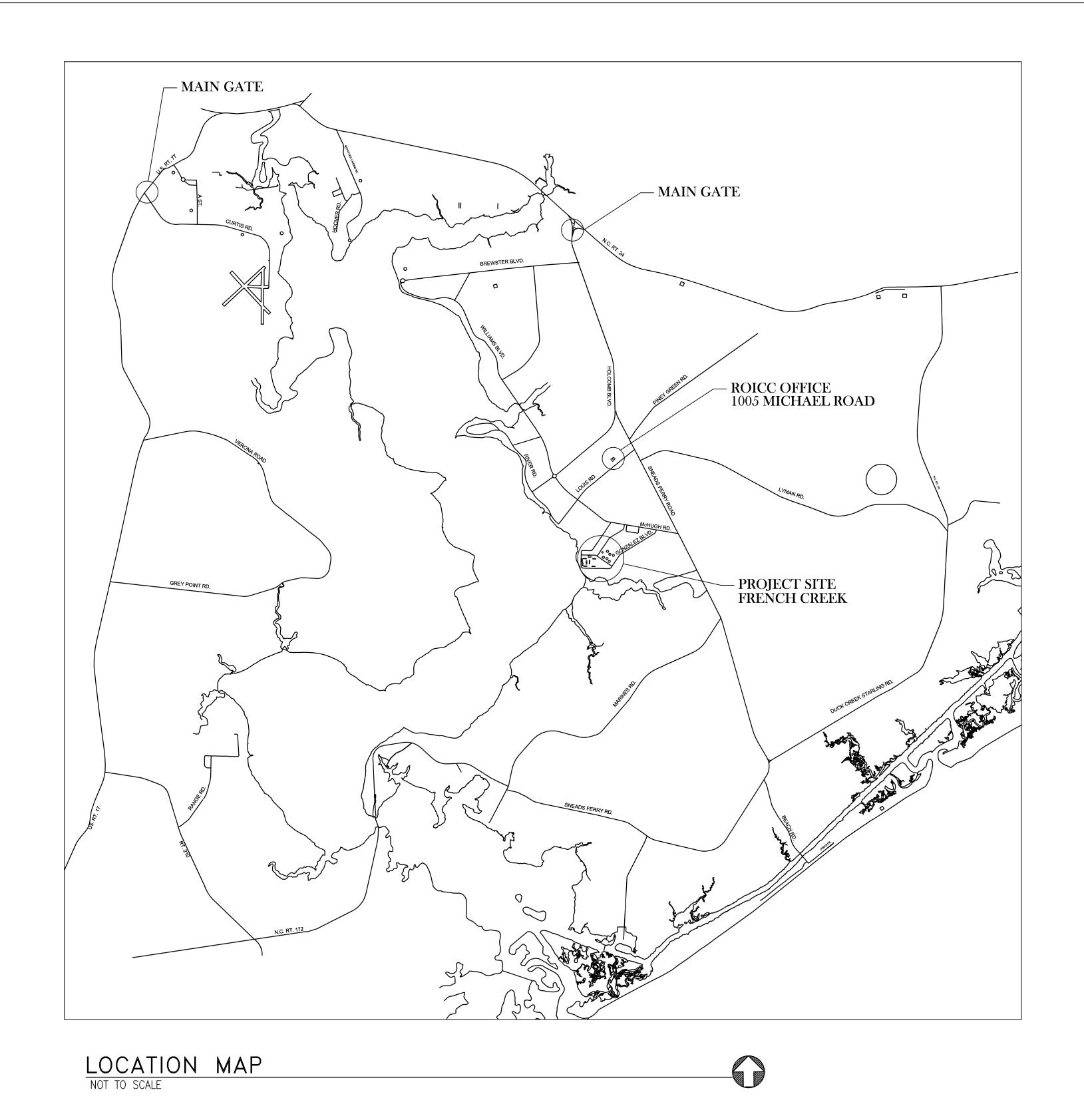
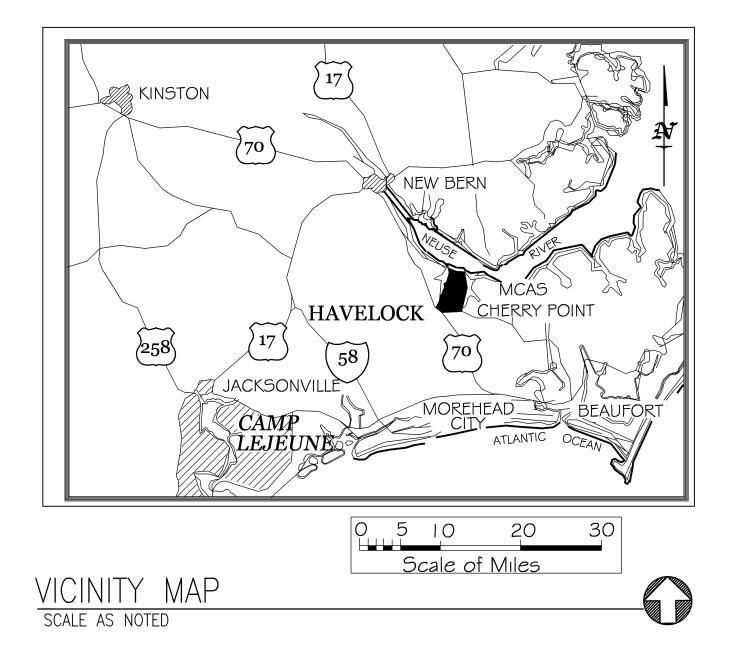


BOILER MODIFICATIONS, VARIOUS FACILITIES, FRENCH CREEK

MARINE CORPS BASE, CAMP LEJEUNE, N.C. PROJECT NO. CP 12-0121





DISCLOSURE OF INFORMATION Contractor shall comply as follows:

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

requests for authorization to release through the prime contractor to the Contracting Officer.

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

Wiley|Wilson 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.254.7242 wileywilson.com G - 001PROJECT NO. CP12-0121 NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA JHE BOILER MODIFICATIONS, VARIOUS ΑEΙ FACILITIES, FRENCH CREEK JHE SUBMITTED BY: COVER SHEET DESIGN DIR. DATE SIZE CODE IDENT NO. NAVFAC DRAWING NO. APPROVED: PWO OR OICC 60011308 No. 11087 8/22/12 CONSTR CONTR NO. N40085-12-B-0121 SATISFACTORY TO SHEET 01 OF 37

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M-101	60011322	BUILDING FC400 MECHANICAL DEMOLITION AND NEW WORK PLAN				
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E-101	60011342	BUILDINGS FC-400, 411-416 ELECTRICAL PLANS				
E-102	60011343	BUILDINGS FC-500, 515, 530, 550, 560, 565 ELECTRICAL PLANS				
E-103	60011344	BUILDINGS FC-571, 572, 573 ELECTRICAL PLANS				

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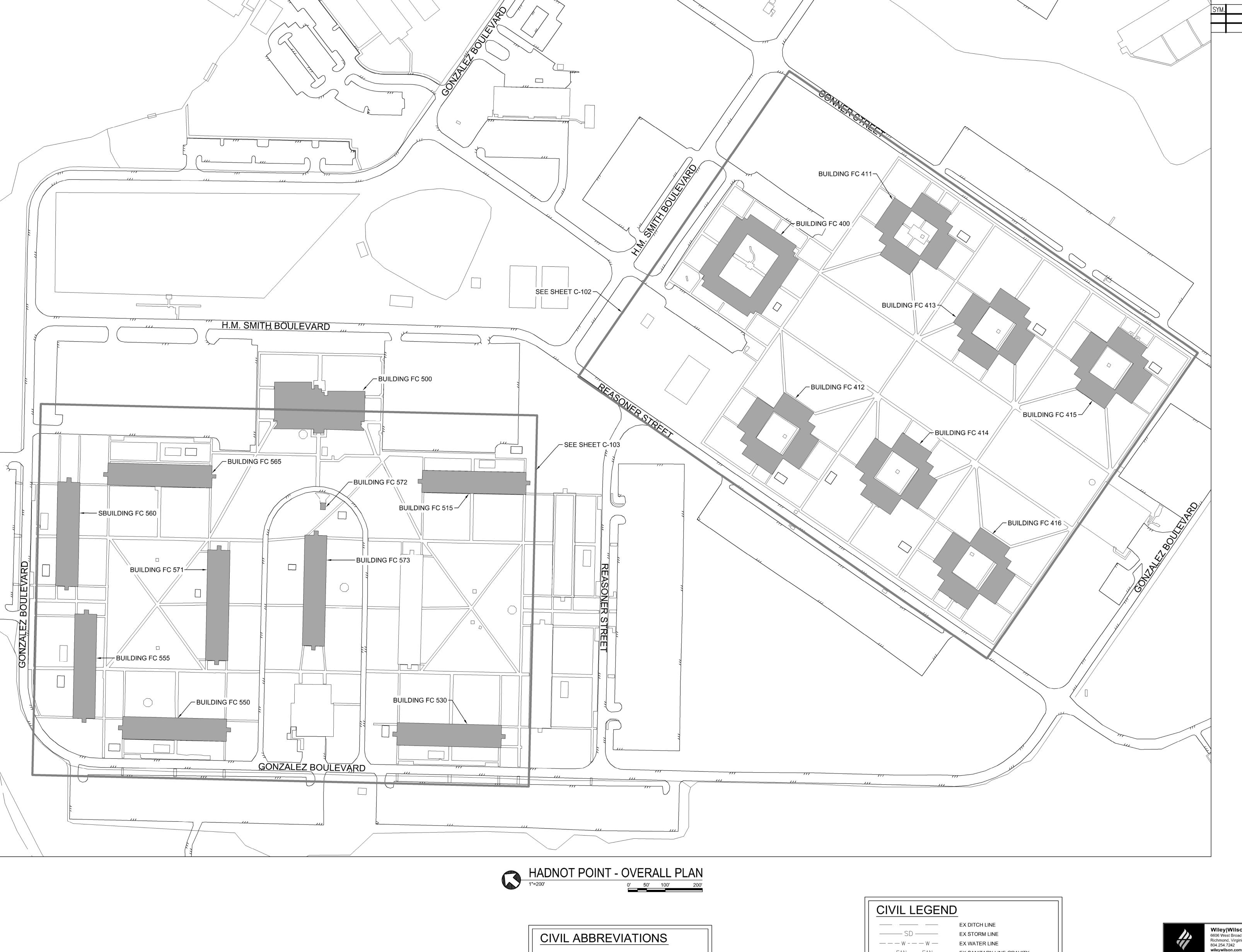
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Wiley|Wilson 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.254.7242 wileywilson.com G-002 PROJECT NO. CP12-0121 NAVAL FACILITIES ENGINEERING COMMAND

MARINE CORPS BASE

CAMP LEJEUNE, NORTH CAROLINA JHE BOILER MODIFICATIONS, VARIOUS AEI FACILITIES, FRENCH CREEK JHE SUBMITTED BY: INDEX OF DRAWINGS DESIGN DIR. DATE SIZE CODE IDENT NO. APPROVED: PWO OR OICC NAVFAC DRAWING NO. JOHN H. EPPERSON 60011309 DATE CONSTR CONTR NO. N40085-12-B-0121 SATISFACTORY TO SCALE: AS SPEC No. 05-12-0121 SHEET 02 OF 37



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.

PREP'D BY DATE APPROVED

2. 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 CONTACTOR SHALL BE RESPONSIBLE FOR REPAIRING, AT HIS EXPENSE, ANY EXISTING UTILITY DAMAGED DURING CONSTRUCTION.

3. UNLESS OTHERWISE INDICATED, DEMOLITION WASTE BECOMES THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROMPTLY REMOVED FROM THE SITE.

4. THE CONTRACTOR IS RESPONSIBLE FOR CONDUCTING DEMOLITION OPERATIONS IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.

5. 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.

6. 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

7. DO NOT CLOSE OR OBSTRUCT STREETS, WALKS, WALKWAYS, OR OTHER ADJACENT OCCUPIED OR USED FACILITIES WITHOUT PERMISSION FROM THE OWNER AND AUTHORITIES HAVING JURISDICTION.

8. CONTRACTOR SHALL PROVIDE SAFETY FENCING AROUND THE CONSTRUCTION SITE AS NEEDED TO KEEP PEDESTRIANS AND VEHICLES OUT OF THE CONSTRUCTION AREA.

9. THE CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS AND MINIMUM 4 INCHES OF CLEARANCE FROM FINISH FLOOR TO GROUND ELEVATION. UNIFORMLY 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.

10. 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

11. 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.

12. ALL CONSTRUCTION VEHICLE WHEELS SHALL BE CLEANED BEFORE ENTERING PAVED ROADS.

13. DIMENSIONS SHOWN ARE TO FACE OF BUILDING.

14. ALL DISTURBED AREAS SHALL BE PERMANENTLY SEEDED AND STABILIZED IN ACCORDANCE THE SEEDING SPECIFICATIONS IMMEDIATELY AFTER REACHING FINISHED GRADE.

15. 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

16. ALL DISTURBED CONCRETE AND ASPHALT SHALL BE REPLACED AS DETAILED ON SHEET C-102 OR TO MATCH EXISTING, WHICHEVER

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BLDG BUILDING COMMUNCATIONS

FORCE MAIN MINIMUM OVERHEAD ELECTRIC OHE SAN SANITARY STORMDRAIN STM STORM TELEPHONE UNDERGROUND ELECTRIC

EX SANITARY LINE GRAVITY — — — SAN - — — SAN — EX SANITARY LINE FORCE MAIN EX STEAM LINE EX COMMUNICATIONS LINE EX FIBEROPTIC LINE — — — C - — — C — EX OVERHEAD POWER

————— UGE ——

EX UNDERGROUND POWER CONCRETE SIDEWALK RESTORATION ASPHALT RESTORATION

Wiley|Wilson 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 wileywilson.com CEK CEK DTS SUBMITTED BY: DESIGN DIR. APPROVED: PWO OR OICC

SATISFACTORY TO

NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA BOILER MODIFICATIONS, VARIOUS FACILITIES, FRENCH CREEK

C-101

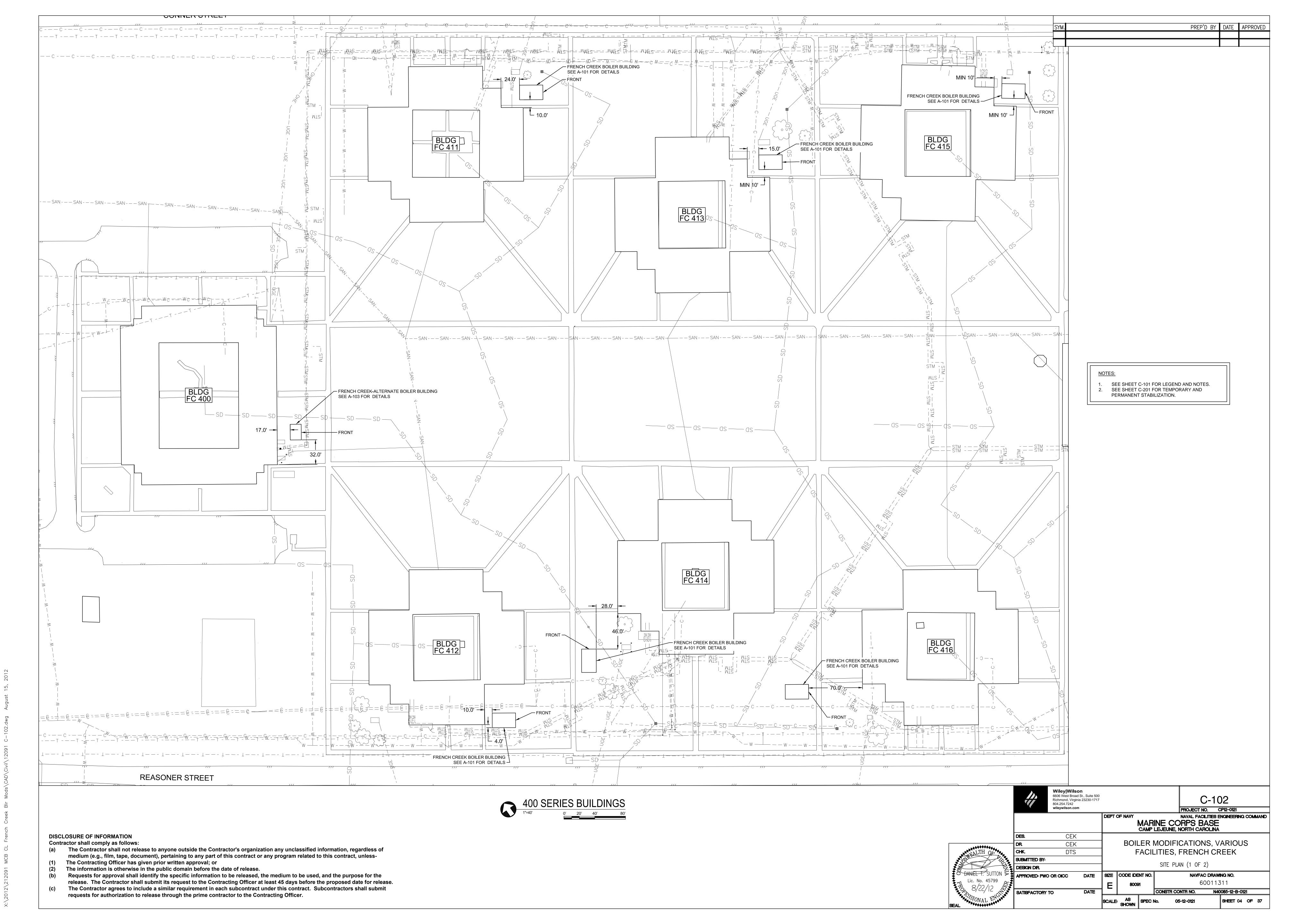
SHEET 03 OF 37

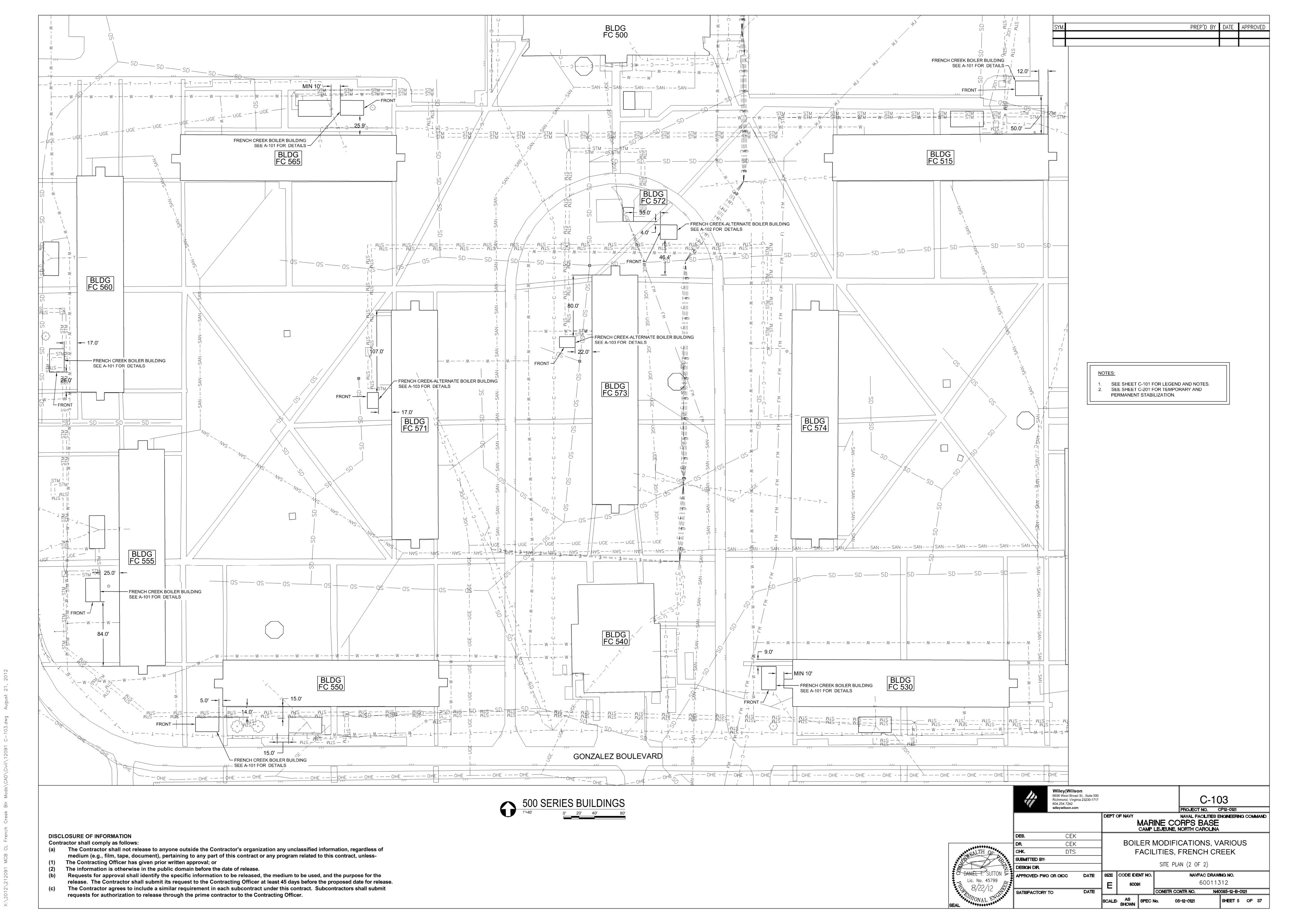
PROJECT NO. CP12-0121

OVERALL PLAN

DATE SIZE CODE IDENT NO. NAVFAC DRAWING NO. 60011310 CONSTR CONTR NO. N40085-12-B-0121 DATE

requests for authorization to release through the prime contractor to the Contracting Officer.





GOOD SEEDBED PREPARATION IS ESSENTIAL TO SUCCESSFUL PLANT ESTABLISHMENT. A GOOD SEEDBED IS

KNOWN, AN APPLICATION OF GROUND AGRICULTURAL LIMESTONE AT THE

BE LEFT WITH A MORE IRREGULAR SURFACE OF LARGE CLODS AND STONES. LIMING--APPLY LIME ACCORDING TO SOIL TEST RECOMMENDATIONS. IF THE PH (ACIDITY) OF THE SOIL IS NOT

WELL-PULVERIZED, LOOSE, AND UNIFORM. WHERE HYDROSEEDING METHODS ARE USED, THE SURFACE MAY

TEXTURED SOILS IS USUALLY SUFFICIENT. APPLY LIMESTONE UNIFORMLY AND INCORPORATE INTO THE TOP 4-6 INCHES OF SOIL. SOILS WITH A PH OF 6 OR HIGHER NEED NOT BE LIMED. FERTILIZER--BASE APPLICATION RATES ON SOIL TESTS. WHEN THESE ARE NOT POSSIBLE, APPLY A 10-10-10

GRADE FERTILIZER AT 700-1,000 LB/ACRE. BOTH FERTILIZER AND LIME SHOULD BE INCORPORATED INTO THE TOP 4-6 INCHES OF SOIL. IF A HYDRAULIC SEEDER IS USED, DO NOT MIX SEED AND FERTILIZER MORE THAN 30 MINUTES BEFORE APPLICATION.

SURFACE ROUGHENING--IF RECENT TILLAGE OPERATIONS HAVE RESULTED IN A LOOSE SURFACE, ADDITIONAL ROUGHENING MAY NOT BE REQUIRED, EXCEPT TO BREAK UP LARGE CLODS. IF RAINFALL CAUSES THE SURFACE TO BECOME SEALED OR CRUSTED, LOOSEN IT JUST PRIOR TO SEEDING BY DISKING, RAKING, HARROWING, OR OTHER SUITABLE METHODS. GROOVE OR FURROW SLOPES STEEPER THAN 3:1 ON THE CONTOUR BEFORE SEEDING (PRACTICE 6.03, SURFACE ROUGHENING).

SELECT AN APPROPRIATE SPECIES OR SPECIES MIXTURE BASED ON TIME OF YEAR. IN THE MOUNTAINS, DECEMBER AND JANUARY SEEDINGS HAVE POOR CHANCES OF SUCCESS. WHEN IT IS NECESSARY TO PLANT AT THESE TIMES, USE RECOMMENDATIONS FOR FALL AND A SECURELY TACKED

EVENLY APPLY SEED USING A CYCLONE SEEDER (BROADCAST), DRILL, CULTIPACKER SEEDER, OR

HYDROSEEDER. USE SEEDING RATES GIVEN. BROADCAST SEEDING AND HYDROSEEDING ARE APPROPRIATE FOR STEEP SLOPES WHERE EQUIPMENT CANNOT BE DRIVEN. HAND BROADCASTING IS NOT RECOMMENDED BECAUSE OF THE DIFFICULTY IN ACHIEVING A UNIFORM DISTRIBUTION. SMALL GRAINS SHOULD BE PLANTED NO MORE THAN 1 INCH DEEP, AND GRASSES AND LEGUMES NO MORE THAN 1/2 INCH. BROADCAST SEED MUST BE COVERED BY RAKING OR CHAIN DRAGGING, AND THEN LIGHTLY FIRMED WITH A ROLLER OR CULTIPACKER. HYDROSEEDED MIXTURES SHOULD INCLUDE A WOOD FIBER (CELLULOSE) MULCH.

THE USE OF AN APPROPRIATE MULCH WILL HELP ENSURE ESTABLISHMENT UNDER NORMAL CONDITIONS, AND IS ESSENTIAL TO SEEDING SUCCESS UNDER HARSH SITE CONDITIONS. HARSH SITE CONDITIONS INCLUDE: • SEEDING IN FALL FOR WINTER COVER (WOOD FIBER MULCHES ARE NOT CONSIDERED ADEQUATE FOR THIS

SLOPES STEEPER THAN 3:1,

 EXCESSIVELY HOT OR DRY WEATHER, ADVERSE SOILS (SHALLOW, ROCKY, OR HIGH IN CLAY OR SAND), AND

 AREAS RECEIVING CONCENTRATED FLOW. IF THE AREA TO BE MULCHED IS SUBJECT TO CONCENTRATED WATERFLOW, AS IN CHANNELS, ANCHOR MULCH WITH NETTING (PRACTICE 6.14, MULCHING).

RESEED AND MULCH AREAS WHERE SEEDLING EMERGENCE IS POOR, OR WHERE EROSION OCCURS, AS SOON AS POSSIBLE. DO NOT MOW. PROTECT FROM TRAFFIC AS MUCH AS POSSIBLE.

TEMPORARY SEEDING FOR SUMMER

SEEDING MIXTURE SPECIES RATE (LB/ACRE) GERMAN MILLET

IN THE PIEDMONT AND MOUNTAINS, A SMALL-STEMMED SUDANGRASS MAY BE SUBSTITUTED AT A RATE OF 50 LB/ACRE.

SEEDING DATES MOUNTAINS--MAY 15 - AUG. 15 PIEDMONT--MAY 1 - AUG. 15

COASTAL PLAIN--APR. 15 - AUG. 15

SOIL AMENDMENTS FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LB/ACRE 10-10-10 FERTILIZER.

APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE

REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE

TEMPORARY SEEDING FOR FALL

RATE (LB/ACRE) SEEDING MIXTURE SPECIES RYE (GRAIN)

SEEDING DATES

MOUNTAINS--AUG. 15 - DEC. 15 COASTAL PLAIN AND PIEDMONT--AUG. 15 - DEC. 30

FOLLOW SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 1,000 LB/ACRE 10-10-10 FERTILIZER.

APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

REPAIR AND REFERTILIZE DAMAGED AREAS IMMEDIATELY. TOPDRESS WITH 50 LB/ACRE OF NITROGEN IN MARCH, IF IT IS NECESSARY TO EXTENT TEMPORARY COVER BEYOND JUNE 15. OVERSEED WITH 50 LB/ACRE KOBE (PIEDMONT AND COASTAL PLAIN) OR KOREAN (MOUNTAINS) LESPEDEZA IN LATE FEBRUARY OR EARLY MARCH.

TEMPORARY SEEDING FOR LATE WINTER AND EARLY SPRING

SEEDING MIXTURE SPECIES RATE (LB/ACRE)

RYE (GRAIN) ANNUAL LESPEDEZA (KOBE IN PIEDMONT AND COASTAL PLAIN, KOREAN IN MOUNTAINS)

OMIT ANNUAL LESPEDEZA WHEN DURATION OF TEMPORARY COVER IS NOT TO EXTEND BEYOND

SEEDING DATES

MOUNTAINS--ABOVE 2500 FEET: FEB. 15 - MAY 15 BELOW 2500 FEET: FEB. 1- MAY 1

PIEDMONT--JAN. 1 - MAY 1 COASTAL PLAIN--DEC. 1 - APR. 15

SOIL AMENDMENTS

FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LB/ACRE 10-10-10 FERTILIZER.

APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE

PERMANENT SEEDING SPECIFICATIONS

SEEDBED REQUIREMENTS

ESTABLISHMENT OF VEGETATION SHOULD NOT BE ATTEMPTED ON SITES THAT ARE UNSUITABLE DUE TO INAPPROPRIATE SOIL TEXTURE, POOR DRAINAGE, CONCENTRATED OVERLAND FLOW, OR STEEPNESS OF SLOPE UNTIL MEASURES HAVE BEEN TAKEN TO CORRECT THESE PROBLEMS.

TO MAINTAIN A GOOD STAND OF VEGETATION, THE SOIL MUST MEET CERTAIN MINIMUM REQUIREMENTS AS A GROWTH MEDIUM. THE EXISTING SOIL SHOULD HAVE THESE CRITERIA: • ENOUGH FINE-GRAINED (SILT AND CLAY) MATERIAL TO MAINTAIN ADEQUATE MOISTURE AND NUTRIENT SUPPLY (AVAILABLE WATER CAPACITY OF AT LEAST .05 INCHES OF WATER TO 1 INCH OF SOIL).

 SUFFICIENT PORE SPACE TO PERMIT ROOT PENETRATION. SUFFICIENT DEPTH OF SOIL TO PROVIDE AN ADEQUATE ROOT ZONE. THE DEPTH TO ROCK OR IMPERMEABLE LAYERS SUCH AS HARDPANS SHOULD BE 12 INCHES OR MORE, EXCEPT ON SLOPES STEEPER THAN 2:1 WHERE THE ADDITION OF SOIL IS NOT FEASIBLE.

• A FAVORABLE PH RANGE FOR PLANT GROWTH, USUALLY 6.0-6.5. FREEDOM FROM LARGE ROOTS, BRANCHES, STONES, LARGE CLODS OF EARTH, OR TRASH OF ANY KIND. CLODS AND STONES MAY BE LEFT ON SLOPES STEEPER THAN 3:1 IF THEY ARE TO BE HYDROSEEDED. IF ANY OF THE ABOVE CRITERIA ARE NOT MET--I.E., IF THE EXISTING SOIL IS TOO COARSE, DENSE, SHALLOW, OR ACIDIC TO FOSTER VEGETATION--SPECIAL AMENDMENTS ARE REQUIRED. THE SOIL CONDITIONERS DESCRIBED BELOW MAY BE BENEFICIAL OR, PREFERABLY, TOPSOIL MAY BE APPLIED IN ACCORDANCE WITH

NCDENR PRACTICE 6.04, TOPSOILING.

IN ORDER TO IMPROVE THE STRUCTURE OR DRAINAGE CHARACTERISTICS OF A SOIL. THE FOLLOWING MATERIALS MAY BE ADDED. THESE AMENDMENTS SHOULD ONLY BE NECESSARY WHERE SOILS HAVE LIMITATIONS THAT MAKE THEM POOR FOR PLANT GROWTH OR FOR FINE TURF ESTABLISHMENT (SEE CHAPTER 3, VEGETATIVE CONSIDERATIONS).

PEAT--APPROPRIATE TYPES ARE SPHAGNUM MOSS PEAT, HYPNUM MOSS PEAT, REED-SEDGE PEAT, OR PEAT HUMUS, ALL FROM FRESH-WATER SOURCES. PEAT SHOULD BE SHREDDED AND CONDITIONED IN STORAGE PILES FOR AT LEAST 6 MONTHS AFTER EXCAVATION.

SAND--CLEAN AND FREE OF TOXIC MATERIALS.

VERMICULITE--HORTICULTURAL GRADE AND FREE OF TOXIC SUBSTANCES.

ROTTED MANURE--STABLE OR CATTLE MANURE NOT CONTAINING UNDUE AMOUNTS OF STRAW OR OTHER

THOROUGHLY ROTTED SAWDUST--FREE OF STONES AND DEBRIS. ADD 6 LB OF NITROGEN TO EACH CUBIC

SLUDGE--TREATED SEWAGE AND INDUSTRIAL SLUDGES ARE AVAILABLE IN VARIOUS FORMS: THESE SHOULD BE USED ONLY IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

INSTALL NECESSARY MECHANICAL EROSION AND SEDIMENTATION CONTROL PRACTICES BEFORE SEEDING,

AND COMPLETE GRADING ACCORDING TO THE APPROVED PLAN.

LIME AND FERTILIZER NEEDS SHOULD BE DETERMINED BY SOIL TESTS. SOIL TESTING IS PERFORMED FREE OF CHARGE BY THE NORTH CAROLINA DEPARTMENT OF AGRICULTURE SOIL TESTING LABORATORY. DIRECTIONS, SAMPLE CARTONS, AND INFORMATION SHEETS ARE AVAILABLE THROUGH COUNTY AGRICULTURAL EXTENSION OFFICES OR FROM NCDA. BECAUSE THE NCDA SOIL TESTING LAB REQUIRES 1-6 WEEKS FOR SAMPLE TURN-AROUND, SAMPLING MUST BE PLANNED WELL IN ADVANCE OF FINAL GRADING. TESTING IS ALSO DONE BY COMMERCIAL LABORATORIES.

WHEN SOIL TESTS ARE NOT AVAILABLE, FOLLOW RATES SUGGESTED ON THE INDIVIDUAL SPECIFICATION SHEET FOR THE SEEDING MIX CHOSEN (TABLES 6.11C THROUGH 6.11V). APPLICATION RATES USUALLY FALL INTO THE FOLLOWING RANGES:

• GROUND AGRICULTURAL LIMESTONE:LIGHT-TEXTURED, SANDY SOILS: 1- 1 1/2 TONS/ACRE HEAVY-TEXTURED, CLAYEY SOILS: 2-3 TONS/ACRE

 FERTILIZER: GRASSES: 800-1200 LB/ACRE OF 10-10-10 (OR THE EQUIVALENT) GRASS-LEGUME MIXTURES: 800-1200 LB/ACRE OF 5-10-10 (OR THE EQUIVALENT)

APPLY LIME AND FERTILIZER EVENLY AND INCORPORATE INTO THE TOP 4-6 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. OPERATE MACHINERY ON THE CONTOUR. WHEN USING A HYDROSEEDER, APPLY LIME AND FERTILIZER TO A ROUGH, LOOSE SURFACE.

ROUGHEN SURFACES ACCORDING TO PRACTICE 6.03, SURFACE ROUGHENING.

COMPLETE SEEDBED PREPARATION BY BREAKING UP LARGE CLODS AND RAKING INTO A SMOOTH, UNIFORM SURFACE (SLOPES LESS THAN 3:1). FILL IN OR LEVEL DEPRESSIONS THAT CAN COLLECT WATER. BROADCAST SEED INTO A FRESHLY LOOSENED SEEDBED THAT HAS NOT BEEN SEALED BY RAINFALL.

SEEDING DATES GIVEN IN THE SEEDING MIXTURE SPECIFICATIONS (TABLE 6.11C THROUGH 6.11V) ARE DESIGNATED AS "BEST" OR "POSSIBLE". SEEDINGS PROPERLY CARRIED OUT WITHIN THE "BEST" DATES HAVE A HIGH PROBABILITY OF SUCCESS. IT IS ALSO POSSIBLE TO HAVE SATISFACTORY ESTABLISHMENT WHEN SEEDING OUTSIDE THESE DATES. HOWEVER, AS YOU DEVIATE FROM THEM, THE PROBABILITY OF FAILURE INCREASES RAPIDLY. SEEDING ON THE LAST DATE SHOWN UNDER "POSSIBLE" MAY REDUCE CHANCES OF SUCCESS BY 30-50%. ALWAYS TAKE THIS INTO ACCOUNT IN SCHEDULING LAND-DISTURBING ACTIVITIES.

USE CERTIFIED SEED FOR PERMANENT SEEDING WHENEVER POSSIBLE. CERTIFIED SEED IS INSPECTED BY THE NORTH CAROLINA CROP IMPROVEMENT ASSOCIATION. IT MEETS PUBLISHED NORTH CAROLINA STANDARDS AND SHOULD BEAR AN OFFICIAL "CERTIFIED SEED" LABEL (FIGURE 6.11B).

GENERALLY, A STAND OF VEGETATION CANNOT BE DETERMINED TO BE FULLY ESTABLISHED UNTIL SOIL COVER HAS BEEN MAINTAINED FOR ONE FULL YEAR FROM PLANTING. INSPECT SEEDED AREAS FOR FAILURE AND MAKE NECESSARY REPAIRS AND RESEEDINGS WITHIN THE SAME SEASON, IF POSSIBLE

RESEEDING--IF A STAND HAS INADEQUATE COVER, RE-EVALUATE CHOICE OF PLANT MATERIALS AND QUANTITIES OF LIME AND FERTILIZER. RE-ESTABLISH THE STAND AFTER SEEDBED PREPARATION OR OVER-SEED THE STAND. CONSIDER SEEDING TEMPORARY, ANNUAL SPECIES IF THE TIME OF YEAR IS NOT APPROPRIATE FOR PERMANENT SEEDING (PRACTICE 6.10, TEMPORARY SEEDING).

PREP'D BY DATE APPROVED

SEEDING NO 5CP FOR WELL-DRAINED SANDY LOAMS; LOW MAINTENANCE

RATE (LB/ACRE) SEEDING MIXTURE SPECIES PENSACOLA BAHIAGRASS SERICEA LESPEDEZA COMMON BERMUDAGRASS **GERMAN MILLET**

SEEDING NOTES

1. WHERE A NEAT APPEARANCE IS DESIRED, OMIT SERICEA.

2. USE A COMMON BERMUDAGRASS ONLY ON ISOLATED SITES WHERE IT CANNOT BECOME A PEST. BERMUDAGRASS MAY BE REPLACED WITH 5 LB/ACRE CENTIPEDEGRASS.

SEEDING DATES APR.1 - JULY 15

AGRICULTURAL LIMESTONE AND 500 LB/ACRE 10-10-10 FERTILIZER.

APPLY 4,000 LB/ACRE GRAIN STRAW OR EQUIVALENT COVER OF ANOTHER SUITABLE MULCH. ANCHOR BY TACKING WITH ASPHALT, ROVING, NETTING, OR BY CRIMPING WITH A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

APPLY LIME AND FERTILIZER ACCORDING TO SOIL TESTS, OR APPLY 3,000 LB/ACRE GROUND

MAINTENANCE

REFERTILIZE THE FOLLOWING APR. WITH 50 LB/ACRE NITROGEN. REPEAT AS GROWTH REQUIRES. MAY BE MOWED ONLY ONCE A YEAR. WHERE A NEAT APPEARANCE IS DESIRED, OMIT SERICEA AND MOW AS OFTEN AS NEEDED.

SEEDING NO 7CP FOR GRASS LINED **CHANNELS**

RATE (LB/ACRE) SEEDING MIXTURE SPECIES

COMMON BERMUDAGRASS 40-80 (1-2 LB/1,000 FT2)

SEEDING DATES COASTAL PLAIN: APR. - JULY

PIEDMONT: APR. 15 - JUNE 30

APPLY LIME AND FERTILIZER ACCORDING TO SOIL TESTS, OR APPLY 3,000 LB/ACRE GROUND

AGRICULTURAL LIMESTONE AND 500 LB/ACRE 10-10-10 FERTILIZER

USE A ROLLED EROSION CONTROL PRODUCT TO COVER THE BOTTOM OF CHANNELS AND DITCHES. THE LINING SHOULD EXTEND ABOVE THE HIGHEST CALCULATED DEPTH OF FLOW. ON CHANNEL SIDE SLOPES ABOVE THIS HEIGHT AND IN DRAINAGES NOT REQUIRING TEMPORARY LININGS, APPLY 4,000 LB/ACRE GRAIN STRAW, AND ANCHOR STRAW BY STAPLING NETTING OVER THE TOP.

MULCH AND ANCHORING MATERIALS MUST NOT BE ALLOWED TO WASH DOWN SLOPES WHERE THEY CAN CLOG DRAINAGE DEVICES.

A MINIMUM OF 3 WEEKS IS REQUIRED FOR ESTABLISHMENT. INSPECT AND REPAIR MULCH FREQUENTLY. REFERTILIZE THE FOLLOWING APR. WITH 50 LB/ACRE NITROGEN.

— 2" NCDOT STD S9.5B COMPACTED SUBGRADE DRY DENSITY SHALL BE NO LESS THAN 95% PER ASTM D698. ALL ASPHALT REPAIR AND PLACEMENT SHALL BE IN ACCORDANCE WITH NCDOT STANDARDS AND SPECIFICATIONS. ASPHALT PAVEMENT REPAIR - DETAIL

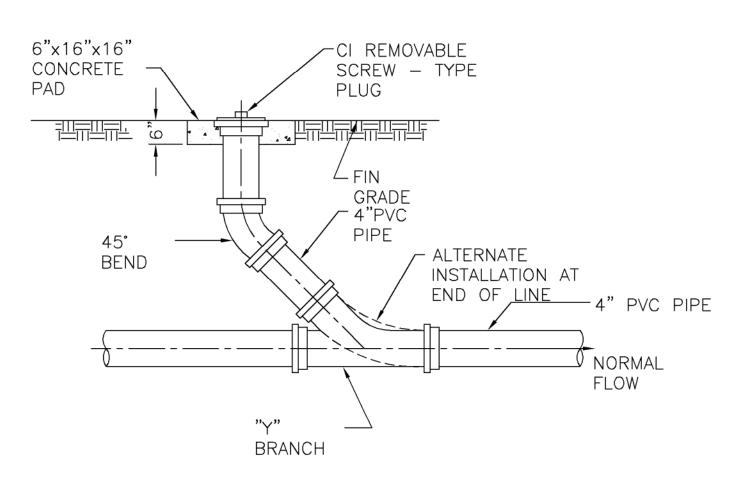
DISCLOSURE OF INFORMATION

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-

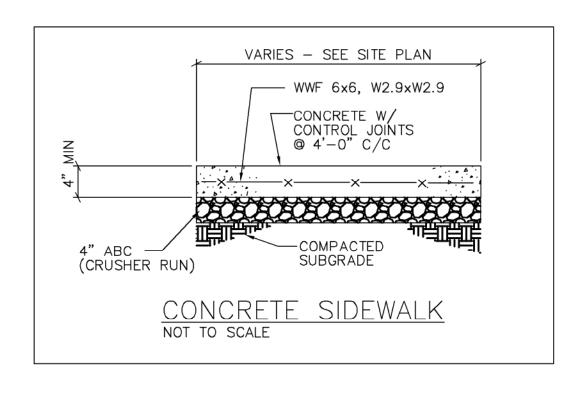
The Contracting Officer has given prior written approval; or (2) The information is otherwise in the public domain before the date of release.

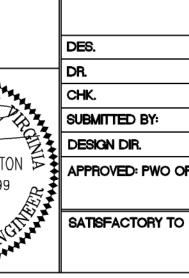
requests for authorization to release through the prime contractor to the Contracting Officer.

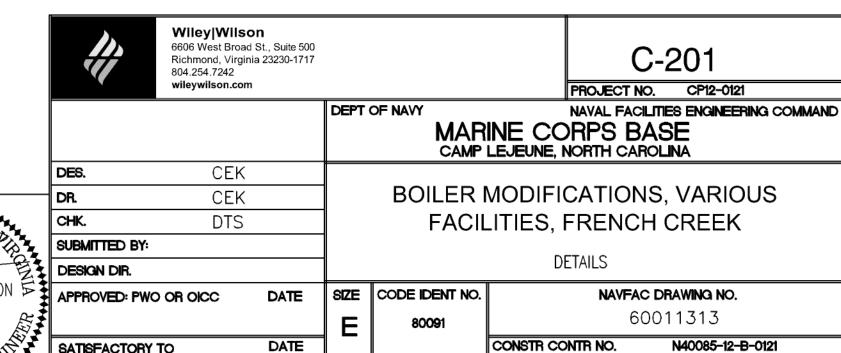
Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release. The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit



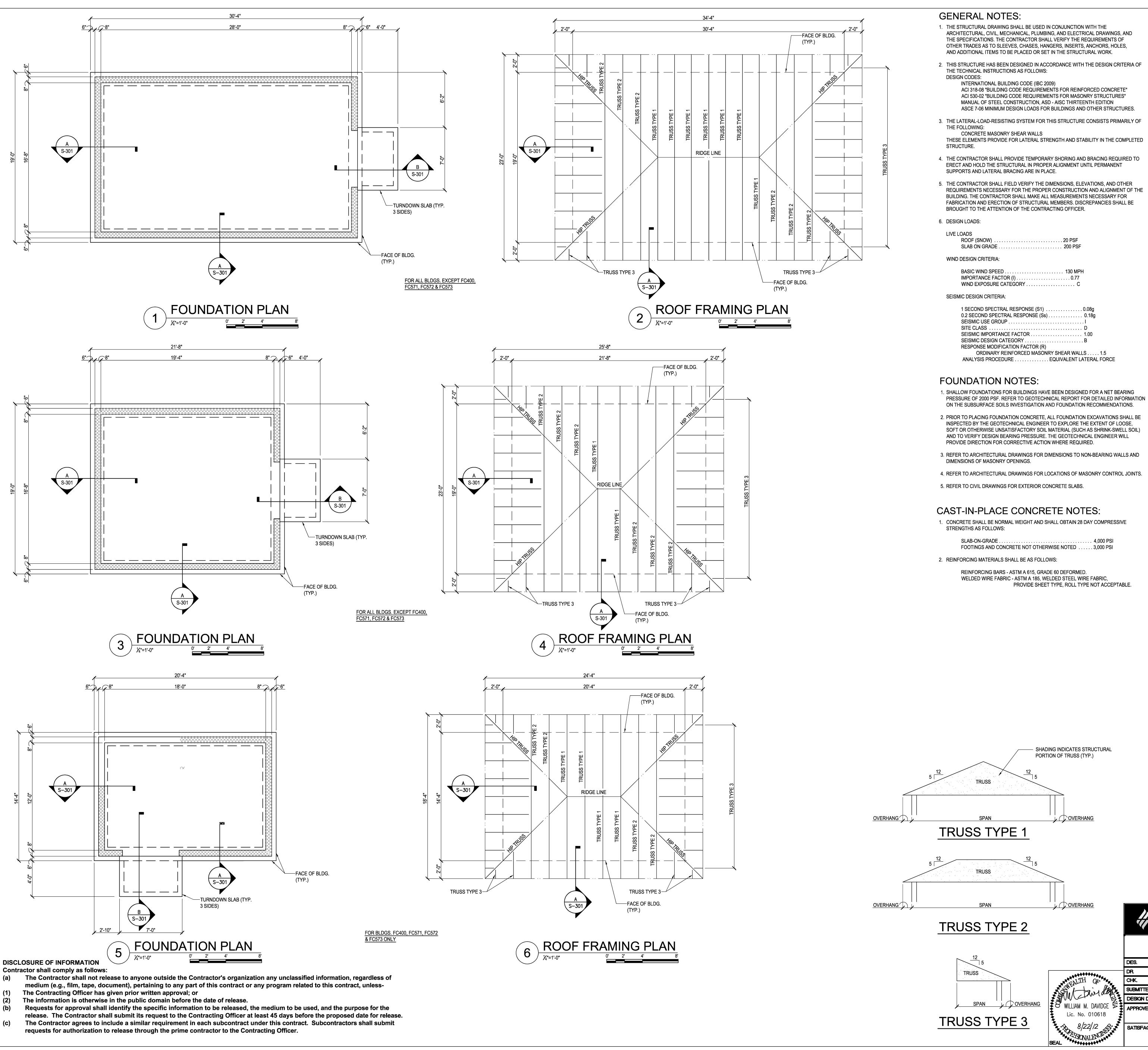
TYPICAL SANITARY SEWER CLEANOUT (GRAVITY LINE ONLY) NOT TO SCALE







SHEET 06 OF 37



PREP'D BY DATE APPROVED

- 3. 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. 4. CONCRETE COVER TO REINFORCING STEEL SHALL CONFORM TO THE MINIMUM COVER
- 5. WHERE REINFORCEMENT SPLICES ARE INDICATED, SPLICE LENGTHS SHALL BE AS

RECOMMENDATIONS IN ACI 318-05 UNLESSOTHERWISE NOTED.

BAR SIZE	TOP BARS	OTHER	BARS IN MASONRY
#3	18"	16"	18"
#4	24"	19"	24"
#5	30"	23"	30"
#6	36"	28"	36"
#7	42"	33"	42"

- 6. CONCRETE EXPOSED TO THE ELEMENTS SHALL BE AIR-ENTRAINED.
- 7. CHAMFER ALL EXPOSED EDGES OF CONCRETE 3/4".

DAY COMPRESSIVE STRENGTH OF 3,000 PSI.

CONCRETE MASONRY NOTES:

- 1. CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C 90 AND BE MADE WITH NORMAL OR LIGHTWEIGHT AGGREGATE. THE COMPRESSIVE STRENGTH OF MASONRY, F'm. EXPRESSED AS FORCE PER UNIT OF NET CROSS-SECTIONAL AREA, SHALL BE 1,500 PSI AT 28 DAYS.
- 2. REINFORCING STEEL SHALL COMPLY WITH ASTM A 615, GRADE 60. SHOP FABRICATE REINFORCING BARS WHICH ARE SHOWN TO BE BENT OR HOOKED.
- 3. GROUT SHALL COMPLY WITH ASTM C 476, AND SHALL BE PROPORTIONED TO OBTAIN A 28
- 4. 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.
- 5. 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.
- 6. PROVIDE REINFORCING STEEL DOWELS OF THE SAME SIZE AND SPACING AS VERTICAL REINFORCING FROM THE SUPPORTING STRUCTURE. DOWELS SHALL HAVE STANDARD ACI
- 7. 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.
- 8. PLACE CONTINUOUS BOND BEAMS AT THE TOP OF ALL WALLS.
- 9. CMU BOND BEAM LINTELS MAY BE USED FOR SPANS UP TO 8 FEET.

STRUCTURAL STEEL NOTES:

1. STRUCTURAL STEEL SHALL COMPLY WITH THE FOLLOWING SPECIFICATIONS:

STRUCTURAL STEEL PLATES - ASTM A36, Fy=36 KSI.

2. 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".

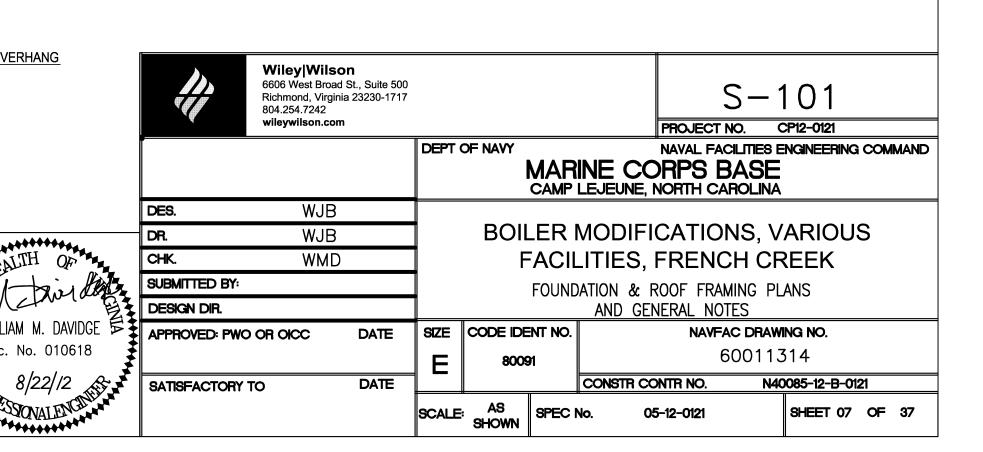
ROOF FRAMING NOTES:

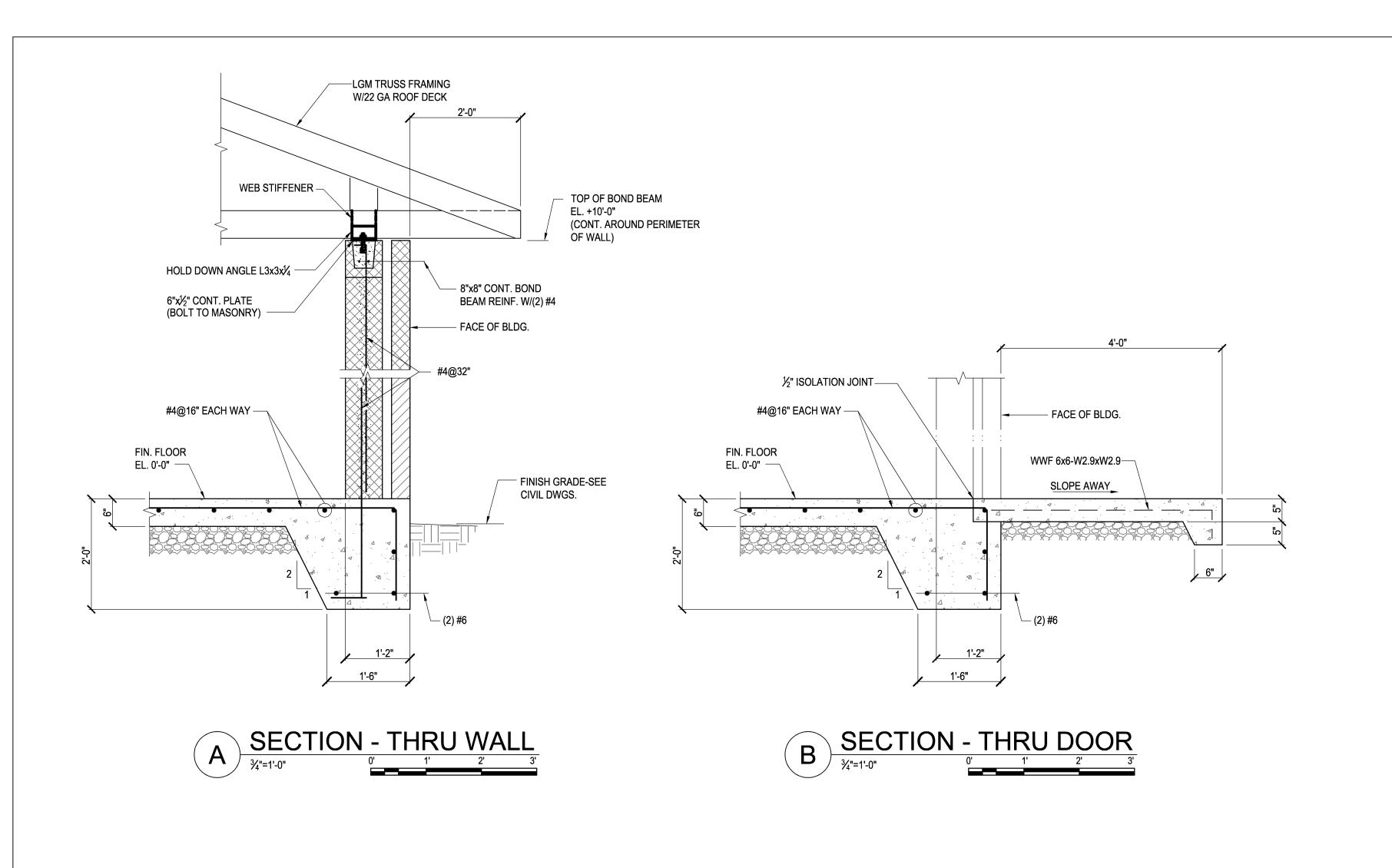
. 4,000 PSI

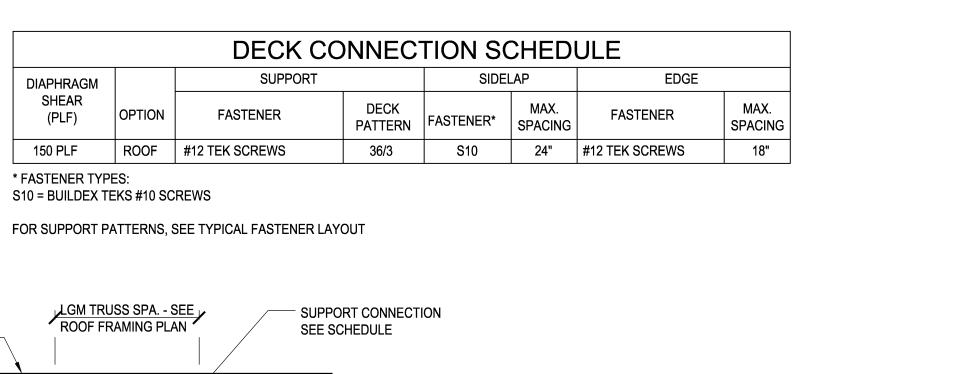
- 1. ROOF SHALL BE FRAMED USING COLD FORMED STEEL (CFS) TRUSSES (OR CFS REAFTERS WHERE NOTED).
- 2. TRUSSES SHALL BE DESIGNED FOR A SUPERIMPOSED DEAD LOAD OF 20 PSF FOR THE BOTTOM CHORD OF TRUSS AND FOR THE FRAMING. DESIGN TOP CHORD FOR A LIVE (SNOW) LOAD OF 20 PSF EXPOSED TO ROOF SURFACE. PLUS THE ADDITIONAL 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.
- 3. PROVIDE SUFFICIENT BOTTOM CHORD BRIDGING FOR BOTH ERECTION AND PERMANENT
- 4. MAXIMUN SPACING FOR CFS TRUSSES AND FRAMING IS 2'-0" O.C.

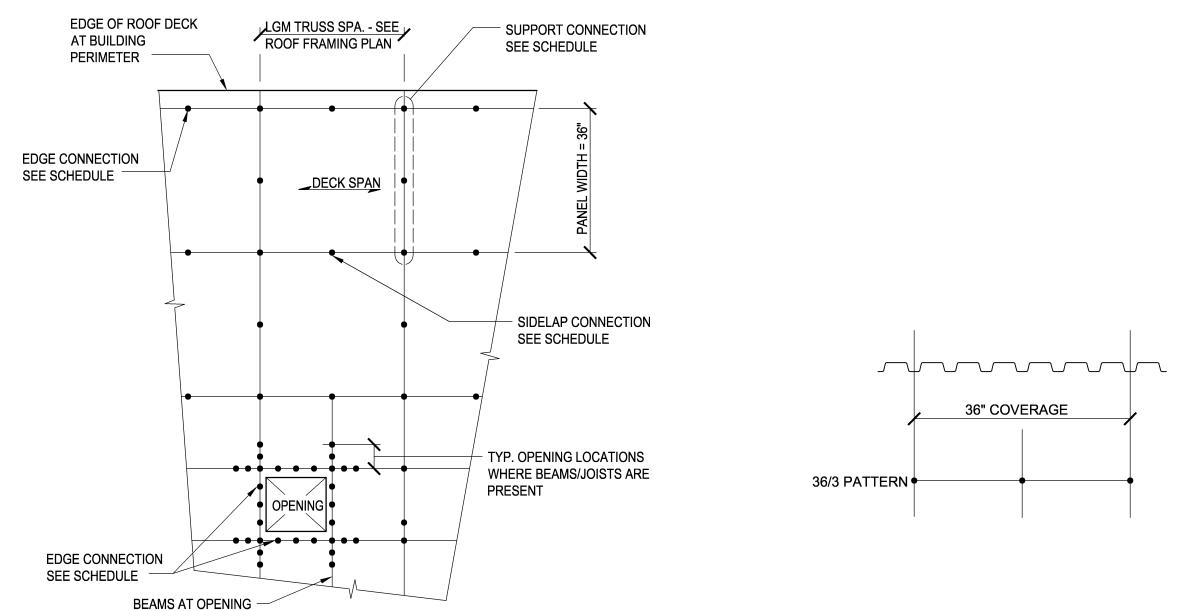
SITE / GRADING NOTES:

- 1. NO TOPOGRAPHIC SURVEY HAS BEEN DONE FOR THIS PROJECT.
- 2. LOCATE EACH BUILDING ACCORDING TO THE CONTROLS GIVEN ON THE CIVIL-SITE DRAWINGS.
- 3. 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".
- 4. 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.
- 5. REFER TO THE CIVIL-SITE DRAWINGS FOR OTHER NOTES AND REQUIREMENTS.











DISCLOSURE OF INFORMATION

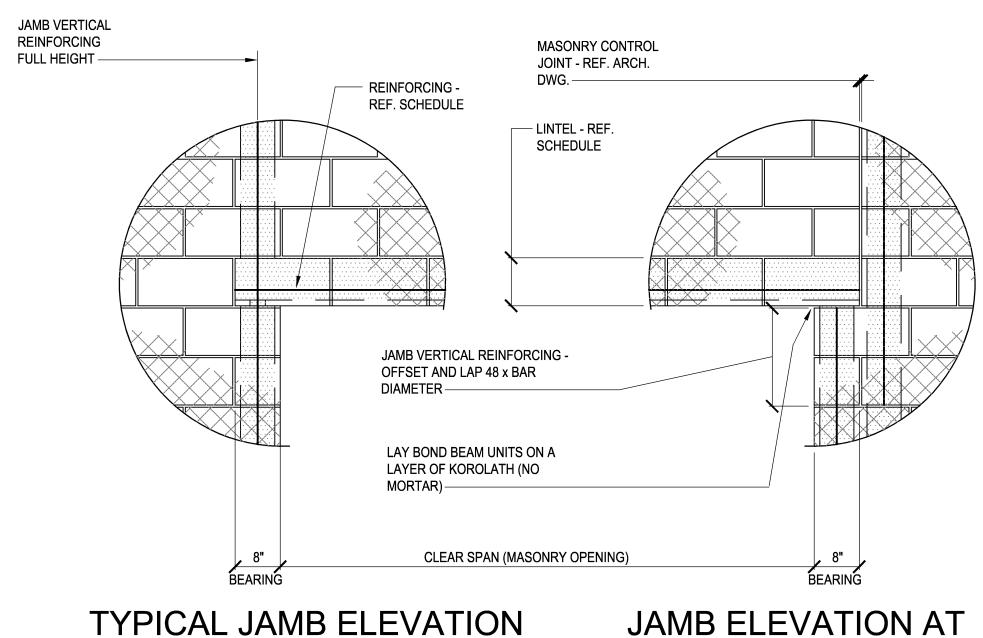
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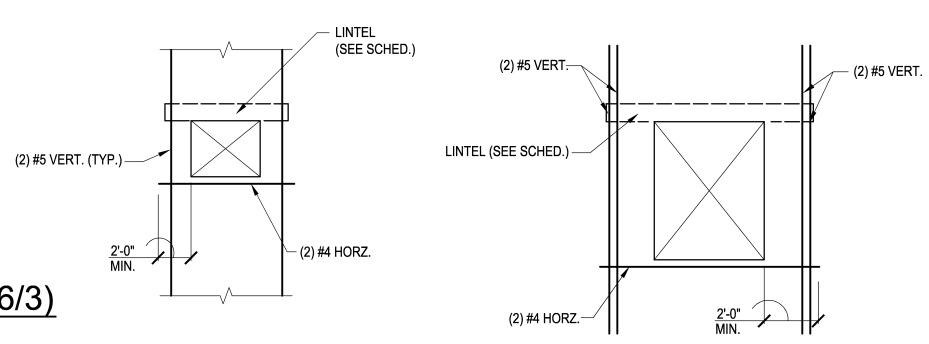
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TYPICAL JAMB ELEVATION MASONRY CONTROL JOINT



REINFORCEMENT AROUND MASONRY WALL OPENINGS

CASE 2

NOTES:

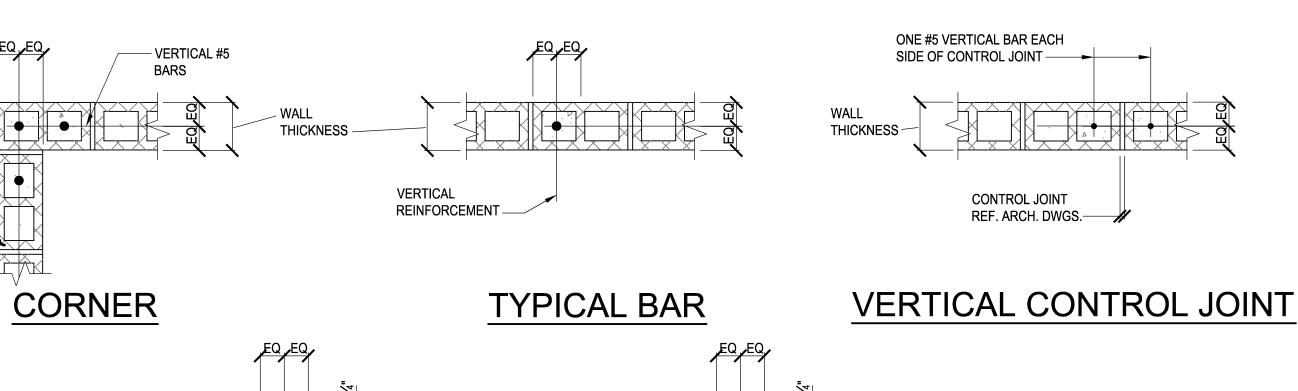
1. CASE 1 - APPLIES TO OPENINGS IN WALLS WHICH ARE 4 FEET OR LESS IN ANY DIRECTION.

CASE 1

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.





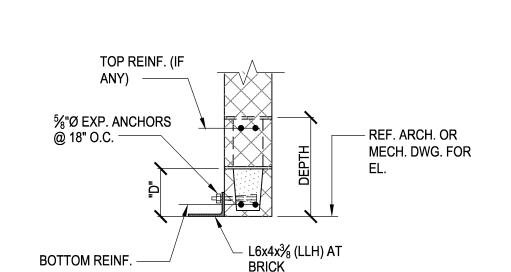
BETWEEN 3'-4" & 8'-0" WIDE OR TALL LESS THAN 3'-4"

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

BOND	BEAM	LINTEL SCH	EDULE
CLEAR SPAN	DEPTH	REINFOR	RCING
SEE/WY SI / WY	"D"	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.

TYPICAL BOND BEAM

1. PROVIDE 8" BEARING EACH END OF LINTEL.

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2. REFER TO ARCHITECTURAL DRAWINGS FOR SIZE AND LOCATION OF 3. FOR LOUVER OPENINGS REFER TO MECHANICAL DRAWINGS. 4. REFER TO ARCHITECTURAL DRAWINGS FOR WIDTH OF LINTEL.

THE DRAWINGS.

5. FOR HEAD DETAILS, SEE ARCHITECTURAL DRAWINGS.

BOND BEAM LINTEL NOTES:

Lic. No. 010618

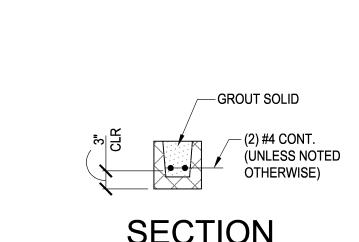
S - 301Richmond, Virginia 23230-1717 804.254.7242 PROJECT NO. CP12-0121 NAVAL FACILITIES ENGINEERING COMMAND

MARINE CORPS BASE

CAMP LEJEUNE, NORTH CAROLINA DEPT OF NAVY SCHEDULE APPLIES ONLY TO LINTELS NOT OTHERWISE SHOWN ON WJB BOILER MODIFICATIONS, VARIOUS WJB FACILITIES, FRENCH CREEK WMD SUBMITTED BY: SECTIONS & DETAILS DESIGN DIR. DATE SIZE CODE IDENT NO. NAVFAC DRAWING NO. APPROVED: PWO OR OICC 60011315 DATE N40085-12-B-0121 CONSTR CONTR NO. SATISFACTORY TO

SCALE: AS SPEC No.

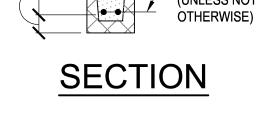
SHEET 08 OF 37

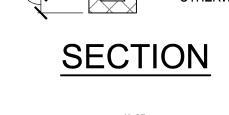


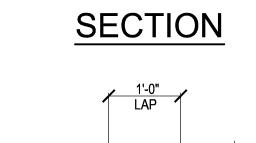
CONTROL JOINT

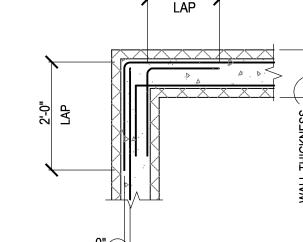
REF. ARCH. DWGS.

PREP'D BY DATE APPROVED



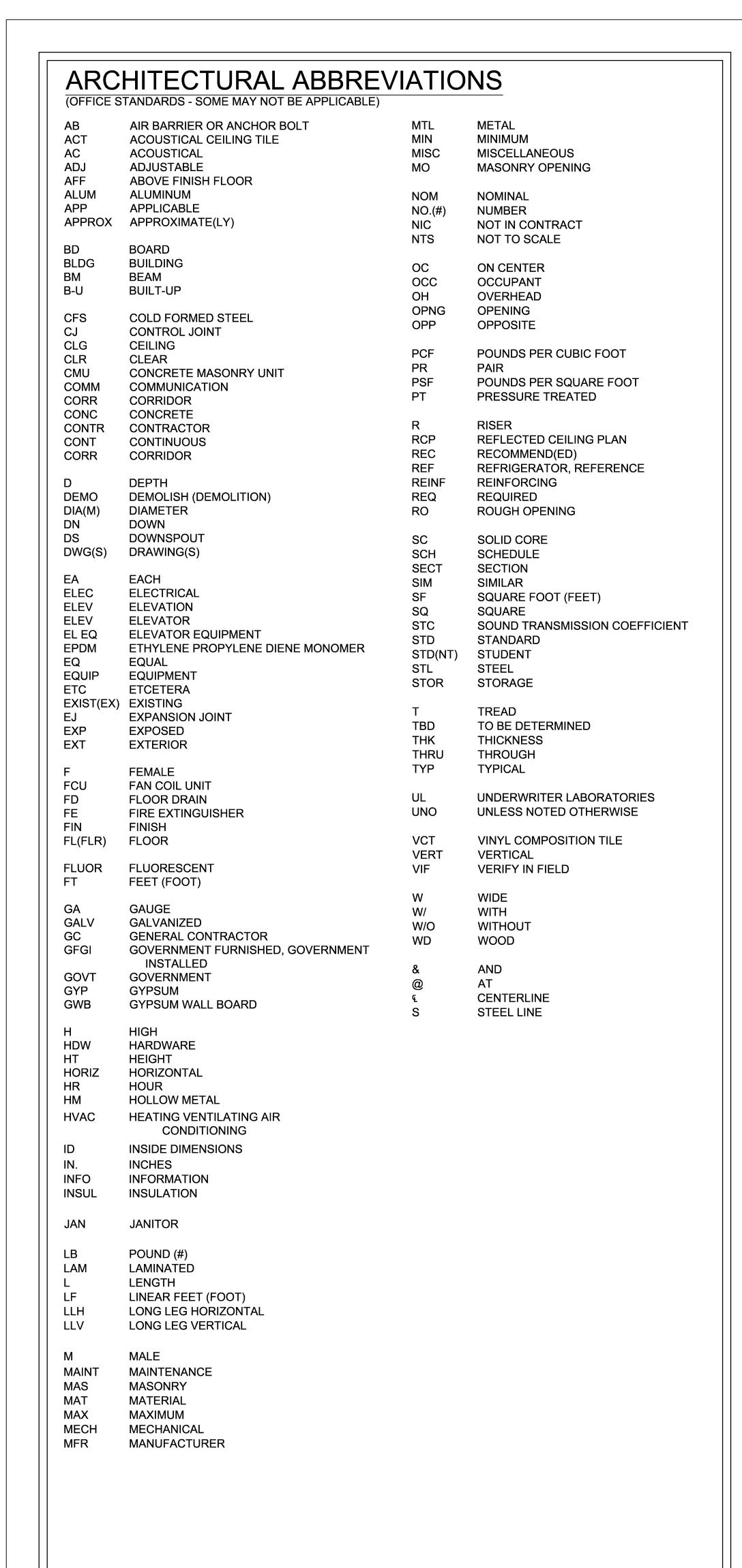






CORNERS

REINFORCING DETAIL

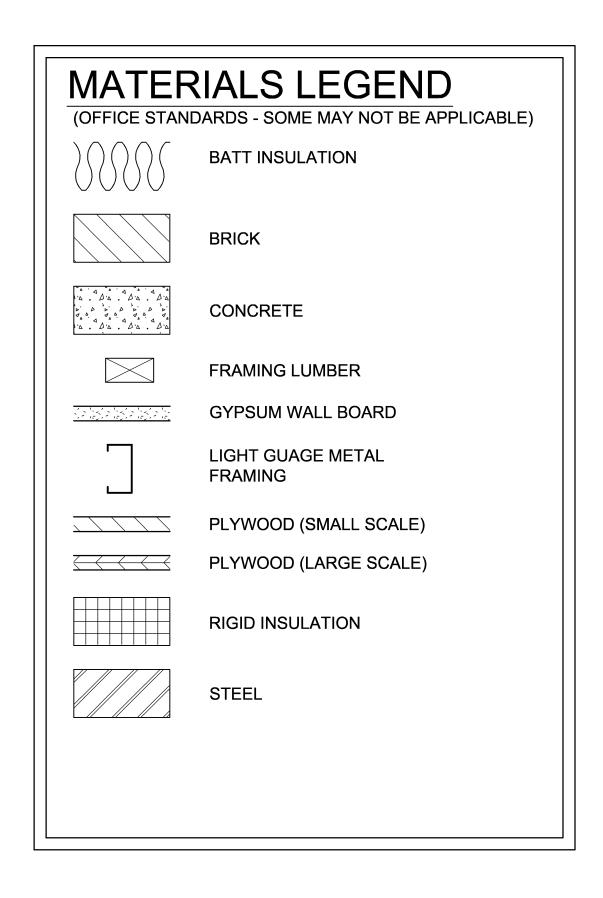


GENERAL CONSTRUCTION NOTES:

- 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
- 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.
- 4. 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.
- 6. 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.
- 10. 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.
- 11. THE CONTRACTOR SHALL NOT REMOVE, ALTER, LOAD PENETRATE OR ADD TO ANY EXISTING BUILDING ASSEMBLY OR STRUCTURE WHICH MAY COMPROMISE IT'S 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 FRO THE ARCHITECT.

	AY NOT BE APPLICAB				
0.00	FLOOR ELEVATION	ONS		DESIGNATION	
NUMBER DENC WALL TYPE	TES WALL TAGS		x (NUMBE X-XXX) SHEET DETAIL	_	DETAIL TAG
$lack{x}$	TOILET ACCESSOR	IES TAGS	Y FLOOD DLANK	EYED NOTE TAG	
×	WINDOW FRAME TA	AG (LETTER)	PLOUR PLAIN N	ETED NOTE TAG	
X	COLUMN DESIGNAT	ΓΙΟΝ	X DEMOLITION K	EYED NOTE TAG	
ROOM NUMBER DESIGNATION	ROOM TAG		X-X FURNITURE TA	.G	
ROOM DESIGNATION DOOR NUMBER DESIGNATION	DOOR TAG		SECTIO (LETTE)	N DESIGNATION R)	SECTION CUT
ELEVATION DESIGNATION			SHEET SECTIO	WHERE IN IS DRAWN	
SHEET WHER ELEVATION IS			XX'-XX"	DIMENSIONS IN FEET/INCHES	DIMENSIONS
CORNER GUAR QUANTITY	D TAG X E	QUIPMENT/ACC	ESSORY TAG (NUMBER)	REVISION TA	AG
BUILDING ELEV MATERIAL TAG	ATION X R	ROOM SIGNAGE 1	ΓAG (LETTER)	(X) FLOOR PATT	ERN TAG (NUMBER)

CODE INFO	RMATION:
2009 IBC:	
BUILDING INFORMATION: GROSS BUILDING AREA: NET BUILDING AREA:	412 SF 322 SF
MEAN BUILDING HEIGHT: NUMBER OF STORIES: TOTAL PERIMETER:	±12'-6" ONE (1) 78'-8" LF
USE GROUP CLASSIFICATIONS:	"U" - UTILITY AND MISCELLANEOUS (312.1)
CONSTRUCTION TYPE:	II-B (NON-COMBUSTIBLE, UNPROTECTED)
TABLE 503: ALLOWABLE AREA: ALLOWABLE HEIGHT: ALLOWABLE # OF STORIES:	8,500 SF 55 FT 2 STORIES
TABLE 601 (RATINGS): STRUCTURAL FRAME: EXTERIOR WALLS: INTERIOR WALLS: ROOF CONSTRUCTION: FLOOR CONSTRUCTION:	0 HR 0 HR 0 HR 0 HR 0 HR
TABLE 602 (RATINGS): SEPARATION DISTANCE:	10 ≤ X ≤ 30 FT
NFPA LIFE SA	FETY 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



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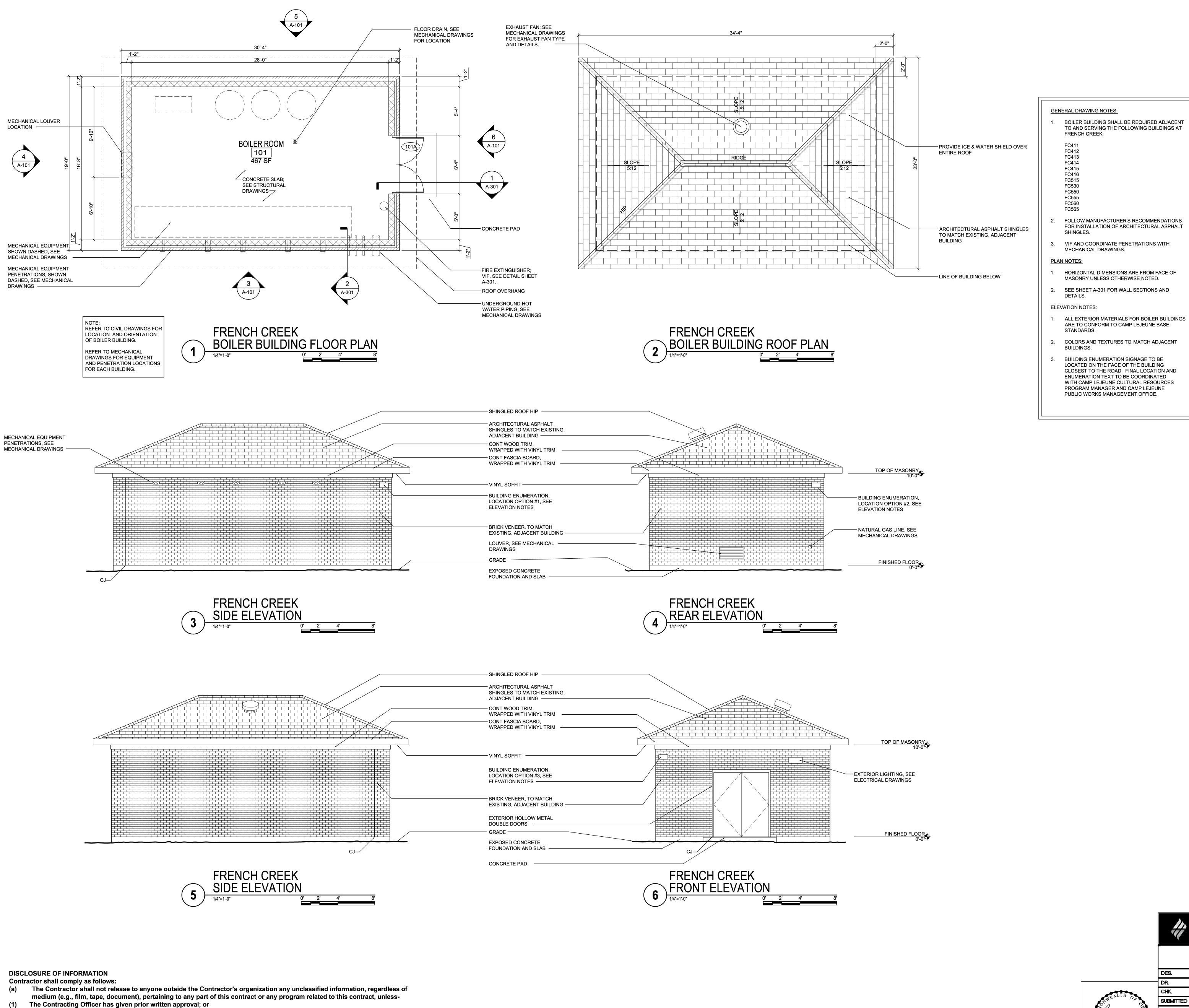
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requests for authorization to release through the prime contractor to the Contracting Officer.

6606 West Broad St., Suite 500 A - 001Richmond, Virginia 23230-1717 804.254.7242 wileywilson.com PROJECT NO. CP12-0121 DEPT OF NAVY NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA LTC **BOILER MODIFICATIONS, VARIOUS** MTG FACILITIES, FRENCH CREEK JHE SUBMITTED BY: GENERAL NOTES, ABBREVIATIONS, AND LEGEND DESIGN DIR. DATE SIZE CODE IDENT NO. NAVFAC DRAWING NO. APPROVED: PWO OR OICC 60011316 CONSTR CONTR NO. N40085-12-B-0121 SATISFACTORY TO 05-12-0121 SHEET 09 OF 37



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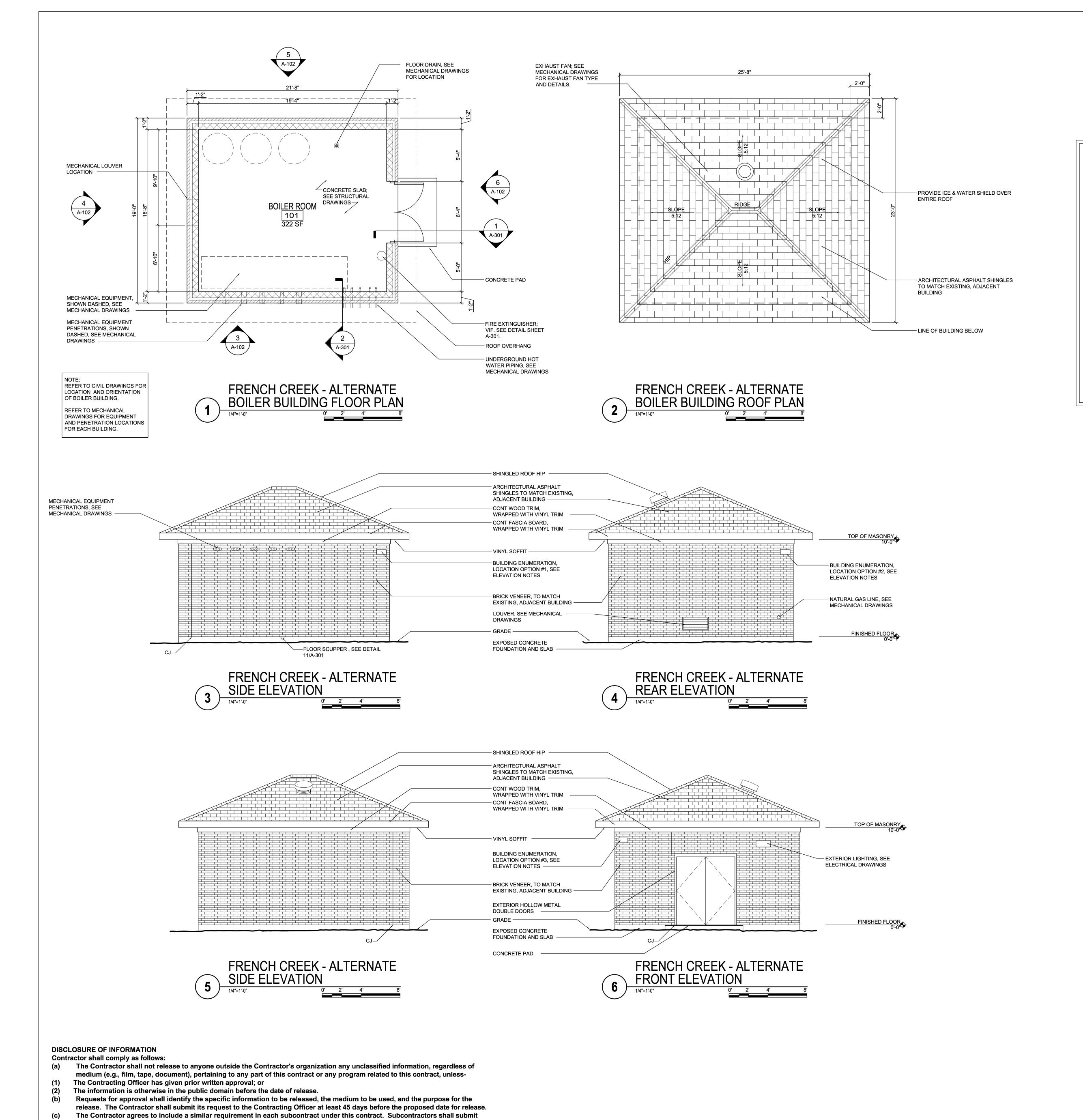
requests for authorization to release through the prime contractor to the Contracting Officer.

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Wiley|Wilson 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.254.7242 wileywilson.com A - 101PROJECT NO. CP12-0121 DEPT OF NAVY NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA LTC **BOILER MODIFICATIONS, VARIOUS** ΑEΙ FACILITIES, FRENCH CREEK JHE SUBMITTED BY: PLANS AND ELEVATIONS — TYPICAL DESIGN DIR. DATE SIZE CODE IDENT NO. APPROVED: PWO OR OICC NAVFAC DRAWING NO. 60011317 CONSTR CONTR NO. N40085-12-B-0121 SATISFACTORY TO 05-12-0121 SHEET 10 OF 37



requests for authorization to release through the prime contractor to the Contracting Officer.

GENERAL DRAWING NOTES:

BOILER BUILDING SHALL BE REQUIRED ADJACENT TO AND SERVING THE FOLLOWING BUILDINGS AT FRENCH CREEK:

- FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION OF ARCHITECTURAL ASPHALT
- VIF AND COORDINATE PENETRATIONS WITH MECHANICAL DRAWINGS.

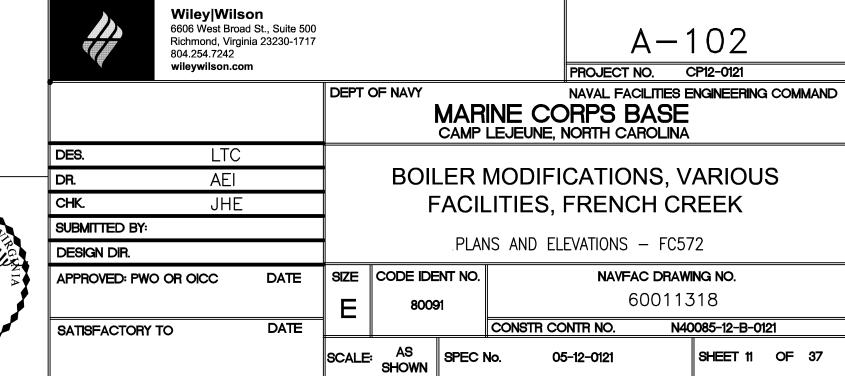
HORIZONTAL DIMENSIONS ARE FROM FACE OF MASONRY UNLESS OTHERWISE NOTED.

2. SEE SHEET A-301 FOR WALL SECTIONS AND DETAILS.

ELEVATION NOTES:

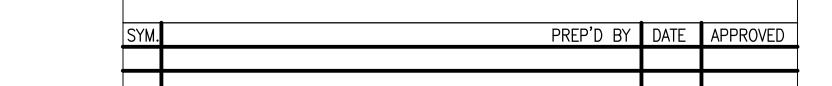
BUILDINGS.

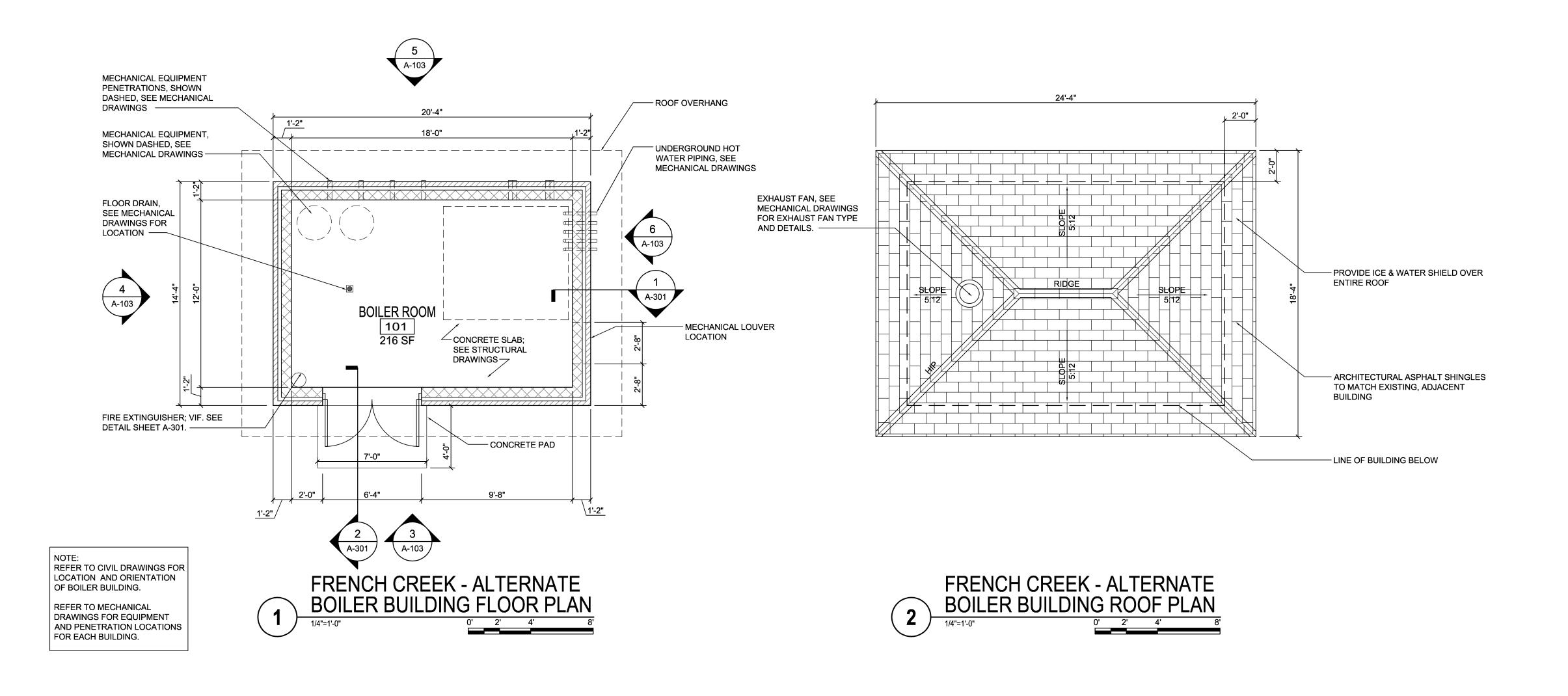
- ALL EXTERIOR MATERIALS FOR BOILER BUILDINGS ARE TO CONFORM TO CAMP LEJEUNE BASE
- COLORS AND TEXTURES TO MATCH ADJACENT
- BUILDING ENUMERATION SIGNAGE TO BE LOCATED ON THE FACE OF THE BUILDING CLOSEST TO THE ROAD. FINAL LOCATION AND ENUMERATION TEXT TO BE COORDINATED WITH CAMP LEJEUNE CULTURAL RESOURCES PROGRAM MANAGER AND CAMP LEJEUNE PUBLIC WORKS MANAGEMENT OFFICE.

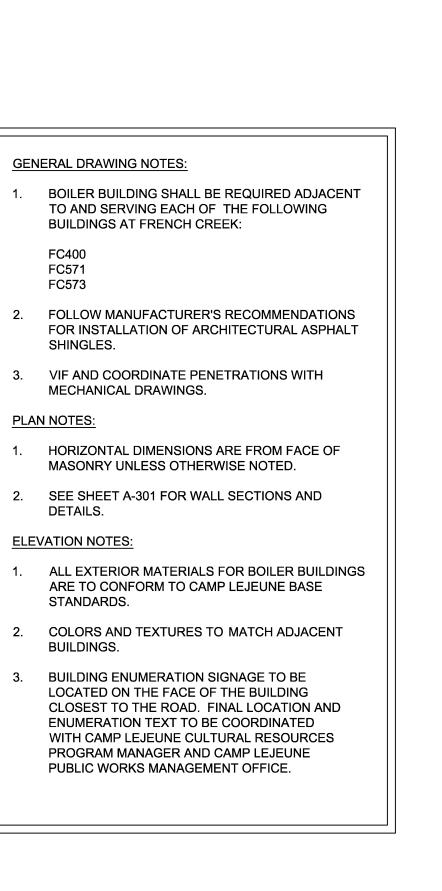


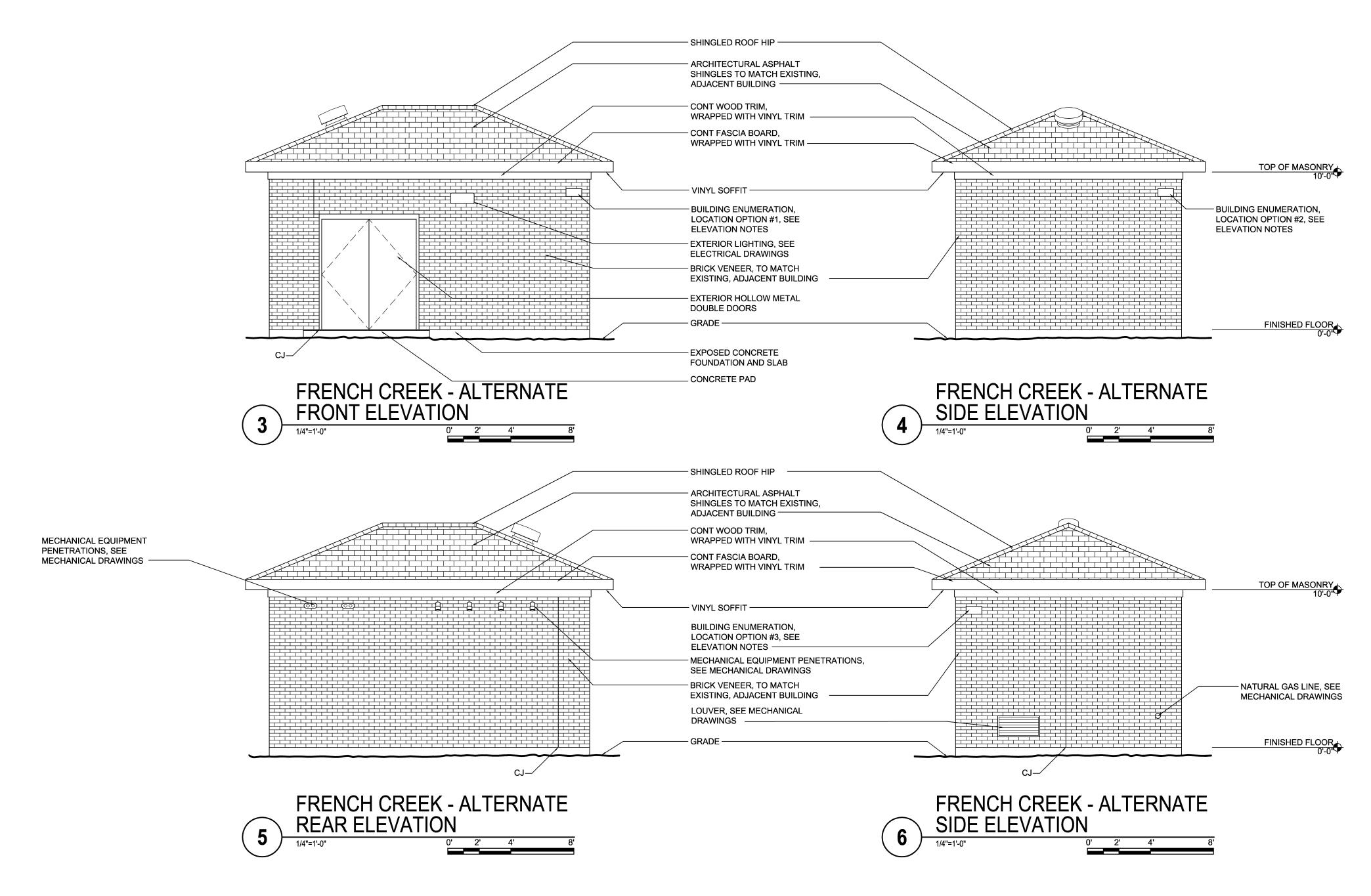
SHEET 11 OF 37

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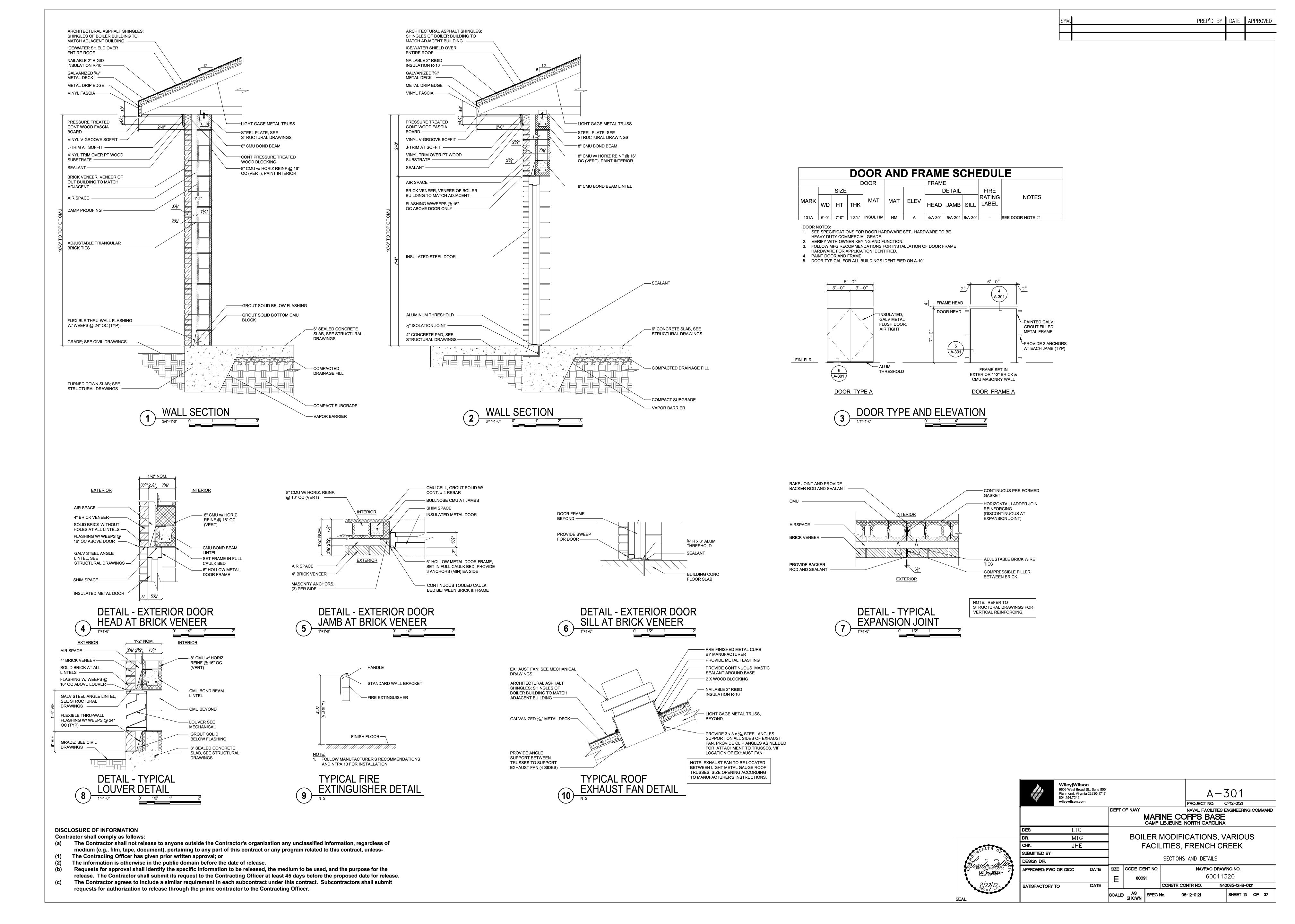




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PROJECT NO. CP12-0121

NAVFAC DRAWING NO.

SHEET 14 OF 37

CONSTR CONTR NO. N40085-12-B-0121

NAVAL FACILITIES ENGINEERING COMMAND

MARINE CORPS BASE

CAMP LEJEUNE, NORTH CAROLINA

BOILER MODIFICATIONS, VARIOUS

FACILITIES, FRENCH CREEK

LEGEND AND ABBREVIATIONS

			٨٩٩٨١	INTIONS			
(E)	EXISTING	DIFF	DIFFERENTIAL	IATIONS	HOODED GRAVITY RELIEF	RF	RADIO FREQUENCY
<i>∟,</i>	ANCHOR	+	DOWN	HGR HOR	HOODED GRAVITY RELIEF HORIZONTAL	RH	RADIO FREQUENCY RELATIVE HUMIDITY
\ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		DN				†	
AAV ACC	AUTOMATIC AIR VENT	DO DP	DIGITAL OUTPUT DIFFERENTIAL PRESSURE	HPR	HORSEPOWER	RHC	REHEAT COIL REEDIGERATION LINE
ACC	AIR-COOLED CHILLER	DPR DPR	DAMPER DAMPER	HPS	HIGH PRESSURE STEAM SUPPLY	RLA	REFRIGERATION LINE
ACU AD	AIR CONDITONING UNIT ACCESS DOOR	DPS	DIFFERENTIAL PRESSURE SENSOR	HTG	HIGH PRESSURE STEAM SUPPLY HEATING	RLF	RATED LOAD AMPS RELIEF
						-	
AF AFF	ABOVE FINISH FLOOR	DWDI	DOUBLE WIDTH, DOUBLE INLET DRAWING	HTR HVAC	HEATER HEATING VENTILATING & AIR CONDITIONING	RPM RTN	REVOLUTIONS PER MINUTE RETURN
	ABOVE FINISH FLOOR AIR FLOW MEASURING STATION	_	EACH	HVU	HEATING VENTILATING & AIR CONDITIONING HEATING AND VENTILATING UNIT		RETURN RELIEF VALVE
AFMS AHU	AIR FLOW MEASURING STATION AIR HANDLING UNIT	EAT	EACH ENTERING AIR TEMPERATURE	HWR	HEATING AND VENTILATING UNIT HOT WATER HEATING RETURN OR HOUR	RV SA	SUPPLY AIR
						SA	
ΑI	ANALOG INPUT	ECC PED	ELECTRIC CONVECTOR	HWS	HOT WATER HEATING SUPPLY	SAF	SUPPLY AIR FAN
AL	ALUMINUM	ECC RED	ECCENTRIC REDUCER	HZ	HERTZ	SAT	SATURATION SILICON CONTROLLED RECTIFIED
AMB	AMBIENT	EDH	ELECTRIC DUCT HEATER	ID	INSIDE DIAMETER	SCR	SILICON CONTROLLED RECTIFIER
AMP	AMPERE ANALOG OUTPUT	EF EG	EXHAUST FAN	IN	INTERNAL ACOUSTICAL DUCT LINING	SD	SPLITTER DAMPER
AO AD	ANALOG OUTPUT	EG	ETHYLENE GLYCOL	INCL	INCH, INCHES	SDPR	SMOKE DAMPER
APD	ACCESS PANEL	EH	ELECTRIC HEATER	INSU	INSULATION	SEC	SECONDS SOLIABE EEET
APD	AIR PRESSURE DROP	EI	EXTERNALLY INSULATED	JWR	JACKET WATER RETURN	SF	SQUARE FEET
APPROX	APPROXIMATE	EJ	EXPANSION JOINT	JWS	JACKET WATER SUPPLY	SL	SUCTION LINE
ARCH	ARCHITECT	EL	ELEVATION	KW	KILOWATT	SP	STATIC PRESSURE
	ALL SERVICE JACKET	ELEV	ELEVATION ELECTRIC PAGE INVATIO	KWH	KILOWATT HOUR	SPD	SPEED
ATC	AUTOMATIC TEMPERATURE CONTROLS	EP	ELECTRIC-PNEUMATIC	LAT	LEAVING AIR TEMPERATURE	SPEC	SPECIFICATIONS
ATM	ATMOSPHERE	EQUI	EQUIPMENT ENERGY FROM THE STATE OF THE STATE	LB/HR	POUNDS PER HOUR	SQ	SQUARE
ATT	ATTENUATOR	ERU	ENERGY RECOVERY UNIT	LBS	POUNDS	SS	STAINLESS STEEL
AUTO	AUTOMATIC	ESP	EXTERNAL STATIC PRESSURE	LF	LINEAR FEET	STD	STANDARD
AV	AIR VALVE	EWT	ENTERING WATER TEMPERATURE	LPR	LOW PRESSURE STEAM RETURN	STL	STEEL
	BOILER	EXH	EXHAUST	LPS	LOW PRESSURE STEAM SUPPLY	STM	STEAM
	BOILER BLOW DOWN	EXIST	EXISTING	LRA	LOCKED ROTOR AMPS	STR	STRAINER
	BALANCING COCK	EXP	EXPANSION	LVR	LOUVER	SYS	SYSTEM
	BELLMOUTH FITTING	EXT	EXTERNAL	LWT	LEAVING WATER TEMPERATURE	TD	TRANSFER DUCT
	BOILER FEED WATER	F&T	FLOAT AND THERMOSTATIC	MAV	MANUAL AIR VENT	TEMP	TEMPERATURE
	BRAKE HORSEPOWER	F OR °F	DEGREE FAHRENHEIT	MAX	MAXIMUM	TONS	TONS OF REFRIGERATION
	BUILDING	F TO F	FACE TO FACE	МВН	THOUSAND BTU'S PER HOUR	TRANS	TRANSFER
	BATTERY ROOM AIR HANDLING UNIT	FC	FORWARD CURVED	MBTUH	THOUSAND BTU'S PER HOUR	TSP	TOTAL STATIC PRESSURE
	BRITISH THERMAL UNIT	FCD	FLOW CONTROL DEVICE	MCA	MINIMUM CIRCUIT AMPS	TSTAT	THERMOSTAT
	BRITISH THERMAL UNITS PER HOUR	FCU	FAN COIL UNIT	MIN	MINIMUM	ТТ	TEMPERATURE TRANSMITTER
	BUTTERFLY VALVE	FCV	FUEL OIL VENT	MPR	MEDIUM PRESSURE STEAM RETURN	TU	TERMINAL UNIT
СТОС	CENTER TO CENTER	FD	FLOOR DRAIN	MPS	MEDIUM PRESSURE STEAM SUPPLY	TWR	TEMPERED WATER RETURN
CA	COMPRESSED AIR	FDPR	FIRE DAMPER	MTG HGT	MOUNTING HEIGHT	TWS	TEMPERED WATER SUPPLY
	COOLING COIL	FF	FINISH FLOOR	N	NORTH •	TYP	TYPICAL
CF	CHEMICAL FEED	FLA	FULL LOAD AMPS	N/A	NOT APPLICABLE	uc	UNDER CUT
	CUBIC FEET PER HOUR	FLEX	FLEXIBLE	NC	NOISE CRITERA OR NORMALLY CLOSED	UH	UNIT HEATER
	CUBIC FEET PER MINUTE	FLEX CONN	FLEXIBLE CONNECTOR	NIC	NOT IN CONTRACT	V	VOLT, VENT
CHR	CHILLED WATER RETURN	FLR	FLOOR	NO	NUMBER OR NORMALLY OPEN	VAG	VACUUM
	CHILLED WATER SUPPLY	FOB	FLAT ON BOTTOM	NOM	NOMINAL	VAR	VARIABLE
CLG	COOLING OR CEILING	FOF	FUEL OIL FILL	NPSH	NET POSITIVE SUCTION HEAD	VAV	VARIABLE AIR VOLUME
СО	CLEANOUT	FOG	FUEL OIL GAUGE	NTS	NOT TO SCALE	VCD	VOLUME CONTROL DAMPER
COMB	COMBINATION	FOR	FUEL OIL RETURN	OA	OUTSIDE AIR	VE	VOLUME EXTRACTOR
COND	CONDENSER OR CONDENSATE	FOS	FUEL OIL SUPPLY	OAT	OUTSIDE AIR TEMPERATURE	VERT	VERTICAL
CONN	CONNECT OR CONNECTION	FOT	FLAT ON TOP	OBD	OPPOSED BLADE DAMPER	VFD	VARIABLE FREQUENCY DRIVE
CPR	CONDENSATE PUMP RETURN	FPF	FINS PER FOOT	OD	OUTSIDE DIAMETER	VLV	VALVE
CRU	COMPUTER ROOM UNIT	FPI	FINS PER INCH	OSD	OPEN SITE DRAIN	VOL	VOLUME
СТ	COOLING TOWER	FPM	FEET PER MINUTE	Р	PUMP	W	WATT
CU FT	CUBIC FEET	FPS	FEET PER SECOND	PD	PRESSURE DROP	W/	WITH
CU IN	CUBIC INCH	FRK	FOIL REINFORCED KRAFT	PE	PNEUMATIC-ELECTRIC	W/O	WITHOUT
CUH	CABINET UNIT HEATER	FRP	FIBERGLASS REINFORCED PLASTIC	PG	PRESSURE GAUGE	WB	WET BULB
Cv	COEFFICIENT, VALVE FLOW	FS	FLOW SWITCH	PH	PHASE	WG	WATER GAUGE
CW	COLD WATER (CITY)	FT	FEET OR FOOT	PLUM	PLUMBING	WP	WATERPROOF, WEATHERPROOF
CWR	CONDENSER WATER RETURN (FROM COND)	FTR	FIN TUBE RADIATION	PNL	PANEL	WT	WEIGHT
cws	CONDENSER WATER SUPPLY (TO COND)	FURN	FURNISH OR FURNACE	PP	TEMPERATURE/PRESSURE TEST PORT		
D	DRAIN	G	GAS	PR	PRESSURE REGULATOR		
DB	DRY BULB	G	GUIDE	PRESS	PRESSURE		
•	DECIBELS TO "A" REFERENCE	GA	GAUGE	PRV	PRESSURE REDUCING VALVE		
		1	GALLON	PS	PRESSURE SWITCH		
DBA	DRY BULB TEMPERATURE	GAL	_	1	DOLINDO DED COLLADE FOOT		
DBA DBT		GALV GALV	GALVANIZED	PSF	POUNDS PER SQUARE FOOT		·
DBA DBT DC	DRY BULB TEMPERATURE	+	GALVANIZED GALLONS PER DAY	PSF PSI	POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH		
DBA DBT DC DC	DRY BULB TEMPERATURE DIRECT CURRENT	GALV					
DBA DBT DC DC DCF	DRY BULB TEMPERATURE DIRECT CURRENT ON CENTER	GALV GPD	GALLONS PER DAY	PSI	POUNDS PER SQUARE INCH		
DBA DBT DC DC DCF DCP	DRY BULB TEMPERATURE DIRECT CURRENT ON CENTER DRY-COOLER FAN	GALV GPD GPH	GALLONS PER DAY GALLONS PER HOUR	PSI PVC	POUNDS PER SQUARE INCH POLYVINYL CHLORIDE		
DBA DBT DC DC DCF DCP DDC	DRY BULB TEMPERATURE DIRECT CURRENT ON CENTER DRY-COOLER FAN DATA CONTROL PANEL	GALV GPD GPH GPM GR/LB	GALLONS PER DAY GALLONS PER HOUR GALLON PER MINUTE GRAINS OF MOISTURE PER LB OF DRY AIR	PSI PVC QTY RA	POUNDS PER SQUARE INCH POLYVINYL CHLORIDE QUANTITY RETURN AIR		
DBA DBT DC DC DCF DCP DDC DEG	DRY BULB TEMPERATURE DIRECT CURRENT ON CENTER DRY-COOLER FAN DATA CONTROL PANEL DIRECT DIGITAL CONTROL DEGREE	GALV GPD GPH GPM GR/LB H & V	GALLONS PER DAY GALLONS PER HOUR GALLON PER MINUTE GRAINS OF MOISTURE PER LB OF DRY AIR HEATING AND VENTILATING	PSI PVC QTY RA RAD	POUNDS PER SQUARE INCH POLYVINYL CHLORIDE QUANTITY RETURN AIR RADLATION		
DBA DBT DC DC DCF DCP DDC DEG	DRY BULB TEMPERATURE DIRECT CURRENT ON CENTER DRY-COOLER FAN DATA CONTROL PANEL DIRECT DIGITAL CONTROL DEGREE PRESSURE DROP	GALV GPD GPH GPM GR/LB H & V H2O	GALLONS PER DAY GALLONS PER HOUR GALLON PER MINUTE GRAINS OF MOISTURE PER LB OF DRY AIR HEATING AND VENTILATING WATER	PSI PVC QTY RA RAD RAF	POUNDS PER SQUARE INCH POLYVINYL CHLORIDE QUANTITY RETURN AIR RADLATION RETURN AIR FANS		
DBA DBT DC DC DCF DCP DDC DEG DELTA P	DRY BULB TEMPERATURE DIRECT CURRENT ON CENTER DRY-COOLER FAN DATA CONTROL PANEL DIRECT DIGITAL CONTROL DEGREE PRESSURE DROP DOOR GRILLE	GALV GPD GPH GPM GR/LB H & V H2O HC	GALLONS PER DAY GALLONS PER HOUR GALLON PER MINUTE GRAINS OF MOISTURE PER LB OF DRY AIR HEATING AND VENTILATING WATER HEATING COIL	PSI PVC QTY RA RAD RAF RC	POUNDS PER SQUARE INCH POLYVINYL CHLORIDE QUANTITY RETURN AIR RADLATION RETURN AIR FANS RECEIVER CONTROLLER		
DBA DBT DC DC DCF DCP DDC DEG DELTA P DG DHC	DRY BULB TEMPERATURE DIRECT CURRENT ON CENTER DRY-COOLER FAN DATA CONTROL PANEL DIRECT DIGITAL CONTROL DEGREE PRESSURE DROP DOOR GRILLE DUCT HEATING COIL	GALV GPD GPH GPM GR/LB H & V H2O HC	GALLONS PER DAY GALLONS PER HOUR GALLON PER MINUTE GRAINS OF MOISTURE PER LB OF DRY AIR HEATING AND VENTILATING WATER HEATING COIL HUB DRAIN	PSI PVC QTY RA RAD RAF RC RCVR	POUNDS PER SQUARE INCH POLYVINYL CHLORIDE QUANTITY RETURN AIR RADLATION RETURN AIR FANS RECEIVER CONTROLLER RECEIVER		
DBA DBT DC DC DCF DCP DDC DEG DELTA P DG DHC DI	DRY BULB TEMPERATURE DIRECT CURRENT ON CENTER DRY-COOLER FAN DATA CONTROL PANEL DIRECT DIGITAL CONTROL DEGREE PRESSURE DROP DOOR GRILLE	GALV GPD GPH GPM GR/LB H & V H2O HC	GALLONS PER DAY GALLONS PER HOUR GALLON PER MINUTE GRAINS OF MOISTURE PER LB OF DRY AIR HEATING AND VENTILATING WATER HEATING COIL	PSI PVC QTY RA RAD RAF RC	POUNDS PER SQUARE INCH POLYVINYL CHLORIDE QUANTITY RETURN AIR RADLATION RETURN AIR FANS RECEIVER CONTROLLER		

GENERAL NOTES (APPLIES TO ALL SHEETS):

- 1. COORDINATE BUILDING DOWNTIME WITH CONTRACTING OFFICER. IF BUILDING HEATING SYSTEM IS DOWN FOR MORE THAN 8 HOURS, PROVIDE TEMPORARY HEATING FOR BOTH BUILDING HEAT
- AND DOMESTIC HOT WATER.
- 2. VERIFY BUILDING OPERATING TEMPERATURES AND ADAPT NEW SYSTEM TO EXISTING SYSTEM. 3. FOLLOW STEAM AND CONDENSATE BRANCHES 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 LINES BETWEEN STEAM PIT AND BUILDING.
- 4. GAS REGULATORS FOR EACH BUILDING WILL BE PROVIDED BY THE OTHERS. SEE PLANS FOR REGULATOR CAPACITY REQUIREMENTS.

DISCLOSURE OF INFORMATION Contractor shall comply as follows:

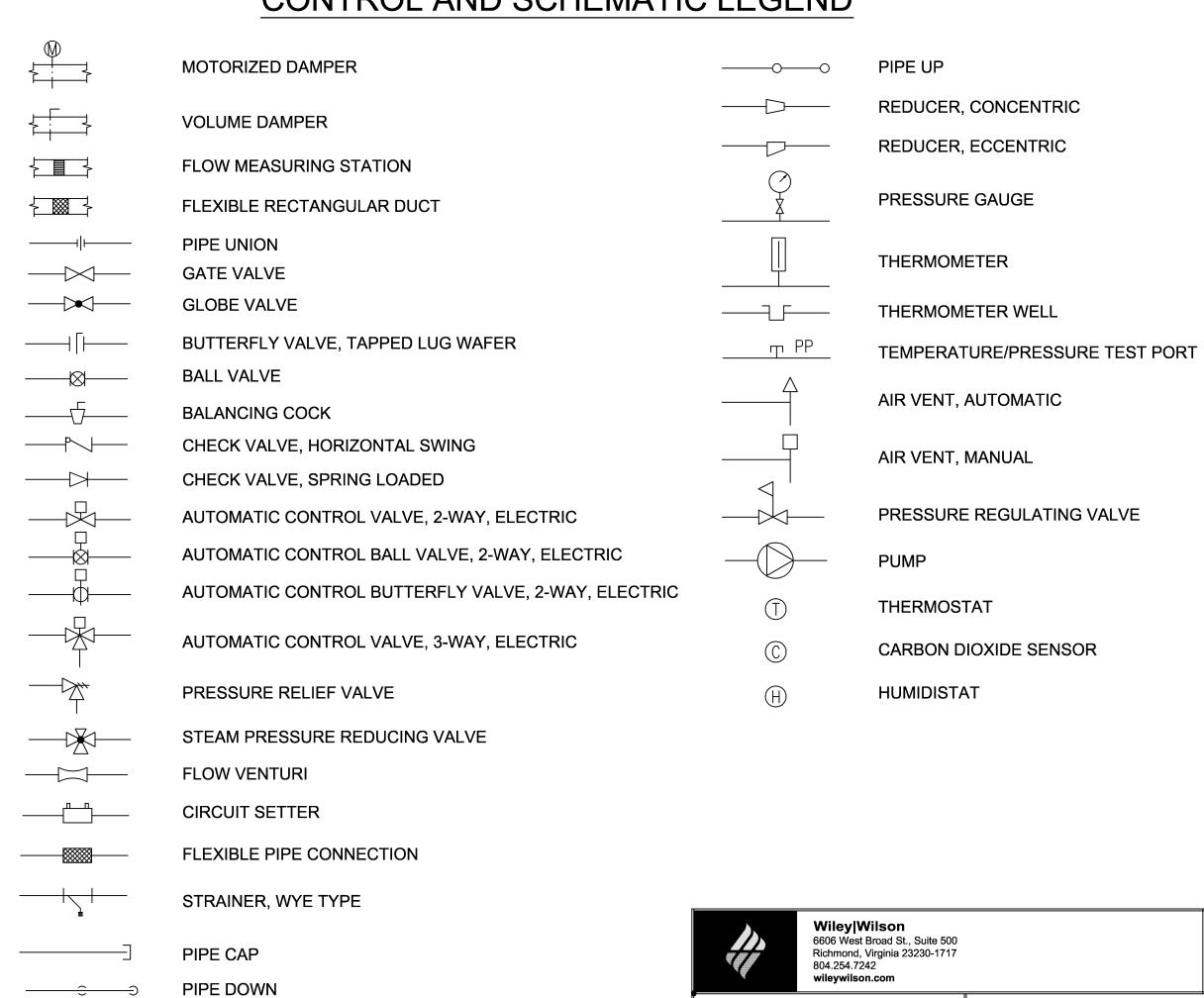
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ME	MECHANICAL LEGEND				
(APPLIES TO ALL MECHANICAL SHEETS)					
c—	PIPE TURN DOWN				
<u> </u>	PIPE TURN UP				
—— HWS ——	HEATING WATER SUPPLY				
	HEATING WATER RETURN				
—— CHS ——	CHILLED WATER SUPPLY				
— CHR —	CHILLED WATER RETURN				
G	NATURAL GAS				
T	DDC ROOM THERMOSTAT (MOUNT 60" AFF)				
	DIRECTION OF FLOW				
	FLEXIBLE PIPE CONNECTION				
[FLOW SWITCH				
	PIPE SENSOR				
→	CHECK VALVE				
40	SOLENOID VALVE				
+_+	STRAINER				
	CIRCUIT SETTER				

───	GATE VALVE
	BUTTERFLY VALVE
——XI——	BALL VALVE
	CONCENTRIC REDUCER
-0-	PUMP
	DUCT MANUAL VOLUME DAMPER
Z	DUCT ELBOW WITH TURNING VANES
	RETURN AIR DUCT
	SUPPLY AIR DUCT
	EXHAUST AIR DUCT

CONTROL AND SCHEMATIC LEGEND



IM

SWL

JHE

DATE

DATE SIZE CODE IDENT NO.

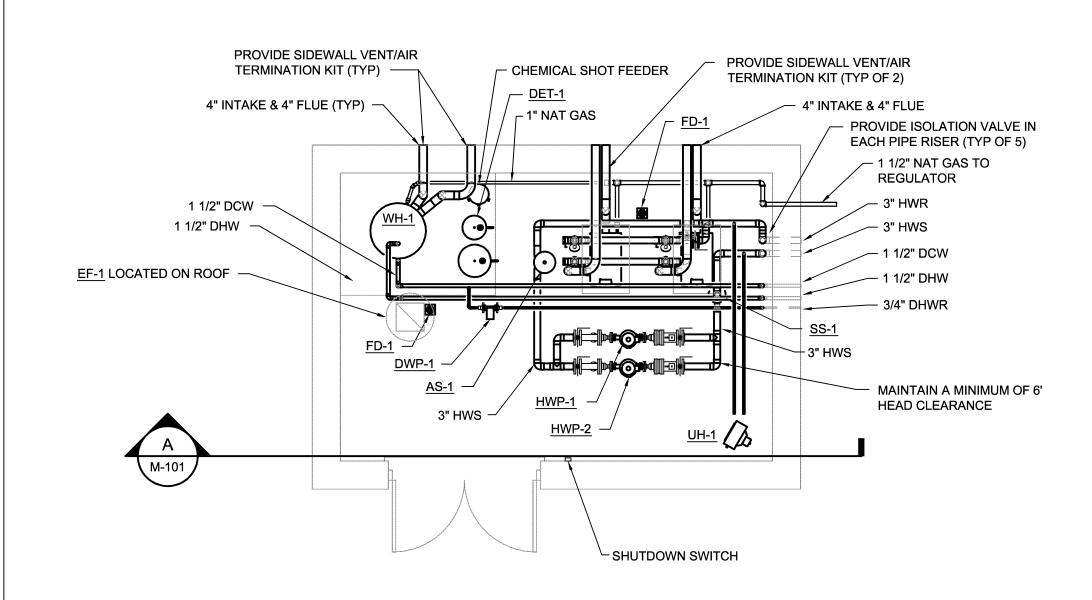
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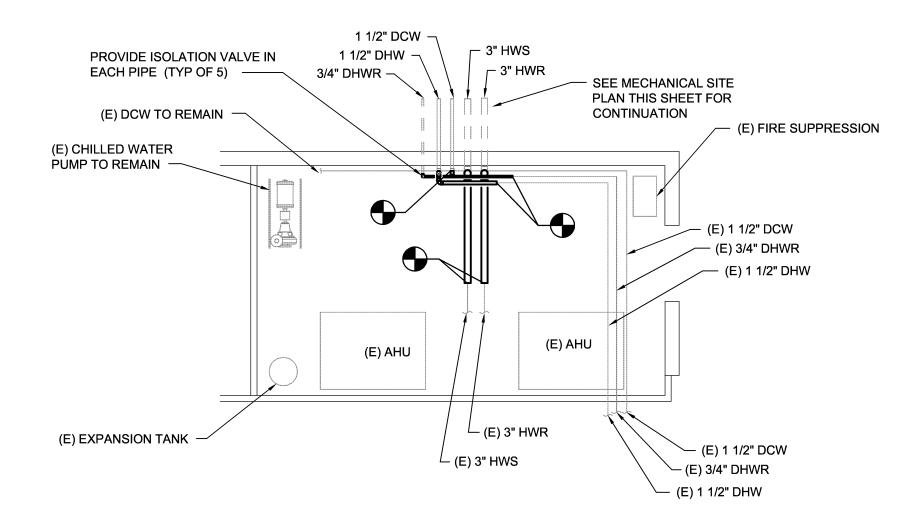
SUBMITTED BY:

SATISFACTORY TO

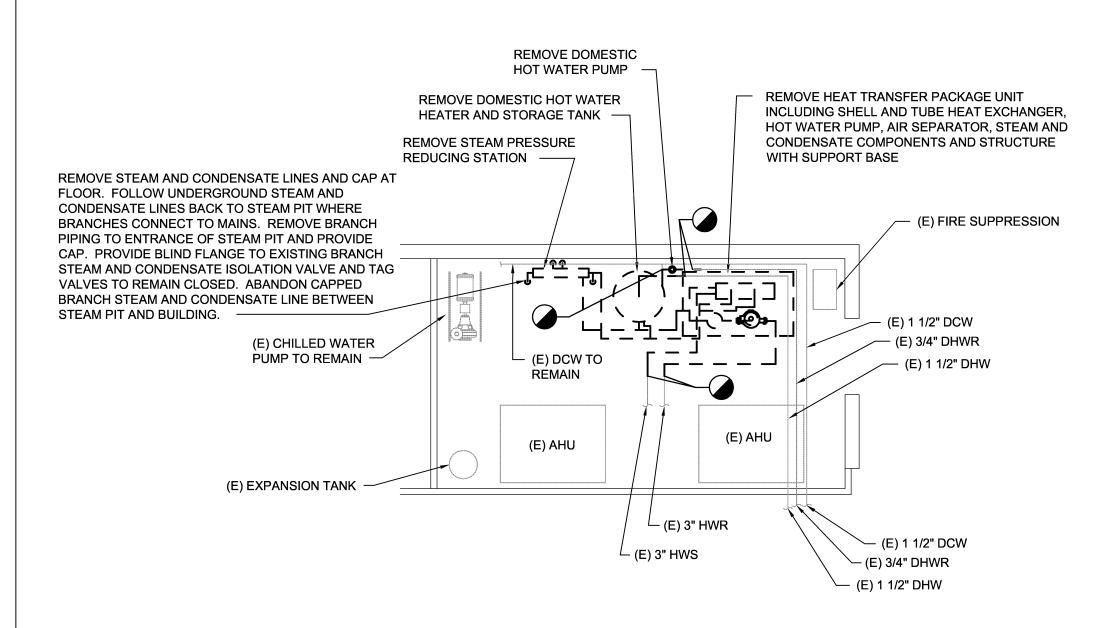
APPROVED: PWO OR OICC

DESIGN DIR.





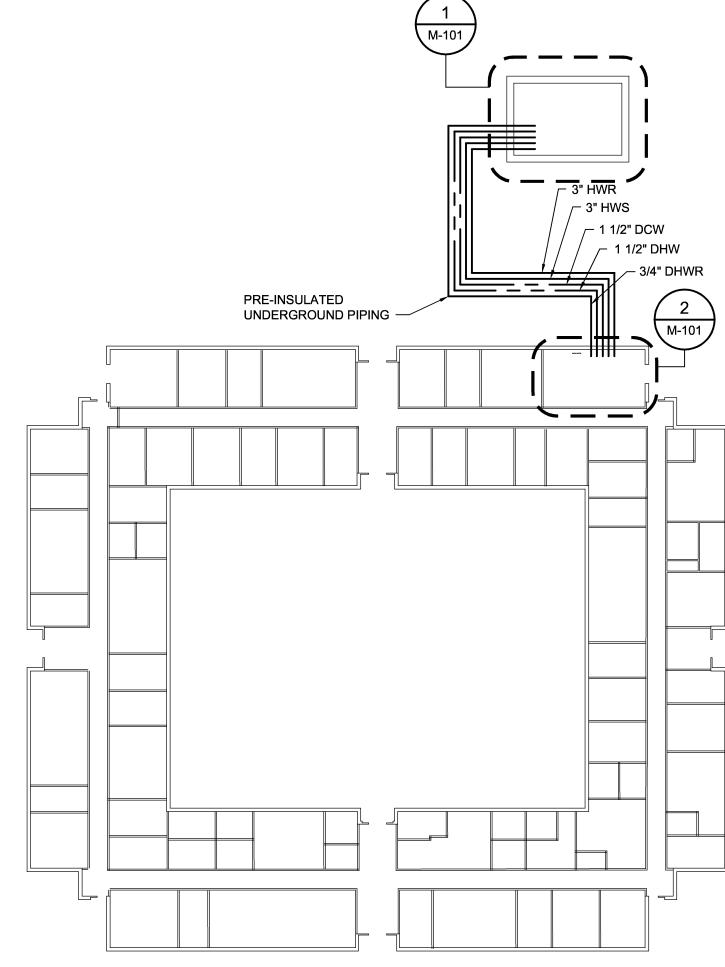


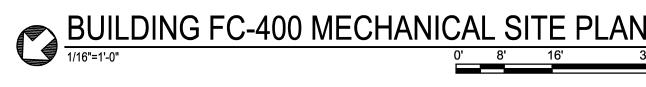




— 4" INTAKE PROVIDE BIRD SCREEN -4" FLUE 1" NAT GAS - ISOLATION VALVE (TYP) 1 1/2" DCW └- 1 1/2" NATURAL GAS TO REGULATOR OUTSIDE 4" HOUSE **KEEPING PAD** - SEE MECHANICAL SITE PLAN THIS SHEET FOR CONTINUATION

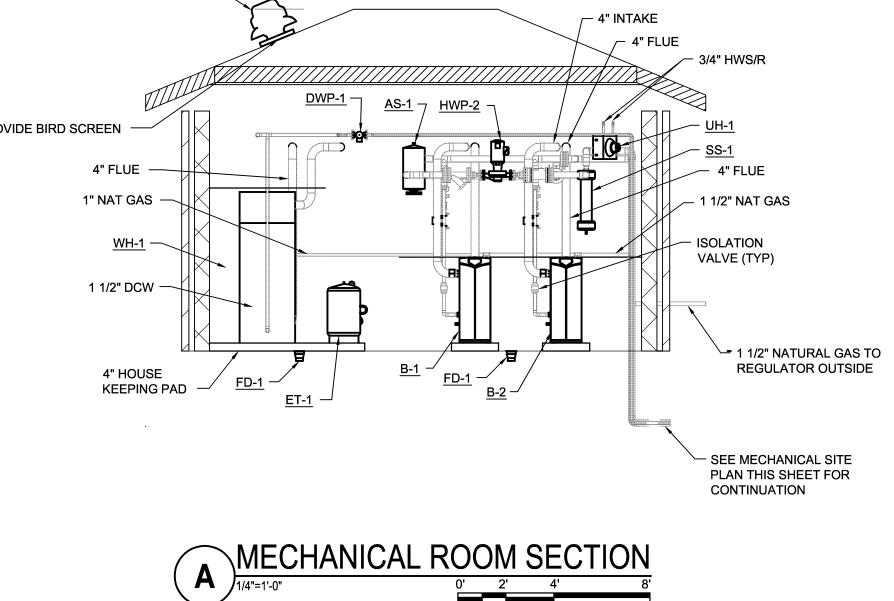


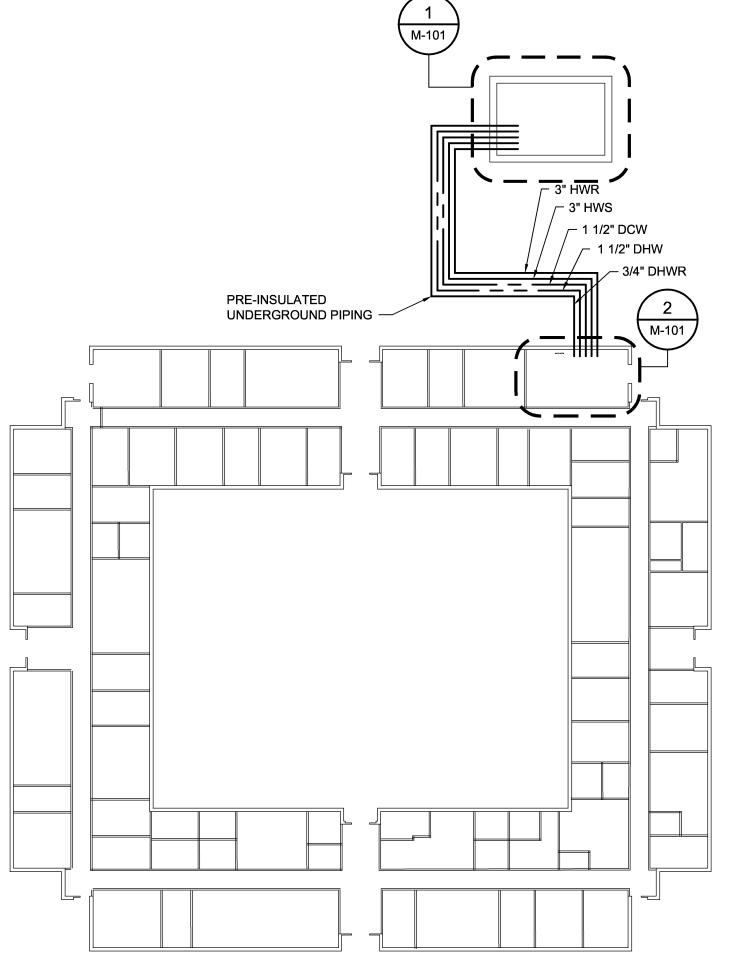




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NOTE: SEE CIVIL FOR EXACT LOCATION OF BUILDING

DEMOLITION NOTES

NATURAL GAS NOTE:

1. TOTAL CONNECTED

NATURAL GAS DEMAND

FOR THIS BUILDING IS

1,200 MBH AT 10 IN-H20.

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.

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

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 HEATER, 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.

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

7. STORE DOMESTIC HOT WATER AT 140 DEG F AND TEMPER TO 110 DEG F BEFORE BEING SUPPLIED TO BUILDING.

8. 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)	367	367			
MINIMUM TURN DOWN RATIO	5:1	5:1			
FLOWRATE (GPM)	21	21			
MAXIMUM PRESSURE DROP (FT_H20)	8	8			
ENTERING WATER TEMPERATURE (DEG F)	160	160			
LEAVING WATER TEMPERATURE (DEG F)	195	195			
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			
BEWARKS LEGEND.	•	•			

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 21 GPM AT 35

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

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)	135	135	5				
TOTAL HEAD (FT-H2O)	100	100	20				
MINIMUM EFFICIENCY (%)	45	45	55				
CONNECTION SIZE	-	-	-				
SUCTION (IN)	2	2	1.5				
DISCHARGE (IN)	2	2	1.5				
MOTOR DATA	-	-	-				
MOTOR FRAME	184JM	184JM	-				
HORSEPOWER	7.5	7.5	-				
RPM	3500	3500	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 2x2x7	80 2x2x7	BOOSTER PL-30				
REMARKS	-	-	1				

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			
MAXIMUM PRESSURE DROP (FT-H20)	23			
COLLECTION CHAMBER CAPACITY (GAL)	1.25			
BASED ON	LAKOS			
MODEL	ILB-0250			

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

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:	<u> </u>			

PREP'D BY DATE APPROVED

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.

AIR SEPARATOR SCHEDULE			
AS-1			
MECH ROOM			
HOT WATER			
3			
BELL & GOSSETT			
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	17.5			
FILL PRESSURE (PSI)	20	60*			
RELEIF VALVE PRESSURE SETTING (PSI)	100	100			
BASED ON	JOHN WOOD COMPANY	AMTROL			
MODEL	JAER-23-607	ST-C SERIES ST-42V-C			

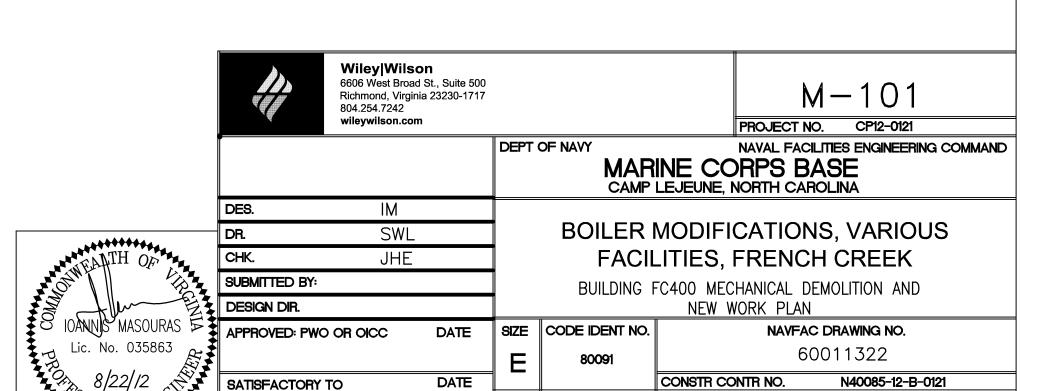
* MATCH DOMESTIC WATER SUPPLY PRESSURE AT THIS LOCATION.

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 H20)	.067			
SELECTION BASE ON	GREENHECK			
ACTUATOR TYPE	120 VAC			
ACTUATOR FAIL POSITION	CLOSED			
MODEL	EAC-601			
REMARKS	1, 2 & 3			

1. SUBMIT COLOR CHART. COLOR TO BE APPROVED BY

SHEET 15 OF 37

2. SEE ARCHITECTURAL PLANS FOR LOCATION. 3. PROVIDE SPRING RETURN CLOSE, POWERED OPEN



BY ACTUATOR.

SCALE: AS SPEC No.

DOMESTIC HOT WATER HEATER SCHEDITIE

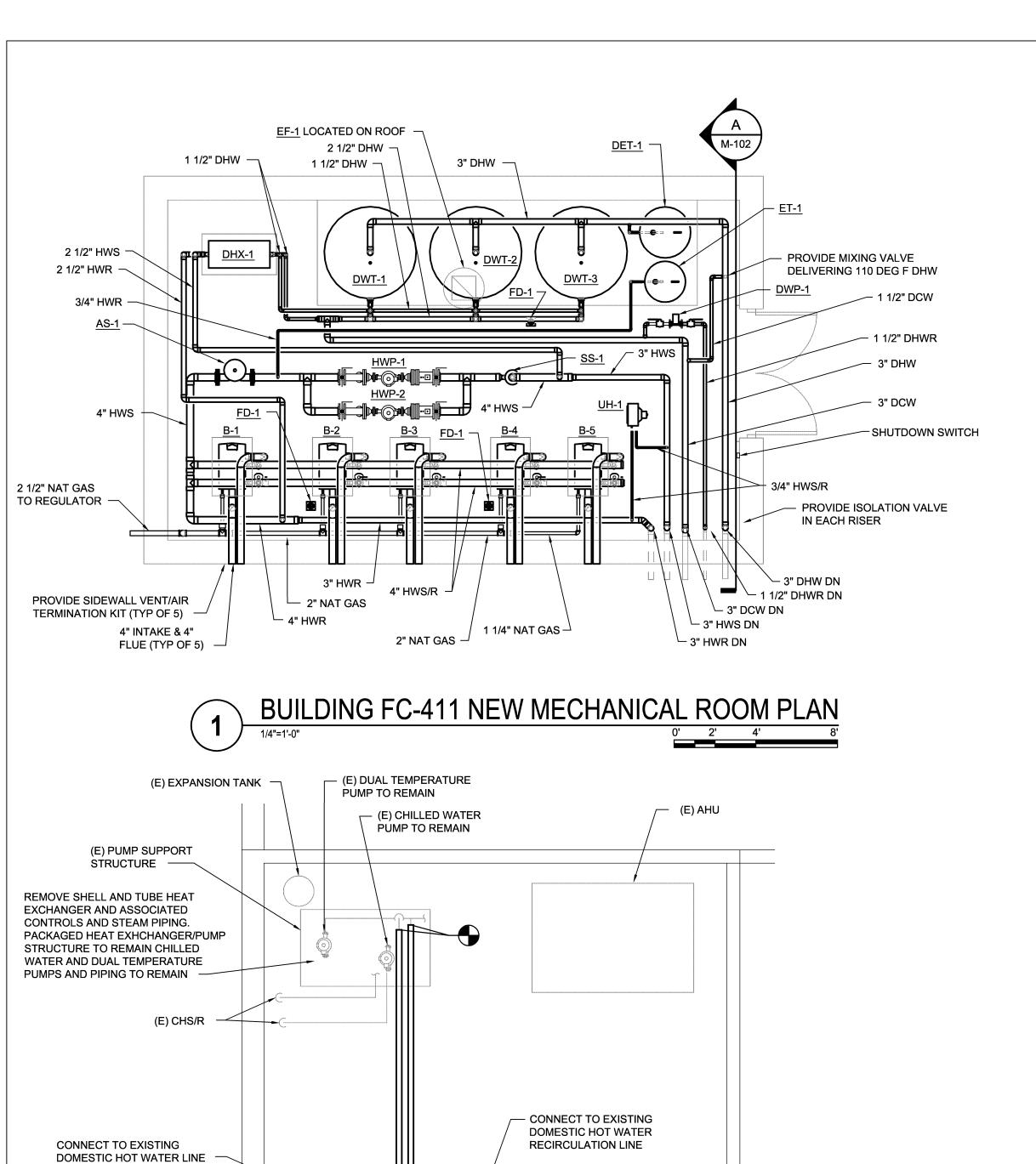
SCHEDULE	
DESIGNATION	WH-1
LOCATION	MECH ROOF
STORAGE (GALLONS)	100
GPH AT 100 DEG F RISE	230
FUEL TYPE	NATURAL GA
MINIMUM INLET GAS PRESSURE (IN. WG.)	4.8
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10.5
GAS INLET CONNECTION (IN)	3/4
INPUT (MBH)	199
VOLTAGE (V)	120
PHASE	1
FREQUENCY (Hz)	60
FLUE GAS STACK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

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.



CONNECT TO EXISTING

DOMESTIC COLD WATER LINE



PROVIDE ISOLATION VALVE

IN EACH RISER (TYP OF 5)

3" DHW DN 1 1/2" DHWR DN -3" DCW DN -

3" HWS DN

DISCLOSURE OF INFORMATION

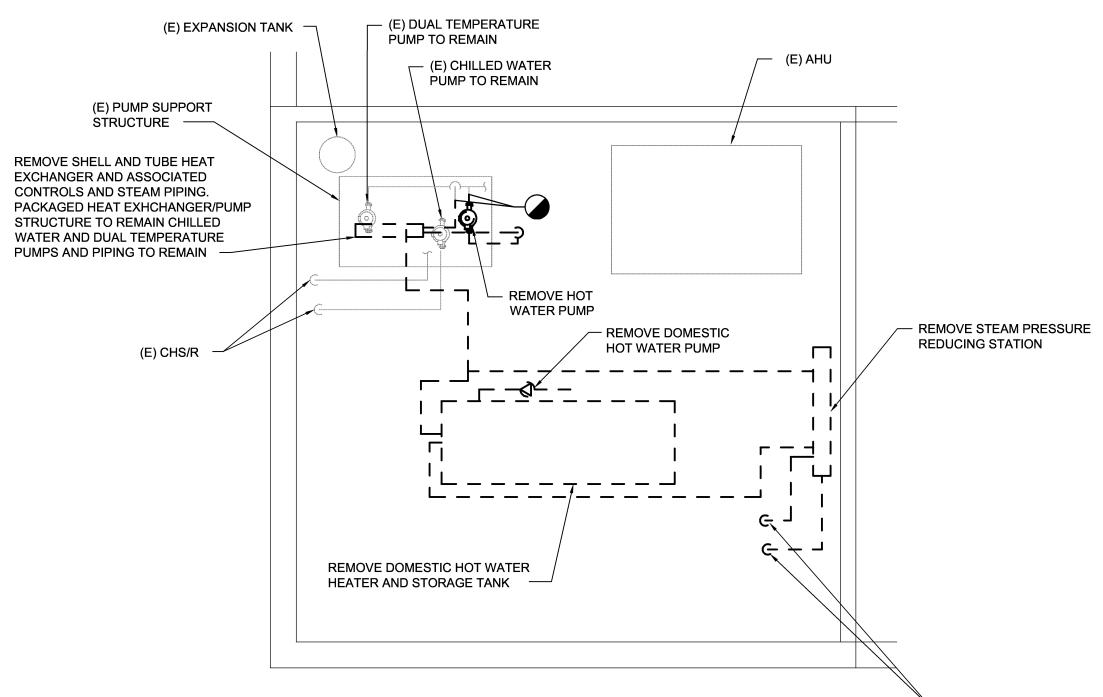
Contractor shall comply as follows:

The Contracting Officer has given prior written approval; or

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

requests for authorization to release through the prime contractor to the Contracting Officer.

3" HWR DN



BUILDING FC-411 MECHANICAL DEMOLITION PLAN

(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-

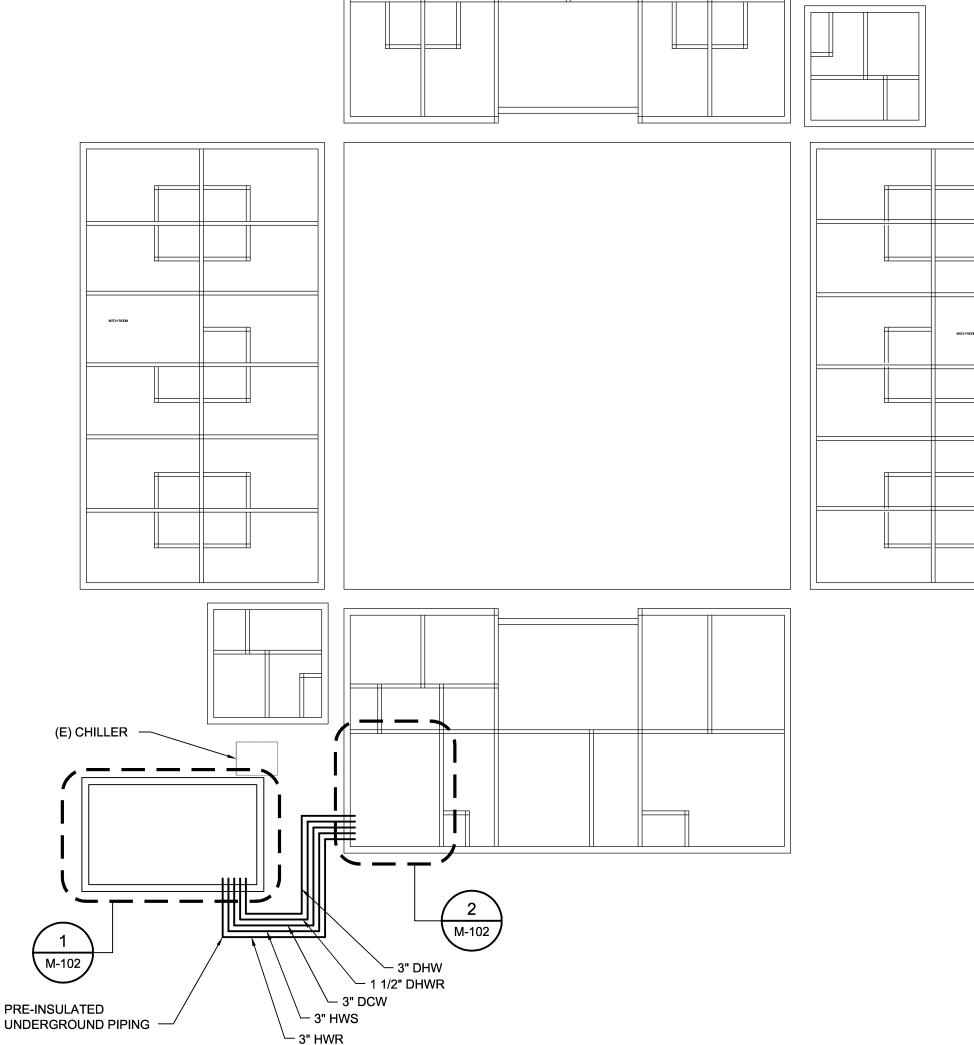
Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the

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

REMOVE STEAM AND CONDENSATE LINES AND CAP AT FLOOR. 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.

PROVIDE BIRD SCREEN 4" HWS/R <u>AS-1</u> -3" DHW — STRAINER CHECK VALVE BOILER PUMP -4" FLUE 2 1/2" DHW 1 1/2" HWS/R ISOLATION VALVE (TYP) SEE MECHANICAL SITE PLAN THIS SHEET FOR — 4" HOUSE CONTINUATION — **KEEPING PAD**



NOTE: SEE CIVIL FOR EXACT LOCATION OF BUILDING

DEMOLITION NOTES

NATURAL GAS NOTE:

1. TOTAL CONNECTED

NATURAL GAS DEMAND

FOR THIS BUILDING IS

2,000 MBH AT 10 IN-H20.

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. 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. REPLACE ALL 76 SHOWER HEADS IN THE BUILDING WITH LOW FLOW, 1.5 GPM SHOWER HEADS. . 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. 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.

INSTALL GAS PIPE INC ACCORDANCE WITH 2012 NORTH CAROLINA FUEL GAS CODE. 6. NOTE TO GOVERNMENT PROJECT MANAGER/CONSTRUCTION MANAGER: REVIEW CONTRACT 12-0147 (REPLACE DDC CONTROLS IN FRENCH CREEK FC411, FC412, FC413, FC415 & FC416) TO COORDINATE

CONTROLS WORK IF POSSIBLE. 7. PROVIDE HOSE BIB AND 1/2" CONNECTION FOR FILLING IN NEW MECHANICAL ROOM.

8. 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. 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.

PUMP SCHEDULE

HOT WATER

HOT WATER

BELL & GOSSETT

80 2x2x9-1/2B

1/60

115

MODINE

HC-18 S 01

Wiley|Wilson 6606 West Broad St., Suite 500

Richmond, Virginia 23230-1717 804.254.7242

IM

SATISFACTORY TO

SWL

OMESTIC HOT

WATER

MECH ROOM

INLINE

15 20

1.5

1.5

3300

115

BELL & GOSSETT

BOOSTER PL-36

10. STORE DOMESTIC HOT WATER AT 140 DEG F AND TEMPER TO 110 DEG F BEFORE BEING SUPPLIED TO BUILDING. 11. PROVIDE APPURTENANCES TO COMPLY WITH ASME CSD-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUT DOWN SWITCH LOCATED ADJACENT TO EXIT DOOR.

12. VERIFY EXISTING SYSTEM OPERATING WATER TEMPERATURES AND MATCH CONDITIONS.

E	BOILER SC	CHEDULE			
DESIGNATION	B-1	B-2	B-3	B-4	B-5
LOCATION	MECH ROOM				
FUEL TYPE	NATURAL GAS				
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4	4	4	4
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10	10	10	10
GAS INLET CONNECTION (IN)	1	1	1	1	1
INPUT (MBH)	399	399	399	399	399
OUTPUT (MBH)	367	367	367	367	367
MINIMUM TURN DOWN RATIO	5:1	5:1	5:1	5:1	5:1
FLOWRATE (GPM)	21	21	21	21	21
MAXIMUM PRESSURE DROP (FT_H20)	8	8	8	8	8
ENTERING WATER TEMPERATURE (DEG F)	120	120	120	120	120
LEAVING WATER TEMPERATURE (DEG F)	155	155	155	155	155
MINIMUM OPERATING PRESSURE (PSI)	30	30	30	30	30
VOLTAGE (V)	120	120	120	120	120
PHASE	1	1	1	1	1
FREQUENCY (Hz)	60	60	60	60	60
TOTAL OPERATING AMPS	1.5	1.5	1.5	1.5	1.5
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4	4	4	4
SELECTION BASED ON	LOCHINVAR	LOCHINVAR	LOCHINVAR	LOCHINVAR	LOCHINVAR
MODEL REMARKS	KB-400	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	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 21 GPM AT 35 DELTA T.

3. PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE,

SELECTION BASED ON (MFGR)

4. PROVIDE BOILERS WHICH ARE AT LEAST 94% EFFICIENT BASED ON BTS-2000, REV 06.07 CONDITIONS.

DESIGNATION

SERVICE

		LOCATION	MECH ROOM	MECH ROOM
		TYPE	INLINE	INLINE
		PUMP DATA	-	-
OOLID OEDADAT	<u> </u>	FLOW (GPM)	105	105
SOLID SEPARAT	OR	TOTAL HEAD (FT-H2O)	65	65
SCHEDULE		MINIMUM EFFICIENCY (%)	50	50
DESIGNATION	SS-1	CONNECTION SIZE	-	-
LOCATION	MECH ROOM	SUCTION (IN)	2	2
SERVICE	HOT WATER	DISCHARGE (IN)	2	2
MAXIMUM PRESSURE DROP (FT-H20)	28	MOTOR DATA	-	-
COLLECTION CHAMBER CAPACITY (GAL)	0.8	MOTOR FRAME	185JM	185JM
BASED ON	LAKOS	HORSEPOWER	5	5
MODEL	ILB-0200	RPM	1750	1750
	•	VOLTS	208	208

HEAT EXCHANGER SCHEDULE			
DESIGNATION	DHX-1		
TYPE	BRAZED PLATE FRAME HEAT EXCHANGER		
LOCATION	MECH ROOM		
BOILER HOT WATER INPUT (MBH)	750		
BOILER HOT WATER FLOW (GPM)	39		
BOILER WATER SUPPLY TEMP (DEG F)	155		
BOILER WATER RETURN TEMP (DEG F)	115		
RECOVERY RATE TEMP RISE (DEG F)	100		
RECOVERY RATE GPH	900		
VOLTS	120		
PHASE	1		
FREQUENCY (Hz)	60		
BASED ON	CEMLINE		
MODEL	BPH-750		

REMARKS LEGEND 1. PROVIDE DOUBLE WALL PLATE FRAME HEAT EXCHANGER, INTEGRATED TANK CIRCULATION PUMP, HWS CONTROL VALVE, TANK SENSORS AND INTEGRATED CONTROL PANEL TO PROVIDE

REMARKS

DESIGNATION

LOCATION

BASED ON

REMARKS

MODEL

STORAGE (GALLONS)

TANK DIAMETER (IN)

VERTICAL HEIGHT (IN)

ASME PRESSURE RATING (PSI)

2. PROVIDE PRESSURE AND TEMPERATURE TEST PORTS ON THE SUPPLY AND RETURN SIDE OF ALL DOMESTIC HOT WATER BUILDING HOT WATER PLATE AND FRAME HEAT EXCHANGERS 3. PROVIDE 3-WAY CONTROL VALVE AND AUTOMATIC FLOW CONTROL VALVE ON BOILER SIDE OF HEAT EXCHANGER. 4. PROVIDE TAPS AND SERVICE VALVES ON DOMESTIC SIDE OF HEAT EXCHANGER TO ALLOW FOR ACID CLEANING.

125

48

88

SYSTEM TEMPERATURES, ALARM CONTACTS, CALL FOR HOT

WATER, CIRCULATION CONTROL, AND SECONDARY SOLENOID

REMARKS LEGEND: 1. BRONZE FITTED PUMP FOR DOMESTIC WATER SERVICE. PROVIDE AQUASTAT CONTROL. 2. HWP-1 AND HWP-2 MUST ACCOMMODATE THE FLOW AND HEAD OF THE SYSTEM DURING SUMMER AND WINTER CONDITIONS. PUMP MUST BE SELECTED TO OPERATE AT STABLE CONDITIONS AT THE ABOVE FLOW AND HEAD AS WELL AS AT 39 GPM. UNIT HEATER SCHEDULE DESIGNATION UH-1 LOCATION MECH ROOM AIRFLOW (CFM) 340 HEATING CAPACITY (MBH) ENTERING AIR TEMPERATURE (DEG F) LEAVING AIR TEMPERATURE (DEG F) ENTERING WATER TEMPERATURE (DEG F) 155 FLOW RATE (GPM) WATER PRESSURE DROP (FT W.G.)

BELL & GOSSETT

80 2x2x9-1/2B

REMARKS LEGEND

1. PROVIDE UNIT MOUNTED THERMOSTAT.

FAN SCHEDULE		
EF-1		
EXHAUST		
MECH ROOM		
CENTRIFUGAL		
700		
.15		
1237		
DIRECT		
1/6		
1725		
115		
1		
60		
GREENHECK		
G-095-VG		
1, 2 & 3		

PREP'D BY DATE APPROVED

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.

AIR SEPARATOR S	CHEDULE
DESIGNATION	AS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
LINE SIZE (IN)	4
BASED ON	BELL & GOSSETT
MODEL	ROLAIRTROL

EXPANSION	TANK SCH	HEDULE
DESIGNATION	ET-1	DET-1
SERVICE	HEATING WATER	DOMESTIC HOT WATER
LOCATION	MECH ROOM	MECH ROOM
TYPE	BLADDER	REPLACEABLE BLADDER
TANK VOLUME (GAL)	60	211
FILL PRESSURE (PSI)	20	60*
RELEIF VALVE PRESSURE SETTING (PSI)	100	100
BASED ON	JOHN WOOD COMPANY	AMTROL
MODEL	JAER-23-607	ST-C SERIES ST-452-C

L-1 INTAKE MECH ROOM COMBINATION LOUVER/DAMPER 8 CHANNEL 36

LOUVER SCHEDULE

DEPTH (IN) FRAME TYPE WIDTH (IN) 16 AIRFLOW (CFM) 700 FREE AREA (SF) .85 FREE AREA VELOCITY (FPM) 822 PRESSURE DROP (IN H20) .085 SELECTION BASE ON GREENHECK ACTUATOR TYPE 120 VAC **ACTUATOR FAIL POSITION** CLOSED 1, 2 & 3

REMARKS LEGEND 1. SUBMIT COLOR CHART. COLOR TO BE APPROVED BY

M - 102

SHEET 16 OF 37

PROJECT NO. CP12-0121

2. SEE ARCHITECTURAL PLANS FOR LOCATION. 3. PROVIDE SPRING RETURN CLOSE, POWERED OPEN

DWT-3 658 125 48 88 LOCHINVAR SUBMITTED BY: LOCK-TEMP DESIGN DIR. APPROVED: PWO OR OICC Lic. No. 035863

MOTOR POWER (HP)

VOLTAGE (V)

BASED ON

REMARKS

MODEL

FREQUENCY (Hz)

DEPT OF NAVY NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA **BOILER MODIFICATIONS, VARIOUS** FACILITIES, FRENCH CREEK JHE BUILDING FC411 MECHANICAL DEMOLITION AND NEW WORK PLAN

SCALE: AS SPEC No.

DATE SIZE CODE IDENT NO. NAVFAC DRAWING NO. 60011323 DATE CONSTR CONTR NO. N40085-12-B-0121

DOMESTIC HOT WATER STORAGE TANK SCHEDULE VERTICAL WITH INLET VERTICAL WITH INLET MECH ROOM MECH ROOM 658 LOCHINVAR LOCK-TEMP

REMARKS LEGEND 1. PROVIDE GLASS LINED VERTICAL DOMESTIC HOT WATER STORAGE TANK WITH RING BASE, 2" TOP OUTLET, 1 1/4" T&P TOP CONNECTION, 2" SIDE BOTTOM HEATING INLET, 2" SIDE BOTTOM HEATING OUTLET, 1" BOTTOM DRAIN, 3/4" SIDE AQUASTAT/SENSOR TAPPING. SEE SPECIFICATIONS FOR REQUIRED FIELD INSULATION, R-12.5 MINIMUM.

VERTICAL WITH INLET

BAFFLE

MECH ROOM

658

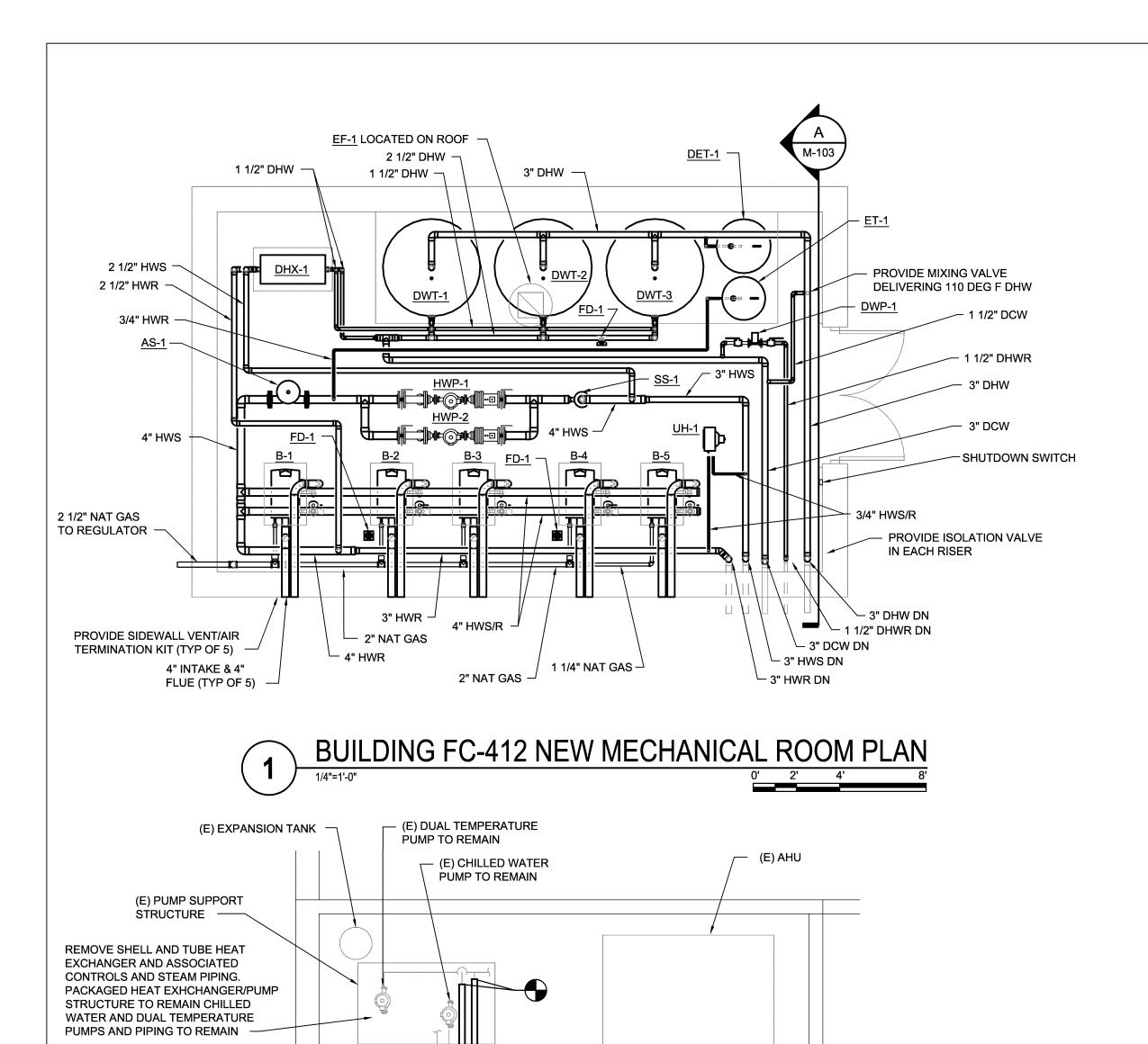
125

88

LOCHINVAR

LOCK-TEMP

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



 CONNECT TO EXISTING DOMESTIC HOT WATER RECIRCULATION LINE

> CONNECT TO EXISTING DOMESTIC COLD WATER LINE

> > - REMOVE STEAM PRESSURE

REMOVE STEAM AND CONDENSATE LINES AND CAP AT

CONDENSATE ISOLATION VALVE AND TAG VALVES TO

BRANCHES CONNECT TO MAINS. REMOVE BRANCH PIPING

TO ENTRANCE OF STEAM PIT AND PROVIDE CAP. PROVIDE

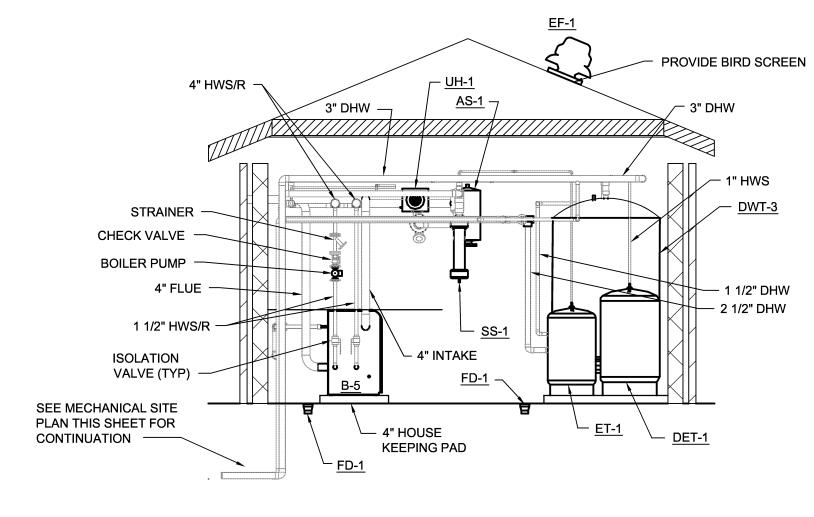
REMAIN CLOSED. ABANDON CAPPED BRANCH STEAM AND

CONDENSATE LINE BETWEEN STEAM PIT AND BUILDING.

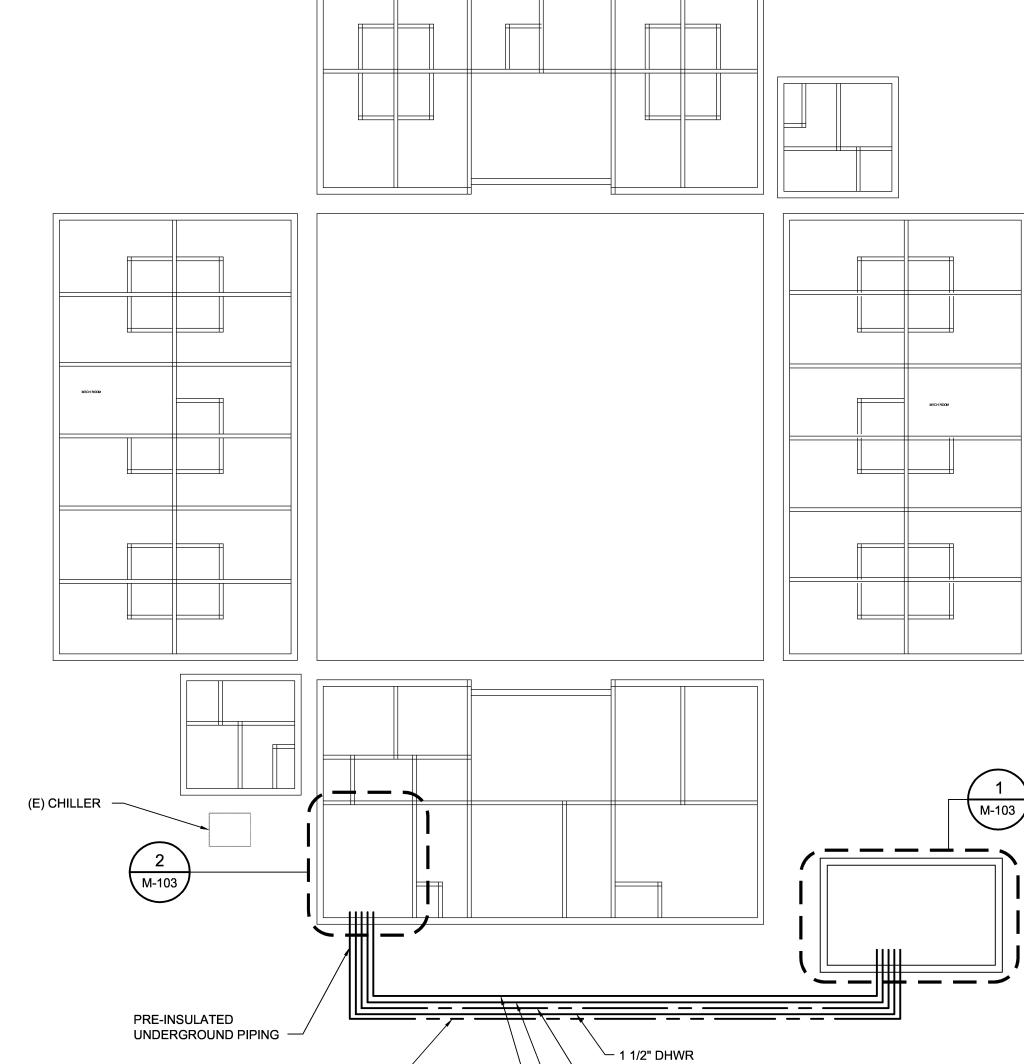
FLOOR. FOLLOW UNDERGROUND STEAM AND CONDENSATE LINES BACK TO STEAM PIT WHERE

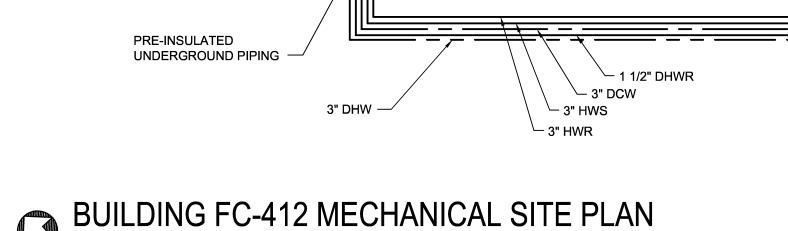
BLIND FLANGE TO EXISTING BRANCH STEAM AND

REDUCING STATION









NOTE: SEE CIVIL FOR EXACT LOCATION OF BUILDING

BUILDING FC-412 MECHANICAL DEMOLITION PLAN

REMOVE DOMESTIC HOT WATER

HEATER AND STORAGE TANK —

3" DHW DN

(E) DUAL TEMPERATURE

— (E) CHILLED WATER

PUMP TO REMAIN

BUILDING FC-412 EXISTING MECHANICAL ROOM PLAN

- REMOVE HOT

WATER PUMP

REMOVE DOMESTIC

HOT WATER PUMP

PROVIDE ISOLATION VALVE

IN EACH RISER (TYP OF 5)

(E) EXPANSION TANK

(E) PUMP SUPPORT

STRUCTURE -

PACKAGED HEAT EXHCHANGER/PUMP STRUCTURE TO REMAIN CHILLED WATER AND DUAL TEMPERATURE PUMPS AND PIPING TO REMAIN

(E) CHS/R

REMOVE SHELL AND TUBE HEAT

EXCHANGER AND ASSOCIATED

CONTROLS AND STEAM PIPING.

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-The Contracting Officer has given prior written approval; or

CONNECT TO EXISTING DOMESTIC HOT WATER LINE

- 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 ZURN MODEL 415B WITH 6" NICKEL BRONZE STRAINER AND PROSET TRAPGUARD

DEMOLITION NOTES

NATURAL GAS NOTE:

1. TOTAL CONNECTED

NATURAL GAS DEMAND

FOR THIS BUILDING IS

2,000 MBH AT 10 IN-H20.

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. 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. REPLACE ALL 76 SHOWER HEADS IN THE BUILDING WITH LOW FLOW, 1.5 GPM SHOWER HEADS. 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. 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.

INSTALL GAS PIPE INC ACCORDANCE WITH 2012 NORTH CAROLINA FUEL GAS CODE. 6. NOTE TO GOVERNMENT PROJECT MANAGER/CONSTRUCTION MANAGER: REVIEW CONTRACT 12-0147 (REPLACE DDC CONTROLS IN FRENCH CREEK FC411, FC412, FC413, FC415 & FC416) TO COORDINATE

CONTROLS WORK IF POSSIBLE. PROVIDE HOSE BIB AND 1/2" CONNECTION FOR FILLING IN NEW MECHANICAL ROOM.

8. 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. 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.

10. STORE DOMESTIC HOT WATER AT 140 DEG F AND TEMPER TO 110 DEG F BEFORE BEING SUPPLIED TO BUILDING.

11. PROVIDE APPURTENANCES TO COMPLY WITH ASME CSD-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUT DOWN SWITCH LOCATED ADJACENT TO EXIT DOOR. 12. VERIFY EXISTING SYSTEM OPERATING WATER TEMPERATURES AND MATCH CONDITIONS.

	BOILER SO	CHEDULE			
DESIGNATION	B-1	B-2	B-3	B-4	B-5
LOCATION	MECH ROOM				
FUEL TYPE	NATURAL GAS				
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4	4	4	4
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10	10	10	10
GAS INLET CONNECTION (IN)	1	1	1	1	1
INPUT (MBH)	399	399	399	399	399
OUTPUT (MBH)	367	367	367	367	367
MINIMUM TURN DOWN RATIO	5:1	5:1	5:1	5:1	5:1
FLOWRATE (GPM)	21	21	21	21	21
MAXIMUM PRESSURE DROP (FT_H20)	8	8	8	8	8
ENTERING WATER TEMPERATURE (DEG F)	120	120	120	120	120
LEAVING WATER TEMPERATURE (DEG F)	155	155	155	155	155
MINIMUM OPERATING PRESSURE (PSI)	30	30	30	30	30
VOLTAGE (V)	120	120	120	120	120
PHASE	1	1	1	1	1
FREQUENCY (Hz)	60	60	60	60	60
TOTAL OPERATING AMPS	1.5	1.5	1.5	1.5	1.5

FAN SCHEDULE		
DESIGNATION	EF-1	
USAGE	EXHAUST	
SERVES ROOM(S)	MECH ROOM	
DESCRIPTION	CENTRIFUGAL	
FAN DATA		
AIRFLOW (SCFM)	700	
TOTAL SP (IN-H2O)	.15	
RPM	1237	
DRIVE TYPE	DIRECT	
MOTOR DATA		
HORSEPOWER	1/6	
RPM	1725	
VOLTS	115	
PHASE	1	
HERTZ	60	
SELECTION BASED ON	GREENHECK	
MODEL	G-095-VG	
REMARKS	1, 2 & 3	
REMARKS LEGEND:	·	
1. PROVIDE FAN WITH INTEGR	AL BACK-DRAFT	

DAMPER, CONTINUOUS DUTY RATED.

3. PROVIDE WALL MOUNTED THERMOSTAT

WITH FAN TO OPEN UPON FAN OPERATION.

2. PROVIDE FAN WITH UNIT MOUNTED DISCONNECT.

CONTROL. WIRE INTAKE LOUVER DAMPER IN SERIES

PREP'D BY DATE APPROVED

REMARKS LEGEND:

SELECTION BASED ON

MODEL REMARKS

REMARKS

FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)

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.

LOCHINVAR LOCHINVAR

KB-400

1, 2, 3 & 4

2. BOILER CIRCULATION PUMP TO BE PROVIDED BY MANUFACTURER AT 21 GPM AT 35 DELTA T.

3. PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE,

4

KB-400

1, 2, 3 & 4

4. PROVIDE BOILERS WHICH ARE AT LEAST 94% EFFICIENT BASED ON BTS-2000, REV 06.07 CONDITIONS.

	TYPE
	PUMP DATA
·OD	FLOW (GPM)
OR	TOTAL HEAD (FT-H2O)
	MINIMUM EFFICIENCY (%)
SS-1	CONNECTION SIZE
MECH ROOM	SUCTION (IN)
HOT WATER	DISCHARGE (IN)
28	MOTOR DATA
0.8	MOTOR FRAME
LAKOS	HORSEPOWER
ILB-0200	RPM
	MECH ROOM HOT WATER 28 0.8 LAKOS

HEAT EXCHANGER SCHEDULE		
DESIGNATION	DHX-1	
TYPE	BRAZED PLATE FRAME HEAT EXCHANGER	
LOCATION	MECH ROOM	
BOILER HOT WATER INPUT (MBH)	750	
BOILER HOT WATER FLOW (GPM)	39	
BOILER WATER SUPPLY TEMP (DEG F)	155	
BOILER WATER RETURN TEMP (DEG F)	115	
RECOVERY RATE TEMP RISE (DEG F)	100	
RECOVERY RATE GPH	900	
VOLTS	120	
PHASE	1	
FREQUENCY (Hz)	60	
BASED ON	CEMLINE	
MODEL	BPH-750	
_		

REMARKS

DESIGNATION

LOCATION

BASED ON

REMARKS

MODEL

STORAGE (GALLONS)

TANK DIAMETER (IN)

REMARKS LEGEND

VERTICAL HEIGHT (IN)

ASME PRESSURE RATING (PSI)

REMARKS LEGEND 1. PROVIDE DOUBLE WALL PLATE FRAME HEAT EXCHANGER. INTEGRATED TANK CIRCULATION PUMP, HWS CONTROL VALVE. TANK SENSORS AND INTEGRATED CONTROL PANEL TO PROVIDE SYSTEM TEMPERATURES, ALARM CONTACTS, CALL FOR HOT WATER, CIRCULATION CONTROL, AND SECONDARY SOLENOID

2. PROVIDE PRESSURE AND TEMPERATURE TEST PORTS ON THE SUPPLY AND RETURN SIDE OF ALL DOMESTIC HOT WATER BUILDING HOT WATER PLATE AND FRAME HEAT EXCHANGERS. 3. PROVIDE 3-WAY CONTROL VALVE AND AUTOMATIC FLOW CONTROL VALVE ON BOILER SIDE OF HEAT EXCHANGER. 4. PROVIDE TAPS AND SERVICE VALVES ON DOMESTIC SIDE OF HEAT EXCHANGER TO ALLOW FOR ACID CLEANING.

VERTICAL WITH INLET

MECH ROOM

658

125

48

88

LOCHINVAR

LOCK-TEMP

DOMESTIC HOT WATER STORAGE TANK SCHEDULE

VERTICAL WITH INLET

BAFFLE

MECH ROOM

658

125

88

LOCHINVAR

LOCK-TEMP

1. PROVIDE GLASS LINED VERTICAL DOMESTIC HOT WATER STORAGE TANK WITH RING BASE, 2" TOP OUTLET, 1 1/4"

T&P TOP CONNECTION, 2" SIDE BOTTOM HEATING INLET, 2" SIDE BOTTOM HEATING OUTLET, 1" BOTTOM DRAIN, 3/4"

SIDE AQUASTAT/SENSOR TAPPING. SEE SPECIFICATIONS FOR REQUIRED FIELD INSULATION, R-12.5 MINIMUM.

PU	MP SCHEE	DULE	
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)	105	105	15
TOTAL HEAD (FT-H2O)	65	65	20
MINIMUM EFFICIENCY (%)	50	50	-
CONNECTION SIZE	-	-	-
SUCTION (IN)	2	2	1.5
DISCHARGE (IN)	2	2	1.5
MOTOR DATA	-	-	-
MOTOR FRAME	185JM	185JM	-
HORSEPOWER	5	5	-
RPM	1750	1750	3300
VOLTS	208	208	115
PHASE	1	1	1
HERTZ	60	60	60
SELECTION BASED ON (MFGR)	BELL & GOSSETT	BELL & GOSSETT	BELL & GOSSETT
MODEL	80 2x2x9-1/2B	80 2x2x9-1/2B	BOOSTER PL-36
REMARKS	2	2	1

LOCHINVAR | LOCHINVAR |

KB-400

1, 2, 3 & 4 | 1, 2, 3 & 4 | 1, 2, 3 & 4

KB-400

LOCHINVAR

KB-400

REMARKS LEGEND: 1. BRONZE FITTED PUMP FOR DOMESTIC WATER SERVICE. PROVIDE AQUASTAT CONTROL 2. HWP-1 AND HWP-2 MUST ACCOMMODATE THE FLOW AND HEAD OF THE SYSTEM DURING SUMMER AND WINTER CONDITIONS. PUMP MUST BE SELECTED TO OPERATE AT STABLE CONDITIONS AT THE ABOVE FLOW AND HEAD AS WELL AS AT 39 GPM.

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	

1. PROVIDE UNIT MOUNTED THERMOSTAT.

DWT-3

MECH ROOM

658

125

48

88

LOCHINVAR

LOCK-TEMP

AIR SEPARATOR S	CHEDULE
DESIGNATION	AS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
LINE SIZE (IN)	4
BASED ON	BELL & GOSSETT
MODEL	ROLAIRTROL

EXPANSION	TANK SCH	HEDULE
DESIGNATION	ET-1	DET-1
SERVICE	HEATING WATER	DOMESTIC HOT WATER
LOCATION	MECH ROOM	MECH ROOM
TYPE	BLADDER	REPLACEABLE BLADDER
TANK VOLUME (GAL)	60	211
FILL PRESSURE (PSI)	20	60*
RELEIF VALVE PRESSURE SETTING (PSI)	100	100
BASED ON	JOHN WOOD COMPANY	AMTROL
MODEL	JAER-23-607	ST-C SERIES ST-452-C

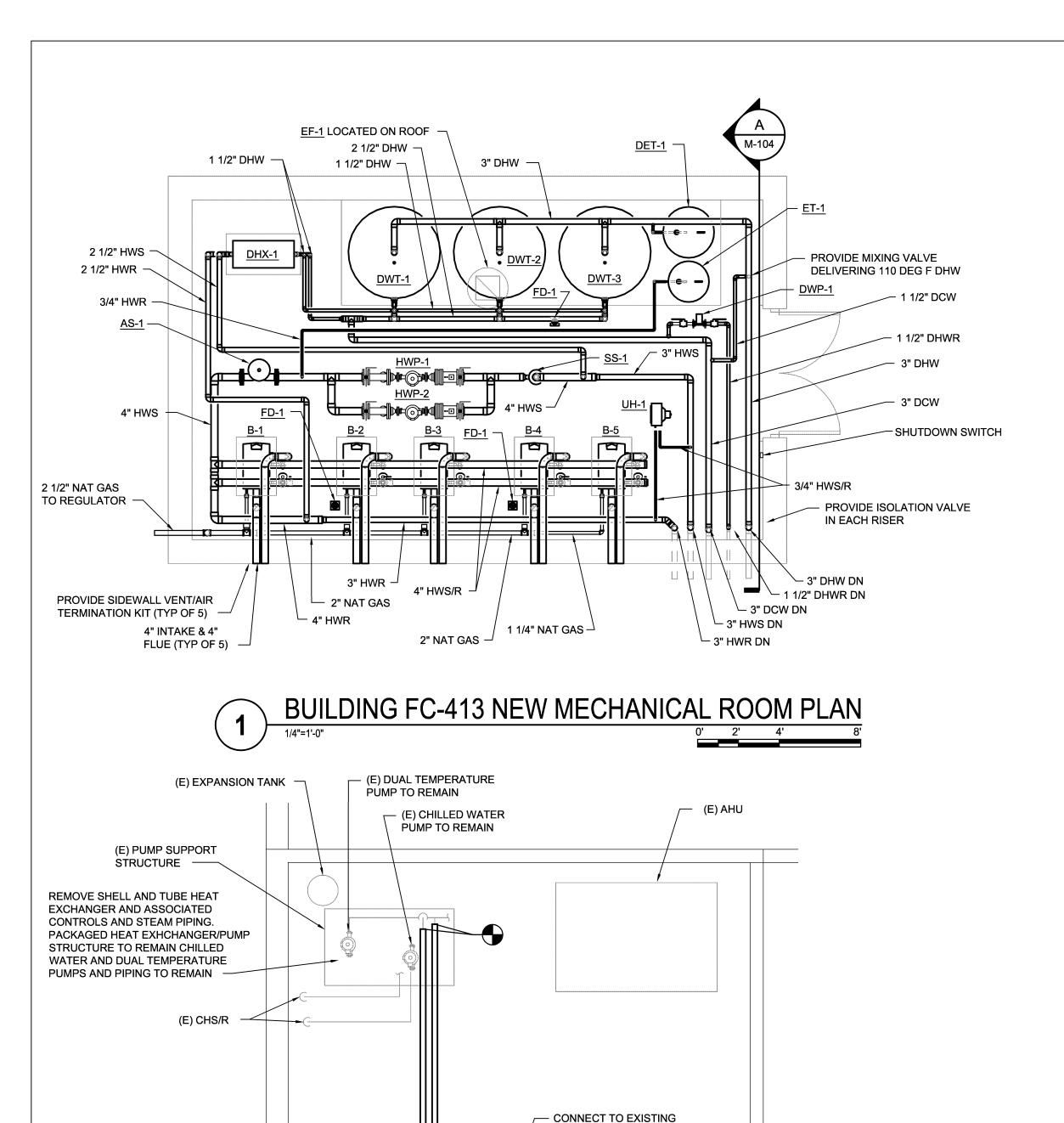
* MATCH DOMESTIC WATER SUPPLY PRESSURE AT THIS LOCATION.

DESIGNATION	L-1
USAGE	INTAKE
LOCATION	MECH ROOM
DESCRIPTION	COMBINATION LOUVER/DAMPER
DEPTH (IN)	8
FRAME TYPE	CHANNEL
WIDTH (IN)	36
HEIGHT (IN)	16
AIRFLOW (CFM)	700
FREE AREA (SF)	.85
FREE AREA VELOCITY (FPM)	822
PRESSURE DROP (IN H20)	.085
SELECTION BASE ON	GREENHECK
ACTUATOR TYPE	120 VAC
ACTUATOR FAIL POSITION	CLOSED
MODEL	EAC-601
REMARKS	1, 2 & 3
REMARKS LEGEND	•

3. PROVIDE SPRING RETURN CLOSE, POWERED OPEN

Wiley|Wilson 6606 West Broad St., Suite 500 M - 103Richmond, Virginia 23230-1717 804.254.7242 PROJECT NO. CP12-0121 VERTICAL WITH INLET DEPT OF NAVY NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA IM SWL JHE SUBMITTED BY: DESIGN DIR. NEW WORK PLAN DATE SIZE CODE IDENT NO. APPROVED: PWO OR OICC

BOILER MODIFICATIONS, VARIOUS FACILITIES, FRENCH CREEK BUILDING FC412 MECHANICAL DEMOLITION AND NAVFAC DRAWING NO. 60011324 N40085-12-B-0121 DATE CONSTR CONTR NO. SATISFACTORY TO SCALE: AS SPEC No. SHEET 17 OF 37



DOMESTIC HOT WATER

CONNECT TO EXISTING

DOMESTIC COLD WATER LINE

RECIRCULATION LINE



CONNECT TO EXISTING

DOMESTIC HOT WATER LINE PROVIDE ISOLATION VALVE

IN EACH RISER (TYP OF 5)

3" DHW DN

3" HWS DN

DISCLOSURE OF INFORMATION

Contractor shall comply as follows:

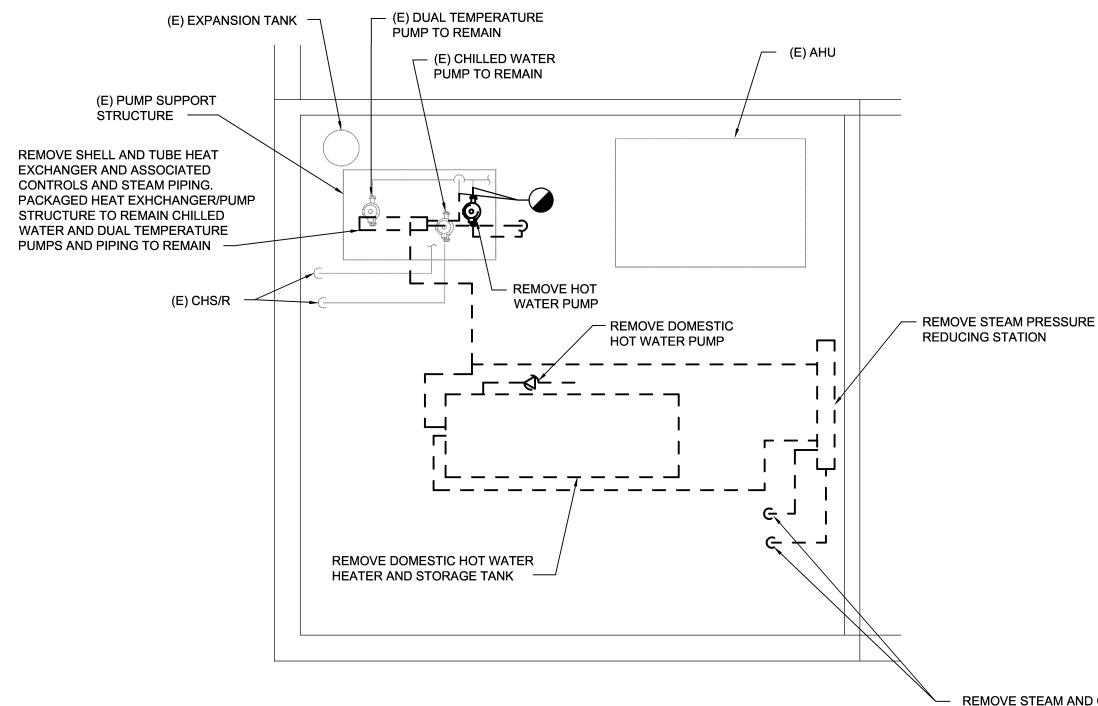
The Contracting Officer has given prior written approval; or

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

requests for authorization to release through the prime contractor to the Contracting Officer.

3" HWR DN

1 1/2" DHWR DN -3" DCW DN -



BUILDING FC-413 MECHANICAL DEMOLITION PLAN

(a) The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of

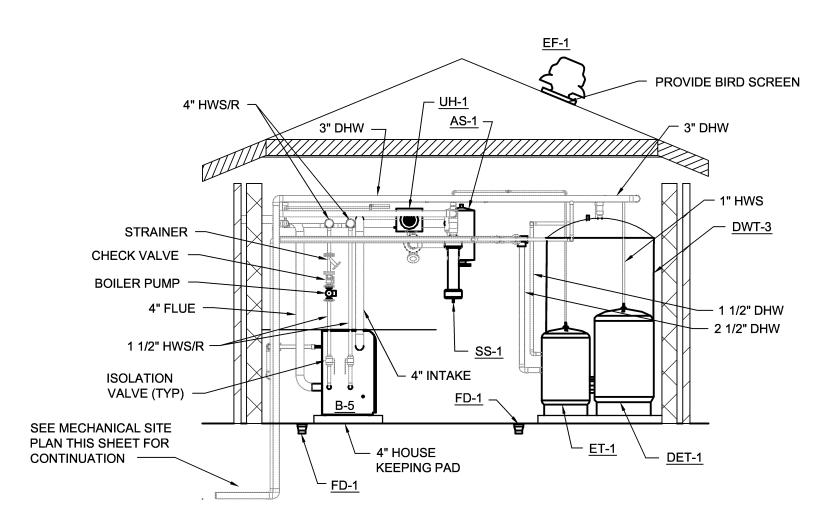
medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless-

Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the

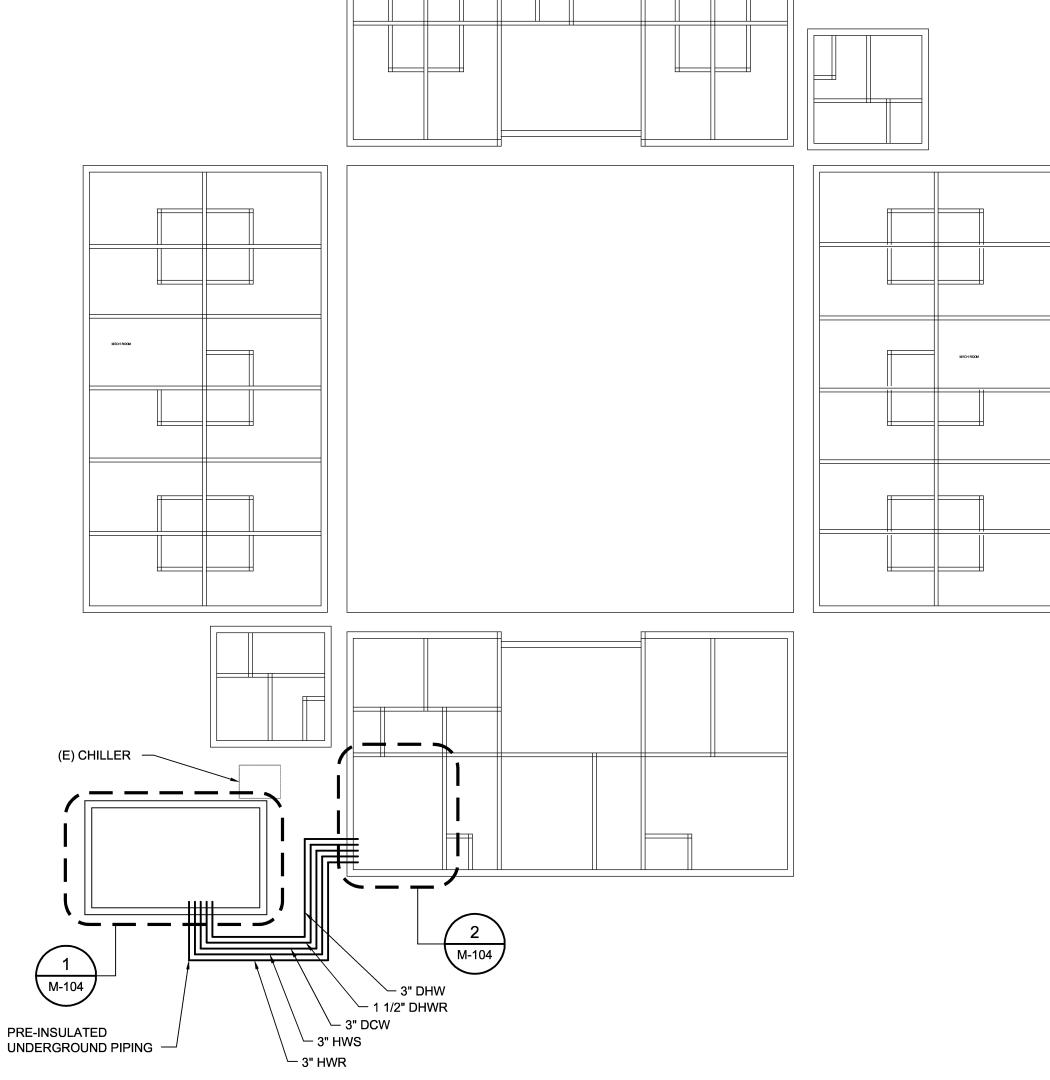
release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.

The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit

REMOVE STEAM AND CONDENSATE LINES AND CAP AT FLOOR. 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.







NOTE: SEE CIVIL FOR EXACT LOCATION OF BUILDING

DEMOLITION NOTES

NATURAL GAS NOTE:

1. TOTAL CONNECTED

NATURAL GAS DEMAND

FOR THIS BUILDING IS

2,000 MBH AT 10 IN-H20.

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.

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.

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.

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. 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.

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CONTROLS WORK IF POSSIBLE. PROVIDE HOSE BIB AND 1/2" CONNECTION FOR FILLING IN NEW MECHANICAL ROOM.

2. REPLACE ALL 76 SHOWER HEADS IN THE BUILDING WITH LOW FLOW, 1.5 GPM SHOWER HEADS.

8. 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.

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. 10. STORE DOMESTIC HOT WATER AT 140 DEG F AND TEMPER TO 110 DEG F BEFORE BEING SUPPLIED TO BUILDING.

11. PROVIDE APPURTENANCES TO COMPLY WITH ASME CSD-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUT DOWN SWITCH LOCATED ADJACENT TO EXIT DOOR.

12. VERIFY EXISTING SYSTEM OPERATING WATER TEMPERATURES AND MATCH CONDITIONS.

BOILER SCHEDULE					
DESIGNATION	B-1	B-2	B-3	B-4	B-5
LOCATION	MECH ROOM				
FUEL TYPE	NATURAL GAS				
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4	4	4	4
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10	10	10	10
GAS INLET CONNECTION (IN)	1	1	1	1	1
INPUT (MBH)	399	399	399	399	399
OUTPUT (MBH)	367	367	367	367	367
MINIMUM TURN DOWN RATIO	5:1	5:1	5:1	5:1	5:1
FLOWRATE (GPM)	21	21	21	21	21
MAXIMUM PRESSURE DROP (FT_H20)	8	8	8	8	8
ENTERING WATER TEMPERATURE (DEG F)	120	120	120	120	120
LEAVING WATER TEMPERATURE (DEG F)	155	155	155	155	155
MINIMUM OPERATING PRESSURE (PSI)	30	30	30	30	30
VOLTAGE (V)	120	120	120	120	120
PHASE	1	1	1	1	1
FREQUENCY (Hz)	60	60	60	60	60
TOTAL OPERATING AMPS	1.5	1.5	1.5	1.5	1.5
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4	4	4	4
SELECTION BASED ON	LOCHINVAR	LOCHINVAR	LOCHINVAR	LOCHINVAR	LOCHINVAR
MODEL REMARKS	KB-400	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	1, 2, 3 & 4
REMARKS LEGEND:	1, 2, 3 & 4	1, 2, 3 & 4	1, 2, 3 & 4	1, 2, 3 & 4	1, 2, 3 8

REMARKS LEGEND

DHX-1

BRAZED PLATE FRAME

HEAT EXCHANGER

MECH ROOM

750

39

155

115

100

900

120

1

60 CEMLINE BPH-750

DWT-3

MECH ROOM

658

125

48

88

LOCHINVAR

DESIGNATION

BOILER HOT WATER INPUT (MBH)

BOILER HOT WATER FLOW (GPM)

BOILER WATER SUPPLY TEMP (DEG F)

RECOVERY RATE TEMP RISE (DEG F)

RECOVERY RATE GPH

VOLTS

PHASE

REMARKS

BOILER WATER RETURN TEMP (DEG F)

1. PROVIDE DOUBLE WALL PLATE FRAME HEAT EXCHANGER,

INTEGRATED TANK CIRCULATION PUMP, HWS CONTROL VALVE,

SYSTEM TEMPERATURES, ALARM CONTACTS, CALL FOR HOT

WATER, CIRCULATION CONTROL, AND SECONDARY SOLENOID

2. PROVIDE PRESSURE AND TEMPERATURE TEST PORTS ON THE

4. PROVIDE TAPS AND SERVICE VALVES ON DOMESTIC SIDE OF

VERTICAL WITH INLET

MECH ROOM

658

125

48

88

LOCHINVAR

HEAT EXCHANGER TO ALLOW FOR ACID CLEANING.

DOMESTIC HOT WATER STORAGE TANK SCHEDULE

VERTICAL WITH INLET

MECH ROOM

658

125

88

LOCHINVAR

SUPPLY AND RETURN SIDE OF ALL DOMESTIC HOT WATER BUILDING HOT WATER PLATE AND FRAME HEAT EXCHANGERS. 3. PROVIDE 3-WAY CONTROL VALVE AND AUTOMATIC FLOW CONTROL VALVE ON BOILER SIDE OF HEAT EXCHANGER.

TANK SENSORS AND INTEGRATED CONTROL PANEL TO PROVIDE

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 21 GPM AT 35 DELTA T.

3. PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE,

4. PROVIDE BOILERS WHICH ARE AT LEAST 94% EFFICIENT BASED ON BTS-2000, REV 06.07 CONDITIONS.

		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	-	-	-
OOLID OFDADAT		FLOW (GPM)	105	105	15
SOLID SEPARAT	OR	TOTAL HEAD (FT-H2O)	65	65	20
SCHEDULE		MINIMUM EFFICIENCY (%)	50	50	-
DESIGNATION	SS-1	CONNECTION SIZE	-	-	-
LOCATION	MECH ROOM	SUCTION (IN)	2	2	1.5
SERVICE	HOT WATER	DISCHARGE (IN)	2	2	1.5
MAXIMUM PRESSURE DROP (FT-H20)	28	MOTOR DATA	-	-	-
COLLECTION CHAMBER CAPACITY (GAL)	0.8	MOTOR FRAME	185JM	185JM	-
BASED ON	LAKOS	HORSEPOWER	5	5	-
MODEL	ILB-0200	RPM	1750	1750	3300
		VOLTS	208	208	115
		PHASE	1	1	1
		HERTZ	60	60	60
HEAT EXCHANGER S	CHEDULE	SELECTION BASED ON (MFGR)	BELL & GOSSETT	BELL & GOSSETT	BELL & GOSSET

PUMP SCHEDULE

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

2. HWP-1 AND HWP-2 MUST ACCOMMODATE THE FLOW AND HEAD OF THE SYSTEM DURING SUMMER AND WINTER CONDITIONS. PUMP MUST BE SELECTED TO OPERATE AT STABLE CONDITIONS AT THE ABOVE FLOW AND HEAD AS WELL AS AT 39 GPM.

80 2x2x9-1/2B

BOOSTER PL-36

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.

FAN SCHEDULE			
DESIGNATION	EF-1		
USAGE	EXHAUST		
SERVES ROOM(S)	MECH ROOM		
DESCRIPTION	CENTRIFUGAL		
FAN DATA			
AIRFLOW (SCFM)	700		
TOTAL SP (IN-H2O)	.15		
RPM	1237		
DRIVE TYPE	DIRECT		
MOTOR DATA			
HORSEPOWER	1/6		
RPM	1725		
VOLTS	115		
PHASE	1		
HERTZ	60		
SELECTION BASED ON	GREENHECK		
MODEL	G-095-VG		
REMARKS	1, 2 & 3		
REMARKS LEGEND:			
1 DDOVIDE EAN WITH INTEGRAL R	ACK DDAET		

PREP'D BY DATE APPROVED

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.

AIR SEPARATOR SCHEDULE		
DESIGNATION	AS-1	
LOCATION	MECH ROOM	
SERVICE	HOT WATER	
LINE SIZE (IN)	4	
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	REPLACEABLE BLADDER		
TANK VOLUME (GAL)	60	211		
FILL PRESSURE (PSI)	20	60*		
RELEIF VALVE PRESSURE SETTING (PSI)	100	100		
BASED ON	JOHN WOOD COMPANY	AMTROL		
MODEL	JAER-23-607	ST-C SERIES ST-452-C		

DESIGNATION	L-1
USAGE	INTAKE
LOCATION	MECH ROOM
DESCRIPTION	COMBINATION LOUVER/DAMPER
DEPTH (IN)	8
FRAME TYPE	CHANNEL
WIDTH (IN)	36
HEIGHT (IN)	16
AIRFLOW (CFM)	700
FREE AREA (SF)	.85
FREE AREA VELOCITY (FPM)	822
PRESSURE DROP (IN H20)	.085
SELECTION BASE ON	GREENHECK
ACTUATOR TYPE	120 VAC
ACTUATOR FAIL POSITION	CLOSED
MODEL	EAC-601
REMARKS	1, 2 & 3

CONSTR CONTR NO.

N40085-12-B-0121

SHEET 18 OF 37

2. SEE ARCHITECTURAL PLANS FOR LOCATION.

Wiley|Wilson 6606 West Broad St., Suite 500 M - 104Richmond, Virginia 23230-1717 804.254.7242 PROJECT NO. CP12-0121 VERTICAL WITH INLET NAVAL FACILITIES ENGINEERING COMMAND DEPT OF NAVY MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA IM **BOILER MODIFICATIONS, VARIOUS** SWL FACILITIES, FRENCH CREEK JHE SUBMITTED BY: BUILDING FC413 MECHANICAL DEMOLTION AND DESIGN DIR. NEW WORK PLAN DATE SIZE CODE IDENT NO. NAVFAC DRAWING NO. APPROVED: PWO OR OICC 60011325

SATISFACTORY TO

DATE

SCALE: AS SPEC No.

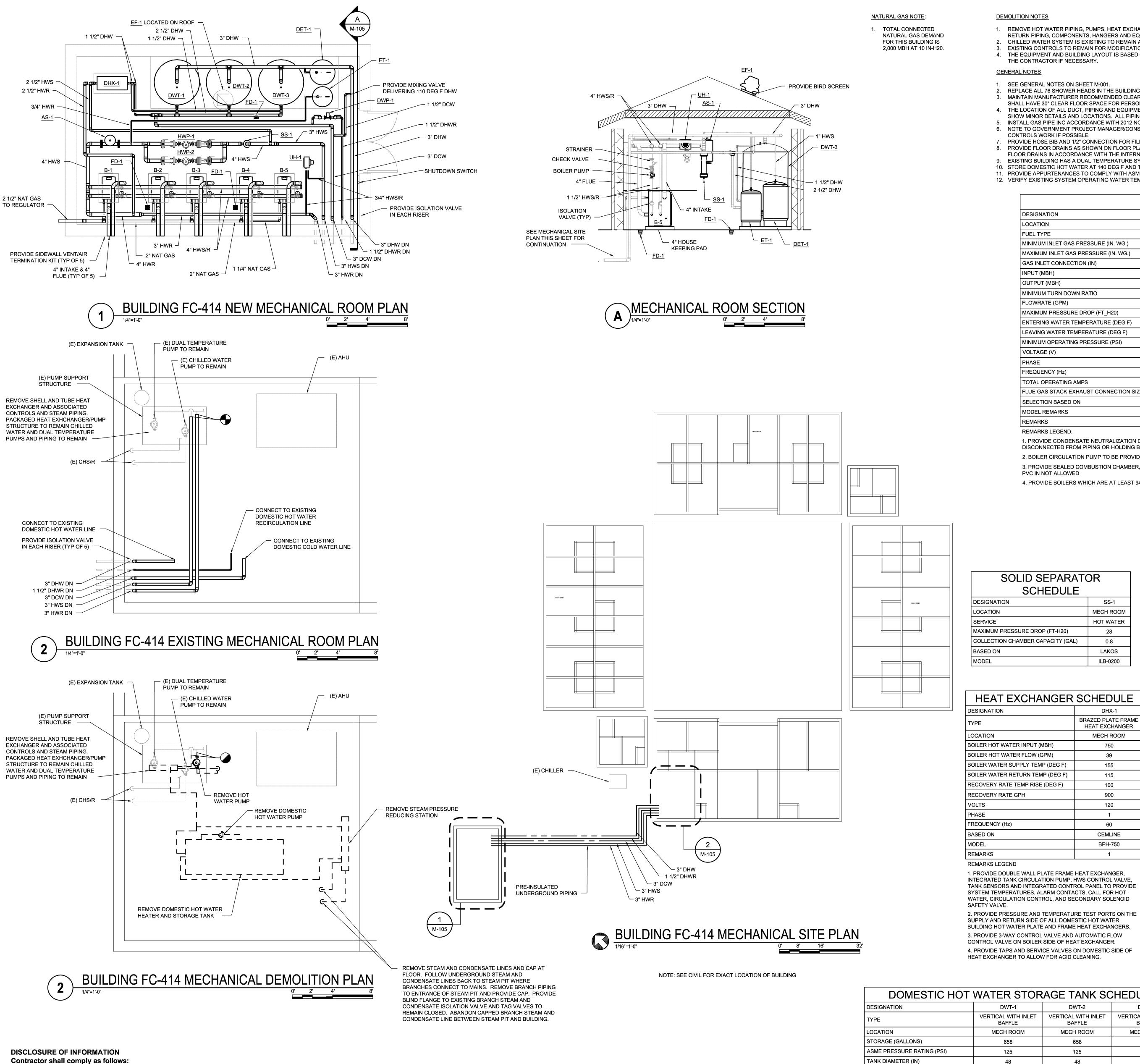
STORAGE (GALLONS) ASME PRESSURE RATING (PSI) TANK DIAMETER (IN) VERTICAL HEIGHT (IN) BASED ON MODEL REMARKS REMARKS LEGEND DESCRIPTION

DESIGNATION

LOCATION

FLOOR DRAIN SCHEDULE DESIGNATION | DRAIN SIZE ZURN MODEL 415B WITH 6" NICKEL BRONZE STRAINER AND PROSET TRAPGUARD

LOCK-TEMP LOCK-TEMP LOCK-TEMP 1. PROVIDE GLASS LINED VERTICAL DOMESTIC HOT WATER STORAGE TANK WITH RING BASE, 2" TOP OUTLET, 1 1/4" T&P TOP CONNECTION, 2" SIDE BOTTOM HEATING INLET, 2" SIDE BOTTOM HEATING OUTLET, 1" BOTTOM DRAIN, 3/4" SIDE AQUASTAT/SENSOR TAPPING. SEE SPECIFICATIONS FOR REQUIRED FIELD INSULATION, R-12.5 MINIMUM.



(a) The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of

The Contracting Officer has given prior written approval; or

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

requests for authorization to release through the prime contractor to the Contracting Officer.

medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless-

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

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. EXISTING CONTROLS TO REMAIN FOR MODIFICATION AND INTEGRATION WITH NEW BACNET EMCS SYSTEM.

2. REPLACE ALL 76 SHOWER HEADS IN THE BUILDING WITH LOW FLOW, 1.5 GPM SHOWER HEADS.

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.

. 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. 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.

INSTALL GAS PIPE INC ACCORDANCE WITH 2012 NORTH CAROLINA FUEL GAS CODE. 6. NOTE TO GOVERNMENT PROJECT MANAGER/CONSTRUCTION MANAGER: REVIEW CONTRACT 12-0147 (REPLACE DDC CONTROLS IN FRENCH CREEK FC411, FC412, FC413, FC415 & FC416) TO COORDINATE

CONTROLS WORK IF POSSIBLE. 7. PROVIDE HOSE BIB AND 1/2" CONNECTION FOR FILLING IN NEW MECHANICAL ROOM.

8. 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. 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.

10. STORE DOMESTIC HOT WATER AT 140 DEG F AND TEMPER TO 110 DEG F BEFORE BEING SUPPLIED TO BUILDING.

11. PROVIDE APPURTENANCES TO COMPLY WITH ASME CSD-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUT DOWN SWITCH LOCATED ADJACENT TO EXIT DOOR.

12. VERIFY EXISTING SYSTEM OPERATING WATER TEMPERATURES AND MATCH CONDITIONS.

BOILER SCHEDULE					
DESIGNATION	B-1	B-2	B-3	B-4	B-5
LOCATION	MECH ROOM				
FUEL TYPE	NATURAL GAS				
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4	4	4	4
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10	10	10	10
GAS INLET CONNECTION (IN)	1	1	1	1	1
INPUT (MBH)	399	399	399	399	399
OUTPUT (MBH)	367	367	367	367	367
MINIMUM TURN DOWN RATIO	5:1	5:1	5:1	5:1	5:1
FLOWRATE (GPM)	21	21	21	21	21
MAXIMUM PRESSURE DROP (FT_H20)	8	8	8	8	8
ENTERING WATER TEMPERATURE (DEG F)	120	120	120	120	120
LEAVING WATER TEMPERATURE (DEG F)	155	155	155	155	155
MINIMUM OPERATING PRESSURE (PSI)	30	30	30	30	30
VOLTAGE (V)	120	120	120	120	120
PHASE	1	1	1	1	1
FREQUENCY (Hz)	60	60	60	60	60
TOTAL OPERATING AMPS	1.5	1.5	1.5	1.5	1.5
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4	4	4	4
SELECTION BASED ON	LOCHINVAR	LOCHINVAR	LOCHINVAR	LOCHINVAR	LOCHINVAR
MODEL REMARKS	KB-400	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	1, 2, 3 & 4

REMARKS LEGEND:

SOLID SEPARATOR

SCHEDULE

HEAT EXCHANGER SCHEDULE

1. PROVIDE DOUBLE WALL PLATE FRAME HEAT EXCHANGER,

INTEGRATED TANK CIRCULATION PUMP, HWS CONTROL VALVE,

SYSTEM TEMPERATURES, ALARM CONTACTS, CALL FOR HOT

SUPPLY AND RETURN SIDE OF ALL DOMESTIC HOT WATER

HEAT EXCHANGER TO ALLOW FOR ACID CLEANING.

BUILDING HOT WATER PLATE AND FRAME HEAT EXCHANGERS. 3. PROVIDE 3-WAY CONTROL VALVE AND AUTOMATIC FLOW CONTROL VALVE ON BOILER SIDE OF HEAT EXCHANGER. 4. PROVIDE TAPS AND SERVICE VALVES ON DOMESTIC SIDE OF

WATER, CIRCULATION CONTROL, AND SECONDARY SOLENOID

TANK SENSORS AND INTEGRATED CONTROL PANEL TO PROVIDE

SS-1

MECH ROOM

HOT WATER

28

8.0 LAKOS ILB-0200

DHX-1

BRAZED PLATE FRAME

HEAT EXCHANGER

MECH ROOM

750

39

155

115

100

900

120

1

60 CEMLINE BPH-750

1

DESIGNATION

MAXIMUM PRESSURE DROP (FT-H20)

BOILER HOT WATER INPUT (MBH)

BOILER HOT WATER FLOW (GPM)

RECOVERY RATE GPH

VOLTS

PHASE

REMARKS

BOILER WATER SUPPLY TEMP (DEG F)

BOILER WATER RETURN TEMP (DEG F)

RECOVERY RATE TEMP RISE (DEG F)

COLLECTION CHAMBER CAPACITY (GAL)

LOCATION

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 21 GPM AT 35 DELTA T.

3. PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE,

4. PROVIDE BOILERS WHICH ARE AT LEAST 94% EFFICIENT BASED ON BTS-2000, REV 06.07 CONDITIONS.

REMARKS

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)	105	105	15		
TOTAL HEAD (FT-H2O)	65	65	20		
MINIMUM EFFICIENCY (%)	50	50	-		
CONNECTION SIZE	-	-	-		
SUCTION (IN)	2	2	1.5		
DISCHARGE (IN)	2	2	1.5		
MOTOR DATA	-	-	-		
MOTOR FRAME	185JM	185JM	•		
HORSEPOWER	5	5	•		
RPM	1750	1750	3300		
VOLTS	208	208	115		
PHASE	1	1	1		
HERTZ	60	60	60		
SELECTION BASED ON (MFGR)	BELL & GOSSETT	BELL & GOSSETT	BELL & GOSSETT		
MODEL	80 2x2x9-1/2B	80 2x2x9-1/2B	BOOSTER PL-36		

REMARKS LEGEND: I. BRONZE FITTED PUMP FOR DOMESTIC WATER SERVICE. PROVIDE AQUASTAT CONTROL. 2. HWP-1 AND HWP-2 MUST ACCOMMODATE THE FLOW AND HEAD OF THE SYSTEM DURING SUMMER AND WINTER CONDITIONS. PUMP MUST BE SELECTED TO OPERATE AT STABLE CONDITIONS AT THE ABOVE FLOW AND HEAD AS WELL AS AT 39 GPM.

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)	155	
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.

FAN SCHE	DULE
DESIGNATION	EF-1
JSAGE	EXHAUST
SERVES ROOM(S)	MECH ROOM
DESCRIPTION	CENTRIFUGAL
FAN DATA	
AIRFLOW (SCFM)	700
TOTAL SP (IN-H2O)	.15
RPM	1237
DRIVE TYPE	DIRECT
MOTOR DATA	
HORSEPOWER	1/6
RPM	1725
VOLTS	115
PHASE	1
HERTZ	60
SELECTION BASED ON	GREENHECK
MODEL	G-095-VG
REMARKS	1, 2 & 3
REMARKS LEGEND:	
	DACK DDAET

PREP'D BY DATE APPROVED

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.

AIR SEPARATOR SCHEDULE		
DESIGNATION	AS-1	
LOCATION	MECH ROOM	
SERVICE	HOT WATER	
LINE SIZE (IN)	4	
BASED ON	BELL & GOSSETT	
MODEL	ROI AIRTROI	

EXPANSION TANK SCHEDULE							
DESIGNATION	ET-1	DET-1					
SERVICE	HEATING WATER	DOMESTIC HOT WATER					
LOCATION	MECH ROOM	MECH ROOM					
TYPE	BLADDER	REPLACEABLE BLADDER					
TANK VOLUME (GAL)	60	211					
FILL PRESSURE (PSI)	20	60*					
RELEIF VALVE PRESSURE SETTING (PSI)	100	100					
BASED ON	JOHN WOOD COMPANY	AMTROL					
MODEL	JAER-23-607	ST-C SERIES ST-452-C					
* MATCH DOMESTIC WATER S	SIIDDI V DDESSIIDE /	AT THIS I OCATION					

* MATCH DOMESTIC WATER SUPPLY PRESSURE AT THIS LOCATION.

DESIGNATION	L-1
USAGE	INTAKE
LOCATION	MECH ROOM
DESCRIPTION	COMBINATION LOUVER/DAMPER
DEPTH (IN)	8
FRAME TYPE	CHANNEL
WIDTH (IN)	36
HEIGHT (IN)	16
AIRFLOW (CFM)	700
FREE AREA (SF)	.85
FREE AREA VELOCITY (FPM)	822
PRESSURE DROP (IN H20)	.085
SELECTION BASE ON	GREENHECK
ACTUATOR TYPE	120 VAC
ACTUATOR FAIL POSITION	CLOSED
MODEL	EAC-601
REMARKS	1, 2 & 3
REMARKS LEGEND	

2. SEE ARCHITECTURAL PLANS FOR LOCATION.

CONSTR CONTR NO.

N40085-12-B-0121

SHEET 19 OF 37

Wiley|Wilson 6606 West Broad St., Suite 500 M - 105Richmond, Virginia 23230-1717 804.254.7242 PROJECT NO. CP12-0121 DEPT OF NAVY NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA IM **BOILER MODIFICATIONS, VARIOUS** SWL FACILITIES, FRENCH CREEK JHE SUBMITTED BY: BUILDING FC414 MECHANICAL DEMOLITION AND DESIGN DIR. NEW WORK PLAN DATE SIZE CODE IDENT NO. NAVFAC DRAWING NO. APPROVED: PWO OR OICC Lic. No. 035863

SCALE: AS SPEC No.

DATE

SATISFACTORY TO

DOMESTIC HOT WATER STORAGE TANK SCHEDULE DWT-3 VERTICAL WITH INLET VERTICAL WITH INLET VERTICAL WITH INLET BAFFLE MECH ROOM MECH ROOM MECH ROOM 658 658 658 125 125 125 TANK DIAMETER (IN) 48 48 VERTICAL HEIGHT (IN) 88 BASED ON LOCHINVAR LOCHINVAR LOCHINVAR MODEL LOCK-TEMP LOCK-TEMP LOCK-TEMP REMARKS

REMARKS LEGEND 1. PROVIDE GLASS LINED VERTICAL DOMESTIC HOT WATER STORAGE TANK WITH RING BASE, 2" TOP OUTLET, 1 1/4" T&P TOP CONNECTION, 2" SIDE BOTTOM HEATING INLET, 2" SIDE BOTTOM HEATING OUTLET, 1" BOTTOM DRAIN, 3/4" SIDE AQUASTAT/SENSOR TAPPING. SEE SPECIFICATIONS FOR REQUIRED FIELD INSULATION, R-12.5 MINIMUM.

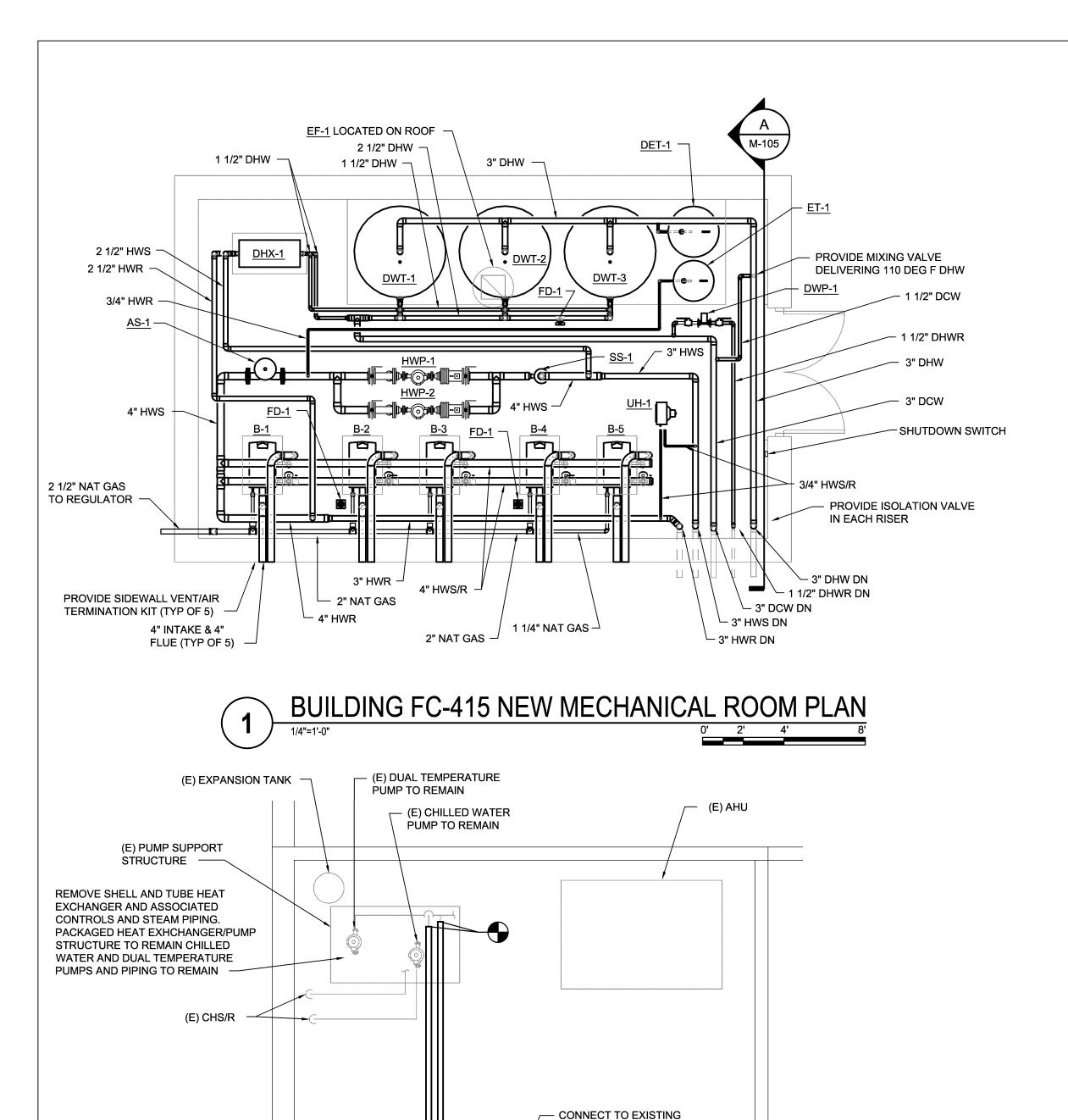
FLOOR DRAIN SCHEDULE

DESCRIPTION

ZURN MODEL 415B WITH 6" NICKEL BRONZE

STRAINER AND PROSET TRAPGUARD

DESIGNATION | DRAIN SIZE



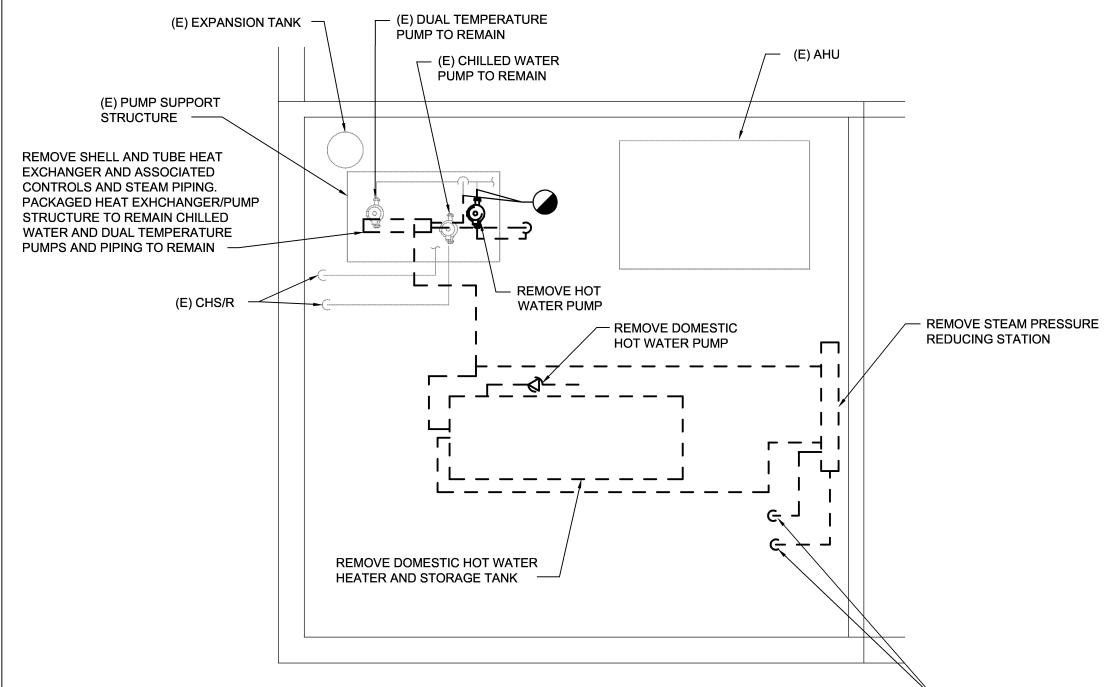
DOMESTIC HOT WATER

CONNECT TO EXISTING

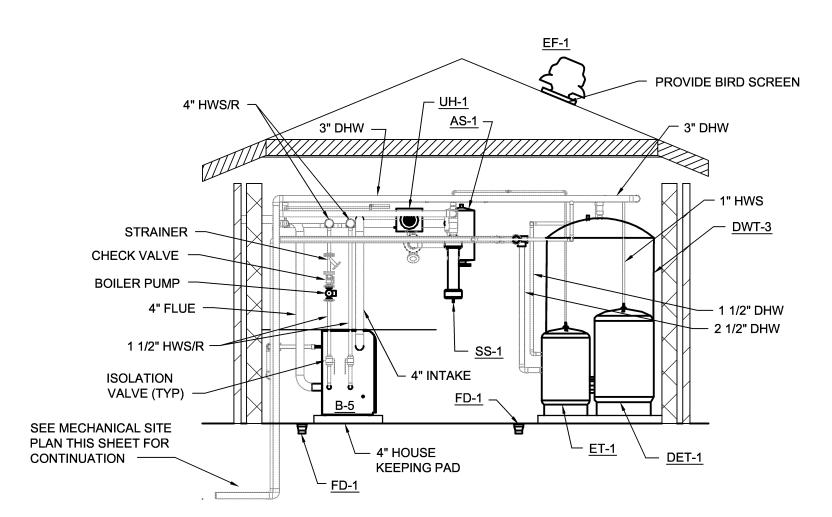
DOMESTIC COLD WATER LINE

RECIRCULATION LINE

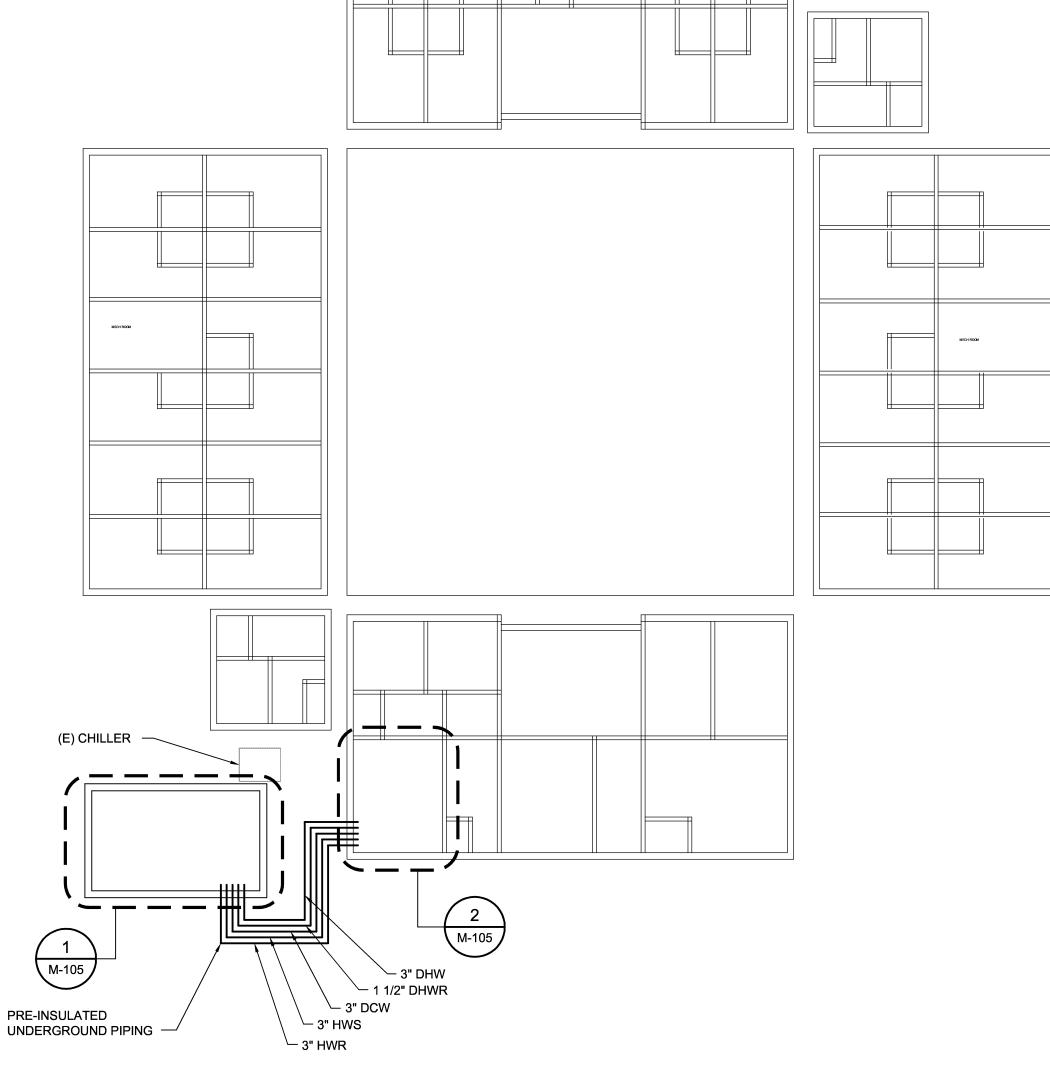




REMOVE STEAM AND CONDENSATE LINES AND CAP AT FLOOR. FOLLOW UNDERGROUND STEAM AND CONDENSATE LINES BACK TO STEAM PIT WHERE BRANCHES CONNECT TO MAINS. REMOVE BRANCH PIPING TO ENTRANCE OF STEAM PIT AND PROVIDE CAP. PROVIDE BLIND FLANGE TO EXISTING BRANCH STEAM AND CONDENSATE ISOLATION VALVE AND TAG VALVES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









NOTE: SEE CIVIL FOR EXACT LOCATION OF BUILDING

FI	LOOK D	RAIN SCHEDULE
DESIGNATION	DRAIN SIZE	DESCRIPTION
FD-1	3"	ZURN MODEL 415B WITH 6" NICKEL BRONZI STRAINER AND PROSET TRAPGUARD

DEMOLITION NOTES

NATURAL GAS NOTE:

TOTAL CONNECTED

NATURAL GAS DEMAND

FOR THIS BUILDING IS

2,000 MBH AT 10 IN-H20.

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. 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. REPLACE ALL 76 SHOWER HEADS IN THE BUILDING WITH LOW FLOW, 1.5 GPM SHOWER HEADS. 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. 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.

INSTALL GAS PIPE INC ACCORDANCE WITH 2012 NORTH CAROLINA FUEL GAS CODE. 6. NOTE TO GOVERNMENT PROJECT MANAGER/CONSTRUCTION MANAGER: REVIEW CONTRACT 12-0147 (REPLACE DDC CONTROLS IN FRENCH CREEK FC411, FC412, FC413, FC415 & FC416) TO COORDINATE

CONTROLS WORK IF POSSIBLE. 7. PROVIDE HOSE BIB AND 1/2" CONNECTION FOR FILLING IN NEW MECHANICAL ROOM.

8. 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.

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. 10. STORE DOMESTIC HOT WATER AT 140 DEG F AND TEMPER TO 110 DEG F BEFORE BEING SUPPLIED TO BUILDING.

11. PROVIDE APPURTENANCES TO COMPLY WITH ASME CSD-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUT DOWN SWITCH LOCATED ADJACENT TO EXIT DOOR.

12. VERIFY EXISTING SYSTEM OPERATING WATER TEMPERATURES AND MATCH CONDITIONS.

BOILER SCHEDULE								
DESIGNATION	B-1	B-2	B-3	B-4	B-5			
LOCATION	MECH ROOM							
FUEL TYPE	NATURAL GAS							
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4	4	4	4			
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10	10	10	10			
GAS INLET CONNECTION (IN)	1	1	1	1	1			
INPUT (MBH)	399	399	399	399	399			
OUTPUT (MBH)	367	367	367	367	367			
MINIMUM TURN DOWN RATIO	5:1	5:1	5:1	5:1	5:1			
FLOWRATE (GPM)	21	21	21	21	21			
MAXIMUM PRESSURE DROP (FT_H20)	8	8	8	8	8			
ENTERING WATER TEMPERATURE (DEG F)	120	120	120	120	120			
LEAVING WATER TEMPERATURE (DEG F)	155	155	155	155	155			
MINIMUM OPERATING PRESSURE (PSI)	30	30	30	30	30			
VOLTAGE (V)	120	120	120	120	120			
PHASE	1	1	1	1	1			
FREQUENCY (Hz)	60	60	60	60	60			
TOTAL OPERATING AMPS	1.5	1.5	1.5	1.5	1.5			
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4	4	4	4			
SELECTION BASED ON	LOCHINVAR	LOCHINVAR	LOCHINVAR	LOCHINVAR	LOCHINVAR			
MODEL REMARKS	KB-400	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	1, 2, 3 & 4			

REMARKS LEGEND:

HEAT EXCHANGER SCHEDULE

1. PROVIDE DOUBLE WALL PLATE FRAME HEAT EXCHANGER,

INTEGRATED TANK CIRCULATION PUMP, HWS CONTROL VALVE,

SYSTEM TEMPERATURES, ALARM CONTACTS, CALL FOR HOT

SUPPLY AND RETURN SIDE OF ALL DOMESTIC HOT WATER

HEAT EXCHANGER TO ALLOW FOR ACID CLEANING.

DOMESTIC HOT WATER STORAGE TANK SCHEDULE

VERTICAL WITH INLET

MECH ROOM

658

125

88

LOCHINVAR

LOCK-TEMP

1. PROVIDE GLASS LINED VERTICAL DOMESTIC HOT WATER STORAGE TANK WITH RING BASE, 2" TOP OUTLET, 1 1/4"

T&P TOP CONNECTION. 2" SIDE BOTTOM HEATING INLET. 2" SIDE BOTTOM HEATING OUTLET. 1" BOTTOM DRAIN. 3/4"

SIDE AQUASTAT/SENSOR TAPPING. SEE SPECIFICATIONS FOR REQUIRED FIELD INSULATION, R-12.5 MINIMUM.

WATER, CIRCULATION CONTROL, AND SECONDARY SOLENOID

2. PROVIDE PRESSURE AND TEMPERATURE TEST PORTS ON THE

VERTICAL WITH INLET

MECH ROOM

658

125

48

88

LOCHINVAR

LOCK-TEMP

VERTICAL WITH INLET

MECH ROOM

658

125

48

88

LOCHINVAR

LOCK-TEMP

BUILDING HOT WATER PLATE AND FRAME HEAT EXCHANGERS. 3. PROVIDE 3-WAY CONTROL VALVE AND AUTOMATIC FLOW CONTROL VALVE ON BOILER SIDE OF HEAT EXCHANGER. 4. PROVIDE TAPS AND SERVICE VALVES ON DOMESTIC SIDE OF

TANK SENSORS AND INTEGRATED CONTROL PANEL TO PROVIDE

DHX-1

BRAZED PLATE FRAME

HEAT EXCHANGER

MECH ROOM

750

39

155

115

100

900

120

1

60 CEMLINE BPH-750

BOILER HOT WATER INPUT (MBH)

BOILER HOT WATER FLOW (GPM)

BOILER WATER SUPPLY TEMP (DEG F)

BOILER WATER RETURN TEMP (DEG F)

RECOVERY RATE TEMP RISE (DEG F)

RECOVERY RATE GPH

VOLTS

PHASE

REMARKS

DESIGNATION

LOCATION

BASED ON

REMARKS

STORAGE (GALLONS)

TANK DIAMETER (IN)

REMARKS LEGEND

VERTICAL HEIGHT (IN)

ASME PRESSURE RATING (PSI)

DESIGNATION

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 21 GPM AT 35 DELTA T.

DESIGNATION

3. PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE,

4. PROVIDE BOILERS WHICH ARE AT LEAST 94% EFFICIENT BASED ON BTS-2000, REV 06.07 CONDITIONS.

		SERVICE	HOT WATER	HOT WATER	DOMESTIC HOT WATER
		LOCATION	MECH ROOM	MECH ROOM	MECH ROOM
		TYPE	INLINE	INLINE	INLINE
		PUMP DATA	-	-	-
	- CD	FLOW (GPM)	105	105	15
SOLID SEPARAT	OR	TOTAL HEAD (FT-H2O)	65	65	20
SCHEDULE		MINIMUM EFFICIENCY (%)	50	50	-
DESIGNATION	SS-1	CONNECTION SIZE	-	-	-
LOCATION	MECH ROOM	SUCTION (IN)	2	2	1.5
SERVICE	HOT WATER	DISCHARGE (IN)	2	2	1.5
MAXIMUM PRESSURE DROP (FT-H20)	28	MOTOR DATA	-	-	-
COLLECTION CHAMBER CAPACITY (GAL)	0.8	MOTOR FRAME	185JM	185JM	-
BASED ON	LAKOS	HORSEPOWER	5	5	-
MODEL	ILB-0200	RPM	1750	1750	3300
		VOLTS	208	208	115
		PHASE	1	1	1
		— HERTZ	60	60	60

SELECTION BASED ON (MFGR)

REMARKS

REMARKS LEGEND: I. BRONZE FITTED PUMP FOR DOMESTIC WATER SERVICE. PROVIDE AQUASTAT CONTROL. 2. HWP-1 AND HWP-2 MUST ACCOMMODATE THE FLOW AND HEAD OF THE SYSTEM DURING SUMMER AND WINTER CONDITIONS. PUMP MUST BE SELECTED TO OPERATE AT STABLE CONDITIONS AT THE ABOVE FLOW AND HEAD AS WELL AS AT 39 GPM.

BELL & GOSSETT | BELL & GOSSETT | BELL & GOSSETT

80 2x2x9-1/2B

BOOSTER PL-36

PUMP SCHEDULE

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)	155				
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	<u> </u>				

1. PROVIDE UNIT MOUNTED THERMOSTAT.

FAN SCHEDULE					
DESIGNATION	EF-1				
USAGE	EXHAUST				
SERVES ROOM(S)	MECH ROOM				
DESCRIPTION	CENTRIFUGAL				
FAN DATA					
AIRFLOW (SCFM)	700				
TOTAL SP (IN-H2O)	.15				
RPM	1237				
DRIVE TYPE	DIRECT				
MOTOR DATA					
HORSEPOWER	1/6				
RPM	1725				
VOLTS	115				
PHASE	1				
HERTZ	60				
SELECTION BASED ON	GREENHECK				
MODEL	G-095-VG				
REMARKS	1, 2 & 3				

PREP'D BY DATE APPROVED

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.

AIR SEPARATOR SCHEDULE						
DESIGNATION	AS-1					
LOCATION	MECH ROOM					
SERVICE	HOT WATER					
LINE SIZE (IN)	4					
BASED ON	BELL & GOSSETT					
MODEL	ROLAIRTROL					

EXPANSION TANK SCHEDULE							
ET-1	DET-1						
RVICE HEATING WATER							
MECH ROOM	MECH ROOM						
BLADDER	REPLACEABLE BLADDER						
60	211						
20	60*						
100	100						
JOHN WOOD COMPANY	AMTROL						
JAER-23-607	ST-C SERIES ST-452-C						
	HEATING WATER MECH ROOM BLADDER 60 20 100 JOHN WOOD COMPANY						

DESIGNATION	L-1
USAGE	INTAKE
LOCATION	MECH ROOM
DESCRIPTION	COMBINATION LOUVER/DAMPER
DEPTH (IN)	8
FRAME TYPE	CHANNEL
WIDTH (IN)	36
HEIGHT (IN)	16
AIRFLOW (CFM)	700
FREE AREA (SF)	.85
FREE AREA VELOCITY (FPM)	822
PRESSURE DROP (IN H20)	.085
SELECTION BASE ON	GREENHECK
ACTUATOR TYPE	120 VAC
ACTUATOR FAIL POSITION	CLOSED
MODEL	EAC-601
REMARKS	1, 2 & 3

2. SEE ARCHITECTURAL PLANS FOR LOCATION.

CONSTR CONTR NO.

N40085-12-B-0121

SHEET 20 OF 37

		Wiley Wilson 6606 West Broad St. Richmond, Virginia 2 804.254.7242	., Suite 500					М-	-106
	4	wileywilson.com						PROJECT NO.	CP12-0121
				DEPT (OF NAVY				S ENGINEERING COMMAND
								DRPS BAS	
						CAMP	LEJEUNE, N	NORTH CAROL	NA
	DES.	IM							
	DR.	SWL			BOI	LER I	MODIFI	CATIONS,	VARIOUS
EANTH OF	CHK.	JHE				FACIL	ITIES, I	FRENCH (CREEK
	SUBMITTED BY:				BU	II DING F	C415 MFC	HANICAL DEMO	OLITION AND
	DESIGN DIR.							ORK PLAN	
TO TOANING MASUURAS DE	APPROVED: PWO	OR OICC	DATE	SIZE	CODE ID	ENT NO.		NAVFAC DF	RAWING NO.
Lic. No. 035863					800)91		6001	1327

DISCLOSURE OF INFORMATION Contractor shall comply as follows:

CONNECT TO EXISTING

DOMESTIC HOT WATER LINE

PROVIDE ISOLATION VALVE

IN EACH RISER (TYP OF 5)

3" DHW DN 1 1/2" DHWR DN -3" DCW DN

> 3" HWS DN 3" HWR DN

(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-

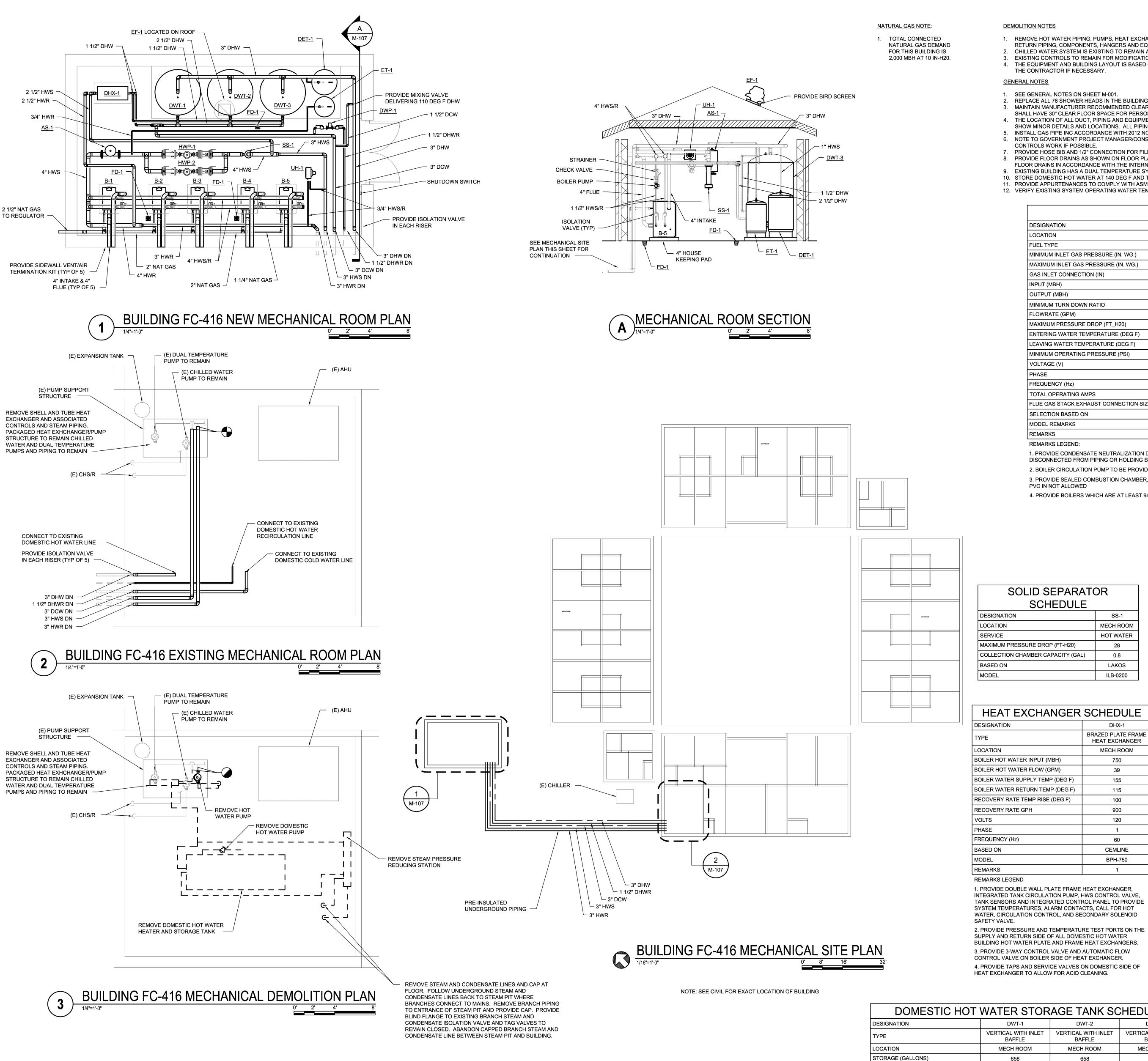
BUILDING FC-415 MECHANICAL DEMOLITION PLAN

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 Contractor shall comply as follows:

The Contracting Officer has given prior written approval; or

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

requests for authorization to release through the prime contractor to the Contracting Officer.

(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-

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

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. 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.

SOLID SEPARATOR

SCHEDULE

SS-1

MECH ROOM

HOT WATER

28

8.0 LAKOS

ILB-0200

DHX-1

BRAZED PLATE FRAME

HEAT EXCHANGER MECH ROOM

750

39

155

115

100

900

120

60 CEMLINE

BPH-750

2. REPLACE ALL 76 SHOWER HEADS IN THE BUILDING WITH LOW FLOW, 1.5 GPM SHOWER HEADS. 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. 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. INSTALL GAS PIPE INC ACCORDANCE WITH 2012 NORTH CAROLINA FUEL GAS CODE.

6. NOTE TO GOVERNMENT PROJECT MANAGER/CONSTRUCTION MANAGER: REVIEW CONTRACT 12-0147 (REPLACE DDC CONTROLS IN FRENCH CREEK FC411, FC412, FC413, FC415 & FC416) TO COORDINATE CONTROLS WORK IF POSSIBLE.

7. PROVIDE HOSE BIB AND 1/2" CONNECTION FOR FILLING IN NEW MECHANICAL ROOM.

FLOOR DRAINS IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE. 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.

8. 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

10. STORE DOMESTIC HOT WATER AT 140 DEG F AND TEMPER TO 110 DEG F BEFORE BEING SUPPLIED TO BUILDING. 11. PROVIDE APPURTENANCES TO COMPLY WITH ASME CSD-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUT DOWN SWITCH LOCATED ADJACENT TO EXIT DOOR.

12. VERIFY EXISTING SYSTEM OPERATING WATER TEMPERATURES AND MATCH CONDITIONS.

BOILER SCHEDULE								
DESIGNATION	B-1	B-2	B-3	B-4	B-5			
LOCATION	MECH ROOM							
FUEL TYPE	NATURAL GAS							
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4	4	4	4			
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10	10	10	10			
GAS INLET CONNECTION (IN)	1	1	1	1	1			
INPUT (MBH)	399	399	399	399	399			
OUTPUT (MBH)	367	367	367	367	367			
MINIMUM TURN DOWN RATIO	5:1	5:1	5:1	5:1	5:1			
FLOWRATE (GPM)	21	21	21	21	21			
MAXIMUM PRESSURE DROP (FT_H20)	8	8	8	8	8			
ENTERING WATER TEMPERATURE (DEG F)	120	120	120	120	120			
LEAVING WATER TEMPERATURE (DEG F)	155	155	155	155	155			
MINIMUM OPERATING PRESSURE (PSI)	30	30	30	30	30			
VOLTAGE (V)	120	120	120	120	120			
PHASE	1	1	1	1	1			
FREQUENCY (Hz)	60	60	60	60	60			
TOTAL OPERATING AMPS	1.5	1.5	1.5	1.5	1.5			
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4	4	4	4			
SELECTION BASED ON	LOCHINVAR	LOCHINVAR	LOCHINVAR	LOCHINVAR	LOCHINVAR			
MODEL REMARKS	KB-400	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	1, 2, 3 & 4			

1. PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT THAT HOLDS 0.25 CU. FT. OF LIME STONE AND IS RECHARGEABLE WITHOUT BEING

	B-5	DESIGNATION
	MECH ROOM	USAGE
;	NATURAL GAS	SERVES ROOM(S)
	4	DESCRIPTION
	10	FAN DATA
	1	AIRFLOW (SCFM)
	399	TOTAL SP (IN-H2O)
	367	RPM
	5:1	DRIVE TYPE
	21	MOTOR DATA
	8	HORSEPOWER
	120	RPM
	155	VOLTS
	30	PHASE
	120	HERTZ
	1	SELECTION BASED ON
	60	MODEL
	1.5	REMARKS
	4	REMARKS LEGEND:
	LOCHINVAR	1. PROVIDE FAN WITH IN
	KB-400	DAMPER, CONTINUOUS [
	1, 2, 3 & 4	PROVIDE FAN WITH UI REPOVIDE WALL MOUN
		3. FROVIDE WALL MOUN

FAN WITH INTEGRAL BACK-DRAFT INTINUOUS DUTY RATED.

FAN WITH UNIT MOUNTED DISCONNECT. 3. PROVIDE WALL MOUNTED THERMOSTAT

FAN SCHEDULE

EF-1

EXHAUST

MECH ROOM

CENTRIFUGAL

700

.15

1237 DIRECT

1/6 1725 115

1

60

GREENHECK

G-095-VG

1, 2 & 3

DESIGNATION

PREP'D BY DATE APPROVED

CONTROL. WIRE INTAKE LOUVER DAMPER IN SERIES WITH FAN TO OPEN UPON FAN OPERATION.

3. PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE,

DESIGNATION

4. PROVIDE BOILERS WHICH ARE AT LEAST 94% EFFICIENT BASED ON BTS-2000, REV 06.07 CONDITIONS.

2. BOILER CIRCULATION PUMP TO BE PROVIDED BY MANUFACTURER AT 21 GPM AT 35 DELTA T.

DISCONNECTED FROM PIPING OR HOLDING BRACKETS. LOCATE KITS ON SLAB. PROVIDE ONE KIT PER BOILER.

SERVICE	HOT WATER	HOT WATER	DOMESTIC HOT WATER
LOCATION	MECH ROOM	MECH ROOM	MECH ROOM
TYPE	INLINE	INLINE	INLINE
PUMP DATA	-	-	-
FLOW (GPM)	105	105	15
TOTAL HEAD (FT-H2O)	65	65	20
MINIMUM EFFICIENCY (%)	50	50	-
CONNECTION SIZE	-	-	-
SUCTION (IN)	2	2	1.5
DISCHARGE (IN)	2	2	1.5
MOTOR DATA	-	-	-
MOTOR FRAME	185JM	185JM	-
HORSEPOWER	5	5	_

PUMP SCHEDULE

DISCHARGE (IN)	DISCHARGE (IN) 2 2																
MOTOR DATA	-	-	-														
MOTOR FRAME 185JM 185JM																	
HORSEPOWER	5	5	-														
RPM	1750	1750	3300														
VOLTS 208 208 PHASE 1 1																	
								HERTZ	60	60	60						
SELECTION BASED ON (MFGR) BELL & GOSSETT BELL & GOSSETT BELL & GOSSETT MODEL REMARKS 2 2 1 REMARKS LEGEND: 1. BRONZE FITTED PUMP FOR DOMESTIC WATER SERVICE. PROVIDE AQUASTAT CONTRO 2. HWP-1 AND HWP-2 MUST ACCOMMODATE THE FLOW AND HEAD OF THE SYSTEM DURIN SUMMER AND WINTER CONDITIONS. PUMP MUST BE SELECTED TO OPERATE AT STABLE CONDITIONS AT THE ABOVE FLOW AND HEAD AS WELL AS AT 39 GPM.																	
								UNIT HEATER SCHEDULE									
								IDESIGNATION	DESIGNATION LIL 1								

DESIGNATION LOCATION AIRFLOW (CFM) HEATING CAPACITY (MBH) ENTERING AIR TEMPERATURE (DEG F) LEAVING AIR TEMPERATURE (DEG F) ENTERING WATER TEMPERATURE (DEG F) FLOW RATE (GPM) WATER PRESSURE DROP (FT W.G.) MOTOR POWER (HP) VOLTAGE (V)	UH-1 MECH ROOM 340 10 55 82 155 .5
AIRFLOW (CFM) HEATING CAPACITY (MBH) ENTERING AIR TEMPERATURE (DEG F) LEAVING AIR TEMPERATURE (DEG F) ENTERING WATER TEMPERATURE (DEG F) FLOW RATE (GPM) WATER PRESSURE DROP (FT W.G.) MOTOR POWER (HP)	340 10 55 82 155
HEATING CAPACITY (MBH) ENTERING AIR TEMPERATURE (DEG F) LEAVING AIR TEMPERATURE (DEG F) ENTERING WATER TEMPERATURE (DEG F) FLOW RATE (GPM) WATER PRESSURE DROP (FT W.G.) MOTOR POWER (HP)	10 55 82 155
ENTERING AIR TEMPERATURE (DEG F) LEAVING AIR TEMPERATURE (DEG F) ENTERING WATER TEMPERATURE (DEG F) FLOW RATE (GPM) WATER PRESSURE DROP (FT W.G.) MOTOR POWER (HP)	55 82 155
LEAVING AIR TEMPERATURE (DEG F) ENTERING WATER TEMPERATURE (DEG F) FLOW RATE (GPM) WATER PRESSURE DROP (FT W.G.) MOTOR POWER (HP)	82 155
ENTERING WATER TEMPERATURE (DEG F) FLOW RATE (GPM) WATER PRESSURE DROP (FT W.G.) MOTOR POWER (HP)	155
FLOW RATE (GPM) WATER PRESSURE DROP (FT W.G.) MOTOR POWER (HP)	
WATER PRESSURE DROP (FT W.G.) MOTOR POWER (HP)	5
MOTOR POWER (HP)	.0
` '	.5
VOLTAGE (V)	1/60
	115
PHASE	1
FREQUENCY (Hz)	60
BASED ON	MODINE
MODEL	HC-18 S 01
REMARKS	1

REMARKS	1
REMARKS LEGEND	

1. PROVIDE UNIT MOUNTED THERMOSTAT.

DESIGNATION	AS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
LINE SIZE (IN)	4
BASED ON	BELL & GOSSETT
MODEL	ROLAIRTROL

EXPANSION	HEDULE		
DESIGNATION	ET-1	DET-1	
SERVICE	HEATING WATER	DOMESTIC HOT WATER	
LOCATION	MECH ROOM	MECH ROOM REPLACEABLE BLADDER 211 60*	
TYPE	BLADDER		
TANK VOLUME (GAL)	60		
FILL PRESSURE (PSI)	20		
RELEIF VALVE PRESSURE SETTING (PSI)	100	100	
BASED ON	JOHN WOOD COMPANY	AMTROL	
MODEL	JAER-23-607	ST-C SERIES ST-452-C	

* MATCH DOMESTIC WATER SUPPLY PRESSURE AT THIS LOCATION.

LOUVER SCH	EDULE			
DESIGNATION	L-1			
USAGE	INTAKE MECH ROOM			
LOCATION				
DESCRIPTION	COMBINATION LOUVER/DAMPER			
DEPTH (IN)	8			
FRAME TYPE	CHANNEL			
WIDTH (IN)	36			
HEIGHT (IN)	16			
AIRFLOW (CFM)	700			
FREE AREA (SF)	.85			
FREE AREA VELOCITY (FPM)	822			
PRESSURE DROP (IN H20)	.085			
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 ARCHITECT.	TO BE APPROVED BY			
	D 004TION			

2. SEE ARCHITECTURAL PLANS FOR LOCATION.

HEDULE	
DWT-3	
VERTICAL WITH INLET BAFFLE	
MECH ROOM	
658	
125	
48	
88	OF HTALES
LOCHINVAR	
LOCK-TEMP	THE ATTH OF
1	\$8 IOANN)S MASOU
	Lic. No. 0358

DOMESTIC HOT WATER STORAGE TANK SCHEDULE								
DESIGNATION	DWT-1	DWT-2	DWT-3 VERTICAL WITH INLET BAFFLE MECH ROOM					
TYPE	VERTICAL WITH INLET BAFFLE	VERTICAL WITH INLET BAFFLE						
LOCATION	MECH ROOM	MECH ROOM						
STORAGE (GALLONS)	658	658	658					
ASME PRESSURE RATING (PSI)	125	125	125					
TANK DIAMETER (IN)	48	48	48					
VERTICAL HEIGHT (IN)	88	88	88					
BASED ON	LOCHINVAR	LOCHINVAR	LOCHINVAR					
MODEL	LOCK-TEMP	LOCK-TEMP	LOCK-TEMP					
REMARKS	1	1	1					

ASME PRESSURE RATING (PSI)	125	125	125
TANK DIAMETER (IN)	48	48	48
VERTICAL HEIGHT (IN)	88	88	88
BASED ON	LOCHINVAR	LOCHINVAR	LOCHINVAR
MODEL	LOCK-TEMP	LOCK-TEMP	LOCK-TEMP
REMARKS	1	1	1
REMARKS LEGEND			
1. PROVIDE GLASS LINED VERTICAL DOM T&P TOP CONNECTION, 2" SIDE BOTTOM SIDE AQUASTAT/SENSOR TAPPING. SEE	HEATING INLET, 2" SIDE BO	TTOM HEATING OUTLET, 1'	BOTTOM DRAIN, 3/4"

FLOOR DRAIN SCHEDULE

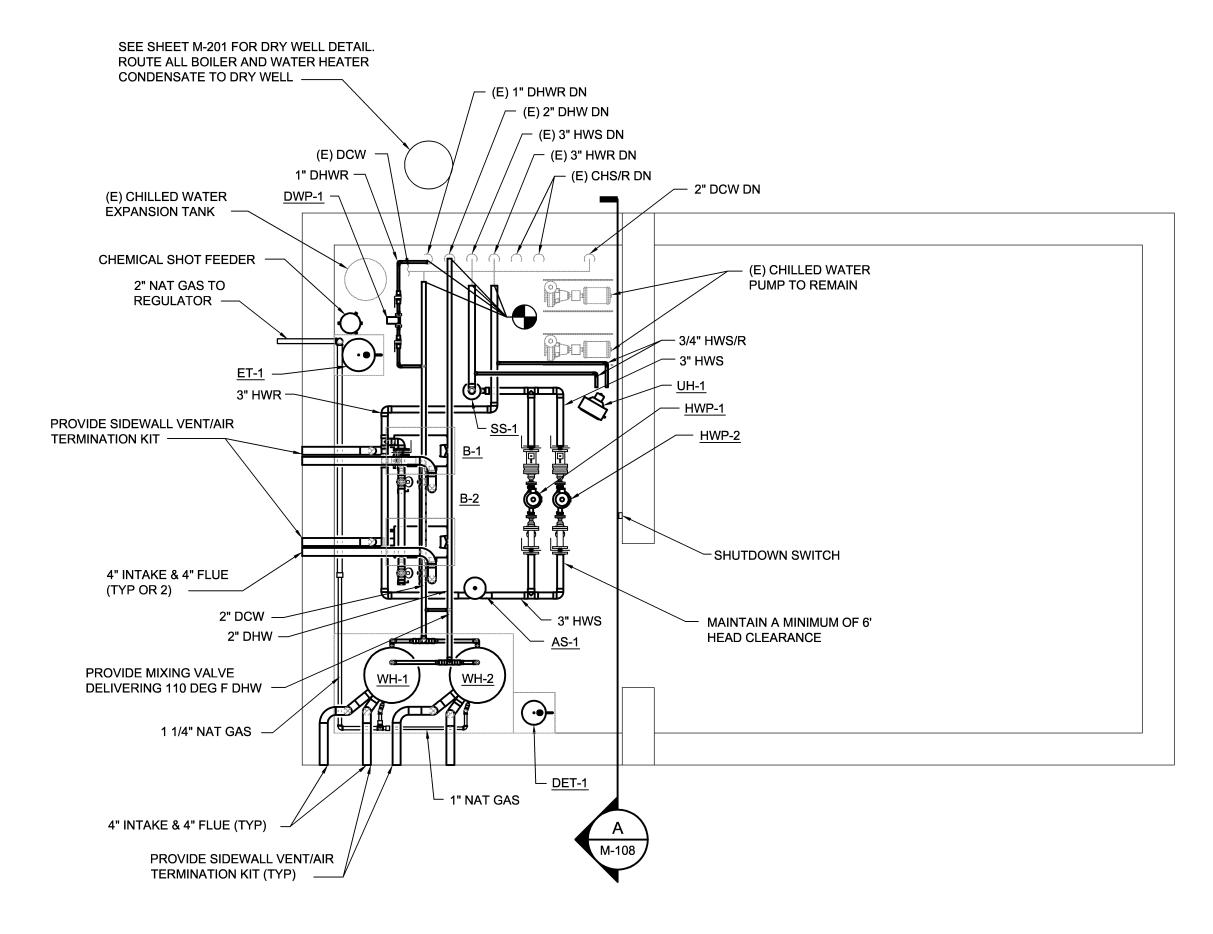
DESCRIPTION

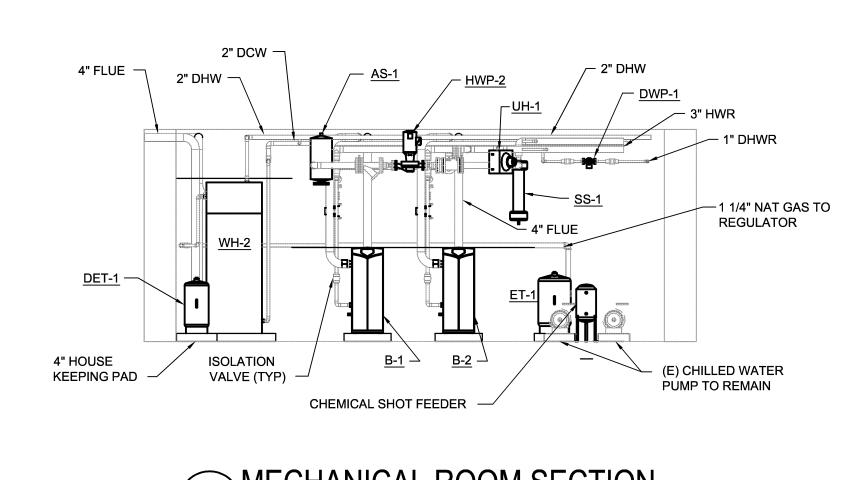
ZURN MODEL 415B WITH 6" NICKEL BRONZE

STRAINER AND PROSET TRAPGUARD

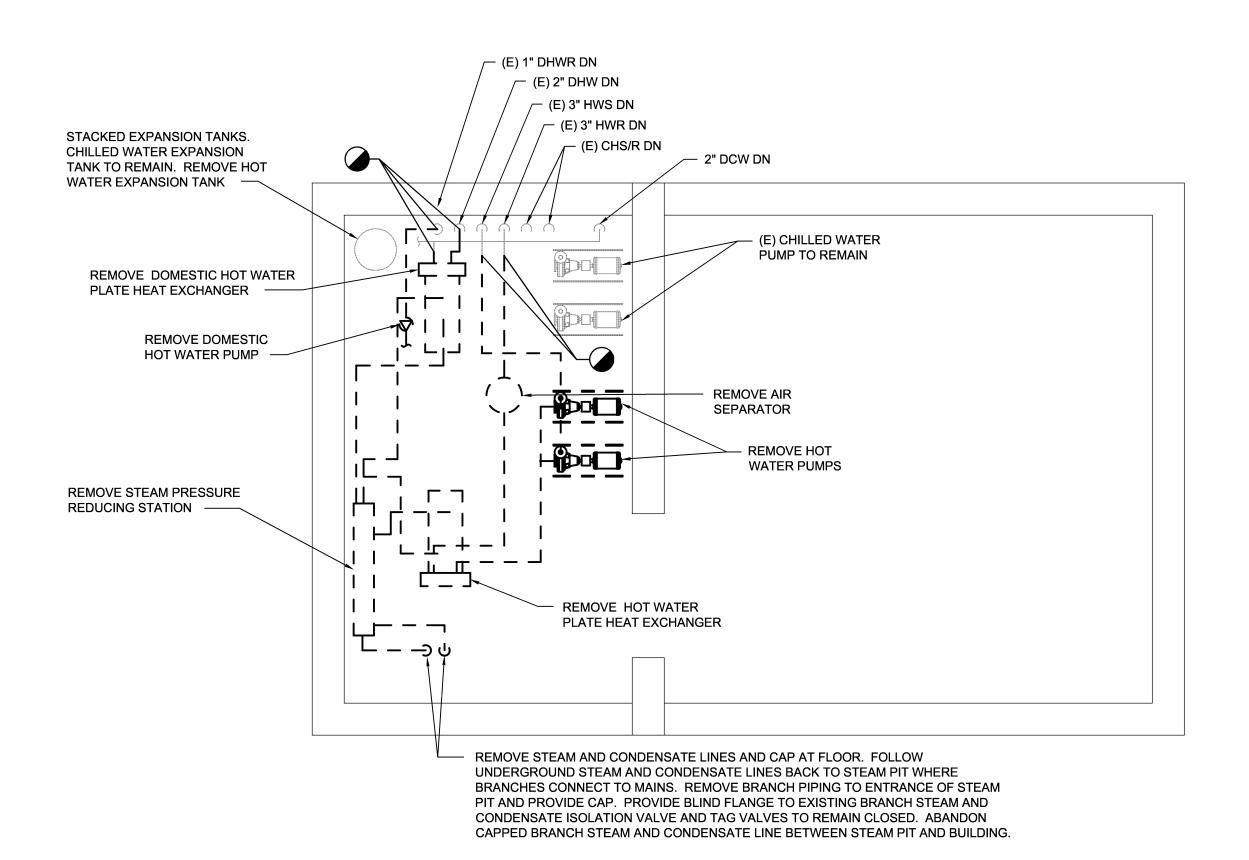
DESIGNATION | DRAIN SIZE

		Wiley Wilso 6606 West Broad Richmond, Virginia 804.254.7242	St., Suite 500 a 23230-1717						M —			
		wileywilson.com		DEPT C	OF NAVY	MAR		PROJECT NAVAL FA ORPS I	CILMES E	P12-0121 NGINEERING	СОМ	MANI
								, NORTH C				
	DES.	IM										
	DR.	SWL			BOIL	ER I	MODIF	CATIO	NS, V	ARIOU	S	
FATH OF	CHK.	JHE			F	ACIL	LITIES	, FREN	CH CF	REEK		
DANING MASOLIRAS A	SUBMITTED BY:			BUILDING FC416 MECHANICAL DEMOLITION AND								
1 Something the second	DESIGN DIR.							WORK PLA				
10/11/00/01/10 1	APPROVED: PWO	OR OICC	DATE	SIZE	CODE IDE	NT NO.		NAVF	AC DRAW	ING NO.		
Lic. No. 035863				80091		60011328						
8/22/12	SATISFACTORY	то	DATE				CONSTR C	CONTR NO.	N4C	0085-12-B-01	21	
SEAL SEAL				SCALE:	AS SHOWN	SPEC I	No.	05-12-0121		SHEET 21	OF	37











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-

The Contracting Officer has given prior written approval; or

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. 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.

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

NATURAL GAS NOTE:

1. TOTAL CONNECTED

NATURAL GAS DEMAND

FOR THIS BUILDING IS

1,100 MBH AT 10 IN-H20.

1. SEE GENERAL NOTES ON SHEET M-001. 2. BUILDING FC-500A IS THE EXISTING MECHANICAL ROOM THAT SERVES BUILDING FC-500.

LOCATIONS. ALL PIPING OFFSETS ARE THE RESPONSIBILITY OF THE CONTRACTOR.

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

INSTALL GAS PIPE IN ACCORDANCE WITH 2012 NORTH CAROLINA FUEL GAS CODE. PROVIDE HOSE BIB AND 1/2" CONNECTION FOR FILLING MECHANICAL ROOM.

7. STORE DOMESTIC HOT WATER AT 140 DEG F AND TEMPER TO 110 DEG F BEFORE BEING SUPPLIED TO BUILDING. PROVIDE

8. PROVIDE APPURTENANCES TO COMPLY WITH ASME CSD-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUT DOWN 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)	367	367		
MINIMUM TURN DOWN RATIO	5:1	5:1		
FLOWRATE (GPM)	21	21		
MAXIMUM PRESSURE DROP (FT_H20)	8	8		
ENTERING WATER TEMPERATURE (DEG F)	140	140		
LEAVING WATER TEMPERATURE (DEG F)	165	165		
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

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 REV06.07

P	UMP SCHE	DULE	
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)	68	68	5
TOTAL HEAD (FT-H2O)	65	65	20
MINIMUM EFFICIENCY (%)	55	55	55
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: 1. BRONZE FITTED PUMP FOR DOMESTIC WATER SERVICE. PROVIDE AQUASTAT CONTROL.

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)	155			
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				

PREP'D BY DATE APPROVED

1. PROVIDE UNIT MOUNTED THERMOSTAT.

SOLID SEPARATOR SCHEDULE			
DESIGNATION	SS-1		
LOCATION	MECH ROOM		
SERVICE	HOT WATER		
MAXIMUM PRESSURE DROP (FT-H20)	12		
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	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	17.5		
FILL PRESSURE (PSI)	20	60*		
RELEIF 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.

DOMESTIC HOT WATER HE	ATER SC	HEDULE
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

Wiley|Wilson 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.254.7242

M - 108PROJECT NO. CP12-0121 NAVAL FACILITIES ENGINEERING COMMAND

SHEET 22 OF 37

IM SWL JHE SUBMITTED BY:

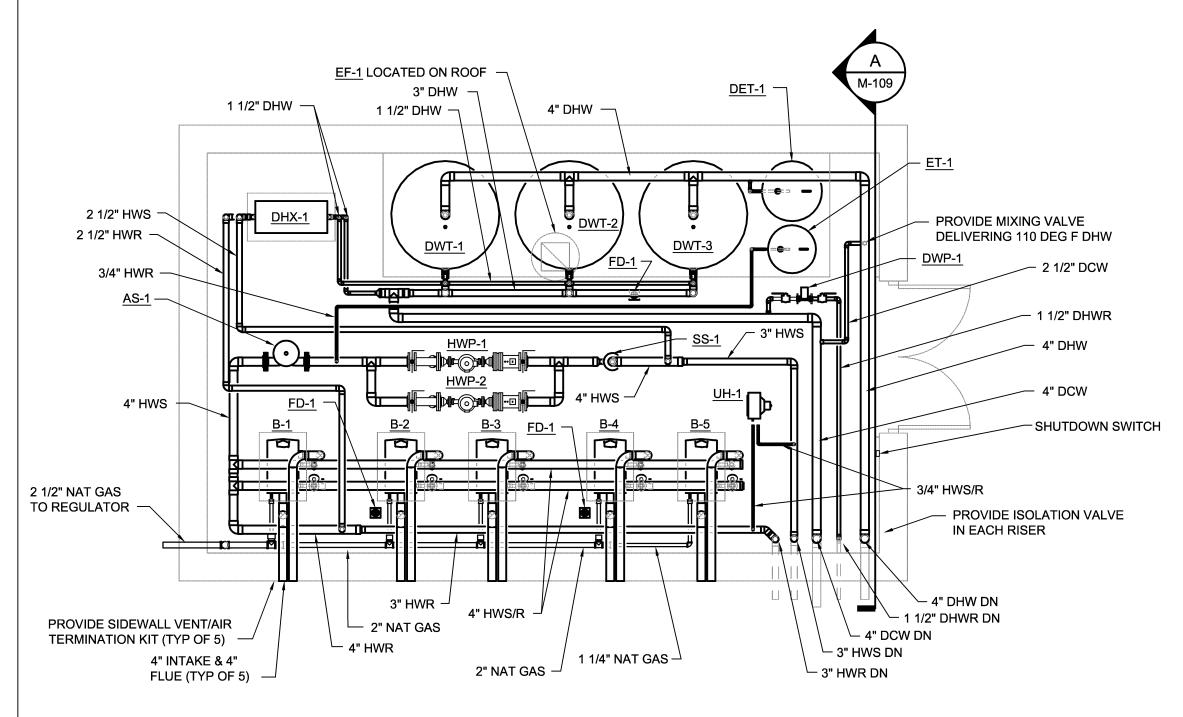
DESIGN DIR.

BOILER MODIFICATIONS, VARIOUS FACILITIES, FRENCH CREEK

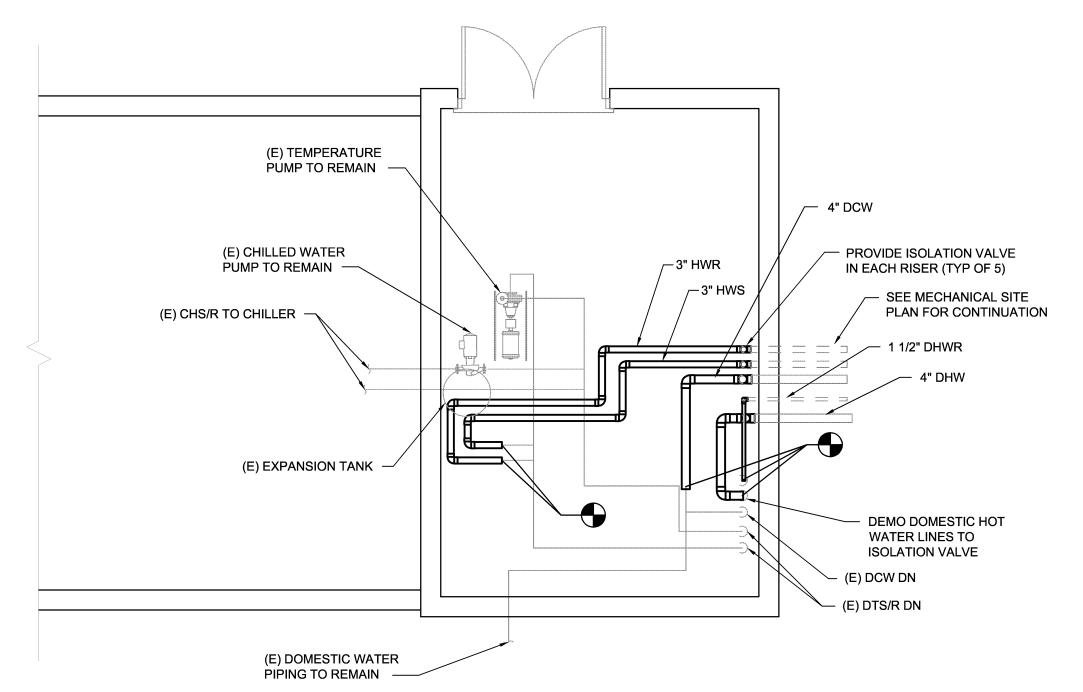
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

BUILDING FC500 MECHANICAL DEMOLITION AND NEW WORK PLAN DATE SIZE CODE IDENT NO. NAVFAC DRAWING NO. 60011329

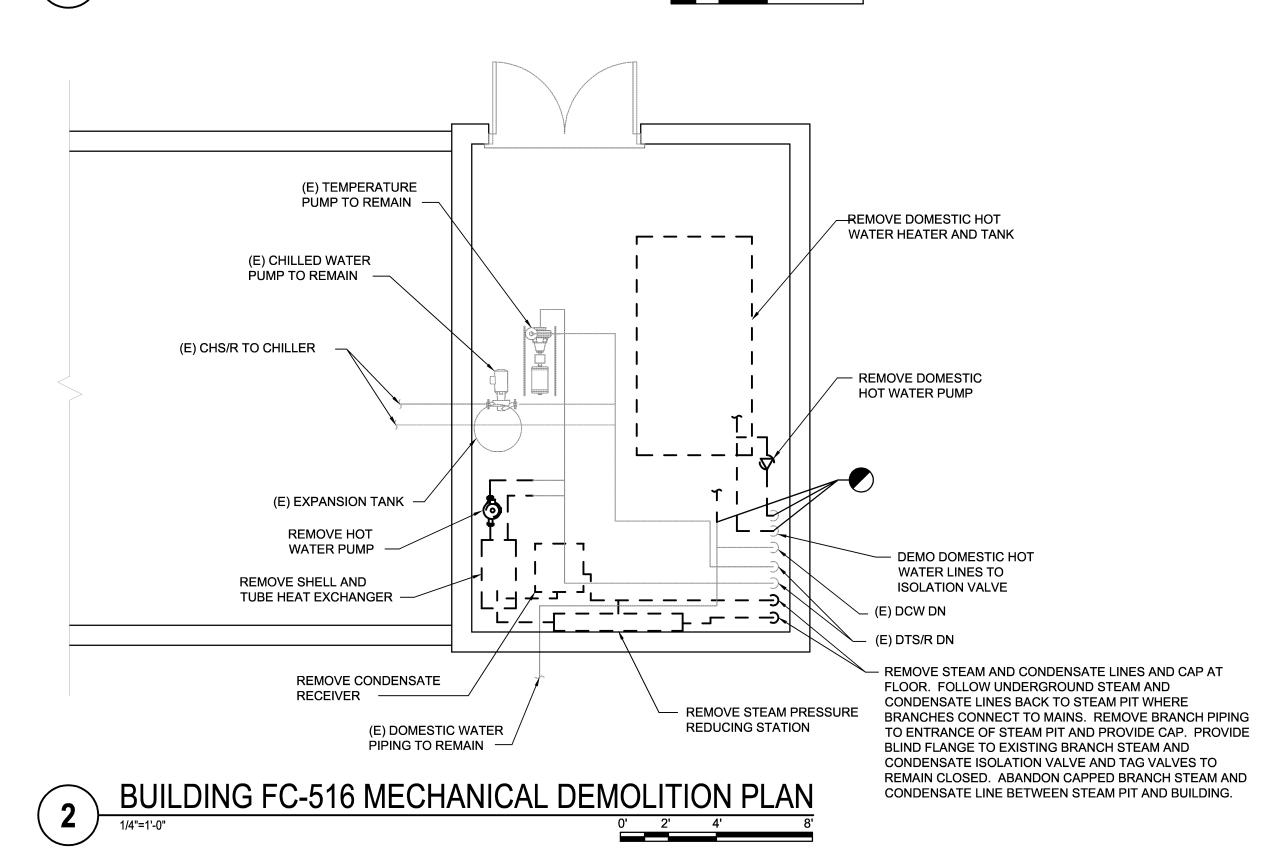
DATE CONSTR CONTR NO. N40085-12-B-0121 SATISFACTORY TO SCALE: AS SPEC No.



BUILDING FC-515 NEW MECHANICAL ROOM PLAN

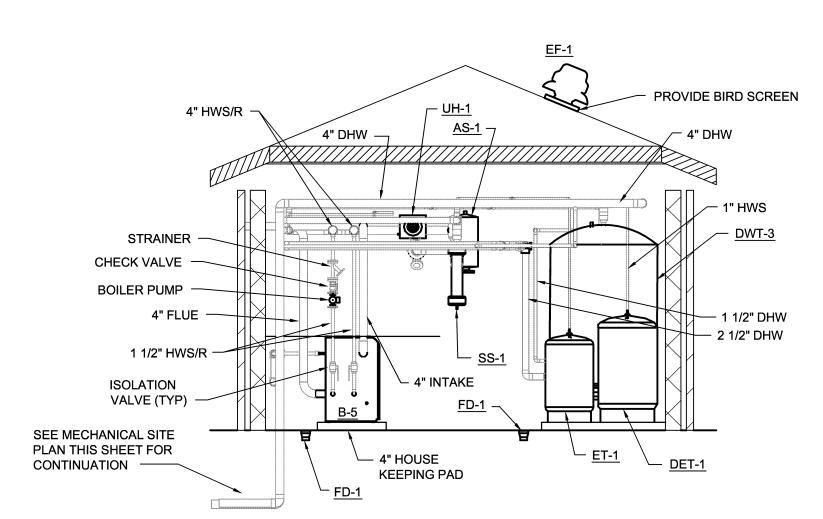


BUILDING FC-516 EXISTING MECHANICAL ROOM PLAN



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-
- 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.





LOCATION

BASED ON

REMARKS

MODEL

STORAGE (GALLONS)

TANK DIAMETER (IN)

VERTICAL HEIGHT (IN)

REMARKS LEGEND

ASME PRESSURE RATING (PSI)

VERTICAL WITH INLET

BAFFLE

MECH ROOM

752

125

100

LOCHINVAR

LOCK-TEMP

1. PROVIDE GLASS LINED VERTICAL DOMESTIC HOT WATER STORAGE TANK WITH RING BASE, 2" TOP OUTLET, 1 1/4"

T&P TOP CONNECTION, 2" SIDE BOTTOM HEATING INLET, 2" SIDE BOTTOM HEATING OUTLET, 1" BOTTOM DRAIN, 3/4" SIDE AQUASTAT/SENSOR TAPPING. SEE SPECIFICATIONS FOR REQUIRED FIELD INSULATION, R-12.5 MINIMUM.

> **BUILDING FC-516 MECHANICAL** ROOM AND CHILLER YARD -

- NEW MECHANICAL ROOM

PRE-INSULATED

UNDERGROUND PIPING

BUILDING FC-515 MECHANICAL SITE PLAN

1/16"=1'-0"

∖ M-109

VERTICAL WITH INLET

BAFFLE

MECH ROOM

125

100

LOCHINVAR

LOCK-TEMP

BAFFLE

MECH ROOM

752

125

100

LOCHINVAR

LOCK-TEMP

√ M-109

- 3" HWS – 4" DCW ─ 1 1/2" DHWR

`— 4" DHW

NATURAL GAS NOTE:

2,000 MBH AT 10 IN-H20.

1. TOTAL CONNECTED NATURAL GAS DEMAND FOR THIS BUILDING IS

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**

SEE GENERAL NOTES ON SHEET M-001.

REPLACE ALL 76 SHOWER HEADS IN THE BUILDING WITH LOW FLOW, 1.5 GPM SHOWER HEADS. 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.

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. INSTALL GAS PIPE INC 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. 8. EXISTING BUILDING HAS A DUAL TEMPERATURE SYSTEM CONTROLLED BY MANUAL HEATING/COOLING CHANGEOVER SWITCH. THE NEW SYSTEM SHALL BE INCORPORATED INTO THE CHANGEOVER CONTROL.

9. STORE DOMESTIC HOT WATER AT 140 DEG F AND TEMPER TO 110 DEG F BEFORE BEING SUPPLIED TO BUILDING. 10. PROVIDE APPURTENANCES TO COMPLY WITH ASME CSD-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUT DOWN SWITCH LOCATED ADJACENT TO EXIT DOOR.

E	BOILER SO	CHEDULE			
DESIGNATION	B-1	B-2	B-3	B-4	B-5
LOCATION	MECH ROOM				
FUEL TYPE	NATURAL GAS				
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4	4	4	4
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10	10	10	10
GAS INLET CONNECTION (IN)	1	1	1	1	1
INPUT (MBH)	399	399	399	399	399
OUTPUT (MBH)	367	367	367	367	367
MINIMUM TURN DOWN RATIO	5:1	5:1	5:1	5:1	5:1
FLOWRATE (GPM)	21	21	21	21	21
MAXIMUM PRESSURE DROP (FT_H20)	8	8	8	8	8
ENTERING WATER TEMPERATURE (DEG F)	120	120	120	120	120
LEAVING WATER TEMPERATURE (DEG F)	155	155	155	155	155
MINIMUM OPERATING PRESSURE (PSI)	30	30	30	30	30
VOLTAGE (V)	120	120	120	120	120
PHASE	1	1	1	1	1
FREQUENCY (Hz)	60	60	60	60	60
TOTAL OPERATING AMPS	1.5	1.5	1.5	1.5	1.5
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4	4	4	4
SELECTION BASED ON	LOCHINVAR	LOCHINVAR	LOCHINVAR	LOCHINVAR	LOCHINVAR
MODEL REMARKS	KB-400	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	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 21 GPM AT 35 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)	155			
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			
<u> </u>				

REMARKS LEGEND 1. PROVIDE UNIT MOUNTED THERMOSTAT.

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)	105	105	15	
TOTAL HEAD (FT-H2O)	65	65	20	
MINIMUM EFFICIENCY (%)	50	50	-	
CONNECTION SIZE	-	-	-	
SUCTION (IN)	2	2	1.5	
DISCHARGE (IN)	2	2	1.5	
MOTOR DATA	-	-	-	
MOTOR FRAME	185JM	185JM	-	
HORSEPOWER	5	5	-	
RPM	1750	1750	3300	
VOLTS	208	208	115	
PHASE	1	1	1	
HERTZ	60	60	60	
SELECTION BASED ON (MFGR)	BELL & GOSSETT	BELL & GOSSETT	BELL & GOSSET	
MODEL	80 2x2x9-1/2B	80 2x2x9-1/2B	BOOSTER PL-36	
REMARKS	2	2	1	
REMARKS LEGEND:	•		•	

REMARKS LEGEND:

1. BRONZE FITTED PUMP FOR DOMESTIC WATER SERVICE. PROVIDE AQUASTAT CONTROL. 2. HWP-1 AND HWP-2 MUST ACCOMMODATE THE FLOW AND HEAD OF THE SYSTEM DURING

SUMMER AND WINTER CONDITIONS. PUMP MUST BE SELECTED TO OPERATE AT STABLE CONDITIONS AT THE ABOVE FLOW AND HEAD AS WELL AS AT 39 GPM.

SOLID SEPARAT	OR
SCHEDULE	
DESIGNATION	SS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
MAXIMUM PRESSURE DROP (FT-H20)	28
COLLECTION CHAMBER CAPACITY (GAL)	0.8
BASED ON	LAKOS
MODEL	ILB-0200

FLOOR DRAIN SCHEDULE

DESCRIPTION

ZURN MODEL 415B WITH 6" NICKEL BRONZE

STRAINER AND PROSET TRAPGUARD

DESIGNATION | DRAIN SIZE

FD-1

LINE SIZE (IN)	4			
BASED ON		BELL & GOSSETT		
MODEL		ROLAIR'	TROL	
EXPANSION	TAN	IK SCH	IEDU	LE
DESIGNATION		ET-1	DI	ET-1
SERVICE	HEATING WATER		DOMESTIC HO WATER	
LOCATION	MECH ROOM		MECH ROOM	
TYPE	BLADDER		REPLA BLA	CEABL DDER
TANK VOLUME (GAL)	60		2	211
FILL PRESSURE (PSI)	20		(60*
RELEIF VALVE PRESSURE SETTING (PSI)	100		1	00
BASED ON	JOHN WOOD COMPANY		AM	TROL
MODEL	JAER-23-607			SERIE: 452-C

PREP'D BY DATE APPROVED

EXHAUST

MECH ROOM

CENTRIFUGAL

.15

1237

DIRECT

1/6

1725

115

60

GREENHECK

G-095-VG

1, 2 & 3

MECH ROOM

HOT WATER

FAN SCHEDULE

DESIGNATION

DESCRIPTION

DRIVE TYPE

MOTOR DATA

VOLTS

REMARKS

LOCATION

HORSEPOWER

| SELECTION BASED ON

REMARKS LEGEND:

1. PROVIDE FAN WITH INTEGRAL BACK-DRAFT

3. PROVIDE WALL MOUNTED THERMOSTAT

WITH FAN TO OPEN UPON FAN OPERATION.

2. PROVIDE FAN WITH UNIT MOUNTED DISCONNECT.

CONTROL. WIRE INTAKE LOUVER DAMPER IN SERIES

DAMPER, CONTINUOUS DUTY RATED.

AIR SEPARATOR SCHEDULE

FAN DATA

SERVES ROOM(S)

AIRFLOW (SCFM)

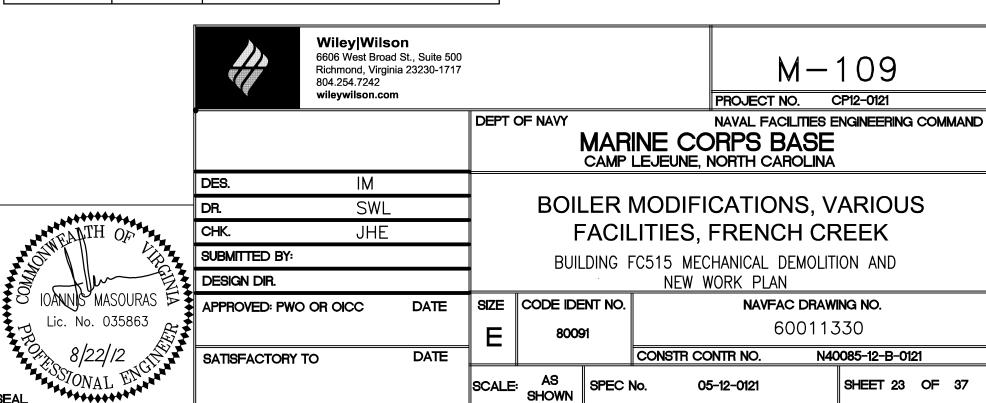
TOTAL SP (IN-H2O)

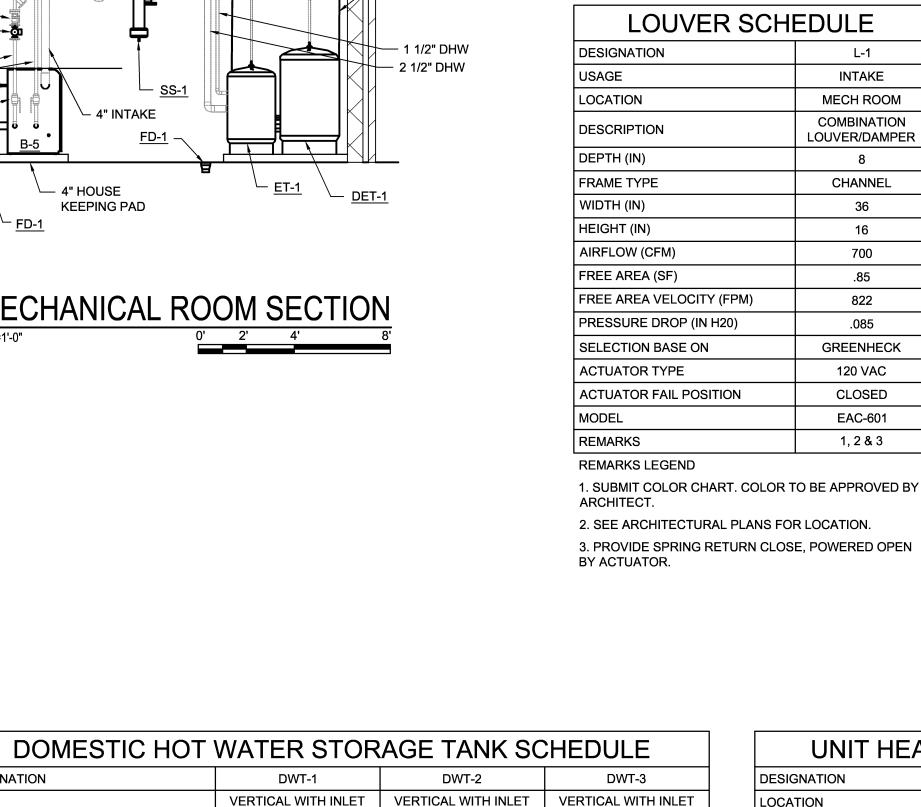
	HEAT EXCHANGER	SCHEDULE
	DESIGNATION	DHX-1
	TYPE	BRAZED PLATE FRAME HEAT EXCHANGER
	LOCATION	MECH ROOM
	BOILER HOT WATER INPUT (MBH)	750
	BOILER HOT WATER FLOW (GPM)	39
	BOILER WATER SUPPLY TEMP (DEG F)	155
	BOILER WATER RETURN TEMP (DEG F)	115
OM	RECOVERY RATE TEMP RISE (DEG F)	100
R	RECOVERY RATE GPH	900
	VOLTS	120
	PHASE	1
	FREQUENCY (Hz)	60
	BASED ON	CEMLINE
	MODEL	BPH-750
	REMARKS	1
,	REMARKS LEGEND	

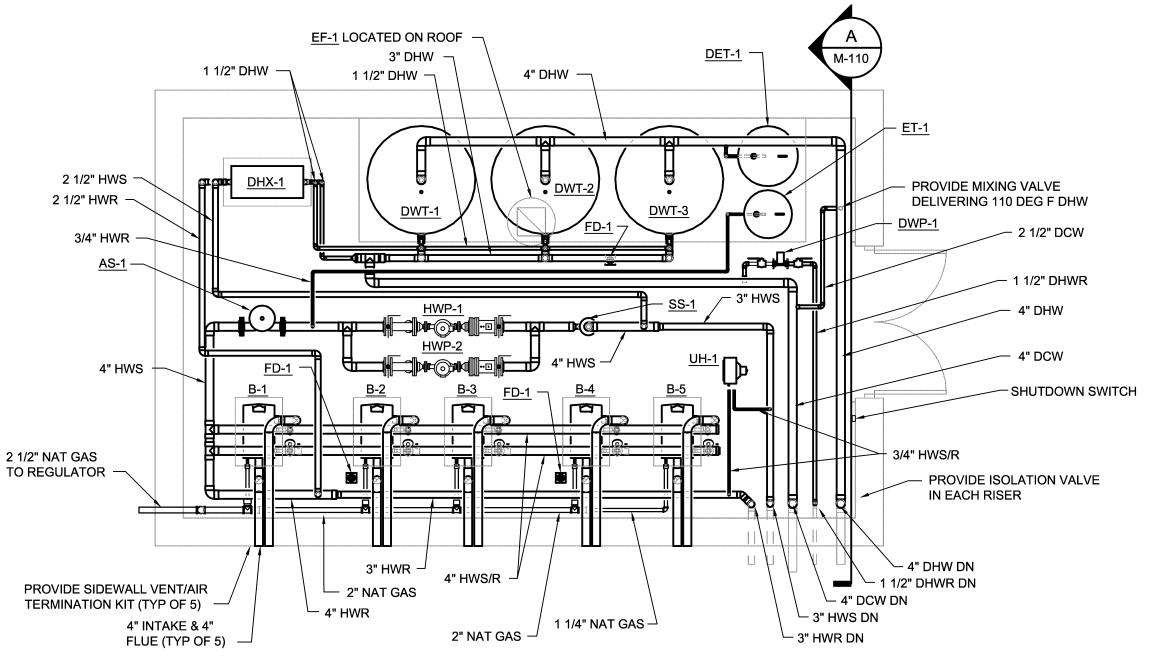
1. PROVIDE DOUBLE WALL PLATE FRAME HEAT EXCHANGER, INTEGRATED TANK CIRCULATION PUMP, HWS CONTROL VALVE, TANK SENSORS AND INTEGRATED CONTROL PANEL TO PROVIDE SYSTEM TEMPERATURES, ALARM CONTACTS, CALL FOR HOT WATER, CIRCULATION CONTROL, AND SECONDARY SOLENOID SAFETY VALVE.

2. PROVIDE PRESSURE AND TEMPERATURE TEST PORTS ON THE SUPPLY AND RETURN SIDE OF ALL DOMESTIC HOT WATER BUILDING HOT WATER PLATE AND FRAME HEAT EXCHANGERS. 3. PROVIDE 3-WAY CONTROL VALVE AND AUTOMATIC FLOW CONTROL VALVE ON BOILER SIDE OF HEAT EXCHANGER. 4. PROVIDE TAPS AND SERVICE VALVES ON DOMESTIC SIDE OF HEAT EXCHANGER TO ALLOW FOR ACID CLEANING.

SHEET 23 OF 37







PROVIDE BIRD SCREEN 4" HWS/R STRAINER CHECK VALVE -**BOILER PUMP** 1 1/2" HWS/R ISOLATION VALVE (TYP) SEE MECHANICAL SITE PLAN THIS SHEET FOR - 4" HOUSE CONTINUATION — **KEEPING PAD**

DESIGNATION

LOCATION

BASED ON

REMARKS

MODEL

STORAGE (GALLONS)

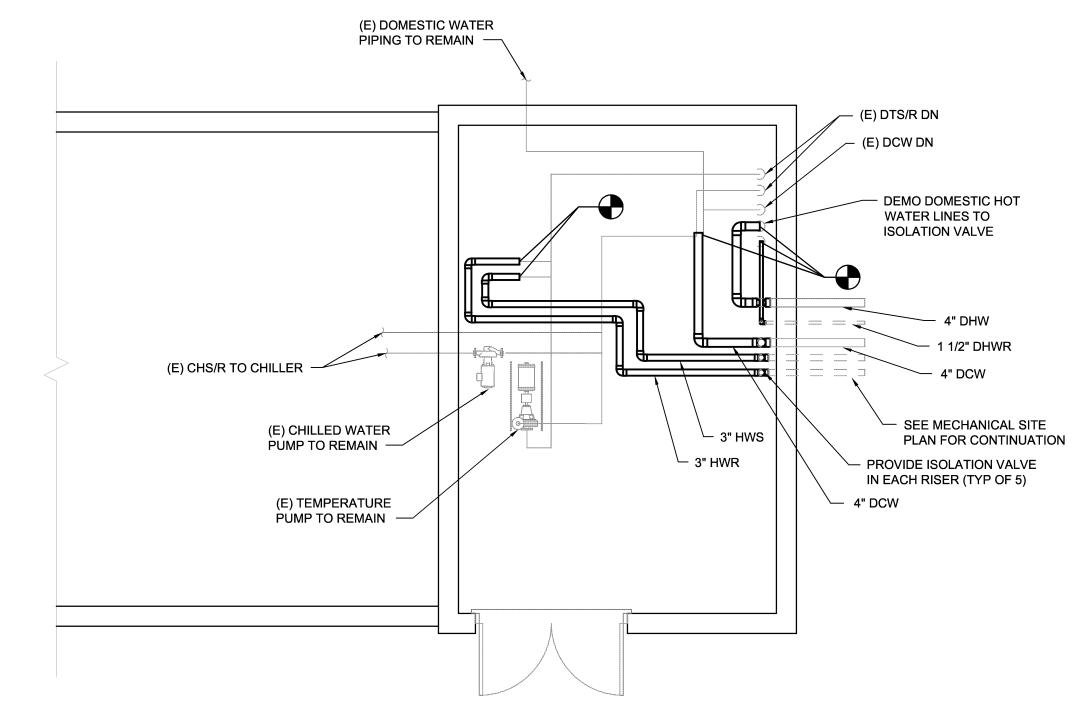
TANK DIAMETER (IN)

VERTICAL HEIGHT (IN)

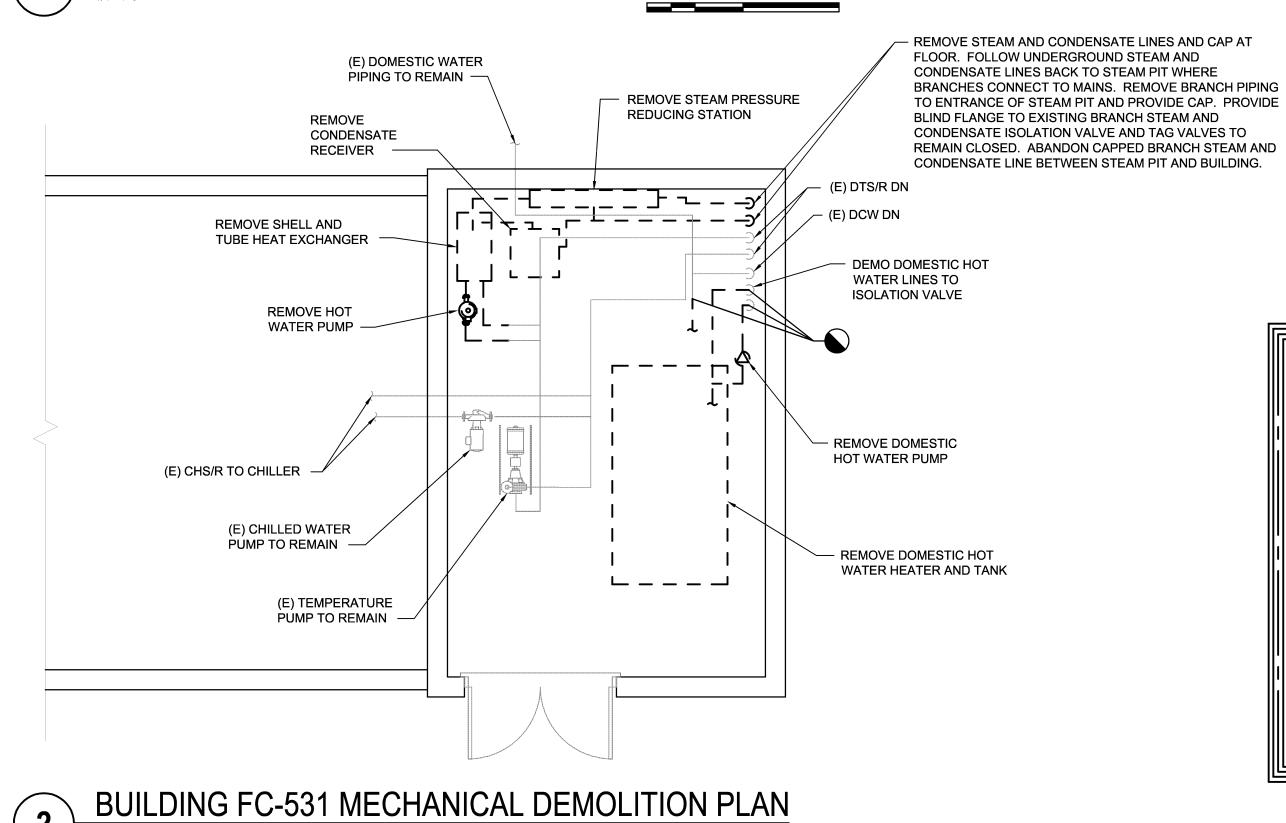
REMARKS LEGEND

ASME PRESSURE RATING (PSI)

BUILDING FC-530 NEW MECHANICAL ROOM PLAN



BUILDING FC-531 EXISTING MECHANICAL ROOM PLAN



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-
- 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.

NATURAL GAS NOTE:

1. TOTAL CONNECTED NATURAL GAS DEMAND FOR THIS BUILDING IS 2,000 MBH AT 10 IN-H20.

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**

SEE GENERAL NOTES ON SHEET M-001. REPLACE ALL 92 SHOWER HEADS IN THE BUILDING WITH LOW FLOW, 1.5 GPM SHOWER HEADS.

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.

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.

10. PROVIDE APPURTENANCES TO COMPLY WITH ASME CSD-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUT DOWN SWITCH LOCATED ADJACENT TO EXIT DOOR.

INSTALL GAS PIPE INC 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. 8. EXISTING BUILDING HAS A DUAL TEMPERATURE SYSTEM CONTROLLED BY MANUAL HEATING/COOLING CHANGEOVER SWITCH. THE NEW SYSTEM SHALL BE INCORPORATED INTO THE CHANGEOVER CONTROL. 9. STORE DOMESTIC HOT WATER AT 140 DEG F AND TEMPER TO 110 DEG F BEFORE BEING SUPPLIED TO BUILDING.

LOUVER SCHEDULE			
SIGNATION	L-1		
AGE	INTAKE		
CATION	MECH ROOM		
SCRIPTION	COMBINATION LOUVER/DAMPER		
PTH (IN)	8		
AME TYPE	CHANNEL		
DTH (IN)	36		
IGHT (IN)	16		
RFLOW (CFM)	700		
EE AREA (SF)	.85		
EE AREA VELOCITY (FPM)	822		
ESSURE DROP (IN H20)	.085		
LECTION BASE ON	GREENHECK		
TUATOR TYPE	120 VAC		
TUATOR FAIL POSITION	CLOSED		
DDEL	EAC-601		

REMARKS LEGEND 1. SUBMIT COLOR CHART. COLOR TO BE APPROVED BY

1, 2 & 3

2. SEE ARCHITECTURAL PLANS FOR LOCATION. 3. PROVIDE SPRING RETURN CLOSE, POWERED OPEN BY ACTUATOR.

BOILER SCHEDULE					
DESIGNATION	B-1	B-2	B-3	B-4	B-5
LOCATION	MECH ROOM				
FUEL TYPE	NATURAL GAS				
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4	4	4	4
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10	10	10	10
GAS INLET CONNECTION (IN)	1	1	1	1	1
INPUT (MBH)	399	399	399	399	399
OUTPUT (MBH)	367	367	367	367	367
MINIMUM TURN DOWN RATIO	5:1	5:1	5:1	5:1	5:1
FLOWRATE (GPM)	21	21	21	21	21
MAXIMUM PRESSURE DROP (FT_H20)	8	8	8	8	8
ENTERING WATER TEMPERATURE (DEG F)	120	120	120	120	120
LEAVING WATER TEMPERATURE (DEG F)	155	155	155	155	155
MINIMUM OPERATING PRESSURE (PSI)	30	30	30	30	30
VOLTAGE (V)	120	120	120	120	120
PHASE	1	1	1	1	1
FREQUENCY (Hz)	60	60	60	60	60
TOTAL OPERATING AMPS	1.5	1.5	1.5	1.5	1.5
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4	4	4	4
SELECTION BASED ON	LOCHINVAR	LOCHINVAR	LOCHINVAR	LOCHINVAR	LOCHINVAR
MODEL REMARKS	KB-400	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	1, 2, 3 & 4

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.

3. PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE,

A DROVIDE BOILERS WHICH ARE AT LEAST 040/ EFFICIENT PASED ON DTS 2000, DEV 06 07 CONDITIONS

2. BOILER CIRCULATION PUMP TO BE PROVIDED BY MANUFACTURER AT 21 GPM AT 35 DELTA T.

DESIGNATION

SERVICE

LOCATION

PUMP DATA

FLOW (GPM)

TOTAL HEAD (FT-H2O)

CONNECTION SIZE

REMARKS LEGEND:

SUCTION (IN)

MINIMUM EFFICIENCY (%)

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)	155			
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.

	DISCHARGE (IN)	2	2	1.5
	MOTOR DATA	-	-	-
	MOTOR FRAME	185JM	185JM	-
	HORSEPOWER	5	5	-
	RPM	1750	1750	3300
	VOLTS	208	208	115
	PHASE	1	1	1
	HERTZ	60	60	60
	SELECTION BASED ON (MFGR)	BELL & GOSSETT	BELL & GOSSETT	BELL & GOSSETT

MODEL 80 2x2x9-1/2B 80 2x2x9-1/2B REMARKS

1. BRONZE FITTED PUMP FOR DOMESTIC WATER SERVICE. PROVIDE AQUASTAT CONTROL. 2. HWP-1 AND HWP-2 MUST ACCOMMODATE THE FLOW AND HEAD OF THE SYSTEM DURING SUMMER AND WINTER CONDITIONS. PUMP MUST BE SELECTED TO OPERATE AT STABLE CONDITIONS AT THE ABOVE FLOW AND HEAD AS WELL AS AT 39 GPM.

PUMP SCHEDULE

HOT WATER

MECH ROOM

INLINE

105

65

50

2

HOT WATER

MECH ROOM

INLINE

105

50

DWP-1

DOMESTIC HOT

WATER

MECH ROOM

INLINE

15

20

1.5

BOOSTER PL-36

SOLID SEPARAT	OR
SCHEDULE	
DESIGNATION	SS-1
LOCATION	MECH ROOF
SERVICE	HOT WATER
MAXIMUM PRESSURE DROP (FT-H20)	28
COLLECTION CHAMBER CAPACITY (GAL)	0.8
BASED ON	LAKOS
MODEL	ILB-0200

FLOOR DRAIN SCHEDULE

SATISFACTORY TO

DESCRIPTION

ZURN MODEL 415B WITH 6" NICKEL BRONZE

DESIGNATION DRAIN SIZE

LINE SIZE (IN)		4		
ASED ON		BELL & GOSSETT		
MODEL		ROLAIRTROL		
EXPANSION	TAN	IK SCH	HEDU	LE
DESIGNATION		ET-1	DI	ΞT-1
SERVICE	HEATIN	NG WATER	DOMES WA	STIC HO
LOCATION	MECH ROOM		MECH ROOM	
TYPE	BLADDER		REPLACEABLE BLADDER	
TANK VOLUME (GAL)		60	2	211
FILL PRESSURE (PSI)		20	6	60*
RELEIF VALVE PRESSURE SETTING (PSI)		100	1	00
BASED ON	JOHN WOOD COMPANY		AMTROL	
	IVE	R-23-607	ST-C ST-	SERIES

PREP'D BY DATE APPROVED

EXHAUST

MECH ROOM

CENTRIFUGAL

.15

1237

DIRECT

1/6 1725

115

GREENHECK G-095-VG

1, 2 & 3

AS-1

MECH ROOM

HOT WATER

FAN SCHEDULE

DESIGNATION

DESCRIPTION

DRIVE TYPE

MOTOR DATA

VOLTS

REMARKS

LOCATION

SERVICE

HORSEPOWER

| SELECTION BASED ON

REMARKS LEGEND:

1. PROVIDE FAN WITH INTEGRAL BACK-DRAFT

3. PROVIDE WALL MOUNTED THERMOSTAT

WITH FAN TO OPEN UPON FAN OPERATION.

2. PROVIDE FAN WITH UNIT MOUNTED DISCONNECT.

CONTROL. WIRE INTAKE LOUVER DAMPER IN SERIES

DAMPER, CONTINUOUS DUTY RATED.

AIR SEPARATOR SCHEDULE

FAN DATA

SERVES ROOM(S)

AIRFLOW (SCFM)

TOTAL SP (IN-H2O)

HEAT EXCHANGER SCHEDULE					
DESIGNATION	DHX-1				
TYPE	BRAZED PLATE FRAME HEAT EXCHANGER				
LOCATION	MECH ROOM				
BOILER HOT WATER INPUT (MBH)	750				
BOILER HOT WATER FLOW (GPM)	39				
BOILER WATER SUPPLY TEMP (DEG F)	155				
BOILER WATER RETURN TEMP (DEG F)	115				
RECOVERY RATE TEMP RISE (DEG F)	100				
RECOVERY RATE GPH	900				
VOLTS	120				
PHASE	1				
FREQUENCY (Hz)	60				
BASED ON	CEMLINE				
MODEL	BPH-750				
REMARKS	1				

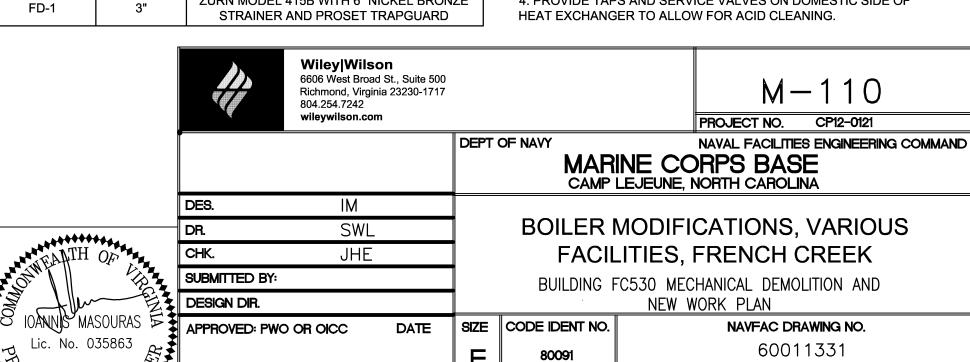
REMARKS LEGEND 1. PROVIDE DOUBLE WALL PLATE FRAME HEAT EXCHANGER, INTEGRATED TANK CIRCULATION PUMP, HWS CONTROL VALVE, TANK SENSORS AND INTEGRATED CONTROL PANEL TO PROVIDE SYSTEM TEMPERATURES, ALARM CONTACTS, CALL FOR HOT WATER, CIRCULATION CONTROL, AND SECONDARY SOLENOID SAFETY VALVE.

2. PROVIDE PRESSURE AND TEMPERATURE TEST PORTS ON THE SUPPLY AND RETURN SIDE OF ALL DOMESTIC HOT WATER BUILDING HOT WATER PLATE AND FRAME HEAT EXCHANGERS. 3. PROVIDE 3-WAY CONTROL VALVE AND AUTOMATIC FLOW CONTROL VALVE ON BOILER SIDE OF HEAT EXCHANGER. 4. PROVIDE TAPS AND SERVICE VALVES ON DOMESTIC SIDE OF

CONSTR CONTR NO.

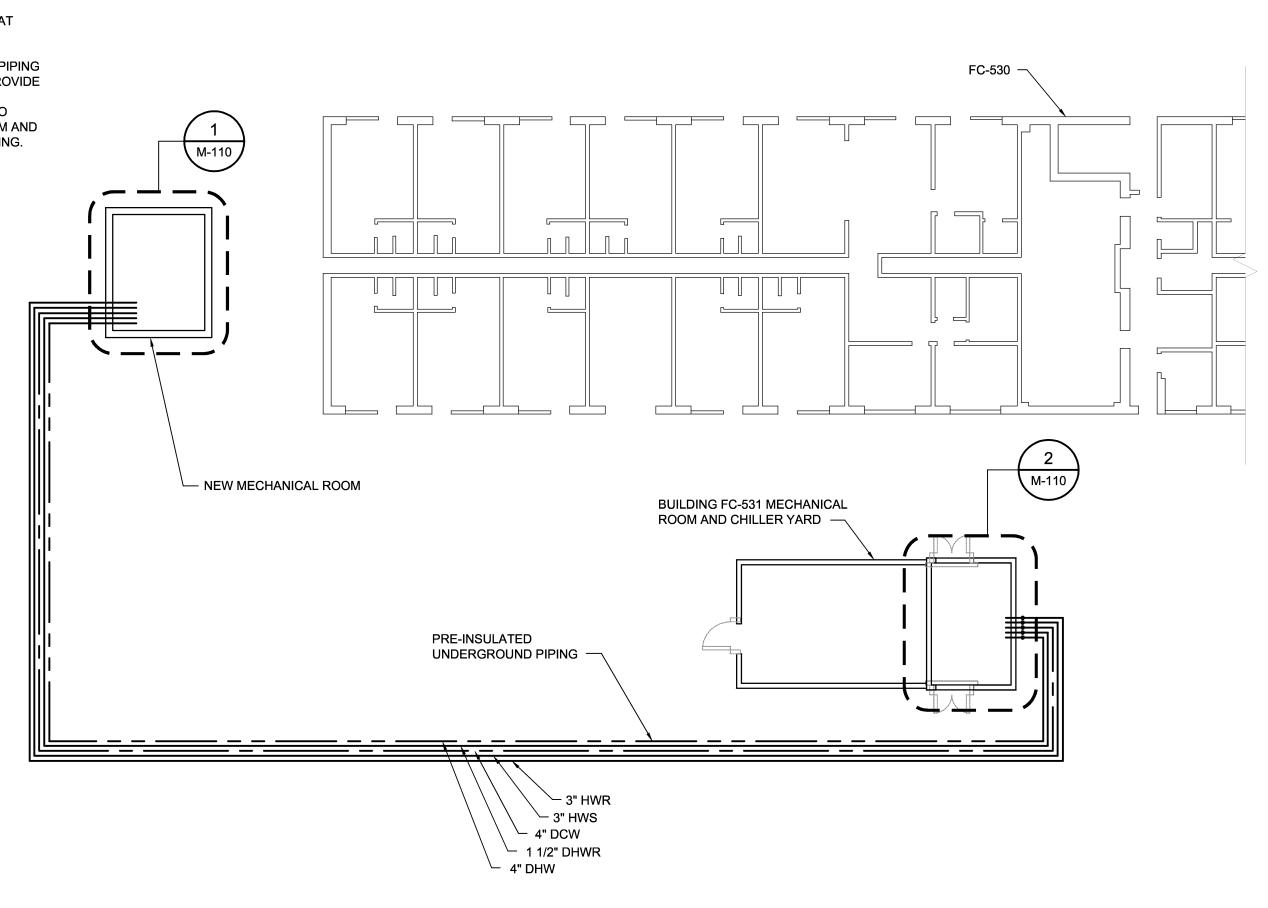
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SHEET 24 OF 37



SCALE: AS SPEC No.

DATE



DOMESTIC HOT WATER STORAGE TANK SCHEDULE

VERTICAL WITH INLET

BAFFLE

MECH ROOM

752

125

100

LOCHINVAR

LOCK-TEMP

VERTICAL WITH INLET

BAFFLE

MECH ROOM

752

125

48

100

LOCHINVAR

LOCK-TEMP

VERTICAL WITH INLET

BAFFI F

MECH ROOM

752

125

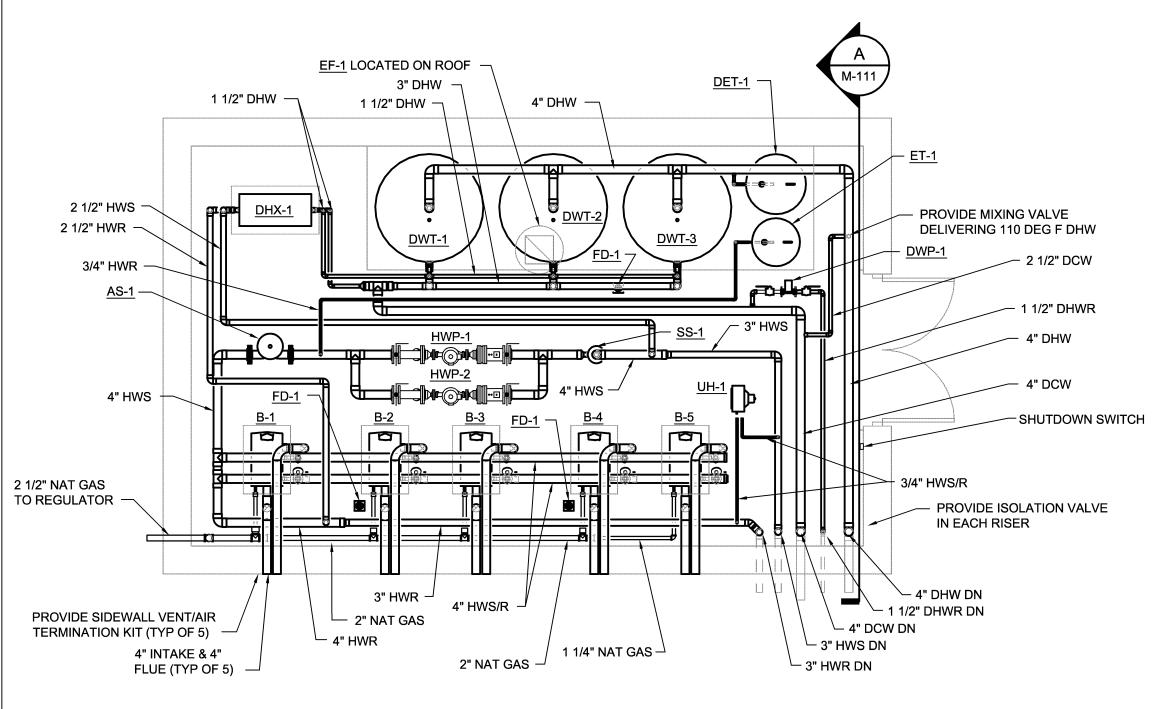
100

LOCHINVAR

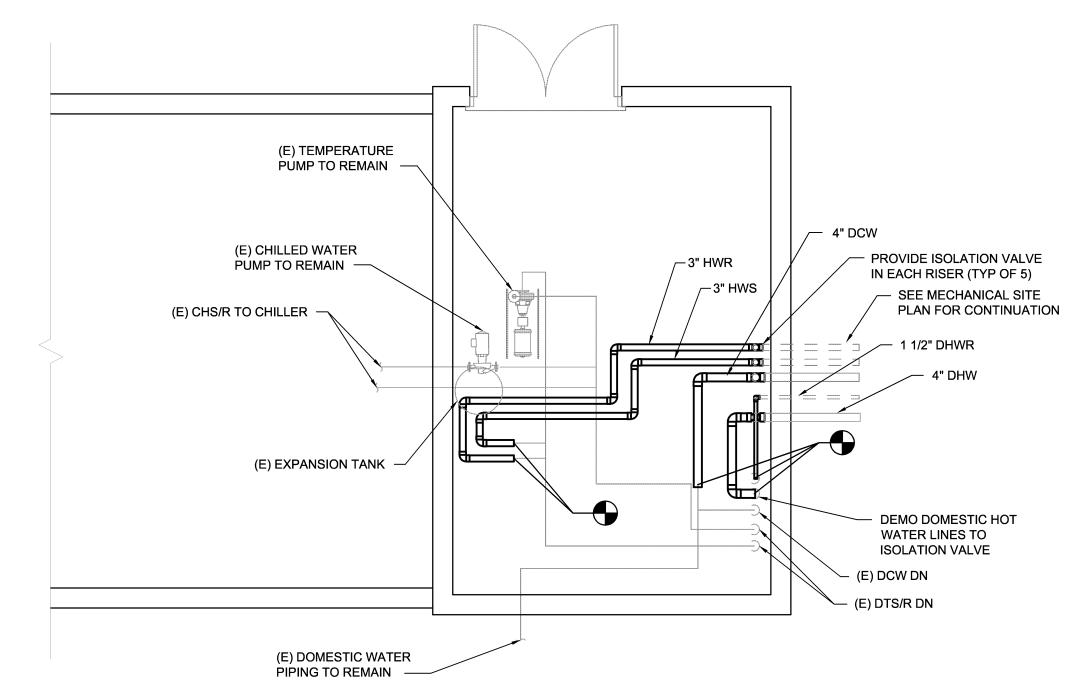
LOCK-TEMP

1. PROVIDE GLASS LINED VERTICAL DOMESTIC HOT WATER STORAGE TANK WITH RING BASE, 2" TOP OUTLET, 1 1/4" T&P TOP CONNECTION, 2" SIDE BOTTOM HEATING INLET, 2" SIDE BOTTOM HEATING OUTLET, 1" BOTTOM DRAIN, 3/4" SIDE AQUASTAT/SENSOR TAPPING. SEE SPECIFICATIONS FOR REQUIRED FIELD INSULATION, R-12.5 MINIMUM.

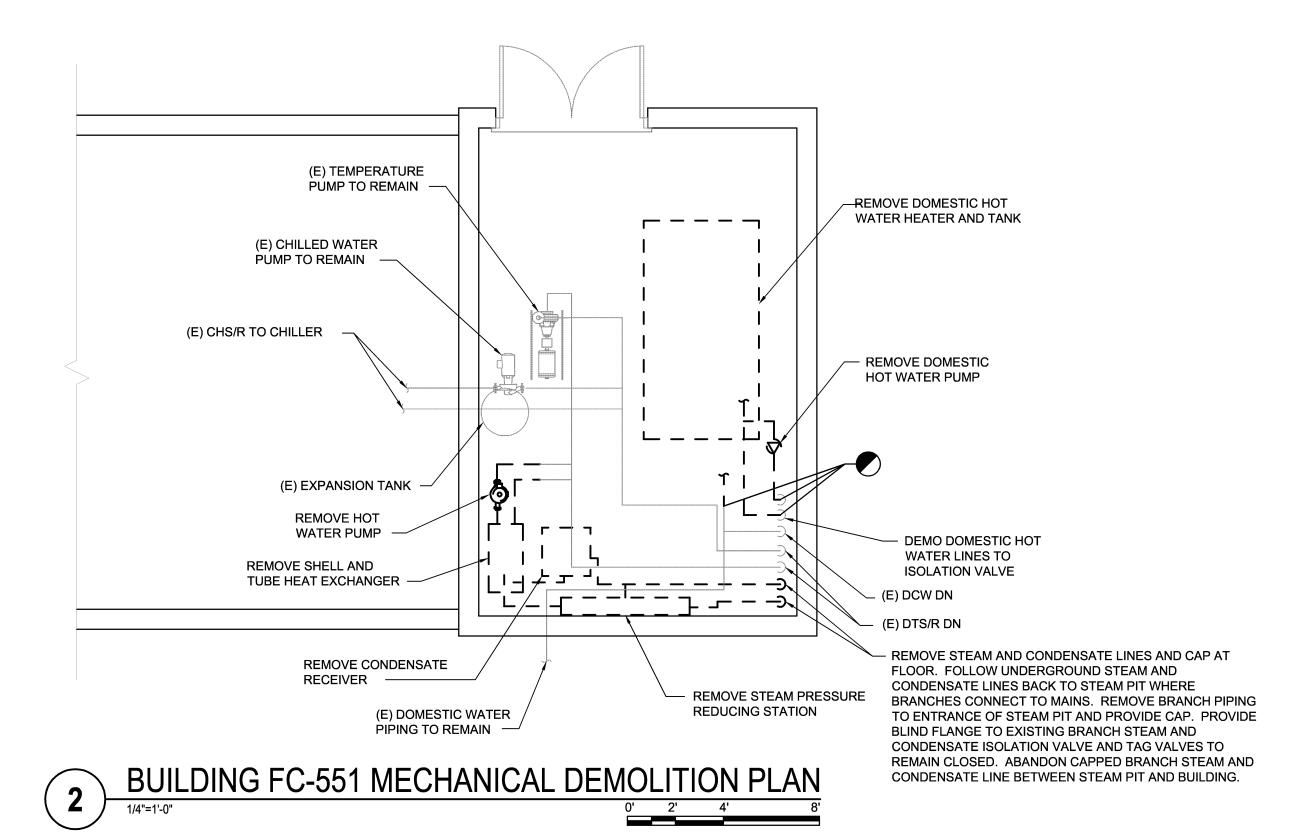
BUILDING FC-530 MECHANICAL SITE PLAN



BUILDING FC-550 NEW MECHANICAL ROOM PLAN



BUILDING FC-551 EXISTING MECHANICAL ROOM PLAN



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-
- 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.

NATURAL GAS NOTE:

PROVIDE BIRD SCREEN

DOMESTIC HOT WATER STORAGE TANK SCHEDULE

VERTICAL WITH INLET

BAFFLE

MECH ROOM

125

100

LOCHINVAR

LOCK-TEMP

VERTICAL WITH INLET

BAFFLE

MECH ROOM

752

125

48

100

LOCHINVAR

LOCK-TEMP

VERTICAL WITH INLET

BAFFLE

MECH ROOM

752

125

100

LOCHINVAR

LOCK-TEMP

1. PROVIDE GLASS LINED VERTICAL DOMESTIC HOT WATER STORAGE TANK WITH RING BASE, 2" TOP OUTLET, 1 1/4"

T&P TOP CONNECTION, 2" SIDE BOTTOM HEATING INLET, 2" SIDE BOTTOM HEATING OUTLET, 1" BOTTOM DRAIN. 3/4" SIDE AQUASTAT/SENSOR TAPPING. SEE SPECIFICATIONS FOR REQUIRED FIELD INSULATION, R-12.5 MINIMUM.

4" HWS/R

STRAINER

4" FLUE

- 4" HOUSE

LOCATION

BASED ON

REMARKS

MODEL

STORAGE (GALLONS)

TANK DIAMETER (IN)

VERTICAL HEIGHT (IN)

REMARKS LEGEND

ASME PRESSURE RATING (PSI)

KEEPING PAD

1 1/2" HWS/R

ISOLATION

VALVE (TYP)

SEE MECHANICAL SITE

PLAN THIS SHEET FOR

CONTINUATION —

CHECK VALVE

1. TOTAL CONNECTED NATURAL GAS DEMAND FOR THIS BUILDING IS 2,000 MBH AT 10 IN-H20.

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**

SEE GENERAL NOTES ON SHEET M-001. REPLACE ALL 76 SHOWER HEADS IN THE BUILDING WITH LOW FLOW, 1.5 GPM SHOWER HEADS.

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.

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.

INSTALL GAS PIPE INC 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.

8. EXISTING BUILDING HAS A DUAL TEMPERATURE SYSTEM CONTROLLED BY MANUAL HEATING/COOLING CHANGEOVER SWITCH. THE NEW SYSTEM SHALL BE INCORPORATED INTO THE CHANGEOVER CONTROL. 9. STORE DOMESTIC HOT WATER AT 140 DEG F AND TEMPER TO 110 DEG F BEFORE BEING SUPPLIED TO BUILDING.

LOUVER SCHEDULE				
ESIGNATION	L-1			
SAGE	INTAKE			
CATION	MECH ROOM			
ESCRIPTION	COMBINATION LOUVER/DAMPER			
EPTH (IN)	8			
RAME TYPE	CHANNEL			
IDTH (IN)	36			
EIGHT (IN)	16			
RFLOW (CFM)	700			
REE AREA (SF)	.85			
REE AREA VELOCITY (FPM)	822			
RESSURE DROP (IN H20)	.085			
ELECTION BASE ON	GREENHECK			
CTUATOR TYPE	120 VAC			
CTUATOR FAIL POSITION	CLOSED			
ODEL	EAC-601			
EMARKS	1, 2 & 3			
TMADICO LECEND				

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

В	OILER SO	CHEDULE				FAN SCHE
DESIGNATION	B-1	B-2	B-3	B-4	B-5	DESIGNATION
LOCATION	MECH ROOM	USAGE				
FUEL TYPE	NATURAL GAS	SERVES ROOM(S)				
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4	4	4	4	DESCRIPTION
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10	10	10	10	FAN DATA
GAS INLET CONNECTION (IN)	1	1	1	1	1	AIRFLOW (SCFM)
INPUT (MBH)	399	399	399	399	399	TOTAL SP (IN-H2O)
OUTPUT (MBH)	367	367	367	367	367	RPM
MINIMUM TURN DOWN RATIO	5:1	5:1	5:1	5:1	5:1	DRIVE TYPE
FLOWRATE (GPM)	21	21	21	21	21	MOTOR DATA
MAXIMUM PRESSURE DROP (FT_H20)	8	8	8	8	8	HORSEPOWER
ENTERING WATER TEMPERATURE (DEG F)	120	120	120	120	120	RPM
LEAVING WATER TEMPERATURE (DEG F)	155	155	155	155	155	VOLTS
MINIMUM OPERATING PRESSURE (PSI)	30	30	30	30	30	PHASE
VOLTAGE (V)	120	120	120	120	120	HERTZ
PHASE	1	1	1	1	1	SELECTION BASED ON
FREQUENCY (Hz)	60	60	60	60	60	MODEL
TOTAL OPERATING AMPS	1.5	1.5	1.5	1.5	1.5	REMARKS
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4	4	4	4	REMARKS LEGEND:
SELECTION BASED ON	LOCHINVAR	LOCHINVAR	LOCHINVAR	LOCHINVAR	LOCHINVAR	1. PROVIDE FAN WITH INTEGRA DAMPER, CONTINUOUS DUTY R
MODEL REMARKS	KB-400	KB-400	KB-400	KB-400	KB-400	PROVIDE FAN WITH UNIT MO
REMARKS	1, 2, 3 & 4	1, 2, 3 & 4	1, 2, 3 & 4	1, 2, 3 & 4	1, 2, 3 & 4	3. PROVIDE WALL MOUNTED TH

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.

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.

2. BOILER CIRCULATION PUMP TO BE PROVIDED BY MANUFACTURER AT 21 GPM AT 35 DELTA T.

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)	155			
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 REMARKS LEGEND

1. PROVIDE UNIT MOUNTED THERMOSTAT.

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)	105	105	15			
TOTAL HEAD (FT-H2O)	65	65	20			
MINIMUM EFFICIENCY (%)	50	50	-			
CONNECTION SIZE	-	-	-			
SUCTION (IN)	2	2	1.5			
DISCHARGE (IN)	2	2	1.5			
MOTOR DATA	-	-	-			
MOTOR FRAME	185JM	185JM	-			
HORSEPOWER	5	5	-			
RPM	1750	1750	3300			
VOLTS	208	208	115			
PHASE	1	1	1			
HERTZ	60	60	60			
SELECTION BASED ON (MFGR)	BELL & GOSSETT	BELL & GOSSETT	BELL & GOSSETT			
MODEL	80 2x2x9-1/2B	80 2x2x9-1/2B	BOOSTER PL-36			
REMARKS	2	2	1			

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

2. HWP-1 AND HWP-2 MUST ACCOMMODATE THE FLOW AND HEAD OF THE SYSTEM DURING SUMMER AND WINTER CONDITIONS. PUMP MUST BE SELECTED TO OPERATE AT STABLE CONDITIONS AT THE ABOVE FLOW AND HEAD AS WELL AS AT 39 GPM.

SOLID SEPARATOR				
SCHEDULE				
DESIGNATION	SS-1			
LOCATION	MECH ROOM			
SERVICE	HOT WATER			
MAXIMUM PRESSURE DROP (FT-H20)	28			
COLLECTION CHAMBER CAPACITY (GAL)	0.8			
BASED ON	LAKOS			
MODEL	ILB-0200			

FLOOR DRAIN SCHEDULE

DESCRIPTION

ZURN MODEL 415B WITH 6" NICKEL BRONZE

DESIGNATION DRAIN SIZE

FD-1

AIR SEPARATOR SCHEDULE					
DESIGNATION	DESIGNATION				
LOCATION		MECH ROOM			
SERVICE		HOT WA	TER		
LINE SIZE (IN)	LINE SIZE (IN)		4		
BASED ON		BELL & GOSSETT			
MODEL		ROLAIRTROL			
EXPANSION	TAN	IK SCH	I EDU	LE	
DESIGNATION		ET-1	DI	ET-1	
SERVICE	HEATIN	NG WATER	DOMES WA	STIC ATEF	
LOCATION	MEC	н коом	MECH	I RO	

PREP'D BY DATE APPROVED

EXHAUST

MECH ROOM

CENTRIFUGAL

.15

1237

DIRECT

1/6 1725

115

GREENHECK G-095-VG

FAN SCHEDULE

1. PROVIDE FAN WITH INTEGRAL BACK-DRAFT

3. PROVIDE WALL MOUNTED THERMOSTAT

WITH FAN TO OPEN UPON FAN OPERATION.

2. PROVIDE FAN WITH UNIT MOUNTED DISCONNECT.

CONTROL. WIRE INTAKE LOUVER DAMPER IN SERIES

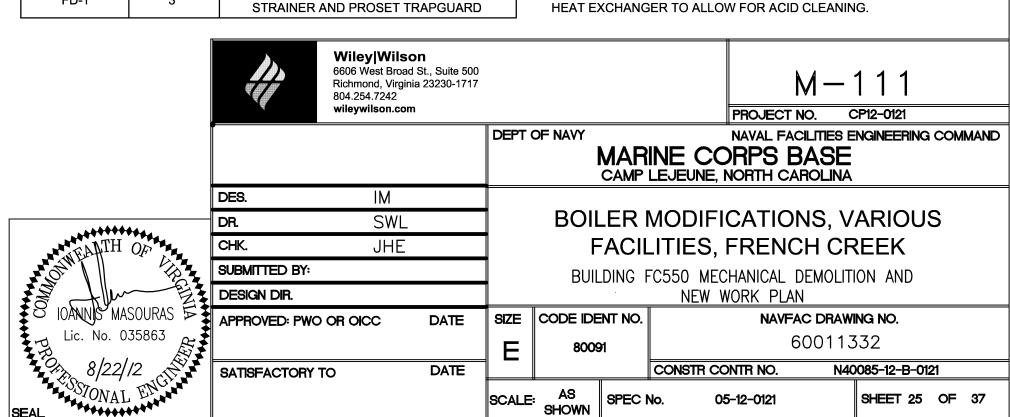
DAMPER, CONTINUOUS DUTY RATED.

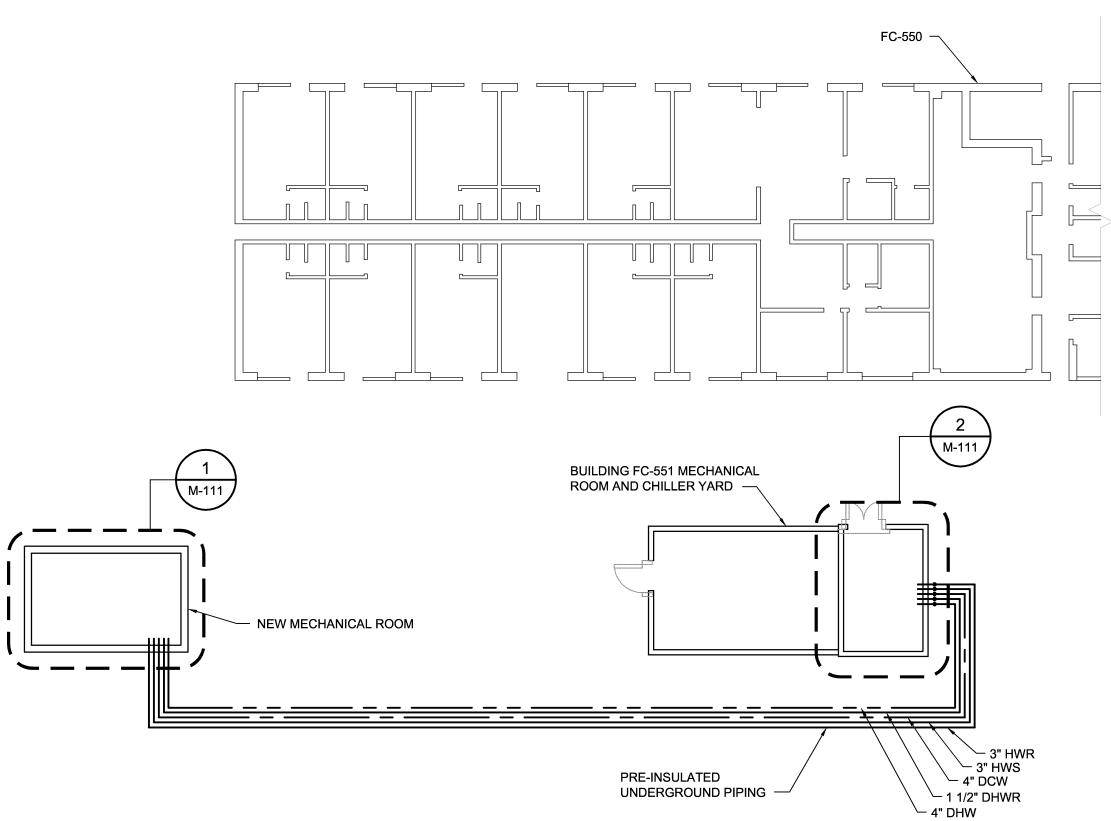
EXPANSION TANK SCHEDULE						
DESIGNATION	ET-1	DET-1				
SERVICE	HEATING WATER	DOMESTIC HOT WATER				
LOCATION	MECH ROOM	MECH ROOM				
TYPE	BLADDER	REPLACEABLE BLADDER				
TANK VOLUME (GAL)	60	211				
FILL PRESSURE (PSI)	20	60*				
RELEIF VALVE PRESSURE SETTING (PSI)	100	100				
BASED ON	JOHN WOOD COMPANY	AMTROL				
MODEL	JAER-23-607	ST-C SERIES ST-452-C				
* MATCH DOMESTIC WATER S	* MATCH DOMESTIC WATER SUPPLY PRESSURE AT THIS LOCATION.					

	HEAT EXCHANGER	SCHEDULE
	DESIGNATION	DHX-1
	TYPE	BRAZED PLATE FRAME HEAT EXCHANGER
	LOCATION	MECH ROOM
1	BOILER HOT WATER INPUT (MBH)	750
	BOILER HOT WATER FLOW (GPM)	39
	BOILER WATER SUPPLY TEMP (DEG F)	155
	BOILER WATER RETURN TEMP (DEG F)	115
	RECOVERY RATE TEMP RISE (DEG F)	100
	RECOVERY RATE GPH	900
	VOLTS	120
	PHASE	1
	FREQUENCY (Hz)	60
	BASED ON	CEMLINE
	MODEL	BPH-750
	REMARKS	1
	REMARKS LEGEND	

1. PROVIDE DOUBLE WALL PLATE FRAME HEAT EXCHANGER, INTEGRATED TANK CIRCULATION PUMP, HWS CONTROL VALVE, TANK SENSORS AND INTEGRATED CONTROL PANEL TO PROVIDE SYSTEM TEMPERATURES, ALARM CONTACTS, CALL FOR HOT WATER, CIRCULATION CONTROL, AND SECONDARY SOLENOID SAFETY VALVE.

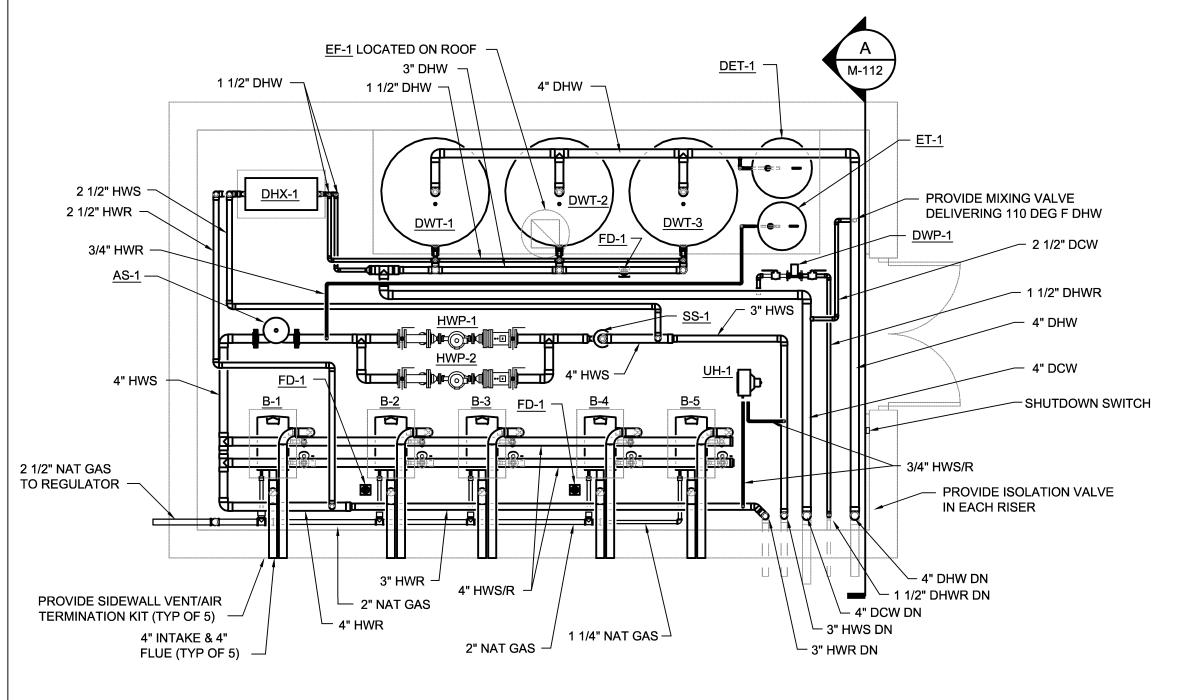
2. PROVIDE PRESSURE AND TEMPERATURE TEST PORTS ON THE SUPPLY AND RETURN SIDE OF ALL DOMESTIC HOT WATER BUILDING HOT WATER PLATE AND FRAME HEAT EXCHANGERS. 3. PROVIDE 3-WAY CONTROL VALVE AND AUTOMATIC FLOW CONTROL VALVE ON BOILER SIDE OF HEAT EXCHANGER. 4. PROVIDE TAPS AND SERVICE VALVES ON DOMESTIC SIDE OF HEAT EXCHANGER TO ALLOW FOR ACID CLEANING.





BUILDING FC-550 MECHANICAL SITE PLAN

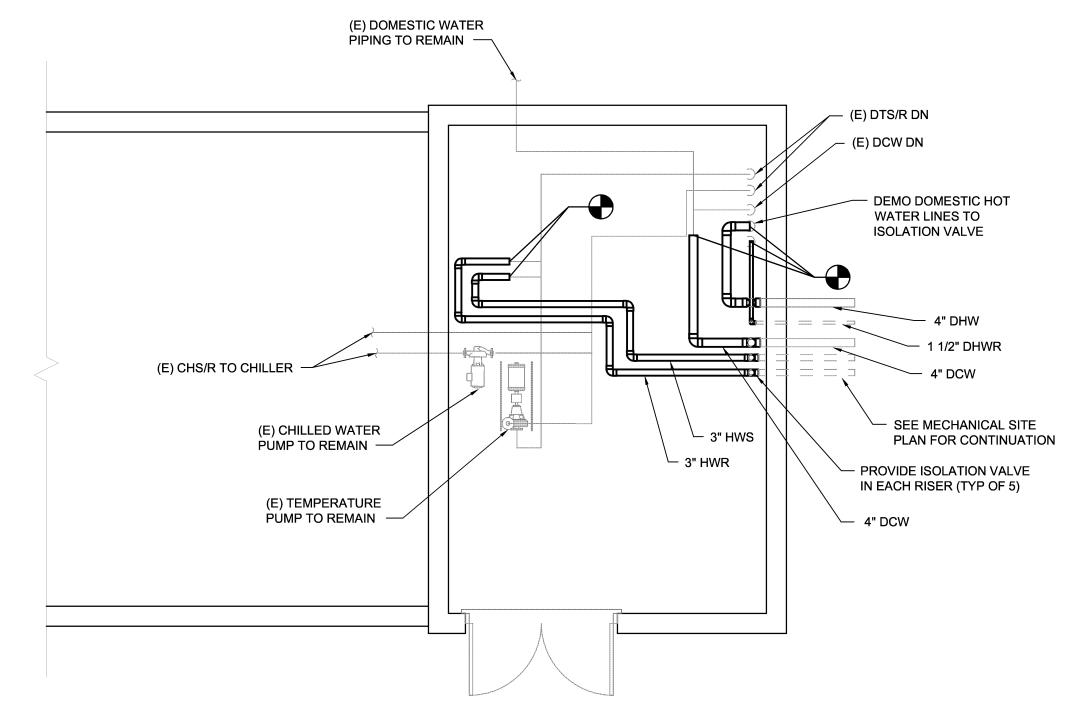
1/16"=1'-0"



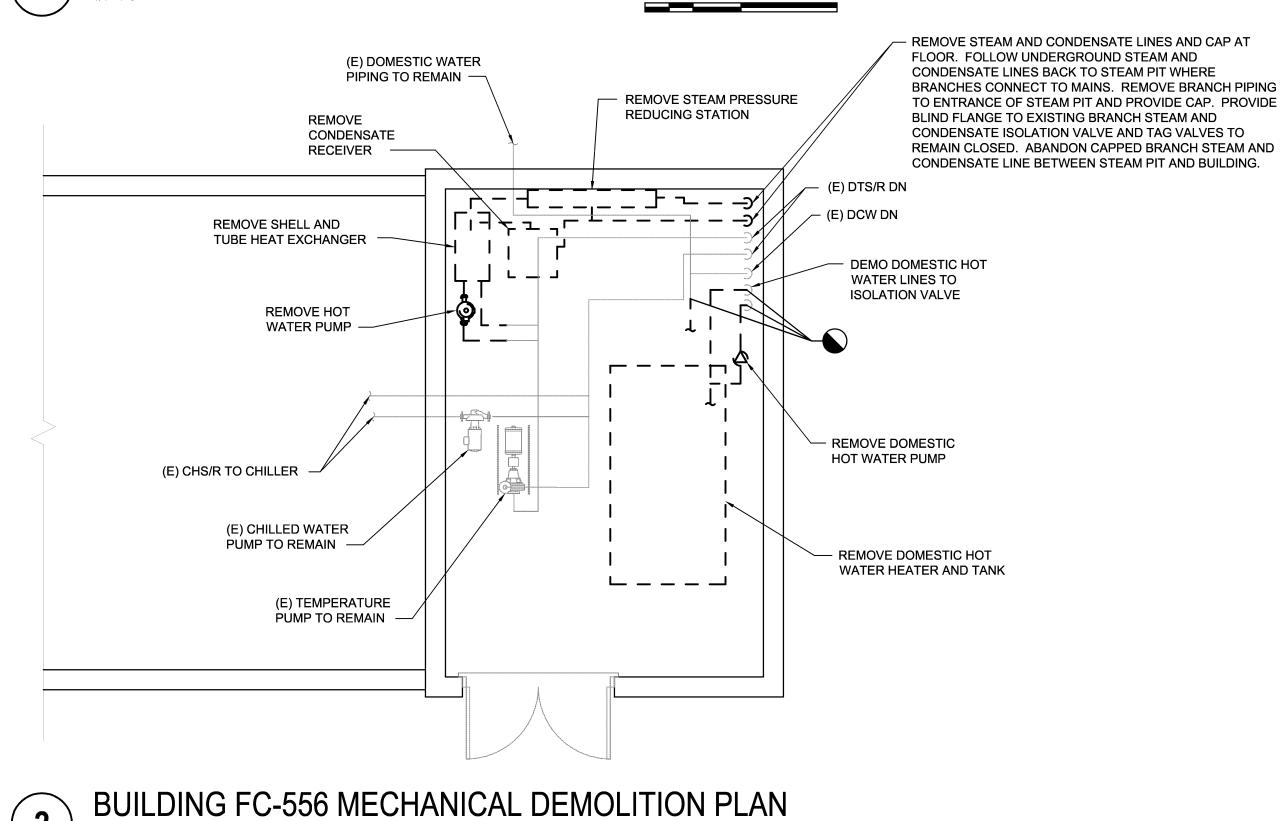
PROVIDE BIRD SCREEN 4" HWS/R STRAINER CHECK VALVE -1 1/2" HWS/R ISOLATION VALVE (TYP) SEE MECHANICAL SITE PLAN THIS SHEET FOR - 4" HOUSE CONTINUATION — **KEEPING PAD**

SIDE AQUASTAT/SENSOR TAPPING. SEE SPECIFICATIONS FOR REQUIRED FIELD INSULATION, R-12.5 MINIMUM.

BUILDING FC-555 NEW MECHANICAL ROOM PLAN



BUILDING FC-556 EXISTING MECHANICAL ROOM PLAN



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-
- 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
- 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.

release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.

NATURAL GAS NOTE:

1. TOTAL CONNECTED NATURAL GAS DEMAND FOR THIS BUILDING IS 2,000 MBH AT 10 IN-H20.

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

REPLACE ALL 92 SHOWER HEADS IN THE BUILDING WITH LOW FLOW, 1.5 GPM SHOWER HEADS.

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.

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.

INSTALL GAS PIPE INC 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.

8. EXISTING BUILDING HAS A DUAL TEMPERATURE SYSTEM CONTROLLED BY MANUAL HEATING/COOLING CHANGEOVER SWITCH. THE NEW SYSTEM SHALL BE INCORPORATED INTO THE CHANGEOVER CONTROL. 9. STORE DOMESTIC HOT WATER AT 140 DEG F AND TEMPER TO 110 DEG F BEFORE BEING SUPPLIED TO BUILDING.

LOUVER SCHEDULE				
SIGNATION	L-1			
\GE	INTAKE			
CATION	MECH ROOM			
SCRIPTION	COMBINATION LOUVER/DAMPER			
PTH (IN)	8			
AME TYPE	CHANNEL			
OTH (IN)	36			
GHT (IN)	16			
FLOW (CFM)	700			
EE AREA (SF)	.85			
EE AREA VELOCITY (FPM)	822			
ESSURE DROP (IN H20)	.085			
ECTION BASE ON	GREENHECK			
TUATOR TYPE	120 VAC			
TUATOR FAIL POSITION	CLOSED			
DEL	EAC-601			

REMARKS LEGEND 1. SUBMIT COLOR CHART. COLOR TO BE APPROVED BY

1, 2 & 3

2. SEE ARCHITECTURAL PLANS FOR LOCATION. 3. PROVIDE SPRING RETURN CLOSE, POWERED OPEN BY ACTUATOR.

REMARKS

В	OILER SO	CHEDULE				FAN SCHE
DESIGNATION	B-1	B-2	B-3	B-4	B-5	DESIGNATION
OCATION	MECH ROOM	USAGE				
FUEL TYPE	NATURAL GAS	SERVES ROOM(S)				
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4	4	4	4	DESCRIPTION
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10	10	10	10	FAN DATA
GAS INLET CONNECTION (IN)	1	1	1	1	1	AIRFLOW (SCFM)
NPUT (MBH)	399	399	399	399	399	TOTAL SP (IN-H2O)
OUTPUT (MBH)	367	367	367	367	367	RPM
MINIMUM TURN DOWN RATIO	5:1	5:1	5:1	5:1	5:1	DRIVE TYPE
FLOWRATE (GPM)	21	21	21	21	21	MOTOR DATA
MAXIMUM PRESSURE DROP (FT_H20)	8	8	8	8	8	HORSEPOWER
ENTERING WATER TEMPERATURE (DEG F)	120	120	120	120	120	RPM
LEAVING WATER TEMPERATURE (DEG F)	155	155	155	155	155	VOLTS
MINIMUM OPERATING PRESSURE (PSI)	30	30	30	30	30	PHASE
VOLTAGE (V)	120	120	120	120	120	HERTZ
PHASE	1	1	1	1	1	SELECTION BASED ON
FREQUENCY (Hz)	60	60	60	60	60	MODEL
TOTAL OPERATING AMPS	1.5	1.5	1.5	1.5	1.5	REMARKS
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4	4	4	4	REMARKS LEGEND:
SELECTION BASED ON	LOCHINVAR	LOCHINVAR	LOCHINVAR	LOCHINVAR	LOCHINVAR	 PROVIDE FAN WITH INTEGRA DAMPER, CONTINUOUS DUTY R
MODEL REMARKS REMARKS	KB-400	KB-400	KB-400	KB-400	KB-400 1, 2, 3 & 4	2. PROVIDE FAN WITH UNIT MO

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.

3. PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE,

4. PROVIDE BOILERS WHICH ARE AT LEAST 94% EFFICIENT BASED ON BTS-2000, REV 06.07 CONDITIONS.

2. BOILER CIRCULATION PUMP TO BE PROVIDED BY MANUFACTURER AT 21 GPM AT 35 DELTA T.

DOMESTIC HO	T WATER STOR	AGE TANK SO	CHEDULE	UNIT HEATER SCH
DESIGNATION	DWT-1	DWT-2	DWT-3	DESIGNATION
TYPE	VERTICAL WITH INLET BAFFLE	VERTICAL WITH INLET BAFFLE	VERTICAL WITH INLET BAFFLE	LOCATION AIRFLOW (CFM)
LOCATION	MECH ROOM	MECH ROOM	MECH ROOM	HEATING CAPACITY (MBH)
STORAGE (GALLONS)	752	752	752	ENTERING AIR TEMPERATURE (DEG F)
ASME PRESSURE RATING (PSI)	125	125	125	LEAVING AIR TEMPERATURE (DEG F)
TANK DIAMETER (IN)	48	48	48	ENTERING WATER TEMPERATURE (DEG F)
VERTICAL HEIGHT (IN)	100	100	100	FLOW RATE (GPM)
BASED ON	LOCHINVAR	LOCHINVAR	LOCHINVAR	WATER PRESSURE DROP (FT W.G.)
MODEL	LOCK-TEMP	LOCK-TEMP	LOCK-TEMP	MOTOR POWER (HP)
REMARKS	1	1	1	
REMARKS LEGEND	-			VOLTAGE (V)
1. PROVIDE GLASS LINED VERTICAL D	OOMESTIC HOT WATER STORAG	GE TANK WITH RING BASE	2" TOP OUTLET 1 1/4"	PHASE
T&P TOP CONNECTION, 2" SIDE BOTT				FREQUENCY (Hz)

BASED ON

MODEL REMARKS REMARKS LEGEND

1. PROVIDE UNIT MOUNTED THERMOSTAT.

	PUMP SCHEDULE						
	DESIGNATION	HWP-1	HWP-				
	SERVICE	HOT WATER	HOT WA				
	LOCATION	MECH ROOM	MECH R				
	TYPE	INLINE	INLIN				
	PUMP DATA	-	-				
	FLOW (GPM)	105	105				
	TOTAL HEAD (FT-H2O)	65	65				
	MINIMUM EFFICIENCY (%)	50	50				
	CONNECTION SIZE	-	- 30				
	SUCTION (IN)	2	2				
	DISCHARGE (IN)	2	2				
	MOTOR DATA	2					
		195 IM	105 11				
	MOTOR FRAME	185JM	185JI				
	HORSEPOWER	5	5				
	RPM	1750	1750				
_	VOLTS	208	208				
	PHASE	1	1				
	HERTZ	60	60				

SELECTION BASED ON (MFGR)

REMARKS

REMARKS LEGEND: 1. BRONZE FITTED PUMP FOR DOMESTIC WATER SERVICE. PROVIDE AQUASTAT CONTROL. 2. HWP-1 AND HWP-2 MUST ACCOMMODATE THE FLOW AND HEAD OF THE SYSTEM DURING SUMMER AND WINTER CONDITIONS. PUMP MUST BE SELECTED TO OPERATE AT STABLE

CONDITIONS AT THE ABOVE FLOW AND HEAD AS WELL AS AT 39 GPM.

DESIGNATION | DRAIN SIZE

80 2x2x9-1/2B

SOLID SEPARATOR SCHEDULE					
DESIGNATION	SS-1				
LOCATION	MECH ROOM				
SERVICE	HOT WATER				
MAXIMUM PRESSURE DROP (FT-H20)	28				
COLLECTION CHAMBER CAPACITY (GAL)	0.8				
BASED ON	LAKOS				
MODEL	ILB-0200				

FLOOR DRAIN SCHEDULE

DESCRIPTION

ZURN MODEL 415B WITH 6" NICKEL BRONZE

LOCATION		MECH R	MOO	
SERVICE		HOT WATER		
LINE SIZE (IN)		4		
BASED ON		BELL & GOSSETT		
MODEL		ROLAIR [®]	TROL	
EXPANSION	TAN	IK SCH	IEDU	LE
DESIGNATION		ET-1	DI	ET-1
SERVICE	HEATIN	NG WATER	DOMESTIC F WATER	
LOCATION	MEC	H ROOM	MECH	ROO
TYPE	BL	ADDER	REPLA BLA	CEAB DDER
TANK VOLUME (GAL)		60	2	211
FILL PRESSURE (PSI)		20	(30 *
RELEIF VALVE PRESSURE SETTING (PSI)		100	1	100
BASED ON		N WOOD MPANY	AM	TROL

JAER-23-607

* MATCH DOMESTIC WATER SUPPLY PRESSURE AT THIS LOCATION.

PREP'D BY DATE APPROVED

EXHAUST

MECH ROOM

CENTRIFUGAL

1237

DIRECT

1/6 1725 115

GREENHECK

G-095-VG

ST-C SERIES

ST-452-C

SHEET 26 OF 37

FAN SCHEDULE

DOMESTIC HOT

WATER

MECH ROOM

INLINE

20

1.5

3300

115

60

BELL & GOSSET

BOOSTER PL-36

HOT WATER

MECH ROOM

INLINE

105

185JM

1750

208

60

80 2x2x9-1/2B

BELL & GOSSETT | BELL & GOSSETT

1. PROVIDE FAN WITH INTEGRAL BACK-DRAFT

3. PROVIDE WALL MOUNTED THERMOSTAT

WITH FAN TO OPEN UPON FAN OPERATION.

2. PROVIDE FAN WITH UNIT MOUNTED DISCONNECT.

CONTROL. WIRE INTAKE LOUVER DAMPER IN SERIES

DAMPER, CONTINUOUS DUTY RATED.

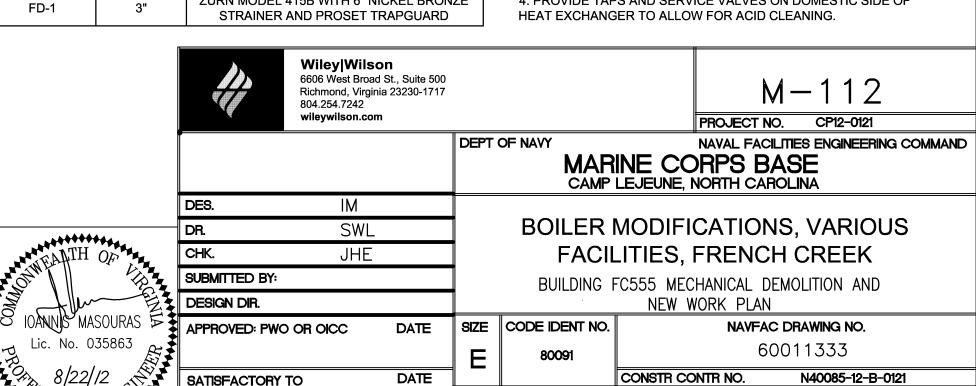
AIR SEPARATOR SCHEDULE

HEAT EXCHANGER SCHEDULE DESIGNATION DHX-1 **BRAZED PLATE FRAME** HEAT EXCHANGER LOCATION MECH ROOM BOILER HOT WATER INPUT (MBH) 750 BOILER HOT WATER FLOW (GPM) 39 BOILER WATER SUPPLY TEMP (DEG F) 155 BOILER WATER RETURN TEMP (DEG F) 115 RECOVERY RATE TEMP RISE (DEG F) 100 900 RECOVERY RATE GPH 120 1 FREQUENCY (Hz) 60 BASED ON CEMLINE BPH-750 MODEL 1

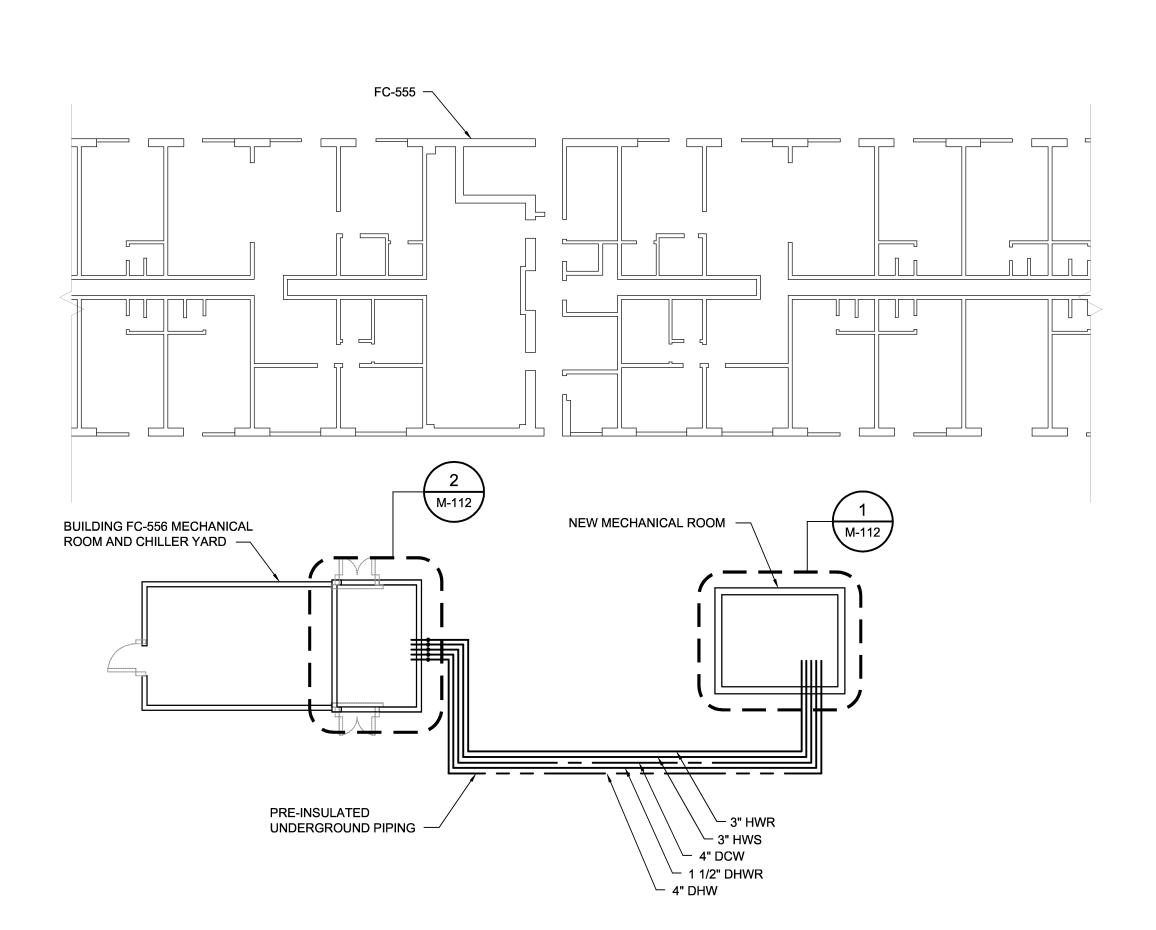
1. PROVIDE DOUBLE WALL PLATE FRAME HEAT EXCHANGER. INTEGRATED TANK CIRCULATION PUMP, HWS CONTROL VALVE, TANK SENSORS AND INTEGRATED CONTROL PANEL TO PROVIDE SYSTEM TEMPERATURES, ALARM CONTACTS, CALL FOR HOT WATER, CIRCULATION CONTROL, AND SECONDARY SOLENOID SAFETY VALVE.

REMARKS LEGEND

2. PROVIDE PRESSURE AND TEMPERATURE TEST PORTS ON THE SUPPLY AND RETURN SIDE OF ALL DOMESTIC HOT WATER BUILDING HOT WATER PLATE AND FRAME HEAT EXCHANGERS. 3. PROVIDE 3-WAY CONTROL VALVE AND AUTOMATIC FLOW CONTROL VALVE ON BOILER SIDE OF HEAT EXCHANGER. 4. PROVIDE TAPS AND SERVICE VALVES ON DOMESTIC SIDE OF

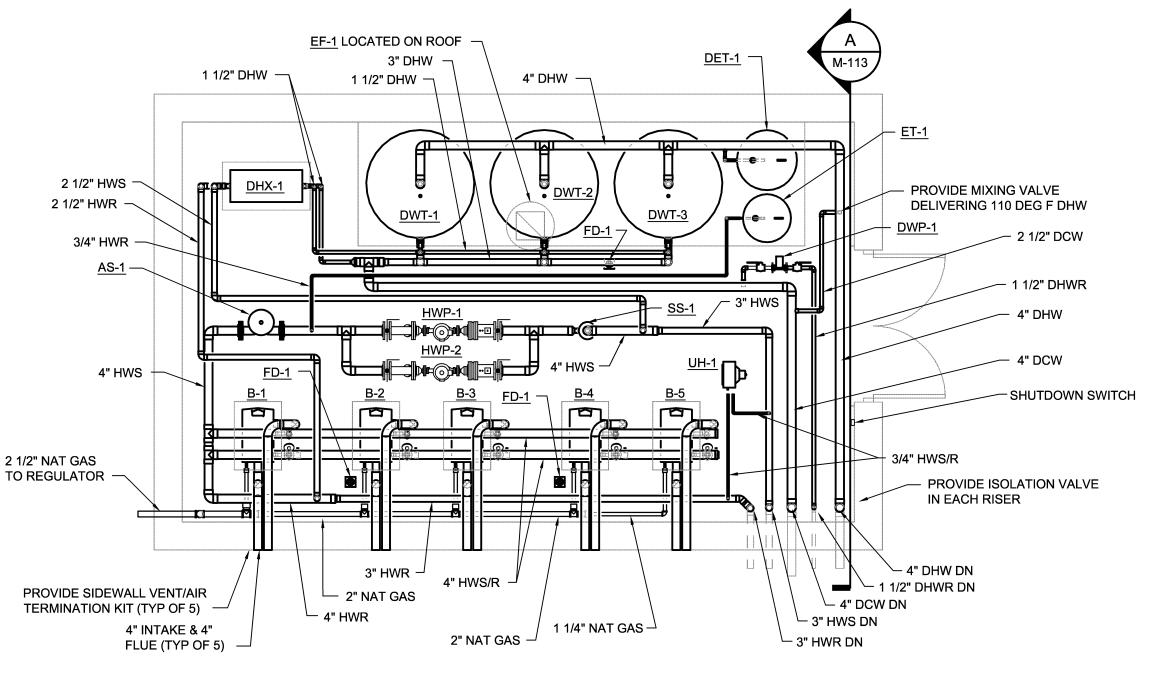


SCALE: AS SPEC No.



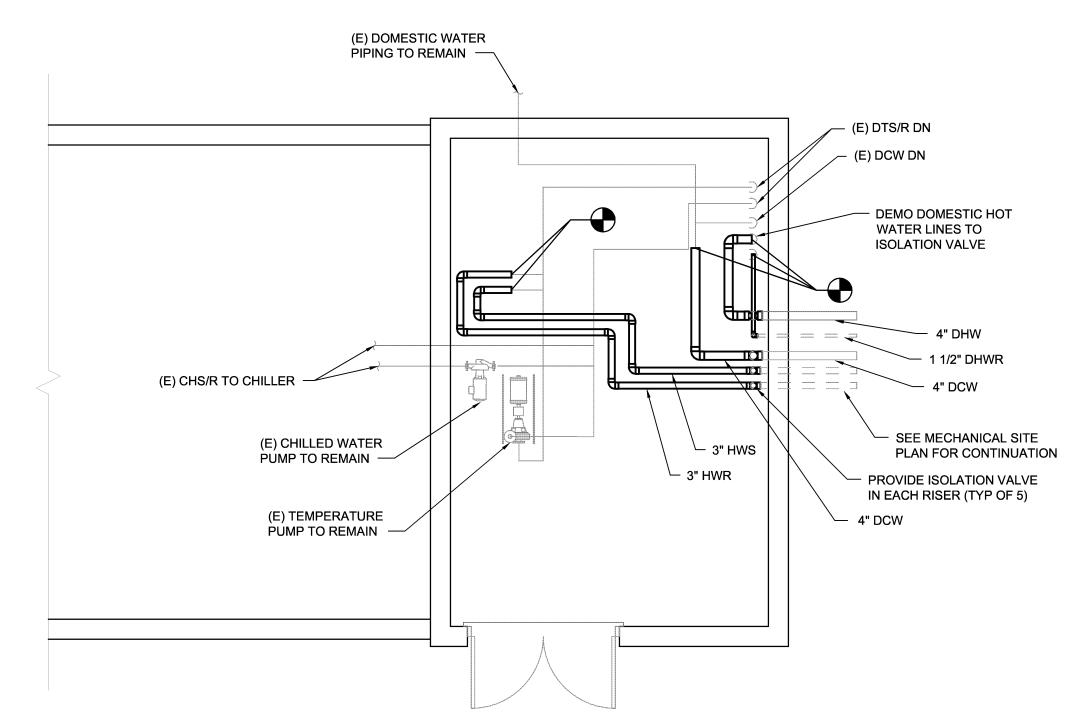
BUILDING FC-555 MECHANICAL SITE PLAN

1/16"=1'-0"

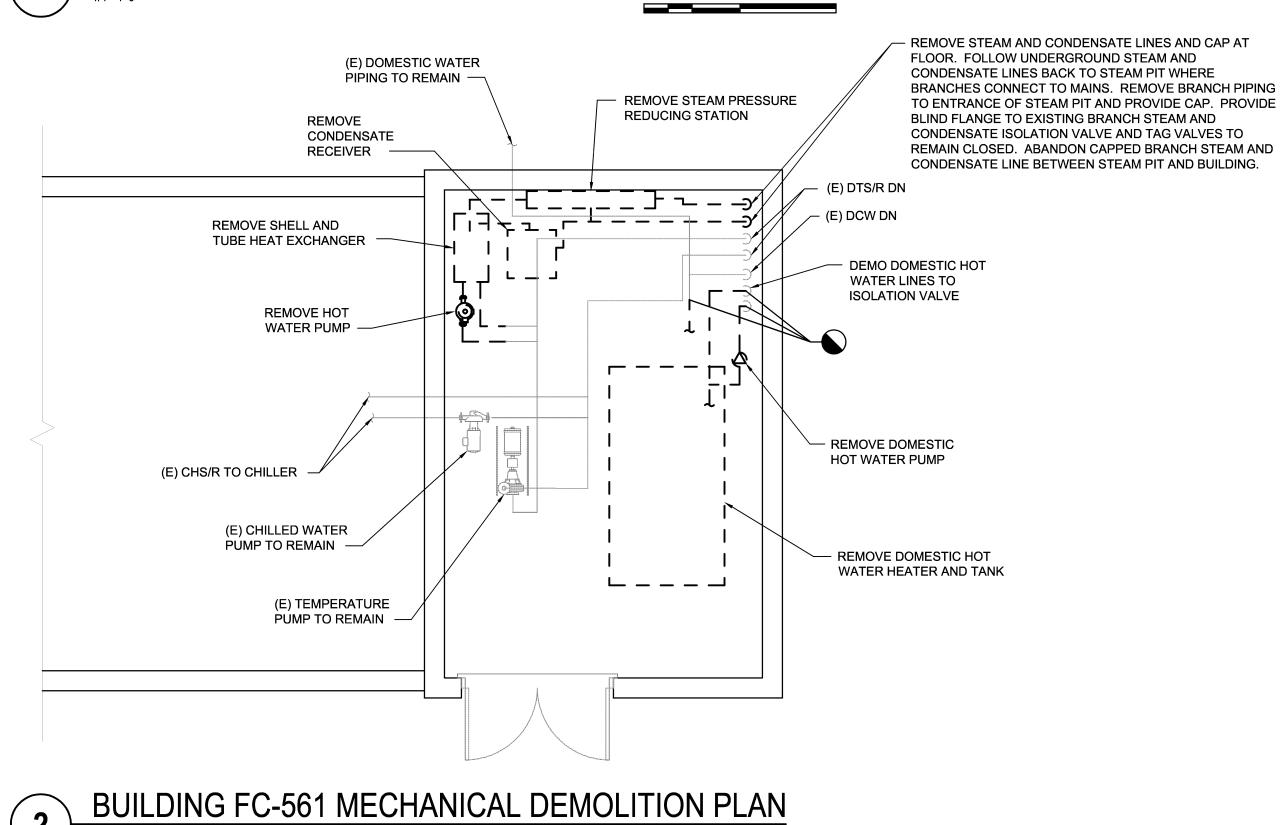


PROVIDE BIRD SCREEN 4" HWS/R STRAINER CHECK VALVE -1 1/2" HWS/R ISOLATION VALVE (TYP) SEE MECHANICAL SITE PLAN THIS SHEET FOR - 4" HOUSE CONTINUATION — **KEEPING PAD**

BUILDING FC-560 NEW MECHANICAL ROOM PLAN



BUILDING FC-561 EXISTING MECHANICAL ROOM PLAN



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requests for authorization to release through the prime contractor to the Contracting Officer.

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- 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

NATURAL GAS NOTE:

3. PROVIDE SPRING RETURN CLOSE, POWERED OPEN

BY ACTUATOR.

1. TOTAL CONNECTED NATURAL GAS DEMAND FOR THIS BUILDING IS 2,000 MBH AT 10 IN-H20.

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.

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**

REPLACE ALL 92 SHOWER HEADS IN THE BUILDING WITH LOW FLOW, 1.5 GPM SHOWER HEADS.

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. 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. INSTALL GAS PIPE INC 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. 8. 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, 2, 3 & 4

9. STORE DOMESTIC HOT WATER AT 140 DEG F AND TEMPER TO 110 DEG F BEFORE BEING SUPPLIED TO BUILDING. 10. PROVIDE APPURTENANCES TO COMPLY WITH ASME CSD-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUT DOWN SWITCH LOCATED ADJACENT TO EXIT DOOR.

LOUVER SCHEDULE BOILER SCHEDULE							
DESIGNATION	L-1	DESIGNATION	B-1	B-2	B-3	B-4	B-5
USAGE	INTAKE	LOCATION	MECH ROOM				
LOCATION	MECH ROOM	FUEL TYPE	NATURAL GAS				
DESCRIPTION	COMBINATION LOUVER/DAMPER	MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4	4	4	4
DEPTH (IN)	8	MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10	10	10	10
FRAME TYPE	CHANNEL	GAS INLET CONNECTION (IN)	1	1	1	1	1
WIDTH (IN)		INPUT (MBH)	399	399	399	399	399
	36	OUTPUT (MBH)	367	367	367	367	367
HEIGHT (IN)	16	MINIMUM TURN DOWN RATIO	5:1	5:1	5:1	5:1	5:1
AIRFLOW (CFM)	700	FLOWRATE (GPM)	21	21	21	21	21
FREE AREA (SF)	.85	MAXIMUM PRESSURE DROP (FT H20)	8	8	8	8	8
FREE AREA VELOCITY (FPM)	822	ENTERING WATER TEMPERATURE (DEG F)	120	120	120	120	120
PRESSURE DROP (IN H20)	.085	LEAVING WATER TEMPERATURE (DEG F)	_		_	_	_
SELECTION BASE ON	GREENHECK		155	155	155	155	155
ACTUATOR TYPE	120 VAC	MINIMUM OPERATING PRESSURE (PSI)	30	30	30	30	30
ACTUATOR FAIL POSITION	CLOSED	VOLTAGE (V)	120	120	120	120	120
MODEL	EAC-601	PHASE	1	1	1	1	1
REMARKS	1, 2 & 3	FREQUENCY (Hz)	60	60	60	60	60
	1, 2 & 3	TOTAL OPERATING AMPS	1.5	1.5	1.5	1.5	1.5
REMARKS LEGEND		FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4	4	4	4
 SUBMIT COLOR CHART. COLOF ARCHITECT. 	R TO BE APPROVED BY	SELECTION BASED ON	LOCHINVAR	LOCHINVAR	LOCHINVAR	LOCHINVAR	LOCHINVAR
2. SEE ARCHITECTURAL PLANS F	OR LOCATION.	MODEL REMARKS	KB-400	KB-400	KB-400	KB-400	KB-400

REMARKS 1, 2, 3 & 4 1, 2, 3 & 4 1, 2, 3 & 4 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 21 GPM AT 35 DELTA T.

3. PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE,

4. PROVIDE BOILERS WHICH ARE AT LEAST 94% EFFICIENT BASED ON BTS-2000, REV 06.07 CONDITIONS.

DOMESTIC HOT WATER STORAGE TANK SCHEDULE					
DESIGNATION	DWT-1	DWT-2	DWT-3		
TYPE	VERTICAL WITH INLET	VERTICAL WITH INLET	VERTICAL WITH INLET		
LOCATION	BAFFLE MECH ROOM	BAFFLE MECH ROOM	BAFFLE MECH ROOM		
STORAGE (GALLONS)	752	752	752		
ASME PRESSURE RATING (PSI)	125	125	125		
TANK DIAMETER (IN)	48	48	48		
VERTICAL HEIGHT (IN)	100	100	100		
BASED ON	LOCHINVAR	LOCHINVAR	LOCHINVAR		
MODEL	LOCK-TEMP	LOCK-TEMP	LOCK-TEMP		
REMARKS	1	1	1		

REMARKS LEGEND 1. PROVIDE GLASS LINED VERTICAL DOMESTIC HOT WATER STORAGE TANK WITH RING BASE, 2" TOP OUTLET, 1 1/4" T&P TOP CONNECTION, 2" SIDE BOTTOM HEATING INLET, 2" SIDE BOTTOM HEATING OUTLET, 1" BOTTOM DRAIN, 3/4" SIDE AQUASTAT/SENSOR TAPPING. SEE SPECIFICATIONS FOR REQUIRED FIELD INSULATION, R-12.5 MINIMUM.

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)	155				
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.

`_ 3" HWS

└_ 4" DCW

└ 1 1/2" DHWR

FC-560	
BUILDING FC-561 MECHANICAL ROOM AND CHILLER YARD	NEW MECHANICAL ROOM
PRE-INSULATED UNDERGROUND PIPING	

BUILDING FC-560 MECHANICAL SITE PLAN

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	1	-	ı				
FLOW (GPM)	105	105	15				
TOTAL HEAD (FT-H2O)	65	65	20				
MINIMUM EFFICIENCY (%)	50	50	-				
CONNECTION SIZE	-	-	-				
SUCTION (IN)	2	2	1.5				
DISCHARGE (IN)	2	2	1.5				
MOTOR DATA	-	-	-				
MOTOR FRAME	185JM	185JM	-				
HORSEPOWER	5	5	-				
RPM	1750	1750	3300				
VOLTS	208	208	115				
PHASE	1	1	1				
HERTZ	60	60	60				
SELECTION BASED ON (MFGR)	BELL & GOSSETT	BELL & GOSSETT	BELL & GOSSETT				
MODEL	80 2x2x9-1/2B	80 2x2x9-1/2B	BOOSTER PL-36				
REMARKS	2	2	1				
REMARKS LEGEND:							

1. BRONZE FITTED PUMP FOR DOMESTIC WATER SERVICE. PROVIDE AQUASTAT CONTROL. 2. HWP-1 AND HWP-2 MUST ACCOMMODATE THE FLOW AND HEAD OF THE SYSTEM DURING SUMMER AND WINTER CONDITIONS. PUMP MUST BE SELECTED TO OPERATE AT STABLE CONDITIONS AT THE ABOVE FLOW AND HEAD AS WELL AS AT 39 GPM.

SOLID SEPARAT	OR
SCHEDULE	
DESIGNATION	SS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
MAXIMUM PRESSURE DROP (FT-H20)	28
COLLECTION CHAMBER CAPACITY (GAL)	0.8
BASED ON	LAKOS
MODEL	ILB-0200

FLOOR DRAIN SCHEDULE

DESCRIPTION

ZURN MODEL 415B WITH 6" NICKEL BRONZE

STRAINER AND PROSET TRAPGUARD

DESIGNATION | DRAIN SIZE

FD-1

AIR SEPARATOR SCHEDULE				
DESIGNATION		AS-	1	
LOCATION		MECH ROOM		
SERVICE		HOT WA	ATER	
LINE SIZE (IN)		4		
BASED ON		BELL & GC	SSETT	
MODEL		ROLAIR ⁻	TROL	
EXPANSION	TAN	K SCH	łEDU	LE
DESIGNATION		ET-1	DI	ET-1
SERVICE	HEATIN	NG WATER	DOMES WA	STIC ATEI
LOCATION	MEC	H ROOM	MECH	l RC
TYPE	BL	ADDER	REPLA BLA	

PREP'D BY DATE APPROVED

EXHAUST

MECH ROOM

CENTRIFUGAL

1237

DIRECT

1/6

1725

115

GREENHECK G-095-VG

FAN SCHEDULE

DESIGNATION

DESCRIPTION

FAN DATA

SERVES ROOM(S)

AIRFLOW (SCFM)

DRIVE TYPE

MOTOR DATA

HORSEPOWER

REMARKS LEGEND:

1. PROVIDE FAN WITH INTEGRAL BACK-DRAFT

3. PROVIDE WALL MOUNTED THERMOSTAT

WITH FAN TO OPEN UPON FAN OPERATION.

PROVIDE FAN WITH UNIT MOUNTED DISCONNECT.

CONTROL. WIRE INTAKE LOUVER DAMPER IN SERIES

DAMPER, CONTINUOUS DUTY RATED.

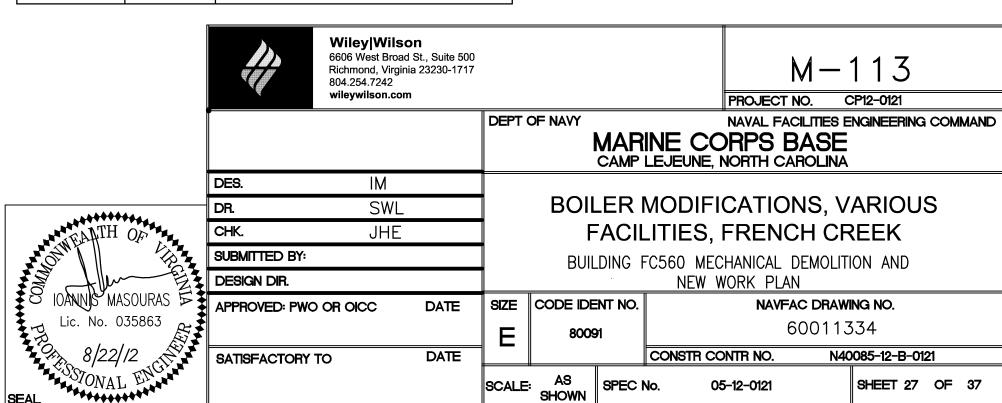
TOTAL SP (IN-H2O)

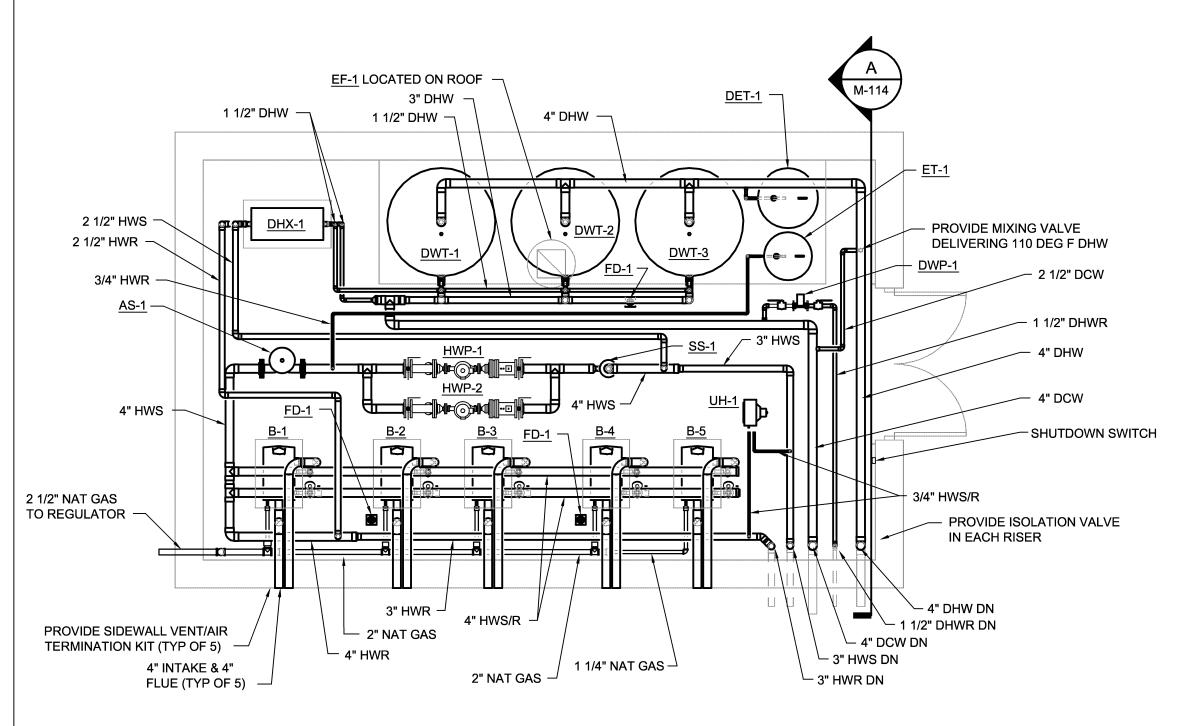
SERVICE	HEATING WATER	DOMESTIC HOT WATER				
LOCATION	MECH ROOM	MECH ROOM				
TYPE	BLADDER	REPLACEABLE BLADDER				
TANK VOLUME (GAL)	60	211				
FILL PRESSURE (PSI)	20	60*				
RELEIF VALVE PRESSURE SETTING (PSI)	100	100				
BASED ON	JOHN WOOD COMPANY	AMTROL				
MODEL	JAER-23-607	ST-C SERIES ST-452-C				
* MATCH DOMESTIC WATER SUPPLY PRESSURE AT THIS LOCATION.						

HEAT EXCHANGER SCHEDULE				
DESIGNATION	DHX-1			
TYPE	BRAZED PLATE FRAME HEAT EXCHANGER			
LOCATION	MECH ROOM			
BOILER HOT WATER INPUT (MBH)	750			
BOILER HOT WATER FLOW (GPM)	39			
BOILER WATER SUPPLY TEMP (DEG F)	155			
BOILER WATER RETURN TEMP (DEG F)	115			
RECOVERY RATE TEMP RISE (DEG F)	100			
RECOVERY RATE GPH	900			
VOLTS	120			
PHASE	1			
FREQUENCY (Hz)	60			
BASED ON	CEMLINE			
MODEL	BPH-750			
REMARKS	1			
REMARKS LEGEND				

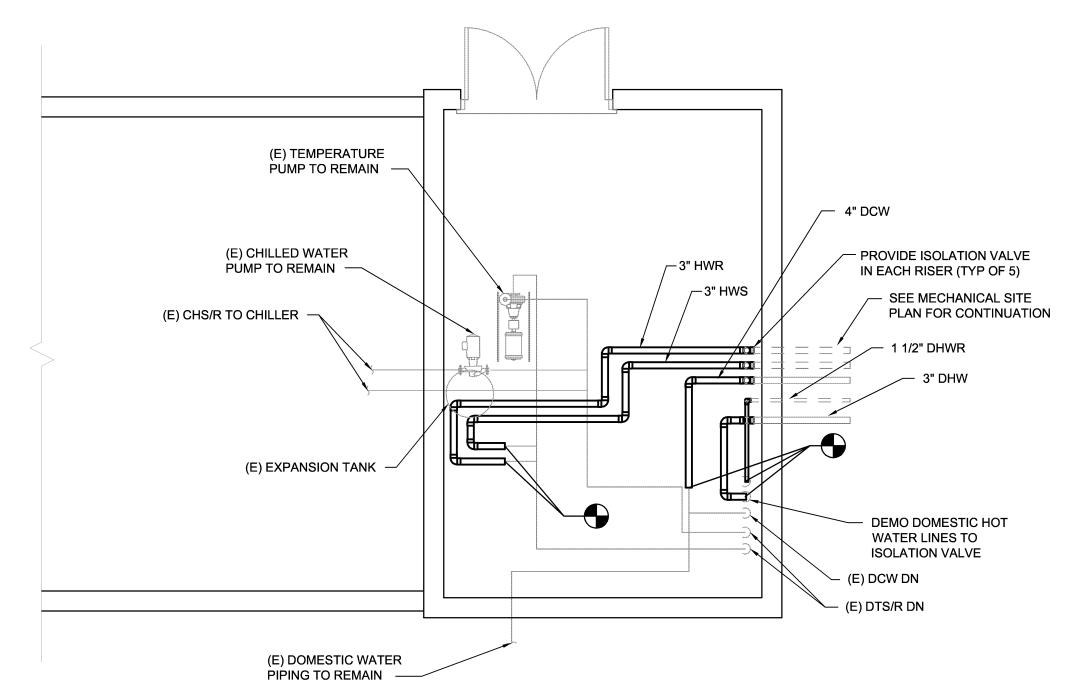
1. PROVIDE DOUBLE WALL PLATE FRAME HEAT EXCHANGER, INTEGRATED TANK CIRCULATION PUMP, HWS CONTROL VALVE, TANK SENSORS AND INTEGRATED CONTROL PANEL TO PROVIDE SYSTEM TEMPERATURES, ALARM CONTACTS, CALL FOR HOT WATER, CIRCULATION CONTROL, AND SECONDARY SOLENOID SAFETY VALVE.

2. PROVIDE PRESSURE AND TEMPERATURE TEST PORTS ON THE SUPPLY AND RETURN SIDE OF ALL DOMESTIC HOT WATER BUILDING HOT WATER PLATE AND FRAME HEAT EXCHANGERS. 3. PROVIDE 3-WAY CONTROL VALVE AND AUTOMATIC FLOW CONTROL VALVE ON BOILER SIDE OF HEAT EXCHANGER. 4. PROVIDE TAPS AND SERVICE VALVES ON DOMESTIC SIDE OF HEAT EXCHANGER TO ALLOW FOR ACID CLEANING.

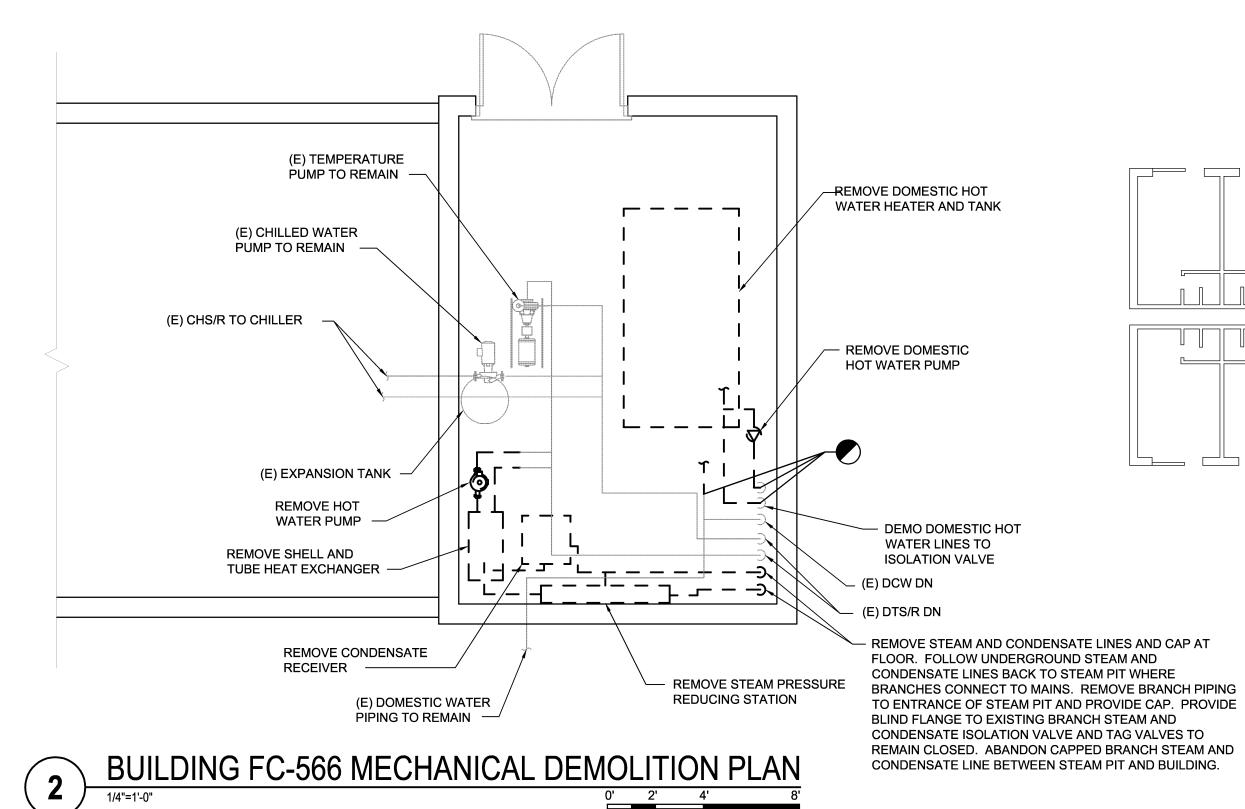




BUILDING FC-565 NEW MECHANICAL ROOM PLAN



BUILDING FC-566 EXISTING MECHANICAL ROOM PLAN



requests for authorization to release through the prime contractor to the Contracting Officer.

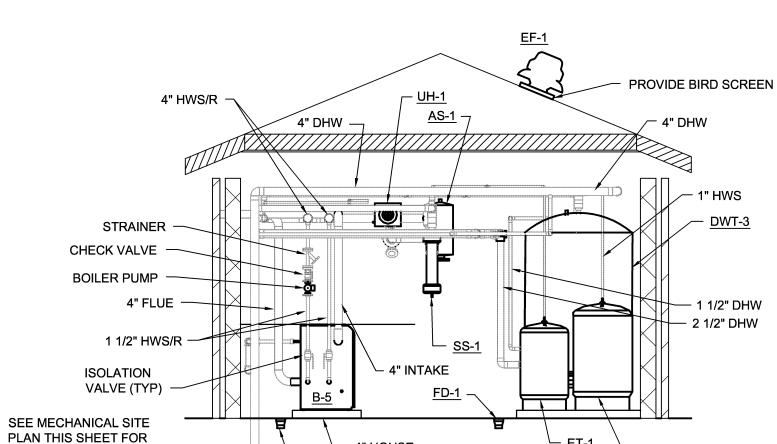
Contractor shall comply as follows: (a) The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless-

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

DISCLOSURE OF INFORMATION

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



DESIGNATION

LOCATION

BASED ON

REMARKS

MODEL

STORAGE (GALLONS)

TANK DIAMETER (IN)

VERTICAL HEIGHT (IN)

REMARKS LEGEND

ASME PRESSURE RATING (PSI)

CONTINUATION —

NATURAL GAS NOTE:

FOR THIS BUILDING IS

2,000 MBH AT 10 IN-H20.

1. TOTAL CONNECTED NATURAL GAS DEMAND

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**

SEE GENERAL NOTES ON SHEET M-001.

REPLACE ALL 76 SHOWER HEADS IN THE BUILDING WITH LOW FLOW, 1.5 GPM SHOWER HEADS. 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.

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.

10. PROVIDE APPURTENANCES TO COMPLY WITH ASME CSD-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUT DOWN SWITCH LOCATED ADJACENT TO EXIT DOOR.

INSTALL GAS PIPE INC 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.

8. EXISTING BUILDING HAS A DUAL TEMPERATURE SYSTEM CONTROLLED BY MANUAL HEATING/COOLING CHANGEOVER SWITCH. THE NEW SYSTEM SHALL BE INCORPORATED INTO THE CHANGEOVER CONTROL. 9. STORE DOMESTIC HOT WATER AT 140 DEG F AND TEMPER TO 110 DEG F BEFORE BEING SUPPLIED TO BUILDING.

LOCHINVAR

KB-400

LOCHINVAR

KB-400

LOCHINVAR

KB-400

JVER SCH	IEDULE	BOILER SCHEDULE					
	L-1	DESIGNATION	B-1	B-2	B-3	B-4	B-5
	INTAKE	LOCATION	MECH ROOM				
	MECH ROOM	FUEL TYPE	NATURAL GAS				
	COMBINATION	MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4	4	4	4
	LOUVER/DAMPER	MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10	10	10	10
	8	GAS INLET CONNECTION (IN)	1	1	1	1	1
	CHANNEL	INPUT (MBH)	399	399	399	399	399
	36	OUTPUT (MBH)	367	367	367	367	367
	16	MINIMUM TURN DOWN RATIO	5:1	5:1	5:1	5:1	5:1
M)	700	FLOWRATE (GPM)	21	21	21	21	21
F)	.85	MAXIMUM PRESSURE DROP (FT_H20)	8	8	8	8	8
ELOCITY (FPM)	822	ENTERING WATER TEMPERATURE (DEG F)	120	120	120	120	120
ROP (IN H20)	.085	LEAVING WATER TEMPERATURE (DEG F)	155	155	155	155	155
ASE ON	GREENHECK	MINIMUM OPERATING PRESSURE (PSI)	30	30	30	30	30
PE	120 VAC	VOLTAGE (V)	120	120	120	120	120
AIL POSITION	CLOSED	PHASE	1	1	1	1	1
	EAC-601	FREQUENCY (Hz)	60	60	60	60	60
	1, 2 & 3	TOTAL OPERATING AMPS	1.5	1.5	1.5	1.5	1.5
GEND						4	
OR CHART. COLOR TO BE APPROVED BY				7	7	т	

SELECTION BASED ON

REMARKS	1, 2, 3 & 4	1, 2, 3 & 4	1, 2, 3 & 4	1, 2, 3 & 4	1, 2, 3 &
REMARKS LEGEND:					
1. PROVIDE CONDENSATE NEUTRALIZATION DRAIN KIT	THAT HOLDS 0.25	CU. FT. OF LIME S	STONE AND IS REC	CHARGEABLE WITH	HOUT BEING
DISCONNECTED FROM PIPING OR HOLDING BRACKETS	. LOCATE KITS OF	N SLAB. PROVIDE	ONE KIT PER BOIL	ER.	

2. BOILER CIRCULATION PUMP TO BE PROVIDED BY MANUFACTURER AT 21 GPM AT 35 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)	155	
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	

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)	105	105	15			
TOTAL HEAD (FT-H2O)	65	65	20			
MINIMUM EFFICIENCY (%)	50	50	-			
CONNECTION SIZE	-	-	-			
SUCTION (IN)	2	2	1.5			
DISCHARGE (IN)	2	2	1.5			
MOTOR DATA	-	-	-			
MOTOR FRAME	185JM	185JM	-			
HORSEPOWER	5	5	-			
RPM	1750	1750	3300			
VOLTS	208	208	115			
PHASE	1	1	1			
HERTZ	60	60	60			
SELECTION BASED ON (MFGR)	BELL & GOSSETT	BELL & GOSSETT	BELL & GOSSET			
MODEL	80 2x2x9-1/2B	80 2x2x9-1/2B	BOOSTER PL-36			
REMARKS	2	2	1			

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

MODEL

DESIGNATION DRAIN SIZE

2. HWP-1 AND HWP-2 MUST ACCOMMODATE THE FLOW AND HEAD OF THE SYSTEM DURING SUMMER AND WINTER CONDITIONS. PUMP MUST BE SELECTED TO OPERATE AT STABLE CONDITIONS AT THE ABOVE FLOW AND HEAD AS WELL AS AT 39 GPM.

SOLID SEPARATO	OR	
SCHEDULE		
DESIGNATION	SS-1	
LOCATION	MECH ROOM	
SERVICE	HOT WATER	
MAXIMUM PRESSURE DROP (FT-H20)	28	
COLLECTION CHAMBER CAPACITY (GAL)	0.8	
BASED ON	LAKOS	

FLOOR DRAIN SCHEDULE

SATISFACTORY TO

DESCRIPTION

ZURN MODEL 415B WITH 6" NICKEL BRONZE

AIR SEPARATOR SCHEDULE				
DESIGNATION	AS	-1		
LOCATION	MECH F	ROOM		
SERVICE	HOT W	ATER		
LINE SIZE (IN)	4	4		
BASED ON	BELL & GO	BELL & GOSSETT		
MODEL	ROLAIR	ROLAIRTROL		
EXPANSION TANK SCHEDU				
DESIGNATION FT-1				

PREP'D BY DATE APPROVED

EXHAUST

MECH ROOM

CENTRIFUGAL

1237

DIRECT

1/6

1725

115

GREENHECK

G-095-VG

FAN SCHEDULE

DESIGNATION

DESCRIPTION

FAN DATA

SERVES ROOM(S)

AIRFLOW (SCFM)

DRIVE TYPE

HORSEPOWER

MOTOR DATA

REMARKS

REMARKS LEGEND:

1. PROVIDE FAN WITH INTEGRAL BACK-DRAFT

3. PROVIDE WALL MOUNTED THERMOSTAT

WITH FAN TO OPEN UPON FAN OPERATION.

2. PROVIDE FAN WITH UNIT MOUNTED DISCONNECT.

CONTROL. WIRE INTAKE LOUVER DAMPER IN SERIES

DAMPER, CONTINUOUS DUTY RATED.

TOTAL SP (IN-H2O)

EXPANSION TANK SCHEDULE					
DESIGNATION	ET-1	DET-1			
SERVICE	HEATING WATER	DOMESTIC HO			
LOCATION	MECH ROOM	MECH ROOM			
TYPE	BLADDER	REPLACEABLE BLADDER			
TANK VOLUME (GAL)	60	211			
FILL PRESSURE (PSI)	20	60*			
RELEIF VALVE PRESSURE SETTING (PSI)	100	100			
BASED ON	JOHN WOOD COMPANY	AMTROL			
MODEL	JAER-23-607	ST-C SERIES ST-452-C			

T CONTROL.	HEAT EXCHANGER	SCHEDULE
EM DURING	DESIGNATION	DHX-1
T STABLE	TYPE	BRAZED PLATE FRAME HEAT EXCHANGER
	LOCATION	MECH ROOM
R	BOILER HOT WATER INPUT (MBH)	750
	BOILER HOT WATER FLOW (GPM)	39
	BOILER WATER SUPPLY TEMP (DEG F)	155
SS-1	BOILER WATER RETURN TEMP (DEG F)	115
MECH ROOM	RECOVERY RATE TEMP RISE (DEG F)	100
HOT WATER	RECOVERY RATE GPH	900
28	VOLTS	120
0.8	PHASE	1
LAKOS	FREQUENCY (Hz)	60
ILB-0200	BASED ON	CEMLINE
	MODEL	BPH-750
	REMARKS	1
	DEMARKS LEGEND	<u> </u>

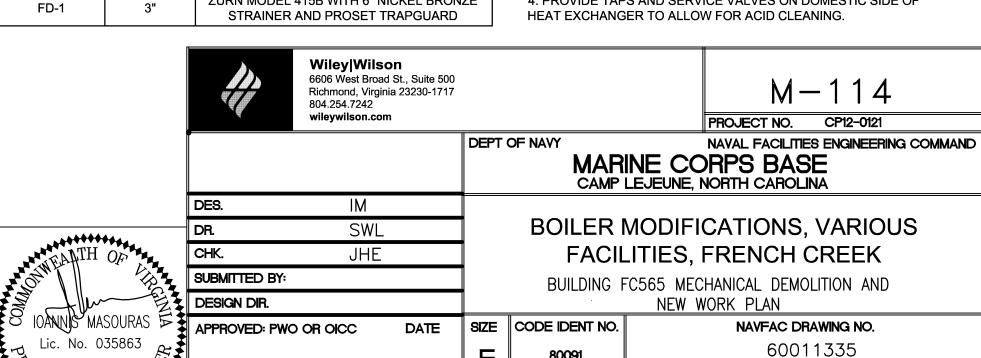
REMARKS LEGEND 1. PROVIDE DOUBLE WALL PLATE FRAME HEAT EXCHANGER, INTEGRATED TANK CIRCULATION PUMP, HWS CONTROL VALVE. TANK SENSORS AND INTEGRATED CONTROL PANEL TO PROVIDE SYSTEM TEMPERATURES, ALARM CONTACTS, CALL FOR HOT WATER, CIRCULATION CONTROL, AND SECONDARY SOLENOID

SAFETY VALVE. 2. PROVIDE PRESSURE AND TEMPERATURE TEST PORTS ON THE SUPPLY AND RETURN SIDE OF ALL DOMESTIC HOT WATER BUILDING HOT WATER PLATE AND FRAME HEAT EXCHANGERS. 3. PROVIDE 3-WAY CONTROL VALVE AND AUTOMATIC FLOW CONTROL VALVE ON BOILER SIDE OF HEAT EXCHANGER. 4. PROVIDE TAPS AND SERVICE VALVES ON DOMESTIC SIDE OF

CONSTR CONTR NO.

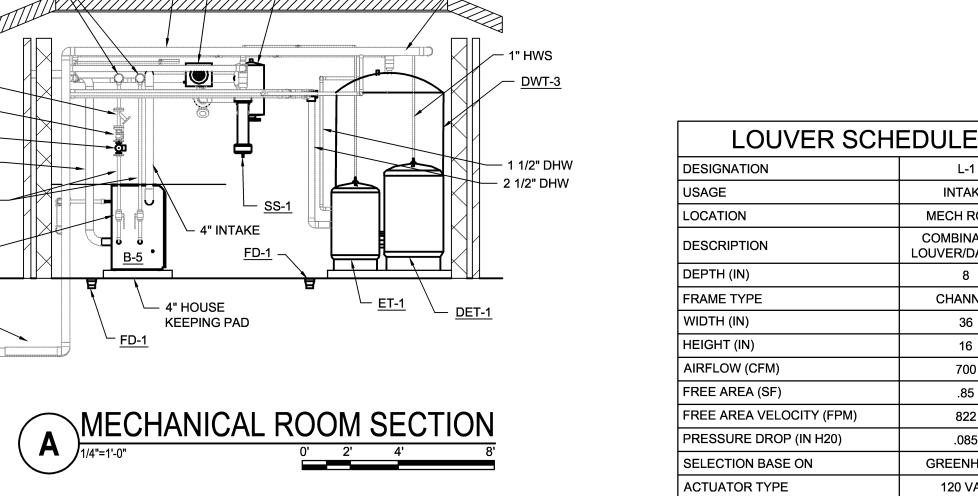
N40085-12-B-0121

SHEET 28 OF 37



SCALE: AS SPEC No.

DATE



DOMESTIC HOT WATER STORAGE TANK SCHEDULE

VERTICAL WITH INLET

BAFFI F

MECH ROOM

752

125

100

LOCHINVAR

LOCK-TEMP

1. PROVIDE GLASS LINED VERTICAL DOMESTIC HOT WATER STORAGE TANK WITH RING BASE, 2" TOP OUTLET, 1 1/4"

T&P TOP CONNECTION, 2" SIDE BOTTOM HEATING INLET, 2" SIDE BOTTOM HEATING OUTLET, 1" BOTTOM DRAIN, 3/4" SIDE AQUASTAT/SENSOR TAPPING. SEE SPECIFICATIONS FOR REQUIRED FIELD INSULATION, R-12.5 MINIMUM.

VERTICAL WITH INLET

BAFFLE

MECH ROOM

125

100

LOCHINVAR

LOCK-TEMP

BAFFLE

MECH ROOM

752

125

48

100

LOCHINVAR

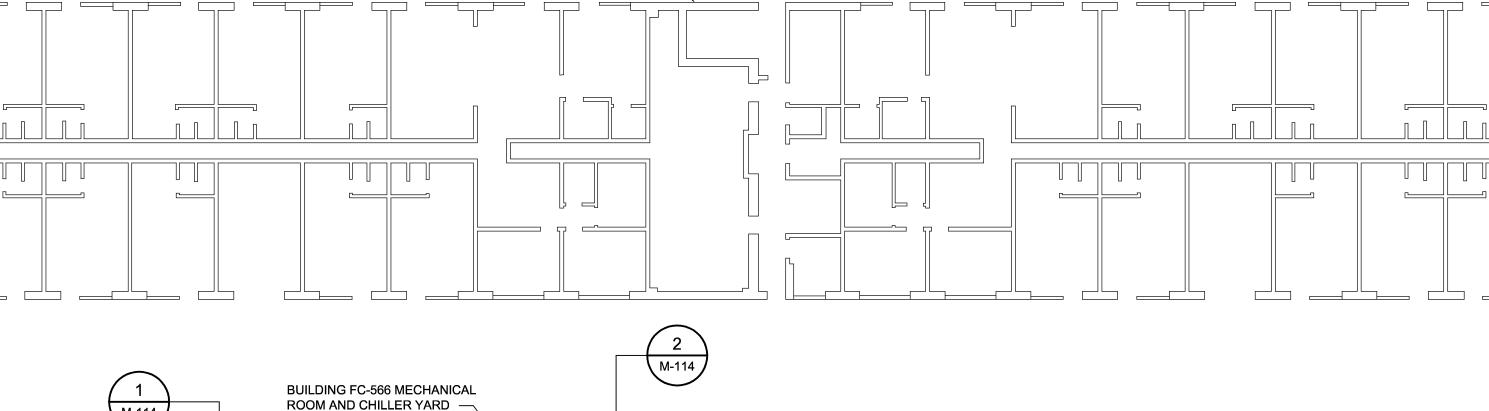
LOCK-TEMP

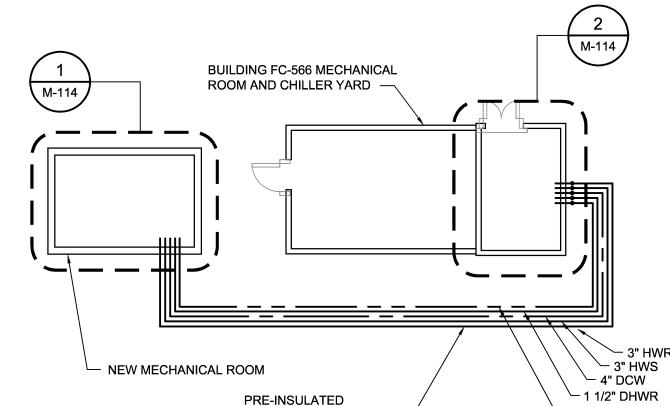
ACTUATOR FAIL MODEL REMARKS

REMARKS LEGE 1. SUBMIT COLOF TART. COLOR TO BE APPROVED BY ARCHITECT.

2. SEE ARCHITECTURAL PLANS FOR LOCATION. 3. PROVIDE SPRING RETURN CLOSE, POWERED OPEN BY ACTUATOR.

VERTICAL WITH INLET REMARKS REMARKS LEGEND 1. PROVIDE UNIT MOUNTED THERMOSTAT.





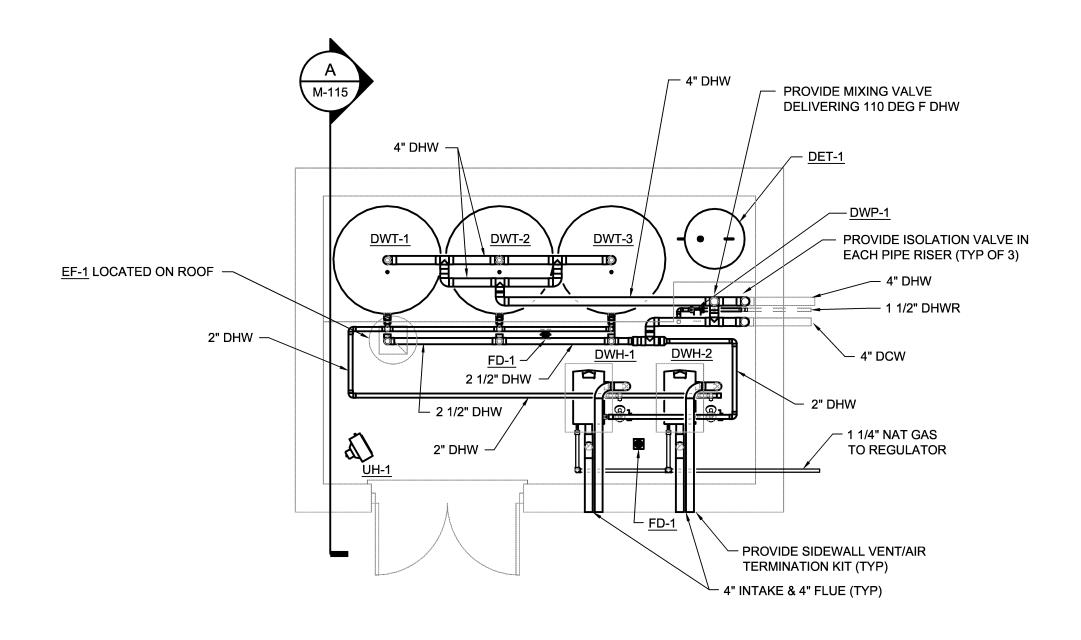
UNDERGROUND PIPING

BUILDING FC-565 MECHANICAL SITE PLAN

1/16"=1'-0"

0' 8' 16' 32'

`— 4" DHW



PROVIDE BIRD SCREEN

4" HOUSE

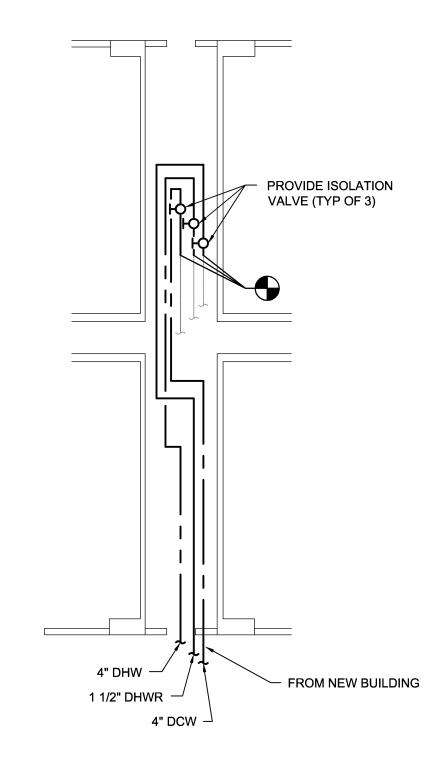
KEEPING PAD —

__ 4" VENT

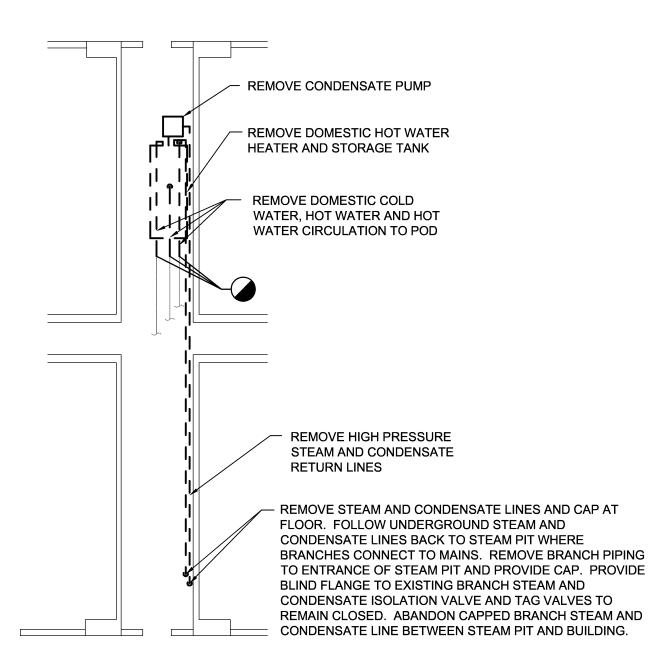
─ 4" HOUSE

KEEPING PAD

- BOILER PUMP



BUILDING FC-571 EXISTING MECHANICAL ROOM NEW WORK PLAN 1/8"=1'-0"



BUILDING FC-571 EXISTING MECHANICAL ROOM DEMOLITION PLAN 1/8"=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-
- 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.

NATURAL GAS NOTE:

1. TOTAL CONNECTED NATURAL GAS DEMAND FOR THIS BUILDING IS 800 MBH AT 10 IN-H20.

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. 2. 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. 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

DELTA T.

1. SEE GENERAL NOTES ON SHEET M-001.

REPLACE ALL 92 SHOWER HEADS IN THE BUILDING WITH LOW FLOW, 1.5 GPM SHOWER HEADS. 3. THIS PLAN SHOWS THE NEW DOMESTIC HOT WATER SYSTEM FOR BUILDING FC-571. HEATING WATER IS GENERATED AT BUILDING FC-572 AND IS DISTRIBUTED TO FC-571 VIA DUAL TEMPERATURE PIPES. SEE

SHEET M-116 FOR NEW HEATING SYSTEM AT FC-572. 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. 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 IN NEW MECHANICAL ROOM.

8. PROVIDE FLOOR DRAINS AS SHOWN ON FLOOR PLAN. CONTRACTOR TO VERIFY NEAREST SEWER MAIN. FOR PRICING PURPOSES, ASSUME 200 YARDS OF SANITARY PIPING.

9. STORE DOMESTIC HOT WATER AT 140 DEG F AND TEMPER TO 110 DEG F BEFORE BEING SUPPLIED TO BUILDING. 10. PROVIDE APPURTENANCES TO COMPLY WITH ASME CSD-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUT DOWN SWITCH LOCATED ADJACENT TO EXIT DOOR.

DESIGNATION	DWH-1	DWH-2
LOCATION	MECH ROOM	MECH ROOM
FUEL TYPE	NATURAL GAS	NATURAL GA
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4
MAXIMUM INLET GAS PRESSURE (IN. WG.)	14	14
GAS INLET CONNECTION (IN)	1	1
INPUT (MBH)	399	399
OUTPUT (MBH)	367	360
MINIMUM TURN DOWN RATIO	5:1	
FLOWRATE (GPM)	21	39
MAXIMUM PRESSURE DROP (FT_H20)	21.1	21.1
ENTERING WATER TEMPERATURE (DEG F)	105	40
LEAVING WATER TEMPERATURE (DEG F)	140	140
MINIMUM OPERATING PRESSURE (PSI)	30	
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
TOTAL OPERATING AMPS	6.5	6.5
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	LOCHINVAR	LOCHINVAF
MODEL REMARKS	AW-400	AW-400
REMARKS	1 & 2	1 & 2

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.

2. BOILER CIRCULATION PUMP TO BE PROVIDED BY MANUFACTURER AT 21 GPM AT 35

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

FLOOR DRAIN SCHEDULE

ZURN MODEL 415B WITH 6" NICKEL BRONZE STRAINER AND PROSET TRAPGUARD

DOMESTIC HOT WATER STORAGE TANK SCHEDULE						
DESIGNATION DWT-1 DWT-2 DWT-3						
TYPE	VERTICAL WITH INLET BAFFLE	VERTICAL WITH INLET BAFFLE	VERTICAL WITH INLET BAFFLE			
LOCATION	MECH ROOM	MECH ROOM	MECH ROOM			
STORAGE (GALLONS)	752	752	752			
ASME PRESSURE RATING (PSI)	125	125	125			
TANK DIAMETER (IN)	48	48	48			
VERTICAL HEIGHT (IN)	100	100	100			
BASED ON	LOCHINVAR	LOCHINVAR	LOCHINVAR			
MODEL	LOCK-TEMP	LOCK-TEMP	LOCK-TEMP			
REMARKS	1	1	1			

NEW MECHANICAL BUILDING

1. PROVIDE GLASS LINED VERTICAL DOMESTIC HOT WATER STORAGE TANK WITH RING BASE, 2" TOP OUTLET, 1 1/4" T&P TOP CONNECTION, 2" SIDE BOTTOM HEATING INLET, 2" SIDE BOTTOM HEATING OUTLET, 1" BOTTOM DRAIN, 3/4" SIDE AQUASTAT/SENSOR TAPPING. SEE SPECIFICATIONS FOR REQUIRED FIELD INSULATION, R-12.5 MINIMUM.

HE	ATER SC	HEDULE	UNIT HEATER SCH	EDULE
	DWH-1	DWH-2	DESIGNATION	UH-1
	MECH ROOM	MECH ROOM	LOCATION	MECH ROOM
	NATURAL GAS	NATURAL GAS	AIRFLOW (CFM)	300
	4	4	HEATING CAPACITY (KW)	3
	14	14	ENTERING AIR TEMPERATURE (DEG F)	55
	1	1	LEAVING AIR TEMPERATURE (DEG F)	87
	399	399	MOTOR POWER (HP)	1/60
	367	360	VOLTAGE (V)	208
	5:1		PHASE	1
	21	39	FREQUENCY (Hz)	60
	21.1	21.1	BASED ON	INDEECO
	105	40	MODEL	ULI
	140	140	REMARKS	1 & 2
	30		REMARKS LEGEND	
	120	120	1. PROVIDE UNIT MOUNTED THERMOSTAT.	
	1	1	2. PROVIDE INTEGRAL DISCONNECT.	

PUMP SCHEDULE			
DESIGNATION	DWP-1		
SERVICE	DOMESTIC HOT WATER		
LOCATION	MECH ROOM		
TYPE	INLINE		
PUMP DATA	-		
FLOW (GPM)	15		
TOTAL HEAD (FT-H2O)	20		
MINIMUM EFFICIENCY (%)	-		
CONNECTION SIZE	-		
SUCTION (IN)	1.5		
DISCHARGE (IN)	1.5		
MOTOR DATA	-		
MOTOR FRAME	-		
HORSEPOWER	-		
RPM	3300		
VOLTS	115		
PHASE	1		
HERTZ	60		
SELECTION BASED ON (MFGR)	BELL & GOSSETT		
MODEL	BOOSTER PL-36		
REMARKS	1		
REMARKS LEGEND:			

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

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	

PREP'D BY DATE APPROVED

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.

EXPANSION TANK SCHEDULE				
DESIGNATION	DET-1			
SERVICE	DOMESTIC HOT WATER			
LOCATION	MECH ROOM			
TYPE	REPLACEABLE BLADDER			
TANK VOLUME (GAL)	211			
FILL PRESSURE (PSI)	60*			
RELEIF VALVE PRESSURE SETTING (PSI)	100			
BASED ON	AMTROL			
MODEL	ST-C SERIES ST-452-C			
* MATCH DOMESTIC WATER SUPPLY PRESSURE AT THIS LOCATION.				

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 H20)	.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 2. SEE ARCHITECTURAL PLANS FOR LOCATION.

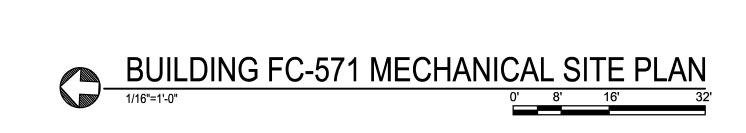
BY ACTUATOR.

3. PROVIDE SPRING RETURN CLOSE, POWERED OPEN

CONSTR CONTR NO.

N40085-12-B-0121

SHEET 29 OF 37



4" DCW

PRE-INSULATED

UNDERGROUND PIPING —

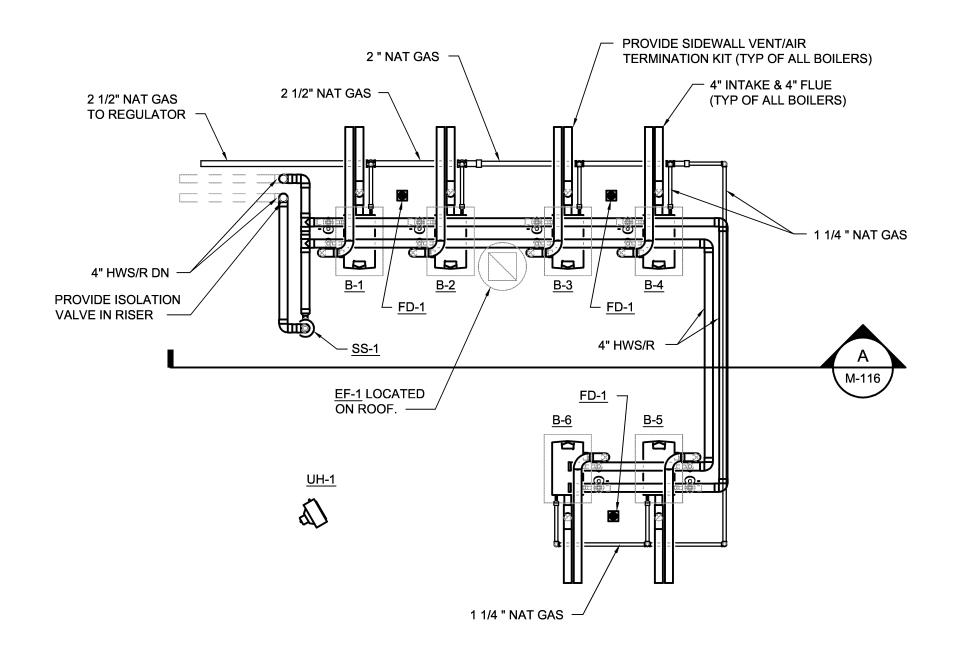
NOTE: SEE CIVIL FOR EXACT LOCATION OF BUILDING

Wiley|Wilson 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.254.7242 wileywilson.com M - 115PROJECT NO. CP12-0121 NAVAL FACILITIES ENGINEERING COMMAND DEPT OF NAVY MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA IM BOILER MODIFICATIONS, VARIOUS SWL FACILITIES, FRENCH CREEK JHE SUBMITTED BY: BUILDING FC571 MECHANICAL DEMOLITION AND DESIGN DIR. NEW WORK PLAN DATE SIZE CODE IDENT NO. NAVFAC DRAWING NO. APPROVED: PWO OR OICC 60011336

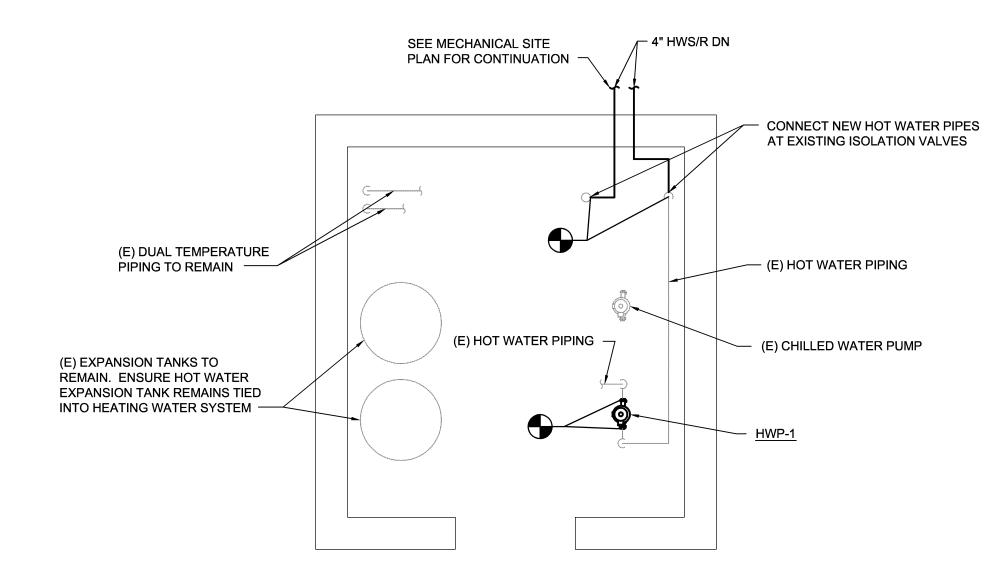
DATE

SCALE: AS SPEC No.

SATISFACTORY TO



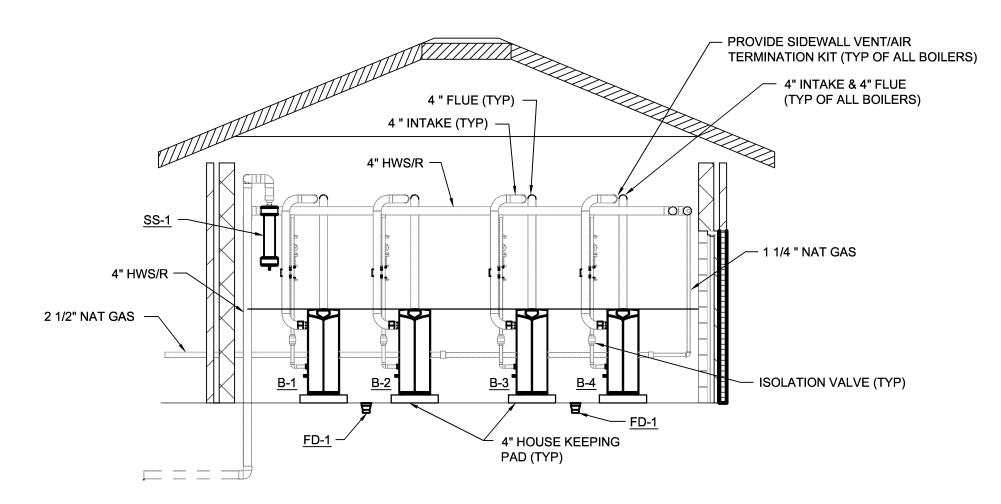
BUILDING FC-572 NEW MECHANICAL ROOM PLAN



BUILDING FC-572 EXISTING MECHANICAL ROOM NEW WORK PLAN

FLOOR. 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 REMOVE HEAT EXCHANGER AND HOT WATER CONDENSATE LINE BETWEEN STEAM PIT AND BUILDING. PIPING UP TO ISOLATION VAVLES (E) DUAL TEMPERATURE PIPING TO REMAIN ---- (E) HOT WATER PIPING (E) HOT WATER PIPING -(E) CHILLED WATER PUMP (E) EXPANSION TANKS TO REMAIN. ENSURE HOT WATER EXPANSION TANK REMAINS TIED INTO HEATING WATER SYSTEM -- REMOVE HOT







M-116 **NEW MECHANICAL BUILDING** PRE-INSULATED UNDERGROUND PIPING 4" HWS/R DN -- EXISTING FENCHED IN CHILLER YARD M-116 EXISTING MECHANICAL ROOM -BUILDING FC-572 MECHANICAL SITE PLAN 1/8"=1'-0" 8' 4' 8'



TOTAL CONNECTED NATURAL GAS DEMAND FOR THIS BUILDING IS 2,400 MBH AT 10 IN-H20.

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. THIS PLAN SHOWS THE NEW HOT WATER SYSTEM FOR BUILDING FC-572. BUILDING FC-572 IS A MECHANICAL ROOM THAT PROVIDES DUAL TEMPERATURE WATER FOR BUILDINGS FC-571 AND FC-573.
- 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. 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 INC ACCORDANCE WITH 2012 NORTH CAROLINA FUEL GAS CODE.
- 6. PROVIDE APPURTENANCES TO COMPLY WITH ASME CSD-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUT DOWN SWITCH LOCATED ADJACENT TO EXIT DOOR.

BOILER SCHEDULE						
DESIGNATION	B-1	B-2	B-3	B-4	B-5	B-6
LOCATION	MECH ROOM					
FUEL TYPE	NATURAL GAS					
MINIMUM INLET GAS PRESSURE (IN. WG.)	4	4	4	4	4	4
MAXIMUM INLET GAS PRESSURE (IN. WG.)	10	10	10	10	10	10
GAS INLET CONNECTION (IN)	1	1	1	1	1	1
INPUT (MBH)	399	399	399	399	399	399
OUTPUT (MBH)	367	367	367	367	367	367
MINIMUM TURN DOWN RATIO	5:1	5:1	5:1	5:1	5:1	5:1
FLOWRATE (GPM)	21	21	21	21	21	21
MAXIMUM PRESSURE DROP (FT_H20)	8	8	8	8	8	8
ENTERING WATER TEMPERATURE (DEG F)	150	150	150	150	150	150
LEAVING WATER TEMPERATURE (DEG F)	185	185	185	185	185	185
MINIMUM OPERATING PRESSURE (PSI)	30	30	30	30	30	30
VOLTAGE (V)	120	120	120	120	120	120
PHASE	1	1	1	1	1	1
FREQUENCY (Hz)	60	60	60	60	60	60
TOTAL OPERATING AMPS	1.5	1.5	1.5	1.5	1.5	1.5
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4	4	4	4	4
SELECTION BASED ON	LOCHINVAR	LOCHINVAR	LOCHINVAR	LOCHINVAR	LOCHINVAR	LOCHINVAR
MODEL REMARKS	KB-400	KB-400	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	1, 2, 3 & 4	1, 2, 3 & 4

- 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 21 GPM AT 35 DELTA T.
- 3. PROVIDE SEALED COMBUSTION CHAMBER, DIRECT VENT AND DUCTED COMBUSTION AIR. PROVIDE CPVC OR AL29-4C FLUE GAS PIPE, PVC IN NOT
- 4. PROVIDE BOILERS WHICH ARE AT LEAST 94% EFFICIENT BASED ON BTS-2000 REV06.07 CONDITIONS.

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:		

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 (FPM)	734	
PRESSURE DROP (IN H20)	.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

SATISFACTORY TO

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	

PREP'D BY DATE APPROVED

- 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)	126	
TOTAL HEAD (FT-H2O)	75	
MINIMUM EFFICIENCY (%)	60	
CONNECTION SIZE	-	
SUCTION (IN)	2.5	
DISCHARGE (IN)	2.5	
MOTOR DATA	-	
MOTOR FRAME	213JM	
HORSEPOWER	7.5	
RPM	1750	
VOLTS	208	
PHASE	1	
HERTZ	60	
SELECTION BASED ON (MFGR)	BELL & GOSSETT	
MODEL	80 2-1/2x2-1/2x9-1/2B	

SOLID SEPARATOR	
SCHEDULE	
DESIGNATION	SS-1
LOCATION	MECH ROOM
SERVICE	HOT WATER
MAXIMUM PRESSURE DROP (FT-H20)	20
COLLECTION CHAMBER CAPACITY (GAL)	1.25
BASED ON	LAKOS
MODEL	ILB-0250

I REMARKS

		Wiley Wilson 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.254.7242		M-116
	4	wileywilson.com		PROJECT NO. CP12-0121
			DEPT OF NAVY	NAVAL FACILITIES ENGINEERING COMMAND
			MARINE CO	DRPS BASE
				NORTH CAROLINA
	DES.	IM		
	DR.	SWL	BOILER MODIF	ICATIONS, VARIOUS
	CHK.	JHE	FACILITIES,	FRENCH CREEK
,	SUBMITTED BY:		BUILDING FC572 ME	CHANICAL DEMOLITION AND
_	DEGIGNI DID		II	MODIC BLAN

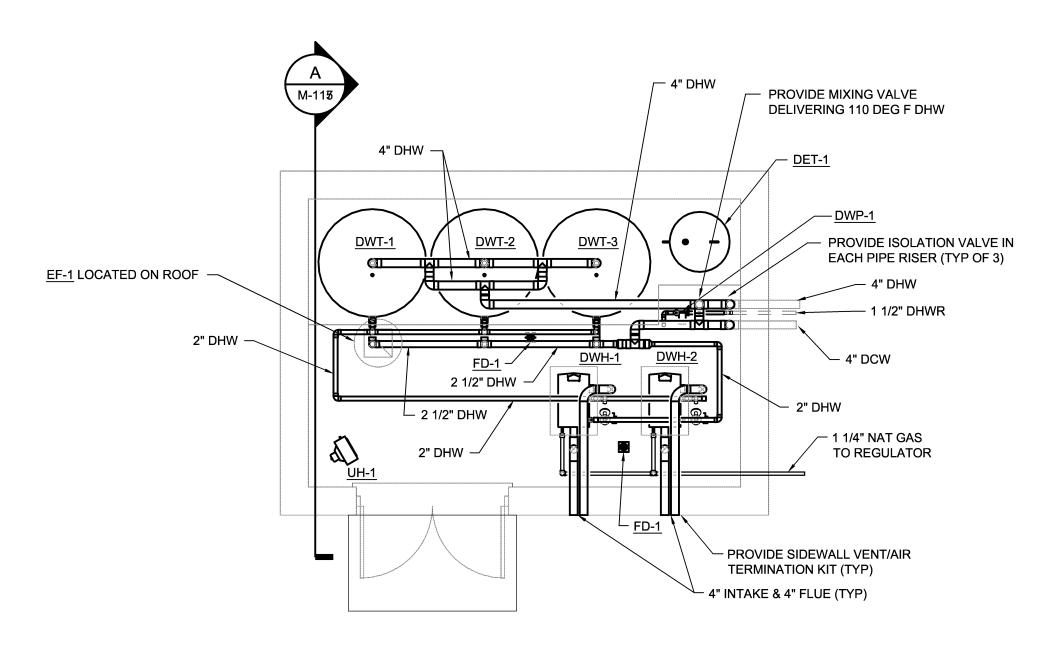
NEW WORK PLAN

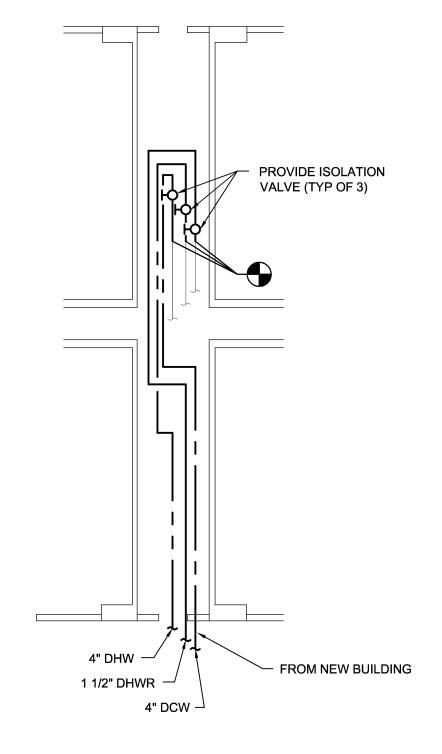
DATE SIZE CODE IDENT NO. NAVFAC DRAWING NO. DATE CONSTR CONTR NO. N40085-12-B-0121 SCALE: AS SPEC No. SHEET 30 OF 37

DISCLOSURE OF INFORMATION Contractor shall comply as follows:

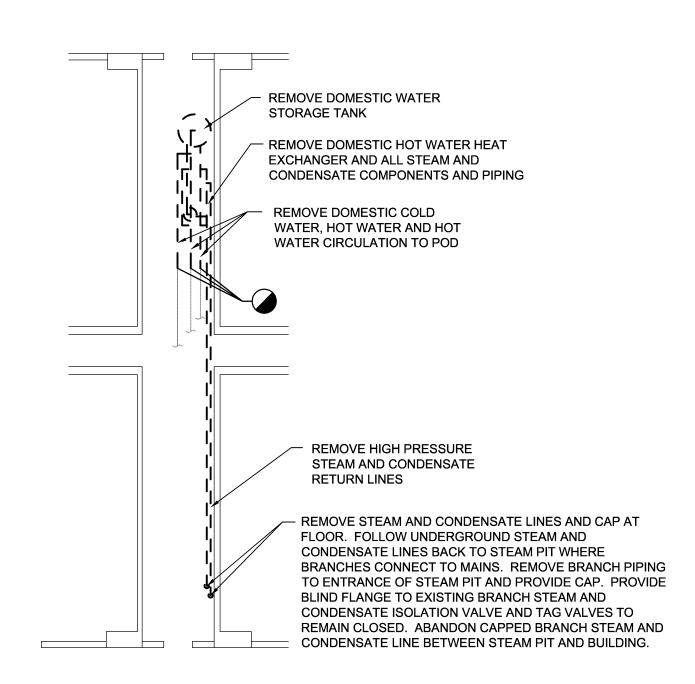
REMOVE STEAM AND CONDENSATE LINES AND CAP AT

- (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-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. 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.





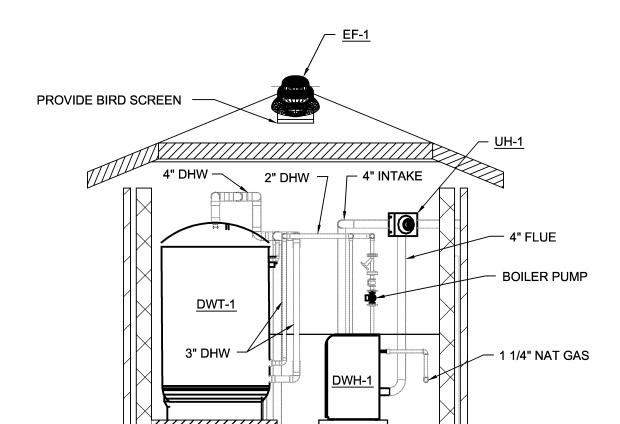
BUILDING FC-573 EXISTING MECHANICAL ROOM NEW WORK PLAN 1/8"=1'-0"



BUILDING FC-573 EXISTING MECHANICAL ROOM DEMOLITION PLAN 1/8"=1'-0" BUILDING FC-573 EXISTING MECHANICAL ROOM DEMOLITION PLAN 0' 4' 8' 16'

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-
- 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.



4" HOUSE

KEEPING PAD -

─ 4" HOUSE

KEEPING PAD

NATURAL GAS NOTE:

1. TOTAL CONNECTED NATURAL GAS DEMAND FOR THIS BUILDING IS 800 MBH AT 10 IN-H20.

- 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. 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

DEMOLITION NOTES

- 1. SEE GENERAL NOTES ON SHEET M-001.
- REPLACE ALL 92 SHOWER HEADS IN THE BUILDING WITH LOW FLOW, 1.5 GPM SHOWER HEADS. 3. THIS PLAN SHOWS THE NEW DOMESTIC HOT WATER SYSTEM FOR BUILDING FC-571. HEATING WATER IS GENERATED AT BUILDING FC-572 AND IS DISTRIBUTED TO FC-571 VIA DUAL TEMPERATURE PIPES. SEE
- SHEET M-116 FOR NEW HEATING SYSTEM AT FC-572. 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. 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 IN NEW MECHANICAL ROOM.
- 8. PROVIDE FLOOR DRAINS AS SHOWN ON FLOOR PLAN. CONTRACTOR TO VERIFY NEAREST SEWER MAIN. FOR PRICING PURPOSES, ASSUME 200 YARDS OF SANITARY PIPING.
- 9. STORE DOMESTIC HOT WATER AT 140 DEG F AND TEMPER TO 110 DEG F BEFORE BEING SUPPLIED TO BUILDING. 10. PROVIDE APPURTENANCES TO COMPLY WITH ASME CSD-1, INCLUDING BUT NOT LIMITED TO MUSHROOM TYPE EMERGENCY SHUT DOWN SWITCH LOCATED ADJACENT TO EXIT DOOR.

		HEDULE
DESIGNATION	DWH-1	DWH-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.)	14	14
GAS INLET CONNECTION (IN)	1	1
INPUT (MBH)	399	399
OUTPUT (MBH)	367	360
MINIMUM TURN DOWN RATIO	5:1	
FLOWRATE (GPM)	21	39
MAXIMUM PRESSURE DROP (FT_H20)	21.1	21.1
ENTERING WATER TEMPERATURE (DEG F)	105	40
LEAVING WATER TEMPERATURE (DEG F)	140	140
MINIMUM OPERATING PRESSURE (PSI)	30	
VOLTAGE (V)	120	120
PHASE	1	1
FREQUENCY (Hz)	60	60
TOTAL OPERATING AMPS	6.5	6.5
FLUE GAS STACK EXHAUST CONNECTION SIZE (IN)	4	4
SELECTION BASED ON	LOCHINVAR	LOCHINVAR
MODEL REMARKS	AW-400	AW-400
REMARKS	1 & 2	1 & 2

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.

2. BOILER CIRCULATION PUMP TO BE PROVIDED BY MANUFACTURER AT 21 GPM AT 35 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

DOMESTIC HOT WATER STORAGE TANK SCHEDULE				
DESIGNATION DWT-1 DWT-2 DV				
TYPE	VERTICAL WITH INLET BAFFLE	VERTICAL WITH INLET BAFFLE	VERTICAL WITH INLET BAFFLE	
LOCATION	MECH ROOM	MECH ROOM	MECH ROOM	
STORAGE (GALLONS)	752	752	752	
ASME PRESSURE RATING (PSI)	125	125	125	
TANK DIAMETER (IN)	48	48	48	
VERTICAL HEIGHT (IN)	100	100	100	
BASED ON	LOCHINVAR	LOCHINVAR	LOCHINVAR	
MODEL	LOCK-TEMP	LOCK-TEMP	LOCK-TEMP	
REMARKS	1	1	1	

1. PROVIDE GLASS LINED VERTICAL DOMESTIC HOT WATER STORAGE TANK WITH RING BASE, 2" TOP OUTLET, 1 1/4" T&P TOP CONNECTION, 2" SIDE BOTTOM HEATING INLET, 2" SIDE BOTTOM HEATING OUTLET, 1" BOTTOM DRAIN, 3/4" SIDE AQUASTAT/SENSOR TAPPING. SEE SPECIFICATIONS FOR REQUIRED FIELD INSULATION, R-12.5 MINIMUM.

FLOOR DRAIN S	SCHEDULE

I LOOK DIVAIN SCHLDULL		
DESIGNATION	DRAIN SIZE	DESCRIPTION
FD-1	3"	ZURN MODEL 415B WITH 6" NICKEL BRONZE

IEDULE
UH-1
MECH ROOM
300
3
55
87
1/60
208
1
60
INDEECO
ULI
1 & 2

1. PROVIDE UNIT MOUNTED THERMOSTAT. 2. PROVIDE INTEGRAL DISCONNECT

PUMP SCHEDULE		
DESIGNATION	DWP-1	
SERVICE	DOMESTIC HOT WATER	
LOCATION	MECH ROOM	
TYPE	INLINE	
PUMP DATA	-	
FLOW (GPM)	15	
TOTAL HEAD (FT-H2O)	20	
MINIMUM EFFICIENCY (%)	-	
CONNECTION SIZE	-	
SUCTION (IN)	1.5	
DISCHARGE (IN)	1.5	
MOTOR DATA	-	
MOTOR FRAME	-	
HORSEPOWER	-	
RPM	3300	
VOLTS	115	
PHASE	1	
HERTZ	60	
SELECTION BASED ON (MFGR) BELL & GOSSET		
MODEL	BOOSTER PL-36	
REMARKS	1	
REMARKS LEGEND:		
1. BRONZE FITTED PUMP FOR DOMESTIC WATER		

SERVICE. PROVIDE AQUASTAT CONTROL.

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

PREP'D BY DATE APPROVED

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.

EXPANSION TANK	SCHEDULE
DESIGNATION	DET-1
SERVICE	DOMESTIC HOT WATER
LOCATION	MECH ROOM
TYPE	REPLACEABLE BLADDER
TANK VOLUME (GAL)	211
FILL PRESSURE (PSI)	60*
RELEIF VALVE PRESSURE SETTING (PSI)	100
BASED ON	AMTROL
MODEL	ST-C SERIES ST-452-C
* MATCH DOMESTIC WATER SUPPLY PRES	SURE AT THIS LOCATION.

LOUVER SCHEDULE

LOUVER SCI	ILDULL
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 H20)	.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

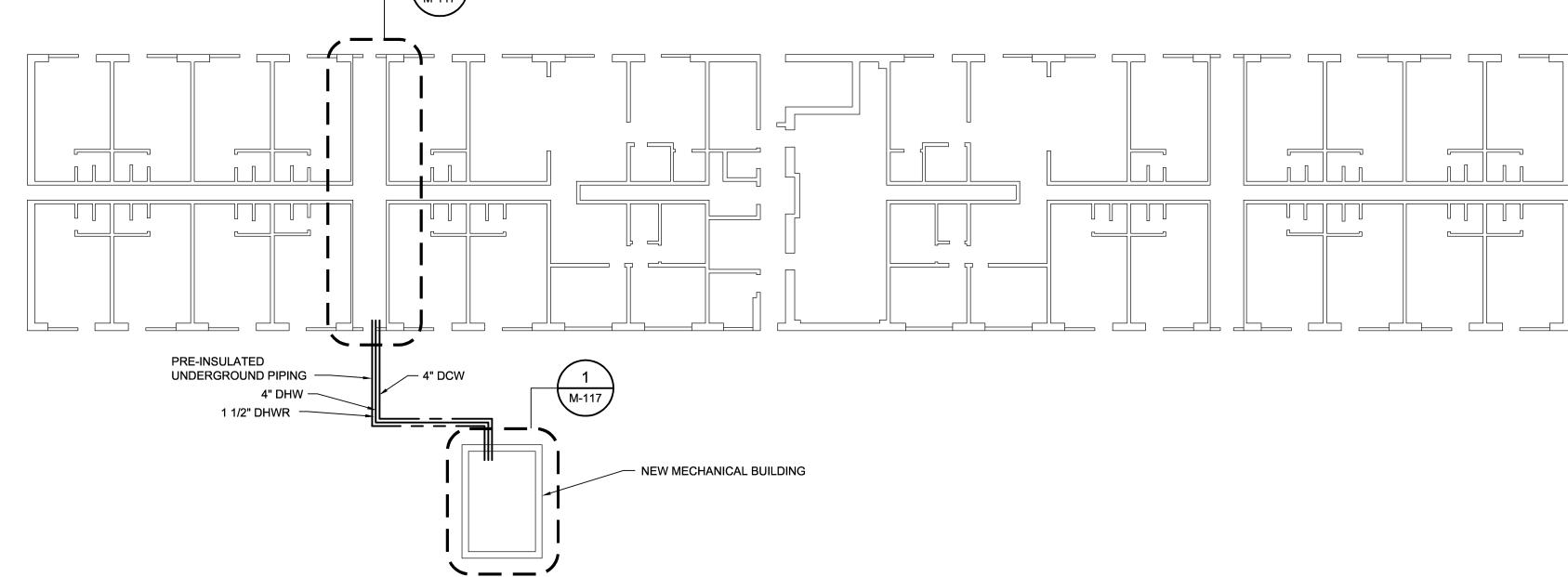
2. SEE ARCHITECTURAL PLANS FOR LOCATION. 3. PROVIDE SPRING RETURN CLOSE, POWERED OPEN BY ACTUATOR.

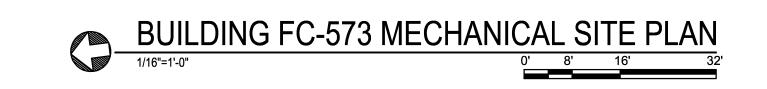
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CONSTR CONTR NO.

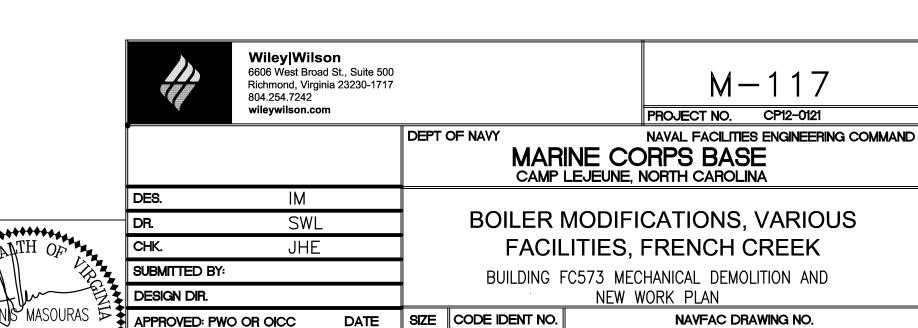
N40085-12-B-0121

SHEET 31 OF 37





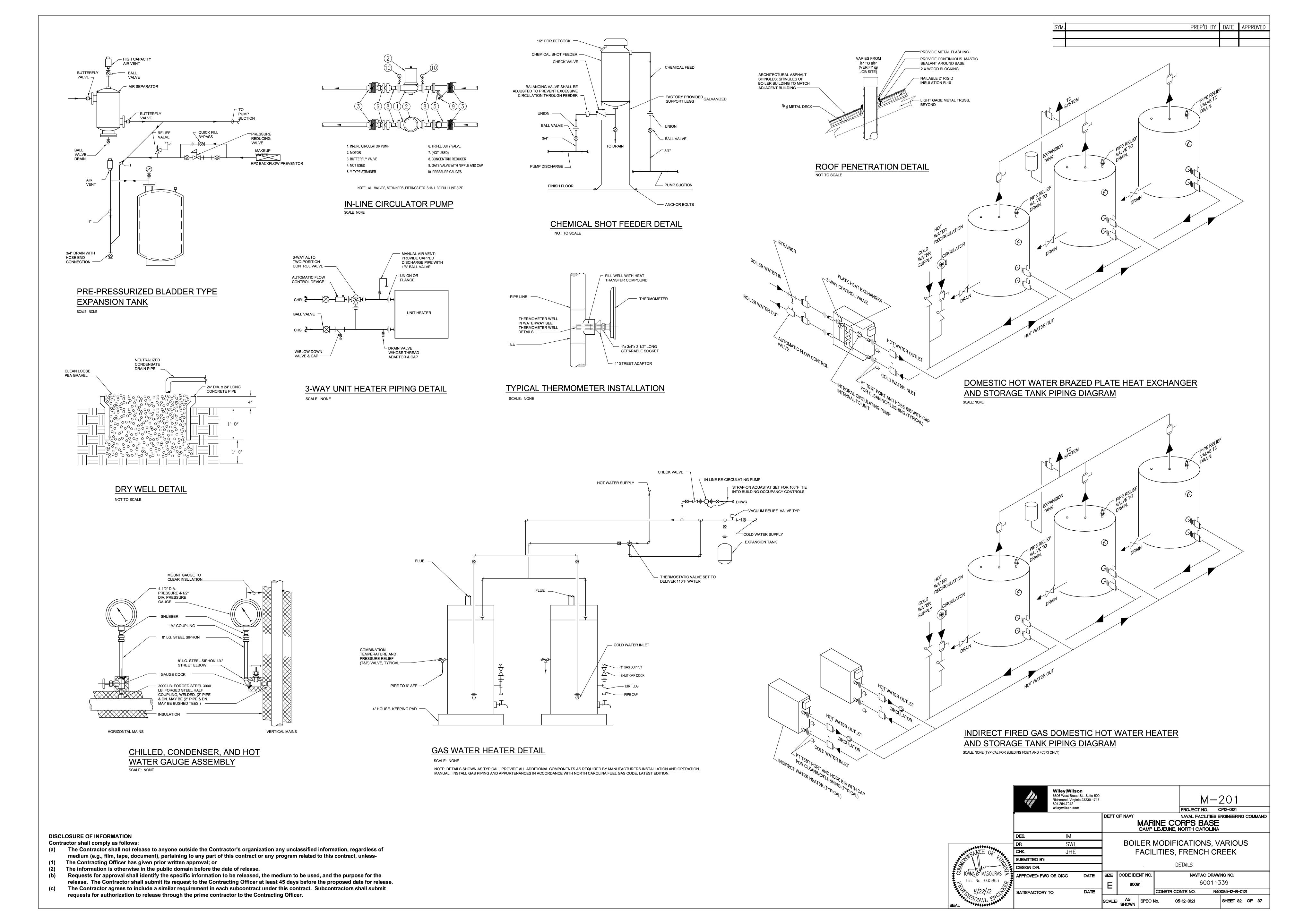
NOTE: SEE CIVIL FOR EXACT LOCATION OF BUILDING

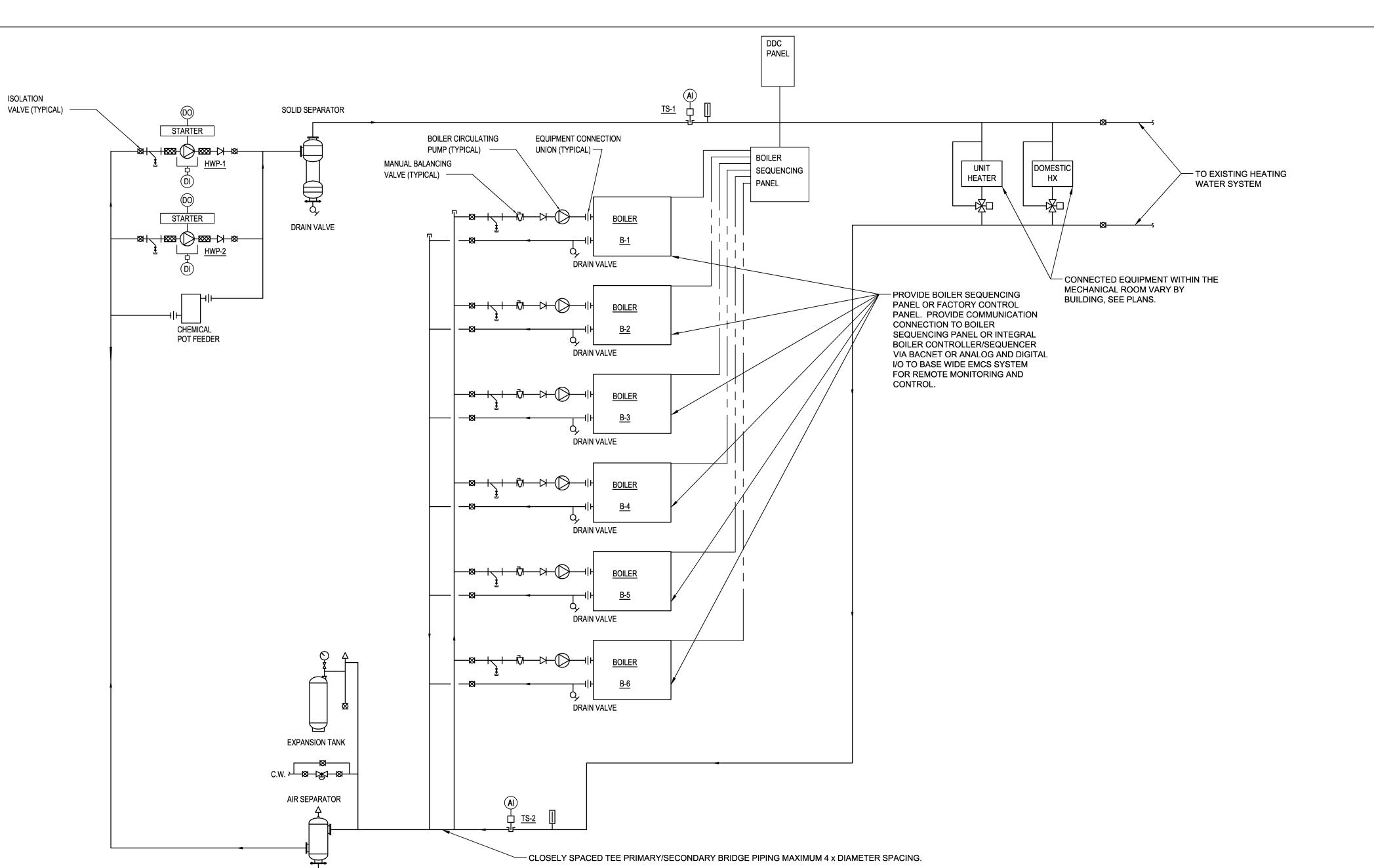


SCALE: AS SPEC No.

DATE

SATISFACTORY TO





HEATING WATER SYSTEM CONTROL DIAGRAM

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

SCALE: NONE (SYSTEM IS TYPICAL FOR ALL BUILDINGS WITH BOILER QUANTITY VARYING BY BUILDING - SEE PLANS)

ON A CALL FOR HEAT, OR ON A CALL FOR DOMESTIC WATER ON BUILDINGS WITH PLATE HEAT EXCHANGER WATER HEATERS, 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

DRAIN VÄLVE

3. BOILER FIRING STATUS

4. BOILER ALARM STATUS

4. BOILER ALARM STATUS
5. BOILER STATUS (ENABLE/DISABLE).

NOTE: IN BUILDING FC-572, THE HEATING WATER SUPPLY PUMPS ARE REMOTELY LOCATED INSIDE THE BUILDING.

IF NEW BOILER CONTROLLER DOES NOT INCLUDE BACNET MS/TP BUS, PROVIDE GATEWAY TO CONVERT BOILER CONTROL PROTOCOL TO APPROPRIATE PROTOCOL. THE FOLLOWING LIST INCLUDES THE EXISTING TO REMAIN BUILDING SUPERVISOR CONTROLLER PROTCOL INFORMATION FOR COORDINATION:

FC400 BACNET MS/TP

FC411 BACNET MS/TP FC412 BACNET MS/TP

FC413 BACNET MS/TP FC414 METASYS N2 FC415 BACNET MS/TP

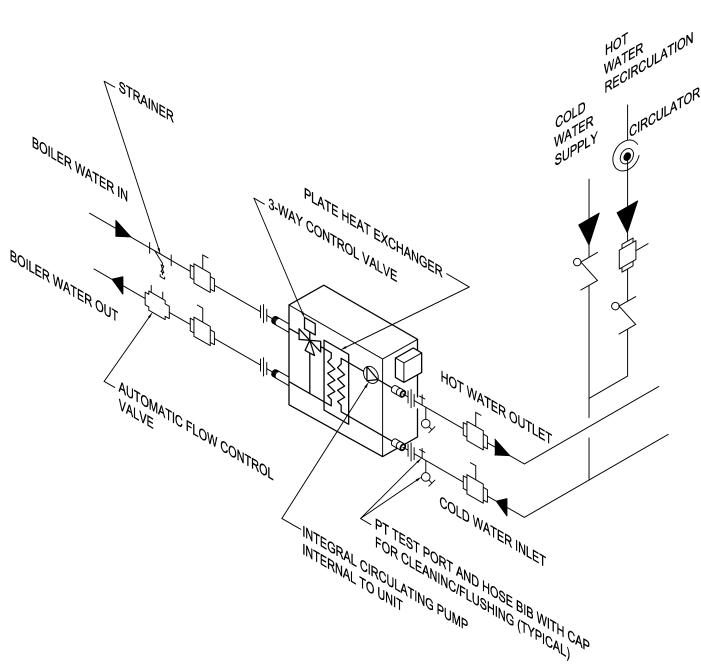
FC415 BACNET MS/TP FC416 BACNET MS/TP

FC515 BACNET MS/TP FC530 METASYS N2 FC550 METASYS N2

FC555 METASYS N2 FC560 METASYS N2

FC565 METASYS N2 FC571 BACNET MS/TP

FC572 BACNET MS/TP FC573 BACNET MS/TP



DOMESTIC HEATING WATER HEAT EXCHANGER SYSTEM CONTROL DIAGRAM

ON A CALL FOR DOMESTIC HOT WATER, AS SENSED BY TANK MOUNTED TEMPERATURE SENSORS OR INTERNAL TEMPERATURE SENSORS, THE DIGITAL CONTROLLER SHALL ENABLE THE DOMESTIC WATER TANK CIRCULATING PUMP AND SEND A CALL FOR HEATING WATER TO THE HEATING WATER SYSTEM. THE CONTROL VALVE SHALL THEN MODULATE TO PROVIDE A DOMESTIC LEAVING WATER TEMPERATURE OF 140°F (ADJUSTABLE). WHEN THE CALL FOR DOMESTIC HOT WATER CEASES, THE REVERSE SHALL OCCUR.

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

THE FOLLOWING POINTS SHALL BE VIEWABLE ON THE EMCS:

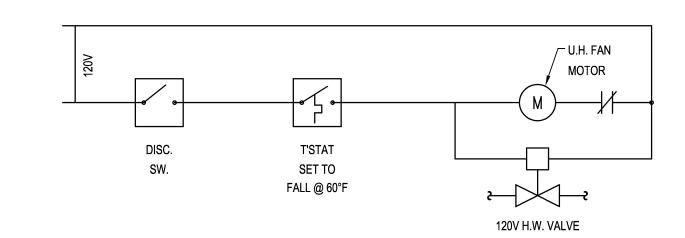
1. HEAT EXCHANGER DOMESTIC HOT WATER LEAVING TEMPERATURE

2. HEAT EXCHANGER DOMESTIC HOT WATER LEAVING TEMPERATURE SETPOINT 3. PUMP STATUS

4. HEAT EXCHANGER PUMP ALARM STATUS

5. HEAT EXCHANGER PUMP ALARM STATUS

5. HEAT EXCHANGER SYSTEM STATUS (ENABLE/DISABLE/CALL FOR HEATING WATER).



TYPICAL HOT WATER UNIT HEATER CONTROL DIAGRAM

Wiley|Wilson 6606 West Broad St., Suite 500 M - 301Richmond, Virginia 23230-1717 804.254.7242 PROJECT NO. CP12-0121 NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA IM BOILER MODIFICATIONS, VARIOUS SWL FACILITIES, FRENCH CREEK JHE SUBMITTED BY: CONTROLS DESIGN DIR. DATE SIZE CODE IDENT NO. NAVFAC DRAWING NO. APPROVED: PWO OR OICC 60011340 DATE CONSTR CONTR NO. N40085-12-B-0121 SATISFACTORY TO SCALE: AS SPEC No. SHEET 33 OF 37

PREP'D BY DATE APPROVED

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

The Contracting Officer has given prior written approval; or
 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

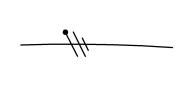
release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release.

The Contractor agrees to include a similar requirement in each subcontract under this contract. Subcontractors shall submit

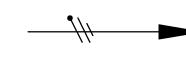
requests for authorization to release through the prime contractor to the Contracting Officer.

TYPE B

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"

120 VOLT, 20 AMP, 3-WIRE, NEMA 5-20 DUPLEX RECEPTACLE. MOUNTING HEIGHT: CENTER +36" AFF UNO.

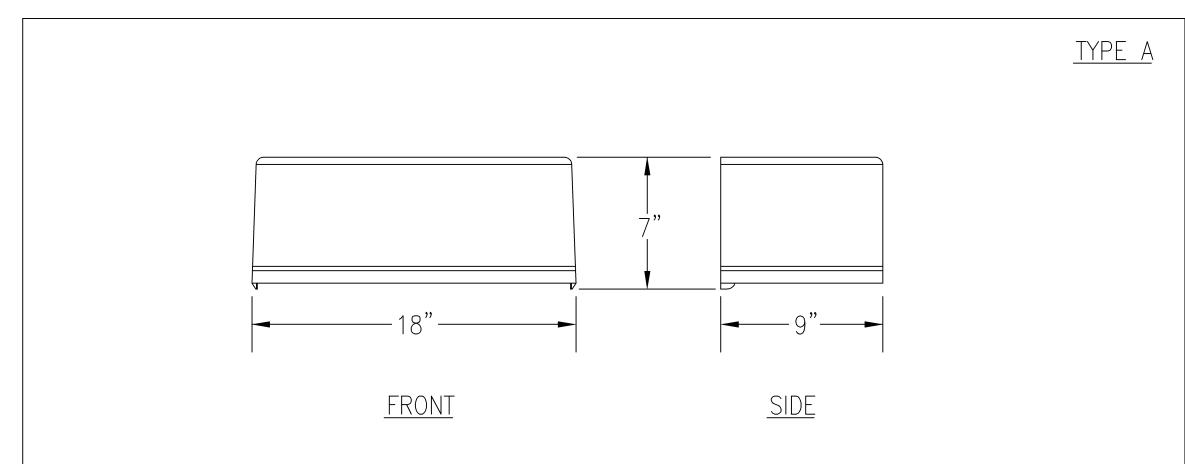
120 VOLT, 20 AMP, 3-WIRE, NEMA 5-20 DOUBLE DUPLEX RECEPTACLE. MOUNTING HEIGHT: CENTER +136" AFF UNO.

120 VOLT, 20 AMP, 3-WIRE, NEMA 5-20 DUPLEX GROUND FAULT CIRCUIT INTERRUPTING RECEPTACLE. MOUNTING HEIGHT: CENTER +18" AFF UNO.

DISCLOSURE OF INFORMATION

Contractor shall comply as follows:

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.

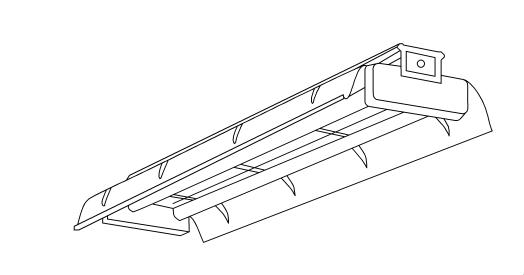


LUMINAIRE REQUIREMENTS:

- 1. HOUSING -TWO-PIECE, NEMA 3R, DIE-CAST ALUMINUM WITH A RIGID STEEL MOUNTING ATTACHMENT FITS DIRECTLY TO A 4" J-BOX OR WALL WITH A "HOOK-N-LOCK" MECHANISM HOUSING AND DOOR FRAME CONCEALED WHEN FIXTURE IS CLOSED. CONCEALED INTEGRAL CAST SLIP HINGES WITH STAINLESS STEEL HINGES.
- 2. FINISH POLYESTER POWDER COAT IN BRONZE FINISH.
- 3. DOOR DIE-CAST WITH TEMPERED GLASS LENS. HINGED DOOR SECURED IN PLACE VIA TWO CAPTIVE FASTENERS.
- 4. LENS 1/8" THICK HEAT- AND IMPACT-RESISTANT CLEAR TEMPERED GLASS
- 5. LAMPS 100 WATT METAL HALIDE
- 6. BALLAST HIGH POWER FACTOR BALLAST RATED FOR -20°F FOR MH LAMP MODES.
- 7. CONTROL INTEGRAL PHOTOCELL
- 8. MOUNTING MOUNT 8' AFF
- 9. CERTIFICATION UL LISTED AND LABELED. CSA CERTIFIED FOR WET LOCATION.

ARCHITECTURAL FLOODLIGHT

NL-64LIGHTING PLATE:



LUMINAIRE REQUIREMENTS:

- 1. HOUSING DIE-FORMED, COLD-ROLLED STEEL, WITH REINFORCEMENT RIBS FOR RIGIDITY. ENDCAPS SECURED WITH TABS, SCREWS OR RIVETS. FIXTURE SHALL NOT PERMANENTLY DEFORM OUT OF "SQUARE" WHEN PICKED UP FROM ANY CORNER.
- 2. FINISH MULTI—STAGE PHOSPHATE BONDING TREATMENT FINISHED WITH HIGH REFLECTANCE (MINIMUM 85%), BAKED WHITE ENAMEL FINISH.
- 3. LAMPHOLDERS- PRESSURE-LOCKED TYPE ENCLOSED IN TURRET HOUSING.
- 4. REFLECTOR DIE-FORMED, COLD-ROLLED STEEL WITH TRANSVERSE RIBS FOR RIGIDITY. SOLID, 10% UPLIGHT APERATURE OR 20% UPLIGHT APERATURE AS INDICATED IN LIGHTING FIXTURE SCHEDULE.
- 5. LAMPS LINEAR FLUORESCENT T8, TYPICALLY WITH WATTAGES AS INDICATED. SEE LIGHTING FIXTURE SCHEDULE.
- 6. BALLAST CLASS P, THERMALLY-PROTECTED, HIGH POWER FACTOR (\geq .95), ELECTRONIC TYPE WITH SOUND RATING A. SEE SPECIFICATION OR LIGHTING FIXTURE SCHEDULE FOR BALLAST OPTIONS AND SPECIFICS.
- 7. MOUNTING SURFACE MOUNT
- 8. PROVIDE OPTION PLATED STEEL WIRE GUARD.
- 9. CERTIFICATION UL LISTED AND LABELED.

INDUSTRIAL FLUORESCENT

UE

UH

UNO

XFMR

LIGHTING PLATE:

NL-13

ELECTRICAL ABBREVIATIONS

		M	MAIN OR METER
A	AMPERES AMPERE FUEL	MB	MAIN CIRCUIT BREAKEI
AF	AMPERE FRAME OR AMPERE FUSE	MCCB	MOLDED CASE CIRCUIT
AFD	ADJUSTABLE FREQUENCY MOTOR DRIVE UNIT	MCP	MOTOR CIRCUIT PROTE
AFF	ABOVE FINISHED FLOOR ABOVE FINISHED GRADE	МН	METAL HALIDE, MANHO
AFG AHU	ABOVE FINISHED GRADE AIR HANDLING UNIT	M. 0	TO CENTER OF DEVICE
		MLO	MAIN LUGS ONLY
AWG	AMERICAN WIRE GUAGE	MS	MAGNETIC STARTER
BAS C	BUILDING AUTOMATION SYSTEM CONDUIT	MSB	MAIN SWITCHBOARD
CHWP	CHILLED WATER PUMP	MTD	MOUNTED
CKT	CIRCUIT	MV	MEDIUM VOLTAGE
CKT BKR	CIRCUIT BREAKER	N	NEUTRAL
COMM	COMMUNICATIONS	NC	NORMALLY CLOSED
CT	CURRENT TRANSFORMER OR CABLE TRAY	NEC	NATIONAL ELECTRICAL
	DISCONNECT SWITCH	NETA	NATIONAL ELECTRICAL
DN	DOWN	NF	NON-FUSED
E OR EXIST.	EXISTING	NIC	NOT IN CONTRACT
EA	EACH	NL	NON LINEAR
EF	EXHAUST FAN	NO	NORMALLY OPEN
EM	EMERGENCY	NPZ	NAME PLATE IMPEDAN
ENCL	ENCLOSURE	O.C.	ON CENTER
ERU	ENERGY RECOVERY UNIT	os	OCCUPANCY SENSOR
EUEP	EXISTING UNDERGROUND ELECTRIC POWER	Р	POLE OR PRIMARY
EUTC	EXISTING UNDERGROUND COMMUNICATIONS	PBX	PULLBOX
EWC	ELECTRIC WATER COOLER	PC	PHOTOELECTRIC CELL
F	FLUSH MOUNTED IN WALL	PH	PHASE
FTL	FEED THRU LUGS	PNL	PANEL
FUS	FUSE	PWR	POWER
FVNR	FULL VOLTAGE NON-REVERSING	R	RAINTIGHT
G	GROUND	RCPT	RECEPTACLE
GFGI	GOVERNMENT FURNISHED GOVERNMENT INSTALLED	S	
GFI	GROUND FAULT INTERRUPTING	_	SINGLE POLE SINGLE T
HP	HORSE POWER	SCC	SHORT CIRCUIT CURRE
HT	HEAT TRACE	STCB	SHUNT TRIP CIRCUIT BI
HWP	HOT WATER PUMP	SW	SWITCH
JB	JUNCTION BOX	SYM	SYMMETRICAL
KV	KILOVOLTS	TC	TIME CLOCK
KVA	KILOVOLT AMPERES	TVSS	TRANSIENT VOLTAGE
KW	KILOWATTS		SURGE SUPPRESSOR
LAN	LOCAL AREA NETWORK	TYP	TYPICAL
LED	LIGHT EMITTING DIODE		

MAIN OR METER MAIN CIRCUIT BREAKER OLDED CASE CIRCUIT BREAKER OTOR CIRCUIT PROTECTOR ETAL HALIDE, MANHOLE, OR MOUNTING HEIGHT O CENTER OF DEVICE **AIN LUGS ONLY** IAGNETIC STARTER IAIN SWITCHBOARD IOUNTED **IEDIUM VOLTAGE EUTRAL ORMALLY CLOSED** ATIONAL ELECTRICAL CODE ATIONAL ELECTRICAL TESTING ASSOCIATION **ON-FUSED OT IN CONTRACT** ON LINEAR **ORMALLY OPEN AME PLATE IMPEDANCE** N CENTER CCUPANCY SENSOR **OLE OR PRIMARY** ULLBOX **HOTOELECTRIC CELL** HASE ANEL **OWER AINTIGHT ECEPTACLE** INGLE POLE SINGLE THROW HORT CIRCUIT CURRENT **HUNT TRIP CIRCUIT BREAKER**

UNDERGROUND ELECTRIC **UNIT HEATER UNLESS NOTED OTHERWISE VOLTS WATER HEATER WEATHERPROOF TRANSFORMER** WYE CONNECTED

6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.254.7242 wileywilson.com PROJECT NO. CP12-0121 DEPT OF NAVY CDH CDH JHE SUBMITTED BY:

DESIGN DIR.

JOHN H. EPPERSON

No. 11087

8/22/12

NAVAL FACILITIES ENGINEERING COMMAND MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA **BOILER MODIFICATIONS, VARIOUS FACILITIES, FRENCH CREEK** ELECTRICAL LEGEND, ABBREVIATIONS AND LIGHTING DETAILS

05-12-0121

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SHEET 34 OF 37

NAVFAC DRAWING NO. DATE SIZE CODE IDENT NO.

APPROVED: PWO OR OICC 60011341 CONSTR CONTR NO. N40085-12-B-0121 SATISFACTORY TO

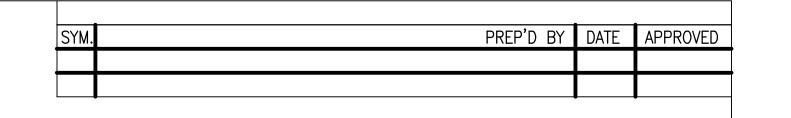
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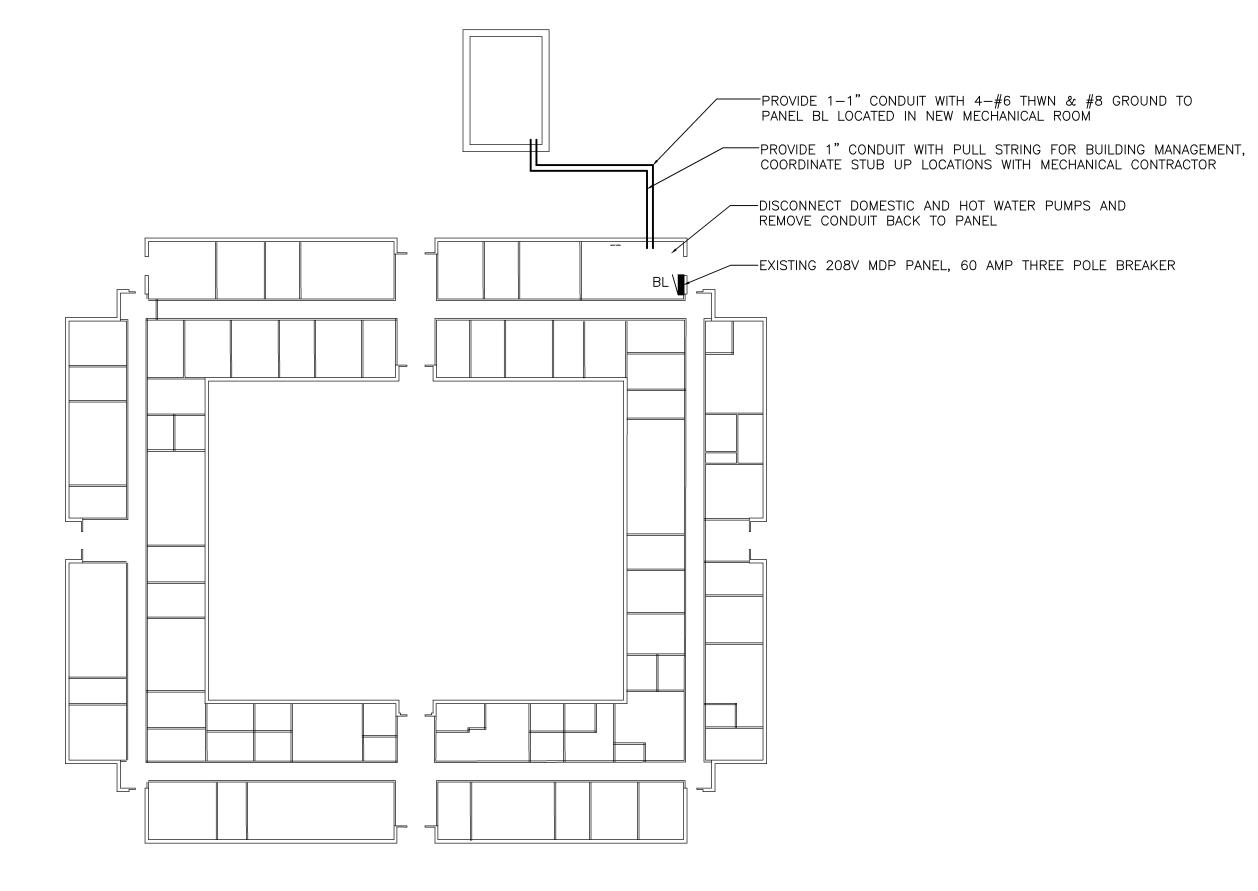
requests for authorization to release through the prime contractor to the Contracting Officer.

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

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-



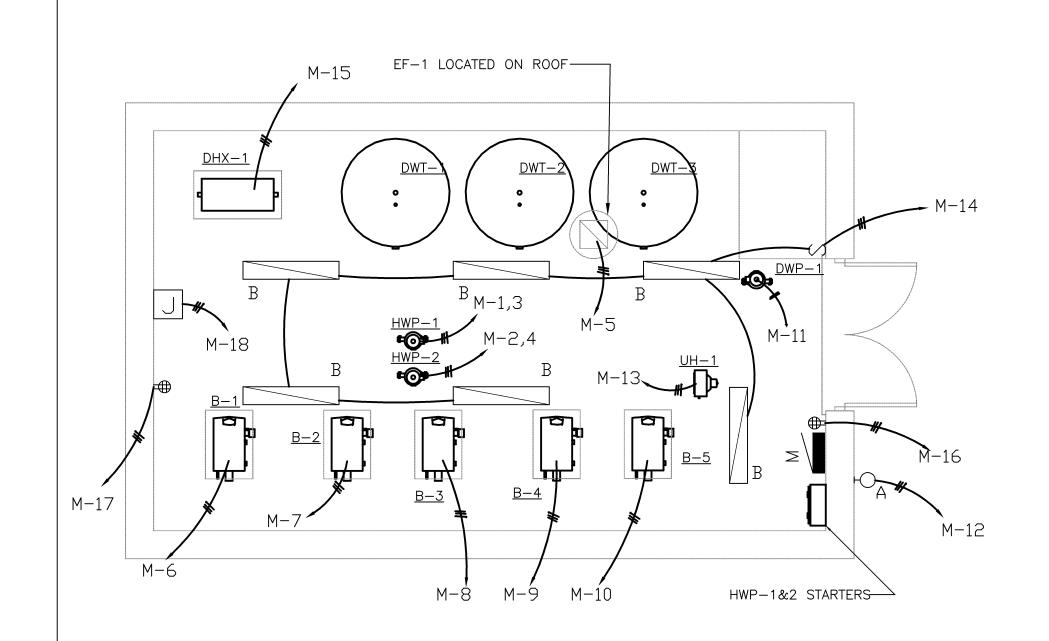




CIRCUIT NO. AREA SERVED AMPS POLES A B C SPARE 20 1 0 0 0 2-#10-#10G-3/4°C 2,5 HWP-1 30 2 0 0 0 2-#10-#10G-3/4°C 20 1 0 0 0 2-#10-#10G-3/4°C	SCC: FED F	MIN SCC:	CABINET:		& SIZE:	MAIN TYPE	ZE:	PANEL SIZ	HASE/WIRE:	VOLTS/PH
NII. AREA SERVEIJ AMPS PILES A B C SIZE CIRCUIT N SPARE 20 1 0 0 0 0 2-#10-#10G-3/4*C ,4 HWP-2 30 2 600 600 0 2-#10-#10G-3/4*C ,5 HWP-1 30 2 0 600 600 2-#10-#10G-3/4*C DWP-1 20 1 0 0 360 2-#12-#12G-3/4*C UH-1 20 1 800 0 0 2-#12-#12G-3/4*C SPARE 20 1 0 0 0 2-#12-#12G-3/4*C SPARE 20 1 0 0 0 2-#12-#12G-3/4*C UITSIDE LIGHT 20 1 0 0 2 2-#12-#12G-3/4*C RECEPTACLE 20 1 0 0 0 2-#12-#12G-3/4*C RECEPTACLE 20 1 360 0 0 2-#12-#12G-3/4*C HUH-1 20 1 360 0 0 2-#12-#12G-3/4*C RECEPTACLE 20 1 0 360 0 2-#12-#12G-3/4*C RECEPTACLE 20 1 0 360 0 2-#12-#12G-3/4*C RECEPTACLE 20 1 0 360 0 2-#12-#12G-3/4*C RECEPTACLE 20 1 0 0 360 0 2-#12-#12G-3/4*C RECEPTACLE 20 1 0 0 0 0 0 0 2-#12-#12G-3/4*C	10	22000				60 A MCB		60 A	//3φ/4W	20V/208y
NI. SPARE 20 1 0 0 0 2-#10-#10G-3/4*C ,4 HWP-2 30 2 600 600 0 2-#10-#10G-3/4*C ,5 HWP-1 30 2 0 600 600 2-#10-#10G-3/4*C DWP-1 20 1 0 0 360 2-#12-#12G-3/4*C UH-1 20 1 800 0 0 2-#12-#12G-3/4*C SPARE 20 1 0 0 0 2-#12-#12G-3/4*C SPARE 20 1 0 0 0 2-#12-#12G-3/4*C UH-1 20 1 0 0 2 2-#12-#12G-3/4*C SPARE 20 1 0 0 0 2 2-#12-#12G-3/4*C UH-1 20 1 0 0 2 2-#12-#12G-3/4*C SPARE 20 1 0 0 0 2 2-#12-#12G-3/4*C UH-1 20 1 0 300 0 2-#12-#12G-3/4*C RECEPTACLE 20 1 0 0 0 2-#12-#12G-3/4*C RECEPTACLE 20 1 360 0 0 2-#12-#12G-3/4*C RECEPTACLE 20 1 800 0 0 2-#12-#12G-3/4*C HUH-1 20 1 800 0 0 2-#12-#12G-3/4*C SPARE 20 1 0 360 2-#12-#12G-3/4*C SPARE 20 1 360 0 0 2-#12-#12G-3/4*C SPARE 20 1 0 360 0 2-#12-#12G-3/4*C	TRCUIT NOTE	CIBCII		VA	PHASE LOAD	1			ARFA SERVED	
HWP-2	TROOT! NETE	CINCO	SIZE	С	В	Α	POLES	AMPS	TINCH SERVED	N□.
S			2-#10-#10G-3/4"C	0	0	0	1	20	SPARE	
DWP-1 20 1 0 0 360 2-#12-#12G-3/4°C UH-1 20 1 800 0 0 2-#12-#12G-3/4°C SPARE 20 1 0 0 0 0 SPARE 20 1 0 0 0 0 DUTSIDE LIGHT 20 1 0 0 125 2-#12-#12G-3/4°C BRECEPTACLE 20 1 0 0 360 2-#12-#12G-3/4°C BRILER 20 1 360 0 0 2-#12-#12G-3/4°C BBILER 20 1 0 360 0 2-#12-#12G-3/4°C BBILER 20 1 0 360 0 2-#12-#12G-3/4°C BBILER 20 1 0 360 0 2-#12-#12G-3/4°C BBILER 20 1 0 0 360 2-#12-#12G-3/4°C BBILER 20 1 0 0 0 2-#12			2-#10-#10G-3/4"C	0	600	600	2	30	HWP-2	4
UH-1 20 1 800 0 0 2-#12-#12G-3/4*C SPARE 20 1 0 0 0 0 SPARE 20 1 0 0 0 0 0 LIGHTS 20 1 0 0 0 2-#12-#12G-3/4*C DUTSIDE LIGHT 20 1 0 0 0 125 2-#12-#12G-3/4*C RECEPTACLE 20 1 0 0 360 2-#12-#12G-3/4*C RECEPTACLE 20 1 360 0 0 2-#12-#12G-3/4*C WH-1 20 1 800 0 0 2-#12-#12G-3/4*C WH-1 20 1 800 0 0 2-#12-#12G-3/4*C BUTSIDE LIGHT 20 1 0 0 360 2-#12-#12G-3/4*C BUTSIDE LIGHT 20 1 360 0 0 2-#12-#12G-3/4*C BUTSIDE LIGHT 20 1 0 360 0 2-#12-#12G-3/4*C BUTSIDE LIGHT 20 1 0 0 360 0 2-#12-#12G-3/4*C BUTSIDE LIGHT 20 1 0 0 0 0 0 0 2-#12-#12G-3/4*C			2-#10-#10G-3/4"C	600	600	0	2	30	HWP-1	5
SPARE 20 1 0 <td></td> <td></td> <td>2-#12-#12G-3/4"C</td> <td>360</td> <td>0</td> <td>0</td> <td>1</td> <td>20</td> <td>DWP-1</td> <td></td>			2-#12-#12G-3/4"C	360	0	0	1	20	DWP-1	
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DUTSIDE LIGHT DUTSID				0	0	0	1	20	SPARE	
DUTSIDE LIGHT 20 1 0 0 125 2-#12-#12G-3/4"C RECEPTACLE 20 1 0 0 0 360 2-#12-#12G-3/4"C RECEPTACLE 20 1 360 0 0 2-#12-#12G-3/4"C WH-1 20 1 800 0 0 2-#12-#12G-3/4"C EF-1 20 1 0 360 0 2-#12-#12G-3/4"C BDILER 1 20 1 0 360 0 2-#12-#12G-3/4"C BDILER 2 20 1 0 360 0 2-#12-#12G-3/4"C SPARE 20 1 0 0 0 0				0	0	0	1	20	SPARE	
RECEPTACLE 20 1 0 0 360 2-#12-#12G-3/4"C RECEPTACLE 20 1 360 0 0 2-#12-#12G-3/4"C WH-1 20 1 800 0 0 2-#12-#12G-3/4"C EF-1 20 1 0 360 0 2-#12-#12G-3/4"C BDILER 1 20 1 0 360 0 2-#12-#12G-3/4"C BDILER 2 20 1 0 360 0 2-#12-#12G-3/4"C SPARE 20 1 0 0 0 0 0			2-#12-#12G-3/4"C	0	300	0	1	20	LIGHTS	
RECEPTACLE 20 1 360 0 0 2-#12-#12G-3/4"C WH-1 20 1 800 0 0 2-#12-#12G-3/4"C EF-1 20 1 0 360 0 2-#12-#12G-3/4"C BDILER 1 20 1 0 360 0 2-#12-#12G-3/4"C BDILER 2 20 1 0 360 0 2-#12-#12G-3/4"C SPARE 20 1 0 0 0 360 2-#12-#12G-3/4"C SPARE 20 1 0 0 0 0 0 0			2-#12-#12G-3/4"C	125	0	0	1	20	DUTSIDE LIGHT	
WH-1			2-#12-#12G-3/4"C	360	0	0	1	20	RECEPTACLE)
EF-1 20 1 0 360 0 2-#12-#12G-3/4"C BDILER 1 20 1 0 360 0 2-#12-#12G-3/4"C BDILER 2 20 1 0 0 360 2-#12-#12G-3/4"C SPARE 20 1 0 0 0 0 SPARE 20 1 0 0 0			2-#12-#12G-3/4"C	0	0	360	1	20	RECEPTACLE	}
EF-1 20 1 0 360 0 2-#12-#12G-3/4"C BDILER 1 20 1 0 360 0 2-#12-#12G-3/4"C BDILER 2 20 1 0 0 360 2-#12-#12G-3/4"C SPARE 20 1 0 0 0 0			2-#12-#12G-3/4"C	0	0		1	20	WH-1	-
BDILER 1 20 1 0 360 0 2-#12-#12G-3/4"C BDILER 2 20 1 0 0 360 2-#12-#12G-3/4"C SPARE 20 1 0 0 0			2-#12-#12G-3/4"C	0	360	0	1	20	EF-1	·)
7 BDILER 2 20 1 0 0 360 2-#12-#12G-3/4"C 3 SPARE 20 1 0 0 0 9 SPARE 20 1 0 0			2-#12-#12G-3/4"C	0	_	0	1)
SPARE 20 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			2-#12-#12G-3/4"C	360	0	0	1		BOILER 2	7
9 SPARE 20 1 0 0 0				0	0	0	1			
				0	0		1			
0 SPARE 20 1 0 0 0 1 0 1 1 1				0	0	0	1	20	SPARE	

LOAD CATEGORY	CONN. LOAD	DEMAND FACTOR	EST. LOAD	
Lighting	0.4	1.25	0.5	
Motors	2.6	1.00	2.6	
Motors (Largest)	1.2	1.25	1.5	
Receptacles (0 - 10 KVA)	2.3	1.00	2.3	
TOTAL	6.6KVA		7.0KVA	

7.4KVA

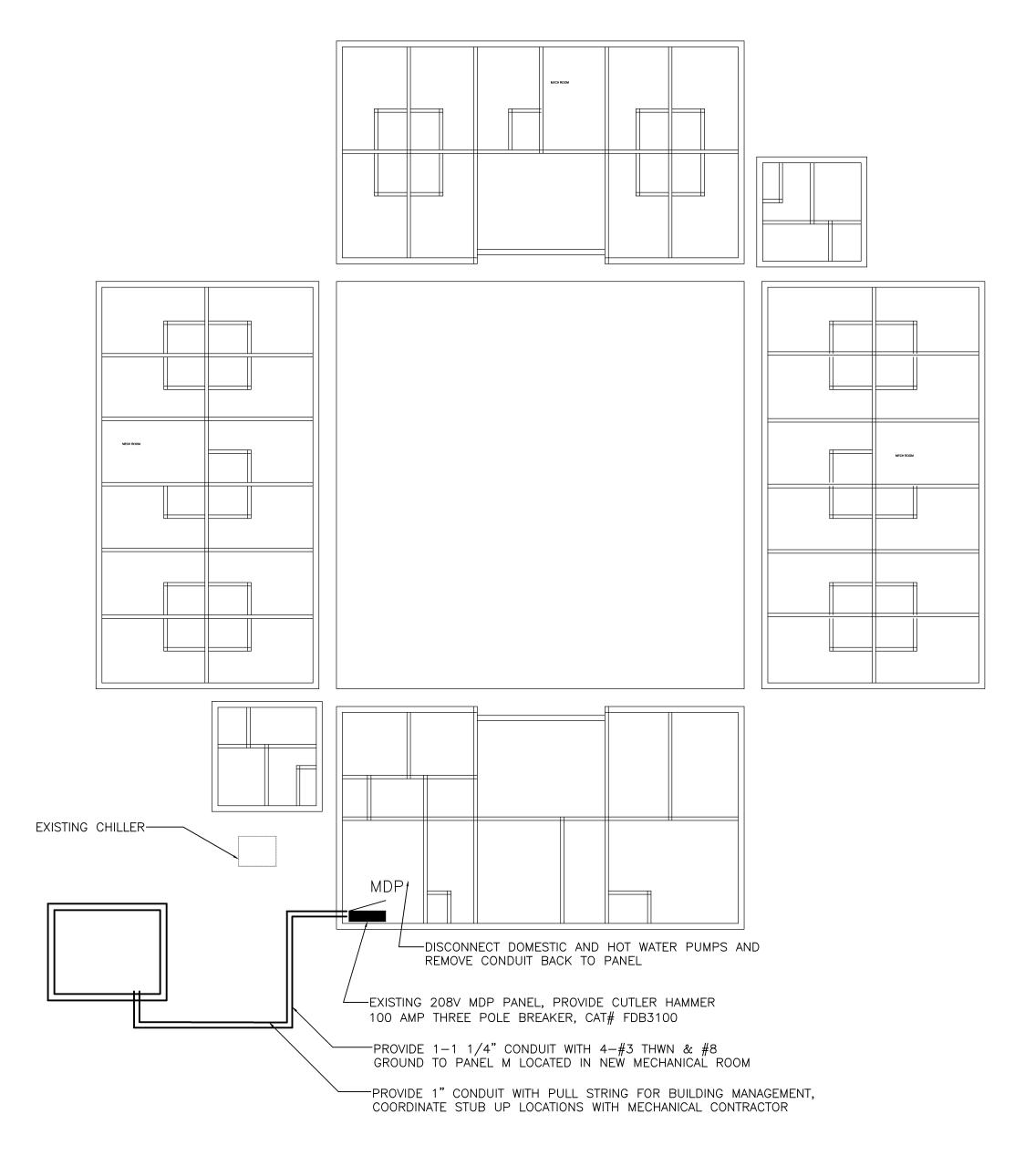




► M400-17

HWP-1&2 STARTERS M400-13

BUILDING FC-400 NEW MECHANICAL ROOM PLAN



BUIL	.DIN	IGS	SF	C-411	-41	6 ELE	ECTRIC	AL	SITE	E PL	AN
1/16"=1'-0"	NOTE:	SEE	CIVIL	DRAWINGS	FOR	BUILDING	ORIENTATION	0' 8	B' 1(6'	3

VOLTS/P	HASE/WIRE:		PANEL SI	ZE:	MAIN TYPE	& SIZE:		CABINET:	MIN SCC:	FED FROM
ر208//208	//3¢/4W		100 A		100 A MCB				22000	
CIRCUIT ND.	AREA SEI	RVED	TRIP AMPS	NO. POLES		PHASE LOAD		WIRE & CONDUIT	CIRCU:	IT NOTES
1,3	HWP-1		20	2	600	B 600	C C	2-#12-#12G-3/4"C		
2,4	HWP-2		20	2	600	600	ln	2-#12-#12G-3/4"C		
5	EF-1		20	1	0	n	360	2-#12-#12G-3/4"C		
<u>. </u>	BOILER 1		20	1	0	0	360	2-#12-#12G-3/4"C		
7	BOILER 2		20	1	360	0	n	2-#12-#12G-3/4"C		
<u>/</u> 8	BOILER 3		20	1	360	0	0	2-#12-#12G-3/4"C		
9	BOILER 4		20	1	0	360	0	2-#12-#12G-3/4"C		
10	BOILER 5		20	1	0	360	0	2-#12-#12G-3/4"C		
11	UH-1		20	1	0	ln	800	2-#12-#12G-3/4"C		
12	DUTSIDE LIGHT		20	1	0	n	125	2-#12-#12G-3/4"C		
13	DWP-1		20	1	360	0	n	2-#12-#12G-3/4"C		
14	LIGHTS		20	1	450	0	n	2-#12-#12G-3/4"C		
15	DHX-1		20	1	0	360	0	2-#12-#12G-3/4"C		
16	RECEPTACLE		20	1	0	360	0	2-#12-#12G-3/4"C		
17	RECEPTACLE		20	1	0	n	360	2-#12-#12G-3/4"C		
18	LOUVER		20	1	0	n	180	2-#12-#12G-3/4"C		
19	SPARE		20	1	0	n	n	E HIE HIEG OF TO		
20	SPARE		20	1	0	n	0			
<u></u> 21	SPARE		20	1	0	0	0			
22 22	SPARE		20	1	0	0	0			
<u></u> 23	SPARE		20	1	0	0	0			
 24	SPARE		20	1	0	0	0			
<u>- : </u>	SPARE		20	1	0	0	0			
 26	SPARE		20	1	0	0	0			
 27	SPARE		20	1	0	0	0			
28	SPARE		20	1	0	0	0			
	SPARE		20	1	0	0	0			
30	SPARE		20	1	0	0	0			
			•	CTED LOAD		2640	2185	7.4 KVA		
LDA	D CATEGORY	CONN. LOAD		FACTOR	•	LOAD		7711 18 411		
1 1010 ±1:		0.6	4	25		0.7	_			
Lighting Motors		0.6		.00		0.7 4.1	-			
	(00005+)	4.1					-			
	(Largest) cles (0 - 10	1.2 1.5		25 .00		1.5 1.5	-			

ELECTRICAL M SCHEDULE

			Wiley Wilso 6606 West Broad Richmond, Virginia 804.254,7242	St., Suite 500 a 23230-1717						-101	
		` `	wileywilson.com		п				PROJECT NO.	CP12-012	
					DEPT	OF NAVY					RING COMMAND
							MAR	INE CC	PRPS BA	SE	
						ı	CAMP	LEJEUNE, N	NORTH CARO	LINA	
		DES.	CDH								
Γ		DR.	CDH			BOIL	ER I	MODIFI	CATIONS	S, VARIC	DUS
	ALTH OF THE	СНК.	JHE			F	ACIL	LITIES, I	FRENCH	CREEK	
		SUBMITTED BY:				Bl	JII DING	S FC-400.	, 411-416 E	FI FCTRICAL	
		DESIGN DIR.						•	LANS		
	JOHN H. EPPERSON	APPROVED: PWC	OR OICC	DATE	SIZE	CODE IDE	NT NO.		NAVFAC [DRAWING NO.	
	No. 11087				E	8009	1		600)11342	
	8/22/12	SATISFACTORY	ТО	DATE				CONSTR CO	NTR NO.	N40085-12-	3-0121
	185.00 10 18 10 18 10 18 10 10 18 10 10 10 10 10 10 10 10 10 10 10 10 10				1	<u>"</u>					

SHEET 35 OF 37

DISCLOSURE OF INFORMATION Contractor shall comply as follows:

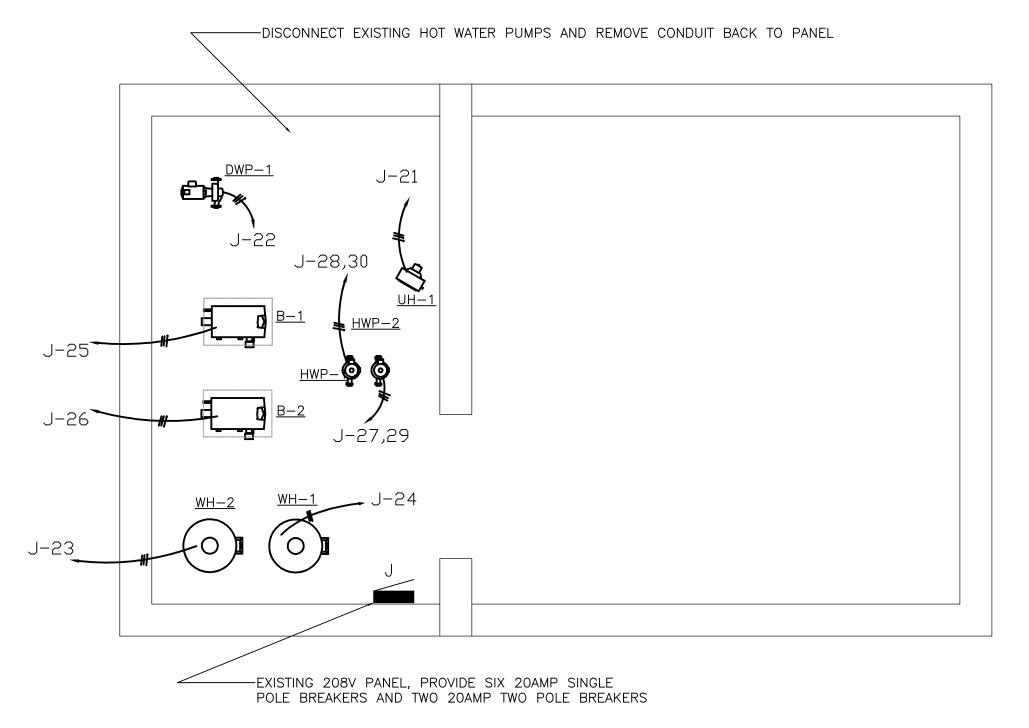
- (a) The Contractor shall not release to anyone outside the Contractor's organization any unclassified information, regardless of medium (e.g., film, tape, document), pertaining to any part of this contract or any program related to this contract, unless-
- (1) The Contracting Officer has given prior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

EF-1 LOCATED ON ROOF-

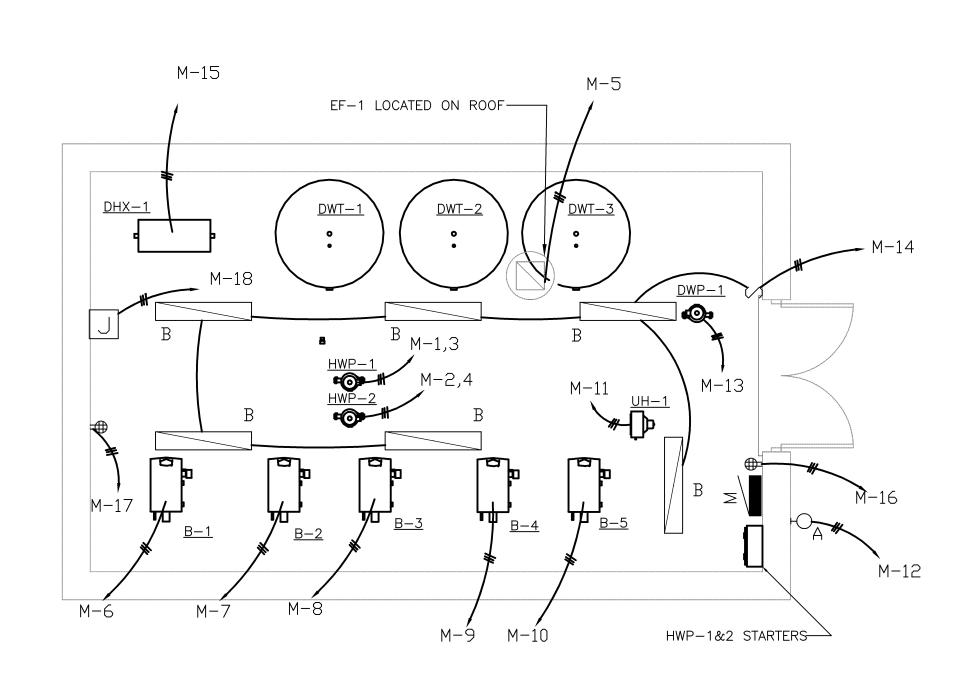
- (2) The information is otherwise in the public domain before the date of release.
- (b) Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45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

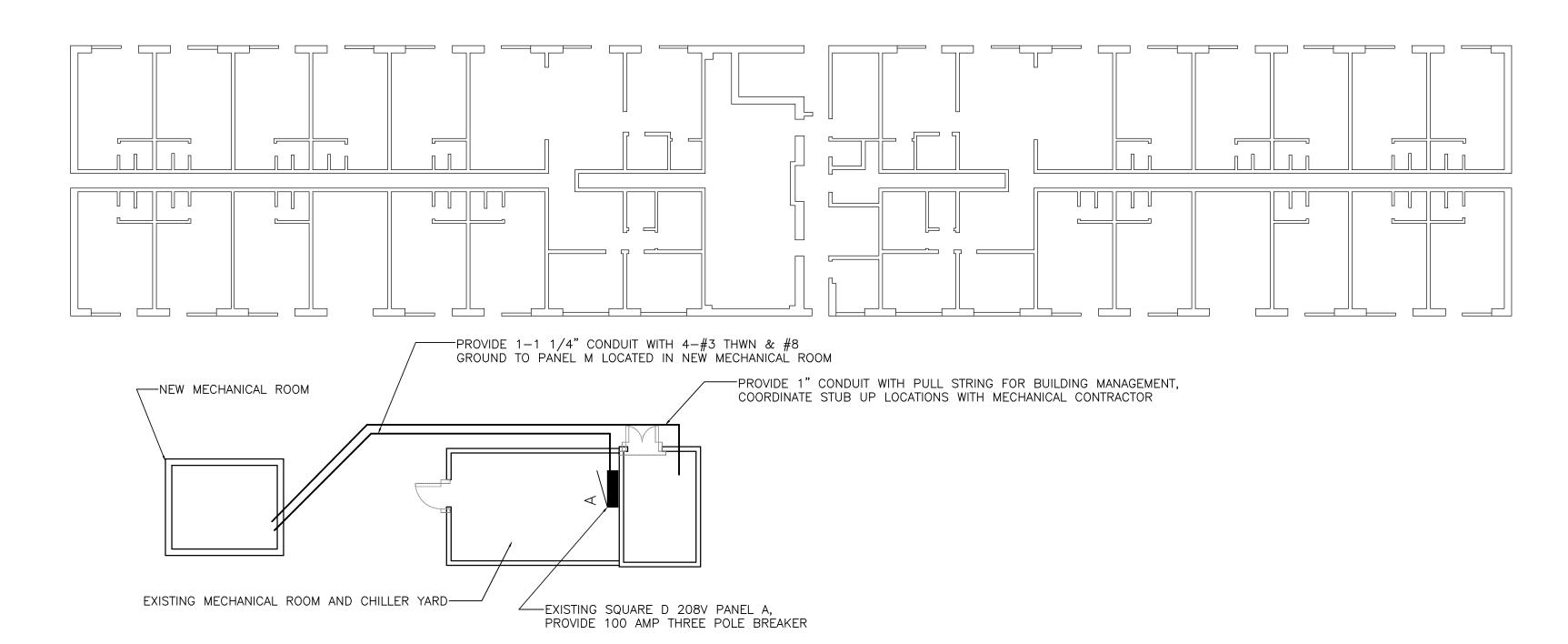


BUILDING FC-500A ELECTRICAL NEW WORK PLAN 1/4"=1'-0" BUILDING FC-500A ELECTRICAL NEW WORK PLAN 2' 2' 4' 8'



BUILDINGS FC-515, 530, 550, 556, 560, 565 NEW MECHANICAL ROOM PLAN

2,4 HWF 5 EF- 6 BOII 7 BOII 8 BOII 9 BOII 10 BOII 11 UH- 12 DUT 13 DWF 14 LIG 15 DHX 16 REC 17 REC 18 LOU 19 SPA 20 SPA 21 SPA 22 SPA 23 SPA 24 SPA 25 SPA 26 SPA 27 SPA 28 SPA 29 SPA	AREA SER /P-1 /P-2 -1 ILER 1 ILER 2 ILER 3 ILER 4 ILER 5 -1 TSIDE LIGHT /P-1 GHTS X-1 CEPTACLE CEPTACLE UVER ARE ARE	VED	PANEL S: 100 A TRIP AMPS 20 20 20 20 20 20 20 20 20 20 20 20 20	ND. PDLES 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	MAIN TYPE 100 A MCI A 600 600 0 0 360 360 0 0 0 0 0 0 0 0 0 0		D VA C 0 0 360 360 0 0 0 0 0 0 0 0 0 0 0 0	CABINET: WIRE & CONDUIT SIZE 2-#12-#12G-3/4"C	MIN SCC: 22000 CIRCUI	FED FROM
CIRCUIT NO. 1,3 HWF 2,4 HWF 5 EF- 6 BOII 7 BOII 8 BOII 10 BOII 11 UH- 12 DUT 13 DWF 14 LIG 15 DHX 16 REC 17 REC 17 REC 18 LOU 19 SPA 20 SPA 21 SPA 22 SPA 23 SPA 24 SPA 25 SPA 26 SPA 27 SPA 28 SPA 29 SPA	AREA SER /P-1 /P-2 -1 ILER 1 ILER 2 ILER 3 ILER 4 ILER 5 -1 TSIDE LIGHT /P-1 GHTS X-1 CEPTACLE CEPTACLE UVER ARE ARE	VED	TRIP AMPS 20 20 20 20 20 20 20 20 20 20 20 20 20	POLES 2	A 600 600 0 0 360 360 0 0 0 0 0 360 450 0 0	PHASE LOA	0 0 360 360 0 0 0 0 0 800 125 0 0	WIRE & CONDUIT SIZE 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C		
ND. 1,3 HWF 2,4 HWF 5 EF- 6 BDI 7 BDI 8 BDI 10 BDI 11 UH- 12 DUT 13 DWF 14 LIG 15 DHX 16 REC 17 REC 18 LDU 19 SPA 20 SPA 21 SPA 22 SPA 23 SPA 24 SPA 25 SPA 26 SPA 27 SPA 28 SPA 29 SPA	/P-1 /P-2 -1 ILER 1 ILER 2 ILER 3 ILER 4 ILER 5 -1 TSIDE LIGHT /P-1 GHTS X-1 CEPTACLE CEPTACLE UVER ARE ARE		AMPS 20 20 20 20 20 20 20 20 20 20 20 20 20	POLES 2	600 600 0 0 360 360 0 0 0 0 0 360 450 0 0	B 600 600 0 0 0 0 0 360 360 0 0 0	0 0 360 360 0 0 0 0 0 800 125 0 0	SIZE 2-#12-#12G-3/4"C	CIRCUI	IT NOTES
NO. 1,3 HWF 2,4 HWF 5 EF- 6 BOII 7 BOII 8 BOII 10 BOII 11 UH- 12 DUT 13 DWF 14 LIG 15 DHX 16 REC 17 REC 18 LOU 19 SPA 20 SPA 21 SPA 22 SPA 23 SPA 24 SPA 25 SPA 26 SPA 27 SPA 28 SPA 29 SPA	/P-1 /P-2 -1 ILER 1 ILER 2 ILER 3 ILER 4 ILER 5 -1 TSIDE LIGHT /P-1 GHTS X-1 CEPTACLE CEPTACLE UVER ARE ARE		AMPS 20 20 20 20 20 20 20 20 20 20 20 20 20	POLES 2	600 600 0 0 360 360 0 0 0 0 0 360 450 0	600 600 0 0 0 0 0 360 360 0 0 0	0 0 360 360 0 0 0 0 0 800 125 0 0	SIZE 2-#12-#12G-3/4"C	CIRCUI	IT NUTES
2,4 HWF 5 EF- 6 BOII 7 BOII 8 BOII 9 BOII 10 BOII 11 UH- 12 DUT 13 DWF 14 LIG 15 DHX 16 REC 17 REC 17 REC 18 LOU 19 SPA 20 SPA 21 SPA 22 SPA 23 SPA 24 SPA 25 SPA 26 SPA 27 SPA 28 SPA 29 SPA	/P-2 -1 ILER 1 ILER 2 ILER 3 ILER 4 ILER 5 -1 TSIDE LIGHT /P-1 GHTS X-1 CEPTACLE CEPTACLE UVER ARE ARE		20 20 20 20 20 20 20 20 20 20 20 20 20 2		600 600 0 0 360 360 0 0 0 0 0 360 450 0	600 600 0 0 0 0 0 360 360 0 0 0	0 0 360 360 0 0 0 0 0 800 125 0 0	2-#12-#12G-3/4"C		
5 EF- 6 BOI 7 BOI 8 BOI 10 BOI 11 UH- 12 DUT 13 DWF 14 LIG 15 DHX 16 REC 17 REC 18 LOU 19 SPA 20 SPA 21 SPA 22 SPA 23 SPA 24 SPA 25 SPA 26 SPA 27 SPA 28 SPA 29 SPA	-1 ILER 1 ILER 2 ILER 3 ILER 4 ILER 5 -1 TSIDE LIGHT /P-1 GHTS X-1 CEPTACLE CEPTACLE UVER ARE ARE		20 20 20 20 20 20 20 20 20 20 20 20 20 2	2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0 0 360 360 0 0 0 0 0 360 450 0	0 0 0 0 360 360 0 0 0 0	360 360 0 0 0 0 0 800 125 0 0 0	2-#12-#12G-3/4"C		
6 BUI 7 BUI 8 BUI 9 BUI 10 BUI 11 UH- 12 UT 13 DWF 14 LIG 15 DHX 16 REC 17 REC 17 REC 18 LUU 19 SPA 20 SPA 21 SPA 22 SPA 23 SPA 24 SPA 25 SPA 26 SPA 27 SPA 28 SPA 29 SPA	ILER 1 ILER 2 ILER 3 ILER 4 ILER 5 -1 TSIDE LIGHT /P-1 GHTS X-1 CEPTACLE CEPTACLE UVER ARE ARE		20 20 20 20 20 20 20 20 20 20 20 20 20	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0 360 360 0 0 0 0 0 360 450 0	0 0 360 360 0 0 0 0	360 0 0 0 0 0 800 125 0 0	2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C		
6 BUI 7 BUI 8 BUI 9 BUI 10 BUI 11 UH- 12 UT 13 DWF 14 LIG 15 DHX 16 REC 17 REC 17 REC 18 LUU 19 SPA 20 SPA 21 SPA 22 SPA 23 SPA 24 SPA 25 SPA 26 SPA 27 SPA 28 SPA 29 SPA	ILER 2 ILER 3 ILER 4 ILER 5 -1 TSIDE LIGHT (P-1 GHTS X-1 CEPTACLE CEPTACLE UVER ARE ARE		20 20 20 20 20 20 20 20 20 20 20 20	1 1 1 1 1 1 1 1 1 1 1 1 1 1	360 360 0 0 0 0 0 360 450 0 0	0 0 360 360 0 0 0 0	0 0 0 0 800 125 0 0	2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C		
B B B B B B B B B B B B B B B B B B B	ILER 3 ILER 4 ILER 5 -1 TSIDE LIGHT /P-1 GHTS X-1 CEPTACLE CEPTACLE UVER ARE ARE		20 20 20 20 20 20 20 20 20 20 20 20	1 1 1 1 1 1 1 1 1 1 1 1	360 0 0 0 0 360 450 0 0	0 360 360 0 0 0 0 0 360	0 0 0 800 125 0 0	2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C		
9 BOI 10 BOI 11 UH- 12 DUT 13 DWF 14 LIG 15 DHX 16 REC 17 REC 18 LOU 19 SPA 20 SPA 21 SPA 22 SPA 23 SPA 24 SPA 25 SPA 26 SPA 27 SPA 28 SPA 29 SPA	ILER 4 ILER 5 -1 TSIDE LIGHT /P-1 GHTS X-1 CEPTACLE CEPTACLE UVER ARE ARE		20 20 20 20 20 20 20 20 20 20 20	1 1 1 1 1 1 1 1 1 1 1	0 0 0 0 360 450 0	360 360 0 0 0 0 0 0 360	0 0 800 125 0 0 0	2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C		
9 BOI 10 BOI 11 UH- 12 OUT 13 DWF 14 LIG 15 DHX 16 REC 17 REC 17 REC 20 SPA 20 SPA 21 SPA 22 SPA 23 SPA 24 SPA 25 SPA 26 SPA 27 SPA 28 SPA 29 SPA	ILER 5 -1 TSIDE LIGHT /P-1 GHTS X-1 CEPTACLE CEPTACLE UVER ARE ARE		20 20 20 20 20 20 20 20 20 20	1 1 1 1 1 1 1 1 1 1	0 0 0 360 450 0 0	360 0 0 0 0 0 0 360	0 800 125 0 0 0	2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C		
10 BOI 11 UH- 12 DUT 13 DWF 14 LIG 15 DHX 16 REC 17 REC 18 LOU 19 SPA 20 SPA 21 SPA 22 SPA 22 SPA 23 SPA 24 SPA 25 SPA 26 SPA 27 SPA 28 SPA 29 SPA	-1 TSIDE LIGHT /P-1 GHTS X-1 CEPTACLE CEPTACLE UVER ARE ARE		20 20 20 20 20 20 20 20 20	1 1 1 1 1 1 1 1 1	0 0 360 450 0 0	0 0 0 0 0 360	800 125 0 0 0 0	2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C		
12	TSIDE LIGHT /P-1 GHTS X-1 CEPTACLE CEPTACLE UVER ARE ARE		20 20 20 20 20 20 20 20	1 1 1 1 1 1 1 1	0 360 450 0 0	0 0 360	125 0 0 0 0	2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C		
12 DUT 13 DWF 14 LIG 15 DHX 16 REC 17 REC 18 LDU 19 SPA 20 SPA 21 SPA 22 SPA 23 SPA 24 SPA 25 SPA 26 SPA 27 SPA 28 SPA 29 SPA	/P-1 GHTS X-1 CEPTACLE CEPTACLE UVER ARE ARE		20 20 20 20 20 20 20 20	1 1 1 1 1 1 1	0 360 450 0 0	0 0 360	125 0 0 0 0	2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C 2-#12-#12G-3/4"C		
13 DWF 14 LIG 15 DHX 16 REC 17 REC 18 LOU 19 SPA 20 SPA 21 SPA 22 SPA 23 SPA 24 SPA 25 SPA 26 SPA 27 SPA 28 SPA 29 SPA	GHTS X-1 CEPTACLE CEPTACLE UVER ARE ARE		20 20 20 20 20	1 1 1 1 1 1	450 0 0 0	0 360	0 0 0	2-#12-#12G-3/4″C 2-#12-#12G-3/4″C 2-#12-#12G-3/4″C		
15 DHX 16 REC 17 REC 18 LOU 19 SPA 20 SPA 21 SPA 22 SPA 23 SPA 24 SPA 25 SPA 26 SPA 27 SPA 28 SPA	X-1 CEPTACLE CEPTACLE UVER ARE ARE		20 20 20 20	1 1 1 1 1	0 0 0	360	0	2-#12-#12G-3/4″C 2-#12-#12G-3/4″C		
15 DHX 16 REC 17 REC 18 LOU 19 SPA 20 SPA 21 SPA 22 SPA 23 SPA 24 SPA 25 SPA 26 SPA 27 SPA 29 SPA	CEPTACLE CEPTACLE UVER ARE ARE		20 20 20 20	1 1 1 1	0		0	2-#12-#12G-3/4"C		
16 REC 17 REC 18 LOU 19 SPA 20 SPA 21 SPA 22 SPA 23 SPA 24 SPA 25 SPA 26 SPA 27 SPA 28 SPA 29 SPA	CEPTACLE UVER ARE ARE		20 20 20	1 1 1	0		0	2-#12-#12G-3/4"C		
REC REC	CEPTACLE UVER ARE ARE		20 20	1 1	0	0	360			
18 LOU 19 SPA 20 SPA 21 SPA 22 SPA 23 SPA 24 SPA 25 SPA 26 SPA 27 SPA 28 SPA 29 SPA	UVER ARE ARE		20	1	ln			2-#12-#12G-3/4"C		
19 SPA 20 SPA 21 SPA 22 SPA 23 SPA 24 SPA 25 SPA 26 SPA 27 SPA 28 SPA 29 SPA	ARE	i			10	0	180	2-#12-#12G-3/4"C		
20 SPA 21 SPA 22 SPA 23 SPA 24 SPA 25 SPA 26 SPA 27 SPA 28 SPA				1	0	0	О			
21 SPA 22 SPA 23 SPA 24 SPA 25 SPA 26 SPA 27 SPA 28 SPA 29 SPA	ARF	li li	20	1	0	0	0			
22 SPA 23 SPA 24 SPA 25 SPA 26 SPA 27 SPA 28 SPA 29 SPA	· · · · · ·		20	1	0	0	0			
23 SPA 24 SPA 25 SPA 26 SPA 27 SPA 28 SPA 29 SPA	ARE		20	1	0	0	О			
24 SPA 25 SPA 26 SPA 27 SPA 28 SPA 29 SPA	ARE		20	1	0	0	0			
25 SPA 26 SPA 27 SPA 28 SPA 29 SPA	ARE		20	1	0	0	О			
26 SPA 27 SPA 28 SPA 29 SPA	ARE		20	1	0	0	0			
27 SPA 28 SPA 29 SPA			20	1	0	0	0			
28 SPA 29 SPA			20	1	0	0	0			
29 SPA	ARE		20	1	0	0	0			
	ARE		20	1	0	0	0			
JU 131 1	ARE		20	1	0	0	0			
1		1	CONNE	CTED LOA	D 2730	2640	2185	7.4 KVA	1	
		CUNN	DEM A NIT							
LUAD C	CATEGORY	CONN. LOAD	Ω⊏ΜΗΝΙ	D FACTOR		ST. LOAD				
Lighting		0.6	1	.25		0.7				
Motors		4.1		1.00		4.1				
Motors (Lar	rgest)	1.2		.25		1.5				
Receptacles (VA)		1.5		1.00		1.5				
TO'		+								



DISCLOSURE OF INFORMATION Contractor shall comply as follows:

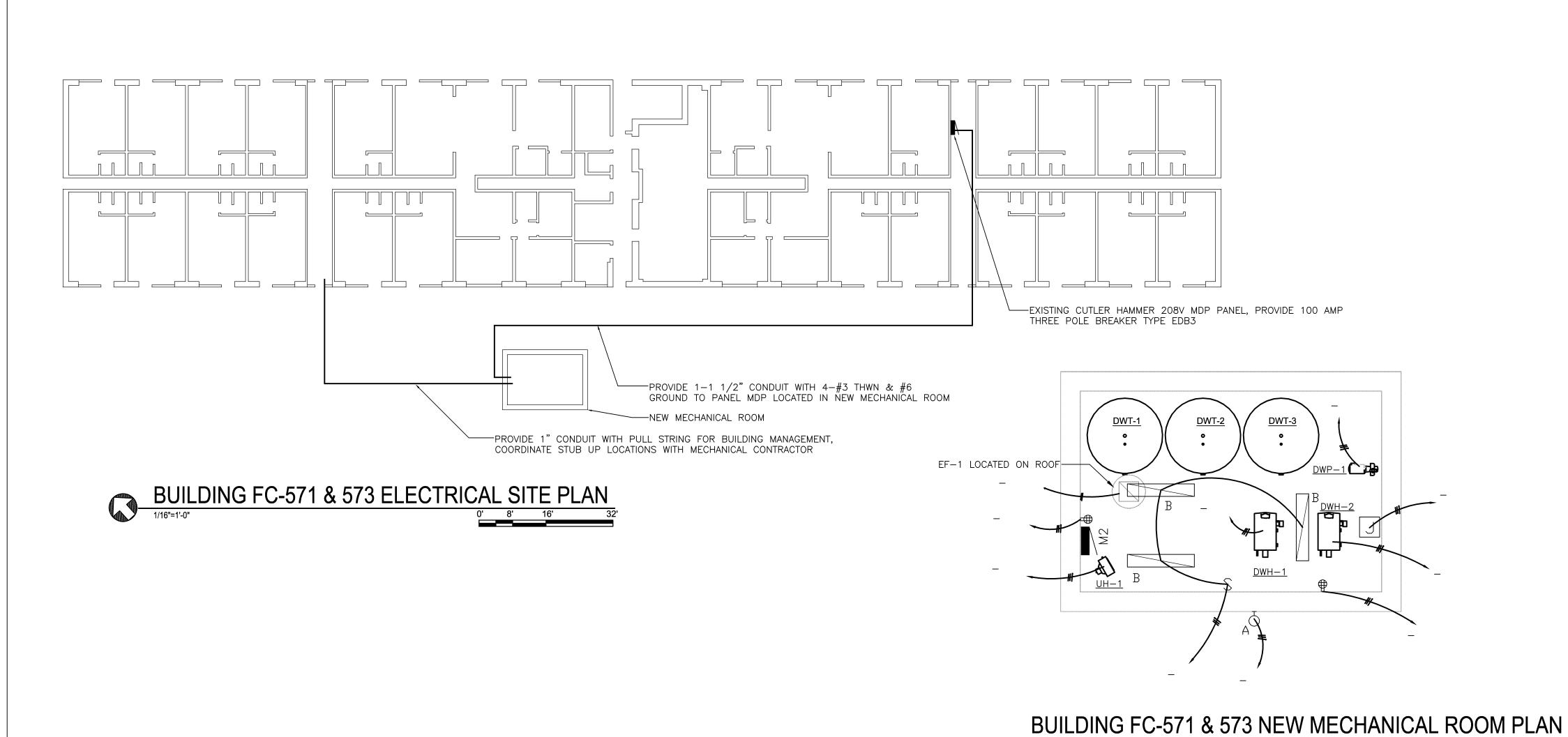
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- (1) The Contracting Officer has given prior written approval; or
- 2) The information is otherwise in the public domain before the date of release.
- (b) Requests for approval shall identify the specific information to be released, the medium to 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 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.

BUILDINGS FC-515, 530, 550, 556, 560, 565 ELECTRICAL SITE PLAN

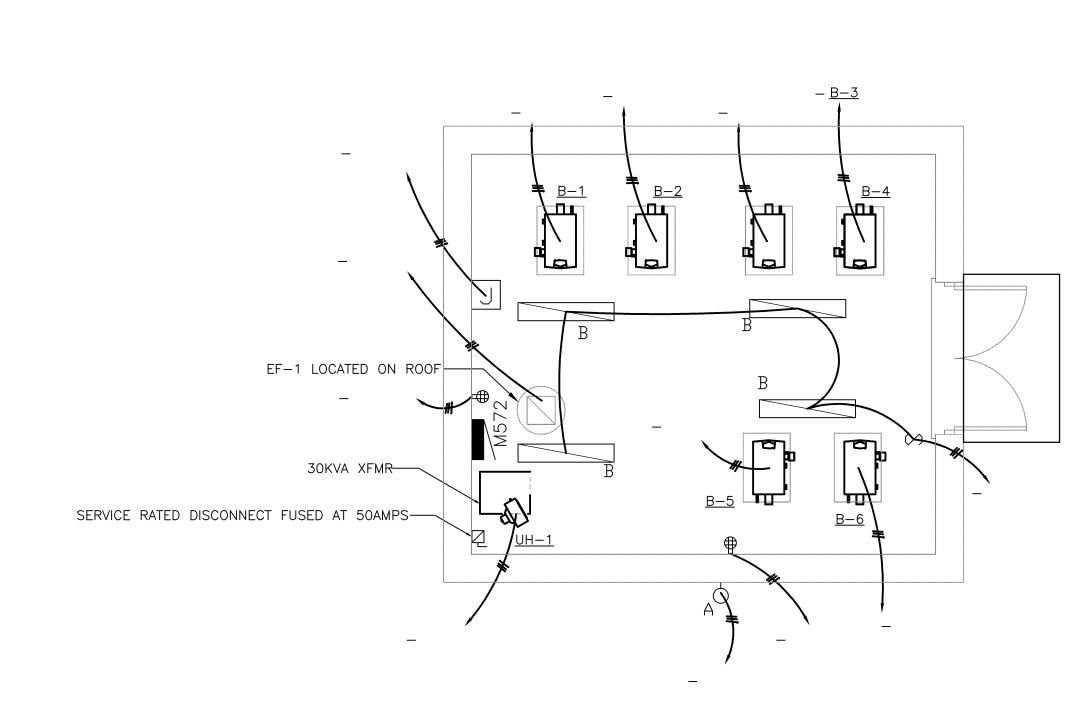
1/16"=1'-0" NOTE: SEE CIVIL DRAWINGS FOR BUILDING ORIENTATION

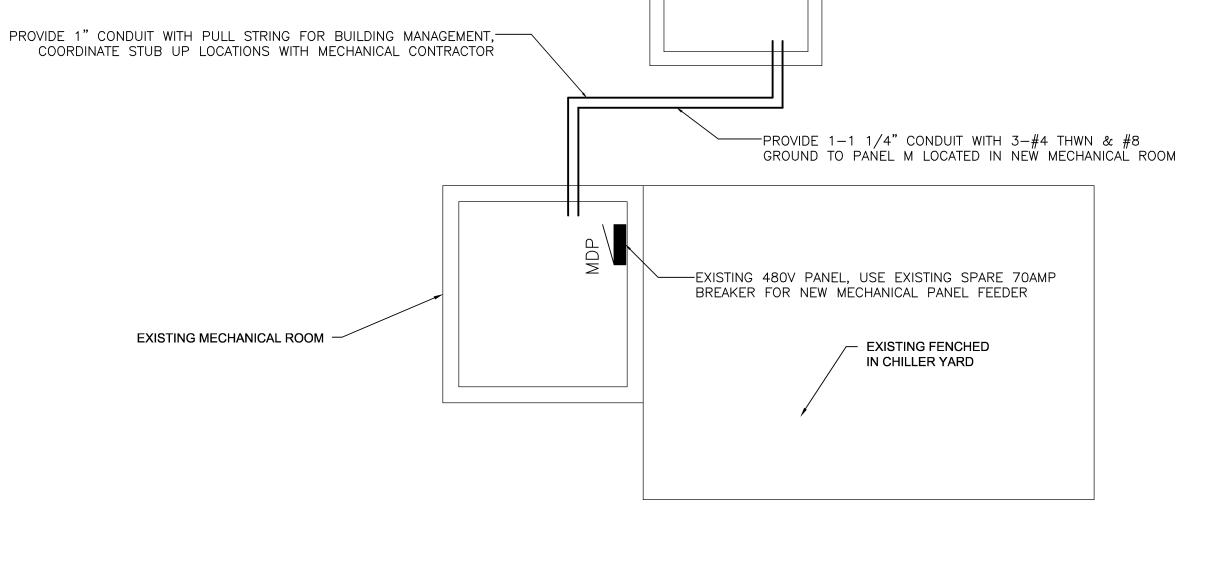
0' 8' 16' 32

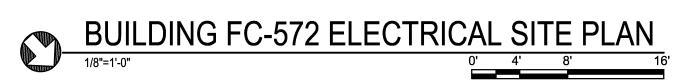
Wiley|Wilson 6606 West Broad St., Suite 500 Richmond, Virginia 23230-1717 804.254.7242 wileywilson.com E - 102PROJECT NO. CP12-0121 NAVAL FACILITIES ENGINEERING COMMAND DEPT OF NAVY MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA CDH BOILER MODIFICATIONS, VARIOUS CDH FACILITIES, FRENCH CREEK JHE SUBMITTED BY: BUILDINGS FC-500, 515, 530, 550, 556, 560, 565 ELECTRICAL PLANS DESIGN DIR. DATE SIZE CODE IDENT NO. NAVFAC DRAWING NO. JOHN H. EPPERSON APPROVED: PWO OR OICC 60011343 No. 11087 8/22/12 CONSTR CONTR NO. N40085-12-B-0121 SATISFACTORY TO SCALE: AS SHOWN 05-12-0121 SHEET 36 OF 37



NEW MECHANICAL BUILDING









		<u> </u>	<u>CIRI</u>	CAL I	M2 SCI	HEDULE	-		
VOLTS/PI	HASE/WIRE:	PANEL SI	ZE:	MAIN TYPE	& SIZE:		CABINET:	MIN SCC:	FED FROM
ر208/ 208.	//3φ/4W	100 A		100 A MCB				22000	
CIRCUIT	AREA SERVED	TRIP	ND.		PHASE LOAI	VA	WIRE & CONDUIT	CIRCUI	T NOTES
ND.		AMPS	POLES	Α	В	С	SIZE	51.1351	
	EF-1	20	1	360	0	0	2-#12-#12G-3/4"C		
2	SPARE	20	1	0	0	0			
3	DWP-1	20	1	0	360	0	2-#12-#12G-3/4"C		
1	LIGHTS	20	1	0	225	0	2-#12-#12G-3/4"C		
5,7	UH-1	20	2	800	0	800	2-#12-#12G-3/4"C		
>	DWH-1	20	1	0	0	360	2-#12-#12G-3/4"C		
3	DWH-2	20	1	360	0	0	2-#12-#12G-3/4"C		
)	SPARE	20	1	0	0	0			
.0	SPARE	20	1	0	0	0			
1	RECEPTACLE	20	1	0	0	360	2-#12-#12G-3/4"C		
2	RECEPTACLE	20	1	0	0	360	2-#12-#12G-3/4"C		
3	SPARE	20	1	0	0	0			
.4	SPARE	20	1	0	0	0			
5	LOUVER	20	1	0	180	0	2-#12-#12G-3/4"C		
6	DUTSIDE LIGHT	20	1	0	125	0	2-#12-#12G-3/4"C		
7	SPARE	20	1	0	0	0			
8	SPARE	20	1	0	0	0			
9	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			
<u>- · </u>	SPARE	20	1	ln ln	Tn .	0			

PREP'D BY DATE APPROVED

Lighting	0.3	1.25	0.4
Motors	1.1	1.00	1.1
Motors (Largest)	0.4	1.25	0.5
Receptacles (0 - 10 KVA)	2.3	1.00	2.3
TOTAL	4.1KVA		4.3KVA

LOAD CATEGORY CONN. LOAD DEMAND FACTOR EST. LOAD

VOLTS/P	HASE/WIRE:		PANEL S	IZE:	MAIN TYPE	& SIZE:		CABINET:	MIN SCC:	FED FROM
120V/208	y/3φ/4W		60 A		60 A MCB				22000	
CIRCUIT ND.	AREA SEF	₹VED	TRIP AMPS	ND. PDLES	A	PHASE LOA	D VA	WIRE & CONDUIT	CIRCUI	IT NOTES
1,3	UH-1		20	2	800	800	0	2-#12-#12G-3/4"C		
<u>2</u> 4	BOILER 1		20	1	360	0	0	2-#12-#12G-3/4"C		
4	BOILER 2		20	1	0	360	0	2-#12-#12G-3/4"C		
5	BOILER 3		20	1	0	0	360	2-#12-#12G-3/4"C		
5	B□ILER 4		20	1	0	0	360	2-#12-#12G-3/4"C		
7	BOILER 5		20	1	360	0	0	2-#12-#12G-3/4"C		
3	BOILER 6		20	1	360	0	0	2-#12-#12G-3/4"C		
7	SPARE		20	1	0	0	0	2-#12-#12G-3/4"C		
10	EF-1		20	1	0	360	0	2-#12-#12G-3/4"C		
l1	RECEPTACLE		20	1	0	0	360	2-#12-#12G-3/4"C		
12	RECEPTACLE		20	1	0	0	360	2-#12-#12G-3/4"C		
13	LIGHTS		20	1	300	0	0	2-#12-#12G-3/4"C		
l4	DUTSIDE LIGHT		20	1	125	0	0	2-#12-#12G-3/4"C		
15	LOUVER		20	1	0	180	0	2-#12-#12G-3/4"C		
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			
			CONNE	CTED LOA	2305	1700	1440	5.3 KVA		
LOA	AD CATEGORY	CONN. LOAD	DEMANI) FACTOR	ES	T. LOAD				
Lighting		0.4	1	.25		0.5				
Motors		2.2		.00		2,2				
	(Largest)	0.4		.25		0.5				
	cles (0 - 10	2,3		1.00		2.3				

TOTAL 5.3KVA

		Wiley Wilso 6606 West Broad Richmond, Virgini 804.254.7242 wileywilson.com	St., Suite 500 a 23230-1717							103			
		wileywiisoii.com		П				PROJECT N	10. C	CP12-0121			
					OF NAVY			ENGINEERING COMMAND					
				MARINE CORPS BASE									
							LEJEUNE, N	NORTH CAI	ROLINA	1			
	DES.	CDH											
	DR.	CDH			BOIL	ER I	MODIFI	CATION	۷S, V	'ARIOUS	3		
ALTH OF	CHK.	CDH JHE TTED BY:			FACILITIES, FRENCH CREEK								
	SUBMITTED BY:			1			•						
	DESIGN DIR.			BUILDINGS FC-571, 572, 573 ELECTRICAL PLANS									
JOHN H. EPPERSON	APPROVED: PWC	OR OICC	DATE	SIZE	CODE IDE	NT NO.		NAVFA	C DRAW	/ING NO.			
No. 11087				80091				60011344					
8/22/12	SATISFACTORY	ТО	DATE				CONSTR CO	NTR NO.	N40	0085-12-B-012	1		
SSIONAL ENGLA				SCALE:	AS	SPEC I	No. 05	5-12-0121		SHEET 37	OF	37	

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.
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