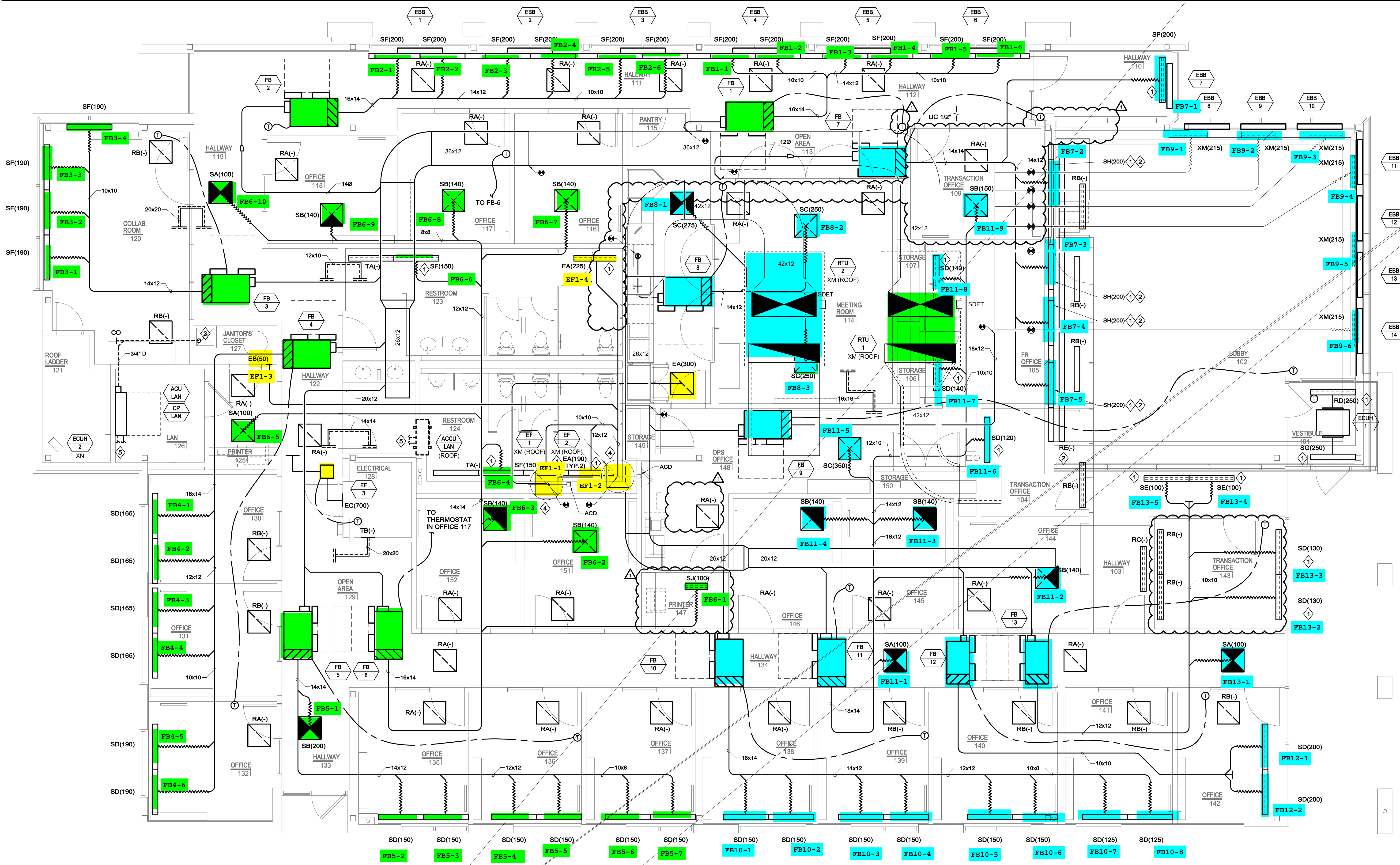


INDIANAPOLIS - 305 - FLOOR 01  
 8480 KEYSTONE CROSSING  
 INDIANAPOLIS, IN 46240-2437 USA

Scenario: Current  
 Wed May 29 16:02:47 EDT 2024



KEYNOTES	
	PROVIDE REMOTELY ADJUSTABLE BALANCING DAMPER PER DETAIL.
	INSTALL LINEAR SLOT DIFFUSER IN VERTICAL WALL. COORDINATE WITH ARCHITECTURAL PLANS FOR MOUNTING ELEVATION. LINEAR SLOT SHALL BE CONTINUOUS ALONG LENGTH OF WALL.
	3/4" CONDENSATE DRAIN PIPING DOWN TO JANITORS SINK.
	RE-BALANCE EXISTING TO REMAIN FAN TO SUM OF CONNECTED AIRFLOWS.
	REFRIGERANT LINES BETWEEN ACU-LAN IN LAN ROOM AND ACCU-LAN ON ROOF. CONTRACTOR SHALL CONFIRM FINAL ROUTING AND SIZING WITH MANUFACTURER'S RECOMMENDATIONS BEFORE INSTALLATION. COORDINATE WITH MANUFACTURER AS REQUIRED.

- SHEET NOTES:**
- REFER TO SHEET H-000 FOR HVAC LEGEND, SYMBOLS AND ABBREVIATIONS.
  - CONTRACTOR TO COORDINATE ALL BUILDING SHUTDOWNS WITH BUILDING MANAGEMENT.
  - ALL EXISTING DUCTWORK AND PIPING WHICH IS TO BE REUSED SHALL BE CLEANED, REINFORCED, INSULATED, LINED, SEALED AND BRACED AS PER SPECIFICATIONS.
  - CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DUCT AND PIPE SIZES AND LOCATIONS PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL INFORM ENGINEER OF ANY DISCREPANCIES ON DRAWINGS.
  - CONTRACTOR SHALL ENSURE ALL EXISTING EQUIPMENT IS OPERATING PROPERLY PRIOR TO REUSE AND SHALL REPAIR/REPLACE EQUIPMENT NOT OPERATING PROPERLY.
  - PROVIDE VOLUME DAMPERS AT EACH DIFFUSER, REGISTER AND GRILLE (AIR DEVICE). ALL VOLUME DAMPERS SHALL BE ACCESSIBLE. VOLUME DAMPERS LOCATED IN INACCESSIBLE LOCATIONS SHALL BE PROVIDED WITH REMOTELY ADJUSTABLE BALANCING DAMPER.
  - THERMOSTATS SHALL BE MOUNTED 4'-0" ABOVE FINISHED FLOOR. COORDINATE EXACT LOCATION WITH THE ARCHITECT. THERMOSTATS MOUNTED ON PERIMETER WALLS SHALL BE PROVIDED WITH AN INSULATED BACK PLATE.
  - CONTRACTOR TO ENSURE A RETURN AIR PATH IS AVAILABLE FROM ALL ROOMS AND SPACES BACK TO THE MAIN RETURN AIR DUCT INLETS. CONTRACTOR SHALL PROVIDE TRANSFER DUCTS AT ALL FULL HEIGHT PARTITIONS. ALL TRANSFER DUCTS SHALL BE LINED AND CONSTRUCTED ACCORDING TO DETAIL. TRANSFER DUCTS SHALL BE SIZED AT A MAXIMUM VELOCITY OF 300 FPM.

- PROVIDE CLEANOUTS AT ALL CHANGES IN DIRECTION FOR ALL CONDENSATE DRAIN PIPING.
- PROVIDE RETURN AIR TRANSFER BOOT FOR ALL RETURN GRILLES PER DETAIL.
- HVAC CONTRACTOR SHALL INCLUDE AS PART OF PROJECT SCOPE (1) 8 HOUR DAY FOR HVAC TECHNICIAN, BALANCING CONTRACTOR AND CONTROLS CONTRACTOR TO INTERFACE WITH THE HVAC DESIGN ENGINEER AFTER THE REQUIRED START UP AND BALANCING HAS BEEN COMPLETED TO VERIFY PROPER OPERATION OF ALL MECHANICAL SYSTEMS BEFORE THE SPACE IS TURNED OVER TO FIDELITY INVESTMENTS. DURING THIS MEETING, THE CONTRACTORS SHALL HAVE WITH THEM ALL NECESSARY EQUIPMENT TO VERIFY OPERATION OF EQUIPMENT AND TO VERIFY AIRFLOWS (DIFFUSER AND TRAVERSE). ANY DEFICIENCIES FOUND DURING THIS WALK THROUGH SHALL BE CORRECTED AT NO ADDITIONAL EXPENSE TO THE OWNER.
- ALL DUCT RUNOUTS TO DIFFUSERS SHALL MATCH SCHEDULED DIFFUSER NECK SIZE, UNLESS OTHERWISE NOTED.
- ALL DUCT RUNOUTS TO TERMINAL EQUIPMENT SHALL MATCH SCHEDULED INLET SIZE, UNLESS OTHERWISE NOTED.
- ROOFTOP UNIT AND ROOF MOUNTED EXHAUST FAN CONTROL SEQUENCES ARE EXISTING TO REMAIN. REFER TO EQUIPMENT OPERATION SCHEDULE ON H-600 FOR HOURS OF OPERATION.
- ROOFTOP UNIT AND ROOF MOUNTED EXHAUST FAN AIRFLOWS SHALL BE BALANCED TO THE NEW TOTAL AIRFLOWS.

Seals:

General Notes:

Project Title:

Number	Description	Date

Key Plan: Project North

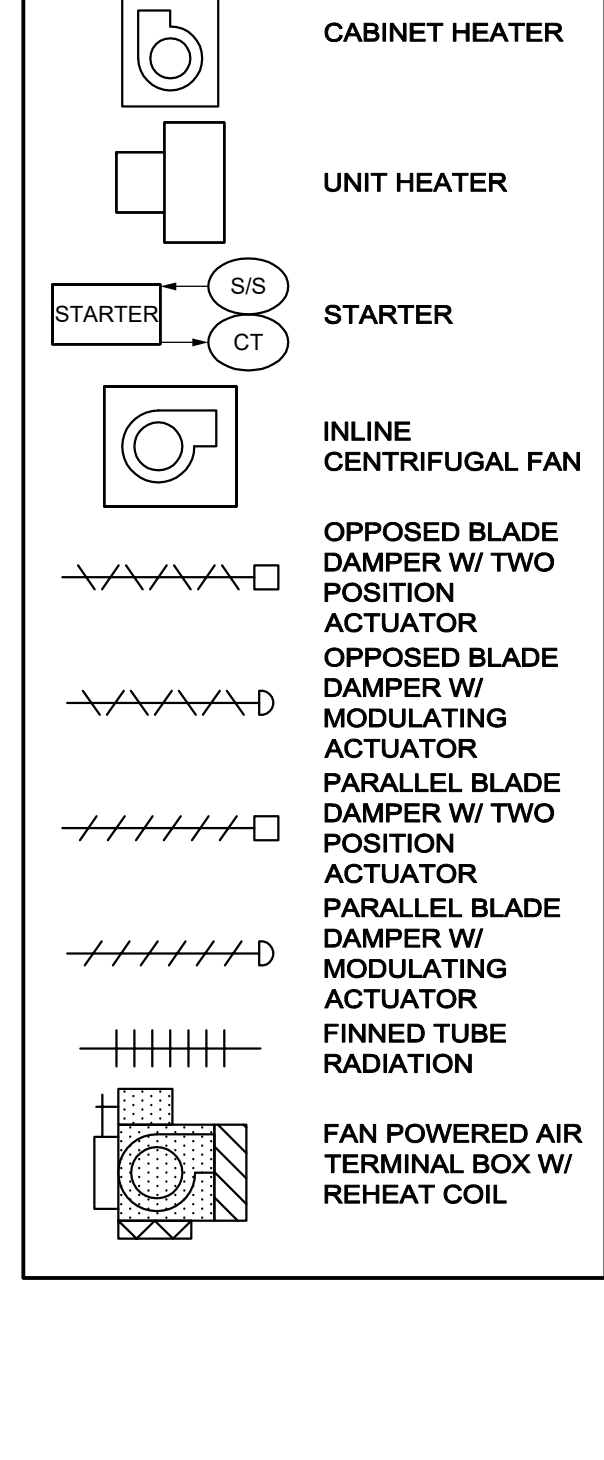
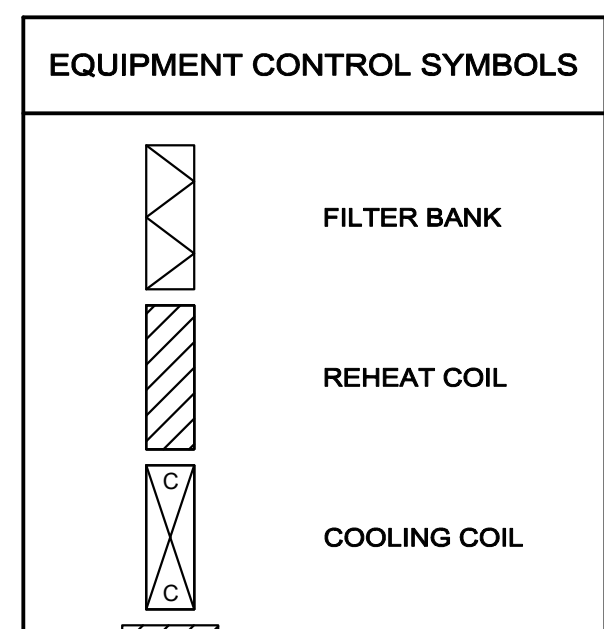
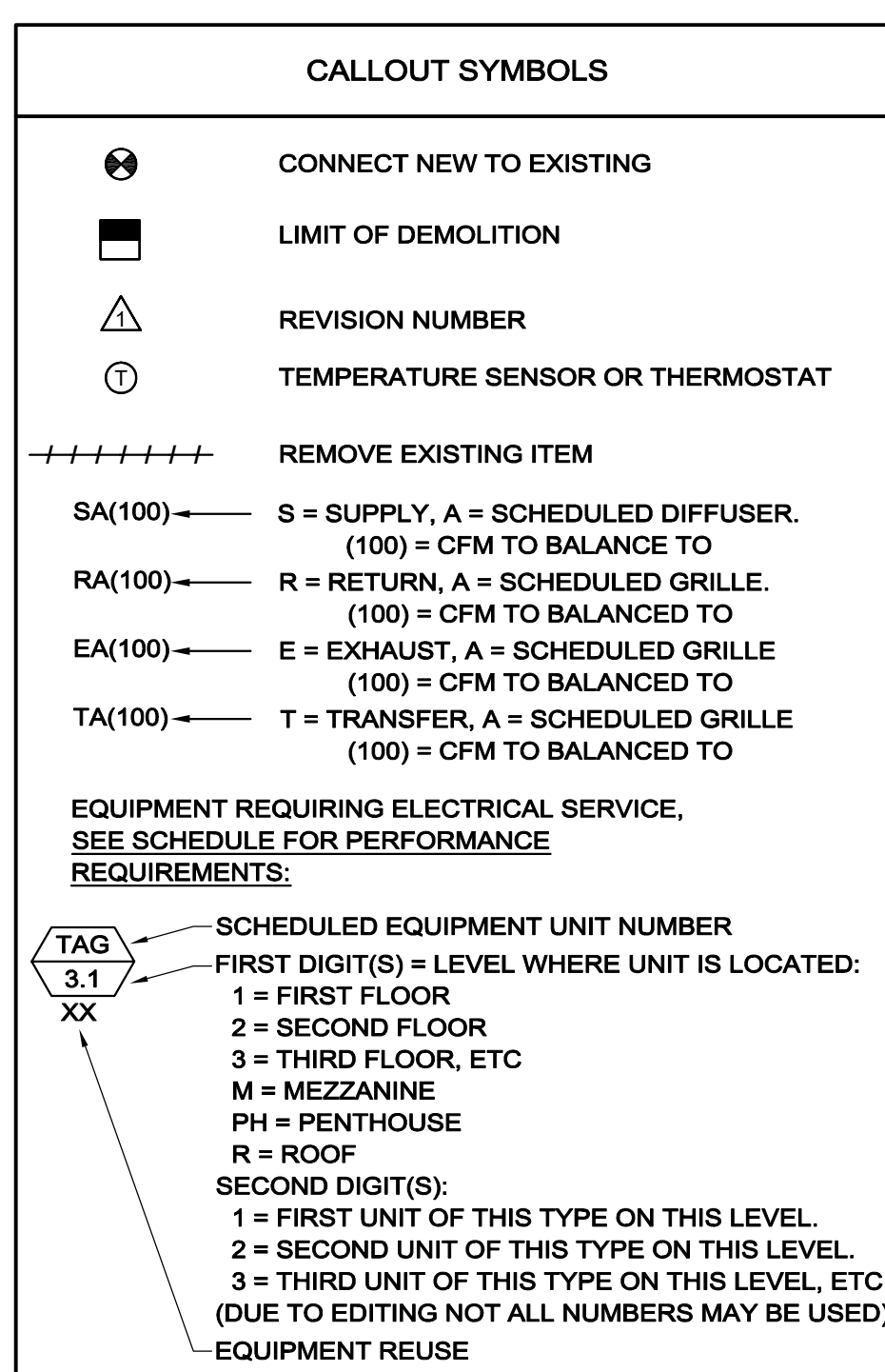
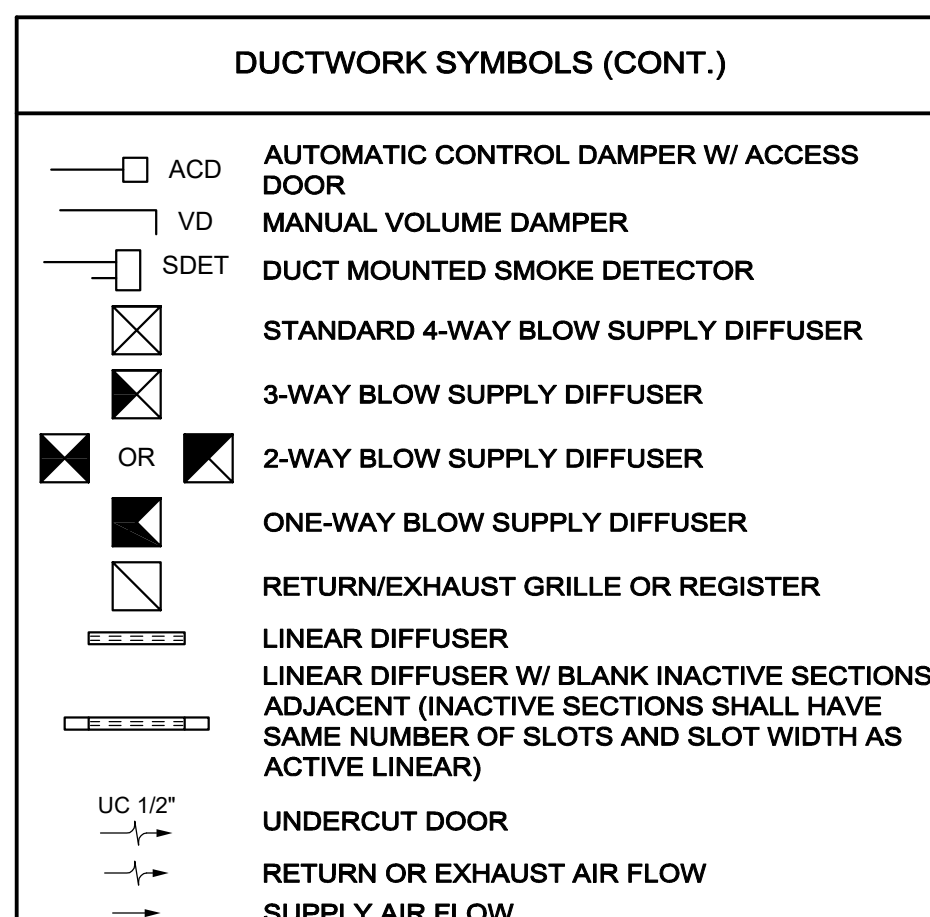
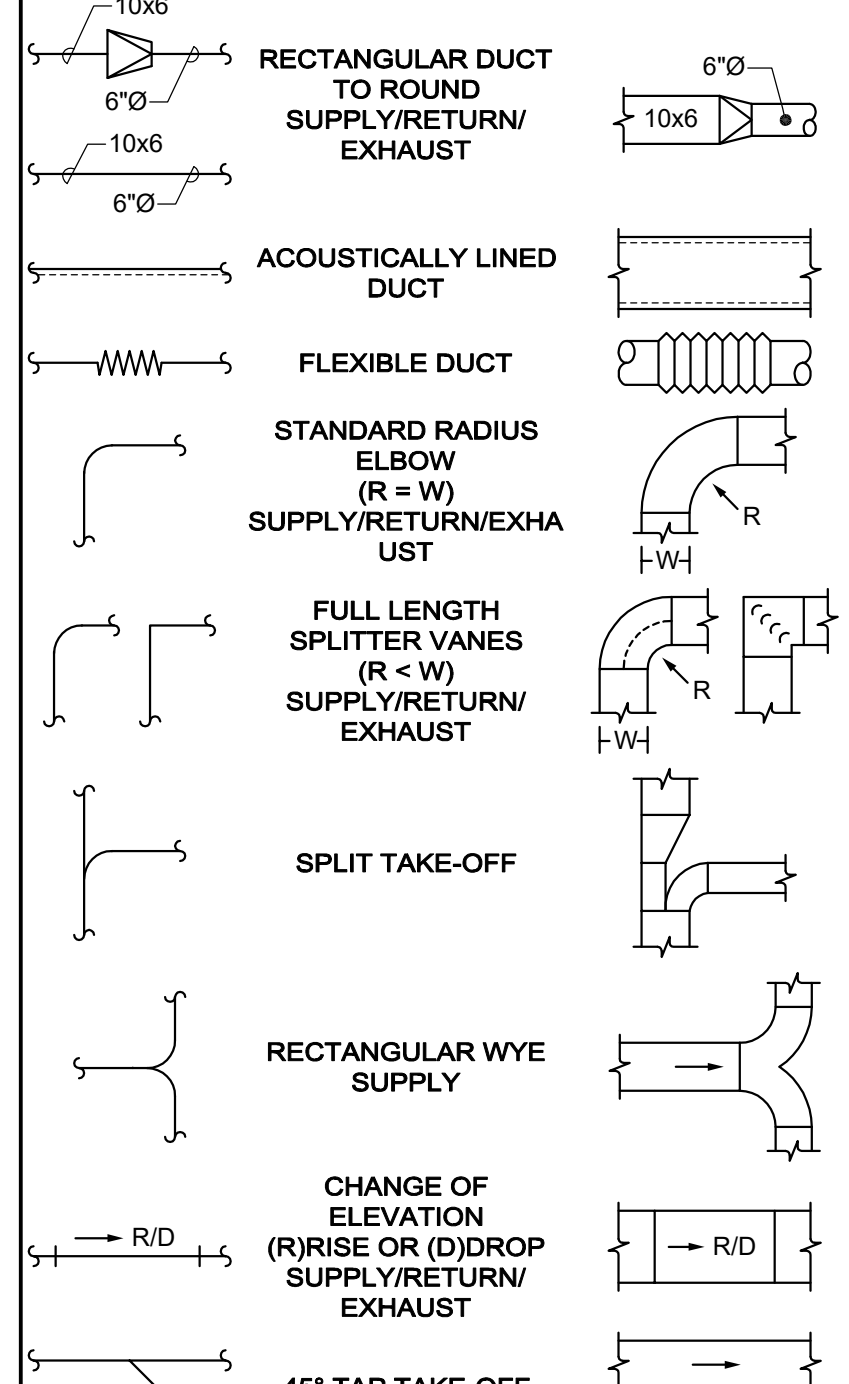
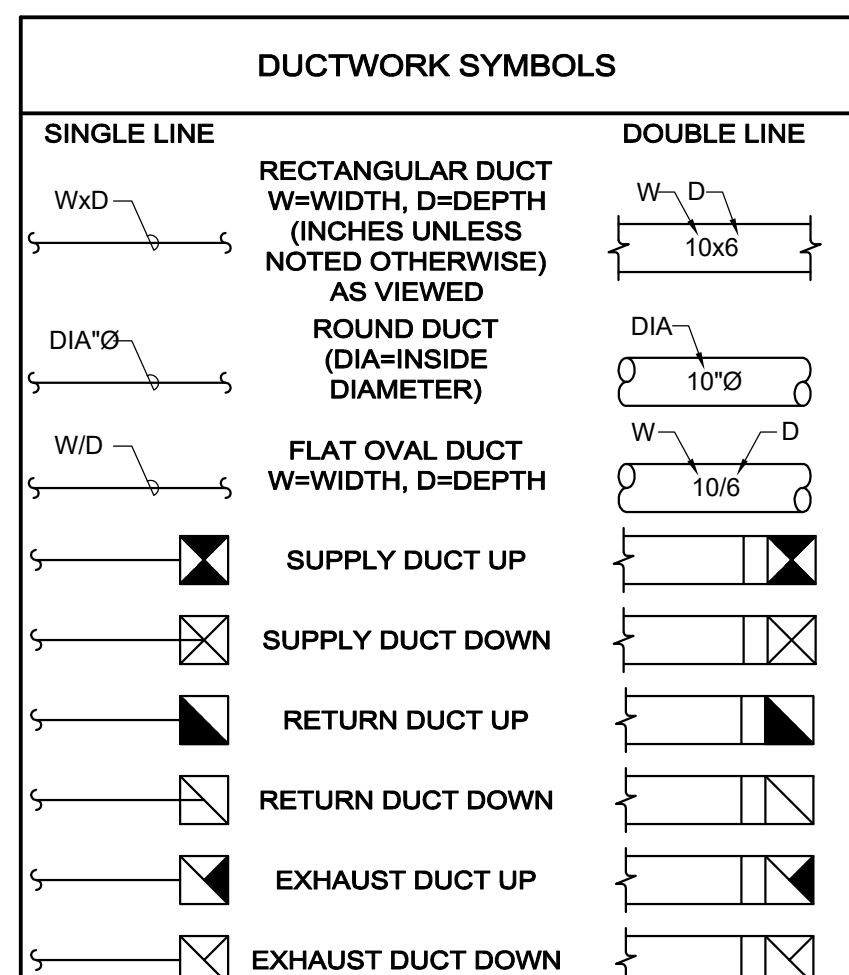
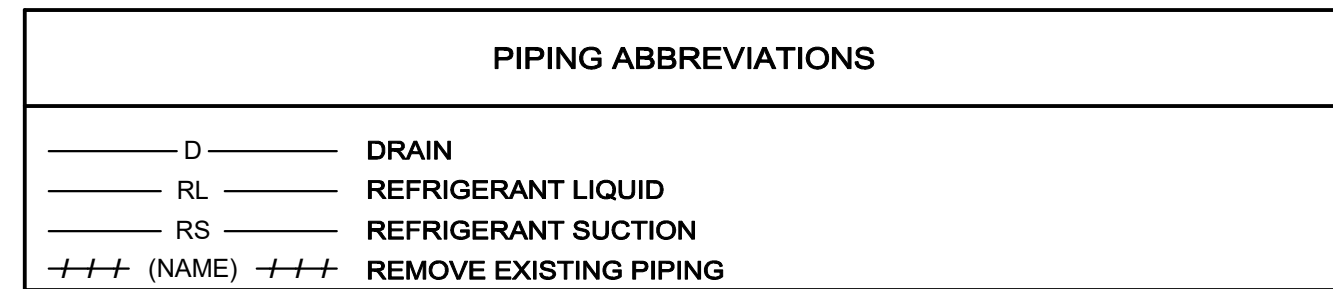
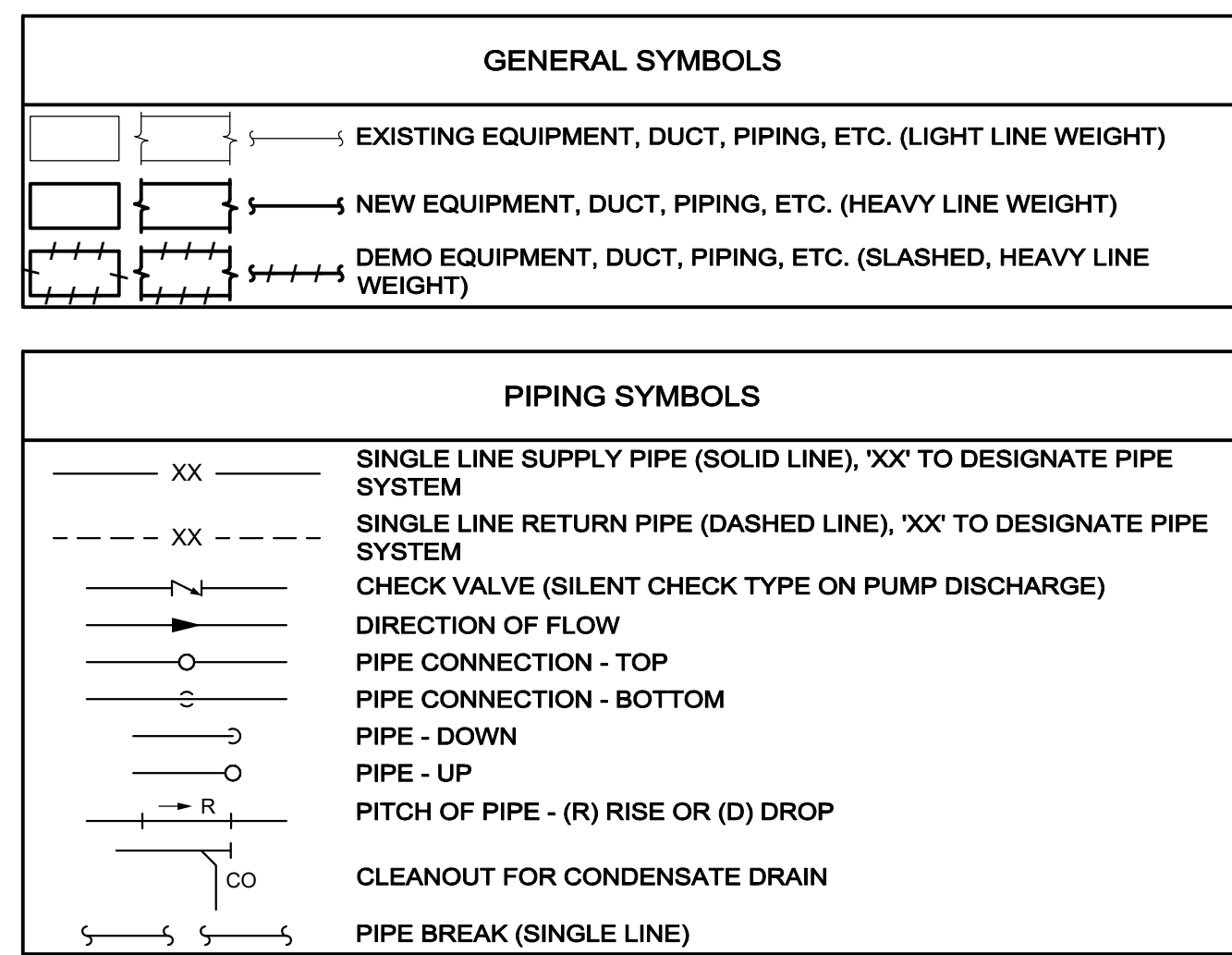
CAD File:  
Project No.:  
Copyright:

Drawing Sheet Title:

Drawing Sheet Number:

Owner's Drawing Sheet No.:

ABBREVIATIONS	
<b>GENERAL</b>	
AD	ACCESS DOOR
ADDL	ADDITIONAL
AF	AIR FOIL
AFF	ABOVE FINISHED FLOOR
AFR	ABOVE FINISHED ROOF
ALT	ALTIITUDE OR ALTERNATE
AMP	AMPERE
AP	ACCESS PANEL
APD	AIR PRESSURE DROP
ARCH	ARCHITECT
AS	AIR STREAM
ATC	AUTOMATIC TEMPERATURE CONTROL
ATM	ATMOSPHERE
AVE	AVERAGE
BHP	BRAKE HORSEPOWER
BI	BACKWARDS INCLINED
BLDG	BUILDING
BOD	BOTTOM OF DUCT
BSMT	BASEMENT
BTU	BRITISH THERMAL UNIT
BTUH	BTU PER HOUR
C TO C	CENTER TO CENTER
CENT	CENTRIFUGAL
CF	CUBIC FEET
CFM	CUBIC FEET PER MINUTE
CL	CENTRAL
CLG	CEILING OR COILING
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONTR	CONTRACTOR
D	DRAIN OR DEPTH
DB	DRY BULB TEMPERATURE
DEG	DEGREE
DDC	DIRECT DIGITAL CONTROL
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DX	DIRECT EXPANSION
EA	EACH OR EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EFF	EFFICIENCY
ELEC	ELECTRICAL
ELEV	ELEVATION
EMER	EMERGENCY
EMS	ENERGY MANAGEMENT SYSTEM
ENT	ENTER
ESP	EXTERNAL STATIC PRESSURE
EXH	EXHAUST
EXIST	EXISTING
EXT	EXTERNAL
EXP	EXPANSION
F	FAHRENHEIT
FA	FREE AREA
FC	FLEXIBLE CONNECTION
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE
FLDR	FLOOR DRAIN
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FS	FLOW SWITCH
FT	FEET
GA	GAUGE
GAL	GALLONS
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
GRD	GRADE
GWB	GYPSPUM WALL BOARD
HD	HEAD
HGT	HEIGHT
HP	HORSEPOWER OR HIGH POINT
HR	HOUR
HTG	HEATING
HZ	HERTZ (FREQUENCY, CYCLES PER SECOND)
ID	INSIDE DIAMETER
IN	INCHES
KW	KILOWATT
L	LENGTH
LAT	LEAVING AIR TEMPERATURE
LB	POUND
LF	LINEAR FEET
LP	LOW POINT
LRA	LOCKED ROTOR AMPS
LVG	LEAVING
MAX	MAXIMUM
MBH	THOUSAND BTUH
MCA	MINIMUM CIRCUIT AMPS
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED OR NOISE CRITERIA
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
No	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
ODP	OPEN DRIP PROOF
OV	OUTLET VELOCITY
PCF	POUNDS PER CUBIC FOOT
PD	PRESSURE DROP
PH	PHASE
PLMBG	PLUMBING
POS	PROVIDED BY OTHER SECTION
QTY	QUANTITY
R	RADIUS
RET	RETURN
REQD	REQUIRED
RLA	RUNNING LOAD AMPS
RM	ROOM
RPM	REVOLUTIONS PER MINUTE
SCH	SCHEDULE
SCR	SCREEN
SCT	SATURATED CONDENSING TEMPERATURE
SDET	SMOKE DETECTOR
SEN	SENSIBLE
SHC	SENSIBLE HEAT CAPACITY
SP	STATIC PRESSURE
SPECS	SPECIFICATIONS
SQ	SQUARE
SF	SQUARE FEET
STL	STEEL
SUP	SUPPLY
T	TEMPERATURE
TA	THROWAWAY
TEL	TELEPHONE
TEFC	TOTALLY ENCLOSED FAN COOLED
TEMP	TEMPERATURE
TSTAT	THERMOSTAT
TON	12,000 BTUH COOLING CAPACITY
TOT	TOTAL
TYP	TYPICAL
UC	UNDERCUT DOOR
V	VOLTS (ELECTRICAL)
VEL	VELOCITY
W	WIDTH OR WATT
W/	WITH
WB	WET BULB TEMPERATURE
WC	WATER COLUMN
WG	WATER GAUGE
W/O	WITHOUT
X	EXISTING EQUIPMENT TO BE REMOVED
XM	EXISTING EQUIPMENT TO REMAIN
XN	NEW LOCATION OF RELOCATED EQUIPMENT
XR	EXISTING EQUIPMENT TO BE RELOCATED
DUCT	
ACD	AUTOMATIC CONTROL DAMPER
AL	ACOUSTICAL DUCT LINER
BOD	BOTTOM OF DUCT
CD	CEILING DIFFUSER
DIFF	DIFFUSER
FBD	FLAT BOTTOM DUCT
LD	LINEAR DIFFUSER
OED	OPEN END DUCT
PAD	PRIMARY AIR DAMPER
TOD	TOP OF DUCT
TSP	TOTAL STATIC PRESSURE (IN. WG)
TV	TURNING VANES
VD	VOLUME DAMPER
WMS	WIRE MESH SCREEN
DUCT SYSTEMS	
EA	EXHAUST AIR
OA	OUTSIDE AIR
RA	RETURN AIR
SA	SUPPLY AIR
TA	TRANSFER AIR
EQUIPMENT	
ACCU	AIR COOLED CONDENSING UNIT
ACU	AIR CONDITIONING UNIT
AF	AIR FILTER OR AIR FOIL
CP	CONDENSATE DRAIN PUMP
DDC	DIRECT DIGITAL CONTROL
DDCFP	DIRECT DIGITAL CONTROL FIELD PANEL
DX	DIRECT EXPANSION
EBB	ELECTRIC BASEBOARD HEATER
ECUH	ELECTRIC CABINET UNIT HEATER
EF	EXHAUST FAN
EHC	ELECTRICAL HEATING COIL
F	FAN
FB	FAN BOX
HC	HEATING COIL
REG	REGISTER
RHC	REHEAT COIL
RTU	ROOF TOP UNIT
SF	SUPPLY FAN
TD	TRANSFER DUCT
PIPING	
BOP	BOTTOM OF PIPE
CO	CLEAN-OUT
TOP	TOP OF PIPE



Jacobs Engineering Group  
2301 Chestnut Street  
Philadelphia, Pennsylvania  
19103

P 215.569.2900  
F 215.569.5963  
W www.jacobs.com

Fidelity's Engineering Consultant:



75 Farrag Street, Suite 900  
Boston, MA 02219-1644

T 617.349.9888  
F 617.348.4228  
W www.nvi.com

Seals:



General Notes:

Project Title:



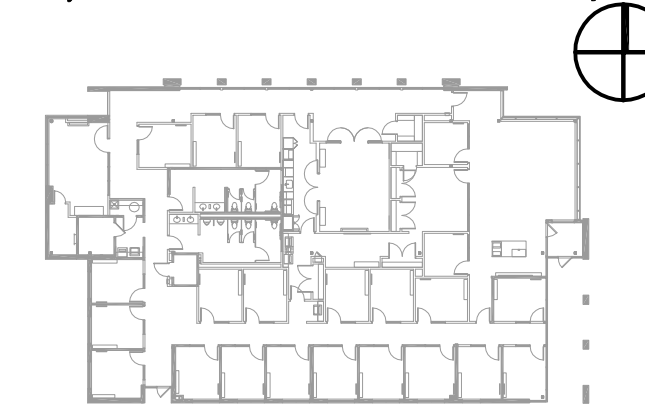
Fidelity Real Estate Company  
245 Summer Street  
Boston, MA 02110

Fidelity Investor Center  
8480 Keystone Crossing  
Indianapolis, IN 46240

Number	Description	Date
	ISSUED FOR PERMIT & CONST.	31 JUL 19

Key Plan:

Project North



CAD File:

Project No.: 0190173

Copyright: 2019 Jacobs Engineering Group

Drawing Sheet Title:

HVAC LEGEND

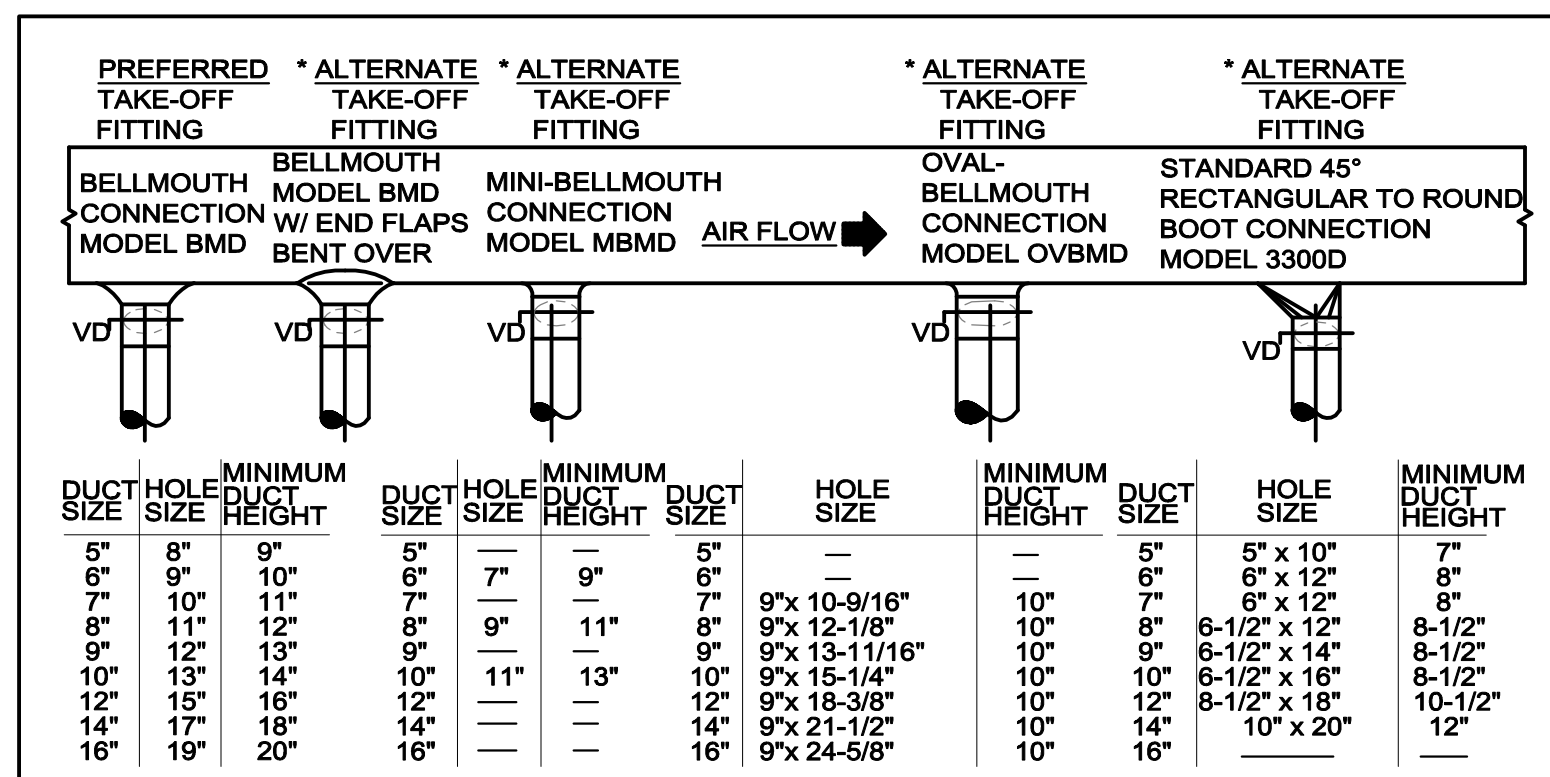
Drawing Sheet Number:

H-000

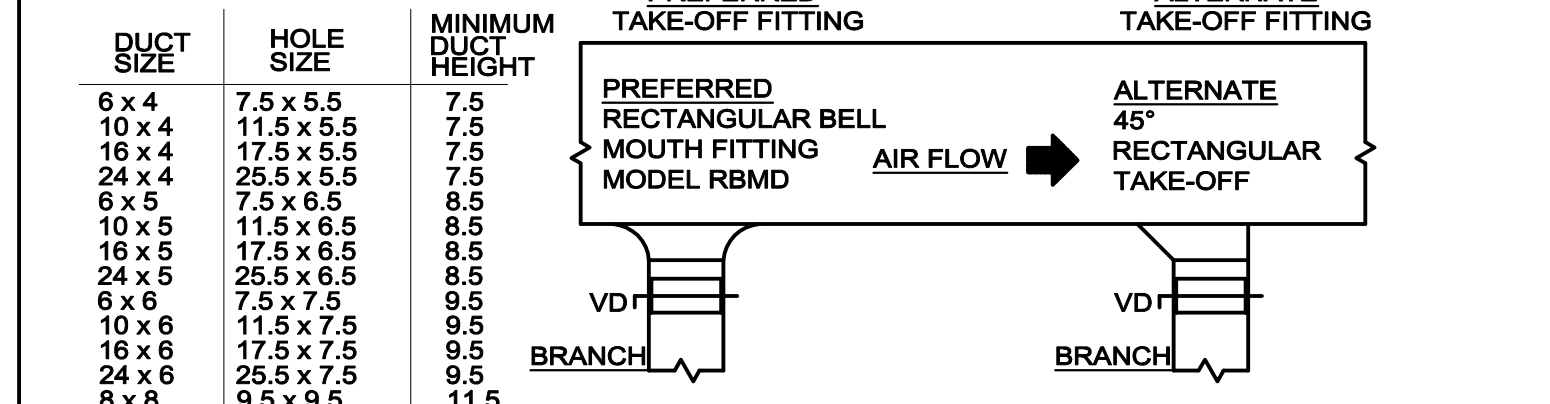
Owner's Drawing Sheet No.:







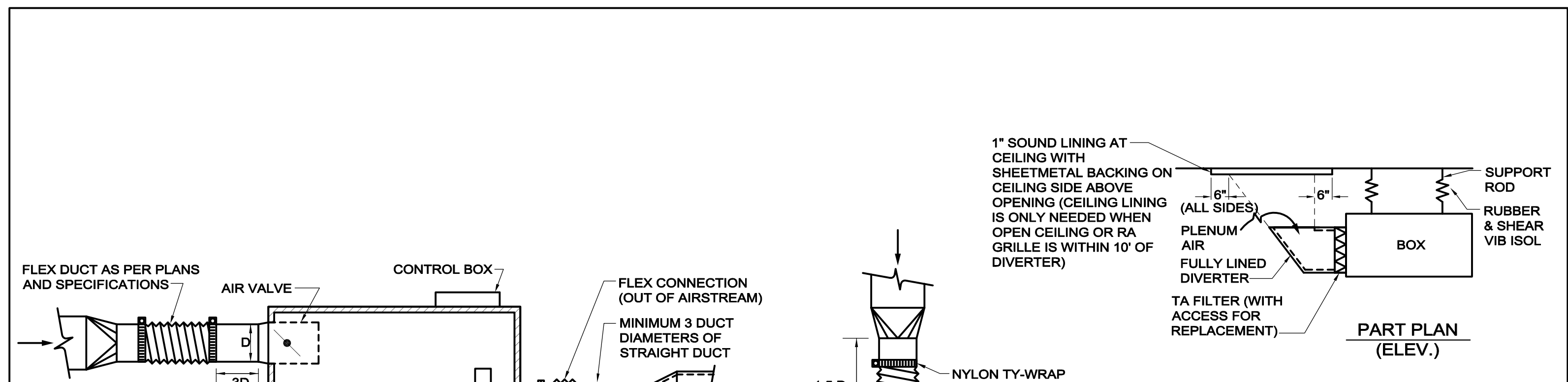
**ALTERNATE ROUND BRANCH DUCT TAKE-OFFS**  
\* ALTERNATE FITTINGS TO BE USED WHEN DUCT HEIGHT DOES NOT PERMIT THE USE OF THE FULL SIZE BELLMOUTH



**ALTERNATE RECTANGULAR BRANCH DUCT TAKE-OFF**

- NOTES:  
ALL ROUND AND RECTANGULAR BELLMOUTH FITTINGS SHALL BE INCLUDED WITH THE FOLLOWING STANDARD FEATURES:  
1. NEOPRENE GASKET TO MINIMIZE AIR LEAKAGE.  
2. PRE-DRILLED HOLES FOR QUICK MOUNTING.  
3. CONSTRUCTED OF HEAVY GALVANIZED STEEL.  
4. 26 GAUGE GALV. QUADRANT VOLUME DAMPER W/ TIGHT FITTING GASKETING TO MINIMIZE LEAKAGE AT DAMPER PIVOT POINTS. (FOR LOW PRESSURE DUCTWORK)

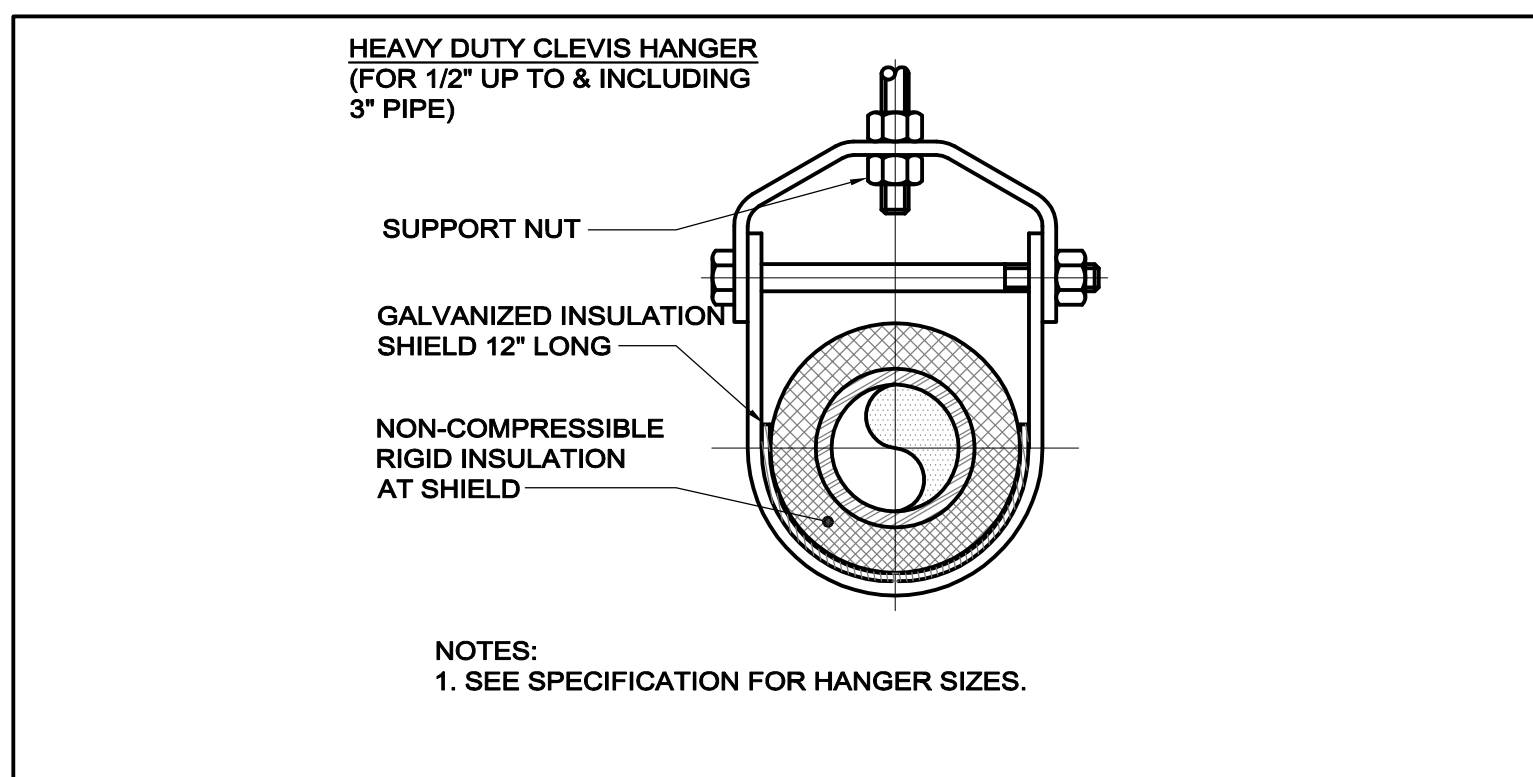
**NV5 TYPICAL DUCT TAKE-OFF H1521**



**FAN BOX CONNECTIONS (SERIES)**

- NOTES:  
1. BOXES WITH INTERNAL VIBRATION ISOLATORS MUST BE HARD DUCTED.  
2. BOX SENSOR SHALL BE ORIENTED IN SAME PLANE AS ELBOW AND BE WITHIN 10" OF HORIZONTAL OR PER MANUFACTURER'S RECOMMENDATION.  
3. FOR BOXES WHERE MANUFACTURER CAN NOT PROVIDE INTERNAL VIBRATION ISOLATORS USE FLEX DUCT AS SHOWN. LENGTH OF FLEX DUCT SHALL NOT EXCEED 12".  
4. OFFSETS WITH FLEX DUCT SHALL NOT EXCEED 30" AND SHALL BE GRADUAL. OFFSETS IN EXCESS OF 30" AND SHALL BE HARD DUCTED.  
5. FLEX DUCT SHALL NOT HAVE MORE THAN 1/2" SAG.  
6. PROVIDE FLOW STRAIGHTENER IF STRAIGHT RUN CANNOT BE MAINTAINED.  
7. BOX MANUFACTURER'S ENGINEERED INLET SOUND ATTENUATOR MAY BE USED IN LIEU OF SOUND DIVERTER SHOWN.

**NV5 H203**



**PIPE HANGER SUPPORT**

**NV5 H001**

MAX. DUCT DIA.	HANGER	MAX. SPACING FEET
20"	ONE 1" x 22 GA. STRAP	10
36"	ONE 1" x 18 GA. STRAP	10
60"	TWO 3/8" DIA. RODS	10
84"	TWO 1/2" DIA. RODS	10

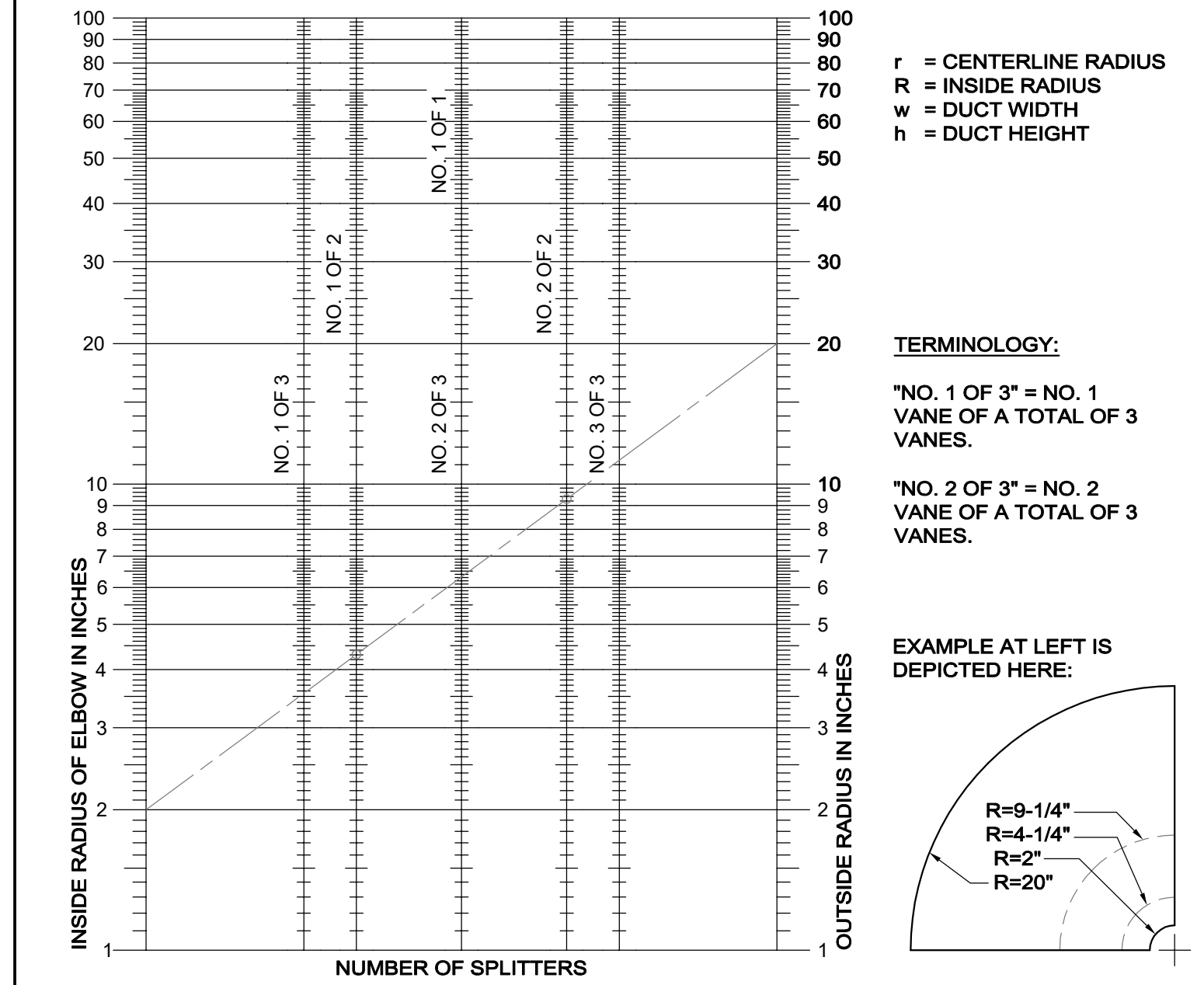
**NV5 ROUND METAL DUCT HANGERS H008**

**RADIUS ELBOW AND SPLITTER VANE REQUIREMENTS**

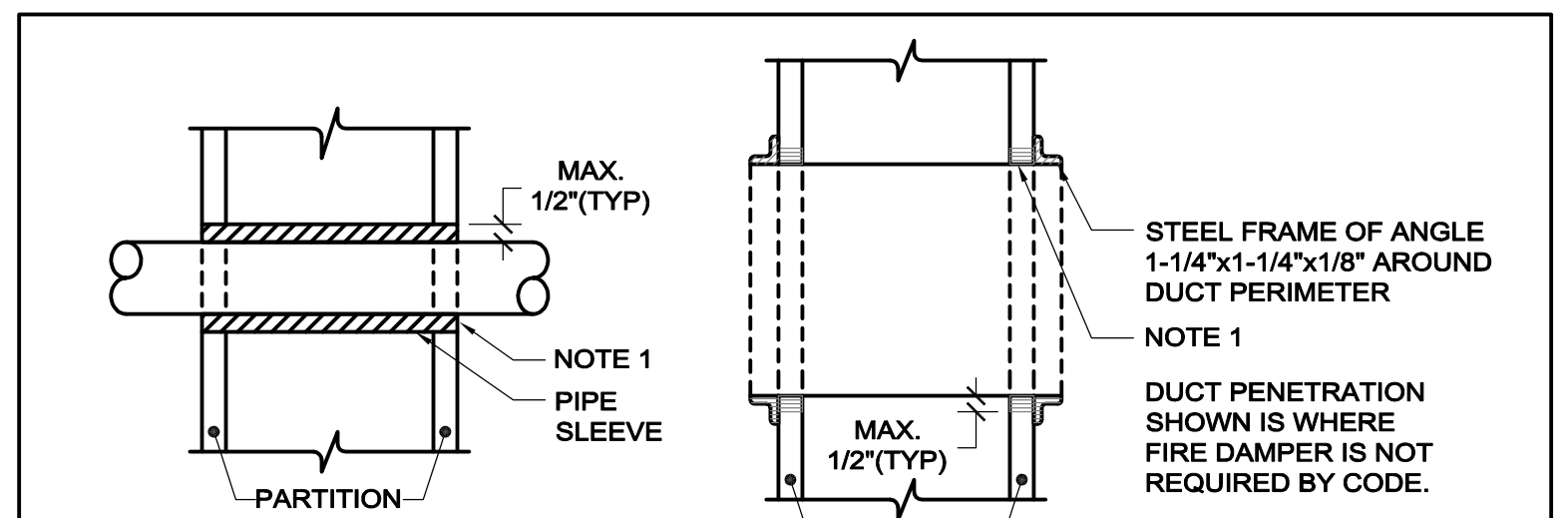
r/w RATIO:	NO. OF VANES FOR 1 ELBOW:	NO. OF VANES WHEN 2 ELBOWS ARE WITHIN 2 EQUIV. DIA.:
r/w ≥ 1.50	0	1
1.5 > r/w ≥ 0.70	1	2
0.7 > r/w ≥ 0.60	2	3
0.6 > r/w ≥ 0.55	3	3

EQUIVALENT DIAMETER = (w+h)/2

NOTE: r/w = 0.5 IS A SQUARE THROAT ELBOW! HOWEVER, MINIMUM INSIDE RADIUS R SHOULD BE 2".

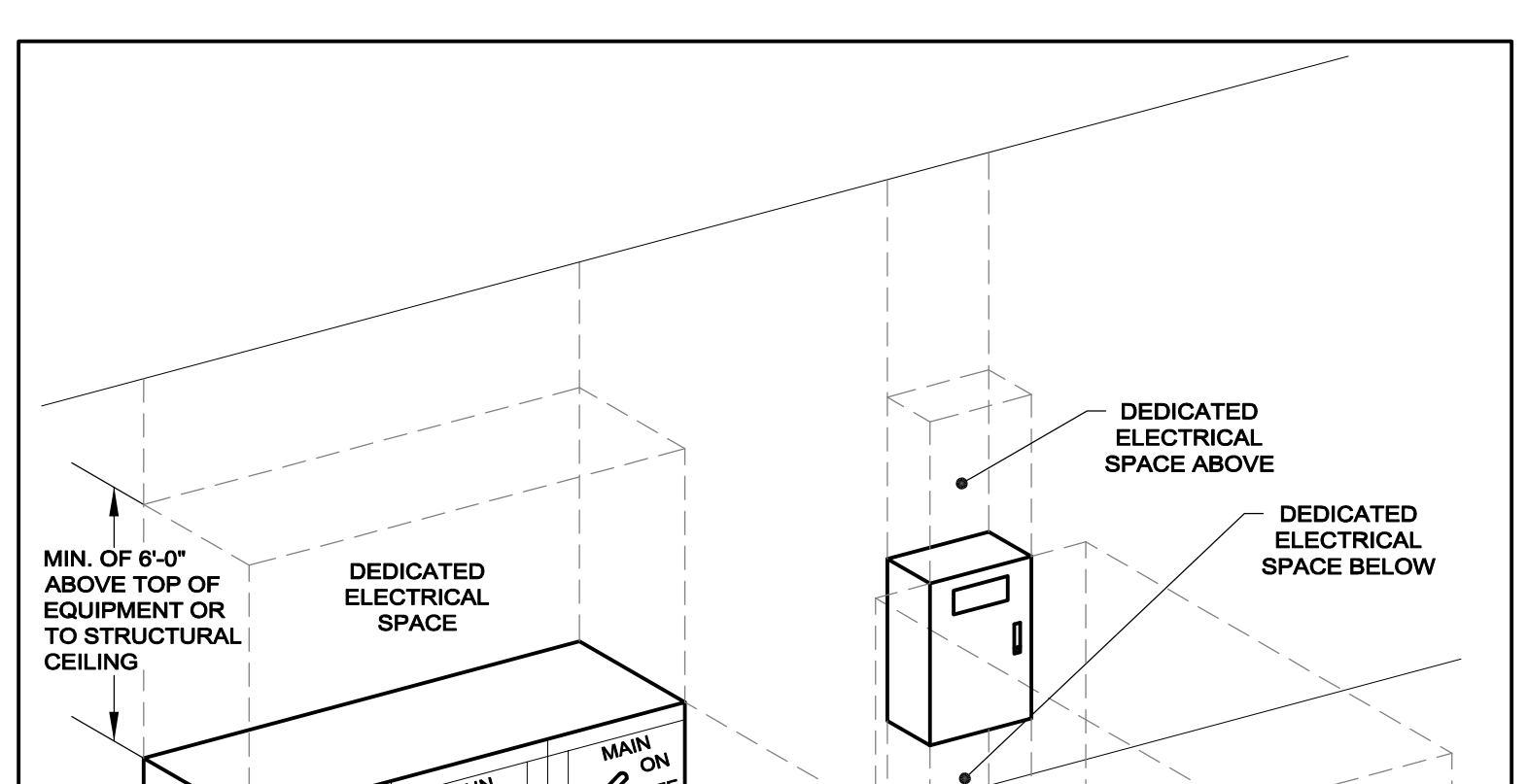


**NV5 NUMBERING & SPACING OF DUCT SPLITTER VANES H1520**

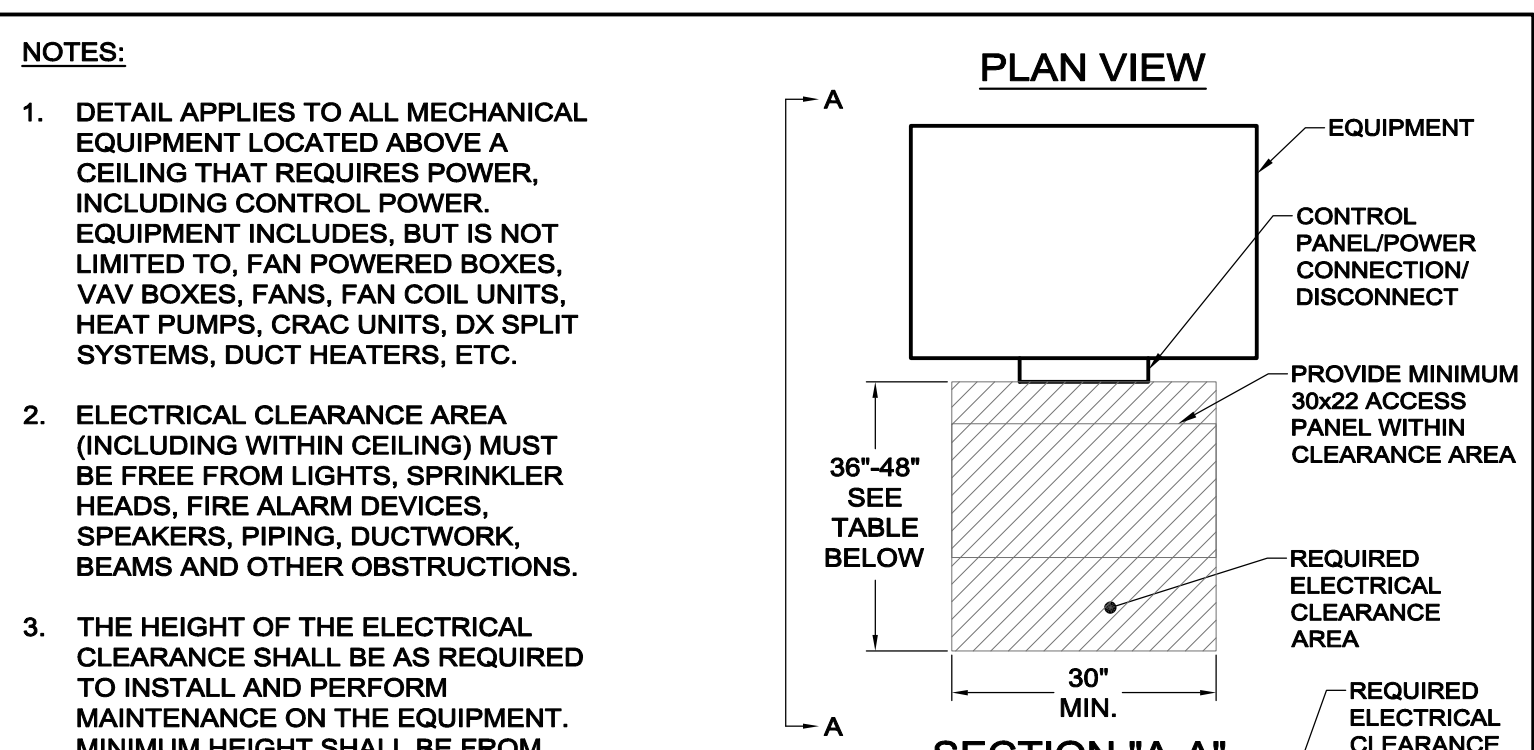


**DUCT & PIPE PENETRATIONS**

**NV5 H901**



**NV5 ELECTRICAL WORK AND DEDICATED SPACE H101**



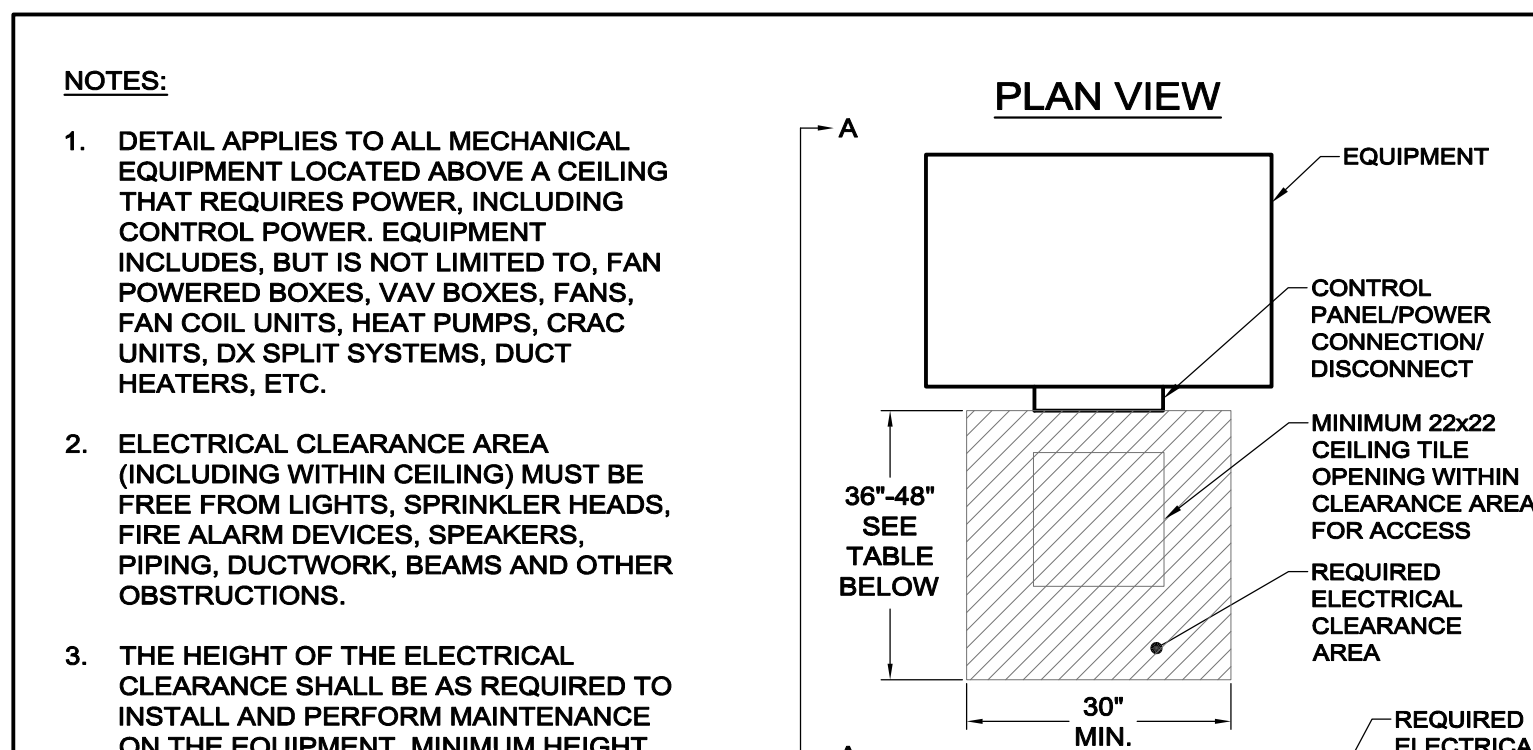
**ELECTRICAL CLEARANCE MECHANICAL EQUIPMENT GWB CEILING**

**NV5 H102**

**MINIMUM ELECTRICAL CLEARANCES (NEC 2017 COMPLIANCE)**

VOLTAGE TO GROUND (SINGLE PHASE VOLTAGE)	CONDITION 1	CONDITION 2	CONDITION 3
0-150	36"	36"	36"
151-600	36"	42"	48"

**NV5 H103**



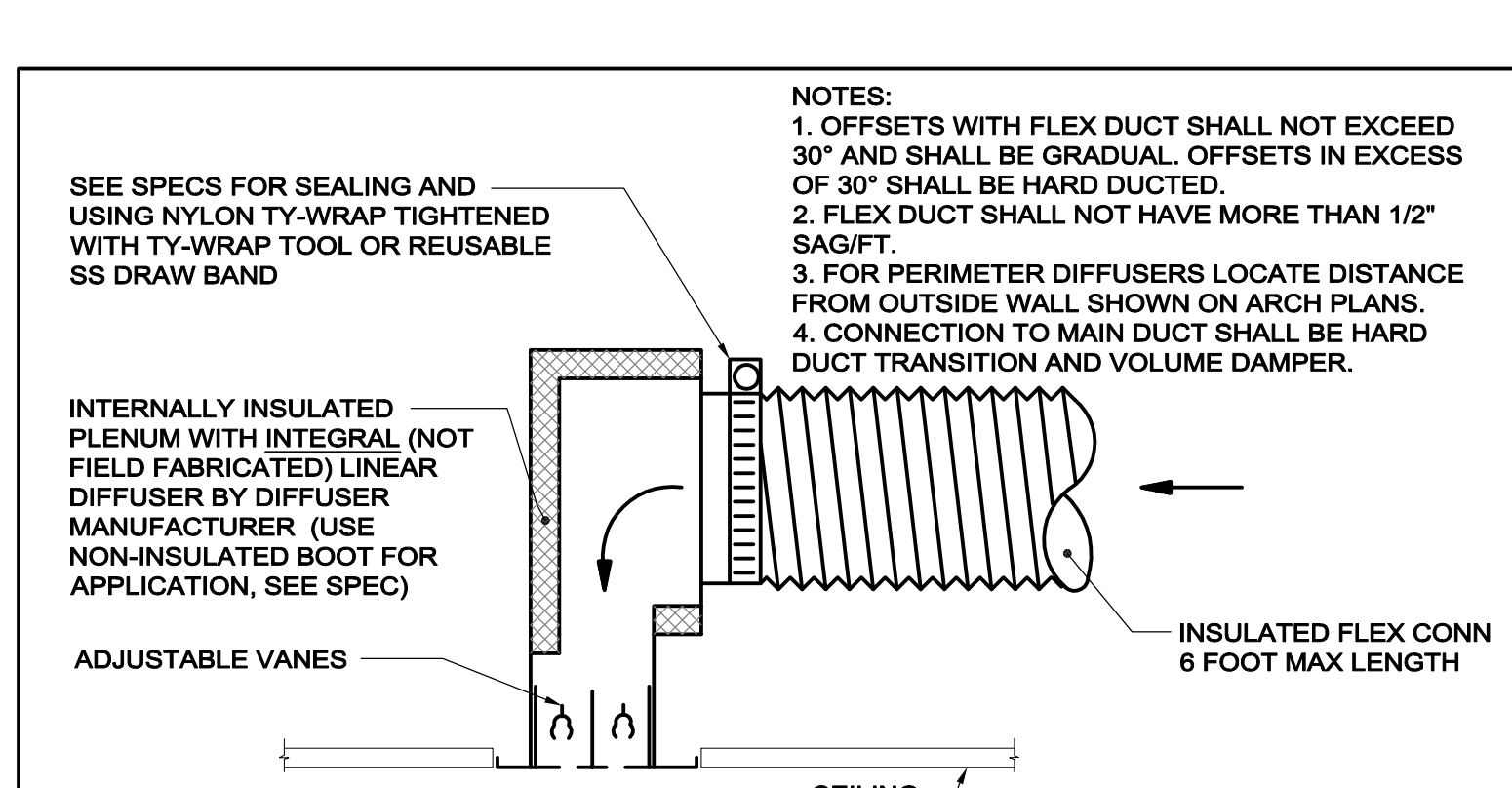
**ELECTRICAL CLEARANCE MECHANICAL EQUIPMENT ATC CEILING**

**NV5 H103**

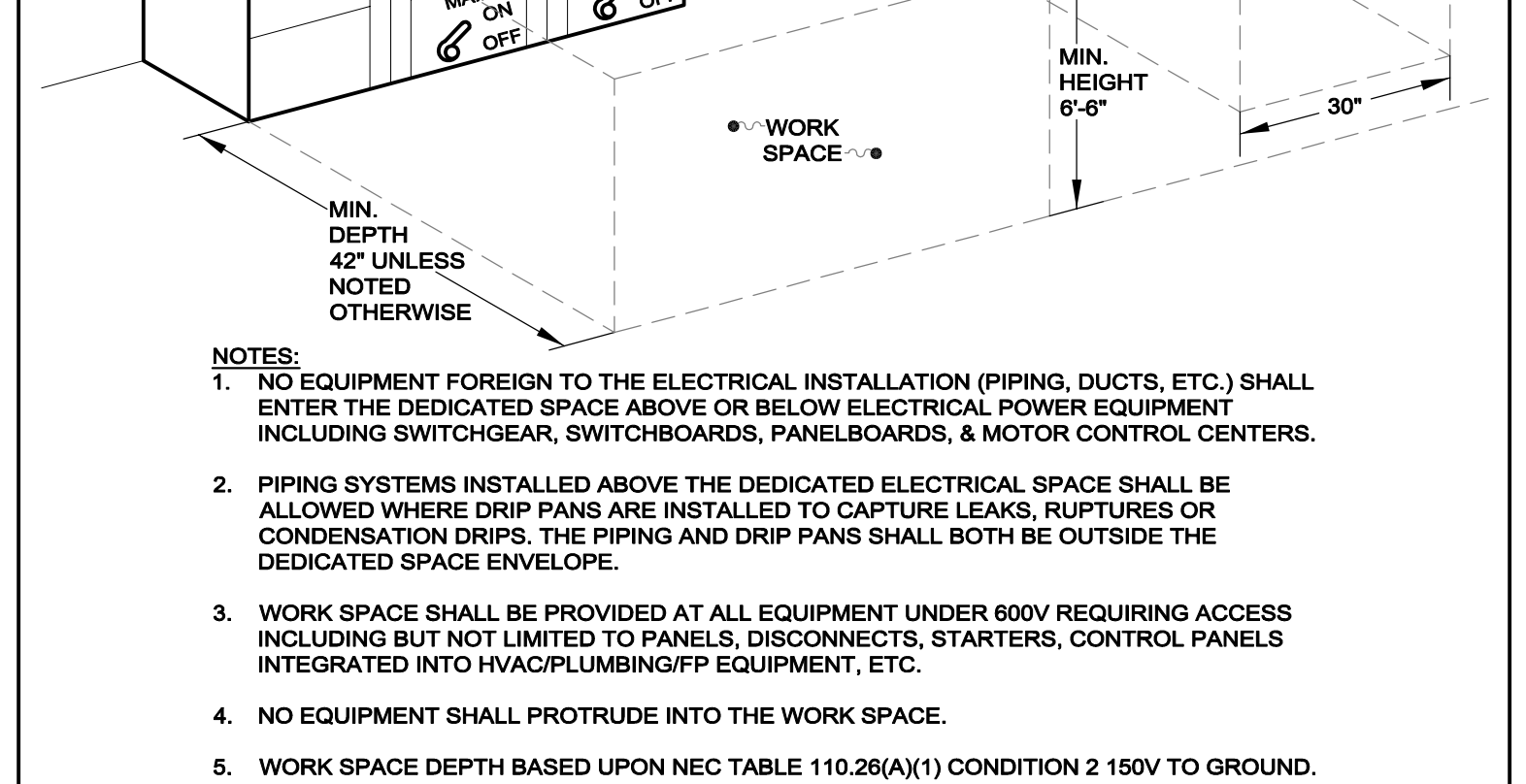
**MINIMUM ELECTRICAL CLEARANCES (NEC 2017 COMPLIANCE)**

VOLTAGE TO GROUND (SINGLE PHASE VOLTAGE)	CONDITION 1	CONDITION 2	CONDITION 3
0-150	36"	36"	36"
151-600	36"	42"	48"

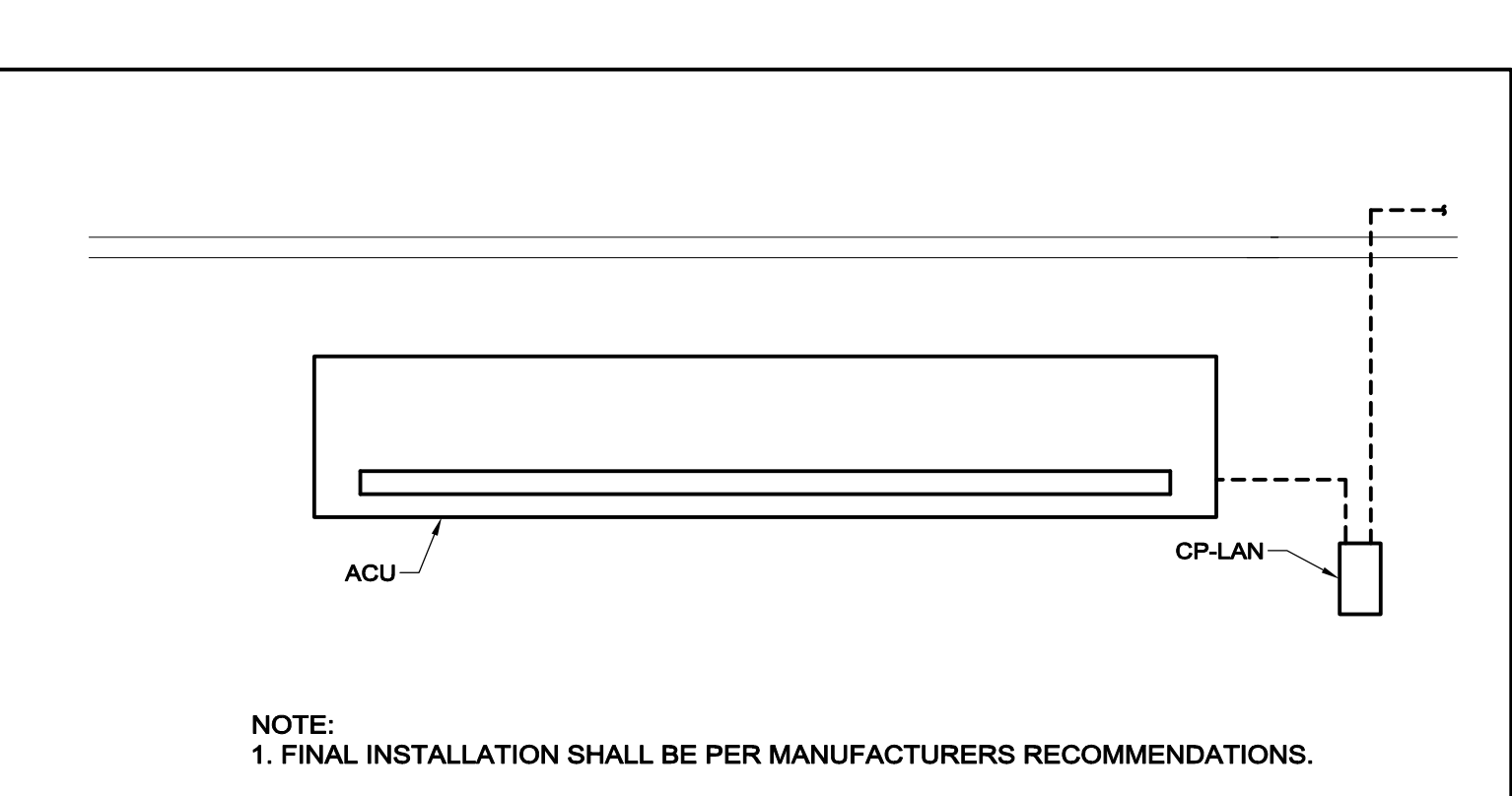
**NV5 H103**



**NV5 LINEAR DIFFUSER CONNECTION H1516**

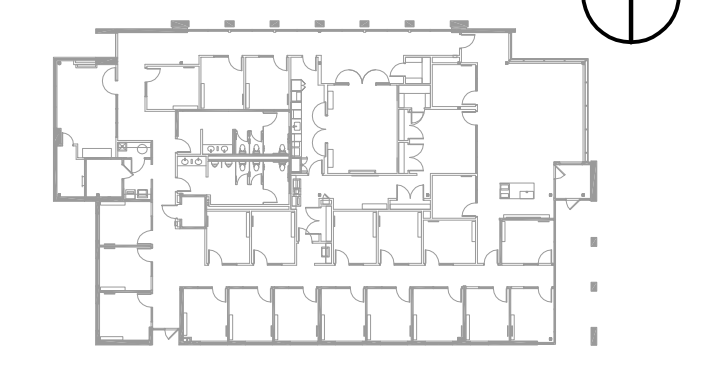


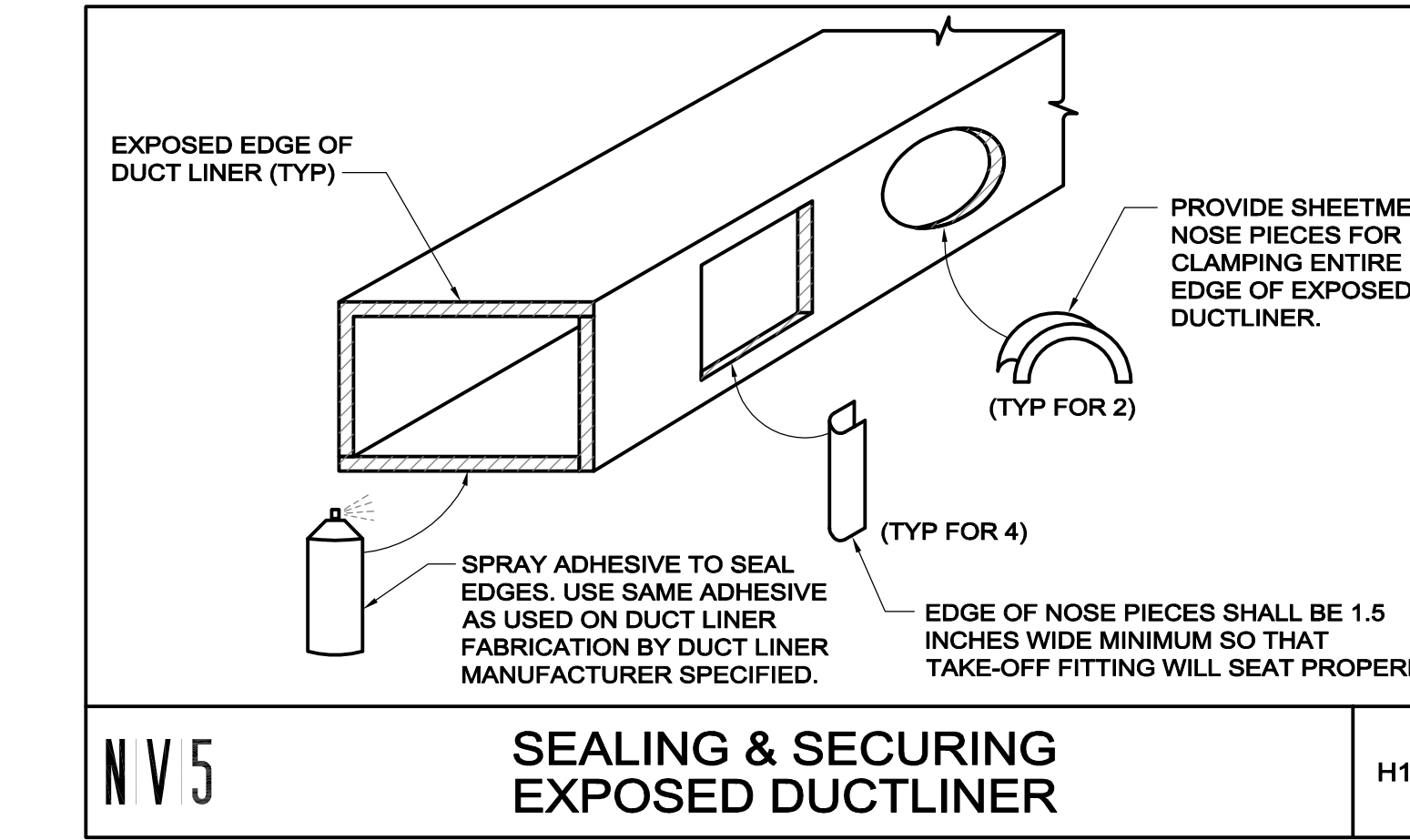
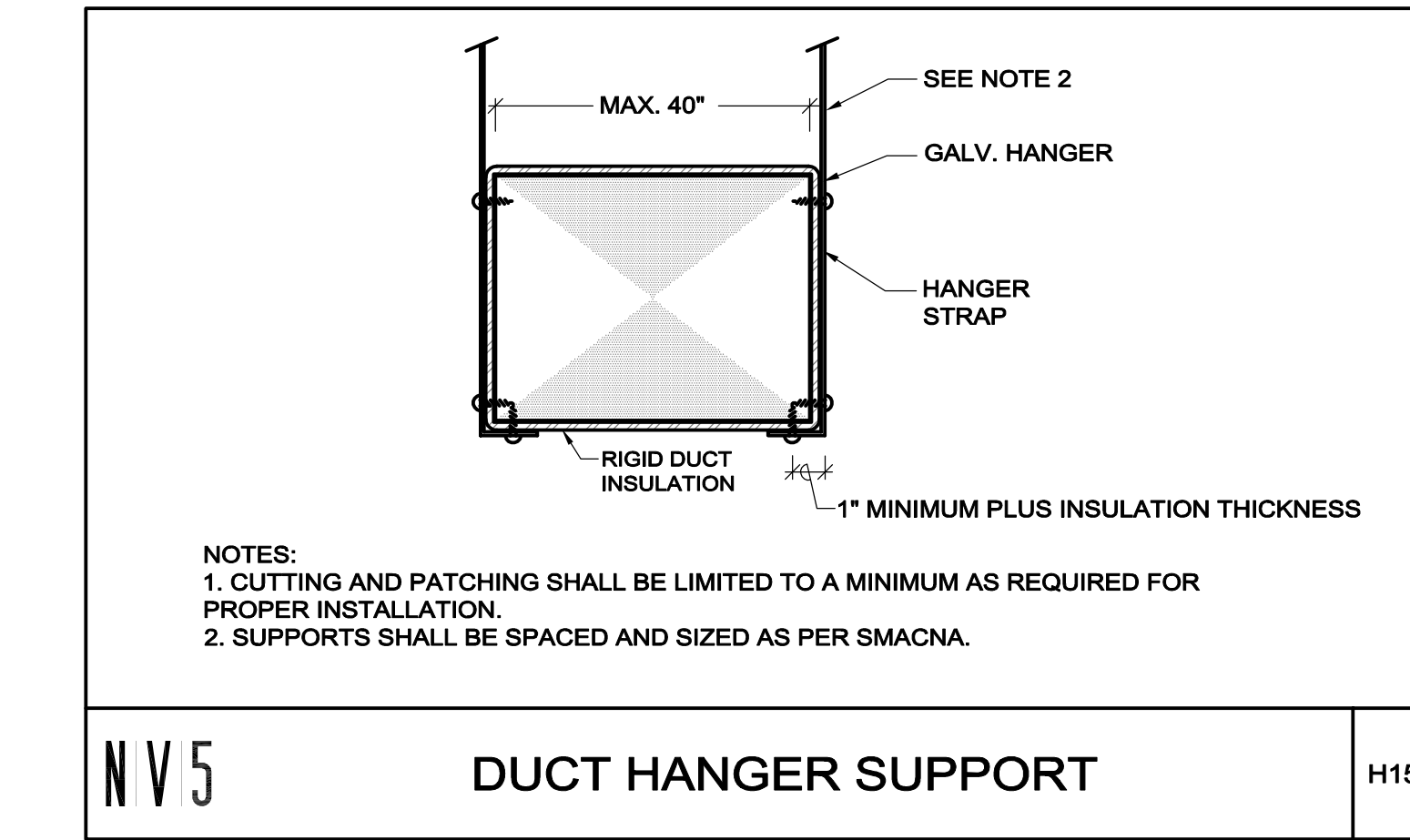
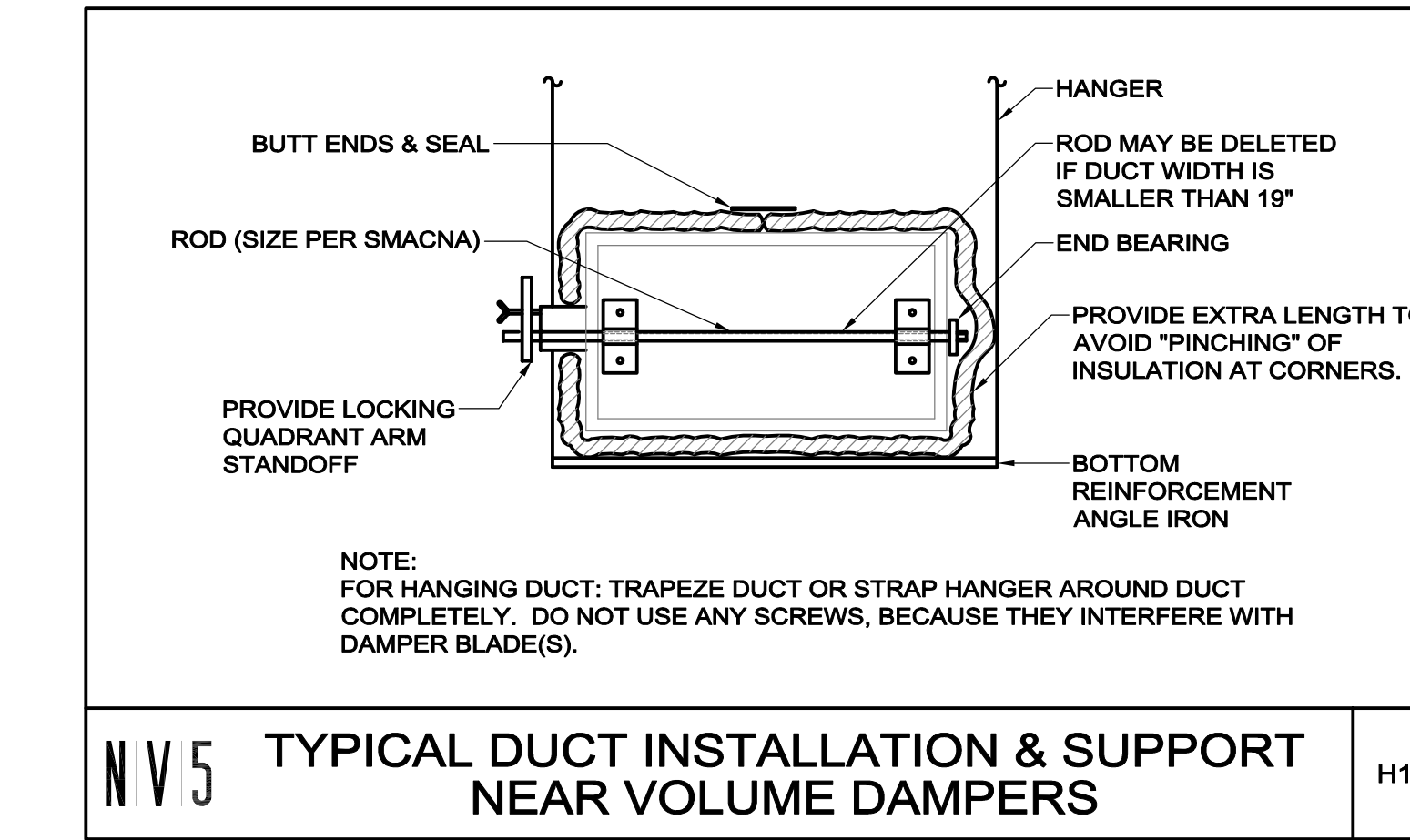
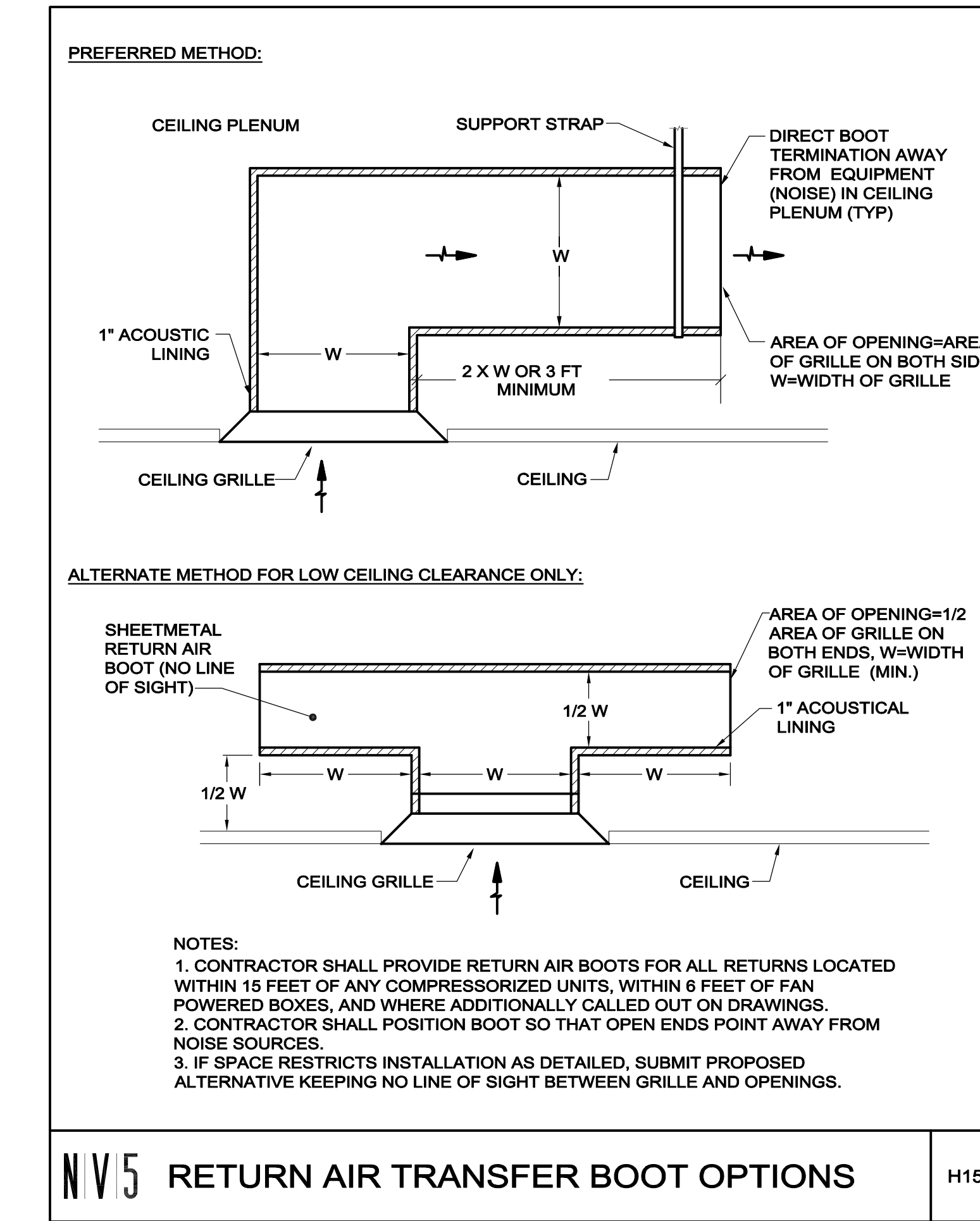
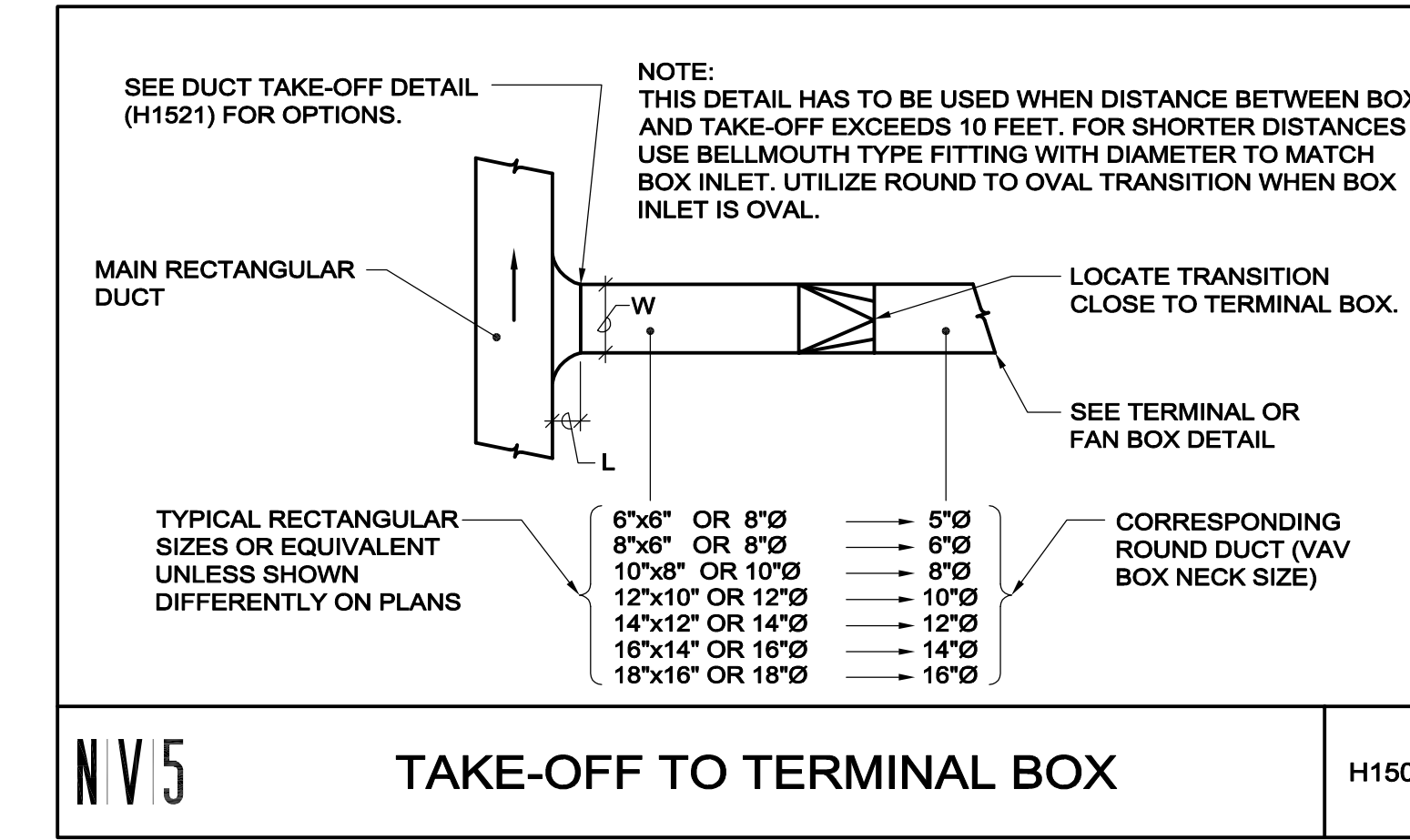
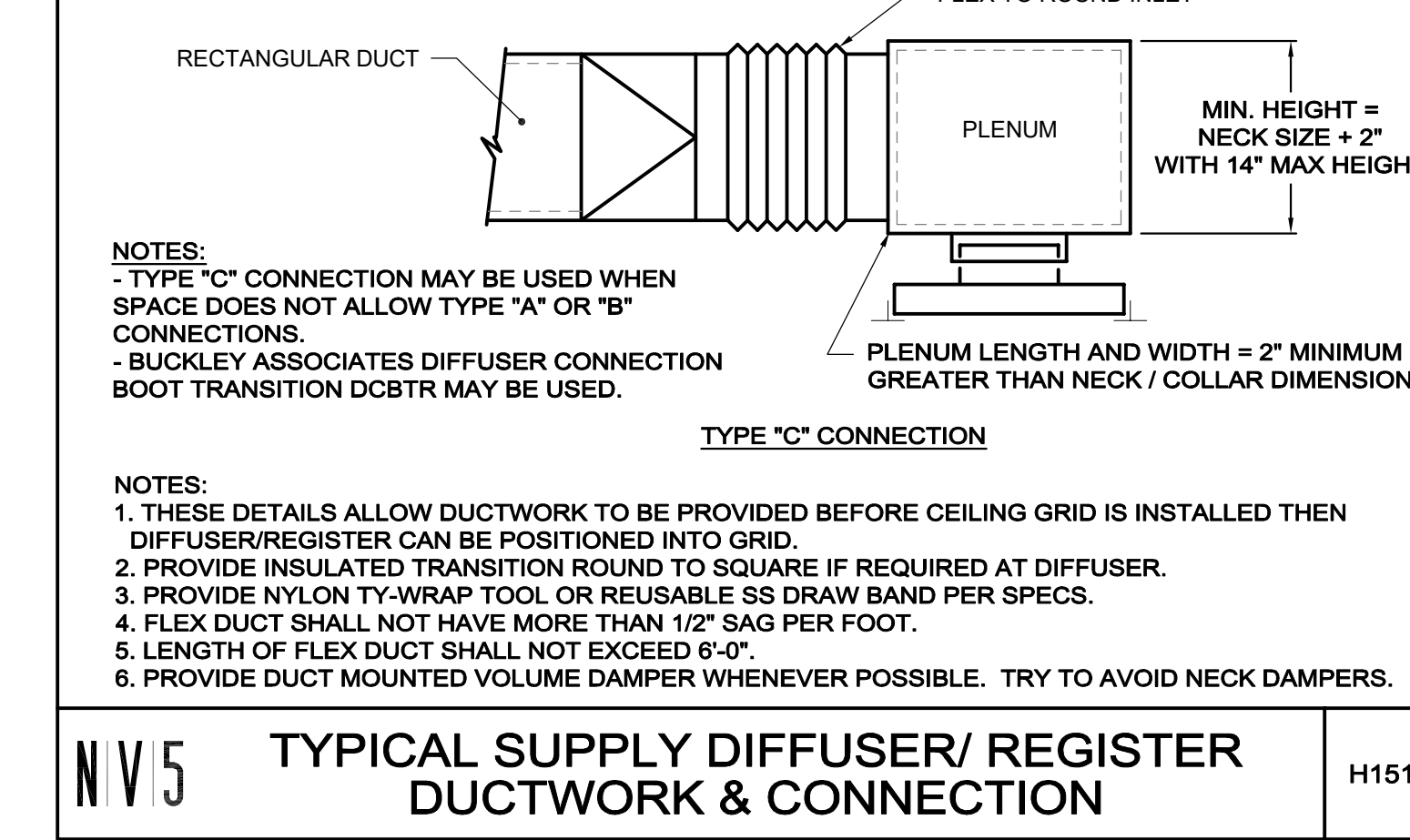
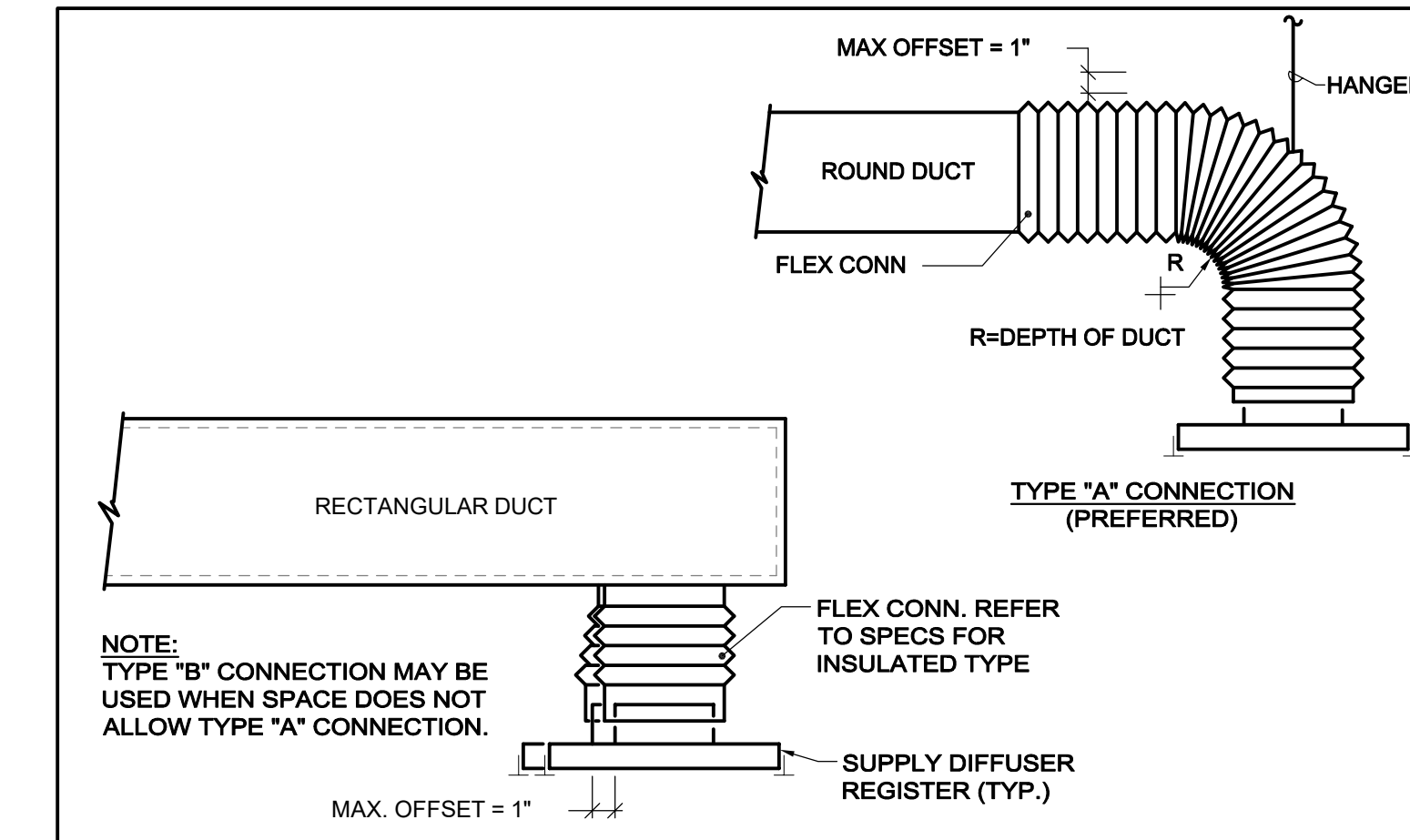
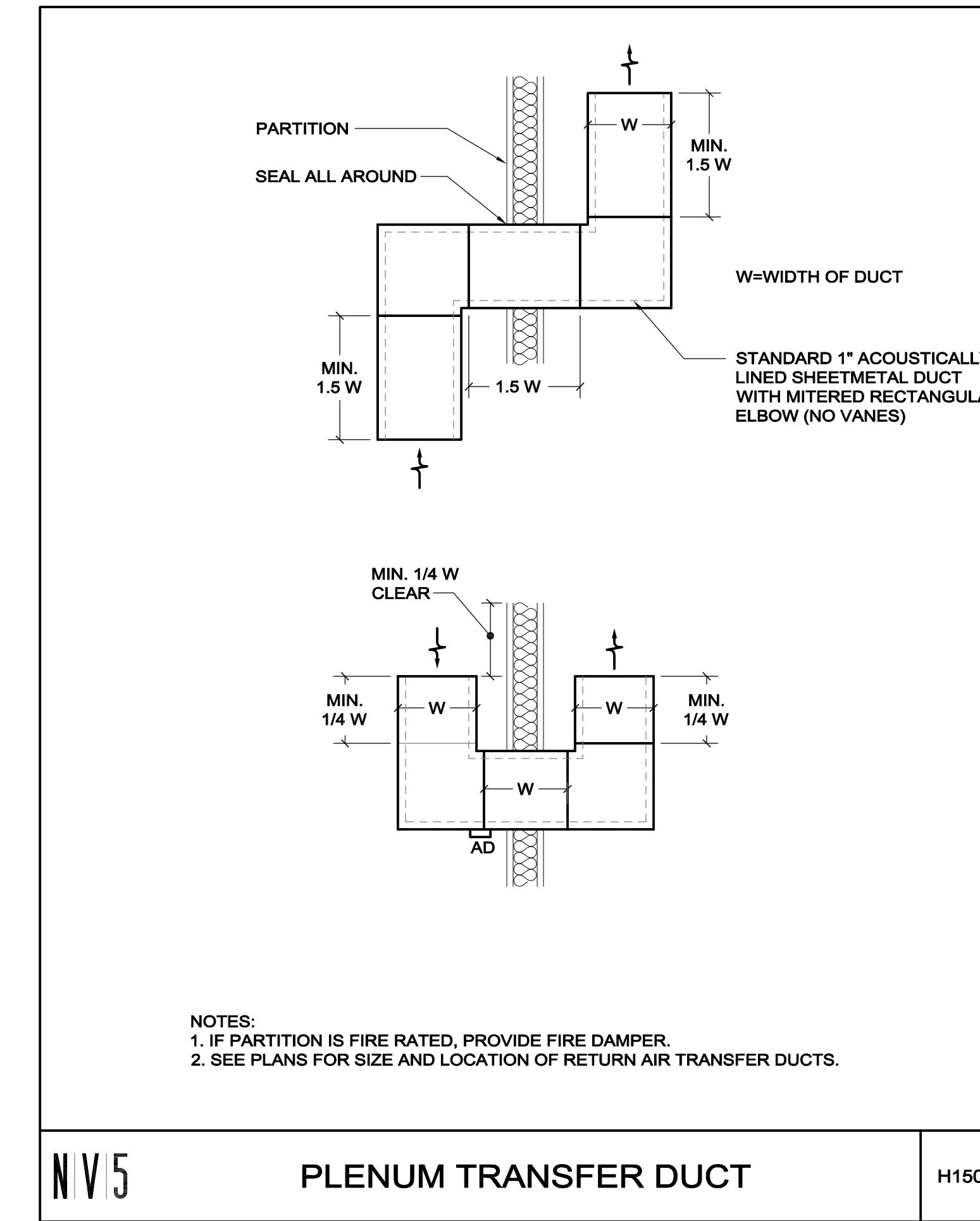
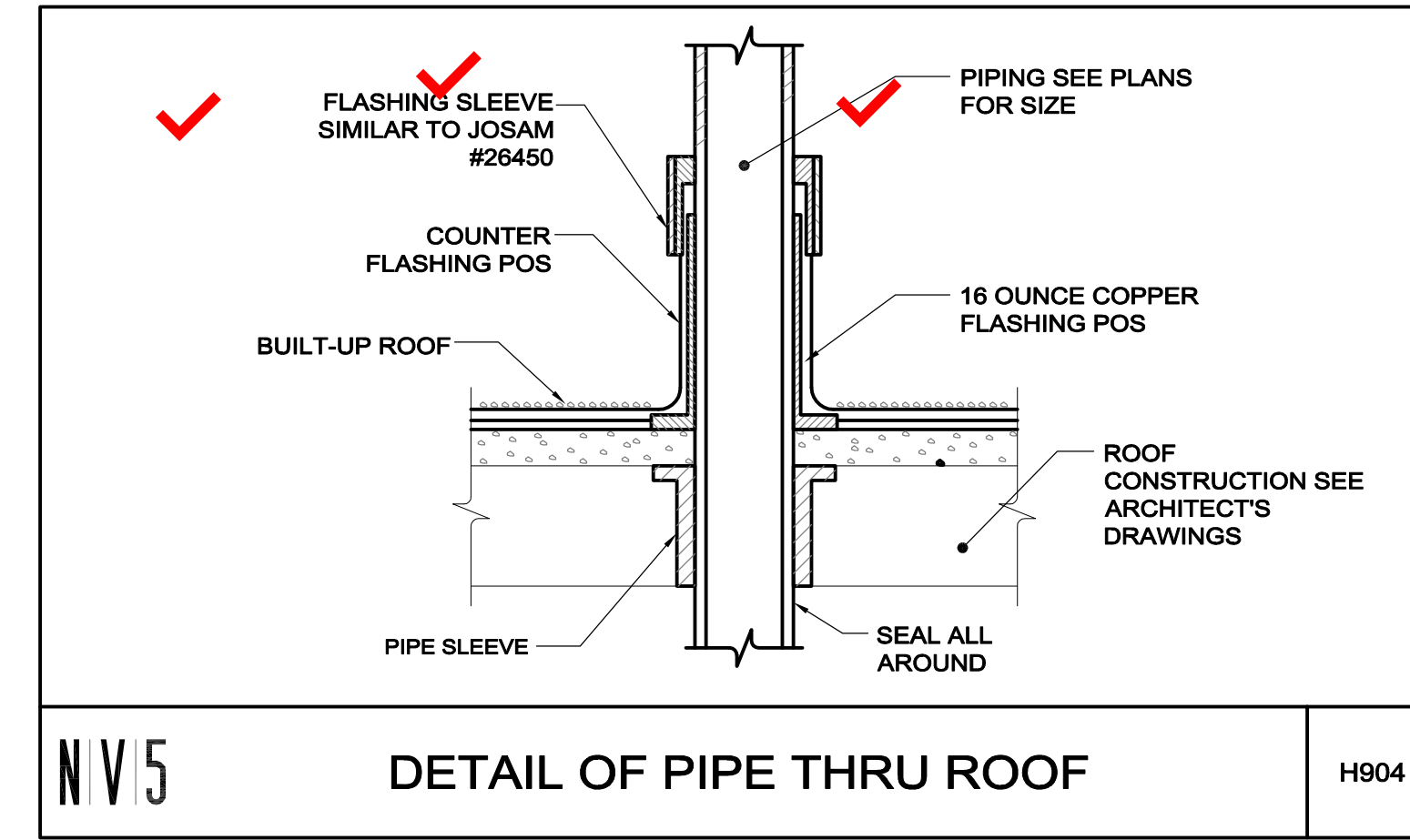
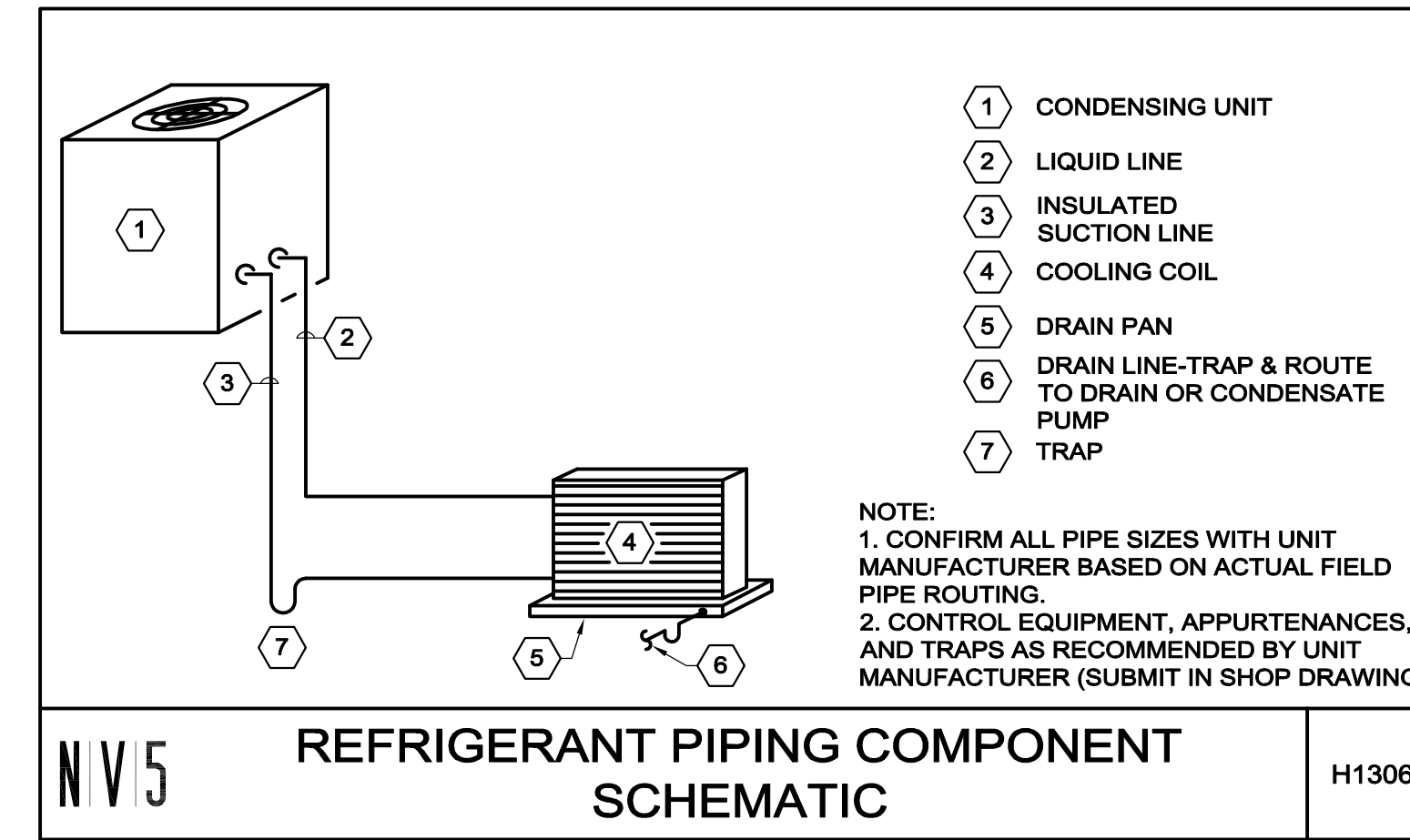
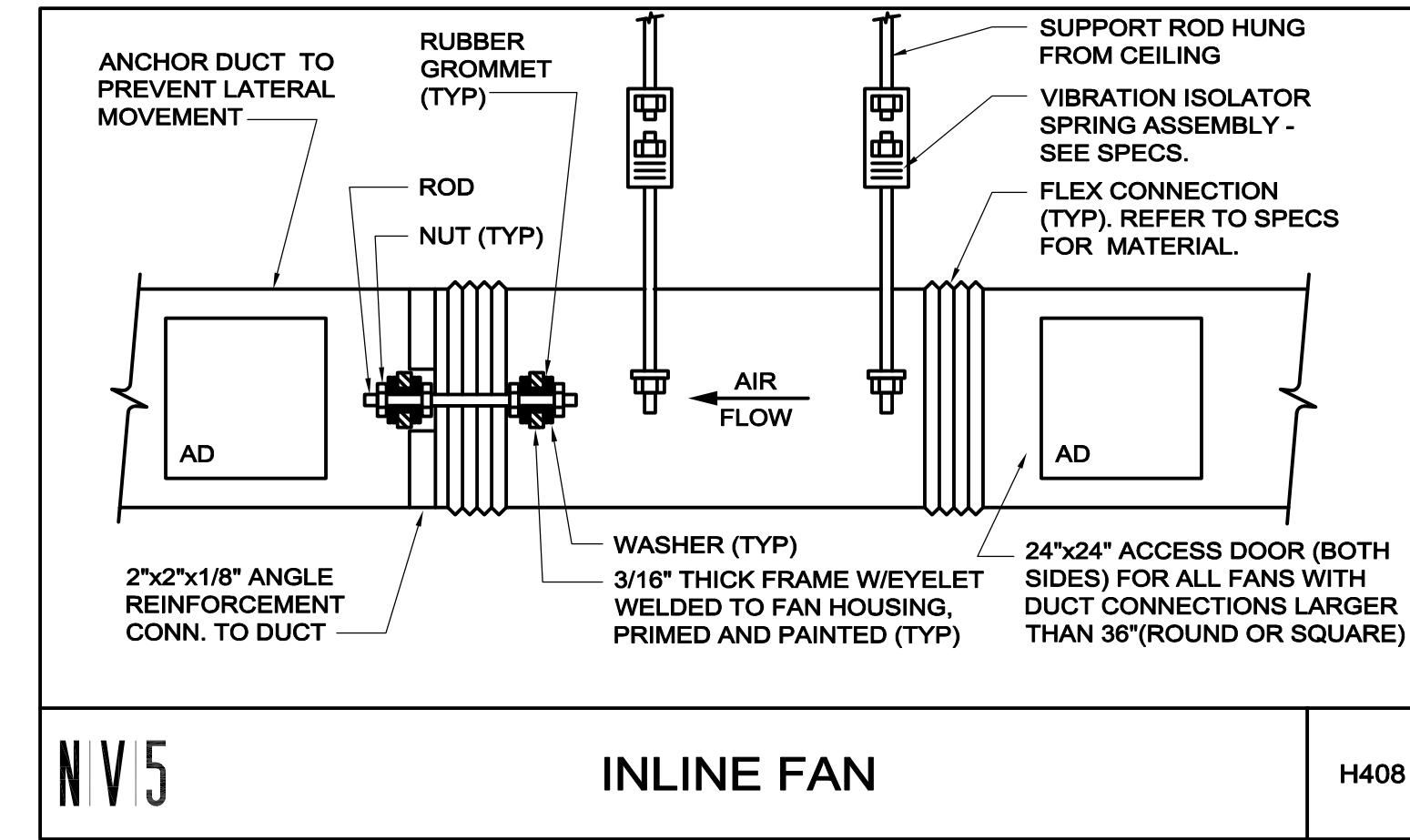
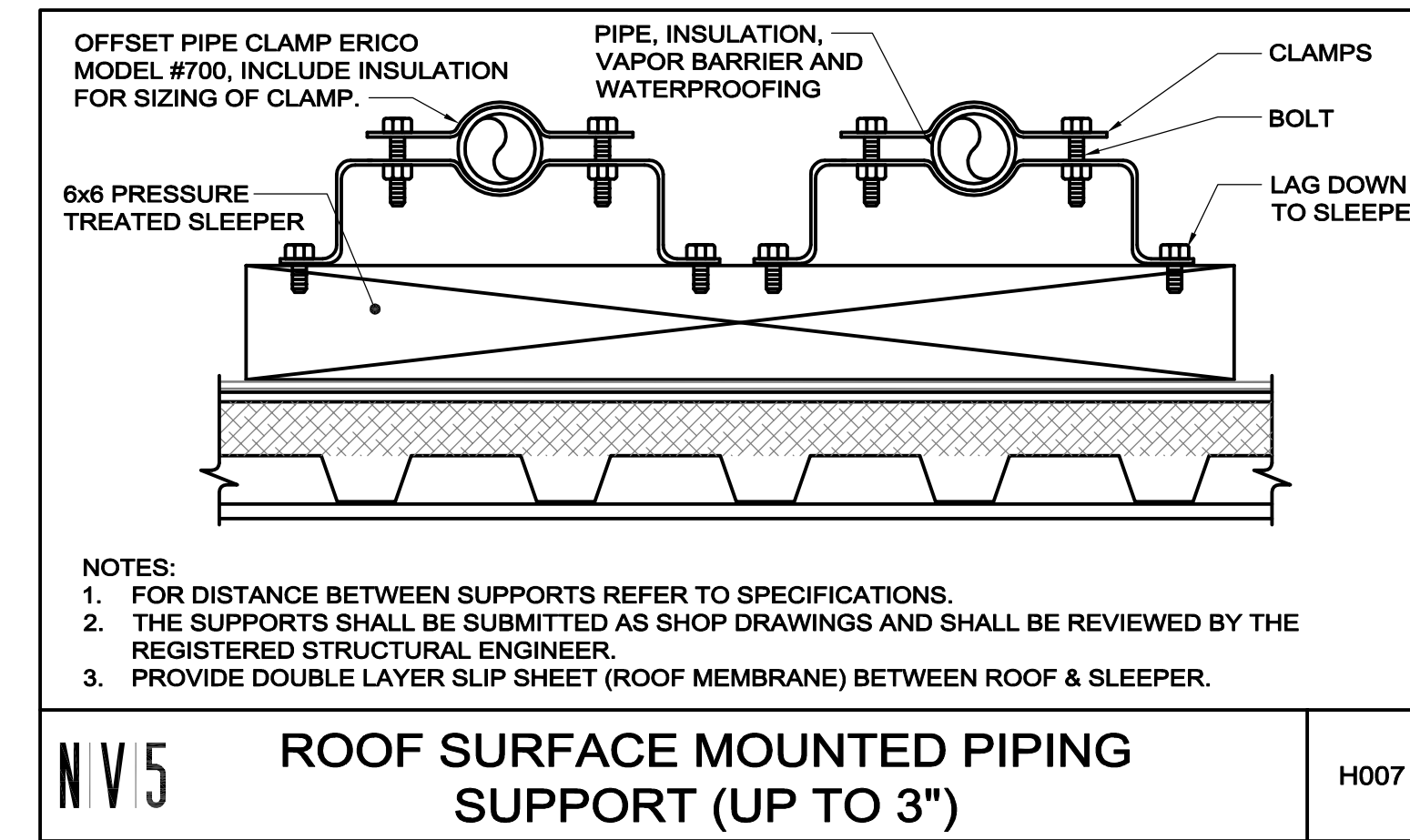
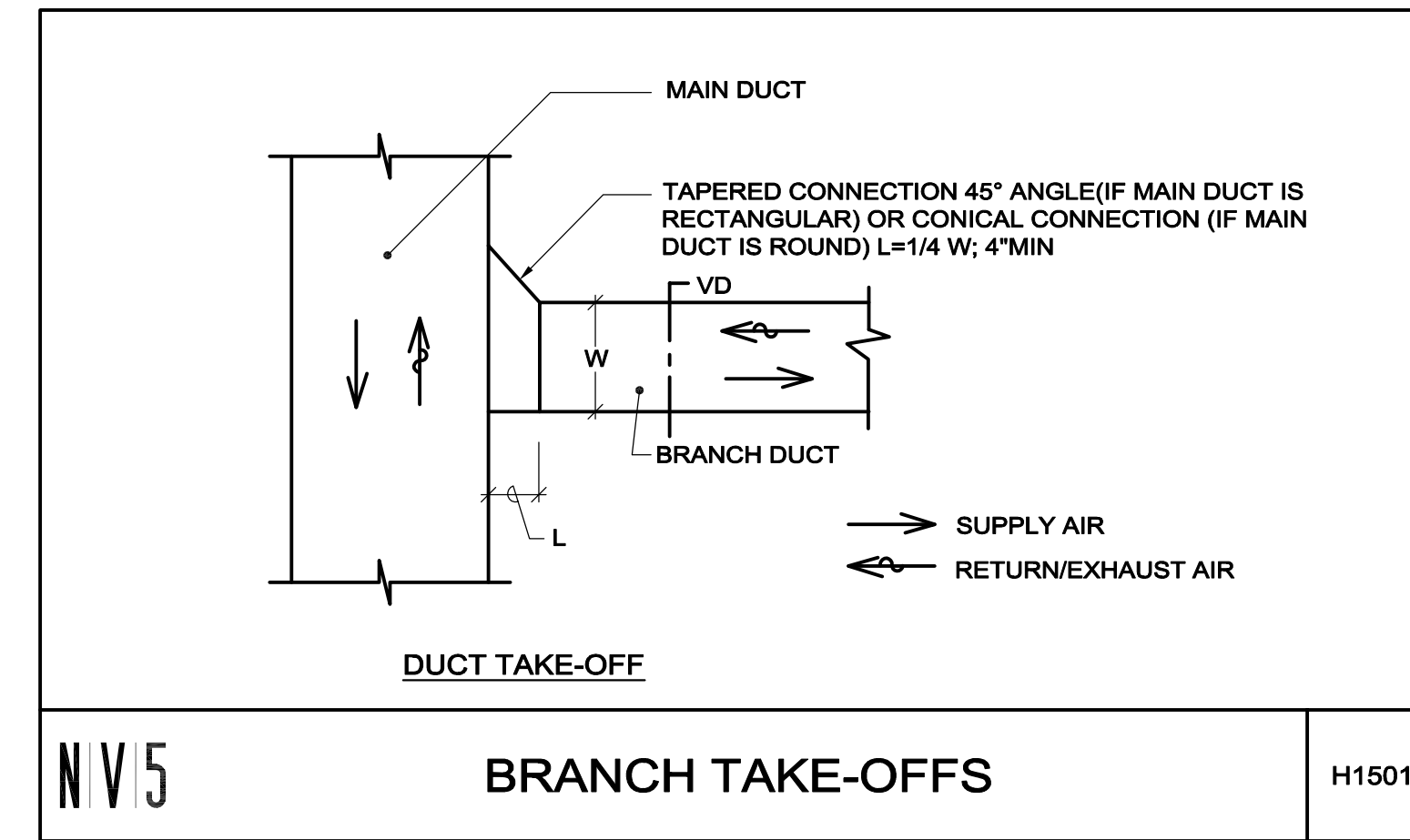
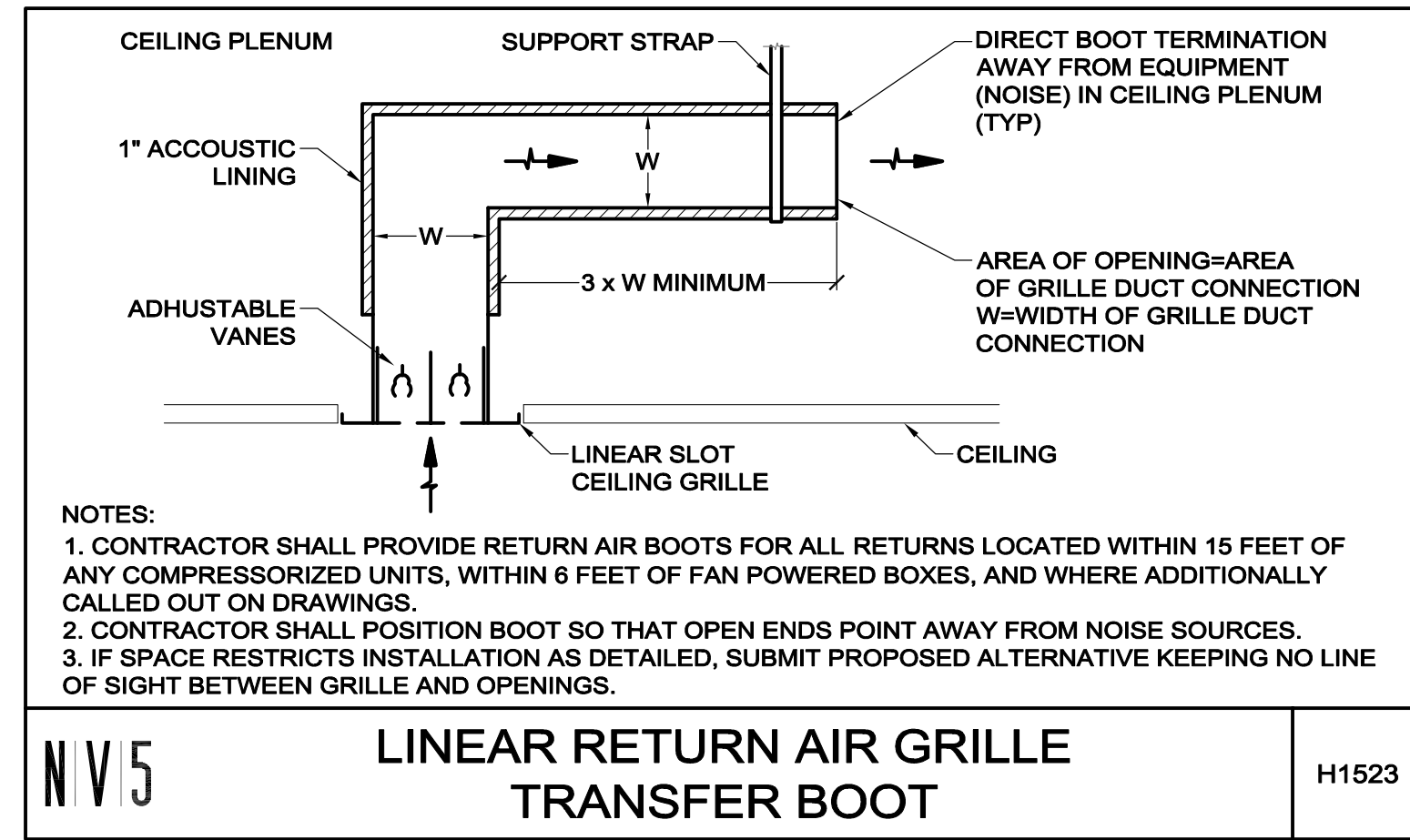
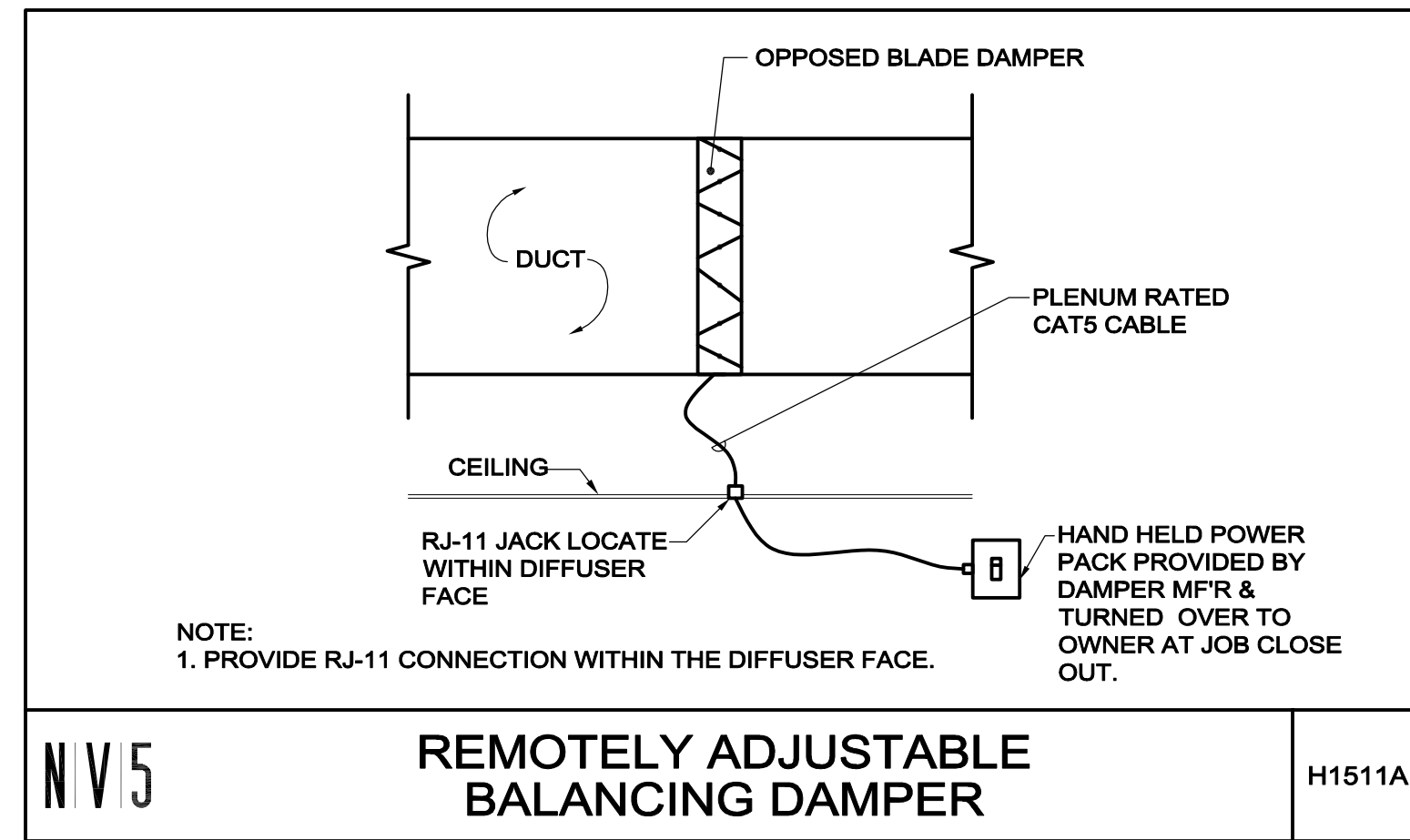
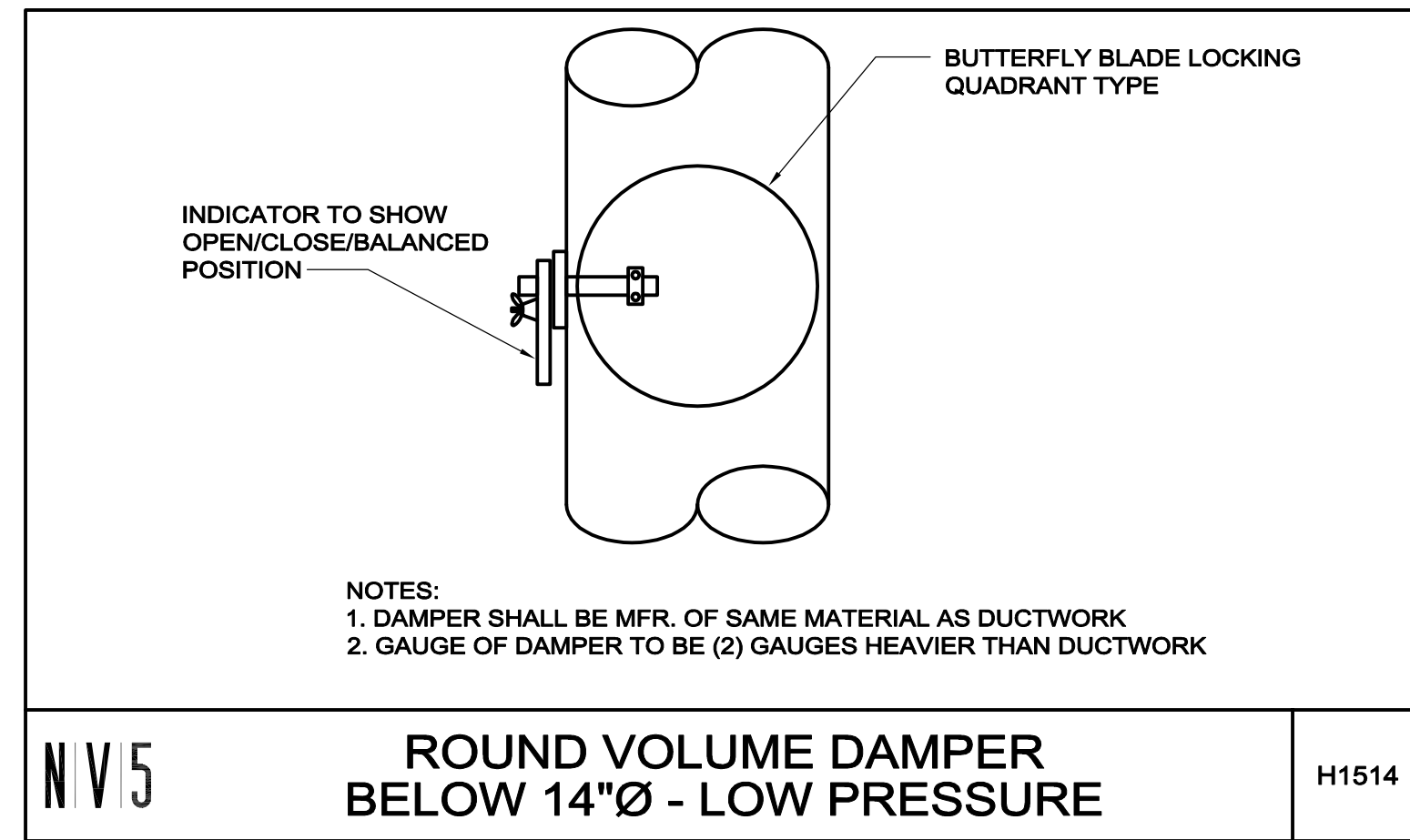
**NV5 WALL HUNG MINI SPLIT ACU MOUNTING DETAIL H235**



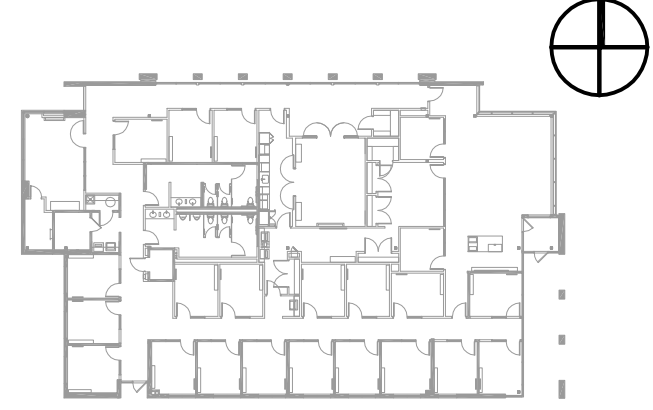
**NV5 ACCU ON SNOW STAND DETAIL H1307**

Number	Description	Date
	ISSUED FOR PERMIT & CONST.	31 JUL 19





Number	Description	Date
	ISSUED FOR PERMIT & CONST.	31 JUL 19



DUCTLESS SPLIT AIR-CONDITIONING UNIT SCHEDULE																		
INDOOR UNIT							OUTDOOR CONDENSING UNIT											
TAG	LOCATION	MANUFACTURER AND MODEL NUMBER (AS STANDARD)	COOLING CAPACITY (BTU)		FAN DATA (CFM)	REFRIGERANT TYPE	TAG	LOCATION	SOUND PRESSURE DB(A)	DESIGN AMBIENT TEMP (°F)		MANUFACTURER AND MODEL NUMBER (AS STANDARD)	ELECTRICAL DATA			EFFICIENCY SEER	REMARKS	
			TOTAL	SENSIBLE	TOTAL					SUMMER	WINTER		V	PH	HZ			MCCP
ACU-LAN	LAN ROOM	MITSUBISHI PKA-A24KA	24,000	18,000	775	R410A	ACCU-LAN	ROOF	48	95	-5	MITSUBISHI PUY-A24NHA	208	1	60	30	17	SEE NOTES

NOTES:  
1. REFER TO SPECIFICATIONS, DETAILS, AND CONTROL DRAWINGS FOR ADDITIONAL INFORMATION.  
2. DISCONNECT SWITCH BY ELECTRICAL CONTRACTOR.  
3. INDOOR UNIT IS POWERED FROM OUTDOOR UNIT.  
4. INDOOR UNIT - PROVIDE WIRELESS REMOTE THERMOSTAT.  
5. REFRIGERANT PIPE SIZES AND REQUIRED ACCESSORIES SHALL BE PER MANUFACTURERS RECOMMENDATIONS.  
6. LOCATE AIR COOLED CONDENSING UNIT ON ROOF.  
7. PROVIDE WITH SNOW STAND AND WIND BAFFLE. PROVIDE ANY ACCESSORIES REQUIRED FOR COOLING DOWN TO -5°F AMBIENT TEMPERATURE.

CONDENSATE PUMP SCHEDULE													
TAG	SERVICE	LOCATION	REC. CAP. GAL.	FLUID TEMP. (°F)	DISCHARGE PRESS. (FT)	PUMP CAP. (GPM)	ELECTRICAL				MANUFACTURER AND MODEL NUMBER (AS STANDARD)	REMARKS	
							HP	V	PH	AMPS			
CP-LAN	WSHP-LAN	WALL	1	55	12	4	1/10	120	1	3.1		HARTELL A2X-1965	SEE NOTES

NOTES:  
1. REFER TO SPECIFICATIONS, DETAILS, AND CONTROL DRAWINGS FOR ADDITIONAL INFORMATION.  
2. CONDENSATE PUMP SHALL BE HARD WIRED AND PLENUM RATED

DUCTWORK PRESSURE CLASS AND SEAL CLASS					
PRESSURE CLASS	STATIC PRESSURE CLASS	SMACNA SEAL CLASS	SMACNA LEAKAGE CLASS		DESIGN VELOCITY LIMITS
			RECTANGULAR	ROUND	
4"	4" POS. OR NEG.	A	6	3	3000 FPM OR LESS
2"	2" POS. OR NEG.	A	6	3	2000 FPM OR LESS

UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE DRAWINGS, USE THE FOLLOWING PRESSURE CLASSIFICATIONS FOR THE TYPES OF DUCTWORK LISTED BELOW

4" (POS) CLASS: ALL SUPPLY DUCTWORK BETWEEN THE DISCHARGE OF AIR SUPPLY UNITS TO THE INLETS OF SUPPLY TERMINAL VOLUME BOXES.  
2" CLASS: ALL OTHER DUCTWORK.

NOTES:  
1. CONTRACTOR SHALL LEAK TEST (SUBMIT REPORT) A MINIMUM OF 25% OF THE SURFACE AREA FOR ALL DUCTWORK ABOVE PRESSURE CLASS 3" AND 100% OF ALL DUCTWORK LOCATED OUTDOORS.  
2. REFER TO SPECIFICATIONS AND DETAILS FOR ADDITIONAL INFORMATION.

MINIMUM DUCT INSULATION R-VALUES (IECC - 2009 AND ASHRAE 90.1-2013 COMPLIANCE)					
LOCATION	SUPPLY	RETURN	RAW OUTDOOR AIR	EXHAUST	
				WITH ENERGY RECOVERY	WITHOUT ENERGY RECOVERY
RETURN AIR PLENUM	R-4	-0-	R-4	-0-	-0-

DUCT LINING SCOPE: ACOUSTIC DUCT LINING OF THE TYPE AND THICKNESS SPECIFIED SHALL BE INSTALLED ON ALL SUPPLY, RETURN, AND EXHAUST DUCTWORK WITHIN 20 FEET OF ALL TYPES OF AIR HANDLING UNITS (INCLUDING RTU AND ALL BRANCHES WITHIN 20") (INCLUDING BRANCHES, ALL LOW PRESSURE DUCTWORK UPSTREAM AND DOWNSTREAM OF FAN POWERED BOXES, FANS, HEAT PUMPS, AND ALL TRANSFER DUCTS) AND WHERE DETAILED OR SHOWN ON DRAWINGS.

NOTES: (SEE SPECIFICATIONS FOR R-VALUES OF VARIOUS DUCT INSULATION AND LINERS).  
1. R-VALUES SHOWN MAY BE OBTAINED BY ADDING THE R-VALUES OF BOTH THE LINING (WHERE SHOWN OR USED) AND EXTERNAL DUCT INSULATION.  
2. R-VALUES SHOWN ARE AS INSTALLED. USE R-VALUES FOR 25% COMPRESSION FOR NON-RIGID INSULATION.  
3. REFER TO SPECIFICATIONS AND DETAILS FOR ADDITIONAL INFORMATION.

PIPE INSULATION (IECC - 2009 AND ASHRAE 90.1 -2013 COMPLIANCE)						
MINIMUM INSULATION THICKNESS IN INCHES FOR INDOOR PIPE SIZES (SEE NOTES BELOW)						
PIPING SYSTEM TYPES	FLUID TEMP. RANGE (°F)	PIPE SIZE				
		< 1"	1" & 1 1/4"	1 1/2" - 3"	4" - 6"	8" & UP
REFRIGERANT OR CONDENSATE DRAIN	≤ 60	0.5	1	1	1	1.5

NOTES:  
1. FOR MINIMUM THICKNESS OF ALTERNATIVE INSULATION TYPES OUTSIDE THE STATED CONDUCTIVITY RANGE, SEE TEST METHOD FOR STEADY STATE HEAT TRANSFER PROPERTIES OF HORIZONTAL PIPE INSULATIONS, ASTM C 335-95, AND THE STATE ENERGY CODE.  
2. REFER TO SPECIFICATIONS AND DETAILS FOR ADDITIONAL INFORMATION.

VENTILATION SCHEDULE									
UNIT	ROOM USE	PER AREA			PER PERSON			UNCORRECTED TOTAL CFM	TOTAL REQUIRED CFM
		AREA (SF)	CFM/SF	CFM	PEOPLE	CFM/PERSON	CFM		
FB-1	OFFICE	280	0.06	17	0	5	0	17	21
FB-2	OFFICE	280	0.06	17	0	5	0	17	21
FB-3	OFFICE	272	0.06	16	8	5	40	56	70
FB-4	OFFICE	338	0.06	20	3	5	15	35	44
FB-5	OFFICE	397	0.06	24	3	5	15	39	48
FB-6	OFFICE	609	0.06	36	4	5	20	56	70
FB-7	OFFICE	400	0.06	24	1	5	5	29	36
FB-8	OFFICE	449	0.06	27	14	5	70	100	121
FB-9	OFFICE	500	0.06	30	1	5	5	35	44
FB-10	OFFICE	467	0.06	28	4	5	20	48	60
FB-11	OFFICE	950	0.06	57	8	5	40	97	121
FB-12	OFFICE	110	0.06	7	1	5	5	12	15
FB-13	OFFICE	110	0.06	7	1	5	5	12	15

OUTDOOR AIR DESIGN TEMPERATURES		
	DRY BULB (°F)	WET BULB (°F)
SUMMER	91	75
WINTER	-3	-4

NOTE: FOR AIR SUPPLIED TO THE BUILDING ONLY.

SERIES FAN BOX SCHEDULE WITH ELECTRIC HEATING COIL																				
TAG	PRIMARY CFM RANGE		PRIMARY INLET SIZE (IN.)	MAX. BOX S.P. DROP	AIRBORNE N.C.		FAN DATA						ELECTRIC COIL					MANUFACTURER AND MODEL NUMBER (AS STANDARD)	REMARKS	
	MIN	MAX			FULL SPEED FAN @ 100% PRIMARY @ 1.0 IN. S.P.	EXT. S.P.	MOTOR						EAT (°F)	LAT (°F)	V	PH	HZ			
							HP	V	PH	HZ	FLA	KW								STEPS
FB-1	300	1200	12	0.5	30	0.3	3/4	277	1	60	5.5	8.0	SCR	65	86	480	3	60	ENVIRO-TEC CFR1221	SEE NOTES
FB-2	300	1200	12	0.5	30	0.3	3/4	277	1	60	5.5	8.0	SCR	65	86	480	3	60	ENVIRO-TEC CFR1221	SEE NOTES
FB-3	190	760	10	0.5	30	0.3	1/2	277	1	60	4.1	5.0	SCR	65	86	480	3	60	ENVIRO-TEC CFR1018	SEE NOTES
FB-4	260	1040	10	0.5	30	0.3	1/2	277	1	60	4.1	7.0	SCR	65	86	480	3	60	ENVIRO-TEC CFR1018	SEE NOTES
FB-5	275	1100	10	0.5	30	0.3	1/2	277	1	60	4.1	7.0	SCR	65	85	480	3	60	ENVIRO-TEC CFR1018	SEE NOTES
FB-6	325	1300	12	0.5	30	0.3	3/4	277	1	60	5.5	9.0	SCR	65	87	480	3	60	ENVIRO-TEC CFR1221	SEE NOTES
FB-7	250	1000	10	0.5	30	0.3	1/2	277	1	60	4.1	7.0	SCR	65	87	480	3	60	ENVIRO-TEC CFR1018	SEE NOTES
FB-8	195	775	10	0.5	30	0.3	1/2	277	1	60	4.1	5.0	SCR	65	85	480	3	60	ENVIRO-TEC CFR1018	SEE NOTES
FB-9	325	1290	12	0.5	30	0.3	3/4	277	1	60	5.5	9.0	SCR	65	87	480	3	60	ENVIRO-TEC CFR1221	SEE NOTES
FB-10	290	1150	12	0.5	30	0.3	3/4	277	1	60	5.5	8.0	SCR	65	87	480	3	60	ENVIRO-TEC CFR1221	SEE NOTES
FB-11	355	1420	12	0.5	30	0.3	3/4	277	1	60	5.5	9.0	SCR	65	85	480	3	60	ENVIRO-TEC CFR1221	SEE NOTES
FB-12	100	400	6	0.5	30	0.3	1/3	277	1	60	2.6	3.0	SCR	65	89	480	3	60	ENVIRO-TEC CFR0811	SEE NOTES
FB-13	140	560	8	0.5	30	0.3	1/3	277	1	60	2.6	4.0	SCR	65	88	480	3	60	ENVIRO-TEC CFR0811	SEE NOTES

NOTES:  
1. REFER TO SPECIFICATIONS, DETAILS, AND CONTROL DRAWINGS FOR ADDITIONAL INFORMATION.  
2. MOTORS SHALL BE ECM TYPE.  
3. PROVIDE WITH INSULATED HOUSING, VIBRATION ISOLATION, HANGER BRACKET, AND THREE SETS OF FILTERS.  
4. CONFIRM COIL AND CONTROL HAND WITH COORDINATED HVAC PLANS.  
5. DISCONNECT SWITCH SHALL BE PROVIDED BY ELECTRICAL.

FAN SCHEDULE													
TAG	SERVICE	LOCATION	CFM	FAN TYPE	E.S.P. (IN.WG)	WHEEL		MOTOR			MANUFACTURER AND MODEL NUMBER (AS STANDARD)	REMARKS	
						TYPE	DRIVE	RPM	HP	V			PH
EF-3	ELECTRIC ROOM EXHAUST	PLENUM	700	INLINE	0.25	BI	DIRECT	1064	1/4	120	1	GREENHECK SQ-100-VG	SEE NOTES

NOTES:  
1. REFER TO SPECIFICATIONS, DETAILS, AND CONTROL DRAWINGS FOR ADDITIONAL INFORMATION.  
2. PROVIDE WITH VARI-GREEN ECM MOTOR, NEOPRENE HANGING VIBRATION ISOLATION, INSULATED HOUSING, AND UNIT MOUNTED SPEED CONTROLLER.  
3. UNIT MOUNTED DISCONNECT SWITCH PROVIDED BY ELECTRICAL CONTRACTOR.

ELECTRIC CABINET UNIT HEATER SCHEDULE														
TAG	LOCATION	TYPE	MOUNTING	INPUT (KW)	OUTPUT (MBH)	AIR		ELECTRIC SERVICE			MANUFACTURER AND MODEL NUMBER (AS STANDARD)	REMARKS		
						CFM	LAT (°F)	TOTALA MPS	V	PH			HZ	
ECU-1	VESTIBULE	HORIZ	HUNG	3.0	10.2	250	55	93	4.0	480	3	60	QMARK CU935	SEE NOTES

NOTES:  
1. REFER TO SPECIFICATIONS, DETAILS, AND CONTROL DRAWINGS FOR ADDITIONAL INFORMATION.  
2. PROVIDE WITH INTEGRAL TWO STAGE T-STAT.  
3. UNIT MOUNTED DISCONNECT SWITCH PROVIDED BY ELECTRICAL CONTRACTOR.  
4. PROVIDE BOTTOM INLET TOP OUTLET AIRFLOW PATTERN WITH DUCT COLLARS.

ELECTRIC BASEBOARD SCHEDULE										
TAG	LENGTH	WATTS PER FOOT	TOTAL WATTS	OUTPUT (MBH)	ELECTRIC SERVICE			MANUFACTURER AND MODEL NUMBER (AS STANDARD)	REMARKS	
					AMPS	V	PH			
EBB-1	4'-0"	250	1000	3412	3.6	277	1	QMARK CSH07A	SEE NOTES	
EBB-2	4'-0"	250	1000	3412	3.6	277	1	QMARK CSH07A	SEE NOTES	
EBB-3	4'-0"	250	1000	3412	3.6	277	1	QMARK CSH07A	SEE NOTES	
EBB-4	4'-0"	250	1000	3412	3.6	277	1	QMARK CSH07A	SEE NOTES	
EBB-5	4'-0"	250	1000	3412	3.6	277	1	QMARK CSH07A	SEE NOTES	
EBB-6	4'-0"	250	1000	3412	3.6	277	1	QMARK CSH07A	SEE NOTES	
EBB-7	4'-0"	250	1000	3412	3.6	277	1	QMARK CSH07A	SEE NOTES	
EBB-8	4'-0"	250	1000	3412	3.6	277	1	QMARK CSH07A	SEE NOTES	
EBB-9	4'-0"	250	1000	3412	3.6	277	1	QMARK CSH07A	SEE NOTES	
EBB-10	4'-0"	250	1000	3412	3.6	277	1	QMARK CSH07A	SEE NOTES	
EBB-11	4'-0"	250	1000	3412	3.6	277	1	QMARK CSH07A	SEE NOTES	
EBB-12	4'-0"	250	1000	3412	3.6	277	1	QMARK CSH07A	SEE NOTES	
EBB-13	4'-0"	250	1000	3412	3.6	277	1	QMARK CSH07A	SEE NOTES	
EBB-14	4'-0"	250	1000	3412	3.6	277	1	QMARK CSH07A	SEE NOTES	

NOTES:  
1. REFER TO SPECIFICATIONS AND CONTROL DIAGRAMS FOR ADDITIONAL INFORMATION  
2. PROVIDE WITH INTEGRAL CONCEALED DISCONNECT PREWIRED TO THE UNIT. DISCONNECTING MEANS SHALL BE NEMA RATED AND SUITABLE FOR LOCKING IN THE OFF POSITION.  
3. CONFIRM EQUIPMENT FINISH WITH THE ARCHITECT.  
4. PROVIDE THE THERMOSTAT PREWIRED TO THE CONTROLLER INTEGRAL TO THE UNIT.

DIFFUSER, GRILLE & REGISTER SCHEDULE									
TAG	SELECTION RANGE (CFM)	NECK SIZE (IN.)	OVERALL SIZE (IN.)	SERVICE	MOUNTING	ACCESSORIES	MANUFACTURER AND MODEL NUMBER (AS STANDARD)	MAX NC	REMARKS
SA	0-100	60	24x24	SUPPLY	LAY-IN	-	TITUS OMNI	30	SEE NOTES
SB	105-210	80	24x24	SUPPLY	LAY-IN	-	TITUS OMNI	30	SEE NOTES
SC	215-350	100	24x24	SUPPLY	LAY-IN	-	TITUS OMNI	30	SEE NOTES
SD	0-210	80	48" x (1) 1" SLOT	SUPPLY	LAY-IN	INS. PLENUM	TITUS FL10-HT	30	SEE NOTES
SE	0-100	60	48" x (1) 1" SLOT	SUPPLY	BORDER 22	INS. PLENUM	TITUS FL10-HT	30	SEE NOTES
SF	105-210	80	48" x (1) 1" SLOT	SUPPLY	BORDER 22	INS. PLENUM	TITUS FL10-HT	30	SEE NOTES
SG	0-250	100	48" x (1) 1" SLOT	SUPPLY	BORDER 22	INS. PLENUM	TITUS FL10-HT	30	SEE NOTES
SH	105-210	80	48" x (1) 1" SLOT	SUPPLY	BORDER 22	INS. PLENUM	TITUS FL10-JT	30	SEE NOTES
SI	0-100	60	12x12	SUPPLY	SURFACE	-	TITUS OMNI	30	SEE NOTES
SJ	0-100	60	24" x (1) 1" SLOT	SUPPLY	LAY-IN	INS. PLENUM	TITUS FL10-HT	30	SEE NOTES
RA	0-500	150	24x24	RETURN	LAY-IN	-	TITUS OMNI	30	SEE NOTES
RB	0-250	-	48" x (1) 1" SLOT	RETURN	LAY-IN	-	TITUS-FL10-HT	30	SEE NOTES
RC	0-250	-	48" x (1) 1" SLOT	RETURN	BORDER 22	-	TITUS-FL10-HT	30	SEE NOTES
RD	0-250	120	48" x (1) 1" SLOT	RETURN	BORDER 22	INS. PLENUM	TITUS-FL10-HT	30	SEE NOTES
RE	0-95LF	-	(1) 2" SLOT	RETURN	BORDER 22	-	TITUS FL20-JT	30	SEE NOTES
EA	0-150	80	48" x (1) 1" SLOT	EXHAUST	BORDER 22	INS. PLENUM	TITUS FL10-HT	30	SEE NOTES
EB	0-50	6x6	8x8	EXHAUST	SIDE WALL	-	TITUS 350 RL	30	SEE NOTES
EC	0-700	12x12	14x14	EXHAUST	SIDE WALL	-	TITUS 350 RL	30	SEE NOTES
ED	0-100	60	12x12	EXHAUST	SURFACE	-	TITUS OMNI	30	SEE NOTES
TA	0-250	120	48" x (1) 1" SLOT	TRANSFER	BORDER 22	-	TITUS-FL10-HT	30	SEE NOTES
TB	0-700	20x20	22x22	TRANSFER	SIDE WALL	-	TITUS 350 RL	30	SEE NOTES

NOTES:  
1. REFER TO SPECIFICATIONS AND DETAILS FOR ADDITIONAL INFORMATION.  
2. SEE PLANS FOR LOCATIONS AND QUANTITIES FOR EACH AIR DEVICE.  
3. SEE PLANS FOR BLOW PATTERNS FOR EACH AIR DEVICE.  
4. AIR DEVICE FINISHES SHALL BE WHITE.  
5. BORDER TYPES SHALL BE COMPATIBLE WITH THE REFLECTED CEILING PLANS.

Project Title:  
**Fidelity INVESTMENTS**  
Fidelity Real Estate Company  
245 Summer Street  
Boston, MA 02110

Fidelity Investor Center  
8480 Keystone Crossing  
Indianapolis, IN 46240

Number	Description	Date
1	ISSUED FOR PERMIT & CONST.	31 JUL 19
1	BULLETIN No. 4	11 DEC 19
2	BULLETIN No. 6	3 JAN 20

</