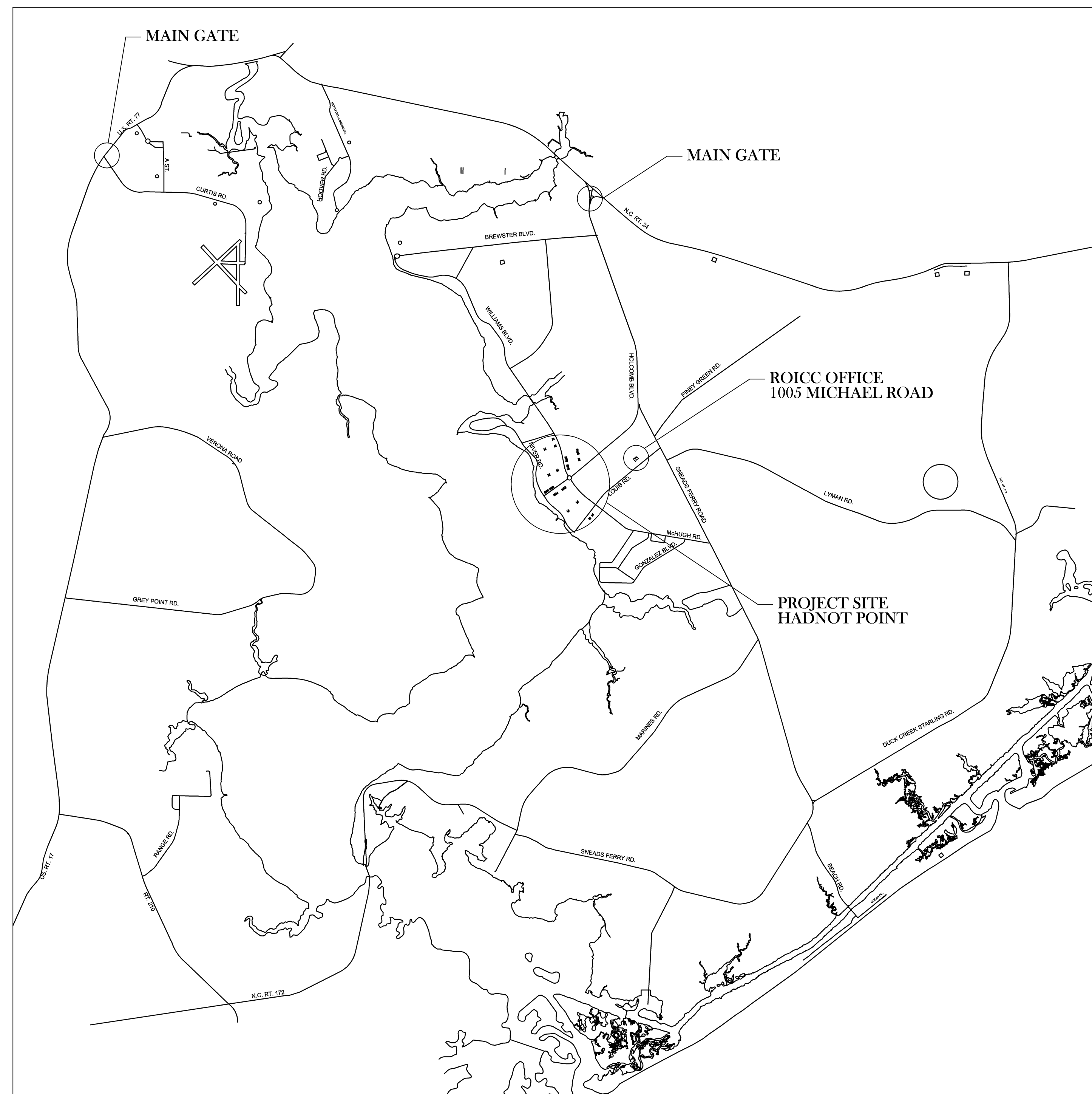


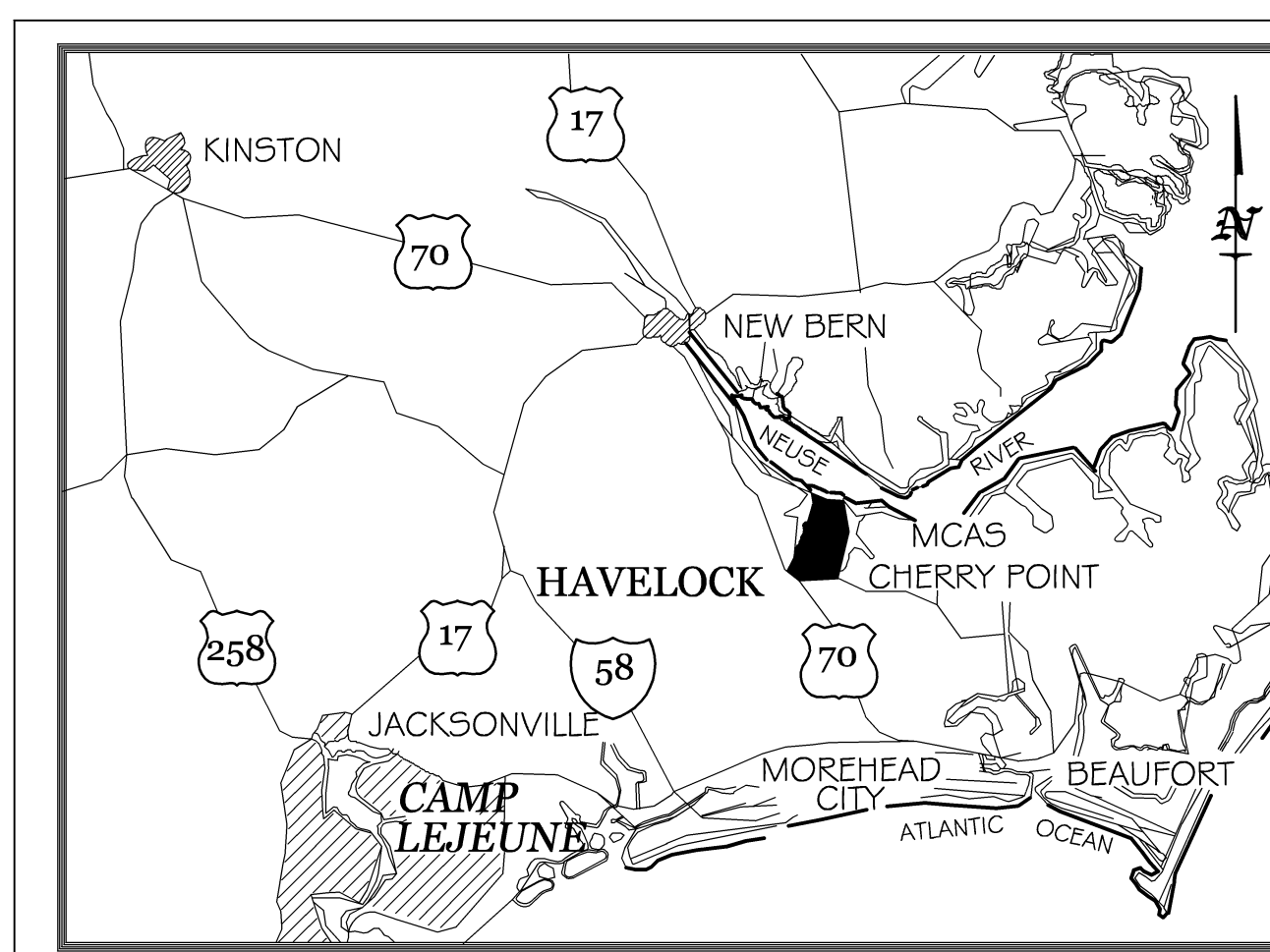
SYM.	PREP'D BY	DATE	APPROVED



BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT

MARINE CORPS BASE,
CAMP LEJEUNE, N.C.
PROJECT NO. CP 12-0104

LOCATION MAP
NOT TO SCALE

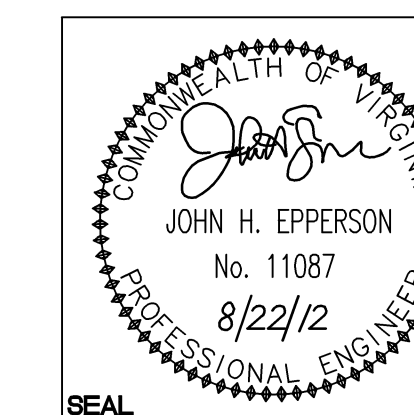


VICINITY MAP
SCALE AS NOTED

DISCLOSURE OF INFORMATION

Contractor shall comply as follows:

- (a) The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless:
 - (1) The Contracting Officer has given prior written approval; or
 - (2) The information is otherwise in the public domain before the date of release.
- (b) Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.
- (c) The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.



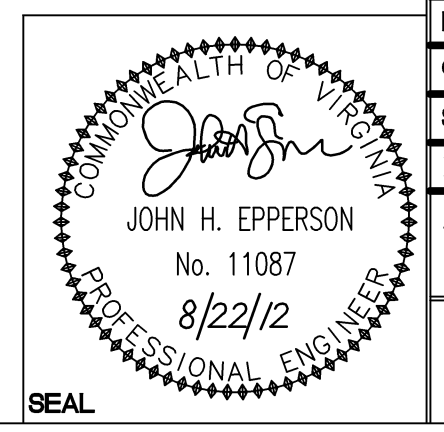
WileyWilson 6600 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.254.7242 wileywilson.com		G-001 PROJECT NO. CP12-0104	
DEPT OF NAVY MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA		NAVAL FACILITIES ENGINEERING COMMAND	
DES. JHE DR. AEI CHK. JHE SUBMITTED BY: DESIGN DR.		BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT COVER SHEET	
APPROVED PWO OR OICC DATE SATISFACTORY TO DATE	SIZE E	CODE IDENT NO. 80091	NAVFAC DRAWING NO. 60011265
SCALE: AS SHOWN		SPEC No. 06-12-0104	SHEET 01 OF 43

SYM.	PREP'D BY	DATE	APPROVED

INDEX OF DRAWINGS		
Sheet Number	NAVFAC Number	Sheet Title
G-001	60011265	COVER SHEET
G-002	60011266	INDEX OF DRAWINGS
C-101	60011267	OVERALL PLAN
C-102	60011268	SITE PLAN (1 OF 2)
C-103	60011269	SITE PLAN (2 OF 2)
C-201	60011270	DETAILS
S-101	60011271	FOUNDATION & ROOF FRAMING PLANS AND GENERAL NOTES
S-301	60011272	SECTIONS & DETAILS
A-001	60011273	GENERAL NOTES, ABBREVIATIONS, AND LEGEND
A-101	60011274	PLANS AND ELEVATIONS
A-301	60011275	SECTIONS AND DETAILS
M-001	60011276	LEGEND AND ABBREVIATIONS
M-101	60011277	BUILDING 6 MECHANICAL DEMOLITION AND NEW WORK PLAN
M-102	60011278	BUILDING 8 MECHANICAL DEMOLITION AND NEW WORK PLAN
M-103	60011279	BUILDING 10 MECHANICAL DEMOLITION AND NEW WORK PLAN
M-104	60011280	BUILDING 12 MECHANICAL DEMOLITION AND NEW WORK PLAN
M-105	60011281	BUILDING 59 & 60 MECHANICAL DEMOLITION AND NEW WORK PLAN
M-106	60011282	BUILDING 63 MECHANICAL DEMOLITION AND NEW WORK PLAN
M-107	60011283	BUILDING 101 MECHANICAL DEMOLITION AND NEW WORK PLAN
M-108	60011284	BUILDING 102 MECHANICAL DEMOLOTION AND NEW WORK PLAN
M-109	60011285	BUILDING 111 MECHANICAL DEMOLITION AND NEW WORK PLAN
M-110	60011286	BUILDING 205 MECHANICAL DEMOLITION AND NEW WORK PLAN
M-111	60011287	BUILDING 213 MECHANICAL DEMOLITION AND NEW WORK PLAN
M-112	60011288	BUILDING 308 MECHANICAL DEMOLITION AND NEW WORK PLAN
M-113	60011289	BUILDING 309 MECHANICAL DEMOLITION AND NEW WORK PLAN
M-114	60011290	BUILDING 312 MECHANICAL DEMOLITION AND NEW WORK PLAN
M-115	60011291	BUILDING 313 MECHANICAL DEMOLITION AND NEW WORK PLAN
M-116	60011292	BUILDING 316 MECHANICAL DEMOLITION AND NEW WORK PLAN
M-117	60011293	BUILDING 318 MECHANICAL DEMOLITION AND NEW WORK PLAN
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M-119	60011295	BUILDING 323 MECHANICAL DEMOLITION AND NEW WORK PLAN
M-120	60011296	BUILDING 407 MECHANICAL DEMOLITION AND NEW WORK PLAN
M-121	60011297	BUILDING 417 MECHANICAL DEMOLITION AND NEW WORK PLAN
M-122	60011298	BUILDING 507 MECHANICAL DEMOLITION AND NEW WORK PLAN
M-123	60011299	BUILDING 511 MECHANICAL DEMOLITION AND NEW WORK PLAN
M-201	60011300	DETAILS
M-301	60011301	CONTROLS
E-001	60011302	ELECTRICAL LEGEND, ABBREVIATION AND LIGHTING DETAILS
E-101	60011303	BUILDINGS 10, 12, 101, 102, 111 ELECTRICAL PLANS
E-102	60011304	BUILDINGS 205,213, 308, 309, 312, 313
E-103	60011305	BUILDINGS 316, 318, 321, 407, 417 ELECTRICAL PLANS
E-104	60011306	BUILDINGS 59, 323, 507, 511
E-105	60011307	BUILDINGS 6, 8, 63 ELECTRICAL PLANS

DISCLOSURE OF INFORMATION

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 - (1) The Contracting Officer has given prior written approval; or
 - (2) The information is otherwise in the public domain before the date of release.
 - (b) Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.
 - (c) The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.



WileyWilson 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.254.7222 wileywilson.com		G-002 PROJECT NO. CP12-0104	
DEPT OF NAVY MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA		NAVAL FACILITIES ENGINEERING COMMAND	
DES.	JHE	BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT	
DR.	AEI	INDEX OF DRAWINGS	
CHK.	JHE	NAVFAC DRAWING NO. 60011266	
SUBMITTED BY:		CONSTR CONTR NO. N40085-12-B-0104	
DESIGN DR.		SHEET 02 OF 43	
APPROVED PWO OR OICC	DATE	SIZE	CODE IDENT NO.
	8/22/12	E	80091
SATISFACTORY TO	DATE	SCALE:	SPEC No.
		AS SHOWN	05-12-0104



GENERAL NOTES:

- NO TOPOGRAPHIC OR GROUND SURVEY WAS PERFORMED. ALL EXISTING FEATURES SHOWN ON THE PLANS ARE FROM GIS INFORMATION PROVIDED BY CAMP LEJEUNE. THIS PLAN DOES NOT GUARANTEE THE EXISTENCE, NON-EXISTENCE, SIZE, TYPE, LOCATION, ALIGNMENT, OR DEPTH OF ANY UNDERGROUND UTILITY OR STRUCTURE. THE CONTRACTOR SHALL PERFORM ANY INVESTIGATION NECESSARY TO VERIFY UTILITY LOCATIONS AND SHALL REPORT TO THE ENGINEER ANY DISCREPANCIES.
- CONTACT MISS UTILITY, 1-800-632-4949, FORTY-EIGHT (48) HOURS PRIOR TO DIGGING. UTILITY AUTHORITIES SHALL BE NOTIFIED IN ADVANCE OF ANY EXCAVATION IN THE PROXIMITY OF THEIR UTILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING, AT HIS EXPENSE, ANY EXISTING UTILITY DAMAGED DURING CONSTRUCTION.
- UNLESS OTHERWISE INDICATED, DEMOLITION WASTE BECOMES THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROMPTLY REMOVED FROM THE SITE.
- THE CONTRACTOR IS RESPONSIBLE FOR CONDUCTING DEMOLITION OPERATIONS IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
- LOCATE, IDENTIFY, DISCONNECT, AND SEAL OR CAP OFF UTILITIES TO BE ABANDONED. EXISTING UTILITIES LOCATED UNDER PROPOSED BOILER BUILDINGS SHALL BE FILLED WITH FLOWABLE FILL. COORDINATE ALL UTILITY DEMOLITION WITH APPLICABLE UTILITY AUTHORITY. NOTIFY OWNER NOT LESS THAN TWO (2) DAYS IN ADVANCE OF PROPOSED UTILITY INTERRUPTIONS.
- THE CONTRACTOR SHALL PROTECT SITE FEATURES THAT ARE TO REMAIN DURING CONSTRUCTION ACTIVITIES. ALL TREES SHALL BE PROTECTED AND NOT DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL BE FULLY LIABLE FOR ANY DAMAGES TO PUBLIC OR PRIVATE PROPERTY CAUSED BY THE CONSTRUCTION OPERATION AND SHALL RESTORE DAMAGED PROPERTY TO EXISTING OR BETTER CONDITION AT NO ADDITIONAL COST TO OWNER.
- DO NOT CLOSE OR OBSTRUCT STREETS, WALKS, WALKWAYS, OR OTHER ADJACENT OCCUPIED OR USED FACILITIES WITHOUT PERMISSION FROM THE OWNER AND AUTHORITIES HAVING JURISDICTION.
- CONTRACTOR SHALL PROVIDE SAFETY FENCING AROUND THE CONSTRUCTION SITE AS NEEDED TO KEEP PEDESTRIANS AND VEHICLES OUT OF THE CONSTRUCTION AREA.
- THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS AND MINIMUM 4 INCHES OF CLEARANCE FROM FINISH FLOOR TO GROUND ELEVATION. UNIFORMITY ROUGH GRADE AREA OF CONSTRUCTION TO A SMOOTH SURFACE, FREE FROM IRREGULAR SURFACE CHANGES. PROVIDE SMOOTH TRANSITION BETWEEN ADJACENT EXISTING GRADES AND NEW GRADES. ADDITIONAL FILL SHALL BE PROPERLY COMPACTED WITH SATISFACTORY SOIL MATERIALS. PROVIDE EROSION CONTROL MEASURES AS APPROPRIATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ANY EROSION FROM OCCURRING AND SEDIMENT FROM LEAVING THE DISTURBED AREA.
- CLEAR AND GRUB AREAS WITHIN AND TO A POINT 5 FEET OUTSIDE OF ALL STRUCTURES, AREAS TO RECEIVE FILL, AND TRANSITIONAL AREAS BETWEEN CUT AND FILL. STRIP TOPSOIL IN A MANNER TO PREVENT INTERMINGLING WITH UNDERLYING SUBSOIL OR WASTE MATERIAL.
- CLEAN ADJACENT STRUCTURES AND IMPROVEMENTS OF DUST, DIRT, AND DEBRIS CAUSED BY CONSTRUCTION OPERATIONS. RETURN ADJACENT AREAS TO CONDITION EXISTING BEFORE CONSTRUCTION OPERATIONS BEGAN. CLEAN UP DEBRIS RESULTING FROM CONSTRUCTION OPERATIONS CONTINUOUSLY WITH THE PROGRESS OF THE WORK.
- ALL CONSTRUCTION VEHICLE WHEELS SHALL BE CLEANED BEFORE ENTERING PAVED ROADS.
- DIMENSIONS SHOWN ARE TO FACE OF BUILDING.
- ALL DISTURBED AREAS SHALL BE PERMANENTLY SEEDED AND STABILIZED IN ACCORDANCE WITH THE SEEDING SPECIFICATIONS IMMEDIATELY AFTER REACHING FINISHED GRADE.
- CONTRACTOR SHALL CONNECT FLOOR DRAIN TO EXISTING SANITARY LINE. THE CONTRACTOR SHALL VERIFY EXISTING SANITARY SEWER LOCATION AND ELEVATION AND UTILITY CROSSING CONFLICTS. CLEANOUTS SHALL BE PROVIDED AT 5' OUTSIDE THE BUILDINGS AND AT EVERY BEND. LATERAL LENGTHS GREATER THAN 50' SHALL HAVE A CLEANOUT SPACED EVERY 50'. LATERAL LENGTHS GREATER THAN 300' SHALL HAVE A MANHOLE. ALL PIPES SHALL BE 4" PVC PIPE AND HAVE A MINIMUM SLOPE OF 1%.
- ALL DISTURBED CONCRETE AND ASPHALT SHALL BE REPLACED AS DETAILED ON SHEET C-102 OR TO MATCH EXISTING, WHICHEVER IS GREATER.

HADNOT POINT - OVERALL PLAN
 1"=100'
 0' 100' 200' 400'

CIVIL ABBREVIATIONS

BLDG	BUILDING
C	COMMUNICATIONS
FM	FORCE MAIN
MIN	MINIMUM
OHE	OVERHEAD ELECTRIC
SAN	SANITARY
SD	STORMDRAIN
STM	STORM
T	TELEPHONE
UGE	UNDERGROUND ELECTRIC

CIVIL LEGEND

---	EX DITCH LINE
---	EX STORM LINE
---	EX WATER LINE
---	EX SANITARY LINE GRAVITY
---	EX SANITARY LINE FORCE MAIN
---	EX STEAM LINE
---	EX COMMUNICATIONS LINE
---	EX FIBEROPTIC LINE
---	EX OVERHEAD POWER
---	EX UNDERGROUND POWER
---	CONCRETE SIDEWALK RESTORATION
---	ASPHALT RESTORATION

DISCLOSURE OF INFORMATION

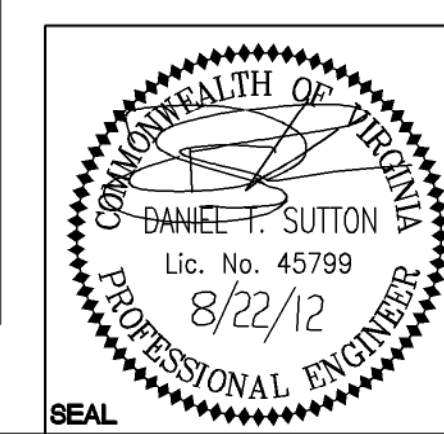
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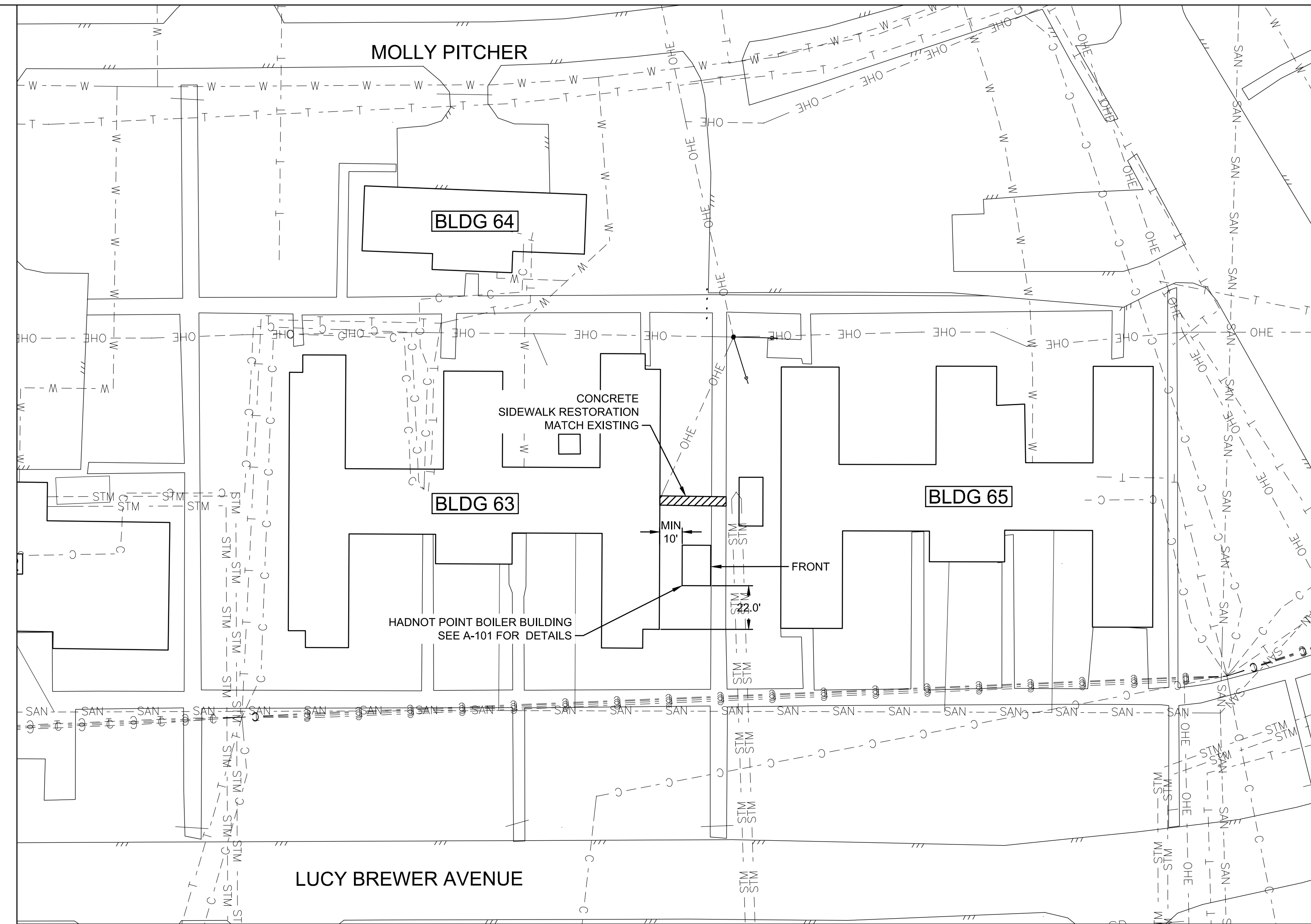
- The Contracting Officer has given prior written approval; or
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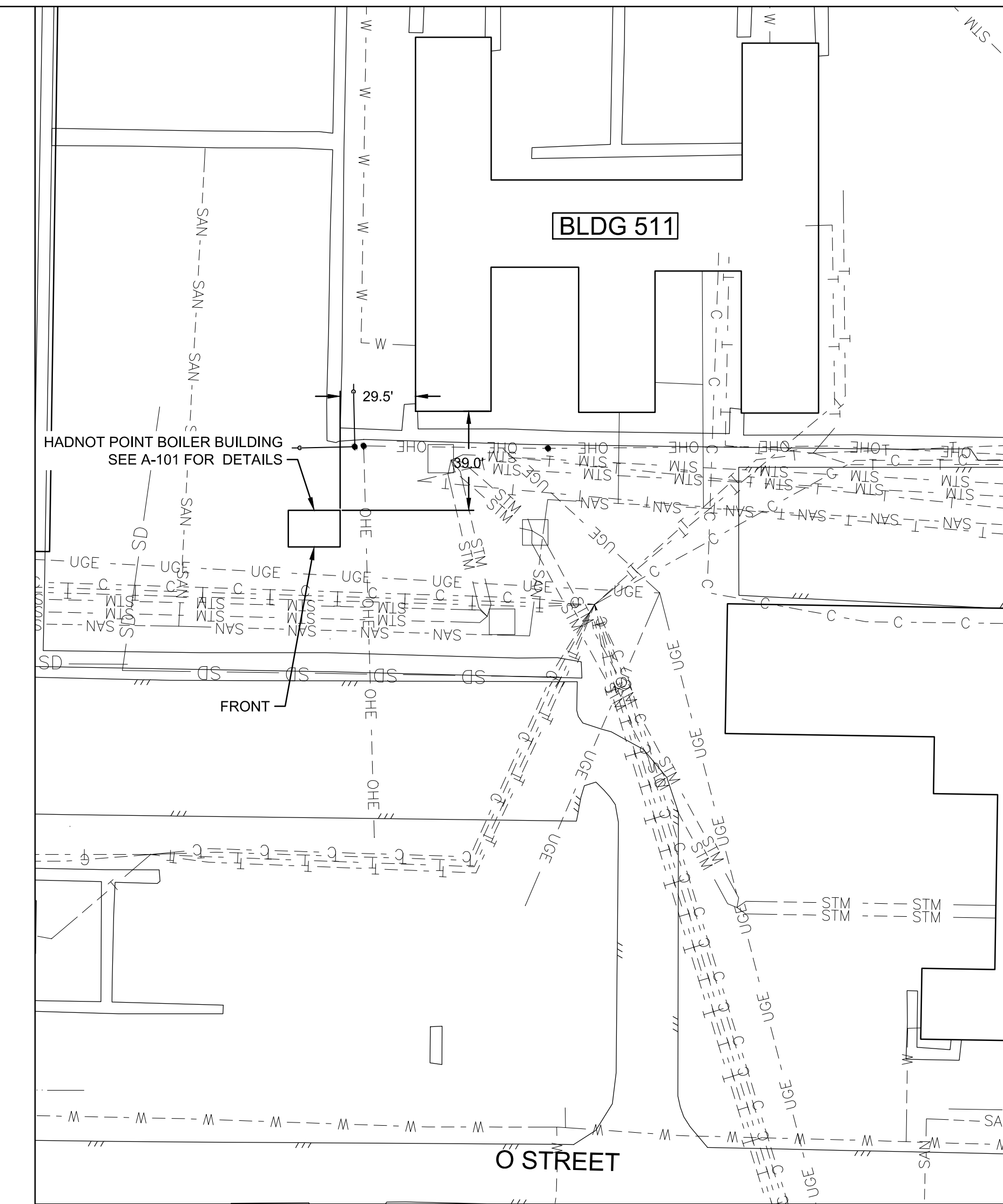
(c) The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.



WileyWilson 6006 West Broad St., Suite 500 Richmond, Virginia 23230-1177 804.254.7242 wileywilson.com		C-101 PROJECT NO. CP2-0104	
DEPT OF NAVY MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA		NAVAL FACILITIES ENGINEERING COMMAND	
BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT			
OVERALL PLAN			
DES: CEK DR: CEK CHK: DTS SUBMITTED BY: DESIGN DR: APPROVED: PWO OR OICC SATISFACTORY TO:	DATE DATE DATE	SIZE: E CODE IDENT NO.: 80081 SCALE: AS SHOWN SPEC No.: 05-12-0104	NAVFAC DRAWING NO.: 60011267 CONSTR CONTR NO.: M40085-12-B-0104 SHEET 03 OF 43



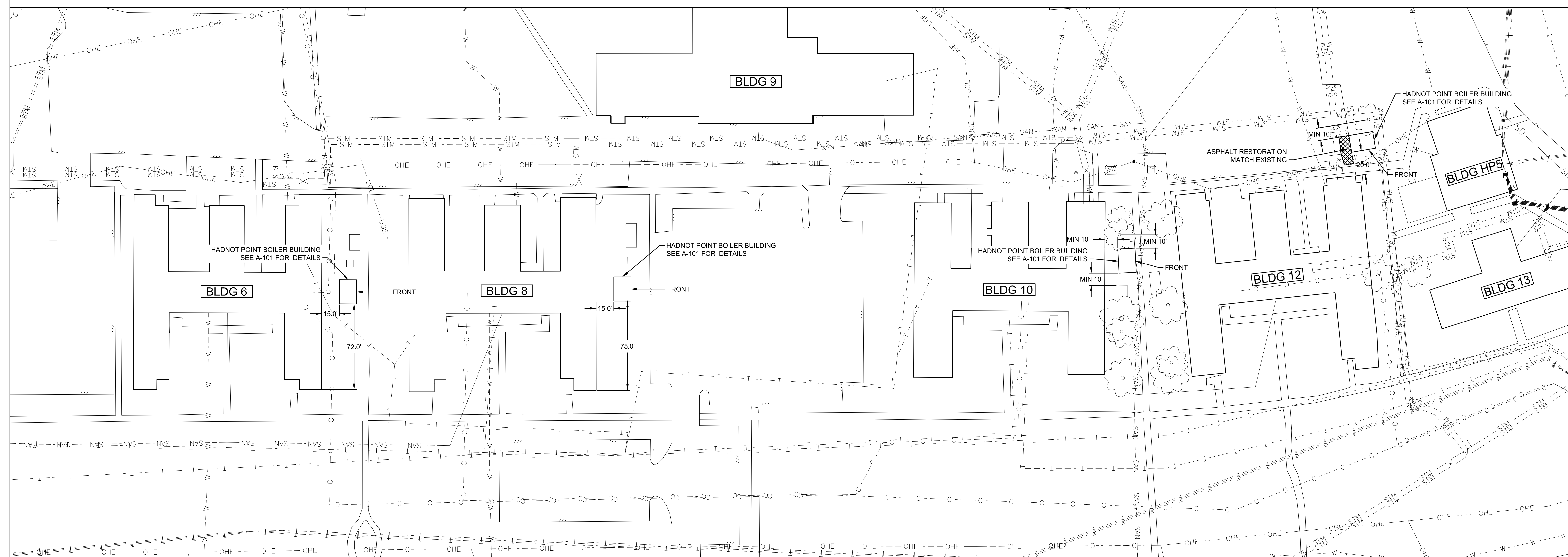
BUILDING 63
1"=40'
0' 20' 40' 80'



BUILDING 511
1"=40'
0' 20' 40' 80'

SYM.	PREP'D BY	DATE	APPROVED

- NOTES:**
- SEE SHEET C-101 FOR LEGEND AND NOTES.
 - SEE SHEET C-201 FOR TEMPORARY AND PERMANENT STABILIZATION.



BUILDINGS 6, 8, 10 & 12
1"=40'
0' 20' 40' 80'

DISCLOSURE OF INFORMATION

Contractor shall comply as follows:

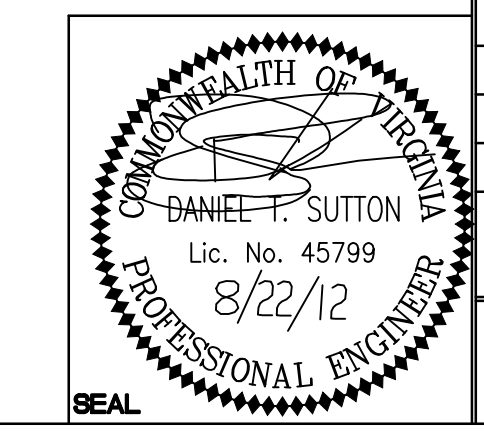
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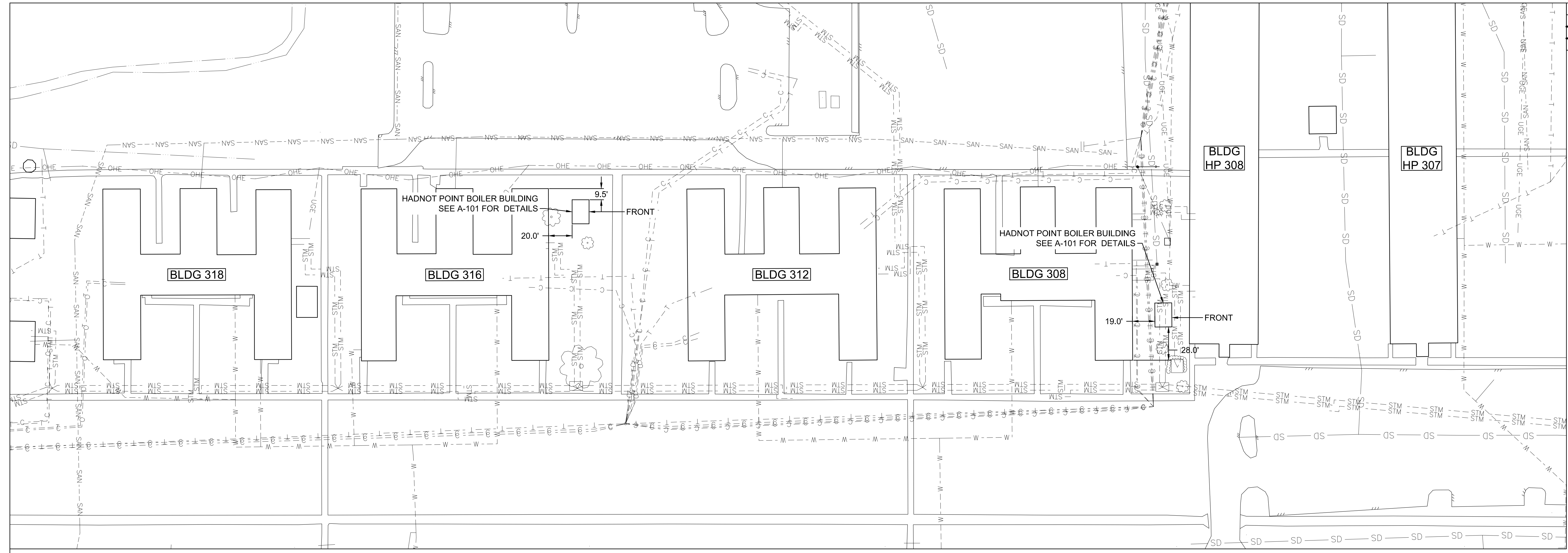
(c) The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.



WileyWilson 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.254.7242 wileywilson.com		C-102 PROJECT NO. CP2-014 DEPT OF NAVY NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA	
DES. CEK	DR. CEK	CHK. DTS	BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT SITE PLAN (1 OF 2)
DESIGN DR.	APPROVED: PWO OR OICC	DATE	NAVFAC DRAWING NO. 60011268 CONSTR CONTR NO. N40085-12-B-014
BATSFATORY TO	DATE	SCALE: AS SHOWN	SPEC No. 05-12-014 SHEET 04 OF 43

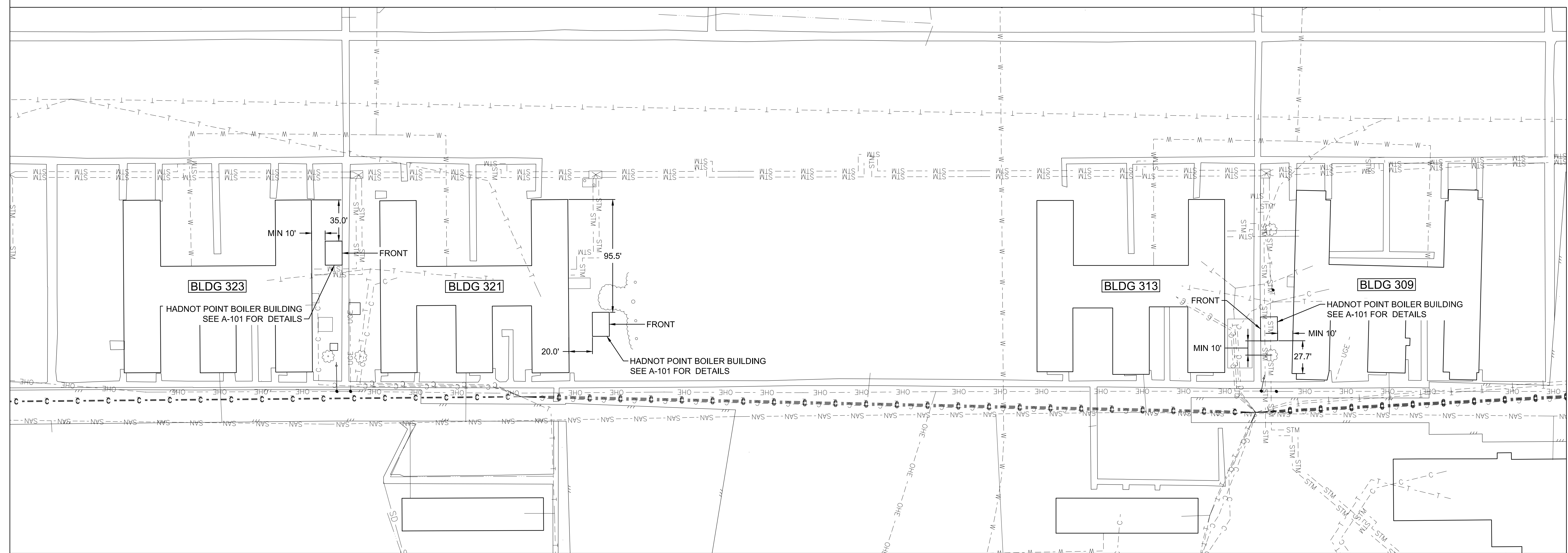
X:\2012\12090 MCB CL Hadnot Bldg Mod\CAD\Civil\20090 C-102.dwg August 15, 2012

SYM.	PREP'D BY	DATE	APPROVED



NOTES:

- SEE SHEET C-101 FOR LEGEND AND NOTES.
- SEE SHEET C-201 FOR TEMPORARY AND PERMANENT STABILIZATION.



DISCLOSURE OF INFORMATION

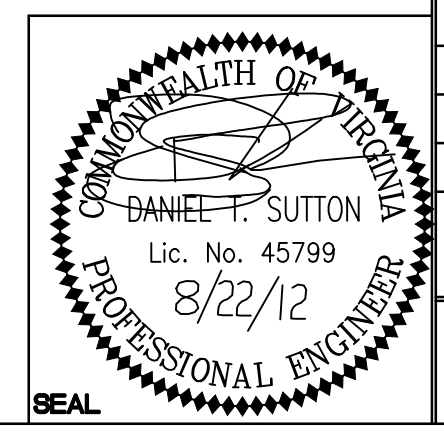
Contractor shall comply as follows:

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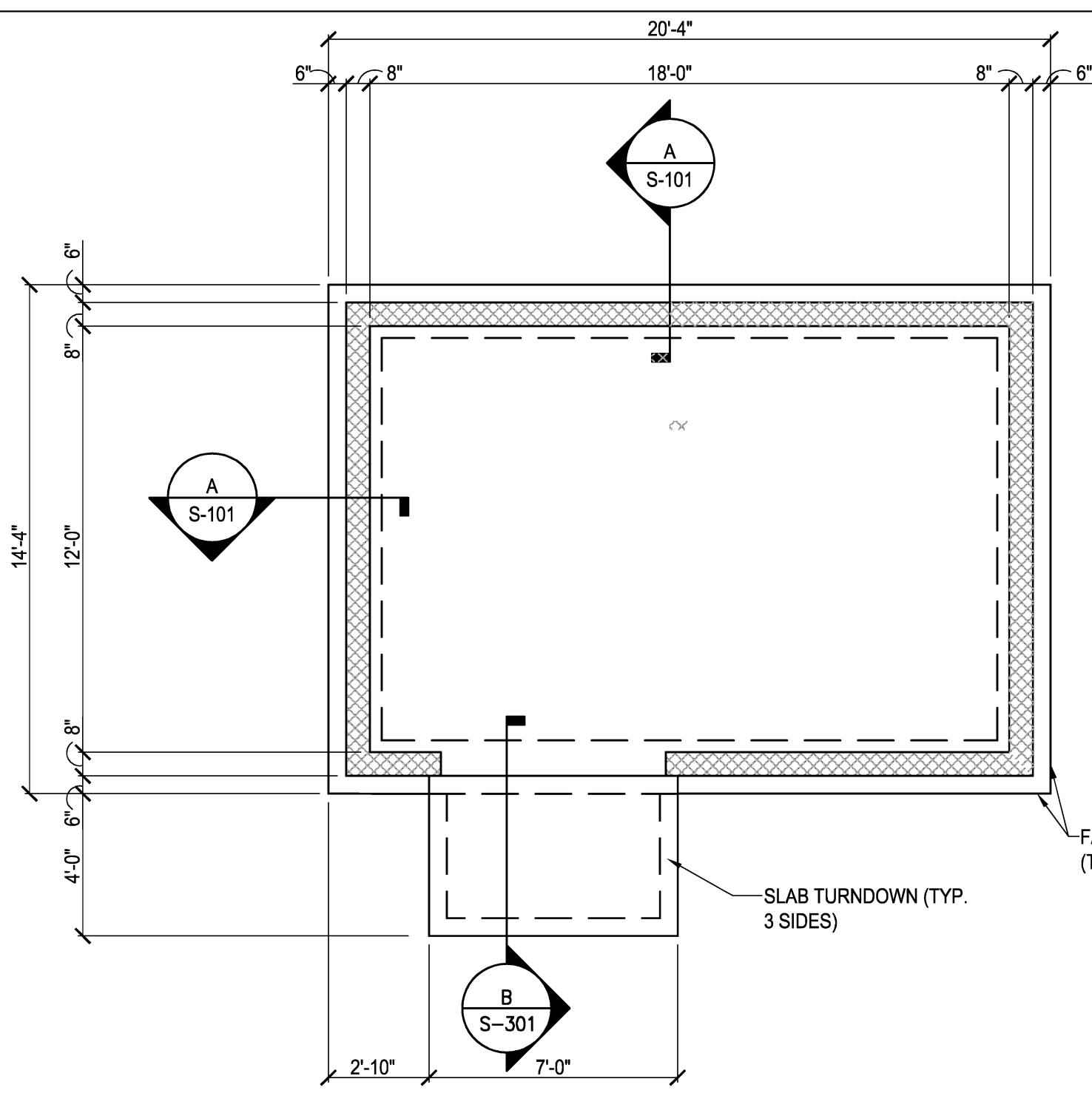
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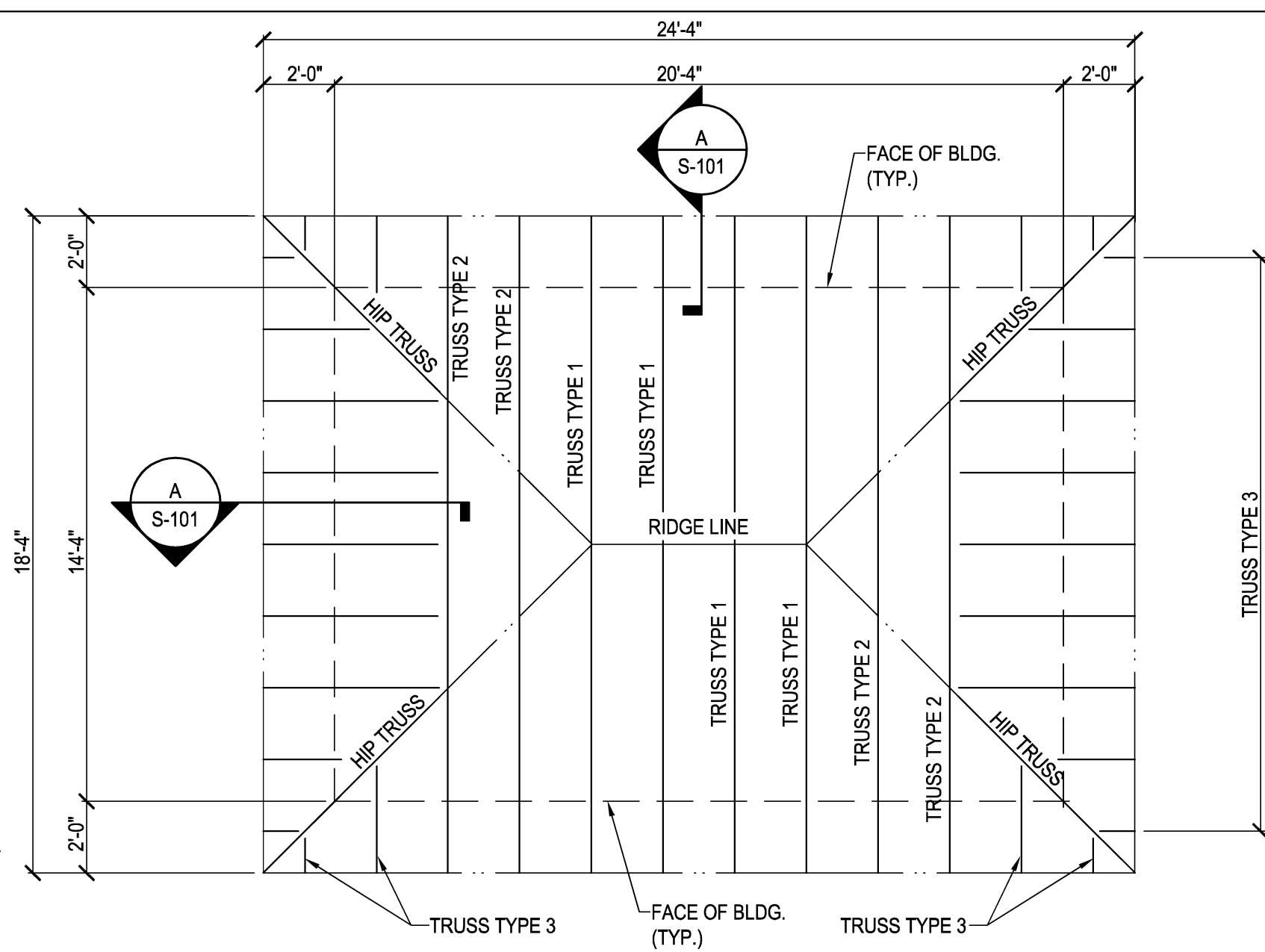


 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.254.7242 wileywilson.com		C-103 PROJECT NO. CP12-014 DEPT OF NAVY NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA	
DES. CEK	DR. CEK	CHK. DTS	BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT SITE PLAN (2 OF 2)
DESIGN DR. APPROVED: PWO OR OICC DATE: 8/22/12	DATE: 8/22/12 DATE:	SIZE: E CODE IDENT NO.: 80091	NAVFAC DRAWING NO.: 60011269 CONSTR CONTR NO.: N40085-12-B-014
SATISFACTORY TO:	DATE:	SCALE: AS SHOWN	SPEC No. 05-12-014 SHEET 05 OF 43

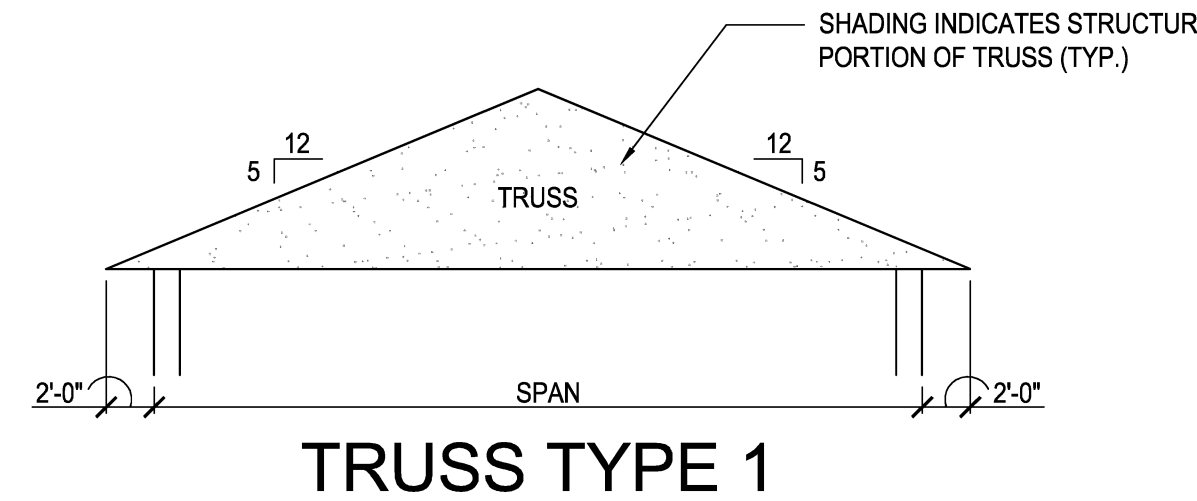
X:\2012\12090 MCB CL Hadnot. Bldg Mod\CAD\Civil\20090 C-103.dwg August 15, 2012



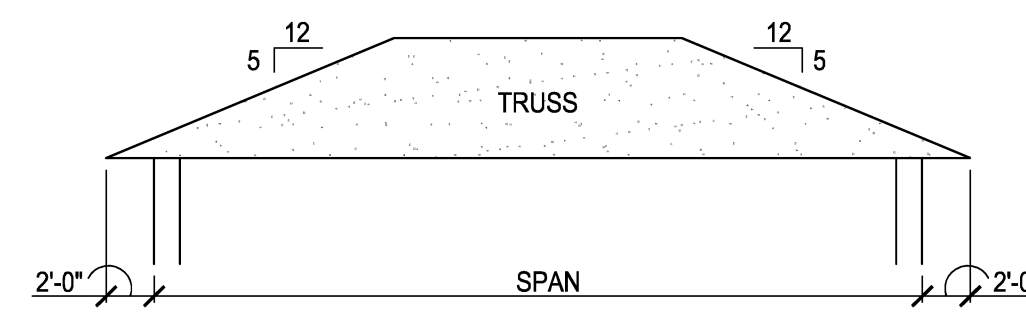
1 FOUNDATION PLAN
1/4"=1'-0"



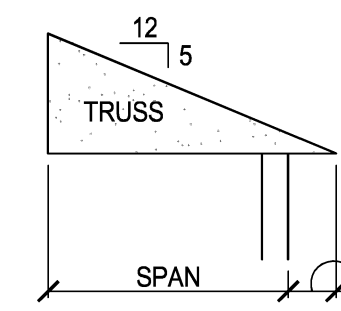
2 ROOF FRAMING PLAN
1/4"=1'-0"



TRUSS TYPE 1



TRUSS TYPE 2



TRUSS TYPE 3

GENERAL NOTES:

- THE STRUCTURAL DRAWING SHALL BE USED IN CONJUNCTION WITH THE ARCHITECTURAL, CIVIL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS, AND THE SPECIFICATIONS. THE CONTRACTOR SHALL VERIFY THE REQUIREMENTS OF OTHER TRADES AS TO LEVELS, CHANGES, HANGERS, INSERTS, ANCHORS, HOLES, AND ADDITIONAL ITEMS TO BE PLACED OR SET IN THE STRUCTURAL WORK.
- THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE DESIGN CRITERIA OF THE TECHNICAL INSTRUCTIONS AS FOLLOWS:
DESIGN CODES:
INTERNATIONAL BUILDING CODE (IBC 2009)
ACI 318-08 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE"
ACI 530-02 "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES"
MANUAL OF STEEL CONSTRUCTION, ASD - AISC THIRTEENTH EDITION
ASCE 7-06 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES.
- THE LATERAL-LOAD-RESISTING SYSTEM FOR THIS STRUCTURE CONSISTS PRIMARILY OF THE FOLLOWING:
CONCRETE MASONRY SHEAR WALLS
THESE ELEMENTS PROVIDE FOR LATERAL STRENGTH AND STABILITY IN THE COMPLETED STRUCTURE.
- THE CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AND BRACING REQUIRED TO ERECT AND HOLD THE STRUCTURAL IN PROPER ALIGNMENT UNTIL PERMANENT SUPPORTS AND LATERAL BRACING ARE IN PLACE.
- THE CONTRACTOR SHALL FIELD VERIFY THE DIMENSIONS, ELEVATIONS, AND OTHER REQUIREMENTS NECESSARY FOR THE PROPER CONSTRUCTION AND ALIGNMENT OF THE BUILDING. THE CONTRACTOR SHALL MAKE ALL MEASUREMENTS NECESSARY FOR FABRICATION AND ERECTION OF STRUCTURAL MEMBERS. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTING OFFICER.
- DESIGN LOADS:
LIVE LOADS:
ROOF (SNOW) 20 PSF
SLAB ON GRADE 200 PSF
WIND DESIGN CRITERIA:
GROUT SHALL COMPLY WITH ASTM C 476, AND SHALL BE PROPORTIONED TO OBTAIN A 28 DAY COMPRESSIVE STRENGTH OF 3,000 PSI.
BASIC WIND SPEED 130 MPH
IMPORTANCE FACTOR (I) 0.77
WIND EXPOSURE CATEGORY C
SEISMIC DESIGN CRITERIA:
1 SECOND SPECTRAL RESPONSE (S1) 0.08g
0.2 SECOND SPECTRAL RESPONSE (S0.2) 0.16g
SITE CLASS I
SEISMIC USE GROUP D
SEISMIC IMPORTANCE FACTOR 1.00
SEISMIC DESIGN CATEGORY B
RESPONSE MODIFICATION FACTOR (R) 1.5
ORDINARY REINFORCED MASONRY SHEAR WALLS 1.5
ANALYSIS PROCEDURE EQUIVALENT LATERAL FORCE

FOUNDATION NOTES:

- SHALLOW FOUNDATIONS FOR BUILDINGS HAVE BEEN DESIGNED FOR A NET BEARING PRESSURE OF 2000 PSF. REFER TO GEOTECHNICAL REPORT FOR DETAILED INFORMATION ON THE SUBSURFACE SOILS INVESTIGATION AND FOUNDATION RECOMMENDATIONS.
- PRIOR TO PLACING FOUNDATION CONCRETE, ALL FOUNDATION EXCAVATIONS SHALL BE INSPECTED BY THE GEOTECHNICAL ENGINEER TO EXPLORE THE EXTENT OF LOOSE, SOFT OR OTHERWISE UNSATISFACTORY SOIL MATERIAL (SUCH AS SHRINK-SWELL SOIL) AND TO VERIFY DESIGN BEARING PRESSURE. THE GEOTECHNICAL ENGINEER WILL PROVIDE DIRECTION FOR CORRECTIVE ACTION WHERE REQUIRED.
- REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS TO NON-BEARING WALLS AND DIMENSIONS OF MASONRY OPENINGS.
- REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF MASONRY CONTROL JOINTS.
- REFER TO CIVIL DRAWINGS FOR EXTERIOR CONCRETE SLABS.

CAST-IN-PLACE CONCRETE NOTES:

- CONCRETE SHALL BE NORMAL WEIGHT AND SHALL OBTAIN 28 DAY COMPRESSIVE STRENGTHS AS FOLLOWS:
SLAB-ON-GRADE 4,000 PSI
FOOTINGS AND CONCRETE NOT OTHERWISE NOTED 3,000 PSI
- REINFORCING MATERIALS SHALL BE AS FOLLOWS:
REINFORCING BARS - ASTM A 615, GRADE 60 DEFORMED.
WELDED WIRE FABRIC - ASTM A 185, WELDED STEEL WIRE FABRIC.
PROVIDE SHEET TYPE, ROLL TYPE NOT ACCEPTABLE.

SYM.	PREP'D BY	DATE	APPROVED

- ALL REINFORCING STEEL AND EMBEDDED ITEMS SUCH AS ANCHOR BOLTS AND WELD PLATES SHALL BE ACCURATELY PLACED IN THE POSITIONS SHOWN AND ADEQUATELY TIED AND SUPPORTED BEFORE CONCRETE IS PLACED TO PREVENT DISPLACEMENT BEYOND PERMITTED TOLERANCES.
- CONCRETE COVER TO REINFORCING STEEL SHALL CONFORM TO THE MINIMUM COVER RECOMMENDATIONS IN ACI 318-05 UNLESS OTHERWISE NOTED.
- WHERE REINFORCEMENT SPLICES ARE INDICATED, SPLICE LENGTHS SHALL BE AS FOLLOWS:

BAR SIZE	TOP BARS	OTHER	BAR SIZE	TOP BARS	OTHER
#3	18"	18"	#18	18"	24"
#4	24"	19"	#19	24"	30"
#5	30"	23"	#30	36"	38"
#6	36"	33"	#36	42"	42"
- CONCRETE EXPOSED TO THE ELEMENTS SHALL BE AIR-ENTRAINED.
- CHAMFER ALL EXPOSED EDGES OF CONCRETE 1/4".

CONCRETE MASONRY NOTES:

- CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C 90 AND BE MADE WITH NORMAL OR LIGHTWEIGHT AGGREGATE. THE COMPRESSIVE STRENGTH OF MASONRY, Fm, EXPRESSED AS FORCE PER UNIT OF NET CROSS-SECTIONAL AREA, SHALL BE 1,500 PSI AT 28 DAYS.
- REINFORCING STEEL SHALL COMPLY WITH ASTM A 615, GRADE 60. SHOP FABRICATE REINFORCING BARS WHICH ARE SHOWN TO BE BENT OR HOOKED.
- GROUT SHALL COMPLY WITH ASTM C 476, AND SHALL BE PROPORTIONED TO OBTAIN A 28 DAY COMPRESSIVE STRENGTH OF 3,000 PSI.
- MORTAR SHALL COMPLY WITH ASTM C 270, TYPE S OR M. AGGREGATE FOR MORTAR SHALL COMPLY WITH ASTM C 144. AGGREGATE FAILING TO COMPLY WITH ASTM C 144 GRADATION REQUIREMENTS MAY BE USED PROVIDED THE MORTAR CAN BE PREPARED TO COMPLY WITH THE AGGREGATE RATIO, WATER RETENTION, AND COMPRESSIVE STRENGTH REQUIREMENTS OF THE PROPERTY SPECIFICATIONS OF ASTM C 270.
- PROVIDE VERTICAL REINFORCING BARS OF THE GIVEN SIZE AND SPACING SHOWN ON THE FOUNDATION PLANS. LAP ALL REINFORCING AT ALL SPLICES PER CAST-IN-PLACE CONCRETE NOTE 5.
- PROVIDE REINFORCING STEEL DOWELS OF THE SAME SIZE AND SPACING AS VERTICAL REINFORCING FROM THE SUPPORTING STRUCTURE. DOWELS SHALL HAVE STANDARD ACI HOOKS.
- PROVIDE STANDARD LADDER TYPE HORIZONTAL JOINT REINFORCING IN CMU WALLS AT 16" O.C. AND IN TWO JOINTS IMMEDIATELY ABOVE AND BELOW ALL OPENINGS, EXTENDING A MINIMUM OF 24" BEYOND THE JAMB OF EACH SIDE OF THE OPENING, EXCEPT AT CONTROL JOINTS.
- PLACE CONTINUOUS BOND BEAMS AT THE TOP OF ALL WALLS.
- CMU BOND BEAM LITTELS MAY BE USED FOR SPANS UP TO 8 FEET.

STRUCTURAL STEEL NOTES:

- STRUCTURAL STEEL SHALL COMPLY WITH THE FOLLOWING SPECIFICATIONS:
STRUCTURAL STEEL PLATES - ASTM A36, Fy=36 KSI.
- WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1, "STRUCTURAL WELDING CODE - STEEL". WELD ELECTRODES SHALL BE E70XX, UNLESS OTHERWISE NOTED. PROVIDE CONTINUOUS FILLET WELDS WITH MINIMUM SIZE REQUIRED BY TABLE J2.4 OF THE "MANUAL OF STEEL CONSTRUCTION, ALLOWABLE STRESS DESIGN".

ROOF FRAMING NOTES:

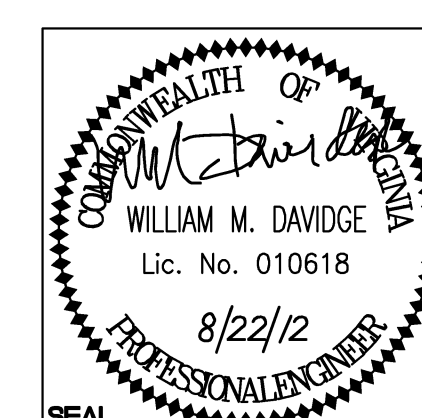
- ROOF SHALL BE FRAMED USING COLD FORMED STEEL (CFS) TRUSSES (OR CFS RAFTERS WHERE NOTED).
- TRUSSES SHALL BE DESIGNED FOR A SUPERIMPOSED DEAD LOAD OF 20 PSF FOR THE BOTTOM CHORD OF TRUSS AND FOR THE FRAMING. DESIGN TOP CHORD FOR A LIVE (SNOW) LOAD OF 20 PSF EXPOSED TO ROOF SURFACE, PLUS THE ADDITIONAL WEIGHT OF DRIFTING SNOW IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE (IBC). TRUSSES SHALL BE DESIGNED FOR WIND LOADS GIVEN IN THE IBC USING A 130 MPH WIND SPEED, EXPOSURE C.
- PROVIDE SUFFICIENT BOTTOM CHORD BRIDGING FOR BOTH ERECTION AND PERMANENT STABILITY.
- MAXIMUM SPACING FOR CFS TRUSSES AND FRAMING IS 2'-0" O.C.

SITE / GRADING NOTES:

- NO TOPOGRAPHIC SURVEY HAS BEEN DONE FOR THIS PROJECT.
- LOCATE EACH BUILDING ACCORDING TO THE CONTROLS GIVEN ON THE CIVIL-SITE DRAWINGS.
- SET EACH BUILDING'S FLOOR ELEVATION 4" ABOVE THE HIGHEST GRADE THAT EXISTS AROUND ITS PERIMETER. SET THE FINISHED GRADE FROM 4" TO 5" BELOW THE FLOOR ELEVATION. PROVIDE POSITIVE DRAINAGE AWAY FROM THE BUILDING FOR A DISTANCE OF AT LEAST 4'-0".
- IF SIDEWALKS OR OTHER SITE FEATURES DICTATE THAT THE FINISHED GRADE ADJOINING THE BUILDING IS MORE THAN 7" BELOW THE FLOOR LEVEL, NOTIFY THE DESIGNER OF RECORD SO THAT THE FOUNDATION MAY BE ADJUSTED TO ACCOMMODATE THE INTENT OF THE DESIGN.
- REFER TO THE CIVIL-SITE DRAWINGS FOR OTHER NOTES AND REQUIREMENTS.

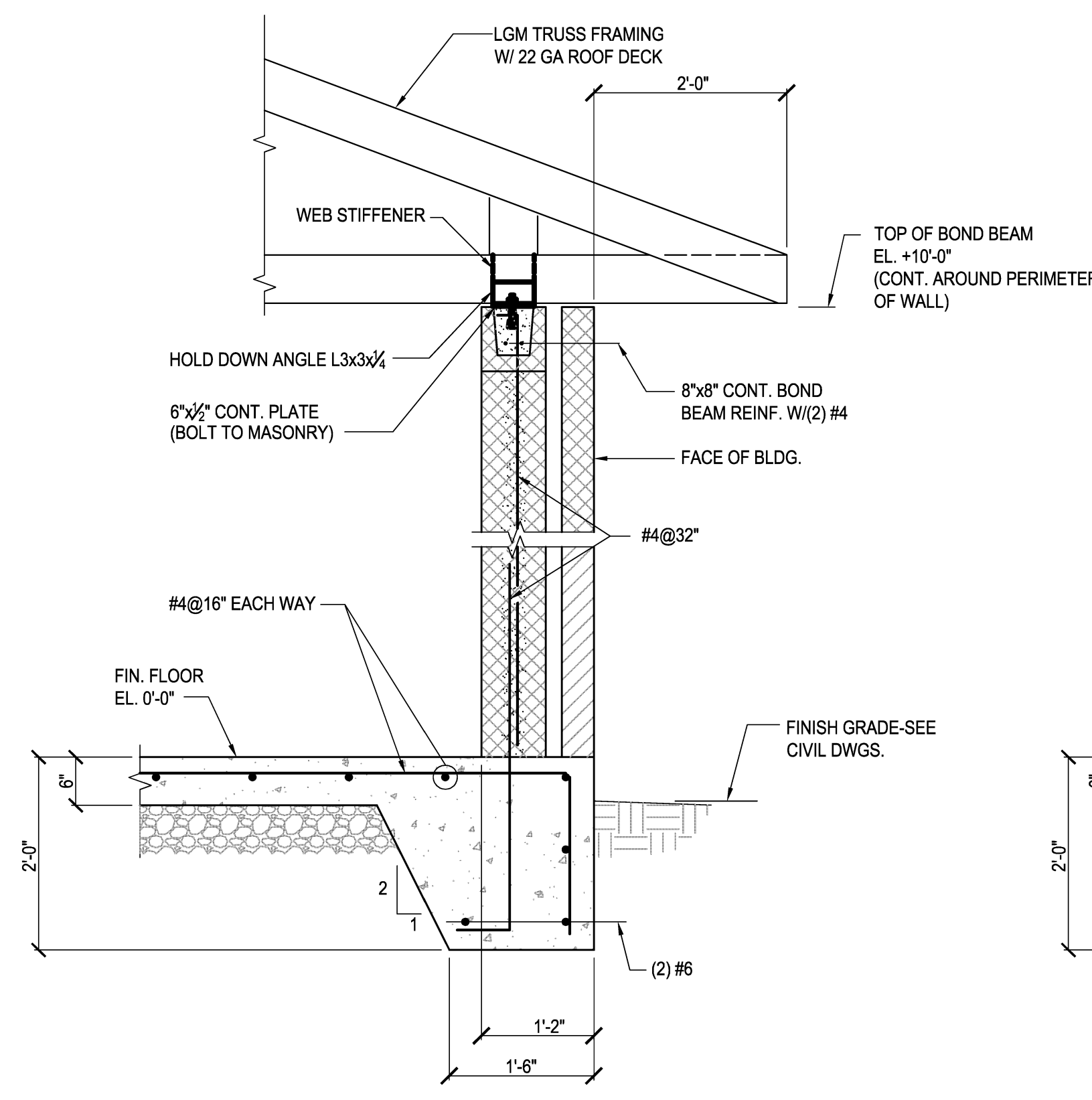
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 - The information is otherwise in the public domain before the date of release.
 - Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.
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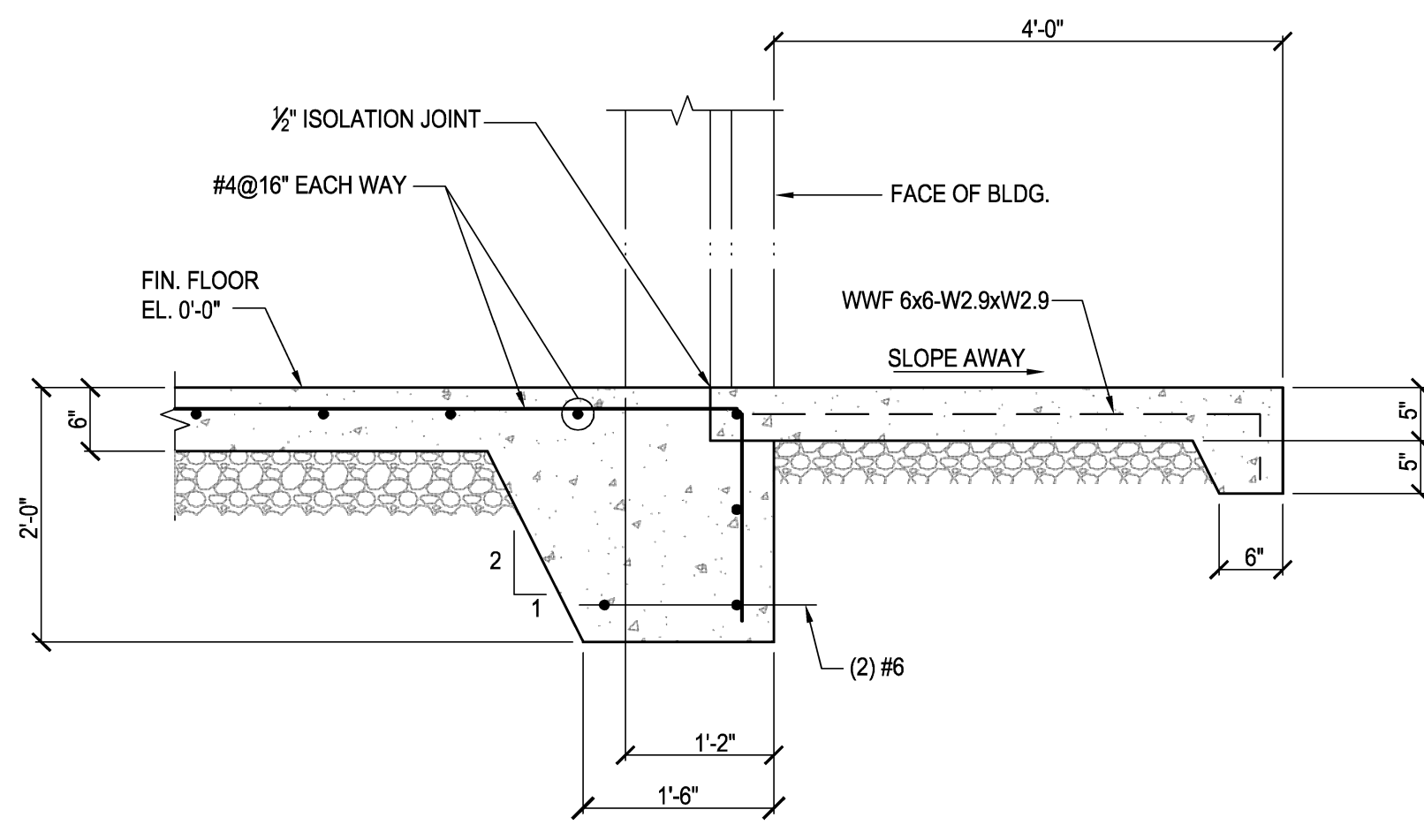


WileyWilson 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.254.7242 wileywilson.com		S-101 PROJECT NO. CP12-0104	
DEPT OF NAVY MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA		NAVAL FACILITIES ENGINEERING COMMAND	
DES.	WJB	BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT FOUNDATION & ROOF FRAMING PLANS AND GENERAL NOTES	
DR.	WJB	NAVFAC DRAWING NO. 60011271	
CHK.	WMD	CONSTR CONTR NO. N40085-12-B-0104	
SUBMITTED BY:		SIZE	CODE IDENT NO.
DESIGN DR.		E	80091
APPROVED PWO OR OICC	DATE	SCALE:	SPEC No.
		AS SHOWN	05-12-0104
SATISFACTORY TO	DATE	SHEET 07 OF 43	

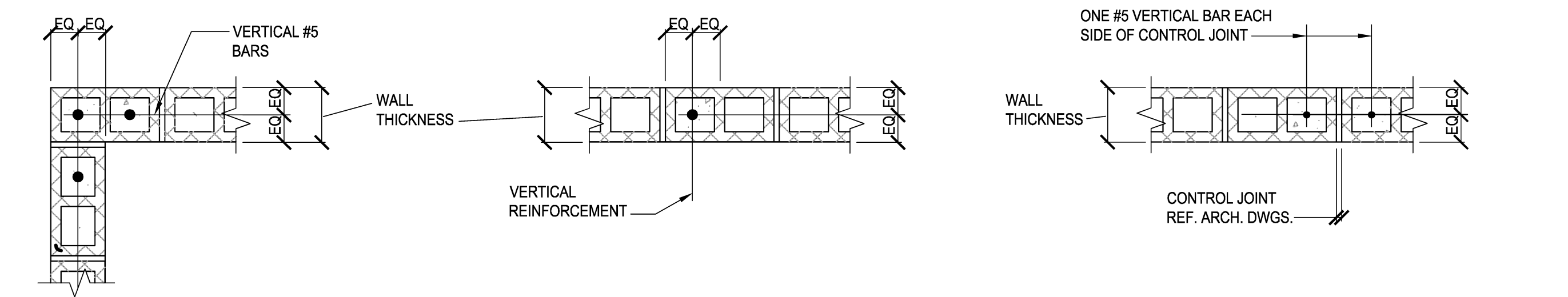
SYM.	PREP'D BY	DATE	APPROVED



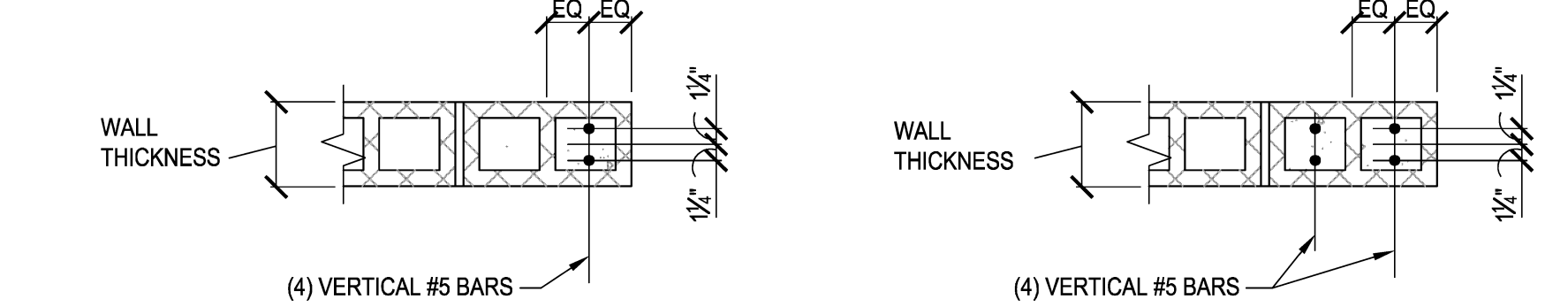
A SECTION - THRU WALL
1/2"=1'-0"



B SECTION - THRU DOOR
1/2"=1'-0"



CORNER TYPICAL BAR VERTICAL CONTROL JOINT

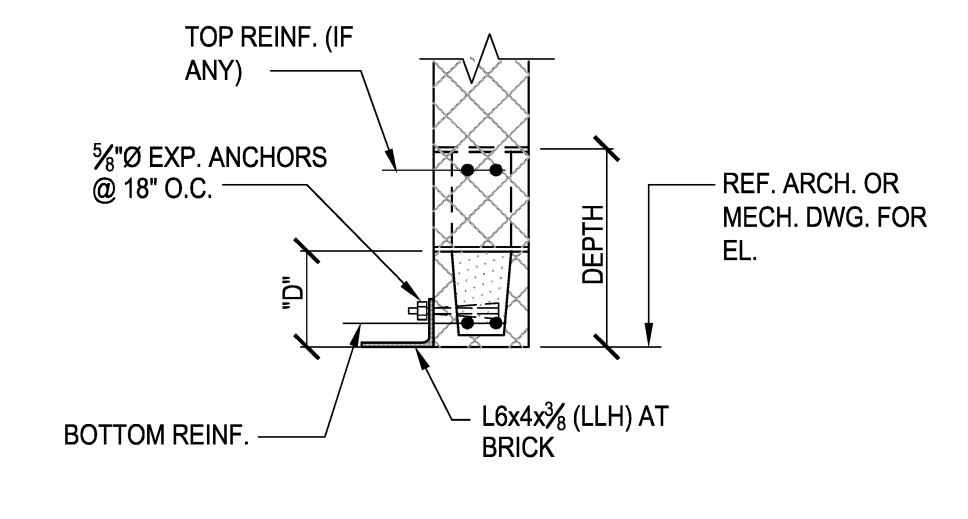


LESS THAN 3'-4" BETWEEN 3'-4" & 8'-0" WIDE OR TALL OPENINGS

NOTE: SHIFT BARS FROM EDGE OF OPENINGS TO CLEAR LINTEL WHERE NECESSARY. SEE REINFORCEMENT AROUND MASONRY WALL OPENINGS, THIS DRAWING.

TYPICAL CONCRETE MASONRY REINFORCING DETAILS

NOT TO SCALE
NOTE: EMPLOY THESE TYPICAL DETAILS UNLESS OTHERWISE SHOWN.

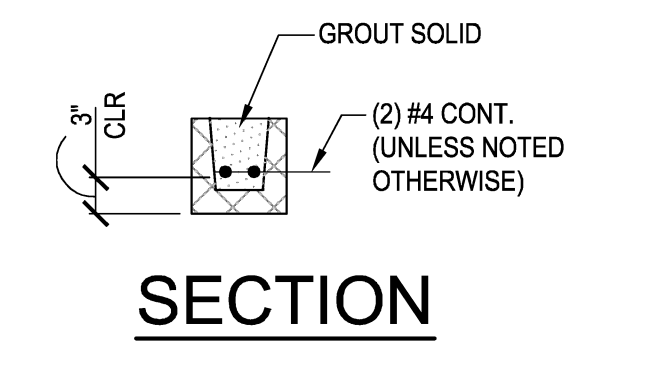


TYPICAL SECTION BOND BEAM LINTEL DETAILS

CLEAR SPAN	DEPTH "D"	REINFORCING	
		8" WIDE	12" WIDE
0 TO 4'-0"	8	(2) #4 BOT.	(2) #4 BOT.
4'-0" TO 8'-0"	16	(2) #4 TOP & BOT.	(2) #5 TOP & BOT.

BOND BEAM LINTEL NOTES:

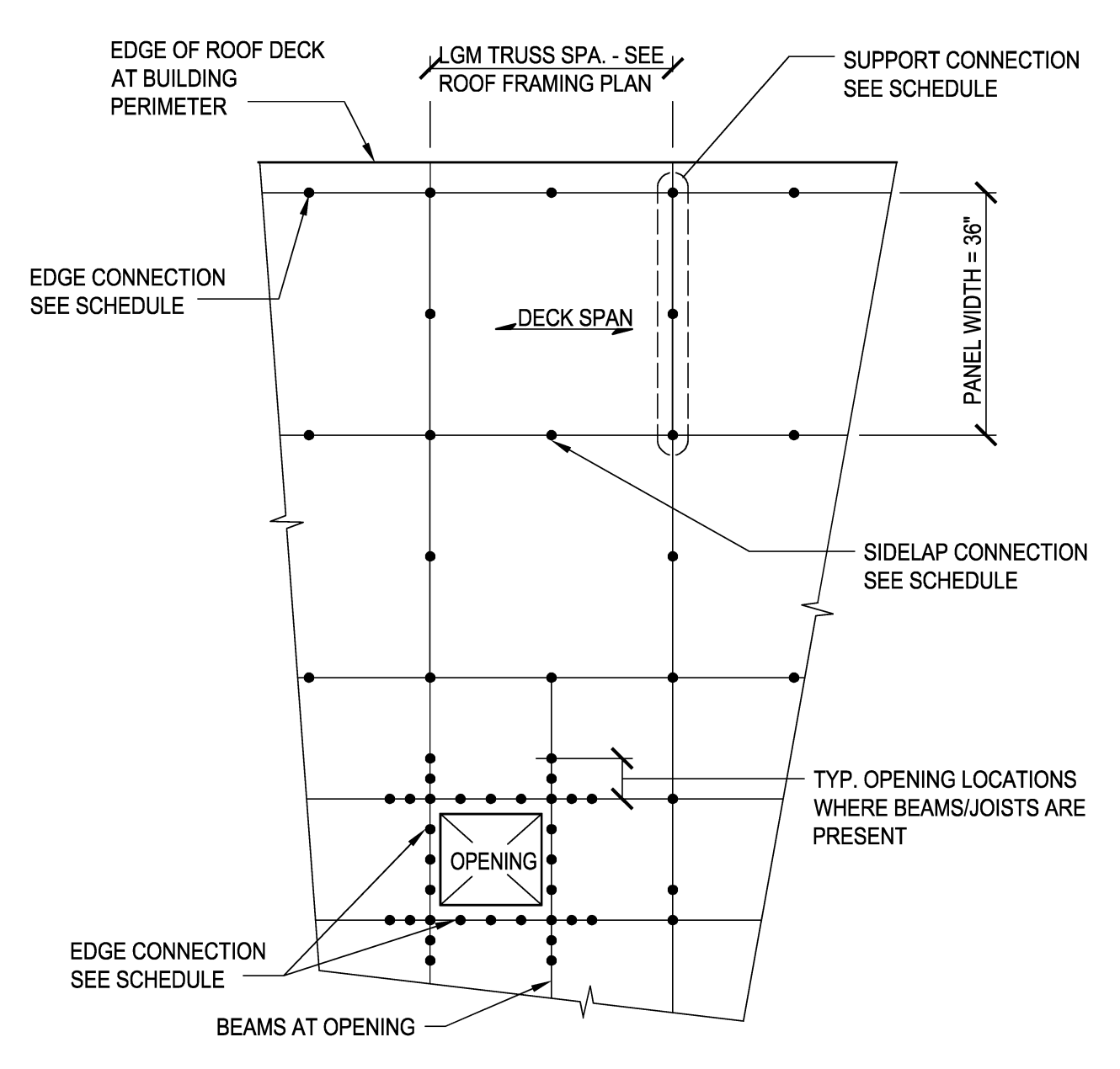
- PROVIDE 8" BEARING EACH END OF LINTEL.
- REFER TO ARCHITECTURAL DRAWINGS FOR SIZE AND LOCATION OF OPENINGS.
- FOR LOUVER OPENINGS REFER TO MECHANICAL DRAWINGS.
- REFER TO ARCHITECTURAL DRAWINGS FOR WIDTH OF LINTEL. SCHEDULE APPLIES ONLY TO LINTELS NOT OTHERWISE SHOWN ON THE DRAWINGS.
- FOR HEAD DETAILS, SEE ARCHITECTURAL DRAWINGS.



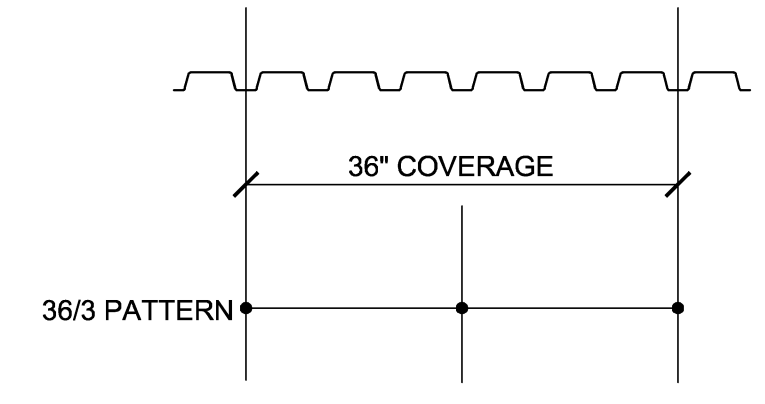
SECTION CORNERS
TYPICAL BOND BEAM REINFORCING DETAIL
NOT TO SCALE

DECK CONNECTION SCHEDULE							
DIAPHRAGM SHEAR (PLF)	OPTION	SUPPORT		SIDELAP		EDGE	
		FASTENER	DECK PATTERN	FASTENER*	MAX. SPACING	FASTENER	MAX. SPACING
110 PLF	ROOF	#12 TEK SCREWS	36/3	S10	24"	#12 TEK SCREWS	18"

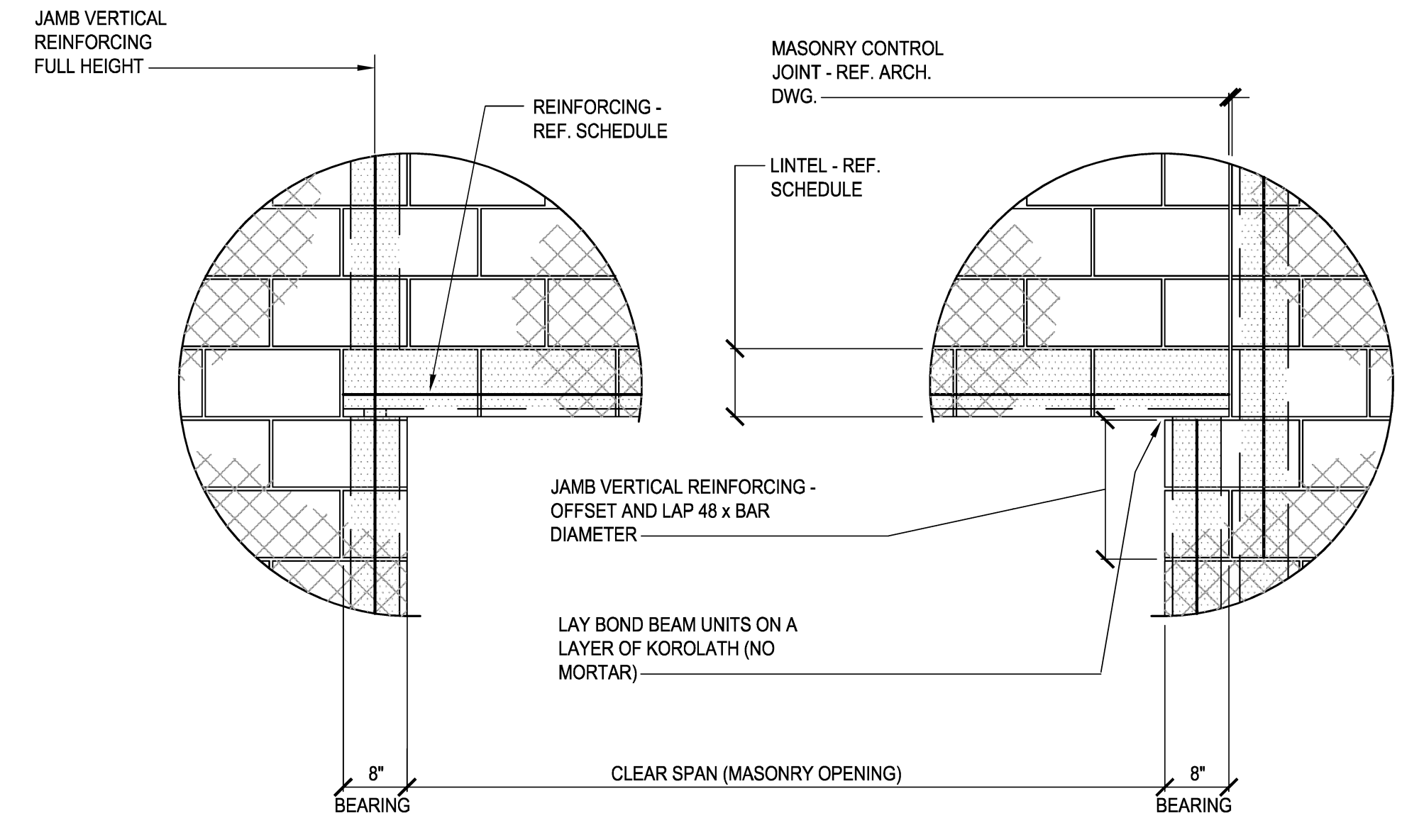
* FASTENER TYPES:
S10 = BUILDDEX TEKS #10 SCREWS
FOR SUPPORT PATTERNS, SEE TYPICAL FASTENER LAYOUT



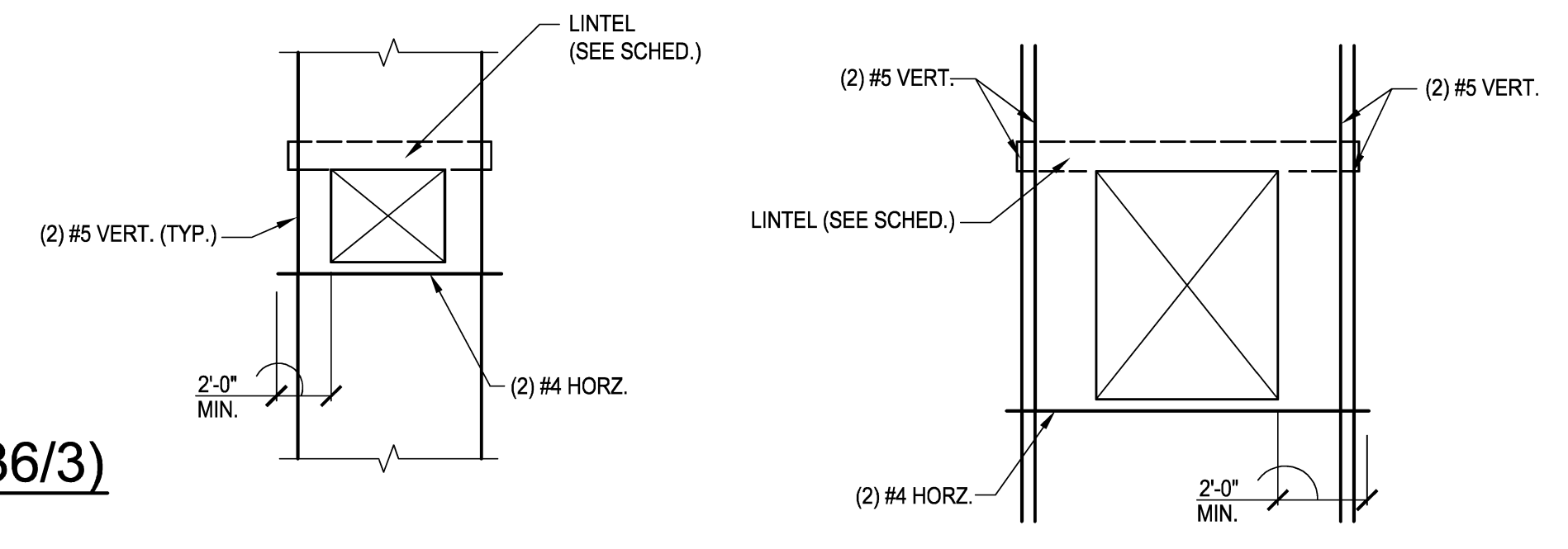
PART PLAN-ROOF DECK CONNECTION
NO SCALE



TYPICAL ROOF FASTENER LAYOUT (36/3)
NO SCALE



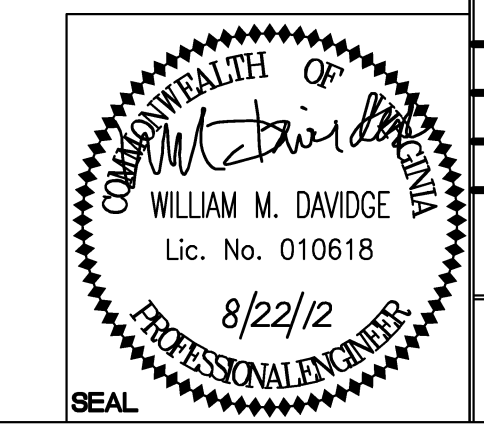
TYPICAL JAMB ELEVATION JAMB ELEVATION AT MASONRY CONTROL JOINT



CASE 1 CASE 2 REINFORCEMENT AROUND MASONRY WALL OPENINGS

- SCALE: NONE
NOTES:
1. CASE 1 - APPLIES TO OPENINGS IN WALLS WHICH ARE 4 FEET OR LESS IN ANY DIRECTION.
CASE 2 - APPLIES TO OPENINGS IN WALLS WHICH EXCEED 4 FEET IN ANY DIRECTION.
2. REINFORCEMENT SHOWN ABOVE IS IN ADDITION TO THE TYPICAL WALL REINFORCEMENT.
3. ALL VERTICAL BARS TO BE FULL HEIGHT FROM FLOOR TO FLOOR.

DISCLOSURE OF INFORMATION
Contractor shall comply as follows:
(a) The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless-
(1) The Contracting Officer has given prior written approval; or
(2) The information is otherwise in the public domain before the date of release.
Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.
(c) The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.



WileyWilson 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.254.7242 wileywilson.com		S-301 PROJECT NO. CP2-014 NAVFAC ENGINEERING COMMAND	
DEPT OF NAVY MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA		BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT	
DESIGN DR. APPROVED PWO OR OICG DATE SATISFACTORY TO DATE		SIZE CODE IDENT NO. E 80091 CONSTR CONTR NO. N40085-12-B-0104	
SCALE: AS SHOWN		SPEC No. 05-12-0104 SHEET 08 OF 43	

ARCHITECTURAL ABBREVIATIONS

(OFFICE STANDARDS - SOME MAY NOT BE APPLICABLE)

AB	AIR BARRIER OR ANCHOR BOLT	MTL	METAL
ACT	ACOUSTICAL CEILING TILE	MIN	MINIMUM
AC	ACOUSTICAL	MISC	MISCELLANEOUS
ADJ	ADJUSTABLE	MO	MASONRY OPENING
AFF	ABOVE FINISH FLOOR		
ALUM	ALUMINUM	NOM	NOMINAL
APP	APPLICABLE	NO.(#)	NUMBER
APPROX	APPROXIMATE(LY)	NIC	NOT IN CONTRACT
		NTS	NOT TO SCALE
BD	BOARD		
BLDG	BUILDING	OC	ON CENTER
BM	BEAM	OCC	OCCUPANT
B-U	BUILT-UP	OH	OVERHEAD
		OPNG	OPENING
		OPP	OPPOSITE
CFS	COLD FORMED STEEL		
CJ	CONTROL JOINT		
CLG	CEILING	PCF	POUNDS PER CUBIC FOOT
CLR	CLEAR	PR	PAIR
CMU	CONCRETE MASONRY UNIT	PSF	POUNDS PER SQUARE FOOT
COMM	COMMUNICATION	PT	PRESSURE TREATED
CORR	CORRIDOR		
CONC	CONCRETE		
CONTR	CONTRACTOR	R	RISER
CONT	CONTINUOUS	RCP	REFLECTED CEILING PLAN
CORR	CORRIDOR	REC	RECOMMEND(ED)
		REF	REFRIGERATOR, REFERENCE
		REIN	REINFORCING
D	DEPTH	REQ	REQUIRED
DEMO	DEMOLISH (DEMOLITION)	RO	ROUGH OPENING
DIA(M)	DIAMETER		
DN	DOWN		
DS	DOWNSPOUT	SC	SOLID CORE
DWG(S)	DRAWING(S)	SCH	SCHEDULE
		SECT	SECTION
EA	EACH	SIM	SIMILAR
ELEC	ELECTRICAL	SF	SQUARE FOOT (FEET)
ELEV	ELEVATION	SQ	SQUARE
ELEV	ELEVATOR	STC	SOUND TRANSMISSION COEFFICIENT
EL EQ	ELEVATOR EQUIPMENT	STD	STANDARD
EPDM	ETHYLENE PROPYLENE DIENE MONOMER	STD(NT)	STUDENT
EQ	EQUAL	STL	STEEL
EQUIP	EQUIPMENT	STOR	STORAGE
ETC	ETCETERA		
EXIST(EX)	EXISTING	T	TREAD
EJ	EXPANSION JOINT	TBD	TO BE DETERMINED
EXP	EXPOSED	THK	THICKNESS
EXT	EXTERIOR	THRU	THROUGH
		TYP	TYPICAL
F	FEMALE		
FCU	FAN COIL UNIT		
FD	FLOOR DRAIN	UL	UNDERWRITER LABORATORIES
FE	FIRE EXTINGUISHER	UNO	UNLESS NOTED OTHERWISE
FIN	FINISH		
FL(FLR)	FLOOR	VCT	VINYL COMPOSITION TILE
		VERT	VERTICAL
FLUOR	FLUORESCENT	VIF	VERIFY IN FIELD
FT	FEET (FOOT)		
		W	WIDE
GA	GAUGE	W	WITH
GALV	GALVANIZED	W/O	WITHOUT
GC	GENERAL CONTRACTOR	WD	WOOD
GFGI	GOVERNMENT FURNISHED, GOVERNMENT INSTALLED		
GOVT	GOVERNMENT	&	AND
GYP	GYPNUM	@	AT
GWB	GYPNUM WALL BOARD	¢	CENTERLINE
		S	STEEL LINE
H	HIGH		
HDW	HARDWARE		
HT	HEIGHT		
HORIZ	HORIZONTAL		
HR	HOUR		
HM	HOLLOW METAL		
HVAC	HEATING VENTILATING AIR CONDITIONING		
ID	INSIDE DIMENSIONS		
IN.	INCHES		
INFO	INFORMATION		
INSUL	INSULATION		
JAN	JANITOR		
LB	POUND (#)		
LAM	LAMINATED		
L	LENGTH		
LF	LINEAR FEET (FOOT)		
LLH	LONG LEG HORIZONTAL		
LLV	LONG LEG VERTICAL		
M	MALE		
MAINT	MAINTENANCE		
MAS	MASONRY		
MAT	MATERIAL		
MAX	MAXIMUM		
MECH	MECHANICAL		
MFR	MANUFACTURER		

GENERAL CONSTRUCTION NOTES:

- THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE DRAWINGS FOR DISCREPANCIES OR OMISSIONS BEFORE ANY WORK IS BEGUN. ANY DISCREPANCIES OR OMISSIONS THAT WOULD AFFECT THE WORK, ITS COST, OR THE WELFARE OF THE GENERAL PUBLIC SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTING OFFICER BEFORE ANY WORK IS BEGUN.
- THE CONTRACTOR SHALL VISIT THE JOB SITE AND FAMILIARIZE HIMSELF WITH CONDITIONS BEFORE ANY WORK IS BEGUN. ANY UNUSUAL SITE CONDITIONS THAT COULD AFFECT THE WORK, ITS COST, OR THE WELFARE OF THE GENERAL PUBLIC SHALL BE BROUGHT TO THE ATTENTION OF THE ROICC BEFORE ANY WORK IS BEGUN.
- THE CONTRACTOR SHALL SAFEGUARD THE OWNER'S PROPERTY AND ADJACENT PROPERTIES DURING CONSTRUCTION AND SHALL REPLACE ANY DAMAGED PROPERTY OR MATERIALS TO THE ORIGINAL CONDITION AT NO COST TO THE OWNER.
- THE CONTRACTOR SHALL COMPLY WITH THE INTERNATIONAL BUILDING CODE (2009 EDITION) AND ALL APPLICABLE AND GOVERNING CODES AND REGULATIONS; AND SHALL COMPLY WITH ALL LIFE SAFETY REQUIREMENTS OF ALL GOVERNING AUTHORITIES. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES AND ORDINANCES.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CLEARANCES PRIOR TO THE COMMENCEMENT OF WORK OR ORDERING OF MATERIALS. ANY DEVIATIONS FROM THE CONTRACT DOCUMENTS SHALL BE REPORTED TO THE CONTRACTING OFFICER IN WRITING PRIOR TO PROCEEDING WITH THAT PORTION OF WORK.
- THE CONTRACTOR OR ANY OF HIS EMPLOYEES, OR SUB-CONTRACTORS SHALL NOT SCALE THESE DRAWINGS FOR DIMENSIONS. IF THERE IS ANY QUESTION CONCERNING THE DIMENSIONS THE CONTRACTOR SHALL CONTACT THE ARCHITECT TO CLARIFY THE DIMENSIONS.
- DRAWING REFERENCES ARE FOR CONVENIENCE ONLY AND DO NOT LIMIT THE EXTENT OR APPLICATION OF THE DRAWING OR DETAIL. ALL DIMENSIONS, DESCRIPTIONS AND/OR SYMBOLS WITHIN A DRAWING ARE COMPLEMENTARY. DRAWINGS AND SPECIFICATIONS WHETHER TAKEN SEPARATELY OR TOGETHER ARE TO BE INTERPRETED ACCORDING TO THEIR FULL INTENT, MEANING AND SPIRIT, AND SHALL BE DEEMED TO EXPLAIN MUTUALLY EACH OTHER AND TO BE A DESCRIPTION OF THE WORK TO BE DONE UNDER THE CONTRACT.
- THE CONTRACTOR SHALL NOT PROCEED WITH ANY WORK THAT DEVIATES FROM WHAT IS INDICATED IN THE CONTRACT DOCUMENTS OR THAT MAY RESULT IN ADDITIONAL COST OR TIME TO THE PROJECT WITHOUT WRITTEN PERMISSION FROM THE CONTRACTING OFFICER.
- REPAIR ANY DAMAGE TO EXISTING EXTERIOR OR INTERIOR WALLS, CEILINGS, FLOORS, OR FINISHES REMAINING IN PLACE, CAUSED BY CONSTRUCTION WORK.
- HORIZONTAL DIMENSIONS FOR NEW CONSTRUCTION ARE FROM FACE OF STUD OR FACE MASONRY UNLESS OTHERWISE NOTED. HORIZONTAL DIMENSIONS FOR EXISTING CONSTRUCTION ARE FROM FACE OF EXISTING FINISHED SURFACE.
- THE CONTRACTOR SHALL NOT REMOVE, ALTER, LOAD PENETRATE OR ADD TO ANY EXISTING BUILDING ASSEMBLY OR STRUCTURE WHICH MAY COMPROMISE ITS INTEGRITY OR STRUCTURAL STABILITY OR THE INTEGRITY AND STRUCTURAL STABILITY OF ADJACENT BUILDING ASSEMBLIES OR STRUCTURE WITHOUT HIS PRIOR INVESTIGATION, REMEDY OR ACTION; AND WRITTEN PERMISSION FROM THE ARCHITECT.

ARCHITECTURAL SYMBOLS

(OFFICE STANDARDS - SOME MAY NOT BE APPLICABLE)

FLOOR ELEVATIONS	DETAIL DESIGNATION (NUMBER) DETAIL TAG
NUMBER DENOTES WALL TYPE WALL TAGS	SHEET WHERE DETAIL IS DRAWN
TOILET ACCESSORIES TAGS	FLOOR PLAN KEYED NOTE TAG
WINDOW FRAME TAG (LETTER)	DEMOLITION KEYED NOTE TAG
COLUMN DESIGNATION	FURNITURE TAG
ROOM NUMBER DESIGNATION ROOM TAG	SECTION DESIGNATION (LETTER) SECTION CUT
ROOM DESIGNATION DOOR TAG	SHEET WHERE SECTION IS DRAWN
DOOR NUMBER DESIGNATION ELEVATION TAG (INTERIOR)	DIMENSIONS IN FEET/INCHES DIMENSIONS
ELEVATION DESIGNATION SHEET WHERE ELEVATION IS SHOWN	
CORNER GUARD TAG QUANTITY	EQUIPMENT/ACCESSORY TAG (NUMBER)
BUILDING ELEVATION MATERIAL TAG	REVISION TAG
	ROOM SIGNAGE TAG (LETTER)
	FLOOR PATTERN TAG (NUMBER)

CODE INFORMATION:

2009 IBC:

BUILDING INFORMATION:	
GROSS BUILDING AREA:	291 SF
NET BUILDING AREA:	216 SF
MEAN BUILDING HEIGHT:	±12'-2"
NUMBER OF STORIES:	ONE (1)
TOTAL PERIMETER:	69'-4" LF
USE GROUP CLASSIFICATIONS:	"U" - UTILITY AND MISCELLANEOUS (312.1)
CONSTRUCTION TYPE:	II-B (NON-COMBUSTIBLE, UNPROTECTED)

TABLE 603:	
ALLOWABLE AREA:	8,500 SF
ALLOWABLE HEIGHT:	55 FT
ALLOWABLE # OF STORIES:	2 STORIES

TABLE 601 (RATINGS):	
STRUCTURAL FRAME:	0 HR
EXTERIOR WALLS:	0 HR
INTERIOR WALLS:	0 HR
ROOF CONSTRUCTION:	0 HR
FLOOR CONSTRUCTION:	0 HR

TABLE 602 (RATINGS):	
SEPARATION DISTANCE:	10 ≤ X ≤ 30 FT

NFPA LIFE SAFETY CODE 101:

OCCUPANCY CLASSIFICATION:	N/A
COMMON PATH OF TRAVEL (SECTION 7.12.1):	X < 50 FT
EGRESS (SECTION 7.12.2):	STORIES USED EXCLUSIVELY FOR MECHANICAL EQUIPMENT, FURNACES, OR BOILERS SHALL BE PERMITTED TO HAVE A SINGLE MEANS OF EGRESS WHERE THE TRAVEL DISTANCE TO AN EXIT ON THAT STORY IS NOT IN EXCESS OF THE COMMON PATH OF TRAVEL LIMITATIONS OF 7.12.1
MINIMUM EGRESS WIDTH:	X ≥ 36 IN.; 72 IN. PROVIDED

MATERIALS LEGEND

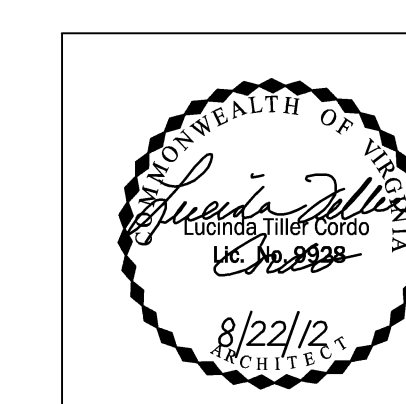
(OFFICE STANDARDS - SOME MAY NOT BE APPLICABLE)

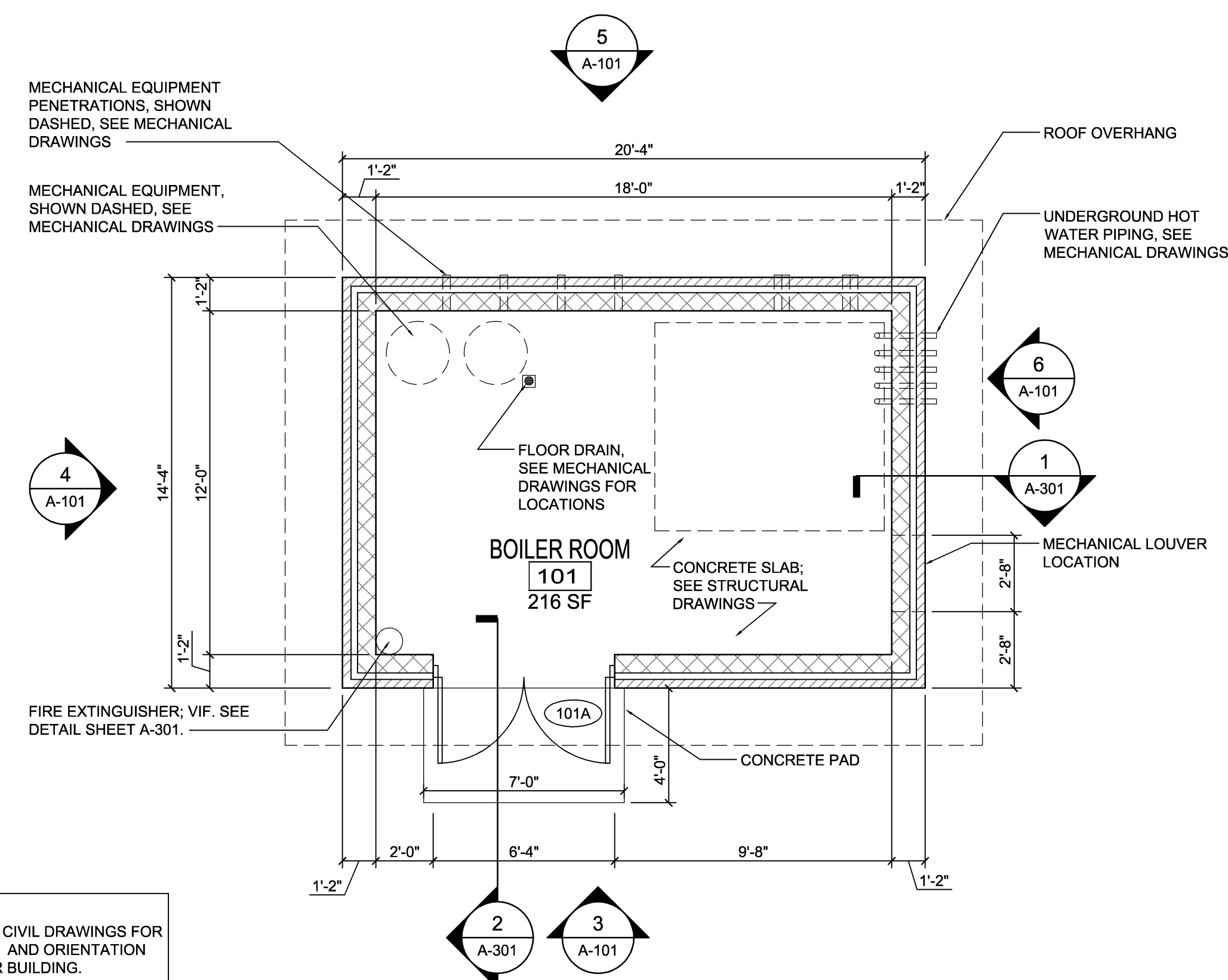
BATT INSULATION
BRICK
CONCRETE
FRAMING LUMBER
GYPSUM WALL BOARD
LIGHT GAUGE METAL FRAMING
PLYWOOD (SMALL SCALE)
PLYWOOD (LARGE SCALE)
RIGID INSULATION
STEEL

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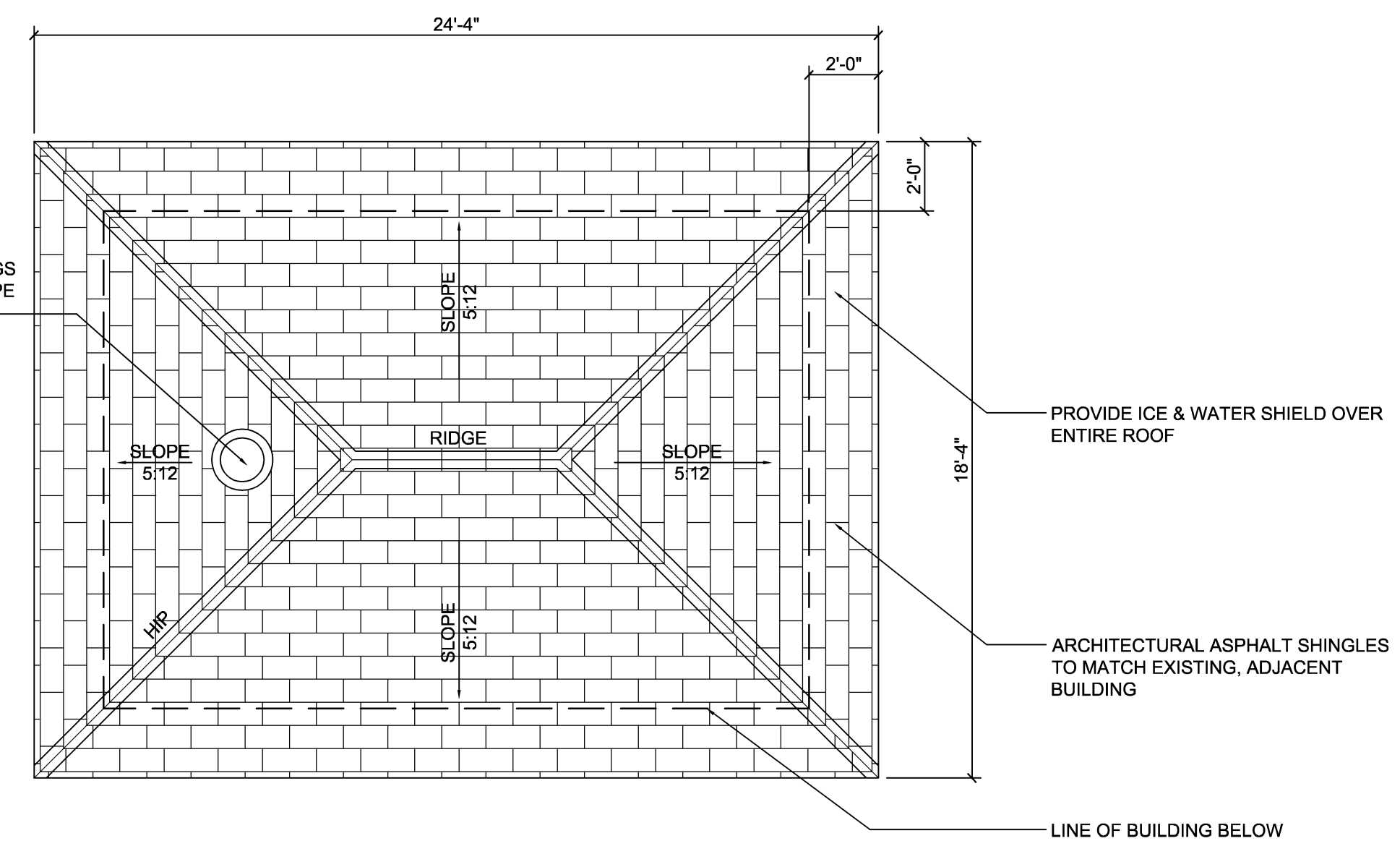
WileyWilson 6600 West Street St., Suite 500 Richmond, Virginia 23230-1717 804.254.7432 wileywilson.com		PROJECT NO. CP12-0104 NAVAL FACILITIES ENGINEERING COMMAND A-001	
DEPT OF NAVY MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA		BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT GENERAL NOTES, ABBREVIATIONS, AND LEGEND	
DES. LTC	DR. AEI	CHK. JHE	SUBMITTED BY: DESIGN DR.
APPROVED: PWO OR OICC	DATE	SIZE: E	CODE IDENT NO. 80091 NAVFAC DRAWING NO. 60011273 CONSTR CONTR NO. N40085-12-B-0104
SATISFACTORY TO	DATE	SCALE: AS SHOWN	SPEC No. 06-12-0104 SHEET 09 OF 43





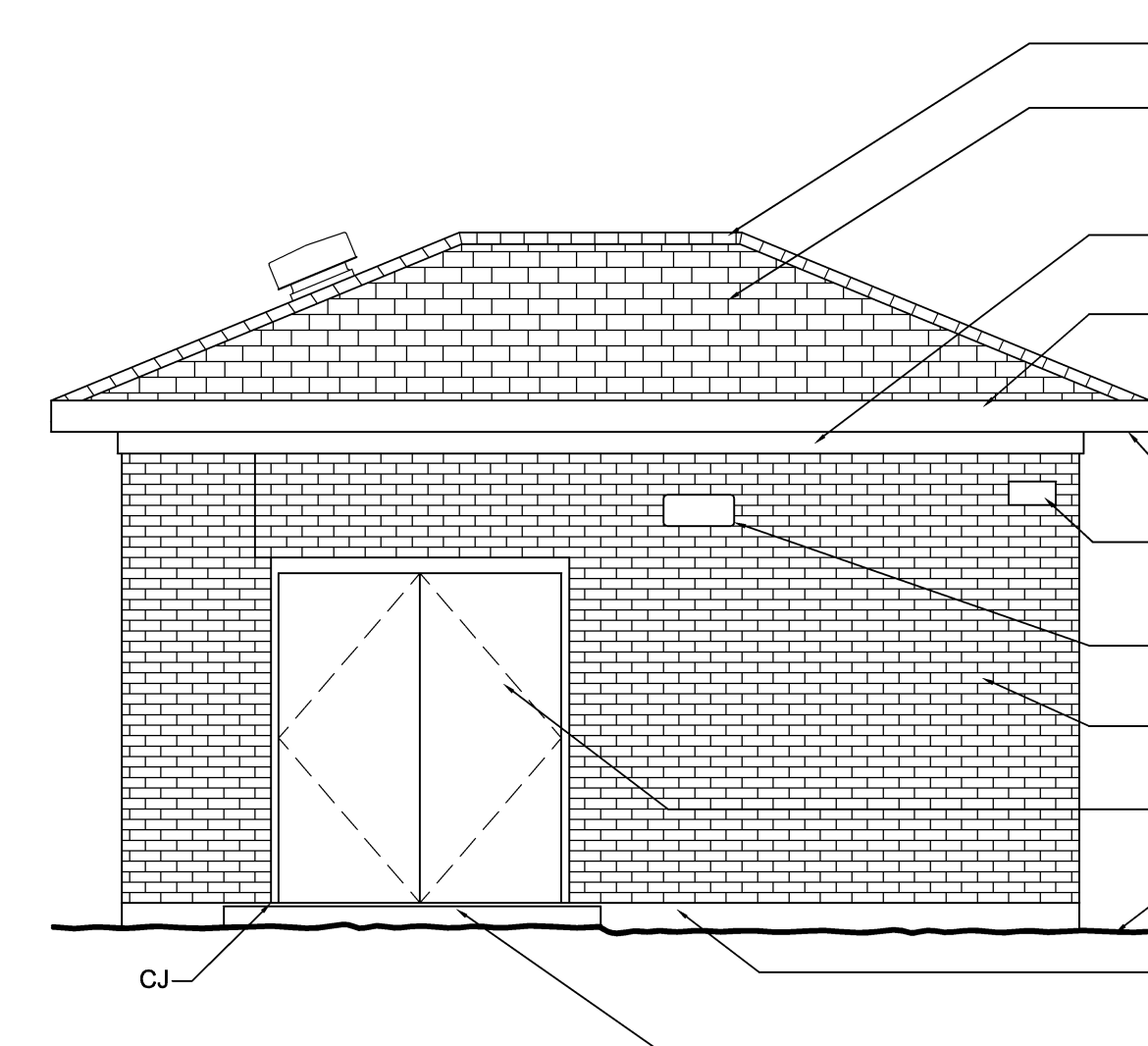
NOTE:
REFER TO CIVIL DRAWINGS FOR LOCATION AND ORIENTATION OF BOILER BUILDING.
REFER TO MECHANICAL DRAWINGS FOR EQUIPMENT AND PENETRATION LOCATIONS FOR EACH BUILDING.

1 HADNOT POINT BOILER BUILDING FLOOR PLAN
1/4"=1'-0"

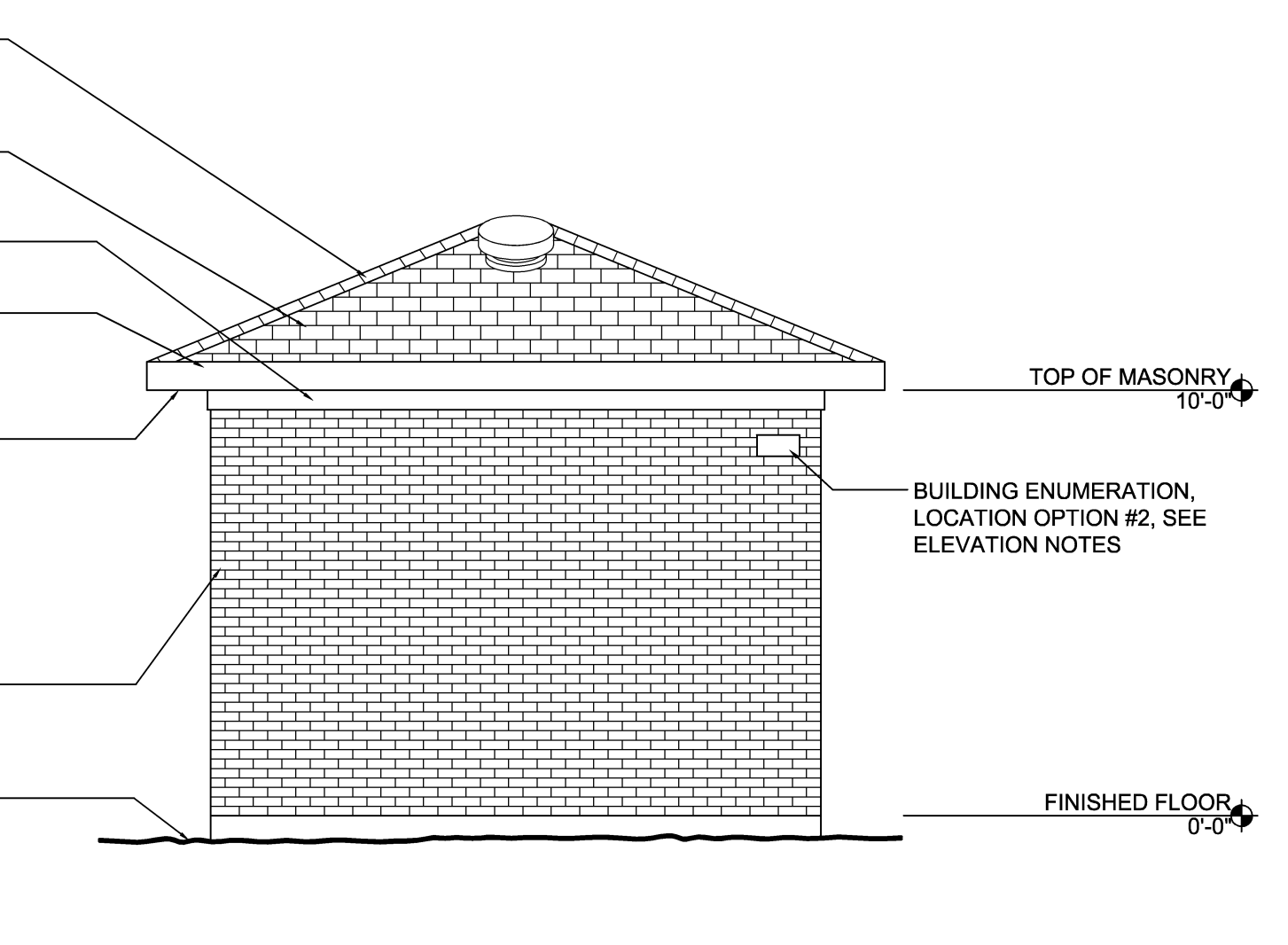


2 HADNOT POINT BOILER BUILDING ROOF PLAN
1/4"=1'-0"

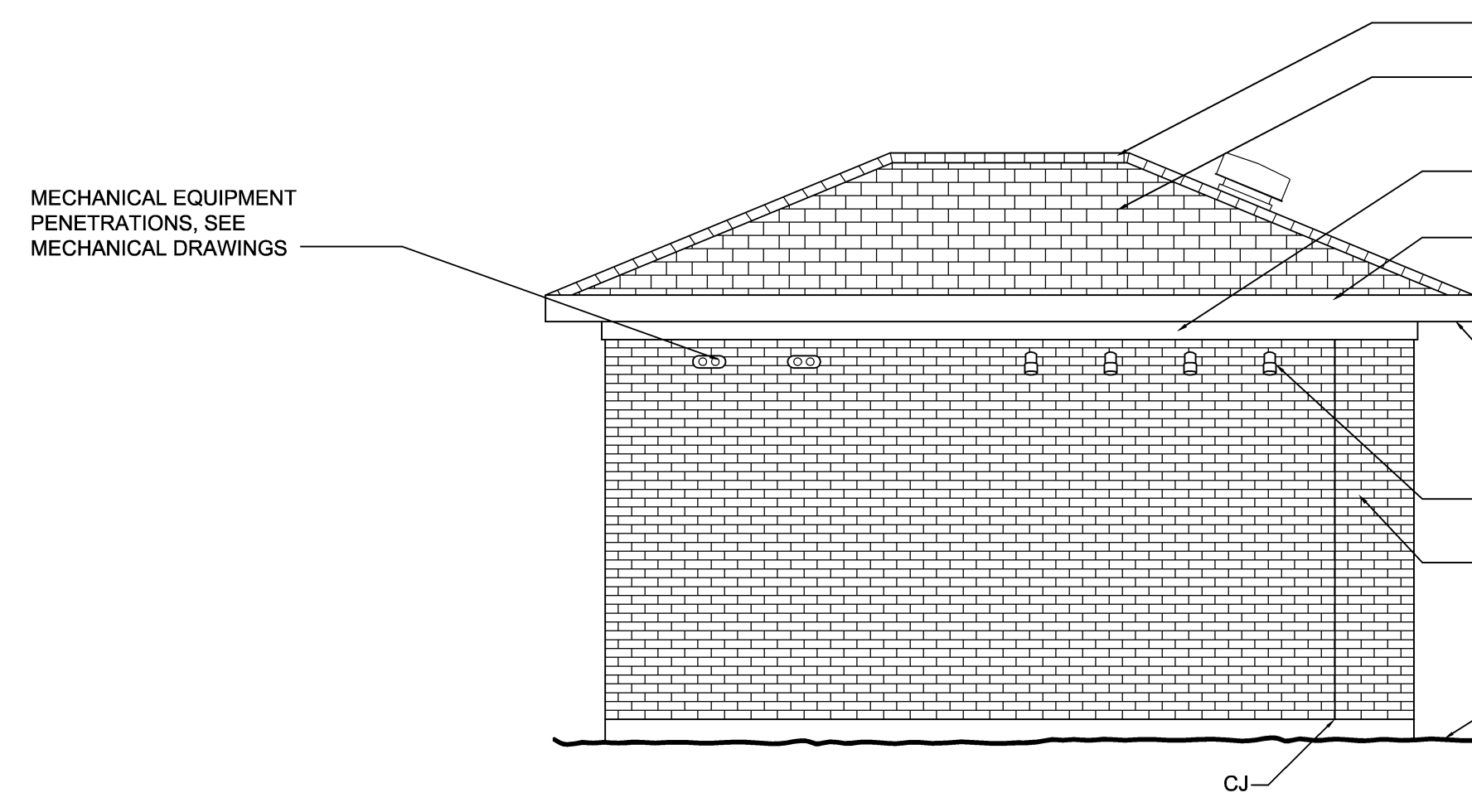
- GENERAL DRAWING NOTES:**
- BOILER BUILDING SHALL BE REQUIRED ADJACENT TO AND SERVING EACH OF THE FOLLOWING BUILDINGS AT HADNOT POINT:
BUILDING 6
BUILDING 8
BUILDING 10
BUILDING 12
BUILDING 63
BUILDING 309 (HISTORIC)
BUILDING 309 (HISTORIC)
BUILDING 316 (HISTORIC)
BUILDING 321 (HISTORIC)
BUILDING 323 (HISTORIC)
BUILDING 511
 - FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION OF ARCHITECTURAL ASPHALT SHINGLES.
 - VIF AND COORDINATE PENETRATIONS WITH MECHANICAL DRAWINGS.
- PLAN NOTES:**
- HORIZONTAL DIMENSIONS ARE FROM FACE OF MASONRY UNLESS OTHERWISE NOTED.
 - SEE SHEET A-301 FOR WALL SECTIONS AND DETAILS.
- ELEVATION NOTES:**
- ALL EXTERIOR MATERIALS FOR BOILER BUILDINGS ARE TO CONFORM TO CAMP LEJEUNE BASE STANDARDS.
 - COLORS AND TEXTURES TO MATCH ADJACENT BUILDINGS.
 - BUILDING ENUMERATION SIGNAGE TO BE LOCATED ON THE FACE OF THE BUILDING CLOSEST TO THE ROAD. FINAL LOCATION AND ENUMERATION TEXT TO BE COORDINATED WITH CAMP LEJEUNE CULTURAL RESOURCES PROGRAM MANAGER AND CAMP LEJEUNE PUBLIC WORKS MANAGEMENT OFFICE.



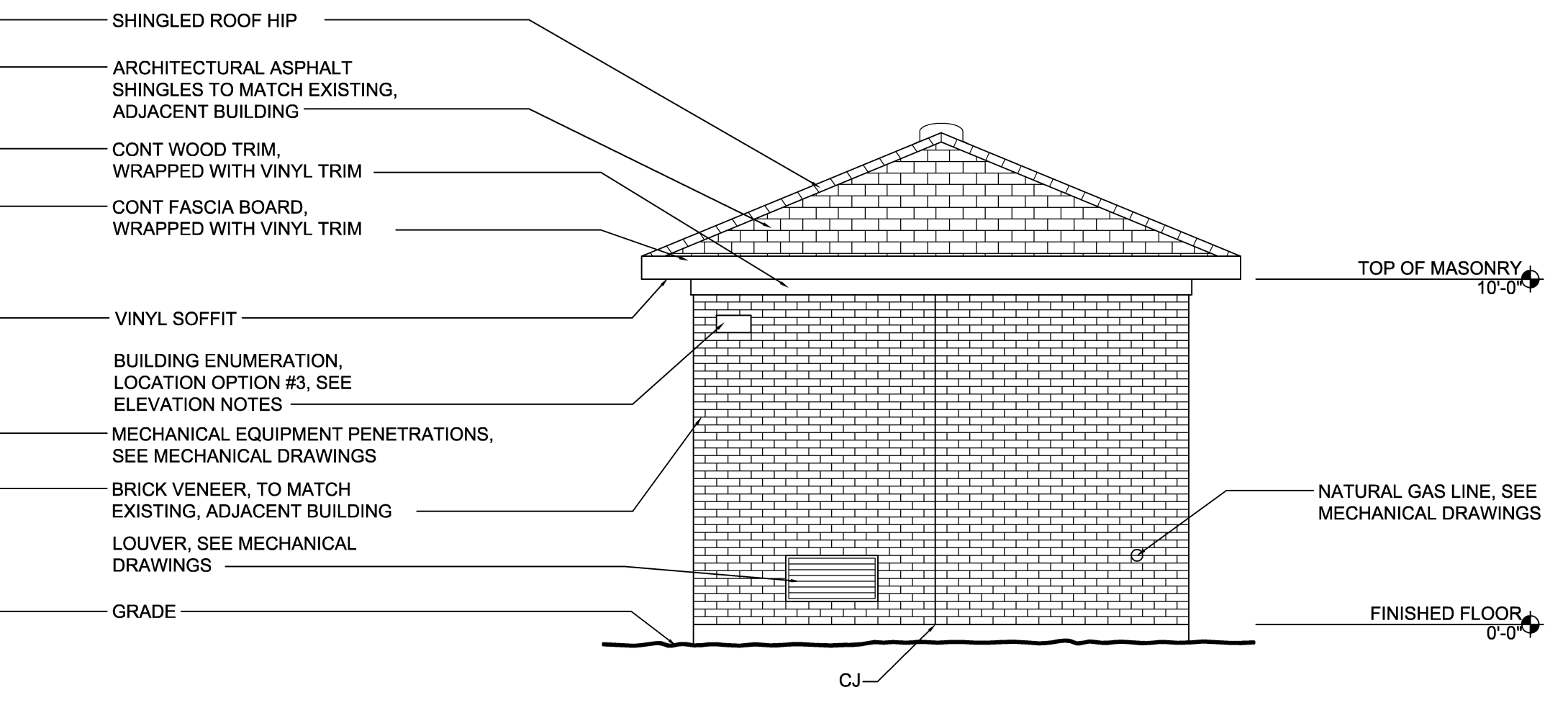
3 HADNOT POINT FRONT ELEVATION
1/4"=1'-0"



4 HADNOT POINT SIDE ELEVATION
1/4"=1'-0"



5 HADNOT POINT REAR ELEVATION
1/4"=1'-0"

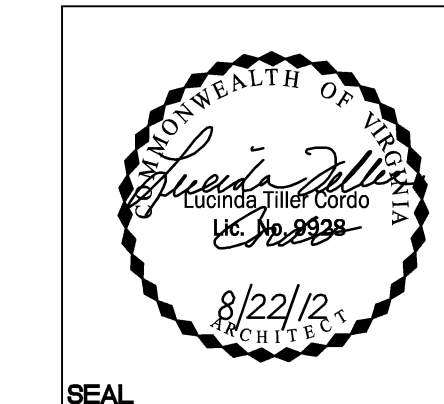


6 HADNOT POINT SIDE ELEVATION
1/4"=1'-0"

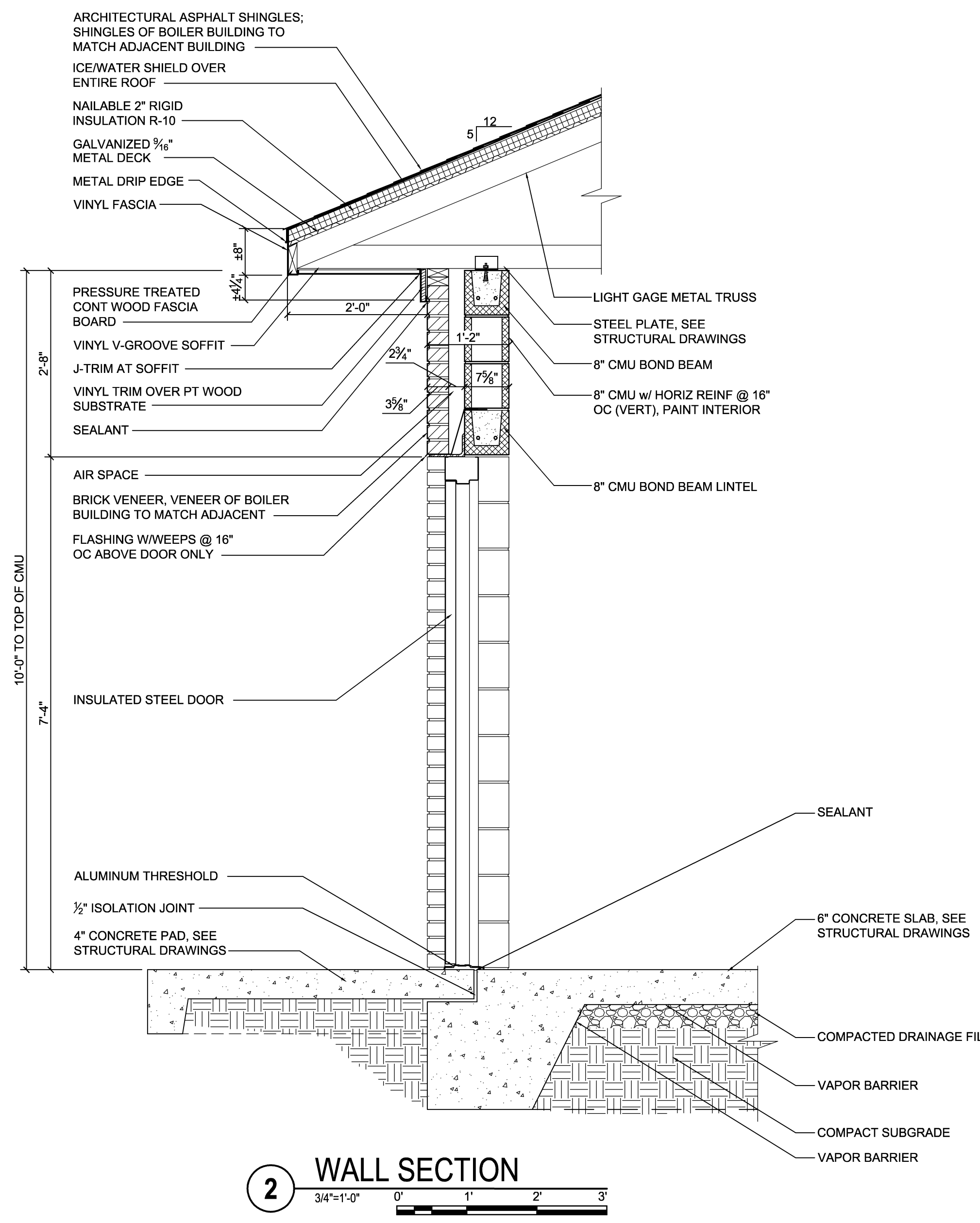
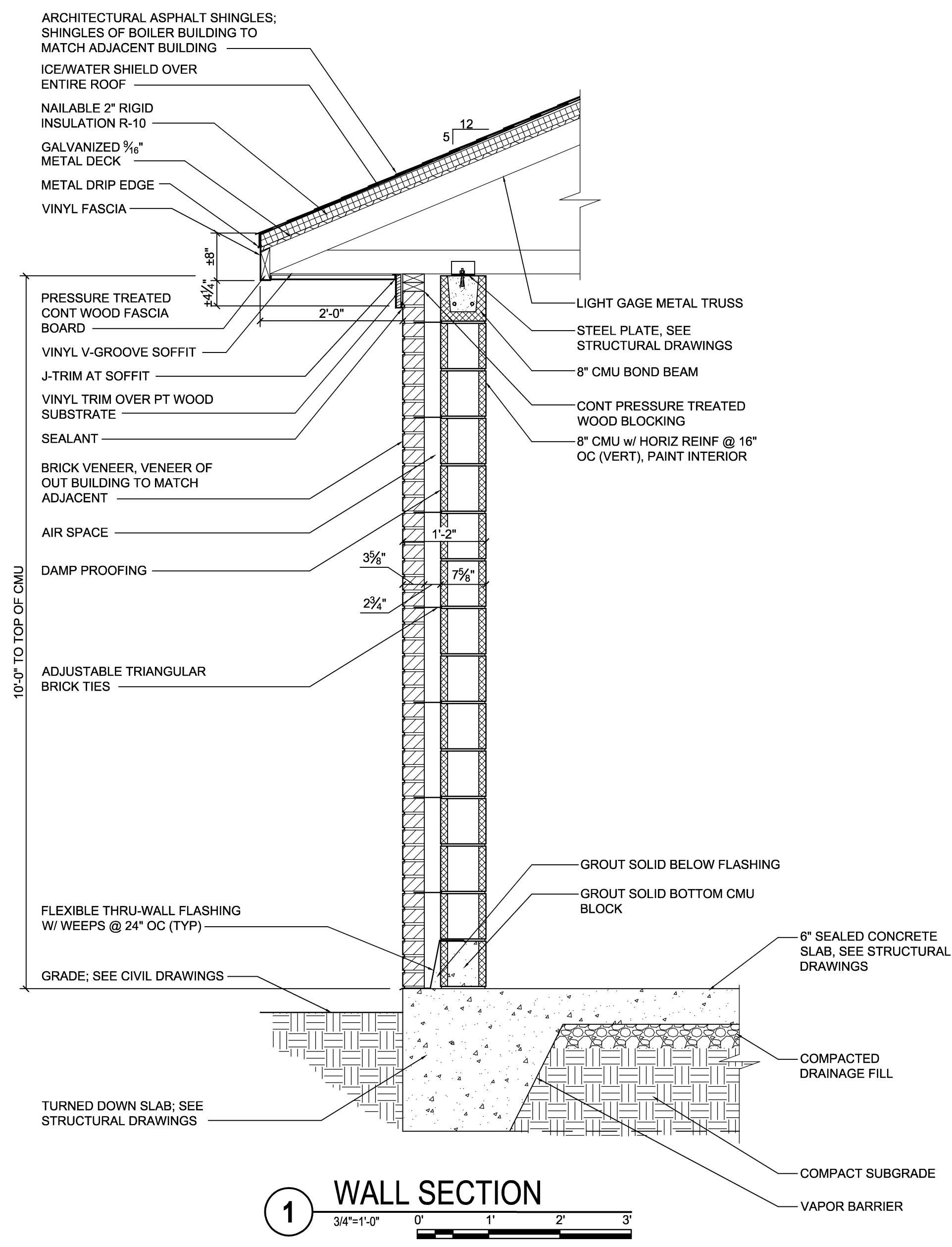
DISCLOSURE OF INFORMATION

Contractor shall comply as follows:

- The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless:
 - The Contracting Officer has given prior written approval; or
 - The information is otherwise in the public domain before the date of release.
- Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.
- The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.

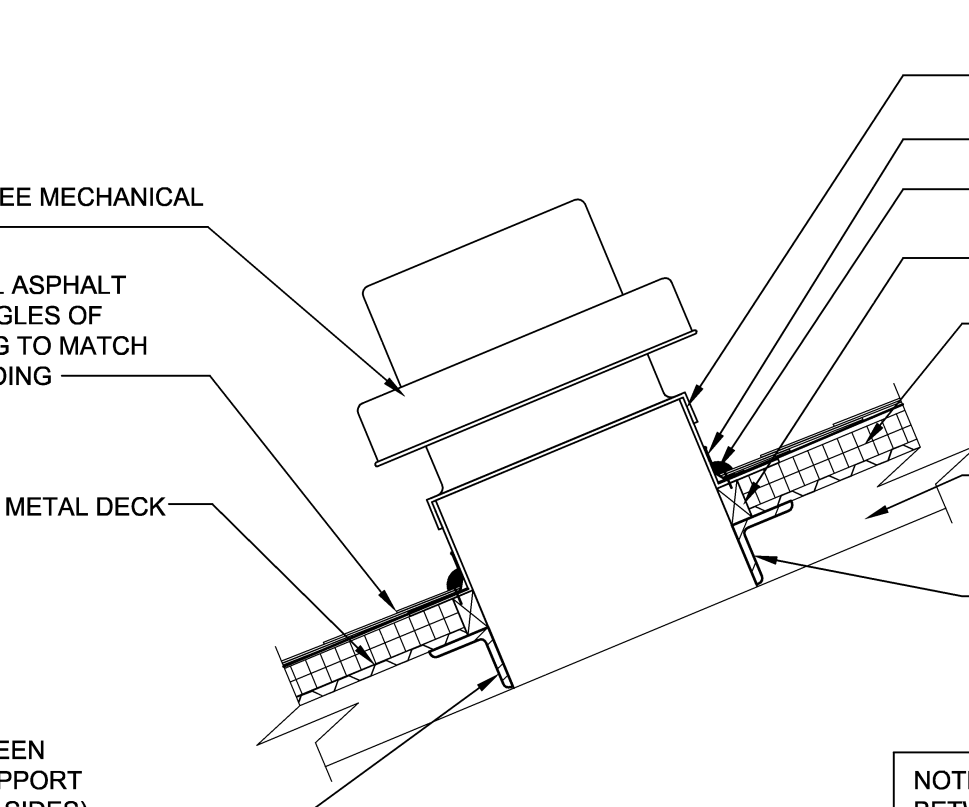
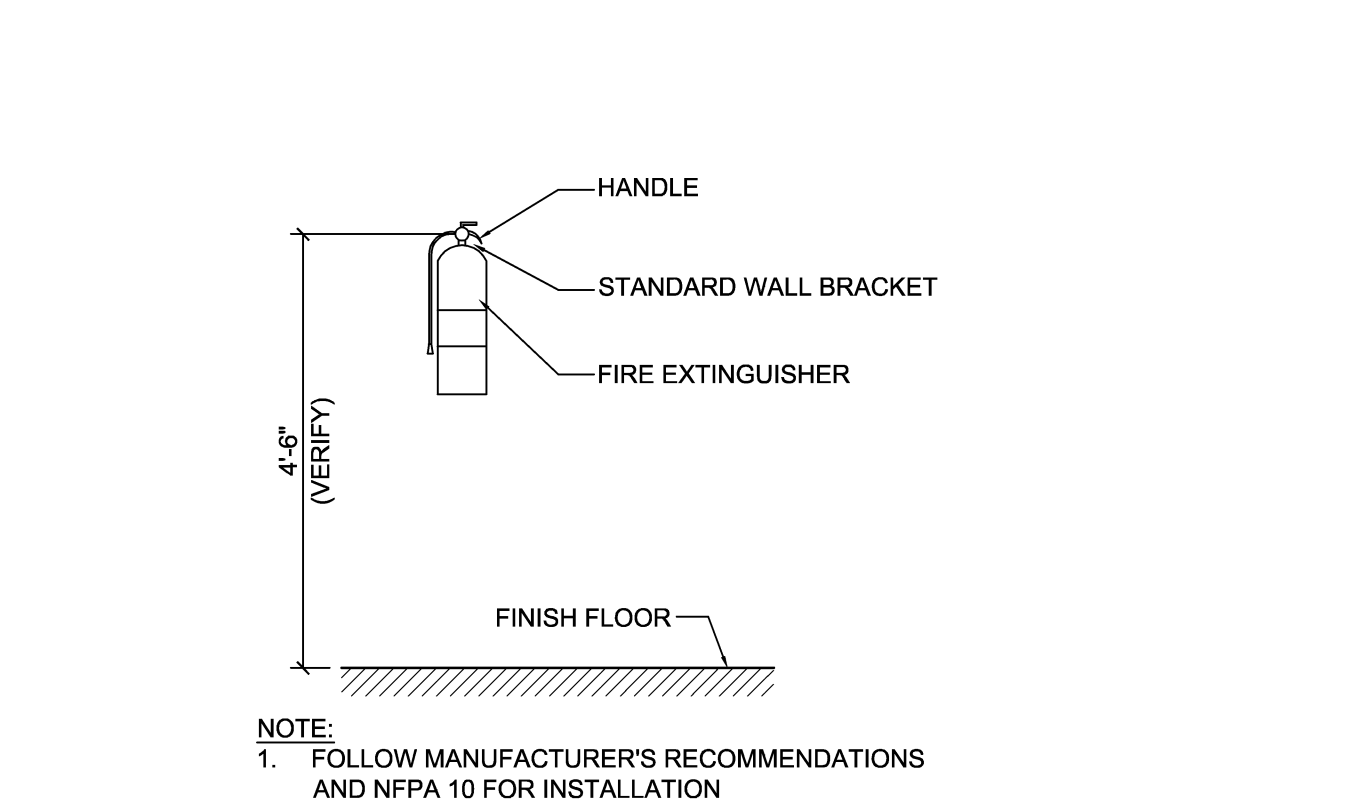
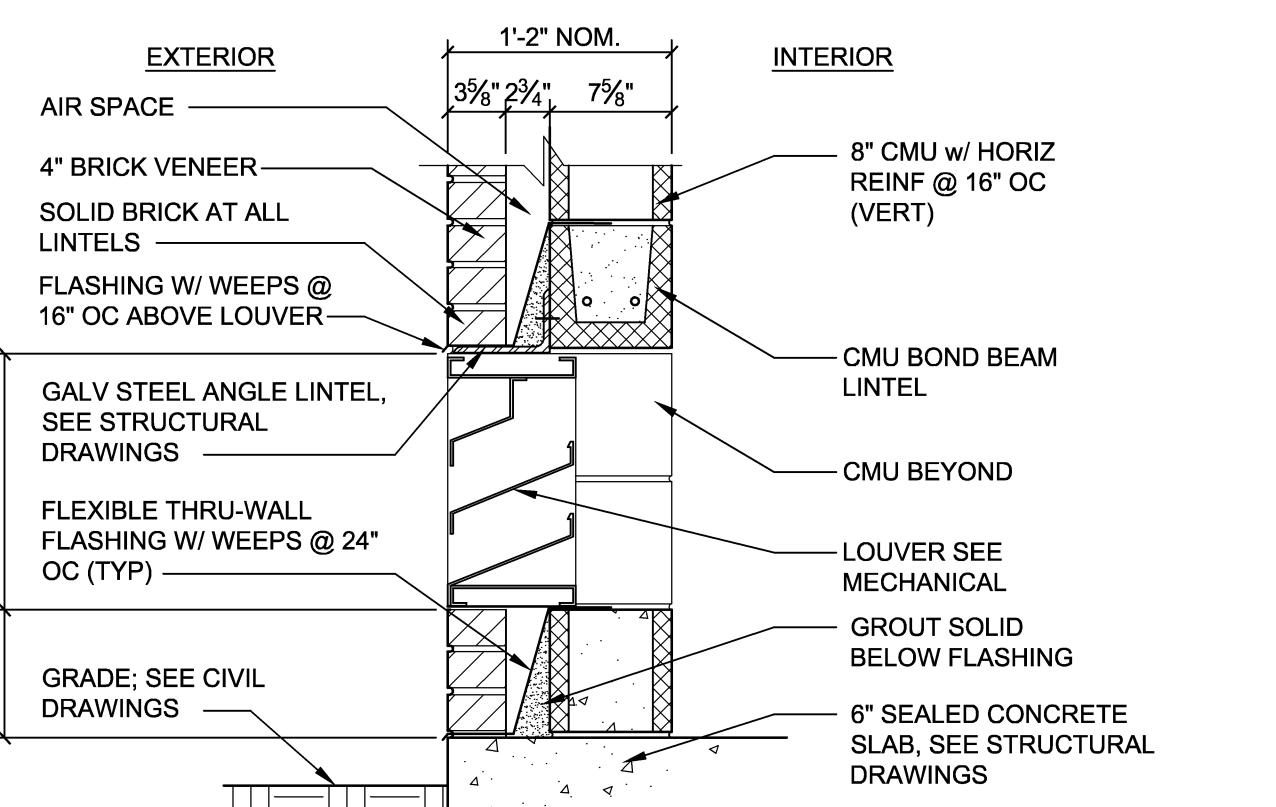
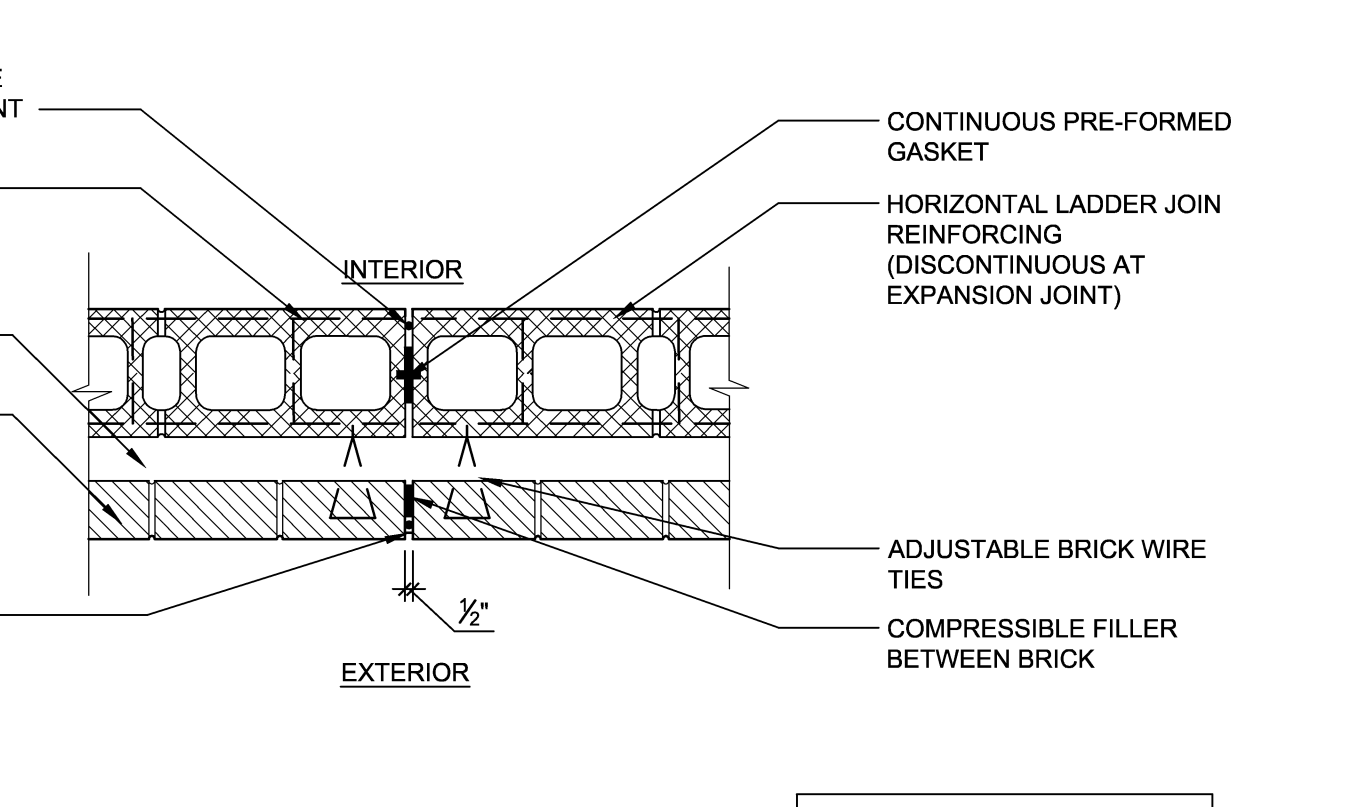
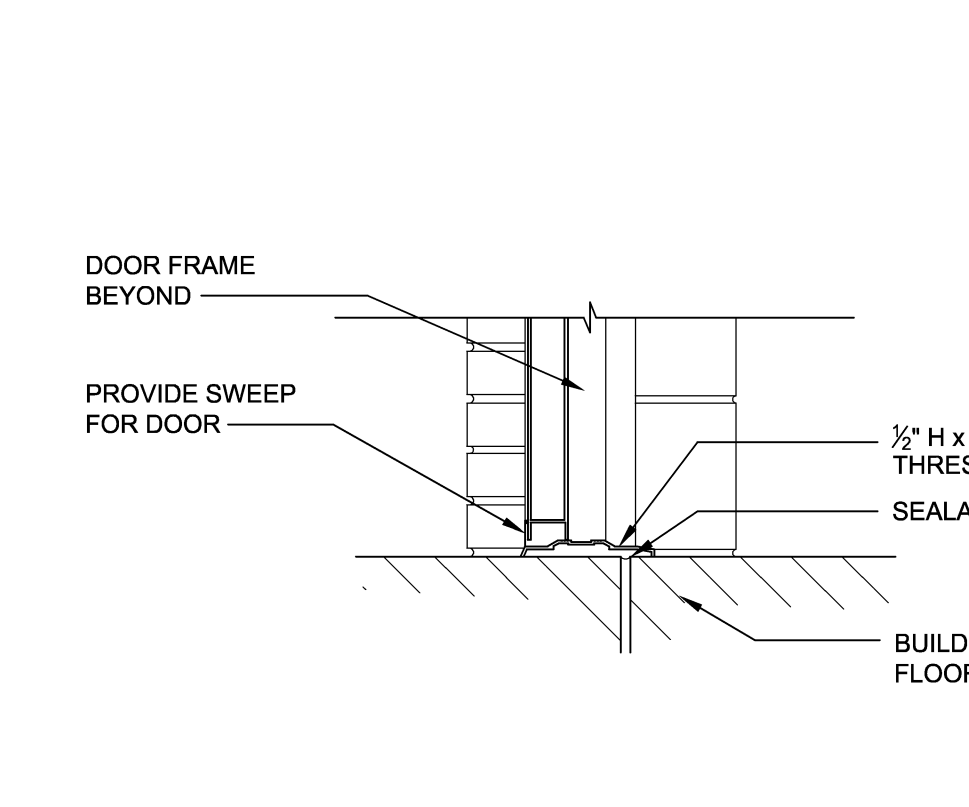
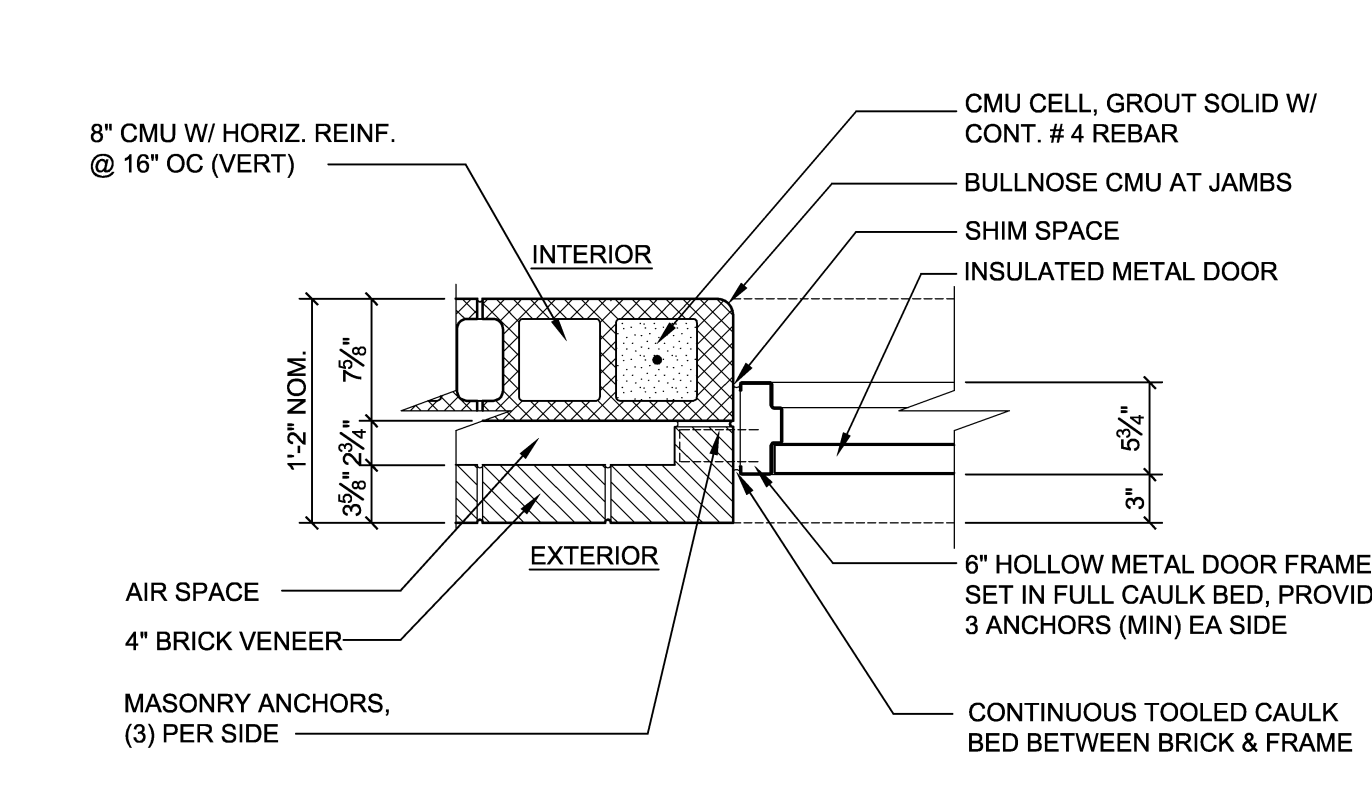
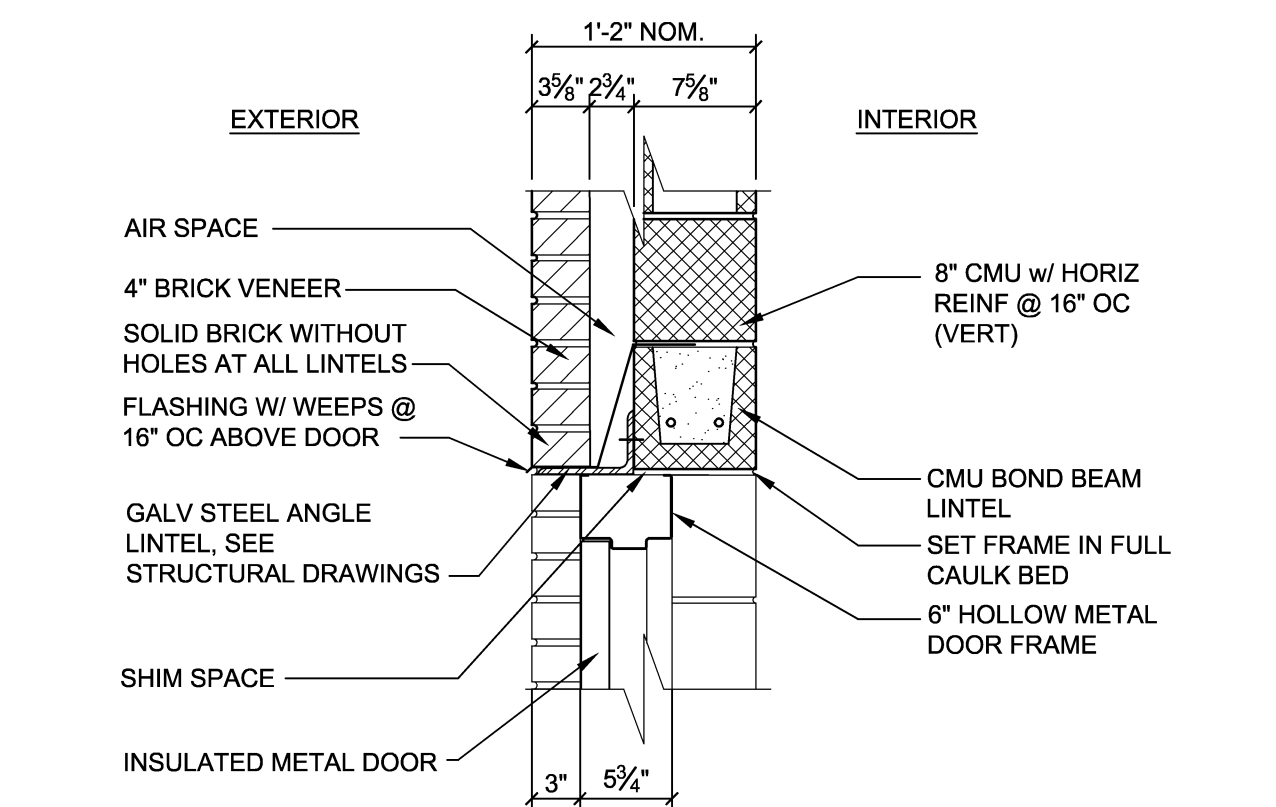
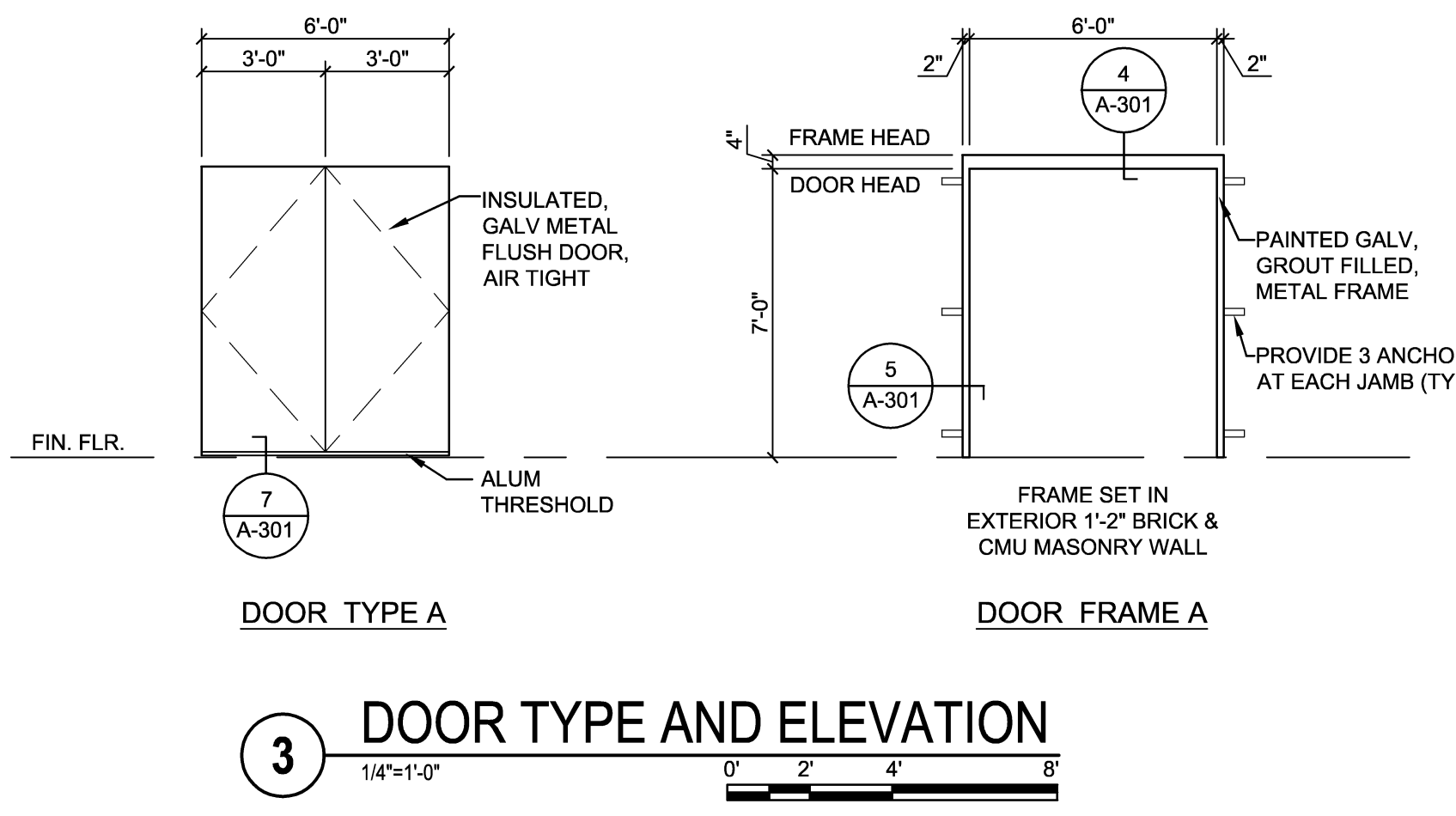


WileyWilson 6600 West Street St., Suite 500 Richmond, Virginia 23230-1717 804.294.7424 wileywilson.com		A-101 PROJECT NO. CP12-0104 NAVAL FACILITIES ENGINEERING COMMAND	
DEPT OF NAVY MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA		BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT PLANS AND ELEVATIONS	
DES. LTC	DR. AEI	CHK. JHE	SUBMITTED BY: DESIGN DR. APPROVED PWO OR OICC DATE SATISFACTORY TO DATE
SIZE E	CODE IDENT NO. 80091	NAVAC DRAWING NO. 60011274	CONSTR CONTR NO. N40085-12-B-0104
SCALE: AS SHOWN	SPEC No. 06-12-0104	SHEET 10 OF 43	



MARK	DOOR			FRAME			FIRE RATING LABEL	NOTES			
	WD	HT	THK	MAT	MAT	ELEV			HEAD	JAMB	SILL
101A	6'-0"	7'-0"	1.34"	INSUL HM	HM	A	4/A-301	5/A-201	7/A-301	--	SEE DOOR NOTE #1

DOOR NOTES:
 1. SEE SPECIFICATIONS FOR DOOR HARDWARE SET. HARDWARE TO BE HEAVY DUTY COMMERCIAL GRADE.
 2. VERIFY WITH OWNER KEYING AND FUNCTION.
 3. FOLLOW MFG RECOMMENDATIONS FOR INSTALLATION OF DOOR FRAME HARDWARE FOR APPLICATION IDENTIFIED.
 4. PAINT DOOR AND FRAME.
 5. DOOR TYPICAL FOR ALL BUILDINGS IDENTIFIED ON A-101



DISCLOSURE OF INFORMATION

Contractor shall comply as follows:

(a) The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless-

(1) The Contracting Officer has given prior written approval; or

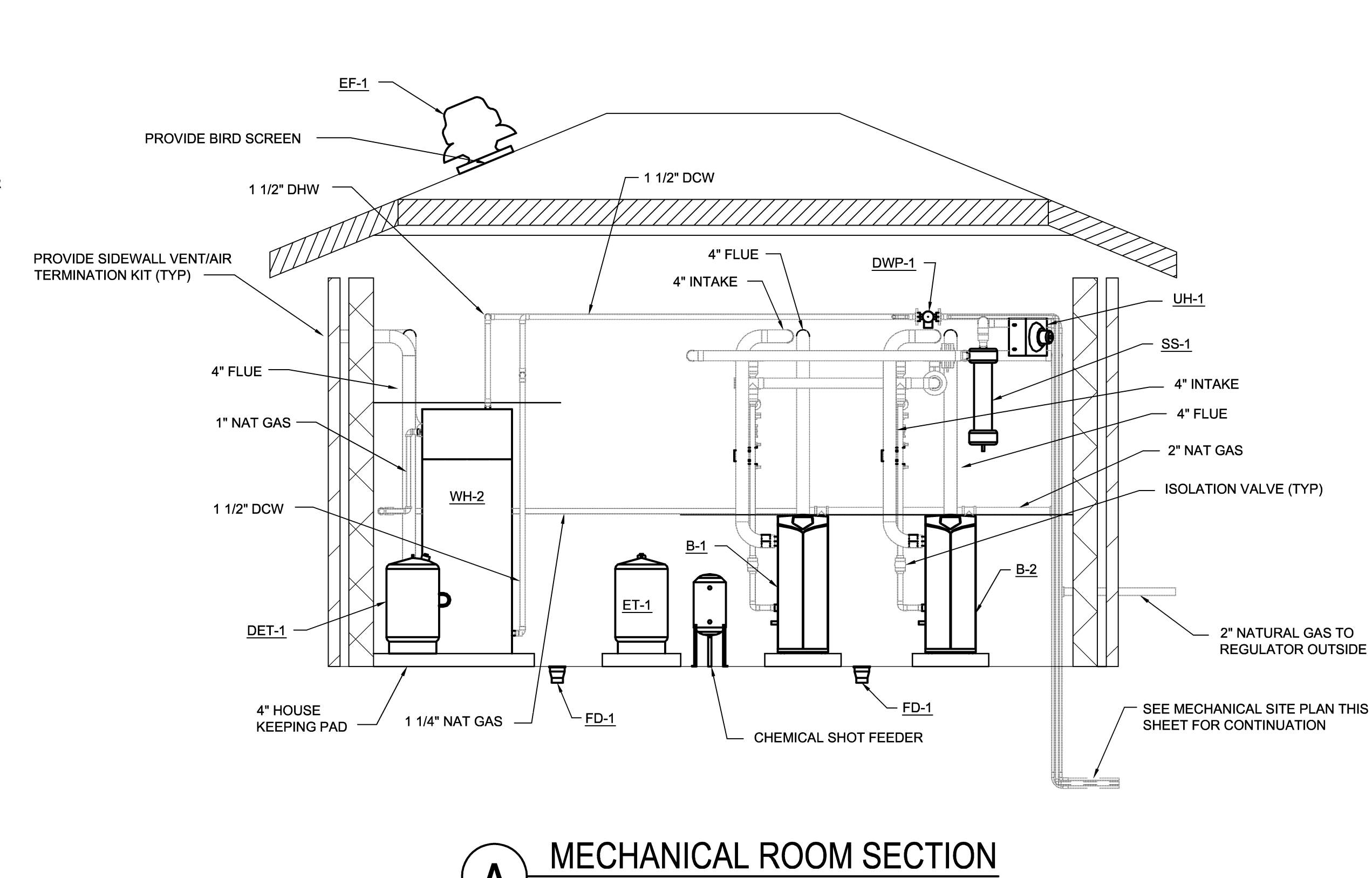
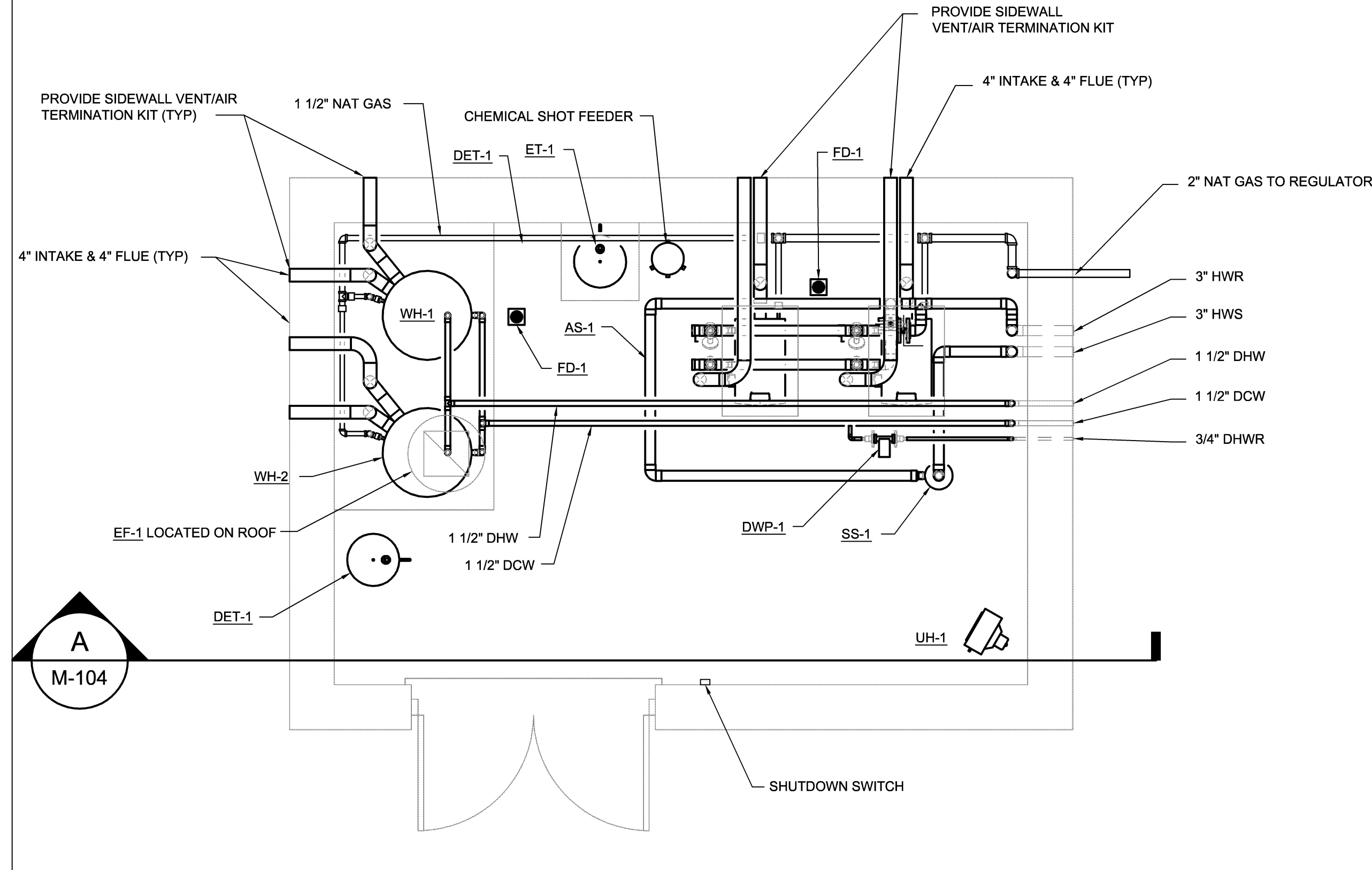
(2) The information is otherwise in the public domain before the date of release.

(b) Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.

(c) The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.

WileyWilson 6600 West Street St., Suite 500 Richmond, Virginia 23230-1717 804.254.7342 wileywilson.com		A-301 PROJECT NO. CP12-014 NAVAL FACILITIES ENGINEERING COMMAND	
DEPT OF NAVY MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA		BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT SECTIONS AND DETAILS	
DES. LTC	DR. AEI	CHK. JHE	SUBMITTED BY: DESIGN DR. APPROVED PWO OR OICC DATE SATISFACTORY TO DATE
SIZE E	CODE IDENT NO. 80091	NAVFAC DRAWING NO. 60011275	CONSTR CONTR NO. N40085-12-B-014
SCALE AS SHOWN	SPEC No. 06-12-014	SHEET 11 OF 43	

SYM	PREP'D BY	DATE	APPROVED



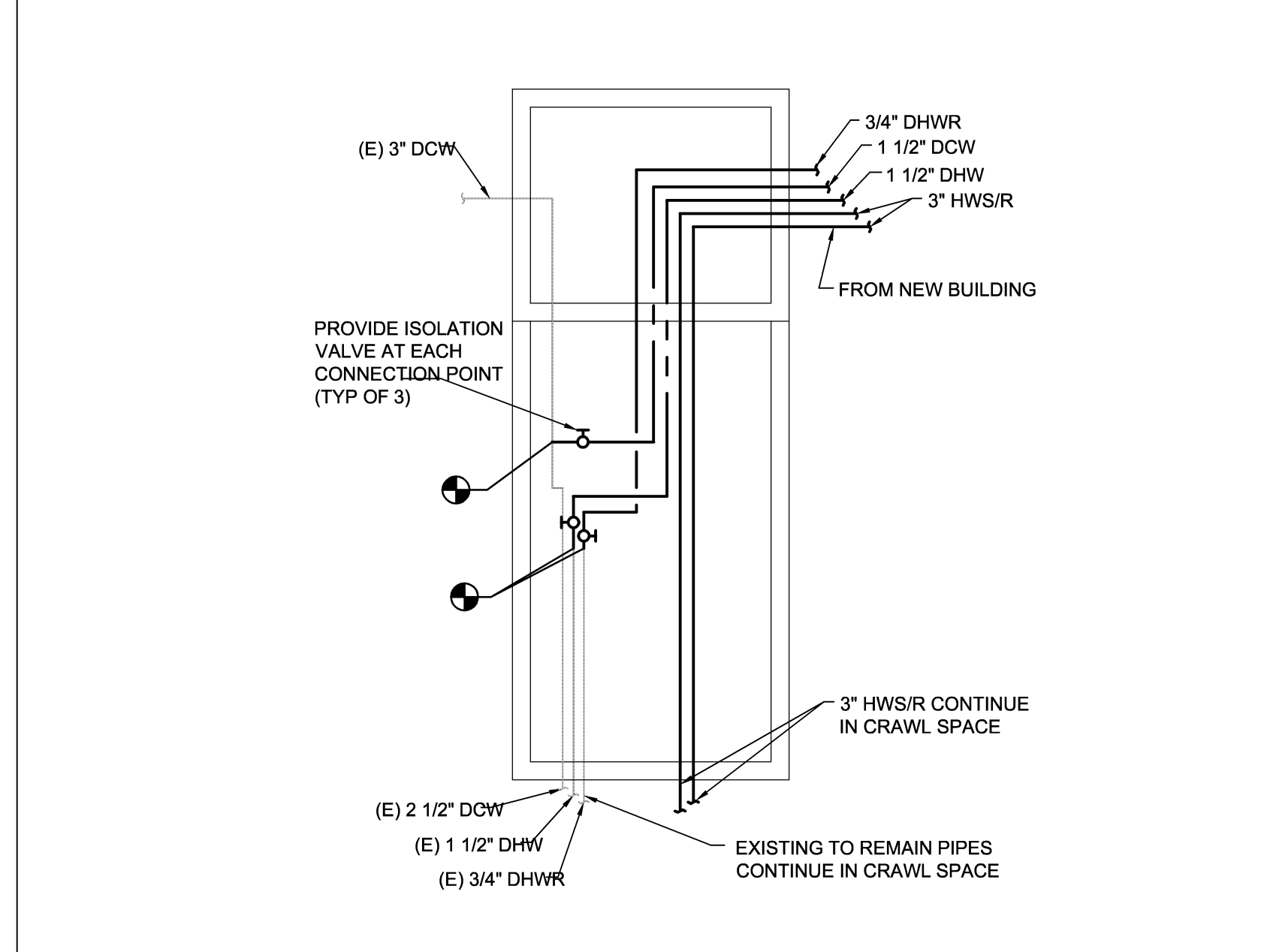
MECHANICAL ROOM SECTION
3/8\"/>

NATURAL GAS NOTE:
1. TOTAL CONNECTED NATURAL GAS DEMAND FOR THIS BUILDING IS 1,200 MBH AT 10 IN-H2O.

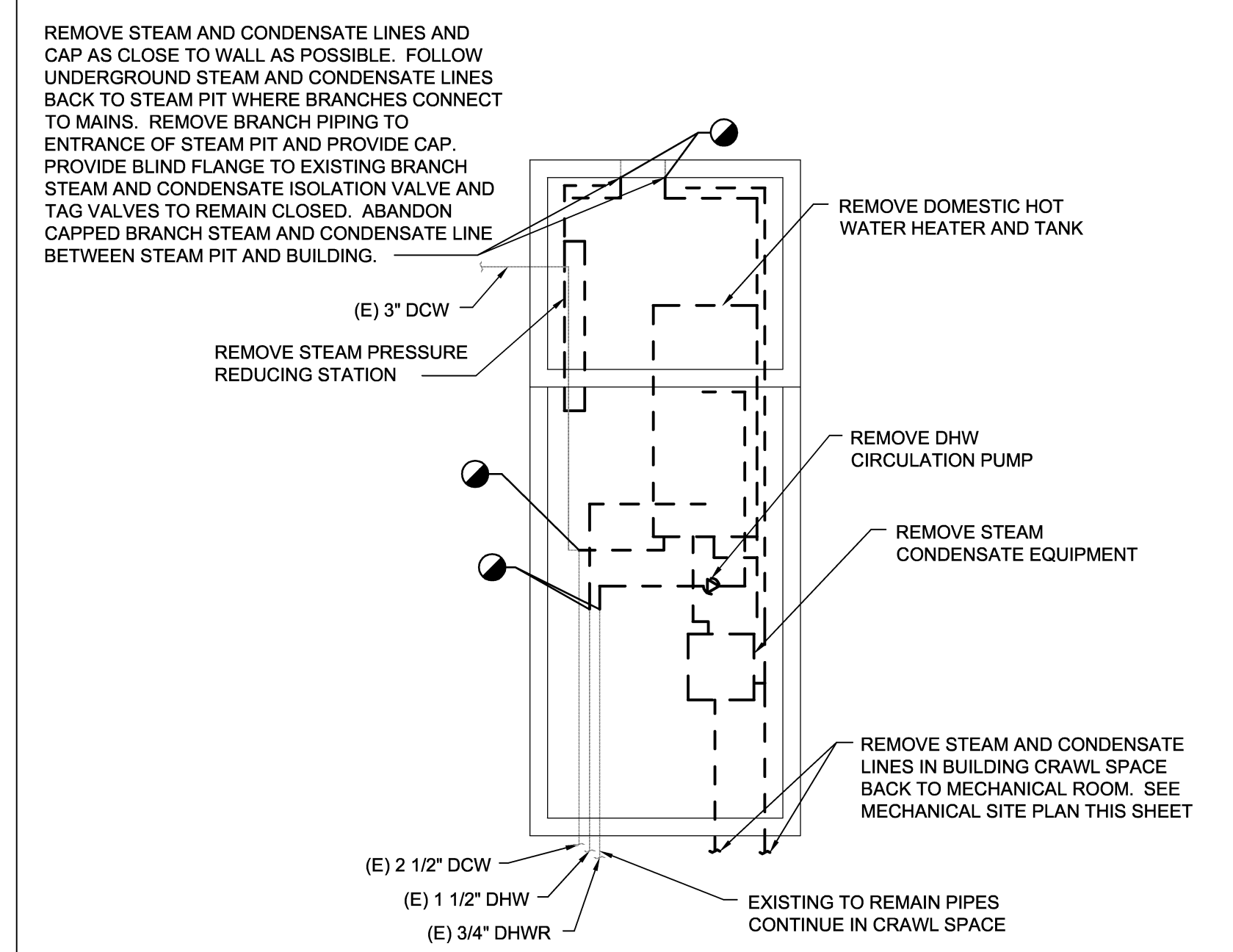
DEMOLITION NOTES:
1. REMOVE HOT WATER PIPING, PUMPS, HEAT EXCHANGERS AND EXPANSION TANKS AS SHOWN. REMOVE ALL ASSOCIATED PIPING, SUPPORTS AND HANGERS. REMOVE ALL STEAM SUPPLY AND CONDENSATE RETURN PIPING, COMPONENTS, HANGERS AND EQUIPMENT.
2. CHILLED WATER SYSTEM IS EXISTING TO REMAIN AND SHALL NOT BE INTERRUPTED DURING CONSTRUCTION.
3. EXISTING CONTROLS TO REMAIN FOR MODIFICATION AND INTEGRATION WITH NEW BACNET EMCS SYSTEM.
4. THE EQUIPMENT AND BUILDING LAYOUT IS BASED ON THE BASIS OF DESIGN EQUIPMENT CLEARANCES. ANY MODIFICATION REQUIRED FOR ACCEPTABLE ALTERNATE MANUFACTURER'S SHALL BE PROVIDED BY THE CONTRACTOR IF NECESSARY.

GENERAL NOTES:
1. SEE GENERAL NOTES ON SHEET M-001.
2. MAINTAIN MANUFACTURER RECOMMENDED CLEARANCE AROUND ALL EQUIPMENT. FOR BOILERS, PROVIDE A MINIMUM 30\"/>

1 BUILDING 12 NEW MECHANICAL ROOM
3/8\"/>

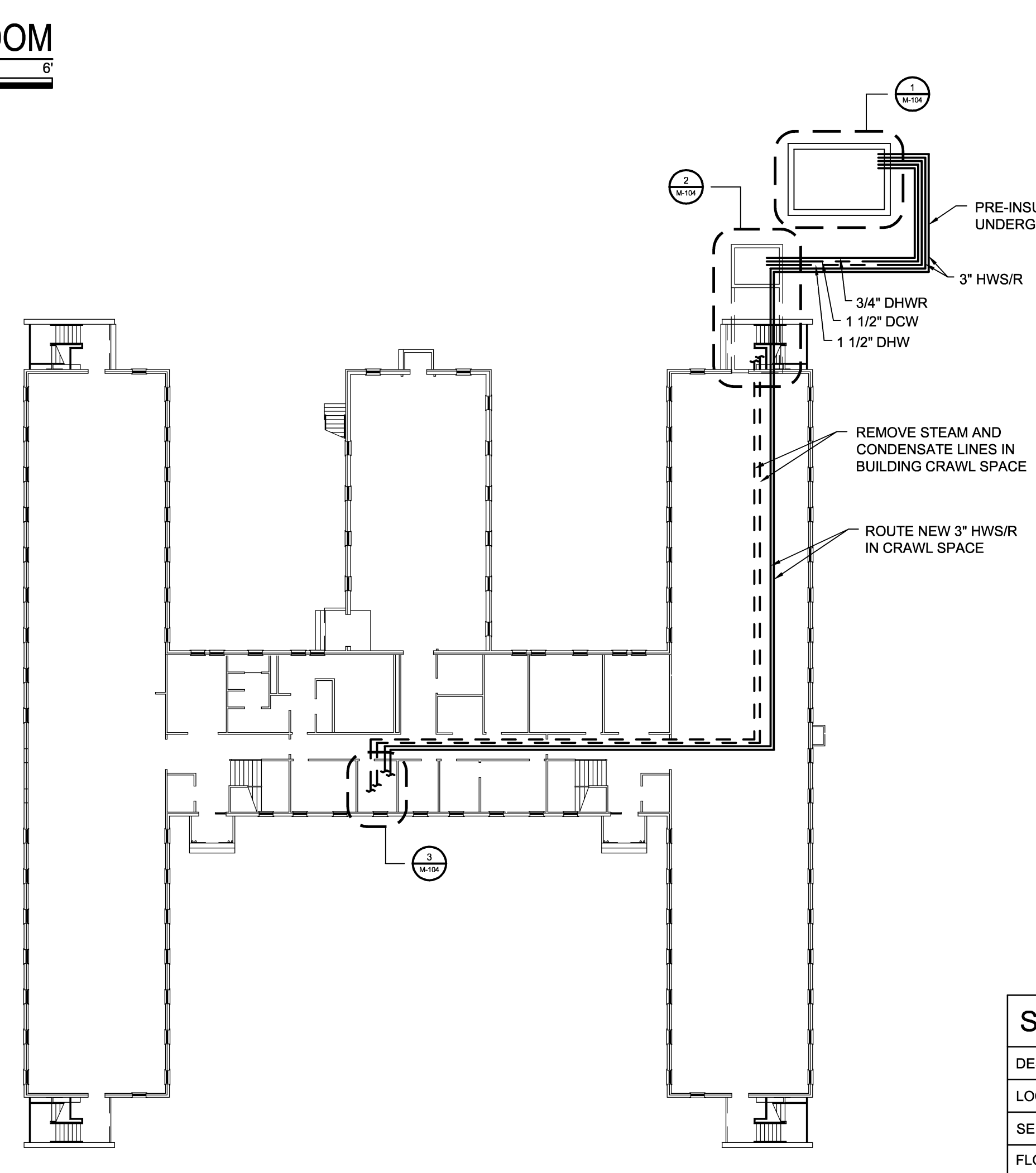


2 BUILDING 12 STEAM PIT NEW WORK PLAN
3/16\"/>

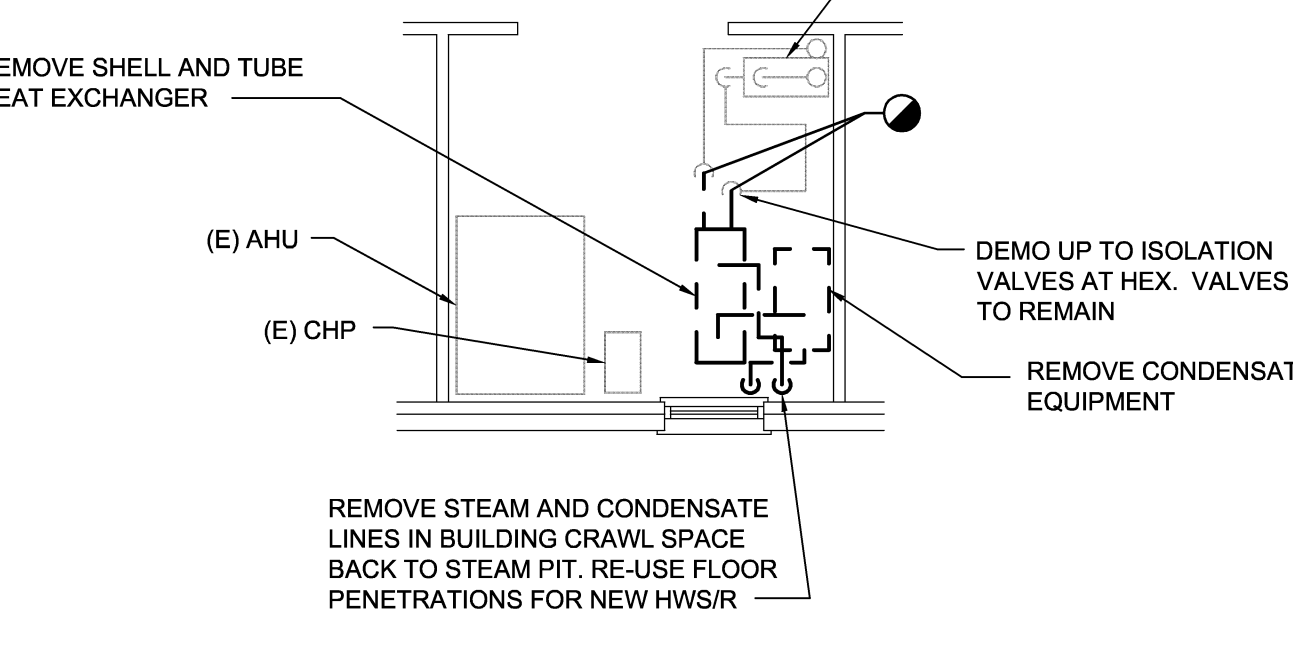


2 BUILDING 12 STEAM PIT DEMOLITION PLAN
3/16\"/>

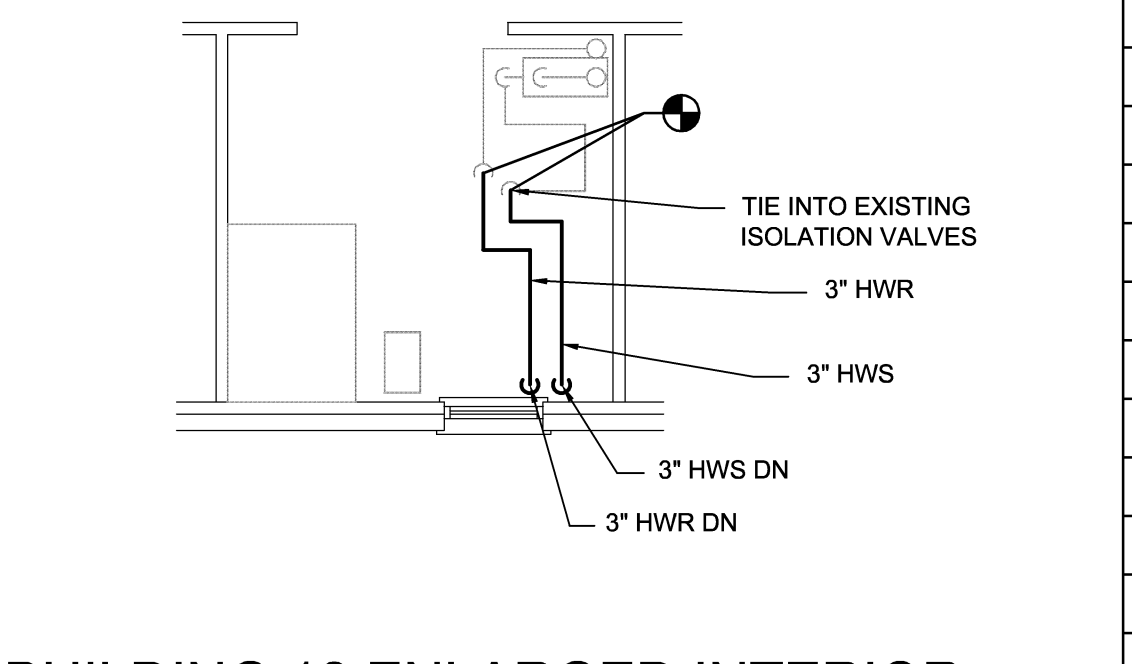
DISCLOSURE OF INFORMATION
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(2) The information is otherwise in the public domain before the date of release.
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(b) The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.
(c) The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.



BUILDING 12 MECHANICAL SITE PLAN
3/8\"/>



3 BUILDING 12 ENLARGED INTERIOR MECHANICAL DEMOLITION PLAN
1/8\"/>



3 BUILDING 12 ENLARGED INTERIOR MECHANICAL NEW WORK PLAN
1/8\"/>

FLOOR DRAIN SCHEDULE

DESIGNATION	DRAIN SIZE	DESCRIPTION
FD-1	3"	ZURN MODEL 415B WITH 6" NICKEL BRONZE STRAINER AND PROSET TRAPGUARD

DOMESTIC HOT WATER HEATER SCHEDULE

DESIGNATION	WH-1	WH-2
LOCATION	MECH ROOM	MECH ROOM
STORAGE (GALLONS)	100	100
GPH AT 100 DEG F RISE	230	230
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4.8	4.8
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10.5	10.5
GAS INLET CONNECTION (IN)	3/4	3/4
INPUT (MBH)	199	199
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	STATE	STATE
MODEL	SUF 100 199 NE	SUF 100 199 NE
REMARKS	1 & 2	1 & 2

REMARKS LEGEND:
1. PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER WATER HEATER.
2. PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.

SOLID SEPARATOR SCHEDULE

DESIGNATION	SS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
FLOW RATE (GPM)	72
MAXIMUM PRESSURE DROP (FT-H2O)	14
COLLECTION CHAMBER CAPACITY (GAL)	0.8
BASED ON	LAKOS
MODEL	ILB-0200

EXPANSION TANK SCHEDULE

DESIGNATION	ET-1	DET-1
SERVICE	HEATING WATER	DOMESTIC HOT WATER
LOCATION	MECH ROOM	MECH ROOM
TYPE	BLADDER	BLADDER
TANK VOLUME (GAL)	60	17.5
FILL PRESSURE (PSI)	20	60"
RELIEF VALVE PRESSURE SETTING (PSI)	100	100
BASED ON	JOHN WOOD COMPANY	AMTROL
MODEL	JAER-23-607	ST-C SERIES ST-42V-C

* MATCH DOMESTIC WATER SUPPLY PRESSURE AT THIS LOCATION.

UNIT HEATER SCHEDULE

DESIGNATION	UH-1
LOCATION	MECH ROOM
AIRFLOW (CFM)	300
HEATING CAPACITY (KW)	3
ENTERING AIR TEMPERATURE (DEG F)	55
LEAVING AIR TEMPERATURE (DEG F)	87
MOTOR POWER (HP)	1/60
VOLTAGE (V)	208
PHASE	1
FREQUENCY (Hz)	60
BASED ON	INDEECO
MODEL	ULI
REMARKS	1 & 2

REMARKS LEGEND:
1. PROVIDE UNIT MOUNTED THERMOSTAT.
2. PROVIDE INTEGRAL DISCONNECT.

BOILER SCHEDULE

DESIGNATION	B-1	B-2
LOCATION	MECH ROOM	MECH ROOM
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10
GAS INLET CONNECTION (IN)	1	1
INPUT (MBH)	399	399
OUTPUT (MBH)	375	375
MINIMUM TURN DOWN RATIO	5:1	5:1
FLOWRATE (GPM)	30	30
MAXIMUM PRESSURE DROP (FT-H2O)	8	8
ENTERING WATER TEMPERATURE (DEG F)	160	160
LEAVING WATER TEMPERATURE (DEG F)	185	185
MINIMUM OPERATING PRESSURE (PSI)	30	30
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
TOTAL OPERATING AMPS	1.5	1.5
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	LOCHINVAR	LOCHINVAR
MODEL REMARKS	KB-400	KB-400
REMARKS	1, 2, 3 & 4	1, 2, 3 & 4

REMARKS LEGEND:
1. PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER BOILER.
2. BOILER CIRCULATION PUMP TO BE PROVIDED BY MANUFACTURER AT 30 GPM AT 25 DELTA T.
3. PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.
4. PROVIDE BOILERS WHICH ARE AT LEAST 94% EFFICIENT BASED ON BTS-2000, REV 06.07 CONDITIONS.

FAN SCHEDULE

DESIGNATION	EF-1
USAGE	EXHAUST
SERVES ROOM(S)	MECH ROOM
DESCRIPTION	CENTRIFUGAL
FAN DATA	--
AIRFLOW (SCFM)	550
TOTAL SP (IN-H2O)	.15
RPM	1630
DRIVE TYPE	DIRECT
MOTOR DATA	--
HORSEPOWER	1/6
RPM	1725
VOLTS	115
PHASE	1
HERTZ	60
SELECTION BASED ON	GREENHECK
MODEL	G-085-VG
REMARKS	1, 2 & 3

REMARKS LEGEND:
1. PROVIDE FAN WITH INTEGRAL BACK-DRAFT DAMPER, CONTINUOUS DUTY RATED.
2. PROVIDE FAN WITH UNIT MOUNTED DISCONNECT.
3. PROVIDE WALL MOUNTED THERMOSTAT CONTROL. WIRE INTAKE LOUVER DAMPER IN SERIES WITH FAN TO OPEN UPON FAN OPERATION.

LOUVER SCHEDULE

DESIGNATION	L-1
USAGE	INTAKE
LOCATION	MECH ROOM
DESCRIPTION	COMBINATION LOUVER/DAMPER
DEPTH (IN)	8
FRAME TYPE	CHANNEL
WIDTH (IN)	32
HEIGHT (IN)	16
AIRFLOW (CFM)	550
FREE AREA (SF)	.75
FREE AREA VELOCITY (FPM)	734
PRESSURE DROP (IN H2O)	.067
SELECTION BASE ON	GREENHECK
ACTUATOR TYPE	120 VAC
ACTUATOR FAIL POSITION	CLOSED
MODEL	EAC-601
REMARKS	1, 2 & 3

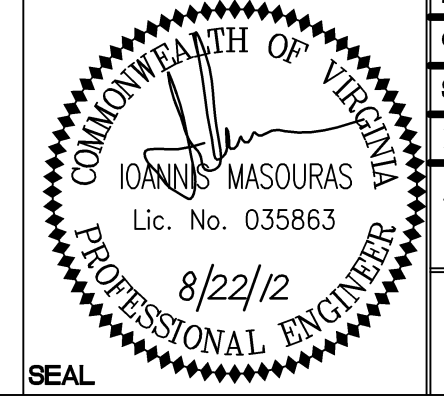
REMARKS LEGEND:
1. SUBMIT COLOR CHART. COLOR TO BE APPROVED BY ARCHITECT.
2. SEE ARCHITECTURAL PLANS FOR LOCATION.
3. PROVIDE SPRING RETURN CLOSE, POWERED OPEN BY ACTUATOR.

PUMP SCHEDULE

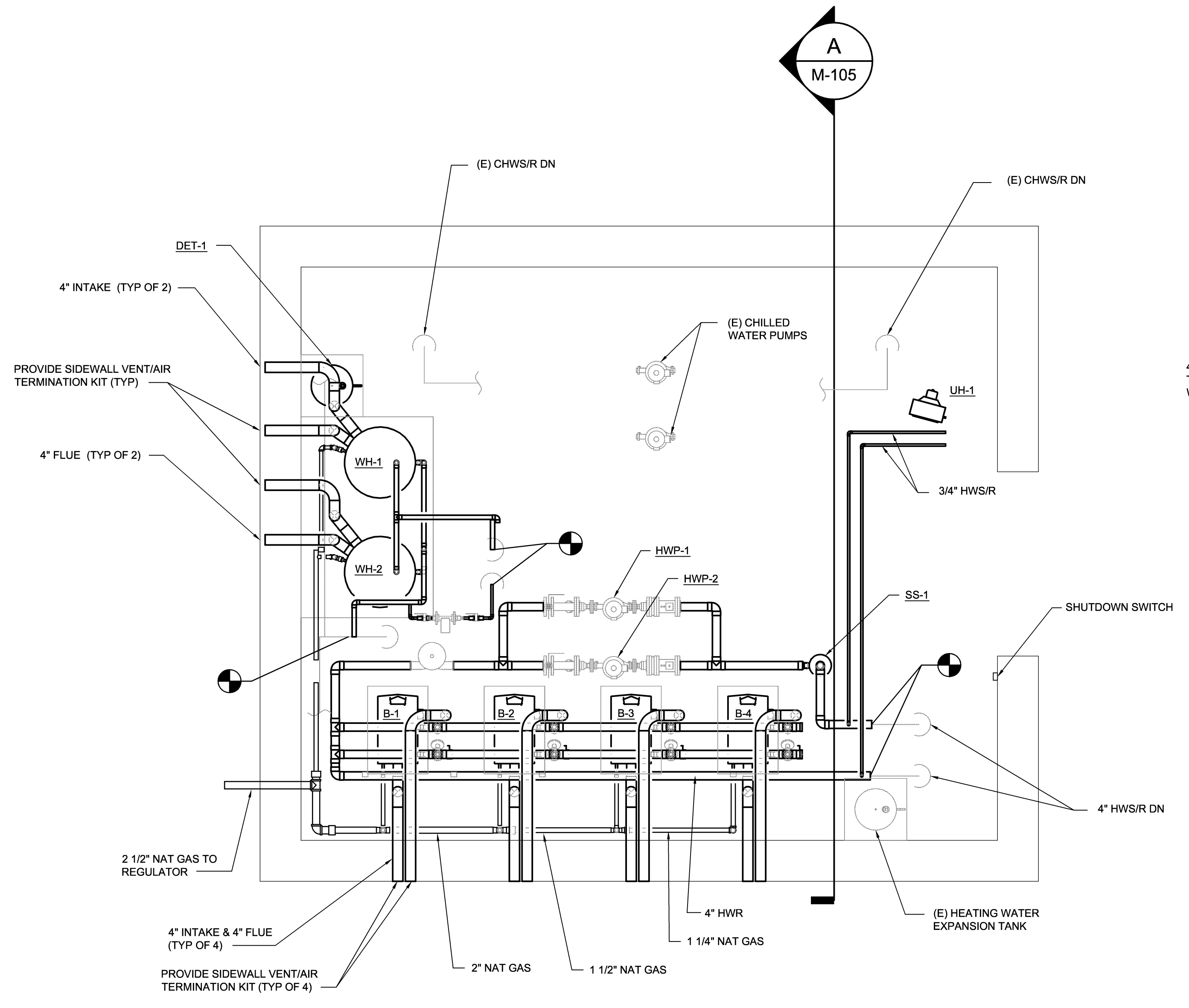
DESIGNATION	DWP-1
SERVICE	DOMESTIC HOT WATER
LOCATION	MECH ROOM
TYPE	INLINE
PUMP DATA	-
FLOW (GPM)	5
TOTAL HEAD (FT-H2O)	20
MINIMUM EFFICIENCY (%)	-
CONNECTION SIZE	-
SUCTION (IN)	1.5
DISCHARGE (IN)	1.5
MOTOR DATA	-
MOTOR FRAME	-
HORSEPOWER	-
RPM	2650
VOLTS	115
PHASE	1
HERTZ	60
SELECTION BASED ON (MFG)	BELL & GOSSETT
MODEL	BOOSTER PL-30
REMARKS	1

REMARKS LEGEND:
1. BRONZE FITTED PUMP FOR DOMESTIC WATER SERVICE. PROVIDE AQUASTAT CONTROL.

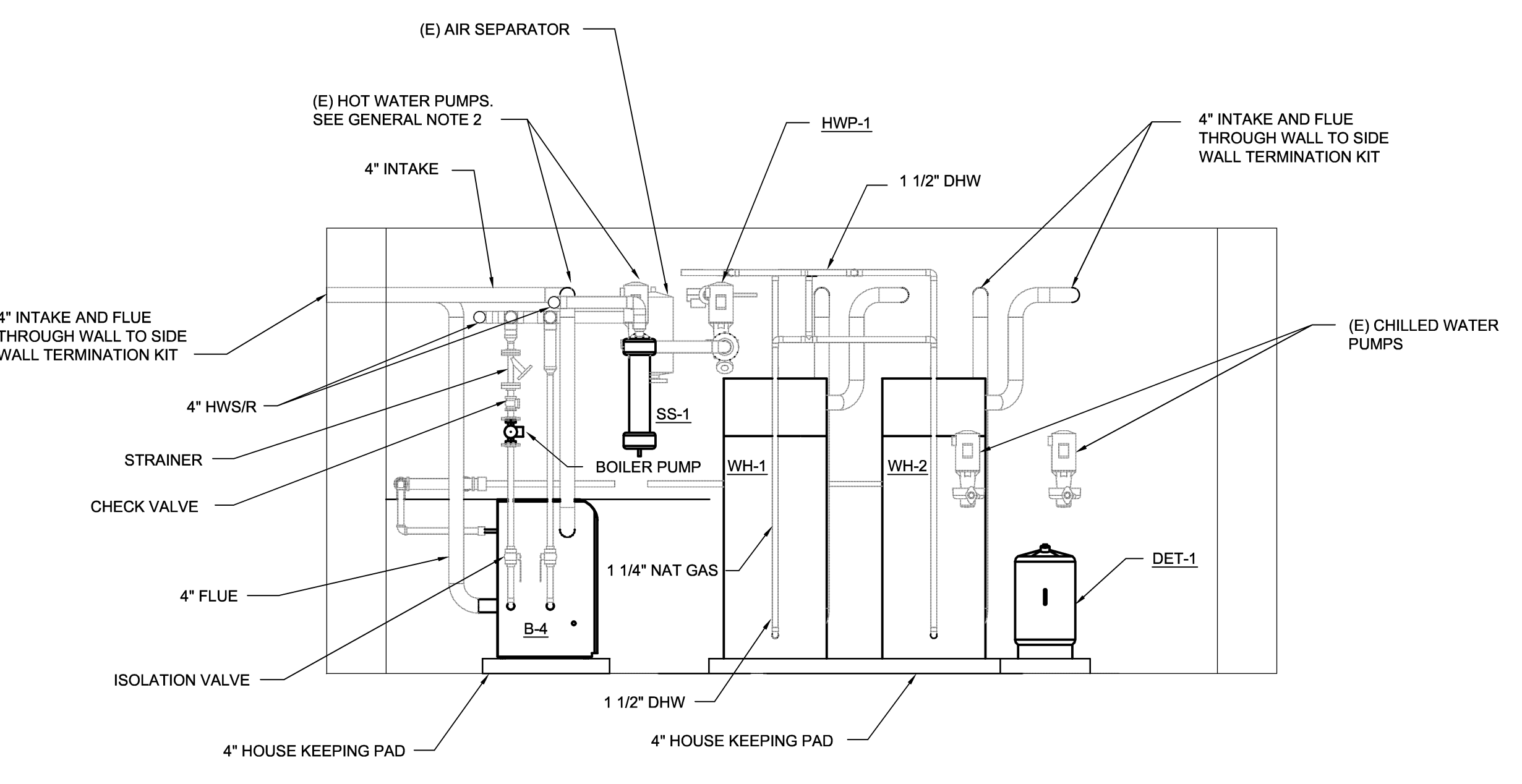
 6006 West Broad St., Suite 500 Richmond, Virginia 23230-1717 (804) 264-7242 wileywilson.com	M-104 PROJECT NO. CP12-0104 NAVAL FACILITIES ENGINEERING COMMAND		
	MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA		
	DES. IM DR. SWL CHK. JHE SUBMITTED BY: [Signature] DESIGN DR. [Signature] APPROVED PWO OR OIC [Signature] SATISFACTORY TO [Signature]	DATE [] [] []	DATE [] [] []



SYM.	PREP'D BY	DATE	APPROVED



1 BUILDING 59 MECHANICAL ROOM NEW WORK PLAN
38" x 1'-0"



A MECHANICAL ROOM SECTION
38" x 1'-0"

NATURAL GAS NOTE:
1. TOTAL CONNECTED NATURAL GAS DEMAND FOR THIS BUILDING IS 2,100 MBH AT 10 IN-H2O.

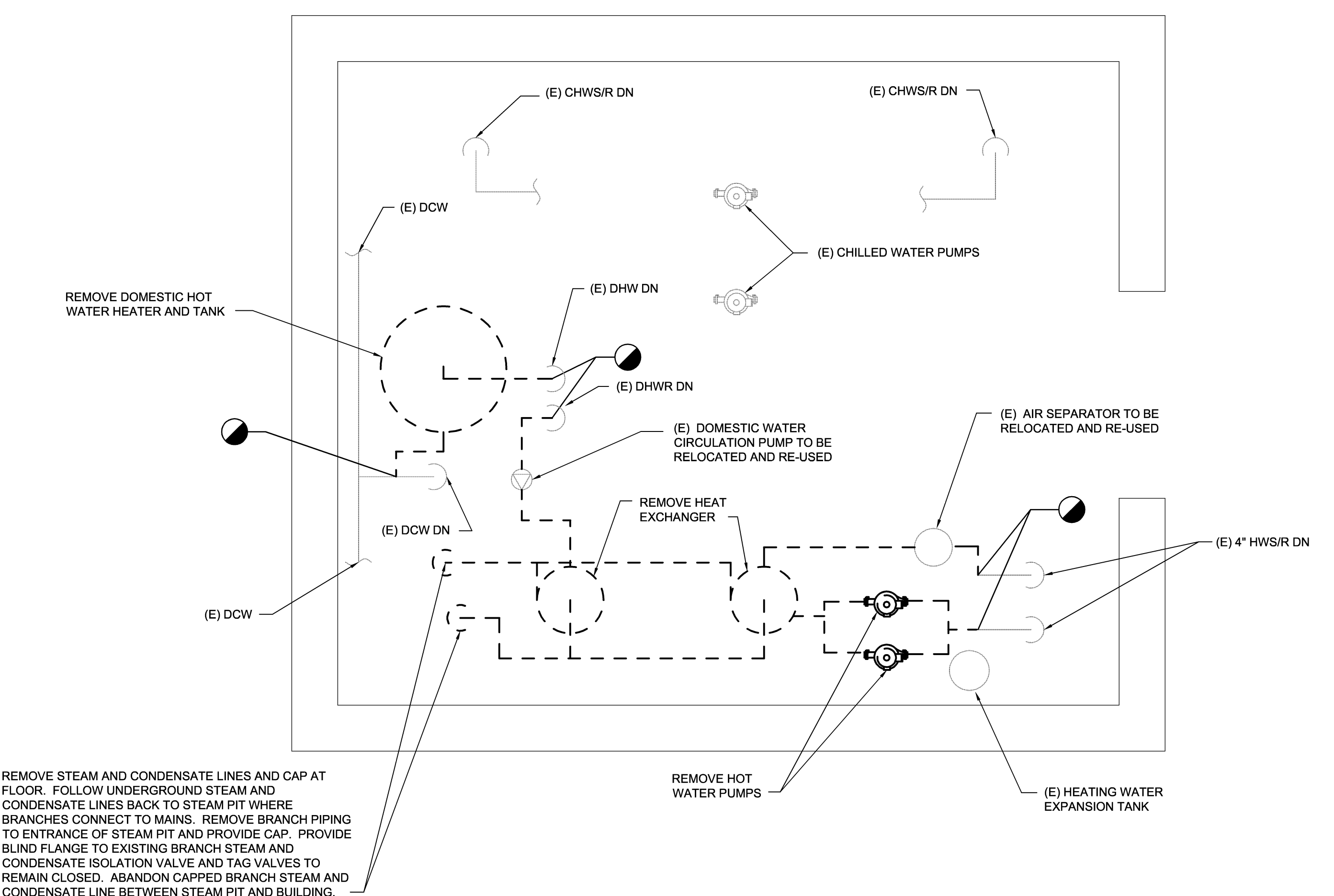
DEMOLITION NOTES:
1. REMOVE HOT WATER PIPING, PUMPS, HEAT EXCHANGERS AND EXPANSION TANKS AS SHOWN. REMOVE ALL ASSOCIATED PIPING, SUPPORTS AND HANGERS. REMOVE ALL STEAM SUPPLY AND CONDENSATE RETURN PIPING, COMPONENTS, HANGERS AND EQUIPMENT.
2. CHILLED WATER SYSTEM IS EXISTING TO REMAIN AND SHALL NOT BE INTERRUPTED DURING CONSTRUCTION.
3. EXISTING CONTROLS TO REMAIN FOR MODIFICATION AND INTEGRATION WITH NEW BACNET EMCS SYSTEM.
4. THE EQUIPMENT AND BUILDING LAYOUT IS BASED ON THE BASIS OF DESIGN EQUIPMENT CLEARANCES. ANY MODIFICATION REQUIRED FOR ACCEPTABLE ALTERNATE MANUFACTURERS SHALL BE PROVIDED BY THE CONTRACTOR IF NECESSARY.

GENERAL NOTES:
1. SEE GENERAL NOTES ON SHEET M-001.
2. HEATING EQUIPMENT IN MECHANICAL ROOM OF BUILDING 59 SERVES BOTH BUILDING 59 AND BUILDING 60. ALL WORK TO BE DONE IN MECHANICAL ROOM.
3. MAINTAIN MANUFACTURER RECOMMENDED CLEARANCE AROUND ALL EQUIPMENT. FOR BOILERS, PROVIDE A MINIMUM 30\"/>

DESIGNATION	B-1	B-2	B-3	B-4
LOCATION	MECH ROOM	MECH ROOM	MECH ROOM	MECH ROOM
FUEL TYPE	NATURAL GAS	NATURAL GAS	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4	4	4
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10	10	10
GAS INLET CONNECTION (IN)	1	1	1	1
INPUT (MBH)	399	399	399	399
OUTPUT (MBH)	375	375	375	375
MINIMUM TURN DOWN RATIO	5:1	5:1	5:1	5:1
FLOWRATE (GPM)	30	30	30	30
MAXIMUM PRESSURE DROP (FT. H ₂ O)	8	8	8	8
ENTERING WATER TEMPERATURE (DEG F)	160	160	160	160
LEAVING WATER TEMPERATURE (DEG F)	185	185	185	185
MINIMUM OPERATING PRESSURE (PSI)	30	30	30	30
VOLTAGE (V)	120	120	120	120
PHASE	1	1	1	1
FREQUENCY (Hz)	60	60	60	60
TOTAL OPERATING AMPS	1.5	1.5	1.5	1.5
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	10	10	10	10
SELECTION BASED ON	LOCHINVAR	LOCHINVAR	LOCHINVAR	LOCHINVAR
MODEL	KB-400	KB-400	KB-400	KB-400
REMARKS	1, 2, 3 & 4	1, 2, 3 & 4	1, 2, 3 & 4	1, 2, 3 & 4

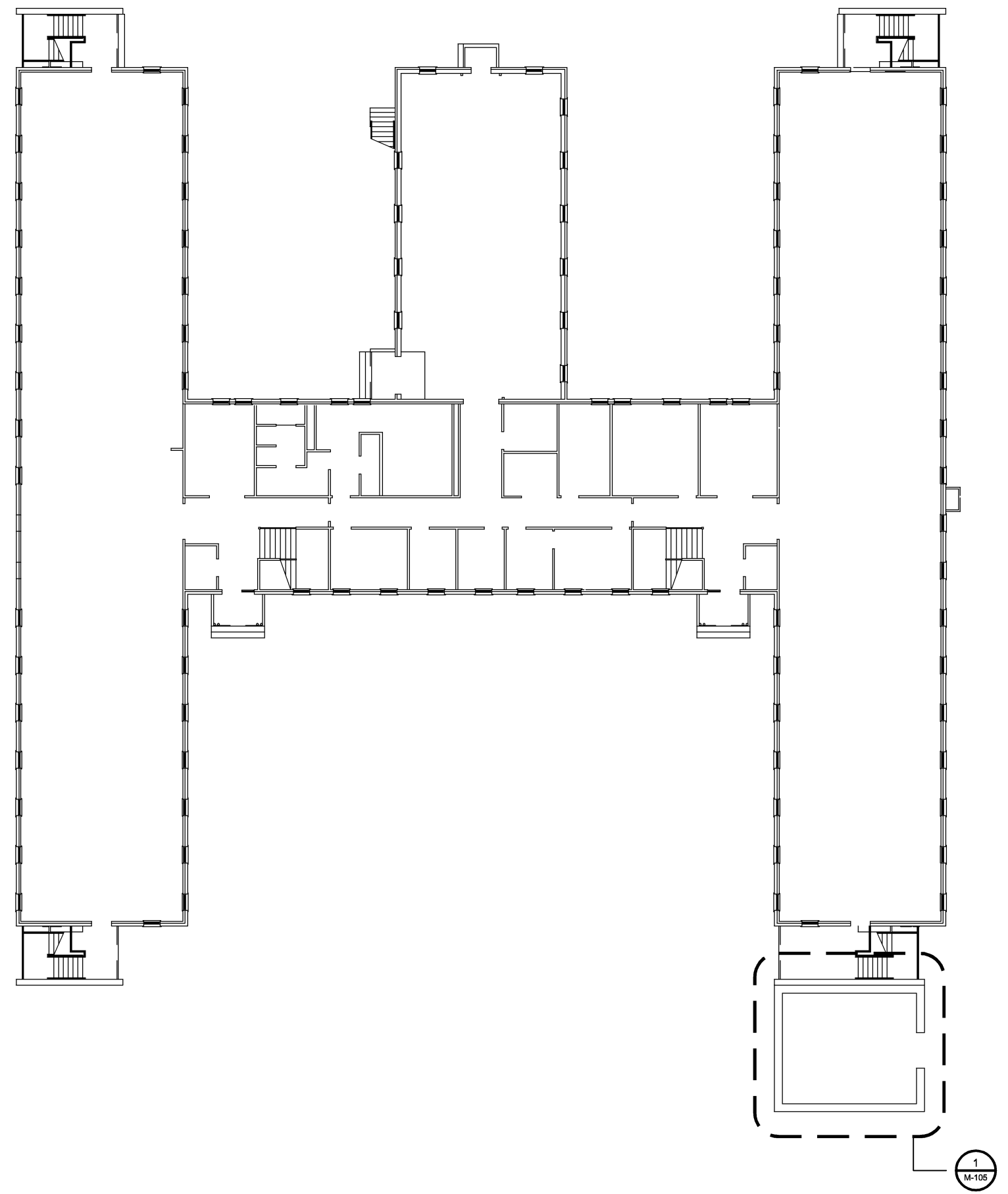
DESIGNATION	UH-1
LOCATION	MECH ROOM
AIRFLOW (CFM)	340
HEATING CAPACITY (MBH)	10
ENTERING AIR TEMPERATURE (DEG F)	55
LEAVING AIR TEMPERATURE (DEG F)	82
ENTERING WATER TEMPERATURE (DEG F)	180
FLOW RATE (GPM)	.5
WATER PRESSURE DROP (FT W.G.)	.5
MOTOR POWER (HP)	1/60
VOLTAGE (V)	115
PHASE	1
FREQUENCY (Hz)	60
BASED ON	MODINE
MODEL	HC-18 S 01
REMARKS	1

REMARKS LEGEND:
1. PROVIDE UNIT MOUNTED THERMOSTAT.



1 BUILDING 59 MECHANICAL ROOM DEMOLITION PLAN
38" x 1'-0"

DISCLOSURE OF INFORMATION
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(1) The Contracting Officer has given prior written approval; or
(2) The information is otherwise in the public domain before the date of release.
Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.
(c) The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.



1 BUILDING 59 MECHANICAL SITE PLAN
384" x 1'-0"

DESIGNATION	WH-1	WH-2
LOCATION	MECH ROOM	MECH ROOM
STORAGE (GALLONS)	100	100
GPH AT 100 DEG F RISE	288	288
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4.8	4.8
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10.5	10.5
GAS INLET CONNECTION (IN)	3/4	3/4
INPUT (MBH)	250	250
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	STATE	STATE
MODEL	SUF 100 250 NE	SUF 100 250 NE
REMARKS	1 & 2	1 & 2

REMARKS LEGEND:
1. PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER WATER HEATER.
2. PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.

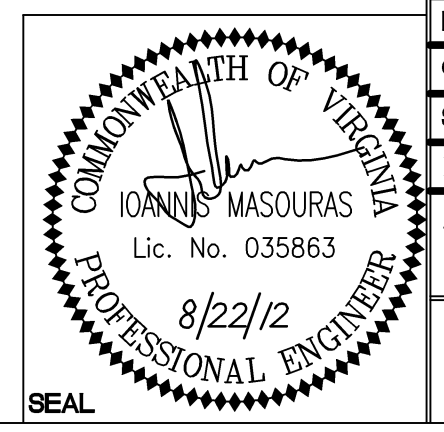
DESIGNATION	HWP-1	HWP-2	DWP-1
SERVICE	HOT WATER	HOT WATER	DOMESTIC HOT WATER
LOCATION	MECH ROOM	MECH ROOM	MECH ROOM
TYPE	INLINE	INLINE	INLINE
PUMP DATA	-	-	-
FLOW (GPM)	161	161	5
TOTAL HEAD (FT-H ₂ O)	65	65	20
MINIMUM EFFICIENCY (%)	60	60	-
CONNECTION SIZE	-	-	-
SUCTION (IN)	2.5	2.5	1.5
DISCHARGE (IN)	2.5	2.5	1.5
MOTOR DATA	-	-	-
MOTOR FRAME	184jm	184jm	-
HORSEPOWER	5	5	-
RPM	1750	1750	2650
VOLTS	208	208	115
PHASE	3	3	1
HERTZ	60	60	60
SELECTION BASED ON (MFR)	BELL & GOSSETT	BELL & GOSSETT	BELL & GOSSETT
MODEL	80 2-1/2x2-1/2x9-1/2B	80 2-1/2x2-1/2x9-1/2B	BOOSTER PL-30
REMARKS	-	-	1

REMARKS LEGEND:
1. BRONZE FITTED PUMP FOR DOMESTIC WATER SERVICE. PROVIDE AQUASTAT CONTROL.

DESIGNATION	SS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
FLOW RATE (GPM)	161
MAXIMUM PRESSURE DROP (FT-H ₂ O)	14
COLLECTION CHAMBER CAPACITY (GAL)	2.2
BASED ON	LAKOS
MODEL	ILB-0300

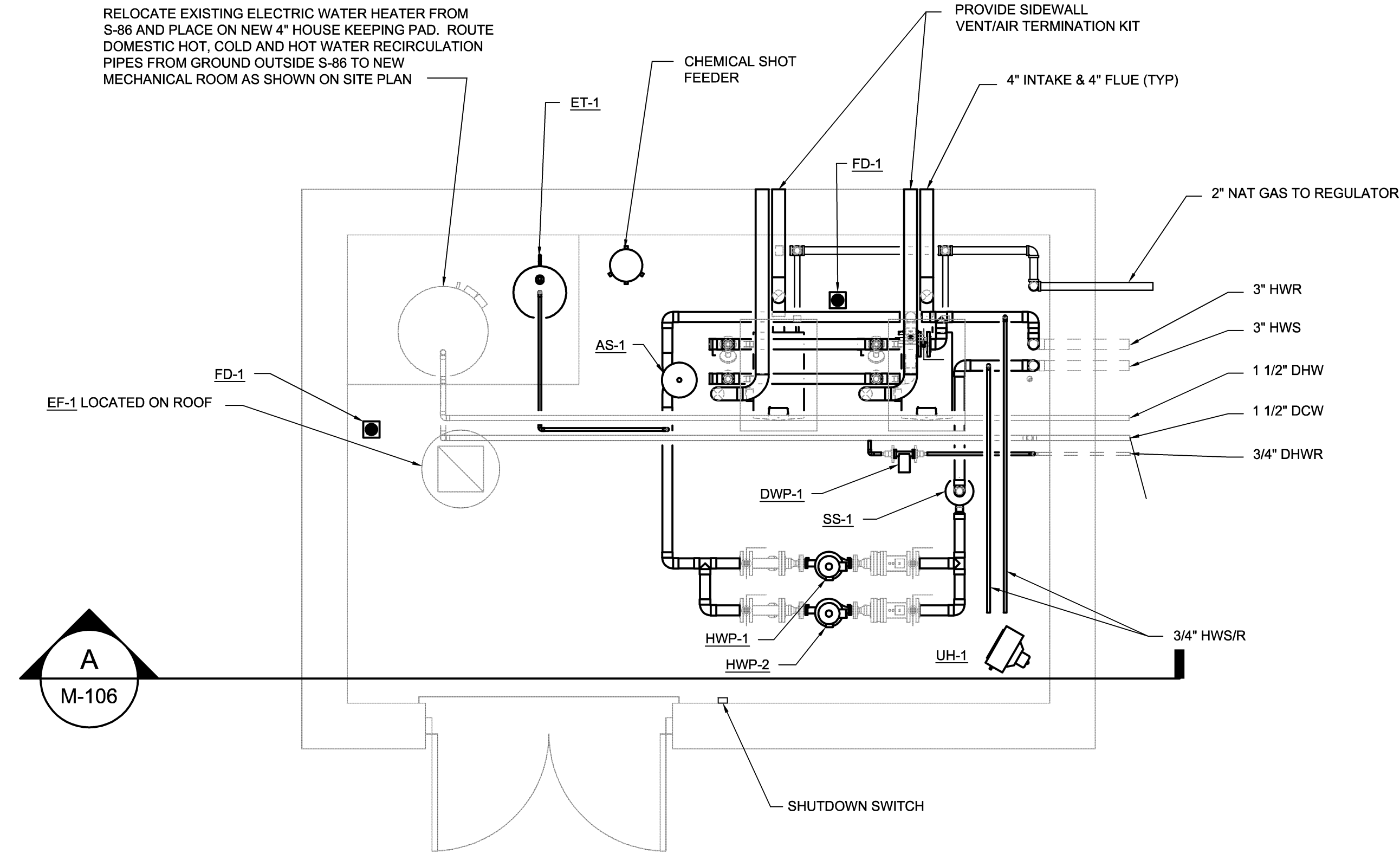
DESIGNATION	DET-1
SERVICE	DOMESTIC HOT WATER
LOCATION	MECH ROOM
TYPE	BLADDER
TANK VOLUME (GAL)	17.5
FILL PRESSURE (PSI)	60"
RELIEF VALVE PRESSURE SETTING (PSI)	100
BASED ON	AMTROL
MODEL	ST-C SERIES ST-42V-C

* MATCH DOMESTIC WATER SUPPLY PRESSURE AT THIS LOCATION.

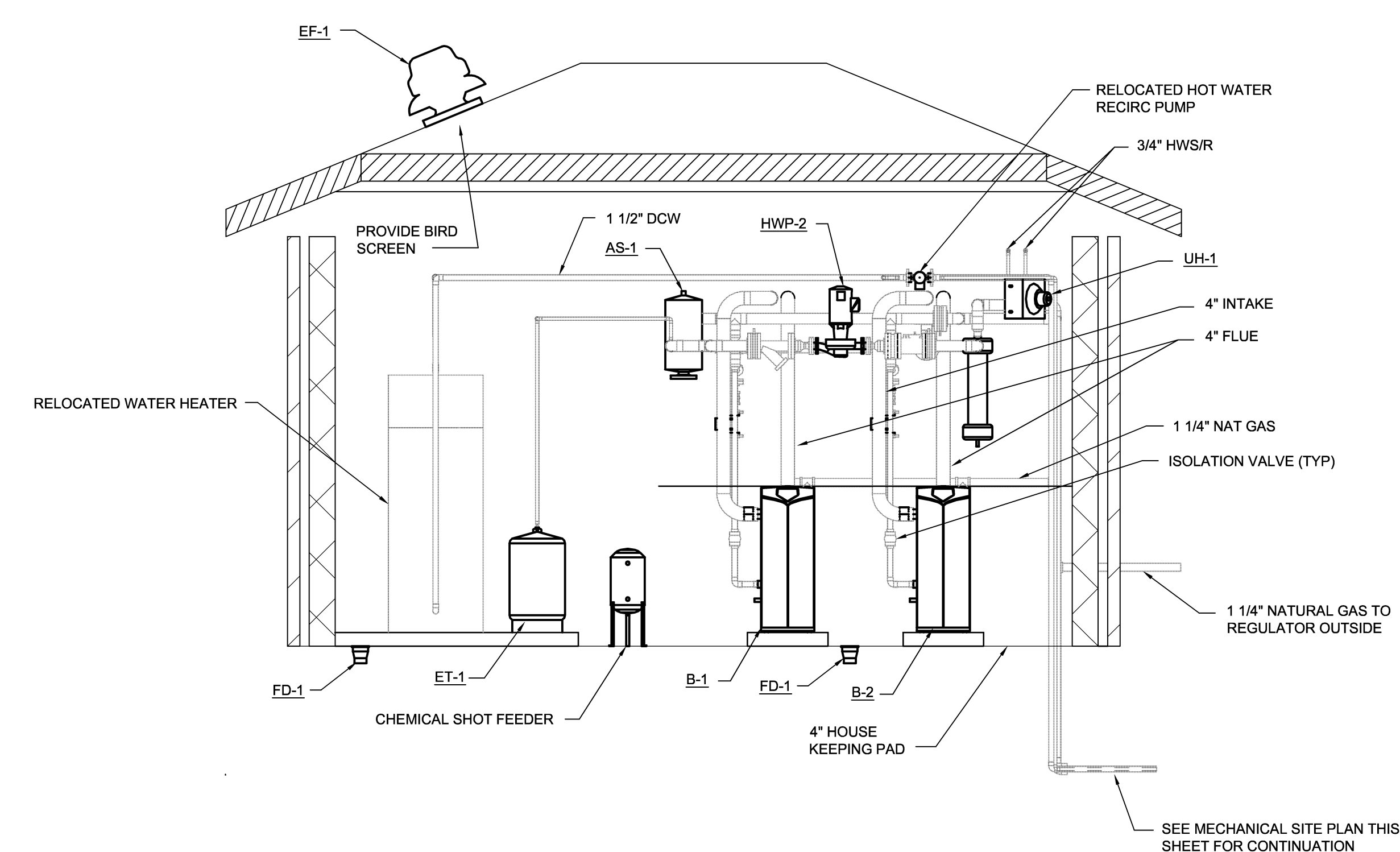


6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.264.7242 wileywilson.com		M-105 PROJECT NO. CP12-0104 NAVAL FACILITIES ENGINEERING COMMAND	
DEPT OF NAVY MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA		BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT BUILDING 59 & 60 MECHANICAL DEMOLITION AND NEW WORK PLAN	
DES. IM	DR. SWL	CHK. JHE	DESIGN DR.
APPROVED PWO OR OICC	DATE	SIZE	CODE IDENT NO.
		E	80091
SATISFACTORY TO	DATE	CONSTR CONTR NO.	NAVFAC DRAWING NO.
		N40085-12-B-0104	60011281
SCALE: AS SHOWN	SPEC No.	05-12-0104	SHEET 17 OF 43

SYM.	PREP'D BY	DATE	APPROVED



1 BUILDING 6 NEW MECHANICAL ROOM
3/8"=1'-0"



A MECHANICAL ROOM SECTION
3/8"=1'-0"

NATURAL GAS NOTE:
1. TOTAL CONNECTED NATURAL GAS DEMAND FOR THIS BUILDING IS 800 MBH AT 10 IN-H2O.

- DEMOLITION NOTES**
- REMOVE HOT WATER PIPING, PUMPS, HEAT EXCHANGERS AND EXPANSION TANKS AS SHOWN. REMOVE ALL ASSOCIATED PIPING, SUPPORTS AND HANGERS. REMOVE ALL STEAM SUPPLY AND CONDENSATE RETURN PIPING, COMPONENTS, HANGERS AND EQUIPMENT.
 - CHILLED WATER SYSTEM IS EXISTING TO REMAIN AND SHALL NOT BE INTERRUPTED DURING CONSTRUCTION.
 - EXISTING CONTROLS TO REMAIN FOR MODIFICATION AND INTEGRATION WITH NEW BACNET EMCS SYSTEM.
 - THE EQUIPMENT AND BUILDING LAYOUT IS BASED ON THE BASIS OF DESIGN EQUIPMENT CLEARANCES. ANY MODIFICATION REQUIRED FOR ACCEPTABLE ALTERNATE MANUFACTURER'S SHALL BE PROVIDED BY THE CONTRACTOR IF NECESSARY.

- GENERAL NOTES**
- SEE GENERAL NOTES ON SHEET M-001.
 - MAINTAIN MANUFACTURER RECOMMENDED CLEARANCE AROUND ALL EQUIPMENT. FOR BOILERS, PROVIDE A MINIMUM 30" PIPING AND MAINTENANCE CLEARANCE ON ALL SIDES. AT LEAST EVERY OTHER SIDE SHALL HAVE 30" CLEAR FLOOR SPACE FOR PERSONNEL ACCESS. FOR WATER HEATERS, PROVIDE MINIMUM 15" CLEARANCE TO THE SIDES AND REAR AND A MINIMUM 30" IN THE FRONT.
 - THE LOCATION OF ALL DUCT, PIPING AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE ANTICIPATED OR ENCOUNTERED INTERFERENCES. THESE PLANS ARE PARTIALLY DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. ALL PIPING OFFSETS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
 - INSTALL GAS PIPE IN ACCORDANCE WITH 2012 NORTH CAROLINA FUEL GAS CODE.
 - PROVIDE HOSE BIB AND 1/2" CONNECTION FOR FILLING IN NEW MECHANICAL ROOM.
 - PROVIDE FLOOR DRAINS AS SHOWN ON FLOOR PLAN. CONTRACTOR TO VERIFY NEAREST SEWER MAIN. FOR PRICING PURPOSES, ASSUME 200 YARDS OF SANITARY PIPING. PROVIDE VENT THROUGH ROOF FOR FLOOR DRAINS IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE.
 - STORE DOMESTIC HOT WATER AT 140 DEG F AND TEMPER TO 110 DEG F BEFORE BEING SUPPLIED TO BUILDING. PROVIDE MIXING VALVE.
 - PROVIDE APPURTENANCES TO COMPLY WITH ASME CSD-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUTDOWN SWITCH LOCATED ADJACENT TO EXIT DOOR.

BOILER SCHEDULE		
DESIGNATION	B-1	B-2
LOCATION	MECH ROOM	MECH ROOM
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10
GAS INLET CONNECTION (IN)	1	1
INPUT (MBH)	399	399
OUTPUT (MBH)	375	375
MINIMUM TURN DOWN RATIO	5:1	5:1
FLOWRATE (GPM)	30	30
MAXIMUM PRESSURE DROP (FT_H2O)	8	8
ENTERING WATER TEMPERATURE (DEG F)	160	160
LEAVING WATER TEMPERATURE (DEG F)	185	185
MINIMUM OPERATING PRESSURE (PSI)	30	30
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
TOTAL OPERATING AMPS	1.5	1.5
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	LOCHINVAR	LOCHINVAR
MODEL REMARKS	KB-400	KB-400
REMARKS	1, 2, 3 & 4	1, 2, 3 & 4

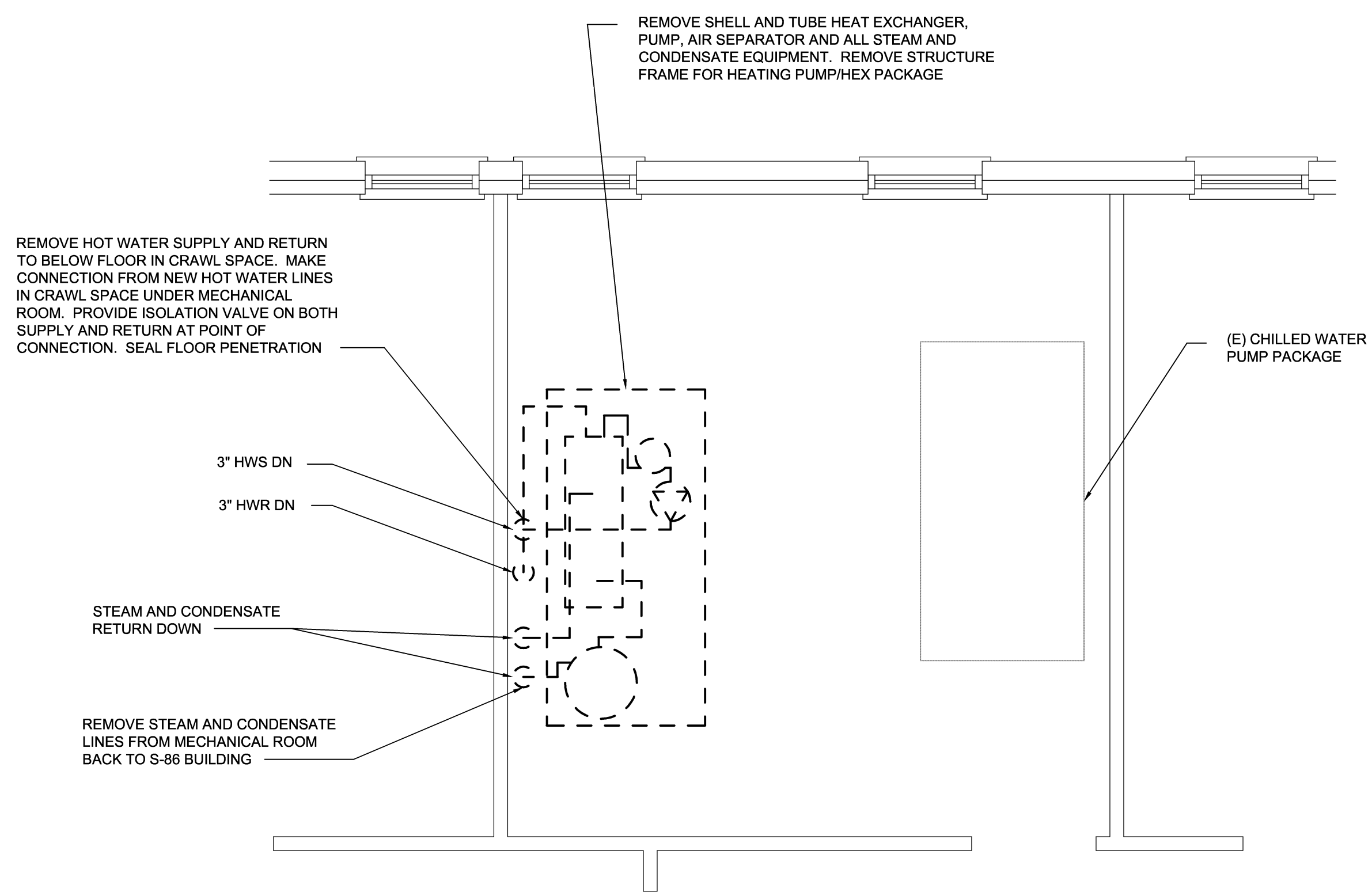
FAN SCHEDULE	
DESIGNATION	EF-1
USAGE	EXHAUST
SERVES ROOM(S)	MECH ROOM
DESCRIPTION	CENTRIFUGAL
FAN DATA	--
AIRFLOW (SCFM)	550
TOTAL SP (IN-H2O)	.15
RPM	1630
DRIVE TYPE	DIRECT
MOTOR DATA	--
HORSEPOWER	1/8
RPM	1725
VOLTS	115
PHASE	1
HERTZ	60
SELECTION BASED ON	GREENHECK
MODEL	G-085-VG
REMARKS	1, 2 & 3

- REMARKS LEGEND:**
- PROVIDE FAN WITH INTEGRAL BACK-DRAFT DAMPER, CONTINUOUS DUTY RATED.
 - PROVIDE FAN WITH UNIT MOUNTED DISCONNECT.
 - PROVIDE WALL MOUNTED THERMOSTAT CONTROL WIRE INTAKE LOUVER DAMPER IN SERIES WITH FAN TO OPEN UPON FAN OPERATION.

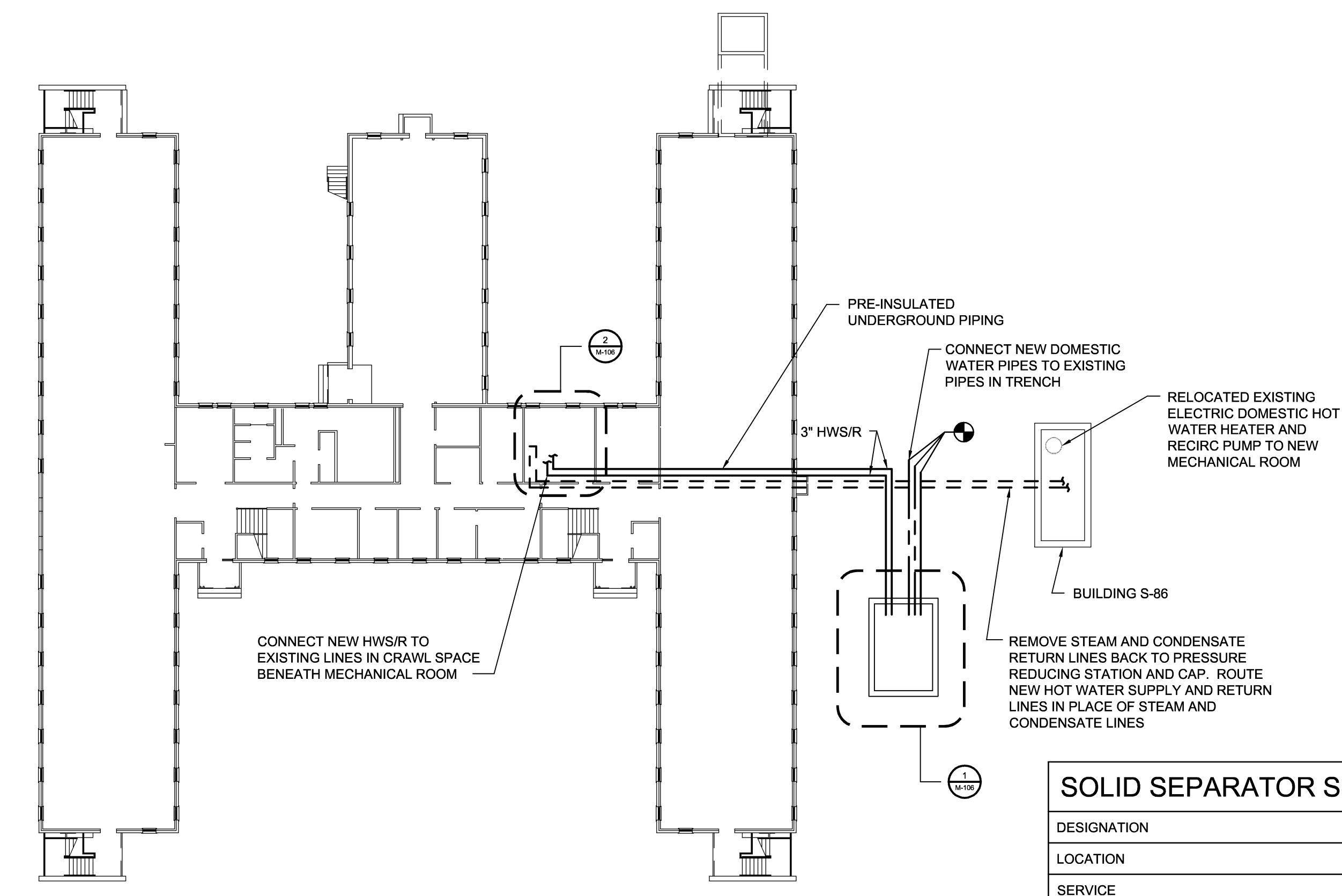
PUMP SCHEDULE		
DESIGNATION	HWP-1	HWP-2
SERVICE	HOT WATER	HOT WATER
LOCATION	MECH ROOM	MECH ROOM
TYPE	INLINE	INLINE
PUMP DATA	-	-
FLOW (GPM)	74	74
TOTAL HEAD (FT-H2O)	65	65
MINIMUM EFFICIENCY (%)	50	50
CONNECTION SIZE	-	-
SUCTION (IN)	1.5	1.5
DISCHARGE (IN)	1.5	1.5
MOTOR DATA	-	-
MOTOR FRAME	182JM	182JM
HORSEPOWER	3	3
RPM	1750	1750
VOLTS	208	208
PHASE	1	1
HERTZ	60	60
SELECTION BASED ON (MFR)	BELL & GOSSETT	BELL & GOSSETT
MODEL	80	80
REMARKS	1-1/2x1-1/2x9-1/2	1-1/2x1-1/2x9-1/2

LOUVER SCHEDULE	
DESIGNATION	L-1
USAGE	INTAKE
LOCATION	MECH ROOM
DESCRIPTION	COMBINATION LOUVER/DAMPER
DEPTH (IN)	8
FRAME TYPE	CHANNEL
WIDTH (IN)	32
HEIGHT (IN)	16
AIRFLOW (CFM)	550
FREE AREA (SF)	.75
FREE AREA VELOCITY (FPM)	734
PRESSURE DROP (IN H2O)	.067
SELECTION BASED ON	GREENHECK
ACTUATOR TYPE	120 VAC
ACTUATOR FAIL POSITION	CLOSED
MODEL	EAC-601
REMARKS	1, 2 & 3

- REMARKS LEGEND:**
- SUBMIT COLOR CHART. COLOR TO BE APPROVED BY ARCHITECT.
 - SEE ARCHITECTURAL PLANS FOR LOCATION.
 - PROVIDE SPRING RETURN CLOSE, POWERED OPEN BY ACTUATOR.



2 BUILDING 63 INTERIOR MECHANICAL ROOM DEMOLITION PLAN
3/8"=1'-0"



BUILDING 63 MECHANICAL SITE PLAN
3/8"=1'-0"

SOLID SEPARATOR SCHEDULE	
DESIGNATION	SS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
FLOW RATE (GPM)	74
MAXIMUM PRESSURE DROP (FT-H2O)	14
COLLECTION CHAMBER CAPACITY (GAL)	0.8
BASED ON	LAKOS
MODEL	ILB-0200

UNIT HEATER SCHEDULE	
DESIGNATION	UH-1
LOCATION	MECH ROOM
AIRFLOW (CFM)	340
HEATING CAPACITY (MBH)	10
ENTERING AIR TEMPERATURE (DEG F)	55
LEAVING AIR TEMPERATURE (DEG F)	82
ENTERING WATER TEMPERATURE (DEG F)	180
FLOW RATE (GPM)	.5
WATER PRESSURE DROP (FT W.G.)	.5
MOTOR POWER (HP)	1/60
VOLTAGE (V)	115
PHASE	1
FREQUENCY (Hz)	60
BASED ON	MOODIE
MODEL	HC-16 S 01
REMARKS	1

FLOOR DRAIN SCHEDULE		
DESIGNATION	DRAIN SIZE	DESCRIPTION
FD-1	3"	ZURN MODEL 415B WITH 6" NICKEL BRONZE STRAINER AND PROSET TRAPGUARD

AIR SEPARATOR SCHEDULE	
DESIGNATION	AS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
LINE SIZE (IN)	3
BASED ON	BELL & GOSSETT
MODEL	ROLAIRTRLO

EXPANSION TANK SCHEDULE	
DESIGNATION	ET-1
SERVICE	HEATING WATER
LOCATION	MECH ROOM
TYPE	BLADDER
TANK VOLUME (GAL)	60
FILL PRESSURE (PSI)	20
RELIEF VALVE PRESSURE SETTING (PSI)	100
BASED ON	JOHN WOOD COMPANY
MODEL	JAER-23-607

DISCLOSURE OF INFORMATION

Contractor shall comply as follows:

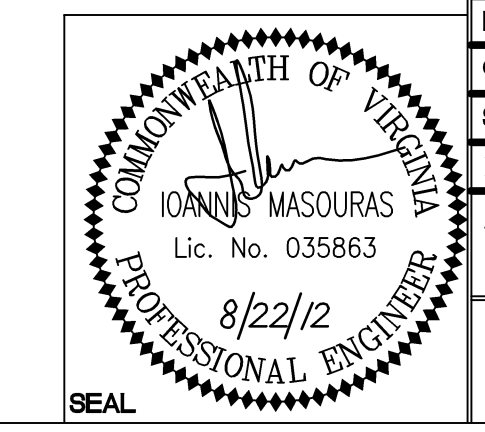
(a) The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless-

(1) The Contracting Officer has given prior written approval; or

(2) The information is otherwise in the public domain before the date of release.

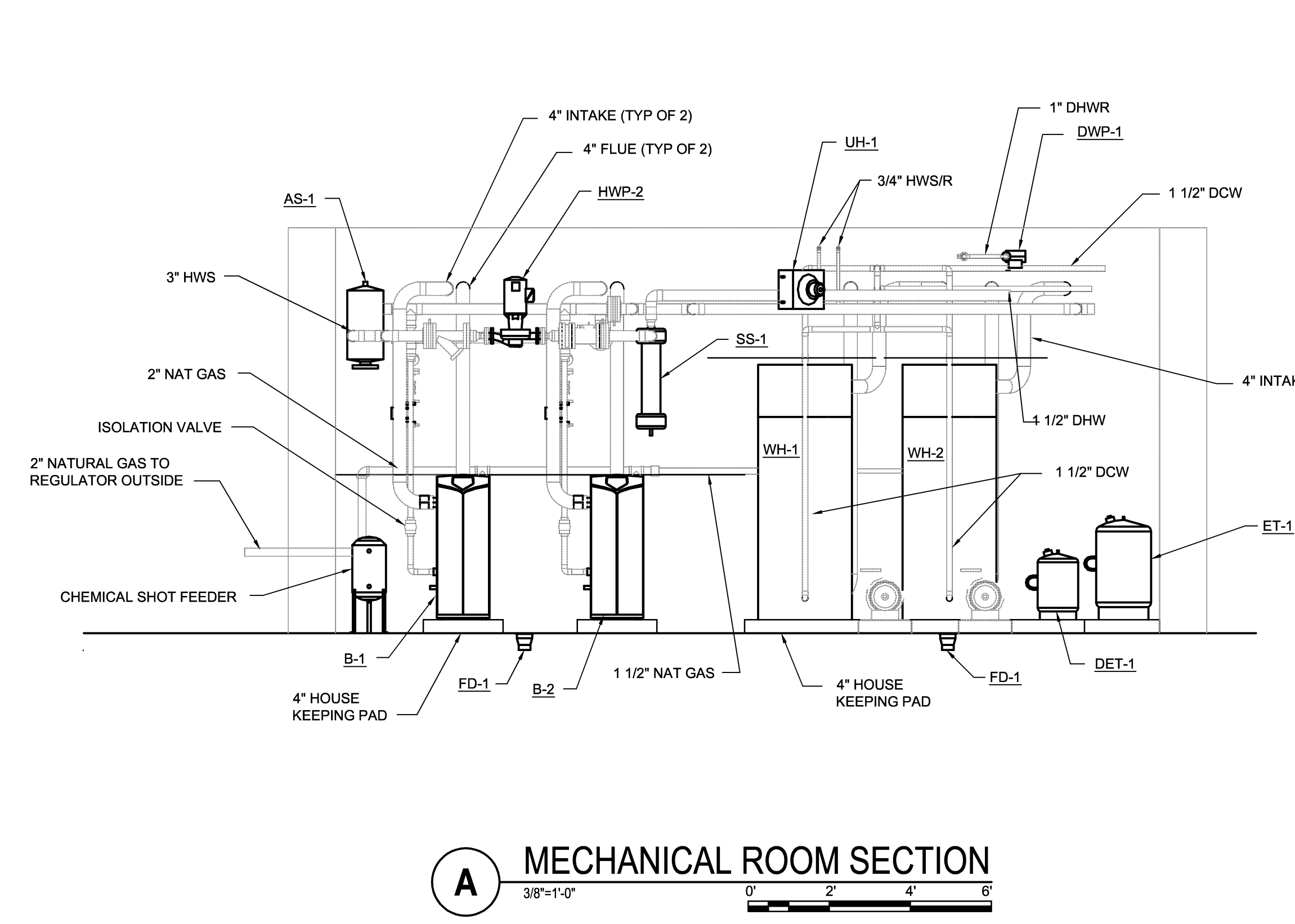
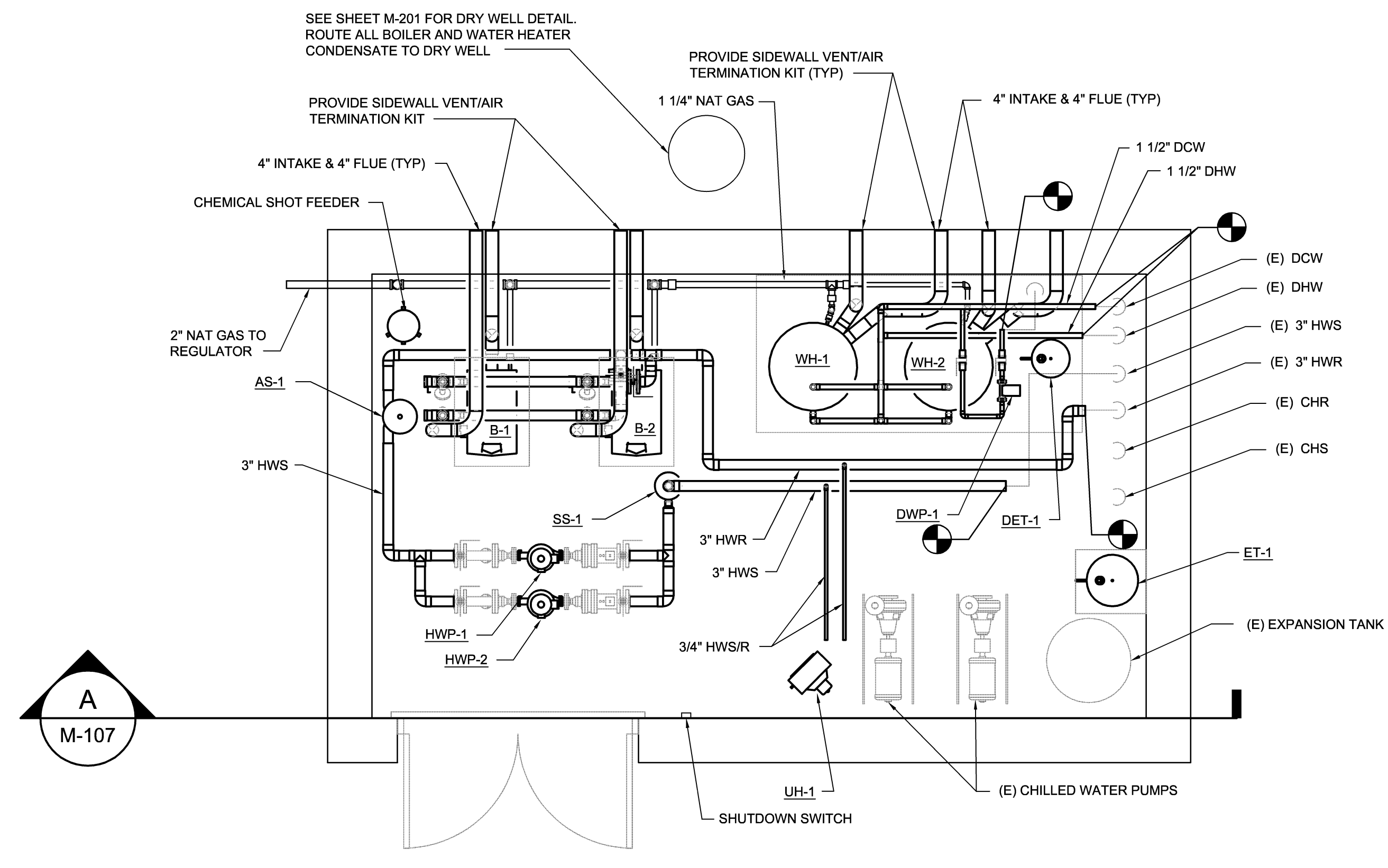
Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.

(c) The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.



WileyWilson 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.254.1742 wileywilson.com		M-106 PROJECT NO. CP12-0104 NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA	
DES.	IM	SIZE	CODE IDENT NO.
DR.	SWL	E	80091
CHK.	JHE	SCALE:	AS SHOWN
SUBMITTED BY:	DESIGN DR.	DATE	DATE
APPROVED PWO OR OICC	DATE	CONSTR CONTR NO.	N40085-12-B-0104
SATISFACTORY TO	DATE	SPEC No.	05-12-0104
		SHEET	18 OF 43

SYM	PREP'D BY	DATE	APPROVED



MECHANICAL ROOM SECTION
3/8"=1'-0"

NATURAL GAS NOTE:
1. TOTAL CONNECTED NATURAL GAS DEMAND FOR THIS BUILDING IS 1,100 MBH AT 10 IN-H2O.

- DEMOLITION NOTES**
- REMOVE HOT WATER PIPING, PUMPS, HEAT EXCHANGERS AND EXPANSION TANKS AS SHOWN. REMOVE ALL ASSOCIATED PIPING, SUPPORTS AND HANGERS. REMOVE ALL STEAM SUPPLY AND CONDENSATE RETURN PIPING, COMPONENTS, HANGERS AND EQUIPMENT.
 - CHILLED WATER SYSTEM IS EXISTING TO REMAIN AND SHALL NOT BE INTERRUPTED DURING CONSTRUCTION.
 - EXISTING CONTROLS TO REMAIN FOR MODIFICATION AND INTEGRATION WITH NEW BACNET EMCS SYSTEM.
 - THE EQUIPMENT AND BUILDING LAYOUT IS BASED ON THE BASIS OF DESIGN EQUIPMENT CLEARANCES. ANY MODIFICATION REQUIRED FOR ACCEPTABLE ALTERNATE MANUFACTURERS SHALL BE PROVIDED BY THE CONTRACTOR IF NECESSARY.

- GENERAL NOTES**
- SEE GENERAL NOTES ON SHEET M-001.
 - BUILDING 101A IS THE EXISTING MECHANICAL ROOM THAT SERVES BUILDING 101.
 - MAINTAIN MANUFACTURER RECOMMENDED CLEARANCE AROUND ALL EQUIPMENT. FOR BOILERS, PROVIDE A MINIMUM 30" PIPING AND MAINTENANCE CLEARANCE ON ALL SIDES. AT LEAST EVERY OTHER SIDE SHALL HAVE 30" CLEAR FLOOR SPACE FOR PERSONNEL ACCESS. FOR WATER HEATERS, PROVIDE MINIMUM 15" CLEARANCE TO THE SIDES AND REAR AND A MINIMUM 30" IN THE FRONT.
 - THE LOCATION OF ALL DUCT, PIPING AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE ANTICIPATED OR ENCOUNTERED INTERFERENCES. THESE PLANS ARE PARTIALLY DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. ALL PIPING OFFSETS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
 - INSTALL GAS PIPE IN ACCORDANCE WITH 2012 NORTH CAROLINA FUEL GAS CODE.
 - PROVIDE HOSE BIB AND 1/2" CONNECTION FOR FILLING IN NEW MECHANICAL ROOM.
 - PROVIDE FLOOR DRAINS AS SHOWN ON FLOOR PLAN. CONTRACTOR TO VERIFY NEAREST SEWER MAIN. FOR PRICING PURPOSES, ASSUME 200 YARDS OF SANITARY PIPING. PROVIDE VENT THROUGH ROOF FOR FLOOR DRAINS IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE.
 - STORE DOMESTIC HOT WATER AT 140 DEG F AND TEMPER TO 110 DEG F BEFORE BEING SUPPLIED TO BUILDING. PROVIDE MIXING VALVE.
 - PROVIDE APPURTENANCES TO COMPLY WITH ASME CSD-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUTDOWN SWITCH LOCATED ADJACENT TO EXIT DOOR.

BOILER SCHEDULE		
DESIGNATION	B-1	B-2
LOCATION	MECH ROOM	MECH ROOM
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10
GAS INLET CONNECTION (IN)	1	1
INPUT (MBH)	399	399
OUTPUT (MBH)	375	375
MINIMUM TURN DOWN RATIO	5:1	5:1
FLOWRATE (GPM)	30	30
MAXIMUM PRESSURE DROP (FT_H2O)	8	8
ENTERING WATER TEMPERATURE (DEG F)	160	160
LEAVING WATER TEMPERATURE (DEG F)	185	185
MINIMUM OPERATING PRESSURE (PSI)	30	30
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
TOTAL OPERATING AMPS	1.5	1.5
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	LOCHINVAR	LOCHINVAR
MODEL REMARKS	KB-400	KB-400
REMARKS	1, 2, 3 & 4	1, 2, 3 & 4

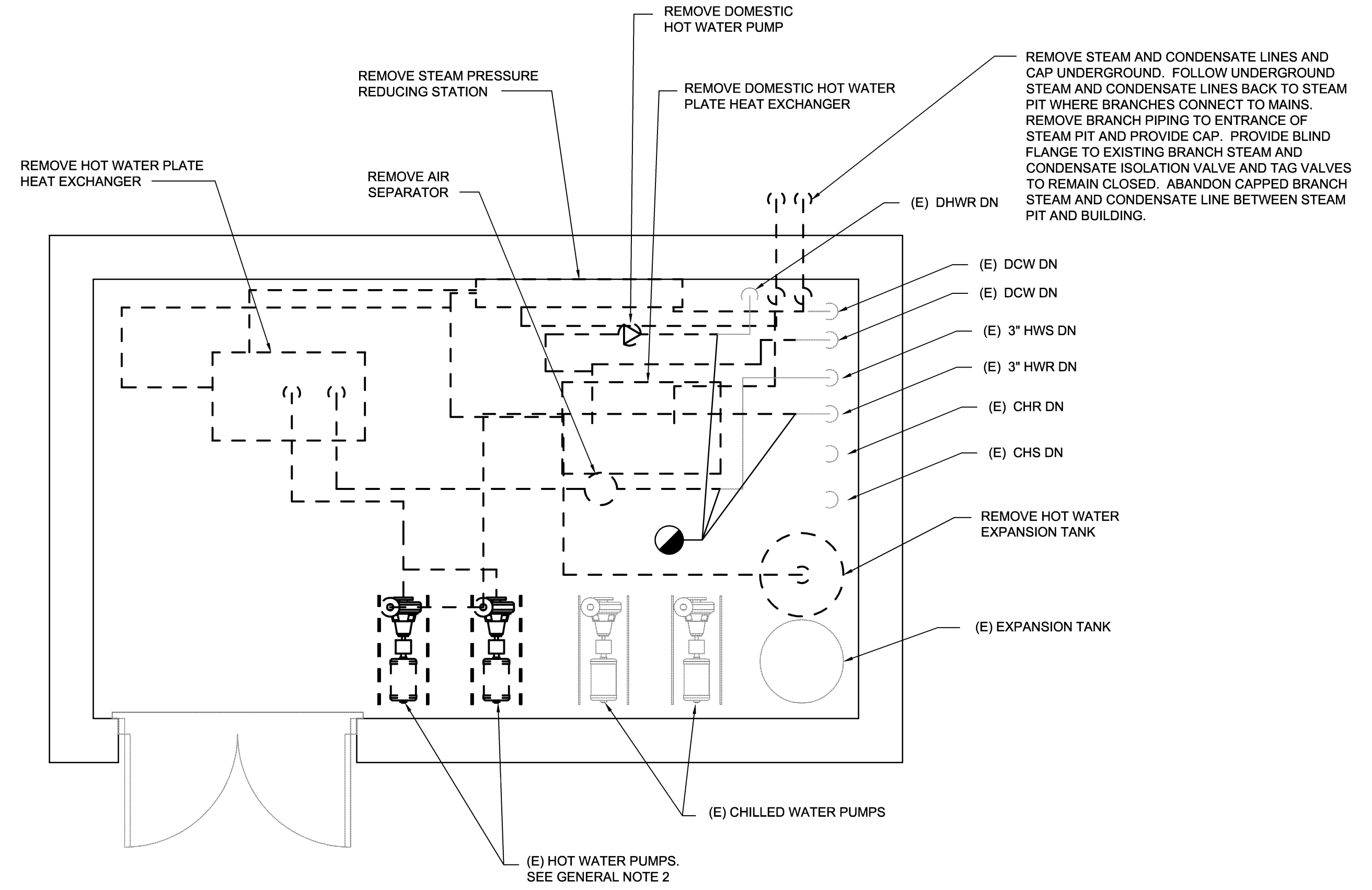
REMARKS LEGEND:
1. PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER BOILER.
2. BOILER CIRCULATION PUMP TO BE PROVIDED BY MANUFACTURER AT 30 GPM AT 25 DELTA T.
3. PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.
4. PROVIDE BOILERS WHICH ARE AT LEAST 94% EFFICIENT BASED ON BTS-2000, REV 06.07 CONDITIONS.

UNIT HEATER SCHEDULE	
DESIGNATION	UH-1
LOCATION	MECH ROOM
AIRFLOW (CFM)	340
HEATING CAPACITY (MBH)	10
ENTERING AIR TEMPERATURE (DEG F)	55
LEAVING AIR TEMPERATURE (DEG F)	82
ENTERING WATER TEMPERATURE (DEG F)	180
FLOW RATE (GPM)	.5
WATER PRESSURE DROP (FT W.G.)	.5
MOTOR POWER (HP)	1/60
VOLTAGE (V)	115
PHASE	1
FREQUENCY (Hz)	60
BASED ON	MODINE
MODEL	HC-18 S 01
REMARKS	1

REMARKS LEGEND:
1. PROVIDE UNIT MOUNTED THERMOSTAT.

SOLID SEPARATOR SCHEDULE	
DESIGNATION	SS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
FLOW RATE (GPM)	72
MAXIMUM PRESSURE DROP (FT-H2O)	14
COLLECTION CHAMBER CAPACITY (GAL)	0.8
BASED ON	LAKOS
MODEL	ILB-0200

BUILDING 101A MECHANICAL NEW WORK PLAN
3/8"=1'-0"



BUILDING 101A MECHANICAL DEMOLITION PLAN
3/8"=1'-0"

PUMP SCHEDULE			
DESIGNATION	HWP-1	HWP-2	DWP-1
SERVICE	HOT WATER	HOT WATER	DOMESTIC HOT WATER
LOCATION	MECH ROOM	MECH ROOM	MECH ROOM
TYPE	INLINE	INLINE	INLINE
PUMP DATA	-	-	-
FLOW (GPM)	72	72	5
TOTAL HEAD (FT-H2O)	65	65	20
MINIMUM EFFICIENCY (%)	50	50	-
CONNECTION SIZE	-	-	-
SUCTION (IN)	1.5	1.5	1.5
DISCHARGE (IN)	1.5	1.5	1.5
MOTOR DATA	-	-	-
MOTOR FRAME	182JM	182JM	-
HORSEPOWER	3	3	-
RPM	1750	1750	2650
VOLTS	208	208	115
PHASE	1	1	1
HERTZ	60	60	60
SELECTION BASED ON (MFOR)	BELL & GOSSETT	BELL & GOSSETT	BELL & GOSSETT
MODEL	80 1-1/2x1-1/2x9-1/2	80 1-1/2x1-1/2x9-1/2	BOOSTER PL-30
REMARKS	-	-	1

REMARKS LEGEND:
1. BRONZE FITTED PUMP FOR DOMESTIC WATER SERVICE. PROVIDE AQUASTAT CONTROL.

DOMESTIC HOT WATER HEATER SCHEDULE		
DESIGNATION	WH-1	WH-2
LOCATION	MECH ROOM	MECH ROOM
STORAGE (GALLONS)	100	100
GPH AT 100 DEG F RISE	173	173
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4.8	4.8
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10.5	10.5
GAS INLET CONNECTION (IN)	3/4	3/4
INPUT (MBH)	150	150
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	STATE	STATE
MODEL	SUF 100 150 NE	SUF 100 150 NE
REMARKS	1 & 2	1 & 2

REMARKS LEGEND:
1. PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER WATER HEATER.
2. PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.

AIR SEPARATOR SCHEDULE	
DESIGNATION	AS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
LINE SIZE (IN)	3
BASED ON	BELL & GOSSETT
MODEL	ROLAIRTR0L

EXPANSION TANK SCHEDULE		
DESIGNATION	ET-1	DET-1
SERVICE	HEATING WATER	DOMESTIC HOT WATER
LOCATION	MECH ROOM	MECH ROOM
TYPE	BLADDER	BLADDER
PUMP VOLUME (GAL)	60	14
FILL PRESSURE (PSI)	20	60
RELIEF VALVE PRESSURE SETTING (PSI)	100	100
BASED ON	JOHN WOOD COMPANY	AMTROL
MODEL	JAER-23-607	ST-C SERIES ST-42V-C

* MATCH DOMESTIC WATER SUPPLY PRESSURE AT THIS LOCATION.

DISCLOSURE OF INFORMATION

Contractor shall comply as follows:

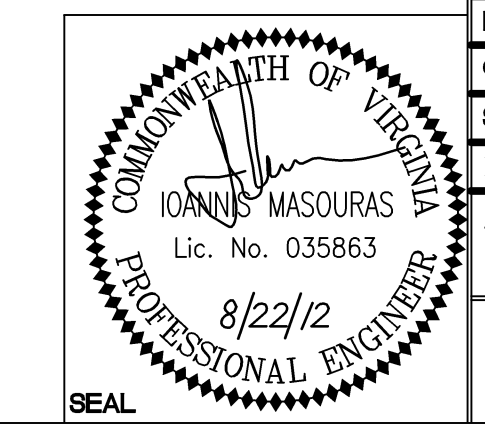
(a) The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless-

(1) The Contracting Officer has given prior written approval; or

(2) The information is otherwise in the public domain before the date of release.

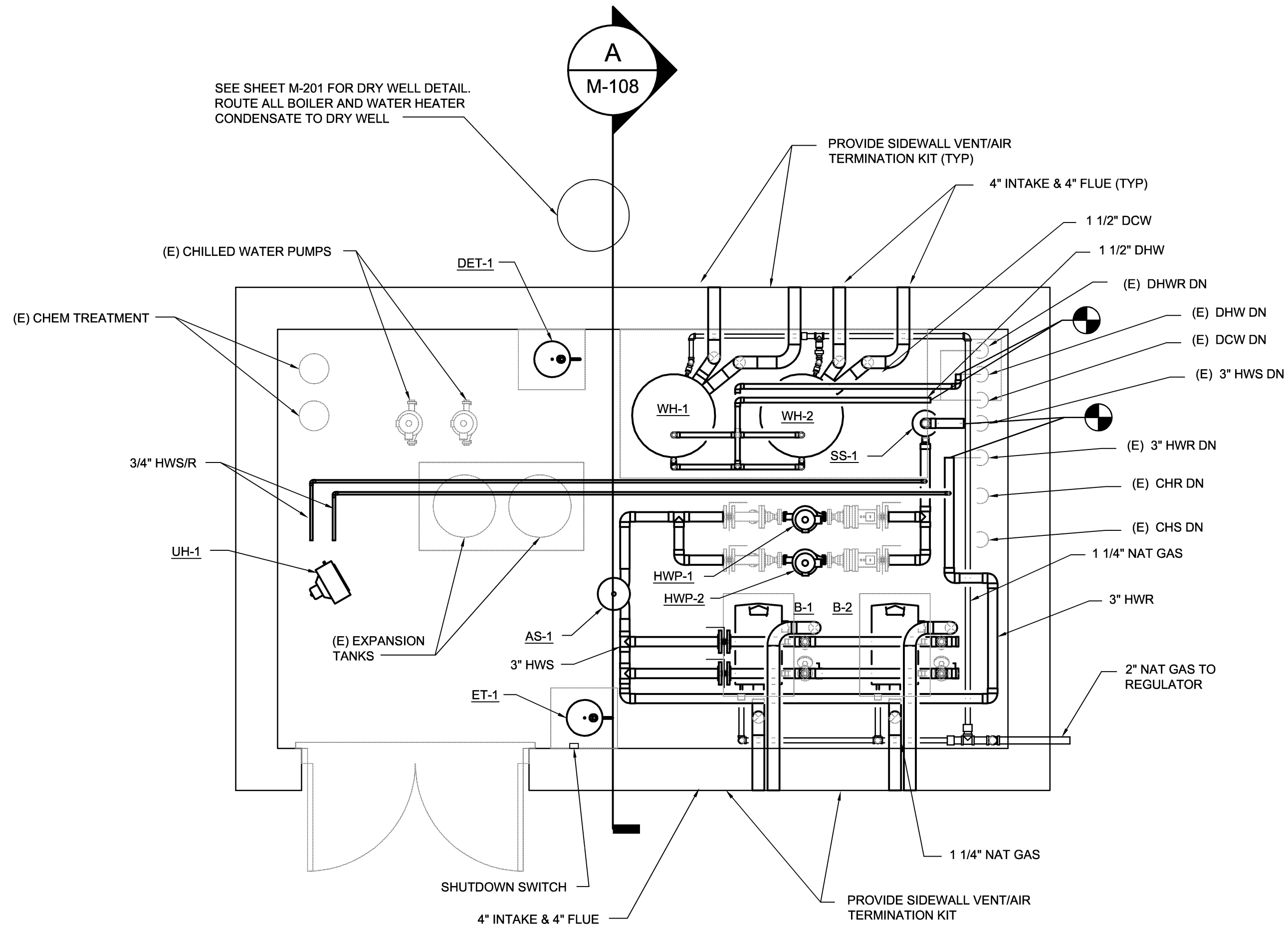
Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.

(c) The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.

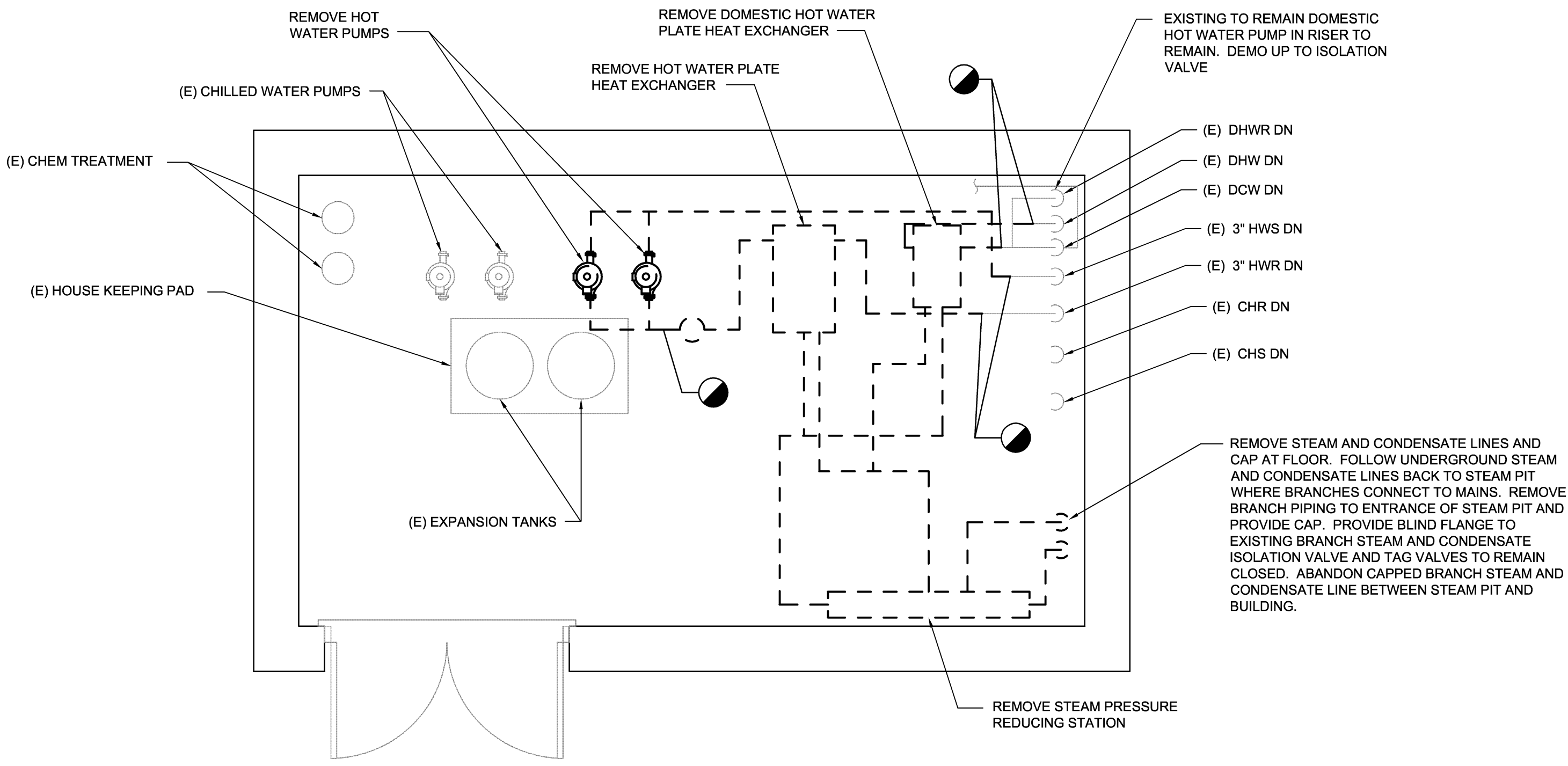


<p>6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.264.7242 wileywilson.com</p>		<p>M-107</p> <p>PROJECT NO. CP12-0104</p> <p>NAVAL FACILITIES ENGINEERING COMMAND</p> <p>MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA</p>	
<p>DEPT OF NAVY</p> <p>DES. IM</p> <p>DR. SWL</p> <p>CHK. JHE</p> <p>SUBMITTED BY:</p> <p>DESIGN DR.</p> <p>APPROVED PWO OR OICC DATE</p> <p>SATISFACTORY TO DATE</p>		<p>BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT BUILDING 101 MECHANICAL DEMOLITION AND NEW WORK PLAN</p> <p>NAVFAC DRAWING NO. 60011283</p> <p>CONSTR CONTR NO. N40085-12-B-0104</p> <p>SHEET 19 OF 43</p>	
SIZE E	CODE IDENT NO. 80091	SCALE AS SHOWN	SPEC No. 05-12-0104

SYM.	PREP'D BY	DATE	APPROVED



BUILDING 102A MECHANICAL NEW WORK PLAN
3/8"=1'-0"



BUILDING 102A MECHANICAL DEMOLITION PLAN
3/8"=1'-0"

DISCLOSURE OF INFORMATION

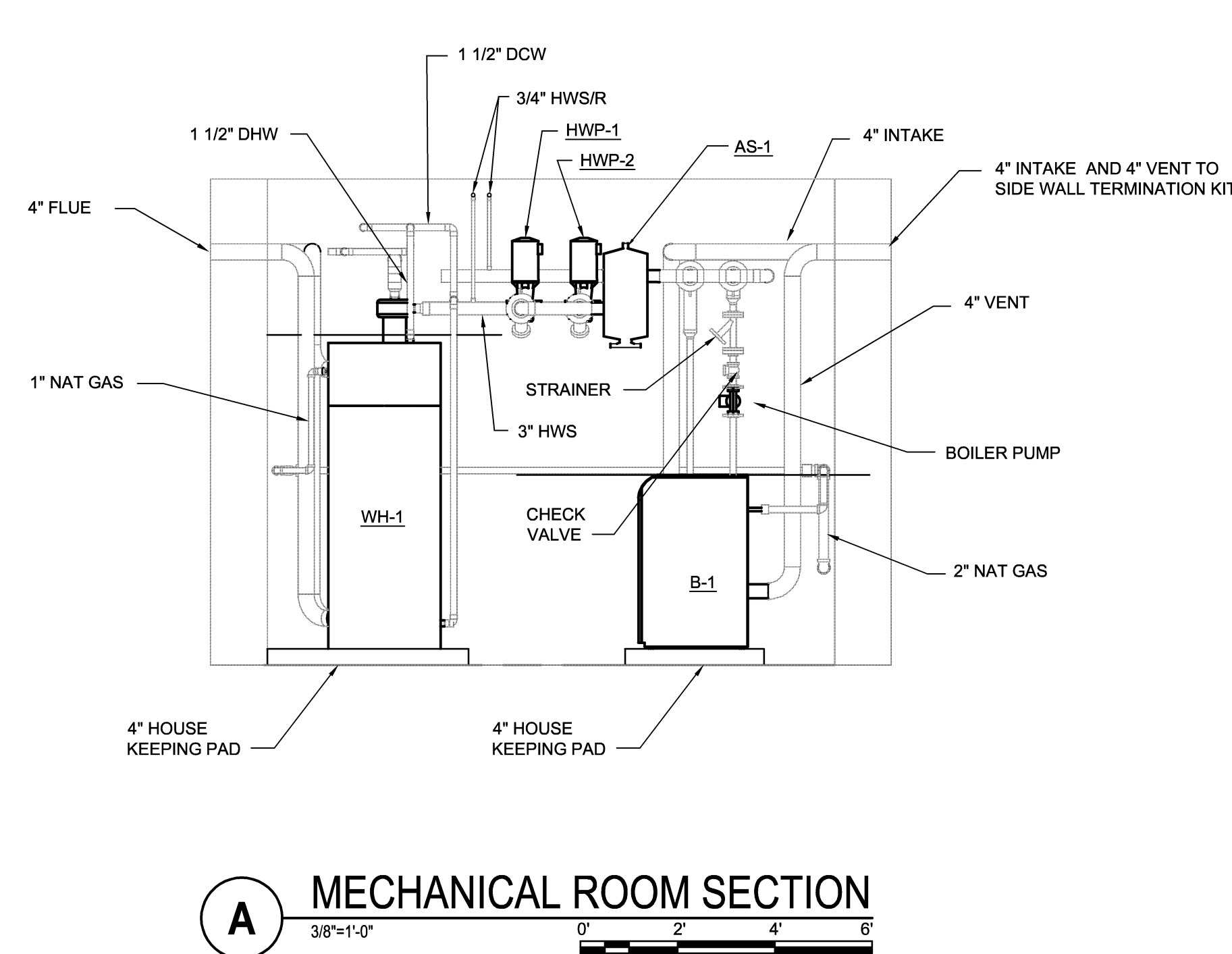
Contractor shall comply as follows:

- The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless:
 - The Contracting Officer has given prior written approval; or
 - The information is otherwise in the public domain before the date of release.
- Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.
- The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.

DESIGNATION	AS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
LINE SIZE (IN)	3
BASED ON	BELL & GOSSETT
MODEL	ROLAIRTROL

DESIGNATION	ET-1	DET-1
SERVICE	HEATING WATER	DOMESTIC HOT WATER
LOCATION	MECH ROOM	MECH ROOM
TYPE	BLADDER	BLADDER
TANK VOLUME (GAL)	60	14
FILL PRESSURE (PSI)	20	60
RELIEF VALVE PRESSURE SETTING (PSI)	100	100
BASED ON	JOHN WOOD COMPANY	AMTROL
MODEL	JAER-23-807	ST-C SERIES ST-42V-C

*MATCH DOMESTIC WATER SUPPLY PRESSURE AT THIS LOCATION.



NOTE: EXISTING PIPING NOT SHOWN FOR CLARITY

NATURAL GAS NOTE:

- TOTAL CONNECTED NATURAL GAS DEMAND FOR THIS BUILDING IS 1,100 MBH AT 10 IN-H2O.

DEMOLITION NOTES

- REMOVE HOT WATER PIPING, PUMPS, HEAT EXCHANGERS AND EXPANSION TANKS AS SHOWN. REMOVE ALL ASSOCIATED PIPING, SUPPORTS AND HANGERS. REMOVE ALL STEAM SUPPLY AND CONDENSATE RETURN PIPING, COMPONENTS, HANGERS AND EQUIPMENT.
- CHILLED WATER SYSTEM IS EXISTING TO REMAIN AND SHALL NOT BE INTERRUPTED DURING CONSTRUCTION.
- EXISTING CONTRACTORS TO REMAIN FOR MODIFICATION AND INTEGRATION WITH NEW BACNET EMCS SYSTEM.
- THE EQUIPMENT AND BUILDING LAYOUT IS BASED ON THE BASIS OF DESIGN EQUIPMENT CLEARANCES. ANY MODIFICATION REQUIRED FOR ACCEPTABLE ALTERNATE MANUFACTURERS SHALL BE PROVIDED BY THE CONTRACTOR IF NECESSARY.

GENERAL NOTES

- SEE GENERAL NOTES ON SHEET M-001.
- BUILDING 102A IS THE EXISTING MECHANICAL ROOM THAT SERVES BUILDING 102.
- MAINTAIN MANUFACTURER RECOMMENDED CLEARANCE AROUND ALL EQUIPMENT. FOR BOILERS, PROVIDE A MINIMUM 30" PIPING AND MAINTENANCE CLEARANCE ON ALL SIDES. AT LEAST EVERY OTHER SIDE SHALL HAVE 30" CLEAR FLOOR SPACE FOR PERSONNEL ACCESS. FOR WATER HEATERS, PROVIDE MINIMUM 15" CLEARANCE TO THE SIDES AND REAR AND A MINIMUM 30" IN THE FRONT.
- THE LOCATION OF ALL DUCT, PIPING AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE ANTICIPATED OR ENCOUNTERED INTERFERENCES. THESE PLANS ARE PARTIALLY DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. ALL PIPING OFFSETS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- INSTALL GAS PIPE IN ACCORDANCE WITH 2012 NORTH CAROLINA FUEL GAS CODE.
- PROVIDE HOSE BIB AND 1/2" CONNECTION FOR FILLING IN NEW MECHANICAL ROOM.
- PROVIDE FLOOR DRAINS AS SHOWN ON FLOOR PLAN. CONTRACTOR TO VERIFY NEAREST SEWER MAIN. FOR PRICING PURPOSES, ASSUME 200 YARDS OF SANITARY PIPING. PROVIDE VENT THROUGH ROOF FOR FLOOR DRAINS IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE.
- STORE DOMESTIC HOT WATER AT 140 DEG F AND TEMPER TO 110 DEG F BEFORE BEING SUPPLIED TO BUILDING. PROVIDE MIXING VALVE.
- PROVIDE APPURTENANCES TO COMPLY WITH ASME CSD-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUTDOWN SWITCH LOCATED ADJACENT TO EXIT DOOR.

DESIGNATION	B-1	B-2
LOCATION	MECH ROOM	MECH ROOM
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10
GAS INLET CONNECTION (IN)	1	1
INPUT (MBH)	399	399
OUTPUT (MBH)	375	375
MINIMUM TURN DOWN RATIO	5:1	5:1
FLOWRATE (GPM)	30	30
MAXIMUM PRESSURE DROP (FT_H2O)	8	8
ENTERING WATER TEMPERATURE (DEG F)	160	160
LEAVING WATER TEMPERATURE (DEG F)	185	185
MINIMUM OPERATING PRESSURE (PSI)	30	30
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
TOTAL OPERATING AMPS	1.5	1.5
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	LOCHINVAR	LOCHINVAR
MODEL REMARKS	KB-400	KB-400
REMARKS	1, 2, 3 & 4	1, 2, 3 & 4

REMARKS LEGEND:

- PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER BOILER.
- BOILER CIRCULATION PUMP TO BE PROVIDED BY MANUFACTURER AT 30 GPM AT 25 DELTA T.
- PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.
- PROVIDE BOILERS WHICH ARE AT LEAST 94% EFFICIENT BASED ON BTS-2000, REV 06.07 CONDITIONS.

DESIGNATION	UH-1
LOCATION	MECH ROOM
AIRFLOW (CFM)	340
HEATING CAPACITY (MBH)	10
ENTERING AIR TEMPERATURE (DEG F)	55
LEAVING AIR TEMPERATURE (DEG F)	82
ENTERING WATER TEMPERATURE (DEG F)	180
FLOW RATE (GPM)	.5
WATER PRESSURE DROP (FT W.G.)	.5
MOTOR POWER (HP)	1/60
VOLTAGE (V)	115
PHASE	1
FREQUENCY (Hz)	60
BASED ON	MODINE
MODEL	HC-18 S 01
REMARKS	1

REMARKS LEGEND:
1. PROVIDE UNIT MOUNTED THERMOSTAT.

DESIGNATION	SS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
FLOW RATE (GPM)	72
MAXIMUM PRESSURE DROP (FT-H2O)	14
COLLECTION CHAMBER CAPACITY (GAL)	0.8
BASED ON	LAKOS
MODEL	ILB-0200

DESIGNATION	HWP-1	HWP-2	DWP-1
SERVICE	HOT WATER	HOT WATER	DOMESTIC HOT WATER
LOCATION	MECH ROOM	MECH ROOM	MECH ROOM
TYPE	INLINE	INLINE	INLINE
PUMP DATA	-	-	-
FLOW (GPM)	72	72	5
TOTAL HEAD (FT-H2O)	65	65	20
MINIMUM EFFICIENCY (%)	50	50	-
CONNECTION SIZE	-	-	-
SUCTION (IN)	1.5	1.5	1.5
DISCHARGE (IN)	1.5	1.5	1.5
MOTOR DATA	-	-	-
MOTOR FRAME	182JM	182JM	-
HORSEPOWER	3	3	-
RPM	1750	1750	2650
VOLTS	208	208	115
PHASE	1	1	1
HERTZ	60	60	60
SELECTION BASED ON (MFGR)	BELL & GOSSETT	BELL & GOSSETT	BELL & GOSSETT
MODEL	80 1-1/2x1-1/2x9-1/2	80 1-1/2x1-1/2x9-1/2	BOOSTER PL-30
REMARKS	-	-	1

REMARKS LEGEND:

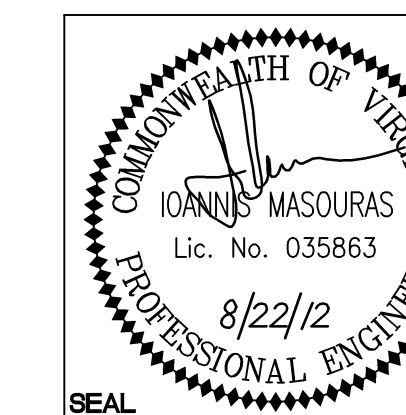
- BRONZE FITTED PUMP FOR DOMESTIC WATER SERVICE. PROVIDE AQUASTAT CONTROL.

DESIGNATION	WH-1	WH-2
LOCATION	MECH ROOM	MECH ROOM
STORAGE (GALLONS)	100	100
GPH AT 100 DEG F RISE	173	173
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4.8	4.8
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10.5	10.5
GAS INLET CONNECTION (IN)	3/4	3/4
INPUT (MBH)	150	150
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	STATE	STATE
MODEL	SUF 100 150 NE	SUF 100 150 NE
REMARKS	1 & 2	1 & 2

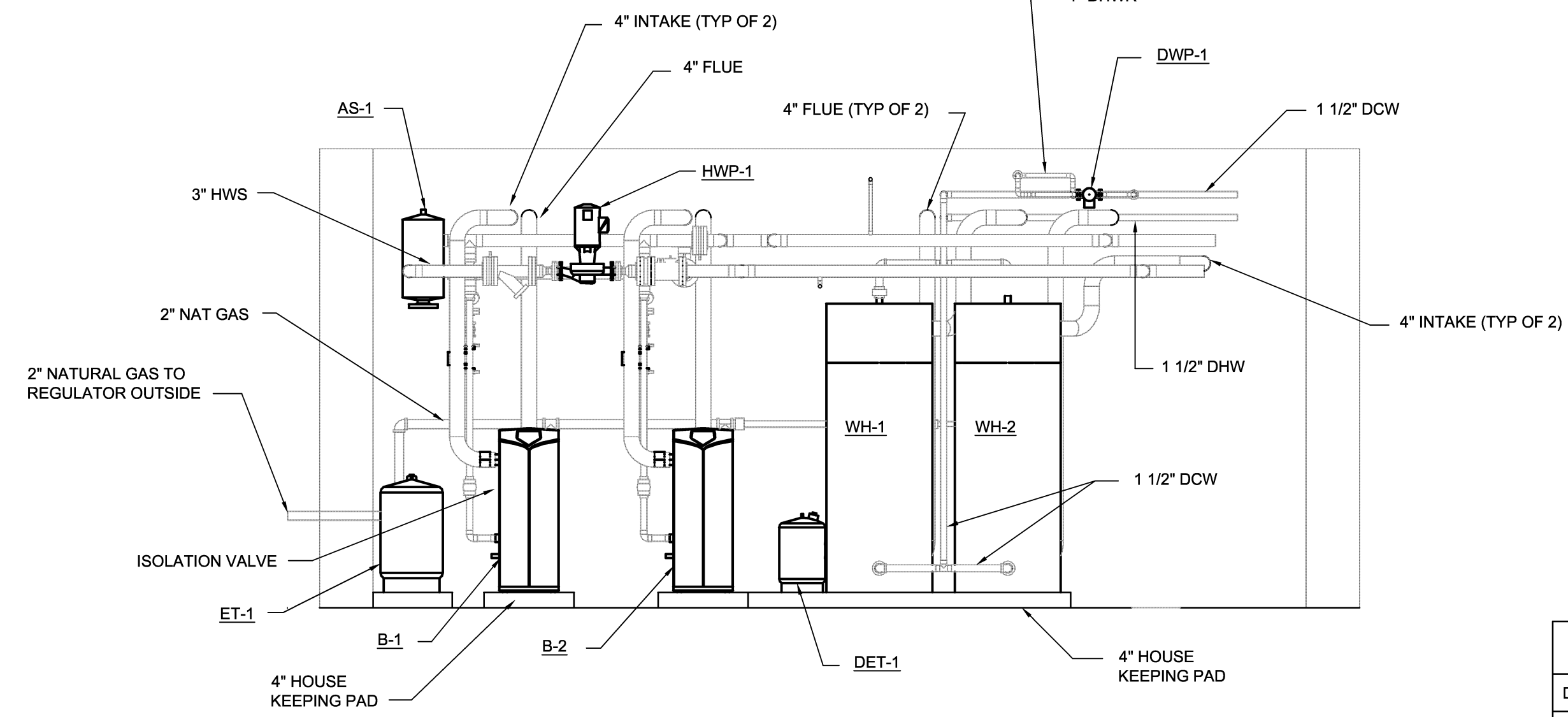
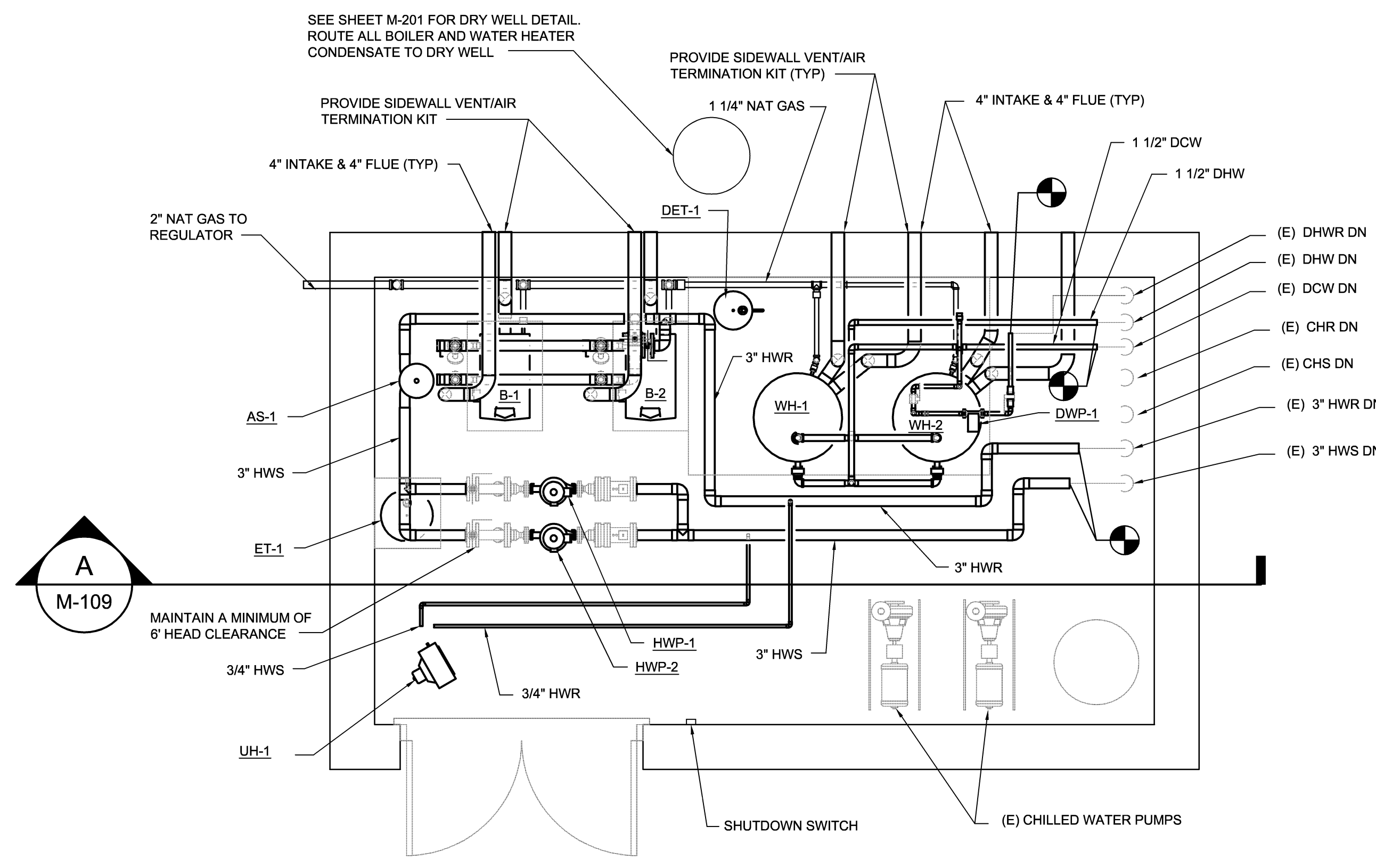
REMARKS LEGEND:

- PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER WATER HEATER.
- PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.

 6006 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.264.7242 wileywilson.com		M-108 PROJECT NO. CP12-004 NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA	
DES. IM	DR. SWL	CHK. JHE	DESIGNED BY:
APPROVED PWO OR OICC DATE SIZE CODE IDENT NO. NAVFAC DRAWING NO. E 80091 60011284 60011284			
SATISFACTORY TO	DATE	SCALE: AS SHOWN	SPEC No. 05-12-004 SHEET 20 OF 43



SYM.	PREP'D BY	DATE	APPROVED



NATURAL GAS NOTE:
 1. TOTAL CONNECTED NATURAL GAS DEMAND FOR THIS BUILDING IS 1,100 MBH AT 10 IN-H2O.

- DEMOLITION NOTES**
- REMOVE HOT WATER PIPING, PUMPS, HEAT EXCHANGERS AND EXPANSION TANKS AS SHOWN. REMOVE ALL ASSOCIATED PIPING, SUPPORTS AND HANGERS. REMOVE ALL STEAM SUPPLY AND CONDENSATE RETURN PIPING, COMPONENTS, HANGERS AND EQUIPMENT.
 - CHILLED WATER SYSTEM IS EXISTING TO REMAIN AND SHALL NOT BE INTERRUPTED DURING CONSTRUCTION.
 - EXISTING CONTROLS TO REMAIN FOR MODIFICATION AND INTEGRATION WITH NEW BACNET EMCS SYSTEM.
 - THE EQUIPMENT AND BUILDING LAYOUT IS BASED ON THE BASIS OF DESIGN EQUIPMENT CLEARANCES. ANY MODIFICATION REQUIRED FOR ACCEPTABLE ALTERNATE MANUFACTURERS SHALL BE PROVIDED BY THE CONTRACTOR IF NECESSARY.
- GENERAL NOTES**
- SEE GENERAL NOTES ON SHEET M-001.
 - BUILDING 111A IS THE EXISTING MECHANICAL ROOM THAT SERVES BUILDING 111.
 - MAINTAIN MANUFACTURER RECOMMENDED CLEARANCE AROUND ALL EQUIPMENT. FOR BOILERS, PROVIDE A MINIMUM 30\"/>

BUILDING 111A MECHANICAL NEW WORK PLAN
 3/8\"/>

MECHANICAL ROOM SECTION
 3/8\"/>

NOTE: EXISTING PIPING NOT SHOWN FOR CLARITY

DESIGNATION	B-1	B-2
LOCATION	MECH ROOM	MECH ROOM
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10
GAS INLET CONNECTION (IN)	1	1
INPUT (MBH)	399	399
OUTPUT (MBH)	375	375
MINIMUM TURN DOWN RATIO	5:1	5:1
FLOWRATE (GPM)	30	30
MAXIMUM PRESSURE DROP (FT. H2O)	8	8
ENTERING WATER TEMPERATURE (DEG F)	160	160
LEAVING WATER TEMPERATURE (DEG F)	185	185
MINIMUM OPERATING PRESSURE (PSI)	30	30
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
TOTAL OPERATING AMPS	1.5	1.5
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	LOCHINVAR	LOCHINVAR
MODEL REMARKS	KB-400	KB-400
REMARKS	1, 2, 3 & 4	1, 2, 3 & 4

REMARKS LEGEND:

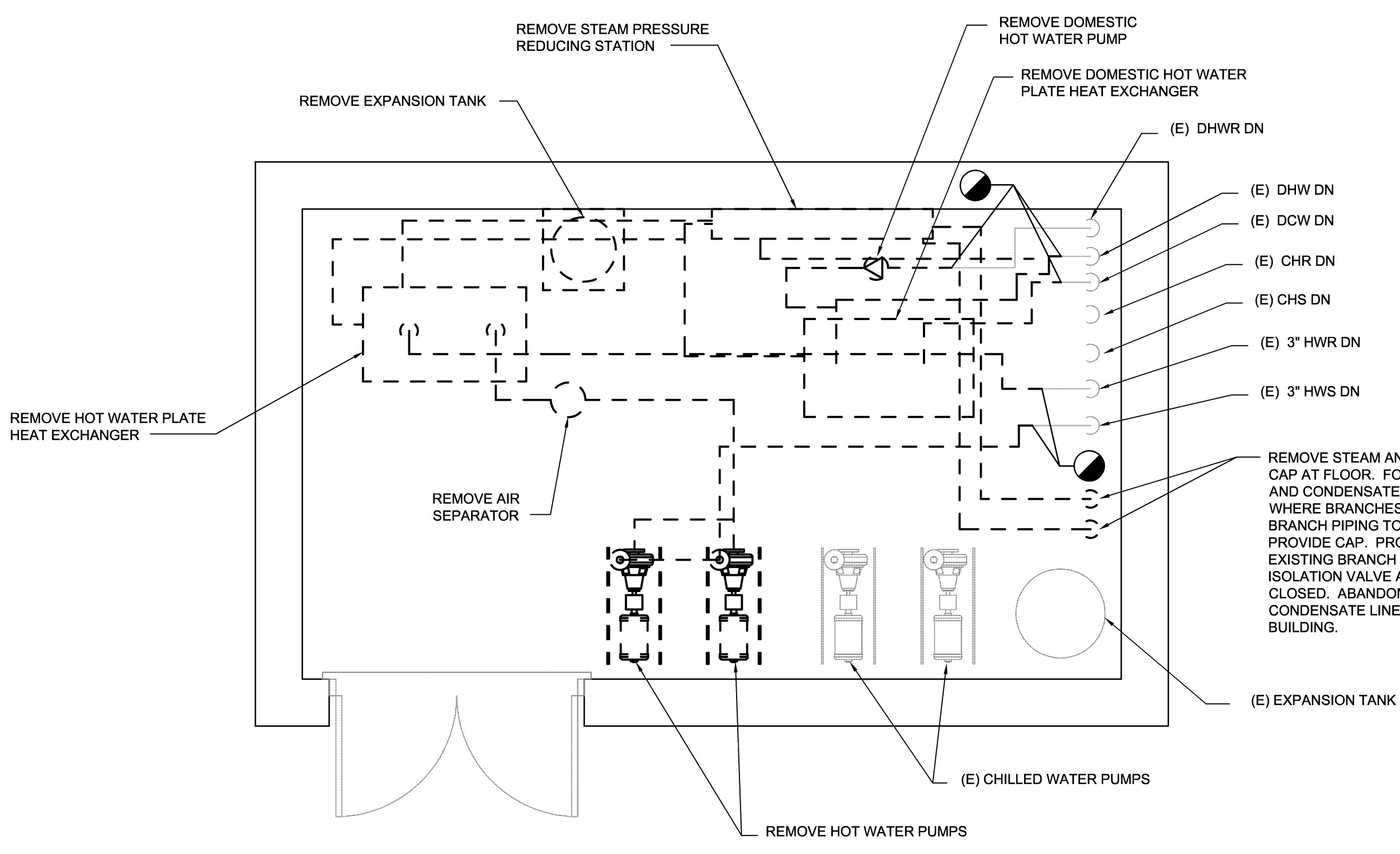
- PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER BOILER.
- BOILER CIRCULATION PUMP TO BE PROVIDED BY MANUFACTURER AT 30 GPM AT 25 DELTA T.
- PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.
- PROVIDE BOILERS WHICH ARE AT LEAST 94% EFFICIENT BASED ON BTS-2000, REV 06.07 CONDITIONS.

DESIGNATION	UH-1
LOCATION	MECH ROOM
AIRFLOW (CFM)	340
HEATING CAPACITY (MBH)	10
ENTERING AIR TEMPERATURE (DEG F)	55
LEAVING AIR TEMPERATURE (DEG F)	82
ENTERING WATER TEMPERATURE (DEG F)	180
FLOW RATE (GPM)	.5
WATER PRESSURE DROP (FT W.G.)	.5
MOTOR POWER (HP)	1/60
VOLTAGE (V)	115
PHASE	1
FREQUENCY (Hz)	60
BASED ON	MODINE
MODEL	HC-18 S 01
REMARKS	1

REMARKS LEGEND:

- PROVIDE UNIT MOUNTED THERMOSTAT.

DESIGNATION	SS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
FLOW RATE (GPM)	72
MAXIMUM PRESSURE DROP (FT-H2O)	14
COLLECTION CHAMBER CAPACITY (GAL)	0.8
BASED ON	LAKOS
MODEL	ILB-0200



BUILDING 111A MECHANICAL DEMOLITION PLAN
 3/8\"/>

DESIGNATION	HWP-1	HWP-2	DWP-1
SERVICE	HOT WATER	HOT WATER	DOMESTIC HOT WATER
LOCATION	MECH ROOM	MECH ROOM	MECH ROOM
TYPE	INLINE	INLINE	INLINE
PUMP DATA	-	-	-
FLOW (GPM)	72	72	5
TOTAL HEAD (FT-H2O)	65	65	20
MINIMUM EFFICIENCY (%)	50	50	-
CONNECTION SIZE	-	-	-
SUCTION (IN)	1.5	1.5	1.5
DISCHARGE (IN)	1.5	1.5	1.5
MOTOR DATA	-	-	-
MOTOR FRAME	182JM	182JM	-
HORSEPOWER	3	3	-
RPM	1750	1750	2850
VOLTS	208	208	115
PHASE	1	1	1
HERTZ	60	60	60
SELECTION BASED ON (MFG)	BELL & GOSSETT	BELL & GOSSETT	BELL & GOSSETT
MODEL	80 1-1/2x1-1/2x9-1/2	80 1-1/2x1-1/2x9-1/2	BOOSTER PL-30
REMARKS	-	-	1

REMARKS LEGEND:

- BRONZE FITTED PUMP FOR DOMESTIC WATER SERVICE. PROVIDE AQUASTAT CONTROL.

DESIGNATION	WH-1	WH-2
LOCATION	MECH ROOM	MECH ROOM
STORAGE (GALLONS)	100	100
GPH AT 100 DEG F RISE	173	173
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4.8	4.8
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10.5	10.5
GAS INLET CONNECTION (IN)	3/4	3/4
INPUT (MBH)	150	150
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	STATE	STATE
MODEL	SUF 100 150 NE	SUF 100 150 NE
REMARKS	1 & 2	1 & 2

REMARKS LEGEND:

- PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER WATER HEATER.
- PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.

DISCLOSURE OF INFORMATION

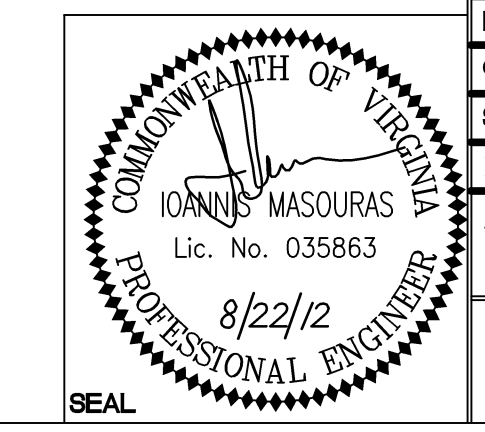
Contractor shall comply as follows:

- The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless:
 - The Contracting Officer has given prior written approval; or
 - The information is otherwise in the public domain before the date of release.
- Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.
- The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.

DESIGNATION	AS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
LINE SIZE (IN)	3
BASED ON	BELL & GOSSETT
MODEL	ROLAIRTROL

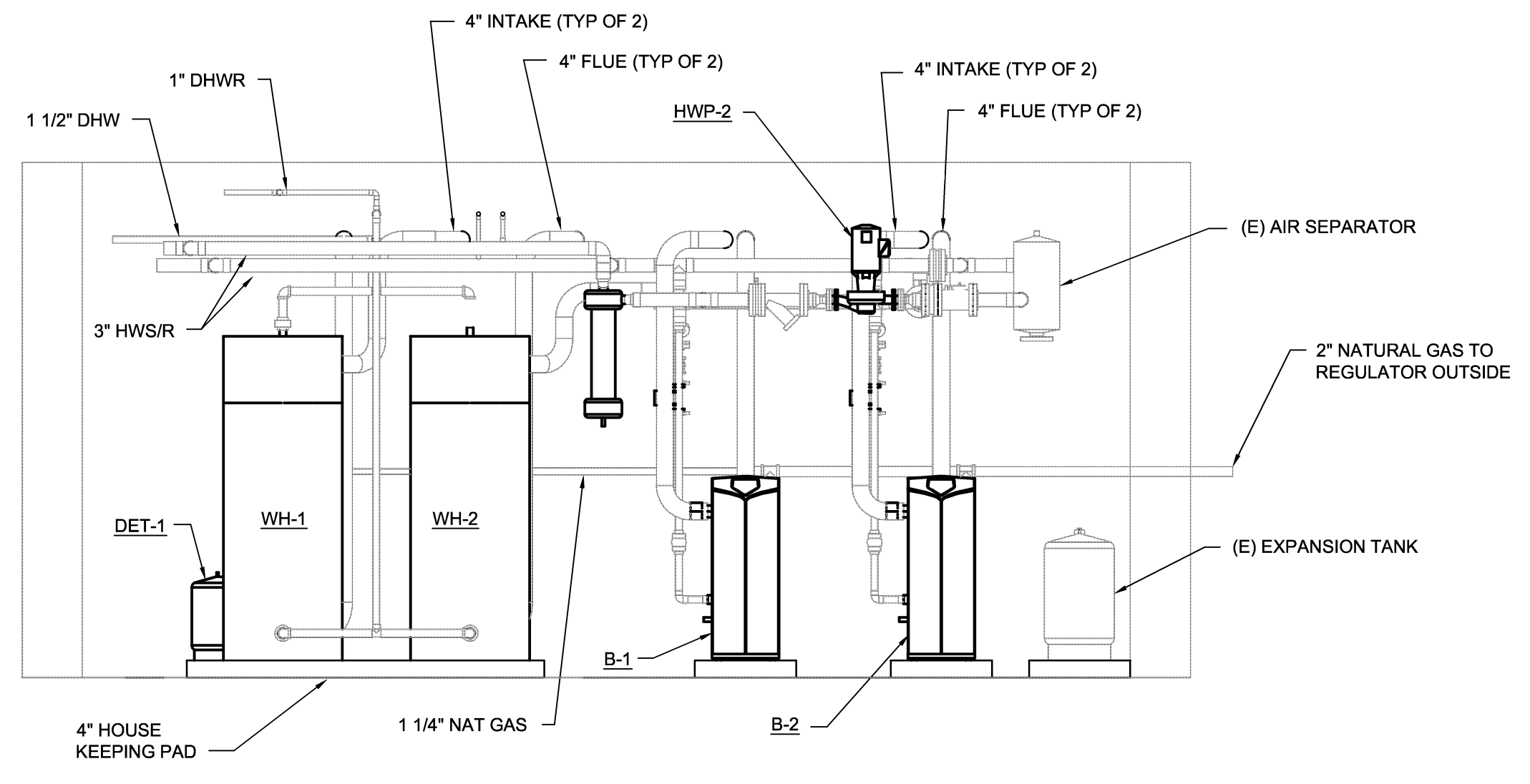
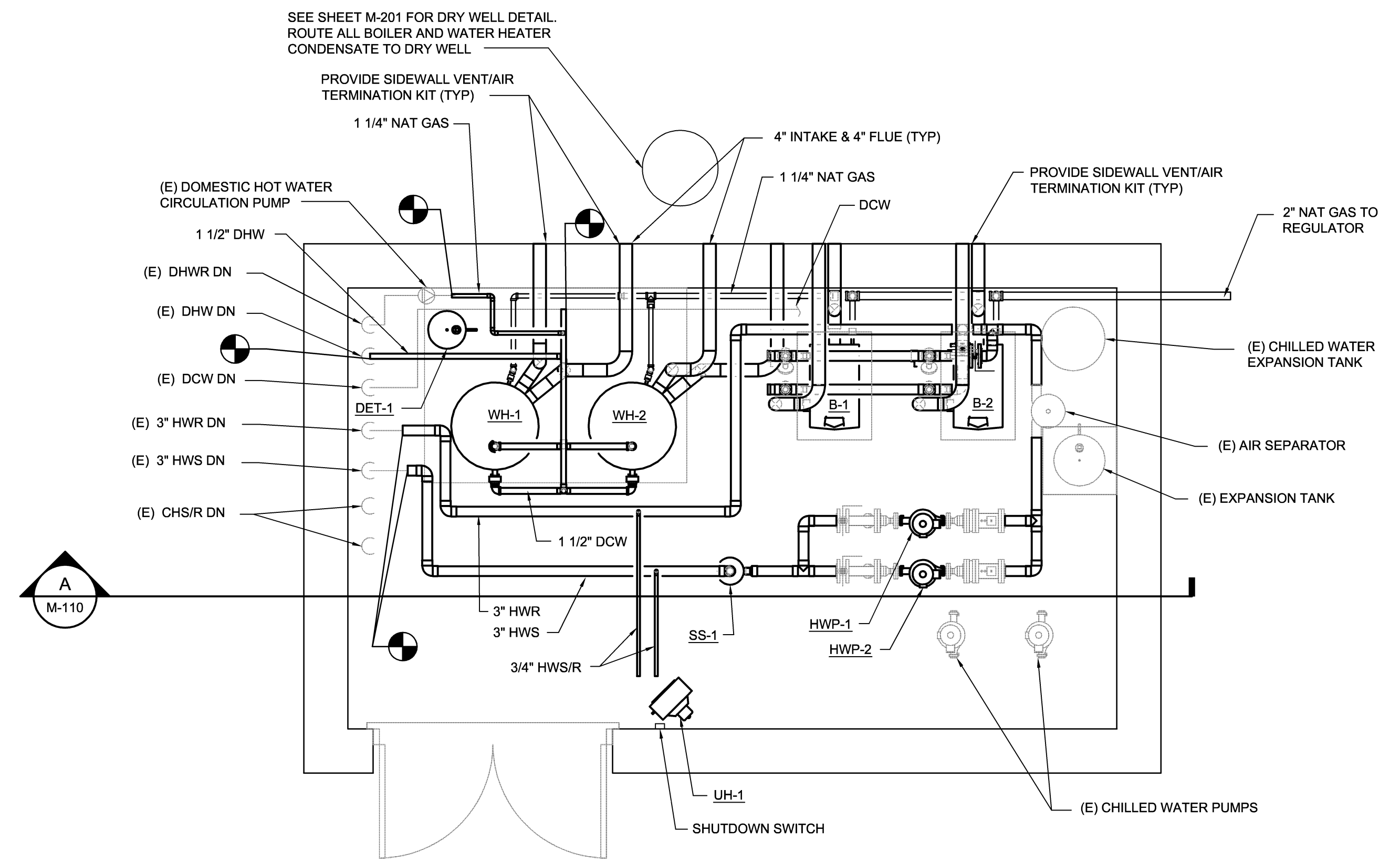
DESIGNATION	ET-1	DET-1
SERVICE	HEATING WATER	DOMESTIC HOT WATER
LOCATION	MECH ROOM	MECH ROOM
TYPE	BLADDER	BLADDER
TANK VOLUME (GAL)	60	14
FILL PRESSURE (PSI)	20	60
RELIEF VALVE PRESSURE SETTING (PSI)	100	100
BASED ON	JOHN WOOD COMPANY	AMTROL
MODEL	JAER-23-607	ST-C SERIES ST-42V-C

* MATCH DOMESTIC WATER SUPPLY PRESSURE AT THIS LOCATION.



6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.264.7242 wileywilson.com		M-109 PROJECT NO. CP12-004 NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA	
DES.	IM	DEPT OF NAVY	NAVFAC DRAWING NO.
DR.	SWL		60011285
CHK.	JHE		
SUBMITTED BY:		CONSTR CONTR NO.	N40085-12-B-0104
DESIGN DR.		SCALE:	AS SHOWN
APPROVED PWO OR OICC	DATE	SPEC No.	05-12-004
SATISFACTORY TO	DATE	SHEET 21	OF 43

SYM	PREP'D BY	DATE	APPROVED



MECHANICAL ROOM SECTION
3/8"=1'-0"

NOTE: EXISTING PIPING NOT SHOWN FOR CLARITY

NATURAL GAS NOTE:
1. TOTAL CONNECTED NATURAL GAS DEMAND FOR THIS BUILDING IS 1,100 MBH AT 10 IN-H2O.

DEMOLITION NOTES
1. REMOVE HOT WATER PIPING, PUMPS, HEAT EXCHANGERS AND EXPANSION TANKS AS SHOWN. REMOVE ALL ASSOCIATED PIPING, SUPPORTS AND HANGERS. REMOVE ALL STEAM SUPPLY AND CONDENSATE RETURN PIPING, COMPONENTS, HANGERS AND EQUIPMENT.
2. CHILLED WATER SYSTEM IS EXISTING TO REMAIN AND SHALL NOT BE INTERRUPTED DURING CONSTRUCTION.
3. EXISTING CONTROLS TO REMAIN FOR MODIFICATION AND INTEGRATION WITH NEW BACNET EMCS SYSTEM.
4. THE EQUIPMENT AND BUILDING LAYOUT IS BASED ON THE BASIS OF DESIGN EQUIPMENT CLEARANCES. ANY MODIFICATION REQUIRED FOR ACCEPTABLE ALTERNATE MANUFACTURER'S SHALL BE PROVIDED BY THE CONTRACTOR IF NECESSARY.

GENERAL NOTES
1. SEE GENERAL NOTES ON SHEET M-001.
2. BUILDING 205A IS THE EXISTING MECHANICAL ROOM THAT SERVES BUILDING 205.
3. MAINTAIN MANUFACTURER RECOMMENDED CLEARANCE AROUND ALL EQUIPMENT. FOR BOILERS, PROVIDE A MINIMUM 30" PIPING AND MAINTENANCE CLEARANCE ON ALL SIDES. AT LEAST EVERY OTHER SIDE SHALL HAVE 30" CLEAR FLOOR SPACE FOR PERSONNEL ACCESS. FOR WATER HEATERS, PROVIDE MINIMUM 15" CLEARANCE TO THE SIDES AND REAR AND A MINIMUM 30" IN THE FRONT.
4. THE LOCATION OF ALL DUCT, PIPING AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE ANTICIPATED OR ENCOUNTERED INTERFERENCES. THESE PLANS ARE PARTIALLY DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. ALL PIPING OFFSETS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
5. INSTALL GAS PIPE IN ACCORDANCE WITH 2012 NORTH CAROLINA FUEL GAS CODE.
6. PROVIDE HOSE BIB AND 1/2" CONNECTION FOR FILLING IN NEW MECHANICAL ROOM.
7. PROVIDE FLOOR DRAINS AS SHOWN ON FLOOR PLAN. CONTRACTOR TO VERIFY NEAREST SEWER MAIN. FOR PRICING PURPOSES, ASSUME 200 YARDS OF SANITARY PIPING. PROVIDE VENT THROUGH ROOF FOR FLOOR DRAINS IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE.
8. STORE DOMESTIC HOT WATER AT 140 DEG F AND TEMPER TO 110 DEG F BEFORE BEING SUPPLIED TO BUILDING. PROVIDE MIXING VALVE.
9. PROVIDE APPURTENANCES TO COMPLY WITH ASME CSO-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUTDOWN SWITCH LOCATED ADJACENT TO EXIT DOOR.

DESIGNATION	B-1	B-2
LOCATION	MECH ROOM	MECH ROOM
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10
GAS INLET CONNECTION (IN)	1	1
INPUT (MBH)	399	399
OUTPUT (MBH)	375	375
MINIMUM TURN DOWN RATIO	5:1	5:1
FLOWRATE (GPM)	30	30
MAXIMUM PRESSURE DROP (FT. H2O)	8	8
ENTERING WATER TEMPERATURE (DEG F)	180	180
LEAVING WATER TEMPERATURE (DEG F)	185	185
MINIMUM OPERATING PRESSURE (PSI)	30	30
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
TOTAL OPERATING AMPS	1.5	1.5
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	LOCHINVAR	LOCHINVAR
MODEL REMARKS	KB-400	KB-400
REMARKS	1, 2, 3 & 4	1, 2, 3 & 4

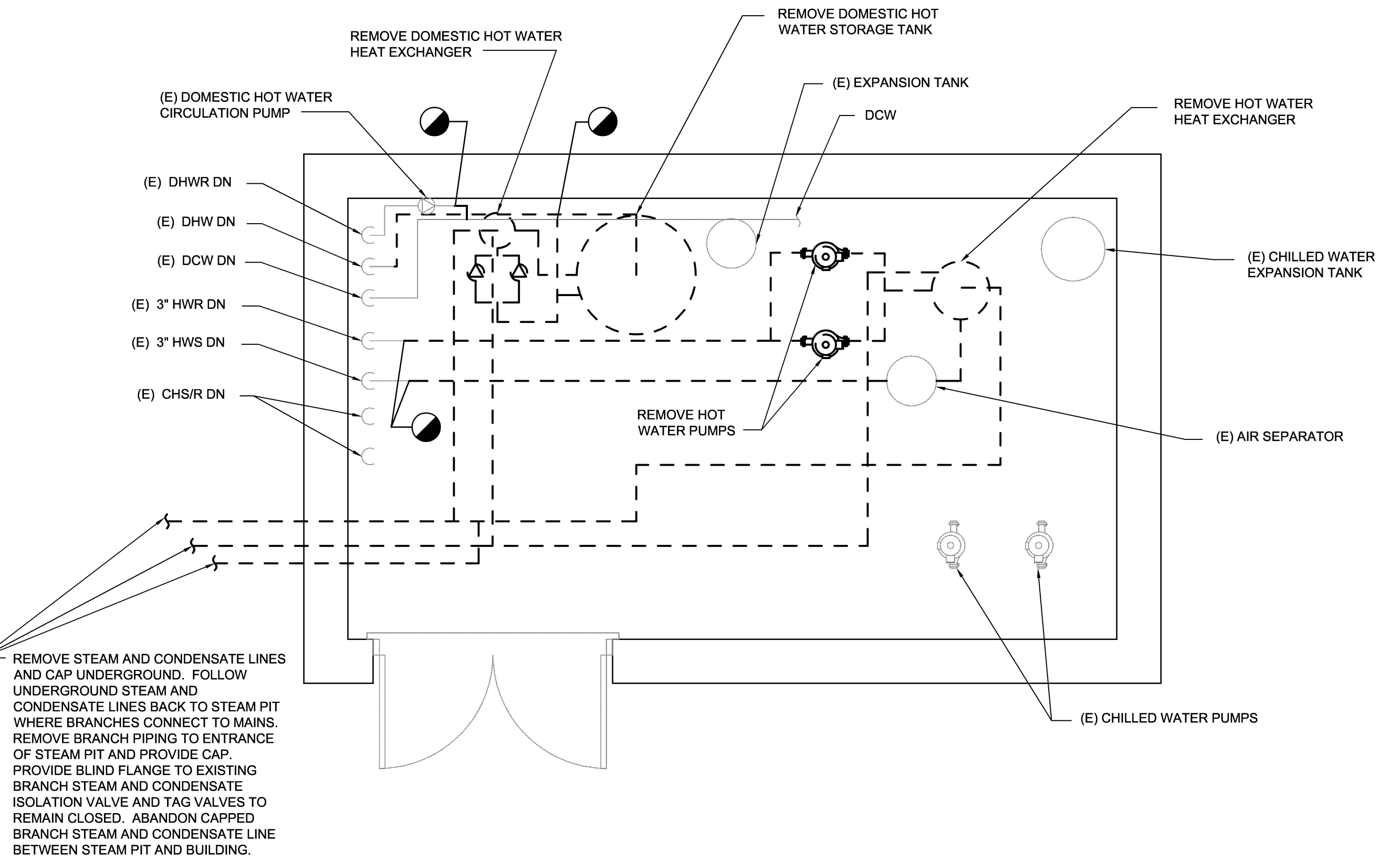
REMARKS LEGEND:
1. PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER BOILER.
2. BOILER CIRCULATION PUMP TO BE PROVIDED BY MANUFACTURER AT 30 GPM AT 25 DELTA T.
3. PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.
4. PROVIDE BOILERS WHICH ARE AT LEAST 94% EFFICIENT BASED ON BTS-2000, REV 06.07 CONDITIONS.

DESIGNATION	UH-1
LOCATION	MECH ROOM
AIRFLOW (CFM)	340
HEATING CAPACITY (MBH)	10
ENTERING AIR TEMPERATURE (DEG F)	55
LEAVING AIR TEMPERATURE (DEG F)	82
ENTERING WATER TEMPERATURE (DEG F)	180
FLOW RATE (GPM)	.5
WATER PRESSURE DROP (FT. W.G.)	.5
MOTOR POWER (HP)	1/60
VOLTAGE (V)	115
PHASE	1
FREQUENCY (Hz)	60
BASED ON	MODINE
MODEL	HC-18 S 01
REMARKS	1

REMARKS LEGEND:
1. PROVIDE UNIT MOUNTED THERMOSTAT.

DESIGNATION	SS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
FLOW RATE (GPM)	60
MAXIMUM PRESSURE DROP (FT-H2O)	23
COLLECTION CHAMBER CAPACITY (GAL)	.3
BASED ON	LAKOS
MODEL	ILB-0150

BUILDING 205A MECHANICAL NEW WORK PLAN
3/8"=1'-0"



BUILDING 205A MECHANICAL DEMOLITION PLAN
3/8"=1'-0"

DESIGNATION	HWP-1	HWP-2	DWP-1
SERVICE	HOT WATER	HOT WATER	DOMESTIC HOT WATER
LOCATION	MECH ROOM	MECH ROOM	MECH ROOM
TYPE	INLINE	INLINE	INLINE
PUMP DATA	-	-	-
FLOW (GPM)	60	60	5
TOTAL HEAD (FT-H2O)	80	80	20
MINIMUM EFFICIENCY (%)	50	50	-
CONNECTION SIZE	-	-	-
SUCTION (IN)	1.5	1.5	1.5
DISCHARGE (IN)	1.5	1.5	1.5
MOTOR DATA	-	-	-
MOTOR FRAME	182JM	182JM	-
HORSEPOWER	5	5	-
RPM	1750	1750	2650
VOLTS	208	208	115
PHASE	1	1	1
HERTZ	60	60	60
SELECTION BASED ON (MFR)	BELL & GOSSETT	BELL & GOSSETT	BELL & GOSSETT
MODEL	80 1-1/2x1-1/2x9-1/2	80 1-1/2x1-1/2x9-1/2	BOOSTER PL-30
REMARKS	-	-	1

REMARKS LEGEND:
1. BRONZE FITTED PUMP FOR DOMESTIC WATER SERVICE. PROVIDE AQUASTAT CONTROL.

DESIGNATION	WH-1	WH-2
LOCATION	MECH ROOM	MECH ROOM
STORAGE (GALLONS)	100	100
GPH AT 100 DEG F RISE	173	173
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4.8	4.8
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10.5	10.5
GAS INLET CONNECTION (IN)	3/4	3/4
INPUT (MBH)	150	150
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	STATE	STATE
MODEL	SUF 100 150 NE	SUF 100 150 NE
REMARKS	1 & 2	1 & 2

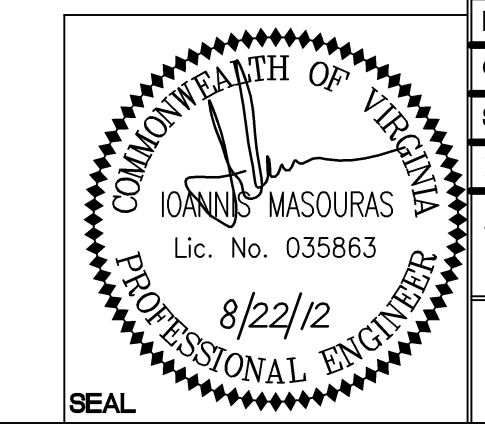
REMARKS LEGEND:
1. PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER WATER HEATER.
2. PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.

DISCLOSURE OF INFORMATION
Contractor shall comply as follows:
(a) The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless:
(1) The Contracting Officer has given prior written approval; or
(2) The information is otherwise in the public domain before the date of release.
Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.
(b) The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.
(c) The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.

DESIGNATION	AS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
LINE SIZE (IN)	3
BASED ON	BELL & GOSSETT
MODEL	ROLAIRTR0L

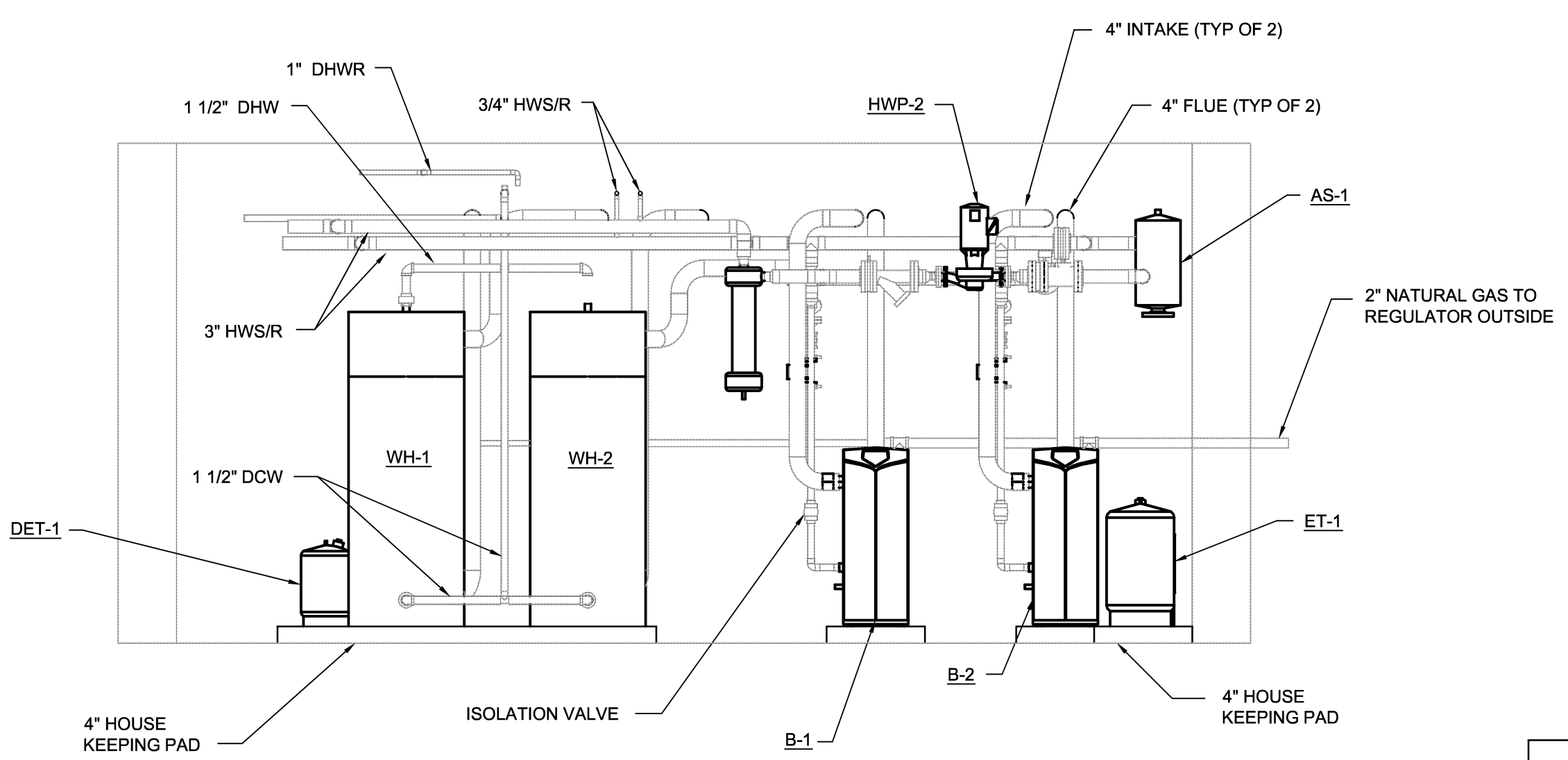
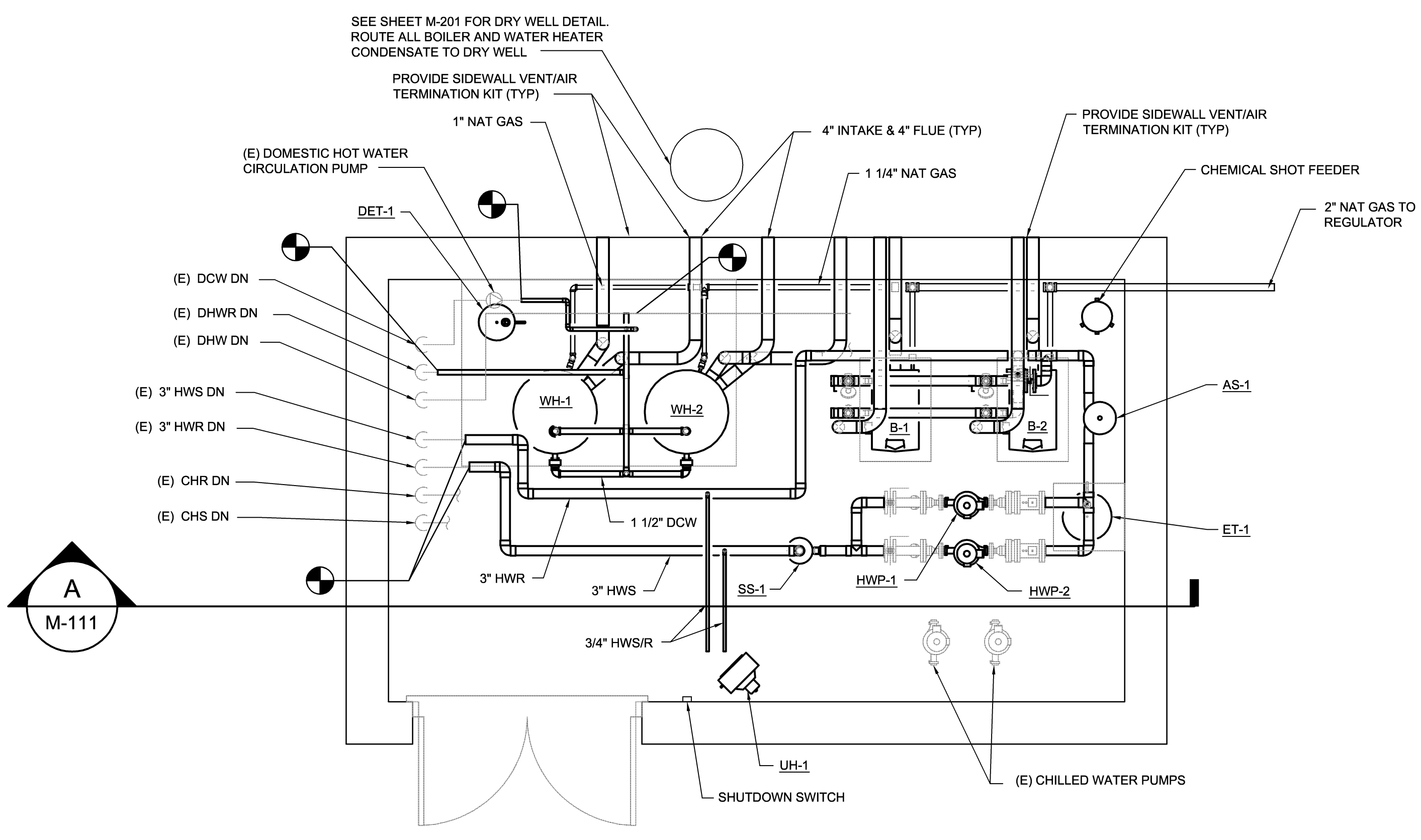
DESIGNATION	DET-1
SERVICE	DOMESTIC HOT WATER
LOCATION	MECH ROOM
TYPE	BLADDER
TANK VOLUME (GAL)	14
FILL PRESSURE (PSI)	60
RELIEF VALVE PRESSURE SETTING (PSI)	100
BASED ON	AMTROL
MODEL	ST-C SERIES ST-42V-C

* MATCH DOMESTIC WATER SUPPLY PRESSURE AT THIS LOCATION.



		M-110 PROJECT NO. CP12-004 NAVFAC FACILITIES ENGINEERING COMMAND	
6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.264.7242 wileywilson.com		MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA	
DES. IM DR. SWL CHK. JHE SUBMITTED BY: JHE DESIGN DR.		BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT BUILDING 205 MECHANICAL DEMOLITION AND NEW WORK PLAN	
APPROVED PWO OR OICC DATE		SIZE CODE IDENT NO. NAVFAC DRAWING NO. E 80091 60011286	
SATISFACTORY TO DATE		CONSTR CONTR NO. N40085-12-B-0104	
SCALE: AS SHOWN		SPEC No. 05-12-004 SHEET 22 OF 43	

SYM.	PREP'D BY	DATE	APPROVED



A MECHANICAL ROOM SECTION
3/8"=1'-0"

NOTE: EXISTING PIPING NOT SHOWN FOR CLARITY

NATURAL GAS NOTE:
1. TOTAL CONNECTED NATURAL GAS DEMAND FOR THIS BUILDING IS 1,100 MBH AT 10 IN-H2O.

DEMOLITION NOTES:
1. REMOVE HOT WATER PIPING, PUMPS, HEAT EXCHANGERS AND EXPANSION TANKS AS SHOWN. REMOVE ALL ASSOCIATED PIPING, SUPPORTS AND HANGERS. REMOVE ALL STEAM SUPPLY AND CONDENSATE RETURN PIPING, COMPONENTS, HANGERS AND EQUIPMENT.
2. CHILLED WATER SYSTEM IS EXISTING TO REMAIN AND SHALL NOT BE INTERRUPTED DURING CONSTRUCTION.
3. EXISTING CONTROLS TO REMAIN FOR MODIFICATION AND INTEGRATION WITH NEW BACNET EMCS SYSTEM.
4. THE EQUIPMENT AND BUILDING LAYOUT IS BASED ON THE BASIS OF DESIGN EQUIPMENT CLEARANCES. ANY MODIFICATION REQUIRED FOR ACCEPTABLE ALTERNATE MANUFACTURERS SHALL BE PROVIDED BY THE CONTRACTOR IF NECESSARY.

GENERAL NOTES:
1. SEE GENERAL NOTES ON SHEET M-001.
2. BUILDING 213A IS THE EXISTING MECHANICAL ROOM THAT SERVES BUILDING 213.
3. MAINTAIN MANUFACTURER RECOMMENDED CLEARANCE AROUND ALL EQUIPMENT. FOR BOILERS, PROVIDE A MINIMUM 30" PIPING AND MAINTENANCE CLEARANCE ON ALL SIDES. AT LEAST EVERY OTHER SIDE SHALL HAVE 30" CLEAR FLOOR SPACE FOR PERSONNEL ACCESS. FOR WATER HEATERS, PROVIDE MINIMUM 15" CLEARANCE TO THE SIDES AND REAR AND A MINIMUM 30" IN THE FRONT.
4. THE LOCATION OF ALL DUCT, PIPING AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE ANTICIPATED OR ENCOUNTERED INTERFERENCES. THESE PLANS ARE PARTIALLY DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. ALL PIPING OFFSETS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
5. INSTALL GAS PIPE IN ACCORDANCE WITH 2012 NORTH CAROLINA FUEL GAS CODE.
6. PROVIDE HOSE BIB AND 1/2" CONNECTION FOR FILLING IN NEW MECHANICAL ROOM.
7. PROVIDE FLOOR DRAINS AS SHOWN ON FLOOR PLAN. CONTRACTOR TO VERIFY NEAREST SEWER MAIN. FOR PRICING PURPOSES, ASSUME 200 YARDS OF SANITARY PIPING. PROVIDE VENT THROUGH ROOF FOR FLOOR DRAINS IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE.
8. STORE DOMESTIC HOT WATER AT 140 DEG F AND TEMPER TO 110 DEG F BEFORE BEING SUPPLIED TO BUILDING. PROVIDE MIXING VALVE.
9. PROVIDE APPURTENANCES TO COMPLY WITH ASME CSD-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUTDOWN SWITCH LOCATED ADJACENT TO EXIT DOOR.

DESIGNATION	B-1	B-2
LOCATION	MECH ROOM	MECH ROOM
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10
GAS INLET CONNECTION (IN)	1	1
INPUT (MBH)	399	399
OUTPUT (MBH)	375	375
MINIMUM TURN DOWN RATIO	5:1	5:1
FLOWRATE (GPM)	30	30
MAXIMUM PRESSURE DROP (FT_H2O)	8	8
ENTERING WATER TEMPERATURE (DEG F)	160	160
LEAVING WATER TEMPERATURE (DEG F)	185	185
MINIMUM OPERATING PRESSURE (PSI)	30	30
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
TOTAL OPERATING AMPS	1.5	1.5
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	LOCHINVAR	LOCHINVAR
MODEL REMARKS	KB-400	KB-400
REMARKS	1, 2, 3 & 4	1, 2, 3 & 4

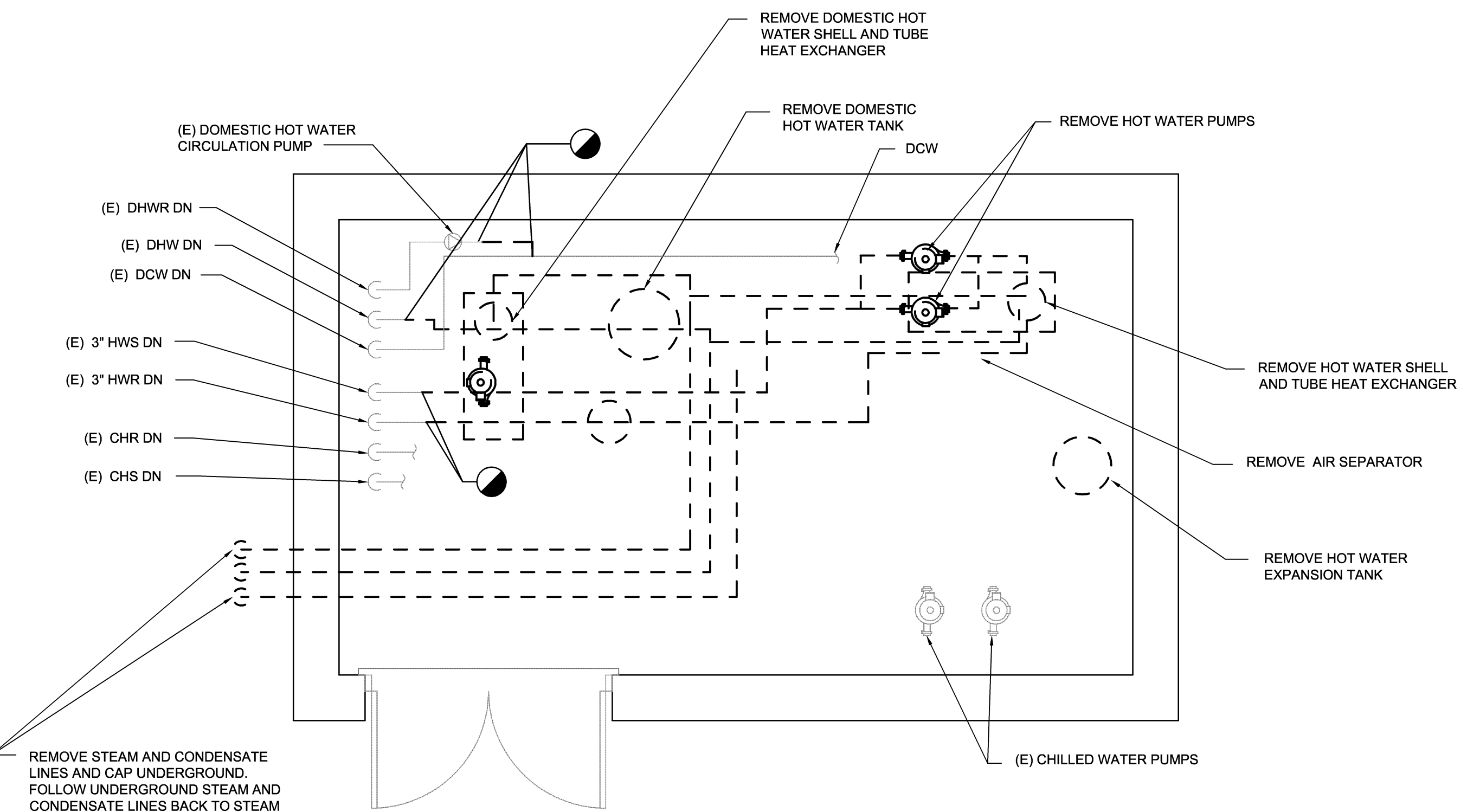
REMARKS LEGEND:
1. PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER BOILER.
2. BOILER CIRCULATION PUMP TO BE PROVIDED BY MANUFACTURER AT 30 GPM AT 25 DELTA T.
3. PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.
4. PROVIDE BOILERS WHICH ARE AT LEAST 94% EFFICIENT BASED ON BTS-2000, REV 06/07 CONDITIONS.

DESIGNATION	UH-1
LOCATION	MECH ROOM
AIRFLOW (CFM)	340
HEATING CAPACITY (MBH)	10
ENTERING AIR TEMPERATURE (DEG F)	55
LEAVING AIR TEMPERATURE (DEG F)	82
ENTERING WATER TEMPERATURE (DEG F)	180
FLOW RATE (GPM)	.5
WATER PRESSURE DROP (FT W.G.)	.5
MOTOR POWER (HP)	1/60
VOLTAGE (V)	115
PHASE	1
FREQUENCY (Hz)	60
BASED ON	MODINE
MODEL	HC-18 S 01
REMARKS	1

REMARKS LEGEND:
1. PROVIDE UNIT MOUNTED THERMOSTAT.

DESIGNATION	SS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
FLOW RATE (GPM)	60
MAXIMUM PRESSURE DROP (FT-H2O)	23
COLLECTION CHAMBER CAPACITY (GAL)	.3
BASED ON	LAKOS
MODEL	ILB-0150

BUILDING 213A MECHANICAL NEW WORK PLAN
3/8"=1'-0"



BUILDING 213A MECHANICAL DEMOLITION PLAN
3/8"=1'-0"

DESIGNATION	HWP-1	HWP-2	DWP-1
SERVICE	HOT WATER	HOT WATER	DOMESTIC HOT WATER
LOCATION	MECH ROOM	MECH ROOM	MECH ROOM
TYPE	INLINE	INLINE	INLINE
PUMP DATA	-	-	-
FLOW (GPM)	60	60	5
TOTAL HEAD (FT-H2O)	80	80	20
MINIMUM EFFICIENCY (%)	50	50	-
CONNECTION SIZE	-	-	-
SUCTION (IN)	1.5	1.5	1.5
DISCHARGE (IN)	1.5	1.5	1.5
MOTOR DATA	-	-	-
MOTOR FRAME	182JM	182JM	-
HORSEPOWER	5	5	-
RPM	1750	1750	2650
VOLTS	208	208	115
PHASE	1	1	1
HERTZ	60	60	60
SELECTION BASED ON (MFGR)	BELL & GOSSETT	BELL & GOSSETT	BELL & GOSSETT
MODEL	80 1-1/2x1-1/2x9-1/2	80 1-1/2x1-1/2x9-1/2	BOOSTER PL-30
REMARKS	-	-	1

REMARKS LEGEND:
1. BRONZE FITTED PUMP FOR DOMESTIC WATER SERVICE. PROVIDE AQUASTAT CONTROL.

DESIGNATION	WH-1	WH-2
LOCATION	MECH ROOM	MECH ROOM
STORAGE (GALLONS)	100	100
GPH AT 100 DEG F RISE	173	173
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4.8	4.8
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10.5	10.5
GAS INLET CONNECTION (IN)	3/4	3/4
INPUT (MBH)	150	150
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	STATE	STATE
MODEL	SUF 100 150 NE	SUF 100 150 NE
REMARKS	1 & 2	1 & 2

REMARKS LEGEND:
1. PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER WATER HEATER.
2. PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.

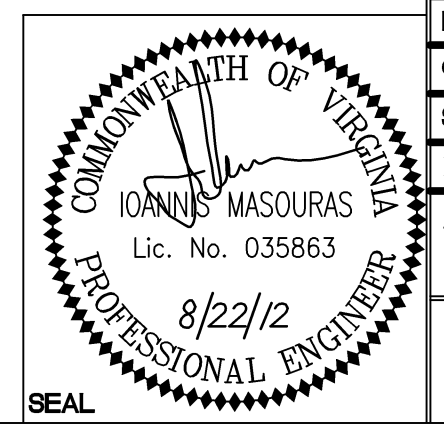
REMOVE STEAM AND CONDENSATE LINES AND CAP UNDERGROUND. FOLLOW UNDERGROUND STEAM AND CONDENSATE LINES BACK TO STEAM PIT WHERE BRANCHES CONNECT TO MAINS. REMOVE BRANCH PIPING TO ENTRANCE OF STEAM PIT AND PROVIDE CAP. PROVIDE BLIND FLANGE TO EXISTING BRANCH STEAM AND CONDENSATE ISOLATION VALVE AND TAG VALVES TO REMAIN CLOSED. ABANDON CAPPED BRANCH STEAM AND CONDENSATE LINE BETWEEN STEAM PIT AND BUILDING.

DISCLOSURE OF INFORMATION
Contractor shall comply as follows:
(a) The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless-
(1) The Contracting Officer has given prior written approval; or
(2) The information is otherwise in the public domain before the date of release.
Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.
(c) The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.

DESIGNATION	AS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
LINE SIZE (IN)	3
BASED ON	BELL & GOSSETT
MODEL	ROLAIRROL

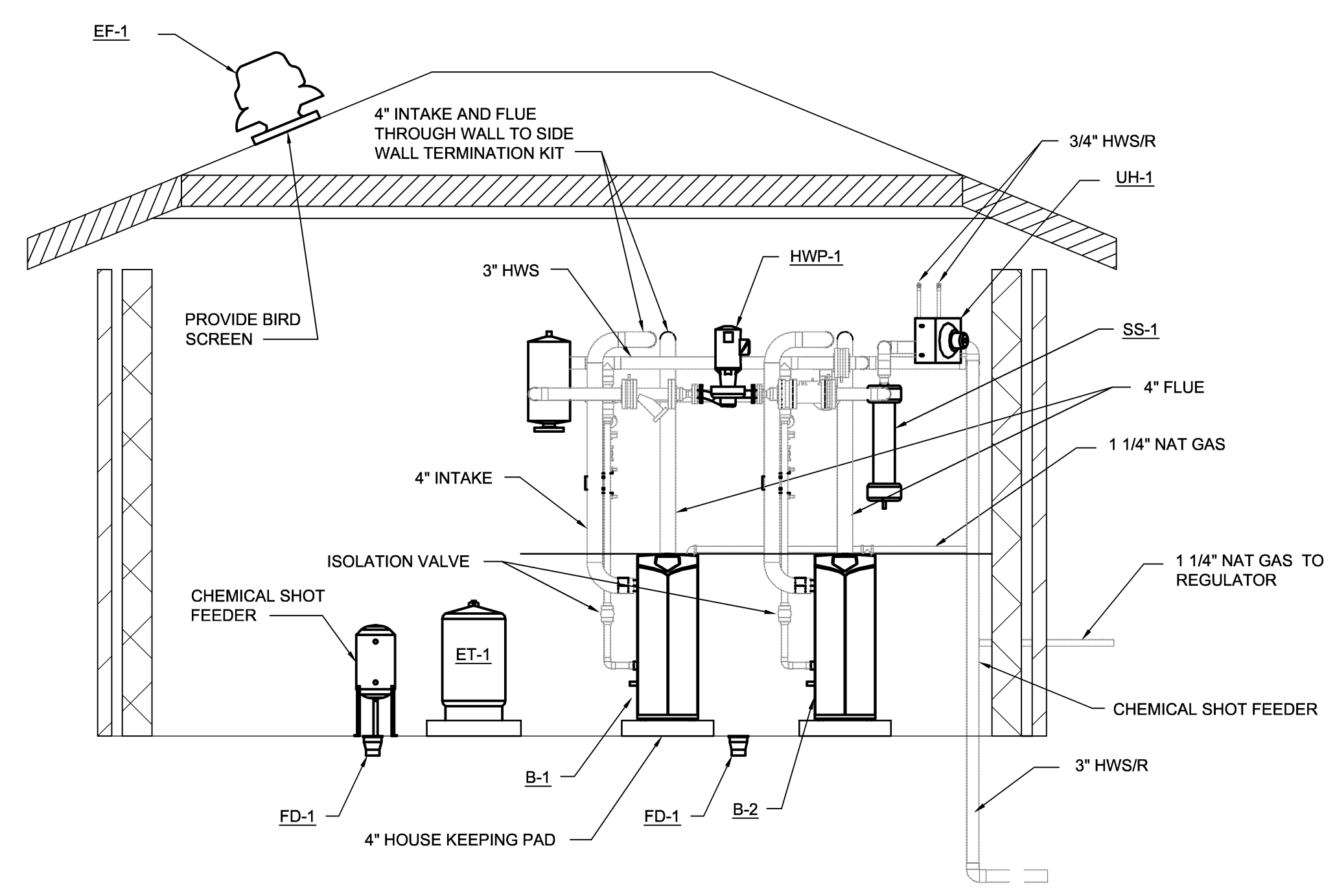
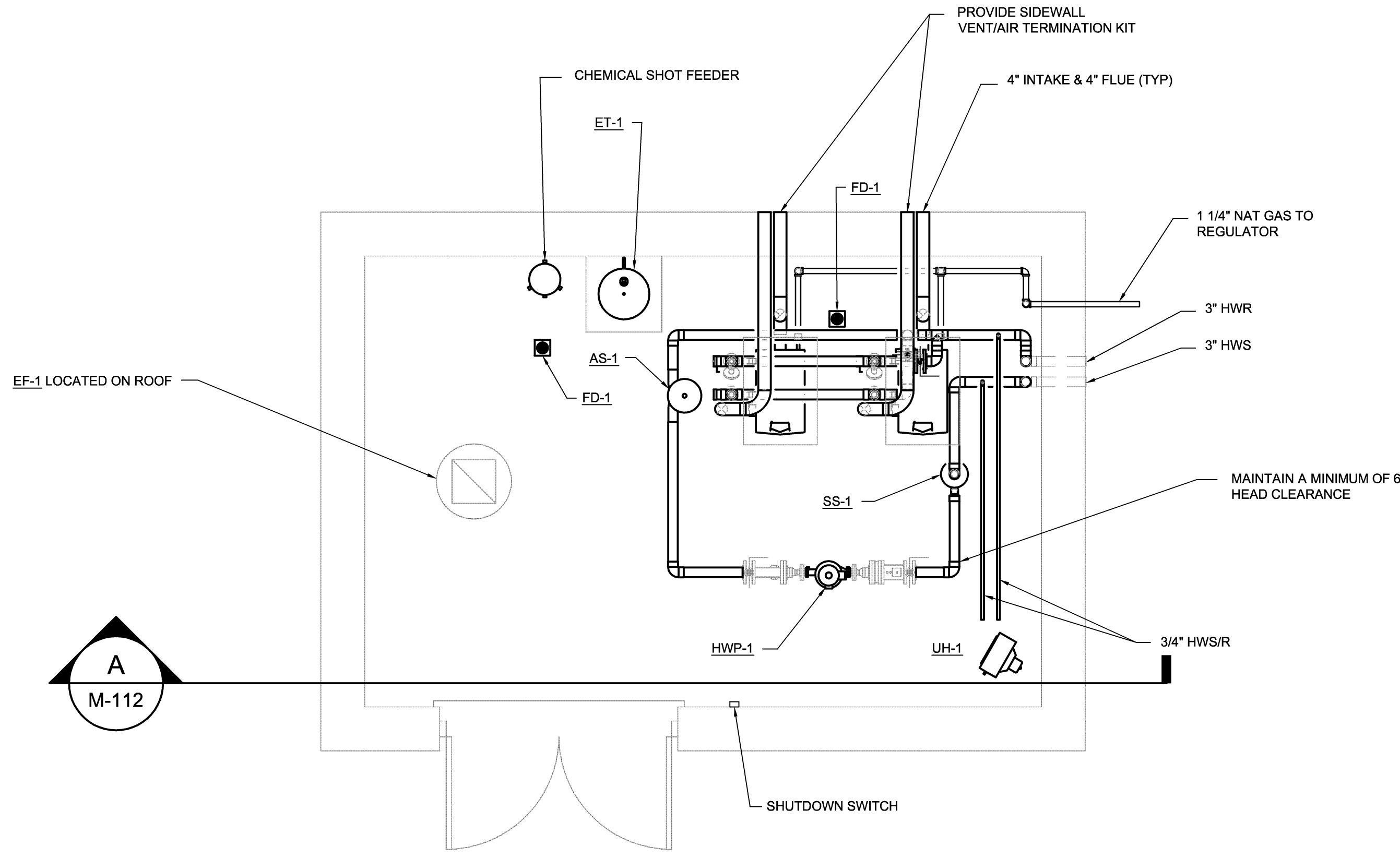
DESIGNATION	ET-1	DET-1
SERVICE	HEATING WATER	DOMESTIC HOT WATER
LOCATION	MECH ROOM	MECH ROOM
TYPE	BLADDER	BLADDER
TANK VOLUME (GAL)	60	14
FILL PRESSURE (PSI)	20	60
RELIEF VALVE PRESSURE SETTING (PSI)	100	100
BASED ON	JOHN WOOD COMPANY	AMTROL
MODEL	JAER-23-607	ST-C SERIES ST-42V-C

*MATCH DOMESTIC WATER SUPPLY PRESSURE AT THIS LOCATION.



WileyWilson 6006 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.264.7242 wileywilson.com		M-111 PROJECT NO. CP12-004 NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT BUILDING 213 MECHANICAL DEMOLITION AND NEW WORK PLAN	
DES. IM	DR. SWL	CHK. JHE	DESIGN DR.
APPROVED PWO OR OICC	DATE	SIZE E	CODE IDENT NO. 80091
SATSFACTORY TO	DATE	SCALE AS SHOWN	SPEC No. 05-12-004
		NAVFAC DRAWING NO. 60011287 CONSTR CONTR NO. N40085-12-B-0104 SHEET 23 OF 43	

SYM.	PREP'D BY	DATE	APPROVED



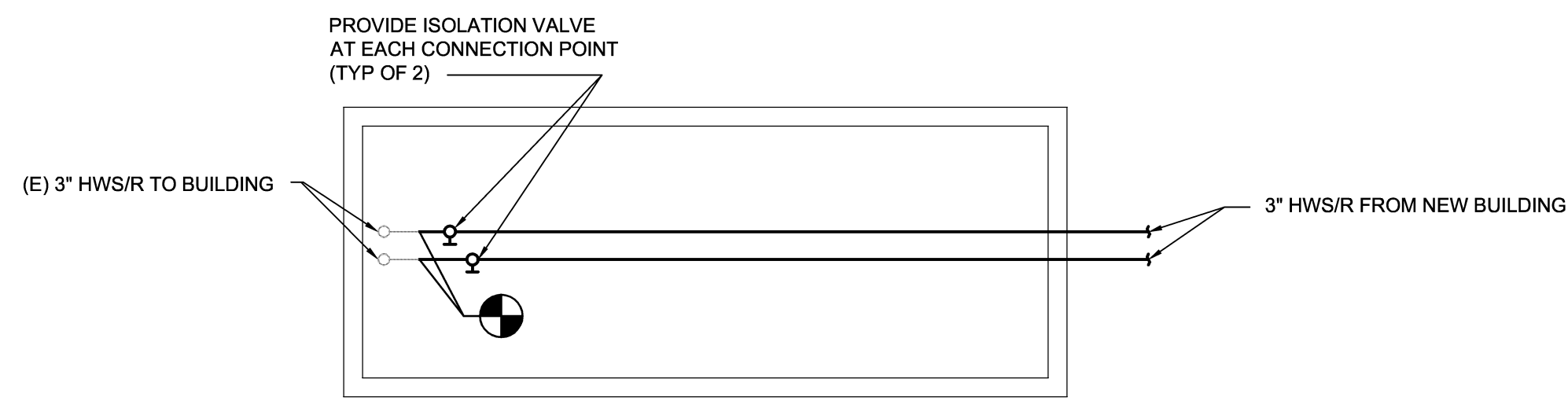
A MECHANICAL ROOM SECTION
3/8"=1'-0" 0 2 4 6

NATURAL GAS NOTE:
1. TOTAL CONNECTED NATURAL GAS DEMAND FOR THIS BUILDING IS 800 MBH AT 10 IN-H2O.

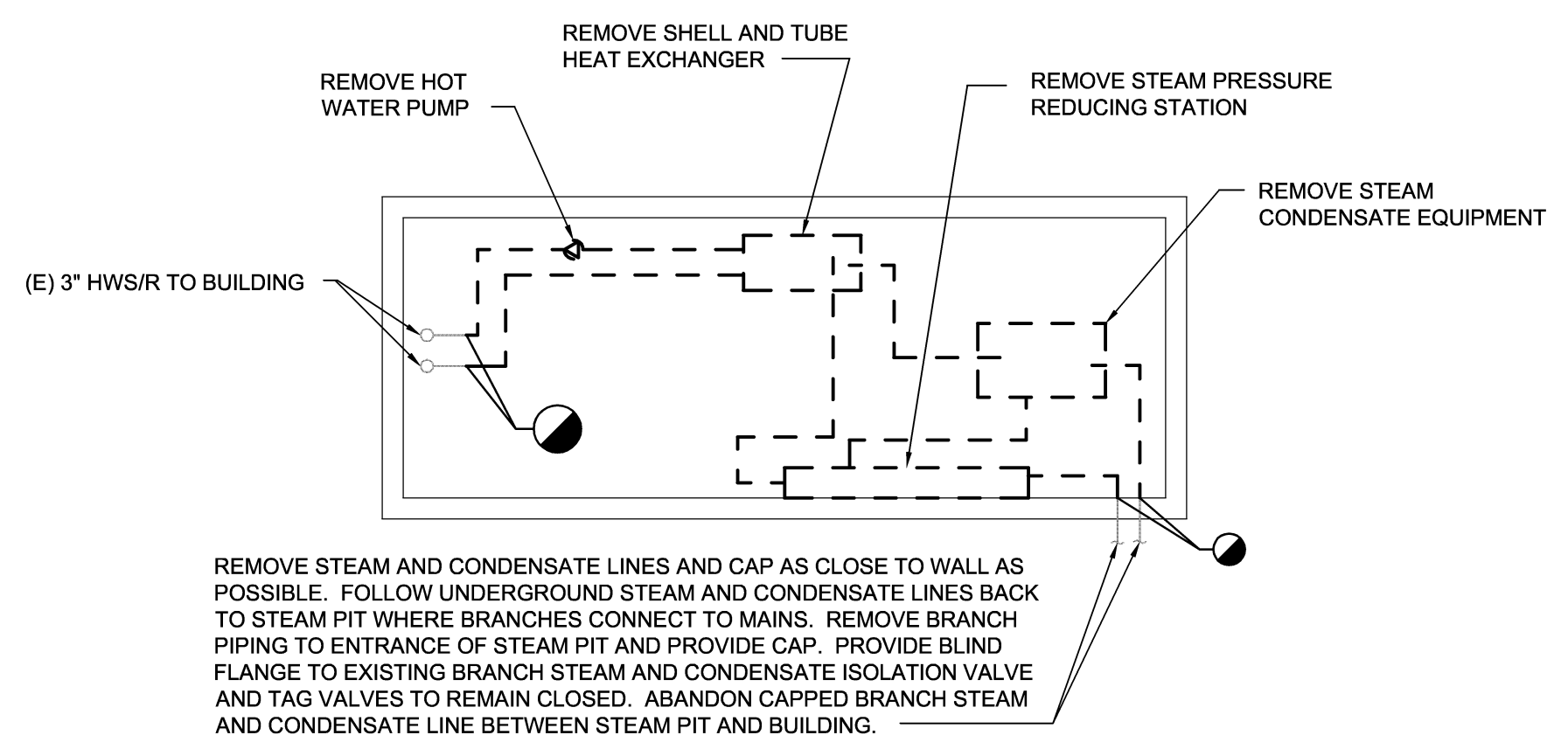
DEMOLITION NOTES:
1. REMOVE HOT WATER PIPING, PUMPS, HEAT EXCHANGERS AND EXPANSION TANKS AS SHOWN. REMOVE ALL ASSOCIATED PIPING, SUPPORTS AND HANGERS. REMOVE ALL STEAM SUPPLY AND CONDENSATE RETURN PIPING, COMPONENTS, HANGERS AND EQUIPMENT.
2. CHILLED WATER SYSTEM IS EXISTING TO REMAIN AND SHALL NOT BE INTERRUPTED DURING CONSTRUCTION.
3. EXISTING CONTROLS TO REMAIN FOR MODIFICATION AND INTEGRATION WITH NEW BACNET EMCS SYSTEM.
4. THE EQUIPMENT AND BUILDING LAYOUT IS BASED ON THE BASIS OF DESIGN EQUIPMENT CLEARANCES. ANY MODIFICATION REQUIRED FOR ACCEPTABLE ALTERNATE MANUFACTURERS SHALL BE PROVIDED BY THE CONTRACTOR IF NECESSARY.

GENERAL NOTES:
1. SEE GENERAL NOTES ON SHEET M-001.
2. DOMESTIC HOT WATER SYSTEM FOR THIS BUILDING IS EXISTING TO REMAIN.
3. MAINTAIN MANUFACTURER RECOMMENDED CLEARANCE AROUND ALL EQUIPMENT. FOR BOILERS, PROVIDE A MINIMUM 30" PIPING AND MAINTENANCE CLEARANCE ON ALL SIDES. AT LEAST EVERY OTHER SIDE SHALL HAVE 30" CLEAR FLOOR SPACE FOR PERSONNEL ACCESS. FOR WATER HEATERS, PROVIDE MINIMUM 15" CLEARANCE TO THE SIDES AND REAR AND A MINIMUM 30" IN THE FRONT.
4. THE LOCATION OF ALL DUCT, PIPING AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE ANTICIPATED OR ENCOUNTERED INTERFERENCES. THESE PLANS ARE PARTIALLY DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. ALL PIPING OFFSETS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
5. INSTALL GAS PIPE IN ACCORDANCE WITH 2012 NORTH CAROLINA FUEL GAS CODE.
6. PROVIDE HOSE BIB AND 1/2" CONNECTION FOR FILLING IN NEW MECHANICAL ROOM.
7. PROVIDE FLOOR DRAINS AS SHOWN ON FLOOR PLAN. CONTRACTOR TO VERIFY NEAREST SEWER MAIN. FOR PRICING PURPOSES, ASSUME 200 YARDS OF SANITARY PIPING. PROVIDE VENT THROUGH ROOF FOR FLOOR DRAINS IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE.
8. PROVIDE APPURTENANCES TO COMPLY WITH ASME CSD-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUTDOWN SWITCH LOCATED ADJACENT TO EXIT DOOR.
9. EXISTING BUILDING HAS A DUAL TEMPERATURE SYSTEM CONTROLLED BY MANUAL HEATING/COOLING CHANGEOVER SWITCH. THE NEW SYSTEM SHALL BE INCORPORATED INTO THE CHANGEOVER CONTROL.

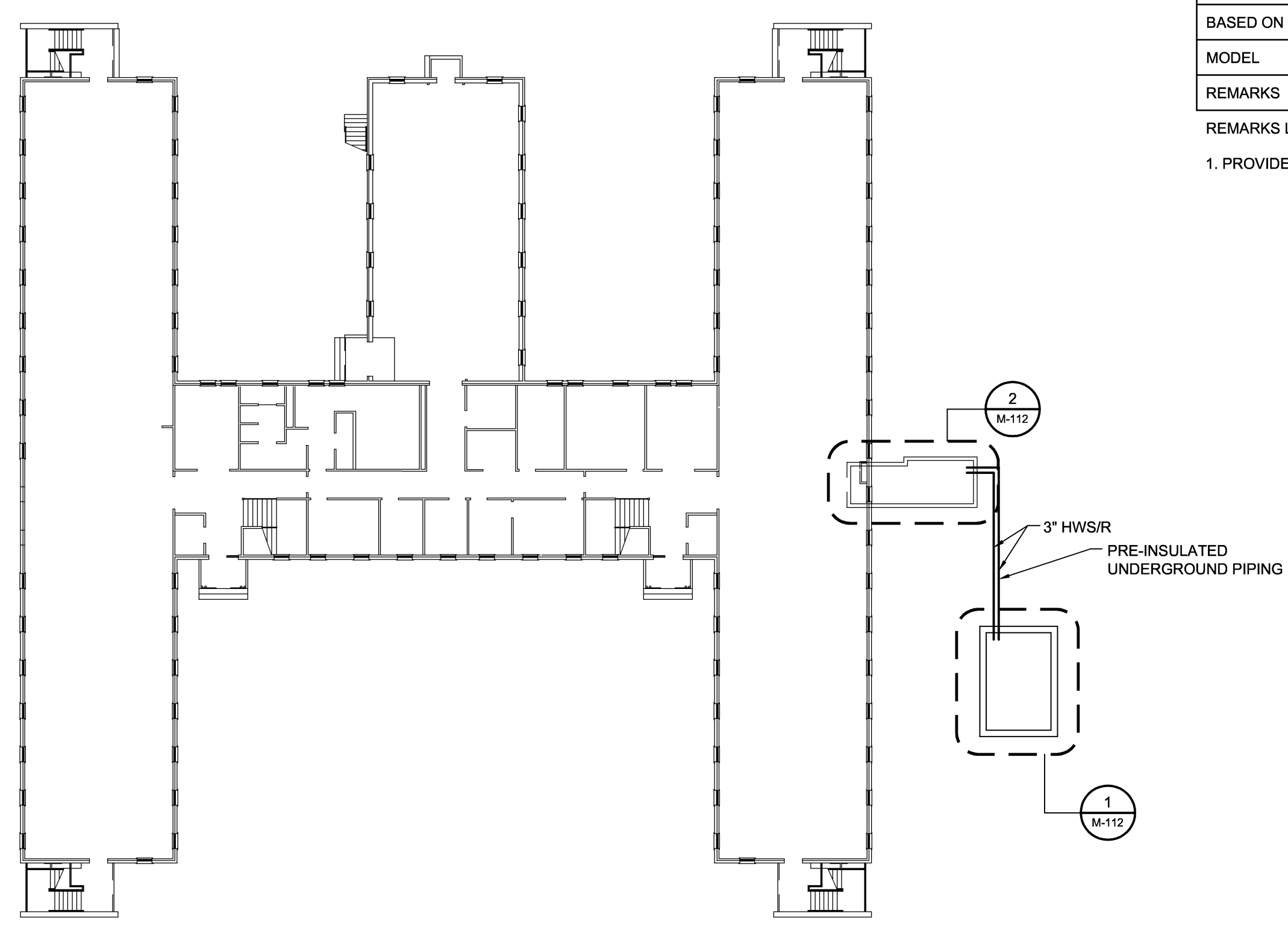
1 BUILDING 308 NEW MECHANICAL ROOM
3/8"=1'-0" 0 2 4 6



2 BUILDING 308 STEAM PIT NEW WORK PLAN
3/16"=1'-0" 0 4 6 8



2 BUILDING 308 STEAM PIT DEMOLITION PLAN
3/16"=1'-0" 0 4 6 8



BUILDING 308 MECHANICAL SITE PLAN
3/64"=1'-0" 0 10 20 40 60

UNIT HEATER SCHEDULE

DESIGNATION	UH-1
LOCATION	MECH ROOM
AIRFLOW (CFM)	340
HEATING CAPACITY (MBH)	10
ENTERING AIR TEMPERATURE (DEG F)	55
LEAVING AIR TEMPERATURE (DEG F)	82
ENTERING WATER TEMPERATURE (DEG F)	180
FLOW RATE (GPM)	.5
WATER PRESSURE DROP (FT W.G.)	.5
MOTOR POWER (HP)	1/60
VOLTAGE (V)	115
PHASE	1
FREQUENCY (Hz)	60
BASED ON	MOODIE
MODEL	HC-18 S 01
REMARKS	1

REMARKS LEGEND:
1. PROVIDE UNIT MOUNTED THERMOSTAT.

BOILER SCHEDULE

DESIGNATION	B-1	B-2
LOCATION	MECH ROOM	MECH ROOM
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10
GAS INLET CONNECTION (IN)	1	1
INPUT (MBH)	399	399
OUTPUT (MBH)	375	375
MINIMUM TURN DOWN RATIO	5:1	5:1
FLOWRATE (GPM)	30	30
MAXIMUM PRESSURE DROP (FT_H2O)	8	8
ENTERING WATER TEMPERATURE (DEG F)	160	160
LEAVING WATER TEMPERATURE (DEG F)	185	185
MINIMUM OPERATING PRESSURE (PSI)	30	30
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
TOTAL OPERATING AMPS	1.5	1.5
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	LOCHINVAR	LOCHINVAR
MODEL REMARKS	KB-400	KB-400
REMARKS	1, 2, 3 & 4	1, 2, 3 & 4

REMARKS LEGEND:
1. PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER BOILER.
2. BOILER CIRCULATION PUMP TO BE PROVIDED BY MANUFACTURER AT 30 GPM AT 25 DELTA T.
3. PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.
4. PROVIDE BOILERS WHICH ARE AT LEAST 94% EFFICIENT BASED ON BTS-2000, REV 06 07 CONDITIONS.

FAN SCHEDULE

DESIGNATION	EF-1
USAGE	EXHAUST
SERVES ROOM(S)	MECH ROOM
DESCRIPTION	CENTRIFUGAL
FAN DATA	--
AIRFLOW (SCFM)	550
TOTAL SP (IN-H2O)	.15
RPM	1630
DRIVE TYPE	DIRECT
MOTOR DATA	--
HORSEPOWER	1/6
RPM	1725
VOLTS	115
PHASE	1
HERTZ	60
SELECTION BASED ON	GREENHECK
MODEL	G-985-VG
REMARKS	1, 2 & 3

REMARKS LEGEND:
1. PROVIDE FAN WITH INTEGRAL BACK-DRAFT DAMPER, CONTINUOUS DUTY RATED.
2. PROVIDE FAN WITH UNIT MOUNTED DISCONNECT.
3. PROVIDE WALL MOUNTED THERMOSTAT CONTROL. WIRE INTAKE LOUVER DAMPER IN SERIES WITH FAN TO OPEN UPON FAN OPERATION.

SOLID SEPARATOR SCHEDULE

DESIGNATION	SS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
FLOW RATE (GPM)	69
MAXIMUM PRESSURE DROP (FT-H2O)	14
COLLECTION CHAMBER CAPACITY (GAL)	0.8
BASED ON	LAKOS
MODEL	ILB-0200

AIR SEPARATOR SCHEDULE

DESIGNATION	AS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
LINE SIZE (IN)	3
BASED ON	BELL & GOSSETT
MODEL	ROLAIRTRLO

EXPANSION TANK SCHEDULE

DESIGNATION	ET-1
SERVICE	HEATING WATER
LOCATION	MECH ROOM
TYPE	BLADDER
TANK VOLUME (GAL)	60
FILL PRESSURE (PSI)	20
RELIEF VALVE PRESSURE SETTING (PSI)	100
BASED ON	JOHN WOOD COMPANY
MODEL	JAER-23-607

LOUVER SCHEDULE

DESIGNATION	L-1
USAGE	INTAKE
LOCATION	MECH ROOM
DESCRIPTION	COMBINATION LOUVER/DAMPER
DEPTH (IN)	8
FRAME TYPE	CHANNEL
WIDTH (IN)	32
HEIGHT (IN)	16
AIRFLOW (CFM)	550
FREE AREA (SF)	.75
FREE AREA VELOCITY (FPM)	734
PRESSURE DROP (IN H2O)	.067
SELECTION BASE ON	GREENHECK
ACTUATOR TYPE	120 VAC
ACTUATOR FAIL POSITION	CLOSED
MODEL	EAC-601
REMARKS	1, 2 & 3

REMARKS LEGEND:
1. SUBMIT COLOR CHART. COLOR TO BE APPROVED BY ARCHITECT.
2. SEE ARCHITECTURAL PLANS FOR LOCATION.
3. PROVIDE SPRING RETURN CLOSE, POWERED OPEN BY ACTUATOR.

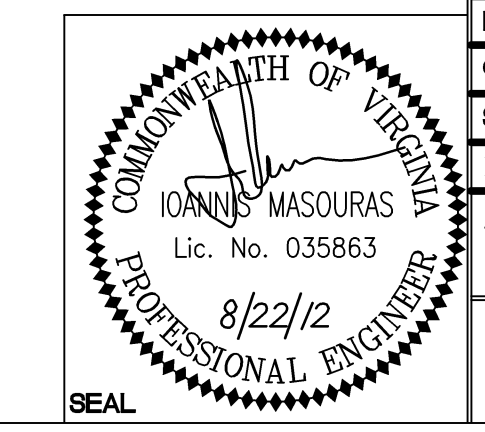
PUMP SCHEDULE

DESIGNATION	HWP-1
SERVICE	HOT WATER
LOCATION	MECH ROOM
TYPE	INLINE
PUMP DATA	-
FLOW (GPM)	69
TOTAL HEAD (FT-H2O)	55
MINIMUM EFFICIENCY (%)	45
CONNECTION SIZE	-
SUCTION (IN)	1.5
DISCHARGE (IN)	1.5
MOTOR DATA	-
MOTOR FRAME	182JM
HORSEPOWER	3
RPM	1750
VOLTS	208
PHASE	1
HERTZ	60
SELECTION BASED ON (MFR)	BELL & GOSSETT
MODEL	80 1-1/2x1-1/2x9-1/2
REMARKS	-

REMARKS LEGEND:
1. BRONZE FITTED PUMP FOR DOMESTIC WATER SERVICE. PROVIDE AQUASTAT CONTROL.

FLOOR DRAIN SCHEDULE

DESIGNATION	FD-1
DRAIN SIZE	3"
DESCRIPTION	ZURN MODEL 415B WITH 6" NICKEL BRONZE STRAINER AND PROSET TRAPGUARD



DISCLOSURE OF INFORMATION

Contractor shall comply as follows:

(a) The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless-

(1) The Contracting Officer has given prior written approval; or

(2) The information is otherwise in the public domain before the date of release.

Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.

(c) The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.

WileyWilson
6606 West Broad St., Suite 500
Richmond, Virginia 23230-1717
804.264.7242
wileywilson.com

M-112
PROJECT NO. CP12-0104
NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

DEPT OF NAVY

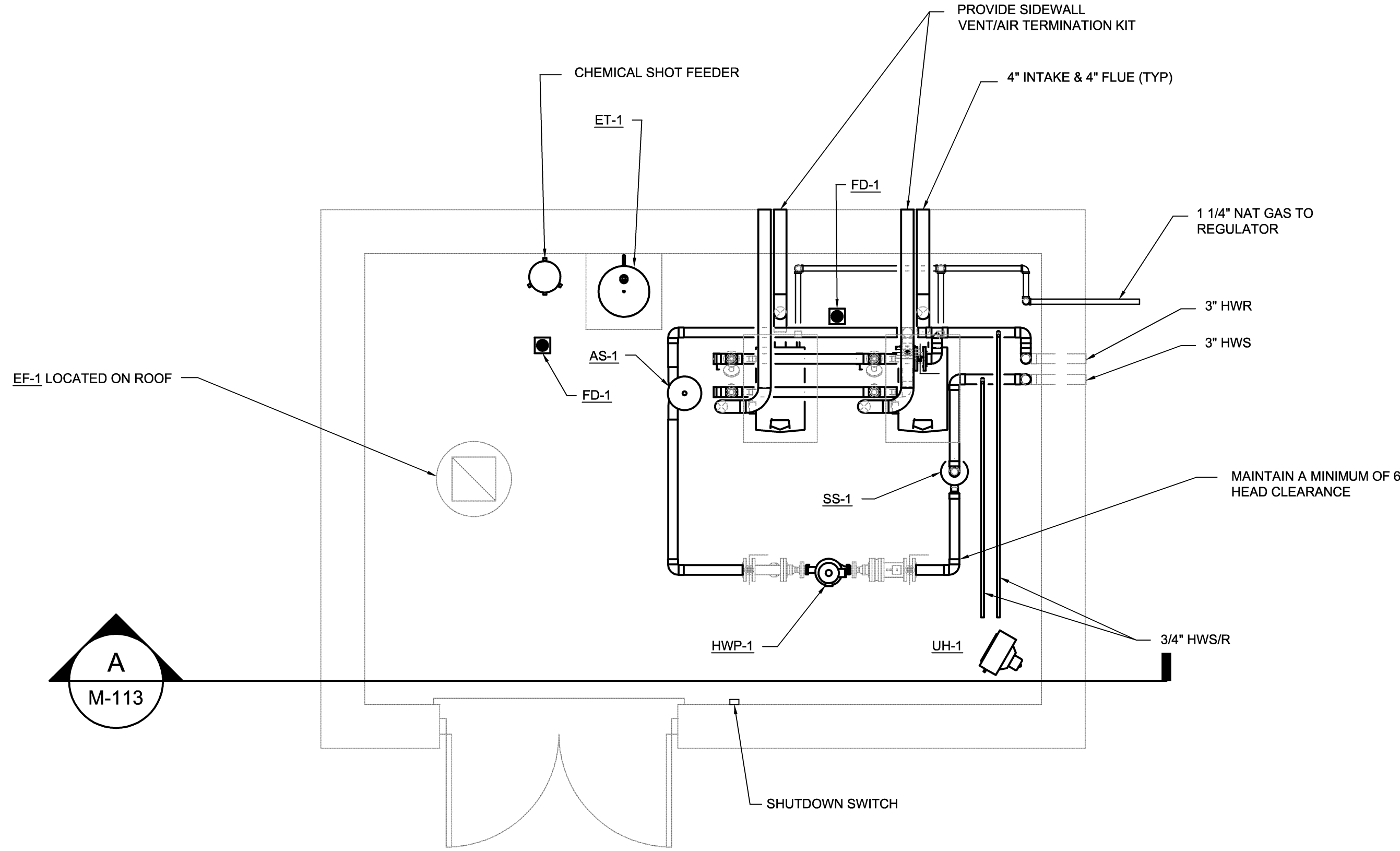
DES. IM
DR. SWL
CHK. JHE
SUBMITTED BY:
DESIGN DR.
APPROVED PWO OR OICC DATE
SATISFACTORY TO DATE

BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT BUILDING 308 MECHANICAL DEMOLITION AND NEW WORK PLAN

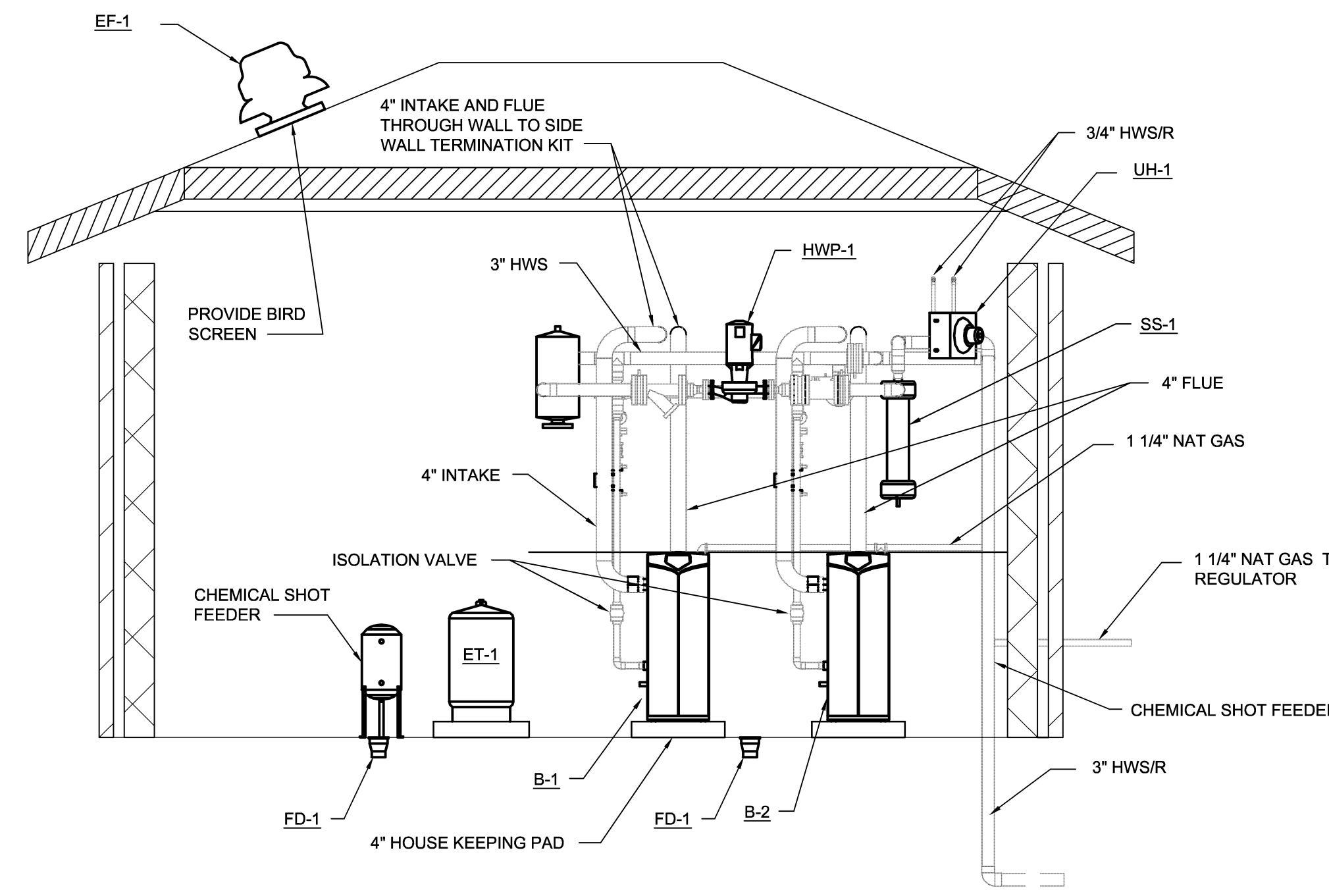
NAVFAC DRAWING NO. 60011288
CONSTR CONTR NO. N40085-12-B-0104

SCALE: AS SHOWN SPEC No. 05-12-0104 SHEET 24 OF 43

SYM.	PREP'D BY	DATE	APPROVED



1 BUILDING 309 NEW MECHANICAL ROOM
3/8"=1'-0"



A MECHANICAL ROOM SECTION
3/8"=1'-0"

NATURAL GAS NOTE:

- TOTAL CONNECTED NATURAL GAS DEMAND FOR THIS BUILDING IS 800 MBH AT 10 IN-H2O.

DEMOLITION NOTES:

- REMOVE HOT WATER PIPING, PUMPS, HEAT EXCHANGERS AND EXPANSION TANKS AS SHOWN. REMOVE ALL ASSOCIATED PIPING, SUPPORTS AND HANGERS. REMOVE ALL STEAM SUPPLY AND CONDENSATE RETURN PIPING, COMPONENTS, HANGERS AND EQUIPMENT.
- CHILLED WATER SYSTEM IS EXISTING TO REMAIN AND SHALL NOT BE INTERRUPTED DURING CONSTRUCTION.
- EXISTING CONTROLS TO REMAIN FOR MODIFICATION AND INTEGRATION WITH NEW BACNET EMCS SYSTEM.
- THE EQUIPMENT AND BUILDING LAYOUT IS BASED ON THE BASIS OF DESIGN EQUIPMENT CLEARANCES. ANY MODIFICATION REQUIRED FOR ACCEPTABLE ALTERNATE MANUFACTURERS SHALL BE PROVIDED BY THE CONTRACTOR IF NECESSARY.

GENERAL NOTES:

- SEE GENERAL NOTES ON SHEET M-001.
- DOMESTIC HOT WATER SYSTEM FOR THIS BUILDING IS EXISTING TO REMAIN.
- MAINTAIN MANUFACTURER RECOMMENDED CLEARANCE AROUND ALL EQUIPMENT. FOR BOILERS, PROVIDE A MINIMUM 30" PIPING AND MAINTENANCE CLEARANCE ON ALL SIDES. AT LEAST EVERY OTHER SIDE SHALL HAVE 30" CLEAR FLOOR SPACE FOR PERSONNEL ACCESS. FOR WATER HEATERS, PROVIDE MINIMUM 15" CLEARANCE TO THE SIDES AND REAR AND A MINIMUM 30" IN THE FRONT.
- THE LOCATION OF ALL DUCT, PIPING AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE ANTICIPATED OR ENCOUNTERED INTERFERENCES. THESE PLANS ARE PARTIALLY DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. ALL PIPING OFFSETS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- INSTALL GAS PIPE IN ACCORDANCE WITH 2012 NORTH CAROLINA FUEL GAS CODE.
- PROVIDE HOSE BIB AND 1/2" CONNECTION FOR FILLING IN NEW MECHANICAL ROOM.
- PROVIDE FLOOR DRAINS AS SHOWN ON FLOOR PLAN. CONTRACTOR TO VERIFY NEAREST SEWER MAIN. FOR PRICING PURPOSES, ASSUME 200 YARDS OF SANITARY PIPING. PROVIDE VENT THROUGH ROOF FOR FLOOR DRAINS IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE.
- PROVIDE APPURTENANCES TO COMPLY WITH ASME CSD-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUTDOWN SWITCH LOCATED ADJACENT TO EXIT DOOR.
- EXISTING BUILDING HAS A DUAL TEMPERATURE SYSTEM CONTROLLED BY MANUAL HEATING/COOLING CHANGEOVER SWITCH. THE NEW SYSTEM SHALL BE INCORPORATED INTO THE CHANGEOVER CONTROL.

BOILER SCHEDULE		
DESIGNATION	B-1	B-2
LOCATION	MECH ROOM	MECH ROOM
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10
GAS INLET CONNECTION (IN)	1	1
INPUT (MBH)	399	399
OUTPUT (MBH)	375	375
MINIMUM TURN DOWN RATIO	5:1	5:1
FLOWRATE (GPM)	30	30
MAXIMUM PRESSURE DROP (FT_H2O)	8	8
ENTERING WATER TEMPERATURE (DEG F)	160	160
LEAVING WATER TEMPERATURE (DEG F)	185	185
MINIMUM OPERATING PRESSURE (PSI)	30	30
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
TOTAL OPERATING AMPS	1.5	1.5
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	LOCHINVAR	LOCHINVAR
MODEL REMARKS	KB-400	KB-400
REMARKS	1, 2, 3 & 4	1, 2, 3 & 4

- REMARKS LEGEND:
- PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER BOILER.
 - BOILER CIRCULATION PUMP TO BE PROVIDED BY MANUFACTURER AT 30 GPM AT 25 DELTA T.
 - PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.
 - PROVIDE BOILERS WHICH ARE AT LEAST 94% EFFICIENT BASED ON BTS-2000, REV 06.07 CONDITIONS.

FAN SCHEDULE	
DESIGNATION	EF-1
USAGE	EXHAUST
SERVES ROOM(S)	MECH ROOM
DESCRIPTION	CENTRIFUGAL
FAN DATA	--
AIRFLOW (SCFM)	550
TOTAL SP (IN-H2O)	.15
RPM	1630
DRIVE TYPE	DIRECT
MOTOR DATA	--
HORSEPOWER	1/8
RPM	1725
VOLTS	115
PHASE	1
HERTZ	60
SELECTION BASED ON	GREENHECK
MODEL	G-985-VG
REMARKS	1, 2 & 3

- REMARKS LEGEND:
- PROVIDE FAN WITH INTEGRAL BACK-DRAFT DAMPER, CONTINUOUS DUTY RATED.
 - PROVIDE FAN WITH UNIT MOUNTED DISCONNECT.
 - PROVIDE WALL MOUNTED THERMOSTAT CONTROL, WIRE INTAKE LOUVER DAMPER IN SERIES WITH FAN TO OPEN UPON FAN OPERATION.

UNIT HEATER SCHEDULE	
DESIGNATION	UH-1
LOCATION	MECH ROOM
AIRFLOW (CFM)	340
HEATING CAPACITY (MBH)	10
ENTERING AIR TEMPERATURE (DEG F)	55
LEAVING AIR TEMPERATURE (DEG F)	82
ENTERING WATER TEMPERATURE (DEG F)	180
FLOW RATE (GPM)	.5
WATER PRESSURE DROP (FT W.G.)	.5
MOTOR POWER (HP)	1/80
VOLTAGE (V)	115
PHASE	1
FREQUENCY (Hz)	60
BASED ON	MODINE
MODEL	HC-18 S 01
REMARKS	1

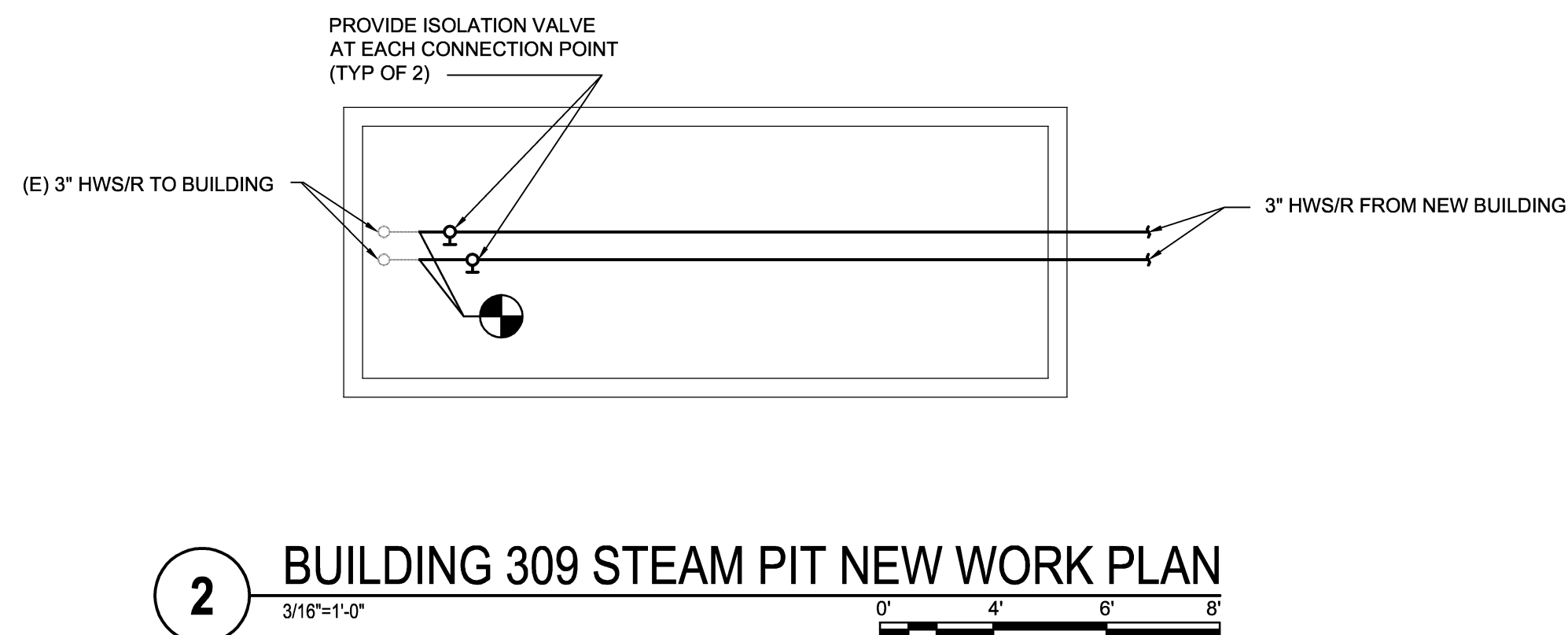
- REMARKS LEGEND:
- PROVIDE UNIT MOUNTED THERMOSTAT.

SOLID SEPARATOR SCHEDULE	
DESIGNATION	SS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
FLOW RATE (GPM)	69
MAXIMUM PRESSURE DROP (FT-H2O)	14
COLLECTION CHAMBER CAPACITY (GAL)	0.8
BASED ON	LAKOS
MODEL	ILB-0200

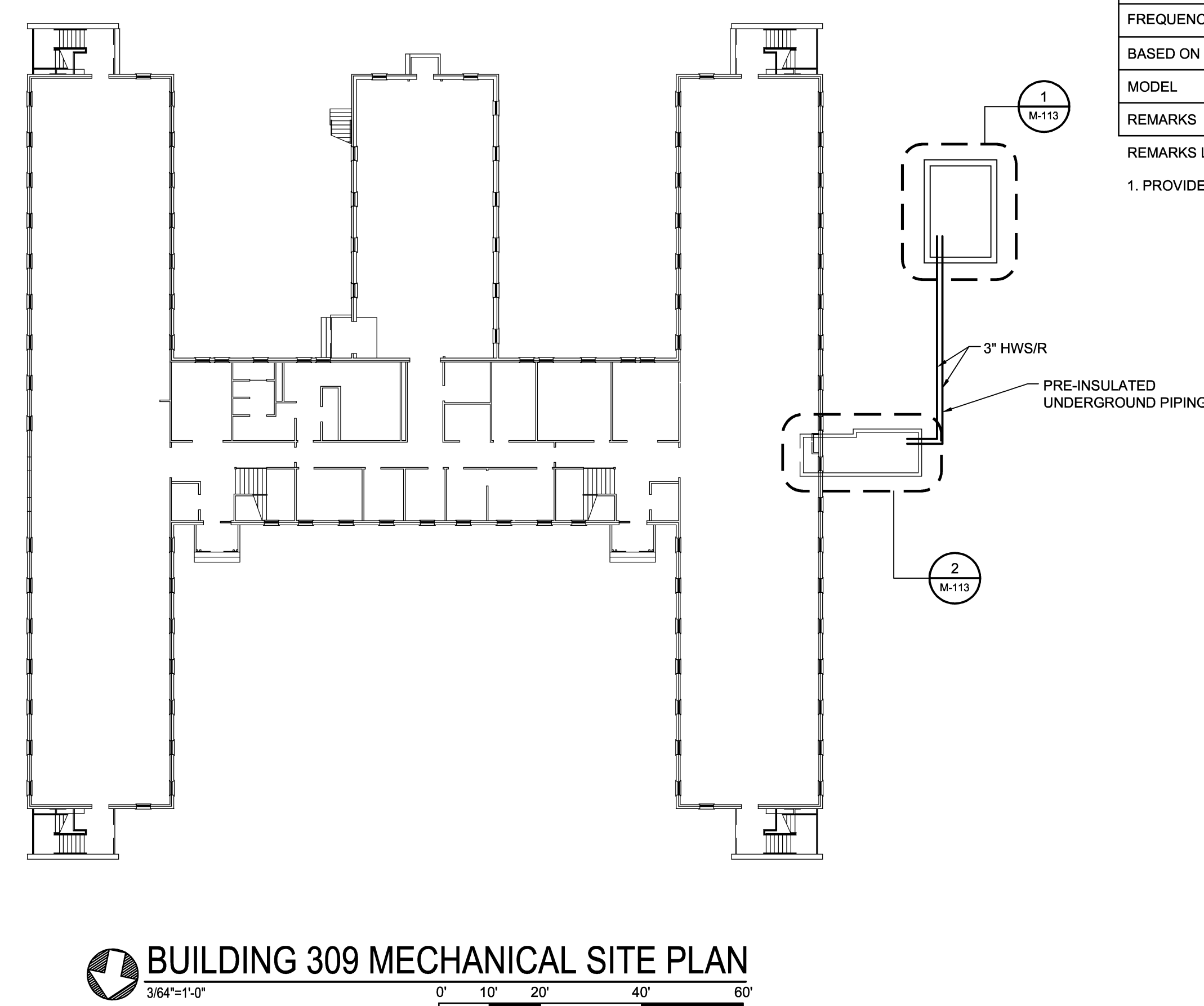
AIR SEPARATOR SCHEDULE	
DESIGNATION	AS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
LINE SIZE (IN)	3
BASED ON	BELL & GOSSETT
MODEL	ROLAIRTR0L

LOUVER SCHEDULE	
DESIGNATION	L-1
USAGE	INTAKE
LOCATION	MECH ROOM
DESCRIPTION	COMBINATION LOUVER/DAMPER
DEPTH (IN)	8
FRAME TYPE	CHANNEL
WIDTH (IN)	32
HEIGHT (IN)	16
AIRFLOW (CFM)	550
FREE AREA (SF)	.75
FREE AREA VELOCITY (FPM)	734
PRESSURE DROP (IN H2O)	.067
SELECTION BASE ON	GREENHECK
ACTUATOR TYPE	120 VAC
ACTUATOR FAIL POSITION	CLOSED
MODEL	EAC-601
REMARKS	1, 2 & 3

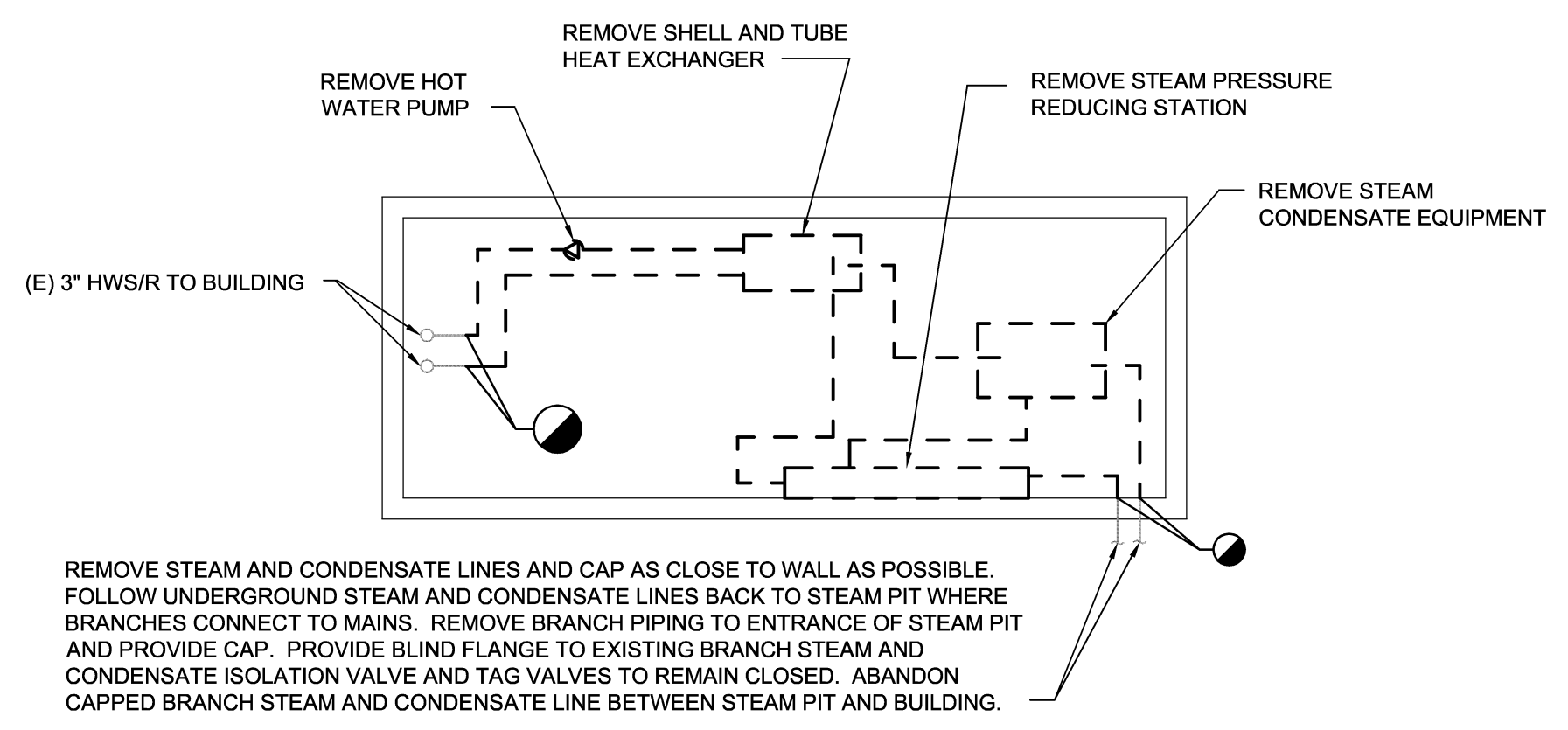
- REMARKS LEGEND:
- SUBMIT COLOR CHART. COLOR TO BE APPROVED BY ARCHITECT.
 - SEE ARCHITECTURAL PLANS FOR LOCATION.
 - PROVIDE SPRING RETURN CLOSE, POWERED OPEN BY ACTUATOR.



2 BUILDING 309 STEAM PIT NEW WORK PLAN
3/16"=1'-0"



BUILDING 309 MECHANICAL SITE PLAN
3/8"=1'-0"

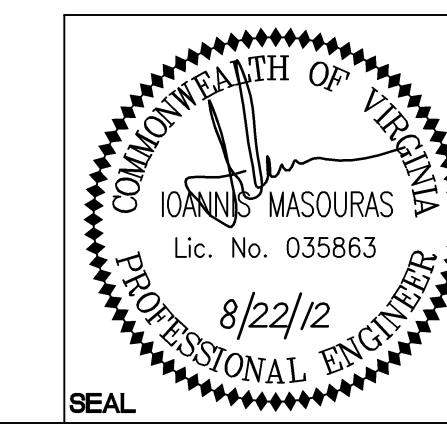


2 BUILDING 309 STEAM PIT DEMOLITION PLAN
3/16"=1'-0"

DISCLOSURE OF INFORMATION

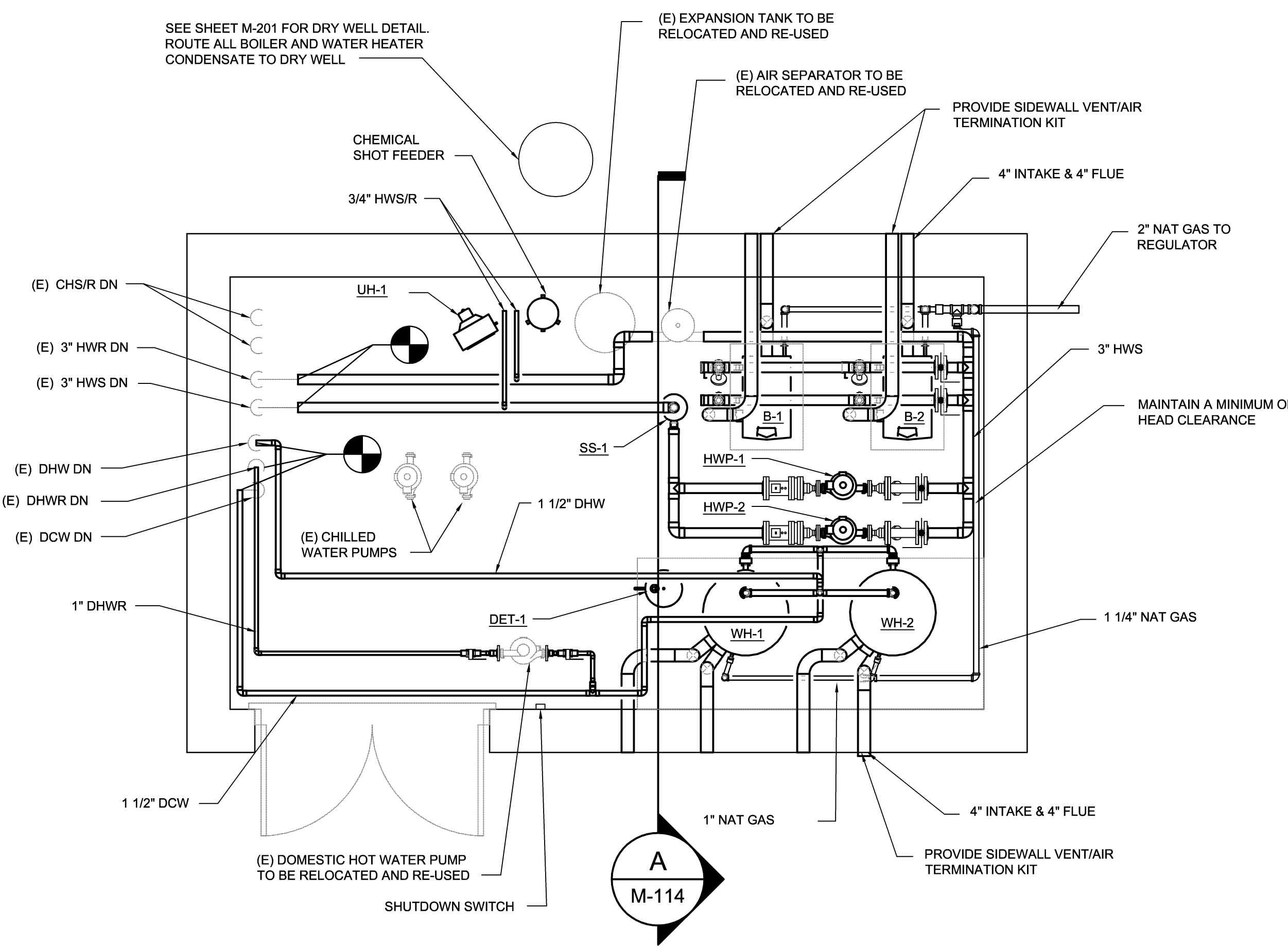
- Contractor shall comply as follows:
- The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless:
 - The Contracting Officer has given prior written approval; or
 - The information is otherwise in the public domain before the date of release.
 - Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.
 - The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.

FLOOR DRAIN SCHEDULE		
DESIGNATION	DRAIN SIZE	DESCRIPTION
FD-1	3"	ZURN MODEL 415B WITH 6" NICKEL BRONZE STRAINER AND PROSET TRAPGUARD

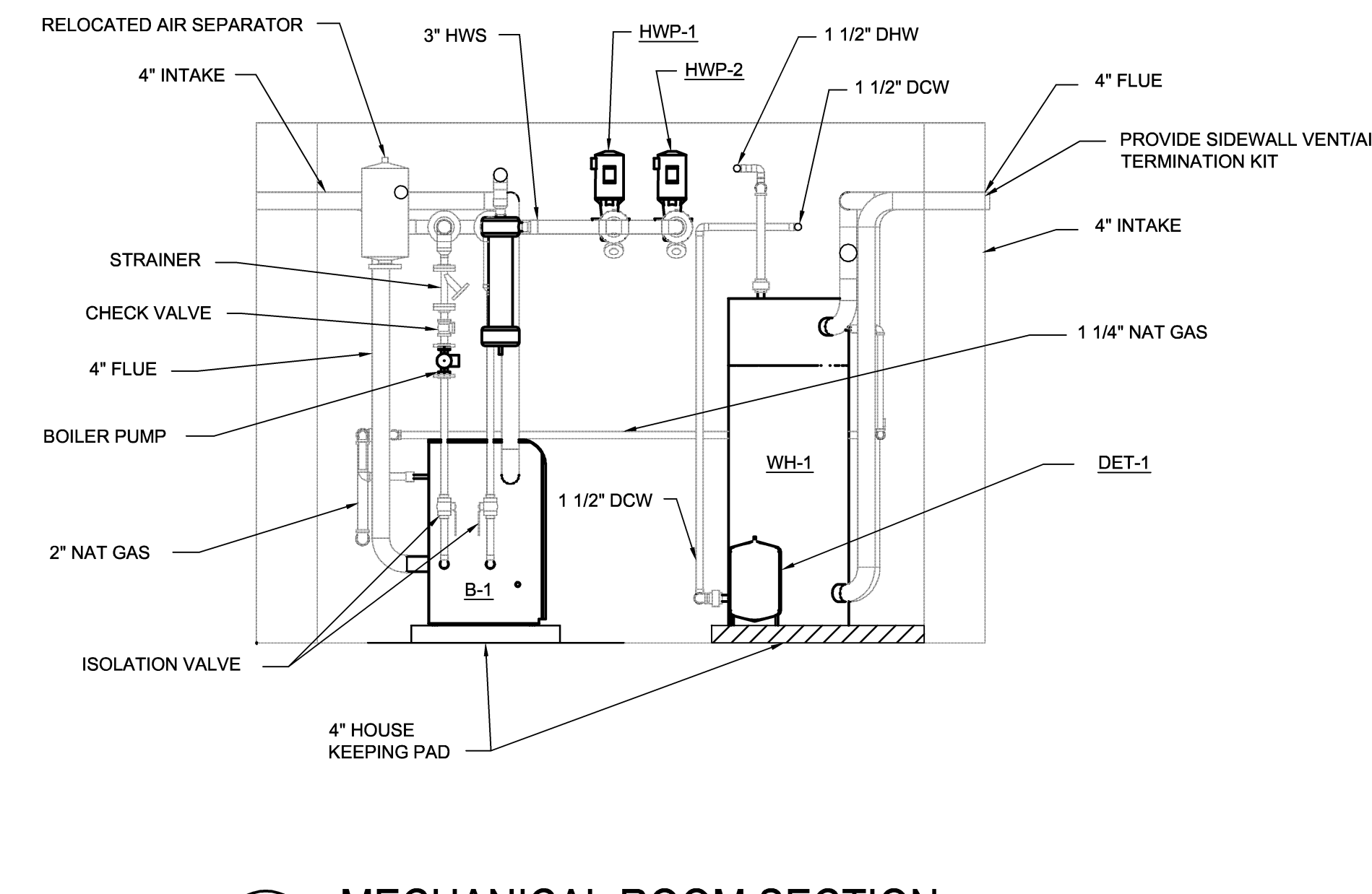


 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.264.7242 wileywilson.com		M-113 PROJECT NO. CP12-0104 NAVAL FACILITIES ENGINEERING COMMAND	
DEPT OF NAVY MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA		BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT BUILDING 309 MECHANICAL DEMOLITION AND NEW WORK PLAN	
DES. IM	DR. SWL	CHK. JHE	DESIGN DR.
APPROVED PWO OR OICC	DATE	SIZE	CODE IDENT NO.
		E	80091
SATISFACTORY TO	DATE	CONSTR CONTR NO.	NAVFAC DRAWING NO.
		N40085-12-B-0104	60011289
SCALE: AS SHOWN	SPEC No.	05-12-0104	SHEET 25 OF 43

SYM.	PREP'D BY	DATE	APPROVED



BUILDING 312A MECHANICAL ROOM PLAN
3/8"=1'-0"



A MECHANICAL ROOM SECTION
3/8"=1'-0"

NOTE: EXISTING PIPING NOT SHOWN FOR CLARITY

NATURAL GAS NOTE:

- 1. TOTAL CONNECTED NATURAL GAS DEMAND FOR THIS BUILDING IS 1,100 MBH AT 10 IN-H2O.

DEMOLITION NOTES

- 1. REMOVE HOT WATER PIPING, PUMPS, HEAT EXCHANGERS AND EXPANSION TANKS AS SHOWN. REMOVE ALL ASSOCIATED PIPING, SUPPORTS AND HANGERS. REMOVE ALL STEAM SUPPLY AND CONDENSATE RETURN PIPING, COMPONENTS, HANGERS AND EQUIPMENT.
- 2. CHILLED WATER SYSTEM IS EXISTING TO REMAIN AND SHALL NOT BE INTERRUPTED DURING CONSTRUCTION.
- 3. EXISTING CONTROLS TO REMAIN FOR MODIFICATION AND INTEGRATION WITH NEW BACNET EMCS SYSTEM.
- 4. THE EQUIPMENT AND BUILDING LAYOUT IS BASED ON THE BASIS OF DESIGN EQUIPMENT CLEARANCES. ANY MODIFICATION REQUIRED FOR ACCEPTABLE ALTERNATE MANUFACTURERS SHALL BE PROVIDED BY THE CONTRACTOR IF NECESSARY.

GENERAL NOTES

- 1. SEE GENERAL NOTES ON SHEET M-001.
- 2. BUILDING 312A IS THE EXISTING MECHANICAL ROOM THAT SERVES BUILDING 312.
- 3. MAINTAIN MANUFACTURER RECOMMENDED CLEARANCE AROUND ALL EQUIPMENT. FOR BOILERS, PROVIDE A MINIMUM 30" PIPING AND MAINTENANCE CLEARANCE ON ALL SIDES. AT LEAST EVERY OTHER SIDE SHALL HAVE 30" CLEAR FLOOR SPACE FOR PERSONNEL ACCESS. FOR WATER HEATERS, PROVIDE MINIMUM 15" CLEARANCE TO THE SIDES AND REAR AND A MINIMUM 30" IN THE FRONT.
- 4. THE LOCATION OF ALL DUCT, PIPING AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE ANTICIPATED OR ENCOUNTERED INTERFERENCES. THESE PLANS ARE PARTIALLY DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. ALL PIPING OFFSETS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- 5. INSTALL GAS PIPE IN ACCORDANCE WITH 2012 NORTH CAROLINA FUEL GAS CODE.
- 6. PROVIDE HOSE BIB AND 1/2" CONNECTION FOR FILLING IN NEW MECHANICAL ROOM.
- 7. PROVIDE FLOOR DRAINS AS SHOWN ON FLOOR PLAN. CONTRACTOR TO VERIFY NEAREST SEWER MAIN. FOR PRICING PURPOSES, ASSUME 200 YARDS OF SANITARY PIPING. PROVIDE VENT THROUGH ROOF FOR FLOOR DRAINS IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE.
- 8. STORE DOMESTIC HOT WATER AT 140 DEG F AND TEMPER TO 110 DEG F BEFORE BEING SUPPLIED TO BUILDING. PROVIDE MIXING VALVE.
- 9. PROVIDE APPURTENANCES TO COMPLY WITH ASME CSD-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUTDOWN SWITCH LOCATED ADJACENT TO EXIT DOOR.

DESIGNATION	B-1	B-2
LOCATION	MECH ROOM	MECH ROOM
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10
GAS INLET CONNECTION (IN)	1	1
INPUT (MBH)	399	399
OUTPUT (MBH)	375	375
MINIMUM TURN DOWN RATIO	5:1	5:1
FLOWRATE (GPM)	30	30
MAXIMUM PRESSURE DROP (FT. H2O)	8	8
ENTERING WATER TEMPERATURE (DEG F)	160	160
LEAVING WATER TEMPERATURE (DEG F)	185	185
MINIMUM OPERATING PRESSURE (PSI)	30	30
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
TOTAL OPERATING AMPS	1.5	1.5
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	LOCHINVAR	LOCHINVAR
MODEL REMARKS	KB-400	KB-400
REMARKS	1, 2, 3 & 4	1, 2, 3 & 4

REMARKS LEGEND:

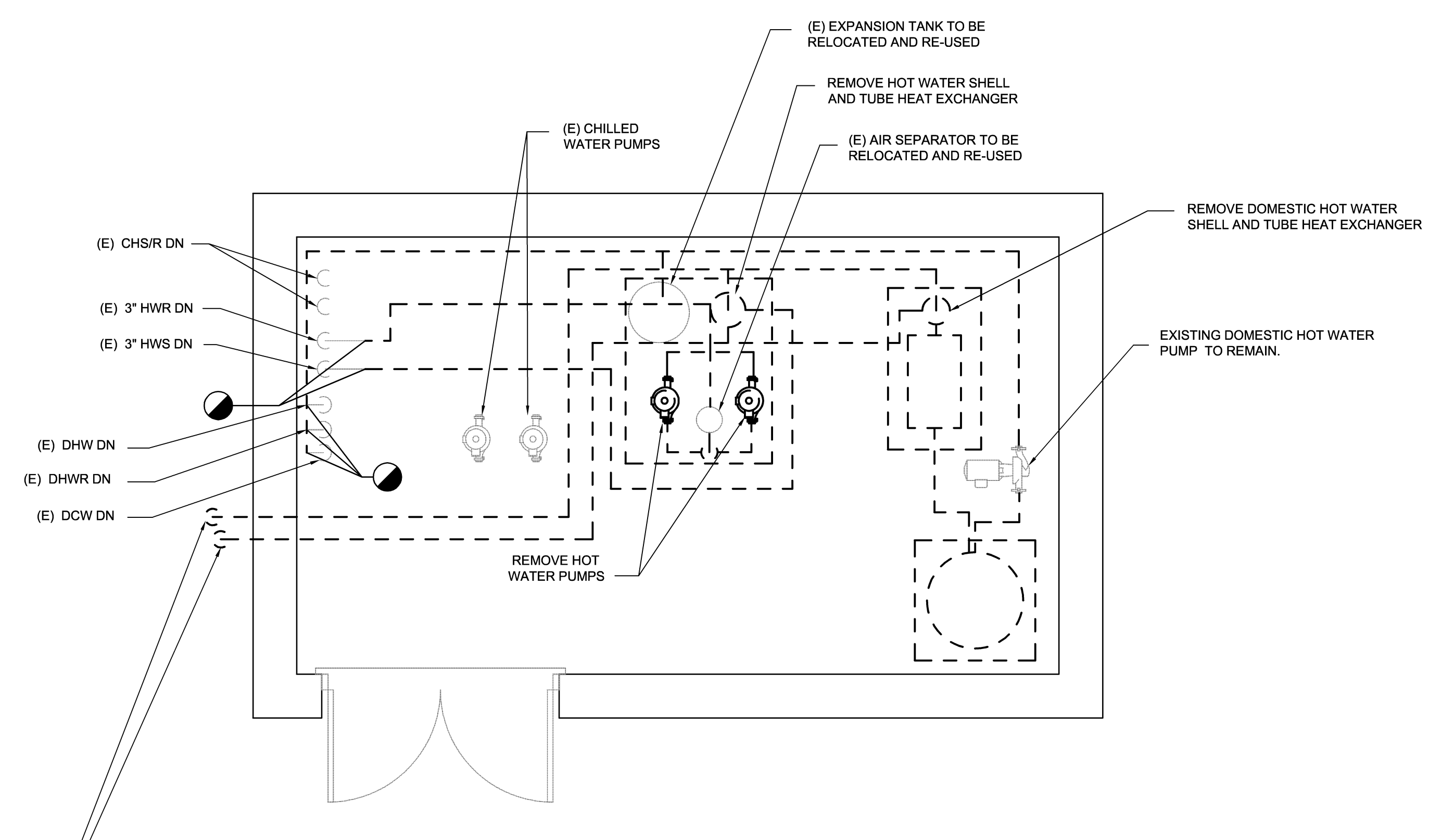
1. PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER BOILER.
2. BOILER CIRCULATION PUMP TO BE PROVIDED BY MANUFACTURER AT 30 GPM AT 25 DELTA T.
3. PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.
4. PROVIDE BOILERS WHICH ARE AT LEAST 94% EFFICIENT BASED ON BTS-2000, REV 06.07 CONDITIONS.

DESIGNATION	UH-1
LOCATION	MECH ROOM
AIRFLOW (CFM)	340
HEATING CAPACITY (MBH)	10
ENTERING AIR TEMPERATURE (DEG F)	55
LEAVING AIR TEMPERATURE (DEG F)	82
ENTERING WATER TEMPERATURE (DEG F)	180
FLOW RATE (GPM)	.5
WATER PRESSURE DROP (FT W.G.)	.5
MOTOR POWER (HP)	1/60
VOLTAGE (V)	115
PHASE	1
FREQUENCY (Hz)	60
BASED ON	MODINE
MODEL	HC-18 S 01
REMARKS	1

REMARKS LEGEND:

1. PROVIDE UNIT MOUNTED THERMOSTAT.

DESIGNATION	SS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
FLOW RATE (GPM)	78
MAXIMUM PRESSURE DROP (FT-H2O)	16
COLLECTION CHAMBER CAPACITY (GAL)	0.8
BASED ON	LAKOS
MODEL	ILB-0200



BUILDING 312A MECHANICAL DEMOLITION PLAN
3/8"=1'-0"

REMOVE STEAM AND CONDENSATE LINES AND CAP UNDERGROUND. FOLLOW UNDERGROUND STEAM AND CONDENSATE LINES BACK TO STEAM PIT WHERE BRANCHES CONNECT TO MAINS. REMOVE BRANCH PIPING TO ENTRANCE OF STEAM PIT AND PROVIDE CAP. PROVIDE BLIND FLANGE TO EXISTING BRANCH STEAM AND CONDENSATE ISOLATION VALVE AND TAG VALVES TO REMAIN CLOSED. ABANDON CAPPED BRANCH STEAM AND CONDENSATE LINE BETWEEN STEAM PIT AND BUILDING.

DESIGNATION	HWP-1	HWP-2
SERVICE	HOT WATER	HOT WATER
LOCATION	MECH ROOM	MECH ROOM
TYPE	INLINE	INLINE
PUMP DATA	-	-
FLOW (GPM)	78	78
TOTAL HEAD (FT-H2O)	80	80
MINIMUM EFFICIENCY (%)	50	50
CONNECTION SIZE	-	-
SUCTION (IN)	1.5	1.5
DISCHARGE (IN)	1.5	1.5
MOTOR DATA	-	-
MOTOR FRAME	184JM	184JM
HORSEPOWER	5	5
RPM	1750	1750
VOLTS	208	208
PHASE	1	1
HERTZ	60	60
SELECTION BASED ON (MFR)	BELL & GOSSETT	BELL & GOSSETT
MODEL	80 1-1/2x1-1/2x9-1/2	80 1-1/2x1-1/2x9-1/2
REMARKS	-	-

REMARKS LEGEND:

1. BRONZE FITTED PUMP FOR DOMESTIC WATER SERVICE. PROVIDE AQUASTAT CONTROL.

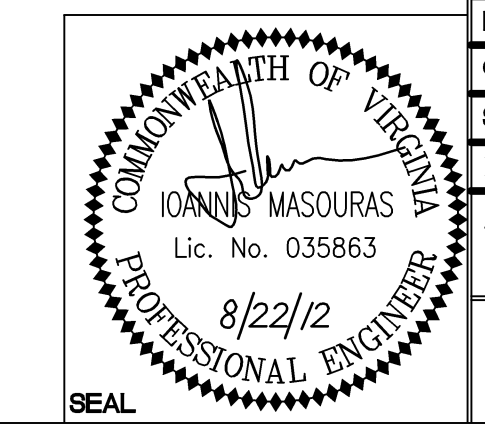
DESIGNATION	WH-1	WH-2
LOCATION	MECH ROOM	MECH ROOM
STORAGE (GALLONS)	100	100
GPH AT 100 DEG F RISE	173	173
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4.8	4.8
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10.5	10.5
GAS INLET CONNECTION (IN)	3/4	3/4
INPUT (MBH)	150	150
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	STATE	STATE
MODEL	SUF 100 150 NE	SUF 100 150 NE
REMARKS	1 & 2	1 & 2

REMARKS LEGEND:

1. PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER WATER HEATER.
2. PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.

DESIGNATION	DET-1
SERVICE	DOMESTIC HOT WATER
LOCATION	MECH ROOM
TYPE	BLADDER
TANK VOLUME (GAL)	14
FILL PRESSURE (PSI)	60
RELIEF VALVE PRESSURE SETTING (PSI)	100
BASED ON	AMTROL
MODEL	ST-C SERIES ST-42V-C

* MATCH DOMESTIC WATER SUPPLY PRESSURE AT THIS LOCATION.



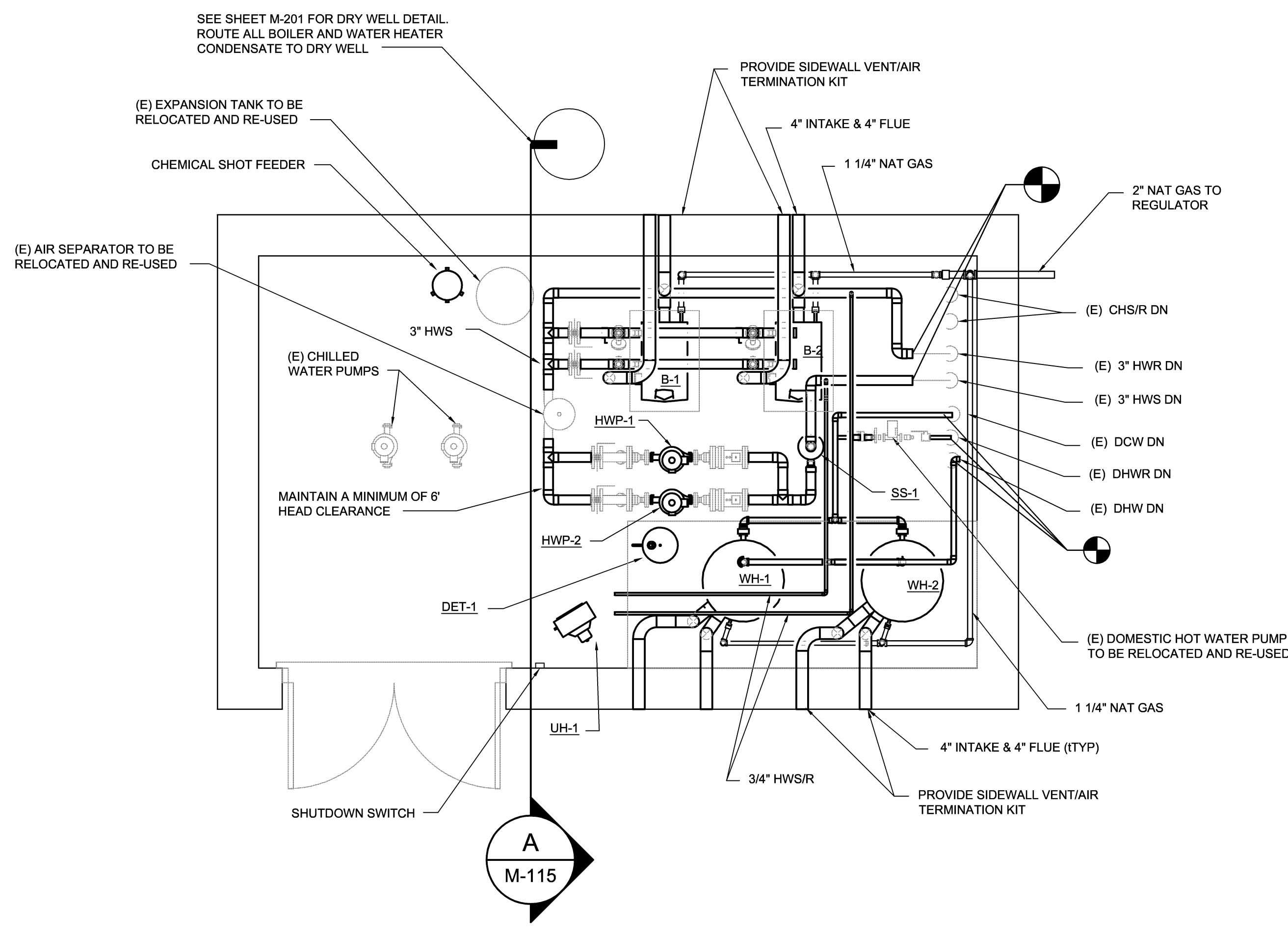
<p>WileyWilson 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.264.7242 wileywilson.com</p>	<p>M-114</p> <p>PROJECT NO. CP12-004</p>	
	<p>NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA</p>	
<p>DES. IM</p> <p>DR. SWL</p> <p>CHK. JHE</p> <p>SUBMITTED BY:</p> <p>DESIGN DR.</p> <p>APPROVED PWO OR OICC</p> <p>SATISFACTORY TO</p>	<p>DATE</p> <p>DATE</p> <p>DATE</p>	<p>SIZE</p> <p>E</p> <p>SCALE: AS SHOWN</p>
<p>CODE IDENT NO.</p> <p>80091</p> <p>CONSTR CONTR NO.</p> <p>N40085-12-B-0104</p>	<p>NAVFAC DRAWING NO.</p> <p>60011290</p>	<p>SHEET 26 OF 43</p>

DISCLOSURE OF INFORMATION

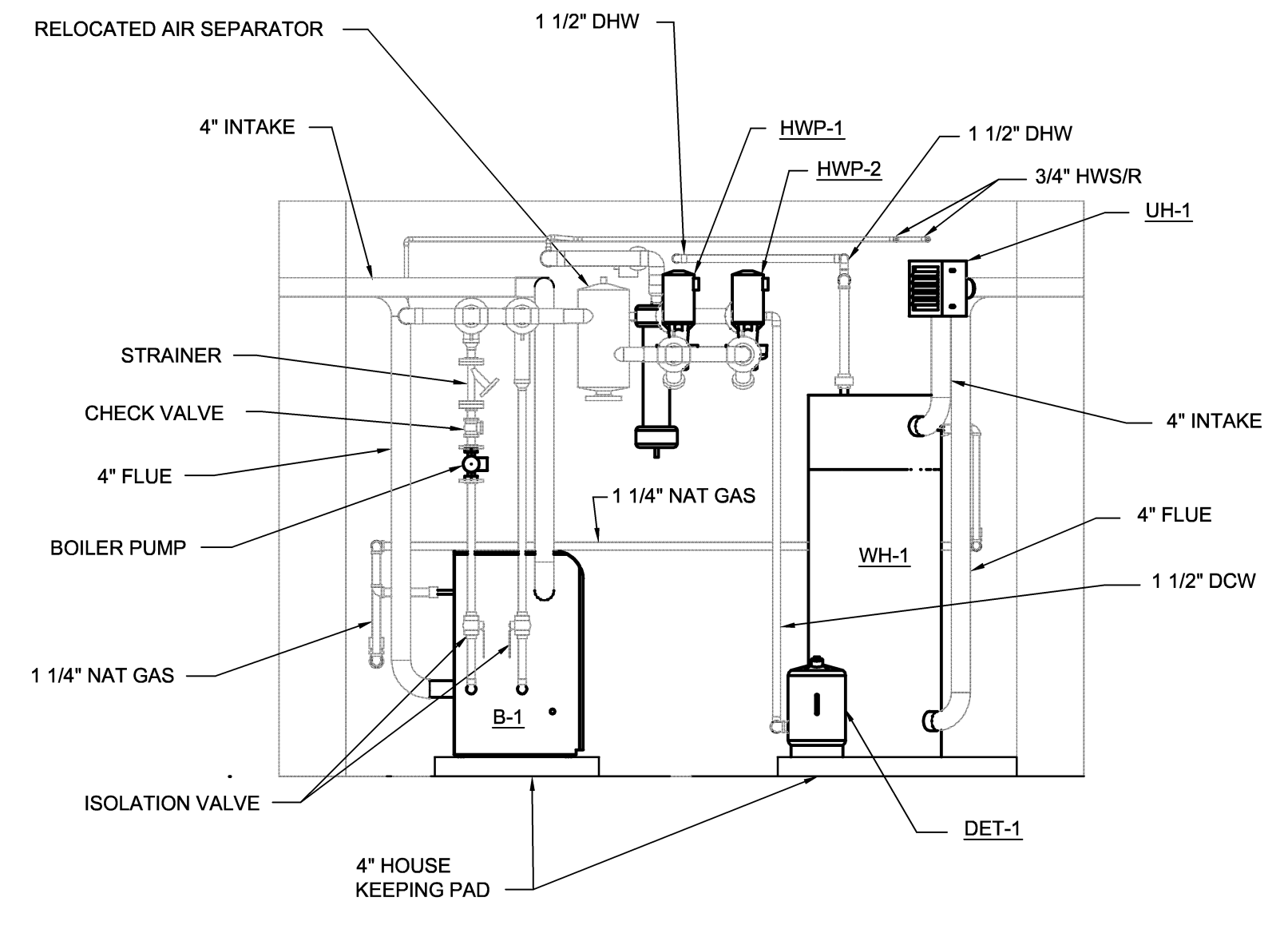
Contractor shall comply as follows:

- The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless:
 - The Contracting Officer has given prior written approval; or
 - The information is otherwise in the public domain before the date of release.
- Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.
- The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.

SYM.	PREP'D BY	DATE	APPROVED



BUILDING 313A MECHANICAL ROOM PLAN
3/8"=1'-0"



MECHANICAL ROOM SECTION
3/8"=1'-0"

NOTE: EXISTING PIPING NOT SHOWN FOR CLARITY

NATURAL GAS NOTE:

- TOTAL CONNECTED NATURAL GAS DEMAND FOR THIS BUILDING IS 1,100 MBH AT 10 IN-H2O.

DEMOLITION NOTES

- REMOVE HOT WATER PIPING, PUMPS, HEAT EXCHANGERS AND EXPANSION TANKS AS SHOWN. REMOVE ALL ASSOCIATED PIPING, SUPPORTS AND HANGERS. REMOVE ALL STEAM SUPPLY AND CONDENSATE RETURN PIPING, COMPONENTS, HANGERS AND EQUIPMENT.
- CHILLED WATER SYSTEM IS EXISTING TO REMAIN AND SHALL NOT BE INTERRUPTED DURING CONSTRUCTION.
- EXISTING CONTROLS TO REMAIN FOR MODIFICATION AND INTEGRATION WITH NEW BACNET EMCS SYSTEM.
- EQUIPMENT AND BUILDING LAYOUT IS BASED ON THE BASIS OF DESIGN EQUIPMENT CLEARANCES. ANY MODIFICATION REQUIRED FOR ACCEPTABLE ALTERNATE MANUFACTURERS SHALL BE PROVIDED BY THE CONTRACTOR IF NECESSARY.

GENERAL NOTES

- SEE GENERAL NOTES ON SHEET M-001.
- BUILDING 313A IS THE EXISTING MECHANICAL ROOM THAT SERVES BUILDING 313.
- MAINTAIN MANUFACTURER RECOMMENDED CLEARANCE AROUND ALL EQUIPMENT. FOR BOILERS, PROVIDE A MINIMUM 30" PIPING AND MAINTENANCE CLEARANCE ON ALL SIDES. AT LEAST EVERY OTHER SIDE SHALL HAVE 30" CLEAR FLOOR SPACE FOR PERSONNEL ACCESS. FOR WATER HEATERS, PROVIDE MINIMUM 15" CLEARANCE TO THE SIDES AND REAR AND A MINIMUM 30" IN THE FRONT.
- THE LOCATION OF ALL DUCT, PIPING AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE ANTICIPATED OR ENCOUNTERED INTERFERENCES. THESE PLANS ARE PARTIALLY DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. ALL PIPING OFFSETS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- INSTALL GAS PIPE IN ACCORDANCE WITH 2012 NORTH CAROLINA FUEL GAS CODE.
- PROVIDE HOSE BIB AND 1/2" CONNECTION FOR FILLING IN NEW MECHANICAL ROOM.
- PROVIDE FLOOR DRAINS AS SHOWN ON FLOOR PLAN. CONTRACTOR TO VERIFY NEAREST SEWER MAIN. FOR PRICING PURPOSES, ASSUME 200 YARDS OF SANITARY PIPING. PROVIDE VENT THROUGH ROOF FOR FLOOR DRAINS IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE.
- STORE DOMESTIC HOT WATER AT 140 DEG F AND TEMPER TO 110 DEG F BEFORE BEING SUPPLIED TO BUILDING. PROVIDE MIXING VALVE.
- PROVIDE APPURTENANCES TO COMPLY WITH ASME CSD-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUTDOWN SWITCH LOCATED ADJACENT TO EXIT DOOR.

DESIGNATION	B-1	B-2
LOCATION	MECH ROOM	MECH ROOM
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10
GAS INLET CONNECTION (IN)	1	1
INPUT (MBH)	399	399
OUTPUT (MBH)	375	375
MINIMUM TURN DOWN RATIO	5:1	5:1
FLOWRATE (GPM)	30	30
MAXIMUM PRESSURE DROP (FT. H2O)	8	8
ENTERING WATER TEMPERATURE (DEG F)	160	160
LEAVING WATER TEMPERATURE (DEG F)	185	185
MINIMUM OPERATING PRESSURE (PSI)	30	30
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
TOTAL OPERATING AMPS	1.5	1.5
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	LOCHINVAR	LOCHINVAR
MODEL REMARKS	KB-400	KB-400
REMARKS	1, 2, 3 & 4	1, 2, 3 & 4

REMARKS LEGEND:

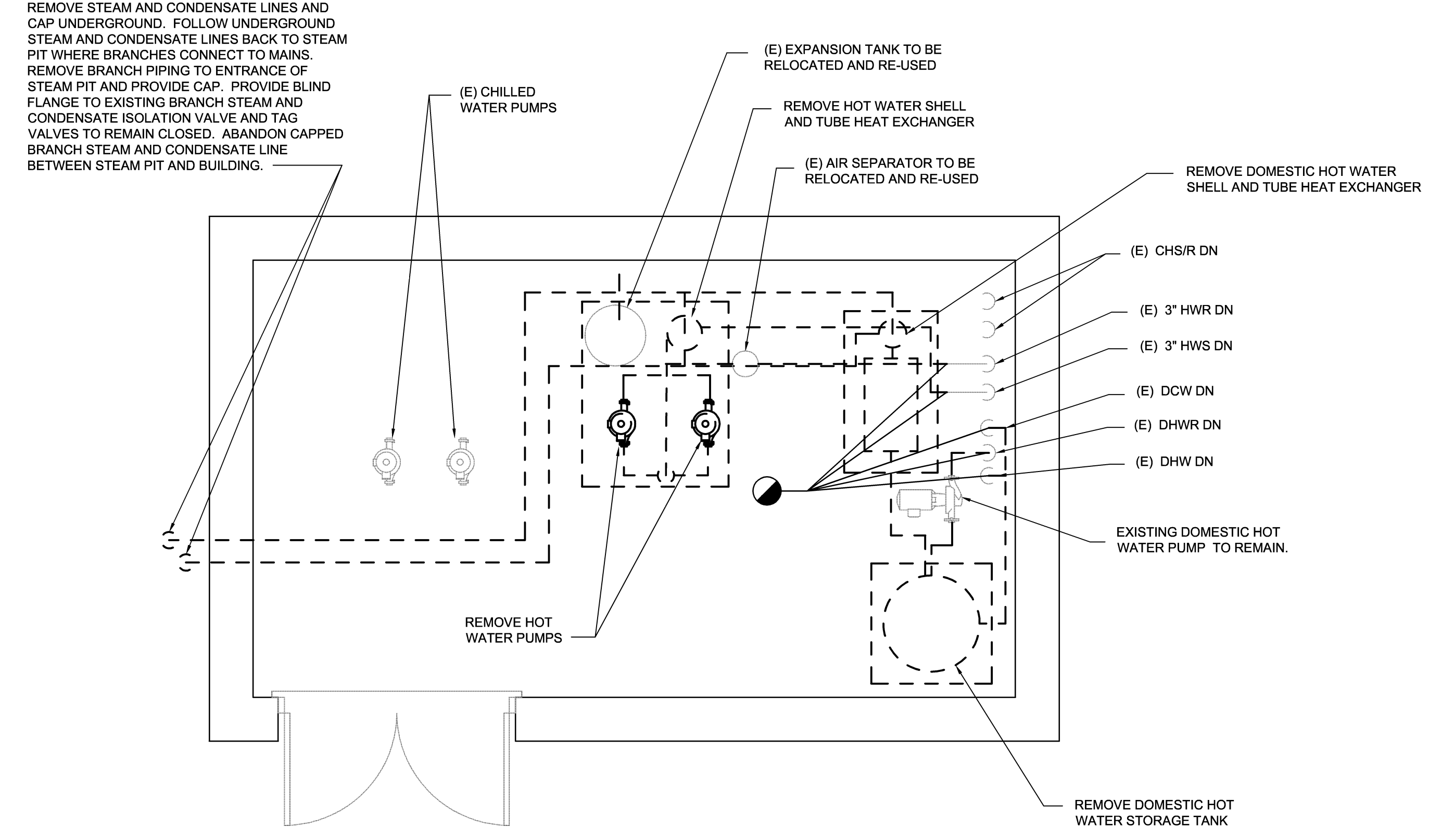
- PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER BOILER.
- BOILER CIRCULATION PUMP TO BE PROVIDED BY MANUFACTURER AT 30 GPM AT 25 DELTA T.
- PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.
- PROVIDE BOILERS WHICH ARE AT LEAST 94% EFFICIENT BASED ON BTS-2000, REV 06.07 CONDITIONS.

DESIGNATION	UH-1
LOCATION	MECH ROOM
AIRFLOW (CFM)	340
HEATING CAPACITY (MBH)	10
ENTERING AIR TEMPERATURE (DEG F)	55
LEAVING AIR TEMPERATURE (DEG F)	82
ENTERING WATER TEMPERATURE (DEG F)	180
FLOW RATE (GPM)	.5
WATER PRESSURE DROP (FT. W.G.)	.5
MOTOR POWER (HP)	1/60
VOLTAGE (V)	115
PHASE	1
FREQUENCY (Hz)	60
BASED ON	MODINE
MODEL	HC-18 S 01
REMARKS	1

REMARKS LEGEND:

- PROVIDE UNIT MOUNTED THERMOSTAT.

DESIGNATION	SS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
FLOW RATE (GPM)	67
MAXIMUM PRESSURE DROP (FT-H2O)	14
COLLECTION CHAMBER CAPACITY (GAL)	0.8
BASED ON	LAKOS
MODEL	ILB-0200



BUILDING 313A MECHANICAL DEMOLITION PLAN
3/8"=1'-0"

DESIGNATION	HWP-1	HWP-2
SERVICE	HOT WATER	HOT WATER
LOCATION	MECH ROOM	MECH ROOM
	INLINE	INLINE
PUMP DATA	-	-
FLOW (GPM)	67	67
TOTAL HEAD (FT-H2O)	80	80
MINIMUM EFFICIENCY (%)	50	50
CONNECTION SIZE	-	-
SUCTION (IN)	1.5	1.5
DISCHARGE (IN)	1.5	1.5
MOTOR DATA	-	-
MOTOR FRAME	184JM	184JM
HORSEPOWER	3	3
RPM	1750	1750
VOLTS	208	208
PHASE	1	1
HERTZ	60	60
SELECTION BASED ON (MFG)	BELL & GOSSETT	BELL & GOSSETT
MODEL	80 1-1/2x1-1/2x9-1/2	80 1-1/2x1-1/2x9-1/2
REMARKS	-	-

REMARKS LEGEND:

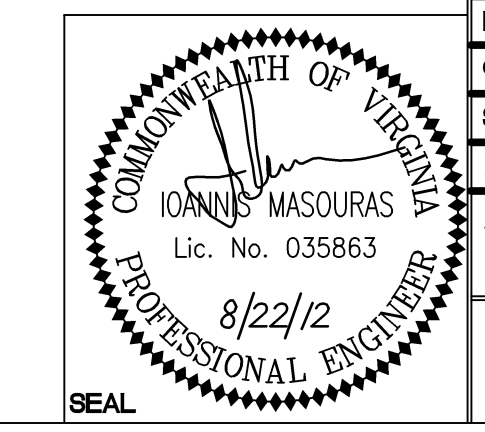
- BRONZE FITTED PUMP FOR DOMESTIC WATER SERVICE. PROVIDE AQUASTAT CONTROL.

DESIGNATION	WH-1	WH-2
LOCATION	MECH ROOM	MECH ROOM
STORAGE (GALLONS)	100	100
GPH AT 100 DEG F RISE	173	173
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4.8	4.8
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10.5	10.5
GAS INLET CONNECTION (IN)	3/4	3/4
INPUT (MBH)	150	150
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	STATE	STATE
MODEL	SUF 100 150 NE	SUF 100 150 NE
REMARKS	1 & 2	1 & 2

REMARKS LEGEND:

- PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER WATER HEATER.
- PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.

DESIGNATION	DET-1
SERVICE	DOMESTIC HOT WATER
LOCATION	MECH ROOM
TYPE	BLADDER
TANK VOLUME (GAL)	14
FILL PRESSURE (PSI)	60
RELIEF VALVE PRESSURE SETTING (PSI)	100
BASED ON	AMTROL
MODEL	ST-C SERIES ST-42V-C
* MATCH DOMESTIC WATER SUPPLY PRESSURE AT THIS LOCATION.	



WileyWilson 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.264.7242 wileywilson.com		M-115 PROJECT NO. CP12-0104 NAVAL FACILITIES ENGINEERING COMMAND	
DEPT OF NAVY MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA		BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT BUILDING 313 MECHANICAL DEMOLITION AND NEW WORK PLAN	
DES. IM	DR. SWL	SIZE. E	CODE IDENT NO. 80091
CHK. JHE	SUBMITTED BY:	DATE. 8/22/12	NAVFAC DRAWING NO. 60011291
DESIGN DR.	APPROVED PWO OR OIC	DATE.	CONSTR CONTR NO. N40085-12-B-0104
SATISFACTORY TO.	DATE.	SCALE. AS SHOWN	SPEC No. 05-12-0104
			SHEET 27 OF 43

DISCLOSURE OF INFORMATION

Contractor shall comply as follows:

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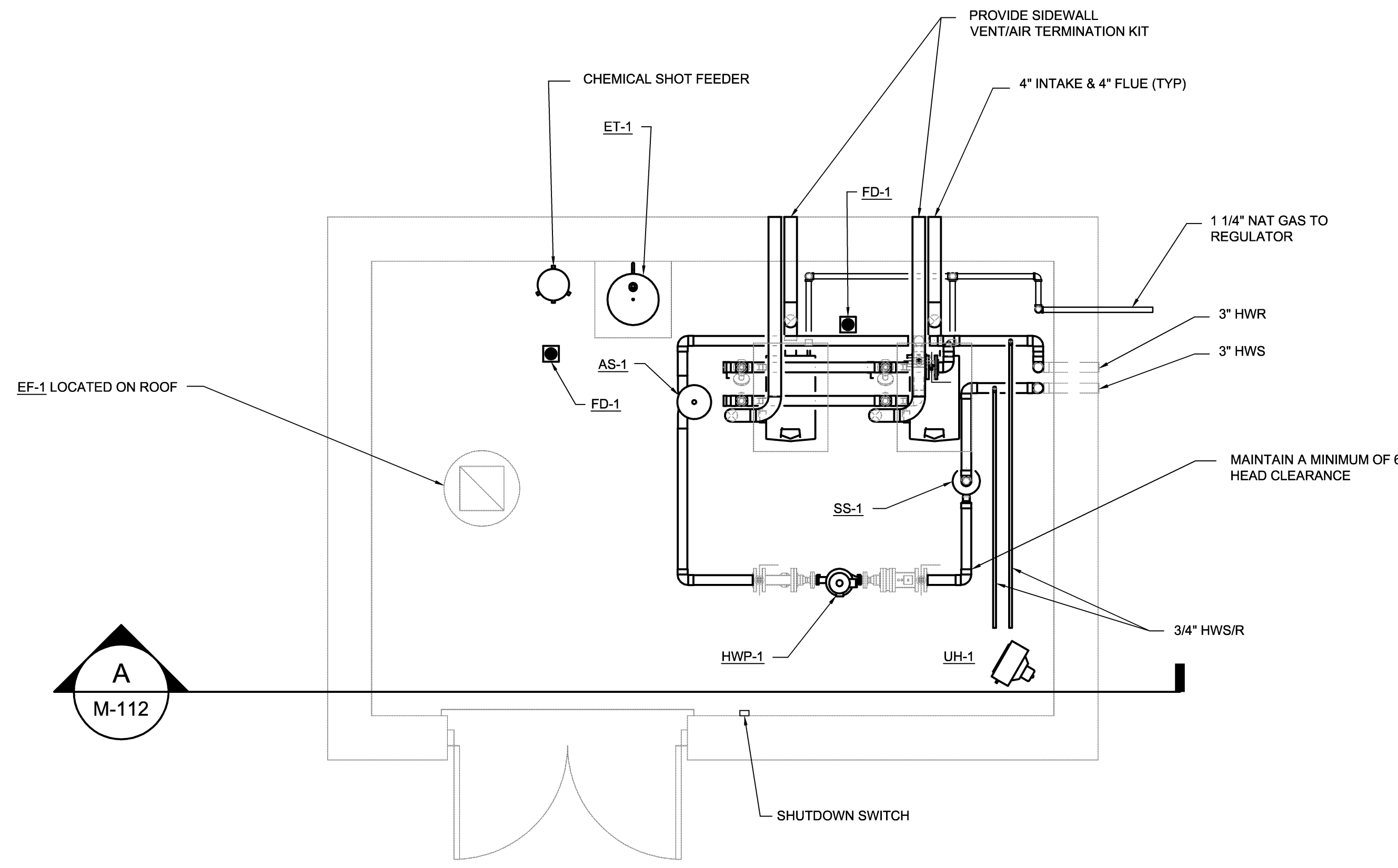
(1) The Contracting Officer has given prior written approval; or

(2) The information is otherwise in the public domain before the date of release.

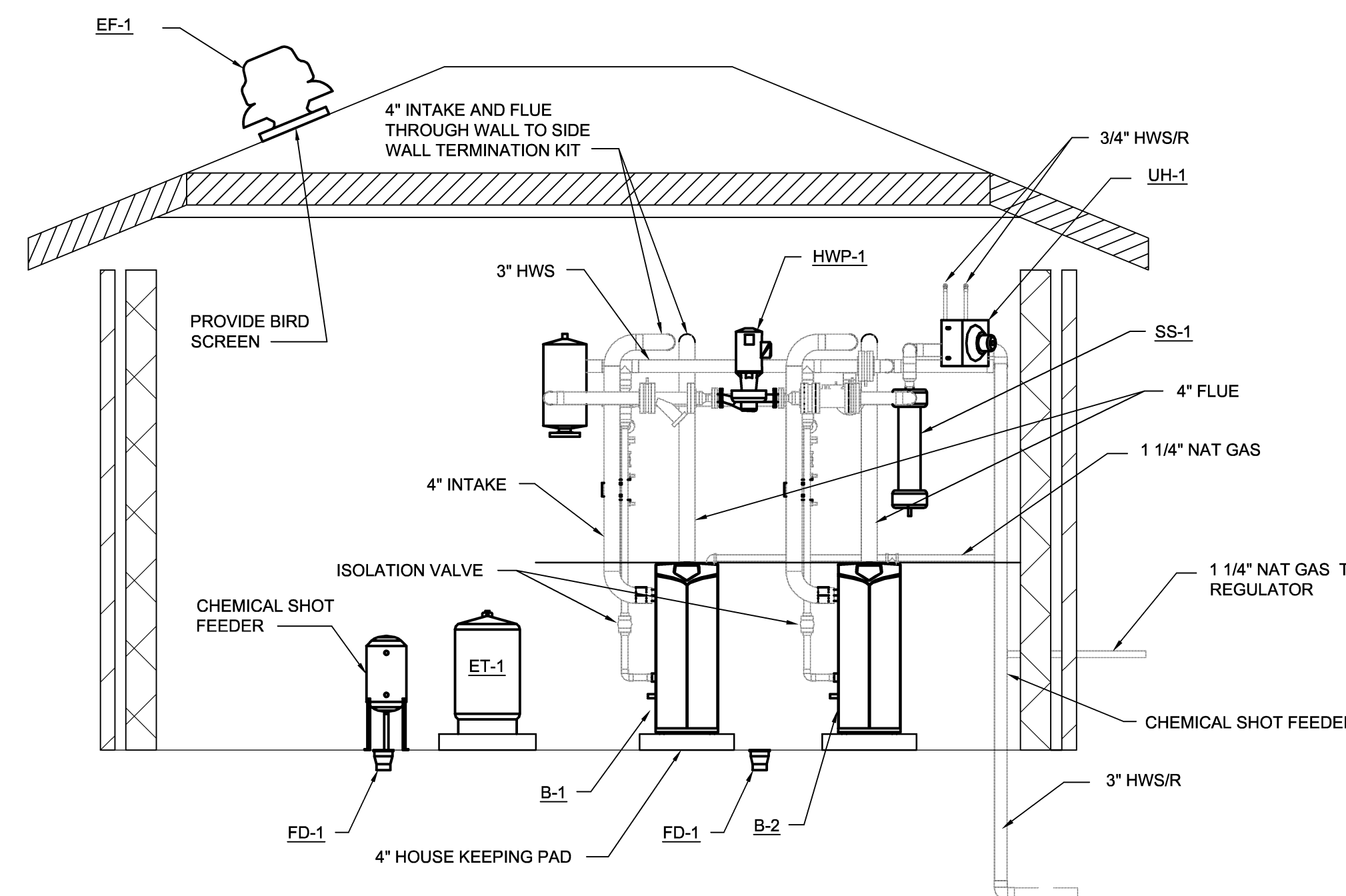
(b) Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.

(c) The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.

SYM.	PREP'D BY	DATE	APPROVED



1 BUILDING 316 NEW MECHANICAL ROOM
3/8"=1'-0"



A MECHANICAL ROOM SECTION
3/8"=1'-0"

NATURAL GAS NOTE:
1. TOTAL CONNECTED NATURAL GAS DEMAND FOR THIS BUILDING IS 800 MBH AT 10 IN-H2O.

DEMOLITION NOTES
1. REMOVE HOT WATER PIPING, PUMPS, HEAT EXCHANGERS AND EXPANSION TANKS AS SHOWN. REMOVE ALL ASSOCIATED PIPING, SUPPORTS AND HANGERS. REMOVE ALL STEAM SUPPLY AND CONDENSATE RETURN PIPING, COMPONENTS, HANGERS AND EQUIPMENT.
2. CHILLED WATER SYSTEM IS EXISTING TO REMAIN AND SHALL NOT BE INTERRUPTED DURING CONSTRUCTION.
3. EXISTING CONTROLS TO REMAIN FOR MODIFICATION AND INTEGRATION WITH NEW BACNET EMCS SYSTEM.
4. THE EQUIPMENT AND BUILDING LAYOUT IS BASED ON THE BASIS OF DESIGN EQUIPMENT CLEARANCES. ANY MODIFICATION REQUIRED FOR ACCEPTABLE ALTERNATE MANUFACTURER'S SHALL BE PROVIDED BY THE CONTRACTOR IF NECESSARY.

GENERAL NOTES
1. SEE GENERAL NOTES ON SHEET M-001.
2. DOMESTIC HOT WATER SYSTEM FOR THIS BUILDING IS EXISTING TO REMAIN.
3. MAINTAIN MANUFACTURER RECOMMENDED CLEARANCE AROUND ALL EQUIPMENT. FOR BOILERS, PROVIDE A MINIMUM 30" PIPING AND MAINTENANCE CLEARANCE ON ALL SIDES. AT LEAST EVERY OTHER SIDE SHALL HAVE 30" CLEAR FLOOR SPACE FOR PERSONNEL ACCESS. FOR WATER HEATERS, PROVIDE MINIMUM 15" CLEARANCE TO THE SIDES AND REAR AND A MINIMUM 30" IN THE FRONT.
4. THE LOCATION OF ALL DUCT, PIPING AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE ANTICIPATED OR ENCOUNTERED INTERFERENCES. THESE PLANS ARE PARTIALLY DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. ALL PIPING OFFSETS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
5. INSTALL GAS PIPE IN ACCORDANCE WITH 2012 NORTH CAROLINA FUEL GAS CODE.
6. PROVIDE HOSE BIB AND 1/2" CONNECTION FOR FILLING IN NEW MECHANICAL ROOM.
7. PROVIDE FLOOR DRAINS AS SHOWN ON FLOOR PLAN. CONTRACTOR TO VERIFY NEAREST SEWER MAIN. FOR PIPING PURPOSES, ASSUME 200 YARDS OF SANITARY PIPING. PROVIDE VENT THROUGH ROOF FOR FLOOR DRAINS IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE.
8. PROVIDE APPURTENANCES TO COMPLY WITH ASME CSD-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUTDOWN SWITCH LOCATED ADJACENT TO EXIT DOOR.
9. EXISTING BUILDING HAS A DUAL TEMPERATURE SYSTEM CONTROLLED BY MANUAL HEATING/COOLING CHANGEOVER SWITCH. THE NEW SYSTEM SHALL BE INCORPORATED INTO THE CHANGEOVER CONTROL.

BOILER SCHEDULE		
DESIGNATION	B-1	B-2
LOCATION	MECH ROOM	MECH ROOM
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10
GAS INLET CONNECTION (IN)	1	1
INPUT (MBH)	399	399
OUTPUT (MBH)	375	375
MINIMUM TURN DOWN RATIO	5:1	5:1
FLOWRATE (GPM)	30	30
MAXIMUM PRESSURE DROP (FT. H2O)	8	8
ENTERING WATER TEMPERATURE (DEG F)	180	180
LEAVING WATER TEMPERATURE (DEG F)	185	185
MINIMUM OPERATING PRESSURE (PSI)	30	30
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
TOTAL OPERATING AMPS	1.5	1.5
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	LOCHINVAR	LOCHINVAR
MODEL REMARKS	KB-400	KB-400
REMARKS	1, 2, 3 & 4	1, 2, 3 & 4

FAN SCHEDULE	
DESIGNATION	EF-1
USAGE	EXHAUST
SERVES ROOM(S)	MECH ROOM
DESCRIPTION	CENTRIFUGAL
FAN DATA	-
AIRFLOW (SCFM)	550
TOTAL SP (IN-H2O)	.15
RPM	1630
DRIVE TYPE	DIRECT
MOTOR DATA	-
HORSEPOWER	1/6
RPM	1125
VOLTS	115
PHASE	1
HERTZ	60
SELECTION BASED ON	GREENHECK
MODEL	G-085-VG
REMARKS	1, 2 & 3

UNIT HEATER SCHEDULE	
DESIGNATION	UH-1
LOCATION	MECH ROOM
AIRFLOW (CFM)	340
HEATING CAPACITY (MBH)	10
ENTERING AIR TEMPERATURE (DEG F)	55
LEAVING AIR TEMPERATURE (DEG F)	82
ENTERING WATER TEMPERATURE (DEG F)	180
FLOW RATE (GPM)	.5
WATER PRESSURE DROP (FT W.G.)	.5
MOTOR POWER (HP)	1/60
VOLTAGE (V)	115
PHASE	1
FREQUENCY (Hz)	60
BASED ON	MODINE
MODEL	HC-18 S 01
REMARKS	1

REMARKS LEGEND:
1. PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER BOILER.
2. BOILER CIRCULATION PUMP TO BE PROVIDED BY MANUFACTURER AT 30 GPM AT 25 DELTA T.
3. PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL28-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.
4. PROVIDE BOILERS WHICH ARE AT LEAST 94% EFFICIENT BASED ON BTS-2000, REV 06 07 CONDITIONS.

PUMP SCHEDULE	
DESIGNATION	HWP-1
SERVICE	HOT WATER
LOCATION	MECH ROOM
TYPE	INLINE
PUMP DATA	-
FLOW (GPM)	100
TOTAL HEAD (FT-H2O)	55
MINIMUM EFFICIENCY (%)	50
CONNECTION SIZE	-
SUCTION (IN)	2
DISCHARGE (IN)	2
MOTOR DATA	-
MOTOR FRAME	182JM
HORSEPOWER	3
RPM	1750
VOLTS	208
PHASE	1
HERTZ	60
SELECTION BASED ON (MFGR)	BELL & GOSSETT
MODEL	80 2x2-9-1/2B
REMARKS	-

REMARKS LEGEND:
1. BRONZE FITTED PUMP FOR DOMESTIC WATER SERVICE. PROVIDE AQUASTAT CONTROL.

SOLID SEPARATOR SCHEDULE	
DESIGNATION	SS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
FLOW RATE (GPM)	100
MAXIMUM PRESSURE DROP (FT-H2O)	26
COLLECTION CHAMBER CAPACITY (GAL)	0.8
BASED ON	LAKOS
MODEL	ILB-0200

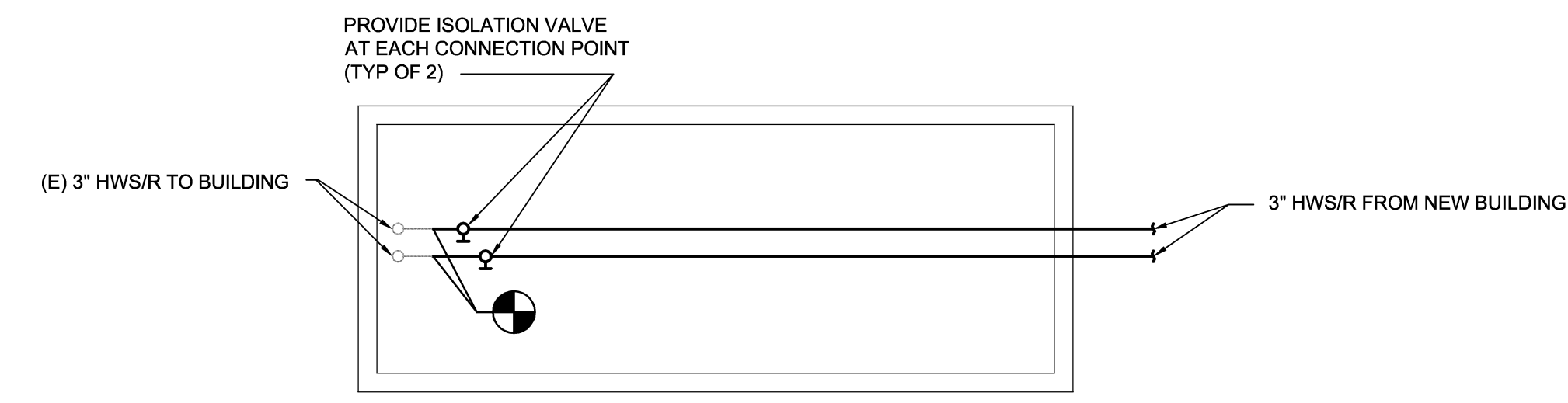
LOUVER SCHEDULE	
DESIGNATION	L-1
USAGE	INTAKE
LOCATION	MECH ROOM
DESCRIPTION	COMBINATION LOUVER/DAMPER
DEPTH (IN)	8
FRAME TYPE	CHANNEL
WIDTH (IN)	32
HEIGHT (IN)	16
AIRFLOW (CFM)	550
FREE AREA (SF)	.75
FREE AREA VELOCITY (FPM)	734
PRESSURE DROP (IN H2O)	.067
SELECTION BASE ON	GREENHECK
ACTUATOR TYPE	120 VAC
ACTUATOR FAIL POSITION	CLOSED
MODEL	EAC-601
REMARKS	1, 2 & 3

REMARKS LEGEND:
1. SUBMIT COLOR CHART. COLOR TO BE APPROVED BY ARCHITECT.
2. SEE ARCHITECTURAL PLANS FOR LOCATION.
3. PROVIDE SPRING RETURN CLOSE, POWERED OPEN BY ACTUATOR.

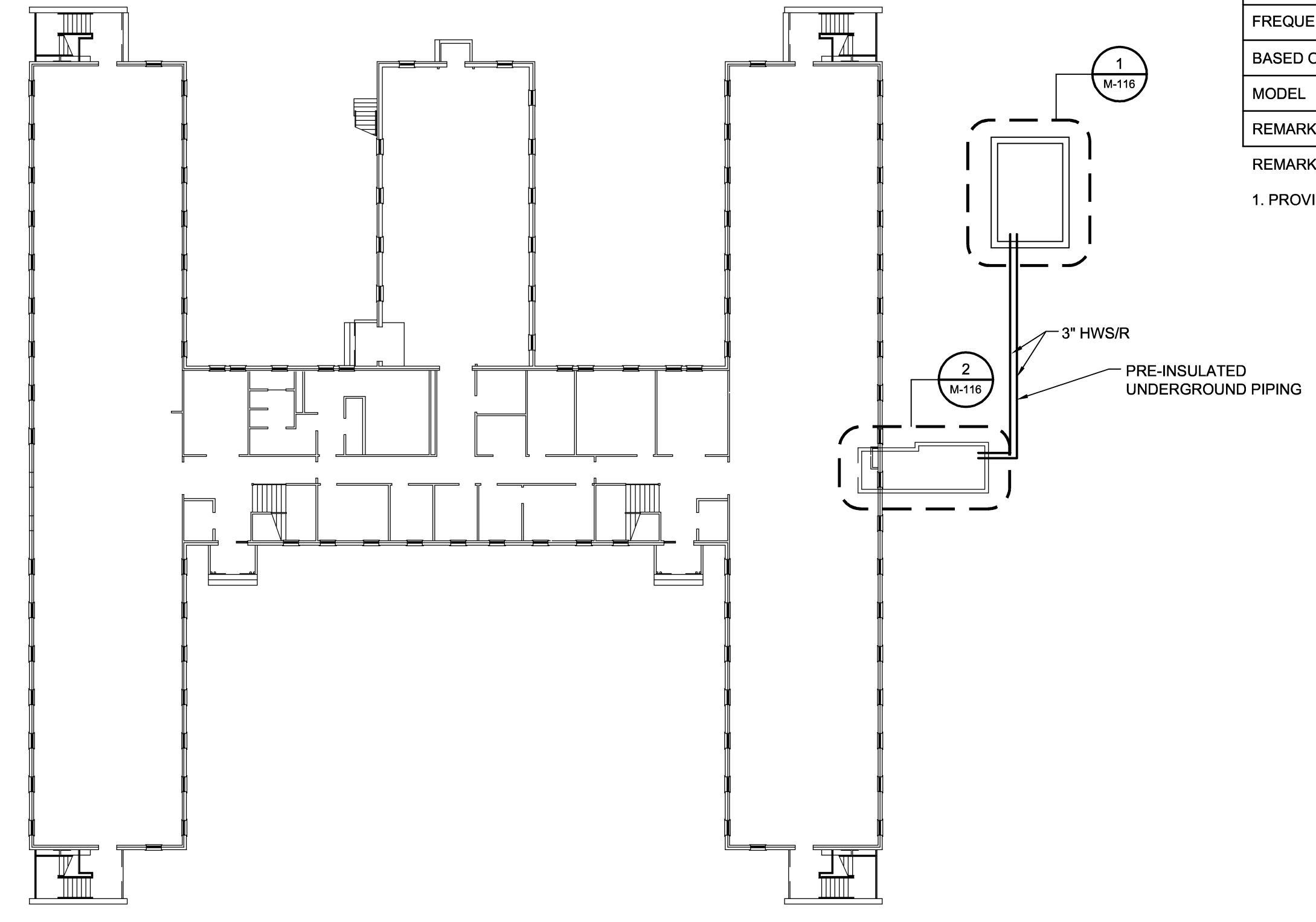
AIR SEPARATOR SCHEDULE	
DESIGNATION	AS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
LINE SIZE (IN)	3
BASED ON	BELL & GOSSETT
MODEL	ROLAIRTR0L

EXPANSION TANK SCHEDULE	
DESIGNATION	ET-1
SERVICE	HEATING WATER
LOCATION	MECH ROOM
TYPE	BLADDER
TANK VOLUME (GAL)	60
FILL PRESSURE (PSI)	20
RELIEF VALVE PRESSURE SETTING (PSI)	100
BASED ON	JOHN WOOD COMPANY
MODEL	JAER-23-607

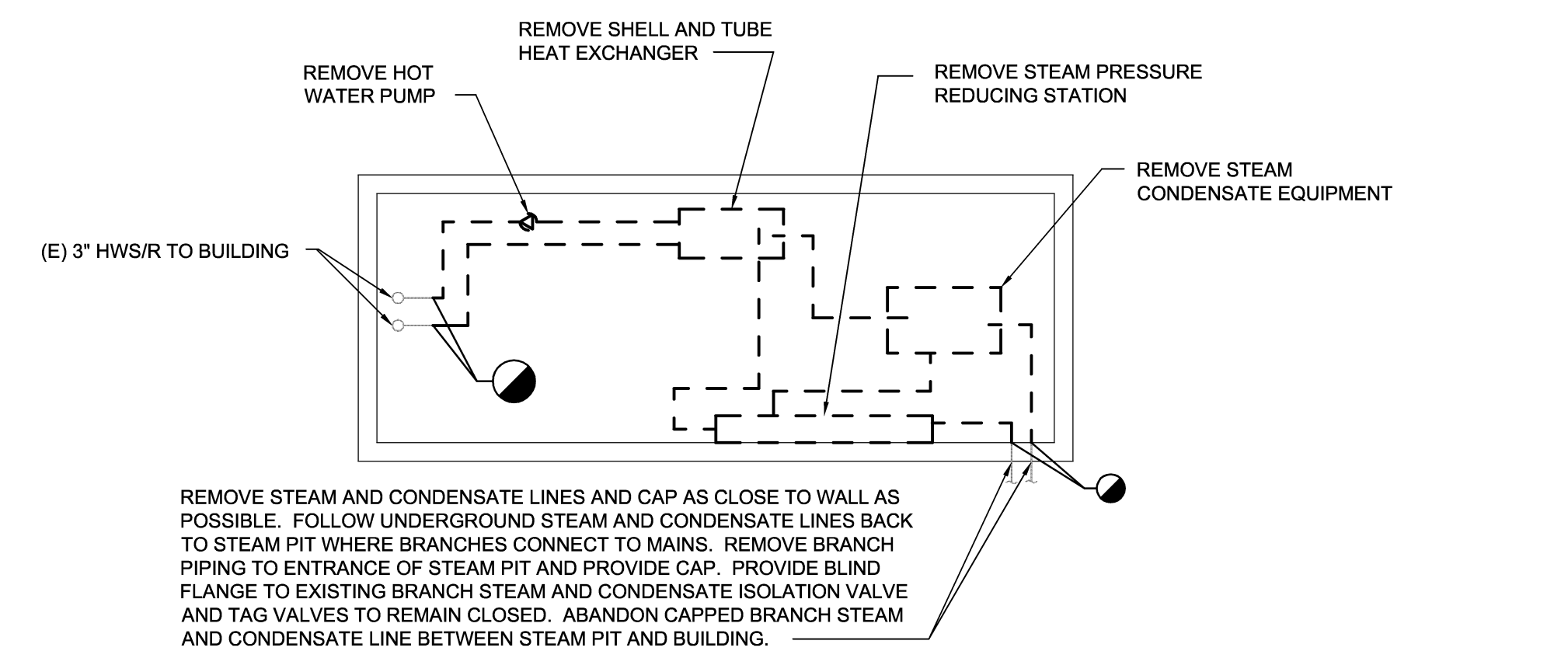
FLOOR DRAIN SCHEDULE		
DESIGNATION	DRAIN SIZE	DESCRIPTION
FD-1	3"	ZURN MODEL 415B WITH 6" NICKEL BRONZE STRAINER AND PROSET TRAPGUARD



2 BUILDING 316 STEAM PIT NEW WORK PLAN
1/8"=1'-0"



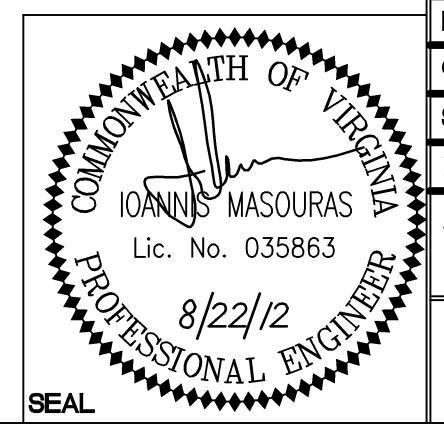
BUILDING 316 MECHANICAL SITE PLAN
3/8"=1'-0"



2 BUILDING 316 STEAM PIT DEMOLITION PLAN
1/8"=1'-0"

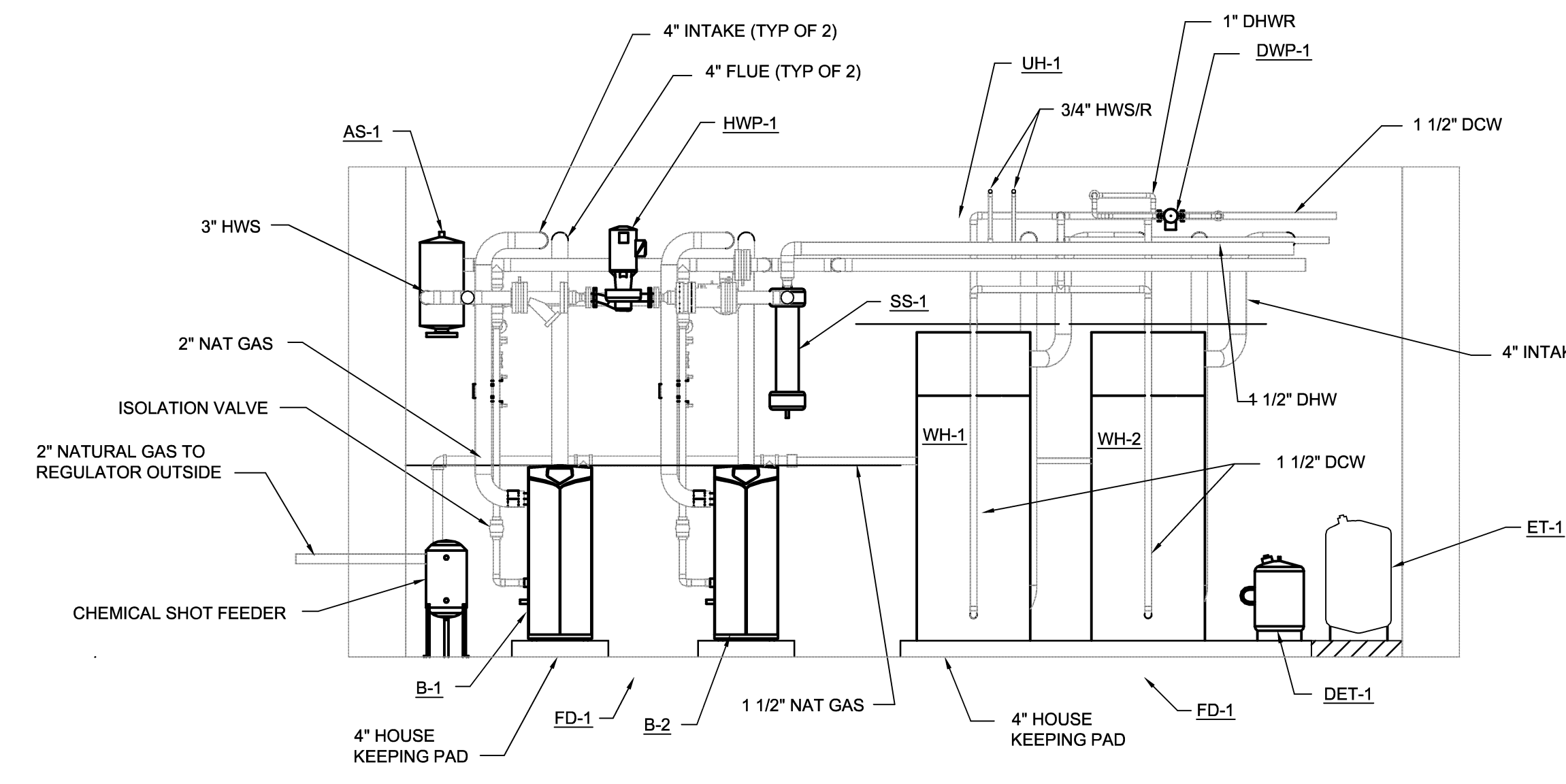
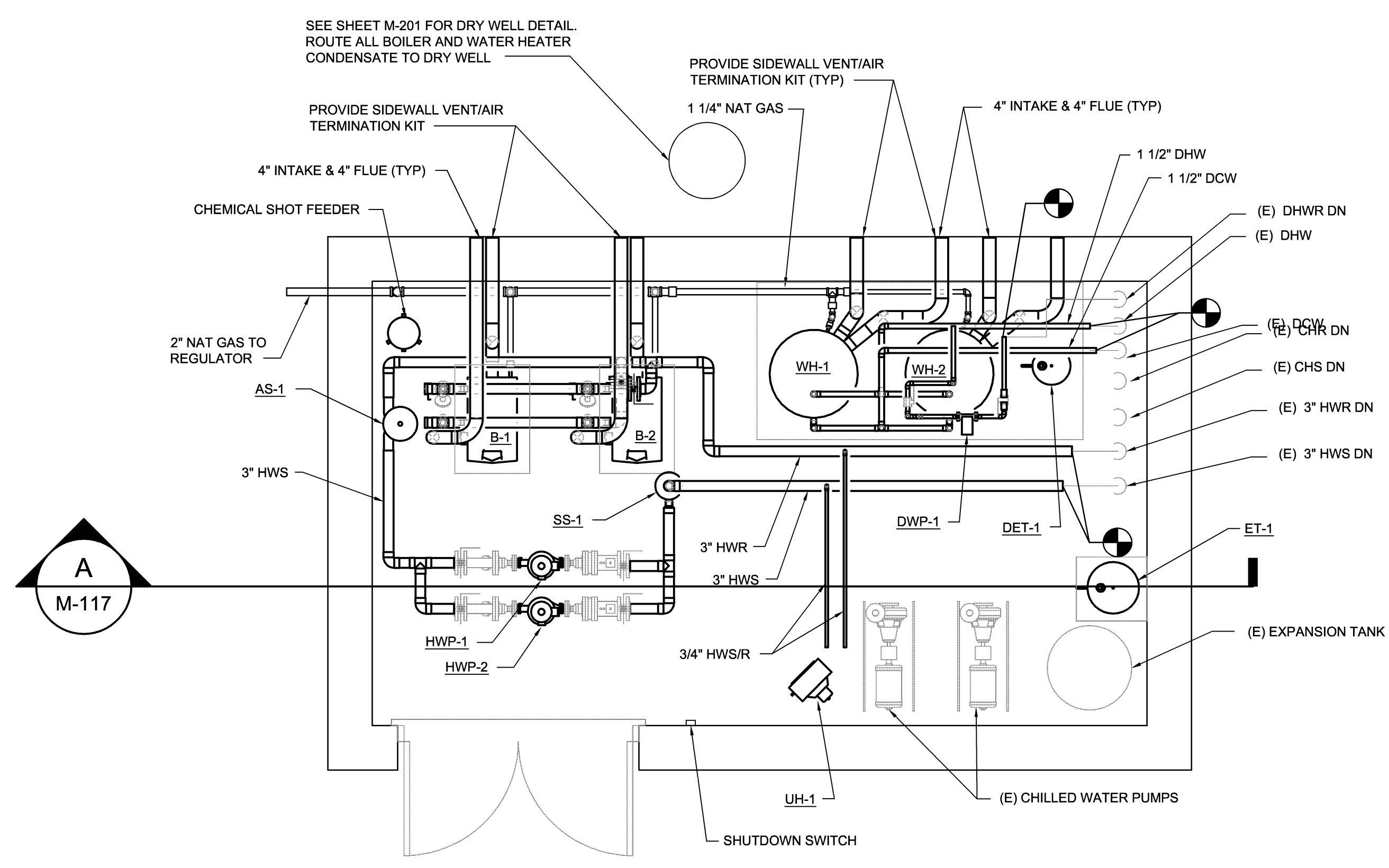
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(2) The information is otherwise in the public domain before the date of release.
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WileyWilson 6006 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.264.7242 wileywilson.com		M-116 PROJECT NO. CP12-0104 NAVAL FACILITIES ENGINEERING COMMAND	
DEPT OF NAVY MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA		BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT BUILDING 316 MECHANICAL DEMOLITION AND NEW WORK PLAN	
DES. IM	DR. SWL	CHK. JHE	APPROVED PWO OR OICC
SUBMITTED BY: DESIGN DR.		DATE:	
APPROVED PWO OR OICC:		DATE:	
SATISFACTORY TO:		DATE:	
SCALE: AS SHOWN	SPEC. No. 05-12-0104	NAVFAC DRAWING NO. 60011292	CONSTR CONTR NO. N40085-12-B-0104
SHEET 28		OF 43	

SYM.	PREP'D BY	DATE	APPROVED



A MECHANICAL ROOM SECTION
3/8"=1'-0"

NOTE: EXISTING PIPING NOT SHOWN FOR CLARITY

NATURAL GAS NOTE:
1. TOTAL CONNECTED NATURAL GAS DEMAND FOR THIS BUILDING IS 1,100 MBH AT 10 IN-H2O.

- DEMOLITION NOTES**
- REMOVE HOT WATER PIPING, PUMPS, HEAT EXCHANGERS AND EXPANSION TANKS AS SHOWN. REMOVE ALL ASSOCIATED PIPING, SUPPORTS AND HANGERS. REMOVE ALL STEAM SUPPLY AND CONDENSATE RETURN PIPING, COMPONENTS, HANGERS AND EQUIPMENT.
 - CHILLED WATER SYSTEM IS EXISTING TO REMAIN AND SHALL NOT BE INTERRUPTED DURING CONSTRUCTION.
 - EXISTING CONTROLS TO REMAIN FOR MODIFICATION AND INTEGRATION WITH NEW BACNET EMCS SYSTEM.
 - THE EQUIPMENT AND BUILDING LAYOUT IS BASED ON THE BASIS OF DESIGN EQUIPMENT CLEARANCES. ANY MODIFICATION REQUIRED FOR ACCEPTABLE ALTERNATE MANUFACTURERS SHALL BE PROVIDED BY THE CONTRACTOR IF NECESSARY.

- GENERAL NOTES**
- SEE GENERAL NOTES ON SHEET M-001.
 - BUILDING 318A IS THE EXISTING MECHANICAL ROOM THAT SERVES BUILDING 318.
 - MAINTAIN MANUFACTURER RECOMMENDED CLEARANCE AROUND ALL EQUIPMENT. FOR BOILERS, PROVIDE A MINIMUM 30" PIPING AND MAINTENANCE CLEARANCE ON ALL SIDES. AT LEAST EVERY OTHER SIDE SHALL HAVE 30" CLEAR FLOOR SPACE FOR PERSONNEL ACCESS. FOR WATER HEATERS, PROVIDE MINIMUM 15" CLEARANCE TO THE SIDES AND REAR AND A MINIMUM 30" IN THE FRONT.
 - THE LOCATION OF ALL DUCT, PIPING AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE ANTICIPATED OR ENCOUNTERED INTERFERENCES. THESE PLANS ARE PARTIALLY DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. ALL PIPING OFFSETS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
 - INSTALL GAS PIPE IN ACCORDANCE WITH 2012 NORTH CAROLINA FUEL GAS CODE.
 - PROVIDE HOSE BIB AND 1/2" CONNECTION FOR FILLING IN NEW MECHANICAL ROOM.
 - PROVIDE FLOOR DRAINS AS SHOWN ON FLOOR PLAN. CONTRACTOR TO VERIFY NEAREST SEWER MAIN. FOR PIPING PURPOSES, ASSUME 200 YARDS OF SANITARY PIPING. PROVIDE VENT THROUGH ROOF FOR FLOOR DRAINS IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE.
 - STORE DOMESTIC HOT WATER AT 140 DEG F AND TEMPER TO 110 DEG F BEFORE BEING SUPPLIED TO BUILDING. PROVIDE MIXING VALVE.
 - PROVIDE APPURTENANCES TO COMPLY WITH ASME CSO-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUTDOWN SWITCH LOCATED ADJACENT TO EXIT DOOR.

BUILDING 318A MECHANICAL NEW WORK PLAN
3/8"=1'-0"

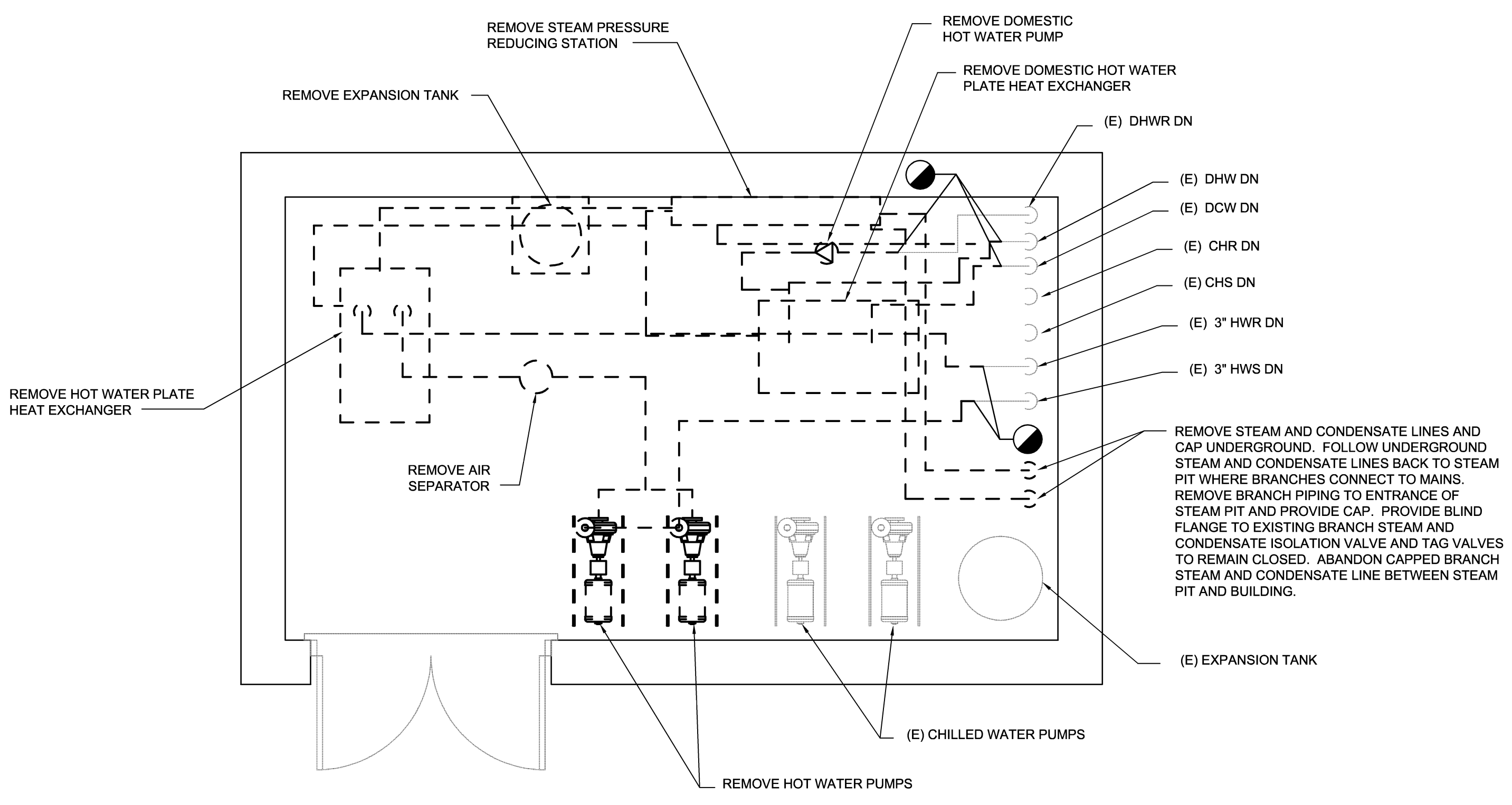
BOILER SCHEDULE		
DESIGNATION	B-1	B-2
LOCATION	MECH ROOM	MECH ROOM
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10
GAS INLET CONNECTION (IN)	1	1
INPUT (MBH)	399	399
OUTPUT (MBH)	375	375
MINIMUM TURN DOWN RATIO	5:1	5:1
FLOWRATE (GPM)	30	30
MAXIMUM PRESSURE DROP (FT. H2O)	8	8
ENTERING WATER TEMPERATURE (DEG F)	160	160
LEAVING WATER TEMPERATURE (DEG F)	185	185
MINIMUM OPERATING PRESSURE (PSI)	30	30
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
TOTAL OPERATING AMPS	1.5	1.5
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	LOCHINVAR	LOCHINVAR
MODEL REMARKS	KB-400	KB-400
REMARKS	1, 2, 3 & 4	1, 2, 3 & 4

- REMARKS LEGEND:**
- PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER BOILER.
 - BOILER CIRCULATION PUMP TO BE PROVIDED BY MANUFACTURER AT 30 GPM AT 25 DELTA T.
 - PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVG OR AL29-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.
 - PROVIDE BOILERS WHICH ARE AT LEAST 94% EFFICIENT BASED ON BTS-2000, REV 06.07 CONDITIONS.

UNIT HEATER SCHEDULE	
DESIGNATION	UH-1
LOCATION	MECH ROOM
AIRFLOW (CFM)	340
HEATING CAPACITY (MBH)	10
ENTERING AIR TEMPERATURE (DEG F)	55
LEAVING AIR TEMPERATURE (DEG F)	82
ENTERING WATER TEMPERATURE (DEG F)	180
FLOW RATE (GPM)	.5
WATER PRESSURE DROP (FT. W.G.)	.5
MOTOR POWER (HP)	1/60
VOLTAGE (V)	115
PHASE	1
FREQUENCY (Hz)	60
BASED ON	MODINE
MODEL	HC-18 S 01
REMARKS	1

- REMARKS LEGEND:**
- PROVIDE UNIT MOUNTED THERMOSTAT.

SOLID SEPARATOR SCHEDULE	
DESIGNATION	SS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
FLOW RATE (GPM)	72
MAXIMUM PRESSURE DROP (FT-H2O)	14
COLLECTION CHAMBER CAPACITY (GAL)	0.8
BASED ON	LAKOS
MODEL	ILB-0200



BUILDING 318A MECHANICAL DEMOLITION PLAN
3/8"=1'-0"

PUMP SCHEDULE			
DESIGNATION	HWP-1	HWP-2	DWP-1
SERVICE	HOT WATER	HOT WATER	DOMESTIC HOT WATER
LOCATION	MECH ROOM	MECH ROOM	MECH ROOM
TYPE	INLINE	INLINE	INLINE
PUMP DATA	-	-	-
FLOW (GPM)	72	72	5
TOTAL HEAD (FT-H2O)	65	65	20
MINIMUM EFFICIENCY (%)	50	50	-
CONNECTION SIZE	-	-	-
SUCTION (IN)	1.5	1.5	1.5
DISCHARGE (IN)	1.5	1.5	1.5
MOTOR DATA	-	-	-
MOTOR FRAME	182JM	182JM	-
HORSEPOWER	3	3	-
RPM	1750	1750	2650
VOLTS	208	208	115
PHASE	1	1	1
HERTZ	60	60	60
SELECTION BASED ON (MFG)	BELL & GOSSETT	BELL & GOSSETT	BELL & GOSSETT
MODEL	80 1-1/2x1-1/2x9-1/2	80 1-1/2x1-1/2x9-1/2	BOOSTER PL-30
REMARKS	-	-	1

- REMARKS LEGEND:**
- BRONZE FITTED PUMP FOR DOMESTIC WATER SERVICE. PROVIDE AQUASTAT CONTROL.

DOMESTIC HOT WATER HEATER SCHEDULE		
DESIGNATION	WH-1	WH-2
LOCATION	MECH ROOM	MECH ROOM
STORAGE (GALLONS)	100	100
GPH AT 100 DEG F RISE	173	173
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4.8	4.8
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10.5	10.5
GAS INLET CONNECTION (IN)	3/4	3/4
INPUT (MBH)	150	150
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	STATE	STATE
MODEL	SUF 100 150 NE	SUF 100 150 NE
REMARKS	1 & 2	1 & 2

- REMARKS LEGEND:**
- PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER WATER HEATER.
 - PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVG OR AL29-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.

DISCLOSURE OF INFORMATION

Contractor shall comply as follows:

(a) The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless-

(1) The Contracting Officer has given prior written approval; or

(2) The information is otherwise in the public domain before the date of release.

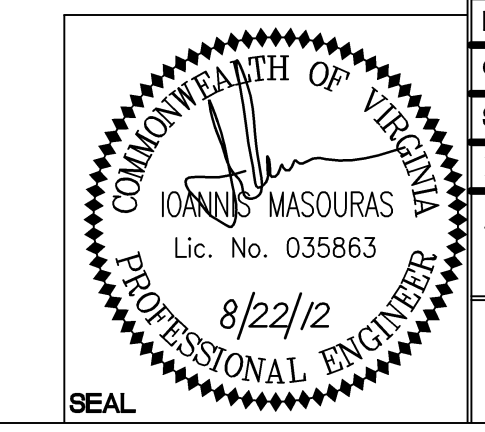
Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.

(c) The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.

AIR SEPARATOR SCHEDULE	
DESIGNATION	AS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
LINE SIZE (IN)	3
BASED ON	BELL & GOSSETT
MODEL	ROLAIRTROL

EXPANSION TANK SCHEDULE		
DESIGNATION	ET-1	DET-1
SERVICE	HEATING WATER	DOMESTIC HOT WATER
LOCATION	MECH ROOM	MECH ROOM
TYPE	BLADDER	BLADDER
TANK VOLUME (GAL)	60	14
FILL PRESSURE (PSI)	20	60
RELIEF VALVE PRESSURE SETTING (PSI)	100	100
BASED ON	JOHN WOOD COMPANY	AMTROL
MODEL	JAER-23-607	ST-C SERIES ST-42V-C

* MATCH DOMESTIC WATER SUPPLY PRESSURE AT THIS LOCATION.



WileyWilson
6606 West Broad St., Suite 500
Richmond, Virginia 23230-1717
804.264.7242
wileywilson.com

M-117
PROJECT NO. CP12-0104
NAVFAC ENGINEERING COMMAND

MARINE CORPS BASE
CAMP LEJUNE, NORTH CAROLINA

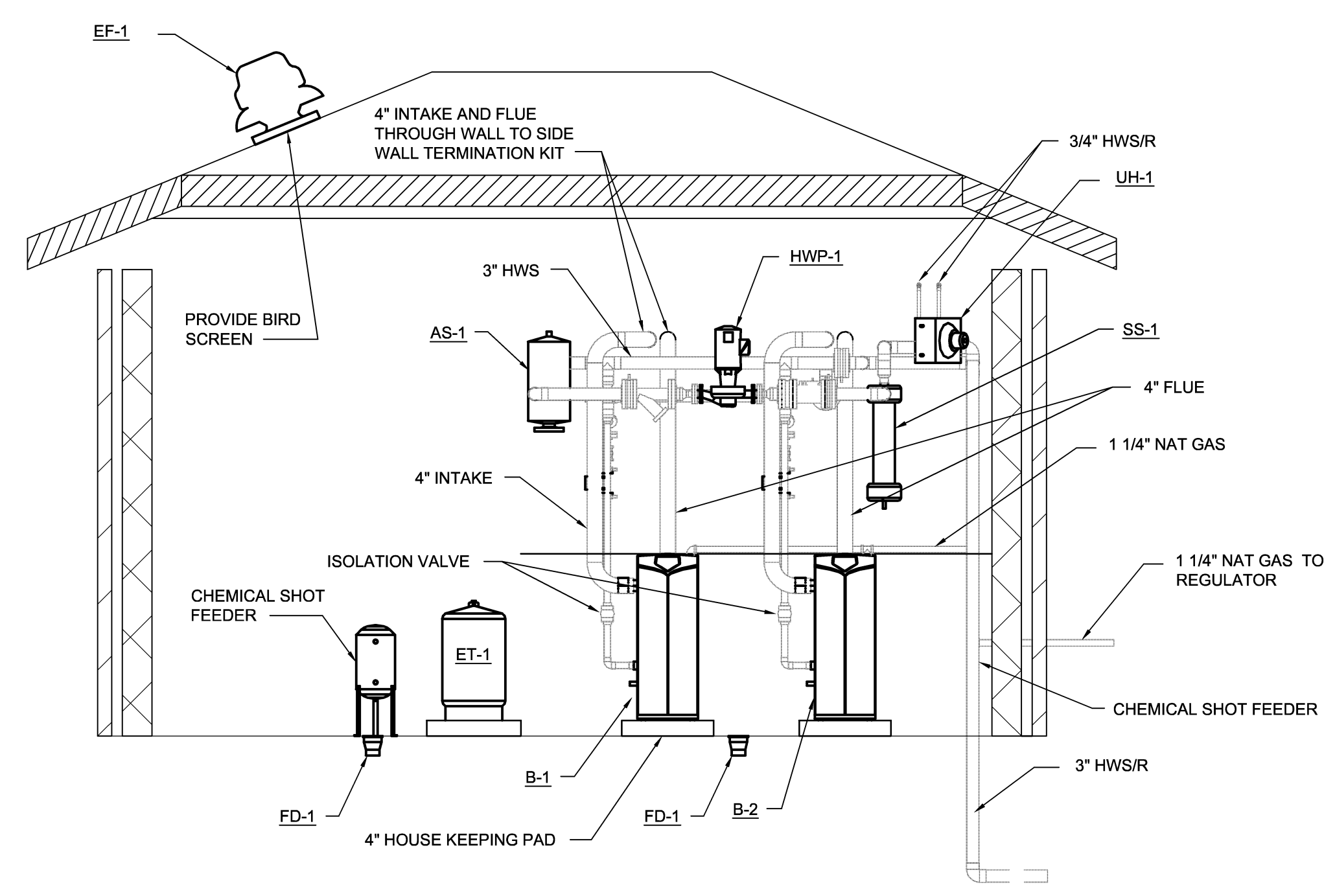
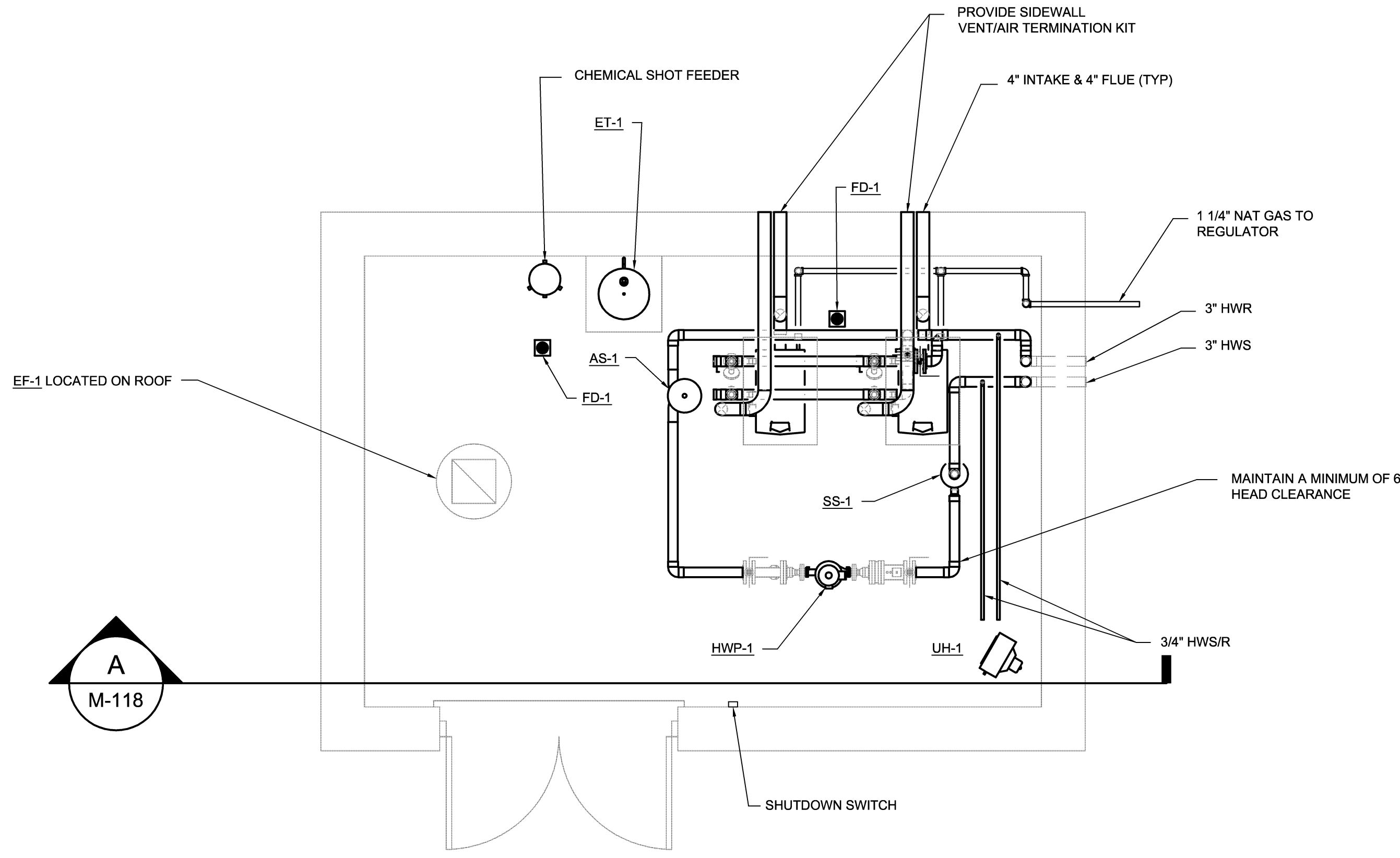
BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT
BUILDING 318 MECHANICAL DEMOLITION AND NEW WORK PLAN

DES. IM
DR. SWL
CHK. JHE
SUBMITTED BY:
DESIGN DR.
APPROVED PWO OR OICC DATE
SATISFACTORY TO DATE

SIZE CODE IDENT NO. NAVFAC DRAWING NO.
E 80091 60011293

CONSTR CONTR NO. N40085-12-B-0104
SCALE: AS SHOWN SPEC No. 05-12-0104 SHEET 29 OF 43

SYM	PREP'D BY	DATE	APPROVED



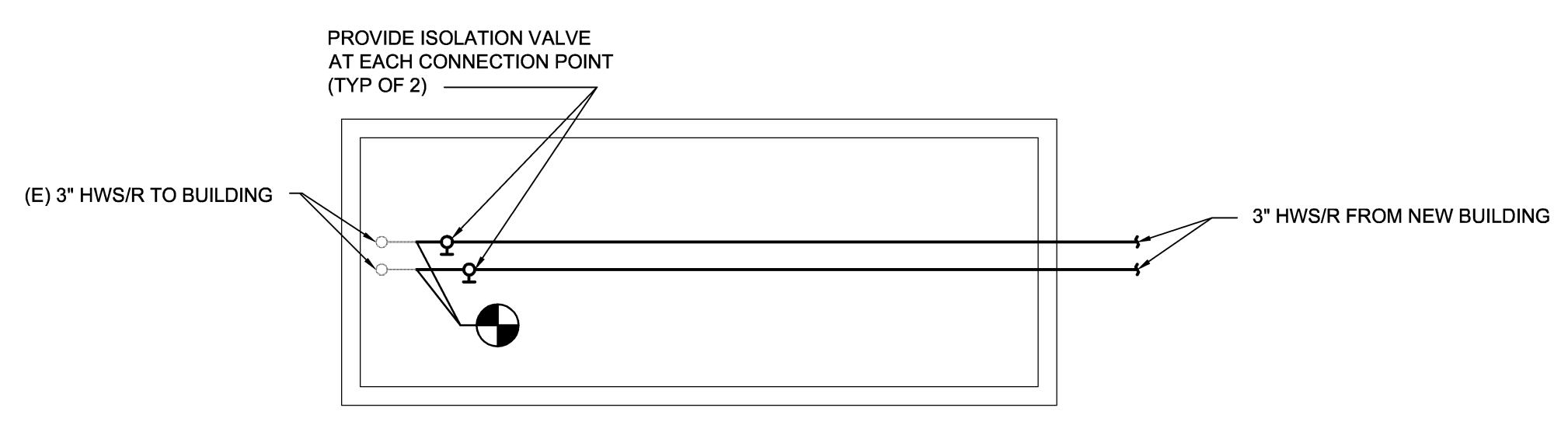
A MECHANICAL ROOM SECTION
3/8"=1'-0"

NATURAL GAS NOTE:
1. TOTAL CONNECTED NATURAL GAS DEMAND FOR THIS BUILDING IS 800 MBH AT 10 IN-H2O.

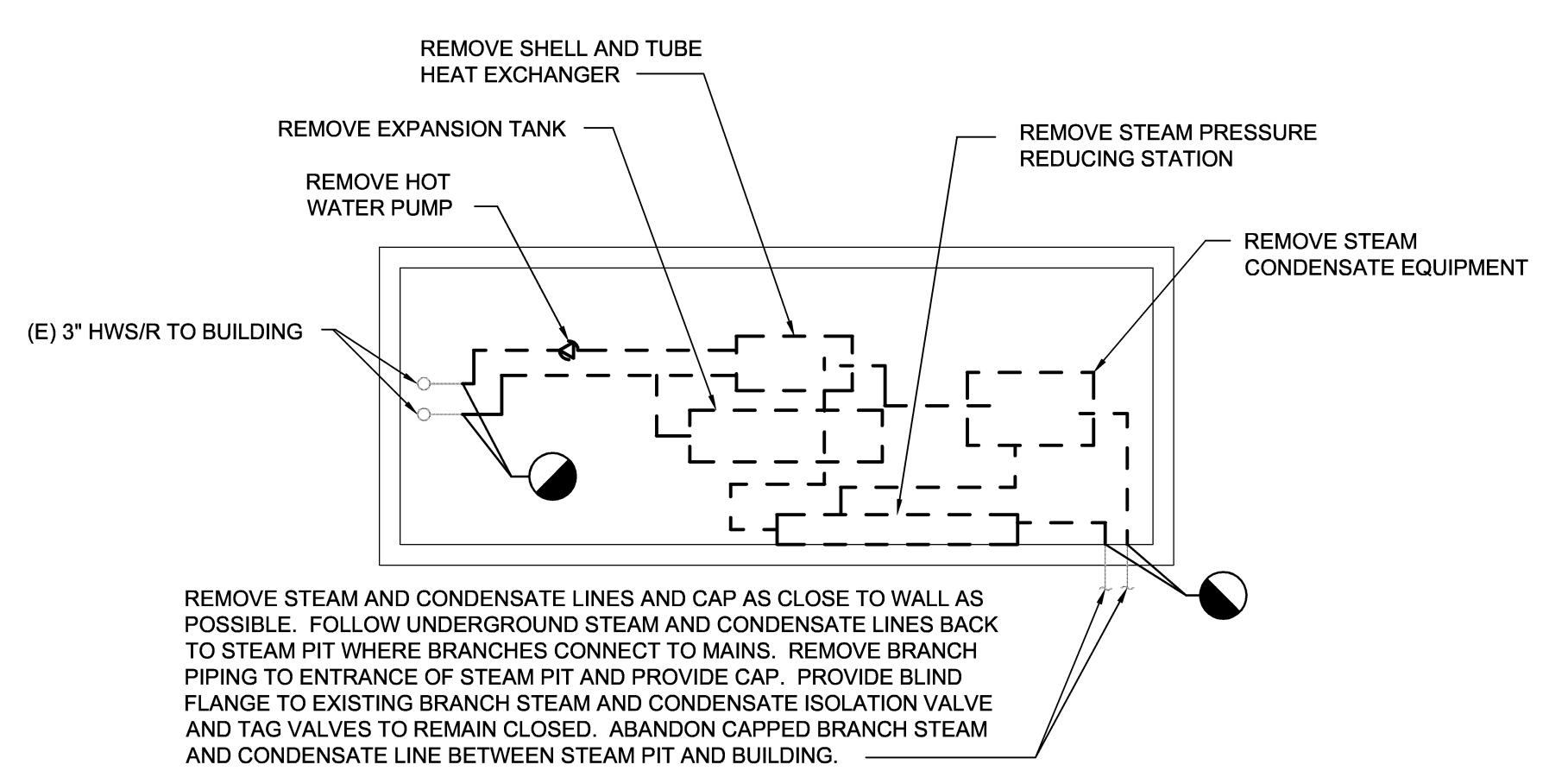
DEMOLITION NOTES:
1. REMOVE HOT WATER PIPING, PUMPS, HEAT EXCHANGERS AND EXPANSION TANKS AS SHOWN. REMOVE ALL ASSOCIATED PIPING, SUPPORTS AND HANGERS. REMOVE ALL STEAM SUPPLY AND CONDENSATE RETURN PIPING, COMPONENTS, HANGERS AND EQUIPMENT.
2. CHILLED WATER SYSTEM IS EXISTING TO REMAIN AND SHALL NOT BE INTERRUPTED DURING CONSTRUCTION.
3. EXISTING CONTROLS TO REMAIN FOR MODIFICATION AND INTEGRATION WITH NEW BACNET EMCS SYSTEM.
4. THE EQUIPMENT AND BUILDING LAYOUT IS BASED ON THE BASIS OF DESIGN EQUIPMENT CLEARANCES. ANY MODIFICATION REQUIRED FOR ACCEPTABLE ALTERNATE MANUFACTURERS SHALL BE PROVIDED BY THE CONTRACTOR IF NECESSARY.

GENERAL NOTES:
1. SEE GENERAL NOTES ON SHEET M-001.
2. DOMESTIC HOT WATER SYSTEM FOR THIS BUILDING IS EXISTING TO REMAIN.
3. MAINTAIN MANUFACTURER RECOMMENDED CLEARANCE AROUND ALL EQUIPMENT. FOR BOILERS, PROVIDE A MINIMUM 30" PIPING AND MAINTENANCE CLEARANCE ON ALL SIDES. AT LEAST EVERY OTHER SIDE SHALL HAVE 30" CLEAR FLOOR SPACE FOR PERSONNEL ACCESS. FOR WATER HEATERS, PROVIDE MINIMUM 15" CLEARANCE TO THE SIDES AND REAR AND A MINIMUM 30" IN THE FRONT.
4. THE LOCATION OF ALL DUCT, PIPING AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE ANTICIPATED OR ENCOUNTERED INTERFERENCES. THESE PLANS ARE PARTIALLY DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. ALL PIPING OFFSETS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
5. INSTALL GAS PIPE IN ACCORDANCE WITH 2012 NORTH CAROLINA FUEL GAS CODE.
6. PROVIDE HOSE BIB AND 1/2" CONNECTION FOR FILLING IN NEW MECHANICAL ROOM.
7. PROVIDE FLOOR DRAINS AS SHOWN ON FLOOR PLAN. CONTRACTOR TO VERIFY NEAREST SEWER MAIN. FOR PRICING PURPOSES, ASSUME 200 YARDS OF SANITARY PIPING. PROVIDE VENT THROUGH ROOF FOR FLOOR DRAINS IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE.
8. PROVIDE APPURTENANCES TO COMPLY WITH ASME CSD-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUTDOWN SWITCH LOCATED ADJACENT TO EXIT DOOR.
9. EXISTING BUILDING HAS A DUAL TEMPERATURE SYSTEM CONTROLLED BY MANUAL HEATING/COOLING CHANGEOVER SWITCH. THE NEW SYSTEM SHALL BE INCORPORATED INTO THE CHANGEOVER CONTROL.

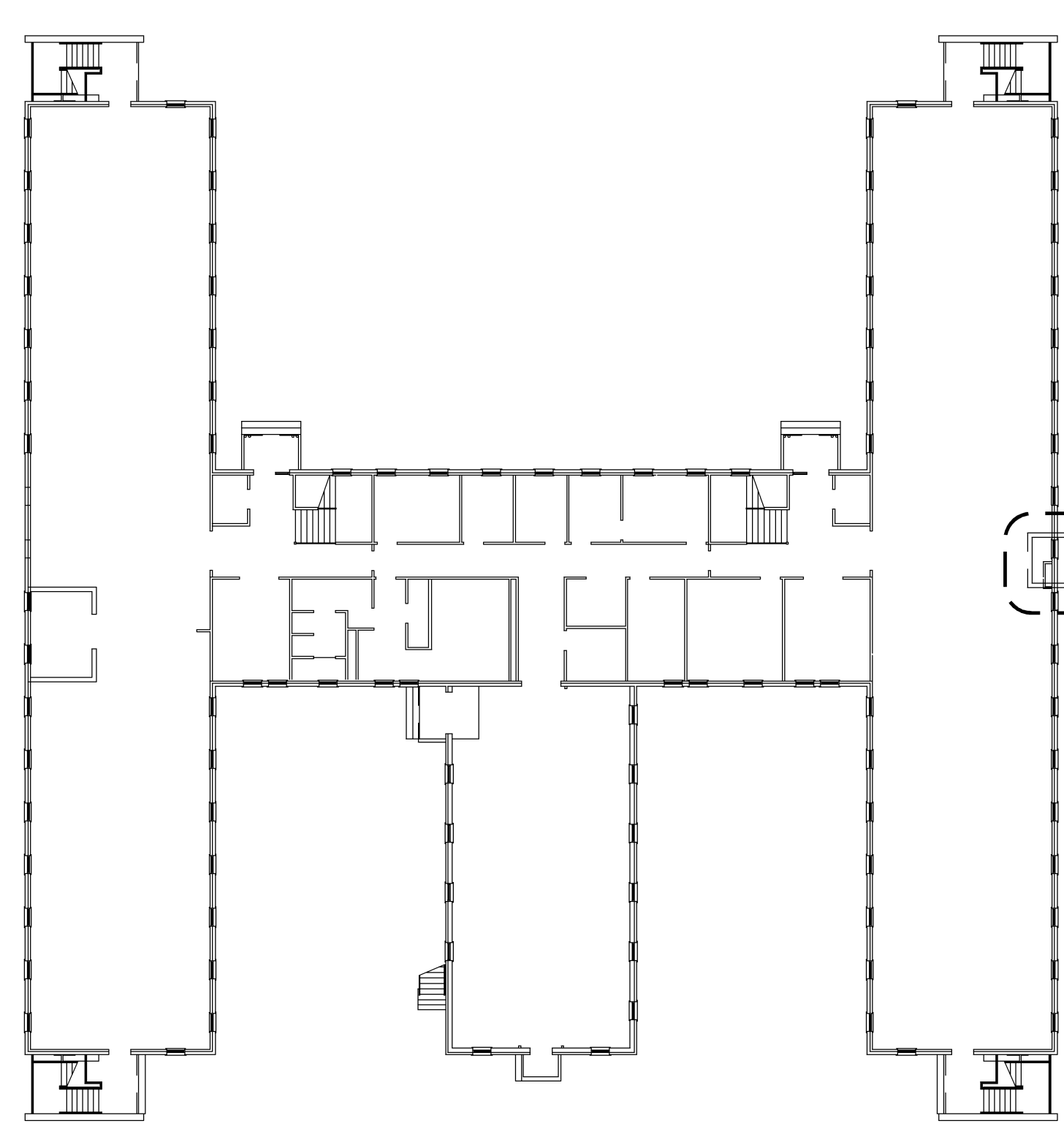
1 BUILDING 321 NEW MECHANICAL ROOM
3/8"=1'-0"



2 BUILDING 321 STEAM PIT NEW WORK PLAN
3/16"=1'-0"



2 BUILDING 321 STEAM PIT DEMOLITION PLAN
3/16"=1'-0"



BUILDING 321 MECHANICAL SITE PLAN
3/64"=1'-0"

UNIT HEATER SCHEDULE

DESIGNATION	UH-1
LOCATION	MECH ROOM
AIRFLOW (CFM)	340
HEATING CAPACITY (MBH)	10
ENTERING AIR TEMPERATURE (DEG F)	55
LEAVING AIR TEMPERATURE (DEG F)	82
ENTERING WATER TEMPERATURE (DEG F)	180
FLOW RATE (GPM)	.5
WATER PRESSURE DROP (FT W.G.)	.5
MOTOR POWER (HP)	1/60
VOLTAGE (V)	115
PHASE	1
FREQUENCY (Hz)	60
BASED ON	MODINE
MODEL	HC-18 S 01
REMARKS	1

REMARKS LEGEND:
1. PROVIDE UNIT MOUNTED THERMOSTAT.

BOILER SCHEDULE

DESIGNATION	B-1	B-2
LOCATION	MECH ROOM	MECH ROOM
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10
GAS INLET CONNECTION (IN)	1	1
INPUT (MBH)	399	399
OUTPUT (MBH)	375	375
MINIMUM TURN DOWN RATIO	5:1	5:1
FLOWRATE (GPM)	30	30
MAXIMUM PRESSURE DROP (FT_H2O)	8	8
ENTERING WATER TEMPERATURE (DEG F)	160	160
LEAVING WATER TEMPERATURE (DEG F)	185	185
MINIMUM OPERATING PRESSURE (PSI)	30	30
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
TOTAL OPERATING AMPS	1.5	1.5
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	LOCHINVAR	LOCHINVAR
MODEL REMARKS	KB-400	KB-400
REMARKS	1, 2, 3 & 4	1, 2, 3 & 4

REMARKS LEGEND:
1. PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER BOILER.
2. BOILER CIRCULATION PUMP TO BE PROVIDED BY MANUFACTURER AT 30 GPM AT 25 DELTA T.
3. PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.
4. PROVIDE BOILERS WHICH ARE AT LEAST 94% EFFICIENT BASED ON BTS-2000, REV 06 07 CONDITIONS.

SOLID SEPARATOR SCHEDULE

DESIGNATION	SS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
FLOW RATE (GPM)	69
MAXIMUM PRESSURE DROP (FT-H2O)	14
COLLECTION CHAMBER CAPACITY (GAL)	0.8
BASED ON	LAKOS
MODEL	ILB-0200

AIR SEPARATOR SCHEDULE

DESIGNATION	AS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
LINE SIZE (IN)	3
BASED ON	BELL & GOSSETT
MODEL	ROLAIRTR0L

EXPANSION TANK SCHEDULE

DESIGNATION	ET-1
SERVICE	HEATING WATER
LOCATION	MECH ROOM
TYPE	BLADDER
TANK VOLUME (GAL)	60
FILL PRESSURE (PSI)	20
RELIEF VALVE PRESSURE SETTING (PSI)	100
BASED ON	JOHN WOOD COMPANY
MODEL	JAER-23-607

LOUVER SCHEDULE

DESIGNATION	L-1
USAGE	INTAKE
LOCATION	MECH ROOM
DESCRIPTION	COMBINATION LOUVER/DAMPER
DEPTH (IN)	8
FRAME TYPE	CHANNEL
WIDTH (IN)	32
HEIGHT (IN)	16
AIRFLOW (CFM)	550
FREE AREA (SF)	.75
FREE AREA VELOCITY (FPM)	734
PRESSURE DROP (IN H2O)	.067
SELECTION BASE ON	GREENHECK
ACTUATOR TYPE	120 VAC
ACTUATOR FAIL POSITION	CLOSED
MODEL	EAC-601
REMARKS	1, 2 & 3

REMARKS LEGEND:
1. SUBMIT COLOR CHART. COLOR TO BE APPROVED BY ARCHITECT.
2. SEE ARCHITECTURAL PLANS FOR LOCATION.
3. PROVIDE SPRING RETURN CLOSE, POWERED OPEN BY ACTUATOR.

FAN SCHEDULE

DESIGNATION	EF-1
USAGE	EXHAUST
SERVES ROOM(S)	MECH ROOM
DESCRIPTION	CENTRIFUGAL
FAN DATA	--
AIRFLOW (SCFM)	550
TOTAL SP (IN-H2O)	.15
RPM	1630
DRIVE TYPE	DIRECT
MOTOR DATA	--
HORSEPOWER	1/6
RPM	1725
VOLTS	115
PHASE	1
HERTZ	60
SELECTION BASED ON	GREENHECK
MODEL	G-985-VG
REMARKS	1, 2 & 3

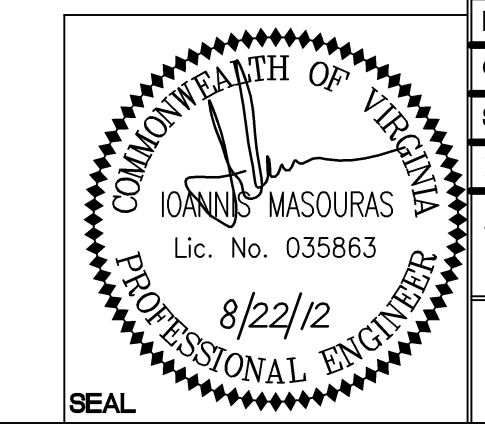
REMARKS LEGEND:
1. PROVIDE FAN WITH INTEGRAL BACK-DRAFT DAMPER, CONTINUOUS DUTY RATED.
2. PROVIDE FAN WITH UNIT MOUNTED DISCONNECT.
3. PROVIDE WALL MOUNTED THERMOSTAT CONTROL, WIRE INTAKE LOUVER DAMPER IN SERIES WITH FAN TO OPEN UPON FAN OPERATION.

PUMP SCHEDULE

DESIGNATION	HWP-1
SERVICE	HOT WATER
LOCATION	MECH ROOM
TYPE	INLINE
PUMP DATA	-
FLOW (GPM)	69
TOTAL HEAD (FT-H2O)	55
MINIMUM EFFICIENCY (%)	45
CONNECTION SIZE	-
SUCTION (IN)	1.5
DISCHARGE (IN)	1.5
MOTOR DATA	-
MOTOR FRAME	182JM
HORSEPOWER	3
RPM	1750
VOLTS	208
PHASE	1
HERTZ	60
SELECTION BASED ON (MFR)	BELL & GOSSETT
MODEL	80 1-1/2x1-1/2x9-1/2
REMARKS	-

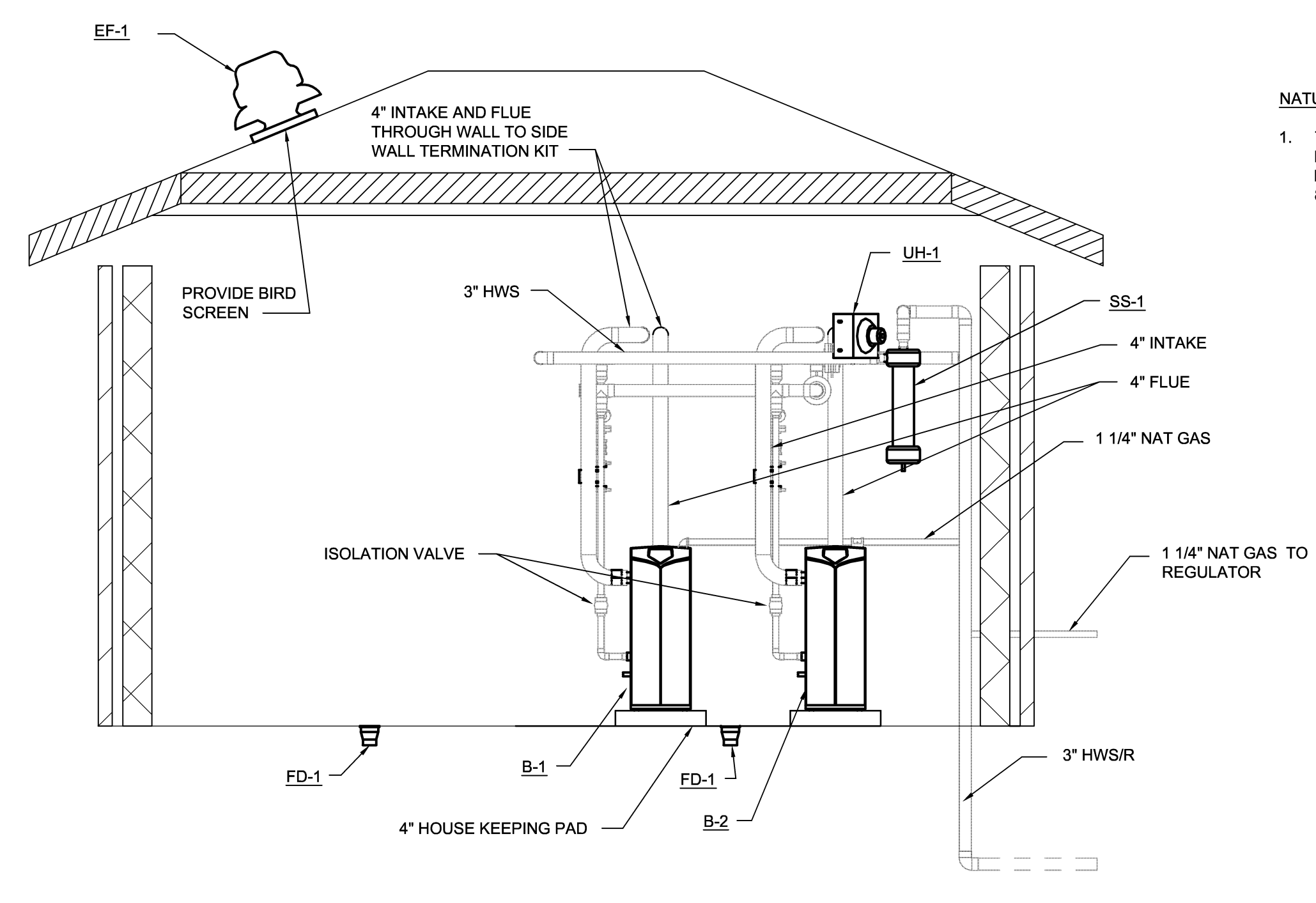
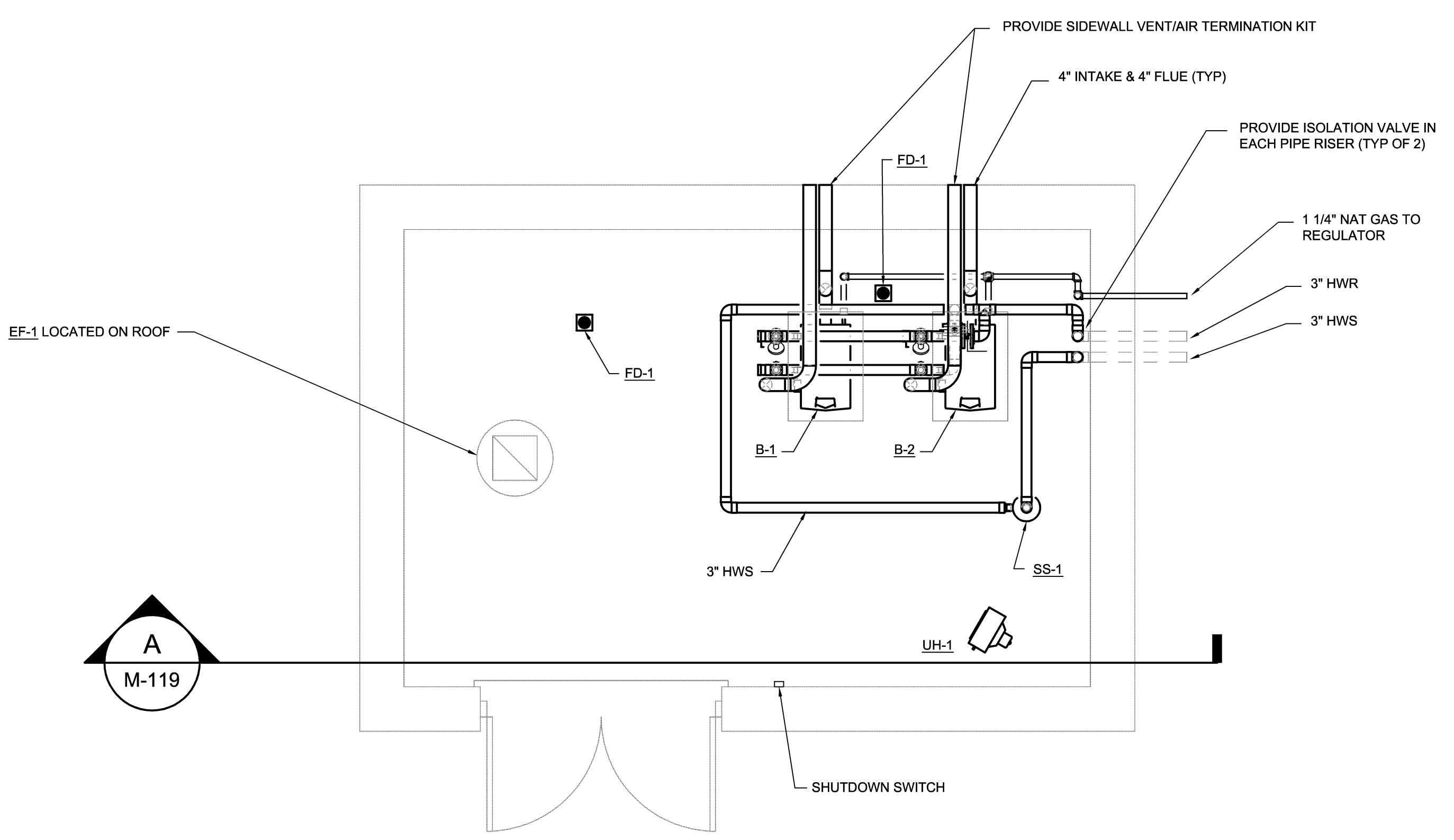
REMARKS LEGEND:
1. BRONZE FITTED PUMP FOR DOMESTIC WATER SERVICE. PROVIDE AQUASTAT CONTROL.

DISCLOSURE OF INFORMATION
Contractor shall comply as follows:
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(2) The information is otherwise in the public domain before the date of release.
(b) Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.
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WileyWilson 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.264.7242 wileywilson.com		M-118 PROJECT NO. CP12-0104 NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA	
DES. IM	DR. SWL	CHK. JHE	BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT BUILDING 321 MECHANICAL DEMOLITION AND NEW WORK PLAN
DESIGNED BY: DESIGN DR.	APPROVED PWO OR OICC	DATE	NAFAC DRAWING NO. 60011294 CONSTR CONTR NO. N40085-12-B-0104
SATISFACTORY TO	DATE	SCALE: AS SHOWN	SPEC No. 05-12-0104 SHEET 30 OF 43

SYM.	PREP'D BY	DATE	APPROVED



NATURAL GAS NOTE:
1. TOTAL CONNECTED NATURAL GAS DEMAND FOR THIS BUILDING IS 800 MBH AT 10 IN-H2O.

DEMOLITION NOTES:
1. REMOVE HOT WATER PIPING, PUMPS, HEAT EXCHANGERS AND EXPANSION TANKS AS SHOWN. REMOVE ALL ASSOCIATED PIPING, SUPPORTS AND HANGERS. REMOVE ALL STEAM SUPPLY AND CONDENSATE RETURN PIPING, COMPONENTS, HANGERS AND EQUIPMENT.
2. CHILLED WATER SYSTEM IS EXISTING TO REMAIN AND SHALL NOT BE INTERRUPTED DURING CONSTRUCTION.
3. EXISTING CONTROLS TO REMAIN FOR MODIFICATION AND INTEGRATION WITH NEW BACNET EMCS SYSTEM.
4. THE EQUIPMENT AND BUILDING LAYOUT IS BASED ON THE BASIS OF DESIGN EQUIPMENT CLEARANCES. ANY MODIFICATION REQUIRED FOR ACCEPTABLE ALTERNATE MANUFACTURER'S SHALL BE PROVIDED BY THE CONTRACTOR IF NECESSARY.

GENERAL NOTES:
1. SEE GENERAL NOTES ON SHEET M-001.
2. DOMESTIC HOT WATER SYSTEM FOR THIS BUILDING IS EXISTING TO REMAIN.
3. MAINTAIN MANUFACTURER RECOMMENDED CLEARANCE AROUND ALL EQUIPMENT. FOR BOILERS, PROVIDE A MINIMUM 30" PIPING AND MAINTENANCE CLEARANCE ON ALL SIDES. AT LEAST EVERY OTHER SIDE SHALL HAVE 30" CLEAR FLOOR SPACE FOR PERSONNEL ACCESS. FOR WATER HEATERS, PROVIDE MINIMUM 15" CLEARANCE TO THE SIDES AND REAR AND A MINIMUM 30" IN THE FRONT.
4. THE LOCATION OF ALL DUCT, PIPING AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE ANTICIPATED OR ENCOUNTERED INTERFERENCES. THESE PLANS ARE PARTIALLY DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. ALL PIPING OFFSETS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
5. INSTALL GAS PIPE IN ACCORDANCE WITH 2012 NORTH CAROLINA FUEL GAS CODE.
6. PROVIDE HOSE BIB AND 1/2" CONNECTION FOR FILLING IN NEW MECHANICAL ROOM.
7. PROVIDE FLOOR DRAINS AS SHOWN ON FLOOR PLAN. CONTRACTOR TO VERIFY NEAREST SEWER MAIN. FOR PRICING PURPOSES, ASSUME 200 YARDS OF SANITARY PIPING. PROVIDE VENT THROUGH ROOF FOR FLOOR DRAINS IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE.
8. PROVIDE APPURTENANCES TO COMPLY WITH ASME CSD-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUTDOWN SWITCH LOCATED ADJACENT TO EXIT DOOR.

MECHANICAL ROOM SECTION
3/8"=1'-0" 0' 2' 4' 6'

BOILER SCHEDULE		
DESIGNATION	B-1	B-2
LOCATION	MECH ROOM	MECH ROOM
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10
GAS INLET CONNECTION (IN)	1	1
INPUT (MBH)	399	399
OUTPUT (MBH)	375	375
MINIMUM TURN DOWN RATIO	5:1	5:1
FLOWRATE (GPM)	30	30
MAXIMUM PRESSURE DROP (FT. H2O)	8	8
ENTERING WATER TEMPERATURE (DEG F)	160	160
LEAVING WATER TEMPERATURE (DEG F)	185	185
MINIMUM OPERATING PRESSURE (PSI)	30	30
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
TOTAL OPERATING AMPS	1.5	1.5
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	LOCHINVAR	LOCHINVAR
MODEL REMARKS	KB-400	KB-400
REMARKS	1, 2, 3 & 4	1, 2, 3 & 4

FAN SCHEDULE	
DESIGNATION	EF-1
USAGE	EXHAUST
SERVES ROOM(S)	MECH ROOM
DESCRIPTION	CENTRIFUGAL
FAN DATA	--
AIRFLOW (SCFM)	550
TOTAL SP (IN-H2O)	.15
RPM	1630
DRIVE TYPE	DIRECT
MOTOR DATA	--
HORSEPOWER	1/8
RPM	1725
VOLTS	115
PHASE	1
HERTZ	60
SELECTION BASED ON	GREENHECK
MODEL	G-085-VG
REMARKS	1, 2 & 3

REMARKS LEGEND:
1. PROVIDE FAN WITH INTEGRAL BACK-DRAFT DAMPER, CONTINUOUS DUTY RATED.
2. PROVIDE FAN WITH UNIT MOUNTED DISCONNECT.
3. PROVIDE WALL MOUNTED THERMOSTAT CONTROL WIRE INTAKE LOUVER DAMPER IN SERIES WITH FAN TO OPEN UPON FAN OPERATION.

REMARKS LEGEND:
1. PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER BOILER.
2. BOILER CIRCULATION PUMP TO BE PROVIDED BY MANUFACTURER AT 30 GPM AT 25 DELTA T.
3. PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.
4. PROVIDE BOILERS WHICH ARE AT LEAST 94% EFFICIENT BASED ON BTS-2000, REV 06.07 CONDITIONS.

PUMP SCHEDULE	
DESIGNATION	HWP-1
SERVICE	HOT WATER
LOCATION	MECH ROOM
TYPE	INLINE
PUMP DATA	-
FLOW (GPM)	35
TOTAL HEAD (FT-H2O)	90
MINIMUM EFFICIENCY (%)	45
CONNECTION SIZE	-
SUCTION (IN)	1.5
DISCHARGE (IN)	1.5
MOTOR DATA	-
MOTOR FRAME	184JM
HORSEPOWER	5
RPM	1750
VOLTS	208
PHASE	1
HERTZ	60
SELECTION BASED ON (MFR)	BELL & GOSSETT
MODEL	80 1-1/2x1-1/2x9-1/2
REMARKS	-

UNIT HEATER SCHEDULE	
DESIGNATION	UH-1
LOCATION	MECH ROOM
AIRFLOW (CFM)	300
HEATING CAPACITY (KW)	3
ENTERING AIR TEMPERATURE (DEG F)	55
LEAVING AIR TEMPERATURE (DEG F)	87
MOTOR POWER (HP)	1/80
VOLTAGE (V)	208
PHASE	1
FREQUENCY (Hz)	60
BASED ON	INDEECO
MODEL	ULI
REMARKS	1 & 2

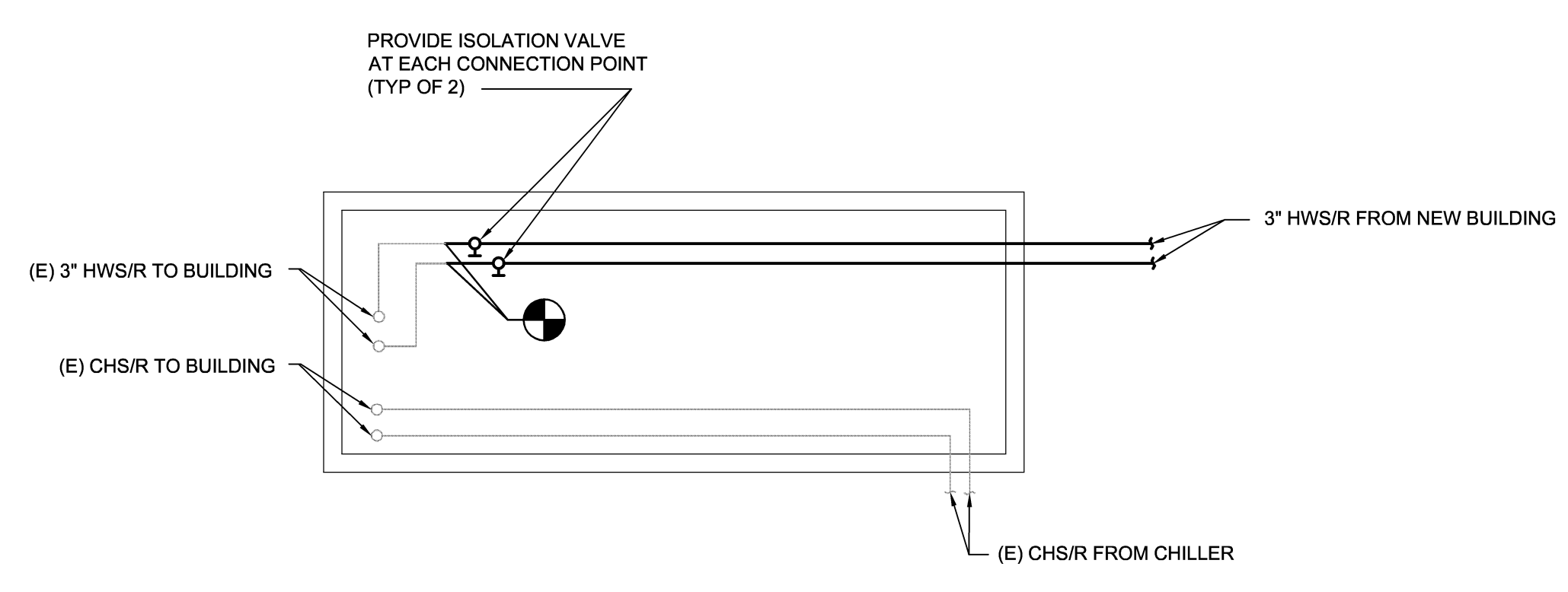
REMARKS LEGEND:
1. PROVIDE UNIT MOUNTED THERMOSTAT.
2. PROVIDE INTEGRAL DISCONNECT.

LOUVER SCHEDULE	
DESIGNATION	L-1
USAGE	INTAKE
LOCATION	MECH ROOM
DESCRIPTION	COMBINATION LOUVER/DAMPER
DEPTH (IN)	8
FRAME TYPE	CHANNEL
WIDTH (IN)	32
HEIGHT (IN)	16
AIRFLOW (CFM)	550
FREE AREA (SF)	.75
FREE AREA VELOCITY (FFM)	734
PRESSURE DROP (IN H2O)	.067
SELECTION BASE ON	GREENHECK
ACTUATOR TYPE	120 VAC
ACTUATOR FAIL POSITION	CLOSED
MODEL	EAC-601
REMARKS	1, 2 & 3

REMARKS LEGEND:
1. SUBMIT COLOR CHART. COLOR TO BE APPROVED BY ARCHITECT.
2. SEE ARCHITECTURAL PLANS FOR LOCATION.
3. PROVIDE SPRING RETURN CLOSE, POWERED OPEN BY ACTUATOR.

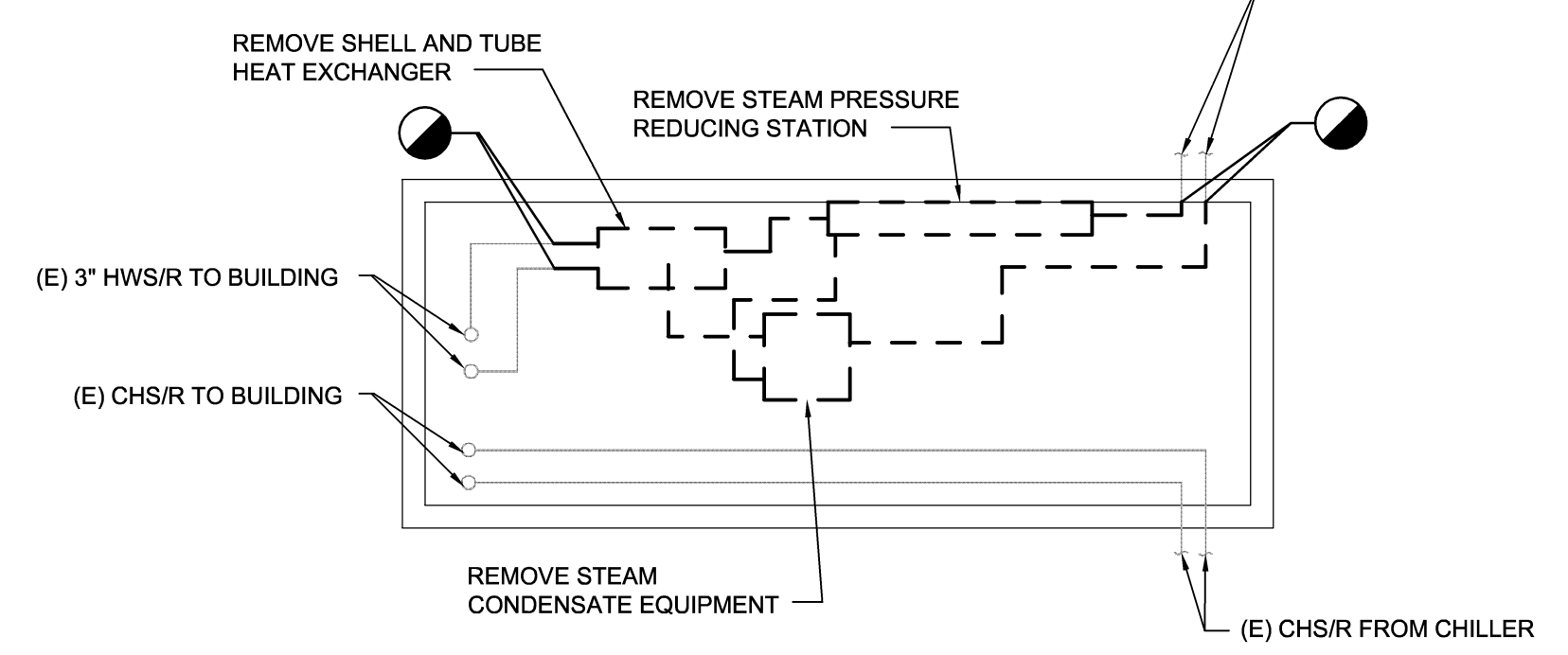
FLOOR DRAIN SCHEDULE		
DESIGNATION	DRAIN SIZE	DESCRIPTION
FD-1	3"	ZURN MODEL 415B WITH 6" NICKEL BRONZE STRAINER AND PROSET TRAPGUARD

BUILDING 323 NEW MECHANICAL ROOM
3/8"=1'-0" 0' 2' 4' 6'

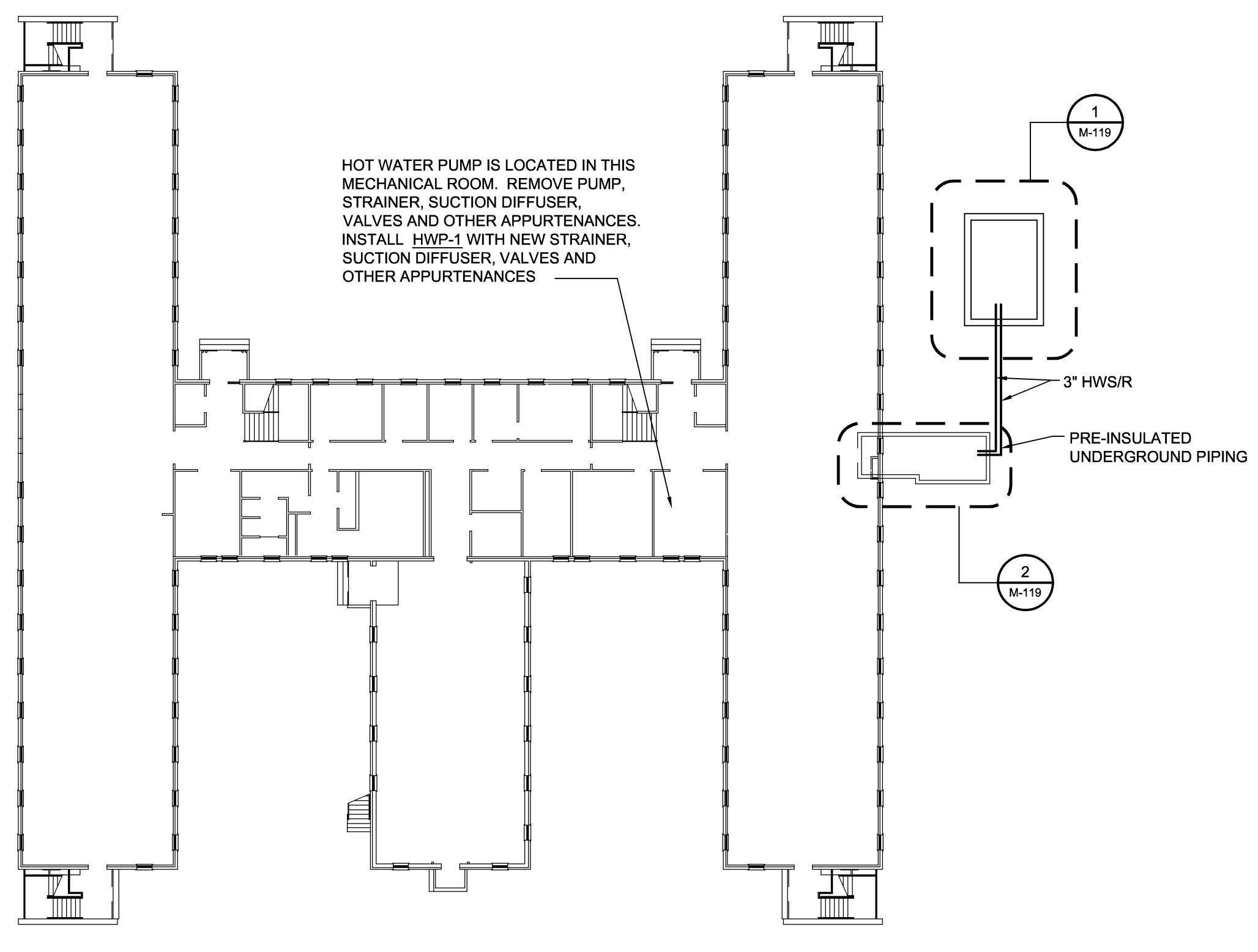


BUILDING 323 STEAM PIT NEW WORK PLAN
3/16"=1'-0" 0' 4' 8' 12'

REMOVE STEAM AND CONDENSATE LINES AND CAP AS CLOSE TO WALL AS POSSIBLE. FOLLOW UNDERGROUND STEAM AND CONDENSATE LINES BACK TO STEAM PIT WHERE BRANCHES CONNECT TO MAINS. REMOVE BRANCH PIPING TO ENTRANCE OF STEAM PIT AND PROVIDE CAP. PROVIDE BLIND FLANGE TO EXISTING BRANCH STEAM AND CONDENSATE ISOLATION VALVE AND TAG VALVES TO REMAIN CLOSED. ABANDON CAPPED BRANCH STEAM AND CONDENSATE LINE BETWEEN STEAM PIT AND BUILDING.

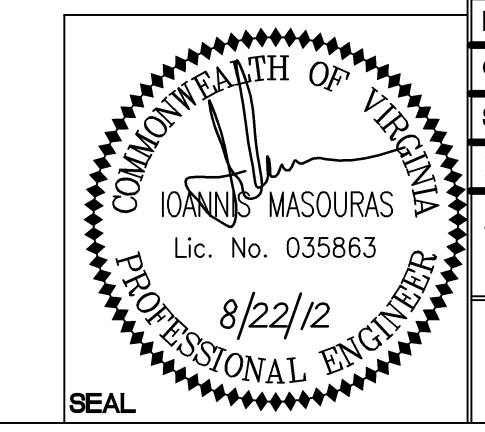


BUILDING 323 STEAM PIT DEMOLITION PLAN
3/16"=1'-0" 0' 4' 8' 12'



BUILDING 323 MECHANICAL SITE PLAN
3/8"=1'-0" 0' 10' 20' 40' 60'

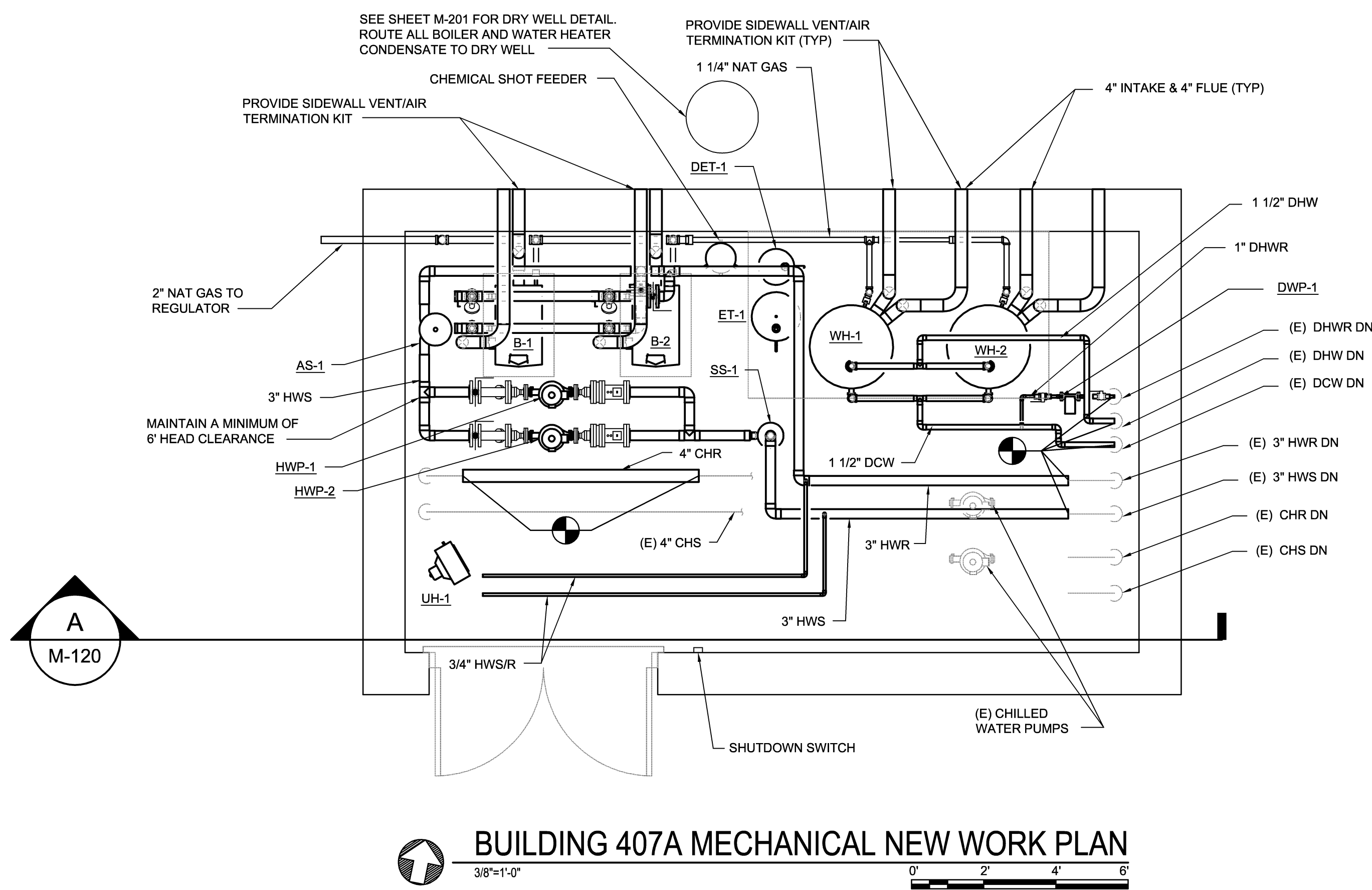
SOLID SEPARATOR SCHEDULE	
DESIGNATION	SS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
FLOW RATE (GPM)	35
MAXIMUM PRESSURE DROP (FT-H2O)	19
COLLECTION CHAMBER CAPACITY (GAL)	0.8
BASED ON	LAKOS
MODEL	ILB-0125



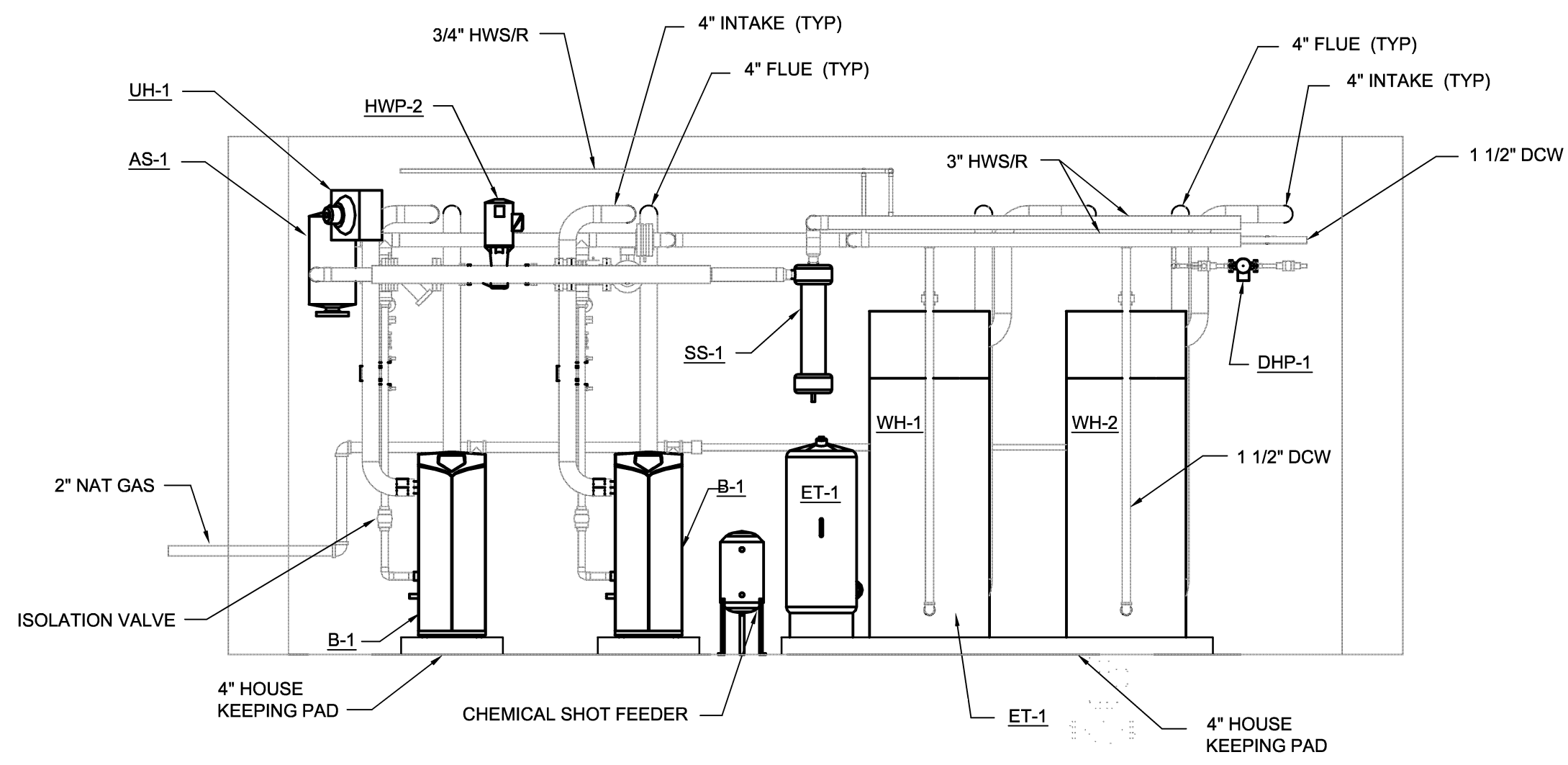
DISCLOSURE OF INFORMATION
Contractor shall comply as follows:
(a) The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless-
(1) The Contracting Officer has given prior written approval; or
(2) The information is otherwise in the public domain before the date of release.
Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.
(c) The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.

 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.264.7242 wileywilson.com		M-119 PROJECT NO. CP12-0104 NAVAL FACILITIES ENGINEERING COMMAND	
DEPT OF NAVY MARINE CORPS BASE CAMP LEJUNE, NORTH CAROLINA		BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT BUILDING 323 MECHANICAL DEMOLITION AND NEW WORK PLAN	
DES. IM	DR. SWL	CHK. JHE	DESIGN DR.
APPROVED PWO OR OIC	DATE	SIZE E	CODE IDENT NO. 80091
SATISFACTORY TO	DATE	CONSTR CONTR NO. N40085-12-B-0104	NAVFAC DRAWING NO. 60011295
SCALE: AS SHOWN	SPEC No. 05-12-0104	SHEET 31 OF 43	

SYM	PREP'D BY	DATE	APPROVED



BUILDING 407A MECHANICAL NEW WORK PLAN
3/8"=1'-0"



A MECHANICAL ROOM SECTION
3/8"=1'-0"

NATURAL GAS NOTE:

- TOTAL CONNECTED NATURAL GAS DEMAND FOR THIS BUILDING IS 1,100 MBH AT 10 IN-H2O.

DEMOLITION NOTES

- REMOVE HOT WATER PIPING, PUMPS, HEAT EXCHANGERS AND EXPANSION TANKS AS SHOWN. REMOVE ALL ASSOCIATED PIPING, SUPPORTS AND HANGERS. REMOVE ALL STEAM SUPPLY AND CONDENSATE RETURN PIPING, COMPONENTS, HANGERS AND EQUIPMENT.
- CHILLED WATER SYSTEM IS EXISTING TO REMAIN AND SHALL NOT BE INTERRUPTED DURING CONSTRUCTION.
- EXISTING CONTROLS TO REMAIN FOR MODIFICATION AND INTEGRATION WITH NEW BACNET EMCS SYSTEM.
- THE EQUIPMENT AND BUILDING LAYOUT IS BASED ON THE BASIS OF DESIGN EQUIPMENT CLEARANCES. ANY MODIFICATION REQUIRED FOR ACCEPTABLE ALTERNATE MANUFACTURER'S SHALL BE PROVIDED BY THE CONTRACTOR IF NECESSARY.

GENERAL NOTES

- SEE GENERAL NOTES ON SHEET M-001.
- BUILDING 407A IS THE EXISTING MECHANICAL ROOM THAT SERVES BUILDING 407.
- MAINTAIN MANUFACTURER RECOMMENDED CLEARANCE AROUND ALL EQUIPMENT. FOR BOILERS, PROVIDE A MINIMUM 30" PIPING AND MAINTENANCE CLEARANCE ON ALL SIDES. AT LEAST EVERY OTHER SIDE SHALL HAVE 30" CLEAR FLOOR SPACE FOR PERSONNEL ACCESS. FOR WATER HEATERS, PROVIDE MINIMUM 15" CLEARANCE TO THE SIDES AND REAR AND A MINIMUM 30" IN THE FRONT.
- THE LOCATION OF ALL DUCT, PIPING AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE ANTICIPATED OR ENCOUNTERED INTERFERENCES. THESE PLANS ARE PARTIALLY DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. ALL PIPING OFFSETS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- INSTALL GAS PIPE IN ACCORDANCE WITH 2012 NORTH CAROLINA FUEL GAS CODE.
- PROVIDE HOSE BIB AND 1/2" CONNECTION FOR FILLING IN NEW MECHANICAL ROOM.
- PROVIDE FLOOR DRAINS AS SHOWN ON FLOOR PLAN. CONTRACTOR TO VERIFY NEAREST SEWER MAIN. FOR PRICING PURPOSES, ASSUME 200 YARDS OF SANITARY PIPING. PROVIDE VENT THROUGH ROOF FOR FLOOR DRAINS IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE.
- STORE DOMESTIC HOT WATER AT 140 DEG F AND TEMPER TO 110 DEG F BEFORE BEING SUPPLIED TO BUILDING. PROVIDE MIXING VALVE.
- PROVIDE APPURTENANCES TO COMPLY WITH ASME CSD-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUTDOWN SWITCH LOCATED ADJACENT TO EXIT DOOR.

DESIGNATION	HWP-1	HWP-2	DWP-1
SERVICE	HOT WATER	HOT WATER	DOMESTIC HOT WATER
LOCATION	MECH ROOM	MECH ROOM	MECH ROOM
TYPE	INLINE	INLINE	INLINE
PUMP DATA	-	-	-
FLOW (GPM)	72	72	5
TOTAL HEAD (FT-H2O)	65	65	20
MINIMUM EFFICIENCY (%)	50	50	-
CONNECTION SIZE	-	-	-
SUCTION (IN)	1.5	1.5	1.5
DISCHARGE (IN)	1.5	1.5	1.5
MOTOR DATA	-	-	-
MOTOR FRAME	182JM	182JM	-
HORSEPOWER	3	3	-
RPM	1750	1750	2850
VOLTS	208	208	115
PHASE	1	1	1
HERTZ	60	60	60
SELECTION BASED ON (MFR)	BELL & GOSSETT	BELL & GOSSETT	BELL & GOSSETT
MODEL	80 1-1/2x1-1/2x9-1/2	80 1-1/2x1-1/2x9-1/2	BOOSTER PL-30
REMARKS	-	-	1

DESIGNATION	B-1	B-2
LOCATION	MECH ROOM	MECH ROOM
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10
GAS INLET CONNECTION (IN)	1	1
INPUT (MBH)	399	399
OUTPUT (MBH)	375	375
MINIMUM TURN DOWN RATIO	5:1	5:1
FLOWRATE (GPM)	30	30
MAXIMUM PRESSURE DROP (FT-H2O)	8	8
ENTERING WATER TEMPERATURE (DEG F)	160	160
LEAVING WATER TEMPERATURE (DEG F)	185	185
MINIMUM OPERATING PRESSURE (PSI)	30	30
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
TOTAL OPERATING AMPS	1.5	1.5
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	LOCHINVAR	LOCHINVAR
MODEL REMARKS	KB-400	KB-400
REMARKS	1, 2, 3 & 4	1, 2, 3 & 4

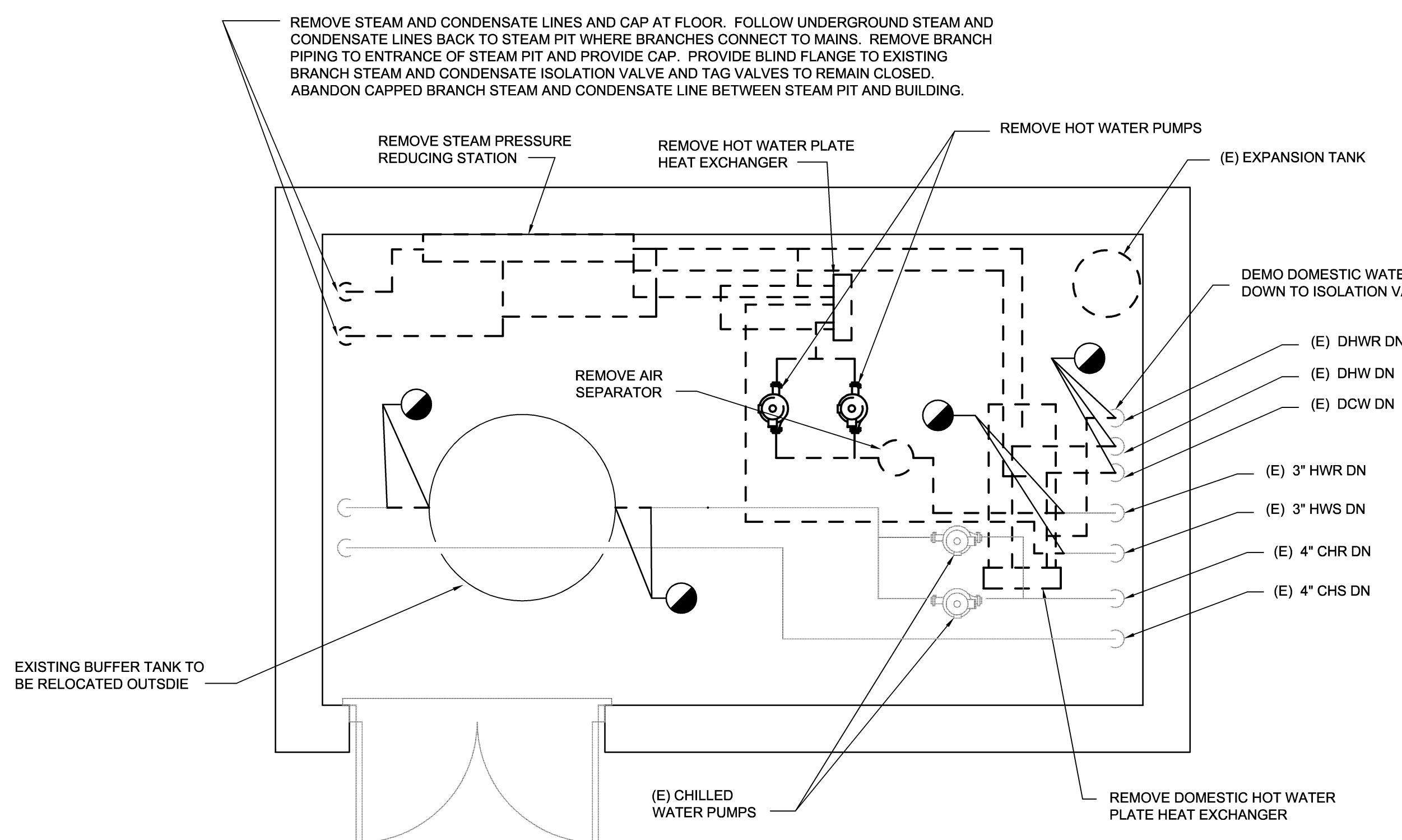
DESIGNATION	ET-1	DET-1
SERVICE	HEATING WATER	DOMESTIC HOT WATER
LOCATION	MECH ROOM	MECH ROOM
TYPE	BLADDER	BLADDER
TANK VOLUME (GAL)	60	14
FILL PRESSURE (PSI)	20	60
RELIEF VALVE PRESSURE SETTING (PSI)	100	100
BASED ON	JOHN WOOD COMPANY	AMTROL
MODEL	JAER-23-607	ST-C SERIES ST-42V-C

* MATCH DOMESTIC WATER SUPPLY PRESSURE AT THIS LOCATION.

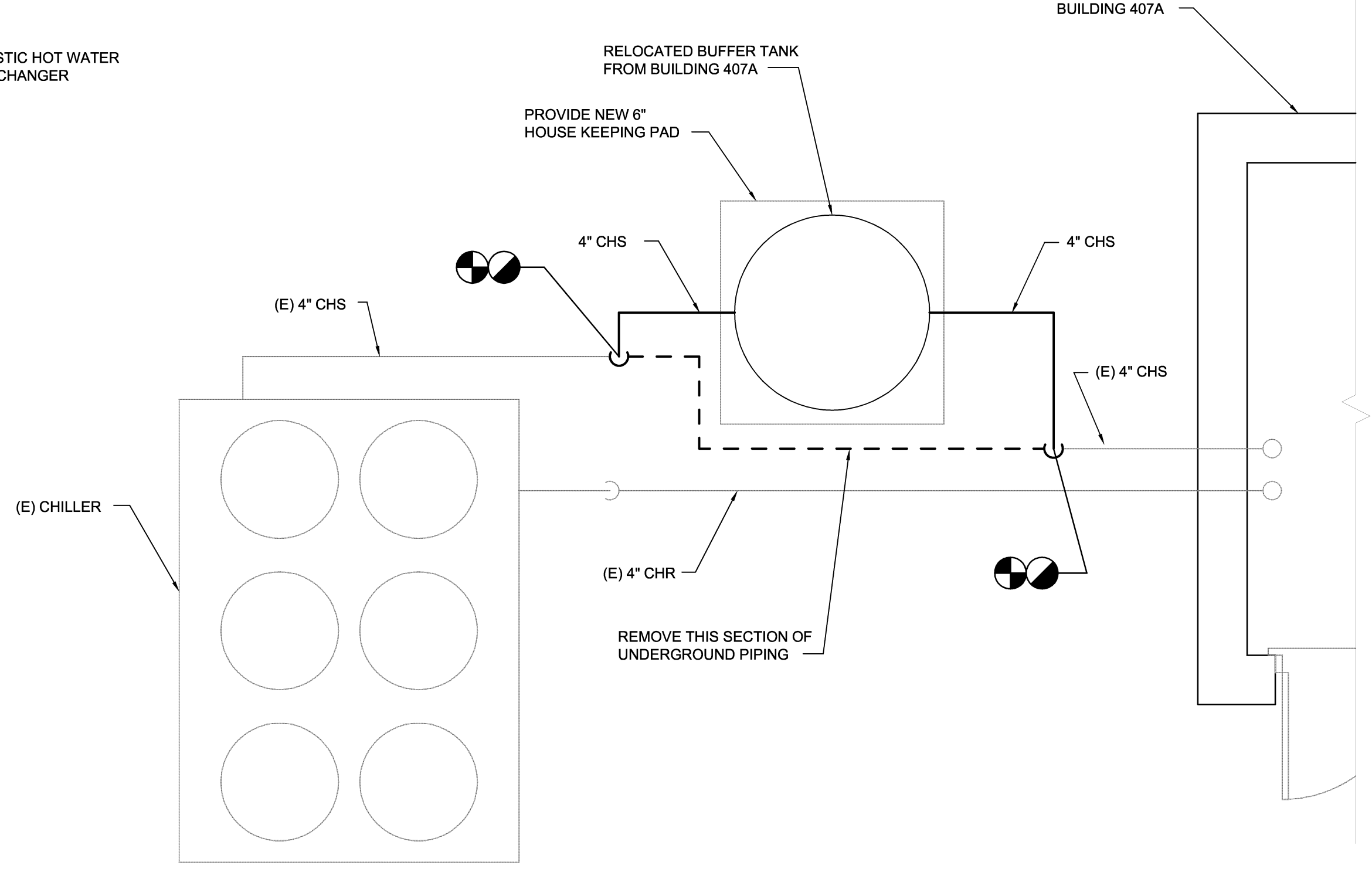
DESIGNATION	AS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
LINE SIZE (IN)	3
BASED ON	BELL & GOSSETT
MODEL	ROLAIRTR0L

- REMARKS LEGEND:**
- BRONZE FITTED PUMP FOR DOMESTIC WATER SERVICE. PROVIDE AQUASTAT CONTROL.

- REMARKS LEGEND:**
- PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER BOILER.
 - BOILER CIRCULATION PUMP TO BE PROVIDED BY MANUFACTURER AT 30 GPM AT 25 DELTA T.
 - PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.
 - PROVIDE BOILERS WHICH ARE AT LEAST 94% EFFICIENT BASED ON BTS-2000, REV 06/07 CONDITIONS.



BUILDING 407A MECHANICAL DEMOLITION PLAN
3/8"=1'-0"



BUILDING 407A BUFFER TANK RELOCATION PLAN
3/8"=1'-0"

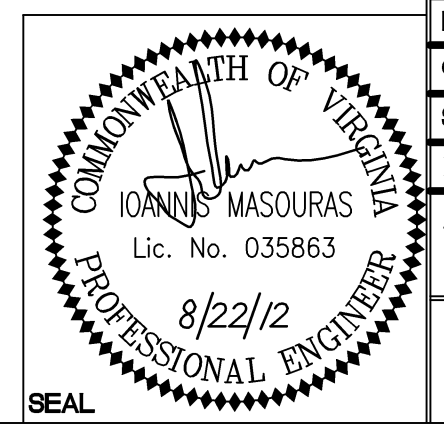
DESIGNATION	WH-1	WH-2
LOCATION	MECH ROOM	MECH ROOM
STORAGE (GALLONS)	100	100
GPH AT 100 DEG F RISE	173	173
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4.8	4.8
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10.5	10.5
GAS INLET CONNECTION (IN)	3/4	3/4
INPUT (MBH)	150	150
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	STATE	STATE
MODEL	SUF 100 150 NE	SUF 100 150 NE
REMARKS	1 & 2	1 & 2

DESIGNATION	UH-1
LOCATION	MECH ROOM
AIRFLOW (CFM)	340
HEATING CAPACITY (MBH)	10
ENTERING AIR TEMPERATURE (DEG F)	55
LEAVING AIR TEMPERATURE (DEG F)	82
ENTERING WATER TEMPERATURE (DEG F)	180
FLOW RATE (GPM)	.5
WATER PRESSURE DROP (FT W.G.)	.5
MOTOR POWER (HP)	1/60
VOLTAGE (V)	115
PHASE	1
FREQUENCY (Hz)	60
BASED ON	MODINE
MODEL	HC-18 S 01
REMARKS	1

- REMARKS LEGEND:**
- PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER WATER HEATER.
 - PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.

- REMARKS LEGEND:**
- PROVIDE UNIT MOUNTED THERMOSTAT.

DESIGNATION	SS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
FLOW RATE (GPM)	72
MAXIMUM PRESSURE DROP (FT-H2O)	14
COLLECTION CHAMBER CAPACITY (GAL)	0.8
BASED ON	LAKOS
MODEL	ILB-0200



WileyWilson 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.264.7242 wileywilson.com		M-120 PROJECT NO. CP12-004 NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA	
DES. IM DR. SWL CHK. JHE SUBMITTED BY:		BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT BUILDING 407 MECHANICAL DEMOLITION AND NEW WORK PLAN	
DESIGN DR. APPROVED PWO OR OICC DATE		SIZE E CODE IDENT NO. 80091 NAVFAC DRAWING NO. 60011296	
SATISFACTORY TO DATE		CONSTR CONTR NO. N40085-12-B-0104 SPEC No. 05-12-004 SHEET 32 OF 43	

DISCLOSURE OF INFORMATION

Contractor shall comply as follows:

(a) The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless-

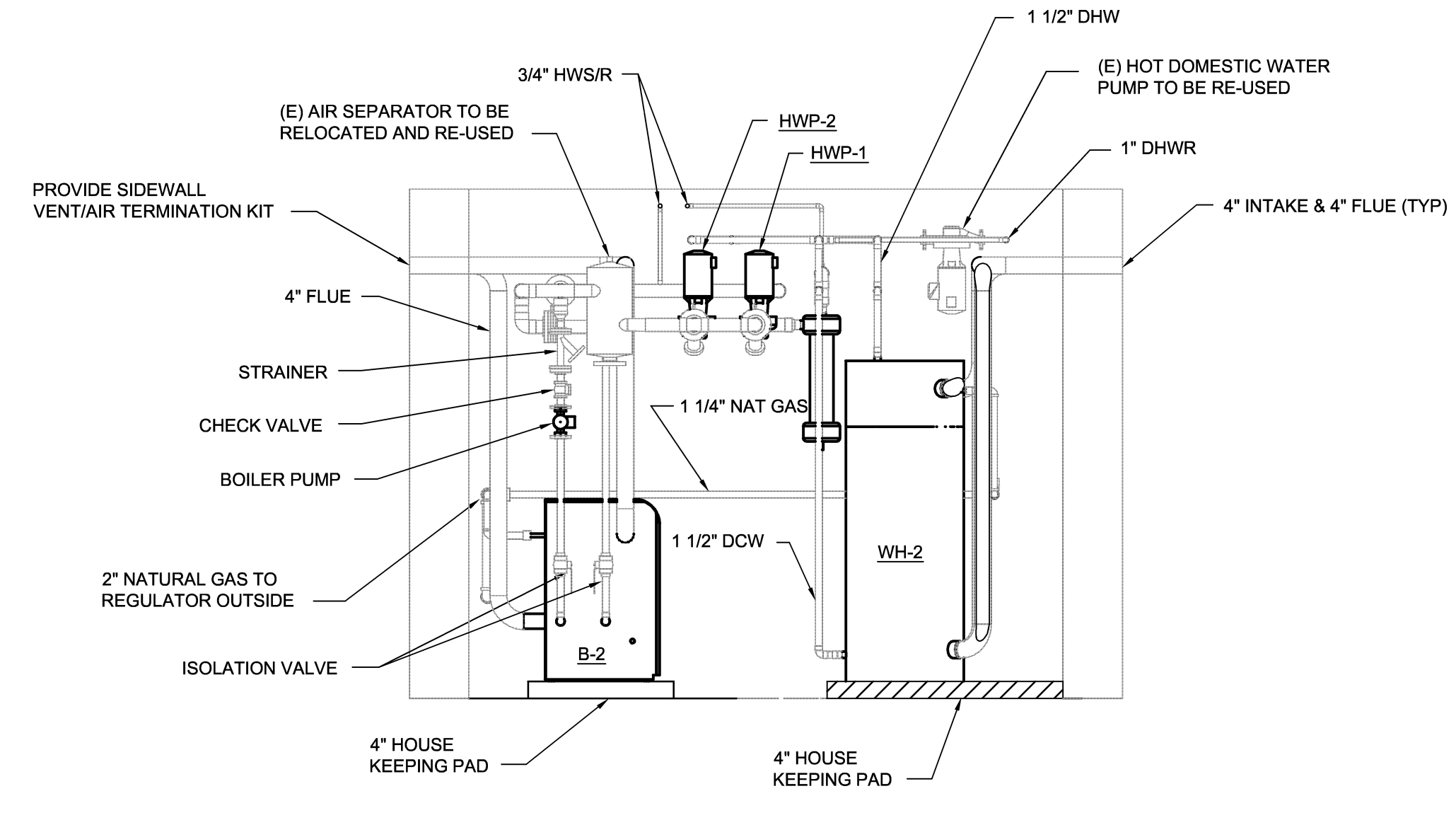
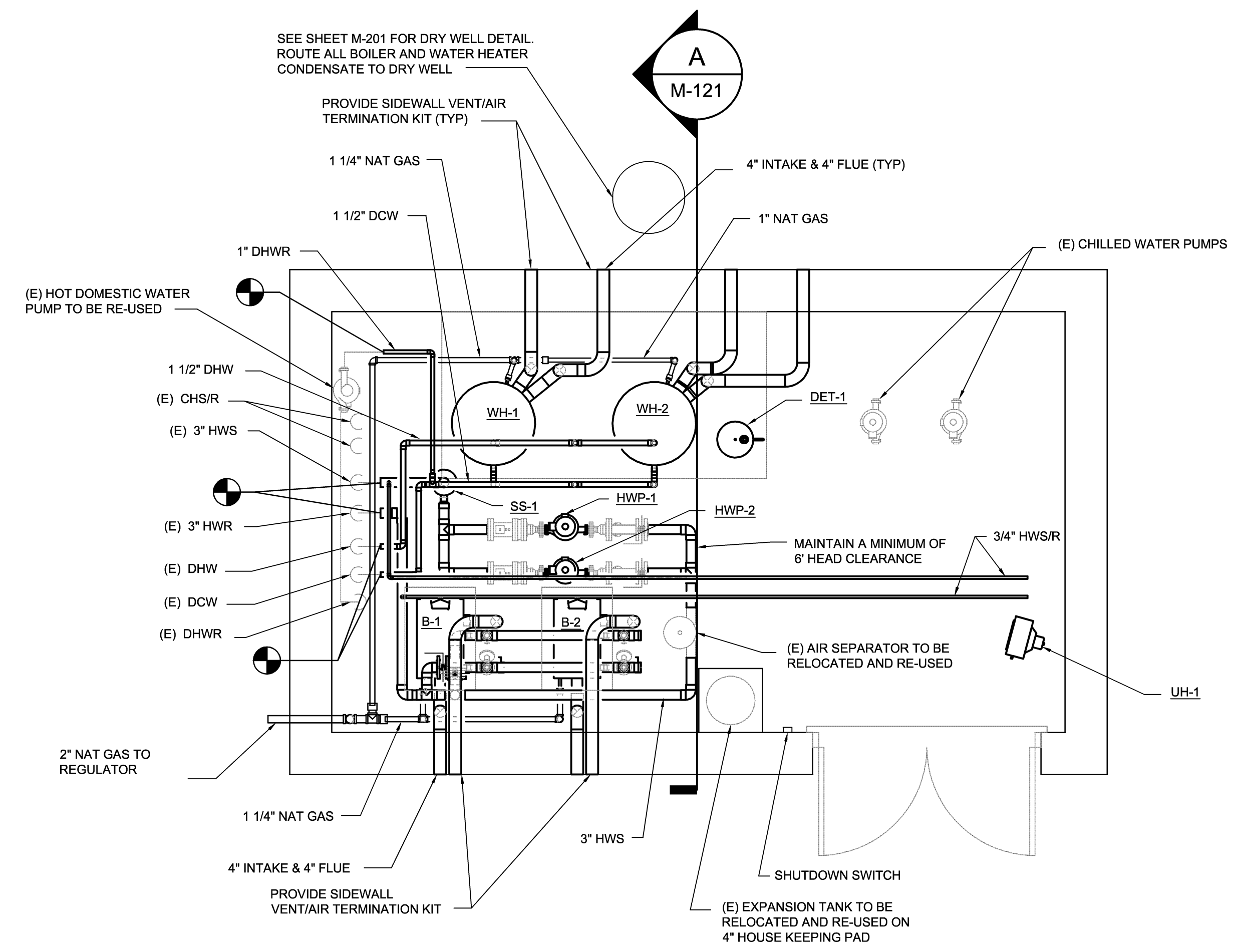
(1) The Contracting Officer has given prior written approval; or

(2) The information is otherwise in the public domain before the date of release.

(b) Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.

(c) The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.

SYM.	PREP'D BY	DATE	APPROVED



A MECHANICAL ROOM SECTION
3/8"=1'-0"

NOTE: EXISTING PIPING NOT SHOWN FOR CLARITY

NATURAL GAS NOTE:

- TOTAL CONNECTED NATURAL GAS DEMAND FOR THIS BUILDING IS 1,100 MBH AT 10 IN-H2O.

DEMOLITION NOTES

- REMOVE HOT WATER PIPING, PUMPS, HEAT EXCHANGERS AND EXPANSION TANKS AS SHOWN. REMOVE ALL ASSOCIATED PIPING, SUPPORTS AND HANGERS. REMOVE ALL STEAM SUPPLY AND CONDENSATE RETURN PIPING, COMPONENTS, HANGERS AND EQUIPMENT.
- CHILLED WATER SYSTEM IS EXISTING TO REMAIN AND SHALL NOT BE INTERRUPTED DURING CONSTRUCTION.
- EXISTING CONTROLS TO REMAIN FOR MODIFICATION AND INTEGRATION WITH NEW BACNET EMCS SYSTEM.
- THE EQUIPMENT AND BUILDING LAYOUT IS BASED ON THE BASIS OF DESIGN EQUIPMENT CLEARANCES. ANY MODIFICATION REQUIRED FOR ACCEPTABLE ALTERNATE MANUFACTURER'S SHALL BE PROVIDED BY THE CONTRACTOR IF NECESSARY.

GENERAL NOTES

- SEE GENERAL NOTES ON SHEET M-001.
- BUILDING 417A IS THE EXISTING MECHANICAL ROOM THAT SERVES BUILDING 417.
- MAINTAIN MANUFACTURER RECOMMENDED CLEARANCE AROUND ALL EQUIPMENT. FOR BOILERS, PROVIDE A MINIMUM 30" PIPING AND MAINTENANCE CLEARANCE ON ALL SIDES. AT LEAST EVERY OTHER SIDE SHALL HAVE 30" CLEAR FLOOR SPACE FOR PERSONNEL ACCESS. FOR WATER HEATERS, PROVIDE MINIMUM 15" CLEARANCE TO THE SIDES AND REAR AND A MINIMUM 30" IN THE FRONT.
- THE LOCATION OF ALL DUCT, PIPING AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE ANTICIPATED OR ENCOUNTERED INTERFERENCES. THESE PLANS ARE PARTIALLY DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. ALL PIPING OFFSETS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- INSTALL GAS PIPE IN ACCORDANCE WITH 2012 NORTH CAROLINA FUEL GAS CODE.
- PROVIDE HOSE BIB AND 1/2" CONNECTION FOR FILLING IN NEW MECHANICAL ROOM.
- PROVIDE FLOOR DRAINS AS SHOWN ON FLOOR PLAN. CONTRACTOR TO VERIFY NEAREST SEWER MAIN. FOR PRICING PURPOSES, ASSUME 200 YARDS OF SANITARY PIPING. PROVIDE VENT THROUGH ROOF FOR FLOOR DRAINS IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE.
- STORE DOMESTIC HOT WATER AT 140 DEG F AND TEMPER TO 110 DEG F BEFORE BEING SUPPLIED TO BUILDING. PROVIDE MIXING VALVE.
- PROVIDE APPURTENANCES TO COMPLY WITH ASME CSD-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUTDOWN SWITCH LOCATED ADJACENT TO EXIT DOOR.

BUILDING 417A MECHANICAL NEW WORK PLAN
3/8"=1'-0"

BOILER SCHEDULE		
DESIGNATION	B-1	B-2
LOCATION	MECH ROOM	MECH ROOM
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10
GAS INLET CONNECTION (IN)	1	1
INPUT (MBH)	399	399
OUTPUT (MBH)	375	375
MINIMUM TURN DOWN RATIO	5:1	5:1
FLOWRATE (GPM)	30	30
MAXIMUM PRESSURE DROP (FT. H2O)	8	8
ENTERING WATER TEMPERATURE (DEG F)	160	160
LEAVING WATER TEMPERATURE (DEG F)	185	185
RELIEF VALVE PRESSURE SETTING (PSI)	30	30
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
TOTAL OPERATING AMPS	1.5	1.5
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	LOCHINVAR	LOCHINVAR
MODEL REMARKS	KB-400	KB-400
REMARKS	1, 2, 3 & 4	1, 2, 3 & 4

REMARKS LEGEND:

- PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER BOILER.
- BOILER CIRCULATION PUMP TO BE PROVIDED BY MANUFACTURER AT 30 GPM AT 25 DELTA T.
- PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.
- PROVIDE BOILERS WHICH ARE AT LEAST 94% EFFICIENT BASED ON BTS-2000, REV 06.07 CONDITIONS.

UNIT HEATER SCHEDULE	
DESIGNATION	UH-1
LOCATION	MECH ROOM
AIRFLOW (CFM)	340
HEATING CAPACITY (MBH)	10
ENTERING AIR TEMPERATURE (DEG F)	55
LEAVING AIR TEMPERATURE (DEG F)	82
ENTERING WATER TEMPERATURE (DEG F)	180
FLOW RATE (GPM)	.5
WATER PRESSURE DROP (FT W.G.)	.5
MOTOR POWER (HP)	1/60
VOLTAGE (V)	115
PHASE	1
FREQUENCY (Hz)	60
BASED ON	MODINE
MODEL	HC-18 S 01
REMARKS	1

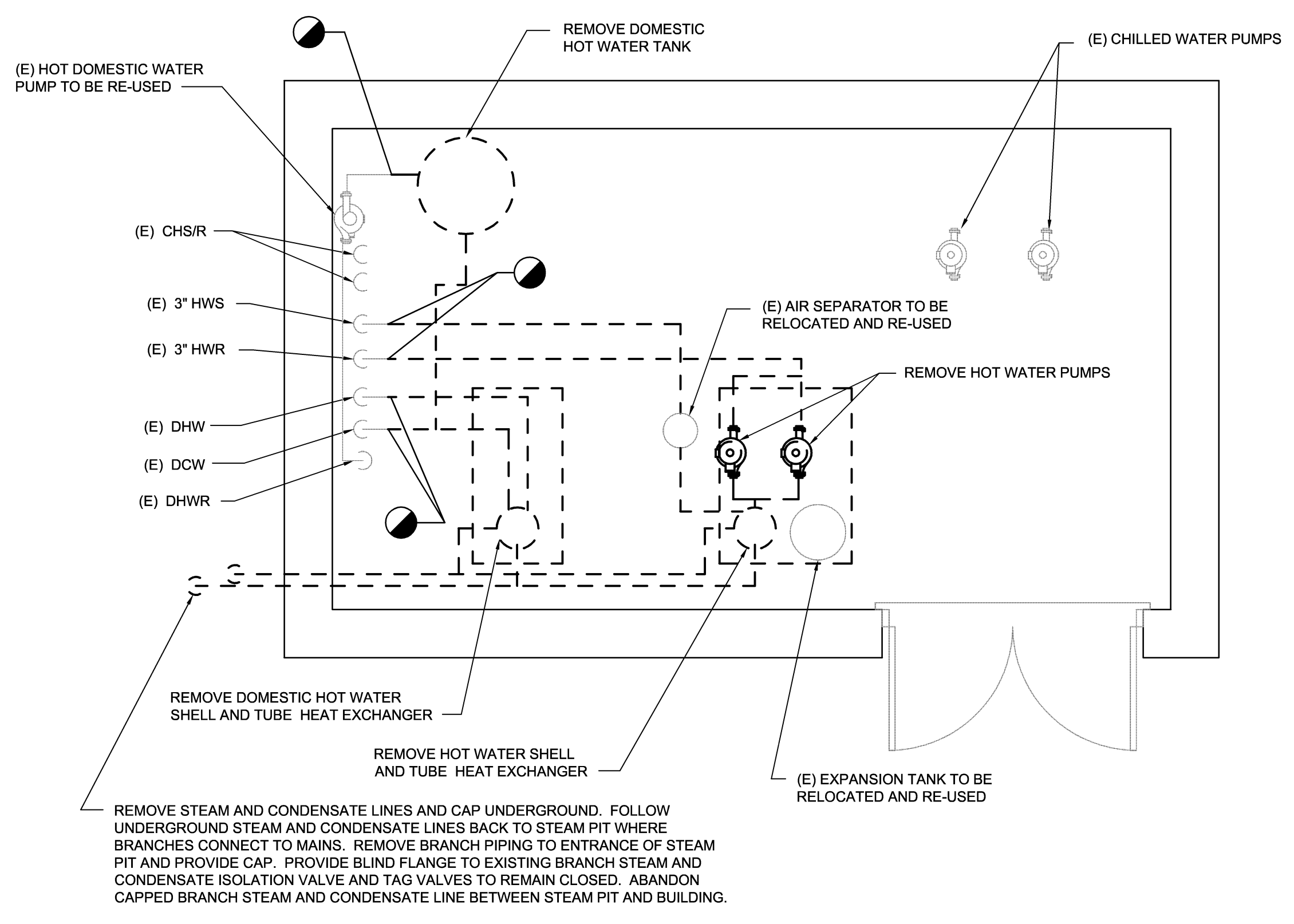
REMARKS LEGEND:

- PROVIDE UNIT MOUNTED THERMOSTAT.

SOLID SEPARATOR SCHEDULE	
DESIGNATION	SS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
FLOW RATE (GPM)	60
MAXIMUM PRESSURE DROP (FT-H2O)	23
COLLECTION CHAMBER CAPACITY (GAL)	.3
BASED ON	LAKOS
MODEL	ILB-0150

EXPANSION TANK SCHEDULE	
DESIGNATION	DET-1
SERVICE	DOMESTIC HOT WATER
LOCATION	MECH ROOM
TYPE	BLADDER
TANK VOLUME (GAL)	14
FILL PRESSURE (PSI)	60
RELIEF VALVE PRESSURE SETTING (PSI)	100
BASED ON	AMTROL
MODEL	ST-C SERIES ST-42V-C

*MATCH DOMESTIC WATER SUPPLY PRESSURE AT THIS LOCATION.



BUILDING 417A MECHANICAL DEMOLITION PLAN
3/8"=1'-0"

DOMESTIC HOT WATER HEATER SCHEDULE		
DESIGNATION	WH-1	WH-2
LOCATION	MECH ROOM	MECH ROOM
STORAGE (GALLONS)	100	100
GPH AT 100 DEG F RISE	173	173
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4.8	4.8
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10.5	10.5
GAS INLET CONNECTION (IN)	3/4	3/4
INPUT (MBH)	150	150
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	STATE	STATE
MODEL	SUF 100 150 NE	SUF 100 150 NE
REMARKS	1 & 2	1 & 2

REMARKS LEGEND:

- PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER WATER HEATER.
- PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.

PUMP SCHEDULE			
DESIGNATION	HWP-1	HWP-2	DWP-1
SERVICE	HOT WATER	HOT WATER	DOMESTIC HOT WATER
LOCATION	MECH ROOM	MECH ROOM	MECH ROOM
TYPE	INLINE	INLINE	INLINE
PUMP DATA	-	-	-
FLOW (GPM)	60	60	5
TOTAL HEAD (FT-H2O)	80	80	20
MINIMUM EFFICIENCY (%)	50	50	-
CONNECTION SIZE	-	-	-
SUCTION (IN)	1.5	1.5	1.5
DISCHARGE (IN)	1.5	1.5	1.5
MOTOR DATA	-	-	-
MOTOR FRAME	184JM	184JM	-
HORSEPOWER	5	5	-
RPM	1750	1750	2650
VOLTS	208	208	115
PHASE	1	1	1
HERTZ	60	60	60
SELECTION BASED ON (MFR)	BELL & GOSSETT	BELL & GOSSETT	BELL & GOSSETT
MODEL	80 1-1/2x1-1/2x9-1/2	80 1-1/2x1-1/2x9-1/2	BOOSTER PL-30
REMARKS	-	-	1

REMARKS LEGEND:

- BRONZE FITTED PUMP FOR DOMESTIC WATER SERVICE. PROVIDE AQUASTAT CONTROL.

DISCLOSURE OF INFORMATION

Contractor shall comply as follows:

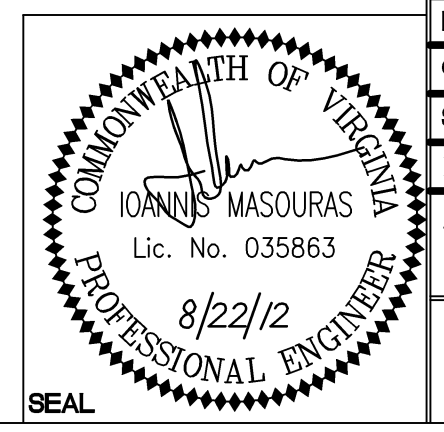
(a) The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless-

(1) The Contracting Officer has given prior written approval; or

(2) The information is otherwise in the public domain before the date of release.

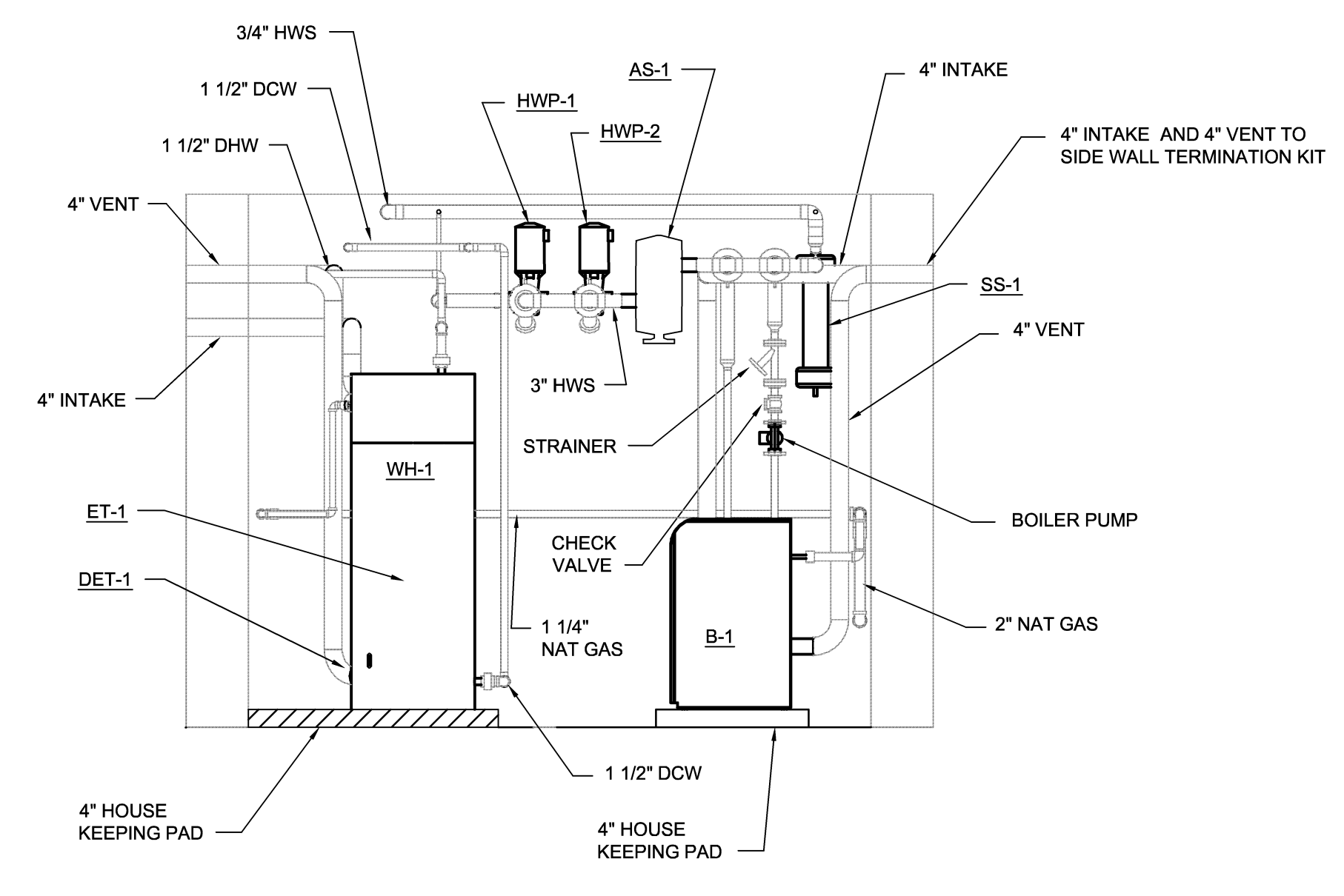
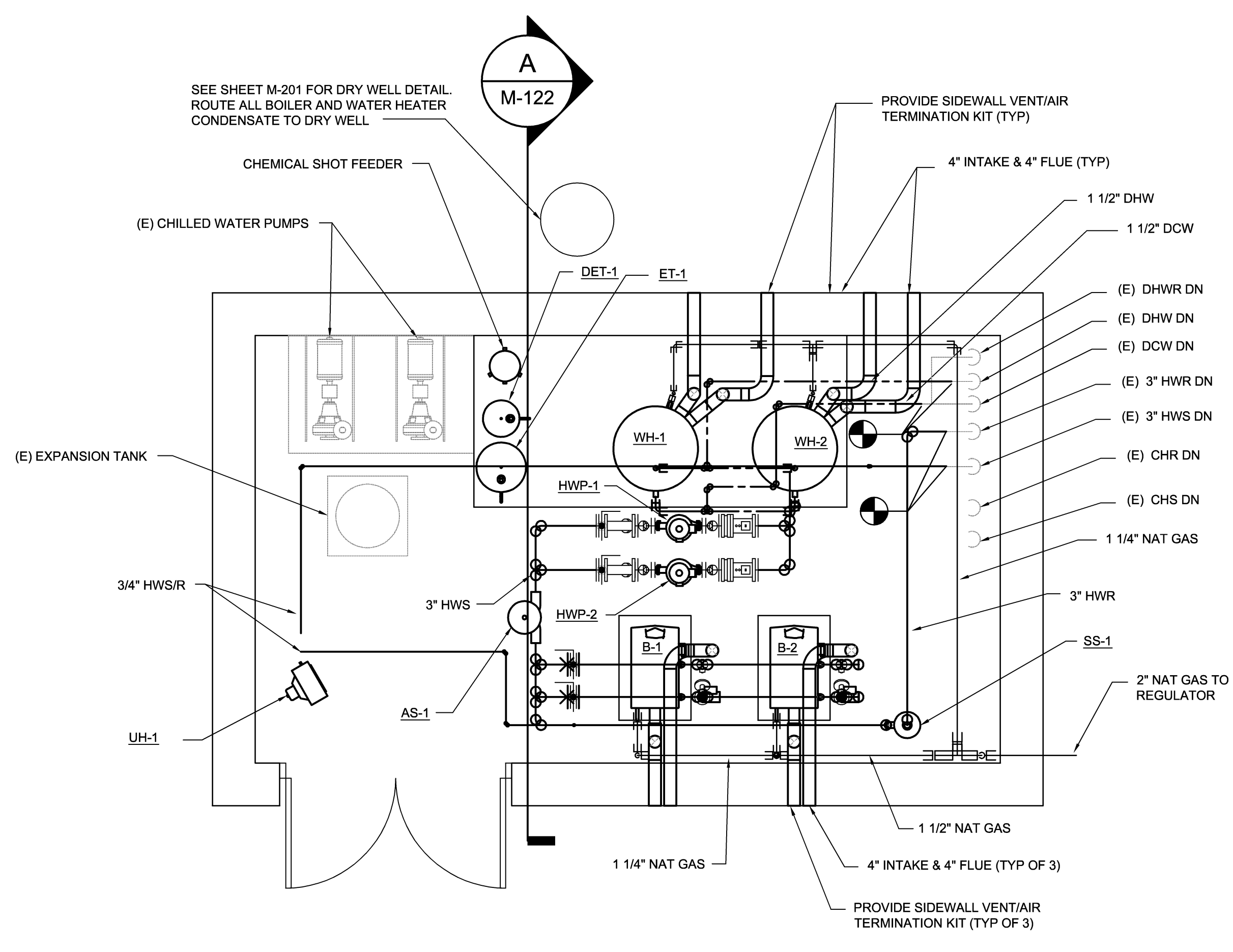
Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.

(c) The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.



WileyWilson 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.264.7242 wileywilson.com		M-121 PROJECT NO. CP12-0104 NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA	
DEPT OF NAVY MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA		BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT BUILDING 417 MECHANICAL DEMOLITION AND NEW WORK PLAN	
DES. IM	DR. SWL	CHK. JHE	SUBMITTED BY: DESIGN DR.
APPROVED PWO OR OIC	DATE	SIZE	CODE IDENT NO.
		E	80091
SATISFACTORY TO	DATE	CONSTR CONTR NO.	NAVFAC DRAWING NO.
		N40085-12-B-0104	60011297
SCALE: AS SHOWN	SPEC No.	05-12-0104	SHEET 33 OF 43

SYM.	PREP'D BY	DATE	APPROVED



A MECHANICAL ROOM SECTION
3/8"=1'-0"
0' 2' 4' 6'

NOTE: EXISTING PIPING NOT SHOWN FOR CLARITY

NATURAL GAS NOTE:

- TOTAL CONNECTED NATURAL GAS DEMAND FOR THIS BUILDING IS 1,100 MBH AT 10 IN-H2O.

DEMOLITION NOTES:

- REMOVE HOT WATER PIPING, PUMPS, HEAT EXCHANGERS AND EXPANSION TANKS AS SHOWN. REMOVE ALL ASSOCIATED HANGERS AND HANGERS. REMOVE ALL STEAM SUPPLY AND CONDENSATE RETURN PIPING, COMPONENTS, HANGERS AND EQUIPMENT.
- CHILLED WATER SYSTEM IS EXISTING TO REMAIN AND SHALL NOT BE INTERRUPTED DURING CONSTRUCTION.
- EXISTING CONTROLS TO REMAIN FOR MODIFICATION AND INTEGRATION WITH NEW BACNET EMCS SYSTEM.
- THE EQUIPMENT AND BUILDING LAYOUT IS BASED ON THE BASIS OF DESIGN EQUIPMENT CLEARANCES. ANY MODIFICATION REQUIRED FOR ACCEPTABLE ALTERNATE MANUFACTURER'S SHALL BE PROVIDED BY THE CONTRACTOR IF NECESSARY.

GENERAL NOTES:

- SEE GENERAL NOTES ON SHEET M-001.
- BUILDING 507A IS THE EXISTING MECHANICAL ROOM THAT SERVES BUILDING 507.
- MAINTAIN MANUFACTURER RECOMMENDED CLEARANCE AROUND ALL EQUIPMENT. FOR BOILERS, PROVIDE A MINIMUM 30" PIPING AND MAINTENANCE CLEARANCE ON ALL SIDES. AT LEAST EVERY OTHER SIDE SHALL HAVE 30" CLEAR FLOOR SPACE FOR PERSONNEL ACCESS. FOR WATER HEATERS, PROVIDE MINIMUM 15" CLEARANCE TO THE SIDES AND REAR AND A MINIMUM 30" IN THE FRONT.
- THE LOCATION OF ALL DUCT, PIPING AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE ANTICIPATED OR ENCOUNTERED INTERFERENCES. THESE PLANS ARE PARTIALLY DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. ALL PIPING OFFSETS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- INSTALL GAS PIPE IN ACCORDANCE WITH 2012 NORTH CAROLINA FUEL GAS CODE.
- PROVIDE HOSE BIB AND 1/2" CONNECTION FOR FILLING IN NEW MECHANICAL ROOM.
- PROVIDE FLOOR DRAINS AS SHOWN ON FLOOR PLAN. CONTRACTOR TO VERIFY NEAREST SEWER MAIN. FOR PRICING PURPOSES, ASSUME 200 YARDS OF SANITARY PIPING. PROVIDE VENT THROUGH ROOF FOR FLOOR DRAINS IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE.
- STORE DOMESTIC HOT WATER AT 140 DEG F AND TEMPER TO 110 DEG F BEFORE BEING SUPPLIED TO BUILDING.
- PROVIDE APPURTENANCES TO COMPLY WITH ASME CSD-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUTDOWN SWITCH LOCATED ADJACENT TO EXIT DOOR.

DESIGNATION	B-1	B-2
LOCATION	MECH ROOM	MECH ROOM
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10
GAS INLET CONNECTION (IN)	1	1
INPUT (MBH)	399	399
OUTPUT (MBH)	375	375
MINIMUM TURN DOWN RATIO	5:1	5:1
FLOWRATE (GPM)	30	30
MAXIMUM PRESSURE DROP (FT. H2O)	8	8
ENTERING WATER TEMPERATURE (DEG F)	160	160
LEAVING WATER TEMPERATURE (DEG F)	185	185
MINIMUM OPERATING PRESSURE (PSI)	30	30
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
TOTAL OPERATING AMPS	1.5	1.5
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	LOCHINVAR	LOCHINVAR
MODEL REMARKS	KB-400	KB-400
REMARKS	1, 2, 3 & 4	1, 2, 3 & 4

- REMARKS LEGEND:
- PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER BOILER.
 - BOILER CIRCULATION PUMP TO BE PROVIDED BY MANUFACTURER AT 30 GPM AT 25 DELTA T.
 - PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.
 - PROVIDE BOILERS WHICH ARE AT LEAST 94% EFFICIENT BASED ON BTS-2000, REV 06/07 CONDITIONS.

DESIGNATION	UH-1
LOCATION	MECH ROOM
AIRFLOW (CFM)	340
HEATING CAPACITY (MBH)	10
ENTERING AIR TEMPERATURE (DEG F)	55
LEAVING AIR TEMPERATURE (DEG F)	82
ENTERING WATER TEMPERATURE (DEG F)	180
FLOW RATE (GPM)	.5
WATER PRESSURE DROP (FT. W.G.)	.5
MOTOR POWER (HP)	1/60
VOLTAGE (V)	115
PHASE	1
FREQUENCY (Hz)	60
BASED ON	MODINE
MODEL	HC-18 S 01
REMARKS	1

- REMARKS LEGEND:
- PROVIDE UNIT MOUNTED THERMOSTAT.

DESIGNATION	SS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
FLOW RATE (GPM)	72
MAXIMUM PRESSURE DROP (FT-H2O)	14
COLLECTION CHAMBER CAPACITY (GAL)	0.8
BASED ON	LAKOS
MODEL	ILB-0200

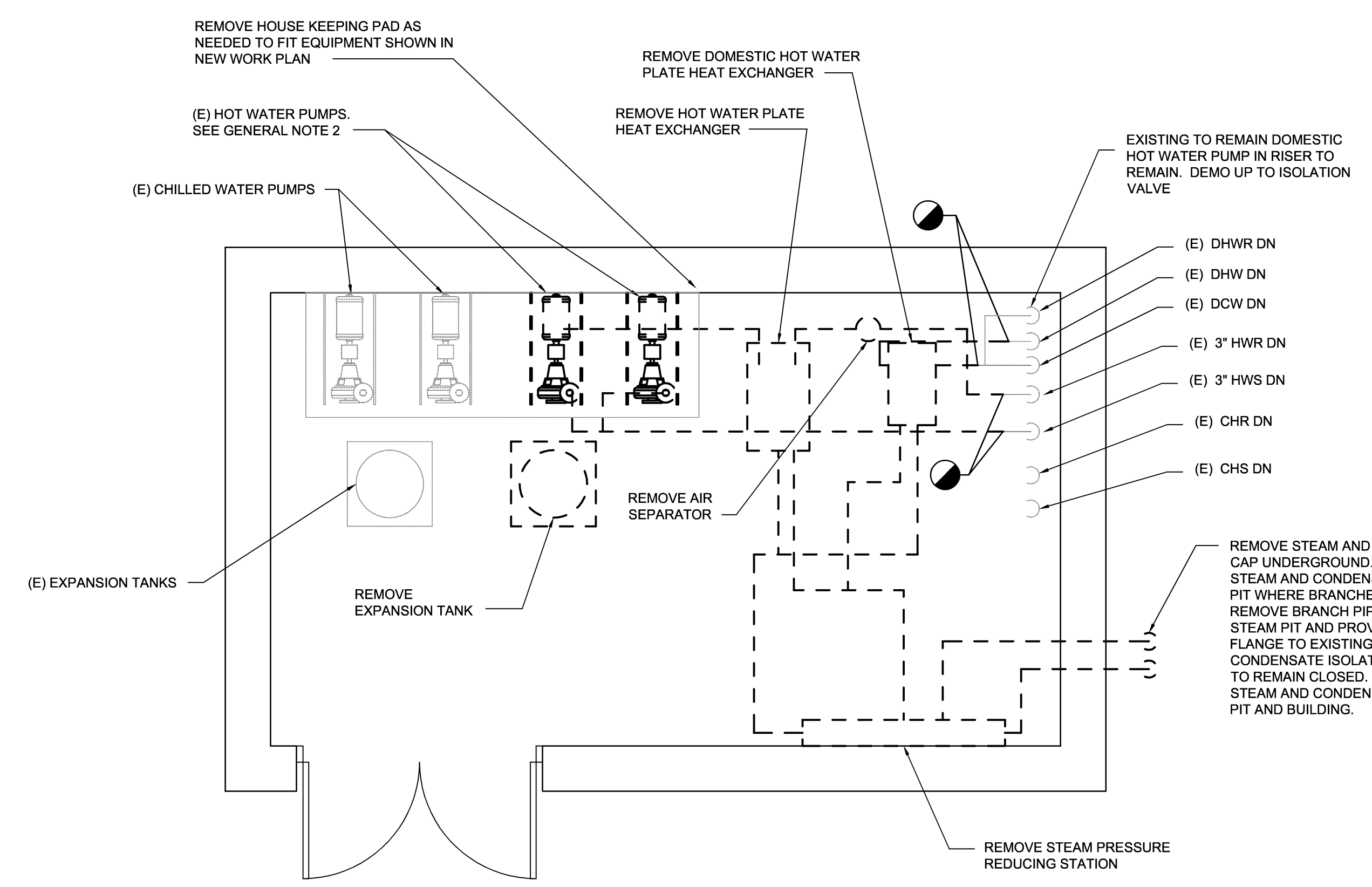
DESIGNATION	HWP-1	HWP-2	DWP-1
SERVICE	HOT WATER	HOT WATER	DOMESTIC HOT WATER
LOCATION	MECH ROOM	MECH ROOM	MECH ROOM
TYPE	INLINE	INLINE	INLINE
PUMP DATA	-	-	-
FLOW (GPM)	72	72	5
TOTAL HEAD (FT-H2O)	65	65	20
MINIMUM EFFICIENCY (%)	50	50	-
CONNECTION SIZE	-	-	-
SUCTION (IN)	1.5	1.5	1.5
DISCHARGE (IN)	1.5	1.5	1.5
MOTOR DATA	-	-	-
MOTOR FRAME	182JM	182JM	-
HORSEPOWER	3	3	-
RPM	1750	1750	2850
VOLTS	208	208	115
PHASE	1	1	1
HERTZ	60	60	60
SELECTION BASED ON (MFGR)	BELL & GOSSETT	BELL & GOSSETT	BELL & GOSSETT
MODEL	80 1-1/2x1-1/2x9-1/2	80 1-1/2x1-1/2x9-1/2	BOOSTER PL-30
REMARKS	-	-	1

- REMARKS LEGEND:
- BRONZE FITTED PUMP FOR DOMESTIC WATER SERVICE. PROVIDE AQUASTAT CONTROL.

DESIGNATION	WH-1	WH-2
LOCATION	MECH ROOM	MECH ROOM
STORAGE (GALLONS)	100	100
GPH AT 100 DEG F RISE	173	173
FUEL TYPE	NATURAL GAS	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4.8	4.8
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10.5	10.5
GAS INLET CONNECTION (IN)	3/4	3/4
INPUT (MBH)	150	150
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	STATE	STATE
MODEL	SUF 100 150 NE	SUF 100 150 NE
REMARKS	1 & 2	1 & 2

- REMARKS LEGEND:
- PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER WATER HEATER.
 - PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE, PVC IN NOT ALLOWED.

BUILDING 507A MECHANICAL NEW WORK PLAN
3/8"=1'-0"
0' 2' 4' 6'



BUILDING 507A MECHANICAL DEMOLITION PLAN
3/8"=1'-0"
0' 2' 4' 6'

DESIGNATION	AS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
LINE SIZE (IN)	3
BASED ON	BELL & GOSSETT
MODEL	ROLAIRTR0L

DESIGNATION	ET-1	DET-1
SERVICE	HEATING WATER	DOMESTIC HOT WATER
LOCATION	MECH ROOM	MECH ROOM
TYPE	BLADDER	BLADDER
TANK VOLUME (GAL)	60	14
FILL PRESSURE (PSI)	20	60
RELIEF VALVE PRESSURE SETTING (PSI)	100	100
BASED ON	JOHN WOOD COMPANY	AMTROL
MODEL	JAER-23-607	ST-C SERIES ST-42V-C

*MATCH DOMESTIC WATER SUPPLY PRESSURE AT THIS LOCATION.

DISCLOSURE OF INFORMATION

Contractor shall comply as follows:

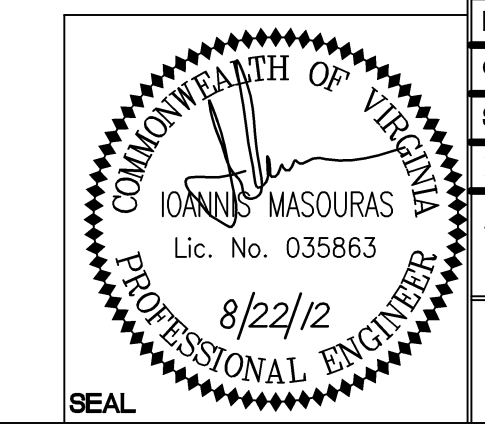
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(1) The Contracting Officer has given prior written approval; or

(2) The information is otherwise in the public domain before the date of release.

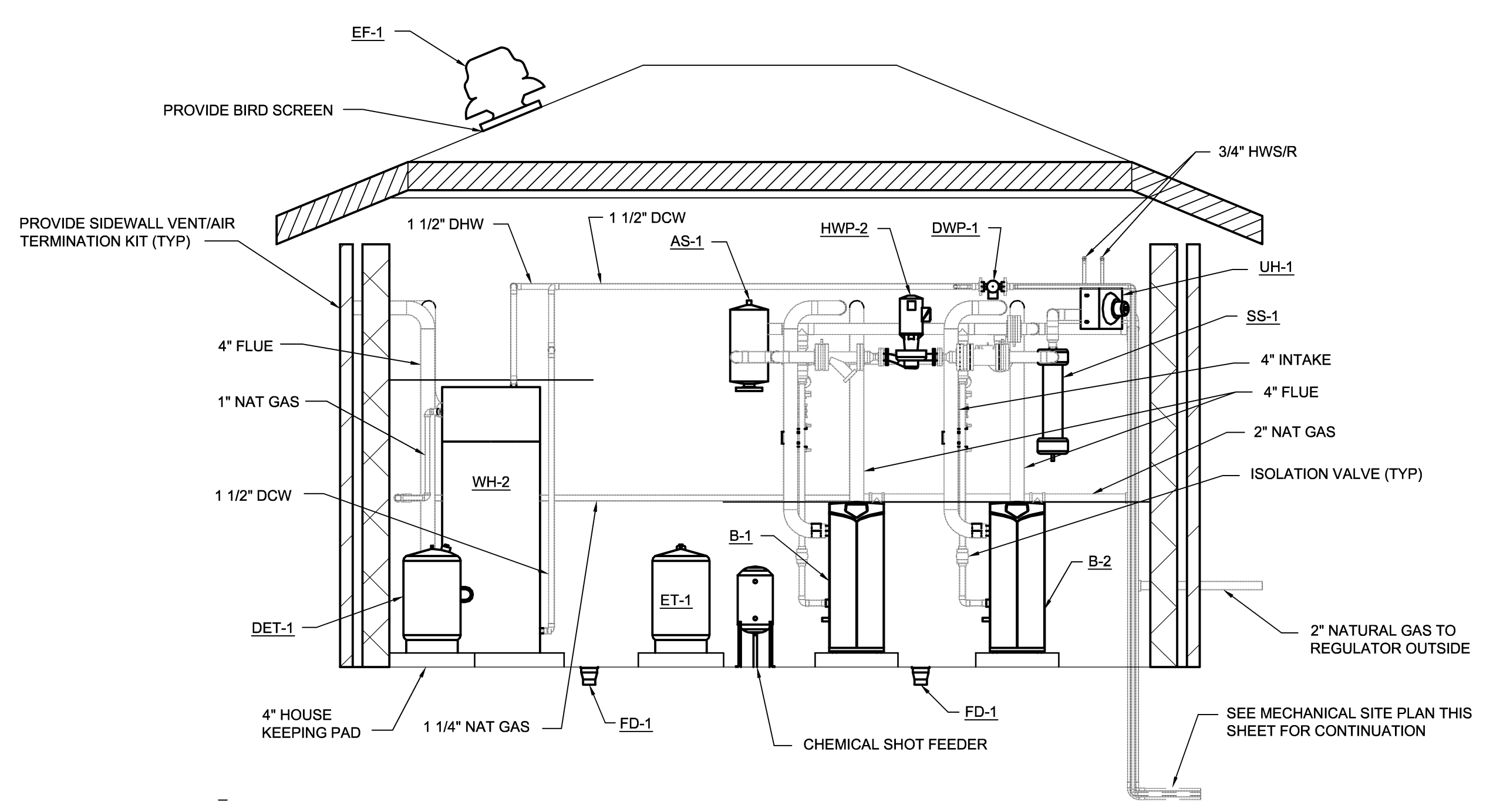
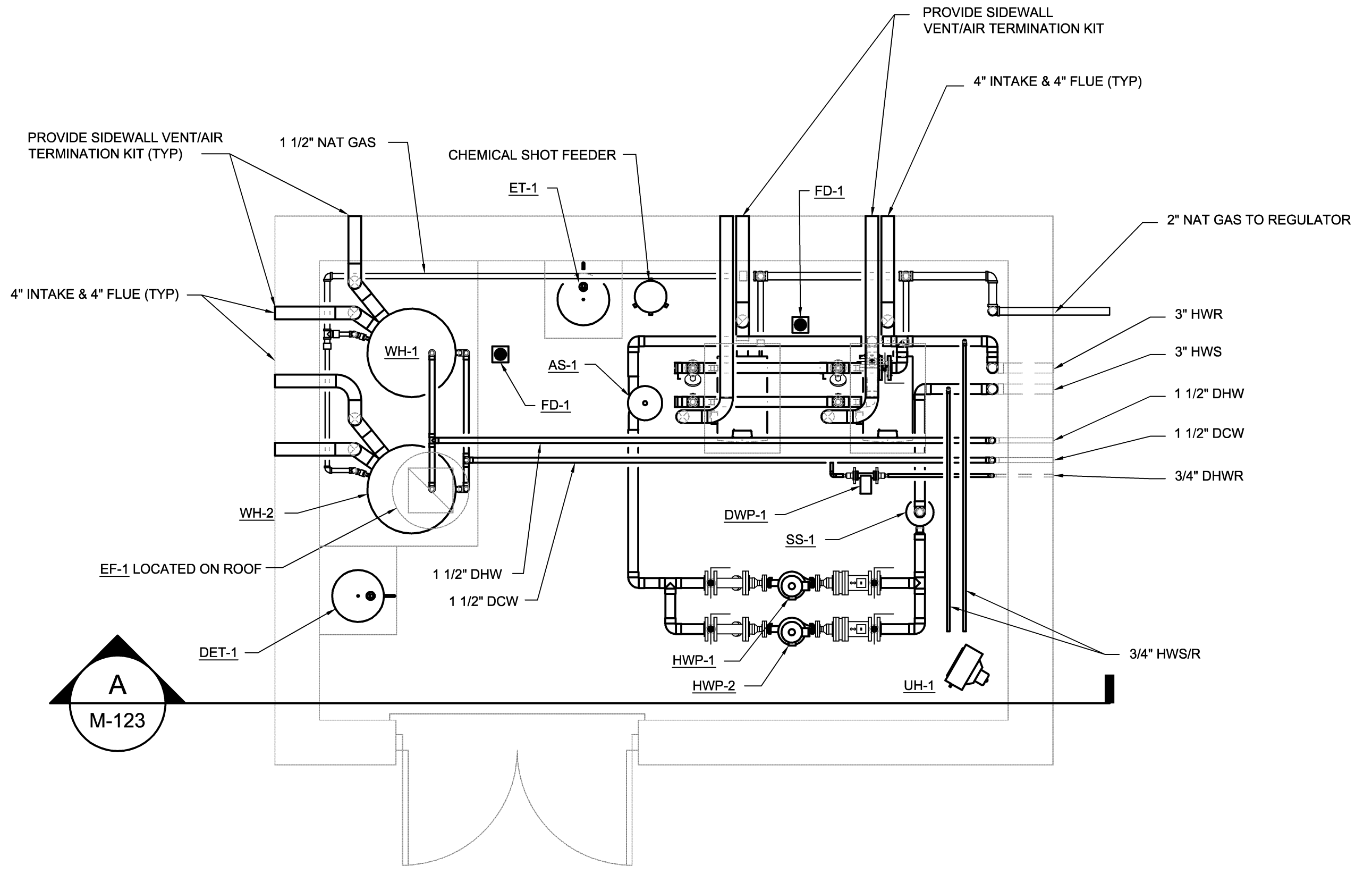
(b) Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.

(c) The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.



6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.264.7242 wileywilson.com		M-122 PROJECT NO. CP12-004 NAVAL FACILITIES ENGINEERING COMMAND	
DEPT OF NAVY MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA		BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT BUILDING 507 MECHANICAL DEMOLITION AND NEW WORK PLAN	
DES. IM	DR. SWL	CHK. JHE	DESIGN DR.
APPROVED PWO OR OICC	DATE	SIZE E	CODE IDENT NO. 80091
SATISFACTORY TO	DATE	CONSTR CONTR NO. N40085-12-B-0104	NAVFAC DRAWING NO. 60011298
SCALE: AS SHOWN	SPEC No. 05-12-004	SHEET 34 OF 43	

SYM.	PREP'D BY	DATE	APPROVED



MECHANICAL ROOM SECTION
3/8"=1'-0"

NATURAL GAS NOTE:
1. TOTAL CONNECTED NATURAL GAS DEMAND FOR THIS BUILDING IS 1,200 MBH AT 10 IN-H2O.

DEMOLITION NOTES:
1. REMOVE HOT WATER PIPING, PUMPS, HEAT EXCHANGERS AND EXPANSION TANKS AS SHOWN. REMOVE ALL ASSOCIATED PIPING, SUPPORTS AND HANGERS. REMOVE ALL STEAM SUPPLY AND CONDENSATE RETURN PIPING, COMPONENTS, HANGERS AND EQUIPMENT.
2. CHILLED WATER SYSTEM IS EXISTING TO REMAIN AND SHALL NOT BE INTERRUPTED DURING CONSTRUCTION.
3. EXISTING CONTROLS TO REMAIN FOR MODIFICATION AND INTEGRATION WITH NEW BACNET EMCS SYSTEM.
4. THE EQUIPMENT AND BUILDING LAYOUT IS BASED ON THE BASIS OF DESIGN EQUIPMENT CLEARANCES. ANY MODIFICATION REQUIRED FOR ACCEPTABLE ALTERNATE MANUFACTURERS SHALL BE PROVIDED BY THE CONTRACTOR IF NECESSARY.

GENERAL NOTES:
1. SEE GENERAL NOTES ON SHEET M-001.
2. MAINTAIN MANUFACTURER RECOMMENDED CLEARANCE AROUND ALL EQUIPMENT. FOR BOILERS, PROVIDE A MINIMUM 30" PIPING AND MAINTENANCE CLEARANCE ON ALL SIDES. AT LEAST EVERY OTHER SIDE SHALL HAVE 30" CLEAR FLOOR SPACE FOR PERSONNEL ACCESS. FOR WATER HEATERS, PROVIDE MINIMUM 15" CLEARANCE TO THE SIDES AND REAR AND A MINIMUM 30" IN THE FRONT.
3. THE LOCATION OF ALL DUCT, PIPING AND EQUIPMENT SHALL BE ADJUSTED TO ACCOMMODATE ANTICIPATED OR ENCOUNTERED INTERFERENCES. THESE PLANS ARE PARTIALLY DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. ALL PIPING OFFSETS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
4. INSTALL GAS PIPE IN ACCORDANCE WITH 2012 NORTH CAROLINA FUEL GAS CODE.
5. PROVIDE HOSE BIB AND 1/2" CONNECTION FOR FILLING IN NEW MECHANICAL ROOM.
6. PROVIDE FLOOR DRAINS AS SHOWN ON FLOOR PLAN. CONTRACTOR TO VERIFY NEAREST SEWER MAIN. FOR PRICING PURPOSES, ASSUME 200 YARDS OF SANITARY PIPING. PROVIDE VENT THROUGH ROOF FOR FLOOR DRAINS IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE.
7. STORE DOMESTIC HOT WATER AT 140 DEG F AND TEMPER TO 110 DEG F BEFORE BEING SUPPLIED TO BUILDING. PROVIDE MIXING VALVE.
8. PROVIDE APPURTENANCES TO COMPLY WITH ASME CSD-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUTDOWN SWITCH LOCATED ADJACENT TO EXIT DOOR.
9. NEW HOT WATER PIPES TO BE ROUTED IN CRAWL SPACE FROM NEW MECHANICAL ROOM TO EXISTING INTERIOR BUILDING MECHANICAL ROOM.

BUILDING 511 NEW MECHANICAL ROOM
3/8"=1'-0"

BOILER SCHEDULE	
DESIGNATION	B-1
LOCATION	MECH ROOM
FUEL TYPE	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10
GAS INLET CONNECTION (IN)	1
INPUT (MBH)	399
OUTPUT (MBH)	375
MINIMUM TURN DOWN RATIO	5:1
FLOWRATE (GPM)	30
MAXIMUM PRESSURE DROP (FT-H2O)	8
ENTERING WATER TEMPERATURE (DEG F)	180
LEAVING WATER TEMPERATURE (DEG F)	185
MINIMUM OPERATING PRESSURE (PSI)	30
VOLTAGAGE (V)	120
PHASE	1
FREQUENCY (Hz)	60
TOTAL OPERATING AMPS	1.5
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4
SELECTION BASED ON	LOCHINVAR
MODEL	KB-400
REMARKS	1, 2, 3 & 4

FAN SCHEDULE	
DESIGNATION	EF-1
USAGE	EXHAUST
SERVES ROOM(S)	MECH ROOM
DESCRIPTION	CENTRIFUGAL
FAN DATA	-
AIRFLOW (SCFM)	550
TOTAL SP (IN-H2O)	.15
RPM	1630
DRIVE TYPE	DIRECT
MOTOR DATA	-
HORSEPOWER	1/8
RPM	1725
VOLTS	115
PHASE	1
HERTZ	60
SELECTION BASED ON	GREENHECK
MODEL	G-085-VG
REMARKS	1, 2 & 3

EXPANSION TANK SCHEDULE	
DESIGNATION	ET-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
FLOW RATE (GPM)	83
MAXIMUM PRESSURE DROP (FT-H2O)	18
COLLECTION CHAMBER CAPACITY (GAL)	0.8
BASED ON	LAKOS
MODEL	ILB-0200

SOLID SEPARATOR SCHEDULE	
DESIGNATION	SS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
FLOW RATE (GPM)	83
MAXIMUM PRESSURE DROP (FT-H2O)	18
COLLECTION CHAMBER CAPACITY (GAL)	0.8
BASED ON	LAKOS
MODEL	ILB-0200

AIR SEPARATOR SCHEDULE	
DESIGNATION	AS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
LINE SIZE (IN)	3
BASED ON	BELL & GOSSETT
MODEL	ROLAIRTR0L

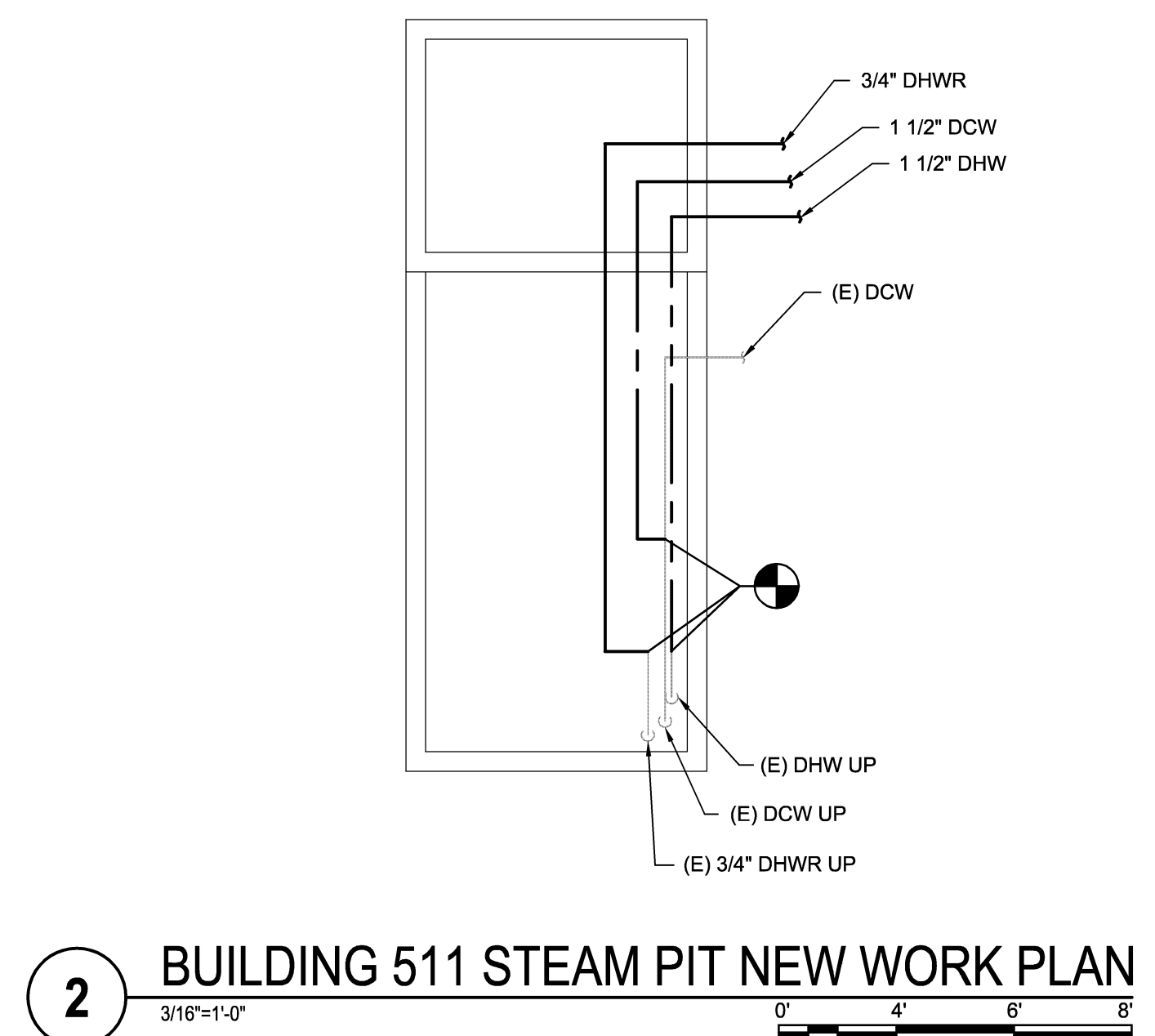
FLOOR DRAIN SCHEDULE	
DESIGNATION	FD-1
DRAIN SIZE	3"
DESCRIPTION	ZURN MODEL 415B WITH 6" NICKEL BRONZE STRAINER AND PROSET TRAPGUARD

DOMESTIC HOT WATER HEATER SCHEDULE	
DESIGNATION	WH-1
LOCATION	MECH ROOM
STORAGE (GALLONS)	100
GPH AT 100 DEG F RISE	230
FUEL TYPE	NATURAL GAS
MINIMUM INLET GAS PRESSURE (IN. WG.)	4.8
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10.5
GAS INLET CONNECTION (IN)	3/4
INPUT (MBH)	199
VOLTAGE (V)	120
PHASE	1
FREQUENCY (Hz)	60
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4
SELECTION BASED ON	STATE
MODEL	SUF 100 199 NE
REMARKS	1 & 2

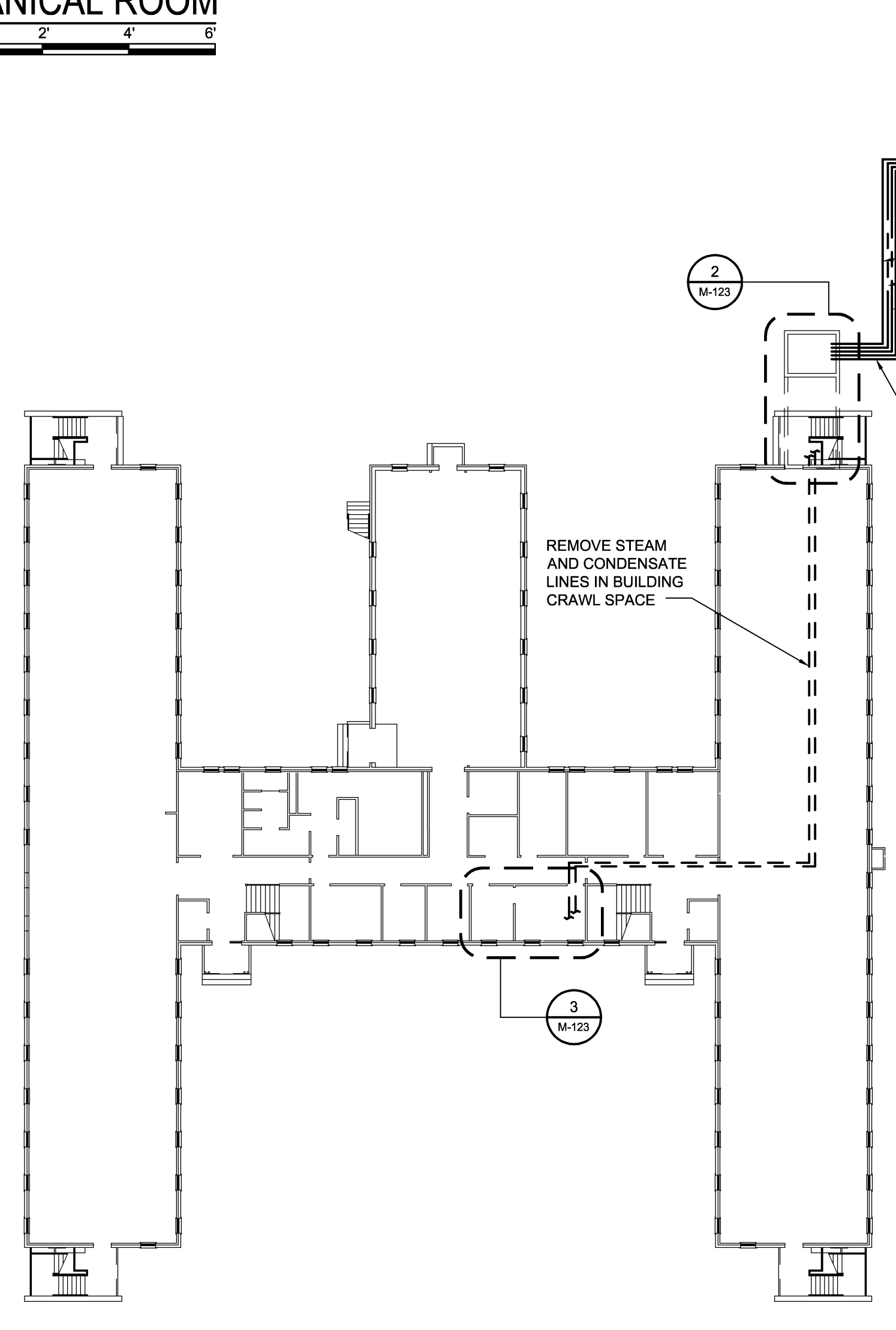
UNIT HEATER SCHEDULE	
DESIGNATION	UH-1
LOCATION	MECH ROOM
AIRFLOW (CFM)	340
HEATING CAPACITY (MBH)	10
ENTERING AIR TEMPERATURE (DEG F)	55
LEAVING AIR TEMPERATURE (DEG F)	82
ENTERING WATER TEMPERATURE (DEG F)	180
FLOW RATE (GPM)	.5
WATER PRESSURE DROP (FT W.G.)	.5
MOTOR POWER (HP)	1/80
VOLTAGE (V)	115
PHASE	1
FREQUENCY (Hz)	60
BASED ON	MODINE
MODEL	HC-18 S 01
REMARKS	1

LOUVER SCHEDULE	
DESIGNATION	L-1
USAGE	INTAKE
LOCATION	MECH ROOM
DESCRIPTION	COMBINATION LOUVER/DAMPER
DEPTH (IN)	8
FRAME TYPE	CHANNEL
WIDTH (IN)	32
HEIGHT (IN)	16
AIRFLOW (CFM)	550
FREE AREA (SF)	.75
FREE AREA VELOCITY (FPM)	734
PRESSURE DROP (IN H2O)	.067
SELECTION BASE ON	GREENHECK
ACTUATOR TYPE	120 VAC
ACTUATOR FAIL POSITION	CLOSED
MODEL	EAC-601
REMARKS	1, 2 & 3

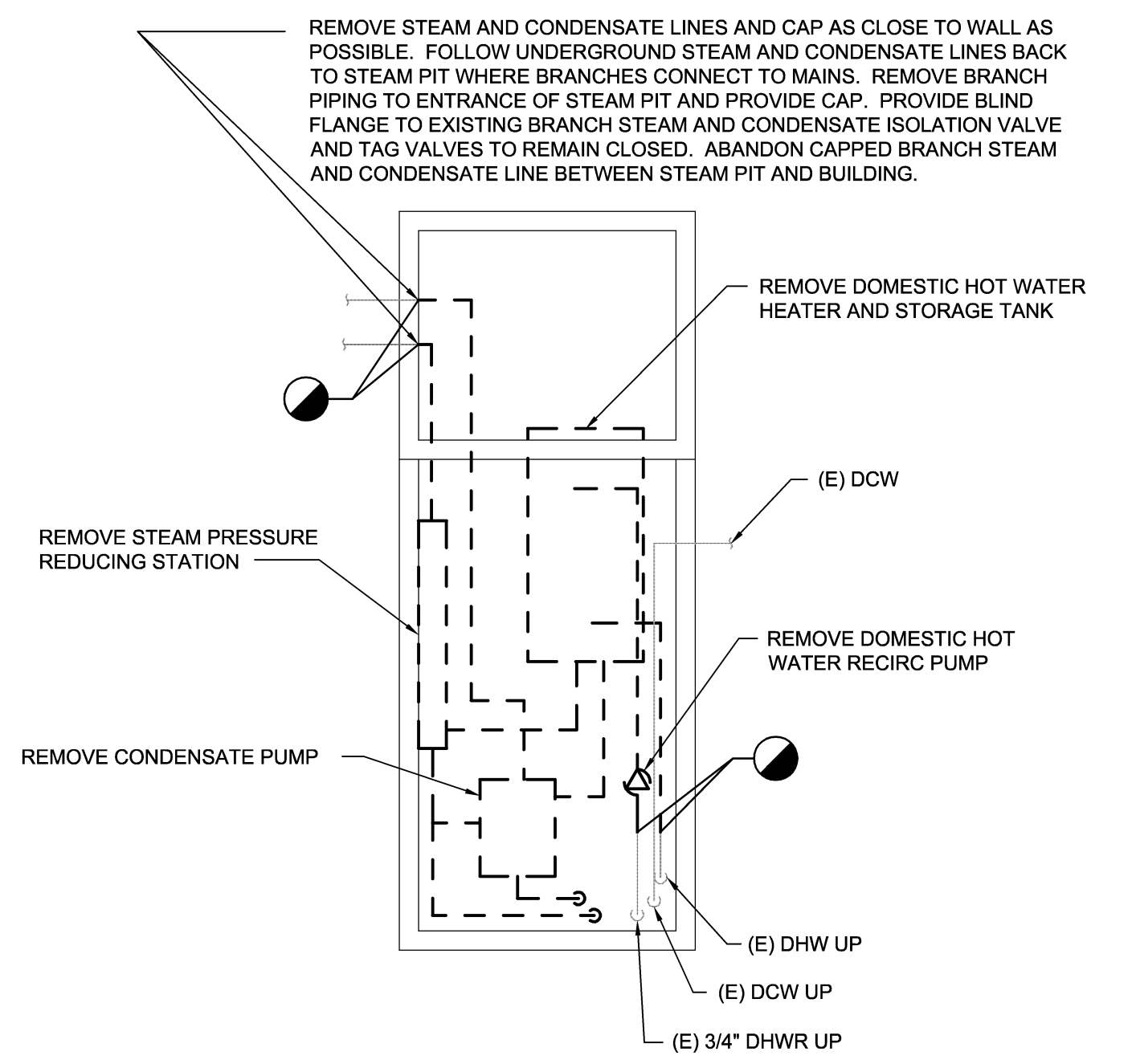
PUMP SCHEDULE			
DESIGNATION	HWP-1	HWP-2	DWP-1
SERVICE	HOT WATER	HOT WATER	DOMESTIC HOT WATER
LOCATION	MECH ROOM	MECH ROOM	MECH ROOM
TYPE	INLINE	INLINE	INLINE
PUMP DATA	-	-	-
FLOW (GPM)	83	83	5
TOTAL HEAD (FT-H2O)	50	50	20
MINIMUM EFFICIENCY (%)	50	50	-
CONNECTION SIZE	-	-	-
SUCTION (IN)	2	2	1.5
DISCHARGE (IN)	2	2	1.5
MOTOR DATA	-	-	-
MOTOR FRAME	182JM	182JM	-
HORSEPOWER	3	3	-
RPM	1750	1750	2850
VOLTS	208	208	115
PHASE	1	1	1
HERTZ	60	60	60
SELECTION BASED ON (MFR)	BELL & GOSSETT	BELL & GOSSETT	BELL & GOSSETT
MODEL	80 2x27	80 2x27	BOOSTER PL-30
REMARKS	-	-	1



BUILDING 511 STEAM PIT NEW WORK PLAN
3/16"=1'-0"

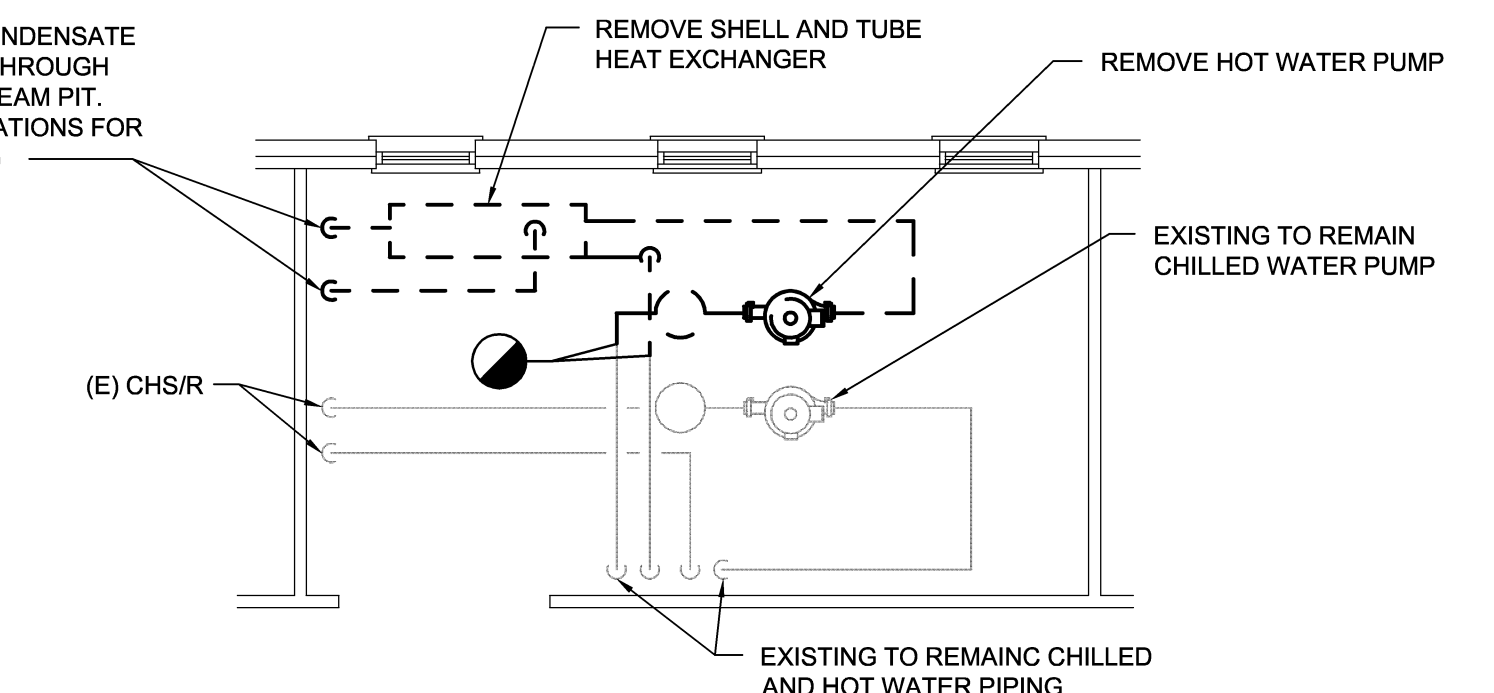


BUILDING 511 MECHANICAL SITE PLAN
3/16"=1'-0"

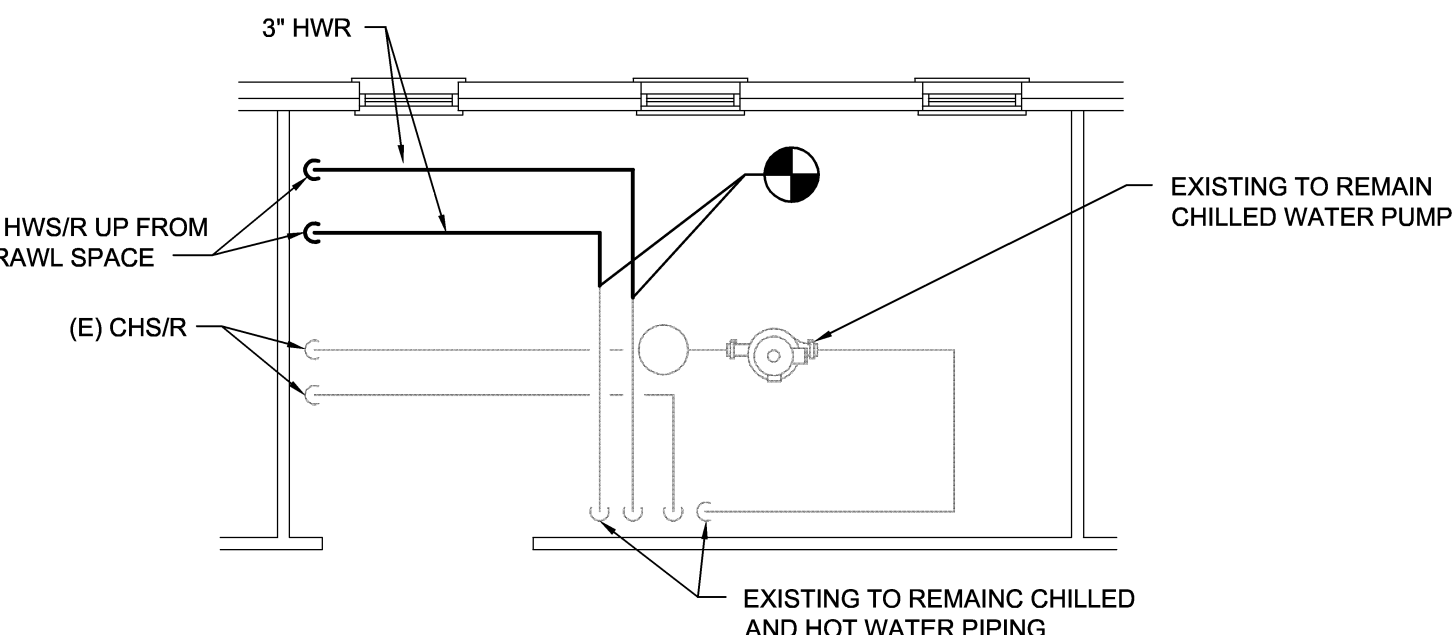


BUILDING 511 STEAM PIT DEMOLITION PLAN
3/16"=1'-0"

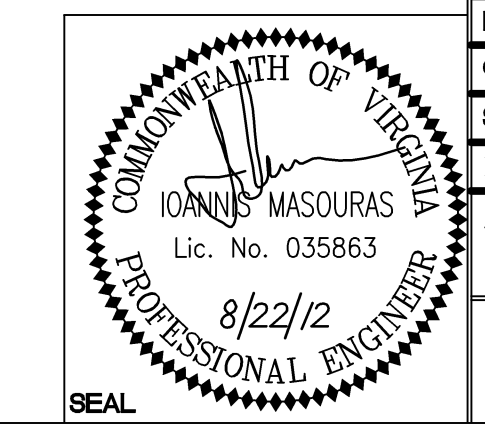
DISCLOSURE OF INFORMATION
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BUILDING 511 ENLARGED INTERIOR MECHANICAL DEMOLITION PLAN
1/8"=1'-0"

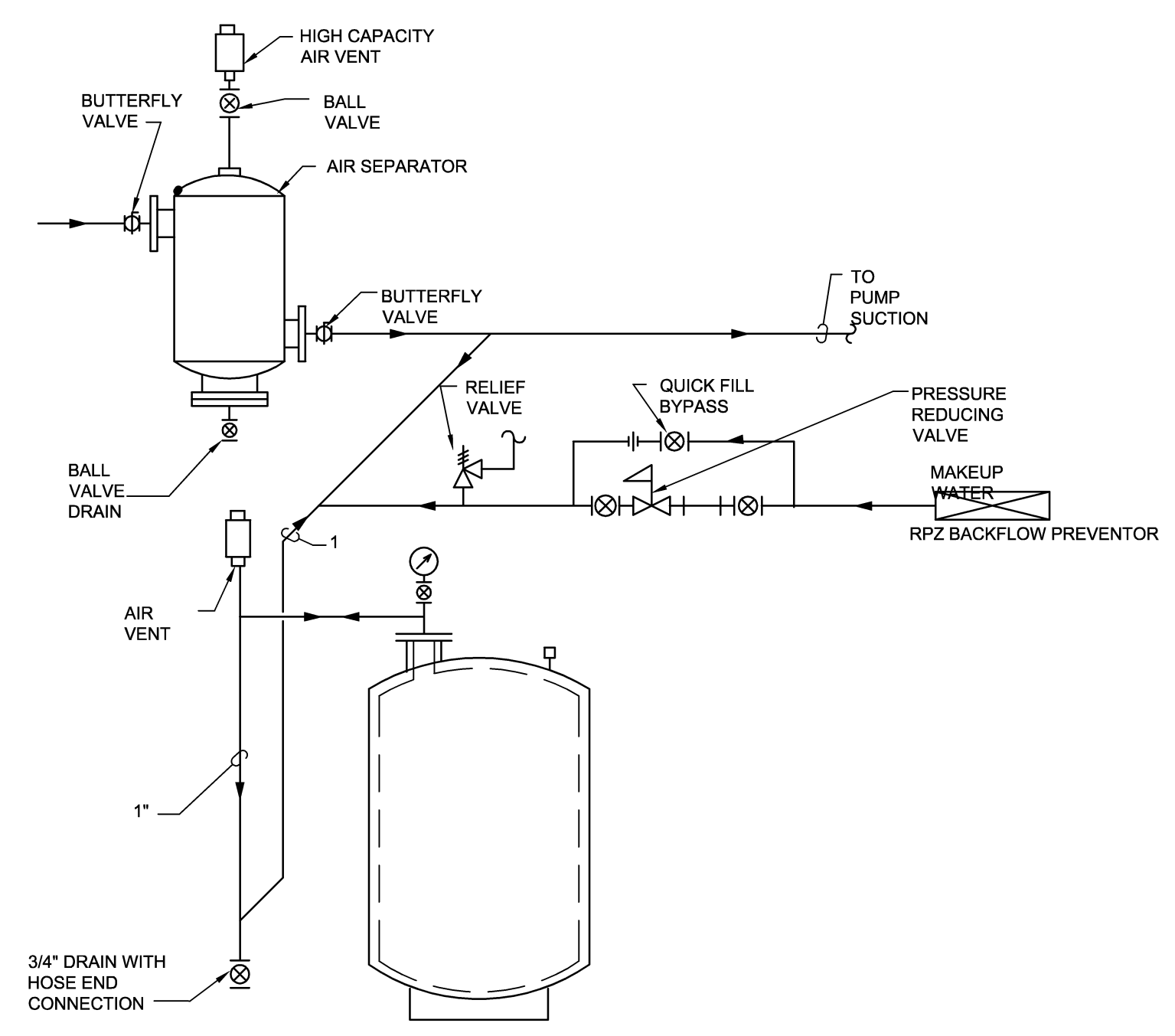


BUILDING 311 ENLARGED INTERIOR MECHANICAL NEW WORK PLAN
1/8"=1'-0"

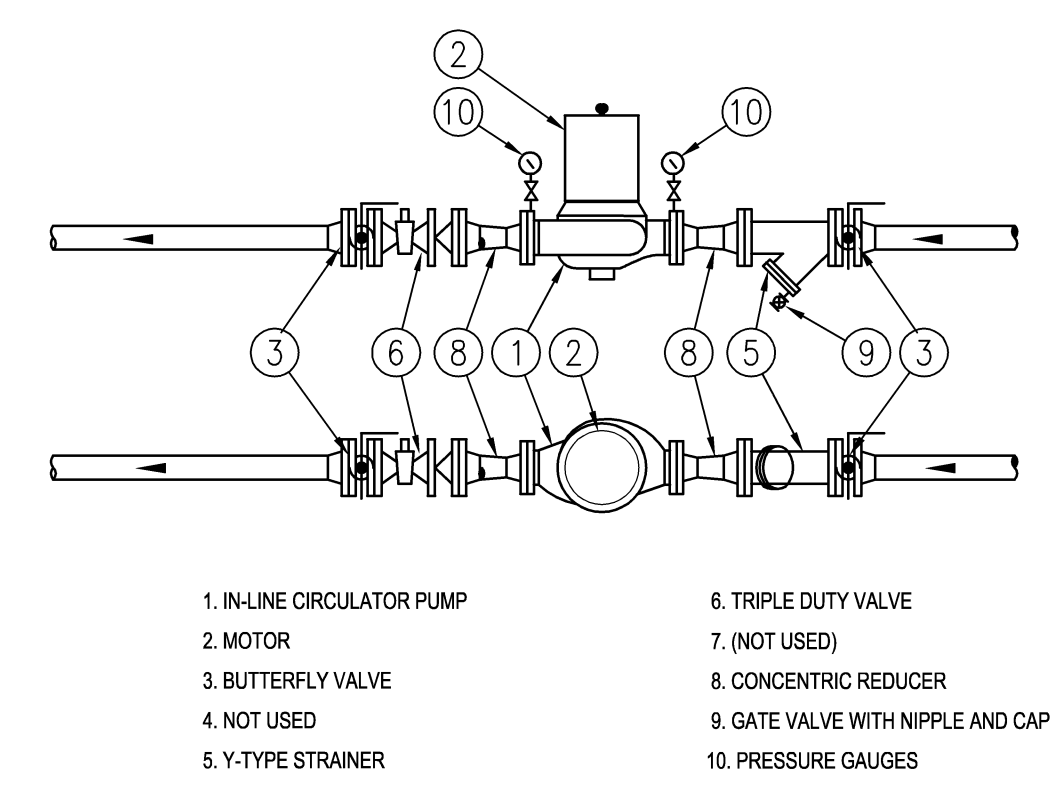


6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.264.7242 wileywilson.com		M-123 PROJECT NO. CP12-0104 DEPT OF NAVY NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA	
DES. IM DR. SWL CHK. JHE SUBMITTED BY: DESIGN DR. APPROVED PWO OR OICC DATE SATISFACTORY TO DATE	SIZE E CODE IDENT NO. 80091 SCALE: AS SHOWN	NAVFAC DRAWING NO. 60011299 CONSTR CONTR NO. N40085-12-B-0104 SPEC No. 05-12-0104	SHEET 35 OF 43

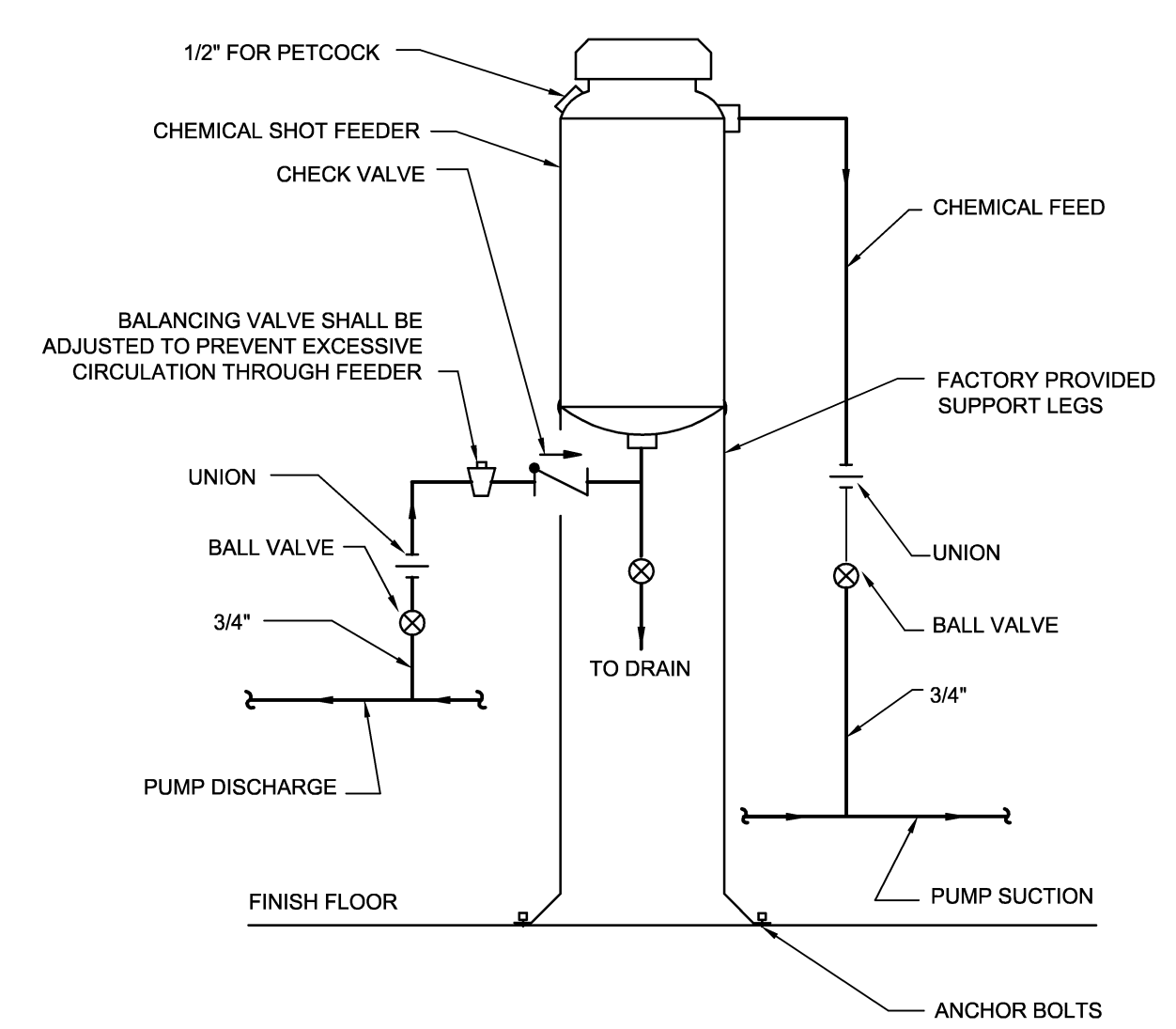
SYM.	PREP'D BY	DATE	APPROVED



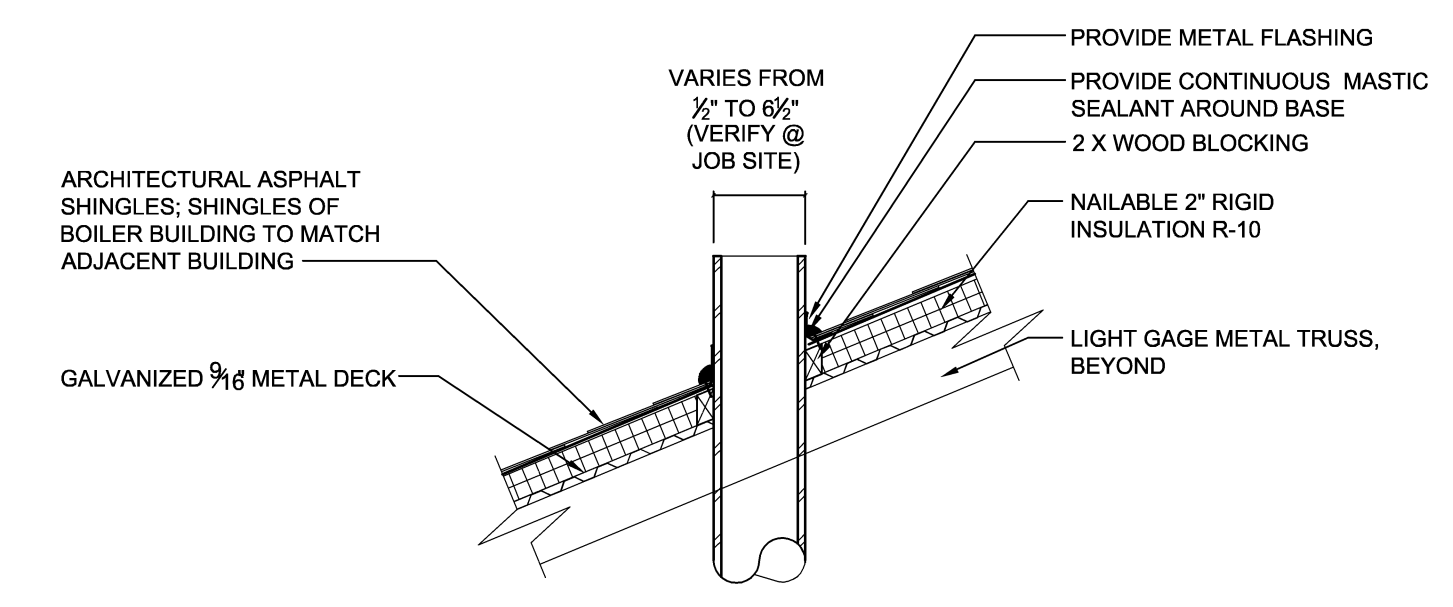
PRE-PRESSURIZED BLADDER TYPE EXPANSION TANK
SCALE: NONE



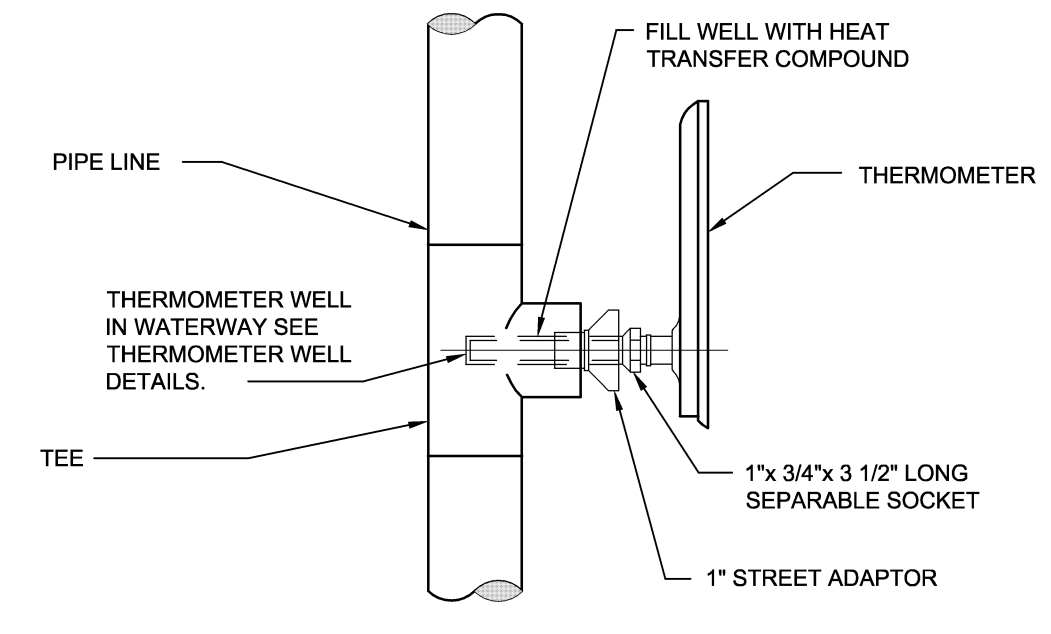
NOTE: ALL VALVES, STRAINERS, FITTINGS ETC. SHALL BE FULL LINE SIZE
IN-LINE CIRCULATOR PUMP
SCALE: NONE



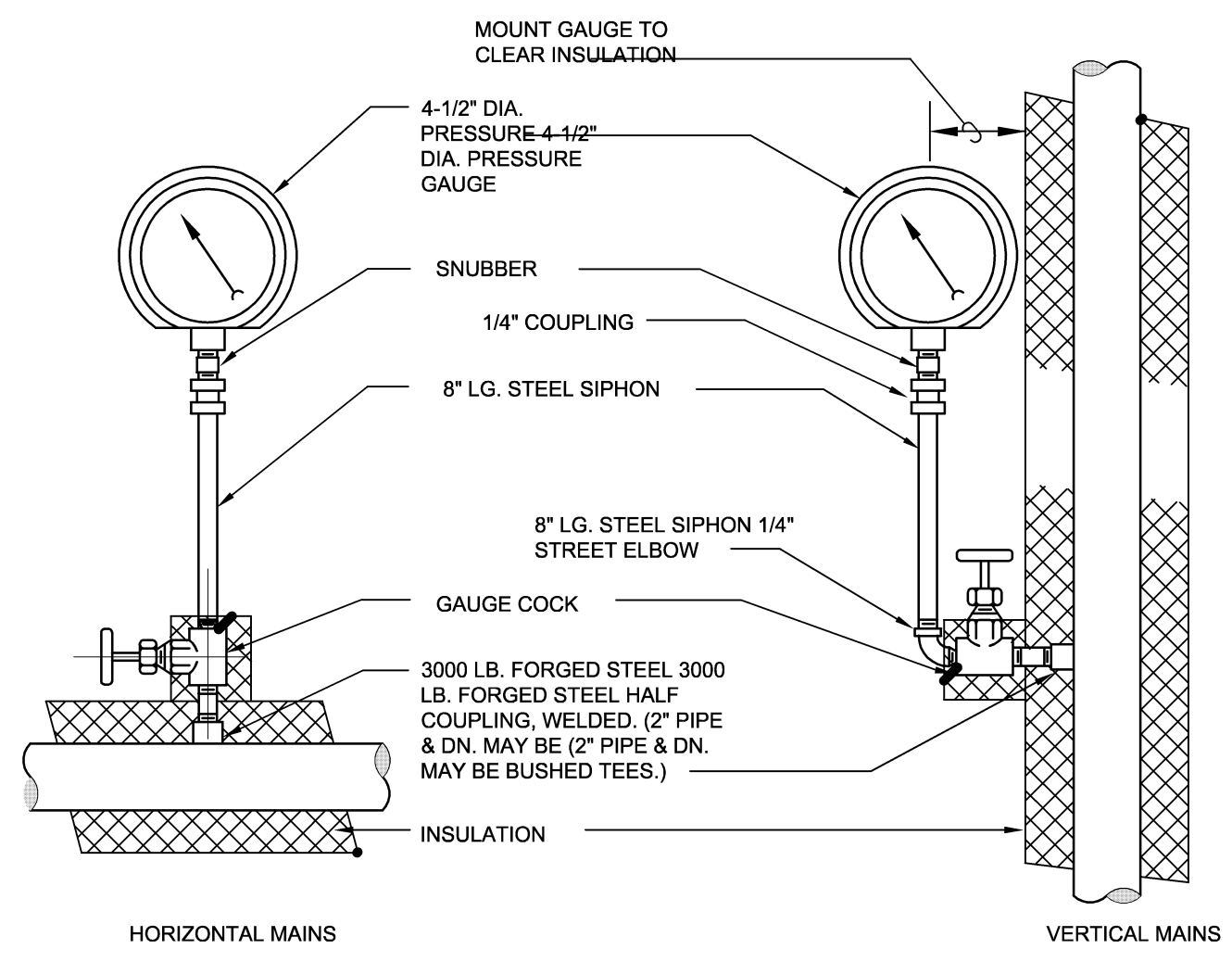
CHEMICAL SHOT FEEDER DETAIL
NOT TO SCALE



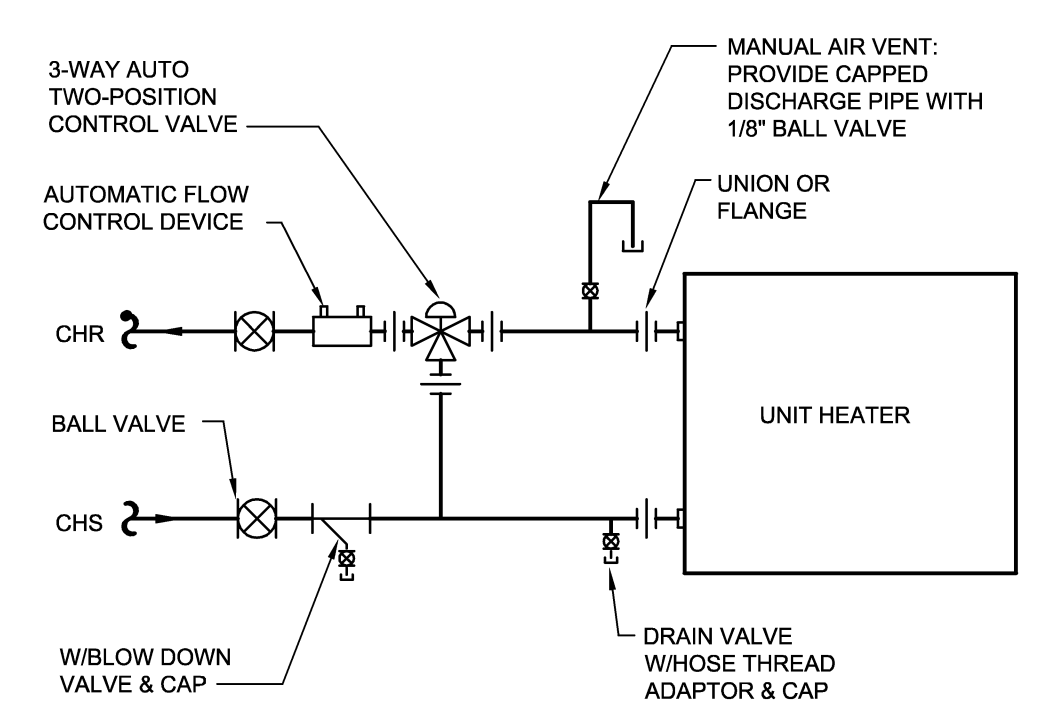
ROOF PENETRATION DETAIL
NOT TO SCALE



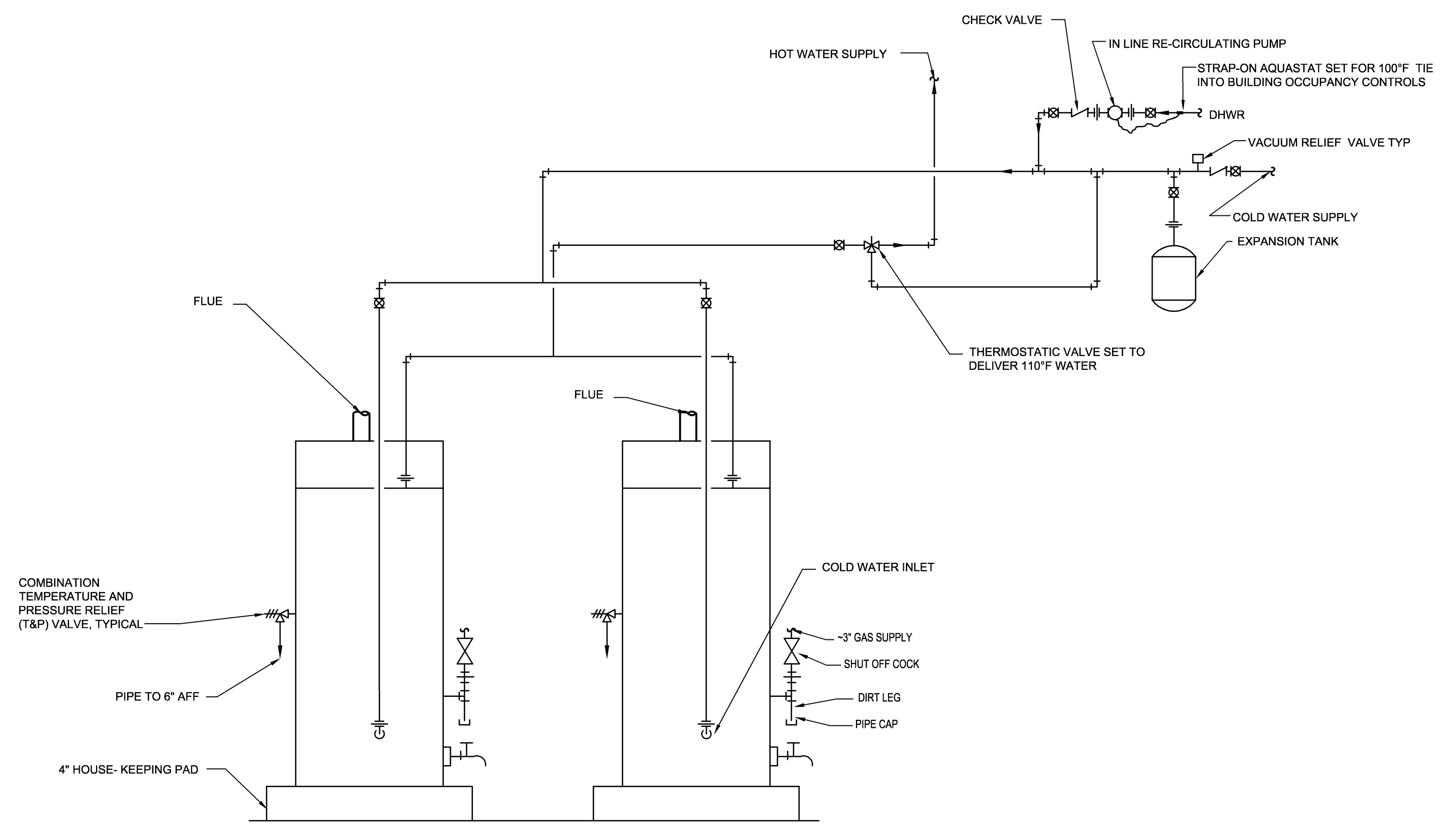
TYPICAL THERMOMETER INSTALLATION
SCALE: NONE



CHILLED, CONDENSER, AND HOT WATER GAUGE ASSEMBLY
SCALE: NONE

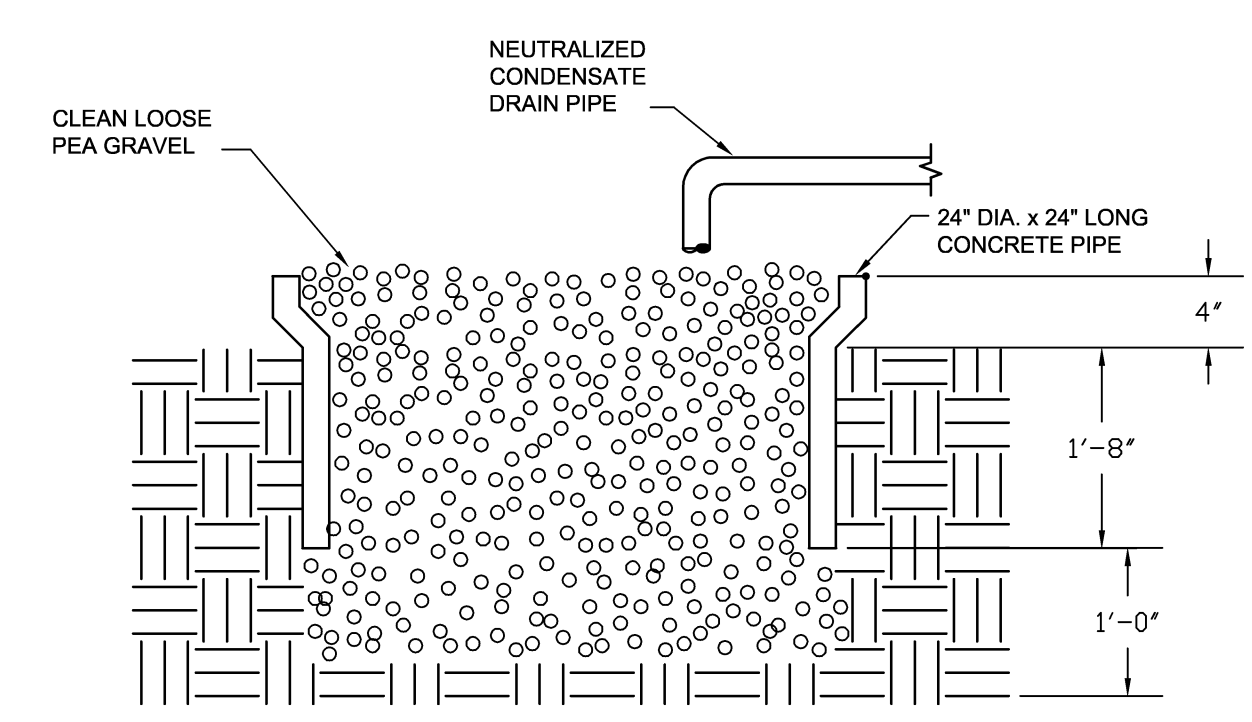


3-WAY UNIT HEATER PIPING DETAIL
SCALE: NONE

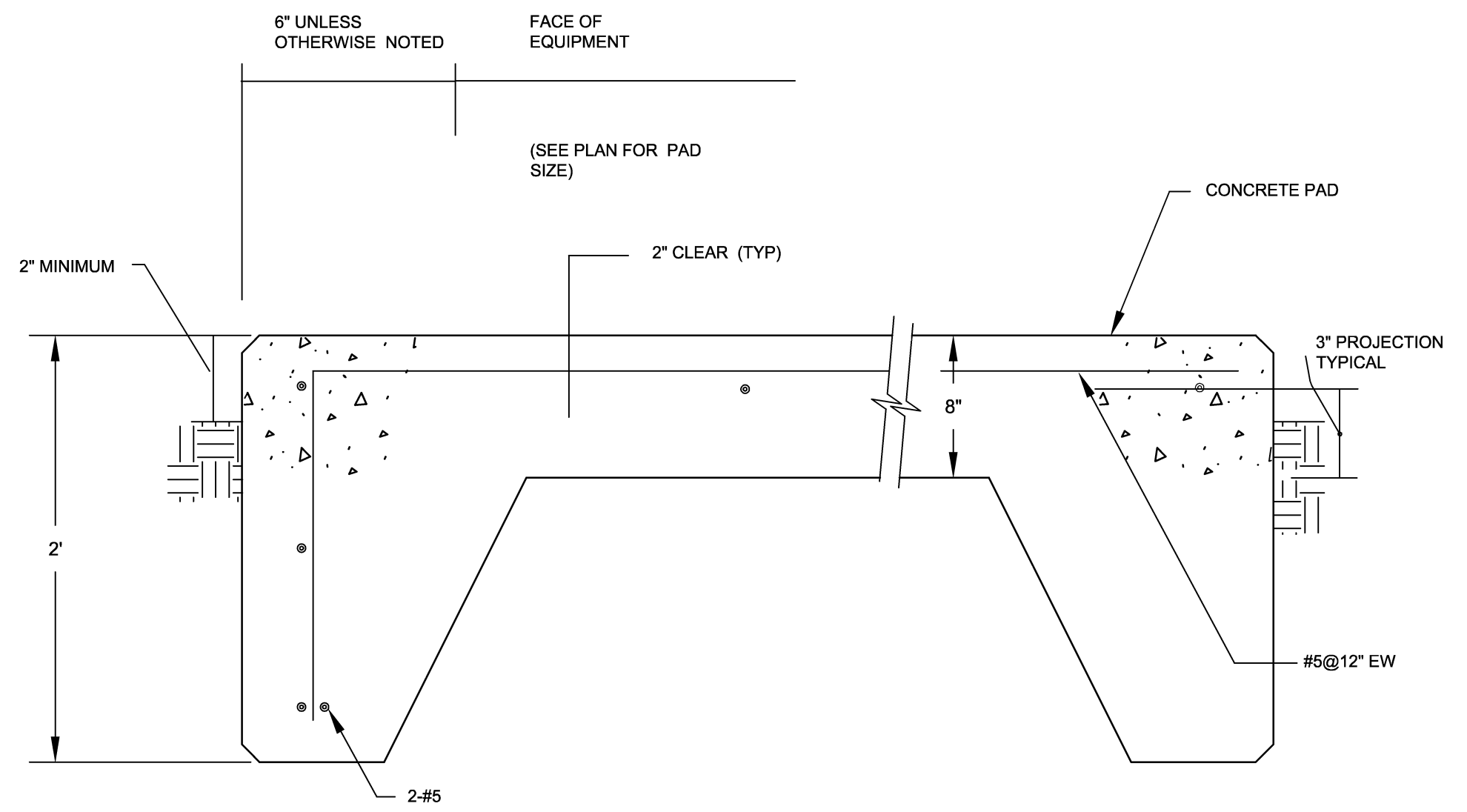


GAS WATER HEATER DETAIL
SCALE: NONE

NOTE: DETAILS SHOWN AS TYPICAL. PROVIDE ALL ADDITIONAL COMPONENTS AS REQUIRED BY MANUFACTURERS INSTALLATION AND OPERATION MANUAL. INSTALL GAS PIPING AND APPURTENANCES IN ACCORDANCE WITH NORTH CAROLINA FUEL GAS CODE, LATEST EDITION.

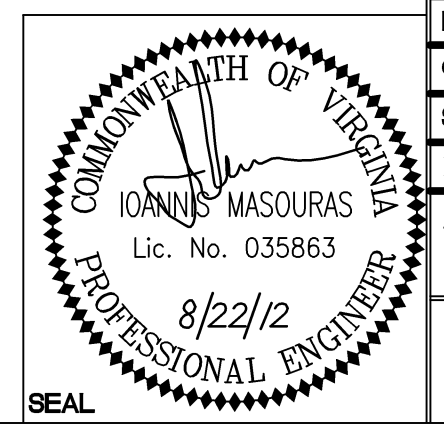


DRY WELL DETAIL
NOT TO SCALE



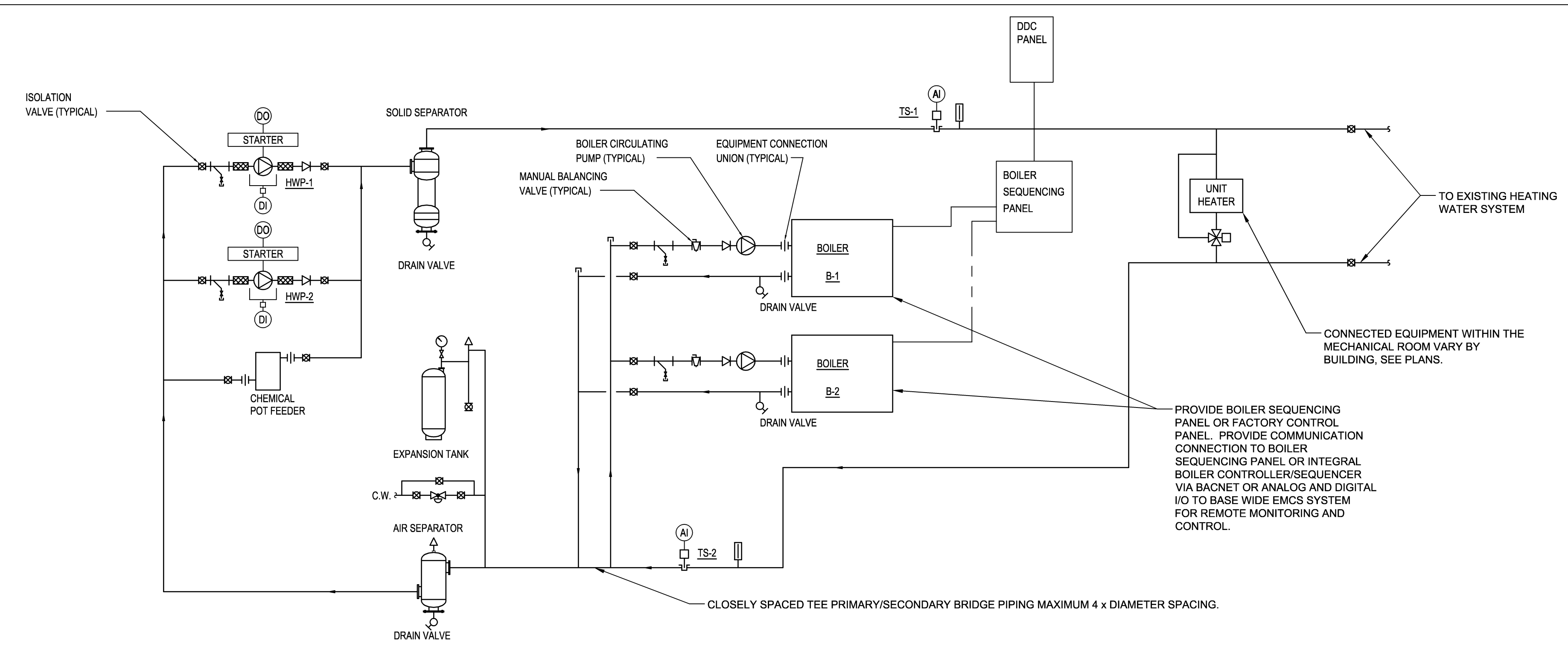
EXTERIOR EQUIPMENT PAD DETAIL
SCALE: NONE

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WileyWilson 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.254.7242 wileywilson.com		M-201 PROJECT NO. CP12-0104 NAVAL FACILITIES ENGINEERING COMMAND	
DEPT OF NAVY MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA		BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT DETAILS	
DES. IM	DR. SWL	CHK. JHE	NAVFAC DRAWING NO. 60011300
DESIGN DR.	APPROVED PWO OR OICC	DATE	SIZE E
SUBMITTED BY:	DATE	CODE IDENT NO. 80091	CONSTR CONTR NO. N40085-12-B-0104
SATISFACTORY TO	DATE	SCALE: AS SHOWN	SPEC No. 05-12-0104 SHEET 36 OF 43

SYM.	PREP'D BY	DATE	APPROVED



HEATING WATER SYSETM CONTROL DIAGRAM
SCALE: NONE (SYSTEM TYPICAL FOR ALL BUILDINGS)

PROVIDE A COMPLETE PACKAGED BOILER CONTROL SYSTEM, EITHER A SEPARATE SEQUENCING PANEL OR INTEGRAL BOILER CONTROLLER.

ON A CALL FOR HEAT THE DIGITAL CONTROLLER SHALL ENABLE THE LEAD HEATING WATER PUMP AND SEND A SIGNAL TO THE BOILER SEQUENCING CONTROLLER TO ENABLE THE BOILERS. THE BOILERS CIRCULATING PUMPS SHALL BE HARD-WIRED TO THE BOILER CONTROL PANEL AND CONTROLLED DIRECTLY BY THE FACTORY BOILER CONTROLLER TO ENERGIZE WHEN THE BOILER IS ENABLED.

THE BOILER SEQUENCING PANEL SHALL CONTROL THE HOURS OF OPERATION AND THE STANDBY OR DUTY STATUS OF THE BOILERS. THE DIGITAL CONTROLLER SHALL ONLY BE ALLOWED TO ADJUST THE DISCHARGE SET-POINT FOR THE SYSTEM AND ENABLE OR DISABLE TO BOILER SYSTEM. THE BOILERS SHALL BE SEQUENCED PER THE MANUFACTURER'S STANDARD SEQUENCE OF OPERATION TO MAXIMIZE SYSTEM EFFICIENCY TO DELIVER A MAXIMUM HEATING WATER SUPPLY TEMPERATURE OF 180°F (REMOTELY ADJUSTABLE) AS SENSED BY TEMPERATURE SENSOR TS-1. PROVIDE OUTSIDE AIR TEMPERATURE RESET CONTROL OF HEATING WATER SYSTEM TEMPERATURE FROM 180°F (ADJUSTABLE) AT 23°F (ADJUSTABLE) OUTSIDE AIR TEMPERATURE, TO 140°F (ADJUSTABLE) AT 55°F (ADJUSTABLE) OUTSIDE AIR TEMPERATURE. THE LEAD BOILER SHALL ALTERNATE POSITION. IF THE LEAD PUMP FAILS TO OPERATE, THE STANDBY PUMP SHALL BE STARTED, THE LEAD PUMP SHALL BE STOPPED AND AN ALARM SIGNAL SHALL BE SENT TO THE DIGITAL CONTROLLER.

WHERE PUMPS OPERATE IN LEAD-STANDBY OPERATION, THE PUMPS PUMPS SHALL AUTOMATICALLY SWITCH FROM LEAD TO STANDBY AND STANDBY TO LEAD AFTER EVERY 250 HOURS OPERATION AT THE NEXT AVAILABLE TIME.

A DIFFERENTIAL PRESSURE SWITCH INSTALLED ACROSS THE FACTORY PROVIDED PRESSURE TAPS OF THE PUMPS SHALL SERVE OF PROOF OF PUMP OPERATION. IF PUMP FAILS TO OPERATE WITHIN 2 MINUTES OF AN ENABLE COMMAND, THE DIGITAL CONTROLLER SHALL SEND AN ALARM.

TEMPERATURE SENSORS SHALL BE INSTALLED AS SHOWN ON THE FLOW SCHEMATIC FOR THE PURPOSE OF MONITORING AND CONTROLLING THE SYSTEM. IF THE TEMPERATURE SENSED IS 20°F MORE OR LESS THAN COMMANDED OR EXPECTED, AN ALARM SIGNAL SHALL BE SENT TO THE DIGITAL CONTROLLER.

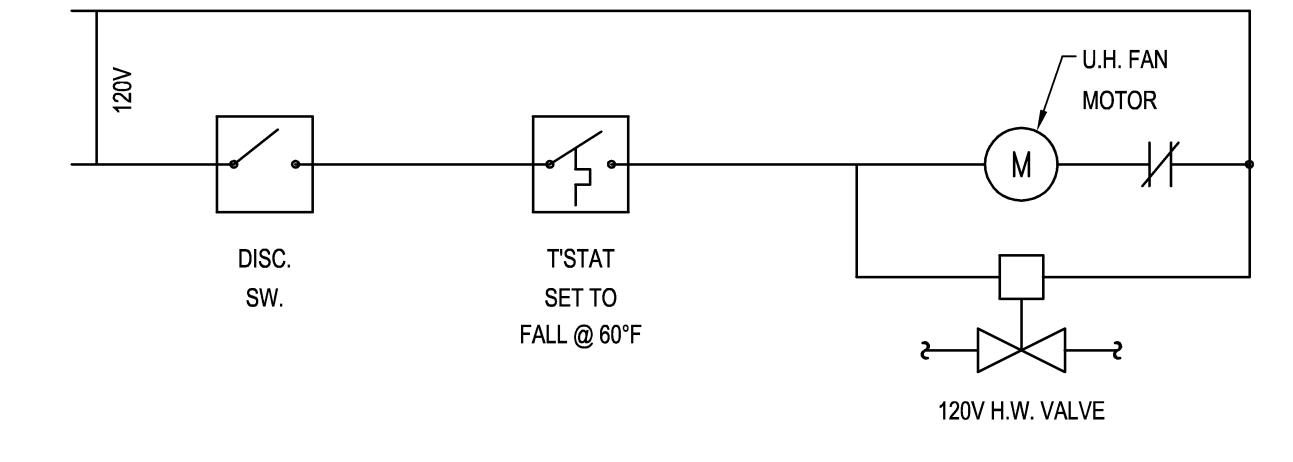
ALL OF THE POINTS INDICATED SHALL BE VIEWABLE FROM THE BASE WIDE EMCS. IN ADDITION, FOR EACH BOILER, FOLLOWING POINTS SHALL BE VIEWABLE ON THE EMCS:

1. BOILER LEAVING WATER TEMPERATURE
2. BOILER LEAVING WATER TEMPERATURE SETPOINT
3. BOILER FIRING STATUS
4. BOILER ALARM STATUS
5. BOILER STATUS (ENABLE/DISABLE).

NOTE: DEPENDING ON THE CONFIGURATION OF THE INDIVIDUAL BUILDING, THE HEATING WATER SUPPLY PUMPS MAY BE REMOTELY LOCATED INSIDE THE BUILDING SERVED.

IF THE BUILDING HAS AN EXISTING DUAL TEMPERATURE SYSTEM CONTROLLED BY A MANUAL HEATING/COOLING CHANGEOVER SWITCH, THE NEW SYSTEM SHALL BE INCORPORATED INTO THE EXISTING CHANGEOVER CONTROL.

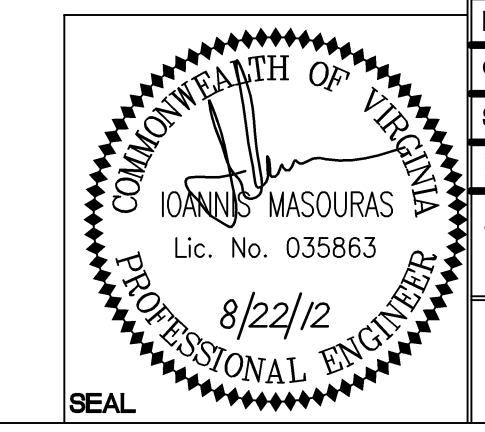
IF NEW BOILER CONTROLLER DOES NOT INCLUDE BACNET MS/TP BUS, PROVIDE GATEWAY TO CONVERT BOILER CONTROL PROTOCOL TO APPROPRIATE PROTOCOL.



TYPICAL HOT WATER UNIT HEATER CONTROL DIAGRAM
SCALE: NONE

DISCLOSURE OF INFORMATION

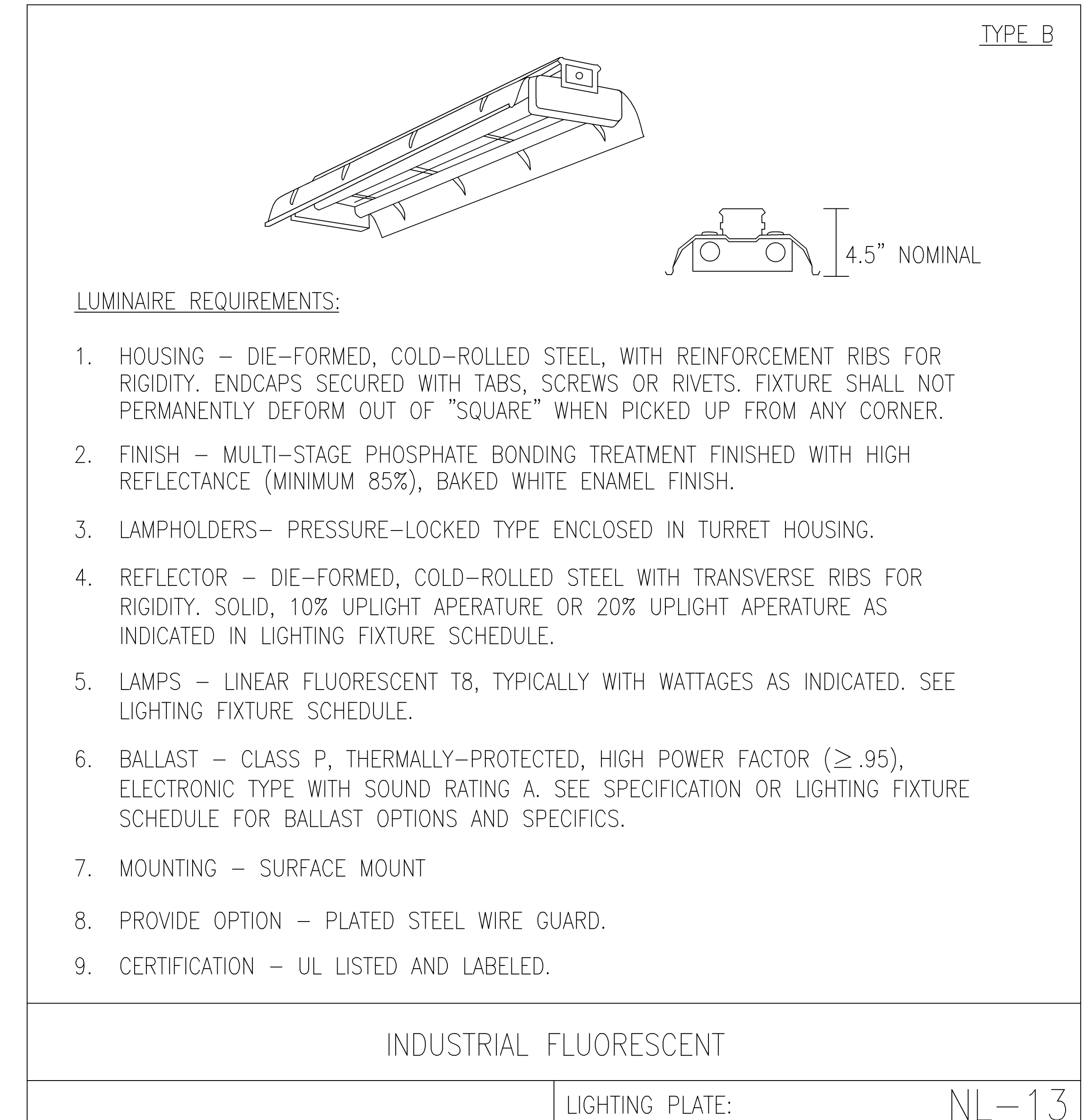
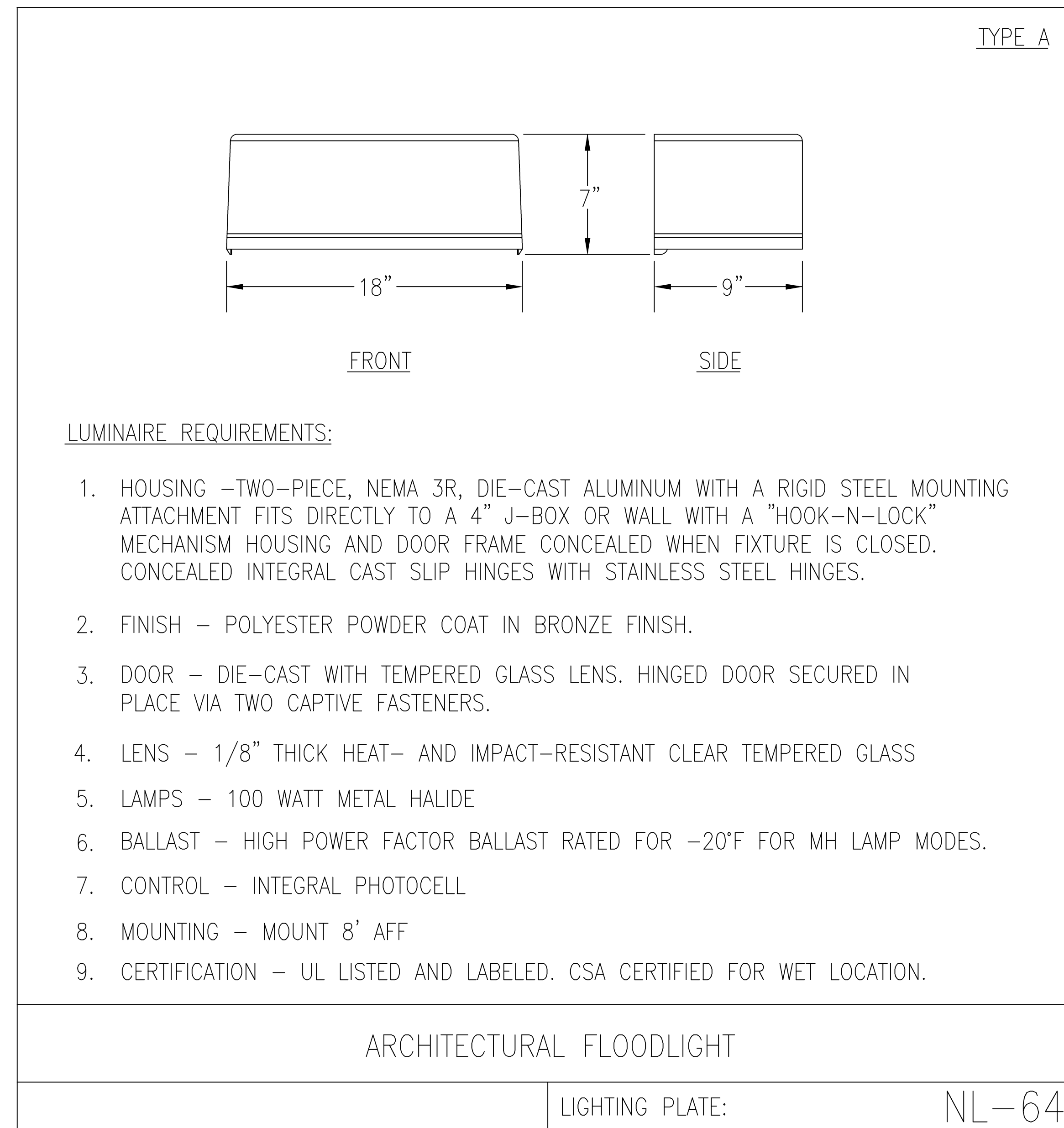
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WileyWilson 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.264.7242 wileywilson.com		M-301 PROJECT NO. CP12-0104	
DEPT OF NAVY NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA		NAVFAC DRAWING NO. 60011301	
DES. IM DR. SWL CHK. JHE SUBMITTED BY: DESIGN DR.	BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT CONTROLS		
APPROVED PWO OR OICC DATE	SIZE E	CODE IDENT NO. 80091	CONSTR CONTR NO. N40085-12-B-0104
SATISFACTORY TO DATE	SCALE: AS SHOWN	SPEC No. 05-12-0104	SHEET 37 OF 43

ELECTRICAL LEGEND

	RACEWAY RUN SURFACE MOUNTED, WITH PHASE, NEUTRAL AND GROUND CONDUCTOR UNLESS NOTED OTHERWISE. PROVIDE 2,3 OR 4 WAY SWITCH LEG CONDUCTORS PER SWITCH TYPE INDICATED ON PLAN. TIC MARKS INDICATE MORE THEN 3 WIRES IN RACEWAY.
	HOMERUN RACEWAY RUN SURFACE MOUNTED,
	BRANCH CIRCUIT PANELBOARD. SIZE AND DESCRIPTION AS SCHEDULED. TOP: +6'-0" AFF.
	DRY TYPE SECONDARY TRANSFORMER. SIZE AS INDICATED.
	ELECTRIC MOTOR. SIZE IN HORSEPOWER AS INDICATED OR SCHEDULED.
	DISCONNECT SWITCH. POLES, AMPS, VOLTS, FUSED AND ENCLOSURE TYPE AND SIZED PER NEC FOR THE EQUIPMENT SUPPLIED. UNO. TOP: +5'-0" AFF.
	FUSED COMBINATION MAGNETIC STARTER, SIZE AND POLES INDICATED IN NEMA 12 ENCLOSURE WITH ON AND OFF DOOR MOUNTED PUSHBUTTON CONTROLS. SIZE THERMAL UNIT PER NEC FOR MOTOR SUPPLIED. TOP: +5'-0" AFF.
	120 VOLT, 20 AMP, 3-WIRE, NEMA 5-20 DUPLEX RECEPTACLE. MOUNTING HEIGHT: CENTER +36" AFF UNO.
	120 VOLT, 20 AMP, 3-WIRE, NEMA 5-20 DOUBLE DUPLEX RECEPTACLE. MOUNTING HEIGHT: CENTER +136" AFF UNO.
	120 VOLT, 20 AMP, 3-WIRE, NEMA 5-20 DUPLEX GROUND FAULT CIRCUIT INTERRUPTING RECEPTACLE. MOUNTING HEIGHT: CENTER +18" AFF UNO.
	120 VOLT, 20 AMP, 3-WIRE, NEMA 5-20 DUPLEX GROUND FAULT CIRCUIT INTERRUPTING RECEPTACLE WITH DUAL HINGED WEATHERPROOF GASKETED COVER. MOUNTING HEIGHT: CENTER +18" AFF UNO.



ELECTRICAL ABBREVIATIONS

A	AMPERES	M	MAIN OR METER	UE	UNDERGROUND ELECTRIC
AF	AMPERE FRAME OR AMPERE FUSE	MB	MAIN CIRCUIT BREAKER	UH	UNIT HEATER
AFD	ADJUSTABLE FREQUENCY MOTOR DRIVE UNIT	MCCB	MOLDED CASE CIRCUIT BREAKER	UNO	UNLESS NOTED OTHERWISE
AFF	ABOVE FINISHED FLOOR	MCP	MOTOR CIRCUIT PROTECTOR	V	VOLTS
AFG	ABOVE FINISHED GRADE	MH	METAL HALIDE, MANHOLE, OR MOUNTING HEIGHT TO CENTER OF DEVICE	WH	WATER HEATER
AHU	AIR HANDLING UNIT	MLO	MAIN LUGS ONLY	WP	WEATHERPROOF
AWG	AMERICAN WIRE GAUGE	MS	MAGNETIC STARTER	XFMR	TRANSFORMER
BAS	BUILDING AUTOMATION SYSTEM	MSB	MAIN SWITCHBOARD	Y	WYE CONNECTED
C	CONDUIT	MTD	MOUNTED		
CHWP	CHILLED WATER PUMP	MV	MEDIUM VOLTAGE		
CKT	CIRCUIT	N	NEUTRAL		
CKT BKR	CIRCUIT BREAKER	NC	NORMALLY CLOSED		
COMM	COMMUNICATIONS	NEC	NATIONAL ELECTRICAL CODE		
CT	CURRENT TRANSFORMER OR CABLE TRAY	NETA	NATIONAL ELECTRICAL TESTING ASSOCIATION		
DS OR DISC SW	DISCONNECT SWITCH	NF	NON-FUSED		
DN	DOWN	NIC	NOT IN CONTRACT		
E OR EXIST.	EXISTING	NL	NON LINEAR		
EA	EACH	NO	NORMALLY OPEN		
EF	EXHAUST FAN	NPZ	NAME PLATE IMPEDANCE		
EM	EMERGENCY	O.C.	ON CENTER		
ENCL	ENCLOSURE	OS	OCCUPANCY SENSOR		
ERU	ENERGY RECOVERY UNIT	P	POLE OR PRIMARY		
EUEP	EXISTING UNDERGROUND ELECTRIC POWER	PBX	PULLBOX		
EUTC	EXISTING UNDERGROUND COMMUNICATIONS	PC	PHOTOELECTRIC CELL		
EWG	ELECTRIC WATER COOLER	PH	PHASE		
F	FLUSH MOUNTED IN WALL	PNL	PANEL		
FTL	FEED THRU LUGS	PWR	POWER		
FUS	FUSE	R	RAINTIGHT		
FVNR	FULL VOLTAGE NON-REVERSING	RCPT	RECEPTACLE		
G	GROUND	S	SINGLE POLE SINGLE THROW		
GFGI	GOVERNMENT FURNISHED GOVERNMENT INSTALLED	SCC	SHORT CIRCUIT CURRENT		
GFI	GROUND FAULT INTERRUPTING	STCB	SHUNT TRIP CIRCUIT BREAKER		
HP	HORSE POWER	SW	SWITCH		
HT	HEAT TRACE	SYM	SYMMETRICAL		
HWP	HOT WATER PUMP	TC	TIME CLOCK		
JB	JUNCTION BOX	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR		
KV	KILOVOLTS	TYP	TYPICAL		
KVA	KILOVOLT AMPERES				
KW	KILOWATTS				
LAN	LOCAL AREA NETWORK				
LED	LIGHT EMITTING DIODE				

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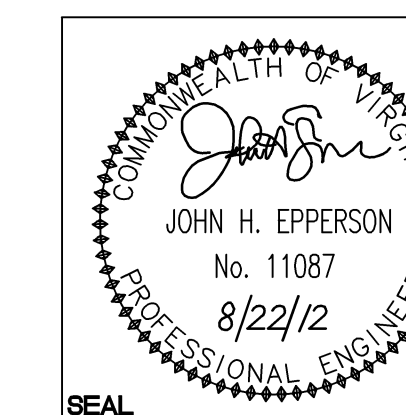
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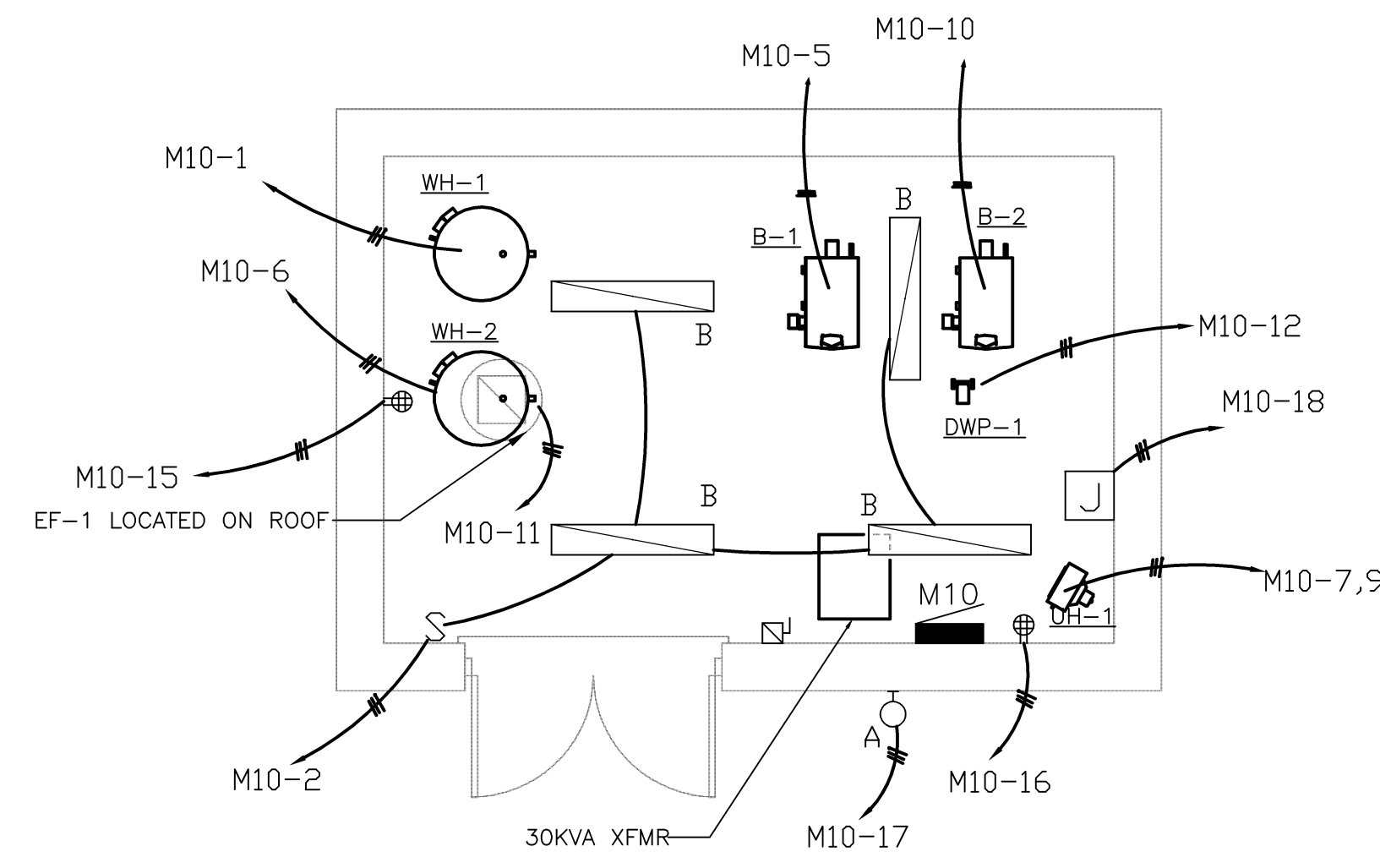
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DISCLOSURE OF INFORMATION



 6600 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.254.7432 wileywilson.com		E-001 <small>PROJECT NO. CP12-0104</small>	
<small>DEPT OF NAVY</small> MARINE CORPS BASE <small>CAMP LEJEUNE, NORTH CAROLINA</small>		<small>NAVAL FACILITIES ENGINEERING COMMAND</small>	
<small>DES.</small> CDH <small>DR.</small> CDH <small>CHK.</small> JHE <small>SUBMITTED BY:</small> <small>DESIGN DR.</small>	BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT <small>ELECTRICAL LEGEND, ABBREVIATION AND LIGHTING DETAILS</small>		
<small>APPROVED:</small> PWO OR OICC <small>DATE</small> <small>BATSFACTORY TO</small> <small>DATE</small>	<small>SIZE</small> E <small>CODE IDENT NO.</small> 80091	<small>NAVFAC DRAWING NO.</small> 60011302 <small>CONSTR CONTR NO.</small> N40085-12-B-0104	<small>SHEET 38 OF 43</small>
<small>SCALE:</small> AS SHOWN	<small>SPEC No.</small> 05-12-0104	<small>SHEET 38 OF 43</small>	



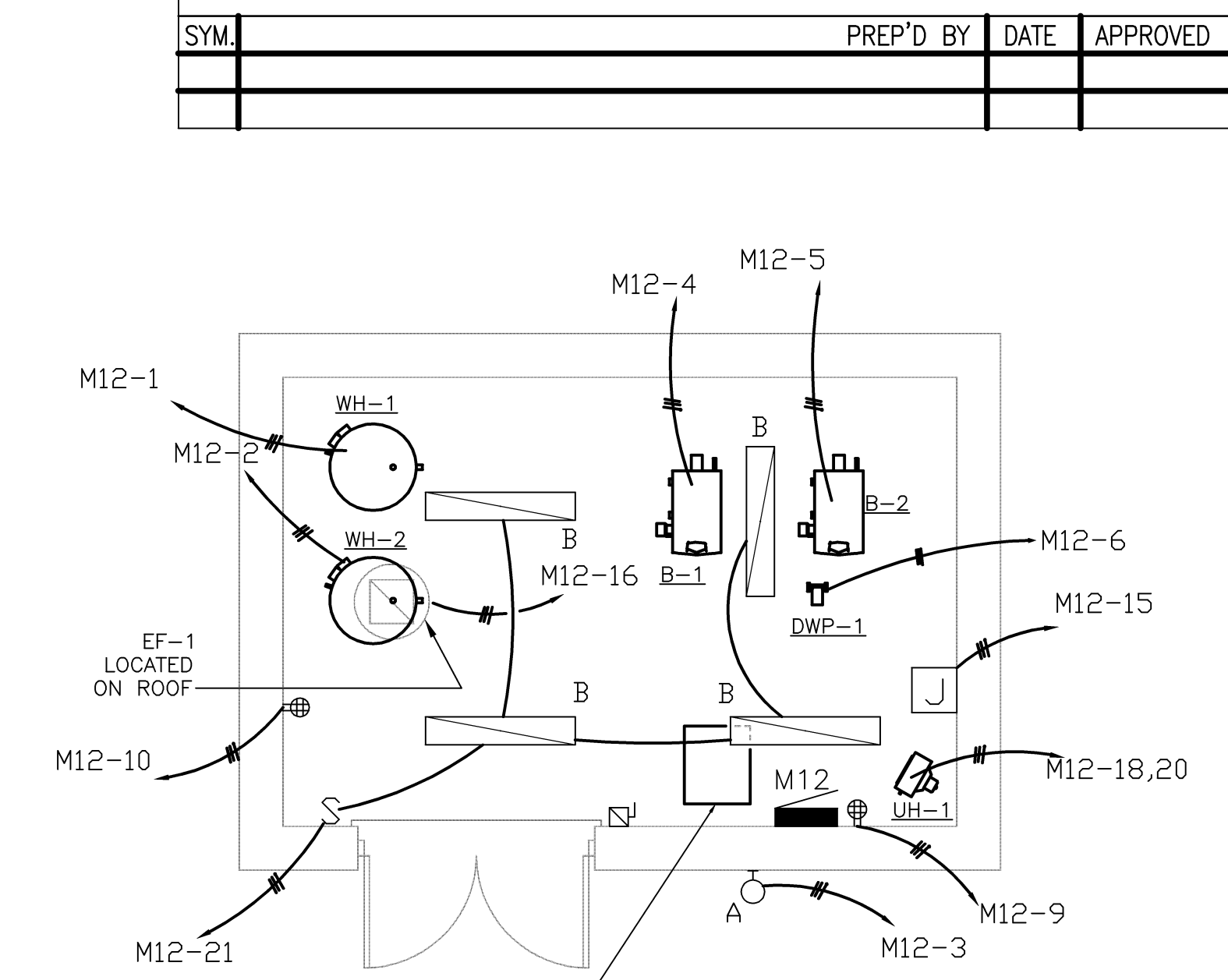
BUILDING 10 NEW MECHANICAL ROOM PLAN
1/4"=1'-0"

ELECTRICAL M10 SCHEDULE									
VOLTS/PHASE/WIRE: 120V/208y/3ø/4W		PANEL SIZE: 60 A		MAIN TYPE & SIZE: 60 A MCB			CABINET: ----	MIN SCC: 22000	FED FROM: ----
CIRCUIT NO.	AREA SERVED	TRIP AMPS	NO. POLES	PHASE LOAD VA			WIRE & CONDUIT SIZE	CIRCUIT NOTES	
				A	B	C			
1	WH-1	20	1	360	0	0	2-#12-#12G-3/4"C		
2	LIGHTS	20	1	300	0	0	2-#12-#12G-3/4"C		
3	SPARE	20	1	0	0	0			
4	SPARE	20	1	0	0	0			
5	B-1	20	1	0	0	360	2-#12-#12G-3/4"C		
6	WH-2	20	1	0	0	360	2-#12-#12G-3/4"C		
7,9	UH-1	20	2	1200	1200	0	2-#12-#12G-3/4"C		
8	SPARE	20	1	0	0	0			
10	B-2	20	1	0	0	360	2-#12-#12G-3/4"C		
11	EF-1	20	1	0	0	360	2-#12-#12G-3/4"C		
12	DWP-1	20	1	0	0	360	2-#12-#12G-3/4"C		
13	SPARE	20	1	0	0	0			
14	SPARE	20	1	0	0	0			
15	RECEPTACLE	20	1	0	0	180	2-#12-#12G-3/4"C		
16	RECEPTACLE	20	1	0	0	180	2-#12-#12G-3/4"C		
17	OUTSIDE LIGHT	20	1	0	0	125	2-#12-#12G-3/4"C		
18	LJUVVER	20	1	0	0	180	2-#12-#12G-3/4"C		
19	SPARE	20	1	0	0	0			
20	SPARE	20	1	0	0	0			
21	SPARE	20	1	0	0	0			
22	SPARE	20	1	0	0	0			
23	SPARE	20	1	0	0	0			
24	SPARE	20	1	0	0	0			
25	SPARE	20	1	0	0	0			
CONNECTED LOAD				1860	1920	1745	5.3 KVA		

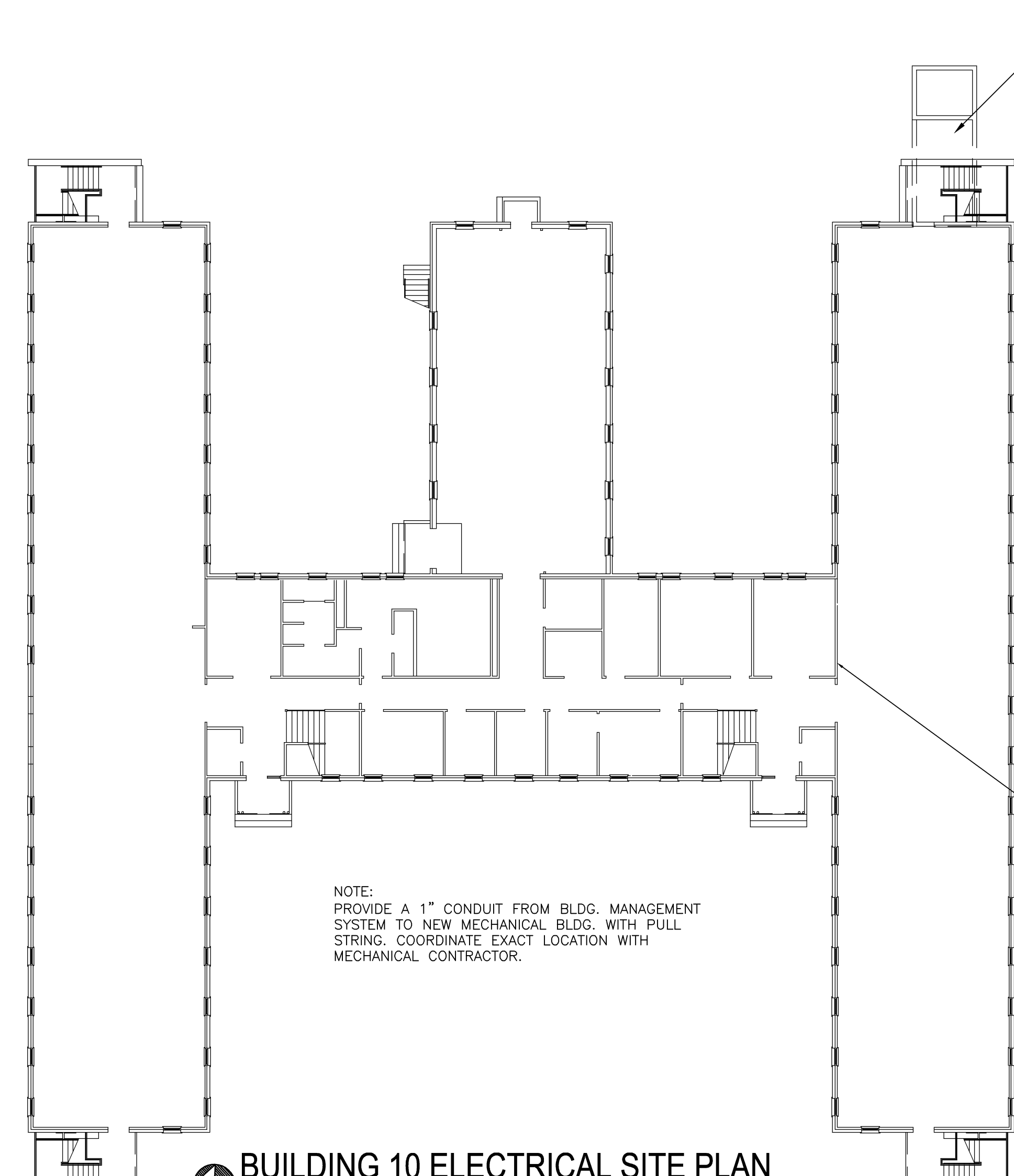
LOAD CATEGORY	CONN. LOAD	DEMAND FACTOR	EST. LOAD
Receptacles (0 - 10 KVA)	3.5	1.00	3.5
Motors	1.1	1.00	1.1
Motors (Largest)	0.4	1.25	0.5
Lighting	0.4	1.25	0.5
TOTAL	5.3KVA		5.5KVA

ELECTRICAL M12 SCHEDULE									
VOLTS/PHASE/WIRE: 120V/208y/3ø/4W		PANEL SIZE: 60 A		MAIN TYPE & SIZE: 60 A MCB			CABINET: ----	MIN SCC: 22000	FED FROM: ----
CIRCUIT NO.	AREA SERVED	TRIP AMPS	NO. POLES	PHASE LOAD VA			WIRE & CONDUIT SIZE	CIRCUIT NOTES	
				A	B	C			
1	WH 1	20	1	360	0	0	2-#12-#12G-3/4"C		
2	WH 2	20	1	360	0	0	2-#12-#12G-3/4"C		
3	OUTSIDE LIGHT	20	1	0	125	0	2-#12-#12G-3/4"C		
4	BOILER 1	20	1	0	360	0	2-#12-#12G-3/4"C		
5	BOILER 2	20	1	0	360	0	2-#12-#12G-3/4"C		
6	DWP 1	20	1	0	0	360	2-#12-#12G-3/4"C		
7	SPARE	20	1	0	0	0			
8	SPARE	20	1	0	0	0			
9	RECEPTACLE	20	1	0	0	180	2-#12-#12G-3/4"C		
10	RECEPTACLE	20	1	0	0	180	2-#12-#12G-3/4"C		
12	SPARE	20	1	0	0	0			
13	SPARE	20	1	0	0	0			
14	SPARE	20	1	0	0	0			
15	LJUVVER	20	1	0	0	180	2-#12-#12G-3/4"C		
16	EF-1	20	1	0	0	360	2-#12-#12G-3/4"C		
17	SPARE	20	1	0	0	0			
18,20	UH-1	20	2	1200	0	1200	2-#12-#12G-3/4"C		
19	SPARE	20	1	0	0	0			
21	LIGHTS	20	1	0	0	300	2-#12-#12G-3/4"C		
22	SPARE	20	1	0	0	0			
23	SPARE	20	1	0	0	0			
24	SPARE	20	1	0	0	0			
25	SPARE	20	1	0	0	0			
CONNECTED LOAD				1920	1685	1920	5.3 KVA		

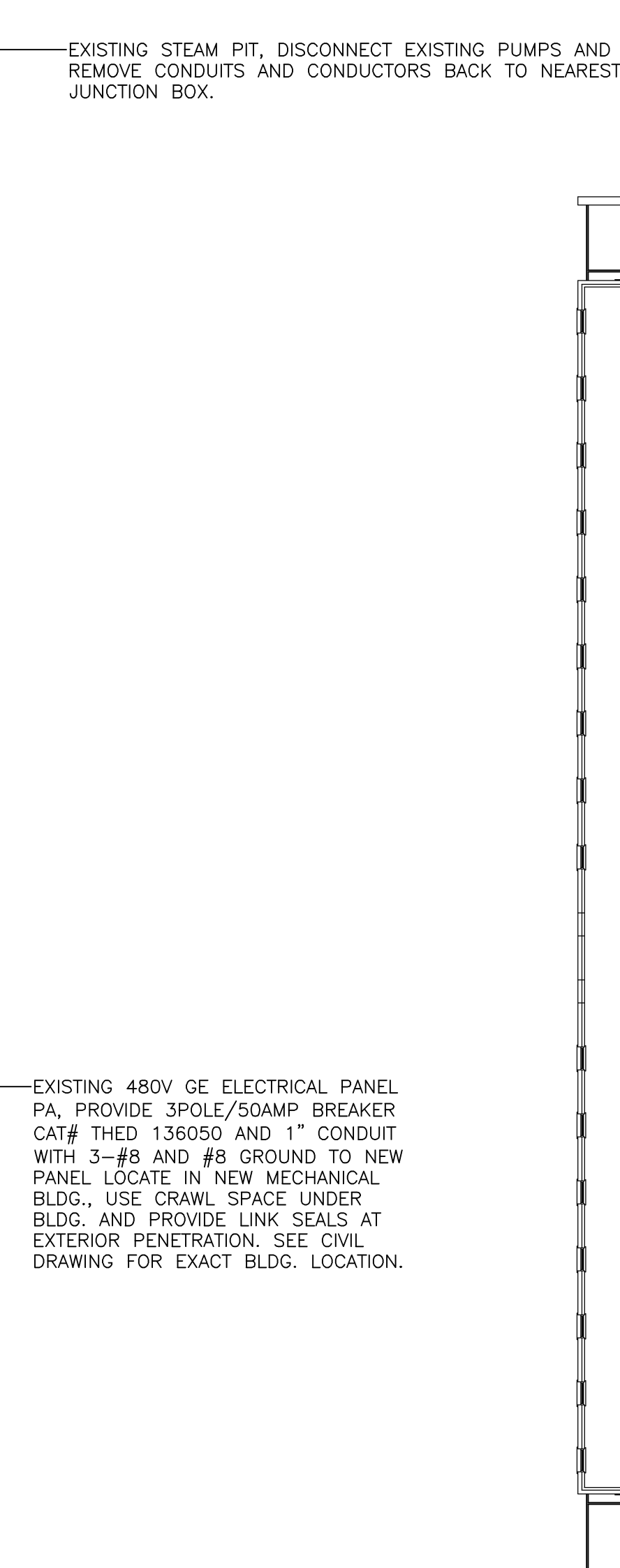
LOAD CATEGORY	CONN. LOAD	DEMAND FACTOR	EST. LOAD
Receptacles (0 - 10 KVA)	3.5	1.00	3.5
Motors	1.1	1.00	1.1
Motors (Largest)	0.4	1.25	0.5
Lighting	0.4	1.25	0.5
TOTAL	5.3KVA		5.5KVA



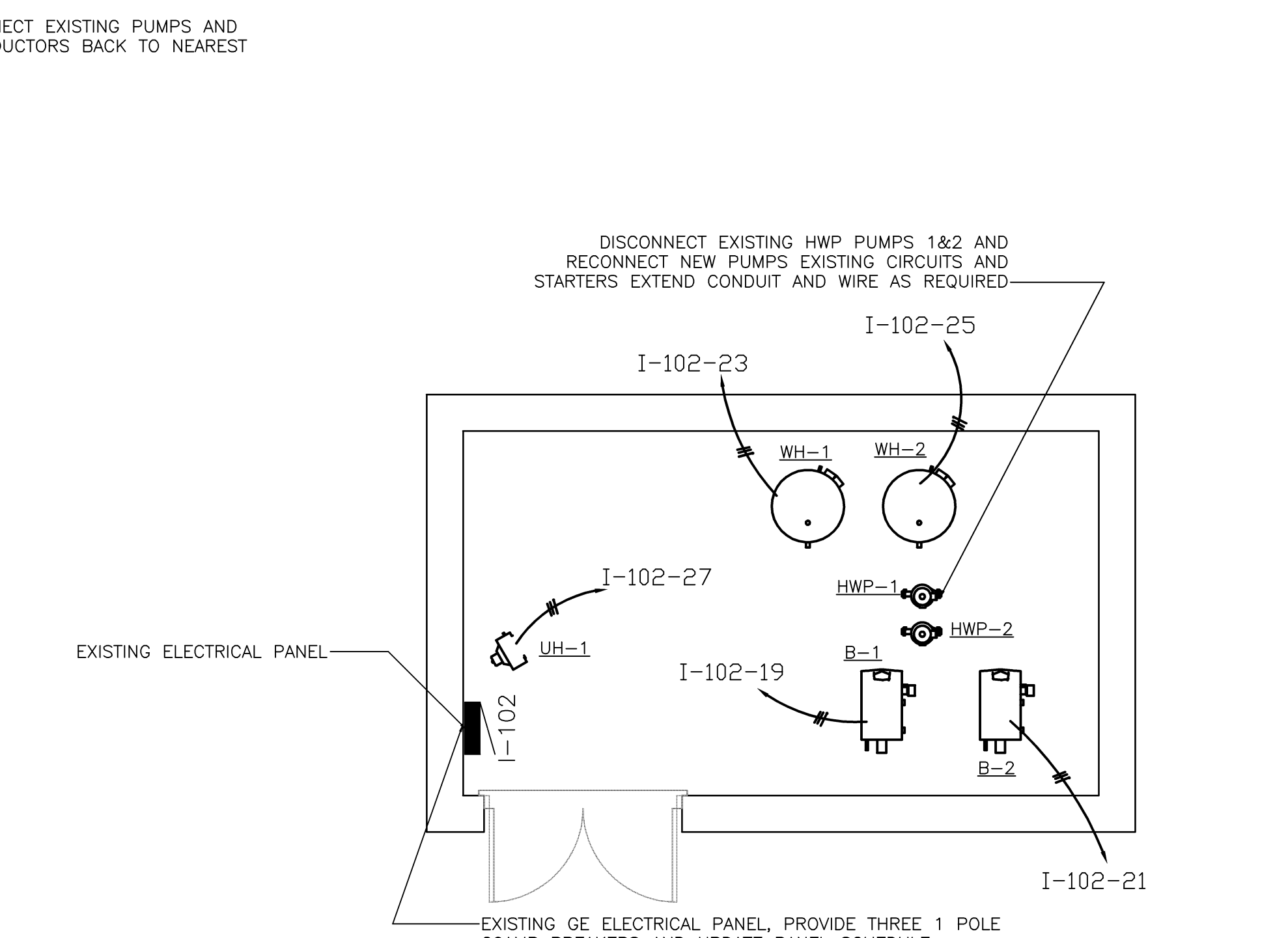
BUILDING 12 NEW MECHANICAL ROOM PLAN
1/4"=1'-0"



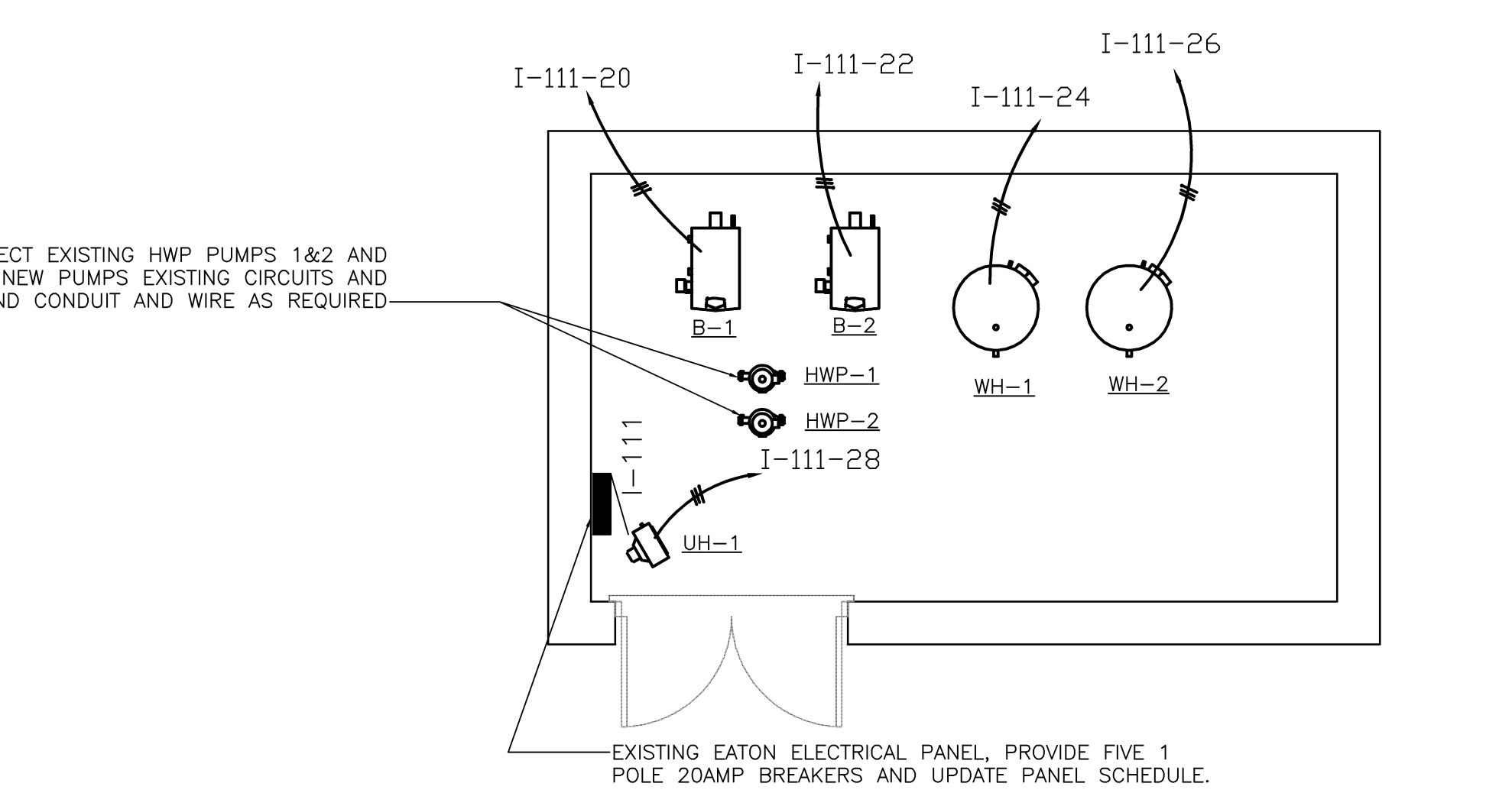
BUILDING 10 ELECTRICAL SITE PLAN
1/8"=1'-0"



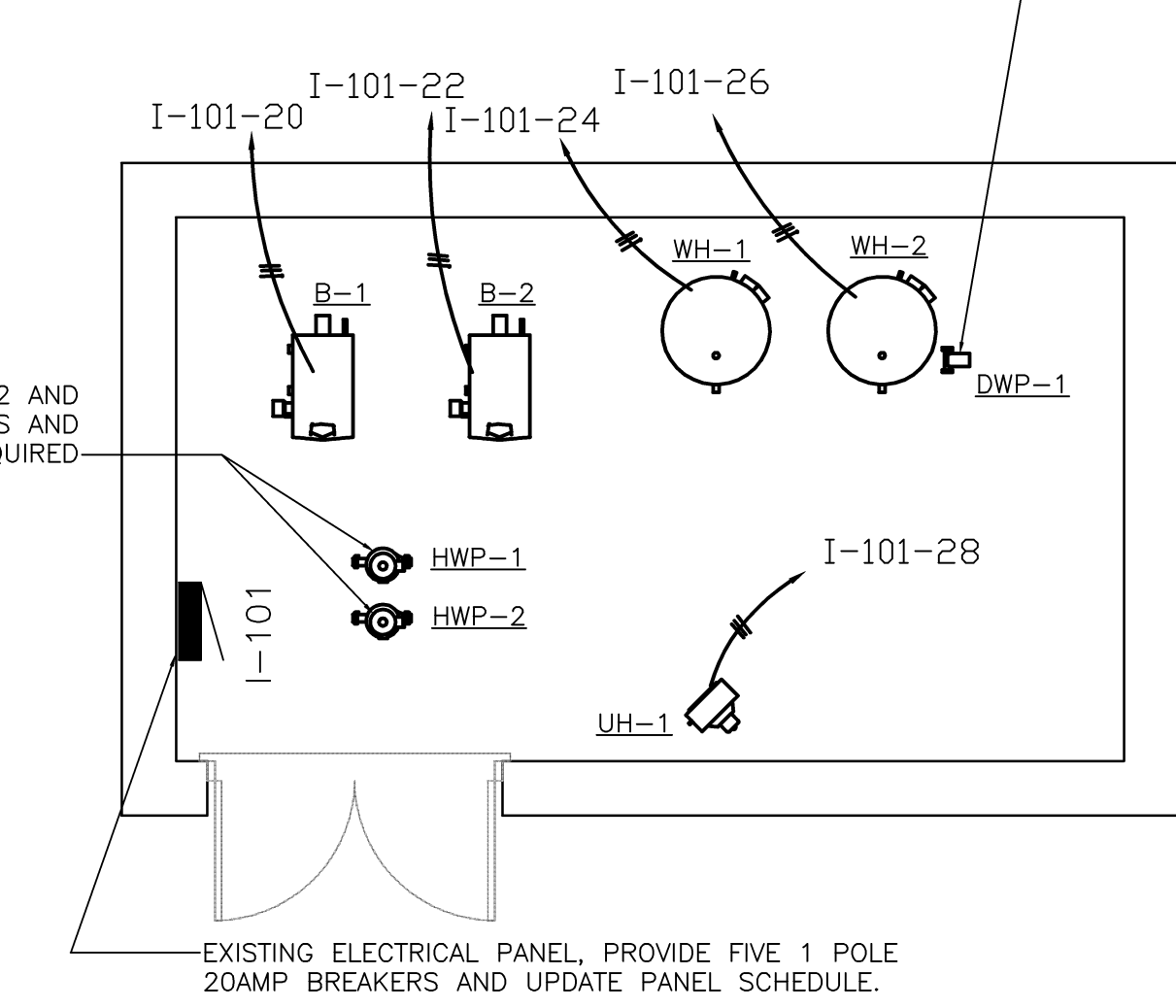
BUILDING 12 ELECTRICAL SITE PLAN
1/8"=1'-0"



BUILDING 102A MECHANICAL ROOM PLAN
1/4"=1'-0"



BUILDING 111A MECHANICAL ROOM PLAN
1/4"=1'-0"



BUILDING 101A MECHANICAL ROOM PLAN
1/4"=1'-0"

DISCLOSURE OF INFORMATION

Contractor shall comply as follows:

(a) The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless-

(1) The Contracting Officer has given prior written approval; or

(2) The information is otherwise in the public domain before the date of release.

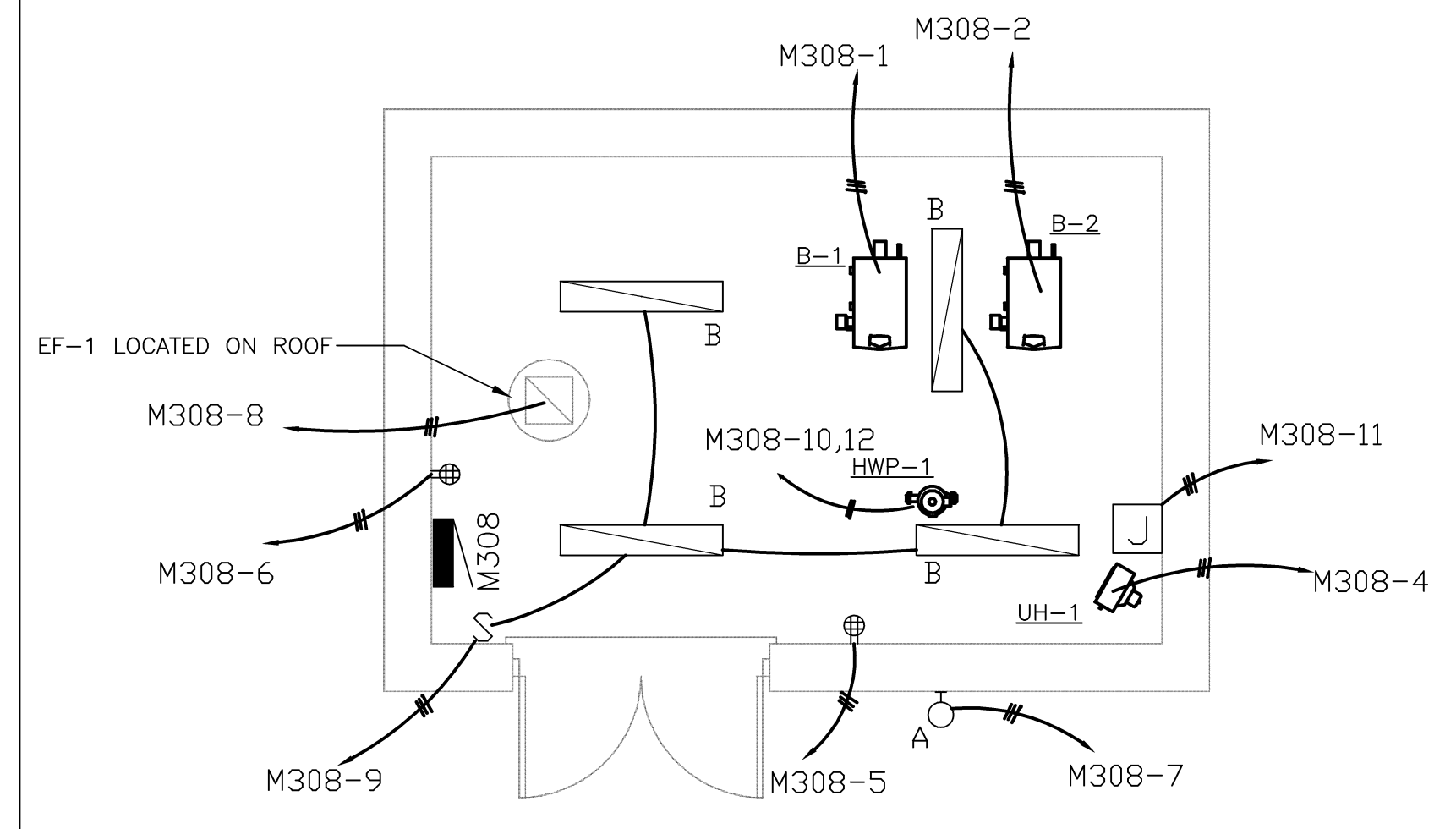
(b) Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.

(c) The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.

APPROVED: JOHN H. EPPERSON
No. 11087
8/22/12
PROFESSIONAL ENGINEER
SEAL

WileyWilson 6600 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.254.7342 wileywilson.com		E-101 PROJECT NO. CP12-0104 NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA	
DEPT OF NAVY BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT BUILDINGS 10, 12, 101, 102, 111 ELECTRICAL PLANS		CODE IDENT NO. E 80091 NAVFAC DRAWING NO. 60011303	
DES. CDH	DR. CDH	CHK. JHE	DESIGN DR.
APPROVED PWO OR OICC	DATE	SIZE	CONSTR CONTR NO.
BATSFACTORY TO	DATE	SCALE	SHEET 39 OF 43
		SPEC No.	06-12-0104

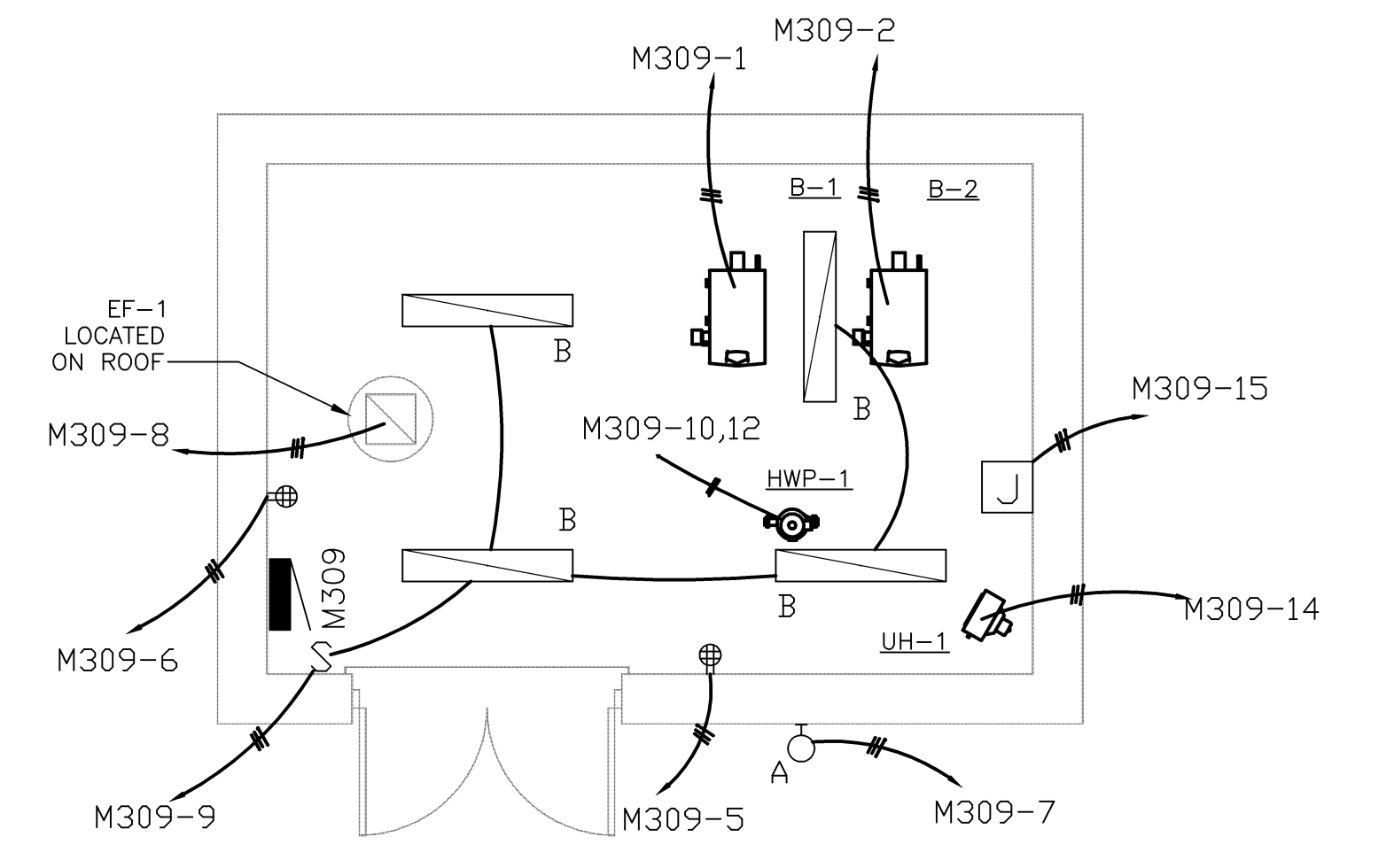
SYM	PREP'D BY	DATE	APPROVED



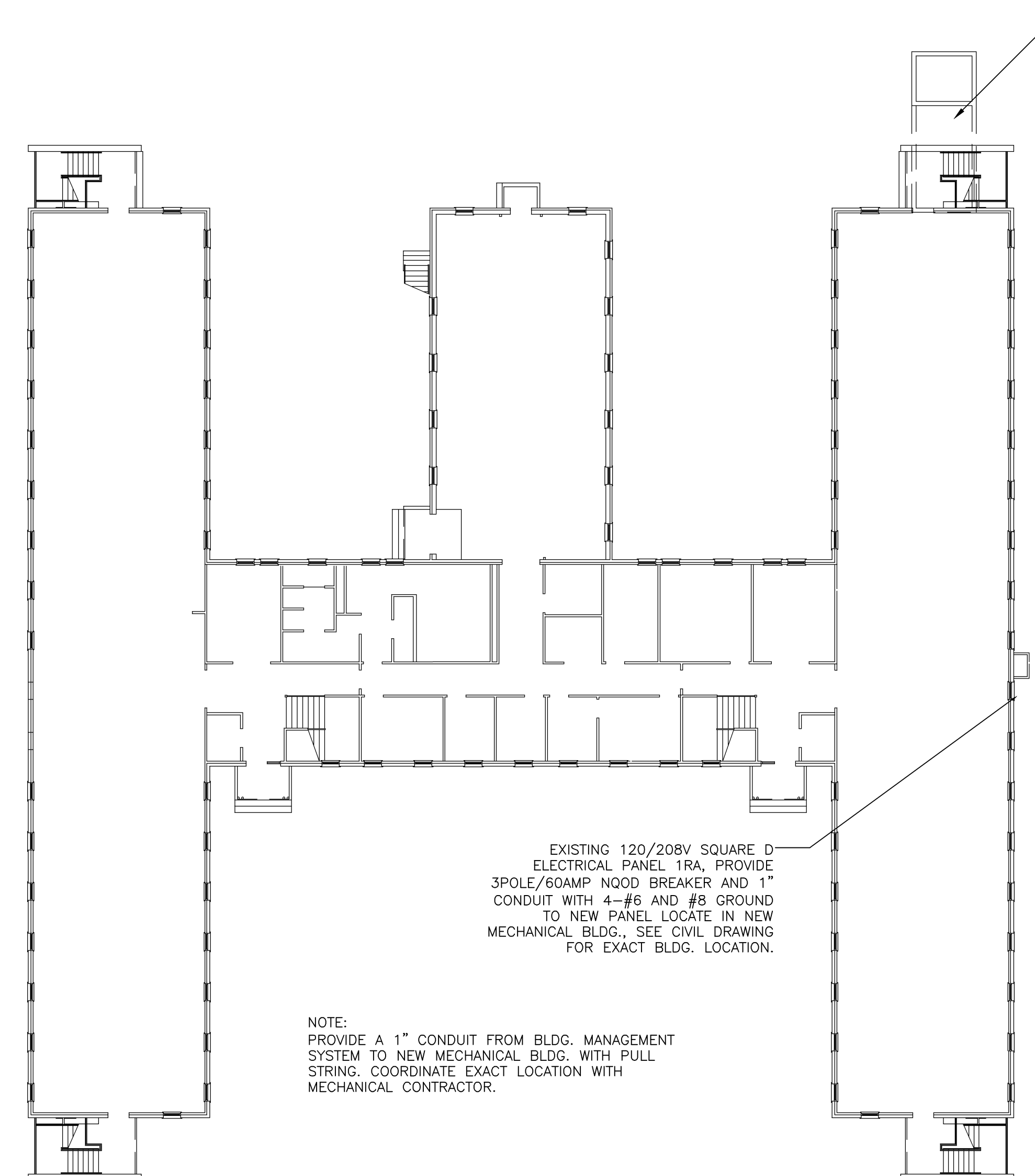
BUILDING 308 NEW MECHANICAL ROOM PLAN
1/4"=1'-0"

ELECTRICAL M308 SCHEDULE										
VOLTS/PHASE/WIRE: 120V/208y/3φ/4W		PANEL SIZE: 60 A		MAIN TYPE & SIZE: 60 A MCB			CABINET: ----		MIN SCC: 2200	FED FROM: ----
CIRCUIT NO.	AREA SERVED	TRIP AMPS	NO. POLES	PHASE LOAD VA			WIRE & CONDUIT SIZE	CIRCUIT NOTES		
				A	B	C				
1	BOILER 1	20	1	360	0	0	2-#12-#12G-3/4"			
2	BOILER 2	20	1	360	0	0	2-#12-#12G-3/4"			
3	SPARE	20	1	0	0	0				
4	UH-1	20	1	0	600	0	2-#12-#12G-3/4"			
5	RECEPTACLE	20	1	0	0	180	2-#12-#12G-3/4"			
6	RECEPTACLE	20	1	0	0	180	2-#12-#12G-3/4"			
7	OUTSIDE LIGHT	20	1	125	0	0	2-#12-#12G-3/4"			
8	EF-1	20	1	360	0	0	2-#12-#12G-3/4"			
9	LIGHTS	20	1	0	300	0	2-#12-#12G-3/4"			
10,12	HWP-1	20	2	0	1352	1352	2-#12-#12G-3/4"			
11	LIDDER	20	1	0	0	180	2-#12-#12G-3/4"			
13	SPARE	20	1	0	0	0				
14	SPARE	20	1	0	0	0				
15	SPARE	20	1	0	0	0				
16	SPARE	20	1	0	0	0				
17	SPARE	20	1	0	0	0				
18	SPARE	20	1	0	0	0				
19	SPARE	20	1	0	0	0				
20	SPARE	20	1	0	0	0				
CONNECTED LOAD				1205	2252	1892	5.2 KVA			
LOAD CATEGORY		CONN. LOAD	DEMAND FACTOR	EST. LOAD						
Receptacles (0 - 10 KVA)		1.0	1.00	1.0						
Motors		11	1.00	11						
Motors (Largest)		2.7	1.25	3.4						
Lighting		0.4	1.25	0.5						
TOTAL		5.2KVA		6.0KVA						

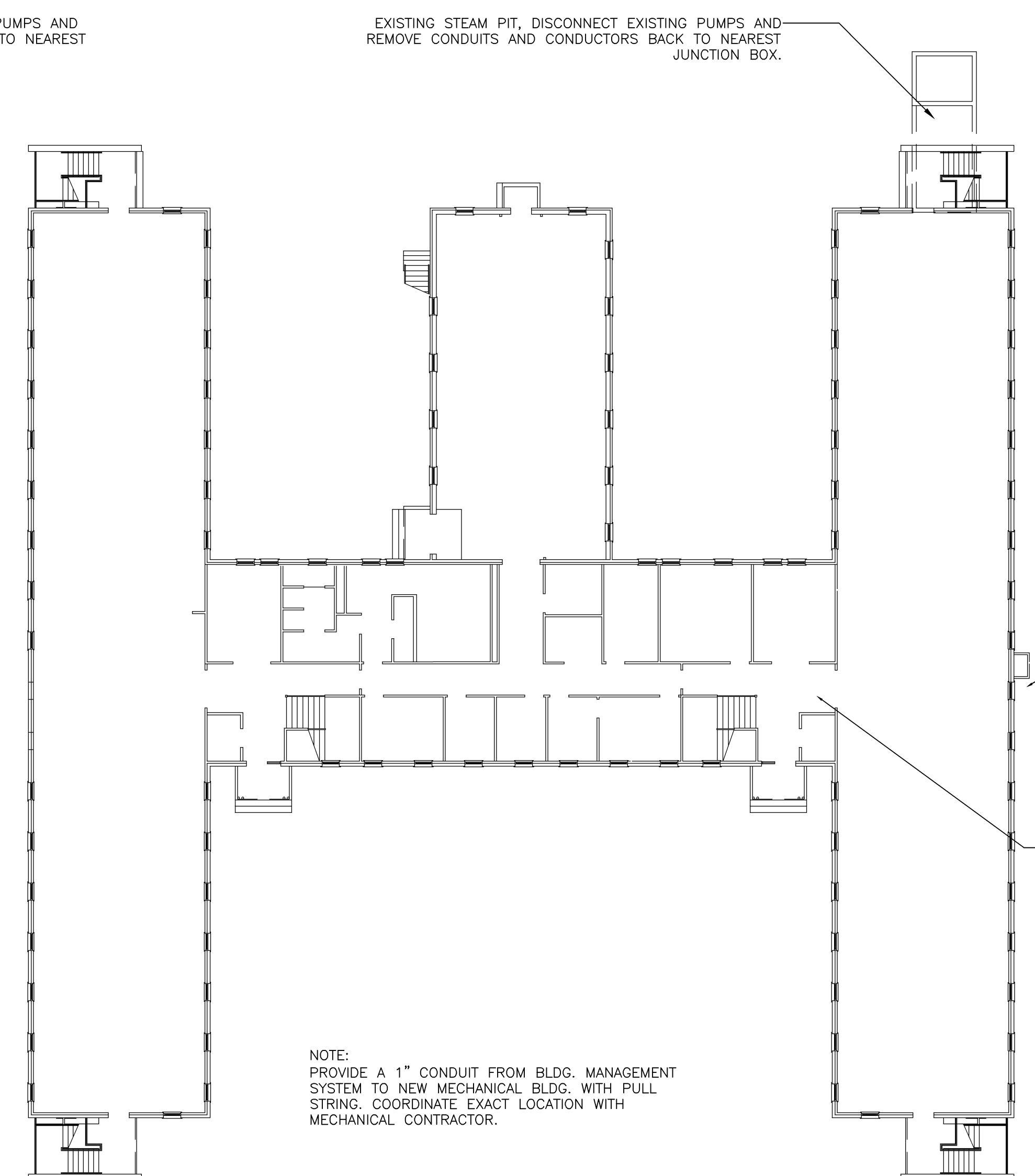
ELECTRICAL M309 SCHEDULE										
VOLTS/PHASE/WIRE: 120V/208y/3φ/4W		PANEL SIZE: 60 A		MAIN TYPE & SIZE: 60 A MCB			CABINET: ----		MIN SCC: 2200	FED FROM: ----
CIRCUIT NO.	AREA SERVED	TRIP AMPS	NO. POLES	PHASE LOAD VA			WIRE & CONDUIT SIZE	CIRCUIT NOTES		
				A	B	C				
1	BOILER 1	20	1	360	0	0	2-#12-#12G-3/4"			
2	BOILER 2	20	1	360	0	0	2-#12-#12G-3/4"			
3	SPARE	20	1	0	0	0				
4	SPARE	20	1	0	0	0				
5	RECEPTACLE	20	1	0	0	180	2-#12-#12G-3/4"			
6	RECEPTACLE	20	1	0	0	180	2-#12-#12G-3/4"			
7	OUTSIDE LIGHT	20	1	125	0	0	2-#12-#12G-3/4"			
8	EF-1	20	1	360	0	0	2-#12-#12G-3/4"			
9	LIGHTS	20	1	0	300	0	2-#12-#12G-3/4"			
10,12	HWP-1	20	2	0	1352	1352	2-#12-#12G-3/4"			
11	LIDDER	20	1	0	0	180	2-#12-#12G-3/4"			
13	SPARE	20	1	0	0	0				
14	UH-1	20	1	0	600	0				
15	LIDDER	20	1	0	180	0	2-#12-#12G-3/4"			
16	SPARE	20	1	0	0	0				
17	SPARE	20	1	0	0	0				
18	SPARE	20	1	0	0	0				
19	SPARE	20	1	0	0	0				
20	SPARE	20	1	0	0	0				
CONNECTED LOAD				1805	1892	1712	5.2 KVA			
LOAD CATEGORY		CONN. LOAD	DEMAND FACTOR	EST. LOAD						
Receptacles (0 - 10 KVA)		1.0	1.00	1.0						
Motors		11	1.00	11						
Motors (Largest)		2.7	1.25	3.4						
Lighting		0.4	1.25	0.5						
TOTAL		5.2KVA		6.0KVA						



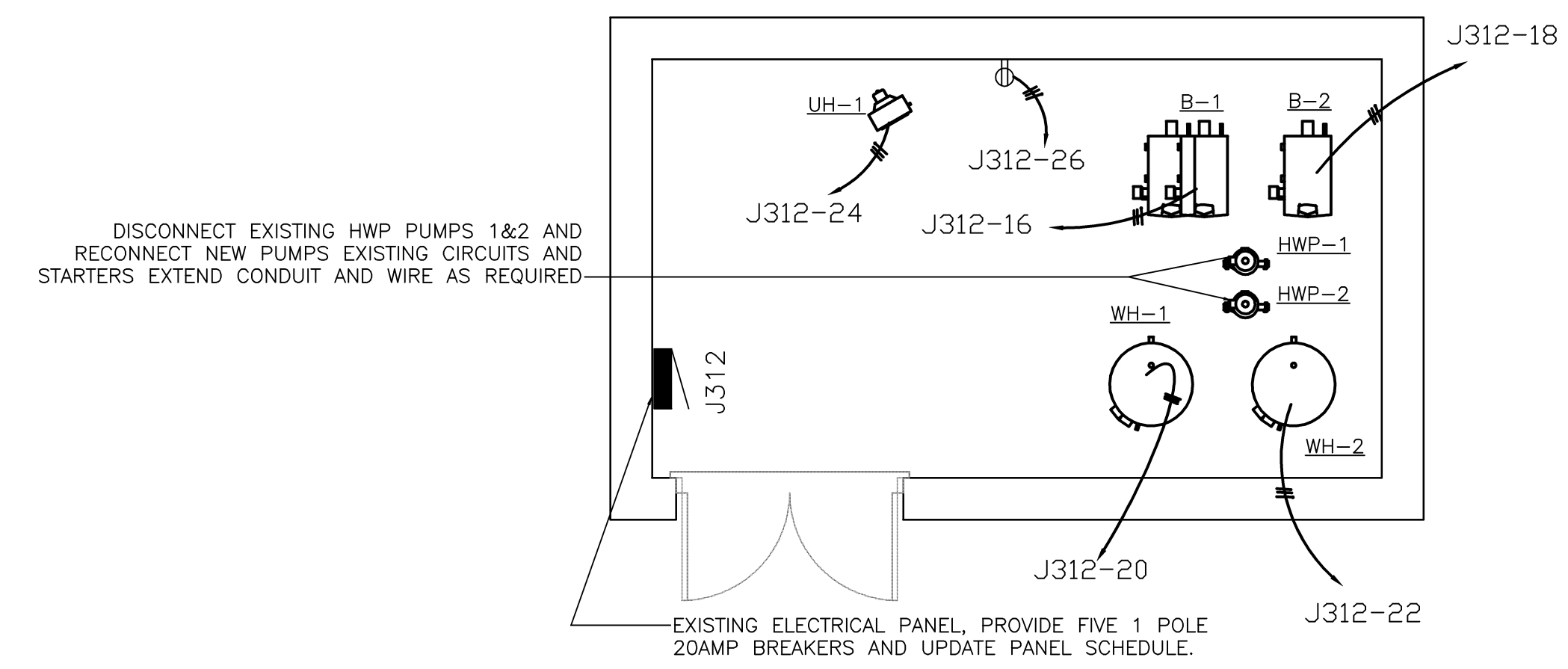
BUILDING 309 NEW MECHANICAL ROOM PLAN
1/4"=1'-0"



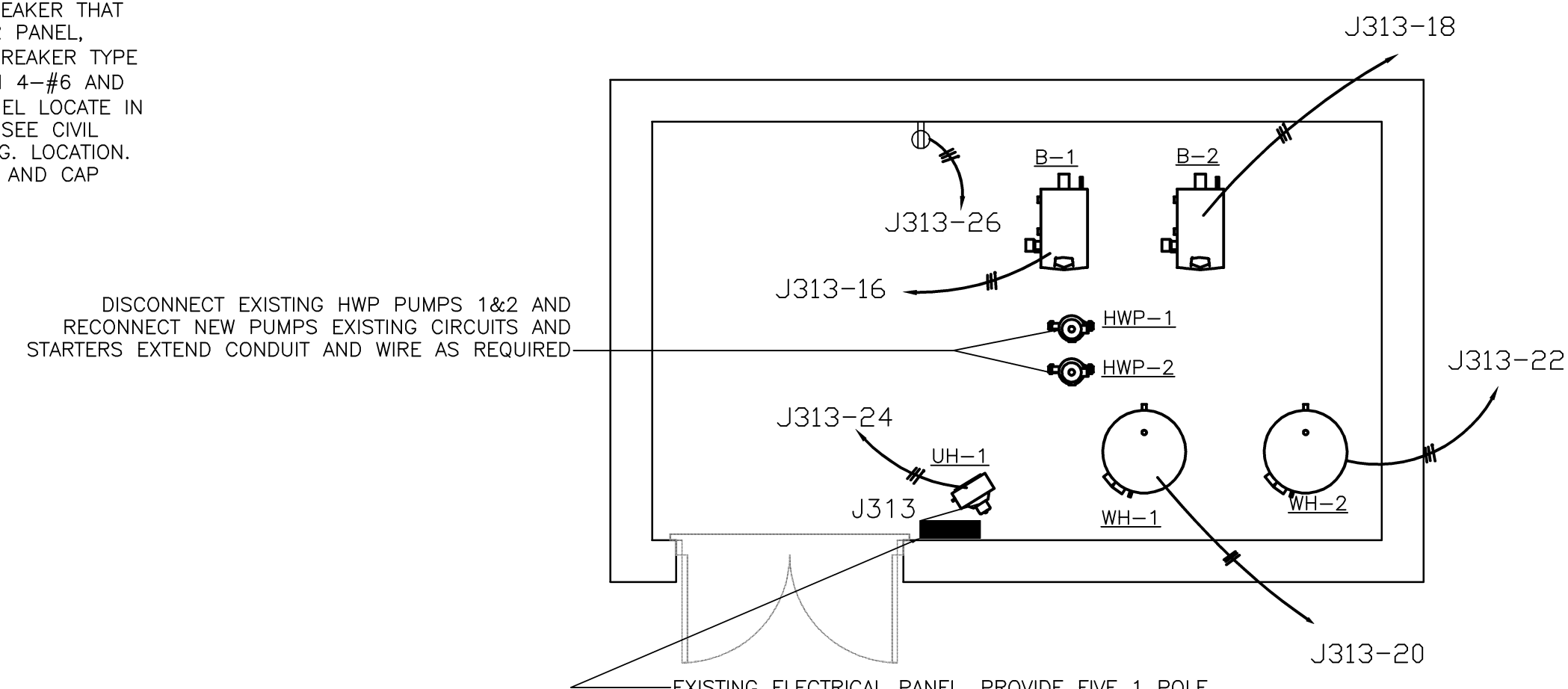
BUILDING 308 ELECTRICAL SITE PLAN
1/16"=1'-0"



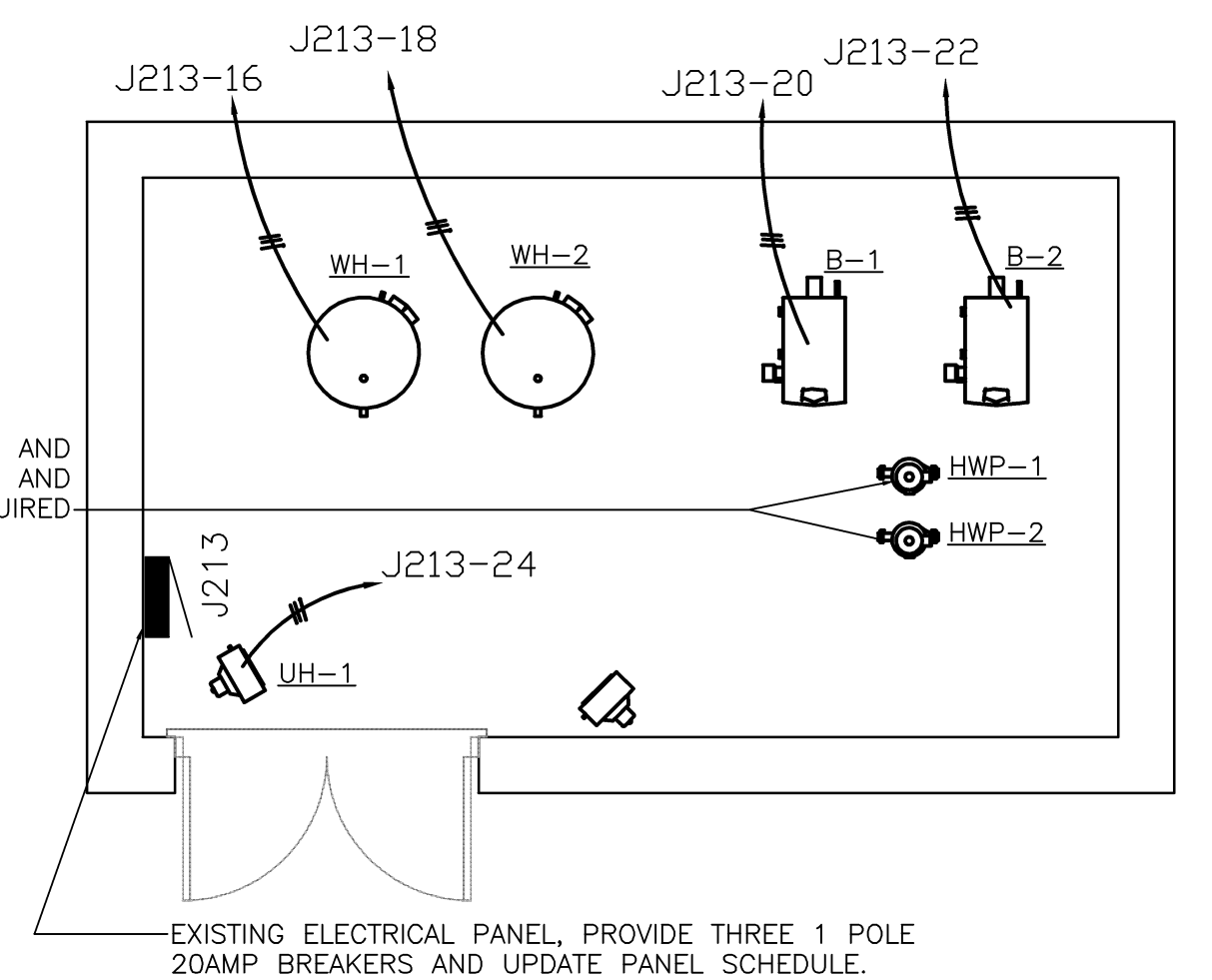
BUILDING 309 ELECTRICAL SITE PLAN
1/16"=1'-0"



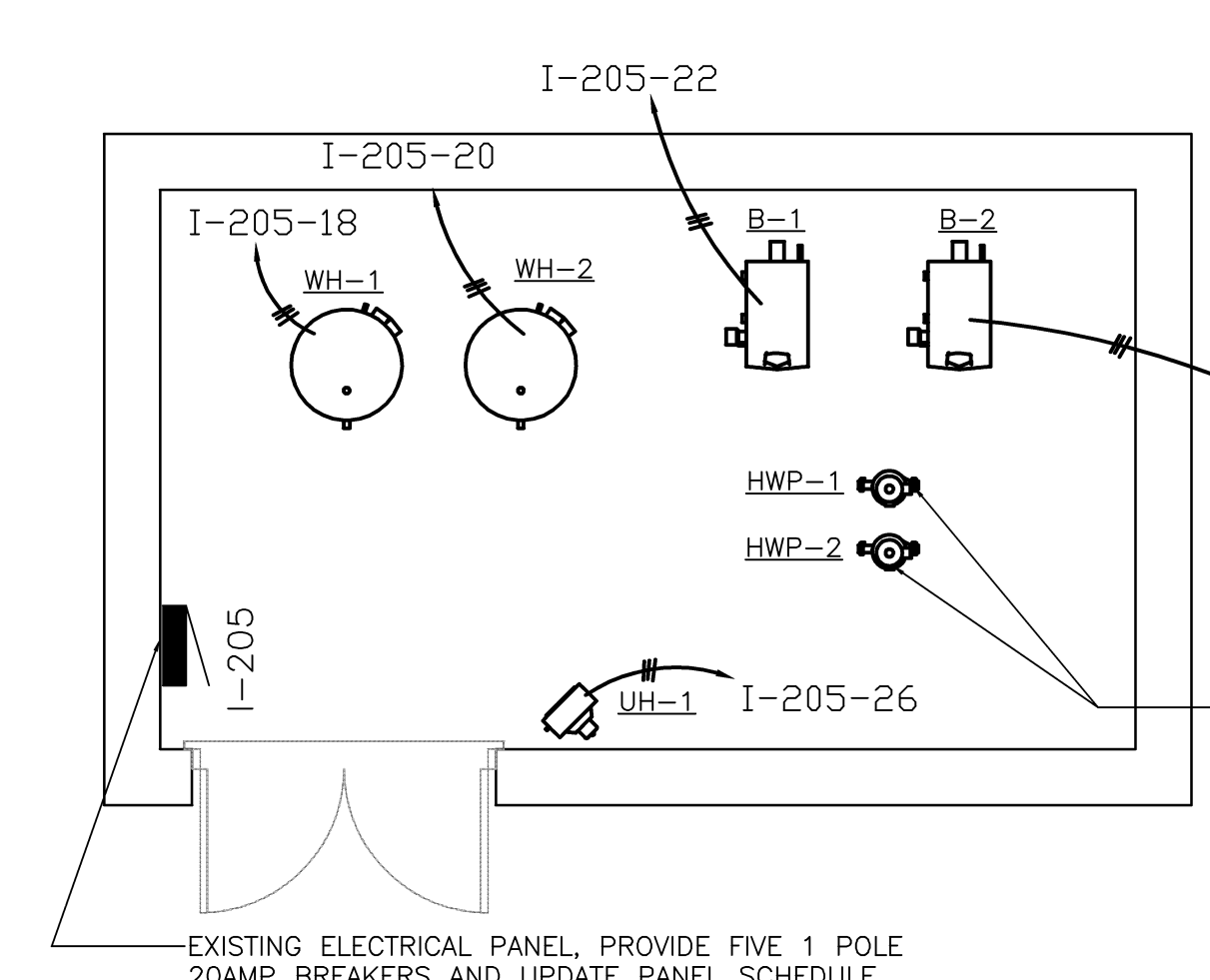
BUILDING 312A MECHANICAL ROOM PLAN
1/4"=1'-0"



BUILDING 313A MECHANICAL ROOM PLAN
1/4"=1'-0"



BUILDING 213A MECHANICAL ROOM PLAN
1/4"=1'-0"



BUILDING 205A MECHANICAL ROOM PLAN
1/4"=1'-0"

Contractor shall comply as follows:

(a) The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless:

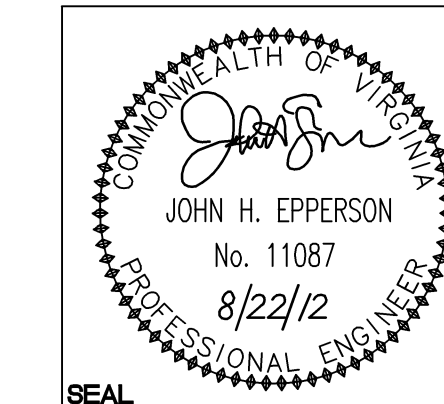
(1) The Contracting Officer has given prior written approval; or

(2) The information is otherwise in the public domain before the date of release.

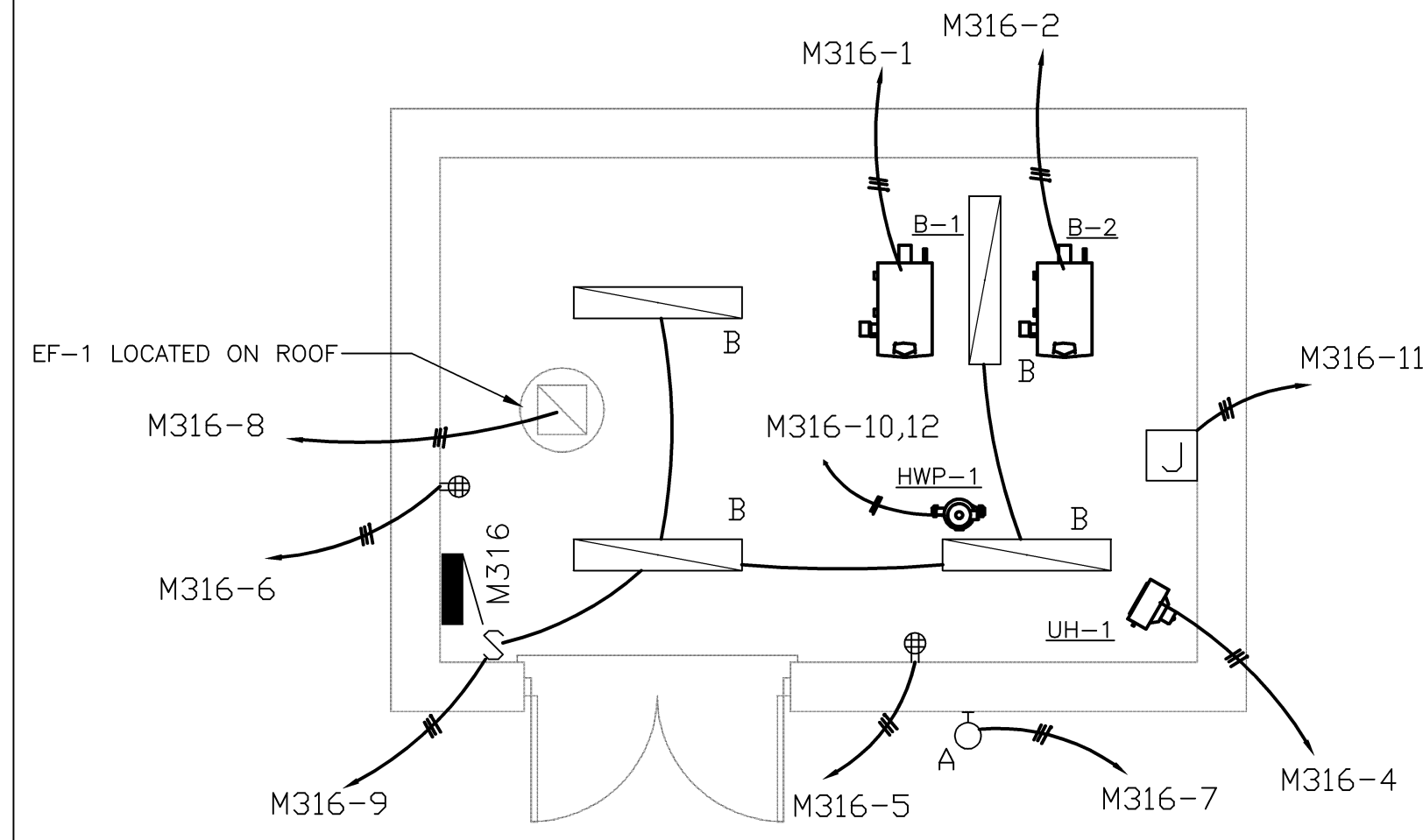
(b) Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.

(c) The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.

DISCLOSURE OF INFORMATION



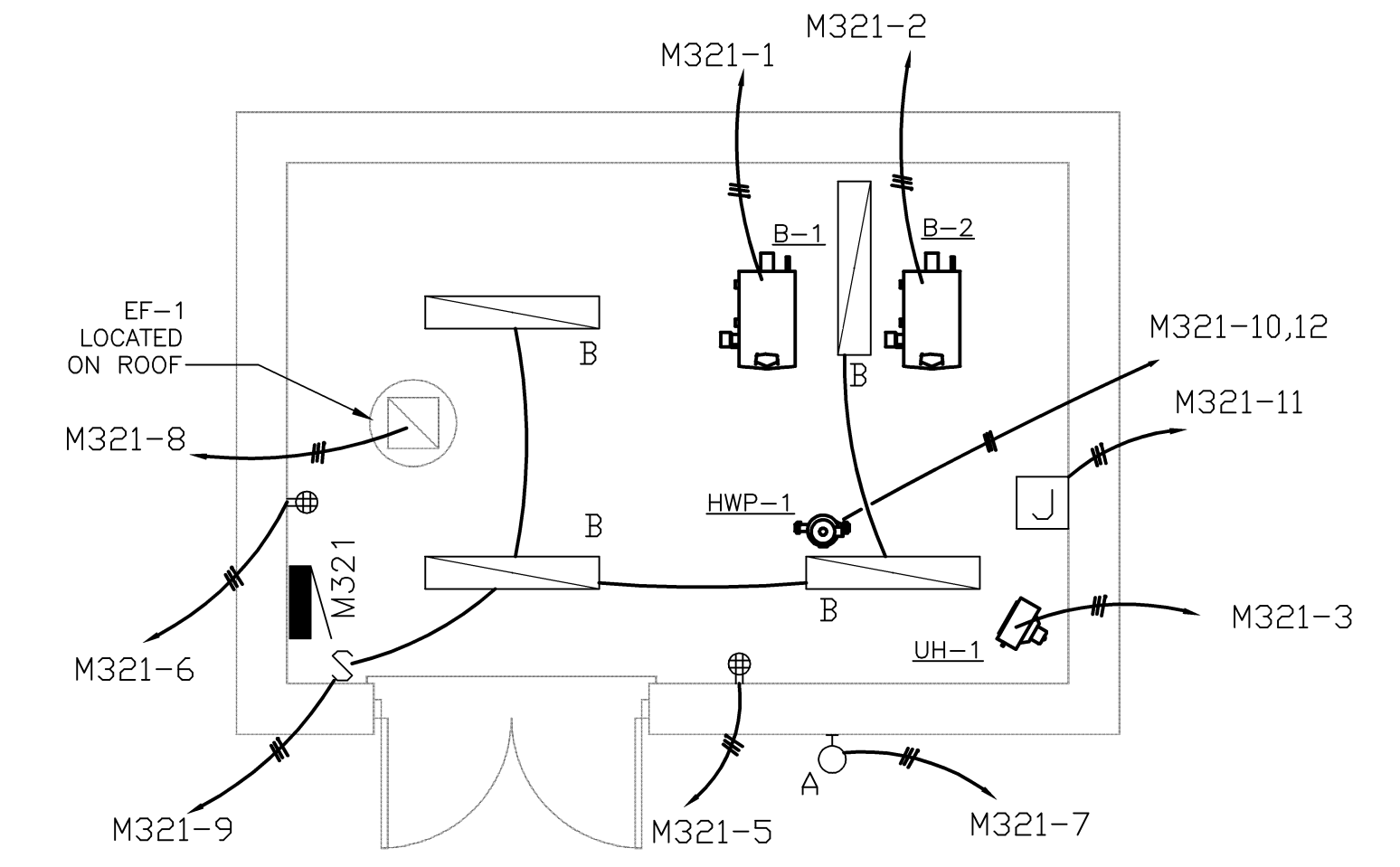
WileyWilson 6600 West Street St., Suite 500 Richmond, Virginia 23230-1717 804.254.7242 wileywilson.com		E-102 PROJECT NO. CP12-0104 NAVAL FACILITIES ENGINEERING COMMAND	
DEPT OF NAVY MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA		BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT BUILDINGS 205,213, 308, 309, 312, 313	
DES. CDH DR. CDH CHK. JHE SUBMITTED BY: DESIGN DR. APPROVED PWO OR OICC DATE SATISFACTORY TO DATE	CODE IDENT NO. E 80091	NAVFAC DRAWING NO. 60011304 CONSTR CONTR NO. N40085-12-B-0104	SCALE: AS SHOWN SPEC No. 06-12-0104 SHEET 40 OF 43



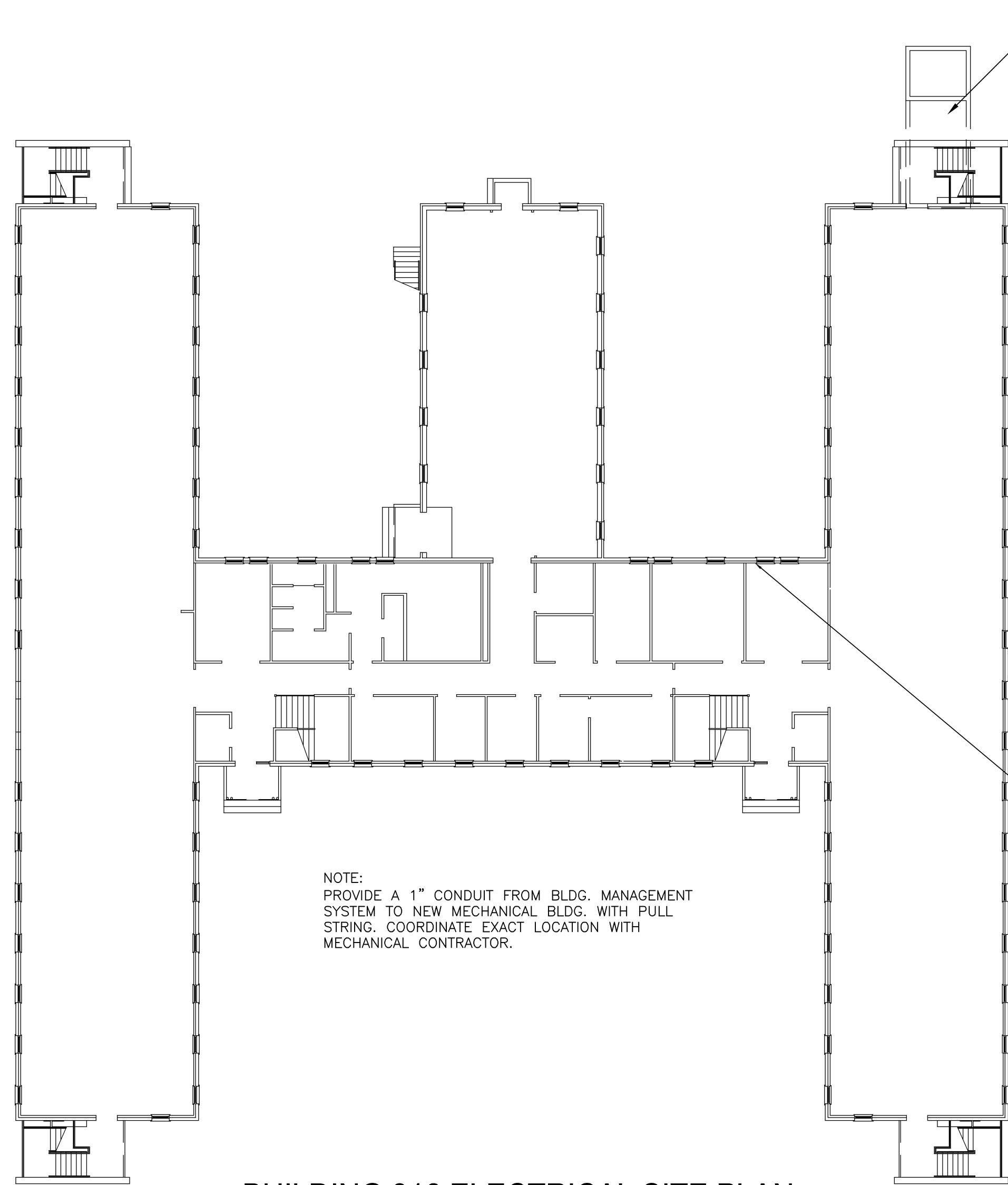
BUILDING 316 NEW MECHANICAL ROOM PLAN
1/4"=1'-0"
0' 2' 4' 8'

ELECTRICAL M316 SCHEDULE									
CIRCUIT NO.	AREA SERVED	TRIP AMPS	NO. POLES	PHASE LOAD VA			WIRE & CONDUIT SIZE	CIRCUIT NOTES	
				A	B	C			
1	BOILER 1	20	1	360	0	0	2-#12-#12G-3/4"		
2	BOILER 2	20	1	360	0	0	2-#12-#12G-3/4"		
3	SPARE	20	1	0	0	0			
4	UH-1	20	1	0	600	0	2-#12-#12G-3/4"		
5	RECEPTACLE	20	1	0	0	180	2-#12-#12G-3/4"		
6	RECEPTACLE	20	1	0	0	180	2-#12-#12G-3/4"		
7	OUTSIDE LIGHT	20	1	125	0	0	2-#12-#12G-3/4"		
8	EF-1	20	1	360	0	0	2-#12-#12G-3/4"		
9	LIGHTS	20	1	0	300	0	2-#12-#12G-3/4"		
10,12	HWP-1	20	2	0	1352	1352	2-#12-#12G-3/4"		
11	LIDUVER	20	1	0	0	180	2-#12-#12G-3/4"		
13	SPARE	20	1	0	0	0			
14	SPARE	20	1	0	0	0			
15	SPARE	20	1	0	0	0			
16	SPARE	20	1	0	0	0			
17	SPARE	20	1	0	0	0			
18	SPARE	20	1	0	0	0			
19	SPARE	20	1	0	0	0			
20	SPARE	20	1	0	0	0			
CONNECTED LOAD				1205	2252	1892	5.2 KVA		
LOAD CATEGORY	CONN. LOAD	DEMAND FACTOR	EST. LOAD						
Receptacles (0 - 10 KVA)	1.0	1.00	1.0						
Motors	1.1	1.00	1.1						
Motors (Largest)	2.7	1.25	3.4						
Lighting	0.4	1.25	0.5						
TOTAL	5.2KVA		6.0KVA						

ELECTRICAL M321 SCHEDULE									
CIRCUIT NO.	AREA SERVED	TRIP AMPS	NO. POLES	PHASE LOAD VA			WIRE & CONDUIT SIZE	CIRCUIT NOTES	
				A	B	C			
1	BOILER 1	20	1	360	0	0	2-#12-#12G-3/4"		
2	BOILER 2	20	1	360	0	0	2-#12-#12G-3/4"		
3	UH-1	20	1	0	360	0	2-#12-#12G-3/4"		
4	SPARE	20	1	0	0	0			
5	RECEPTACLE	20	1	0	0	180	2-#12-#12G-3/4"		
6	RECEPTACLE	20	1	0	0	180	2-#12-#12G-3/4"		
7	OUTSIDE LIGHT	20	1	125	0	0	2-#12-#12G-3/4"		
8	EF-1	20	1	360	0	0	2-#12-#12G-3/4"		
9	LIGHTS	20	1	0	300	0	2-#12-#12G-3/4"		
10,12	HWP-1	20	2	0	360	360	2-#12-#12G-3/4"		
11	LIDUVER	20	1	0	0	180	2-#12-#12G-3/4"		
13	SPARE	20	1	0	0	0			
14	SPARE	20	1	0	0	0			
15	SPARE	20	1	0	0	0			
16	SPARE	20	1	0	0	0			
17	SPARE	20	1	0	0	0			
18	SPARE	20	1	0	0	0			
19	SPARE	20	1	0	0	0			
20	SPARE	20	1	0	0	0			
CONNECTED LOAD				1205	1020	900	2.9 KVA		
LOAD CATEGORY	CONN. LOAD	DEMAND FACTOR	EST. LOAD						
Receptacles (0 - 10 KVA)	0.7	1.00	0.7						
Motors	1.1	1.00	1.1						
Motors (Largest)	0.7	1.25	0.9						
Lighting	0.4	1.25	0.5						
TOTAL	2.9KVA		3.2KVA						



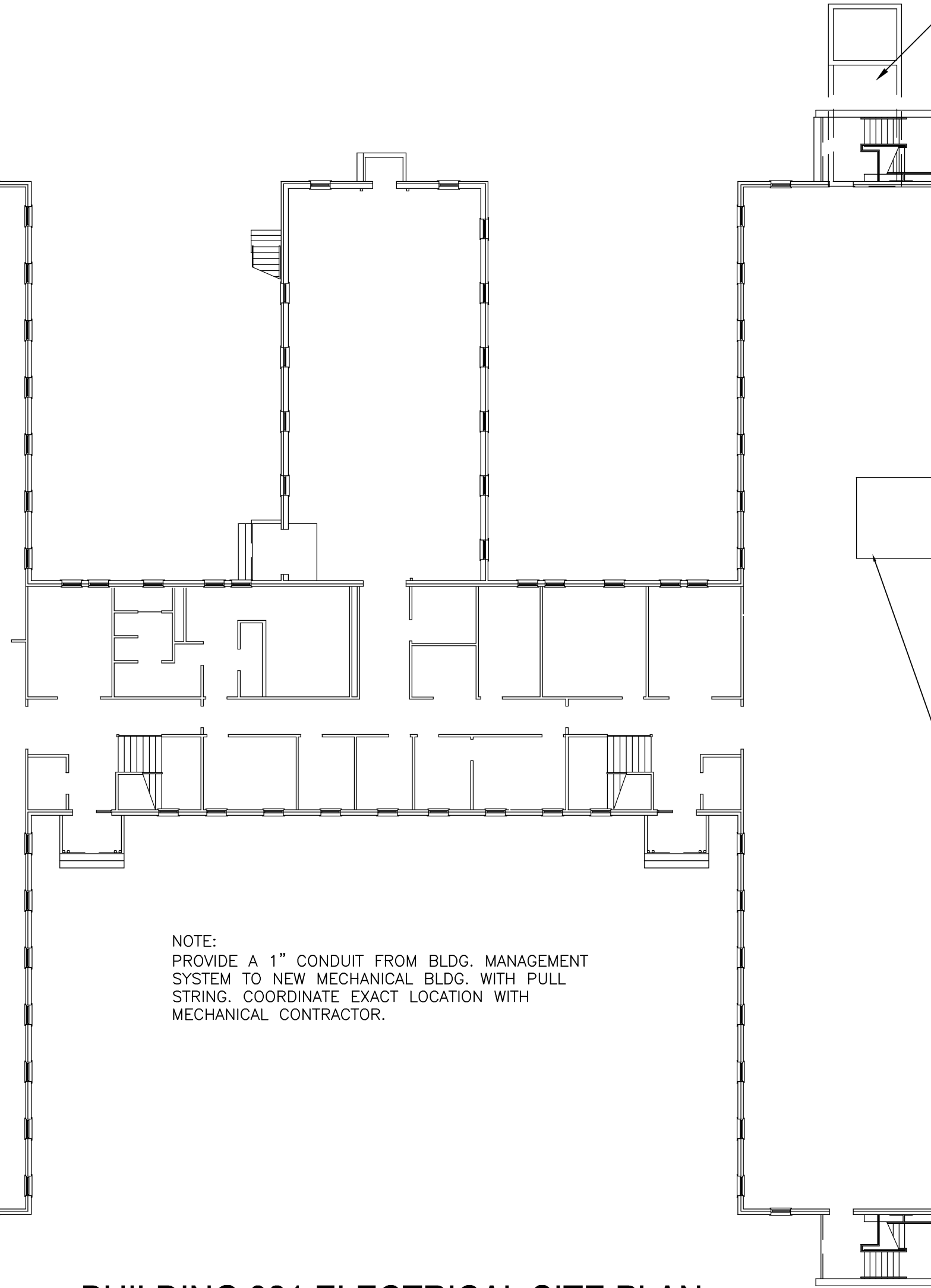
BUILDING 321 NEW MECHANICAL ROOM PLAN
1/4"=1'-0"
0' 2' 4' 8'



BUILDING 316 ELECTRICAL SITE PLAN
1/16"=1'-0"
0' 5' 10' 20' 30'

EXISTING STEAM PIT, DISCONNECT EXISTING PUMPS AND REMOVE CONDUITS AND CONDUCTORS BACK TO NEAREST JUNCTION BOX.

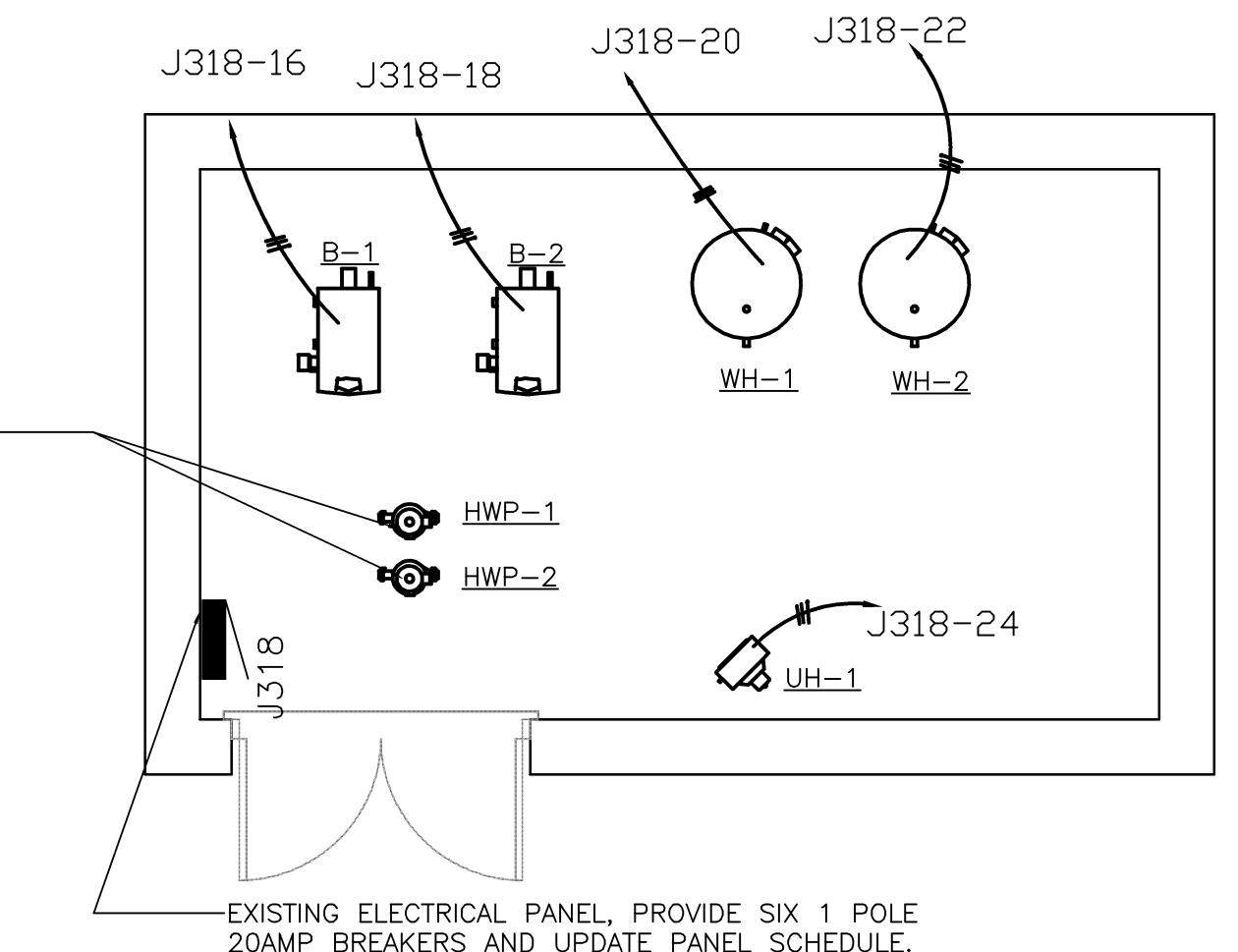
EXISTING 120/208V CUTLER HAMMER ELECTRICAL PANEL MDP. REMOVE SPARE 1 POLE BREAKERS 13,15,17 AND PROVIDE 3POLE/60AMP BREAKER TYPE BA AND 1" CONDUIT WITH 4-#6 AND #8 GROUND TO NEW PANEL LOCATE IN NEW MECHANICAL BLDG., USE CRAWL SPACE UNDER BLDG. AND PROVIDE LINK SEALS AT EXTERIOR PENETRATION. SEE CIVIL DRAWING FOR EXACT BLDG. LOCATION.



BUILDING 321 ELECTRICAL SITE PLAN
1/16"=1'-0"
0' 5' 10' 20' 30'

EXISTING STEAM PIT, DISCONNECT EXISTING PUMPS AND REMOVE CONDUITS AND CONDUCTORS BACK TO NEAREST JUNCTION BOX.

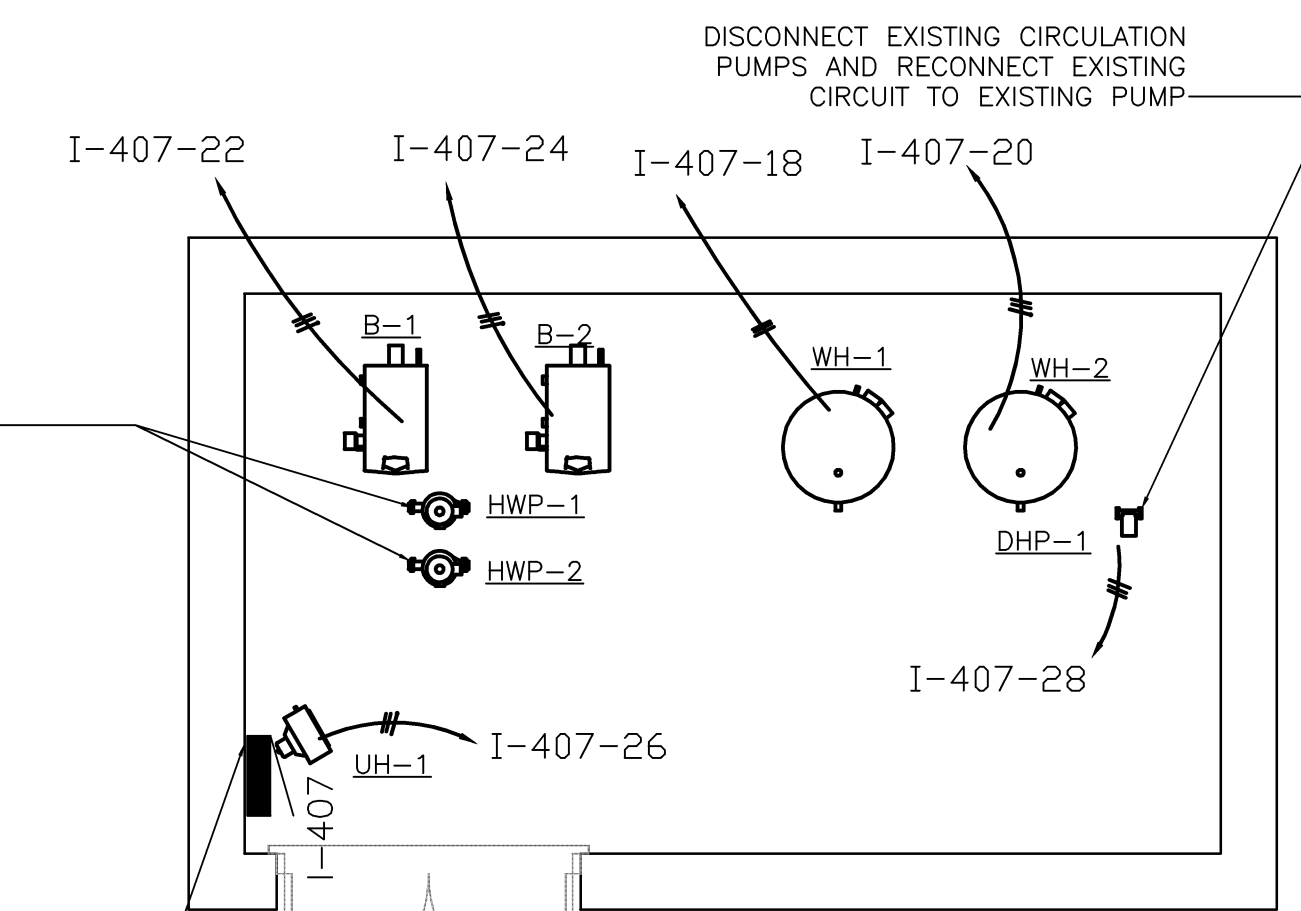
EXISTING 120/208V GE SPECTRA SERIES ELECTRICAL PANEL MDP. PROVIDE 3POLE/60AMP BREAKER AND 1" CONDUIT WITH 4-#6 AND #8 GROUND TO NEW PANEL LOCATE IN NEW MECHANICAL BLDG., USE CRAWL SPACE UNDER BLDG. AND PROVIDE LINK SEALS AT EXTERIOR PENETRATION. SEE CIVIL DRAWING FOR EXACT BLDG. LOCATION.



BUILDING 318A MECHANICAL ROOM PLAN
1/4"=1'-0"
0' 2' 4' 8'

DISCONNECT EXISTING HWP PUMPS 1&2 AND RECONNECT NEW PUMPS EXISTING CIRCUITS AND STARTERS EXTEND CONDUIT AND WIRE AS REQUIRED.

EXISTING ELECTRICAL PANEL, PROVIDE SIX 1 POLE 20AMP BREAKERS AND UPDATE PANEL SCHEDULE.

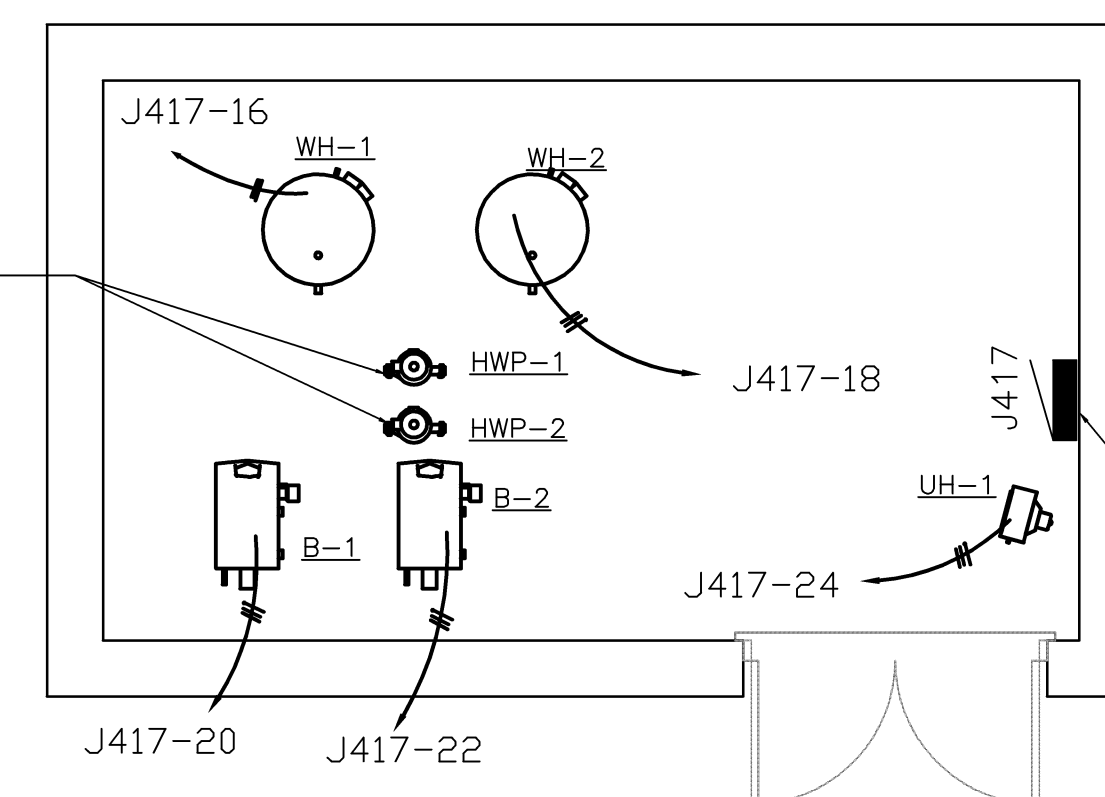


BUILDING 407A MECHANICAL ROOM PLAN
1/4"=1'-0"
0' 2' 4' 8'

DISCONNECT EXISTING HWP PUMPS 1&2 AND RECONNECT NEW PUMPS EXISTING CIRCUITS AND STARTERS EXTEND CONDUIT AND WIRE AS REQUIRED.

EXISTING ELECTRICAL PANEL, PROVIDE SEVEN 1 POLE 20AMP BREAKERS AND UPDATE PANEL SCHEDULE.

DISCONNECT EXISTING HWP PUMPS 1&2 AND RECONNECT NEW PUMPS EXISTING CIRCUITS AND STARTERS EXTEND CONDUIT AND WIRE AS REQUIRED.



BUILDING 417A MECHANICAL ROOM PLAN
1/4"=1'-0"
0' 2' 4' 8'

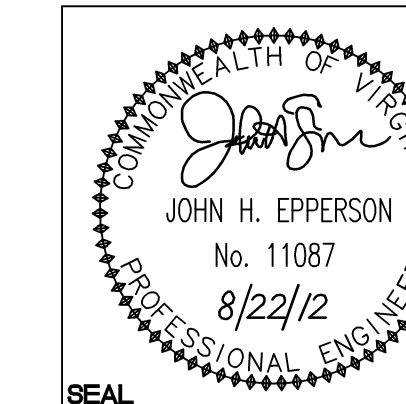
EXISTING ELECTRICAL PANEL, PROVIDE FIVE 1 POLE 20AMP BREAKERS AND UPDATE PANEL SCHEDULE.

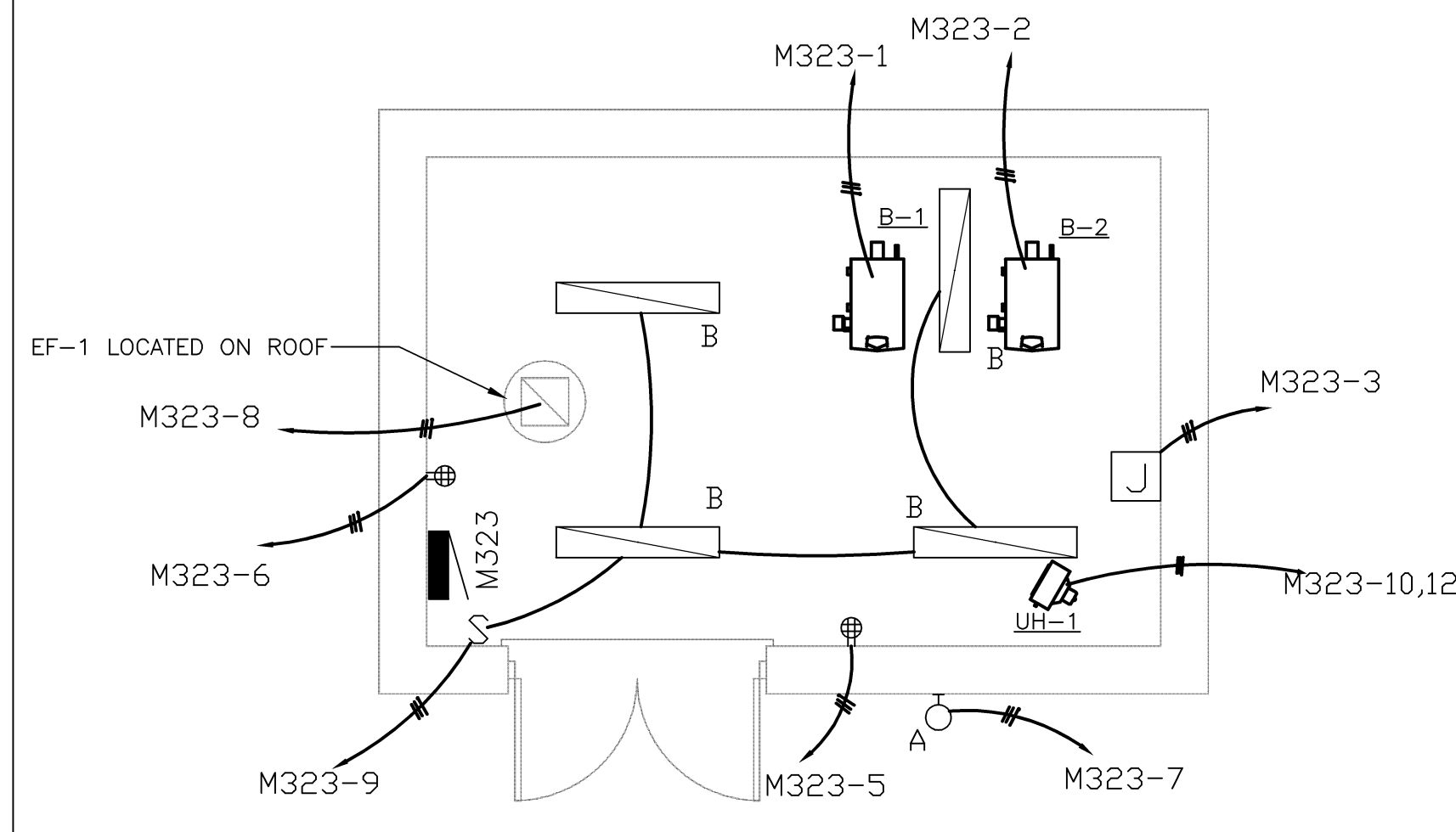
Contractor shall comply as follows:

- The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless:
 - The Contracting Officer has given prior written approval; or
 - The information is otherwise in the public domain before the date of release.
- Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.
- The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.

DISCLOSURE OF INFORMATION

<p>WileyWilson 6600 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.294.7424 wileywilson.com</p>		<p>E-103</p> <p>PROJECT NO. CP12-0104 NAVFACILITIES ENGINEERING COMMAND</p>	
<p>DEPT OF NAVY MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA</p>		<p>BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT BUILDINGS 316, 318, 321, 407, 417 ELECTRICAL PLANS</p>	
DES. CDH	DR. CDH	CHK. JHE	<p>APPROVED PWO OR OICC DATE</p> <p>SIZE CODE IDENT NO. NAVFAC DRAWING NO. E 80091 60011305</p>
<p>SUBMITTED BY: JOHN H. EPPERSON DESIGN DR. No. 11087 DATE 8/22/12</p>		<p>CONSTR CONTR NO. N40085-12-B-0104 SHEET 41 OF 43</p>	
<p>SATISFACTORY TO</p>		<p>SCALE: AS SHOWN</p>	<p>SPEC No. 06-12-0104</p>



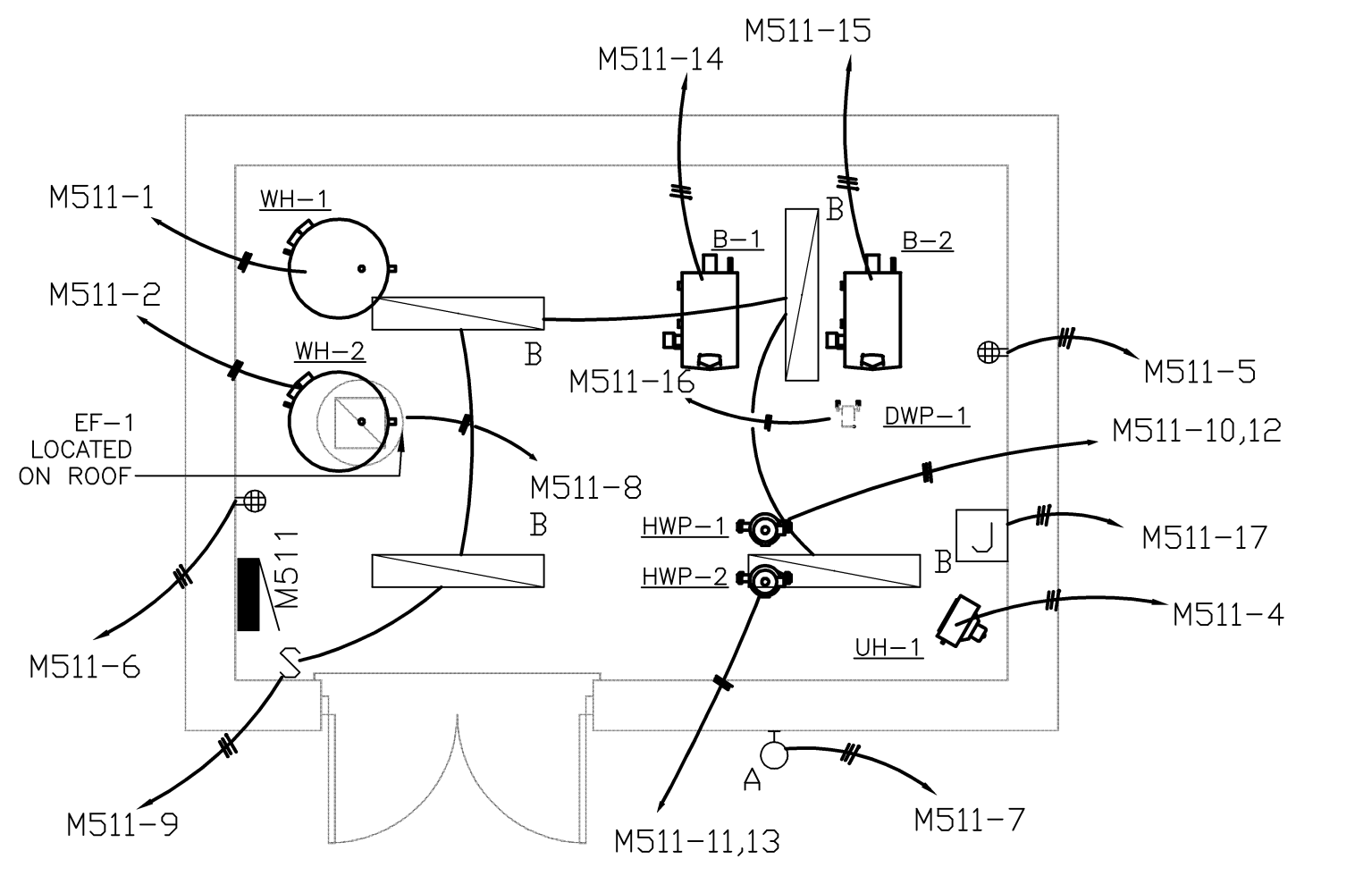


BUILDING 323 NEW MECHANICAL ROOM PLAN

1/4"=1'-0" 0 2 4 8

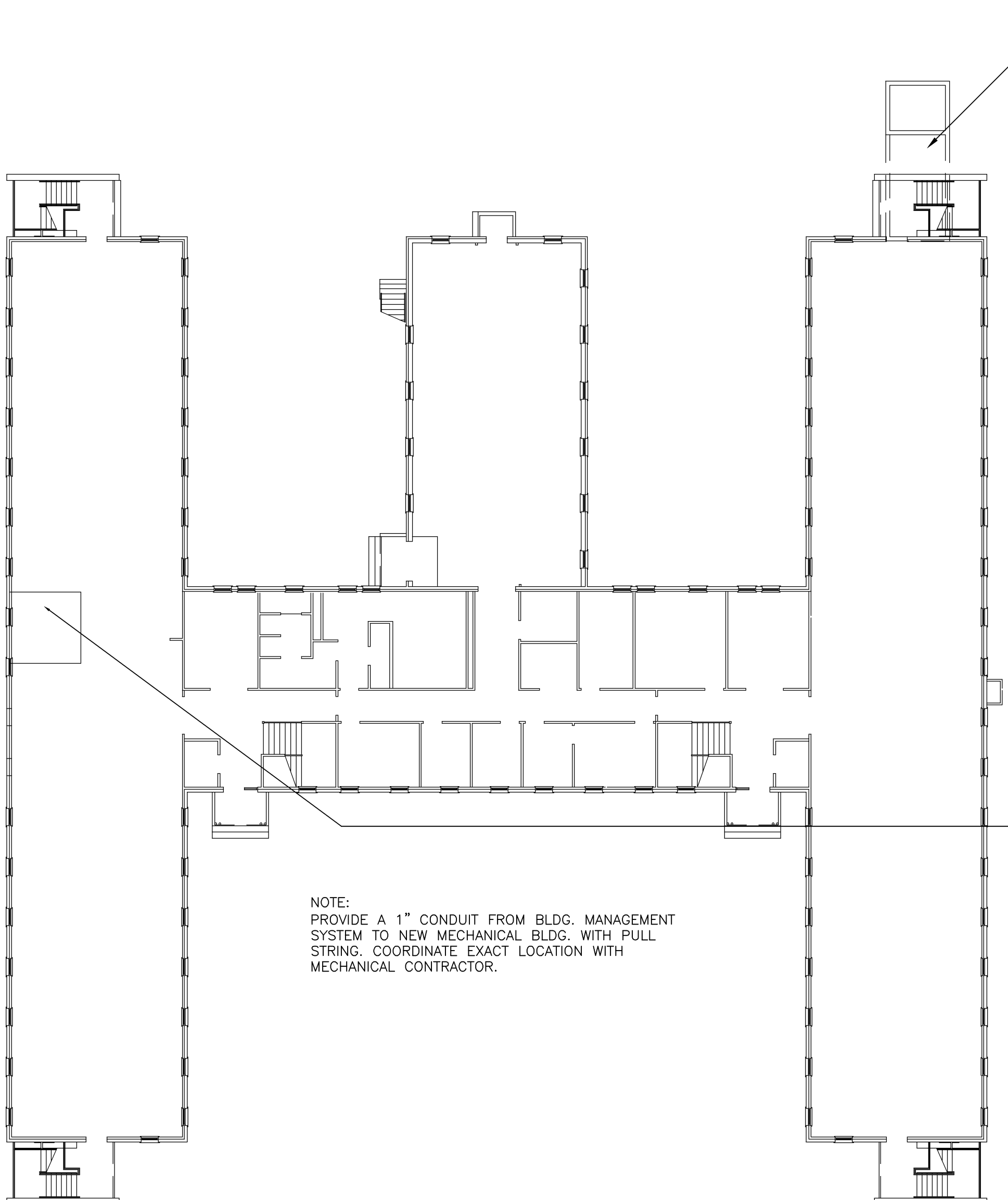
ELECTRICAL M323 SCHEDULE										
CIRCUIT NO.	AREA SERVED	TRIP AMPS	NO. POLES	PHASE LOAD VA			WIRE & CONDUIT SIZE	CIRCUIT NOTES		
				A	B	C				
1	BOILER 1	20	1	360	0	0	2-#12-#12G-3/4"C			
2	BOILER 2	20	1	360	0	0	2-#12-#12G-3/4"C			
3	LOUVER	20	1	0	180	0	2-#12-#12G-3/4"C			
4	SPARE	20	1	0	0	0				
5	RECEPTACLE	20	1	0	0	180	2-#12-#12G-3/4"C			
6	RECEPTACLE	20	1	0	0	180	2-#12-#12G-3/4"C			
7	OUTSIDE LIGHT	20	1	125	0	0	2-#12-#12G-3/4"C			
8	EF-1	20	1	360	0	0	2-#12-#12G-3/4"C			
9	LIGHTS	20	1	0	300	0	2-#12-#12G-3/4"C			
10,12	UH-1	20	2	1200	1200	0	2-#12-#12G-3/4"C			
11	SPARE	20	1	0	0	0				
13	SPARE	20	1	0	0	0				
14	SPARE	20	1	0	0	0				
15	SPARE	20	1	0	0	0				
16	SPARE	20	1	0	0	0				
17	SPARE	20	1	0	0	0				
18	SPARE	20	1	0	0	0				
19	SPARE	20	1	0	0	0				
20	SPARE	20	1	0	0	0				
CONNECTED LOAD				1205	1680	1560	4.3 KVA			
LOAD CATEGORY	CONN. LOAD	DEMAND FACTOR	EST. LOAD							
Receptacles (0 - 10 kVA)	2.8	1.00	2.8							
Motors (Largest)	0.7	1.00	0.7							
Lighting	0.4	1.25	0.5							
TOTAL	4.3KVA		4.5KVA							

ELECTRICAL M511 SCHEDULE										
CIRCUIT NO.	AREA SERVED	TRIP AMPS	NO. POLES	PHASE LOAD VA			WIRE & CONDUIT SIZE	CIRCUIT NOTES		
				A	B	C				
1	WH-1	20	1	360	0	0	2-#12-#12G-3/4"C			
2	WH-2	20	1	360	0	0	2-#12-#12G-3/4"C			
3	SPARE	20	1	0	0	0				
4	UH-1	20	1	0	600	0	2-#12-#12G-3/4"C			
5	RECEPTACLE	20	1	0	0	180	2-#12-#12G-3/4"C			
6	RECEPTACLE	20	1	0	0	180	2-#12-#12G-3/4"C			
7	OUTSIDE LIGHT	20	1	125	0	0	2-#12-#12G-3/4"C			
8	EF-1	20	1	360	0	0	2-#12-#12G-3/4"C			
9	LIGHTS	20	1	0	300	0	2-#12-#12G-3/4"C			
10,12	HWP-1	20	2	0	360	360	2-#12-#12G-3/4"C			
11,13	HWP-2	20	2	360	0	360	2-#12-#12G-3/4"C			
14	BOILER 1	20	1	360	0	0	2-#12-#12G-3/4"C			
15	BOILER 2	20	1	0	360	0	2-#12-#12G-3/4"C			
16	DWP-1	20	1	0	360	0	2-#12-#12G-3/4"C			
17	LOUVER	20	1	0	0	180	2-#12-#12G-3/4"C			
18	SPARE	20	1	0	0	0				
19	SPARE	20	1	0	0	0				
20	SPARE	20	1	0	0	0				
CONNECTED LOAD				1925	1980	1260	5.0 KVA			
LOAD CATEGORY	CONN. LOAD	DEMAND FACTOR	EST. LOAD							
Receptacles (0 - 10 kVA)	1.7	1.00	1.7							
Motors	2.2	1.00	2.2							
Motors (Largest)	0.7	1.25	0.9							
Lighting	0.4	1.25	0.5							
TOTAL	5.0KVA		5.3KVA							



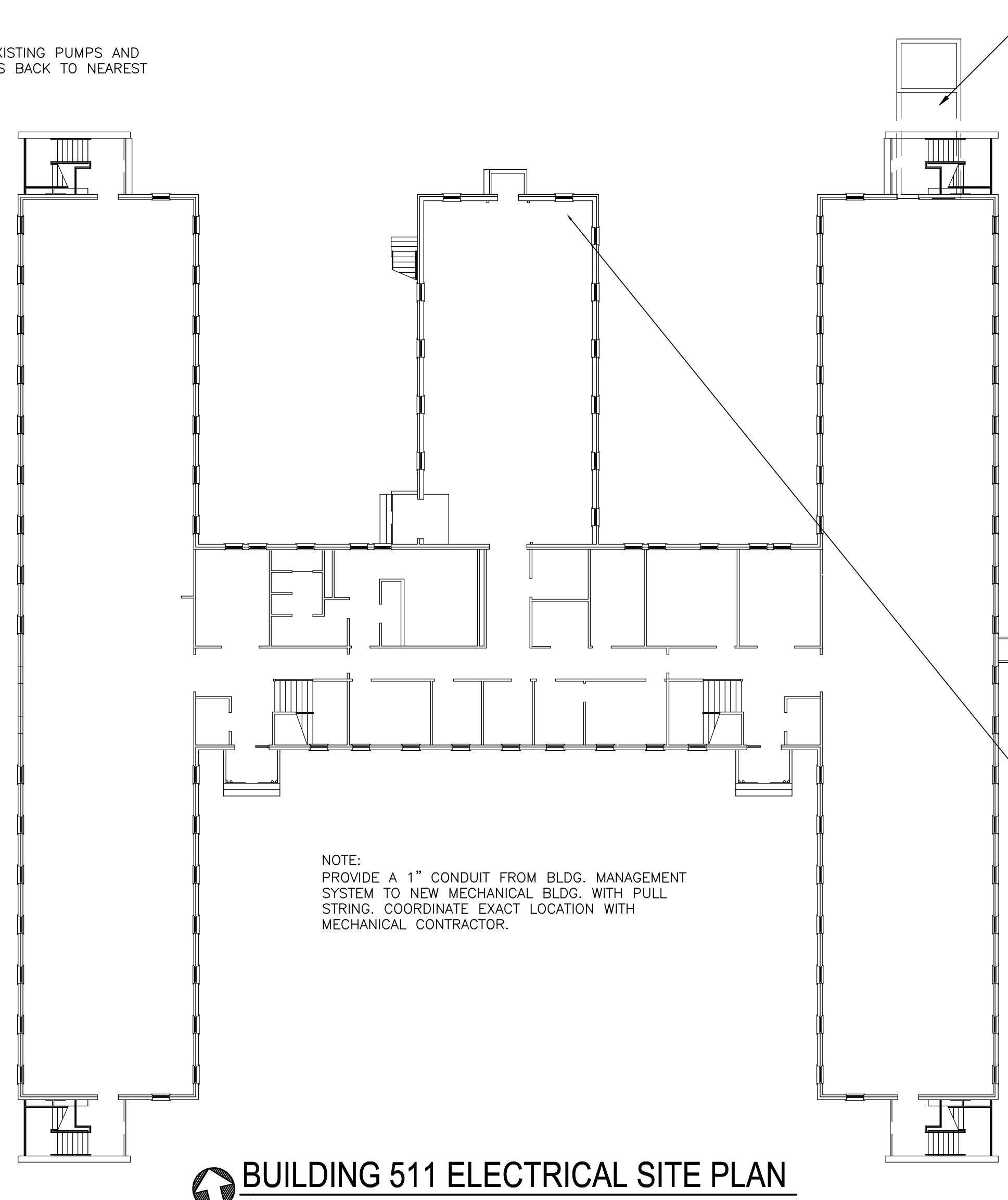
BUILDING 511 NEW MECHANICAL ROOM PLAN

1/4"=1'-0" 0 2 4 8



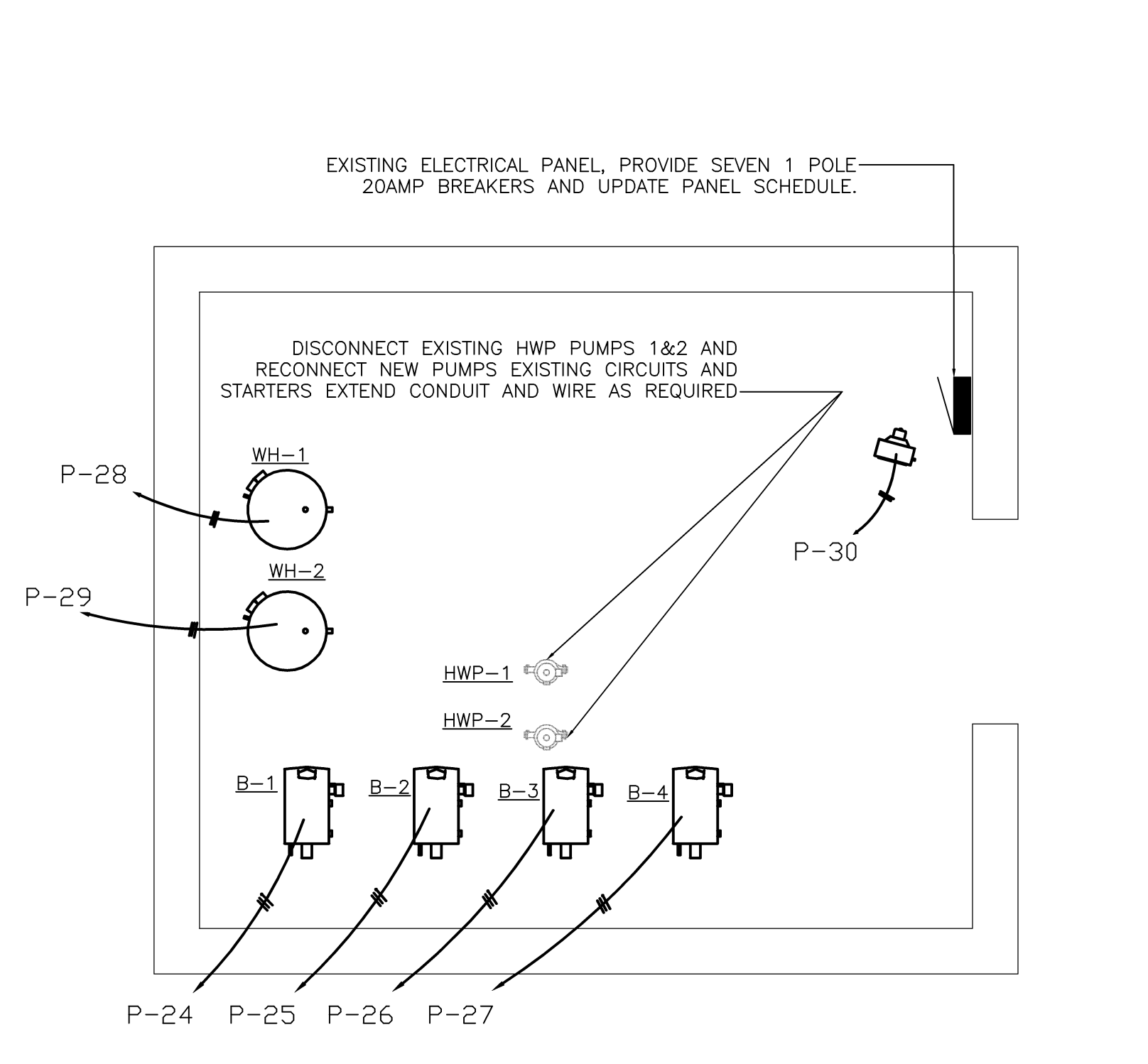
BUILDING 323 ELECTRICAL SITE PLAN

1/16"=1'-0" 0 5 10 20 30'



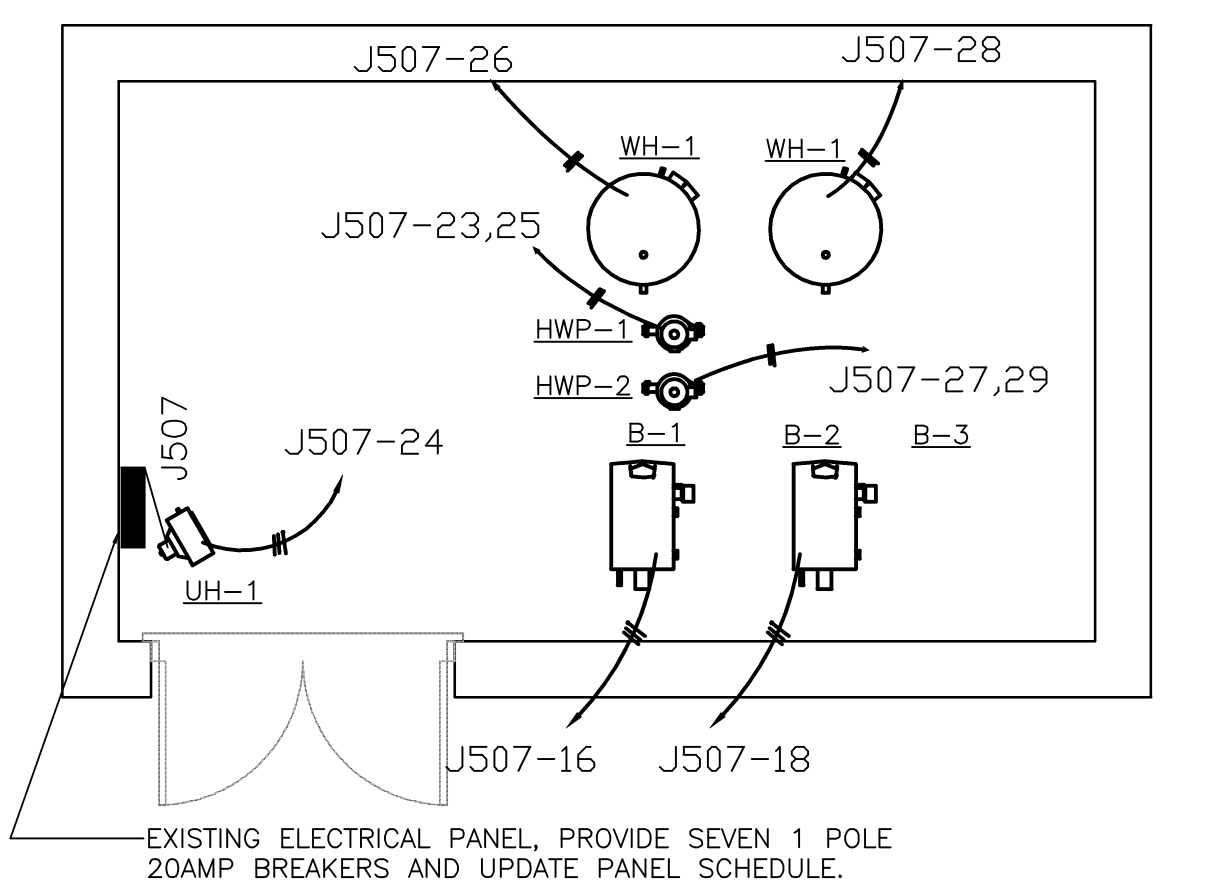
BUILDING 511 ELECTRICAL SITE PLAN

1/16"=1'-0" 0 5 10 20 30'



BUILDING 59 MECHANICAL ROOM NEW WORK PLAN

1/4"=1'-0" 0 2 4 8



BUILDING 507A MECHANICAL ROOM PLAN

1/4"=1'-0" 0 2 4 8

DISCLOSURE OF INFORMATION

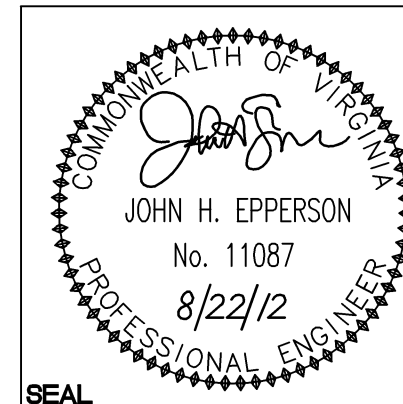
Contractor shall comply as follows:

(a) The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless:

- (1) The Contracting Officer has given prior written approval; or
- (2) The information is otherwise in the public domain before the date of release.

(b) Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.

(c) The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.



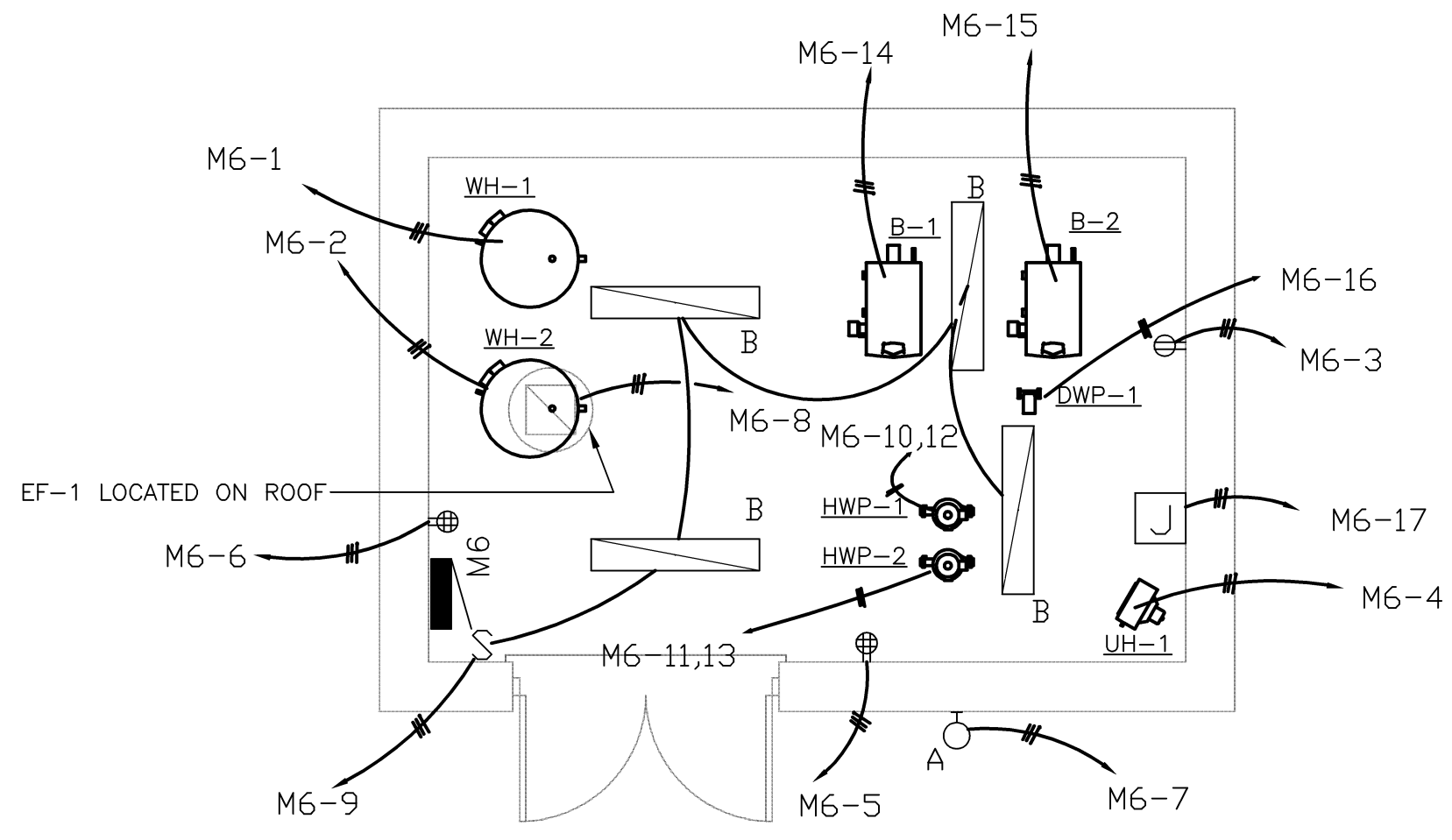
WileyWilson 6600 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.254.7442 wileywilson.com		E-104 PROJECT NO. CP12-0104 NAVAL FACILITIES ENGINEERING COMMAND	
DEPT OF NAVY MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA		BUILDINGS 59, 323, 507, 511	
DES. CDH DR. CDH CHK. JHE SUBMITTED BY: DESIGN DR.	APPROVED: PWO OR OICC DATE SATISFACTORY TO DATE	SIZE: E CODE IDENT NO.: 80091 SCALE: AS SHOWN SPEC No.: 06-12-0104	NAVFAC DRAWING NO.: 60011306 CONSTR CONTR NO.: N40085-12-B-0104 SHEET 42 OF 43

SYM	PREP'D BY	DATE	APPROVED

ELECTRICAL M6 SCHEDULE

CIRCUIT NO.	AREA SERVED	TRIP AMPS	NO. POLES	PHASE LOAD VA			WIRE & CONDUIT SIZE	CIRCUIT NOTES
				A	B	C		
1	WH-1	20	1	360	0	0	2-#12-#12G-3/4"C	
2	WH-2	20	1	360	0	0	2-#12-#12G-3/4"C	
3	DWP-1	20	1	0	360	0	2-#12-#12G-3/4"C	
4	UH-1	20	1	0	600	0	2-#12-#12G-3/4"C	
5	RECEPTACLE	20	1	0	0	180	2-#12-#12G-3/4"C	
6	RECEPTACLE	20	1	0	0	180	2-#12-#12G-3/4"C	
7	OUTSIDE LIGHT	20	1	125	0	0	2-#12-#12G-3/4"C	
8	EF-1	20	1	360	0	0	2-#12-#12G-3/4"C	
9	LIGHTS	20	1	0	300	0	2-#12-#12G-3/4"C	
10,12	HWP-1	20	2	0	1352	1352	2-#12-#12G-3/4"C	
11,13	HWP-2	20	2	0	1352	1352	2-#12-#12G-3/4"C	
14	BOILER 1	20	1	360	0	0	2-#12-#12G-3/4"C	
15	BOILER 2	20	1	0	360	0	2-#12-#12G-3/4"C	
16	DWP-1	20	1	0	360	0	2-#12-#12G-3/4"C	
17	LDUVER	20	1	0	0	180	2-#12-#12G-3/4"C	
18	SPARE	20	1	0	0	0		
19	SPARE	20	1	0	0	0		
20	SPARE	20	1	0	0	0		
CONNECTED LOAD				2917	3332	3244	9.3 KVA	

LOAD CATEGORY	CONN. LOAD	DEMAND FACTOR	EST. LOAD
Receptacles (0 - 10 KVA)	2.0	1.00	2.0
Motors	4.1	1.00	4.1
Motors (Largest)	2.7	1.25	3.4
Lighting	0.4	1.25	0.5
TOTAL	9.3KVA		10.1KVA



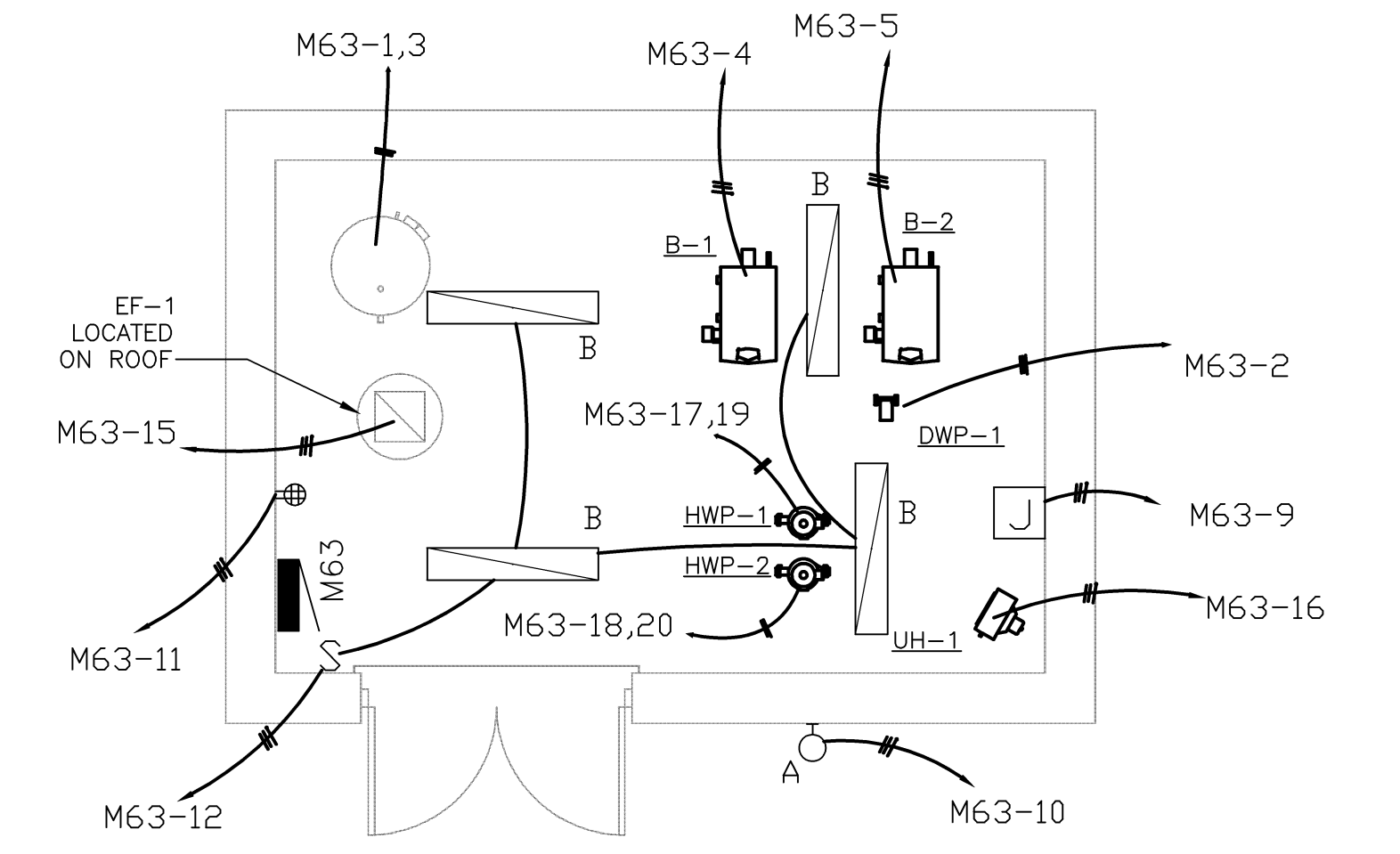
BUILDING 6 NEW MECHANICAL ROOM PLAN

1/4"=1'-0" 0' 2' 4' 8'

ELECTRICAL M63 SCHEDULE

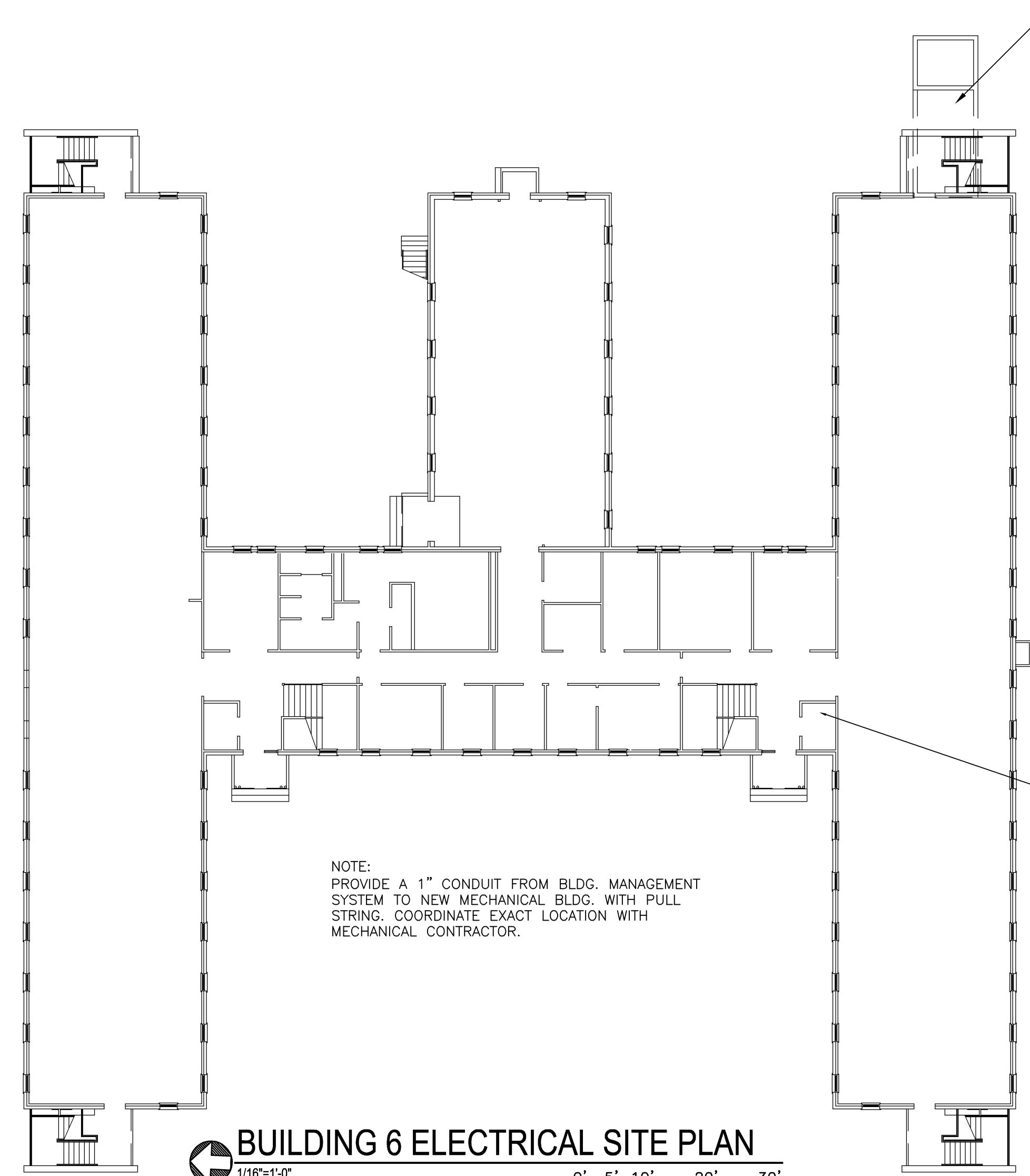
CIRCUIT NO.	AREA SERVED	TRIP AMPS	NO. POLES	PHASE LOAD VA			WIRE & CONDUIT SIZE	CIRCUIT NOTES
				A	B	C		
1,3	WH-1	30	2	1352	1352	0	2-#10-#10G-3/4"C	
4	CHEMICAL RECPAC LE	20	1	180	0	0	2-#12-#12G-3/4"C	
5	BOILER 1	20	1	0	360	0	2-#12-#12G-3/4"C	
6	BOILER 2	20	1	0	360	0	2-#12-#12G-3/4"C	
7	SPARE	20	1	0	0	0		
8	SPARE	20	1	0	0	0		
9	LDUVER	20	1	0	180	0	2-#12-#12G-3/4"C	
10	OUTSIDE LIGHT	20	1	0	125	0	2-#12-#12G-3/4"C	
11	RECEPTACLE	20	1	0	0	180	2-#12-#12G-3/4"C	
12	LIGHTS	20	1	0	0	300	2-#12-#12G-3/4"C	
13	SPARE	20	1	0	0	0		
14	SPARE	20	1	0	0	0		
15	EF-1	20	1	0	360	0	2-#12-#12G-3/4"C	
16	UH-1	20	1	0	600	0	2-#12-#12G-3/4"C	
17,19	HWP-1	20	2	1352	0	1352	2-#12-#12G-3/4"C	
18,20	HWP-2	20	2	1352	0	1352	2-#12-#12G-3/4"C	
CONNECTED LOAD				4236	2977	3544	10.6 KVA	

LOAD CATEGORY	CONN. LOAD	DEMAND FACTOR	EST. LOAD
Receptacles (0 - 10 KVA)	1.0	1.00	1.0
Motors	6.5	1.00	6.5
Motors (Largest)	2.7	1.25	3.4
Lighting	0.4	1.25	0.5
TOTAL	10.6KVA		11.4KVA



BUILDING 63 NEW MECHANICAL ROOM PLAN

1/4"=1'-0" 0' 2' 4' 8'



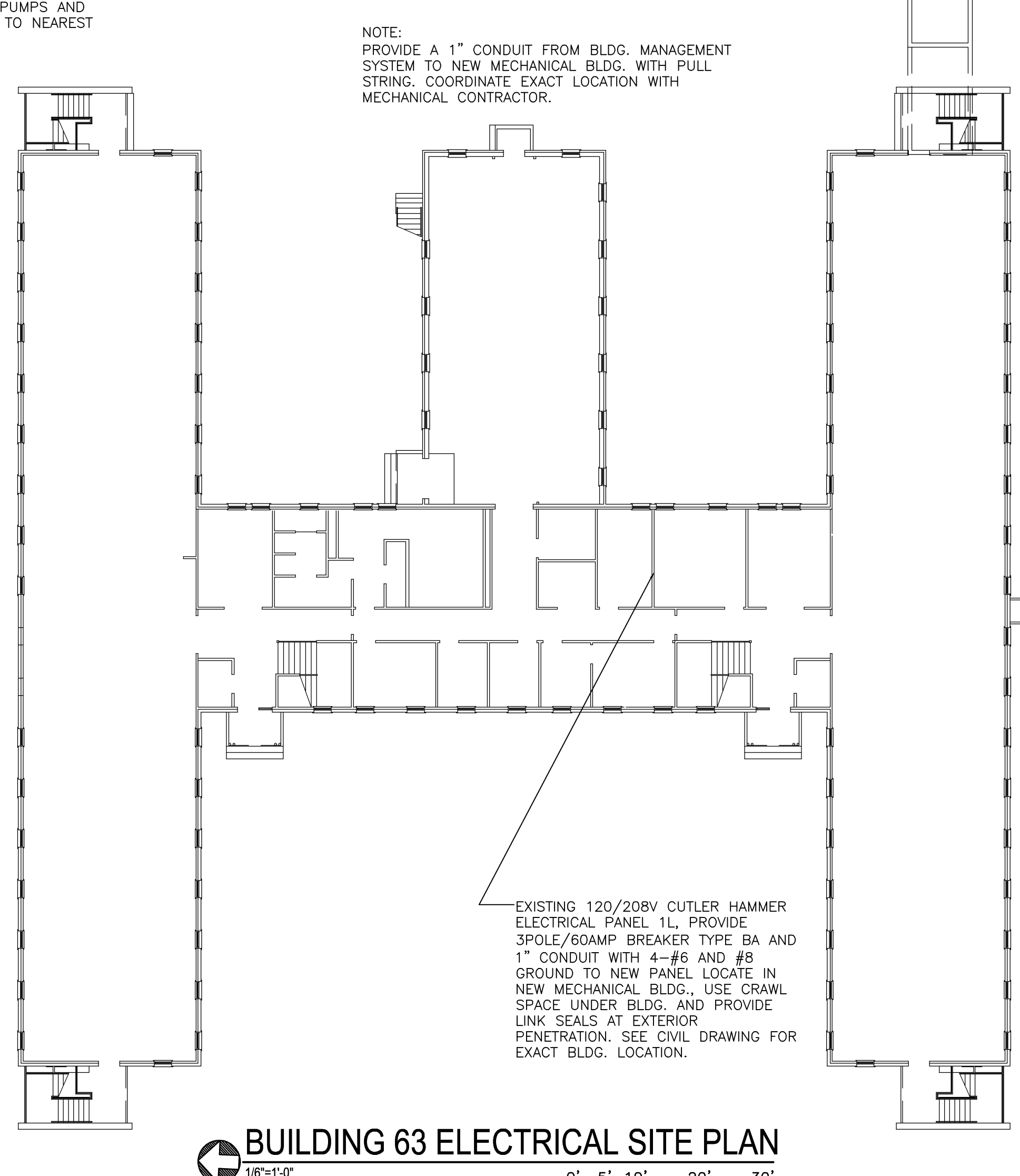
BUILDING 6 ELECTRICAL SITE PLAN

1/8"=1'-0" 0' 5' 10' 20' 30'

EXISTING STEAM PIT, DISCONNECT EXISTING PUMPS AND REMOVE CONDUITS AND CONDUCTORS BACK TO NEAREST JUNCTION BOX.

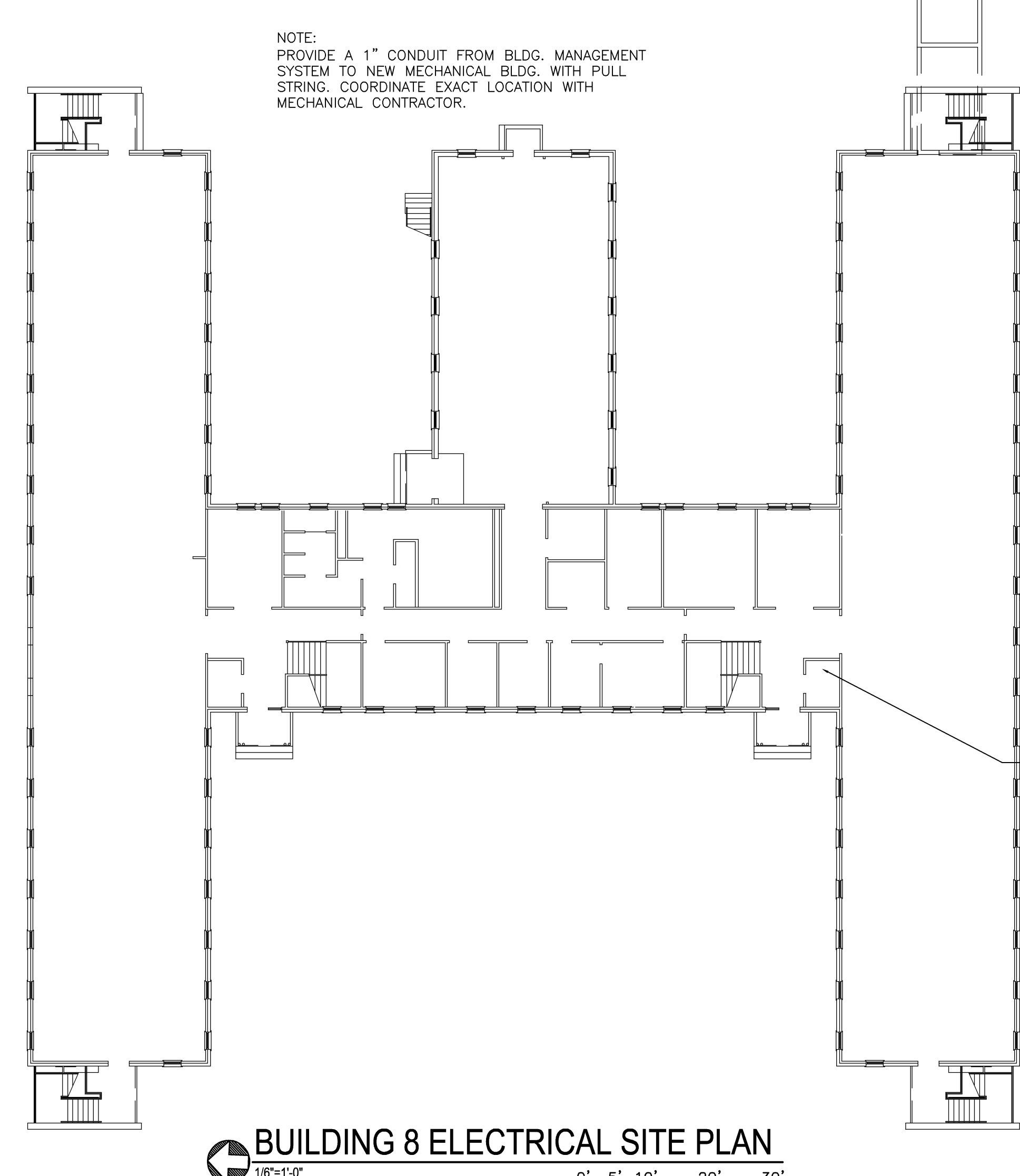
NOTE: PROVIDE A 1" CONDUIT FROM BLDG. MANAGEMENT SYSTEM TO NEW MECHANICAL BLDG. WITH PULL STRING. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.

NOTE: PROVIDE A 1" CONDUIT FROM BLDG. MANAGEMENT SYSTEM TO NEW MECHANICAL BLDG. WITH PULL STRING. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.



BUILDING 63 ELECTRICAL SITE PLAN

1/8"=1'-0" 0' 5' 10' 20' 30'



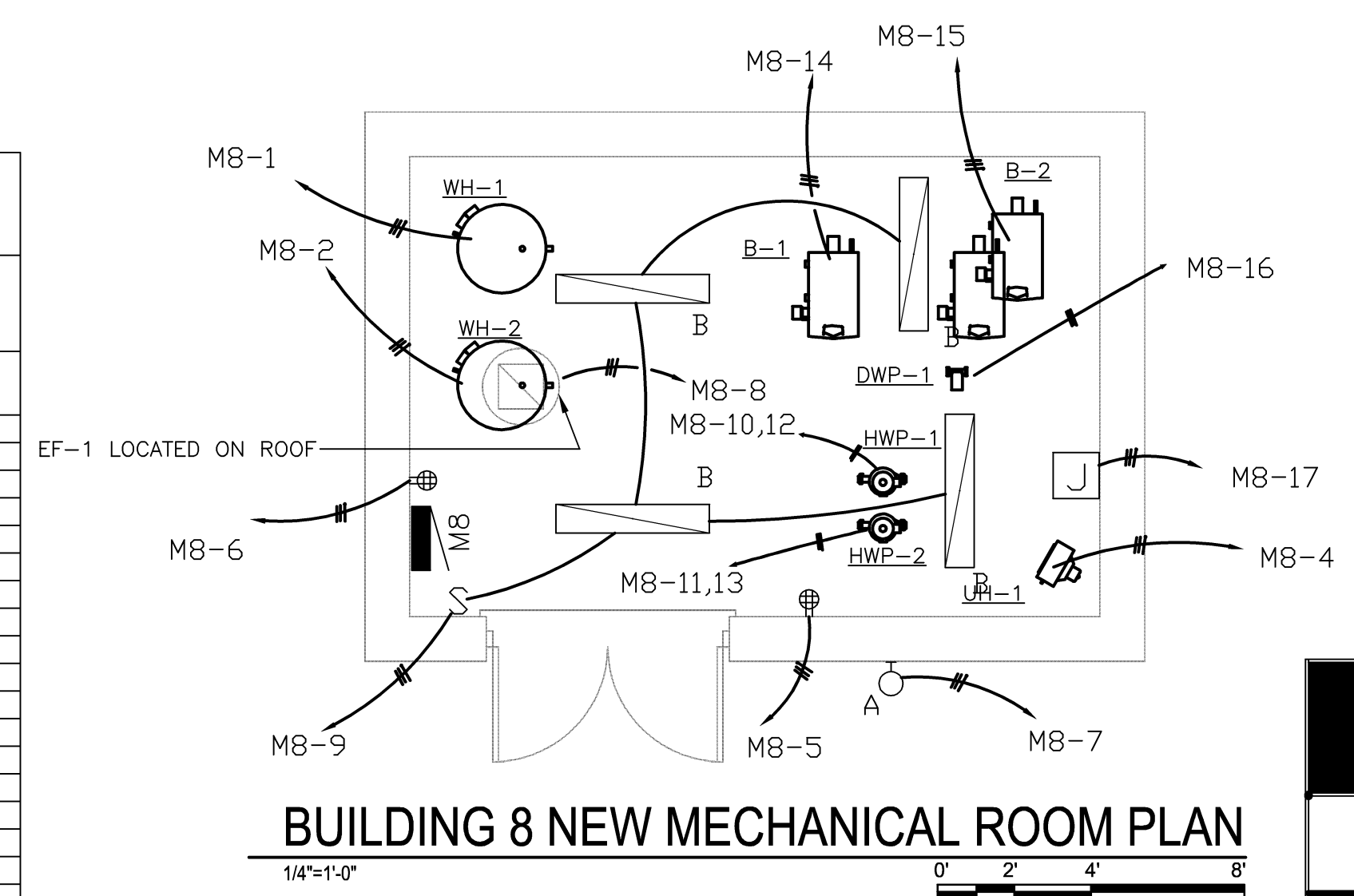
BUILDING 8 ELECTRICAL SITE PLAN

1/8"=1'-0" 0' 5' 10' 20' 30'

ELECTRICAL M8 SCHEDULE

CIRCUIT NO.	AREA SERVED	TRIP AMPS	NO. POLES	PHASE LOAD VA			WIRE & CONDUIT SIZE	CIRCUIT NOTES
				A	B	C		
1	WH-1	20	1	360	0	0	2-#10-#10G-3/4"C	
2	WH-2	20	1	360	0	0	2-#10-#10G-3/4"C	
3	SPARE	20	1	0	0	0		
4	UH-1	20	1	0	600	0	2-#10-#10G-3/4"C	
5	RECEPTACLE	20	1	0	0	180	2-#10-#10G-3/4"C	
6	RECEPTACLE	20	1	0	0	180	2-#10-#10G-3/4"C	
7	OUTSIDE LIGHT	20	1	125	0	0	2-#10-#10G-3/4"C	
8	EF-1	20	1	360	0	0	2-#10-#10G-3/4"C	
9	LIGHTS	20	1	0	300	0	2-#10-#10G-3/4"C	
10,12	HWP-1	20	2	0	1352	1352	2-#10-#10G-3/4"C	
11,13	HWP-2	20	2	0	1352	1352	2-#10-#10G-3/4"C	
14	BOILER 1	20	1	360	0	0	2-#10-#10G-3/4"C	
15	BOILER 2	20	1	0	360	0	2-#10-#10G-3/4"C	
16	DWP-1	20	1	0	360	0	2-#10-#10G-3/4"C	
17	LDUVER	20	1	0	0	180	2-#10-#10G-3/4"C	
18	SPARE	20	1	0	0	0		
19	SPARE	20	1	0	0	0		
20	SPARE	20	1	0	0	0		
CONNECTED LOAD				2917	2972	3244	9.0 KVA	

LOAD CATEGORY	CONN. LOAD	DEMAND FACTOR	EST. LOAD
Receptacles (0 - 10 KVA)	1.7	1.00	1.7
Motors	4.1	1.00	4.1
Motors (Largest)	2.7	1.25	3.4
Lighting	0.4	1.25	0.5
TOTAL	9.0KVA		9.7KVA



BUILDING 8 NEW MECHANICAL ROOM PLAN

1/4"=1'-0" 0' 2' 4' 8'

DISCLOSURE OF INFORMATION

Contractor shall comply as follows:

(a) The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless-

(1) The Contracting Officer has given prior written approval; or

(2) The information is otherwise in the public domain before the date of release.

(b) Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.

(c) The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.

<p>6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.254.7424 wileywilson.com</p>		<p>E-105</p> <p>PROJECT NO. CP12-0104</p> <p>NAVAL FACILITIES ENGINEERING COMMAND</p> <p>MARINE CORPS BASE</p> <p>CAMP LEJEUNE, NORTH CAROLINA</p> <p>BOILER MODIFICATIONS, VARIOUS FACILITIES, HADNOT POINT</p> <p>BUILDINGS 6, 8, 63 ELECTRICAL PLANS</p>	
<p>DES. CDH</p> <p>DR. CDH</p> <p>CHK. JHE</p> <p>SUBMITTED BY:</p> <p>DESIGN DR.</p>	<p>APPROVED PWO OR OICC</p> <p>DATE</p>	<p>SIZE E</p> <p>CODE IDENT NO. 80091</p> <p>CONSTR CONTR NO. N40085-12-B-0104</p>	<p>NAVFACT DRAWING NO. 60011307</p> <p>SCALE AS SHOWN</p> <p>SPEC No. 06-12-0104</p> <p>SHEET 43 OF 43</p>
<p>JOHN H. EPPERSON</p> <p>No. 11087</p> <p>8/22/12</p> <p>PROFESSIONAL ENGINEER</p>		<p>DATE</p>	