

Woolfolk Building Ninth Floor Renovations

Department of Finance & Administration Capital Facilities (Jackson, MS)

Architect's Project Number: 1411

Index of Drawings:

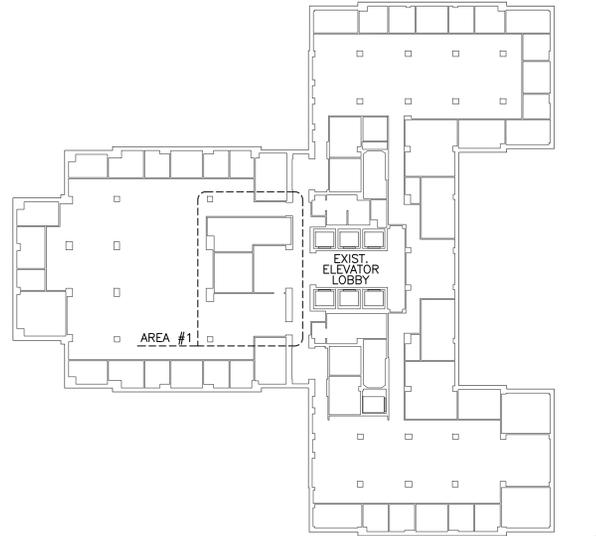
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Code Reference:

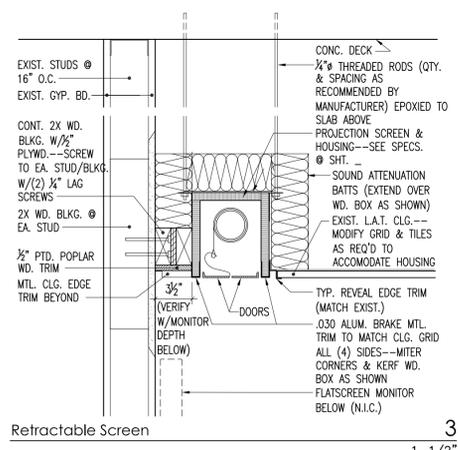
2012 International Building Code
2012 ICC & applicable codes as req'd.
by State Law



9th Floor Key Plan
1-1/2"

Abbreviations & Symbols

a.d.a. americans with disabilities act	elec. electrical	pld. painted
adj. adjacent	elev. elevation	p.t.d. paper towel dispenser
a.f.f. above finished floor	e.w. each way	reinf. reinforcing
alum. aluminum	exist. existing	req'd. required
a.b. anchor bolt	f.e. fire extinguisher	sim. similar
b.p. base plate	f.f.e. finished floor elevation	specs. specifications
bitum. bituminous	flsh. flashing	sq. square
b.o.s. bottom of steel	ftg. footing	stl. steel
bdg. building	gov. galvanized	t&b top and bottom
block./blk. (wood) blocking	gyp. bd./g.b. gypsum board	t.o.b. top of beam
bm. beam	hgt. height	t.o.s. top of steel
cab. cabinet	hgl. mtl. hollow metal	t.o.m. top of masonry
cem. cement	horiz. horizontal	t.o.w. top of wall
col. column	l.a.t. lay-in acoustical tile clg.	trtd. treated
conc. concrete	mos. masonry	ts tubular steel
cmu. concrete masonry unit	mech. mechanical	v.c.t. vinyl composition tile
c.j. control joint	min. minimum	vert. vertical
cop. copper	mtl. metal	verif. verify in field
c.t. ceramic tile	no. number	v.i.f. vent through roof
dbl. double	n.l.s. not to scale	wd. wood
dr. door	o.c. on center	w/r water-resistant
d.p. dampproofing	p.lam. plastic laminate	wm water meter
d.s. downsput	plywd. plywood	w.p. waterproofing
e.d.f. electric drinking fountain	pr. pair	w.w.m. welded wire mesh



Refractable Screen
1-1/2"

- ### Keyed RCP Notes
- Remove existing return register assembly, salvage and reinstall at location shown on RCP--see Mech. for additional notes on HVAC modifications.
 - Remove existing sprinkler head, salvage and reinstall at location shown on RCP--see Mech. for additional notes on fire sprinkler piping.
 - Remove existing supply register, salvage and reinstall at location shown on RCP--see Mech. for additional notes on HVAC modifications.
 - Remove existing lite fixture, salvage and reinstall at location shown on RCP--see Elec. for additional notes on lighting modifications.
 - Remove existing L.A.T. clg. tiles and grid to extents shown. Provide new L.A.T., grid, and new (or salvaged) tiles at elevation of L.A.T. clg. to remain, all to match exist.
 - Remove existing L.A.T. clg. tiles and grid to extents shown. Provide new L.A.T., grid, and new (or salvaged) tiles, all to match existing. Provide new acoust. batts over this ceiling.
 - Modify existing L.A.T. clg. tiles and grid to extents shown to accommodate new partition.

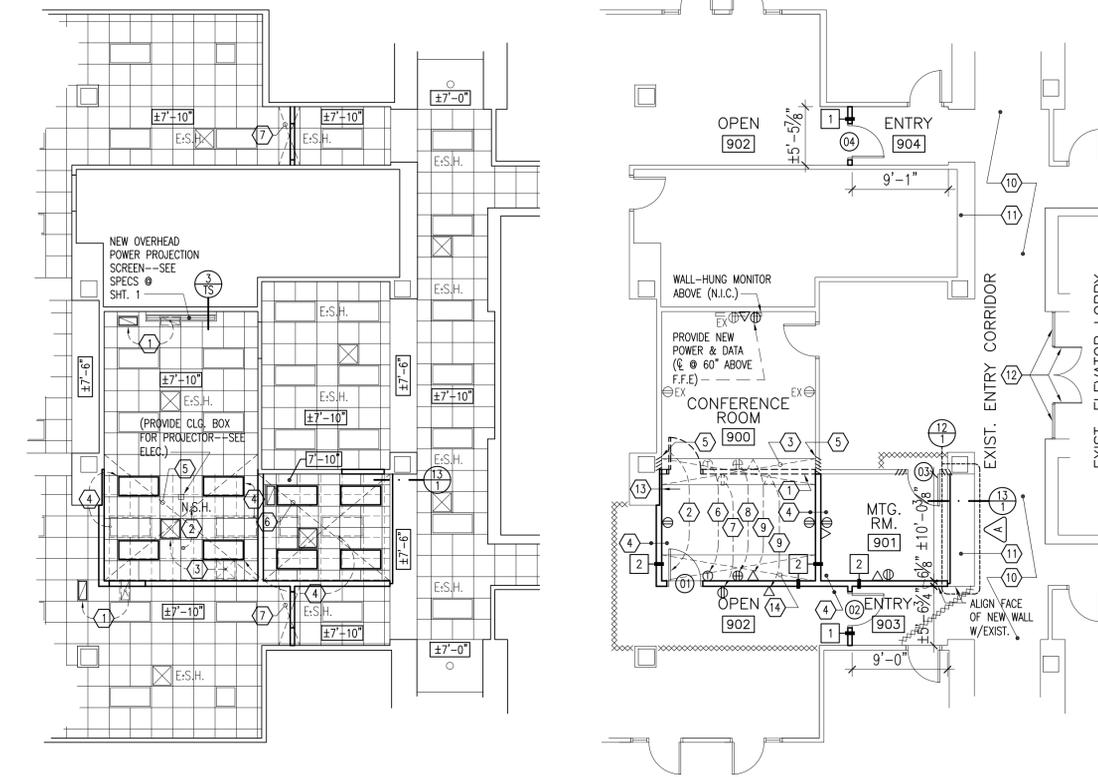
RCP Legend

[Symbol]	EXIST. LAY-IN ACOUSTICAL TILE TO REMAIN (PROTECT DURING CONSTRUCTION)
[Symbol]	EXIST. LAY-IN ACOUSTICAL TILE TO BE REMOVED (SALVAGE CLG. TILES AND RE-USE AS PRACTICABLE)
[Symbol]	NEW LAY-IN ACOUSTICAL TILE & GRID TO MATCH EXIST.
[Symbol]	EXIST. LITE FIXTURE TO REMAIN (PROTECT DURING CONSTRUCTION)
[Symbol]	EXIST. LITE FIXTURE TO BE REMOVED--SALVAGE AND REINSTALL WHERE SHOWN ON RCP
[Symbol]	NEW (OR SALVAGED) LITE FIXTURE TO MATCH EXIST.--SEE ELEC.
[Symbol]	EXIST. SUPPLY REGISTER TO REMAIN (PROTECT DURING CONSTRUCTION)
[Symbol]	EXIST. SUPPLY REGISTER TO BE REMOVED--SALVAGE AND REINSTALL WHERE SHOWN ON RCP--SEE MECH.
[Symbol]	NEW (OR SALVAGED) SUPPLY REGISTER TO MATCH EXIST.--SEE MECH.
[Symbol]	EXIST. RETURN REGISTER TO REMAIN (PROTECT DURING CONSTRUCTION)
[Symbol]	EXIST. RETURN REGISTER TO BE REMOVED--SALVAGE AND REINSTALL WHERE SHOWN ON RCP--SEE MECH.
[Symbol]	NEW (OR SALVAGED) RETURN REGISTER TO MATCH EXIST.--SEE MECH.
[Symbol]	EXIST. SPRINKLER HEAD TO REMAIN (PROTECT DURING CONSTRUCTION)
[Symbol]	EXIST. SPRINKLER HEAD TO BE REMOVED--SALVAGE AND REINSTALL WHERE SHOWN ON RCP--SEE MECH.
[Symbol]	N.S.H. NEW (OR SALVAGED) SPRINKLER HEAD--SEE MECH.

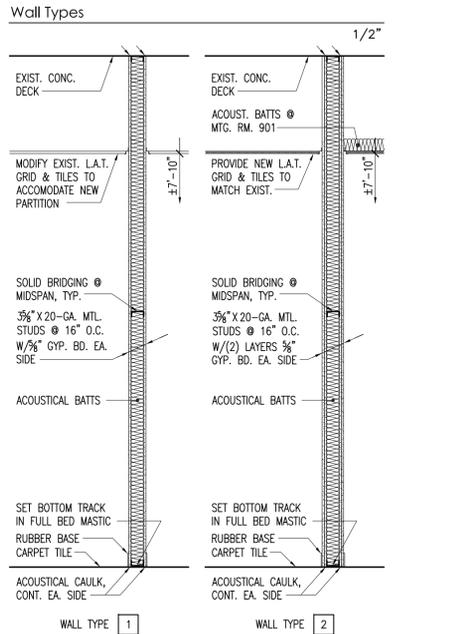
Finish Schedule

RM. NO.	Room Name	Floor	Base	Walls	Ceiling	Clg. Hgt.	Remarks
900	Conference Room	exist. carpet tile to remain*	new rubber base	exist./new gyp. bd., point new	exist. & new L.A.T. (2x2)	±7'-10" (exist.)	*Provide new carpet tile to match exist. where missing or damaged--extend exist. into expanded area.
901	Meeting Room	exist. carpet tile to remain*	new rubber base	exist./new gyp. bd., point new	L.A.T. (2x2) to match exist. w/3" acoust. batts	±7'-10" (exist.)	*Provide new carpet tile to match exist. where missing or damaged
902	Open Office	exist. carpet tile to remain	exist. rubber base/new rubber base @ new partitions	exist./new gyp. bd., point new	exist. L.A.T.*	±7'-10" (exist.)	*Modify exist. tiles & grid as req'd. @ new partitions. Replace any damaged tiles & grid where damaged.
903	Entry	exist. carpet tile to remain	exist. rubber base/new rubber base @ new partitions	exist./new gyp. bd., point new	exist. L.A.T.*	±7'-10" (exist.)	*Modify exist. tiles & grid as req'd. @ new partitions. Replace any damaged tiles & grid where damaged.
904	Entry	exist. carpet tile to remain	exist. rubber base/new rubber base @ new partitions	exist./new gyp. bd., point new	exist. L.A.T.*	±7'-10" (exist.)	*Modify exist. tiles & grid as req'd. @ new partitions. Replace any damaged tiles & grid where damaged.

- NOTES:
- PROVIDE ABUSE-RESISTANT GYP. BD. TO 48" A.F.F. AT ALL LOCATIONS OF GYP. BD., EQUAL TO USG 3/8" "MOLD TOUGH AR". ALL OTHER GYP. BD. EQUAL TO USG 3/8" "MOLD TOUGH".
 - CONTRACTOR TO PAINT ALL NEW WALLS AND FULL EXTENT OF ALL EXIST. WALLS (CORNER TO CORNER) WHERE BLENDING NEW WALLS WITH EXIST. WALLS. PAINT COLOR AND FINISH SHALL MATCH EXISTING WALLS. PROVIDE ONE COAT OF LATEX PRIMER UNDERCOAT AND TWO COATS OF LATEX TOP COATS. OWNER SHALL PROVIDE TO CONTRACTOR BRAND OF PAINT, COLOR, AND SHEEN TO BE USED, TO MATCH EXIST.
 - EXISTING CEILING TILE OR GRID IN GOOD CONDITION MAY BE RE-USED.
 - CONTRACTOR SHALL REPAIR AND/OR REPLACE ANY DAMAGE TO EXISTING FLOORS, CEILINGS, WALLS, DOORS, ETC. DAMAGED DURING RENOVATION CONSTRUCTION.
 - ALL NEW WALLS SHALL RECEIVE NEW RUBBER BASE TO MATCH EXIST. REPAIR/EXTEND EXIST. RUBBER BASE WHERE REQ'D.
 - PAINT NEW FRAMES TO MATCH EXIST.
 - AT NEW DOORS, PROVIDE CARPET ACCENT STRIP IF CARPET TILE IN ROOM DOES NOT MEMBER OUT WITH EXIST. CARPET TILE.



Partial Ninth Floor RCP AREA 1
1/8"



WALL TYPE 1 WALL TYPE 2

Keyed Floorplan Notes

- Demolish exist. interior partition to extent shown.
- Remove exist. door and frame. Salvage door and hardware and reinstall at new location shown on plan in new h.m. frame.
- Install salvaged carpet tiles (salvaged from south wall of expanded Conference Room) at location where existing wall is demolished.
- Protect exist. carpet tiles in the area of renovation. Replace any damaged carpet tiles with new to match existing where new walls are being built if damaged during construction or to provide a finished look.
- Repair exist. finishes adjacent to surface/finishes to be removed, repair exist. surfaces w/materials and finishes to match exist., including tape, float, and point where required.
- Salvage exist. thermostat and reinstall where shown in new partition. Extend exist. feeders as req'd.--see Elec. & Mech.
- Salvage exist. duplex receptacle and reinstall where shown in new partition--see Elec.
- Salvage exist. double duplex receptacle and reinstall where shown in new partition--see Elec.
- Salvage exist. comm./data outlet box and reinstall where shown in new partition--see Elec.
- Protect exist. terrazzo flooring in the Exist. Entry Corridor during construction. Any damage to the terrazzo flooring shall be replaced by the Contractor at no cost to the Owner.
- Protect exist. granite wall caps during construction. Any damage to these wall caps shall be replaced by the Contractor at no cost to the Owner.
- Protect exist. glass entry doors from the Exist. Elevator Lobby during construction. Any damage to these doors or glass breakage shall be replaced by the Contractor at no cost to the Owner.
- Furr gyp. bd. over exist. col.
- Salvage exist. carpet tiles this area and relocate per note 3. Provide new solid color carpet tiles as spec'd.

Floor Plan Legend

[Symbol]	EXIST. WALL TO REMAIN (PROTECT DURING CONSTRUCTION)
[Symbol]	EXIST. INTERIOR PARTITION TO BE DEMOLISHED
[Symbol]	NEW INTERIOR PARTITION--SEE DETAILS
[Symbol]	REPAIR EXIST. FINISHES ADJACENT TO SURFACE/FINISHES TO BE REMOVED, REPAIR EXIST. SURFACES W/MATERIALS AND FINISHES TO MATCH EXIST., INCLUDING TAPE, FLOAT, AND PAINT WHERE REQUIRED.
[Symbol]	TEMPORARY CONSTRUCTION PARTITION (EXTEND FULL-HGT., FLOOR TO UNDERSIDE OF DECK & SEAL--CONSTRUCT OF 3/8" PLYWD. OR UNFINISHED GYP. BD., W/ PEEL-AND-STICK MEMBRANE TIGHT TO FLOOR AND CLG. SLABS TO CREATE AIRTIGHT AND DUSTPROOF BARRIER. PROVIDE WOOD FRAMED PEDESTRIAN DOOR W/HINGES AND PADLOCK HASP WHERE REQ'D. FOR CONSTRUCTION ACCESS.
[Symbol]	EXIST. DOOR TO REMAIN (PROTECT DURING CONSTRUCTION)
[Symbol]	EXIST. DOOR TO BE REMOVED AND RELOCATED AS SHOWN ON FLOORPLAN. IN NEW H.M. FRAME
[Symbol]	NEW (OR SALVAGED) DOOR--SEE DOOR SCHEDULE
[Symbol]	EXIST. THERMOSTAT TO BE SALVAGED AND REINSTALLED AT NEW LOCATION SHOWN ON PLAN. MOUNT CENTERLINE 48" A.F.F.--SEE MECH.
[Symbol]	NEW DUPLEX RECEPTACLE (OR SALVAGED EXIST. WHERE NOTED)--SEE ELEC.
[Symbol]	EXIST. DOUBLE DUPLEX RECEPTACLE TO BE SALVAGED AND REINSTALLED AT NEW LOCATION SHOWN ON PLAN. MOUNT CENTERLINE 16" A.F.F.--SEE ELEC.
[Symbol]	NEW COMM./DATA OUTLET BOX (OR SALVAGED EXIST. WHERE NOTED) WITH 3/4" CONDUIT TO ABOVE ACCESSIBLE CEILING. MOUNT CENTERLINE 16" A.F.F.--SEE ELEC.

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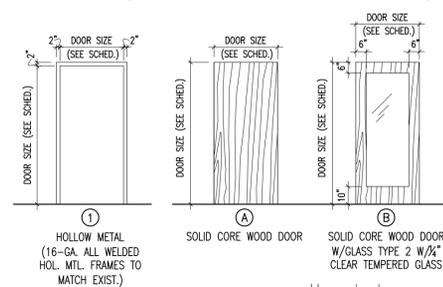
Electrical Engineer:
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01 September 2015
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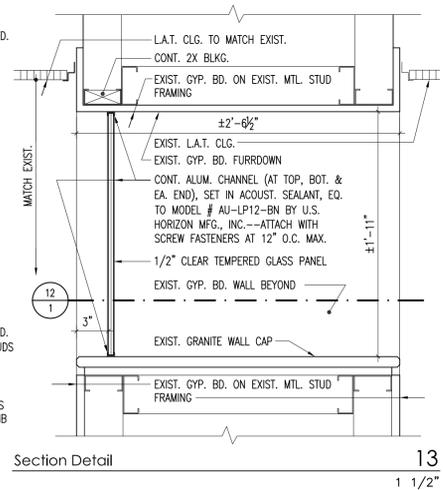
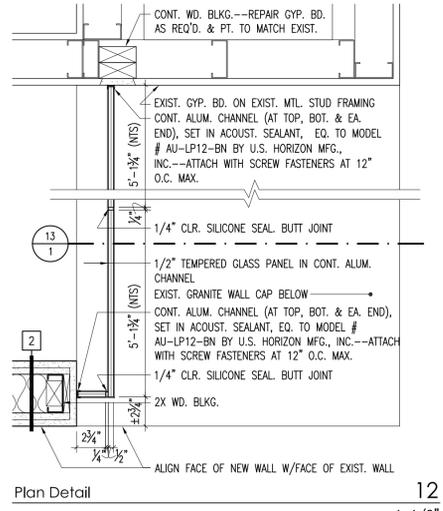
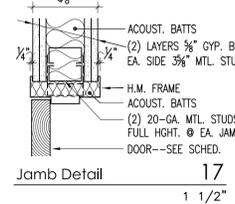
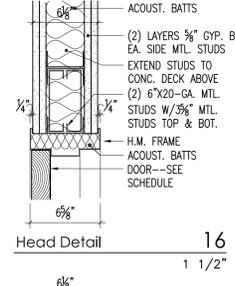
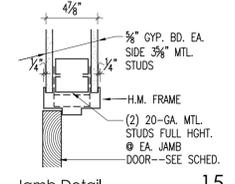
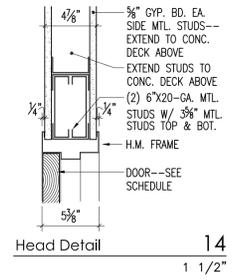
Door Frame Types Door Types
1/4"



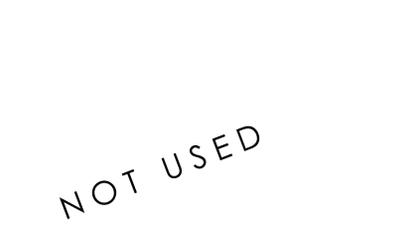
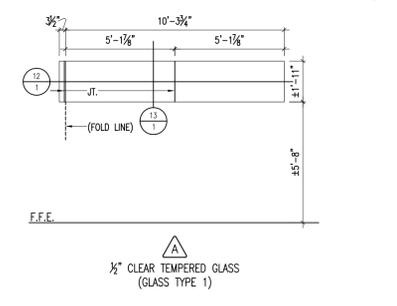
Door Schedule

Mark	Size	Door Type	Rating (Door & Frame)	Material	Head	Jamb	Threshold	Frame Type	Frame Depth	Remarks	Hardware Set
1	3 ⁰ x 7 ⁰ x 1 ¹ / ₄	EXIST.	NONE	SOLID CORE WD.	16/1	17/1	NONE	1	6 ¹ / ₂ "	* SALVAGE & REINSTALL EXIST. DOOR HARDWARE	* SALVAGE & REINSTALL EXIST. DOOR HARDWARE
2	3 ⁰ x 7 ⁰ x 1 ¹ / ₄	B	NONE	SOLID CORE WD.	14/1	15/1	NONE	1	5 ¹ / ₂ "		HARDWARE SET #1--SEE ABOVE
3	3 ⁰ x 7 ⁰ x 1 ¹ / ₄	A	NONE	SOLID CORE WD.	16/1	17/1	NONE	1	±6 ¹ / ₂ "	* FIELD VERIFY EXISTING WALL THICKNESS	HARDWARE SET #2--SEE ABOVE
4	3 ⁰ x 7 ⁰ x 1 ¹ / ₄	B	NONE	SOLID CORE WD.	14/1	15/1	NONE	1	5 ¹ / ₂ "		HARDWARE SET #1--SEE ABOVE

DOOR NOTES:
1. PROVIDE FACTORY-FINISHED, PREMIUM GRADE SOLID CORE VENEER DOORS W/AA GRADE FACES TO MATCH FACILITY STANDARD FOR SPECIES, CUT, CONSTRUCTION, FINISH, ETC.
2. AT VIEW WINDOWS, WOOD STOP DETAIL TO MATCH FACILITY STANDARD (ON THIS FLOOR).



Window Types 1/4"



NOT USED 4
NOT USED 5
NOT USED 6
NOT USED 7
NOT USED 8
NOT USED 9
NOT USED 10
NOT USED 11



MECHANICAL LEGEND AND ABBREVIATIONS

PIPING LEGEND (CONT.)	PIPING LEGEND (CONT.)	DUCTWORK LEGEND	DUCTWORK LEGEND (CONTINUED)	CONTROLS LEGEND	
EXISTING HOT WATER SUPPLY	CHECK VALVE	RADIUS ELBOW	DUCT END/CAP	HUMIDITY SENSOR	
EXISTING HOT WATER RETURN	AUTOMATIC THREE-WAY CONTROL VALVE	ELBOW WITH TURNING VANES	FLEXIBLE DUCT	TEMPERATURE SENSOR/THERMOSTAT	
HOT WATER SUPPLY	AUTOMATIC TWO-WAY CONTROL VALVE	RECTANGULAR BRANCH TAKEOFF WITH BALANCING DAMPER	VOLUME DAMPER IN DUCT	MISCELLANEOUS	
HOT WATER RETURN	BALL VALVE	RECTANGULAR SUPPLY DUCT UP	1A - 1 WAY	DIFFERENTIAL PRESSURE SENSOR	
ARROW INDICATES DIRECTION OF FLOW	MANUAL AIR VENT	RECTANGULAR SUPPLY DUCT DOWN	2A - 2 WAY	DIFFERENTIAL PRESSURE SWITCH	
UNION	AUTOMATIC AIR VENT	RECTANGULAR RETURN OR EXHAUST DUCT UP	3A - 3 WAY	DIAMETER	
Y" TYPE STRAINER WITH HOSE END BLOW OFF VALVE	THERMOMETER	RECTANGULAR RETURN OR EXHAUST DUCT DOWN	4A - 4 WAY	DETAIL DESIGNATION	
Y" TYPE STRAINER	PIPE SENSOR WELL (THERMOMETER)	ROUND DUCT, UP	2C - 2 WAY CORNER	TERMINAL DESIGNINATION	
ELBOW TURNED UP	PRESSURE GAUGE AND COCK	ROUND DUCT, DOWN	4C - 4 WAY CORNER	EXISTING EQUIPMENT, PIPING, OR DUCTWORK TO REMAIN IN SERVICE.	
ELBOW TURNED DOWN	PRESSURE GAUGE WITH LOOP	SLOPING RISE IN DUCTWORK	RETURN/EXHAUST REGISTER OR GRILLE	EXISTING EQUIPMENT, PIPING, OR DUCTWORK TO BE REMOVE.	
BOTTOM PIPE CONNECTION	TEMPERATURE-PRESSURE TEST FITTING	SLOPING DROP IN DUCTWORK		NEW CONNECTION TO EXISTING PIPING, DUCTWORK AND/OR EQUIPMENT	
TOP PIPE CONNECTION	CENTER LINE	DUCT SIZE (CLEAR INSIDE DIMENSION) FIRST FIGURE INDICATES PLAN SIZE		TAG (SEE SCHEDULE)	
SHUT-OFF VALVE		ROUND DUCT DIAMETER SIZE (CLEAR INSIDE DIMENSION)		DIFFUSER, RETURN, & EXHAUST GRILLE TAG	
AUTOMATIC FLOW CONTROL VALVE					
ORIFICE TYPE FLOW MEASURING DEVICE					
VENTURI TYPE FLOW MEASURING DEVICE					
BALANCING VALVE					

INDEX OF DRAWING

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M2	NINTH FLOOR PLAN - AREA #1 - HVAC DEMOLITION AND RENOVATION
M3	MECHANICAL DETAILS
M4	MECHANICAL DETAILS AND SCHEDULES
M5	MECHANICAL SPECIFICATIONS
M6	MECHANICAL SPECIFICATIONS

GENERAL NOTES - HVAC

GENERAL DEMOLITION AND SALVAGE REQUIREMENTS

- A. IT IS THE INTENT OF THE DEMOLITION PLANS TO AID THE CONTRACTOR IN BIDDING THE PROJECT BY PROVIDING INFORMATION ABOUT EXISTING HVAC EQUIPMENT, PIPING, AND ASSOCIATED MATERIALS AND THEIR REMOVAL.
- B. ALL PIPING, DUCTWORK AND EQUIPMENT LOCATIONS SHOWN ON THESE DRAWINGS WERE TAKEN FROM EXISTING RECORD DRAWINGS AND SITE INVESTIGATION.
- C. CONTRACTOR SHALL VISIT PROJECT SITE AND OBSERVE ALL EXISTING CONDITIONS AFFECTING THE WORK AND MAKE NECESSARY ADJUSTMENTS, TO FACILITATE INSTALLATION OF COMPLETE, OPERABLE SYSTEMS AT NO ADDITIONAL COST TO THE USING AGENCY.
- D. THE MECHANICAL CONSTRUCTION SHALL INCLUDE ALL WORK REQUIRED FOR THE REMOVAL OF EXISTING MECHANICAL EQUIPMENT, PIPING, ETC. WHERE INDICATED OR REQUIRED TO FACILITATE NEW CONSTRUCTION. THE CONTRACTOR SHALL REMOVE FROM THE PREMISES OTHER DEVICES AND MATERIALS NOT REUSED IN THE BUILDING. USING AGENCY SHALL HAVE FIRST RIGHTS TO SALVAGED ITEMS.

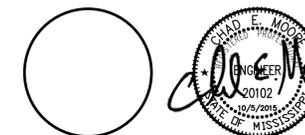
GENERAL RENOVATION REQUIREMENTS

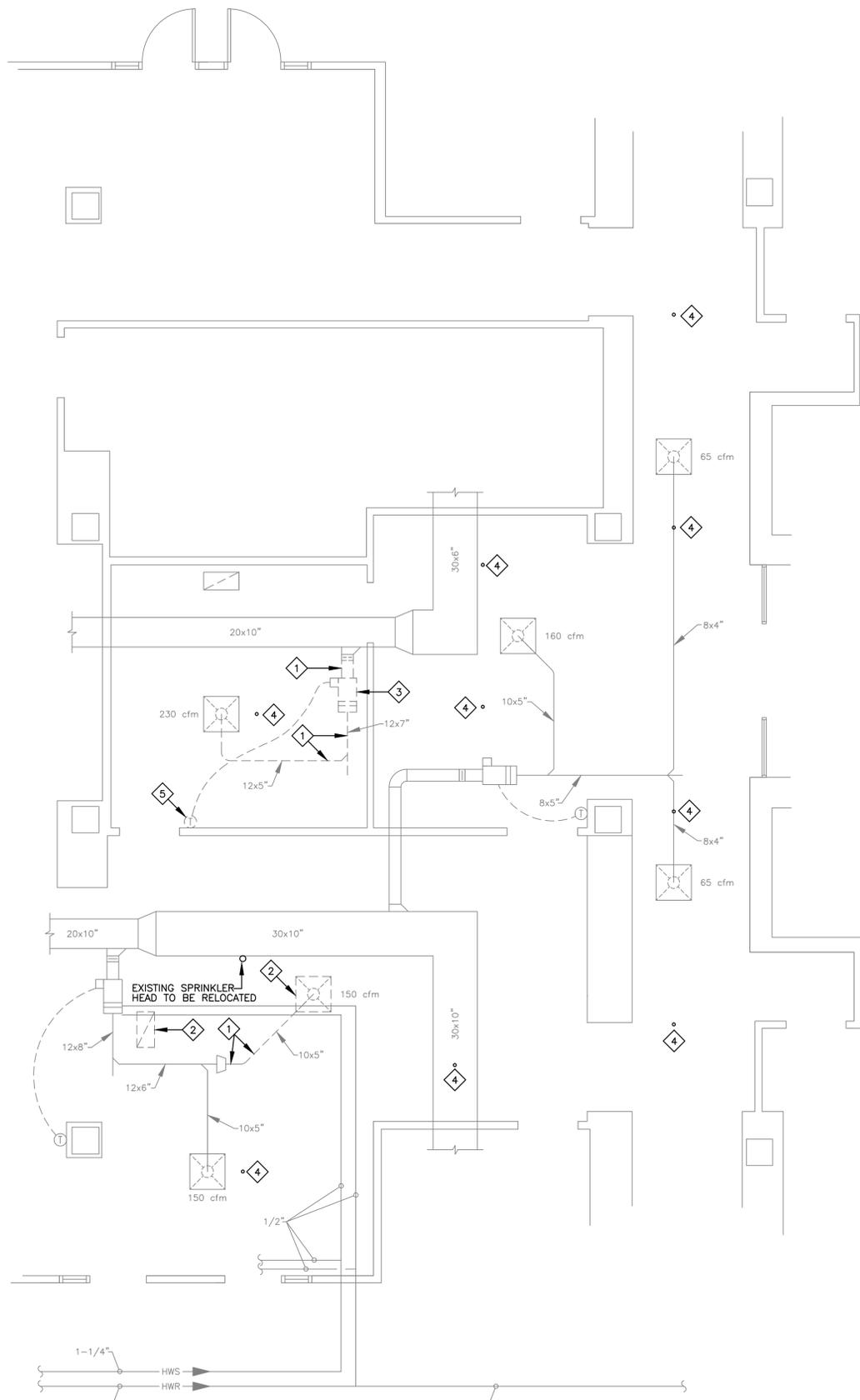
- A. INSTALLATION OF ALL EQUIPMENT AND SYSTEMS SHALL BE IN ACCORDANCE WITH, MANUFACTURER'S REQUIREMENTS, STANDARD DETAILS, SECTIONS AND ELEVATIONS SHOWN ON THE DRAWINGS.
- B. CONTRACTOR SHALL MAINTAIN A CLEAR SERVICE AREA AROUND ALL EQUIPMENT FOR MAINTENANCE.
- C. ALL DUCT SIZES SHOWN ON DRAWINGS ARE INSIDE CLEAR DIMENSIONS.

MECHANICAL LEGEND AND ABBREVIATIONS

ABBREVIATIONS - MECHANICAL		ABBREVIATIONS - MECHANICAL		ABBREVIATIONS - MECHANICAL	
BMS	BUILDING MANAGEMENT SYSTEM	FT	FEET	OBD	OPPOSED BLADE DAMPER
BTU	BRITISH THERMAL UNIT	GPM	GALLONS PER MINUTE	OD	OUTSIDE DIMENSION
CD	CEILING DIFFUSER	HC	HEATING COIL	PD	PRESSURE DROP
CRG	CEILING RETURN GRILLE	HP	HORSE POWER	PRV	PRESSURE REDUCING VALVE
CFM	CUBIC FEET PER MINUTE	HR	HOUR	PSI	POUNDS PER SQUARE INCH (GAUGE)
CSA	CONDITIONING SUPPLY AIR	HW	HOT WATER	RH	RELATIVE HUMIDITY
DB	DRY BULB	ID	INSIDE DIMENSION	RHC	REHEAT COIL
DIA	DIAMETER	LAT	LEAVING AIR TEMPERATURE	SA	SUPPLY AIR
DN	DOWN	LBS	POUNDS	SENS	SENSIBLE
EAT	ENTERING AIR TEMPERATURE	LWT	LEAVING WATER TEMPERATURE	SP	STATIC PRESSURE
EDB	ENTERING DRY BULB	MAX	MAXIMUM	SQFT	SQUARE FEET
EFF	EFFICIENCY	MBH	THOUSAND BTU PER HOUR	TYP	TYPICAL
ET	EXPANSION TANK	MFG	MANUFACTURER	VAV	VARIABLE AIR VOLUME
EWB	ENTERING WET BULB	MFS	MAXIMUM FUSE SIZE	VD	VOLUME DAMPER
EWT	ENTERING WATER TEMPERATURE	MIN	MINIMUM	W/	WITH
°F	DEGREES FAHRENHEIT	MOPP	MAXIMUM OVERCURRENT PROTECTION	WB	WET BULB
FC	FLEXIBLE CONNECTION (DUCT OR PIPE)	NC	NORMALLY CLOSED	EHWS	EXISTING HEATING WATER SUPPLY
FLR	FLOOR	NO	NORMALLY OPEN	EHWR	EXISTING HEATING WATER RETURN
FLA	FULL LOAD AMPS	NTS	NOT TO SCALE		

15-03





NINTH FLOOR PLAN - AREA #1 - HVAC (DEMOLITION)
SCALE: 1/4" = 1'-0"

GENERAL FIRE PROTECTION NOTES:

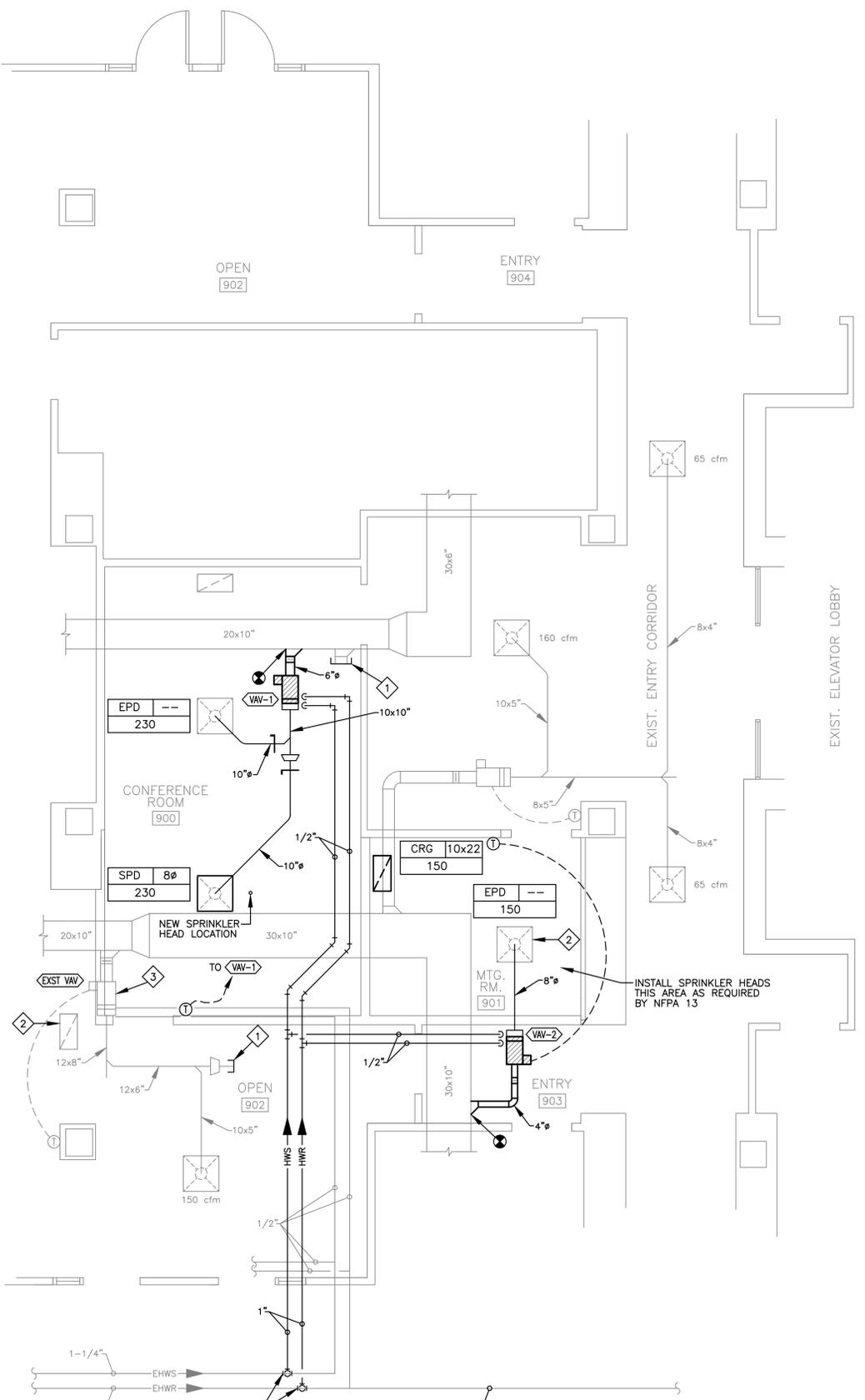
1. ALL SYSTEMS AND EQUIPMENT SHALL STRICTLY COMPLY WITH NFPA 13 AND ALL LOCAL CODES.
2. ALL FIRE PROTECTION WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID CONFLICTS.
3. SPRINKLER HEADS SHALL BE INSTALLED IN CENTER OF CEILING TILES WHERE POSSIBLE.
4. SPRINKLER HEADS SHALL MATCH EXISTING.
5. CONTRACTOR SHALL VISIT SITE PRIOR TO BID DATE AND FIELD VERIFY EXACT LOCATION OF EXISTING FIRE MAIN.
6. CONTRACTOR SHALL PROVIDE OFF-SETS OR MOVE ANY EXISTING SPRINKLER PIPE (AT NO ADDITIONAL COST TO THE OWNER) WHICH CONFLICTS WITH THE INSTALLATION OF THE NEW WORK THAT IS REQUIRED.
7. CONTRACTOR SHALL RELOCATE THE EXISTING SPRINKLER HEADS AS REQUIRED FOR THE NEW TENANT LAYOUT TO CONFORM TO NFPA 13.

DEMOLITION NOTES:

- 1 EXISTING SUPPLY AIR DUCTWORK TO BE REMOVED BACK TO POINT SHOWN ON PLANS. REMOVE ALL DUCTWORK, FITTINGS, HANGERS, ETC.
- 2 EXISTING GRILLE TO BE RELOCATED. SEE NEW HVAC PLAN FOR NEW LOCATION.
- 3 EXISTING VAV TERMINAL UNIT TO BE REMOVED. REMOVE ALL POWER AND CONTROL WIRING, HANGERS, MEDIUM PRESSURE RUN OUT, ETC.
- 4 EXISTING SPRINKLER HEAD TO REMAIN (PROTECT DURING CONSTRUCTION).
- 5 EXISTING THERMOSTAT TO BE REMOVED.

PLAN NOTES:

- 1 CAP EXISTING DUCT AT POINT SHOWN ON PLANS. SEAL CAP AIR TIGHT.
- 2 EXISTING GRILLE TO BE RELOCATED TO THIS LOCATION.
- 3 EXISTING VAV TERMINAL UNIT TO BE REPROGRAMMED TO NEW AIR FLOW. SEE SCHEDULE.



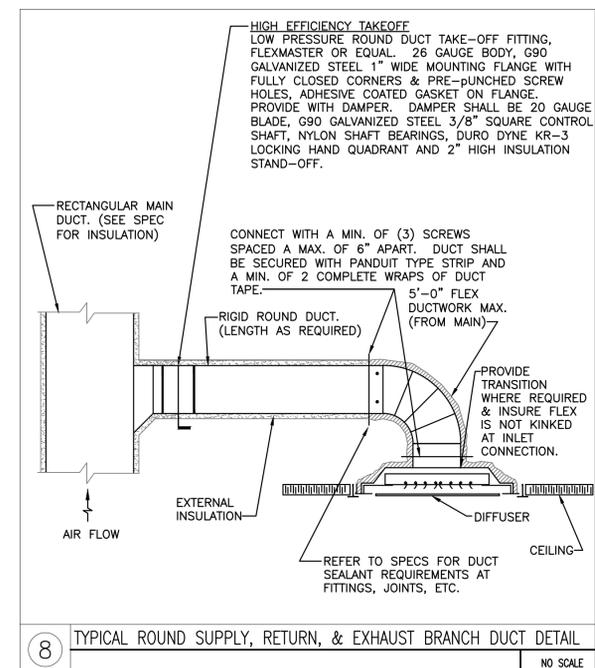
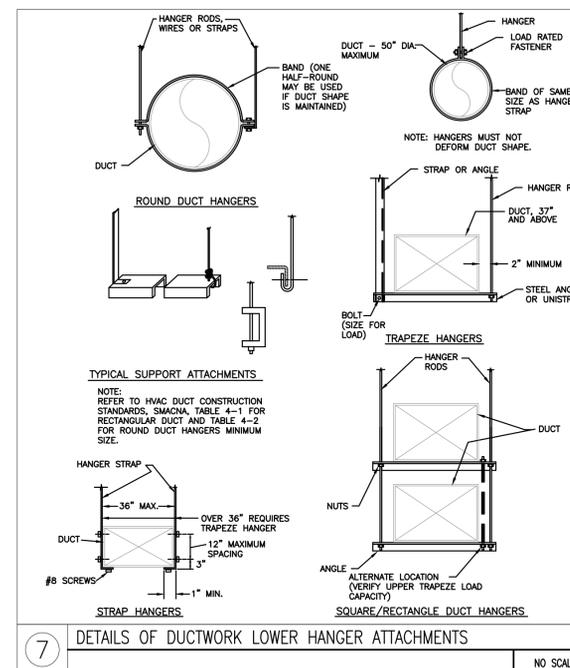
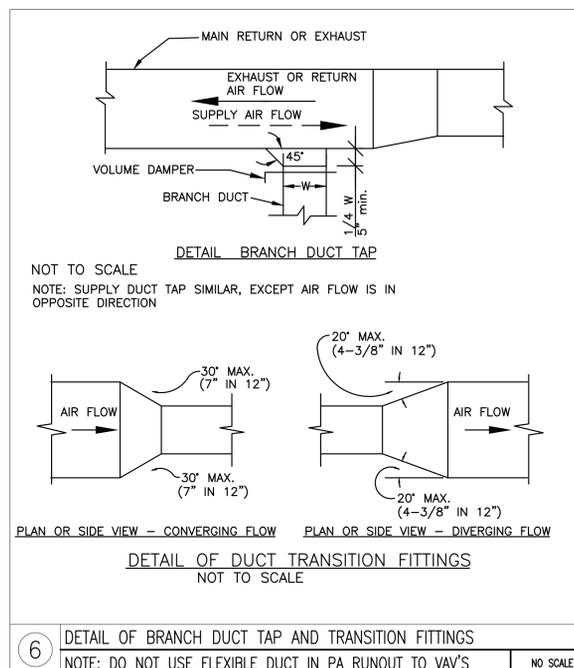
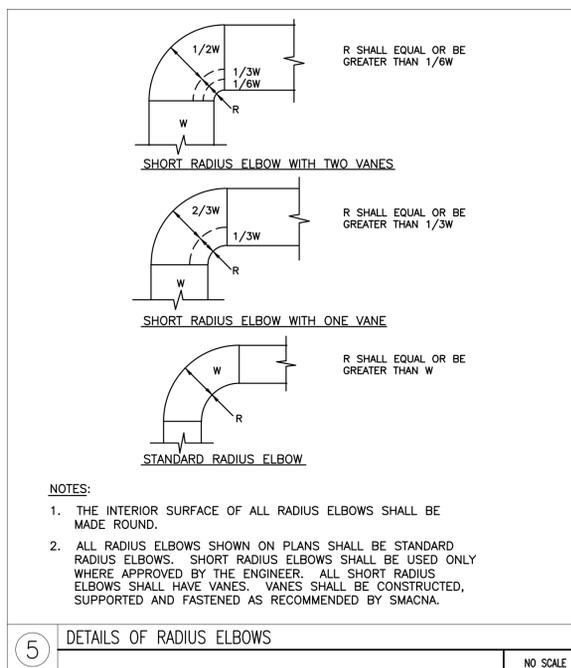
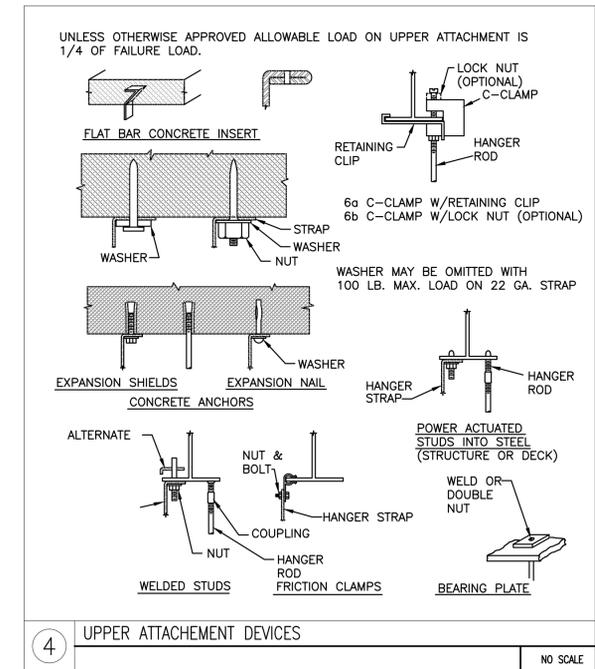
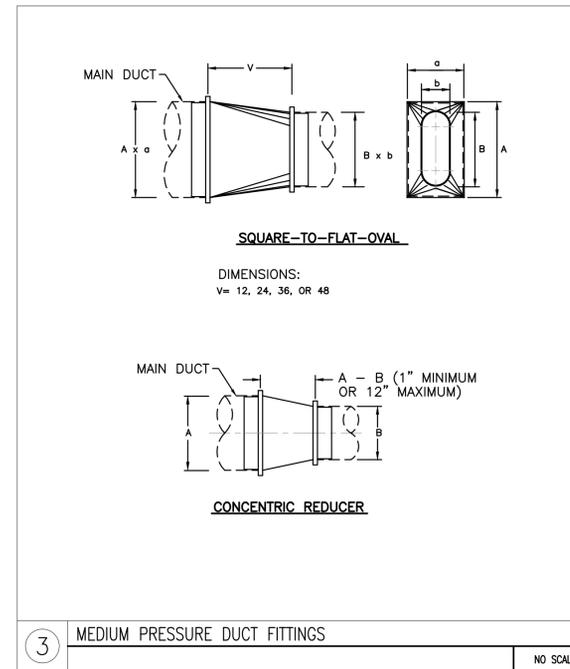
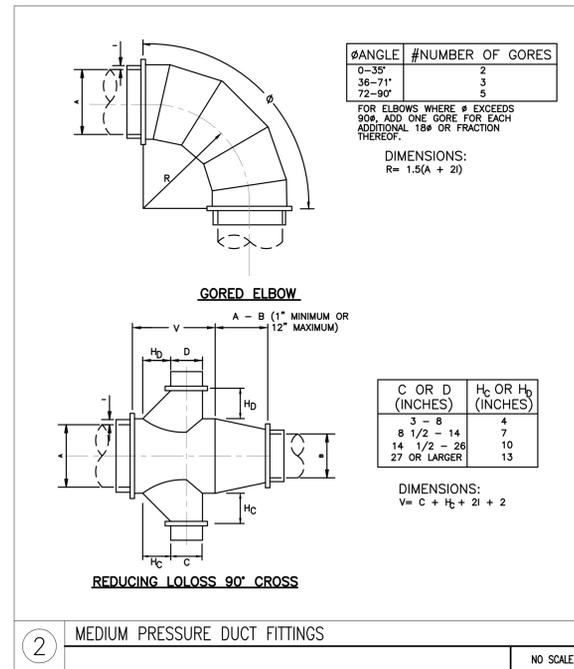
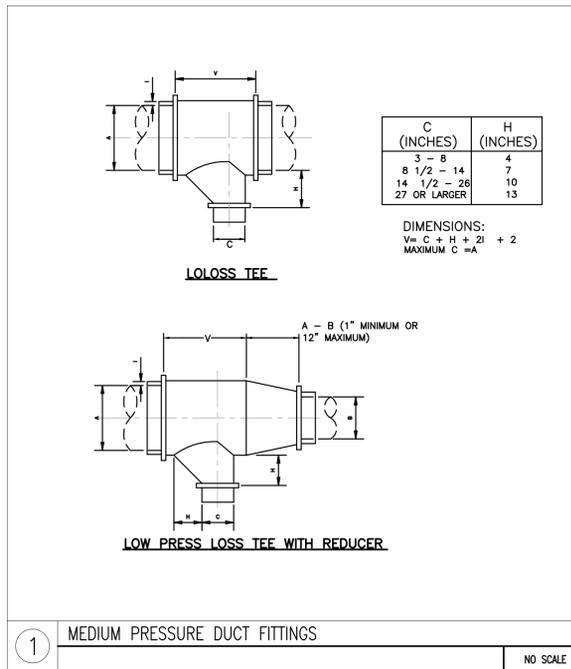
NINTH FLOOR PLAN - AREA #1 - HVAC (RENOVATION)
SCALE: 1/4" = 1'-0"

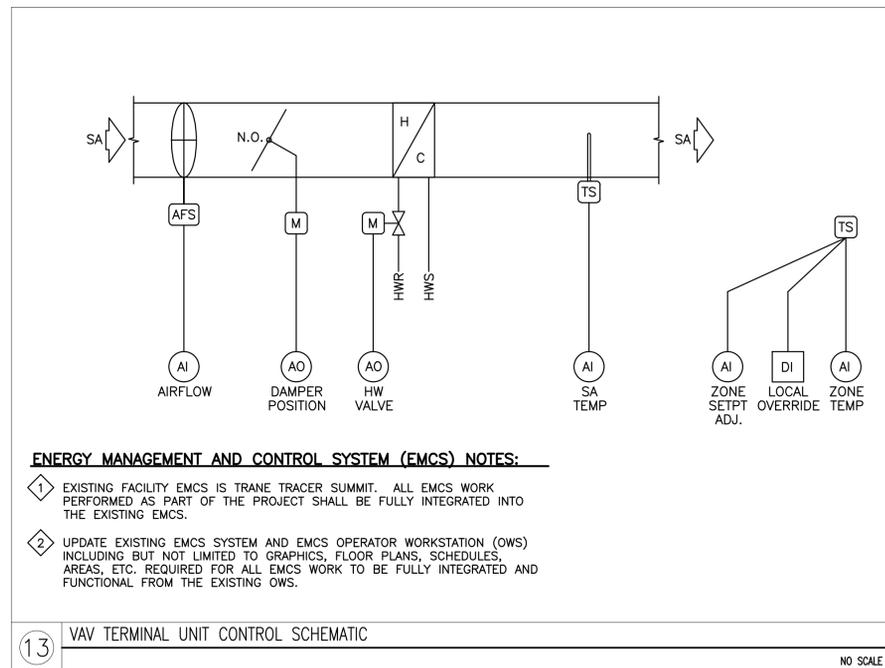
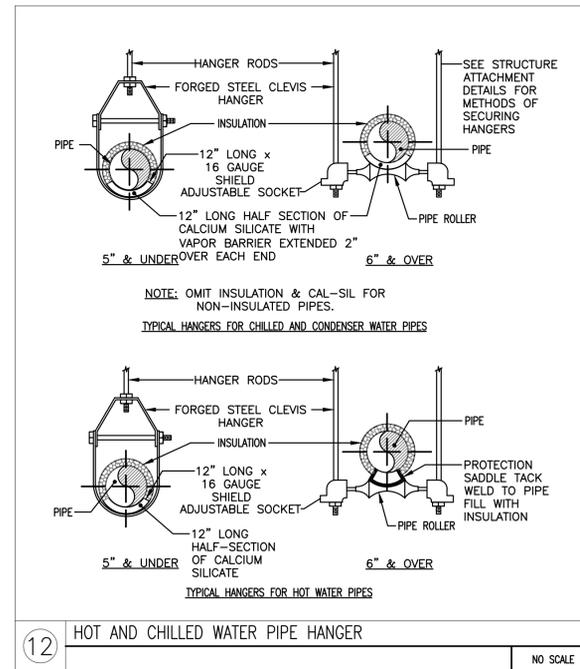
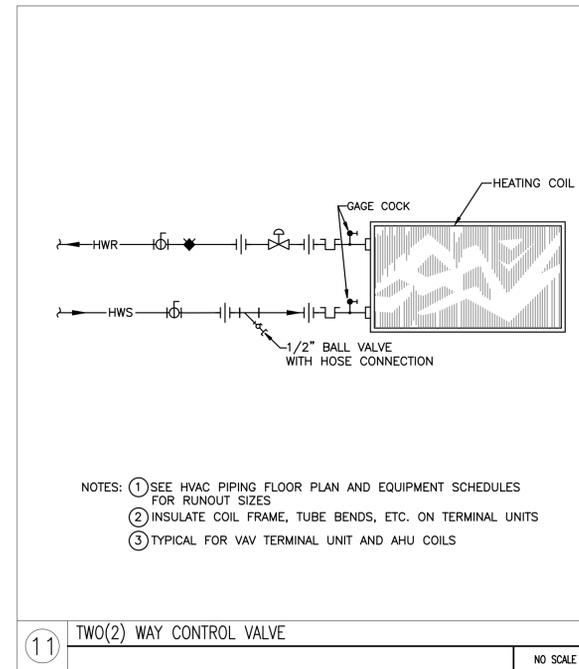
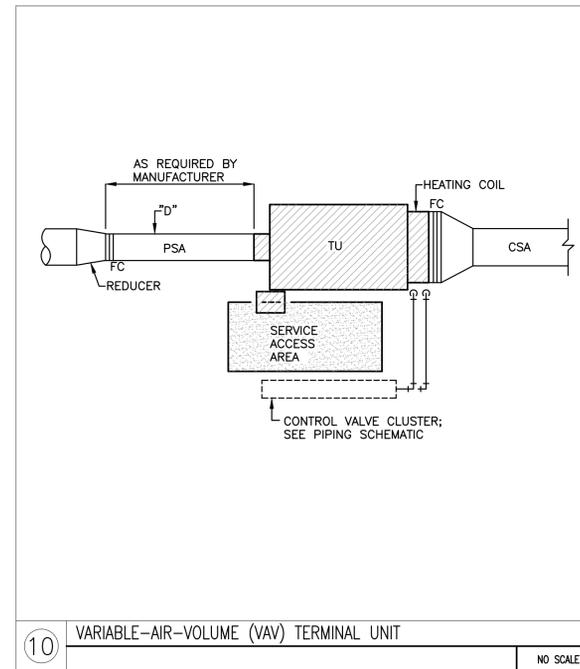
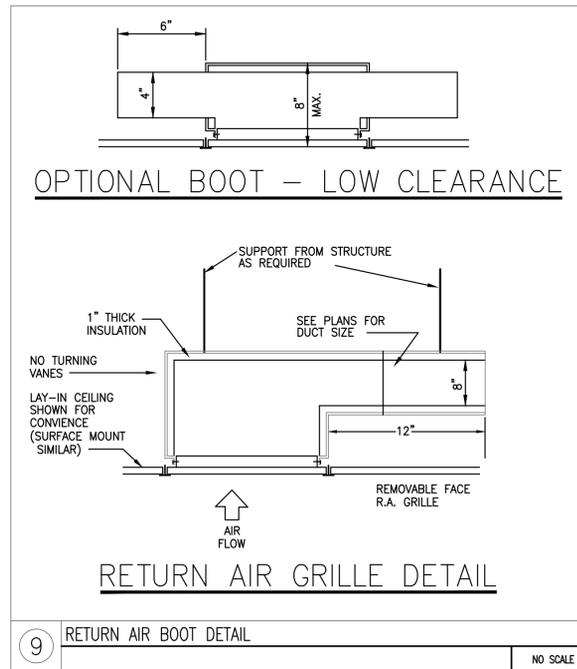
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01 September 2015
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ENERGY MANAGEMENT AND CONTROL SYSTEM (EMCS) NOTES:

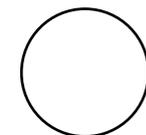
- EXISTING FACILITY EMCS IS TRANE TRACER SUMMIT. ALL EMCS WORK PERFORMED AS PART OF THE PROJECT SHALL BE FULLY INTEGRATED INTO THE EXISTING EMCS.
- UPDATE EXISTING EMCS SYSTEM AND EMCS OPERATOR WORKSTATION (OWS) INCLUDING BUT NOT LIMITED TO GRAPHICS, FLOOR PLANS, SCHEDULES, AREAS, ETC. REQUIRED FOR ALL EMCS WORK TO BE FULLY INTEGRATED AND FUNCTIONAL FROM THE EXISTING OWS.

VARIABLE AIR VOLUME TERMINAL UNIT SCHEDULE

TAG	MANUFACTURER AND MODEL NO	INLET SIZE	DESIGN CFM			MIN OA CFM		TOTAL ΔP	NC	CO2 CONTROL	HEATING COIL							VOLT-Ø	REMARKS	TAG	
			COOL	MIN	HEAT	AREA	OCC				ROWS	CFM	EAT	LAT	GPM	EWT	LWT				MBH
VAV-1	TRANE VCWE	08	460	140	280	---	---	0.5	---	NO	2	280	55	100.0	1.1	160	135.1	13.7	120-1	SINGLE DUCT WITH HEATING COIL, FLOW RING, 24 VAC CONTROL TRANSFORMER	VAV-1
VAV-2	TRANE VCWE	06	150	90	110	---	---	0.5	---	NO	1	110	55	100.0	0.66	160	143.7	5.4	120-1	SINGLE DUCT WITH HEATING COIL, FLOW RING, 24 VAC CONTROL TRANSFORMER	VAV-2
EXST VAV	EXISTING UNIT	06	150	40	75	---	---	---	---	---	---	75	---	---	---	---	---	---	---	EXISTING TERMINAL UNIT.	EXST VAV

AIR DISTRIBUTION DEVICE SCHEDULE

TAG	BASIS OF DESIGN	DESCRIPTION	FACE SIZE	MOUNT	FINISH	PATTERN	REMARKS	TAG
SPD	PRICE SPD	SQUARE PLAQUE DIFFUSER	24x24	LAY-IN	WHITE	4-WAY		SPD
CRG	PRICE 80	EGGCRATE GRILLE RETURN	12x24	LAY-IN	WHITE	---		CRG
EPD	EXISTING CEILING DIFFUSER	SQUARE PLAQUE DIFFUSER	24x24	LAY-IN	WHITE	4-WAY	EXISTING/RELOCATED DIFFUSER. RE-BALANCE TO CFM SHOWN ON PLANS.	CRG



1.1 GENERAL

- A. PROVIDE ALL EQUIPMENT SHOWN OR SCHEDULED ON THE DRAWINGS OR SPECIFIED HEREIN, INCLUDING ALL LABOR, MATERIALS AND INCIDENTALS NECESSARY AND REQUIRED FOR COMPLETE HVAC SYSTEMS.
- B. GENERAL CONDITIONS, SUPPLEMENTARY GENERAL CONDITIONS, GENERAL REQUIREMENTS, INFORMATION TO BIDDERS AND OTHER PERTINENT DOCUMENTS ISSUED BY THE ARCHITECT ARE A PART OF THESE SPECIFICATIONS AND SHALL BE COMPLIED WITH IN EVERY RESPECT.

1.2 SCOPE OF WORK

- A. HEATING, VENTILATING, AND AIR CONDITIONING (HVAC) SYSTEMS
 - 1. VARIABLE AIR VOLUME TERMINAL UNITS
 - 2. AIR DISTRIBUTION
 - 3. CONTROLS
- B. PIPING INSTALLATIONS
 - 1. HEATING WATER
- C. MISCELLANEOUS
 - 1. PAYMENT OF ALL FEES AND PERMITS REQUIRED.
 - 2. SUPPORTS FOR PIPING, DUCTWORK, FIXTURES, AND EQUIPMENT.
 - 3. CUTTING AS REQUIRED FOR WORK.
 - 4. INSULATION FOR PIPING AND AIR DISTRIBUTION SYSTEMS.
 - 5. PRESSURE TESTING OF PIPING AND AIR DISTRIBUTION SYSTEMS.
- D. RELATED WORK DESCRIBED ELSEWHERE
 - 1. PATCHING OF CUT SURFACES BY GENERAL CONTRACTOR.
 - 2. FURRING AND CHASES BY GENERAL CONTRACTOR.
 - 3. PAINTING BY GENERAL CONTRACTOR.
 - 4. POWER WIRING BY ELECTRICAL CONTRACTOR.

2.1 CODES, STANDARDS, PERMITS AND INSPECTIONS

- A. COMPLY WITH LOCAL AND STATE LAWS, CODES AND ORDINANCES RELATIVE TO THE WORK.
 - 1. ELECTRICAL EQUIPMENT AND WIRING: NFPA 70-2008
 - 2. DUCTWORK: SMACNA, NFPA 90A
 - 3. MECHANICAL SYSTEMS: INTERNATIONAL MECHANICAL CODE, CURRENT ADOPTED EDITION
 - 4. AIR CONDITIONING EQUIPMENT: U.L.; ARI CERTIFIED RATING
 - 5. FIRE SPRINKLER SYSTEMS: NFPA 13, CURRENT ADOPTED EDITION

2.2 SUBMITTALS

- A. PROVIDE SUBMITTAL FOR THE FOLLOWING IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
 - 1. PIPE AND FITTINGS FOR EACH SERVICE
 - 2. VALVES
 - 3. PIPE FIXTURE, AND DUCTWORK SUPPORTS
 - 4. THERMAL INSULATION AND ACCESSORIES
 - 5. VARIABLE AIR VOLUME TERMINAL UNITS
 - 6. AIR DISTRIBUTION SYSTEM DEVICES.
 - 7. PIPING, VALVE, DUCTWORK, AND EQUIPMENT IDENTIFICATION MATERIALS AND DEVICES.
 - 8. TEMPERATURE CONTROL SYSTEM(S) MATERIAL, EQUIPMENT AND DEVICES.
- B. CERTIFIED TEST REPORTS
 - 1. TEST AND BALANCE REPORT (UPON PROJECT COMPLETION, BUT PRIOR TO FINAL INSPECTION).

2.3 MINOR DEVIATIONS

- A. DRAWINGS ARE DIAGRAMMATIC AND SHOW, IN GENERAL, LOCATION OF PIPE, DUCTWORK, EQUIPMENT, ETC., AND SHALL NOT BE SCALED. CHECK AND VERIFY DIMENSIONS AND EXISTING CONDITIONS AS THE BUILDING IS UNDER CONSTRUCTION AND PERFORM ANY ADJUSTMENTS REQUIRED.
- B. PROVIDE ACCESS TO EQUIPMENT AND APPARATUS REQUIRING OPERATION, SERVICE OR MAINTENANCE WITHIN THE LIFE OF THE SYSTEM.

2.4 PROTECTION OF EQUIPMENT AND MATERIALS

- A. RESPONSIBILITY FOR CARE AND PROTECTION OF EQUIPMENT AND MATERIAL UNDER THIS DIVISION RESTS WITH THE CONTRACTOR UNTIL IT HAS BEEN TESTED AND ACCEPTED.

2.5 STARTING AND INSTRUCTIONS

- A. CONTRACTOR SHALL SUPERVISE THE STARTING, ADJUSTING AND TESTING OF ALL EQUIPMENT AND TRAINING OF THE OPERATOR(S) IN THE OPERATION OF THE SYSTEMS.

2.6 WARRANTY

- A. CONTRACTOR SHALL GUARANTEE ALL MATERIALS, EQUIPMENT AND WORKMANSHIP TO BE FREE FROM DEFECTS FOR A PERIOD OF ONE-YEAR FROM DATE OF SUBSTANTIAL COMPLETION (THIS INCLUDES REFRIGERANT REPLACEMENT).

2.7 PIPE HANGERS

- A. ADJUSTABLE STEEL CLEVIS HANGERS (MSS TYPE 1); HANGERS AND RODS TO BE GALVANIZED.
- B. COPPER PIPE SHALL BE ISOLATED FROM STEEL HANGERS, OR COPPER HANGERS SHALL BE USED.

2.8 PIPING IDENTIFICATION

- A. INSTALL MANUFACTURED PIPE MARKERS INDICATING SERVICE ON EACH PIPING SYSTEM. INSTALL WITH FLOW INDICATION ARROWS SHOWING DIRECTION OF FLOW.
 - 1. PIPES WITH OD, INCLUDING INSULATION, LESS THAN 6 INCHES (150 mm): PRETENTIONED PIPE MARKERS. USE SIZE TO ENSURE A TIGHT FIT.
- B. LOCATE PIPE MARKERS AND COLOR BANDS WHERE PIPING IS EXPOSED:
 - 1. NEAR EACH CONTROL DEVICE.
 - 2. NEAR EACH BRANCH CONNECTION. WHERE FLOW PATTERN IS NOT OBVIOUS, MARK EACH PIPE AT BRANCH.
 - 3. NEAR PENETRATIONS THROUGH WALLS, CEILINGS, AND NONACCESSIBLE ENCLOSURES.
 - 4. NEAR EQUIPMENT AND OTHER POINTS OF ORIGINATION AND TERMINATION.
 - 5. SPACED AT MAXIMUM INTERVALS OF 50 FEET ALONG EACH. REDUCE INTERVALS TO 25 FEET IN AREAS OF CONGESTED PIPING AND EQUIPMENT.

2.9 INSULATION

- A. HEATING WATER: PREMOLDED FIBERGLASS WITH FACTORY-APPLIED, ALL PURPOSE, VAPOR-RETARDANT JACKET. USE 1" THICK FOR HEATING WATER COVER FITTINGS WITH PRE-MOLDED FIBERGLASS FITTING INSULATION AND PVC FITTING COVERS.
- B. APPLICATION
 - 1. APPLY INSULATION TO STRAIGHT PIPES AND TUBES AS FOLLOWS:
 - a. SECURE EACH LAYER OF PREFORMED PIPE INSULATION TO PIPE WITH BANDS WITHOUT DEFORMING INSULATION MATERIALS.
 - b. FOR INSULATION WITH FACTORY-APPLIED JACKETS. SECURE LAPS WITH ALUMINUM BANDS AT 18 INCHES O.C.

2.9 INSULATION (CONTINUED)

- 2. APPLY INSULATION TO FITTINGS AND ELBOWS AS FOLLOWS:
 - a. APPLY PREMOLDED INSULATION SECTIONS OF THE SAME MATERIAL AS STRAIGHT SEGMENTS OF PIPE INSULATION WHEN AVAILABLE. SECURE ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
 - b. COVER FITTINGS WITH HEAVY PVC FITTING COVERS. OVERLAP PVC COVERS ON PIPE INSULATION JACKETS AT LEAST 1 INCH (25mm) AT EACH END. SECURE FITTING COVERS WITH MANUFACTURER'S ATTACHMENTS AND ACCESSORIES. SEAL SEAMS WITH TAPE AND VAPOR-RETARDER MASTIC.
- 3. APPLY INSULATION TO VALVES AND SPECIALTIES AS FOLLOWS:
 - a. APPLY PREMOLDED INSULATION SECTIONS OF THE SAME MATERIAL AS STRAIGHT SEGMENTS OF PIPE INSULATION WHEN AVAILABLE. SECURE ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
 - b. USE PREFORMED HEAVY PVC FITTING COVERS FOR VALVE SIZES WHERE AVAILABLE. SECURE FITTING COVERS WITH MANUFACTURER'S ATTACHMENTS AND ACCESSORIES. SEAL SEAMS WITH TAPE AND VAPOR-RETARDER MASTIC.
- 4. DUCT INSULATION
 - a. DUCT INSULATION TYPE AND THICKNESS
 - 1) 2 INCH THICK DUCT WRAP WITH VAPOR BARRIER. ASTM C553 AND C612, FLEXIBLE NONCOMBUSTIBLE FIBERGLASS BLANKET.
 - 2) 'K' (KSI) VALUE: ASTM C518, 0.24 AT 75 DEGREES F
 - 3) MAXIMUM SERVICE TEMPERATURE: 350 DEGREES F
 - 4) MAXIMUM MOISTURE ABSORPTION: 0.20 % BY VOLUME
 - b. DUCT WRAP VAPOR BARRIER JACKET - FACTORY INSTALLED (FSK)
 - 1) KRAFT PAPER REINFORCED WITH GLASS FIBER YARN AND BONDED TO ALUMINIZED FILM
 - 2) MOISTURE VAPOR TRANSMISSION: ASTM E96 PROCEDURE E, 0.02 PERM
 - 3) SECURE WITH PRESSURE SENSITIVE TAPE
 - c. DUCT INSULATION INSTALLATION
 - 1) ENSURE THAT INSULATION IS CONTINUOUS THROUGH ALL WALLS.
 - 2) FINISH INSULATION NEATLY AT HANGERS, SUPPORTS, AND OTHER PROTRUSIONS
 - 3) LOCATE INSULATION JOINTS OR COVER SEAMS IN LEAST VISIBLE LOCATIONS
 - 4) PREPARATION
 - a) DO NOT INSTALL COVERING BEFORE DUCTWORK AND EQUIPMENT HAS BEEN REVIEWED
 - b) ENSURE SURFACE IS CLEAN AND DRY PRIOR TO INSTALLATION
 - c) ENSURE INSULATION IS DRY BEFORE AND DURING APPLICATION
 - 5) MECHANICAL FASTENERS
 - a) ADHERED ANCHORS
 - b) CLIP OFF PIN PENETRATIONS FLUSH WITH INSULATION SURFACE OR FACING
 - c) SEAL PINS AND WASHERS WHERE PINS PENETRATE VAPOR BARRIERS
 - (1) WITH 4 INCH SQUARE PIECES OF VAPOR BARRIER MATERIAL TO MATCH FACING
 - (2) ADHERE WITH VAPORSEAL ADHESIVE
 - d) SPACING ON RECTANGULAR DUCTS
 - (1) TYPICAL OF HORIZONTAL AND VERTICAL UNLESS OTHERWISE SPECIFIED
 - 6) RECTANGULAR DUCT WRAP WITH VAPOR BARRIER
 - a) VAPOR BARRIER AND SEALING CONTINUOUS WITHOUT BREAKS. VAPOR PROOF SEAL AROUND SUPPORTS AND BRACING
 - b) 2 INCHES LAP STRIP AT ONE END
 - c) PEEL INSULATION FOR 2 INCH LAP STRIP ALONG LONGITUDINAL JOINTS
 - d) SEAL LAP STRIPS WITH VAPORSEAL ADHESIVE, FOSTER'S 85-60 OR EQUAL

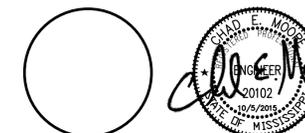
2.10 VALVES

- A. VALVES FOR HEATING WATER SERVICE SHALL BE TWO-PIECE, COPPER ALLOY VALVES WITH FULL-PORT, CHROME-PLATED BRONZE BALL; PTFE OR TFE SEATS; 600 PSIG MINIMUM CWP RATING. NIBCO, CONBRACO, GRINNEL OR EQUAL.
- B. VALVES TO HAVE LEVER HANDLES AND EXTENDED STEMS.
- C. CONTROL VALVES FOR HEATING COILS: 2-WAY VALVE WITH DDC CONTROLLER.

2.11 PIPING

- A. HEATING WATER PIPING:
 - 1. ABOVE GROUND APPLICATIONS: HARD DRAWN TYPE L COPPER; SOLDER-JOINT FITTINGS; AND SOLDERED JOINTS.
 - 2. SOLDER: ASTM B 32, LEAD-FREE, 95-5 SOLDER
 - 3. CORROSION PROTECTION: WRAP ALL UNDERGROUND PIPE AND FITTINGS WITH PE FILM.
 - 4. INSTALL PIPING WITH 0.25% SLOPE TOWARD DRAIN; DRAIN VALVE SHALL BE A BALL VALVE WITH HOSE CONNECTION.
- B. TESTING:
 - 1. HEATING WATER PIPING - TEST AT 150 PSI; FOR 24 HOURS WITH NO LOSS IN PRESSURE PERMITTED. (NOTE: TESTS TO BE CONDUCTED BEFORE ANY EQUIPMENT HAS BEEN CONNECTED AND BEFORE ANY INSULATION IS INSTALLED.)

15-03



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(Jackson, Mississippi)
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2.13 VAV TERMINAL UNITS

- A. MANUFACTURER TO BE TRANE, PRICE, TITUS, OR JOHNSON CONTROLS.

2.14 MISCELLANEOUS PIPING INSTALLATION:

- A. EXAMINE ROUGHING-IN FOR HEATING WATER SUPPLY PIPING SYSTEMS. VERIFY THAT LOCATIONS AND SIZES OF PIPING AND LOCATIONS AND TYPES OF SUPPORTS MATCH THOSE INDICATED, BEFORE INSTALLING AND CONNECTING EQUIPMENT. USE MANUFACTURER'S ROUGHING-IN DATA.
- B. DO NOT PROCEED UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

2.15 AIR DISTRIBUTION DEVICES

- A. SEE SCHEDULE ON DRAWING

2.16 CONTROL WIRING

- A. CONTROL WIRING TO BE NO. 18 AWG COPPER CONDUCTORS WITH THW PLASTIC COVERING.
- B. LINE VOLTAGE WIRING TO BE SUITABLE FOR 600 VOLTS, 168°F TEMPERATURE WITH TYPE THW COVERING; MINIMUM SIZE 18 AWG.
- C. ALL CONTROL AND LINE VOLTAGE WIRING SHALL BE INSTALLED IN EMT CONDUIT. MATERIALS AND METHODS SHALL BE IN ACCORDANCE WITH THE ELECTRICAL DIVISION OF THESE SPECIFICATIONS.

2.17 DUCTWORK

A. MATERIALS

1. GALVANIZED, SHEET STEEL: LOCK-FORMING QUALITY; ASTM A 653/A 653M, G90 (Z275) COATING DESIGNATION; MILL-PHOSPHATIZED FINISH FOR SURFACES OF DUCTS EXPOSED TO VIEW.
- B. DUCT LINER
1. GENERAL: COMPLY WITH NFPA 90A OR NFPA 90B AND NAIMA'S "FIBROUS GLASS DUCT LINER STANDARD," SURFACES OF DUCTS EXPOSED TO VIEW.
2. MATERIALS: ASTM C 1071 WITH SURFACE EXPOSED TO AIRSTREAM COATED WITH ACRYLIC OR COMPOSITE COATING TREATED WITH EPA REGISTERED ANTI-MICROBIAL AGENT TO RESIST MICROBIAL GROWTH AS DETERMINED BY ASTM G 21 AND G22 TO PREVENT EROSION OF GLASS FIBERS; LINER TO BE "TOUGH GUARD" MANUFACTURED BY CERTAINTED, KNAUF, OR EQUAL.
- a. THICKNESS: 1 INCH.
- b. THERMAL CONDUCTIVITY (K-VALUE): 0.26 AT 75 DEG F MEAN TEMPERATURE.
- c. FIRE-HAZARD CLASSIFICATION: MAXIMUM FLAME-SPREAD RATING OF 25 AND SMOKE-DEVELOPED RATING OF 50, WHEN TESTED ACCORDING TO ASTM C 411.
- d. LINER ADHESIVE: COMPLY WITH NFPA 90A OR NFPA 90B AND ASTM C 916.
- e. MECHANICAL FASTENERS: GALVANIZED STEEL, SUITABLE FOR ADHESIVE ATTACHMENT, MECHANICAL ATTACHMENT, OR WELDING ATTACHMENT TO DUCT WITHOUT DAMAGING LINER WHEN APPLIED AS RECOMMENDED BY MANUFACTURER AND WITHOUT CAUSING LEAKAGE IN DUCT.

C. RECTANGULAR DUCT FABRICATION

1. GENERAL: FABRICATE DUCTS, ELBOWS, TRANSITIONS, OFFSETS, BRANCH CONNECTIONS, AND OTHER CONSTRUCTION WITH GALVANIZED, SHEET STEEL, ACCORDING TO SMACNA "HVAC DUCT CONSTRUCTION STANDARDS--METAL AND FLEXIBLE," COMPLY WITH REQUIREMENTS FOR METAL THICKNESS, REINFORCING TYPES AND INTERVALS, TIE-ROD APPLICATIONS, AND JOINTS TYPES AND INTERVALS.

D. DUCT SEALANT

1. JOINT AND SEAM SEALANT: ONE-PART, NONSAG, SOLVENT-RELEASE-CURING, POLYMERIZED BUTYL SEALANT, FORMULATED WITH A MINIMUM OF 75 PERCENT SOLIDS.

2.18 DUCT ACCESSORIES

A. VOLUME DAMPERS

1. GENERAL DESCRIPTION: FACTORY FABRICATED, WITH REQUIRED HARDWARE AND ACCESSORIES. STIFFEN DAMPER BLADES FOR STABILITY. INCLUDE LOCKING DEVICE TO HOLD SINGLE-BLADE DAMPERS IN A FIXED POSITION WITHOUT VIBRATION. CLOSE DUCT PENETRATIONS FOR DAMPER COMPONENTS TO SEAL DUCT CONSISTENT WITH PRESSURE CLASS.
2. STANDARD VOLUME DAMPERS: SINGLE-BLADE, FOR DUCTS UP TO 10x6, MULTIPLE OPPOSED-BLADE TYPE FOR LARGER SIZES, STANDARD LEAKAGE RATING, AND SUITABLE FOR HORIZONTAL OR VERTICAL APPLICATIONS.
- a. STEEL FRAMES: HAT-SHAPED, GALVANIZED SHEET STEEL CHANNELS, MINIMUM OF 0.064 INCH THICK, WITH MITERED AND WELDED CORNERS; FRAMES WITH FLANGES WHERE INDICATED FOR ATTACHING TO WALLS AND FLANGELESS FRAMES WHERE INDICATED FOR INSTALLING IN DUCTS.
- b. ROLL-FORMED STEEL BLADES: 0.064-INCH THICK GALVANIZED SHEET STEEL.
- c. BLADE AXLES: GALVANIZED STEEL, WITH 1-1/2" STAND-OFF BRACKET FOR EXTERNAL INSULATION.
- d. BEARINGS: MOLDED SYNTHETIC.
- e. TIE BARS AND BRACKETS: GALVANIZED STEEL.
- f. GREENHECK MBD-15, OR EQUAL.
3. DAMPER HARDWARE: ZINC-PLATED, DIE-CAST CORE WITH DIAL AND HANDLE MADE OF 3/32-INCH THICK ZINC-PLATED STEEL, AND 3/4-INCH HEXAGON LOCKING NUT. INCLUDE CENTER HOLE TO SUIT DAMPER OPERATING-ROD SIZE. INCLUDE ELEVATED PLATFORM FOR INSULATED DUCT MOUNTING.

B. TURNING VANES

1. FABRICATE TO COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS--METAL AND FLEXIBLE" FOR VANES AND VANE RUNNERS. VANE RUNNERS SHALL AUTOMATICALLY ALIGN VANES.

C. DUCT-MOUNTED ACCESS DOORS

1. GENERAL DESCRIPTION: FABRICATE DOORS AIRTIGHT AND SUITABLE FOR DUCT PRESSURE CLASS.
2. DOOR: SINGLE WALL, DUCT MOUNTING, AND RECTANGULAR; FABRICATED OF GALVANIZED SHEET METAL WITH THICKNESS AS INDICATED FOR DUCT PRESSURE CLASS. INCLUDE 1-BY-1-INCH BUTT OR PIANO HINGE AND CAM LATCHES.
3. SEAL AROUND FRAME ATTACHMENT TO DUCT AND DOOR TO FRAME WITH NEOPRENE OR FOAM RUBBER.

D. FLEXIBLE CONNECTORS

1. GENERAL DESCRIPTION: FLAME-RETARDANT OR NONCOMBUSTIBLE FABRICS, COATINGS, AND ADHESIVES COMPLYING WITH UL 181, CLASS 1.
2. METAL-EDGED CONNECTORS: FACTORY FABRICATED WITH A FABRIC STRIP 5-3/4 INCHES (146mm) WIDE ATTACHED TO TWO STRIPS OF 2-3/4-INCH (70mm) WIDE, 0.028-INCH (0.7mm) THICK, GALVANIZED SHEET STEEL OR 0.032-INCH (0.8mm) THICK ALUMINUM SHEETS. SELECT METAL COMPATIBLE WITH DUCTS.
3. INDOOR SYSTEM, FLEXIBLE CONNECTOR FABRIC: GLASS FABRIC DOUBLE COATED WITH NEOPRENE.
- a. MINIMUM WEIGHT: 26 oz./SQ. YD. (880 G/SQ. M).
- b. TENSILE STRENGTH: 480 lbf/INCH (84 N/mm) IN THE WARP AND 360 lbf/INCH (63 N/mm) IN THE FILLING.
- c. SERVICE TEMPERATURE: MINUS 40 TO PLUS 200 DEG F (MINUS 40 TO PLUS 93 DEG C).

E. FLEXIBLE DUCTS

A. AVAILABLE MANUFACTURERS:

1. DUCTMATE INDUSTRIES, INC.
2. FLEXMASTER U.S.A., INC.

B. INSULATED-DUCT CONNECTORS: UL 181, CLASS 1, ALUMINUM LAMINATE AND POLYESTER FILM WITH LATEX ADHESIVE SUPPORTED BY HELICALLY WOUND, SPRING-STEEL WIRE, FIBROUS-GLASS INSULATION; ALUMINIZED VAPOR BARRIER FILM.

1. PRESSURE RATING: 10-INCH WG (2500 Pa) POSITIVE AND 1.0-INCH WG (250 Pa) NEGATIVE.
2. MAXIMUM AIR VELOCITY: 4000 FPM (20.3 M/S).
3. TEMPERATURE RANGE: MINUS 20 TO PLUS 210 DEG F (MINUS 28 TO PLUS 99 DEG C).
4. MAXIMUM LENGTH OF FLEX DUCT RUNOUTS NOT TO EXCEED 6 FEET IN LENGTH.

2.18 DUCT ACCESSORIES (CONT'D)

F. FIRE DAMPERS

A. MANUFACTURERS TO BE RUSKIN OR GREENHECK

1. RECTANGULAR TYPE UP TO 1000 FPM: RUSKIN DIBD2 OR DIBD10 STYLE A
2. RECTANGULAR TYPE 1000 FPM AND HIGHER: RUSKIN DIBD2 OR DIBD10 STYLE B
3. CIRCULAR AND OVAL TYPE: RUSKIN DIBD2 STYLE CR AND CO, OR DIBD10 STYLE R AND LO

B. INSTALL PER MANUFACTURER'S RECOMMENDATIONS

G. APPLICATION AND INSTALLATION

1. INSTALL DUCT ACCESSORIES ACCORDING TO APPLICABLE DETAILS IN SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS--METAL AND FLEXIBLE" FOR METAL DUCTS.
2. PROVIDE TEST HOLES AT FAN INLETS AND OUTLETS AND ELSEWHERE AS INDICATED.
3. INTALL DUCT ACCESS DOORS TO ALLOW FOR INSPECTING, ADJUSTING, AND MAINTAINING ACCESSORIES AND TERMINAL UNITS AS FOLLOWS:
- a. DOWNSTREAM FROM VOLUME DAMPERS, TURNING VANES, AND EQUIPMENT.
4. INSTALL FLEXIBLE CONNECTORS IMMEDIATELY ADJACENT TO EQUIPMENT IN DUCTS ASSOCIATED WITH FANS AND MOTORIZED EQUIPMENT SUPPORTED BY VIBRATION ISOLATORS.

2.19 TESTING, ADJUSTING AND BALANCING

A. GENERAL

1. CLEAN PIPING, EQUIPMENT SPECIALTIES, BEFORE TESTING. DO NOT COVER OR PAINT ANY PART OF PIPING OR CONNECT FIXTURES OR EQUIPMENT BEFORE TESTING AND OBTAINING APPROVAL.
2. NOTICE OF TESTS: GIVE WRITTEN NOTICE IN AMPLE TIME TO ALL CONCERNED OF DATE WHEN TESTS WILL BE CONDUCTED.
3. TESTS: CONDUCT TESTS AS SPECIFIED FOR EACH SYSTEM OR EQUIPMENT UNIT IN THE PRESENCE OF AN ACCREDITED REPRESENTATIVE OF THE ARCHITECT, AS WELL AS WELL AS REPRESENTATIVES OF AGENCIES HAVING JURISDICTION.
4. COSTS: FURNISH LABOR, MATERIAL AND INSTRUMENTS AND BEAR OTHER COSTS IN CONNECTION WITH ALL TESTS. THE CONTRACTOR SHALL FURNISH ALL EQUIPMENT, MATERIALS, ELECTRICITY, FUEL AND WATER REQUIRED FOR TESTING. INSTALLED INSTRUMENTS MAY BE USED FOR TESTS IF CALIBRATED AND APPROVED FOR THE PURPOSE.

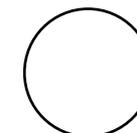
B. PERFORMANCE TESTS OF HVAC SYSTEMS

1. EACH AND EVERY PHASE OF THE HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS SHALL BE OPERATED FOR A SUFFICIENT PERIOD OF TIME TO DEMONSTRATE TO THE ENTIRE SATISFACTION OF THE OWNER, THE ABILITY OF THE SYSTEMS TO MAINTAIN DESIGN CONDITIONS.
2. THE CONTRACTOR SHALL PROCURE THE SERVICES OF AN INDEPENDANT AGENCY, APPROVED BY THE ARCHITECT, WHICH SPECIALIZES IN THE TESTING AND BALANCING FOR AIR DISTRIBUTION SYSTEMS. THE AGENCY SHALL BE FULLY CERTIFIED BY THE NATIONAL ENVIRONMENTAL BALANCING BUREAU OR THE ASSOCIATED AIR BALANCE COUNCIL. THE ARCHITECT WILL NOT MAKE FINAL INSPECTION UNTIL FOUR COPIES OF THE BALANCING AND TESTING RECORDS SPECIFIED BELOW HAVE BEEN SUBMITTED FOR EVALUATION AND APPROVAL. THE BALANCING AGENCY SHALL PERFORM THE FOLLOWING TESTS AND COMPILE THE FOLLOWING INFORMATION:

a. AIR SYSTEMS AND AIR DISTRIBUTION BALANCE: AIR HANDLING EQUIPMENT FOR SUPPLY, RETURN AND EXHAUST SYSTEMS.

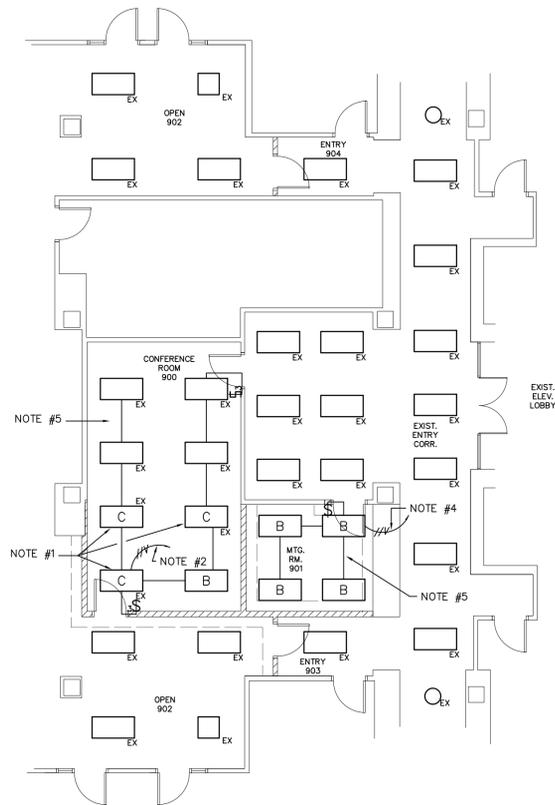
- | 1. DESIGN CONDITIONS: | 2. INSTALLED EQUIPMENT: | 3. FIELD TESTS: |
|--|--|--|
| CFM
STATIC PRESSURE
MOTOR HORSEPOWER
MINIMUM PERCENT OF FRESH AIR
FAN RPM
FAN MOTOR BRAKE HORSEPOWER | MANUFACTURER
SIZE
ARRANGEMENTS, DISCHARGE CLASS
MOTOR HORSEPOWER, VOLT, PHASE,
CYCLE AND FULL LOAD AMPS
STARTER HEATER AMP RATINGS | FAN SPEED
FAN MOTOR OPERATING AMPERES
PHASE(1)_(2)_(3)
FAN MOTOR OPERATION BRAKE HORSEPOWER
FIELD VOLTS 1-2___2-3___1-3___
STATIC PRESSURE AT OUTLET
TOTAL PRESSURE AT INLET |
| 4. VELOCITY TEST FOR TOTAL AIR:
DISCHARGE OR SUCTION DUCT SIZE
NUMBER OF VELOCITY READINGS
DUCT AVERAGE VELOCITY
TOTAL CFM | 5. INDIVIDUAL OUTLETS (GRILLES, REGISTERS, AND DIFFUSERS) INCLUDING SUPPLY, RETURN AND EXHUST:
EACH OUTLET SHALL BE IDENTIFIED AS TO LOCATION AND AREA
OUTLET MANUFACTURER AND TYPE
OUTLET SIZE
OUTLET FREE AREA, CORE AREA OR NECK AREA
OUTLET FACTOR
REQUIRED CFM AND TEST RESULTS, EACH OUTLET
ALL OUTLETS SHALL BE SET FOR AIR PATTERN
ALL MAIN SUPPLY AIR, RETURN AIR, AND EXHAUST AIR SHALL BE ADJUSTED AND SET FOR DESIGN CFM | |
3. BALANCE ALL SUPPLY AIR, RETURN AIR, OUTSIDE AIR AND EXHAUST AIR DISTRIBUTION DEVICES TO WITHIN 10% OF SPECIFIED CFM.

15-03



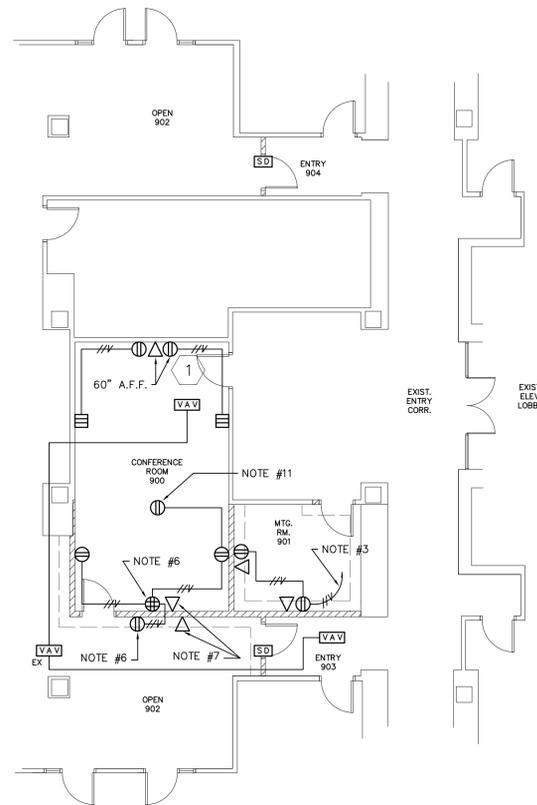
01 September 2015
Woolfolk Building Ninth Floor Renovations
Department of Finance & Administration Capitol Facilities
(Jackson, Mississippi)
GS# 350-025
BURRIS/WAGNON ARCHITECTS, P.A.
500L EAST WOODROW WILSON AVENUE JACKSON MS 39216 PH 6019697543 FAX 6019699374

M6



LIGHTING
PARTIAL FLOOR PLAN -
9TH FLOOR - AREA 1

SCALE: 1/8" = 1'-0"



POWER AND COMMUNICATIONS
PARTIAL FLOOR PLAN -
9TH FLOOR - AREA 1

SCALE: 1/8" = 1'-0"

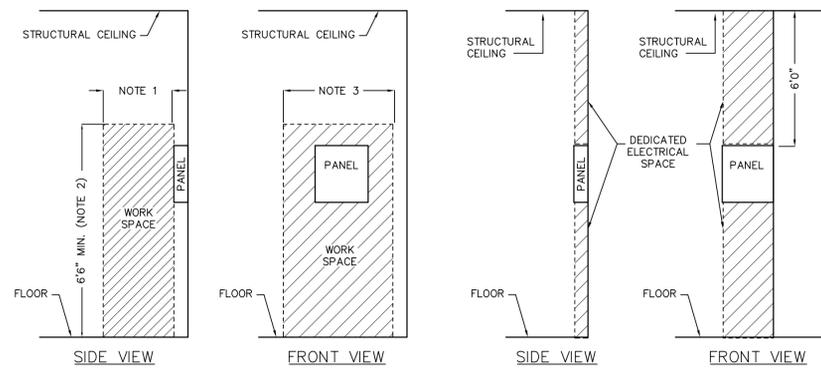
DEMOLITION NOTE:
 WHERE SPECIFICALLY DEFINED BY NOTE OR SHOWN TO BE AN AREA TO BE DEMOLISHED, DISCONNECT AND REMOVE ALL EXISTING LIGHTING FIXTURES, ELECTRICAL EQUIPMENT, RECEPTACLES, EXPOSED CONDUIT, SURFACE DEVICE BOXES, PLATES, ETC. REMOVE ALL WIRE FROM EXISTING CONDUIT, CUT BACK, CAP AND ABANDON ALL CONCEALED CONDUITS. MAINTAIN AND RESTORE, IF INTERRUPTED, ALL BRANCH CIRCUITS AND FEEDERS PASSING THROUGH RENOVATED AREAS AND SERVING UNDISTURBED AREAS. EXISTING STRAIGHT LENGTHS OF CONDUIT FOUND TO BE REUSABLE MAY BE USED. ALL OTHER DEMOLISHED MATERIALS SHALL BE REMOVED FROM THE JOB SITE SUBJECT TO THE DEMOLITION DIRECTIVE ISSUED BY THE ARCHITECT. CONSULT WITH THE ARCHITECT PRIOR TO ANY DEMOLITION CONCERNING THE IMPLEMENTATION OF THIS NOTE.

NOTES:

1. DISCONNECT AND RE-INSTALL THREE (3) 2' X 4' LIGHT FIXTURES IN THIS AREA, AS SHOWN.
2. CONNECT TO EXISTING LIGHTING CIRCUIT AND CONFIGURE/CONNECT LIGHTS FOR 3-WAY SWITCHING AS SHOWN.
3. CONNECT TO NEAREST ADEQUATE 120 VOLT RECEPTACLE CIRCUIT IN AREA.
4. CONNECT TO NEAREST ADEQUATE 120/277 VOLT LIGHTING CIRCUIT IN AREA.
5. CLEAN AND RELAMP ALL EXISTING FIXTURES IN THIS ROOM.
6. EXTEND CIRCUITS FROM EXISTING DEMOLISHED OUTLETS PER THE ARCHITECTURAL PLANS.
7. EXTEND CABLING FROM EXISTING DEMOLISHED COMMUNICATION OUTLETS PER THE ARCHITECTURAL PLANS.
8. NOT USED.
9. NOT USED.
10. NOT USED.
11. MOUNT OUTLET IN CEILING FOR PROJECTOR. VERIFY LOCATION PRIOR TO ROUGH-IN.



05 October 2015
 Woolfolk Building Ninth Floor Renovations
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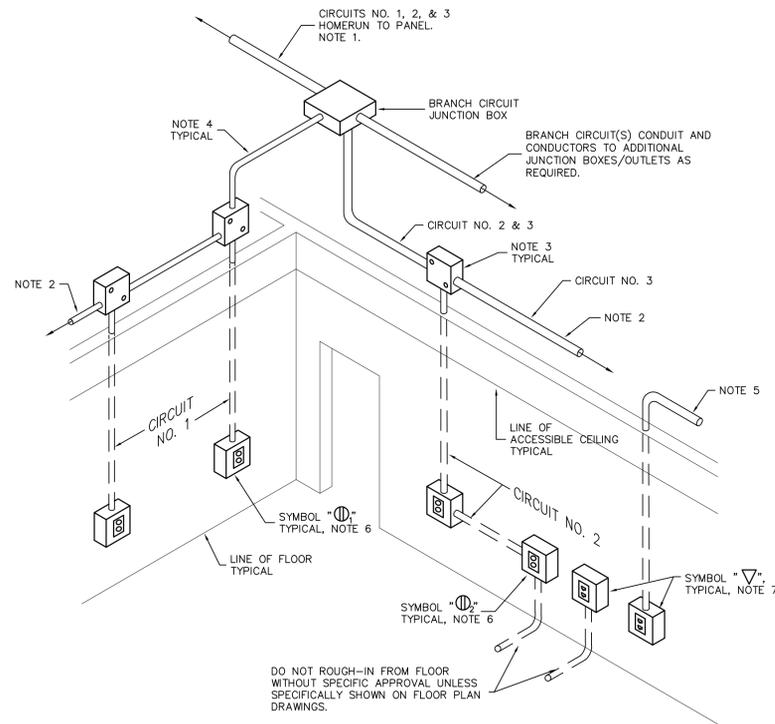


WORKING SPACE - NEC SECTION 110-26
NO SCALE

- NOTES:
- SEE NEC TABLE 110.26(A)(1), 36" MINIMUM.
 - 6'6" MINIMUM OR HEIGHT OF GEAR - WHICHEVER IS GREATER.
 - 30" OR WIDTH OF GEAR, WHICHEVER IS GREATER.

DEDICATED ELECTRICAL SPACE OVER AND UNDER PANELBOARD - NEC SECTION 110-26 (f)(1)
NO SCALE

- NOTES:
- ALL PANEL DOORS MUST OPEN MINIMUM 90°.
 - NO PIPING, DUCTS, LEAK PROTECTION APPARATUS OR OTHER EQUIPMENT FOREIGN TO THE ELECTRICAL INSTALLATION SHALL BE INSTALLED IN THE WORK SPACE OR DEDICATED ELECTRICAL SPACE.



TYPICAL DEVICE BRANCH CIRCUIT CONNECTION DIAGRAM, COMMUNICATIONS CONDUIT DIAGRAM AND JUNCTION BOX LEGEND
NO SCALE

- NOTES:
- HOMERUN TO PANEL, 3/4" MINIMUM, SEE FLOOR PLAN DRAWINGS FOR CIRCUIT NUMBERS, LOCATIONS, AND NUMBER REQUIRED. CIRCUIT NUMBERS SHOWN ARE REPRESENTATIVE. BRANCH CIRCUIT JUNCTION BOX LOCATION SHOWN IS FOR BIDDING PURPOSES ONLY. ACTUAL LOCATION SHALL BE FIELD COORDINATED WITH OTHER TRADES AND LOCATED FOR CONVENIENT ACCESSIBILITY.
 - BRANCH CIRCUIT(S) CONDUIT AND CONDUCTORS TO ADDITIONAL JUNCTION BOXES/RECEPTACLES AS REQUIRED.
 - MOUNT JUNCTION BOXES TO OVERHEAD STRUCTURE OR PERMANENT WALL ABOVE ACCESSIBLE CEILING.
 - TYPICAL, ALL CONDUITS SHALL BE ROUTED CONCEALED UNLESS SPECIFICALLY NOTED AND/OR SHOWN BY SYMBOLS ON THE DRAWINGS OTHERWISE.
 - COMMUNICATIONS CONDUIT SHALL BE 3/4" MINIMUM, IT MAY EXTEND TO COMMUNICATIONS BACKBOARD, STUB ABOVE CEILING OR EXTEND TO CABLETRAY, SEE FLOOR PLANS AND/OR LEGEND FOR METHOD OF ROUTING. SEE FLOOR PLANS FOR LOCATIONS AND NUMBER REQUIRED. ACTUAL LOCATIONS SHALL BE FIELD COORDINATED WITH OTHER TRADES AND LOCATED FOR CONVENIENT ACCESSIBILITY.
 - APPLICABLE, BUT NOT LIMITED TO THE FOLLOWING SYMBOLS (WHERE THEY ARE PRESENT):
 - APPLICABLE, BUT NOT LIMITED TO THE FOLLOWING SYMBOLS (WHERE THEY ARE PRESENT):
- BRANCH CIRCUIT JUNCTION BOX LEGEND:**
- ☐ - BRANCH CIRCUIT JUNCTION BOX FOR 120 VOLT CIRCUITRY.
 - ☒ - BRANCH CIRCUIT JUNCTION BOX FOR 277 VOLT CIRCUITRY (IF PRESENT).
 - ☑ - BRANCH CIRCUIT JUNCTION BOX FOR 120 VOLT EMERGENCY CIRCUITRY (IF PRESENT).
 - ☒ - BRANCH CIRCUIT JUNCTION BOX FOR 277 VOLT EMERGENCY CIRCUITRY (IF PRESENT).

CIRCUITRY NOTE:

BRANCH CIRCUIT HOMERUNS ARE SHOWN TO IDENTIFY CIRCUITRY. CONDUITS AND/OR NUMBER OF CONDUCTORS ARE SHOWN FOR HOMERUNS AND/OR SPECIAL CIRCUITRY. CONDUITS ARE SHOWN FOR LIGHTING CIRCUITS TO CLARIFY SWITCHING. NORMAL BRANCH CIRCUIT CONDUCTORS TO BE DETERMINED AS FOLLOWS:

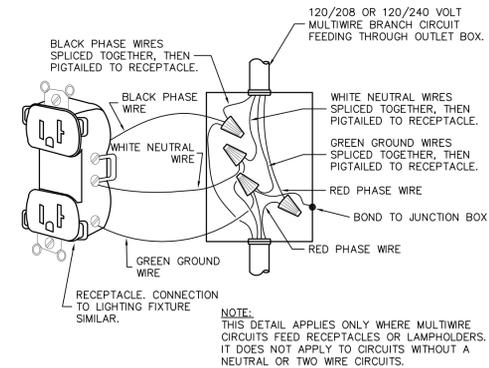
- ONE CONDUCTOR FOR EACH PHASE
- ONE CONDUCTOR FOR EACH NEUTRAL
- ONE CONDUCTOR FOR EACH SWITCHLEG
- ONE CONDUCTOR FOR EACH GROUND
- ONE CONDUCTOR FOR EACH BATTERY CHARGER ON APPLICABLE FIXTURES
- TWO CONDUCTORS FOR THREE- AND FOUR-WAY SWITCHING
- SEPARATE NEUTRAL FOR EACH GFI BREAKER CIRCUIT
- SEPARATE NEUTRAL FOR EACH CIRCUIT OR FIXTURE SERVED BY DIMMER.

ALL BRANCH CIRCUITS SHALL CONTAIN GROUND WIRE. ALL SHARED NEUTRAL CONDUCTORS SERVING RECEPTACLE BRANCH CIRCUIT SHALL BE MINIMUM #10 AWG.

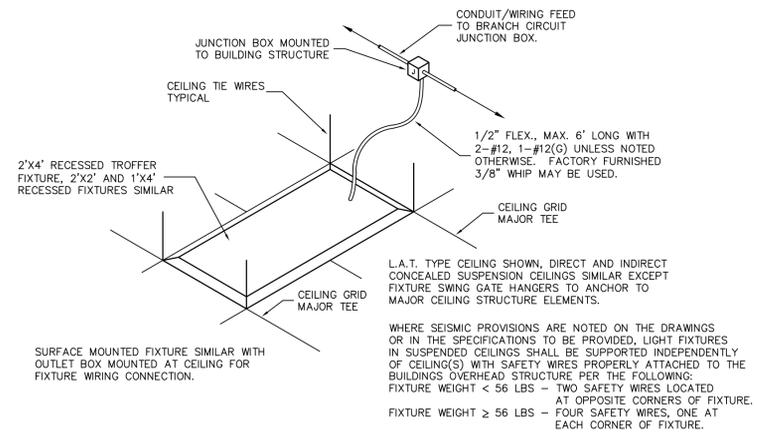
ALL CONDUITS SHALL BE ROUTED CONCEALED UNLESS SPECIFICALLY NOTED AND/OR SHOWN BY SYMBOLS ON THE DRAWINGS OTHERWISE.

BRANCH CIRCUIT(S) FOR EACH FIXTURE/DEVICE SHALL BE DETERMINED FROM CIRCUIT NUMBER AND PANEL DESIGNATION SHOWN AT EACH SYMBOL.

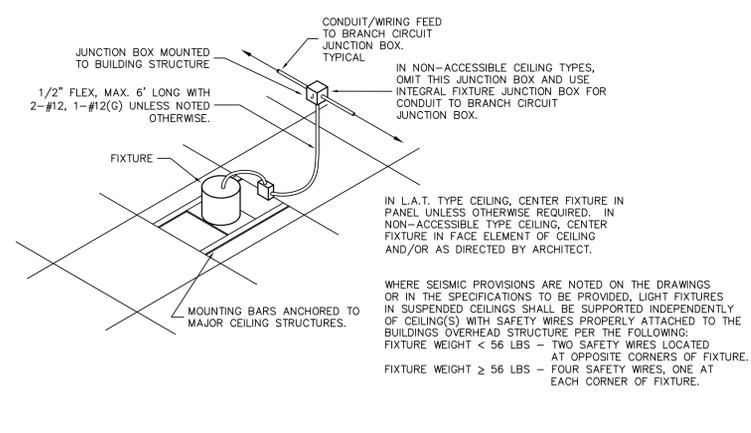
A	CIRCUIT NUMBER	CS	CIRCUIT NUMBER
B	PANEL DESIGNATION	CL	PANEL DESIGNATION
SEE PANEL SCHEDULE		SEE PANEL SCHEDULE	



TYPICAL BRANCH CIRCUIT WIRING
NO SCALE



FLUORESCENT TROFFER TYPICAL MOUNTING DETAIL
NO SCALE



FLUORESCENT/INCANDESCENT/HID DOWNLIGHT TYPICAL MOUNTING DETAIL
NO SCALE



DIVISION 16 INDEX

SECTION 16010 – BASIC ELECTRICAL REQUIREMENTS
 SECTION 16020 – CODES AND STANDARDS
 SECTION 16100 – BASIC MATERIALS AND METHODS
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 SECTION 16120 – WIRES AND CABLES
 SECTION 16135 – BOXES AND FITTINGS
 SECTION 16143 – WIRING DEVICES
 SECTION 16452 – GROUNDING
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 SECTION 16515 – INTERIOR LIGHTING FIXTURES
 SECTION 16610 – FIRE ALARM AND DETECTION SYSTEM

SECTION 16010 – BASIC ELECTRICAL REQUIREMENTS

16010.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this and other sections of Division 16.

16010.02 DESCRIPTION OF THE WORK

A. The work of this Section includes, but not limited to, the following (including all labor, materials, tools, equipment, etc. for a complete installation):
 1. Empty conduit and flush outlet boxes, termination board, pull-boxes, etc for the telephone system and the Data System as indicated on the plans.
 2. The rough-in and final electrical connections to equipment furnished in other Sections of the Project Manual and as indicated on the plans/site specific.
 3. Lighting Fixtures and Lamps as indicated on the Lighting Fixture Schedule.
 4. All requested Shop Drawings, Wiring Diagrams, Equipment Data Submittals in accordance with the requirements of the Project Manual and as the Local Code Reviewer may require.
 5. Provide all testing, cleaning, and adjustments of the electrical installation and related electrical components.
 6. Support devices and backing as required for a complete and working electrical installation.
 7. Rough-in and Final Connections of the Power Distribution panelboards, including circuit breakers.

END SECTION 16010

SECTION 16020 – CODES AND STANDARDS

16020.01 CODES

A. Strictly comply with the latest edition of the National Electrical Code (NEC), National Fire Protection Association (NFPA), International Building Code (IBC), National Electrical Safety Code (ANSI-C2) and all Federal, State and/or local codes. Notify Architect of any conflict between these codes and the drawings and/or specifications before bid date or correct conflicts at his own expense.

16020.02 STANDARDS

A. Familiarize himself, coordinate, and cooperate with all other trades in installation of his materials. Layout of Division 16 work shall be the responsibility of this Contractor and all conflicts with Division 16 work and other trades shall be resolved prior to installation.
 B. Use only new equipment/materials of current manufacturer which are listed by Underwriters' Laboratories when such listings are issued for the type of equipment/materials, approved by NEMA standards, National Electrical Code standards or other appropriate agency. Equipment/material shall be of current production from manufacturer's of long experience in the manufacturer of such type equipment/material and who are regularly engaged in the production of this type equipment/material.
 C. Equipment/materials shall have local service representation where applicable.
 D. Notify Architect prior to installation of conflicts between electrical and structural, architectural, mechanical, etc. work.
 E. Equipment/materials installed and connected in strict compliance with manufacturer's recommendations unless these requirements are exceeded as noted on the drawings or specified herein.
 F. Equipment/materials shall be installed and connected in a neat and workmanlike manner.
 G. Use experienced labor or employ appropriate Sub-Contractor to do all cutting and patching necessary for installation of his materials. Obtain permission from Architect and General Contractor before cutting any structural member.
 H. Not to scale electrical drawings. Follow architectural, equipment supplier shop drawings, and manufacturers shop and installation drawings for accuracy.

END SECTION 16020

SECTION 16100 – BASIC MATERIALS AND METHODS

16100.01 GENERAL

A. Equipment is specified by manufacturer's name and catalog number and is intended to establish the minimum standards of quality acceptable.
 B. Substitute equipment, equivalent in all respects to that specified, is permitted with the written approval of the Architect. Approval will not be considered until after award of contract and only if submitted by the Contractor.
 C. The manufacturers name first mentioned in this specification is considered to be the specified equipment. The "or equal" manufacturers mentioned or other manufacturers proposed by the Contractor shall be considered as substituted equipment.
 D. Substituted equipment shall meet the dimensional and functional requirements of the building as represented by the plans and specifications. All revisions to the contract precipitated by the use of substituted equipment shall be incorporated by the Contractor, after approval in writing by the Architect, at no additional cost to the Owner.
 E. Mounting Heights
 1. Mounting heights of various devices, outlets, safety switches, panelboards and the like shall reference the height above the finished floor or grade above which they are mounted. Heights specified shall reference the center of the device, box, breaker or switch operating handle.
 2. Mounting heights may be adjusted slightly to permit cutting of masonry block to the top or bottom of the block course nearest the required height. All heights shall be consistently cut above or below block coursing so that they will be the same height above the reference.
 3. Mounting heights shall be as follows:

Description	Mounting Height
Switch Toggle	48" to center
Receptacle	16" to center
Receptacle or Switch	4" to center above counter / backsplash above counter top

END SECTION 16100

SECTION 16110 – RACEWAYS

16110.01 METAL CONDUIT AND TUBING

Rigid Galvanized Steel Conduit: ANSI C80.1, UL Standard 6.
 Intermediate Steel Conduit (IMC): ANSI C80-6, UL 1242.
 Electrical Metallic Tubing (EMT) and Fittings: ANSI C80.3, UL Standard 797.
 Flexible Metal Conduit: UL 1, zinc-coated steel.
 Liquid-tight Flexible Metal Conduit and Fittings: UL 360.

16110.02 CONDUIT BODIES

A. General: Types, shapes, and sizes as required to suit individual applications and NEC requirements. Provide matching gasketed covers secured with corrosion-resistant screws.
 B. Metallic Conduit and Tubing: Use metallic conduit bodies. Use bodies with threaded hubs for threaded raceways.
 C. Conduit bodies 1 inch and Smaller: Use bodies with compression-type or screw type EMT connectors.

16110.03 WIRING METHODS

A. Indoors: Use the following wiring methods (There shall be no exposed interior conduits, unless specifically approved by the Owner's Representative.)
 1. Connection to Vibrating Equipment: including transformers and hydraulic, pneumatic or electric solenoid or motor-operated equipment: Flexible Metal Conduit.
 2. Concealed: Electrical Metallic Tubing (EMT).

16110.04 INSTALLATION

A. General: Install the electrical raceways in accordance with the manufacturer's written installation instructions, applicable requirements of NEC, and as follows.
 B. Conceal Conduit and EMT, unless indicated otherwise, within finished walls, ceilings, and floors. Keep raceways at least 6 inches away from parallel runs of flues and hot water pipes. Install raceways level and square and at proper elevations.
 C. Elevation of Raceway: Where possible, install horizontal raceway runs above water piping.
 D. Complete the installation of electrical raceways before starting installation of conductors within raceways.
 E. Prevent foreign matter from entering raceways by using temporary closure protection.
 F. Make bends and offsets so the inside diameter is not effectively reduced.
 G. Install exposed raceways parallel and perpendicular to nearby surfaces or structural members and follow the surface contours as much as practical.
 H. Flexible Connections: Use short length (maximum of 6 ft.) of flexible conduit for recessed and semi-recessed lighting fixtures, for equipment subject to vibration, noise transmission, or movement; and for all meters. Use liquid-tight flexible conduit in wet locations. Install separate ground conductor across flexible connections.

END SECTION 16110

SECTION 16120 – WIRES AND CABLES

16120.01 GENERAL

A. Conductors: Provide solid conductors for power and lighting circuits no. 10 AWG and smaller. Provide stranded conductors for sizes no. 8 AWG and larger.
 B. Conductor Material: copper for all wires and cables.
 C. Insulation: Provide THHN/THWN insulation for all conductors size 500MCM and larger, and no. 8 AWG and smaller. For all other sizes provide THW, THHN/THWN or XHHW insulation as appropriate for the locations where installed.

16120.02 CONNECTORS FOR CONDUCTORS

A. Provide UL-listed factory-fabricated, solderless metal connectors of sizes, ampacity ratings, materials, types and classes for applications and for services indicated. Use connectors with temperature ratings equal to or greater than those of the wires upon which used.

16120.03 INSTALLATION OF WIRES AND CABLES

A. General: Install electrical cables, wires, and connectors in compliance with NEC and install all wire in raceway.
 B. Use splice and tap connectors that are compatible with conductor material. All splices shall be in accessible junction boxes.
 C. Provide adequate length of conductors within electrical enclosures and train the conductors to terminal points with no excess. Bundle multiple conductors, with conductors larger than no. 10 AWG cabled in individual circuits. Make terminations so there is no bare conductor at the terminal.
 D. Tighten electrical connectors and terminals, including screws and bolts, in accordance with manufacturer's published torque tightening values. Where manufacturer's torquing requirements are not indicated, tighten connectors and terminals to comply with tightening torques specified in UL 486A and UL 486B.

END SECTION 16120

SECTION 16135 – BOXES AND FITTINGS

16135.01 GENERAL

A. General: Of indicated types, sizes, and NEMA enclosure classes. Where not indicated, provide units of types, sizes, and classes appropriate for the use and location. Provide all items complete with covers and accessories required for the intended use. Provide gaskets for units in damp or wet locations.
 B. Sheet Steel: Flat-rolled, code-gage, galvanized steel.
 C. Fasteners for General Use: Corrosion resistant screws and hardware including cadmium and zinc plated items.
 D. Fasteners for Damp or Wet Locations: Stainless steel screws and hardware.

16135.02 METAL OUTLET, DEVICE, AND SMALL WIRING BOXES

A. Steel boxes: Conform to NEMA OS 1, "Sheet Steel Outlet Boxes, Device boxes, Covers, and Box Supports." Boxes shall be sheet steel with stamped knockouts, threaded screw holes and accessories suitable for each location including mounting brackets and straps, cable clamps, exterior rings and fixture studs.

16135.03 PULL AND JUNCTION BOXES

A. General: Comply with UL 50, "Electrical Cabinets and Boxes", for boxes over 100 cubic inches volume. Boxes shall have screwed or bolted on covers of material same as box and shall be of size and shape to suit application.
 B. Sheet steel boxes with welded seams. Where necessary to provide a rigid assembly, construct with internal structural steel bracing.

16135.04 GENERAL INSTALLATION REQUIREMENTS

A. Locations: Install items where indicated and where required to suit code requirements and installation conditions.
 B. Remove sharp edges where they may come in contact with wiring or personnel.

END SECTION 16135

SECTION 16143 – WIRING DEVICES

16143.01 GENERAL

A. Provide wiring devices, in types, characteristics, grades, colors, and electrical ratings for applications indicated which are UL listed and which comply with NEMA WD 1 and other applicable UL and NEMA standards.
 B. Provide ivory color devices and wall plates except as otherwise indicated. Verify color selections with Owner's Representative.
 C. Receptacles: Specification Grade and comply with UL 498 and NEMA WD 1.
 D. Ground-Fault Interrupter (GFI) Receptacles: Provide "feed-thru" type ground-fault circuit interrupter, with integral heavy-duty NEMA 5-20R duplex receptacles arranged to protect connected downstream receptacles on same circuit (when required). Provide unit designed for installation in a 2-3/4 inch deep outlet box without adapter, grounding type, Class A, Group 1, per UL Standard 94.3.
 E. Snap Switches: Specification Grade and comply with UL 20 and NEMA WD1.

16143.02 WIRING DEVICE ACCESSORIES

A. Wall plates: Single and combination style, of types, sizes, and with ganging and cutouts as indicated. Provide plates which mate and match with wiring devices to which attached. Provide metal screws for securing plates to devices with screw heads colored to match finish of plates. Provide wall plate as follows:
 Unfinished Areas (Mechanical, Electrical): steel plate, galvanized.
 Others Areas: 302 Stainless Steel.

16143.03 INSTALLATION OF WIRING DEVICES AND ACCESSORIES

A. Install wiring devices and accessories as indicated, in accordance with manufacturer's written instructions, applicable requirements of NEC and in accordance with recognized industry practices to fulfill project requirements.
 B. Coordinate with other work, including painting, electrical boxes and wiring installations, as necessary to interface installation of wiring devices with other Work.
 C. Install wiring devices only in electrical boxes that are clean, free from excess building materials, dirt, and debris.
 D. Install wiring devices after wiring work is completed and wall plates after painting work is completed.
 E. Tighten connectors and terminals, including screws and bolts, in accordance with equipment manufacturer's published torque tightening values for wiring devices. Where manufacturer's torquing requirements are not indicated, tighten connectors and terminals to comply with tightening torques specified in UL Standard 486A. Use properly sized torque indicating hand tool.
 F. Jumbo wall plates shall not be used.

16143.04 PROTECTION

A. Protect installed components from damage. Replace damaged items prior to final acceptance.

END SECTION 16143

16452.01 GROUNDING AND BONDING PRODUCTS

A. Products: Of types indicated and of sizes and ratings to comply with NEC. Where types, sizes, ratings, and quantities indicated are in excess of NEC requirements, the more stringent requirements and the greater size, rating, and quantity indications govern.
 B. Conductor Material: Copper.

16452.02 WIRE AND CABLE CONDUCTORS

A. General: Conform to NEC Table 8, except as otherwise indicated, for conductor properties, including stranding.
 1. Equipment Grounding Conductor: Green insulated.

16452.03 APPLICATION

A. Equipment Grounding Conductor Application: Comply with NEC Article 250 for sizes and quantities of equipment grounding conductors, except where larger sizes or more conductors are indicated. Provide separate green grounding conductor for all branch circuits and feeders including Feeder and branch circuits, Lighting circuits, Receptacle circuits, Single-phase motor or appliance circuits, and Three-phase motor or appliance branch circuits.

16452.05 INSTALLATION

A. General: Ground electrical systems and equipment in accordance with NEC requirements except where the Drawings or Specifications exceed NEC requirements.

16452.06 CONNECTIONS

A. General: Make connections in such a manner as to minimize possibility of galvanic action or electrolysis. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact will be galvanically compatible.
 B. Use electroplated or hot-tin-coated materials to assure high conductivity and make contact points closer in order of galvanic series.
 C. Make connections with clean bare metal at points of contact.
 D. Coat and seal connections involving dissimilar metals with inert material such as red lead paint to prevent future penetration of moisture to contact surfaces.
 E. Terminate insulated equipment-grounding conductors for feeders and branch circuits with pressure-type grounding lugs. Where metallic raceways terminate at metallic housings without mechanical and electrical connection to the housing, terminate each conduit with a grounding bushing. Connect grounding bushings with a bare grounding conductor to the ground bus in the housing.
 F. Bond electrically non-continuous conduits at both entrances and exits with grounding bushings and bare grounding conductors.

END SECTION 16452

SECTION 16470 – PANELBOARDS AND CIRCUIT BREAKERS

16470.01 GENERAL

A. Provide with dead front construction, pressure terminals and lockable door.
 B. Manufacturers shall be General Electric type AQ or equal in Square D Company, Siemens or Cutler Hammer.

16470.02 INSTALLATION

A. Install panelboards and accessory items in accordance with NEMA PB 1.1, "General Instructions for Proper Installation, Operation and Maintenance of Panelboards Rated 600 Volts or Less" and manufacturers' written installation instructions.
 B. Circuit breakers shall have batted connections and shall have minimum interrupting rating and voltage rating as shown on drawings. All single pole 15 and 20 ampere circuit breakers shall be UL listed SWD for switching duty. All circuit breakers serving HVAC equipment shall be UL rated HACR. All 15 and 20 amp circuit breakers serving high inductive (HIM) or high intensity discharge (HID) loads shall be HM or HID rated.
 C. Where existing panelboards are shown and/or noted to be used for new branch circuits, existing adequate spare circuit breakers and/or spaces may be used for the new circuits. Circuit breaker(s) installed in existing panelboards shall be of the same manufacturer and K.A.I.C. rating as existing breakers. Where space is inadequate for new circuit breaker(s), provide new panel section with sufficient pole capacity and same ratings as existing panel and serve by tapping the bus of the existing panel. Provide all required hardware and accessories necessary for installation of the new circuit breaker(s) and/or panel sections. Contractor shall be responsible for visiting the site and verifying the existing conditions prior to bidding.

16470.03 GROUNDING

A. Connections: Make equipment-grounding connections at panelboards as indicated.

16470.04 CONNECTIONS

A. Tighten electrical connectors and terminals, including grounding connections, in accordance with manufacturer's published torque-lightening values. Where manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

END SECTION 16470

SECTION 16515 – INTERIOR LIGHTING FIXTURES

16515.01 GENERAL

A. Install the lighting fixtures complete with, but not limited to, energy-efficient lamps, lamp holders, reflectors, energy efficient ballasts, starters and wiring. The fixtures are shipped factory assembled, with parts and accessories required for a complete installation.
 B. Wiring: Electrician wiring within conduit from accessible junction box with sufficient length to allow fixture to be 120 volt, minimum No. 18 AWG.

16515.02 INSTALLATION OF INTERIOR LIGHTING FIXTURES

A. Install interior lighting fixtures at locations and heights as indicated, in accordance with fixture manufacturer's written instructions, applicable requirements of NEC, NECA's "Standard of Installation", NEMA standards, and with recognized industry practices to ensure that lighting fixtures fulfill requirements.
 B. Install flush mounted fixtures to eliminate light leakage between fixture frame and finished surface.
 C. Support surface mounted fixtures greater than 2 feet in length at a point in addition to the outlet box fixture stud.
 D. Fixture mounting shall be rigid steel independent of the ceiling tiles and shall be supported from the major structural elements of the ceiling system.
 E. Provide all lighting fixtures as shown on the drawings by symbols and as defined in the lighting fixture schedule(s). Fixtures shall be provided with all necessary mounting accessories. The installation of all fixtures shall be complete, safe and in full accordance with manufacturer's recommendations and these specifications. This contractor shall provide additional 1-1/2" x 1-1/2" x 12 ga. channel bridging where necessary to mount lighting fixtures governed by the conditions encountered.
 F. Procure fixtures completely factory wired for proper operation in the application shown on the drawings. All fixtures shall be furnished with proper fittings and accessories for installation in the area encountered. This Contractor shall review the Architectural plans and specifications and provide fixtures compatible with the ceiling specified in each area.
 G. Substituted fixtures shall meet the performance and functional characteristics and the general appearance and dimensions (+/- 10%) of the specified fixtures. Approval of submitted substitute fixture(s) shall not eliminate the Contractor's responsibility to provide fixtures similar in characteristics to the specified fixture(s).
 H. Recessed fixtures in accordance with Article 410 of the NEC. All recessed fixtures in accessible ceilings shall be connected with 1/2" flexible conduit from accessible junction box with sufficient length to allow fixture to be relocated to any adjacent ceiling panel without disconnecting. 3/8" flexible conduit may be used if furnished with the fixture by the manufacturer. All recessed fixtures in non-accessible ceilings, unless otherwise indicated, shall be pre-wired from the factory with junction box for terminating branch circuit conduit.

16515.03 ADJUSTING AND CLEANING

A. Clean interior lighting fixtures of dirt and construction debris upon completion of installation. Clean fingerprints and smudges from lenses.
 B. Protect installed fixtures from damage during remainder of construction period.

END SECTION 16515

SECTION 16610 – FIRE ALARM AND DETECTION SYSTEM

16610.01 GENERAL

A. Shall be installed in conduit. Conduit and wiring though not shown on drawings shall be provided by the contractor to accomplish the intent of the system as shown on the drawings by symbols and this specification.
 B. The Fire Alarm and Detection System(s) and its/their installation shall comply with the latest revisions all applicable codes and standards including Standard Building Code (SBC), National Fire Protection Agency (NFPA), National Electrical Code (NEC), Americans with Disabilities Act (ADA).
 C. Provide all equipment, accessories, material, and labor required to install and connect in accordance with these specifications and applicable drawings for fully operational Fire Alarm and Detection System to the complete satisfaction of the Architect. All material and/or equipment necessary for the proper operation of the system not specified or described herein shall be deemed part of the specifications and shall be provided by the Division 16 contractor.
 D. See Section 16600 "SPECIAL SYSTEMS" for additional requirements.
 E. The installed and/or modified Fire Alarm and Detection System(s) and all associated devices and connections shall be tested in accord with the manufacturer's recommendations, applicable codes and standards, and testing guidelines as herein specified. Testing shall be performed by an independent, third-party company qualified to test the system involved. Testing company qualifications shall be submitted to the Architect for approval prior to the beginning of testing.

16610.02 INSTRUCTIONS

A. Fire Alarm System shall consist of an expandable four zone general alarm, supervised system complete with pull stations, automatic detector and audio/visual devices for complete coverage of the areas noted on the drawings.
 B. Actuation of any initiation device shall cause the following actions:
 1. Activate general alarms (audible and visual).
 2. Visual alarm shall continue until system is reset. Audible only shall be controlled by silence switch.
 3. Activate associated zone indicators (audible and visual).
 4. Turn off power to all air supply units via the duct detector associated therewith.
 5. Transmit signal over telephone lines to central fire reporting station via dialer and/or communicator as required.
 6. Provide all necessary hardware required to accomplish this function and coordinate installation including, if required, proper polarity reversing relays.
 C. System shall be installed by qualified technician of the equipment. This technician shall test the entire system for proper operation.
 System wiring shall be Class B as defined by NFPA. Any system circuit wiring ground or open, or any system component failure shall cause all trouble signals to operate. System components shall be protected against transient over voltages by General Electric Series L metal oxide varistor or equal.
 D. Smoke detectors of proper size and type shall be furnished and properly installed in each of the air handling duct systems as noted in the following locations:
 1. In the return duct prior to exhausting from building diluted by outside air of all units 15000 CFM and above.
 2. In the main supply duct on the downstream side of filters.
 3. The detectors shall be furnished with necessary NC & NO contacts as needed for Division 15 Contractor to use for air handling unit shut down.
 4. Wiring and connection requirements for air handling unit shut down to be the responsibility of the Division 15 Contractor.
 5. Each detector shall have a remote alarm and test station installed where directed by the Architect or as shown on the drawings.
 E. Activation of any device shall not interfere with the normal operation, subsequent activation, and/or alarm operation of any other connected component due to System design, wiring, or power limitations.

F. Alarm Devices. Audible/visual and visual alarm devices shall be provided and connected throughout the facility(ies) properly located as to produce audible and visual alarms in accordance with NFPA 72 and ADA. Audible/visual devices provided in corridors shall be located within 15 feet of each corridor end and at a spacing no greater than 50' in between. Visual alarm devices shall be provided and connected as shown on the drawings and in each restroom, classroom, meeting/conference room, filing/work room, dressing/locker room, examination room and similar rooms/spaces. Visual alarm devices provided in rooms (with the exception of corridors/hallways) whose effective rectangular (length X width) dimensions (measured from the longest points) exceed 20'LX20'W shall have a light output of 110 candelas. Visual alarm devices in corridors and other spaces shall have a light output of 15 candelas unless noted otherwise on the drawings.

G. Manual Pull Station. Shall be provided and connected at all exterior doors and in each corridor where required to limit spacing between devices to 200 feet. Shall be non-coded, addressable double action – push type with housings and levers of high-impact Lexan or cast metal.

H. Main terminal cabinet shall be equipped with a drill switch which, when activated, shall cause only the general alarm audible and visual signals to activate but no other general alarm functions shall be affected.

I. Main terminal cabinet shall have battery standby complete with metered charger. Batteries shall by maintenance free sealed type capable of operating system for 24 hours. Charger shall be rated for recovery of batteries from full discharge to full charge in 24 hours or less.

J. System components shall be the following as manufactured by Simplex or equal approved by Architect.

ITEM	CAT. NO.	BOX	with device
Main Terminal Cabinet		4005 Series	
Duct Detector with Proper Sampling Tubes 2098-9649-9201			with device
Smoke Detector	2098-9202	4"	square
Manual Station, Double Action	2099	4"	sq. with 1gg raised cover
Audible & Visual signal	4903-9215	4"	square
Visual Signal	4904-9163	4"	square
Remote Annunciator	4602-9102		

END SECTION 16610



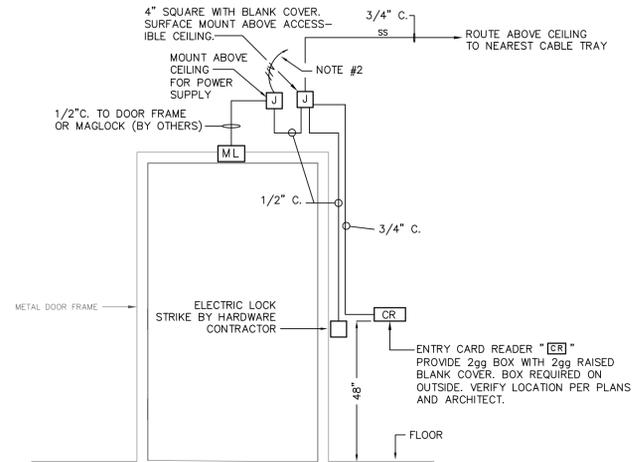
POWER CONNECTION SCHEDULE									
MARK	EQUIPMENT	VOLTAGE /PHASE	FLA	KW	HP	PANEL CKT. NO.	BRANCH CIRCUIT	DISC. SW / FUSE	REMARKS
1	MOTORIZED PROJECTION SCREEN	120	-	-	-	-	2 - #12, 1 - #12G, 1/2" c.	-	3,4

POWER CONNECTION REMARKS:

- CIRCUIT TO INCLUDE ONE (1) GREEN GROUNDING CONDUCTOR (G) SIZED PER BRANCH CIRCUIT SIZE UNLESS SHOWN TO BE SIZED DIFFERENTLY. MINIMUM CONDUCTOR REQUIREMENT 2-#12, 1-#12G, 1/2" c.
- DUAL ELEMENT TYPE FUSE AND SWITCH OF PROPER VOLTAGE. IF FUSE SIZE NOT SHOWN, UNIT TO BE UNFUSED.
- CONNECT TO NEAREST ADEQUATE 120 VOLT RECEPTACLE CIRCUIT IN AREA.
- CONNECT SCREEN THRU RAISE/LOWER SWITCH PROVIDED BY OTHERS. VERIFY LOCATION OF SWITCH PRIOR TO ROUGH-IN.

LIGHTING FIXTURE SCHEDULE						
VOLTS	SYMBOL	WATTS	DESCRIPTION	MANUFACTURER	CAT. NO.	MOUNTING
-	A	-	NOT USED	-	-	-
120/277	B	3-32	RECESSED FLUORESCENT TROFFER, 2' X 4'. MATCH EXISTING.	-	-	RECESSED
-	C	-	EXISTING RECESSED FLUORESCENT TROFFER SALVAGED FROM DEMOLITION.	-	-	RECESSED

LEGEND	
	BRANCH CIRCUIT (CONDUIT AND WIRING) CONCEALED ABOVE CEILING OR IN WALL, NUMBER OF CONDUCTORS. (---) INDICATES GREEN GROUNDING CONDUCTOR SIZED PER BRANCH CIRCUIT UNLESS OTHERWISE NOTED.
	HOME RUN, PANEL AND CIRCUIT DESIGNATION, NUMBER OF CONDUCTORS.
	RECESSED FLUORESCENT FIXTURE WITH FIXTURE SYMBOL AND CIRCUIT NUMBER.
	TELEPHONE OUTLET AND PLATE, 3/4" OR SIZE AS NOTED CONDUIT STUBBED UP ABOVE ACCESSIBLE CEILING.
	SWITCH, SINGLE POLE FLUSH TUMBLER. MOUNT CENTER LINE UP 48", UNLESS NOTED OTHERWISE ON THE PLANS OR IN THE SPECIFICATIONS.
	SWITCH, THREE-WAY FLUSH TUMBLER. MOUNT CENTER LINE UP 48", UNLESS NOTED OTHERWISE ON THE PLANS OR IN THE SPECIFICATIONS.
	DUPLEX GROUNDABLE RECEPTACLE, 120 VOLTS, NEMA 5-20R, CIRCUIT NUMBER.
	DUPLEX GROUNDABLE RECEPTACLE, 120 VOLTS, NEMA 5-20R, CIRCUIT NUMBER, MOUNT CENTER LINE UP 4" ABOVE COUNTER/BACKSPASH.
	DOUBLE DUPLEX GROUNDABLE RECEPTACLE, 120 VOLTS, NEMA 5-20R, CIRCUIT NUMBER.
	BY ANY DEVICE INDICATES EXISTING
	CONNECTION TO SECURITY DOOR. SEE DETAIL.
	CONNECTION TO VAV BOX.
	POWER CONNECTION SCHEDULE MARK. SEE POWER CONNECTION SCHEDULE.



NOTES:

- NOT ALL COMPONENTS ARE PROVIDED AT EACH DOOR. VERIFY WITH ARCHITECT. FURNISH ALL ROUGH-IN'S FOR ALL DOORS INDICATED.
- TO EMERGENCY 120 VOLT CIRCUIT PER THE PLANS.

DOOR SECURITY PROVISIONS " SD "

NO SCALE



05 October 2015
 215001
Woolfolk Building Ninth Floor Renovations
 Department of Finance & Administration Capitol Facilities
 (Jackson, Mississippi)
 GS# 350-025
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