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09-21-2007	TITLE 1 60% REVIEW	A
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07-31-2008	TITLE # DESIGN 90% REVIEW SUBMITAL E	E
08-25-2008	TITLE # DESIGN 100% OWNER REVIEW	F
02-19-2009	TITLE # CONSTRUCTION BID ISSUE	G

GENERAL NOTES:

- BIDDER/CONTRACTOR SHALL VISIT THE SITE, EXAMINE AND VERIFY CONDITIONS UNDER WHICH THE WORK SHALL BE CONDUCTED AND ACCOUNT FOR FIELD CONDITIONS AND DIMENSIONAL CONSIDERATIONS IN ALL BIDS SUBMITTED.
- SOME STANDARD SYMBOLS, ABBREVIATIONS AND DETAILS INDICATED IN CONTRACT DOCUMENTS MAY NOT BE APPLICABLE TO THIS SPECIFIC CONTRACT ISSUE.
- CONTRACTOR SHALL REVIEW THE DOCUMENTS OF INTERFACING TRADES AND CONTRACTS PRIOR TO BIDDING AND COMMENCEMENT OF WORK TO ENSURE COMPLETE COORDINATION OF FINISHED WORK.
- BEFORE AWARD OF CONTRACT, IF THERE ARE QUESTIONS ABOUT INTENT, CLARITY, APPLICATION OF NOTES, OR WORK SHOWN OR SPECIFIED, REQUEST WRITTEN CLARIFICATION FROM ARCHITECT/ENGINEER. ANY CLARIFICATION PROVIDED AFTER CONTRACT AWARD SHALL BE AT NO ADDITIONAL COST TO OWNER.
- CONFIRM THAT EXISTING SYSTEMS ARE INACTIVE AND PURGED BEFORE TAPPING INTO THEM, UNLESS OTHERWISE DIRECTED.
- SCHEDULE AND COORDINATE UTILITY SHUTDOWNS AND DEMOLITION WORK WITH OWNER.
- DO NOT INTERFERE WITH OWNER'S OPERATIONS. SCHEDULE PLANNED SHUTDOWNS WITH OWNER'S WRITTEN APPROVAL, AT LEAST ONE WEEK IN ADVANCE.
- COMPLY WITH OWNER'S CORPORATE STANDARDS AND ALL APPLICABLE LOCAL STANDARDS, CODES AND REGULATIONS.
- NOT USED
- COORDINATE AND SCHEDULE EXTENT OF DEMOLITION WORK WITH OWNER. DEMOLITION WORK SHALL BE COMPLETED TO THE EXTENT INDICATED OR SPECIFIED.
- DEMOLISHED MATERIALS, UNLESS OTHERWISE DIRECTED, BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE PROMPTLY REMOVED FROM THE SITE BEFORE THE END OF EACH WORKDAY. OWNER RETAINED SALVAGED EQUIPMENT SHALL BE PROPERLY PROTECTED FOR REUSE OR CRATED FOR PROTECTION AND DELIVERED TO OWNER'S SITE STORAGE (ALL REFRIGERANTS AND HAZARDOUS MATERIAL SHALL BE PROPERLY DISPOSED OF PER ALL APPLICABLE STATE, FEDERAL AND LOCAL CODES).
- REFER TO TRUSS SPACE ALLOCATION DETAIL FOR ROUTING OF MECHANICAL AND ELECTRICAL WORK. THE ALLOCATION SHALL BE ADHERED TO UNLESS OTHERWISE NOTED ON DRAWINGS. EXCEPTIONS SHALL REQUIRE SPECIFIC WRITTEN APPROVAL BY THE ARCHITECT/ENGINEER.
- COLUMN MOUNTINGS, UNLESS OTHERWISE INDICATED ON THE DRAWINGS: RESERVE NORTH AND EAST SIDES OF COLUMNS FOR MOUNTING OF ELECTRICAL WORK ONLY, E.G. SWITCHES, STARTERS, ALARMS, CONDUIT, ETC. RESERVE SOUTH AND WEST SIDES OF COLUMNS FOR MOUNTING OF MECHANICAL WORK ONLY, E.G. PIPING, THERMOSTATS, WATER COOLERS, FIRE HOSES, ETC. INSTALL RECEPTACLES AND POWER OUTLETS WITHIN THE WEB OF THE COLUMN. FACE-OF-COLUMN SURFACE MOUNTING OF THESE DEVICES IS PROHIBITED.
- COORDINATE AND PERFORM WORK BASED ON REVIEWED/CERTIFIED SHOP DRAWINGS. FIELD CHECKS OF INSTALLED WORK AND LATEST REVISION OF CONTRACT DOCUMENTS, INCLUDING ALL INTERFACING DISCIPLINE DRAWINGS, BEFORE PROCEEDING WITH PROCUREMENT, DETAILING, FABRICATION OR INSTALLATION. EQUIPMENT INSTALLED PRIOR TO REVIEW OF SHOP DRAWINGS BECOMES RESPONSIBILITY OF THE CONTRACTOR. CORRECTIONS/MODIFICATIONS SHALL BE MADE AS DIRECTED BY ENGINEER AND OWNER AT NO ADDITIONAL COST.
- FIELD CHECK AND COORDINATE WORK WITH CONTRACT DOCUMENTS AND OTHER TRADES FOR: INVERT ELEVATIONS, ELEVATION ROUTING, SPACE PRIORITIES, DIMENSIONS AND CLEARANCES TO ENSURE THAT NO CODE CONFLICT OR INTERFERENCE WITH OTHER WORK OCCURS. LACKING SUCH COORDINATION, CORRECTIVE WORK ACCEPTABLE TO OWNER SHALL BE DONE BY THE CONTRACTOR, WITHIN SCHEDULE, AT NO ADDITIONAL COST.
- COORDINATE PURCHASED EQUIPMENT CONCRETE PAD AND ROOF CURB LOCATIONS, SIZES, AND CONSTRUCTION REQUIREMENTS, WITH REVIEWED AND CERTIFIED SHOP DRAWINGS AND ARCHITECTURAL AND STRUCTURAL TRADES.
- REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION AND PROPER FLASHING OF ROOF CURBS AND SUPPORTS.
- REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF DIFFUSERS, REGISTERS AND GRILLES. COORDINATE THE LOCATION OF FIRE PROTECTION SPRINKLER HEADS WITH THESE ITEMS.
- REFER TO REFERENCED CODES, AS WELL AS CIVIL, MECHANICAL AND ARCHITECTURAL DRAWINGS AND SPECIFICATIONS, FOR BUILDING SURFACES PENETRATION AND SEALING REQUIREMENTS.
- FIRE STOP AND SEAL ALL FIRE RATED PARTITION AND FLOOR PENETRATIONS.
- DO NOT ROUTE ANY PIPING, DUCTWORK OR EQUIPMENT WITHIN THE "DEDICATED ELECTRICAL SPACES" PER NATIONAL ELECTRICAL CODE (NEC).
- BEFORE PENETRATING EXISTING CONCRETE OR SOIL SURFACES, CONSULT WITH ALL LOCAL UTILITIES' PROGRAMS FOR THE AREA OF WORK AND VERIFY LOCATION OF ALL EXISTING UNDERGROUND UTILITIES AND STRUCTURES BY USE OF "ELECTRONIC" OR SIMILAR NON-INVASIVE DETECTOR DEVICES. IF POTENTIAL INTERFERENCES ARE DISCOVERED, PROPOSE ALTERNATE ROUTING AND ASSOCIATED COSTS TO OWNER AND ARCHITECT/ENGINEER FOR APPROVAL BEFORE PROCEEDING.
- ALL CURBS FOR EQUIPMENT, ROOF OPENINGS, ETC. SHALL BE PROVIDED BY ARCHITECTURAL. SEE ARCHITECTURAL DRAWINGS FOR LOCATION AND DETAILS OF CURBS. SEE SECTION 07720, ROOF ACCESSORIES, AND 05500, METAL FABRICATIONS, FOR ASSOCIATED SPECIFICATIONS. COORDINATE CONSTRUCTION AND PLACEMENT OF CURBS AND ROOF OPENINGS WITH APPROVED MECHANICAL EQUIPMENT SHOP DRAWINGS.

PIPING RELATED ITEMS

- PIPE ROUTES SHOWN ARE SCHEMATIC IN NATURE. FIELD VERIFY ROUTING, AND CONNECTION POINTS AND INSTALL WORK AS REQUIRED BY FIELD CONDITIONS. MAJOR VARIATIONS FROM THAT WHICH IS INDICATED ON THE DRAWINGS SHALL BE APPROVED BY THE ARCHITECT-ENGINEER.
- PIPING FLOW DIAGRAMS MAY NOT INDICATE ALL CONNECTIONS, VALVES, DRAINS, VENTS AND OTHER DEVICES REQUIRED BY PHYSICAL LAYOUT, ROUTING OR BY EQUIPMENT MANUFACTURER. REFER TO PLANS, SECTIONS, DETAILS, SPECIFICATIONS AND REVIEWED/CERTIFIED SHOP DRAWINGS. WHERE CONTRACT DOCUMENTS CONFLICT, REQUEST ARCHITECT-ENGINEER INTERPRETATION.
- PIPING FLOW DIAGRAMS AND DETAILS MAY NOT INDICATE ALL CONNECTIONS, VALVES, DRAINS, VENTS AND OTHER DEVICES OR PIPING SPECIALTIES REQUIRED BY SYSTEMS FOR FURNISHED EQUIPMENT OR FOR COMPLETE, PROPERLY FUNCTIONING AND OPERATING SYSTEMS. COORDINATE AND PROVIDE AS REQUIRED. SEE I&C DRAWINGS FOR ADDITIONAL REQUIREMENTS.
- PROVIDE MINIMUM FOUR-INCH HIGH, EPOXY PROTECTED, CONCRETE HOUSEKEEPING PADS UNDER MECHANICAL EQUIPMENT, UNLESS SPECIFICALLY STATED AS OMITTED OR INDICATED AS A DIFFERENT DEPTH. VARIATIONS MAY BE ACCEPTABLE DUE TO THE REQUIREMENTS OF THE MOUNTING, GROUTING, ELEVATION OF EQUIPMENT BEING INSTALLED. COORDINATE PAD LOCATION AND SIZES WITH REVIEWED/CERTIFIED SHOP DRAWINGS AND ALL RELATED TRADES.
- TAP BRANCH-PIPING CONNECTIONS FROM TOP OF MAIN FOR ALL SERVICES EXCEPT CLOSED LOOP CHILLED WATER, HEATING HOT WATER, OR AS SPECIFICALLY INDICATED ON DRAWINGS.
- VALVES LOCATED IN TRUSS SPACE SHALL BE SAFELY REACHABLE AND OPERABLE FROM A CATWALK, SERVICE PLATFORM, OR LIFT DEVICE. ROUTE AND ARRANGE PIPING AND VALVING, AND PROVIDE U-JOINTED, TWO-BEARING SUPPORTED, VALVE STEM EXTENSION RODS, AS REQUIRED TO MEET THIS CRITERIA.
- INSTALL LOOSE TRIM FURNISHED WITH EQUIPMENT, AND IF NECESSARY, SUPPLEMENT WITH LIKE QUALITY TRIM FOR A COMPLETE, PROPERLY FUNCTIONING AND OPERATING SYSTEM. REFER TO REVIEWED/CERTIFIED SHOP DRAWINGS.
- PROVIDE MANUAL CHAIN OPERATOR FOR EXTENDED/SUPPORTED STEM VALVES SIZED 3" AND LARGER, EXCEPT FOR DEAD-END VALVES, IN EQUIPMENT SPACES AND WHERE INDICATED, WHICH CANNOT BE REACHED FROM NORMAL OPERATING LEVEL. PROVIDE CHAINS TO WITHIN 4'-0" ABOVE FLOOR, UNLESS OTHERWISE INDICATED ON DRAWINGS. OFFSET CHAINS THAT FALL IN AISLE WAYS, OVER EQUIPMENT OR OTHERWISE CAUSE OBSTRUCTION, AND SECURE TO NEAREST COLUMN, ANCHOR OR WALL.
- DO NOT OBSTRUCT STRUCTURE DOORS OR FURNISHED EQUIPMENT ACCESS DOORS, HATCHES, COVERS OR PANELS WITH PIPING, CONDUIT OR DUCT.
- ROUTE DRAIN, VENT, RELIEF, AND SERVICE PIPING TO AND FROM EQUIPMENT, AS DIRECTED BY EQUIPMENT MANUFACTURER. TEST, FLUSH AND FILL AS REQUIRED FOR A COMPLETE OPERATING SYSTEM.
- DO NOT ROUTE DRAIN PIPING ACROSS FLOOR/AISLE OR OTHER WALKWAY SURFACES.
- ROUTE SAFE FLUIDS VENT DISCHARGE AND DRAIN PIPING TO NEAREST HUB OUTLET OR FLOOR DRAIN. ROUTE BELOW FINISHED FLOOR WHEN CROSSING AISLES.
- ROUTE SAFE FLUIDS HIGH ELEVATION SOURCED AUTOMATIC AND MANUAL DEVICE VENTS TO NEAREST COLUMN AND TERMINATE 4'-0" AFF. TERMINATE WITH PLUGGED END BALL VALVE (BA).
- ROUTE SCREEN TERMINATED FUEL GAS VENTS TO ATMOSPHERE PER APPLICABLE CODES/STANDARDS/REGULATIONS/UNDERWRITER'S REQUIREMENTS WITHOUT PRODUCING ADJACENT/DOWNWIND HAZARDS.
- ROUTE AND SIZE VENTS FROM NATURAL GAS REGULATORS THROUGH ROOF PER APPLICABLE CODE AND MANUFACTURER'S RECOMMENDATIONS.
- ROUTE HAZARDOUS FLUIDS VENTS, INCLUDING REFRIGERANT VENTS, TO ATMOSPHERE PER APPLICABLE CODES/STANDARDS/REGULATIONS/UNDERWRITER'S REQUIREMENTS WITHOUT PRODUCING ADJACENT/DOWNWIND HAZARDS.
- PROVIDE 16 GAGE GALVANIZED STEEL SAFETY SPLASH COVERS OVER DRAINS WHERE STEAM CONDENSATE BLOWDOWN OCCURS.
- PROVIDE SECURED SPLASH BLOCKS FOR ROOF-MOUNTED EQUIPMENT DRAIN POINTS. CONFIRM WITH OWNER AND APPLICABLE CODES THAT FLUID IS ALLOWED TO BE ROUTED TO ROOF DRAINS.

- DO NOT SUPPORT PIPING FROM TOP CHORD OF TRUSS.
- CONTRACTOR SHALL COORDINATE AND SIZE ALL REFRIGERANT LIQUID AND SUCTION LINES WITH MANUFACTURER BASED ON ROUTING BETWEEN EQUIPMENT, AND PROVIDE DUAL SAFETY HANDLES FOR BALL VALVES AS REQUIRED TO MEET SYSTEM CAPACITY AND CONTROL AS SPECIFIED.
- PROVIDE ACCESS DOORS AS MAY BE REQUIRED TO ALL VALVES, CLEAN-OUTS AND OTHER DEVICES.
- INDOOR AND OUTDOOR FUEL GAS APPLIANCE PRESSURE REGULATORS AND GAS TRAP ASSEMBLIES SHALL BE VENTED TO THE OUTSIDE ATMOSPHERE AT A MINIMUM DISTANCE OF 15'-0" FROM ANY MECHANICAL OR GRAVITY AIR INTAKE OPENINGS. PROVIDE MEANS TO PREVENT WATER FROM ENTERING THE VENT AND BLOCKAGE DUE TO INSECTS AND FOREIGN MATTER. SIZE VENTS PER THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS AND DO NOT COMBINE WITH ANY OTHER VENT. CONFIRM PROPOSED VENTING WITH LOCAL CODE AUTHORITIES.
- COORDINATE LOCATION OF FLOOR DRAINS, HUB OUTLETS, ETC., WITH APPROVED EQUIPMENT SHOP DRAWINGS, ALL OTHER TRADES AND ASSOCIATED HOUSEKEEPING PADS IN ORDER TO ELIMINATE INTERFERENCES AND TRIP HAZARDS DUE TO DRAIN PIPING IN WALKING SPACES.
- PROVIDE REQUIRED, ACCESSIBLE, PLUMBING FIXTURE TRAP SEAL PRIMERS, INCLUDING TUBING AND CONNECTIONS, PER SITE APPLICABLE CODES AND AS IDENTIFIED ON DRAWINGS. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- DO NOT SUPPORT DUCTWORK FROM TOP CHORD OF TRUSS.
- DUCT ROUTES SHOWN ARE SCHEMATIC IN NATURE. FIELD VERIFY ROUTING AND CONNECTION POINTS AND PROVIDE WORK AS REQUIRED BY FIELD CONDITIONS.
- DUCTWORK FLOW DIAGRAMS MAY NOT INDICATE ALL CONNECTIONS, DAMPERS, DEVICES REQUIRED BY PHYSICAL LAYOUT, ROUTING OR BY EQUIPMENT MANUFACTURER. REFER TO PLANS, SECTIONS, DETAILS, SPECIFICATIONS AND REVIEWED/CERTIFIED SHOP DRAWINGS. WHERE CONFLICT BETWEEN CONTRACT DOCUMENTS IS PERCEIVED, REQUEST ARCHITECT-ENGINEER INTERPRETATION PRIOR TO FABRICATION AND INSTALLATION.
- PROVIDE ACCESS DOORS OR CONTROL EXTENSIONS AS MAY BE REQUIRED TO ALLOW ADJUSTMENT OF ALL CONTROL DEVICES SUCH AS VOLUME DAMPERS, ETC.
- DIMENSIONS SHOWN ON DRAWINGS FOR ALL DUCTWORK ARE INSIDE CLEAR.
- RETURN AIR DUCTWORK IN RETURN AIR PLENUM SHALL BE THERMALLY INSULATED WHERE INDICATED ON CONTRACT DOCUMENTS.
- RETURN AIR DUCTWORK TO AIR CONDITIONING UNIT, EXPOSED TO MECHANICAL EQUIPMENT ROOM ENVIRONMENT, SHALL BE INSULATED. INSULATE AND VAPOR SEAL ALL OUTSIDE AIR INTAKE DUCTWORK FROM ROOF CURB OR WALL TO AHU.
- PROVIDE FIRE AND SMOKE DAMPERS IN FIRE RATED SURFACE PENETRATIONS, AS REQUIRED BY CODES FOR APPLICATION CONDITIONS. PROVIDE ADJACENT ACCESS DOORS AS REQUIRED FOR SERVICE.
- PROVIDE COMBINATION SMOKE AND FIRE DAMPERS IN ALL SMOKE BARRIER PARTITIONS.
- FLEXIBLE DUCT CONNECTORS SHALL BE INSTALLED IN ACCESSIBLE AREAS ONLY. MAXIMUM ALLOWABLE FLEX DUCT IS 5'-0" TOTAL LENGTH. SUPPORT TO AVOID SAGGING OR KINKING.
- PROVIDE A SPARE SET OF FILTERS FOR ALL EQUIPMENT INSTALLED UNDER THIS CONTRACT.

SUPPORT RELATED ITEMS

- PROVIDE SUPPLEMENTARY (MISCELLANEOUS) STEEL FOR SUPPORT, SWAY BRACING, CROSS-BRACING, AND ANCHORAGE OF PIPING, DUCTWORK, ASSOCIATED EQUIPMENT AND ANCILLARIES, IN ACCORDANCE WITH REQUIREMENTS OF THE CONTRACT DOCUMENTS, IN ORDER TO MEET SITE SEISMIC AND SYSTEM SPECIFIC INSTALLATION AND OPERATING CONDITIONS. COORDINATE SUPPLEMENTARY (MISCELLANEOUS) STEEL WITH PRIMARY BUILDING OR TRESTLE STRUCTURAL STEEL WORK.
- SUPPORT, BRACE, CROSS-BRACE, GUIDE AND ANCHOR AS REQUIRED SO TO IMPOSE NO PIPE/DUCT/EQUIPMENT LOAD OR MOMENT ON ANY EQUIPMENT FLANGE OR FLEXIBLE CONNECTION. DAMPEN SYSTEM TO CONTROL AND LIMIT SYSTEM AND STRUCTURE MOTION AS A RESULT OF REACTION FORCES GENERATED BY SYSTEM FLUID/AIR FLOW, INCLUDING PURGING, TESTING AND OPERATION.
- DO NOT WELD TO, CUT OR DRILL BUILDING STEEL.
- DO NOT WELD SUPPLEMENTARY (MISCELLANEOUS) STEEL TO BUILDING STEEL WITHOUT PRIOR WRITTEN APPROVAL OF PROPOSED DETAIL BY THE DESIGNING STRUCTURAL ENGINEER. WELDING TO SUPPLEMENTARY STEEL IS PERMITTED.
- USE APPROVED BEAM CLAMPS. C-CLAMPS ARE PROHIBITED.
- DO NOT HANG SUPPORTS FROM TOP CHORD OF TRUSS.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL EQUIPMENT, PIPING AND DUCTWORK SUPPORTED BY LONG SPAN AND CAMBERED STEEL, CONFIRMING THAT EXPANSION COMPENSATION IS ADEQUATE.

INSTRUMENT RELATED ITEMS

- LOCATE PRESSURE AND TEMPERATURE GAUGES SUCH THAT THEY ARE READABLE FROM THE OPERATING FLOOR LEVEL. OTHERWISE, PROVIDE REMOTE ELEMENT READING INSTRUMENTS MOUNTED ON A 16-GAGE GALVANIZED GAUGE BOARD, READABLE FROM OPERATING FLOOR. REFER TO SPECIFICATIONS, FLOW DIAGRAMS AND VALVE/EQUIPMENT SCHEDULES FOR SYSTEM PRESSURE AND TEMPERATURE OPERATING RANGES. SELECT INSTRUMENTS TO OPERATE IN MIDDLE THIRD OF SYSTEM OPERATING RANGE, UNLESS INDICATED OTHERWISE. MARK PRESSURE GAUGES CALIBRATED FOR ELEVATION.
- INSTALL FLOW-MEASURING DEVICES WITH A MINIMUM STRAIGHT RUN OF PIPING CONSISTING OF 10 DIAMETERS UPSTREAM AND 5 DIAMETERS DOWNSTREAM OF DEVICE. CONTRACTOR SHALL COORDINATE AND PROVIDE FOR ANY ADDITIONAL REQUIREMENTS OF DEVICE MANUFACTURER.
- PROVIDE PROPERLY GRADUATED TEST GAUGES AND THERMOMETERS WITH RANGES AS REQUIRED FOR SERVICE.

INSULATION RELATED ITEMS

- INSULATE AND SECTIONALLY VAPOR SEAL SURFACES WHERE FLUID TEMPERATURES LESS THAN 65 DEG F CAN OCCUR. MAINTAIN VAPOR BARRIER CONTINUITY SECTIONAL SEALS BETWEEN JOINTS TO COLD SURFACE. ON MAXIMUM 24'-FOOT CENTERS, AT CHANGES OF DIRECTION, INTERFACES, CONNECTIONS, PENETRATIONS AND DEVICES.
- EXTEND VALVE STEMS AND DAMPER OPERATORS BEYOND INSULATION AS REQUIRED AND MAINTAIN VAPOR BARRIER CONTINUITY.
- IN WEATHER-EXPOSED LOCATIONS, INSTALL INSULATED PIPING VALVES UPSIDE DOWN OR AT 4 O'CLOCK POSITION, WHERE SAFETY/OPERATING AND OTHER CONDITIONS GOVERN.
- REPAIR EXISTING PIPE INSULATION DAMAGED DURING WORK AND MAINTAIN VAPOR SEAL INTEGRITY. ISOLATE WITH VAPOR BARRIER, NEW WORK FROM OLD WORK. FIT-UP/START-UP RELATED ITEMS
- WHERE ALTERNATE DESIGN BASE PRODUCTS ARE APPROVED FOR INSTALLATION, SUBMIT SHOP DRAWINGS OF PROPOSED INSTALLATION. PROVIDE REQUIRED DESIGN AND ANCILLARY EQUIPMENT MODIFICATION AND SUPPLEMENTATION, AT NO ADDITIONAL COST TO OWNER.
- COORDINATE FINAL EQUIPMENT CONNECTION STYLES, TYPES, SIZES AND LOCATIONS WITH REVIEWED/CERTIFIED SHOP DRAWINGS AND AS-BUILT CONDITIONS. PROVIDE NECESSARY SIZE REDUCTION OR INCREASE AND CONNECTION TYPE AS REQUIRED BY THE PURCHASED EQUIPMENT. PIPING ARRANGEMENTS SHALL NOT IMPOSE NON-DESIGN LOADS ON EQUIPMENT CONNECTIONS; PROVIDE ADDITIONAL SUPPORT WORK AS REQUIRED TO MEET MANUFACTURER'S LIMITS.
- MAINTAIN CLEARANCE REQUIREMENTS OF EQUIPMENT MANUFACTURER'S, OWNER STANDARDS, NATIONAL ELECTRICAL CODE (NEC), APPLICABLE FEDERAL, STATE AND LOCAL CODES, AND REGULATIONS.
- COORDINATE PIPING AND DUCTWORK ROUTING TO ENSURE A 4'-0" MINIMUM CLEARANCE ON BOTH SIDES OF ELECTRICAL BUS DUCTS, AND 4'-0" MINIMUM FRONT AND SIDE ACCESS CLEARANCES TO ELECTRICAL PANELS.
- MAINTAIN MIN. 6"-9" HEADROOM CLEARANCE FOR PIPING, CONDUIT AND DUCTWORK PASSING OVER CATWALKS.
- DO NOT ROUTE MECHANICAL WORK BELOW OR IMMEDIATELY ADJACENT TO MONORAILS, HATCH, TRAP DOORS OR ELECTRICAL SUBSTATIONS.
- LOCATE THERMOSTATS 48" ABOVE FLOOR, UNLESS OTHERWISE NOTED.
- FIT BUTTERFLY VALVES WITH STRAIGHT RUN OF PIPE SUCH THAT VALVE DISC DOES NOT ENTER ADJACENT FITTINGS OR EQUIPMENT. LOCATE THERMOWELLS SO AS TO PREVENT VIBRATION OR INTERFERENCE WITH VALVE OPERATION.
- PROVIDE MANUAL AND AUTOMATIC AIR VENTS AND VACUUM BREAKERS AT PIPING HIGH-POINTS AND WHERE NECESSARY TO PRECLUDE PIPING SYSTEM/COMPONENT OR OPERATING FAILURE DUE TO AIR BINDING, VACUUM COLLAPSE OR WATER HAMMER.
- PROVIDE TRASH HANDLING FULL PORT BALL DRAIN VALVES WITH NIPPLE AND CAP AT PIPING LOW-POINTS AND AT BASE OF RISERS.
- PROVIDE TEMPORARY OR PERMANENT PIPING, HOSE, VALVES, FILTERS/STRAINERS, PRESSURE AND TEMPERATURE GAUGES, FLOW AND OTHER INSTRUMENTATION, FOR PURGING, CLEANING, FLUSHING, DISINFECTING, TESTING, START UP AND OPERATION, WHETHER SUFFICIENTLY INDICATED IN THE DOCUMENTS OR NOT. AFTER CLEANING/FLUSHING, REMOVE TEMPORARY FILTER/STRAINER ELEMENTS AND CLEAN STRAINERS.
- PROVIDE APPROVED DOUBLE CONTAINMENT OR LIPPED, SAFELY DRAINED, 16 GAGE GALVANIZED SHEET DRIP PANS UNDER MECHANICAL ITEMS LOCATED OVER ANY BUS DUCT OR ELECTRICAL EQUIPMENT.
- PROVIDE 16 GAGE GALVANIZED SHEET METAL HEAT SHIELDS AT ALL POINTS WHERE A HOT PIPE, FLUE STACK, HEATING AIR, OR RADIANT HEAT IS DIRECTED AT AN ELECTRICAL BUS DUCT, CABLE TRAY, CONTROL PANEL OR HEAT SENSITIVE CONSTRUCTION SURFACE OR EQUIPMENT.
- PROVIDE WATER HAMMER ARRESTERS AT RAPID ACTION FLOW CONTROL DEVICES AND AT PLUMBING FIXTURES, PER MANUFACTURER'S INSTRUCTIONS AND PLUMBING & DRAINAGE INSTITUTE STANDARD

- PDI-WH-201.
- PROVIDE INSULATION ON SURFACE, WHERE TEMPERATURE COULD BURN, FOR PERSONNEL PROTECTION WITHIN 8'-0" OF ALL OPERATING LEVELS. PROVIDE DUAL SAFETY HANDLES FOR BALL VALVES WHERE ACCIDENTAL OPERATION MAY CAUSE INJURY OR DAMAGE TO PERSONNEL OR PROCESS.
- PROVIDE ENERGY LOCKOUT/TAGOUT PROVISIONS FOR SYSTEMS WHERE REQUIRED BY OSHA, OWNER'S STANDARDS, AND WHERE INDICATED ON DRAWINGS. COMPLY WITH MOST STRINGENT REQUIREMENTS.
- REFER TO SUPPLEMENTARY PROJECT SPECIFIC NOTES FOR ADDITIONAL REQUIREMENTS.
- FOR EXHAUST FAN DISCHARGES, PLUMBING VENTS AND FLUES, MAINTAIN A MINIMUM OF 20'-0" HORIZONTALLY FROM, OR 4'-0" (2'-0" FOR PLUMBING VENTS) VERTICALLY ABOVE OUTDOOR AIR INTAKES AND 30'-0" FROM COOLING TOWERS.
- PROVIDE BLIND FLANGE ON ALL BUTTERFLY VALVE END OF LINE FOR FUTURE CONNECTION.
- THE GENERAL CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY AND CONSTRUCTION MEANS AND METHODS IN THE PERFORMANCE OF THE WORK. PROVIDE ALL MEASURES REQUIRED TO PROTECT THE STRUCTURE, WORKERS AND OTHER PERSONS DURING CONSTRUCTION OPERATIONS.

This drawing has been prepared solely for the use of Brookhaven National Laboratory and there are no representations of any kind made by Giffels, Partnership to any party with whom this Partnership has not entered into a contract.

This drawing shall not be used for construction purposes until the seal and signature of the professional engineer appears on the drawing and proper permit forms and related fees are transmitted by the Owner's Agent Contractor to the Authority Having Jurisdiction.

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 Project No.: SF070003

JOB NO.	SHEET NO.	REVISION	DATE	DWG.	APPD.	DA.
 <p>UNDER CONTRACT WITH UNITED STATES DEPARTMENT OF ENERGY PLANT ENGINEERING DIVISION UPTON, NEW YORK 11973</p>						
JOB TITLE CENTRAL CHILLED WATER FACILITY PHASE II			DWG. TITLE MECHANICAL GENERAL NOTES			
USGPP/LN, NEW	DATE	ACCT. NO.	SHEET OF			
SCALE NO SCLAE	DWN. BY EP	REV'D BY BN	JOB NO. 11705	DWG. NO.		
ESHG RISK LEVEL	APP'D. B HARRISON	BLDG. NO. 600	M-002			
PATH:						