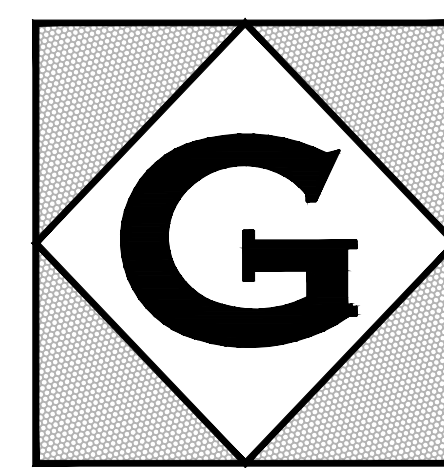




**DUCTWORK REPAIR AND
REPLACEMENT AT HEC
FOR
ST. PETERSBURG COLLEGE**

SPC PROJECT NO. 0000080274



PREPARED BY
GRINER ENGINEERING INC.
1628 FIRST AVENUE NORTH
ST. PETERSBURG, FLORIDA 33713

PROJECT NUMBER #11066
ISSUE DATE: 3/12/2012
PERMIT SET

BOARD OF TRUSTEES:
TIMOTHY E. BRETT
KENNETH P. BURKE
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BOARD OF TRUSTEES

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E3.1 ELECTRICAL DETAILS

ELECTRICAL SYMBOL LEGEND		
SYMBOL	DESCRIPTION	MOUNTING
	1 X 4 FLUORESCENT FIXTURE LETTER INDICATES TYPE	SEE FIXTURE SCHEDULE
	LINEAR INDIRECT FLUORESCENT FIXTURE LETTER INDICATES TYPE	SEE FIXTURE SCHEDULE
	2 X 4 FLUORESCENT FIXTURE LETTER INDICATES TYPE	SEE FIXTURE SCHEDULE
	SHADING DENOTES FIXTURE WITH EM BATTERY PACK. 'N' DENOTES FIXTURE UNSWITCHED FOR NIGHT LIGHT	SEE FIXTURE SCHEDULE
	FLUORESCENT STRIP FIXTURE LETTER INDICATES TYPE	SEE FIXTURE SCHEDULE
	FLUORESCENT WALL BRACKET FIXTURE LETTER INDICATES TYPE	SEE FIXTURE SCHEDULE
	PL FLUORESCENT DOWNLIGHT LETTER INDICATES TYPE	SEE FIXTURE SCHEDULE
	EXIT-SHADING DENOTES FACEPLATE LOCATION. LETTER INDICATES TYPE. PROVIDE ARROWS AS REQUIRED.	SEE FIXTURE SCHEDULE
	SINGLE POLE SWITCH (20A-120/277) 'S' DENOTES 3-WAY 'D' DENOTES DIMMER	48" AFF OR AS NOTED
	OCCUPANCY SENSOR	48" AFF OR AS NOTED
	LOW VOLTAGE LIGHTING SWITCH	48" AFF OR AS NOTED
	DUPLEX RECEPTACLE, 125V, 20A 'C' DENOTES ISOLATED GROUND	18" AFF OR AS NOTED
	DUPLEX RECEPTACLE, 125V, 20A	18" AFF OR AS NOTED
	DUPLEX RECEPTACLE, 125V, 20A	48" AFF OR AS NOTED
	QUAD RECEPTACLE, 125V, 20A	18" AFF OR AS NOTED
	POWER/TELEPHONE POLE	SEE DETAIL OR AS NOTED
	OUTLET BOX OR J-BOX FOR POWER AND DATA SUPPLY TO FURNITURE SYSTEMS	18" AFF OR AS NOTED
	COMBINATION VOICE/DATA OUTLET	18" AFF OR AS NOTED
	DATA OUTLET	18" AFF OR AS NOTED
	VOICE OUTLET	18" AFF OR AS NOTED
	FAX OUTLET	18" AFF OR AS NOTED
	CARD READER	COORDINATE WITH SECURITY INSTALLER
	SURVEILLANCE CAMERA	COORDINATE WITH SECURITY INSTALLER
	T.V. OUTLET	18" AFF OR AS NOTED
	PANELBOARD 120/208V	SEE PANEL SCHEDULE
	RACEWAY CONCEALED IN WALL OR ABOVE CEILING	SEE SPECIFICATIONS
	HOMERUN TO PANEL. LETTERS INDICATE PANEL. NUMBERS INDICATE CIRCUIT. NOTE: HASH MARKS INDICATES THE NUMBER OF WIRES EXCLUDING THE REQUIRED EQUIPMENT GROUND.	SEE SPECIFICATIONS
	MOTOR, NUMERAL INDICATES HORSEPOWER	AS NOTED
	MOTOR RATED SWITCH WITH OVERLOAD RELAYS AS REQUIRED.	MOUNTED ADJACENT TO EQUIPMENT
	NON-FUSIBLE SAFETY SWITCH-SIZE AS NOTED	SEE SPECIFICATIONS
	FUSIBLE SAFETY SWITCH-SIZE AS NOTED	SEE SPECIFICATIONS
	FAN OR AIR HANDLER SHUTDOWN RELAY	MOUNTED ADJACENT TO EQUIPMENT
	FIRE ALARM VISUAL SIGNAL 75cd UON	80" AFF OR AS NOTED
	FIRE ALARM MANUAL PULLSTATION	48" AFF OR AS NOTED
	FIRE ALARM AUDIBLE/VISUAL SIGNAL 75cd UON. ADA COMPATIBLE.	80" AFF OR AS NOTED
	FIRE ALARM AUDIBLE/VISUAL SIGNAL 75cd UON. ADA COMPATIBLE.	CEILING MOUNTED AS NOTED
	FIRE ALARM SMOKE DETECTOR	ON CEILING OR AS NOTED
	FIRE ALARM HEAT DETECTOR	ON CEILING OR AS NOTED
	120 VOLT SINGLE STATION SMOKE DETECTOR	WALL OR AS NOTED
	FIRE ALARM SMOKE DETECTOR	CEILING OR AS NOTED
	FIRE ALARM TAMPER AND FLOW SWITCH	AS NOTED
	FIRE ALARM MINIHORN	WALL OR AS NOTED
	FIRE ALARM COMBINED HEAT AND CO SYSTEM DETECTOR	ON CEILING OR AS NOTED
	FIRE ALARM COMBINED SMOKE AND CO SYSTEM DETECTOR 'SB' DENOTES SOUND BASE	ON CEILING OR AS NOTED
	FIRE ALARM PANEL ('FACP' DENOTES FIRE ALARM CONTROL PANEL, 'FAM' DENOTES ANNUNCIATOR)	60" AFF OR AS NOTED
	REFER TO LIKE NUMBERED NOTES	

NOTE:

1. ALL MOUNTING HEIGHTS SHOWN ARE TO THE TOP OF THE DEVICE UNLESS NOTED OTHERWISE.
2. NOT ALL SYMBOLS APPEAR ON PLANS.

ABBREVIATIONS:	
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
BFG	BELOW FINISHED GRADE
C	CONDUIT
CPW	COOL. WHITE
DACP	DOOR ALARM CONTROL PANEL
DN	NIGHT LIGHT
EG	EQUIPMENT GROUND
ENCL	ENCLOSURE
EWG	ELECTRIC WATER COOLER
OWH	ELECTRIC WATER HEATER
EX	EXPLOSION PROOF
FHP	FRACTIONAL HORSEPOWER
FCU	FAN COIL UNIT
GFI	GROUND FAULT INTERRUPTER
HD	HIGH INTENSITY DISCHARGE
HORIZ	HORIZONTAL
IG	ISOLATED GROUND
LW	LIGHT WHITE
HP	HORSEPOWER, HEAT PUMP
HVAC	HEATING, VENTILATING, AIR CONDITIONING
JB	JUNCTION BOX
LRA	LOCKED ROTOR AMPERES
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUGS ONLY
N	NEUTRAL
NL	NIGHT LIGHT
OB	OUTLET BOX
PB	PULL BOX, PUSH-BUTTON
PS	PAY STATION
SP	SUPPLY FAN
SPEC	SPECIFICATIONS
TL	TWISTLOCK
TTB	TELEPHONE TERMINAL BOARD
TYTB	TELEVISION TERMINAL BOARD
UNO	UNLESS NOTED OTHERWISE
UP	FEED UPWARD
VERT	VERTICAL
WM	WATT MISER
WP	WEATHERPROOF
WW	WARM WHITE
XMR	TRANSFORMER

NATIONAL ELECTRIC CODE NOTES:

ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF NFPA 70 - 2011 NATIONAL ELECTRIC CODE

ELECTRICAL SUBMITTAL NOTES:

SUBMIT ALL ELECTRICAL SYSTEMS SUBMITTALS AT ONE (1) TIME IN ONE (1) INTEGRAL GROUP. PIECE-BY-PIECE SUBMISSION OF INDIVIDUAL ITEMS WILL NOT BE ACCEPTABLE. ENGINEER MAY CHECK CONTENTS OF EACH SUBMITTAL SET UPON INITIAL DELIVERY; IF NOT COMPLETE AS SET FORTH HEREIN, SUBMITTAL SETS MAY BE RETURNED TO CONTRACTOR WITHOUT REVIEW AND APPROVAL AND WILL NOT BE ACCEPTED UNTIL MADE COMPLETE. SHOP DRAWINGS WILL BE REVIEWED MAXIMUM TWICE AS PART OF THIS CONTRACT. ADDITIONAL SHOP DRAWING REVIEWS SHALL BE INVOICED AT \$85.00 PER HOUR, BILLABLE TO THE SUB-CONTRACTOR.

ELECTRICAL GENERAL NOTES:

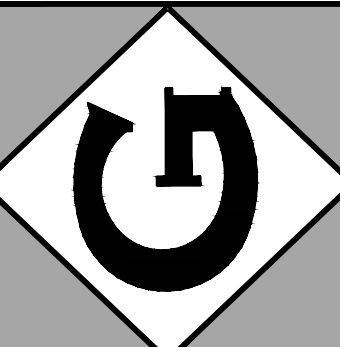
1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE FLORIDA BUILDING CODE, NATIONAL ELECTRIC CODE, ST. PETERSBURG COLLEGE DESIGN AND CONSTRUCTION STANDARDS, AND NFPA CODES LATEST EDITIONS.
2. THE WORK, APPARATUS AND MATERIALS WHICH SHALL BE FURNISHED UNDER THE SPECIFICATIONS AND ACCOMPANYING DRAWINGS SHALL INCLUDE ALL ITEMS SPECIFIED HEREINAFTER AND SHOWN ON THE DRAWINGS. ALL OTHER MATERIALS NECESSARY FOR THE COMPLETE INSTALLATION SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR TO PROVIDE COMPLETE ELECTRICAL SYSTEMS AS INDICATED ON THE DRAWINGS AND AS SPECIFIED HEREIN.
3. THE CONTRACTOR SHALL FURNISH ALL PROTECTIVE DEVICES, CONDUCTORS, SUPPORTS, RACEWAYS, ETC., TO PROVIDE COMPLETE INTERIOR ELECTRICAL SYSTEMS AS SHOWN ON THE DRAWINGS AND AS SPECIFIED HEREINAFTER. THE WORK SHALL INCLUDE COMPLETE TESTING OF ALL EQUIPMENT AND WIRING AT THE COMPLETION OF THE WORK AND MAKING ANY MINOR CONNECTION CHANGES OR ADJUSTMENTS NECESSARY FOR THE PROPER FUNCTIONING OF THE SYSTEM AND EQUIPMENT. ALL WORKMANSHIP SHALL BE OF THE HIGHEST QUALITY AND NO SUBSTANDARD WORK WILL BE ACCEPTED.
4. ALL REQUIRED INSURANCE TO BE PROVIDED FOR PROTECTION AGAINST PUBLIC LIABILITY OF PROPERTY DAMAGE FOR DURATION OF THE WORK.
5. IN GENERAL, MATERIALS AND APPARATUS SHALL COMPLY WITH ALL APPLICABLE TESTS, RATINGS, SPECIFICATIONS, AND REQUIREMENTS OF THE IEEE AND NEMA AND SHALL BEAR THE APPROVED DEVICE LABEL OF THE UNDERWRITERS' LABORATORIES, INC. OR OTHER TESTING LABORATORY APPROVED BY THE SPC AUTHORITY HAVING JURISDICTION.
6. CONTRACTOR SHALL GUARANTEE ALL WORK FOR A PERIOD OF ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION. CONTRACTOR SHALL RECTIFY ANY DEFECTS DUE TO FAULTY MATERIALS OR WORKMANSHIP AND PAY FOR ANY DAMAGE TO OTHER WORK RESULTING THEREFROM WITHIN SAID PERIOD. THE OWNER WILL GIVE NOTICE OF DEFECTS WITH REASONABLE PROMPTNESS.
7. BIDDERS ARE TO VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND SATISFY THEMSELVES AS TO THE NATURE AND SCOPE OF WORK AND THE EXTENT OF DEMOLITION. THE SUBMISSION OF A BID WILL BE EVIDENCED THAT SUCH AN EXAMINATION HAS BEEN MADE. LATER CLAIMS FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED, OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD AN EXAMINATION BEEN MADE, WILL NOT BE ALLOWED.
8. PRIOR TO SUBMITTING A BID, THE CONTRACTOR SHALL HAVE STUDIED AND COMPARED THE CONTRACT DOCUMENTS WITH EXISTING/PROPOSED CONDITIONS AND NOT LATER THAN TEN (10) DAYS PRIOR TO THE BID OPENING SHALL REPORT TO THE ENGINEER AND OWNER ANY ERROR, INCONSISTENCY, OR OMISSION IN THE CONTRACT DOCUMENTS.
9. ALL CUTTING, PATCHING AND REPAIR WORK SHALL BE THE RESPONSIBILITY OF THE TRADE INVOLVED. THE WORK SHALL BE PERFORMED BY SUB-CONTRACTOR SPECIALIZING IN THAT DISCIPLINE.
10. PROTECT EXISTING ELECTRICAL EQUIPMENT AND INSTALLATIONS NECESSARY TO REMAIN. IF DAMAGED OR DISTURBED IN THE COURSE OF THE WORK, REMOVE DAMAGED PORTIONS AND INSTALL NEW PRODUCTS OF EQUAL CAPACITY, QUALITY, AND FUNCTIONALITY.
11. THE CONTRACTOR SHALL INCLUDE WITHIN THE BID ALL REQUIRED OFF HOUR, OVERTIME, AND NON-BUSINESS HOUR WORK AS REQUIRED TO PERFORM THE WORK WITHOUT DISRUPTING THE BUILDING NORMAL BUSINESS OPERATIONS.
12. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES FOR ITEMS IN THEIR SCOPE OF WORK WHICH WOULD REQUIRE ELECTRICAL WORK (DISCONNECTION/RECONNECTION ETC.) AND ARE NOT INDICATED ON THE ELECTRICAL PLANS. ALL SUBCONTRACTORS ARE REQUIRED TO COORDINATE THEIR WORK WITH OTHER TRADES. LACK OF THIS COORDINATION RESULTING IN ADDED COST TO THE CONTRACT WILL BE BORNE BY THE SUBCONTRACTOR.
13. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS AND SUBMITTALS FOR ELECTRICAL EQUIPMENT SHOWN ON THE PLANS AND SPECIFICATIONS FOR THE ENGINEER'S APPROVAL. THE ENGINEER MAY REQUIRE THE CONTRACTOR TO REDO ANY WORK WHICH WAS NOT APPROVED, OR THE ENGINEER MAY REQUIRE A CREDIT TO THE OWNER, PROVIDE A SET OF AS BUILTS AFTER THE JOB IS COMPLETED. THIS SET SHALL BE CONTINUOUSLY UPDATED DURING CONSTRUCTION.
14. ALL WORK SHALL BE PERFORMED DURING TIME PERIODS ACCEPTABLE TO THE OWNER. SCHEDULE ALL WORK WITH THE OWNER'S REPRESENTATIVE MINIMUM FOURTEEN (14) DAYS BEFORE PERFORMING ANY WORK THAT WILL IMPACT ST. PETERSBURG COLLEGE OPERATIONS.
15. THE CONTRACTOR SHALL COORDINATE ALL PHASING OF ELECTRICAL WORK TO CONCLUDE WITH PREVIOUS AND SUBSEQUENT PHASES OF THE REMODELING PROJECT. PROVISIONS SHALL BE MADE FOR THE CONTINUATION AND EXTENSIONS OF ALL CIRCUITS AND SYSTEMS AS REQUIRED AND INDICATED ON THE ELECTRICAL DRAWINGS.
16. ALL ELECTRICAL AND FIRE ALARM WORK SHALL BE IN CONDUITS UNLESS LOW VOLTAGE DATA/PHONE WIRING ABOVE CEILING. ALL LOW VOLTAGE WIRING IN CEILING SPACE OR IN AIR HANDLING FLENUMS NOT IN CONDUIT SHALL BE UL LISTED AS SUITABLE FOR PLENUM USE.
17. ALL JUNCTION BOXES AND COVER PLATES SHALL BE PAINTED AND LABELED.
18. PROVIDE SEAL FOR PENETRATION OF RATED WALLS/CEILINGS BY CONDUIT.
19. BRANCH CIRCUIT CONDUCTORS SHALL NOT BE SMALLER THAN NO. 12 AND WHERE BRANCH CIRCUIT CONDUCTOR RUNS FROM SOURCE (PANEL) TO THE LAST DEVICE ON THE CIRCUIT EXCEEDS 75 FT. IN LENGTH, THE CONDUCTORS SHALL BE NO. 10 MINIMUM AND FOR THE ENTIRE LENGTH OF THE CIRCUIT. FOR RUNS OVER 150 FT. IN LENGTH THE CONDUCTOR SHALL BE NO. 8 MINIMUM AND FOR THE ENTIRE LENGTH OF THE CIRCUIT. THE ABOVE APPLIES TO 120 VOLT CIRCUITS ONLY.
20. WORK IS TO BE CARRIED OUT WITHOUT UNNECESSARY INTERFERENCE WITH OWNER'S EXISTING FACILITIES AND OPERATIONS. POWER INTERRUPTIONS SHALL BE SCHEDULED WITH OWNER AND SHALL BE TAKEN ONLY DURING THOSE PERIODS WHICH HE HAS APPROVED IN WRITING. COORDINATE EXACT PHASING OF CONSTRUCTION WITH OWNER MINIMUM (14) FOURTEEN DAYS ADVANCE NOTICE.
21. THE CONTRACTOR SHALL STRICTLY CONFORM TO THE NEC REQUIREMENTS FOR DE-RATING FOR CONDUCTOR CAPACITY AND CONDUIT FILL.
22. CONTRACTOR SHALL VERIFY EXISTING FIRE ALARM SYSTEM IS OPERATIONAL PRIOR TO START OF WORK AND REPORT ANY DEFICIENCIES TO OWNER. ONCE CONTRACTOR BEGINS WORK ALL REPAIRS, REPLACEMENT AND REPROGRAMMING COSTS TO MAKE SYSTEM OPERATIONAL WITH NEW EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
23. THE FIRE ALARM SYSTEM PANEL IS EXISTING TO REMAIN. ALL FIRE ALARM WORK SHALL REQUIRE THE USE OF THE SPC APPROVED VENDOR. ALL WORK ASSOCIATED WITH THE FIRE ALARM SHALL BE COMPLETED UNDER A SEPARATE SET OF DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR POINT TO POINT WIRING DIAGRAMS, BATTERY CALCULATIONS, RISER DIAGRAMS AND SIGNED AND SEALED SHOP DRAWINGS. THE FIRE ALARM SHALL BE RE-CERTIFIED UPON COMPLETION.
24. SUBMIT CLOSEOUT DOCUMENTS TO ST. PETERSBURG COLLEGE. THE EXACT SITE ADDRESS FOR CLOSEOUT DOCUMENTS TO BE PROVIDED BY ST. PETERSBURG PROJECT COORDINATOR.
25. CONTRACTOR SHALL REFER TO FLORIDA BUILDING CODE REQUIREMENTS AND INSPECTION SCHEDULE. CONFIRM WITH ST. PETERSBURG AUTHORITY HAVING JURISDICTION FOR REQUIREMENTS.
26. ANY DEVIATION AND CHANGES OF WORK SHALL BE SUBMITTED TO ST. PETERSBURG BUILDING DEPARTMENT FOR APPROVAL.
27. SUBMIT FIRE ALARM SHOP DRAWINGS TO ST. PETERSBURG BUILDING DEPARTMENT FOR APPROVAL PRIOR TO START ANY WORK.

FIRE ALARM GENERAL NOTES:

1. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF THE PROPOSED ADDRESSABLE FIRE ALARM DEVICES AND WIRING LAYOUTS, ANY REVISIONS AND/OR ADDITIONS REQUIRED BY THE LOCAL JURISDICTION PRIOR TO OBTAINING CERTIFICATE OF OCCUPANCY ARE THE RESPONSIBILITY OF THE CONTRACTOR AND WILL NOT BE REASON FOR ADDITIONAL COMPENSATION TO THE CONTRACTOR.
2. THE FIRE ALARM SYSTEM COMPONENTS SHALL BE INSTALLED IN COMPLIANCE WITH NFPA 70, 72, AND FLORIDA BUILDING CODE.
3. SYSTEM INSPECTION, TEST RESULT, AND OPERATION SHEETS SHALL BE PROVIDED TO THE OWNER.
4. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS SHOWING EXACT FIELD INSTALLATION TO THE OWNER AFTER COMPLETION OF THE PROJECT.
5. ALL FIELD CHANGES SHALL BE COORDINATED WITH OWNER'S REPRESENTATIVE.
6. SMOKE DETECTORS SHALL BE INSTALLED MINIMUM 3'-0" FROM HVAC SUPPLY AIR DIFFUSERS.
7. ALL JUNCTION BOXES AND COVER PLATES TO EMERGENCY SYSTEM SHALL BE PAINTED RED FOR QUICK RECOGNITION.
8. ALL CONTROL AND ALARM CABLES SHALL BE INSTALLED IN CONDUIT.
9. CONTRACTOR SHALL VERIFY THAT THE QUANTITY AND LOCATIONS SHOWN ON THE DRAWINGS SHALL PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM TO THE OWNER.
10. WHEN CEILING MOUNTED, SMOKE AND/OR HEAT DETECTORS SHALL BE MOUNTED NO CLOSER THAN 4" TO A SIDE WALL.
11. CONTRACTOR SHALL VERIFY EXISTING FIRE ALARM SYSTEM IS OPERATIONAL PRIOR TO START OF WORK AND REPORT ANY DEFICIENCIES TO OWNER. ONCE CONTRACTOR BEGINS WORK ALL REPAIRS, REPLACEMENT AND REPROGRAMMING COSTS TO MAKE SYSTEM OPERATIONAL WITH NEW EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL COORDINATE THE DEMOLITION AND RENOVATION FIRE ALARM WORK WITH THE OWNER AND AUTHORITY HAVING JURISDICTION TO ENSURE FALSE ALARMS ARE AVOIDED DURING DEMOLITION. THE FIRE ALARM IS TO REMAIN ACTIVE DURING DEMOLITION.
13. THE FIRE ALARM SYSTEM PANEL IS EXISTING TO REMAIN. ALL FIRE ALARM WORK SHALL REQUIRE THE USE OF THE OWNER APPROVED VENDOR.
14. THE FIRE ALARM SHALL BE RE-CERTIFIED UPON COMPLETION OF WORK.

PROFESSIONAL SEAL

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CAROLINE HEALTH EDUCATION CENTER
DUCTWORK REPAIR AND
REPLACEMENT
7200 46TH STREET NORTH, PINELLAS PARK, FLORIDA

CLIENT INFORMATION

DRAWN BY

JWY

REVIEWED BY

JWY

DESIGN PROJECT NUMBER

11066

DATE

MARCH 12, 2012

SHEET TITLE

ELECTRICAL COVER

SHEET

NO.

DATE

REVISED FOR

1

3-12-12

REVIEW COMMENTS

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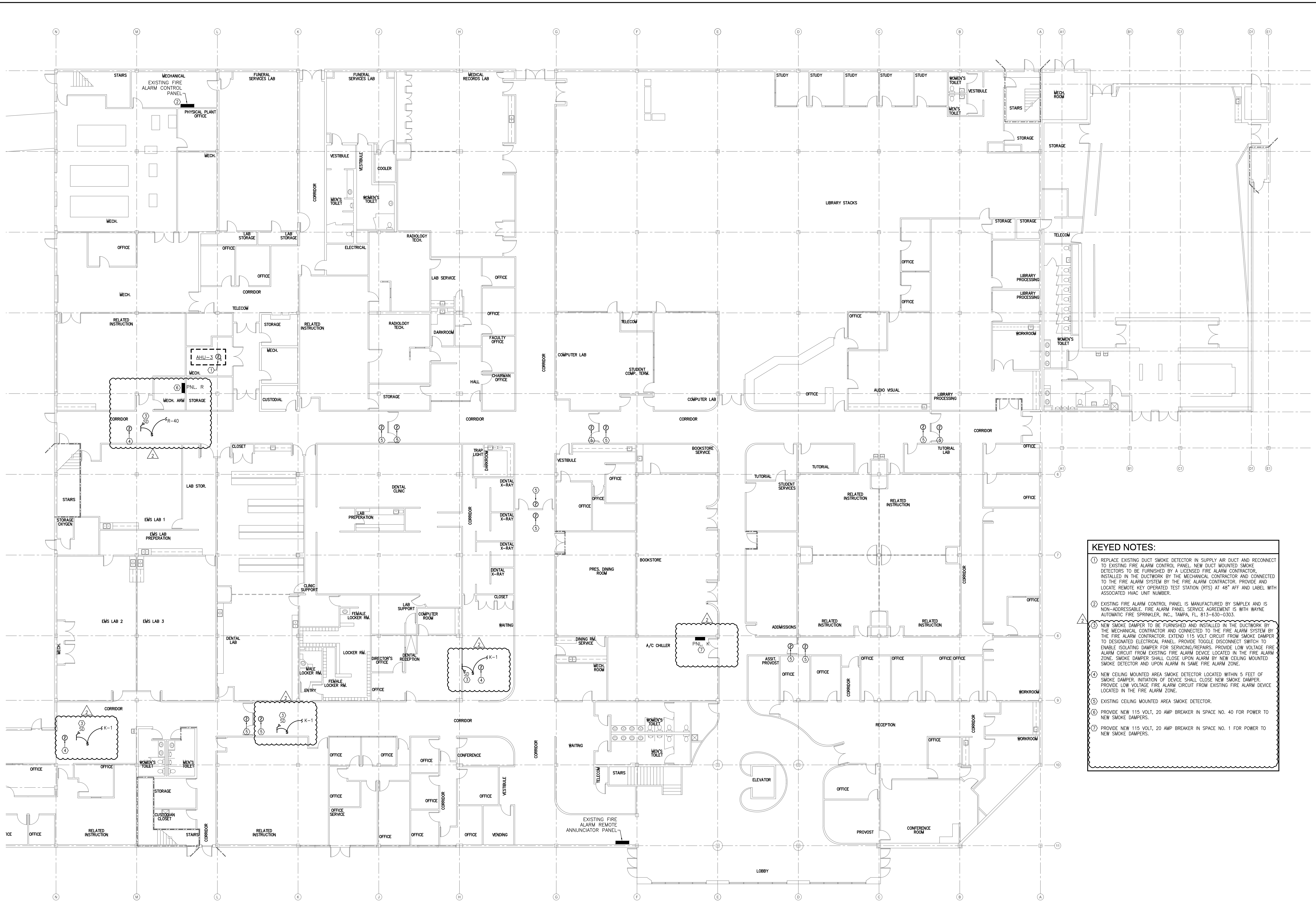
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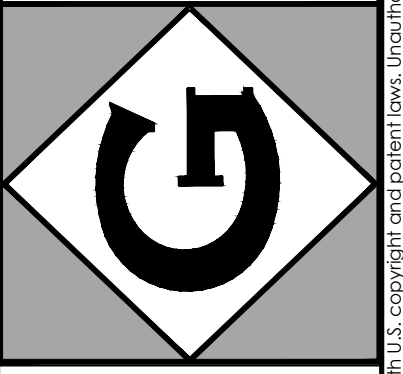
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- KEYED NOTES:**
- ① REPLACE EXISTING DUCT SMOKE DETECTOR IN SUPPLY AIR DUCT AND RECONNECT TO EXISTING FIRE ALARM CONTROL PANEL. NEW DUCT MOUNTED SMOKE DETECTORS TO BE FURNISHED BY A LICENSED FIRE ALARM CONTRACTOR. INSTALLED IN THE DUCTWORK BY THE MECHANICAL CONTRACTOR AND CONNECTED TO THE FIRE ALARM SYSTEM BY THE FIRE ALARM CONTRACTOR. PROVIDE AND LOCATE REMOTE KEY OPERATED TEST STATION (RTS) AT 48" AFF AND LABEL WITH ASSOCIATED HVAC UNIT NUMBER.
 - ② EXISTING FIRE ALARM CONTROL PANEL IS MANUFACTURED BY SIMPLEX AND IS NON-ADDRESSABLE. FIRE ALARM PANEL SERVICE AGREEMENT IS WITH WAYNE AUTOMATIC FIRE SPRINKLER, INC., TAMPA, FL 813-630-0303.
 - ③ NEW SMOKE DAMPER TO BE FURNISHED AND INSTALLED IN THE DUCTWORK BY THE MECHANICAL CONTRACTOR AND CONNECTED TO THE FIRE ALARM SYSTEM BY THE FIRE ALARM CONTRACTOR. EXTEND 115 VOLT CIRCUIT FROM SMOKE DAMPER TO DESIGNATED ELECTRICAL PANEL. PROVIDE TOGGLE DISCONNECT SWITCH TO ENABLE ISOLATING DAMPER FOR SERVICING/REPAIRS. PROVIDE LOW VOLTAGE FIRE ALARM CIRCUIT FROM EXISTING FIRE ALARM DEVICE LOCATED IN THE FIRE ALARM ZONE. SMOKE DAMPER SHALL CLOSE UPON ALARM BY NEW CEILING MOUNTED SMOKE DETECTOR AND UPON ALARM IN SAME FIRE ALARM ZONE.
 - ④ NEW CEILING MOUNTED AREA SMOKE DETECTOR LOCATED WITHIN 5 FEET OF SMOKE DAMPER. INITIATION OF DEVICE SHALL CLOSE NEW SMOKE DAMPER. PROVIDE LOW VOLTAGE FIRE ALARM CIRCUIT FROM EXISTING FIRE ALARM DEVICE LOCATED IN THE FIRE ALARM ZONE.
 - ⑤ EXISTING CEILING MOUNTED AREA SMOKE DETECTOR.
 - ⑥ PROVIDE NEW 115 VOLT, 20 AMP BREAKER IN SPACE NO. 40 FOR POWER TO NEW SMOKE DAMPERS.
 - ⑦ PROVIDE NEW 115 VOLT, 20 AMP BREAKER IN SPACE NO. 1 FOR POWER TO NEW SMOKE DAMPERS.

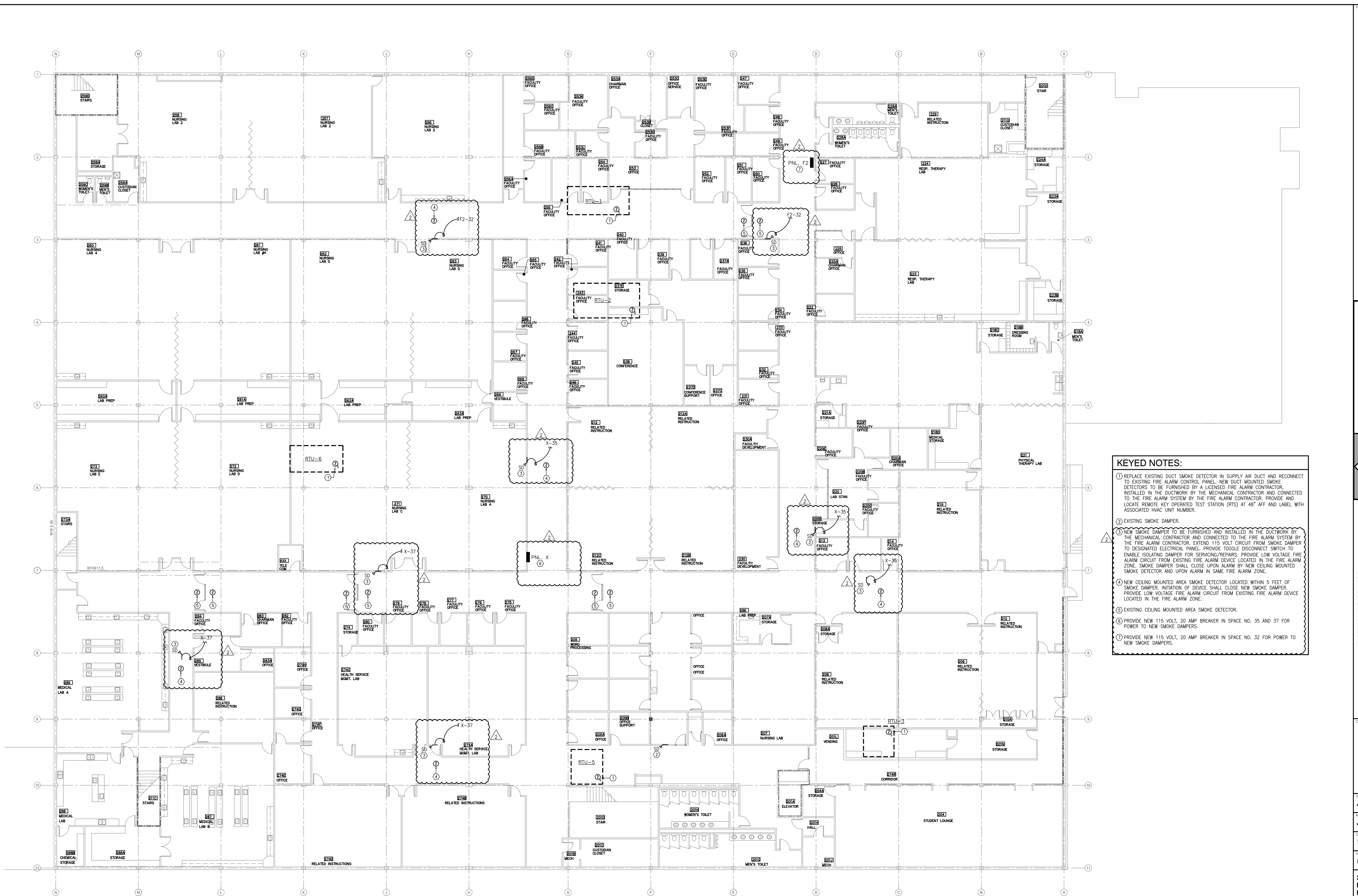
1ST FLOOR ELECTRICAL RENOVATION PLAN
 SCALE: 3/32" = 1'-0"

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 7200 46TH STREET NORTH, PINELAS PARK, FLORIDA

CLIENT INFORMATION		
DESIGNED BY	JWY	
REVIEWED BY	JWY	
GET PROJECT NUMBER	11066	
DATE	MARCH 12, 2012	
SHEET TITLE		
1ST FLOOR ELECTRICAL RENOVATION PLAN		
NO.	DATE	REVISED FOR
1	3-12-12	REVIEW COMMENTS
2	4-10-12	REVIEW COMMENTS
SHEET NUMBER		
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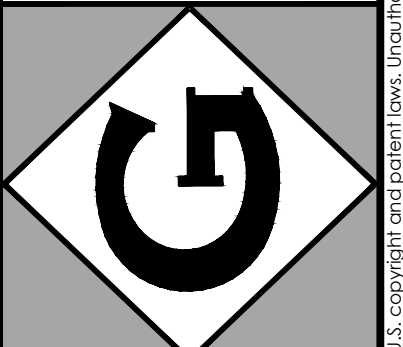


- KEYED NOTES:**
- 1 REPLACE EXISTING DUCT SMOKE DETECTOR IN SUPPLY AIR DUCT AND RECONNECT TO EXISTING FIRE ALARM CONTROL PANEL. NEW DUCT MOUNTED SMOKE DETECTORS TO BE FURNISHED BY A LICENSED FIRE ALARM CONTRACTOR. INSTALLED IN THE DUCTWORK BY THE MECHANICAL CONTRACTOR AND CONNECTED TO THE FIRE ALARM SYSTEM BY THE FIRE ALARM CONTRACTOR. PROVIDE AND LOCATE REMOTE KEY OPERATED TEST STATION (RTS) AT 48" AFF AND LABEL WITH ASSOCIATED HVAC UNIT NUMBER.
 - 2 EXISTING SMOKE DAMPER.
 - 3 NEW SMOKE DAMPER TO BE FURNISHED AND INSTALLED IN THE DUCTWORK BY THE MECHANICAL CONTRACTOR AND CONNECTED TO THE FIRE ALARM SYSTEM BY THE FIRE ALARM CONTRACTOR. EXTEND 115 VOLT CIRCUIT FROM SMOKE DAMPER TO DESIGNATED ELECTRICAL PANEL. PROVIDE TOGGLE DISCONNECT SWITCH TO ENABLE ISOLATING DAMPER FOR SERVICING/REPAIRS. PROVIDE LOW VOLTAGE FIRE ALARM CIRCUIT FROM EXISTING FIRE ALARM DEVICE LOCATED IN THE FIRE ALARM ZONE. SMOKE DAMPER SHALL CLOSE UPON ALARM BY NEW CEILING MOUNTED SMOKE DETECTOR AND UPON ALARM IN SAME FIRE ALARM ZONE.
 - 4 NEW CEILING MOUNTED AREA SMOKE DETECTOR LOCATED WITHIN 5 FEET OF SMOKE DAMPER. INITIATION OF DEVICE SHALL CLOSE NEW SMOKE DAMPER. PROVIDE LOW VOLTAGE FIRE ALARM CIRCUIT FROM EXISTING FIRE ALARM DEVICE LOCATED IN THE FIRE ALARM ZONE.
 - 5 EXISTING CEILING MOUNTED AREA SMOKE DETECTOR.
 - 6 PROVIDE NEW 115 VOLT, 20 AMP BREAKER IN SPACE NO. 35 AND 37 FOR POWER TO NEW SMOKE DAMPERS.
 - 7 PROVIDE NEW 115 VOLT, 20 AMP BREAKER IN SPACE NO. 32 FOR POWER TO NEW SMOKE DAMPERS.

2ND FLOOR ELECTRICAL RENOVATION PLAN
 SCALE: 3/32" = 1'-0"

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DESIGNED BY
JWY

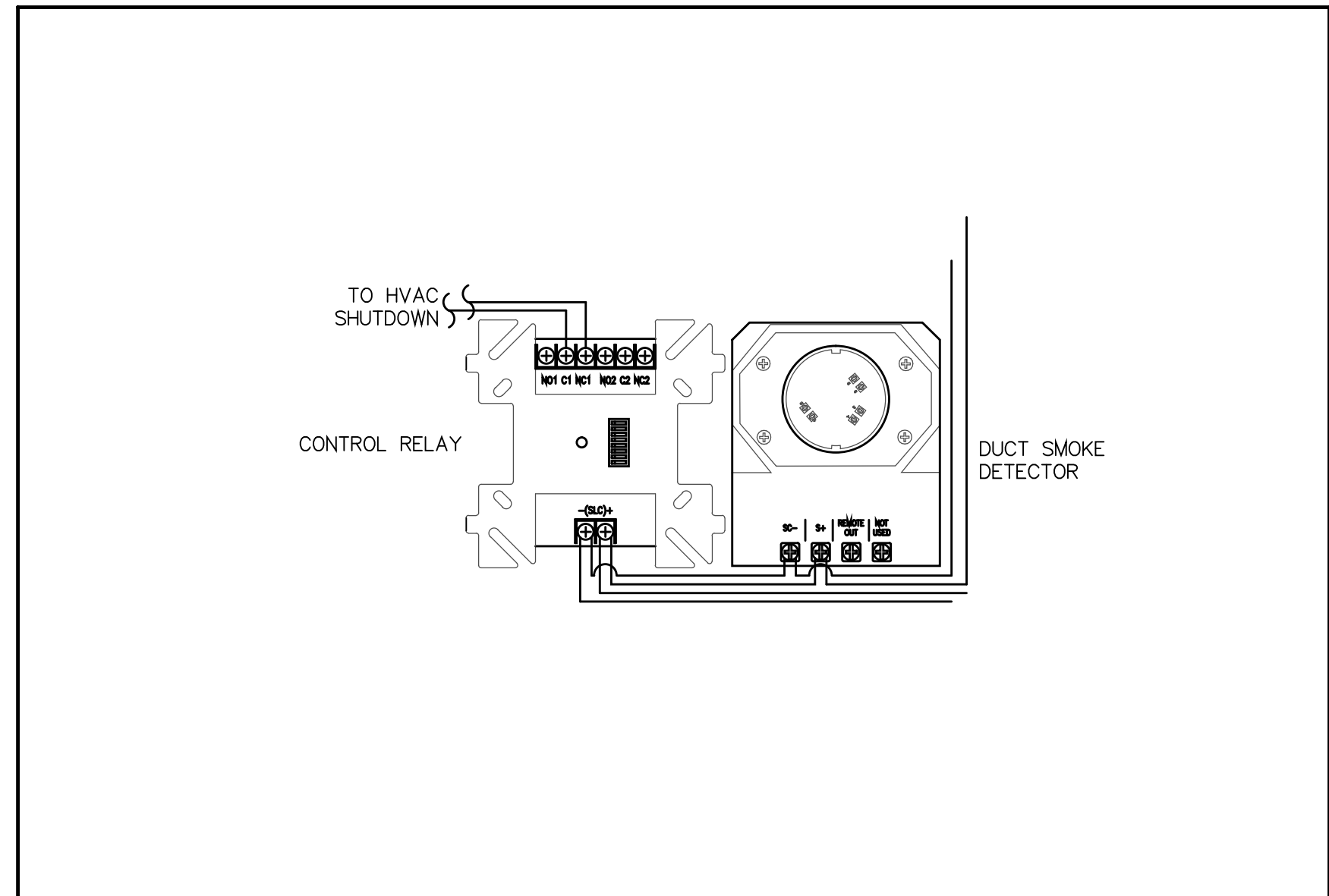
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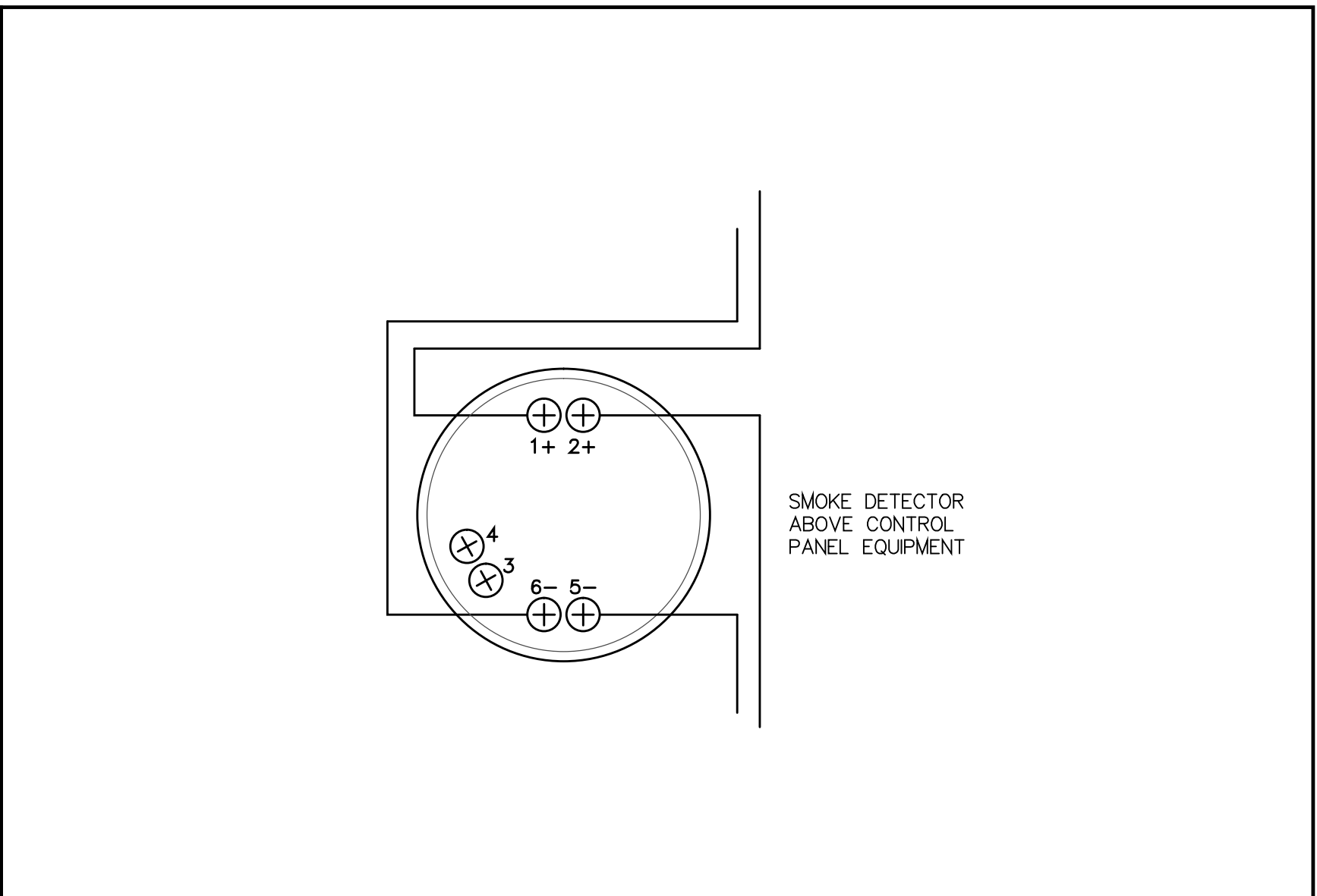
SHEET TITLE
**2ND FLOOR
 ELECTRICAL
 RENOVATION PLAN**

NO.	DATE	REV. DESCRIPTION
1	3-12-2012	REVIEW COMMENTS
2	4-10-2012	REVIEW COMMENTS

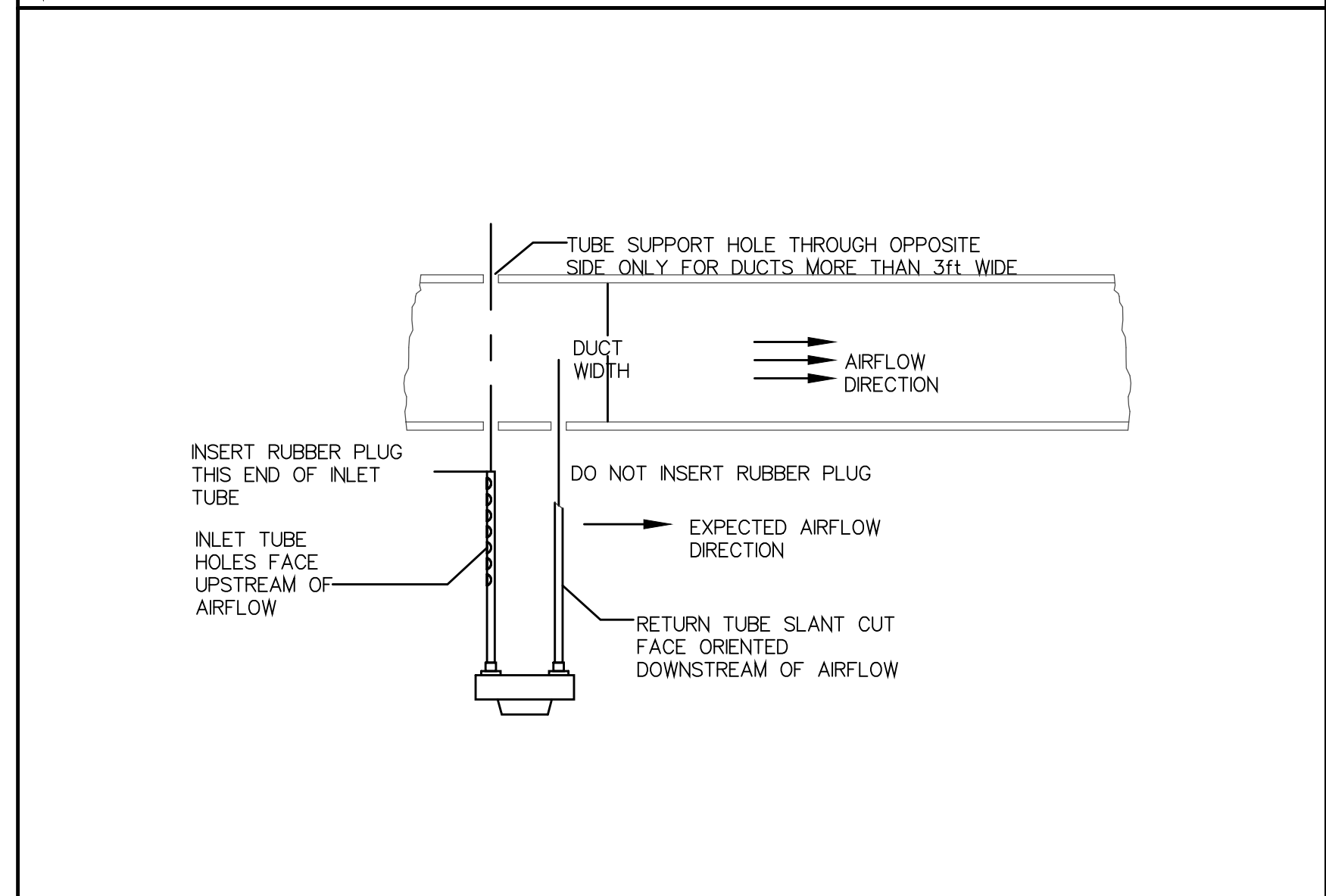
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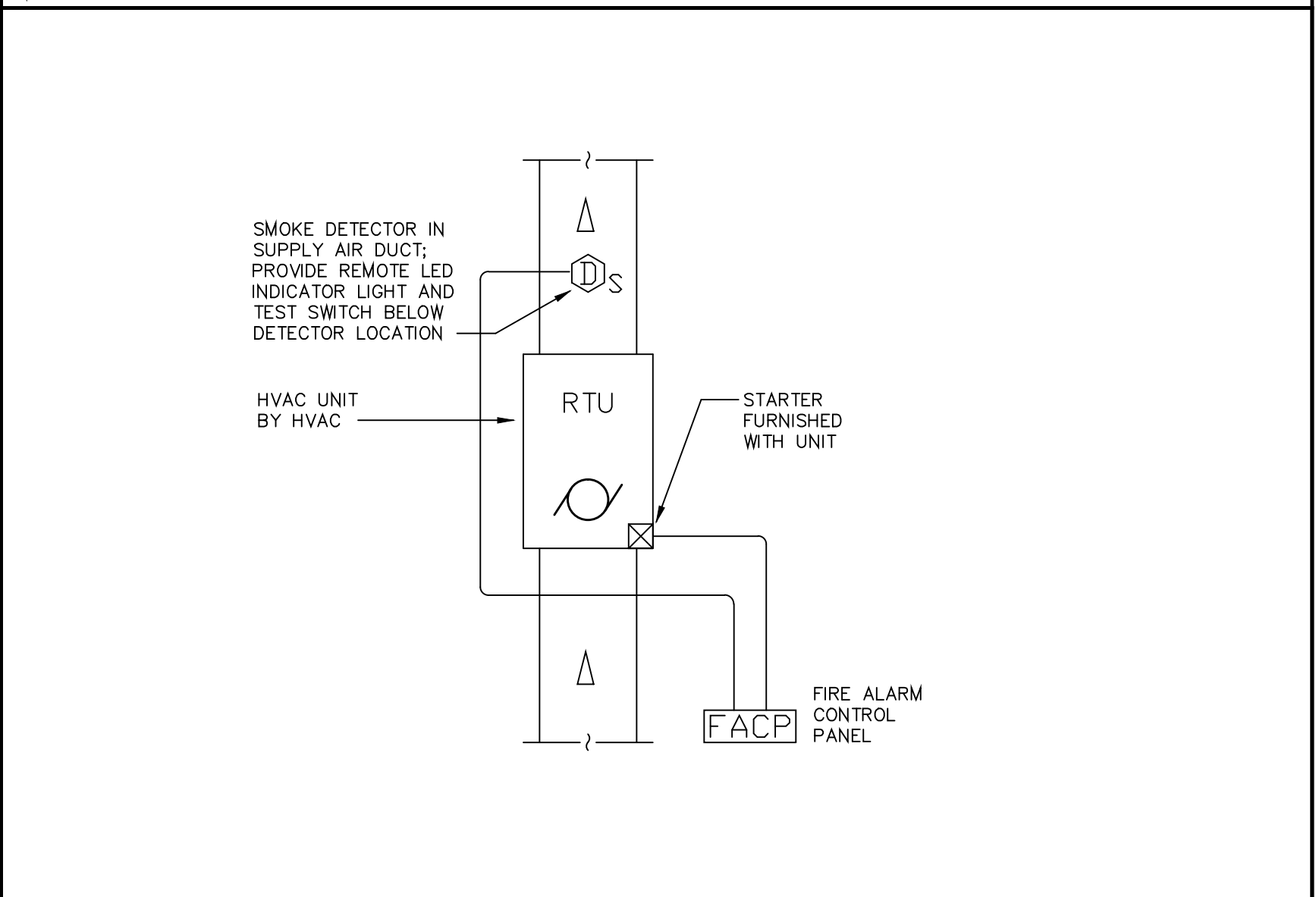
TYPICAL DUCT SMOKE DETECTOR WIRING DETAIL
NOT TO SCALE



TYPICAL SMOKE DETECTOR WIRING DETAIL
NOT TO SCALE



TYPICAL DUCT SMOKE DETECTOR INSTALLATION DETAIL
NOT TO SCALE



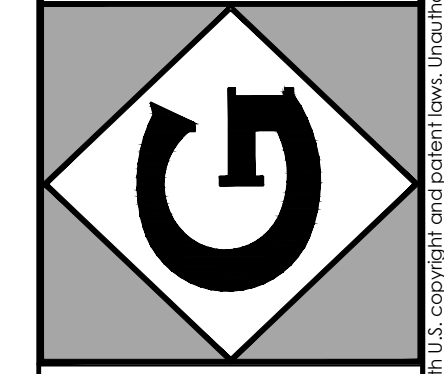
TYPICAL WIRING DIAGRAM - HVAC DUCT SMOKE DETECTOR
NOT TO SCALE



FIRE/SMOKE DAMPER INTERLOCK DETAIL
NOT TO SCALE

GENERAL FIRE ALARM DETAILS:
FIRE ALARM DETAILS ARE FOR REFERENCE ONLY. REFER TO MANUFACTURER INSTALLATION INSTRUCTION AND REQUIREMENTS FOR EXACT CONNECTIONS AND LAYOUTS.

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JOB PROJECT NUMBER
11066
DATE
MARCH 12, 2012

SHEET TITLE
ELECTRICAL DETAILS

NO.	DATE	REVISED FOR
1	3-12-12	REVIEW COMMENTS

HVAC SYMBOL LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	EXISTING DUCTWORK TO REMAIN SIZE IN INCHES (PLAN DIM. FIRST)		ROUND DUCT DOWN
	EXISTING DUCTWORK/EQUIPMENT TO BE REMOVED		ROUND DUCT UP
	NEW DUCTWORK SIZE IN INCHES (PLAN DIM. FIRST)		GOOSENECK
	NEW FLEXIBLE DUCT		ROOF MOUNTED EXHAUST FAN
	NEW DUCTSOX DUCTWORK		SMOKE DAMPER (VERTICAL POSITION)
	NESTED SQUARE/RECTANGULAR BRANCH TAKE OFF		DUCT ACCESS DOOR
	SPIN-IN FITTING WITH VOLUME DAMPER		COMBINATION FIRE/SMOKE DAMPER (VERTICAL POSITION)
	SPIN-IN FITTING WITHOUT VOLUME DAMPER		FIRE DAMPER (VERTICAL POSITION)
	DUCT TRANSITION (RECTANGLE TO RECTANGLE)		FIRE DAMPER (HORIZONTAL POSITION)
	DUCT TRANSITION (RECTANGLE TO ROUND)		MOTORIZED VOLUME DAMPER IN DUCTWORK
	DUCT TEE WITH TURNING VANES		MANUAL VOLUME DAMPER IN DUCTWORK
	DUCT ELBOW UP		DUCT MOUNTED SMOKE DETECTOR
	DUCT ELBOW DOWN		SIDEWALL RETURN GRILLE
	90° ELBOW WITH TURNING VANES		SIDEWALL SUPPLY GRILLE
	90° RADIUS ELBOW (R=1.5W)		FLEXIBLE DUCT CONNECTOR
	45° BRANCH TAKE-OFF WITH VOLUME DAMPER		CEILING DIFFUSER (SUPPLY, RETURN, & EXHAUST)
	ELECTRIC DUCT HEATER		EXISTING CEILING DIFFUSER (SUPPLY, RETURN, & EXHAUST)
	UNDER CUT DOOR (INCHES GIVEN)		AIR DEVICE IDENTIFICATION (AIRFLOW NECK SIZE)
	SUPPLY AIRFLOW DIRECTION		
	EXISTING DUCTWORK TO REMAIN, SINGLE LINE DUCTWORK		
	EXISTING DUCTWORK TO BE REMOVED, SINGLE LINE DUCTWORK		
	NEW CONNECTION TO EXISTING		EXHAUST/RETURN AIRFLOW DIRECTION
	THERMOSTAT (MTD, 4'-0" AFF)		KEYED NOTE
	SENSOR (MTD, 4'-0" AFF)		HUMIDISTAT
	HEAT DETECTOR		HVAC EQUIPMENT CONTROL
	CARBON MONOXIDE SENSOR		STATIC PRESSURE SENSOR
			CARBON DIOXIDE SENSOR

HVAC PIPING AND VALVES LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	ELBOW - TURNED UP		TRIPLE DUTY VALVE (SHUT-OFF, BALANCING & CHECK)
	ELBOW - TURNED DOWN		BALL VALVE
	PIPE RISER		AUTO CIRCUIT SETTER VALVE
	TEE - OUTLET UP		HORIZONTAL SWING CHECK VALVE
	TEE - OUTLET DOWN		Y-TYPE STRAINER WITH BLOW DOWN AND VALVE
	CAP		BASKET TYPE STRAINER
	UNION		
	CONCENTRIC INCREASER		COMPRESSED AIR PIPING
	ECCENTRIC REDUCER		CONDENSER WATER RETURN PIPING
	FLEXIBLE PIPE CONNECTOR		CONDENSER WATER SUPPLY PIPING
	THERMOMETER		CONDENSATE PIPING
	PRESSURE GAGE		CHILLED WATER RETURN PIPING
	PRESSURE/TEMPERATURE PLUG		CHILLED WATER SUPPLY PIPING
	AUTOMATIC AIR VENT		HOT WATER HEATING SYSTEM RETURN PIPING
	MANUAL AIR VENT		HOT WATER HEATING SYSTEM SUPPLY PIPING
	VENTURI FLOW MEASUREMENT DEVICE		FUEL GAS PIPING
	BUTTERFLY VALVE		REFRIGERATION SYSTEM DISCHARGE PIPING
	MOTORIZED CONTROL VALVE (BUTTERFLY VALVE)		REFRIGERATION SYSTEM RETURN PIPING (SUCTION)
			REFRIGERATION SYSTEM SUPPLY PIPING (LIQUID)

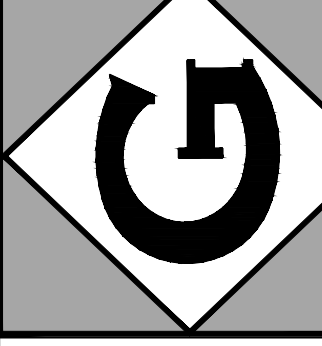
HVAC GENERAL NOTES	
1.	ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE FLORIDA BUILDING CODE-MECHANICAL, 2007 WITH 2009 AMMENDMENTS, NATIONAL ELECTRIC CODE AND NFPA.
2.	PRIOR TO SUBMITTING A BID, THE CONTRACTOR SHALL HAVE STUDIED AND COMPARED THE CONTRACT DOCUMENTS WITH EXISTING/PROPOSED CONDITIONS AND NOT LATER THAN TEN (10) DAYS PRIOR TO THE BID OPENING SHALL REPORT TO THE ENGINEER ANY ERROR, INCONSISTENCY, OR OMISSION IN THE CONTRACT DOCUMENTS.
3.	PROVIDE FLEXIBLE CONNECTION FROM EACH DUCTWORK CONNECTION TO THE INLET AND OUTLET OF EACH EXISTING AIR HANDLING UNIT. NO FLEX CONNECTIONS PERMITTED BETWEEN DUCTWORK AND VAV TERMINAL UNITS.
4.	ALL DUCTS SHOWN ARE INSIDE CLEAR DIMENSIONS.
5.	SLEEVE AND SEAL ALL PIPING PASSING THROUGH WALLS.
6.	ALL CUTTING, PATCHING AND REPAIR WORK SHALL BE PERFORMED BY A SUB-CONTRACTOR SPECIALIZING IN THE APPROPRIATE DISCIPLINE.
7.	REFER TO SHEET M5.1, SECTION 15950 FOR DUCT LEAKAGE PRESSURE TESTING REQUIREMENTS. THE MAXIMUM ALLOWABLE LEAKAGE FOR THE DUCTWORK IS 2%.
8.	THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS AND SUBMITTALS FOR HVAC DUCTWORK SHOWN ON THE PLANS AND SPECIFICATIONS FOR THE ENGINEER'S APPROVAL. THE ENGINEER MAY REQUIRE THE CONTRACTOR TO REDO ANY WORK, WHICH WAS NOT APPROVED, OR THE ENGINEER MAY REQUIRE A CREDIT TO THE OWNER. PROVIDE A SET OF AS-BUILTS AFTER THE JOB IS COMPLETED. THIS SET SHALL BE CONTINUOUSLY UPDATED DURING CONSTRUCTION.
9.	PROVIDE AIR TURNING VANES AT ALL 90-DEGREE RECTANGULAR ELBOWS.
10.	FLEXIBLE DUCTWORK IS NOT ACCEPTABLE FOR USE IN THIS PROJECT.
11.	CONTRACTOR SHALL PROVIDE "AS-BUILT" DRAWINGS IN ELECTRONIC FORMAT, AUTOCAD VERSION 2010 OR NEWER. CONTRACTOR SHALL ALSO PROVIDE 3 FULL SIZE HARD PRINTS OF AS-BUILT DRAWINGS.
12.	DUCTWORK LAYOUTS SHOWN ON THE PLANS ARE BASED ON EXISTING DRAWINGS OBTAINED FROM THE OWNER AND FROM SITE OBSERVATIONS OF EXISTING CONDITIONS. EXACT ROUTING OF EXISTING DUCTWORK AND LOCATION OF VAV TERMINAL UNITS SHALL BE FIELD VERIFIED BY THE CONTRACTOR AS WORK PROGRESSES. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LENGTHS OF DUCT AND QUANTITY OF FITTINGS REQUIRED FOR EACH SYSTEM.

SCOPE OF WORK	
1.	REMOVE EXISTING DUCTWORK AND PROVIDE NEW DUCTWORK FOR SYSTEMS IDENTIFIED ON THE FLOOR PLANS. THE DUCTWORK THAT IS TO BE REPLACED IS THE MEDIUM PRESSURE DUCTWORK BETWEEN THE AIR HANDLING UNITS OR PACKAGED ROOFTOP UNITS AND THE INLET TO THE VARIABLE AIR VOLUME TERMINAL UNITS. THE EXISTING DUCTWORK IS INTERNALLY INSULATED SHEET METAL WITH PORTIONS OF DUCTWORK CLOSEST TO AIR HANDLING EQUIPMENT ADDITIONALLY INSULATED WITH EXTERNAL INSULATION.
2.	RELOCATION OF EXISTING DUCT MOUNTED STATIC PRESSURE SENSORS TO NEW DUCTWORK AT LOCATIONS IDENTIFIED ON THE DRAWINGS.
3.	REMOVAL OF EXISTING CEILING SYSTEMS IN ROOMS WHERE DEMOLITION AND REPLACEMENT DUCTWORK IS LOCATED. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ANY DAMAGED CEILING TILES TO MATCH EXISTING. WHERE THE CONDITION OF EXISTING CEILING SYSTEMS ARE POOR AND CANNOT BE REMOVED AND REINSTALLED WITHOUT INCURRING DAMAGE; NEW CEILING SYSTEMS SHALL BE PROVIDED. REMOVAL AND REPLACEMENT OF CEILING SYSTEMS SHALL BE PERFORMED BY A CONTRACTOR SPECIALIZING IN T-BAR ACOUSTICAL CEILING SYSTEMS. NEW CEILING SYSTEMS SHALL BE: GRID: 24"x24" ARMSTRONG FLAT LAY-IN, WHITE FINISH. TILE: ARMSTRONG 1728A, FINE PRESSED, SQUARE LAY-IN HUMIGUARD PLUS, WHITE FINISH, 24"x24".5%. CONTRACTORS BID PRICE SHALL INCLUDE ALL WORK ASSOCIATED WITH PROVIDING THE NEW DUCTWORK SYSTEMS.
4.	THE WORK WILL BE COMPLETED IN PHASES DUE TO THE REQUIREMENT THAT THE FACILITY MUST REMAIN OPERATIONAL DURING THE DUCTWORK REPLACEMENT. THE CONTRACTOR SHALL PROVIDE A SEPARATE BID PRICE AND CONSTRUCTION TIMETABLE FOR EACH SYSTEM. THE OWNER WILL PRIORITIZE SYSTEM REPLACEMENT AND IDENTIFY PERIODS OF TIME WHEN WORK CAN BE PERFORMED, I.E. SCHOOL HOLIDAYS, ETC.
5.	THE OWNER (SPC) WILL PROVIDE TEST AND BALANCE CONTRACTOR TO MONITOR PRE AND POST CONSTRUCTION AIR VOLUMES. SUBMITTALS SHALL BE PROVIDED IN ELECTRONIC FORMAT. TEST AND BALANCE WORK IS LIMITED TO AIR HANDLING UNITS, PACKAGED ROOFTOP AIR CONDITIONERS AND VARIABLE AIR VOLUME TERMINAL UNITS. TEST AND BALANCE OF AIR INLETS AND OUTLETS IS NOT REQUIRED.
6.	EXISTING CORRIDOR WALLS ARE METAL STUD WITH OPSUM BOARD, CONTINUOUS FROM FLOOR TO FLOOR AND SEALED FOR SMOKE TIGHT CONSTRUCTION. WHERE DUCTWORK IS REMOVED WALL OPENINGS SHALL BE PATCHED AND SEALED TO MAINTAIN INTEGRITY OF SMOKE TIGHT CONSTRUCTION. WHERE NEW DUCTWORK PENETRATES WALL THE INSULATION SHALL BE CONTINUOUS THRU WALL AND ANNULAR SPACE BETWEEN INSULATION AND WALL SHALL BE SEALED.
7.	THE CONTRACTOR SHALL PROVIDE DUCT PRESSURE LEAKAGE TESTING AS SPECIFIED IN SECTION 15950.
8.	PROVIDE DUCT CLEANING FOR AHU-1. DUCT CLEANING SHALL BE PROVIDED FOR INTERNAL INSULATED DUCTS BETWEEN AIR HANDLING UNIT OUTLET AND INLETS TO ASSOCIATED VAV TERMINAL UNITS. ALL DUCTWORK IS INTERNALLY LINED. REFER TO SHEET M5.2 FOR DUCT CLEANING SPECIFICATION.

HVAC ABBREVIATIONS							
ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
ADA	AMERICAN WITH DISABILITIES ACT	EWB	ENTERING WET BULB TEMPERATURE	LRA	LOCKED ROTOR AMPS	SMACNA	SHEET METAL & AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
A.F.F.	ABOVE FINISHED FLOOR	EWT	ENTERING WATER TEMPERATURE	LWB	LEAVING WET BULB TEMPERATURE		
A.F.G.	ABOVE FINISHED GRADE	FCB	FLORIDA BUILDING CODE	LWT	LEAVING WATER TEMPERATURE	SP	STATIC PRESSURE
AFR	ABOVE FINISHED ROOF	FCU	FAN COIL UNIT	MBH	THOUSANDS OF BTU PER HOUR	SS	SANITARY SEWER STACK
AHU	AIR-HANDLING UNIT	FD	FIRE DAMPER	MC	MECHANICAL CONTRACTOR	TSP	TOTAL STATIC PRESSURE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	FD	FLOOR DRAIN	MCA	MINIMUM CIRCUIT AMPS	UBC	UNIFORM BUILDING CODE
AP	ACCESS PANEL	FLA	FULL LOAD AMPS	MOCB	MAXIMUM OVER CURRENT PROTECTION	UL	UNDERWRITERS LABORATORIES
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATION, & AIR CONDITIONING ENGINEERS	F.P.C.	FIRE PROTECTION CONTRACTOR	NC	NORMALLY CLOSED	UMC	UNIFORM MECHANICAL CODE
		FPM	FEET PER MINUTE	NEC	NATIONAL ELECTRIC CODE	UON	UNLESS OTHERWISE NOTED
		FT	FEET	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION	UPC	UNIFORM PLUMBING CODE
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS	GAL	GALLONS	NIC	NOT IN CONTRACT	V	VENT
		G.C.	GENERAL CONTRACTOR	NO	NORMALLY OPEN	V	VOLTS
		GPH	GALLONS PER HOUR	NTS	NOT TO SCALE	VAV	VARIABLE AIR VOLUME
ASPE	AMERICAN SOCIETY OF PLUMBING ENGINEERS	GPM	GALLONS PER MINUTE	OA	OUTSIDE AIR	VB	VACUUM BREAKER
		HP	HORSEPOWER	PC	PLUMBING CONTRACTOR	VFD	VARIABLE FREQUENCY DRIVE
BHP	BRAKE HORSE POWER	HR	HOUR	PSI	POUNDS PER SQUARE INCH	VF	VERIFY IN FIELD
BTU	BRITISH THERMAL UNIT	HSPF	HEATING SEASON PERFORMANCE FACTOR	PSIG	POUNDS PER SQUARE INCH-GAUGE	VRV	VARIABLE REFRIGERANT FLOW
CFM	CUBIC FEET PER MINUTE	HVAC	HEATING, VENTILATION, & AIR CONDITIONING	PTAC	PACKAGED TERMINAL AIR CONDITIONER	VRV	VARIABLE REFRIGERANT VOLUME
CO	CLEAN OUT	Hz	HERTZ	PVC	POLYVINYL CHLORIDE	VS	VENT STACK
COP	COEFFICIENT OF PERFORMANCE	IBC	INTERNATIONAL BUILDING CODE	RA	RETURN AIR	VTR	VENT THROUGH ROOF
CPVC	CHLORINATED POLYVINYL CHLORIDE	IECC	INTERNATIONAL ENERGY CONSERVATION CODE	RD	ROOF DRAIN		
CU	CONDENSING UNIT			RLA	RATED LOAD AMPS	%RH	PERCENT RELATIVE HUMIDITY
DDC	DIRECT DIGITAL CONTROLS			RO	ROOF OVERFLOW	ΔP	CHANGE IN PRESSURE
DIA.	DIAMETER	IMC	INTERNATIONAL MECHANICAL CODE	RBPFP	REDUCED PRESSURE BACKFLOW PREVENTER	ΔT	CHANGE IN TEMPERATURE
EAT	ENTERING AIR TEMPERATURE	IPC	INTERNATIONAL PLUMBING CODE			°C	DEGREES CELCIUS
EC	ELECTRICAL CONTRACTOR	IPV	INTEGRATED PART-LOAD VALUE	RPM	REVOLUTIONS PER MINUTE	°F	DEGREES FAHRENHEIT
EDB	ENTERING DRY BULB TEMPERATURE	KW	KILOWATTS	RTU	ROOF TOP UNIT	°K	DEGREES KELVIN
EER	ENERGY EFFICIENCY RATIO	LAT	LEAVING AIR TEMPERATURE	SA	SUPPLY AIR	°R	DEGREES RANKIN
ESP	EXTERNAL STATIC PRESSURE	LB	POUNDS FORCE	SC	SITE CONTRACTOR	"WC	INCHES WATER COLUMN
ETR	EXISTING TO REMAIN	LDB	LEAVING DRY BULB TEMPERATURE	SEER	SEASONAL ENERGY EFFICIENCY RATIO	φ	DIAMETER
EUH	ELECTRIC UNIT HEATER	LEED	LEADERSHIP IN ENERGY & ENVIRONMENTAL DESIGN			φ	ELECTRICAL PHASE

PROFESSIONAL SEAL

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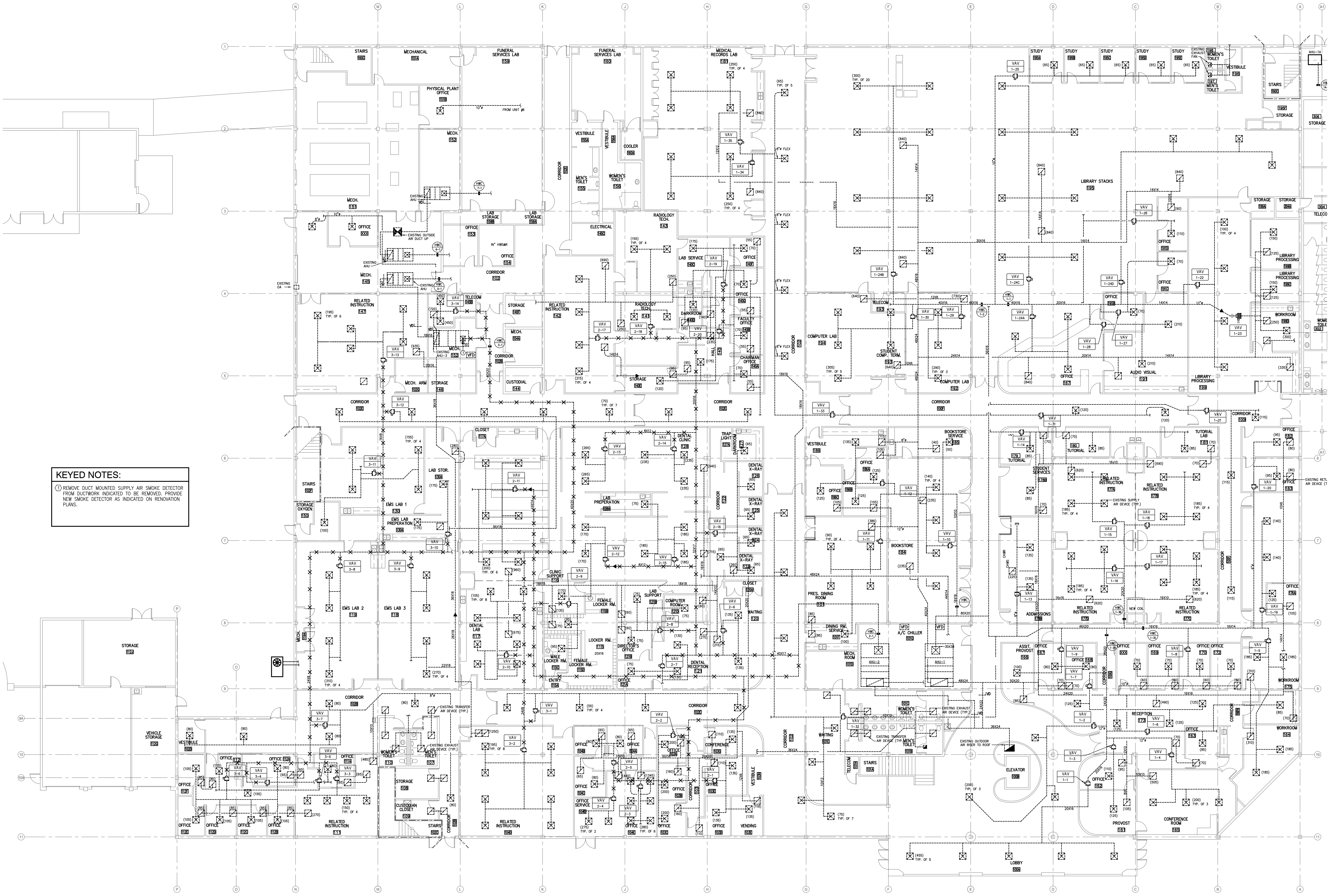
GET PROJECT NUMBER
11066

DATE
MARCH 12, 2012

SHEET TITLE
MECHANICAL COVER SHEET

NO.	DATE	REVISED FOR
1	3-12-2012	REVIEW COMMENTS
2	4-10-2012	REVIEW COMMENTS

SHEET NUMBER
M1.1

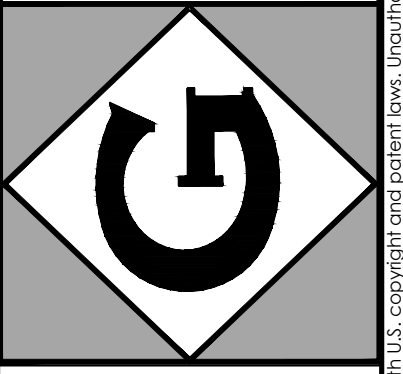


KEYED NOTES:

① REMOVE DUCT MOUNTED SUPPLY AIR SMOKE DETECTOR FROM DUCTWORK INDICATED TO BE REMOVED. PROVIDE NEW SMOKE DETECTOR AS INDICATED ON RENOVATION PLANS.

1ST FLOOR DEMOLITION PLAN
 SCALE: 3/32" = 1'-0"

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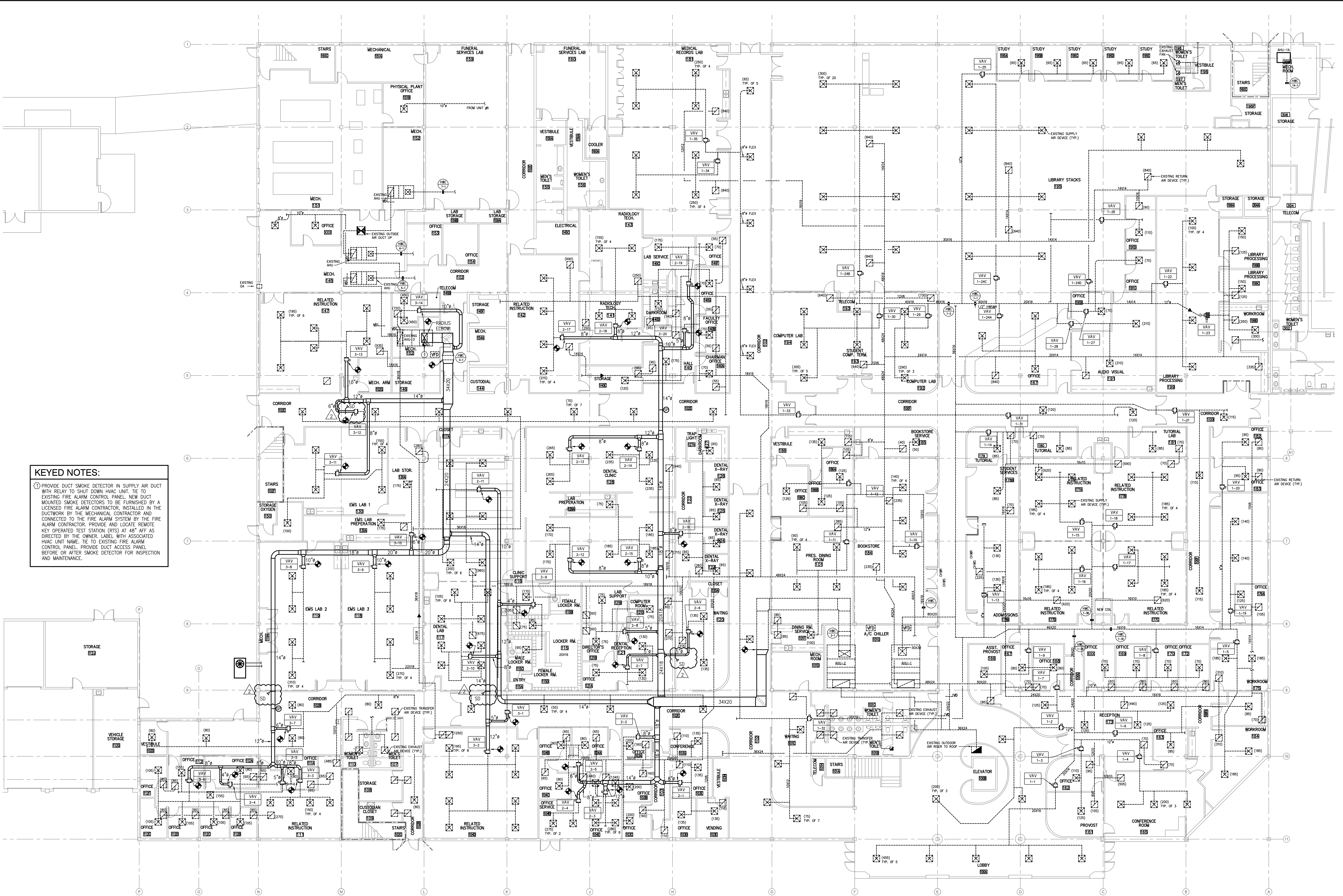
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JWY

DATE
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SHEET TITLE
**1ST FLOOR
 DEMOLITION PLAN**

NO.	DATE	REVISED FOR

SHEET NUMBER
M2.1



KEYED NOTES:

① PROVIDE DUCT SMOKE DETECTOR IN SUPPLY AIR DUCT WITH RELAY TO SHUT DOWN HVAC UNIT. TIE TO EXISTING FIRE ALARM CONTROL PANEL. NEW DUCT MOUNTED SMOKE DETECTORS TO BE FURNISHED BY A LICENSED FIRE ALARM CONTRACTOR, INSTALLED IN THE DUCTWORK BY THE MECHANICAL CONTRACTOR AND CONNECTED TO THE FIRE ALARM SYSTEM BY THE FIRE ALARM CONTRACTOR. PROVIDE AND LOCATE REMOTE KEY OPERATED TEST STATION (RTS) AT 48" AFF AS DIRECTED BY THE OWNER. LABEL WITH ASSOCIATED HVAC UNIT NAME. TIE TO EXISTING FIRE ALARM CONTROL PANEL. PROVIDE DUCT ACCESS PANEL BEFORE OR AFTER SMOKE DETECTOR FOR INSPECTION AND MAINTENANCE.

1ST FLOOR RENOVATION PLAN
 SCALE: 3/32" = 1'-0"

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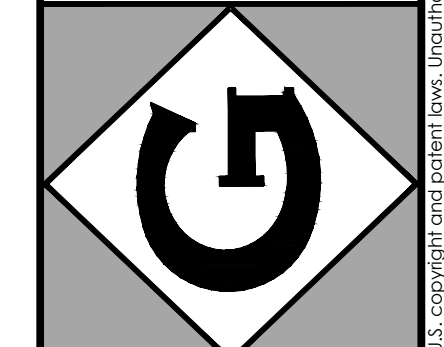
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SHEET TITLE
**1ST FLOOR
 RENOVATION PLAN**

NO.	DATE	BY	REVISION
1	4-10-12	JWY	REVIEW COMMENTS

SHEET NUMBER
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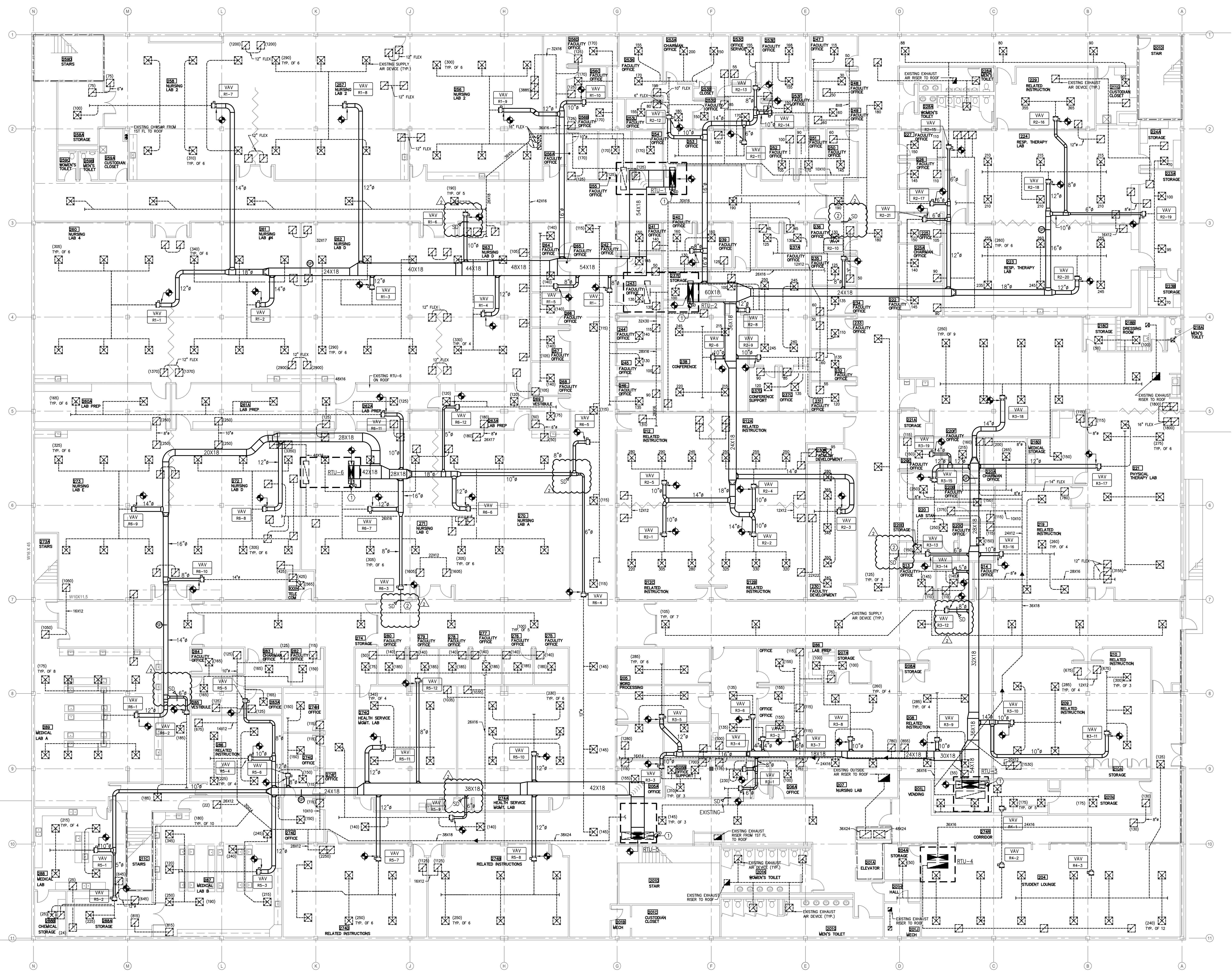
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JOB PROJECT NUMBER
110666
DATE
MARCH 12, 2012

SHEET TITLE
**2ND FLOOR
RENOVATION PLAN**

NO.	DATE	BY	REVISION
1	3-9-2012	JWY	REVIEW COMMENTS
2	4-10-2012	JWY	REVIEW COMMENTS

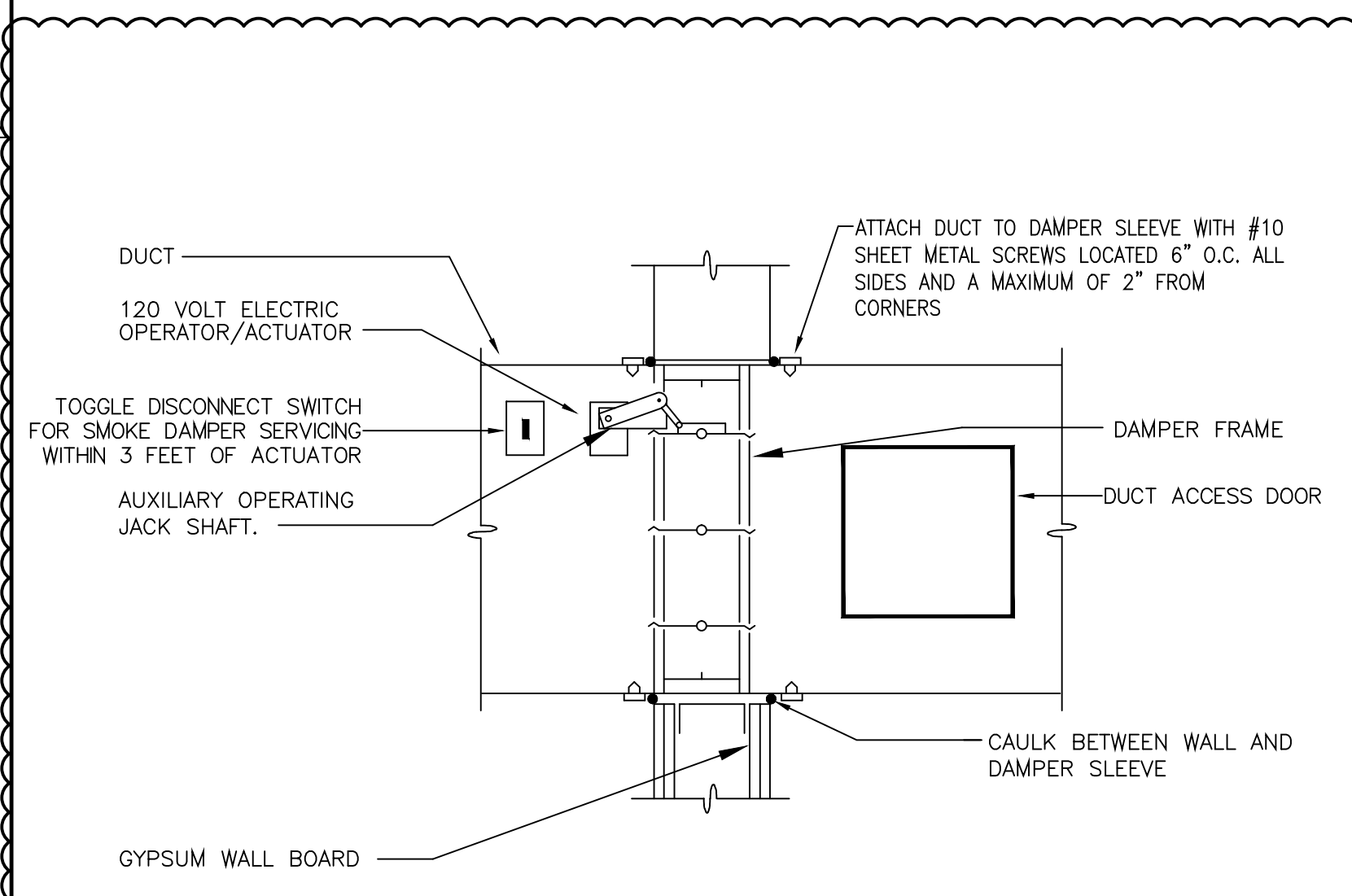
SHEET NUMBER
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KEYED NOTES:

- 1 PROVIDE DUCT SMOKE DETECTOR IN SUPPLY AIR DUCT WITH RELAY TO SHUT DOWN HVAC UNIT. NEW DUCT MOUNTED SMOKE DETECTORS TO BE FURNISHED BY A LICENSED FIRE ALARM CONTRACTOR, INSTALLED IN THE DUCTWORK BY THE MECHANICAL CONTRACTOR AND CONNECTED TO THE FIRE ALARM SYSTEM BY THE FIRE ALARM CONTRACTOR. PROVIDE DUCT ACCESS PANEL BEFORE OR AFTER SMOKE DETECTOR FOR INSPECTION AND MAINTENANCE.
- 2 PROVIDE SMOKE DAMPER IN EXISTING DUCT.

2ND FLOOR RENOVATION PLAN
SCALE: 3/32" = 1'-0"

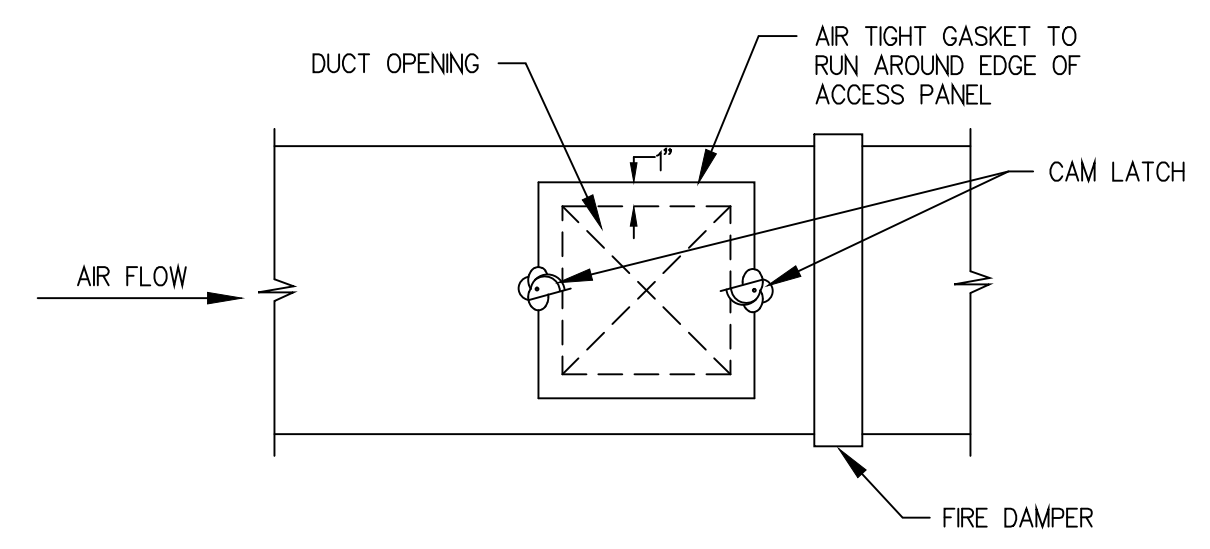


- OPERATION:**
- SMOKE DAMPER MODE
SMOKE DETECTOR UPON SENSING HEAT/SMOKE ACTUATES DAMPER MOTOR TO CLOSE DAMPER.
 - RELAYS:
ACTIVATED BY THE FIRE ALARM SYSTEM, TO SHUT DOWN H.V.A.C. SYSTEM AND CLOSE SMOKE DAMPERS.
 - SHUT DOWN OF H.V.A.C. SYSTEM TO INITIATE CLOSING OF SMOKE DAMPERS.

- GENERAL:**
- INSTALLATION OF DAMPERS OUT OF WALL IS SIMILAR FOR ATTACHMENT OF DUCT TO DAMPER SLEEVE.

- SMOKE DAMPER SPECIFICATION**
- FABRICATE IN ACCORDANCE WITH NFPA 90A AND UL 555S.
 - LEAKAGE RATING: CLASS 1, MAXIMUM OF 9 CFM AT 4 INCHES WG DIFFERENTIAL PRESSURE.
 - DAMPER TEMPERATURE RATING: 250 DEGREES F.
 - FRAME: 16 GAUGE, GALVANIZED STEEL.
 - BLADES:
STYLE: [SINGLE SKIN WITH 3 LONGITUDINAL GROOVES] [AIRFOIL-SHAPED, SINGLE PIECE, DOUBLE SKIN].
ACTION: OPPOSED.
ORIENTATION: HORIZONTAL.
MATERIAL: MINIMUM 18 GAUGE EQUIVALENT THICKNESS, GALVANIZED STEEL.
WIDTH: MAXIMUM 6 INCHES.
 - BEARINGS: STAINLESS STEEL PRESSED INTO FRAME.
 - SEALS: SILICONE BLADE EDGE SEALS AND FLEXIBLE STAINLESS STEEL JAMB SEALS.
 - LINKAGE: CONCEALED IN FRAME.
 - ACTUATOR:
TYPE: ELECTRIC 120 VOLT, 60 HERTZ, TWO-POSITION, FAIL CLOSE, FAIL CLOSE.
MOUNTING: EXTERNAL.
 - SLEEVE: FACTORY INSTALLED 20 GAUGE SLEEVE, MINIMUM 12 INCHES LONG.

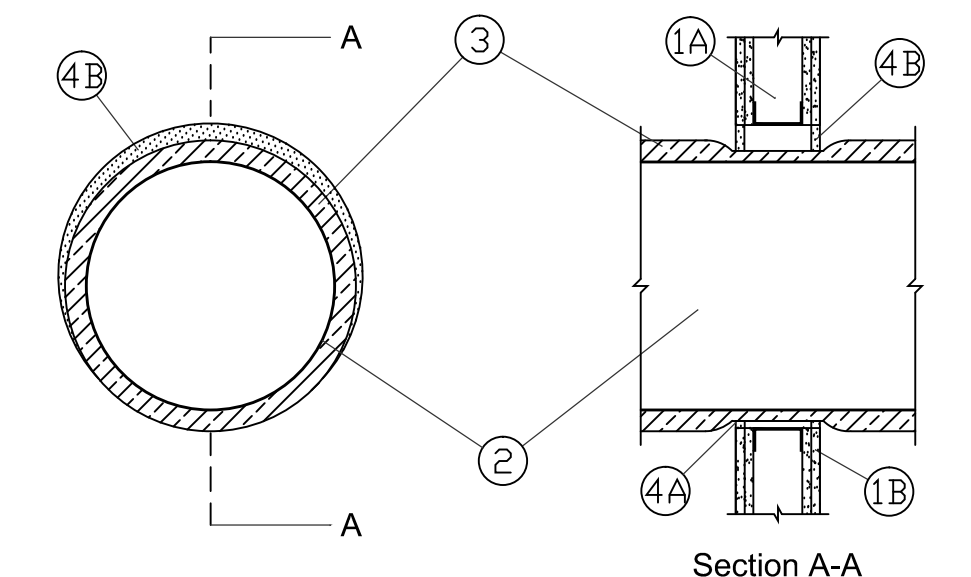
SMOKE DAMPER THROUGH WALL INSTALLATION DETAIL
NOT TO SCALE



ACCESS PANEL SIZE SCHEDULE	
FIRE DAMPER SIZE	ACCESS PANEL SIZE
6" TO 15"	10" W x (DAMPER DEPTH-2") D
15" TO 21"	12" W x (DAMPER DEPTH-2") D
21" AND ABOVE	18" W x (DAMPER DEPTH-2") D

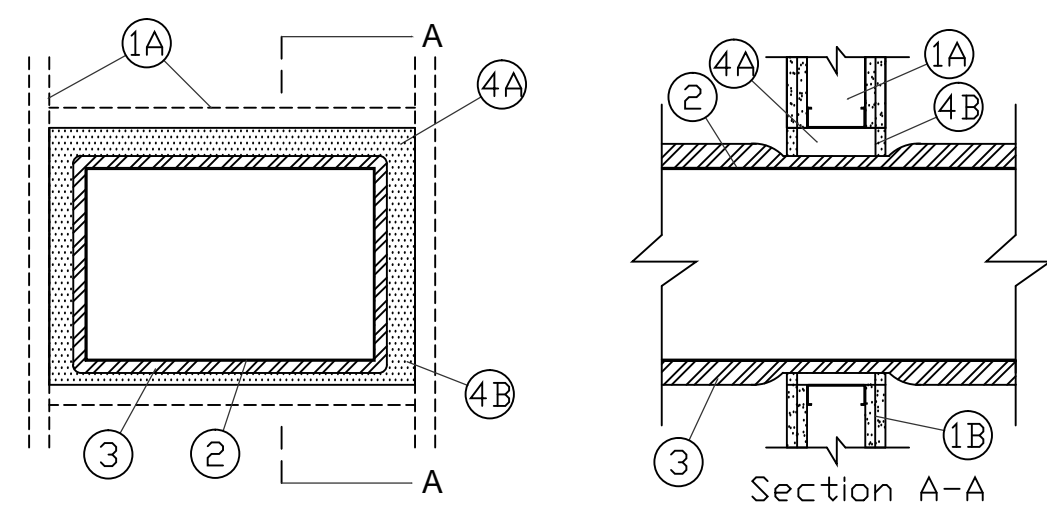
ALL OTHER ACCESS PANELS TO BE A MINIMUM OF 15" x 15" WHERE DUCT SIZE ALLOWS. USE FOUR CAM LATCHES ON PANELS LARGER THAN 18" x 18" SIZE.

DUCTWORK ACCESS PANEL DETAIL
NOT TO SCALE



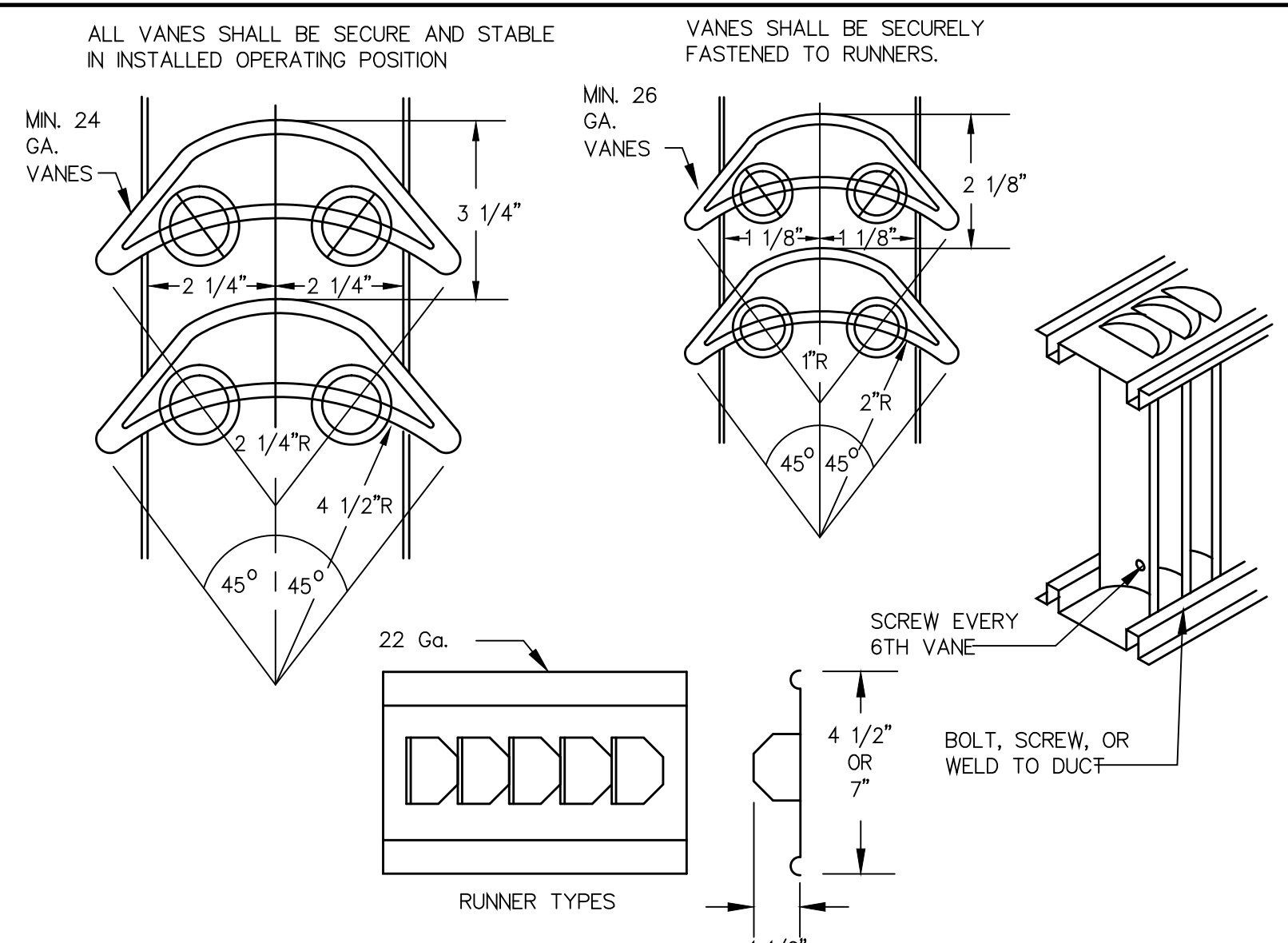
- WALL ASSEMBLY - GYPSUM BOARD/STEEL STUD WALL ASSEMBLY.
 - STUDS - WALL FRAMING MIN 3-1/2 IN. (89 MM) WIDE STEEL CHANNEL STUDS SPACED MAX 24 IN. (610 MM) OC.
 - GYPSUM BOARD* - 5/8 IN. (16 MM) THICK, 4 FT (1.22 M) WIDE WITH SQUARE OR TAPERED EDGES.
- STEEL DUCT - SPIRAL-WOUND OR LONG SEAM STEEL DUCT TO BE INSTALLED ECCENTRICALLY OR CONCENTRICALLY WITHIN THE OPENING. STEEL DUCT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF THE WALL ASSEMBLY.
- BATTS AND BLANKETS* - NOM 2 IN. (51 MM) THICK LIGHT DENSITY (MIN 3/4 PCF OR 12 KG/M3) GLASS FIBER BLANKET INSULATION JACKETED ON THE OUTSIDE WITH A FOIL-SCRIM-KRAFT FACING. LONGITUDINAL AND TRANSVERSE JOINTS SEALED WITH FOIL-SCRIM-KRAFT TAPE. NOM ANNULAR SPACE TO BE 1 IN. (25 MM). SEE BATTS AND BLANKETS (BKW) CATEGORY IN THE BUILDING MATERIALS DIRECTORY FOR NAMES OF MANUFACTURERS. ANY BATT OR BLANKET MEETING THE ABOVE SPECIFICATIONS AND BEARING THE UL CLASSIFICATION MARKING WITH A FLAME SPREAD VALUE OF 25 OR LESS AND A SMOKE DEVELOPED VALUE OF 50 OR LESS MAY BE USED.
- FILL, VOID OR CAVITY MATERIAL* - SEALANT - MIN 5/8 IN. (16 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTH SURFACES OF THE WALL. SPECIFIED TECHNOLOGIES INC - SPECSERL SERIES SSS SEALANT OR SPECSERL LCI SEALANT

ROUND DUCT THROUGH SMOKE-TIGHT CORRIDOR WALL
NOT TO SCALE

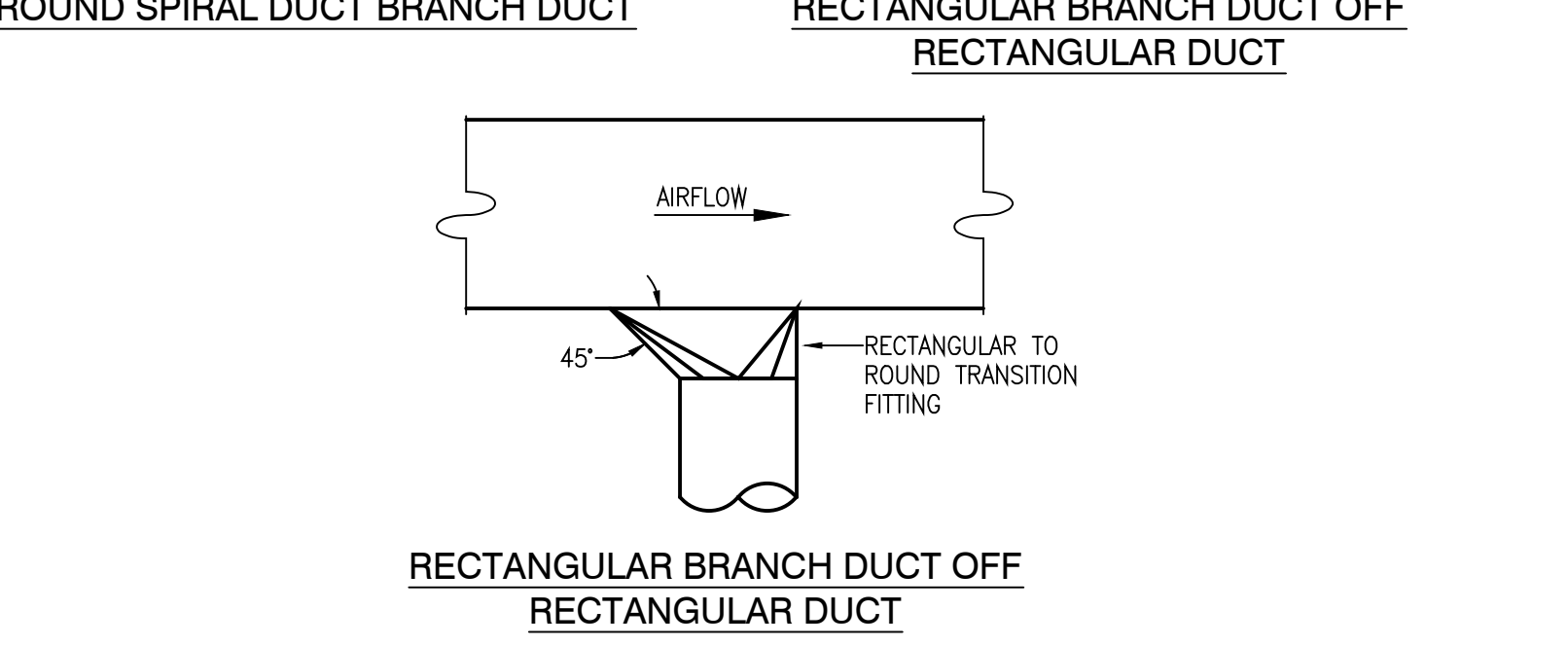
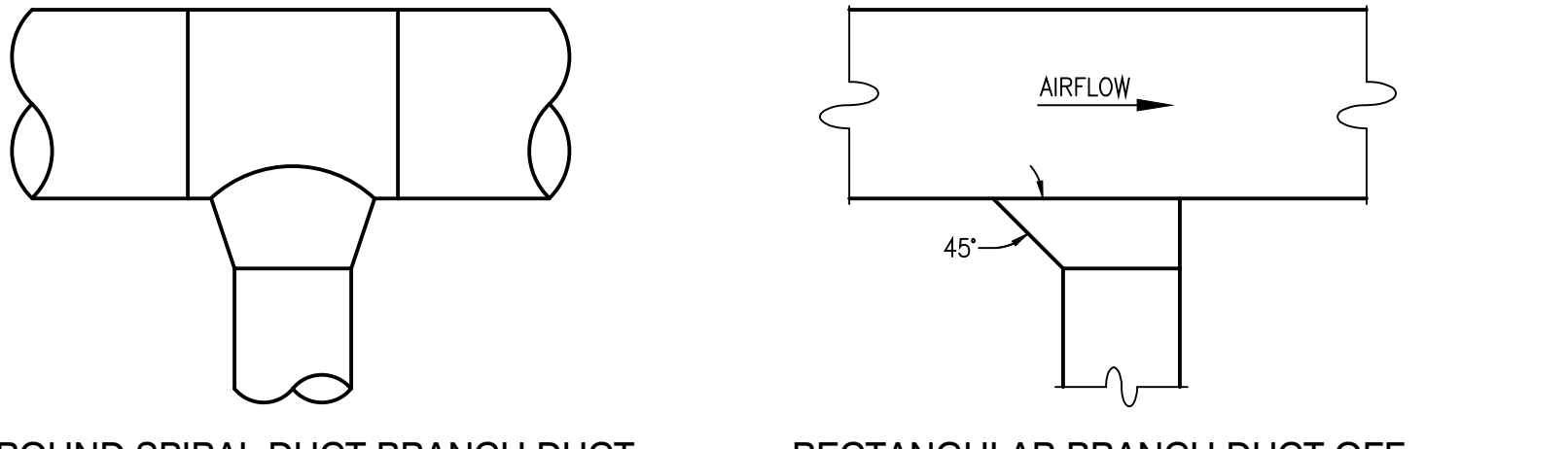


- WALL ASSEMBLY - GYPSUM BOARD/STEEL STUD WALL ASSEMBLY.
 - STUDS - WALL FRAMING MIN 3-1/2 IN. (89 MM) WIDE STEEL CHANNEL STUDS SPACED MAX 24 IN. (610 MM) OC.
 - GYPSUM BOARD* - 5/8 IN. (16 MM) THICK, 4 FT (1.22 M) WIDE WITH SQUARE OR TAPERED EDGES.
- STEEL DUCT - STEEL DUCT TO BE INSTALLED WITHIN THE FRAMED OPENING. MIN CLEARANCE BETWEEN DUCT AND EDGE OF FRAMED OPENING IN WALL IS 3 IN. (76 MM). STEEL DUCT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF THE WALL ASSEMBLY.
- BATTS AND BLANKETS* - NOM 2 IN. (51 MM) THICK LIGHT DENSITY (MIN 3/4 PCF OR 12 KG/M3) GLASS FIBER BLANKET INSULATION JACKETED ON THE OUTSIDE WITH A FOIL-SCRIM-KRAFT FACING. LONGITUDINAL AND TRANSVERSE JOINTS SEALED WITH FOIL-SCRIM-KRAFT TAPE. NOM ANNULAR SPACE BETWEEN INSULATED STEEL DUCT AND PERIPHERY OF OPENING TO BE 1 IN. (25 MM).
- FILL, VOID OR CAVITY MATERIAL* - SEALANT - MIN 5/8 IN. (16 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTH SURFACES OF THE WALL. SPECIFIED TECHNOLOGIES INC - SPECSERL SERIES SSS SEALANT OR SPECSERL LCI SEALANT

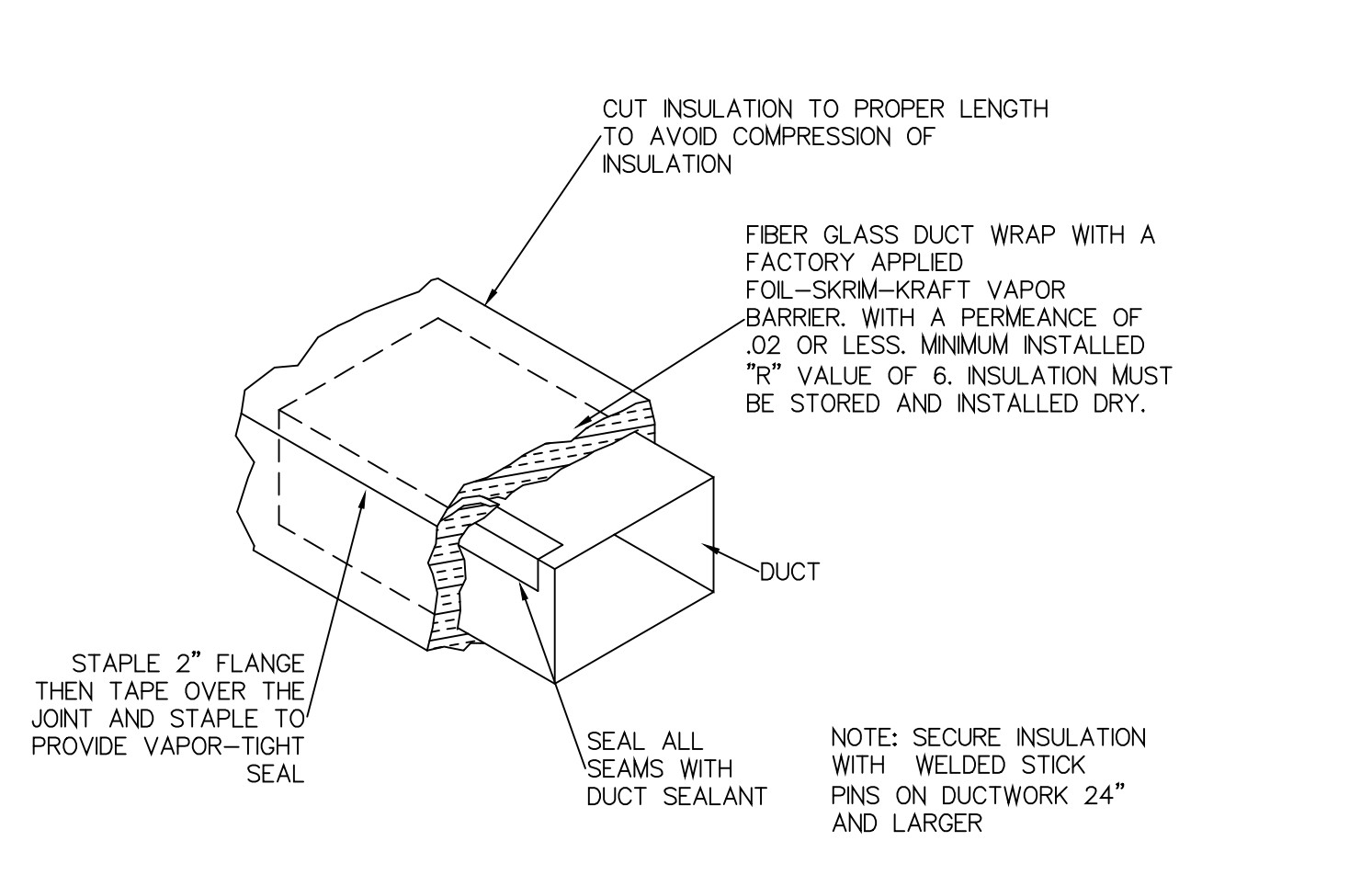
RECTANGULAR DUCT THROUGH SMOKE-TIGHT CORRIDOR WALL
NOT TO SCALE



TURNING VANES DETAIL
NOT TO SCALE



DUCTWORK FITTINGS DETAIL
NOT TO SCALE



FIBERGLASS BLANKET DUCT INSULATION DETAIL
NOT TO SCALE

ROUND DUCT HANGERS MINIMUM SIZE			
DL	MAXIMUM SPACING	ROD	STRAP
10\"/>			

- NOTES:**
- STRAPS ARE GALVANIZED STEEL; RODS ARE UNCOATED OR GALVANIZED STEEL.
 - TABLE ALLOWS FOR CONVENTIONAL WALL THICKNESS, AND JOINT SYSTEMS PLUS ONE LB/SF OF INSULATION WEIGHT.

MAXIMUM HALF OF DUCT PERIMETER	PAIR AT 10 FT. SPACING		PAIR AT 8 FT. SPACING		PAIR AT 5 FT. SPACING		PAIR AT 4 FT. SPACING	
	STRAP	WIRE/ROD	STRAP	WIRE/ROD	STRAP	WIRE/ROD	STRAP	WIRE/ROD
P/2=30"	1"x22 GA. (135")	10 GA. (135")	1"x22 GA. (135")	10 GA. (135")	1"x22 GA. (108")	10 GA. (108")	1"x22 GA. (108")	10 GA. (108")
P/2=72"	1"x18 GA.	8"	1"x20 GA.	8"	1"x22 GA.	8"	1"x22 GA.	8"
P/2=96"	1"x16 GA.	8"	1"x18 GA.	8"	1"x20 GA.	8"	1"x22 GA.	8"
P/2=120"	1 1/2"x16 GA.	8"	1"x16 GA.	8"	1"x18 GA.	8"	1"x20 GA.	8"
P/2=168"	1 1/2"x16 GA.	8"	1"x16 GA.	8"	1"x16 GA.	8"	1"x18 GA.	8"
P/2=192"	1 1/2"x16 GA.	8"	1"x16 GA.	8"	1"x16 GA.	8"	1"x16 GA.	8"

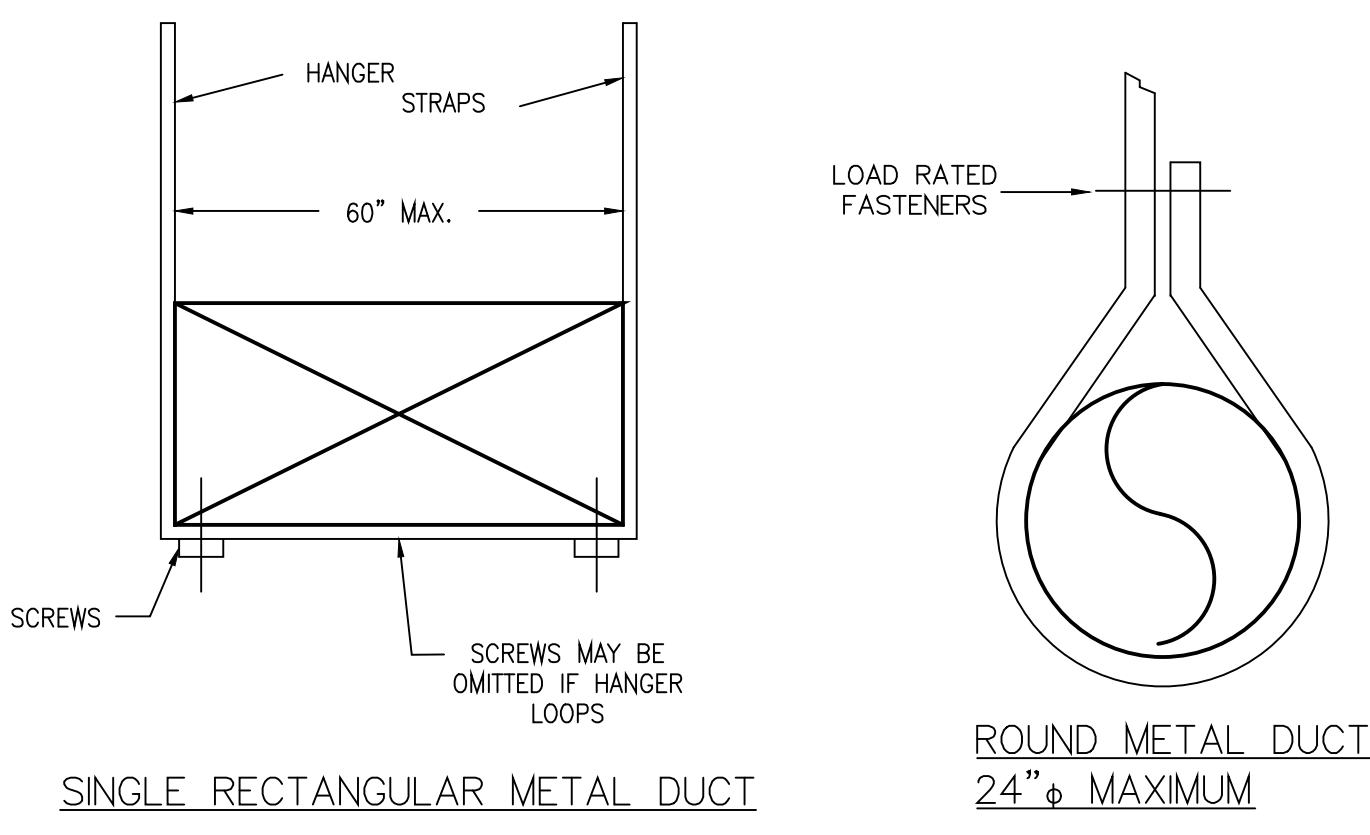
WHEN STRAPS ARE LAP JOINED USE THESE MINIMUM FASTENERS:

STRAP	SINGLE HANGER MAXIMUM ALLOWABLE LOAD	
	STRAP	WIRE OR ROD (DIA.)
1"x18, 20, 22 GA. - (2) #10 OR (1) 1 1/2" BOLT	1"x22 GA.-260 LBS.	0.106"-80 LBS.
1"x16 GA. - (2) 1 1/2" DIA.	1"x20 GA.-320 LBS.	0.135"-120 LBS.
1"x16 GA. - (2) 8" DIA.	1"x18 GA.-420 LBS.	0.162"-160 LBS. 1"

PLACE FASTENERS IN SERIES, NOT SIDE BY SIDE.

1"x16 GA.-700 LBS.	1/2" DIA.-680 LBS.
1 1/2"x16 GA.-1100 LBS.	3/4" DIA.-1250 LBS.

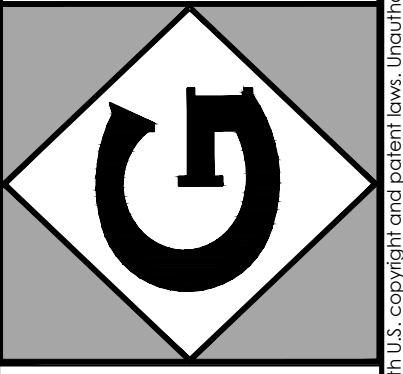
- NOTES:**
- DIMENSIONS OTHER THAN GAUGE ARE IN INCHES.
 - TABLES ALLOW FOR DUCT WEIGHT, 1 LB/SF INSULATION WEIGHT AND NORMAL REINFORCEMENT AND TRAPZEE WEIGHT, BUT NO EXTERNAL LOADS!
 - STRAPS ARE GALVANIZED STEEL; OTHER MATERIALS ARE UNCOATED STEEL.
 - ALLOWABLE LOADS FOR P/2 ASSUME THAT DUCTS ARE 16 GA. MAXIMUM, EXCEPT THAT WHEN MAXIMUM DUCT DIMENSION (W) IS OVER 60" THEN P/2 MAXIMUM IS (1.25 W).



DUCTWORK SUPPORT DETAIL
NOT TO SCALE

PROFESSIONAL SEAL

GRINER ENGINEERING, INC.
1628 First Avenue North
St. Petersburg, Florida 33713
Phone: (727)-822-2335
Fax: (727)-821-3361
www.griner-engineering.net
Certificate of Authorization #3173



ST. PETERSBURG COLLEGE
CARUTH HEALTH EDUCATION CENTER
DUCTWORK REPAIR AND REPLACEMENT
7200 46TH STREET NORTH, PINELAS PARK, FLORIDA

CLIENT INFORMATION

DRAWN BY
JWJ

REVIEWED BY
JWJ

GET PROJECT NUMBER
11066

DATE
MARCH 12, 2012

SHEET TITLE
MECHANICAL DETAILS

NO.	DATE	REVISED FOR
1	3-0-2012	REVIEW COMMENTS
2	4-0-2012	REVIEW COMMENTS

SHEET NUMBER
M3.1

MARK	MANUFACTURER AND MODEL	AIR QUANTITY				ELECTRICAL HEATING COIL (KW)	VOLTAGE (V/Ø/Hz)	NUMBER OF HEATING STAGES	MAXIMUM PRESSURE DROP (INCHES H ₂ O)	MAXIMUM N.C. LEVEL
		COOLING MODE		HEATING MODE						
		MAX.	MIN.	MAX.	MIN.					
VAV-R1-1	TRANE VCCF-12	1825	730	1825	730	-	-	-	0.01	30
VAV-R1-2	TRANE VCCF-14	2040	815	2040	815	-	-	-	0.01	25
VAV-R1-3	TRANE VCCF-12	1760	705	1760	705	-	-	-	0.01	28
VAV-R1-4	TRANE VCCF-12	1310	525	1310	525	-	-	-	0.01	25
VAV-R1-5	TRANE VCCF-8	705	280	705	280	-	-	-	0.05	25
VAV-R1-6	TRANE VCCF-10	955	380	955	380	-	-	-	0.01	25
VAV-R1-7	TRANE VCCF-14	1970	790	1970	790	-	-	-	0.01	25
VAV-R1-8	TRANE VCCF-12	1740	695	1740	695	-	-	-	0.01	30
VAV-R1-9	TRANE VCCF-12	1820	730	1820	730	-	-	-	0.01	30
VAV-R1-10	TRANE VCCF-10	1030	410	1030	410	8.5	208/1/60	3	0.01	25

MARK	MANUFACTURER AND MODEL	AIR QUANTITY				ELECTRICAL HEATING COIL (KW)	VOLTAGE (V/Ø/Hz)	NUMBER OF HEATING STAGES	MAXIMUM PRESSURE DROP (INCHES H ₂ O)	MAXIMUM N.C. LEVEL
		COOLING MODE		HEATING MODE						
		MAX.	MIN.	MAX.	MIN.					
VAV-R2-1	TRANE VCCF-10	1005	405	1005	405	-	-	-	0.01	25
VAV-R2-2	TRANE VCCF-10	1005	405	1005	405	-	-	-	0.01	25
VAV-R2-3	TRANE VCCF-14	1930	770	1930	770	-	-	-	0.01	25
VAV-R2-4	TRANE VCCF-10	1075	430	1075	430	-	-	-	0.01	25
VAV-R2-5	TRANE VCCF-10	1005	405	1005	405	-	-	-	0.01	25
VAV-R2-6	TRANE VCCF-10	920	370	920	370	7.5	208/1/60	2	0.01	25
VAV-R2-7	TRANE VCCF-10	1160	465	1160	465	-	-	-	0.01	26
VAV-R2-8	TRANE VCCF-12	1790	715	1790	715	-	-	-	0.01	30
VAV-R2-9	TRANE VCCF-10	1265	505	1265	505	-	-	-	0.01	28
VAV-R2-10	TRANE VCCF-8	775	310	775	310	-	-	-	0.01	25
VAV-R2-11	TRANE VCCF-6	385	155	385	155	-	-	-	0.15	23
VAV-R2-12	TRANE VCCF-10	1010	405	1010	405	8.5	208/1/60	2	0.01	25
VAV-R2-13	TRANE VCCF-8	655	260	655	260	-	-	-	0.05	25
VAV-R2-14	TRANE VCCF-10	920	370	920	370	-	-	-	0.01	25
VAV-R2-15	TRANE VCCF-6	480	190	480	190	-	-	-	0.20	25
VAV-R2-16	TRANE VCCF-8	750	300	750	300	-	-	-	0.05	25
VAV-R2-17	TRANE VCCF-6	280	110	280	110	-	-	-	0.08	20
VAV-R2-18	TRANE VCCF-12	1540	615	1540	615	-	-	-	0.01	28
VAV-R2-19	TRANE VCCF-6	360	145	360	145	-	-	-	0.15	23
VAV-R2-20	TRANE VCCF-12	1585	635	1585	635	-	-	-	0.01	28
VAV-R2-21	TRANE VCCF-6	445	180	445	180	-	-	-	0.20	23

MARK	MANUFACTURER AND MODEL	AIR QUANTITY				ELECTRICAL HEATING COIL (KW)	VOLTAGE (V/Ø/Hz)	NUMBER OF HEATING STAGES	MAXIMUM PRESSURE DROP (INCHES H ₂ O)	MAXIMUM N.C. LEVEL
		COOLING MODE		HEATING MODE						
		MAX.	MIN.	MAX.	MIN.					
VAV-R3-1	TRANE VCCF-6	440	175	440	175	-	-	-	0.15	23
VAV-R3-2	TRANE VCCF-4	155	65	155	65	1.5	208/1/60	2	0.01	30
VAV-R3-3	TRANE VCCF-10	940	375	940	375	-	-	-	0.01	25
VAV-R3-4	TRANE VCCF-6	330	130	330	130	-	-	-	0.15	23
VAV-R3-5	TRANE VCCF-12	1720	690	1720	690	-	-	-	0.01	28
VAV-R3-6	TRANE VCCF-4	135	55	135	55	-	-	-	0.01	25
VAV-R3-7	TRANE VCCF-6	470	190	470	190	-	-	-	0.20	25
VAV-R3-8	TRANE VCCF-10	1245	500	1245	500	-	-	-	0.01	27
VAV-R3-9	TRANE VCCF-10	1155	460	1155	460	-	-	-	0.01	25
VAV-R3-10	TRANE VCCF-10	1155	460	1155	460	-	-	-	0.01	25
VAV-R3-11	TRANE VCCF-10	910	365	910	365	-	-	-	0.01	24
VAV-R3-12	TRANE VCCF-8	755	300	755	300	-	-	-	0.06	25
VAV-R3-13	TRANE VCCF-6	380	150	380	150	-	-	-	0.15	22
VAV-R3-14	TRANE VCCF-5	290	115	290	115	-	-	-	0.02	23
VAV-R3-15	TRANE VCCF-12	1440	575	1440	575	11.5	208/3/60	2	0.01	28
VAV-R3-16	TRANE VCCF-10	1055	420	1055	420	-	-	-	0.01	25
VAV-R3-17	TRANE VCCF-12	1655	660	1655	660	-	-	-	0.01	28
VAV-R3-18	TRANE VCCF-14	2520	1010	2520	1010	-	-	-	0.01	28
VAV-R3-19	TRANE VCCF-4	155	65	155	65	-	-	-	0.01	25

EXTERIOR AIR HANDLING SCHEDULE										
MARK		RTU-1	RTU-2	RTU-3	RTU-5	RTU-6				
MANUFACTURER	-	TRANE	TRANE	TRANE	TRANE	TRANE				
MODEL NUMBER	-	TSCX035	TSCX050	TSCX035	TSCX030	TSCX025				
SUPPLY AIR QUANTITY	CFM	15404	20712	17069	12765	12765				
OUTSIDE AIR QUANTITY	CFM	3835	5200	4675	3605	3170				
FAN WHEEL TYPE/DIAMETER	-	G35-22" AF	D50-32" AF	E35-25" AF	G30-22" AF	E25-22" AF				
MAXIMUM FAN SPEED	RPM	1954	1089	1664	1743	1784				
MAXIMUM OUTLET VELOCITY	FFM	-	-	-	-	-				
STATIC PRESS. DROP EXT./TOTAL	N. H2O/N. H2O	2.75/5.29	2.75/4.69	2.75/5.64	2.75/4.98	2.75/5.54				
MOTOR SIZE	HP	25	25	30	20	20				
ELECTRICAL CHARACTERISTICS	V/ /HZ	460/3/60	460/3/60	460/3/60	460/3/60	460/3/60				
PRE-FILTER EFFICIENCY	%	35	35	35	35	35				
PRE-FILTER TYPE	-	2" PLEATED	2" PLEATED	2" PLEATED	2" PLEATED	2" PLEATED				
AFTER-FILTER EFFICIENCY	%	65	65	65	65	65				
AFTER-FILTER TYPE	-	4" PLEATED	4" PLEATED	4" PLEATED	4" PLEATED	4" PLEATED				
COOLING COIL										
TOTAL COOLING CAPACITY	MBH	675.34	891.56	784.84	586.63	546.77				
SENSIBLE COOLING CAPACITY	MBH	439.89	576.12	493.40	363.21	349.14				
COOLING COIL MAX. FACE VELOCITY	FFM	451	408	500	430	499				
ENTERING AIR TEMP. DB./WB.	F/ F	77.9/66.5	77.9/66.6	78.2/67.1	78.4/67.4	78/66.8				
LEAVING AIR TEMP. DB./WB.	F/ F	52/51.9	52/51.9	52/51.9	52/51.9	52/51.9				
COOLING COIL MAX. AIR PRESS. DROP	INCHES W.G.	0.83	0.67	1.04	0.79	1.09				
COOLING COIL EWT/LWT	F/ F	44/59	44/59	44/59	44/59	44/59				
COOLING COIL WATER FLOWRATE	GPM	89.75	118.49	104.3	77.96	72.66				
COOLING COIL MAX. H2O PRESS. DROP	FT. H2O	6.07	7.68	7.89	5.32	4.26				
REHEAT COIL										
TOTAL REHEATING CAPACITY	MBH	384.23	503.16	425.76	310.95	303.69				
REHEATING COIL MAX. FACE VELOCITY	FFM	451	408	500	430	499				
ENTERING AIR TEMP. DB.	F	52	52	52	52	52				
LEAVING AIR TEMP. DB.	F	75	75	75	75	75				
REHEAT. COIL MAX. AIR PRESS. DROP	INCHES W.G.	0.13	0.11	0.16	0.12	0.17				
REHEATING COIL EWT/LWT	F/ F	108/96	108/96	108/96	108/96	108/96				
REHEATING COIL WATER FLOWRATE	GPM	64.2	84.08	71.14	51.96	50.75				
REHEAT. COIL MAX. H2O PRESS. DROP	FT. H2O	2.32	3.21	2.82	1.79	1.59				
HEATING COIL										
TOTAL HEATING CAPACITY	MBH	384.23	503.16	425.76	310.95	303.69				
HEATING COIL MAX. FACE VELOCITY	FFM	451	408	500	430	499				
ENTERING AIR TEMP. DB.	F	63.8	63.5	62.9	62.5	63.4				
LEAVING AIR TEMP. DB.	F	85	85	85	85	85				
HEATING COIL MAX. AIR PRESS. DROP	INCHES W.G.	0.13	0.11	0.16	0.12	0.17				
HEATING COIL EWT/LWT	F/ F	160/140	160/140	160/140	160/140	160/140				
HEATING COIL WATER FLOWRATE	GPM	64.2	84.08	71.14	51.96	50.75				
HEATING COIL MAX. WATER PRESS. DROP	FT. H2O	2.32	3.21	2.82	1.79	1.59				
SOUND PRESSURE (AT DISCHARGE AT 250 HZ OCTAVE BAND)	DB	91	86	91	88	88				
DIMENSIONS	LXWXH	223X102X73	238X126X88	228X102X73	202X97X66	202X84X64				
WEIGHT	LBS	7869	10471	8039	6200	5790				
NOTES	-	BELOW	BELOW	BELOW	BELOW	BELOW				

VAV UNIT SCHEDULE - RTU-5										
MARK	MANUFACTURER AND MODEL	AIR QUANTITY				ELECTRICAL HEATING COIL (KW)	VOLTAGE (V/Ø/Hz)	NUMBER OF HEATING STAGES	MAXIMUM PRESSURE DROP (INCHES H ₂ O)	MAXIMUM N.C. LEVEL
		COOLING MODE		HEATING MODE						
		MAX.	MIN.	MAX.	MIN.					
VAV-R5-1	TRANE VCCF-10	825	350	825	350	-	-	-	0.01	25
VAV-R5-2	TRANE VCCF-5	300	120	300	120	-	-	-	0.02	23
VAV-R5-3	TRANE VCCF-12	1835	735	1835	735	-	-	-	0.01	30
VAV-R5-4	TRANE VCCF-10	910	365	910	365	-	-	-	0.01	25
VAV-R5-5	TRANE VCCF-8	670	270	670	270	5.5	208/1/60	2	0.05	25
VAV-R5-6	TRANE VCCF-8	750	300	750	300	-	-	-	0.05	25
VAV-R5-7	TRANE VCCF-12	1515	605	1515	605	-	-	-	0.01	28
VAV-R5-8	TRANE VCCF-12	1490	595	1490	595	-	-	-	0.01	28
VAV-R5-9	TRANE VCCF-6	415	165	415	165	-	-	-	0.15	23
VAV-R5-10	TRANE VCCF-12	1395	560	1395	560	-	-	-	0.01	25
VAV-R5-11	TRANE VCCF-12	1385	555	1385	555	-	-	-	0.01	25
VAV-R5-12	TRANE VCCF-8	830	330	830	330	-	-	-	0.05	25

VAV UNIT SCHEDULE - RTU-6										
MARK	MANUFACTURER AND MODEL	AIR QUANTITY				ELECTRICAL HEATING COIL (KW)	VOLTAGE (V/Ø/Hz)	NUMBER OF HEATING STAGES	MAXIMUM PRESSURE DROP (INCHES H ₂ O)	MAXIMUM N.C. LEVEL
		COOLING MODE		HEATING MODE						
		MAX.	MIN.	MAX.	MIN.					
VAV-R6-1	TRANE VCCF-12	1410	565	1410	565	-	-	-	0.01	27
VAV-R6-2	TRANE VCCF-6	375	150	375	150	-	-	-	0.15	22
VAV-R6-3	TRANE VCCF-8	510	205	510	205	-	-	-	0.05	22
VAV-R6-4	TRANE VCCF-6	430	170	430	170	-	-	-	0.20	23
VAV-R6-5	TRANE VCCF-8	570	230	570	230	-	-	-	0.05	23
VAV-R6-6	TRANE VCCF-12	1835	735	1835	735	-	-	-	0.01	30
VAV-R6-7	TRANE VCCF-12	1835	735	1835	735	-	-	-	0.01	30
VAV-R6-8	TRANE VCCF-12	1835	735	1835	735	-	-	-	0.01	30
VAV-R6-9	TRANE VCCF-14	1965	785	1965	785	-	-	-	0.01	25
VAV-R6-10	TRANE VCCF-8	565	225	565	225	-	-	-	0.05	23
VAV-R6-11	TRANE VCCF-10	985	395	985	395	-	-	-	0.01	25
VAV-R6-12	TRANE VCCF-5	310	125	310	125	-	-	-	0.02	23

EXISTING AIR HANDLER MODIFICATIONS SCHEDULE										
MARK		AHU-2	AHU-3							
MANUFACTURER	-	TRANE								

