

HVAC SPEC

1. GENERAL
A. THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION,"
B. ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR
C. INVESTIGATE EACH SPACE THROUGH WITH EQUIPMENT MUST BE MOVED.
D. DUCTWORK AND PIPING IS SHOWN DIAGRAMMATICALLY AND DOES NOT
E. SUPPORT ALL DUCTWORK AND PIPING FROM BUILDING STRUCTURE
F. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION,
G. THIS CONTRACTOR SHALL SUBMIT TO THE ARCHITECT FOR APPROVAL A
H. REMOVAL AND RELOCATION OF CERTAIN EXISTING WORK WILL BE
I. PLAN INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING
J. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND APPROVED
K. DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL,
L. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND
M. SEAL OPENINGS AROUND DUCTS AND PIPING THROUGH PARTITIONS,
N. ALL PRESENT MATERIAL, EQUIPMENT AND CONSTRUCTION DEBRIS TO
O. MATERIALS AND WORKMANSHIP, UNLESS OTHERWISE NOTED, SHALL BE
P. THE WORK IN THE BUILDING SHALL BE DONE WHEN AND AS DIRECTED,
Q. THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED
R. UNLESS OTHERWISE SPECIFICALLY SPECIFIED, INCLUDE ALL CUTTING
S. REMOVABLE ACCESS TILE AND/OR ACCESS DOOR ARE REQUIRED IN
T. ALL MATERIAL AND EQUIPMENT TO BE NEW UNLESS OTHERWISE NOTED
U. SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT
V. INSURANCE: IN ACCORDANCE WITH BUILDING REQUIREMENTS AND
W. THE FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS
X. GUARANTEE:
1) ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED FOR A
2) THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE
3) THIS CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE AND
Y. SPECIFICATIONS ARE OF SIMPLIFIED FORM AND INCLUDE INCOMPLETE
Z. DEFINITIONS:
1) "PROVIDE" TO SUPPLY, INSTALL AND CONNECT UP COMPLETE AND
2) "INSTALL" TO ERECT, MOUNT AND CONNECT COMPLETE WITH

3) "FURNISH" OR "SUPPLY": TO PURCHASE, PROCURE, ACQUIRE AND
4) "WORK": LABOR, MATERIALS, EQUIPMENT, APPARATUS, CONTROLS,
5) "CONCEALED": EMBEDDED IN MASONRY OR OTHER CONSTRUCTION,
6) "EXPPOSED": NOT INSTALLED UNDERGROUND OR "CONCEALED" AS
7) "SIMILAR" OR "EQUAL": EQUAL IN MATERIALS, WEIGHT, SIZE,
2. SCOPE OF WORK
A. THE WORK UNDER CONTRACT INCLUDES ALL LABOR, MATERIALS AND
B. THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND
C. PRIOR TO THE INSTALLATION OF ANY WORK AND PROCUREMENT OF
D. WITHIN 15 DAYS AFTER AWARD OF CONTRACT, SUBMIT FOR REVIEW, A
3. SHOP DRAWINGS
A. INDICATE ON EACH SUBMISSION: PROJECT NAME AND LOCATION,
B. THE WORK DESCRIBED IN ALL SHOP DRAWING SUBMISSION SHALL BE
C. EACH SUBMITTED SHOP DRAWING IS TO INCLUDE A CERTIFICATION
D. ALL SHOP DRAWINGS ARE TO BE SUBMITTED TO ALLOW AMPLE TIME
E. IF SUBMITTALS DIFFER FROM THE CONTRACT DOCUMENT
F. SUBMISSIONS:
1) PROVIDE ALL COORDINATION DRAWINGS, DUCTWORK AND PIPING SHOP
A. SHEETMETAL SHOP STANDARDS SHALL BE COMPILED DIRECTLY FROM
2) AIR OUTLETS.
3) AIR AND WATER BALANCE REPORT.
4) AUTOMATIC CONTROL SYSTEMS AND DEVICES.
5) SEQUENCE OF OPERATIONS
H. COORDINATION DRAWINGS: PLANS, DRAWN TO SCALE INDICATING
1) DUCT AND PIPING INSTALLATION INDICATING COORDINATION WITH
2) COORDINATION WITH SUSPENDED CEILING COMPONENTS, STRUCTURAL
4. AS-BUILTS AND EQUIPMENT OPERATION INSTRUCTIONS
A. PROVIDE ALL COORDINATION DRAWINGS, DUCTWORK AND PIPING SHOP
B. ON COMPLETION AND ACCEPTANCE OF WORK, THIS CONTRACTOR SHALL
C. THESE INSTRUCTIONS SHALL BE TYPED ON 8-1/2 INCH X 11 IN
D. THE INSTRUCTIONS SHALL BE ORGANIZED IN SECTIONS, WITH ONE
E. FINAL "AS-BUILT" DRAWINGS INDICATING AS INSTALLED CONDITIONS
5. SUBSTITUTIONS
A. NO SUBSTITUTE MATERIAL OR MANUFACTURER OF EQUIPMENT SHALL BE
B. ALL SUBSTITUTED EQUIPMENT SHALL CONFORM TO SPACE
C. CONTRACTOR SHALL SUBMIT BID BASED ON SPECIFIED ITEMS AND
6. ACCESS DOORS IN GENERAL CONSTRUCTION
A. THIS CONTRACTOR SHALL SUBMIT TO THE ARCHITECT FOR APPROVAL A
B. SQUARE DIFFUSERS: DIFFUSERS SHALL BE STEEL CONSTRUCTION

7. SHEET METAL WORK
A. DUCT CONSTRUCTION, INCLUDING SHEET METAL THICKNESSES, SEAM
B. EXCEPT AS OTHERWISE SHOWN OR NOTED, ALL DUCTWORK AND OTHER
C. DESCRIPTION OF DUCTWORK PRESSURE CLASS AND EQUIPMENT:
1) 4 INCH AND GREATER DUCT CLASS: ALL SUPPLY DUCTWORK FROM
2) 4 INCH AND GREATER DUCT CLASS: ALL RETURN AIR DUCTWORK FROM
D. GENERAL FABRICATION REQUIREMENTS: COMPLY WITH SMACNA'S
1) THE FOLLOWING FITTING CONNECTIONS AND DUCT CONSTRUCTION
a. DRIVE SPLIT [T-1, T-2] FITTING CONNECTIONS
b. 26 GAUGE DUCTWORK.
2) TRANSVERSE JOINTS: SELECT JOINT TYPES AND FABRICATE
3) USE THE FOLLOWING SMACNA TRANSVERSE (GIRTH) JOINTS
a. DUCT CONSTRUCTION AS FOLLOWS FOR 4" W.G. CLASS:
(1) UP TO 12 INCH WIDE USE T-6 OR T-7
(2) 13 INCH TO 18 INCH WIDE USE T-11 OR T12
(3) 19 INCH WIDE AND UP USE TDC OR TDF
E. VOLUME DAMPERS: GALVANIZED STEEL, PER SMACNA "LOW VELOCITY
1) PROVIDE MANUAL VOLUME DAMPERS TO PROPERLY PROVIDE MANUAL
2) LOW PRESSURE: ALL SUPPLY AIR MAIN BRANCHES FROM TRUNK, EACH
3) LOW PRESSURE: ALL EXHAUST AND RETURN BRANCHES FROM TRUNK,
c. AS NOTED ON PLANS
F. FLEXIBLE DUCTS
1) FLEXIBLE DUCT SHALL BE USED ONLY FOR FINAL CONNECTIONS TO
2) TEAR RESISTANT, RUGGED FLEXIBLE DUCT DESIGNED FOR HIGH
3) FLEXIBLE DUCT CONNECTORS: CLAMPS SHALL BE STAINLESS STEEL
4) MANUFACTURED BY FLEXMASTER TYPE 4, THERMAFLEX MODEL M-KC.
G. ACCESS DOORS: INSULATED OR UNINSULATED, SAME AS DUCT.
1) PROVIDE MINIMUM 20 INCH X 14 INCH ON MAIN DUCTS, AND 12 INCH
2) ALL ACCESS DOORS TO BE HINGED, WITH LATCH SIMILAR TO
H. FLEXIBLE CONNECTIONS: NEOPRENE-COATED GLASS FABRIC, 30 OZ
I. TURNING VANES: GALVANIZED STEEL SMALL DOUBLE-THICKNESS
J. ALL DUCT DIMENSIONS INDICATED ON PLANS ARE INSIDE CLEAR
K. EXISTING DUCTWORK TO BE REUSED:
1) THIS CONTRACTOR SHALL INSPECT, SEAL PER SMACNA REQUIREMENTS,
2) FRAME TYPE SUITABLE FOR MOUNTING IN CEILING OR WALL
3) EXACT LOCATION OF ALL AIR OUTLETS AS PER ARCHITECTURAL
4) PROVIDE MOUNTING AND BLOCKING
5) SUITABLE FOR OPERATION AT 20% EXCESS AND 20% LESS THAN NOTED
6) MANUFACTURER RESPONSIBLE FOR EXAMINING APPLICATION OF EACH
7) PROVIDE SHEETMETAL BLANK OFF AS REQUIRED FOR 1 WAY, 2 WAY OR
8) PROVIDE BLANKING FOR PROPER COVERAGE AND BLOW WITHOUT
9) MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS,
a. ANEMOSTAT PRODUCTS; A MESTEK COMPANY.
b. TITUS.
c. TUTTLE AND BAILEY
d. PRICE
e. METALARE
B. SQUARE DIFFUSERS: DIFFUSERS SHALL BE STEEL CONSTRUCTION

C. REGISTERS AND GRILLES:
1) RETURN AND EXHAUST REGISTERS: STAINLESS STEEL CONSTRUCTION.
9. TESTING AND BALANCING
A. ALL AIR AND WATER BALANCING SHALL BE BY AN INDEPENDENT
B. CONTRACTOR TO BALANCE ENTIRE SYSTEM TO AIR AND/OR WATER
C. AIR BALANCING SHALL BE ACCOMPLISHED BY ADJUSTMENT OF FANS
D. ADJUST FLOW THROUGH COILS AS REQUIRED.
E. FANS, AIR HANDLING UNITS, PUMPS, CHILLERS, HEAT EXCHANGERS
F. UPON COMPLETION OF THE INSTALLATION, THE CONTRACTOR SHALL
G. IF DISCREPANCIES EXIST IN THE REPORT THAT REQUIRE FIELD
H. THE CONTRACTOR SHALL PROVIDE ALL LABOR, PRESSURE GAUGES,
I. BALANCING REPORT SHALL BE PROVIDED ON NEBB OR ABC-TYPE
J. BALANCING AND TESTING SHALL BE PERFORMED AND SUPERVISED BY A
K. THE PERFORMANCE AND CAPACITY OF ALL SYSTEMS AND EQUIPMENT TO
10. INSULATION - GENERAL REQUIREMENTS
A. ALL INSULATION MATERIALS, INCLUDING JACKETS, FACING,
B. PRODUCTS SHALL NOT CONTAIN ASBESTOS, LEAD, MERCURY, OR
C. DEFINITIONS:
1) EXPOSED: INDOOR DUCTS, PIPING OR EQUIPMENT LOCATED IN
2) CONCEALED: INDOOR DUCTS, PIPING OR EQUIPMENT WHICH IS NOT
3) OUTDOOR: DUCTS, PIPING OR EQUIPMENT WHICH IS EXPOSED TO THE
11. DUCTWORK INSULATION
A. INSULATE ALL DUCTWORK IN ACCORDANCE WITH INSULATION SCHEDULE
B. INSULATION SCHEDULE - DUCTWORK
SERVICE LOCATION THICKNESS MATERIAL FINISH
SUPPLY/RETURN CONCEALED 2" D-1 VAPORSEAL
RETURN CONCEALED IN 2" D-1 VAPORSEAL
C. MATERIAL:
1) TYPE D-1: MINIMUM 1-LB DENSITY FIBERGLASS BLANKET HAVING AN
D. INSTALLATION:
1) FIBERGLASS BLANKET: 2 INCH LAP STRIPS AT ALL SEAMS. SECURE
12. EQUIPMENT, DUCT, AND PIPING TAGS AND LABELS
A. PIPE AND DUCT LABELS
1) PIPE AND DUCT LABELS SHALL BE INSTALLED AT MAXIMUM INTERVALS
2) GENERAL REQUIREMENTS FOR MANUFACTURED PIPE LABELS:
3) SELF-ADHESIVE PIPE AND DUCT LABELS: PRINTED PLASTIC WITH
4) PIPE AND DUCT LABEL CONTENTS: INCLUDE IDENTIFICATION OF
a. FLOW-DIRECTION ARROWS: INTEGRAL WITH PIPING OR DUCT SYSTEM
13. EQUIPMENT
A. PROVIDE ALL EQUIPMENT AND ACCESSORIES OF THE SIZES AND
B. INSTALL EQUIPMENT IN ACCORDANCE WITH APPROVED SHOP DRAWINGS,
C. PROVIDE EQUIPMENT SUPPORTS AND/OR MOUNTINGS AS INDICATED ON
1) FLOOR MOUNTED EQUIPMENT - PROVIDE DIMENSIONS FOR A 4 INCH
2) EQUIPMENT ON FLOOR STANDS - PROVIDE FLOOR STAND OF
3) ROOF MOUNTED EQUIPMENT - PROVIDE PREFABRICATED ISOLATED ROOF
4) CEILING MOUNTED EQUIPMENT - PROVIDE SUPPORTS WITH APPROVED
5) PROVIDE SUPPLEMENTAL STEEL AS REQUIRED TO ADEQUATELY SUPPORT
6) EQUIPMENT SHALL BE INSTALLED WITH VIBRATION ISOLATION, REFER
D. REUSE OF EXISTING EQUIPMENT:
1) EXISTING SYSTEM SURVEY

d. PRIOR TO START OF CONSTRUCTION, CONTRACTOR TO
e. EQUIPMENT TO BE REUSED AS WELL AS ALL ACCESSORIES. UPON
d. COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL WARRANTY
2. AUTOMATIC CONTROLS - GENERAL REQUIREMENTS
A. WORK INCLUDED
1) FURNISH AND INSTALL AS HEREIN SPECIFIED, A COMPLETE
2) PROVIDE POWER FOR PANELS AND CONTROL DEVICES FROM A SOURCE
3) COORDINATE INSTALLATION SCHEDULE WITH THE MECHANICAL
4) FURNISH, MOUNT, AND WIRE ALL ASSOCIATED PANELS AND DEVICES
B. SUBMITTALS
1) PRODUCT DATA: INCLUDE MANUFACTURER'S TECHNICAL LITERATURE
2) SHOP DRAWINGS: DETAIL EQUIPMENT ASSEMBLIES AND INDICATE
3) SCHEMATIC FLOW DIAGRAMS SHOWING FANS, COILS, DAMPERS,
b. WIRING DIAGRAMS: POWER, SIGNAL, AND CONTROL WIRING.
c. DETAILS OF CONTROL PANEL FACES, INCLUDING CONTROLS,
C. QUALITY ASSURANCE
1) INSTALLER QUALIFICATIONS: A QUALIFIED INSTALLER WHO IS AN
2) COMPLY WITH ALL CURRENT GOVERNING CODES, ORDINANCES, AND
3) MATERIALS AND EQUIPMENT SHALL BE THE CATALOGUED PRODUCTS OF
D. SEQUENCE OF OPERATIONS
1) CATH LAB 4
a. EXISTING
(1) THE EXISTING CONTROL SYSTEM AND SEQUENCE OF OPERATION SHALL
b. LEAK DETECTION
(1) A NEW DRAIN PAN IS BEING PROVIDED IN A SHAFT FOR AN OPEN
KEY PLAN
TRUE NORTH
ISSUE FOR BID
01/15/2016
ISSUE CHART
NO ISSUE DATE
Job Number B150268-000
Checked DPR
Approved DPR
TITLE
MECHANICAL SPECIFICATIONS
SHEET NUMBER
M-300

CONSULTANTS
AKF Group, LLC
PROJECT
MMC Cath Lab 4
22 Bramhall Street
Portland, ME 04102
Maine Medical Center
MaineHealth
Maine Medical Center
22 Bramhall Street
Portland, ME 04102
KEY PLAN
TRUE NORTH
ISSUE FOR BID
01/15/2016
ISSUE CHART
NO ISSUE DATE
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Approved DPR
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MECHANICAL SPECIFICATIONS
SHEET NUMBER
M-300

SAVE DATE: 1/15/2016 4:32 PM
PLOT DATE: 1/27/2016 3:28 PM
LOGIN: Cousensau, Christopher
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