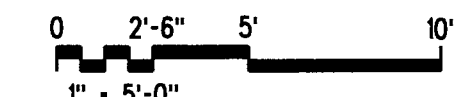
1. ALL RENTAL EQUIPMENT FOR THE TEMPORARY CONDENSER WATER PLANT (TOWERS, PUMPS, CONTROLS, ETC.) IS TO BE BY THE SAME SOURCE (YORK, CARRIER, TRANE, AGGREKO, OR APPROVED EQUAL.)
2. ALL PRIMARY COMPONENTS SHALL SHOW DOCUMENTED EVIDENCE THAT THE EQUIPMENT IS NOT MORE THAN FIVE YEARS OLD AND HAS NO MORE THAN 22,500 DOCUMENTED SERVICE HOURS. SUBMIT MAINTENANCE AND REPAIR RECORDS FOR EACH PUMP AND COOLING TOWER. ALTERNATIVELY THE PROVIDER SHALL HAVE A DOCUMENTED OVERHAUL PROGRAM FOR EQUIPMENT BETWEEN EACH RENTAL AND PROVIDE RECORDS OF RENTAL EQUIPMENT FOR THIS PROJECT. PROGRAM SHALL BE EQUAL TO BASIS OF DESIGN PROVIDER - AGGREKO.
3. THE TEMPORARY EQUIPMENT PROVIDER SHALL HAVE 24/7 CONTACT VIA TELEPHONE. SERVICE CALLS MUST BE RETURNED WITHIN 1-HOUR. THE TEMPORARY EQUIPMENT PROVIDER MUST HAVE A QUALIFIED REPAIR TECHNICIAN ON SITE WITHIN 4 HOURS OF THE SERVICE CALL AND HAVE A REPAIR PLAN AND PARTS MET, THE FAA RESERVES THE RIGHT TO PERFORM REPAIRS AS NECESSARY TO RESTORE OPERATION AND BACKCHARGE THE CONTRACTOR FOR ANY COSTS INCURRED. FAILURE OF MORE THAN 1 UNIT WOULD BE CONSIDERED AN EMERGENCY AND ADDITIONAL RESOURCES, NAMELY ALTERNATE REPLACEMENT UNITS, MUST BE AVAILABLE TO RETURN THE SYSTEM TO OPERATION AS QUICKLY AS POSSIBLE. A QUALIFIED TECHNICIAN MUST BE ON SITE FOR A MINIMUM OF 4 HOURS PER WEEK WHILE THE RENTAL EQUIPMENT IS IN OPERATION TO INSPECT, CLEAN, AND MAINTAIN THE EQUIPMENT.
4. THE TEMPORARY EQUIPMENT PROVIDER MUST HAVE AN ESTABLISHED, OPERATIONAL OFFICE LOCATED WITHIN 100-MILES OF THE FAA FACILITY.
5. DOCUMENTATION SHALL BE SUBMITTED BY THE TEMPORARY EQUIPMENT PROVIDER ATTESTING TO THE COMPATIBILITY OF THE TEMPORARY COOLING TOWER PLANT WITH THE EXISTING MAKE-UP WATER AND CHEMICAL TREATMENT PROGRAM ON-SITE.
6. DOCUMENTATION SHALL BE PROVIDED BY THE TEMPORARY EQUIPMENT PROVIDER DETAILING THE REQUIRED MAINTENANCE REGIME AND SCHEDULE FOR THE TEMPORARY COOLING TOWERS PLANT FOR THE PROJECTED DURATION OF THE INSTALLATION.
7. THREE COOLING TOWERS AND THREE PUMPS SHALL BE PROVIDED. EACH COOLING TOWER AND PUMP SHALL BE MATCHED IN CAPACITY TO THE SIZE OF THE LARGEST CHILLER IN THE FACILITY. THE PIPING SERVING THE PUMPS AND CHILLERS MUST BE CONFIGURED TO ALLOW ANY PUMP TO OPERATE WITH ANY TOWER AND CHILLER. TOWERS SHALL BE CERTIFIED ANNUALLY PER STD-201 OR ALTERNATIVELY FIELD ACCEPTANCE TESTED PER ATC-105.
8. SUBMIT DESIGN DRAWINGS SHOWING THE PROPOSED TEMPORARY COOLING TOWER, PUMP AND PIPING INSTALLATION REQUIREMENTS INCLUDING FOUNDATIONS, ANCHORAGE, BRACING AND SUPPORTS. WORK ASSOCIATED WITH TEMPORARY COOLING TOWERS AND PUMPS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. WORK SHALL BE ACCOMPLISHED IN A PROFESSIONAL MANNER AND SHALL BE COMPLETED BY PERSONNEL EXPERIENCED IN THAT PARTICULAR ASPECT OF INSTALLATION.
9. 8 FOOT HIGH CHAIN LINK FENCE WITH TOP RAIL AND LOCKING GATE AROUND TEMPORARY COOLING TOWER YARD. NO OTHER CONSTRUCTION RELATED ACTIVITIES, INCLUDING, BUT NOT LIMITED, TO MATERIAL STORAGE, PARKING, CUTTING, OR WELDING SHALL BE ALLOWED WITHIN THE TEMPORARY COOLING TOWER YARD. FENCING ALONG VEHICLE ROUTES SHALL ALSO HAVE CONCRETE OR WATER FILLED HIGHWAY BARRICADES.
10. COOLING TOWERS SHALL BE INSTALLED ON CONCRETE PADS DESIGNED TO SUPPORT THE WEIGHT OF THE TOWER WHILE IN OPERATION. THE COOLING TOWER FOUNDATION AND STRUCTURAL STEEL SUPPORTS SHALL BE DESIGNED TO WITHSTAND WIND AND SEISMIC FORCES PER PROJECT SPECIFICATIONS. REFER TO STRUCTURAL COOLING TOWERS SHALL BE ELEVATED (6" MAX) TO PROVIDE THE RATED NET POSITIVE SUCTION HEAD PRESSURE REQUIRED FOR THE TEMPORARY PUMPS. PROVIDE EQUALIZER LINE BETWEEN COOLING TOWERS. SUMPS WITH ISOLATION VALVES AT EACH TOWER. PROVIDE BIRD SCREENS ON THE INLET TO THE COOLING TOWERS.
11. PUMPS SHALL BE INSTALLED ON CONCRETE PADS SIZED TO SUPPORT THE WEIGHT OF THE PUMP WHILE IN OPERATION. THE PUMPS SHALL BE ANCHORED IN PLACE TO WITHSTAND VIBRATION AND SEISMIC FORCES PER PROJECT SPECIFICATIONS. PUMPS SHALL BE WEATHERPROOF OR SHALL BE PROTECTED BY A WEATHERPROOF ENCLOSURE.
12. TEMPORARY PIPING SHALL BE SCHEDULE 40 BLACK STEEL PIPE WITH WELDED, GROOVED OR FLANGED CONNECTIONS. NO HOSES WILL BE PERMITTED. PIPING SHALL BE SUPPORTED ON CONCRETE, STEEL PLATE OR PRESSURE TREATED WOOD FOUNDATIONS WITH STEEL PIPE SUPPORTS. TEMPORARY PIPE SUPPORTS SHALL BE DESIGNED USING A MAXIMUM SOIL BEARING CAPACITY OF 750 PSF.
13. PUMPS AND PIPING SHALL BE INSULATED AND HEAT TRACED. COOLING TOWER BASINS SHALL BE PROVIDED WITH BASIN HEATERS SIZED FOR THE AMBIENT DESIGN CONDITIONS AT THE SITE.

**GENERAL SHEET NOTES:**

- A. REFER TO SHEETS M001 AND M002 FOR HVAC ABBREVIATIONS, SYMBOLS AND GENERAL NOTES.
- B. REFER TO SHEETS M003 AND M004 FOR SITE UTILITIES.
- C. SHEET IS PROVIDED FOR REFERENCE ONLY. LOCATIONS ARE APPROXIMATE.
- D. LANDSCAPING IS TO BE PROTECTED AND AVOIDED TO THE GREATEST EXTENT POSSIBLE. UPON DEMOLITION OF TEMPORARY EQUIPMENT RETURN LANDSCAPING TO ITS PRIOR STATE.

**TEMPORARY EQUIPMENT REQUIREMENTS:**

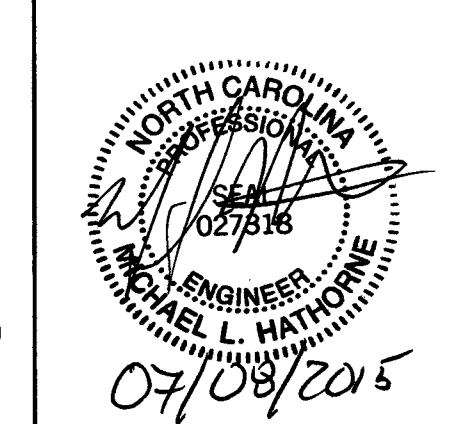
14. PROVIDE ISOLATION VALVES ON THE INLET/OUTLET OF EACH TOWER AND CHILLER AND SUCTION/DISCHARGE OF EACH PUMP TO ALLOW EQUIPMENT TO BE SERVICED WITHOUT DISRUPTING OPERATION OF REMAINING TOWERS AND PUMPS.
15. COOLING TOWERS, PUMPS, AND CONTROLS SHALL BE TESTED AND COMMISSIONED PRIOR TO OPERATION WITH THE FACILITY CHILLERS. THE TEMPORARY SYSTEM MUST OPERATE CONTINUOUSLY FOR 7 DAYS WITHOUT FAILURE BEFORE DEMOLITION OF THE EXISTING PIPING, VALVES OR TOWERS CAN BEGIN. EACH TOWER AND EACH PUMP SHALL BE OPERATED FOR MINIMUM 24 HOURS DURING THE 7 DAY PERIOD. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE AND REPAIRS OF THE TEMPORARY SYSTEM BUT THE FAA RESERVES THE RIGHT TO MAKE EMERGENCY REPAIRS AT ANY TIME. RENTAL PROVIDER SHALL HAVE TECHNICIAN ON SITE FOR FIRST 48 HOURS OF OPERATION DURING TRANSITION FROM PERMANENT TO TEMPORARY SYSTEM.
16. TEMPORARY COOLING TOWERS, PUMPS AND OTHER RELATED EQUIPMENT SHALL HAVE SELF-CONTAINED, PACKAGED CONTROLS FOR AUTOMATIC OPERATION OF TEMPORARY EQUIPMENT. FAA SITE PERSONNEL SHALL BE ABLE TO MANUALLY OPERATE EACH COOLING TOWER AND PUMP FROM A LOCAL CONTROL PANEL LOCATED IN TEMPORARY COOLING TOWER YARD. ONCE COOLING TOWER AND PUMP ARE STARTED BY SITE PERSONNEL, PACKAGED CONTROLS SHALL STAGE TOWER FANS ON AND OFF TO MAINTAIN CONDENSER WATER SUPPLY TEMPERATURE AT SET POINT. LIGHT INDICATORS SHALL BE PROVIDED AS PART OF CONTROL PANEL OR AS A SEPARATE LIGHT INDICATOR PANEL TO SHOW ALARM AND RUNNING STATUS OF EQUIPMENT. AT A MINIMUM, PROVIDE LIGHT INDICATORS FOR FOLLOWING ITEMS: TOWER FAN STATUS; CONDENSER WATER PUMP STATUS; BASIN HEATER STATUS; AND LOW SUMP LEVEL ALARM. PROVIDE A COMBINATION LIGHT STROBE AND HORN INCLUDING SILENCE SWITCH FOR AUDIBLE AND VISUAL ALARM NOTIFICATION. LIGHT STROBE AND HORN SHALL BE MOUNTED ON TOP OF CONTROL PANEL OR SOMEWHERE IN COOLING TOWER YARD WHERE IT CAN BE SEEN FROM OUTSIDE OF YARD. LIGHT STROBE AND HORN SHALL BE ACTIVATED WHEN THERE IS AN ALARM FOR LOW SUMP LEVEL OR A TEMPERATURE OUT OF THE CONTROL RANGE. PROVIDE TEMPERATURE AND PRESSURE GAUGES IN MAIN CONDENSER WATER SUPPLY AND RETURN PIPING. ALL POWER WIRING, CONTROL WIRING, AND PANELS SHALL BE INSTALLED IN RGS CONDUIT AND WEATHER PROOF ENCLOSURES WHERE REQUIRED BY EXPECTED AMBIENT CONDITIONS. CONTROL PANEL SHALL BE PROVIDED WITH BUILT-IN HEATER AND/OR FAN TO PROTECT CONTROL DEVICES FROM EXTREME TEMPERATURES.
17. COPPER MAKE-UP WATER AND BLOWDOWN PIPING. PROVIDE COPPER OR SCHEDULE 40 PVC PIPING FOR ATMOSPHERIC PRESSURE GRAVITY DRAIN AND OVERFLOW PIPING. PVC SHALL NOT BE INSTALLED IN ANY PART OF A PRESSURIZED SYSTEMS. PROVIDE DRAIN, OVERFLOW, BLOW DOWN PIPING AND DRAIN TO SANITARY SEWER SYSTEM THAT IS ADEQUATE IN SIZE FOR THE EXPECTED LOAD.
18. EACH TEMPORARY PUMP WILL HAVE A STRAINER. CLEAN AND FLUSH EQUIPMENT AND PIPING PRIOR TO STARTUP/CUTOVER TO TEMPORARY SYSTEM. A TEMPORARY WATER TREATMENT SYSTEM SHALL CONTROL WATER QUALITY AND CORROSION. THE SAME CHEMICALS THAT ARE PRESENTLY USED IN THE SYSTEM WILL BE UTILIZED. COORDINATE REQUIREMENTS WITH FACILITY WATER TREATMENT CONTRACTOR.
19. LIGHTNING PROTECTION FOR THE TEMPORARY COOLING TOWERS PER DIVISION 26 REQUIREMENTS AND ELECTRICAL DRAWINGS.
20. LIGHTING IN THE TEMPORARY COOLING TOWER YARD PER OSHA AND FACILITY SECURITY REQUIREMENTS. COORDINATE LIGHTING REQUIREMENTS WITH COR.
21. OPERATION AND MAINTENANCE TRAINING FOR FACILITY PERSONNEL. PROVIDE A MINIMUM OF 2 SESSIONS, 4 HOURS IN DURATION FOR EACH SESSION.
22. REMOVE TEMPORARY EQUIPMENT, PIPING, SUPPORTS, FOUNDATION, CONTROLS, AND WIRING AT COMPLETION OF WORK. RETURN THE SITE TO ITS ORIGINAL CONDITION.



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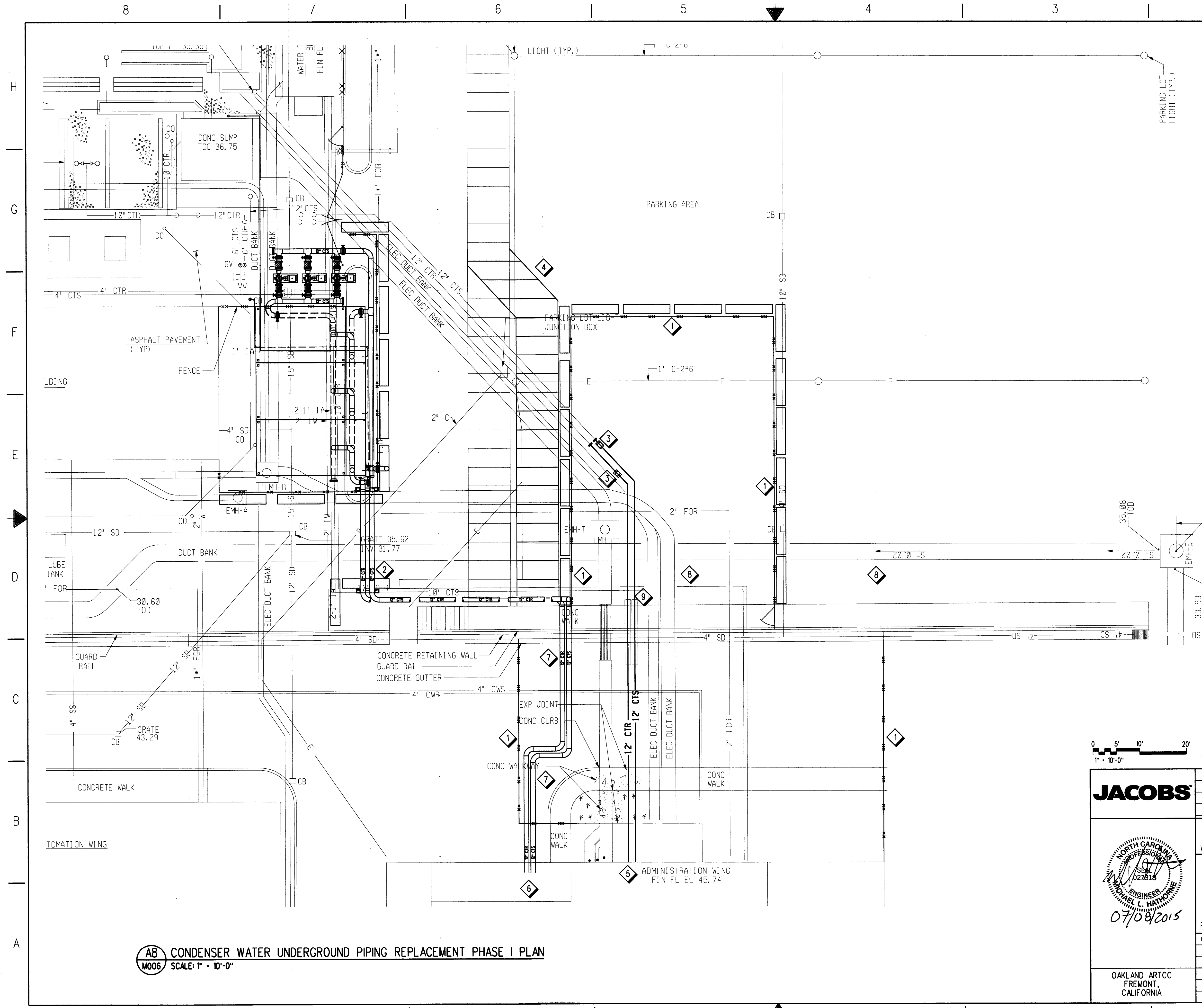
**SHEET NOTES**

1. CONNECT 3\"/>



REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
<b>DEPARTMENT OF TRANSPORTATION            FEDERAL AVIATION ADMINISTRATION</b> WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>					
<b>CONTROL WING BASEMENT            AND CHILLER/COOLING TOWER MODERNIZATION            OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER            TEMPORARY COOLING TOWER            YARD PLAN</b>					
FREMONT			OAKLAND (ZOA) ARTCC		
REVIEWED BY	SUBMITTED BY	APPROVED BY			
	RSBradfish	<i>[Signature]</i>			
SUBMITTER'S TITLE		APPROVER'S TITLE			
DESIGNED BY		ISSUED BY		DATE 07/08/2015	
DRAWN BY		AIRWAY FACILITY DIVISION		JCN	
CHECKED BY		DRAWING NO.		REV.	
D. LUKASZEWICZ		ZOA - D - CWBMMS - M005			

OAKLAND ARTCC  
 FREMONT,  
 CALIFORNIA



- GENERAL SHEET NOTES:**
- A. REFER TO SHEET M001 FOR HVAC ABBREVIATIONS, SYMBOLS AND GENERAL NOTES.
  - B. EXISTING UNDERGROUND INFORMATION ON SHEET IS PROVIDED FOR REFERENCE ONLY. CONTRACTOR SHALL HIRE A UTILITY LOCATOR PRIOR TO DEMOLITION/EXCAVATION ACTIVITY.
  - C. EXISTING LANDSCAPING IS TO BE PROTECTED AND AVOIDED TO THE GREATEST EXTENT POSSIBLE.

- SHEET NOTES**
- 1 TEMPORARY FENCING AND BARRICADES TO REMAIN UNTIL SITE RESTORATION HAS BEEN COMPLETED TO MATCH EXISTING AND APPROVED BY COR.
  - 2 12" CTS/R WELDED PIPING TO BE INSTALLED CLEAR SPAN AT NO LESS THAN 10' CLEAR ABOVE GRADE. PAINT PIPING SAFETY YELLOW AND TAG WITH DOT COMPLIANT MINIMUM CLEARANCE SIGN. SUPPORT AT BOTH ENDS.
  - 3 TERMINATION OF NEW 12" CTS/R PIPING FOR PHASE I SHALL INCLUDE TEE VERTICAL VALVED CONNECTIONS FOR TEMPORARY TOWER PIPING SPACED APPROXIMATELY 3' APART BELOW GRADE. ISOLATION VALVES SHALL BE INSTALLED NORTH OF TEMPORARY TOWER CONNECTIONS ON 12" MAINS. EXTEND PIPING NO LESS THAN 36" BEYOND ISOLATION VALVES ON CTS AND BLIND FLANGE. EXTEND PIPING ON CTR TO ALLOW FOR BLIND FLANGE TO BE IN LINE WITH CTS BLIND FLANGE.
  - 4 TEMPORARY MARKINGS ON PAVEMENT TO REROUTE PEDESTRIAN WAY TO OPEN DRIVELANE.
  - 5 CONTINUES TO CHILLER PLANT, SEE M101, M201.
  - 6 AREAWAY TO AND FROM CHILLER PLANT.
  - 7 PIPING ON CRIBBING ON GRADE.
  - 8 EXISTING DRIVELANE TO BE RESTORED TO TRANSITION FROM PHASE I TO PHASE II. ONE DRIVELANE MUST REMAIN AVAILABLE AT ALL TIMES.
  - 9 EXISTING SLEEVED PIPE ROUTE UNDER RETAINING WALL.

0 5' 10' 20'  
1" = 10'-0"

KEY NORTH

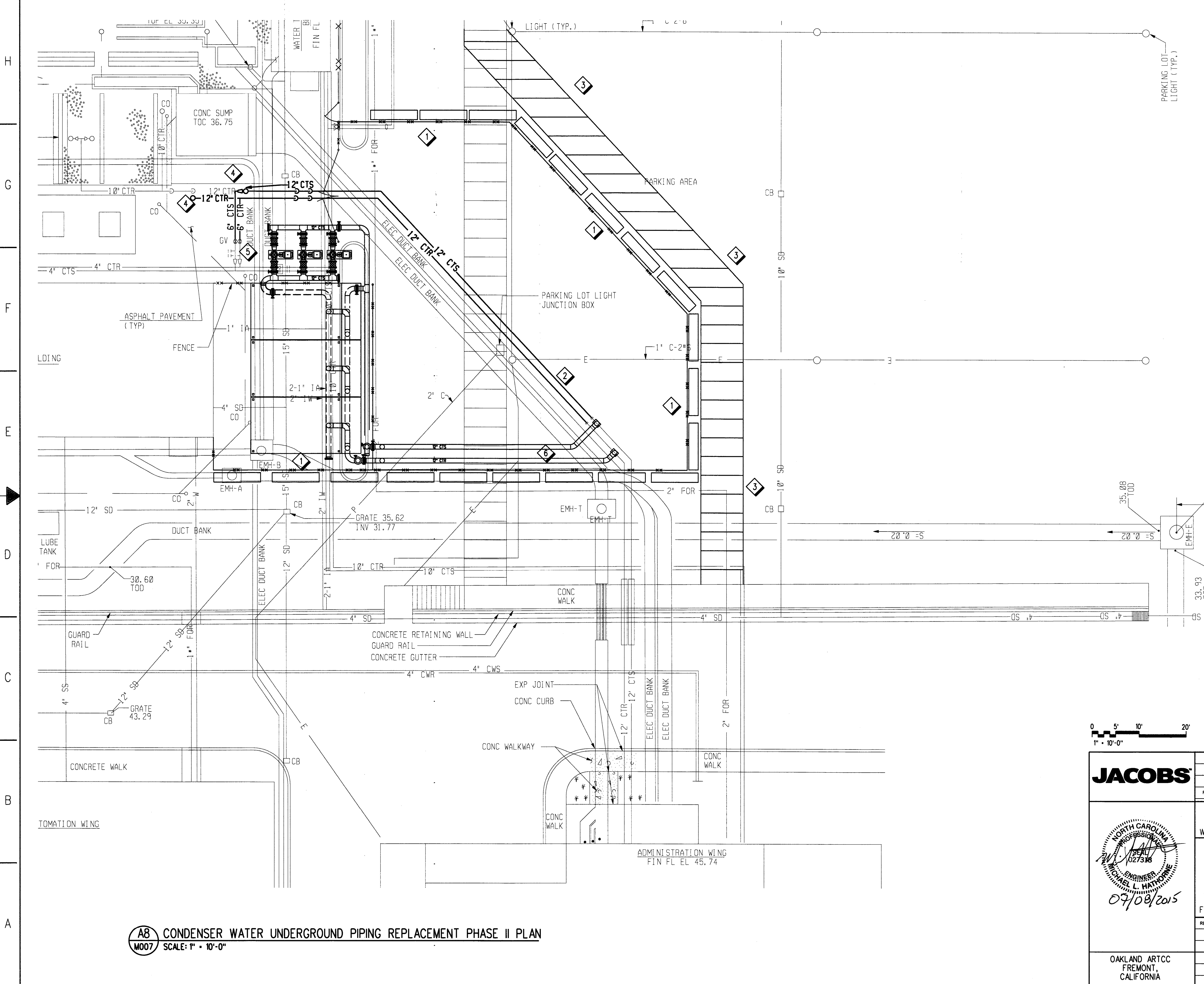
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PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

**A8** CONDENSER WATER UNDERGROUND PIPING REPLACEMENT PHASE I PLAN  
**M006** SCALE: 1" = 10'-0"

<b>JACOBS</b>					
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
<b>DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION</b> WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>					
<b>CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER CONDENSER WATER UNDERGROUND PIPING REPLACEMENT PHASE I PLAN</b> FREMONT <span style="float: right;">OAKLAND (ZOA) ARTCC</span>					
DESIGNED BY M. HATHORNE	ISSUED BY AIRWAY FACILITY DIVISION	DATE 07/08/2015	JCN		
DRAWN BY A. STURDIVANT	CHECKED BY M. HATHORNE	DRAWING NO. ZOA - D - CWBMS - M006	REV.		

07/08/2015

7/2/2015



- GENERAL SHEET NOTES:**
- A. REFER TO SHEET M001 FOR HVAC ABBREVIATIONS, SYMBOLS AND GENERAL NOTES.
  - B. EXISTING UNDERGROUND INFORMATION ON SHEET IS PROVIDED FOR REFERENCE ONLY. CONTRACTOR SHALL HIRE A UTILITY LOCATOR PRIOR TO DEMOLITION/EXCAVATION ACTIVITY.
  - C. EXISTING LANDSCAPING IS TO BE PROTECTED AND AVOIDED TO THE GREATEST EXTENT POSSIBLE.

- SHEET NOTES**
- 1 TEMPORARY FENCING TO REMAIN UNTIL SITE RESTORATION HAS BEEN COMPLETED TO MATCH EXISTING AND APPROVED BY COR.
  - 2 CONNECT PHASE II CTS/R PIPING TO EXISTING PHASE I CTS/R PIPING.
  - 3 TEMPORARY MARKING ON PAVEMENT TO REROUTE PEDESTRIAN WALKWAY.
  - 4 PIPING TO ABOVE GRADE. REFER TO M205.
  - 5 BRANCH TAKEOFFS TO ENGINE GENERATOR BUILDING. REFER TO M206.
  - 6 PIPING ROUTED ON GRADE WITH CRIBBING.



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<b>JACOBS</b>		REV.		APPROVED DATE		DESCRIPTION		JCN		REDLINE DATE		APVD	
		<b>DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA</b>											
		<b>CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER CONDENSER WATER UNDERGROUND PIPING REPLACEMENT PHASE II PLAN</b>											
OAKLAND ARTCC FREMONT, CALIFORNIA		DESIGNED BY M. HATHORNE		ISSUED BY AIRWAY FACILITY DIVISION		DATE 07/08/2015		JCN		DRAWING NO. ZOA - D - CWBMS - M007		REV.	

**A8** CONDENSER WATER UNDERGROUND PIPING REPLACEMENT PHASE II PLAN  
**M007** SCALE: 1" = 10'-0"

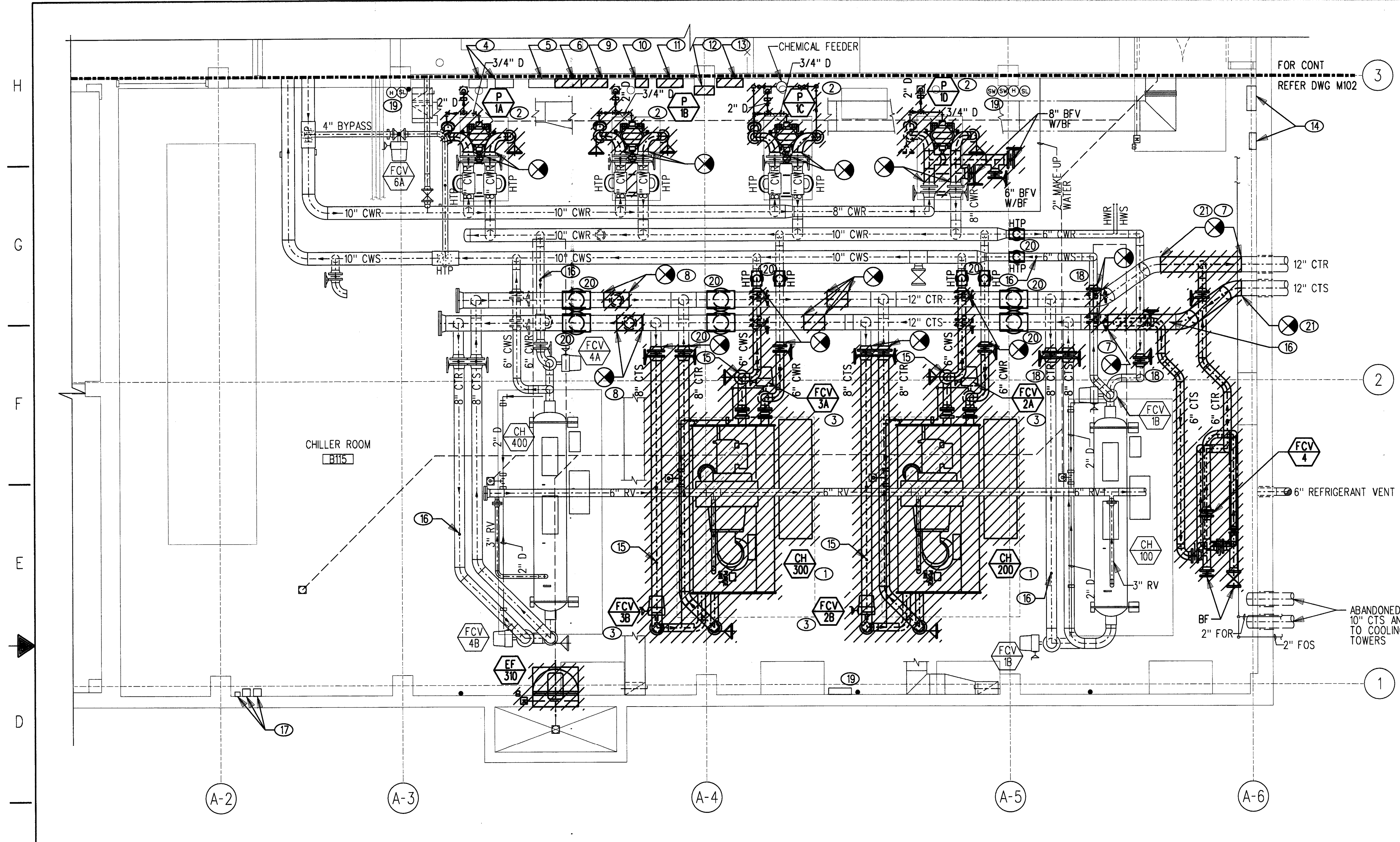


GENERAL SHEET NOTES

A. REFER TO SHEET M-001 FOR MECHANICAL ABBREVIATIONS, SYMBOLS AND GENERAL NOTES.

SHEET NOTES

- 1 DEMOLISH CH-200 AND CH-300 AND ASSOCIATED PIPING.
- 2 DEMOLISH P-1A AND P-1C PUMP BODY AND P-1B AND P-1D PUMP AND MOTOR. HOUSE KEEPING PAD TO REMAIN. DEMOLITION WORK TO BE COMPLETED ONE AT A TIME.
- 3 SALVAGE FLOW CONTROL VALVES, FCV-2A, FCV-3A, FCV-2B AND FCV-3B FOR REINSTALLATION WITH NEW CHILLERS.
- 4 EXISTING FLOW METER DISPLAYS TO REMAIN IN PLACE.
- 5 CONTROL PANEL CSI-13/14. EXISTING CONTROLS ASSOCIATED WITH HOT WATER SYSTEM SHALL REMAIN IN PLACE AND FULLY OPERATIONAL. EXISTING CONTROL POINTS ASSOCIATED WITH CHILLED/CONDENSER WATER SYSTEM SHALL BE RELOCATED TO NEW CONTROL PANELS.
- 6 CONTROL PANEL CSI-15/16. REMOVE CONTROL PANEL ASSOCIATED WITH CONDENSER WATER SYSTEM. TURN OVER REMOVED CONTROLLERS TO FAA FOR USE AS SPARE PARTS.
- 7 DEMOLISH 6" CONDENSER WATER BYPASS. UTILIZE HOT TAP/LINESTOP TO INSTALL NEW ISOLATION VALVES AND PIPING.
- 8 TEMPORARY BYPASS FOR CTS/R UTILIZING HOTTAP/LINESTOPS IN ORDER TO DEMOLISH EXISTING, CORRODED 8" CTR TAKEOFFS.
- 9 PULL BOX FOR CONTROL WIRING ASSOCIATED WITH CONDENSER WATER SYSTEM. REMOVE EXISTING WIRING AND CONTROL PANEL. PROTECT EXISTING CONDUITS AND ROUTING FOR RUNNING NEW CONTROL WIRING.
- 10 DEMOLISH EXISTING ULTRASONIC FLOW METER CONTROL PANEL THAT IS NO LONGER IN SERVICE.
- 11 CONTROL PANEL CSI-24/25. REMOVE CONTROL PANEL ASSOCIATED WITH CH-100 AND CH-200. CONTROLS SHALL REMAIN OPERATIONAL UNTIL INSTALLATION OF CH-200 IS COMPLETE. REMOVE EXISTING CONTROL PANEL ONCE NEW CONTROLS ARE INSTALLED AND FULLY OPERATIONAL. TURN OVER REMOVED CONTROLLERS TO FAA FOR USE AS SPARE PARTS.
- 12 YORKTALK XL (TOP) AND CONTROL PANEL CSI-26 (BOTTOM). DEMOLISH NETWORK INTERFACE YORKTALK XL. NEW CHILLERS SHALL COMMUNICATE WITH NEW DDCS USING BACNET. IF NECESSARY, RECONFIGURE CSI-26 TO FACILITATE COMMUNICATION BETWEEN NEW CHILLERS AND NEW DDCS.
- 13 CONTROL PANEL CSI-27/28. DEMOLISH CONTROL PANEL ASSOCIATED WITH CH-300 AND CH-400. CONTROLS SHALL REMAIN OPERATIONAL UNTIL INSTALLATION OF CH-300 IS COMPLETE. REMOVE EXISTING CONTROL PANEL ONCE NEW CONTROLS ARE INSTALLED AND FULLY OPERATIONAL. TURN OVER REMOVED CONTROLLERS TO FAA FOR USE AS SPARE PARTS.
- 14 EXISTING LIGHT INDICATOR PANEL AND CONTROL PANEL CSI-46/47 ASSOCIATED WITH AHU-350 AND FANS SHALL REMAIN IN PLACE.
- 15 EXISTING INSERTION TYPE ELECTROMAGNETIC FLOW METER SHALL BE REUSED. REMOVE FLOW METER AND PROTECT DURING DEMOLITION FOR REINSTALLATION.
- 16 EXISTING INSERTION TYPE ELECTROMAGNETIC FLOW METER TO REMAIN IN PLACE.
- 17 EXISTING TRACETEK LEAK DETECTION MODULES AND LOCAL ALARM HORN TO REMAIN.
- 18 DEMOLISH CH-100 CWS/R AND CTS/R ISOLATION VALVES.
- 19 EXISTING REFRIGERANT LEAK MONITOR AND ALARM SYSTEM AND ASSOCIATED STROBE LIGHTS, HORNS AND MANUAL SWITCHES SHALL REMAIN IN PLACE AND BE FULLY OPERATIONAL DURING CONSTRUCTION.
- 20 NEW HOT TAPS/LINESTOPS FOR BYPASS AND VALVE REPLACEMENT.
- 21 POINT OF DEDUCTIVE ALTERNATE REPLACEMENT, 12" INSIDE PLANT WALL.

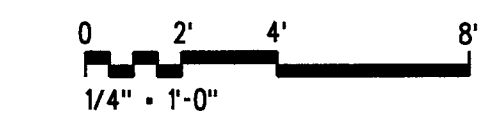


FOR CONT REFER DWG M102

CHILLER ROOM B115

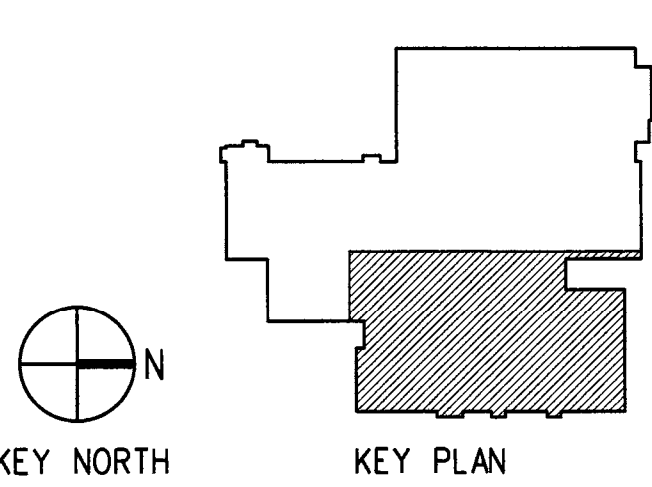
ABANDONED EXISTING 10" CTS AND CTR TO COOLING TOWERS

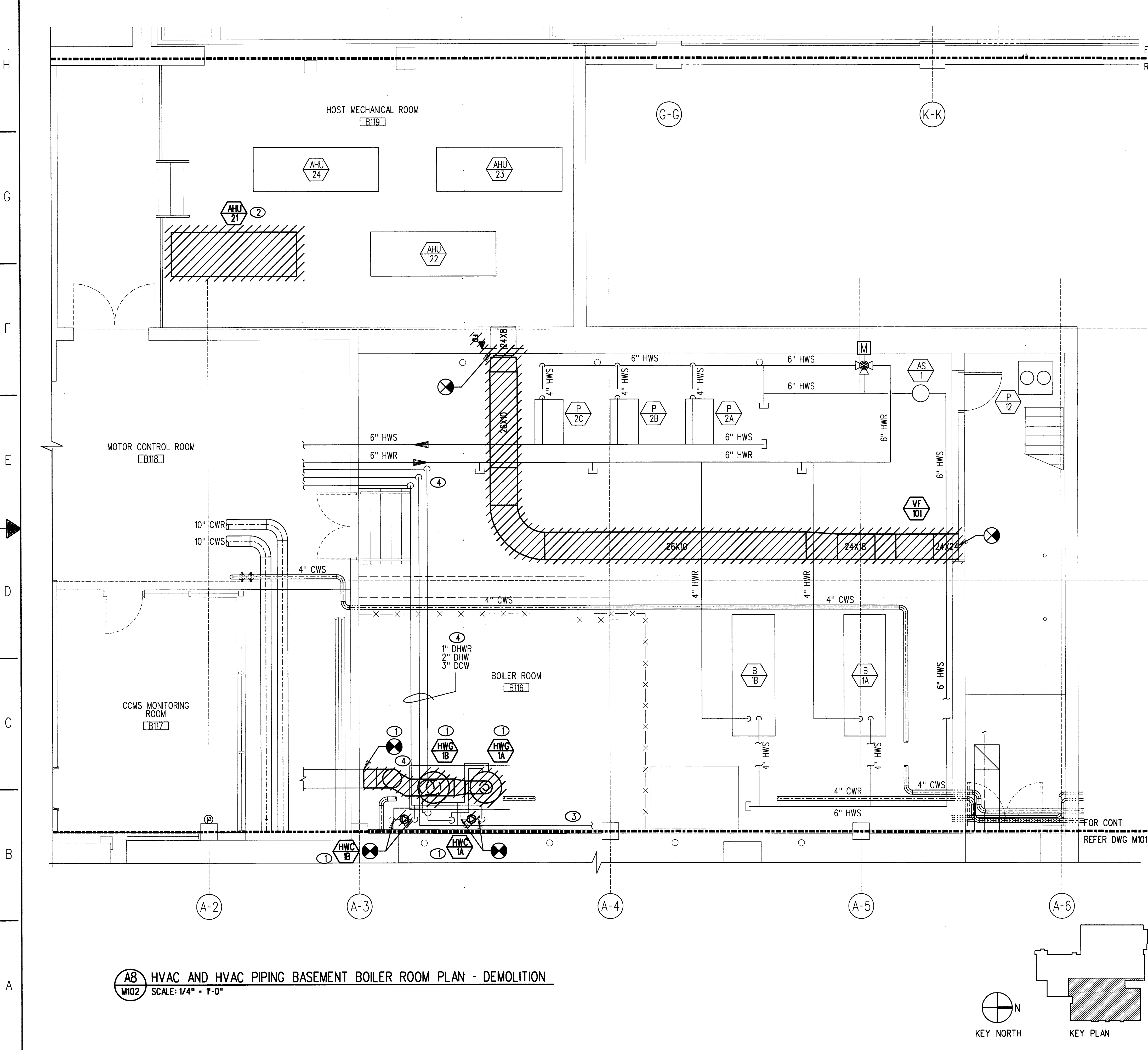
C8 HVAC AND HVAC PIPING BASEMENT CHILLER ROOM PLAN - DEMOLITION M101 SCALE: 1/4" = 1'-0"



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<b>JACOBS</b>					
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA					
<b>CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION</b> <b>OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER</b> <b>HVAC AND HVAC PIPING</b> <b>BASEMENT CHILLER ROOM PLAN - DEMOLITION</b> FREMONT OAKLAND (ZOA) ARTCC					
REVIEWED BY	SUBMITTED BY	APPROVED BY			
	RSBradfish				
SUBMITTER'S TITLE		APPROVER'S TITLE			
DESIGNED BY	ISSUED BY	DATE	JCN		
U. HATHORNE	AIRWAY FACILITY DIVISION	07/08/2015			
DRAWN BY	CHECKED BY	DRAWING NO.	REV.		
A. STUBBYANT	D. LUKASZEWICZ	ZOA - D - CWBMS - M101			





**GENERAL SHEET NOTES**

A. REFER TO SHEET M-001 FOR MECHANICAL ABBREVIATIONS, SYMBOLS AND GENERAL NOTES.

**SHEET NOTES**

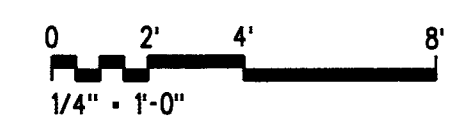
- ① DEMOLISH DOMESTIC WATER HEATERS HWG-1A AND HWG-1B, DHW CIRCULATION PUMPS HWC-1A AND HWC-1B, ASSOCIATED PIPING AND EXHAUST FLUE. DEMOLISH GAS PIPING BACK TO SHUTOFF VALVE. CAP FLUE AT WALL. HEATER AND PUMPS WILL BE REPLACED ONE AT A TIME TO ALLOW FOR CONTINUAL DOMESTIC HOT WATER SUPPLY.
- ② DEMOLISH AHU-21, ASSOCIATED PIPING, ISOLATION VALVES AND CONTROLS.
- ③ RELOCATE EXISTING WORKBENCH AND STORAGE. PREP AREA FOR SAND FILTER INSTALLATION.
- ④ DEMOLISH INSULATION FOR DOMESTIC WATER PIPING FROM ROOM ENTRY TO WATER HEATERS AND REINSULATE.

FOR CONT  
REFER DWG M103 8

5

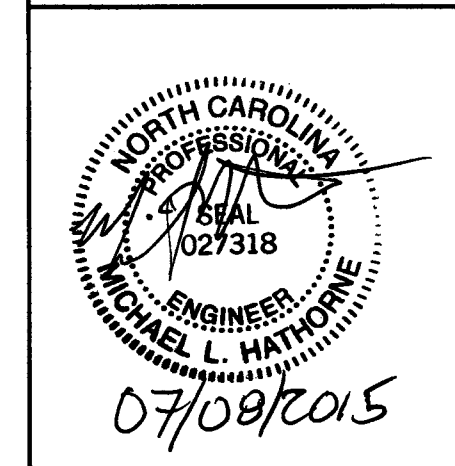
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FOR CONT  
REFER DWG M101



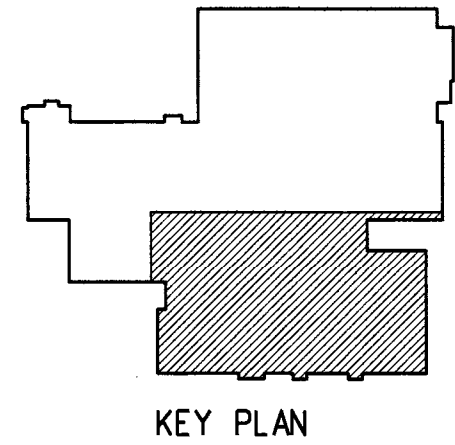
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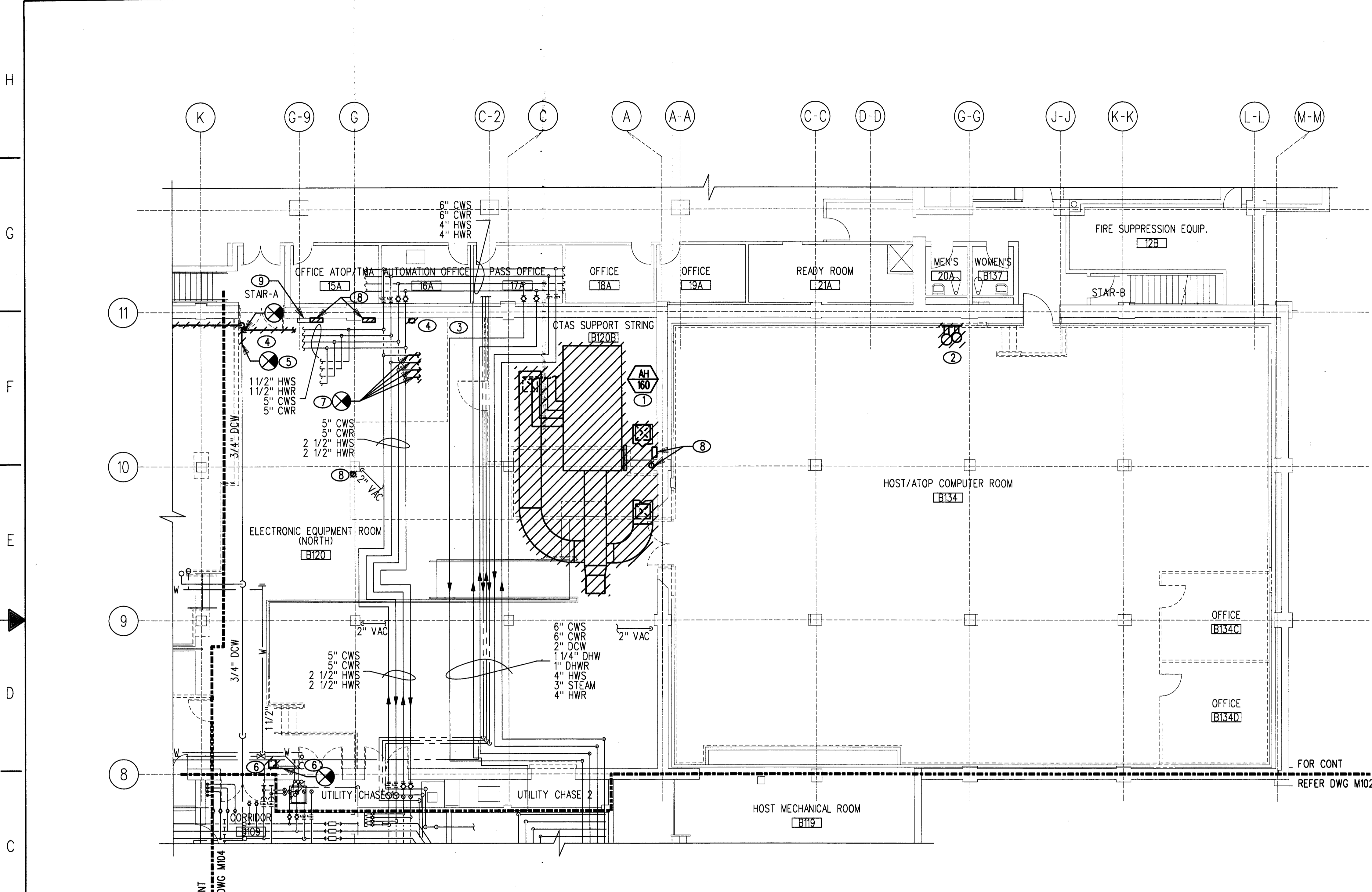
**JACOBS**



REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
<b>DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION</b> WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>					
<b>CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER HVAC AND HVAC PIPING BASEMENT BOILER ROOM PLAN - DEMOLITION</b> FREMONT <span style="float: right;">OAKLAND (ZOA) ARTCC</span>					
REVIEWED BY	SUBMITTED BY	APPROVED BY			
	RBradfish				
SUBMITTER'S TITLE		APPROVER'S TITLE			
DESIGNED BY M. HATHORNE		ISSUED BY AIRWAY FACILITY DIVISION		DATE 07/08/2015	JCN
DRAWN BY A. STURDWAY		CHECKED BY D. LUKASZEWICZ		DRAWING NO. ZOA - D - CWBMS - M102	REV.
7/2/2015					

**AB M102 HVAC AND HVAC PIPING BASEMENT BOILER ROOM PLAN - DEMOLITION**  
SCALE: 1/4" = 1'-0"

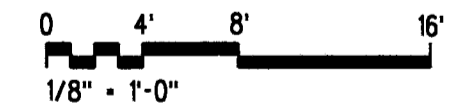




- GENERAL SHEET NOTES**
- A. REFER TO SHEET M-001 FOR MECHANICAL ABBREVIATIONS, SYMBOLS AND GENERAL NOTES.
  - B. EXISTING TO REMAIN VACUUM PIPING HEADER NOT SHOWN FOR CLARITY.
  - C. REFER TO A102 FOR ABATEMENT IDENTIFICATION.
  - D. EXISTING TO REMAIN PIPING WITH ACM INSULATION ABATED SHALL BE REINSULATION, JACKETED AND LABELED THE SAME AS NEW PIPING.

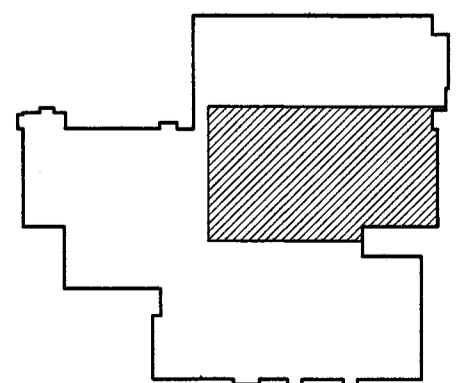
- SHEET NOTES**
- ① DEMOLISH AH-160, ASSOCIATED DUCTWORK, PIPING CATWALK PLATFORM AND CONTROLS.
  - ② DEMOLISH EXISTING WATER COOLER AND CAP DOMESTIC WATER AND SANITARY SEWER PIPING AT WALL.
  - ③ DEMOLISH EXISTING COMPRESSED AIR STATION AND PIPING BACK TO ORIGIN.
  - ④ DEMOLISH SANITARY SEWER PIPING FROM DSR WATER COOLER AND CONDENSATE PIPING TO/FROM CONDENSATE PUMP PRIOR TO INSTALLATION OF NEW WALL FURRING NOTIFY COR A MINIMUM OF 2 WEEKS PRIOR TO PIPING REMOVAL OF 1 HOUR SERVICE INTERRUPTION OF PLUMBING FIXTURES ABOVE. NEW CONDENSATE PUMP TO BE INSTALLED WITH NEW AHU. CONDENSATE PIPING FROM AH-160 TO BE DEMOLISHED.
  - ⑤ SALVAGE EXISTING DCW FILTER AND ASSOCIATED PIPING. COORDINATE DEMOLITION AND REINSTALLATION WITH ARCHITECTURAL.
  - ⑥ DEMOLISH EXISTING WATER COOLER. PREPARE PIPING FOR NEW WATER COOLER AND WATER FILTER INSTALLATION.
  - ⑦ DEMOLISH CWS/R AND HWS/R FROM AH-160. UTILIZE PIPE FREEZE FOR NEW BRANCH AND VALVES TO NEW AHU-102.
  - ⑧ DEMOLISH ABANDONED CONTROL PANELS AND ASSOCIATED PNEUMATIC THERMOSTATS.
  - ⑨ EXISTING CONTROL PANEL, CSI-3, TO REMAIN IN PLACE.

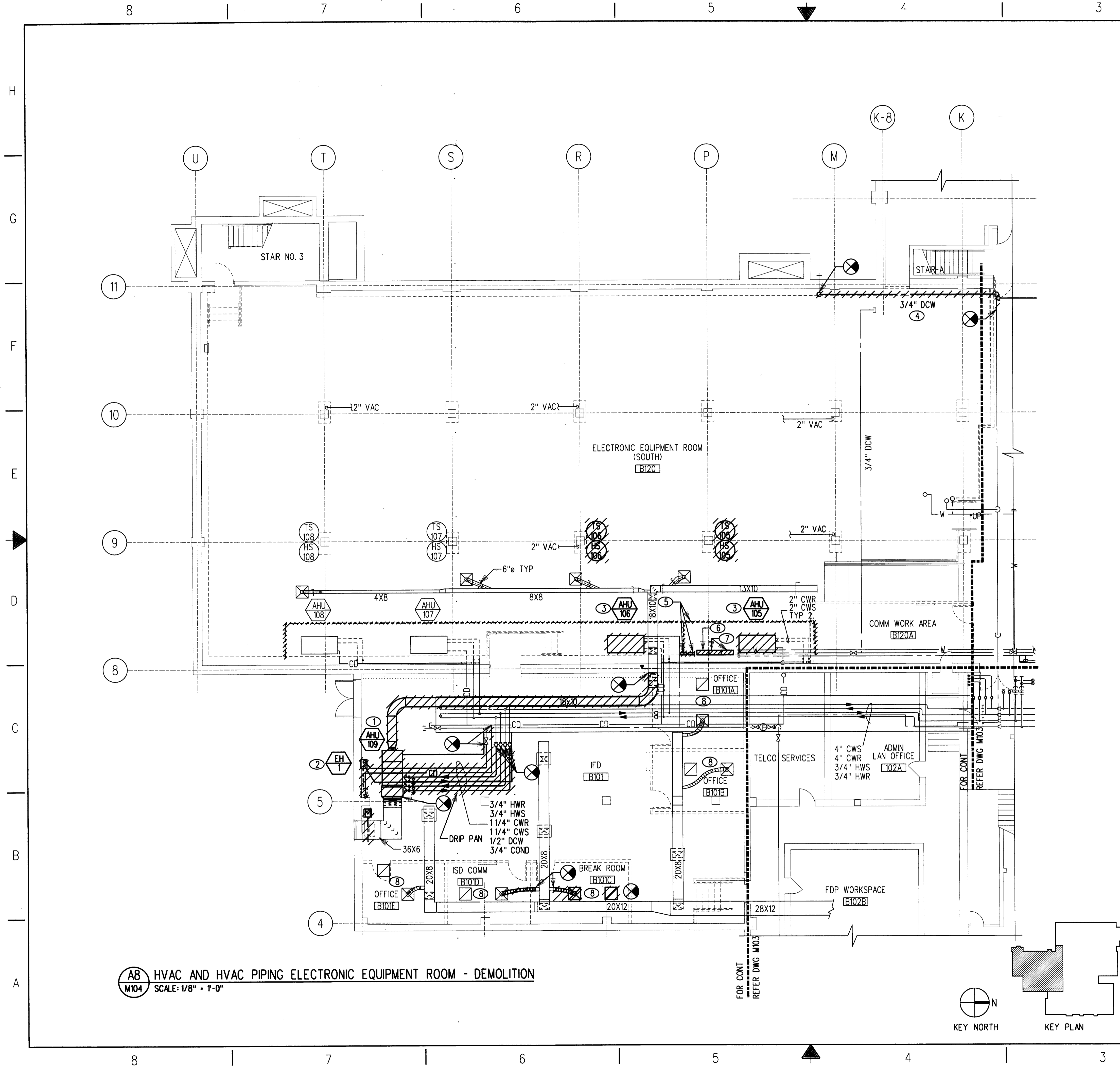
**B8 HVAC AND HVAC PIPING HOST EQUIPMENT ROOM PLAN - DEMOLITION**  
 M103 SCALE: 1/8" = 1'-0"



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 PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>					
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA					
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER HVAC AND HVAC PIPING HOST EQUIPMENT ROOM PLAN - DEMOLITION FREMONT OAKLAND (ZOA) ARTCC					
DESIGNED BY M. HATHORNE	DRAWN BY A. STUROVANT	CHECKED BY D. LUKASZEWICZ	ISSUED BY AIRWAY FACILITY DIVISION	DATE 07/08/2015	JCN
OAKLAND ARTCC FREMONT, CALIFORNIA			DRAWING NO. ZOA - D - CWBMS - M103		



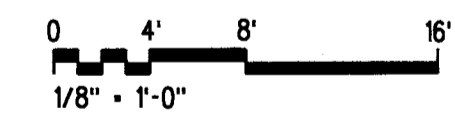


**GENERAL SHEET NOTES**

- A. REFER TO SHEET M001 FOR MECHANICAL ABBREVIATIONS, SYMBOLS AND GENERAL NOTES.
- B. EXISTING TO REMAIN VACUUM PIPING HEADER NOT SHOWN FOR CLARITY.
- C. REFER TO GENERAL NOTES I AND R ON SHEET G002 FOR ADDITIONAL INFORMATION REGARDING THE WORK WHEN REMOVING ACCESS FLOOR SYSTEM.

**SHEET NOTES**

- ① DEMOLISH AHU-109 AND ASSOCIATED PIPING BACK TO BRANCH TAKEOFF. ASSOCIATED DRIP PAN AND HANGERS TO BE DEMOLISHED. SUPPLY DUCTWORK TO BE DEMOLISHED TO WALL.
- ② DEMOLISH EH-1 AND ASSOCIATED PIPING. DCW PIPING TO BE DEMOLISHED BACK TO ISOLATION VALVE AND CAPPED. DEMOLISH CONDENSATE PUMP AND PIPING.
- ③ DEMOLISH AHU-105 AND AHU-106. FREEZE PIPES AND DEMOLISH ISOLATION VALVES, CONTROLS AND ASSOCIATED PIPING FROM VALVES TO THE UNIT. UNITS SHALL BE REPLACED ONE AT A TIME.
- ④ SALVAGE EXISTING DCW FILTER AND ASSOCIATED PIPING TO BE REINSTALLED. COORDINATE DEMOLITION AND REINSTALLATION WITH ARCHITECTURAL.
- ⑤ DEMOLISH EXISTING LEAK DETECTION PANELS AND ASSOCIATED LEAK DETECTION CABLE.
- ⑥ DEMOLISH CONTROL PANEL CSI-11/12 ASSOCIATED WITH AHU-109 AND LEAK DETECTION ALARM. ALL MISCELLANEOUS CONTROL AND MONITORING POINTS SHALL THAT ARE NOT ASSOCIATED WITH AHU-109 SHALL BE DISCONNECTED AND RECONNECTED TO NEW CONTROL PANEL.
- ⑦ DEMOLISH ABANDONED CONTROL PANELS.
- ⑧ SALVAGE ALL DIFFUSERS AND REGISTERS FOR REINSTALLATION WITH NEW CEILING GRID.

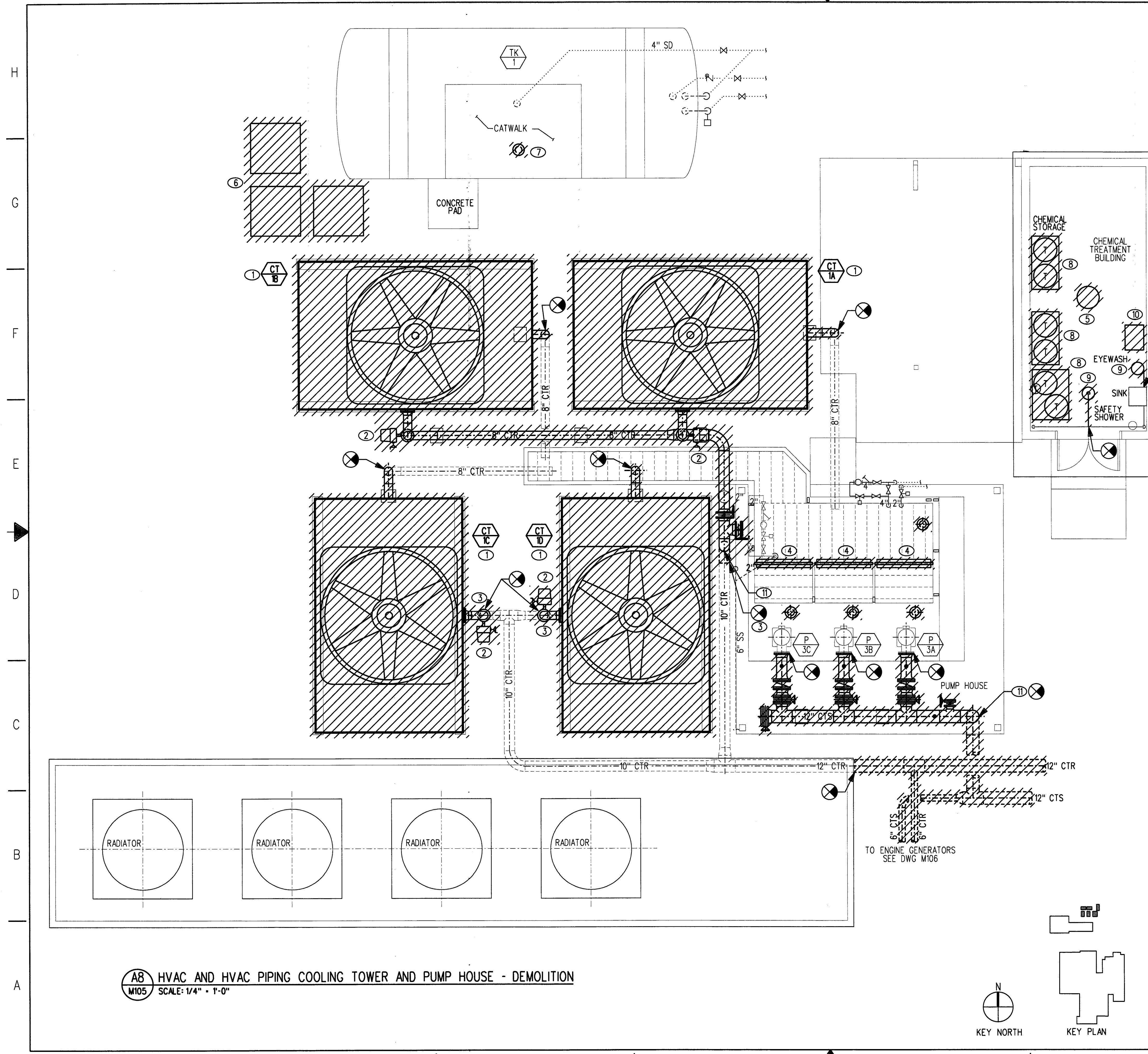


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PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA			
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER HVAC AND HVAC PIPING ELECTRONIC EQUIPMENT ROOM - DEMOLITION FREMONT OAKLAND (ZOA) ARTCC			
REVIEWED BY SUBMITTED BY SUBMITTER'S TITLE DESIGNED BY DRAWN BY CHECKED BY	APPROVED DATE APPROVED BY APPROVER'S TITLE ISSUED BY AIRWAY FACILITY DIVISION	DATE 07/08/2015 DRAWING NO. ZOA - D - CWBMS - M104	JCN REV.	APVD DATE	REV.

**A8** HVAC AND HVAC PIPING ELECTRONIC EQUIPMENT ROOM - DEMOLITION  
**M104** SCALE: 1/8" = 1'-0"



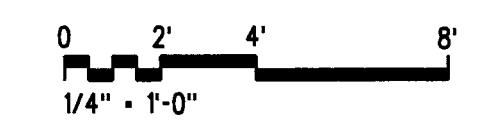


**GENERAL SHEET NOTES**

A. REFER TO SHEET M001 FOR MECHANICAL ABBREVIATIONS, SYMBOLS AND GENERAL NOTES.

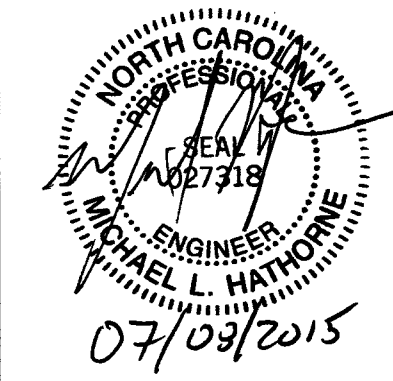
**SHEET NOTES**

- ① AFTER TOWERS ARE DEMOLISHED, CLEAN FLUME AND INSPECT CONCRETE. REPORT ANY DEFICIENCIES TO COR.
- ② DEMOLISH BUTTERFLY ISOLATION VALVE, FCV AND BRANCH PIPING TO COOLING TOWER.
- ③ SHOULD DEDUCTIVE ALTERNATE BE ACCEPTED, REPLACE MANUAL ISOLATION VALVES DURING LINESSTOPPING FOR TEMPORARY TOWER CONNECTION.
- ④ REMOVE BASIN TRASH SCREENS AND FABRICATE NEW SCREENS USING THE OLD SCREENS AS TEMPLATES.
- ⑤ DEMOLISH EXISTING ROOF EXHAUST VENT.
- ⑥ DEMOLISH EXISTING TERRACOTTA REPLACEMENT FILL FOR COOLING TOWERS. EXISTING REPLACEMENT PUMP IS PROPERTY OF OWNER AND IS TO REMAIN.
- ⑦ DEMOLISH LEVEL SWITCH MOUNTED ON TOP OF STORAGE TANK.
- ⑧ DEMOLISH SPILL CONTAINMENT AND PALLET. SALVAGE/PROTECT EXISTING CHEMICAL TREATMENT SYSTEM, PUMPS, CHEMICAL BARRELS, PIPING, ETC.
- ⑨ DEMOLISH EYEWASH AND SAFETY SHOWER.
- ⑩ RELOCATE FIRE CABINET. COORDINATE FINAL LOCATION ON SITE WITH COR.
- ⑪ SHOULD DEDUCTIVE ALTERNATE BE ACCEPTED, POINT OF TERMINATION FOR DEMOLITION SHALL BE AT POINTS INDICATED ABOVE GRADE.

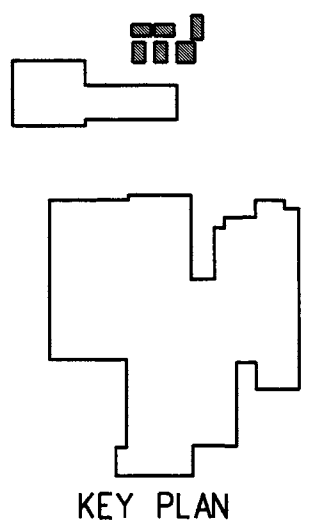
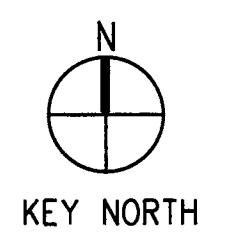


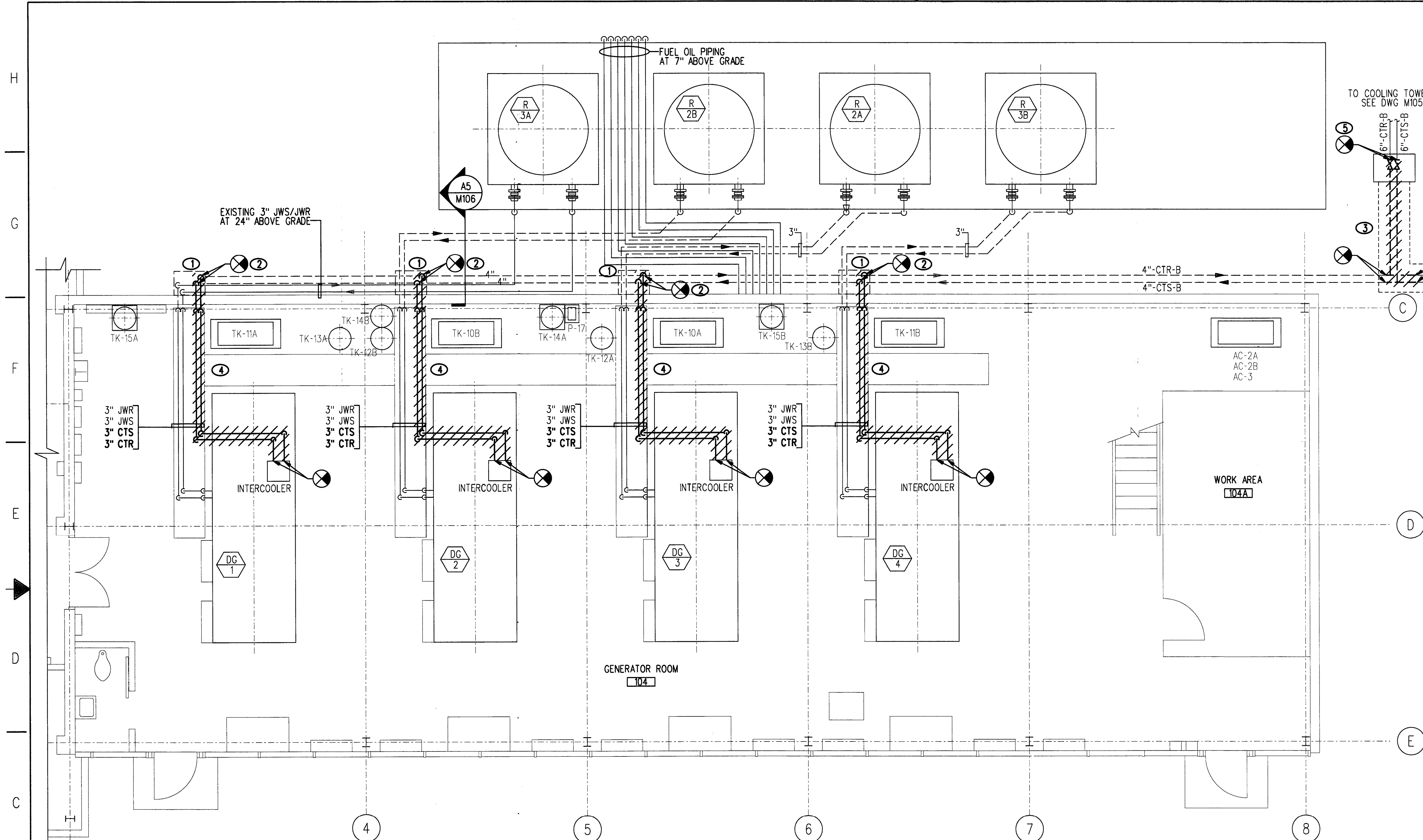
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PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>							
REV.	APPROVED DATE	DESCRIPTION		JCN	REDLINE DATE	APVD	
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA							
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER HVAC AND HVAC PIPING COOLING TOWER AND PUMP HOUSE - DEMOLITION FREMONT OAKLAND (ZOA) ARTCC							
REVIEWED BY	SUBMITTED BY	APPROVED BY					
	RSBradfish	<i>[Signature]</i>					
SUBMITTER'S TITLE		APPROVER'S TITLE					
DESIGNED BY M. HATHORNE		ISSUED BY AIRWAY FACILITY DIVISION		DATE 07/08/2015		JCN	
DRAWN BY A. STURDIVANT				DRAWING NO. ZOA - D - CWBMS - M105		REV.	
CHECKED BY D. LUKASIEWICZ							



**AB** HVAC AND HVAC PIPING COOLING TOWER AND PUMP HOUSE - DEMOLITION  
**M105** SCALE: 1/4" = 1'-0"

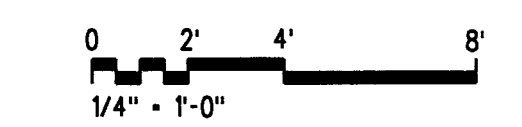




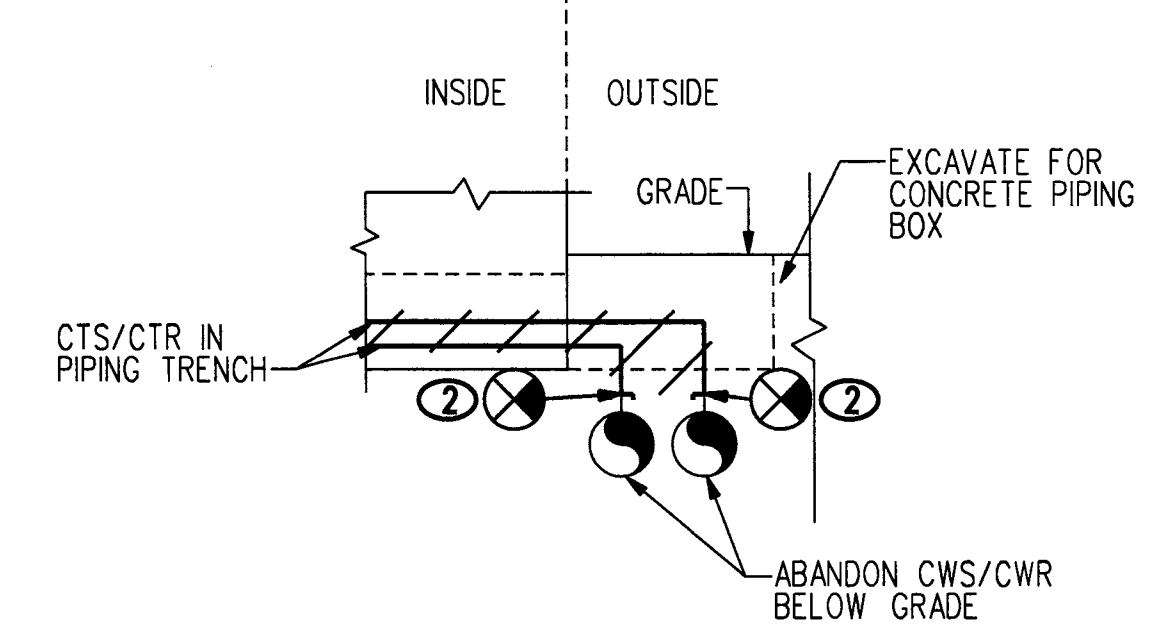
- ### GENERAL SHEET NOTES
- A. REFER TO SHEET M001 FOR MECHANICAL ABBREVIATIONS, SYMBOLS AND GENERAL NOTES.
  - B. GENERATORS ARE IN STANDBY STATE AND ABLE TO START AUTOMATICALLY WITHOUT WARNING. IN THE EVENT OF A POWER FAILURE WORK INSIDE GENERATOR ROOM 104 SHALL STOP AND PERSONNEL SHALL LEAVE THE BUILDING UNTIL COMMERCIAL POWER IS RESTORED.
  - C. IN THE EVENT OF A POWER FAILURE AND/OR FACILITY OPERATIONS TO EXERCISE GENERATORS ANY DELAYS INCURRED WILL NOT RESULT IN A CLAIM AGAINST THE GOVERNMENT FOR WORK DELAYS DUE TO THE POWER EMERGENCY.
  - D. WHEN WORKING IN CLOSE PROXIMITY TO THE ENGINE GENERATORS, PERSONNEL HARM MAY RESULT DUE TO THE SUDDEN START UP OF A GENERATOR DUE TO POWER FAILURE. THE SSC MANAGER, IN CONJUNCTION WITH THE COR, SHALL DETERMINE WHEN THE GENERATOR SHALL BE LOCKED OUT OF SERVICE TO PREVENT INJURY TO PERSONNEL.
  - E. NUMEROUS UTILITIES CROSS THE WORK AREA. VERIFY UTILITY ROUTING BEFORE EXCAVATION.
  - F. CONTRACTOR MAY ONLY WORK ON ONE GENERATOR AT A TIME. IN THE EVENT OF POWER FAILURE, THE OTHER THREE SHALL REMAIN OPERATIONAL AT ALL TIMES. START UP SEQUENCE SHALL BE REVISED TO ALLOW TWO GENERATORS TO START AT THE SAME TIME WHILE THE THIRD IS IN STANDBY MODE.

- ### SHEET NOTES
- ① EXCAVATE A 2'X2' SECTION OF ASPHALT AT POINT WHERE PIPING ENTERS THE BUILDING. EXPOSE CONDENSER WATER PIPING.
  - ② DEMOLISH CONDENSER WATER PIPING FOR EACH GENERATOR FROM INTERCOOLER BACK TO HEADER. CAP AND ABANDON BRANCH BELOW GRADE. SEE DETAIL A5.
  - ③ LOCATE EXISTING PIPING AND EXCAVATE ASPHALT NEAR GROUND BOX TO ALLOW FOR DEMOLITION OF CONDENSER WATER PIPING AND VALVES IN GROUND BOX. CAP AND ABANDON 4\"/>

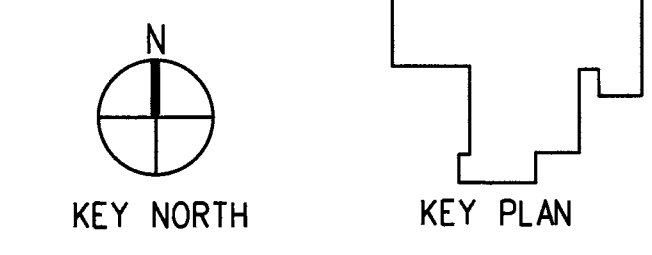
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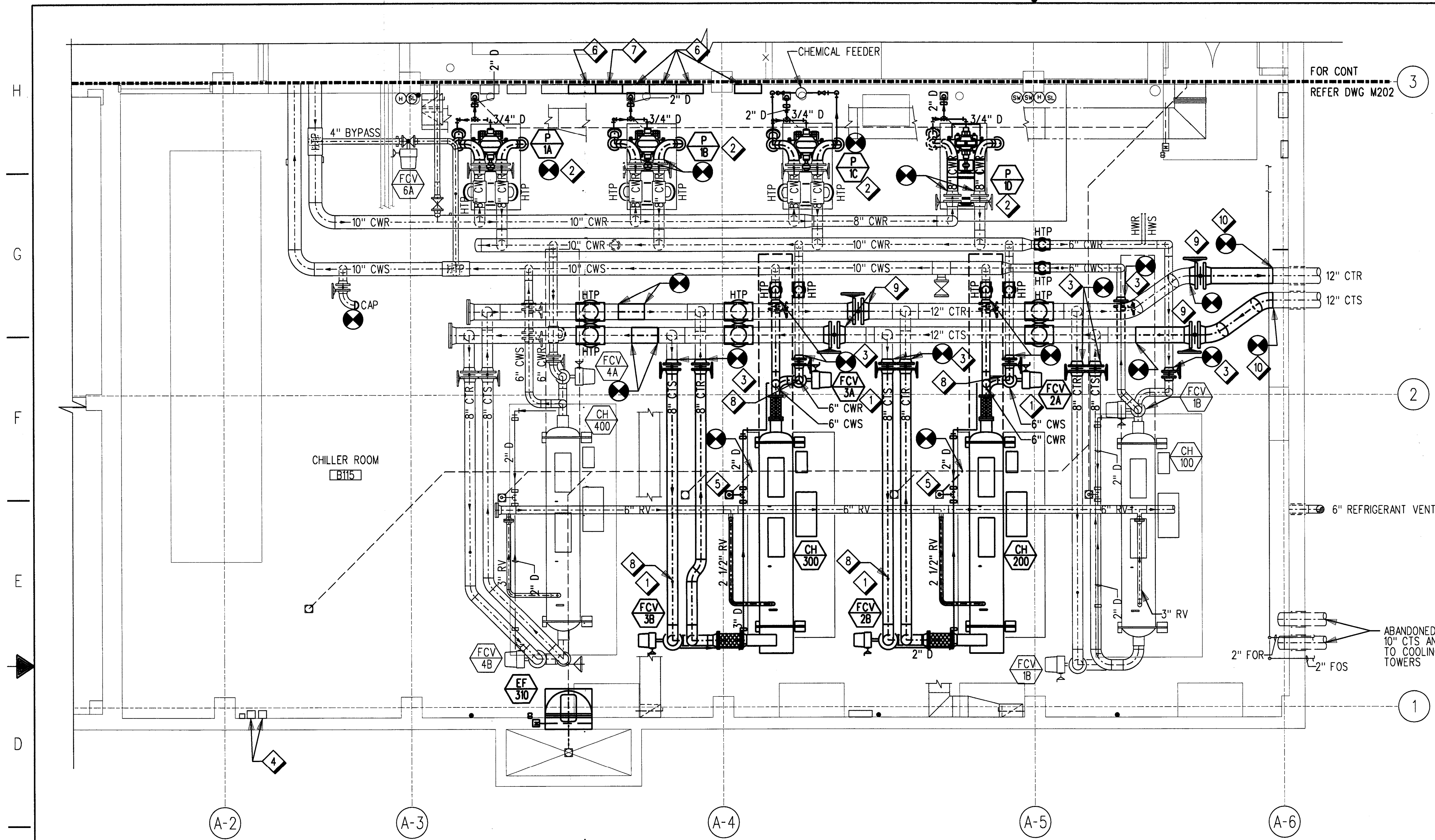
**B8** HVAC AND HVAC PIPING ENGINE GENERATOR ROOM PLAN - DEMOLITION  
M106 SCALE: 1/4" = 1'-0"



**A5** UNDERGROUND CTS/CTR BRANCH DETAIL - DEMOLITION  
M106 SCALE: NONE

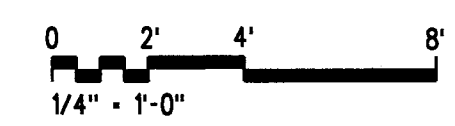


		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA			
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER HVAC AND HVAC PIPING ENGINE GENERATOR ROOM PLAN - DEMOLITION FREMONT OAKLAND (ZOA) ARTCC			
REVIEWED BY:	SUBMITTED BY: <i>RBradfish</i>	APPROVED BY: <i>[Signature]</i>		DATE: 07/08/2015	JCN:
OAKLAND ARTCC FREMONT, CALIFORNIA		ISSUED BY: AIRWAY FACILITY DIVISION		DRAWING NO.: ZOA - D - CWBMS - M106	REV:



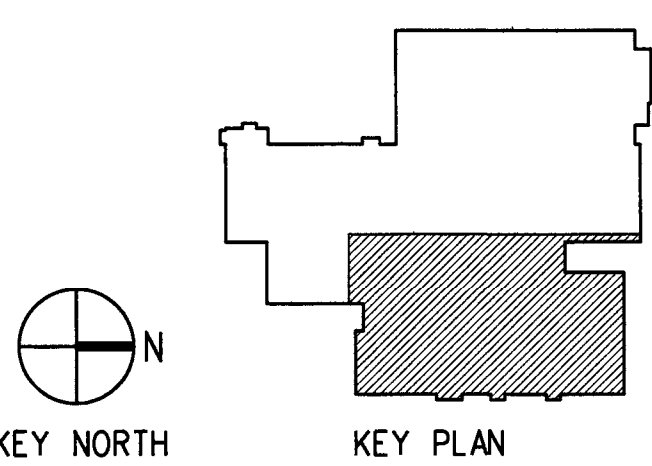
- GENERAL SHEET NOTES**
- A. REFER TO SHEET M001 FOR MECHANICAL ABBREVIATIONS, SYMBOLS AND GENERAL NOTES.
- 
- SHEET NOTES**
- 1 REINSTALL SALVAGED FLOW CONTROL VALVES FCV-2A, FCV-2B, FCV-3A, FCV-3B
  - 2 REPLACE PIPING, ISOLATION VALVES, STRAINER, GAUGES, DRAINS AND INSULATION.
  - 3 ISOLATION VALVES TO BE REPLACE ONE CHILLER AT A TIME.
  - 4 CONNECT ALARM CONTACTS FROM TRACETEK LEAK DETECTION MODULES TO NEW DDCS FOR LEAK DETECTION ALARM.
  - 5 PROVIDE NEW 3" FD. CONNECT TO EXISTING 3" SS PIPE BELOW GRADE.
  - 6 NEW CONTROL PANELS FOR CONDENSER/CHILLED WATER SYSTEM.
  - 7 PROVIDE NEW CONTROL WIRING ASSOCIATED WITH CONDENSER WATER SYSTEM. REUSE EXISTING CONDUITS AND ROUTING TO RUN NEW CONTROL WIRING.
  - 8 FLOW METER PROVIDED BY FAA AND INSTALLED UNDER UESC PROJECT. REINSTALL EXISTING FLOW METER. REQUIRED STRAIGHT PIPING RUN FOR ACCURATE READING SHALL BE VERIFIED. ONCE INSTALLED, VERIFY FLOW RATE READING AND RANGES.
  - 9 12" MAIN ISOLATION VALVES.
  - 10 IF DEDUCTIVE ALTERNATE IS ACCEPTED, 12" MAIN POINT OF CONNECTION AT PLANT WALL.

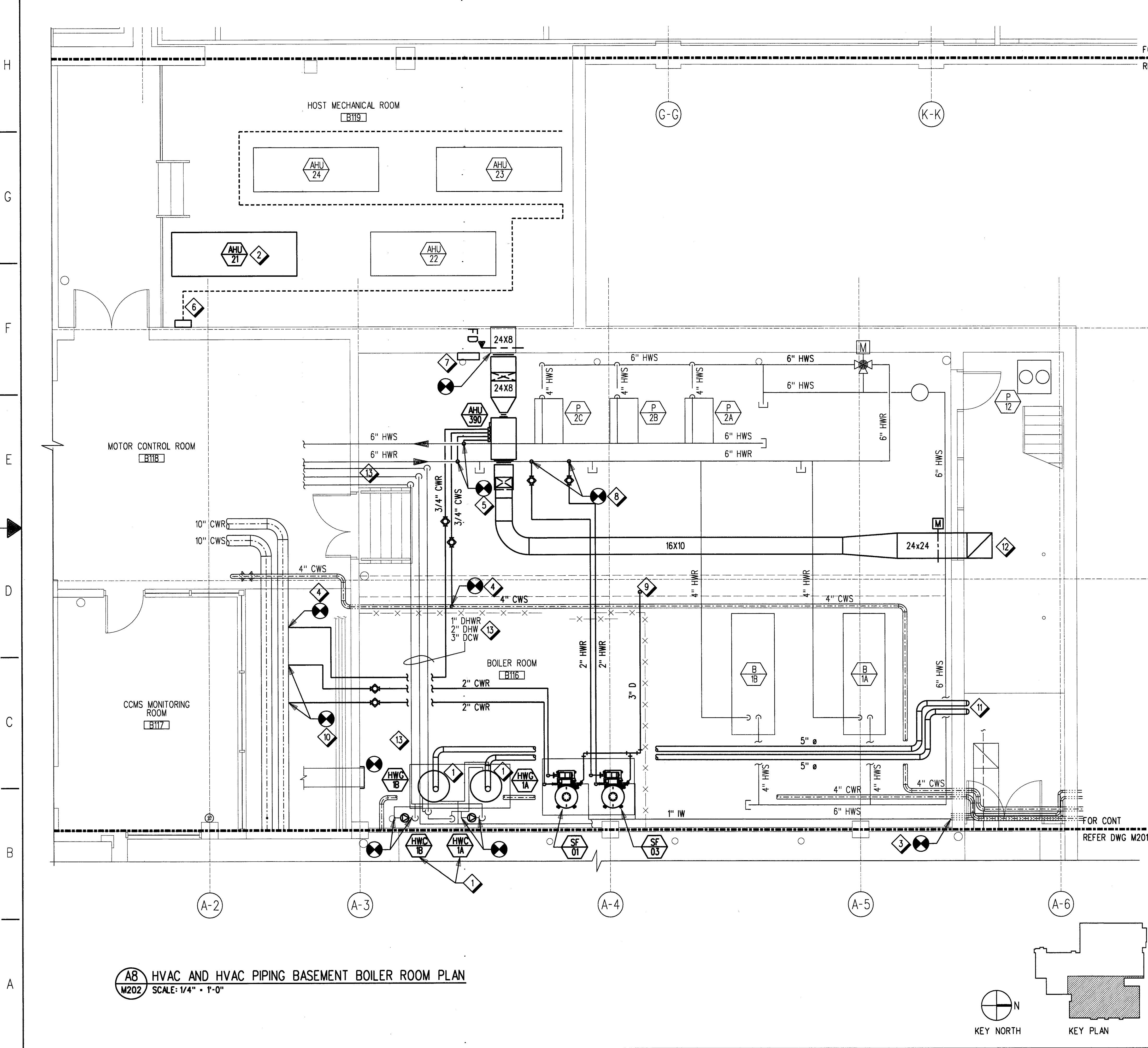
**C8 HVAC AND HVAC PIPING BASEMENT CHILLER ROOM PLAN**  
**M201 SCALE: 1/4" = 1'-0"**



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<b>JACOBS</b>					
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
<b>DEPARTMENT OF TRANSPORTATION          FEDERAL AVIATION ADMINISTRATION</b> WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>					
<b>CONTROL WING BASEMENT          AND CHILLER/COOLING TOWER MODERNIZATION          OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER          HVAC AND HVAC PIPING          BASEMENT CHILLER ROOM PLAN</b> FREMONT <span style="float: right;">OAKLAND (ZOA) ARTCC</span>					
REVIEWED BY	SUBMITTED BY	RSBradfish		APPROVED BY	<i>[Signature]</i>
	SUBMITTER'S TITLE			APPROVER TITLE	
	DESIGNED BY	M. HATHORNE		DATE	07/08/2015
	DRAWN BY	A. STURDWAY		ISSUED BY	AIRWAY FACILITY DIVISION
	CHECKED BY	D. LUKASIEWICZ		DATE	07/08/2015
				DRAWING NO.	ZOA - D - CWMMS - M201
				REV.	





FOR CONT  
REFER DWG M203 8

5

4

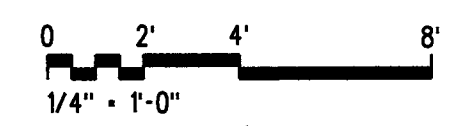
FOR CONT  
REFER DWG M201

**GENERAL SHEET NOTES**

- A. REFER TO SHEET M001 FOR MECHANICAL ABBREVIATIONS, SYMBOLS AND GENERAL NOTES.
- B. REFER TO GENERAL NOTES I AND R ON SHEET G002 FOR ADDITIONAL INFORMATION REGARDING THE WORK WHEN REMOVING ACCESS FLOOR SYSTEM.

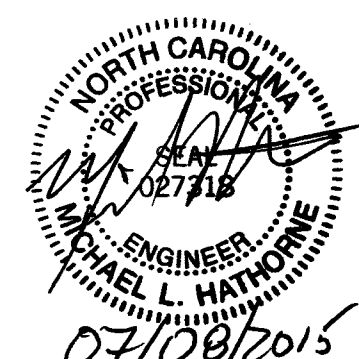
**SHEET NOTES**

- 1. REPLACE/WORK ON DOMESTIC WATER SYSTEMS SHALL BE ONE COMPONENT AT A TIME TO ALLOW FOR CONTINUAL HOT WATER SUPPLY TO BUILDING.
- 2. INSTALL AHU-21 IN EXISTING LOCATION. HOT TAP/LINESTOP TO PROVIDE NEW BRANCH ISOLATION VALVES.
- 3. CONNECT TO EXISTING IW PIPING.
- 4. HOT TAP SIDE OF 4" CWS AND 10" CWR FOR AHU-390
- 5. HOT TAP 6" HWS/R FOR 3/4" HWS/R FROM AHU-390
- 6. LEAK DETECTION PANEL. LEAK DETECTION CABLE UNDER RAISED FLOOR FOR AHU AND ASSOCIATED BRANCH PIPING, AND CONNECT TO LEAK DETECTION PANEL.
- 7. CONTROL PANEL FOR AHU-390.
- 8. HOT TAP BOTTOM OF 6" HWR FOR FILTER SF-03
- 9. TIE FILTER BACKWASH TO DRAIN LINE IN TRENCH
- 10. HOT TAP SIDE OF 10" CWR FOR FILTER SF-01
- 11. ROUTE DOMESTIC HOT WATER HEATER FLUE TO AREAWAY AND PROVIDE SIDEWALL TERMINATION KIT. FLUE SHALL BE INSTALLED COMPLETELY WITH FINAL TIE IN AT WATER HEATERS TO MINIMIZE INTERRUPTION TO HOT WATER SUPPLY.
- 12. 24X24 STAINLESS STEEL DUCT UP TO GOOSENECK W/WMS AT ROOF LINE.
- 13. REINSULATION DOMESTIC WATER PIPING FROM BOILER ROOM ENTRY TO HOT WATER HEATERS.



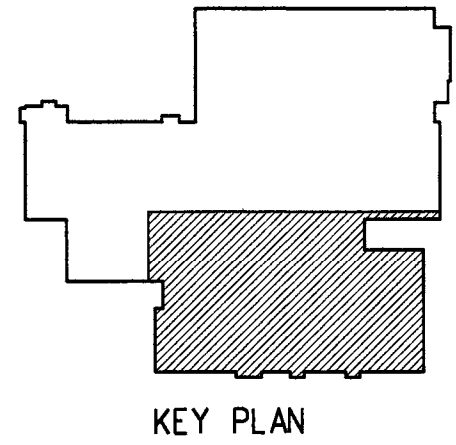
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**JACOBS**



REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>					
<b>CONTROL WING BASEMENT            AND CHILLER/COOLING TOWER MODERNIZATION            OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER            HVAC AND HVAC PIPING            BASEMENT BOILER ROOM PLAN</b>					
FREMONT <span style="float: right;">OAKLAND (ZOA) ARTCC</span>					
REVIEWED BY	SUBMITTED BY	APPROVED BY			
	RSBradfish	<i>[Signature]</i>			
SUBMITTER'S TITLE		APPROVER'S TITLE			
DESIGNED BY M. HATHORNE		ISSUED BY AIRWAY FACILITY DIVISION		DATE 07/08/2015	
DRAWN BY A. STURDYANT				DRAWING NO. ZOA - D - CWBMS - M202	
CHECKED BY D. LUKASZEWICZ				REV.	

**A8** HVAC AND HVAC PIPING BASEMENT BOILER ROOM PLAN  
M202 SCALE: 1/4" = 1'-0"



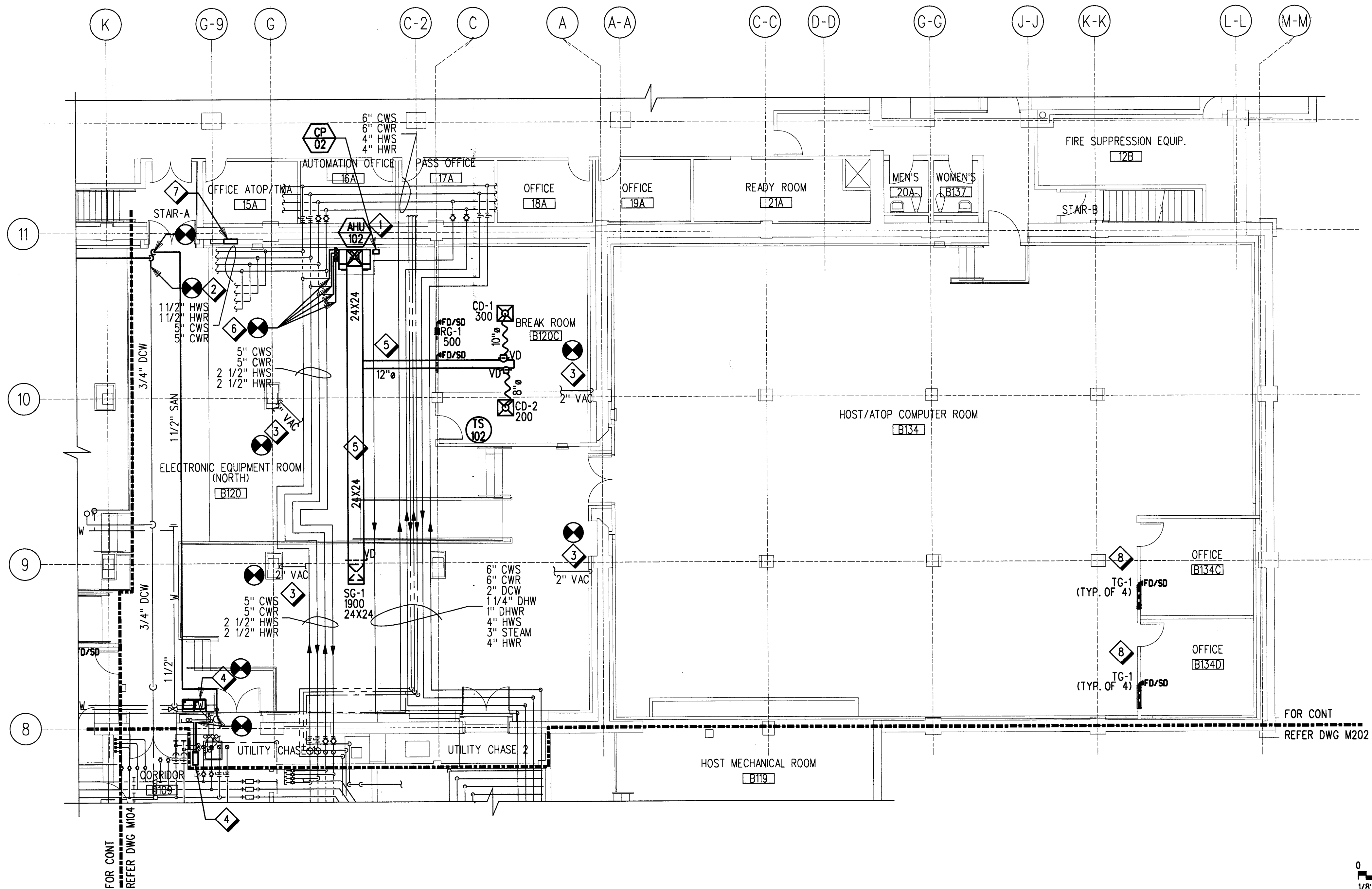


GENERAL SHEET NOTES

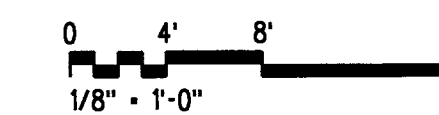
- A. REFER TO SHEET M001 FOR MECHANICAL ABBREVIATIONS, SYMBOLS AND GENERAL NOTES.
- B. EXISTING TO REMAIN VACUUM PIPING HEADER NOT SHOWN FOR CLARITY.

SHEET NOTES

- 1 RUN CONDENSATE PIPING FOR AHU-102 TO NEW CONDENSATE PUMP CP-02.
- 2 REINSTALL SALVAGED DOMESTIC WATER PIPING AND FILTER. COORDINATE INSTALLATION WITH ARCHITECTURAL.
- 3 PROVIDE VACUUM PIPE EXTENSION TO EXTEND OUTSIDE OF NEW WALL FURRING. COORDINATE INSTALLATION WITH ARCHITECTURAL.
- 4 CONNECT NEW WATER COOLER AND WATER FILTER TO EXISTING DW, SAN AND SAN VENT PIPING.
- 5 RUN DUCT AS HIGH AS POSSIBLE.
- 6 1" CWS/R AND 1" HWS/R
- 7 NEW CONTROL PANEL FOR AHU-102.
- 8 TRANSFER GRILLES WITH FIRE AND SMOKE DAMPERS BELOW RAISED FLOOR AND ABOVE REFLECTED CEILING. COORDINATE FINAL LOCATIONS WITH COR.

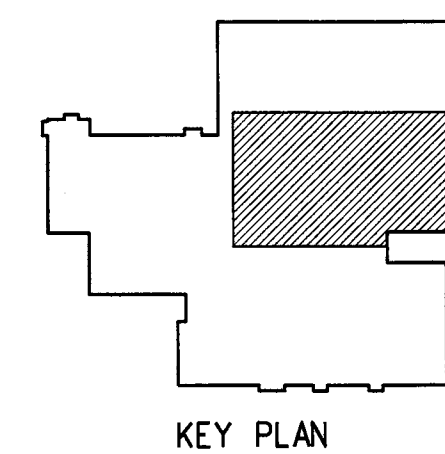


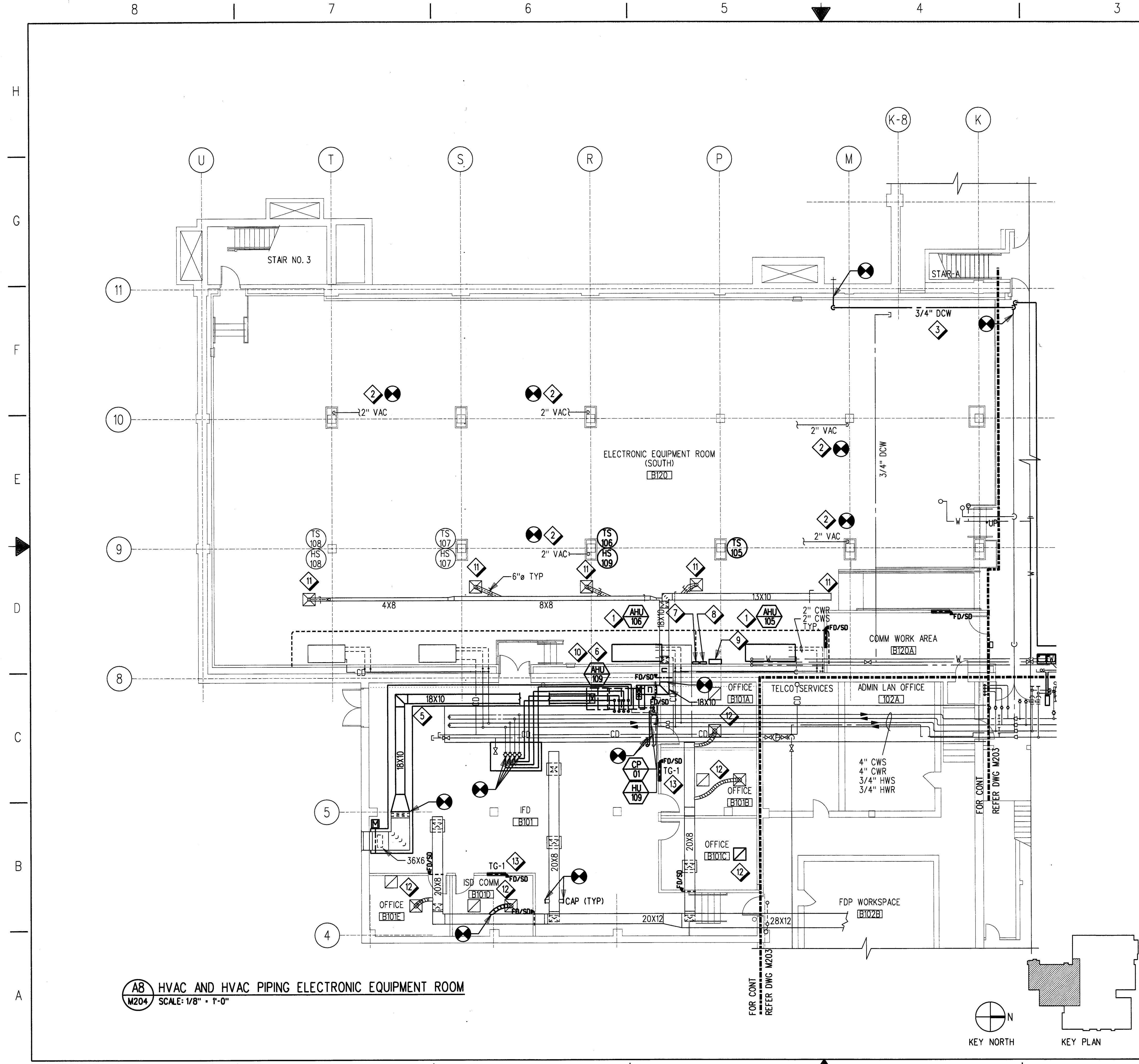
**B8** HVAC AND HVAC PIPING HOST EQUIPMENT ROOM PLAN  
**M203** SCALE: 1/8" = 1'-0"



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		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA			
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER HVAC AND HVAC PIPING HOST EQUIPMENT ROOM PLAN OAKLAND (ZOA) ARTCC			
FREMONT OAKLAND ARTCC FREMONT, CALIFORNIA	REVIEWED BY SUBMITTED BY SUBMITTER'S TITLE DESIGNED BY DRAWN BY CHECKED BY	SUBMITTED BY R. Stratfisch APPROVED BY APPROVER'S TITLE ISSUED BY AIRWAY FACILITY DIVISION	DATE 07/08/2015 DRAWING NO. ZOA - D - CWBMS - M203	REV.	APPROVED BY 

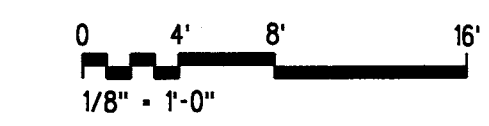




- GENERAL SHEET NOTES**
- A. REFER TO SHEET M001 FOR MECHANICAL ABBREVIATIONS, SYMBOLS AND GENERAL NOTES.
  - B. EXISTING TO REMAIN VACUUM PIPING HEADER NOT SHOWN FOR CLARITY
  - C. REFER TO GENERAL NOTES I AND R ON SHEET G002 FOR ADDITIONAL INFORMATION REGARDING THE WORK WHEN REMOVING ACCESS FLOOR SYSTEM.

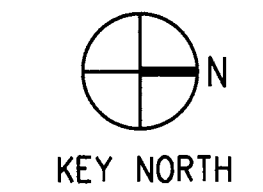
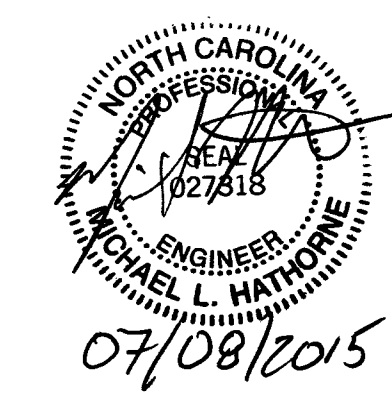
- SHEET NOTES**
- 1. INSTALL AHU-105 AND AHU-106 IN EXISTING LOCATION. PROVIDE NEW BRANCH ISOLATION VALVES.
  - 2. PROVIDE VACUUM PIPE EXTENSION TO EXTEND OUTSIDE OF NEW WALL FURRING. COORDINATE INSTALLATION AND LOCATIONS WITH ARCHITECTURAL.
  - 3. REINSTALL SALVAGED DOMESTIC WATER PIPING AND FILTER. COORDINATE INSTALLATION WITH ARCHITECTURAL.
  - 4. INSTALL NEW HUMIDIFIER AND CONDENSATE PUMP.
  - 5. PROVIDE DRIP PANS UNDER NEW DUCTWORK AND PIPING.
  - 6. RUN CONDENSATE PIPING BACK TO CONDENSATE PUMP.
  - 7. PROVIDE NEW LEAK DETECTION PANEL. PROVIDE NEW LEAK DETECTION CABLE UNDER RAISED FLOOR FOR AHU AND ASSOCIATED BRANCH PIPING, AND CONNECT TO LEAK DETECTION PANEL.
  - 8. PROVIDE NEW LEAK DETECTION PANEL. PROVIDE NEW LEAK DETECTION CABLE FOR OVERHEAD PIPING, AND CONNECT TO LEAK DETECTION PANEL.
  - 9. PROVIDE NEW CONTROL PANEL FOR AHU-109.
  - 10. AHU-109 TO BE MOUNTED ON 36" HIGH FLOOR STAND.
  - 11. BALANCE EXISTING DIFFUSER AIRFLOW TO 100 CFM AND EXISTING GRILLE AIRFLOW TO 600 CFM.
  - 12. REINSTALL SALVAGED DIFFUSERS AND REGISTERS TO MATCH NEW SUSPENDED CEILING GRID. COORDINATE LOCATIONS WITH COR.
  - 13. TRANSFER GRILLES WITH FIRE AND SMOKE DAMPERS ABOVE REFLECTED CEILING. COORDINATE FINAL LOCATIONS WITH COR.

**AB** HVAC AND HVAC PIPING ELECTRONIC EQUIPMENT ROOM  
**M204** SCALE: 1/8" = 1'-0"

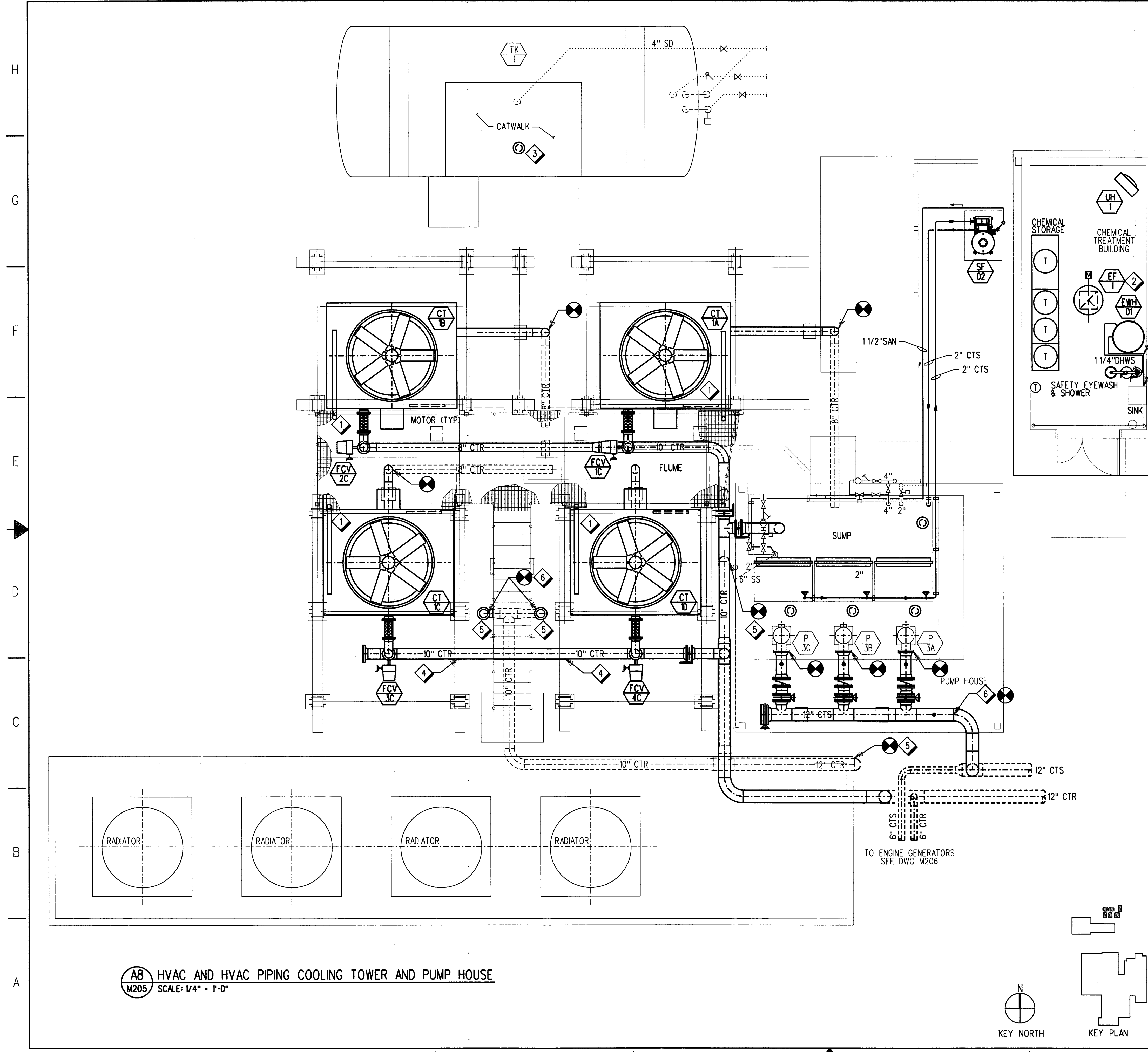


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<b>JACOBS</b>					
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
<b>DEPARTMENT OF TRANSPORTATION          FEDERAL AVIATION ADMINISTRATION</b> WESTERN SERVICE AREA RENTON, WA					
<b>CONTROL WING BASEMENT          AND CHILLER/COOLING TOWER MODERNIZATION          OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER          HVAC AND HVAC PIPING          ELECTRONIC EQUIPMENT ROOM</b> FREMONT OAKLAND (ZOA) ARTCC					
REVIEWED BY	SUBMITTED BY	APPROVED BY			
	RSBradfish				
SUBMITTER'S TITLE		APPROVER'S TITLE			
DESIGNED BY M. HATHORNE		ISSUED BY AIRWAY FACILITY DIVISION		DATE 07/08/2015 JCN	
DRAWN BY A. STURDIVANT		CHECKED BY D. LUKASZEWICZ		DRAWING NO. ZOA - D - CWBMS - M204	
OAKLAND ARTCC FREMONT, CALIFORNIA				REV.	



KEY PLAN



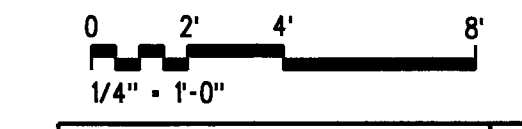
**GENERAL SHEET NOTES**

- A. REFER TO SHEET M001 FOR MECHANICAL ABBREVIATIONS, SYMBOLS AND GENERAL NOTES.
- B. REFER TO STRUCTURAL FOR COOLING TOWER CATWALK ACCESS PLATFORM REQUIREMENTS.

**SHEET NOTES**

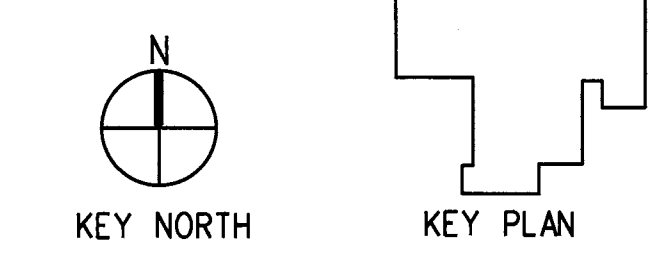
- 1 DAVIT CRANE, 1 TON JIB, WINCH AND COVER PROVIDED BY COOLING TOWER MANUFACTURER TO SERVICE TOWERS
- 2 COORDINATE NEW EXHAUST FAN INSTALLATION WITH ARCHITECTURAL.
- 3 NEW LEVEL SENSOR FOR STORAGE TANK. COORDINATE TANK WATER LEVEL AND ALARM SETTINGS WITH FAA.
- 4 NEW SUPPORT FROM CONCRETE BELOW TO NEW PIPING.
- 5 SHOULD DEDUCTIVE ALTERNATE NOT BE ACCEPTED, CAP ABANDONED CTR PIPING.
- 6 SHOULD DEDUCTIVE ALTERNATE BE ACCEPTED, POINT OF CONNECTION FOR NEW WORK TO EXISTING SHALL BE AT POINTS INDICATED ABOVE GRADE.

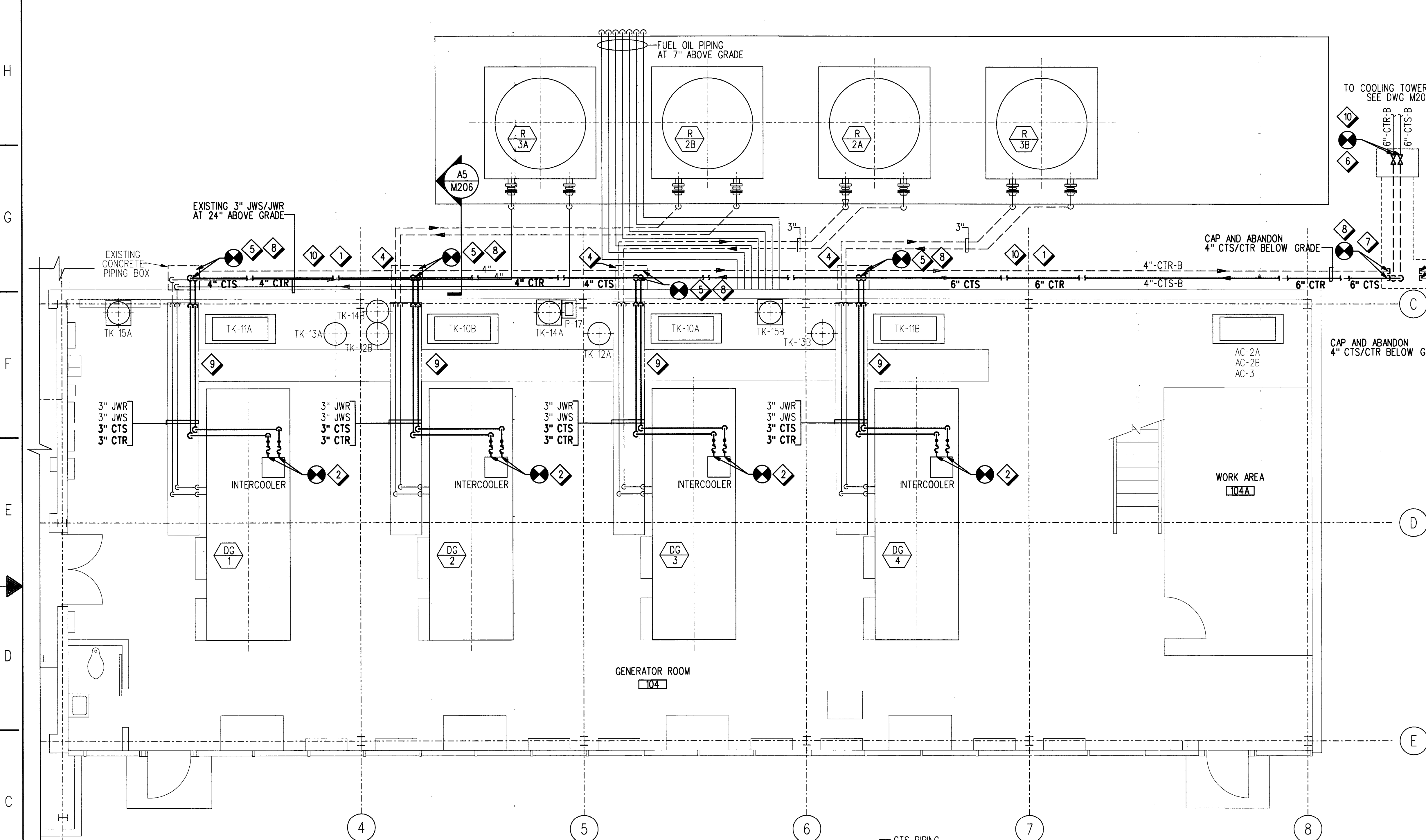
**AB** HVAC AND HVAC PIPING COOLING TOWER AND PUMP HOUSE  
**M205** SCALE: 1/4" = 1'-0"



**FOR OFFICIAL USE ONLY**  
 PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA	
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER HVAC AND HVAC PIPING COOLING TOWER AND PUMP HOUSE OAKLAND (ZOA) ARTCC FREMONT, CA	
REVIEWED BY DESIGNED BY DRAWN BY CHECKED BY	SUBMITTED BY RSBradfish	APPROVED BY 	DATE 07/08/2015
OAKLAND ARTCC FREMONT, CALIFORNIA	ISSUED BY AIRWAY FACILITY DIVISION	DRAWING NO. ZOA - D - CWBMS - M205	REV.

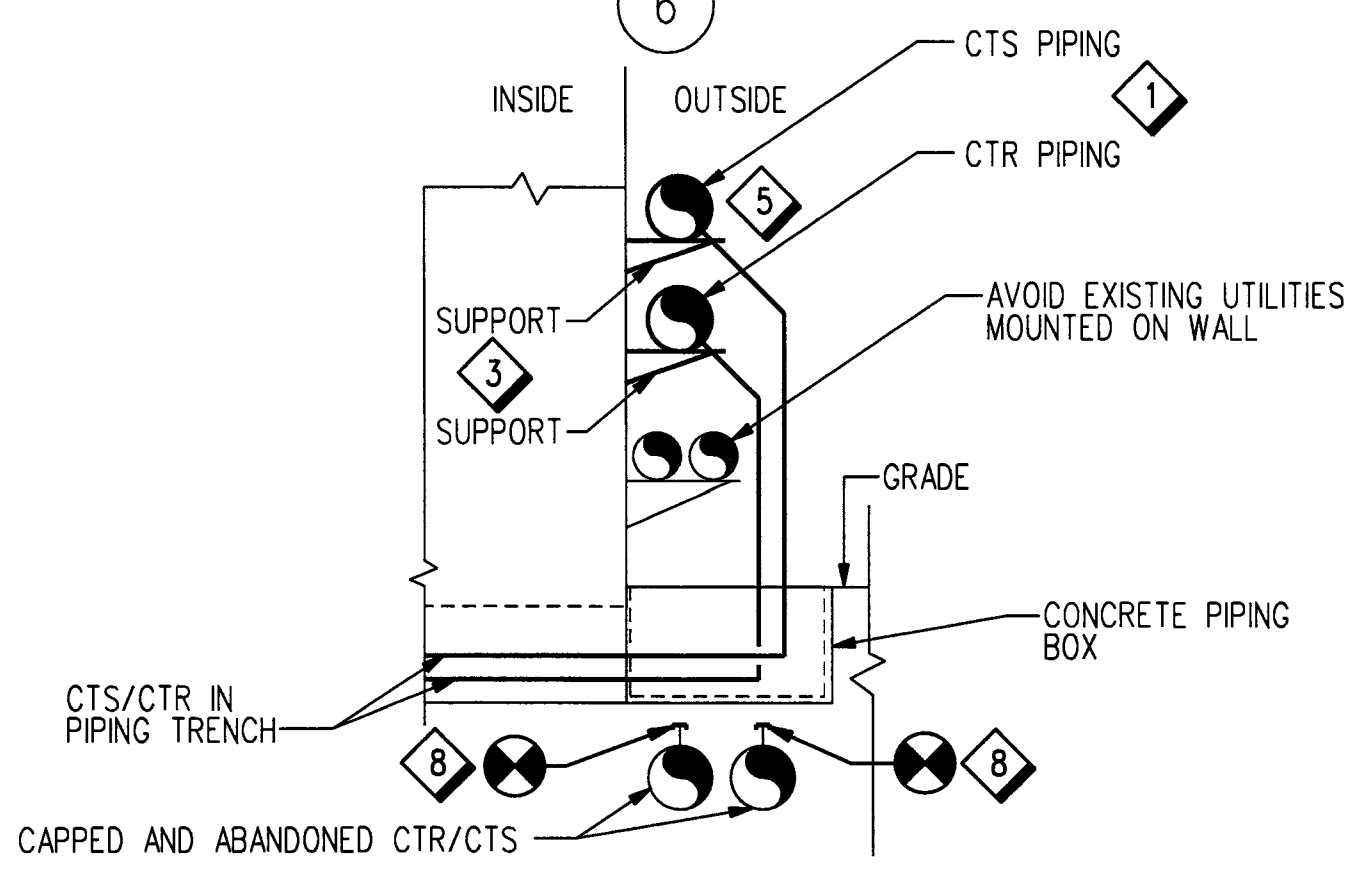




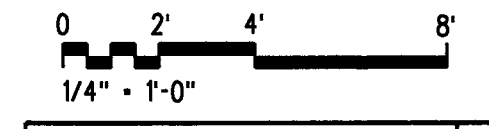
- ### GENERAL SHEET NOTES
- A. REFER TO SHEET M001 FOR MECHANICAL ABBREVIATIONS, SYMBOLS AND GENERAL NOTES.
  - B. GENERATORS ARE IN STANDBY STATE AND ABLE TO START AUTOMATICALLY WITHOUT WARNING. IN THE EVENT OF A POWER FAILURE WORK INSIDE GENERATOR ROOM 104 SHALL STOP AND PERSONNEL SHALL LEAVE THE BUILDING UNTIL COMMERCIAL POWER IS RESTORED.
  - C. IN THE EVENT OF A POWER FAILURE AND/OR FACILITY OPERATIONS TO EXERCISE GENERATORS ANY DELAYS INCURRED WILL NOT RESULT IN A CLAIM AGAINST THE GOVERNMENT FOR WORK DELAYS DUE TO THE POWER EMERGENCY.
  - D. WHEN WORKING IN CLOSE PROXIMITY TO THE ENGINE GENERATORS, PERSONNEL HARM MAY RESULT DUE TO THE SUDDEN START UP OF A GENERATOR DUE TO POWER FAILURE. IT SHALL BE AT THE DISCRETION OF THE SSC MANAGER, IN CONJUNCTION WITH THE COR, TO DETERMINE WHAT WORK IS CONSIDERED DANGEROUS, REQUIRING THE GENERATOR TO BE LOCKED OUT OF SERVICE TO PREVENT INJURY TO PERSONNEL.
  - E. NUMEROUS UTILITIES CROSS PERPENDICULAR TO THE WORK AREA. VERIFY UTILITY ROUTING BEFORE EXCAVATION.
  - F. CONTRACTOR MAY ONLY WORK ON ONE GENERATOR AT A TIME. IN THE EVENT OF POWER FAILURE, THE OTHER THREE SHALL REMAIN OPERATIONAL AT ALL TIMES. START UP SEQUENCE SHALL BE REVISED TO ALLOW TWO GENERATORS TO START AT THE SAME TIME WHILE THE THIRD IS IN STANDBY MODE.

- ### SHEET NOTES
- 1 CONDENSER WATER HEADERS MOUNTED ON WALL, SEE DETAIL A5. AVOID CONFLICT WITH OTHER ITEMS WHEN MOUNTING SUPPORTS AND PIPING ON WALL. PROVIDE INSULATION AND STAINLESS STEEL JACKET.
  - 2 CONDENSER WATER BRANCH PIPING INSIDE BUILDING UP TO GENERATOR INTERCOOLERS. REPLACE CONTROL VALVE AND FLOW METER.
  - 3 SUPPORT CONDENSER WATER PIPING ON EXTERIOR WALL EVERY 12 FEET ALONG ENTIRE LENGTH TO DISTRIBUTE WEIGHT.
  - 4 2'X2'X10" CAST IN PLACE CONCRETE BOX FOR EXPOSED PIPING. SIMILAR TO EXISTING AT GENERATOR NO.4.
  - 5 CONNECT BRANCHES FROM EACH GENERATOR TO HEADER. AVOID INTERFERENCE WITH EXISTING UTILITIES MOUNTED ON WALL. SEE DETAIL A5.
  - 6 CASED PIPING SYSTEM FOR BELOW GRADE PIPING SECTION CONNECTING ISOLATION VALVES TO EXISTING 6" HEADERS IN GROUND BOX. BED PIPING PER MANUFACTURER INSTRUCTIONS.
  - 7 CONNECT ABOVE GRADE CONDENSER WATER HEADERS TO SECTION BELOW GRADE. FOLLOW ANY CASED PIPING MANUFACTURERS INSTRUCTIONS FOR AT GRADE FINISHING. BACKFILL AND COMPACT PIPE TRENCH AND PATCH ASPHALT.
  - 8 CAP BRANCHED TAKEOFFS AT ABANDONED HEADERS. SEE DETAIL A5.
  - 9 TRENCH AREAS ARE CONGESTED WITH OTHER UTILITIES.
  - 10 POINT OF CONNECTION IF DEDUCTIVE ALTERNATE IS ACCEPTED.

**B8 HVAC AND HVAC PIPING ENGINE GENERATOR ROOM PLAN**  
M206 SCALE: 1/4" = 1'-0"

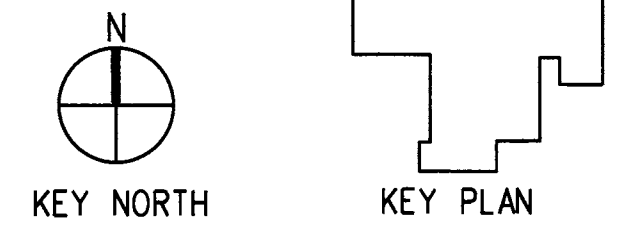


**A5 EXTERIOR WALL AND TRENCH PIPING DETAIL**  
M206 SCALE: NTS



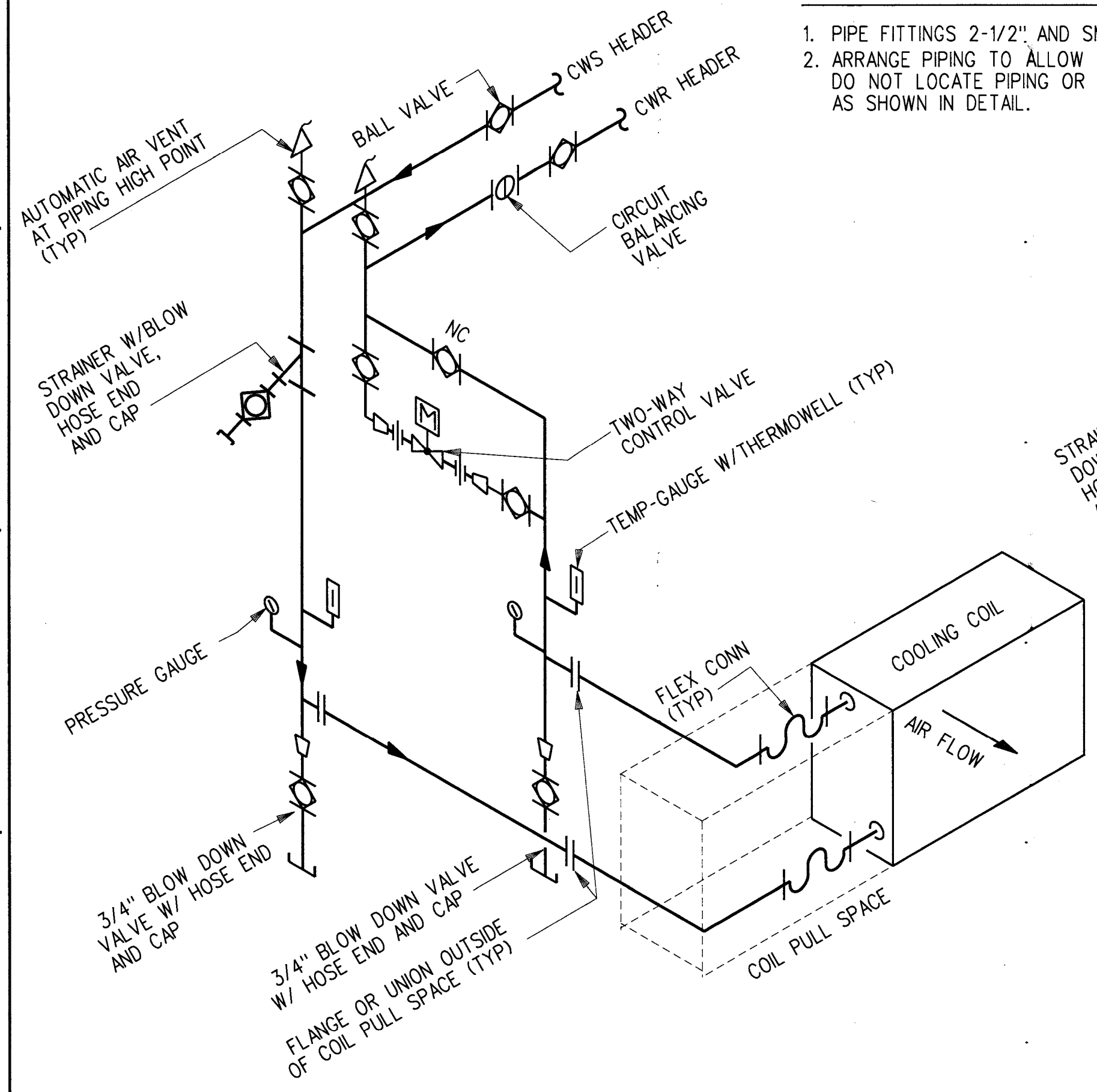
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PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>					
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>					
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER HVAC AND HVAC PIPING ENGINE GENERATOR ROOM PLAN OAKLAND (ZOA) ARTCC					
FREMONT					
REVIEWED BY	SUBMITTED BY	APPROVED BY			
	RBradfish	<i>[Signature]</i>			
SUBMITTER'S TITLE		APPROVER'S TITLE			
DESIGNED BY	ISSUED BY	DATE	JCN		
M. HATHORNE	AIRWAY FACILITY DIVISION	07/08/2015			
DRAWN BY	CHECKED BY	DRAWING NO.	REV.		
A. STURDIVANT	D. LUKASZEWICZ	ZOA - D - CWBMS - M206			

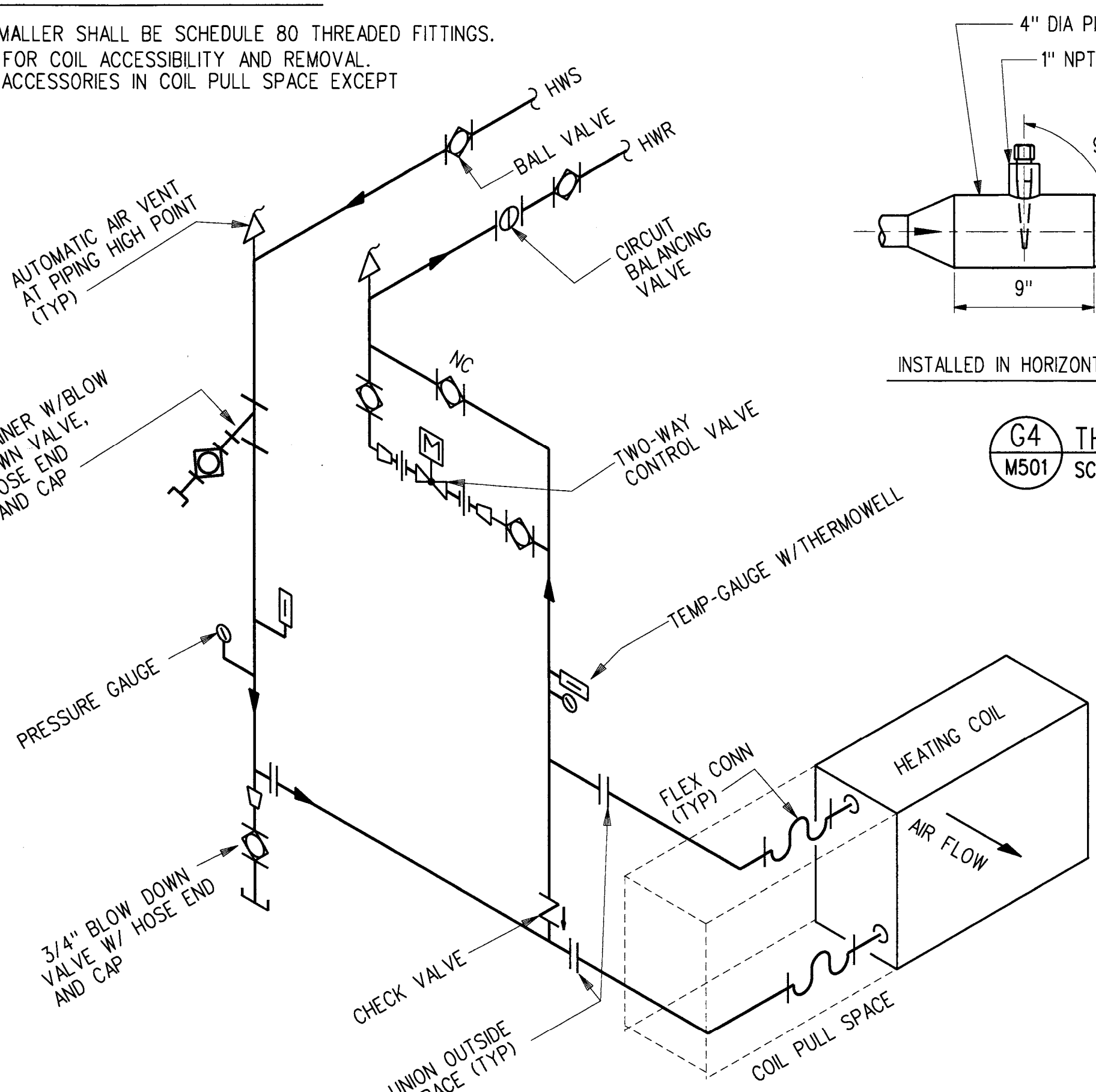


**NOTES FOR DETAILS E8 AND E5:**

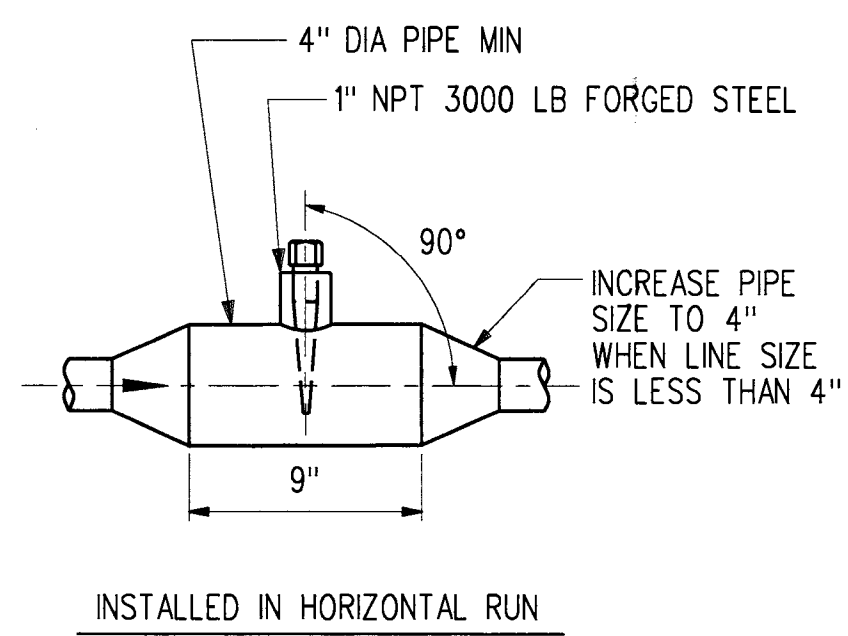
1. PIPE FITTINGS 2-1/2" AND SMALLER SHALL BE SCHEDULE 80 THREADED FITTINGS.
2. ARRANGE PIPING TO ALLOW FOR COIL ACCESSIBILITY AND REMOVAL. DO NOT LOCATE PIPING OR ACCESSORIES IN COIL PULL SPACE EXCEPT AS SHOWN IN DETAIL.



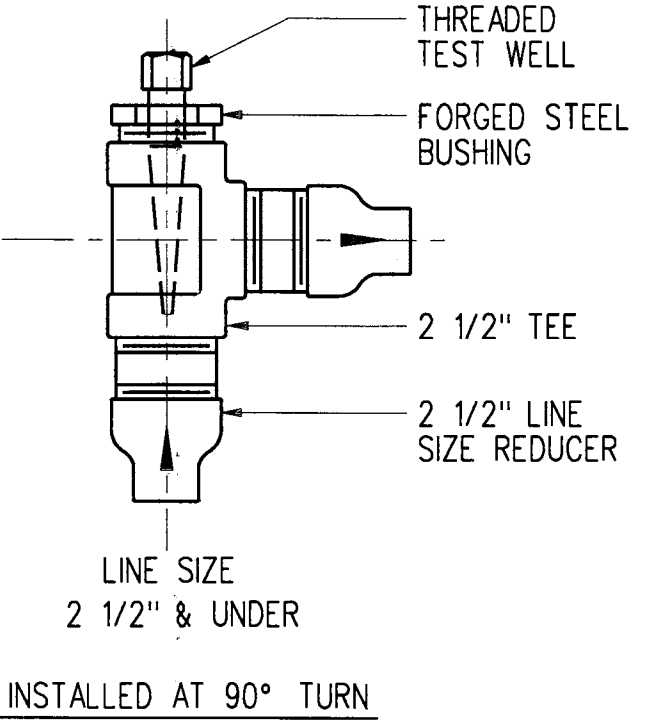
**E8 COOLING COIL PIPING**  
M501 SCALE: NTS AHU-111, 390



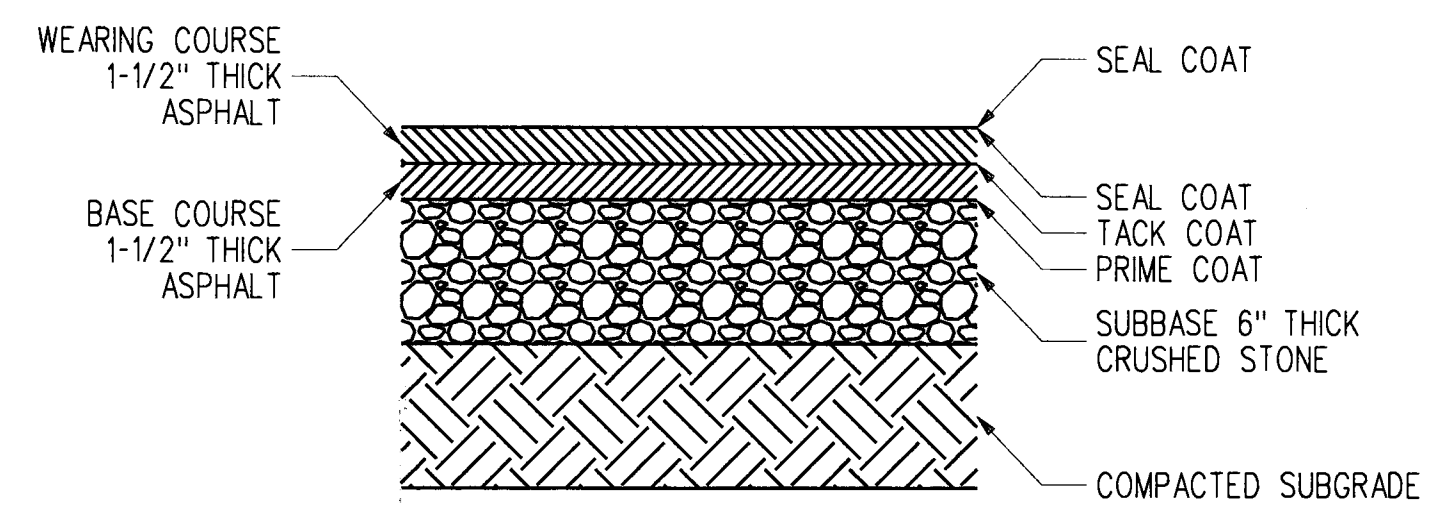
**E5 HEATING COIL PIPING**  
M501 SCALE: NTS AHU-111, 390



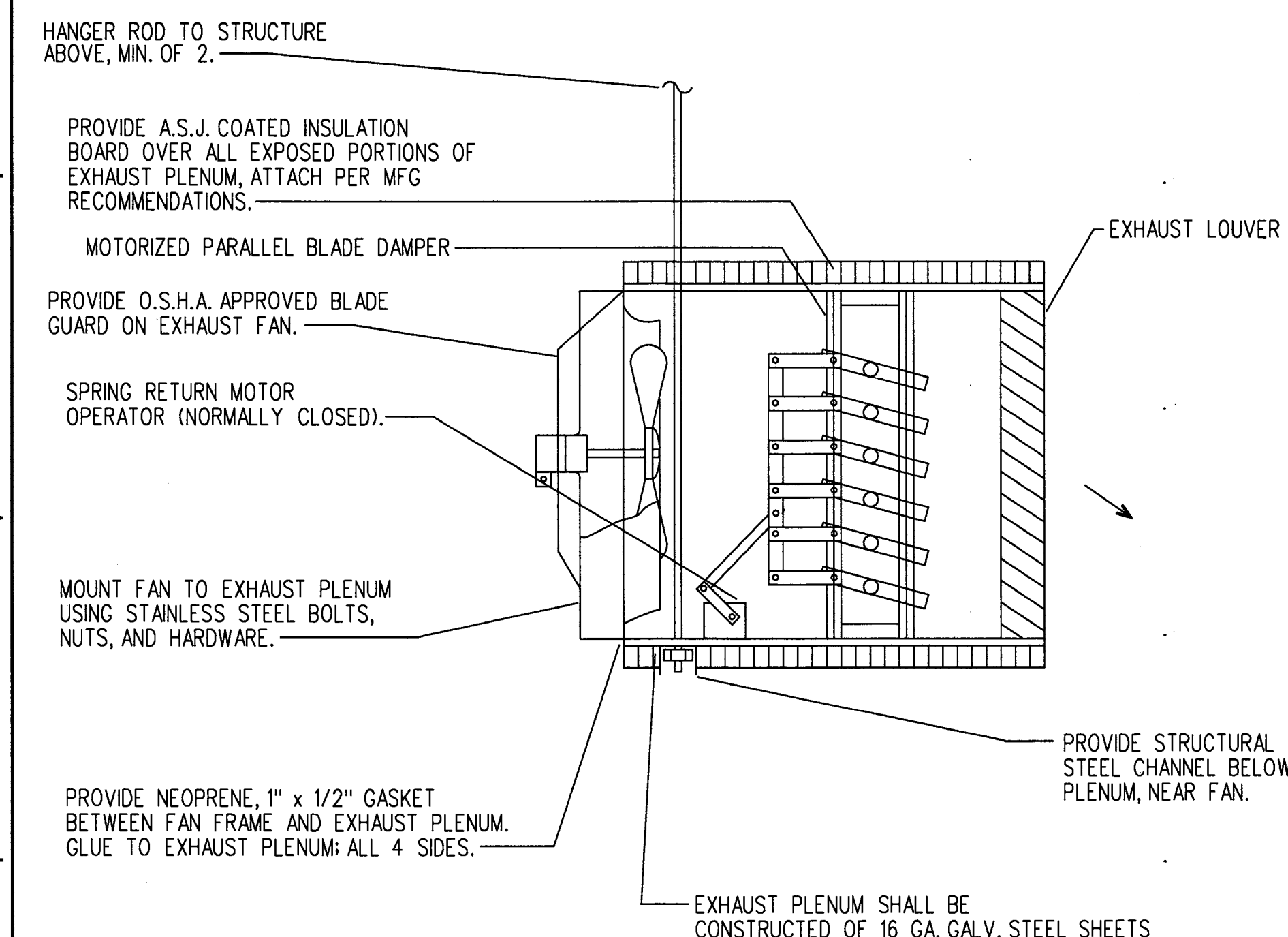
**G4 THERMOWELL INSTALLATION DETAIL**  
M501 SCALE: NTS



**E3 AUTOMATIC AIR VENT DETAIL**  
M501 SCALE: NTS

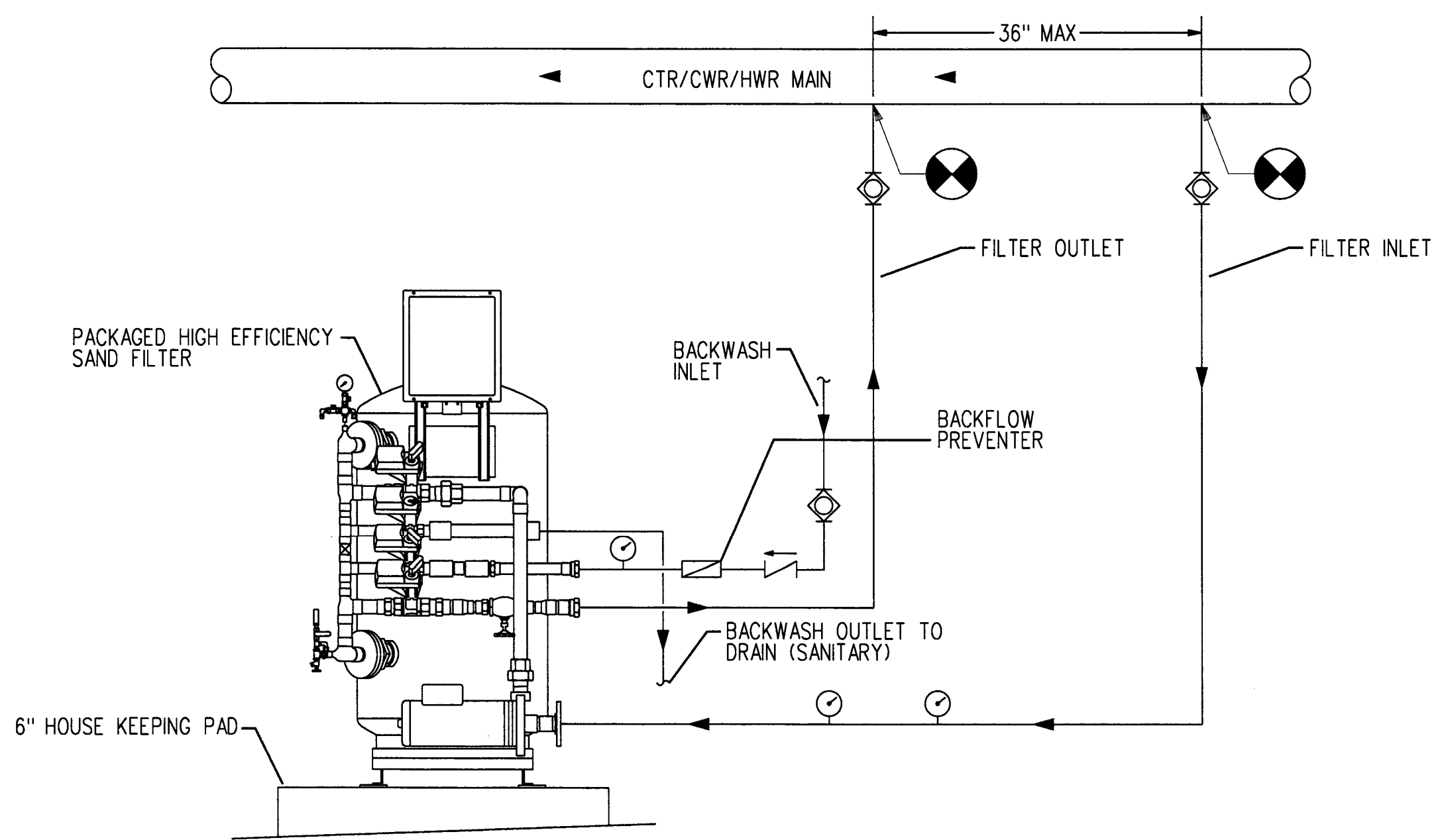


**F2 ASPHALT PAVEMENT DETAIL**  
M501 SCALE: 1-1/2" = 1'-0"

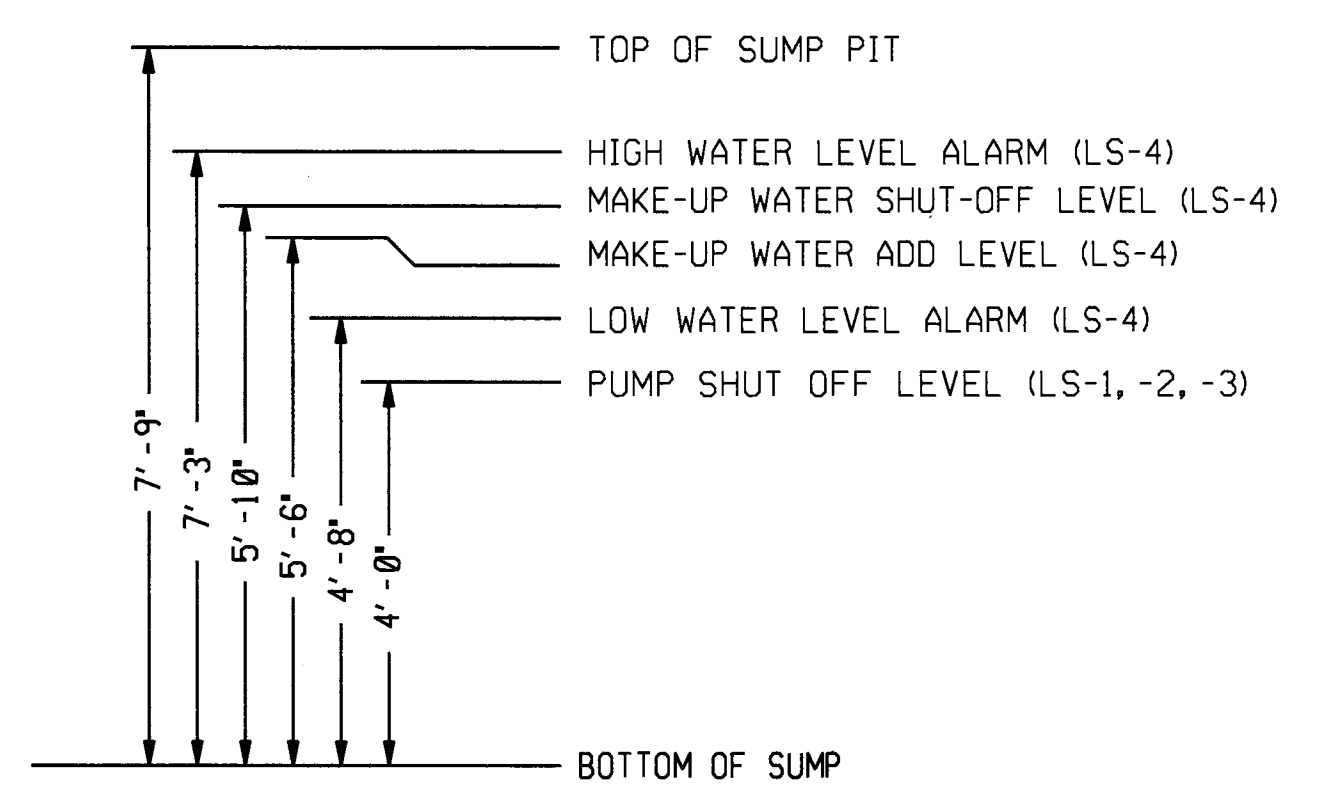


- NOTES:**
1. PROVIDE ADDITIONAL BRACING OR HANGER RODS TO STEEL STRUCTURE ABOVE.
  2. INSULATION ON FAN PLENUM NOT REQUIRED IN ROOFTOP PENTHOUSES.

**A8 TYPICAL EXHAUST FAN / PLENUM DETAIL**  
M501 SCALE: NTS EF-310



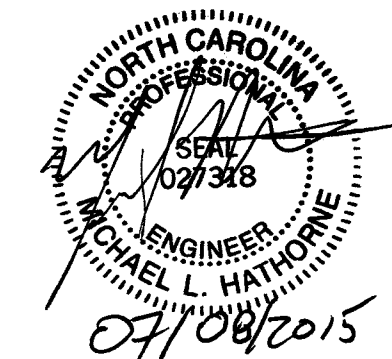
**A5 HIGH EFFICIENCY SAND FILTER DETAIL**  
M501 SCALE: NTS SF-01, 02, 03



**C2 COOLING TOWER SUMP WATER LEVEL SETTINGS DETAIL**  
M501 SCALE: NTS

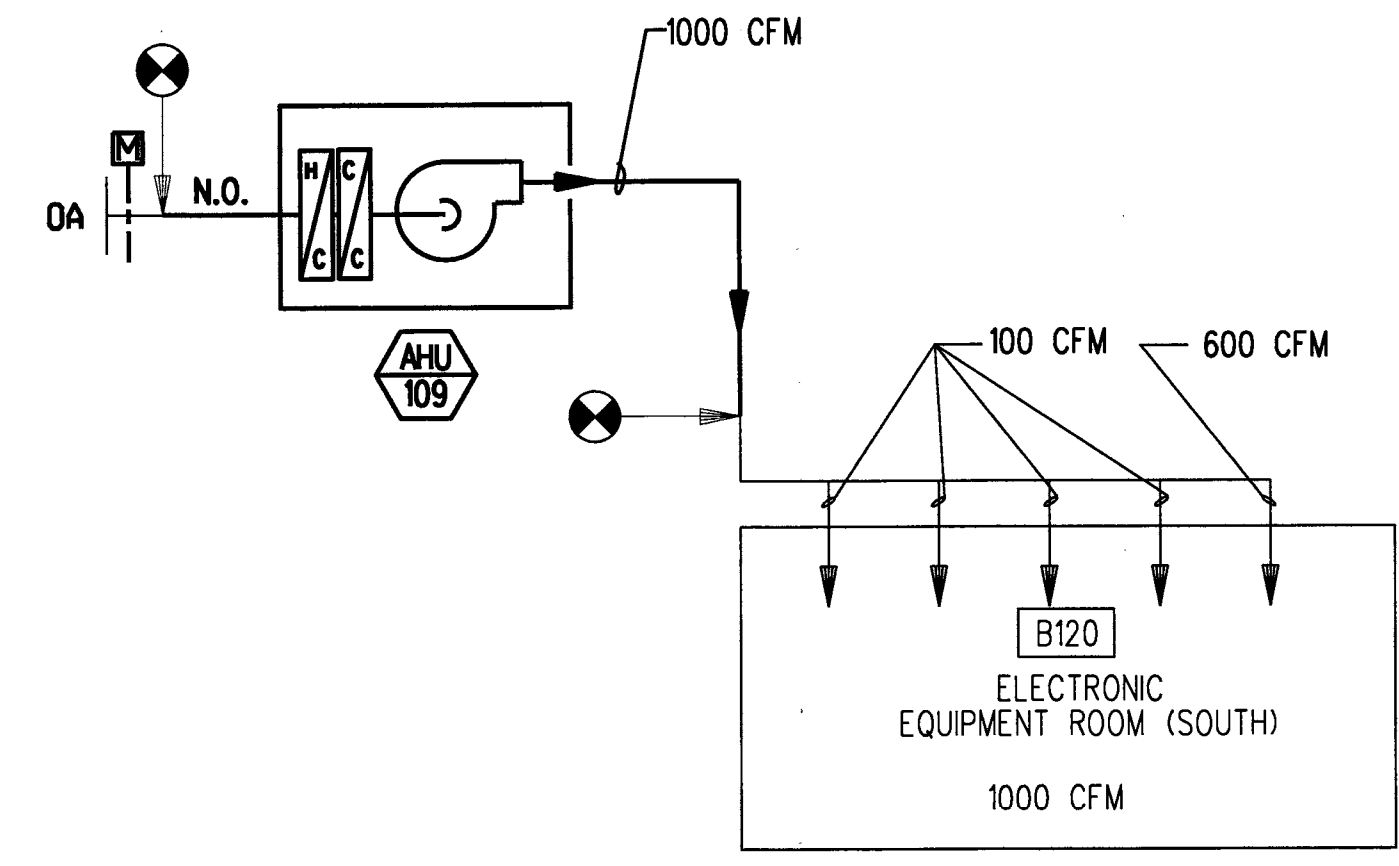
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<b>JACOBS</b>					
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA					
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER					
HVAC TYPICAL DETAILS OAKLAND (ZOA) ARTCC					
FREMONT OAKLAND (ZOA) ARTCC					
REVIEWED BY	SUBMITTED BY	APPROVED BY			
	RBradfish	<i>[Signature]</i>			
SUBMITTER'S TITLE		APPROVER'S TITLE			
DESIGNED BY	ISSUED BY	DATE	JCN		
M. HATHORNE	AIRWAY FACILITY DIVISION	07/08/2015			
DRAWN BY	CHECKED BY	DRAWING NO.	REV.		
A. STURDIVANT	D. LUKASZEWICZ	ZOA - D - CWBMS - M501			
OAKLAND ARTCC, FREMONT, CALIFORNIA					



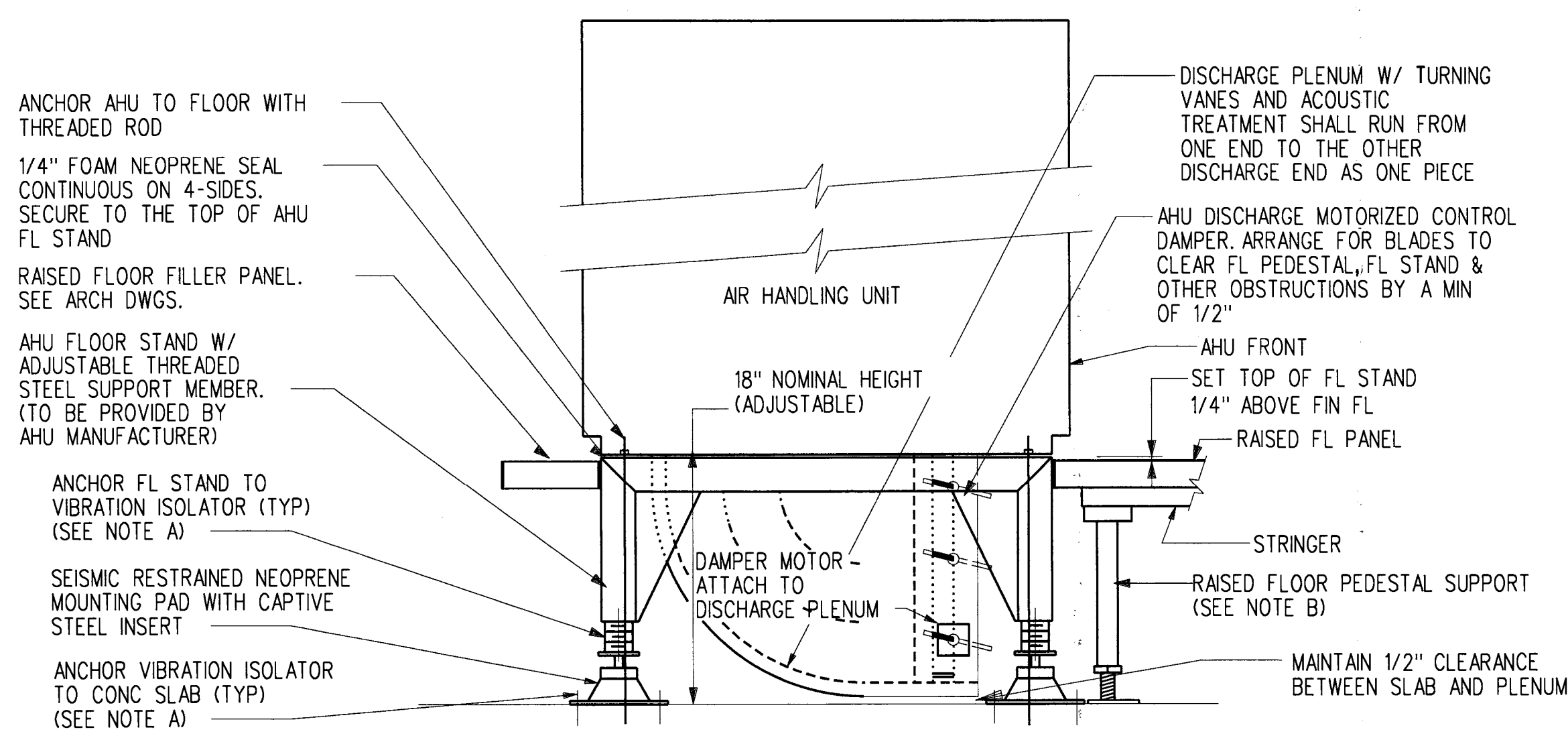
GENERAL SHEET NOTES

A. REFER TO SHEET M001 FOR MECHANICAL ABBREVIATIONS, SYMBOLS AND GENERAL NOTES.



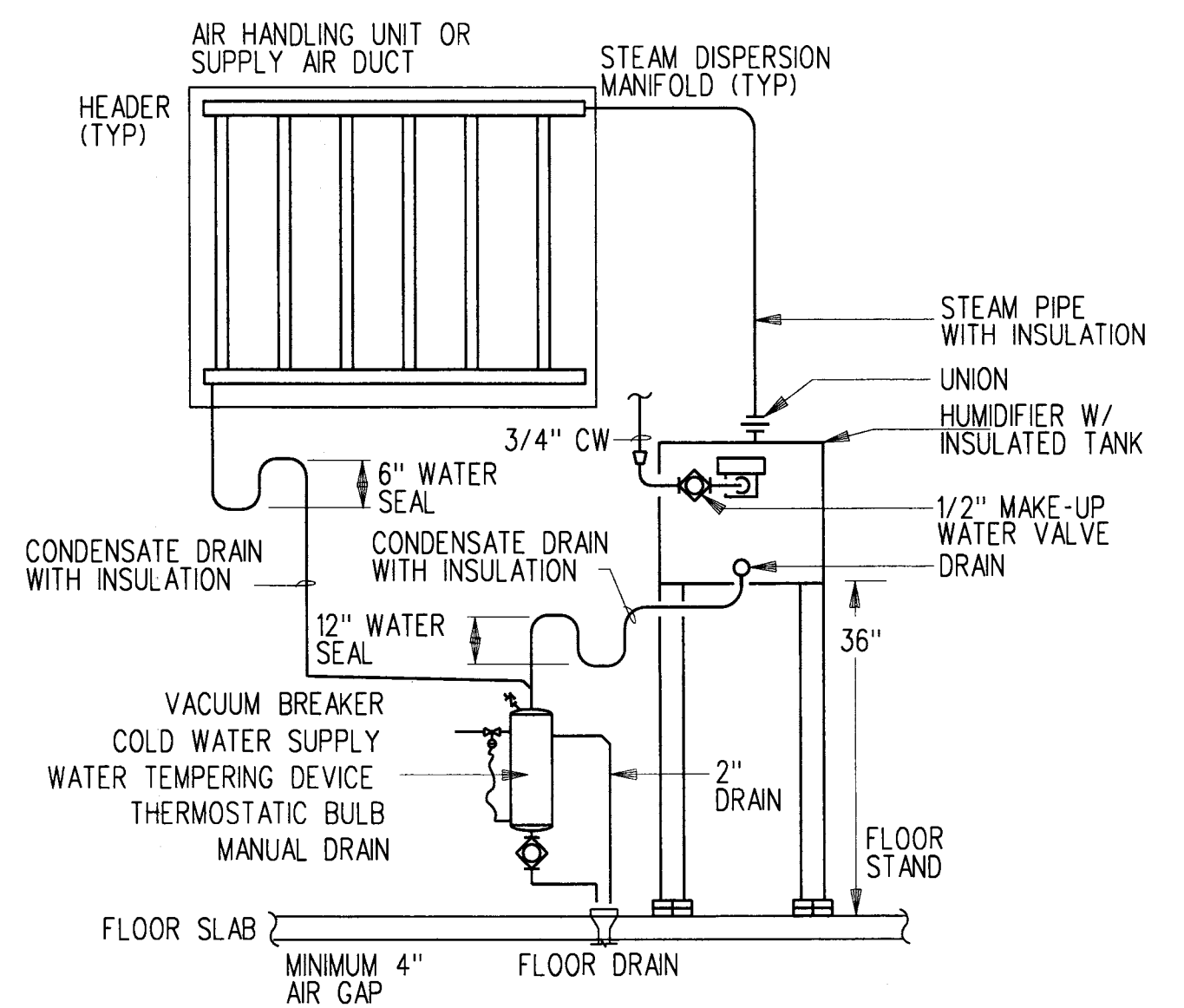
NOTE: AIRFLOW IS AS INDICATED.

F7 AHU-109 AIR FLOW DIAGRAM  
SCALE: NTS AHU-109

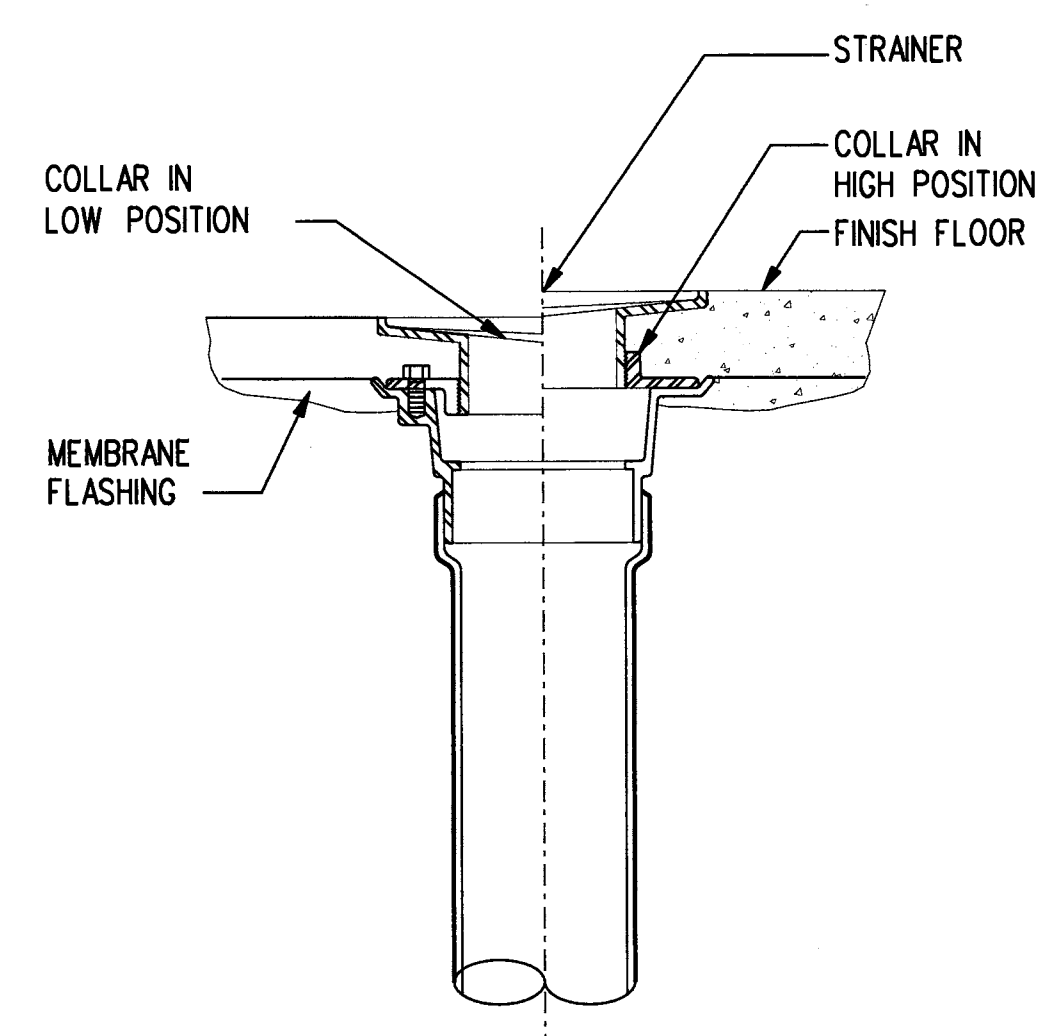


- DETAIL NOTES:
- A. ANCHOR BOLT SIZE AND QUANTITY SHALL BE IN ACCORDANCE WITH AHU MANUFACTURER FOR SEISMIC REQUIREMENTS.
  - B. COORDINATE RAISED FLOOR STANDS WITH INSTALLATION OF AIR HANDLING UNITS AND PIPES.
  - C. DISCHARGE AIR PLENUM AND DAMPER BELOW ACCESS FLOOR SHALL COVER THE FULL LENGTH AND WIDTH OF AHU. PIPING SHALL BE AT LEFT SIDE OF AHU (WHILE FACING FRONT). SEPARATE DISCHARGE PLENUMS AND DAMPERS FOR EACH FAN ARE NOT ACCEPTABLE.
  - D. STAND EXISTING TO REMAIN. RELOCATE AND REINSTALL.

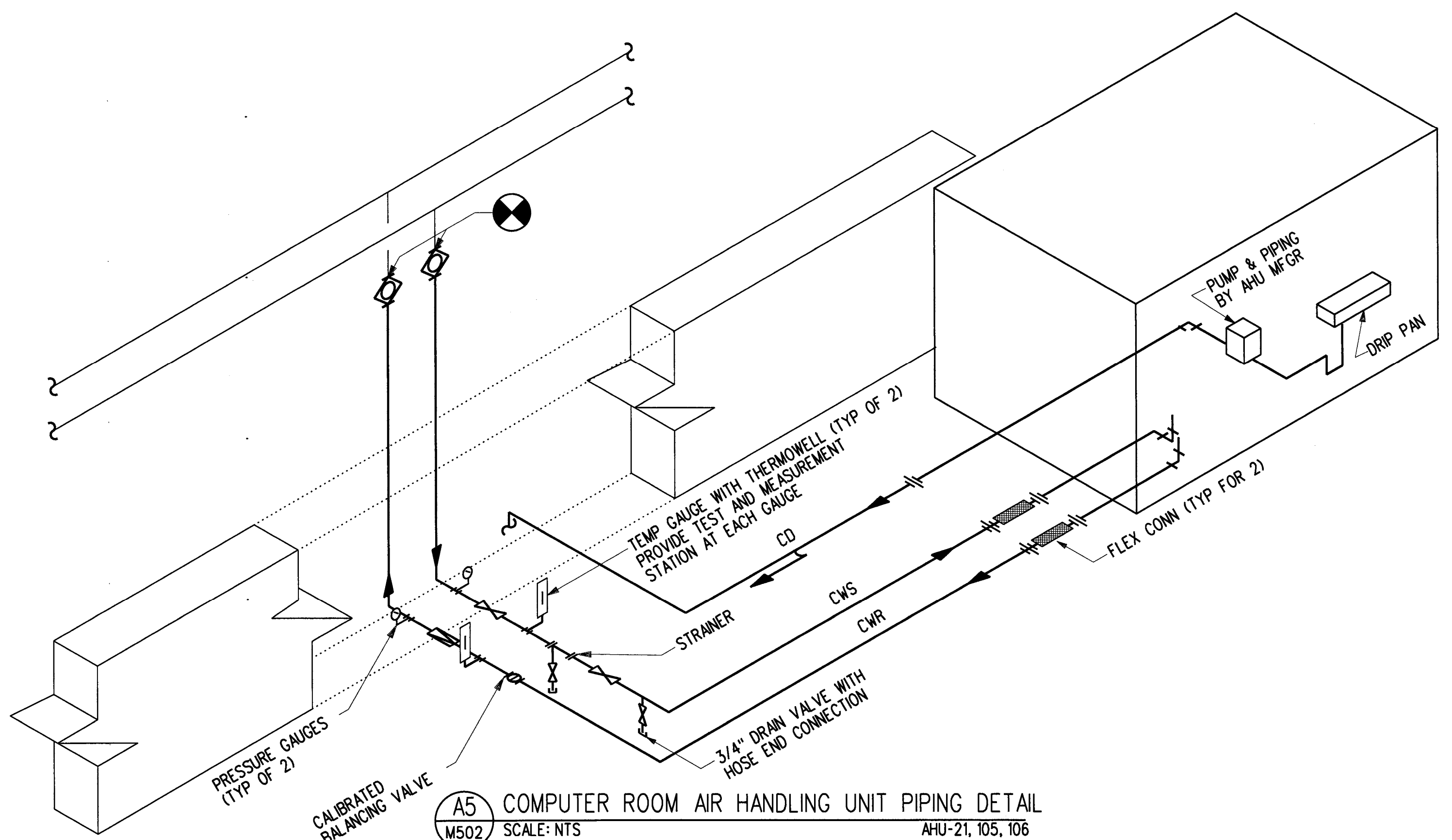
E4 TYPICAL PLENUM DETAIL  
SCALE: NTS AHU-21, 105, 106



F2 ELECTRIC STEAM HUMIDIFIER DETAIL  
SCALE: NTS HU-109



C8 FLOOR DRAIN DETAIL  
SCALE: NTS



A5 COMPUTER ROOM AIR HANDLING UNIT PIPING DETAIL  
SCALE: NTS AHU-21, 105, 106

NOTE: AHU-21 INCLUDES HOT WATER SUPPLY AND RETURN IN ADDITION TO CHILLED WATER SHOWN.

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<b>JACOBS</b>					
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA					
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER HVAC TYPICAL DETAILS OAKLAND (ZOA) ARTCC FREMONT					
DESIGNED BY M. HATHORNE	ISSUED BY AIRWAY FACILITY DIVISION		DATE 07/08/2015	JCN	REV.
DRAWN BY A. STURDIVANT			DRAWING NO. ZOA - D - CWBMS - M502		
CHECKED BY D. LUKASZEWICZ					

Professional Engineer Seal for Michael L. Hathorne, State of North Carolina, License No. 22713, dated 07/08/2015.

**CHILLER SCHEDULE - CENTRIFUGAL TYPE**

Table with columns: UNIT NO., LOCATION, NOMINAL CAPACITY TONS, FULL LOAD EFFICIENCY (KW/TON), PART LOAD EFFICIENCY IPLV (KW/TON), REFRIGERANT (TYPE, QTY, PRESS. RATING), EVAPORATOR DATA (NO. OF PASS., FLUID TYPE, FLOW RATE, EWT, LWT, MAX. PD, FOULING FACTOR), CONDENSER DATA (NO. OF PASS., FLUID TYPE, FLOW RATE, EWT, LWT, MAX. PD, FOULING FACTOR), COMPRESSOR DATA (NO. OF COMP., RUN LOAD AMPS, COMPRESSOR MOTOR CONTROL), CHILLER ELECTRICAL REQUIREMENTS (POWER CONN., POWER INPUT, MINIMUM CIRCUIT AMPACITY, MAX. OCP, ELECTRICAL CHAR.), MAXIMUM ALLOWABLE WEIGHT, KNOWN ACCEPTABLE SOURCE (MFGR, MODEL / SERIES), REMARKS.

NOTES:  
1. UNITS: HR-SF-DEG. F/BTU  
2. UNIT SHALL BE CAPABLE OF VARIABLE EVAPORATOR FLOW.  
3. UNIT EQUIPPED WITH DAVITED OR HINGED WATER BOXES.  
4. SOLE SOURCE CHILLERS TO MATCH REPLACEMENT CHILLERS FROM ENERGY PROJECT. CONTACT MATT KLING AT HAVTECH AT 301-302-5514

**COOLING TOWER SCHEDULE**

Table with columns: UNIT NO., LOCATION, SERVICE, TYPE, NOMINAL CAPACITY (TONS), AIR EWB (°F), CONDENSER WATER DATA (MAX GPM, EWT, LWT, STATIC LIFT), NO. OF CELLS, NO. OF FANS / CELL, FAN AND MOTOR DATA (SPEED CONTROL, HP, VOLT, PH), ELECTRICAL DATA (V, PH, HZ), MAXIMUM ALLOWABLE WEIGHT (LBS.), KNOWN ACCEPTABLE SOURCE (MFGR, MODEL / SERIES), REMARKS.

NOTES:  
1. REFER TO M001 FOR WIND LOAD CRITERIA  
2. VARIABLE SPEED WITH MOTOR SHAFT MOUNTED GROUNDING RINGS.

**DIFFUSER, REGISTER AND GRILLE SCHEDULE**

Table with columns: TAG, CFM RANGE (MIN, MAX), SERVICE, FACE SIZE (W, D), NECK SIZE (W, D, DIA), MAX NC, KNOWN ACCEPTABLE SOURCE, REMARKS.

NOTES:

**PUMP SCHEDULE**

Table with columns: UNIT NO., LOCATION, SERVICE, GPM, TDH (FEET), RPM, HP, ELECTRICAL DATA (VOLTS, PH, HZ), KNOWN ACCEPTABLE SOURCE (MFGR, MODEL / SERIES), REMARKS.

NOTES:  
1. VARIABLE FLOW PUMP OPERATIONAL RANGE FROM 200 TO 900 GPM.  
2. VARIABLE SPEED WITH MOTOR SHAFT MOUNTED GROUNDING RING.  
3. HIGH TEMPERATURE CONDENSATE PUMP WITH 1 GALLON RESERVOIR.  
4. EXISTING TO REMAIN MOTORS.

**TEMPORARY PUMP SCHEDULE**

Table with columns: UNIT NO., LOCATION, SERVICE, GPM, TDH (FEET), RPM, HP, ELECTRICAL DATA (VOLTS, PH, HZ), KNOWN ACCEPTABLE SOURCE (MFGR, MODEL / SERIES), REMARKS.

NOTES:  
1. PROVIDE STARTER, PIPING AND CONTROLS.

**TEMPORARY COOLING TOWER SCHEDULE**

Table with columns: UNIT NO., LOCATION, SERVICE, TYPE, NOMINAL CAPACITY (TONS), AIR EWB (°F), CONDENSER WATER DATA (GPM, EWT, LWT, STATIC LIFT), NO. OF CELLS, NO. OF FANS / CELL, FAN AND MOTOR DATA (SPEED CONTROL, ELECTRICAL DATA), MAXIMUM ALLOWABLE WEIGHT (LBS.), KNOWN ACCEPTABLE SOURCE (MFGR, MODEL / SERIES), REMARKS.

NOTES:  
1. AGGREKO COOLING TOWER SERVICE  
2. NOMINAL TON CAPACITY IS BASED ON KNOWN STANDARD SIZES FOR TEMPORARY TOWERS. TOWER MUST BE AT LEAST CAPABLE OF FLOW RATE AND TEMPERATURE RANGE INDICATED.  
3. REFER TO M001 FOR WIND LOAD CRITERIA  
4. PROVIDE NECESSARY CONTROLS AS REQUIRED ON M005

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JACOBS  
DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION  
WESTERN SERVICE AREA  
CONTROL WING BASEMENT  
AND CHILLER/COOLING TOWER MODERNIZATION  
OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER  
MECHANICAL EQUIPMENT SCHEDULES  
OAKLAND (ZOA) ARTCC  
FREMONT  
REVIEWED BY: SUBMITTED BY: APPROVED BY:  
OAKLAND ARTCC  
FREMONT, CALIFORNIA  
ISSUED BY:  
AIRWAY FACILITY DIVISION  
DATE 07/08/2015  
DRAWING NO.  
ZOA - D - CWBMS - M601

### AIR HANDLING UNIT SCHEDULE

UNIT NO.	LOCATION	AREA SERVED	SUPPLY FAN DATA								COOLING COIL DATA							HEATING COIL DATA					AIR FILTERS			KNOWN ACCEPTABLE SOURCE		REMARKS							
			SUPPLY AIR (CFM)	MIN. OA (CFM)	ESP (IN. W.G.)	TSP (IN. W.G.)	DRIVE	RPM	SUPPLY FAN MOTOR DATA				CAPACITY			AIR				WATER			POSITION	CAPACITY (MBH)	AIR		PRE-FILTER		DIRTY APD IN W.G.	DIRTY APD IN W.G.	MFGR	MODEL / SERIES			
									HP	VOLTS	PH	HZ	TOTAL (MBH)	SENS. (MBH)	EDB (°F)	EWB (°F)	LDB (°F)	LWB (°F)	EWT (°F)	LWT (°F)	GPM	GPM			GPM	EWT (°F)							LWT (°F)		
AHU-21	HOST MECHANICAL	B119	16,000	-	0.50	-	BELT	-	7.5 (2)	480	3	60	385.2	345.6	-	-	-	-	75.0	-	-	REHEAT	125.2	-	-	8.0	-	-	-	-	-	-	COMPU-AIRE	SYSTEM 2000	NOTE 1, 2
AHU-102	B120	B120	2,400	-	1.00	2.04	BELT	1800	1.5	480	3	60	57.2	54.7	76.0	62.0	55.2	53.7	11	45	55	REHEAT	58.8	70.0	92.3	6.0	180	160	2" MERV 13	-	-	-	CARRIER	39LF	
AHU-105	B120	B120	12,500	-	0.75	-	BELT	-	15	480	3	60	288.5	208.6	75.0	62.5	56.0	53.8	56	45	57	-	-	-	-	-	-	-	-	-	-	LIEBERT	CW084	NOTE 1, 2	
AHU-106	B120	B120	12,500	-	0.75	-	BELT	-	15	480	3	60	288.5	208.6	75.0	62.5	56.0	53.8	56	45	57	-	-	-	-	-	-	-	-	-	-	LIEBERT	CW084	NOTE 1, 2	
AHU-109	TM&O	B120	1,000	1,000	1.85	2.21	BELT	1693	2	480	3	60	37.7	29.2	81.0	66.0	53.4	52.9	7.5	45	55	PREHEAT	45.7	38.0	77.7	4.7	180	160	2" MERV 13	-	-	-	CARRIER	39S	
AHU-390	BOILER PLANT	HOST MECHANICAL	450	450	0.75	1.69	BELT	1531	1/2	480	3	60	14.6	14.4	81.0	66.0	54.6	52.4	2.9	45	55	PREHEAT	26.7	38.0	85.1	2.7	180	160	2" MERV 13	-	-	-	CARRIER	39S	

NOTES:  
1. PROVIDE UNIT WITH FACTORY INSTALLED 120V CONDENSATE PUMP, SMOKE DETECTOR AND FACTORY BACNET INTERFACE AND NETWORK CONTROLLER.  
2. PROVIDE UNIT WITH MANUFACTURERS SEISMIC UNIT FRAME AND SEISMIC STAND.

### PACKAGED HIGH EFFICIENCY SAND FILTER SCHEDULE

UNIT NO.	LOCATION	SERVICE	FILTRATION MEDIA	CONTINUOUS FLOW @ 5 PSIG DP (GPM)	BACKWASH FLOW		FILTER EFFICIENCY	PIPE SIZES (IN.)				PUMP ELECTRICAL DATA				OVERALL DIMENSIONS (IN)			MAXIMUM ALLOWABLE WEIGHT	KNOWN ACCEPTABLE SOURCE		COMMENTS	
					DESIGN GPM	TOTAL GAL		FILTER IN	FILTER OUT	DCW IN	BACKWASH TO DRAIN	MOTOR HP	V	PH	HZ	RLA	W	H		D	MFGR		MODEL / SERIES
SF-01	CHILLER PLANT	CHILLED WATER SYSTEM	SAND	25	10	50	0.25 MICRON	1.5	1.5	1.5	1.5	1	480	3	60	1.8	20	70	32	1,050 LBS	CHEMWORKS / AMERIWATER	CW-116	
SF-02	CHILLER PLANT	CONDENSER WATER SYSTEM	SAND	35	15	75	0.50 MICRON	2.0	2.0	1.5	1.5	2	480	3	60	2.4	27	70	36	1,720 LBS	CHEMWORKS / AMERIWATER	CW-120	
SF-03	BOILER PLANT	HEATING HOT WATER SYSTEM	SAND	25	10	50	0.25 MICRON	1.5	1.5	1.5	1.5	1	480	3	60	1.8	20	70	32	1,050 LBS	CHEMWORKS / AMERIWATER	CW-116	

NOTES:  
1. PROVIDE UNIT WITH SELF PRIMING SUCTION LIFT PUMP FROM MANUFACTURER.

### EXHAUST FAN SCHEDULE

UNIT NO.	LOCATION	SERVICE	CFM	PERFORMANCE DATA				MOTOR DATA			CONSTRUCTION DATA						KNOWN ACCEPTABLE SOURCE		REMARKS
				TSP (IN WG)	MAX OV (FPM)	MAX RPM	MAX BHP	HP	VOLTS	PH	TYPE FAN	CLASS	ROT.	DISCH.	ARRANG.	DRIVE	MFGR	MODEL / SERIES	
EF-1	PUMP HOUSE	PUMP HOUSE	200	0.10	2112	1725	0.01	1/6	120	1	CENTRIFUGAL	-	-	-	-	DIRECT	GREENHECK	G	NOTE 1
EF-310	B115	B115	1,435	0.50	6104	972	0.41	3/4	480	3	PROPELLER	-	-	-	-	DIRECT	GREENHECK	SBE	NOTE 1, 2

NOTES:  
1. UNIT WITH MOTORIZED DAMPER, THERMOSTAT AND WIRE MESH SCREEN. PROVIDE 12" CURB AND ELECTRICAL DISCONNECT.  
2. TWO SPEED FAN

### HUMIDIFIER SCHEDULE

UNIT NO.	LOCATION	SERVICE	TYPE	HUMIDIFIER CAPACITY DATA			ELECTRICAL DATA			DUCT AIR TEMP (F)	DUCT AIR FLOW (CFM)	MAXIMUM ABSORPTION DISTANCE (IN)	MAXIMUM FACE VELOCITY (FPM)	KNOWN ACCEPTABLE SOURCE		REMARKS
				REQUIRED CAPACITY (LBS/HR)	SYSTEM CAPACITY (LBS/HR)	TOTAL POWER (KW)	VOLTS	PH	HZ					MFGR	MODEL / SERIES	
HU-109	B101	AHU-109	WALL MOUNTED	17	20	6.0	480	3	60	92.3	1,000	6	800	DRISTEEM	VM-6	NOTE 1, 2

NOTES:  
1. PROVIDE UNIT WITH CONDENSATE TEMPERING / MIXING VALVE AND HIGH TEMPERATURE CONDENSATE PUMP.  
2. STEAM DISTRIBUTION GRID.

### ELECTRIC WATER COOLER SCHEDULE

UNIT NO.	LOCATION	CW (MINIMUM)	WASTE (MINIMUM)	VENT (MINIMUM)	ELECTRICAL DATA			KNOWN ACCEPTABLE SOURCE		REMARKS
					VOLTS	PH	HZ	MFGR	MODEL / SERIES	
EWC-01	B120	1/2"	1-1/4"	-	120	1	60	ELKAY	EZH20	NOTE 1

NOTES:  
1. IN-WALL CARRIER MOUNTING SYSTEM. BI-LEVEL FOUNTAIN WITH BOTTLE FILLING STATION

### UNIT HEATER SCHEDULE

UNIT NO.	LOCATION	AREA SERVED	CFM	HEATING COIL DATA							ELECTRICAL DATA				KNOWN ACCEPTABLE SOURCE		REMARKS	
				TOTAL (MBH)	TOTAL (KW)	EAT (°F)	LAT (°F)	EWT (°F)	LWT (°F)	FLOW (GPM)	PD (FT)	HP	VOLTS	PH	HZ	MFGR		MODEL / SERIES
UH-1	CHEMICAL TREATMENT	CHEMICAL TREATMENT	700	10,239	3.0	60	74	-	-	-	-	1/4	208	1	60	CHROMALOX	CXH-A	NOTE 1

NOTES:  
1. SUPPLIED WITH WALL MOUNTED THERMOSTAT.

### WATER HEATER SCHEDULE

UNIT NO.	LOCATION	AREA SERVED	PERFORMANCE DATA							ELECTRICAL DATA			KNOWN ACCEPTABLE SOURCE		REMARKS	
			CAPACITY (GALLONS)	INPUT (BTU/HR)	THERMAL EFFICIENCY	FIRST HOUR RATING (GALLONS)	RECOVERY 100° RISE (GAL/HR)	VENT SIZE (INCHES)	V	PH	FLA	MFGR	MODEL			
EW-01	CHEMICAL TREATMENT	EMERGENCY SHOWER	120	3.0 KW	-	-	10	-	-	-	480	3	6	THERM-OMEGA-TECH	EMV	NOTE 1
HWG-1A	BOILER PLANT	DOMESTIC HOT WATER	90	200,000	96%	305	233	4	120	1	-	-	-	LOCHINVAR	SHIELD	
HWG-1B	BOILER PLANT	DOMESTIC HOT WATER	90	200,000	96%	305	233	4	120	1	-	-	-	LOCHINVAR	SHIELD	

NOTES:  
1. EMERGENCY SAFETY SHOWER WATER HEATER WITH MIXING VALVE SET AT 85° F.

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PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

JACOBS

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DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION  
WESTERN SERVICE AREA RENTON, WA

CONTROL WING BASEMENT  
AND CHILLER/COOLING TOWER MODERNIZATION  
OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER

MECHANICAL  
EQUIPMENT SCHEDULES  
OAKLAND (ZOA) ARTCC

FREMONT

REVIEWED BY: \_\_\_\_\_

DESIGNED BY: M. HATHORNE

DRAWN BY: A. STURDIVANT

CHECKED BY: D. LUKASZEWICZ

SUBMITTED BY: R. Bradfisch

SUBMITTER'S TITLE: \_\_\_\_\_

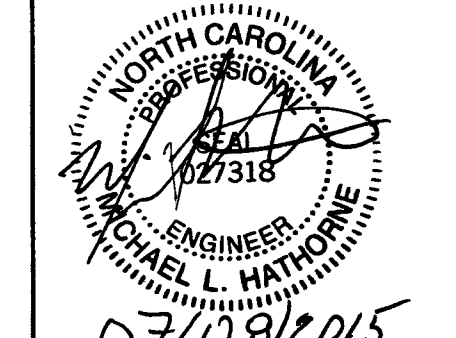
ISSUED BY: AIRWAY FACILITY DIVISION

APPROVED BY: *[Signature]*

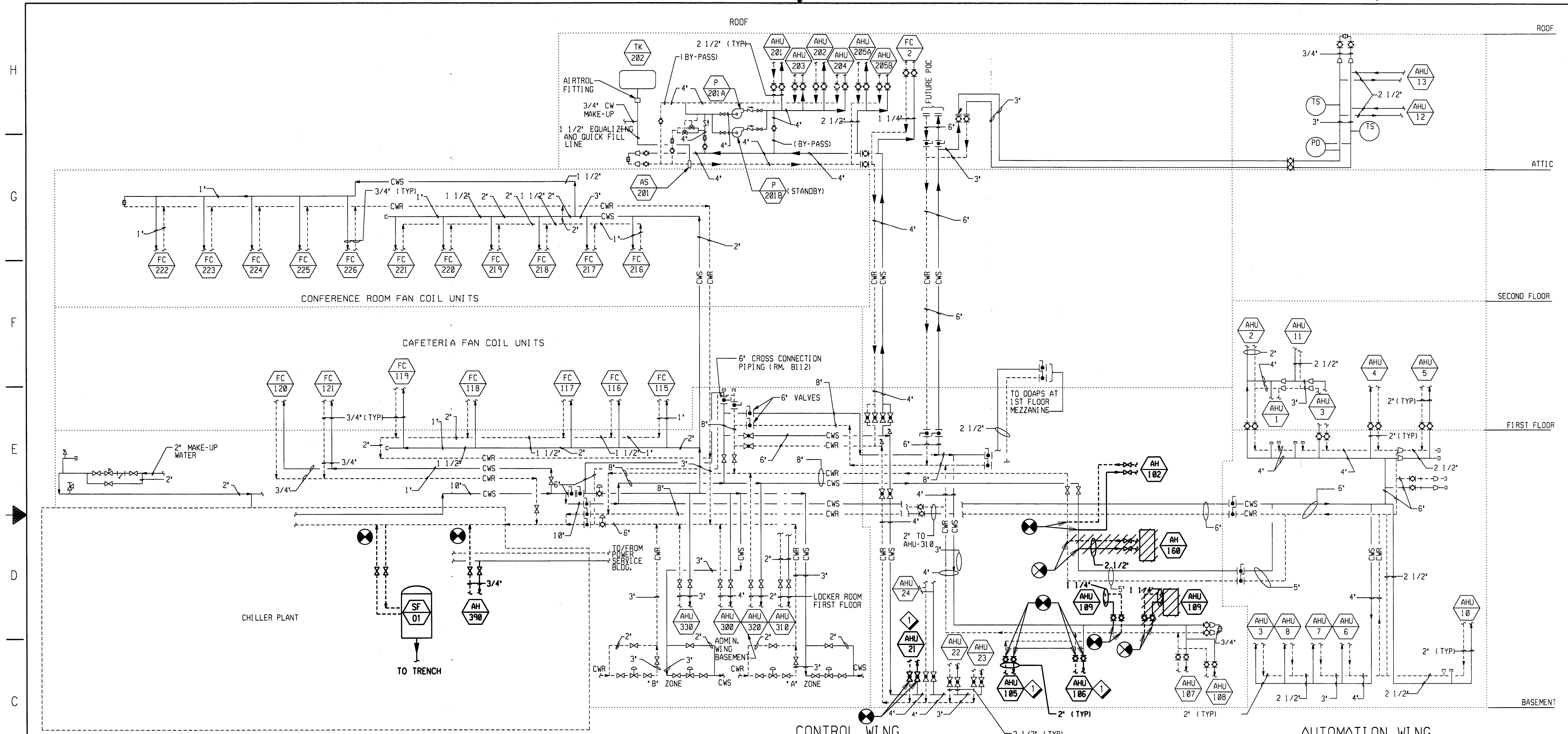
DATE: 07/08/2015

DRAWING NO.: ZOA - D - CWBMS - M602

7/2/2015







**ADMINISTRATION WING**

**CONTROL WING**

**AUTOMATION WING**

**GENERAL SHEET NOTES**

A. REFER TO SHEET M001 FOR MECHANICAL ABBREVIATIONS, SYMBOLS AND GENERAL NOTES.

**SHEET NOTES**

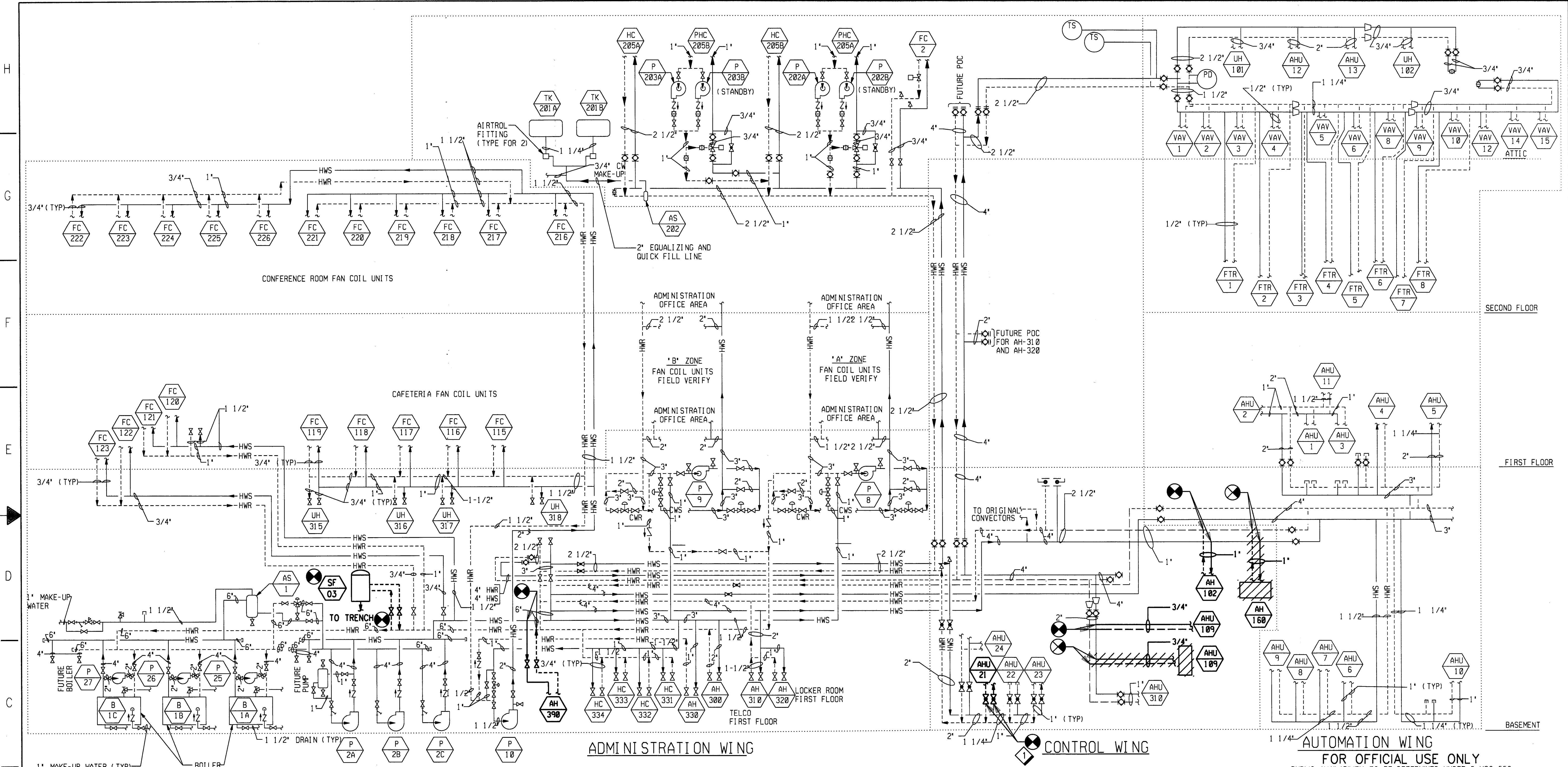
1 UNIT REPLACED IN SAME LOCATION. REPLACE BRANCH ISOLATION VALVES UTILIZING LINESSTOP OR PIPE FREEZE

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<b>JACOBS</b>					
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA					
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER CHILLED WATER RISER DIAGRAM					
FREMONT			OAKLAND (ZOA) ARTCC		
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DESIGNED BY M. HATHORNE		ISSUED BY AIRWAY FACILITY DIVISION		DATE 07/08/2015	
DRAWN BY C. HILL		CHECKED BY D. LUKASZEWICZ		DRAWING NO. ZOA - D - CWBMS - M701	



**AB** CHILLED WATER RISER DIAGRAM  
M701 SCALE: NTS



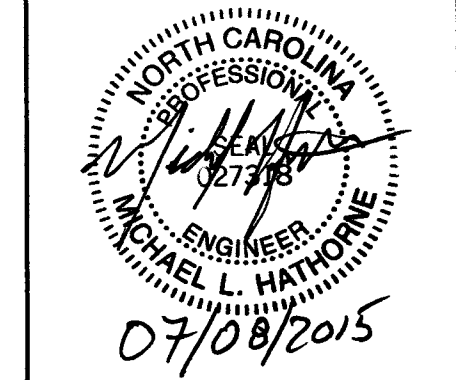
**M702** HEATING HOT WATER RISER DIAGRAM  
SCALE: NTS

**GENERAL SHEET NOTES**

A. REFER TO SHEET M001 FOR MECHANICAL ABBREVIATIONS, SYMBOLS AND GENERAL NOTES.

**SHEET NOTES**

1 UNIT REPLACED IN SAME LOCATION. REPLACE BRANCH ISOLATION VALVES UTILIZING LINSTOP OR PIPE FREEZE



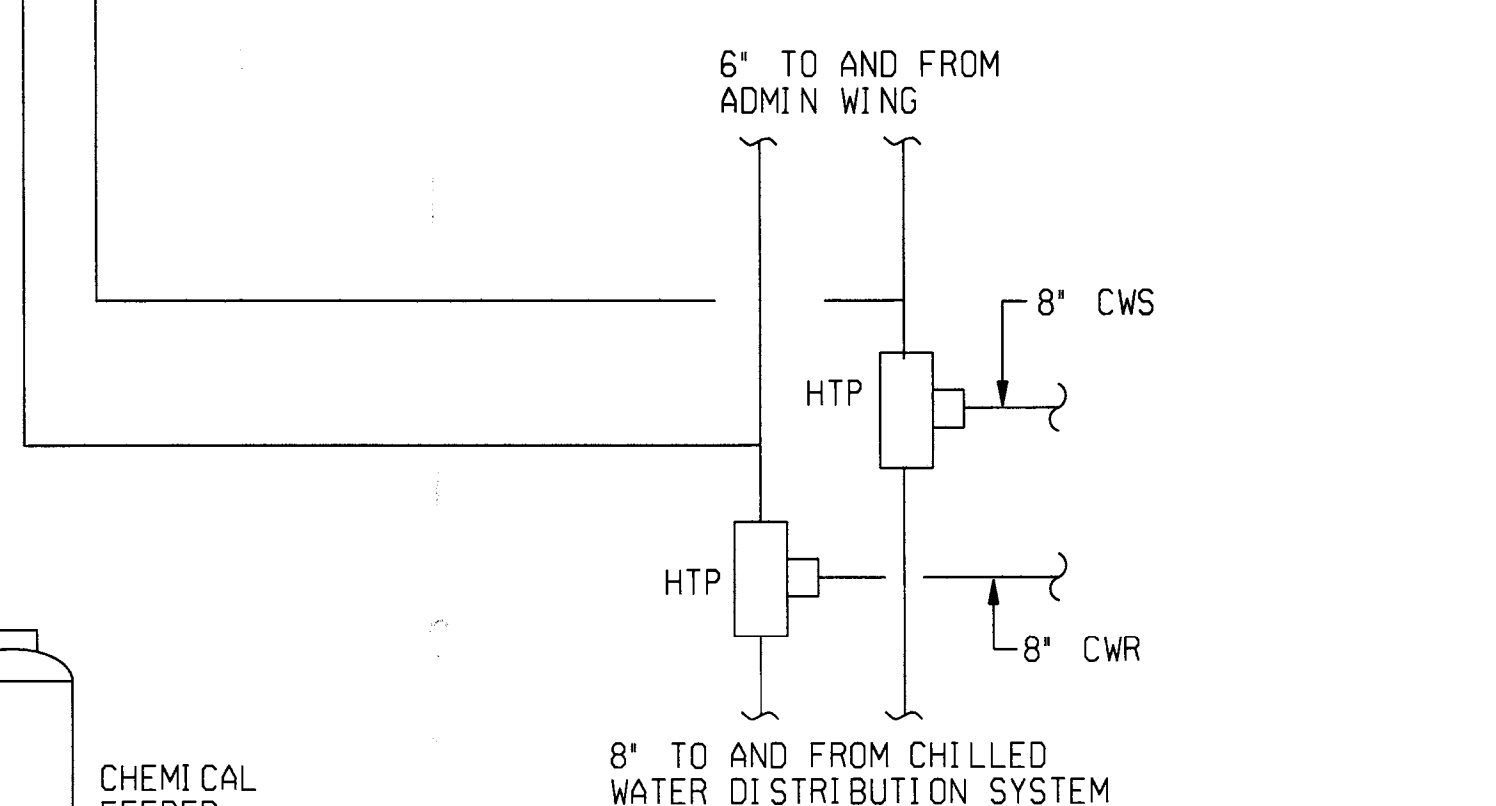
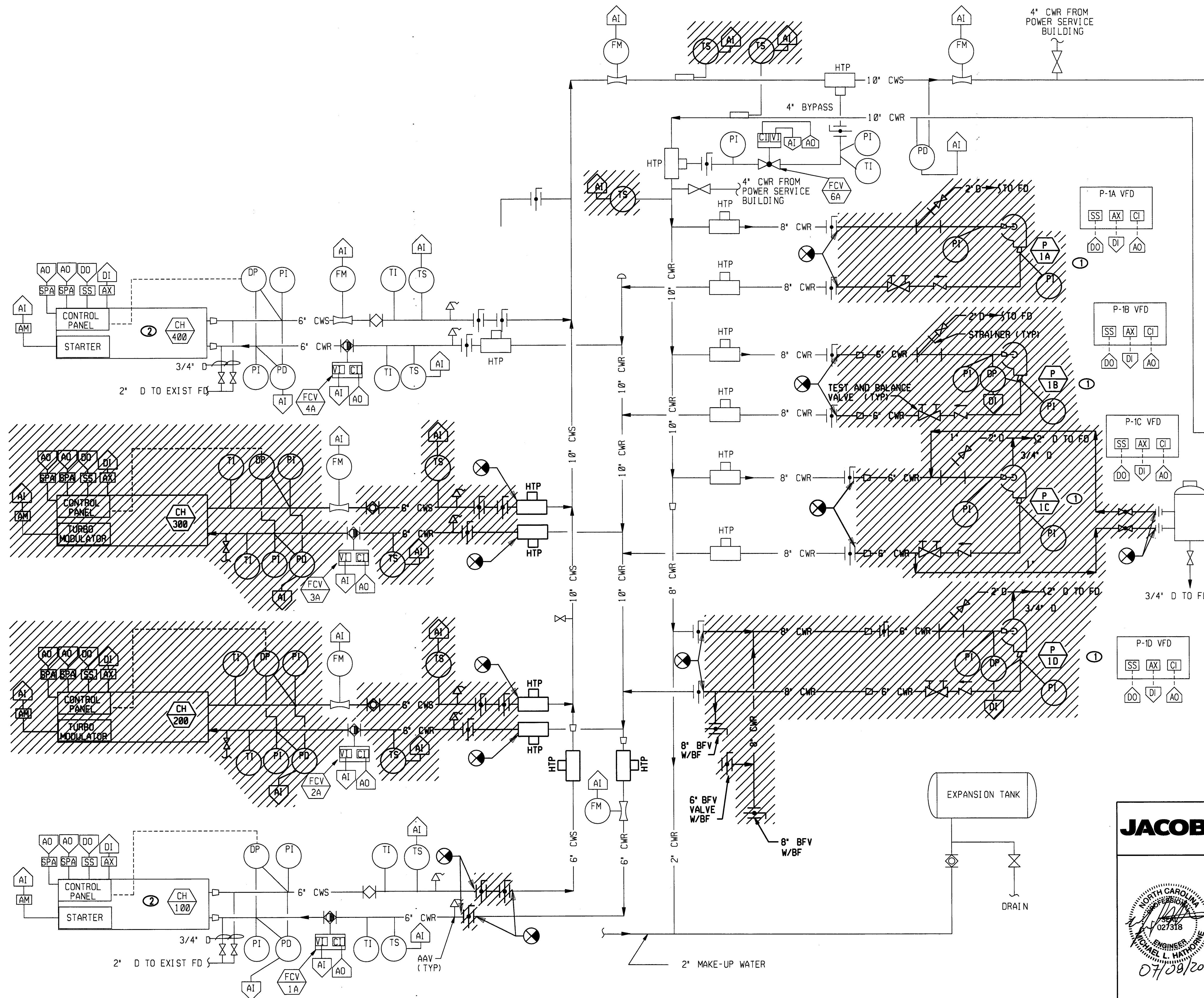
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
<b>DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION</b> WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>					
<b>CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER HEATING HOT WATER RISER DIAGRAM</b>					
FREMONT			OAKLAND (ZOA) ARTCC		
REVIEWED BY	SUBMITTED BY	APPROVED BY			
	RBradfish	<i>[Signature]</i>			
SUBMITTER'S TITLE		APPROVER'S TITLE			
DESIGNED BY M. HATHORNE		ISSUED BY AIRWAY FACILITY DIVISION		DATE 07/08/2015	JCN
DRAWN BY C. HILL		CHECKED BY D. LUKASZEWICZ		DRAWING NO. ZOA - D - CWBMS - M702	REV.

GENERAL SHEET NOTES

A. REFER TO SHEET M001 FOR MECHANICAL ABBREVIATIONS, SYMBOLS AND GENERAL NOTES.

SHEET NOTES

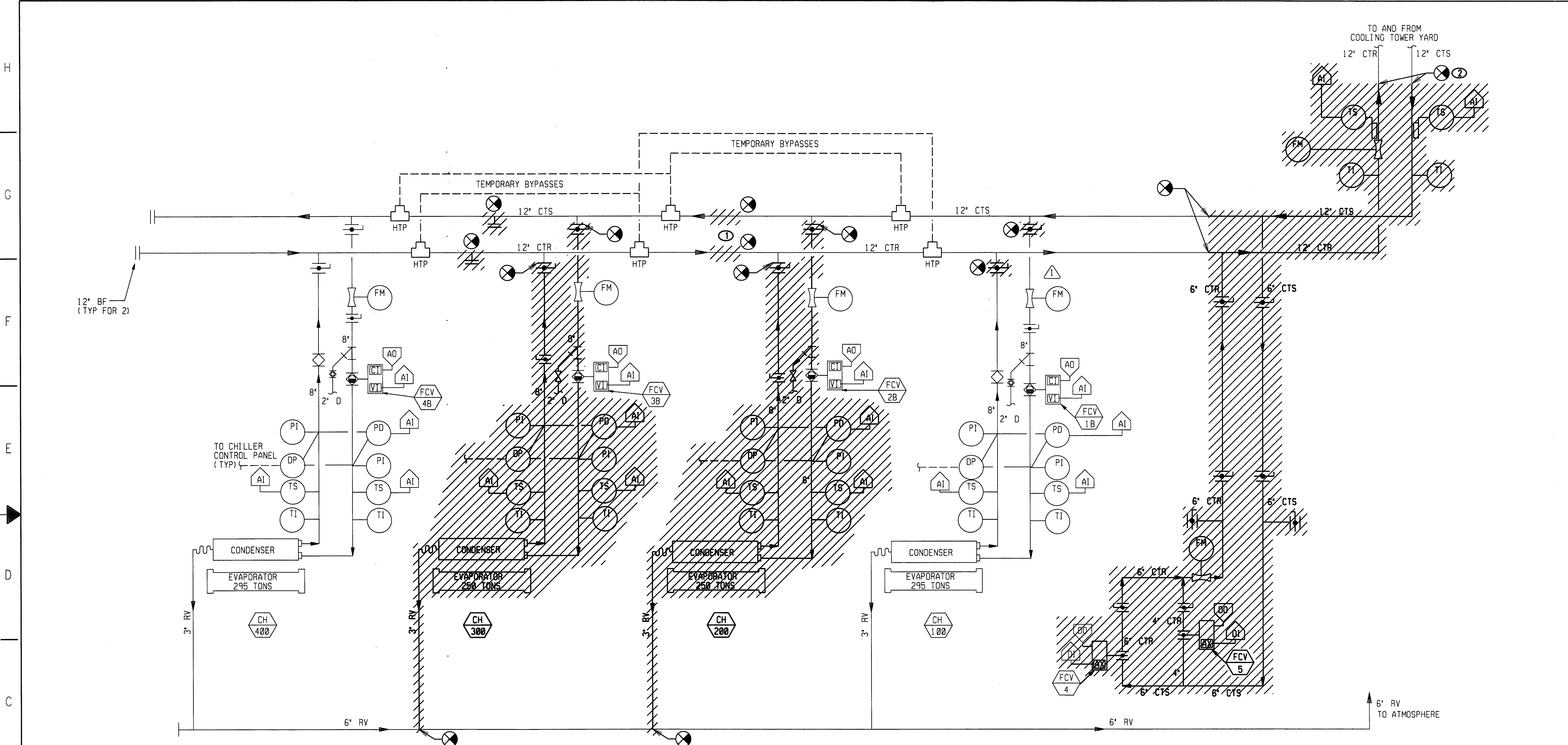
- ① DEMOLISH P-1A AND P-1C PUMP BODY AND P-1B AND P-1D PUMP AND MOTOR, HOUSE KEEPING PAD TO REMAIN. DEMOLITION WORK TO BE COMPLETED ONE AT A TIME.
- ② MECHANICAL EQUIPMENT AND ASSOCIATED DEVICES THAT ARE CURRENTLY BEING PROVIDED UNDER UECS PROJECT ARE NOT SHOWN. EQUIPMENT, DEVICES AND ASSOCIATED CONTROL SHALL BE FIELD COORDINATED AS NECESSARY.



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<b>JACOBS</b>							
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD		
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA							
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER CHILLED WATER SYSTEM SCHEMATIC DIAGRAM - DEMOLITION FREMONT OAKLAND (ZOA) ARTCC							
REVIEWED BY	SUBMITTED BY	APPROVED BY					
	RBradfish	[Signature]					
SUBMITTER'S TITLE		APPROVER'S TITLE					
DESIGNED BY		ISSUED BY		DATE 07/08/2015		JCN	
DRAWN BY		AIRWAY FACILITY DIVISION		DRAWING NO.		REV.	
CHECKED BY				ZOA - D - CWBMS - M703			
OAKLAND ARTCC FREMONT, CALIFORNIA				7/2/2015			

**A8** CHILLED WATER SYSTEM SCHEMATIC DIAGRAM - DEMOLITION ②  
M703 SCALE: NTS



**GENERAL SHEET NOTES**

A. REFER TO SHEET M001 FOR MECHANICAL ABBREVIATIONS, SYMBOLS AND GENERAL NOTES.

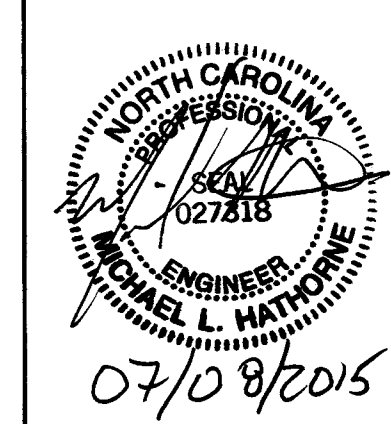
**SHEET NOTES**

- ① 12" MAIN ISOLATION VALVES.
- ② POINT OF TERMINATION IF ALTERNATE DEDUCT IS ACCEPTED.

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**AB** CONDENSER WATER SYSTEM SCHEMATIC DIAGRAM - DEMOLITION  
M704 SCALE: NTS

**JACOBS**



REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD

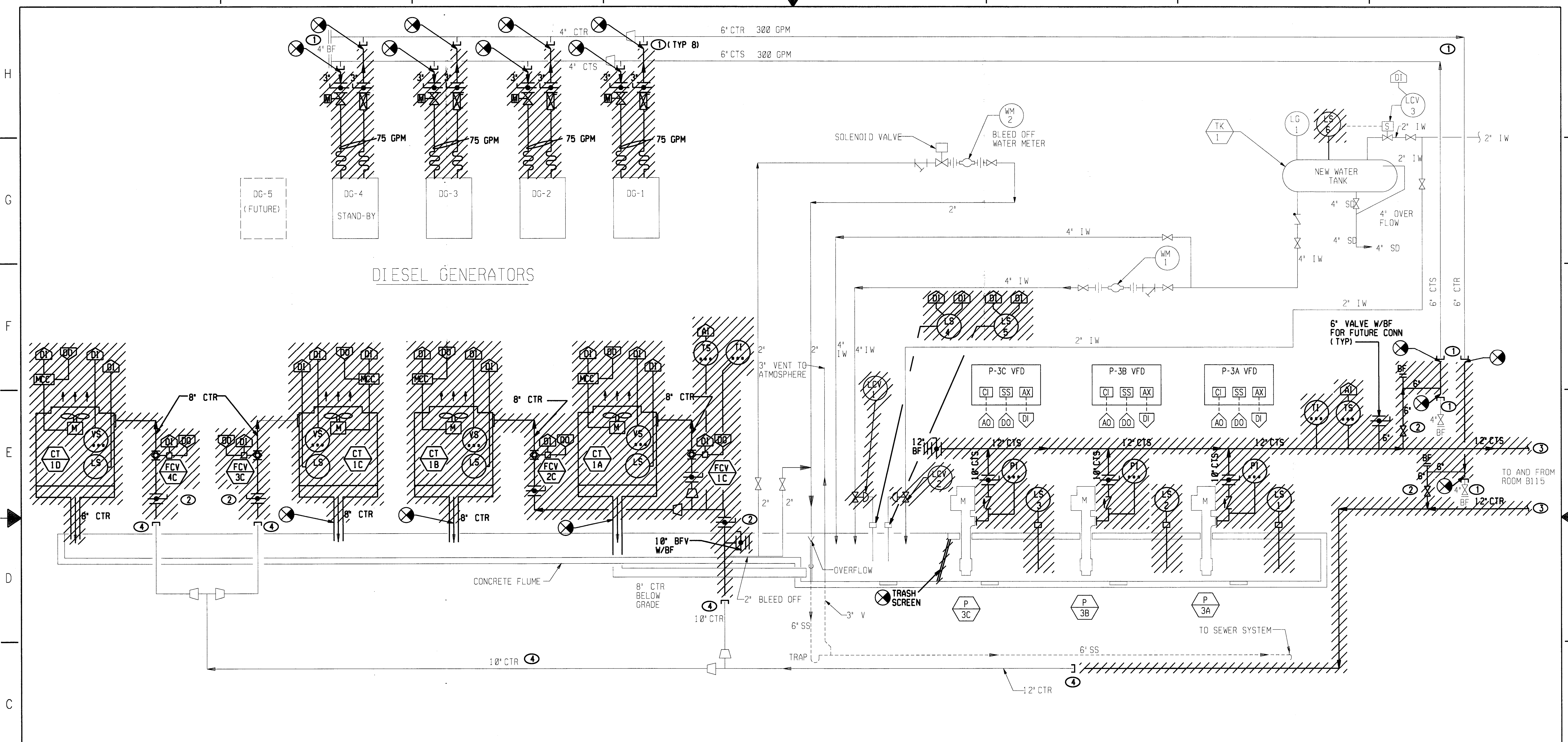
DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION  
WESTERN SERVICE AREA RENTON, WA

CONTROL WING BASEMENT  
AND CHILLER/COOLING TOWER MODERNIZATION  
OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER  
CONDENSER WATER SYSTEM  
SCHEMATIC DIAGRAM - DEMOLITION

FREMONT OAKLAND (ZOA) ARTCC CA

DESIGNED BY M. HATHORNE	ISSUED BY AIRWAY FACILITY DIVISION	DATE 07/08/2015	JCN
DRAWN BY C. HILL	CHECKED BY D. LUKASZEWICZ	DRAWING NO. ZOA - D - CWBMS - M704	REV.

OAKLAND ARTCC  
FREMONT,  
CALIFORNIA



**DIESEL GENERATORS**

**GENERAL SHEET NOTES**

A. REFER TO SHEET M001 FOR MECHANICAL ABBREVIATIONS, SYMBOLS AND GENERAL NOTES.

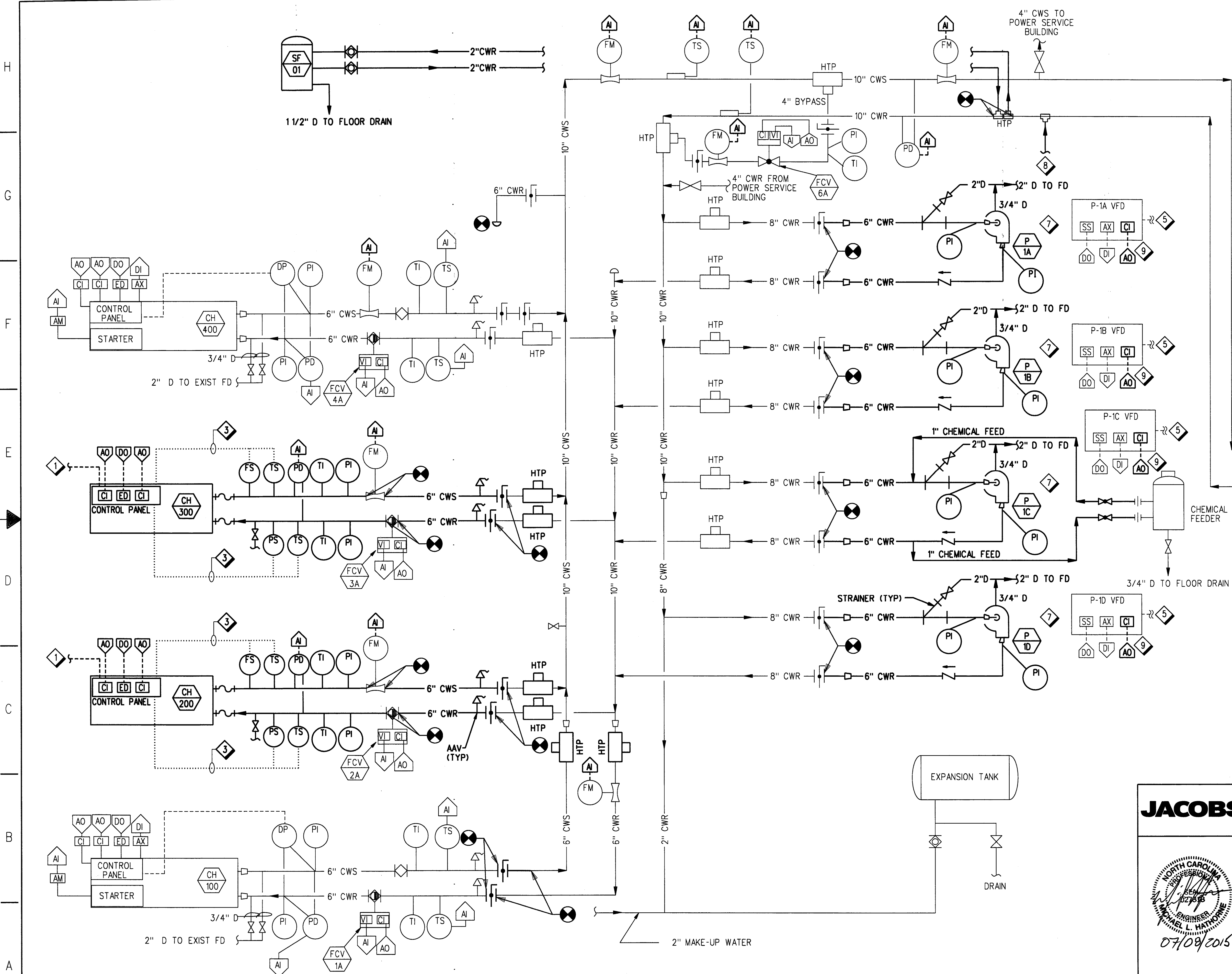
**SHEET NOTES**

- ① CAP COOLING TOWER WATER PIPING TO ENGINE GENERATORS AND ABANDON IN PLACE.
- ② IF ALTERNATE DEDUCT IS ACCEPTED VALVE REPLACEMENT AS PART OF PHASED WORK FOR LINSTOPS TO INSTALL TEMPORARY TOWERS AND PUMPS.
- ③ IF ALTERNATE DEDUCT IS ACCEPTED HOT TAP/LINSTOPS FOR VALVE REPLACEMENT AND TEMPORARY TOWER YARD INSTALLATION.
- ④ IF ALTERNATE DEDUCT IS NOT ACCEPTED CAP COOLING TOWER WATER PIPING TO COOLING TOWERS AND ABANDON IN PLACE.

**A8** COOLING TOWER WATER SYSTEM SCHEMATIC DIAGRAM - DEMOLITION  
**M705** SCALE: NTS

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		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA			
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER COOLING TOWER WATER SYSTEM SCHEMATIC DIAGRAM - DEMOLITION FREMONT OAKLAND (ZOA) ARTCC			
REVIEWED BY SUBMITTED BY SUBMITTER'S TITLE DESIGNED BY DRAWN BY CHECKED BY	RSBradfisch AIRWAY FACILITY DIVISION	APPROVED BY 	DATE 07/08/2015 DRAWING NO. ZOA - D - CWBMS - M705	JCN REV.	APVD

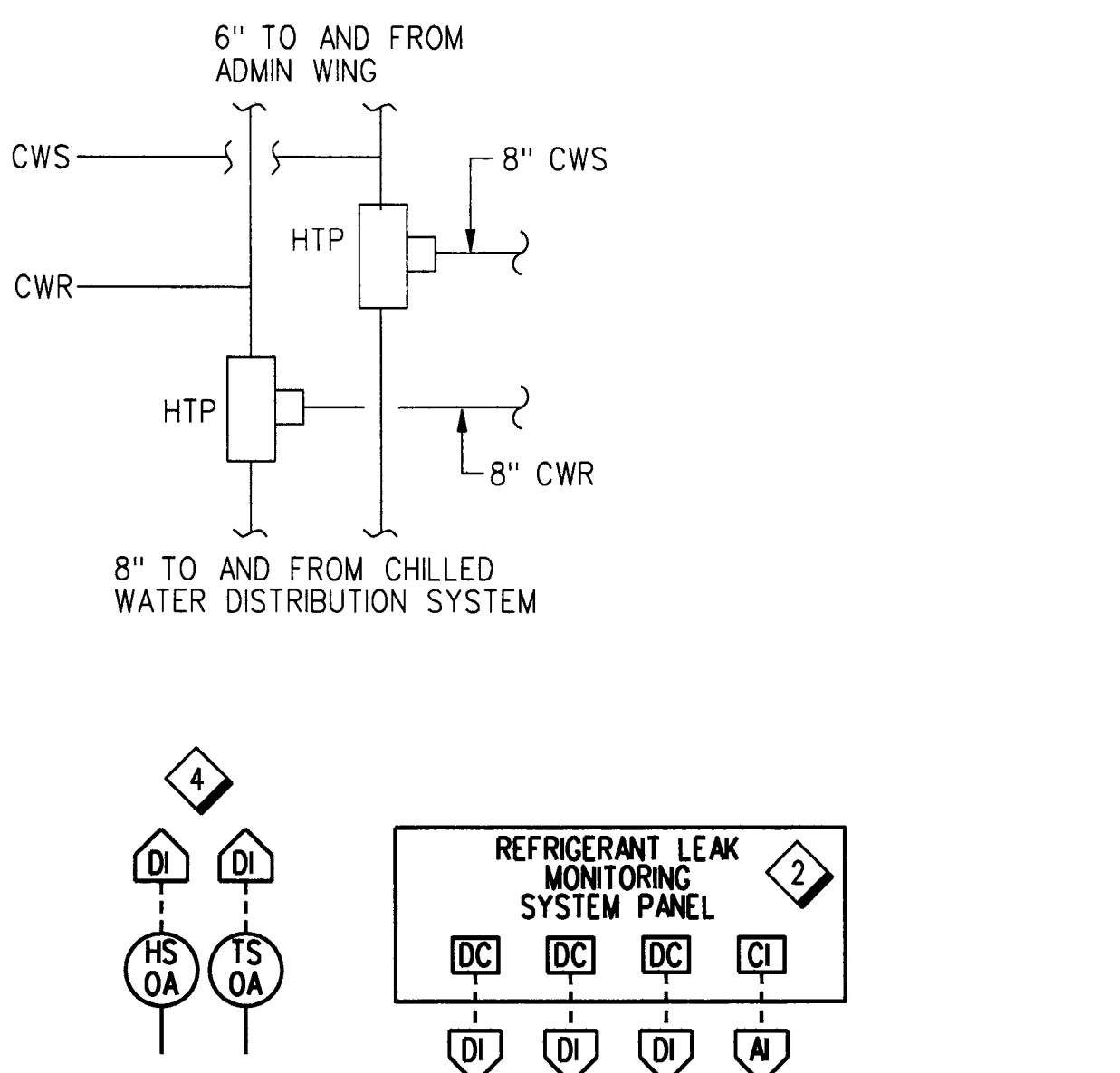


**GENERAL SHEET NOTES**

A. REFER TO SHEET M001 FOR MECHANICAL ABBREVIATIONS, SYMBOLS AND GENERAL NOTES.

**SHEET NOTES**

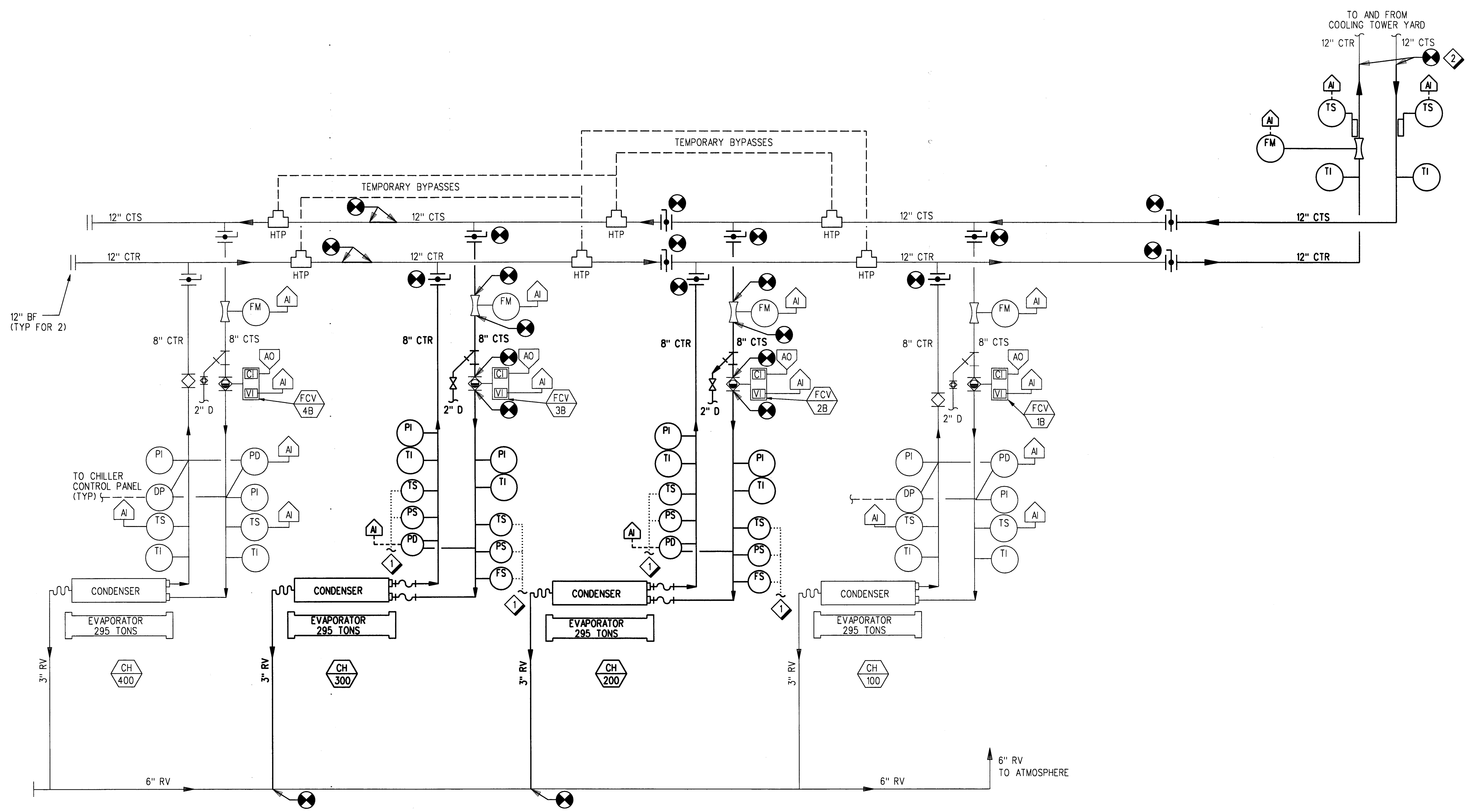
- 1 PROVIDE A NETWORK INTERFACE THAT IS COMPATIBLE WITH THE DDCS AT CHILLER CONTROL PANEL. EACH PANEL SHALL BE CONNECTED TO THE DDCS SO IT CAN BE MONITORED AND/OR CONTROLLED BY DDCS. SEE DDCS POINT FUNCTION SCHEDULE FOR LIST OF CHILLER POINTS TO BE MONITORED BY DDCS THROUGH A NETWORK INTERFACE.
- 2 CONNECT REFRIGERANT LEVEL, ALARMS, SILENCE AND FAULT/TROUBLE POINTS TO DDCS.
- 3 CHILLER CHILLED WATER INLET/OUTLET TEMPERATURE SENSORS, PRESSURE SWITCHES AND FLOW SWITCHES PROVIDED BY CHILLER MANUFACTURER. SEE DDCS POINT FUNCTION SCHEDULE FOR LIST OF CHILLER POINTS TO BE MONITORED BY DDCS THROUGH A NETWORK INTERFACE.
- 4 PROVIDE NEW OUTDOOR AIR TEMPERATURE AND HUMIDITY SENSORS AND CONNECT TO DDCS. COORDINATE LOCATION OF SENSORS WITH COR.
- 5 EACH VFD SHALL BE DIRECTLY CONNECTED TO NEW DDCS USING BACNET FOR REMOTE MONITORING AND CONTROL AS PART OF UESC PROJECT.
- 6 MECHANICAL EQUIPMENT AND ASSOCIATED DEVICES BEING PROVIDED UNDER UESC PROJECT ARE NOT SHOWN IN 95% DESIGN. THEY WILL BE COORDINATED AND SHOWN IN NEXT SUBMITTAL ONCE DESIGN OF UESC PROJECT PROGRESSES FURTHER.
- 7 P-1A AND P-1C PUMP BODY AND SALVAGED MOTOR AND P-1B AND P-1D PUMP AND MOTOR INSTALLED ON EXISTING HOUSE KEEPING PADS.
- 8 3/4" CWR FROM AHU-390
- 9 CONDUIT AND WIRING FOR VFD SPEED CONTROL PROVIDED UNDER UESC PROJECT. CONNECT VFD SPEED CONTROL POINT TO DDCS.



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		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA					
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER CHILLED WATER SYSTEM SCHEMATIC DIAGRAM OAKLAND (ZOA) ARTCC					
FREMONT		REVIEWED BY:	SUBMITTED BY: <i>RSBradfish</i>	APPROVED BY: <i>[Signature]</i>	DATE: 07/08/2015		
OAKLAND ARTCC FREMONT, CALIFORNIA		DESIGNED BY: W. HATHORNE	DRAWN BY: C. HILL	CHECKED BY: D. LUKASZEWICZ	ISSUED BY: AIRWAY FACILITY DIVISION	DRAWING NO.: ZOA - D - CWBMS - M706	

**A8 CHILLED WATER SYSTEM SCHEMATIC DIAGRAM**  
M706 SCALE: NTS



**GENERAL SHEET NOTES**

A. REFER TO SHEET M001 FOR MECHANICAL ABBREVIATIONS, SYMBOLS AND GENERAL NOTES.

**SHEET NOTES**

- 1 CHILLER CONDENSER WATER INLET/OUTLET TEMPERATURE SENSORS, PRESSURE SWITCHES AND FLOW SWITCHES PROVIDED BY CHILLER MANUFACTURER. SEE DDCS POINT FUNCTION SCHEDULE FOR LIST OF CHILLER POINTS TO BE MONITORED BY DDCS THROUGH A NETWORK INTERFACE.
- 2 POINT OF CONNECTION IF ALTERNATE DEDUCT IS ACCEPTED.

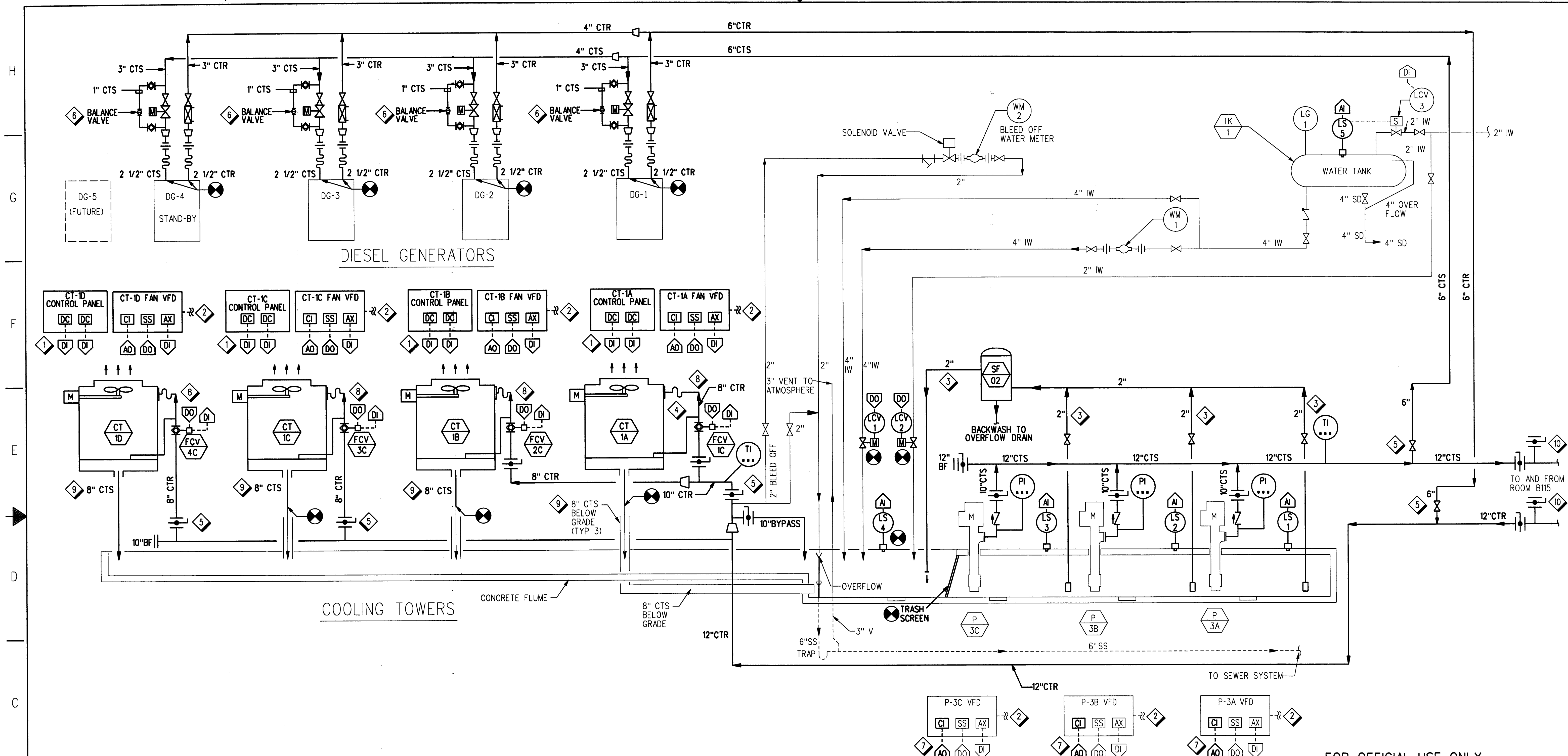
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**AB** CONDENSER WATER SYSTEM SCHEMATIC DIAGRAM  
M707 SCALE: NTS

**JACOBS**



REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA					
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER CONDENSER WATER SYSTEM SCHEMATIC DIAGRAM OAKLAND (ZOA) ARTCC					
REVIEWED BY	SUBMITTED BY	APPROVED BY			
	RSBradfish	[Signature]			
SUBMITTER'S TITLE		APPROVER'S TITLE			
DESIGNED BY M. HATHORNE		ISSUED BY AIRWAY FACILITY DIVISION		DATE 07/08/2015	JCN
DRAWN BY C. HILL		DRAWING NO. ZOA - D - CWBMS - M707		REV.	
CHECKED BY D. LUKASZEWICZ					



DIESEL GENERATORS

COOLING TOWERS

**GENERAL SHEET NOTES**

- A. REFER TO SHEET M001 FOR MECHANICAL ABBREVIATIONS, SYMBOLS AND GENERAL NOTES.

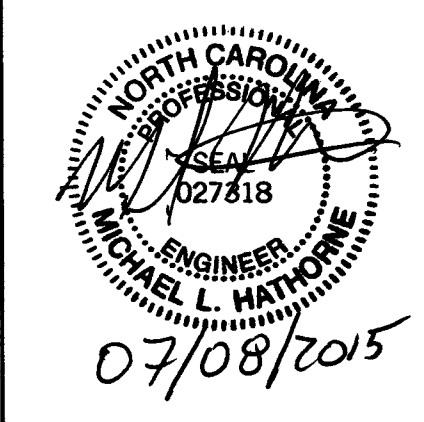
**SHEET NOTES**

- 1 CONNECT FAN VIBRATION ALARM AND OIL-LEVEL ALARM CONTACTS TO DDCS.
- 2 EACH VFD SHALL BE DIRECTLY CONNECTED TO NEW DDCS USING BACNET/IP FOR REMOTE MONITORING AND CONTROL.
- 3 2" SS SUCTION AND DISCHARGE FOR FILTER SYSTEM.
- 4 1" SS RISER DRAIN INSTALLED ABOVE FLOW CONTROL VALVE (TYP 4).
- 5 IF ALTERNATE DEDUCT IS ACCEPTED THEN VALVE REPLACEMENT CRITICAL TO LINESHOP DURATION.
- 6 1" CALIBRATED BALANCE VALVE AROUND FLOW CONTROL VALVE SET TO 10 GPM.
- 7 CONDUIT AND WIRING FOR VFD SPEED CONTROL PROVIDED UNDER UESC PROJECT. CONNECT VFD SPEED CONTROL POINT TO DDCS.
- 8 8" SS RISER PIPING IS SCHEDULE 10 SS FROM FLOW CONTROL VALVE TO TOWER INLET.
- 9 8" SS OUTLET TO FLUME.
- 10 TEMPORARY TOWER WATER CONNECTION.

**M708** COOLING TOWER WATER SYSTEM SCHEMATIC DIAGRAM  
SCALE: NTS

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**JACOBS**

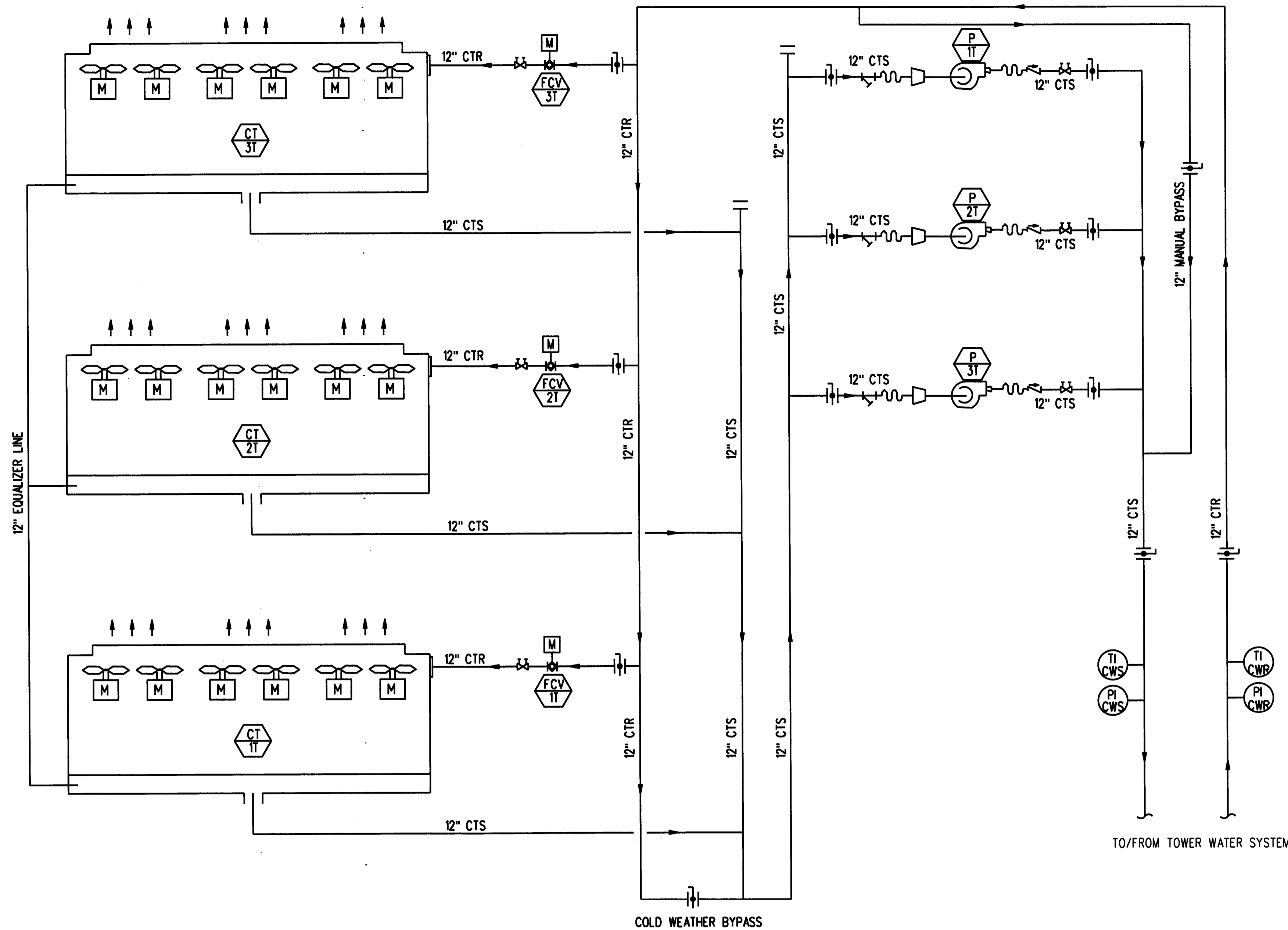


REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
<b>DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION</b> WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>					
<b>CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER COOLING TOWER WATER SYSTEM SCHEMATIC DIAGRAM</b>					
FREMONT <span style="float: right;">OAKLAND (ZOA) ARTCC</span>					
REVIEWED BY	SUBMITTED BY	APPROVED BY			
	RSBradfish	<i>[Signature]</i>			
DESIGNED BY	SUBMITTER'S TITLE	APPROVER'S TITLE			
M. HATHORNE		AIRWAY FACILITY DIVISION			
DRAWN BY	ISSUED BY	DATE	JCN		
C. HILL		07/08/2015			
CHECKED BY	DRAWING NO.	ZOA - D - CWBMS - M708		REV.	
D. LUKASIEWICZ					



GENERAL SHEET NOTES

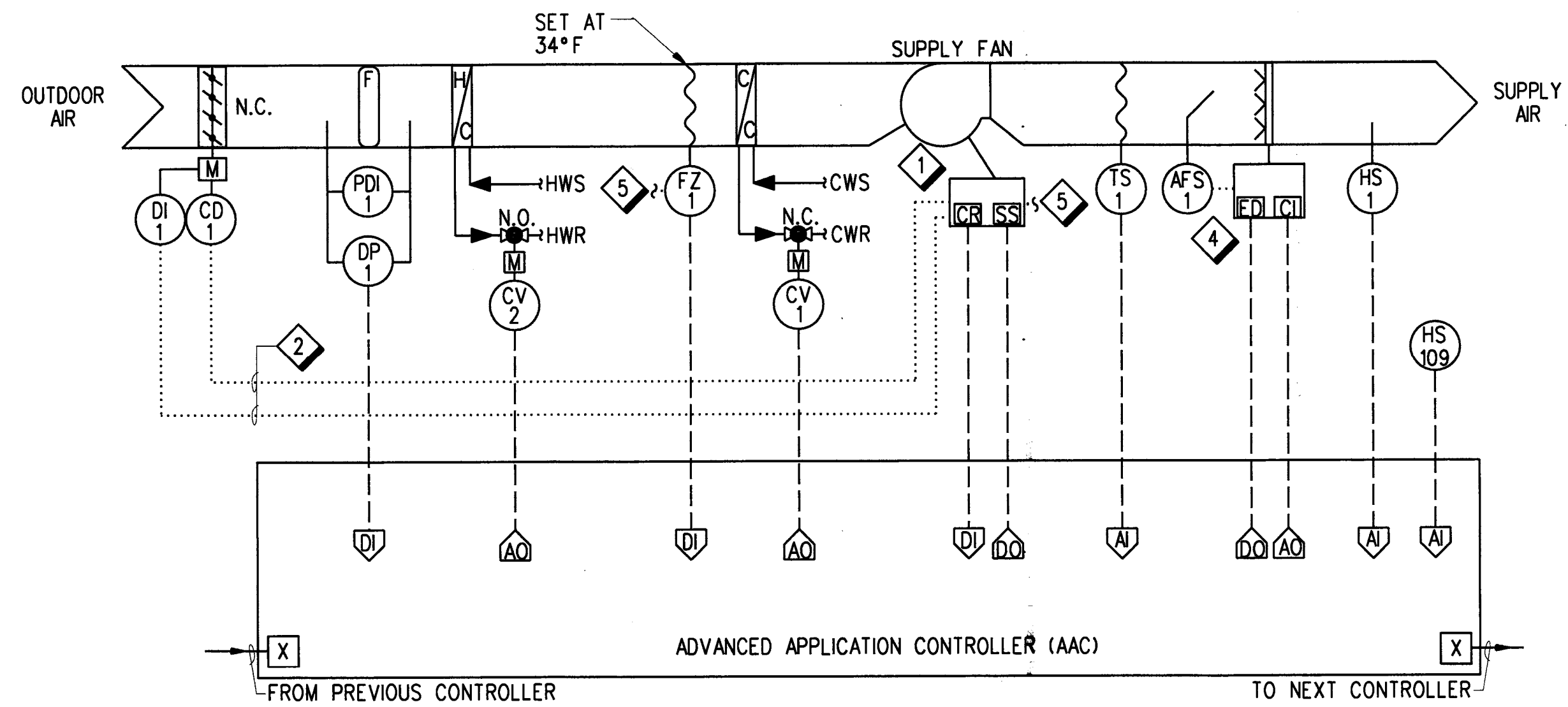
A. REFER TO SHEET M001 FOR MECHANICAL ABBREVIATIONS, SYMBOLS AND GENERAL NOTES.



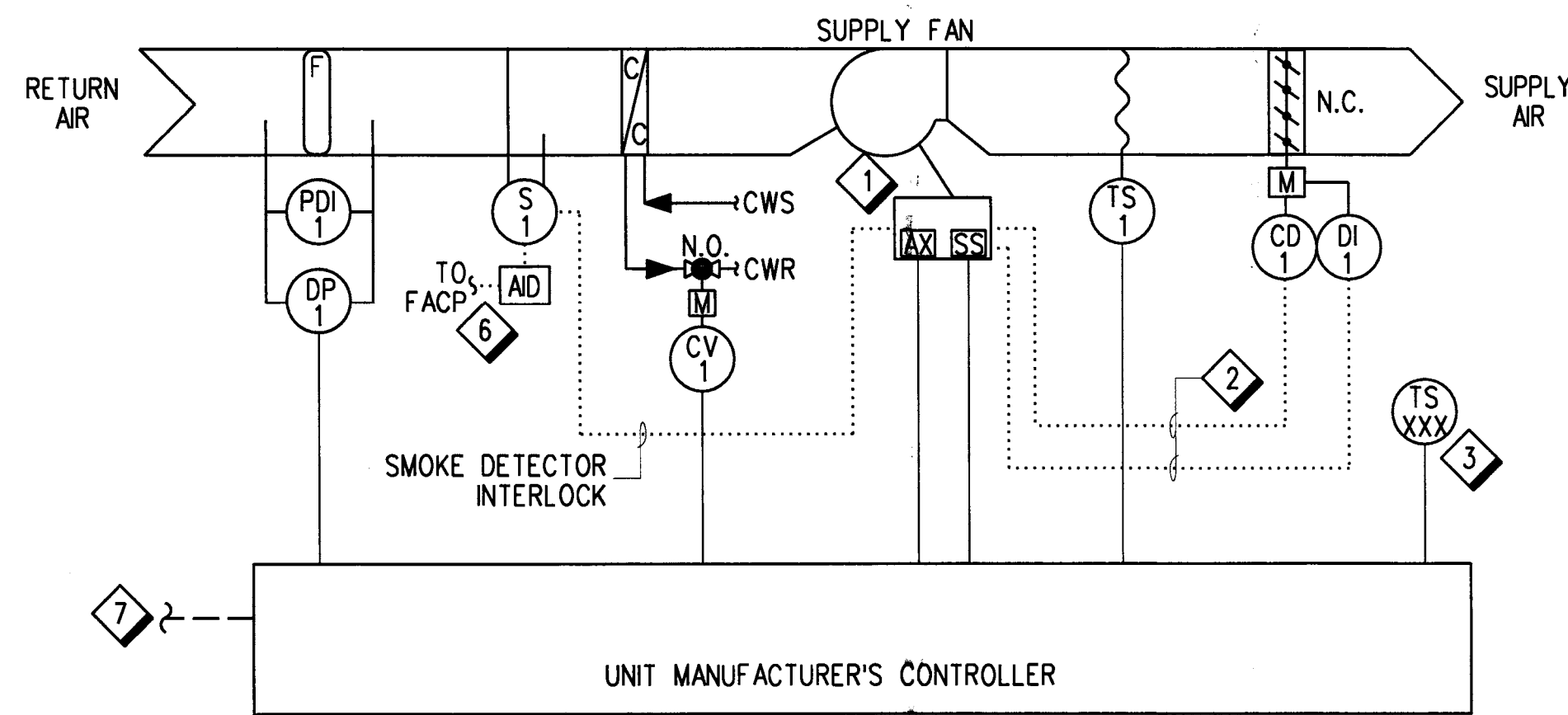
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PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>					
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>					
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER TEMPORARY COOLING TOWER WATER SYSTEM SCHEMATIC DIAGRAM FREMONT <span style="float: right;">OAKLAND (ZOA) ARTCC</span>					
DESIGNED BY M. HATHORNE	ISSUED BY AIRWAY FACILITY DIVISION	DATE 07/08/2015	JCN		
DRAWN BY A. STUBOVANT	CHECKED BY D. LUKASZEWCZ	DRAWING NO. ZOA - D - CWBMS - M709	REV.		

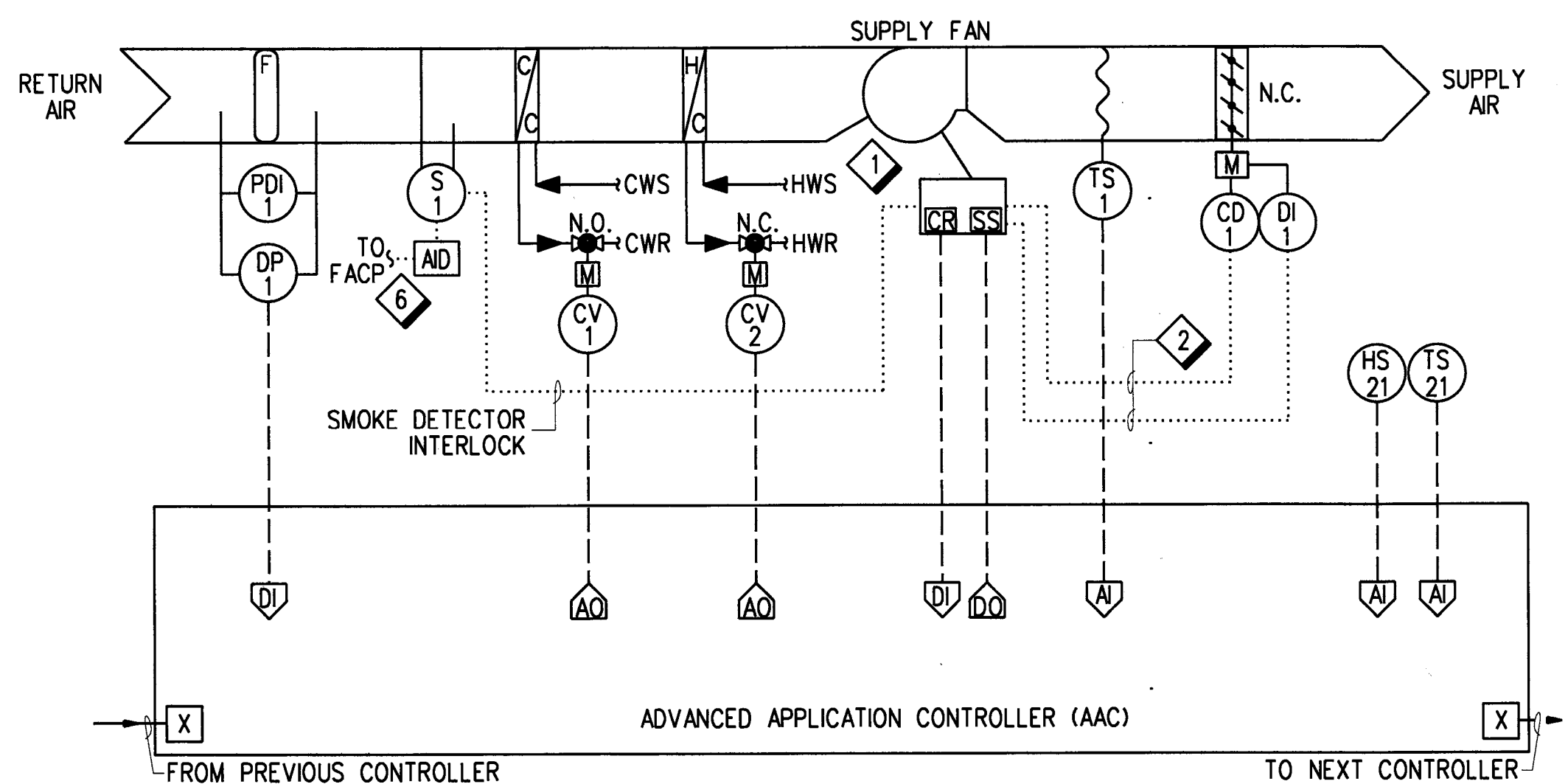
**AB** TEMPORARY COOLING TOWER WATER SYSTEM SCHEMATIC DIAGRAM  
**M709** SCALE: NTS



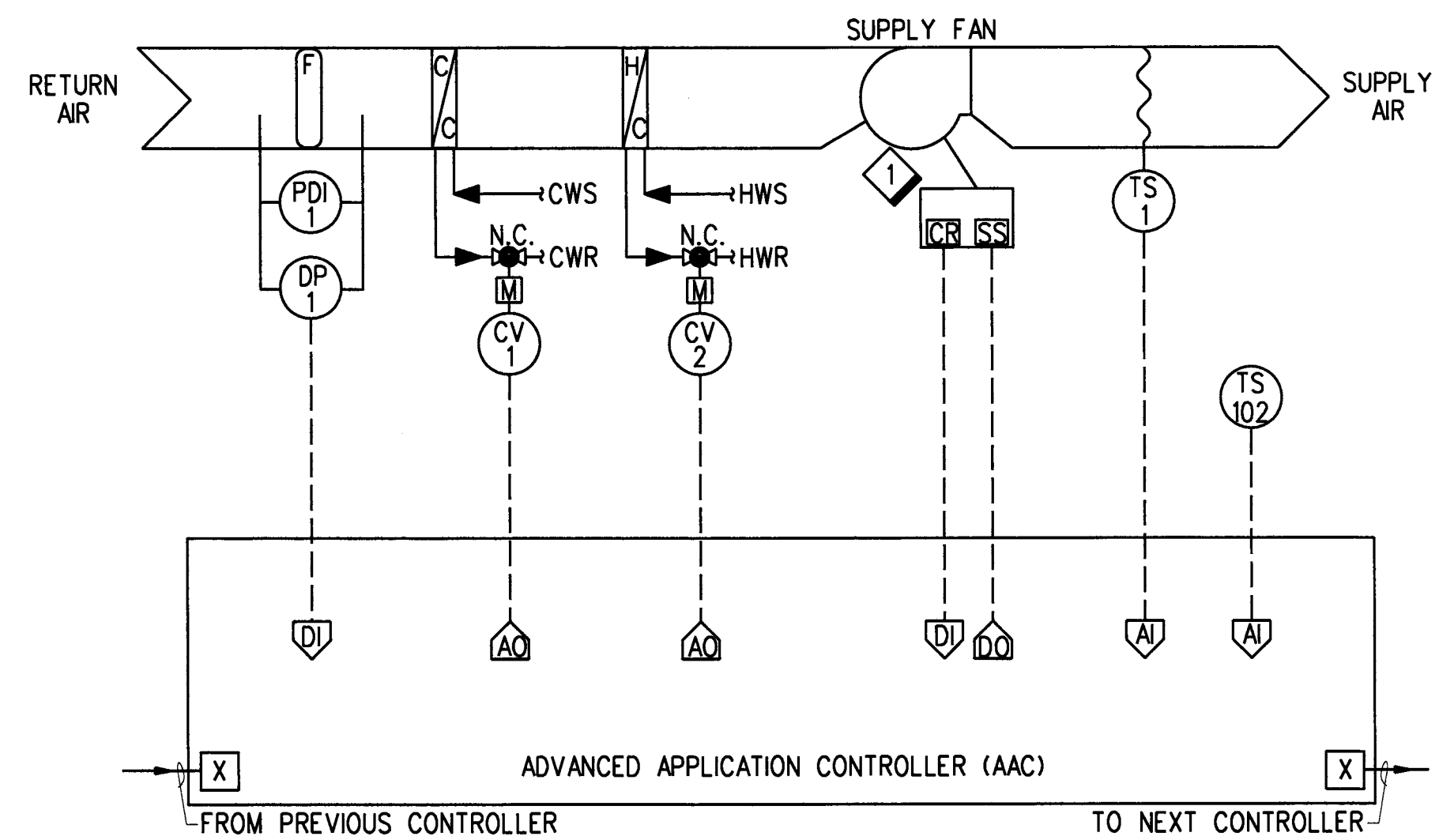
**E7** OUTDOOR AIR HANDLING UNIT - CONTROL DIAGRAM  
M801 NTS AHU-109



**E4** COMPUTER ROOM AIR HANDLING UNIT - CONTROL DIAGRAM  
M801 NTS AHU-105 AND AHU-106



**B8** COMPUTER ROOM AIR HANDLING UNIT - CONTROL DIAGRAM  
M801 NTS AHU-21



**B5** AIR HANDLING UNIT - CONTROL DIAGRAM  
M801 NTS AHU-102

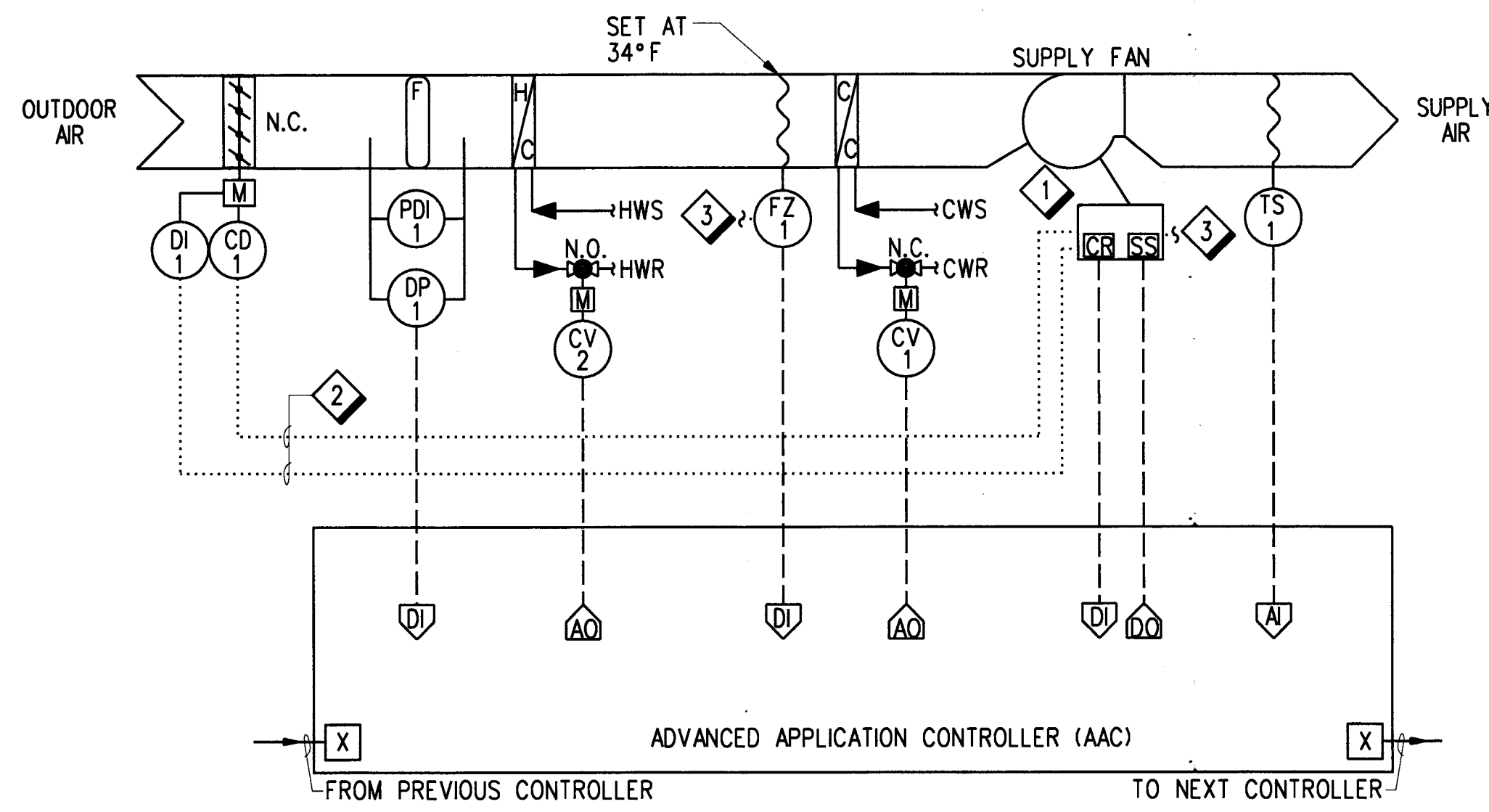
- GENERAL SHEET NOTES:**
- A. FOR SYMBOLS AND ABBREVIATIONS REFER TO SHEET M001 AND M002.
  - B. SEE DIVISION 23 "HVAC INSTRUMENTATION AND CONTROLS" FOR SEQUENCE OF OPERATION.
  - C. ADDRESSABLE INTERFACE DEVICES PROVIDED AND CONNECTED TO FIRE ALARM SYSTEM BY DIVISION 28. SEE DIVISION 28, "FIRE ALARM AND DETECTION SYSTEM" FOR ADDITIONAL INFORMATION.

- SHEET NOTES:**
- 1 MOTOR STARTER
  - 2 PROVIDE INTERLOCK WIRING BETWEEN FAN AND ASSOCIATED ISOLATION DAMPER. WHEN FAN IS COMMANDED TO START IN EITHER HAND OR AUTO MODE, ISOLATION DAMPER SHALL OPEN. ONCE ISOLATION DAMPER IS PROVEN OPEN BY ASSOCIATED DAMPER POSITION SWITCH, FAN SHALL START. FAN SHALL STOP IF ASSOCIATED ISOLATION DAMPER CLOSES.
  - 3 XXX REPRESENTS ASSOCIATED UNIT NUMBER. SEE MECHANICAL FLOOR PLANS FOR LOCATIONS OF SPACE TEMPERATURE SENSORS.
  - 4 HARDWIRE INTERLOCK HUMIDIFIER WITH AIR FLOW SWITCH. WHEN AIR FLOW SWITCH INDICATES THAT THERE IS NO AIR FLOW, HUMIDIFIER SHALL BE DISABLED.
  - 5 PROVIDE COVERAGE OF 12 INCHES OF ACTIVE ELEMENT PER SQUARE FOOT OF COIL. HARD WIRE INTERLOCK FREEZESTAT WITH FAN TO STOP FAN WHEN FREEZESTAT IS ACTIVATED.
  - 6 UNIT MOUNTED SMOKE DETECTOR BY UNIT MANUFACTURER AND ADDRESSABLE INTERFACE DEVICE (AID) WITH INTERLOCK WIRING BY DIVISION 28.
  - 7 MANUFACTURER'S PACKAGED CONTROLLER ASSOCIATED WITH COMPUTER ROOM AIR HANDLING UNITS SHALL COMMUNICATE WITH NEW DDCS VIA UNIT MOUNTED, BACNET COMPATIBLE NETWORK CARD. NETWORK CARD AT EACH UNIT SHALL BE CONNECTED TO ETHERNET HUB USING CAT 5 TO COMMUNICATE WITH NEW DDCS. SEE POINT FUNCTION SCHEDULES FOR THE REQUIRED CONTROL AND MONITORING POINTS.

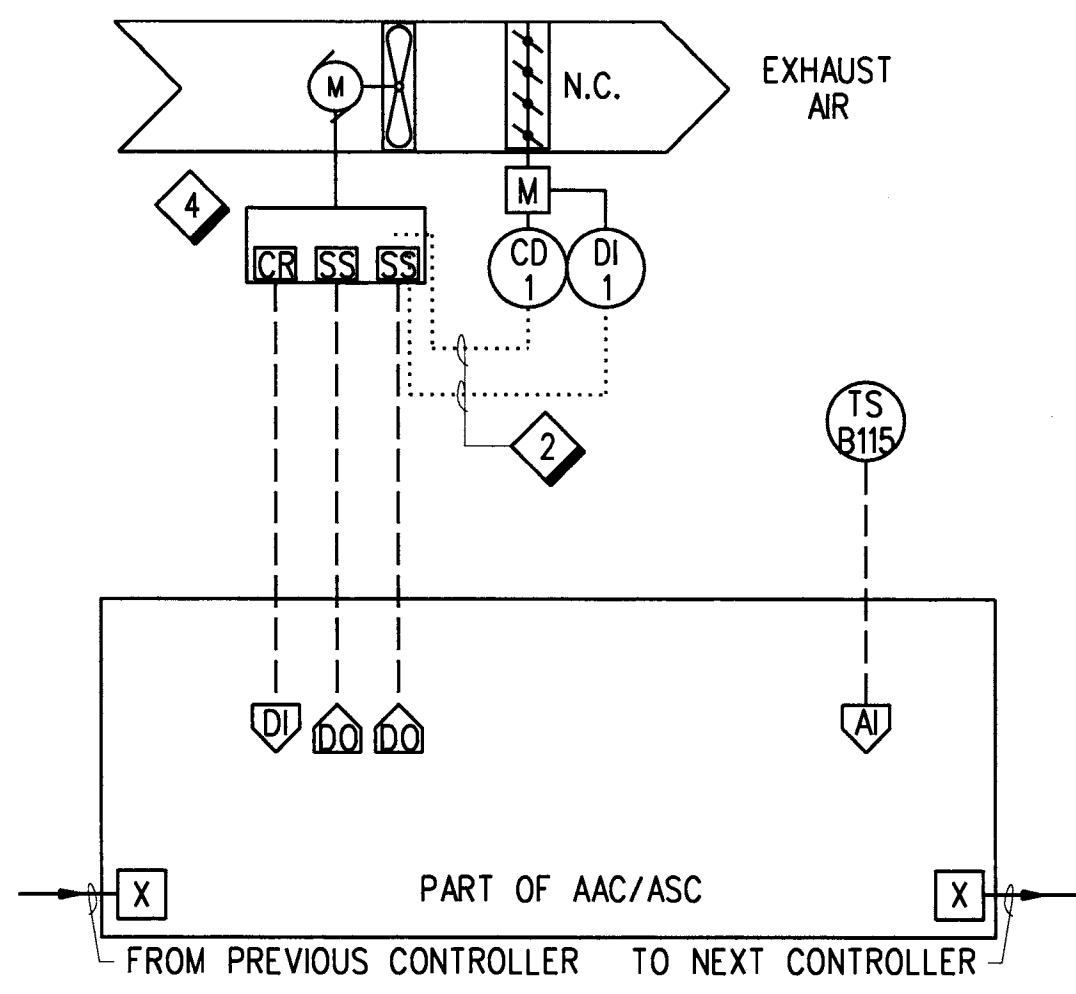
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PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>					
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA					
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER HVAC CONTROL DIAGRAMS FREMONT OAKLAND (ZOA) ARTCC					
DESIGNED BY R. JEON	ISSUED BY AIRWAY FACILITY DIVISION		DATE 07/08/2015	JCN	REV.
DRAWN BY R. JEON	CHECKED BY W. HORN		DRAWING NO. ZOA - D - CWBMM5 - M801		

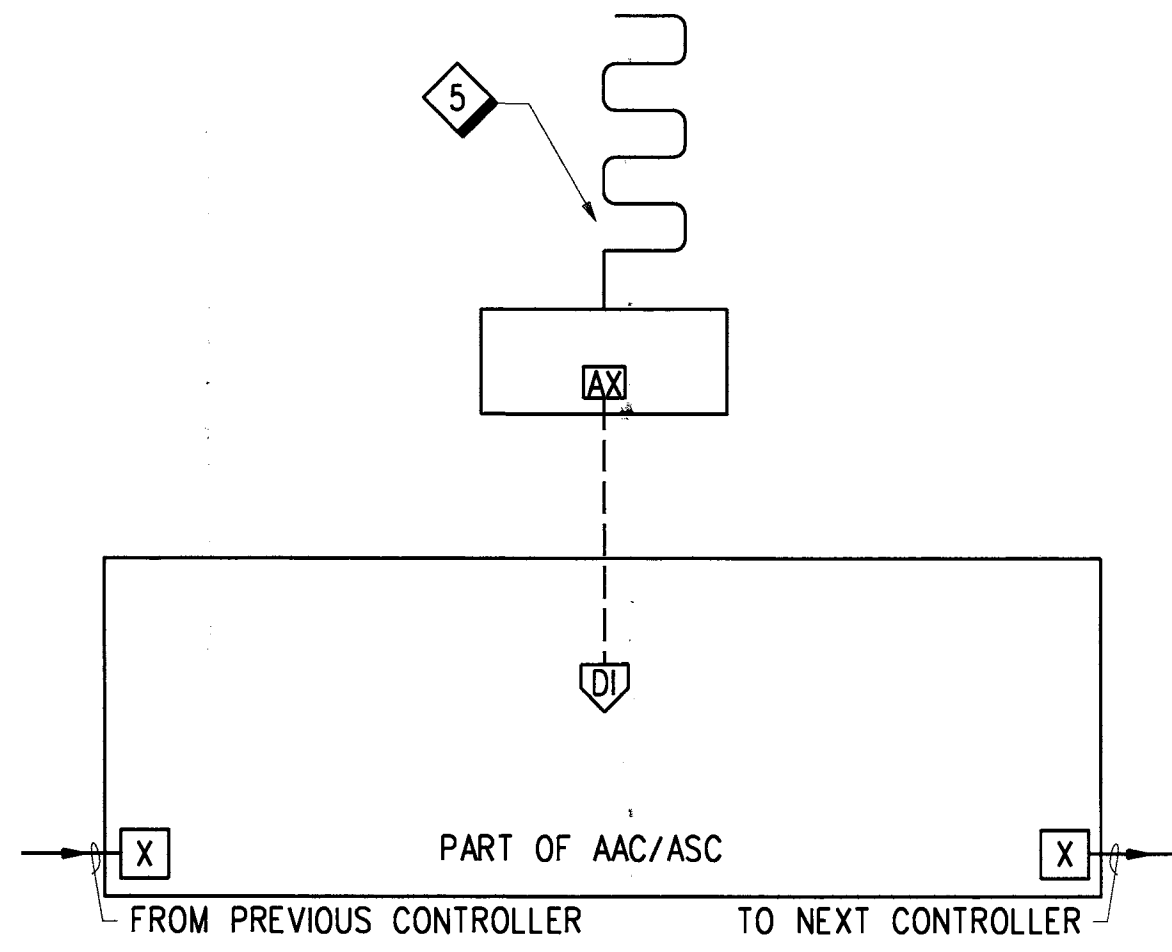




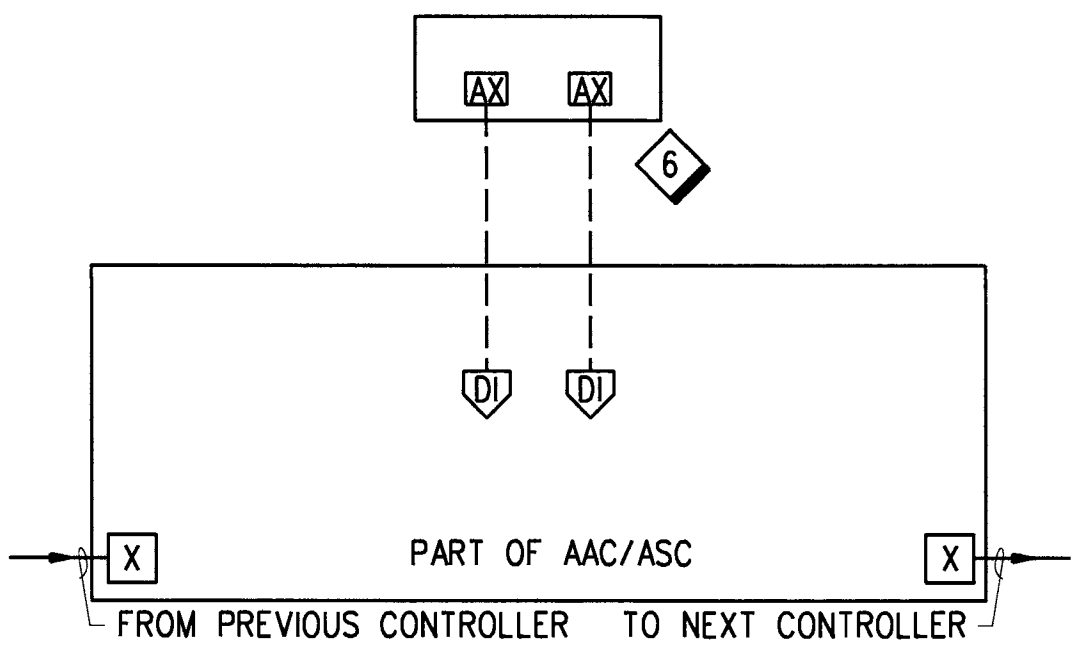
**F8** OUTDOOR AIR HANDLING UNIT - CONTROL DIAGRAM  
M802 NTS AHU-390



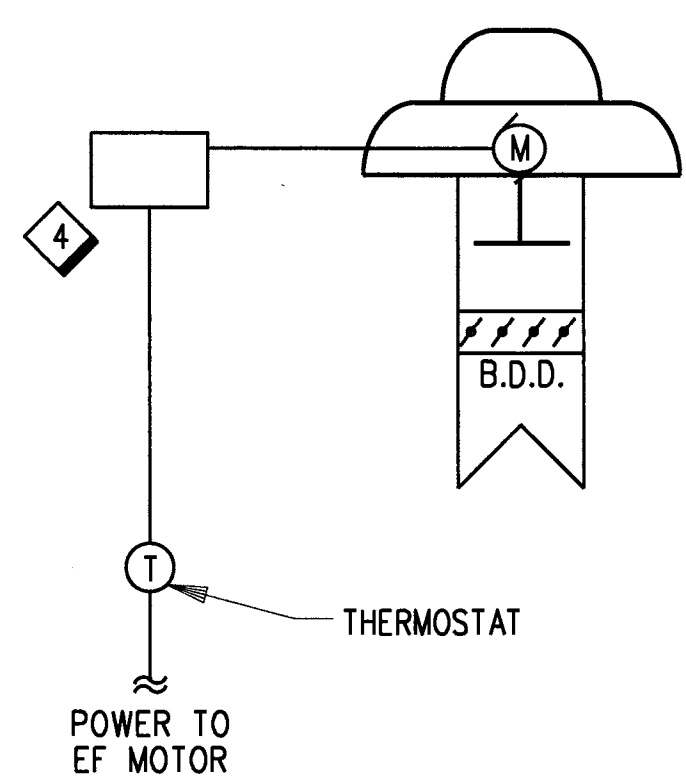
**F5** EXHAUST FAN - CONTROL DIAGRAM  
M802 NTS EF-310



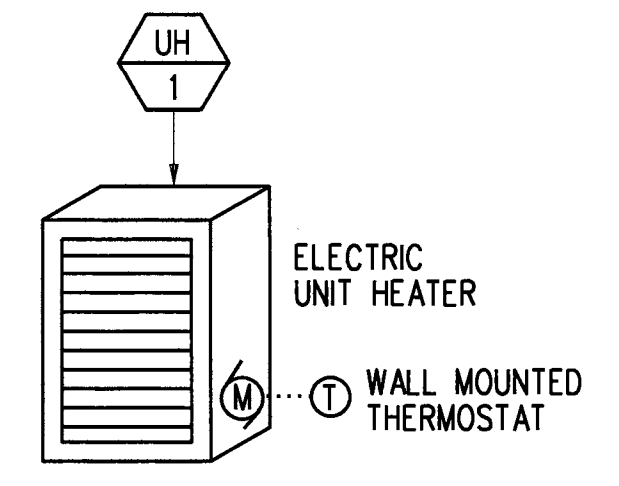
**F3** WATER LEAK DETECTION MONITORING  
M802 NTS TYPICAL



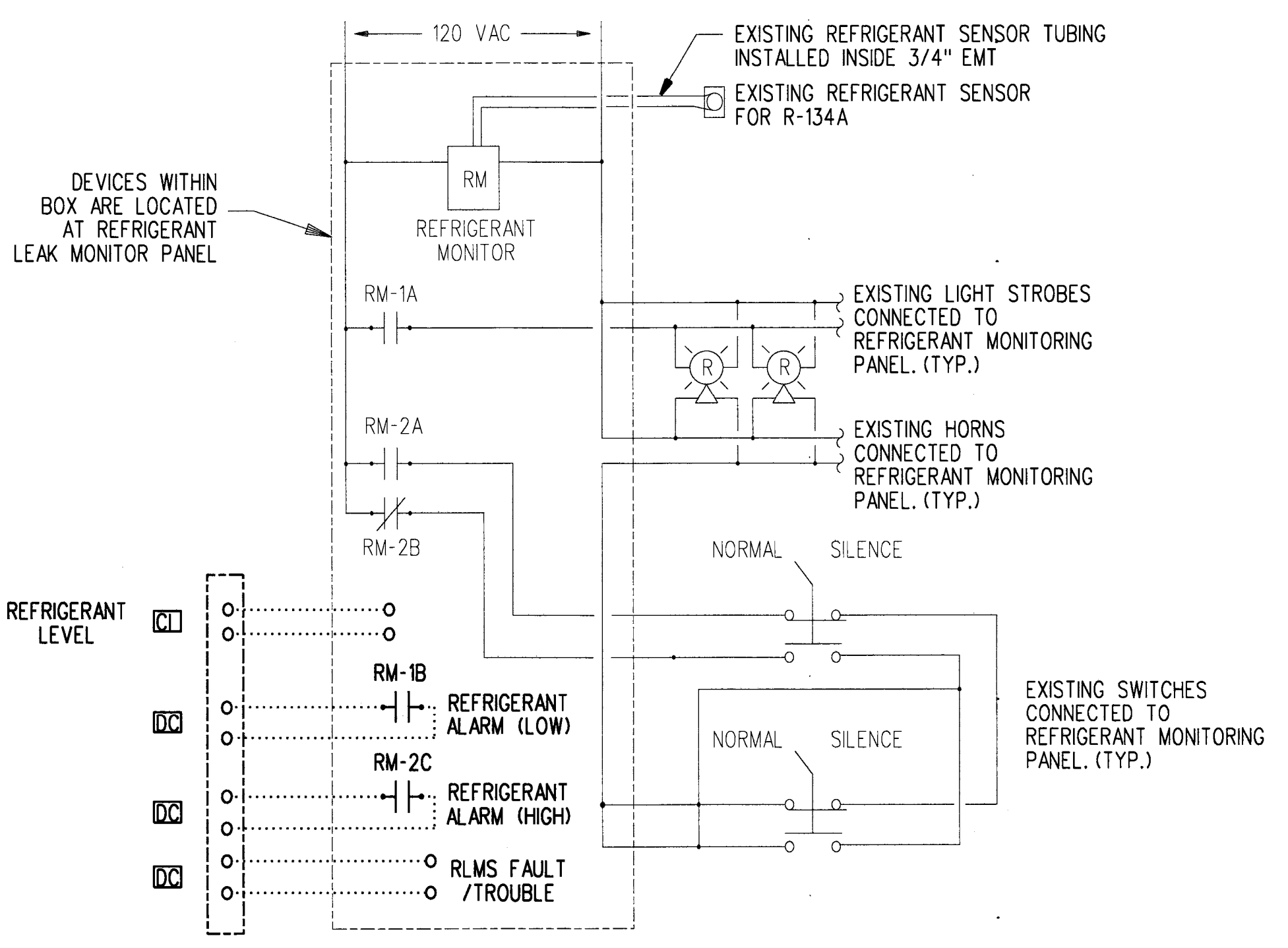
**D5** CONTROL PANEL UPS MONITORING  
M802 NTS TYPICAL



**A5** EXHAUST FAN - CONTROL DIAGRAM  
M802 NTS EF-1



**A4** ELECTRIC UNIT HEATER  
M802 NTS TYPICAL



**A8** REFRIGERANT LEAK MONITOR - CONTROL DIAGRAM  
M802 NTS

**GENERAL SHEET NOTES:**

- A. FOR SYMBOLS AND ABBREVIATIONS REFER TO SHEET M001 AND M002.
- B. SEE DIVISION 23 "HVAC INSTRUMENTATION AND CONTROLS" FOR SEQUENCE OF OPERATION.

**SHEET NOTES:**

- 1 MOTOR STARTER
- 2 PROVIDE INTERLOCK WIRING BETWEEN FAN AND ASSOCIATED ISOLATION DAMPER. WHEN FAN IS COMMANDED TO START IN EITHER HAND OR AUTO MODE, ISOLATION DAMPER SHALL OPEN. ONCE ISOLATION DAMPER IS PROVEN OPEN BY ASSOCIATED DAMPER POSITION SWITCH, FAN SHALL START. FAN SHALL STOP IF ASSOCIATED ISOLATION DAMPER CLOSES.
- 3 PROVIDE COVERAGE OF 12 INCHES OF ACTIVE ELEMENT PER SQUARE FOOT OF COIL. HARD WIRE INTERLOCK FREEZESTAT WITH FAN TO STOP FAN WHEN FREEZESTAT IS ACTIVATED.
- 4 FAN DISCONNECT
- 5 CONNECT WATER LEAK DETECTION ALARM POINT TO DDCS. SEE MECHANICAL FLOOR PLANS FOR LOCATIONS OF LEAK DETECTION PANEL AND CABLES.
- 6 CONNECT UNINTERRUPTIBLE POWER SUPPLY(UPS) STATUS AND ALARM POINTS TO DDCS. EACH PANEL CONTAINS BACNET ROUTER, ETHERNET SWITCH AND DDCP WILL BE PROVIDED WITH UPS.

**REFRIGERANT LEAK MONITOR NOTES:**

- 1. RM-1 TRANSFERS AT 100 PPM FOR R-134A.
- 2. RM-2 TRANSFERS AT 300 PPM FOR R-134A.
- 3. ..... DENOTES WIRING TO DDCP
- 4. INDICATED CONTROL DIAGRAMS ARE SHOWN GENERICALLY ONLY AND MAY DIFFER FROM THE ACTUAL PROCURED EQUIPMENT.

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		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA OAKLAND (ZOA) ARTCC			
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER HVAC CONTROL DIAGRAMS			
REVIEWED BY SUBMITTED BY SUBMITTER'S TITLE DESIGNED BY DRAWN BY CHECKED BY	R. JEON R. JEON R. JEON W. HORN	APPROVED BY APPROVER'S TITLE ISSUED BY AIRWAY FACILITY DIVISION	DATE 07/08/2015 JCN	DRAWING NO. ZOA - D - CWBMS - M802	REV. 1

**GENERAL SHEET NOTES:**

- A. FOR SYMBOLS AND ABBREVIATIONS REFER TO SHEET M001 AND M002.
- B. SEE DIVISION 23 "HVAC INSTRUMENTATION AND CONTROLS" FOR SEQUENCE OF OPERATION.

**SHEET NOTES:**

- 1 LISTED ALARM LIMITS ARE INITIAL SETTINGS ONLY. ACTUAL ALARM LIMITS MAY DIFFER DEPENDING ON ACTUAL OPERATING CONDITIONS.
- 2 CONTROL AND MONITORING POINTS ASSOCIATED WITH COMPUTER ROOM AIR HANDLING UNIT SHALL BE MAPPED OVER AND INTEGRATED INTO NEW DDCS VIA NETWORK CARD FOR REMOTE CONTROL AND MONITORING OF MANUFACTURER'S PACKAGED CONTROLLERS.

- DENOTES NEW DDCS POINT
- DENOTES EXISTING DDCS POINT
- DENOTES NETWORK POINT
- DENOTES EXISTING NETWORK POINT

**DDCS POINT FUNCTION SCHEDULE**

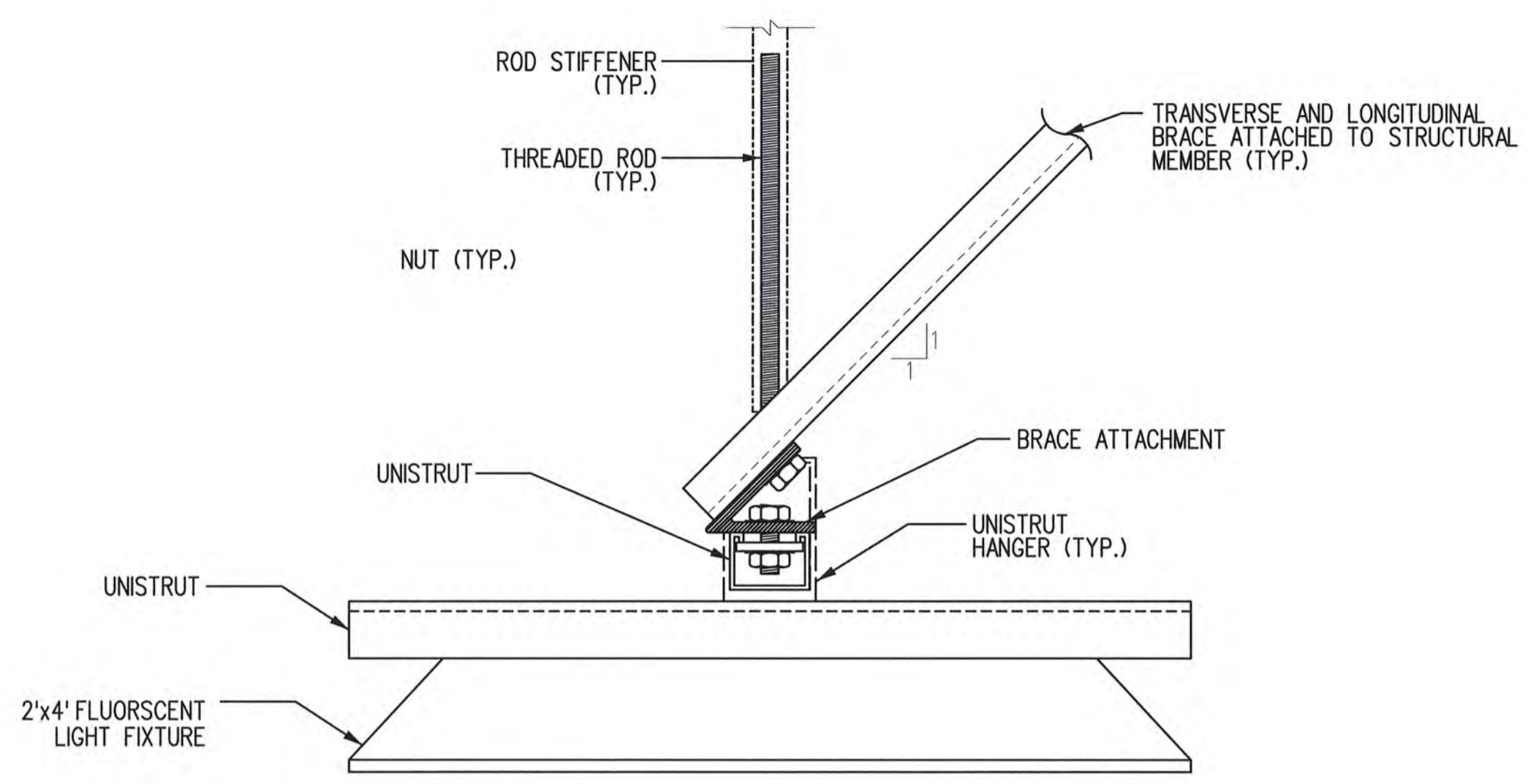
POINT DESCRIPTION	HARDWARE						FAIL MODE				SOFTWARE																GRAPHICS				ALARM LIMITS		NOTES										
	DEVICE CODE	SUPERVISED WIRING	ANALOG INPUT	DIGITAL INPUT	ADDRESSABLE INPUT	ACCUMULATOR INPUT	ANALOG OUTPUT	2 STATE DIGITAL OUTPUT	3 STATE DIGITAL OUTPUT	ADDRESSABLE OUTPUT	FAIL ON (OPEN)	FAIL OFF (CLOSED)	LAST COMMAND STATE	LOCAL DEFAULT	NETWORK POINT	CALCULATED POINT	MAINTENANCE ALARM	CRITICAL ALARM	PROGRAM START (STOP)	OPTIMUM START (STOP)	MORNING WARM/COOL	UNOCCUPIED SETPOINT	DEMAND LIMIT	DUTY CYCLE	ENTHALPY ECONOMIZER	DIRECT DIGITAL CONTROL	SET POINT ADJUSTMENT	TOTALIZER	RUN TIME	LIGHTING CONTROL	TENANT BILLING	ALARM INSTRUCTIONS		MAINTENANCE WORK ORDER	ALARM LIMITS	SOFTWARE INTERLOCKS	2D GRAPHICS	3D GRAPHICS	FLOOR PLAN	POINT LIST	LOW LIMIT	HIGH LIMIT	
<b>OUTDOOR AIR HANDLING UNIT (AHU-109)</b>																																											
SUPPLY FAN START/STOP	SS																																										
SUPPLY FAN STATUS	CR																																										
SUPPLY AIR TEMPERATURE	TS																																										
SUPPLY AIR HUMIDITY	HS																																										
SPACE HUMIDITY	HS																																										
FILTER ALARM	DP																																										
FREEZE/STAT ALARM	FZ																																										
COOLING COIL CONTROL VALVE	CV																																										
HEATING COIL CONTROL VALVE	CV																																										
HUMIDIFIER ENABLE/DISABLE	ED																																										
HUMIDIFIER CONTROL	CI																																										
<b>OUTDOOR AIR HANDLING UNIT (AHU-390)</b>																																											
SUPPLY FAN START/STOP	SS																																										
SUPPLY FAN STATUS	CR																																										
SUPPLY AIR TEMPERATURE	TS																																										
FILTER ALARM	DP																																										
FREEZE/STAT ALARM	FZ																																										
COOLING COIL CONTROL VALVE	CV																																										
HEATING COIL CONTROL VALVE	CV																																										
<b>COMPUTER ROOM AIR HANDLING UNIT (AHU-21)</b>																																											
SUPPLY FAN START/STOP	SS																																										
SUPPLY FAN STATUS	CR																																										
SPACE TEMPERATURE	TS																																										
SPACE HUMIDITY	HS																																										
SUPPLY AIR TEMPERATURE	TS																																										
FILTER ALARM	DP																																										
COOLING COIL CONTROL VALVE	CV																																										
HEATING COIL CONTROL VALVE	CV																																										
<b>COMPUTER ROOM AIR HANDLING UNIT (AHU-105 AND AHU-106)</b>																																											
SUPPLY FAN START/STOP	SS																																										
SUPPLY FAN STATUS	AX																																										
SPACE TEMPERATURE	TS																																										
SUPPLY AIR TEMPERATURE	TS																																										
SUPPLY AIR TEMPERATURE SET POINT	-																																										
FILTER ALARM	DP																																										
COOLING COIL CONTROL VALVE	CV																																										
<b>AIR HANDLING UNIT (AHU-102)</b>																																											
SUPPLY FAN START/STOP	SS																																										
SUPPLY FAN STATUS	CR																																										
SPACE TEMPERATURE	TS																																										
SUPPLY AIR TEMPERATURE	TS																																										
FILTER ALARM	DP																																										
COOLING COIL CONTROL VALVE	CV																																										
HEATING COIL CONTROL VALVE	CV																																										
<b>EXHAUST FAN (EF-310)</b>																																											
EXHAUST FAN START/STOP - LOW SPEED	SS																																										
EXHAUST FAN START/STOP - HIGH SPEED	SS																																										
EXHAUST FAN STATUS	CR																																										
SPACE TEMPERATURE	TS																																										
<b>LEAK DETECTION SYSTEM MONITORING</b>																																											
LEAK DETECTION ALARM (TYPICAL)	AX																																										
<b>UPS MONITORING (TYPICAL)</b>																																											
UNINTERRUPTIBLE POWER SUPPLY STATUS	AX																																										
UNINTERRUPTIBLE POWER SUPPLY ALARM	AX																																										
<b>REFRIGERANT LEAK MONITORING SYSTEM</b>																																											
REFRIGERANT LEVEL	CI																																										
REFRIGERANT LEAK ALARM (LOW LEVEL ALARM)																																											



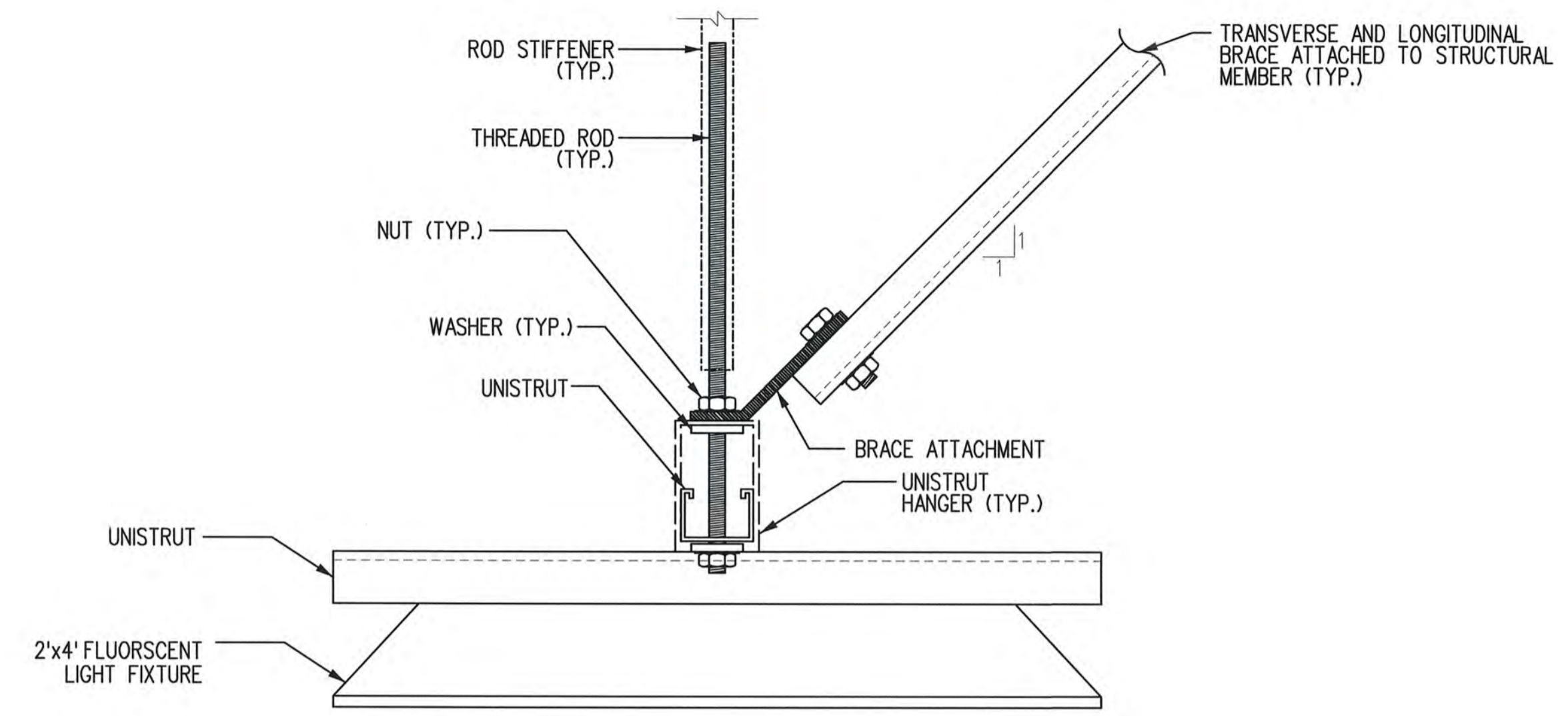


GENERAL SHEET NOTES:

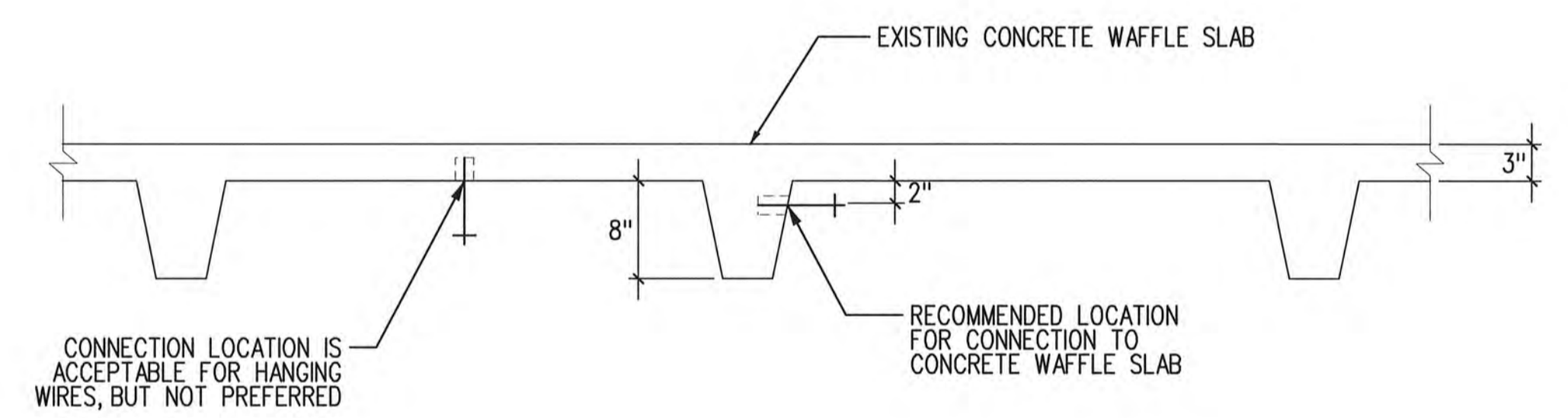
- A. DETAILS ARE FOR REFERENCE ONLY. SHOP DRAWINGS AND DESIGN CALCULATIONS SATISFYING THE REQUIREMENTS INDICATED SHALL BE SUBMITTED BY THE CONTRACTOR'S DESIGNATED PROFESSIONAL ENGINEER. PROVIDE VERTICAL AND LATERAL SUPPORT FOR ALL NON-STRUCTURAL COMPONENTS TO MEET THE SEISMIC DESIGN CATEGORY INDICATED ON SHEET E001 AND THE SEISMIC DESIGN CRITERIA INDICATED ON THE STRUCTURAL DRAWINGS.
- B. DETAILS APPLY TO NEW WORK AND EXISTING TO REMAIN SYSTEMS AND DEVICES WITHIN THE AREA OF WORK.
- C. LIGHTING FIXTURES AND CONDUITS SHALL NOT BE SUPPORTED BY CEILING GRID OR HVAC EQUIPMENT. LIGHTING FIXTURES AND CONDUITS SHALL BE SECURED AND SUPPORTED BY THE STRUCTURAL COMPONENTS.



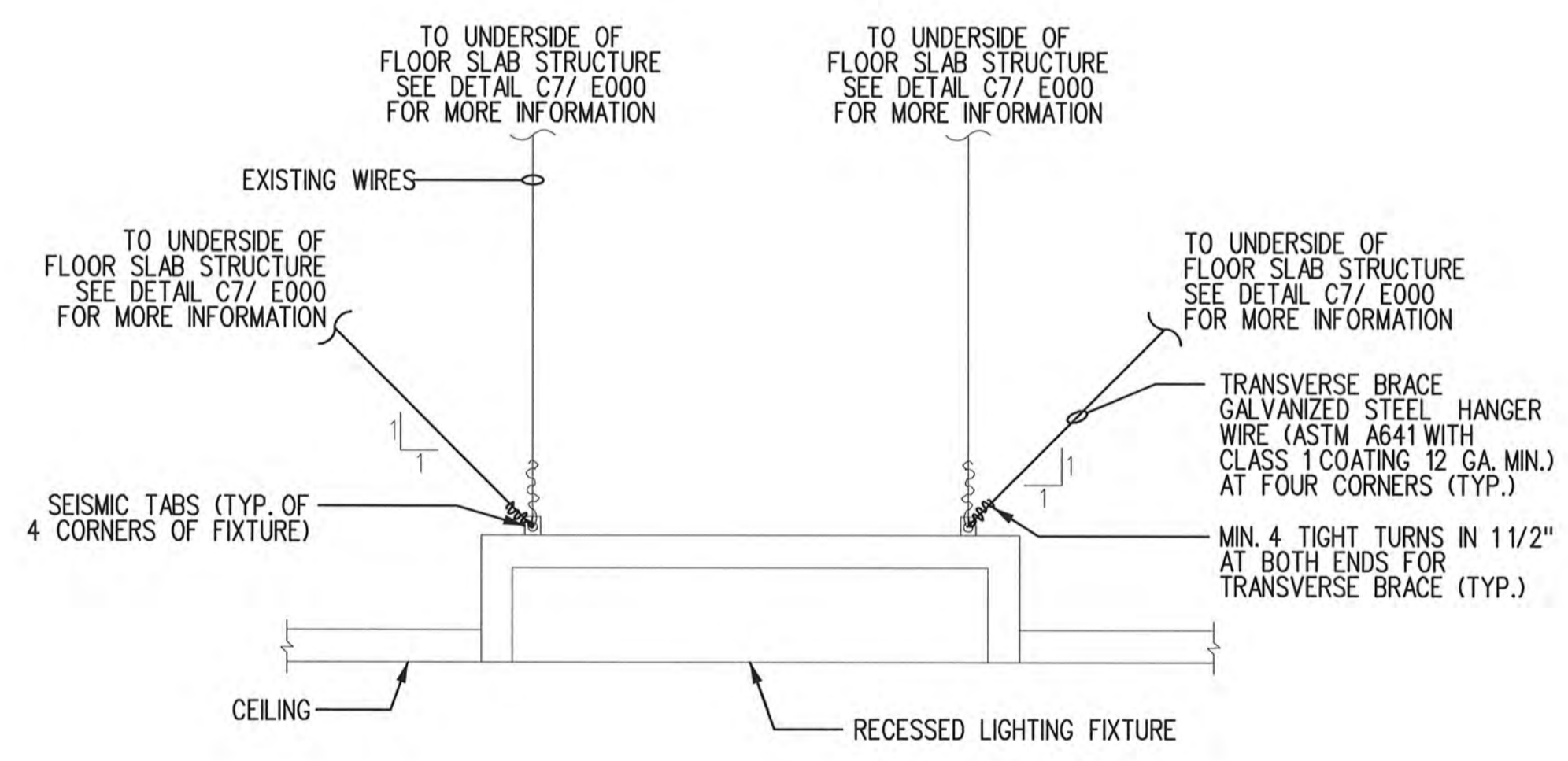
**F8**  
E000 NTS  
EXISTING UNISTRUT LIGHTING FIXTURE SUPPORT



**F4**  
E000 NTS  
NEW UNISTRUT LIGHTING FIXTURE SUPPORT



**C7**  
E000 NTS  
WAFFLE SLAB CONNECTION



**C4**  
E000 NTS  
RECESSED LIGHTING FIXTURES SUPPORT

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PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>									
REV.	APPROVED DATE	DESCRIPTION				JCN	REDLINE DATE	APVD	
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>									
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER SEISMIC DETAILS FREMONT <span style="float: right;">OAKLAND (ZOA) ARTCC</span>									
DESIGNED BY	SUBMITTED BY		APPROVED BY						
DRIVEN BY	SUBMITTER'S TITLE		APPROVER'S TITLE						
CHECKED BY	ISSUED BY	DATE	JOB NO.						
OAKLAND ARTCC FREMONT, CALIFORNIA		AIRWAY FACILITY DIVISION		DATE 07/08/2015	JOB NO.		DRAWING NO. ZOA - D - CWBMS - E000		
6/30/2015									



ABBREVIATIONS

A	A	AMPERE	H	HE	HEAD END	T	T	TRANSFORMER
H	AC	ALTERNATING CURRENT	HH	HAND HOLE		TB	TB	TERMINAL BOX OR TERMINAL BOARD
	ACP	ACCESS CONTROL PANEL	HOA	HAND-OFF-AUTOMATIC		TD	TD	TIME DELAY
	AF	AMPERE FRAME	HPS	HIGH PRESSURE SODIUM		TELCOM	TELCOM	TELECOMMUNICATIONS
	AFCT	ABOVE FINISHED COUNTER TOP	HZ	HERTZ		TERMINAL	TERMINAL	TERMINAL
	AFF	ABOVE FINISHED FLOOR	IC	INTERCOMMUNICATION, INTERCOM		THH	THH	TELECOMMUNICATIONS HANDHOLE
	AC	AMPERE INTERRUPTING CAPACITY	INCAND	INCANDESCENT		TIA	TIA	TELECOMMUNICATIONS INDUSTRY ASSOCIATION
	AMM	AMMETER	ISMS	INTEGRATED SECURITY MANAGEMENT SYSTEM		TMH	TMH	TELECOMMUNICATIONS MANHOLE
	ANN	ANNUNCIATOR	J	JUNCTION		TT	TT	TELEPHONE TERMINAL
	AO	ANALOG OUTPUT	JB	JUNCTION BOX		TV	TV	TELEVISION, CCTV CAMERA
	APU	ALARM PROCESSING UNIT	K	KILOAMPERES		TVSS	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
	AT	AMPERE TRIP	KV	KILOVOLT		TYP	TYP	TYPICAL
G	ATS	AUTOMATIC TRANSFER SWITCH	KCMIL	THOUSAND CIRCULAR MILLS		U	U	UNLESS OTHERWISE NOTED
	AWG	AMERICAN WIRE GAUGE	KVA	KILOVOLT AMPERES		V	V	VOLT, VOLTAGE
	A/V	AUDIO/VISUAL	KVAR	KILOVOLT AMPERES-REACTIVE		VA	VA	VOLT AMPERE
B	BAT CHGR	BATTERY CHARGER	KW	KILOWATT		VAV	VAV	VARIABLE AIR VOLUME TERMINAL
	BC	BARE COPPER	KWH	KILOWATT HOUR		VFD	VFD	VARIABLE FREQUENCY DRIVE
	BPU	BREAKER PROGRAMMING UNIT	LA	LIGHTNING ARRESTER		W	W	WATT
C	C	CONDUIT	LAOSP	LOCAL OPERATING STATUS PANEL		WM	WM	WIREFOLD
	CB	CIRCUIT BREAKER	LRA	LOCKED ROTOR AMPERE		WP	WP	WEATHERPROOF
	CC	CENTRAL COMPUTER	LTG	LIGHTING		WW	WW	WIREFRAY
	CCTV	CLOSED CIRCUIT TELEVISION	LV	LOW VOLTAGE		X	X	AUXILIARY RELAY
F	CKT	CIRCUIT	M	MOTOR		XFR	XFR	TRANSFER
	CLF	CURRENT LIMITING FUSE	MCB	MAIN CIRCUIT BREAKER		XFMR	XFMR	TRANSFORMER
	CO	CONDUIT ONLY	MCC	MOTOR CONTROL CENTER		XMTR	XMTR	TRANSMITTER
	COMM	COMMUNICATIONS	MCP	MOTOR CIRCUIT PROTECTOR		XDCR	XDCR	TRANSDUCER
	COR	CONTRACTING OFFICER'S REPRESENTATIVE	MDT	MAIN DISTRIBUTION TERMINAL		Y	Y	WYE
	CPC	CRITICAL POWER CENTER	MG	MOTOR GENERATOR		Y-Δ	Y-Δ	WYE-DELTA
	CPU	CENTRAL PROCESSING UNIT	MH	MANHOLE		Z	Z	IMPEDANCE
	CR	CARD READER	MLO	MAIN LUGS ONLY				
	CS	CONTROL SWITCH	MP	MULTIPOINT				
	CT	CURRENT TRANSFORMER, CABLE TRAY	MTD	MOUNTED				
E	DB	DIRECT BURIAL	MTS	MANUAL TRANSFER SWITCH				
	DC	DIRECT CURRENT	MVA	MEGAVOLT AMPERE				
	DI	DIGITAL INPUT	N	NEUTRAL				
	DISC	DISCONNECT	NEC	NATIONAL ELECTRICAL CODE				
	DIST PNL	DISTRIBUTION PANEL	NTS	NOT TO SCALE				
	DM	DEMAND METER	OVHD	OVERHEAD				
	DO	DIGITAL OUTPUT	P	POLE				
	DPDT	DOUBLE POLE DOUBLE THROW	PCMS	POWER CONTROL AND MONITORING SYSTEM				
	DPST	DOUBLE POLE SINGLE THROW	PF	POWER FACTOR				
D	DT	DOUBLE THROW	PH	PHASE				
	DWG(S)	DRAWING(S)	PNL	PANELBOARD				
E	E	EXISTING	POS	POSITIVE OR POSITION				
	ECP	ENGINE CONTROL PANEL	PP	POWER POLE OR PATCH PANEL				
	EDAM	ELECTRICAL DATA ACQUISITION AND MONITORING	PS	POWER SUPPLY				
	EF	EXHAUST FAN	PTZ	CAMERA, PAN-TILT-ZOOM				
	EH	ELECTRIC HEATER	PVC	POLYVINYL CHLORIDE				
	EHC	ELECTRONIC HUMIDIFIER	R	RESOURCE CONSERVATION AND RECOVERY ACT				
	EHT	ELECTRIC HEATING COIL	REC	RECEPTACLE				
	EHH	ELECTRICAL HANDHOLE	REF	REFERENCE				
C	EMERG	EMERGENCY	RFI	RADIO FREQUENCY INTERFERENCE				
	EMH	ELECTRICAL MANHOLE	RGS	RIGID GALVANIZED STEEL				
	EMT	ELECTRIC METALLIC TUBING	RM	ROOM				
	ERMS	ENVIRONMENTAL REMOTE MONITORING SYSTEM	S	SECURITY CONTROL CENTER				
	ET	ELECTRIC HEAT TRACE	SCP	SYSTEM CONTROL PANEL				
	EXP	EXPANSION ENCLOSURE	SIM	SIMILAR				
F	FA	FAN COOLED	SLC	SIGNALING LINE CIRCUIT				
	FACP	FIRE ALARM CONTROL PANEL	SP	SINGLE POLE				
	FDR	FEEDER	SRGG	SIGNAL REFERENCE GROUND GRID				
	FLA	FULL LOAD AMPERES	S/S	START-STOP				
B	FLUOR	FLUORESCENT	SW	SWITCH				
	FO	FIBER OPTIC	SWBD	SWITCHBOARD				
	FOT	FIBER OPTIC TERMINAL	SWGR	SWITCHGEAR				
	FPU	FIELD PROGRAMMING UNIT						
	FV	FULL VOLTAGE						
G	GFI	GROUND FAULT INTERRUPTER						
	GFCI	GOVERNMENT FURNISHED CONTRACTOR INSTALLED						
	GH	GUARD HOUSE						
A	GND	GROUND						

LEGEND

ELECTRICAL PLAN SYMBOLS

	LIGHT LINE WEIGHT INDICATES EXISTING WORK
	HEAVY LINE WEIGHT INDICATES NEW WORK
	CROSS HATCHING OVERLAPPING DEVICES AND EQUIPMENT INDICATES DEMOLITION (UON)
	BRANCH CIRCUIT - EXPOSED, 3/4" C, WITH 2*12 WIRES PLUS 1*12 GROUND, UON
	SAME AS BRANCH CIRCUIT - EXCEPT CONCEALED IN CEILING, UNDER GROUND OR WALL SPACE
	HOME RUN TO PANEL DP, CIRCUIT 1
	CONDUIT UP
	CONDUIT DOWN
	DISCONNECT SWITCH, NON-FUSIBLE, +48" AFF (UON) 30A FRAME SIZE "WP" WHERE USED, INDICATES WEATHERPROOF
	DISCONNECT SWITCH, FUSIBLE, +48" AFF (UON) 30A FRAME SIZE, 5A FUSE SIZE
	COMBINATION MOTOR STARTER/ FUSED DISCONNECT SWITCH: 600V, 3-POLE, 30A SWITCH, 30A FUSES, SIZE 1 STARTER, IN NEMA 1 ENCLOSURE, +60" AFF TO HANDLE UON 30 = SWITCH AMPERE RATING (15) = FUSE SIZE 1 = NEMA 1 STARTER SIZE
	MOTOR STARTER: 600V, 3 0, SIZE 1 STARTER, IN NEMA 1 ENCLOSURE, +60" AFF TO CONTROLS UON 1 = NEMA 1 STARTER SIZE
	VARIABLE FREQUENCY DRIVE
	HARMONIC FILTER
	MANUAL MOTOR STARTER SWITCH, 208V, 1, 30A, +18" AFF (UON)
	MOTOR CONNECTION
	2'X4' FLUORESCENT FIXTURE
	1'X4' FLUORESCENT FIXTURE
	EMERGENCY FLUORESCENT FIXTURE WITH SELF-DIAGNOSTIC INTEGRAL BATTERY BACKUP
	OPEN INDUSTRIAL FLUORESCENT FIXTURE
	EMERGENCY OPEN INDUSTRIAL FLUORESCENT FIXTURE WITH SELF-DIAGNOSTIC INTEGRAL BATTERY BACKUP
	WALL MOUNTED, FLUORESCENT OR INCANDESCENT FIXTURE
	EXTERIOR FLOOD LIGHT FIXTURE
	SUBSCRIPTS (APPLICABLE TO ALL LIGHTING FIXTURES): E1 = FIXTURE TYPE DESIGNATOR a = LAMP(S) a CONTROLLED BY SWITCH a (TYPICAL FOR ALL LOWER CASE LETTERS).
	WALL MOUNTED EXIT LIGHTING FIXTURE, +84" AFF SHADED SECTION(S) INDICATE FACE(S) WITH DIRECTIONAL ARROWS AS SHOWN ON PLANS
	PHOTOELECTRIC SENSOR
	LIGHTNING/GROUNDING CONDUCTOR
	DOWN CONDUCTOR
	AIR TERMINAL
	DUPLEX RECEPTACLE, NEMA 5-20R, 20A, 125V, 2P, 3W, +18" AFF UON, FOR RECEPTACLE ABOVE COUNTER TOP, INSTALL AT 8" AFCT. "S" WHERE USED, INDICATES SURFACE MOUNTED "WP" WHERE USED, INDICATES WEATHERPROOF "E" WHERE USED, INDICATES EXISTING
	GFI DUPLEX RECEPTACLE, NEMA 5-20R, 20A, 125V, 2P, 3W, 18" AFF UON, FOR RECEPTACLE ABOVE SINK OR COUNTER TOP, INSTALL AT 8" AFCT
	JUNCTION BOX, WALL MOUNTED AT HEIGHT INDICATED WITH BLANK COVER PLATE (UON), "WP" WHERE USED, INDICATES WEATHERPROOF
	6"x6"x4" JUNCTION BOX WITH BLANK COVER PLATE AT STUB UP
	6"x6"x4" JUNCTION BOX WITH BLANK COVER PLATE (UON)
	SINGLE POLE SWITCH OUTLET, LOWERCASE SUBSCRIPT, WHEN USED, INDICATES SWITCH LEG, 48" AFF (UON)
	THREE WAY SWITCH, +48" AFF (UON)
	FOUR WAY SWITCH, +48" AFF (UON)
	SWITCH WITH OCCUPANCY SENSOR
	CEILING MOUNTED OCCUPANCY SENSOR
	WALL MOUNTED EMERGENCY-POWER-OFF BUTTON
	208Y/120V PANELBOARD
	480Y/277V PANELBOARD
	TRANSIENT VOLTAGE SURGE SUPPRESSOR
	WALL MOUNTED VOICE OUTLET WITH 1-RJ45 JACK, +18" AFF TO CENTER OF DEVICE UON. "S" WHERE USED, INDICATES SURFACE MOUNTED "E" WHERE USED, INDICATES EXISTING
	WALL MOUNTED VOICE/DATA OUTLET WITH 4-RJ45 JACK, +18" AFF TO CENTER OF DEVICE UON. "S" WHERE USED, INDICATES SURFACE MOUNTED "E" WHERE USED, INDICATES EXISTING
	POINT OF INTERCEPTION & CONNECTION OF NEW TO EXISTING

ONE LINE, SCHEMATIC DIAGRAM SYMBOLS

	LIGHT LINE WEIGHT INDICATES EXISTING WORK
	HEAVY LINE WEIGHT INDICATES NEW WORK
	CROSS HATCHING OVERLAPPING DEVICES AND EQUIPMENT INDICATES DEMOLITION (UON)
	MOLDED CASE THERMAL MAGNETIC CIRCUIT BREAKER, 100A, FRAME AND 60A, TRIP
	DRY TYPE, STEP DOWN TRANSFORMER: KVA RATING AND VOLTAGE AS INDICATED ON DRAWINGS
	MANUAL TRANSFER SWITCH
	WYE CONNECTION
	DELTA CONNECTION

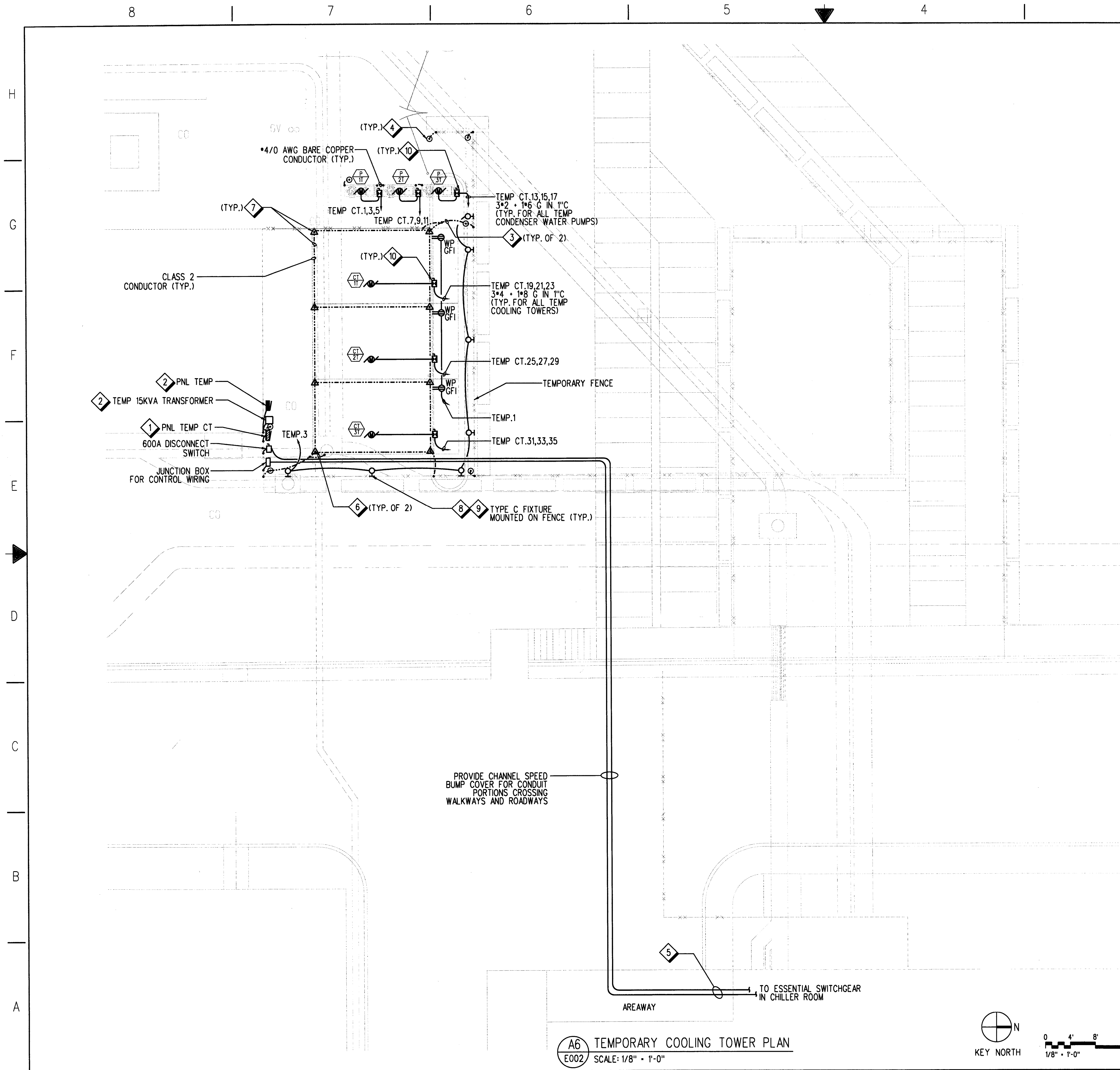
GENERAL NOTES

- PRACTICE EXTREME CAUTION WHEN WORKING ON BUILDING SERVICE, ESSENTIAL AND CRITICAL POWER SYSTEMS. THIS FACILITY IS AN AIR ROUTE TRAFFIC CONTROL CENTER FACILITY (ARTCC) AND UNAUTHORIZED ELECTRICAL OUTAGES MAY CAUSE ACCIDENTS AND/OR LOSS OF LIFE.
- UNSCHEDULED INTERRUPTIONS ARE NOT PERMITTED. WORK REQUIRING PERMANENT, TEMPORARY OR PARTIAL OUTAGES SHALL BE SCHEDULED AND APPROVED IN WRITING BY THE COR AT LEAST 30 CALENDAR DAYS IN ADVANCE OF PERFORMING WORK.
- COORDINATE ELECTRICAL DEMOLITION WORK WITH WORK SHOWN ON ARCHITECTURAL AND MECHANICAL DRAWINGS.
- ONLY FAA SPECIALISTS ARE PERMITTED TO OPERATE CIRCUIT BREAKERS. CONTRACTOR SHALL REQUEST PERMISSION OF THE COR AT LEAST 30 CALENDAR DAYS IN ADVANCE AND IN WRITING FOR EACH CASE OF BREAKER OPERATION. CONTRACTOR SHALL NOT OPEN (DE-ENERGIZE) OR CLOSE (ENERGIZE) ANY CIRCUIT BREAKER AT ANY TIME.
- FIRESTOP CONDUIT PENETRATIONS THROUGH FLOORS AND FIRE RATED WALLS. MATERIALS & METHODS EMPLOYED IN FIRESTOPPING SHALL BE IN ACCORDANCE WITH UL STANDARDS. LEAVE NO OPENINGS IN FIRE RATED ASSEMBLIES OPEN OVERNIGHT, OR PAST THE WORK SHIFT, TEMPORARILY FIRE STOP THESE OPENINGS IF NECESSARY.
- ELECTRICAL EQUIPMENT AND LIGHTING FIXTURE SUPPORT SYSTEMS SHALL BE INSTALLED TO WITHSTAND IBC SEISMIC DESIGN CATEGORY "D".
- WHERE CONDUIT IS INDICATED TO BE REUSED, REMOVE EXISTING WIRING AND/OR ABANDONED CONDUCTORS INSIDE OF CONDUIT PRIOR TO PULLING NEW WIRING.
- VERIFY EXISTING CONDITIONS BEFORE COMMENCING ANY DEMOLITION OR CONSTRUCTION. ELECTRICAL DEMOLITION REQUIRES THE IDENTIFICATION OF THE CIRCUITS, THEN THE REMOVAL OF WIRING, CONDUIT, AND OTHER RELATED EQUIPMENT BACK TO THE RESPECTIVE SOURCE. MAINTAIN CONTINUITY OF EXISTING TO REMAIN CIRCUITS WHETHER INSIDE OR OUTSIDE OF THE DEMOLITION AREA. CONCEALED CONDUITS THAT ARE INACCESSIBLE MAY BE ABANDONED IN PLACE.
- SEE MECHANICAL DEMOLITION DRAWINGS FOR EXTENT OF DEMOLITION AND RELOCATION OF MECHANICAL EQUIPMENT. ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE ELECTRICAL CONNECTIONS TO DEMOLISHED MECHANICAL EQUIPMENT BACK TO ITS POWER SOURCE AS DIRECTED BY THE MECHANICAL CONTRACTOR. EXTEND EXISTING CIRCUITS TO NEW EQUIPMENT LOCATIONS AS REQUIRED AND REUSE OR RELOCATE DISCONNECTING MEANS IN ACCORDANCE WITH THE NEC. COORDINATE SCHEDULING OF DISCONNECTION OF MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR.
- WHERE BRANCH CIRCUITS ARE DEMOLISHED FROM PANELBOARDS NOT SHOWN IN CONTRACT DRAWINGS, CIRCUIT BREAKERS SHALL BE SET TO "OFF" POSITION AND PANELBOARD DIRECTORY SHALL BE MODIFIED TO READ "SPARE".
- FOR EACH CONDUIT THAT IS TO BE LEFT IN PLACE FOR FUTURE USE, INSTALL A PULLWIRE AND SECURELY CAP EACH END. PERMANENTLY MARK THE END OF EACH CONDUIT WITH THE LOCATION OF THE OPPOSITE END'S TERMINATION POINT.
- WHEN CONDUITS AND CONDUCTORS ARE TO REMAIN IN PLACE AND ARE TO BE REUSED, CONTRACTOR SHALL ADEQUATELY PROTECT CONDUITS AND CONDUCTORS FROM ALL PHYSICAL DAMAGE, INCLUDING ANY OUTDOOR EXPOSURE, AS APPLICABLE. WHERE NEEDED, INSTALL APPROPRIATE TEMPORARY JUNCTION BOXES AS DIRECTED BY THE COR.
- ALL ELECTRICAL CONDUCTORS THAT ARE SCHEDULED TO BE REUSED, SHALL BE MEGGERED BEFORE BEING DISTURBED, OR DISCONNECTED FROM THEIR TERMINALS, OR SPLICES. THE MEGOHMMETER READINGS SHALL BE TAKEN, RECORDED, AND SUBMITTED AS PER SPECIFICATIONS. ALL TESTING OF THOSE CONDUCTORS TO BE REUSED, SHALL BE WITNESSED BY THE COR, WITHOUT EXCEPTION. THE COR SHALL SIGN THE FIELD REPORT OF THESE MEGOHMMETER READINGS.
- ALL SECURITY WORK SHALL BE PERFORMED BY THE SECURITY SYSTEMS DESIGN AND INTEGRATION (SSDI) CONTRACTOR, WHO SHALL BE UNDER THE CONTRACT OF THE GENERAL CONTRACTOR OF THIS PROJECT.

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PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>									
REV.	APPROVED DATE	DESCRIPTION				JCN	REDLINE DATE	APVD	
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>									
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER ELECTRICAL ABBREVIATIONS, LEGENDS AND GENERAL NOTES OAKLAND (ZOA) ARTCC									
FREMONT									
DESIGNED BY	SUBMITTED BY <i>RSBradfish</i>				APPROVED BY <i>AmJL</i>				
DRAWN BY	SUBMITTER'S TITLE				APPROVER'S TITLE				
CHECKED BY	ISSUED BY	DATE 07/08/2015		JCN					
OAKLAND ARTCC FREMONT, CALIFORNIA		AIRWAY FACILITY DIVISION		ZOA - D - CWBMS - E001		REV.			





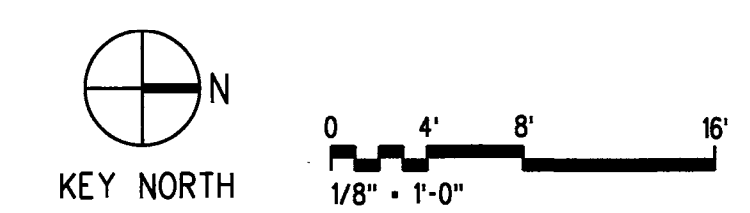
GENERAL NOTES

- A. ALL EXTERIOR EQUIPMENT SHALL BE NEMA 3R.
- B. ALL TEMPORARY EXTERIOR CONDUIT AND FITTINGS SHALL BE RIGID GALVANIZED STEEL.
- C. SHEET IS PROVIDED FOR REFERENCE ONLY LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE FINAL EQUIPMENT SIZES AND RATINGS WITH FINAL TEMPORARY EQUIPMENT SELECTION.
- D. CIRCUIT CONDUIT RUNS ARE DIAGRAMMATIC ONLY. CONTRACTOR SHALL FIELD VERIFY AND COORDINATE WITH COR FOR EXACT CONDUIT ROUTING.
- E. CONTRACTOR SHALL FIELD VERIFY EXISTING UNDERGROUND UTILITIES AND COORDINATE WITH COR FOR ALL UNDERGROUND WORK.
- F. COORDINATE ALL WORK ASSOCIATED WITH TEMPORARY FENCE WITH PHASE I AND PHASE II FENCE LOCATIONS. REFER TO DRAWINGS M006 AND M007 FOR MORE INFORMATION.

SHEET NOTES:

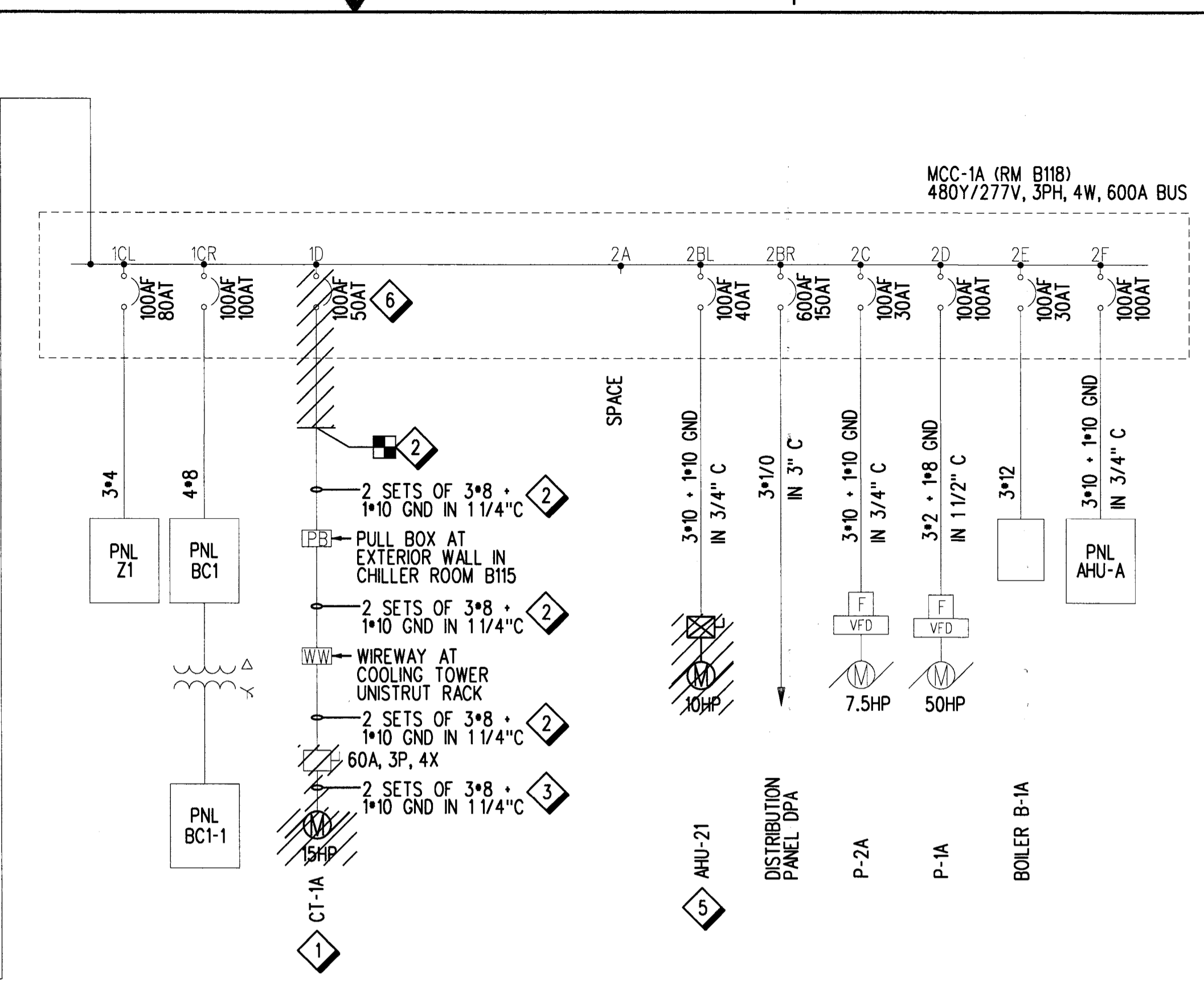
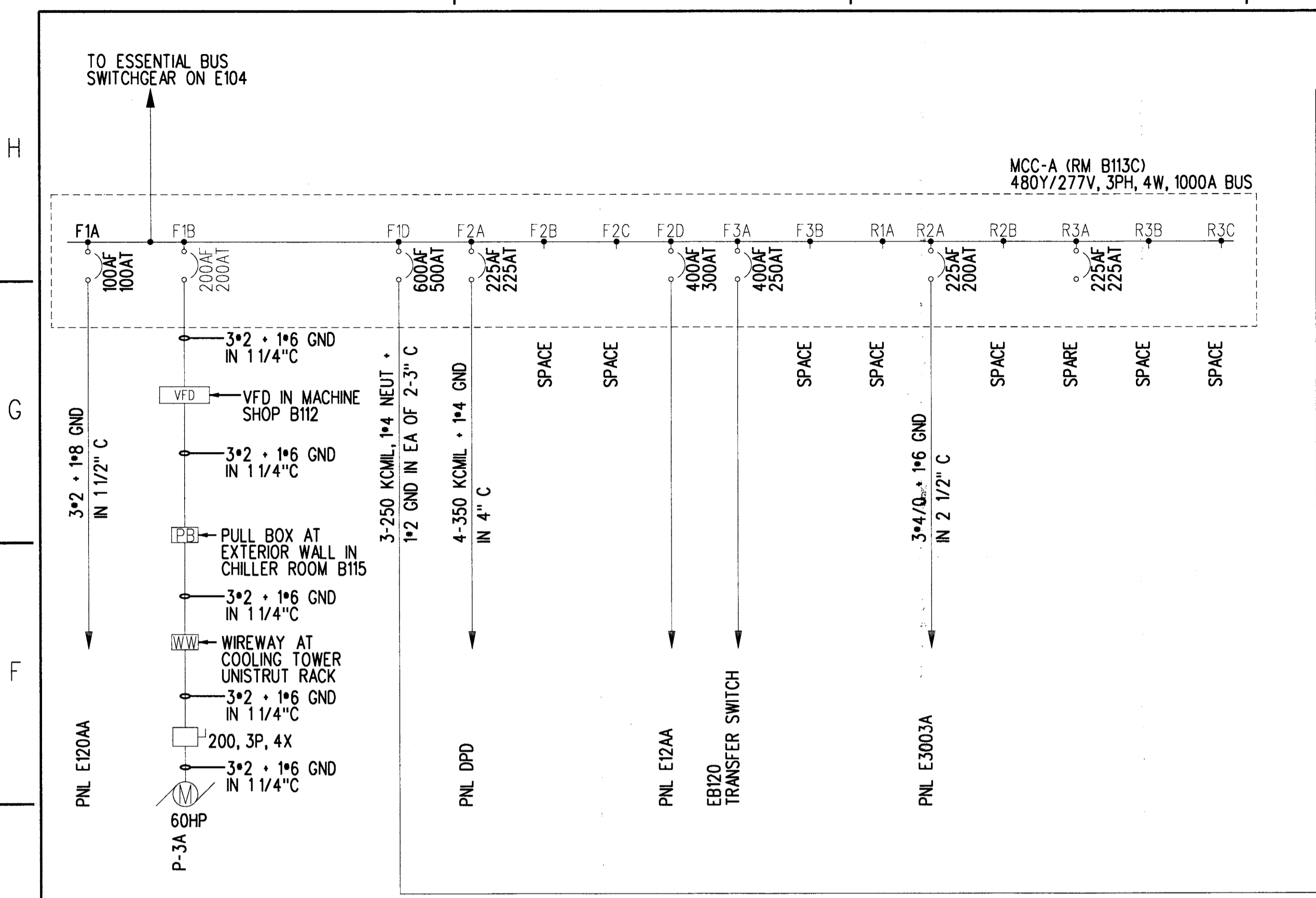
- 1 PROVIDE A 600A, 480V, 3PH, 3W, PNL "TEMP CT" FOR TEMPORARY POWER.
- 2 PROVIDE A 50A 208Y/120V, 3PH, 4W, 20 POLE, PNL "TEMP" VIA A 15KVA STEP DOWN TRANSFORMER FOR 120V SERVICE.
- 3 PROVIDE DOWN CONDUCTORS. DOWN CONDUCTORS SHALL BE EXOTHERMICALLY WELDED TO A #4/0 AWG BARE COPPER CONDUCTOR BEFORE ENTERING THE GROUND AT NO LESS THAN 18" ABOVE THE GROUND LEVEL. BOND THE #4/0 AWG COPPER CONDUCTOR TO A 3/4" DIAMETER X 10'-0" GROUND ROD THAT IS AT A MINIMUM OF 24" BELOW GRADE LEVEL.
- 4 BOND THE CORNER FENCE POST BY EXOTHERMICALLY WELDING A #4/0 AWG COPPER CONDUCTOR TO THE POST. EXOTHERMICALLY WELD THE #4/0 AWG COPPER CONDUCTOR TO A 3/4" DIAMETER X 10'-0" GROUND ROD THAT IS AT A MINIMUM OF 24" BELOW GRADE LEVEL.
- 5 BOND ALL CONDUITS TO EXISTING EARTH ELECTRODE SYSTEM PRIOR TO ENTERING BUILDING.
- 6 BOND PLATFORM OF COOLING TOWER WITH #4/0 AWG BARE COPPER CONDUCTOR. ALL CONNECTIONS SHALL BE MADE WITH EXOTHERMIC WELLS.
- 7 PROVIDE AIR TERMINALS AND POTENTIAL EQUALIZATION LOOP CONDUCTOR ON TOP OF TEMPORARY COOLING TOWERS.
- 8 LIGHTING FIXTURES ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL COORDINATE LIGHTING LAYOUT WITH EXACT TEMPORARY COOLING TOWER SELECTIONS TO ENSURE LIGHTING LEVELS PER OSHA AND SECURITY REQUIREMENTS ARE MET.
- 9 TYPE C FIXTURE BASIS OF DESIGN: LITHONIA TWRIC 150M 120 PE LPI.
- 10 COMBINATION MOTOR STARTER DISCONNECT SWITCH WITH OVERLOAD PROTECTION FOR TEMPORARY COOLING TOWERS AND PUMPS TO BE PROVIDED BY TEMPORARY COOLING TOWER AND PUMP MANUFACTURER.

**A6** TEMPORARY COOLING TOWER PLAN  
 E002 SCALE: 1/8" = 1'-0"

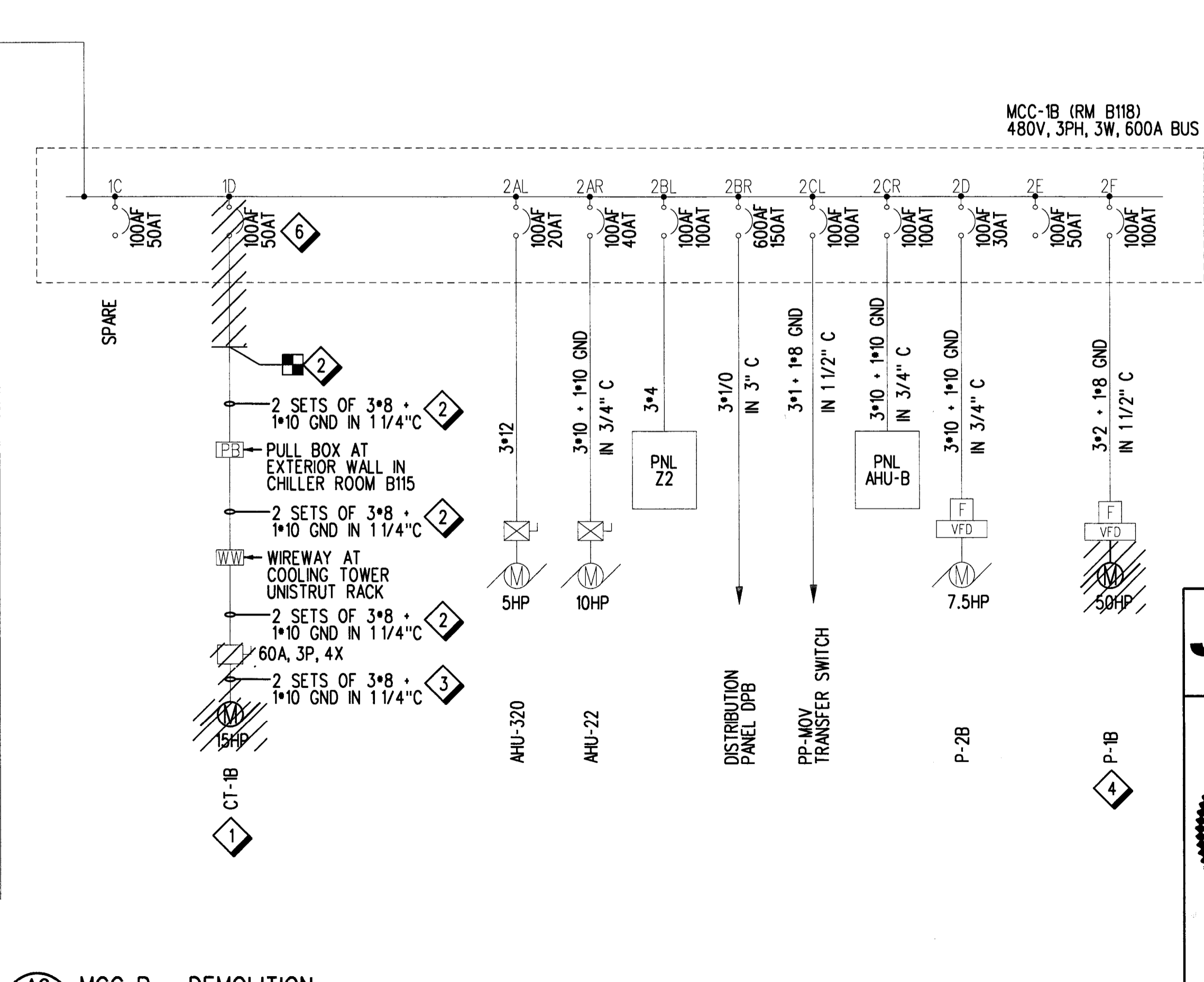
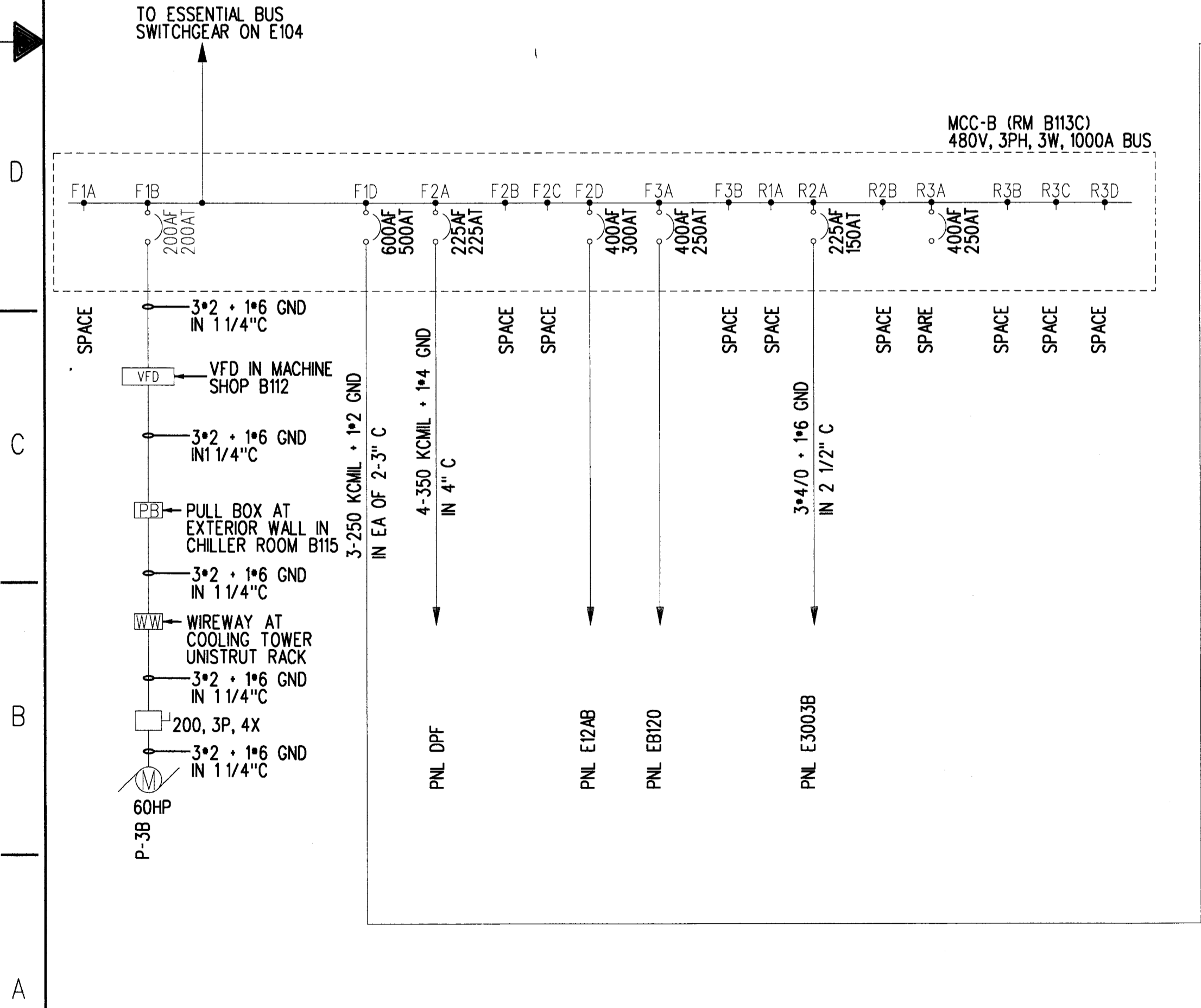


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		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA			
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER TEMPORARY COOLING TOWER PLAN			
FREMONT OAKLAND (ZOA) ARTCC		DESIGNED BY L. CLEMENTS		ISSUED BY AIRWAY FACILITY DIVISION	
DRAWN BY J. FRIEDBERG		CHECKED BY H. NGHE		DATE 07/08/2015 DRAWING NO. ZOA - D - CWBMS - E002	
REVIEWED BY SUBMITTED BY R. Bradfish		APPROVED BY 		USER: BRUSER	



**E6** MCC-A - DEMOLITION  
E101 NO SCALE



**A6** MCC-B - DEMOLITION  
E101 NO SCALE

**GENERAL NOTES**

- A. THIS SINGLE LINE DIAGRAM WAS DEVELOPED UTILIZING EXISTING DRAWINGS AND THE MECHANICAL CHILLED WATER AND HEATING WATER SYSTEM RETROFIT PROJECT DRAWINGS. THE MECHANICAL CHILLED WATER AND HEATING WATER SYSTEM RETROFIT PROJECT IS SCHEDULED TO BE COMPLETED IN AUGUST 2015.
- B. MAINTAIN CONTINUITY TO AREAS NOT AFFECTED BY DEMOLITION OR PROVIDE TEMPORARY POWER IN AREAS WHERE THE COR DETERMINES THAT IS NECESSARY. COOLING TOWERS SHALL BE REPLACED ONE AT A TIME. ELECTRICAL WORK SHALL MATCH MECHANICAL PHASING PLAN AS REQUIRED.

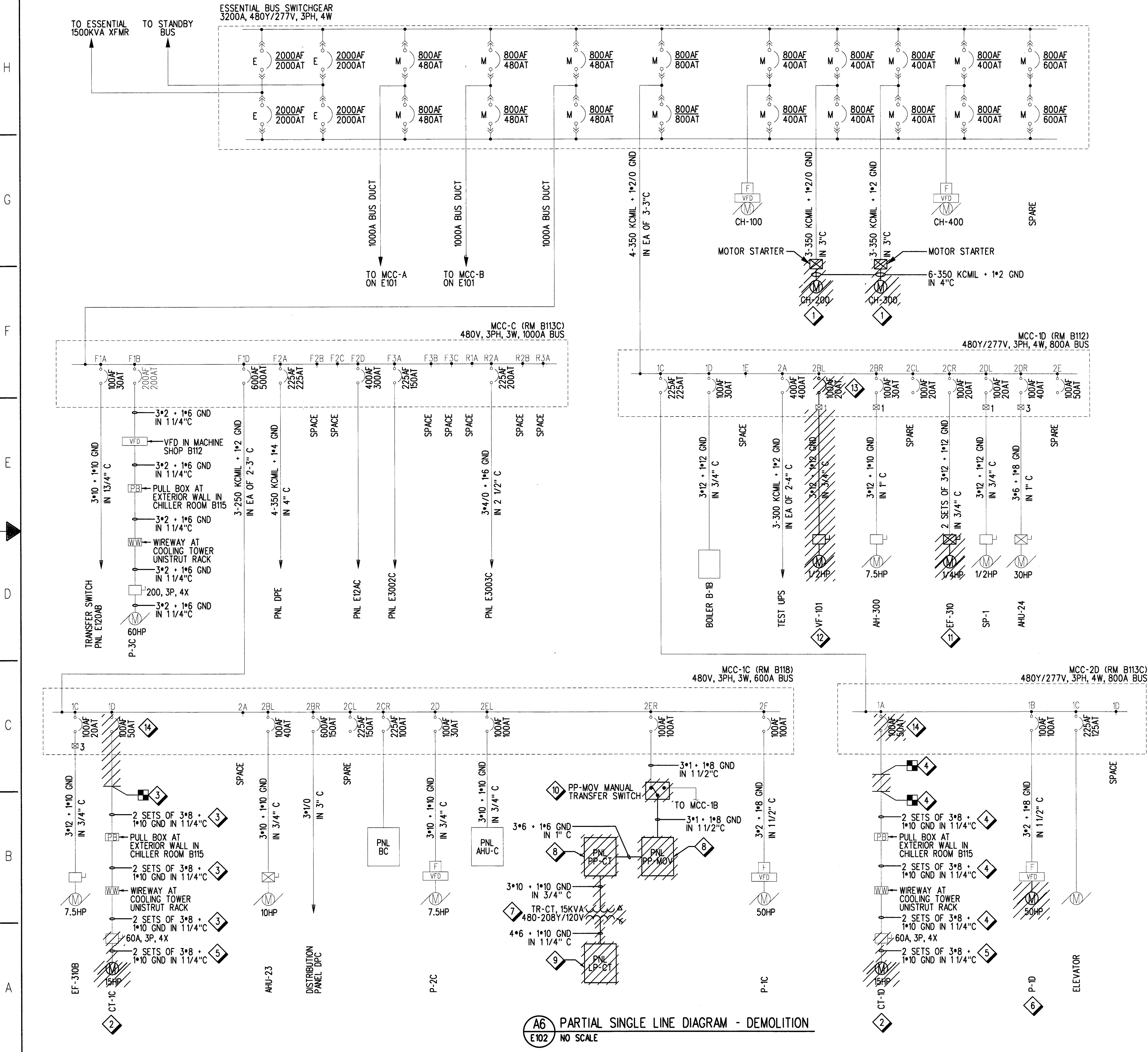
**SHEET NOTES**

- 1 EXISTING COOLING TOWER TO BE REPLACED. REMOVE ASSOCIATED DISCONNECT SWITCH.
- 2 REMOVE ONE SET OF 3\*8 AWG \* 1\*10 GND BETWEEN THE MCC AND THE COOLING TOWER. REMOVE CONDUIT AND WIRING FROM INTERCEPTION POINT BACK TO SOURCE. EXISTING UNDERGROUND CONDUIT AND ONE SET OF CONDUCTORS BETWEEN INTERCEPTION POINT AND DISCONNECT SWITCH TO REMAIN FOR NEW WORK. SEE DRAWING E203 FOR PORTION OF CONDUIT AND TO BE REMOVED.
- 3 REMOVE WIRING BETWEEN DISCONNECT SWITCH AND COOLING TOWER. REMOVE EXISTING EXPOSED CONDUIT BACK TO STUB UP. EXISTING UNDERGROUND CONDUIT BETWEEN DISCONNECT SWITCH AND COOLING TOWER TO REMAIN FOR NEW WORK.
- 4 EXISTING CHILLED WATER PUMP TO BE REPLACED. ASSOCIATED VFD AND HARMONIC FILTER TO REMAIN FOR NEW WORK. REMOVE CONDUIT AND WIRING BETWEEN VFD AND MOTOR. CONDUIT AND WIRING BETWEEN VFD AND MCC TO REMAIN FOR NEW WORK.
- 5 AIR HANDLING UNIT TO BE REPLACED. REMOVE ASSOCIATED DISCONNECT SWITCH. EXISTING CONDUIT AND WIRING TO REMAIN FOR NEW WORK.
- 6 FEEDER CIRCUIT BREAKER TO BE REPLACED. REMOVE EXISTING FEEDER CIRCUIT BREAKER AND ASSOCIATED MOTOR STARTER.

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		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER PARTIAL SINGLE LINE DIAGRAM - DEMOLITION FREMONT OAKLAND (ZOA) ARTCC			
		REVIEWED BY: _____ SUBMITTED BY: RBradfish SUBMITTER'S TITLE: _____ DESIGNED BY: L. CLEMENTS DRAWN BY: J. FREDBERG CHECKED BY: H. NOME	APPROVED BY: [Signature] APPROVER'S TITLE: _____ ISSUED BY: AIRWAY FACILITY DIVISION DATE: 07/08/2015 DRAWING NO.: ZOA - D - CWBMM5 - E101	JCN: _____ REDLINE DATE: _____ APVD: _____	OAKLAND ARTCC FREMONT, CALIFORNIA





**GENERAL NOTES**

- THIS SINGLE LINE DIAGRAM WAS DEVELOPED UTILIZING EXISTING DRAWINGS AND THE MECHANICAL CHILLED WATER AND HEATING WATER SYSTEM RETROFIT PROJECT DRAWINGS. THE MECHANICAL CHILLED WATER AND HEATING WATER SYSTEM RETROFIT PROJECT IS SCHEDULED TO BE COMPLETED IN AUGUST 2015.
- MAINTAIN CONTINUITY TO AREAS NOT AFFECTED BY DEMOLITION OR PROVIDE TEMPORARY POWER IN AREAS WHERE THE COR DETERMINES THAT IS NECESSARY. COOLING TOWERS SHALL BE REPLACED ONE AT A TIME. ELECTRICAL WORK SHALL MATCH MECHANICAL PHASING PLAN AS REQUIRED.

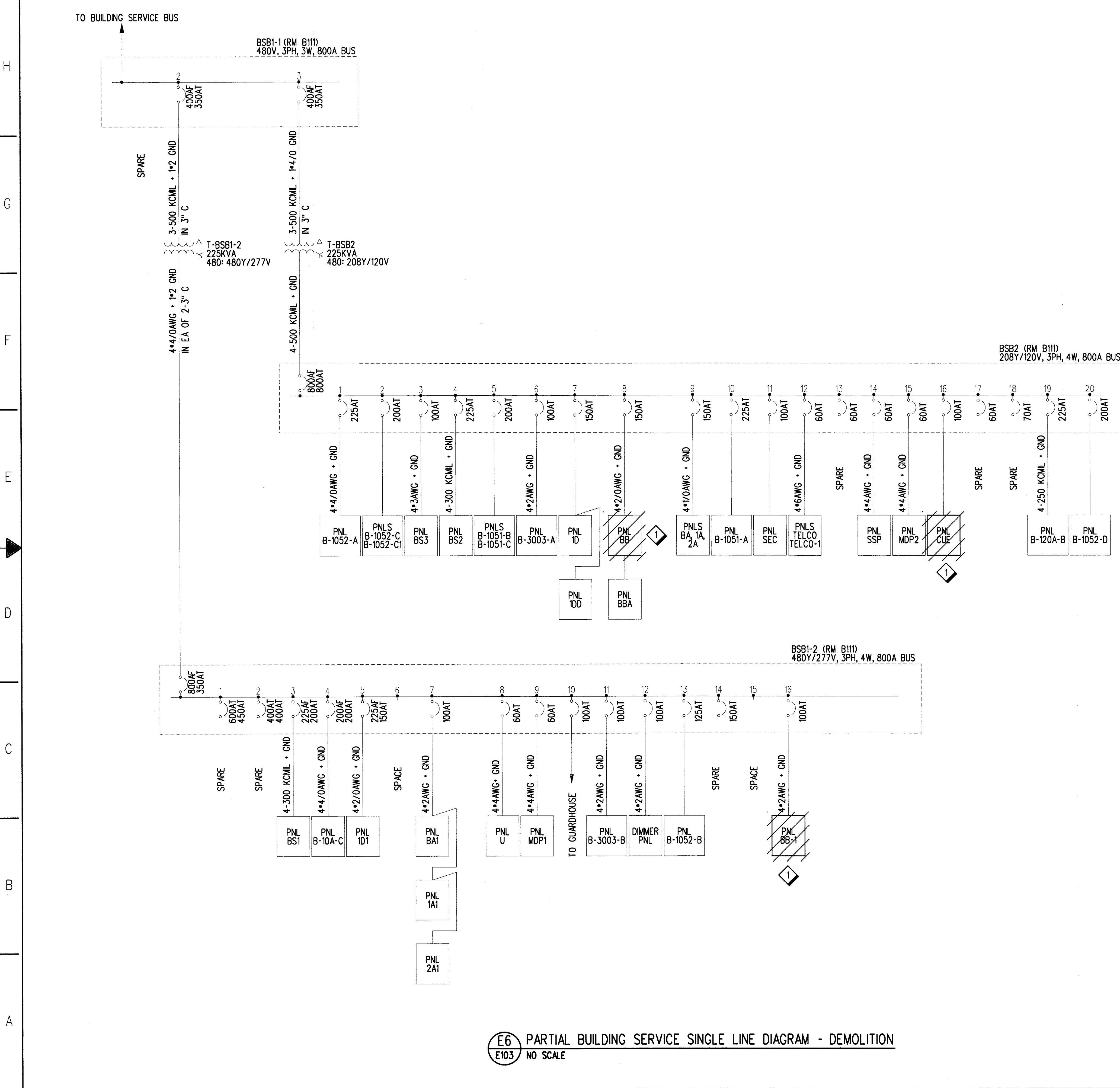
- SHEET NOTES**
- EXISTING CHILLER AND MOTOR STARTER TO BE REPLACED. REMOVE ASSOCIATED MOTOR STARTER. REMOVE CONDUIT AND WIRING TO FIRST COUPLING IN CEILING SPACE. EXISTING OVERHEAD CONDUIT AND WIRING TO REMAIN FOR NEW WORK.
  - EXISTING COOLING TOWER TO BE REPLACED. REMOVE ASSOCIATED DISCONNECT SWITCH.
  - REMOVE ONE SET OF 3\*8AWG \* 1\*10 GND BETWEEN THE MCC AND THE COOLING TOWER. REMOVE CONDUIT FROM INTERCEPTION POINT IN B118 BACK TO MCC. EXISTING UNDERGROUND CONDUIT AND ONE SET OF CONDUCTORS TO REMAIN FOR NEW WORK. SEE DRAWING E203 FOR PORTION OF CONDUIT TO BE REMOVED.
  - REMOVE ONE SET OF 3\*8AWG \* 1\*10 GND BETWEEN THE MCC AND THE COOLING TOWER. REMOVE PORTION OF CONDUIT FOR INTERCEPTION IN ROOM B112. EXISTING UNDERGROUND CONDUIT AND ONE SET OF CONDUCTORS TO REMAIN FOR NEW WORK. SEE DRAWING E203 FOR PORTION OF CONDUIT TO BE REMOVED.
  - REMOVE WIRING BETWEEN DISCONNECT SWITCH AND COOLING TOWER. REMOVE EXISTING EXPOSED CONDUIT BACK TO STUB UP. EXISTING UNDERGROUND CONDUIT BETWEEN DISCONNECT SWITCH AND COOLING TOWER TO REMAIN FOR NEW WORK.
  - EXISTING CHILLED WATER PUMP TO BE REPLACED. ASSOCIATED VFD, AND HARMONIC FILTER TO REMAIN FOR NEW WORK. REMOVE CONDUIT AND WIRING BETWEEN VFD AND MOTOR. CONDUIT AND WIRING BETWEEN VFD AND MCC TO REMAIN FOR NEW WORK.
  - EXISTING TRANSFORMER TO BE REPLACED. REMOVE ASSOCIATED PRIMARY AND SECONDARY (INPUT AND OUTPUT) CONDUIT AND WIRING BACK TO SOURCE.
  - PANELBOARD TO BE REPLACED. EXISTING FEEDER CONDUIT AND WIRING TO REMAIN FOR NEW WORK.
  - PANELBOARD TO BE REPLACED. REMOVE EXISTING FEEDER CONDUIT AND WIRING BACK TO SOURCE. EXISTING BRANCH CONDUIT AND WIRING TO REMAIN FOR NEW WORK.
  - MANUAL TRANSFER SWITCH (MTS) TO BE REPLACED. EXISTING CONDUIT AND WIRING BACK TO REMAIN FOR NEW WORK.
  - MECHANICAL EQUIPMENT TO BE REPLACED. REMOVE ASSOCIATED COMBINATION MOTOR STARTER DISCONNECT SWITCH. REMOVE ONE SET OF 3\*12 AWG \* 1\*12 GND BETWEEN MCC AND THE MOTOR. ONE SET OF CONDUCTORS AND EXISTING CONDUIT TO REMAIN FOR NEW WORK.
  - MECHANICAL EQUIPMENT TO BE DEMOLISHED. REMOVE ASSOCIATED DISCONNECT SWITCH, MOTOR STARTER, CONDUIT AND WIRING BACK TO SOURCE.
  - FEEDER CIRCUIT BREAKER TO BE REPLACED. REMOVE EXISTING FEEDER CIRCUIT BREAKER. EXISTING STARTER TO REMAIN FOR NEW WORK.
  - FEEDER CIRCUIT BREAKER TO BE REPLACED. REMOVE EXISTING FEEDER CIRCUIT BREAKER AND ASSOCIATED MOTOR STARTER.

**A6 PARTIAL SINGLE LINE DIAGRAM - DEMOLITION**  
E102 NO SCALE

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PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>			
REV.	APPROVED DATE	DESCRIPTION	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA			
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER PARTIAL SINGLE LINE DIAGRAM - DEMOLITION			
FREMONT		OAKLAND (ZOA) ARTCC	
DESIGNED BY	ISSUED BY	DATE	JCN
DRAWN BY	AIRWAY FACILITY DIVISION	07/08/2015	
CHECKED BY		DRAWING NO.	REV.
		ZOA - D - CWBMS - E102	

6/30/2015



**GENERAL NOTES**

- A. THIS SINGLE LINE DIAGRAM WAS DEVELOPED UTILIZING EXISTING DRAWINGS AND THE MECHANICAL CHILLED WATER AND HEATING WATER SYSTEM RETROFIT PROJECT DRAWINGS. THE MECHANICAL CHILLED WATER AND HEATING WATER SYSTEM RETROFIT PROJECT IS SCHEDULED TO BE COMPLETED IN AUGUST 2015.
- B. MAINTAIN CONTINUITY TO AREAS NOT AFFECTED BY DEMOLITION OR PROVIDE TEMPORARY POWER IN AREAS WHERE THE COR DETERMINES THAT IS NECESSARY.

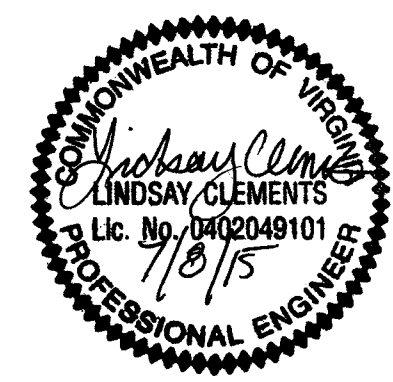
**SHEET NOTES**

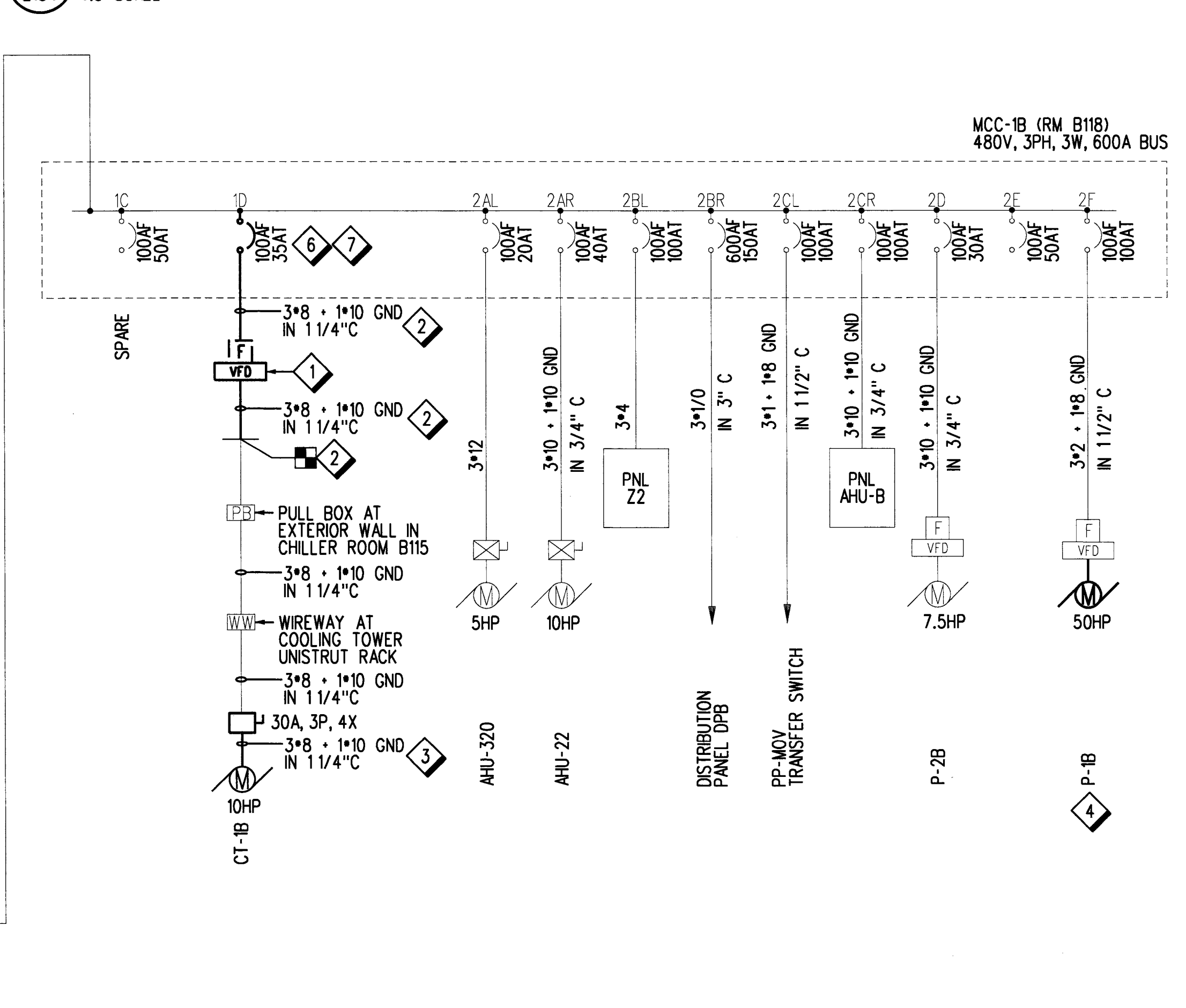
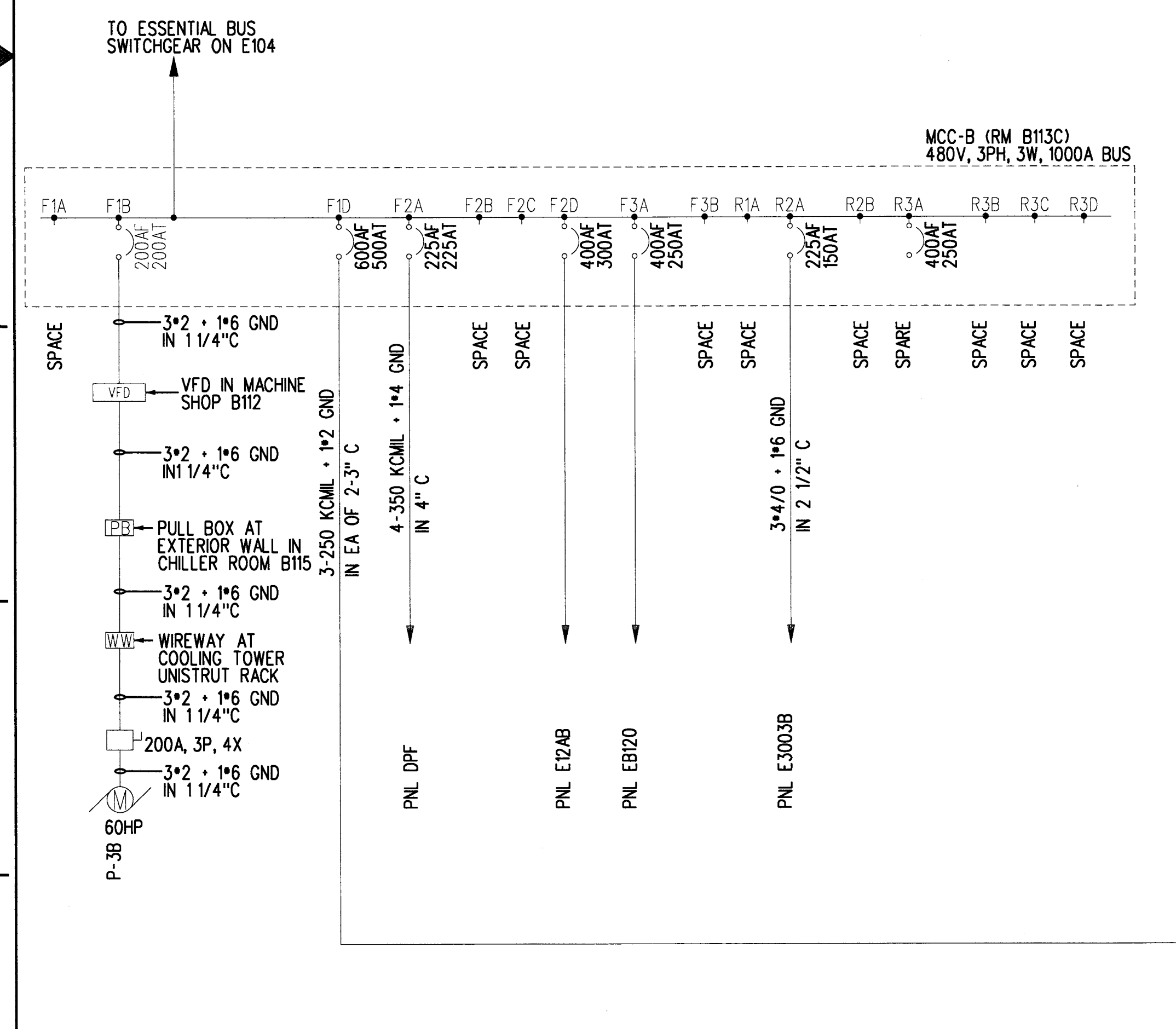
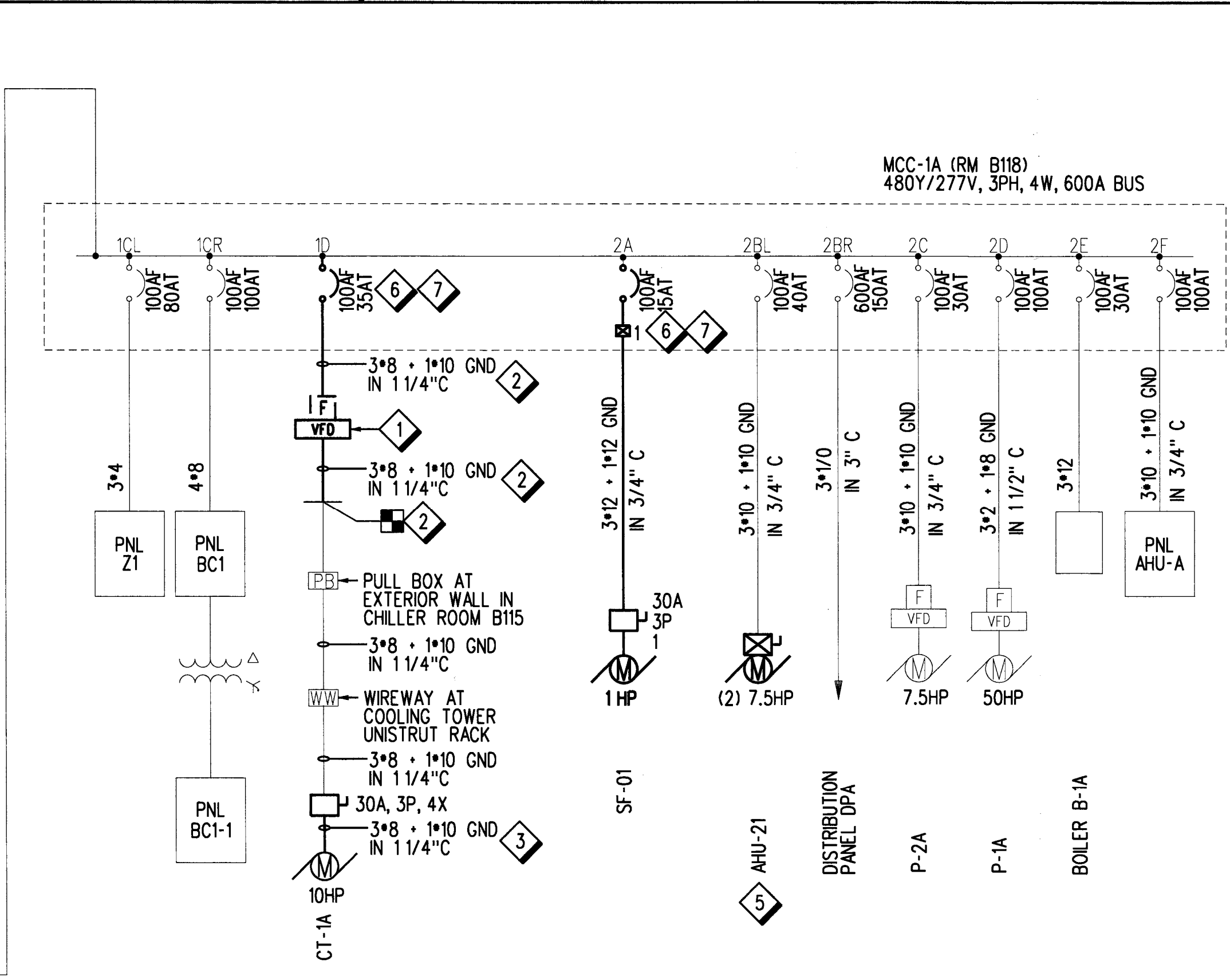
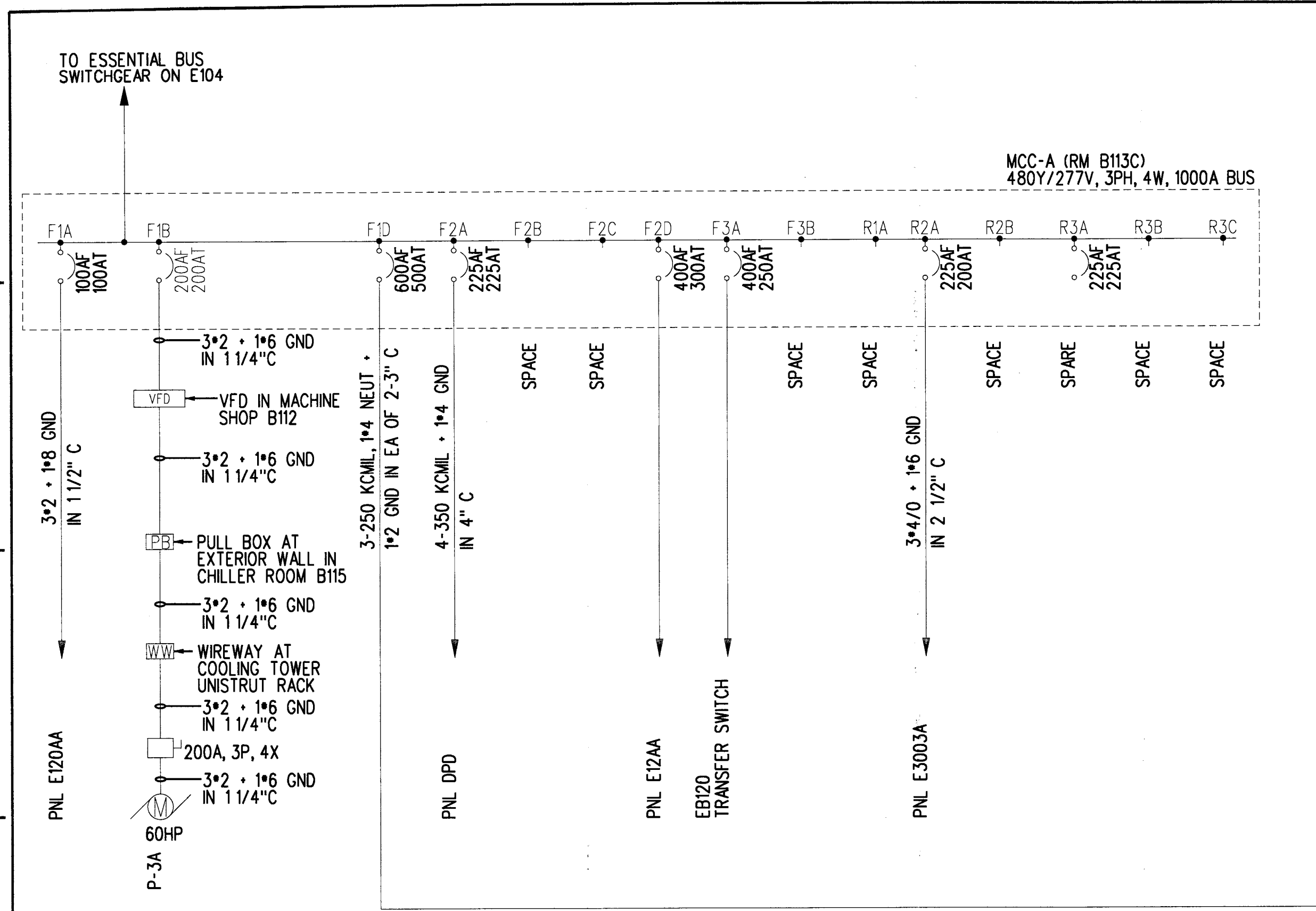
- 1 PANELBOARD TO BE REPLACED. EXISTING FEEDER CONDUIT AND WIRING TO REMAIN FOR NEW WORK.

**E6 PARTIAL BUILDING SERVICE SINGLE LINE DIAGRAM - DEMOLITION**  
**E103 NO SCALE**

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 PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>					
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>					
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER PARTIAL BUILDING SERVICE SINGLE LINE DIAGRAM - DEMOLITION FREMONT <span style="float: right;">OAKLAND (ZOA) ARTCC</span>					
DESIGNED BY	SUBMITTED BY		APPROVED BY		JCN
DRAWN BY	SUBMITTER'S TITLE		APPROVER TITLE		
CHECKED BY	ISSUED BY		DATE		REV.
	OAKLAND ARTCC FREMONT, CALIFORNIA		AIRWAY FACILITY DIVISION		07/08/2015 ZOA - D - CWBMMS - E103





**E6** MCC-A - NEW WORK  
E104 NO SCALE

**A6** MCC-B - NEW WORK  
E104 NO SCALE

**GENERAL NOTES**

- A. THIS SINGLE LINE DIAGRAM WAS DEVELOPED UTILIZING EXISTING DRAWINGS AND THE MECHANICAL CHILLED WATER AND HEATING WATER SYSTEM RETROFIT PROJECT DRAWINGS. THE MECHANICAL CHILLED WATER AND HEATING WATER SYSTEM RETROFIT PROJECT IS SCHEDULED TO BE COMPLETED IN AUGUST 2015.
- B. MAINTAIN CONTINUITY TO AREAS NOT AFFECTED BY DEMOLITION OR PROVIDE TEMPORARY COOLING IN AREAS WHERE THE COR DETERMINES THAT IS NECESSARY. COOLING TOWERS SHALL BE REPLACED ONE AT A TIME. ELECTRICAL WORK SHALL MATCH MECHANICAL PHASING PLAN AS REQUIRED.

**SHEET NOTES**

- 1 PROVIDE NEW VFD IN MACHINE SHOP ROOM B112 FOR COOLING TOWER. PROVIDE HARMONIC FILTER FOR COOLING TOWER VFDs AS REQUIRED PER HARMONICS CALCULATION PROVIDED BY SELECTED VFD VENDOR. SEE DRAWINGS E401 AND E407 FOR VFD LOCATION.
- 2 PROVIDE NEW CONDUIT AND WIRING FROM MCC TO NEW VFD AND FROM NEW VFD TO THE LOCATION WHERE THE EXISTING CONDUIT AND WIRING ARE BEING INTERCEPTED IN ROOM B118. SEE DRAWING E407 FOR INTERCEPTION POINT.
- 3 PROVIDE NEW WIRING IN EXISTING UNDERGROUND CONDUIT BETWEEN DISCONNECT SWITCH AND COOLING TOWER. EXTEND EXISTING CONDUIT TO NEW COOLING TOWER AS REQUIRED.
- 4 NEW CHILLED WATER PUMP. PROVIDE NEW CONDUIT AND WIRING BETWEEN VFD AND MOTOR.
- 5 NEW AIR HANDLING UNIT. RECONNECT EXISTING CONDUIT AND WIRING TO INTEGRAL COMBINATION STARTER DISCONNECT SWITCH IN NEW AIR HANDLING UNIT.
- 6 PROVIDE NEW FEEDER CIRCUIT BREAKER AND STARTER AT ASSOCIATED MCC. NEW CIRCUIT BREAKER SHALL MATCH EXISTING CIRCUIT BREAKER IN TYPE, MANUFACTURER, AND AIC RATING.
- 7 PROVIDE REMOTE STATUS INDICATOR LIGHTS IN THE MOTOR CONTROL CENTER BUCKET FOR REPLACED LOADS. PROVIDE CONVERSION KIT FOR MCC COMPARTMENT AND MODIFY COMPARTMENT AS REQUIRED.

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		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA			
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER ESSENTIAL POWER SINGLE LINE DIAGRAMS - NEW WORK FREMONT OAKLAND (ZOA) ARTCC			
REVIEWED BY DATE	SUBMITTED BY RSEradfish	APPROVED BY 	DESIGNED BY L. CLEMENTS	ISSUED BY AIRWAY FACILITY DIVISION	DATE 07/08/2015 JCN
OAKLAND ARTCC FREMONT, CALIFORNIA		DRAWN BY J. FREDBERG	CHECKED BY H. NICH	DRAWING NO. ZOA - D - CWBMS - E104	REV.





**GENERAL NOTES**

- A. THIS SINGLE LINE DIAGRAM WAS DEVELOPED UTILIZING EXISTING DRAWINGS AND THE MECHANICAL CHILLED WATER AND HEATING WATER SYSTEM RETROFIT PROJECT DRAWINGS. THE MECHANICAL CHILLED WATER AND HEATING WATER SYSTEM RETROFIT PROJECT IS SCHEDULED TO BE COMPLETED IN AUGUST 2015.
- B. MAINTAIN CONTINUITY TO AREAS NOT AFFECTED BY DEMOLITION OR PROVIDE TEMPORARY POWER IN AREAS WHERE THE COR DETERMINES THAT IS NECESSARY. COOLING TOWERS SHALL BE REPLACED ONE AT A TIME. ELECTRICAL WORK SHALL MATCH MECHANICAL PHASING PLAN AS REQUIRED.

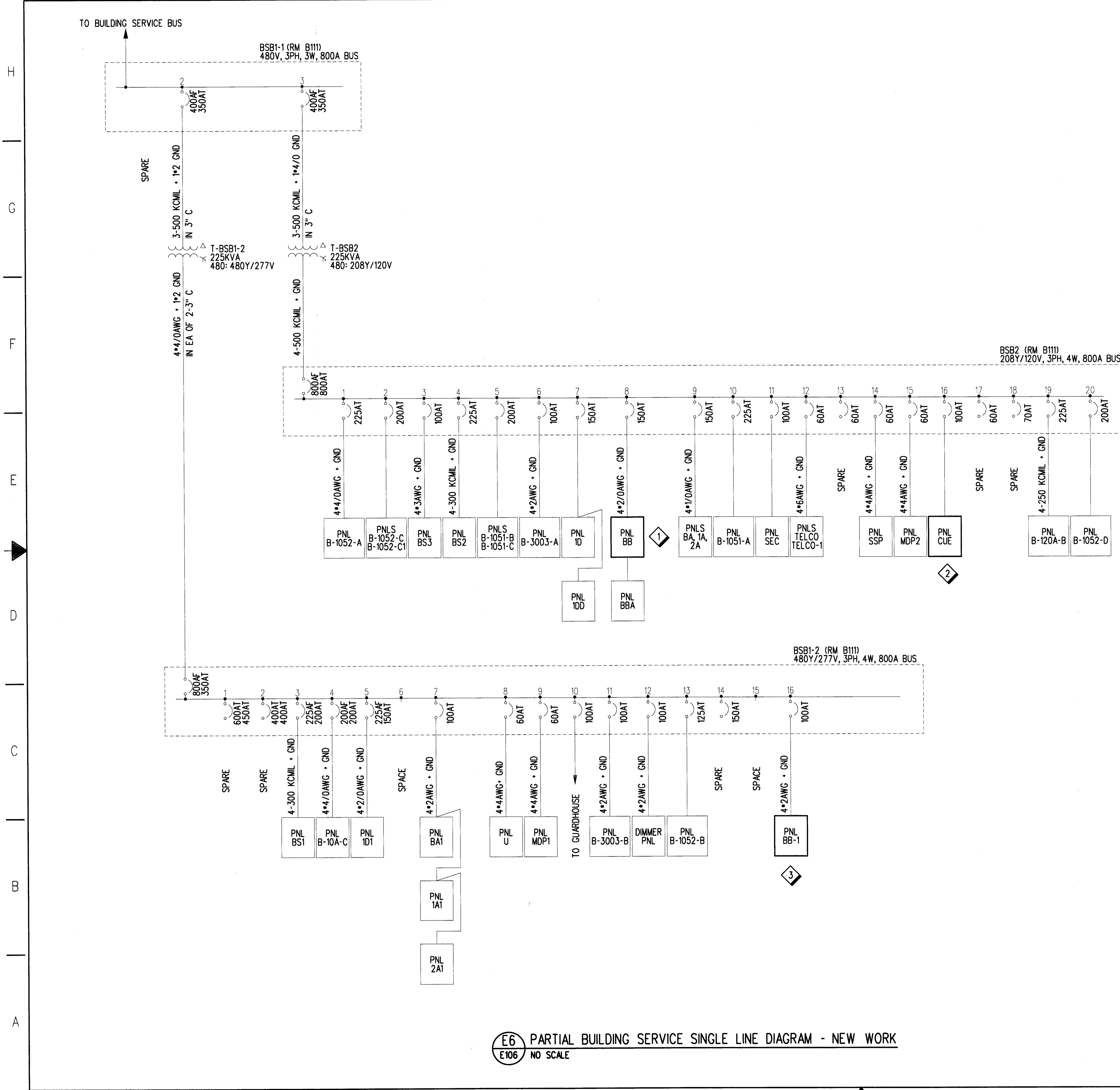
**SHEET NOTES**

- 1. NEW CHILLER WITH INTEGRAL VFD PROVIDED BY MECHANICAL PROVIDE EXTERNAL HARMONIC FILTER AS REQUIRED PER HARMONICS CALCULATION. EXTEND EXISTING OVERHEAD CONDUIT AND WIRING TO NEW CHILLER AS REQUIRED.
- 2. PROVIDE NEW VFD IN MACHINE SHOP ROOM B112 FOR COOLING TOWER. PROVIDE HARMONIC FILTER FOR COOLING TOWER VFDs AS REQUIRED PER HARMONICS CALCULATION PROVIDED BY SELECTED VFD VENDOR. SEE DRAWINGS E401 AND E407 FOR VFD LOCATION.
- 3. PROVIDE NEW CONDUIT AND WIRING FROM MCC TO NEW VFD AND FROM NEW VFD TO THE LOCATION WHERE THE EXISTING CONDUIT AND WIRING ARE BEING INTERCEPTED IN ROOM B118. SEE DRAWING E407 FOR INTERCEPTION POINT.
- 4. PROVIDE NEW CONDUIT AND WIRING FROM LOCATION WHERE THE EXISTING CONDUIT AND WIRING ARE BEING INTERCEPTED IN ROOM B112 TO NEW VFD AND FROM NEW VFD TO INTERCEPTION POINT. SEE DRAWING E407 FOR INTERCEPTION POINT.
- 5. PROVIDE NEW WIRING IN EXISTING UNDERGROUND CONDUIT BETWEEN DISCONNECT SWITCH AND COOLING TOWER. EXTEND EXISTING CONDUIT TO NEW COOLING TOWER AS REQUIRED.
- 6. NEW CHILLED WATER PUMP. PROVIDE NEW CONDUIT AND WIRING BETWEEN VFD AND MOTOR.
- 7. NEW EXHAUST FAN. PROVIDE NEW COMBINATION STARTER DISCONNECT SWITCH. RECONNECT EXISTING CONDUIT AND WIRING TO NEW DISCONNECT SWITCH. PROVIDE NEW CONDUIT AND WIRING FROM DISCONNECT SWITCH TO NEW MOTOR.
- 8. PROVIDE NEW FEEDER CIRCUIT BREAKER AT ASSOCIATED MCC. NEW CIRCUIT BREAKER SHALL MATCH EXISTING CIRCUIT BREAKER IN TYPE, MANUFACTURER, AND AIC RATING.
- 9. NEW 100A DOUBLE THROW MANUAL TRANSFER SWITCH (MTS). RECONNECT EXISTING CONDUIT AND WIRING TO NEW MTS.
- 10. NEW 15KVA, 480-208Y/120V, 3 PHASE, 4 WIRE STEP DOWN TRANSFORMER. CONNECT NEW PRIMARY AND SECONDARY CONDUIT AND WIRING TO NEW TRANSFORMER.
- 11. NEW 480V, 3 PHASE, 3 WIRE, 42 POLES, WITH 125A MCB, PANELBOARD PP-MOV. RECONNECT EXISTING FEEDER CONDUIT AND WIRING.
- 12. NEW 480V, 3 PHASE, 3 WIRE, 36 POLES, WITH 50A MCB, PANELBOARD PP-CT. RECONNECT EXISTING FEEDER CONDUIT AND WIRING.
- 13. NEW 208Y/120V, 3 PHASE, 4 WIRE, 24 POLES, WITH 50A MCB, PANELBOARD LP-CT. PROVIDE NEW FEEDER CONDUIT AND WIRING.
- 14. PROVIDE TEMPORARY POWER SERVICE FOR TEMPORARY COOLING TOWERS AND PUMPS AS PROPOSED ON DRAWING E002. PROVIDE UNISTRUT RACK FOR TEMPORARY POWER PANELBOARD. PROVIDE AND CONNECT NEW CONDUIT AND WIRING FROM ESSENTIAL SWITCHGEAR TO TEMPORARY POWER PANELBOARD. PANELBOARD ENCLOSURE SHALL BE RATED FOR OUTDOOR USE. (BASIS OF DESIGN: SQUARE D, I-LINE)
- 15. UTILIZE EXISTING SPARE DRAW OUT CIRCUIT BREAKER IN THE ESSENTIAL SWITCHGEAR TO FEED TEMPORARY POWER PANELBOARD FOR THE TEMPORARY COOLING TOWERS. PROVIDE AND CONNECT NEW CONDUIT AND WIRING TO CIRCUIT BREAKER IN ESSENTIAL SWITCHGEAR AND TEMPORARY POWER PANELBOARD.
- 16. PROVIDE #8 AWG COPPER CONDUCTOR AS GROUND ELECTRODE CONDUCTOR.
- 17. PROVIDE REMOTE STATUS INDICATOR LIGHTS IN THE MOTOR CONTROL CENTER BUCKET FOR REPLACED LOADS. PROVIDE CONVERSION KIT FOR MCC COMPARTMENT AND MODIFY COMPARTMENT AS REQUIRED.

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PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>			
REV.	APPROVED DATE	DESCRIPTION	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA OAKLAND (ZOA) ARTCC			
<b>CONTROL WING BASEMENT          AND CHILLER/COOLING TOWER MODERNIZATION          OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER          ESSENTIAL POWER SINGLE LINE DIAGRAM -          NEW WORK</b>			
REVIEWED BY	SUBMITTED BY	APPROVED BY	
	RSBradfish	<i>[Signature]</i>	
DESIGNED BY	ISSUED BY	DATE	
J. FREDBERG	AIRWAY FACILITY DIVISION	07/08/2015	
DRAWN BY	CHECKED BY	DRAWING NO.	REV.
H. NGHE		ZOA - D - CWBMM5 - E105	

**A6** ESSENTIAL POWER SINGLE LINE DIAGRAM - NEW WORK  
**E105** SCALE: 1/4" = 1'-0"



**GENERAL NOTES**

- A. THIS SINGLE LINE DIAGRAM WAS DEVELOPED UTILIZING EXISTING DRAWINGS AND THE MECHANICAL CHILLED WATER AND HEATING WATER SYSTEM RETROFIT PROJECT DRAWINGS. THE MECHANICAL CHILLED WATER AND HEATING WATER SYSTEM RETROFIT PROJECT IS SCHEDULED TO BE COMPLETED IN AUGUST 2015.
- B. MAINTAIN CONTINUITY TO AREAS NOT AFFECTED BY DEMOLITION OR PROVIDE TEMPORARY POWER IN AREAS WHERE THE COR DETERMINES THAT IS NECESSARY.
- C. CONTRACTOR TO FIELD VERIFY THAT EXISTING BACKBOX IS SUITABLE FOR NEW PANELBOARD MAINS ARE AT THE SAME ENTRY LOCATION, AND AND FEEDER AND BRANCH WIRING TERMINATIONS IN NEW PANELBOARD.

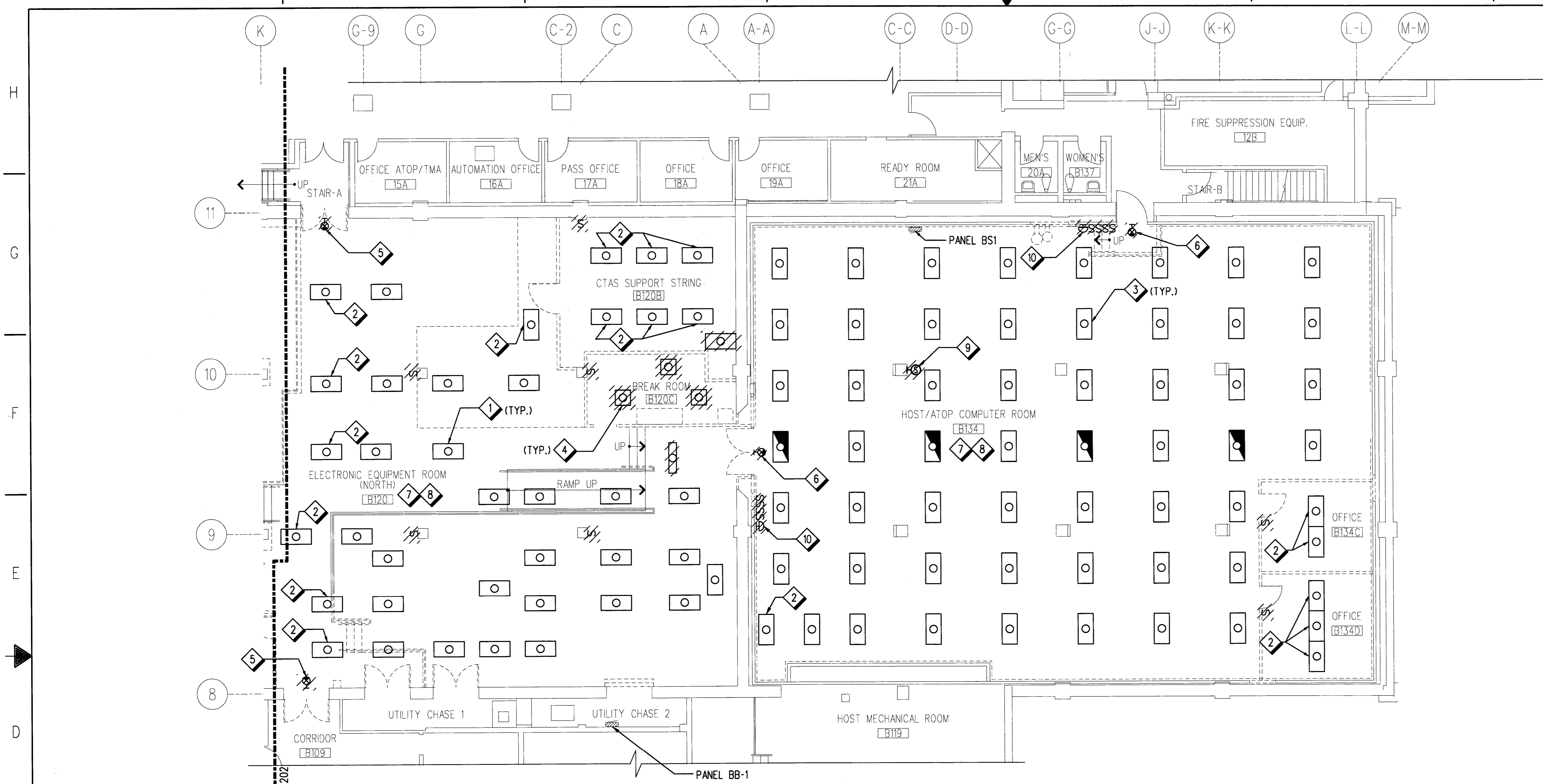
**SHEET NOTES**

- 1. NEW 208Y/120V, 3 PHASE, 4 WIRE, 42 POLES, WITH 150A MCB, PANELBOARD BB. RECONNECT EXISTING FEEDER AND BRANCH CONDUITS AND WIRING.
- 2. NEW 208Y/120V, 3 PHASE, 4 WIRE, 42 POLES, WITH 225A MCB, PANELBOARD CUE. RECONNECT EXISTING FEEDER CONDUIT AND WIRING.
- 3. NEW 480Y/277V, 3 PHASE, 4 WIRE, 42 POLES, WITH 100A MCB, PANELBOARD BB-1. RECONNECT EXISTING FEEDER AND BRANCH CONDUITS AND WIRING.

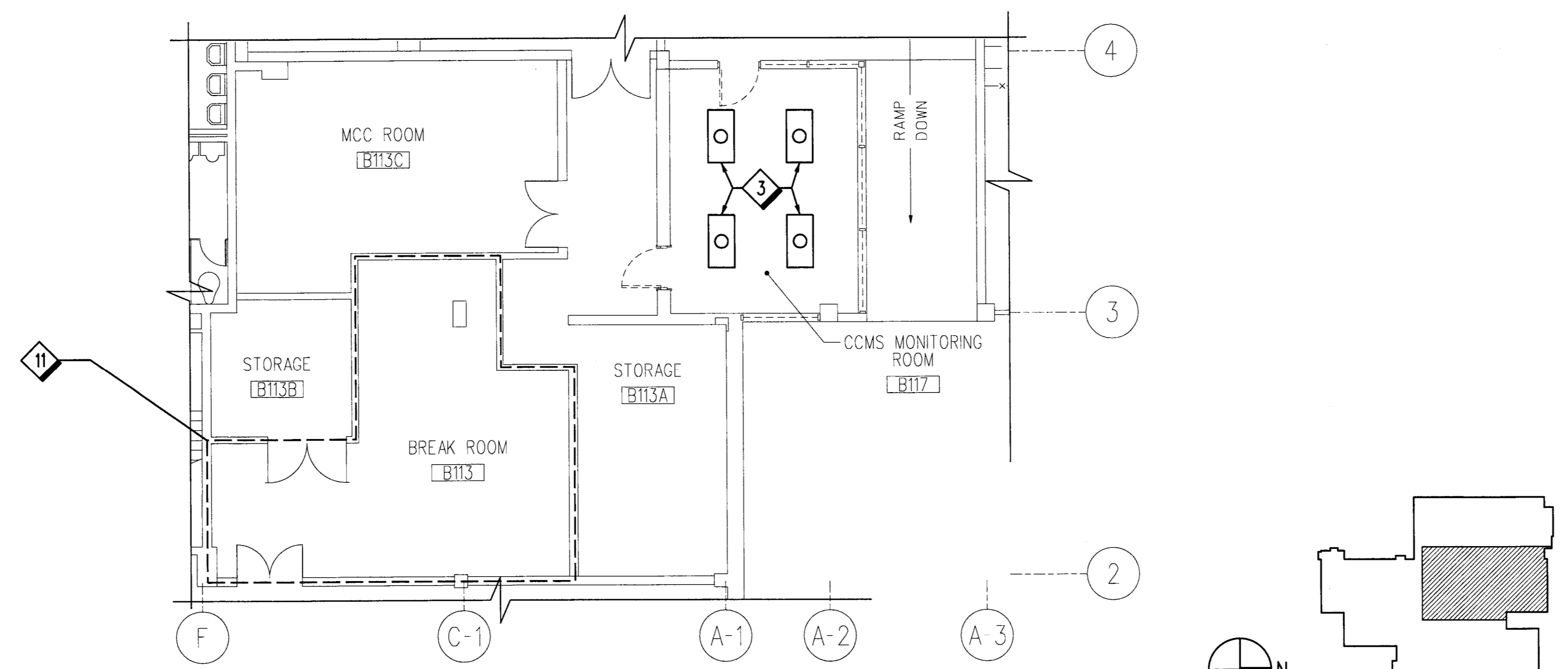
**E6 PARTIAL BUILDING SERVICE SINGLE LINE DIAGRAM - NEW WORK**  
**E106 NO SCALE**

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	DEPARTMENT OF TRANSPORTATION <b>FEDERAL AVIATION ADMINISTRATION</b> WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>			
	<b>CONTROL WING BASEMENT                  AND CHILLER/COOLING TOWER MODERNIZATION                  OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER                  PARTIAL BUILDING SERVICE SINGLE LINE DIAGRAM                  - NEW WORK</b> FREMONT <span style="float: right;">OAKLAND (ZOA) ARTCC</span>			
		REVIEWED BY: _____ SUBMITTED BY: <i>RSBradfish</i> APPROVED BY: _____ APPROVER'S TITLE: _____		DATE: 07/08/2015 JCN: _____ DATE: _____ JCN: _____
	DESIGNED BY: L. CLEMENTS DRAWN BY: J. FREDBERG CHECKED BY: H. NGHE		ISSUED BY: AIRWAY FACILITY DIVISION DATE: 07/08/2015 DRAWING NO.: ZOA - D - CWBMS - E106 REV.: _____	
	OAKLAND ARTCC FREMONT, CALIFORNIA		OAKLAND (ZOA) ARTCC AIRWAY FACILITY DIVISION 6/30/2015 USER: 88USER	



**C6** PARTIAL BASEMENT LIGHTING PLAN - DEMOLITION  
E201 SCALE: 1/8" = 1'-0"



**A5** PARTIAL BASEMENT LIGHTING PLAN - DEMOLITION  
E201 SCALE: 1/8" = 1'-0"

**GENERAL NOTES**

- A. MAINTAIN CONTINUITY TO AREAS NOT AFFECTED BY DEMOLITION OR PROVIDE TEMPORARY POWER IN AREAS WHERE THE COR DETERMINES THAT IS NECESSARY.

**SHEET NOTES**

- 1. EXISTING LIGHTING FIXTURES TO BE RE-CIRCUITED. DISCONNECT AND REMOVE ASSOCIATED LIGHT SWITCHES AND CONDUIT AND WIRING BACK TO SOURCE (PANELS BB-1 AND BS1).
- 2. EXISTING LIGHT FIXTURE TO BE RELOCATED. REMOVE ASSOCIATED UNISTRUT SUPPORT SYSTEM. REFER TO DRAWING E301 FOR MORE INFORMATION.
- 3. EXISTING TO REMAIN LIGHTING FIXTURES. PROVIDE TEMPORARY SUPPORT FOR THE LIGHT FIXTURES DURING THE CEILING REPLACEMENT.
- 4. DISCONNECT AND REMOVE EXISTING LIGHTING FIXTURES, ASSOCIATED LIGHT SWITCHES, CONDUIT AND WIRING BACK TO SOURCE (PANEL BB-1). REMOVE ASSOCIATED SEISMIC BRACING AND UNISTRUT SUPPORT SYSTEM.
- 5. DISCONNECT AND REMOVE EXISTING EXIT SIGN. REMOVE ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE.
- 6. DISCONNECT AND REMOVE EXISTING EXIT SIGN. EXISTING CONDUIT AND WIRING TO REMAIN FOR NEW WORK.
- 7. PROVIDE 50FC TEMPORARY LIGHTING DURING CONSTRUCTION. COORDINATE WITH COR ON PHASING OF LIGHT FIXTURE RE-CIRCUITING.
- 8. PROVIDE OVERHEAD PROTECTION FOR OPERATIONAL EQUIPMENT IN THIS AREA DURING CONSTRUCTION. COORDINATE WITH COR FOR EXACT REQUIREMENTS.
- 9. EXISTING PA SPEAKER TO BE REPLACED. REMOVE EXISTING CONDUIT AND WIRING BACK TO SOURCE.
- 10. REMOVE ABANDONED EMERGENCY-POWER-OFF (EPO) BUTTON.
- 11. EXISTING PA SPEAKERS IN THIS AREA TO BE REPLACED. REMOVE EXISTING CONDUIT AND WIRING BACK TO NEXT DEVICE IN LINE OUTSIDE THE AREA OF WORK.

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**JACOBS**

REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD

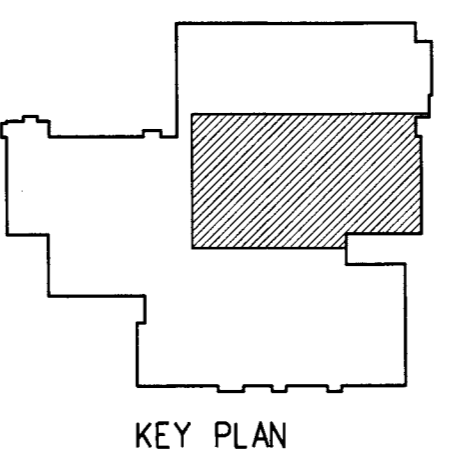
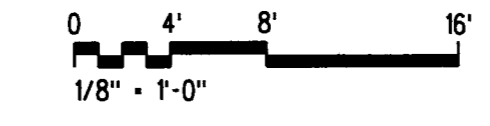
**DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**  
WESTERN SERVICE AREA RENTON, WA

**CONTROL WING BASEMENT  
AND CHILLER/COOLING TOWER MODERNIZATION  
OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER  
PARTIAL BASEMENT LIGHTING  
PLAN - DEMOLITION**  
FREMONT OAKLAND (ZOA) ARTCC

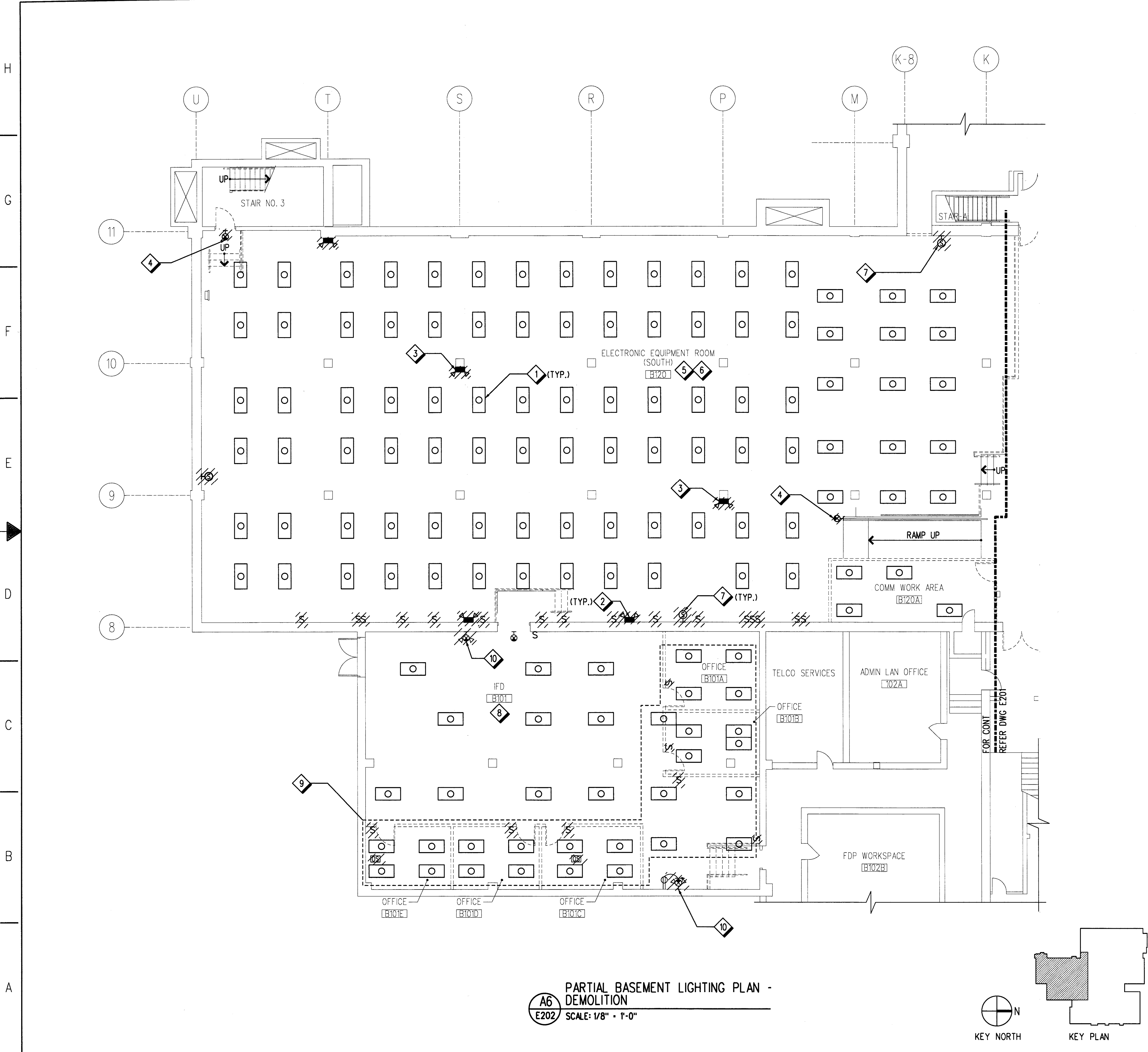
DESIGNED BY L. CLEMENTS	ISSUED BY AIRWAY FACILITY DIVISION	DATE 07/08/2015	JCN
DRAWN BY J. FRIEBERG	CHECKED BY H. NGHE	DRAWING NO. ZOA - D - CWBMS - E201	REV.

OAKLAND ARTCC  
FREMONT, CALIFORNIA

DATE: 6/30/2015 TIME: 11:51 AM USER: BRUER







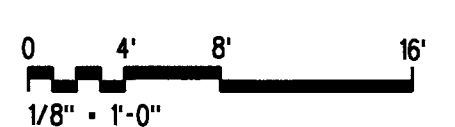
**A6**  
**E202** PARTIAL BASEMENT LIGHTING PLAN - DEMOLITION  
 SCALE: 1/8" = 1'-0"

**GENERAL NOTES**

A. MAINTAIN CONTINUITY TO AREAS NOT AFFECTED BY DEMOLITION OR PROVIDE TEMPORARY POWER IN AREAS WHERE THE COR DETERMINES THAT IS NECESSARY.

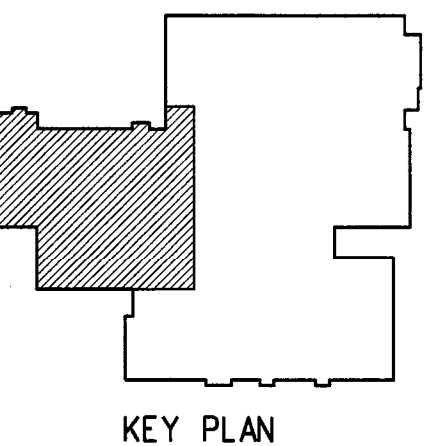
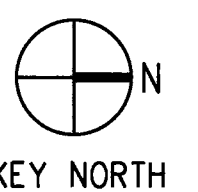
**SHEET NOTES**

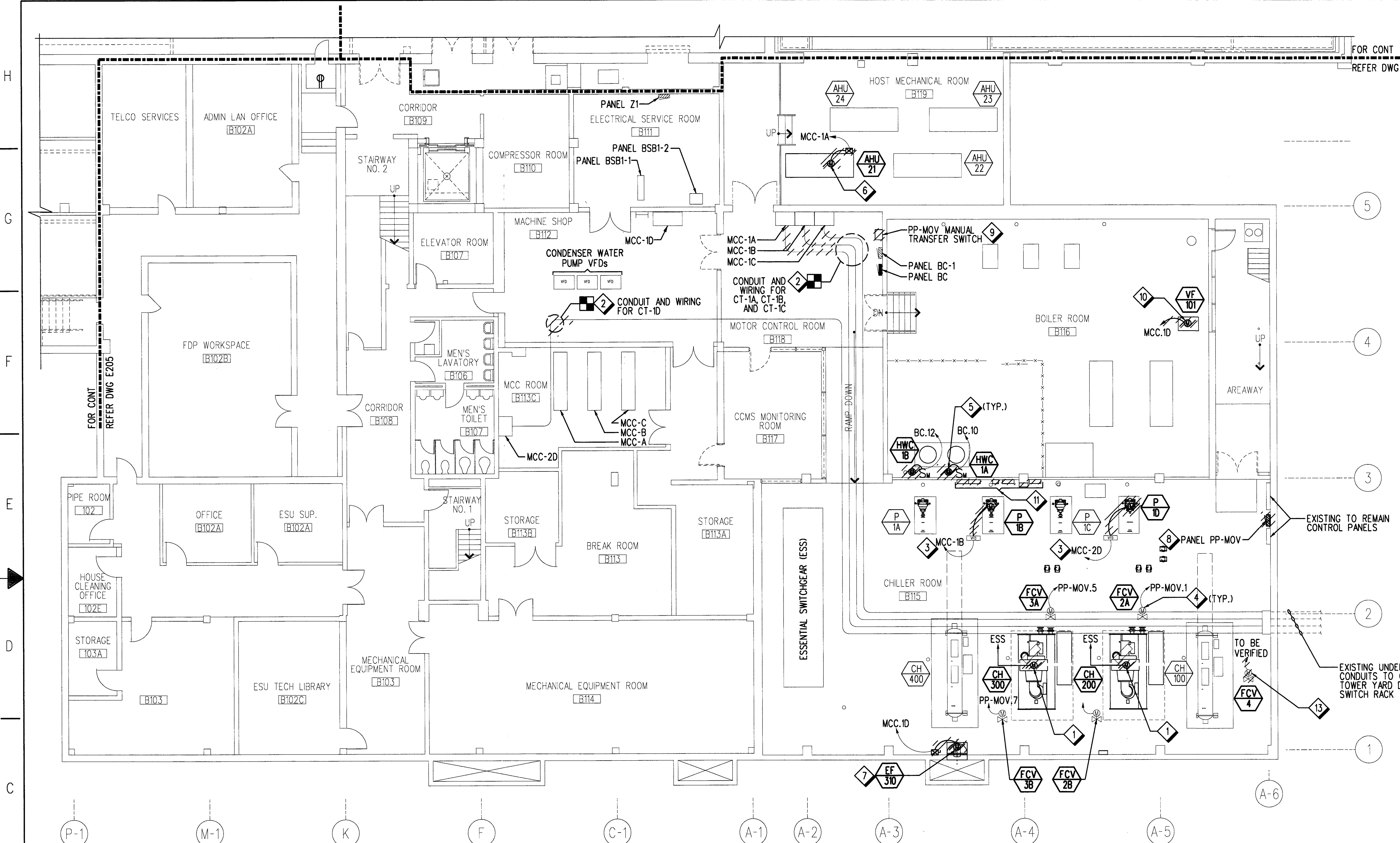
- 1 EXISTING LIGHTING FIXTURES TO BE RE-CIRCUITED, DISCONNECT AND REMOVE ASSOCIATED LIGHT SWITCHES AND CONDUIT AND WIRING BACK TO SOURCE (PANELS BB-1 AND BS1).
- 2 REMOVE EMERGENCY EGRESS LIGHT FIXTURE.
- 3 SALVAGE EMERGENCY EGRESS LIGHT FIXTURE AND RETURN TO FAA.
- 4 DISCONNECT AND REMOVE EXISTING EXIT SIGN, REMOVE ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE.
- 5 PROVIDE 50FC TEMPORARY LIGHTING DURING CONSTRUCTION. COORDINATE WITH COR ON PHASING OF LIGHT FIXTURE RE-CIRCUITING.
- 6 PROVIDE OVERHEAD PROTECTION FOR OPERATIONAL EQUIPMENT IN THIS AREA DURING CONSTRUCTION. COORDINATE WITH COR FOR EXACT REQUIREMENTS.
- 7 EXISTING PA SPEAKER TO BE REPLACED, REMOVE EXISTING CONDUIT AND WIRING BACK TO NEXT DEVICE IN LINE OUTSIDE THE AREA OF WORK.
- 8 EXISTING PA SPEAKERS IN THIS AREA TO BE REPLACED, REMOVE EXISTING CONDUIT AND WIRING BACK TO NEXT DEVICE IN LINE OUTSIDE THE AREA OF WORK.
- 9 EXISTING LIGHT FIXTURES TO BE RELOCATED AND RE-CIRCUITED, DISCONNECT AND REMOVE ASSOCIATED LIGHT SWITCHES, CEILING MOUNTED OCCUPANCY SENSORS, AND CONDUIT AND WIRING BACK TO SOURCE (PANEL BB-1).
- 10 SALVAGE COMBINATION EMERGENCY LIGHTING UNIT AND EXIT SIGN AND RETURN TO FAA.



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		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA			
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER PARTIAL BASEMENT LIGHTING PLAN - DEMOLITION OAKLAND (ZOA) ARTCC			
		REVIEWED BY: _____ SUBMITTED BY: <i>RSBradfish</i> SUBMITTER'S TITLE: _____ DESIGNED BY: L. CLEMENTS DRAWN BY: J. FREIBERG CHECKED BY: H. NGHE		APPROVED BY: <i>[Signature]</i> APPROVER'S TITLE: _____ DATE: 07/08/2015 DRAWING NO.: ZOA - D - CWBMM5 - E202	
OAKLAND ARTCC FREMONT, CALIFORNIA		ISSUED BY: AIRWAY FACILITY DIVISION		DATE: 6/30/2015 TIME: 11:58 AM USER: 111111	





**GENERAL NOTES**

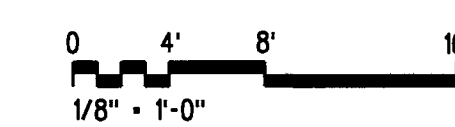
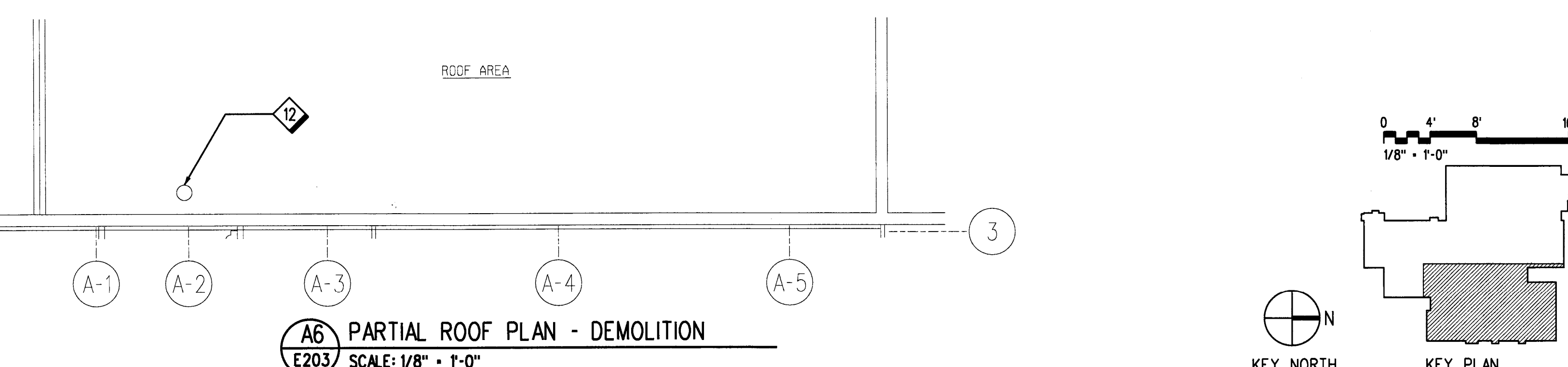
A. MAINTAIN CONTINUITY TO AREAS NOT AFFECTED BY DEMOLITION OR PROVIDE TEMPORARY POWER IN AREAS WHERE THE COR DETERMINES THAT IS NECESSARY.

**SHEET NOTES**

- 1 EXISTING CHILLER AND MOTOR STARTER TO BE REPLACED. REMOVE WIRING TO ESSENTIAL SWITCHGEAR. EXISTING OVERHEAD CONDUIT TO REMAIN FOR NEW WORK.
- 2 INTERCEPT EXISTING COOLING TOWER CONDUIT. EXISTING WIRING TO REMAIN FOR NEW WORK. INTERCEPTION POINT SHOWN IS APPROXIMATE. CONTRACTOR TO FIELD VERIFY AND COORDINATE WITH COR EXACT INTERCEPTION POINT.
- 3 EXISTING CHILLED WATER PUMP TO BE REPLACED. ASSOCIATED VFD, AND HARMONIC FILTER TO REMAIN FOR NEW WORK. REMOVE CONDUIT AND WIRING BETWEEN VFD AND MOTOR. CONDUIT AND WIRING BETWEEN VFD AND MCC TO REMAIN FOR NEW WORK.
- 4 EXISTING FLOW CONTROL VALVE (FCV) TO BE SALVAGED. EXISTING CONDUIT AND WIRING TO REMAIN FOR NEW WORK.
- 5 EXISTING HOT WATER PUMP TO BE REPLACED. ASSOCIATED DISCONNECT SWITCH, CONDUIT AND WIRING TO REMAIN FOR NEW WORK.
- 6 EXISTING AIR HANDLING UNIT TO BE REPLACED. REMOVE ASSOCIATED DISCONNECT MEANS. ASSOCIATED CONDUIT AND WIRING TO REMAIN FOR NEW WORK.
- 7 EXISTING EXHAUST FAN TO BE REPLACED. REMOVE ASSOCIATED COMBINATION MOTOR STARTER DISCONNECT SWITCH. REMOVE ONE SET OF 3\*12 AWG + 1\*12 GND BETWEEN MCC AND THE MOTOR. ONE SET OF CONDUCTORS AND EXISTING CONDUIT TO REMAIN FOR NEW WORK.
- 8 PANELBOARD TO BE REPLACED. EXISTING CONDUIT AND WIRING TO REMAIN FOR NEW WORK. PROVIDE TEMPORARY POWER FOR ALL EXISTING TO REMAIN LOADS FED FROM THIS PANEL DURING REPLACEMENT.
- 9 EXISTING MANUAL TRANSFER SWITCH TO BE REPLACED. EXISTING CONDUIT AND WIRING TO REMAIN FOR NEW WORK.
- 10 EXISTING EQUIPMENT TO BE DEMOLISHED. REMOVE ASSOCIATED DISCONNECT SWITCH, CONDUIT AND WIRING BACK TO SOURCE.
- 11 EXISTING CONTROL PANELS TO BE REPLACED. EXISTING CONDUIT AND WIRING TO REMAIN FOR NEW WORK.
- 12 EXISTING VENT HOOD ON ROOF TO BE REMOVED BY MECHANICAL. EXISTING BOND TO LIGHTNING PROTECTION SYSTEM TO REMAIN FOR NEW WORK.
- 13 EXISTING FLOW CONTROL VALVE TO BE DEMOLISHED. REMOVE EXISTING CONDUIT AND WIRING BACK TO SOURCE.

**B6 PARTIAL BASEMENT POWER PLAN - DEMOLITION**  
 E203 SCALE: 1/8" = 1'-0"

**A6 PARTIAL ROOF PLAN - DEMOLITION**  
 E203 SCALE: 1/8" = 1'-0"



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 PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

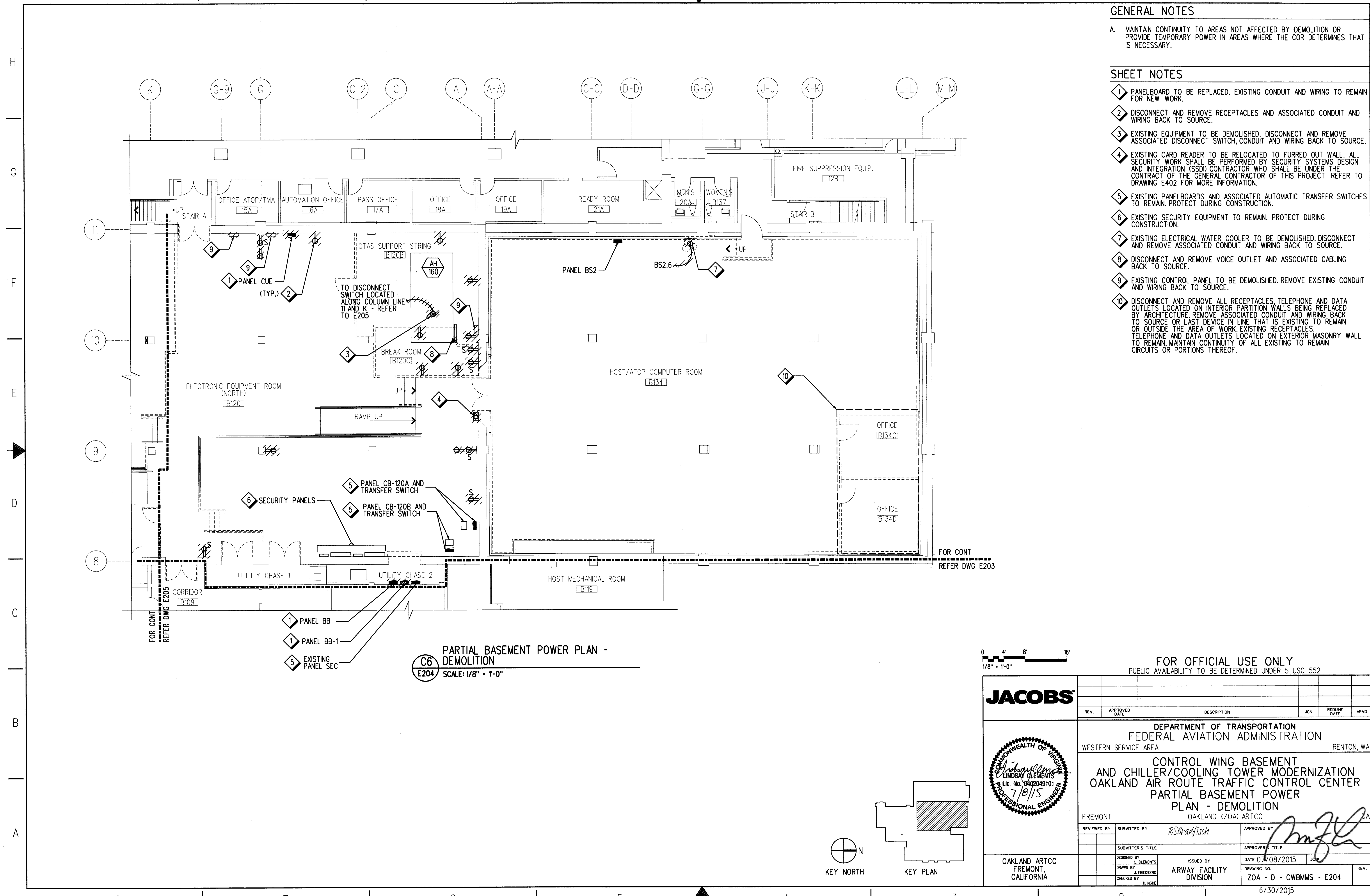
<b>JACOBS</b>		REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA					
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER PARTIAL BASEMENT POWER PLAN - DEMOLITION OAKLAND (ZOA) ARTCC					
		FREMONT OAKLAND (ZOA) ARTCC	REVIEWED BY SUBMITTED BY DESIGNED BY DRAWN BY CHECKED BY	SUBMITTER'S TITLE L. CLEMENTS J. FREDBERG H. NGHE	ISSUED BY AIRWAY FACILITY DIVISION	APPROVED BY 	DATE 08/2015

**GENERAL NOTES**

- A. MAINTAIN CONTINUITY TO AREAS NOT AFFECTED BY DEMOLITION OR PROVIDE TEMPORARY POWER IN AREAS WHERE THE COR DETERMINES THAT IS NECESSARY.

**SHEET NOTES**

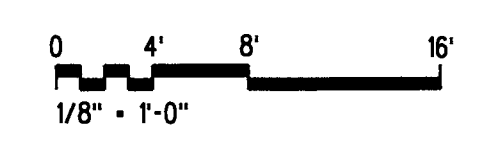
- 1. PANELBOARD TO BE REPLACED. EXISTING CONDUIT AND WIRING TO REMAIN FOR NEW WORK.
- 2. DISCONNECT AND REMOVE RECEPTACLES AND ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE.
- 3. EXISTING EQUIPMENT TO BE DEMOLISHED. DISCONNECT AND REMOVE ASSOCIATED DISCONNECT SWITCH, CONDUIT AND WIRING BACK TO SOURCE.
- 4. EXISTING CARD READER TO BE RELOCATED TO FURRED OUT WALL. ALL SECURITY WORK SHALL BE PERFORMED BY SECURITY SYSTEMS DESIGN AND INTEGRATION (SSDI) CONTRACTOR WHO SHALL BE UNDER THE CONTRACT OF THE GENERAL CONTRACTOR OF THIS PROJECT. REFER TO DRAWING E402 FOR MORE INFORMATION.
- 5. EXISTING PANELBOARDS AND ASSOCIATED AUTOMATIC TRANSFER SWITCHES TO REMAIN. PROTECT DURING CONSTRUCTION.
- 6. EXISTING SECURITY EQUIPMENT TO REMAIN. PROTECT DURING CONSTRUCTION.
- 7. EXISTING ELECTRICAL WATER COOLER TO BE DEMOLISHED. DISCONNECT AND REMOVE ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE.
- 8. DISCONNECT AND REMOVE VOICE OUTLET AND ASSOCIATED CABLING BACK TO SOURCE.
- 9. EXISTING CONTROL PANEL TO BE DEMOLISHED. REMOVE EXISTING CONDUIT AND WIRING BACK TO SOURCE.
- 10. DISCONNECT AND REMOVE ALL RECEPTACLES, TELEPHONE AND DATA OUTLETS LOCATED ON INTERIOR PARTITION WALLS BEING REPLACED BY ARCHITECTURE. REMOVE ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE OR LAST DEVICE IN LINE THAT IS EXISTING TO REMAIN OR OUTSIDE THE AREA OF WORK. EXISTING RECEPTACLES, TELEPHONE AND DATA OUTLETS LOCATED ON EXTERIOR MASONRY WALL TO REMAIN. MAINTAIN CONTINUITY OF ALL EXISTING TO REMAIN CIRCUITS OR PORTIONS THEREOF.



- 1. PANEL BB
- 1. PANEL BB-1
- 5. EXISTING PANEL SEC

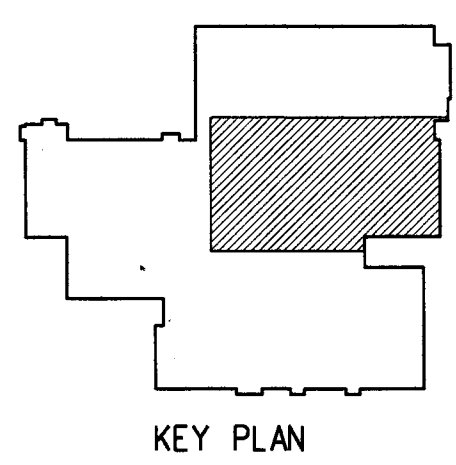
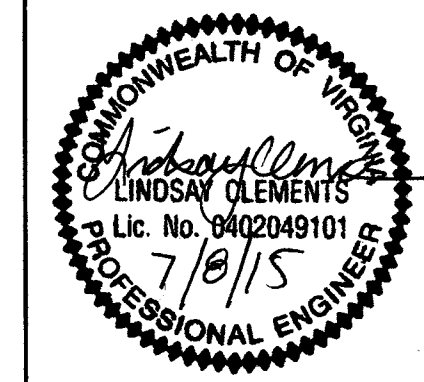
**C6** PARTIAL BASEMENT POWER PLAN - DEMOLITION  
SCALE: 1/8" = 1'-0"

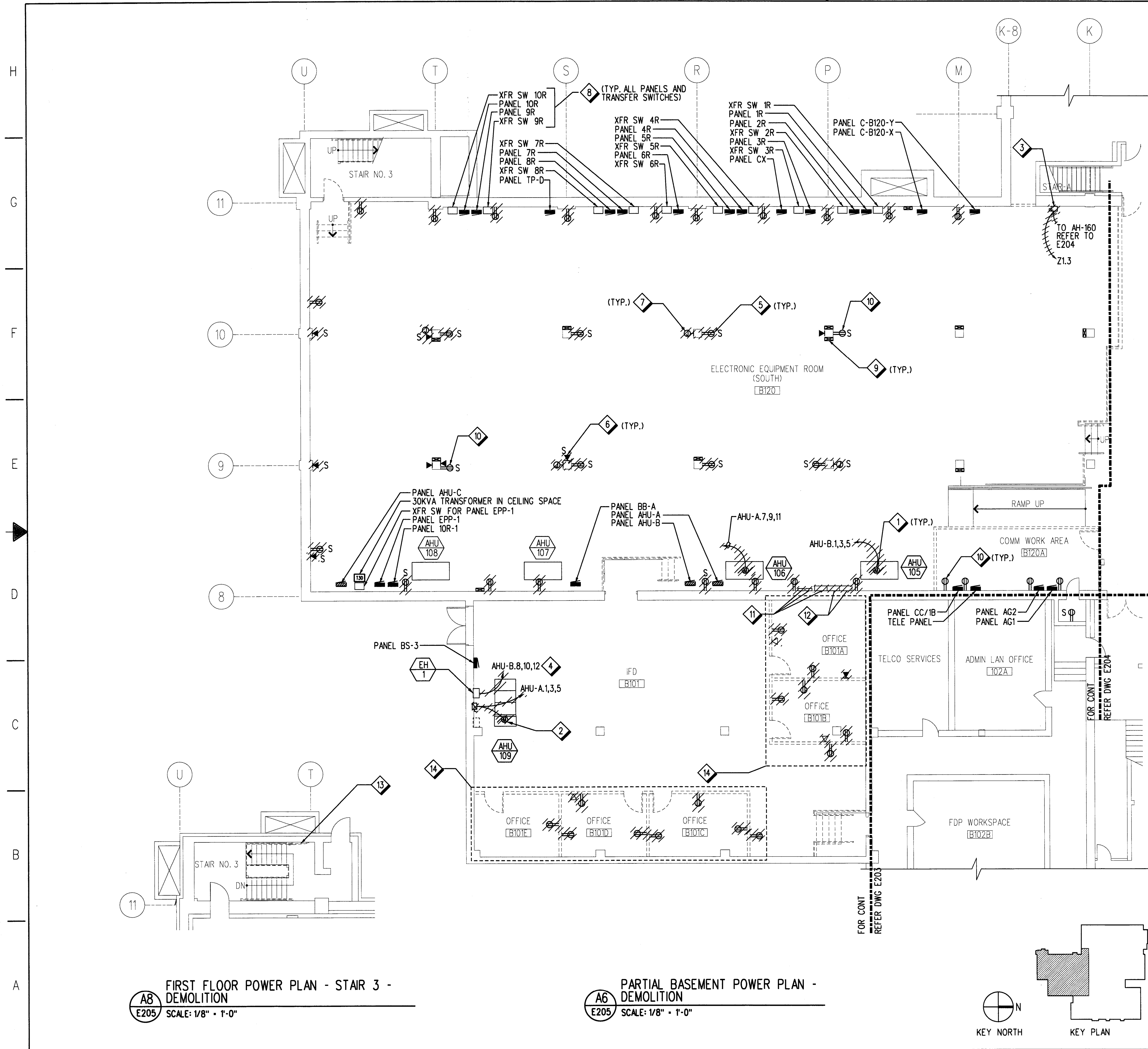
FOR CONT  
REFER DWG E203



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<b>JACOBS</b>					
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>					
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER PARTIAL BASEMENT POWER PLAN - DEMOLITION FREMONT <span style="float: right;">OAKLAND (ZOA) ARTCC</span>					
REVIEWED BY	SUBMITTED BY	APPROVED BY			
	RSBradfish	<i>[Signature]</i>			
SUBMITTER'S TITLE		APPROVER'S TITLE			
DESIGNED BY	L. CLEMENTS	ISSUED BY	DATE	07/08/2015	
DRAWN BY	J. FRIEDBERG	AIRWAY FACILITY DIVISION	DRAWING NO.	ZOA - D - CWBMS - E204	
CHECKED BY	H. NGHE		REV.		

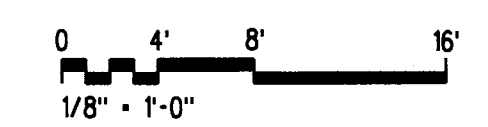




- ### GENERAL NOTES
- A. MAINTAIN CONTINUITY TO AREAS NOT AFFECTED BY DEMOLITION OR PROVIDE TEMPORARY POWER IN AREAS WHERE THE COR DETERMINES THAT IS NECESSARY.
- ### SHEET NOTES
- 1 EXISTING AHU TO BE REPLACED. REMOVE EXISTING WIRING BACK TO SOURCE. EXISTING CONDUIT TO REMAIN FOR NEW WORK.
  - 2 EXISTING AHU TO BE REPLACED AND RELOCATED. REMOVE ASSOCIATED DISCONNECT SWITCH, CONDUIT AND WIRING BACK TO SOURCE.
  - 3 EXISTING EQUIPMENT TO BE DEMOLISHED. DISCONNECT AND REMOVE ASSOCIATED DISCONNECT SWITCH, CONDUIT AND WIRING BACK TO SOURCE.
  - 4 EXISTING EQUIPMENT TO BE RELOCATED. DISCONNECT AND REMOVE ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE.
  - 5 DISCONNECT AND REMOVE RECEPTACLES AND ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE.
  - 6 EXISTING VOICE JACK TO BE RELOCATED TO FURRED OUT WALL. PROTECT EXISTING CABLING FOR RECONNECTION.
  - 7 EXISTING PULL BOX TO BE DEMOLISHED. REMOVE ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE.
  - 8 ALL CRITICAL AND BUILDING SERVICE PANELBOARDS AND ASSOCIATED AUTOMATIC TRANSFER SWITCHES SHALL REMAIN OPERATIONAL. PROTECT PANELBOARDS AND ASSOCIATED AUTOMATIC TRANSFER SWITCHES DURING CONSTRUCTION.
  - 9 EXISTING CABLE TRAY TO REMAIN. PROTECT DURING CONSTRUCTION.
  - 10 MAINTAIN CONTINUITY OF CIRCUIT FOR EXISTING TO REMAIN DEVICE.
  - 11 EXISTING LEAK DETECTION PANELS TO BE REPLACED. EXISTING CONDUIT AND WIRING TO REMAIN FOR NEW WORK.
  - 12 EXISTING ABANDONED CONTROL PANELS TO BE DEMOLISHED. REMOVE ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE.
  - 13 EXISTING SWING GATE TO BE REPLACED BY ARCHITECTURE. EXISTING CONDUIT AND WIRING FOR MAGNETIC HOLD OPEN DEVICE TO REMAIN FOR NEW WORK.
  - 14 DISCONNECT AND REMOVE ALL RECEPTACLES, TELEPHONE AND DATA OUTLETS LOCATED ON INTERIOR PARTITION WALLS BEING REPLACED BY ARCHITECTURE. REMOVE ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE OR LAST DEVICE IN-LINE THAT IS EXISTING TO REMAIN OR OUTSIDE THE AREA OF WORK. EXISTING RECEPTACLES, TELEPHONE AND DATA OUTLETS LOCATED ON EXTERIOR MASONRY WALL OR B101 PERIMETER WALL TO REMAIN. MAINTAIN CONTINUITY OF ALL EXISTING TO REMAIN CIRCUITS OR PORTIONS THEREOF.

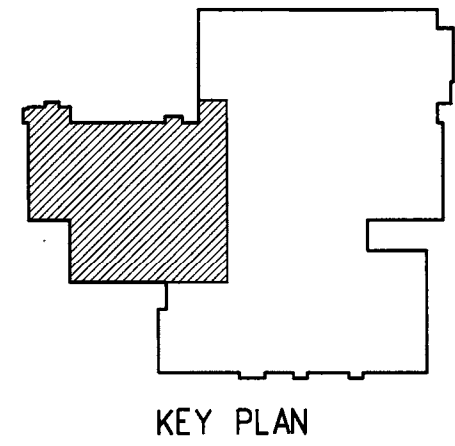
**AB E205**  
**FIRST FLOOR POWER PLAN - STAIR 3 - DEMOLITION**  
 SCALE: 1/8" = 1'-0"

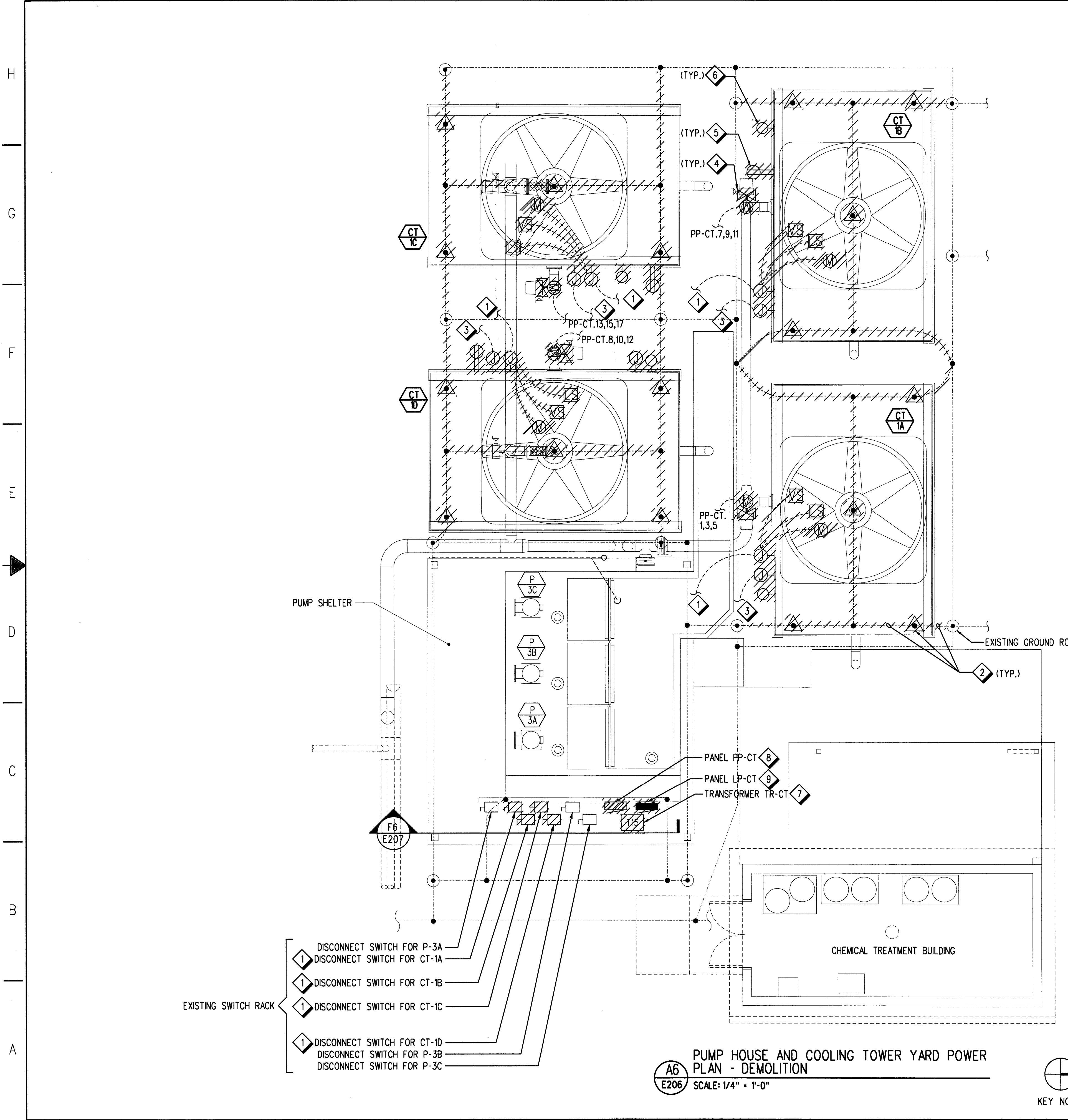
**A6 E205**  
**PARTIAL BASEMENT POWER PLAN - DEMOLITION**  
 SCALE: 1/8" = 1'-0"



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		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA			
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER PARTIAL BASEMENT POWER PLAN - DEMOLITION OAKLAND (ZOA) ARTCC			
FREMONT		REVIEWED BY: [ ] SUBMITTED BY: RBradfish SUBMITTER'S TITLE: [ ] DESIGNED BY: L. CLEMENTS DRAWN BY: J. FRIEDBERG CHECKED BY: H. NISHE		APPROVED BY: [Signature] APPROVER TITLE: [ ] DATE: 07/08/2015 ISSUED BY: AIRWAY FACILITY DIVISION DRAWING NO.: ZOA - D - CWBMS - E205	
OAKLAND ARTCC FREMONT, CALIFORNIA		OAKLAND ARTCC FREMONT, CALIFORNIA			





GENERAL NOTES

- A. MAINTAIN CONTINUITY TO AREAS NOT AFFECTED BY DEMOLITION OR PROVIDE TEMPORARY POWER IN AREAS WHERE THE COR DETERMINES THAT IS NECESSARY. COOLING TOWERS SHALL BE REPLACED ONE AT A TIME. ELECTRICAL WORK SHALL MATCH MECHANICAL PHASING PLAN AS REQUIRED.
- B. BRANCH CIRCUIT CONDUIT RUNS ARE DIAGRAMMATIC. CONTRACTOR TO FIELD VERIFY BRANCH CIRCUITS PER PANELBOARD SCHEDULE AND THIS DRAWING. COORDINATE WITH COR.

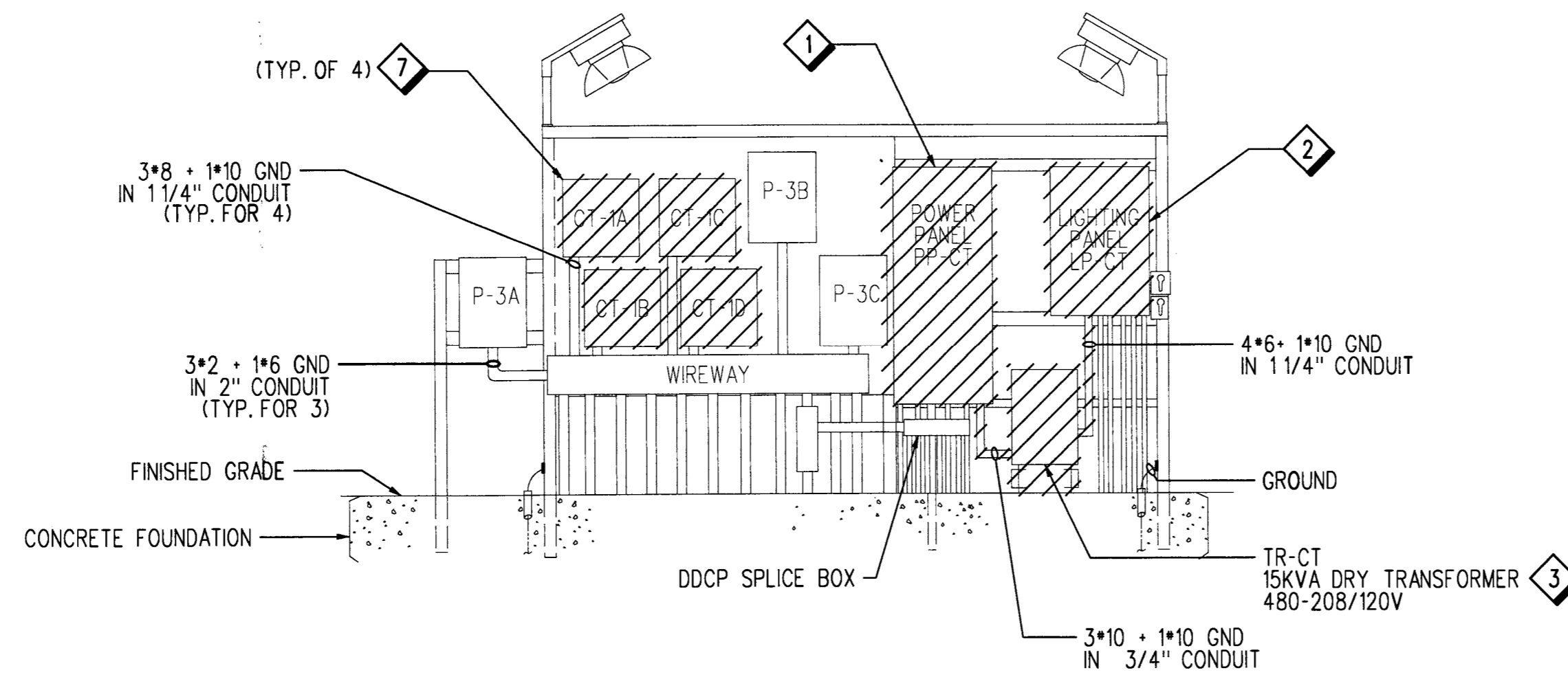
SHEET NOTES

- 1 EXISTING COOLING TOWER TO BE REPLACED. REMOVE ASSOCIATED DISCONNECT SWITCH. REMOVE EXPOSED CONDUIT BACK TO STUB UP. REMOVE EXISTING WIRING BETWEEN COOLING TOWER AND DISCONNECT SWITCH. REMOVE ONE SET OF CONDUCTORS BETWEEN DISCONNECT SWITCH AND MCC. EXISTING UNDERGROUND CONDUIT AND 1 SET OF CONDUCTORS BETWEEN THE DISCONNECT SWITCH AND MCC TO REMAIN FOR NEW WORK.
- 2 REMOVE AIR TERMINALS AND DOWN CONDUCTOR TO 1FOOT ABOVE GROUND PRIOR TO CONNECTION TO THE UNDERGROUND EARTH ELECTRODE SYSTEM.
- 3 PULL BOX TO BE DEMOLISHED. REMOVE ASSOCIATED LOADS AND WIRING BACK TO STUB UPS. REMOVE EXPOSED CONDUIT BACK TO PVC COATED RGS STUB UP. REMOVE CORRODED CONDUIT CLAMPS. EXISTING UNDERGROUND CONDUIT AND WIRING TO REMAIN FOR NEW WORK.
- 4 EXISTING FLOW CONTROL VALVE (FCV) TO BE REPLACED. REMOVE WIRING BACK TO SOURCE. REMOVE EXPOSED CONDUIT BACK TO PVC COATED RGS STUB UP. REMOVE CORRODED CONDUIT CLAMPS. EXISTING UNDERGROUND CONDUIT TO REMAIN FOR NEW WORK.
- 5 EXISTING RECEPTACLES TO BE REPLACED. REMOVE EXPOSED CONDUIT AND WIRING BACK TO PVC COATED RGS STUB UP. REMOVE CORRODED CONDUIT CLAMPS. EXISTING UNDERGROUND CONDUIT AND WIRING TO REMAIN FOR NEW WORK.
- 6 EXISTING LIGHT FIXTURE TO BE REPLACED. REMOVE EXPOSED CONDUIT AND WIRING BACK TO PVC COATED RGS STUB UP. REMOVE CORRODED CONDUIT CLAMPS. EXISTING UNDERGROUND CONDUIT AND WIRING TO REMAIN FOR NEW WORK.
- 7 EXISTING TRANSFORMER TO BE REPLACED. REMOVE ASSOCIATED PRIMARY AND SECONDARY (INPUT AND OUTPUT) CONDUIT AND WIRING BACK TO SOURCE.
- 8 PANELBOARD TO BE REPLACED. EXISTING FEEDER CONDUIT AND WIRING TO REMAIN FOR NEW WORK.
- 9 PANELBOARD TO BE REPLACED. REMOVE EXISTING FEEDER CONDUIT AND WIRING BACK TO SOURCE. EXISTING BRANCH CONDUIT AND WIRING TO REMAIN FOR NEW WORK.

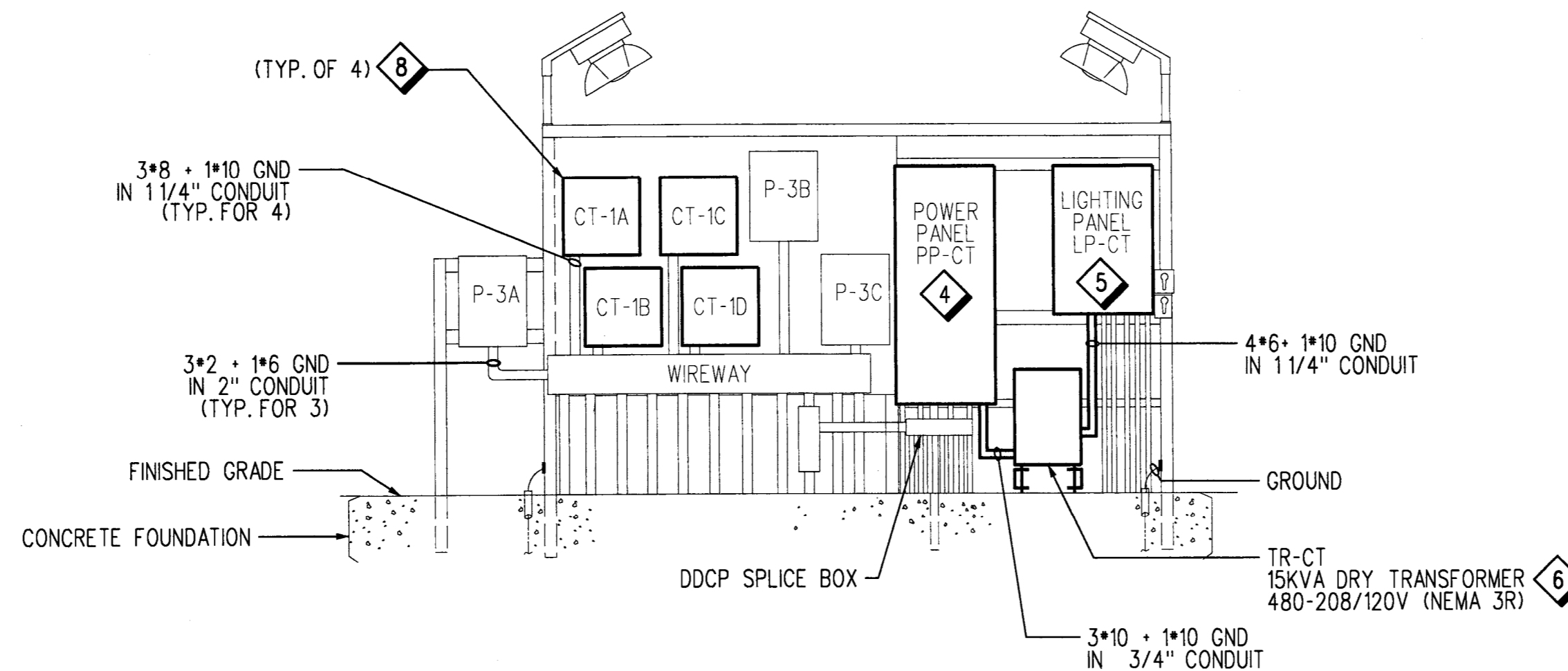
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 PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>		REV.	APPROVED DATE	DESCRIPTION	JCN	REVISION DATE	APVD
		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA					
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER COOLING TOWER PHASING AND CHEMICAL TREATMENT BUILDING POWER PLAN - DEMOLITION FREMONT OAKLAND (ZOA) ARTCC					
REVIEWED BY	SUBMITTED BY	APPROVED BY					
	RSBradfish						
DESIGNED BY	L. CLEMENTS	ISSUED BY	DATE	07/08/2015			
DRAWN BY	J. FRIEDBERG	AIRWAY FACILITY DIVISION	DRAWING NO.	ZOA - D - CWBMM5 - E206			
CHECKED BY	H. NGHE	OAKLAND ARTCC FREMONT, CALIFORNIA		REV.			

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**F6** DISCONNECT SWITCH ELEVATION - DEMOLITION  
E207 SCALE: 1/4" = 1'-0"



**B6** DISCONNECT SWITCH ELEVATION - NEW WORK  
E207 SCALE: 1/4" = 1'-0"

**GENERAL NOTES**

- A. MAINTAIN CONTINUITY TO AREAS NOT AFFECTED BY DEMOLITION OR PROVIDE TEMPORARY POWER IN AREAS WHERE THE COR DETERMINES THAT IS NECESSARY. COOLING TOWERS SHALL BE REPLACED ONE AT A TIME. ELECTRICAL WORK SHALL MATCH MECHANICAL PHASING PLAN AS REQUIRED.
- B. ALL EXTERIOR EQUIPMENT SHALL BE INSTALLED WITH NEMA 4X ENCLOSURES, UNLESS NOTED OTHERWISE.
- C. ALL EXTERIOR AND UNDERGROUND CONDUIT FITTINGS SHALL BE PVC COATED RIGID GALVANIZED STEEL.

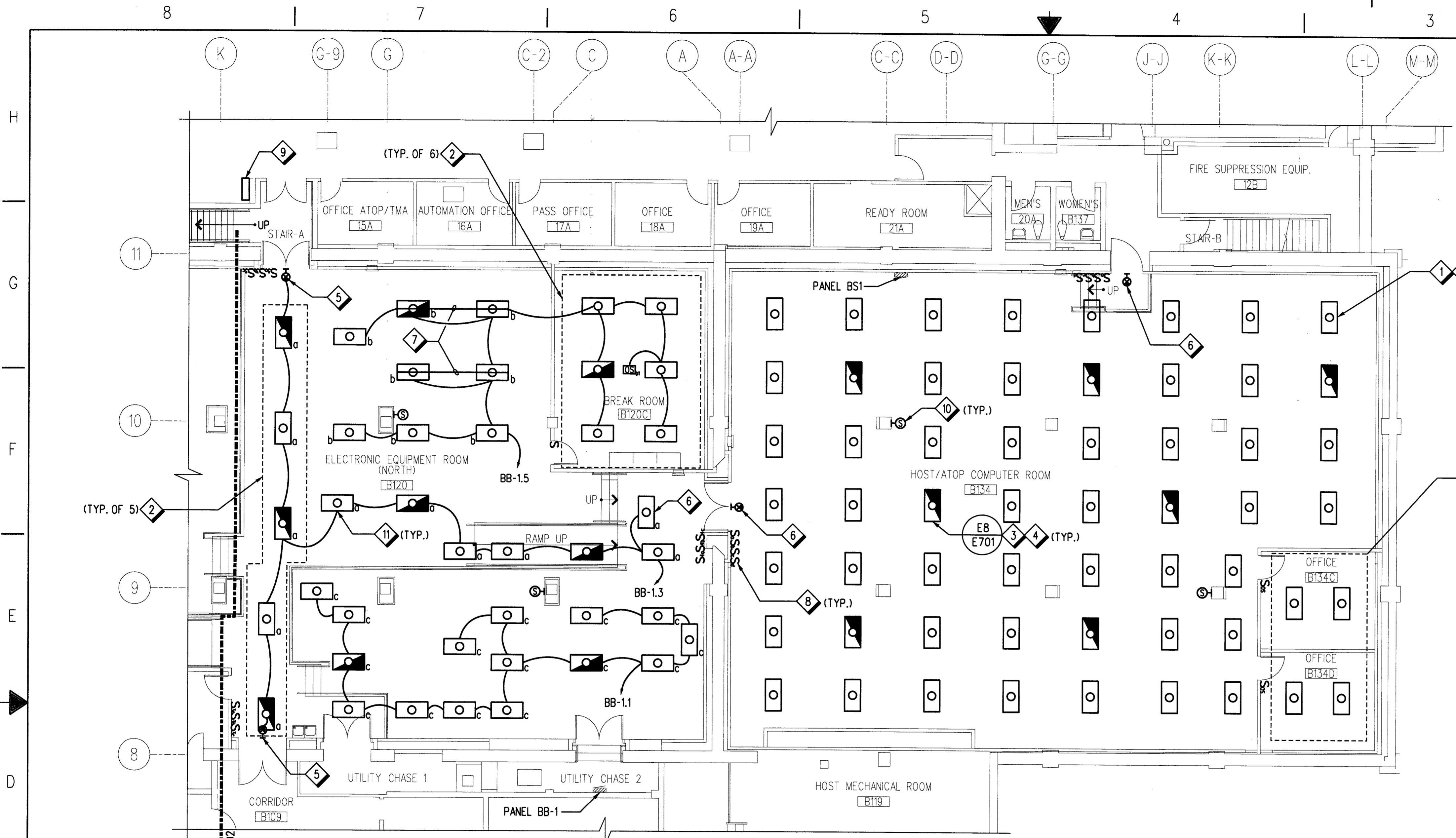
**SHEET NOTES**

- 1 REMOVE EXISTING PANELBOARD. EXISTING FEEDER AND BRANCH CONDUIT AND WIRING TO REMAIN FOR NEW WORK.
- 2 REMOVE EXISTING PANELBOARD. REMOVE EXISTING FEEDER CONDUIT AND WIRING BACK TO SOURCE. EXISTING BRANCH CONDUIT AND WIRING TO REMAIN FOR NEW WORK.
- 3 REMOVE EXISTING TRANSFORMER. REMOVE ASSOCIATED PRIMARY AND SECONDARY (INPUT AND OUTPUT) CONDUIT AND WIRING BACK TO SOURCE.
- 4 PROVIDE NEW 100 MLO, 480V, 3 PHASE, 3 WIRE, 36 POLE PANELBOARD PP-CT. RECONNECT EXISTING FEEDER AND BRANCH CONDUIT AND WIRING.
- 5 PROVIDE NEW 50A MCB, 208Y/120V, 3 PHASE, 4 WIRE, 24 POLE PANELBOARD LP-CT. PROVIDE NEW CONDUIT AND WIRING FROM TRANSFORMER TO NEW PANELBOARD. RECONNECT EXISTING BRANCH CIRCUITS TO NEW PANELBOARD. SPLICE AND EXTEND EXISTING CONDUCTORS AS REQUIRED.
- 6 PROVIDE NEW 15KVA, 480-208Y/120V, 3 PHASE, 4 WIRE, NEMA 3R TRANSFORMER. CONNECT NEW PRIMARY CONDUCTORS AND CONDUIT FROM PANELBOARD PP-CT TO NEW TRANSFORMER.
- 7 REMOVE EXISTING COOLING TOWER DISCONNECT SWITCHES.
- 8 PROVIDE NEW 30A, 600V, 3 POLE, SINGLE THROW DISCONNECT SWITCHES FOR COOLING TOWERS.

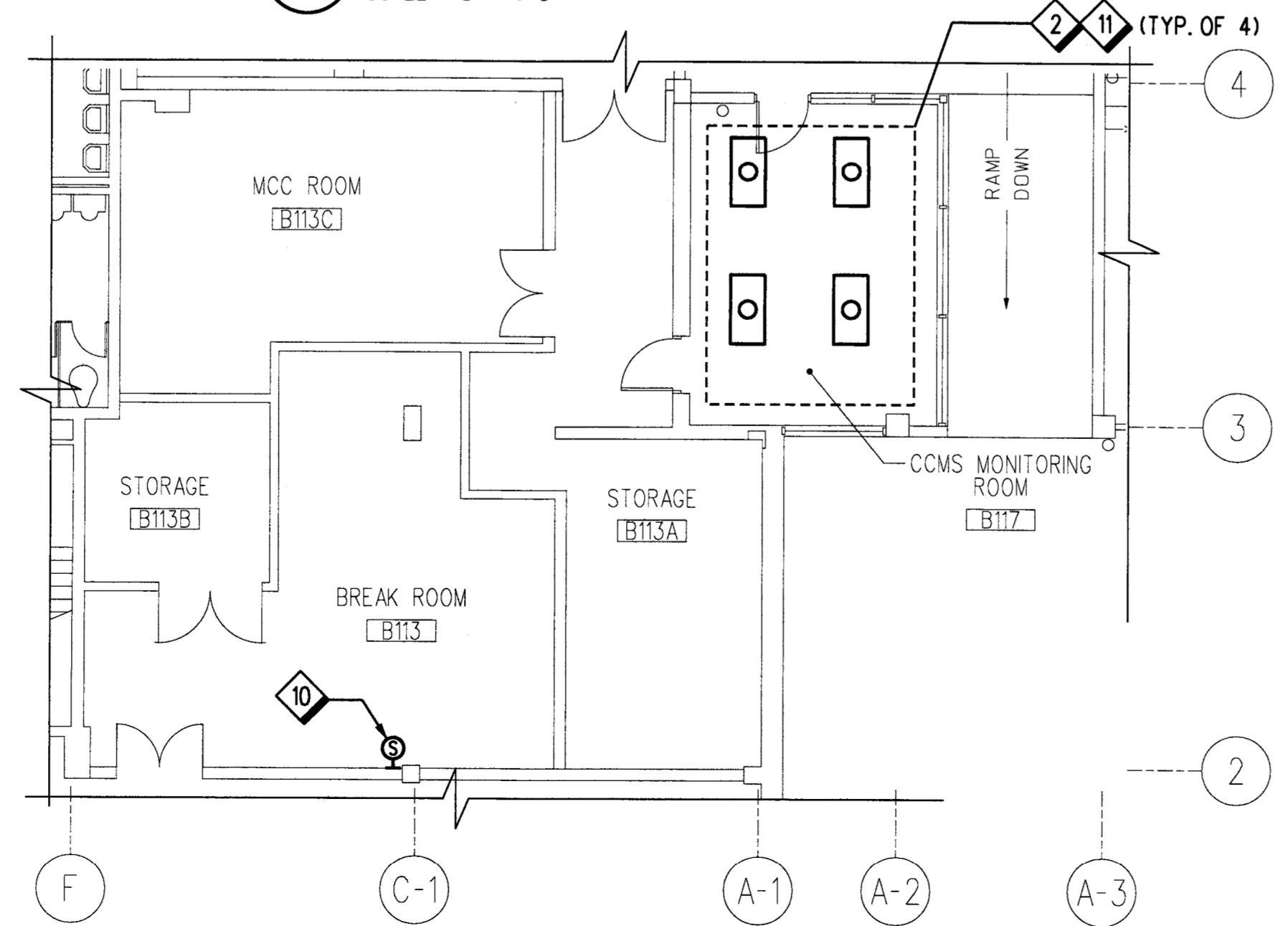
FOR OFFICIAL USE ONLY  
PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>					
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA					
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER COOLING TOWER DISCONNECT SWITCH ELEVATION					
FREMONT			OAKLAND (ZOA) ARTCC		
DESIGNED BY	L. CLEMENTS	ISSUED BY	DATE	07/08/2015	JUNE
DRAWN BY	J. FRIEDBERG	CHECKED BY	H. NGRE		
OAKLAND ARTCC FREMONT, CALIFORNIA		AIRWAY FACILITY DIVISION		DRAWING NO. ZOA - D - CWBMS - E207	
6/30/2015					

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**C6 PARTIAL BASEMENT LIGHTING PLAN - NEW WORK**  
E301 SCALE: 1/8" = 1'-0"



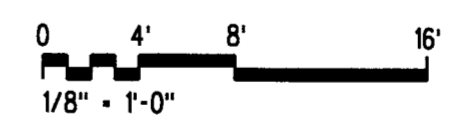
**A6 PARTIAL BASEMENT LIGHTING PLAN - NEW WORK**  
E301 SCALE: 1/8" = 1'-0"

**GENERAL NOTES**

- A. PROVIDE SUPPORT FOR CONDUITS, LIGHTING FIXTURES, AND UNISTRUT AS REQUIRED FOR SEISMIC SUPPORT PER IBC.
- B. CONDUITS SHALL NOT BE SUPPORTED BY CEILING GRID OR HVAC. CONDUITS SHALL BE SECURED AND SUPPORTED BY THE STRUCTURAL COMPONENTS.

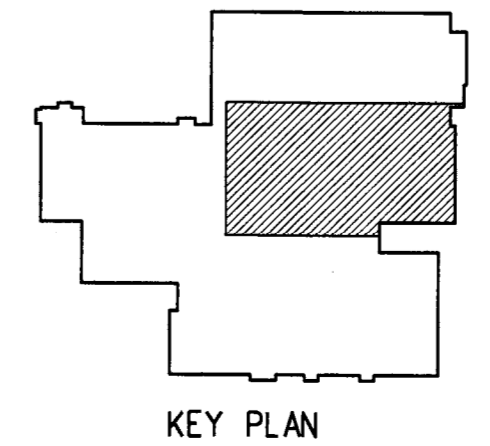
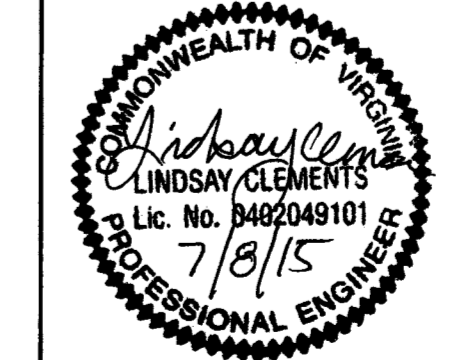
**SHEET NOTES**

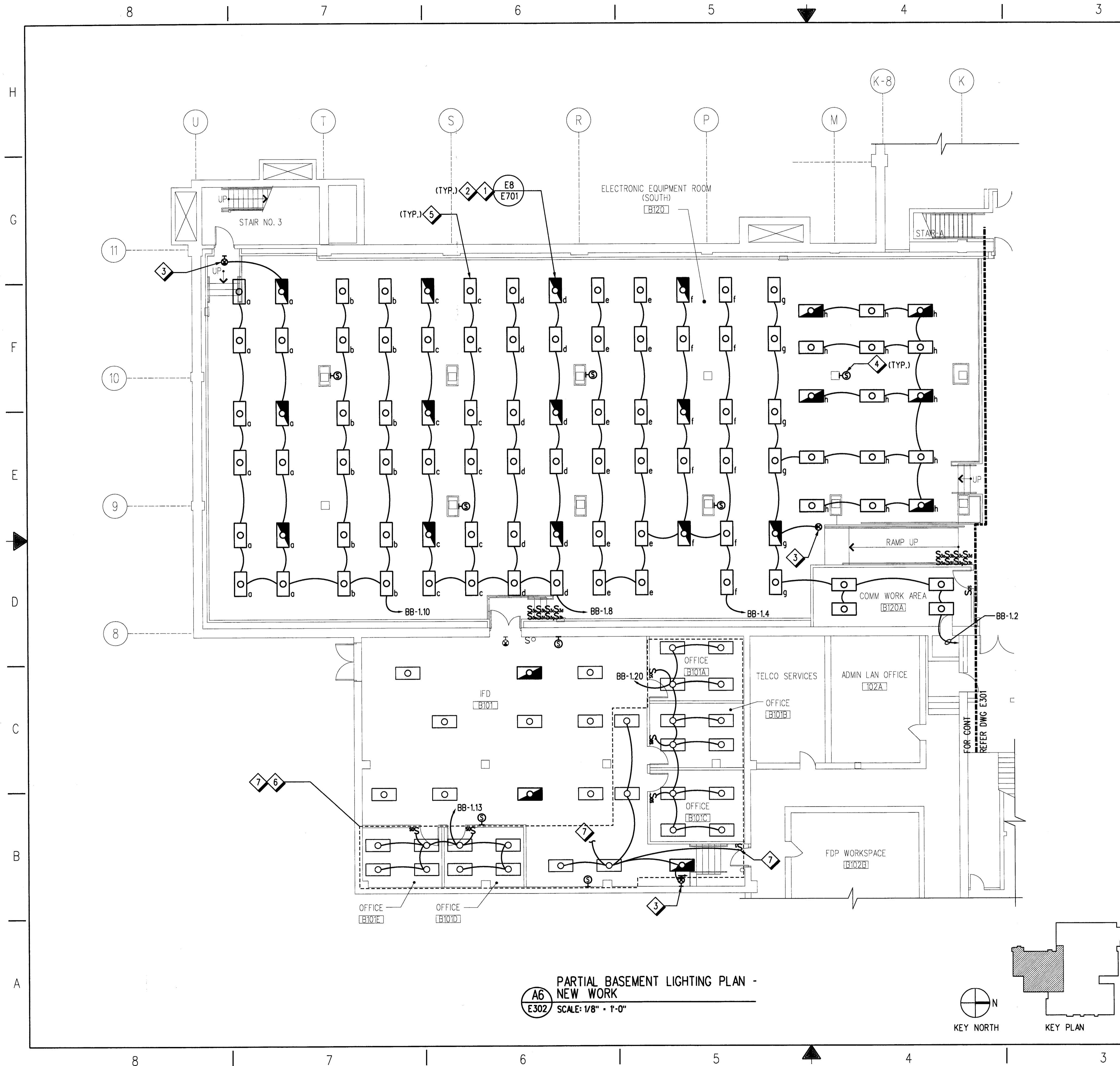
- 1 RE-INSTALL LIGHT FIXTURES IN NEW CEILING GRID. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN.
- 2 RE-INSTALL EXISTING TO REMAIN LIGHTING FIXTURES IN NEW CEILING GRID. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN.
- 3 RETROFIT EXISTING LIGHTING FIXTURE WITH INTEGRAL SELF-DIAGNOSTIC EMERGENCY BATTERY BALLAST (BASIS OF DESIGN: BODINE LP600STU).
- 4 EMERGENCY LIGHT FIXTURES SHALL BE CONNECTED TO THE UNSWITCHED SIDE OF THE CIRCUIT.
- 5 NEW LED EXIT SIGN (BASIS OF DESIGN: LITHONIA LE-S-W-1-R-ELN-SD).
- 6 RECONNECT EXISTING CONDUIT AND WIRING TO NEW LED EXIT SIGN (BASIS OF DESIGN: LITHONIA LE-S-W-1-R-ELN-SD).
- 7 PROVIDE NEW UNISTRUT SUPPORT SYSTEM FOR RELOCATED LIGHT FIXTURES TO MATCH EXISTING.
- 8 PROVIDE NEW LIGHT SWITCHES. INTERCEPT AND EXTEND EXISTING CONDUIT AND WIRING TO NEW LIGHT SWITCHES. SWITCHING SCHEME SHALL REMAIN THE SAME AS EXISTING IN ROOM B134.
- 9 PROVIDE NEW PA AMPLIFIER FOR NEW PA SPEAKERS. (BASIS OF DESIGN: BOGEN, C60)
- 10 PROVIDE NEW PUBLIC ADDRESS SYSTEM SPEAKER AND CONNECT TO NEW AMPLIFIER WITH 2\*16 AWG IN 3/4" CONDUIT.
- 11 ENSURE EXISTING LIGHT FIXTURES AND/ OR UNISTRUT SUPPORT SYSTEM ARE SEISMICALLY BRACED PER IBC.



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PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA					
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER PARTIAL BASEMENT LIGHTING PLAN - NEW WORK OAKLAND (ZOA) ARTCC					
FREMONT		REVIEWED BY	SUBMITTED BY <i>RSBradfish</i>	APPROVED BY <i>[Signature]</i>	DATE 07/08/2015	JCN	
OAKLAND ARTCC FREMONT, CALIFORNIA		DESIGNED BY L. CLEMENTS	DRAWN BY J. FRIEDBERG	CHECKED BY H. NGHE	ISSUED BY AIRWAY FACILITY DIVISION	DRAWING NO. ZOA - D - CWBMS - E301	





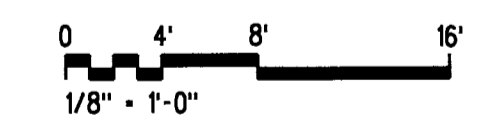
**GENERAL NOTES**

- A. PROVIDE SUPPORT FOR CONDUITS, LIGHTING FIXTURES, AND UNISTRUT AS REQUIRED FOR SEISMIC SUPPORT PER IBC.
- B. CONDUITS SHALL NOT BE SUPPORTED BY CEILING GRID OR HVAC. CONDUITS SHALL BE SECURED AND SUPPORTED BY THE STRUCTURAL COMPONENTS.

**SHEET NOTES**

- 1 RETROFIT EXISTING LIGHTING FIXTURE WITH INTEGRAL SELF-DIAGNOSTIC EMERGENCY BATTERY BALLAST (BASIS OF DESIGN: BODINE LP600STU).
- 2 EMERGENCY LIGHT FIXTURES SHALL BE CONNECTED TO THE UNSWITCHED SIDE OF THE CIRCUIT.
- 3 NEW LED EXIT SIGN (BASIS OF DESIGN: LITHONIA LE-S-W-1-R-ELN-SD).
- 4 PROVIDE NEW PUBLIC ADDRESS SYSTEM SPEAKER AND CONNECT TO NEW AMPLIFIER WITH 2\*16A AWG IN 3/4" CONDUIT.
- 5 ENSURE EXISTING LIGHT FIXTURES AND/OR UNISTRUT SUPPORT SYSTEM ARE SEISMICALLY BRACED PER IBC. SEISMIC ANCHORING WORK UNDER THE ATOP AREA BETWEEN COLUMNS U AND K IS TO BE COMPLETED BETWEEN 11:00PM AND 6:00AM. COORDINATE WITH COR.
- 6 RE-INSTALL SALVAGED LIGHT FIXTURES IN NEW LOCATIONS AS SHOWN.
- 7 CONNECT RELOCATED LIGHT FIXTURES TO EXISTING LIGHTING CIRCUIT AND RELOCATED THREE-WAY SWITCH IN IFD ROOM B101.

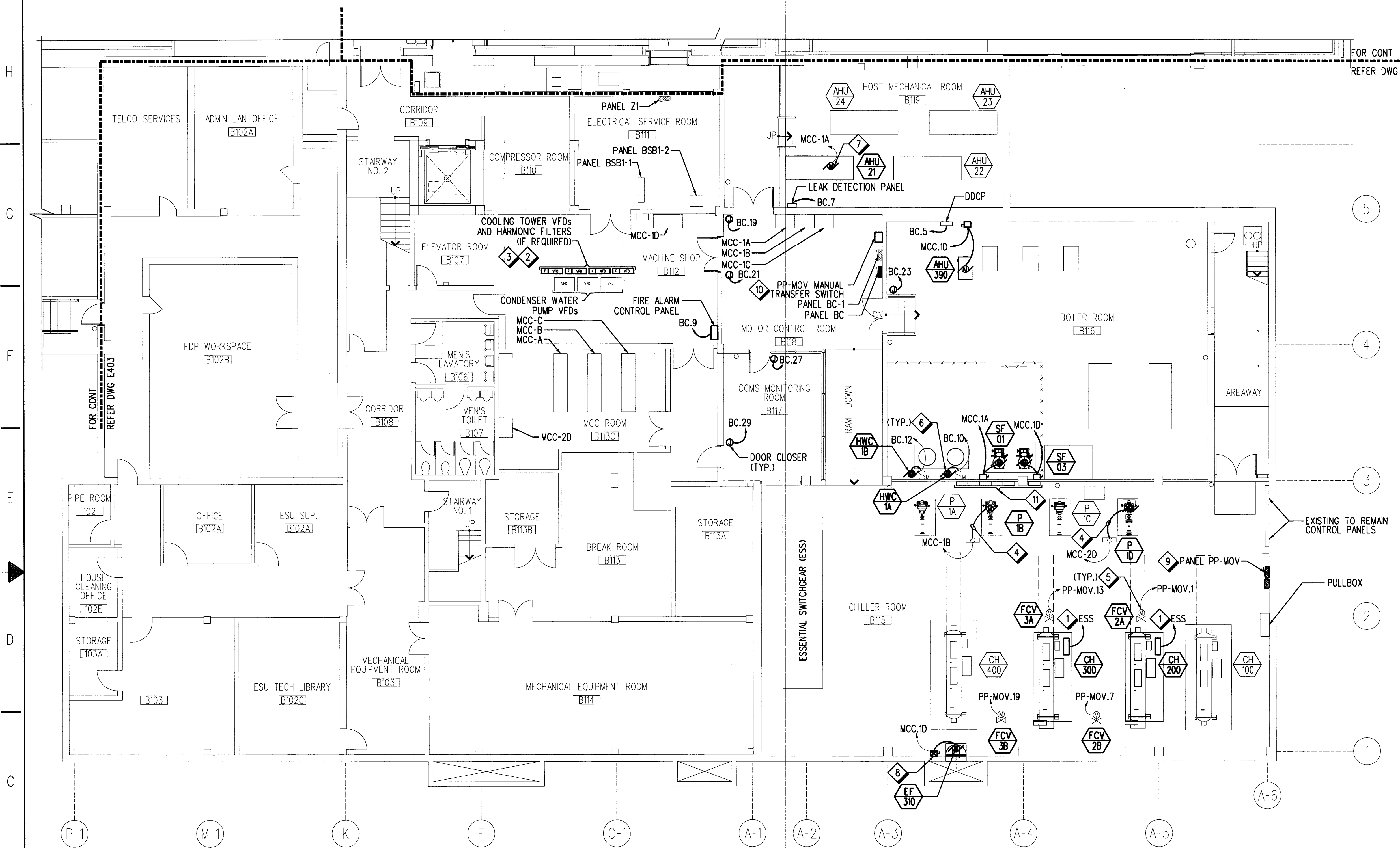
**PARTIAL BASEMENT LIGHTING PLAN - NEW WORK**  
 SCALE: 1/8" = 1'-0"



FOR OFFICIAL USE ONLY  
 PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>		REVISIONS	
REV.	APPROVED DATE	DESCRIPTION	APPROVED
		<b>DEPARTMENT OF TRANSPORTATION</b> <b>FEDERAL AVIATION ADMINISTRATION</b> WESTERN SERVICE AREA RENTON, WA	
FREMONT		<b>CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION</b> <b>OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER</b> <b>PARTIAL BASEMENT LIGHTING PLAN - NEW WORK</b> OAKLAND (ZOA) ARTCC	
REVIEWED BY	SUBMITTED BY	APPROVED BY	DATE
	RBradfish		07/08/2015
DESIGNED BY	ISSUED BY	DATE	REV.
L. CLEMENTS	AIRWAY FACILITY DIVISION	07/08/2015	ZOA - D - CWBMS - E302
DRAWN BY	CHECKED BY	DATE	TIME
J. FRIEDBERG	H. NICH	6/30/2015	11:58
OAKLAND ARTCC, FREMONT, CALIFORNIA		DATE: 6/30/2015 TIME: 11:58 USER: 88USER	





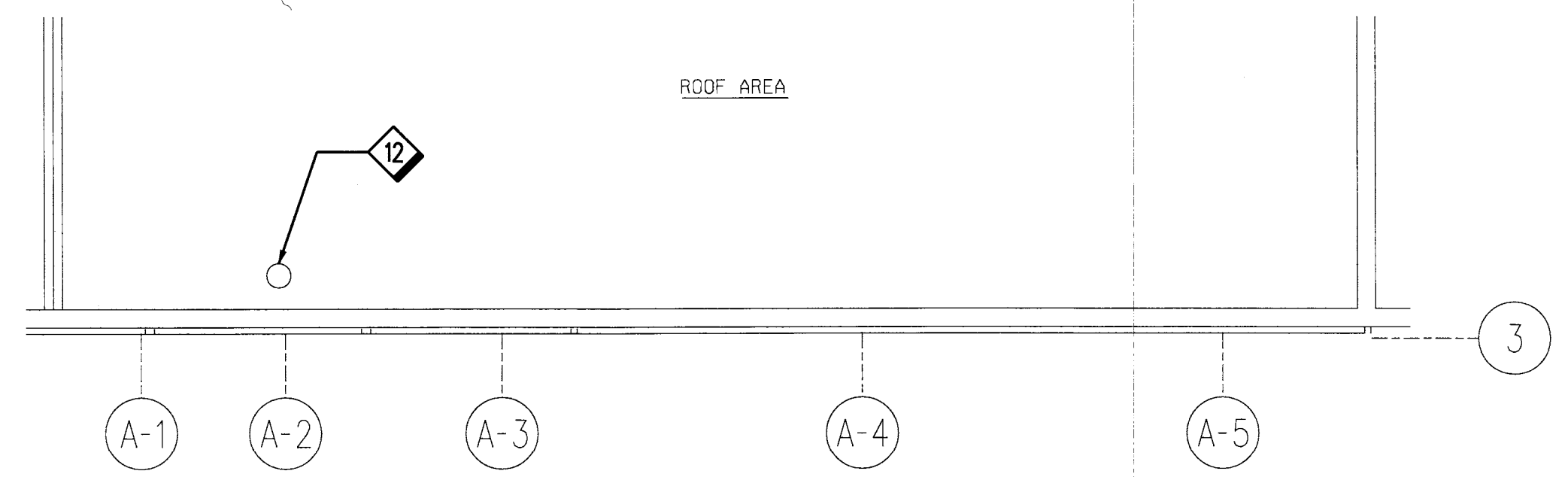
**GENERAL NOTES**

A. BRANCH CIRCUIT CONDUIT RUNS ARE DIAGRAMMATIC, CONTRACTOR TO FIELD VERIFY BRANCH CIRCUITS PER PANELBOARD SCHEDULE AND THIS DRAWING. COORDINATE WITH COR.

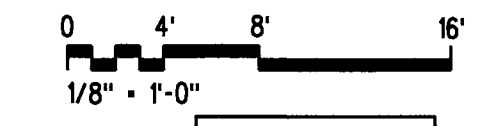
**SHEET NOTES**

- 1 NEW CHILLER WITH INTEGRAL VFD AND EXTERNAL HARMONIC FILTER (IF REQUIRED, NOT SHOWN) PROVIDED BY MECHANICAL. EXTEND EXISTING OVERHEAD CONDUIT AND WIRING TO NEW CHILLER AS REQUIRED.
- 2 PROVIDE NEW VFD IN MACHINE SHOP ROOM B112 FOR COOLING TOWER. PROVIDE HARMONIC FILTER FOR COOLING TOWER VFDs AS REQUIRED PER HARMONICS CALCULATION PROVIDED BY SELECTED VFD VENDOR. PROVIDE NEW UNISTRUT SUPPORT SYSTEM FOR NEW VFDs AND FILTERS.
- 3 PROVIDE NEW CONDUIT AND WIRING FROM MCC TO NEW VFD AND FROM NEW VFD AND THE LOCATION WHERE THE EXISTING CONDUIT AND WIRING ARE BEING INTERCEPTED. SEE DRAWING E407 FOR INTERCEPTION POINT.
- 4 NEW CHILLED WATER PUMP. PROVIDE NEW CONDUIT AND WIRING BETWEEN MOTOR AND EXISTING VFD.
- 5 SALVAGED FLOW CONTROL VALVE (FCV). RECONNECT EXISTING CONDUIT AND WIRING TO FCV.
- 6 NEW HOT WATER PUMP. PROVIDE NEW CONDUIT AND WIRING BETWEEN DISCONNECT SWITCH AND MOTOR.
- 7 NEW AIR HANDLING UNIT. RECONNECT EXISTING CONDUIT AND WIRING TO INTEGRAL DISCONNECT SWITCH IN NEW AHU.
- 8 NEW EXHAUST FAN. PROVIDE NEW COMBINATION MOTOR STARTER DISCONNECT SWITCH. RECONNECT EXISTING CONDUIT AND WIRING TO NEW DISCONNECT SWITCH. PROVIDE NEW CONDUIT AND WIRING BETWEEN DISCONNECT SWITCH AND EXHAUST FAN.
- 9 NEW 480V, 3 PHASE, 3 WIRE, 42 POLES, WITH 125A MCB, PANELBOARD PP-MOV AND TVSS. SPLICE AND EXTEND EXISTING CONDUIT AND WIRING TO NEW PANELBOARD. CONTRACTOR SHALL PROVIDE CONSTRUCTION PHASING PLAN TO COR FOR APPROVAL PRIOR TO COMMENCEMENT OF WORK.
- 10 NEW 100A DOUBLE THROW MANUAL TRANSFER SWITCH (MTS). RECONNECT EXISTING CONDUIT AND WIRING TO NEW MTS.
- 11 NEW CONTROL PANELS. RECONNECT EXISTING CONDUIT AND WIRING TO NEW CONTROL PANELS.
- 12 RECONNECT EXISTING LIGHTNING PROTECTION BONDING CONDUCTORS TO NEW ROOF CAP. USE BI-METALLIC CONNECTOR WHERE APPROPRIATE.

**B6 PARTIAL BASEMENT POWER PLAN - NEW WORK**  
E401 SCALE: 1/8" = 1'-0"

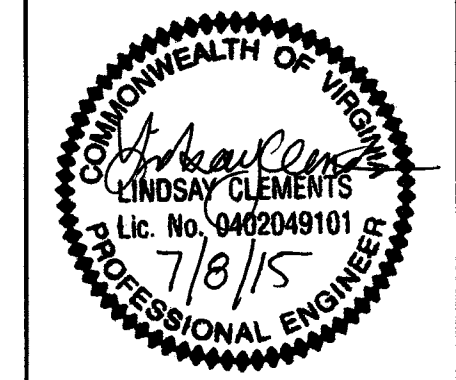


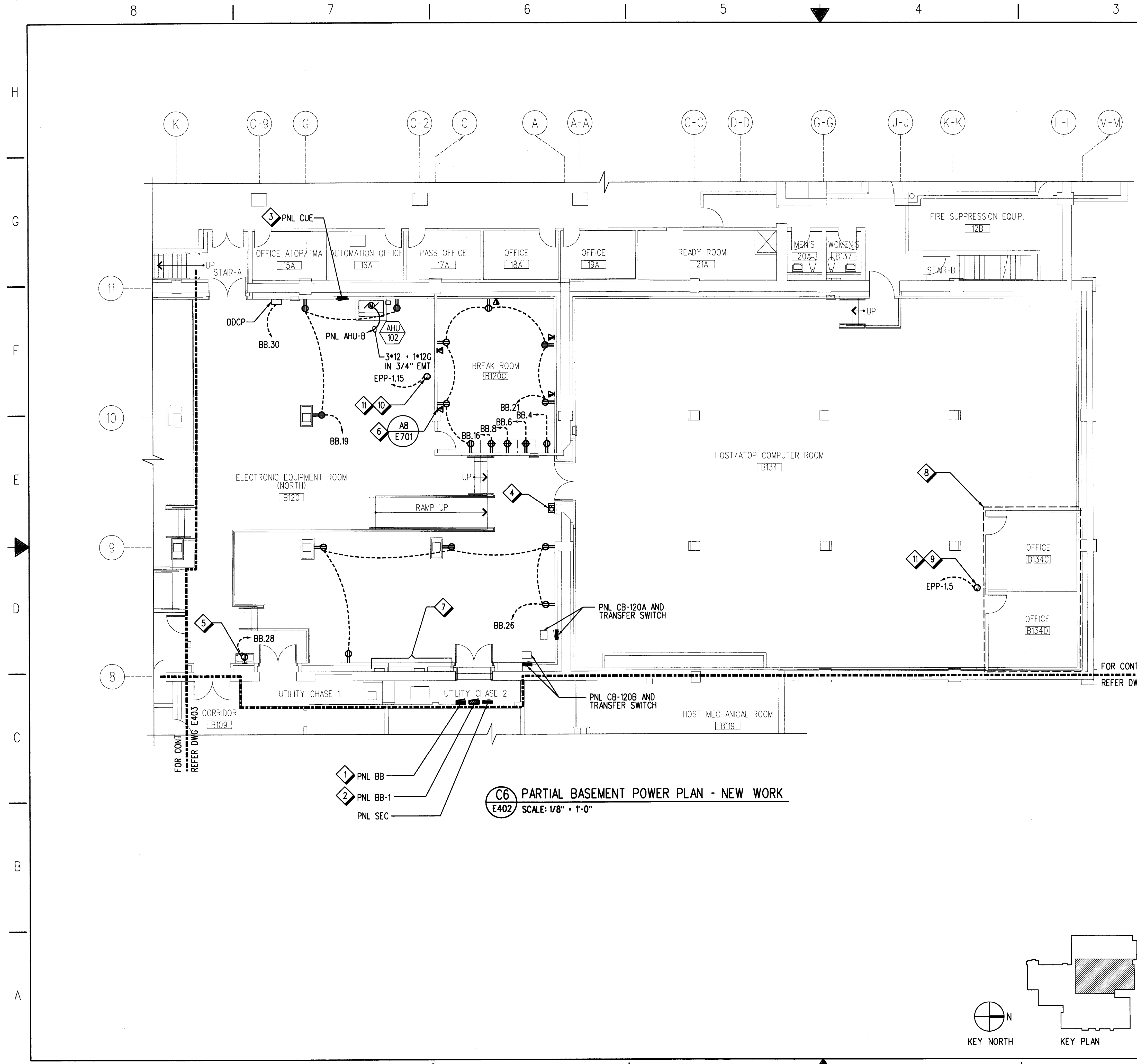
**A6 PARTIAL ROOF PLAN - NEW WORK**  
E401 SCALE: 1/8" = 1'-0"



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		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA			
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER PARTIAL BASEMENT POWER PLAN - NEW WORK FREMONT OAKLAND (ZOA) ARTCC			
REVIEWED BY DESIGNED BY DRAWN BY CHECKED BY	SUBMITTED BY R. Bradfish	APPROVED BY 	DATE 07/08/2015	JCN J. FRELBERG	APVD H. NOE
OAKLAND ARTCC FREMONT, CALIFORNIA		AIRWAY FACILITY DIVISION		DRAWING NO. ZOA - D - CWBMS - E401	





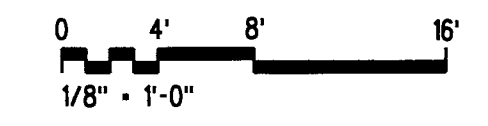
**GENERAL NOTES**

A. BRANCH CIRCUIT CONDUIT RUNS ARE DIAGRAMMATIC. CONTRACTOR TO FIELD VERIFY BRANCH CIRCUITS PER PANELBOARD SCHEDULE AND THIS DRAWING. COORDINATE WITH COR.

**SHEET NOTES**

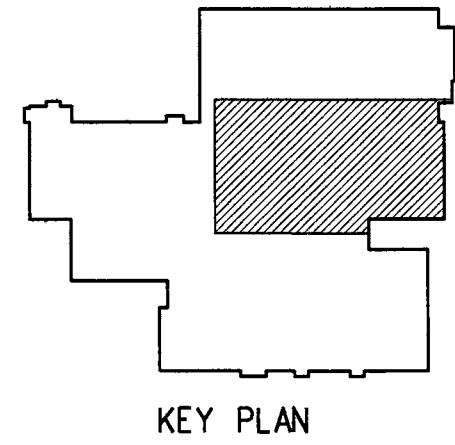
- 1 PROVIDE 208Y/120V, 3 PHASE, 4 WIRE, 42 POLES, WITH 150A MCB, PANELBOARD BB. RECONNECT EXISTING CONDUIT AND WIRING TO NEW PANELBOARD. SPLICE AND EXTEND EXISTING CONDUIT AND WIRING AS REQUIRED.
- 2 PROVIDE 480Y/277V, 3 PHASE, 4 WIRE, 42 POLES, WITH 100A MCB, PANELBOARD BB-1. RECONNECT EXISTING CONDUIT AND WIRING TO NEW PANELBOARD. SPLICE AND EXTEND EXISTING CONDUIT AND WIRING AS REQUIRED.
- 3 NEW 208Y/120V, 3 PHASE, 4 WIRE, 42 POLES, WITH 225A MCB, PANELBOARD CUE. INSTALL PANELBOARD FLUSH WITH NEW FURRED-OUT WALL. RECONNECT EXISTING CONDUIT AND WIRING TO NEW PANELBOARD. SPLICE AND EXTEND EXISTING CONDUIT AND WIRING AS REQUIRED.
- 4 RE-INSTALL EXISTING CARD READER IN NEW LOCATION SHOWN. ALL SECURITY WORK SHALL BE PERFORMED BY SECURITY SYSTEMS DESIGN AND INTEGRATION (SSDI) CONTRACTOR WHO SHALL BE UNDER THE CONTRACT OF THE GENERAL CONTRACTOR OF THIS PROJECT. REFER TO DRAWING E402 FOR MORE INFORMATION.
- 5 WALL MOUNTED JUNCTION BOX FOR NEW EWC.
- 6 PROVIDE CABLING FROM NEAREST ADMIN 110 BLOCK AND LAN SWITCH IN ELECTRONICS EQUIPMENT ROOM B120.
- 7 COORDINATE EXISTING SECURITY EQUIPMENT ACCESSIBILITY WITH NEW FURRED-OUT WALL.
- 8 PROVIDE RECEPTACLES, TELEPHONE AND DATA OUTLETS IN SAME LOCATION AS DEVICES REMOVED DURING DEMOLITION ON NEW INTERIOR PARTITION WALLS. COORDINATE EXACT REQUIREMENTS WITH COR.
- 9 PULL BOX FOR FOUR FIRE AND SMOKE DAMPERS LOCATED BELOW RAISED FLOOR AND ABOVE REFLECTED CEILING FOR OFFICES B134C AND B134D. REFER TO MECHANICAL FOR EXACT LOCATIONS.
- 10 PULL BOX FOR TWO FIRE AND SMOKE DAMPERS LOCATED ABOVE REFLECTED CEILING FOR BREAK ROOM B120C. REFER TO MECHANICAL FOR EXACT LOCATIONS.
- 11 CONNECT TO EXISTING SPARE 20A, 1 POLE CIRCUIT BREAKER IN PANELBOARD EPP-1.

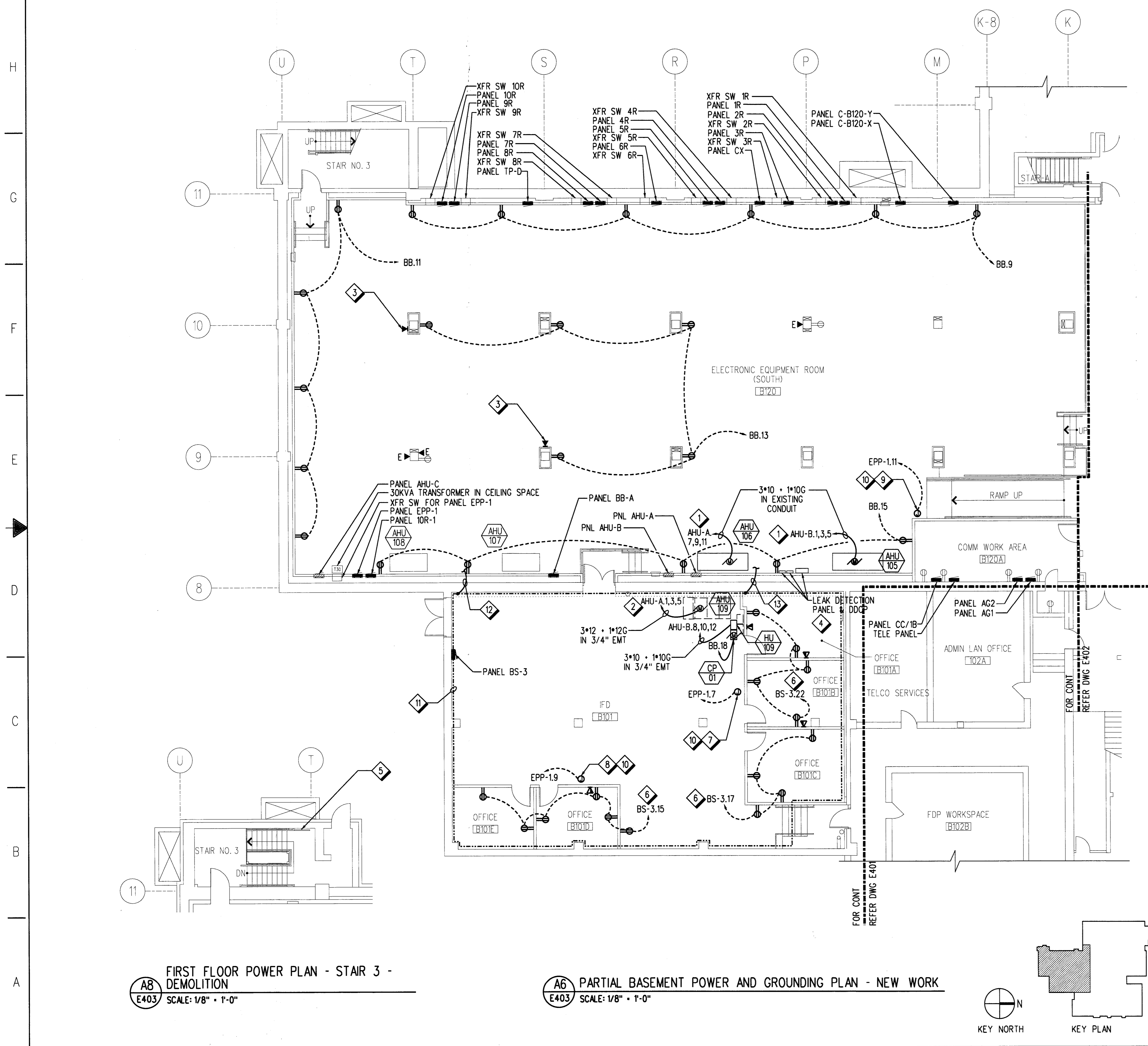
**C6** PARTIAL BASEMENT POWER PLAN - NEW WORK  
**E402** SCALE: 1/8" = 1'-0"



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 PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>			
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER PARTIAL BASEMENT POWER PLAN - NEW WORK FREMONT <span style="float: right;">OAKLAND (ZOA) ARTCC</span>			
DESIGNED BY L. CLEMENTS DRAWN BY J. FRIEDBERG CHECKED BY H. NGHE	SUBMITTED BY R. Bradfisch	APPROVED BY 	DATE 07/08/2015	DRAWING NO. ZOA - D - CWBMM - E402	REV.
OAKLAND ARTCC FREMONT, CALIFORNIA		ISSUED BY AIRWAY FACILITY DIVISION		DATE 07/30/2015	



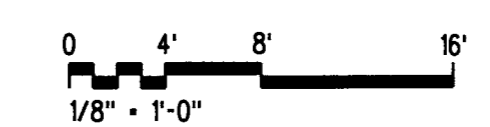


- GENERAL NOTES**
- A. BRANCH CIRCUIT CONDUIT RUNS ARE DIAGRAMMATIC, CONTRACTOR TO FIELD VERIFY BRANCH CIRCUITS PER PANELBOARD SCHEDULE AND THIS DRAWING. COORDINATE WITH COR.
  - B. MAINTAIN CONTINUITY TO AREAS NOT AFFECTED BY DEMOLITION OR PROVIDE TEMPORARY POWER IN AREAS WHERE THE COR DETERMINES THAT IS NECESSARY.

- SHEET NOTES**
- 1 PROVIDE NEW WIRING IN EXISTING CONDUIT. CONNECT NEW WIRING TO INTEGRAL DISCONNECT SWITCH IN NEW AHU. REPLACE EXISTING FEEDER CIRCUIT BREAKER WITH 50A, 3 POLE CIRCUIT BREAKER IN INDICATED PANELBOARD. NEW CIRCUIT BREAKER SHALL MATCH EXISTING IN TYPE, MANUFACTURER, AND AIC RATING.
  - 2 PROVIDE NEW WIRING IN NEW CONDUIT. CONNECT NEW WIRING TO INTEGRAL DISCONNECT SWITCH IN NEW AHU. REPLACE EXISTING FEEDER CIRCUIT BREAKER WITH 20A, 3 POLE CIRCUIT BREAKER IN INDICATED PANELBOARD. NEW CIRCUIT BREAKER SHALL MATCH EXISTING IN TYPE, MANUFACTURER, AND AIC RATING.
  - 3 RECONNECT EXISTING CABLING TO NEW DEVICE LOCATED ON FURRED OUT WALL.
  - 4 NEW DDCP AND LEAK DETECTION PANELS. RECONNECT EXISTING CONDUIT AND WIRING TO NEW CONTROL PANELS.
  - 5 NEW SWING GATE. RECONNECT EXISTING CONDUIT AND WIRING TO MAGNETIC HOLD OPEN DEVICE.
  - 6 CONNECT TO EXISTING SPARE 20A, 1POLE CIRCUIT BREAKER IN INDICATED PANELBOARD.
  - 7 PULL BOX FOR ONE FIRE AND SMOKE DAMPER ABOVE REFLECTED CEILING FOR ROOMS B101A, B101B, AND B101C AND THREE FIRE AND SMOKE DAMPERS IN ADJACENT DUCTWORK. REFER TO MECHANICAL FOR EXACT LOCATIONS.
  - 8 PULL BOX FOR ONE FIRE AND SMOKE DAMPER ABOVE REFLECTED CEILING FOR ROOMS B101D AND B101E AND TWO FIRE AND SMOKE DAMPERS IN ADJACENT DUCTWORK. REFER TO MECHANICAL FOR EXACT LOCATIONS.
  - 9 PULL BOX FOR FIRE AND SMOKE DAMPERS BELOW RAISED FLOOR AND ABOVE REFLECTED CEILING FOR ROOM B120A. REFER TO MECHANICAL FOR EXACT LOCATIONS.
  - 10 PROVIDE NEW 20A, 1POLE CIRCUIT BREAKER IN PANELBOARD EPP-1 FOR FIRE AND SMOKE DAMPER CIRCUIT. NEW CIRCUIT BREAKER SHALL MATCH EXISTING IN MANUFACTURER, TYPE, AND AIC RATING.
  - 11 PROVIDE #4/0 AWG BARE COPPER PERIMETER GROUND LOOP.
  - 12 BOND THE NEW PERIMETER GROUND LOOP IN ROOM B101 TO THE EXISTING PERIMETER GROUND LOOP IN B120 WITH A #4/0 AWG BARE COPPER CONDUCTOR. ROUTE BONDING CONDUCTOR IN EXISTING SPARE CONDUIT SLEEVE BETWEEN B101 AND B120 IN THIS AREA. COORDINATE WITH COR FOR EXACT LOCATION.
  - 13 BOND THE NEW PERIMETER GROUND LOOP IN ROOM B101 TO THE EXISTING PERIMETER GROUND LOOP IN B120 WITH A #4/0 AWG BARE COPPER CONDUCTOR.

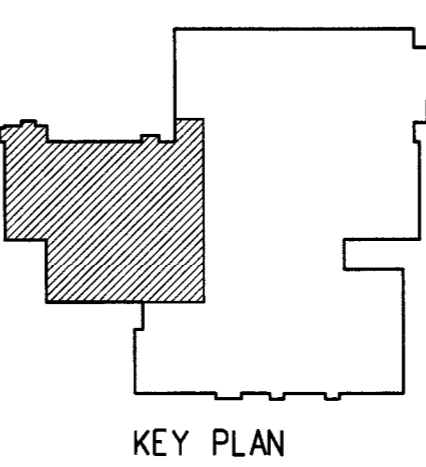
**A8** FIRST FLOOR POWER PLAN - STAIR 3 - DEMOLITION  
 E403 SCALE: 1/8" = 1'-0"

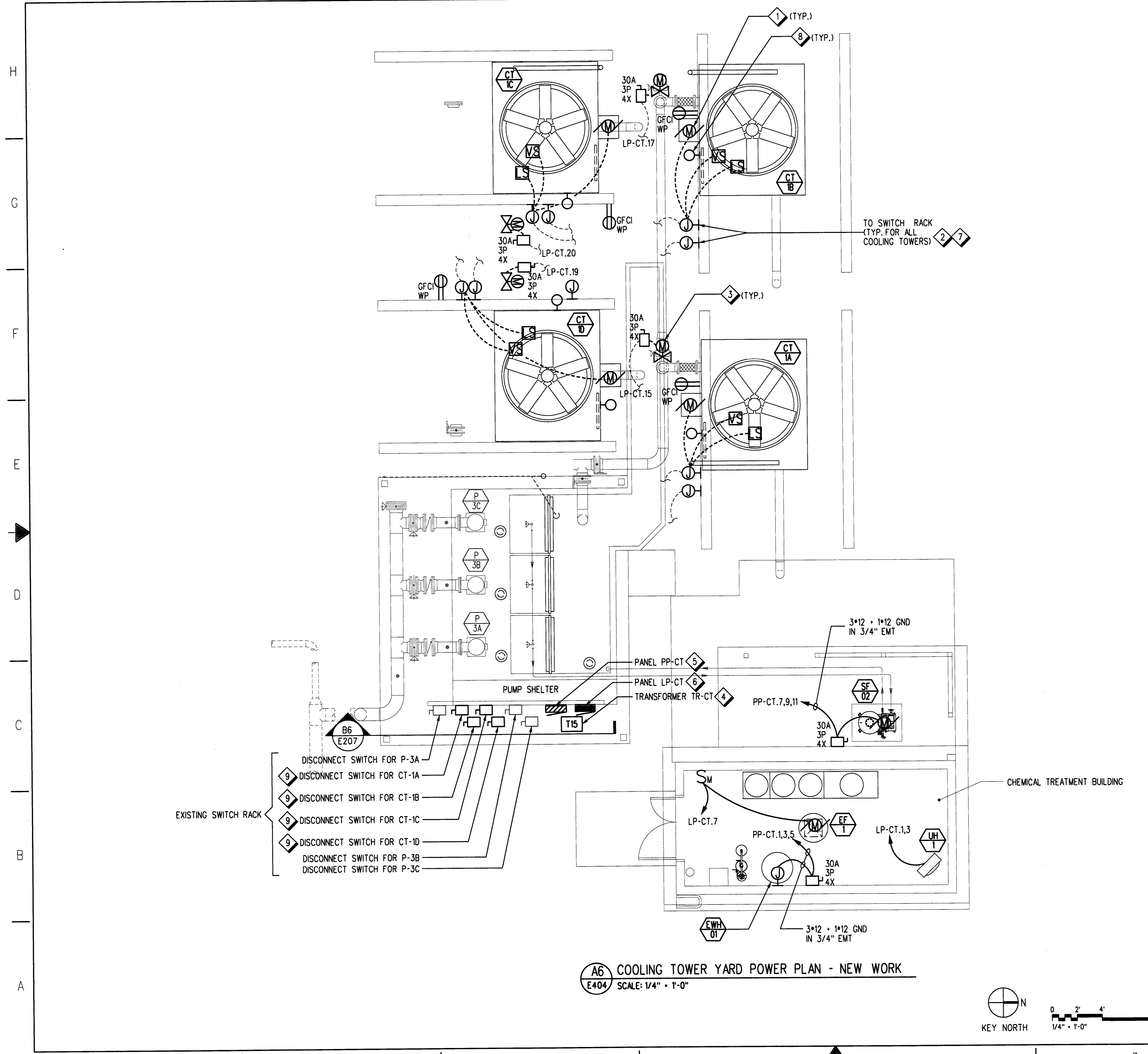
**A6** PARTIAL BASEMENT POWER AND GROUNDING PLAN - NEW WORK  
 E403 SCALE: 1/8" = 1'-0"



**FOR OFFICIAL USE ONLY**  
 PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA	
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER PARTIAL BASEMENT POWER PLAN - NEW WORK FREMONT OAKLAND (ZOA) ARTCC	
REVIEWED BY:	SUBMITTED BY: RBradfish	APPROVED BY:	DATE: 07/08/2015
DESIGNED BY: L. CLEMENTS	ISSUED BY: AIRWAY FACILITY DIVISION	DRAWING NO.: ZOA - D - CWBMS - E403	REV.





**GENERAL NOTES**

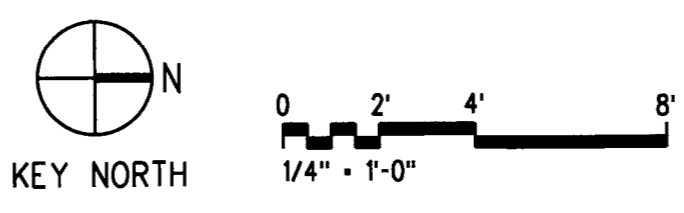
- A. BRANCH CIRCUIT CONDUIT RUNS ARE DIAGRAMMATIC. CONTRACTOR TO FIELD VERIFY BRANCH CIRCUITS PER PANELBOARD SCHEDULE AND THIS DRAWING. COORDINATE WITH COR.
- B. NEW DISCONNECT SWITCHES INSTALLED ON THE EXTERIOR SHALL BE PROVIDED WITH NEMA 4X STAINLESS STEEL ENCLOSURE.
- C. ALL EXTERIOR AND UNDERGROUND CONDUIT AND FITTINGS SHALL BE PVC COATED RIGID GALVANIZED STEEL.

**SHEET NOTES**

- 1 PROVIDE NEW WIRING IN EXISTING UNDERGROUND CONDUIT BETWEEN DISCONNECT SWITCH AND COOLING TOWER. EXTEND EXISTING CONDUIT TO NEW COOLING TOWER AS REQUIRED.
- 2 PROVIDE NEW PULL BOX AND ASSOCIATED CONDUIT AND WIRING FOR COOLING TOWER RECEPTACLES, LIGHTING, LEVEL SWITCH, AND VIBRATION SENSOR. NEW ABOVE GRADE CONDUIT SHALL BE ROUTED ALONG THE COOLING TOWER SURFACE AND STRUCTURE BEAM SUPPORT.
- 3 NEW FLOW CONTROL VALVE (FCV). PROVIDE NEW ABOVE GRADE CONDUIT AND WIRING TO NEW FCV VIA NEW DISCONNECT SWITCH. PROVIDE UNISTRUT SUPPORT SYSTEM FOR NEW DISCONNECT SWITCH AS REQUIRED.
- 4 NEW 15KVA, 480-208Y/120V, 3 PHASE, 4 WIRE STEP DOWN TRANSFORMER. CONNECT NEW PRIMARY AND SECONDARY CONDUIT AND WIRING TO NEW TRANSFORMER.
- 5 NEW 480V, 3 PHASE, 3 WIRE, 36 POLES, WITH 50A MCB, PANELBOARD PP-CT. RECONNECT EXISTING FEEDER CONDUIT AND WIRING.
- 6 NEW 208Y/120V, 3 PHASE, 4 WIRE, 24 POLES, WITH 50A MCB, PANELBOARD LP-CT. PROVIDE NEW FEEDER CONDUIT AND WIRING.
- 7 PROVIDE NEW STAINLESS STEEL CONDUIT CLAMPS FOR EXISTING CONDUIT STUB-UPS.
- 8 NEW LED LIGHTING FIXTURE (BASIS OF DESIGN: D211-LED2050UNVHKBZPC WITH MAGTECH DRIVER MODEL M18-U36-0500 AND GLARE SHIELD).
- 9 PROVIDE NEW 30A, 600V, 3 POLE SINGLE THROW DISCONNECT SWITCHES FOR COOLING TOWERS.

- DISCONNECT SWITCH FOR P-3A
- DISCONNECT SWITCH FOR CT-1A
- DISCONNECT SWITCH FOR CT-1B
- DISCONNECT SWITCH FOR CT-1C
- DISCONNECT SWITCH FOR CT-1D
- DISCONNECT SWITCH FOR P-3B
- DISCONNECT SWITCH FOR P-3C

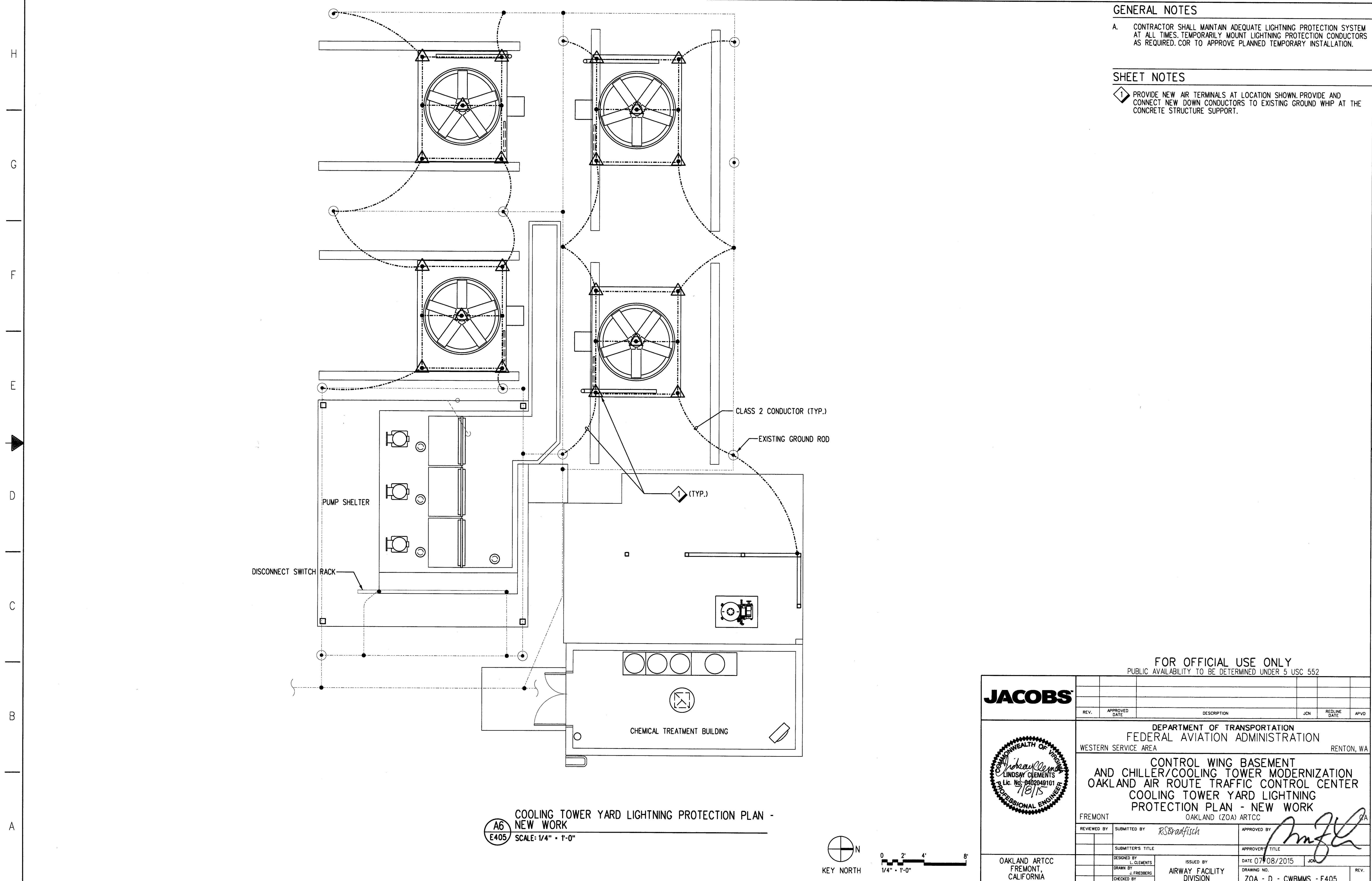
**A6** COOLING TOWER YARD POWER PLAN - NEW WORK  
**E404** SCALE: 1/4" = 1'-0"



**FOR OFFICIAL USE ONLY**  
 PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>					
REV.	APPROVED DATE	DESCRIPTION	JCN	RELINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>					
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER COOLING TOWER YARD POWER PLAN - NEW WORK FREMONT <span style="float: right;">OAKLAND (ZOA) ARTCC</span>					
REVIEWED BY	SUBMITTED BY <i>RSBradfish</i>	APPROVED BY <i>[Signature]</i>			
SUBMITTER'S TITLE		APPROVER'S TITLE			
DESIGNED BY <i>L. CLEMENTS</i>	ISSUED BY	DATE 07/08/2015	JCN		
DRAWN BY <i>J. FREDBERG</i>	AIRWAY FACILITY DIVISION	DRAWING NO.	ZOA - D - CWBMS - E404		
CHECKED BY <i>H. NGHE</i>					
6/30/2015					

8 | 7 | 6 | 5 | 4 | 3 | 2 | 1



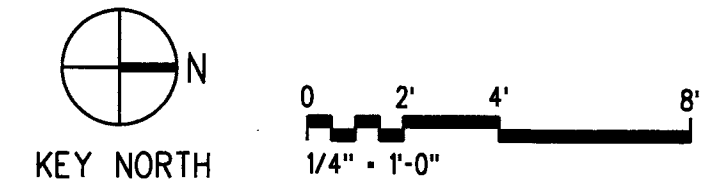
**GENERAL NOTES**  
 A. CONTRACTOR SHALL MAINTAIN ADEQUATE LIGHTNING PROTECTION SYSTEM AT ALL TIMES. TEMPORARILY MOUNT LIGHTNING PROTECTION CONDUCTORS AS REQUIRED. COR TO APPROVE PLANNED TEMPORARY INSTALLATION.

**SHEET NOTES**  
 1 PROVIDE NEW AIR TERMINALS AT LOCATION SHOWN. PROVIDE AND CONNECT NEW DOWN CONDUCTORS TO EXISTING GROUND WHIP AT THE CONCRETE STRUCTURE SUPPORT.

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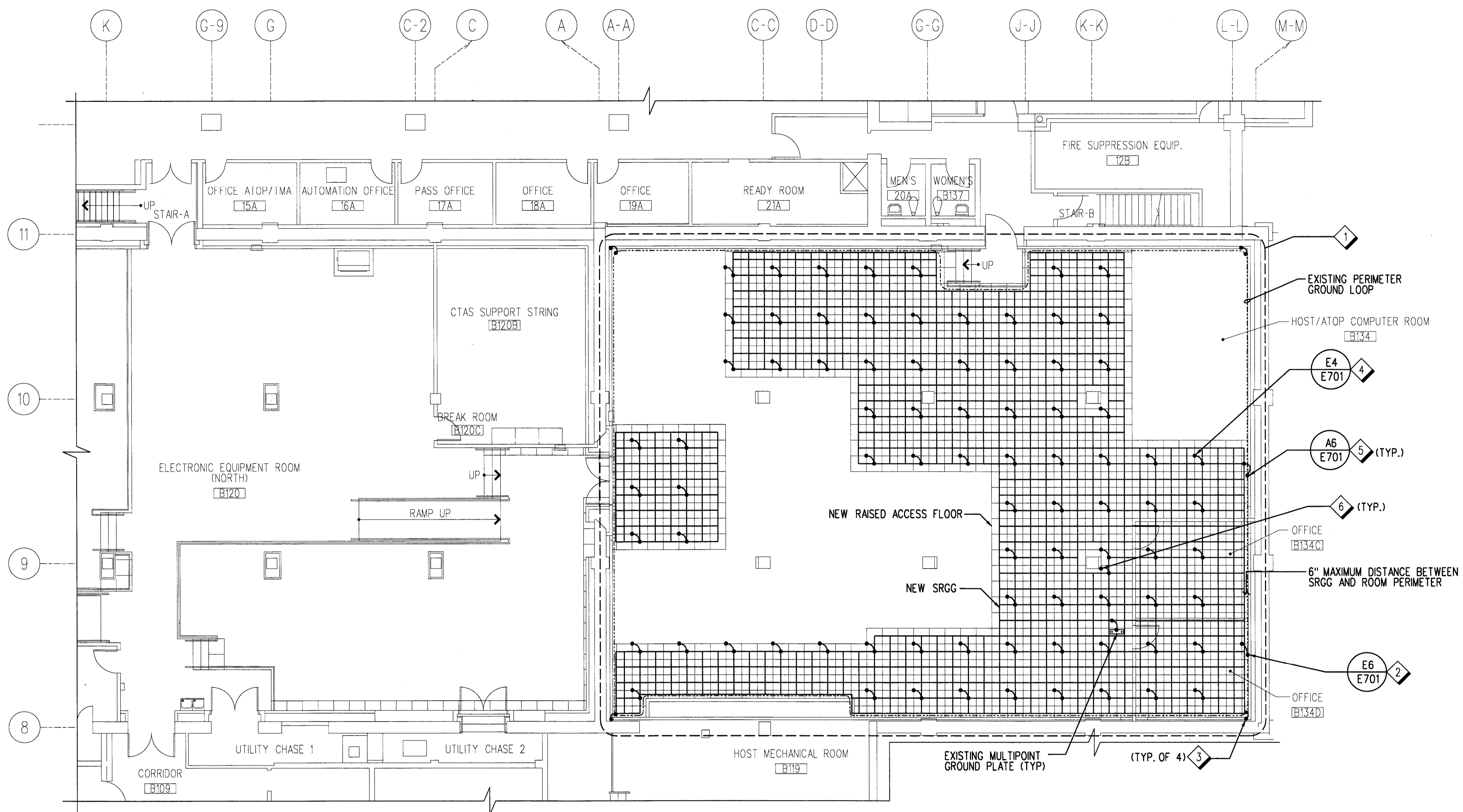
**A6**  
**E405** COOLING TOWER YARD LIGHTNING PROTECTION PLAN - NEW WORK  
 SCALE: 1/4" = 1'-0"



FOR OFFICIAL USE ONLY  
 PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

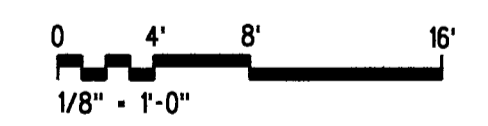
<b>JACOBS</b>		REV.		APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA						
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER COOLING TOWER YARD LIGHTNING PROTECTION PLAN - NEW WORK OAKLAND (ZOA) ARTCC						
FREMONT		REVIEWED BY	SUBMITTED BY		APPROVED BY			
OAKLAND ARTCC FREMONT, CALIFORNIA		SUBMITTER'S TITLE		APPROVER'S TITLE				
DESIGNED BY	L. CLEMENTS	ISSUED BY	DATE		07/08/2015	JCN		
DRAWN BY	J. FREDBERG	AIRWAY FACILITY DIVISION		DRAWING NO.	ZOA - D - CWBMS - E405	REV.		
CHECKED BY	H. NGHE			6/30/2015		USER: #USER		

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- GENERAL NOTES**
- A. MECHANICAL DUCTS, PIPING, ELECTRICAL MECHANICAL EQUIPMENT AND OTHER METALLIC EQUIPMENT IN ROOMS WITH RAISED FLOORS SHOWN IN THIS DRAWING SHALL BE BONDED TO THE SRGG WHERE THEY ENTER THE AREA WITH A #4 AWG BARE COPPER CONDUCTOR.
- SHEET NOTES**
- 1 PROVIDE SIGNAL REFERENCE GROUND GRID (SRGG) SYSTEM UNDER NEW SECTIONS OF THE RAISED FLOOR SYSTEM. SRGG SHALL CONSIST OF A GRID OF 2 INCH WIDE COPPER STRIPS, 26 GAUGE OR THICKER, LAID ON A TWO FEET BY 2 FEET GRID, WELDED AT EACH GRID INTERSECTION. CONTRACTOR SHALL PRACTICE EXTREME CARE WHEN INSTALLING THE SRGG UNDER THE EXISTING NAS EQUIPMENT CABLING UNDER THE RAISED FLOOR.
  - 2 PROVIDE BONDING FROM PERIMETER GROUND LOOP TO PEDESTALS WITH #4 AWG BARE COPPER CONDUCTOR AT 10 FOOT INTERVALS.
  - 3 PROVIDE BONDING FROM PERIMETER GROUND LOOP TO ACCESSIBLE BUILDING STEEL WITH #4/0 AWG BARE COPPER CONDUCTOR.
  - 4 CONNECT EVERY THIRD FLOOR PEDESTAL TO NEW SRGG USING #4 AWG BARE COPPER CONDUCTOR.
  - 5 BOND SRGG TO THE #4/0 AWG BARE COPPER CONDUCTOR PERIMETER GROUND LOOP AT EVERY GRID INTERSECTION WITH #4 AWG BARE COPPER CONDUCTOR.
  - 6 PROVIDE BONDING FROM SRGG TO ACCESSIBLE BUILDING STEEL WITH #4 AWG BARE COPPER CONDUCTOR.

**C6 PARTIAL BASEMENT GROUNDING PLAN - NEW WORK**  
E406 SCALE: 1/8" = 1'-0"



FOR OFFICIAL USE ONLY  
PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

**JACOBS**

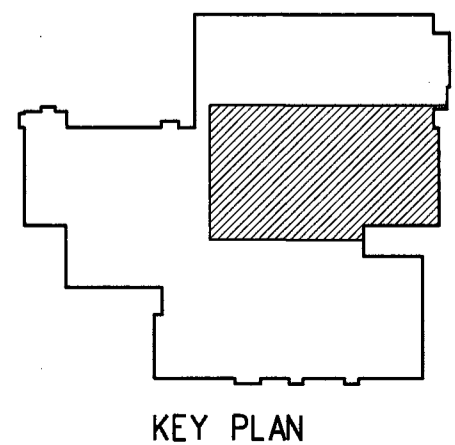
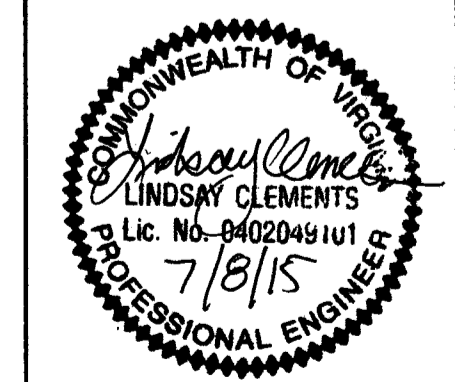
DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION  
WESTERN SERVICE AREA RENTON, WA

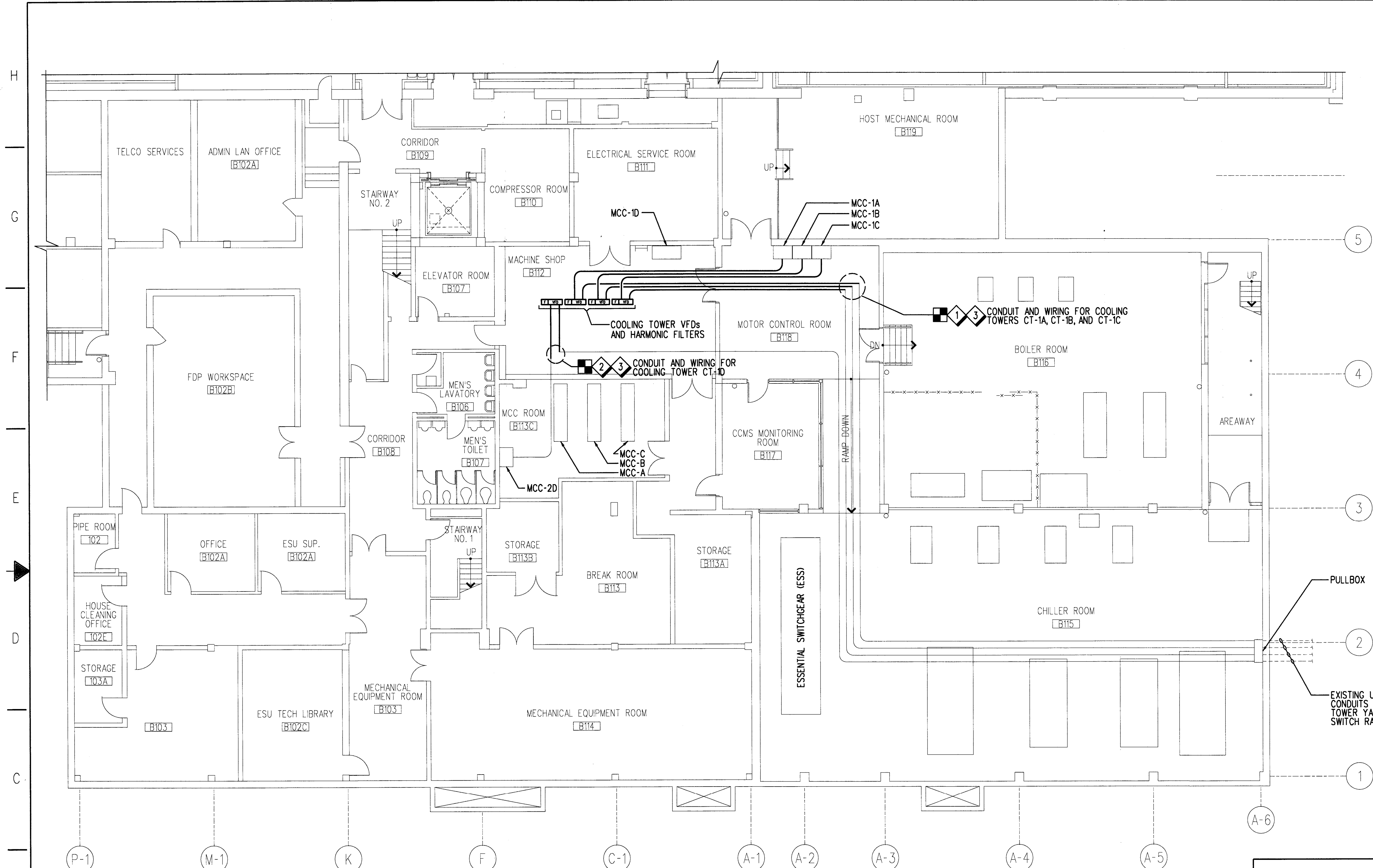
CONTROL WING BASEMENT  
AND CHILLER/COOLING TOWER MODERNIZATION  
OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER  
PARTIAL BASEMENT GROUNDING PLAN - NEW WORK  
FREMONT OAKLAND (ZOA) ARTCC

REVIEWED BY: [Signature] SUBMITTED BY: RSBrafisch APPROVED BY: [Signature]

DESIGNED BY: L. CLEMENTS ISSUED BY: AIRWAY FACILITY DIVISION DATE: 07/08/2015 JCN  
DRAWN BY: J. FRIEDBERG DRAWING NO.: ZOA - D - CWBMS - E406 REV.  
CHECKED BY: H. NGHE

OAKLAND ARTCC  
FREMONT, CALIFORNIA

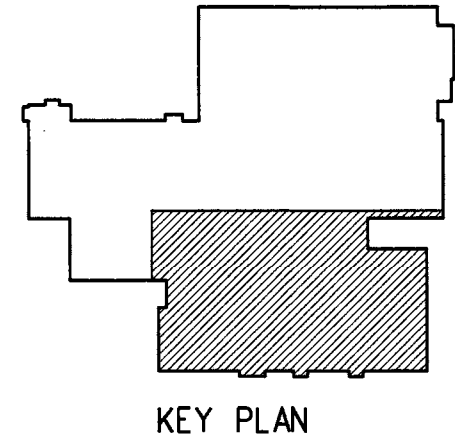
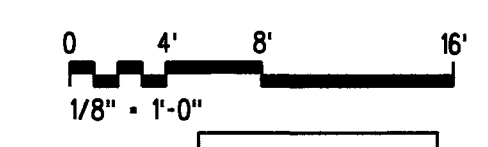




**GENERAL NOTES**  
 A. BRANCH CIRCUIT CONDUIT RUNS ARE DIAGRAMMATIC. CONTRACTOR TO FIELD VERIFY BRANCH CIRCUITS PER PANELBOARD SCHEDULE AND THIS DRAWING. COORDINATE EXACT ROUTING WITH COR.

**SHEET NOTES**  
 1. PROVIDE NEW CONDUIT AND WIRING FROM MCC TO NEW VFD AND FROM NEW VFD AND THE LOCATION WHERE THE EXISTING CONDUIT IS BEING INTERCEPTED.  
 2. PROVIDE NEW CONDUIT AND WIRING FROM LOCATION WHERE THE EXISTING CONDUIT IS BEING INTERCEPTED TO NEW VFD AND FROM NEW VFD TO THE LOCATION WHERE THE EXISTING CONDUIT IS BEING INTERCEPTED.  
 3. COORDINATE EXACT OVERHEAD CONDUIT ROUTING WITH EXISTING CONDITIONS.

**B6 BASEMENT CONDUIT ROUTING PLAN**  
 E407 SCALE: 1/8" = 1'-0"



FOR OFFICIAL USE ONLY  
 PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>					
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA					
<b>CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION</b> <b>OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER</b> <b>BASEMENT CONDUIT ROUTING PLAN</b>					
FREMONT			OAKLAND (ZOA) ARTCC		
DESIGNED BY	L. CLEMENTS	ISSUED BY	DATE	07/08/2015	JCN
DRAWN BY	J. FREDBERG	CHECKED BY	H. NGHE		
REVIEWED BY		SUBMITTED BY	RSBradfish	APPROVED BY	<i>[Signature]</i>
OAKLAND ARTCC FREMONT, CALIFORNIA		AIRWAY FACILITY DIVISION		DRAWING NO. ZOA - D - CWBMS - E407	

6/30/2015

### PANELBOARD "PP-MOV" SCHEDULE

PNL NAME: PP-MOV			ACCESSORY LUGS: NONE			VOLTAGE: 480			3-PHASE, 3-WIRE + G.			BUS AMPS: 225							
LOCATION: CHILLER RM B115			MOUNTING: SURFACE			NEUTRAL BUS: NONE			MAIN AMPS: 125			MCB							
FED FROM: MCC-1B & MCC-1C VIA MTS			GROUND BUS: EQUIPMENT ONLY			AIC: 10000													
NOTE	TYPE	LOAD DESCRIPTION	FRM.	TRIP	POLE	A	B	C	LOADS (VA)	CTK NUMB.	A	B	C	FRM.	TRIP	POLE	NOTE	TYPE	LOAD DESCRIPTION
EQN		FCV-2A (CH200)	100	20	3	360				1	2			100	20	3		EQN	FCV-4B (CH400)
EQN			-	-	-				360	3	4			-	-	-		EQN	
EQN			-	-	-				360	5	6			-	-	-		EQN	
EQN		FCV-2B (CH200)	100	20	3	360				7	8			100	20	3		EQN	FCV-5B (COOLING TOWER WATER BYPASS)
EQN			-	-	-				360	9	10			-	-	-		EQN	
EQN			-	-	-				360	11	12			-	-	-		EQN	
EQN		FCV-3A (CH300)	100	20	3	360				13	14			100	20	3		EQN	FCV-6B (CHILLED WATER BYPASS)
EQN			-	-	-				360	15	16			-	-	-		EQN	
EQN			-	-	-				360	17	18			-	-	-		EQN	
EQN		FCV-3B (CH300)	100	20	3	360				19	20			100	30	3		EQC	TEMP. REFRIGERATION UNIT
EQN			-	-	-				360	21	22			-	-	-		EQC	
EQN			-	-	-				360	23	24			-	-	-		EQC	
EQN			-	-	-					25	26			100	20	3		SPARE	SPARE
EQN			-	-	-					27	28			-	-	-		SPARE	
EQN			-	-	-					29	30			-	-	-		SPARE	
EQN		FCV-1A (CH100)	100	20	3					31	32	500		100	30	3		SPARE	TVSS
EQN			-	-	-					33	34		500	-	-	-		SPARE	
EQN			-	-	-					35	36		500	-	-	-		SPARE	
EQN			-	-	-					37	38	3215		100	50	3		SUB	PNL PP-CT & PANEL PP-CT (COOLING TOWER YARD)
EQN			-	-	-					39	40		2640	-	-	-		SUB	
EQN			-	-	-					41	42		2640	-	-	-		SUB	

CONNECTED LOAD (kVA): PHASE A 5.2, L&A 0.0, LTG 0.0, EQC 5.8, DRY 0.0, REC 0.0, EQN 7.0, RGE 0.0, KEQ 0.0, SPARE 0.0. TOTAL 12.8

DEMAND LOAD (kVA): PHASE A 0.0, LTG 0.0, EQC 5.8, DRY 0.0, REC 0.0, EQN 7.0, RGE 0.0, KEQ 0.0, SPARE 0.0. TOTAL 11.1

### PANELBOARD "BB" SCHEDULE

PNL NAME: BB			ACCESSORY LUGS: NONE			VOLTAGE: 208Y/120			3-PHASE, 4-WIRE + G.			BUS AMPS: 225							
LOCATION: UTILITY CHASE 2			MOUNTING: SURFACE			NEUTRAL BUS: 100% RATED			MAIN AMPS: 150			MCB							
FED FROM: BS52			GROUND BUS: EQUIPMENT ONLY			AIC: 10000													
NOTE	TYPE	LOAD DESCRIPTION	FRM.	TRIP	POLE	A	B	C	LOADS (VA)	CTK NUMB.	A	B	C	FRM.	TRIP	POLE	NOTE	TYPE	LOAD DESCRIPTION
SUB		PANEL BB-A	100	100	3					1	2			100	20	1		LTG	LTS (HOST & BREAK RM) & EX FAN
SUB			-	-	-					3	4		1000	100	20	1		REC	BREAK ROOM B120C REFRIGERATOR
SUB			-	-	-					5	6		1000	100	20	1		REC	BREAK ROOM B120C COUNTERTOP
REC		LIGHTS/REC. UTILITY CHASES 1&2	100	20	1					7	8		1000	100	20	1		REC	BREAK ROOM B120C COUNTERTOP
REC		CWB B120 SOUTHWEST	100	20	1			1080		9	10			100	20	1		REC	REC FORT HENRY AREA CWB B120
REC		CWB B120 SOUTH	100	20	1				900	11	12			100	20	1		REC	REC FORT HENRY AREA CWB B120
REC		CWB B120 SOUTH COLUMNS	100	20	1					13	14			100	20	1		REC	REC FORT HENRY AREA CWB B120
REC		CWB B120 SOUTHWEST	100	20	1				900	15	16		1000	100	20	1		REC	BREAK ROOM B120C COUNTERTOP
EQC		WAAS BLOWERS (FANS)	100	20	1					17	18		500	100	20	1		EQC	CP-01 IFD B101
REC		CWB B120 NORTHWEST	100	20	1			540		19	20			100	20	1		REC	UHF GUARD FREQ. CONV. REC.
REC		BREAK ROOM B120C	100	20	1				1080	21	22			100	20	1		SPARE	SPARE
REC		DALER & DVRS CONV. REC. UFLR	100	20	1					23	24			100	20	1		EQN	WATER HEATER UNDER SINK CH 1
EQN		CSI PCU 3, 4, 10, 11	100	20	1					25	26	900		100	20	1		REC	CWB B120 NORTHEAST
SPACE			100	20	1					27	28		500	100	20	1	1	REC	CWB B120 EWC
SPACE			100	20	1					29	30			100	20	1		EQN	CWB B120 NW DDPC
EQN		CTAS SUPPORT STRING RM BLOWER	100	20	1					31	32			100	20	1		SPARE	SPARE
SPACE			100	20	1					33	34			100	20	1		SPARE	SPARE
SPACE			100	20	1					35	36			100	20	1		SPARE	SPARE
SPACE			100	20	1					37	38			100	20	1		SPARE	SPARE
SPACE			100	20	1					39	40			100	20	1		SPARE	SPARE
SPACE			100	20	1					41	42			100	20	1		SPARE	SPARE

CONNECTED LOAD (kVA): PHASE A 3.3, L&A 0.0, LTG 0.0, EQC 0.5, DRY 0.0, REC 10.8, EQN 0.5, RGE 0.0, KEQ 0.0, SPARE 0.0. TOTAL 11.8

DEMAND LOAD (kVA): PHASE A 0.0, LTG 0.0, EQC 0.5, DRY 0.0, REC 10.4, EQN 0.4, RGE 0.0, KEQ 0.0, SPARE 0.0. TOTAL 11.3

### PANELBOARD "PP-CT" SCHEDULE

PNL NAME: PP-CT			ACCESSORY LUGS: NONE			VOLTAGE: 480			3-PHASE, 3-WIRE + G.			BUS AMPS: 100							
LOCATION: CT YARD DISC SW RACK			MOUNTING: SURFACE			NEUTRAL BUS: NONE			MAIN AMPS: 50			MCB							
FED FROM: PP-MOV			GROUND BUS: EQUIPMENT ONLY			AIC: 10000													
NOTE	TYPE	LOAD DESCRIPTION	FRM.	TRIP	POLE	A	B	C	LOADS (VA)	CTK NUMB.	A	B	C	FRM.	TRIP	POLE	NOTE	TYPE	LOAD DESCRIPTION
EQC		EWB-01	100	20	3	1000				1	2	1270		100	25	3		SUB	PANEL LP-CT VIA XFMR TR-CT
EQC			-	-	-			1000		3	4		695	-	-	-		SUB	
EQC			-	-	-				1000	5	6			-	-	-		SUB	
EQC		SF-02	100	20	3	945				7	8			100	20	3		SPARE	SPARE
EQC			-	-	-			945		9	10			-	-	-		SPARE	
EQC			-	-	-				945	11	12			-	-	-		SPARE	
SPARE			-	-	-					13	14			100	20	3		SPARE	SPARE
SPARE			-	-	-					15	16			-	-	-		SPARE	
SPARE			-	-	-					17	18			-	-	-		SPARE	
SPARE			-	-	-					19	20			100	20	3		SPARE	SPARE
SPARE			-	-	-					21	22			-	-	-		SPARE	
SPARE			-	-	-					23	24			-	-	-		SPARE	
SPARE			-	-	-					25	26			100	20	3		SPARE	SPARE
SPARE			-	-	-					27	28			-	-	-		SPARE	
SPARE			-	-	-					29	30			-	-	-		SPARE	
SPARE			-	-	-					31	32			100	20	3		SPARE	SPARE
SPARE			-	-	-					33	34			-	-	-		SPARE	
SPARE			-	-	-					35	36			-	-	-		SPARE	

CONNECTED LOAD (kVA): PHASE A 3.2, L&A 0.0, LTG 0.0, EQC 5.8, DRY 0.0, REC 0.0, EQN 2.7, RGE 0.0, KEQ 0.0, SPARE 0.0. TOTAL 8.5

DEMAND LOAD (kVA): PHASE A 0.0, LTG 0.0, EQC 5.8, DRY 0.0, REC 0.0, EQN 2.0, RGE 0.0, KEQ 0.0, SPARE 0.0. TOTAL 7.8

### PANELBOARD "BB-1" SCHEDULE

PNL NAME: BB-1			ACCESSORY LUGS: NONE			VOLTAGE: 480Y/277			3-PHASE, 4-WIRE + G.			BUS AMPS: 225							
LOCATION: UTILITY CHASE 2			MOUNTING: SURFACE			NEUTRAL BUS: 100% RATED			MAIN AMPS: 100			MCB							
FED FROM: BS51-2			GROUND BUS: EQUIPMENT ONLY			AIC: 10000													
NOTE	TYPE	LOAD DESCRIPTION	FRM.	TRIP	POLE	A	B	C	LOADS (VA)	CTK NUMB.	A	B	C	FRM.	TRIP	POLE	NOTE	TYPE	LOAD DESCRIPTION
LTG		B120 NORTHEAST	100	20	1	1005				1	2	1675		100	20	1		LTG	B120 COL. M-K & B120A
LTG		B120 NORTH CENTER	100	20	1			804		3	4		1541	100	20	1		LTG	B120 COL. P-R
LTG		B120 NORTHWEST	100	20	1				938	5	6		1608	100	20	1		SPARE	SPARE
SPARE			-	-	-					7	8			100	20	1		LTG	B120 COL. R-S
SPARE			-	-	-					9	10			100	20	1		LTG	B120 COL. T-U
SPARE			-	-	-					11	12			100	20	1		SPARE	SPARE
LTG		RM B101D & B101E	100	20	1			540		13	14			100	20	1		SPARE	SPARE
SPARE			-	-	-					15	16			100	20	1		SPARE	SPARE
SPARE			-	-	-					17	18			100	20	1		SPARE	SPARE
SPARE			-	-	-					19	20		800	100	20	1		LTG	RM B101A, B101B, & B101C
SPARE			-	-	-					21	22			100	20	1		SP	



### PANELBOARD "CUE" SCHEDULE

PNL NAME: CUE		ACCESSORY LUGS: NONE				VOLTAGE: 208Y/120				3-PHASE, 4-WIRE + G.				BUS AMPS: 225		MCB	
LOCATION: ELEC. EQ. RM B120		MOUNTING: SURFACE				NEUTRAL BUS: 100% RATED				GROUND BUS: EQUIPMENT ONLY				MAIN AMPS: 225		MCB	
		FED FROM: BS52								AIC:							

NOTE	TYPE	LOAD DESCRIPTION	CIRCUIT BREAKER			LOADS (VA)			CKT NUMB.	LOADS (VA)			CIRCUIT BREAKER			NOTE	TYPE	LOAD DESCRIPTION
			FRM.	TRIP	POLE	A	B	C		A	B	C	FRM.	TRIP	POLE			
	SPACE		100	20	1			1	2			100	20	1	SPARE	SPARE		
	SPACE		100	20	1			3	4			100	20	1	SPARE	SPARE		
	SPACE		100	20	1			5	6			100	20	1	SPARE	SPARE		
	SPACE		100	20	1			7	8			100	20	1	SPARE	SPARE		
	SPACE		100	20	1			9	10			100	20	1	SPARE	SPARE		
	SPACE		100	20	1			11	12			100	20	1	SPARE	SPARE		
	SPACE		100	20	1			13	14			100	20	1	SPARE	SPARE		
	SPACE		100	20	1			15	16			100	20	1	SPARE	SPARE		
	SPACE		100	20	1			17	18			100	20	1	SPARE	SPARE		
	SPACE		100	20	1			19	20			100	20	1	SPARE	SPARE		
	SPACE		100	20	1			21	22			100	20	1	SPARE	SPARE		
	SPACE		100	20	1			23	24			100	20	1	SPARE	SPARE		
	SPACE		100	20	1			25	26			100	20	1	SPARE	SPARE		
	SPACE		100	20	1			27	28			100	20	1	SPARE	SPARE		
	SPACE		100	20	1			29	30			100	20	1	SPARE	SPARE		
	SPACE		100	20	1			31	32			100	20	1	SPARE	SPARE		
	SPACE		100	20	1			33	34			100	20	1	SPARE	SPARE		
	SPACE		100	20	1			35	36			100	20	1	SPARE	SPARE		
	SPACE		100	20	1			37	38			100	20	1	SPARE	SPARE		
	SPACE		100	20	1			39	40			100	20	1	SPARE	SPARE		
	SPACE		100	20	1			41	42			100	20	1	SPARE	SPARE		
PANEL NOTES:						0 0 0						0 0 0						

CONNECTED LOAD (kVA)				DEMAND LOAD (kVA)											
PHASE A	0.0	L&A	0.0	LTG	0.0	EQC	0.0	L&A	0.0	LTG	0.0	EQC	0.0		
PHASE B	0.0	DRY	0.0	REC	0.0	EQN	0.0	DRY	0.0	REC	0.0	EQN	0.0		
PHASE C	0.0	RGE	0.0	KEQ	0.0	SPARE	0.0	RGE	0.0	KEQ	0.0	SPARE	0.0		
TOTAL		0.0		0.0		TOTAL		0.0		0.0		TOTAL		0.0	

### PANELBOARD "TEMP CT" SCHEDULE

PNL NAME: TEMP CT		ACCESSORY LUGS: NONE				VOLTAGE: 480				3-PHASE, 3-WIRE + G.				BUS AMPS: 600		MLO	
LOCATION: TEMP CT YARD		MOUNTING: SURFACE				NEUTRAL BUS: NONE				GROUND BUS: EQUIPMENT ONLY				MAIN AMPS: 600		MCB	
		FED FROM: ESS. SW. GR.								AIC:							

NOTE	TYPE	LOAD DESCRIPTION	CIRCUIT BREAKER			LOADS (VA)			CKT NUMB.	LOADS (VA)			CIRCUIT BREAKER			NOTE	TYPE	LOAD DESCRIPTION
			FRM.	TRIP	POLE	A	B	C		A	B	C	FRM.	TRIP	POLE			
	EQC	TEMP PUMP 1T	225	200	3	20784		1	2	540		100	30	3	SUB	PNL TEMP		
	EQC		-	-	-	20784		3	4			100	30	3	SUB	FR. 15KVA XFMR		
	EQC		-	-	-	20784		5	6			100	30	3	SUB			
	EQC	TEMP PUMP 2T	225	200	3	20784		7	8			100	20	3	SPARE	SPARE		
	EQC		-	-	-	20784		9	10			100	20	3	SPARE	SPARE		
	EQC		-	-	-	20784		11	12			100	20	3	SPARE	SPARE		
	EQC	TEMP PUMP 3T	225	200	3	20784		13	14			100	20	3	SPARE	SPARE		
	EQC		-	-	-	20784		15	16			100	20	3	SPARE	SPARE		
	EQC		-	-	-	20784		17	18			100	20	3	SPARE	SPARE		
	EQC	CT-1T	100	90	3	20784		19	20			100	20	3	SPARE	SPARE		
	EQC		-	-	-	20784		21	22			100	20	3	SPARE	SPARE		
	EQC		-	-	-	20784		23	24			100	20	3	SPARE	SPARE		
	EQC	CT-2T	100	90	3	20784		25	26			100	20	3	SPARE	SPARE		
	EQC		-	-	-	20784		27	28			100	20	3	SPARE	SPARE		
	EQC		-	-	-	20784		29	30			100	20	3	SPARE	SPARE		
	EQC	CT-3T	100	90	3	20784		31	32			100	20	3	SPARE	SPARE		
	EQC		-	-	-	20784		33	34			100	20	3	SPARE	SPARE		
	EQC		-	-	-	20784		35	36			100	20	3	SPARE	SPARE		
	SPACE	SPARE	100	20	3			37	38			100	20	3	SPARE	SPARE		
	SPACE		-	-	-			39	40			100	20	3	SPARE	SPARE		
	SPACE		-	-	-			41	42			100	20	3	SPARE	SPARE		
PANEL NOTES:		124704 124704 124704				540 1000 0												

CONNECTED LOAD (kVA)				DEMAND LOAD (kVA)											
PHASE A	125.2	L&A	0.0	LTG	1.0	EQC	374.1	L&A	0.0	LTG	1.0	EQC	374.1		
PHASE B	125.7	DRY	0.0	REC	0.5	EQN	0.0	DRY	0.0	REC	0.5	EQN	0.0		
PHASE C	124.7	RGE	0.0	KEQ	0.0	SPARE	0.0	RGE	0.0	KEQ	0.0	SPARE	0.0		
TOTAL		375.7		375.7		TOTAL		375.7		375.7		TOTAL		375.7	

### PANELBOARD "TEMP" SCHEDULE

PNL NAME: TEMP		ACCESSORY LUGS: NONE				VOLTAGE: 208Y/120				3-PHASE, 4-WIRE + G.				BUS AMPS: 100		MCB	
LOCATION: TEMP CT YARD		MOUNTING: SURFACE				NEUTRAL BUS: 100% RATED				GROUND BUS: EQUIPMENT ONLY				MAIN AMPS: 50		MCB	
		FED FROM:								AIC:							

NOTE	TYPE	LOAD DESCRIPTION	CIRCUIT BREAKER			LOADS (VA)			CKT NUMB.	LOADS (VA)			CIRCUIT BREAKER			NOTE	TYPE	LOAD DESCRIPTION
			FRM.	TRIP	POLE	A	B	C		A	B	C	FRM.	TRIP	POLE			
	REC	TOWER RECEPTACLES	100	20	1	540		1	2			100	20	1	SPARE	SPARE		
	LTG	TEMPORARY LIGHTING	100	20	1		1000	3	4			100	20	1	SPARE	SPARE		
	SPACE	SPARE	100	20	1			5	6			100	20	1	SPARE	SPARE		
	SPACE	SPARE	100	20	1			7	8			100	20	1	SPARE	SPARE		
	SPACE	SPARE	100	20	1			9	10			100	20	1	SPARE	SPARE		
	SPACE	SPARE	100	20	1			11	12			100	20	1	SPARE	SPARE		
	SPACE	SPARE	100	20	1			13	14			100	20	1	SPARE	SPARE		
	SPACE	SPARE	100	20	1			15	16			100	20	1	SPARE	SPARE		
	SPACE	SPARE	100	20	1			17	18			100	20	1	SPARE	SPARE		
PANEL NOTES:						540 1000 0												

CONNECTED LOAD (kVA)				DEMAND LOAD (kVA)											
PHASE A	0.5	L&A	0.0	LTG	1.0	EQC	0.0	L&A	0.0	LTG	1.0	EQC	0.0		
PHASE B	1.0	DRY	0.0	REC	0.5	EQN	0.0	DRY	0.0	REC	0.5	EQN	0.0		
PHASE C	0.0	RGE	0.0	KEQ	0.0	SPARE	0.0	RGE	0.0	KEQ	0.0	SPARE	0.0		
TOTAL		1.5		1.5		TOTAL		1.5		1.5		TOTAL		1.5	

### EXISTING PANELBOARD "AHU-A" SCHEDULE

PNL NAME: AHU-A		ACCESSORY LUGS: NONE				VOLTAGE: 480				3-PHASE, 3-WIRE + G.				BUS AMPS: 225		MCB	
LOCATION: ELEC. EQ. RM B120		MOUNTING: SURFACE				NEUTRAL BUS: NONE				GROUND BUS: EQUIPMENT ONLY				MAIN AMPS: 100		MCB	
		FED FROM: MCC-1A								AIC:							

NOTE	TYPE	LOAD DESCRIPTION	CIRCUIT BREAKER			LOADS (VA)			CKT NUMB.	LOADS (VA)			CIRCUIT BREAKER			NOTE	TYPE	LOAD DESCRIPTION
			FRM.	TRIP	POLE	A	B	C		A	B	C	FRM.	TRIP	POLE			
1,2	EQC	AHU-109	100	20	3			1	2	945		100	30	3	SPARE	SPARE (FUTURE AHU-101)		
	EQC		-	-	-			3	4			100	30	3	SPARE	SPARE		
	EQC		-	-	-			5	6	945		100	30	3	SPARE	SPARE		
1,2	EQC	AHU-106	100	50	3			7	8	5820		100	30	3	SPARE	SPARE		
	EQC		-	-	-			9	10			100	30	3	SPARE	SPARE		
	EQC		-	-	-			11	12	5820		100	30	3	SPARE	SPARE		
	SPACE	SPARE	100	30	3			13	14			100	20	3	SPARE	SPARE		
	SPACE		-	-	-			15	16			100	20	3	SPARE	SPARE		
	SPACE		-	-	-			17	18			100	20	3	SPARE	SPARE		
	SPACE		-	-	-			19	20			100	50	3	SUB	PANEL EPP1 (NORMAL)		
	SPACE		-	-	-			21	22			100	50	3	SUB	VIA 30KVA XFMR		
	SPACE		-	-	-			23	24			100	50	3	SUB			
	SPACE	SPARE	100	40	3			25	26			100	40	3	SPACE			
	SPACE		-	-	-			27	28			100	40	3	SPACE			
	SPACE		-	-	-			29	30			100	40	3	SPACE			
	SPACE		-	-	-			31	32			100	40	3	SPACE			
	SPACE		-	-	-			33	34			100	40	3	SPACE			
	SPACE		-	-	-			35	36			100	40	3	SPACE			
	SPACE		-	-	-			37	38			100	40	3	SPACE			
	SPACE		-	-	-			39	40			100	40	3	SPACE			
	SPACE		-	-	-			41	42			100	40	3	SPACE			
PANEL NOTES:						6765 6765 6765			0 0 0									

CONNECTED LOAD (kVA)				DEMAND LOAD (kVA)									
PHASE A	6.8	L&A	0.0	LTG	0.0	EQC	20.3	L&A	0.0	LTG	0.0	EQC	20.3
PHASE B	6.8	DRY	0.0	REC	0.0	EQN	0.0	DRY	0.0	REC	0.0	EQN	0.0
PHASE C													

**EXISTING PANELBOARD "BC" SCHEDULE**

PNL NAME: BC		ACCESSORY LUGS: NONE		VOLTAGE: 208Y/120		3-PHASE, 4-WIRE + G.		BUS AMPS: 225										
LOCATION: MOTOR CTRL RM B118		MOUNTING: SURFACE		NEUTRAL BUS: 100% RATED		GROUND BUS: EQUIPMENT ONLY		MAIN AMPS: 225										
FED FROM: MCC-1C								AIC:										
NOTE	LOAD	CIRCUIT BREAKER			LOADS (VA)			CIRCUIT BREAKER			NOTE	LOAD						
TYPE	DESCRIPTION	FRM.	TRIP	POLE	A	B	C	FRM.	TRIP	POLE	TYPE	DESCRIPTION						
REC	ESS. BUS LEAK DET. & REC B115	100	20	1				100	20	1	REC	RM B112, B115, B117, B118						
REC	CCMS ROOM BEHIND RACKS	100	20	1				100	20	1	REC	REC B115 & LTS B116						
1 EQC	DDCP BOILER RM B116	100	20	1			500	100	20	1	REC	B115, B116, PH RGR, ELTS B115						
1 EQC	LEAK DET. B119	100	20	1	500			100	20	1	EQN	TOSHIBA MINI-UPS 2KVA						
1 EQC	FIRE ALARM CONTROL PANEL B112	100	20	1		500		100	20	1 1	EQC	DOM. HW CIRC PUMP HWC-1A						
REC	CCMS COMP. & PRINTER	100	20	1				100	20	1 1	EQC	DOM. HW CIRC PUMP HWC-1B						
EQC	TOXGUARD GAS DET. & DOOR REL.	100	20	1				-	-	-	SPACE	-						
EQC	WATER SOFTENER	100	20	1				-	-	-	SPACE	-						
EQC	FAN COILS HALLWAY 1048 1ST FL	100	20	1				-	-	-	SPACE	-						
1,2 EQC	DOOR 119 CLOSER	100	20	1	500			-	-	-	SPACE	-						
1,2 EQC	DOOR 118 CLOSER	100	20	1		500		100	20	1	REC	CSI ESS PWR MNR PT (PNL 24/25)						
1,2 EQC	DOOR 116 CLOSER	100	20	1			500	-	-	-	SPACE	-						
EQN	SUMP PUMP BOILER RM.	100	20	1				-	-	-	SPACE	-						
1,2 EQC	DOOR 117A CLOSER	100	20	1		500		-	-	-	SPACE	-						
1,2 EQC	DOOR 117B CLOSER	100	20	1		500		100	20	1	REC	E. WALL CHILLER ROOM B115						
EQC	FREON MONITOR SYS.	100	20	1				100	20	3	EQN	EF320 (BOILER RM/FAN KIT ROOF)						
REC	PWR STRIP CAGE AREA BOILER RM	100	20	2				-	-	-	EQC	-						
REC	-	-	-	-				-	-	-	EQC	-						
SPACE	-	-	-	-				-	-	-	SPACE	-						
SPACE	-	-	-	-				100	20	1	SPACE	SPARE						
SPACE	-	-	-	-				-	-	-	SPACE	-						
PANEL NOTES:					1000	1500	1500	0	500	500								
1. NEW LOAD.					CONNECTED LOAD (KVA)			DEMAND LOAD (KVA)										
2. PROVIDE NEW CIRCUIT BREAKER.					PHASE A	1.0	L&A	0.0	LTG	0.0	EQC	5.0	L&A	0.0	LTG	0.0	EQC	5.0
NEW CIRCUIT BREAKER SHALL MATCH					PHASE B	2.0	DRY	0.0	REC	0.0	EQN	0.0	DRY	0.0	REC	0.0	EQN	0.0
EXISTING IN TYPE, MANUFACTURER,					PHASE C	2.0	RGE	0.0	KEQ	0.0	SPARE	0.0	RGE	0.0	KEQ	0.0	SPARE	0.0
AND AIC RATING.					TOTAL			TOTAL					5.0	5.0				

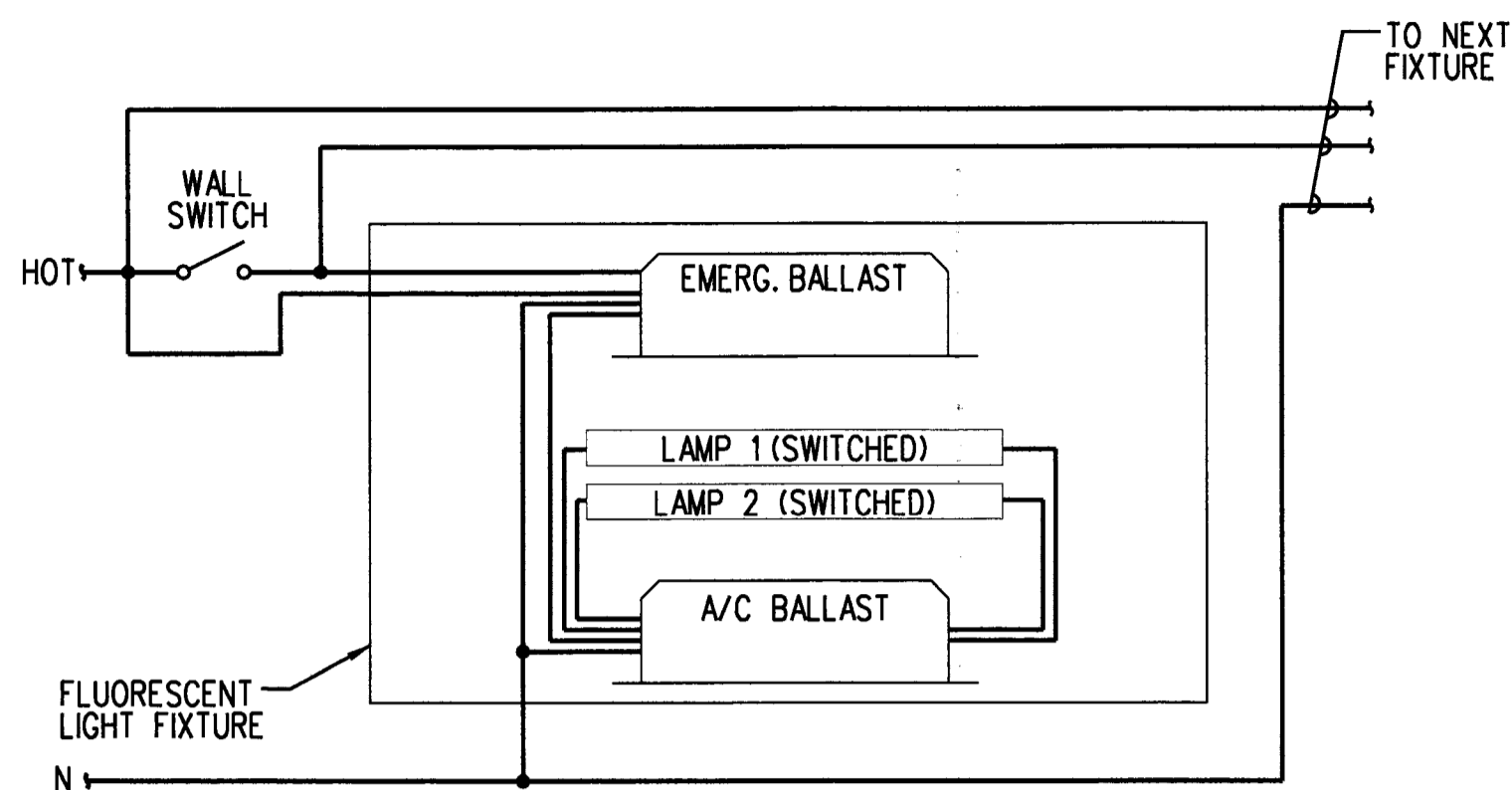
BC

FOR OFFICIAL USE ONLY  
PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>		REV.		APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA						
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER PANEL SCHEDULES						
FREMONT		OAKLAND (ZOA) ARTCC						
REVIEWED BY	SUBMITTED BY	RBradfish		APPROVED BY				
SUBMITTER'S TITLE				APPROVER'S TITLE				
DESIGNED BY L. CLEMENTS		ISSUED BY AIRWAY FACILITY DIVISION		DATE 07/08/2015		JOB NO.		
DRAWN BY J. FROBERG		CHECKED BY H. NGHE		DRAWING NO. ZOA - D - CWBMS - E603		REV.		

6/30/2015

DATE: 88DATE TIME: 88TIME USER: 88USER

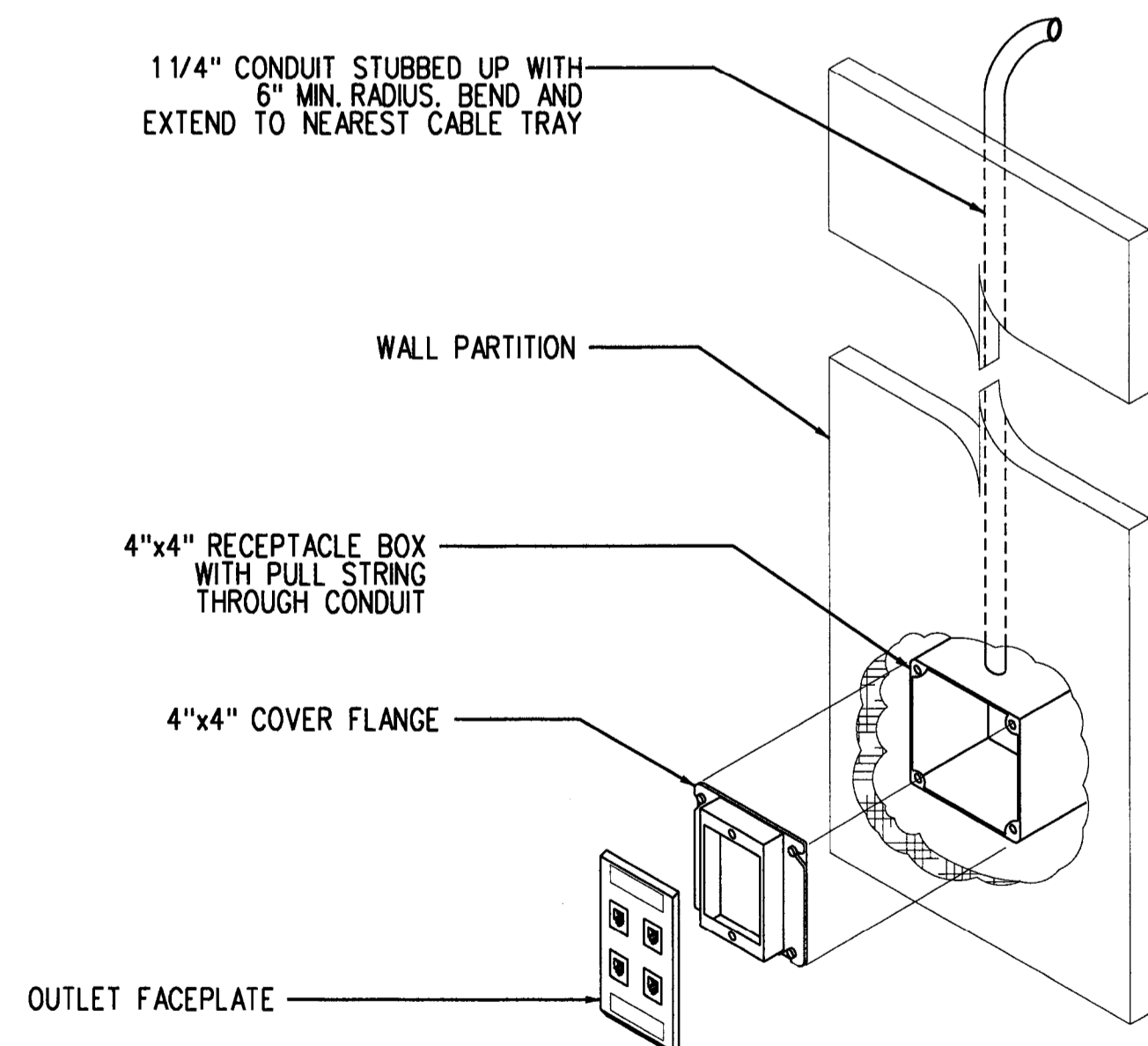


DETAIL NOTES:

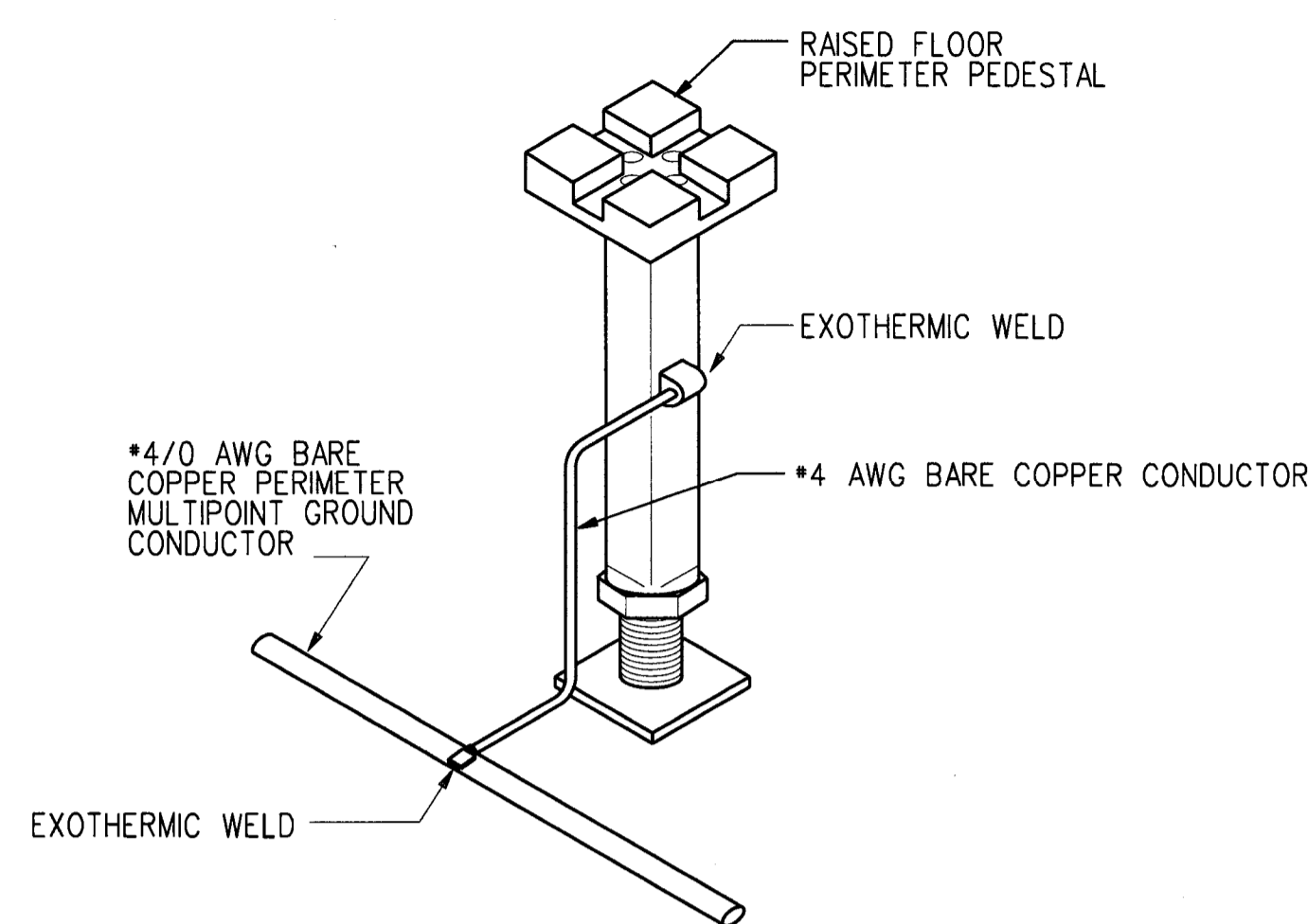
1. TWO LAMP EMERGENCY OPERATION WITH TWO LAMP BALLAST SHOWN. SIMILAR FOR OTHER LAMPING CONFIGURATIONS.
2. SWITCHED BALLAST SHOWN. COORDINATE CONNECTION TO A/C BALLAST WITH MANUFACTURER.

— SUPPLY BRANCH CIRCUITRY

**E8** TYPICAL EMERGENCY BALLAST WIRING  
E701 NTS



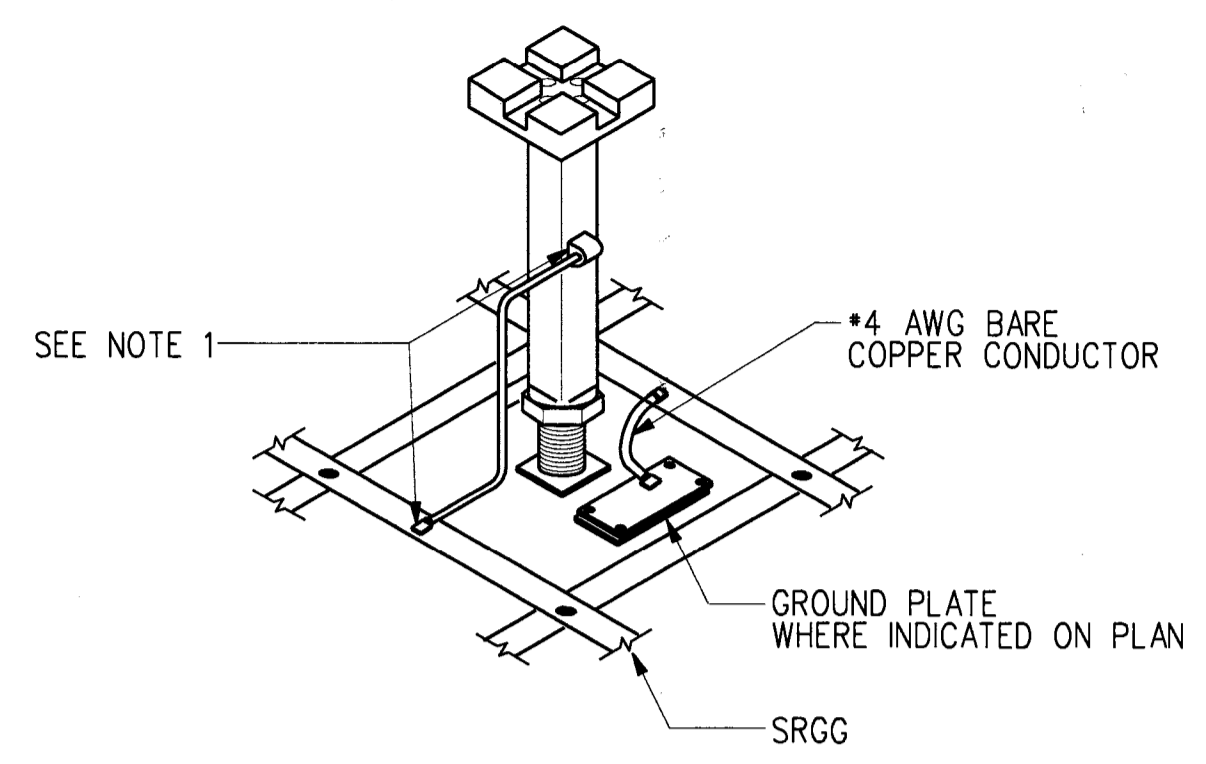
**A8** TYPICAL WALL CABLE SYSTEM  
E701 NTS



NOTES:

1. GROUND RAISED FLOOR PERIMETER PEDESTAL TO PERIMETER GROUND CONDUCTOR AT 10' INTERVALS.

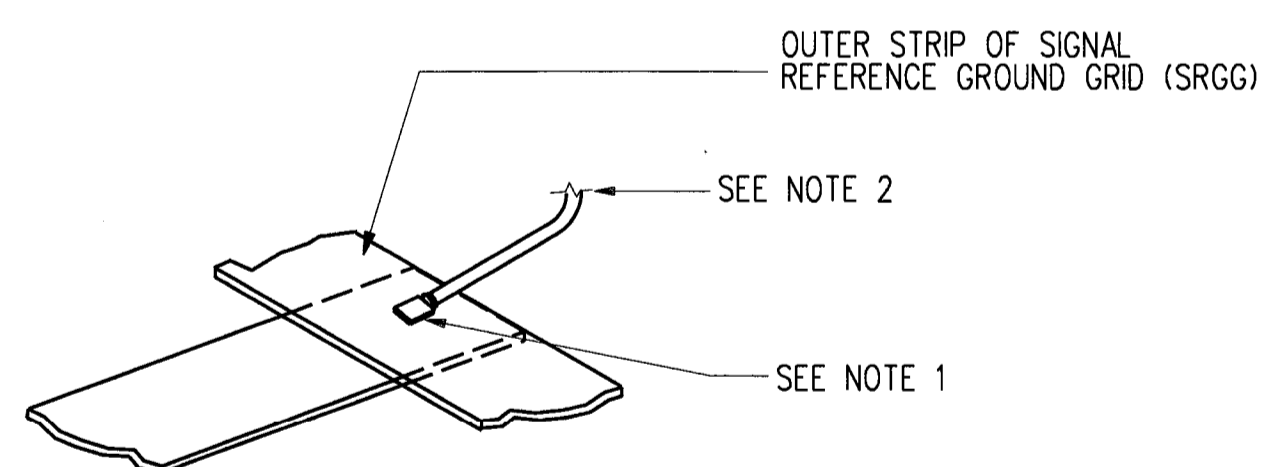
**E6** RAISED FLOOR PERIMETER PEDESTAL GROUNDING  
E701 NTS



NOTES:

1. BOND EVERY THIRD RAISED FLOOR PEDESTAL IN EACH DIRECTION TO THE SRGG USING A \*4 AWG BARE COPPER CONDUCTOR AND EXOTHERMIC WELDS.

**E4** EQUIPMENT ROOM RAISED FLOOR PEDESTAL GROUNDING  
E701 NTS



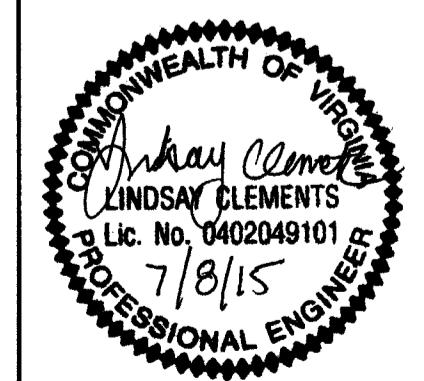
NOTES:

1. BOND \*4 AWG BARE COPPER CONDUCTOR TO THE SRGG USING EXOTHERMIC WELD. THE CONDUCTOR SHALL TAKE THE SHORTEST PATH TO THE SRGG WITH LENGTH NOT EXCEEDING 4 FEET.
2. CONNECT SRGG TO MULTIPPOINT PERIMETER GROUND CONDUCTOR AT EVERY GRID INTERSECTION WITH \*4 AWG BARE COPPER CONDUCTOR.

**A6** GROUND CONNECTION TO SRGG  
E701 NTS

FOR OFFICIAL USE ONLY  
PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>					
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER DETAILS FREMONT OAKLAND (ZOA) ARTCC					
DESIGNED BY L. CLEMENTS	ISSUED BY AIRWAY FACILITY DIVISION	DATE 07/08/2015	JCN		
DRAWN BY J. FRIEDBERG	CHECKED BY H. NGHE	DRAWING NO. ZOA - D - CWBMS - E701	REV.		
OAKLAND ARTCC FREMONT, CALIFORNIA					



6/30/2015

DATE: 6/30/2015 TIME: 11:15 AM USER: 58USER

FIRE SUPPRESSION GENERAL NOTES

- A. FIRE SUPPRESSION WORK ON THIS PROJECT SHALL BE INSTALLED IN ACCORDANCE WITH SPECIFICATIONS, MOST RECENT EDITIONS OF THE INTERNATIONAL BUILDING CODE, NFPA CODES, APPLICABLE STATE CODES AND REGULATIONS.
- B. WORK THAT IS DETAILED ON THESE PLANS IS BASED ON PREVIOUSLY REVIEWED BUILDING DRAWINGS AND SITE VISITS. WHERE FIELD CONDITIONS ARE DIFFERENT THAN SHOWN, ADVISE COR OF VARIANCES WHICH WILL AFFECT PROPOSED WORK PRIOR TO COMMENCING WORK.
- C. COORDINATE FIRE SUPPRESSION WORK WITH SITE CONDITIONS AND WORK OF OTHER TRADES.
- D. ADVISE COR IN WRITING AT LEAST 10 WORKING DAYS PRIOR TO INTERRUPTION OF SERVICES. OBTAIN PRIOR APPROVAL IN WRITING FROM COR.
- E. PROVIDE MATERIAL AND INSTALLATION INCLUDING INCIDENTAL WORK AND TEMPORARY CONNECTIONS AS MAY BE REQUIRED.
- F. COORDINATE FIRE SUPPRESSION WORK WITH THE FIRE ALARM AND DETECTION WORK.
- G. PIPE PENETRATIONS THROUGH SLAB AND FIRE RATED MASONRY WALLS SHALL HAVE PIPE SLEEVES SEALED WITH UL LISTED FIRE RATED ASSEMBLY MATERIAL. CAULK ANNULAR SPACE BETWEEN PIPE AND SLEEVE. PIPES THROUGH WALLS SHALL HAVE ESCUTCHEONS.
- H. PROVIDE SEISMIC BRACING FOR SEISMIC DESIGN CATEGORY D IN ACCORDANCE WITH NFPA 13 AND SPECIFICATION SECTION 2113.13.
- I. RELATED WORK, CONNECTIONS OR REVISIONS TO FIRE SUPPRESSION SYSTEM IN WHICH SYSTEM IS REQUIRED TO BE TEMPORARILY SHUT DOWN, SHALL BE FULLY COORDINATED WITH COR PRIOR TO COMMENCEMENT OF WORK. PIPING SHALL NOT BE LEFT UNATTENDED WHILE DRAINING OR DRIPPING.
- J. WORK REQUIRING CUTTING, PATCHING AND PAINTING SHALL MATCH EXISTING CONDITIONS.
- K. GAS AND ARC CUTTING ARE NOT PERMITTED.
- L. ALL AREAS ARE CLASSIFIED AS LIGHT HAZARD UNLESS OTHERWISE NOTED.
- M. VERIFY PIPE LOCATIONS AND ELEVATIONS. COORDINATE ROUTING OF PIPING TO AVOID INTERFERENCE WITH OTHER TRADES.
- N. PROVIDE UPRIGHT SPRINKLERS IN ALL AREAS WITH UNFINISHED CEILINGS UNLESS THE OBSTRUCTIONS REQUIRE THE INSTALLATION OF PENDENT SPRINKLERS.
- O. VERIFY ALL LOCATIONS AND MEASUREMENTS AS CONDITIONS MAY VARY THROUGHOUT CONSTRUCTION. ALL CHANGES FROM THE ORIGINAL DESIGN MUST BE APPROVED BY THE COR.
- P. INSTALL TAMPER AND FLOW SWITCHES. CONNECTIONS TO FIRE ALARM SIGNALING LINE CIRCUITS SHALL BE MADE BY THE FIRE ALARM CONTRACTOR.
- Q. DRAWINGS ARE FOR REFERENCE PURPOSES ONLY. APPROVED SHOP DRAWINGS AND HYDRAULIC CALCULATIONS SHALL BE SUBMITTED AND APPROVED PRIOR TO INSTALLATION AND MODIFICATION OF THE SPRINKLER SYSTEM.
- R. OBTAIN ALL REQUIRED PERMITS AND APPROVALS FROM THE COR PRIOR TO COMMENCING WORK.
- S. PERFORM FACILITY WATERFLOW TEST. BASE HYDRAULIC CALCULATIONS ON THE RESULTS OF THE WATERFLOW TEST WITH A SAFETY FACTOR OF 7 PSI.
- T. SPRINKLER SYSTEM PIPING SHALL NOT BE INSTALLED DIRECTLY ABOVE CRITICAL ELECTRONIC EQUIPMENT. THIS EQUIPMENT CONTROLS AIR TRAFFIC AND IS DEEMED CRITICAL FOR THE LIFE SAFETY OF THE FLYING PUBLIC.

FIRE SUPPRESSION LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
		ORDINARY HAZARD GROUP 1
		ORDINARY HAZARD GROUP 2
		EXTRA HAZARD GROUP 1
		PIPE TURNING UP
		PIPE TURNING DOWN
		POINT OF CONNECTION
		POINT OF DISCONNECTION
		CAPPED PIPE/OUTLET
	GV	GATE VALVE
	AV	ANGLE VALVE
	GLV	GLOBE VALVE
	CV	CHECK VALVE
	PRV	PRESSURE REDUCING VALVE
	DPV	DRY PIPE VALVE
	DIPV	SINGLE INTERLOCK PREACTION VALVE
	OS&Y	OUTSIDE SCREW AND YOKE VALVE
	OS&Y	PRESSURE REGULATING VALVE (FIRE PROTECTION) WITH TAMPER SWITCH
	OS&Y	OUTSIDE SCREW AND YOKE GATE VALVE WITH TAMPER SWITCH
	SP	FIRE STANDPIPE RISER
	FDC	FREE STANDING FIRE DEPARTMENT CONNECTION
	FDC	WALL MOUNTED FIRE DEPARTMENT CONNECTION
	FS	FLOW SWITCH
	FHV	FIRE HOSE VALVE
	FHV	FIRE HOSE VALVE PRESSURE REGULATING TYPE
	FHV	BUTTERFLY VALVE WITH TAMPER SWITCH
	FVC	FIRE VALVE CABINET
	FCA	FLOOR CONTROL ASSEMBLY
		THERMAL DETECTOR
		TO BE DEMOLISHED
		VIKING FIRECYCLE VALVE ASSEMBLY

FIRE SUPPRESSION ABBREVIATIONS

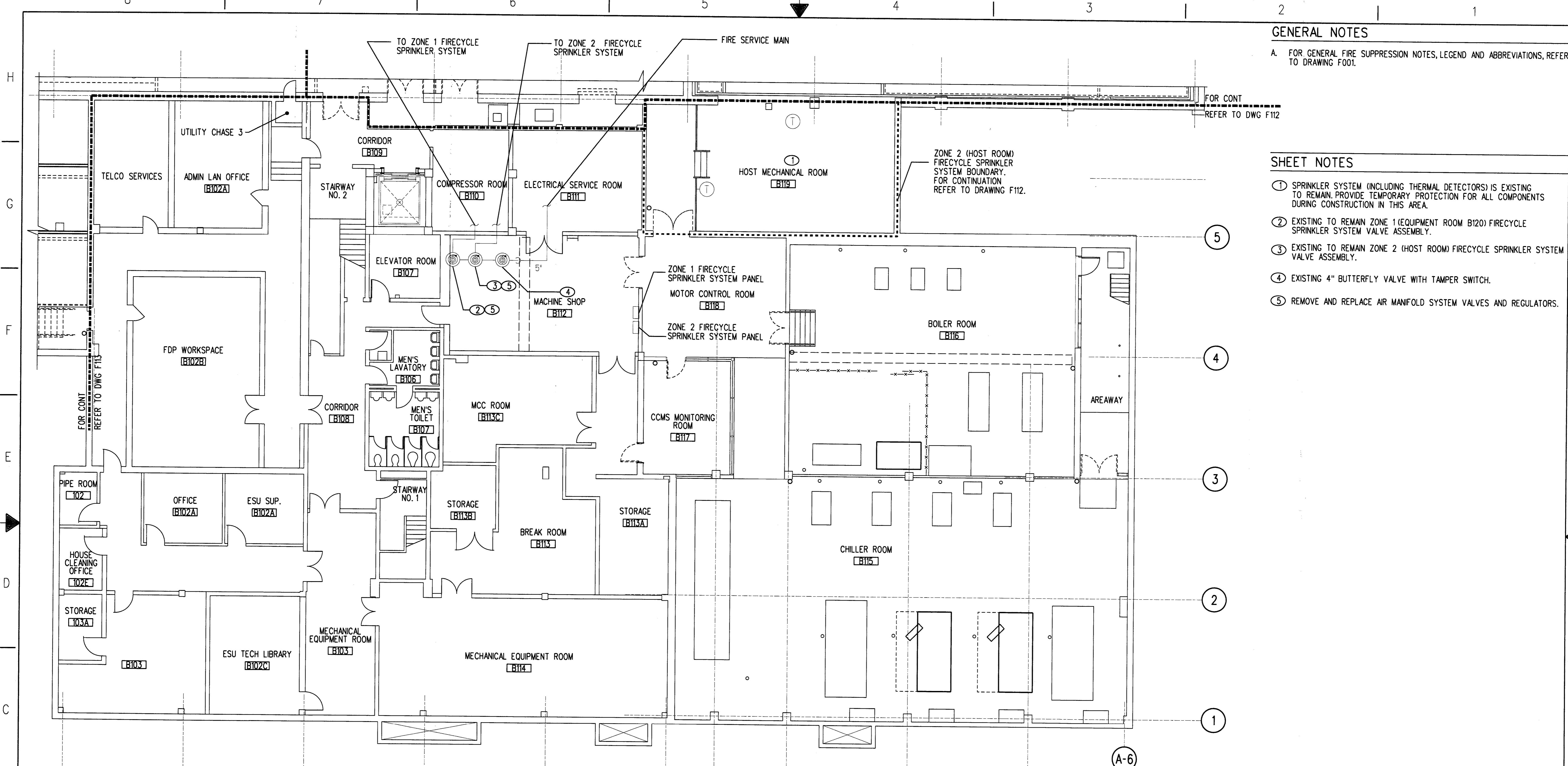
AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
AVG	AVERAGE
BFP	DOUBLE CHECK BACKFLOW PREVENTER
CFM	CUBIC FEET PER MINUTE
COR	CONTRACTING OFFICER'S REPRESENTATIVE
ELEV	ELEVATION
FDC	FIRE DEPARTMENT CONNECTION
FHV	FIRE HOSE VALVE
FP	FIRE PUMP
FPC	FIRE PUMP CONTROLLER
FVC	FIRE VALVE CABINET
GALS	GALLONS
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GV	GATE VALVE
JP	JOCKEY PUMP
MIN	MINIMUM
NP	NOT PERMITTED
NC	NONCOMBUSTIBLE
OS&Y	OUTSIDE SCREW AND YOKE
PSIG	POUNDS PER SQUARE INCH GAUGE
SOV	SOLENOID VALVE
SQFT	SQUARE FEET
UH	UNIT HEATER
VLV	VALVE

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PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>	REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
	DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER FIRE SUPPRESSION GENERAL NOTES, LEGEND AND ABBREVIATIONS FREMONT OAKLAND (ZOA) ARTCC					
	REVIEWED BY	SUBMITTED BY	APPROVED BY			
		<i>RSBradfish</i>	<i>[Signature]</i>			
	DESIGNED BY	ISSUED BY	DATE	JCN		
	<i>M. RONCEVIC</i>	AIRWAY FACILITY DIVISION	07/08/2015			
DRAWN BY	CHECKED BY	DRAWING NO.	REV.			
<i>M. RONCEVIC</i>	<i>J. MCLAUGHLIN</i>	ZOA - D - CWBMM - F001				

6/29/2015

DATE: 88DATE TIME: 88TIME USER: 88USER



**GENERAL NOTES**

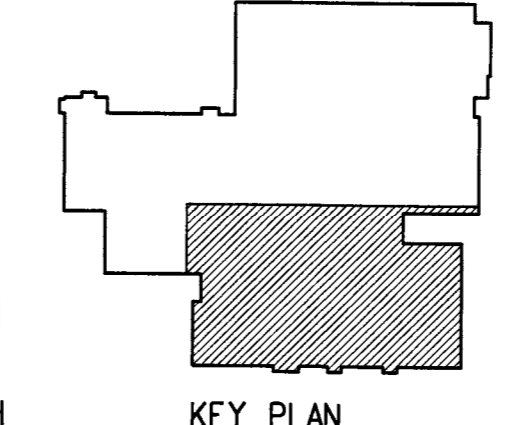
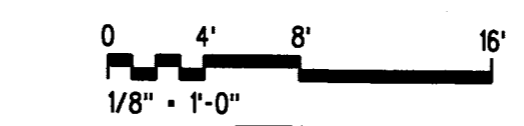
A. FOR GENERAL FIRE SUPPRESSION NOTES, LEGEND AND ABBREVIATIONS, REFER TO DRAWING F001.

- SHEET NOTES**
- ① SPRINKLER SYSTEM (INCLUDING THERMAL DETECTORS) IS EXISTING TO REMAIN. PROVIDE TEMPORARY PROTECTION FOR ALL COMPONENTS DURING CONSTRUCTION IN THIS AREA.
  - ② EXISTING TO REMAIN ZONE 1 (EQUIPMENT ROOM B120) FIRECYCLE SPRINKLER SYSTEM VALVE ASSEMBLY.
  - ③ EXISTING TO REMAIN ZONE 2 (HOST ROOM) FIRECYCLE SPRINKLER SYSTEM VALVE ASSEMBLY.
  - ④ EXISTING 4" BUTTERFLY VALVE WITH TAMPER SWITCH.
  - ⑤ REMOVE AND REPLACE AIR MANIFOLD SYSTEM VALVES AND REGULATORS.

**B8 FIRE SUPPRESSION DEMOLITION - BASEMENT PLAN - PART 1**  
 F111 SCALE: 1/8" = 1'-0"

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 PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>		REVISIONS	
REV.	APPROVED DATE	DESCRIPTION	APPROVED
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA			
<b>CONTROL WING BASEMENT          AND CHILLER/COOLING TOWER MODERNIZATION          OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER          FIRE SUPPRESSION DEMOLITION -          BASEMENT PLAN - PART 1</b>			
FREMONT OAKLAND (ZOA) ARTCC			
REVIEWED BY	SUBMITTED BY	APPROVED BY	
	RSBradfish	<i>[Signature]</i>	
SUBMITTER'S TITLE		APPROVER'S TITLE	
DESIGNED BY	ISSUED BY	DATE	JCN
M. RONCEVIC	AIRWAY FACILITY DIVISION	07/08/2015	
DRAWN BY	CHECKED BY	DRAWING NO.	REV.
M. RONCEVIC	J. McLAUGHLIN	ZOA - D - CWBMS - F111	
6/29/2015			

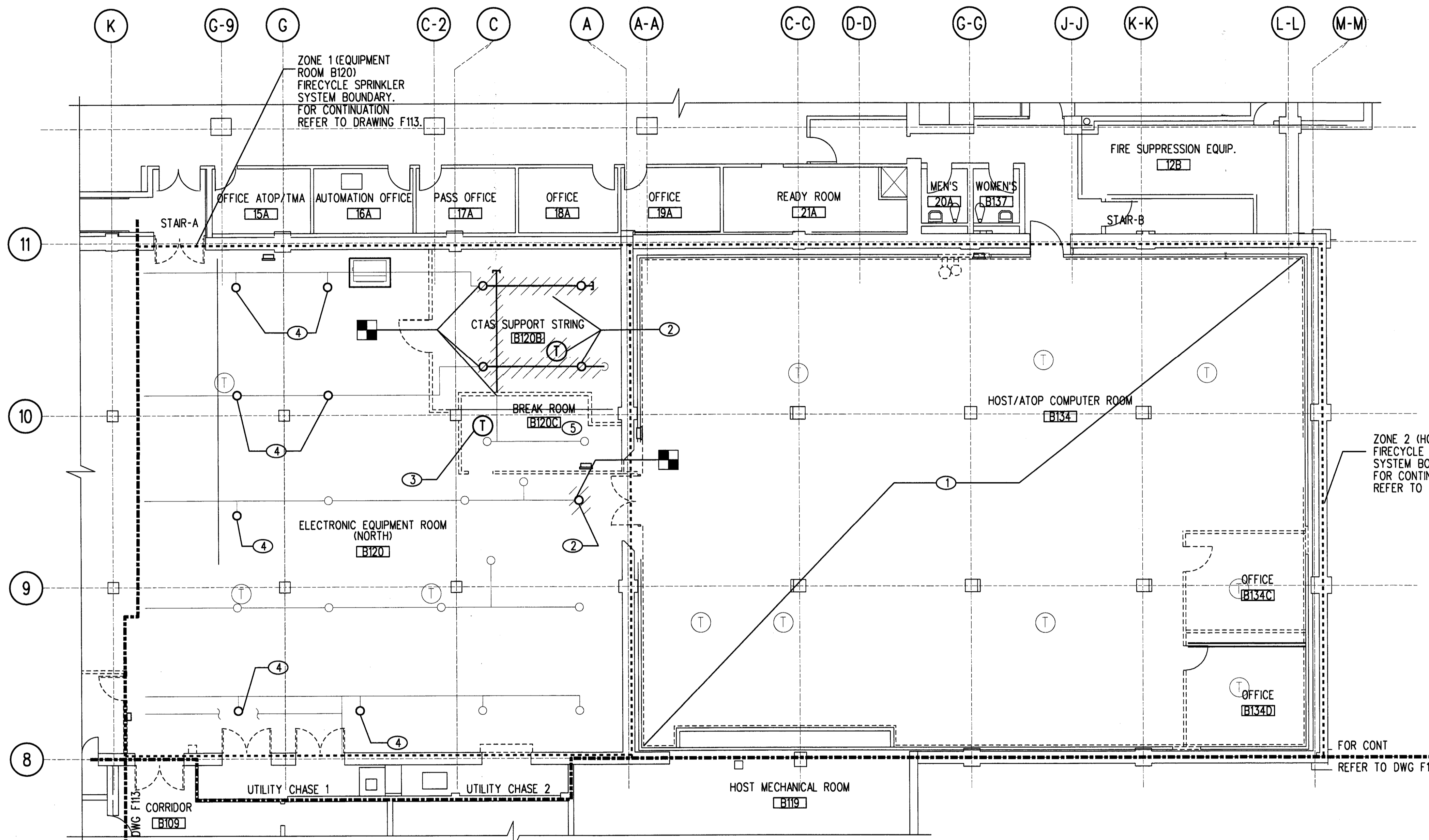


GENERAL NOTES

A. FOR GENERAL AND DEMOLITION FIRE SUPPRESSION NOTES, LEGEND AND ABBREVIATIONS, REFER TO DRAWING F001.

SHEET NOTES

- ① CEILING IN HOST ROOM WILL BE DEMOLISHED AND REPLACED. PROVIDE TEMPORARY SUPPORT AND PROTECTION FOR SPRINKLERS AND THERMAL DETECTORS. PROVIDE A FIRE WATCH DURING CONSTRUCTION. COORDINATE FIRE WATCH REQUIREMENTS WITH COR.
- ② DEMOLISH SPRINKLERS AND PIPING ASSOCIATED WITH THE REMOVAL OF AH-160.
- ③ RELOCATE THERMAL DETECTOR TO BE CENTERED BETWEEN THE TWO SPRINKLERS IN THIS ROOM ONCE NEW CEILING IS INSTALLED.
- ④ RELOCATE SPRINKLER TO AVOID INTERFERENCE AND/OR OBSTRUCTION. PROVIDE ALL NECESSARY FITTINGS, CONNECTIONS AND PIPE TO ACCOMMODATE NECESSARY RELOCATION. ENSURE THERMAL DETECTOR IS RELOCATED IF NECESSARY TO MEET MANUFACTURER'S INSTALLATION REQUIREMENTS. FIELD COORDINATE NEW SPRINKLER LOCATION WITH COR PRIOR TO IMPLEMENTING WORK.
- ⑤ RELOCATE SPRINKLERS IN THIS ROOM TO COORDINATE LOCATIONS WITH NEW CEILING GRID.

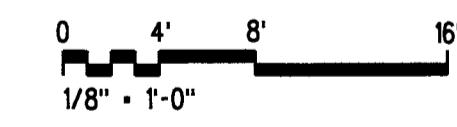


**C8** FIRE SUPPRESSION DEMOLITION - BASEMENT PLAN - PART 2  
**F112** SCALE: 1/8" = 1'-0"

ZONE 2 (HOST ROOM)  
 FIRECYCLE SPRINKLER  
 SYSTEM BOUNDARY.  
 FOR CONTINUATION  
 REFER TO DRAWING F111.

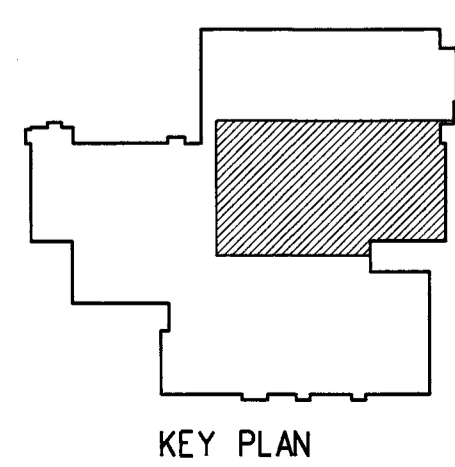
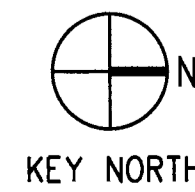
FOR CONT  
 REFER TO DWG F111

FOR CONT  
 REFER TO DWG F113



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 PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>			
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER FIRE SUPPRESSION DEMOLITION - BASEMENT PLAN - PART 2 FREMONT <span style="float: right;">OAKLAND (ZOA) ARTCC</span>			
REVIEWED BY DESIGNED BY DRAWN BY CHECKED BY	SUBMITTED BY <i>RSbraafisch</i>	APPROVED BY 	DATE 07/08/2015	JCN JCN	REV. ZOA - D - CWBMS - F112
OAKLAND ARTCC FREMONT, CALIFORNIA		ISSUED BY AIRWAY FACILITY DIVISION		DATE 07/08/2015	

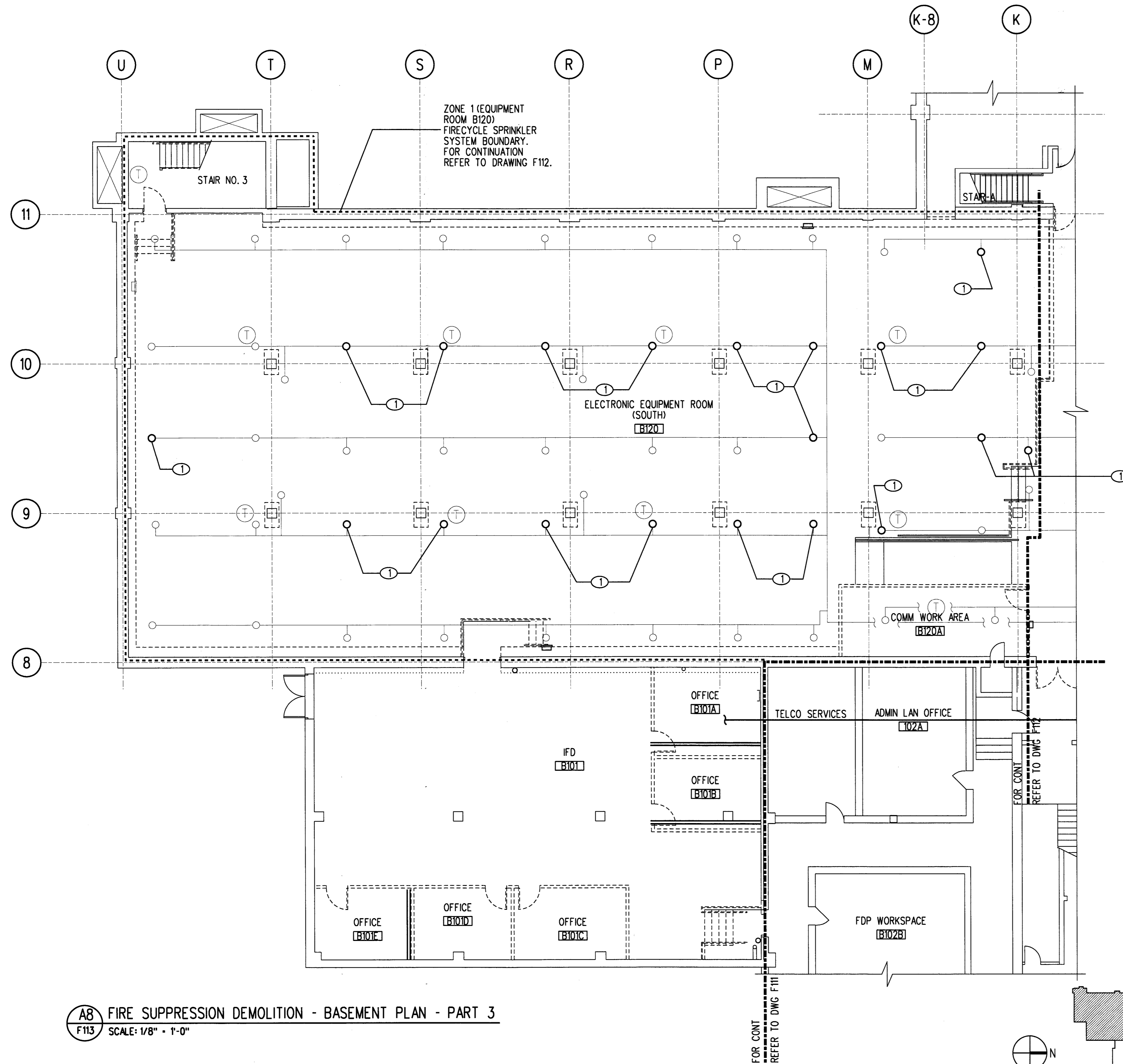


**GENERAL NOTES**

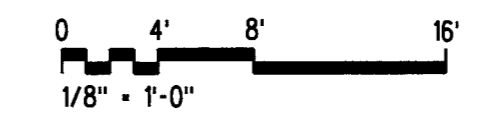
A. FOR GENERAL FIRE SUPPRESSION NOTES, LEGEND AND ABBREVIATIONS, REFER TO DRAWING FOOT.

**SHEET NOTES**

① RELOCATE SPRINKLER TO AVOID INTERFERENCE AND/OR OBSTRUCTION. PROVIDE ALL NECESSARY FITTINGS, CONNECTIONS AND PIPE TO ACCOMMODATE NECESSARY RELOCATION. ENSURE THERMAL DETECTOR IS RELOCATED IF NECESSARY TO MEET MANUFACTURER'S INSTALLATION REQUIREMENTS. FIELD COORDINATE NEW SPRINKLER LOCATION WITH COR PRIOR TO IMPLEMENTING WORK.

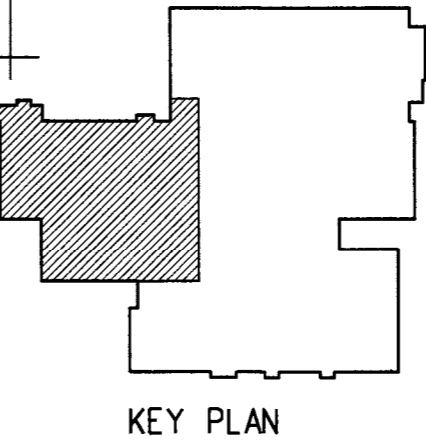
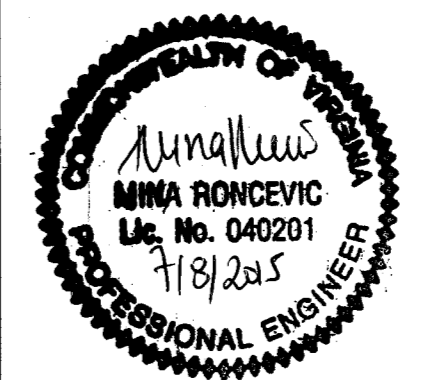


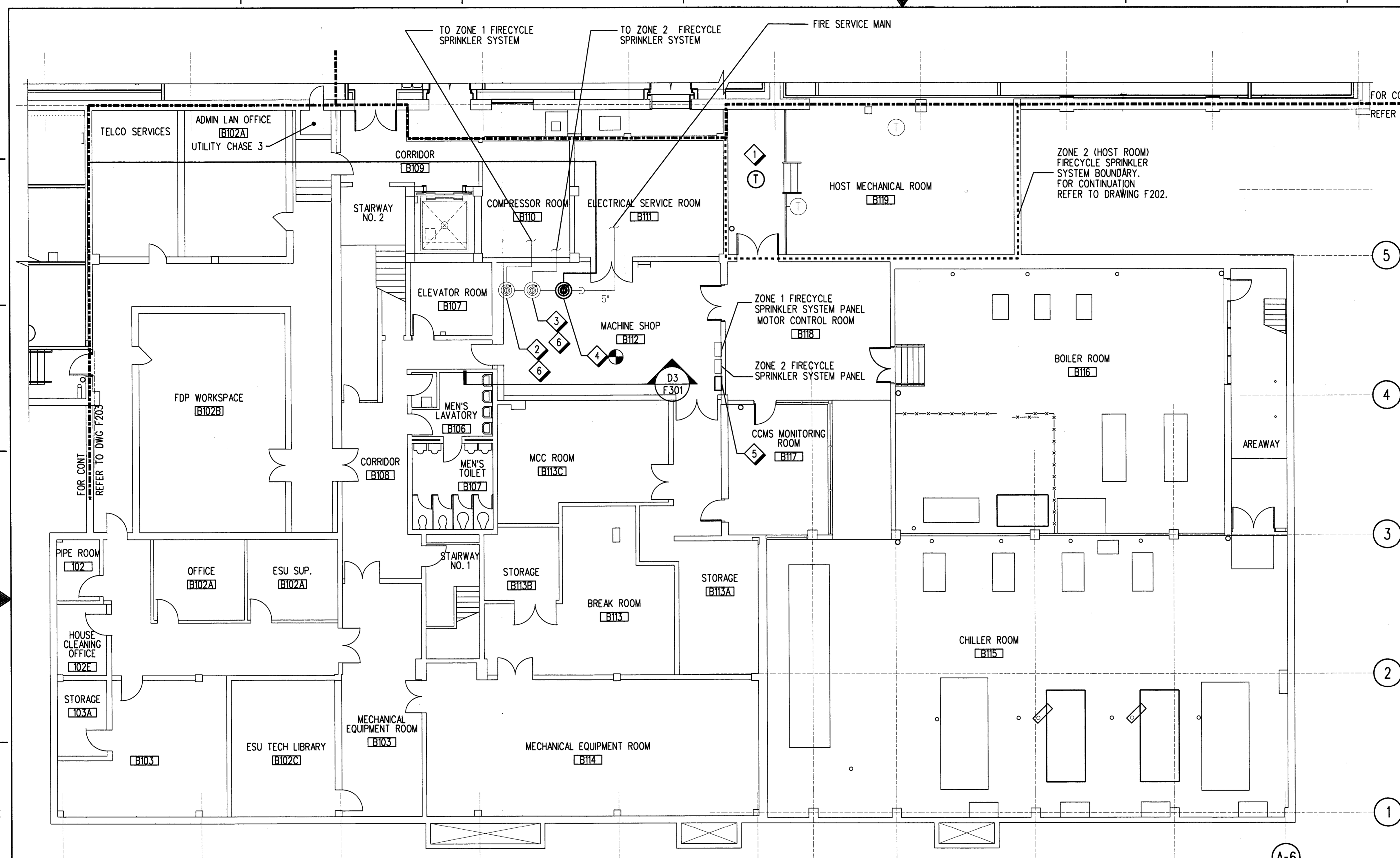
**A8 FIRE SUPPRESSION DEMOLITION - BASEMENT PLAN - PART 3**  
 F113 SCALE: 1/8" = 1'-0"



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 PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>					
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA					
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER FIRE SUPPRESSION DEMOLITION - BASEMENT PLAN - PART 3					
FREMONT OAKLAND (ZOA) ARTCC					
DESIGNED BY	SUBMITTED BY		APPROVED BY		
	RStradfish		[Signature]		
SUBMITTER'S TITLE		APPROVER'S TITLE			
DATE	ISSUED BY	DATE	JCN		
07/08/2015	AIRWAY FACILITY DIVISION	07/08/2015			
DRAWN BY	CHECKED BY	DRAWING NO.	REV.		
M. RONCEVIC	J. McLAUGHLIN	ZOA - D - CWBMS - F113			

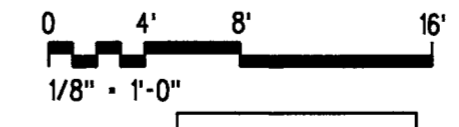




**GENERAL NOTES**  
 A. FOR GENERAL FIRE SUPPRESSION NOTES, LEGEND AND ABBREVIATIONS, REFER TO DRAWING F001.

- SHEET NOTES**
- 1 PROVIDE THERMAL DETECTOR IN THIS AREA. DETECTOR SHALL BE INSTALLED WITHIN 12"-18" OF A SPRINKLER, IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES.
  - 2 EXISTING TO REMAIN ZONE 1 (EQUIPMENT ROOM B120) FIRECYCLE SPRINKLER SYSTEM VALVE ASSEMBLY.
  - 3 EXISTING TO REMAIN ZONE 2 (HOST ROOM) FIRECYCLE SPRINKLER SYSTEM VALVE ASSEMBLY.
  - 4 CONNECT NEW FEED MAIN AND FIRECYCLE PREACTION SPRINKLER VALVE ASSEMBLY TO EXISTING 4" BUTTERFLY VALVE WITH TAMPER SWITCH. NEW VALVE TO SERVE ZONE 3 (B101 AREA).
  - 5 VIKING FIRECYCLE PREACTION SPRINKLER SYSTEM CONTROL PANEL FOR ZONE 3.
  - 6 PROVIDE NEW AIR MANIFOLD SYSTEM VALVES AND REGULATORS.

**B8 FIRE SUPPRESSION BASEMENT PLAN - PART 1**  
 F201 SCALE: 1/8" = 1'-0"



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 PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>					
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA					
<b>CONTROL WING BASEMENT          AND CHILLER/COOLING TOWER MODERNIZATION          OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER          FIRE SUPPRESSION BASEMENT PLAN - PART 1</b>					
FREMONT			OAKLAND (ZOA) ARTCC		
DESIGNED BY	M. RONCEVIC	ISSUED BY	DATE	07/08/2015	JCN
DRAWN BY	M. RONCEVIC	CHECKED BY	J. McLAUGHLIN	DRAWING NO. ZOA - D - CWBMS - F201	
OAKLAND ARTCC FREMONT, CALIFORNIA		AIRWAY FACILITY DIVISION		REV.	



REVIEWED BY: [Signature]  
 SUBMITTED BY: R. Bradfish  
 APPROVED BY: [Signature]

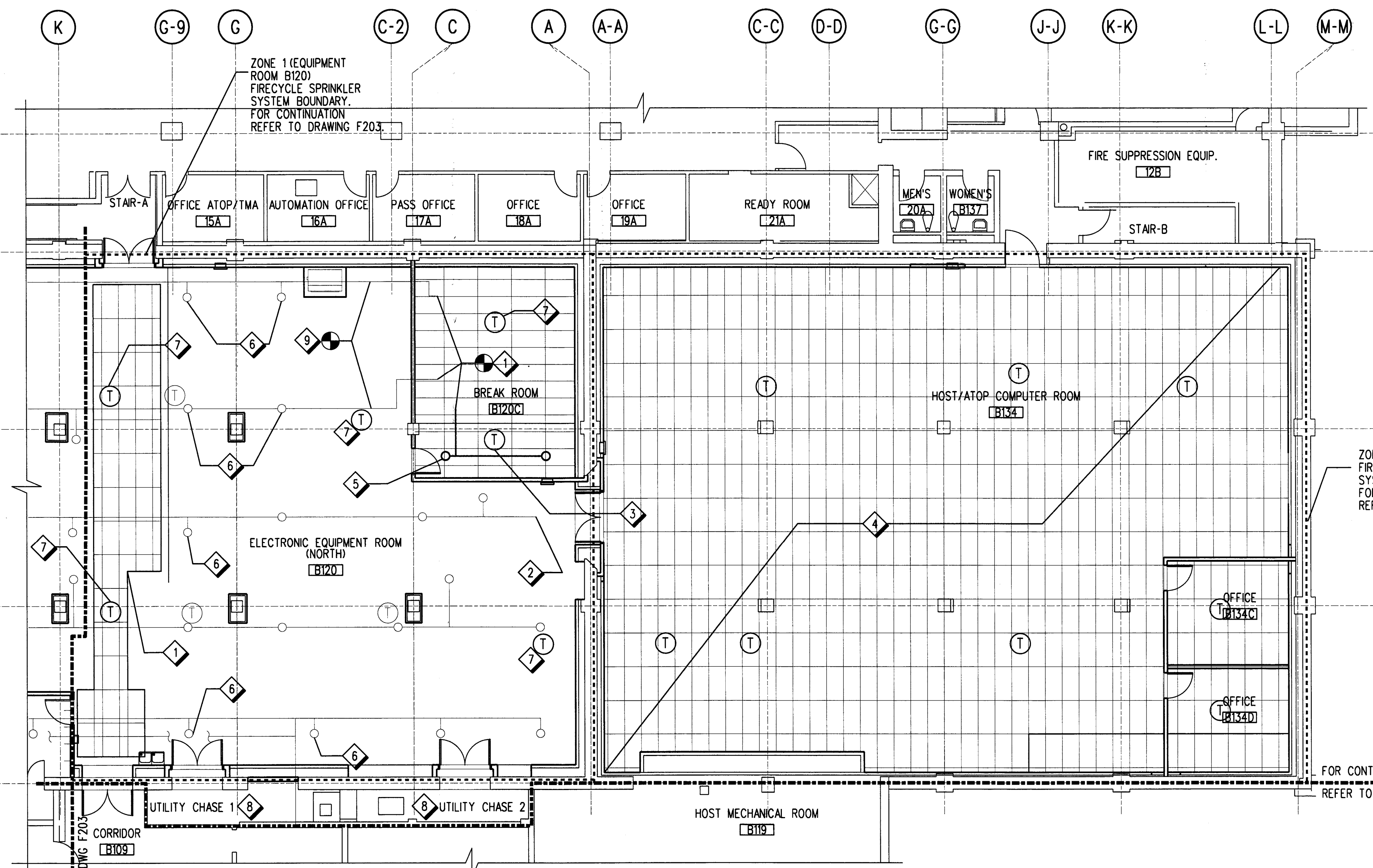


**GENERAL NOTES**

A. FOR GENERAL FIRE SUPPRESSION NOTES, LEGEND AND ABBREVIATIONS, REFER TO DRAWING F001.

**SHEET NOTES**

- 1 PROVIDE SPRINKLER AND THERMAL DETECTOR PROTECTION AT CEILING LEVEL. COORDINATE SPRINKLER AND THERMAL DETECTOR LOCATIONS WITH OTHER CEILING-MOUNTED EQUIPMENT. ENSURE ADEQUATE SPRINKLER AND THERMAL DETECTOR PROTECTION IS MAINTAINED ABOVE CEILING.
- 2 FIELD VERIFY SPRINKLER PROTECTION ADEQUACY ONCE AHU IS REMOVED. PROVIDE ADDITIONAL SPRINKLER PROTECTION IF REQUIRED. IF ADDITIONAL SPRINKLER PROTECTION IS NOT REQUIRED, CAP PIPE.
- 3 EXISTING THERMAL DETECTOR RELOCATED TO COMPLY WITH MANUFACTURER'S INSTALLATION REQUIREMENTS.
- 4 NEW CEILING INSTALLED IN THIS AREA. PROVIDE TEMPORARY PROTECTION AND SUPPORT FOR THERMAL DETECTORS DURING CONSTRUCTION. COORDINATE NEW LOCATIONS WITH OTHER CEILING-MOUNTED EQUIPMENT. PROVIDE A FIRE WATCH DURING CONSTRUCTION.
- 5 RELOCATE EXISTING SPRINKLERS IN THIS AREA TO COORDINATE WITH NEW CEILING GRID AND OTHER CEILING-MOUNTED EQUIPMENT.
- 6 SPRINKLER RELOCATED TO AVOID INTERFERENCE AND/OR OBSTRUCTION. PROVIDE ALL NECESSARY FITTINGS, CONNECTIONS AND PIPE TO ACCOMMODATE NECESSARY RELOCATION. ENSURE THERMAL DETECTOR IS RELOCATED IF NECESSARY TO MEET MANUFACTURER'S INSTALLATION REQUIREMENTS. FIELD COORDINATE NEW SPRINKLER LOCATION WITH COR PRIOR TO IMPLEMENTING WORK.
- 7 THERMAL DETECTOR SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION REQUIREMENTS.
- 8 PROVIDE SPRINKLER PROTECTION IN UTILITY CHASE. CONNECT TO EXISTING ADMINISTRATION WING WET PIPE SPRINKLER SYSTEM.
- 9 PROVIDE ADDITIONAL SPRINKLER PROTECTION IN THIS AREA TO MAINTAIN NFPA 13-COMPLIANT COVERAGE.

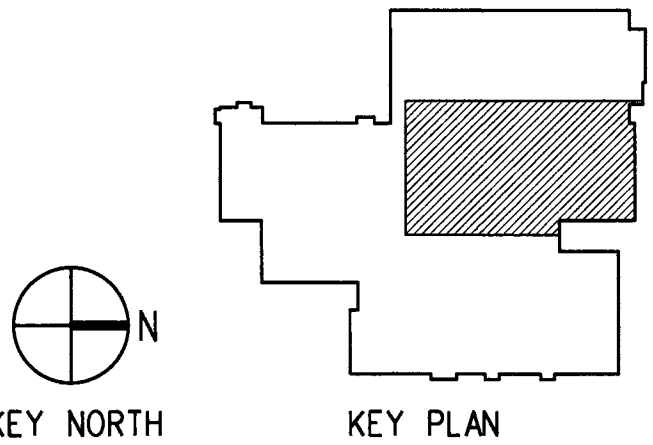


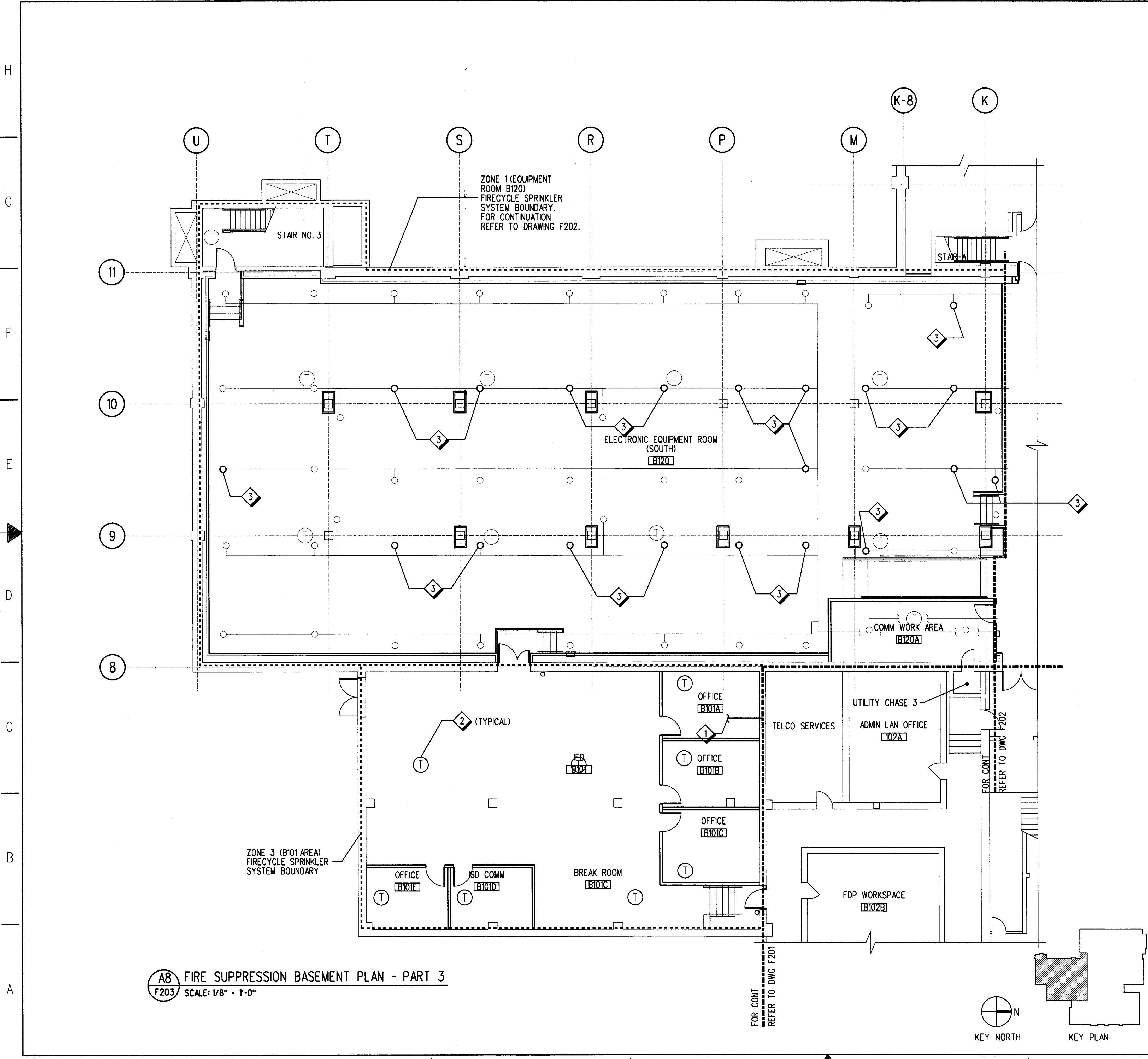
**C8** FIRE SUPPRESSION BASEMENT PLAN - PART 2  
**F202** SCALE: 1/8" = 1'-0"



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<b>JACOBS</b>		REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA							
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER FIRE SUPPRESSION BASEMENT PLAN - PART 2 FREMONT OAKLAND (ZOA) ARTCC							
DESIGNED BY	W. RONCEVIC	ISSUED BY	AIRWAY FACILITY DIVISION	DATE	07/08/2015	JCN	
DRAWN BY	W. RONCEVIC	CHECKED BY	J. MCLAUGHLIN	DRAWING NO.	ZOA - D - CWBMS - F202	REV.	





**GENERAL NOTES**

A. FOR GENERAL FIRE SUPPRESSION NOTES, LEGEND AND ABBREVIATIONS, REFER TO DRAWING F001.

B. ALL AREAS ARE CLASSIFIED AS LIGHT HAZARD UNLESS NOTED OTHERWISE.

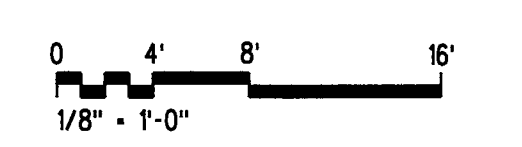
**SHEET NOTES**

1 TO ZONE 3 FIRECYCLE SINGLE INTERLOCKED SPRINKLER SYSTEM.

2 THERMAL DETECTOR SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION REQUIREMENTS.

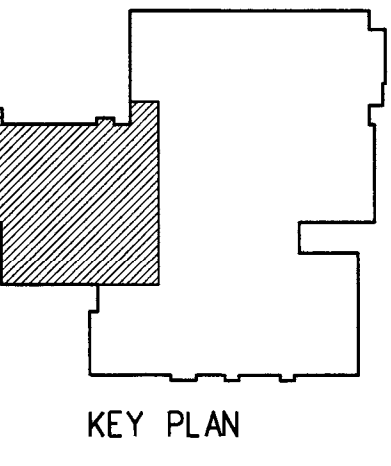
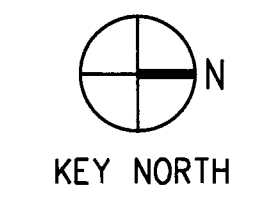
3 SPRINKLER RELOCATED TO AVOID INTERFERENCE AND/OR OBSTRUCTION. PROVIDE ALL NECESSARY FITTINGS, CONNECTIONS AND PIPE TO ACCOMMODATE NECESSARY RELOCATION. ENSURE THERMAL DETECTOR IS RELOCATED IF NECESSARY TO MEET MANUFACTURER'S INSTALLATION REQUIREMENTS. FIELD COORDINATE NEW SPRINKLER LOCATION WITH COR PRIOR TO IMPLEMENTING WORK.

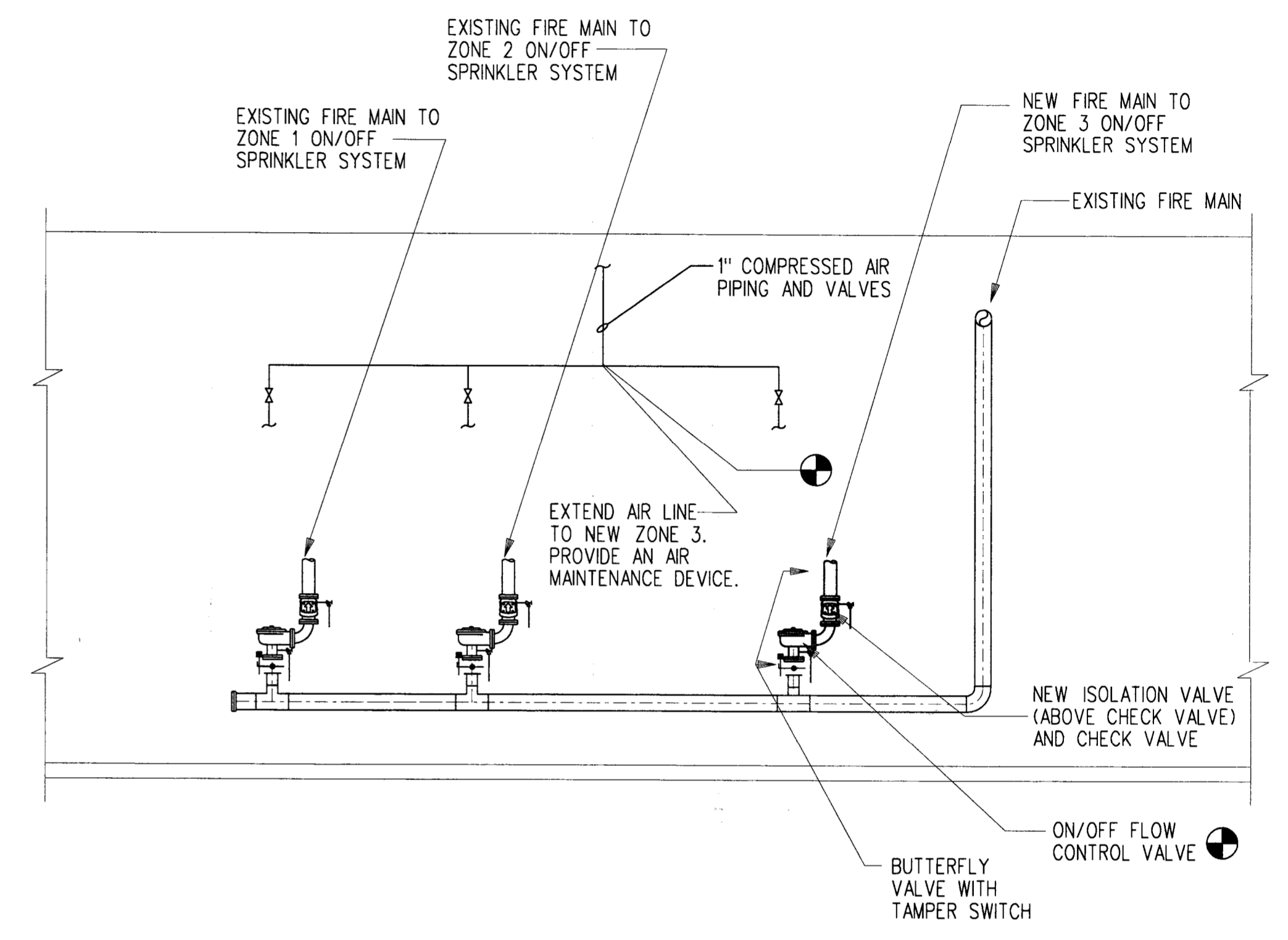
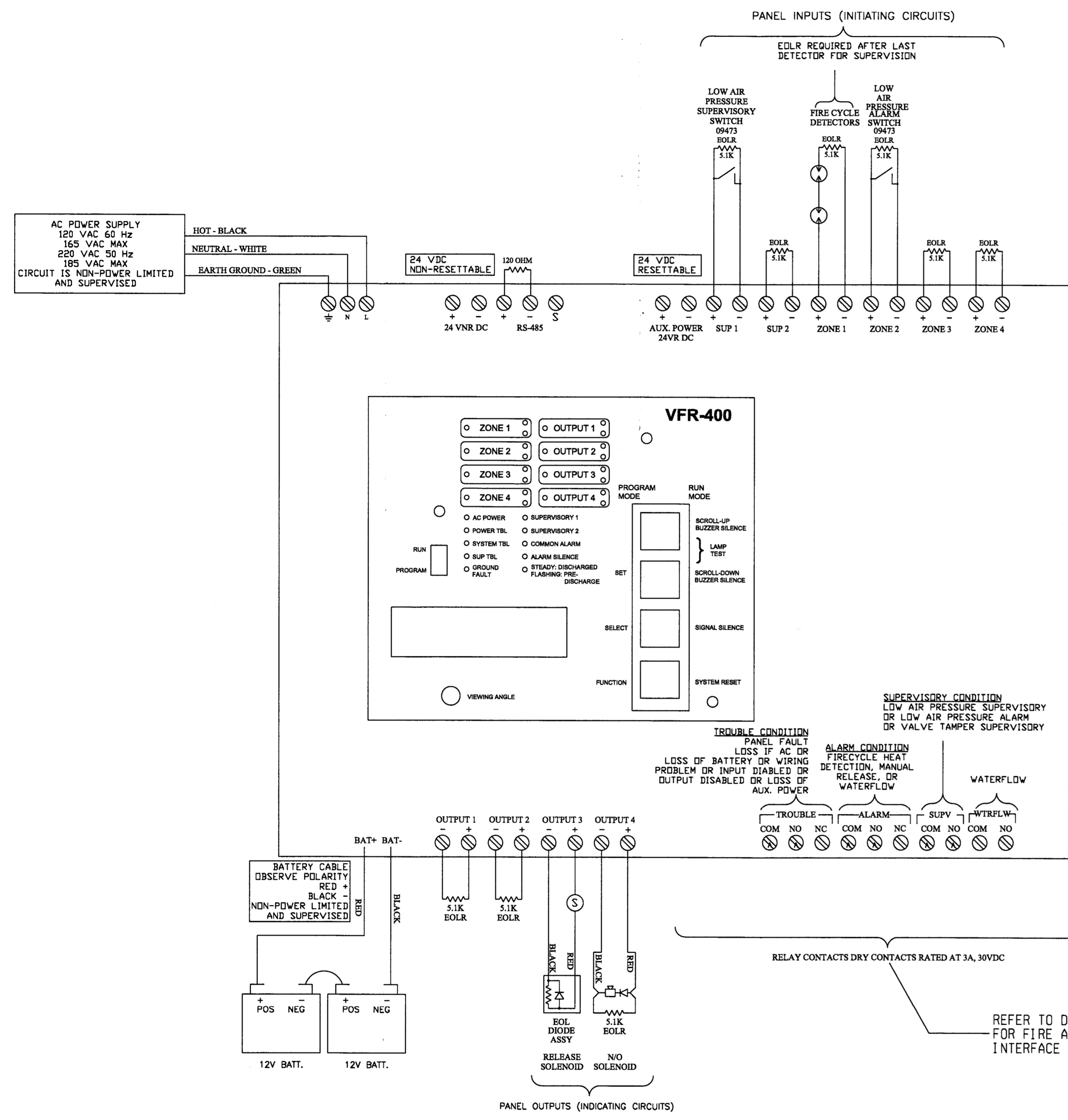
**AB** FIRE SUPPRESSION BASEMENT PLAN - PART 3  
**F203** SCALE: 1/8" = 1'-0"



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 PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>		REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA							
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER FIRE SUPPRESSION BASEMENT PLAN - PART 3 FREMONT OAKLAND (ZOA) ARTCC							
		REVIEWED BY SUBMITTED BY R. Bradfish		APPROVED BY 			
OAKLAND ARTCC FREMONT, CALIFORNIA		DESIGNED BY M. RONCEVIC DRAWN BY M. RONCEVIC CHECKED BY J. McLAUGHLIN		ISSUED BY AIRWAY FACILITY DIVISION		DATE 07/08/2015 JCN DRAWING NO. ZOA - D - CWBMS - F203 REV.	





**D3 ELEVATION**  
F301 SCALE: N.T.S.

**B8 ON/OFF FIRE SPRINKLER CONTROL PANEL INTERFACE DIAGRAM**  
F301 SCALE: N.T.S.

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PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

**JACOBS**

DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION  
WESTERN SERVICE AREA  
RENTON, WA

CONTROL WING BASEMENT  
AND CHILLER/COOLING TOWER MODERNIZATION  
OAKLAND AIR ROUTE TRAFFIC CENTER  
FIRE SUPPRESSION DETAILS

FREMONT OAKLAND (ZOA) ARTCC

REVIEWED BY: [Signature] SUBMITTED BY: R. S. Bradfisch APPROVED BY: [Signature]

DESIGNED BY: M. RONCEVIC DATE: 07/08/2015  
DRAWN BY: M. RONCEVIC ISSUED BY: AIRWAY FACILITY DIVISION  
CHECKED BY: J. McLAUGHLIN DRAWING NO.: ZOA - D - CWBMS - F301

OAKLAND ARTCC  
FREMONT,  
CALIFORNIA

DATE: 6/29/2015

FIRE ALARM GENERAL NOTES

- A. FIRE ALARM WORK ON THIS PROJECT SHALL BE INSTALLED IN ACCORDANCE WITH THE SPECIFICATIONS, THE INTERNATIONAL BUILDING CODE, NFPA 70 AND 72, AND APPLICABLE LOCAL JURISDICTION CODES AND REGULATIONS.
- B. WORK THAT IS DETAILED ON THESE PLANS IS BASED ON PREVIOUSLY REVIEWED BUILDING DRAWINGS AND SITE VISITS. VERIFY ALL LOCATIONS AND MEASUREMENTS AS CONDITIONS MAY VARY THROUGHOUT CONSTRUCTION. WHERE FIELD CONDITIONS ARE DIFFERENT THAN SHOWN ADVISE COR OF VARIANCES WHICH WILL AFFECT PROPOSED WORK. ALL CHANGES MUST BE APPROVED BY THE COR PRIOR TO COMMENCING WORK.
- C. DRAWINGS ARE FOR REFERENCE PURPOSES ONLY. SHOP DRAWINGS SHALL BE SUBMITTED PRIOR TO INSTALLATION OF THE FIRE ALARM SYSTEM.
- D. THE FINAL FIRE ALARM TEST SHALL BE WITNESSED BY THE COR.
- E. FILE A "RECORD OF COMPLETION" IN ACCORDANCE WITH NFPA 72 TO COR.
- F. ALL NEW FIRE ALARM DEVICES SHALL BE CONNECTED TO EXISTING FIRE ALARM CONTROL PANEL. ALL CIRCUITS SHALL BE CLASS A, IN ACCORDANCE WITH NFPA 72.
- G. OBTAIN ALL REQUIRED PERMITS AND APPROVALS FROM THE AUTHORITY HAVING JURISDICTION PRIOR TO COMMENCING WORK.
- H. COORDINATE FIRE ALARM WORK WITH EXISTING SITE CONDITIONS AND THE WORK OF OTHER TRADES.
- I. FIRE STOPPED PENETRATIONS WHERE EXISTING CONDUIT AND/OR DEVICES ARE REMOVED SHALL BE REPAIRED TO MAINTAIN BUILDING FIRE INTEGRITY.
- J. THE ARTCC IS A CRITICAL OPERATING FACILITY. ALL WORK WITHIN SHALL BE PERFORMED IN SUCH A MANNER SO AS NOT TO DISRUPT ONGOING OPERATIONS. ADVISE COR AT LEAST 10 DAYS PRIOR TO INTERRUPTION OF SERVICES. OBTAIN PRIOR APPROVAL IN WRITING FROM COR.
- K. THE WORK REQUIRED SHALL INCLUDE THE FURNISHING OF MATERIALS, CUTTING, PATCHING, REPAIRING, ADAPTING, AND OTHER INCIDENTAL WORK, TOGETHER WITH SUCH TEMPORARY CONNECTIONS AS MAY BE REQUIRED.
- L. CONDUIT PENETRATIONS THROUGH SLAB AND MASONRY RATED WALLS SHALL HAVE THROUGH PENETRATION FIRE STOPPING SYSTEM, INSTALLED PER SPECIFICATIONS.
- M. RELATED WORK, CONNECTIONS OR REVISIONS TO THE EXISTING FIRE ALARM SYSTEM, IN WHICH THE SYSTEM IS REQUIRED TO BE TEMPORARILY SHUT DOWN, SHALL BE FULLY COORDINATED WITH THE COR PRIOR TO COMMENCEMENT OF WORK. DO NOT SHUT DOWN OR DISCONNECT THE EXISTING FIRE ALARM OR FIRE PROTECTION SYSTEMS WITHOUT FIRST NOTIFYING THE COR AND OBTAINING PRIOR APPROVAL IN WRITING.
- N. WORK REQUIRING CUTTING, PATCHING AND PAINTING SHALL MATCH EXISTING CONDITIONS.

FIRE ALARM ABBREVIATIONS

- AFF ABOVE FINISHED FLOOR
- AHJ AUTHORITY HAVING JURISDICTION
- AVG AVERAGE
- COR CONTRACTING OFFICER REPRESENTATIVE
- DACT DIGITAL ALARM COMMUNICATOR TRANSMITTER
- ELEV ELEVATION
- EOL END OF LINE RESISTOR
- IDC INITIATING DEVICE CIRCUIT
- MIN MINIMUM
- NAC NOTIFICATION APPLIANCE CIRCUIT
- NP NOT PERMITTED
- NC NONCOMBUSTIBLE
- SLC SIGNALING LINE CIRCUIT
- SQFT SQUARE FEET

FIRE ALARM DEMOLITION NOTES

- A. DEMOLITION WORK FOR THE EXISTING FIRE ALARM SYSTEM SHALL BE REMOVED FROM SITE (UNLESS NOTED OTHERWISE) AND DISPOSED OF IN ACCORDANCE WITH THE APPLICABLE ENVIRONMENTAL PROTECTION AGENCY AND STATE CODES, REGULATIONS AND AS DIRECTED BY COTR. CLEAN-UP SHALL BE DAILY OR AS DIRECTED BY COTR.
- B. EXISTING WALL PENETRATIONS THAT ARE NOT REUSED SHALL BE REPAIRED TO MATCH EXISTING BUILDING FINISHES. FIRE STOPPED PENETRATIONS WHERE EXISTING CONDUIT WILL BE REMOVED SHALL BE REPAIRED TO MAINTAIN BUILDING FIRE INTEGRITY.
- C. IF NEEDED, PROVIDE TEMPORARY CONNECTIONS TO KEEP REMAINING SYSTEM IN SERVICE.

FIRE ALARM NOTIFICATION MATRIX - ADDRESSABLE FACP

		SYSTEM OUTPUTS															
		CONTROL UNIT ANNUNCI.								NOTIFICATION							
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
ACTIONS		<ul style="list-style-type: none"> <li>A. ACTIVATE COMMON ALARM SIGNAL INDICATOR</li> <li>B. ACTIVATE AUDIBLE ALARM SIGNAL</li> <li>C. ACTIVATE COMMON SUPERVISORY SIGNAL INDICATOR</li> <li>D. ACTIVATE AUDIBLE SUPERVISORY SIGNAL</li> <li>E. ACTIVATE COMMON TROUBLE SIGNAL INDICATOR</li> <li>F. ACTIVATE AUDIBLE COMMON TROUBLE SIGNAL</li> <li>G. DISPLAY ADDRESS AND DESCRIPTION</li> <li>H. DISPLAY CORRESPONDING LED ON EXISTING GRAPHIC ANNUNCIATOR PANEL</li> <li>I. THROUGH STATE CHANGE TO CENTRAL STATION VIA DACT</li> <li>J. ACTIVATE AMBIL. OPERATIONS SUPP. &amp; AUTO. WING WHITE STROBES/SIGNALS</li> <li>K. ACTIVATE POWER SERVICE BUILDING WHITE STROBES/SIGNALS</li> <li>L. ACTIVATE CONTROL ROOM STAGE 1 RED STROBES</li> <li>M. ACTIVATE CONTROL ROOM STAGE 1 WHITE STROBES/SIGNALS</li> <li>N. SHUT DOWN ASSOCIATED AIR HANDLING UNIT</li> <li>O. INITIATE ELEVATOR RECALL</li> <li>P. SHUNT TRIP ELEVATOR POWER</li> </ul>															
SYSTEM INPUTS																	
1	On/Off Fire Sprinkler Panel Alarm	●	●							●	●	●	●	●	●	●	●
2	On/Off Fire Sprinkler Panel Trouble									●	●	●	●	●	●	●	●
3	Ceiling Smoke Detector	●	●							●	●	●	●	●	●	●	●
4	Under-Floor Smoke Detector	●	●							●	●	●	●	●	●	●	●
5	Above-Ceiling Smoke Detector	●	●							●	●	●	●	●	●	●	●
6	Air Sampling Smoke Detector Panel Alarm	●	●							●	●	●	●	●	●	●	●
7	Air Sampling Smoke Detector Panel Trouble									●	●	●	●	●	●	●	●
8	Manual Pull Station	●	●							●	●	●	●	●	●	●	●
9	Beam Smoke Detector	●	●							●	●	●	●	●	●	●	●
10	Heat Detector (Non-On/Off Sprinkler Type)	●	●							●	●	●	●	●	●	●	●
11	Sprinkler Waterflow Device	●	●							●	●	●	●	●	●	●	●
12	Sprinkler Hi/Low Air Pressure Switch			●	●					●	●	●	●	●	●	●	●
13	Sprinkler Control Valve Tamper Switch			●	●					●	●	●	●	●	●	●	●
14	Duct Smoke Detector			●	●												
15	Elevator Lobby Smoke Detector	●	●							●	●	●	●	●	●	●	●
16	Elevator Machine Room Smoke Detector	●	●							●	●	●	●	●	●	●	●
17	Elevator Machine Room Heat Detector	●	●							●	●	●	●	●	●	●	●
18	Pull Station in Control Wing 1st Floor (Note 4)	●	●							●	●	●	●	●	●	●	●
19	Second Alarm From Control Wing Alarm Initiating Device (See Note 3, 4, 5)	●	●							●	●	●	●	●	●	●	●
20	Ceiling Smoke Detector	●	●							●	●	●	●	●	●	●	●
21	Manual Pull Station	●	●							●	●	●	●	●	●	●	●
22	Heat Detector (Non-On/Off Sprinkler Type)	●	●							●	●	●	●	●	●	●	●
23	Sprinkler Waterflow Device	●	●							●	●	●	●	●	●	●	●
24	Sprinkler Hi/Low Air Pressure Switch			●	●					●	●	●	●	●	●	●	●
25	Sprinkler Control Valve Tamper Switch			●	●					●	●	●	●	●	●	●	●
26	Duct Smoke Detector			●	●												
27	Fire Alarm Primary Power/Battery Failure									●	●	●	●	●	●	●	●
28	Fire Alarm Circuit Short, Open, Ground									●	●	●	●	●	●	●	●
	SYSTEM INPUTS	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P

- NOTES:
- BOLD TEXT INDICATES NEW DEVICE PROGRAMMING.
  - STAGE I ALARM IS INITIATED BY A SPECIFIED DEVICE IN THE ADMINISTRATION, AUTOMATION, OR CONTROL WINGS. THE POWER SERVICE BUILDING IS NOT CONSIDERED A SOURCE OF STAGE I ALARMS FOR THE OCCUPANT NOTIFICATION SCHEME.
  - DEVICES THAT WILL ACTIVATE THE STAGE I ALARM ARE THOSE DEVICES WHICH ACTIVATE A COMMON ALARM SIGNAL IN SYSTEM INPUT LINES 1, 3 THROUGH 6, 8 THROUGH 11, AND 15 THROUGH 17.
  - STAGE II ALARM IS INITIATED ONLY BY A SPECIFIED CONTROL ROOM DEVICE SUBSEQUENT TO A STAGE I ALARM. THE CONTROL ROOM DEVICES THAT WILL ACTIVATE THE STAGE II ALARM ARE THOSE DEVICES WHICH ACTIVATE A COMMON ALARM SIGNAL IN SYSTEM INPUT LINES 1, 3 THROUGH 6, AND 8 THROUGH 11.
  - MANUAL PULL STATIONS LOCATED IN THE DSR CONTROL ROOM SHALL INITIATE THE STAGE II DEVICES IMMEDIATELY.
  - SMOKE DETECTORS LOCATED IN THE MOD 4 FIRST FLOOR AREA SHALL BE PROGRAMMED FOR STAGE II NOTIFICATION.

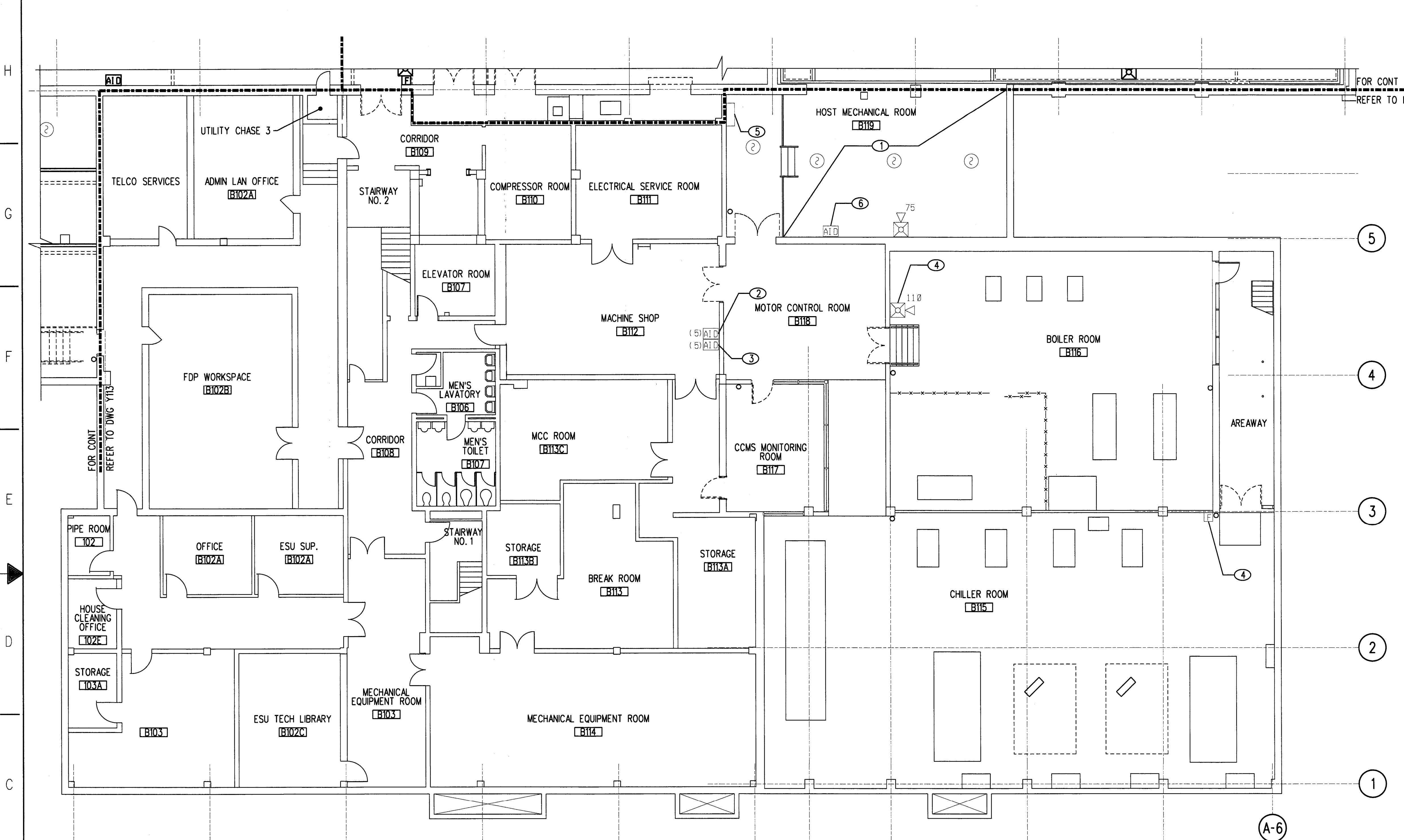
**A6** FIRE ALARM MATRIX  
**Y001** SCALE: N.T.S.

FIRE ALARM LEGEND

- ☉ PHOTOELECTRIC SMOKE DETECTOR
- xx ☒ NOTIFICATION STROBE  
(XX DENOTES CANDELA RATING, C DENOTES CEILING MOUNTED)
- xx ☒ NOTIFICATION HORN/STROBE  
(XX DENOTES CANDELA RATING, C DENOTES CEILING MOUNTED)
- ! HEAT DETECTOR
- ☐ MANUAL PULL STATION
- AIID ADDRESSABLE INTERFACE DEVICE
- ACD ADDRESSABLE CONTROL DEVICE
- ☉<sub>S</sub> DUCT SMOKE DETECTOR  
(S DENOTES SUPPLY SIDE)  
(R DENOTES RETURN SIDE)
- FACP FIRE ALARM CONTROL PANEL
- FATC FIRE ALARM TERMINAL CABINET
- TS TAMPER SWITCH
- ////// DEVICE TO BE DEMOLISHED
- BOLD INDICATES NEW DEVICE/NEW DEVICE LOCATION
- MAGNETIC DOOR HOLD OPEN DEVICE

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 PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>		REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA							
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER FIRE ALARM DEMOLITION AND GENERAL NOTES, LEGEND AND ABBREVIATIONS FREMONT OAKLAND (ZOA) ARTCC							
DESIGNED BY M. RONCEVIC	DRAWN BY M. RONCEVIC	CHECKED BY J. McLAUGHLIN	ISSUED BY AIRWAY FACILITY DIVISION	DATE 07/08/2015	JCN	REV.	
OAKLAND ARTCC FREMONT, CALIFORNIA		SUBMITTED BY RSBradfish		APPROVED BY <i>[Signature]</i>		DRAWING NO. ZOA - D - CWBMS - Y001	



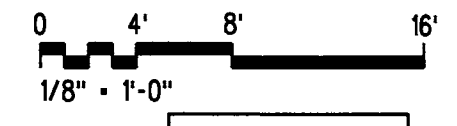
**GENERAL NOTES**  
 A. FOR GENERAL AND DEMOLITION FIRE ALARM NOTES, LEGEND AND ABBREVIATIONS, REFER TO DRAWING Y001.

- SHEET NOTES**
- ① PROVIDE TEMPORARY PROTECTION FOR SMOKE DETECTORS DURING CONSTRUCTION IN THIS AREA.
  - ② EXISTING TO REMAIN FIRECYCLE SPRINKLER SYSTEM ZONE 1 ADDRESSABLE INTERFACE DEVICES.
  - ③ EXISTING TO REMAIN FIRECYCLE SPRINKLER SYSTEM ZONE 2 ADDRESSABLE INTERFACE DEVICES.
  - ④ FIRE ALARM CIRCUIT DEAD ENDS AT DEVICE. ENSURE CLASS A REQUIREMENTS ARE MET. IF NOT, REVISE CONDUIT ROUTING TO MEET CLASS A REQUIREMENTS.
  - ⑤ EXISTING TO REMAIN FIRE ALARM SYSTEM POWER SUPPLY PANEL.
  - ⑥ AIR HANDLING UNIT TO BE REPLACED. TEMPORARILY DISCONNECT EXISTING ADDRESSABLE INTERFACE DEVICE.

**B8 FIRE ALARM DEMOLITION - BASEMENT PLAN - PART 1**  
 Y111 SCALE: 1/8" = 1'-0"

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<b>JACOBS</b>		REV. APPROVED DATE DESCRIPTION JCN REDLINE DATE APVD	
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA			
<b>CONTROL WING BASEMENT          AND CHILLER/COOLING TOWER MODERNIZATION          OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER          FIRE ALARM DEMOLITION -          BASEMENT PLAN - PART 1</b>			
FREMONT OAKLAND (ZOA) ARTCC			
REVIEWED BY	SUBMITTED BY	APPROVED BY	
	RSBradfish	<i>[Signature]</i>	
SUBMITTER'S TITLE		APPROVER'S TITLE	
DESIGNED BY	ISSUED BY	DATE	JCN
M. RONCEVIC	AIRWAY FACILITY DIVISION	07/08/2015	
DRAWN BY	CHECKED BY	DRAWING NO.	REV.
M. RONCEVIC	J. McLAUGHLIN	ZOA - D - CWBMS - Y111	
6/29/2015			



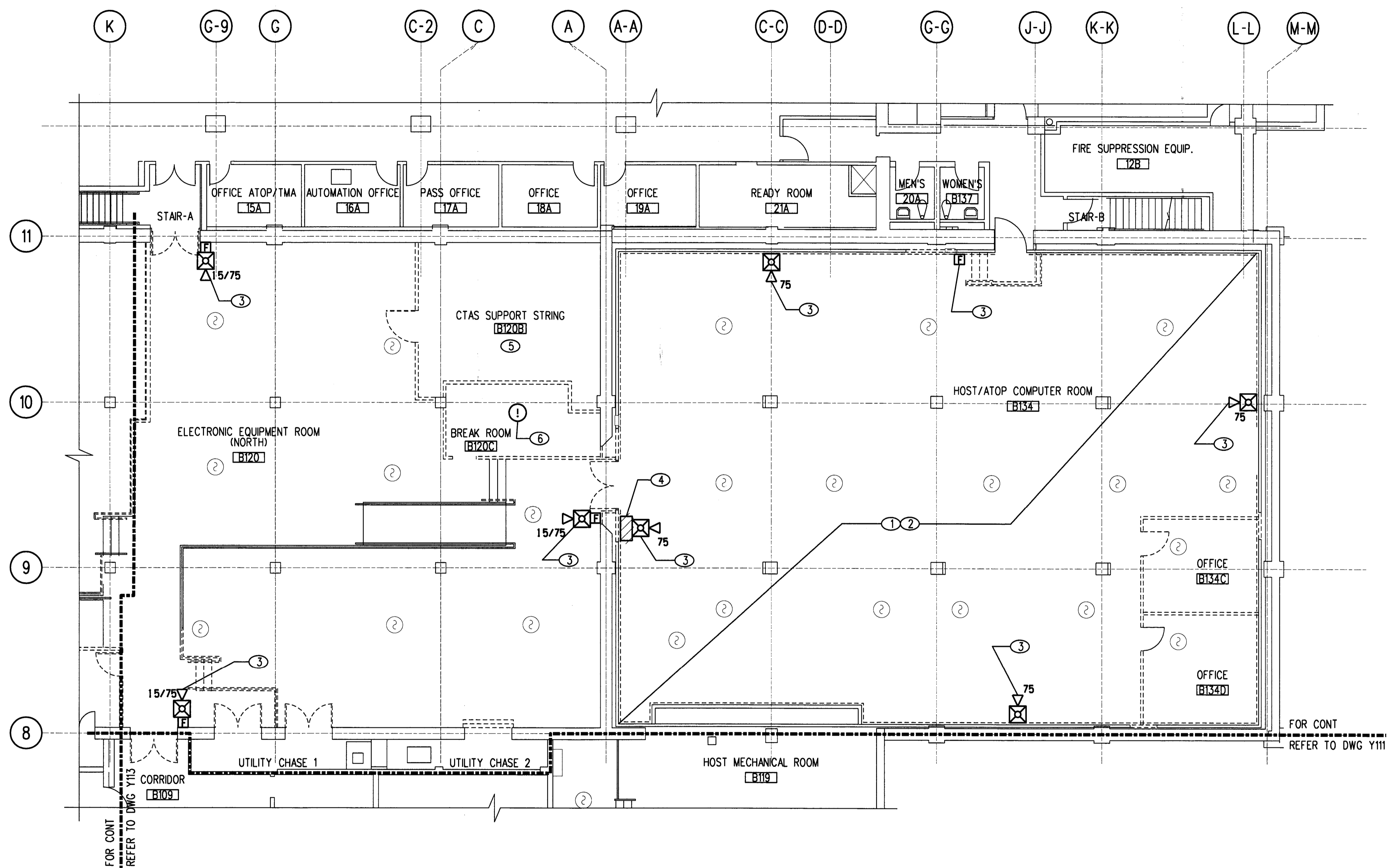
KEY PLAN

**GENERAL NOTES**

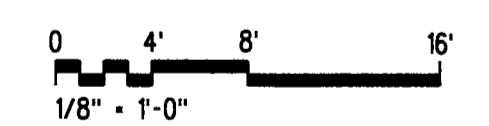
A. FOR GENERAL AND DEMOLITION FIRE ALARM NOTES, LEGEND AND ABBREVIATIONS, REFER TO DRAWING Y001.

**SHEET NOTES**

- ① CEILING IN HOST ROOM WILL BE DEMOLISHED AND REPLACED. PROVIDE TEMPORARY SUPPORT AND PROTECTION FOR SMOKE DETECTORS. PROVIDE A FIRE WATCH DURING CONSTRUCTION. COORDINATE FIRE WATCH REQUIREMENTS WITH COR.
- ② FLOOR IN HOST ROOM WILL BE DEMOLISHED AND REPLACED. PROVIDE TEMPORARY SUPPORT AND PROTECTION FOR UNDERFLOOR VESDA SYSTEM.
- ③ DEVICE TO BE TEMPORARILY PROTECTED DURING DEMOLITION OF WALL. DEVICE TO BE REINSTALLED IN SAME LOCATION ONCE NEW WALL IS INSTALLED.
- ④ DISCONNECTED SMOKE DETECTOR ANNUNCIATOR PANEL AND ALL ITS ASSOCIATED WIRING AND CONDUIT TO BE REMOVED AND DISPOSED OF.
- ⑤ DEMOLISH ALL DUCT SMOKE DETECTORS AND ADDRESSABLE INTERFACE DEVICES ASSOCIATED WITH AIR HANDLING UNIT 160. REMOVE DEVICES FROM FIRE ALARM PROGRAMMING.
- ⑥ CEILING IN ROOM WILL BE DEMOLISHED AND REPLACED. PROVIDE TEMPORARY SUPPORT AND PROTECTION FOR HEAT DETECTOR. PROVIDE A FIRE WATCH DURING CONSTRUCTION.

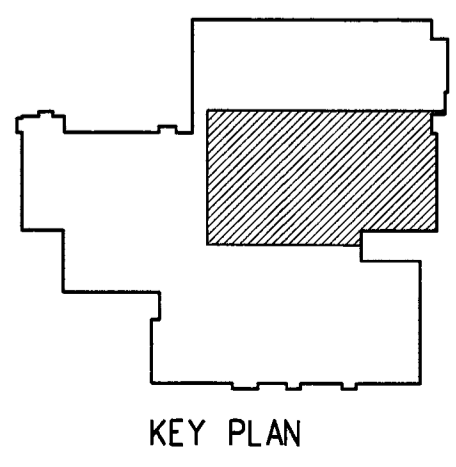


**C8** FIRE ALARM DEMOLITION - BASEMENT PLAN - PART 2  
**Y112** SCALE: 1/8" = 1'-0"



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		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA <span style="float: right;">RENTON, WA</span>			
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER FIRE ALARM DEMOLITION - BASEMENT PLAN - PART 2 FREMONT <span style="float: right;">OAKLAND (ZOA) ARTCC</span>			
REVIEWED BY DESIGNED BY DRAWN BY CHECKED BY	SUBMITTED BY SUBMITTER'S TITLE M. RONCEVIC M. RONCEVIC J. MCGOUGHIN	APPROVED BY APPROVER'S TITLE RSBradfisch AIRWAY FACILITY DIVISION	DATE 07/08/2015 DRAWING NO. ZOA - D - CWBMS - Y112	JCN REDLINE DATE APVD	JCN DATE 6/29/2015 TIME USER



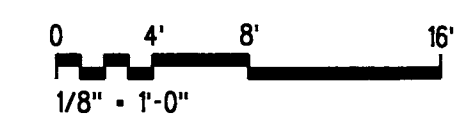
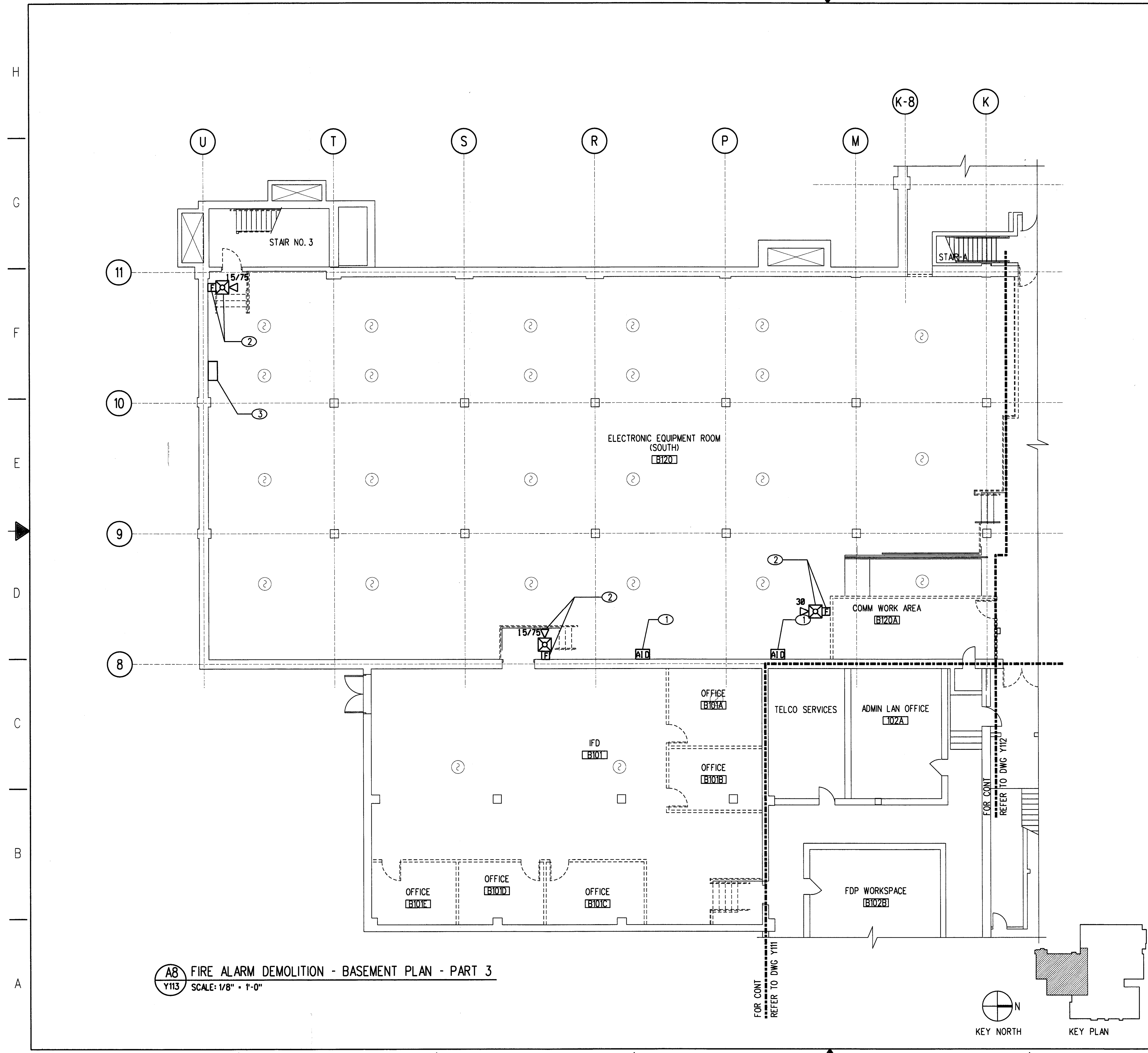
KEY NORTH  
 KEY PLAN

GENERAL NOTES

A. FOR GENERAL AND DEMOLITION FIRE ALARM NOTES, LEGEND AND ABBREVIATIONS, REFER TO DRAWING Y001.

SHEET NOTES

- ① AIR HANDLING UNIT TO BE REPLACED. TEMPORARILY DISCONNECT EXISTING ADDRESSABLE INTERFACE DEVICE AND PROTECT DURING CONSTRUCTION.
- ② DEVICE TO BE TEMPORARILY PROTECTED DURING DEMOLITION OF WALL. DEVICE TO BE REINSTALLED IN SAME LOCATION ONCE NEW WALL IS INSTALLED.
- ③ REMOTE POWER SUPPLY PANEL TO BE TEMPORARILY PROTECTED DURING DEMOLITION OF WALL. PANEL TO BE REINSTALLED IN SAME LOCATION ONCE NEW WALL IS INSTALLED.



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PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

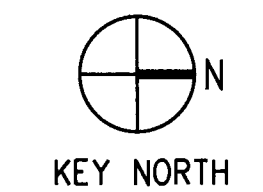
**JACOBS**

COMMONWEALTH OF VIRGINIA  
 MINA RONCEVIC  
 Lic. No. 040201  
 7/18/2015  
 PROFESSIONAL ENGINEER

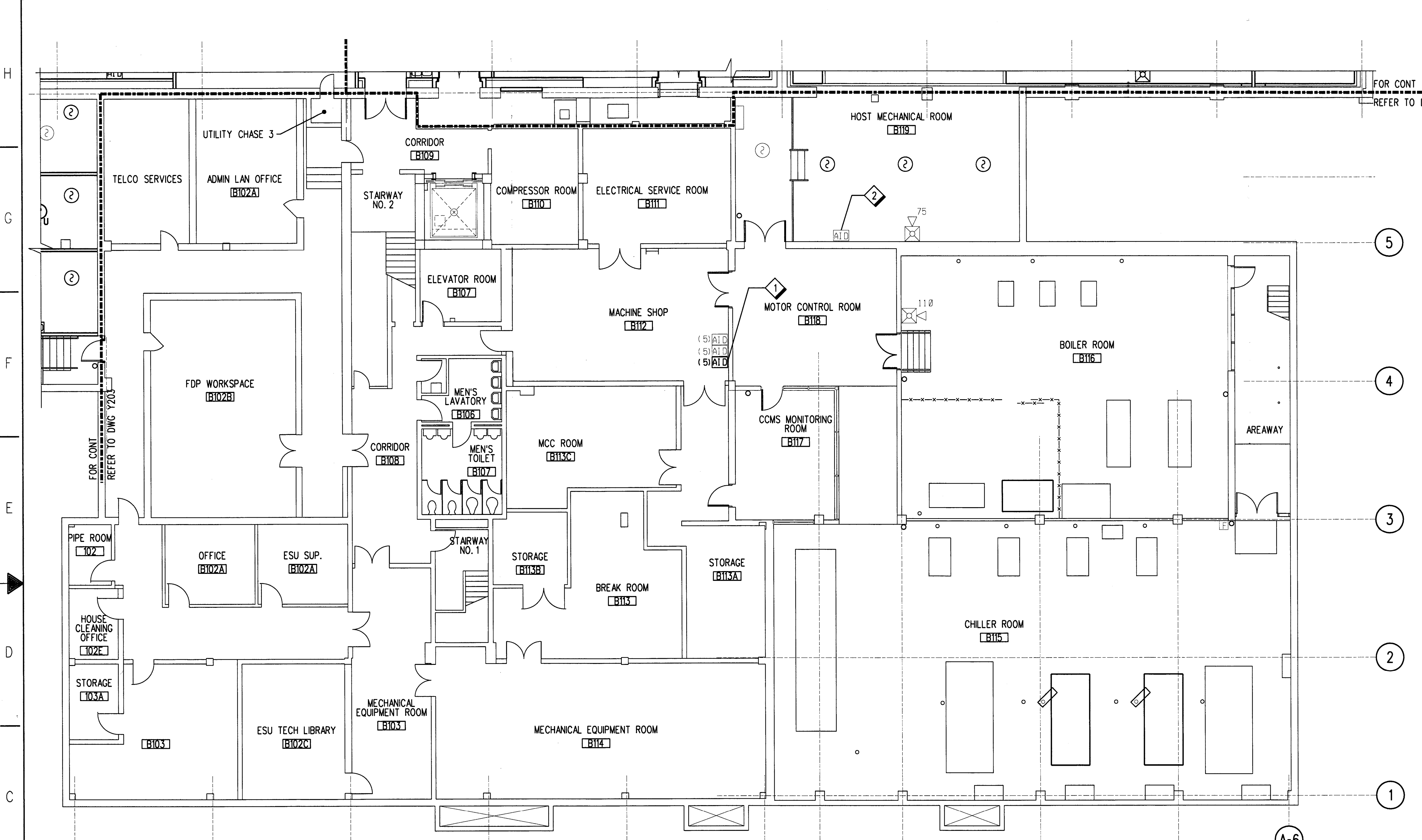
OAKLAND ARTCC  
 FREMONT,  
 CALIFORNIA

REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA					
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER FIRE ALARM DEMOLITION - BASEMENT PLAN - PART 3 FREMONT OAKLAND (ZOA) ARTCC					
REVIEWED BY	SUBMITTED BY	APPROVED BY		DATE	
	RSBradfish	<i>[Signature]</i>		07/08/2015	
SUBMITTER'S TITLE		APPROVER'S TITLE		DATE	
DESIGNED BY M. RONCEVIC		ISSUED BY AIRWAY FACILITY DIVISION		DRAWING NO. ZOA - D - CWBMS - Y113	
DRAWN BY M. RONCEVIC		CHECKED BY J. MCLAUGHLIN		REV.	
				6/29/2015	

**A8** FIRE ALARM DEMOLITION - BASEMENT PLAN - PART 3  
 Y113 SCALE: 1/8" = 1'-0"



KEY PLAN



**GENERAL NOTES**

A. FOR GENERAL FIRE ALARM NOTES, LEGEND AND ABBREVIATIONS, REFER TO DRAWING Y001.

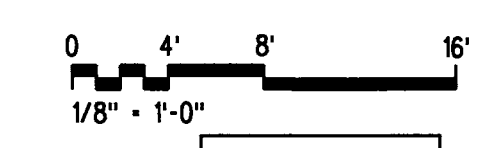
**SHEET NOTES**

- ① ADDRESSABLE INTERFACE DEVICES TO MONITOR FIRECYCLE SPRINKLER SYSTEM FIRE, TROUBLE, WATERFLOW AND VALVE TAMPER.
- ② RECONNECT EXISTING ADDRESSABLE INTERFACE MODULE TO NEW FACTORY-INSTALLED DUCT SMOKE DETECTOR IN AHU-21.

**B8 FIRE ALARM BASEMENT PLAN - PART 1**  
Y201 SCALE: 1/8" = 1'-0"

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PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

		REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA					
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER FIRE ALARM BASEMENT PLAN - PART 1 FREMONT OAKLAND (ZOA) ARTCC					
		REVIEWED BY DESIGNED BY DRAWN BY CHECKED BY	SUBMITTED BY SUBMITTER'S TITLE ISSUED BY AIRWAY FACILITY DIVISION	APPROVED BY APPROVER'S TITLE DATE 07/08/2015 JCN	DRAWING NO. ZOA - D - CWBMS - Y201	REV.	

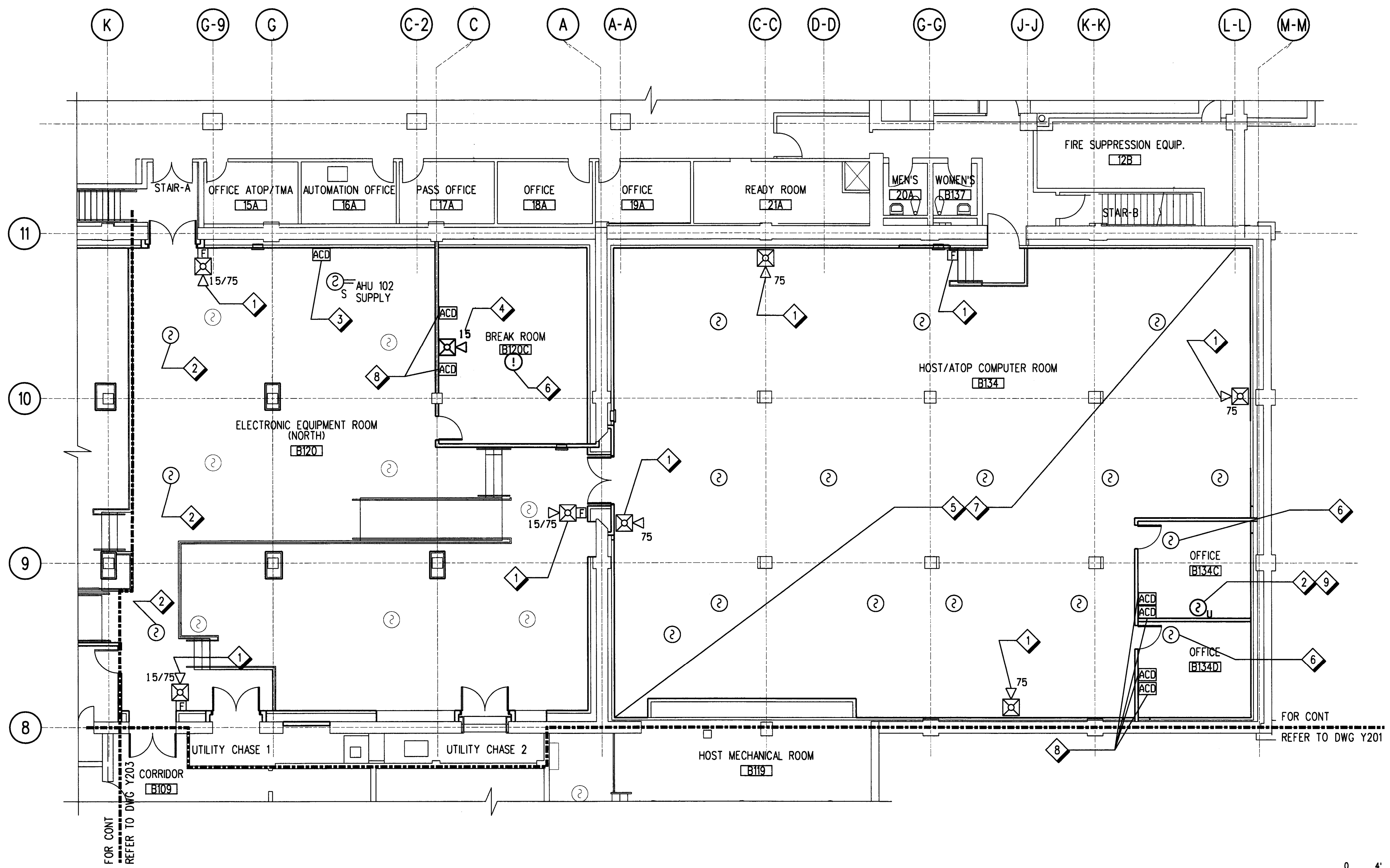


KEY PLAN

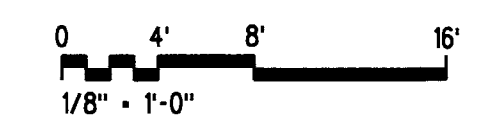


**GENERAL NOTES**  
 A. FOR GENERAL FIRE ALARM NOTES, LEGEND AND ABBREVIATIONS, REFER TO DRAWING Y001.

- SHEET NOTES**
- 1 EXISTING DEVICE TO BE REINSTALLED IN SAME LOCATION ONCE NEW WALL IS INSTALLED.
  - 2 CONNECT NEW SMOKE DETECTOR TO EXISTING SIGNALING LINE CIRCUIT. ENSURE ADEQUATE CAPACITY EXISTS. ENSURE CLASS A WIRING IS MAINTAINED.
  - 3 PROVIDE ADDRESSABLE CONTROL MODULE FOR AIR HANDLING UNIT 102 SHUTDOWN. LOCATE DEVICE NEAR MOTOR STARTER.
  - 4 CONNECT NEW NOTIFICATION APPLIANCE TO EXISTING NOTIFICATION APPLIANCE CIRCUIT. ENSURE ADEQUATE CAPACITY EXISTS. ENSURE CLASS A WIRING IS MAINTAINED. EXISTING CIRCUITS USE 4 WIRES TO ALLOW SILENCING OF THE AUDIBLE FUNCTION OF THE NOTIFICATION APPLIANCE WITHOUT DISABLING THE STROBE FUNCTION OF THE NOTIFICATION APPLIANCE. NEW DEVICES SHALL PROVIDE THE SAME CAPABILITY.
  - 5 COORDINATE LOCATIONS OF SMOKE DETECTORS IN HOST ROOM WITH ALL OTHER CEILING-MOUNTED EQUIPMENT.
  - 6 EXISTING DEVICE TO BE REINSTALLED IN NEW LOCATION ONCE NEW CEILING IS INSTALLED. PROGRAM DEVICE TO CLOSE BOTH FIRE/SMOKE DAMPERS UPON ALARM ACTIVATION.
  - 7 ENSURE ADEQUATE UNDERFLOOR SMOKE DETECTION IS MAINTAINED ONCE WALLS OF OFFICES B134C AND B134D ARE EXTENDED TO THE SLAB BELOW THE RAISED FLOOR.
  - 8 PROVIDE ADDRESSABLE CONTROL MODULE FOR FIRE/SMOKE DAMPER SHUTDOWN.
  - 9 PROGRAM DEVICE TO CLOSE BOTH FIRE/SMOKE DAMPERS UPON ALARM ACTIVATION.

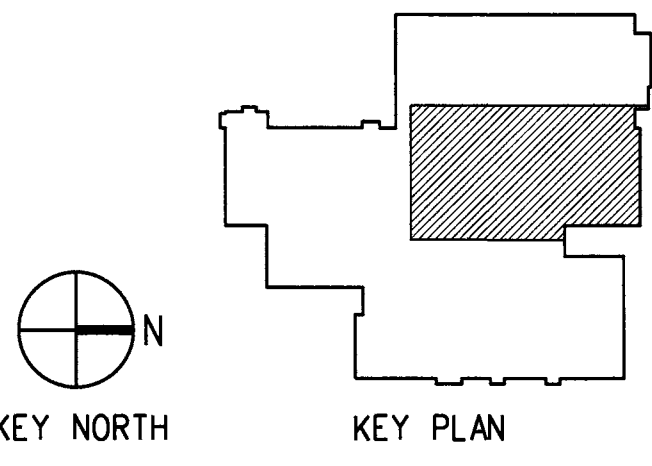


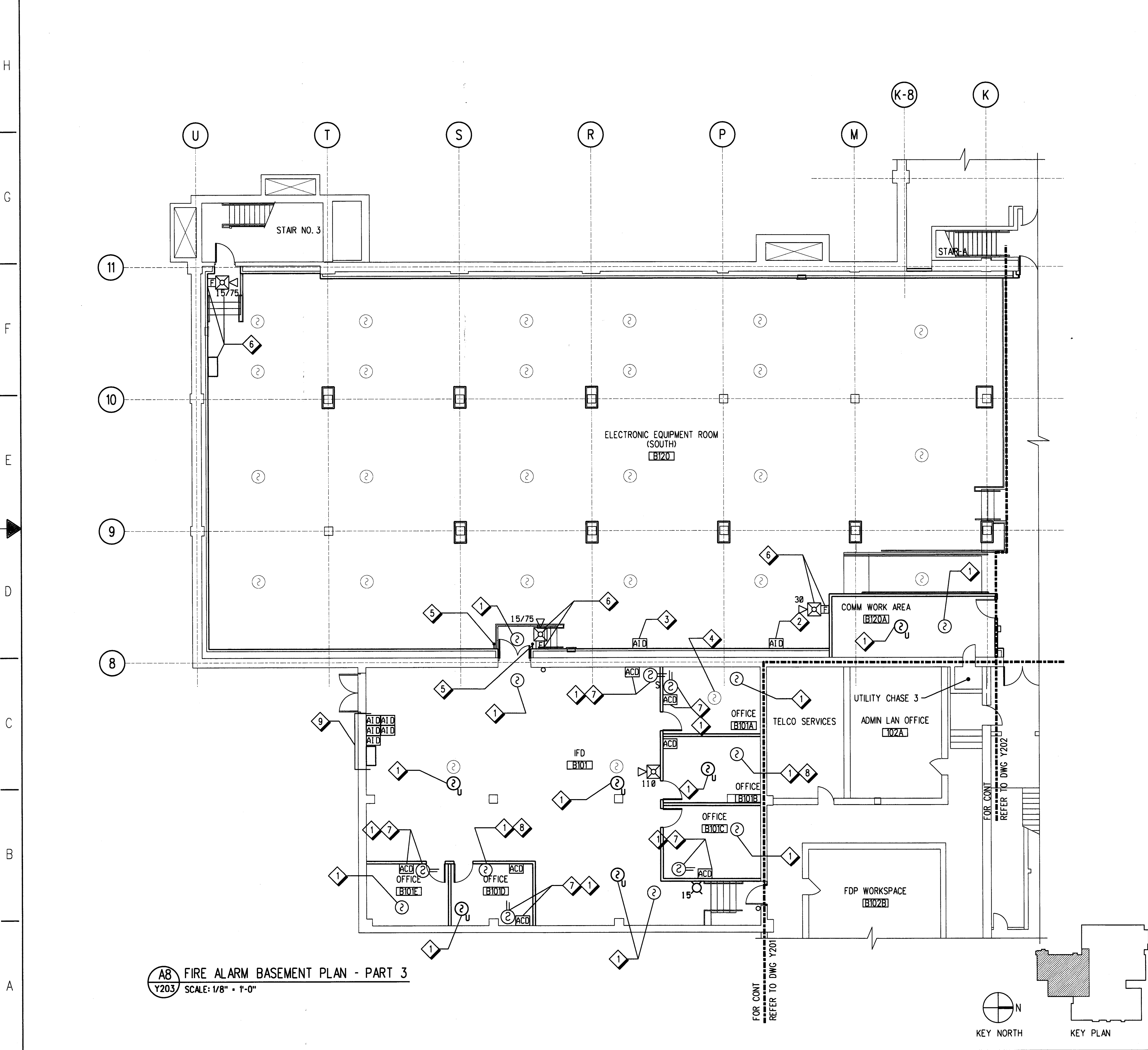
**C8 FIRE ALARM BASEMENT PLAN - PART 2**  
 Y202 SCALE: 1/8" = 1'-0"



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 PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA			
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER FIRE ALARM BASEMENT PLAN - PART 2 FREMONT OAKLAND (ZOA) ARTCC			
REVIEWED BY DESIGNED BY DRAWN BY CHECKED BY	SUBMITTED BY M. RONCEVIC M. RONCEVIC J. McLAUGHLIN	APPROVED BY 	DATE 07/08/2015	DRAWING NO. ZOA - D - CWBMS - Y202	REV.
OAKLAND ARTCC FREMONT, CALIFORNIA		AIRWAY FACILITY DIVISION		6/29/2015	

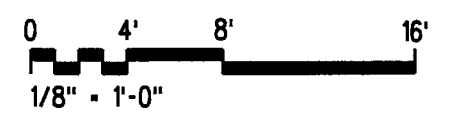




**GENERAL NOTES**  
 A. FOR GENERAL FIRE ALARM NOTES, LEGEND AND ABBREVIATIONS, REFER TO DRAWING Y001.

- SHEET NOTES**
1. CONNECT NEW SMOKE DETECTOR TO EXISTING SIGNALING LINE CIRCUIT. ENSURE ADEQUATE CAPACITY EXISTS. ENSURE CLASS A WIRING IS MAINTAINED.
  2. REINSTALL EXISTING ADDRESSABLE INTERFACE DEVICE ON NEW WALL. RECONNECT DEVICE TO NEW FACTORY-INSTALLED DUCT SMOKE DETECTOR IN AHU-105.
  3. REINSTALL EXISTING ADDRESSABLE INTERFACE DEVICE ON NEW WALL. RECONNECT DEVICE TO NEW FACTORY-INSTALLED DUCT SMOKE DETECTOR IN AHU-106.
  4. EXISTING SMOKE DETECTOR ABOVE SUSPENDED CEILING TO REMAIN.
  5. UPON FIRE ALARM SIGNAL ACTIVATION, MAGNETIC DOOR HOLD OPEN DEVICES SHALL RELEASE DOORS AND DOORS SHALL CLOSE.
  6. EXISTING DEVICE TO BE REINSTALLED IN SAME LOCATION ONCE NEW WALL IS INSTALLED.
  7. PROVIDE DUCT SMOKE DETECTOR FOR FIRE/SMOKE DAMPER CLOSURE.
  8. PROGRAM SMOKE DETECTOR FOR FIRE/SMOKE DAMPER CLOSURE.
  9. PROVIDE NEW VESDA SYSTEM FOR THE B101 AREA. VESDA SYSTEM ADDRESSABLE INTERFACE DEVICES TO MONITOR PRE-ALARM I, PRE-ALARM II, ALARM, POWER AND TROUBLE SIGNALS.

**AB FIRE ALARM BASEMENT PLAN - PART 3**  
 Y203 SCALE: 1/8" = 1'-0"



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 PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA		
		CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER FIRE ALARM BASEMENT PLAN - PART 3 FREMONT OAKLAND (ZOA) ARTCC		
	REVIEWED BY: _____ SUBMITTED BY: <i>RSBradfish</i>	APPROVED BY: <i>[Signature]</i> APPROVER'S TITLE: _____	DESIGNED BY: M. RONCEVIC DRAWN BY: M. RONCEVIC CHECKED BY: J. MC LAUGHLIN	ISSUED BY: AIRWAY FACILITY DIVISION DATE: 07/08/2015 DRAWING NO.: ZOA - D - CWBMMS - Y203
OAKLAND ARTCC FREMONT, CALIFORNIA	OAKLAND ARTCC FREMONT, CALIFORNIA		DATE: 8/29/2015 TIME: 5:15 PM USER: #USER	REV. _____



KEY PLAN

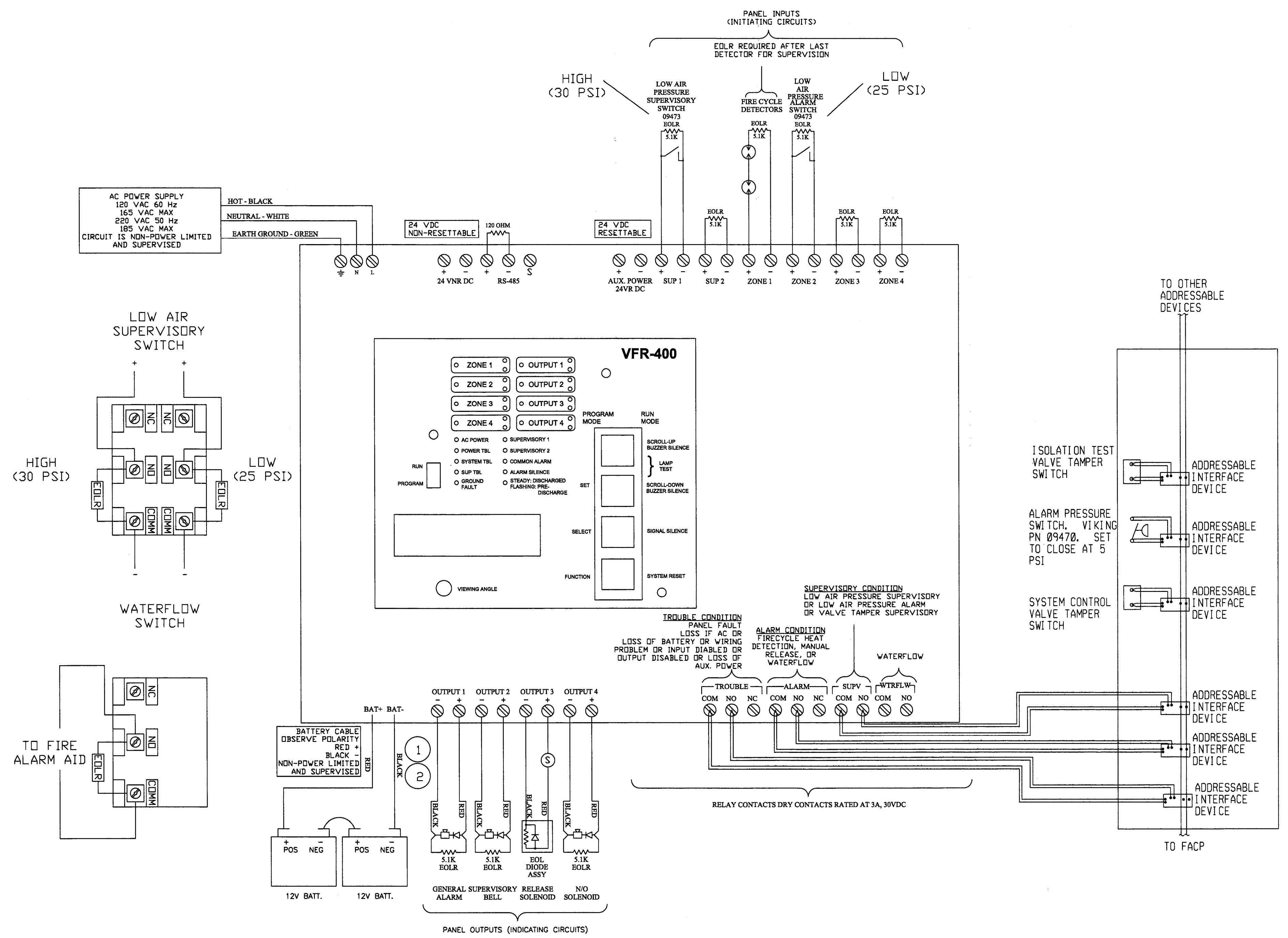
FOR CONT  
 REFER TO DWG Y201

FOR CONT  
 REFER TO DWG Y202

PROGRAM #6 For One Sprinkler System						
Viking Sprinkler System Types	Release Zone and Manual Release Zone	1. FIRECYCLE III Single Interlocked Preaction Multicycle System				
		2. FIRECYCLE III Single Interlocked Preaction Multicycle System- NYC Special				
OUTPUTS (Indicating Circuits)	ZONES (Initiating Circuits)					
	SUP 1 Low Air Supervisory Zone	SUP 2 Valve Tamper Supervisory Zone	#1 FIRECYCLE Detector Zone	#2 Low Air Alarm Zone	#3 Waterflow Zone	#4 Manual Release Zone
#1 General Alarm			X		X	X
#2 Supervisory Bell	X	X		X		
#3 Release Solenoid			X			X
#4 N/O Solenoid			X	X	X	

OPERATION DESCRIPTION	
<b>Inputs:</b>	FIRECYCLE Detector zone, Low Air Alarm zone, 1 Waterflow zone, Manual Release zone, 2 Supervisory zones.
<b>Outputs:</b>	1 General alarm, 1 Supervisory Alarm, 1 Release Solenoid, & 1 N/O Solenoid
<b>Operation:</b>	<p>Activation of FIRECYCLE Detector zone #1 will activate output #1 (General Alarm), output #3 (Release Solenoid) &amp; output #4 (N/O solenoid).</p> <p>Activation of Low Air alarm zone #2 will activate output #2 (Supervisory Bell) and output #4 (N/O Solenoid).</p> <p>Activation of Waterflow zone #3 will activate output #1 (General Alarm) &amp; output #4 (N/O Solenoid).</p> <p>Activation of Manual Release zone #4 will activate output #1 (General Alarm) &amp; output #3 (Release Solenoid).</p> <p>Deactivation of FIRECYCLE Detector zone #1 will start soak timer, when timer cycle is complete output #3 (Release Solenoid) is deactivated.</p> <p>Activation of Low Air Supervisory Zone #1 or Valve Tamper Supervisory zone #2 will activate output #2 (Supervisory Bell).</p>

- NOTES:
1. Connect EOL Diode assembly IN SERIES as shown with Solenoid on output #3 (Release Solenoid) and output #4 (N/O Solenoid). Black wire to positive terminal on panel and Red wire through Solenoid to negative terminal on panel.
  2. Polarity is shown on indicating circuits in normal (no alarm) condition. Polarity reverses when output is activated.
  3. Leave EOLR (provided) on all unused circuits.
  4. See the instruction manual for circuit information, panel limits, and battery sizing.
  5. For wire routing instructions through the releasing panel, see Note 3 on page 56 of the instruction manual.
  6. See instruction manual for proper programming.
  7. See specific system type data page for proper pressure switch settings.
  8. Connect EOL resistor after last FIRECYCLE detector on return line to common terminal in FIRECYCLE Detector zone #1.
  9. Set the soak timer to desired duration period. Factory setting is continuous. Recommend 60 seconds minimum.
  10. Loss of DC power below 20 volt causes output #3 (Release Solenoid) and output #4 (N/O Solenoid) to drop out.
  11. Use only Viking FIRECYCLE detectors on FIRECYCLE Detector zone #1.



B8 ON/OFF FIRE SPRINKLER CONTROL PANEL INTERFACE DIAGRAM  
Y301 N.T.S.

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PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

<b>JACOBS</b>					
REV.	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION WESTERN SERVICE AREA RENTON, WA					
CONTROL WING BASEMENT AND CHILLER/COOLING TOWER MODERNIZATION OAKLAND AIR ROUTE TRAFFIC CONTROL CENTER					
FIRE ALARM DETAILS OAKLAND (ZOA) ARTCC					
FREMONT					
DESIGNED BY	SUBMITTED BY		APPROVED BY		
DRAWN BY	SUBMITTER'S TITLE		APPROVER'S TITLE		
CHECKED BY	ISSUED BY		DATE		
OAKLAND ARTCC FREMONT, CALIFORNIA		AIRWAY FACILITY DIVISION		DATE 07/08/2015 JCN	
		DRAWING NO.		REV.	
		ZOA - D - CWBMS - Y301			

6/29/2015  
DATE: 6/29/2015 TIME: 11:58 AM USER: 55558