REPLACE 450 TON CHILLER (#3) IN, BUILDING 4390

MARINE CORPS AIR STATION
CHERRY POINT, NORTH CAROLINA

WO#6733967

INDEX OF DRAWINGS

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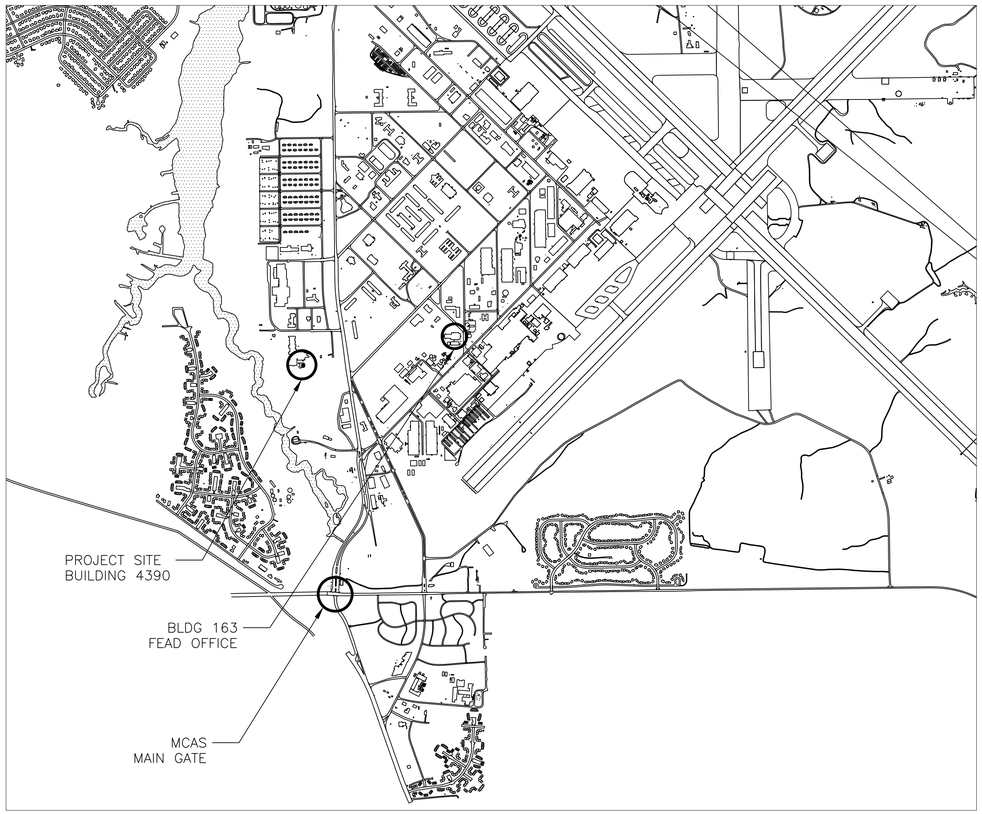
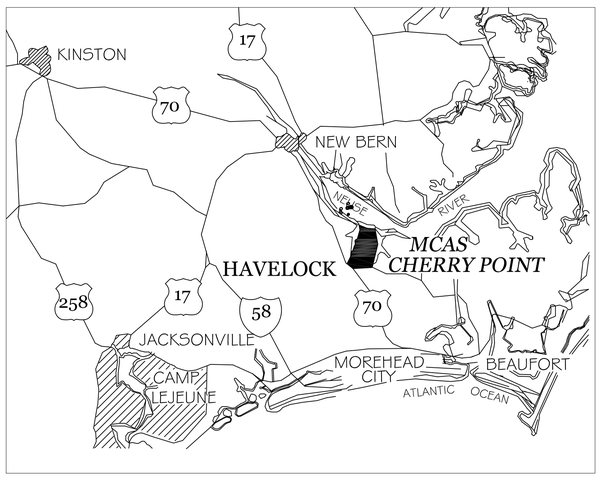
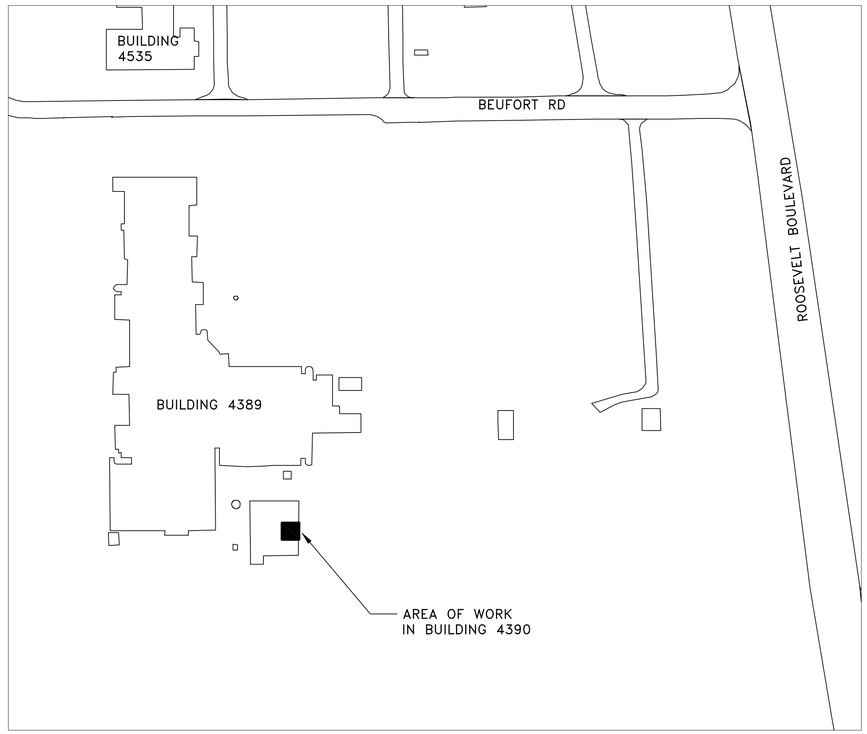


LOCATION MAP



VICINITY MAP



PROJECT SITE BUILDING 4390

NO.	DESCRIPTION	DATE	APPR

DESIGNED & ENGINEERED BY:
FACILITIES ENGINEERING
MECHANICAL

A/E'S USE THIS SPACE FOR YOUR ADDRESS INFO.

FINAL DESIGN

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DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS AIR STATION, CHERRY POINT, N.C.

REPLACE 450 TON CHILLER (#3)
IN, BUILDING 4390

TITLE SHEET

CODE ID. NO. 80091 | SIZE D

SCALE:

FED NO.

STA. PROJ. NO. 6733967

SPEC. NO.

CONSTR. CONTR. NO.

NAVFAC DRAWING NO.
12767608

SHEET 1 OF 4

G-001

DRAWFORM REVISION JULY 2003

WATER CHILLER SCHEDULE

MARK	LOCATION	SERVICE	NOMINAL CAPACITY TONS	MINIMUM COP	REFRIGERANT TYPE	EVAPORATOR						CONDENSER						COMPRESSORS			POWER				CONTROL POWER				REMARKS
						WATER QUANTITY GPM	TEMP – °F ENTER	TEMP – °F LEAVE	PRESSURE DROP FT. H2O	FOULING FACTOR	ETHYLENE GLYCOL %	WATER QUANTITY GPM	TEMP – °F ENTER	TEMP – °F LEAVE	PRESSURE DROP FT. H2O	FOULING FACTOR	NUMBER	MINIMUM CAPACITY STEPS	MINIMUM CAPACITY %	TOTAL KW	COMPRESSOR KW	VOLTS	PHASE	MAX FLA	VOLTS	PHASE	
CH# 3	RM 1455	CHILLED WATER	400	–	R-134A	476	56	44	10.0	0.00025	–	720	85	95	10.0	0.00025	1	–	10	180	–	460	3	–	–	–	1

1. THE BASIS OF DESIGN FOR THE NEW CHILLER IS BASED ON A TRANE CENTRIFUGAL WATER-COOLED AGILITY CHILLER MODEL# HDWA0400.

MECHANICAL LEGEND

NOTE: HEAVY LINE WEIGHT INDICATES NEW EQUIPMENT OR EQUIPMENT TO BE REMOVED, LIGHT LINE WEIGHT INDICATES EQUIPMENT WHICH IS EXISTING TO REMAIN

- HWS — HOT WATER SUPPLY PIPING
- HWR — HOT WATER RETURN PIPING
- CHS — CHILLED WATER SUPPLY PIPING
- CHR — CHILLED WATER RETURN PIPING
- RL — REFRIGERANT LIQUID PIPING
- RS — REFRIGERANT SUCTION PIPING
- D — CONDENSATE DRAIN PIPING
- BACKFLOW PREVENTER
- BALANCING VALVE (GLOBE VALVE/SQUARE HEAD COCK)
- BALL VALVE
- CHECK VALVE
- BUTTERFLY VALVE
- STRAINER WITH BLOW DOWN VALVE
- 3-WAY AUTO CONTROL VALVE
- PRESSURE REDUCING VALVE
- 2-WAY AUTO CONTROL VALVE
- THERMOMETER
- FLEXIBLE PIPING CONNECTION
- PRESSURE GAUGE SHUT-OFF COCK
- AUTOMATIC AIR VENT
- UNION

- PIPE SLOPE (DOWN IN ARROW DIRECTION)
- FLOW CONTROL BALANCING VALVE WITH PRESSURE TAPS (GPM NOTED)
- GAS SHUT-OFF COCK
- RELIEF VALVE
- ECCENTRIC PIPE REDUCER
- PIPE CAP
- DIRECTION OF FLOW
- THERMOMETER WELL
- PIPE ANCHOR (A)
- SUPPLY DUCT SECTION
- EXHAUST DUCT SECTION
- RETURN DUCT SECTION
- (S) BOILER EMERGENCY SHUT-OFF SWITCH
- FD FIRE DAMPER WITH ACCESS DOOR
- (T) AHU-1 THERMOSTAT/SENSOR MOUNT 60" ABOVE FLOOR SUBSCRIPT INDICATES EQUIPMENT BEING CONTROLLED
- ELBOW WITH TURNING VANES
- BD MANUAL BALANCING DAMPER WITH LOCKING QUADRANT
- FLEXIBLE DUCT CONNECTION

- (AD) ACCESS DOOR
- (M) MOTORIZED CONTROL DAMPER
- POINT OF CONNECTION-NEW TO EXISTING
- POINT OF DEMOLITION TERMINATION
- (S) DUCT SMOKE DETECTOR
- P-1 PUMP MARK – SEE SCHEDULE
- EF-1 EXHAUST FAN MARK – SEE SCHEDULE
- AHU-1 AIR HANDLING UNIT MARK – SEE SCHEDULE
- VAV-1 VARIABLE AIR VOLUME BOX MARK – SEE SCHEDULE
- B-1 BOILER MARK – SEE SCHEDULE
- CU-1 CONDENSING UNIT MARK – SEE SCHEDULE
- DSS-1 DUCTLESS SPLIT SYSTEM MARK – SEE SCHEDULE
- (A) 100 GRILLE OR DIFFUSER MARK – SEE SCHEDULE OR SPECIFICATION (CFM NOTE)
- 1 NEW WORK NOTE MARK
- 1 DEMOLITION WORK NOTE MARK
- FLEXIBLE DUCT CONNECTION WITH BALANCING DAMPER
- (B) EMERGENCY BOILER SHUT-OFF SWITCH
- (D) CONTROL VALVE
- LOW PRESSURE SUPPLY OR RETURN DUCT WORK
- MEDIUM PRESSURE SUPPLY DUCT WORK

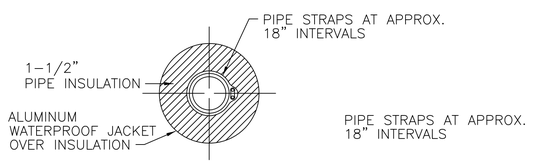
ALL EQUIPMENT AND ASSOCIATED COMPONENTS SCHEDULED OR OTHERWISE INDICATED ON DRAWINGS BY MANUFACTURER'S NAME AND ASSOCIATED MODEL NUMBER SERVE AS THE BASIS OF DESIGN AND ARE INTENDED TO SHOW THE GENERAL SIZE, CONFIGURATION, LOCATION, CONNECTIONS, AND/OR SUPPORT FOR EQUIPMENT OR SYSTEMS SPECIFIED WITH RELATION TO THE OTHER BUILDING SYSTEMS. THERE IS NO INTENT TO LIMIT COMPETITION. SEE SPECIFICATIONS FOR TECHNICAL REQUIREMENTS PERTAINING TO THE PRODUCTS.

ABBREVIATIONS

∠	ANGLE
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
APD	AIR PRESSURE DROP
APPROX	APPROXIMATELY
AS-1	AIR SEPARATOR MARK – SEE SCHEDULE
BD	BALANCING DAMPER
BDD	BACK DRAFT DAMPER
BTUH	BRITISH THERMAL UNIT PER HOUR
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CHLR-1	CHILLER MARK – SEE SCHEDULE
COP	COEFFICIENT OF PERFORMANCE
CP-1	CONDENSATE PUMP MARK – SEE SCHEDULE
CU-1	CONDENSING UNIT MARK – SEE SCHEDULE
CWR	CHILLED WATER RETURN
CWS	CHILLED WATER SUPPLY
DN	DOWN
DSS-1	DUCTLESS SPLIT SYSTEM MARK – SEE SCHEDULE
DSH	
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB
EMD	END OF MAIN DRIP
EWB	ENTERING WET BULB
EWT	ENTERING WATER TEMPERATURE
ESP	EXTERNAL STATIC PRESSURE
EXIST	EXISTING
FD	FIRE DAMPER WITH ACCESS DOOR
FDB	DEGREE FAHRENHEIT DRY BULB
FF	FINISHED FLOOR
FPM	FEET PER MINUTE
FT	FEET
FWB	DEGREE FAHRENHEIT WET BULB
GA	GAUGE
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
"HG	INCHES OF MERCURY
HP	HORSE POWER
HWC	HOT WATER CONVERTER MARK – SEE SCHEDULE
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
ID	INSIDE DIAMETER
KW	KILOWATT
L-1	LOUVER MARK – SEE SCHEDULE
LAT	LEAVING AIR TEMPERATURE
LBS/HR	POUND PER HOUR
LDB	LEAVING DRY BULB
LWB	LEAVING WET BULB
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MOCP	MAXIMUM OVER CURRENT PROTECTION
MIN	MINIMUM
MBH	THOUSAND BTU/HR
MCA	MINIMUM CIRCUIT AMPS
MFS	MAXIMUM FUSE SIZE
NOM	NOMINAL
NO	NUMBER
OA	OUTSIDE AIR
OD	OUTSIDE DIAMETER
PD	PRESSURE DROP
PH	PHASE
PSIG	POUNDS PER SQUARE INCH GAGE
%RH	PERCENT RELATIVE HUMIDITY
PRV	PRESSURE RELIEF VALVE
RA	RETURN AIR
RBJ	RUN BETWEEN JOIST
RIH-1	ROOF INTAKE HOOD MARK – SEE SCHEDULE
RLA	RATED LOAD AMPS
RPM	REVOLUTIONS PER MINUTE
RTJ	RUN THRU JOIST
SA	SUPPLY AIR
SCT	SATURATED CONDENSING TEMPERATURE
SEER	SEASONAL ENERGY EFFICIENCY RATING
SF	SQUARE FEET
SP	STATIC PRESSURE
SST	SATURATED SUCTION TEMPERATURE
TS	TIP SPEED
T'STAT	THERMOSTAT
TYP	TYPICAL
UH-1	UNIT HEATER MARK – SEE SCHEDULE
VAV-1	VARIABLE AIR VOLUME UNIT AND MARK – SEE SCHEDULE
"WC	INCHES WATER COLUMN
WPD	WATER PRESSURE DROP
SCR	SILICON CONTROLLED RECTIFIER

GENERAL NOTES

1. SCOPE OF WORK INCLUDES PROVIDING A FIRST CLASS WORKING SYSTEM IN COMPLIANCE WITH THESE DRAWINGS AND SPECIFICATIONS, TESTED READY FOR OPERATION COMPLETE WITH LABOR, MATERIALS, APPARATUS, TRANSPORTATION, AND TOOLS REQUIRED FOR THE INSTALLATION.
2. COORDINATE WORK WITH THAT OF OTHER TRADES. INSTALL THE NEW EQUIPMENT IN THE EXACT LOCATIONS OF THE EXISTING CEILING MOUNTED DEVICES.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MODIFICATIONS, CHANGES, ETC. FOR THE EQUIPMENT HE PROVIDES, EVEN IF APPROVED AS AN EQUAL.
4. MISCELLANEOUS ITEMS NOT SHOWN ON THE PLANS BUT NECESSARY FOR A COMPLETE OPERABLE SYSTEM, SHALL BE SUPPLIED AND INSTALLED.
5. INSTALL EQUIPMENT PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. MAINTAIN ALL RECOMMENDED CLEARANCES.
6. REPAIR ANY MATERIAL OR WORK WHICH THE CONTRACTOR HAS DAMAGED.
7. BALANCE AIR AND WATER SYSTEMS WITHIN ±5% OF THE VALUES INDICATED.
8. TEST THE ENTIRE SYSTEM IN ALL MODES OF OPERATION TO INSURE PROPER OPERATION.
9. FURNISH AND INSTALL ALL EQUIPMENT AND MATERIALS FOR A COMPLETE INSTALLATION IN ALL RESPECTS READY OF INTENDED USE AND IN STRICT ACCORDANCE WITH ALL STATE AND LOCAL CODES AND MANUFACTURER'S RECOMMENDATIONS. INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY PRECAUTIONS AND PROCEDURES.



REFRIGERANT LINE SECTION THRU PIPE

APPR	
DATE	
DESCRIPTION	
SYM.	

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FINAL DESIGN

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DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS AIR STATION, CHERRY POINT, N.C.

REPLACE 450 TON CHILLER (#3)
IN , BLDG. 4390

MECHANICAL DETAILS, LEGEND AND SCHEDULES

CODE ID. NO. 80091	SIZE D
SCALE: AS SHOWN	
FED NO.	
STA. PROJ. NO. 6733967	
SPEC. NO.	
CONSTR. CONTR. NO.	
NAVFAC DRAWING NO. 12767609	
SHEET 2 OF 4	

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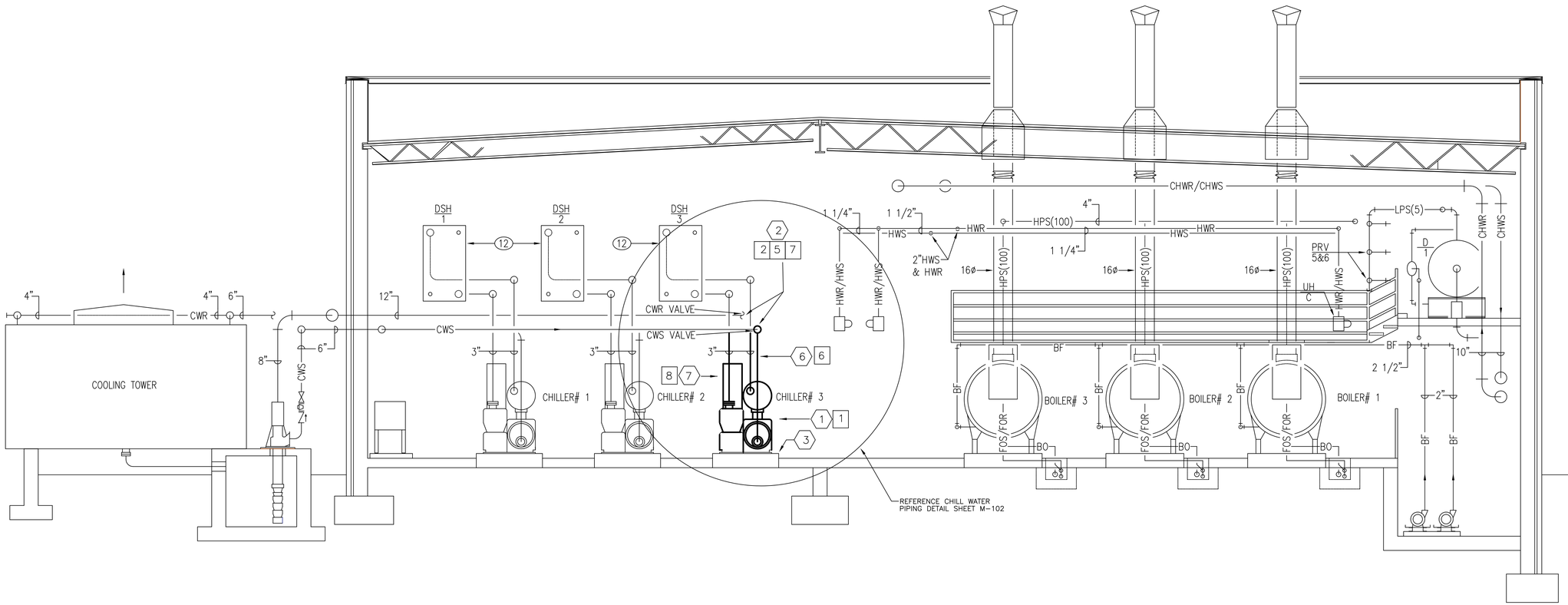


DEMOLITION AND NEW WORK ELEVATION FOR CHILLER # 3

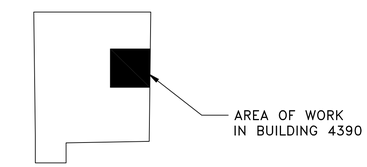
SCALE: 1/4"=1'-0"

DEMO NOTES:

1. REMOVE THE 400 TON NUMBER 3 CHILLER, PREPARE THE AREA FOR THE NEW CHILLER.
2. EXISTING CWS & CWR PIPING, TO REMAIN FOR REUSE.
3. EXISTING CONCRETE SLAB TO REMAIN FOR REUSE.
4. EXISTING ELECTRICAL DISCONNECT AND WIRING TO REMAIN FOR REUSE.
5. REMOVE THE FOUR 8" FLANGED BUTTERFLY VALVES ON THE CHILL WATER SUPPLY AND RETURN PIPING.
6. EXISTING REFRIGERANT LINES AND CONDENSATE DRAIN LINE TO REMAIN FOR REUSE.
7. EXISTING CONTROL WIRING TO REMAIN FOR REUSE.
8. EXISTING CWS & CWR PIPING TO REMAIN FOR REUSE.

NEW WORK NOTES:

1. INSTALL NEW 400 TON NUMBER 3 CHILLER.
2. RECONNECT EXISTING CHILL WATER SUPPLY AND RETURN PIPING TO NEW CHILLER.
3. RECONNECT EXISTING ELECTRICAL WIRING TO NEW CHILLER.
4. INSTALL FOUR NEW 8" FLANGED BUTTERFLY VALVES ON THE CHILL WATER SUPPLY AND RETURN PIPING.
5. RECONNECT EXISTING REFRIGERANT LINES AND THE CONDENSATE DRAIN LINE
6. INSTALL NEW 1-1/2" PIPE INSULATION ON THE AREAS WHERE INSULATION WAS REMOVED.
7. RECONNECT ALL THE EXISTING CONTROL WIRING TO THE NEW CHILLER.
8. THE NEW 400 TON CHILLER MUST FIT THROUGH THE OPENING OF THE BUILDING WITHOUT ANY MODIFICATIONS.



KEY PLAN

0 5' 10' 20'

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

APPR	DATE	DESCRIPTION	SYM.

DESIGNED & ENGINEERED BY:
FACILITIES ENGINEERING
MECHANICAL

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PROJECT MANAGER	MHE
FIRE PROTECTION	–
BRANCH MANAGER	LPF
DESIGN DIRECTOR	LPF

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NAVAL FACILITIES ENGINEERING COMMAND
MARINE CORPS AIR STATION, CHERRY POINT, N.C.

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MECHANICAL DEMO/NEW WORK PLAN

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NAVFAC DRAWING NO.	12767610
SHEET	3 OF 4

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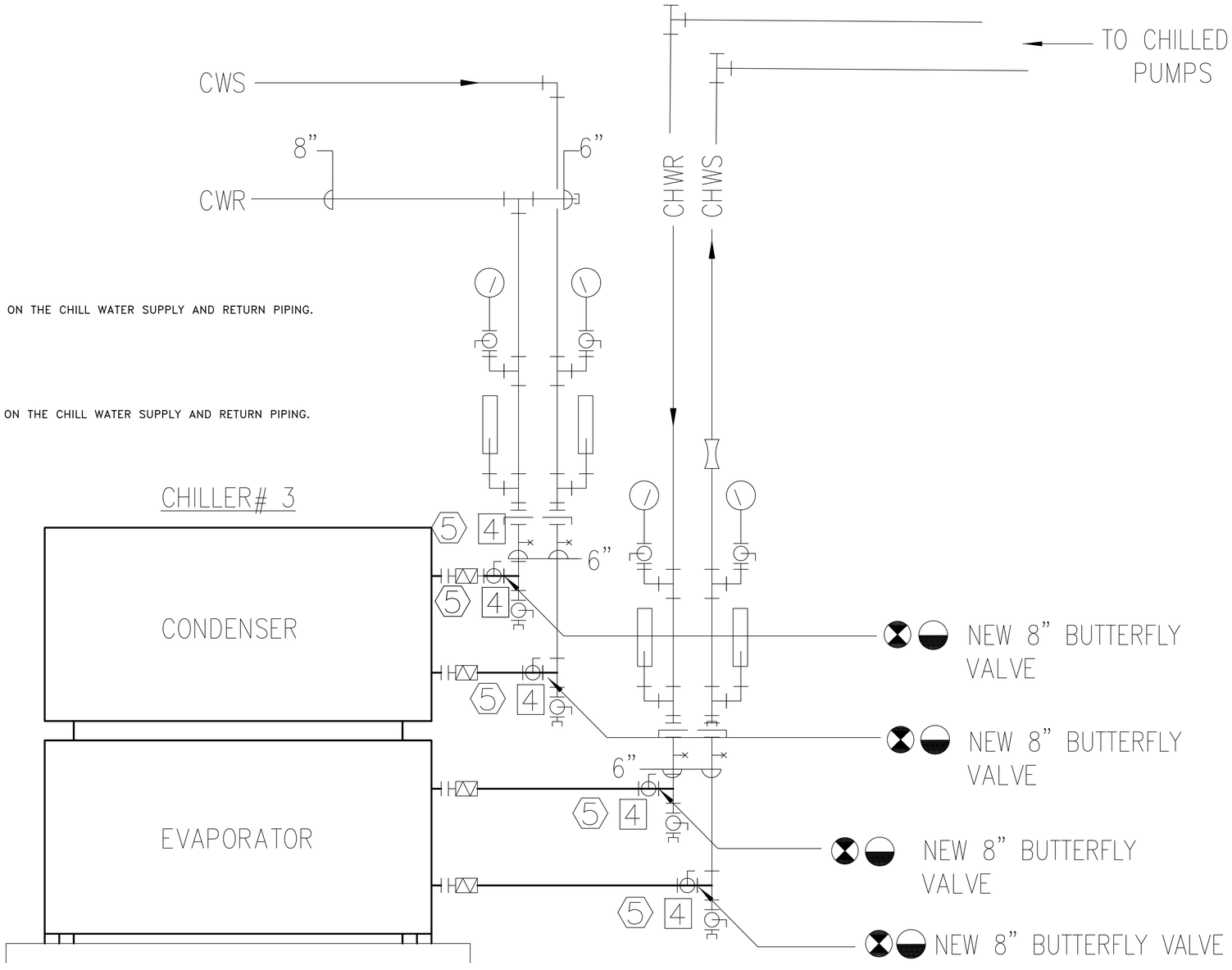
NEW WORK NOTES:

4 INSTALL FOUR NEW 8" FLANGED BUTTERFLY VALVES ON THE CHILL WATER SUPPLY AND RETURN PIPING.

DEMO NOTES:

5 REMOVE THE FOUR 8" FLANGED BUTTERFLY VALVES ON THE CHILL WATER SUPPLY AND RETURN PIPING.



CHILLED WATER PIPING DETAIL

NOT TO SCALE

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MARINE CORPS AIR STATION, CHERRY POINT, N.C.
NAVAL FACILITIES ENGINEERING COMMAND

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MECHANICAL– CHILL WATER PIPING DETAIL

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NAVFAC DRAWING NO.	12767611
SHEET	4 OF 4

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