

FILE NAME: BIM 360/HF PACKAGE 3P1527 LOG COM CSP-163960-M-01
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GENERAL NOTES					
1.0 GENERAL		2.4.4	LOCATIONS AND SIZES OF FLOOR, WALL AND ROOF OPENINGS MUST BE COORDINATED WITH OTHER TRADES INVOLVED.	6.5	ISOLATION VALVES (EXCEPT CONTROL VALVES) AND PIPING SPECIALTIES AND STRAINERS MUST BE FULL LINE SIZE BEFORE REDUCING SIZE TO MAKE CONNECTIONS TO EQUIPMENT AND CONTROLS.
1.1	CONTRACT DOCUMENT DRAWINGS FOR MECHANICAL WORK ARE DIAGRAMMATIC AND ARE INTENDED TO CONVEY SCOPE AND GENERAL ARRANGEMENT ONLY. DO NOT SCALE DRAWINGS. CONTRACTOR MUST BE RESPONSIBLE TO FIELD SURVEY ACTUAL SITE CONDITIONS AND ACCOMMODATE ACTUAL SITE CONDITIONS AS PART OF SCOPE OF WORK AT NO ADDITIONAL COST TO GOVERNMENT.	2.4.5	PROVIDE CONTROL WIRING FROM REMOTE DISCONNECTS TO VFDs. PROVIDE FAST ACTING AUXILIARY CONTACT IN DISCONNECT CONNECTED TO LOGIC/DIGITAL INPUT ON VFD TO TRIGGER FREEWHEEL STOP.	6.6	PROVIDE MECHANICAL JOINTS SUCH AS UNIONS, FLANGES, OR THREADED FITTINGS AT EACH EQUIPMENT CONNECTION, IN BYPASSES, AT FLOOR PENETRATIONS, AT CONTROL DEVICES, AND IN LONG PIPE RUNS (100 FEET OR MORE) TO PERMIT DISASSEMBLY FOR ALTERATION AND REPAIRS.
1.2	PROVIDE WORK INDICATED OR IMPLIED ON THE DRAWINGS UNLESS SPECIFICALLY NOTED OTHERWISE.	3.0	WORK AREA	6.7	MEASURE, CUT, AND INSTALL PIPE LENGTH ACCURATELY TO MINIMIZE MISALIGNMENT. INSTALL PIPING WITHOUT FORCING OR SPRINGING.
1.3	PROVIDE MATERIALS, EQUIPMENT AND PERFORM LABOR REQUIRED TO PROVIDE COMPLETE AND OPERABLE MECHANICAL SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED, AND AS REQUIRED BY CODE.	3.1	PROVIDE CONSTRUCTION AND DUST BARRICADES AS INDICATED AND AS DIRECTED BY THE CONTRACTING OFFICER TO ISOLATE WORK AREAS FROM OTHER PARTS OF THE BUILDING AND TO MAINTAIN EGRESS PATHWAYS. PROVIDE TEMPORARY EXIT SIGNAGE, WALK-OFF MATS AND DOORS.	7.0	EQUIPMENT
1.4	WORK SHOWN ON THE DRAWINGS MUST BE PERFORMED BY THE CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE.	3.2	BARRICADES MUST HAVE LOCKABLE DOOR TO PREVENT UNAUTHORIZED ENTRY. PROVIDE "WIPE OFF" MATS TO MINIMIZE TRACKING DUST AND DEBRIS.	7.1	PROVIDE EQUIPMENT AND APPURTENANCES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, CONTRACT DOCUMENTS, APPLICABLE BUILDING, STATE, AND LOCAL CODES, ENERGY CODES, ASHRAE AND NFPA STANDARDS, AND INSURANCE UNDERWRITER REQUIREMENTS.
1.5	EQUIPMENT SUBMITTALS AND SHOP DRAWINGS REQUIRED BY THE SPECIFICATIONS MUST BE APPROVED IN ACCORDANCE WITH CONTRACT REQUIREMENTS PRIOR TO PURCHASE, FABRICATION, AND INSTALLATION.	3.3	DEVELOP, POST, AND IMPLEMENT NEW, SAFE PATHS OF EGRESS IF BARRICADES BLOCK NORMAL PATHS OF EGRESS.	7.2	ALL MATERIAL AND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR THE INTENDED PURPOSE. USE THE MORE STRINGENT METHODS WHEN MANUFACTURER'S RECOMMENDATIONS AND PLANS & SPECIFICATION REQUIREMENTS DIFFER. BRING ANY CONFLICTS BETWEEN MANUFACTURER'S RECOMMENDATIONS AND PLANS & SPECIFICATION REQUIREMENTS TO THE GOVERNMENT'S ATTENTION.
1.6	WHERE TWO OR MORE ITEMS OF THE SAME TYPE OF EQUIPMENT ARE REQUIRED, THE PRODUCTS OF A SINGLE MANUFACTURER MUST BE USED.	3.4	PROVIDE TEMPORARY EXIT SIGNS.	8.0	CONTROLS
1.7	VERIFY EXISTING CONDITIONS AT THE SITE AND REPORT DISCREPANCIES TO THE CONTRACTING OFFICER BEFORE PROCEEDING WITH WORK.	3.5	DUST-PROOF PARTITIONS MUST HAVE LOCKABLE PRE-HUNG DOOR 3'-0" X 7'-0" TO PREVENT UNAUTHORIZED ENTRY, FIRE-PROOF OR METAL STUDS AND PLYWOOD. "WIPE OFF" MATS TO MINIMIZE TRACKING DUST AND DEBRIS TO ADJOINING SPACES, AND TEMPORARY EXIT SIGNS IF PARTITIONS INTERFERE WITH PATHS OF EGRESS.	8.1	COORDINATE AUXILIARY CONTACT AND RELAY REQUIREMENTS WITH SEQUENCES OF OPERATION.
1.8	LIMITS OF WORK ARE SHOWN FOR GENERAL REFERENCE AND DO NOT ESTABLISH PRECISE BOUNDARIES OF WORK FOR TRADES THAT MAY BE REQUIRED TO COMPLETE THE PROJECT.	3.6	IF DUST-PROOF PARTITIONS BLOCKS NORMAL PATHS OF EGRESS, THE CONTRACTOR MUST DEVELOP, POST, AND IMPLEMENT NEW, SAFE PATHS OF EGRESS.	8.2	COORDINATE MOTOR AND MOTOR CONTROL REQUIREMENTS WITH EQUIPMENT SCHEDULES AND SEQUENCES OF OPERATION.
1.9	THE VERBIAGE ON THE DRAWING INDICATING TYPES OF MATERIALS IS INTENDED TO AID THE CONTRACTOR IN UNDERSTANDING THE VARIOUS CONDITIONS LIKELY TO BE ENCOUNTERED.	3.7	RETURN ADJACENT AREAS DISTURBED BY THIS PROJECT'S CONSTRUCTION TO THE CONDITION PRIOR TO CONSTRUCTION.	8.3	HARDWIRE SAFETIES TO SHUTDOWN HVAC EQUIPMENT.
1.10	THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING QUANTITIES OF MATERIALS REQUIRED TO COMPLETE THE PROJECT.	4.0	HVAC WORK	8.4	LOCATE TEMPERATURE, PRESSURE AND FLOW MEASURING DEVICES IN ACCESSIBLE LOCATIONS WITH A STRAIGHT SECTION OF PIPE OR DUCT UPSTREAM AND DOWNSTREAM, AS RECOMMENDED BY THE MANUFACTURER FOR ACCURACY.
1.11	REFER TO DETAILS FOR ADDITIONAL REQUIREMENTS REGARDING SIZES AND ARRANGEMENTS.	4.1	COORDINATE THE LOCATIONS OF GRILLES, REGISTERS AND DIFFUSERS WITH THE CEILING GRID, LIGHTING, AUDIO VISUAL EQUIPMENT, AND SPRINKLER HEAD LAYOUTS.	8.5	CONTROL WIRE AND CONDUIT MUST COMPLY WITH THE NATIONAL ELECTRIC CODE, DIVISION 26 OF THE SPECIFICATIONS, AND LOCAL CODES.
1.12	PAINT COLORS AND OTHER FINISHES ARE SUBJECT TO CHANGE FROM THOSE LISTED IN THE CONTRACT DOCUMENTS WITHOUT NOTICE. CONTRACTOR TO SUBMIT SAMPLES OF COLORS AND FINISHES TO CONTRACTING OFFICER FOR REVIEW AND APPROVAL BEFORE THE INSTALLATION/FINISHING OF SURFACES.	4.2	HEATING DEVICES AND SURFACES WITH ELEVATED TEMPERATURES WHICH CAN BE ACCESSED OR COME IN CONTACT WITH BUILDING OCCUPANTS AND MAINTENANCE PERSONNEL MUST BE PROTECTED, INSULATED, OR CONTROLLED TO REMAIN BELOW 120°F.	8.6	UNLESS OTHERWISE SHOWN, LOCATE ROOM THERMOSTATS WITH CONTROLS BETWEEN 42"-48" ABOVE FINISHED FLOOR IN ACCORDANCE WITH ADA AND ABA REQUIREMENTS. NOTIFY THE CONTRACTING OFFICER OF ROOMS WHERE THE ABOVE LOCATION CANNOT BE MAINTAINED OR WHERE THERE IS A QUESTION ON LOCATION.
1.13	IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE AND TO MAINTAIN THE BUILDING'S STRUCTURAL INTEGRITY DURING PHASES OF DEMOLITION AND NEW WORK. PROVIDE REQUIRED SUPPORT, SHORING, PINNING, ETC. TO ASSURE THIS REQUIREMENT.	4.3	PIPING AND DUCTWORK MUST CLEAR DOORS, WINDOWS, EQUIPMENT CLEARANCES, MAINTENANCE REQUIREMENTS, CODE SETBACKS, ETC. TO ASSURE OPERATION, INSPECTION, AND MAINTENANCE.	9.0	TEST AND INSPECTION
1.14	MAINTAIN BUILDING IN WEATHERPROOF AND WATERTIGHT CONDITIONS THROUGHOUT THE DURATION OF CONSTRUCTION.	4.4	WELDING TO STRUCTURAL MEMBERS MUST NOT BE PERMITTED. ATTACHMENTS MUST BE MADE USING CLAMPS MEETING MSS STANDARDS AS SPECIFIED.	9.1	TESTING ADJUSTING AND BALANCING (TAB) AGENCY MUST BE A MEMBER OF THE ASSOCIATED AIR BALANCING COUNCIL (AABC), THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB), OR THE TESTING, ADJUSTING AND BALANCING BUREAU (TABB). THE TAB FIRM MUST BE A SUBCONTRACTOR HIRED DIRECTLY BY THE GENERAL CONTRACTOR. TAB FIRM MUST HAVE A MINIMUM OF 5 YEARS EXPERIENCE ON SIMILAR PROJECTS. PERFORM TAB IN ACCORDANCE WITH THE REQUIREMENTS OF THE TAB PROCEDURAL STANDARD RECOMMENDED BY THE TAB TRADE ASSOCIATION THAT APPROVED THE TAB FIRM'S QUALIFICATIONS. COMPLY WITH REQUIREMENTS OF AABC MN-1, NEBB PROCEDURAL STANDARDS, OR SMACNA HVAC TAB(TABB) AS SUPPLEMENTED AND MODIFIED BY SPECIFICATION SECTIONS.
1.15	FIRE STOP FLOOR/CEILING PENETRATIONS AND PENETRATIONS THROUGH RATED PARTITIONS/WALLS.	4.5	MECHANICAL EQUIPMENT, DUCTWORK, AND PIPING MUST NOT BE SUPPORTED FROM ROOF OR DECK ASSEMBLY. SUPPORTS MUST ATTACH TO STRUCTURAL MEMBERS.		
1.16	LEGALLY DISPOSE OF DEMOLISHED MATERIALS OFF-SITE PER REGULATIONS OF AUTHORITIES HAVING JURISDICTION OVER THIS PROJECT.	4.6	PROVIDE VIBRATION ISOLATION FOR MECHANICAL EQUIPMENT TO PREVENT VIBRATION TRANSMISSION TO BUILDING STRUCTURE.		
1.17	WORK SHOWN ON DRAWINGS INVOLVES THE REMOVAL, REPLACEMENT, DEMOLITION, CUTTING, PATCHING AND PLASTERING OF EXISTING SURFACES IN ROOMS ABOVE AND BELOW THE CONSTRUCTION AREA. THE CONTRACTOR MUST RESTORE SURFACES AND FLOORS THAT ARE AFFECTED BY THEIR WORK. THE CONTRACTOR MUST COORDINATE THE PATCHING AND REPAIR OF THEIR WORK WITH THE WORK OF THE GENERAL CONTRACTOR'S FINAL FINISHES.	4.7	PROVIDE ACCESS DOORS AT EVERY LOCATION THAT A VOLUME DAMPER, FIRE DAMPER, VALVE OR OTHER CONTROL/BALANCING ITEM WILL BE INSTALLED ABOVE AN INACCESSIBLE CEILING.		
1.18	MAINTAIN A MINIMUM OF 6'-8" CLEARANCE TO UNDERSIDE OF PIPES, DUCTS, CONDUITS, SUSPENDED EQUIPMENT, SUPPORTS, ETC., THROUGHOUT ACCESS ROUTES IN MECHANICAL ROOMS.	5.0	DUCTWORK		
1.19	COORDINATE FINAL EQUIPMENT CONNECTIONS WITH MANUFACTURERS' CERTIFIED DRAWINGS. COORDINATE AND PROVIDE DUCTWORK AND PIPING TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS. FIELD VERIFY AND COORDINATE DUCTWORK AND PIPING DIMENSIONS BEFORE FABRICATION.	5.1	DUCT DIMENSIONS SHOWN ON PLANS ARE THE INSIDE CLEAR DESIGN DIMENSIONS. FLAT OVAL DIMENSIONS ARE FROM OUTSIDE RADIUS TO OUTSIDE RADIUS OF THE ROUNDED DIMENSION (NOT CENTERLINE TO CENTERLINE). INSTALLATION SHALL INCLUDE PROVISIONS FOR DUCT FLANGES, HANGERS, AND INSULATION IN ACCORDANCE WITH SMACNA REQUIREMENTS AS SPECIFIED.		
1.20	PROVIDE MISCELLANEOUS STEEL REQUIRED TO ENSURE INSTALLATION AND SUPPORT OF MECHANICAL WORK AS SHOWN IN DETAILS FOR PIPING, DUCTWORK AND EQUIPMENT (UNLESS OTHERWISE NOTED) AT NO ADDITIONAL COST TO THE GOVERNMENT.	5.2	PROVIDE RADIUS TYPE ELBOWS WITH A CENTERLINE RADIUS OF 1.5 TIMES THE WIDTH OR DIAMETER OF THE DUCT WHERE SPACE PERMITS. OTHERWISE, ELBOWS HAVING A MINIMUM RADIUS EQUAL TO THE WIDTH OR DIAMETER OF THE DUCT OR SQUARE ELBOWS WITH FACTORY FABRICATED SINGLE WIDTH TURNING VANES ARE ALLOWED PROPERLY INSTALLED AND SPACED PER SMACNA GUIDELINES. PROVIDE 90 DEGREE SQUARE DUCT ELBOWS WITH TURNING VANES UNLESS OTHERWISE INDICATED OR SPECIFIED. PROVIDE ACCESS DOORS UPSTREAM OF ELBOWS CONTAINING TURNING VANES.		
1.21	EQUIPMENT, PIPING, DUCTWORK, ETC., MUST BE SUPPORTED AS DETAILED AND SPECIFIED TO PROVIDE A VIBRATION FREE INSTALLATION.	5.3	DUCTS MUST BE GROUNDED ACROSS FLEXIBLE CONNECTIONS WITH FLEXIBLE COPPER GROUNDING STRAPS. GROUNDING STRAPS MUST BE BOLTED OR SOLDERED TO BOTH THE EQUIPMENT AND THE DUCT.		
1.22	PROVIDE FLEXIBLE CONNECTIONS IN DUCTWORK SYSTEMS CONNECTED TO FANS AND OTHER EQUIPMENT WHICH REQUIRE VIBRATION ISOLATION. FLEXIBLE CONNECTIONS MUST BE PROVIDED AT THE POINT OF CONNECTION TO THE EQUIPMENT UNLESS OTHERWISE INDICATED.	5.4	WHERE DUCT BRANCHES OR TERMINAL DEVICES ARE REMOVED FROM EXISTING DUCTS, THE CONTRACTOR MUST PATCH THE MAIN WITH LIKE THICKNESS SHEET METAL. EXTEND PATCH TO DUCT EDGES. PATCHES MUST BE MADE WITH HEMMED EDGES. PAINT PATCHES TO MATCH DUCTWORK.		
2.0 COORDINATION		5.5	COORDINATE DUCT ROUTING AND ELEVATION WITH LIGHTING, CEILING GRID, PIPING, CABLE TRAYS, CONDUIT, AND OTHER ITEMS REQUIRED FOR THE COMPLETION OF THIS PROJECT.		
2.1	SEVERAL PROJECTS MAY OCCUR AT THE SITE SIMULTANEOUSLY WITH THIS PROJECT. COORDINATE WORK REQUIREMENTS UNDER THIS CONTRACT WITH THESE PROJECTS.	5.6	PROVIDE OFFSETS IN DUCTWORK AS REQUIRED TO COORDINATE WITH OTHER TRADES AND FIELD INSTALLED CONDITIONS. DUCTWORK OFFSETS MUST BE MADE WITH GRADUAL TRANSITIONS (NO GREATER THAN 30 DEGREES) AND MAINTAIN EQUIVALENT CROSS-SECTIONAL AREAS.		
2.2	THE CONTRACTOR MUST REVIEW DRAWINGS AND INCORPORATE PHASING REQUIREMENTS IN BID.	6.0	PIPING		
2.3	MECHANICAL CONTRACTOR MUST REFER TO AND COORDINATE WITH OTHER DISCIPLINE DRAWINGS (INCLUDING ARCHITECTURAL, INTERIORS, TELECOMMUNICATIONS, STRUCTURAL, CIVIL, PLUMBING, ELECTRICAL AND FIRE PROTECTION).	6.1	PROVIDE PIPING SO THAT VALVES, STRAINERS, UNIONS, TRAPS, FLANGES, AND OTHER APPURTENANCES REQUIRING ACCESS ARE ACCESSIBLE.		
2.4	COORDINATE WITH THE ELECTRICAL CONTRACTOR:	6.2	ISOLATION VALVES MUST BE PROVIDED IN A LOCATION AND ELEVATION WHICH ALLOWS FOR EQUIPMENT AND BRANCH PIPING REMOVAL, WHILE MAINTAINING SERVICE UPSTREAM OF THE ISOLATION VALVE.		
2.4.1	LOCATION AND POWER REQUIREMENTS OF EQUIPMENT, CONTROL PANELS AND DEVICES.	6.3	VALVES MUST BE ADJUSTED FOR SMOOTH AND EASY OPERATION.		
2.4.2	MECHANICAL CONTRACTOR MUST FURNISH MOTOR CONTROL DEVICES TO ELECTRICAL CONTRACTOR FOR INSTALLATION. MOTOR CONTROL DEVICES INCLUDE BUT ARE NOT LIMITED TO FUSED DISCONNECTS, DISCONNECTS, MOTOR STARTING SWITCHES, PUSH BUTTON STATIONS, FRACTIONAL HORSEPOWER MANUAL MOTOR STARTERS WITH THERMAL OVERLOADS, 3 PHASE MOTOR CONTACTORS, COMBINATION MOTOR STARTERS, VARIABLE FREQUENCY DRIVES, SINGLE PHASE MOTOR SPEED ADJUSTMENT DEVICES.	6.4	BALANCING VALVES AND ISOLATION VALVES USED TO ADJUST FLOW RATES MUST BE PROVIDED WITH POSITION INDICATORS AND MAXIMUM ADJUSTABLE STOPS (MEMORY STOPS).		
2.4.3	COORDINATE ELECTRICAL REQUIREMENTS AND LOCATIONS OF EQUIPMENT WITH THE ELECTRICAL CONTRACTOR PRIOR TO ORDERING AND INSTALLATION.				

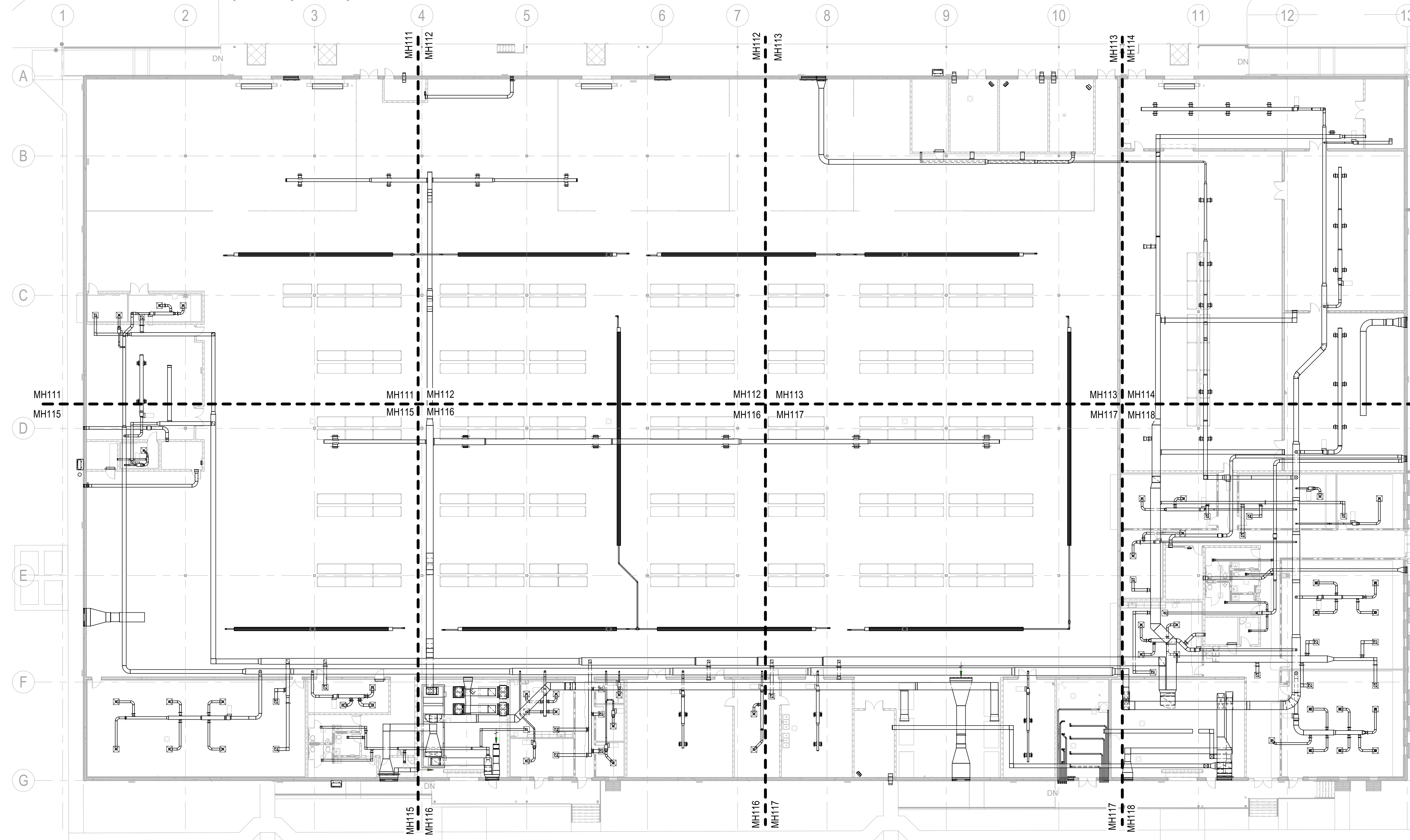
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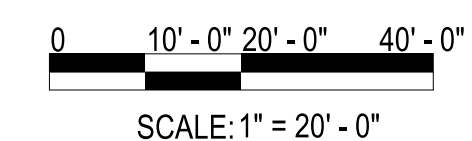
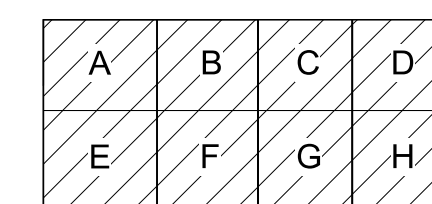
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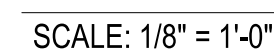


HVAC - 1ST FLOOR PLAN - OVERALL

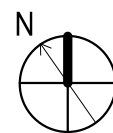
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SCALE: 1/8" = 1' - 0'



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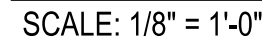
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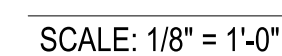


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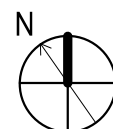
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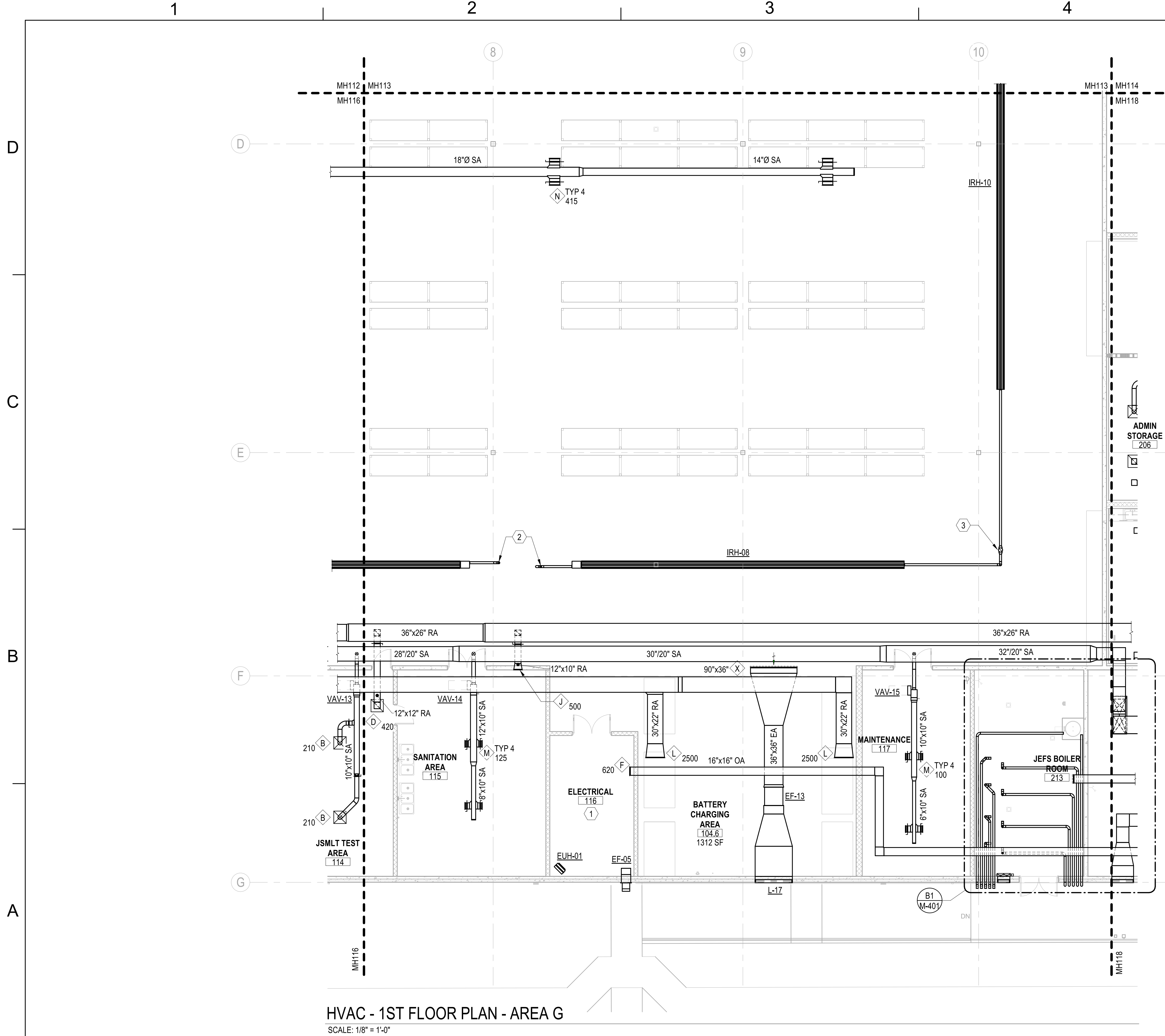


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SCALE: 1/8" = 1'-0"



FILE NAME: BIM 360/HF PACKAGE 3P1527 LOG COM CSP-163960-M.vst
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- GENERAL NOTES**
- 1 PROVIDE MANUAL VOLUME DAMPERS IN ALL RUN-OUTS TO DIFFUSERS, AT ALL BRANCH TAKE-OFFS FROM MAIN SUPPLY DUCT, AND IN ALL OTHER AREAS AS REQUIRED TO PROVIDE PROPER SYSTEM BALANCING.
 - 2 ALL SUPPLY AIR DUCT RUN-OUTS TO DIFFUSERS AND VAV BOXES SHALL BE SIZED TO MATCH DIFFUSER NECK SIZE OR VAV BOX INLET SIZE UNLESS OTHERWISE INDICATED.
 - 3 SHEET METAL FABRICATOR MAY SUBSTITUTE EQUIVALENT ROUND OR FLAT OVAL DUCTWORK FOR RECTANGULAR SIZES INDICATED. DUCTWORK BETWEEN AHU AND VAV BOXES SHALL BE SIZED TO 0.2" STATIC PRESSURE LOSS PER 100' OF DUCT RUN, DUCTWORK DOWNSTREAM OF VAV BOXES, RETURN, EXHAUST AND TRANSFER AIR DUCTS SHALL BE SIZED TO 0.05"/100' OF DUCT RUN. ALL REVISIONS MUST BE COORDINATED WITH ALL OTHER TRADES AND ILLUSTRATED IN DUCTWORK SHOP DRAWINGS FOR APPROVAL.
 - 4 PLAN DRAWINGS ARE DIAGRAMMATIC IN NATURE AND NOT ILLUSTRATE ALL SPECIFIC DUCT TAKE-OFF CONFIGURATIONS, TAPS, ETC. REFER TO PROJECT SPECIFICATIONS AND DETAILS FOR SPECIFIC REQUIREMENTS.
 - 5 ALL EQUIPMENT SHALL BE INSTALLED WITH MANUFACTURER'S REQUIRED ACCESS SPACE BETWEEN UNIT AND FULL HEIGHT WALLS AND OTHER OBSTRUCTIONS.

- KEYNOTES**
- 1 THERE SHALL NOT BE ANY EQUIPMENT (PIPING, DUCTWORK, MACHINERY, ETC.) THAT DOES NOT SERVE THIS SPACE INSTALLED ABOVE OR WITHIN THIS SPACE, NOR SHALL ANY EQUIPMENT NOT SERVING THIS SPACE PASS THROUGH OR ENTER THIS SPACE.
 - 2 COMBUSTION AIR INTAKE UP THROUGH ROOF. REFER TO M-500 SERIES FOR ROOF PENETRATION DETAIL. INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS.
 - 3 COMBINE FLUES INTO SINGLE COMMON FLUE AND TERMINATE ON ROOF. REFER TO M-500 SERIES FOR ROOF PENETRATION DETAIL. INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS.

DUCT CONSTRUCTION SCHEDULE						
DUCT SYSTEM	MIN PRESS CLASS	MIN. SEAL CLASS	SMACNA DUCT LEAKAGE CLASS (CL)			DUCT TEST PRESS
			RECT	ROUND	FLAT OVAL	
CAV SUPPLY	2" W.C.	A	4	2	2	2" W.C.
VAV SUPPLY - UPSTREAM OF BOXES	3" W.C.	A	4	2	2	3" W.C.
VAV SUPPLY - DOWNSTREAM OF BOXES	2" W.C.	A	4	2	2	2" W.C.
EXHAUST DUCTS	±1" W.C.	A	4	2	2	1" W.C.
RETURN DUCTS	±1" W.C.	A	4	2	2	1" W.C.
OUTSIDE AIR DUCTS	-1" W.C.	A	4	2	2	1" W.C.
TRANSFER AIR DUCTS	1" W.C.	A	NA	NA	NA	NA

KEYPLAN

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E	F	G	H

0 4'-0" 8'-0" 16'-0" N
SCALE: 1/8" = 1'-0"

APPR	DATE	DESCRIPTION	SYN

NAVFAC

PRELIMINARY
NOT FOR CONSTRUCTION

RQ Jordan COMPANY
- A JOINT VENTURE -

Michael Baker INTERNATIONAL
100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108
APPROVED

FOR COMMANDER NAVFAC

ACTIVITY
MARINE CORPS BASE
CAMP LEJEUNE

SATISFACTORY TO DATE DD/MM/YY

DES EMB DRW AJK CHK DWH

PM

BRANCH HEAD

DESIGN DIRECTOR

FIRE PROTECTION

NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
ATLANTIC DESIGN AND CONSTRUCTION
NORFOLK, VA

JACKSONVILLE, NC

LOGCOM CSP WAREHOUSE

HVAC - 1ST FLOOR PLAN - AREA G

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
ATLANTIC DESIGN AND CONSTRUCTION
MCB CAMP LEJEUNE

SCALE: AS NOTED
EPROJCT NO.: 1639600
CONSTR. CONTR. NO. N40085-20-C-0059
NAVFAC DRAWING NO.

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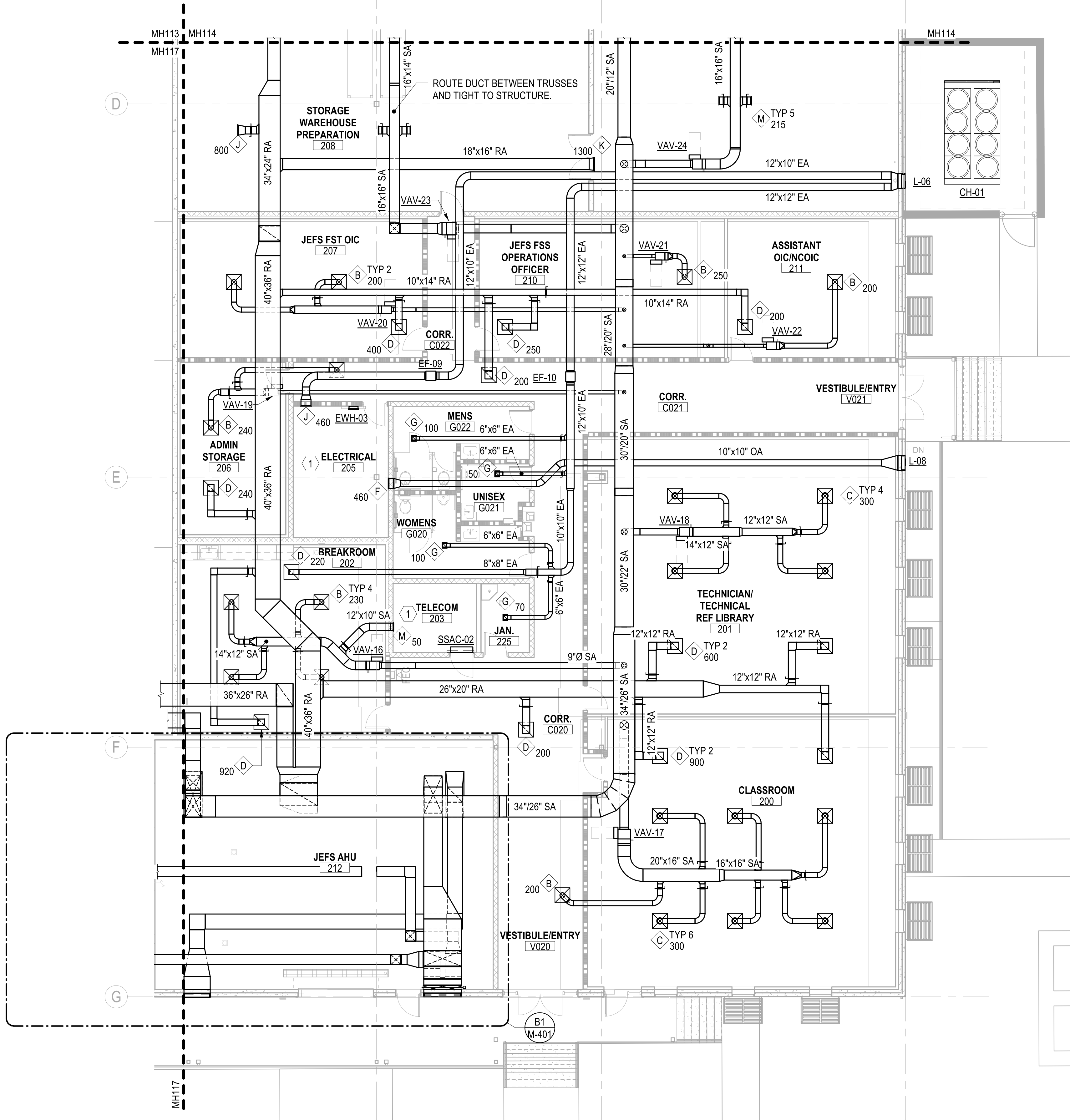
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HVAC - 1ST FLOOR PLAN - AREA H
SCALE: 1/8" = 1'-0"

UNCLASSIFIED

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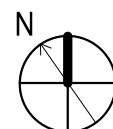
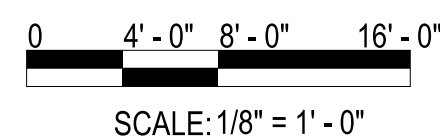
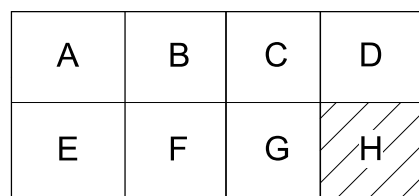
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TRANSFER AIR DUCTS	1" W.C.	A	NA	NA	NA	NA

KEYPLAN



PRELIMINARY
NOT FOR CONSTRUCTION



Michael Baker INTERNATIONAL
100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108
APPROVED

FOR COMMANDER NAVFAC
ACTIVITY
MARINE CORPS BASE
CAMP LEJEUNE
SATISFACTORY TO DATE: DD/MM/YY
DES EMB DRW AJK CHK DWH
PM
BRANCH HEAD
DESIGN DIRECTOR
FIRE PROTECTION

NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND ATLANTIC
ATLANTIC DESIGN AND CONSTRUCTION
MCB CAMP LEJEUNE
JACKSONVILLE, NC
LOGCOM CSP WAREHOUSE
HVAC - 1ST FLOOR PLAN - AREA H

SCALE: AS NOTED
EPROJECT NO.: 1639600
CONSTR. CONTR. NO.: N40085-20-C-0059
NAVFAC DRAWING NO.
SHEET OF
MH118

P1527 PREFINAL SUBMISSION - 08/06/2021

UNCLASSIFIED

FILE NAME: BIM 360/HF PACKAGE 3P1527 LOG COM CSP-163960-M.dwg
PLOTTED: 8/4/2021 12:20:29 PM

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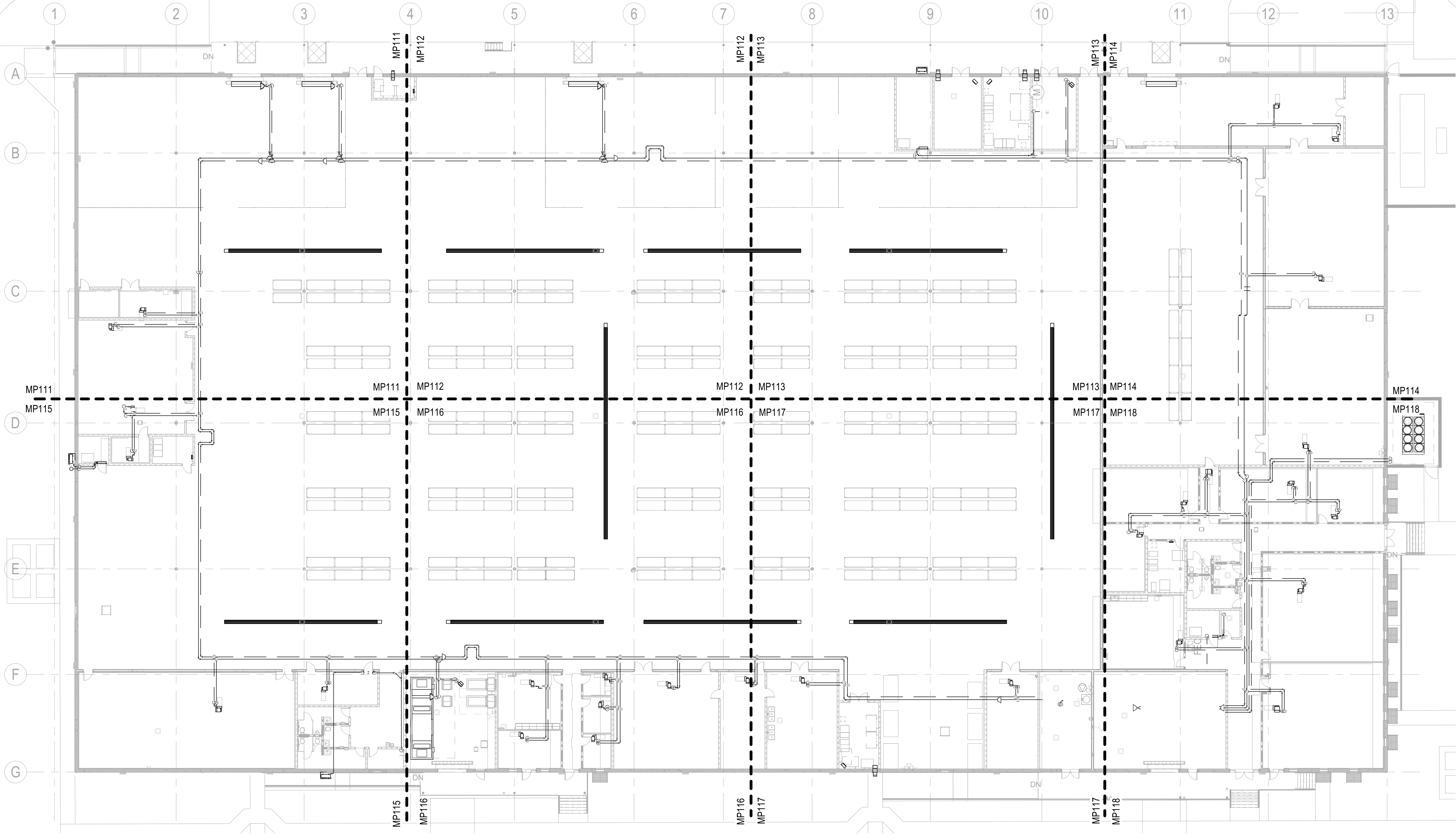
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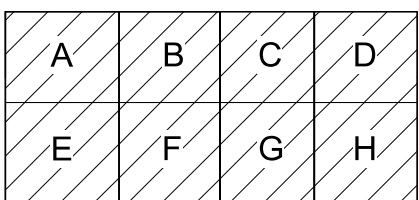
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PIPING - 1ST FLOOR PLAN - OVERALL

SCALE: 1" = 20'-0"

KEYPLAN



0 10' - 0" 20' - 0" 40' - 0"
SCALE: 1" = 20' - 0"



UNCLASSIFIED	
NAVFAC	
PRELIMINARY NOT FOR CONSTRUCTION	
Michael Baker INTERNATIONAL 100 AIRSIDE DRIVE MOON TOWNSHIP, PA 15108 APPROVED	
FOR COMMANDER NAVFAC ACTIVITY MARINE CORPS BASE CAMP LEJEUNE SATISFACTORY TO DATE: DD/MM/YY DES EMB DRW AJK CHK DWH PM BRANCH HEAD DESIGN DIRECTOR FIRE PROTECTION	
DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND ATLANTIC DESIGN AND CONSTRUCTION MCB CAMP LEJEUNE	JACKSONVILLE, NC LOGCOM CSP WAREHOUSE PIPING - OVERALL - 1ST FLOOR PLAN
SCALE: AS NOTED PROJECT NO.: 1639600 CONSTR. CONTR. NO.: N40085-20-C-0059 NAVFAC DRAWING NO.: SHEET OF	MP110

P1527 PREFINAL SUBMISSION - 08/06/2021

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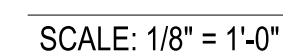
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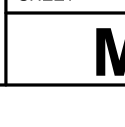


FILE NAME: BIM 360://HF PACKAGE 3/P1527 LOG COM CSP-1639600-M.rvt



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

- 1 THERE SHALL NOT BE ANY EQUIPMENT (PIPING, DUCTWORK, MACHINERY, ETC.) THAT DOES NOT SERVE THIS SPACE INSTALLED ABOVE OR WITHIN THIS SPACE, NOR SHALL ANY EQUIPMENT NOT SERVING THIS SPACE PASS THROUGH OR ENTER THIS SPACE.
- 2 TERMINATE CONDENSATE DRAIN AT FLOOR DRAIN. DO NOT ROUTE PIPING AS TO CREATE A TRIPPING HAZARD.



MP113

[illegible]

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P1527 PREFINAL SUBMISSION - 08/06/2021

PLOTTED: 8/4/2021 12:20:46 PM

FILE NAME: BIM 360://HF PACKAGE 3/P1527 LOG COM CSP-1639600-M.rvt

FILE NAME: BIM 360/HF PACKAGE 3P1527 LOG COM CSP-1639600-M.dwg
PLOTTED: 8/4/2021 12:20:51 PM

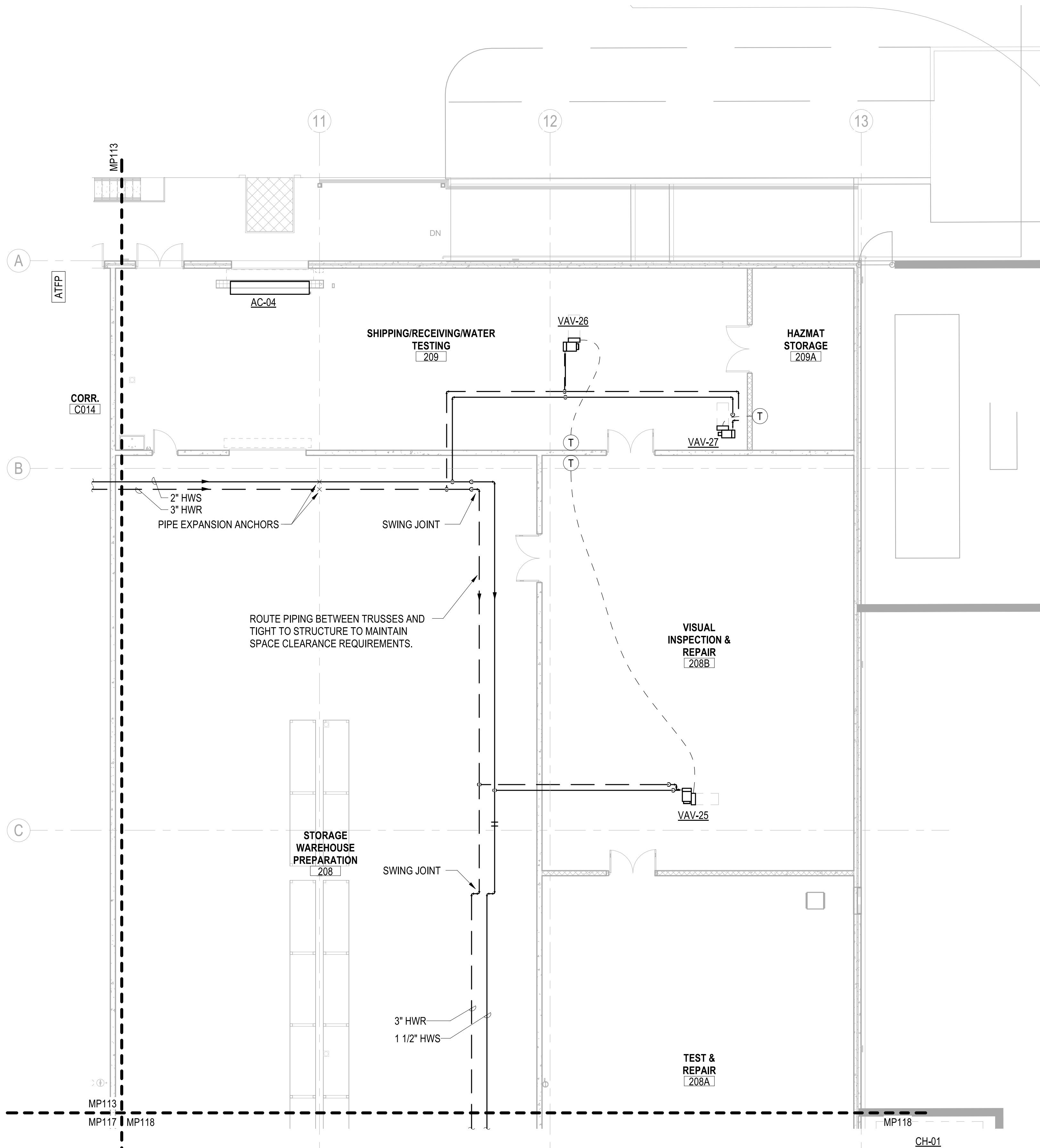
DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND ATLANTIC
ATLANTIC DESIGN AND CONSTRUCTION
MCB CAMP LEJEUNE
JACKSONVILLE, NC
LOGCOM CSP WAREHOUSE
PIPING - 1ST FLOOR PLAN - AREA D

D

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PIPING - 1ST FLOOR PLAN - AREA D

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

UNCLASSIFIED

GENERAL NOTES

- 1 ALL HWS & HWR BRANCHES ARE 3/4" UNLESS NOTED OTHERWISE.
- 2 PROVIDE AN AIR VENT AT THE HIGH POINT OF EACH DROP IN THE HEATING AND CHILLED WATER PIPING SYSTEMS. ALL PIPING SHALL GRADE TO THE LOW POINTS. PROVIDE HOSE END DRAIN VALVES AT THE BOTTOM OF ALL RISERS AND LOW POINTS.
- 3 INSTALL PIPING SO THAT ALL VALVES, STRAINERS, UNIONS, TRAPS, FLANGES AND OTHER APPURTENANCES REQUIRING ACCESS ARE EASILY ACCESSIBLE. ALL VALVES SHALL BE INSTALLED SO THAT THE REMAINS IN SERVICE WHEN EQUIPMENT OR PIPING ON EQUIPMENT SIDE OF VALVE IS REMOVED. ALL BALANCING VALVES AND BUTTERFLY VALVES SHALL BE PROVIDED WITH POSITION INDICATORS AND MAXIMUM ADJUSTABLE STOPS (AKA "MEMORY STOPS"). ALL VALVES (EXCEPT CONTROL VALVES) AND STRAINERS SHALL BE FULL SIZE OF PIPE BEFORE REDUCING SIZE TO MAKE CONNECTIONS TO EQUIPMENT AND CONTROLS.
- 4 INSTALL PIPING WITHOUT FORCING OR SPRINGING.
- 5 PLAN DRAWINGS ARE DIAGRAMMATIC IN NATURE AND NOT ILLUSTRATE ALL SPECIFIC DUCT TAKE-OFF CONFIGURATIONS, TAPS, ETC. REFER TO PROJECT SPECIFICATIONS AND DETAILS FOR SPECIFIC REQUIREMENTS.

KEYNOTES



PRELIMINARY
NOT FOR CONSTRUCTION



Michael Baker
INTERNATIONAL
100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108
APPROVED

FOR COMMANDER NAVFAC
ACTIVITY
MARINE CORPS BASE
CAMP LEJEUNE
SATISFACTORY TO DATE: DD/MM/YY
DES EMB DRW AJK CHK DWH
PM
BRANCH HEAD
DESIGN DIRECTOR
FIRE PROTECTION

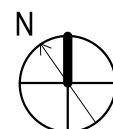
DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
ATLANTIC DESIGN AND CONSTRUCTION
MCB CAMP LEJEUNE
JACKSONVILLE, NC
LOGCOM CSP WAREHOUSE
PIPING - 1ST FLOOR PLAN - AREA D

SCALE: AS NOTED
EPROJECT NO.: 1639600
CONSTR. CONTR. NO.
N40085-20-C-0059
NAVFAC DRAWING NO.
SHEET OF
MP114

KEYPLAN

A	B	C	D
E	F	G	H

0 4'-0" 8'-0" 16'-0"
SCALE: 1/8" = 1'-0"



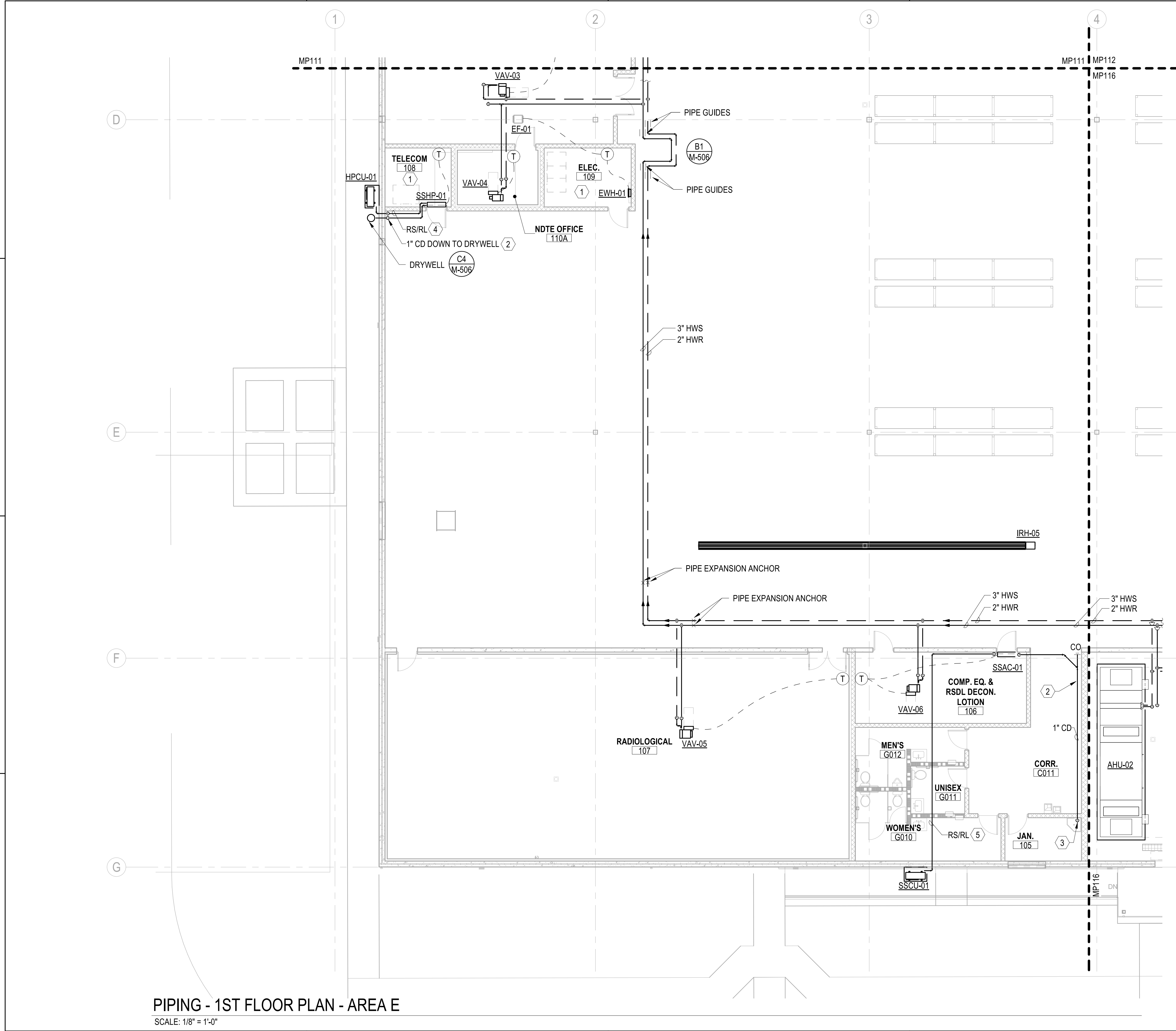
P1527 PRELIM SUBMISSION - 08/06/2021

UNCLASSIFIED

PLOTTED: 8/4/2021 12:20:57 PM

FILE NAME: BIM 360/HF PACKAGE 3P1527 LOG COM CSP-163960-M.dwt

PIPING - 1ST FLOOR PLAN - AREA E
SCALE: 1/8" = 1'-0"



- ### GENERAL NOTES
- 1 ALL HWS & HWR BRANCHES ARE 3/4" UNLESS NOTED OTHERWISE.
 - 2 PROVIDE AN AIR VENT AT THE HIGH POINT OF EACH DROP IN THE HEATING AND CHILLED WATER PIPING SYSTEMS. ALL PIPING SHALL GRADE TO THE LOW POINTS. PROVIDE HOSE END DRAIN VALVES AT THE BOTTOM OF ALL RISERS AND LOW POINTS.
 - 3 INSTALL PIPING SO THAT ALL VALVES, STRAINERS, UNIONS, TRAPS, FLANGES AND OTHER APPURTENANCES REQUIRING ACCESS ARE EASILY ACCESSIBLE. ALL VALVES SHALL BE INSTALLED SO THAT THE REMAINS IN SERVICE WHEN EQUIPMENT OR PIPING ON EQUIPMENT SIDE OF VALVE IS REMOVED. ALL BALANCING VALVES AND BUTTERFLY VALVES SHALL BE PROVIDED WITH POSITION INDICATORS AND MAXIMUM ADJUSTABLE STOPS (AKA "MEMORY STOPS"). ALL VALVES (EXCEPT CONTROL VALVES) AND STRAINERS SHALL BE FULL SIZE OF PIPE BEFORE REDUCING SIZE TO MAKE CONNECTIONS TO EQUIPMENT AND CONTROLS.
 - 4 INSTALL PIPING WITHOUT FORCING OR SPRINGING.
 - 5 PLAN DRAWINGS ARE DIAGRAMMATIC IN NATURE AND NOT ILLUSTRATE ALL SPECIFIC DUCT TAKE-OFF CONFIGURATIONS, TAPS, ETC. REFER TO PROJECT SPECIFICATIONS AND DETAILS FOR SPECIFIC REQUIREMENTS.

- ### KEYNOTES
- 1 THERE SHALL NOT BE ANY EQUIPMENT (PIPING, DUCTWORK, MACHINERY, ETC.) THAT DOES NOT SERVE THIS SPACE INSTALLED ABOVE OR WITHIN THIS SPACE, NOR SHALL ANY EQUIPMENT NOT SERVING THIS SPACE PASS THROUGH OR ENTER THIS SPACE.
 - 2 ROUTE ALL CONDENSATE PIPING AT 1/8" PER 1'-0" SLOPE TOWARD POINT OF TERMINATION. PROVIDE CLEANOUT AT ALL CHANGES OF DIRECTION GREATER THAN 45°.
 - 3 1" CD DOWN TO MOP RECEPTOR. TERMINATE PIPE OPEN ENDED APPROXIMATELY 3" ABOVE RECEPTOR.
 - 4 ROUTE PAIR OF REFRIGERANT LINES FROM INDOOR HEAT PUMP TO ASSOCIATED OUTDOOR CONDENSING UNIT. SIZE PER MANUFACTURER'S RECOMMENDATIONS.
 - 5 ROUTE PAIR OF REFRIGERANT LINES FROM INDOOR ACU TO ASSOCIATED OUTDOOR CONDENSING UNIT. SIZE PER MANUFACTURER'S RECOMMENDATIONS.

KEYPLAN

A	B	C	D
E	F	G	H

0 4'-0" 8'-0" 16'-0"

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

N

APPR	DATE	DESCRIPTION	SYM

PRELIMINARY
NOT FOR CONSTRUCTION

SEAL

Michael Baker INTERNATIONAL
100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108
APPROVED

FOR COMMANDER NAVFAC

ACTIVITY
MARINE CORPS BASE
CAMP LEJEUNE

SATISFACTORY TO DATE: DD/MM/YY

DES EMB | DRW AJK | CHK DWH

PM

BRANCH HEAD

DESIGN DIRECTOR

FIRE PROTECTION

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
ATLANTIC DESIGN AND CONSTRUCTION
NAVFAC CAMP LEJEUNE
JACKSONVILLE, NC

LOGCOM CSP WAREHOUSE

PIPING - 1ST FLOOR PLAN - AREA E

MP115

P1527 PREINAL SUBMISSION - 08/06/2021

PLOTTED: 8/4/2021 12:21:03 PM

FILE NAME: BIM 360/HF PACKAGE 3P1527 LOG COM CSP-163960-M.dwg

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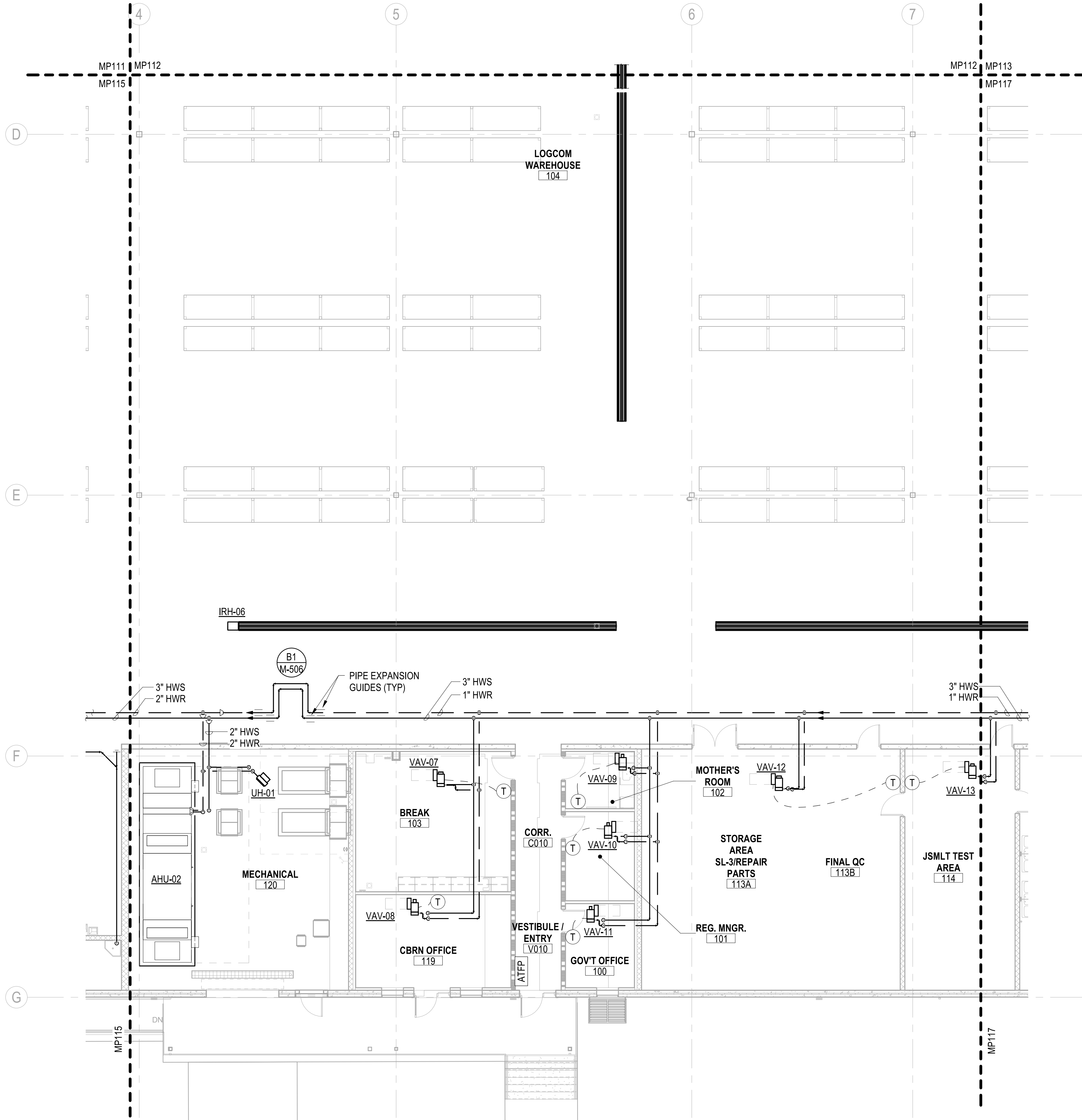
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PIPING - 1ST FLOOR PLAN - AREA F

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

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UNCLASSIFIED

GENERAL NOTES

- 1 ALL HWS & HWR BRANCHES ARE 3/4" UNLESS NOTED OTHERWISE.
- 2 PROVIDE AN AIR VENT AT THE HIGH POINT OF EACH DROP IN THE HEATING AND CHILLED WATER PIPING SYSTEMS. ALL PIPING SHALL GRADE TO THE LOW POINTS. PROVIDE HOSE END DRAIN VALVES AT THE BOTTOM OF ALL RISERS AND LOW POINTS.
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- 5 PLAN DRAWINGS ARE DIAGRAMMATIC IN NATURE AND NOT ILLUSTRATE ALL SPECIFIC DUCT TAKE-OFF CONFIGURATIONS, TAPS, ETC. REFER TO PROJECT SPECIFICATIONS AND DETAILS FOR SPECIFIC REQUIREMENTS.

KEYNOTES



PRELIMINARY
NOT FOR CONSTRUCTION



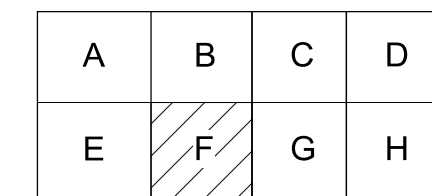
Michael Baker
INTERNATIONAL
100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108
APPROVED

FOR COMMANDER NAVFAC
ACTIVITY
MARINE CORPS BASE
CAMP LEJEUNE
SATISFACTORY TO DATE: DD/MM/YY
DES EMB DRW AJK CHK DWH
PM
BRANCH HEAD
DESIGN DIRECTOR
FIRE PROTECTION

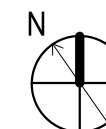
DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
ATLANTIC DESIGN AND CONSTRUCTION
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND ATLANTIC
NORFOLK, VA
MCB CAMP LEJEUNE
JACKSONVILLE, NC
LOGCOM CSP WAREHOUSE
PIPING - 1ST FLOOR PLAN - AREA F

SCALE: AS NOTED
EPROJCT NO.: 1639600
CONSTR. CONTR. NO.
N40085-20-C-0059
NAVFAC DRAWING NO.
SHEET OF
MP116

KEYPLAN



0 4' - 0" 8' - 0" 16' - 0"
SCALE: 1/8" = 1' - 0"



P1527 PREFINAL SUBMISSION - 08/06/2021

UNCLASSIFIED

FILE NAME: BIM 360/HF PACKAGE 3P1527 LOG COM CSP-1639600-M.dwg
PLOTTED: 8/4/2021 12:21:09 PM

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
ATLANTIC DESIGN AND CONSTRUCTION
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND ATLANTIC
NORFOLK, VA
MCB CAMP LEJEUNE
JACKSONVILLE, NC
LOGCOM CSP WAREHOUSE
PIPING - 1ST FLOOR PLAN - AREA G

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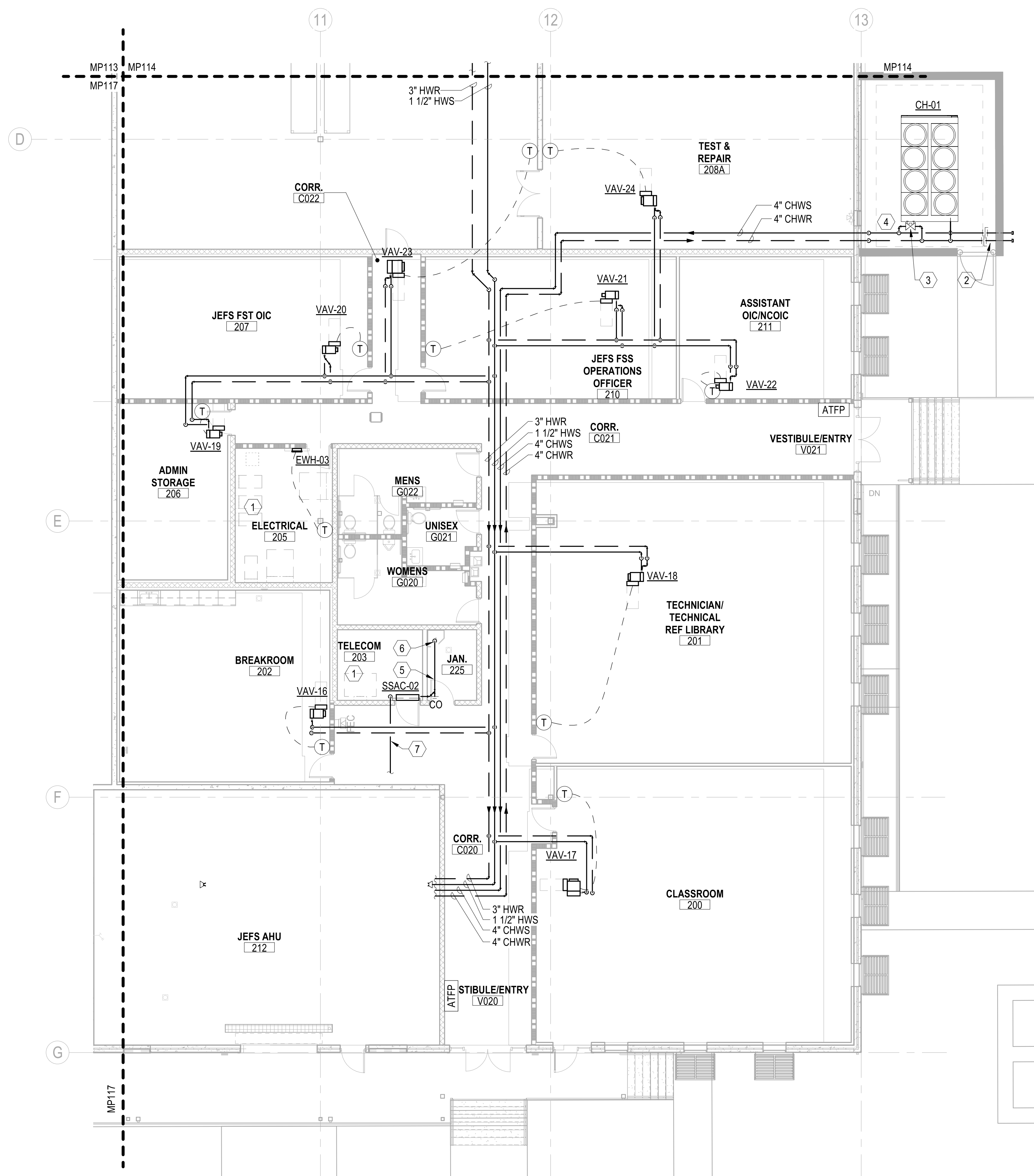
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UNCLASSIFIED



PIPING - 1ST FLOOR PLAN - AREA H

GENERAL NOTES

- | | |
|---|---|
| 1 | ALL HWS & HWR BRANCHES ARE 3/4" UNLESS NOTED OTHERWISE. |
| 2 | PROVIDE AN AIR VENT AT THE HIGH POINT OF EACH DROP IN THE HEATING AND CHILLED WATER PIPING SYSTEMS. ALL PIPING SHALL GRADE TO THE LOW POINTS. PROVIDE HOSE END DRAIN VALVES AT THE BOTTOM OF ALL RISERS AND LOW POINTS. |
| 3 | INSTALL PIPING SO THAT ALL VALVES, STRAINERS, UNIONS, TRAPS, FLANGES AND OTHER APPURTENANCES REQUIRING ACCESS ARE EASILY ACCESSIBLE. ALL VALVES SHALL BE INSTALLED SO THAT THE REMAINS IN SERVICE WHEN EQUIPMENT OR PIPING ON EQUIPMENT SIDE OF VALVE IS REMOVED. ALL BALANCING VALVES AND BUTTERFLY VALVES SHALL BE PROVIDED WITH POSITION INDICATORS AND MAXIMUM ADJUSTABLE STOPS (AKA "MEMORY STOPS"). ALL VALVES (EXCEPT CONTROL VALVES) AND STRAINERS SHALL BE FULL SIZE OF PIPE BEFORE REDUCING SIZE TO MAKE CONNECTIONS TO EQUIPMENT AND CONTROLS. |
| 4 | INSTALL PIPING WITHOUT FORCING OR SPRINGING. |
| 5 | PLAN DRAWINGS ARE DIAGRAMMATIC IN NATURE AND NOT ILLUSTRATE ALL SPECIFIC DUCT TAKE-OFF CONFIGURATIONS, TAPS, ETC. REFER TO PROJECT SPECIFICATIONS AND DETAILS FOR SPECIFIC REQUIREMENTS. |

KEYNOTES

- 1 THERE SHALL NOT BE ANY EQUIPMENT (PIPING, DUCTWORK, MACHINERY, ETC.) THAT DOES NOT SERVE THIS SPACE INSTALLED ABOVE OR WITHIN THIS SPACE, NOR SHALL ANY EQUIPMENT NOT SERVING THIS SPACE PASS THROUGH OR ENTER THIS SPACE.
- 2 VALVED BLIND FLANGES FOR TEMPORARY / EMERGENCY CHILLER CONNECTION.
- 3 4" CHILLER BYPASS / BALANCING VALVE
- 4 WRAP ALL EXTERIOR ABOVE GROUND PIPING IN HEAT TRACE TO MAINTAIN PROTECT PIPING DOWN TO 10 °F. SIZE HEAT TRACE PER SPECIFICATIONS. INSTALL AND JACKET PER MANUFACTURER'S RECOMMENDATIONS.
- 5 ROUTE ALL CONDENSATE PIPING AT 1/8" PER 1'-0" SLOPE TOWARD POINT OF TERMINATION. PROVIDE CLEANOUT AT ALL CHANGES OF DIRECTION GREATER THAN 45°.
- 6 1" CD DOWN TO MOP RECEPTOR. TERMINATE PIPE OPEN ENDED APPROXIMATELY 3" ABOVE RECEPTOR.
- 7 ROUTE PAIR OF REFRIGERANT LINES FROM INDOOR ACU TO ASSOCIATED OUTDOOR CONDENSING UNIT. SIZE PER MANUFACTURER'S RECOMMENDATIONS.



PRELIMINARY
NOT FOR CONSTRUCTION



Michael Baker
I N T E R N A T I O N A L
100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108 A/E INR
APPROVED

FOR COMMANDER NAVFAC		
ACTIVITY		
MARINE CORPS BASE CAMP LEJEUNE		
SATISFACTORY TO DATE DD/MM/YY		
DES EMB	DRW AJK	CHK DWH
PM		
BRANCH HEAD		
DESIGN DIRECTOR		
FIRE PROTECTION		

DEPARTMENT OF THE NAVY	NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND ATLANTIC	NORFOLK, VA
ATLANTIC DESIGN AND CONSTRUCTION	JACKSONVILLE, NC
MCB CAMP LEJEUNE	LOGCOM CSP WAREHOUSE
PIPING - 1ST FLOOR PLAN - AREA H	

SCALE:	AS NOTED
EPROJECT NO.:	1639600
CONSTR. CONTR. NO.	N40085-20-C-0059
NAVFAC DRAWING NO.	
SHEET	OF
MP118	

21527 PREFINAL SUBMISSION - 08/06/2021

INCI ASSOCIATED

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8/06/20

FILE NAME: BIM 360/HF PACKAGE 3P1527 LOG COM CSP-1639600-M.dwg
PLOTTED: 8/4/2021 12:18:12 PM

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
ATLANTIC DESIGN AND CONSTRUCTION
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND ATLANTIC
NORFOLK, VA
MOB CAMP LEJEUNE
JACKSONVILLE, NC
LOGCOM CSP WAREHOUSE
MECHANICAL - SECTIONS

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UNCLASSIFIED

SECTION - JEFS AHU

SCALE: 1/4" = 1'-0"

M-401

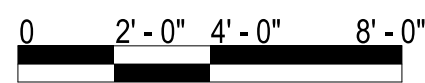
B1

SECTION - JEFS BOILER ROOM

SCALE: 1/4" = 1'-0"

M-401

B3



SCALE: 1/4" = 1'-0"

SCALE: AS NOTED
PROJECT NO.: 1639600
CONSTR. CONTR. NO.: N40085-20-C-0059
NAVFAC DRAWING NO.:

SHEET OF

M-301

P1527 PRELIM SUBMISSION - 08/06/2021

FOR COMMANDER NAVFAC
ACTIVITY
MARINE CORPS BASE
CAMP LEJEUNE
SATISFACTORY TO DATE: DD/MM/YY
DES EMB DRW AJK CHK DWH
PM
BRANCH HEAD
DESIGN DIRECTOR
FIRE PROTECTION

Michael Baker
INTERNATIONAL
100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108
AVE INFO
APPROVED

RQ Jordan
COMPANY
- A JOINT VENTURE -

PRELIMINARY
NOT FOR CONSTRUCTION



UNCLASSIFIED

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SYN DESCRIPTION
DATE
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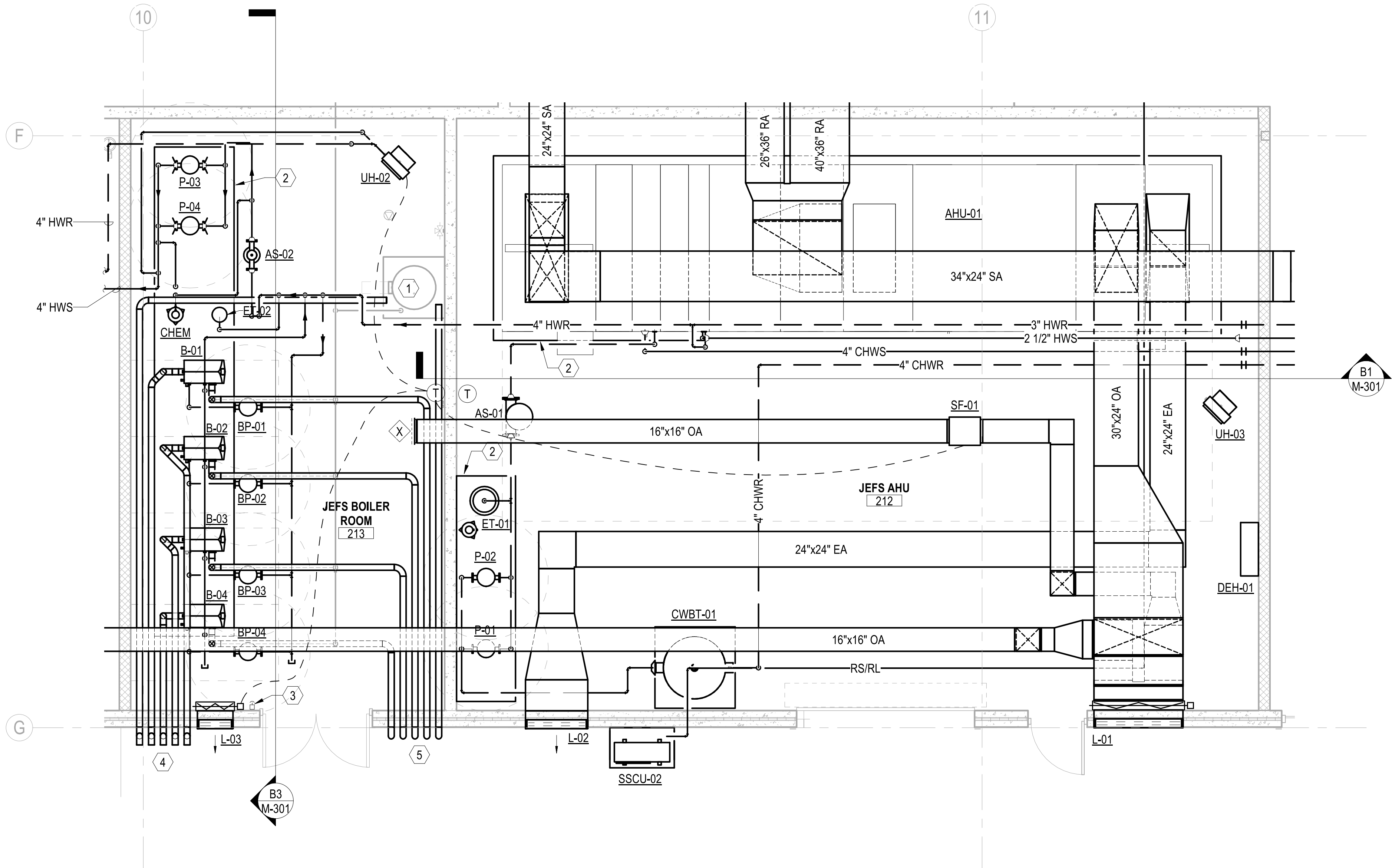
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MECHANICAL - ENLARGED JEFS AHU 212 AND JEFS BOILER ROOM 213

SCALE: 1/4" = 1'-0"

MH111

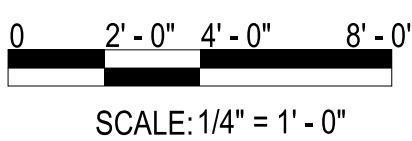
B1

GENERAL NOTES

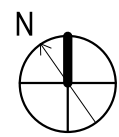
- 1 PROVIDE MANUAL VOLUME DAMPERS IN ALL RUN-OUTS TO DIFFUSERS, AT ALL BRANCH TAKE-OFFS FROM MAIN SUPPLY DUCT, AND IN ALL OTHER AREAS AS REQUIRED TO PROVIDE PROPER SYSTEM BALANCING.
- 1 ALL HWS & HWR BRANCHES ARE 3/4" UNLESS NOTED OTHERWISE.
- 2 ALL SUPPLY AIR DUCT RUN-OUTS TO DIFFUSERS AND VAV BOXES SHALL BE SIZED TO MATCH DIFFUSER NECK SIZE OR VAV BOX INLET SIZE UNLESS OTHERWISE INDICATED.
- 2 PROVIDE AN AIR VENT AT THE HIGH POINT OF EACH DROP IN THE HEATING AND CHILLED WATER PIPING SYSTEMS. ALL PIPING SHALL GRADE TO THE LOW POINTS. PROVIDE HOSE END DRAIN VALVES AT THE BOTTOM OF ALL RISERS AND LOW POINTS.
- 3 SHEET METAL FABRICATOR MAY SUBSTITUTE EQUIVALENT ROUND OR FLAT OVAL DUCTWORK FOR RECTANGULAR SIZES INDICATED. DUCTWORK BETWEEN AHU AND VAV BOXES SHALL BE SIZED TO 0.2" STATIC PRESSURE LOSS PER 100' OF DUCT RUN, DUCTWORK DOWNSTREAM OF VAV BOXES, RETURN, EXHAUST AND TRANSFER AIR DUCTS SHALL BE SIZED TO 0.05"/100' OF DUCT RUN. ALL REVISIONS MUST BE COORDINATED WITH ALL OTHER TRADES AND ILLUSTRATED IN DUCTWORK SHOP DRAWINGS FOR APPROVAL.
- 3 INSTALL PIPING SO THAT ALL VALVES, STRAINERS, UNIONS, TRAPS, FLANGES AND OTHER APPURTENANCES REQUIRING ACCESS ARE EASILY ACCESSIBLE. ALL VALVES SHALL BE INSTALLED SO THAT THE REMAINS IN SERVICE WHEN EQUIPMENT OR PIPING ON EQUIPMENT SIDE OF VALVE IS REMOVED. ALL BALANCING VALVES AND BUTTERFLY VALVES SHALL BE PROVIDED WITH POSITION INDICATORS AND MAXIMUM ADJUSTABLE STOPS (AKA "MEMORY STOPS"). ALL VALVES (EXCEPT CONTROL VALVES) AND STRAINERS SHALL BE FULL SIZE OF PIPE BEFORE REDUCING SIZE TO MAKE CONNECTIONS TO EQUIPMENT AND CONTROLS.
- 4 PLAN DRAWINGS ARE DIAGRAMMATIC IN NATURE AND NOT ILLUSTRATE ALL SPECIFIC DUCT TAKE-OFF CONFIGURATIONS, TAPS, ETC. REFER TO PROJECT SPECIFICATIONS AND DETAILS FOR SPECIFIC REQUIREMENTS.
- 5 ALL EQUIPMENT SHALL BE INSTALLED WITH MANUFACTURER'S REQUIRED ACCESS SPACE BETWEEN UNIT AND FULL HEIGHT WALLS AND OTHER OBSTRUCTIONS.
- 9 INSTALL PIPING WITHOUT FORCING OR SPRINGING.

KEYNOTES

- 1 PLUMBING EQUIPMENT - REFER TO PLUMBING DRAWINGS.
- 2 CONCRETE MECHANICAL EQUIPMENT PAD ON LEVEL SURFACE. EXTEND PAD 6" BEYOND THE EDGE OF THE EQUIPMENT IN ALL DIRECTIONS.
- 3 PROVIDE CSD-1 BOILER KILL SWITCH TO CUT POWER TO BOILERS - REFER TO ELECTRICAL DESIGN FOR DETAILS.
- 4 EXHAUST FLUE TERMINATION. INSTALL PER EQUIPMENT MANUFACTURER'S TERMINATION REQUIREMENTS AND RECOMMENDATIONS.
- 5 COMBUSTION AIR INLET TERMINATION. INSTALL PER EQUIPMENT MANUFACTURER'S TERMINATION REQUIREMENTS AND RECOMMENDATIONS.



SCALE: 1/4" = 1'-0"



APPR	DATE	DESCRIPTION	SYM
PRELIMINARY NOT FOR CONSTRUCTION			
SEAL			
Michael Baker INTERNATIONAL			
100 AIRSIDE DRIVE MOON TOWNSHIP, PA 15108 APPROVED			
FOR COMMANDER NAVFAC			
ACTIVITY			
MARINE CORPS BASE CAMP LEJEUNE			
SATISFACTORY TO DATE DD/MM/YY			
DES	EMB	DRW	AJK
PM	CHK	DWH	
BRANCH HEAD			
DESIGN DIRECTOR			
FIRE PROTECTION			
DEPARTMENT OF THE NAVY			
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND			
ATLANTIC DESIGN AND CONSTRUCTION			
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND ATLANTIC			
NORFOLK, VA			
MCB CAMP LEJEUNE			
JACKSONVILLE, NC			
LOGCOM CSP WAREHOUSE			
MECHANICAL - ENLARGED PLANS			
SCALE: AS NOTED			
EPROJCT NO.: 1639600			
CONSTR. CONTR. NO. N40085-20-C-0059			
NAVFAC DRAWING NO.			
SHEET OF			
M-401			

P1527 PREFINAL SUBMISSION - 08/06/2021

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UNCLASSIFIED

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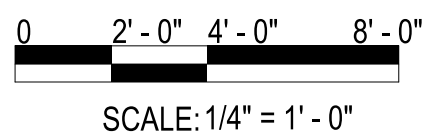
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MECHANICAL - ENLARGED MECHANICAL 120

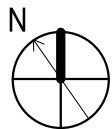
SCALE: 1/4" = 1'-0"

MH116

A1



SCALE: 1/4" = 1'-0"



GENERAL NOTES

- 1 PROVIDE MANUAL VOLUME DAMPERS IN ALL RUN-OUTS TO DIFFUSERS, AT ALL BRANCH TAKE-OFFS FROM MAIN SUPPLY DUCT, AND IN ALL OTHER AREAS AS REQUIRED TO PROVIDE PROPER SYSTEM BALANCING.
- 1 ALL HWS & HWR BRANCHES ARE 3/4" UNLESS NOTED OTHERWISE.
- 2 ALL SUPPLY AIR DUCT RUN-OUTS TO DIFFUSERS AND VAV BOXES SHALL BE SIZED TO MATCH DIFFUSER NECK SIZE OR VAV BOX INLET SIZE UNLESS OTHERWISE INDICATED.
- 2 PROVIDE AN AIR VENT AT THE HIGH POINT OF EACH DROP IN THE HEATING AND CHILLED WATER PIPING SYSTEMS. ALL PIPING SHALL GRADE TO THE LOW POINTS. PROVIDE HOSE END DRAIN VALVES AT THE BOTTOM OF ALL RISERS AND LOW POINTS.
- 3 SHEET METAL FABRICATOR MAY SUBSTITUTE EQUIVALENT ROUND OR FLAT OVAL DUCTWORK FOR RECTANGULAR SIZES INDICATED. DUCTWORK BETWEEN AHU AND VAV BOXES SHALL BE SIZED TO 0.2" STATIC PRESSURE LOSS PER 100' OF DUCT RUN, DUCTWORK DOWNSTREAM OF VAV BOXES, RETURN, EXHAUST AND TRANSFER AIR DUCTS SHALL BE SIZED TO 0.05"/100' OF DUCT RUN. ALL REVISIONS MUST BE COORDINATED WITH ALL OTHER TRADES AND ILLUSTRATED IN DUCTWORK SHOP DRAWINGS FOR APPROVAL.
- 3 INSTALL PIPING SO THAT ALL VALVES, STRAINERS, UNIONS, TRAPS, FLANGES AND OTHER APPURTENANCES REQUIRING ACCESS ARE EASILY ACCESSIBLE. ALL VALVES SHALL BE INSTALLED SO THAT THE REMAINS IN SERVICE WHEN EQUIPMENT OR PIPING ON EQUIPMENT SIDE OF VALVE IS REMOVED. ALL BALANCING VALVES AND BUTTERFLY VALVES SHALL BE PROVIDED WITH POSITION INDICATORS AND MAXIMUM ADJUSTABLE STOPS (AKA "MEMORY STOPS"). ALL VALVES (EXCEPT CONTROL VALVES) AND STRAINERS SHALL BE FULL SIZE OF PIPE BEFORE REDUCING SIZE TO MAKE CONNECTIONS TO EQUIPMENT AND CONTROLS.
- 4 PLAN DRAWINGS ARE DIAGRAMMATIC IN NATURE AND NOT ILLUSTRATE ALL SPECIFIC DUCT TAKE-OFF CONFIGURATIONS, TAPS, ETC. REFER TO PROJECT SPECIFICATIONS AND DETAILS FOR SPECIFIC REQUIREMENTS.
- 5 ALL EQUIPMENT SHALL BE INSTALLED WITH MANUFACTURER'S REQUIRED ACCESS SPACE BETWEEN UNIT AND FULL HEIGHT WALLS AND OTHER OBSTRUCTIONS.
- 9 INSTALL PIPING WITHOUT FORCING OR SPRINGING.

KEYNOTES

- 1 CONCRETE MECHANICAL EQUIPMENT PAD ON LEVEL SURFACE. EXTEND PAD 6" BEYOND THE EDGE OF THE EQUIPMENT IN ALL DIRECTIONS.
- 2 PLUMBING EQUIPMENT - REFER TO PLUMBING DRAWINGS.
- 3 OUTDOOR AIR DUCT UP TO GV-01 ON ROOF
- 4 EXHAUST AIR DUCT UP TO GV-02 ON ROOF
- 5 OUTDOOR AIR DUCT UP TO GV-03 ON ROOF
- 6 EXHAUST AIR DUCT UP TO GV-04 ON ROOF



PRELIMINARY
Not for construction



Michael Baker
INTERNATIONAL

100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108
APPROVED

FOR COMMANDER NAVFAC

ACTIVITY

MARINE CORPS BASE
CAMP LEJEUNE

SATISFACTORY TO DATE: DD/MM/YY

DES EMB DRW AJK CHK DWH

PM

BRANCH HEAD

DESIGN DIRECTOR

FIRE PROTECTION

NORFOLK, VA

JACKSONVILLE, NC

LOGCOM CSP WAREHOUSE

MECHANICAL - ENLARGED PLANS

SCALE: AS NOTED

EPROJCT NO.: 1639600

CONSTR. CONTR. NO.

N40085-20-C-0059

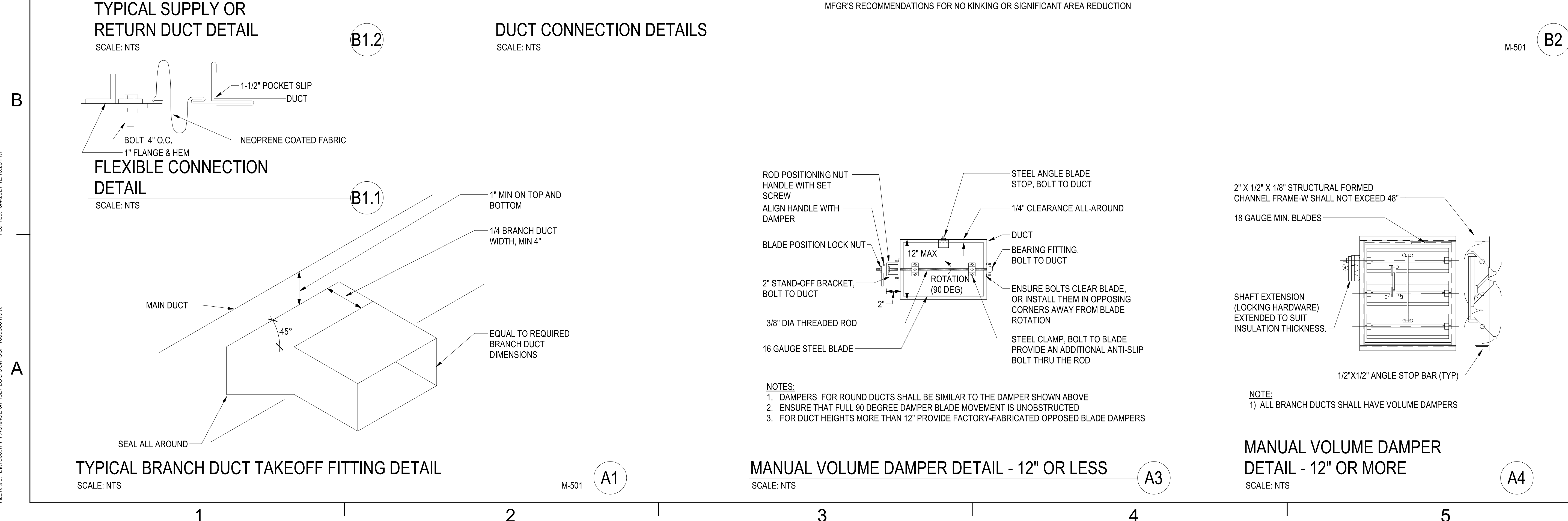
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SHEET

OF

M-402

P1527 PREINAL SUBMISSION - 08/06/2021



21527 PREFINAL SUBMISSION - 08/06/2021

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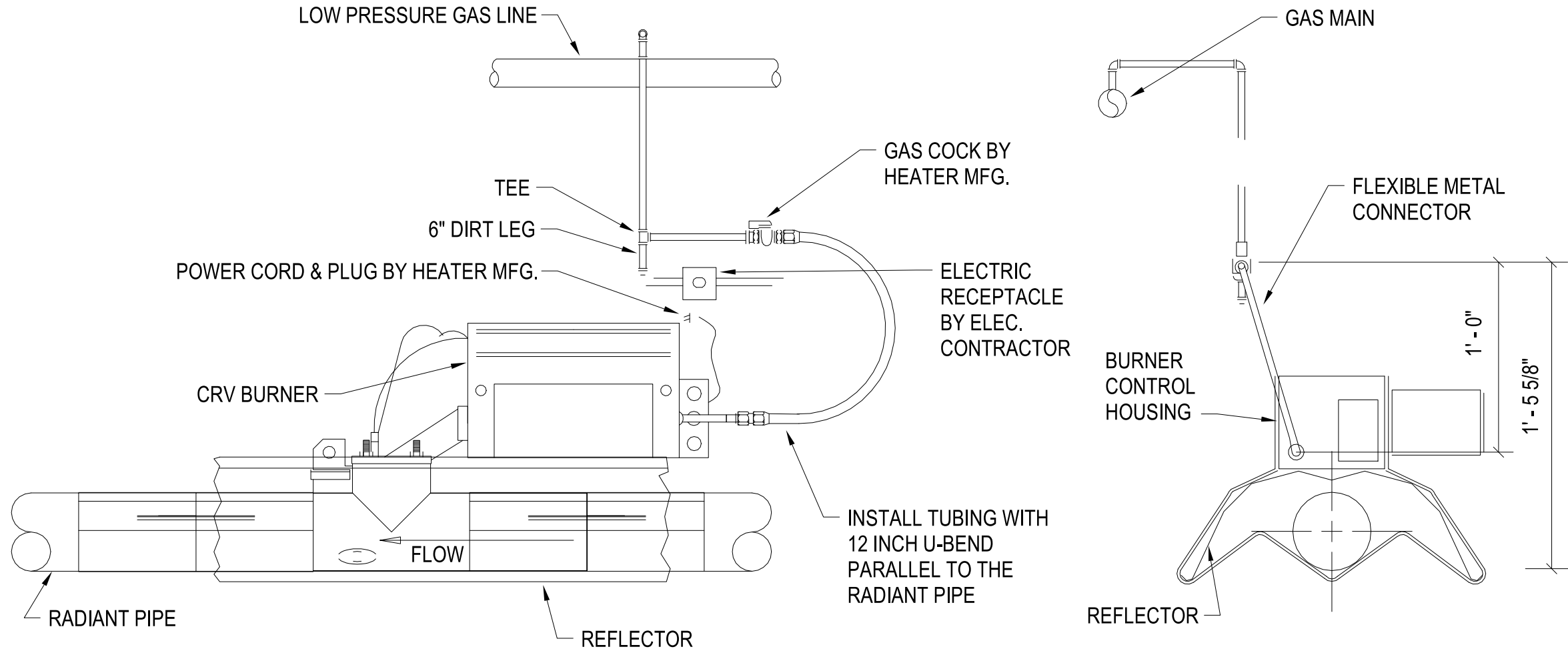
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- NOTES:
1. SHUT-OFF VALVE MUST BE PARALLEL TO ONE HALF INCH BURNER INLET PIPE.
 2. THE 2" DISPLACEMENT AS SHOWN IS FOR THE COLD CONDITION. THIS DISPLACEMENT WILL BE REDUCED AS THE SYSTEM IS FIRED.
 3. ALLOW MINIMUM OF 16-5/8" CLEARANCE FROM CENTER OF PIPE TO OBSTRUCTIONS ABOVE FOR BURNER REMOVAL

OVERHEAD RADIANT HEATING SYSTEM BURNER DETAIL

SCALE: NTS

C1

DUCT PENETRATION THRU WALL DETAIL

SCALE: NTS

C3

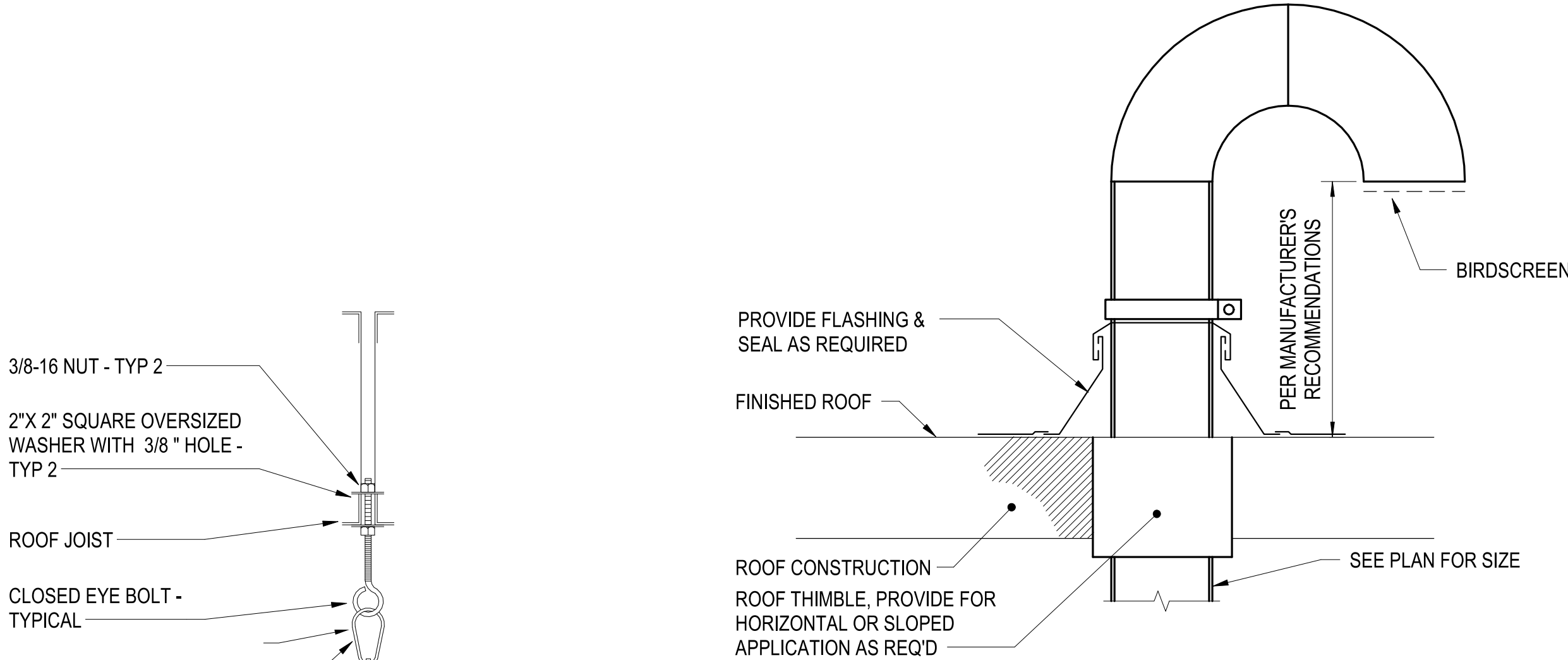
DUCTED RETURN AIR CONNECTION DETAIL

SCALE: NTS

C4

- NOTES:
1. THIS DETAIL IS NOT APPLICABLE TO FIRE OR SMOKE RATED WALLS, REFER TO LIFE SAFETY DRAWINGS FOR LOCATION OF ALL FIRE/SMOKE RATED WALLS.
 2. DUCTWORK PENETRATING FIRE RATED WALLS SHALL BE MIN 16 GAUGE THICK.
 3. WALL PENETRATIONS OF RATED WALLS NOT INDICATED AS REQUIRING DAMPERS ON THE PLANS SHALL BE PROVIDED WITH FIRESTOPPING IN ACCORDANCE WITH SPECIFICATION SECTION 07 84 00 FIRESTOPPING.
 4. STEEL COLLAR IS REQUIRED ONLY IN LOCATIONS WHERE THE WALL IS VISIBLE FROM THE SPACE, NOT REQUIRED WHERE PENETRATING WALLS ABOVE FINISHED CEILINGS.

- NOTES:
1. REFER TO GRILL, REGISTER AND DIFFUSER SCHEDULE FOR X & Y DUCT NECK SIZE CONNECTION TO RETURN GRILL/REGISTER.
 2. WHERE CFM IS SHOWN ON PLANS, DAMPER SHALL BE PLACED IN RETURN/EXHAUST DUCTWORK IN LOCATION SHOWN ON PLANS



COMBUSTION AIR INTAKE DETAIL

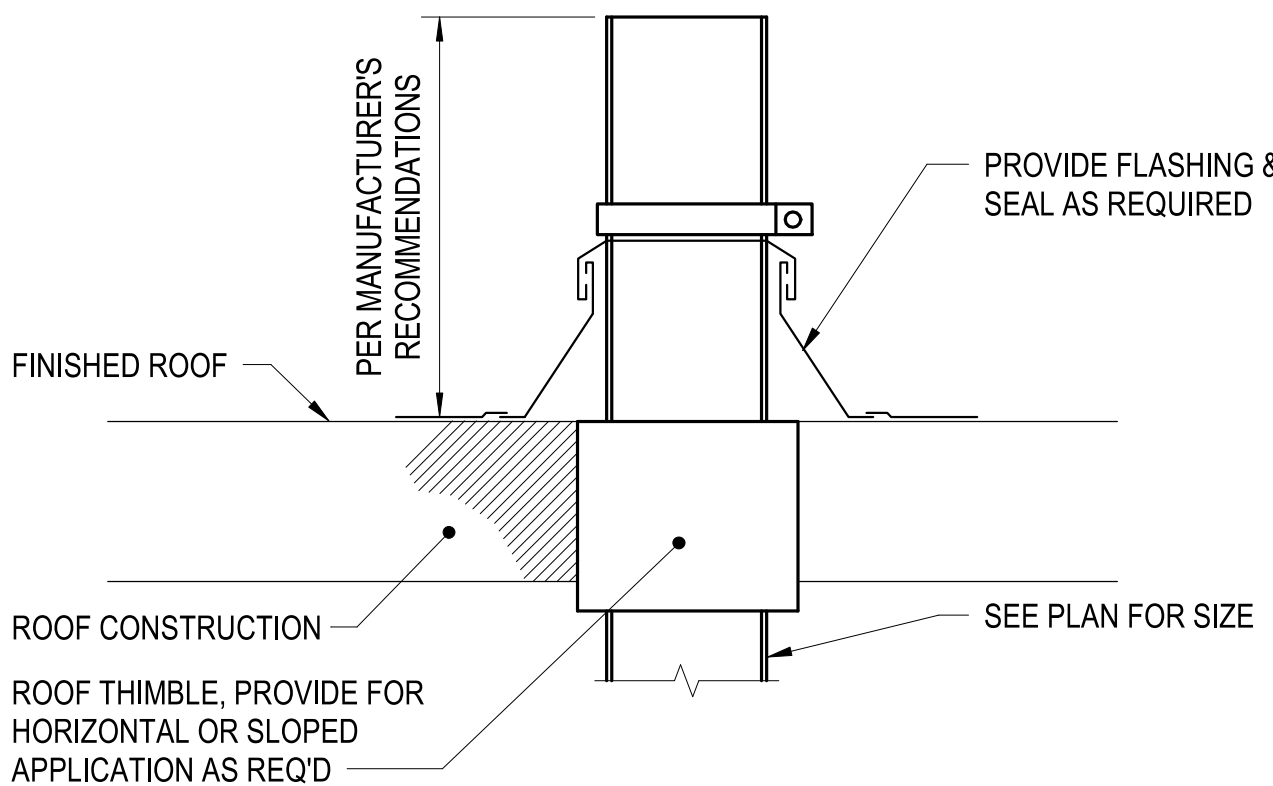
SCALE: NTS

B2

FIRE DAMPER DETAIL

SCALE: NTS

B3



VENT/ FLUE DETAIL

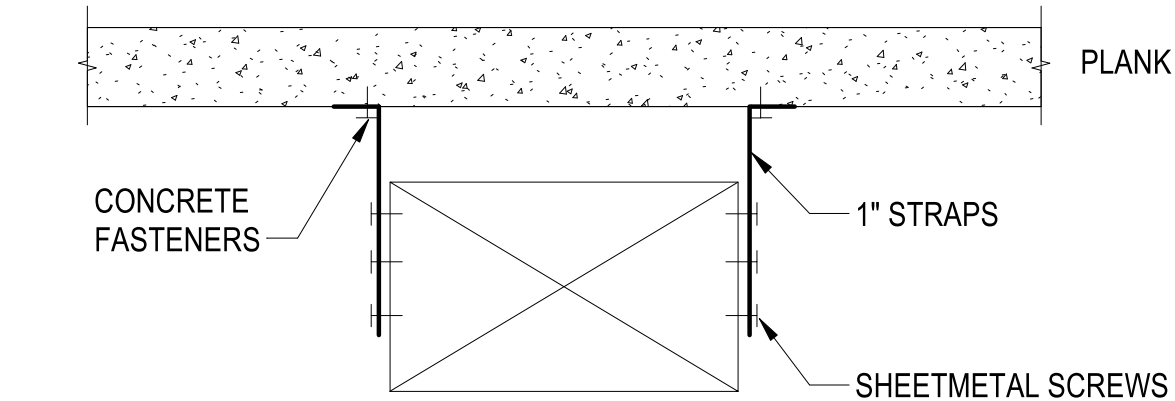
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A3

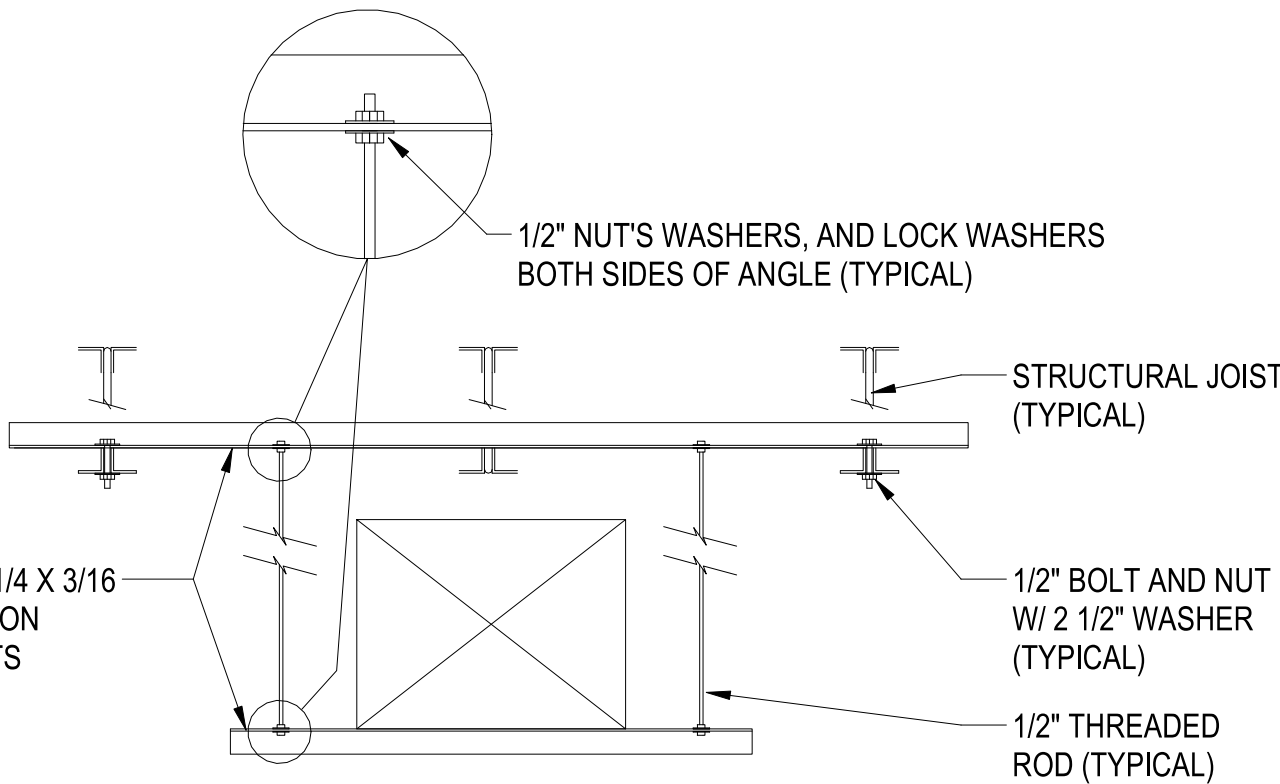
DUCT HANGER DETAIL

SCALE: NTS

A4



- NOTE
1. FOR MEDIUM PRESSURE DUCTWORK SUPPORT STRAPS MAY BE BOLTED THROUGH AT REINFORCING ANGLE BOLT



- NOTE:
- ALL DUCT SUPPORTS PER SMACNA.

OVERHEAD RADIANT HEATING SYSTEM TUBE/HANGER DETAIL

SCALE: NTS

A1

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UNCLASSIFIED

UNCLASSIFIED

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DATE	APPR
DESCRIPTION	SYM



PRELIMINARY
NOT FOR CONSTRUCTION



Michael Baker INTERNATIONAL
100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108
APPROVED

FOR COMMANDER NAVFAC
ACTIVITY
MARINE CORPS BASE CAMP LEJEUNE
SATISFACTORY TO DATE DD/MM/YY
DES EMB DRW AJK CHK DWH
PM
BRANCH HEAD
DESIGN DIRECTOR
FIRE PROTECTION

NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVFAC
ATLANTIC DESIGN AND CONSTRUCTION
NAVFAC
JACKSONVILLE, NC
LOGCOM CSP WAREHOUSE
MECHANICAL - DETAILS

SCALE:	AS NOTED
EPROJECT NO.:	1639600
CONSTR. CONTR. NO.:	N40085-20-C-0059
NAVFAC DRAWING NO.:	17250095
SHEET	241 OF

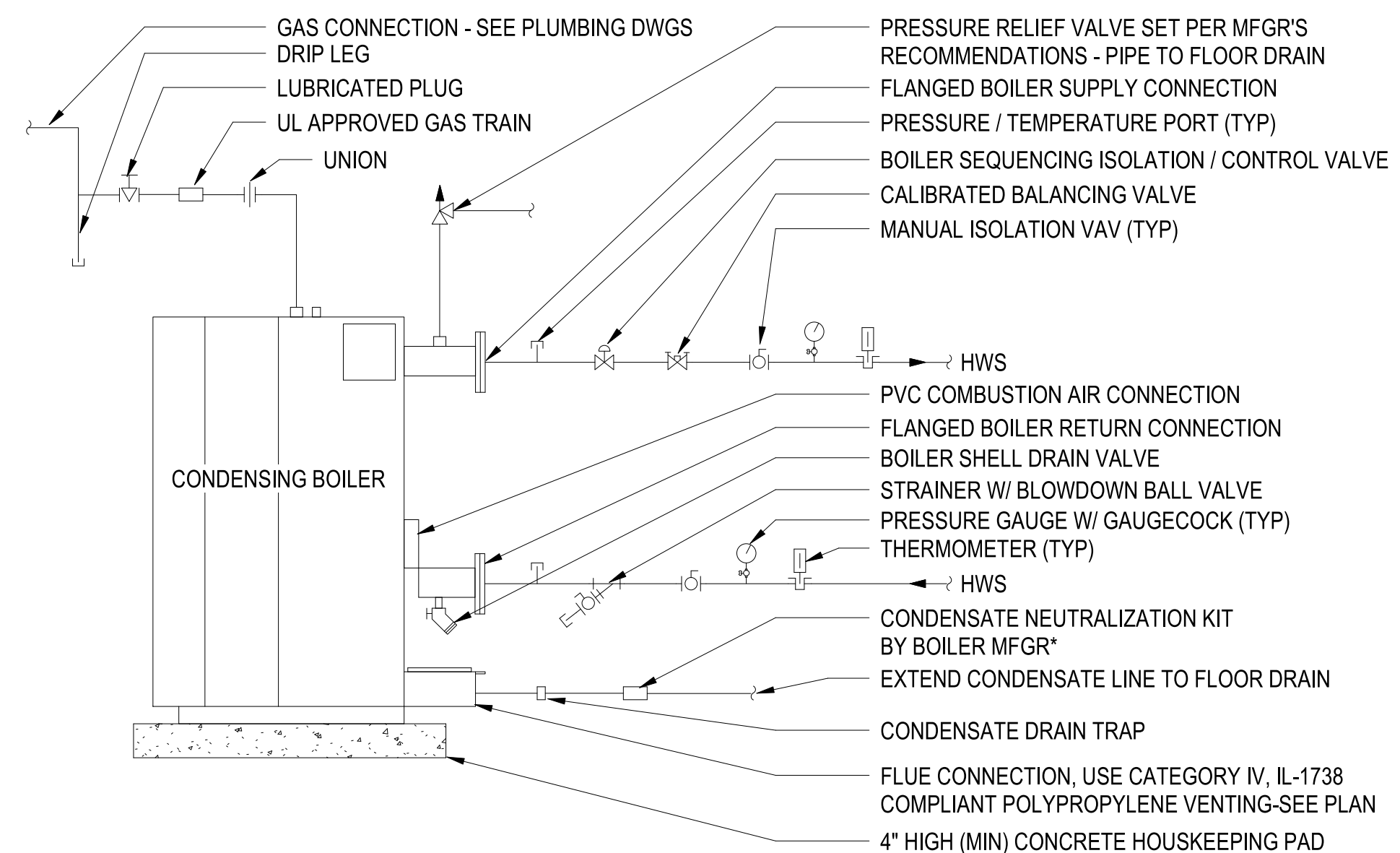
M-502

P1527 PREINAL SUBMISSION - 08/06/2021

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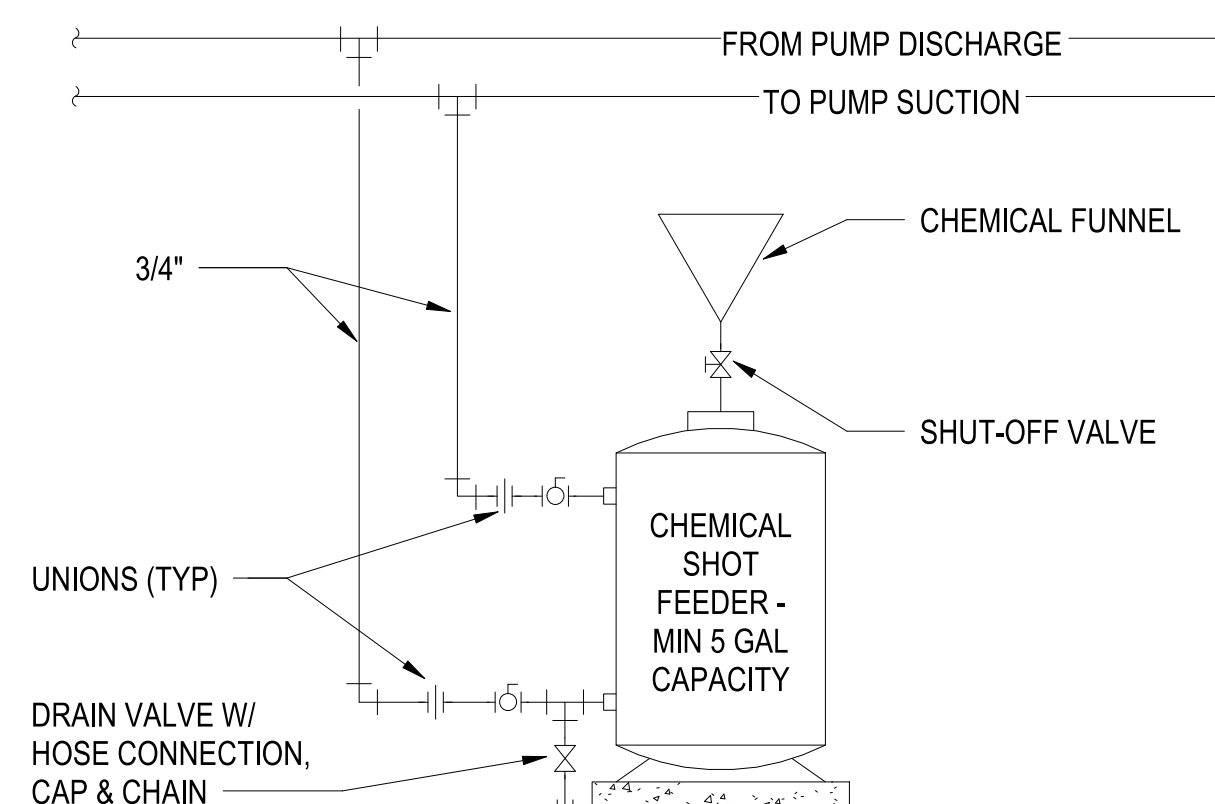




C1

C4

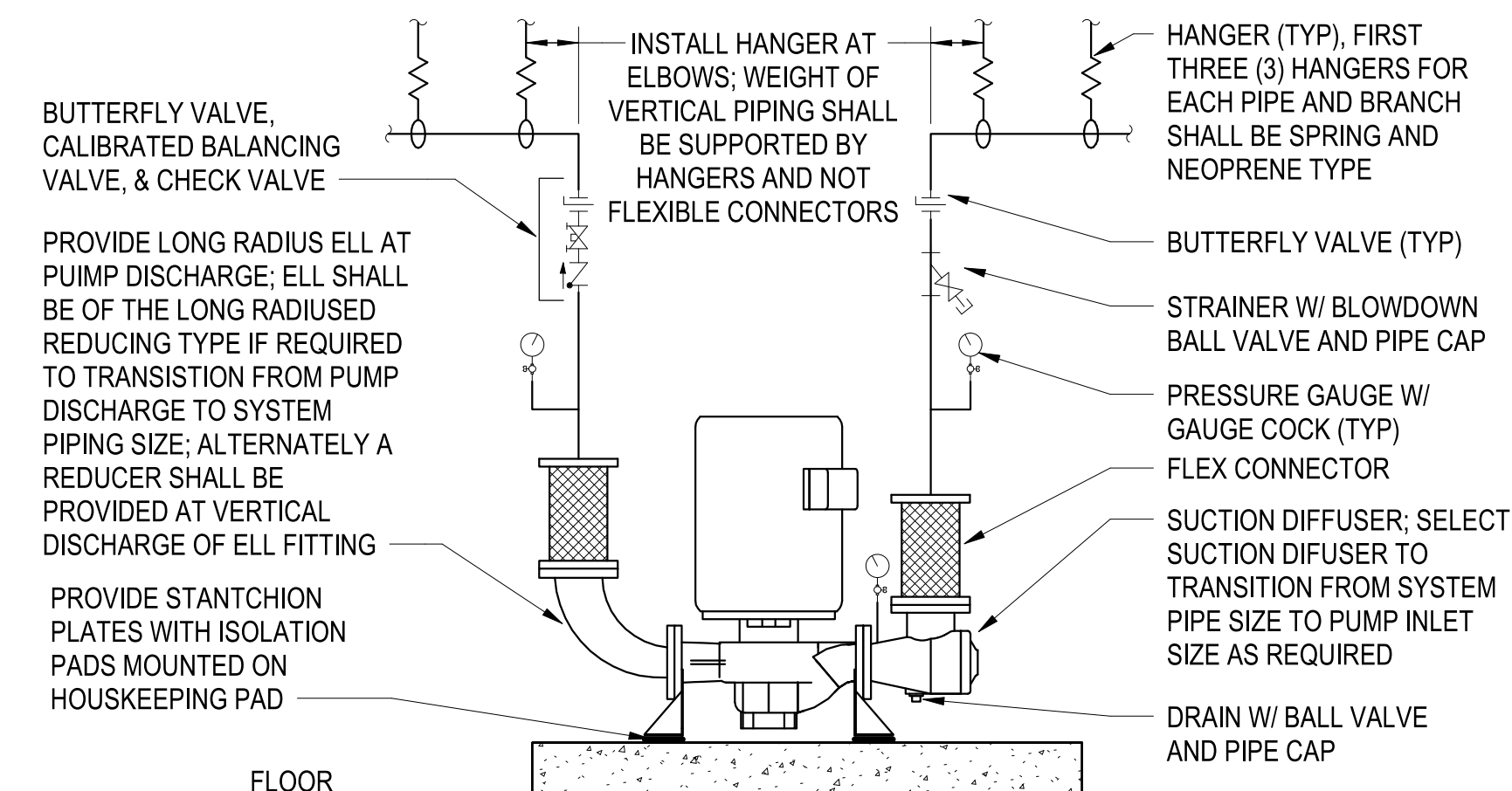
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B1

(B2)

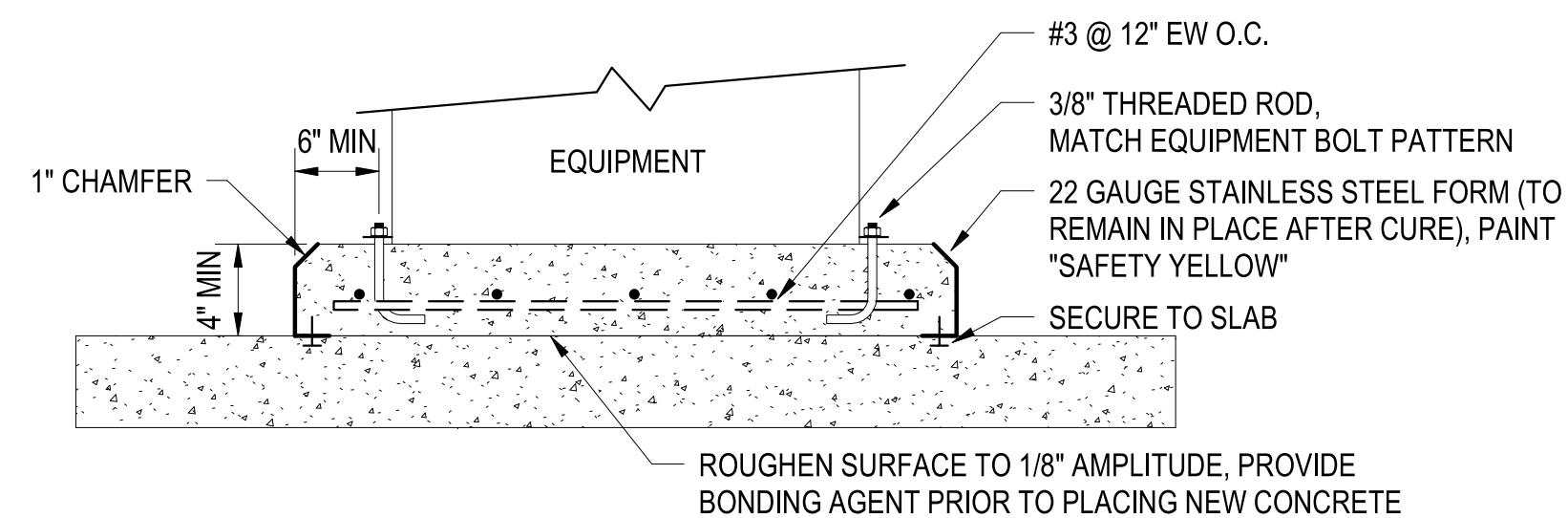
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B4

SCALE: NTS

M-702

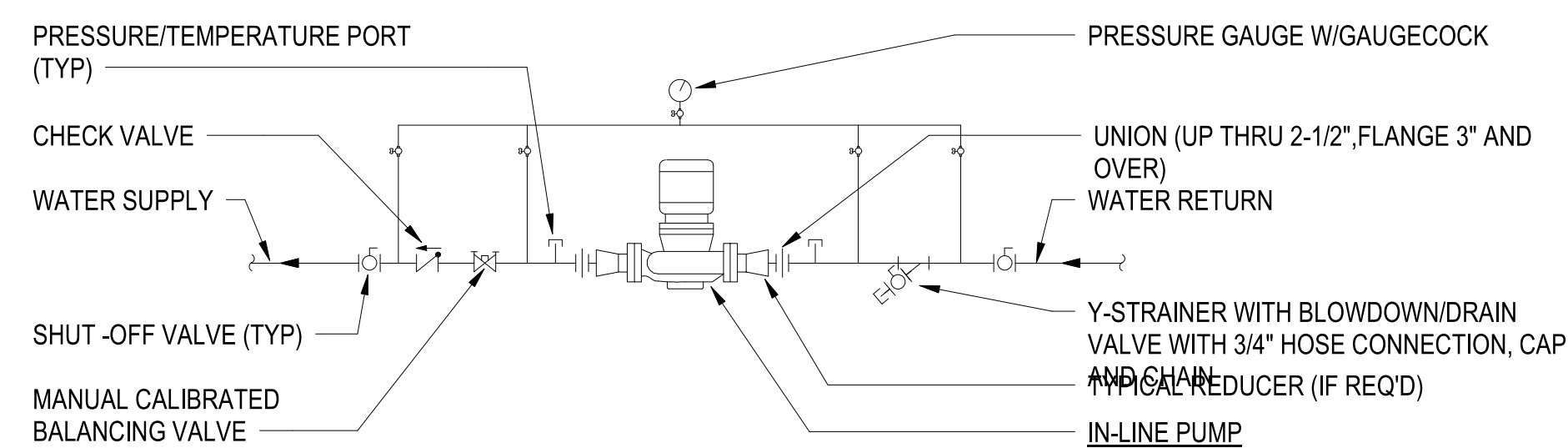


A2

A4

SCALE: NTS

M-703



NOTE:
SUPPORT PUMP FROM WALL, FLOOR, OR ROOF STEEL, DO NOT PIPE SUPPORT.

A4

SCALE: NTS

M-703

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INFRARED RADIANT HEATER (IRH) SCHEDULE											
TAG	BURNER MAX INPUT (MBH)	BURNER MIN INPUT (MBH)	RADIANT TUBE LENGTH PER BURNER (FT)	BURNER QTY	GAS INLET PRESSURE MIN/MAX (IN WC)	MOUNTING HEIGHT	ELECTRICAL DATA		BASIS OF DESIGN		NOTES
							VOLT/ PHASE/ HERTZ	AMPS RUN / START	MANUF	MODEL	
IRH-01	150	115	52	1	5 / 14	24'-6"	120 / 1 / 1	1	A.R.S.	DUH150-S50	
IRH-02	150	115	52	1	5 / 14	24'-6"	120 / 1 / 1	1	A.R.S.	DUH150-S50	
IRH-03	150	115	52	1	5 / 14	24'-6"	120 / 1 / 1	1	A.R.S.	DUH150-S50	
IRH-04	150	115	52	1	5 / 14	24'-6"	120 / 1 / 1	1	A.R.S.	DUH150-S50	
IRH-05	150	115	52	1	5 / 14	24'-6"	120 / 1 / 1	1	A.R.S.	DUH150-S50	
IRH-06	150	115	52	1	5 / 14	24'-6"	120 / 1 / 1	1	A.R.S.	DUH150-S50	
IRH-07	150	115	52	1	5 / 14	24'-6"	120 / 1 / 1	1	A.R.S.	DUH150-S50	
IRH-08	150	115	52	1	5 / 14	24'-6"	120 / 1 / 1	1	A.R.S.	DUH150-S50	
IRH-09	205	160	72	1	5 / 14	27'-0"	120 / 1 / 1	1	A.R.S.	DUH205-S70	
IRH-10	205	160	72	1	5 / 14	27'-0"	120 / 1 / 1	1	A.R.S.	DUH205-S70	
NOTES: 1. PROVIDE HEAT SHIELDS WHERE RADIANT TUBES PASS OVER ADJACENT ITEMS AS REQUIRED. 2. PROVIDE WITH FULLY AUTOMATIC 4-TRY DIRECT SPARK IGNITION CONTROL, 100% SHUT OFF. 3. PROVIDE THERMOSTAT, VENT PIPE, ROOF TERMINATION KIT AND BURNER / BLOWER ASSEMBLY.											
8/4/2021 10:43											

HYDRONIC UNIT HEATER (UH) / SCHEDULE												
TAG	SPACE SERVED	AIRFLOW (CFM)	GPM	EWT/ LWT (°F)	MBH	MAX WPD (FT H2O)	ELECTRICAL DATA			BASIS OF DESIGN		NOTES
							FAN MOTOR HP OR (W)	AMPS	VOLT/ PHASE/ HERTZ	MANUF.	MODEL	
UH-01	120 MECHANICAL	500	0.7	140 / 110	9.5	0.9	(16)	0.8	115 / 1 / 60	STERLING	HS-118A	1
UH-02	213 JEFS BOILER ROOM	500	0.7	140 / 110	9.5	0.9	(16)	0.8	115 / 1 / 60	STERLING	HS-118A	1
UH-03	212 JEFS AHU	500	0.7	140 / 110	9.5	0.9	(16)	0.8	115 / 1 / 60	STERLING	HS-118A	1
UH-04	124 WHSE MECH	500	0.7	140 / 110	9.5	0.9	(16)	0.8	115 / 1 / 60	STERLING	HS-118A	1
			2.8									
NOTES: 1. PROVIDE WITH LOCAL DISCONNECT, OVERCURRENT PROTECTION, AND STARTER. 2. UNIT TO BE CONTROLLED BY DDC SYSTEM THERMOSTAT - REFER TO CONTROLS DRAWINGS.												
8/4/2021 10:43												

ELECTRIC WALL (EWH) & UNIT HEATER (EUH) SCHEDULE									
TAG	AREA (ROOM) SERVED	AIR FLOW (CFM)	HEATER DATA			WEIGHT (LBS)	BASIS OF DESIGN		NOTES
			KW	VOLTS/ PHASE/ HERTZ	AMPS		MANUF	MODEL	
EWH-01	109 ELEC	80	1.5	120 / 1 / 60	12.9	10	INDEECO	HLA12	1
EWH-02	121 ELEC	80	1.5	120 / 1 / 60	12.9	10	INDEECO	HLA12	1
EWH-03	205 ELECTRICAL	80	1.5	120 / 1 / 60	12.9	10	INDEECO	HLA12	1
EUH-01	116 ELECTRICAL	350	3.3	208 / 1 / 60	16.2	25	INDEECO	ULIR	1
EUH-02	122 FIRE RISER	350	3.3	208 / 1 / 60	16.2	25	INDEECO	ULIR	1
EUH-03	123 ELEC	350	3.3	208 / 1 / 60	16.2	25	INDEECO	ULIR	1
NOTES : 1. UNIT SHALL BE CONTROLLED BY BUILDING DDC SYSTEM THERMOSTAT; PROVIDE WITH DISCONNECT.									
8/4/2021 10:43									

AIR CURTAIN (AC) SCHEDULE																					
TAG	AREA SERVED	LENGTH	NET WEIGHT (LB)	MAX CFM @ NOZZLE	MAX FPM @ NOZZLE	dBa @ 10' FROM NOZZLE	HEATING COIL DATA								MOTOR DATA			BASIS OF DESIGN		NOTES	
							HTG AIRFLOW (CFM)	MBH	GPM	COIL ROWS	HW TEMP (°F)		MAX. WPD (FT H2O)	EAT (°F)	LAT (°F)	VOLT/ PHASE/ HERTZ	HP	AMP EA.	MANUF		MODEL
											EWT	LWT									
AC-01	104.1 SHIPPING / RECEIVING 2 DOCKS	123.2	410	9668	4218	63	7614	244.9	19.4	2	140	114.4	3.9	60	89.5	480 / 3 / 60	3 @ 3/4	1.6	POWERED AIRE, INC.	THS-3-120HW	
AC-02	104.1 SHIPPING / RECEIVING 2 DOCKS	123.2	410	9668	4218	63	7614	244.9	19.4	2	140	114.4	3.9	60	89.5	480 / 3 / 60	3 @ 3/4	1.6	POWERED AIRE, INC.	THS-3-120HW	
AC-03	104.3 ISSUE / RETURN AREA A	123.2	410	9668	4218	63	7614	244.9	19.4	2	140	114.4	3.9	60	89.5	480 / 3 / 60	3 @ 3/4	1.6	POWERED AIRE, INC.	THS-3-120HW	
AC-04	209 SHIPPING / RECEIVING / WATER TESTING	123.2	410	9668	4218	63	7614	244.9	19.4	2	140	114.4	3.9	60	89.5	480 / 3 / 60	3 @ 3/4	1.6	POWERED AIRE, INC.	THS-3-120HW	
									77.6												
NOTES: 1. SWITCH TO BE MOUNTED SUCH THAT UNIT OPERATES WHENEVER DOOR IS OPENED.																					
2. SUPPLY COMPLETE WITH WATERTIGHT JUNCTION BOX MOUNTED ON BOTTOM CENTER OF MOTOR ASSEMBLY.																					
3. PROVIDE WITH MANUAL MOTOR STARTER AND DISCONNECT.																					
8/4/2021 10:43																					

VARIABLE AIR VOLUME (VAV) BOX SCHEDULE																
TAG	SPACE SERVED	COOLING CFM		INLET DUCT SIZE (DIA)	REHEAT COIL DATA								BASIS OF DESIGN		NOTES	
					HTG AIRFLOW (CFM)	MBH	GPM	COIL ROWS	HW TEMP (°F)		MAX. WPD (FT H2O)	LAT (°F)	MANUF	MODEL		
		MAX	MIN						EWT	LWT						
VAV-01	112 ESAPI OFFICE	210	65	5	65	2.5	0.2	1	140	110	5.00	90.00	TITUS	DESV	1 - 5	
VAV-02	111 ESAPI ROOM	490	150	7	150	5.7	0.4	1	140	110	5.00	90.00	TITUS	DESV	1 - 5	
VAV-03	110 NDTE / STORAGE	800	240	9	240	9.1	0.6	1	140	110	5.00	90.00	TITUS	DESV	1 - 5	
VAV-04	110A NDTE STORAGE, 108 TELECOM	200	60	5	60	2.3	0.2	1	140	110	5.00	90.00	TITUS	DESV	1 - 5	
VAV-05	107 RADIOLOGICAL	1,300	390	12	390	14.7	1.0	1	140	110	5.00	90.00	TITUS	DESV	1 - 5	
VAV-06	106 COMP EQ & RSDL	860	260	9	260	9.8	0.7	1	140	110	5.00	90.00	TITUS	DESV	1 - 5	
VAV-07	103 BREAK	700	210	8	210	7.9	0.5	1	140	110	5.00	90.00	TITUS	DESV	1 - 5	
VAV-08	119 CBRN OFFICE	260	80	5	80	3.0	0.2	1	140	110	5.00	90.00	TITUS	DESV	1 - 5	
VAV-09	102 MOTHER'S ROOM	150	50	4	50	1.9	0.1	1	140	110	5.00	90.00	TITUS	DESV	1 - 5	
VAV-10	101 REG MGR	150	50	4	50	1.9	0.1	1	140	110	5.00	90.00	TITUS	DESV	1 - 5	
VAV-11	100 GOVT OFFICE	120	40	4	40	1.5	0.1	1	140	110	5.00	90.00	TITUS	DESV	1 - 5	
VAV-12	113A STORAGE AREA SL-3 / REPAIR PARTS, 113B FINAL QC	620	190	8	190	7.2	0.5	1	140	110	5.00	90.00	TITUS	DESV	1 - 5	
VAV-13	114 JSMLT TEST AREA	420	200	6	200	7.6	0.5	1	140	110	5.00	90.00	TITUS	DESV	1 - 5	
VAV-14	115 SANITATION AREA	500	300	7	300	11.3	0.8	1	140	110	5.00	90.00	TITUS	DESV	1 - 5	
VAV-15	117 MAINTENANCE	400	250	6	250	9.5	0.6	1	140	110	5.00	90.00	TITUS	DESV	1 - 5	
VAV-16	202 BREAKROOM, 203 TELECOM	970	300	9	300	11.3	0.8	1	140	110	5.00	90.00	TITUS	DESV	1 - 5	
VAV-17	200 CLASSROOM, C020 CORR	2,000	800	14	800	30.2	2.0	1	140	110	5.00	90.00	TITUS	DESV	1 - 5	
VAV-18	201 TECHNICIAN / TECHNICAL REF LIBRARY	1,200	400	10	400	15.1	1.0	1	140	110	5.00	90.00	TITUS	DESV	1 - 5	
VAV-19	206 ADMIN STORAGE, C021 CORR, C022 CORR	440	140	6	140	5.3	0.4	1	140	110	5.00	90.00	TITUS	DESV	1 - 5	
VAV-20	207 JEFS FST OIC	400	120	6	120	4.5	0.3	1	140	110	5.00	90.00	TITUS	DESV	1 - 5	
VAV-21	210 JEFS FSS OPERATIONS OFFICER	250	80	5	80	3.0	0.2	1	140	110	5.00	90.00	TITUS	DESV	1 - 5	
VAV-22	211 ASSISTANT OIC / NCOIC	200	60	5	60	2.3	0.2	1	140	110	5.00	90.00	TITUS	DESV	1 - 5	
VAV-23	208 STORAGE WAREHOUSE PREPERATION, 118 TELECOM	2,050	620	14	620	23.4	1.6	1	140	110	5.00	90.00	TITUS	DESV	1 - 5	
VAV-24	208A TEST & REPAIR	1,300	700	12	700	26.5	1.8	1	140	110	5.00	90.00	TITUS	DESV	1 - 5	
VAV-25	208B VISUAL INSPECTION & REPAIR	1,200	700	10	700	26.5	1.8	1	140	110	5.00	90.00	TITUS	DESV	1 - 5	
VAV-26	209 SHIPPING / RECEIVING / WATER TESTING	800	400	9	400	15.1	1.0	1	140	110	5.00	90.00	TITUS	DESV	1 - 5	
VAV-27	209A HAZMAT STORAGE	230	70	5	70	2.6	0.2	1	140	110	5.00	90.00	TITUS	DESV	1 - 5	
						17.5										
NOTES: 1. MAXIMUM ALLOWABLE STATIC PRESSURE LOSS ACROSS THE BOX = 0.5 INCHES WATER GAUGE.																
2. MAXIMUM DISCHARGE STATIC PRESSURE DOWNSTREAM = 0.5 INCHES WATER GAUGE.																
3. MAXIMUM ALLOWABLE DISCHARGE OR RADIATED NOISE CRITERIA (NC) = 30.																
4. HOT WATER COIL PERFORMANCE DATA IS BASED ON A 140 DEGREE EWT - MFG TO PROVIDE SPECIFIC COIL PARAMETERS (FPI, ETC.) TO MEET ALL REQUIRED PERFORMANCE CRITERIA (MBH @ 140° INPUT; TOTAL APD ACROSS BOX & COIL)																
5. ROOM TO CONTAIN OCCUPANCY SENSOR TIED TO VAV BOX TO ALLOW FOR SHUT-OFF MINIMUM AIRFLOW DURING PERIODS OF UNOCCUPANCY (VS. SCHEDULED MINIMUM).																
8/4/2021 10:43																

FILE NAME: BIM 360/HF PACKAGE 3P1527 LOG COM CSP-163960-M.dwt
PLOTTED: 8/4/2021 12:18:43 PM

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LOUVER (L) SCHEDULE									
TAG	SERVING	SERVICE	SIZE WxH (IN)	DESIGN AIRFLOW (CFM)	FREE AREA (SQFT)	MAX PRESSURE DROP (IN WG)	BASIS OF DESIGN		NOTES
							MANUF	MODEL	
L-01	AHU-01 INTAKE, SF-01, 116 ELECTRICAL (EF-05)	INTAKE	60x48	8020	>11.5	0.10	RUSKIN	ELF6375DXD	1 - 5
L-02	AHU-01 EXHAUST	EXHAUST	42x48	6000	>7.5	0.10	RUSKIN	ELF6375DXD	1 - 4
L-03	213 JEFS BOILER ROOM (SF-01)	RELIEF	24x24	1400	>1.8	0.10	RUSKIN	ELF6375DXD	1 - 4
L-04	AHU-02 INTAKE, 120 MECH	INTAKE	72x48	9000	>12.9	0.10	RUSKIN	ELF6375DXD	1 - 5
L-05	AHU-02 EXHAUST, EF-03	EXHAUST	54x48	7565	>9.5	0.10	RUSKIN	ELF6375DXD	1 - 5
L-06	EF-09, EF-10	EXHAUST	24x18	1000	>1.3	0.10	RUSKIN	ELF6375DXD	1 - 5
L-07	EF-11	EXHAUST	42x36	4100	>5.2	0.10	RUSKIN	ELF6375DXD	1 - 5
L-08	205 ELECTRICAL	INTAKE	24x12	460	>0.7	0.10	RUSKIN	ELF6375DXD	1 - 4
L-09	EF-06, EF-07, EF-08	INTAKE	36x30	2350	>3.4	0.10	RUSKIN	ELF6375DXD	1 - 5
L-10	109 ELEC (EF-01)	INTAKE	12x18	260	>0.37	0.10	RUSKIN	ELF6375DXD	1 - 4
L-11	EF-01	EXHAUST	12x18	260	>0.33	0.10	RUSKIN	ELF6375DXD	1 - 4
L-12	121 ELEC (EF-02)	INTAKE	12x12	210	>0.3	0.10	RUSKIN	ELF6375DXD	1 - 4
L-13	104 LOGCOM WAREHOUSE	INTAKE	60x48	7330	>10.5	0.10	RUSKIN	ELF6375DXD	1 - 4
L-14	105 LOGCOM WAREHOUSE	INTAKE	60x48	7330	>10.5	0.10	RUSKIN	ELF6375DXD	1 - 4
L-15	105 LOGCOM WAREHOUSE	INTAKE	60x48	7340	>10.5	0.10	RUSKIN	ELF6375DXD	1 - 4
L-16	105 LOGCOM WAREHOUSE	EXHAUST	72x48	11000	>13.8	0.10	RUSKIN	ELF6375DXD	1 - 4
L-17	105 LOGCOM WAREHOUSE	EXHAUST	72x48	11000	>13.8	0.10	RUSKIN	ELF6375DXD	1 - 4
NOTES: 1. PROVIDE MANUFACTURER'S STANDARD COLOR AND FINISH CHART WITH SUBMITTAL FOR SELECTION BY ARCHITECT. 2. LOUVER SHALL BE AMCA LISTED TO MEET AMCA 550 (HIGH VELOCITY WIND DRIVEN RAIN RESISTANT) AND MIAMI-DADE COUNTY APPROVED. 3. PROVIDE WITH LOW LEAKAGE MOTORIZED DAMPER(S) FOR ATFP COMPLIANCE (3 CFM/SQFT AGAINST 1" DIFFERENTIAL PRESSURE) INTERNAL OR EXTERNAL TO LOUVER. SEE DRAWINGS FOR LOCATION OF MOTORIZED DAMPERS. 4. PROVIDE CORROSION RESISTANT COATINGS AND MATERIALS; PROVIDE WITH ALUMINUM BIRDSCREEN. 5. LOUVER SELECTED FOR SHARED SERVICE OF MULTIPLE DEVICES; INSULATED PLENUM BOX SHALL BE PROVIDED BEHIND LOUVER WITH DUCTED CONNECTION TO EACH DEVICE (COMPLETE WITH BACKDRAFT DAMPERS TO PREVENT CROSS FLOW IN ADDITION TO MOTORIZED DAMPERS FOR CONTROL AND ATFP SHUTDOWN).									

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DEHUMIDIFIER (DEH) SCHEDULE									
TAG	AREA SERVED	AMBIENT TEMP. OPERATING RANGE	CAPACITY (PINTS PER DAY)	ELECTRICAL			BASIS OF DESIGN		NOTES
				VOLT/ PHASE/ HERTZ	AMPS	CONNECTION (DISCONNECT) TYPE	MANUF	MODEL	
DEH-01	212 JEFS AHU	56-95°F	110	115 / 60 / 1	6.4	HARDWIRED	SANTA FE	CLASSIC	1 - 6
NOTES: 1. UNIT SHALL BE PROVIDED WITH FULL CHARGE OF R-410A REFRIGERANT 2. UNIT WEIGHT = 110 LBS; DIMENSIONS (L x W x H inches): 20 x 17 x 36 3. MOUNT UNIT ON WALL BRACKET; PROVIDE WITH CONDENSATE PUMP AS REQUIRED TO PROVIDE NECESSARY LIFT TO ACCOMMODATE GRAVITY CONDENSATE DRAINAGE TO POINT OF TERMINATION AS INDICATED ON PLANS. 4. CAPACITY RATINGS BASED ON STANDARD DEHUMIDIFIER RATING CONDITIONS OF 80°F, 60% RH. 5. UNIT SHALL HARD WIRED WITH DISCONNECT (NO PIGTAIL PLUG) TO DISCOURAGE THEFT/RELOCATION. 6. UNIT SHALL BE WALL MOUNTED WITHIN THE MECHANICAL ROOMS AS INDICATED ON PLANS.									

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GRAVITY VENTILATOR (GV) SCHEDULE									
TAG	AREA SERVED	SERVICE	DESIGN AIRFLOW (CFM)	MAX P.D. @ DESIGN AIRFLOW...	MIN THROAT AREA (SQ. FT.)	THROAT SIZE (IN x IN)	BASIS OF DESIGN		NOTES
							MANUF.	MODEL	
GV-01	120 - MECHANICAL	INTAKE	2,900	0.03	9	36 x 36	GREENHECK	FGI	1 - 3
GV-02	120 - MECHANICAL	EXHAUST	2,900	0.03	9	36 x 36	GREENHECK	FGR	1 - 3
GV-03	120 - MECHANICAL	INTAKE	2,900	0.03	9	36 x 36	GREENHECK	FGI	1 - 3
GV-04	120 - MECHANICAL	EXHAUST	2,900	0.03	9	36 x 36	GREENHECK	FGR	1 - 3
NOTES: 1. ROOF VENTILATOR TO BE CONSTRUCTED FOR DUCTED APPLICATION WITH CORROSION RESISTANT COATING. 2. PROVIDE 18" ROOF CURB. COORDINATE WITH ROOF CONSTRUCTION. 3. ALL ROOF MOUNTED HVAC EQUIPMENT MUST BE PROVIDED MEETING THE MIAMI-DADE COUNTY FLORIDA HURRICANE WIND RESISTANCE REQUIREMENTS.									

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EXHAUST FAN (EF) AND SUPPLY FAN (SF) SCHEDULE													
TAG	SERVICE	LOCATION / SPACE SERVED	FAN TYPE	DRIVE TYPE	AIR FLOW (CFM)	ESP (IN. WG.)	MAX. FAN RPM	MAX SOUND (SONES)	MOTOR DATA		BASIS OF DESIGN		NOTES
									APPROX. MOTOR SIZE (HP)	VOLTS/ PHASE/ HERTZ	MANUF	MODEL	
SF-01	SUPPLY	213 JEFS BOILER ROOM	INLINE	DIRECT	1,500	0.50	1000	10	1/2	115 / 1 / 60	GREENHECK	SQ	1,2,3,5
SF-02	SUPPLY	104 LOGCOM WAREHOUSE	INLINE	DIRECT	7,330	0.50	1000	15	1 1/2	208 / 3 / 60	GREENHECK	SQ	1,2,3,5
SF-03	SUPPLY	104 LOGCOM WAREHOUSE	INLINE	DIRECT	7,330	0.50	1000	15	1 1/2	208 / 3 / 60	GREENHECK	SQ	1,2,3,5
SF-04	SUPPLY	104 LOGCOM WAREHOUSE	INLINE	DIRECT	7,330	0.50	1000	15	1 1/2	208 / 3 / 60	GREENHECK	SQ	1,2,3,5
EF-01	EXHAUST	109 ELEC	INLINE	DIRECT	260	0.38	1500	10	1/10	115 / 1 / 60	GREENHECK	SQ	1,2,3,4
EF-02	EXHAUST	121 ELEC	WALL PROP	DIRECT	210	0.25	1700	10	1/15	115 / 1 / 60	GREENHECK	SE	1,2,3,4
EF-03	EXHAUST	103 BREAK, 105 JAN, G010 WOMEN'S, G011 UNISEX, G012 MEN'S	INLINE	DIRECT	460	0.50	1600	10	1/8	115 / 1 / 60	GREENHECK	SQ	1,2
EF-04	EXHAUST	120 MECHANICAL	INLINE	DIRECT	2,000	0.50	1000	10	3/4	115 / 1 / 60	GREENHECK	SQ	1,2,3
EF-05	EXHAUST	116 ELECTRICAL	WALL PROP	DIRECT	620	0.25	1200	10	1/6	115 / 1 / 60	GREENHECK	SE	1,2,3,4
EF-06	EXHAUST	122 FIRE RISER	WALL PROP	DIRECT	800	0.25	1400	10	1/12	115 / 1 / 60	GREENHECK	SE	1,2,3,4
EF-07	EXHAUST	123 ELEC	WALL PROP	DIRECT	810	0.25	1400	10	1/12	115 / 1 / 60	GREENHECK	SE	1,2,3,4
EF-08	EXHAUST	124 WHSE MECH.	WALL PROP	DIRECT	740	0.25	1300	10	1/4	115 / 1 / 60	GREENHECK	SE	1,2,3,4
EF-09	EXHAUST	205 ELECTRICAL	INLINE	DIRECT	460	0.50	1700	10	1/10	115 / 1 / 60	GREENHECK	SQ	1,2,3
EF-10	EXHAUST	202 BREAKROOM, 204 JAN, G020 WOMEN'S, G021 UNISEX, G022 MEN'S	INLINE	DIRECT	540	0.50	1700	10	1/6	115 / 1 / 60	GREENHECK	SQ	1,2
EF-11A	EXHAUST	208A TEST & REPAIR	INLINE	DIRECT	600	0.50	1700	10	1/6	115 / 1 / 60	GREENHECK	SQ	1,2,3
EF-11B	EXHAUST	208A TEST & REPAIR	INLINE	DIRECT	600	0.50	1700	10	1/6	115 / 1 / 60	GREENHECK	SQ	1,2,3
EF-12	EXHAUST	104 LOGCOM WAREHOUSE	INLINE	DIRECT	11,000	0.50	1000	22	5	208 / 3 / 60	GREENHECK	SQ	1,2,3
EF-13	EXHAUST	104 LOGCOM WAREHOUSE	INLINE	DIRECT	11,000	0.50	1000	22	5	208 / 3 / 60	GREENHECK	SQ	1,2,3
NOTES: 1. PROVIDE WITH LOCAL DISCONNECT SWITCH FOR FIELD MOUNTING AND INSTALLATION. PROVIDE WITH MOTOR STARTER AND OVERCURRENT PROTECTION. 2. PROVIDE UNIT WITH ELECTRICALLY COMMUTATED MOTOR (ECM) - FIELD ADJUSTABLE TO SCHEDULED AIRFLOW. 3. CONTROL: CONTROL SHALL BE BY SPACE MOUNTED THERMOSTAT FOR VENTILATION ROOM COOLING - SEE CONTROL DRAWINGS; PROVIDE LOW LEAKAGE MOTORIZED DAMPER AT EXHAUST LOUVER AND ASSOCIATED INTAKE... 4. PROVIDE WITH LOW LEAKAGE INSULATED DAMPER W/END SWITCH, 45° WALL HOOD DISCHARGE ASSEMBLY WITH INTEGRAL BIRDSCREEN. 5. PROVIDE WITH FILTER SECTION UTILIZING 1" PLEATED MERV 8 FILTERS (SIZE 20x20x1).													

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DIFFUSER, REGISTER AND GRILLE SCHEDULE									
TAG	MAX CFM	SERVICE	TYPE	SIZE (INCHES)		MAX NC	BASIS OF DESIGN		NOTES
				FACE	NECK		MANUF	MODEL	
A	190	SUPPLY	DIFFUSER	24 x 24	6" Ø	<25	TITUS	TMS-AA	1 - 4
B	280	SUPPLY	DIFFUSER	24 x 24	8" Ø	<25	TITUS	TMS-AA	1 - 4
C	430	SUPPLY	DIFFUSER	24 x 24	10" Ø	<25	TITUS	TMS-AA	1 - 4
D	1300	RETURN / EXHAUST / TRANSFER	GRILLE	24 x 24	22 x 22	<20	TITUS	PXP-AA	1 - 3
E	115	SUPPLY	GRILLE	8 x 8	6 x 6	<20	TITUS	300FL	1 - 4
F	810	SUPPLY	GRILLE	18 x 18	16 x 16	<20	TITUS	300FL	1 - 4
G	155	RETURN / EXHAUST / TRANSFER	GRILLE	10 x 8	8 x 6	<20	TITUS	355FL	1 - 3
H	345	RETURN / EXHAUST / TRANSFER	GRILLE	12 x 12	10 x 10	<20	TITUS	355FL	1 - 3
J	810	RETURN / EXHAUST / TRANSFER	GRILLE	18 x 18	16 x 16	<20	TITUS	355FL	1 - 3
K	1285	RETURN / EXHAUST / TRANSFER	GRILLE	22 x 22	20 x 20	<20	TITUS	355FL	1 - 3
L	3450	RETURN / EXHAUST / TRANSFER	GRILLE	38 x 38	36 x 36	<20	TITUS	355FL	1 - 3
M	265	SUPPLY	DRUM LOUVER	14 x 10	12 x 8	<20	TITUS	DL	1 - 3
N	440	SUPPLY	DRUM LOUVER	22 x 12	20 x 10	<20	TITUS	DL	1 - 3
-	-	-	-	-	-	-	-	-	-
X	THIS TAG "X" USED TO DESIGNATE BALANCED CFM OF OPEN ENDED DUCT TERMINATIONS.								5
NOTES: 1. REFER TO DRAWINGS FOR ACTUAL AIR BALANCE QUANTITIES IN SPECIFIC LOCATIONS. 2. CONTRACTOR TO VERIFY CEILING TYPE AND PROVIDE PROPER FRAME AND BORDER TYPE. 3. ALL DIFFUSERS, REGISTERS AND GRILLES ARE TO BE OF ALUMINUM CONSTRUCTION AND PROVIDED WITH MANUFACTURER'S STANDARD ENAMEL PAINT FINISH. REFER TO DIVISION 09 90 00 PAINTS AND COATINGS, AND ARCHITECTURAL DRAWINGS FOR FINISH SCHEDULES TO DETERMINE REQUIRED COLOR/FINISH FOR DIFFUSERS/REGISTERS/GRILLES. 4. NC LEVELS ARE BASED ON DIFFUSER BLADES SET FOR HORIZONTAL AIRFLOW. 5. PROVIDE 1/2" HARDWARE CLOTH IN REMOVABLE "U" FRAME OVER BELMOUTH AT OPEN END OF DUCT.									

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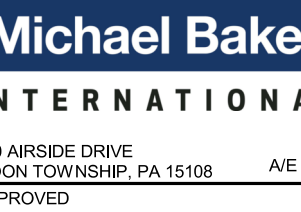
UNCLASSIFIED

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FOR COMMANDER NAVFAC
ACTIVITY
MARINE CORPS BASE
CAMP LEJEUNE
SATISFACTORY TO DATE DD/MM/YY
DES EMB DRW AJK CHK DWH
PM
BRANCH HEAD
DESIGN DIRECTOR
FIRE PROTECTION

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
ATLANTIC DESIGN AND CONSTRUCTION
NAVFAC CAMP LEJEUNE
JACKSONVILLE, NC
LOGCOM CSP WAREHOUSE
MECHANICAL - SCHEDULES

SCALE: AS NOTED
EPROJECT NO.: 1639600
CONSTR. CONTR. NO.
N40085-20-C-0059
NAVFAC DRAWING NO.
SHEET OF

M-603

P1527 PREINAL SUBMISSION - 08/06/2021

CHILLED WATER BUFFER TANK (CWBT) SCHEDULE

CHILLED WATER BUFFER TANK (CWBT) SCHEDULE											
TAG	TYPE	SERVICE	LOCATION	SIZE DIA x HT (IN)	CONN. SIZE (IN)	CAPACITY (GAL)	FACTORY HEAT TRACING		BASIS OF DESIGN		NOTES
							VOLT/ PHASE/ HERTZ	MCA/ MOP	MANUF	MODEL	
CWBT-01	VERTICAL	CHILLED WATER	212 JEFS AHU	42 x 90	4" FLANGE	500	120 / 1 / 60	<12 / 15	CEMLINE	V500CWBT4-F-C-2I	1 - 2
NOTES: 1. TANK TO BE PROVIDED WITH 2" FLEXIBLE ELASTOMERIC INSULATION; INTERNAL BAFFLE; 6" FLANGED CONNECTIONS & AIR VENT. 2. UNIT SHALL BE ASME RATED PRESSURE VESSEL - RATED TO 125PSIG @ 375°F; BUILT TO ASME SECTION VIII, DIVISION 1.											
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M-604

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VENTILATION SCHEDULE																	
ROOM NUMBER	ROOM NAME	VENTILATION CRITERIA / CLASSIFICATION	AREA (FT2)	OCCUPANCY (# PEOPLE)	CFM/SF	CFM/ PERSON	CALCULATED REQUIRED...					EXHAUST AIR (EA)					NOTES
							CFM/SF	CFM/ PERSON	EZ	TOTAL (CFM)	DESIGN OA (CFM)	CFM/SF	FIXTURE COUNT	CFM/ FIXTURE	TOTAL EA REQ'D (CFM)	DESIGN EA (CFM)	
100	GOVT OFFICE	ASHRAE 62.1-2016: OFFICE SPACE	104	3	0.06	5	THE VENTILATION REQUIREMENT FOR THIS AIR HANDLING SYSTEM HAS BEEN DETERMINED BY UTILIZING THE ASHRAE 62.1 MULTI-ZONE CALCULATION SPREADSHEET THAT ACCOUNTS FOR INDIVIDIAL VAV ZONES AND THEIR RESPECTIVE AREA AND OCCUPANCY AND SPACE CLASSIFICATION IN ACCORDANCE WITH ASHRAE 62.1. THE VAV BOX SCHEDULE MINIMUM AIRFLOWS PER BOX HAVE BEEN ADJUSTED USING THIS SPREADSHEET TO PROVIDE THE REQUIRED VENTILATION TO THEIR ASSOCIATED AHU. THE ASHRAE 62.1 MULTI-ZONE CALCULATIONS ARE INCLUDED IN THE MECHANICAL CALCULATIONS.										
101	REG. MNGR.	ASHRAE 62.1-2016: OFFICE SPACE	113	3	0.06	5											
102	MOTHER'S ROOM	ASHRAE 62.1-2016: OFFICE SPACE	72	1	0.06	5											
103	BREAK	ASHRAE 62.1-2016: BREAK ROOM, KITCHENETTE (EXHAUST)	399	10	0.06	5						0.3			120	125	
105	JAN.	ASHRAE 62.1-2016: JANITOR CLOSET	84	-	-	-						1			84	85	
106	COMP. EQ. & RSDL DECON. LOTION	ASHRAE 62.1-2016: OCCUPIABBLE STORAGE	307	2	0.06	5											
107	RADIOLOGICAL	ASHRAE 62.1-2016: OCCUPIABBLE STORAGE	2,397	2	0.06	5											
108	TELECOM	ASHRAE 62.1-2016: COMPUTER (NOT PRINTING)	98	0	0.06	5											
110	NDTE / STORAGE	ASHRAE 62.1-2016: OCCUPIABBLE STORAGE	1,480	3	0.06	5											
110A	NDTE OFFICE	ASHRAE 62.1-2016: OFFICE SPACE	110	3	0.06	5											
111	ESAPI ROOM	ASHRAE 62.1-2016: OFFICE SPACE	224	2	0.06	5											
112	ESAPI OFFICE	ASHRAE 62.1-2016: OFFICE SPACE	124	2	0.06	5											
113A	STORAGE AREA SL-3/REPAIR PARTS	ASHRAE 62.1-2016: OCCUPIABBLE STORAGE	669	0	0.06	5											
113B	FINAL QC	ASHRAE 62.1-2016: OFFICE SPACE	509	2	0.06	5											
114	JSMLT TEST AREA	ASHRAE 62.1-2016: WOOD / METAL SHOP	502	3	0.18	10											
115	SANITATION AREA	ASHRAE 62.1-2016: WOOD / METAL SHOP	797	3	0.18	10											
117	MAINTENANCE	ASHRAE 62.1-2016: WOOD / METAL SHOP	579	3	0.18	10											
118	TELE.	ASHRAE 62.1-2016: COMPUTER (NOT PRINTING)	303	0	0.06	5											
119	CBRN OFFICE	ASHRAE 62.1-2016: OFFICE SPACE	269	3	0.06	5											
200	CLASSROOM	ASHRAE 62.1-2016: LECTURE CLASSROOM	1,452	51	0.06	7.5											
201	TECHNICIAN/ TECHNICAL REF LIBRARY	ASHRAE 62.1-2016: LIBRARIES	1,462	12	0.12	5											
202	BREAKROOM	ASHRAE 62.1-2016: BREAK ROOM, KITCHENETTE (EXHAUST)	693	12	0.06	5						0.3			208	220	
203	TELECOM	ASHRAE 62.1-2016: COMPUTER (NOT PRINTING)	102	0	0.06	5											
206	ADMIN STORAGE	ASHRAE 62.1-2016: OCCUPIABBLE STORAGE	319	0	0.06	5											
207	JEFS FST OIC	ASHRAE 62.1-2016: OFFICE SPACE	579	6	0.06	5											
208	STORAGE WAREHOUSE PREPARATION	ASHRAE 62.1-2016: OCCUPIABBLE STORAGE	5,941	3	0.06	5											
208A	TEST & REPAIR	ASHRAE 62.1-2016: WOOD / METAL SHOP	2163	6	0.18	10									4084	4100	1
208B	VISUAL INSPECTION & REPAIR	ASHRAE 62.1-2016: WOOD / METAL SHOP	2,193	4	0.18	10											
209	SHIPPING / RECEIVING / WATER TESTING	ASHRAE 62.1-2016: SHIPPING/RECEIVING	1,966	2	0.12	10											
209A	HAZMAT STORAGE	ASHRAE 62.1-2016: OCCUPIABBLE STORAGE	317	0	0.06	5											
210	JEFS FSS OPERATIONS OFFICER	ASHRAE 62.1-2016: OFFICE SPACE	585	6	0.06	5											
211	ASSISTANT OIC/NCOIC	ASHRAE 62.1-2016: OFFICE SPACE	407	3	0.06	5											
225	JAN.	ASHRAE 62.1-2016: JANITOR CLOSET	59	-	-	-						1			59	70	
C020	CORRIDOR	ASHRAE 62.1-2016: CORRIDOR	749	0	0.06	-											
C021	CORRIDOR	ASHRAE 62.1-2016: CORRIDOR	514	0	0.06	-											
C022	CORRIDOR	ASHRAE 62.1-2016: CORRIDOR	121	0	0.06	-											
G010	WOMEN'S	ASHRAE 62.1-2016: TOILETS (PUBLIC)	194	-	-	-							2	50	100	100	
G011	UNSEX	ASHRAE 62.1-2016: TOILETS (PUBLIC)	65	-	-	-							1	50	50	50	
G012	MEN'S	ASHRAE 62.1-2016: TOILETS (PUBLIC)	129	-	-	-							2	50	100	100	
G020	WOMENS	ASHRAE 62.1-2016: TOILETS (PUBLIC)	159	-	-	-							2	50	100	100	
G021	UNSEX	ASHRAE 62.1-2016: TOILETS (PUBLIC)	66	-	-	-							1	50	50	50	
G022	MENS	ASHRAE 62.1-2016: TOILETS (PUBLIC)	162	-	-	-							2	50	100	100	
NOTES: 1. EXHAUST REQUIREMENT OF 1 AIR CHANGE EVERY 8 MINUTES. HEIGHT USED FOR CALCULATION IS 15 FEET.																	
8/4/2021 10:43																	

APPR

DATE

DESCRIPTION

SYM



PRELIMINARY

NOT FOR CONSTRUCTION

SEAL



Michael Baker

INTERNATIONAL

100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108

APPROVED

A/E INFO

FOR COMMANDER NAVFAC

ACTIVITY

MARINE CORPS BASE
CAMP LEJEUNE

SATISFACTORY TO DATE DD/MM/YY

DES EMB | DRW AJK | CHK DWH

PM

BRANCH HEAD

DESIGN DIRECTOR

FIRE PROTECTION

DEPARTMENT OF THE NAVY

NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND

NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND ATLANTIC

ATLANTIC DESIGN AND CONSTRUCTION

MCB CAMP LEJEUNE

JACKSONVILLE, NC

LOGCOM CSP WAREHOUSE

MECHANICAL - SCHEDULES

SCALE: AS NOTED

EPROJECT NO.: 1639600

CONSTR. CONTR. NO. N40085-20-C-0059

NAVFAC DRAWING NO.

SHEET OF

M-605

P1527 PREFINAL SUBMISSION - 08/06/2021

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FILE NAME: BIM 360/HF PACKAGE 3P1527 LOG COM CSP-163960-M.dwt
PLOTTED: 8/4/2021 12:18:50 PM

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VENTILATION SCHEDULE																	
ROOM NUMBER	ROOM NAME	VENTILATION CRITERIA / CLASSIFICATION	AREA (FT2)	OCCUPANCY (# PEOPLE)	CFM/SF	CFM/ PERSON	CALCULATED REQUIRED...					EXHAUST AIR (EA)					NOTES
							CFM/SF	CFM/ PERSON	EZ	TOTAL (CFM)	DESIGN OA (CFM)	CFM/SF	FIXTURE COUNT	CFM/ FIXTURE	TOTAL EA REQ'D (CFM)	DESIGN EA (CFM)	
104	WAREHOUSE AREA	ASHRAE 62.1-2016: WAREHOUSES	52,538	0	0.06	10	3,152	0	0.8	3,940	4,000						
104.1	SHIPPING/RECIEVING 2 DOCKS	ASHRAE 62.1-2016: SHIPPING/RECEIVING	4,075	0	0.12	10	489	0	0.8	611	620						
104.2	SHELTER STORAGE	ASHRAE 62.1-2016: OCCUPIABLE STORAGE	2,532	0	0.06	5	152	0	0.8	190	200						
104.3	ISSUE/RETURN AREA	ASHRAE 62.1-2016: SORTING, PACKING, LIGHT ASSEMBLY	2,585	1	0.12	7.5	310	8	0.8	397	400						
104.4	SORT AREA	ASHRAE 62.1-2016: SORTING, PACKING, LIGHT ASSEMBLY	1,866	1	0.12	7.5	224	8	0.8	289	300						
104.5	DISPOSAL AREA	ASHRAE 62.1-2016: SORTING, PACKING, LIGHT ASSEMBLY	2,053	1	0.12	7.5	246	8	0.8	317	320						
104.6	BATTERY CHARGING AREA	ASHRAE 62.1-2016: WAREHOUSES	1,316	0	0.06	10	79	0	0.8	99	100						
C010	CORRIDOR	ASHRAE 62.1-2016: CORRIDOR	164	0	0.06	0	10	0	0.8	12	20						
C011	CORR	ASHRAE 62.1-2016: CORRIDOR	346	0	0.06	0	21	0	0.8	26	30						
C013	CORRIDOR	ASHRAE 62.1-2016: CORRIDOR	385	0	0.06	0	23	0	0.8	29	30						
C014	CORRIDOR	ASHRAE 62.1-2016: CORRIDOR	346	0	0.06	0	21	0	0.8	26	30						
											6,050						
109	ELEC.	NO REQUIREMENT	129	-	-	-											
116	ELECTRICAL	NO REQUIREMENT	303	-	-	-											
120	MECHANICAL	NO REQUIREMENT	1,009	-	-	-											
121	ELEC.	NO REQUIREMENT	103	-	-	-											
122	FIRE RISER	NO REQUIREMENT	398	-	-	-											
123	ELEC.	NO REQUIREMENT	403	-	-	-											
124	WHSE MECH.	NO REQUIREMENT	366	-	-	-											
205	ELECTRICAL	NO REQUIREMENT	227	-	-	-											
212	JEFS AHU	NO REQUIREMENT	1,486	-	-	-											
213	JEFS BOILER ROOM	NO REQUIREMENT	582	-	-	-											
V010	VESTIBULE/ENTRY	NO REQUIREMENT	46	-	-	-											
V020	VESTIBULE/ ENTRY	NO REQUIREMENT	131	-	-	-											
V021	VESTIBULE/ENTRY	NO REQUIREMENT	110	-	-	-											
NOTES: 1. EXHAUST REQUIREMENT OF 1 AIR CHANGE EVERY 8 MINUTES. HEIGHT USED FOR CALCULATION IS 15 FEET.																	
8/4/2021 10:43																	



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Michael Baker
INTERNATIONAL
100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108
APPROVED

FOR COMMANDER NAVFAC
ACTIVITY
MARINE CORPS BASE
CAMP LEJEUNE
SATISFACTORY TO DATE: DD/MM/YY
DES EMB DRW AJK CHK DWH
PM
BRANCH HEAD
DESIGN DIRECTOR
FIRE PROTECTION

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND ATLANTIC
ATLANTIC DESIGN AND CONSTRUCTION
MCB CAMP LEJEUNE
JACKSONVILLE, NC
LOGCOM CSP WAREHOUSE
MECHANICAL - SCHEDULES

SCALE: AS NOTED
EPROJECT NO.: 1639600
CONSTR. CONTR. NO.
N40085-20-C-0059
NAVFAC DRAWING NO.
SHEET OF

M-606

P1527 PREFINAL SUBMISSION - 08/06/2021

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UNCLASSIFIED

UNCLASSIFIED

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M-701

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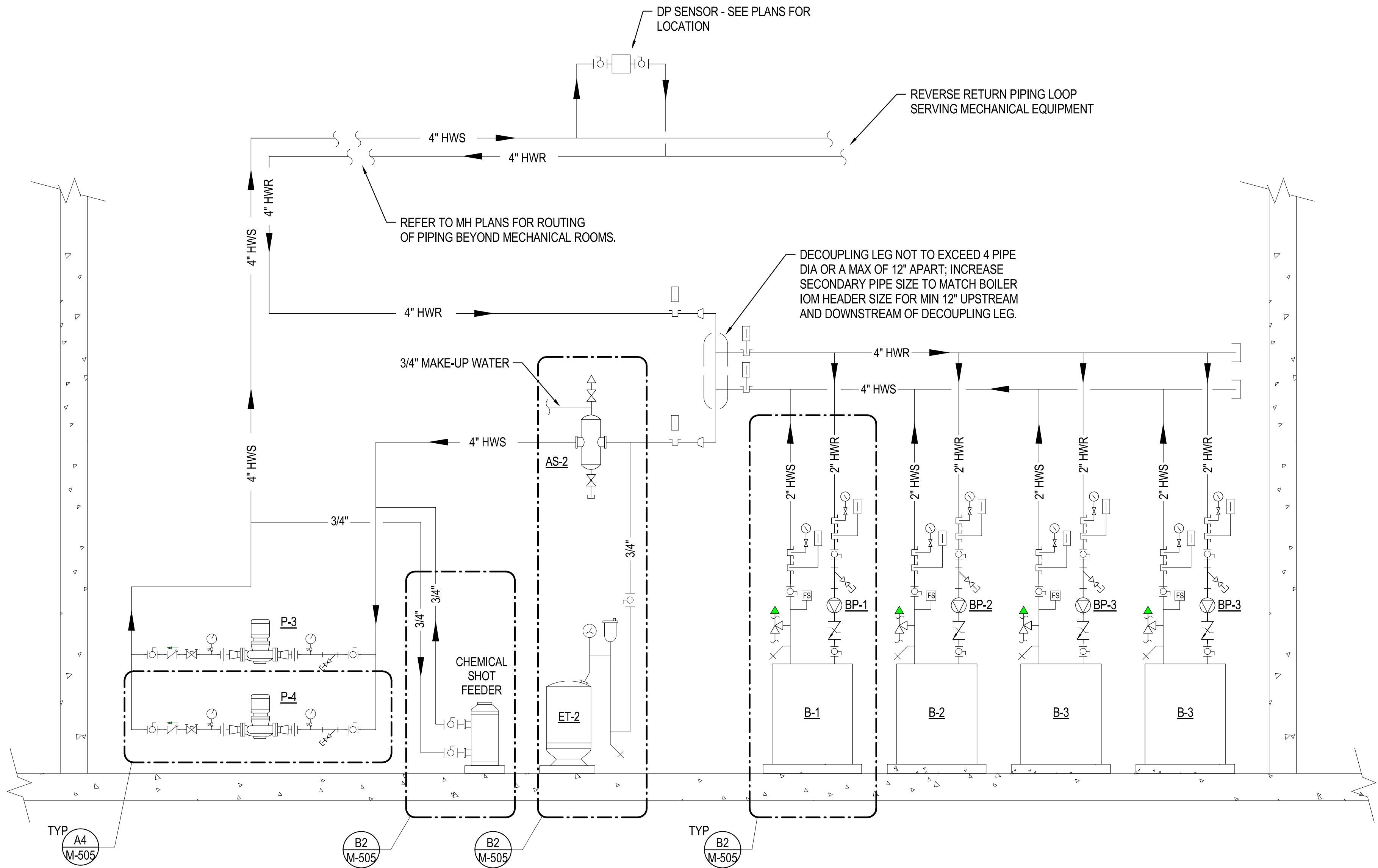


P1527 PREFINAL SUBMISSION - 08/06/2021

FILE NAME: BIM 360/HF PACKAGE 3P1527 LOG COM CSP-163960-M.mxd
PLOTTED: 8/4/2021 12:18:53 PM

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HOT WATER FLOW DIAGRAM
SCALE: NTS



GENERAL NOTES

- HOT WATER PIPING DIAGRAMS INDICATED ON THIS DRAWING SHEET ARE DIAGRAMMATIC IN NATURE AND DO NOT NECESSARILY INDICATE ALL REQUIRED PIPING APPURTENANCES. REFER TO EQUIPMENT DETAILS ON M-500 SERIES OF DRAWINGS AS WELL AS MANUFACTURER'S INSTALLATION INSTRUCTIONS AND PROVIDE ALL NECESSARY PIPING APPURTENANCES REQUIRED FOR A COMPLETE INSTALLATION.
- INSTALL VALVED DRAINS AT ALL SYSTEM HIGH POINTS.
- BOILERS (B-1, B-2, B-3, & B-4) SHALL FUNCTION VIA THEIR FACTORY CONTROLS. BOILER CONTROLS SHALL HAVE LEAD-LAG SEQUENCES TO PROVIDE BOILER STAGING MODULATION AND EQUAL RUN TIME FOR EACH BOILER. P-3, AND P-4 SHALL BE DUTY/STAND-BY OPERATION. IF DUTY PUMP FAILS BASED ON CURRENT SWITCH MONITORING IT'S OPERATION, THE STAND-BY PUMP SHALL BE ENABLED.



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ACTIVITY
MARINE CORPS BASE
CAMP LEJEUNE

SATISFACTORY TO DATE: DD/MM/YY

DES EMB DRW AJK CHK DWH

PM

BRANCH HEAD

DESIGN DIRECTOR

FIRE PROTECTION

NORFOLK, VA

JACKSONVILLE, NC

ATLANTIC DESIGN AND CONSTRUCTION

NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND

NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND ATLANTIC

ATLANTIC DESIGN AND CONSTRUCTION

MCB CAMP LEJEUNE

LOGCOM CSP WAREHOUSE

MECHANICAL - DIAGRAMS

AS NOTED

PROJECT NO.: 1639600

CONSTR. CONTR. NO. N40085-20-C-0059

NAVFAC DRAWING NO.

SHEET OF

M-703

P1527 PREFINAL SUBMISSION - 08/06/2021

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FILE NAME: BIM 360/HF PACKAGE 3P1527 LOG COM CSP-163960-M.dwt
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ELECTRIC METER SEQUENCE OF OPERATION:

THE CONTROLLER SHALL MONITOR THE ELECTRIC METER FOR ELECTRIC CONSUMPTION ON A CONTINUAL BASIS. THESE VALUES SHALL BE MADE AVAILABLE TO THE SYSTEM AT ALL TIMES.

ALARM SHALL BE GENERATED AS FOLLOWS:

- METER FAILURE: SENSOR READING INDICATES A LOSS OF PULSE OUTPUT FROM THE ELECTRIC METER.

PEAK DEMAND HISTORY:

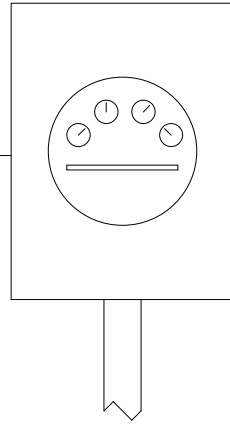
THE CONTROLLER SHALL MONITOR AND RECORD THE PEAK (HIGH AND LOW) DEMAND READINGS FROM THE ELECTRIC METER. PEAK READINGS SHALL BE RECORDED ON A DAILY, MONTH-TO-DATE, AND YEAR-TO-DATE BASIS.

USAGE HISTORY:

THE CONTROLLER SHALL MONITOR AND RECORD ELECTRIC METER READINGS SO AS TO PROVIDE A POWER CONSUMPTION HISTORY. USAGE READINGS SHALL BE RECORDED ON A DAILY, MONTH-TO-DATE, AND YEAR-TO-DATE BASIS.

NOTE: THIS METER IS SEPARATE AND DISTINCT FROM THE METER INDICATED ON THE ELECTRICAL DRAWINGS. ATC SUB-CONTRACTOR TO PROVIDE.

(1) BI - METER PULSE



ELECTRIC METER CONTROL DIAGRAM

SCALE: NTS

WATER FLOW METER SEQUENCE OF OPERATION:

WATER METER:

THE CONTROLLER SHALL MONITOR THE WATER METER FOR WATER CONSUMPTION ON A CONTINUAL BASIS. THESE VALUES SHALL BE MADE AVAILABLE TO THE SYSTEM AT ALL TIMES.

ALARM SHALL BE GENERATED AS FOLLOWS:

- METER FAILURE: SENSOR READING INDICATES A LOSS OF PULSE OUTPUT FROM THE WATER METER.

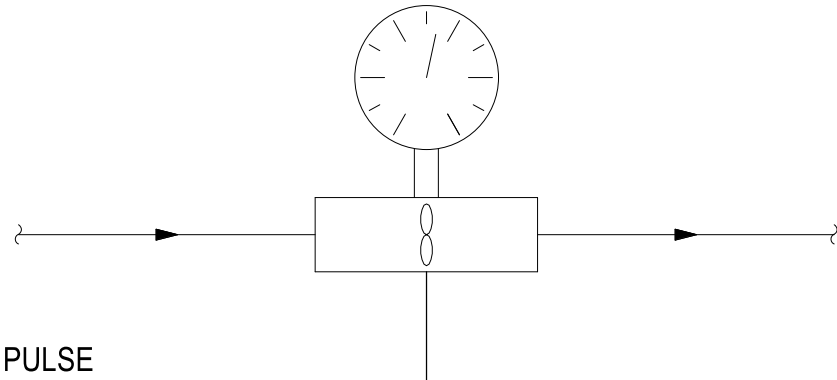
PEAK DEMAND HISTORY:

THE CONTROLLER SHALL MONITOR AND RECORD THE PEAK (HIGH AND LOW) DEMAND READINGS FROM THE WATER METER. THESE READINGS SHALL BE RECORDED ON A DAILY, MONTH-TO-DATE, AND YEAR-TO-DATE BASIS.

USAGE HISTORY:

THE CONTROLLER SHALL MONITOR AND RECORD WATER METER READINGS SO AS TO PROVIDE A WATER CONSUMPTION HISTORY. USAGE READINGS SHALL BE RECORDED ON A DAILY, MONTH-TO-DATE, AND YEAR-TO-DATE BASIS.

(1) BI - METER PULSE



WATER FLOW METER CONTROL DIAGRAM

SCALE: NTS

GAS METER SEQUENCE OF OPERATION:

GAS METER:

THE CONTROLLER SHALL MONITOR THE GAS METER FOR GAS CONSUMPTION ON A CONTINUAL BASIS. THESE VALUES SHALL BE MADE AVAILABLE TO THE SYSTEM AT ALL TIMES.

ALARM SHALL BE GENERATED AS FOLLOWS:

- METER FAILURE: SENSOR READING INDICATES A LOSS OF PULSE OUTPUT FROM THE GAS METER.

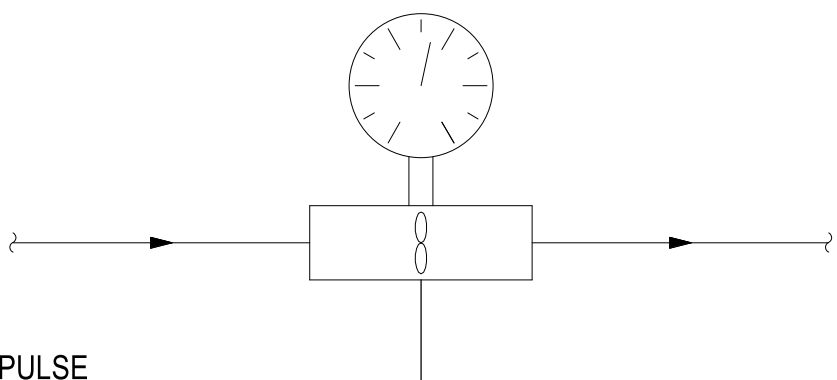
PEAK DEMAND HISTORY:

THE CONTROLLER SHALL MONITOR AND RECORD THE PEAK (HIGH AND LOW) DEMAND READINGS FROM THE GAS METER. PEAK READINGS SHALL BE RECORDED ON A DAILY, MONTH-TO-DATE, AND YEAR-TO-DATE BASIS.

USAGE HISTORY:

THE CONTROLLER SHALL MONITOR AND RECORD GAS METER READINGS SO AS TO PROVIDE A GAS CONSUMPTION HISTORY. USAGE READINGS SHALL BE RECORDED ON A DAILY, MONTH-TO-DATE, AND YEAR-TO-DATE BASIS.

(1) BI - METER PULSE



GAS METER CONTROL DIAGRAM

SCALE: NTS

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ELECTRIC METER - SYSTEM POINT LIST

POINT NUMBER	SYSTEM POINT DESCRIPTION	SHOW ON DISPLAY	HARDWARE POINTS								SYSTEM FEATURES /SOFTWARE POINTS				NOTES																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
			ANALOG				DIGITAL (BINARY)				PROGRAMS		ALARMS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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WATER METER - SYSTEM POINT LIST

POINT NUMBER	SYSTEM POINT DESCRIPTION	SHOW ON DISPLAY	HARDWARE POINTS								SYSTEM FEATURES /SOFTWARE POINTS				NOTES		
			ANALOG				DIGITAL (BINARY)				PROGRAMS		ALARMS				
			INPUT (AI)		OUTPUT (AO)		INPUT (BI)		OUTPUT (BO)								
	WATER METER												(AV) ANALOG VALUE	(BV) BINARY VALUE	TREND	COMM. FAIL	
	DDC CONTROL PANEL																
1	PULSE INPUT	●					●							●		●	
2	CURRENT DEMAND LEVEL	●											●		●		
3	DEMAND	●												●			
4	PEAK MONTH-TO-DATE	●												●			
5	PEAK TODAY	●												●			
6	PEAK YEAR-TO-DATE	●												●			
7	USAGE TODAY	●												●			
8	USAGE MONTH-TO-DATE	●												●			
9	USAGE YEAR-TO-DATE	●												●			
10	METER FAILURE	●														●	
11	RESERVED FOR FUTURE																
12	RESERVED FOR FUTURE																

NATURAL GAS METER - SYSTEM POINT LIST

POINT NUMBER	SYSTEM POINT DESCRIPTION	SHOW ON DISPLAY	HARDWARE POINTS								SYSTEM FEATURES /SOFTWARE POINTS				NOTES				
			ANALOG				DIGITAL (BINARY)				PROGRAMS		ALARMS						
			INPUT (AI)		OUTPUT (AO)		INPUT (BI)		OUTPUT (BO)										
	GAS METER																		
				</															

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Michael Baker
INTERNATIONAL

100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108
APPROVED

FOR COMMANDER NAVFAC

ACTIVITY

MARINE CORPS BASE
CAMP LEJEUNE

SATISFACTORY TO DATE: DD/MM/YY

DES DEM DRW JW CHK EMB

PM

BRANCH HEAD

DESIGN DIRECTOR

FIRE PROTECTION

NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND

ATLANTIC DESIGN AND CONSTRUCTION

NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND ATLANTIC

NORFOLK, VA

JACKSONVILLE, NC

LOGCOM CSP WAREHOUSE

MECHANICAL - CONTROLS

SCALE: AS NOTED

EPROJECT NO.: 1639600

CONSTR. CONTR. NO.

N40085-20-C-0059

NAVFAC DRAWING NO.

SHEET OF

M-802

P1527 PREFINAL SUBMISSION - 08/06/2021

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THE CONTROLLER SHALL MONITOR THE OUTSIDE AIR TEMPERATURE AND HUMIDITY AND CALCULATE THE OUTSIDE AIR ENTHALPY ON A CONTINUAL BASIS. THESE VALUES SHALL BE MADE AVAILABLE TO THE SYSTEM AT ALL TIMES.

ALARM SHALL BE GENERATED AS FOLLOWS:

- **SENSOR FAILURE:** SENSOR READING INDICATES SHORTENED OR DISCONNECTED SENSOR. IN THE EVENT OF A SENSOR FAILURE, AN ALTERNATE OUTSIDE AIR CONDITIONS SENSOR (SUCH AS AHU OA SENSOR) SHALL BE MADE AVAILABLE TO THE SYSTEM WITHOUT INTERRUPTION IN SENSOR READINGS.

IF NO OA TEMP SENSOR CAN BE READ, A DEFAULT VALUE OF 65°F WILL BE USED.

IF NO OA HUMIDITY SENSOR CAN BE READ, A DEFAULT VALUE OF 50% WILL BE USED.

OUTSIDE AIR TEMPERATURE HISTORY:

THE CONTROLLER SHALL MONITOR AND RECORD THE HIGH AND LOW TEMPERATURE READINGS FOR THE OUTSIDE AIR. THESE READINGS SHALL BE RECORDED ON A DAILY, MONTH-TO-DATE, AND YEAR-TO-DATE BASIS.

OUTSIDE AIR CONDITIONS CONTROL DIAGRAM

SCALE: NTS



VARIABLE FREQUENCY DRIVE (VFD) INTERFACE MONITOR:

CURRENT VFD STATUS AND OPERATING CONDITIONS SHALL BE MONITORED THROUGH ITS COMMUNICATIONS INTERFACE PORT. THE INTERFACE SHALL MONITOR AND TREND THE POINTS AS SHOWN ON THE POINTS LIST.

VARIABLE FREQUENCY DRIVE (VFD)

SCALE: NTS

(1) BI - ATFP SWITCH

ANTI-TERRORISM FORCE PROTECTION (ATFP) SHUTDOWN SEQUENCE OF OPERATION

PROVIDE ATFP SHUTDOWN STATIONS, SEE MP10# PLANS AND DETAIL C4/M-504. ATFP SHUTDOWN CONTROL SHALL BE HARDWIRED 120V CIRCUIT WITH KEYED RESET. ACTIVATION OF ANY SWITCH SHALL SHUTDOWN ALL HVAC SYSTEMS MOVING AIR THROUGH THE BUILDING (AS INDICATED IN INDIVIDUAL SEQUENCES) WITHIN 30 SECONDS. ALL DAMPERS TO THE OUTSIDE SHALL CLOSE. OPERATION SHALL BE REGARDLESS OF HAND/OFF/AUTO (HOA) POSITION OF EQUIPMENT. SYSTEM ACTIVATION SHALL GENERATE AN ALARM WITHIN THE HVAC SYSTEM

UPON ACTIVATION OF A SHUTDOWN SWITCH THE FOLLOWING SHALL OCCUR WITHIN 30 SECONDS (IN NORMAL OCCUPIED SPACES):

- ALL FANS SHALL SHUT DOWN (EXCEPT AS INDICATED)
- ALL OUTDOOR AIR DAMPERS SHALL CLOSE
- ALL EXHAUST DAMPERS SHALL CLOSE
- AN ALARM SHALL BE GENERATED

SYSTEMS EXCLUDED FROM ATPF SHUTDOWN

- COMPUTER ROOM AIR CONDITIONING UNITS (CRAC-01 THRU CRAC-03); SPLIT SYSTEM AIR CONDITIONERS AND HEAT PUMPS; DEHUMIDIFIER.

AFTP SHUTDOWN CONTROL DIAGRAM

SCALE: NTS



FIRE ALARM SEQUENCE OF OPERATION:

THE CONTROLLER SHALL MONITOR FIRE ALARM. CONNECT TO RELAY MODULE.

UPON ACTIVATION OF FIRE ALARM SYSTEM THE FOLLOWING SHALL OCCUR WITHIN 30 SECONDS:

- ALL FANS SHALL SHUTDOWN
- ALL OUTDOOR AIR DAMPERS SHALL CLOSE
- ALL EXHAUST DAMPERS SHALL CLOSE
- AN ALARM SHALL BE GENERATED

SYSTEM SHALL SHUTDOWN AND DAMPERS SHALL CLOSE REGARDLESS OF THE POSITION OF HAND-OFF-AUTO SWITCHES.

SYSTEMS EXCLUDED FROM FIRE ALARM SHUTDOWN:

- COMPUTER ROOM AIR CONDITIONING UNITS (CRAC-01 THRU CRAC-03)

FIRE ALARM SYSTEM CONTROL DIAGRAM

SCALE: NTS

M-803



A1

BY MAINTAINING BOTH THE CONSTANT OUTSIDE AIR VENTILATION AND THE CONSTANT EXHAUST AIRFLOW REQUIREMENTS, THE RESULTING SPACE PRESSURE SHALL REMAIN SLIGHTLY POSITIVE.

M-804

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AHU-1 SYSTEM POINT LIST																														
POINT NUMBER	SYSTEM POINT DESCRIPTION	SHOW ON DISPLAY	HARDWARE POINTS										SYSTEM FEATURES / SOFTWARE POINTS										NOTES							
			ANALOG						DIGITAL (BINARY)				PROGRAMS					ALARMS												
			INPUT (AI)			OUTPUT (AO)			INPUT (BI)		OUTPUT (BO)																			
			TEMPERATURE	PRESSURE	RELATIVE HUMIDITY	AIRFLOW (CFM)	% OPEN/FREQUENCY	% OPEN / CLOSE	% OPEN/FREQUENCY	STATUS ON/OFF	OPEN/CLOSE	SMOKE	STATUS (FAULT)	START / STOP				TREND	TIME SCHEDULING	OPT. START/STOP	EVENT	ALARM INSTRUCT		RUN TIME	AUTO RESTART	HIGH ANALOG	LOW ANALOG	SENSOR FAIL	FLOW FAIL	COMM. FAIL
	DDC CONTROL PANEL																													
01A-D	SUPPLY FAN VFD																													1
02A-D	EXHAUST FAN VFD																													1
03	SUPPLY FAN DP																													
04	EXHAUST FAN DP																													
05	AFMS - OUTSIDE AIR (OA) AIRFLOW																													
06	AFMS - EXHAUST AIRFLOW																													
07	AFMS - SUPPLY AIR (SA) AIRFLOW																													
08	HOT WATER HEATING (HW) VALVE																													
09	CHILLED WATER COOLING (CHW) VALVE																													
10	OUTSIDE AIR (OA) DAMPER																													
11	OUTSIDE AIR (OA) DAMPER END SWITCH																													
12	EXHAUST AIR (EA) DAMPER																													
13	EXHAUST AIR (EA) DAMPER END SWITCH																													
14	HX BYPASS DAMPER																													
15	RETURN AIR DAMPER																													
16	OUTSIDE AIR (OA) FILTER DP																													
17	EXHAUST AIR (EA) FILTER DP																													
18	PRE-FILTER DP																													
19	PRIMARY FILTER DP																													
20	OUTSIDE AIR (OA) TEMPERATURE																													
21	EXHAUST AIR (EA) BEFORE HX TEMP																													
22	EXHAUST AIR (EA) AFTER HX TEMP																													
23	HX LEAVING (HX-LVG) OA TEMP																													
24	MIXED AIR (MA) TEMPERATURE																													
25	SUPPLY AIR (SA) TEMPERATURE																													
26	PREHEAT TEMPERATURE																													
27	OUTSIDE AIR (OA) HUMIDITY																													
28	EXHAUST AIR (EA) BEFORE HX HUMIDITY																													
29	EXHAUST AIR (EA) AFTER HX HUMIDITY																													
30	HX LEAVING (HX-LA) OA AIR HUMIDITY																													
31	SUPPLY AIR (SA) STATIC PRESSURE																													
32	HIGH STATIC SHUTDOWN SWITCH																													
33	FREEZE/STAT																													
##	RESERVED FOR FUTURE																													
NOTES: 1. SUPPLY AND EXHAUST FAN & VFD'S AS INDICATED ON THESE DRAWINGS MAY REFER TO FAN-WALL ARRAYS CONSISTING OF MULTIPLE FANS AND VFD'S; FAN WALL SHALL MODULATE PER MANUFACTURER'S PROVIDED CONTROLS FOR OPTIMUM PERFORMANCE AND EFFICIENCY BASED ON COMMON ANALOG OUTPUT SIGNAL.																														



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Michael Baker
INTERNATIONAL
100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108
AVE INFO
APPROVED

FOR COMMANDER NAVFAC
ACTIVITY
MARINE CORPS BASE
CAMP LEJEUNE
SATISFACTORY TO DATE: DD/MM/YY
DES DEM | DRW AJK | CHK EMB
PM
BRANCH HEAD
DESIGN DIRECTOR
FIRE PROTECTION

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
ATLANTIC DESIGN AND CONSTRUCTION
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND ATLANTIC
NORFOLK, VA
JACKSONVILLE, NC
LOGCOM CSP WAREHOUSE
MECHANICAL - CONTROLS

SCALE: AS NOTED
EPROJECT NO.: 1639600
CONSTR. CONTR. NO.
N40085-20-C-0059
NAVFAC DRAWING NO.
SHEET OF

M-805

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SCALE: NTS

UNIT SHALL BE HARDWIRED TO SHUTDOWN AND CLOSE ALL ASSOCIATED DAMPERS UPON ATFP SWITCH ACTIVATION, REFER TO DRAWING M-803 FOR MORE INFORMATION.

BY MAINTAINING BOTH THE CONSTANT VENTILATION AND THE CONSTANT RELIEF AIRFLOW REQUIREMENTS, THE RESULTING SPACE PRESSURE SHALL REMAIN SLIGHTLY POSITIVE.

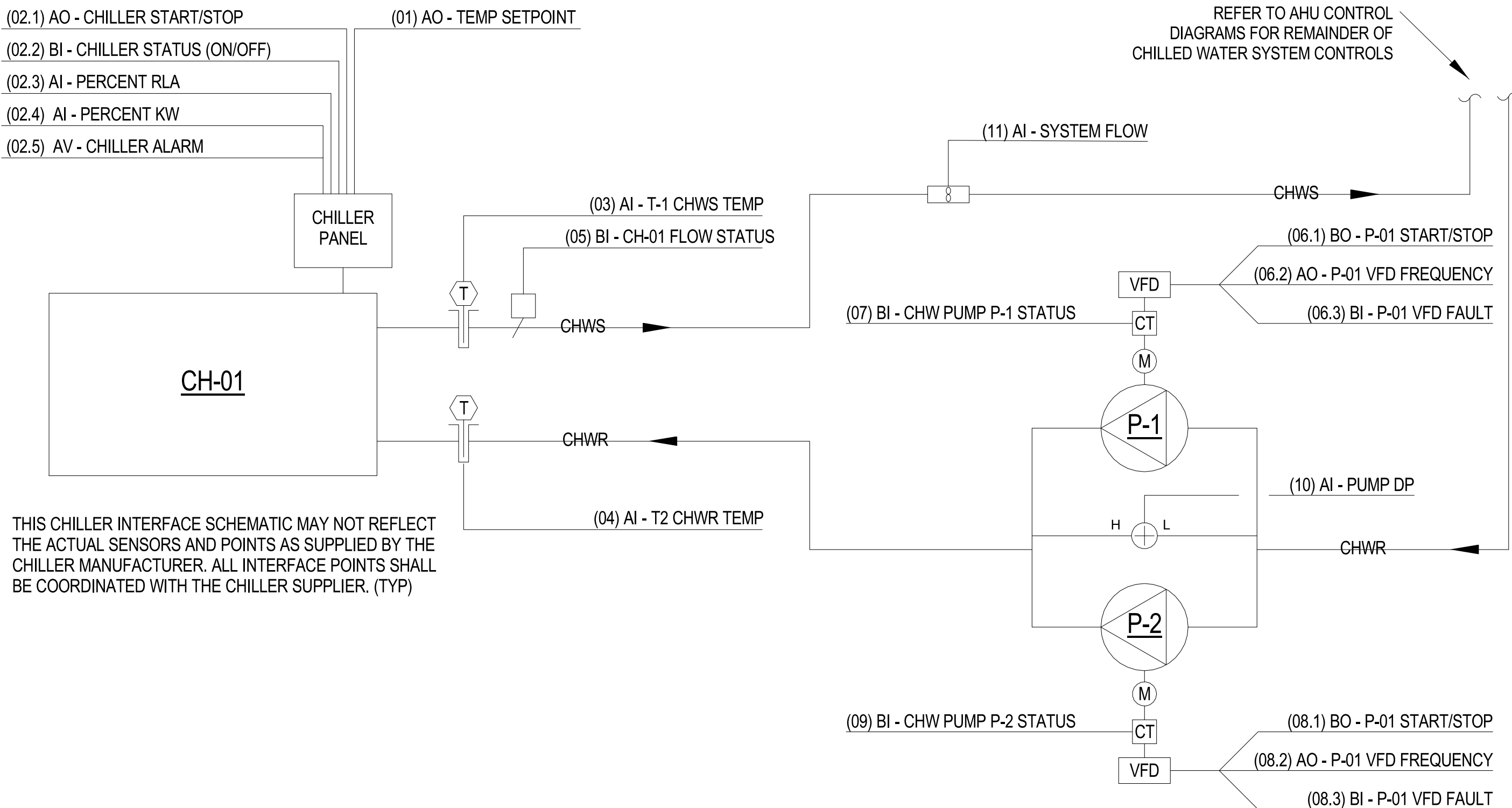
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P1527 PREFINAL SUBMISSION - 08/06/2021

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FILE NAME: BIM 360/HF PACKAGE 3P1527 LOG COM CSP-163960-M.dvt



CHILLED WATER SYSTEM CONTROL DIAGRAM

SCALE: NTS

AIR COOLED CHILLED WATER SYSTEM SEQUENCE OF OPERATION

- CHILLED WATER CONTROL
 - UPON COMMAND FOR CHILLED WATER BY ANY EITHER AHU-01 OR 02; ENABLE LEAD CHILLED WATER PUMP AND CHILLED WATER PLANT.
 - THE COOLING PLANT WILL BE ENERGIZED BY FIRST ENERGIZING LEAD CHW PUMP (P-1 OR P-2) AT FULL SYSTEM CONSTANT VOLUME FLOWRATE.
 - CHILLER SHALL BE PROVIDED WITH AN INTEGRAL FLOW SWITCH TO ASSURE PROOF OF FLOW AND ENABLE CHILLER OPERATION.
 - MANUFACTURE'S CHILLER CONTROLLER SHALL OPERATE / STAGE / SEQUENCE CHILLER CAPACITIES TO DELVER CHILLED WATER SUPPLY TEMPERATURE (42°F, ADJ.).
- CHILLED WATER SYSTEM ALARM
 - A LOW TEMPERATURE (36°F ADJUSTABLE) OR HIGH TEMPERATURE (48°F ADJUSTABLE) SENSED AT T-1 SHALL SIGNAL AN ALARM AT DDC.
 - AN ALARM CONDITION AT THE CHILLER MASTER CONTROL PANEL SHALL SIGNAL AN ALARM CONDITION.
- ADDITIONAL MONITORING AND ALARMS:
 - PUMP (P-1, P-2) STATUS: ON/OFF/FAULT
 - CHILLER STATUS: ENABLED/DISABLED/FAULT
 - BUILDING CHILLED WATER SUPPLY TEMPERATURE: MONITOR/LOW ALARM (38°F, ADJ.)/HIGH ALARM (46°F, ADJ.)
 - BUILDING CHILLED WATER RETURN TEMPERATURE: MONITOR/LOW ALARM (44°F, ADJ.)/HIGH ALARM (60°F, ADJ.)
 - CHILLER LEAVING WATER TEMPERATURE: MONITOR
 - CHILLER ENTERING WATER TEMPERATURE: MONITOR

CHILLED WATER SYSTEM SYSTEM POINT LIST																																	
POINT NUMBER	SYSTEM POINT DESCRIPTION	SHOW ON DISPLAY	HARDWARE POINTS												SYSTEMS FEATURES / SOFTWARE POINTS													NOTES					
			ANALOG						DIGITAL (BINARY)						PROGRAMS						ALARMS												
			INPUT (AI)			OUTPUT (AO)			INPUT (BI)			OUTPUT (BO)																					
			TEMPERATURE	PRESSURE	RELATIVE HUMIDITY	KW	PERCENT RLA	FLOW (GPM)	SETPOINT ADJ	FREQUENCY			STATUS ON/OFF	FILTER STATUS	STATUS OPEN/CLOSED	STATUS (FAULT)	START/STOP	OPEN/CLOSE			TREND	(AV) ANALOG VALUE	TIME SCHEDULING	ALARM INSTRUCT	RUN TIME	AUTOMATIC RESTART			HIGH ANALOG	LOW ANALOG	SENSOR FAIL	FLOW FAIL	COMM. FAIL
	DDC CONTROL PANEL																																
01	CHILLED WATER SETPOINT																																
02-15	CHILLER CH-01																																
03	CHWS TEMP (CH-01) SENSOR T-1																																
04	CHWR TEMP (CH-01) SENSOR T-2																																
05	CH-01 FLOW SWITCH FS-1																																
06.1	PUMP P-1 START/STOP																																
06.2	PUMP P-1 VFD FREQUENCY																																
06.3	PUMP P-1 VFD FAULT																																
07	PUMP P-1 STATUS																																
08.1	PUMP P-1 START/STOP																																
08.2	PUMP P-1 VFD FREQUENCY																																
08.3	PUMP P-1 VFD FAULT																																
09	PUMP P-2 STATUS																																
10	PUMP P-1,2 DIFFERENTIAL PRESS																																
11	SYSTEM FLOW (TOTAL)																																
12	BTU'S EXTRACTED																																
-	RESERVED FOR FUTURE																																



PRELIMINARY
Not for construction



Michael Baker
INTERNATIONAL

100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108
AVE INFO

FOR COMMANDER NAVFAC

ACTIVITY
MARINE CORPS BASE
CAMP LEJEUNE

SATISFACTORY TO DATE: DD/MM/YY
DES DEM | DRW AJK | CHK EMB

PM
BRANCH HEAD
DESIGN DIRECTOR
FIRE PROTECTION

NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
ATLANTIC DESIGN AND CONSTRUCTION
NORFOLK, VA
JACKSONVILLE, NC

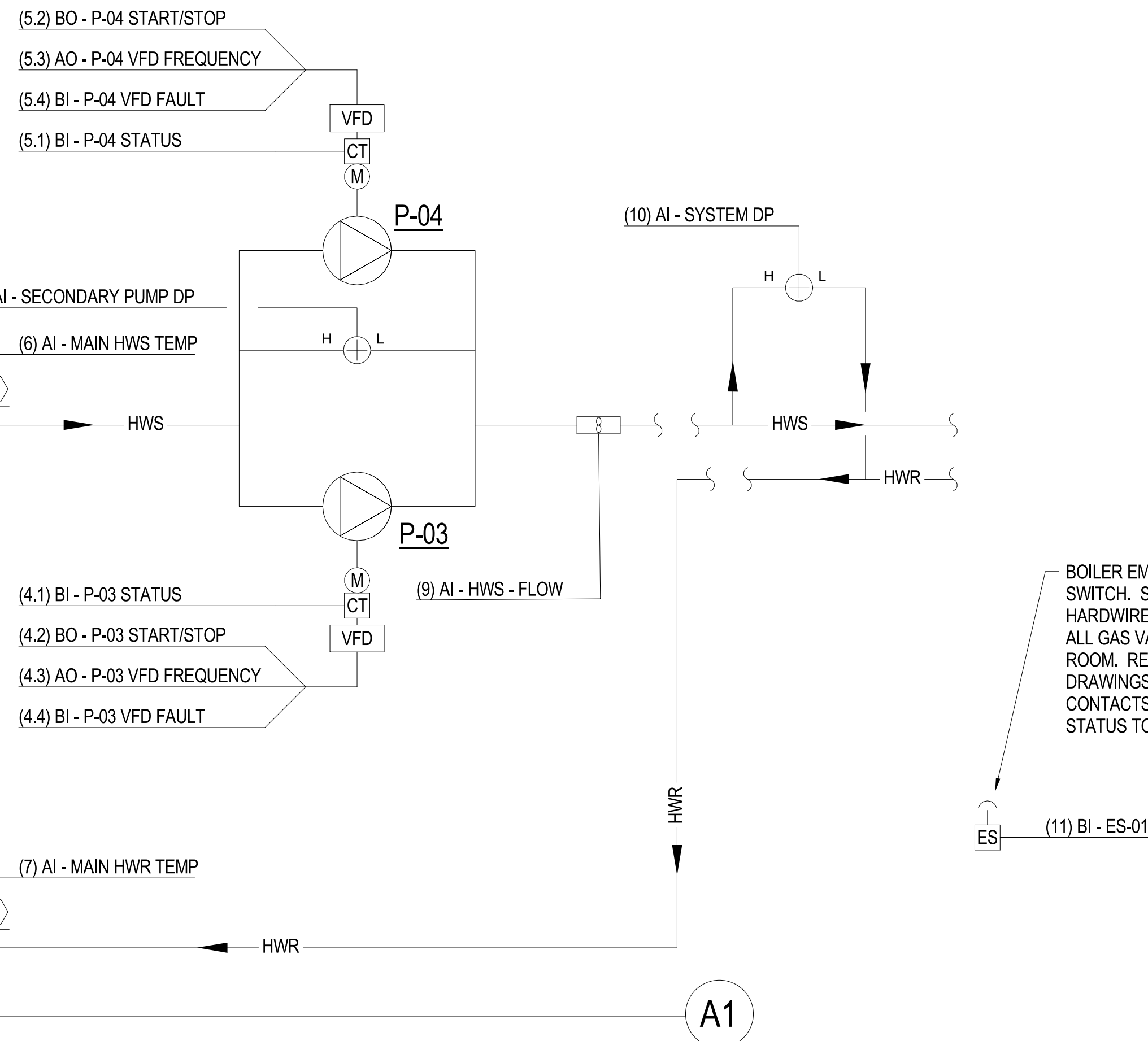
LOGCOM CSP WAREHOUSE
MECHANICAL - CONTROLS

SCALE: AS NOTED
EPROJCT NO.: 1639600
CONSTR. CONTR. NO. N40085-20-C-0059
NAVFAC DRAWING NO.

SHEET OF

M-808

P1527 PREFINAL SUBMISSION - 08/06/2021



BOILER EMERGENCY SHUTDOWN SWITCH. SWITCH SHALL BE HARDWIRE INTERLOCKED TO CLOSE ALL GAS VALVES IN MECHANICAL ROOM. REFER TO ELECTRICAL DRAWINGS FOR WIRING. PROVIDE CONTACTS TO REPORT SWITCH STATUS TO DDC SYSTEM.

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FILE NAME: BIM 360://HF PACKAGE 3/P1527 LOG COM CSP-1639600-M.rvt

BOILER & HEATING HOT WATER PRIMARY/SECONDARY SYSTEM SEQUENCE OF OPERATION

1. HEATING HOT WATER CONTROL
- 1.1. UPON COMMAND FOR HOT WATER BY ANY SERVED DEVICE; ENABLE DUTY SECONDARY HEATING HOT WATER PUMP AND BOILER PLANT (SECONDARY PUMPS ARE FULLY REDUNDANT DUTY/STANDBY).
- 1.2. THE 4-BOILER PLANT SHALL STAGE AND MODULATE THE BOILERS IN THE MOST ENERGY EFFICIENCY COMBINATION OF ACTIVE BOILERS AND FIRING RATES AS DETERMINED BY THE BOILER MANUFACTURER'S INTEGRAL CONTROL SEQUENCE TO MAINTAIN THE MAIN HWS TEMPERATURE AT THE HW SUPPLY TEMPERATURE SETPOINT COMMANDED BY THE DDC SYSTEM IN RESPONSE TO THE OUTDOOR AIR CONDITIONS PER THE HEATING HW OA RESET SCHEDULE. BOILER MASTER CONTROLLER SHALL ALTERNATE LEAD BOILER TO PROVIDE EQUALIZED RUN TIME.
- 1.3. TO PREVENT SHORT CYCLING; THE BOILER SYSTEM SHALL RUN FOR AND BE OFF FOR MINIMUM ADJUSTABLE TIMES (BOTH USER DEFINABLE), UNLESS SHUTDOWN ON SAFETIES.
- 1.4. THE BOILER(S) SHALL RUN SUBJECT TO THEIR OWN INTERNAL SAFETIES AND CONTROLS.
- 1.5. STANDBY SECONDARY HW PUMP SHALL BE ENABLED UPON A FAILURE OF THE DUTY PUMP. THE DUTY PUMP SHALL BE THE PUMP WITH THE LEAST RUNTIME HOURS; SECONDARY PUMPS SHALL CYCLE BETWEEN DUTY/STANDBY ON A WEEKLY BASIS.
2. SECONDARY PUMP DIFFERENTIAL PRESSURE CONTROL:
 - 2.1. THE OPERATING (DUTY) SECONDARY PUMP VFD SHALL MODULATE THE PUMP SPEED TO MAINTAIN THE DIFFERENTIAL PRESSURE (DP) AS MEASURED AT THE REMOTE SYSTEM DP SENSOR. DP SETPOINT SHALL BE AS DETERMINED/RECOMMENDED BY TAB AGENT TO ACHIEVE SYSTEM BALANCING.
 - 2.2. MINIMUM SYSTEM FLOW SHALL BE BASED UPON MINIMUM PERMISSIBLE VFD SPEED AS INDICATED BY THE VFD MANUFACTURER'S IOM. MINIMUM FLOW PROVISIONS SHALL BE ACHIEVED BY THE 3-WAY VALVES INSTALLED IN THE SECONDARY PIPING SYSTEM VAV BOXES (REFER TO EQUIPMENT SCHEDULES AND CONTROL VALVE SCHEDULE).
3. ALARMS AND SYSTEM MONITORING:
 - 3.1. ALARMS SHALL BE PROVIDED AS INDICATED ON THE POINTS LIST AND AS FOLLOWS:
 - SECONDARY HW PUMP FAILURE: COMMANDED ON, BUT STATUS IS OFF.
 - SECONDARY HW PUMP RUNNING IN HAND; COMMANDED OFF, BUT STATUS IS ON.
 - SECONDARY HW PUMP RUNTIME EXCEEDED; STATUS RUNTIME EXCEEDS 168 HOURS (ADJ.)
 - HIGH SECONDARY HW SUPPLY TEMP; IF GREATER THAN 160°F (ADJ.)
 - LOW SECONDARY HW RETURN TEMP; IF LESS THAN 100° OR 15° BELOW SUPPLY WATER TEMPERATURE (WHICHEVER IS LOWER TO ACCOUNT FOR HW RESET)
 - HIGH SYSTEM PRESSURE IF REMOTE DP SENSOR IS 25% (ADJ.) ABOVE SETPOINT.
 - LOW SYSTEM PRESSURE IF REMOTE DP SENSOR IS 25% (ADJ.) BELOW SETPOINT.
 - 3.2. SYSTEM MONITORING POINTS SHALL BE AS INDICATED ON THE POINTS LIST, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
 - SECONDARY HWS FLOWRATE (UFC 3-410-01 REQUIRED POINT)
 - SECONDARY HWS/R TEMPERATURES
 - DIFFERENTIAL PRESSURE ACROSS SECONDARY PUMPS (UFC 3-410-01 REQUIRED POINT)
 - BOILER FAILURE ALARMS NOT OTHERWISE INDICATED BUT PROVIDED WITH BOILER CONTROLLER / BOILER BACNET INTERFACE.

[illegible]

P1527 PREFINAL SUBMISSION - 08/06/2021

D

C

B

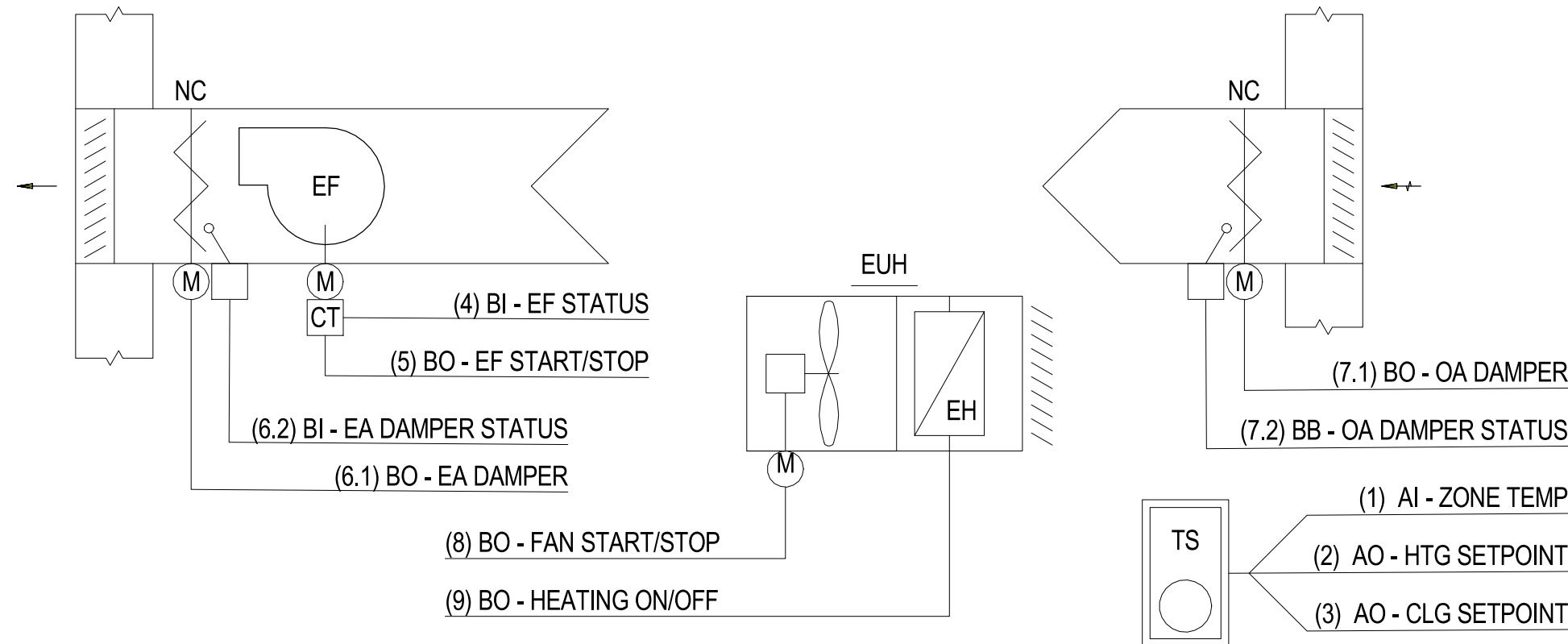
A

ELECTRICAL ROOM FAN FORCED VENTILATION COOLING / ELECTRIC HEATING - SEQUENCE OF OPERATION

- 1. ROOM TO BE THERMOSTATICALLY CONTROLLED BY COMMON THERMOSTAT CONNECTED TO THE DDC SYSTEM FOR SPACE HEATING AND EXHAUST BASED FORCED OUTSIDE AIR VENTILATION COOLING TO MAINTAIN TEMPERATURES WITH 10°F OF AMBIENT OUTDOOR CONDITIONS.
- 2. ON RISE IN SPACE TEMPERATURE ABOVE 80°F (ADJ.) DAMPERS ASSOCIATED WITH THE ROOM INTAKE AND EXHAUST LOUVERS SHALL OPEN AND THE EXHAUST FAN SHALL OPERATE CONTINUOUSLY. UPON FALL IN SPACE TEMPERATURE BELOW 80°F (ADJ.) THE REVERSE SHALL OCCUR.
- 3. UPON FALL IN SPACE TEMPERATURE BELOW HEATING SETPOINT OF 55°F (ADJ.), ELECTRIC UNIT/WALL HEATER SERVING SPACE SHALL ENERGIZE BY STARTING FAN AND ELECTRIC HEATING COIL TO MAINTAIN SPACE HEATING SETPOINT. UPON RISE IN TEMPERATURE ABOVE 55°F (ADJ.), THE REVERSE SHALL OCCUR. WHERE ELECTRIC HEATERS PROVIDED WITH INTEGRAL THERMOSTATIC CONTROL, SET SUC CONTROL AT 55°; PROVIDE ALARM TO DDC SYSTEM OF SPACE TEMPERATURE FALLS BELOW 50°.
- 4. ATPF SHUTDOWN: VENTILATION SYSTEM (FAN AND DAMPERS) SHALL BE HARDWIRED TO SHUTDOWN UPON ATPF SWITCH ACTIVATION, REFER TO M-803 FOR MORE INFORMATION.

EXHAUST FAN / VENTILATION DAMPERS / ELECTRIC UNIT HEATER SYSTEM POINT LIST

POINT NUMBER	SYSTEM POINT DESCRIPTION	HARDWARE POINTS										SYSTEM FEATURES /SOFTWARE POINTS						NOTES
		ANALOG					DIGITAL (BINARY)					PROGRAMS			ALARMS			
		INPUT (AI)		OUTPUT(AO)			INPUT (BI)		OUTPUT (BO)									
	SHOW ON DISPLAY	TEMPERATURE	SETPOINT ADJ	STATUS	START/STOP	OPEN/CLOSED	ON/OFF	TREND - START/STOP	TREND - STATUS	TREND - OPEN/CLOSED	TREND - HEATER	FAILURE	IN HAND	RUNTIME EXCEEDED	LOW ANALOG			
1	ZONE TEMP	●	●														●	
2	HEATING SETPOINT*	●		●													●	1
3	COOLING (VENTILATION) SETPOINT	●		●														
4	EXHAUST FAN STATUS	●				●							●	●			●	
5	EXHAUST FAN START/STOP	●							●									
6.1	EXHAUST DAMPER	●								●					●			
6.2	EXHAUST DAMPER STATUS					●												
7.1	OUTDOOR AIR DAMPER	●								●					●			
7.2	OUTDOOR AIR DAMPER STATUS					●												
8	UNIT HEATER FAN START/STOP*	●						●							●			1
9	UNIT HEATER ELECTRIC COIL*	●								●								1
-	-																	
##	RESERVED FOR FUTURE																	



ELECTRICAL ROOM CONTROL DIAGRAM
(EF-02, 03, & 04, EWH-01, 02 / EUH-01)

SCALE: NTS

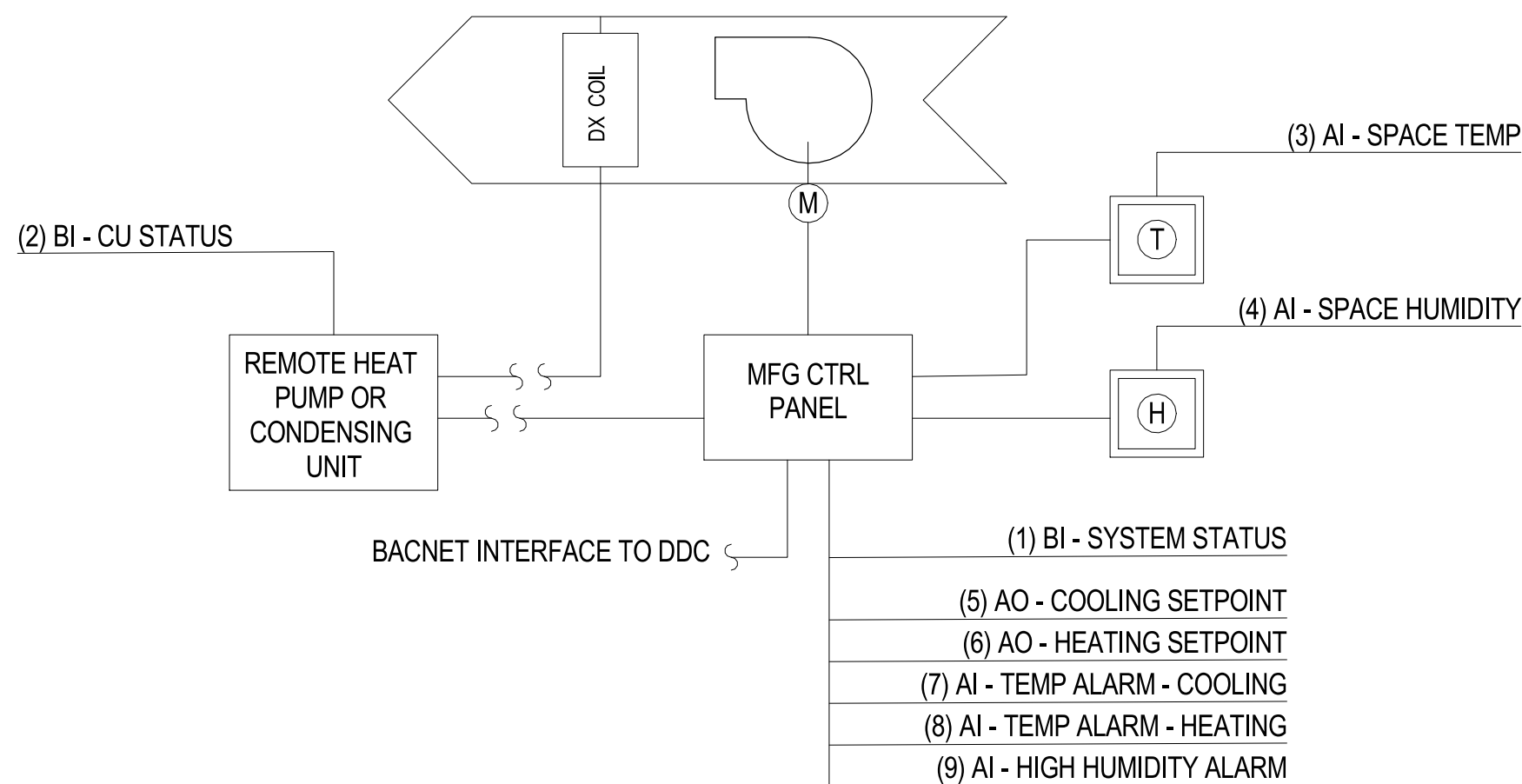
A1

SPLIT DX HEAT PUMP - SEQUENCE OF OPERATION

- 1. REMOTE CONTROL PANEL BY UNIT/SYSTEM MANUFACTURER SHALL BE WALL MOUNTED AND CONTROL COOLING AND HEATING MODES OF OPERATION. TEMPERATURE AND HUMIDITY SENSORS SHALL BE INTEGRAL TO THE CONTROL PANEL (IF AVAILABLE FROM MANUFACTURER) OR MOUNTED SEPARATELY ADJACENT TO THE CONTROL PANEL BY THE CONTROLS CONTRACTOR.
- 2. MANUFACTUER'S CONTROL PANEL SHALL INCLUDE AUTOMATIC UNIT SWITCHING OPERATIONS (HEATING / COOLING) AND DISPLAY NORMAL FUNCTIONS, MALFUNCTIONS AND SERVICE DIAGNOSTICS ON AN INTEGRAL LCD DISPLAY. BACNET INTERFACE MODULE SHALL BE PROVIDED (IF AVAILABLE FROM MANUFACTURER) TO INTEGRATE INTO BUILDING DDC SYSTEM.
- 3. ALARM CONDITIONS, IN ADDITION TO BEING DISPLAYED ON THE LOCAL LCD CONTROL PANEL SHALL BE RELAYED TO THE DDC SYSTEM. IF BACNET INTERFACE IS AVAILABLE, ALARM SPECIFICS SHALL BE SENT TO THE DDC SYSTEM, OTHERWISE A BASIC ALARM RELAY SHALL BE PROVIDED TO SIGNAL AN ALARM CONDITION TO THE DDC TO ALERT BUILDING OPERATOR OF CONDITION.
- 4. THE UNIT SHALL OPERATE CONTINUOUSLY. THE HEATING TEMPERATURE SETPOINT (HEAT PUMPS) IS 68° F DB (ADJ). THE COOLING TEMPERATURE SETPOINT IS 78°F DB (ADJ). ALARMS SHALL BE PROVIDED WHEN SPACE TEMPERATURE CONDITIONS FALL OUTSIDE THE HEATING (HEAT PUMPS ONLY) AND COOLING SETPOINTS BY 5°F OR WHEN SPACE HUMIDITY EXCEEDS 65%. ALL ALARM POINTS SHALL BE ADJUSTABLE.
- 5. CONTROL CONTRACTOR SHALL PROVIDE ALL INTERCONNECTING WIRING, RELAYS AND CONNECTIONS BETWEEN MANUFACTURER'S CONTROL PANEL, INDOOR UNIT AND OUTDOOR CONDENSING UNIT AND INTERFACE TO BUILDING DDC SYSTEM.

DUCTLESS MINI-SPLIT COOLING/ HEAT PUMP SYSTEMS (SSAC / SSCU & SSHP / HPCU) POINT LIST

POINT NUMBER	SYSTEM POINT DESCRIPTION	HARDWARE POINTS												SYSTEM FEATURES /SOFTWARE POINTS				NOTES			
		ANALOG						DIGITAL (BINARY)						PROGRAMS		ALARMS					
		INPUT (AI)			OUTPUT (AO)			INPUT (BI)			OUTPUT (BO)										
	SHOW ON DISPLAY	TEMPERATURE	RELATIVE HUMIDITY				TEMPERATURE				UNIT STATUS						TREND				HIGH ANALOG
	SPLIT DX HEAT PUMP																				
	DDC SYSTEM BACNET INTERFACE	●																			
1	SYSTEM STATUS	●								●							●				
2	CONDENSING UNIT STATUS	●								●							●				
3	SPACE TEMPERATURE	●	●														●				
4	SPACE HUMIDITY	●		●																	
5	COOLING SETPOINT	●					●														
6	HEATING SETPOINT	●					●														
7	ZONE TEMP ALARM - COOLING																		●		
8	ZONE TEMP ALARM - HEATING																			●	
9	ZONE HIGH HUMIDITY ALARM																		●		
-	-																				
##	RESERVED FOR FUTURE																				



SPLIT DX HEAT PUMP - CONTROL DIAGRAM

SCALE: NTS

A3

B

A

APPR
DATE

DESCRIPTION

SYN

PRELIMINARY
Not for construction

SEAL

100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108
AVE INFO
APPROVED

FOR COMMANDER NAVFAC
ACTIVITY
MARINE CORPS BASE
CAMP LEJEUNE
SATISFACTORY TO DATE: DD/MM/YY
DES DEM | DRW AJK | CHK EMB
PM
BRANCH HEAD
DESIGN DIRECTOR
FIRE PROTECTION
NAVFACILITIES ENGINEERING SYSTEMS COMMAND
ATLANTIC DESIGN AND CONSTRUCTION
NORFOLK, VA
JACKSONVILLE, NC
LOGCOM CSP WAREHOUSE
MECHANICAL - CONTROLS

SCALE: AS NOTED
EPROJECT NO.: 1639600
CONSTR. CONTR. NO. N40085-20-C-0059
NAVFAC DRAWING NO.
SHEET OF

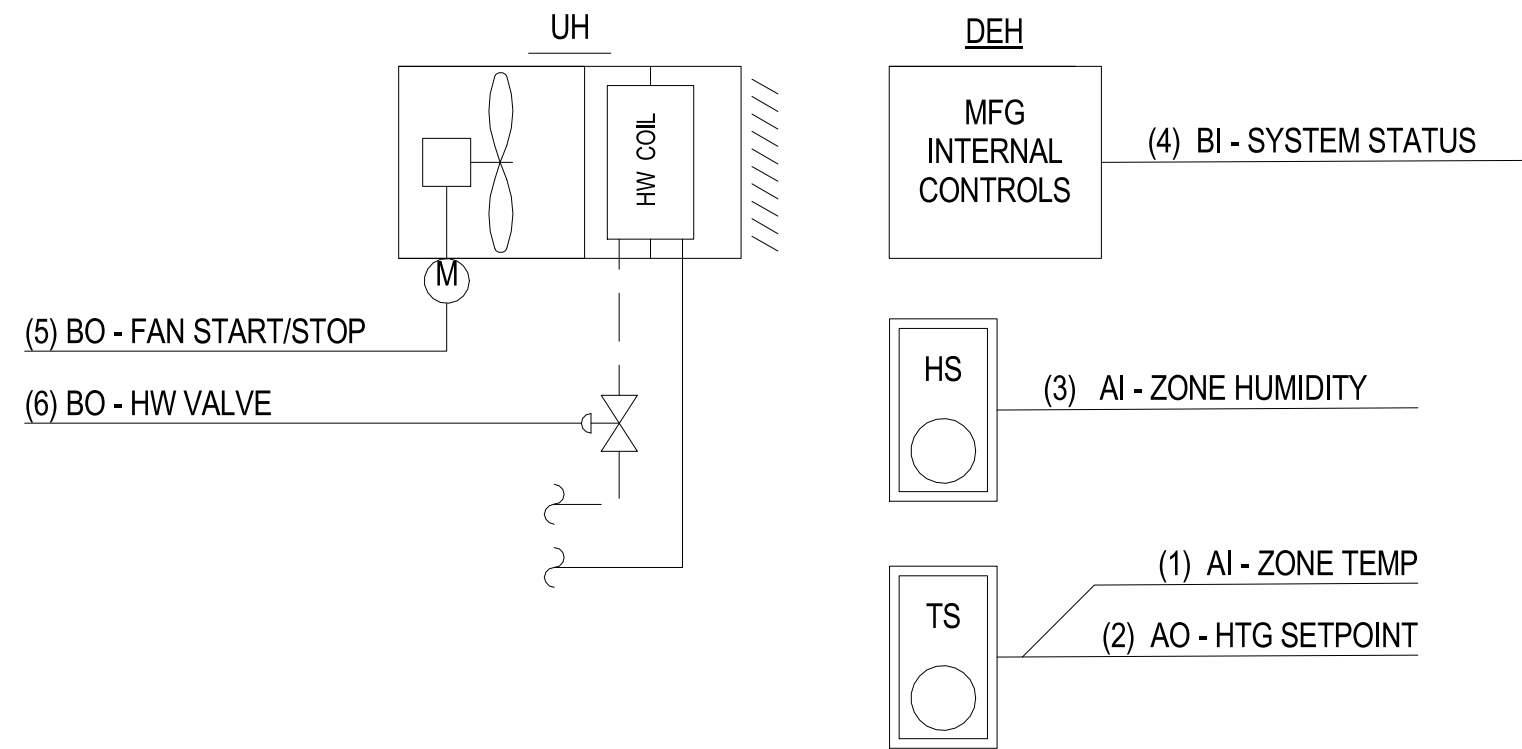
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P1527 PREFINAL SUBMISSION - 08/06/2021

FILE NAME: BIM 360/HF PACKAGE 3P1527 LOG COM CSP-163960-M.dvt
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**COLD MECHANICAL ROOM HYDRONIC HEATING AND DEHUMIDIFICATION -
SEQUENCE OF OPERATION**

- ROOM TO BE DEHUMIDIFIED BY DEHUMIDIFIER INTERNAL CONTROLS. UPON RISE IN RELATIVE HUMIDITY ABOVE 55°F DEWPOINT (ADJ.), DEHUMIDIFIER TO TURN ON AND OPERATE CONTINUOUSLY. UPON FALL IN DEWPOINT BELOW 55°F DEWPOINT (ADJ.), THE REVERSE SHALL OCCUR.
- ZONE HUMIDITY SENSOR TO SEND ROOM HUMIDITY LEVEL TO DDC SYSTEM. UPON RISE IN HUMIDITY LEVEL ABOVE 65°F DEWPOINT (ADJ.), ALARM SHALL BE GENERATED.
- UPON FALL IN SPACE TEMPERATURE BELOW HEATING SETPOINT OF 55°F (ADJ.), HYDRONIC UNIT HEATER SERVING SPACE SHALL ENERGIZE BY STARTING FAN AND FULLY OPENING HOT WATER VALVE TO MAINTAIN SPACE HEATING SETPOINT. UPON RISE IN TEMPERATURE ABOVE 55°F (ADJ.), THE REVERSE SHALL OCCUR.

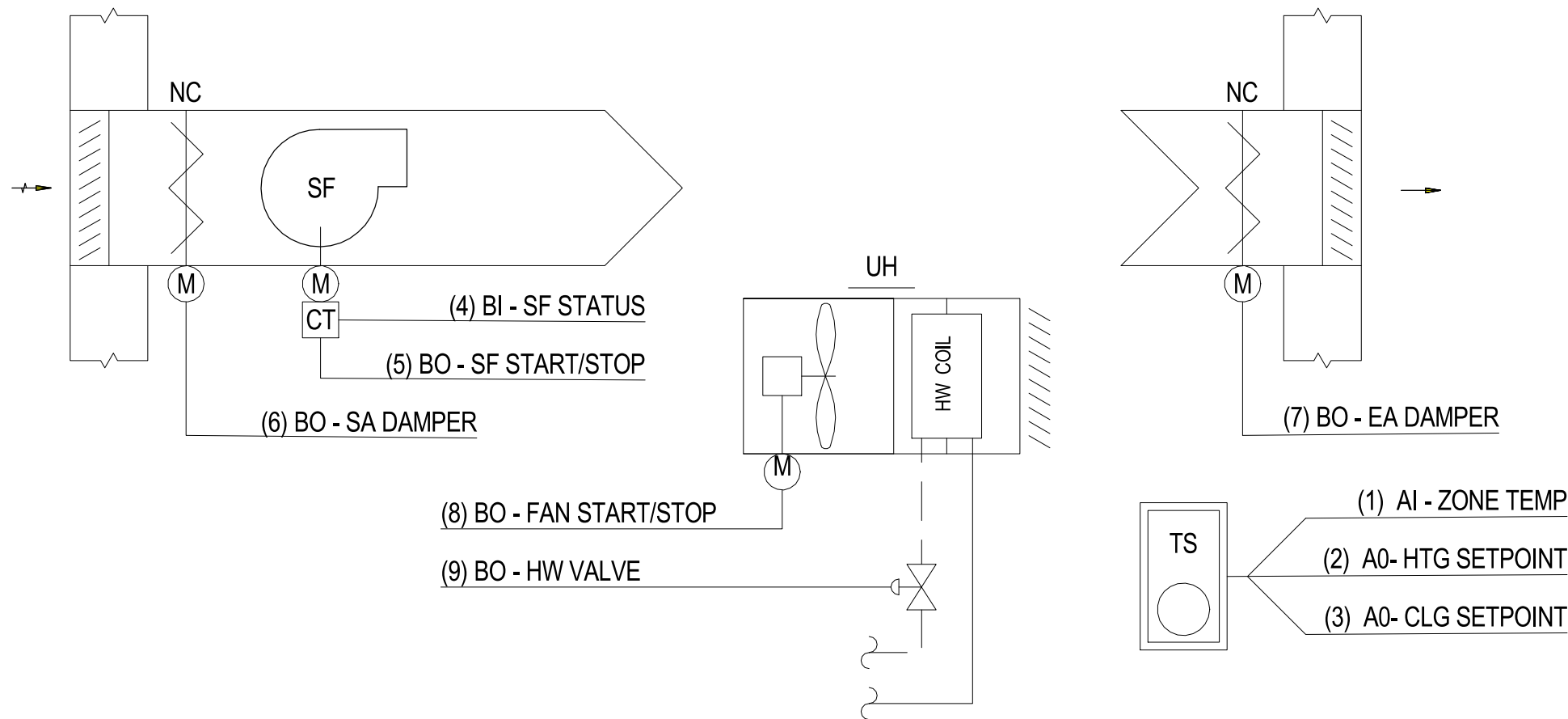


MECHANICAL ROOM 400 CONTROL DIAGRAM (UH-02, DEH-01)

SCALE: NTS

**MECHANICAL ROOM 401 FAN FORCED VENTILATION COOLING/HYDRONIC HEATING -
SEQUENCE OF OPERATION**

- ROOM TO BE THERMOSTATICALLY CONTROLLED BY COMMON THERMOSTAT CONNECTED TO THE DDC SYSTEM FOR SPACE HEATING AND SUPPLY BASED FORCED OUTSIDE AIR VENTILATION COOLING TO MAINTAIN TEMPERATURES WITH 10°F OF AMBIENT OUTDOOR CONDITIONS.
- ON RISE IN SPACE TEMPERATURE ABOVE 80°F (ADJ.) DAMPERS ASSOCIATED WITH THE ROOM INTAKE AND EXHAUST LOUVERS SHALL OPEN AND THE SUPPLY FAN SHALL OPERATE CONTINUOUSLY. UPON FALL IN SPACE TEMPERATURE BELOW 80°F (ADJ.), THE REVERSE SHALL OCCUR.
- UPON FALL IN SPACE TEMPERATURE BELOW HEATING SETPOINT OF 55°F (ADJ.), HYDRONIC UNIT HEATER SERVING SPACE SHALL ENERGIZE BY STARTING FAN AND OPENING HOT WATER VALVE TO MAINTAIN SPACE HEATING SETPOINT. UPON RISE IN TEMPERATURE ABOVE 55°F (ADJ.), THE REVERSE SHALL OCCUR.

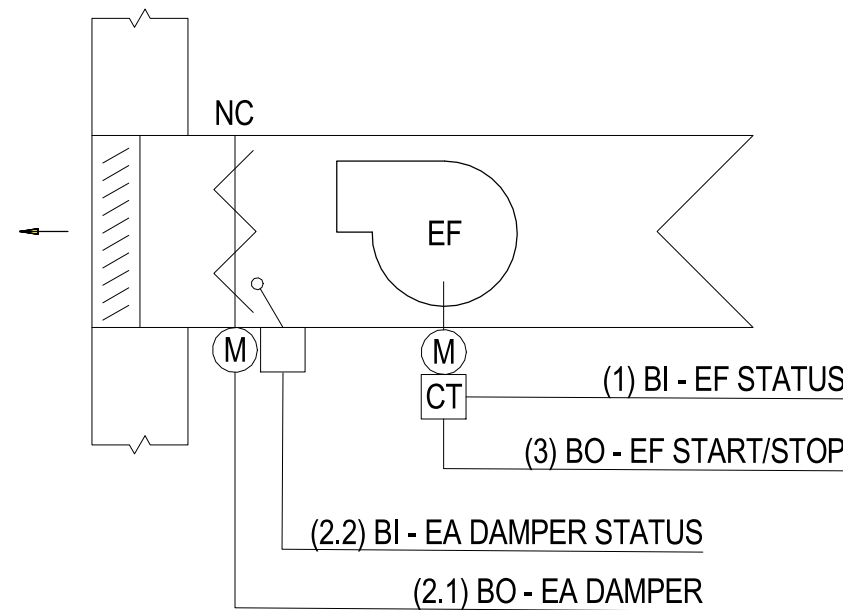


MECHANICAL ROOM 401 (HOT) CONTROL DIAGRAM (SF-01, UH-01)

SCALE: NTS

EXHAUST FAN (EF-01) - SEQUENCE OF OPERATION

- THE FAN SHALL RUN DURING OCCUPIED HOURS IN IN CONJUNCTION WITH AHU-02, UNLESS SHUTDOWN ON SAFETIES.
- THE FAN SHALL SHUTDOWN, THE ASSOCIATED EXHAUST DAMPER SHALL CLOSE, AND AN ALARM SHALL BE GENERATED UPON RECEIVING AN ATFP SHUTDOWN SIGNAL.
- THE CONTROLLER SHALL MONITOR THE FAN STATUS.
- ALARMS SHALL BE PROVIDED AS FOLLOWS:
 - FAN FAILURE: COMMANDED ON, BUT THE STATUS IS OFF.
 - FAN IN HAND: COMMANDED OFF, BUT THE STATUS IS ON.
 - FAN RUNTIME EXCEEDED: FAN STATUS RUNTIME EXCEEDS A USER DEFINABLE LIMIT (ADJ.).
- ATFP SHUTDOWN: VENTILATION SYSTEM (FAN AND DAMPERS) SHALL BE HARDWIRED TO SHUTDOWN UPON ATFP SWITCH ACTIVATION, REFER TO M-803 FOR MORE INFORMATION.



EXHAUST FAN EF-01 & DAMPER CONTROL DIAGRAM

SCALE: NTS

HYDRONIC UNIT HEATER / DEHUMIDIFIER (UH / DEH) POINTS LIST

POINT NUMBER	SYSTEM POINT DESCRIPTION	HARDWARE POINTS												SYSTEM FEATURES /SOFTWARE POINTS				NOTES					
		ANALOG						DIGITAL (BINARY)						PROGRAMS		ALARMS							
		INPUT (AI)			OUTPUT(AO)			INPUT (BI)			OUTPUT (BO)												
	HYDRONIC UNIT HEATERS AND DEHUMIDIFIER	COLOR GRAPHIC	TEMPERATURE	HUMIDITY	SETPOINT ADJ				STATUS				START/STOP	POSITION			TREND - START/STOP	TREND - STATUS	TREND - HEATER	FAILURE	IN HAND	RUNTIME EXCEEDED	LOW ANALOG
1	ZONE TEMP	●	●																				●
2	HEATING SETPOINT	●			●																		
3	AI - ZONE HUMIDITY	●		●																			●
4	BI - SYSTEM STATUS	●						●										●		●	●		
5	UNIT HEATER FAN START/STOP	●										●											
6	UNIT HEATER HW VALVE	●											●										
-	-																						
##	RESERVED FOR FUTURE																						

SUPPLY FAN / VENTILATION DAMPERS / UNIT HEATER SYSTEM POINT LIST

POINT NUMBER	SYSTEM POINT DESCRIPTION	HARDWARE POINTS												SYSTEM FEATURES /SOFTWARE POINTS						NOTES								
		ANALOG						DIGITAL (BINARY)						PROGRAMS			ALARMS											
		INPUT (AI)			OUTPUT(AO)			INPUT (BI)			OUTPUT (BO)																	
	EXHAUST FAN / VENTILATION COOLING & ASSOCIATED LOUVERS / HYDRONIC HEATERS	SHOW ON GRAPHIC	TEMPERATURE					SETPOINT ADJ	POSITION /% OPEN				STATUS			START/STOP	OPEN/CLOSED	ON/OFF		TREND - START/STOP	TREND - STATUS	TREND - OPEN/CLOSED	TREND - HEATER	FAILURE	IN HAND	RUNTIME EXCEEDED	LOW ANALOG	
1	ZONE TEMP	●	●																									
2	HEATING SETPOINT	●				●																						●
3	COOLING (VENTILATION) SETPOINT	●				●																						
4	SUPPLY FAN STATUS	●										●								●	●			●	●			
5	SUPPLY FAN START/STOP	●														●					●							
6.1	INTAKE (OA) DAMPER	●											●				●					●						
6.2	INTAKE (OA) DAMPER STATUS	●										●											●					
7.1	EXHAUST AIR DAMPER	●															●					●						
7.2	EXHAUST AIR DAMPER STATUS	●										●																
8	UNIT HEATER FAN START/STOP	●											●			●							●					
9	UNIT HEATER HW VALVE	●																										
-	-							●																				
##	RESERVED FOR FUTURE																											

EXHAUST FAN EF-01 & DAMPER POINT LIST

POINT NUMBER	SYSTEM POINT DESCRIPTION	SHOW ON DISPLAY	HARDWARE POINTS								SYSTEM FEATURES / SOFTWARE POINTS				NOTES						
			ANALOG				DIGITAL (BINARY)				PROGRAMS		ALARMS								
			INPUT (AI)		OUTPUT (AO)		INPUT (BI)		OUTPUT (BO)												
	EXHAUST FAN / ASSOCIATED LOUVER																				
1	EXHAUST FAN STATUS	●							STATUS						TREND - START/STOP	TREND - STATUS	TREND - OPEN/CLOSED	FAILURE	IN HAND	RUNTIME EXCEEDED	LOW ANALOG
2.1	EXHAUST DAMPER	●							●						●	●	●				
2.2	EXHAUST DAMPER STATUS	●							●												
3	EXHAUST FAN START/STOP	●												●							
-	-																				
##	RESERVED FOR FUTURE																				



PRELIMINARY
NOT FOR CONSTRUCTION



Michael Baker
INTERNATIONAL
100 AIRSIDE DRIVE
MOON TOWNSHIP, PA 15108
AVE INFO

FOR COMMANDER NAVFAC
ACTIVITY
MARINE CORPS BASE
CAMP LEJEUNE
SATISFACTORY TO DATE: DD/MM/YY
DES DEM | DRW KC | CHK EMB
PM
BRANCH HEAD
DESIGN DIRECTOR
FIRE PROTECTION

DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND
ATLANTIC DESIGN AND CONSTRUCTION
NAVFAC
MBC CAMP LEJEUNE
JACKSONVILLE, NC
LOGCOM CSP WAREHOUSE
MECHANICAL - CONTROLS

SCALE: AS NOTED
EPROJECT NO.: 1639600
CONSTR. CONTR. NO.
N40085-20-C-0059
NAVFAC DRAWING NO.
SHEET OF

M-813

P1527 PREINAL SUBMISSION - 08/06/2021