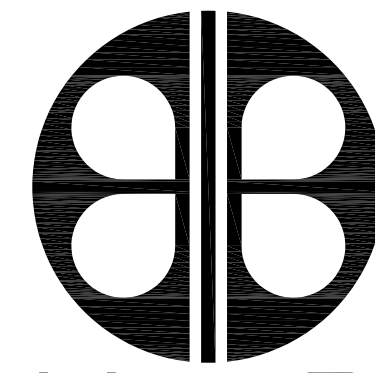


CHILLER REPLACEMENT - ORANGE COUNTY UTILITIES BUILDING



BORRELLI + PARTNERS
ARCHITECTURE PLANNING LANDSCAPE INTERIOR
ACC 000711

720 VASSAR STREET
ORLANDO, FL. 32804 (407) 418-1338

PROJECT #16-166

ORANGE COUNTY UTILITIES ADMINISTRATION BUILDING
9150 CURRY FORD ROAD, ORLANDO, FLORIDA 32825

90% CONSTRUCTION DOCUMENTS

12-20-18

CONSULTANTS:

**MECHANICAL, PLUMBING &
ELECTRICAL ENGINEERS**

BOBES ASSOCIATES CONSULTING ENGINEERS, INC.

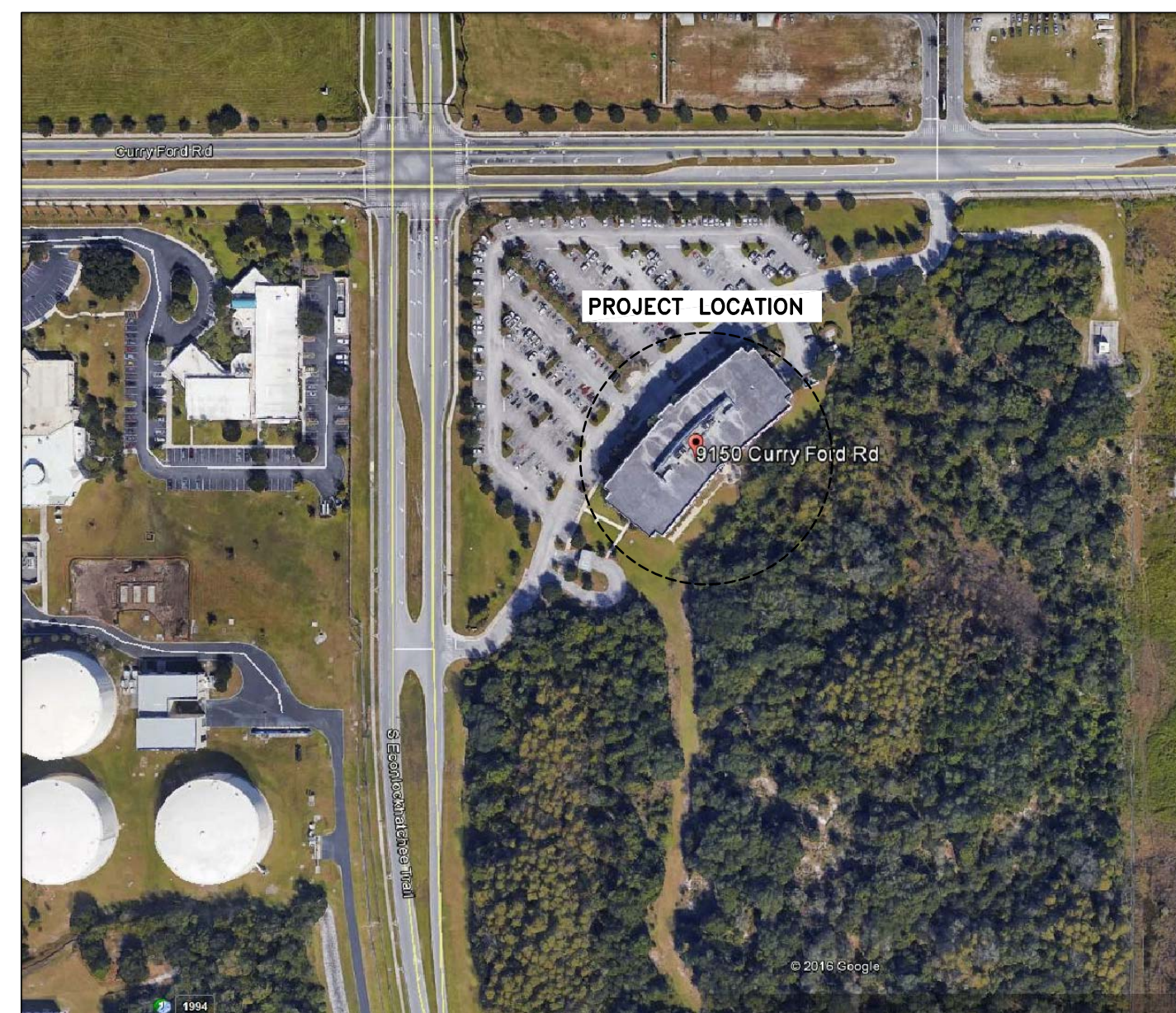
150 CIRCLE DRIVE
MAITLAND, FLORIDA 32751
(407)628-0882

DRAWING INDEX

COVER

M-001 LEGEND & NOTES – HVAC
MD-140 PARTIAL ROOF PLAN HVAC – DEMOLITION
M-140 PARTIAL ROOF PLAN HVAC – RENOVATION
M-500 DETAILS – HVAC

E-140 PARTIAL ROOF PLAN ELECTRICAL – RENOVATION



AERIAL PHOTO LOCATION: 9150 CURRY FORD ROAD, ORLANDO, FLORIDA 32825

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District 1 Commissioner: Betsy VanderLey
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District 3 Commissioner: Mayra Uribe
District 4 Commissioner: Maribel Gomez Cordero
District 5 Commissioner: Emily Bonilla
District 6 Commissioner: Victoria P. Siplin

ROOF MOUNTED CHILLER REPLACEMENT AT THE OCU ADMINISTRATION BUILDING

BORRELLI + PARTNERS
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SIGNATURE AND DATED SEAL

CONSULTANTS

DRAWING TITLE

PROJECT ADDRESS
OCU CENTRAL ADMINISTRATION BUILDING
9150 CURRY FORD ROAD
ORLANDO, FLORIDA 32825
OWNER NAME AND ADDRESS
ORANGE COUNTY UTILITIES
9150 CURRY FORD ROAD
ORLANDO, FLORIDA 32825

PROJECT NO.	PHASE	SCALE	FILE NAME	DRAWN BY	CHECKED BY	DATE
115-000	100% CONST. DOCS	N/A	CAP FILE	ROP	JAM	2-2-2019

A-000

HVAC SYMBOL LEGEND			
	DUCT—FIRST DIM. IS WIDTH DUCT—SECOND DIM. IS HEIGHT		DUCT TAKE-OFF W/ VOLUME DAMPER
	DUCT ELBOW DOWN		POINT OF CONNECTION NEW TO EXISTING WORK
	DUCT ELBOW UP		POINT OF EXTENT OF REMOVAL OF EXISTING HVAC
	DUCT RISE		THERMOMETER
	DUCT DOWN		PRESSURE GAUGE
	DUCT UNDER POSITIVE PRESSURE		UNION OR FLANGE
	DUCT UNDER NEGATIVE PRESSURE		BALL OR BUTTERFLY VALVE
	ELBOW W/TURNING VANES		CHECK VALVE
	TAKE-OFF W/EXTRACTOR		MODULATING CONTROL VALVE
	FLEXIBLE DUCT		TWO POSITION CONTROL VALVE
	FLEXIBLE CONNECTION		PLUG VALVE W/ MEMORY
	SUPPLY AIR TERMINAL ARROW INDICATES THROW		FLEXIBLE PIPE
	RETURN OR EXHAUST AIR		STRAINER
	LINEAR DIFFUSERS		MANUAL AIR VENT
	SIDE MOUNTED EDH		AUTOMATIC AIR VENT
	BOTTOM MOUNTED EDH		3/4" HOSE END DRAIN PIPE
	FIRE DAMPER		CHILLED WATER SUPPLY
	SMOKE DAMPER		CHILLED WATER SUPPLY
	FIRE/SMOKE DAMPER		HOT WATER SUPPLY
	VOLUME DAMPER		HOT WATER RETURN
	REMOTE VOLUME DAMPER		REFRIGERANT HOT GAS
	MOTORIZED DAMPER		REFRIGERANT LIQUID
	BACKDRAFT DAMPER		REFRIGERANT SUCTION
	SMOKE DETECTOR (DUCT MOUNTED)		CONDENSATE DRAIN
	DUCT ACCESS DOOR		PIPE ELBOW DOWN
	DUCT ACCESS DOOR		PIPE ELBOW UP
	HUMIDITY SENSOR		PIPE ELBOW
	ROOM TEMPERATURE SENSOR		PIPE TEE DOWN
	THERMOSTAT		PIPE TEE UP
	SMOKE DETECTOR		ROUND

HVAC ABBREVIATIONS			
AC	AIR CONDITIONING	HD	HUB DRAIN
AHU	AIR HANDLING UNIT	HOA	HAND/OFF/AUTOMATIC
AFF	ABOVE FINISHED FLOOR	HP	HORSEPOWER
BDD	BACKDRAFT DAMPER	HVAC	HEATING, VENTILATING & AIR CONDITIONING
BHP	BRKAC HORSEPOWER	H2O	WATER
BMS	BUILDING MANAGEMENT SYSTEM	INIT	INITIAL
BTU	BRITISH THERMAL UNIT	KH	KITCHEN HOOD
CF	CHEMICAL FEEDER	LAT	LVG. AIR TEMPERATURE
CFM	CUBIC FEET PER MINUTE	LD	LINEAR DIFFUSER
CLG	CEILING	LR	LINEAR RETURN
CYC	CYCLES	LVG	LEAVING
COND	CONDENSATE	LWT	LVG. WATER TEMPERATURE
CC	COOLING COIL	MUA	MAKE UP AIR UNIT (KITCHEN HOOD)
CD	CEILING DIFFUSER	MBH	MEGA BTU PER HOUR
CG	CEILING GRILLE	MD	MOTORIZED DAMPER
DIM	DIMENSION	NC	NOISE CRITERIA
DB	DRY BULB	NIC	NOT IN CONTRACT
°F	DEGREES FAHRENHEIT	OA	OUTSIDE AIR
DWG	DRAWING	OPER	OPERATING
EA	EXHAUST AIR	OV	OUTLET VELOCITY
EAT	ENTERING AIR TEMPERATURE	PCF	PUMP, CHEMICAL FEED
EG	EXHAUST AIR GRILLE	PCH	PUMP, CHILLED WATER
EHC	ELECTRIC HEATING COIL	PD	PRESSURE DROP
EDH	ELECTRIC DUCT HEATER	PH	PHASE
EHU	ELECTRIC UNIT HEATER	RG	RETURN AIR GRILLE
EWH	ELECTRIC WALL HEATER	ROT	ROTATION
ENT	ENTERING	RPM	REVOLUTION PER MINUTE
ER	EXHAUST AIR REGISTER	RVD	REMOTE VOLUME DAMPER
EWI	ENT. WATER TEMPERATURE	SA	SUPPLY AIR
F	FILTER	SENS	SENSIBLE
FCU	FAN COIL UNIT	SD	SPLITTER DAMPER
EF	EXHAUST FAN	SP	STATIC PRESSURE
EFG	EXHAUST FAN, GREASE	SR	SUPPLY AIR REGISTER
FF	FLY FAN	TG	TRANSFER AIR GRILLE
FPI	FINS PER INCH	TEMP	TEMPERATURE
FPM	FEET PER MINUTE	UD	UNDERCUT DOOR
FR	FAN, RETURN	VG	VENT, GRAVITY
SF	SUPPLY FAN	W	WATTS
GPM	GALLONS PER MINUTE	WB	WET BULB
FD	FIRE DAMPER	W/	WITH

HVAC GENERAL NOTES

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE 2017 FLORIDA BUILDING CODE (6TH EDITION), THE 2017 FLORIDA MECHANICAL CODE (6TH EDITION), THE 2017 FLORIDA ENERGY EFFICIENCY CODE (6TH EDITION) AND THE ORANGE COUNTY BUILDING DEPARTMENT REQUIREMENTS AND ALL OTHER APPLICABLE CODES AND STANDARDS.
- PRIOR TO BID, THE CONTRACTOR SHALL VISIT THE SITE AND SHALL VERIFY ALL EXISTING SYSTEMS, FIELD CONDITIONS, POTENTIAL CONFLICTS ETC. WHICH WILL IMPACT THE WORK.
- CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS IN THE FIELD FOR EQUIPMENT, CHILLED WATER PIPING AND ROOF PENETRATIONS.
- CONNECTION TO ALL EQUIPMENT SHALL BE VERIFIED WITH MANUFACTURERS CERTIFIED DRAWINGS. TRANSITIONS TO ALL EQUIPMENT SHALL BE VERIFIED AND PROVIDED FOR ALL EQUIPMENT FURNISHED.
- ALL EQUIPMENT SHALL BE PROPERLY SUPPORTED AND ISOLATED TO PREVENT NOISE AND VIBRATION TRANSMISSION.
- ALL MECHANICAL EQUIPMENT SHALL BE LOCATED WITH RESPECT TO BUILDING CONSTRUCTION AND OTHER EQUIPMENT SO AS TO PERMIT ACCESS TO THE MECHANICAL EQUIPMENT IN CONFORMITY WITH ANY CLEARANCE WHICH MAY BE RECOMMENDED BY THE MANUFACTURER OF THE EQUIPMENT. SUFFICIENT CLEARANCE SHALL BE MAINTAINED FOR CLEANING COILS, AND MOTORS. ALL PIPING SHALL BE INSTALLED TO PROVIDE ADEQUATE CLEARANCE FOR ACCESS TO ALL EQUIPMENT. INSTALLATION OF ALL MECHANICAL EQUIPMENT SHALL COMPLY WITH THE MANUFACTURERS SPECIFICATION AND CLEARANCE REQUIREMENT.
- ALL CHILLED WATER PIPING SHALL BE INSULATED WITH 2" THICK FOAM GLASS INSULATION W/ .016" THICK ALUMINUM JACKET OVER THE INSULATION. ALL INSULATION SEAMS AND JOINTS SHALL BE SEALED WITH APPROVED MASTIC. ALL NEW VALVES SHALL BE INSULATED WITH 1" THICK CLOSED CELLULAR (ARMAFLEX) PIPE INSULATION AND WRAPPED WITH .016" THICK ALUMINUM JACKETING.
- CHILLED WATER PIPING SHALL BE SCHEDULE 40 BLACK STEEL IN ACCORDANCE WITH ASTM 53. PIPE FITTINGS SHALL BE WELDED IN ACCORDANCE WITH ASME B 16.9.
- COORDINATE ALL CONTROL DEVICES WITH THE ELECTRICAL CONTRACTOR.
- ALL CONTROL WIRING, CONDUIT AND HARDWARE TO COMPLETE THE HVAC CONTROL SYSTEM SHALL BE FURNISHED AND INSTALLED UNDER DIVISION 23 - MECHANICAL.
- ALL CONTROL WIRING AND INTERLOCK WIRING LOCATED IN MECHANICAL ROOMS AND IN NON ACCESSIBLE CEILINGS SHALL BE IN CONDUIT.
- THE CONTRACTOR SHALL HIRE AN INDEPENDENT TEST AND BALANCE FIRM TO TEST AND BALANCE ALL AIR CONDITIONING SYSTEMS—SEE SPECIFICATIONS. THE TEST & BALANCE CONTRACTOR SHALL BE CERTIFIED BY NEBB OR ABA.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COORDINATING THEIR WORK WITH THE TEST AND BALANCE FIRM. PRIOR TO TEST AND BALANCE, THE CONTRACTOR SHALL START-UP PRE-BALANCE THE SYSTEM, AND REPLACE ALL AIR FILTERS FOR EVERY AHU BEING TESTED. ALL DISCREPANCIES, DRIVE CHANGES, ETC. REPORTED BY ENGINEER OR THE TEST AND BALANCE FIRM SHALL BE CORRECTED BY THE CONTRACTOR WITHIN FIVE CALENDAR DAYS AT NO ADDITIONAL COST.
- CONTRACTOR SHALL LABEL ALL EQUIPMENT (FANS, AIR HANDLING UNITS AND CONDENSING UNITS) WITH ENGRAVED TYPE PHENOLIC LABELS PERMANENTLY AFFIXED TO THE EQUIPMENT. CONTRACTOR SHALL INSTALL ADDITIONAL PHENOLIC LABEL TO THE CEILING GRID TEE BELOW ANY CEILING MOUNTED EQUIPMENT LOCATED ABOVE ACOUSTICAL LAY-IN CEILINGS OR TO THE CEILING ACCESS PANEL LOCATED BELOW ANY CEILING MOUNTED EQUIPMENT LOCATED ABOVE GYPSUM BOARD CEILINGS.
- THE CONTRACTOR SHALL PROVIDE A WRITTEN GUARANTEE THAT SHALL WARRANT ALL WORKMANSHIP AND MATERIALS FOR ONE (1) YEAR. DURING THE FIRST YEAR ALL SYSTEM MALFUNCTIONS SHALL BE REPAIRED AT NO EXPENSE TO THE OWNER. THE COMPRESSORS SHALL HAVE A 5 YEAR WARRANTY (LABOR & MATERIALS).
- OPERATION AND MAINTENANCE MANUALS SHALL INCLUDE AS A SEPARATE SUBMITTAL ITEM, PREVENTATIVE MAINTENANCE REQUIREMENTS ALONG WITH TIME SCHEDULE(S) FOR EACH ITEM. THE SEQUENCE OF OPERATION SHALL ALSO INCLUDE A DEFINITIVE SEQUENCE OF OPERATION OF THE MECHANICAL SYSTEM AND COMPONENTS AS THEY FUNCTION INTEGRALLY AND INDEPENDENTLY WITH THE SYSTEM.
- THE CONTRACTOR SHALL PROVIDE ALL REQUIRED PERMITS.
- THE CONTRACTOR SHALL PREPARE REDLINED AS-BUILT DRAWINGS OF THE HVAC SYSTEMS AT THE COMPLETION OF THE PROJECT CONSTRUCTION AND SHALL INCLUDE THOSE AS-BUILT DRAWINGS AT PROJECT CLOSEOUT ALONG WITH THE O&M MANUAL.
- PRIOR TO ORDERING HVAC EQUIPMENT THE CONTRACTOR SHALL PROVIDE A COMPLETE HVAC SHOP DRAWING SUBMITTAL TO THE ENGINEER FOR REVIEW AND APPROVAL. THE HVAC SUBMITTAL SHALL INCLUDE ALL NEW AIR CONDITIONING EQUIPMENT, PIPING, PIPE INSULATION, CONTROLS, DAMPERS, HANGERS ETC. CONTRACTOR SHALL NOT ORDER ANY HVAC EQUIPMENT UNTIL THIS SUBMITTAL IS REVIEWED AND ACCEPTED BY THE ENGINEER OF RECORD. CONTRACTOR SHALL SUBMIT THE SHOP DRAWING AS ONE COMPLETE SUBMITTAL AND SHALL NOT PIECE MEAL THE SUBMITTAL SPREAD OUT OVER THE COURSE OF DAYS AND WEEKS. FAILURE TO SUBMIT A COMPLETE HVAC SHOP DRAWING SUBMITTAL SHALL RESULT IN AN IMMEDIATE REJECTION OF THE SHOP DRAWING SUBMITTAL.

HVAC SCOPE OF WORK

- PRIOR TO START OF DEMOLITION, THE CONTRACTOR SHALL RUN A (HYDRONIC) TEST & BALANCE ON THE EXISTING CHILLERS AND ALL EXISTING PRIMARY AND SECONDARY CHILLED WATER PUMPS.
- REMOVE (2) EXISTING, 150 TON, AIR COOLED CHILLERS ON ROOF SUPPORT STAND. DISCONNECT EXISTING CHILLED WATER SUPPLY AND RETURN PIPING. DISCONNECT EXISTING (2) POWER SUPPLIES. DISCONNECT EXISTING HVAC CONTROLS. DISCONNECT ALL ATTACHED LIGHTNING PROTECTION CABLES AND AIR TERMINALS.
- PROVIDE (2) NEW, 150 TON, AIR COOLED CHILLERS ON EXISTING ROOF SUPPORT STAND. MODIFY EXISTING ROOF SUPPORT STAND AS NEEDED AND AS DICTATED BY FIELD CONDITIONS. RE-CONNECT EXISTING CHILLED WATER SUPPLY AND RETURN PIPING. RE-CONNECT EXISTING (2) POWER SUPPLIES. RE-CONNECT EXISTING HVAC CONTROLS. RE-CONNECT EXISTING LIGHTNING PROTECTION CABLES AND AIR TERMINALS.
- VERIFY EXISTING (2) INLINE PRIMARY CHILLED WATER CHILLED WATER PUMPS PCHP-1 & PCHP-2 ARE IN GOOD CONDITION AND OPERATIONAL. EXISTING PUMPS ARE TO REMAIN.
- VERIFY EXISTING (2) INLINE SECONDARY CHILLED WATER CHILLED WATER PUMPS SCHP-1 & SCHP-2 ARE IN GOOD CONDITION AND OPERATIONAL. EXISTING PUMPS ARE TO REMAIN.
- PROVIDE NEW CHILLED WATER SUPPLY AND CHILLED WATER RETURN PIPING CONNECTED TO NEW CHILLERS AND EXISTING CHILLED WATER PIPING AS REQUIRED. PROVIDE NEW CHILLED WATER PIPE SUPPORTS FOR ROUTING OF NEW CHILLED WATER PIPING ABOVE THE ROOF.
- PROVIDE NEW 2" FOAM GLASS CHILLED WATER PIPE INSULATION WITH .016" THICK EXTERNAL ALUMINUM JACKET ON NEW CHILLED WATER PIPING AND WHERE PIPING INSULATION HAS BEEN REMOVED ON EXISTING CHILLED WATER PIPING.
- AFTER INSTALLATION OF THE NEW CHILLERS, THE CONTRACTOR SHALL PROVIDE A TEST AND BALANCE (HYDRONIC) OF NEW CHILLERS AND ALL EXISTING PRIMARY AND SECONDARY CHILLED WATER PUMPS.
- IN ORDER TO REMOVE AND REPLACE THE (2) ROOF MOUNTED CHILLERS THE CONTRACTOR SHALL OBTAIN A CRANE AND SHALL DETERMINE AND COORDINATE THE CHILLER LAY DOWN AND CRANE PAD LOCATIONS WITH THE OWNER. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO THE SITE OR PARKING LOT RESULTING FROM THEIR WORK.
- THE CONTRACTOR SHALL PERFORM ALL WORK OVER THE WEEKENDS (2) AND SHALL MINIMIZE THE IMPACT TO THE FUNCTION OF THE BUILDING.

PUMP SCHEDULE (EXISTING TO REMAIN)

UNIT NUMBER	SERVICE	LOCATION	CASING TYPE	FLUID		GPM	NPSHR (FT.)	HEAD (FT.)	SHUT-OFF HEAD (FT.)	IMPELLER SIZE (IN.)	WORKING PRESS. (PSIG)	PUMP RPM	BHP	VOLTS	PHASE	CYCLES	MOTOR HP	BASIS OF DESIGN	NOTES
				TYPE	TEMP (°F)														
PCHP-1	PRIMARY CHILLED WATER CHILLER CH-1	ROOF	IN-LINE	WATER	42	212	--	16	--	--	125	1150	--	460	3	60	2	PACO 5X5X7 (EXISTING)	1,3
PCHP-2	PRIMARY CHILLED WATER CHILLER CH-2	ROOF	IN-LINE	WATER	42	212	--	16	--	--	125	1150	--	460	3	60	2	PACO 5X5X7 (EXISTING)	1,3
SCHP-1	SECONDARY CHILLED WATER PUMP	ROOF	IN-LINE	WATER	42	403	--	32	--	--	125	1750	--	460	3	60	5	PACO 5X5X7 (EXISTING)	2,3
SCHP-2	SECONDARY CHILLED WATER PUMP	ROOF	IN-LINE	WATER	42	403	--	32	--	--	125	1750	--	460	3	60	5	PACO 5X5X7 (EXISTING)	2,3

- EXISTING PUMP WITH COMBINATION MOTOR STARTER AND DISCONNECT SWITCH.
- EXISTING PUMP WITH VARIABLE SPEED DRIVE.
- ALL EXISTING PUMPS ARE TO REMAIN.

AIR COOLED CHILLER SCHEDULE (NEW)

UNIT NUMBER	SERVICE	LOCATION	MINIMUM CAPACITY (TONS)	CHILLED WATER			REFRIGERANT	COMPRESSOR				CONDENSER FANS		WATER BOX NO. OF PASSES	ELECTRIC SERVICE			EFFICIENCY BTU/W	IPLV BTU/W	MANUFACTURER	WEIGHT LBS	NOTES							
				GPM	% GLYCOL	EWT (°F)		LWT (°F)	P.D. (FT. H2O)	TYPE	QTY	TYPE	IMPELLER SIZE		MOTOR RLA	MOTOR LRA	QTY						FLA (EA)	RPM	KW	MCA	MOPD	VOLTS	PHASE
CH-1	ADMINISTRATION BLDG	ROOF	140.8	212	--	57	42	5.95	134A	2	SCREW	--	91/91	--	10	4.3	--	2	148.7	138.5/134.9	225/225	480	3	60	11.36	20.34	CARRIER 30XV-140H	12,056	1-9
CH-2	ADMINISTRATION BLDG	ROOF	140.8	212	--	57	42	5.95	134A	2	SCREW	--	91/91	--	10	4.3	--	2	148.7	138.5/134.9	225/225	480	3	60	11.36	20.34	CARRIER 30XV-140H	12,056	1-9

- PROVIDE VARIABLE SPEED COMPRESSOR AND CONDENSER FANS.
- PROVIDE CHILLER WITH 65,000 AMP SHORT CIRCUIT RATING.
- MAXIMUM A-WEIGHT SOUND PRESSURE LEVEL AT FULL LOAD AND 30' FROM CHILLER IS 65 db.
- MINIMUM FULL LOAD EFFICIENCY = 11.36 EER.
- MINIMUM IPLV EFFICIENCY = 20.34 EER.
- CHILLER SHALL UNLOAD DOWN TO 15% OF TOTAL UNIT CAPACITY.
- FURNISH WITH FACTORY NON FUSED DISCONNECT SWITCH.
- PROVIDE WITH DUAL POINT POWER CONNECTION.
- PROVIDE CONTROL POWER TRANSFORMER.

ROOF MOUNTED CHILLER REPLACEMENT AT OC ADMINISTRATION BUILDING

16-166
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ORLANDO, FLORIDA 32825

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ORANGE COUNTY UTILITIES
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SIGNATURE AND DATED SEAL

CONSULTANTS

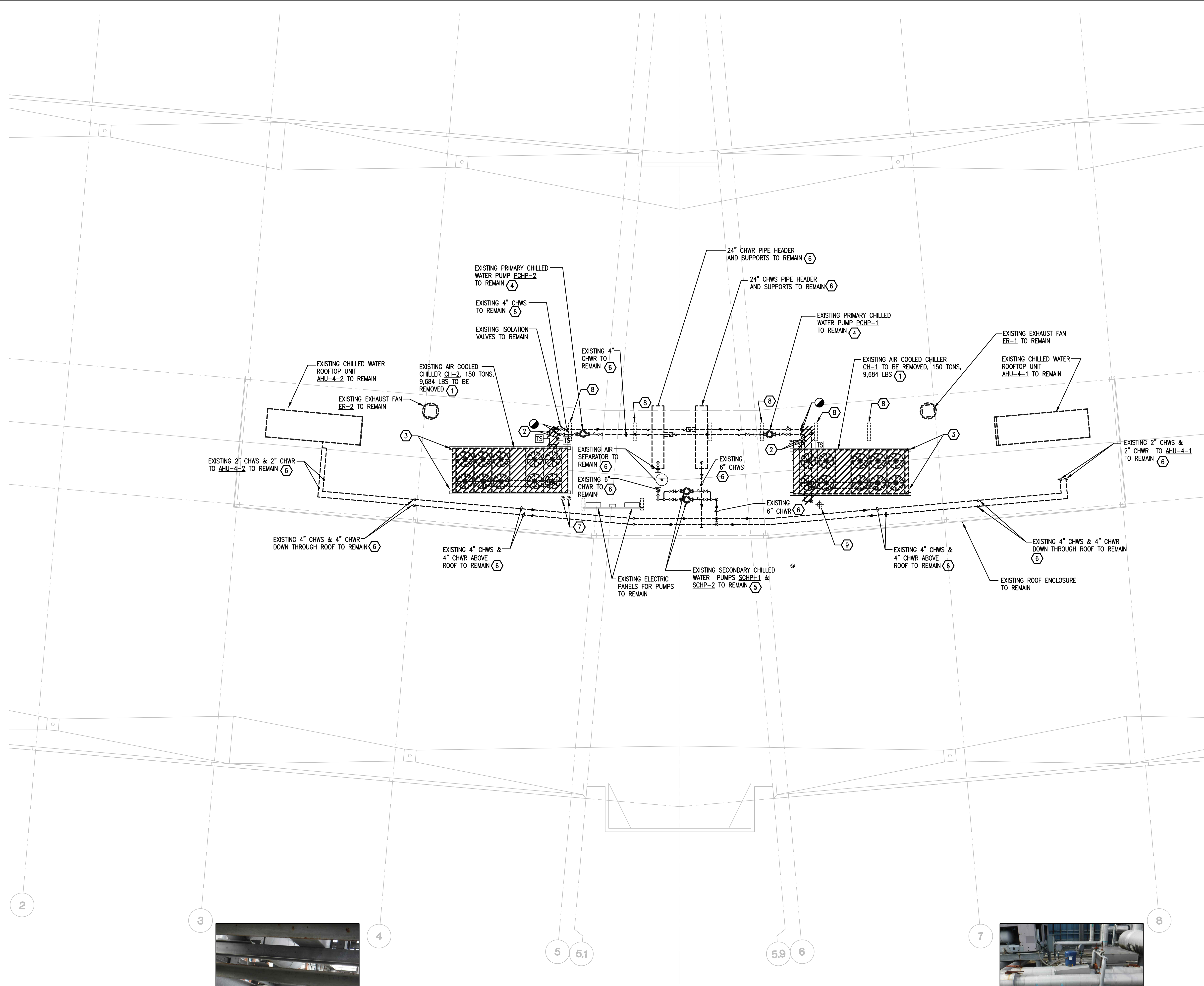
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FLORIDA STATE P.E. NUMBER: 2131

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OCU CHILLER REPLACEMENT
LEGEND & NOTES - HVAC

M-001



HVAC KEY NOTES - DEMOLITION

- 1 EXISTING AIR COOLED CHILLERS, 150 TONS, CH-1 AND CH-2 ARE TO BE REMOVED. DISCONNECT EXISTING CHILLED WATER SUPPLY AND RETURN PIPING CONNECTED TO CHILLER. DISCONNECT EXISTING ELECTRICAL POWER TO CHILLER (480 VOLTS, 3PH). DISCONNECT EXISTING CONTROL WIRING CONNECTED TO CHILLER.
- 2 REMOVE EXISTING CHILLED WATER SUPPLY PIPING FROM CONNECTION TO CHILLER TO POINT INDICATED. TEMPORARILY CAP REMAINING ENDS OF PIPING. REMOVE PIPING INSULATION AND ALUMINUM JACKET AS REQUIRED.
- 3 EXISTING STEEL CHILLER SUPPORT STAND TO REMAIN AND TO BE REUSED. EXISTING SUPPORT STAND IS 20 FEET LONG WITH 8" SPACE BETWEEN THE TWO I-BEAMS. STEEL I-BEAMS ARE INDICATED TO BE W14X22 WITH EIGHT (8) PIPE SUPPORTS ATTACHED TO THE ROOF.
- 4 EXISTING PRIMARY CHILLED WATER PUMPS PCHP-1 AND PCHP-2 ARE TO REMAIN. CONTRACTOR SHALL VERIFY PUMPS ARE IN GOOD CONDITION AND OPERATING PROPERLY. EXISTING PUMP CONTROLS SHALL REMAIN.
- 5 EXISTING SECONDARY CHILLED WATER PUMPS SCHP-1 AND SCHP-2 ARE EXISTING TO REMAIN. EXISTING VARIABLE SPEED DRIVES FOR AND PUMP CONTROLS FOR THE PUMPS ARE EXISTING TO REMAIN. CONTRACTOR SHALL VERIFY PUMPS ARE IN GOOD CONDITION AND OPERATING PROPERLY.
- 6 EXISTING (ABOVE ROOF) INSULATED CHILLED WATER SUPPLY AND RETURN PIPING IS EXISTING TO REMAIN UNLESS OTHERWISE NOTED. EXISTING PIPE SUPPORTS ARE EXISTING TO REMAIN. EXISTING PIPE INSULATION (FOAM GLASS) SHALL BE REPLACED IF FOUND DAMAGED OR MISSING AT VALVES OR ON EXISTING PIPING ROUTED ABOVE THE ROOF. EXISTING ALUMINUM JACKET OVER PIPE INSULATION IS EXISTING TO REMAIN CONTRACTOR TO REPAIR OR REPLACE ANY ALUMINUM JACKET FOUND DAMAGED OR MISSING.
- 7 EXISTING (2) ROOF PENETRATIONS WITH POWER WIRING AND CONDUIT TO REMAIN. EXISTING ROOF PENETRATION WITH CONTROL WIRING AND CONDUIT TO REMAIN.
- 8 EXISTING CHILLED WATER PIPING SUPPORT BASE TO REMAIN. CONTRACTOR SHALL PROTECT SUPPORT BASE THROUGHOUT CONSTRUCTION.
- 9 EXISTING HOSE BIBB TO REMAIN. CONTRACTOR TO PROTECT HOSE BIBB THROUGHOUT CONSTRUCTION.

HVAC GENERAL NOTES

1. CONTRACTOR TO PROTECT EXISTING ROOF SURFACE THROUGHOUT CONSTRUCTION. CONTRACTOR SHALL REPAIR OR REPLACE ANY ROOFING MATERIAL OR SECTIONS OF ROOFING DAMAGED DURING CONSTRUCTION AT THEIR OWN EXPENSE.
2. CONTRACTOR TO REPAIR ANY ROOF LEAKS CAUSED BY THEIR WORK DURING CONSTRUCTION AT THEIR OWN EXPENSE. CONTRACTOR SHALL REPAIR OR REPLACE AND DAMAGED WALLS, CEILINGS, FLOORS, DOORS, OR FURNITURE DUE TO ANY ROOF LEAKS CAUSED BY THEIR WORK DURING CONSTRUCTION AT THEIR OWN EXPENSE AND TO THE OWNER'S SATISFACTION.
3. CONTRACTOR REMOVE AND SAVE ALL LIGHTNING PROTECTION CABLES AND AIR TERMINALS ATTACHED TO REMOVED CHILLERS.
4. CONTRACTOR TO PROTECT ALL EXISTING HVAC PIPING AND EQUIPMENT THROUGHOUT CONSTRUCTION.



EXISTING CHILLER CH-1 TO BE REMOVED AND REPLACED



EXISTING CHILLER CH-2 TO BE REMOVED AND REPLACED



EXISTING CHILLED WATER SUPPLY AND RETURN PIPING, PRIMARY PUMPS AND ACCESSORIES TO REMAIN



EXISTING STEEL CHILLER SUPPORT STAND TO REMAIN



EXISTING CHILLED WATER PIPING AND SECONDARY PUMPS TO REMAIN

1 PARTIAL ROOF PLAN - HVAC - DEMOLITION
1/8" = 1'-0"

ROOF MOUNTED CHILLER REPLACEMENT AT OCU ADMINISTRATION BUILDING

CONSULTANTS

CONTRACTOR

DATE

BORRELLI PARTNERS
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ALCANTARA E. BOBES JR., P.E.
FLORIDA P.E. #3410

CONTRACTOR

DATE

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FLORIDA STATE P.E. NUMBER: 2131

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ORLANDO, FLORIDA 32825

OWNER NAME AND ADDRESS

ORANGE COUNTY UTILITIES
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ORLANDO, FLORIDA 32825

PROJECT NO.

16-166

PHASE

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SCALE

1"=0'-0"

FILE NAME

CAD FILE

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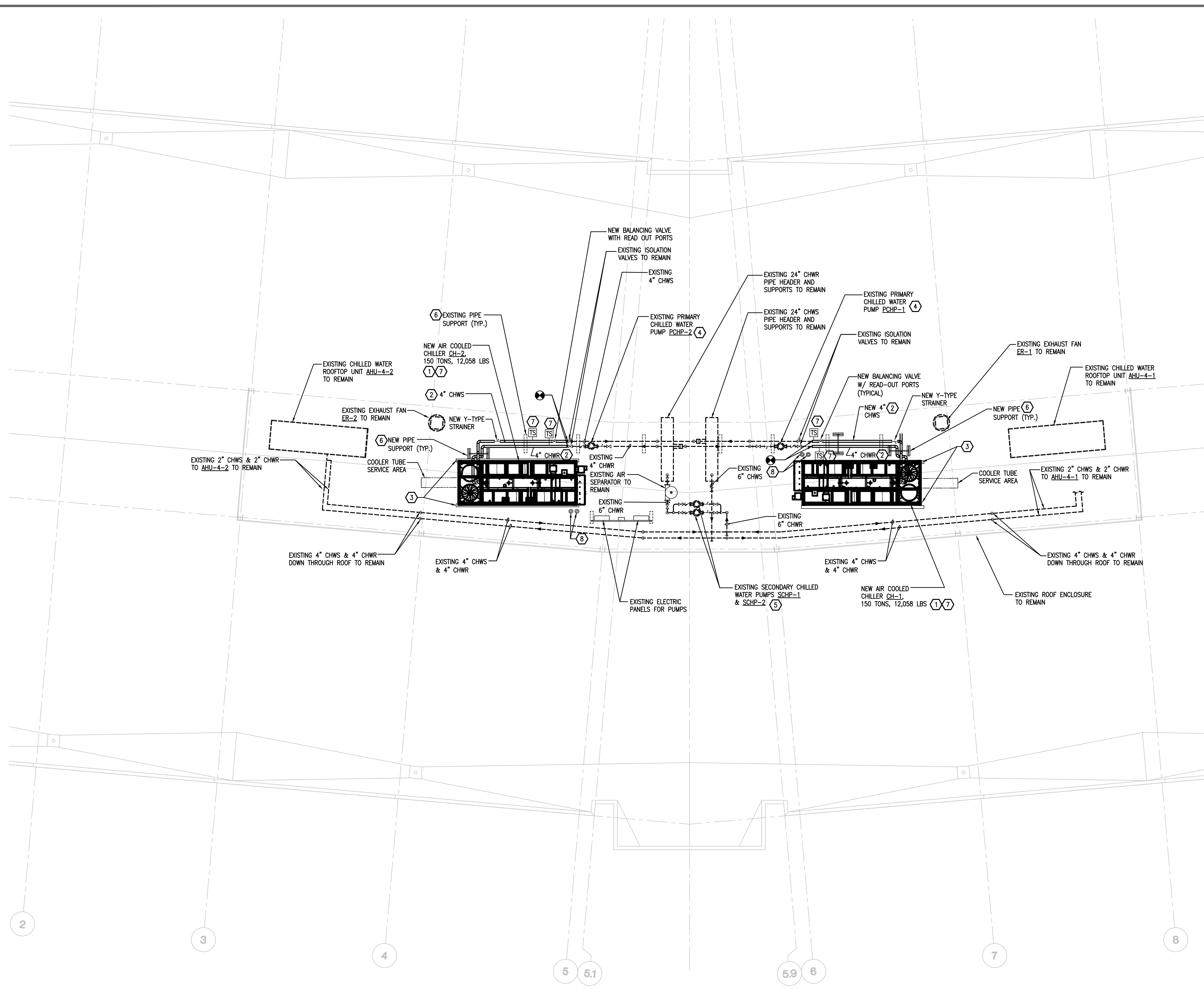
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MD-140



1 PARTIAL ROOF PLAN - HVAC - RENOVATION
1/8" = 1'-0"

HVAC KEY NOTES - RENOVATION

- NEW AIR COOLED CHILLERS, 150 TONS, CH-1 AND CH-2 TO BE INSTALLED ON EXISTING CHILLER ROOF SUPPORT STAND. CONTRACTOR TO RE-CONNECT EXISTING POWER TO NEW CHILLERS, PROVIDE NEW CONDUIT AND POWER WIRING AS REQUIRED. CONTRACTOR TO RE-CONNECT BUILDING CONTROL SYSTEM (BMS) TO NEW CHILLERS, PROVIDE NEW CONDUIT AND CONTROL WIRING AS REQUIRED.
- PROVIDE NEW CHILLED WATER SUPPLY AND RETURN PIPING FROM CONNECTION TO NEW CHILLER AND ROUTED ABOVE THE ROOF TO POINT INDICATED. PROVIDE NEW PIPE INSULATION AND ALUMINUM JACKET ON NEW PIPING. PROVIDE NEW PIPE INSULATION AND ALUMINUM JACKET WHERE REMOVED ON EXISTING CHILLED WATER PIPING.
- EXISTING CHILLER SUPPORT STAND TO REMAIN AND TO BE REUSED. EXISTING SUPPORT STAND IS 20 FEET LONG AND 88" WIDE BETWEEN OUTSIDE EDGE OF THE I-BEAMS. STEEL I-BEAMS ARE INDICATED TO BE W14X22 WITH 8 PIPE SUPPORTS ATTACHED TO ROOF. CONTRACTOR SHALL VISIT THE SITE AND FIELD VERY EXACT DIMENSIONS OF THE EXISTING STRUCTURAL SUPPORT SYSTEM. THE CONTRACTOR SHALL INCLUDE IN HIS BID ALL NECESSARY MODIFICATIONS TO THE STRUCTURAL STEEL SYSTEM AS NECESSARY TO SUPPORT THE ACTUAL CHILLER FURNISHED BY THE CONTRACTOR.
- PRIMARY CHILLED WATER PUMPS PCHP-1 AND PCHP-2 ARE EXISTING TO REMAIN.
- SECONDARY CHILLED WATER PUMPS SCHP-1 AND SCHP-2 ARE EXISTING TO REMAIN.
- PROVIDE NEW PIPE SUPPORTS ON ROOF TO SUPPORT ROUTING OF NEW INSULATED CHILLED WATER SUPPLY AND RETURN PIPING ABOVE THE ROOF. SOME PIPE SUPPORT BASES ARE EXISTING. CONTRACTOR TO PROVIDE ADDITIONAL PIPE SUPPORTS ON THESE EXISTING BASES.
- NEW CHILLER CONTROLS AND TEMPERATURE SENSORS SHALL CONNECT TO EXISTING BUILDING BMS CONTROL SYSTEM. PROVIDE NEW CONTROL WIRING AND CONDUIT AS REQUIRED.
- EXISTING ROOF PENETRATIONS WITH POWER CONDUIT AND WIRING AND CONTROL CONDUIT & WIRING TO REMAIN. PROVIDE NEW NON-FUSED DISCONNECT SWITCH FOR POWER AND CONTROL WIRING. PROVIDE ANY ADDITIONAL ROOF SUPPORTS FOR INSTALLATION OF DISCONNECT SWITCHES ON ROOF.

HVAC GENERAL NOTES

- CONTRACTOR TO PROTECT THE EXISTING ROOF SURFACE THROUGHOUT CONSTRUCTION. CONTRACTOR SHALL REPAIR OR REPLACE ANY ROOFING SECTIONS DAMAGED DURING CONSTRUCTION.
- CONTRACTOR TO REPAIR ANY ROOF LEAKS CAUSED BY THEIR WORK DURING CONSTRUCTION AT THEIR OWN EXPENSE. CONTRACTOR SHALL REPAIR OR REPLACE ANY WALLS, CEILINGS, FLOORS, DOORS, OR FURNITURE DAMAGED INSIDE THE BUILDING DUE TO ANY ROOF LEAKS CAUSED BY THEIR WORK DURING CONSTRUCTION AT THEIR OWN EXPENSE AND TO THE OWNER'S SATISFACTION.
- CONTRACTOR TO PROTECT ALL EXISTING HVAC PIPING AND EQUIPMENT THROUGHOUT CONSTRUCTION.
- ALL NEW SHUT-OFF VALVE HANDLES, Y-STRAINER OUTLET, READ-OUT PORTS AND INSERTION WELLS (WELD-O-LET) SHALL HAVE EXTENSIONS TO BE ACCESSIBLE OUTSIDE OF PIPE INSULATION WITH ALUMINUM JACKET.
- ALL NEW READ-OUT PORTS AND INSERTION WELLS (WELD-O-LET) SHALL HAVE REMOVABLE END CAPS.
- CONTRACTOR TO RE-INSTALL EXISTING LIGHTNING PROTECTION CABLES AND AIR TERMINALS ON NEW CHILLER. EXTEND EXISTING CABLES AS REQUIRED TO ATTACH TO AIR TERMINALS.



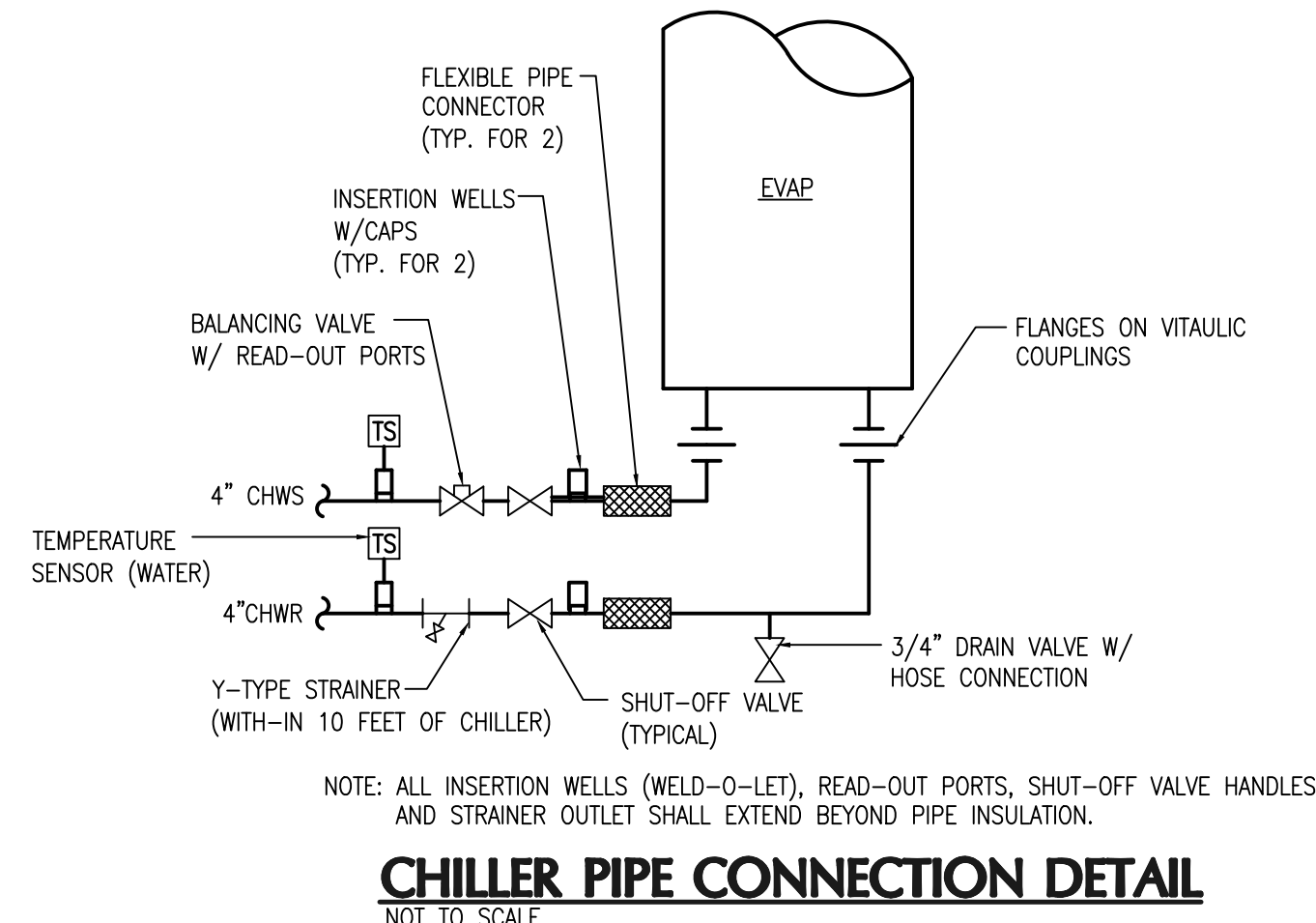
EXISTING CHILLED WATER SUPPLY AND RETURN PIPING TO BE REMOVED TO FIRST ELBOW



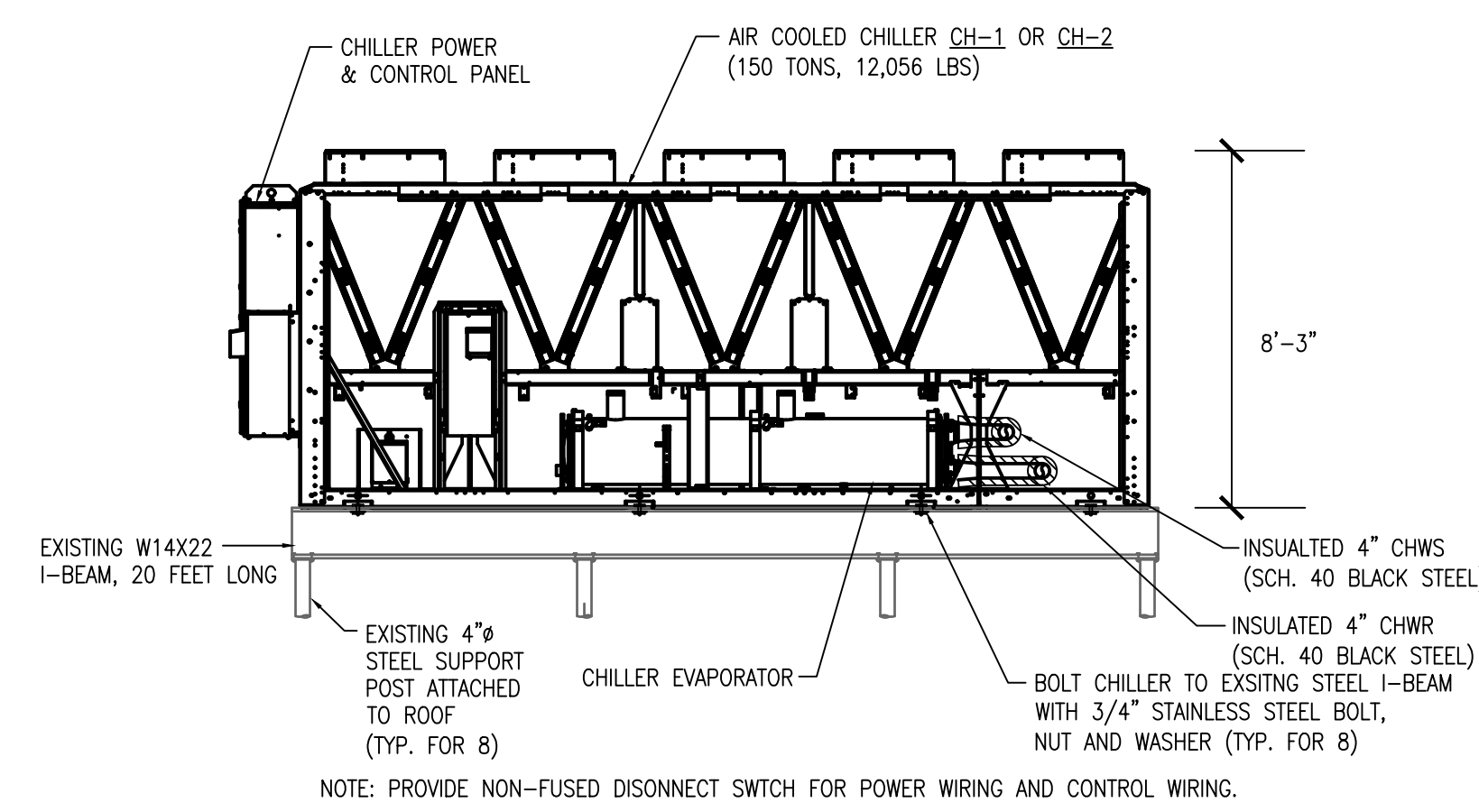
EXISTING CHILLED WATER SUPPLY AND RETURN PIPING TO BE REMOVED TO FIRST ELBOW

ROOF MOUNTED CHILLER REPLACEMENT AT OCU ADMINISTRATION BUILDING

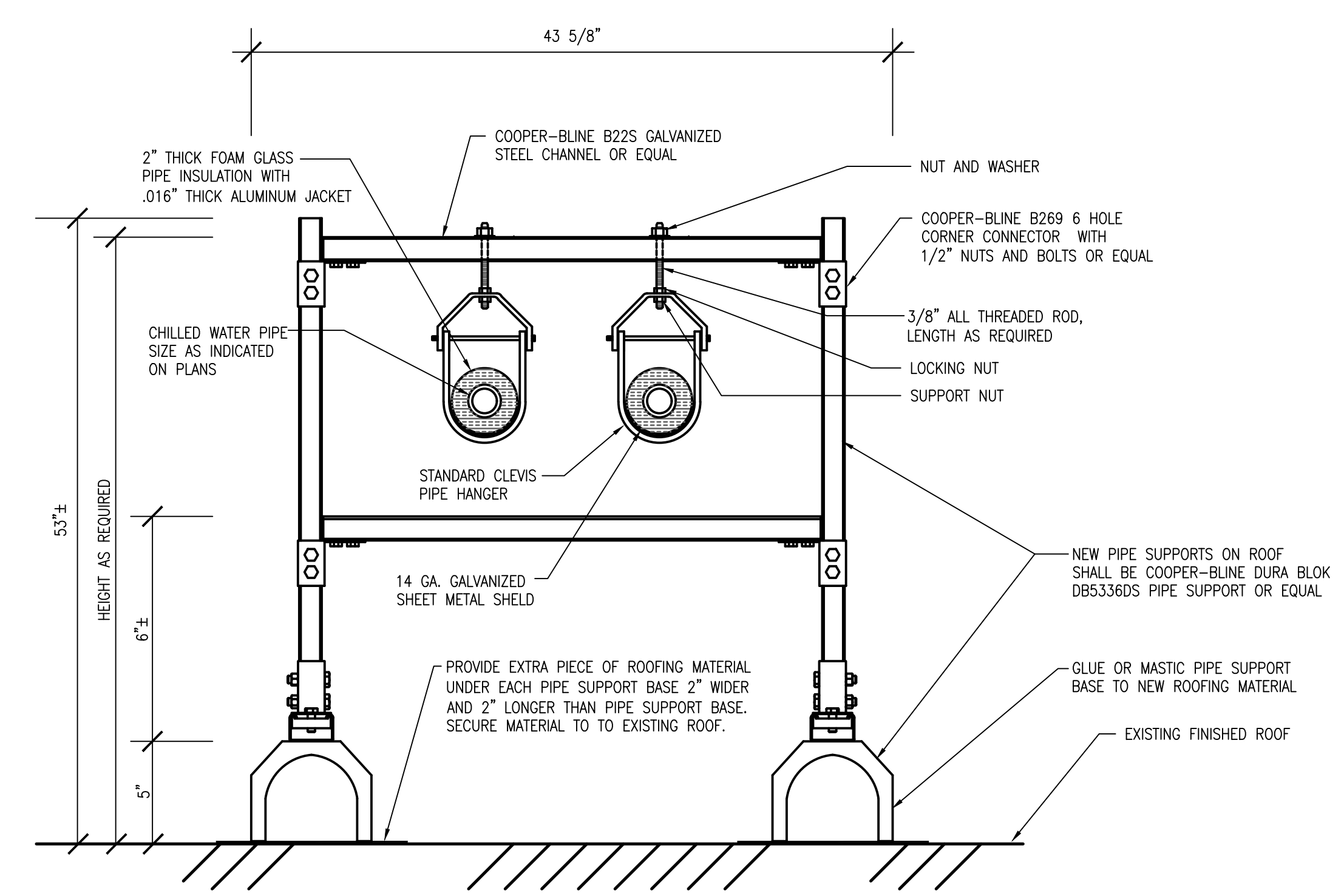
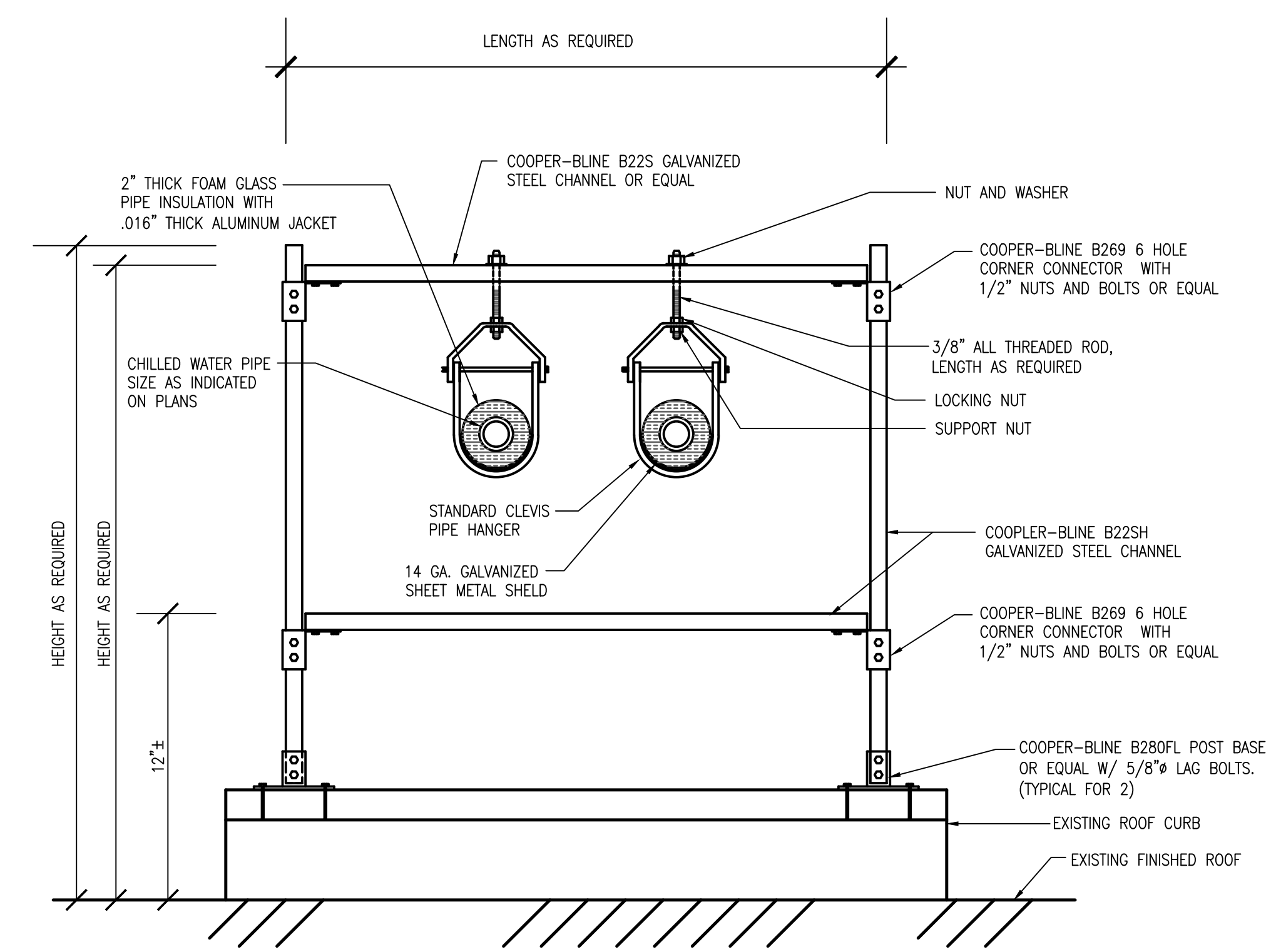
<p>BORRELLI + PARTNERS ARCHITECTURE PLANNING LANDSCAPE INTERIOR</p> <p>730 VASSAR STREET ORLANDO, FL 32804 407.418.1338</p> <p><small>CONFERENTIAL THIS DRAWING IS THE PROPERTY OF BORRELLI + PARTNERS UNLESS OTHERWISE PROVIDED IN WRITING. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED IN THE DRAWING. COPYRIGHT BORRELLI + PARTNERS, INC. 2017</small></p>		<p>BORES ASSOCIATES CONSULTING ENGINEERS</p> <p>150 CHURCH DRIVE, SUITE 200 ORLANDO, FL 32751</p> <p><small>REGISTERED PROFESSIONAL ENGINEER FLORIDA STATE P.E. NUMBER: 2131</small></p>	
<p>CONSULTANTS</p>		<p>CONSULTANTS</p>	
<p>DRAWING TITLE</p> <p>OCU CHILLER REPLACEMENT PARTIAL ROOF PLAN HVAC - RENOVATION</p>		<p>DRAWING TITLE</p> <p>OCU CENTRAL ADMINISTRATION BUILDING 9150 CURRY FORD ROAD ORLANDO, FLORIDA 32825</p> <p>OWNER NAME AND ADDRESS ORANGE COUNTY UTILITIES 9150 CURRY FORD ROAD ORLANDO, FLORIDA 32825</p>	
PROJECT NO.	16-166	REV.	DESCRIPTION
PHASE	100% CONST. DOCS	DATE	
SCALE	1"=0'-0"		
FILE NAME	CAD FILE		
DRAWN BY	MB		
CHECKED BY	ABP		
DATE	02-05-19		



CHILLER PIPE CONNECTION DETAIL
NOT TO SCALE



CHILLER MOUNTING DETAIL
NOT TO SCALE

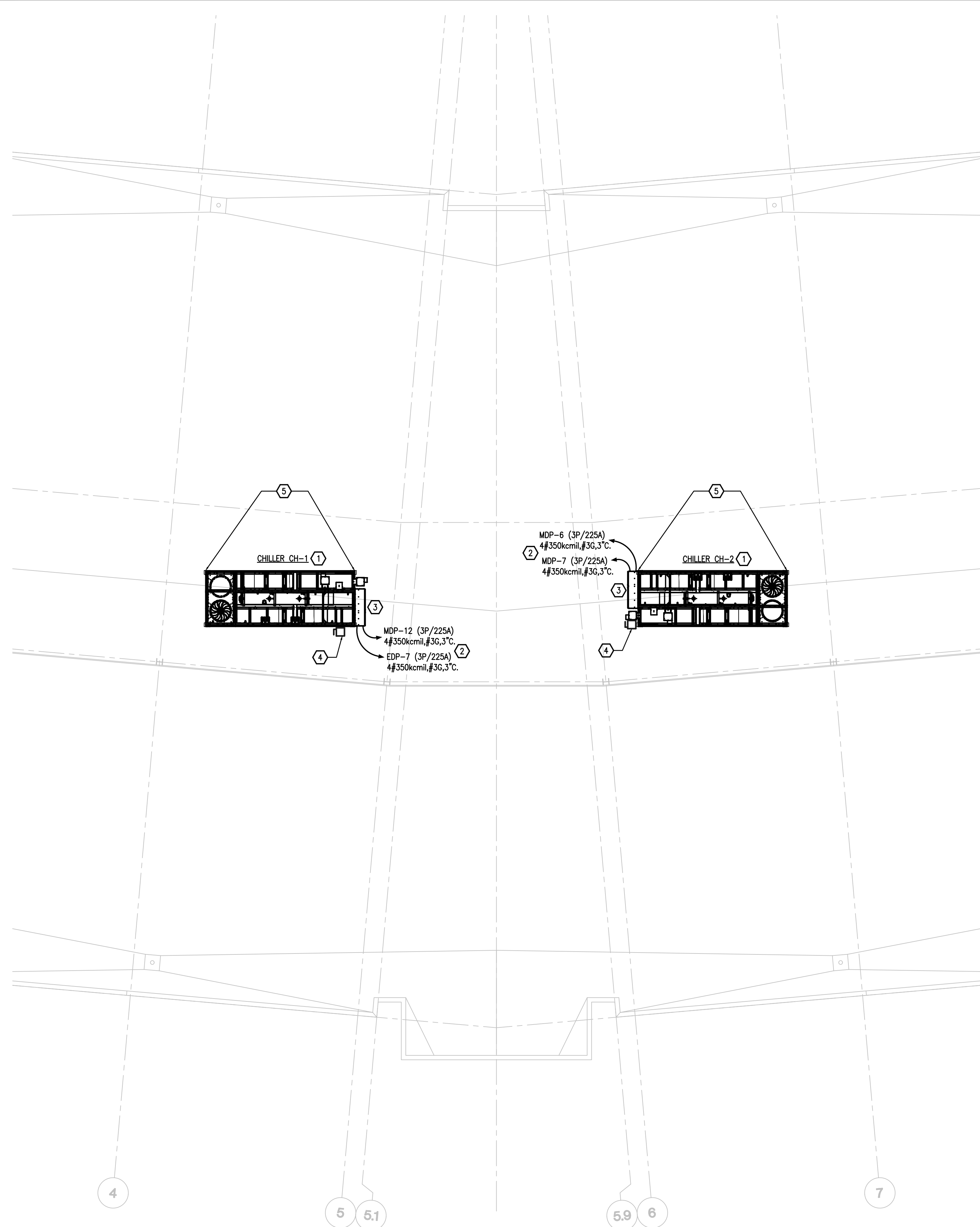


- NOTES:**
1. ALL SUPPORT MATERIALS (CHANNELS, BOLTS, CONNECTORS, & NUTS) SHALL BE HOT DIPPED GALVANIZED STEEL. PAINT ALL SURFACES WITH 2 COATS OF RUST INHIBITING PAINT AFTER ASSEMBLY. IF REQUIRED BY OWNER, CONTRACTOR TO USE 304 STAINLESS STEEL MATERIALS WITH OUT PAINTING.
 2. SPACING OF NEW PIPE SUPPORTS SHALL COMPLY WITH 2017 FBCM SECTION 305 TABLE 305.4.
 3. CONTRACTOR OPTION TO INSTALL ROOF CURBS IN PLACE OF COOPER-BLINE DB5336DS PIPE SUPPORTS. NEW ROOF CURBS SHALL BE ATTACHED TO EXISTING ROOF SURFACE AND SHALL BE A MINIMUM OF 8" HIGHER THAN FINISHED ROOF SURFACE. NEW ROOF CURBS SHALL PATE ES-1 OR APPROVED EQUAL AND INSTALLED PER MANUFACTURERS INSTRUCTIONS. PROVIDE ADDITIONAL COOPER-BLINE PIPE SUPPORTS SIMILAR TO WHAT IS INDICATED FOR EXISTING ROOF CURBS.

CHILLED WATER PIPE SUPPORT ON ROOF DETAIL
NOT TO SCALE

ROOF MOUNTED CHILLER REPLACEMENT AT OCU ADMINISTRATION BUILDING

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		AUGUST O. E. BORGES JR., P.E. FLORIDA STATE P.E. NUMBER: 2131 FLORIDA P.E. # 29410	
		BORRES ASSOCIATES CONSULTING ENGINEERS 100 CHICKA DRIVE, MAITLAND, FL 32751 P. 407-271-9300 FLORIDA STATE P.E. NUMBER: 2131	
CONSULTANTS		SIGNATURE AND DATED SEAL	
DRAWING TITLE		OCU CHILLER REPLACEMENT DETAILS - HVAC	
PROJECT ADDRESS OCU CENTRAL ADMINISTRATION BUILDING 9150 CURRY FORD ROAD ORLANDO, FLORIDA 32825	PROJECT NO. 16-166	DATE 02-05-19	REV.
OWNER NAME AND ADDRESS ORANGE COUNTY UTILITIES 9150 CURRY FORD ROAD ORLANDO, FLORIDA 32825	PHASE 100% CONST. DOCS	SCALE 1"=0'-0"	DESCRIPTION
FILE NAME CAD FILE	DRAWN BY MB	CHECKED BY ABP	DATE



1 PARTIAL ROOF PLAN - HVAC - POWER
1/8" = 1'-0"

EXISTING CONDITIONS

GENERAL NOTES

- VISIT AND CAREFULLY EXAMINE THOSE PORTIONS OF THE BUILDING AND SITE AFFECTED BY THIS WORK BEFORE SUBMITTING PROPOSALS SO AS TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT EXECUTION OF THE WORK. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH EXAMINATION HAS BEEN MADE AND LATER CLAIMS FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WILL NOT BE RECOGNIZED.
- UTILITIES AND SERVICES INDICATED ARE TAKEN FROM FIELD SURVEYS AND RECORD PLANS. IT IS TO BE UNDERSTOOD THAT SOME SYSTEMS AND EQUIPMENT MAY NOT BE SHOWN ON THE PLAN. IT IS ALSO TO BE UNDERSTOOD THAT UNFORESEEN CONDITIONS PROBABLY EXIST AND NEW WORK MAY NOT BE FIELD LOCATED EXACTLY AS SHOWN ON THE DRAWINGS. COOPERATION WITH OTHER TRADES IN ROUTING; AS DETERMINED DURING CONSTRUCTION AND AS DIRECTED BY THE ARCHITECT/ENGINEER, MAY BE NECESSARY AND IT IS INTENDED THAT SUCH DEVIATION SHALL BE CONSIDERED AS PART OF THIS CONTRACT. IT IS ALSO UNDERSTOOD THAT THE PLANS ARE NOT COMPLETELY TO SCALE. THIS CONTRACTOR IS TO FIELD VERIFY DIMENSIONS OF ALL SITE UTILITIES, ETC. PRIOR TO BID AND INCLUDE ANY DEVIATIONS IN THE CONTRACT.

KEY NOTES

- EXISTING CHILLER IS TO BE REPLACED WITH NEW. REMOVE EXISTING LIGHTNING PROTECTION CABLES AND AIR TERMINALS FROM EXISTING CHILLER AND REINSTALL ON NEW CHILLER.
- REPLACE EXISTING CHILLER FEEDER BREAKERS IN PANELS "MDP" AND "EDP" IN FIRST FLOOR MAIN ELECTRICAL ROOM WITH 3 POLE, 225 AMP CIRCUIT BREAKERS WITH SAME AIC RATING AS EXISTING. DESIGN INTENT IS TO REUSE EXISTING CONDUITS AND FEEDERS AND EXTEND AS REQUIRED TO NEW CHILLER PANEL. CHILLERS ARE TO BE FURNISHED WITH DISCONNECT SWITCHES BY THE MANUFACTURER.
- PROVIDE POWER FOR NEW FACTORY INSTALLED CONTROL TRANSFORMER AS REQUIRED BY MANUFACTURER SIMILAR TO EXISTING CONTROL TRANSFORMER BEING REPLACED.
- EXISTING ELECTRICAL DISCONNECT (NOT SERVING CHILLER) TO BE REMOVED TO ACCOMMODATE THE CHILLER REPLACEMENT AND REINSTALLED AFTER THE NEW CHILLER IS INSTALLED.
- PRIOR TO REMOVAL OF THE CHILLER THE CONTRACTOR SHALL REMOVE ALL EXISTING LIGHTNING PROTECTION AIR TERMINALS AND CABLING TO ACCOMMODATE THE CHILLER REPLACEMENT. CONTRACTOR SHALL RE-INSTALL TERMINALS AND CABLING ON NEW CHILLERS. CONTRACTOR SHALL PROVIDE NEW AIR TERMINALS AND NEW CABLING AS NECESSARY TO PROPERLY PROTECT THE NEW CHILLERS. CONTRACTOR SHALL RECONNECT THE LIGHTNING PROTECTION CABLING TO THE GROUND CONDUCTORS.

ELECTRICAL SCOPE OF WORK

- PROVIDE ELECTRICAL SUPPORT FOR THE REMOVAL AND REPLACEMENT OF (2) EXISTING AIR COOLED CHILLERS.
- REPLACE EXISTING CIRCUIT BREAKERS IN 1ST FLOOR PANELS WITH NEW.
- PROVIDE NEW FACTORY FURNISHED ELECTRICAL DISCONNECT FOR NEW CHILLERS. DISCONNECT WILL BE INTEGRATED INTO THE CHILLERS.
- CONTRACTOR SHALL REMOVE AND REINSTALL ANY ELECTRICAL DEVICES, DISCONNECTS ETC. ON THE CHILLER SUPPORT STAND NECESSARY TO REMOVE AND REPLACE THE (2) CHILLERS. ANY ITEMS DAMAGED AS A RESULT OF THE CHILLER REPLACEMENT SHALL BE REPLACED BY THE CONTRACTOR.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH FLORIDA BUILDING CODE 6th EDITION (2017 FBC), THE 2014 NATIONAL ELECTRICAL CODE (NEC), ALL APPLICABLE LOCAL, COUNTY, AND STATE CODES AND STANDARDS, ALL REQUIREMENTS OF THE SERVING ELECTRIC UTILITY AND THE AMERICANS WITH DISABILITIES ACT (ADA).
- PRIOR TO BID, THE CONTRACTOR SHALL VISIT THE SITE AND SHALL VERIFY ALL EXISTING SYSTEMS, FIELD CONDITIONS AND POTENTIAL CONFLICTS WHICH WILL IMPACT THE WORK. THE CONTRACTOR SHALL VISIT THE ROOF AND THE 1ST FLOOR ELECTRICAL ROOM.
- COORDINATE ALL WORK DONE UNDER THIS DIVISION WITH WORK TO BE PERFORMED UNDER DIVISION 15.
- COORDINATE WITH OTHER TRADES FOR EXACT LOCATIONS OF ALL MOTORS AND OTHER EQUIPMENT TO BE INSTALLED AND/OR WIRED UNDER THIS DIVISION BUT FURNISHED UNDER ANOTHER DIVISION OF THE SPECIFICATIONS.
- ALL BRANCH CIRCUITS FOR 120 VOLT, 20 AMP CIRCUITS EXCEEDING EIGHTY FEET IN LENGTH SHALL BE INCREASED IN SIZE AS REQUIRED TO ALLOW FOR VOLTAGE DROP LOSSES.
- PACK ALL SLEEVES FOR CONDUITS PASSING THROUGH FIRE RATED WALLS AND FLOOR SLABS WITH FIRE RESISTANT MATERIALS. ALL PENETRATIONS SHALL BE UL RATED.
- TYPE AC CABLE AND ELECTRICAL NON-METALLIC TUBING SHALL NOT BE PERMITTED. TYPE MC CABLE IS PERMITTED AS LONG AS IT IS ACCEPTABLE TO THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ).
- COORDINATE THE REQUIRED SIZE OF ALL CIRCUIT BREAKERS FEEDING EQUIPMENT (I.E. MOTORS, HVAC, KITCHEN EQUIPMENT, SPECIAL PURPOSE OUTLETS, OWNER FURNISHED EQUIPMENT, ETC.) WITH APPROVED EQUIPMENT SHOP DRAWINGS AND OWNER REPRESENTATIVES PRIOR TO ORDERING PANELBOARDS. BREAKERS SHALL BE SIZED PER THE NEC, THE EQUIPMENT NAME PLATE AND MANUFACTURER'S RECOMMENDATIONS.
- ALL CONDUITS IN OR UNDER SLAB OR UNDERGROUND SHALL BE PVC SCHEDULE 40.
- ALL CONDUITS ABOVE SLAB, WHETHER EXPOSED OR CONCEALED, SHALL BE EMT, IMC, OR RIGID GALVANIZED STEEL.
- FLEXIBLE METAL RACEWAYS SHALL NOT EXCEED 6' IN LENGTH.
- "LIQUID-TIGHT" TYPE FLEXIBLE WEATHERPROOF RACEWAYS SHALL HAVE A METALLIC INTERIOR AND NOT EXCEED 6' IN LENGTH.
- ALL BOXES, PLASTER RINGS, EXTENSION RINGS, AND BOX COVERS SHALL BE METAL.
- ALL CONDUITS SHALL BE PARALLEL AND PERPENDICULAR TO STRUCTURAL MEMBERS.
- ALL BENDS SHALL BE MADE IN CONDUIT USING PROPER EQUIPMENT AND MEET NATIONAL ELECTRICAL CODE (NEC) REQUIREMENTS.
- ALL WIRE, INCLUDING BUT NOT LIMITED TO FEEDERS AND BRANCH CIRCUIT WIRING, SHALL BE COPPER - #12 AWG THWN MINIMUM EXCEPT FOR LOW-VOLTAGE WIRING FOR COMMUNICATIONS SYSTEMS, WHICH MAY BE SMALLER.
- ALL DEVICES SHALL BE COMMERCIAL OR SPECIFICATION GRADE.
- ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY POWER AND TEMPORARY LIGHTING DURING CONSTRUCTION. TEMPORARY POWER SHALL PROVIDE ADEQUATE POWER FOR NORMAL CONSTRUCTION USE. TEMPORARY LIGHTING SHALL PROVIDE ADEQUATE LIGHT SO THAT THE INDIVIDUAL TRADES WORK CAN BE COMPLETED.
- ALL ELECTRICAL EQUIPMENT SHALL BE UL LISTED.
- A GREEN INSULATED COPPER GROUND CONDUCTOR SHALL BE INSTALLED IN ALL RACEWAYS.
- GROUNDING SYSTEM SHALL BE IN ACCORDANCE WITH NEC ARTICLE 250 AND APPLICABLE REQUIREMENTS OF IEEE STANDARDS 142 AND 241.
- CONDUCTORS ARE SIZED FOR VOLTAGE DROP PER N.E.C. ARTICLES 210.19(A) NOTE 4, 215.2(A)(1)NOTE 2 AND THE 2017 F.B.C. ENERGY CONSERVATION CODE C405.6.3. ELECTRICAL CONTRACTOR SHALL PERFORM VOLTAGE DROP CALCULATIONS IN ACCORDANCE WITH N.E.C. ARTICLES 210.19(A)(1)NOTE 4, 215.2(A)NOTE 2 AND THE 2017 F.B.C. ENERGY CONSERVATION CODE C405.6.3 ON ANY CIRCUITS THAT ARE INSTALLED THAT DIFFER FROM THE DESIGN SHOWN IN THESE PLANS. FEEDER CONDUCTORS AND BRANCH CIRCUIT CONDUCTORS SHALL EACH BE SIZED FOR A MAXIMUM VOLTAGE DROP OF 3% AND A COMBINED MAXIMUM VOLTAGE DROP OF 5% TOTAL.
- THE CONTRACTOR SHALL PROVIDE A COMPLETE ELECTRICAL SHOP DRAWING SUBMITTAL TO THE ENGINEER FOR REVIEW AND APPROVAL. THE ELECTRICAL SUBMITTAL SHALL INCLUDE ALL ELECTRICAL PANELS, MDP'S, BREAKERS, DISCONNECTS, DEVICES, RECEPTACLES, CONDUIT, RACEWAYS, LIGHT FIXTURES, POLES, SWITCHES, OCCUPANCY SENSORS, PULL BOXES, WIRING ETC. CONTRACTOR SHALL NOT ORDER ANY ELECTRICAL EQUIPMENT UNTIL THIS SUBMITTAL IS REVIEWED AND ACCEPTED BY THE ENGINEER OF RECORD. CONTRACTOR SHALL SUBMIT THE SHOP DRAWING AS ONE COMPLETE SUBMITTAL AND SHALL NOT PIECE MEAL THE SUBMITTAL SPREAD OUT OVER THE COURSE OF DAYS AND WEEKS. FAILURE TO SUBMIT A COMPLETE ELECTRICAL SHOP DRAWING SUBMITTAL SHALL RESULT IN AN IMMEDIATE REJECTION OF THE SHOP DRAWING SUBMITTAL.



EXISTING CHILLER TO BE REMOVED AND REPLACED (TYPICAL OF 2)



EXISTING INTEGRATED CHILLER DISCONNECTS TO BE REMOVED ALONG WITH CHILLER



EXISTING LIGHTNING PROTECTION CABLING AND AIR TERMINALS TO BE REMOVED AND REINSTALLED



EXISTING DISCONNECT TO BE REMOVED AND REINSTALLED

GENERAL NOTES

ROOF MOUNTED CHILLER REPLACEMENT AT OCU ADMINISTRATION BUILDING

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DRAWING TITLE
OCU CHILLER REPLACEMENT PARTIAL ROOF PLAN ELECTRICAL - RENOVATION

PROJECT ADDRESS
OCU CENTRAL ADMINISTRATION BUILDING
9150 CURRY FORD ROAD
ORLANDO, FLORIDA 32825
OWNER NAME AND ADDRESS
ORANGE COUNTY UTILITIES
9150 CURRY FORD ROAD
ORLANDO, FLORIDA 32825

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