

GENERAL NOTES

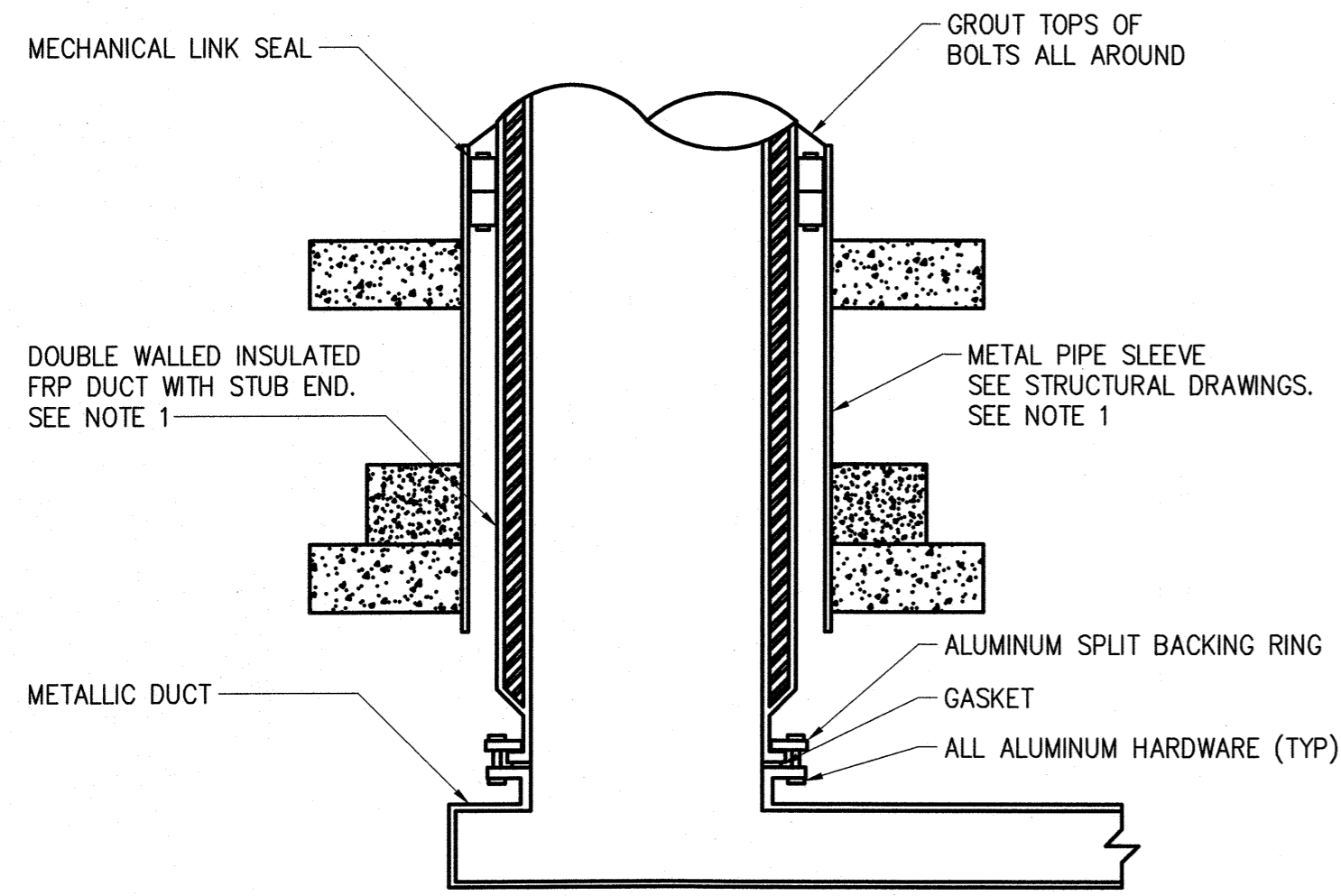
- THE SYMBOLS AND ABBREVIATIONS LIST ON THIS SHEET IS A COMPREHENSIVE STANDARD GUIDE INTENDED FOR GENERAL USE ON ALL PROJECTS. THEREFORE NOT ALL THE SYMBOLS AND ABBREVIATIONS CONTAINED IN THIS LIST ARE NECESSARILY USED ON THIS PARTICULAR PROJECT AND SHOULD BE USED FOR CLARIFICATION ONLY.
- ALL DUCT DIMENSIONS ARE CLEAR DIMENSIONS TO INSIDE OF DUCT. DIMENSIONS TO DUCTS FROM FLOOR OR WALL SHALL BE TO THE OUTSIDE OF DUCT/INSULATION. WHERE INTERNAL INSULATION IS REQUIRED THE DUCT SIZE SHALL BE INCREASED TO GIVE CLEAR INSIDE DIMENSIONS AS NOTED ON THE DRAWINGS.
- EQUIPMENT SIZES AND LOCATIONS ARE APPROXIMATE. ACTUAL DIMENSIONS TO BE DETERMINED BY EQUIPMENT FURNISHED. COORDINATE HVAC WORK WITH THE WORK OF ALL OTHER TRADES.
- FINAL OPENING DIMENSIONS, CONCRETE PAD SIZES, AND LOCATIONS MUST BE COORDINATED DURING CONSTRUCTION WITH APPROVED EQUIPMENT.
- FINAL SIZES OF FLOOR OPENINGS, DUCT PLENUMS, TRANSITIONS AND PIPING CONNECTIONS TO ALL EQUIPMENT SHALL BE DETERMINED BY EQUIPMENT FURNISHED.
- THE DRAWINGS ARE SCHEMATIC IN NATURE AND SHOW INTENDED GENERAL LOCATION OF HVAC EQUIPMENT AND SYSTEMS. NOT ALL OFFSETS AND REQUIRED FITTINGS FOR ACTUAL FIELD INSTALLATION ARE INTENDED TO BE SHOWN FOR INSTALLATION OF SYSTEMS IN THE SPACE AVAILABLE IN CONSIDERATION OF WORK OF OTHER TRADES AND FIELD CONDITIONS. CONTRACTOR SHALL PROVIDE ADDITIONAL OFFSETS IN DUCTWORK AND PIPING AS REQUIRED TO AVOID SUCH INTERFERENCES OR FIELD CONDITIONS AT NO ADDITIONAL COST TO THE ORIGINAL CONTRACT AMOUNT.
- FIRST FIGURE OF DUCT SIZE INDICATES DIMENSION OF FACE SHOWN OR INDICATED OR WIDTH OF DUCT IN PLAN VIEW.
- COORDINATE THE REQUIREMENTS FOR HVAC OPENINGS AND SLEEVES IN BUILDING ELEMENTS WITH THE GC.
- REFER TO ELECTRICAL DRAWINGS OR SPECIFICATIONS FOR INTERLOCKING WIRING REQUIREMENTS.
- CONTRACTOR SHALL COORDINATE DUCTWORK INSTALLATION WITH OTHER TRADES SO THAT THE DUCTWORK IS INSTALLED BEFORE THE PIPING, LIGHTING AND ELECTRICAL CONDUIT.
- PROVIDE ADEQUATE SUPPORT, PER THE MANUFACTURER'S RECOMMENDATIONS, FOR ALL HVAC EQUIPMENT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING ELECTRICAL RATINGS FROM CERTIFIED DRAWINGS OF EQUIPMENT AND SHALL MAKE ANY BRANCH CIRCUIT DISTRIBUTION MODIFICATION REQUIREMENTS WITHOUT ANY ADDITIONAL COST TO OWNER. THE CONTRACTOR SHALL SUBMIT A SCHEDULE OF SUCH CHANGES FOR APPROVAL BY ENGINEER.
- WHEREVER THE REQUIREMENTS AND REGULATIONS OF STATE, FEDERAL AND LOCAL AUTHORITIES HAVING JURISDICTION DIFFER FROM THE DRAWINGS OR SPECIFICATIONS, THEY SHALL TAKE PRECEDENCE AND SHALL BE MADE PART OF THE CONTRACT (EXCEPT WHERE THE DRAWINGS OR SPECIFICATIONS ARE MORE STRINGENT).
- THE CONTRACTOR SHALL PROVIDE AND INSTALL FIRE AND SMOKE RATED DAMPERS IN HVAC DUCTS WHICH PENETRATE FIRE RATED BUILDING ASSEMBLIES AS SHOWN ON ARCHITECTURAL DRAWINGS.
- DUCTWORK AND PLENUM TO LOUVERS SHALL BE CONNECTED TO FRAMED OPENINGS AND, SEALED AIRTIGHT AND WEATHER RESISTANT.
- THERMOSTATS, SENSORS, AND/OR CONTROL PANEL LOCATIONS SHOWN ARE APPROXIMATE AND SHALL BE COORDINATED TO SUIT FIELD CONDITIONS.
- INSTALL WALL MTD SENSORS, CONTROLS AND THERMOSTATS 4"-0" AFF UNLESS OTHERWISE NOTED. ALIGN WITH OTHER NEARBY ITEMS SUCH AS LIGHT SWITCHES. DO NOT INSTALL CLOSER THAN 6-INCHES FROM EDGE OF DOOR FRAME OR CORNER OF WALL AS SHOWN ON ARCH PLANS. WHERE CONFLICTS MAY OCCUR WITH ITEMS SUCH AS LIGHT SWITCHES, MOUNT THE SENSOR OR CONTROL DEVICE 4"-6" AFF CENTERED ABOVE THE LIGHT SWITCH.
- PROVIDE ADEQUATE MEANS OF ACCESS CLEARANCE FOR ALL HVAC/MECHANICAL EQUIPMENT AND SYSTEMS THAT REQUIRE ACCESS FOR PROPER OPERATION, MAINTENANCE AND REPAIR PER RECOMMENDED MANUFACTURER CLEARANCES. PROVIDE ACCESS DOORS WHERE NECESSARY IN FINISHED WALLS OR DRYWALL CEILINGS FOR ACCESS TO VALVES, DAMPERS, OR CONTROL DEVICES.
- COORDINATE THE REQUIREMENTS OF HVAC HANGERS AND SUPPORTS W/ OTHER PRIME CONTRACTORS PROVIDING STRUCTURAL AND/OR ARCHITECTURAL BUILDING ELEMENTS WHICH HVAC SUPPORTS SHALL INTERFACE.
- HVAC CONTRACTOR SHALL PROVIDE ALL FIRESTOPPING AND PIPE SLEEVES FOR ALL PIPE AND DUCT PENETRATIONS THRU FIRE RATED BUILDING ASSEMBLIES.
- CONTRACTOR SHALL OBTAIN AND PAY ALL FEES RELATED TO PERMITTING, AND INSPECTIONS.
- FOR ADDITIONAL REQUIREMENTS REFER TO SPECIFICATIONS.

ABBREVIATIONS

ACCU	AIR COOLED CONDENSING UNIT
AFF	ABOVE FLOOR FINISH
AI	ANALOG INPUT
AL	ALUMINUM
AO	ANALOG OUTPUT
ARCH	ARCHITECTURAL
BD	BACKDRAFT DAMPER
CFM	CUBIC FEET PER MINUTE
CONC	CONCRETE
CRAC	CONTROL ROOM AIR CONDITIONING
DB	DRY BULB
DI	DISCRETE INPUT
DN	DOWN
DO	DISCRETE OUTPUT
DWG	DRAWING
EF	EXHAUST FAN
EL	ELEVATION
EQPT	EQUIPMENT
FA	FREE AREA
FRP	FIBERGLASS REINFORCED PLASTIC
FS	FLOW SENSOR
GALV	GALVANIZED
H	HEIGHT
HMI	HUMAN MACHINE INTERFACE
HP	HORSEPOWER
KW	KILOWATT
L	LENGTH
LBS	POUNDS
LS	LIGHT SWITCH
MBH	THOUSAND BTU PER HOUR
MD	MOTORIZED DAMPER
MECH	MECHANICAL
MTD	MOUNTED
OPD	OVERCURRENT PROTECTION DEVICE
PD	PRESSURE DIFFERENTIAL
RF	RECIRCULATION FAN
SD	SMOKE DAMPER
SF	SUPPLY FAN
S.P.	STATIC PRESSURE
STS	SURFACE TEMPERATURE SENSOR
TH	THERMOSTAT
TS	TEMPERATURE SENSOR
THS	TEMPERATURE & HUMIDITY SENSOR
TYP	TYPICAL
UH	UNIT HEATER
W	WIDTH
WB	WET BULB
VEL	VELOCITY
WMS	WIRE MESH SCREEN
WSA	WIRE SIZE AMPS

DUCT SYMBOLS

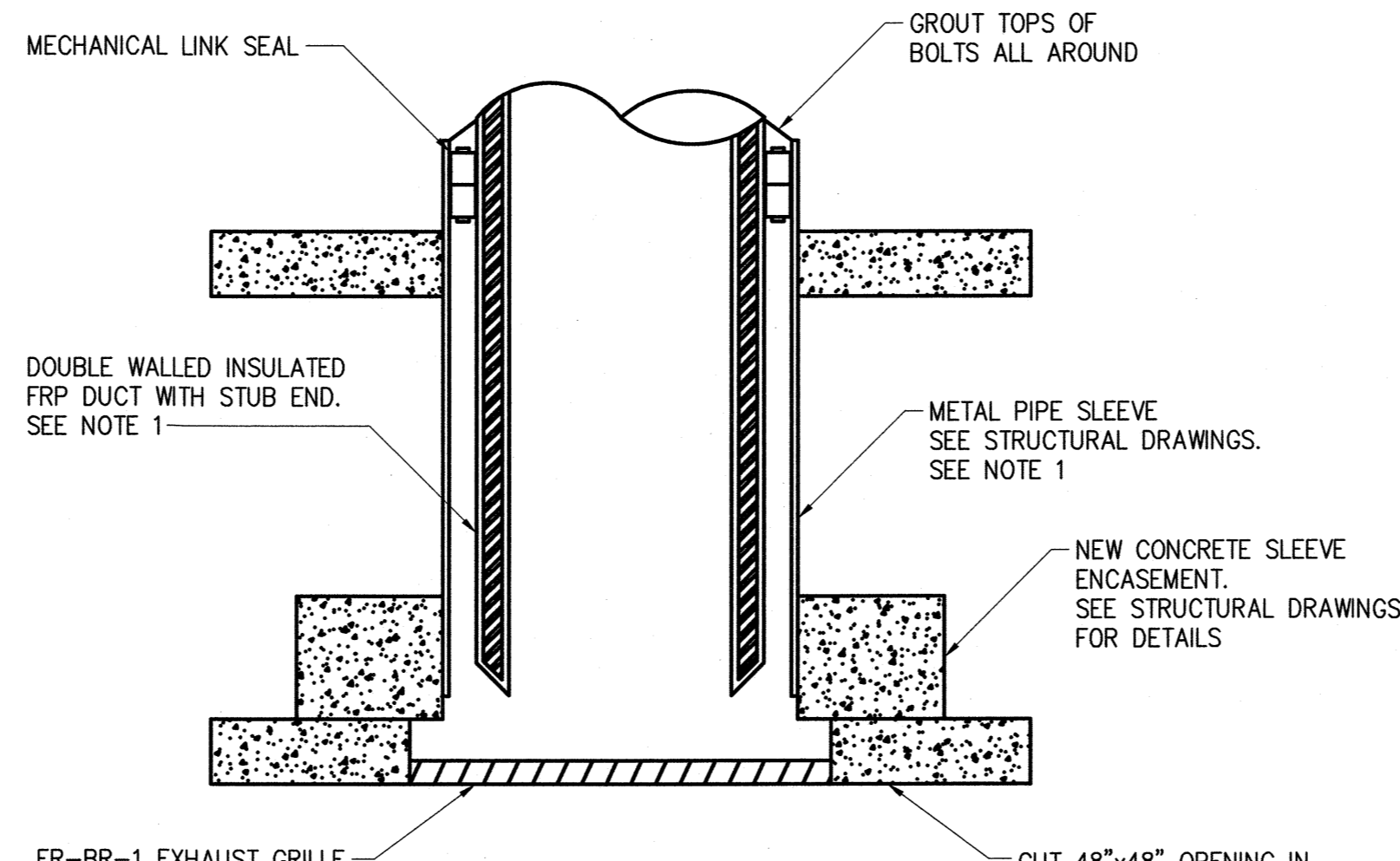
	SUPPLY AIR DUCT SECTION-UP
	SUPPLY AIR DUCT SECTION-DOWN
	RETURN AIR DUCT SECTION-UP
	RETURN AIR DUCT SECTION-DOWN
	EXHAUST AIR DUCT SECTION-UP
	EXHAUST AIR DUCT SECTION-DOWN
	VOLUME DAMPER
	MITERED ELBOW WITH TURNING VANES
	BULLHEAD TEE WITH TURNING VANES AND SPLITTER PLATE



FRP DUCT DETAIL 1
N.T.S.

NOTES:

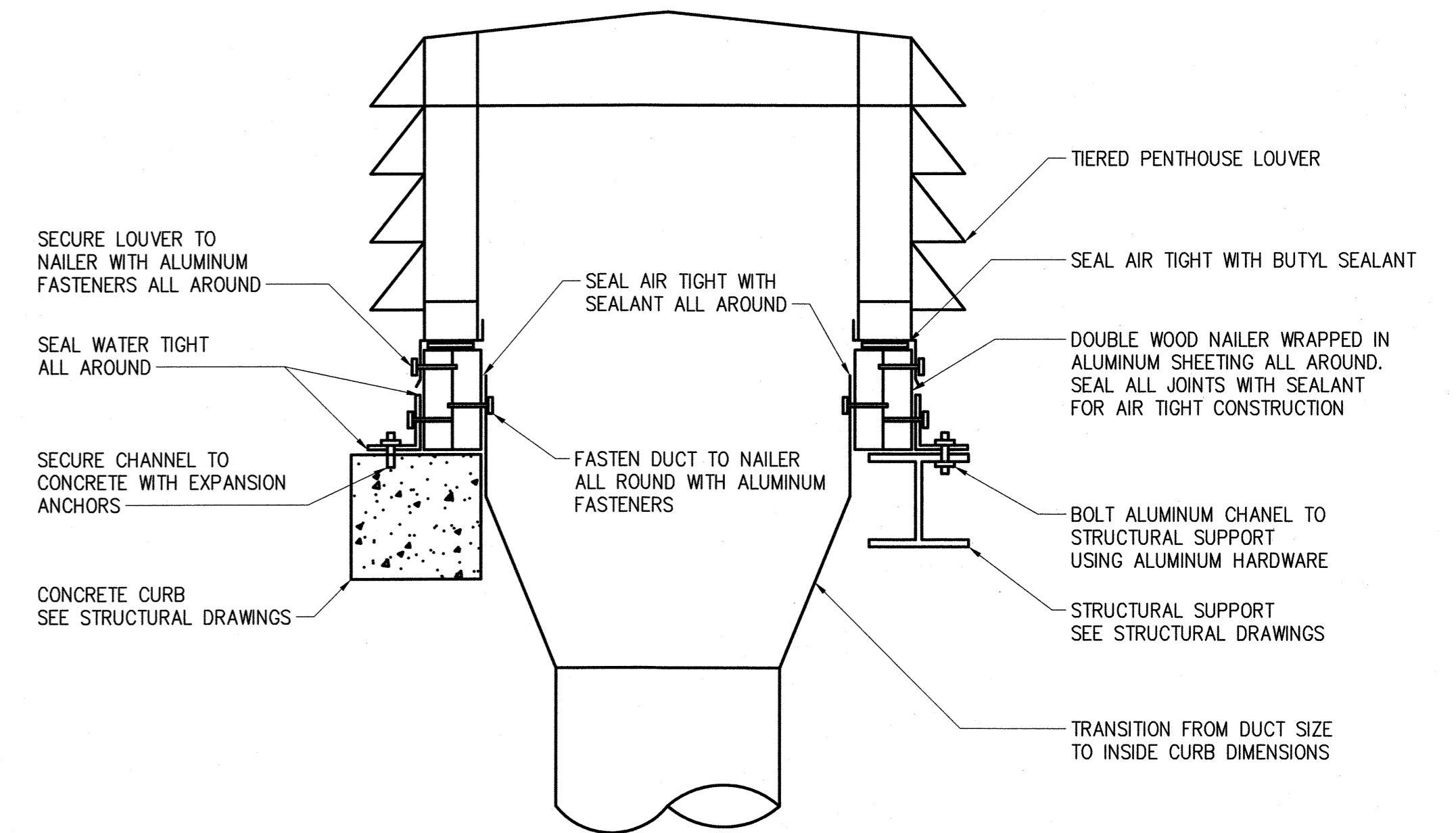
- THE CONTRACTOR SHALL COORDINATE THE FINAL OUTSIDE DIAMETER OF THE FRP DUCT WITH THE PIPE SLEEVE SHOWN IN THE STRUCTURAL DRAWINGS TO ALLOW PROPER INSTALLATION OF THE LINK SEAL PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS



FRP DUCT DETAIL 2
N.T.S.

NOTES:

- THE CONTRACTOR SHALL COORDINATE THE FINAL OUTSIDE DIAMETER OF THE FRP DUCT WITH THE PIPE SLEEVE SHOWN IN THE STRUCTURAL DRAWINGS TO ALLOW PROPER INSTALLATION OF THE LINK SEAL PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS

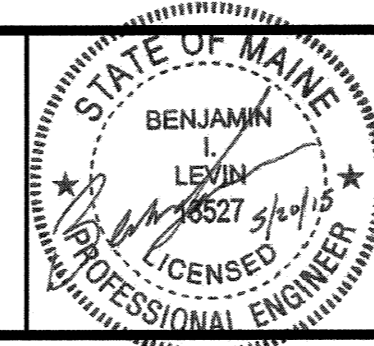


TIERED PENTHOUSE DETAIL ON STEEL OR CONCRETE SUPPORT
N.T.S.

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XREFs: \\black\90216-000-TB_3422
PLOT DATE: May 21, 2015 - 3:10pm By: mbrandt

DESIGNED	SB
DRAWN	MJB
CHECKED	CMB
PROJ.ENGR.	BIL
NO.	1
DATE	MAY 2015
ISSUED FOR	CONSTRUCTION
BY	BIL

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PORTLAND WATER DISTRICT
PORTLAND, MAINE
EAST END WASTEWATER TREATMENT FACILITY
AERATION UPGRADE

HVAC
SYMBOLS, ABBEVIATIONS, AND NOTES

DATE	MAY 2015
DWG. NO.	H01
SHEET NO.	71
FILE NAME:	90216-000H01

FINAL DRAWING - ISSUED FOR CONSTRUCTION