





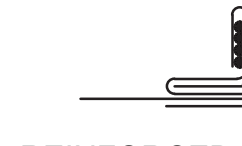
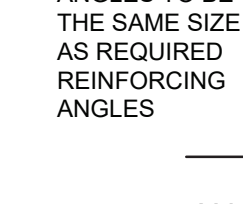
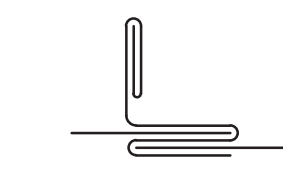
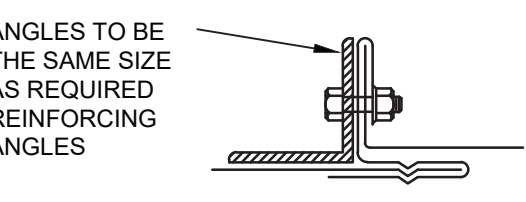
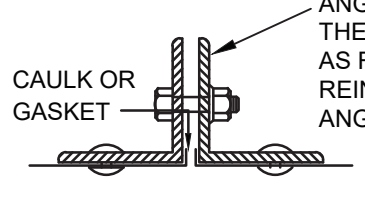

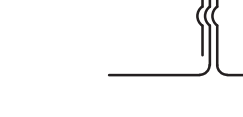
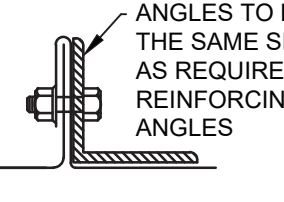
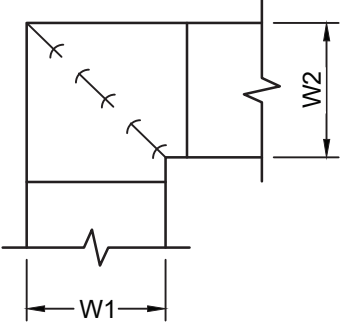
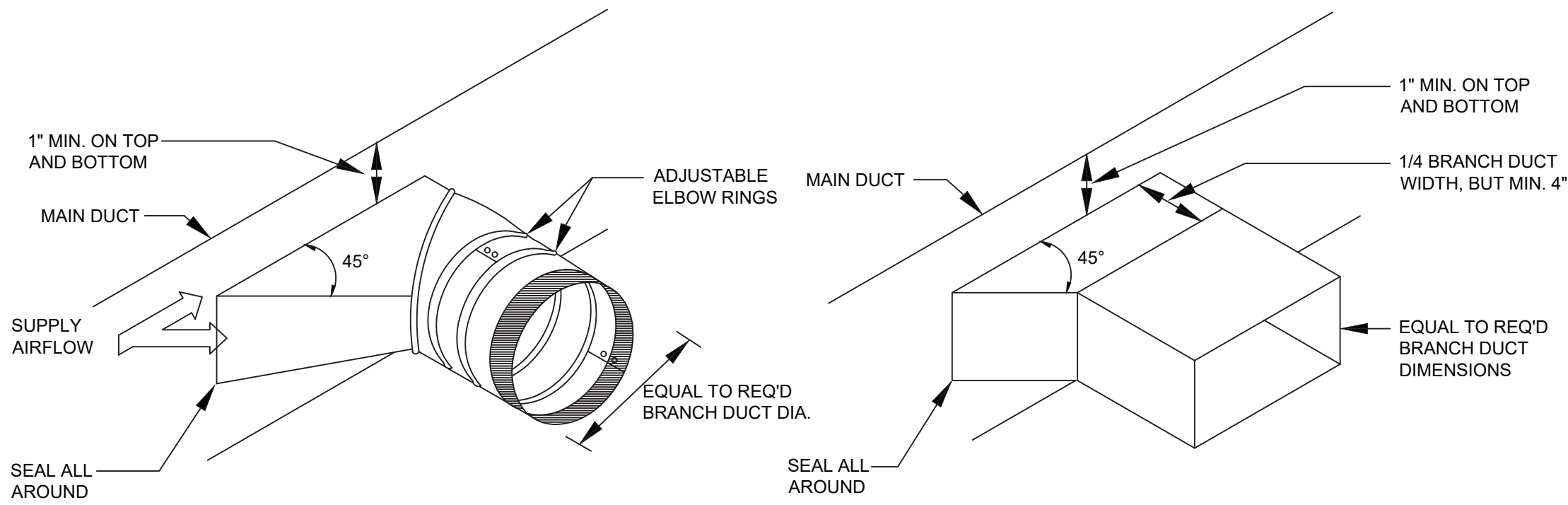


THICKNESS & REINFORCING SCHEDULE - * LOW PRESSURE DUCTWORK						
* NOTE: LOW PRESSURE DUCTWORK SHALL BE DUCTWORK IN WHICH THE PRESSURE DOES NOT EXCEED 2" WATER GAUGE.						
GREATEST DUCT DIMENSION	STEEL DUCTS U.S. STANDARD GAUGE	ALUMINUM DUCTS B & S GAUGE	LONGITUDINAL SEAM	TRANSVERSE JOINT SMALLEST DIMENSION	TRANSVERSE JOINT GREATEST DIMENSION	REINFORCING (ALL DUCTS 18" THRU 54" SHALL BE CROSSBROKEN)
12" OR LESS	26	24(0.020")	PITTSBURGH OR ACME LOCK	DRIVE SLIP OR POCKET LOCK OR BAR SLIP	PLAIN "S" SLIP OR POCKET LOCK OR BAR SLIP	NONE REQUIRED
13" THRU 18"	24	22(0.025")	PITTSBURGH OR ACME LOCK	DRIVE SLIP OR POCKET LOCK OR BAR SLIP	PLAIN "S" SLIP OR POCKET LOCK OR BAR SLIP	NONE REQUIRED
19" THRU 30"	24	22(0.025")	PITTSBURGH OR ACME LOCK	HEMMED "S" SLIP OR DRIVE SLIP OR 1" POCKET LOCK	HEMMED "S" SLIP OR BAR SLIP OR 1" POCKET LOCK	IF TRANSVERSE JOINTS ARE LOCATED 4'-0" OR LESS ON CENTER NO REINFORCING IF ON 8'-0" CENTERS REINFORCE WITH 1"x1"x18" ANGLES AT 4 FT. O.C. FASTENED ON 8" CENTERS
31" THRU 42"	22	20(0.032")	PITTSBURGH OR ACME LOCK	DRIVE SLIP 18" OR LESS BAR SLIP REINFORCED BAR SLIP OR POCKET LOCK	BAR SLIP OR REINFORCED BAR SLIP OR POCKET LOCK	IF TRANSVERSE JOINTS ARE LOCATED 4'-0" OR LESS ON CENTER NO REINFORCING IF ON 8'-0" CENTERS REINFORCE WITH 1"x1"x18" ANGLES AT 4 FT. O.C. FASTENED ON 8" CENTERS
43" THRU 54"	22	20(0.032")	PITTSBURGH LOCK	1 1/4" BAR SLIP, OR REINFORCED BAR SLIP OR 1 1/2" POCKET LOCK	1 1/4" BAR SLIP, OR REINFORCED BAR SLIP OR 1 1/2" POCKET LOCK	IF TRANSVERSE JOINTS ARE LOCATED 4'-0" OR LESS ON CENTER NO REINFORCING IF ON 8'-0" CENTERS REINFORCE WITH 1"x1"x18" ANGLES AT 4 FT. O.C. FASTENED ON 8" CENTERS
55" THRU 60"	20	18(0.040")	PITTSBURGH LOCK	1 1/4" BAR SLIP, OR REINFORCED BAR SLIP, OR 1 1/2" POCKET LOCK	1 1/4" BAR SLIP, OR REINFORCED BAR SLIP, OR 1 1/2" POCKET LOCK	IF TRANSVERSE JOINTS ARE LOCATED 4'-0" OR LESS ON CENTER NO REINFORCING IF ON 8'-0" CENTERS REINFORCE WITH 1"x1"x18" ANGLES AT 4 FT. O.C. FASTENED ON 8" CENTERS
61" THRU 84"	20	18(0.040")	PITTSBURGH LOCK	REINFORCED BAR SLIP, OR ANGLE SLIP, ALTERNATE BAR SLIP, OR ANGLE REINFORCED POCKET LOCK	REINFORCED BAR SLIP, OR ANGLE SLIP, ALTERNATE BAR SLIP, OR ANGLE REINFORCED POCKET LOCK	REINFORCE ALL SIDES OVER 60" WITH 1 1/2"x1 1/2"x18" ANGLES ON 2'-0" CENTERS. SIDES UNDER 60" NEED NO REINFORCING IF JOINTS ARE ON 4'-0" CENTERS. IF JOINTS ARE ON 8'-0" CENTERS REINFORCE WITH 1 1/2"x1 1/2"x18" ANGLES ON 4'-0" CENTERS.
85" THRU 96"	18	16(0.051") (LONGITUDINAL SEAM MAY BE STANDING SEAM)	PITTSBURGH LOCK	1 1/2" COMPANION ANGLES, OR ANGLE REINFORCED POCKET LOCK, OR 1 1/2" ANGLE SLIP OR REINFORCED BAR SLIP	1 1/2" COMPANION ANGLES, OR ANGLE REINFORCED POCKET LOCK, OR 1 1/2" ANGLE SLIP OR REINFORCED BAR SLIP	REINFORCE ALL SIDES OVER 84" WITH 1 1/2"x1 1/2"x18" ANGLES ON 2'-0" CENTERS. SIDES 61" THRU 84" REINFORCE WITH 1 1/2"x1 1/2"x18" ANGLES ON 2'-0" CENTERS. SIDES 60" OR LESS NEED NO REINFORCING IF JOINTS ARE ON 4'-0" CENTERS. IF JOINTS ARE ON 8'-0" CENTERS REINFORCE WITH 1 1/2"x1 1/2"x18" ANGLES ON 4'-0" CENTERS.
OVER 96"	18	16(0.051") (LONGITUDINAL SEAM MAY BE STANDING SEAM)	PITTSBURGH LOCK	2" COMPANION ANGLE, OR 2"x2"x1/4" ANGLE SLIP, OR 2"x2"x1/4" ANGLE REINFORCED POCKET LOCK OR REINFORCED BAR SLIP	2" COMPANION ANGLE, OR 2"x2"x1/4" ANGLE SLIP, OR 2"x2"x1/4" ANGLE REINFORCED POCKET LOCK OR REINFORCED BAR SLIP	REINFORCE ALL SIDES OVER 96" WITH 2"x2"x1/4" ANGLES ON 2'-0" CENTERS REINFORCE ALL SIDES 85" THRU 96" WITH 1 1/2"x1 1/2"x18" ANGLES ON 2'-0" CENTERS. REINFORCE ALL SIDES 61" THRU 84" WITH 1 1/2"x1 1/2"x18" ANGLES ON 2'-0" CENTERS. REINFORCE ALL SIDES UNDER 60" WITH 1 1/2"x1 1/2"x18" ANGLES IF JOINTS ARE 8'-0" ON CENTER. NO REINFORCING IF JOINTS ARE 4'-0" ON CENTER.
<div><div><p>PITTSBURGH LOCK</p></div><div><p>ACME LOCK</p></div><div><p>DRIVE SLIP</p></div><div><p>POCKET LOCK</p></div><div><p>BAR SLIP</p></div><div><p>HEMMED "S" SLIP</p></div><div><p>REINFORCED BAR SLIP</p></div><div><p>ANGLE SLIP</p></div><div><p>ALTERNATE BAR SLIP</p></div><div><p>ANGLE REINFORCED POCKET LOCK</p></div><div><p>COMPANION ANGLES</p></div><div><p>PLAIN "S" SLIP</p></div><div><p>STANDING SEAM</p></div><div><p>ANGLE REINFORCED STANDING SEAM</p></div><div>ANGLES TO BE THE SAME SIZE AS REQUIRED REINFORCING ANGLES</div></div>						

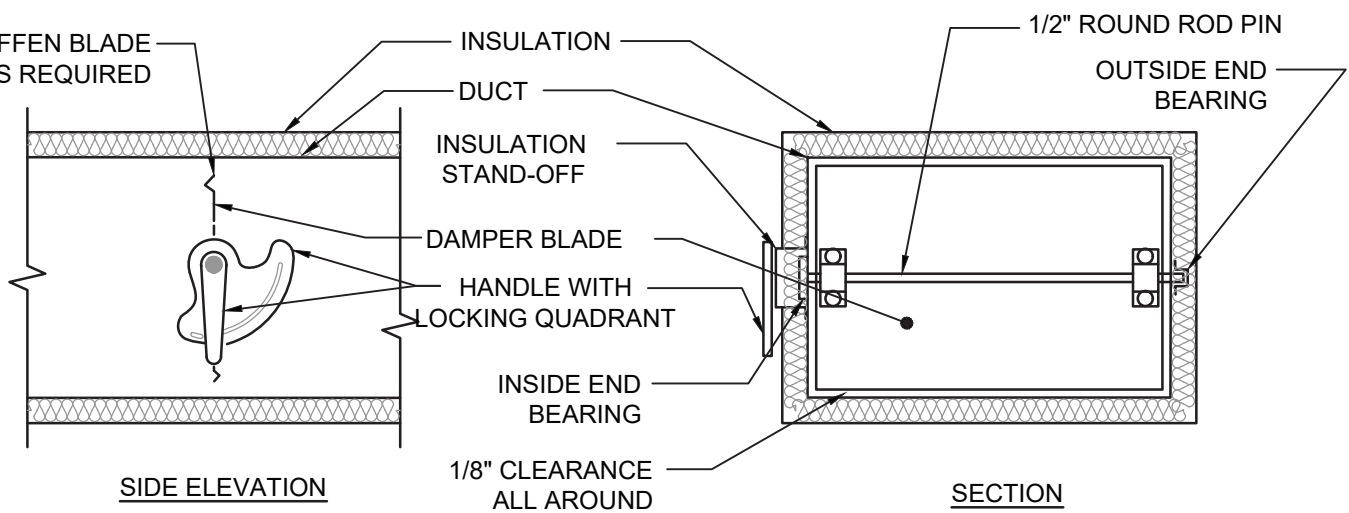


- NOTE:
- ALL VANED ELBOWS SHALL BE CONSTRUCTED AND INSTALLED AS DETAILED BY SMACNA.
  - WHEN W1 IS NOT EQUAL TO W2, VANE SHALL BE SINGLE VANE TYPE REGARDLESS OF W DIMENSION.
  - ALL SINGLE VANES SHALL HAVE A 2" RADIUS, 1-1/2" MAXIMUM SPACE BETWEEN VANES AND A 3/4" TRAILING EDGE.
  - WHEN W EQUALS W2 AND W1 IS GREATER THAN 20" VANES SHALL BE DOUBLE VANE TYPE.

1 Ductwork Squared Elbow Detail  
M001 N.T.S.

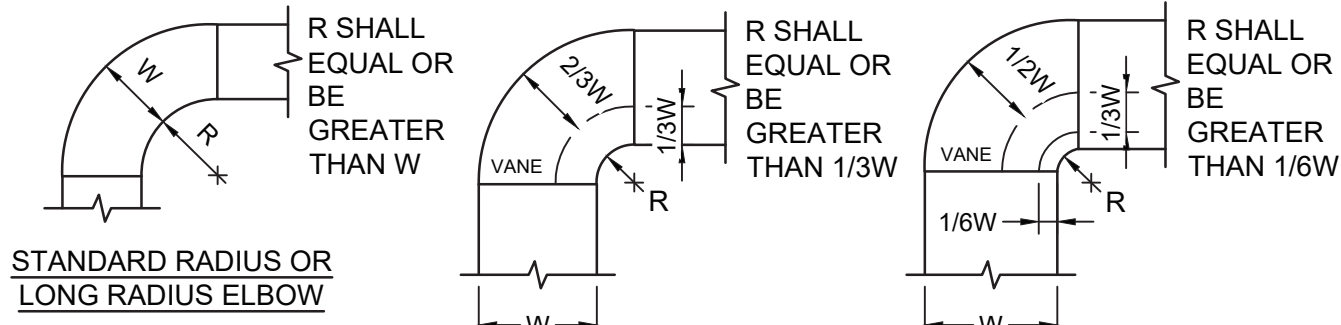


3 Typical Branch Take-Off Fitting Detail  
M001 N.T.S.



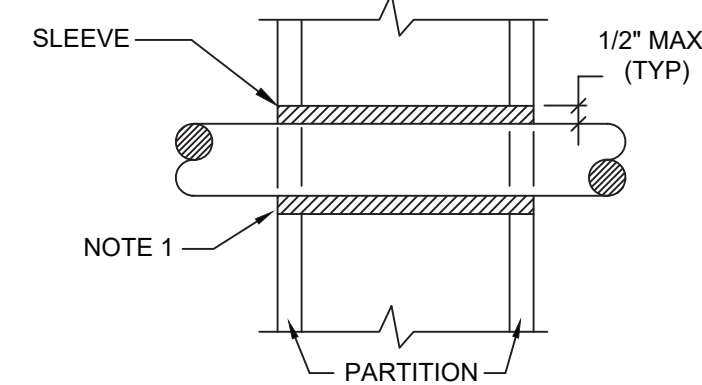
- NOTE:
- DELETE INSULATION STAND-OFF ON DUCTWORK WITHOUT EXTERIOR INSULATION.
  - DETAIL SHOWS SINGLE-BLADE DAMPER. DAMPER INSTALLATION SHALL BE SIMILAR FOR MULTI-BLADE DAMPERS & ROUND DAMPERS.

5 Ductwork Volume Damper Detail  
M001 N.T.S.



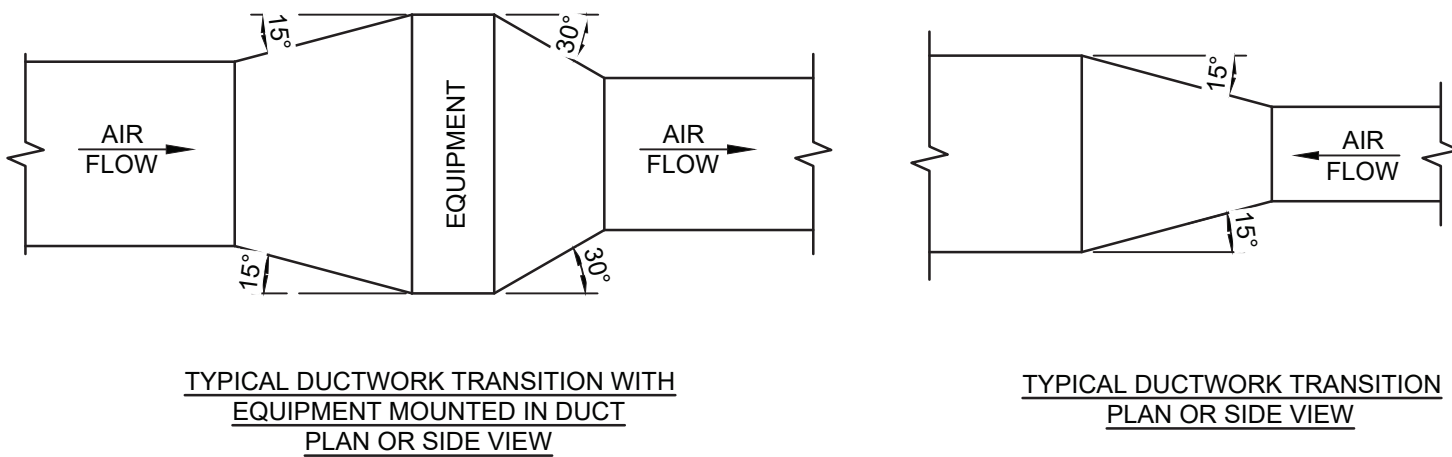
- NOTE:
- THE INTERIOR SURFACE OF ALL RADIUS ELBOWS SHALL BE MADE ROUND.
  - ALL STANDARD RADIUS ELBOWS CAN BE SUBSTITUTED WITH SHORT RADIUS ELBOWS. ALL SHORT RADIUS ELBOWS SHALL HAVE VANES. VANES SHALL BE CONSTRUCTED, SUPPORTED AND FASTENED AS RECOMMENDED BY SMACNA.

2 Ductwork Radius Elbow Detail  
M001 N.T.S.



- NOTES:
- AT FIRE RATED PARTITIONS, ADD ADDITIONAL LAYER OF FIRE SAFING INSULATION AROUND PENETRATION SO AS TO FILL CAVITY.
  - DUCT AND PIPE PENETRATIONS THRU CORRIDOR WALLS ABOVE THE CEILING ARE TO BE FIRE STOPPED AROUND THE PENETRATION.

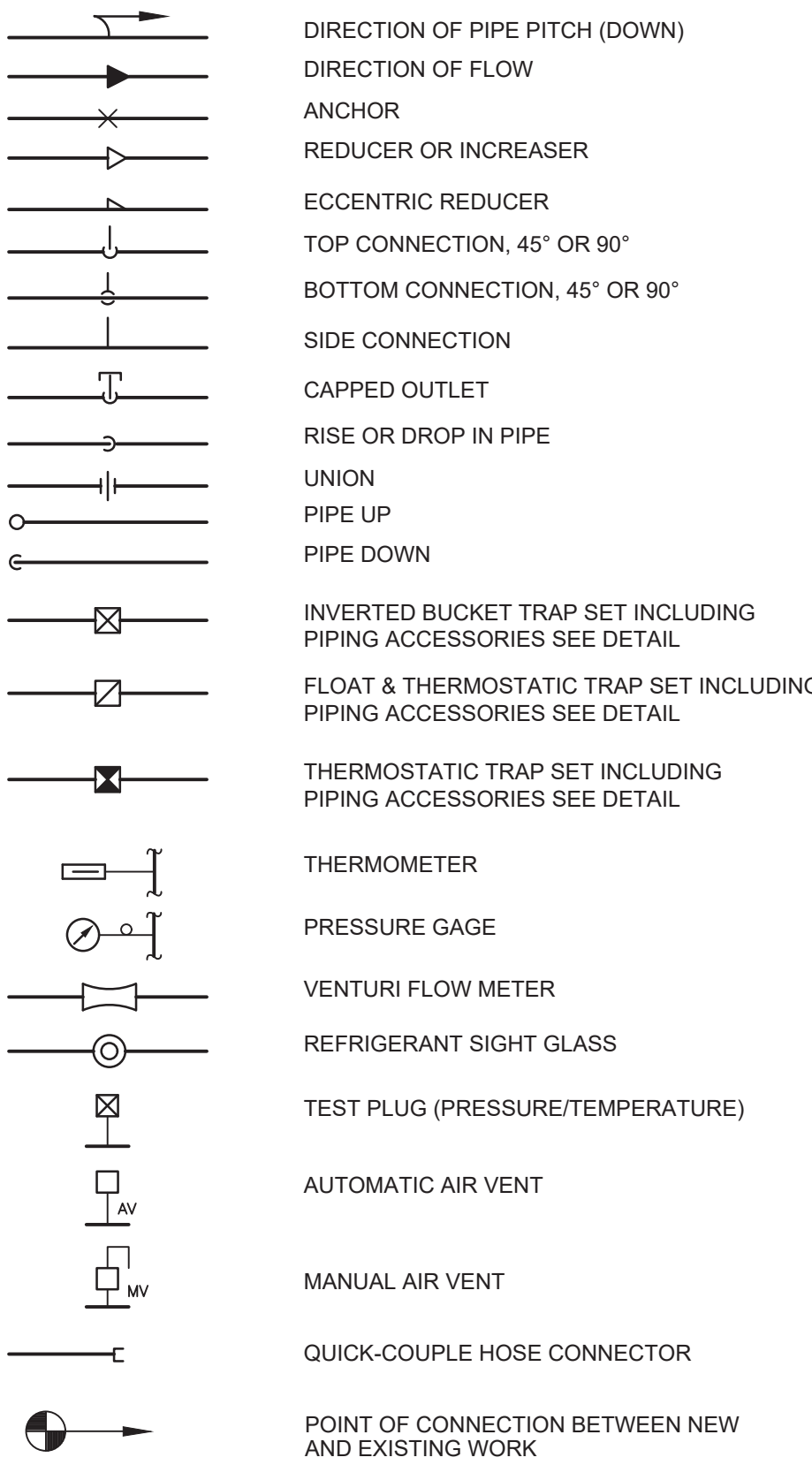
4 Pipe Penetrations Detail  
M001 N.T.S.



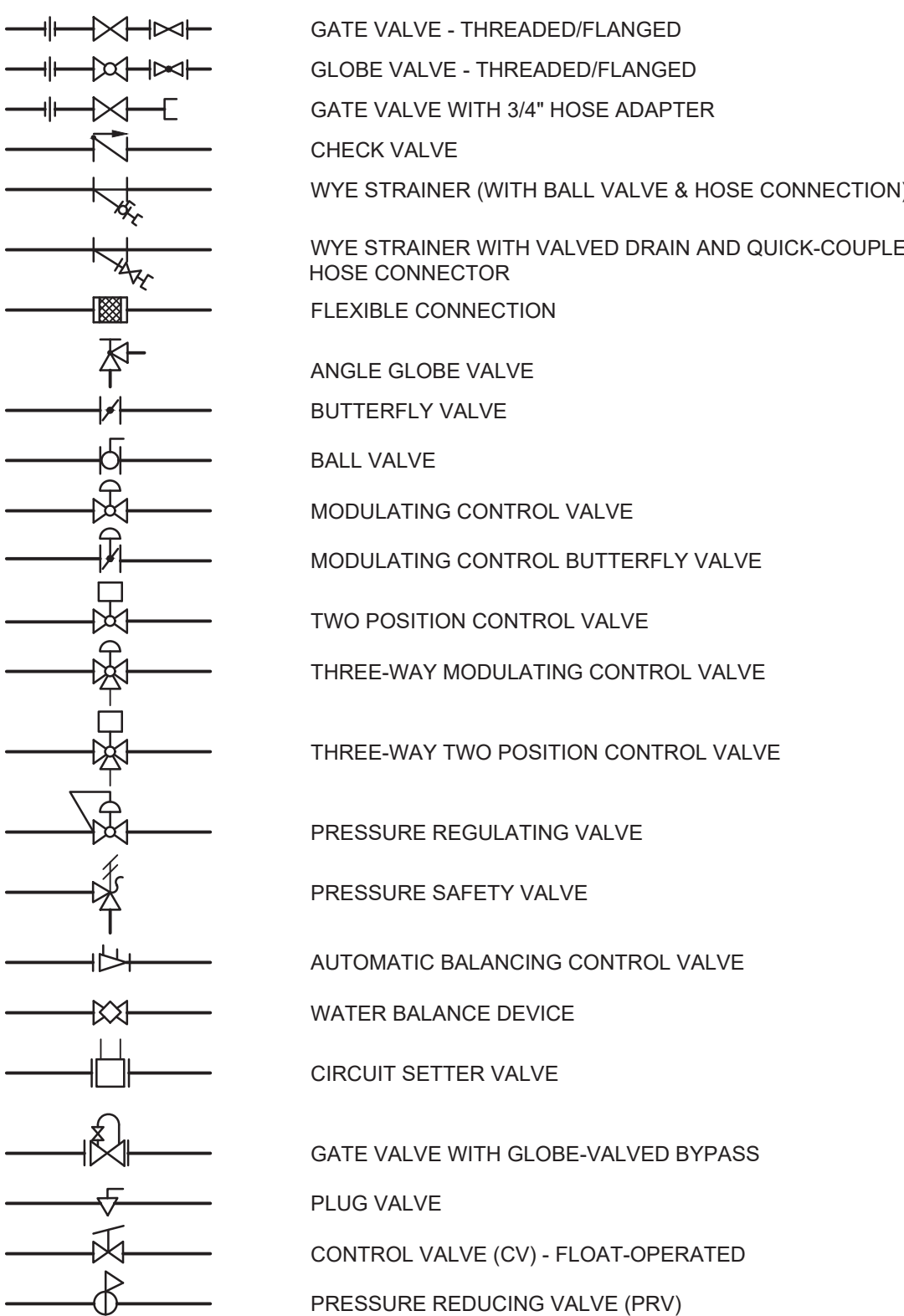
- NOTE:
- UNLESS OTHERWISE INDICATED ON PLANS, MAXIMUM ANGLES SHOWN SHALL APPLY.

6 Ductwork Transition Detail  
M001 N.T.S.

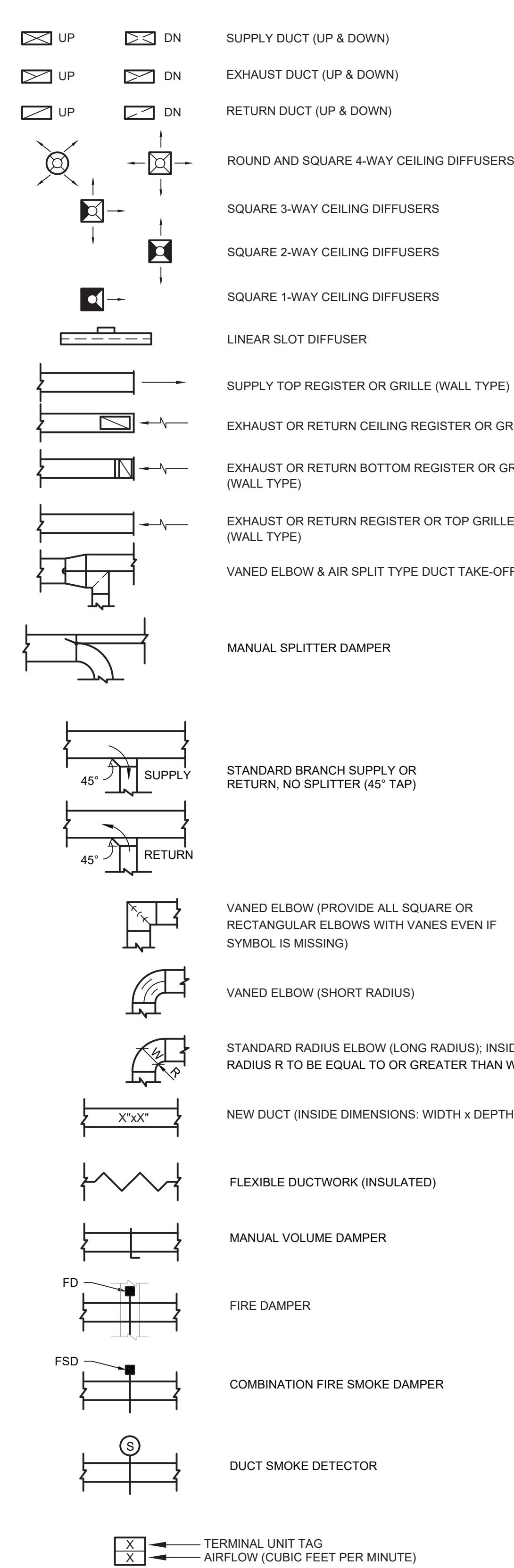
## General Symbols:



## Valve Symbols:



## Mechanical Legend :

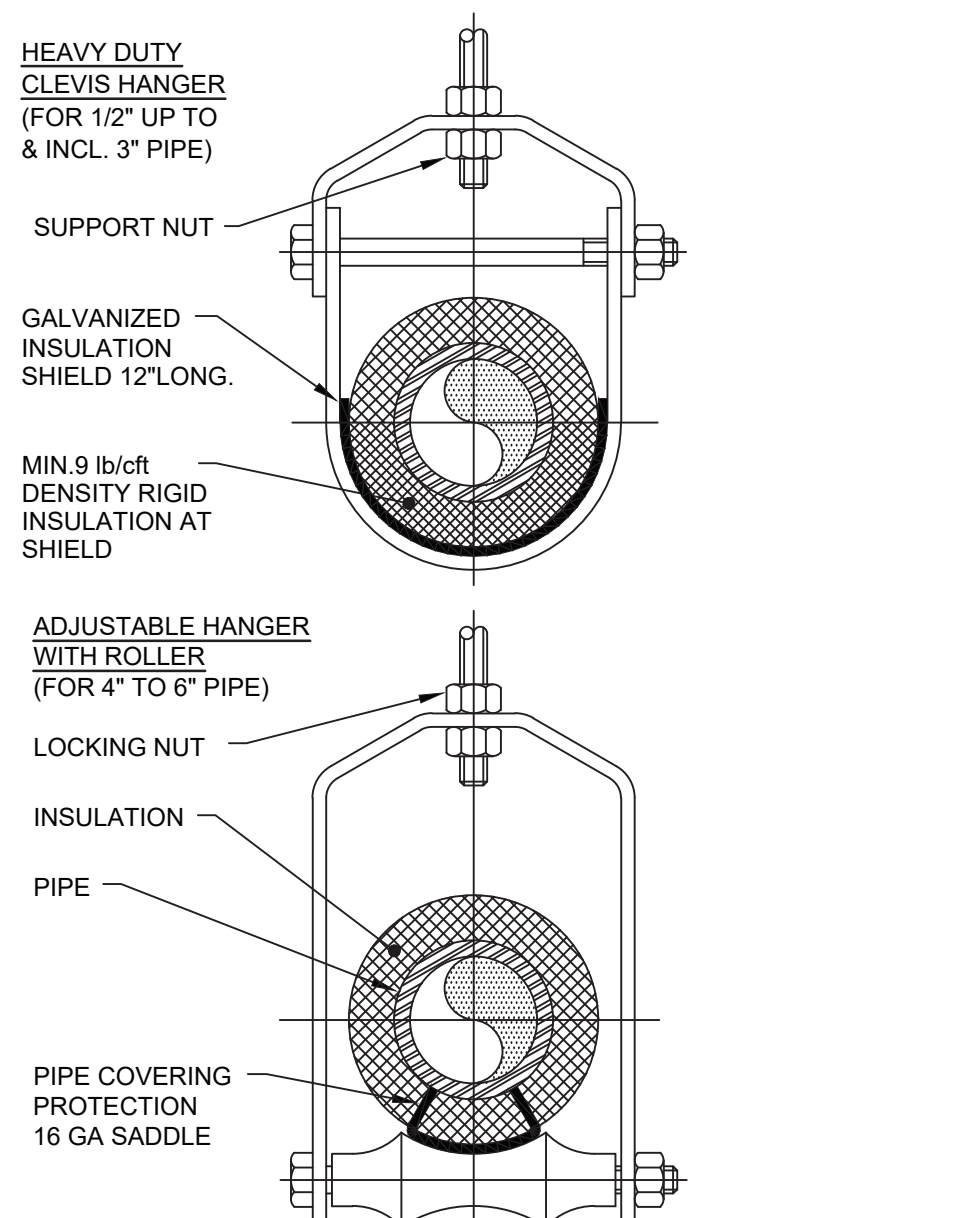


## Mechanical Notes:

- ALL MATERIALS AND EQUIPMENT ARE TO BE NEW, UNUSED, AND FREE FROM DEFECTS OF ANY KIND. THE BASIS OF QUALITY SHALL BE THE LATEST REVISION OF ASTM, ANSI, OR OTHER ACCEPTABLE STANDARDS.
- THESE DRAWINGS ARE DIAGRAMMATIC, AND INDICATE GENERAL ARRANGEMENT OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO HAVE REVIEWED THE SITE FOR HIS WORK PRIOR TO HAVING SUBMITTED HIS PROPOSAL. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR CONDITIONS FOUND DURING THE COURSE OF THE CONTRACT.
- THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THAT OF ALL OTHER TRADES.
- ALL WORK INCLUDING LABOR AND MATERIALS SHALL BE FULLY GUARANTEED FOR ONE (1) YEAR FROM THE DATE OF PAYMENT AND FINAL ACCEPTANCE BY THE OWNER AND ENGINEER.
- ALL CUTTING, PATCHING, FIRE-STOPPING, AND SURFACE RESTORATION IN CONNECTION WITH THIS TRADE SHALL BE COMPLETED BY THIS CONTRACTOR.
- A MINIMUM OF FOUR (4) COPIES OF SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO ORDERING AND INSTALLATION OF THE EQUIPMENT AND/OR MATERIALS. BY SUBMITTING SHOP DRAWINGS, THE CONTRACTOR REPRESENTS THAT ACTUAL FIELD CONDITIONS ARE VERIFIED BY HIM AND ARE REFLECTED ON HIS SUBMITTALS.
- THIS CONTRACTOR SHALL PAY ALL FEES, GIVE ALL NOTICES, FILE ALL NECESSARY DRAWINGS, AND OBTAIN ALL PERMITS, INSPECTIONS AND CERTIFICATES OF APPROVAL REQUIRED IN CONNECTION WITH WORK UNDER THIS CONTRACT.
- ALL WORK IN ASSOCIATION WITH THIS CONTRACT SHALL BE COMPLETED IN STRICT COMPLIANCE WITH THE 2020 BUILDING CODE OF NEW YORK STATE, 2020 MECHANICAL CODE OF NEW YORK STATE & 2020 ENERGY CONSERVATION CONSTRUCTION CODE OF NEW YORK STATE.
- ALL PIPING SHALL BE PROPERLY SUPPORTED AND ROUTED PARALLEL OR PERPENDICULAR TO BUILDING WALLS. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL SUPPORT HANGERS AND MISCELLANEOUS METALS REQUIRED FOR PROPER INSTALLATION OF WORK.
- ALL PIPING SHALL BE PITCHED SUCH THAT AIR IN THE SYSTEM CAN BE VENTED THROUGH MANUAL AIR VENTS.
- TEST PIPING AND PROVE TIGHT FOR AT LEAST TWO HOURS TO TWICE THE SYSTEM WORKING PRESSURE. TEST SHALL BE PERFORMED IN THE PRESENCE OF THE ENGINEER AND LOCAL INSPECTOR. TEST SHALL BE REPEATED IF NECESSARY UNTIL FINAL APPROVAL OF SYSTEM IS OBTAINED.
- SUPPORT HORIZONTAL PIPING UTILIZING A SPACING PER PIPING MANUFACTURER'S REQUIREMENTS.
- INSTALL VALVES ON THE ENTIRE DISTRIBUTION SYSTEM, SO LOCATED AS TO GIVE COMPLETE CONTROL TO ALL FIXTURES AND EQUIPMENT.
- INSTALL DRAIN VALVES AT BASE OF ALL RISERS AND AT LOW POINTS OF PIPING SYSTEM. INSTALL MANUAL AIR VENT VALVE FACILITIES AT THE TOP OF ALL RISERS AND AT HIGH POINTS OF THE PIPING SYSTEM.
- INSTALL ALL HYDRONIC PIPING AS HIGH AS POSSIBLE PROVIDING RISERS, DROPS AND OFFSETS TO CLEAR STRUCTURAL MEMBERS, LIGHT FIXTURES, OTHER PIPING, AND OTHER OBSTRUCTIONS. WHERE CONFLICTS ARISE, IT SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO PROCEEDING.
- THE ENTIRE HYDRONIC SYSTEM IS TO BE BALANCED TO WITHIN 10% OF THE SPECIFIED WATER FLOWRATE REQUIREMENTS. A CERTIFIED BALANCING REPORT AND VERIFICATION IS TO BE SUBMITTED TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE.
- ALL DUCTWORK IS TO BE CONSTRUCTED OF GALVANIZED SHEET STEEL (EXCEPT WHERE OTHERWISE SPECIFIED) WITH GAUGES, BRACING AND CONSTRUCTION IN ACCORDANCE WITH THE LATEST SMACNA DUCT MANUAL STANDARDS AND ALL OTHER AUTHORITIES HAVING JURISDICTION.
- PROVIDE MANUAL DAMPERS AT EACH SPLIT OR TAP CONNECTION TO TRUNK DUCTS FOR BALANCING PURPOSES WHETHER OR NOT SPECIFICALLY SHOWN ON DRAWINGS. EACH DAMPER SHALL BE OF THE OPPOSED BLADE DAMPER TYPE INSTALLED WITH AN OPERATOR AND LOCKING DEVICE. ALL DAMPERS LOCATED ABOVE HARD OR INACCESSIBLE CEILINGS SHALL BE INSTALLED WITH REMOTE GEAR OPERATORS.
- FURNISH & INSTALL FUSIBLE LINK FIRE DAMPERS AT ALL LOCATIONS WHERE DUCT PENETRATES FIRE-RATED FLOOR OR CEILING ASSEMBLY WHETHER OR NOT SPECIFICALLY SHOWN. INSTALL DUCTWORK CASING ACCESS DOORS AND FRAMES AHEAD OF EACH FIRE DAMPER FOR INSPECTION AND MAINTENANCE. DOORS SHALL BE A MINIMUM OF 20 GA. DOUBLE PANEL INSULATED TYPE.
- INSTALL TURNING VANES ON ALL RECTANGULAR TURNS. TURNING VANES SHALL BE DOUBLE THICKNESS TYPE CONSTRUCTED IN ACCORDANCE WITH SMACNA MANUAL.
- ROUND SHEET STEEL ELBOWS ARE TO BE INSTALLED AT THE DUCT CONNECTION TO ALL SUPPLY AIR DIFFUSERS. SHEET STEEL PLENUM BOXES ARE TO BE INSTALLED AT THE DUCT CONNECTION TO ALL RETURN AND EXHAUST AIR GRILLES. THE CONTRACTOR IS TO PAINT THE INSIDE OF THE SHEET STEEL PLENUM BOXES FLAT BLACK.
- INSTALL ALL DUCTWORK AS HIGH AS POSSIBLE PROVIDING RISERS, DROPS AND OFFSETS TO CLEAR STRUCTURAL MEMBERS, LIGHT FIXTURES, OTHER PIPING, AND OTHER OBSTRUCTIONS. WHERE CONFLICTS ARISE, IT SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO PROCEEDING.
- THE ENTIRE AIR DISTRIBUTION SYSTEM IS TO BE BALANCED TO WITHIN 10% OF THE SPECIFIED AIRFLOW REQUIREMENTS.
- THE CONTRACTOR IS RESPONSIBLE TO TEST ALL EQUIPMENT, PIPING, FIXTURES, AND SYSTEMS INSTALLED UNDER THIS CONTRACT TO ENSURE PROPER OPERATION PRIOR TO FINAL ACCEPTANCE BY THE OWNER AND ENGINEER.
- THE CONTRACTOR IS RESPONSIBLE TO DETERMINE WHETHER SPECIAL LICENSING IS REQUIRED IN ORDER TO PERFORM THE REQUIRED WORK IN THE MUNICIPALITY WHERE THE PROJECT IS LOCATED. IF THE CONTRACTOR CANNOT OBTAIN THE REQUIRED LICENSING TO COMPLETE THE WORK WITHIN THE PROJECT SCHEDULE, THEN THE CONTRACTOR SHALL NOT BE PERMITTED TO BID ON THIS PROJECT.
- CONTRACTOR IS RESPONSIBLE TO CREATE AND SUBMIT RED-LINE "AS-BUILT" PLANS TO THE ENGINEER AT THE END OF THE PROJECT. AS-BUILT PLANS SHALL ACCURATELY REPRESENT THE SYSTEMS AS THEY WERE INSTALLED.

## Mechanical Equipment:

- 1 THERMOSTAT PROVIDED BY OWNER, INSTALLED BY CONTRACTOR, MOUNT 5'-0" A.F.F. IN LOCATIONS SHOWN ON PLANS



- NOTES:
- PIPE 8" AND LARGER SHALL HAVE ROLLER SUPPORTED WITH DUAL RODS.
  - FOR CHW SERVICE OVER 3" REPLACE SADDLE WITH 12" LONG 14 GA SHIELD WITH RIGID INSULATION BETWEEN PIPE AND SHIELD.

PIPE Ø (IN.)	MAX. SPACING BETWEEN HANGERS (FT.)			MIN. ROD SIZE (IN.)
	STEEL PIPE	COPPER PIPE	CPVC	
1/2 THRU 1	7	5	5	3/8
1-1/2 THRU 2	9	6	6	3/8
2-1/2	11	9	7.5	1/2
3	12	10	7.5	1/2
4	14	12	8.5	5/8
6	17	14	9	3/4
8	19	16	10	7/8
10	22	18	10.5	7/8

7 Pipe Hanger Support  
M001 N.T.S.

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Consultant

Project Title

VALLEY CENTRAL SCHOOL DISTRICT  
MAYBROOK ALTERNATIVE LEARNING CENTER  
2023 CAPITAL PROJECT - PHASE 1

Project Title

STATE OF NEW YORK  
JULIUS ROBERTSON  
099033  
LICENSED PROFESSIONAL ENGINEER

DATE DESCRIPTION

Drawn By: BJK  
Checked By: BJK  
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CSArch Proj. #: 181-2302.01  
Issued for Bid: 10/18/24

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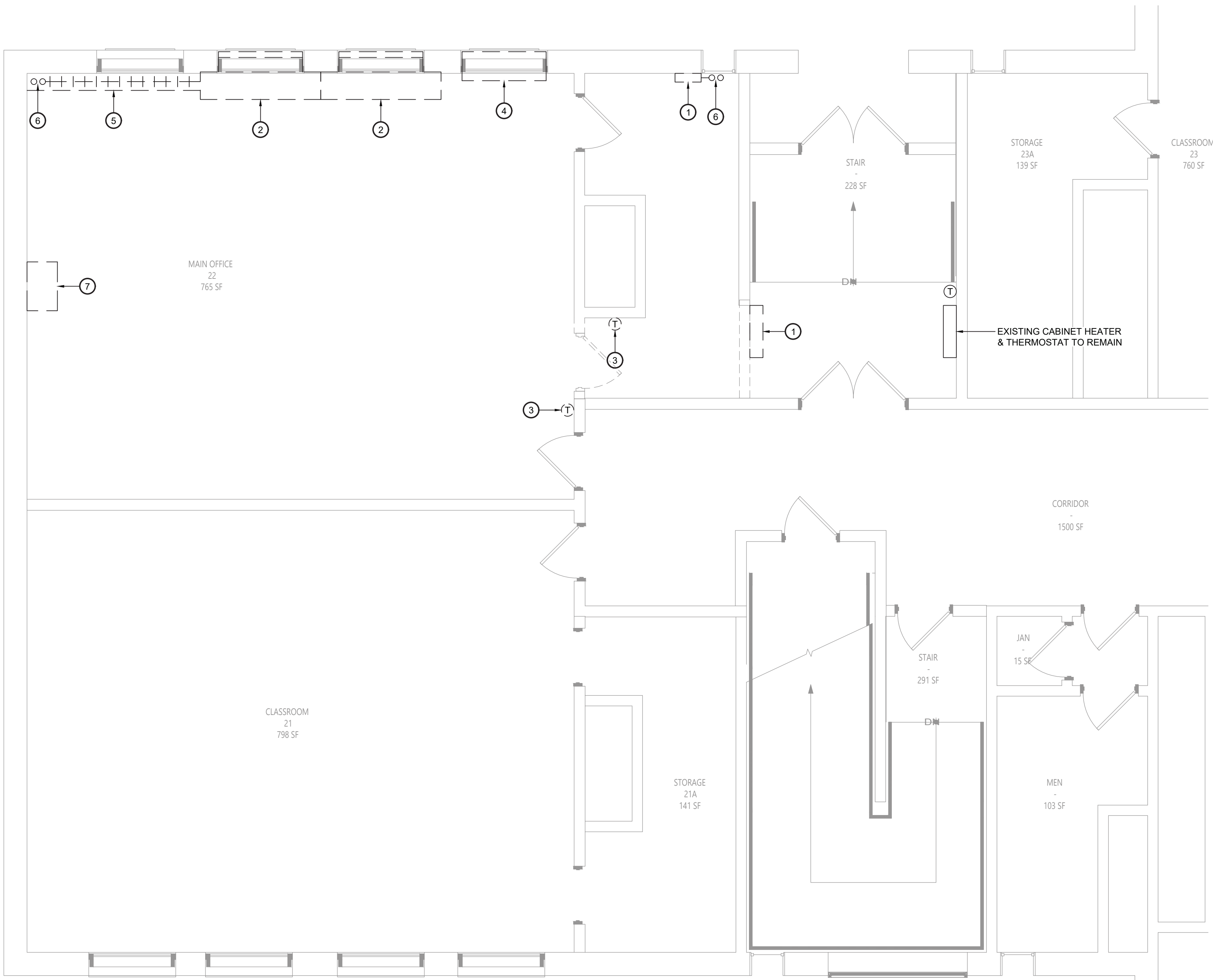
MECHANICAL  
NOTES,  
LEGENDS,  
SCHEDULES &  
DETAILS

Sheet No.

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M001

CONSTRUCTION DOCUMENTS

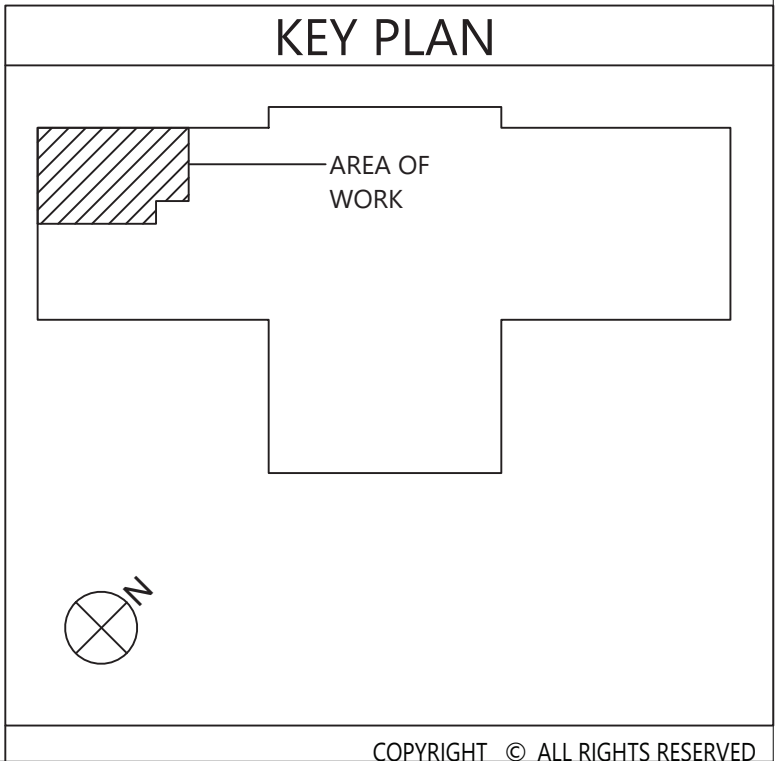




1 Mechanical Demolition Plan  
MD111 Scale: 1/4" = 1'-0"

Key Notes:

- EXISTING CABINET UNIT HEATER TO BE DISCONNECTED, REMOVED & PROPERLY DISPOSED OF INCLUDING ANY PIPING, CONTROLS, HANGERS, SUPPORTS, ACCESSORIES, ETC.; REMOVE PIPING BACK TO MAINS & CAP
- EXISTING UNIT VENTILATOR TO BE DISCONNECTED, REMOVED & PROPERLY DISPOSED OF INCLUDING ANY PIPING, CONTROLS, LOUVERS, HANGERS, SUPPORTS, ACCESSORIES, ETC.; REMOVE PIPING BACK TO MAINS & CAP; SEAL EXTERIOR LOUVER WEATHER TIGHT W/ RIGID INSULATION ON INSIDE FACE
- EXISTING THERMOSTAT TO BE DISCONNECTED, REMOVED & PROPERLY DISPOSED OF INCLUDING ANY ASSOCIATED WIRING, TUBING, CONDUIT, ACCESSORIES, ETC.;
- EXISTING WINDOW AIR CONDITIONING UNIT TO BE DISCONNECTED, REMOVED & TURNED OVER TO OWNER
- EXISTING FINNED TUBE RADIATION TO BE DISCONNECTED, REMOVED & PROPERLY DISPOSED OF INCLUDING ANY PIPING, CONTROLS, HANGERS, SUPPORTS, ACCESSORIES, ETC.; REMOVE PIPING BACK TO MAINS & CAP
- EXISTING HOT WATER PIPING RISING UP ALONG WALL TO ABOVE CEILING TO BE DISCONNECTED, REMOVED & PROPERLY DISPOSED OF INCLUDING ANY ASSOCIATED VALVES, STRAINERS, HANGERS, SUPPORTS, INSULATION, ACCESSORIES, ETC. REMOVE TO MAINS ABOVE CEILING & CAP
- EXISTING SINK TO BE DISCONNECTED, REMOVED & PROPERLY DISPOSED OF INCLUDING ANY ASSOCIATED VALVES, HANGERS, SUPPORTS, INSULATION, ACCESSORIES, ETC. REMOVE PIPING DN THRU FLOOR & CAP IN BASEMENT



VALLEY CENTRAL SCHOOL DISTRICT  
MAYBROOK ALTERNATIVE LEARNING CENTER  
2023 CAPITAL PROJECT - PHASE 1

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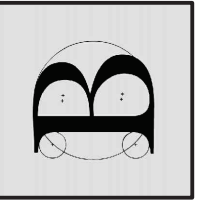
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