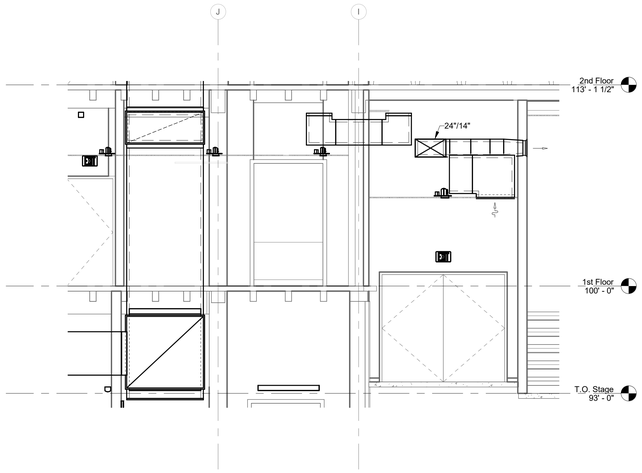
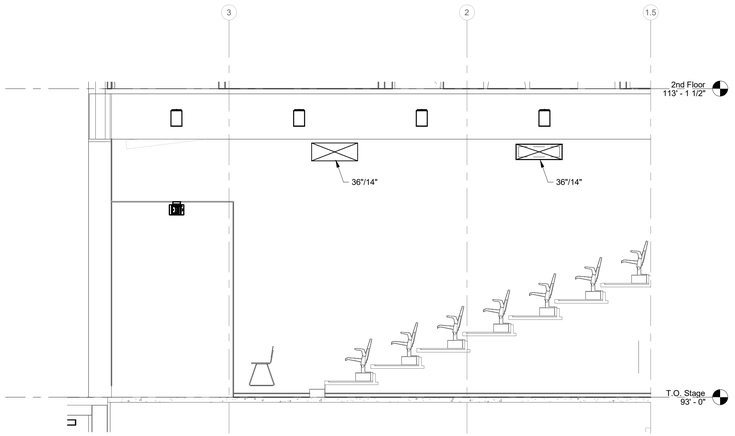


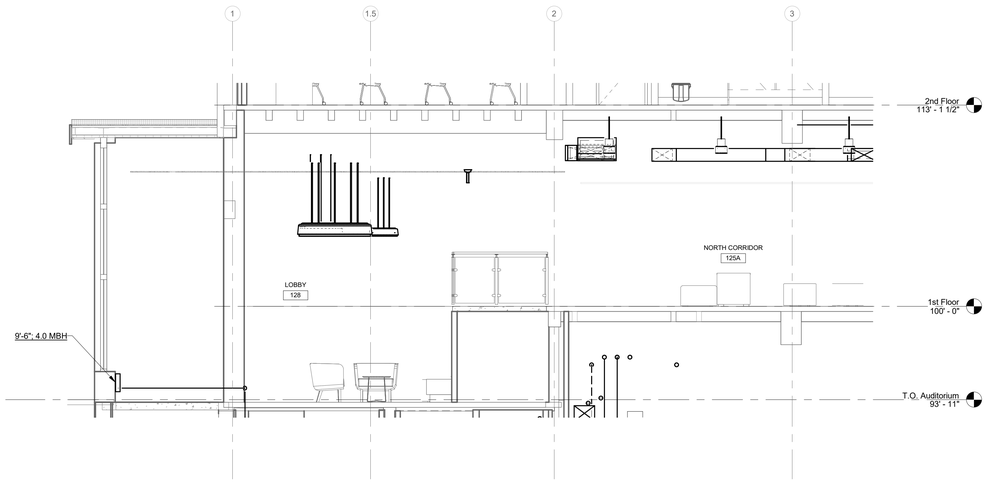
4 SECTION THEATER 115 RETURN AIR

SCALE: 1/4" = 1'-0"



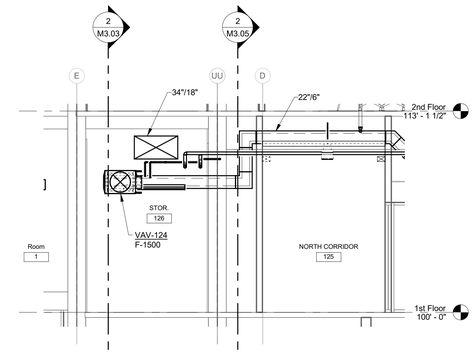
5 SECTION THEATER 115

SCALE: 1/4" = 1'-0"



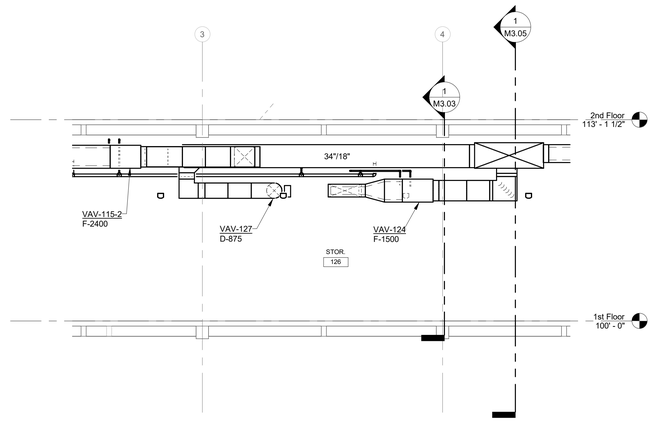
6 SECTION NW LOBBY

SCALE: 1/4" = 1'-0"



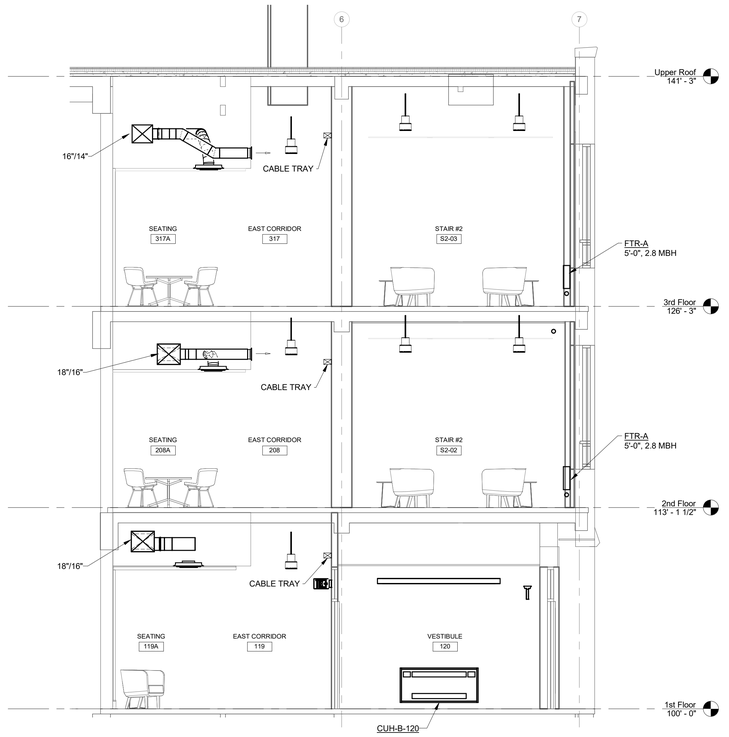
1 SECTION-1 STORAGE 126

SCALE: 1/4" = 1'-0"



2 SECTION-2 STORAGE 126

SCALE: 1/4" = 1'-0"



3 SECTION EAST CORRIDOR

SCALE: 1/4" = 1'-0"

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REVISION SCHEDULE		
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FIRST FLOOR SECTIONS - AIR DISTRIBUTION

M3.03

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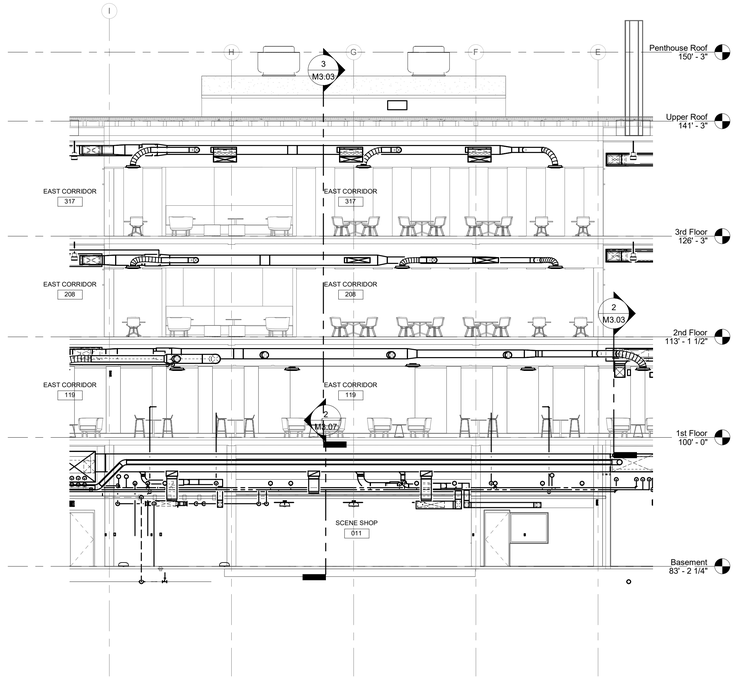
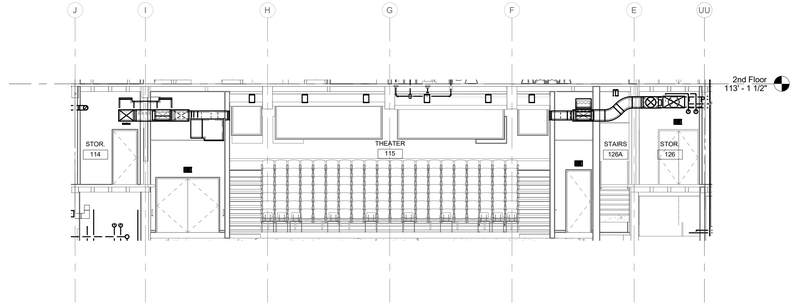


2 PARTIAL BUILDING SECTION-2

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



1 THEATER SECTION 115 N-S

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

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SECTIONS - AIR DISTRIBUTION

M3.04

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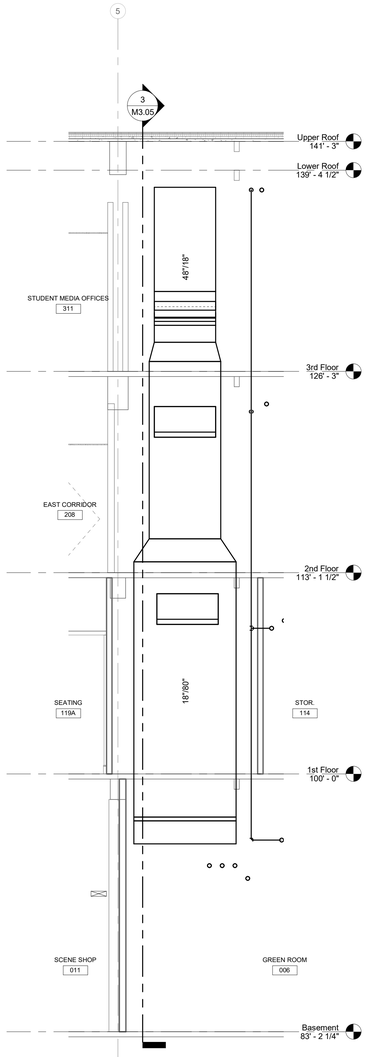
RENOVATION LEGEND:

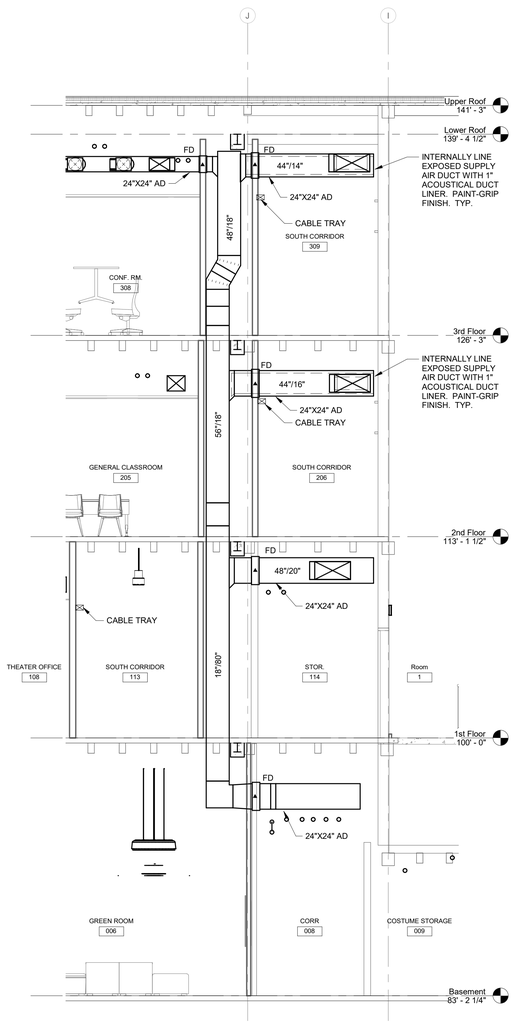
WORK TO BE INSTALLED

WORK TO REMAIN



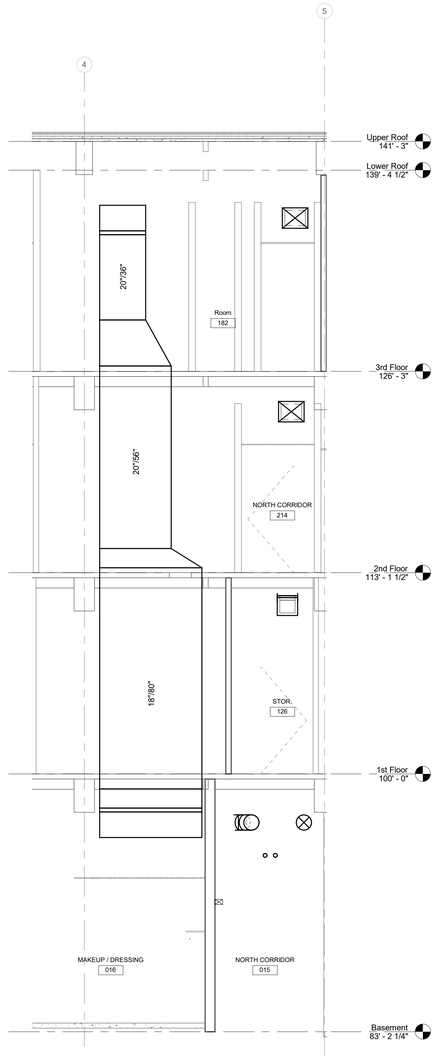
4 SOUTH SUPPLY CHASE SECTION-2

SCALE: 1/4" = 1'-0"



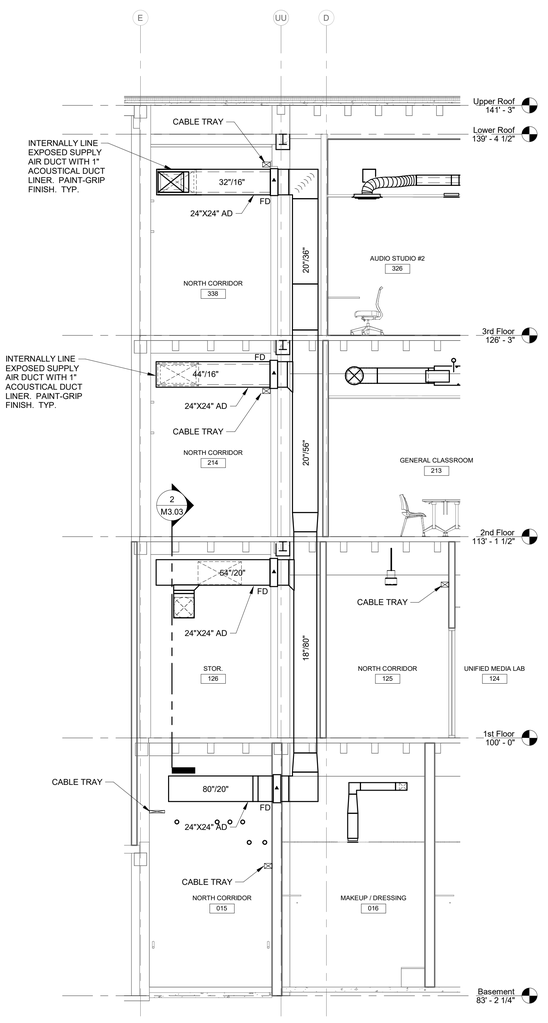
3 SOUTH SUPPLY CHASE SECTION-1

SCALE: 1/4" = 1'-0"



2 NORTH SUPPLY CHASE SECTION-2

SCALE: 1/4" = 1'-0"



1 NORTH SUPPLY CHASE SECTION-1

SCALE: 1/4" = 1'-0"

0 1 2 3 4 8 12 16

1 2 3 4

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SUPPLY CHASE SECTIONS - AIR DISTRIBUTION

M3.05

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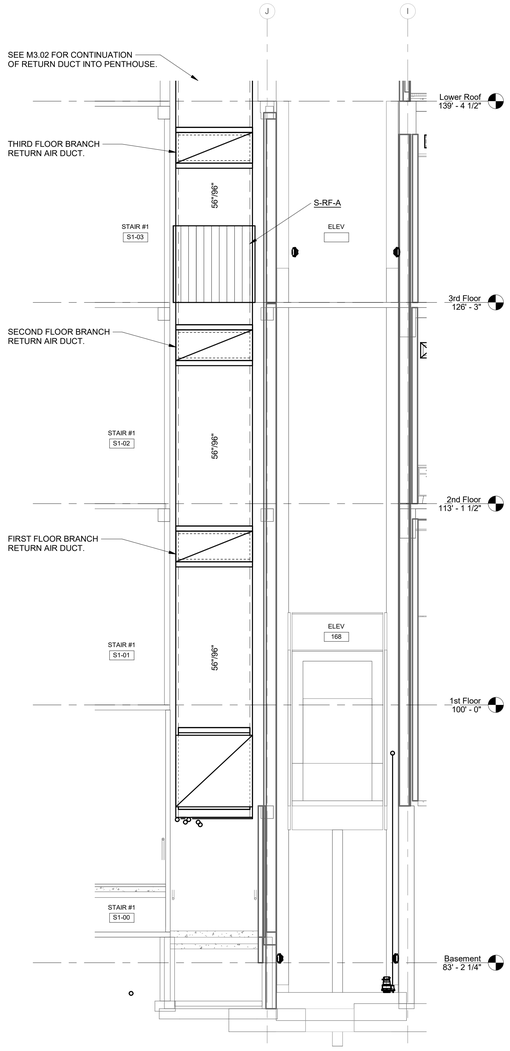
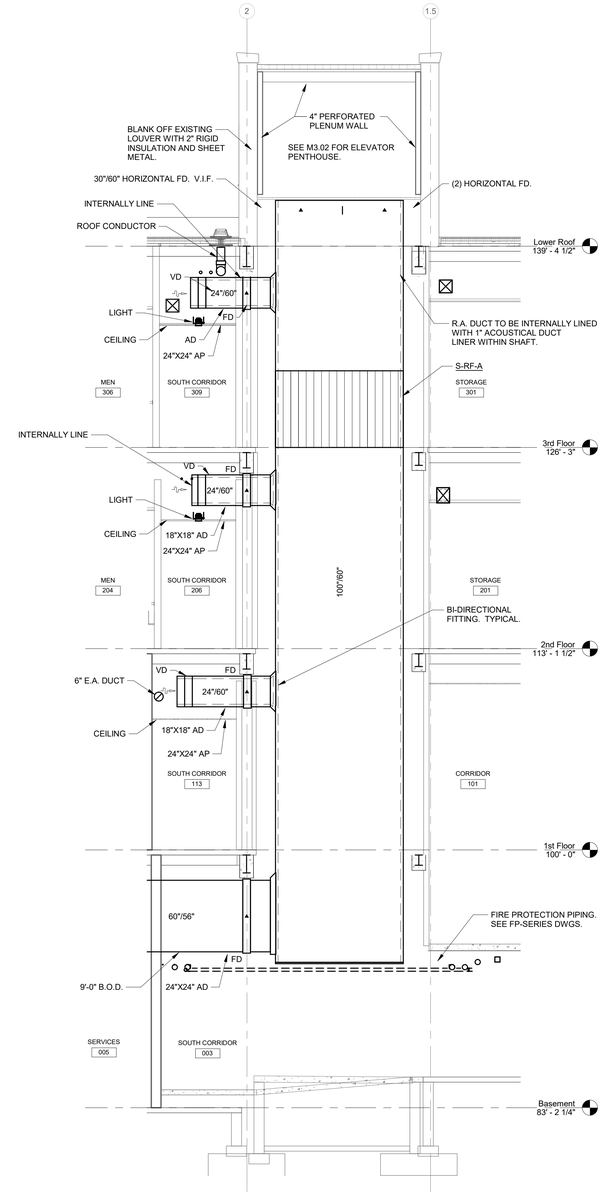


2 RETURN AIR CHASE SECTION-2

SCALE: 1/4" = 1'-0"



1 RETURN AIR CHASE SECTION-1

SCALE: 1/4" = 1'-0"

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RETURN CHASE SECTIONS - AIR DISTRIBUTION

M3.06

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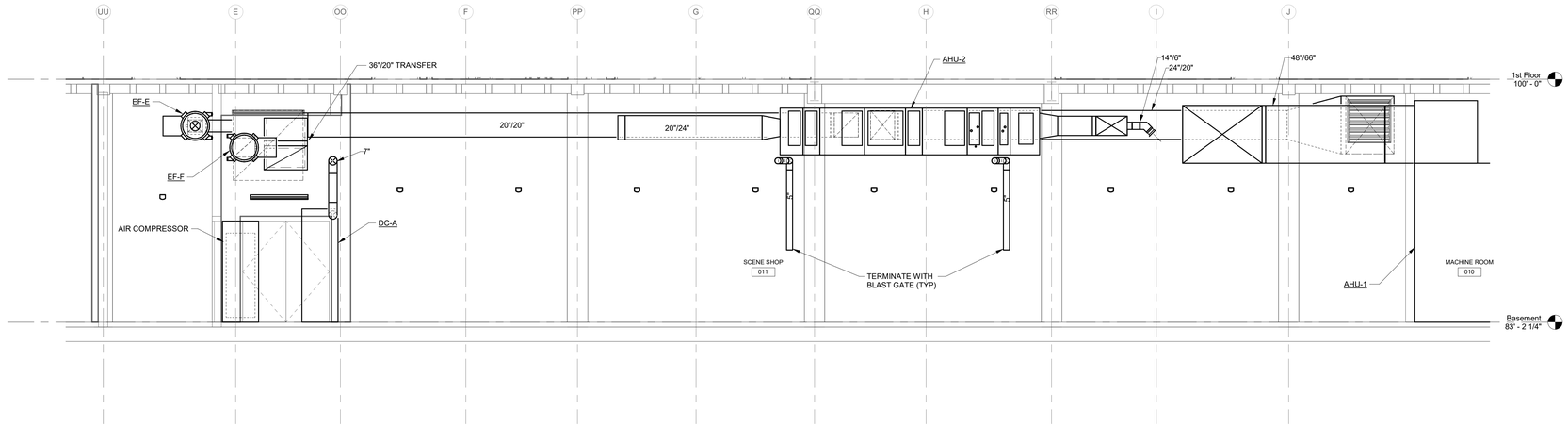
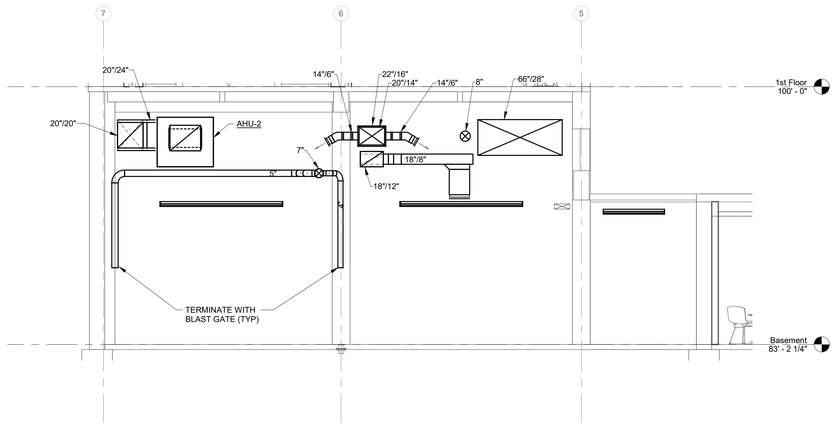


1 SECTION SCENE SHOP N-S

SCALE: 1/4" = 1'-0"



2 SECTION SCENE SHOP E-W

SCALE: 1/4" = 1'-0"

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SCENE SHOP SECTIONS - AIR DISTRIBUTION

M3.07

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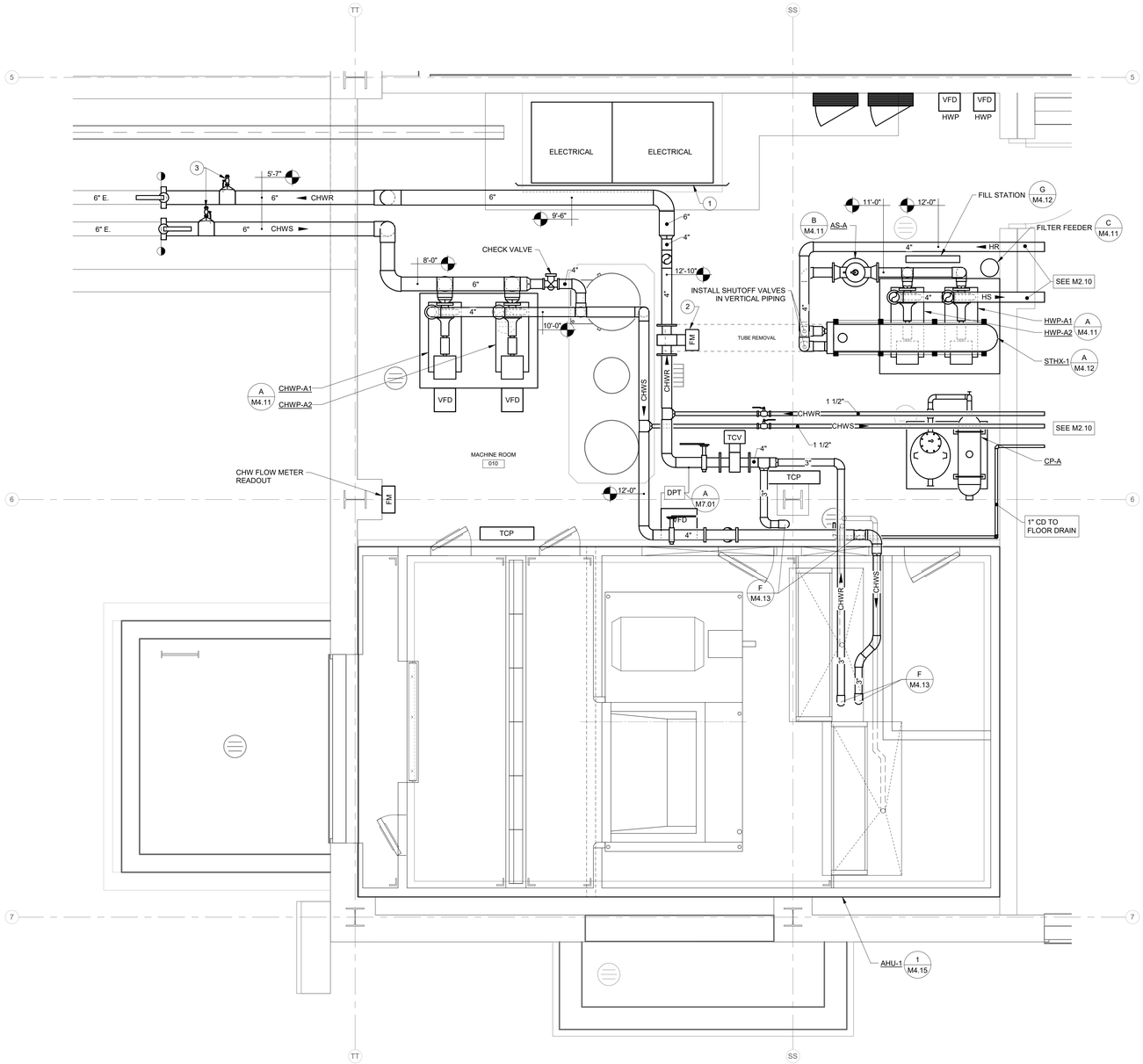

MACHINE ROOM 010 PLAN - HYDRONIC PIPING

SCALE: 1/2" = 1'-0"

NORTH

RENOVATION LEGEND:

- WORK TO BE INSTALLED
- WORK TO REMAIN

GENERAL NOTES:

1. SEE M7.02 FOR SYSTEM PIPING SCHEMATIC. NOT ALL SMALL PIPING SHOWN ON THIS DRAWING FOR CLARITY. ALL PIPE SHOWN ON SYSTEM PIPING SCHEMATIC SHALL BE INCLUDED.
2. SEE M3.13 FOR HEATING WATER & CHILLED WATER EXPANSION TANK LOCATIONS.
3. SEE ALSO DRAWING PM0.01 AND M2.10 FOR ADDITIONAL GENERAL NOTES.

(#) PLAN NOTES:

1. INSTALL VERTICAL SHEET METAL SPLASH SHROUD FROM TOP OF ELECTRICAL UP TO DECK.
2. INSTALL METER IN PIPING WITH MANUFACTURER'S REQUIRED UPSTREAM AND DOWNSTREAM DISTANCES.
3. 1" BLEED FLUSHIG TAPS. INSTALL AFTER ISOLATION VALVES SO THEY CAN BE USED TO FLUSH THE SYSTEM.
4. 1 1/2" AIR SEPARATOR BLOW DOWN VALVE ON WALL. ROUTE TO FLOOR DRAIN.
5. FILL STATION MOUNTED ON UNISTRUT ANCHORED TO GROUND.

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MACHINE ROOM 010 - HYDRONIC PIPING

M3.11

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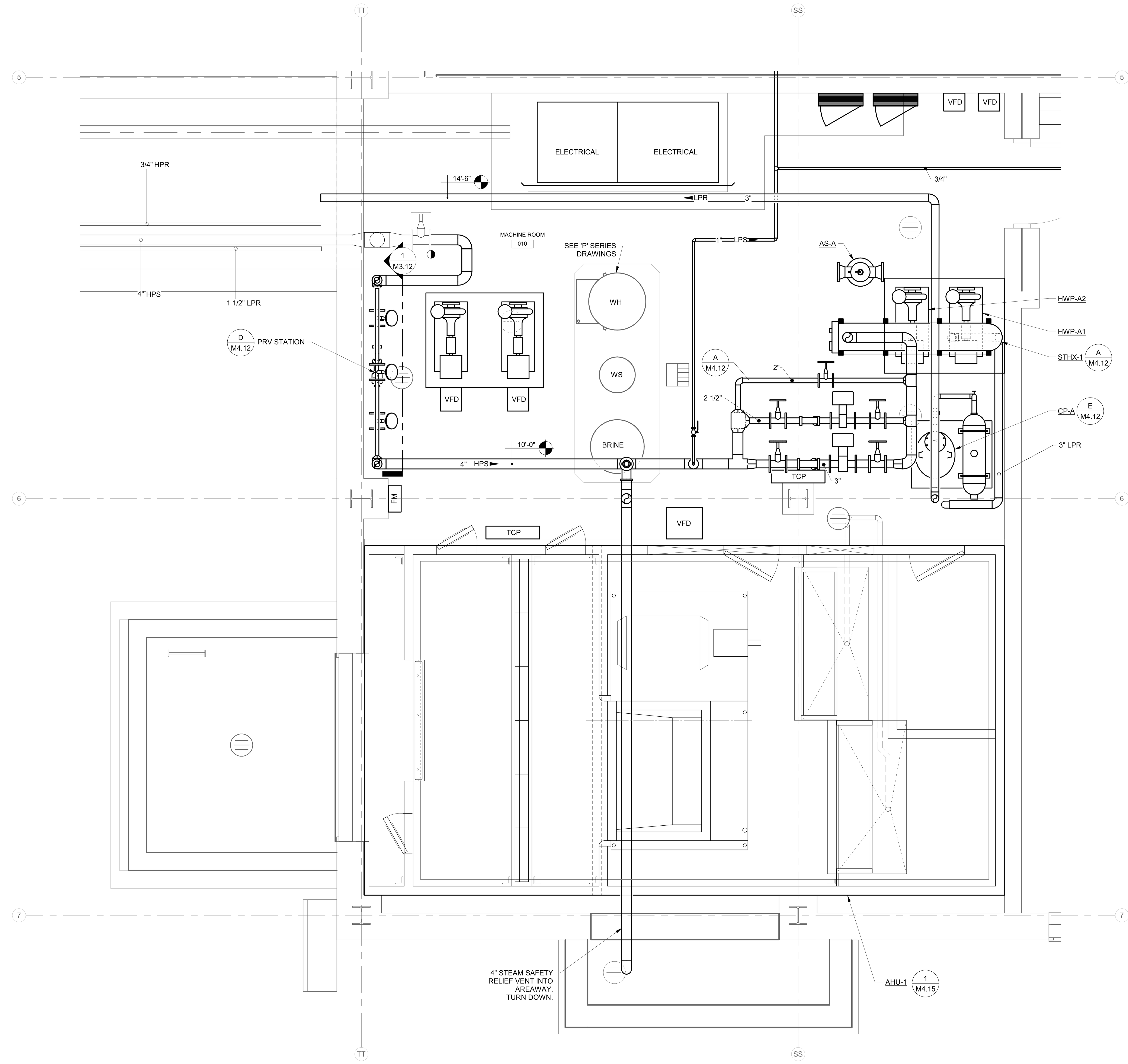
RENOVATION LEGEND:

- WORK TO BE INSTALLED
- WORK TO REMAIN

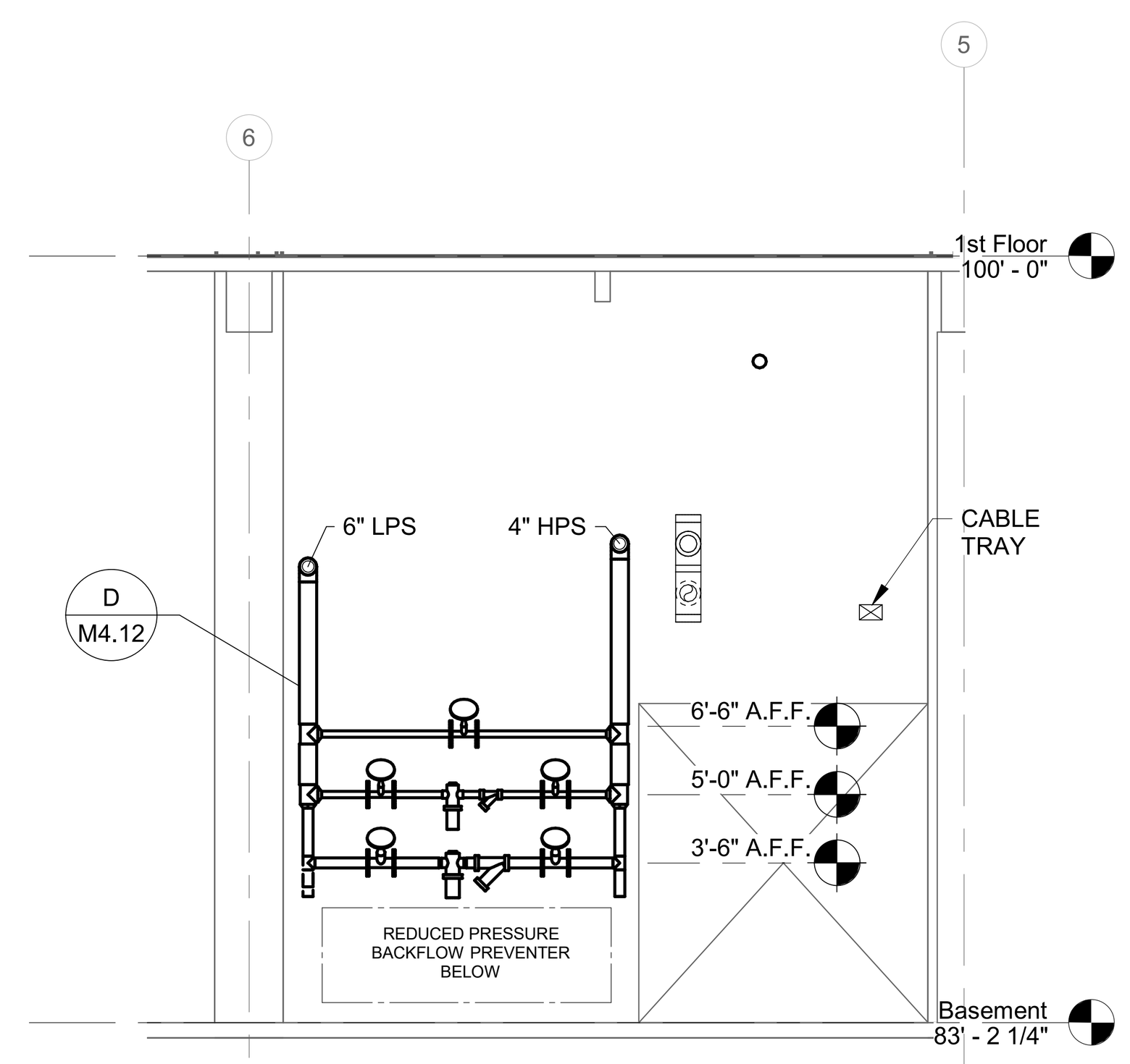
GENERAL NOTES:

1. SEE ALSO DRAWING PM0.01 AND M2.10 FOR ADDITIONAL GENERAL NOTES.



MACHINE ROOM 010 PLAN - STEAM PIPING

SCALE: 1/2" = 1'-0"



1 PRV STATION ELEVATION

SCALE: 1/4" = 1'-0"

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MACHINE ROOM 010 - STEAM PIPING

M3.12

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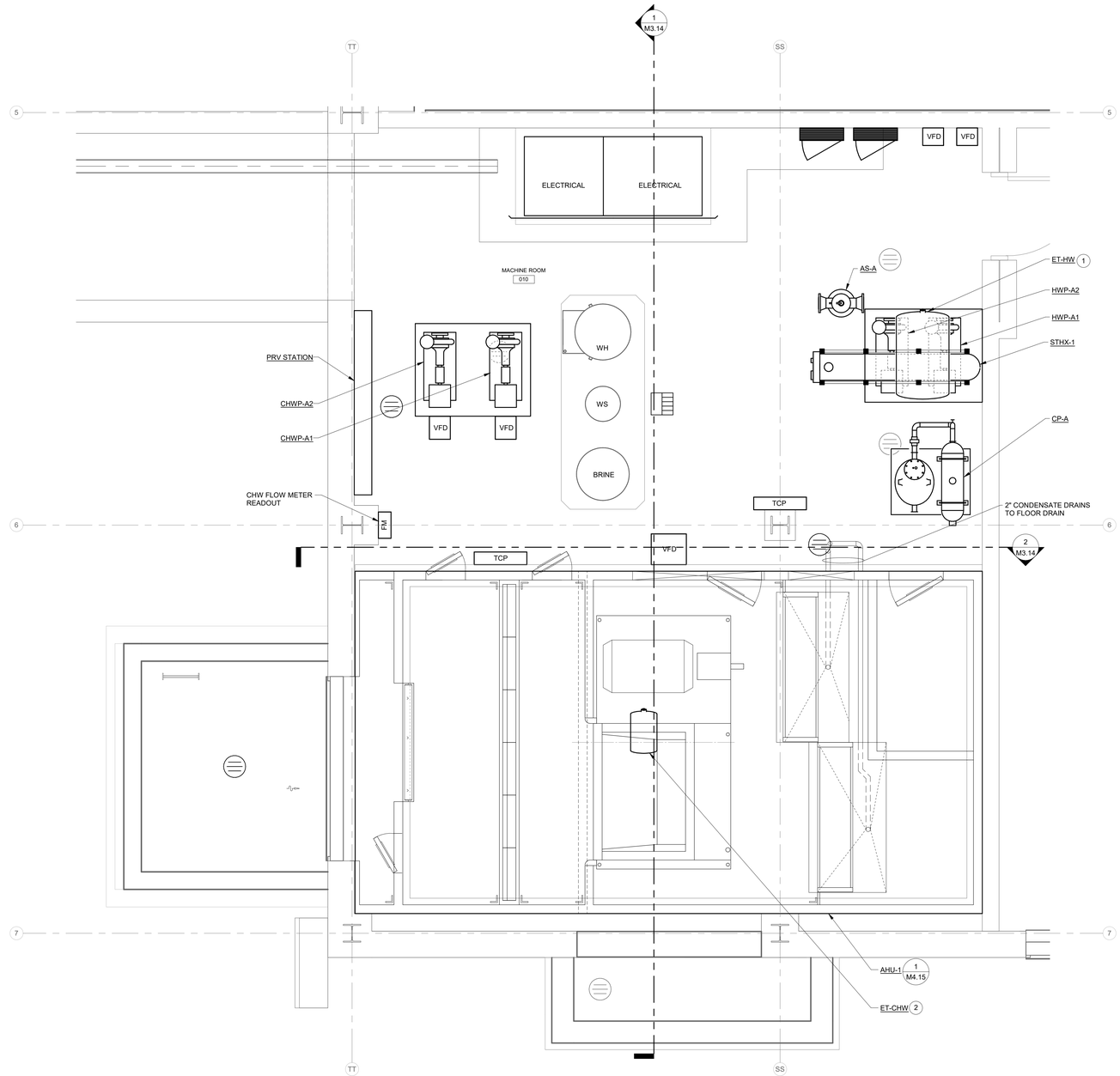

MACHINE ROOM 010 PLAN - MECHANICAL EQUIPMENT

SCALE: 1/2" = 1'-0"

NORTH

RENOVATION LEGEND:

WORK TO BE INSTALLED

WORK TO REMAIN

GENERAL NOTES:

1. SEE ALSO DRAWING PM0.01 AND M2.10 FOR ADDITIONAL GENERAL NOTES.

(#) PLAN NOTES:

1. HEATING WATER EXPANSION TANK, ET-HW, SUSPENDED FROM SLAB ABOVE. PIPE AS NOTED ON M7.00 SERIES DRAWINGS.
2. CHILLED WATER EXPANSION TANK, ET-CHW, SUSPENDED FROM SLAB ABOVE IN THIS AREA. PIPE AS NOTED ON M7.00 SERIES DRAWINGS.

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MACHINE ROOM 010 - MECHANICAL EQUIPMENT

M3.13

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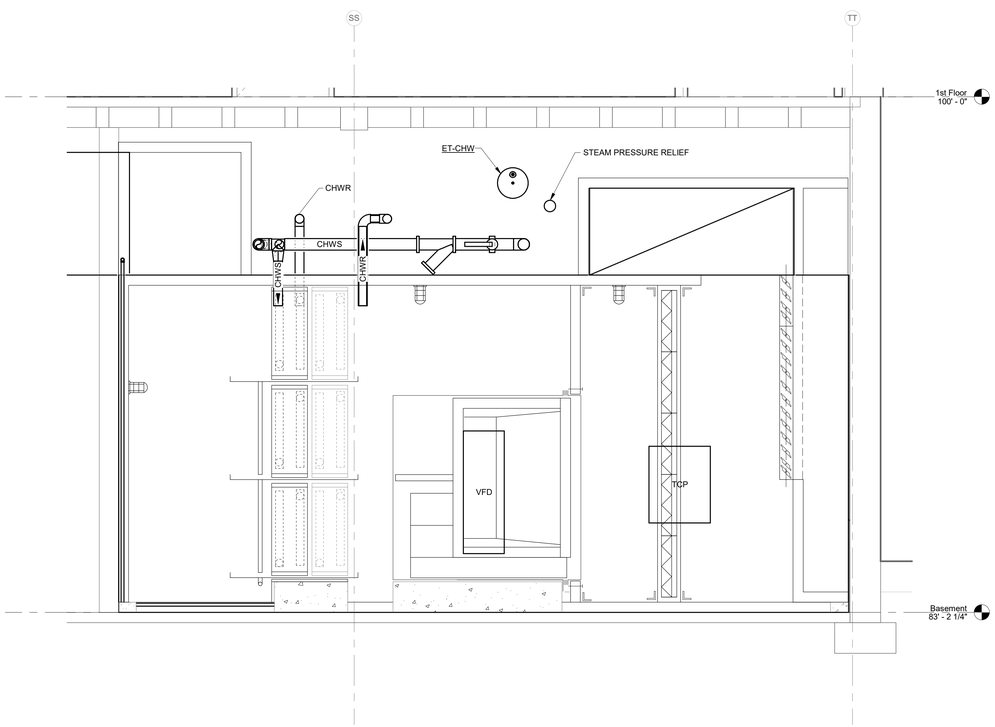
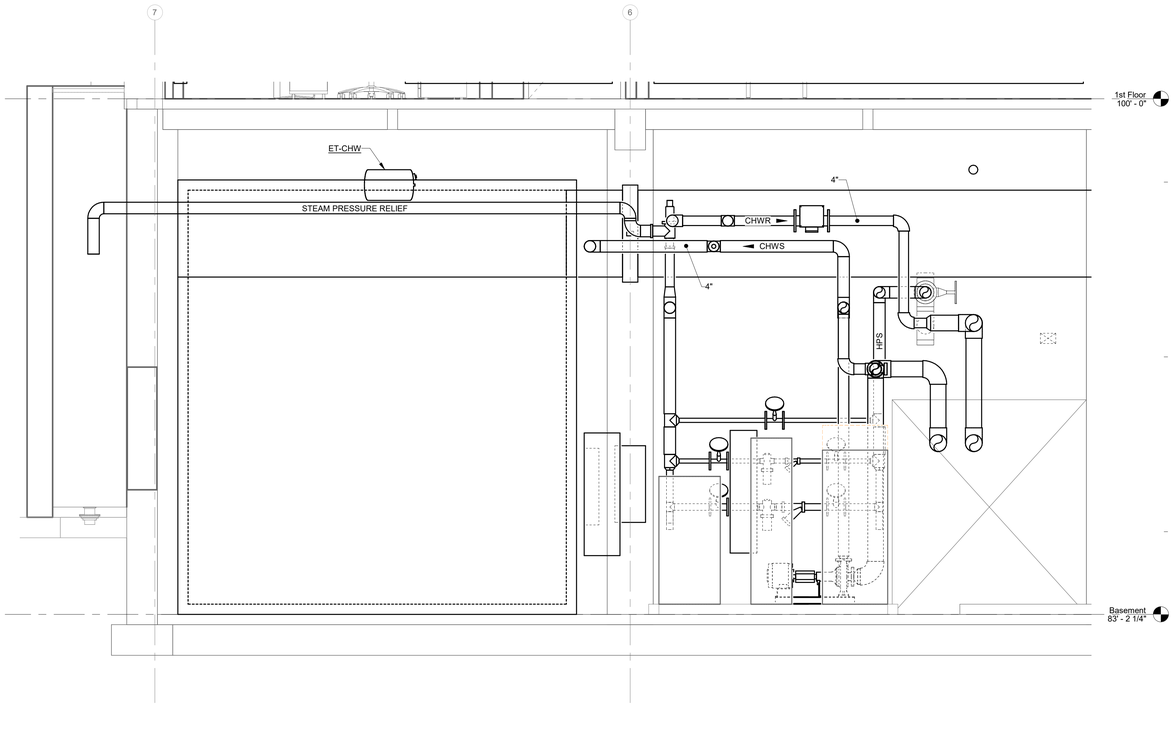


2 SECTION MACHINE ROOM EAST WALL - MECHANICAL

SCALE: 1/2" = 1'-0"



1 SECTION MACHINE ROOM SOUTH WALL - MECHANICAL

SCALE: 1/2" = 1'-0"

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DANIEL E. DIMOND
REGISTERED
No.
PE60910351
STATE OF
INDIANA
PROFESSIONAL ENGINEER

CERTIFICATION 06/05/2020

100% CONSTRUCTION DOCUMENTS

Indiana State University -
Dreiser Hall Renovation

221 North 6th Street
Terre Haute, IN 47809

Project No.: 19A052
Drawn By: ACB
Checked By: MJE
Scale: See Drawing
Issue Date: 06/05/2020

REVISION SCHEDULE		
Rev. #	Revision Description	Issue Date

MACHINE ROOM 010
SECTIONS - MECHANICAL

M3.14

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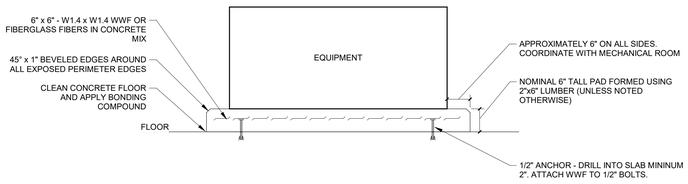
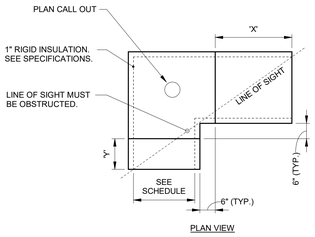


G TYPICAL HOUSE KEEPING PAD

SCALE: NONE



PLAN VIEW

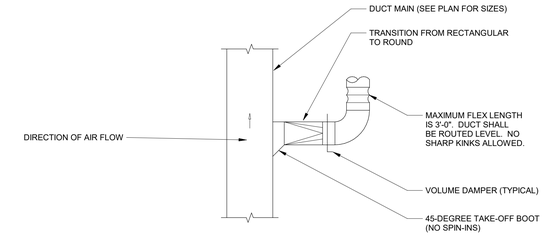
TRANSFER DUCT SCHEDULE				
PLAN CALL OUT	TRANSFER DUCT SIZE	CFM RANGE	"X" DIMENSION	"Y" DIMENSION
AA	10"/10"	0 - 200	12"	N/A
BB	14"/10"	205 - 325	24"	N/A
CC	18"/10"	330 - 400	24"	N/A
DD	26"/10"	405 - 550	24"	6"
FF	10" X 10"	0-200	12"	N/A
GG	12" X 10"	205-325	12"	N/A
HH	30" X 10"	805-1000	36"	14"
JJ	36" X 10"	805-1000	48"	18"

REMARKS:

1. 'X' AND 'Y' DIMENSIONS SHOWN ARE MINIMUMS TO NULLIFY ANY 'LINE OF SIGHT' THROUGH THE TRANSFER DUCT. ACTUAL FIELD DIMENSIONS MAY VARY BASED ON APPLICATION, WALL THICKNESS, ORIENTATION, ETC. FIELD VERIFY CONDITIONS PRIOR TO FABRICATION.
2. 'TRANSFER DUCT SIZE' LISTED IN THE SCHEDULE ARE THE INTERNAL DIMENSIONS.

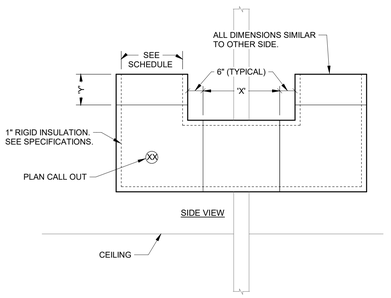
D RETURN AIR TRANSFER DUCT DETAIL

SCALE: NONE



A BRANCH DUCT TAKE-OFF FROM MAIN DUCT

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



TRANSFER DUCT SCHEDULE				
PLAN CALL OUT	TRANSFER DUCT SIZE	CFM RANGE	"X" DIMENSION	"Y" DIMENSION
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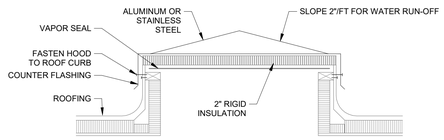
HH	30" X 10"	805-1000	36"	14"
JJ	36" X 10"	805-1000	48"	18"
KK	36" X 24"	-	48"	18"
LL	40" X 12"	-	48"	18"
MM	40" X 14"	-	48"	18"

REMARKS:

1. 'X' AND 'Y' DIMENSIONS SHOWN ARE MINIMUMS TO NULLIFY ANY 'LINE OF SIGHT' THROUGH THE TRANSFER DUCT. ACTUAL FIELD DIMENSIONS MAY VARY BASED ON APPLICATION, WALL THICKNESS, ORIENTATION, ETC. FIELD VERIFY CONDITIONS PRIOR TO FABRIBACTION.
2. 'TRANSFER DUCT SIZE' LISTED IN THE SCHEDULE ARE THE INTERNAL DIMENSIONS.

H U SHAPE RETURN AIR TRANSFER DUCT

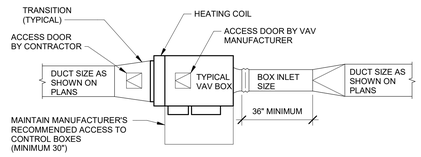
SCALE: NONE



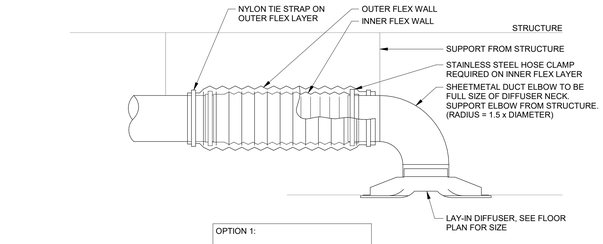
NOTE:
FIELD VERIFY EXISTING CURB SIZE.

E VAV BOX INSTALLATION

SCALE: NONE

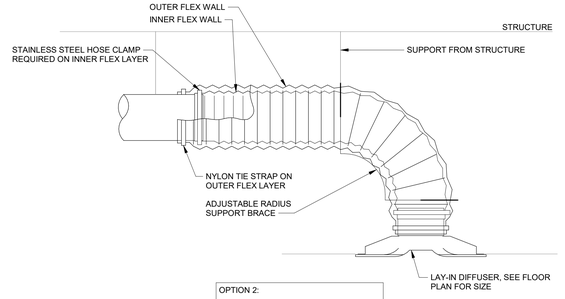


NOTES:
1. SUPPORT UNIT AT ALL FOUR CORNERS FROM STRUCTURE ABOVE.
2. SUPPORT UNIT SO THAT BOTTOM ACCESS PANEL CAN BE REMOVED WITHOUT REMOVING SUPPORTS.
3. SIZE OF ACCESS DOOR IN OUTLET DUCT SHALL BE APPROXIMATELY 2/3'S THE WIDTH OF THE DUCT. (MINIMUM SIZE SHALL BE 6"/6")



OPTION 1:

PROVIDE 90-DEGREE METAL ELBOW FOR FINAL CONNECTION TO DIFFUSER. PROVIDE STAINLESS STEEL HOSE CLAMP FOR CONNECTION TO ALL DIFFUSERS.



OPTION 2:

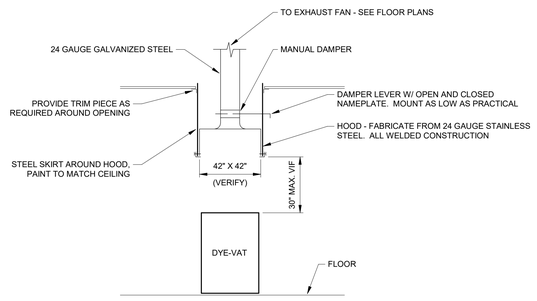
PROVIDE ONE PIECE, FULLY ADJUSTABLE BRACE; LIKE TITUS FLEXRIGHT OR THERMAFLEX FLEX FLOW ELBOW FOR CONNECTION TO ALL DIFFUSERS.

B CONNECTION TO DIFFUSER

SCALE: NONE

J ROOF CURB CAP

SCALE: NONE

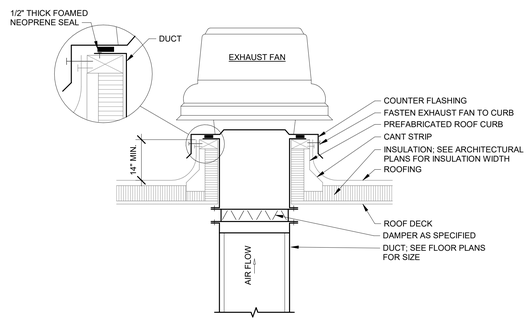


NOTES:

1. HOOD SHALL HAVE FACE OPENING AREA 6" WIDER THAN TOP OF DYE-VAT ON ALL SIDES. SUBMIT DWG. FOR REVIEW BY ENGR. PRIOR TO FABRICATION.
2. AUTO DAMPER AND EXHAUST FAN TO TIE-IN WITH POWER TO DYE-VAT WITH DELAYED TIMED SHUT-OFF.

K DYE-VAT EXHAUST HOOD

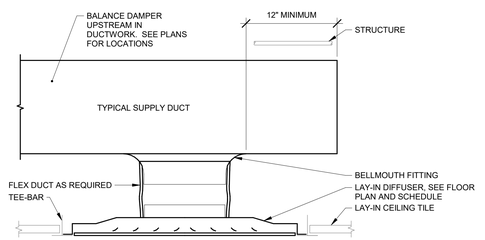
SCALE: NONE



NOTES:
1. ROOF CURB TO BE ANCHORED TO ROOF STRUCTURE.
2. USE CANT STRIP FOR BUILT UP ROOF.
3. CURB TO ACCOMMODATE SLOPED ROOF.
4. **INSTALL INTERNALLY LINED DUCTWORK TO A POINT 10-FOOT FROM FAN INLET.**

F CENTRIFUGAL ROOF EXHAUST FAN

SCALE: NONE



NOTE: FOR LIMITED SPACE CONNECTIONS ONLY.

C SUPPLY DIFFUSER

SCALE: NONE

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DETAILS - AIR DISTRIBUTION

M4.01

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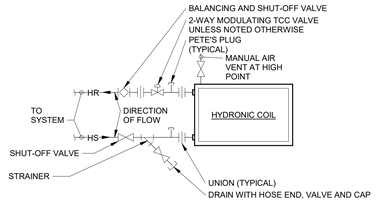
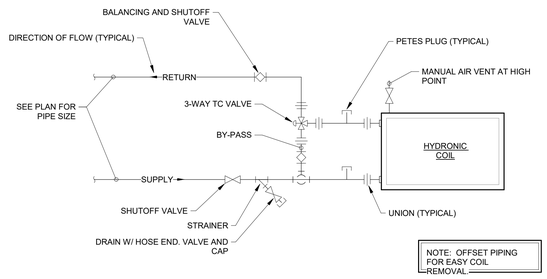


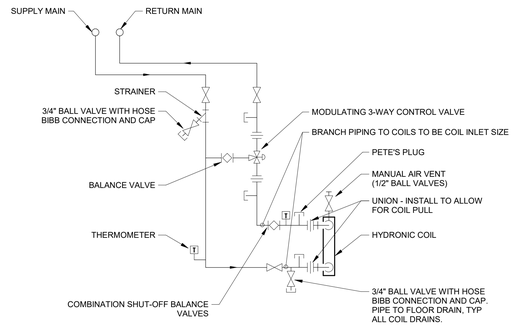
G TERMINAL UNIT HYDRONIC COIL PIPING WITH 2-WAY VALVE

SCALE: NONE



H TERMINAL UNIT HYDRONIC COIL PIPING WITH 3-WAY VALVE

SCALE: NONE

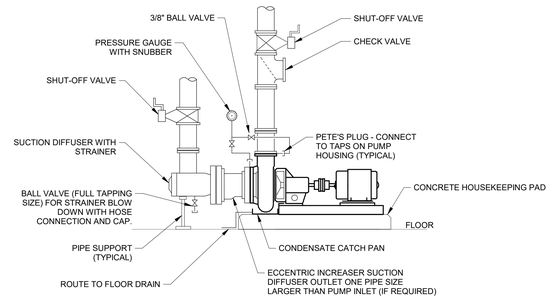


NOTES:

1. PROVIDE MANUAL AIR VENTS IN TOP OF COILS.
2. ALL THERMOMETERS, UNIONS, SHUTOFF'S AND BALANCE VALVES SHALL BE INSTALLED FOR EACH COIL. CHECK WITH UNIT MANUFACTURER FOR NUMBER OF COILS.
3. INSTALL BALL VALVE WITH HOSE BIBB CONNECTION AND CAP ON ALL STRAINERS.
4. COORDINATE NUMBER OF COILS IN UNIT WITH CSAC MANUFACTURER.
5. ARRANGE PIPING SO AS NOT TO BLOCK ACCESS DOORS AND OPENINGS TO UNIT.

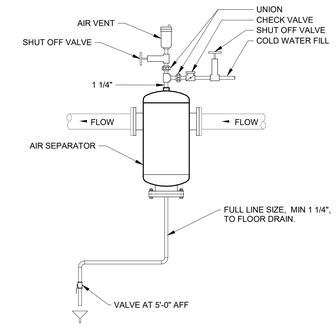
D COIL PIPING FOR AHU SCHEMATIC

SCALE: NONE



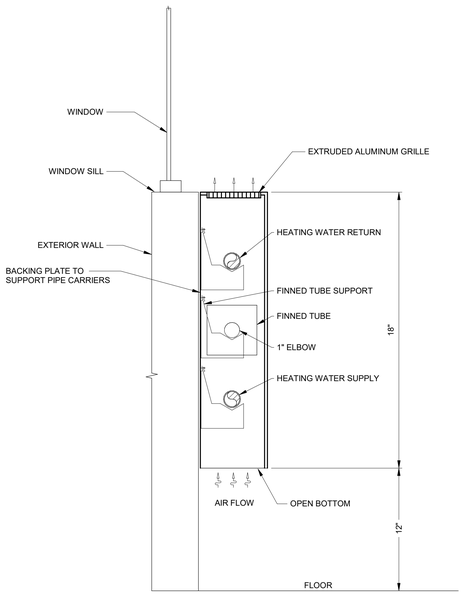
A FRAME MOUNTED END SUCTION PUMP WITH SUCTION DIFFUSER

SCALE: NONE



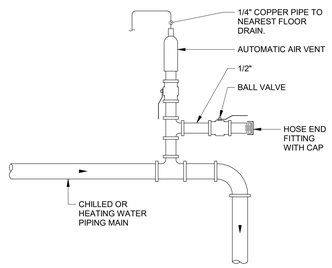
B TYPICAL AIR SEPARATOR

SCALE: NONE



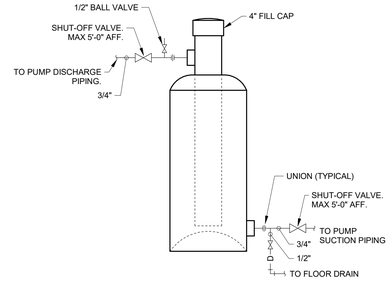
K FINNED TUBE RADIATION

SCALE: NONE



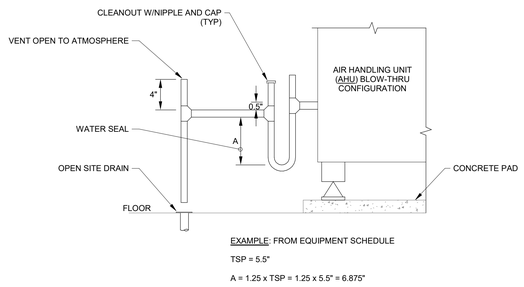
E AUTOMATIC AIR VENT PIPING

SCALE: NONE



C FILTER FEEDER PIPING SCHEMATIC

SCALE: NONE



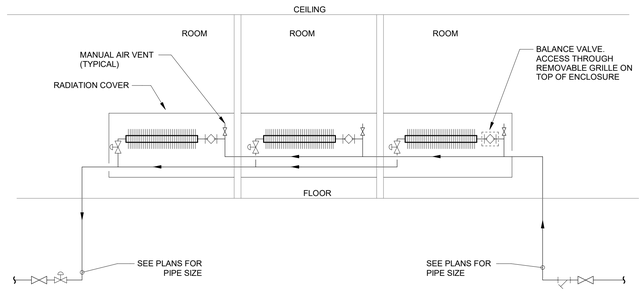
EXAMPLE: FROM EQUIPMENT SCHEDULE

TSP = 5.5"

A = 1.25 x TSP = 1.25 x 5.5" = 6.875"

F CONDENSATE DRAIN PAN PIPING - BLOW THRU

SCALE: NONE



L MULTIPLE FINNED RADIATION PIPING WITH ENCLOSURE

SCALE: NONE

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REVISION SCHEDULE		
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DETAILS - HYDRONICS

M4.11

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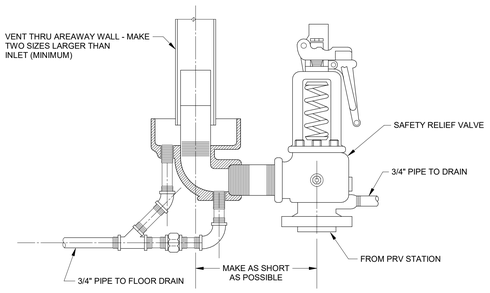
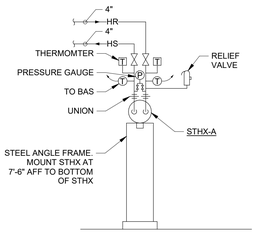
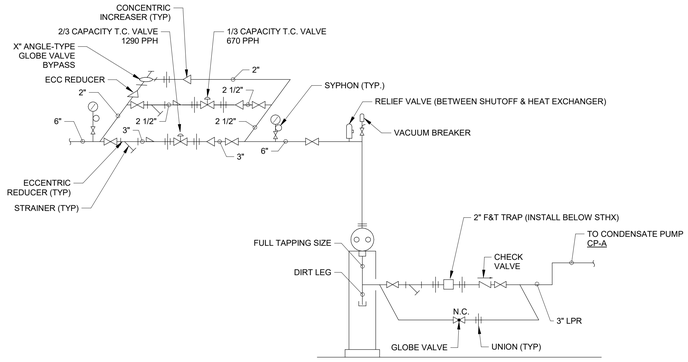


F DRIP PAN ELBOW SAFTEY VALVE

SCALE: NONE



WATER SIDE



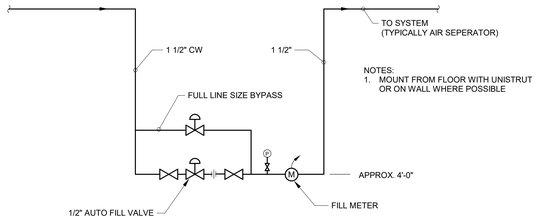
STEAM SIDE

A SHELL AND TUBE HEAT EXCHANGER (STHX) PIPING

SCALE: NONE

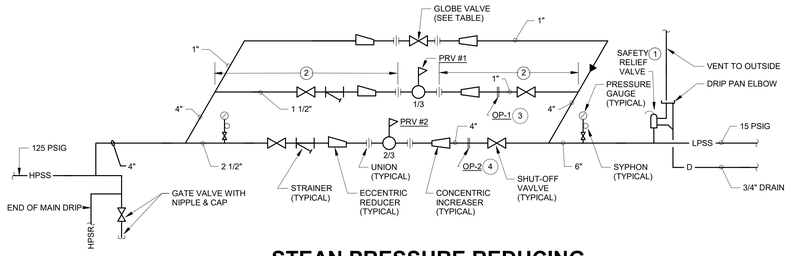
	PRV#1 (1/3)	PRV#2 (2/3)	GLOBE VALVE
CAPACITY	670 LB/HR	1290 LB/HR	2,170 LB/HR
PRESS. IN	125 PSIG	125 PSIG	125 PSIG
PRESS. OUT	15 PSIG	15 PSIG	25 PSIG
INLET SIZE	1/2"	3/4"	3/4"
OUTLET SIZE	1/2"	3/4"	3/4"

NOTES:
1. 2,730 LB/HR RELIEVING CAPACITY @ 25 PSIG INLET SIZE: 3" FLG, OUTLET SIZE: 4" FNPT, ORIFICE "J". FURNISHED BY SAME SUPPLIER AS PRV STATION.
2. MANUFACTURER'S RECOMMENDATIONS (TYP)
3. OP-1: 2" ORIFICE PLATE WITH (1) HOLE AT 7/8"
4. OP-2: 4" ORIFICE PLATE WITH (1) HOLE AT 7/16"



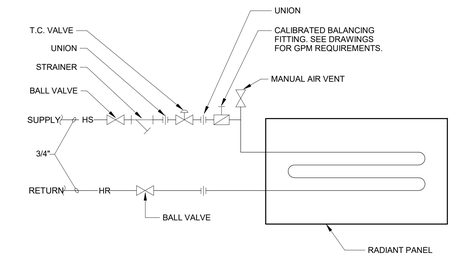
G FILL STATION SCHEMATIC

SCALE: NONE



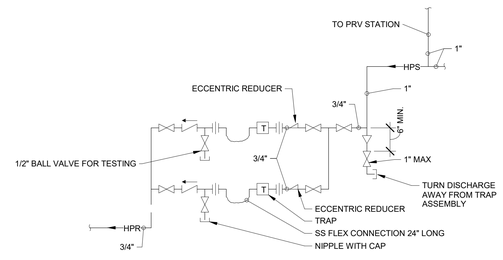
D STEAN PRESSURE REDUCING STATION PIPING SCHEMATIC

SCALE: NONE



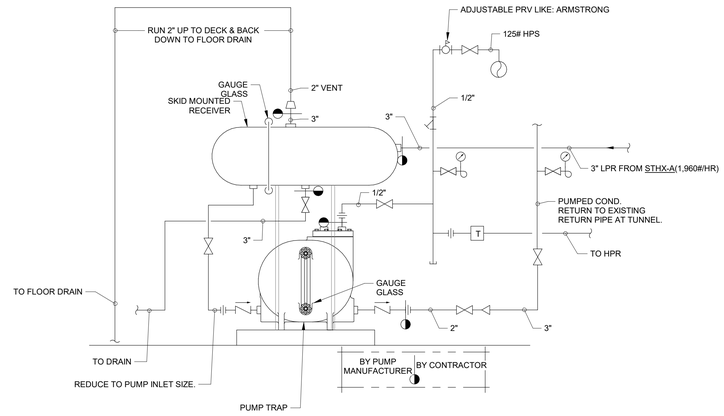
B RADIANT CEILING PANEL PIPING

SCALE: NONE



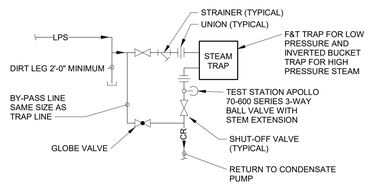
H END OF MAIN DRIP AND WARM UP (HIGHPRESSURE)

SCALE: NONE



E STEAM POWERED DUPLEX CONDENSATE PUMP PIPING SCHEMATIC

SCALE: NONE



C END OF MAIN DRIP STREAM TRAP

SCALE: NONE

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DETAILS - HYDRONICS

M4.12

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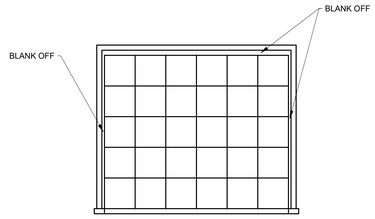
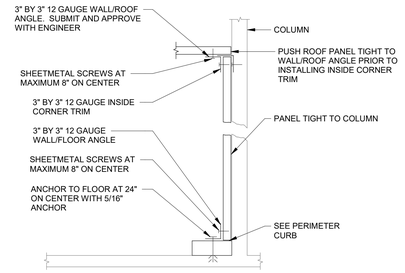


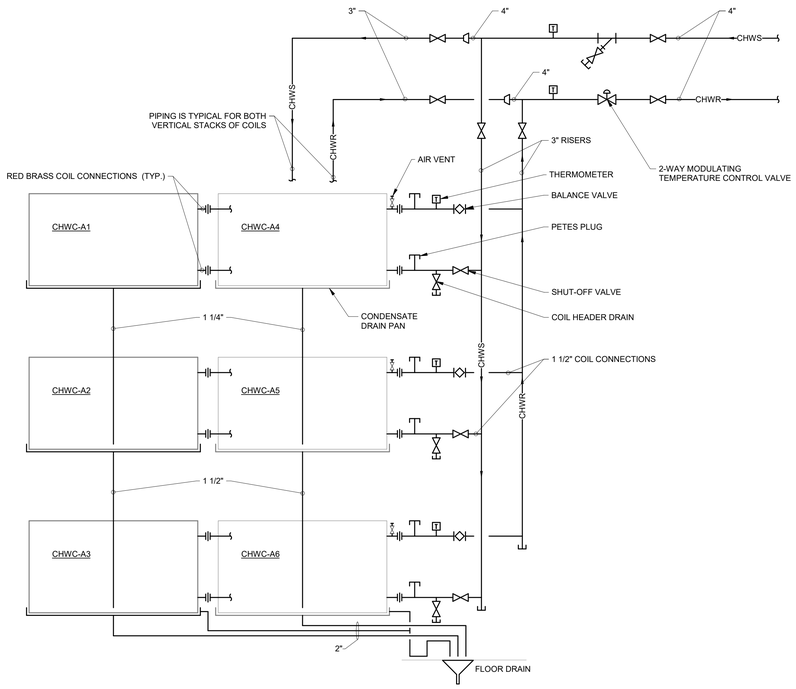
PRE-FILTER & FINAL FILTER SCHEDULE
24" X 24" X (5) ROWS OF 6

E FILTER SECTION
SCALE: NONE

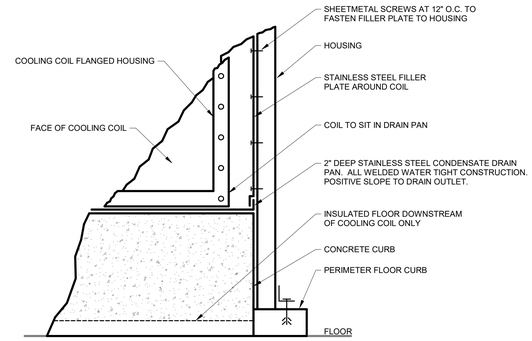
CONTRACTOR TO INSTALL AHU HOUSING SQUARE AND PLUMB. ALL CORNERS SHALL BE 90-DEGREE ANGLES UNLESS OTHERWISE SHOWN. PROVIDE ALL SHIMS, BLOCKING ETC. AS REQUIRED TO ACHIEVE THESE RESULTS.



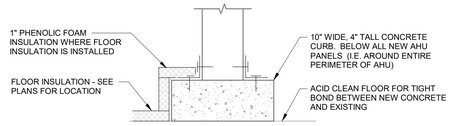
A AHU HOUSING CONSTRUCTION
SCALE: NONE



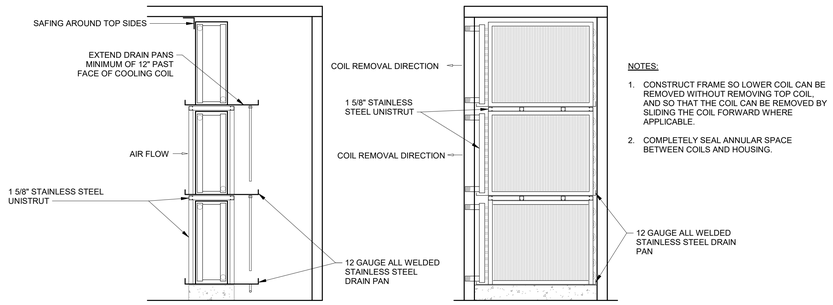
F AHU-1 COIL PIPING
SCALE: NONE



B CHILLED WATER COIL
SCALE: NONE



C PERIMETER CURB
SCALE: NONE



D COOLING COIL MOUNTING
SCALE: NONE

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DANIEL E. DIMOND REGISTERED No. PE60910351 STATE OF INDIANA PROFESSIONAL ENGINEER

CERTIFICATION 06/06/2020

100% CONSTRUCTION DOCUMENTS

Indiana State University - Dreiser Hall Renovation

221 North 6th Street
Terre Haute, IN 47809

Project No.: 19A052
Drawn By: ACB
Checked By: MJE
Scale: See Drawing
Issue Date: 06/05/2020

REVISION SCHEDULE		
Rev. #	Revision Description	Issue Date

DETAILS - AIR HANDLING UNIT 1

M4.13

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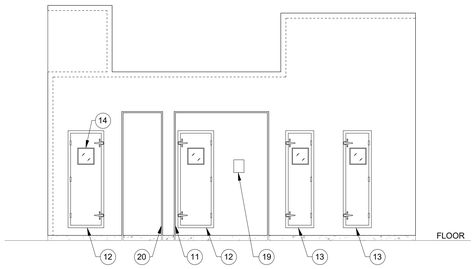
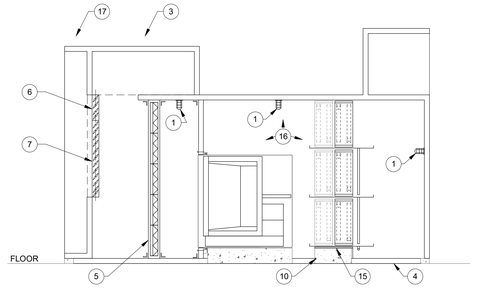


AHU-1 EXTERIOR ELEVATION FACING EAST

SCALE: 1/4" = 1'-0"

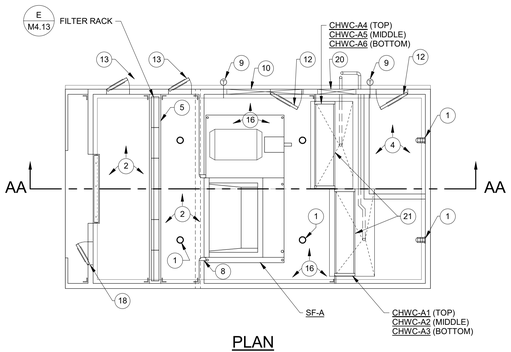
PLAN NOTES:

1. MARINE LIGHT. (PROVIDE AND INSTALLED BY DIV. 26 CONTRACTOR).
2. NO INSULATED FLOOR.
3. 80" X 34" RETURN AIR.
4. INSULATED FLOOR PANEL. INSULATE CURB WITH 1" PHENOLIC FOAM. SEE C/M4.13
5. FILTER BANK. PROVIDE TOTAL - (30) 24/24 FILTERS. SEE 23 31 19 FOR FILTER TYPE.
6. 48" X 20" MOTORIZED MIN OUTDOOR AIR DAMPER WITH INSULATED BLADES, LIKE TAMCO OR EQUAL.
7. 48" X 60" MOTORIZED ECONOMIZER DAMPER WITH INSULATED BLADES, LIKE TAMCO OR EQUAL. (BELOW)
8. FLEXIBLE CONNECTION.
9. THERMOMETER.
10. 12" CONCRETE BASE FOR CHILLED WATER COIL.
11. 6'-0" X 8'-0" TALL REMOVABLE SECTION FOR FAN REMOVAL AND REPLACEMENT.
12. INSTALL DOORS 24" WIDE X 72" TALL, ORIENTATION AS SHOWN.
13. INSTALL DOORS 18" WIDE X 72" TALL, ORIENTATION AS SHOWN.
14. 12/12 DOUBLE GLAZED INSULATED WINDOW. (TYP.)
15. 1" RIGID INSULATION BELOW CHILLED WATER PAN. INSULATE FACE OF 12" BASE WITH 1" PHENOLIC FOAM.
16. PERFORATED PANELS ON FLOOR, WALLS, AND CEILING WITHIN THIS SECTION.
17. INSULATED 166" X 148" OA PLENUM.
18. 18" WIDE X 48" TALL ACCESS DOOR.
19. AFMS CFM READOUT METER
20. 2'-6" X 8'-0" TALL REMOVABLE SECTION FOR CHILLED WATER COIL REMOVAL AND REPLACEMENT.
21. FOR CHILLED WATER COIL PIPING SEE F/M4.13



SECTION AA

SCALE: 1/4" = 1'-0"

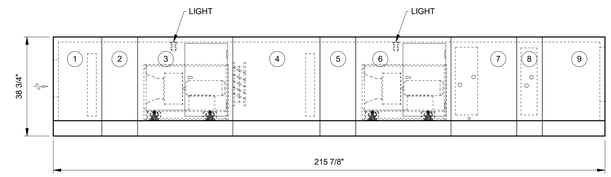


PLAN

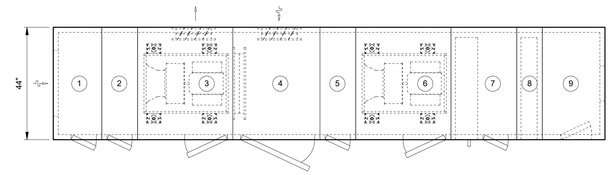
SCALE: 1/4" = 1'-0"

A AHU-1 - BUILT-IN-PLACE UNIT

SCALE: 1/4" = 1'-0"



ELEVATION



PLAN

AHU-2 SECTIONS

1. RETURN PLENUM W/ FILTER
2. ACCESS
3. RETURN FAN W/ EXHAUST DAMPER (SIDE)
4. FILTER MIXING BOX W/ OA & RETURN DAMPER (SIDE)
5. ACCESS
6. SUPPLY FAN
7. COOLING COIL W/ ACCESS
8. HEATING COIL
9. DISCHARGE PLENUM (W/ ACCESS)

B AHU-2 SCENE SHOP

SCALE: NONE

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REVISION SCHEDULE		
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PROFILES - AIR HANDLING UNITS

M4.15

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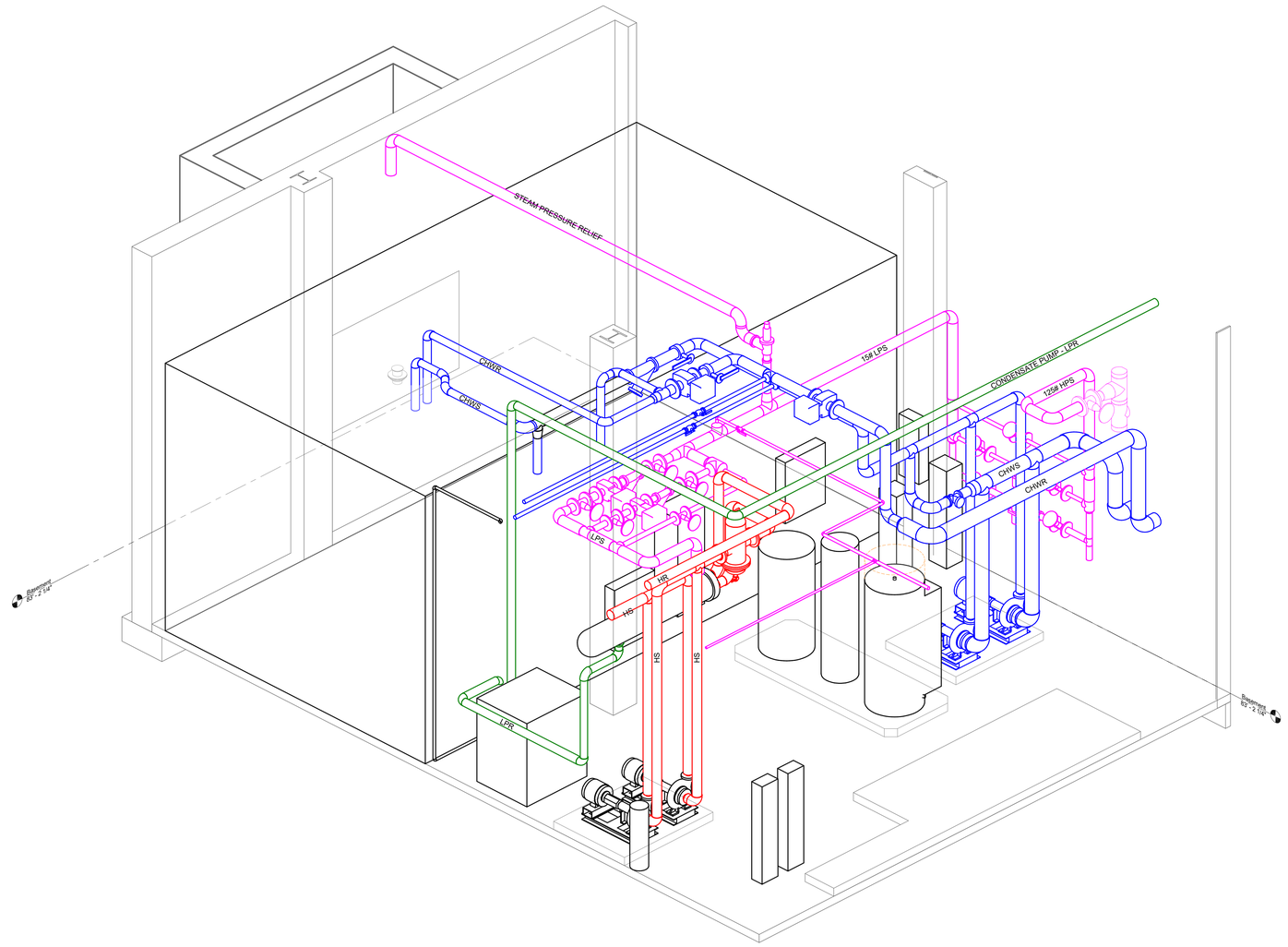

1 PERSPECTIVE - MACHINE ROOM 010 - MECHANICAL 1

SCALE:

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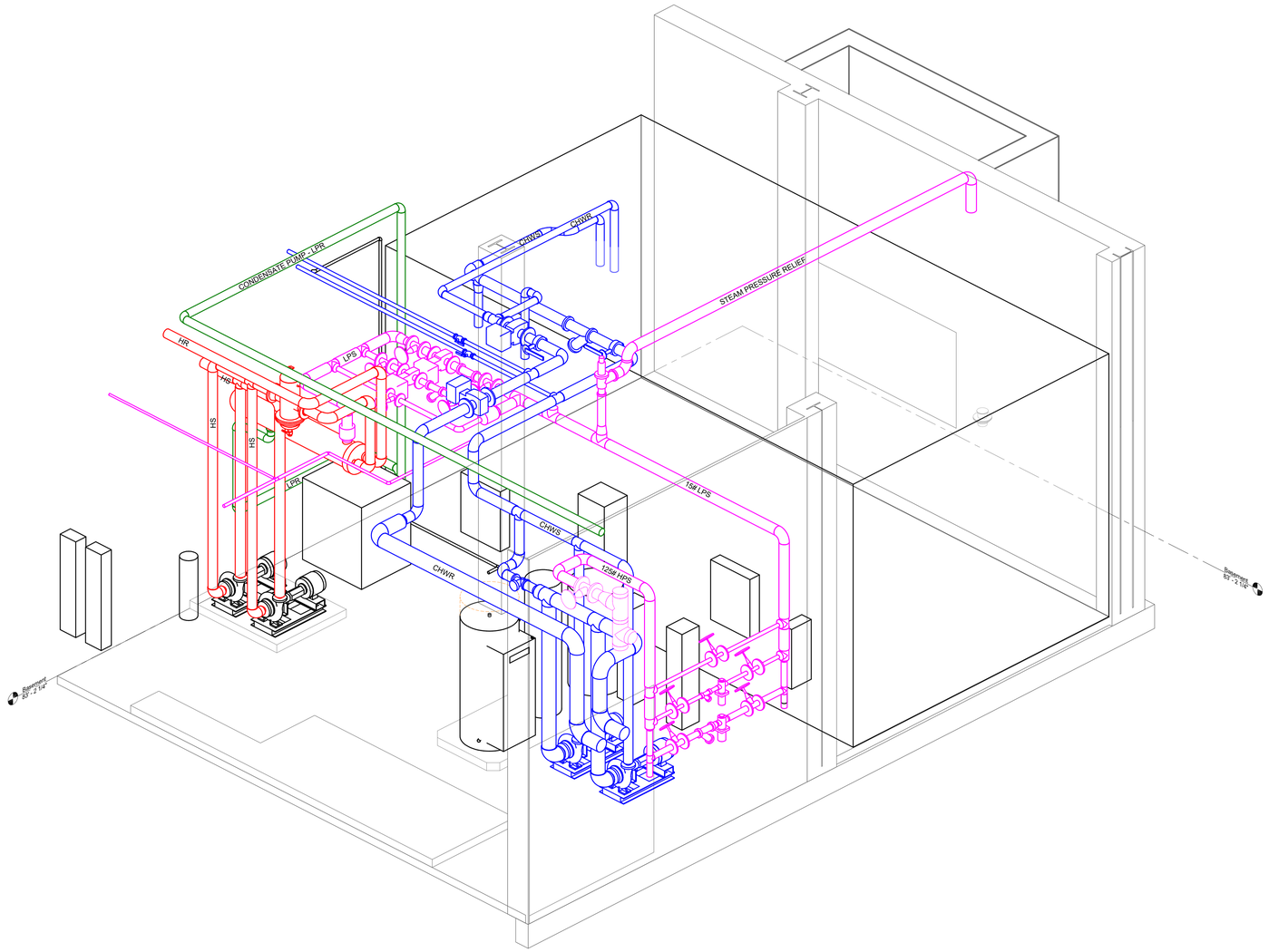
PERSPECTIVE - MACHINE ROOM 010 - MECHANICAL

M5.01



1 PERSPECTIVE - MACHINE ROOM 010 - MECHANICAL 2

SCALE:

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PERSPECTIVE - MACHINE ROOM 010 - MECHANICAL

M5.02

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FAN SCHEDULE

MARK NO.	SYSTEM SERVED	SPECIFICATION			MANUFACTURER AND MODEL NO.	OPERATING DATA						MOTOR DATA					WEIGHT LBS.	REMARKS
		SECTION	NAME	EQUIPMENT TYPE		CFM	TOTAL S.P.	RPM	BHP	SONES	DRIVE	HP	VOLTS	PHASE	RPM	VFD		
SF-A	AHU-1 SUPPLY AIR	23 34 16	CENTRIFUGAL HVAC FANS	PLENUM FAN	TWIN CITY 445 EPF	40,000	6.0	974	34.9	OUTLET-62 INLET-50	BELT	60	208	3	1750	Y	2,900	CLASS III FAN, BELT GUARD, MOTOR MOUNT FRAME, SPRING VIBRATION ISOLATION.
RF-A	AHU-1 RELIEF AIR	23 34 16	CENTRIFUGAL HVAC FANS	DWDI FAN	TWIN CITY BAF DWDI 402	40,000	2.0	700	19.0	INLET-39	BELT	25	208	3	1750	Y	3,000	CLASS III FAN, BELT GUARD, MOTOR MOUNT FRAME, SPRING VIBRATION ISOLATION.
EF-A	SOUTH RESTROOMS	23 34 23	HVAC POWER VENTILATORS	CENTRIFUGAL ROOF VENTILATOR	GREENHECK G-099-VG	750	0.75	1549	0.18	10.1	DIRECT	1/4	115	1	1725	N	40	BELT GUARD, ISOLATORS AND HARDWARE FOR VERTICAL MOUNTING. DISC. SWITCH. CONTROL BY T.C.C.
EF-B	NORTH RESTROOMS	23 34 23	HVAC POWER VENTILATORS	CENTRIFUGAL ROOF VENTILATOR	GREENHECK G-123-VG	1700	1.0	1725	0.48	15.6	DIRECT	1/2	115	1	1725	N	49	ROOF CURB, DISC SW. CONTROL BY T.C.C.
EF-C	DYE-VAT EXHAUST	23 34 23	HVAC POWER VENTILATORS	CENTRIFUGAL ROOF VENTILATOR	GREENHECK CUE-101HP-VG	500	0.75	1732	0.15	9.2	DIRECT	1/2	115	1	2500	N	52	ROOF CURB, WALL SWITCH BY DIV. 26 CONTRACTOR., DISC SW.
EF-D	LOBBY RESTROOMS	23 34 23	HVAC POWER VENTILATORS	CENTRIFUGAL ROOF VENTILATOR	GREENHECK G-103-VG	700	0.5	1401	0.15	7.8	DIRECT	1/3	115	1	1725	N	40	ROOF CURB, CONTROL BY TCC., DISC SW.
EF-E	WELDING EXHAUST	23 34 23	HVAC POWER VENTILATORS	MIXED FLOW INLINE	GREENHECK QEI-9-II	800	1.75	2036	0.47	7.2	BELT	1/2	115	1	1725	N	170	EXPLOSION PROOF. WALL SWITCH BY DIV. 26 CONTRACTOR.
EF-F	SCENE SHOP EXHAUST	23 34 23	HVAC POWER VENTILATORS	MIXED FLOW INLINE	GREENHECK QEI-9-II	1,500	1.5	2578	0.79	8.8	BELT	1	208	3	1725	N	-	EXPLOSION PROOF. TWO SPEED MOTOR. WALL SWITCH BY DIV. 26 CONTRACTOR.
EF-G	DESIGN LAB EXHAUST	23 34 23	HVAC POWER VENTILATORS	CENTRIFUGAL UPBLAST ROOF VENTILATOR	GREENHECK CUE-099-VG	800	0.75	1626	0.2	10.0	DIRECT	1/4	115	1	1725	N	39	UPBLAST CENTRIFUGAL ROOF EXHAUST FAN. WALL SWITCH BY DIV. 26 CONTRACTOR
DBF-A	DRYER BOOSTER FAN	23 34 23	HVAC POWER VENTILATORS	INLINE BOOSTER	FANTECH DBF 4XL DRYER EXHAUST FAN	188	-	2175	-	-	DIRECT	1	120	1	2175	N	-	-
DC-A	SCENE SHOP DUST COLLECTOR	23 34 23	HVAC POWER VENTILATORS	MIXED FLOW INLINE	ONEIDA AIR SYSTEMS DUST GORILLA PRO #XGK050035W	3,250	5.0	-	-	-	DIRECT	5	208	1	4000	N	-	REMOTE STARTER WITH PUSH BOTTON ON/OFF SWITCH AND RF KEYFOB. STACKING SOUND FILTER: 80-82 dBA @ 10 ft

VARIABLE AIR VOLUME BOX SCHEDULE WITH HEAT (HOT WATER)

MARK NO.	DRAWING NAME &/OR PURPOSE	SPECIFICATION			MANUFACTURER & MODEL NO.	INLET DIA (IN.)	CLG CFM RANGE (*4)	HTG CFM	MAX APD THRU BOX AND COIL	INLET SP (IN. W.G.)	HEATING DATA (*1)						REMARKS
		SECTION	NAME	EQUIP TYPE							MBH (*2)	EAT	LAT	EWT	LWT	GPM	WPD	
VAV-A	VAV BOX ZONE	23 36 00	AIR TERMINAL UNITS	VAV WITH HYDRONIC HEATING COIL	PRICE MODEL SDV5	6"ø	0-360	250	0.50"	1.00"	12.60	55 °F	100 °F	180 °F	140.00 °F	0.60	0.10	TWO-ROW COIL
VAV-B	VAV BOX ZONE	23 36 00	AIR TERMINAL UNITS	VAV WITH HYDRONIC HEATING COIL	PRICE MODEL SDV5	8"ø	361-640	450	0.50"	1.00"	20.10	55 °F	97 °F	180 °F	140.00 °F	1.10	0.30	TWO-ROW COIL
VAV-C	VAV BOX ZONE	23 36 00	AIR TERMINAL UNITS	VAV WITH HYDRONIC HEATING COIL	PRICE MODEL SDV5	10"ø	641-945	660	0.50"	1.00"	33.90	55 °F	97 °F	180 °F	140.00 °F	1.80	0.90	TWO-ROW COIL
VAV-D	VAV BOX ZONE	23 36 00	AIR TERMINAL UNITS	VAV WITH HYDRONIC HEATING COIL	PRICE MODEL SDV5	12"ø	946-1350	945	0.50"	1.00"	42.20	55 °F	101 °F	180 °F	140.00 °F	2.50	1.80	TWO-ROW COIL
VAV-E	VAV BOX ZONE	23 36 00	AIR TERMINAL UNITS	VAV WITH HYDRONIC HEATING COIL	PRICE MODEL SDV5	14"ø	1351-2000	1400	0.50"	1.00"	62.50	55 °F	100 °F	180 °F	140.00 °F	3.60	1.90	TWO-ROW COIL
VAV-F	VAV BOX ZONE	23 36 00	AIR TERMINAL UNITS	VAV WITH HYDRONIC HEATING COIL	PRICE MODEL SDV5	16"ø	2001-2400	1680	0.50"	1.50"	75.00	55 °F	101 °F	180 °F	140.00 °F	4.50	2.90	TWO-ROW COIL
VAV-G	VAV BOX ZONE	23 36 00	AIR TERMINAL UNITS	VAV WITH HYDRONIC HEATING COIL	PRICE MODEL SDV5	24"x16"	2401-4000	2800	0.55"	1.00"	118.80	55 °F	103 °F	180 °F	140.00 °F	7.30	8.30	TWO-ROW COIL

NOTES:

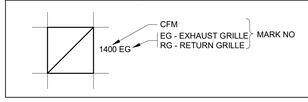
(1) HEATING DATA RUN AT 75% OF VAV BOX MAXIMUM CFM. COIL AIR PRESSURE DROPS ARE AT FULL VAV BOX CFM.

DUCT SILENCER SCHEDULE

MARK NO	AREA / EQUIPMENT SERVED	SPECIFICATION			MANUFACTURER & MODEL NO	CFM	DIMENSIONS			MAX FACE VELOCITY (FPM)	MAX APD (IN)	MIN DYNAMIC INSERTION LOSS (dB)								REMARKS
		SECTION	NAME	EQUIPMENT TYPE			WIDTH	HEIGHT	LENGTH			63 HZ	125 HZ	250 HZ	500 HZ	1000 HZ	2000 HZ	4000 HZ	8000 HZ	
S-A	SEE PLANS	23 33 00	AIR ACCESSORIES DUCT SILENCER	RECTANGULAR	RUSKIN A-120	100-250	6"	12"	36"	750	0.20	10	23	49	56	58	59	55	30	SEE PLANS FOR ALL LOCATIONS
S-RF-A	AHU-1 RELIEF AIR	23 33 00	AIR ACCESSORIES DUCT SILENCER	RECTANGULAR	RUSKIN MLF-60	40,000	56"	92"	60"	800	0.21	5	14	21	30	35	23	20	14	
S-115-1	THEATER 115	23 33 00	AIR ACCESSORIES DUCT SILENCER	ELBOW	RUSKIN ELBSP5	2,400	24"	18"	2'-6" UP x 2'-6" DN	800	0.30	5	14	21	31	32	28	25	21	
S-115-2	THEATER 115	23 33 00	AIR ACCESSORIES DUCT SILENCER	ELBOW	RUSKIN ELBSP5	2,400	24"	18"	2'-6" UP x 2'-6" DN	800	0.30	5	14	21	31	32	28	25	21	
S-333-1	TV STUDIO 333	23 33 00	AIR ACCESSORIES DUCT SILENCER	ELBOW	RUSKIN ELBSP5	1,130	16"	14"	2'-6" UP x 2'-6" DN	800	0.30	5	14	21	31	32	28	25	21	
S-333-2	TV STUDIO 333	23 33 00	AIR ACCESSORIES DUCT SILENCER	ELBOW	RUSKIN ELBSP5	1,130	16"	14"	2'-6" UP x 2'-6" DN	800	0.30	5	14	21	31	32	28	25	21	

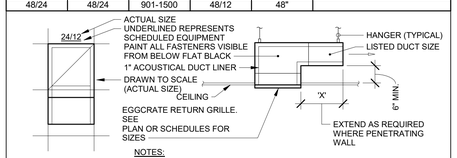
EXHAUST/RETURN REGISTER SCHEDULE

MARK NO.	NOMINAL GRILLE SIZE	MAX N.C.	MAX ΔP	CFM RANGE	REMARKS
0-200	8/8	25	.1	0-200	-
225-450	12/12	25	.1	225-450	-
455-800	16/16	25	.1	455-800	-
805-1050	20/20	25	.1	805-1050	-
1055-1400	24/24	25	.1	1055-1400	-



PLENUM RETURN GRILLE SCHEDULE

MARK NO.	GRILLE SIZE	CFM RANGE	DUCTED ELBOW SIZE	'X' DIMEN.	REMARKS
24/12	24/12	0-500	24/8	18"	
24/24	24/24	501-900	24/12	24"	
48/24	48/24	901-1500	48/12	48"	

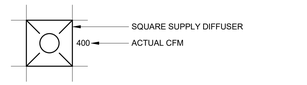


NOTES:

1. INSIDE OF DUCT TO BE BLACK.
2. DUCT SUPPORTED FROM STRUCTURE, NOT CEILING GRID.

CEILING DIFFUSER SCHEDULE

MARK NO.	SPECIFICATION NAME	MANUFACTURER AND MODEL NO.	CFM RANGE	MAX. N.C.	NECK DIA.	FACE SIZE	CEILING MODULE SIZE
60 - 135	SQUARE CEILING DIFFUSER	PRICE SCDA OR EQUAL	100 - 135	15	6"	12/12	24/24
140 - 205	SQUARE CEILING DIFFUSER	PRICE SCDA OR EQUAL	140 - 205	18	8"	12/12	24/24
210 - 245	SQUARE CEILING DIFFUSER	PRICE SCDA OR EQUAL	210 - 245	19	8"	24/24	24/24
250 - 325	SQUARE CEILING DIFFUSER	PRICE SCDA OR EQUAL	250 - 325	19	10"	24/24	24/24
330 - 475	SQUARE CEILING DIFFUSER	PRICE SCDA OR EQUAL	330 - 475	19	12"	24/24	24/24
480 - 645	SQUARE CEILING DIFFUSER	PRICE SCDA OR EQUAL	480 - 645	18	14"	24/24	24/24
650 - 735	SQUARE CEILING DIFFUSER	PRICE SCDA OR EQUAL	650 - 735	18	15"	24/24	24/24



TRANSFER DUCT SCHEDULE

PLAN CALL OUT	TRANSFER DUCT SIZE	CFM RANGE	'X' DIMENSION	'Y' DIMENSION
AA	10"/10"	0-200	12"	0"
BB	14"/12"	205-325	12"	0"
CC	16"/16"	330-500	18"	0"
DD	20"/20"	505-800	18"	6"
EE	24"/22"	805-1000	18"	12"
FF	26"/24"	1005-1250	24"	12"
GG	28"/26"	1255-1500	28"	12"
HH	30"/18"	805-1000	36"	14"
JJ	38"/14"	805-1000	48"	18"
KK	46"/12"	900-1100	60"	24"

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CERTIFICATION 06/05/2020

100% CONSTRUCTION DOCUMENTS

Indiana State University - Dreiser Hall Renovation

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Project No.: 19A052
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REVISION SCHEDULE		
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SCHEDULES - AIR DISTRIBUTION

M6.01

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AIR HANDLING UNIT SCHEDULE

MARK NO.	DRAWING NAME &/OR PURPOSE	SPECIFICATION			MANUFACTURER AND MODEL NO.	AIR VOLUME (CFM)	ECONOMIZER AIR	PRE-FILTER	FILTER	RETURN FAN									SUPPLY FAN									COOLING COIL										HEATING COIL									REMARKS
		SECTION	NAME	EQUIPMENT TYPE		MIN. O.A.				TSP (IN WG.)	ESP (IN WG.)	WHEEL RPM DIA. (IN)	QTY	HP	BHP	VOLTS PHASE	VFD	TSP (IN WG.)	ESP (IN WG.)	WHEEL RPM DIA. (IN)	QTY	HP	BHP	VOLTS PHASE	VFD	WATER FLOW (GPM)	MIN. TOTAL MBH	EAT DB WB	LAT DB WB	EWT LWT	DX COIL	MAX. FPI	MIN. ROWS	MAX. FACE (FPM)	MAX. APD (IN)	MAX. WPD (FT)	WATER FLOW (GPM)	MIN. MBH	EAT LAT	EWT LWT	MAX. FPI	MIN. ROWS	MAX. FACE (FPM)	MAX. APD (IN)	MAX. WPD (FT)	
AHU-1	MAIN BUILDING HVAC	23 31 19	HVAC HOUSING	BUILT UP AIR HANDLING UNIT	CUSTOM BUILT UP AHU	40,000 8,000	Y	Y	Y	SEE RF-A M6.01								SEE SF-A M6.01								SEE CHWC-A1 THRU A6 M6.11										NO HWC									
AHU-2	SCENE SHOP	23 73 13	MODULAR INDOOR CSAC	MODULAR CENTRAL STATION AIR-HANDLING UNITS	TRANE	3,000 450	Y	Y	Y	2.79	0.75	2,338 16.5	1	3	2.4	208 3	Y	4.10	1.25	2,406 16.5	1	5	3.4	208 3	Y	19.6	98.4	78°F 65°F	55°F 54°F	45°F 55°F	N	8	6	500	0.80	10.0	15.4	154	58°F 105°F	180°F 160°F	8	1	700	0.3	10	

MINI-SPLIT AIR-COOLED CONDENSING UNIT SCHEDULE

MARK NO.	EQUIPMENT SERVED	MANUFACTURER AND MODEL NO.	CAPACITY		ELECTRICAL DATA				TOTAL WEIGHT (LBS)	REMARKS
			COOLING (BTUH)	HEATING (BTUH)	MCA	MOCP	VOLTS	PHASE		
ACCU-A	DS-A	FUJITSU HALCYON AOU18RLXFW1	18,000	21,600	6.1	20	208	1	134	FIELD SUPPLIED DISCONNECT SWITCH BY E.C. 95°F AMBIENT ENTERING AIR TO UNIT. INSTALL ON EQUIPMENT RAILS. LOW AMBIENT OPERATION DOWN TO -5°F. INVERTER COMPRESSOR.
ACCU-B	DS-B	FUJITSU HALCYON AOU24RLXFZH	22,000	25,000	25.1	30	208	1	150	
ACCU-C	DS-C	FUJITSU HALCYON AOU24RGLX	24,000	27,000	25.1	30	208	1	134	
ACCU-D	DS-D	FUJITSU HALCYON AOU12RLFW1	12,000	16,000	6.7	15	208	1	84	

MINI-SPLIT SCHEDULE

MARK NO.	AREA SERVED	INDOOR MFG & MODEL NO.	CAPACITY*		AIRFLOW	ELECTRICAL DATA			REMARKS
			COOLING BTUHS	HEATING BTUHS	HI/LO (CFM)	MCA/ MOCP	VOLTS	PHASE	
DS-A	TELECOMM 211	FUJITSU HALCYON ASU18RLF	18,000	20,000	542/365	0.32/15	208	1	HIGH WALL MTD, CONDENSATE PUMP, WALL MOUNTED THERMOSTAT.
DS-B	LIGHTING AND SOUND CONTROL	FUJITSU HALCYON ASU12RLX	12,000	13,500	388/265	0.19/15	208	1	HIGH WALL MTD, CONDENSATE PUMP, WALL MOUNTED THERMOSTAT.
DS-C	FIRST FLOOR EAST CORRIDOR	FUJITSU HALCYON AOU24RLXFWH	24,000	27,000	800/518	9.0/30	208	1	HORIZ. DUCTED, CONDENSATE PUMP, WALL MOUNTED THERMOSTAT, PROVIDE FILTER RACK ON UNIT.
DS-D	CONCESSIONS 133	FUJITSU HALCYON ASU12RLFCC	12,000	16,000	359/277	6.7/15	208	1	HIGH WALL MTD, CONDENSATE PUMP, WALL MOUNTED THERMOSTAT.

NOTES:
COIL CAPACITY LISTED BASED ON 80°F DB/67°F WB ENTERING AIR TEMPERATURE

DS-XXX → ROOM NUMBER OR AREA SERVED IDENTIFICATION

STEAM HUMDIFIER SCHEDULE

MARK NO.	AREA SERVED	SPECIFICATION			MANUFACTURER AND MODEL NO.	ENTERING D.B. °F.	ENTERING W.B. °F.	LEAVING D.B. °F.	LEAVING W.B. °F.	OUTPUT LBS. /HR.	DISPERSION MODEL. DUCT MOUNTED	DUCT SIZE	ABSORBTION DISTANCE	REMARKS
		SECTION	NAME	EQUIPMENT TYPE										
H-1	COSTUME STORAGE 009	23 84 13	HUMIDIFIERS	STEAM HUMDIFIER	ARMSTRONG 90 SERIES	70	62.5	-	-	5	1 MANIFOLD	W/H = 30"/8"	36"	Y-STRAINER, INVERTED BUCKET TRAP BY UNIT MFG.
H-2	COSTUME STORAGE 004	23 84 13	HUMIDIFIERS	STEAM HUMDIFIER	ARMSTRONG 90 SERIES	70	62.5	-	-	10	1 MANIFOLD	W/H = 18"/14"	36"	Y-STRAINER, INVERTED BUCKET TRAP BY UNIT MFG.

HEAT EXCHANGER SCHEDULE (STHX)

MARK NO.	DRAWING NAME &/OR PURPOSE	SPECIFICATION			MANUFACTURER AND MODEL NO.	HOT SIDE		COLD SIDE					HEATING SURFACE SQ. FT.	HR & HS SIZE (IN.)	STEAM INLET (IN.)	COND. SIZE (IN.)	WT. DRY (LBS.)	REMARKS
		SECTION	NAME	EQUIPMENT TYPE		STEAM (PSIG)	LBS/HR	FLUID	TEMP. IN °F	TEMP. OUT °F	FLOW GPM	DIFF. PRESS FT. HD.						
STHX-A	HEATING WATER FOR ALL FLOORS	23 57 13	HEAT EXHANGERS	SHELL & TUBE	BELL & GOSSETT QSU-106-2	5#	1,960	WATER	150°F	180°F	130	5	88.2	4" FLANGED	4" FLANGED	1 1/2" NPT	365	SUPPORTS BY M.C. PROVIDE (1) EXTRA TUBE BUNDLE

HYDRONIC COOLING COIL SCHEDULE

MARK NO.	DRAWING NAME &/OR PURPOSE	SPECIFICATION			MANUFACTURER AND MODEL NO.	AIR VOLUME (CFM)	MIN. TOTAL MBH	MIN. SENS. MBH	E.A.T. D.B.	E.A.T. W.B.	L.A.T. D.B.	L.A.T. W.B.	WATER TEMPERATURE E.W.T.	WATER TEMPERATURE L.W.T.	MIN. ROWS	MAX. FPI	MAX. FACE (FPM)	MAX. APD (IN)	MAX. WPD (FT)	WATER FLOW (GPM)	COIL FACE AREA WIDTH (IN)	COIL FACE AREA HEIGHT (IN)	COIL CONNECTION SIZES (IN)	REMARKS
		SECTION	NAME	EQUIPMENT TYPE																				
CHWC-A1 THRU A6	AHU-1 COOLING	23 82 16	AIR COILS	CHILLED WATER COIL	TEMTROL 5WC-20-36x66x10-8AL	6,700	250.0	167.7	76.5	65.4	52.4	52.3	45	63	10	8	406	0.73	11.6	27.7	66"	36"	1.50"	TOTAL 6 COILS. CAPACITY GIVEN IS FOR EACH COIL. RED BRASS COIL CONNECTIONS

PUMP SCHEDULE

MARK NO.	SYSTEM SERVED	SPECIFICATION			MANUFACTURER AND MODEL NO.	FLUID	GPM	FT. HD. WTR.	EFF. %	IMP. DIA.	SUCTION	DISCHARGE	MOTOR DATA						REMARKS
		SECTION	NAME	EQUIPMENT TYPE									HP	BHP	RPM	VOLTS	PHASE	VFD	
HWP-A1 & A2	HEATING WATER	23 21 23	HYDRONIC PUMP	BASE MOUNTED END SUCTION PUMP	BELL & GOSSETT e1510-2BD-SS-184T-S	WATER	130	70	71%	8.5"	2.5"	2"	5	3.23	1800	208	3	Y	...
CHWP-A1 & A2	CHILLED WATER	23 21 23	HYDRONIC PUMP	BASE MOUNTED END SUCTION PUMP	BELL & GOSSETT e1510-2BD-SS-184T-S	WATER	180	50	73.5%	8.5"	2.5"	2"	5	3.06	1800	208	3	Y	CONDENSATE CATCH PAN

STEAM CONDENSATE PUMP SCHEDULE

MARK NO.	DRAWING NAME &/OR PURPOSE	SPECIFICATION			MANUFACTURER AND MODEL NO.	FLUID	PPH	STEAM (PSIG)	REMARKS
		SECTION	NAME	EQUIPMENT TYPE					
CP-A	BUILDING STEAM RETURN	23 22 24	STEAM CONDENSATE PUMP	STEAM MOTIVE CONDENSATE PUMP	ARMSTRONG SPT-3508	HOT CONDENSATE	4,140	125	65 PSIG DISCHARGE PRESSURE, 125 PSIG MOTIVE STEAM, SKID MOUNTED STEAM POWERED CONDENSATE PUMP COMPLETE WITH ALL TRIM AND RECEIVER. INLET TO RECEIVER TO BE NO HIGHER THAN 40" ABOVE FLOOR. STAINLESS STEEL CHECK VALVES.

AIR SEPARATOR SCHEDULE

MARK NO.	DRAWING NAME &/OR PURPOSE	SPECIFICATION SECTION	SPECIFICATION NAME	MANUFACTURER AND MODEL NO.	WT LBS. WET	PIPE SIZE (IN.)	PIPE SIZE TO EXPAN. TANK	MAX WDP. (FT)	REMARKS
AS-HW	HEATING WATER SYSTEM	23 21 13	HYDRONIC PIPING SYSTEMS	SPIROTHERM VFD-400FL	150	4.0	1.5"	1	-

EXPANSION TANK SCHEDULE

MARK NO.	DRAWING NAME &/OR PURPOSE	SPECIFICATION SECTION	SPECIFICATION NAME	MANUFACTURER AND MODEL NO.	ASME RATING (PSI)	PIPE SIZE (IN.)	TANK VOLUME (GAL)	MINIMUM ACCEPTANCE VOLUME (GAL)	REMARKS
ET-HW	HW SYSTEM EXPANSION TANK	23 21 13	HYDRONIC PIPING SYSTEMS	BELL & GOSSETT: D-120	125	1"	68	34	24"Ø, 40" LONG. 120 LBS. HORIZONTAL TANK.
ET-CHW	CW SYSTEM EXPANSION TANK	23 21 13	HYDRONIC PIPING SYSTEMS	BELL & GOSSETT: D-15	125	1/2"	8	2.4	12"Ø, 20" LONG. 800 LBS. HORIZONTAL TANK.

FAN COIL SCHEDULE

MARK NO	DRAWING NAME &/OR PURPOSE	SPECIFICATION			MANUFACTURER & MODEL NO	FAN					MIN MBH	EAT	LAT	HEATING WATER		WATER FLOW (GPM)	MIN ROWS	MAX WPD (FT)	REMARKS
		SECTION	NAME	EQUIPMENT TYPE		CFM	ESP	AMPS	VOLTS	HP				EWT	LWT				
FC-A	COSTUME STORAGE 009	23 82 19	FAN COIL UNIT	CONCEALED DUCTED	INTERNATIONAL CPY-06	500	0.2	1.4	120	1/12	24.3	66	100	180	150	1.5	1	1.7	UNIT DISCONNECT, 3-SPEED ECM FAN MOTOR, CONTROL BY TCC
FC-B	COSTUME STORAGE 004	23 82 19	FAN COIL UNIT	CONCEALED DUCTED	INTERNATIONAL CPY-10	1000	0.2	2.8	120	(2) 1/12	38.9	66	100	180	150	2.6	1	1.7	UNIT DISCONNECT, 3-SPEED ECM FAN MOTOR, CONTROL BY TCC

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CERTIFICATION 06/05/2020

100% CONSTRUCTION DOCUMENTS

Indiana State University - Dreiser Hall Renovation

221 North 6th Street
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Project No.: 19A052
Drawn By: ACB
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Scale: See Drawing
Issue Date: 06/05/2020

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Rev. #	Revision Description	Issue Date

SCHEDULES - HYDRONICS

M6.11

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FINNED TUBE RADIATION SCHEDULE

MARK NO.	DRAWING NAME &/OR PURPOSE	SPECIFICATION			MANUFACTURER AND MODEL NO.	CAPACITY			ENCLOSURE (ALL DIMENSIONS IN INCHES)					ELEMENT				REMARKS
		SECTION	NAME	EQUIPMENT		BTU PER LIN. FT.	HEATING WATER SUPPLY (HS)	HEATING WATER RETURN (HR)	HEIGHT (IN.)	INSTALLED HEIGHT (IN.)	DEPTH (IN.)	FIN SIZE (IN.)	FINS PER FOOT	ROWS	TUBE MATERIAL	TUBE DIAMETER (IN.)	FINNED MATERIAL	
FTR-A	PERIMETER HEATING	23 32 33	CONVECTORS AND FINNED TUBE RADIATION HYDRONIC	FINNED TUBE RADIATION	VULCAN LV3-VC33	560	180	160	18"	VERIFY IN FIELD	3-7/8"	3 1/4 x 3 1/4	32	1	COPPER	1"	ALUMINUM	WALL MOUNT, 14 GA ENCLOSURE, CLEAR ANODIZED ALUMINUM GRILLE. ENCLOSURE COLOR BY ARCHITECT. BACKPLATE SUPPORT AS REQUIRED FOR MOUNTING. CONTINUOUS ENCLOSURE WITH CORNER PIECES. FIELD VERIFY EXACT WIDTHS NEEDED. PROVIDE CARRIERS FOR TOTAL 3 ROWS, BOTTOM ROW SUPPLY, MIDDLE ROW FINNED TUBE, TOP ROW RETURN.
FTR-B	PERIMETER HEATING	23 32 33	CONVECTORS AND FINNED TUBE RADIATION HYDRONIC	FINNED TUBE RADIATION	VULCAN LV2-VR02	425	180	160	14"	VERIFY IN FIELD	3-9/16"	2 1/4 x 2 1/2	50	1	COPPER	3/4"	ALUMINUM	WALL MOUNT,
FTR-C	PERIMETER HEATING	23 32 33	CONVECTORS AND FINNED TUBE RADIATION HYDRONIC	FINNED TUBE RADIATION	VULCAN JDVP31-VC3/4-35	1,060	180	160	11"	VERIFY IN FIELD	9"	3 1/4 x 3 1/4	50	1	COPPER	3/4"	ALUMINUM	PEDISTAL MOUNT, 2 FINNED ELEMENTS WIDE.

HYDRONIC RADIANT CEILING PANEL SCHEDULE

MARK NO	DRAWING NAME &/OR PURPOSE	SPECIFICATION		MANUFACTURER & MODEL NO	CAPACITY		PANEL			TUBE		REMARKS
		SECTION	NAME		BTU PER PANEL	MEAN WATER SUPPLY	SIZE	PASSES	MATERIAL	DIA	MATERIAL	
RCP-A	RESTROOM HEAT	23 82 43	RADIANT CEILING PANELS - HYDRONIC	STERLING LINER RADIANT PANEL	750	170	24" X 24"	4	COPPER	1/2"	AL	-

UNIT HEATER SCHEDULE

MARK NO.	DRAWING NAME &/OR PURPOSE	SPECIFICATION			MANUFACTURER AND MODEL NO.	HEATING DATA							WEIGHT	FAN RPM	ELECTRICAL DATA			STYLE	REMARKS
		SECTION	NAME	EQUIPMENT		CFM	MBH	GPM	WPD (FT)	EAT	EWT°F / LWT°F	ROW			HP	VOLTS	PH		
CUH-A	VESTIBULE 134 & CORRIDOR 101 HEATING	23 82 39	UNIT HEATER	CABINET UNIT HEATER	STERLING MODEL: W-1080-04	335	29.2	1.26	0.20	60°F	180°F / 150°F	2	135	875	1/15	120	1	FLOOR MOUNTED	HI-CAPACITY HEATING COIL, BUILT-IN DISCONNECT SWITCH
CUH-B	VESTIBULE 120 HEATING	23 82 39	UNIT HEATER	CABINET UNIT HEATER	STERLING MODEL: W-1080-06	495	47.8	3.03	1.13	60°F	180°F / 150°F	2	157	875	1/15	120	1	FLOOR MOUNTED	HI-CAPACITY HEATING COIL, BUILT-IN DISCONNECT SWITCH
PUH-A	STAIRWAY HEATING	23 82 39	UNIT HEATER	PROPELLER UNIT HEATER	STERLING MODEL: HS-60B	900	33.6	2.22	0.06	60°F	180°F / 150°F	1	41	1,000	1/20	120	1	HORIZONTAL EXPOSED	FAN GUARD, HORIZONTAL AND VERTICAL ADJUSTABLE LOUVERS.

(1) NOTE:
LOW AND HIGH SPEED RESPECTIVELY.

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SCHEDULES - HYDRONICS

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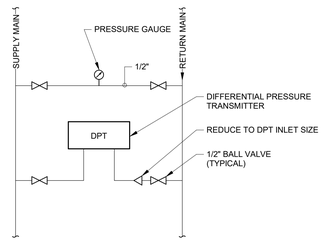
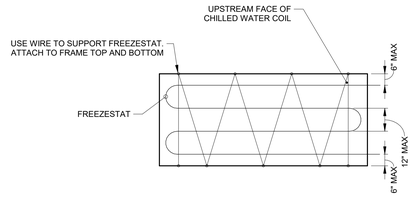


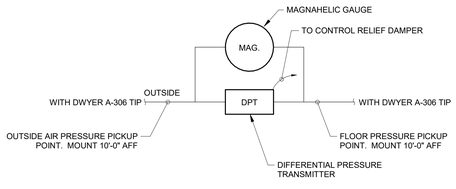
A TYPICAL DPT INSTALLATION

SCALE: NONE



B TYPICAL FREEZESTAT INSTALLATION

SCALE: NONE



C BUILDING PRESSURIZATION

SCALE: NONE

GENERAL NOTES - CONTROLS:

1. ALL CONTROL VALVES WILL BE ELECTRONIC/ELECTRIC ACTUATED.
2. ALL THERMOSTATS WILL BE REMOTE/READABLE. ADJUSTABLE FOR NIGHT SETBACK CAPABLITIES.
3. LISTED CONTROL POINTS ARE MINIMUM REQUIREMENTS. T.C.C. SHALL PROVIDE ADDITIONAL POINTS IF REQUIRED FOR SPECIFIED SEQUENCE OF OPERATION.
4. ALL THERMOSTATS TO BE MOUNTED AT 48" AFF TO TOP OF BACK BOX. NO WIREMOLD ALLOWED. DROP WIRE DOWN THRU CONCRETE BLOCK CORES. VERTICAL CONDUIT FOR WIRE TO THERMOSTATS NOT REQUIRED WHEN INSTALLING IN EXISTING BLOCK WALLS. CONDUITS ARE REQUIRED IN ALL OTHER WALLS. ELECTRICAL CONTRACTOR TO INSTALL CONDUIT TO ABOVE CEILING AND BACK BOX FOR ALL THERMOSTATS INSTALLED IN NEW WALLS. TEMPERATURE CONTROL CONTRACTOR TO PROVIDE COMPLETE INSTALLATION FOR ALL THERMOSTATS INSTALLED IN EXISTING WALLS.
5. THERMOSTATS SHOWN ON EQUIPMENT SHALL BE INSTALLED WITH SENSOR TO SENSE RETURN AIR TEMPERATURE.
6. COORDINATE THERMOSTAT LOCATIONS WITH ALL CASEWORK, GENERAL CONTRACTOR AND ELECTRICAL CONTRACTOR PRIOR TO WALL CONSTRUCTION.
7. THERMOSTATS IN PRIVATE OFFICES AND CLASSROOMS SHALL BE ADJUSTABLE TYPE. THERMOSTATS IN COMMON AREAS SHALL BE FLAT PLATE SENSORS WITH ADJUSTMENT THROUGH BUILDING AUTOMATION SYSTEM (BAS) OR IN REMOTE LOCATION AS REQUIRED BY OWNER.
8. TEMPERATURE CONTROL CONTRACTOR SHALL NOTIFY AND COORDINATE MECHANICAL CONTRACTOR OF ALL WELLS NEEDED IN PIPING.
9. CONTROL CONTRACTOR SHALL LOCATE ALL CONTROLLERS, RELAYS, ETC. AT AN EASILY ACCESSIBLE LOCATION IF NOT INSTALLED WITHIN EQUIPMENT CABINET.
10. NO RELAYS IN A BOX (RIB'S) ARE ALLOWED. ALL RELAYS TO BE PLUG-IN TYPE RELAYS.
11. ALL THERMOSTATS, CO2 SENSORS AND MOTION SENSORS TO HAVE STICK-ON LABELS THAT INDICATE NAME OF EQUIPMENT THAT THEY CONTROL. LABELS TO BE LOCATED DIRECTLY BELOW DEVICE. VERIFY LABEL LOCATION WITH THE ENGINEER/OWNER PRIOR TO LABELING ALL DEVICES. ALL DEVICES TO BE LABELED WITH SAME I.D.
12. REFER TO E-SERIES DRAWINGS FOR LOCATIONS OF OCCUPANCY SENSORS. T.C.C. TO INSTALL CONTROL WIRING FROM OCCUPANCY SENSOR POWER PACK TO EQUIPMENT CONTROLLERS SERVING EACH RESPECTIVE SPACE TO EXECUTE SEQUENCES OF OPERATION. FOR DAY/UNOCCUPIED MODE, OCCUPANCY SENSOR (SAME AS LIGHTING CONTROL SENSOR) SHOULD SHUTOFF VENTILATION, ALLOWING ROOM TEMPERATURE TO REMAIN UNCHANGED, WHERE APPLICABLE.
13. ALL RELIEF DAMPERS AND EXHAUST FAN ISOLATION DAMPERS SHALL BE INSULATED, TIGHT-CLOSING TEMPERATURE CONTROL DAMPERS.
14. COMPLETELY REMOVE ALL EXISTING PNEUMATIC CONTROLS INCLUDING COMPRESSOR, AIR DRYER, ACTUATORS, TUBING AND SPECIALTIES.
15. CONTROL VALVES ON AHU'S AND STEAM FOR STHX'S SHALL READ BACK ACTUAL POSITION OF VALVE.
16. ALL TERMINAL UNIT CONTROL VALVES WILL FAIL IN LAST POSITION.
17. ALL OUTSIDE AIR, RETURN AIR AND RELIEF DAMPERS TO READ BACK ACTUAL ORIENTATION OF DAMPERS.
18. ALL OUTSIDE AIR DAMPERS SHALL FAIL CLOSED, EXCEPT FOR LIFE SAFETY DAMPERS.

GENERAL NOTES - CONTROL SEQUENCE:

1. THESE SEQUENCES DEFINE THE MANNER AND METHOD BY WHICH CONTROLS FUNCTION. REQUIREMENTS FOR EACH TYPE OF CONTROL SYSTEM OPERATION ARE SPECIFIED. EQUIPMENT, DEVICES, AND SYSTEM COMPONENTS REQUIRED FOR CONTROL SYSTEMS ARE IN SPECIFICATION SECTIONS. FURNISH ALL CONTROL DEVICES AND COMPONENTS, WHETHER SPECIFIED OR NOT, TO ACCOMPLISH THE DESCRIBED SEQUENCES.
2. THE SOFTWARE WILL ENABLE USER TO AUTOMATICALLY PROGRAM LEAD-LAG OPERATION OF ALL COMMON TYPES OF EQUIPMENT. COMMON TYPES OF EQUIPMENT INCLUDE CHILLERS, COOLING TOWERS, PUMPS, BOILERS, ETC.
3. ALL PUMPS AND FANS SHALL HAVE CURRENT SENSORS WHICH WILL BE USED FOR PROOF OF OPERATION AND TO DISPLAY AMP DRAW. SHOULD ANY EQUIPMENT FAIL, THEN THE B.A.S. SYSTEM SHALL BE ALARMED AND THE STAND-BY EQUIPMENT WILL BE ENERGIZED, IF AVAILABLE. WHERE EQUIPMENT IS CONTROLLED WITH VFD'S THEN B.A.S. SHALL READ AMP DRAW THROUGH VFD. CURRENT SENSOR SHALL HAVE ALARMS SET TO SENSE A "NONLOADED" CONDITION AND ALERT B.M.S.
4. EVERY SETPOINT INDICATED IN THESE SPECIFICATIONS SHALL BE USER ADJUSTABLE.
5. ALL EQUIPMENT INDEXED BY OUTSIDE AIR TEMPERATURE SHALL BE INDEXED THROUGH ONE SINGLE TEMPERATURE SENSOR.
6. EVERY ACTION INDICATED IN THIS CONTROL SEQUENCE SHALL BE ABLE TO BE INDEXED THROUGH THE B.A.S. FROM COMPUTER AT THE OWNER'S HEAD-END COMPUTER.
7. IN THE EVENT OF A POWER FAILURE, EVERYTHING SHALL AUTOMATICALLY RESET/RESTART. ALL EQUIPMENT SHALL BE STAGED ON.
8. THERE SHALL BE NO MEMORY LOSS OR REPROGRAMMING REQUIRED UPON LOSS OF POWER.
9. GENERAL REFERENCES ARE MADE TO GLOBAL COMMANDS. GLOBAL COMMANDS SHALL BE SET UP TO COMMUNICATE TO ALL COMMON EQUIPMENT, AS SPECIFIED, WITHOUT HAVING TO ADDRESS EACH AND EVERY PIECE OF EQUIPMENT INDIVIDUALLY.
10. ALL FAN SYSTEMS WITH MOTORIZED DAMPERS SHALL BE INTERLOCKED THROUGH END SWITCHES WHERE REQUIRED TO PREVENT DUCT COLLAPSE. FAN SHALL NOT START UNTIL DAMPERS ARE FULLY OPEN UNLESS SPECIFICALLY NOTED OTHERWISE.
11. B.A.S. SYSTEM SHALL UTILIZE OPTIMUM START/STOP FOR BUILDING WARM-UP AND COOL-DOWN PRIOR TO OCCUPANCY.
12. ALL CRITICAL ALARMS SHALL SEND A SIGNAL TO LOCATION AS DIRECTED BY OWNER.
13. THIS DDC CONTROL SYSTEM WILL BE DESIGNED SO THAT THE OWNER WILL BE ABLE TO ACCESS AND CONTROL THIS SYSTEM FROM ANYWHERE ON THE WAN USING A STANDARD INTERNET BROWSER SUCH AS INTERNET EXPLORER.
14. IF ADDITIONAL POINTS ARE REQUIRED TO ACHIEVE CONTROL SEQUENCE THEN THEY SHALL BE INCLUDED.

GENERAL NOTES - SCHEMATICS:

1. SENSORS SHALL BE MOUNTED ON THE SIDE OF DUCTWORK WITH TOP OF SENSING PROBE CENTERED IN THE DUCT. (SAME DISTANCE FROM TOP TO BOTTOM AND SIDE TO SIDE).
2. ALL TEMPERATURE SENSORS IN THE AIR HANDLING UNITS SHALL BE INSTALLED ON THE CENTER LINE OF THE UNIT. (SAME DISTANCE FROM TOP OF BOTTOM AND SIDE TO SIDE).
3. MASTER OUTDOOR AIR TEMPERATURE SENSOR SHALL BE LOCATED ON THE NORTH FACE OF THE BUILDING.

MASTER AMBIENT SENSORS:

1. TEMPERATURE AND HUMIDITY
   - A. AMBIENT SENSOR (WET BULB AND DRY BULB) SHALL CONTROL ALL EQUIPMENT WHICH USES AMBIENT TEMPERATURE IN ITS CONTROL SEQUENCE TO INDEX TO ECONOMIZER/ENTHALPY MODE.
   - B. UNIT INDEXED TO ECONOMIZER MODE AT THE FOLLOWING CONDITION:
     - a. AMBIENT DRY BULB TEMPERATURE LESS THAN 55°F.
   - C. UNIT SHALL BE INDEXED TO ENTHALPY MODE DURING THE FOLLOWING AMBIENT CONDITIONS:
     - a. AMBIENT DRY BULB TEMPERATURE LESS THAN OR EQUAL TO 70°F.
     - b. AMBIENT WET BULB TEMPERATURE LESS THAN OR EQUAL TO 55°F.
   - D. UNIT SHALL BE INDEXED TO MECHANICAL COOLING AT THE FOLLOWING AMBIENT CONDITION:
     - a. AMBIENT DRY BULB TEMPERATURE GREATER THAN OR EQUAL TO 55°F.
2. CO_2 SENSOR
   - A. A MASTER AMBIENT CO_2 SENSOR AND RETURN AIR CO_2 SENSOR SHALL CONTROL OUTSIDE AIR SO CO_2 INSIDE DOES NOT EXCEED OUTSIDE AIR CO_2 BY 700 PPM (ADJ).
   - B. SEE VAV WITH HYDRONIC HEAT FOR ADDITIONAL OUTSIDE AIR DAMPER CONTROL BASED ON CO_2 SENSOR.
3. INCLUDE ALL MASTER AMBIENT SENSOR READINGS ON EACH PAGE OF GRAPHICS.

TEMPERATURE SET POINTS:

1. PROVIDE THE FOLLOWING TEMPERATURE SET POINTS:
   - A. COOLING OCCUPIED: 72°F
   - B. HEATING OCCUPIED: 71°F
   - C. UNOCCUPIED: 7°F - 78°F.
     - a. NO ENERGY USE IF SPACE IS BETWEEN THESE SETPOINTS DURING UNOCCUPIED MODE. AS TEMPERATURE APPROACHES UNOCCUPIED HIGH OR LOW TEMPERATURE THEN SYSTEM(S) SHALL MODULATE TO MAINTAIN TEMPERATURES WITHIN UNOCCUPIED OUTER LIMITS.

OCCUPIED / UNOCCUPIED:

1. GLOBAL COMMANDS
   - A. SCREEN WITH TOGGLE SWITCH WILL ALLOW USER TO ASSIGN DIFFERENT ZONES AS INDEXABLE AS "STAND-ALONE" OR "GLOBAL COMMANDS."
   - B. WHEN ANY SPACE IS INDEXED TO UNOCCUPIED MODE, THE RESPECTIVE VAV BOX SHALL CLOSE 100% AN REMAIN CLOSED UNTIL HEATING OR COOLING IS REQUIRED.
   - C. STANDBY/OCCUPIED 1 6:00 A.M. TO 6:00 P.M.
     - a. ENABLES SPACE MOUNTED MOTION SENSORS TO INDEX TERMINAL DEVICES FROM STANDBY TO OCCUPIED MODE. WHEN MOTION SENSOR DETECTS MOTION, SPACE REMAINS IN OCCUPIED MODE FOR 120 MINUTES (ADJ) AND RESPECTIVE AHU (UNITS WITH AFMS ADJUST OUTSIDE AIR DAMPERS TO BRING IN 400 CFM PER ROOM.
   - D. OCCUPIED 2 6:00 P.M. TO 11:00 P.M.
     - a. DISABLES SPACE MOUNTED MOTION SENSORS. ONLY PUSH BUTTONS WILL INDEX TERMINAL UNITS TO OCCUPIED MODE AND VENTILATION TO OPERATE IN STANDBY MODE. WHEN BUTTON IS PUSHED SPACE MAINTAINS OCCUPIED TEMPERATURE FOR 120 MINUTES (ADJ).
   - E. UNOCCUPIED 11:00 P.M. TO 6:00 A.M.
     - a. MOTION SENSOR AND PUSH BUTTON ARE DISABLED.
     - b. SPECIFIC OCCUPIED/UNOCCUPIED MODES, IF REQUIRED, WILL BE AS NOTED FOR SPECIFIC AIR HANDLING UNITS.

CRITICAL ALARMS:

1. EACH CRITICAL ALARM SHALL BE IDENTIFIED BY A SIMPLE TEXT MESSAGE. OWNER CAN GET ONLINE VIA WEB BROWSER AND IDENTIFY WHAT CRITICAL ALARM(S) EXISTING.
2. THE FOLLOWING POINTS SHALL BE PROGRAMMED AS CRITICAL ALARMS:
   - A. LOW HEATING WATER SUPPLY TEMPERATURE - WHEN O.A. IS LESS THAN 35°F AND HS TEMPERATURE DROPS BELOW 100°F.
   - B. HIGH CHILLED WATER SUPPLY TEMPERATURE - WHEN CHILLED WATER SYSTEM IS ENERGIZED AND CHILLED WATER IS GREATER THAN 50°F.
   - C. LOW BUILDING TEMPERATURE - ANY SPACE TEMPERATURE LESS THAN 50°F.
   - D. HIGH BUILDING TEMPERATURE - ANY SPACE TEMPERATURE GREATER THAN 85°F.
   - E. AHU STATUS - AHU IS ENERGIZED BUT FAILS TO OPERATE I.E. FREEZE STAT, NO AIR FLOW, ETC. FREEZE STAT TO BE ELECTRONIC RESET FROM B.A.S.
   - F. CHILLED WATER PUMP FAILURE.
   - G. HEATING WATER PUMP FAILURE.
   - H. HIGH BUILDING HUMIDITY - ANY SPACE HUMIDITY SENSOR ABOVE 70% RH.
   - I. ELECTRICAL POWER LOSS (BUILDING SERVICE).
   - J. WATER DETECTION IN THE ELEVATOR PIT.

GENERAL NOTES - UTILITY METERING:

1. PROVIDE UTILITY METERING FOR CHILLED WATER, STEAM CONDENSATE, ELECTRICAL METERING SYSTEM SPECIFIED BY DIVISION 26 AND MONITORED BY B.A.S.

TYPICAL SEQUENCE - ALL AHU'S:

1. AHU CHILLED WATER VALVE CONTROL
   - A. THE CHILLED WATER (CW) COOLING CONTROL VALVE SHALL BE CLOSED AT AMBIENT TEMPERATURES BELOW 53°F. ABOVE 53°F THE CW COOLING CONTROL VALVE SHALL MODULATE TO SATISFY CHILLED WATER RETURN TEMPERATURE SENSOR TO MAINTAIN A CHWR LOW LIMIT OF 63°F. FOR DEHUMIDIFICATION REQUIREMENTS THE SPACE RELATIVE HUMIDTY SENSOR SHALL OVERRIDE THE CHILLED WATER VALVE CONTROL AND RESET THE CHILLED WATER RETURN TEMPERATURE LIMIT DOWNWARD WHENEVER THE HUMIDITY SETPOINT IS EXCEEDED. RESET CURVE FOR THE CHILLED WATER RETURN TEMPERATURE LIMIT.

RH	CWR LOW LIMIT TEMPERATURE
0-50%	63°F.
60-100%	58°F

   - B. WHEN SYSTEM IS FIRST ENERGIZED AND AMBIENT TEMPERATURE IS > 54°F, THEN CHILLED WATER VALVE SHALL OPEN FOR TEN (10) MINUTES BEFORE REVERTING CONTROL OF VALVE TO THE RETURN WATER TEMPERATURE.
2. AHU SUPPLY FAN CONTROL
   - A. AHU FANS SHALL BE OFF DURING UNOCCUPIED MODE UNLESS ANY SPACE TEMPERATURE SERVED BY RESPECTIVE AHU IS OUTSIDE UNOCCUPIED MODE TEMPERATURE SETPOINTS.
   - B. DISCHARGE PRESSURE CONTROL ON AHU'S WITH VAV BOXES
     - a. AHU SHALL MONITOR ALL VAV BOXES SERVED BY RESPECTIVE AHU. THE DISCHARGE STATIC PRESSURE SHALL BE DECREASED IN 0.1" INCREMENTS IN 10 (TEN) MINUTE INTERVALS UNTIL ANY ONE VAV AIR VALVE IS 100% OPEN. WHEN VAV AIR VALVES CANNOT BE SATISFIED THE DISCHARGE PRESSURE SHALL BE RAISED IN THE SAME SEQUENCE IN WHICH IT WAS REDUCED UNTIL ALL AIR VALVES ARE SATISFIED AT WHICH TIME THE PRESSURE SHALL REMAIN CONSTANT.
   - C. VFD TO ALARM BAS IF FAN FAILS TO OPERATE.
3. AHU SAFETIES - TYPICAL ALL AHU'S
   - A. PROVIDE TWO (2) ELECTRIC LOW LIMIT THERMOSTAT'S WITH A *20'-0"* ELEMENT SERPENTINED ACROSS THE FACE OF THE LEAVING AIR SIDE OF THE HEATING COIL WHICH WILL STOP THE SUPPLY FAN, CLOSE THE OUTSIDE AIR DAMPER (AND RELIEF AIR DAMPERS IF APPLICABLE) AND P/STION CONTROL VALVE FOR FULL COIL WATER FLOW. AHU TO RESTART AUTOMATICALLY TWO (2) TIMES AND ALERT B.A.S. SYSTEM.
   - B. UNIT SMOKE DETECTORS - DETECTORS SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR AND ARRANGED TO STOP SUPPLY FAN AND CLOSE OUTSIDE AIR DAMPERS UPON ALARM ACTIVATION. TEMPERATURE CONTROL CONTRACTOR SHALL SUPERVISE DETECTOR INSTALLATION LOCATIONS AND WIRE INTO FAN CIRCUITS.
   - C. SUPPLY FAN - THE SUPPLY AND RETURN AIR FAN SHALL STOP AND SYSTEM SHALL GO INTO ALARM IF THE SUPPLY FAN DISCHARGE STATIC PRESSURE EXCEEDS 3" (ADJ) (AUTO RESET) THE VFD CURRENT MONITOR SHALL REPORT FAN STATUS AND ALARM B.A.S. WHEN FAN FAILS TO OPERATE.
   - D. MIXED AIR TEMPERATURE - MIXED AIR TEMPERATURE SENSOR TO OVERRIDE OUTSIDE AIR DAMPER SO THAT MIXED AIR TEMPERATURE DOES NOT DROP BELOW 48°F.

SYMBOL LEGEND

- PETE'S PLUG
- PUMP
- TC VALVE - ALL MODULATING
- TEMPERATURE SENSOR
- FM — FLOW METER
- T — THERMOMETER
- SHUT-OFF VALVE
- BALANCE VALVE WITH MEMORY STOP
- DPT — DIFFERENTIAL PRESSURE TRANSMITTER
- PRESSURE GAUGE
- FS — FLOW SWITCH
- PRESSURE REDUCING VALVE
- RELIEF VALVE
- HIGH CAPACITY VENT PIPED TO FLOOR DRAIN
- ANGLED GLOBE VALVE
- VFD — VARIABLE FREQUENCY DRIVE
- TO BUILDING AUTOMATION SYSTEM
- AFMS — AIR FLOW MEASURING STATION
- FS — FREEZESTAT
- M — MOTORIZED DAMPER
- CO_2 — CO2 SENSOR
- H — HUMIDITY SENSOR / HUMIDISTAT

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CERTIFICATION 06 / 05 / 2020

100% CONSTRUCTION DOCUMENTS

Indiana State University - Dreiser Hall Renovation

221 North 6th Street
Terre Haute, IN 47809

Project No.: 19A052
Drawn By: MJE
Checked By: MJE
Scale: See Drawing
Issue Date: 06/05/2020

REVISION SCHEDULE		
Rev. #	Revision Description	Issue Date

CONTROLS - GENERAL

M7.01

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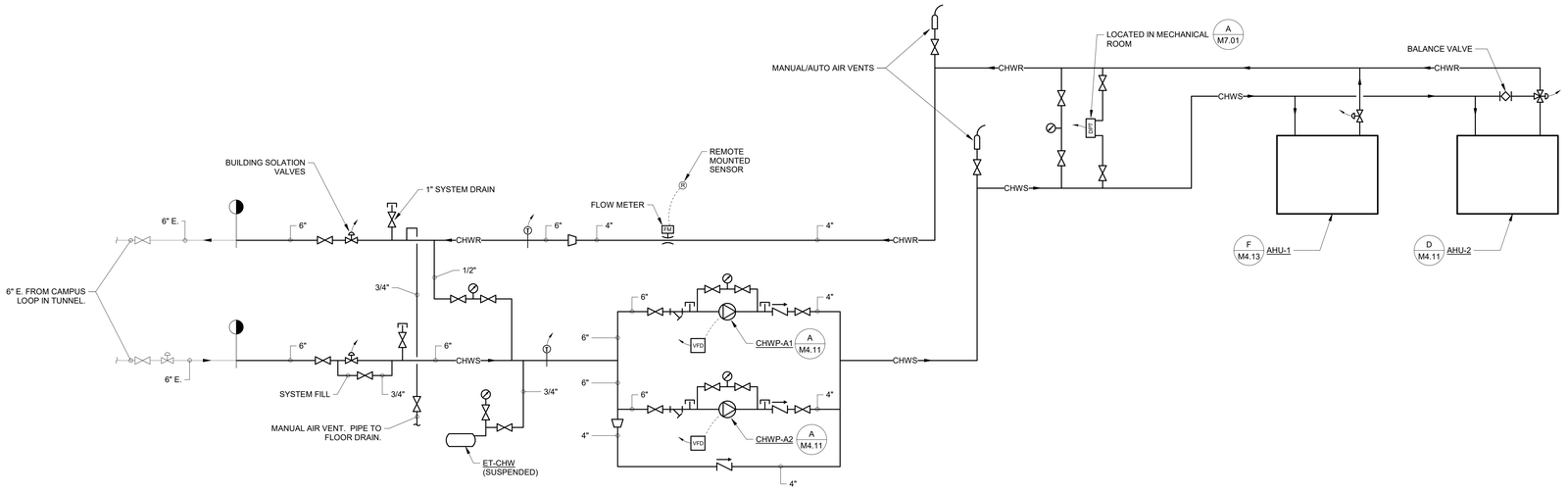


1 CHILLED WATER SCHEMATIC

SCALE: NONE

CONTROL POINTS LIST				
ITEM	SIGNAL TYPE			
TYPICAL CHILLED WATER PUMP (CHWP-A)	DI	AI	AO	DO
START/STOP				1
VFD CONTROL			1	
CURRENT SENSOR (STATUS)		1		
CHILLED WATER SYSTEM MISC. POINTS	DI	AI	AO	DO
CHWS TEMPERATURE (COMMON) (1)		1		
CHWR TEMPERATURE (COMMON)		1		
CHILLED WATER DPT		1		
MASTER OUTSIDE AIR TEMPERATURE DB		1		
MASTER OUTSIDE AIR TEMPERATURE WB		1		
BUILDING ISOLATION VALVES				2

(1) NOTES:
TO BE USED ON CONTROL SYSTEM FOR COIL CHILLED WATER SUPPLY TEMPERATURES.

CHILLED WATER SYSTEM SEQUENCE OF OPERATIONS

A. CHILLED WATER SYSTEM ENABLE:

a. THE CHILLED WATER SYSTEM SHALL BE ENABLED WHENEVER THE OUTSIDE AIR TEMPERATURE SENSOR SENSES A TEMPERATURE ABOVE 55°F., OR WHEN ANY SPACE CALLS FOR COOLING AND THE ECONOMIZER WILL NOT SATISFY THE SPACE.

B. CHILLED WATER PUMP CONTROL:

a. LEAD CHILLED WATER PUMP WILL BE STARTED WHEN THE SYSTEM IS ENABLED AND THE THE DIFFERENTIAL SETPOINT IS NOT SATISFIED BY AVAILABLE PRESSURE FROM THE CENTRAL CAMPUS CHILLED WATER SYSTEM VIA THE PUMP BYPASS.

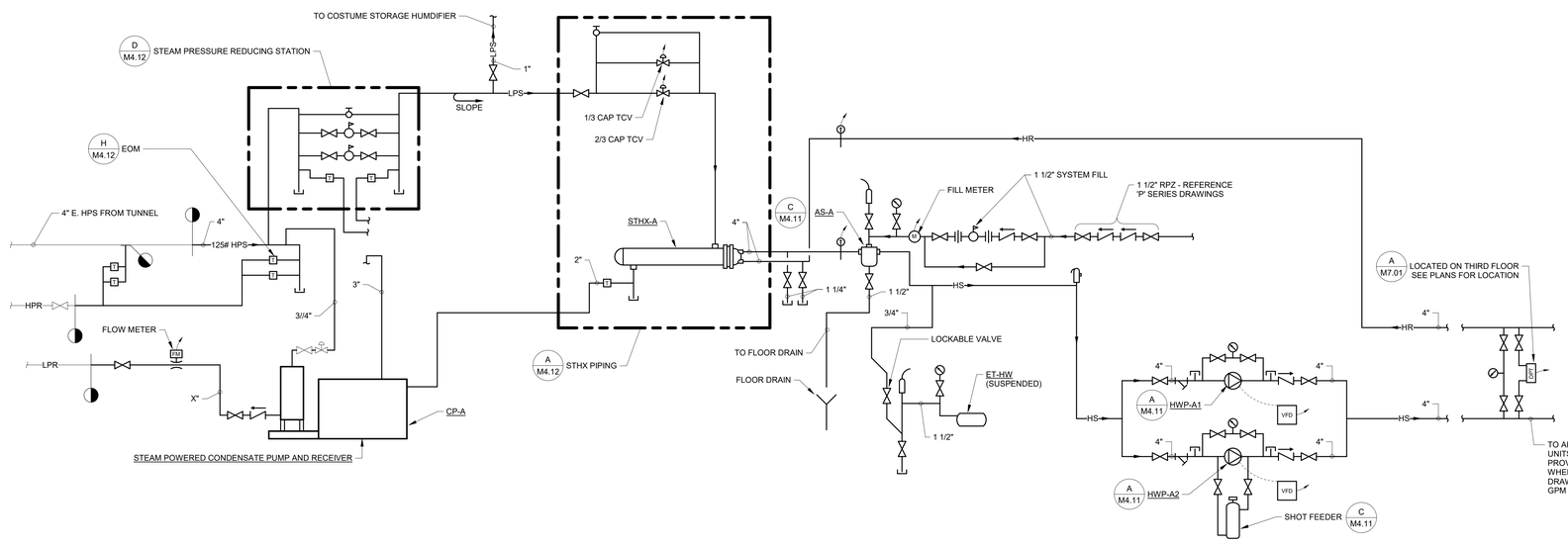
b. THE LEAD PUMP VFD WILL MODULATE TO SATISFY THE SYSTEM DIFFERENTIAL PRESSURE SETPOINT, INITIALLY SET AT 10 PSI, AS MEASURED BY THE DIFFERENTIAL PRESSURE TRANSMITTER.

c. WHEN THE LEAD PUMP SPEED RISES ABOVE 65%, THE LAG PUMP SHALL BE INDEXED ON.

d. AS BOTH PUMPS SPEEDS REDUCE TO 35%, THE LAG PUMP SHALL BE STAGED OFF.

e. LEAD PUMP SHALL BE ALTERNATED ON A WEEKLY BASIS.

f. LEAD PUMP SHALL OPERATE AT 25 HZ AT AMBIENT TEMPERATURES LESS THAN 20°F.



2 HEATING WATER SCHEMATIC

SCALE: NONE

CONTROL POINTS LIST				
ITEM	SIGNAL TYPE			
TYPICAL HEATING WATER PUMP (HWP-A)	DI	AI	AO	DO
START/STOP				1
VFD CONTROL			1	
CURRENT SENSOR (STATUS)		1		
HEATING WATER SYSTEM MISC. POINTS	DI	AI	AO	DO
HEATING WATER DPT		1		
HR TEMPERATURE (COMMON)		1		
HS TEMPERATURE (COMMON) (1)		1		
1/3 - 2/3 STEAM CONTROL VALVE			2	
1/3 - 2/3 STEAM CONTROL VALVE POSITION		2		
FILL METER	1			

(1) NOTES:
TO BE USED ON CONTROL SYSTEM FOR COIL HEATING WATER SUPPLY TEMPERATURES.

HEATING WATER SYSTEM SEQUENCE OF OPERATION:

A. HEATING WATER SYSTEM ENABLE:

a. THE HEATING SYSTEM WILL BE ENABLED YEAR ROUND, UNLESS DISABLED BY THE OPERATOR VIA SOFTWARE INPUT.

B. HEAT EXCHANGER CONTROL:

a. THE TWO SEQUENCED HEAT EXCHANGER CONTROL VALVES (1/3 & 2/3) WILL MODULATE IN SEQUENCE TO MAINTAIN THE DESIRED HOT WATER SUPPLY TEMPERATURE TO ITS SETPOINT AS IT IS RESET BASED ON THE FOLLOWING RESET SCHEDULE:

OA-T:	HW-SP:
35°F.	180°F.
80°F.	80°F.

C. HOT WATER PUMP CONTROL:

a. LEAD HOT WATER PUMP WILL BE STARTED WHEN THE SYSTEM IS ENABLED.

b. THE LEAD PUMP VFD WILL MODULATE TO SATISFY THE SYSTEM DIFFERENTIAL PRESSURE SETPOINT INITIALLY SET AT 10 PSI, AS MEASURED BY THE DIFFERENTIAL PRESSURE TRANSMITTER VALVE.

c. WHEN THE LEAD PUMP SPEED RISES ABOVE 65%, THE LAG PUMP SHALL BE INDEXED ON.

d. LEAD PUMP SHALL BE ALTERNATED ON A WEEKLY BASIS.

e. BOTH PUMPS SHALL OPERATE AT AMBIENT TEMPERATURES LESS THAN 20°F.

D. FILL METER

a. IF FILL METER REPORTS MORE THAN 10 GALLONS BEING FILLED INTO SYSTEM THEN ALARM SHALL BE SENT TO BAS.

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CERTIFICATION 06/05/2020

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HEATING AND CHILLED WATER SCHEMATIC

M7.02

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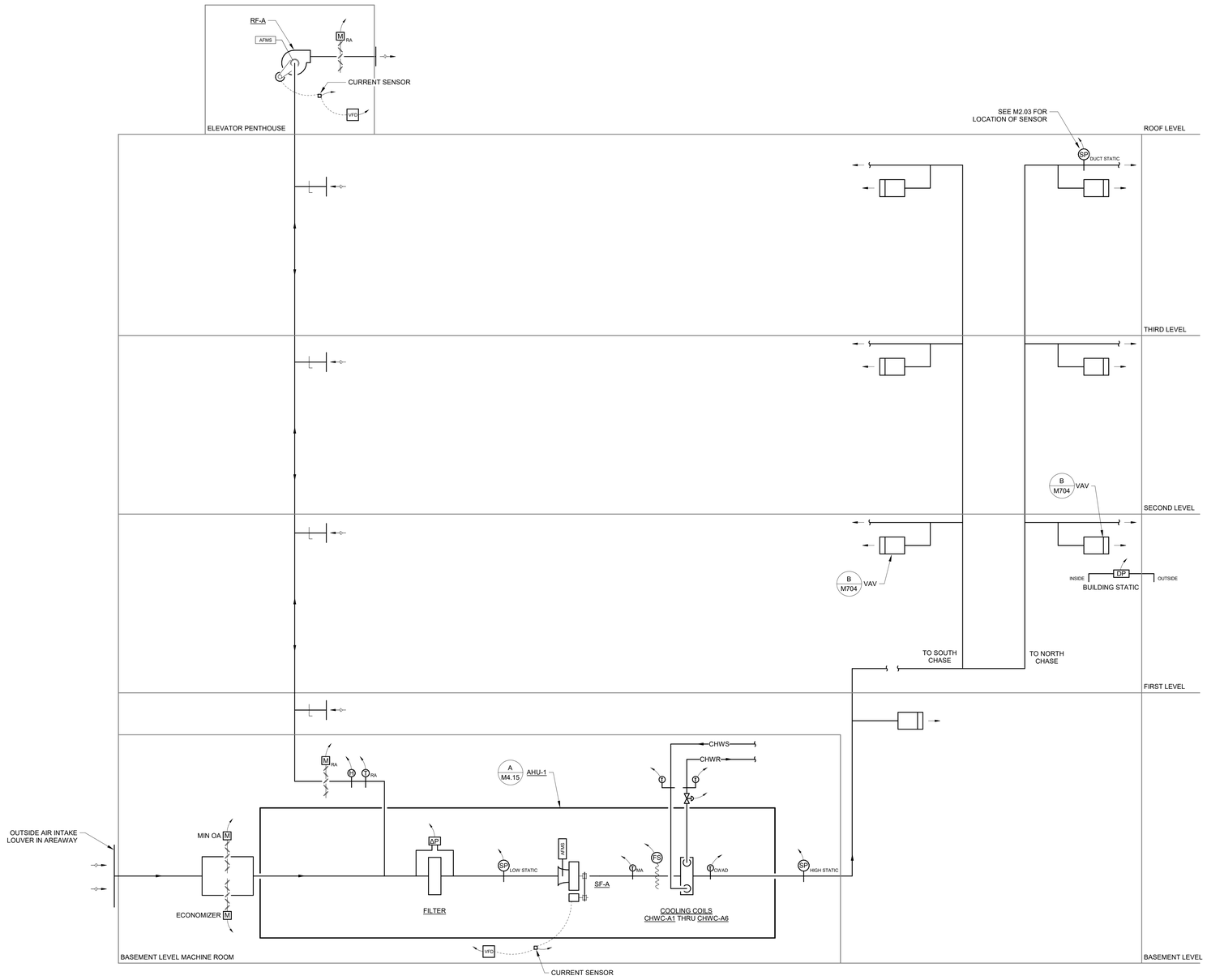

1 AHU-1 CONTROL SCHEMATIC

SCALE: NONE

CONTROL POINTS LIST				
ITEM	SIGNAL TYPE			
AHU-1 (MAIN BUILDING)	DI	AI	AO	DO
OUTSIDE AIR TEMPERATURE (1)		1		
RETURN AIR TEMPERATURE		1		
HUMIDITY SENSOR		1		
RELIEF FAN START/STOP				1
RELIEF FAN SPEED			1	
RELIEF FAN AIR FLOW MEASURING STATION (AFMS)		1		
RELIEF FAN CURRENT SENSOR		1		
RELIEF AIR DAMPER (RLA)			1	
RELIEF AIR DAMPER POSITION		1		
RETURN AIR DAMPER			1	
RETURN AIR DAMPER POSITION (RLFA)		1		
MINIMUM OUTSIDE AIR (OA) DAMPER			1	
MINIMUM OUTSIDE AIR (OA) DAMPER POSITION		1		
ECONOMIZER DAMPER			1	
ECONOMIZER DAMPER POSITION		1		
FILTER DIFFERENTIAL PRESSURE SENSOR		1		
SUPPLY FAN START/STOP				1
SUPPLY FAN AIR FLOW MEASURING STATION (AFMS)		1		
SUPPLY FAN SPEED			1	
SUPPLY FAN CURRENT SENSOR		1		
MIXED AIR (MA) TEMPERATURE		1		
FREEZESTAT (FS) (STATUS) REMOTE RESETTABLE	1			
CHILLED WATER SUPPLY (CHWS) TEMPERATURE (1)		1		
CHILLED WATER SUPPLY (CHWR) TEMPERATURE		1		
CHILLED WATER TC VALVE			1	
CHILLED WATER TC VALVE POSITION		1		
CHILLED WATER COIL AIR DISCHARGE (CWAD) TEMPERATURE		1		
HIGH STATIC PRESSURE SAFETY (HPS) SUPPLY AIR	1			
DUCT STATIC PRESSURE		1		
HUMIDITY SENSOR (SPACE) SEE PLANS		3		
BUILDING STATIC PRESSURE		2		
LOW STATIC PRESSURE SAFETY (LPS)	1			

(1) GLOBAL SIGNAL FROM BAS

AHU-1 CONTROL

A. MECHANICAL COOLING/ECONOMIZER

1. SEE M7.01 "MASTER AMBIENT SENSORS" FOR CHANGEOVER TEMPERATURES.

B. CHILLED WATER VALVE CONTROL

1. SEE M7.01 "TYPICAL SEQUENCES - ALL AHU'S".

C. TEMPERATURE SETPOINTS

1. SEE M7.01 FOR "TEMPERATURE SETPOINTS".

D. SUPPLY FAN CONTROL

1. SEE M7.01 FOR "AHU FAN SUPPLY CONTROL".

E. RELIEF FAN CONTROL

1. RELIEF FAN SHALL TRACK SUPPLY FAN AND DELIVER 3,000 CFM LESS THAN SUPPLY FAN. MINIMUM OA DAMPER SHALL BE OPEN.
2. AVERAGE BUILDING PRESSURE AS MEASURED BY (2) PRESSURE SENSORS, ONE ON THE 3RD FLOOR OF THE BUILDING AND ONE ON THE 1ST FLOOR OF THE BUILDING SHALL OVER RIDE RELIEF FAN CONTROL TO MAINTAIN BUILDING BETWEEN .03" AND .05" POSITIVE RELATIVE TO AMBIENT PRESSURE.

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100% CONSTRUCTION DOCUMENTS

Indiana State University -
Dreiser Hall Renovation

221 North 6th Street
Terre Haute, IN 47809

Project No.: 19A052
Drawn By: MJE
Checked By: MJE
Scale: See Drawing
Issue Date: 06/05/2020

REVISION SCHEDULE		
Rev. #	Revision Description	Issue Date

CONTROLS - AHU-1

M7.03

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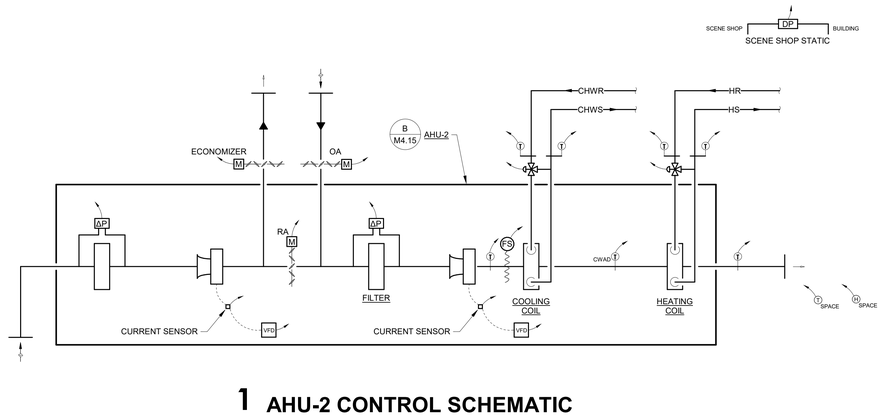

1 AHU-2 CONTROL SCHEMATIC

SCALE: NONE

CONTROL POINTS LIST				
ITEM	SIGNAL TYPE			
AHU-2 (SCENE SHOP)	DI	AI	AO	DO
OUTSIDE AIR TEMPERATURE (1)		1		
SPACE TEMPERATURE		1		
SPACE HUMIDITY		1		
RETURN FAN START/STOP				1
RETURN FAN SPEED			1	
RETURN FAN CURRENT SENSOR		1		
ECONOMIZER AIR DAMPER			1	
ECONOMIZER AIR DAMPER POSITION		1		
RETURN AIR DAMPER			1	
RETURN AIR DAMPER POSITION		1		
OUTSIDE AIR (OA) DAMPER			1	
OUTSIDE AIR (OA) DAMPER POSITION		1		
FILTER DIFFERENTIAL PRESSURE SENSOR		2		
SUPPLY FAN START/STOP				1
SUPPLY FAN SPEED			1	
SUPPLY FAN CURRENT SENSOR		1		
MIXED AIR (MA) TEMPERATURE		1		
FREEZESTAT (FS) (STATUS) REMOTE RESETTABLE	1			
CHILLED WATER SUPPLY (CHWS) TEMPERATURE (1)		1		
CHILLED WATER SUPPLY (CHWR) TEMPERATURE		1		
CHILLED WATER TC VALVE			1	
CHILLED WATER TC VALVE POSITION		1		
CHILLED WATER COIL AIR DISCHARGE (CWAD) TEMPERATURE		1		
HEATING WATER SUPPLY (HS) TEMPERATURE (1)		1		
HEATING WATER SUPPLY (HR) TEMPERATURE		1		
HEATING WATER TC VALVE			1	
HEATING WATER TC VALVE POSITION		1		
DISCHARGE AIR TEMPERATURE		1		
(1) GLOBAL SIGNAL FROM BAS				

AHU-2 CONTROL

A. MECHANICAL COOLING/ECONOMIZER

1. SEE M7.01 "MASTER AMBIENT SENSORS" FOR CHANGEOVER TEMPERATURES.

B. CHILLED WATER VALVE CONTROL

1. SEE M7.01 "TYPICAL SEQUENCES - ALL AHU'S".

C. TEMPERATURE SETPOINTS

1. SEE M7.01 FOR "TEMPERATURE SETPOINTS".

D. RETURN FAN CONTROL

1. VFD SHALL VARY FAN SPEED AS REQUIRED AND MODULATE EXHAUST AIR DAMPER TO MAINTAIN SPACE PRESSURE NEGATIVE RELATIVE TO BUILDING AS MEASURED BY STATIC PRESSURE SENSOR.

E. SUPPLY FAN CONTROL

1. VFD SHALL VARY FAN SPEED AS REQUIRED TO MAINTAIN SPACE TEMPERATURE. SUPPLY FAN SHALL OPERATE AS A SINGLE ZONE VAV SYSTEM.

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CERTIFICATION 06/06/2020

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CONTROLS - AHU-2

M7.04

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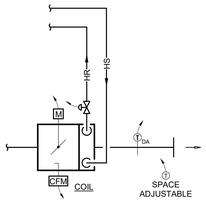
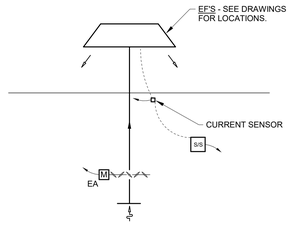


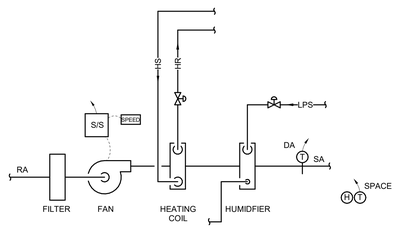
A VAV WITH HW COIL SCHEMATIC

SCALE: NONE



B EXHAUST FAN SCHEMATIC

SCALE: NONE



C FAN COIL SCHEMATIC

SCALE: NONE

VAV WITH HYDRONIC HEAT

A. OCCUPIED

1. GLOBAL COMMAND TO INDEX VAV AIR VALVES TO THE FOLLOWING MINIMUMS BASED ON AMBIENT TEMPERATURE.
   a. AT AMBIENT TEMPERATURE OF LESS THAN 50°F. ALL VAV BOXES SHALL HAVE MINIMUM CFM SET 70% OF VAV DESIGN CFM.
   b. AT AMBIENT TEMPERATURE OF GREATER THAN 50°F. ALL VAV BOXES SHALL HAVE MINIMUM CFM SET 35% OF VAV DESIGN CFM.
2. IF SPACE TEMPERATURE INCREASES, VAV VALVE SHALL MODULATE OPEN.
3. IF SPACE TEMPERATURE FALLS, VAV VALVE TO MODULATE TO MINIMUM CFM AS DESCRIBED ABOVE AND T.C. HEATING VALVE SHALL MODULATE OPEN TO SATISFY SPACE TEMPERATURE.
4. SPACE MOUNTED CO2 SENSOR (WHERE SHOWN) SHALL DRIVE ZONE BOX OPEN IF CO2 READING EXCEEDS OUTSIDE AIR CO2 BY 400 PPM. IF BOX OPENS AND CO2 IS STILL NOT SATISFIED, THEN AHU OUTSIDE AIR DAMPER SHALL MODULATE OPEN AN ADDITIONAL 10%. AFTER (10) TEN MINUTES IF CO2 SYSTEM IS STILL NOT SATISFIED, THEN OUTSIDE AIR DAMPER SHALL OPEN AN ADDITIONAL 10%. AFTER (2) TWO HOURS, THE AHU DAMPER SHALL RESET TO MINIMUM.

B. UNOCCUPIED

1. AIR VALVES SHALL HAVE A MINIMUM SETTING OF 10% OF DESIGN CFM. (BE SURE OUTSIDE AIR DAMPER ON AHU IS CLOSED)
2. ON A CALL FOR HEAT, AIR VALVE SHALL BE AT MINIMUM UNOCCUPIED CFM SETTING. IF SPACE TEMPERATURE CANNOT BE SATISFIED AND HEATING WATER VALVE IS INDEXED TO 100% OPEN, THEN AIR VALVE SHALL MODULATE OPEN TO MAINTAIN UNOCCUPIED TEMPERATURE.
3. ON A CALL FOR COOLING, HEATING WATER VALVE SHALL CLOSE AND AIR VALVE SHALL MODULATE OPEN TO SATISFY SETBACK TEMPERATURE.

EXHAUST FAN

A. EXHAUST FANS SHALL BE INDEXED ON THROUGH THE B.A.S. SYSTEM. EXHAUST FANS SHALL BE INDEXED ON WHEN AHU IS INDEXED TO OCCUPIED MODE UNLESS SPECIFICALLY NOTED OTHERWISE IN SEQUENCE OF OPERATION.

B. A CURRENT MONITOR SHALL ALARM B.A.S. IF FAN FAIL TO OPERATE WHEN INDEXED ON.

C. EXHAUST FANS SHALL BE INDEXED ON AFTER HOURS BY MOTION SENSOR AND OPERATE FOR 15 MINUTES.

D. MOTORIZED DAMPER SHALL CLOSE WHEN FAN IS INDEXED OFF.

PROPELLER UNIT HEATER

A. WALL MOUNTED DDC SPACE THERMOSTAT SHALL CYCLE FAN AND MODULATE CONTROL VALVE TO MAINTAIN SPACE TEMPERATURE SETPOINT.

B. ABOVE 60°F. (ADJ.) AMBIENT TEMPERATURE, ALL PUH'S SHALL BE LOCKED OUT.

CABINET UNIT HEATER

A. INTEGRAL DDC SPACE THERMOSTAT SHALL CYCLE FAN AND MODULATE CONTROL VALVE TO MAINTAIN SPACE TEMPERATURE SETPOINT.

B. ABOVE 60°F. (ADJ.) AMBIENT TEMPERATURE, ALL CUH'S SHALL BE LOCKED OUT.

RADIANT CEILING PANEL

A. WALL MOUNTED DDC SPACE THERMOSTAT SHALL MODULATE CONTROL VALVE TO MAINTAIN SPACE TEMPERATURE SETPOINT.

B. ABOVE 60°F. (ADJ.) AMBIENT TEMPERATURE, ALL RCP'S SHALL BE LOCKED OUT.

PERIMETER RADIATION

A. PERIMETER RADIATION SHALL BE CONTROLLED BY NEAREST RESPECTIVE VAV BOX.

B. ABOVE 60°F. (ADJ.) AMBIENT TEMPERATURE, ALL FTR'S SHALL BE LOCKED OUT.

FAN COIL UNITS:

A. OCCUPIED

1. GLOBAL COMMAND TO INDEX FCU FANS ON AND RUN CONTINUOUSLY.
2. ON A CALL FOR COOLING, VAV SERVING SPACE SHALL MODULATE OPEN.
3. ON A CALL FOR HEATING, FAN COIL HEATING WATER VALVE OPEN, VAV BOX SHALL BE AT MINIMUM AIRFLOW.
4. WHEN A SPACE IS AT SETPOINT CLOSE HEATING WATER AND CHILLED WATER CONTROL VALVES.
5. DDC SPACE THERMOSTAT SHALL ALLOW FOR SPACE SET POINT BETWEEN 70°F AND 75°F (ADJ).
6. IF SPACE HUMIDITY RISES ABOVE 60% RH (ADJ.), INDEX CHW VALVE TO FULL OPEN, AND MODULATE HW VALVE TO MAINTAIN SPACE SETPOINT.
7. DUCT MOUNTED HUMIDIFIER AND STEAM CONTROL VALVE SHALL MAINTAIN HUMIDITY SPACE RH AT 50% (ADJ).

B. UNOCCUPIED

1. GLOBAL COMMAND TO INDEX FCU FANS OFF AND CYCLE FANS TO MAINTAIN SETBACK SPACE TEMPERATURE.
2. ON A CALL FOR COOLING, VAV BOX SERVING SPACE SHALL MODULATE OPEN.
3. ON A CALL FOR HEATING, MODULATE FAN COIL HEATING WATER VALVE OPEN. VAV BOX SHALL AT MINIMUM AIRFLOW.
4. WHEN SPACE IS AT SETPOINT, CLOSE HEATING WATER AND CHILLED WATER CONTROL VALVES.
5. UNOCCUPIED SPACE SETPOINTS SHALL BE 78°F FOR COOLING AND 68°F FOR HEATING.
6. IF SPACE HUMIDITY RISES ABOVE 60% RH (ADJ.), INDEX VAV BOX SERVING SPACE FULL OPEN, AND MODULATE FAN COIL HEATING WATER VALVE TO MAINTAIN SPACE SETPOINT.
7. MORNING WARM UP CYCLE SHALL COMMENCE AT 6:00 AM.
8. DUCT MOUNTED HUMIDIFIER AND STEAM CONTROL VALVE SHALL MAINTAIN HUMIDITY SPACE RH AT 50% (ADJ).

CONTROL POINTS LIST

ITEM	SIGNAL TYPE			
TYPICAL VAV WITH HEATING COIL	DI	AI	AO	DO
SPACE TEMPERATURE		1		
AIR VALVE ACTUATOR			1	
HEATING WATER TC VALVE			1	
AIR VALVE CFM		1		
SPACE CO2 SENSOR (WHERE SHOWN ON DRAWINGS)		1		

CONTROL POINTS LIST

ITEM	SIGNAL TYPE			
TYPICAL EF UNLESS NOTED OTHERWISE	DI	AI	AO	DO
REMOTE START/STOP AND DAMPER				1
CURRENT SENSOR		1		
MOTION SENSOR				1
MOTORIZED DAMPER			1	

CONTROL POINTS LIST

ITEM	SIGNAL TYPE			
TYPICAL CABINET/PROPELLER UNIT HEATER	DI	AI	AO	DO
SPACE TEMPERATURE		1		
HEATING WATER TC VALVE				1
FAN START/STOP				1

CONTROL POINTS LIST

ITEM	SIGNAL TYPE			
RADIANT CEILING PANEL	DI	AI	AO	DO
ROOM TEMPERATURE		1		
CONTROL VALVE			1	
CONTROL VALVE POSITION		1		

CONTROL POINTS LIST

ITEM	SIGNAL TYPE			
PERIMETER RADIATION	DI	AI	AO	DO
OUTSIDE AIR TEMPERATURE		1		
ROOM TEMPERATURE		1		
CONTROL VALVE			1	
CONTROL VALVE POSITION		1		

CONTROL POINTS LIST

ITEM	SIGNAL TYPE			
MISCELLANEOUS	DI	AI	AO	DO
ELEVATOR PIT MOISTURE DETECTION		1		
THERMOSTATIC DOMESTIC WATER MIXING VALVE		1	1	
ELEVATOR PIT SUMP PUMP ALARM	1			

CONTROL POINTS LIST

ITEM	SIGNAL TYPE			
TYPICAL FAN COIL (FC)	DI	AI	AO	DO
SPACE TEMPERATURE		1		
SPACE TEMPERATURE SETPOINT		1		
SUPPLY FAN STATUS	1			
SUPPLY FAN START/STOP				1
SUPPLY FAN SPEED CONTROL (EACH SPEED)				1
HEATING WATER TC VALVE			1	
DISCHARGE AIR TEMPERATURE		1		
SPACE HUMIDITY		1		
SPACE HUMIDITY SETPOINT		1		

UTILITY METERING SCHEDULE

BUILDING NAME	CHILLED WATER					STEAM CONDENSATE				ELECTRICAL	CONTROLS	COMMENTS
	PIPE SIZE	MAX. FLOW (GPM)	METER TYPE	METER SIZE	METER MODEL	PIPE SIZE	FLOW (GPM)	METER TYPE	METER MODEL		NCE PANELS REQ'D	
DREISER HALL	4"	188	ELECTROMAGNETIC	4"	PROLINE PROMAG 50W	3"	-	VORTEX SHEDDING	PROWIRL 72F	BY DIVISION 26	-	REMOTE READOUT PANEL DISPLAY

NOTE: ALL METERS TO BE ENDRESS HAUSER: ALL MODEL NUMBERS ARE ENDRESS HAUSER MODEL NUMBERS.

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CONTROLS - MISCELLANEOUS

M7.05

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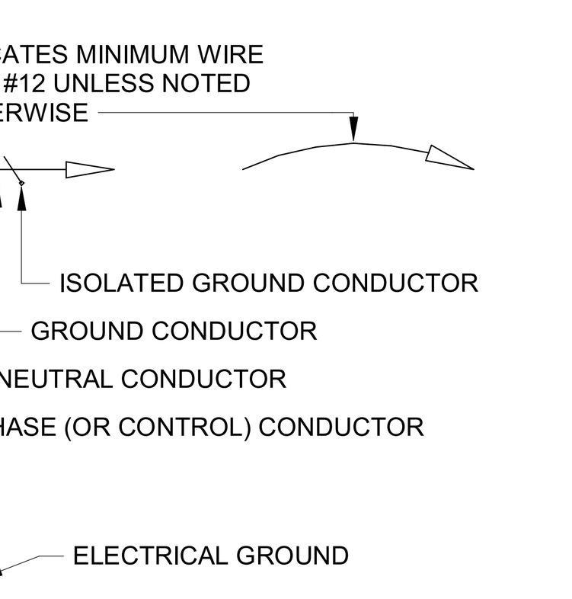
ABBREVIATIONS

A	AMPERE
AC	ALTERNATING CURRENT; ARMORED CABLE
ADJ	ADJUSTABLE
AF	AMPERE FUSE; AMPERE FRAME
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERE INTERRUPTING CAPACITY
AL	ALUMINUM
ALCR	AUTOMATIC LOAD CONTROL RELAY
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ASYM	ASYMMETRICAL
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUX	AUXILIARY
AVG	AVERAGE
AWG	AMERICAN WIRE GUAGE
BATT	BATTERY
BPS	BOLTED PRESSURE SWITCH
C	CONDUIT; CENTRIGRADE
C/C	CENTER TO CENTER
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CD	CANDELA
CF	CUBIC FEET
CFL	COMPACT FLUORESCENT
CIRC	CIRCUIT
CLG	CEILING
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
COMB	COMBINATION
CONC	CONCRETE
COND	CONDUCTOR
CONT	CONTINUOUS; CONTINUED
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CT	CURRENT TRANSFORMER
CU	COPPER; CUBIC
CU FT	CUBIC FOOT
CY	CUBIC YARD
CYL	CYLINDER
D	DEEP; DEPTH
DB	DECIBEL; DIRECT BURIED
DC	DIRECT CURRENT
DDC	DIRECT DIGITAL CONTROL
DF	DUAL FACE
DIA	DIAMETER
DIAG	DIAGONAL
DISC	DISCONNECT
DISTR	DISTRIBUTION
DN	DOWN
DPDT	DOUBLE POLE, DOUBLE THROW
DPST	DOUBLE POLE, SINGLE THROW
DWG	DRAWING
DX	DIRECT EXPANSION
E	EAST; EXISTING
EA	EACH
EBBR	ELECTRIC BASEBOARD RADIATION
EB	ELECTRONIC BALLAST
EC	ELECTRICAL CONTRACTOR
EGC	EQUIPMENT GROUNDING CONDUCTOR
ELEC	ELECTRICAL
ELEV	ELEVATOR; ELEVATION
EM	EMERGENCY
EMS	ENERGY MANAGEMENT SYSTEM
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
ENG	ENGINE
EQUIP	EQUIPMENT
EST	ESTIMATED
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EXP	EXPOSED
EXT	EXTERIOR
F	FUSED; FAHRENHEIT
FA	FIRE ALARM
FAA	FIRE ALARM ANNUNCIATOR
FACP	FIRE ALARM CONTROL PANEL
FC	FOOT-CANDLE
FD	FUSED DISCONNECT
FDR	FEEDER
FIN	FINISHED
FIXT	FIXTURE
FLA	FULL LOAD AMPS
FLR	FLOOR
FLUOR	FLUORESCENT
FM	FREQUENCY MODULATION; FACTORY MUTUAL
FT	FOOT; FEET
FURN	FURNISHED
FVNR	FULL VOLTAGE NON-REVERSING
G	GROUND
GA	GUAGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GEN	GENERATOR
GFCI, GFI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTION
GND	GROUND
GRS, GRC	GALVANIZED RIGID STEEL CONDUIT
H	HIGH
HD	HEAVY DUTY; HIGH DEFINITION
HG	MERCURY
HOA	HAND-OFF-AUTOMATIC
HORIZ	HORIZONTAL
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HR	HOUR
HRS/DAY	HOURS PER DAY
HT	HEIGHT
HV	HIGH VOLTAGE
HZ	HERTZ
ID	INSIDE DIAMETER
IDF	INTERMEDIATE DISTRIBUTION FRAME
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT
IMP	IMPEDANCE
IN	INCH
INCAN	INCANDESCENT
INSUL	INSULATION; INSULATED
INT	INTERIOR; INTERNAL
INV EL	INVERTED ELEVATION
J	JOULE; JUNCTION
JB	JUNCTION BOX
K	THOUSAND
KCMIL	THOUSAND CIRCULAR MILS
KHZ	KILOHERTZ
KK	KIRK KEY
KP	KEYPAD
KV	KILOVOLT
KVA	KILOVOLT AMPERE
KVAR	KILOVOLT AMPERE REACTIVE
KW	KILOWATT
KWH	KILOWATT-HOUR
L	LENGTH; LONG; LUMEN
LB	POUND; ELL CONDUIT BODY
LED	LIGHT EMITTING DIODE
LF	LINEAR FOOT
LLD	LAMP LUMEN DEPRECIATION
LO	LOCK OUT
LRA	LOCKED ROTOR AMPS
LT	LIGHT; LIQUID-TIGHT
LTG	LIGHTING
LV	LOW VOLTAGE
M	METER
MA	MILLIAMPERE
MAG STR	MAGNETIC STARTER
MAN	MANUAL
MAT	MATERIAL
MATV	MASTER ANTENNA TELEVISION
MAX	MAXIMUM
MC	METAL CLAD CABLE; MOTOR CONTROLLER
MCA	MINIMUM CIRCUIT AMPS
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCCB	MOLDED CASE CIRCUIT BREAKER
MCM	THOUSAND CIRCULAR MILS
MCP	MOTOR CIRCUIT PROTECTOR
MCS	MOTOR CIRCUIT SWITCH

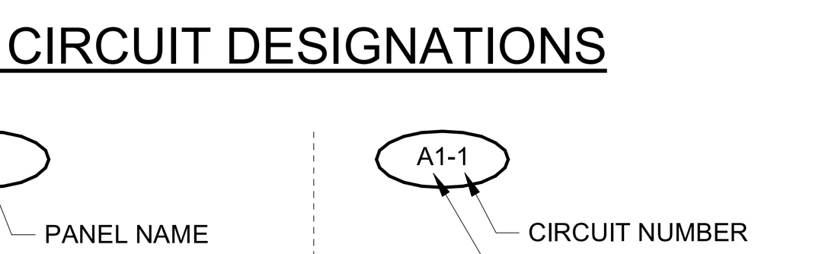
MDF	
MDP	
MED	
MFG	
MFR	MAIN DISTRIBUTION FRAME
MH	MAIN DISTRIBUTION PANELBOARD
MHZ	MEDIUM
MI	MANUFACTURING
MIC	MANUFACTURER
MIN	MANHOLE; METAL HALIDE; MAN-HOUR
MISC	MEGAHERTZ
MLO	MINERAL INSULATED
MOCP	MICROPHONE
MOG	MINIMUM; MINUTE
MTD	MISCELLANEOUS
MTS	MAIN LUGS ONLY
MV	MAXIMUM OVERCURRENT PROTECTION
MVA	MOGUL
MVAR	MOUNTED
MW	MANUAL TRANSFER SWITCH
	MEGAVOLT; MEDIUM VOLTAGE
N	MEGAVOLT AMPERES
N/A	MEGAVOLT AMPERES REACTIVE
NC	MEGAWATT
NEC	
NEMA	NEUTRAL
	NOT APPLICABLE
NF	NORMALLY CLOSED
NFS	NATIONAL ELECTRICAL CODE
NIC	NATIONAL ELECTRICAL
NL	MANUFACTURERS ASSOCATION
NM	NON-FUSED
NO	NON-FUSED DISCONNECT
NTS	NOT IN CONTRACT
	NIGHT LIGHT
O&P	NON-METALLIC SHEATHED CABLE
OC	NUMBER; NORMALLY OPEN
OD	NOT TO SCALE
OH	
OL	OVERHEAD AND PROFIT
OS&Y	ON CENTER; OVERCURRENT
OZ	OUTSIDE DIAMETER
	OVERHEAD
P	OVERLOAD
PA	OUTSIDE SCREW AND YOKE
PB	OUNCE
PC	
PED	POLE; PULL
PF	PUBLIC ADDRESS
PH	PUSH BUTTON; PULL BOX
PIV	PHOTOCELL
PL	PEDESTAL
PNL	POWER FACTOR
PR	PHASE
PRI	POST INDICATOR VALVE
PSF	PILOT LIGHT
PSI	PANEL
PSIG	PAIR
PT	PRIMARY
PU	POUNDS PER SQUARE FOOT
PVC	POUNDS PER SQUARE INCH
PWR	POUNDS PER SQUARE INCH GUAGE
	POTENTIAL TRANSFORMER
QUAN; QTY	PER UNIT
	POLYVINYL CHLORIDE
R	POWER
RECEPT	
REF	QUANTITY
REFR	
REQ'D	RESISTANCE; RELOCATED
RGS	RECEPTACLE
RLA	REFERENCE
RM	REFRIGERATOR
RMS	REQUIRED
RNC	RIGID GALVANIZED STEEL
RT	RUNNING LOAD AMPS
	ROOM
SCCR	ROOT MEAN SQUARE
SCHED	RIGID NON-METALLIC CONDUIT
SCR	RAINTIGHT
SE	
SEC	SHORT-CIRCUIT CURRENT-RATING
SN	SCHEDULE
SP	SHORT CIRCUIT RATING
SPD	SERVICE ENTRACE; SERVICE EQUIPMENT
SPDT	SECONDARY
SPKR	SOLID NEUTRAL
SPST	SINGLE POLE
SQ	SURGE PROTECTIVE DEVICE
SQ FT	SINGLE POLE, DOUBLE THROW
SQ IN	SPEAKER
SS	SINGLE POLE, SINGLE THROW
S/S	SQUARE
ST	SQUARE FEET
STD	SQUARE INCH
SURF	STAINLESS STEEL; SAFETY SWITCH
SW	START STOP
SWD	SHUNT TRIP;
SWBD	STANDARD
SQ YD	SURFACE
SYM	SWITCH
	SWITCHING DUTY
T	SWITCHBOARD
TB	SQUARE YARD
TC	SYMMETRICAL
TCC	
TCP	TEMPERATURE; TRANFORMER
TD	TERMINAL BLOCK
TELE	TIME CLOCK
TGB	TEMPERATURE CONTROLS CONTRACTOR
THD	TEMPERATURE CONTROL PANEL
TMGB	TIME DELAY
TO	TELEPHONE
TR	TELECOMMUNICATIONS GROUNDING BUSBAR
TTB	TOTAL HARMONIC DISTORTION; THREAD
TV	TELECOMMUNICATIONS MAIN GROUNDING BUSBAR
TVSS	TELECOMMUNICATIONS OUTLET
TYP	TAMPER RESISTANT; TELECOM ROOM
	TELEPHONE TERMAINAL BOARD
UC	TELEVISION
UF	TRANSIENT VOLTAGE SURGE SUPPRESSOR
UG	TYPICAL
UHF	
UL	UNDER (CABINET OR COUNTER)
UNFIN	UNDERGROUND FEEDER
UNO	UNDERGROUND
UTIL	ULTRA HIGH FREQUENCY
UTP	UNDERWRITERS LABORATORY
	UNFINISHED
V	UNLESS NOTED OTHERWISE
VA	UTILITY
VAR	UNSHIELDED TWISTED PAIR
VERT	
VFD	VOLT
VHF	VOLT AMPERES
VOL	VOLT AMPERES REACTIVE
	VERTICAL
W	VARIABLE FREQUENCY DRIVE
W/	VERY HIGH FREQUENCY
WAP	VOLUME
WG	
WM	WIRE; WATT; WIDE
WP	WITH
WT	WIRELESS ACCESS POINT
	WIRE GUARD
XFMR	"WIREMOLD" (SURFACE RACEWAY)
XFER	WEATHERPROOF
	WEIGHT; WATERTIGHT
Y	
	TRANSFORMER
°	TRANSFER
Δ	
Ø	WYE
#	
%	DEGREE
@	DELTA
~	PHASE; DIAMETER
'	POUND; NUMBER
"	PERCENT
	AT
	APPROXIMATELY
	FEET
	INCHES

NOT ALL SYMBOLS ON THIS SHEET ARE USED IN THESE DOCUMENTS.

TYPICAL WIRING DESIGNATIONS



ROOM CIRCUIT DESIGNATIONS



* INDIVIDUAL CIRCUITS NUMBERS ARE LOCATED AT EACH DEVICE

ROOM CIRCUIT DESIGNATION SHOWN ABOVE APPLY TO EVERY DEVICE IN THE ROOM UNLESS NOTED OTHERWISE

DOOR DESIGNATIONS

ROOM CIRCUIT DESIGNATIONS WITH RELAY NUMBER

RACEWAYS

- CONDUIT, IN WALL OR CEILING
- CONDUIT, BELOW FLOOR
- CONDUIT, EXPOSED
- W — SURFACE RACEWAY ("WIREMOLD")
- CONDUIT, TURNING UP
- CONDUIT, TURNING DOWN
- CONDUIT, CAPPED
- UNDERFLOOR DUCT & JUNCTION BOX, SINGLE SYSTEM
- UNDERFLOOR DUCT & JUNCTION BOX, DUAL SYSTEM
- UNDERFLOOR DUCT & JUNCTION BOX, TRIPLE SYSTEM
- J — JUNCTION BOX
- P — PULL BOX

MISCELLANEOUS

- CLOCK (WALL)
- CLOCK (CEILING)
- BELL
- BUZZER
- THERMOSTAT
- ELECTRICAL GROUND

GENERAL NOTES - "CLOUD" AND EXPOSED CEILINGS:

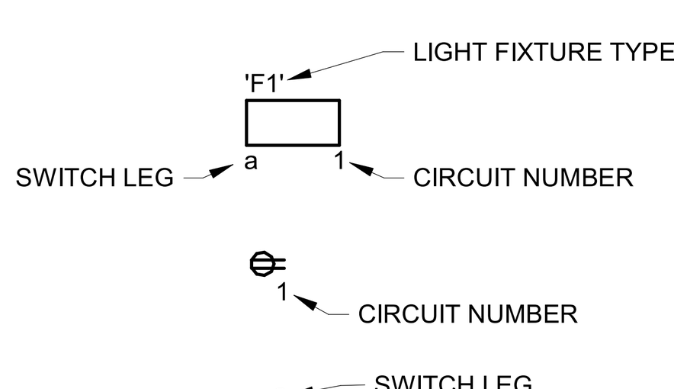
1. REVIEW REFLECTED CEILING PLANS AND BID DOCUMENTS TO UNDERSTAND CEILING CONSTRUCTION IN AREAS PRIOR TO BID.
2. IT IS THE INTENT THAT THE VISIBILITY OF EXPOSED ELECTRICAL WORK IN EXPOSED AREAS AROUND "CLOUD" CEILINGS IS KEPT TO A MINIMUM AND SHALL BE AS NEAT AND FINISHED AS POSSIBLE.
3. INSTALL RACEWAYS IN EXPOSED AREAS AS HIGH AS POSSIBLE. COORDINATE WITH TRADES.
4. EXTEND RACEWAYS EXITING WALLS TO ABOVE ACCESSIBLE CEILING (BEYOND THE EXPOSED AREA). WALL PENETRATIONS SHALL BE COORDINATED WITH GENERAL TRADES TO PROVIDE A FINISHED APPEARANCE. REFER TO ROUGH-IN DETAILS.
5. J-HOOKS SHALL BE CONCEALED ABOVE SUSPENDED CEILINGS. DO NOT USE WALL MOUNTED J-HOOKS WITH EXPOSED CABLES IN EXPOSED AREAS AROUND "CLOUD" CEILINGS. INSTEAD, UTILIZE PENDANT MOUNTED J-HOOKS WITH THREADED ROD ABOVE ACCESSIBLE CEILING AREA OR OTHER APPROVED METHOD. COORDINATE IN FIELD.
6. INSTALL CONDUITS, JUNCTION BOXES, AND COVER PLATES PRIOR TO PAINTING OF EXPOSED AREAS.
7. ELECTRICAL ITEMS SHALL BE PAINTED.
8. CABLE TRAYS SHALL HAVE PAINTABLE SOLID COVER ON BOTTOM.

BRANCH CIRCUIT WIRING CHART

FEEDER CONDUCTOR SIZES SHOWN ON THESE BID DOCUMENTS HAVE BEEN SELECTED TO MAINTAIN LESS THAN 2% VOLTAGE DROP AT POTENTIAL FULL LOAD CONDITION (80% OF CIRCUIT SIZE) PER ANTICIPATED ROUTING AND CONDUCTOR LENGTH. BRANCH CIRCUIT CONDUCTORS SHALL BE SIZED TO MAINTAIN LESS THAN 3% VOLTAGE DROP FROM PANELBOARD TO LOAD BASED UPON 60% OF CIRCUIT SIZE LOAD CONDITIONS. THE FOLLOWING CHART REPRESENTS WIRE SIZES FOR A 20 AMP CIRCUIT BASED UPON CIRCUIT LENGTH IN ORDER TO MAINTAIN LESS THAN 3% VOLTAGE DROP FOR A 12 AMP LOAD. CONTRACTOR SHALL USE THIS CHART FOR BIDDING AND INSTALLATION GUIDELINES. FOR KNOWN CIRCUITS WITH LARGER LOAD CONDITIONS, CONTRACTOR SHALL ADJUST ACCORDINGLY. GROUND CONDUCTOR SIZES SHALL BE INCREASED SAME AS CIRCUIT CONDUCTORS, PER NEC. ADJUST RACEWAY SIZES ACCORDINGLY.

	BRANCH CIRCUIT CONDUCTOR LENGTH FOR 20 AMP CIRCUIT TO MAINTAIN LESS THAN 3% VOLTAGE DROP AT 12 AMP LOAD. ADJUST AS KNOWN CONDITIONS REQUIRE.					
WIRE SIZE	120V-1P	208V-1P	208V-3P	277V-1P	480V-3P	
#12	0'-80'	0'-140'	0'-160'	0'-185'	0'-375'	CONDUCTOR LENGTHS INDICATED ARE TO THE FIRST DEVICE (BUT MAINTAIN MAXIMUM 5% VOLTAGE DROP TO THE LAST DEVICE FOR KNOWN LOADS).
#10	81'-135'	141'-230'	161'-270'	186'-310'	376'-620'	
#8	136'-200'	231'-350'	271'-410'	311'-470'	621'-940'	
#6	201'-315'	351'-550'	411'-635'	471'-735'	941'-1475'	

TYPICAL DEVICE DESIGNATIONS



CIRCUIT DESCRIPTIONS

CIRCUIT NUMBER:
PANEL-CIRCUIT NUMBER
(I.E. A1-1)

MULTIPLE INDIVIDUAL CIRCUIT NUMBERS:
PANEL-CIRCUIT NUMBER,CIRCUIT NUMBER,CIRCUIT NUMBER
(I.E. A1-1, A1-3)

2-POLE CIRCUIT NUMBER:
PANEL-CIRCUIT NUMBER/CIRCUIT NUMBER
(I.E. A1-1,3)

3-POLE CIRCUIT NUMBER:
PANEL-CIRCUIT NUMBER/CIRCUIT NUMBER/CIRCUIT NUMBER
(I.E. A1-1,3,5)

PANELS

- PANEL, FLUSH
- PANEL, SURFACE
- CONTROL PANEL (AS NOTED), FLUSH
- CONTROL PANEL (AS NOTED), SURFACE

POWER EQUIPMENT

- 1-PHASE MOTOR
- 3-PHASE MOTOR
- S_F — FUSIBLE BOX COVER SWITCH
- ENCLOSED SWITCH, NON-FUSIBLE
- F — ENCLOSED SWITCH, FUSIBLE
- CB — ENCLOSED CIRCUIT BREAKER
- MANUAL MOTOR STARTER
- P — MANUAL MOTOR STARTER WITH PILOT LIGHT
- MAGNETIC MOTOR STARTER
- COMBINATION DISCONNECT & MAGNETIC MOTOR STARTER
- T — SMALL TRANSFORMER
- VFD — VARIABLE ADJUSTABLE FREQUENCY DRIVE
- PUSHBUTTON
- UP/DOWN PUSHBUTTON
- UP/DOWN/STOP PUSHBUTTON

RECEPTACLES AND OUTLETS

- DUPLEX RECEPTACLE
- HORIZONTAL DUPLEX RECEPTACLE
- DOUBLE DUPLEX (QUAD) RECEPTACLE
- DUPLEX RECEPTACLE ABOVE COUNTERTOP OR TOGGLE SWITCH HEIGHT WHERE NO COUNTER IS PRESENT
- DOUBLE DUPLEX (QUAD) RECEPTACLE ABOVE COUNTERTOP OR TOGGLE SWITCH HEIGHT WHERE NO COUNTER IS PRESENT
- GROUND FAULT CIRCUIT INTERRUPTER (GFCI) DUPLEX RECEPTACLE
- HORIZONTAL GFCI DUPLEX RECEPTACLE
- DOUBLE DUPLEX (QUAD) GFCI RECEPTACLE
- GFCI DUPLEX RECEPTACLE ABOVE COUNTERTOP OR TOGGLE SWITCH HEIGHT WHERE NO COUNTER IS PRESENT
- DOUBLE DUPLEX (QUAD) GFCI RECEPTACLE ABOVE COUNTERTOP OR TOGGLE SWITCH HEIGHT WHERE NO COUNTER IS PRESENT
- WP — GFCI/ WEATHERPROOF DUPLEX RECEPTACLE
- SINGLE RECEPTACLE
- FLUSH FLOOR OUTLET, ONE DUPLEX RECEPTACLE UNLESS NOTED OTHERWISE
- PT — FIRE-RATED POKE-THRU, DUAL-SERVICE WITH ONE QUADRAPLEX RECEPTACLE & FOUR DATA JACKS UNLESS NOTED OTHERWISE
- PED — PEDESTAL-TYPE FLOOR OUTLET, ONE DUPLEX RECEPTACLE UNLESS NOTED OTHERWISE
- CEILING DROP CORD. 3#12 TYPE SO CORD WITH 2 DUPLEX RECEPTACLES AND KELLUMS GRIPS UNLESS NOTED OTHERWISE
- SPECIAL OUTLET OR EQUIPMENT CONNECTION (AS NOTED)
- FLUSH FLOOR BOX, DUAL-SERVICE WITH 4-GANGS AND TWO DUPLEX RECEPTACLES UNLESS NOTED OTHERWISE
- MULTIOUTLET ASSEMBLY, LENGTH INDICATED, 16" AFF UNLESS NOTED OTHERWISE; INDICATES VERTICAL RUN
- LAB TOP PEDESTAL OUTLET, GFCI-TYPE DUPLEX RECEPTACLE
- LAB TOP PEDESTAL OUTLET, GFCI-TYPE QUADRIPLEX RECEPTACLE
- LAB TOP PEDESTAL OUTLET,TWO GFCI-TYPE DUPLEX RECEPTACLES
- LAB TOP PEDESTAL OUTLET, TWO GFCI-TYPE QUADRIPLEX RECEPTACLES
- USB — USB DUPLEX RECEPTACLE WITH (2) INTEGRAL USB CHARGING PORTS
- ISOLATED GROUND DUPLEX RECEPTACLE
- ISOLATED GROUND QUAD RECEPTACLE

TYPICAL MOUNTING HEIGHTS

DEVICE TYPE	HEIGHT
TOGGLE SWITCHES	48" TO TOP OF DEVICE BOX
RECEPTACLE OUTLETS (GENERAL)	16"
RECEPTACLE OUTLETS ABOVE 30" HIGH COUNTERTOPS	36"
RECEPTACLE OUTLETS ABOVE 36" HIGH COUNTERTOPS	42"
SPECIAL PURPOSE OUTLETS	WITHIN 72" OF INTENDED USE.
TELEPHONE & DATA OUTLETS	16"
TELEPHONE AND DATA OUTLETS ABOVE 30" COUNTERTOPS	36"
TELEPHONE AND DATA OUTLETS ABOVE 36" COUNTERTOPS	42"
WALL TELEPHONE OUTLETS	48" TO TOP OF DEVICE BOX
WALL INTERCOM STATIONS	48" TO TOP OF DEVICE BOX
WALL LIGHTING OUTLETS	84" TO CENTER OF DEVICE BOX
THERMOSTATS	48" TO TOP OF DEVICE BOX
PUSH BUTTONS	48" TO TOP OF DEVICE BOX
ELEVATOR AND HOISTWAY CONTROL BUTTONS	42" TO CENTER OF DEVICE BOX
CLOCK OUTLETS	88" TO CENTER OF DEVICE WHEN POSSIBLE, OR 6" BELOW CEILING. ABOVE DOORS CENTER CLOCK OUTLET BETWEEN DOOR TRIM AND CEILING
BELLS, BUZZERS, CHIMES	96" TO CENTER OF DEVICE BOX WHEN POSSIBLE, OR 6" BELOW CEILING
FIRE ALARM STATIONS	48" TO TOP OF DEVICE BOX
FIRE ALARMS (GONGS, BELLS, HORNS, LIGHTS)	80", OR 6" BELOW CEILING
CARD READERS	48" TO TOP OF DEVICE BOX

NOTES:
1. MOUNTING HEIGHTS ARE TO BOTTOM OF DEVICE BOX UNLESS NOTED OTHERWISE.
2. COMPLY WITH ACCESSIBILITY CODE.

LIGHT FIXTURES

- LIGHT, CEILING
- LIGHT, CEILING
- LIGHT, WALL
- EXIT SIGN, CEILING
- EXIT SIGN, WALL
- EXIT SIGN, CEILING
- EXIT SIGN WITH DIRECTIONAL ARROW, CEILING
- EXIT SIGN WITH DIRECTIONAL ARROW, WALL
- EMERGENCY LIGHTING UNIT
- TRACK LIGHT FIXTURE
- EMERGENCY LIGHT FIXTURE
- LIGHT FIXTURE DIRECTIONAL AIMING INDICATOR
- NL — NIGHT LIGHT

SWITCHES

- S — SWITCH, SINGLE POLE
- S_2 — SWITCH, DOUBLE POLE
- S_3 — SWITCH, THREE WAY
- S_4 — SWITCH, FOUR WAY
- S_K — SWITCH, KEY OPERATED
- S_P — SWITCH, WITH PILOT LIGHT
- S_{WP} — SWITCH, WEATHERPROOF
- S_X — SWITCH, EXPLOSIONPROOF
- S_D — SWITCH, DIMMER
- S_{TS} — SWITCH, SPRING WOUND, INTERVAL TIME SWITCH
- S_{DT} — SWITCH, DIGITAL INTERVAL TIME SWITCH
- S_{LV} — SWITCH, LOW VOLTAGE
- LV — LOW-VOLTAGE TOUCHSCREEN LIGHTING CONTROL
- MT — MULTI-TECHNOLOGY CEILING OCCUPANCY SENSOR
- US — ULTRASONIC CEILING OCCUPANCY SENSOR
- PI — PASSIVE INFRARED CEILING OCCUPANCY SENSOR
- \$1 — SINGLE POLE WALL OCCUPANCY SENSOR
- \$2 — TWO POLE WALL OCCUPANCY SENSOR
- \$D — COMBINATION WALL OCCUPANCY SENSOR AND DIMMER
- DL — DAYLIGHT SENSOR
- TC — TIMECLOCK
- PC — PHOTOCELL
- R — RELAY PANEL
- LC — LIGHTING CONTACTOR
- LRM — LIGHTING RELAY MODULE
- ALCR — AUTOMATIC LOAD CONTROL RELAY (LIGHTING)

FIRE ALARM SYSTEMS

- FACP — FIRE ALARM CONTROL PANEL
- VCC — FIRE ALARM VOICE COMMAND CENTER
- F — MANUAL PULL STATION
- FIRE ALARM WALL SPEAKER-STROBE
- FIRE ALARM WALL STROBE
- FIRE ALARM CEILING STROBE
- FIRE ALARM CEILING SPEAKER-STROBE
- FIRE ALARM CEILING SPEAKER
- FIRE ALARM BELL
- DH — ELECTRO-MAGNETIC DOOR HOLDER
- R — FIRE ALARM ADDRESSIBLE INTERFACE DEVICE.
- F — PHOTOELECTRIC SMOKE DETECTOR
- D — DUCT TYPE SMOKE DETECTOR
- H — HEAT DETECTOR
- FS — SPRINKLER FLOW SWITCH
- TS — SPRINKLER TAMPERSWITCH
- NAC — FIRE ALARM NOTIFICATION APPLIANCE CIRCUIT PANEL
- FAMM — FIRE ALARM MONITOR MODULE
- RIAM — FIRE ALARM RELAY ADDRESSABLE MODULE

SECURITY DEVICES

- DS — DOOR SWITCH
- PS — POWER SUPPLY (TYPE NOTED)
- CR — CARD READER
- K — KEYPAD
- REX — REQUEST-TO-EXIT MOTION SENSOR
- PIR — INTRUSION DETECTION MOTION SENSOR
- EL — ELECTRICALLY RETRACTABLE LATCH
- ES — ELECTRIC STRIKE

GENERAL NOTES:

1. COORDINATE LOCATIONS OF DEVICES TO BE INSTALLED IN CEILINGS WITH THE ARCHITECTURAL REFLECTED CEILING PLANS. NOTIFY ENGINEER OF ANY CONFLICTS PRIOR TO INSTALLATION.
2. 120 VOLT CIRCUITS SHALL UTILIZE SEPARATE INDEPENDENT NEUTRAL CONDUCTORS. DO NOT SHARE NEUTRALS.
3. CONTRACTOR SHALL COORDINATE WITH ALL TRADES. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR INCORRECT WORK, OR FOR INFRINGEMENT UPON OTHERS' WORK, DUE TO A LACK OF COORDINATION.
4. DEVICES IN GENERAL SHALL BE CENTERED IN WALL SPACE IN WHICH THEY ARE INSTALLED OR THEY SHALL BE SPACED SYMMETRICALLY (FOR EXAMPLE, CENTER DEVICES WHEN MOUNTED ON FACE OF COLUMNS).
5. COORDINATE AND VERIFY LOCATIONS OF DEVICES WITH BLOCK COURSING, FINISH MATERIALS, CASEWORK, ETC. PRIOR TO ROUGH-IN.
6. WIRING TO ALL RECEPTACLES ON DEDICATED CIRCUITS SHALL BE A MINIMUM #10 AWG UNLESS OTHERWISE NOTED.
7. RECEPTACLES CONNECTED TO EMERGENCY CIRCUITS SHALL BE RED COLOR.
8. WIRING SHALL BE MINIMUM #12 AWG IN 3/4" EMT CONDUIT UNLESS OTHERWISE NOTED OR REQUIRED.
9. COORDINATE LOCATION OF RECEPTACLES AT ELECTRIC WATER COOLERS (EWC) WITH EWC MANUFACTURER. PROVIDE DUPLEX RECEPTACLE SO THAT IT IS CONCEALED BY EWC HOUSING.
10. FOR ROOMS AND AREAS THAT WILL RECEIVE TECHNOLOGY DEVICES AND CABLING, PROVIDE A MINIMUM OF TWO (2) 1-INCH EMT CONDUIT SLEEVES THROUGH ALL FULL HEIGHT WALLS. EXTEND FROM ABOVE LAY-IN CEILING OF THE ROOM TO ABOVE THE LAY-IN CEILING OF THE CORRIDOR, PAST ALL DRYWALL BULKHEADS. COORDINATE IN FIELD. PROVIDE INSULATED BUSHING ON BOTH ENDS OF CONDUITS. TYPICALLY, INSTALL CONDUITS ABOVE ROOM DOOR LOCATION.
11. LOW VOLTAGE PLENUM-RATED CABLING (FIRE ALARM, TELEPHONE/DATA, ETC.) SHALL BE CONCEALED ABOVE ACCESSIBLE CEILINGS. FOR CABLES BEING ROUTED THROUGH AREAS WITH EXPOSED STRUCTURE OR INACCESSIBLE CEILINGS, INSTALL CABLES IN MINIMUM 1-INCH CONDUITS.
12. REPLACE EXISTING BLANK COVERPLATES WITH NEW. FINISH/MATERIAL TO MATCH THOSE USED FOR NEW DEVICES.
13. DEVICE BOXES SHALL BE FLUSH MOUNTED AND ALL RACEWAYS SHALL BE CONCEALED AS MUCH AS POSSIBLE. USE OF SURFACE RACEWAYS SHALL BE KEPT TO A MINIMUM AND COORDINATED IN FIELD AND WITH ARCHITECT/ENGINEER.
14. EXISTING CONCEALED RACEWAYS AND DEVICE BOXES MAY BE REUSED IN PLACE IF DEEMED CODE COMPLIANT AND IN GOOD CONDITION. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION.
15. PROVIDE 120V POWER CONNECTION TO MOTORIZED DAMPERS AT EXHAUST FANS.
16. PROVIDE FLUSH BACK BOXES AND CONCEALED RACEWAYS FOR THERMOSTATS. SEE MECHANICAL DRAWINGS FOR LOCATIONS.
17. A MAXIMUM OF THREE SINGLE-PHASE CIRCUITS SHALL BE INSTALLED IN A SINGLE CONDUIT.
18. LOCATION OF LIGHT FIXTURES IN MECHANICAL AND EQUIPMENT ROOMS SHALL BE COORDINATED IN FIELD AND LOCATED TO PROVIED THE BEST ILLUMINATION OF THE SPACE AND EQUIPMENT. COORDINATE WITH ENGINER.
19. COORDINATE EXACT LOCATION OF FLOOR OUTLETS AND OUTLETS AT TV LOCATIONS AND SIMILAR LOCATIONS PRIOR TO ROUGH-IN. OUTLETS AT TV LOCATIONS SHALL BE INSTALLED IN A RECESSED WALL BOX AND CONCEALED BY THE TV. SEE T-SERIES DRAWINGS.
20. COORDINATE ALL WORK WITH TECHNOLOGY DRAWINGS AND SPECIFICATIONS. SEE T-SERIES DRAWINGS FOR PATHWAYS AND ELECTRICAL WORK.
21. PROVIDE FIRESTOPPING AT ALL PENETRATIONS THROUGH FIRE-RATED CONSTRUCTION.
22. ALL WARRANTIES REFERED TO ON THE DRAWINGS AND SPECIFICATIONS SHALL BEGIN AT THE DATE OF SUBSTANTIAL COMPLETION AT THE END OF THE PROJECT.
23. COORDINATE ALL CORE DRILLING AND INSTALLATION/LOCATION OF FLOOR BOXES AND POKE THRU'S WITH STRUCTURAL ENGINEER. AVOID CONCRETE JOISTS AS MUCH AS POSSIBLE. ALSO, COORDINATE WITH OTHER TRADES TO ENSURE PROPER ACCESS.
24. CONTRACTOR SHALL COORDINATE OCCUPANCY SENSOR LOCATIONS AND ARRANGE FOR BEST OPERATION. PROVIDE HIGH-BAY OCCUPANCY SENSORS WHEN MOUNTEDABOVE 10'-0" AFF. COMMISSION AND COORDINATE OCCUPANCY SENSOR OPERATIONAL SETTINGS WITH OWNER DURING INSTALLATION. AT COMPLETION OF PROJECT AND AFTER OWNER OCCUPANCY, CONTRACTOR SHALL MAKE ONE READJUSTMENT PER SENSOR AS DIRECTED BY THE OWNER.
25. ALL DEVICES ON WALLS SHALL BE INDIVIDUALLY FED FROM ABOVE (I.E. DO NOT INSTALL RACEWAYS HORIZONTALLY IN WALL UNLESS APPROVED).
26. INSTALL ALL ABOVE-CEILING RACEWAYS AT LEAST 7-INCHES ABOVE CEILING TO ALLOW FOR REMOVAL OF CEILING TILES AND LIGHTS.
27. DO NOT INSTALL RACEWAYS IN FLOOR SLABS. INSTALL RACEWAYS BELOW SLAB ON GRADE AT LEAST 6-INCHES BELOW BOTTOM OF SLAB. FEEDER CONDUITS SHALL BE AT LEAST 24-INCHES BELOW BOTTOM OF SLAB.
28. VERIFY PROJECTOR, TV, ETC. LOCATIONS PRIOR TO ROUGH-IN.
29. PROVIDE DEDICATED 120V CIRCUIT TO EACH TEMPERATURE CONTROL PANEL. REFER TO MECHANICAL DRAWINGS FOR PROPOSED LOCATIONS AND COORDINATE EXACT LOCATIONS WITH TEMPERATURE CONTROL CONTRACTOR.
30. COLOR OF WIRING DEVICES, TELECOM. DEVICES, ETC. SHALL TYPICALLY BE WHITE WITH WHITE HYLON COVERPLATES. COLOR OF WIRING DEVICES, TELECOM. DEVICES, ETC. ON WOOD WALLS SHALL BE BLACK WITH BLACK NYLON COVERPLATES. COORDINATE WITH ARCHITECT.
31. CONTRACTOR SHALL CONFIRM LOCATION OF BUILDING EXPANSION JOINTS AND PROVIDE ADEQUATE EXPANSION CAPABILITIES IN ELECTRICAL SYSTEMS AS REQUIRED.
32. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS DETAILING LENS SEAMS ON LIGHTING FIXTURES AND LIGHTING RUNS REQUIRING MORE THAN ONE LENS COVER.
33. REFER TO 'S' SERIES DRAWINGS FOR SUPPORT REQUIREMENTS WHEN ANCHORING TO EXISTING STRUCTURE.
34. CONCEAL ALL NEW RACEWAYS AND BOXES IN WALLS OR ABOVE CEILINGS UNLESS OTHERWISE NOTED OR APPROVED.
35. COORDINATE LOCATIONS OF DEVICES, TV'S, ETC. AND SIDE-BY-SIDE DEVICES TO HAVE SAME MOUNTING HEIGHTS.
36. COORDINATE INSTALLATION OF DEVICES, EQUIPMENT, AND SUPPORTS AT ACOUSTICAL WALLS/CEILINGS WITH DETAILS AND INFORMATION DETAILED ON AV AND ARCH. DRAWINGS AND SPECS.
37. VERIFY COLOR OF DEVICES WITH ARCHITECT PRIOR TO ORDERING. GENERALLY, FINISH SHALL BE BLACK IF MOUNTED ON WOOD CEILING. ALL OTHER LOCATIONS SHALL BE WHITE.

GENERAL NOTES - DEMOLITION:

1. FIELD VERIFY EXISTING CONDITIONS PRIOR TO BEGINNING WORK. THESE DRAWINGS DO NOT SHOW ALL REQUIRED DEMOLITION WORK. SOME CONDITIONS MAY HAVE BEEN CONCEALED DURING FIELD SURVEYS.
2. DEVICES AND EQUIPMENT SHOWN DASHED AND WITH HEAVY LINE WEIGHT ON DEMOLITION DRAWINGS SHALL BE REMOVED IN THEIR ENTIRETY, INCLUDING ALL WIRING TO SOURCE, UNLESS OTHERWISE NOTED.
3. DISPOSAL OF DEMOLISHED MATERIALS SHALL COMPLY WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
4. CONTRACTOR SHALL PROTECT EXISTING OWNER FACILITIES THAT ARE TO REMAIN DURING CONSTRUCTION. ANY FACILITIES DAMAGED OR DISCONNECTED BY CONTRACTOR SHALL BE IMMEDIATELY RESTORED TO PREVIOUS CONDITION.
5. OWNER SHALL HAVE "RIGHT OF FIRST REFUSAL" FOR DEMOLISHED ITEMS. CONTRACTOR SHALL COORDINATE WITH OWNER PRIOR TO BEGINNING WORK TO DETERMINE WHATE ITEMS THE OWNER MAY BE INTERESTED IN KEEPING. CONTRACTOR SHALL CAREFULLY REMOVE SUCH ITEMS AND DELIVER TO OWNER'S DESIGNATED STORAGE AREA. FOR ITEMS DEEMED OBSOLETE BY THE OWNER, CONTRACTOR SHALL IMMEDIATELY REMOVE SUCH ITEMS FROM THE PREMISES, UNLESS OTHERWISE NOTED.
6. FOR MECHANICAL EQUIPMENT BEING REMOVED, REMOVE ASSOCIATED DISCONNECTS, CONTROLLERS, WIRING, ETC. COMPLETE. VERIFY WITH MECHANICAL CONTRACTOR.
7. FOR EQUIPMENT OR DEVICES BEING REMOVED FROM WALLS THAT WILL REMAIN, REMOVE EXISTING DEVICE AND WIRING AND PROVIDE NEW BLANK COVERPLATE.
8. PROVIDE ADEQUATE SUPPORT FOR EXISTING CABLING/RACEWAYS ABOVE CEILING AS REQUIRED. REMOVE OBSOLETE CABLING, WIRING, RACEWAYS, ETC.
9. REMOVE ASSOCIATED ELECTRICAL FOR ANY EXISTING EQUIPMENT BEING REMOVED BY ANY TRADE. REFER TO ALL DRAWINGS.
10. CONTRACTOR SHALL REMOVE EXISTING DEVICES ON WALLS BEING REMOVED, WHETHER DEVICES ARE SHOWN OR NOT, UNLESS OTHERWISE INSTRUCTED.
11. COORDINATE SCHEDULING OF DEMOLITION WORK WITH OWNER AND TRADES.
12. PATCH EXISTING HOLES THROUGH WALLS AND FLOORS WHERE EXISTING RACEWAYS OR CABLES ARE REMOVED.
13. FOR DEMOLITION OF RECESSED PANELS AND SIMILAR EQUIPMENT, COORDINATE WALL PATCH WITH GENERAL CONTRACTOR PRIOR TO BEGINNING WORK. REMOVE ALL FEEDER AND BRANCH CONDUIT AND WIRE.
14. ALL EXISTING FIRE ALARM EQUIPMENT AND DEVICES SHALL BE CAREFULLY REMOVED BY THE CONTRACTOR AND TURNED OVER TO THE OWNER FOR SALVAGE. COORDINATE WITH THE OWNER PRIOR TO REMOVAL AND DELIVER TO DESIGNATED LOCATION ON CAMPUS FOR STORAGE. CONTRACTOR SHALL PROVIDE AND USE FIBER DRUMS FOR STORAGE OF DEVICES AND DELIVER DRUMS/DEVICES TO OWNER. FOR ALL ITEMS DEEMED OBSOLETE BY THE OWNER, CONTRACTOR SHALL IMMEDIATELY REMOVE SUCH ITEMS FROM THE PREMISES, UNLESS OTHERWISE NOTED.
15. SYMBOLS USED FOR TELECOM. OUTLETS ON DEMO DRAWINGS ARE GENERIC AND DON'T NECESSARILY REFLECT THE ACTUAL TYPE OF DEVICE, NUMBER OF JACKS, OR QUANTITY OF CABLES. CONTRACTOR SHALL REMOVE SUCH OUTLET COMPLETELY AND REMOVE ALL CABLES TO SOURCE, UNLESS OTHERWISE NOTED. REMOVE CONDUIT STUBS TO CORRIDOR CEILING.
16. THERE ARE SOME EXISTING DEVICE BOXES WITH BLANK COVERPLATES THROUGHOUT THE BUILDING. CONTRACTOR SHALL REMOVE ANY WIRING AND REPLACE COVERPLATE PER NOTE 7 ABOVE.
17. REMOVE ALL ABANDONED CONDUITS AND FIRESTOP/PATCH ALL WALL/FLOOR OPENINGS, UNLESS OTHERWISE NOTED.
18. REMOVE ALL SURFACE RACEWAYS (ONE AND MULTI-COMPARTMENT) AND WIRING UNLESS OTHERWISE NOTED. PATCH WALLS.
19. FOR REMOVAL OF FIRE ALARM DUCT DETECTORS, REMOVE ALL INTERLOCKS FOR FAN SHUTDOWN AND REMOVE ALL REMOVE ALARM LAMPS AND TEST SWITCHES. ALSO, REMOVE ALL FIRE ALARM INTERLOCKS WITH ELEVATOR RECALL, SMOKE FANS, LIGHTING CONTROLS, ETC.

browning day

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CERTIFICATION 06/05/2020

100% CONSTRUCTION DOCUMENTS

Indiana State University - Dreiser Hall Renovation

221 North 6th Street
Terre Haute, IN 47809

Project No.: 19A052
Drawn By: JPS
Checked By: TEH
Scale: See Drawing
Issue Date: 06/05/2020

REVISION SCHEDULE		
Rev. #	Revision Description	Issue Date

SYMBOLS, ABBREV., & GENERAL NOTES - ELEC.

E0.1

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DEMOLITION LEGEND:

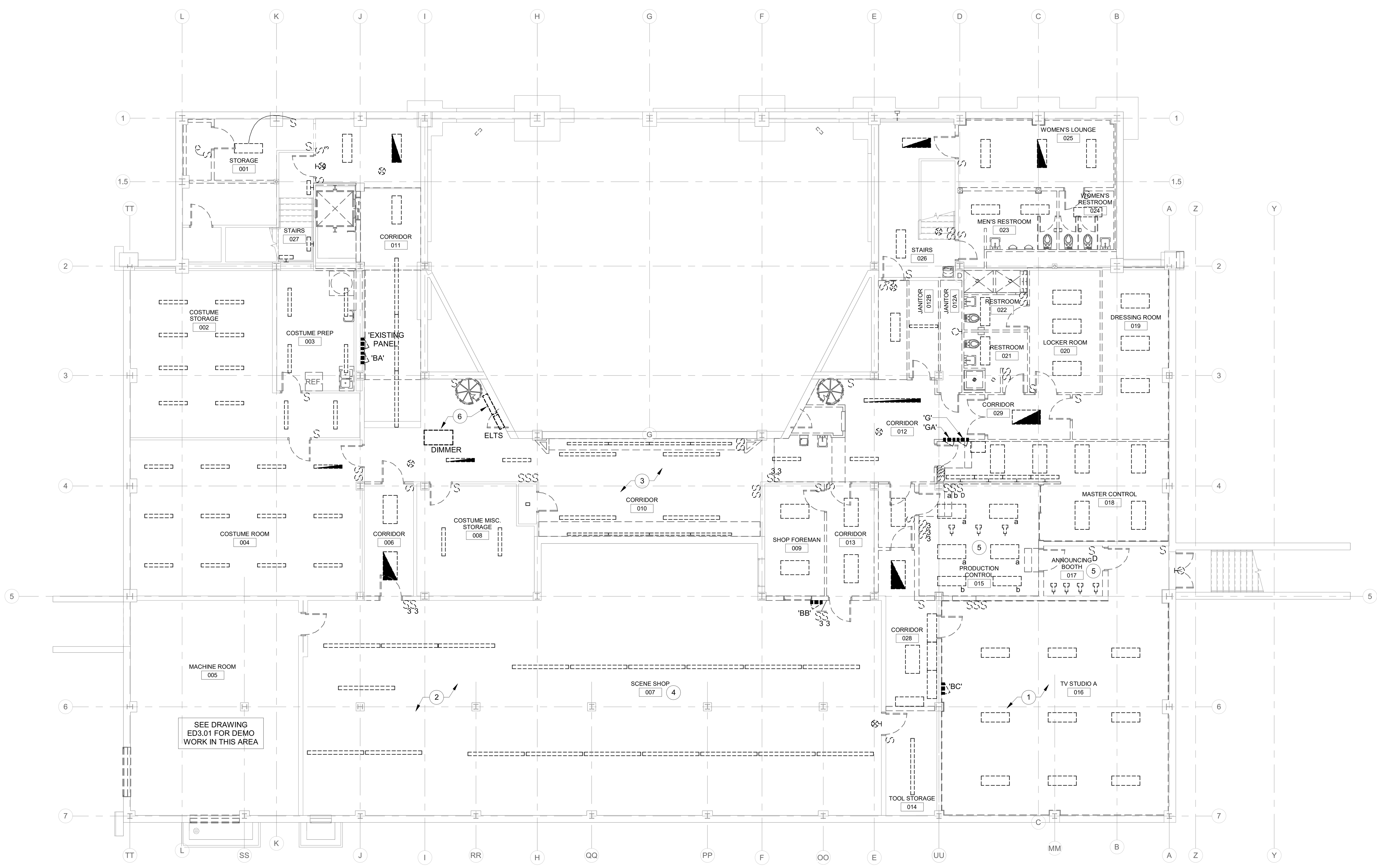
- WORK TO BE REMOVED
- WORK TO REMAIN

GENERAL NOTES:

1. SEE E0.1 FOR GENERAL NOTES.

PLAN NOTES:

1. REMOVE PIPE/UNISTRUT GRID, ALL CONNECTOR STRIPS AND ALL OVERHEAD WIRING, ETC. ASSOCIATED WITH PHOTOGRAPHY/THEATRICAL LIGHTS.
2. REMOVE SPOT LIGHTS, WIRING AND CONTROLS.
3. REMOVE ALL MAKEUP STATION LIGHTING, WIRING AND CONTROLS.
4. SOME LIGHTS ARE CONNECTED TO EMERGENCY CIRCUITS. VERIFY IN FIELD.
5. REMOTE ON-AIR LIGHTS AND CONTROLS.
6. REMOVE STRAND C21 DIMMERS AND EMERGENCY TRANSFER EQUIPMENT AND TURN OVER TO OWNER. REMOVE ALL ASSOCIATED CONDUITS AND WIRING.



BASEMENT PLAN - LIGHTING DEMOLITION

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

NORTH

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CERTIFICATION 06/05/2020

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Indiana State University - Dreiser Hall Renovation

221 North 6th Street
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Project No.: 19A052
Drawn By: JPS
Checked By: TEH
Scale: See Drawing
Issue Date: 06/05/2020

REVISION SCHEDULE

Rev. #	Revision Description	Issue Date

BASEMENT PLAN - LIGHTING DEMOLITION

ED2.00

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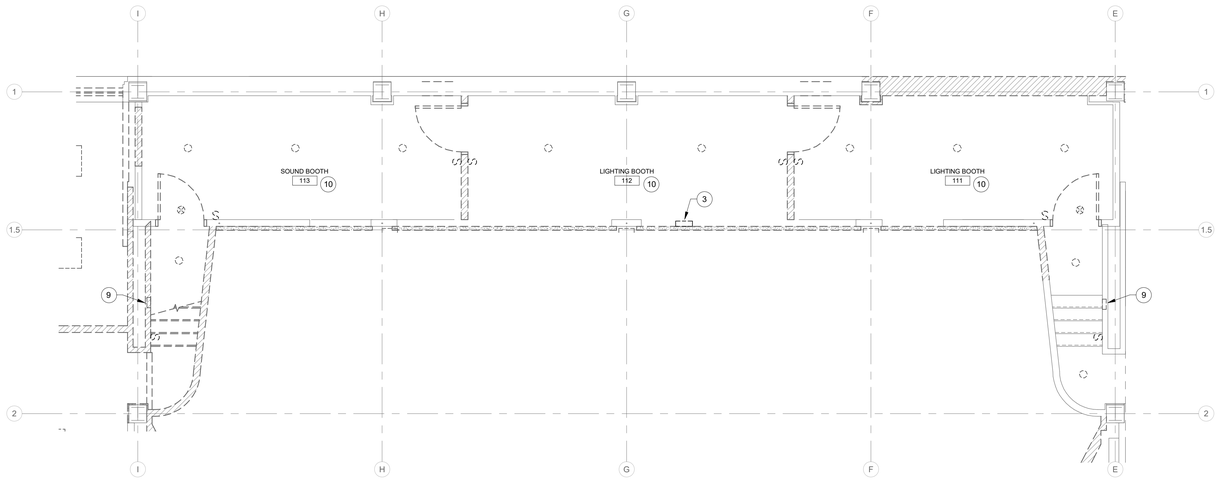
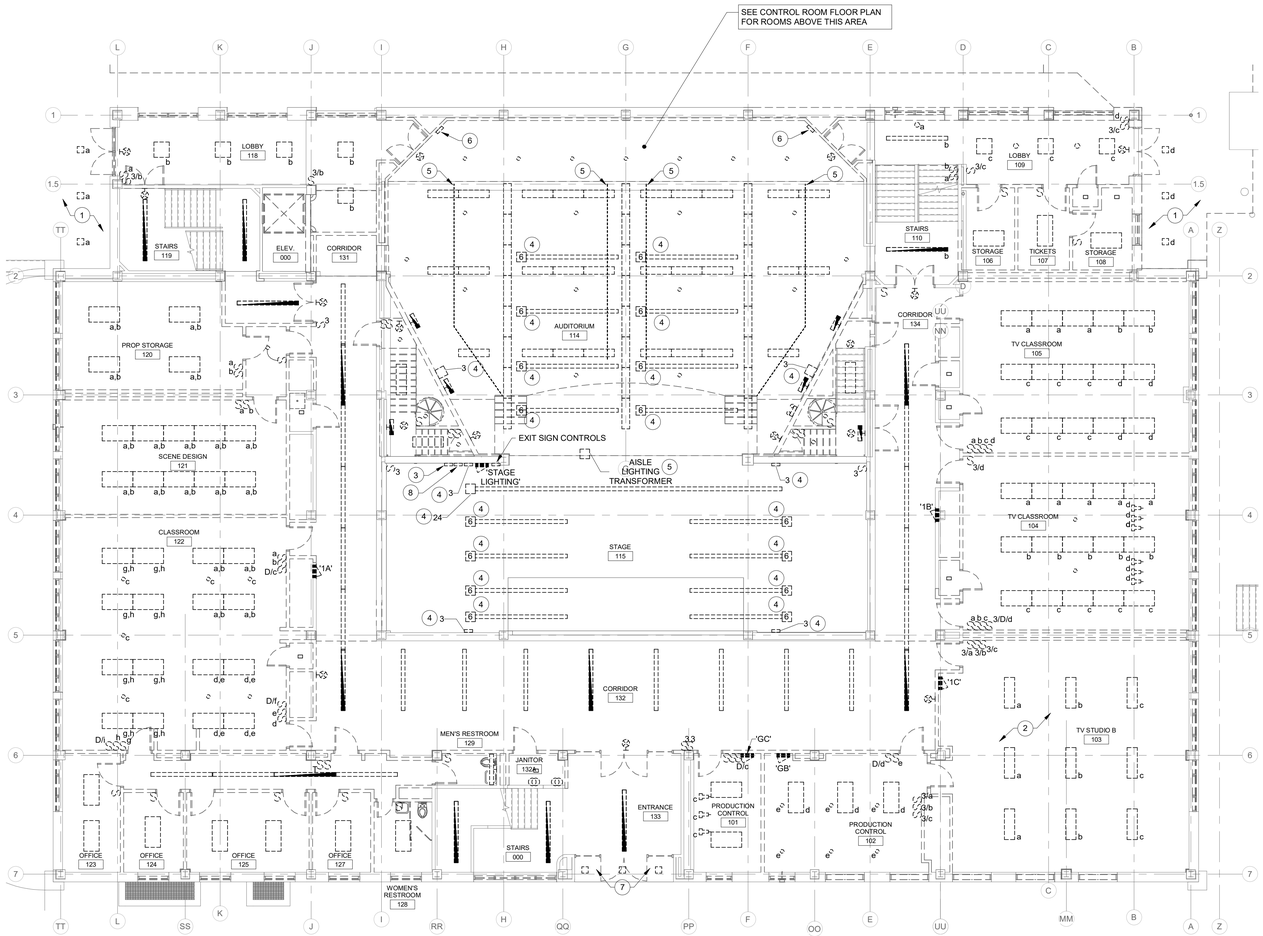


CONTROL ROOM FLOOR PLAN - LIGHTING DEMOLITION

SCALE: 1/4" = 1'-0"

NORTH



FIRST FLOOR PLAN - LIGHTING DEMOLITION

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

NORTH

DEMOLITION LEGEND:

- WORK TO BE REMOVED
- WORK TO REMAIN

GENERAL NOTES:

1. SEE E0.1 FOR GENERAL NOTES.

(#) PLAN NOTES:

1. REMOVE LIGHTS AND WIRING FROM CANOPY AND PREPARE FOR NEW.
2. REMOVE ALL PIPE/UNISTRUT GRID, CONNECTOR STRIPS, WIRING, ETC. ASSOCIATED WITH TV STUDIO LIGHTING.
3. REMOVE 12-BUTTON CONTROL STATION.
4. REMOVE LIGHTING RELAY RECEPTACLES AND STAGE PIN RECEPTACLES, DROP BOXES, ETC. AS INDICATED.
5. REMOVE AISLE LIGHTING, LIGHTING TRANSFORMER (120VAC/12DC), AND FEED BACK TO LIGHTING TRANSFER SWITCH (ELTS) IN BASEMENT. SEE DRAWING ED2.00 FOR LOCATION.
6. REMOVE 2-BUTTON CONTROL STATION.
7. EXISTING CANOPY LIGHTS TO REMAIN. SEE E2.01 FOR WORK.
8. REMOVE ALL THEATER LIGHTING CONDUITS AND WIRING IN THIS AREA AND THROUGHOUT THE THEATER, STAGE, CONTROL BOOTH, ETC.
9. REMOVE STEP LIGHTS. PATCH WALL.
10. REMOVE ALL LIGHTING CONTROL EQUIPMENT, WIRING, ETC.

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FIRST FLOOR PLAN - LIGHTING DEMOLITION

ED2.01

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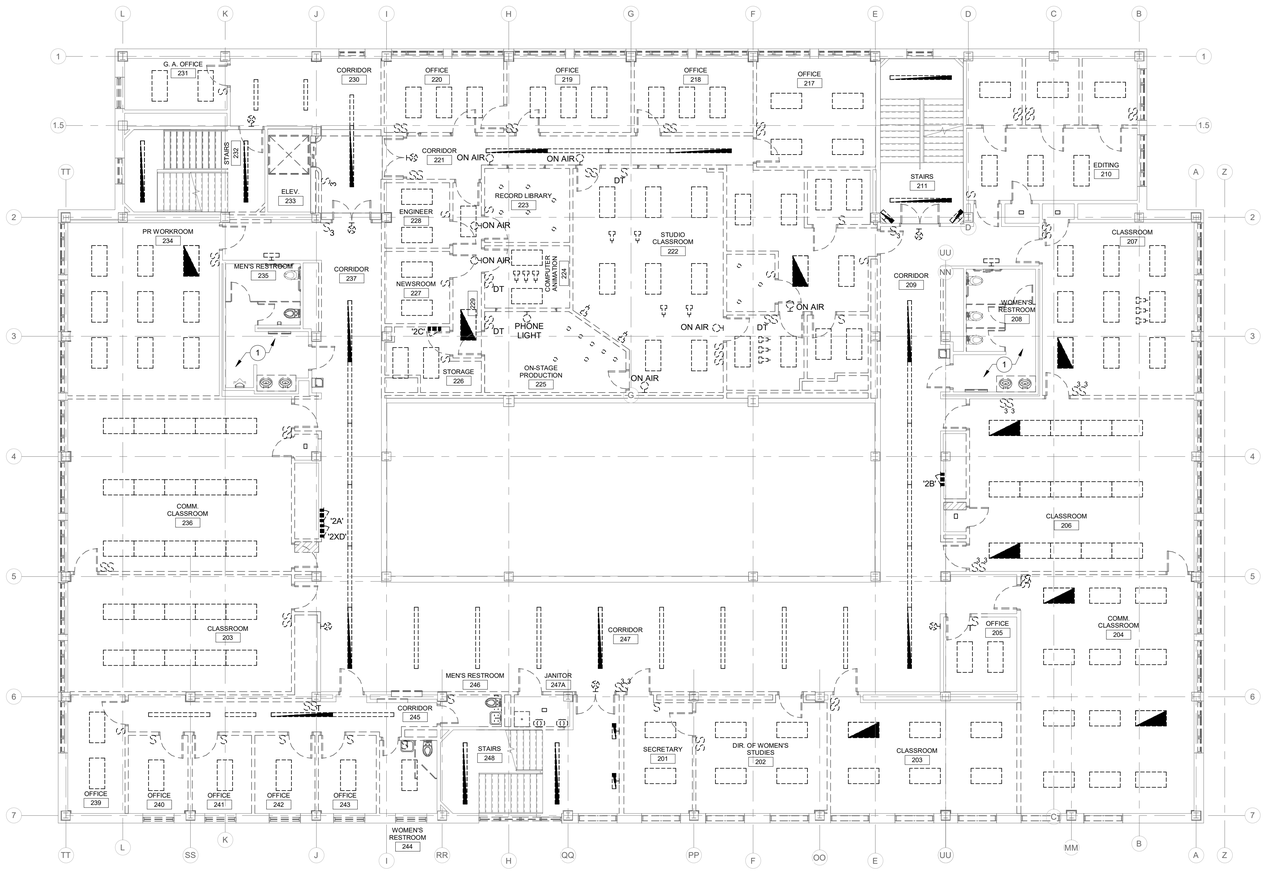

SECOND FLOOR PLAN - LIGHTING DEMOLITION

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

DEMOLITION LEGEND:

- WORK TO BE REMOVED
- WORK TO REMAIN

GENERAL NOTES:

1. SEE E0.1 FOR GENERAL NOTES.

(#) PLAN NOTES:

1. LIGHTING IN THIS AREA TO REMAIN. DISCONNECT FROM EXISTING CIRCUIT AND PREPARE FOR CONNECTION TO NEW CIRCUIT. SEE E2.02 FOR NEW WORK.

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SECOND FLOOR PLAN - LIGHTING DEMOLITION

ED2.02

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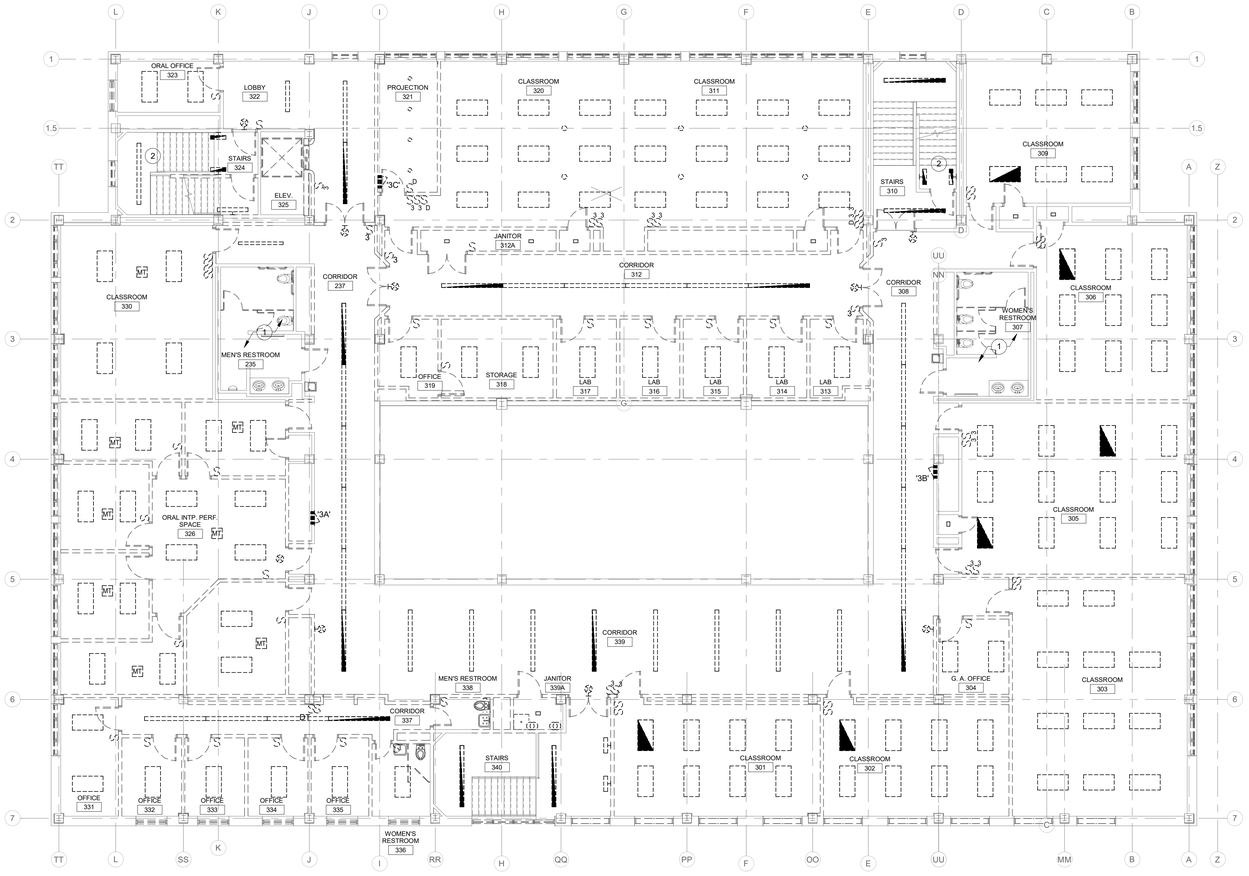

THIRD FLOOR PLAN - LIGHTING DEMOLITION

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

NORTH

DEMOLITION LEGEND:

- WORK TO BE REMOVED
- WORK TO REMAIN

GENERAL NOTES:

1. SEE E0.1 FOR GENERAL NOTES.

(#) PLAN NOTES:

1. LIGHTING IN THIS AREA TO REMAIN. DISCONNECT FROM EXISTING CIRCUIT AND PREPARE FOR CONNECTION TO NEW CIRCUIT. SEE E2.03 FOR NEW WORK.
2. SEE ED2.20 FOR DEMOLITION WORK IN UPPER SOUTHWEST AND NORTHWEST STAIRS.

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THIRD FLOOR PLAN - LIGHTING DEMOLITION

ED2.03

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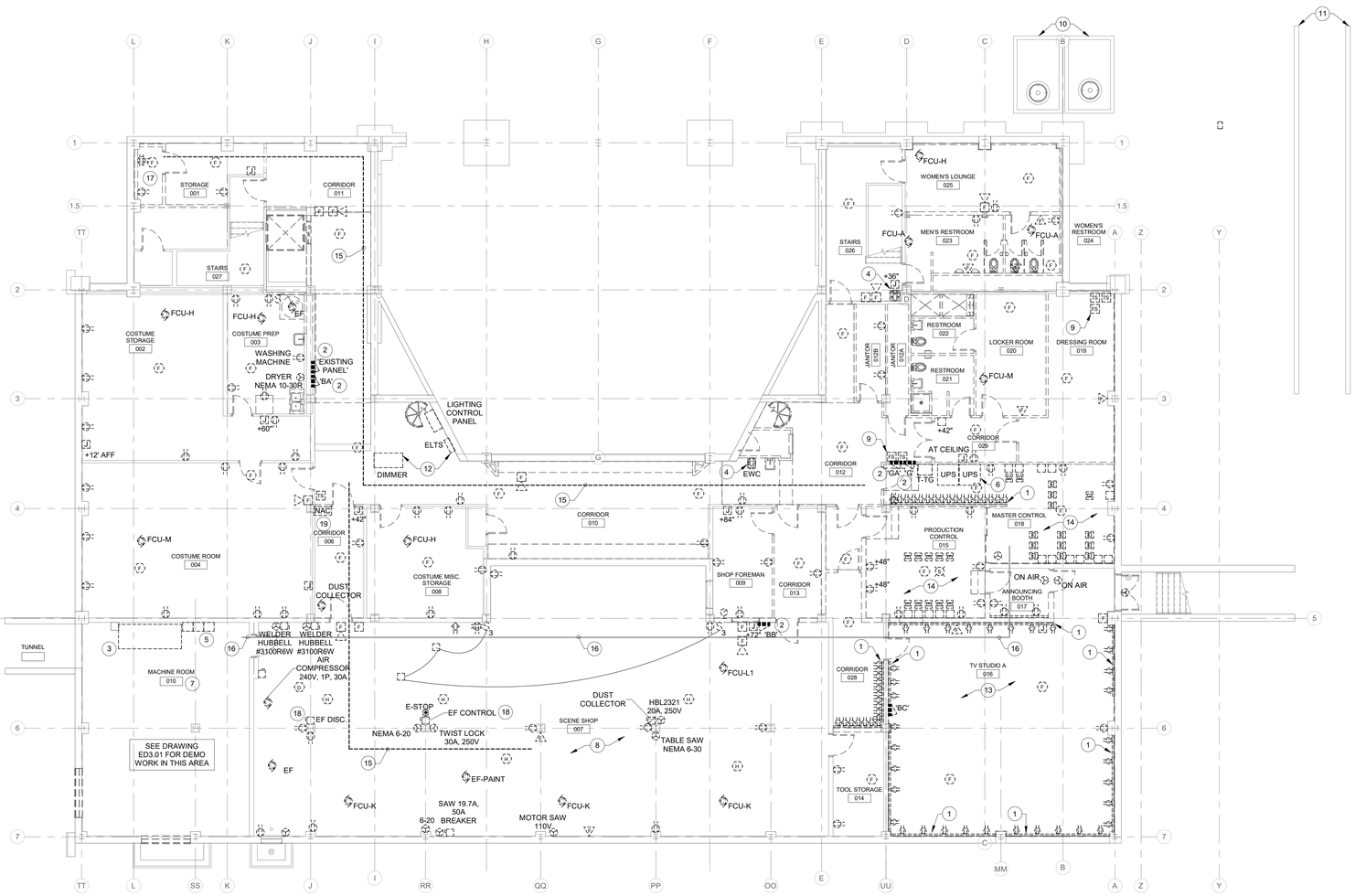

BASEMENT PLAN - POWER DEMOLITION

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

NORTH

DEMOLITION LEGEND:

- WORK TO BE REMOVED
- WORK TO REMAIN

GENERAL NOTES:

1. SEE E0.1 FOR GENERAL NOTES.

(#) PLAN NOTES:

1. REMOVE SURFACE RACEWAY AND WIRING BACK TO SOURCE.
2. PANELBOARD TO BE REMOVED. REMOVE WIRING AND CONDUIT BACK TO SOURCE. SEE ED5.01 FOR RISER DIAGRAM.
3. MAIN SWITCHBOARD 'MSBD' TO BE REMOVED. REMOVE EQUIPMENT AND WIRING BACK TO SOURCE. PAD TO REMAIN.
4. ELECTRICAL WATER COOLER TO BE REMOVED. REMOVE DUPLEX GFCI RECEPTACLE AND WIRING BACK TO SOURCE.
5. MOTOR CONTROL CENTER TO BE REMOVED. REMOVE ALL WIRING AND CONDUIT FROM SOURCE, MAIN SWITCHBOARD 'MSBD'.
6. UPS EQUIPMENT FOR TELECOM RACKS TO BE REMOVED. REMOVE ALL ASSOCIATED EQUIPMENT WIRING AND CONDUIT.
7. REMOVE ALL EQUIPMENT, WIRING, ETC. IN MACHINE ROOM.
8. REMOVE ALL EQUIPMENT, WIRING, ETC. IN SCENE SHOP.
9. REMOVE FIRE ALARM CONNECTIONS TO FIRE PROTECTION SYSTEM.
10. EXISTING MV MANHOLES TO REMAIN.
11. EXISTING UTILITY TUNNEL TO REMAIN.
12. EXISTING DIMMER AND EMERGENCY TRANSFER EQUIPMENT TO BE REMOVED. SEE ED2.00.
13. REMOVE ALL EQUIPMENT, WIRING, ETC. IN TV STUDIO. COORDINATE IN FIELD.
14. REMOVE ALL EQUIPMENT, WIRING, ETC. IN ESPN CONTROL AND EQUIPMENT ROOMS. COORDINATE IN FIELD.
15. REMOVE (2) 4" CONDUITS FOR TELECOMM PATHWAY.
16. CABLE TRAY FOR TELECOMM TO REMAIN.
17. REMOVE ALL BACKBOARDS AND EQUIPMENT ASSOCIATED WITH TELECOM ROOM.
18. REMOVE AND SALVAGE DISCONNECT SWITCH AND 2-SPEED CONTROLS FOR REUSE. SEE E2.10.
19. REMOVE 120V CIRCUIT AND FIRE ALARM NOTIFICATION APPLIANCE CIRCUIT PANEL. REMOVE WIRE AND CONDUIT BACK TO SOURCE, PANEL BXD.

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Rev. #	Revision Description	Issue Date

BASEMENT PLAN - POWER DEMOLITION

ED2.10

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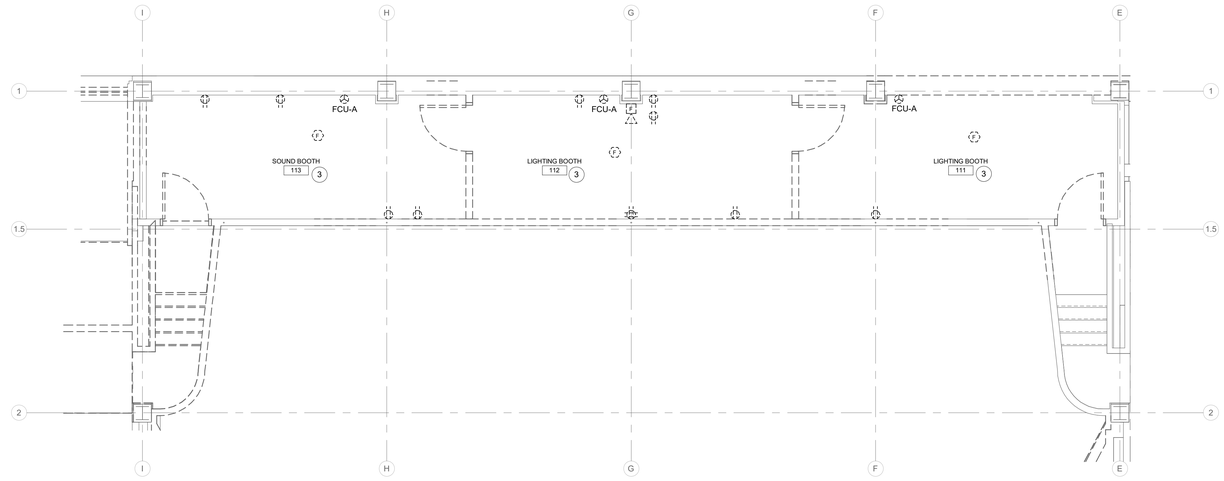
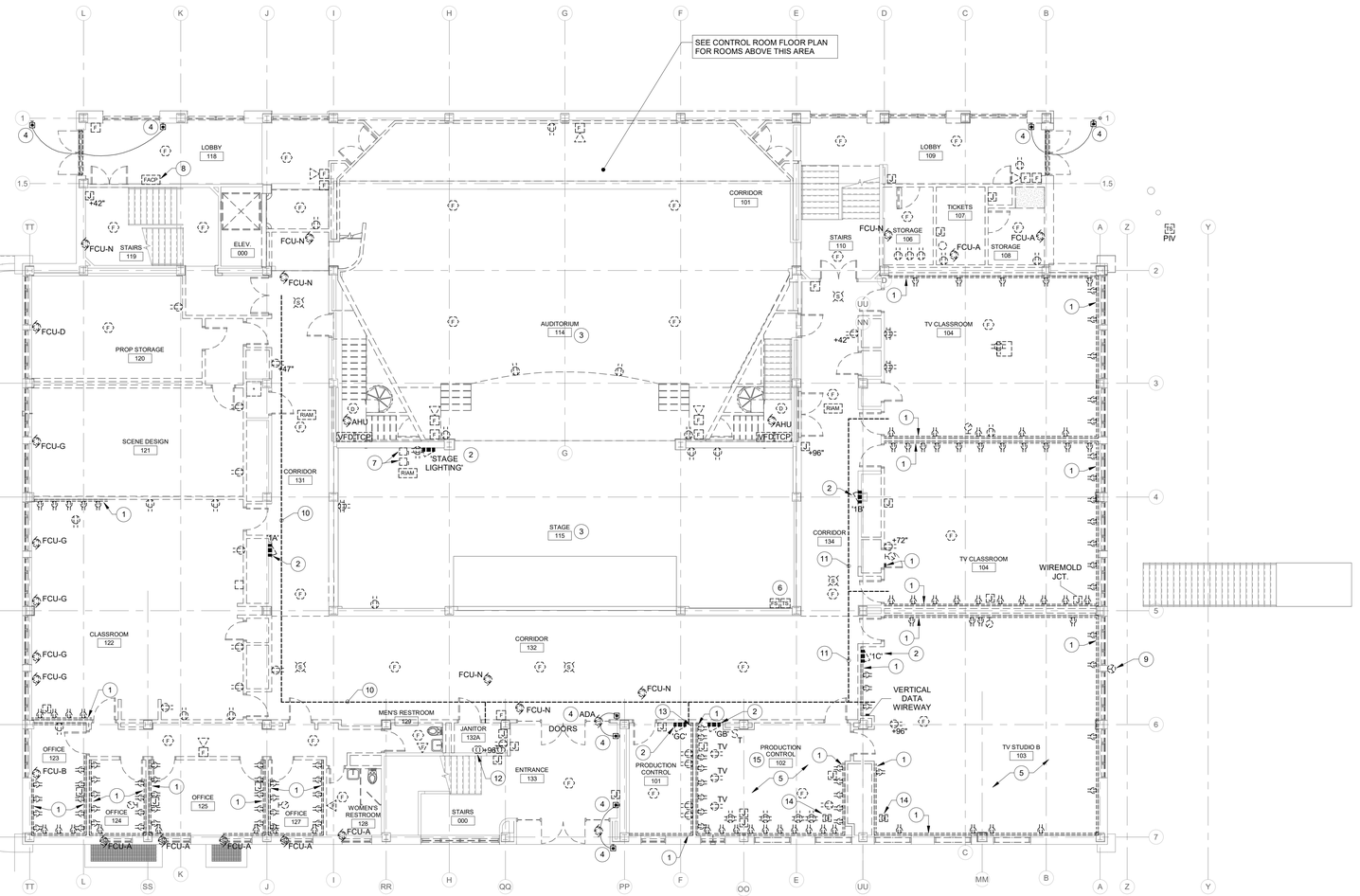


CONTROL ROOM FLOOR PLAN - POWER DEMOLITION

SCALE: 1/4" = 1'-0"

NORTH



FIRST FLOOR PLAN - POWER DEMOLITION

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

NORTH

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DEMOLITION LEGEND:

- WORK TO BE REMOVED
- WORK TO REMAIN

GENERAL NOTES:

1. SEE E0.1 FOR GENERAL NOTES.

(#) PLAN NOTES:

1. REMOVE SURFACE RACEWAY AND WIRING BACK TO SOURCE.
2. PANELBOARD TO BE REMOVED. REMOVE WIRING AND CONDUIT BACK TO SOURCE. SEE ED5.01 FOR RISER DIAGRAM.
3. REMOVE ALL DEVICES, EQUIPMENT, WIRING, ETC. IN THEATER (AUDITORIUM), STAGE AND CONTROL BOOTH.
4. REMOVE ADA DOOR OPERATOR AND PUSH BUTTON CONTROLS.
5. REMOVE ALL EQUIPMENT, WIRING, ETC. IN TV STUDIO AND CONTROL ROOM. COORDINATE IN FIELD.
6. REMOVE FIRE ALARM CONNECTIONS TO FIRE PROTECTION SYSTEM.
7. RELOCATE EXISTING MOTOR STARTERS. COORDINATE LOCATION WITH OWNER. REPLACE FIRE ALARM CONNECTION.
8. REMOVE 120V CIRCUIT AND FIRE ALARM CONTROL PANEL (REMOTE COMMAND CENTER). REMOVE WIRING AND CONDUIT BACK TO SOURCE, PANELBOARD BXD. REMOVE FIRE ALARM CONNECTION CABLES IN DREISER AND TO EXISTING FACP IN GILLUM HALL BASEMENT.
9. IRRIGATION CONTROLLER TO REMAIN. 120V CIRCUIT TO BE REPLACED. SEE E2.11.
10. REMOVE (2) - 4" CONDUITS FOR TELECOMM PATHWAY.
11. REMOVE CABLE TRAY TO TV ROOMS. PATCH WALLS AS REQUIRED.
12. REMOVE (2) - 4" TELECOMM CONDUIT RISERS AND PATCH FLOOR AS REQUIRED. REMOVE PLYWOOD BACKBOARD.
13. REMOVE WIREWAY.
14. REMOVE FLOOR PULL BOXES.
15. REMOVE ALL EXISTING FLOOR BOXES, POKE-THRU'S IN 102.

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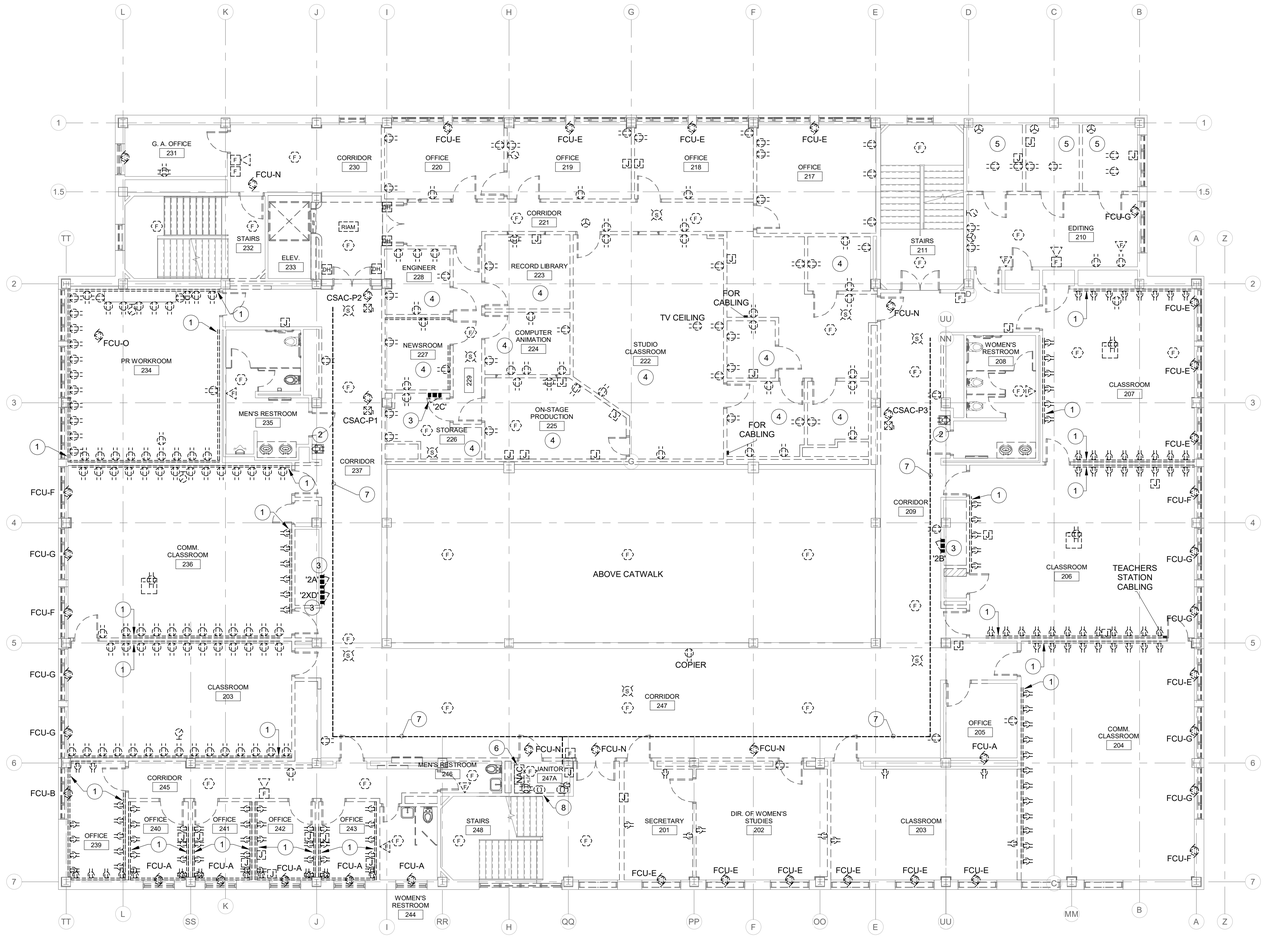
FIRST FLOOR PLAN - POWER DEMOLITION

ED2.11



SECOND FLOOR PLAN - POWER DEMOLITION

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

NORTH

DEMOLITION LEGEND:

- WORK TO BE REMOVED
- WORK TO REMAIN

GENERAL NOTES:

1. SEE E0.1 FOR GENERAL NOTES.

(#) PLAN NOTES:

1. REMOVE SURFACE RACEWAY AND WIRING BACK TO SOURCE.
2. ELECTRICAL WATER COOLER TO BE REMOVED. REMOVE DUPLEX GFCI RECEPTACLE AND WIRING BACK TO SOURCE.
3. PANELBOARD TO BE REMOVED. REMOVE WIRING AND CONDUIT BACK TO SOURCE. SEE ED5.01 FOR RISER DIAGRAM.
4. REMOVE ALL EQUIPMENT, WIRING, ETC. IN RADIO ROOMS. COORDINATE IN FIELD.
5. REMOVE ALL EQUIPMENT, WIRING, ETC. IN SOUND ROOMS. COORDINATE IN FIELD.
6. REMOVE 120V CIRCUIT AND FIRE ALARM NOTIFICATION APPLIANCE CIRCUIT PANEL. REMOVE WIRE AND CONDUIT BACK TO SOURCE, PANEL 2XD.
7. REMOVE (2) - 4" CONDUITS FOR TELECOMM PATHWAY.
8. REMOVE (2) - 4" TELECOMM CONDUIT RISERS AND PATCH FLOOR AS REQUIRED. REMOVE PLYWOOD BACKBOARD.

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SECOND FLOOR PLAN - POWER DEMOLITION

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DEMOLITION LEGEND:

WORK TO BE REMOVED

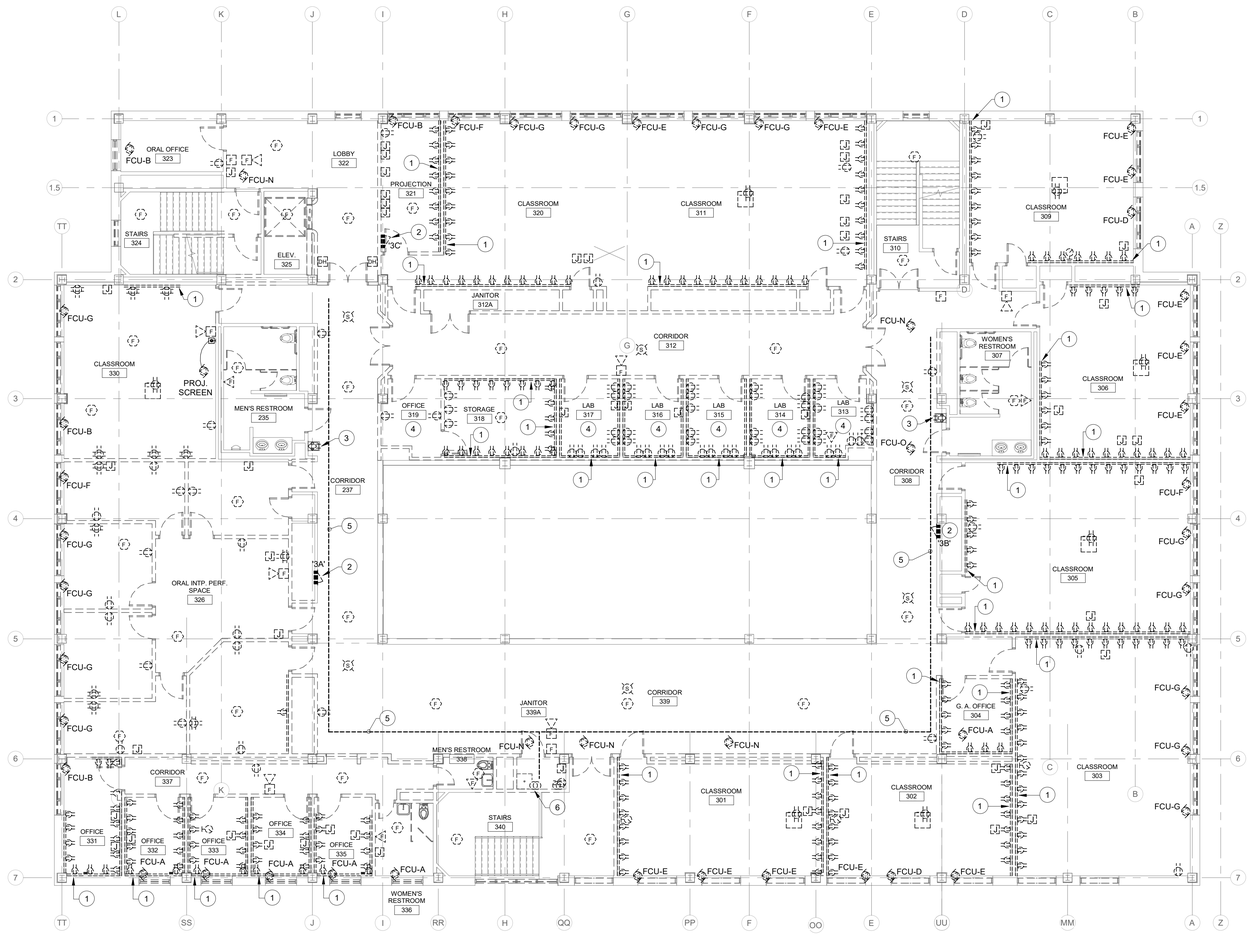
WORK TO REMAIN

GENERAL NOTES:

1. SEE E0.1 FOR GENERAL NOTES.

(#) PLAN NOTES:

1. REMOVE SURFACE RACEWAY AND WIRING BACK TO SOURCE.
2. PANELBOARD TO BE REMOVED. REMOVE WIRING AND CONDUIT BACK TO MAIN SWITCHBOARD. SEE ED5.01 FOR RISER DIAGRAM.
3. ELECTRICAL WATER COOLER TO BE REMOVED. REMOVE DUPLEX GFCI RECEPTACLE AND WIRING BACK TO SOURCE.
4. REMOVE ALL EQUIPMENT, WIRING, ETC. IN RADIO ROOMS. COORDINATE IN FIELD.
5. REMOVE (2) - 4" CONDUITS FOR TELECOMM PATHWAY.
6. REMOVE (2) - 4" TELECOMM CONDUIT RISERS AND PATCH FLOOR AS REQUIRED. REMOVE PLYWOOD BACKBOARD.



NORTH

THIRD FLOOR PLAN - POWER DEMOLITION

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

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THIRD FLOOR PLAN - POWER DEMOLITION

ED2.13

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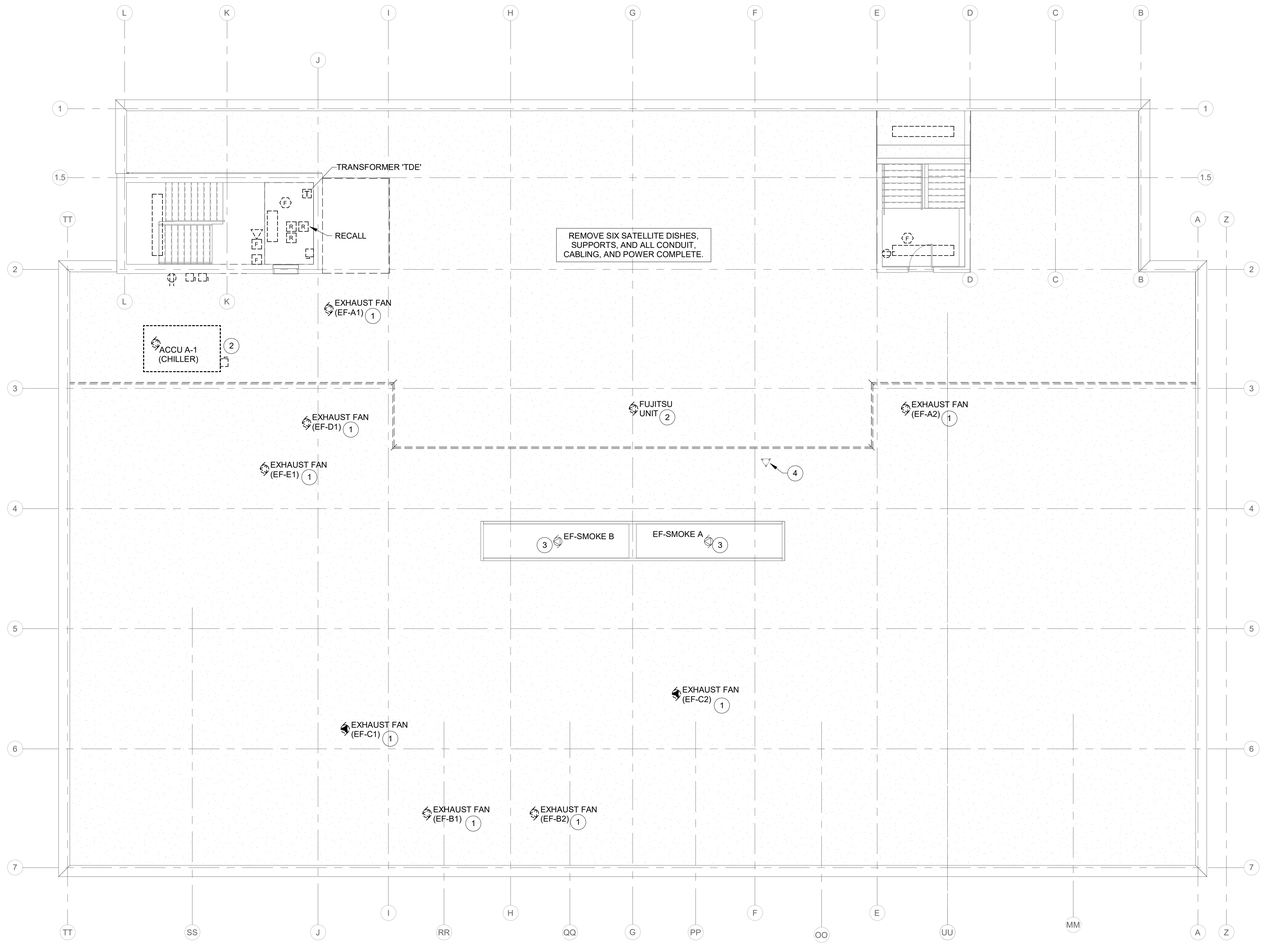

ROOF PLAN - ELECTRICAL DEMOLITION

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

NORTH

DEMOLITION LEGEND:

- WORK TO BE REMOVED
- WORK TO REMAIN

GENERAL NOTES:

1. SEE E0.1 FOR GENERAL NOTES.

(#) PLAN NOTES:

1. DISCONNECT EXHAUST FAN AND REMOVE WIRE AND CONDUIT BACK TO SOURCE.
2. DISCONNECT CONDENSING UNIT AND REMOVE WIRE AND CONDUIT BACK TO SOURCE.
3. STAGE VENT FAN FED FROM PANEL 'ELDPA' IN GILLUM HALL BASEMENT TO REMAIN.
4. RADIO TOWER AND ANTENNAS TO REMAIN.

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DANIEL E. DIMOND REGISTERED No. PE60910351 STATE OF INDIANA PROFESSIONAL ENGINEER

CERTIFICATION 06/05/2020

100% CONSTRUCTION DOCUMENTS

Indiana State University - Dreiser Hall Renovation

221 North 6th Street
Terre Haute, IN 47809

Project No.: 19A052
Drawn By: JPS
Checked By: TEH
Scale: See Drawing
Issue Date: 06/05/2020

REVISION SCHEDULE		
Rev. #	Revision Description	Issue Date

ROOF PLAN - ELECTRICAL DEMOLITION

ED2.20

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DEMOLITION LEGEND:

WORK TO BE REMOVED

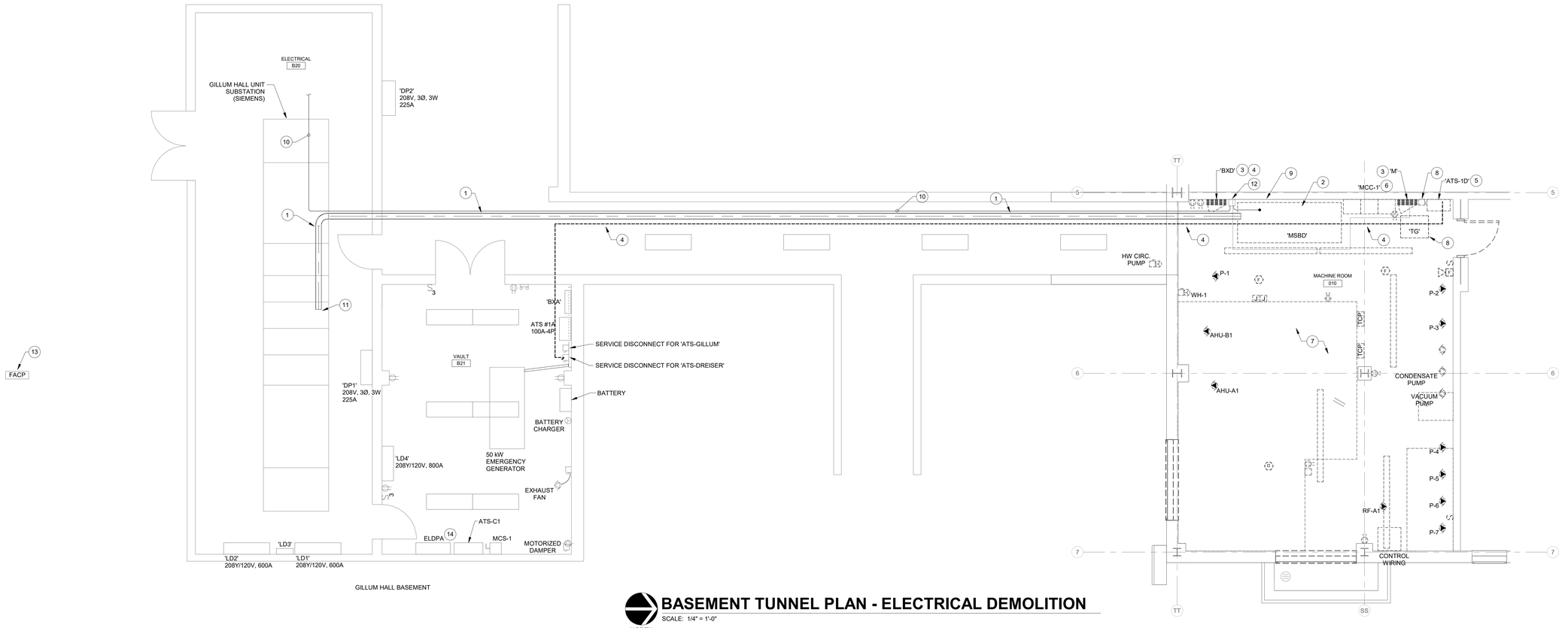
WORK TO REMAIN

GENERAL NOTES:

1. SEE E0.1 FOR GENERAL NOTES.

(#) PLAN NOTES:

1. 2000A, 3-PHASE COPPER FEEDER BUS DUCT WITH 4 WIRE + GROUND FROM GILLUM HALL UNIT SUBSTATION TO DREISER HALL 'MSBD' TO REMAIN.
2. MAIN SWITCHBOARD 'MSBD' TO BE REMOVED. DISCONNECT BUS DUCT AND PREPARE FOR REUSE.
3. REMOVE PANELBOARD AND FEEDER BACK TO SOURCE.
4. REMOVE EMERGENCY FEED FROM GENERATOR IN GILLUM HALL BASEMENT TO PANELBOARD 'BXD' IN DREISER HALL BASEMENT.
5. REMOVE AUTOMATIC TRANSFER SWITCH 'ATS-1D' FOR PANELBOARD 'BXD'.
6. MOTOR CONTROL CENTER TO BE REMOVED. REMOVE ALL WIRING AND CONDUIT FROM SOURCE, MAIN SWITCHBOARD 'MSBD'.
7. REMOVE ALL EQUIPMENT, WIRING, ETC. IN MACHINE ROOM.
8. REMOVE DISCONNECT, 75 KVA TRANSFORMER 'TG', AND FEEDER TO PANELBOARD 'G' IN BASEMENT. SEE DRAWING ED2.10 FOR LOCATION.
9. EXISTING CONCRETE PADS MAY REMAIN AND BE REUSED. OTHERWISE REMOVE AND PROVIDE NEW FOR NEW EQUIPMENT.
10. #4/0 GROUNDING ELECTRODE CONDUCTOR TO REMAIN.
11. BUS DUCT IS CONNECTED TO SIEMENS RL-1600 POWER CIRCUIT BREAKER, TO REMAIN.
12. GROUND BOX TO REMAIN.
13. EXISTING GILLUM HALL FACP TO REMAIN IS LOCATED IN NEARBY MAIN BASEMENT/TELECOM ROOM. (NOTE: THIS PROJECT WILL SEPARATE DREISER HALL FIRE ALARM FROM GILLUM HALL'S FIRE ALARM CONTROL PANEL (FACP).
14. EXISTING ROOFTOP STAGE EXHAUST FANS (EF-SMOKE-A AND B) ARE FED FROM PANEL 'ELDPA' AND SHALL REMAIN. REWORK AS REQUIRED.



BASEMENT TUNNEL PLAN - ELECTRICAL DEMOLITION

SCALE: 1/4" = 1'-0"

NORTH

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REVISION SCHEDULE		
Rev. #	Revision Description	Issue Date

TUNNEL PLAN - ELECTRICAL DEMOLITION

ED3.01

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DEMOLITION LEGEND:

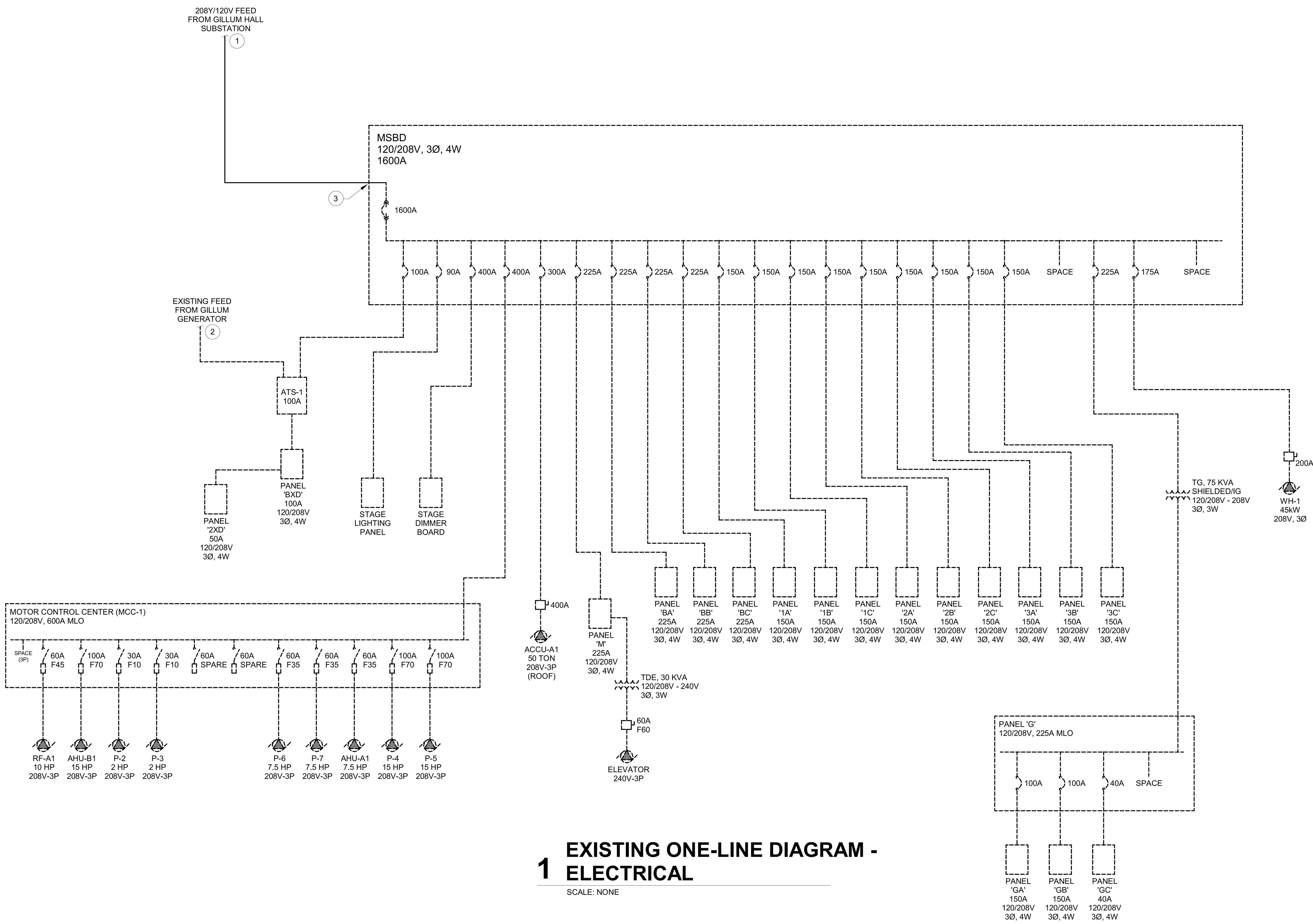
- (dashed box) WORK TO BE REMOVED
- (solid box) WORK TO REMAIN

GENERAL NOTES:

1. SEE E001 FOR GENERAL NOTES.
2. FOR PANELS BEING REMOVED, REMOVE ALL WIRING AND CONDUIT BACK TO SOURCE, INCLUDING ANY ABANDONED CONDUIT AND PANELBAORD TUBS, UNLESS OTHERWISE NOTED.

PLAN NOTES:

1. 2000A, 3-PHASE COPPER FEEDER BUS DUCT WITH 4 WIRE + GROUND FROM GILLUM HALL UNIT SUBSTATION TO DREISER HALL 'MSBD' TO REMAIN. #4/0 GROUNDING ELECTRODE CONDUCTOR TO REMAIN.
2. REMOVE AUTOMATIC TRANSFER SWITCH AND FEED FROM GILLUM HALL GENERATOR. SEE DRAWING ED3.01.
3. DISCONNECT BUS DUCT FROM MSBD AND PREPARE FOR INSTALLATION OF END CABLE TAP BOX. SEE E5.01.



1 EXISTING ONE-LINE DIAGRAM - ELECTRICAL
SCALE: NONE

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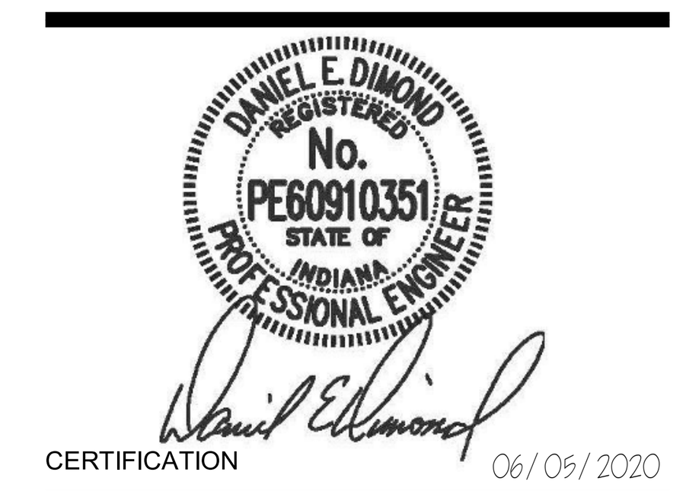

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Project No.: 19A052
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EXISTING ONE-LINE DIAGRAM - ELECTRICAL DEMOLITION

ED5.01

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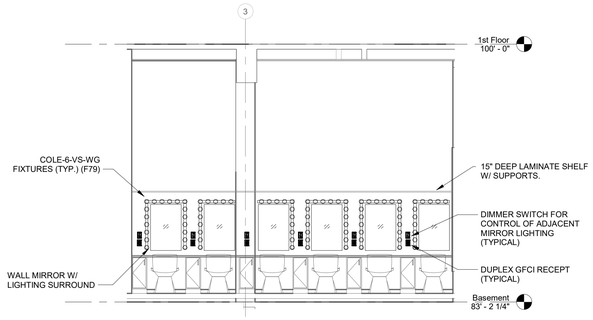
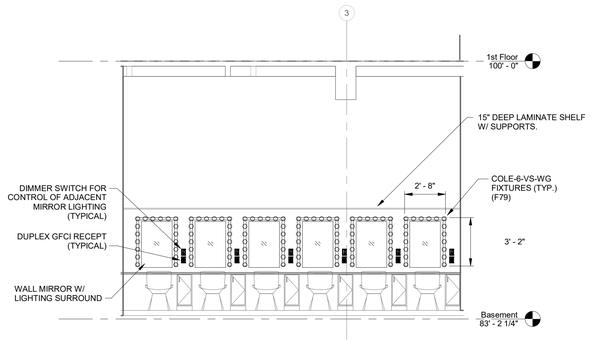


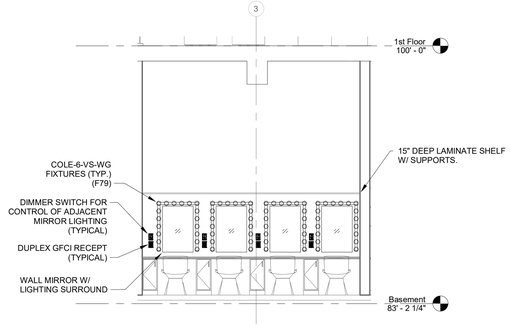
1 MAKEUP MIRROR #1 - ELEVATION

SCALE: 1/4" = 1'-0"



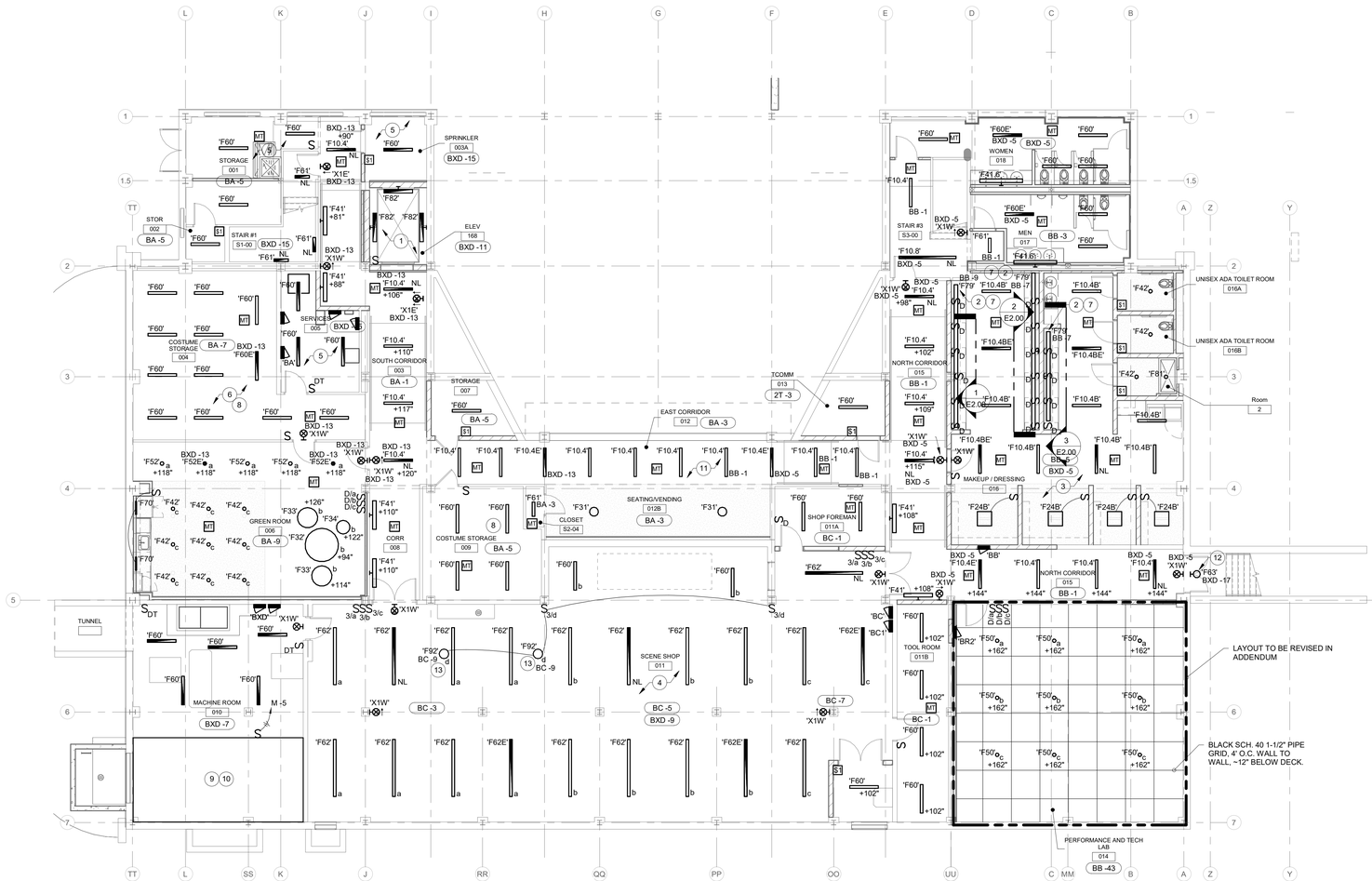
2 MAKEUP MIRROR #2 - ELEVATION

SCALE: 1/4" = 1'-0"



3 MAKEUP MIRROR #3 - ELEVATION

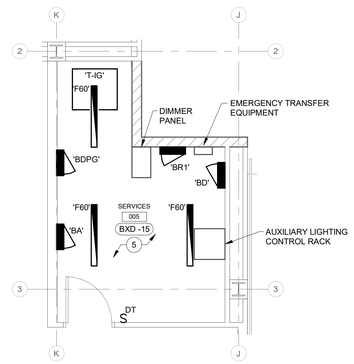
SCALE: 1/4" = 1'-0"



BASEMENT PLAN - LIGHTING

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

NORTH



ENLARGED SERVICES 005 - LIGHTING

SCALE: 1/4" = 1'-0"

NORTH

RENOVATION LEGEND:

- WORK TO BE INSTALLED
- WORK TO REMAIN

GENERAL NOTES:

1. SEE E0.1 FOR GENERAL NOTES.

(#) PLAN NOTES:

1. PROVIDE AT LEAST THREE TYPE 'F82' FIXTURES IN ELEVATOR PIT. COORDINATE EXACT LOCATION WITH EQUIPMENT. PROVIDE ADDITIONAL FIXTURES AS REQUIRED TO MAINTAIN 10 FOOTCANDLES MINIMUM THE ENTIRE PIT. PROVIDE LIGHT SWITCH AT LADDER FOR CONTROL OF LIGHTS IN PIT. COORDINATE WITH ELEVATOR INSTALLER.
2. MAKEUP MIRROR LIGHTING. SEE ELEVATIONS ON THIS DRAWING FOR LOCATION AND QUANTITY OF LIGHTS. COORDINATE EXACT SIZE AND QUANTITY WITH ARCHITECTURAL ELEVATIONS AND MIRROR SPECIFICATIONS PRIOR TO ORDERING.
3. SUSPENDED FIXTURES TO BE MOUNTED AT 11'-7" AFF IN THIS AREA.
4. SUSPENDED FIXTURES TO BE MOUNTED AT 10'-0" AFF IN SCENE SHOP.
5. SUSPENDED FIXTURES TO BE MOUNTED AT 7'-10" AFF.
6. SUSPENDED FIXTURES TO BE MOUNTED AT 10'-0" AFF.
7. MAKEUP MIRROR LIGHTING TO BE WIRED THROUGH CONTACTORS. SEE DRAWING E2.10 FOR DETAILS.
8. COORDINATE LIGHT FIXTURE LOCATIONS WITH SHELVING UNITS.
9. PROVIDE (2) ADDITIONAL 'F60' LIGHT FIXTURES AND INSTALL AS DIRECTED.
10. PROVIDE (8) JELLY JAR VAPORTIGHT SURFACE MOUNTED LIGHTS IN AHU-1 AND LOCATE AS DIRECTED BY MECHANICAL ENGINEER AND CONTRACTOR. WIRE TO A LIGHT SWITCH MOUNTED ON SIDE OF UNIT. PROVIDE 120V CIRCUIT INDICATED.
11. SUSPENDED FIXTURES TO BE MOUNTED AT 8'-0" AFF.
12. LIGHT FIXTURE TO BE CONTROLLED THROUGH PHOTOCELL. COORDINATE EXACT LOCATION OF PHOTOCELL WITH ENGINEER PRIOR TO ROUGH-IN.
13. COORDINATE LOCATION OF SCOOP LIGHTING WITH OWNER AND PAINT TABLE.

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BASEMENT PLAN - LIGHTING

E2.00

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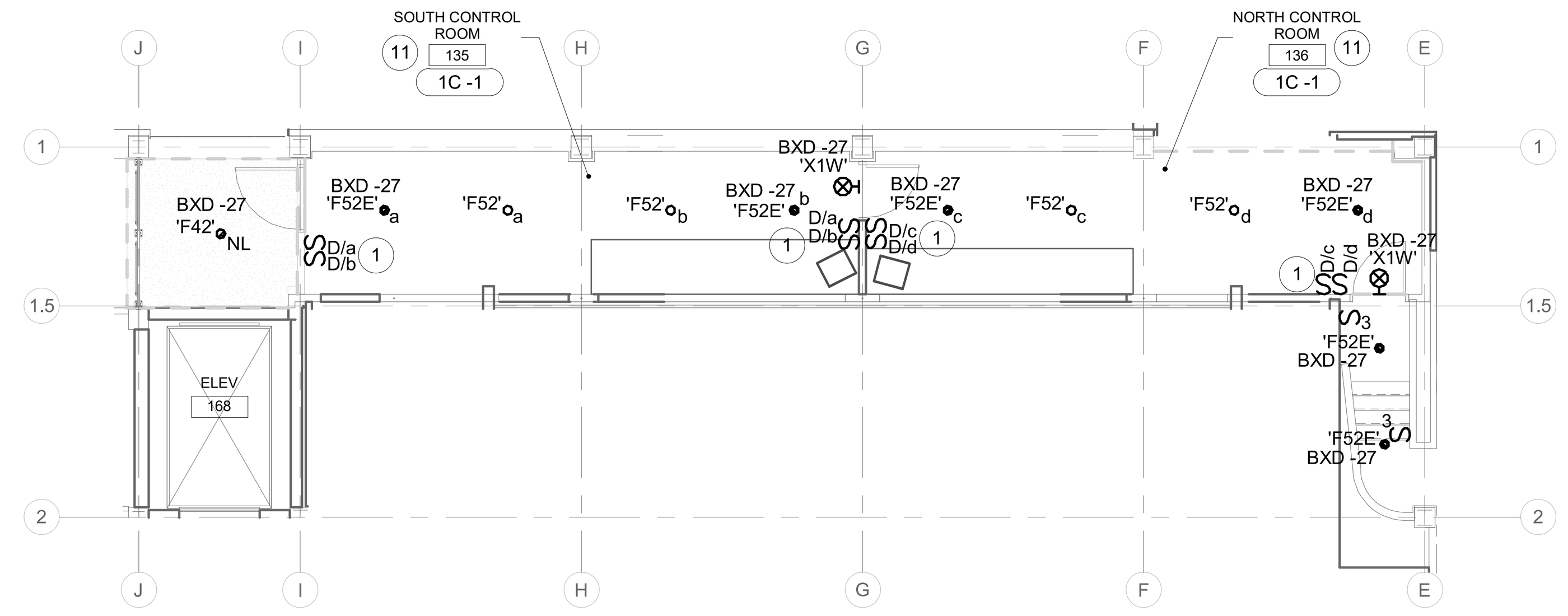
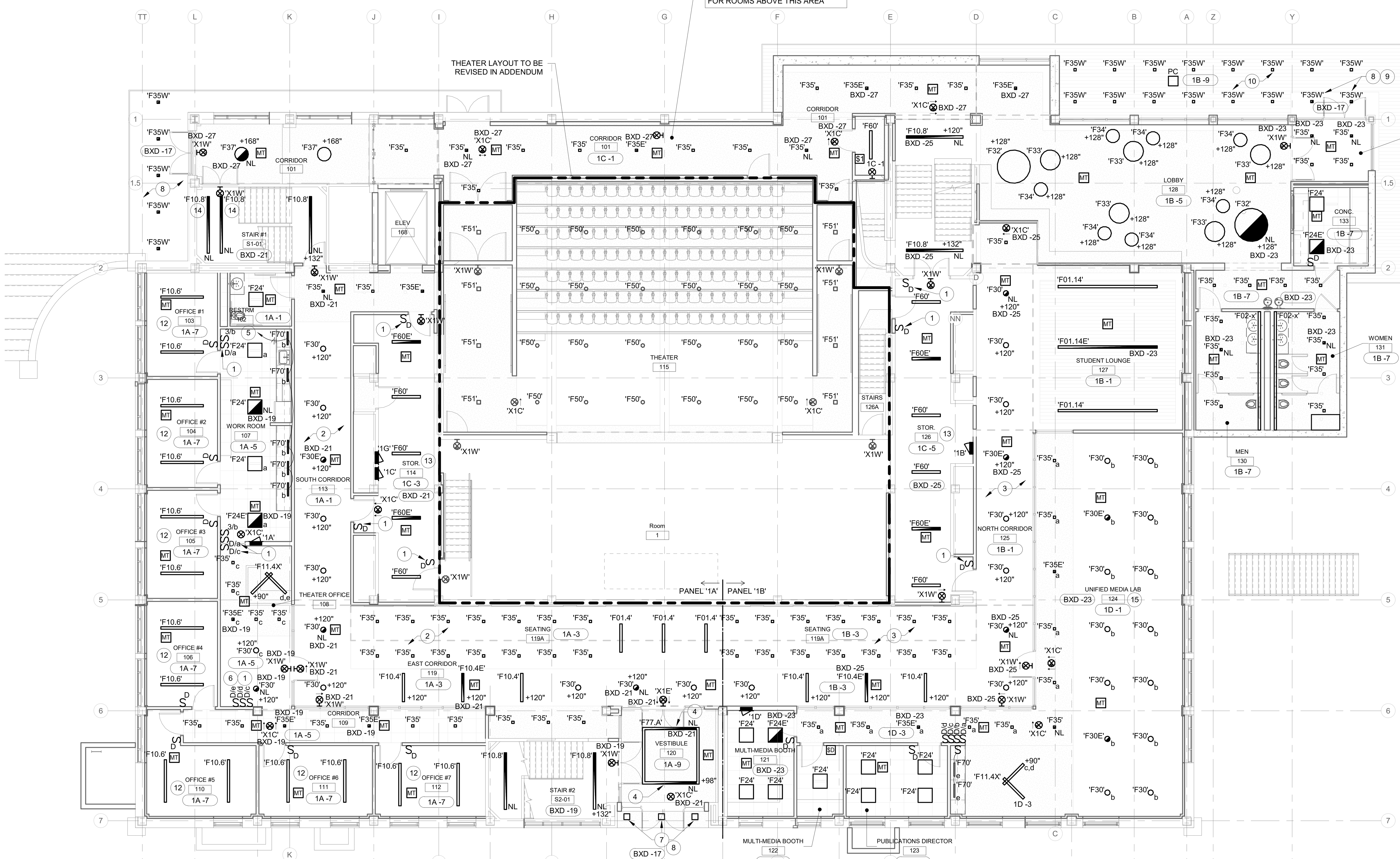


CONTROL ROOM FLOOR PLAN - LIGHTING

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



FIRST FLOOR PLAN - LIGHTING

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

RENOVATION LEGEND:

- WORK TO BE INSTALLED
- WORK TO REMAIN

GENERAL NOTES:

1. SEE E0.1 FOR GENERAL NOTES.

PLAN NOTES:

1. PROVIDE MULTI-LOCATION DIMMERS.
2. INTERLOCK OCCUPANCY SENSORS TOGETHER TO CONTROL LIGHTS IN CORRIDOR AND SEATING ON CIRCUIT 1A-1 AND 1A-3.
3. INTERLOCK OCCUPANCY SENSORS TOGETHER TO CONTROL LIGHTS IN CORRIDOR AND SEATING ON CIRCUIT 1B-1 AND 1B-3.
4. CONNECT PORTION OF LIGHT FIXTURE TO EMERGENCY CIRCUIT. PROVIDE ALCR TRANSFER DEVICE.
5. UNDERCOUNTER LIGHTING TO BE CONTROLLED BY OVERHEAD LIGHTING CONTROL OCCUPANCY SENSOR.
6. DIMMER d CONTROLS DOWNLIGHT AND DIMMER e CONTROLS UPLIGHT.
7. (3) - EXISTING RECESSED CANOPY LIGHTS - REFINISH DOOR AND FRAME AND REPLACE LAMP WITH LED 'A' LAMP. REWIRE TO EMERGENCY CIRCUIT AND CONTROL WITH PHOTOCELL.
8. EXTERIOR LIGHT FIXTURES TO BE CONTROLLED THROUGH PHOTOCELL. COORDINATE EXACT LOCATION OF PHOTOCELL WITH ENGINEER PRIOR TO ROUGH-IN.
9. MOUNT LIGHT FIXTURES AS INDICATED IN LOWER CANOPY.
10. PROVIDE 120V NORMAL CIRCUIT TO (14) 'F35W' DOWNLIGHTS IN UPPER CANOPY. WIRE THROUGH PHOTOCELL. COORDINATE EXACT LOCATION OF PHOTOCELL WITH ENGINEER PRIOR TO ROUGH-IN.
11. LIGHTING TO BE MOUNTED AT 8'-2" TO BOTTOM OF FIXTURES IN THIS AREA.
12. LIGHTING TO BE MOUNTED AT 10'-6" TO BOTTOM OF FIXTURES IN THIS AREA.
13. LIGHTING TO BE MOUNTED AT 8'-0" TO BOTTOM OF FIXTURES IN THIS AREA.
14. MOUNT ONE LIGHT AT 11'-0" ABOVE SW ENTRY LEVEL LANDING AND ONE LIGHT AT 11'-0" ABOVE ITERMEDIATE LANDING BETWEEN FLOORS 1 AND 2.
15. PENDANT FIXTURES IN THIS AREA TO BE MOUNTED AT 10'-0" AFF UNLESS OTHERWISE NOTED.

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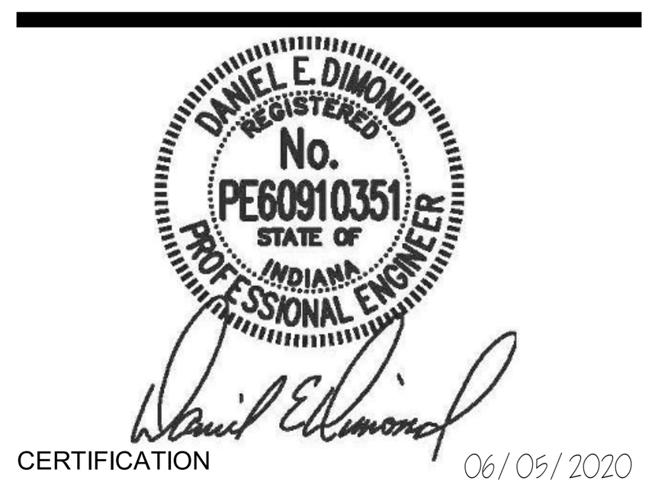

CERTIFICATION 06/05/2020

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FIRST FLOOR PLAN - LIGHTING

E2.01

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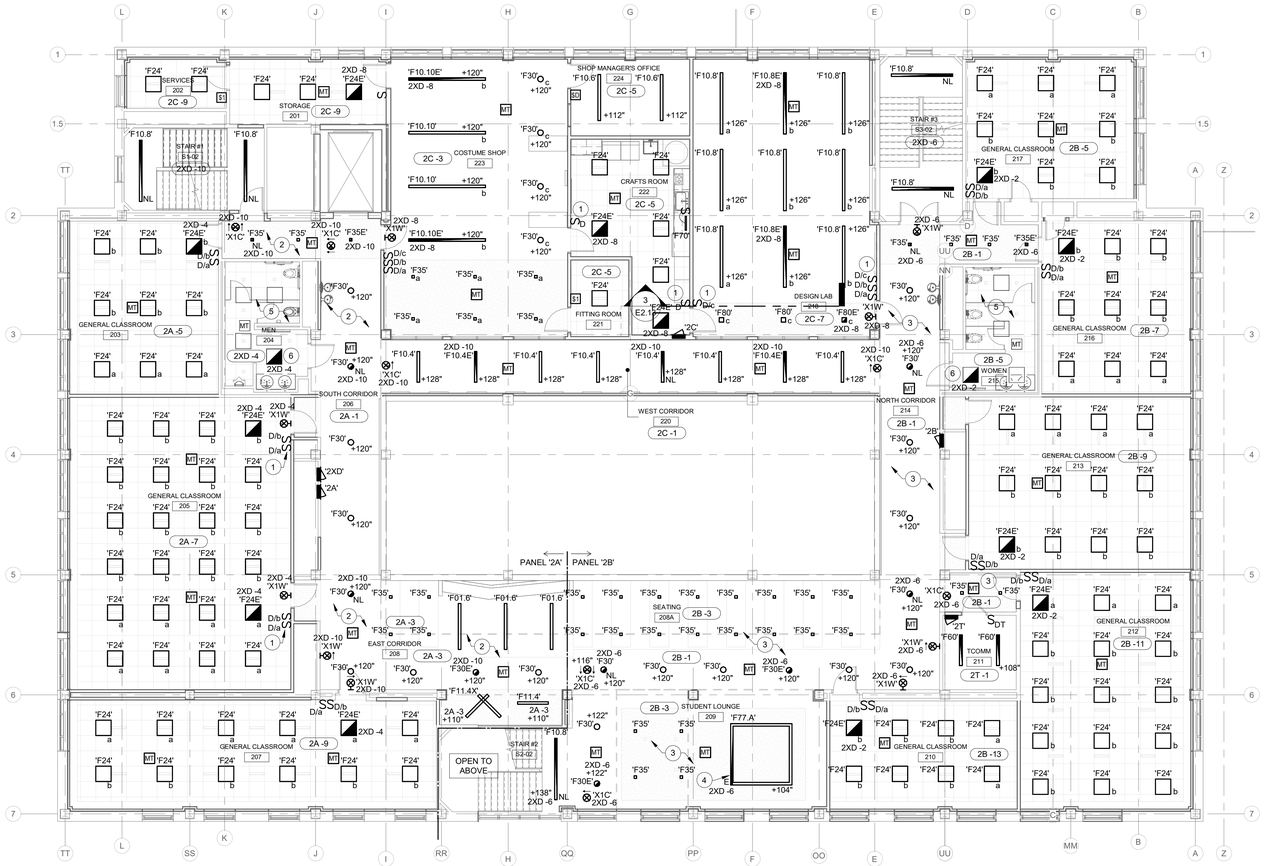

SECOND FLOOR PLAN - LIGHTING

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

NORTH

RENOVATION LEGEND:

WORK TO BE INSTALLED

WORK TO REMAIN

GENERAL NOTES:

1. SEE E0.1 FOR GENERAL NOTES.

(#) PLAN NOTES:

1. PROVIDE MULTI-LOCATION DIMMERS.
2. INTERLOCK OCCUPANCY SENSORS TOGETHER TO CONTROL LIGHTS IN CORRIDOR AND SEATING ON CIRCUIT 2A-1 AND 2A-3.
3. INTERLOCK OCCUPANCY SENSORS TOGETHER TO CONTROL LIGHTS IN CORRIDOR AND SEATING ON CIRCUIT 2B-1 AND 2B-3.
4. CONNECT PORTION OF LIGHT FIXTURE TO EMERGENCY CIRCUIT. PROVIDE AUTOMATIC LOAD CONTROL RELAY TRANSFER DEVICE.
5. EXISTING LIGHT FIXTURES AND OCCUPANCY SENSOR TO REMAIN. PROVIDE WIRING AND CONDUIT AS REQUIRED TO RE-CONNECT FIXTURES TO CIRCUIT INDICATED.
6. CONNECT ONE EXISTING LIGHT FIXTURE TO EMERGENCY CIRCUIT. PROVIDE UL924 AUTOMATIC LOAD CONTROL RELAY (ALCR).

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SECOND FLOOR PLAN - LIGHTING

E2.02

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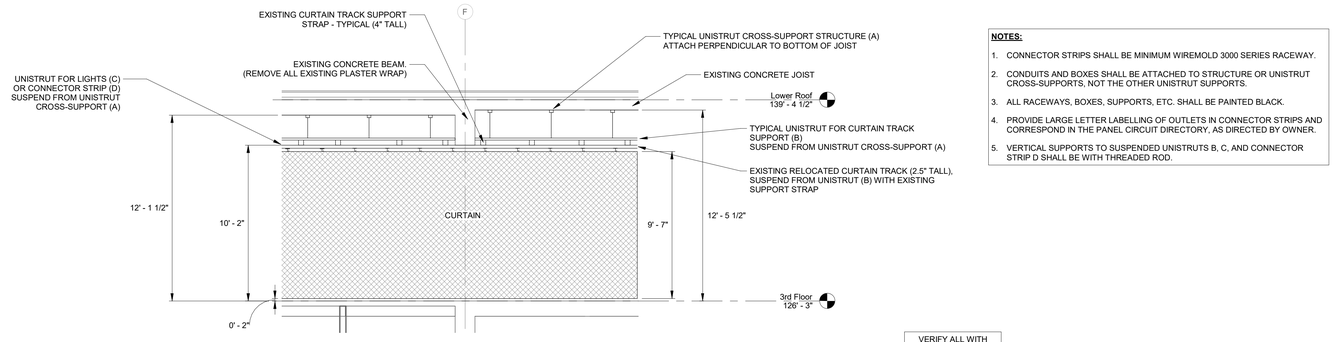


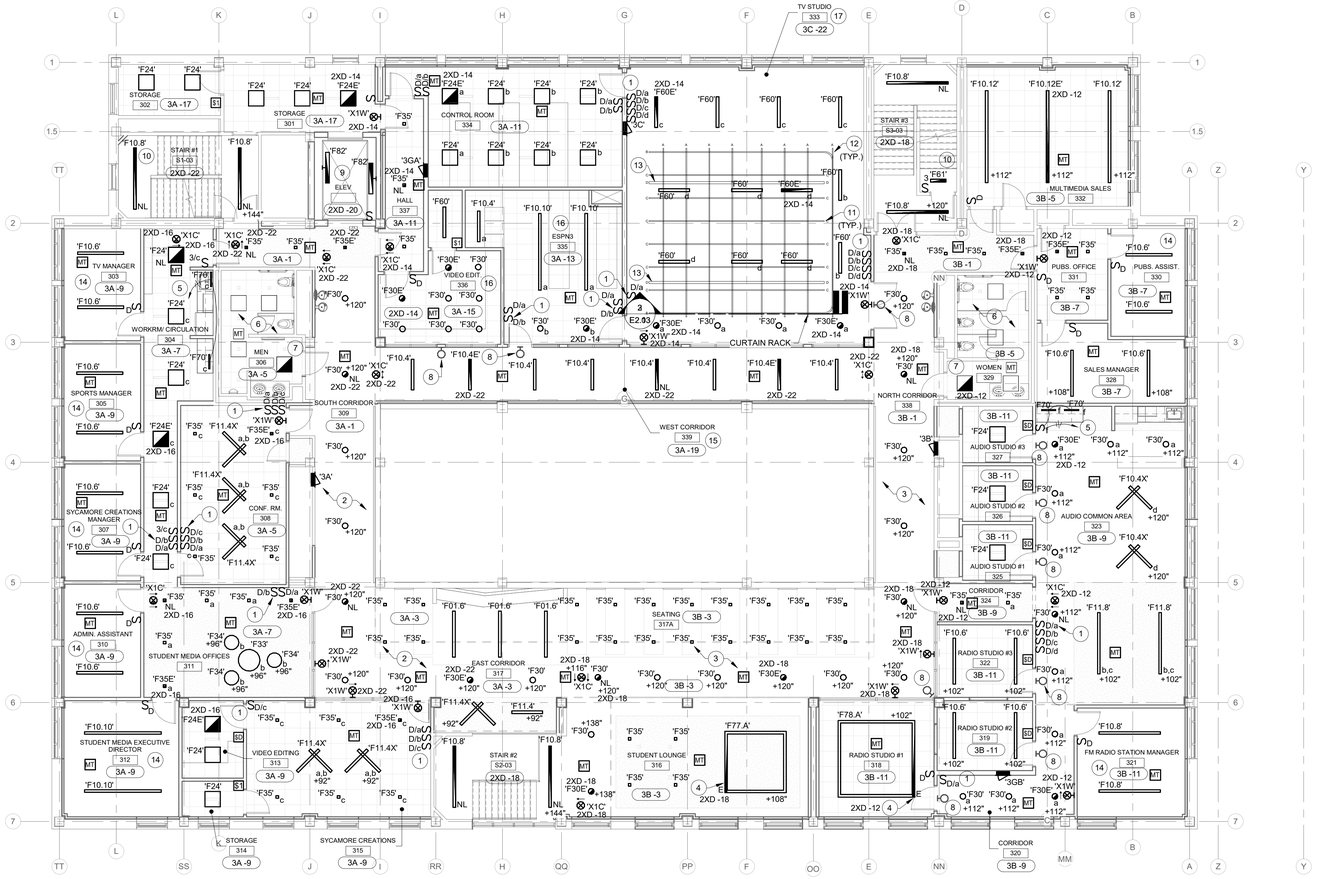
NOTES:

1. CONNECTOR STRIPS SHALL BE MINIMUM WIREMOLD 3000 SERIES RACEWAY.
2. CONDUITS AND BOXES SHALL BE ATTACHED TO STRUCTURE OR UNISTRUT CROSS-SUPPORTS, NOT THE OTHER UNISTRUT SUPPORTS.
3. ALL RACEWAYS, BOXES, SUPPORTS, ETC. SHALL BE PAINTED BLACK.
4. PROVIDE LARGE LETTER LABELLING OF OUTLETS IN CONNECTOR STRIPS AND CORRESPOND IN THE PANEL CIRCUIT DIRECTORY, AS DIRECTED BY OWNER.
5. VERTICAL SUPPORTS TO SUSPENDED UNISTRUTS B, C, AND CONNECTOR STRIP D SHALL BE WITH THREADED ROD.

VERIFY ALL WITH OWNER AND FIELD CONDITIONS

2 TV STUDIO - ELEVATION FACING WEST

SCALE: 1/4" = 1'-0"



THIRD FLOOR PLAN - LIGHTING

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

NORTH

RENOVATION LEGEND:

- WORK TO BE INSTALLED
- WORK TO REMAIN

GENERAL NOTES:

1. SEE E0.1 FOR GENERAL NOTES.

(#) PLAN NOTES:

1. PROVIDE MULTI-LOCATION DIMMERS.
2. INTERLOCK OCCUPANCY SENSORS TOGETHER TO CONTROL LIGHTS IN CORRIDOR AND SEATING ON CIRCUIT 3A-1 AND 3A-3.
3. INTERLOCK OCCUPANCY SENSORS TOGETHER TO CONTROL LIGHTS IN CORRIDOR AND SEATING ON CIRCUIT 3B-1 AND 3B-3.
4. CONNECTION PORTION OF LIGHT FIXTURE TO EMERGENCY CIRCUIT. PROVIDE AUTOMATIC LOAD CONTROL RELAY TRANSFER DEVICE.
5. CONNECT UNDERCOUNTER LIGHTS TO ALSO BE CONTROLLED BY OVERHEAD LIGHTING CONTROL OCCUPANCY SENSOR.
6. EXISTING LIGHT FIXTURES AND OCCUPANCY SENSOR TO REMAIN. PROVIDE WIRING AND CONDUIT AS REQUIRED TO RE-CONNECT FIXTURES TO CIRCUIT INDICATED.
7. CONNECT ONE EXISTING LIGHT FIXTURE TO EMERGENCY CIRCUIT. PROVIDE UL924 AUTOMATIC LOAD CONTROL RELAY (ALCR).
8. PROVIDE ROUGH-IN FOR LOW-VOLTAGE LED "ON AIR" LIGHT. LIGHTS FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR. PROVIDE CONDUIT AND LOW VOLTAGE WIRING TO CONTROLS WITHIN ROOM. COORDINATE LOCATIONS AND WIRING WITH OWNER.
9. PROVIDE AT LEAST TWO TYPE 'F82' FIXTURES AT TOP OF ELEVATOR SHAFT. COORDINATE EXACT LOCATION WITH EQUIPMENT. PROVIDE ADDITIONAL FIXTURES AS REQUIRED TO MAINTAIN 20 FOOTCANDLES MINIMUM ON TOP OF CAB AT HIGHEST LEVEL. PROVIDE LIGHT SWITCH FOR CONTROL OF LIGHTS. COORDINATE WITH ELEVATOR INSTALLER.
10. SEE E2.20 FOR NEW LIGHTING IN SOUTHWEST AND NORTHWEST UPPER STAIRS.
11. PROVIDE 1-5/8" UNISTRUT CROSS SUPPORT FOR LIGHTING. (TYPICAL - C)
12. PROVIDE 1-5/8" UNISTRUT CROSS SUPPORT STRUCTURE INSTALLED ACROSS THE BOTTOM OF THE EXISTING CONCRETE JOISTS FOR SUPPORT STRUCTURE. (TYPICAL - A)
13. PROVIDE CONNECTOR STRIP WITH TEN (10) TWIST-LOCK RECEPTACLES (NEMA L5-20R) FOR OWNER PROVIDED LIGHT FIXTURES. COORDINATE EXACT LOCATION IN FIELD PRIOR TO ROUGH-IN. SEE E2.13 FOR CIRCUITS. VERIFY RECEPTACLE TYPE WITH OWNER. (TYPICAL - D)
14. LIGHTING IN THIS AREA TO BE MOUNTED AT 10'-6" AFF.
15. LIGHTING IN THIS AREA TO BE MOUNTED AT 8'-4" AFF.
16. LIGHTING IS THIS AREA TO BE MOUNTED AT 8'-0" AFF.
17. LIGHTING AROUND PERIMETER OF CURTAIN TO BE MOUNTED AT 10'-6" AFF IN THIS SPACE.

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CERTIFICATION 06/05/2020

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Indiana State University - Dreiser Hall Renovation
221 North 6th Street
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THIRD FLOOR PLAN - LIGHTING

E2.03

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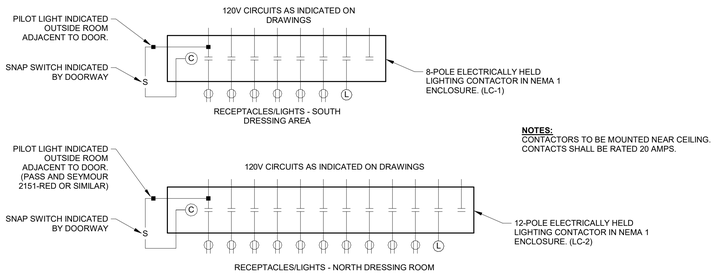
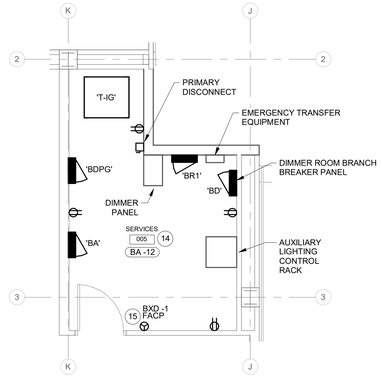


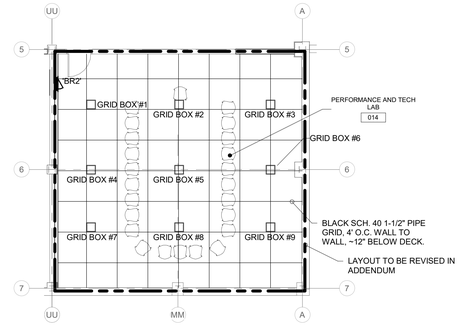
A MAKEUP/DRESSING 019 - CONTACTOR CONTROLLED RECEPTACLES DETAIL

SCALE: NONE



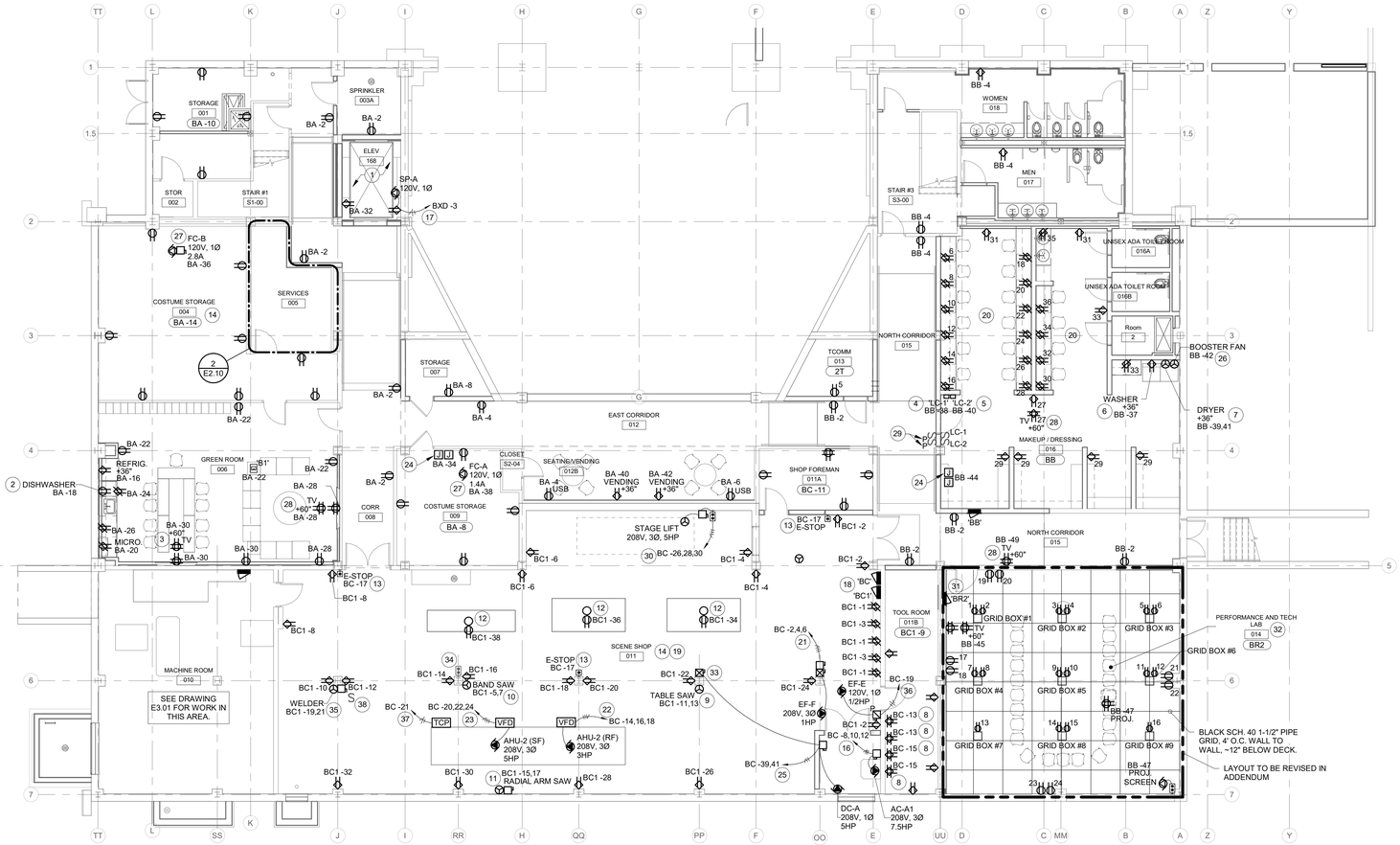
2 ENLARGED SERVICES 005 - POWER

SCALE: 1/4" = 1'-0"



3 PERFORMANCE LAB 014 - NETWORK WIRING

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



BASEMENT PLAN - POWER

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

NORTH

RENOVATION LEGEND:

- WORK TO BE INSTALLED
- WORK TO REMAIN

GENERAL NOTES:

1. SEE E0.1 FOR GENERAL NOTES.

(#) PLAN NOTES:

1. COORDINATE ALL EQUIPMENT AND DEVICES IN ELEVATOR SHAFT WITH ELEVATOR INSTALLER PRIOR TO ROUGH-IN.
2. PROVIDE DUPLEX MOUNTED UNDER COUNTER FOR DISHWASHER. PROVIDE 20A-1P GFCI BREAKER IN PANELBOARD.
3. VERIFY TV LOCATION AND MOUNTING HEIGHT PRIOR TO ROUGH-IN.
4. PROVIDE 8-POLE CONTACTOR FOR CONTROL OF MAKEUP LIGHTS AND RECEPTACLES. PROVIDE 120V CIRCUIT FOR CONTROL OF CONTACTOR. CONTACTOR TO BE CONTROLLED VIA SWITCH INSIDE DRESSING ROOM. (I.E. WHEN SWITCH IS ON, CONTACTOR IS CLOSED, WHEN SWITCH IS OFF, CONTACTOR IS OPEN)
5. PROVIDE 12-POLE CONTACTOR FOR CONTROL OF MAKEUP LIGHTS AND RECEPTACLES. PROVIDE 120V CIRCUIT FOR CONTROL OF CONTACTOR. CONTACTOR TO BE CONTROLLED VIA SWITCH INSIDE DRESSING ROOM. (I.E. WHEN SWITCH IS ON, CONTACTOR IS CLOSED, WHEN SWITCH IS OFF, CONTACTOR IS OPEN)
6. PROVIDE 120V CIRCUIT AND NEMA 5-20R RECEPTACLE MOUNTED AT 36" AFF FOR WASHING MACHINE. COORDINATE EXACT LOCATION.
7. PROVIDE 120/208V CIRCUIT AND NEMA 14-30R RECEPTACLE MOUNTED AT 36" AFF FOR ELECTRIC DRYER. PROVIDE 3 #10, 1 #10 GND, 3/4" CONDUIT. COORDINATE EXACT LOCATION. WIRE DRYER CIRCUIT THROUGH A JUNCTION BOX. CONTROLS CONTRACTOR TO PROVIDE A CURRENT SENSOR ON CONDUCTORS FOR CONTROL OF DRYER EXHAUST FAN. COORDINATE IN FIELD.
8. PROVIDE QUAD RECEPTACLE FOR OWNER EQUIPMENT CHARGING STATION. COORDINATE EXACT LOCATION WITH OWNER PRIOR TO ROUGH-IN.
9. PROVIDE HUBBELL #HBL2320 NEMA L6-20R RECEPTACLE FOR TABLE SAW.
10. PROVIDE HUBBELL #HBL2630 NEMA L6-30R RECEPTACLE FOR BAND SAW. PROVIDE 2 #10, 1#10 GND, 3/4" CONDUIT.
11. INSTALL EXISTING RADIAL ARM SAW STARTER/CONTROL CABINET AND CONNECT TO SAW. PROVIDE 2 #6, 1 #6 GND, 1" CONDUIT. PROVIDE 60A-2P NON-FUSED DISCONNECT SWITCH.
12. PROVIDE A 20A NEMA 5-20R SINGLE RECEPTACLE NEAR CEILING AND PROVIDE A HUBBELL #HBL25123GF220 CORD REEL WITH 25' SLO CORD, INLINE GFCI PROTECTOR AND (2) DUPLEX RECEPTACLES. SUPPORT FROM STRUCTURE.
13. PROVIDE RED MUSHROOM HEAD EMERGENCY STOP (E-STOP) BUTTON TO DE-ENERGIZE CONTACTOR IN PANEL 'BC1' FEEDER AND SHUT OFF POWER TO SHOP DEVICES/EQUIPMENT. PROVIDE 120V CIRCUIT INDICATED FOR CONTROL POWER. SEE E5.01.
14. COORDINATE RECEPTACLE LOCATIONS WITH FINAL EQUIPMENT LAYOUT.
15. PROVIDE 120V CIRCUIT INDICATED TO FIRE ALARM CONTROL PANEL.
16. PROVIDE 3 #8, 1 #10, 3/4" CONDUIT TO AIR COMPRESSOR. PROVIDE 60A-3P NON-FUSED DISCONNECT. COORDINATE EXACT LOCATION IN FIELD.
17. PROVIDE GFCI DUPLEX RECEPTACLE AND CONNECTION TO ELEVATOR SUMP PUMP. PROVIDE 3 #10, 3/4" CONDUIT. COORDINATE EXACT LOCATION IN FIELD.
18. VERIFY PANEL 'BC' AND 'BC1' LOCATION WITH OWNER PRIOR TO ROUGH-IN.
19. ALL DUPLEX RECEPTACLES IN SCENE SHOP AND TOOL ROOM SHALL BE GFCI TYPE AND SHALL BE INSTALLED AT 48" AFF UNLESS OTHERWISE INDICATED.
20. SEE ELEVATIONS OF RECEPTACLES AT MAKEUP MIRRORS ON E2.00.
21. PROVIDE 3 #12, 1 #12 GND, 3/4" CONDUIT. REUSE EXISTING DISCONNECT AND 2-SPEED CONTROLS. COORDINATE EXACT LOCATION IN FIELD PRIOR TO ROUGH-IN.
22. PROVIDE VFD FOR AIR HANDLING UNIT RETURN FAN. FUSE AT 17.5 AMPS. CONNECT FROM VFD TO FAN WITH SAME SIZE CONUDCTORS FROM PANEL. PROVIDE 3 #12, 1 #12 GND, 3/4" CONDUIT.
23. PROVIDE VFD FOR AIR HANDLING UNIT SUPPLY FAN. FUSE AT 25 AMPS. CONNECT FROM VFD TO FAN WITH SAME SIZE CONUDCTORS FROM PANEL. PROVIDE 3 #10, 1 #10 GND, 3/4" CONDUIT.
24. PROVIDE 120V CIRCUIT INDICATED FOR VAV CONTROL TRANSFORMERS. COORDINATE EXACT LOCATION IN FIELD.
25. PROVIDE 60A-2P FUSED DISCONNECT FOR DUST COLLECTOR. PROVIDE 2 #6, 1 #10, 1" CONDUIT. WIRE THROUGH REMOTE STARTER AS INDICATED. FUSE PER MANUFACTURER'S RECOMMENDATIONS. SEE NOTE 33.
26. PROVIDE 120V CIRCUIT FOR INLINE BOOSTER FAN FOR DRYER EXHAUST. PROVIDE 3 #10, 3/4" CONDUIT. EXHAUST FAN TO BE CONTROLLED WITH CURRENT SENSOR FOR DRYER CONDUCTORS. SEE NOTE 7.
27. PROVIDE 120V CIRCUIT TO DISCONNECT FURNISEHD WITH FAN COIL UNIT. COORDINATE EXACT CONNECTION LOCATION IN FIELD.
28. COORDINATE LOCATION OF RECEPTACLE WITH THEATRICAL TV MONITOR BACKBOX. INTEGRATE OUTLET WITH BACKBOX.
29. PROVIDE PILOT LIGHT (PASS AND SEYMOUR 2151 RED SERIES OR SIMILAR) TO INDICATE WHEN RECEPTACLES AND MAKEUP MIRRORS ARE ENGERGIZED. PROVIDE SWITCHES INSIDE DRESSING ROOM FOR CONTROL. SEE DETAIL ON THIS DRAWING FOR SCHEMATIC.
30. PROVIDE 60A-3P FUSED DISCONNECT FOR STAGE LIFT. FUSE AT 25 AMPS. PROVIDE 3 #10, 1 #10 GND, 3/4" CONDUIT. PROVIDE CONNECTIONS TO STAGE LIFT AS REQUIRED. WIRE THROUGH CONTROLS.
31. VERIFY PANEL LOCATION WITH OWNER. SEE PLAN ABOVE FOR LOW VOLTAGE WIRING.
32. RUN CONDUITS FOR GRID BOXES IN PERFORMANCE/TECH LAB 014 TIGHT TO DECK (NOT ON GRID) AND DROP DOWN TO GRID BOXES. COORDINATE EXACT ROUTING IN FIELD.
33. PROVIDE MANUAL STOP/START MOTOR STARTER FOR DUST COLLECTOR. VERIFY LOCATION WITH OWNER.
34. PROVIDE REMOTE 2-SPEED STOP/START STATION FOR EF-F.
35. PROVIDE NEMA 6-50R RECEPTACLE AND 60A-2P NON-FUSED DISCONNECT FOR WELDER. PROVIDE 2 #8, 1 #10 GND, 3/4" CONDUIT. COORDINATE EXACT LOCATION IN FIELD.
36. WIRE EF-E CIRCUIT THROUGH MANUAL STARTER IN SCENE SHOP 011 AS INDICATED. FAN TO BE MANUALLY CONTROLLED. PROVIDE 3 #12, 3/4" CONDUIT AND 20A-2P DISCONNECT AT EXHAUST FAN.
37. PROVIDE 120V CIRCUIT INDICATED TO AHU-2 TEMPERATURE CONTROL PANEL. COORDINATE EXACT LOCATION IN FIELD.
38. PROVIDE ON/OFF SWITCH FOR EXHAUST FAN 'EF-E'.

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CERTIFICATION 06/05/2020

100% CONSTRUCTION DOCUMENTS

Indiana State University - Dreiser Hall Renovation

221 North 6th Street
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Project No.: 19A052
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BASEMENT PLAN - POWER

E2.10

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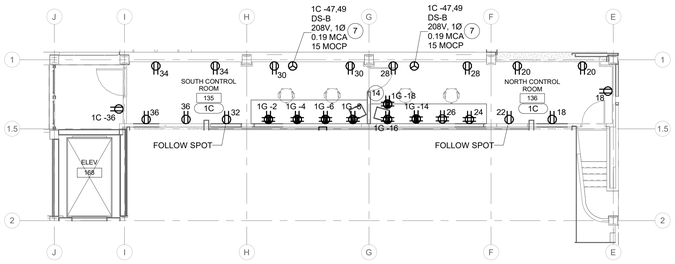
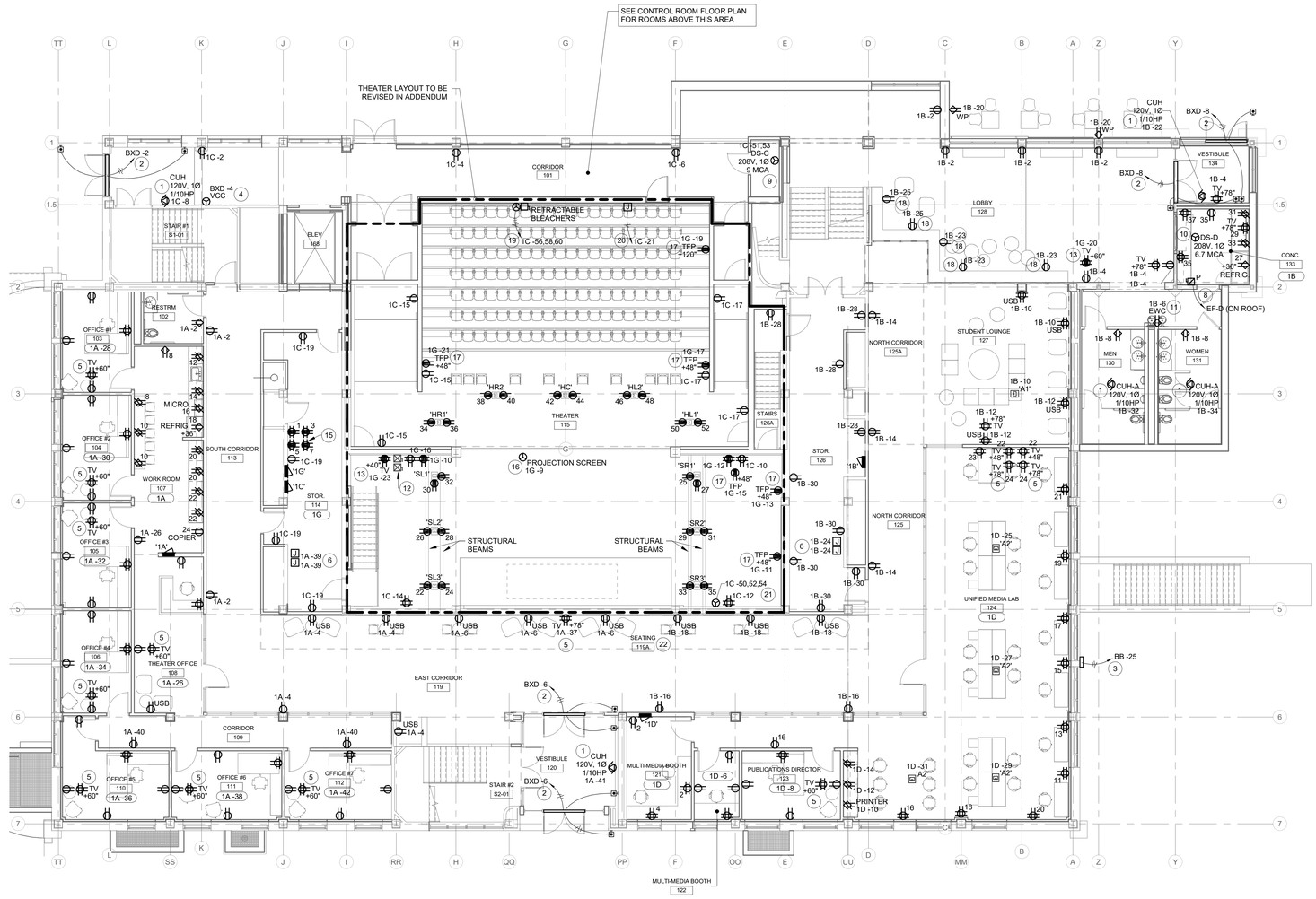


CONTROL ROOM FLOOR PLAN - POWER

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

NORTH



FIRST FLOOR PLAN - POWER

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

NORTH

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RENOVATION LEGEND:

WORK TO BE INSTALLED

WORK TO REMAIN

GENERAL NOTES:

1. SEE E0.1 FOR GENERAL NOTES.
2. COORDINATE DEVICE LOCATIONS AT WALLS RECEIVING SPECIAL COVERING (WOOD, ETC.) WITH ARCHITECT.
3. COORDINATE LOCATION OF FLOORBOXES WITH STRUCTURAL BEAMS.
4. COORDINATE RECEPTACLES AT PERIMETER WALLS WITH HOT WATER RADIATION. SEE MECHANICAL DRAWINGS.
5. ALL RECEPTACLES FED FROM PANEL '1G' SHALL BE ISOLATED GROUND CIRCUITS.

(#) PLAN NOTES:

1. PROVIDE 120V, 20A CIRCUIT TO DISCONNECT FURNISHED WITH CABINET UNIT HEATER. COORDINATE EXACT LOCATION IN FIELD.
2. PROVIDE 120V EMERGENCY CIRCUIT TO DOOR OPERATOR(S) AND WIRE TO ALL CONTROLS. SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.
3. RE-FEED 120V TO EXISTING IRRIGATION CONTROLLER.
4. PROVIDE 120V CIRCUIT TO FIRE ALARM VOICE COMMAND CENTER. COORDINATE EXACT LOCATION IN FIELD.
5. VERIFY TV LOCATION AND MOUNTING HEIGHT PRIOR TO ROUGH-IN.
6. PROVIDE 120V CIRCUIT INDICATED FOR VAV CONTROL TRANSFORMERS. COORDINATE EXACT LOCATION IN FIELD.
7. PROVIDE WIRING FROM ROOFTOP CONDENSING UNIT (ACCU-B). SEE DRAWING E2.20.
8. PROVIDE MANUAL STARTER FOR EF-D ON LOW ROOF. SEE E2.12.
9. PROVIDE WIRING FROM ROOFTOP CONDENSING UNIT (ACCU-C). SEE DRAWING E2.20.
10. PROVIDE WIRING FROM ROOFTOP CONDENSING UNIT (ACCU-D). SEE DRAWING E2.20.
11. PROVIDE GFCI RECEPTACLE FOR NEW ELECTRIC WATER COOLER. COORDINATE LOCATION OF OUTLET WITH WATER COOLER HOUSING AND REMOTE CHILLER.
12. RELOCATE EXISTING SMOKE EVAC FAN MOTOR STARTERS. COORDINATE LOCATION WITH OWNER. EXTEND EXISTING WIRING.
13. COORDINATE LOCATION OF RECEPTACLE WITH THEATRICAL TV MONITOR BACKBOX. INTEGRATE OUTLET WITH BACKBOX.
14. PROVIDE OUTLET AT CEILING HEIGHT FOR THEATER PROJECTOR. COORDINATE EXACT LOCATION IN FIELD.
15. PROVIDE (4) 120V CIRCUITS FROM PANEL '1G' INDICATED AND TERMINATE IN BACKBOX ABOVE AV EQUIPMENT RACK. CONFIRM EXACT LOCATION IN FIELD PRIOR TO ROUGH-IN.
16. PROVIDE 120V CIRCUIT AND CONNECTION TO MOTORIZED SCREEN. PROVIDE CONNECTION TO CONTROLS ON STAGE AND BACK OF HOUSE CONTROL ROOM.
17. PROVIDE 120V CIRCUIT ADJACENT TO TECHNICAL FACILITIES PANEL. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT IN FIELD PRIOR TO ROUGH-IN.
18. RECEPTACLES TO BE MOUNTED IN BASE OF BANQUETTE. COORDINATE EXACT LOCATION WITH CASEWORK INSTALLER AND ARCHITECT PRIOR TO ROUGH-IN.
19. PROVIDE 3 #10, 1 #10N, 1 #10 GND TO RETRACTABLE SEATING. PROVIDE 208V, 3-PHASE, 30A NON-FUSED DISCONNECT. WIRE THROUGH SEATING CONTROLLERS. COORDINATE EXACT LOCATION OF CONTROLLERS IN FIELD PRIOR TO ROUGH-IN.
20. PROVIDE 120V CIRCUIT INDICATED TO INTEGRAL SEATING AISLE LIGHTING. COORDINATE EXACT CONNECTION IN FIELD. PROVIDE 3 # 12, 3/4" CONDUIT.
21. PROVIDE A NEMA L15-20R RECEPTACLE FOR CAPSTAN WINCH. VERIFY LOCATION. PROVIDE 4 #12, 1 #12 GND, 3/4" CONDUIT.
22. INSTALL RECEPTACLES IN BASE IN SEATING 119A. VERIFY WITH ARCHITECT.

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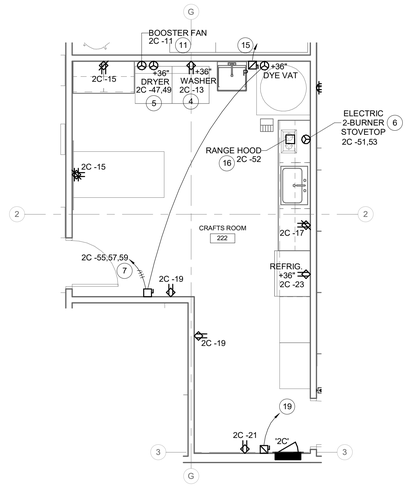
FIRST FLOOR PLAN - POWER

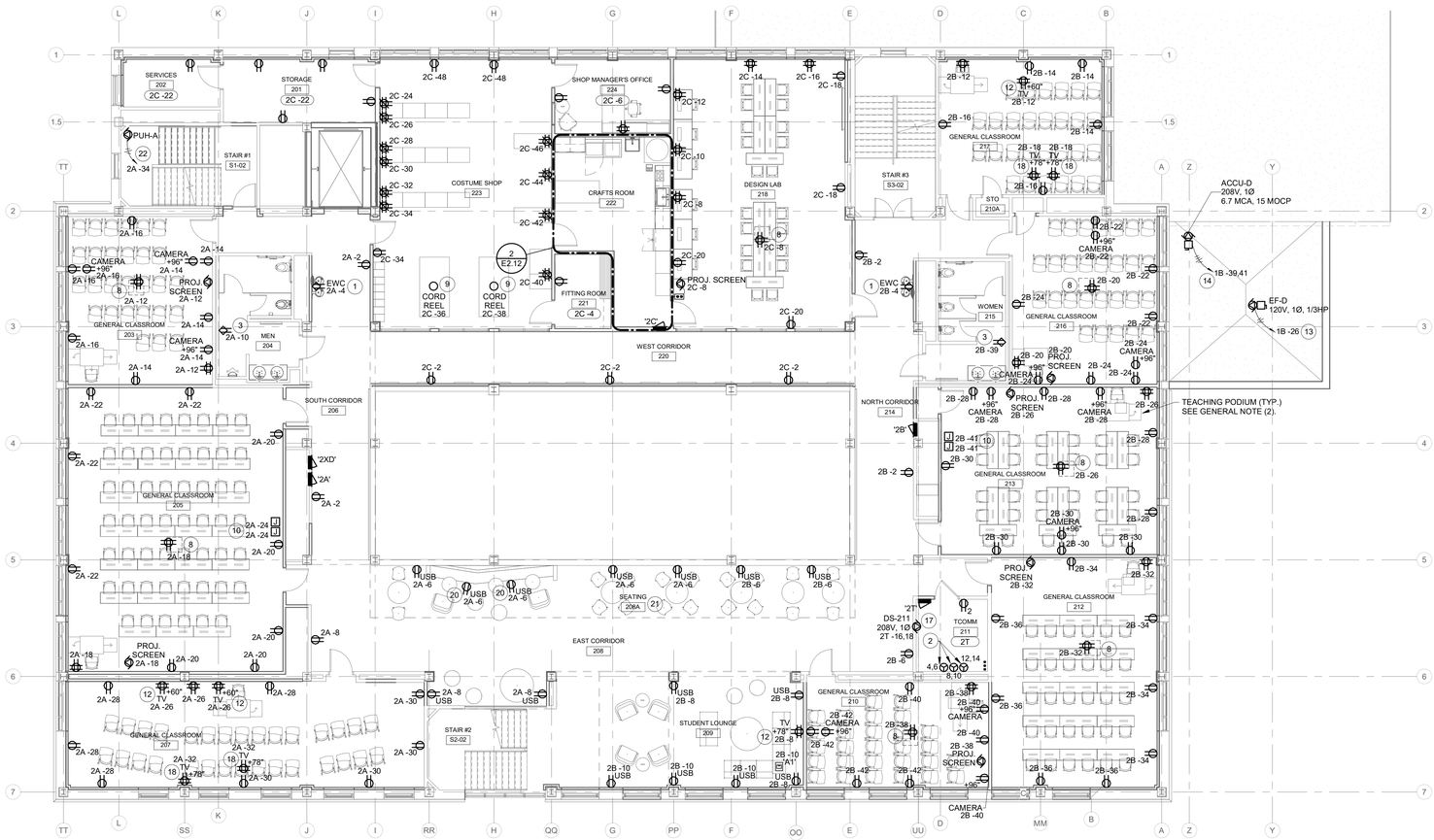
E2.11



ENLARGED CRAFTS ROOM 222 - POWER

SCALE: 1/4" = 1'-0"

NORTH



SECOND FLOOR PLAN - POWER

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

NORTH

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RENOVATION LEGEND:

WORK TO BE INSTALLED

WORK TO REMAIN

GENERAL NOTES:

1. SEE E0.1 FOR GENERAL NOTES.
2. INSTALL DEVICES AT TEACHING PODIUMS CLOSE TO THE CORNER OF THE ROOM TO KEEP CABLES NEAR OUTSIDE WALLS OR CORNER OF ROOM.
3. COORDINATE DEVICE LOCATIONS AT WALLS RECEIVING SPECIAL COVERING (WOOD, ETC.) WITH ARCHITECT.
4. COORDINATE RECEPTACLES AT PERIMETER WALLS WITH HOT WATER RADIATION. SEE MECHANICAL DRAWINGS.
5. COORDINATE HEIGHT AND LOCATION OF CAMERA OUTLETS IN CLASSROOMS 203, 210, 213, AND 216 WITH OWNER PRIOR TO ROUGH-IN.

(#) PLAN NOTES:

1. PROVIDE GFCI RECEPTACLE FOR NEW ELECTRIC WATER COOLER. COORDINATE LOCATION OF OUTLET WITH WATER COOLER HOUSING AND REMOTE CHILLER.
2. PROVIDE NEMA L6-30R RECEPTACLE FOR TELECOM RACK CONNECTION WITH #10 WIRING.
3. PROVIDE NEW RECEPTACLE AND WIRING IN EXISTING DEVICE BOX.
4. PROVIDE 120V CIRCUIT AND NEMA 5-20R RECEPTACLE MOUNTED AT 36" AFF FOR WASHING MACHINE. COORDINATE EXACT LOCATION.
5. PROVIDE 120/208V CIRCUIT AND NEMA 14-30R RECEPTACLE MOUNTED AT 36" AFF FOR ELECTRIC DRYER. PROVIDE 3 #10, 1 #10 GND, 3/4" CONDUIT. COORDINATE EXACT LOCATION. WIRE DRYER CIRCUIT THROUGH A JUNCTION BOX. CONTROLS CONTRACTOR TO PROVIDE A CURRENT SENSOR ON CONDUCTORS FOR CONTROL OF DRYER EXHAUST FAN. COORDINATE IN FIELD.
6. PROVIDE 120/208V CIRCUIT AND NEMA 14-30R RECEPTACLE FOR COUNTERTOP ELECTRIC 2-BURNER STOVE TOP. PROVIDE 3 #10, 1 #10 GND, 3/4" CONDUIT. VERIFY WITH EQUIPMENT. SEE NOTE 16 FOR CIRCUIT TO RANGE HOOD.
7. PROVIDE 100A-3P NON-FUSED DISCONNECT. PROVIDE 3 #3, 1 #8 GND, 1-1/4" CONDUIT. CONNECT TO DYE VAT WITH SAME SIZE WIRING TO DISCONNECT. VERIFY CONNECTION WITH EQUIPMENT.
8. INSTALL RECEPTACLE FLUSH IN PROJECTOR CEILING PAN.
9. PROVIDE STAGE NINJA STX-20-4 CORD REEL WITH 20'-0" 12/3 CORD AND QUAD-TAP 5-20R OUTLET. PROVIDE RECEPTACLE IN CEILING FOR POWER. SUPPORT REEL FROM STRUCTURE.
10. PROVIDE 120V CIRCUIT INDICATED FOR VAV CONTROL TRANSFORMERS MOUNTED ABOVE CEILING. COORDINATE EXACT LOCATION IN FIELD.
11. PROVIDE 120V CIRCUIT FOR INLINE BOOSTER FAN FOR DRYER EXHAUST. PROVIDE 3 #10, 3/4" CONDUIT. EXHAUST FAN TO BE CONTROLLED WITH CURRENT SENSOR FOR DRYER CONDUCTORS. SEE NOTE 5.
12. VERIFY TV LOCATION AND MOUNTING HEIGHT PRIOR TO ROUGH-IN.
13. PROVIDE 120V CIRCUIT INDICATED TO EXHAUST FAN. WIRE THROUGH MOTOR STARTER IN CONC. 133. PROVIDE 2 #10, 1 #10 GND, 3/4" CONDUIT AND 20A-2P DISCONNECT IN NEMA 3R ENCLOSURE AT EXHAUST FAN. FAN TO BE CONTROLLED BY B.A.S.
14. PROVIDE 2 #12, 1#12 N, 1 #12 GND, 3/4" CONDUIT TO OUTDOOR CONDENSING UNIT. PROVIDE 208V, 20A NON-FUSED DISCONNECT IN NEMA 3R ENCLOSURE. PROVIDE UNISTRUT STAND AS REQUIRED. PROVIDE 2 #12, 1 #12 N, 1 #12 GND (MINIMUM) TO INDOOR UNIT. COORDINATE EXACT WIRING WITH MANUFACTURER.
15. PROVIDE MANUAL STARTER FOR DYE VAT EXHAUST FAN EF-C ON ROOF. SEE E2.20.
16. PROVIDE 120V CIRCUIT TO RANGE HOOD. WIRE THROUGH FIXTURE MOUNTED CONTROLS. COORDINATE EXACT LOCATION IN FIELD.
17. PROVIDE WIRING FROM ROOFTOP CONDENSING UNIT (ACCU-A). SEE DRAWING E2.20.
18. PROVIDE OUTLET FOR DISTANCE LEARNING TEACHER CONFIDENCE MONITORS AT BACK OF CLASSROOM. COORDINATE EXACT LOCATION IN FIELD PRIOR TO ROUGH-IN.
19. PROVIDE MANUAL STARTER FOR DESIGN LAB EXHAUST FAN (EF-G) ON ROOF. SEE E2.20.
20. RECEPTACLES TO BE MOUNTED IN BASE OF BANQUETTE. COORDINATE EXACT LOCATION WITH CASEWORK INSTALLER AND ARCHITECT PRIOR TO ROUGH-IN.
21. INSTALL RECEPTACLES IN BASE IN SEATING 208A. VERIFY WITH ARCHITECT.
22. PROVIDE 120V CIRCUIT INDICATED TO DISCONNECT FURNISHED WITH PROPELLER UNIT HEATER.

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CERTIFICATION 06/05/2020

100% CONSTRUCTION DOCUMENTS

Indiana State University - Dreiser Hall Renovation

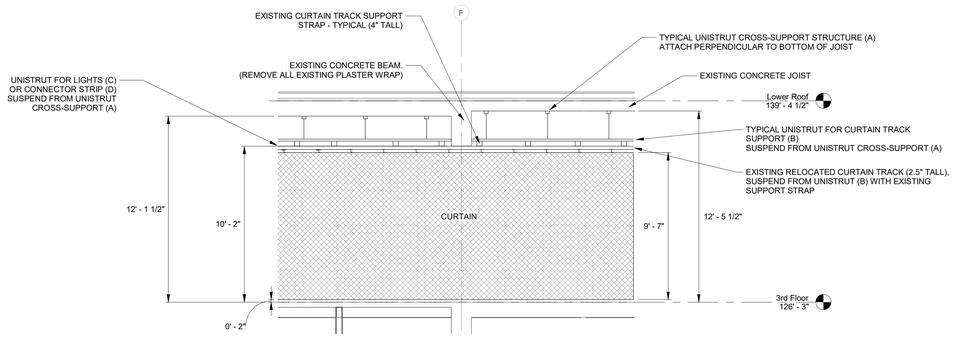
221 North 6th Street
Terre Haute, IN 47809

Project No.: 19A052
Drawn By: JPS
Checked By: TEH
Scale: See Drawing
Issue Date: 06/05/2020

REVISION SCHEDULE		
Rev. #	Revision Description	Issue Date

SECOND FLOOR PLAN - POWER

E2.12



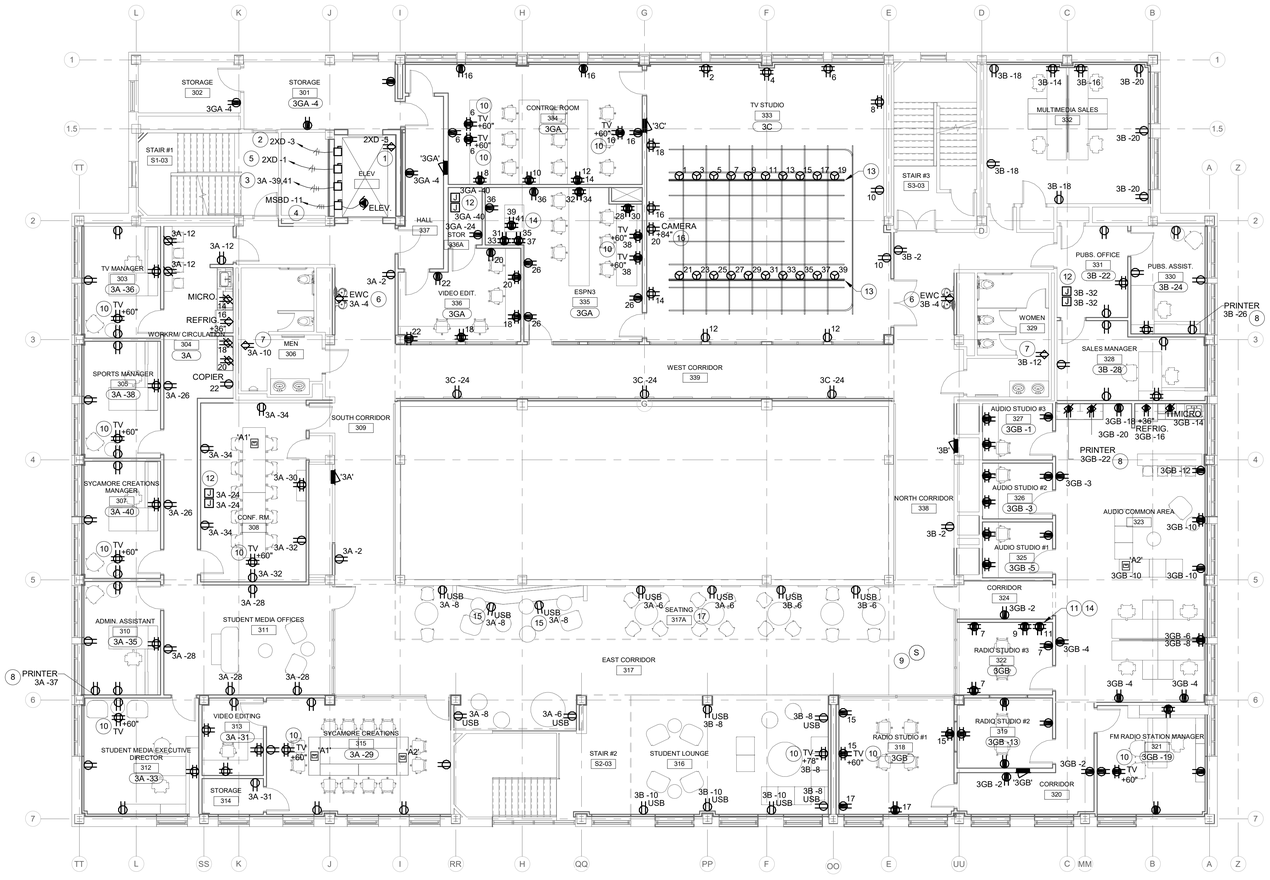
NOTES:

1. CONNECTOR STRIPS SHALL BE MINIMUM WIREMOLD 3000 SERIES RACEWAY.
2. CONDUITS AND BOXES SHALL BE ATTACHED TO STRUCTURE OR UNISTRUT CROSS-SUPPORTS, NOT THE OTHER UNISTRUT SUPPORTS.
3. ALL RACEWAYS, BOXES, SUPPORTS, ETC. SHALL BE PAINTED BLACK.
4. PROVIDE LARGE LETTER LABELLING OF OUTLETS IN CONNECTOR STRIPS AND CORRESPOND IN THE PANEL CIRCUIT DIRECTORY, AS DIRECTED BY OWNER.
5. VERTICAL SUPPORTS TO SUSPENDED UNISTRUTS B, C, AND CONNECTOR STRIP D SHALL BE WITH THREADED ROD.

TV STUDIO - ELEVATION FACING WEST

SCALE: 1/4" = 1'-0"

NORTH



THIRD FLOOR PLAN - POWER

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

NORTH

PLAN NOTES:

1. COORDINATE ALL EQUIPMENT AND DEVICES IN ELEVATOR SHAFT WITH ELEVATOR INSTALLER PRIOR TO ROUGH-IN.
2. PROVIDE 120V CIRCUIT AND SPST FUSIBLE DISCONNECT SWITCH INDICATED FOR CONNECTION TO ELEVATOR CAR LIGHTING.
3. PROVIDE 30A, 120/208V SINGLE-PHASE CIRCUIT AND DPST FUSIBLE SWITCH FOR TEMPORARY CONSTRUCTION POWER.
4. PROVIDE 3 #1, 1 #1 GND, 2" CONDUIT. PROVIDE A 100A-3P FUSED DISCONNECT WITH AUXILIARY CONTACT AND FUSE PER MANUFACTURER'S RECOMMENDATIONS. VERIFY LOCATION WITH ELEVATOR INSTALLER PRIOR TO ROUGH-IN. WIRE THRU AUXILIARY CONTACT TO BATTERY LOWERING SYSTEM.
5. PROVIDE A 120V CIRCUIT AND SPST FUSIBLE DISCONNECT SWITCH AND CONNECTION FOR ELEVATOR REMOTE MONITORING SYSTEM.
6. PROVIDE GFCI RECEPTACLE FOR NEW ELECTRIC WATER COOLER. COORDINATE LOCATION OF OUTLET WITH WATER COOLER HOUSING AND REMOTE CHILLER.
7. PROVIDE NEW RECEPTACLE AND WIRING IN EXISTING DEVICE BOX.
8. VERIFY PRINTER LOCATION WITH OWNER PRIOR TO ROUGH-IN. PROVIDE DEDICATED CIRCUIT INDICATED.
9. PROVIDE 1" CONDUIT TO RACK IN 322 FOR OWNER PROVIDED SPEAKER. COORDINATE WITH OWNER.
10. VERIFY TV LOCATION AND MOUNTING HEIGHT PRIOR TO ROUGH-IN.
11. PROVIDE (2) 1-1/2" CONDUITS FROM THIS ROOM TO ROOF. COORDINATE WITH OWNER. PROVIDE DEDICATED SEPARATE 1" CONDUITS TO ROOMS 303, 312, 321, AND 323.
12. PROVIDE 120V CIRCUIT INDICATED FOR VAV CONTROL TRANSFORMERS MOUNTED ABOVE CEILING. COORDINATE EXACT LOCATION IN FIELD.
13. PROVIDE CONNECTOR STRIP WITH TEN (10) TWIST-LOCK RECEPTACLES (NEMA L5-20R) FOR OWNER PROVIDED LIGHT FIXTURES. COORDINATE EXACT LOCATION IN FIELD PRIOR TO ROUGH-IN. VERIFY RECEPTACLE TYPE WITH OWNER.
14. PROVIDE RECEPTACLES FOR EQUIPMENT RACKS. COORDINATE WITH OWNER.
15. RECEPTACLES TO BE MOUNTED IN BASE OF BANQUETTE. COORDINATE EXACT LOCATION WITH CASEWORK INSTALLER AND ARCHITECT PRIOR TO ROUGH-IN.
16. PROVIDE OUTLET MOUNTED AT 84" AFF FOR SONY CAMERA CIRCUIT. COORDINATE EXACT LOCATION IN FIELD PRIOR TO ROUGH-IN.
17. INSTALL RECEPTACLES IN BASE IN SEATING 317A. VERIFY WITH ARCHITECT.

RENOVATION LEGEND:

- WORK TO BE INSTALLED
- WORK TO REMAIN

GENERAL NOTES:

1. SEE E0.1 FOR GENERAL NOTES.
2. COORDINATE DEVICE LOCATIONS AT WALLS RECEIVING SPECIAL COVERING (WOOD, ETC.) WITH ARCHITECT.
3. COORDINATE RECEPTACLES AT PERIMETER WALLS WITH HOT WATER RADIATION. SEE MECHANICAL DRAWINGS.
4. ALL RECEPTACLES FED FROM PANELS '3GA' AND '3GB' SHALL BE ISOLATED GROUND CIRCUITS.

ELEVATOR GENERAL NOTES:

1. THESE NOTES APPLY TO THE NEW ELEVATOR. THE ELEVATOR WILL BE A MACHINE-ROOMLESS ELEVATOR SYSTEM UNLESS OTHERWISE APPROVED. THE MACHINE AND THE CONTROLLER WILL BE IN THE HOISTWAY, LOCATED AT OR NEAR THE TOP FLOOR LANDING. COORDINATE ALL WORK WITH ELEVATOR INSTALLER.
2. THE ELEVATOR NAMEPLATE CURRENT RATING FOR THE ELEVATOR IS 53 AMPS. PROVIDE A DEDICATED FEEDER OF 3 #1, 1 #4 GND, 2" CONDUIT FROM MAIN SWITCHBOARD IN BASEMENT MACHINE ROOM 010. CONNECT TO CONTROLLER LOCATED ON THE TOP LANDING OF THE ELEVATOR SHAFT. PROVIDE A 100A-3P FUSED DISCONNECT SWITCH WITH AN AUXILIARY CONTACT FOR CONNECTION TO THE BATTERY LOWERING SYSTEM.
3. PROVIDE A DEDICATED 20A, 120V BRANCH CIRCUIT TO ELEVATOR CONTROLLER FOR CAR LIGHTING.
4. PROVIDE A DEDICATED 20A, 120V BRANCH CIRCUIT TO ELEVATOR CONTROLLER FOR REMOTE MONITORING.
5. PROVIDE A DEDICATED CIRCUIT AND GFCI RECEPTACLE NEXT TO EACH CONTROLLER IN THE HOISTWAY, AS DIRECTED.
6. PROVIDE LIGHTING AT TOP OF SHAFT TO PROVIDE A MINIMUM OF 20 FC ON TOP OF CAR AT TOP FLOOR. PROVIDE LIGHT SWITCH. COORDINATE WITH ELEVATOR INSTALLER.
7. PROVIDE A DEDICATED OUTSIDE TELEPHONE LINE TO EACH ELEVATOR CONTROLLER AND TERMINATE AS DIRECTED. COORDINATE WITH ELEVATOR INSTALLER.
8. PROVIDE A NORMALLY CLOSED CONTACT REPRESENTING THE SMOKE DETECTOR AT THE DESIGNATED RETURN LANDING.
9. PROVIDE A NORMALLY CLOSED CONTACT REPRESENTING ALL SMOKE DETECTORS LOCATED IN LOBBIES, HOISTWAYS, OR CONTROL SPACES, BUT NOT THE SMOKE DETECTOR AT THE DESIGNATED RETURN LANDING. PROVIDE ONE NORMALLY CLOSED CONTACT TO REPRESENT THE SMOKE DETECTOR IN THE CONTROL SPACE FOR THE ELEVATOR, AND ANY SMOKE DETECTORS IN THE HOISTWAY FOR THE ELEVATOR.
10. PROVIDE A TEMPORARY 120/208V, SINGLE-PHASE, 3-WIRE + GROUND ELECTRICAL SUPPLY FOR PLATFORM OPERATION DURING CONSTRUCTION AND AVAILABLE AT THE START OF THE ELEVATOR INSTALLATION.
11. PROVIDE THREE (3) SIMPLEX FIRE ALARM SYSTEM 'IAM' MODULES FOR EACH ELEVATOR AND CONNECT TO ELEVATOR CONTROLS FOR PRIMARY RECALL, ALTERNATE CONTROL, AND FIREMAN'S FLASH HAT ("FIRE HELMET"). CONNECT AS REQUIRED. COORDINATE WITH ELEVATOR INSTALLER AND PROVIDE ALL COMPONENTS, WIRING, AND PROGRAMMING AS REQUIRED. LOCATE ABOVE CEILING IN EACH ELEVATOR LOBBY AREA.
12. ELEVATOR MANUFACTURER TO PROVIDE AN INTERFACE BOARD NEXT TO EACH CONTROLLER FOR CONNECTION OF FIRE ALARM DEVICES, SECURITY CAMERAS, ETC. AND WILL PROVIDE THE TRAVELING CABLES IN THE HOISTWAY. THE E.C. SHALL COORDINATE AND COMMUNICATE THE REQUIRED CABLES WITH THE ELEVATOR MANUFACTURER.

ELEVATOR INSTALLATION - COORDINATION OF SCOPE OF WORK

A. THE ELEVATOR SUPPLIER/INSTALLER WILL PHYSICALLY INSTALL FIRE ALARM AND SECURITY DEVICES INSIDE THE ELEVATOR CARS. THE FOLLOWING IS A DESCRIPTION OF SCOPE OF WORK THAT IS INCLUDED IN SPECIFICATION SECTION 142100 ELECTRIC TRACTION PASSENGER ELEVATORS (MACHINE ROOMLESS), THE DIV. 26/27/28 CONTRACTOR(S) SHALL COORDINATE THE FOLLOWING WORK WITH THE ELEVATOR SUPPLIER/INSTALLER. ALSO COORDINATE SCHEDULING OF SUCH WORK.

B. SCOPE OF WORK FOR THE ELEVATOR SUPPLIER/INSTALLER

1. FIRE ALARM SYSTEM SPEAKER/STROBE - A FIRE ALARM SPEAKER STROBE SHALL BE INSTALLED IN THE ELEVATOR CAR. THE ELEVATOR SUPPLIER/INSTALLER SHALL PROVIDE A 2 #14 AWG CABLE FOR THE STROBE AND A 2 #18 SHIELDED TWISTED PAIR CABLE FOR THE SPEAKER, BOTH IN THE HOISTWAY TRAVELING CABLE FOR EACH ELEVATOR. THE FIRE ALARM SUPPLIER SHALL FURNISH THE SPEAKER/STROBES AND JUMPER CABLES (FOR WIRING FROM THE COP TO THE SPEAKER/STROBE IN SIDE THE CAR) AND THE ELEVATOR SUPPLIER/INSTALLER SHALL INSTALL THEM. SINCE THIS IS A LIFE SAFETY DEVICE, THE INSTALLATION SHALL BE OBSERVED BY THE FIRE ALARM SUPPLIER, AND TESTED BY SAME TO ENSURE PROPER OPERATION. THE FIRE ALARM SUPPLIER SHALL PROVIDE ALL NECESSARY WIRING FROM THE FIRE ALARM SYSTEM TO THE ELEVATOR CONTROLLERS LOCATED IN THE SHAFT AT THE TOP LANDING (VERIFY). THE ELEVATOR SUPPLIER/INSTALLER SHALL MAKE ALL CONNECTIONS AT THE CONTROLLER AND INSIDE THE ELEVATOR CARS.
2. FIRE ALARM SYSTEM FIREMAN'S HAT, PRIMARY RECALL, AND SECONDARY RECALL - THE FIRE ALARM SUPPLIER SHALL PROVIDE CONTROL MODULES AND CABLING TO EACH ELEVATOR CONTROLLER LOCATED IN THE SHAFT AT THE TOP LANDING (VERIFY). THE ELEVATOR SUPPLIER/INSTALLER SHALL MAKE FINAL CONNECTIONS INSIDE THE CONTROLLER TO PROVIDE OPERATION OF THE FIREMAN'S HAT, PRIMARY RECALL, AND SECONDARY RECALL.
3. SECURITY CAMERA - A SECURITY CAMERA SHALL BE INSTALLED IN EACH ELEVATOR CAR. THE ELEVATOR SUPPLIER/INSTALLER SHALL PROVIDE A BELDEN #1694F STRANDED FLEXIBLE RG6 COAX CABLE IN THE HOISTWAY TRAVELING CABLE FOR EACH ELEVATOR. THE SECURITY SYSTEM SUPPLIER SHALL FURNISH THE IP CAMERAS, PoE+ OVER COAX ADAPTER KITS, AND JUMPER CABLES (FOR WIRING FROM THE COP TO THE CAMERA) AND THE ELEVATOR SUPPLIER/INSTALLER SHALL INSTALL THEM. AN ADAPTOR WILL NEED TO BE INSTALLED AT BOTH ENDS OF THE COAX CABLE. THE ELEVATOR SUPPLIER/INSTALLER SHALL INSTALL ONE INSIDE THE CONTROLLER CONNECTION BOX IN THE SHAFT AT THE TOP LANDING (VERIFY) AND INSTALL THE OTHER INSIDE THE CAR COP. THE SECURITY SYSTEM SUPPLIER SHALL PROVIDE ALL NECESSARY WIRING FROM THE SECURITY SYSTEM TO THE ELEVATOR CONTROLLERS LOCATED IN THE SHAFT AT THE TOP LANDING (VERIFY). THE ELEVATOR SUPPLIER/INSTALLER SHALL MAKE ALL CONNECTIONS AT THE CONTROLLERS AND INSIDE THE ELEVATOR CARS. THE SECURITY SYSTEM SUPPLIER SHALL PERFORM ALL NECESSARY TESTS FOR PROPER OPERATION AND COORDINATE ANY NECESSARY ADJUSTMENTS WITH THE ELEVATOR SUPPLIER/INSTALLER.
4. COORDINATE CONSTRUCTION OF ENTRANCE WALLS WITH INSTALLATION OF DOOR FRAMES AND SILLS. ENSURE ADEQUATE SUPPORT FOR ENTRANCE/ATTACHMENT POINTS AT ALL LANDINGS.
5. COORDINATE OPENINGS FOR HALL PUSH BUTTONS, SIGNAL FEATURES, AND ANY REQUIRED SLEEVES.
6. COORDINATE EMERGENCY POWER TRANSFER SWITCH AND POWER CHANGE PENDING SIGNALS AS REQUIRED FOR TERMINATION AT THE ELEVATOR SIGNAL CONTROL CABINET. THE ELECTRICAL CONTRACTOR SHALL PROVIDE A DRY CONTACT CLOSURE TO SIGNAL THE LOSS OF NORMAL POWER AND TO ENABLE THE ELEVATOR CONTROLS TO SEND THE ELEVATOR TO A DESIGNATED LANDING AND OPEN ITS DOORS. COORDINATE FUNCTION AND REQUIREMENTS WITH THE ELEVATOR SUPPLIER/INSTALLER AND ELEVATOR INSPECTOR.
7. COORDINATE INTERFACE BETWEEN ELEVATOR AND FIRE ALARM SYSTEM.
8. COORDINATE INTERFACE WITH TELEPHONE SYSTEM.
9. THE ELEVATOR SUPPLIER/INSTALLER SHALL PROVIDE ALL NECESSARY TRAVELING CABLES, INCLUDING SPARES, AND MAKE ALL FINAL CONNECTIONS AT THE ELEVATOR CONTROLLER AND INSIDE THE CAR.
10. SCHEDULING OF ALL WORK SHALL BE COORDINATED BETWEEN TRADES AND THE ELEVATOR SUPPLIER/INSTALLER TO ENSURE THAT WORK CAN BE PERFORMED IN A TIMELY MANNER WITHOUT REQUIRING SPECIAL JOB VISITS, OTHERWISE THAT TRADE SHALL COMPENSATE THE ELEVATOR SUPPLIER/INSTALLER AS NECESSARY.
11. THE ELEVATOR SUPPLIER/INSTALLER SHALL PROVIDE ALL PROVISIONS AT CONTROLLER AND ELEVATOR CAR FOR ALL CONNECTIONS AND SHALL INCLUDE ALL REQUIRED MATERIALS AND LABOR IN THEIR BID TO MAKE CONNECTIONS, INSTALL EQUIPMENT DESCRIBED ABOVE, AND ASSIST WITH TESTING.
12. CONTRACTORS SHALL SUBMIT EQUIPMENT DATA SHEETS (CUT SHEETS) TO THE ELEVATOR SUPPLIER/INSTALLER FOR ALL EQUIPMENT THAT IS TO BE INSTALLED INSIDE THE ELEVATOR CAR.
13. THE ELEVATOR SUPPLIER/INSTALLER SHALL SHOW ALL EQUIPMENT LOCATIONS AND TRAVELING CABLE INFORMATION ON THEIR SUBMITTAL DRAWINGS FOR APPROVAL.
14. THE ELECTRICAL CONTRACTOR WILL PROVIDE A 1" CONDUIT FROM EACH ELEVATOR PIT TO A LOCATION NEAR THE BUILDING'S FIRE ALARM CONTROL PANEL, WHICH SHOULD BE THE LOCATION FOR AN ELEVATOR STATUS PANEL. THE ELEVATOR SUPPLIER/INSTALLER SHALL PROVIDE ALL NECESSARY WIRING, CONNECTIONS AND EQUIPMENT.

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100% CONSTRUCTION DOCUMENTS

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Drawn By: JPS
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Issue Date: 06/05/2020

REVISION SCHEDULE		
Rev. #	Revision Description	Issue Date

THIRD FLOOR PLAN - POWER

E2.13

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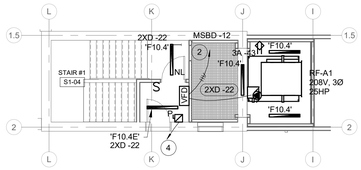
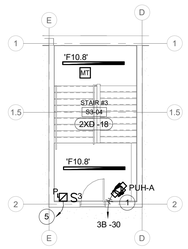


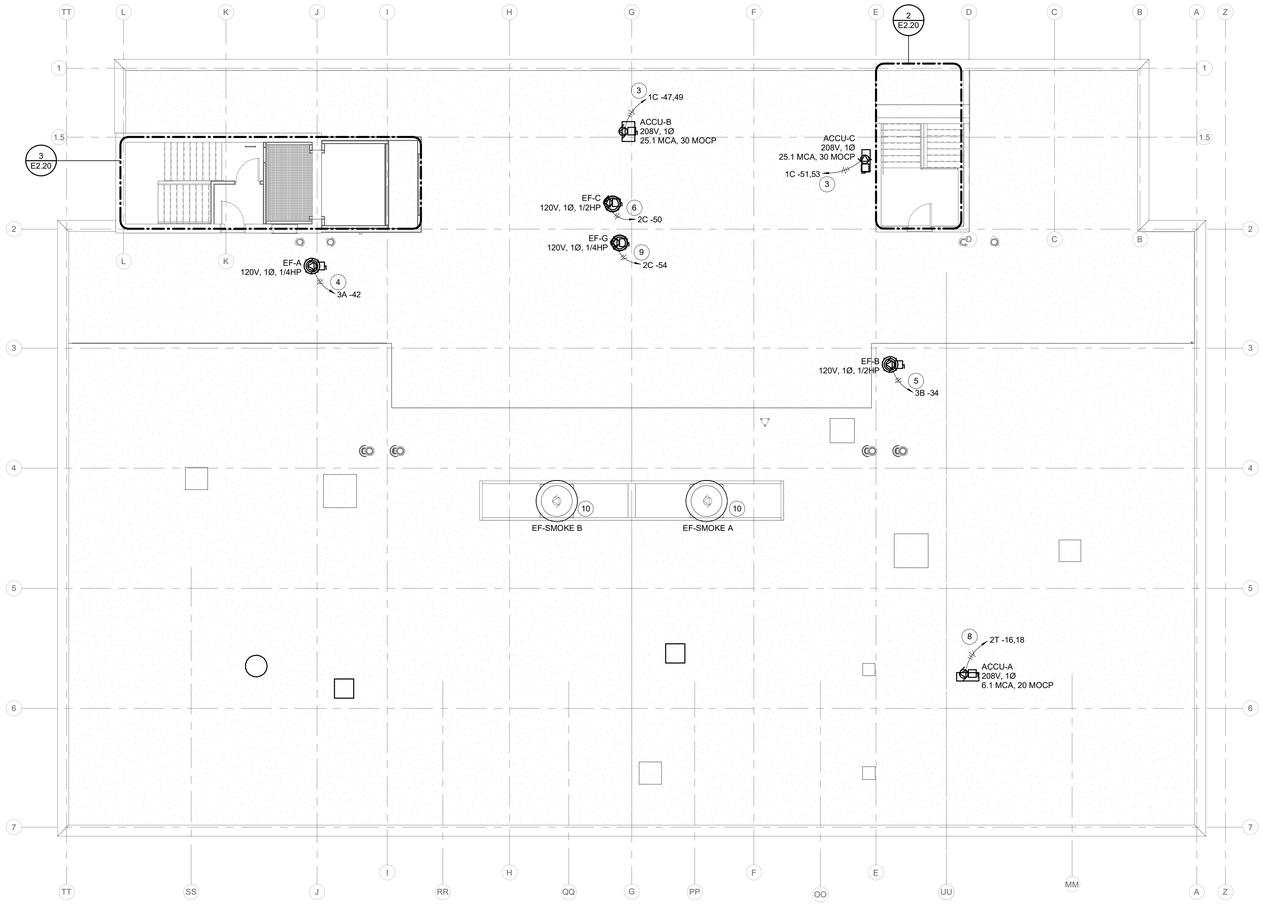
3 UPPER STAIR #1 - ELECTRICAL

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



2 UPPER STAIR #3 - ELECTRICAL

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



ROOF PLAN - ELECTRICAL

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

RENOVATION LEGEND:

- WORK TO BE INSTALLED
- WORK TO REMAIN

GENERAL NOTES:

1. SEE E0.1 FOR GENERAL NOTES.
2. COORDINATE EXACT LOCATION OF HVAC EQUIPMENT WITH MECHANICAL DRAWINGS PRIOR TO ROUGH-IN.

(#) PLAN NOTES:

1. PROVIDE 120V CIRCUIT INDICATED TO PROPELLER UNIT HEATER. PROVIDE 3 #12, 3/4" CONDUIT. PROVIDE 120V, 20A DISCONNECT.
2. PROVIDE VFD AT AHU FOR RELIEF FAN (RF-A1). FUSE AT 100 AMPS. CONNECT FROM VFD TO MOTOR WITH SAME SIZE CONUDCTORS FROM PANEL. SEE E5.01 FOR WIRE SIZING. COORDINATE EXACT LOCATION ON VFD IN FIELD PRIOR TO ROUGH-IN.
3. PROVIDE 2 #10, 1#10 N, 1 #10 GND, 3/4" CONDUIT TO OUTDOOR CONDENSING UNIT. PROVIDE 208V, 30A NON-FUSED DISCONNECT IN NEMA 3R ENCLOSURE. PROVIDE UNISTRUT STAND AS REQUIRED. PROVIDE 2 #10, 1 #10 N, 1 #10 GND (MINIMUM) TO INDOOR UNITS. SEE E2.11. COORDINATE EXACT WIRING WITH MANUFACTURER.
4. WIRE EF-A CIRCUIT THROUGH MANUAL STARTER IN UPPER STAIRS # 1. FAN TO BE CONTROLLED BY B.A.S. PROVIDE 3 #10, 3/4" CONDUIT AND 20A-2P DISCONNECT AT EXHAUST FAN.
5. WIRE EF-B CIRCUIT THROUGH MANUAL STARTER IN UPPER STAIRS # 3. FAN TO BE CONTROLLED BY B.A.S. PROVIDE 3 #10, 3/4" CONDUIT AND 20A-2P DISCONNECT AT EXHAUST FAN.
6. WIRE EF-C CIRCUIT THROUGH MANUAL STARTER IN CRAFTS ROOM 222. SEE E2.12. FAN TO BE MANUALLY CONTROLLED. PROVIDE 3 #10, 3/4" CONDUIT AND 20A-2P DISCONNECT AT EXHAUST FAN.
7. PROVIDE 120V CIRCUIT TO TEMPERATURE CONTROL PANEL. COORDINATE EXACT LOCATION IN FIELD PRIOR TO ROUGH-IN.
8. PROVIDE 2 #10, 1#10 N, 1 #10 GND, 3/4" CONDUIT TO OUTDOOR CONDENSING UNIT. PROVIDE 208V, 20A NON-FUSED DISCONNECT IN NEMA 3R ENCLOSURE. PROVIDE UNISTRUT STAND AS REQUIRED. PROVIDE 2 #12, 1 #12 N, 1 #12 GND (MINIMUM) TO INDOOR UNIT. COORDINATE EXACT WIRING WITH MANUFACTURER.
9. WIRE EF-G CIRCUIT THROUGH MANUAL STARTER IN CRAFTS ROOM 222. FAN TO BE MANUALLY CONTROLLED. PROVIDE 3 #10, 3/4" CONDUIT AND 20A-2P DISCONNECT AT EXHAUST FAN.
10. EXISTING STAGE SMOKE VENT FAN AND FEED FROM GILLUM HALL TO REMAIN.

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ROOF PLAN - ELECTRICAL

E2.20

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RENOVATION LEGEND:

WORK TO BE INSTALLED

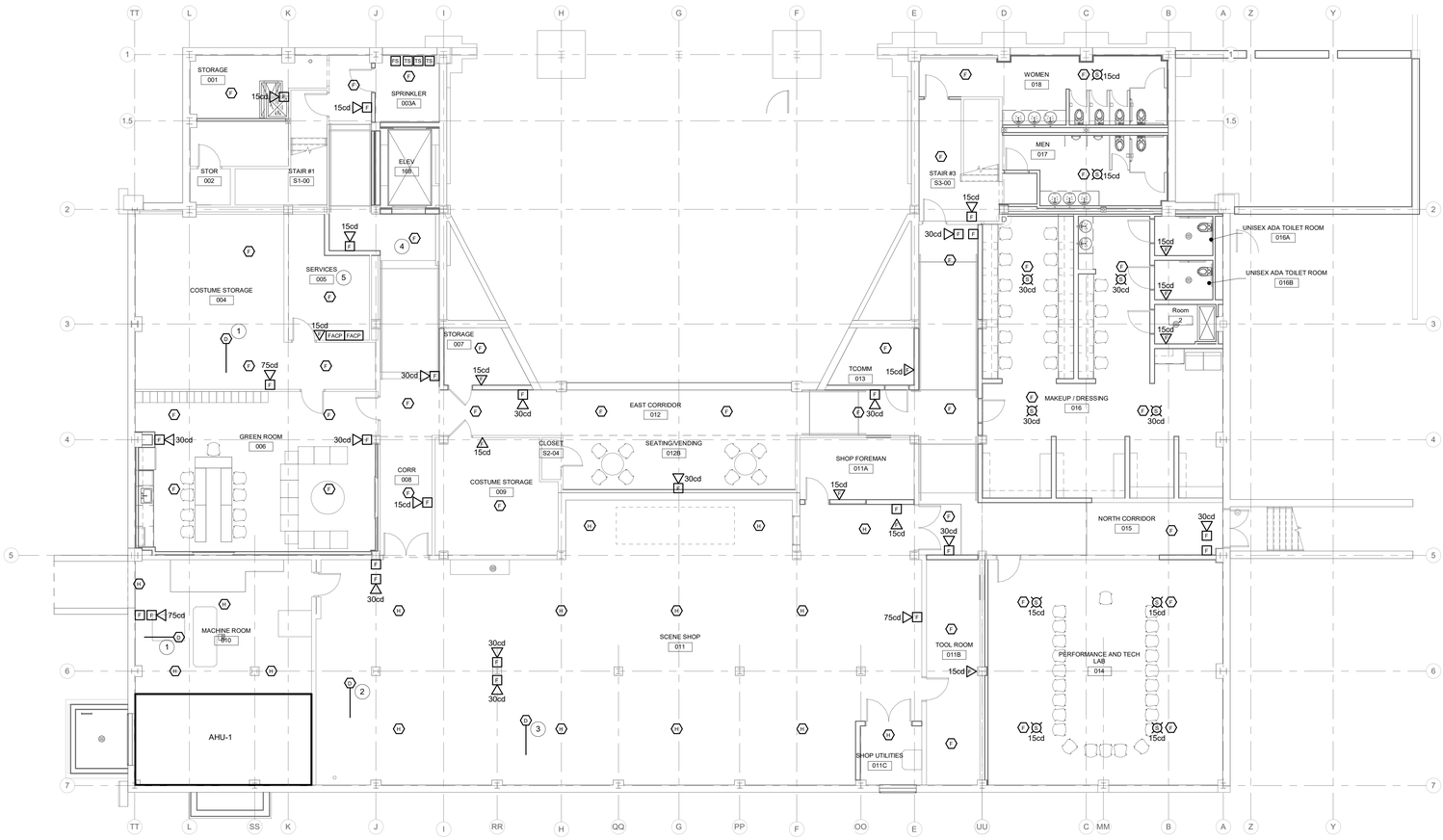
WORK TO REMAIN

GENERAL NOTES:

1. REFER TO SHEET E0.1 FOR ADDITIONAL GENERAL NOTES.

(#) PLAN NOTES:

1. INSTALL DUCT SMOKE DETECTOR IN RETURN AIR DUCT. WIRE TO SHUT DOWN AHU-1 DURING ALARM.
2. INSTALL DUCT SMOKE DETECTOR IN SUPPLY AIR DUCT. WIRE TO SHUT DOWN AHU-1 DURING ALARM.
3. INSTALL DUCT SMOKE DETECTOR IN RETURN AIR DUCT. WIRE TO SHUT DOWN AHU-2 DURING ALARM.
4. INTERLOCK SMOKE DETECTOR FOR ELEVATOR RECALL.
5. PROVIDE FIRE ALARM CONTROL PANEL(S). INTERLOCK WITH THEATER LIGHTING CONTROLS IN THIS ROOM TO RUN THEATER LIGHTS ON TO 100% DURING ANY ALARM IN THE THEATER AREA.



BASEMENT PLAN - FIRE ALARM

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

NORTH

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BASEMENT PLAN - FIRE ALARM

E2.30

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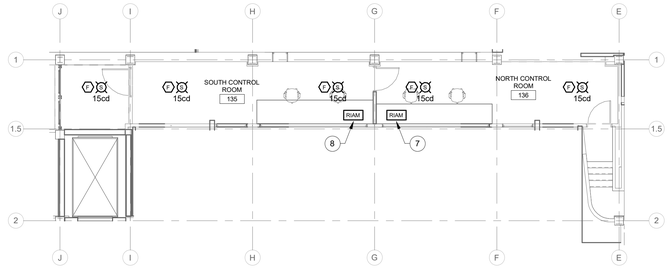
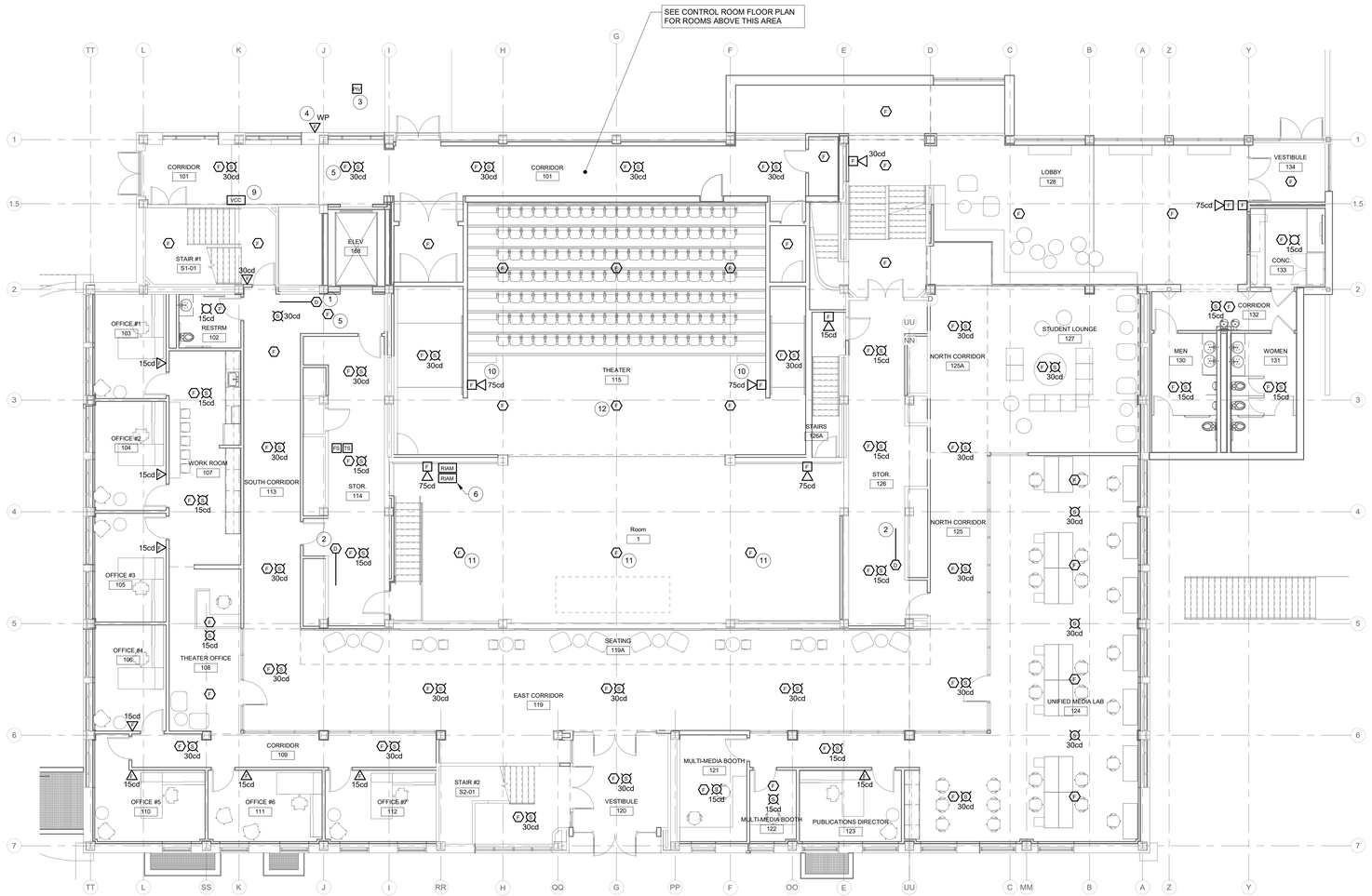


CONTROL ROOM FLOOR PLAN - FIRE ALARM

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

NORTH



FIRST FLOOR PLAN - FIRE ALARM

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

NORTH

RENOVATION LEGEND:

- WORK TO BE INSTALLED
- WORK TO REMAIN

GENERAL NOTES:

1. REFER TO SHEET E0.1 FOR ADDITIONAL GENERAL NOTES.

(#) PLAN NOTES:

1. INSTALL DUCT SMOKE DETECTOR IN RETURN DUCT AND WIRE TO SHUT DOWN AHU-1 IN BASEMENT DURING ALARM.
2. INSTALL DUCT SMOKE DETECTOR IN SUPPLY DUCT AND WIRE TO SHUT DOWN AHU-1 IN BASEMENT DURING ALARM.
3. PROVIDE CONNECTION TO TAMPER SWITCHES AT VALVE PIT AND PIV. PROVIDE CIRCUIT PROTECTOR.
4. PROVIDE WEATHERPROOF STROBE AT FIRE DEPARTMENT CONNECTION AREA. COORDINATE IN FIELD.
5. INTERLOCK SMOKE DETECTOR FOR ELEVATOR RECALL.
6. PROVIDE CONTROL RELAY IAM AND WIRE TO EXISTING RELOCATED SMOKE EVAC FANS AND PROGRAM TO TURN ON FANS DURING ANY SMOKE ALARM CONDITION IN THE THEATER AREAS.
7. PROVIDE CONTROL RELAY IAM TO TURN THEATER AREA LIGHTING ON TO 100 PERCENT DURING ANY FIRE ALARM CONDITION. INTERLOCK WITH LIGHTING CONTROLS IN BASEMENT SERVICES 005.
8. PROVIDE CONTROL RELAY IAM TO SHUNT THEATER SOUND SYSTEM DURING ANY FIRE ALARM CONDITION. ALSO INTERLOCK WITH SOUND SYSTEM CONTROLS IN STORAGE 114.
9. PROVIDE VOICE COMMAND CENTER AND INTERLOCK WITH FIRE ALARM CONTROL PANEL IN BASEMENT SERVICES 005.
10. VERIFY SPEAKER/STROBE LOCATION WITH ARCHITECT.
11. INSTALL SMOKE DETECTORS ABOVE CATWALK.
12. COORDINATE EXACT LOCATIONS OF SMOKE DETECTORS IN THEATER WITH ALL OTHER COMPONENTS AND ACOUSTICAL TREATMENTS. MOUNT DETECTORS ON BOTTOM OF BEAMS.

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CERTIFICATION 06/05/2020

100% CONSTRUCTION DOCUMENTS

Indiana State University - Dreiser Hall Renovation

221 North 6th Street
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Project No.: 19A052
Drawn By: JPS
Checked By: TEH
Scale: See Drawing
Issue Date: 06/05/2020

REVISION SCHEDULE		
Rev. #	Revision Description	Issue Date

FIRST FLOOR PLAN - FIRE ALARM

E2.31

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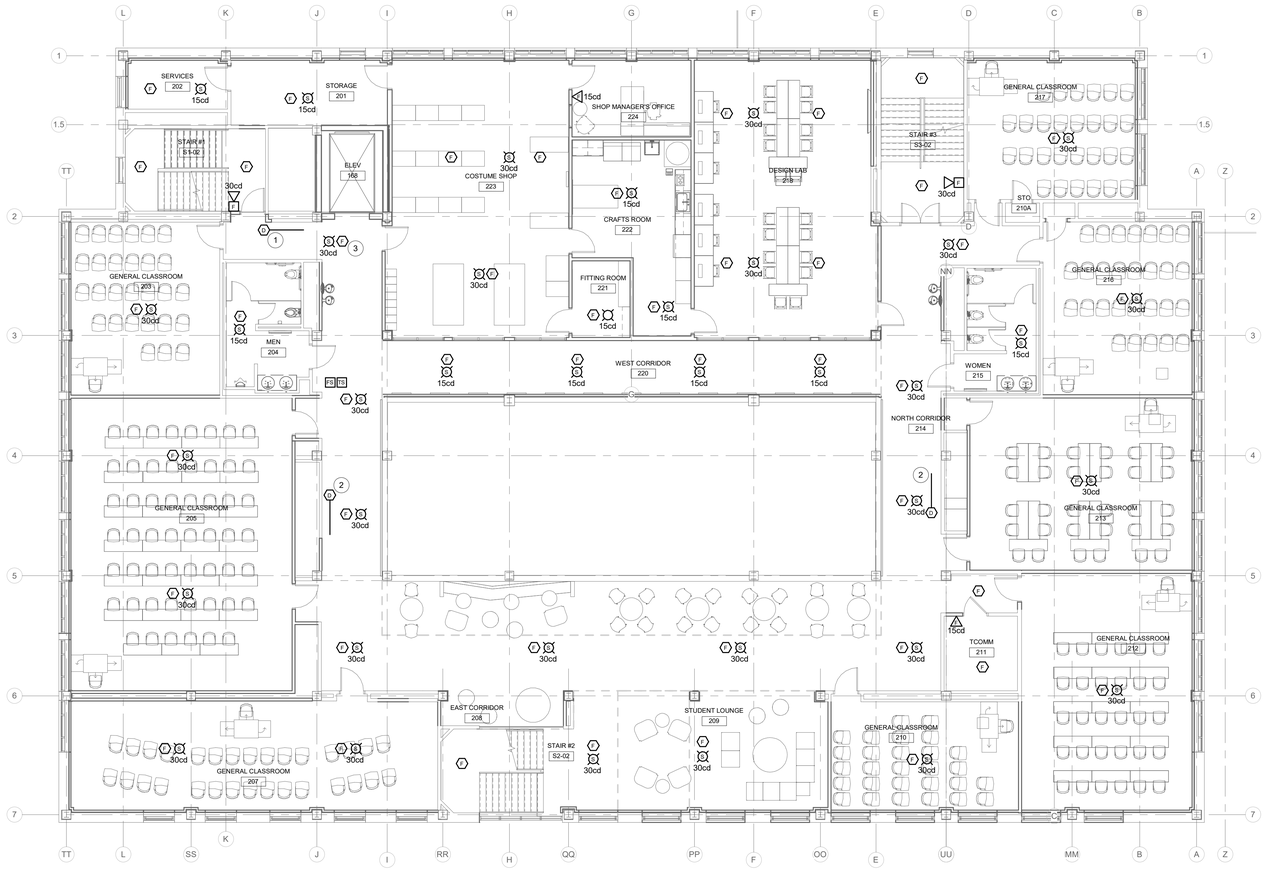

SECOND FLOOR PLAN - FIRE ALARM

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

NORTH

RENOVATION LEGEND:

WORK TO BE INSTALLED

WORK TO REMAIN

GENERAL NOTES:

1. REFER TO SHEET E0.1 FOR ADDITIONAL GENERAL NOTES.

(#) PLAN NOTES:

1. INSTALL DUCT SMOKE DETECTOR IN RETURN DUCT AND WIRE TO SHUT DOWN AHU-1 IN BASEMENT DURING ALARM.
2. INSTALL DUCT SMOKE DETECTOR IN SUPPLY DUCT AND WIRE TO SHUT DOWN AHU-1 IN BASEMENT DURING ALARM.
3. INTERLOCK SMOKE DETECTOR FOR ELEVATOR RECALL.

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REVISION SCHEDULE		
Rev. #	Revision Description	Issue Date

SECOND FLOOR PLAN - FIRE ALARM

E2.32

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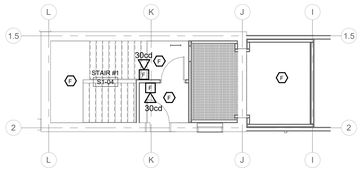
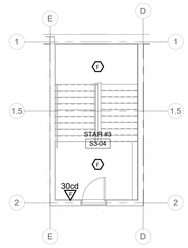


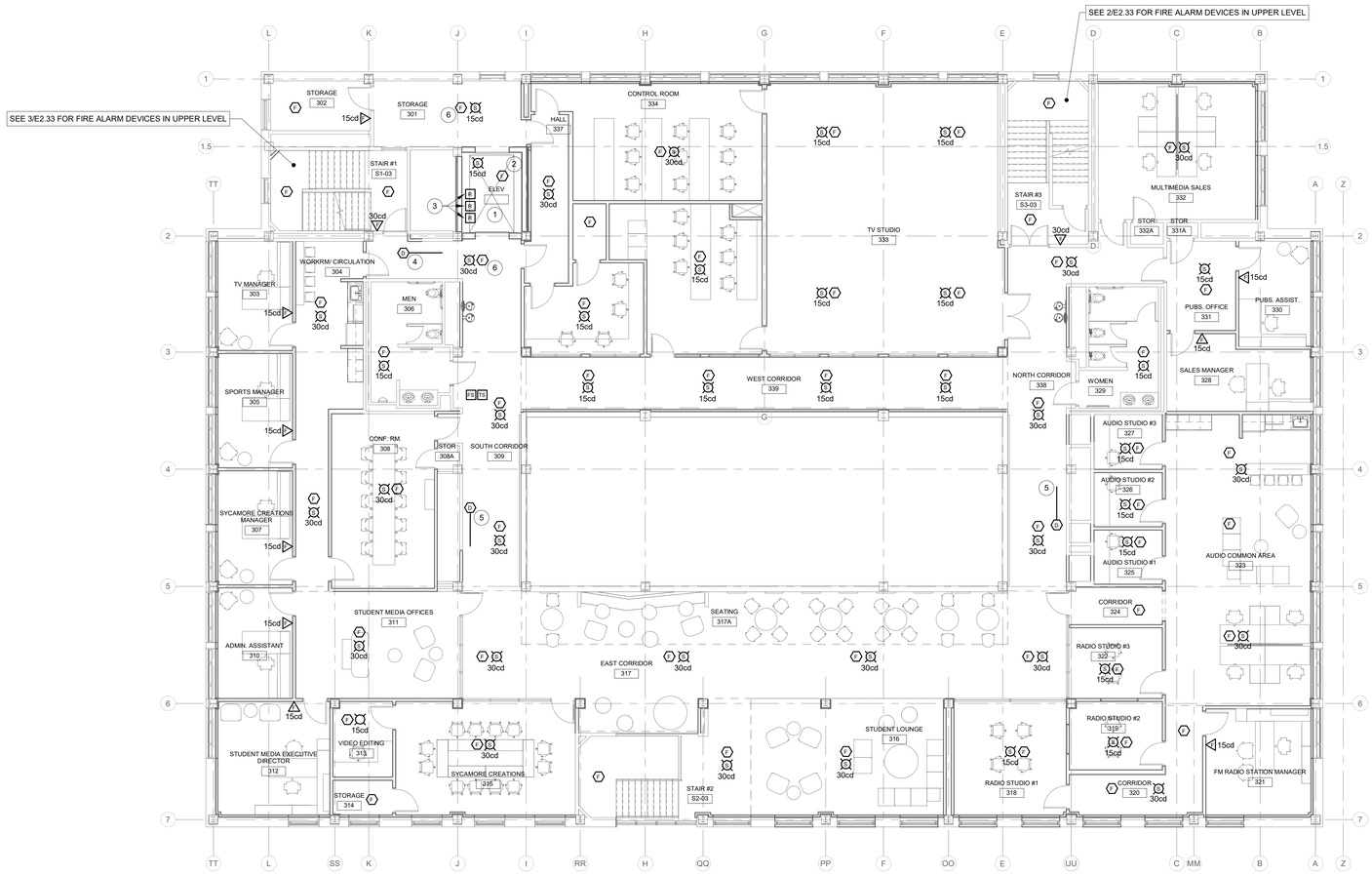
3 UPPER STAIR #1 - FIRE ALARM

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



2 UPPER STAIR #3 - FIRE ALARM

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



THIRD FLOOR PLAN - FIRE ALARM

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

RENOVATION LEGEND:

- WORK TO BE INSTALLED
- WORK TO REMAIN

GENERAL NOTES:

1. REFER TO SHEET E0.1 FOR ADDITIONAL GENERAL NOTES.

(#) PLAN NOTES:

1. COORDINATE LOCATION OF ALL DEVICES IN ELEVATOR SHAFT WITH ELEVATOR INSTALLER PRIOR TO ROUGH-IN.
2. PLACE SMOKE DETECTOR IN ELEVATOR EQUIPMENT ROOM SPACE. PROGRAM FOR 'FIREMAN'S HAT' FUNCTION.
3. PROVIDE ADDRESSABLE CONTROL RELAYS FOR ELEVATOR SHUTDOWN FUNCTION AND 'FIREMAN'S HAT' WARNING INDICATOR. FIELD COORDINATE EXACT LOCATIONS.
4. INSTALL DUCT SMOKE DETECTOR IN RETURN DUCT AND WIRE TO SHUT DOWN AHU-1 IN BASEMENT DURING ALARM.
5. INSTALL DUCT SMOKE DETECTOR IN SUPPLY DUCT AND WIRE TO SHUT DOWN AHU-1 IN BASEMENT DURING ALARM.
6. INTERLOCK SMOKE DETECTOR FOR ELEVATOR RECALL.

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THIRD FLOOR PLAN - FIRE ALARM

E2.33

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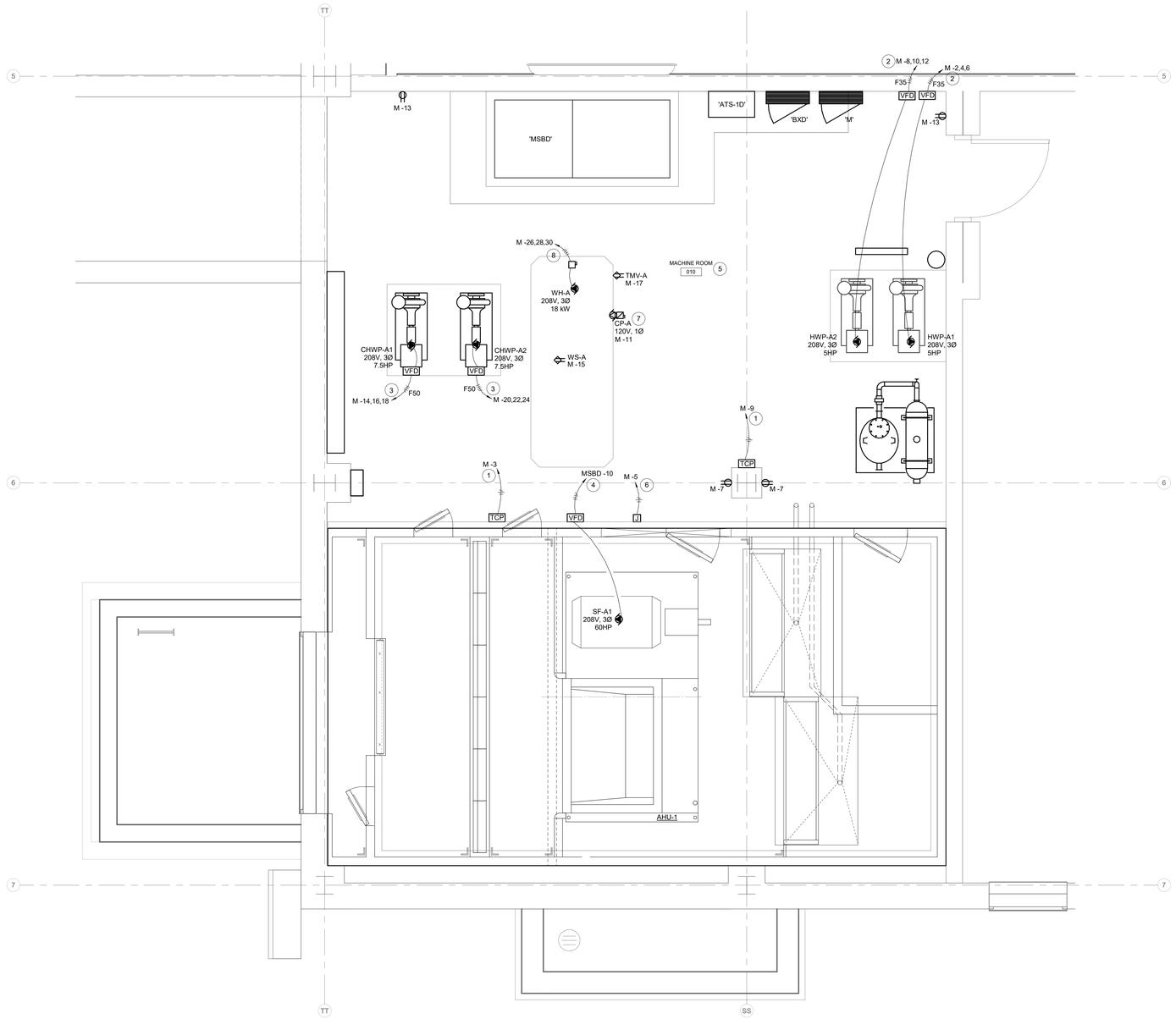

ENLARGED MECHANICAL ROOM - POWER

SCALE: 1/2" = 1'-0"

NORTH

RENOVATION LEGEND:

WORK TO BE INSTALLED

WORK TO REMAIN

GENERAL NOTES:

1. SEE E-001 FOR GENERAL NOTES.
2. VERIFY VFD AND TCP LOCATIONS IN FIELD. PROVIDE UNISTRUT FLOOR STAND AS REQUIRED. CONNECT FROM VFD TO MOTOR WITH SAME SIZE CONDUCTORS AS FEEDER FROM PANEL. MAKE AS SHORT AS POSSIBLE.

(#) PLAN NOTES:

1. PROVIDE 120V CIRCUIT TO TEMPERATURE CONTROL PANEL. COORDINATE EXACT LOCATION IN FIELD.
2. PROVIDE VFD AT HOT WATER PUMP. FUSE AT 25 AMPS. CONNECT FROM VFD TO MOTOR WITH SAME SIZE CONDUCTORS FROM PANEL.
3. PROVIDE VFD AT CHILLED WATER PUMP. FUSE AT 40 AMPS. CONNECT FROM VFD TO MOTOR WITH SAME SIZE CONDUCTORS FROM PANEL.
4. PROVIDE VFD AT AHU FOR SUPPLY FAN. FUSE AT 250 AMPS. CONNECT FROM VFD TO MOTOR WITH SAME SIZE CONUDCTORS FROM PANEL. SEE E5.01 FOR WIRE SIZING.
5. COORDINATE RECEPTACLE LOCATIONS WITH FINAL EQUIPMENT LAYOUT.
6. PROVIDE 120V CIRCUIT INDICATED TO AIR HANDLING UNIT LIGHTING. COORDINATE EXACT CONNECTION LOCATION IN FIELD. SEE E2.00.
7. PROVIDE 3 #12, 3/4" CONDUIT TO CIRCULATION PUMP (CP-A). PROVIDE MANUAL STARTER. COORDINATE EXACT LOCATION.
8. PROVIDE 3 #4, 1 #8 GND, 1-1/4" CONDUIT TO WATER HEATER. PROVIDE 100A-3P NON-FUSED DISCONNECT. PROVIDE UNISTRUT STAND AS REQUIRED. COORDINATE EXACT LOCATION.

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Rev. #	Revision Description	Issue Date

ENLARGED MECHANICAL ROOM - ELECTRICAL

E3.01

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RENOVATION LEGEND:

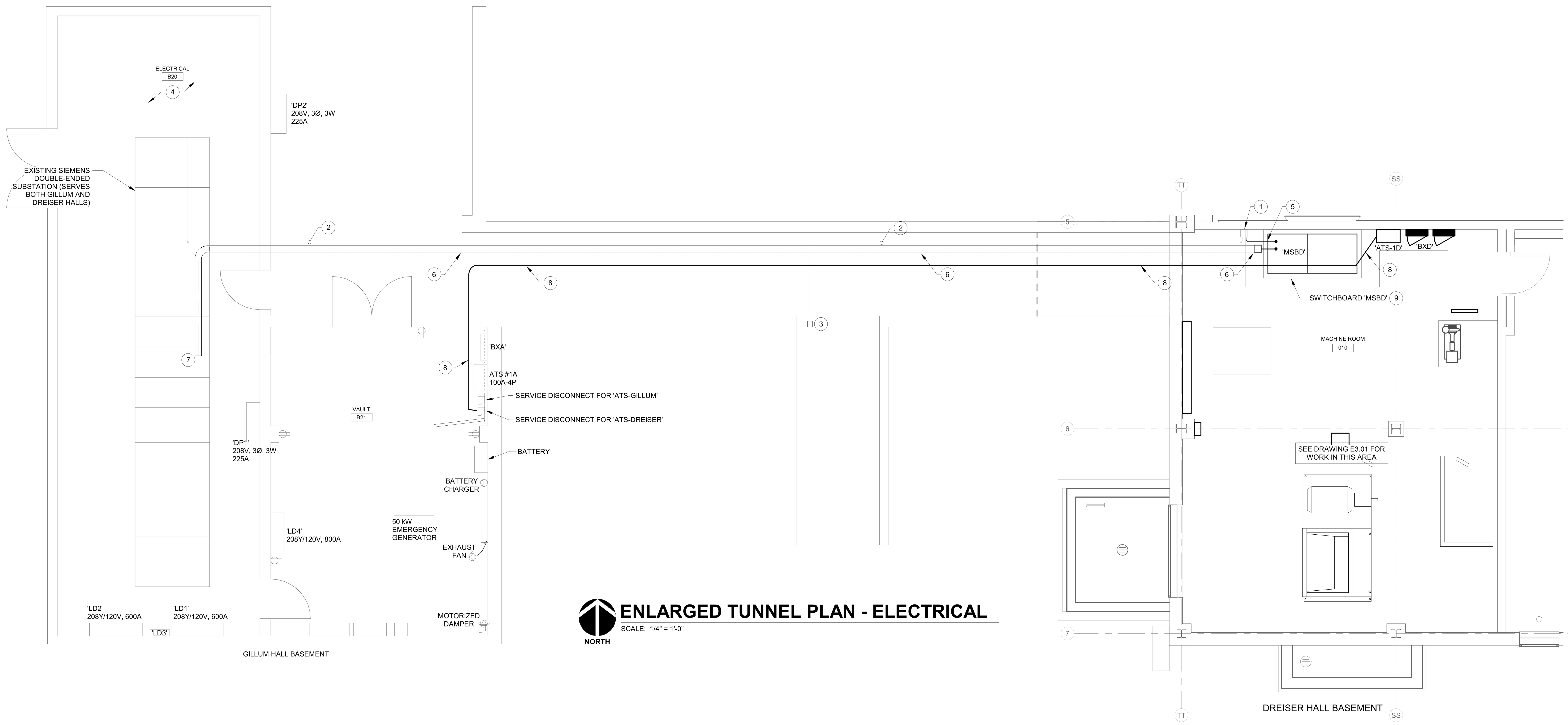
- WORK TO BE INSTALLED
- WORK TO REMAIN

GENERAL NOTES:

1. SEE E-001 FOR GENERAL NOTES.

PLAN NOTES:

1. EXISTING GROUNDING BOX TO REMAIN. REWORK AS REQUIRED TO MAINTAIN ACCESS WITH RESPECT TO NEW BUS DUCT END CABLE TAP BOX.
2. EXISTING #4/0 COPPER GROUND CONDUCTOR TO REMAIN.
3. EXISTING #4/0 COPPER GROUND CONNECTION TO MAIN WATER SUPPLY PIPE TO REMAIN.
4. CONTRACTOR MAY OBTAIN TEMPORARY CONSTRUCTION POWER FROM EXISTING PANEL(S) LOCATED IN GILLUM HALL ELEC. ROOM B20. COORDINATE WITH OWNER.
5. PROVIDE #4/0 COPPER GROUND ELECTRODE CONDUCTOR CONNECTION FROM EXISTING GROUND BOX TO NEW SWITCHBOARD 'MSBD'.
6. EXISTING 2000A, 120/208V, 3-PHASE, 4-WIRE SIEMENS BUS DUCT TO REMAIN. DISCONNECT FROM EXISTING SWITCHBOARD 'MSBD'. PROVIDE A HORIZONTAL END CABLE TAP BOX ON BUS DUCT AND PROVIDE 2000A CONDUIT AND WIRE CONNECTION TO NEW 'MSBD'. SEE E5.01.
7. EXISTING BUS DUCT IS CONNECTED TO EXISTING SIEMENS RL-1600 BREAKER IN EXISTING SUBSTATION.
8. PROVIDE EMERGENCY FEED FROM EXISTING GILLUM HALL GENERATOR. SEE E5.01 FOR WIRE SIZE.
9. REUSE EXISTING CONCRETE PAD AND REWORK AS REQUIRED. COORDINATE EXACT LOCATION OF 'MSBD' WITH ALL TRADES TO AVOID PIPES AND DUCTS OVER 'MSBD'. REUSE EXISTING SHEET METAL SCREEN (OR PROVIDE NEW) BETWEEN 'MSBD' AND STEAM STATION. MODIFY AS REQUIRED.



ENLARGED TUNNEL PLAN - ELECTRICAL

SCALE: 1/4" = 1'-0"

NORTH

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ENLARGED TUNNEL PLAN - ELECTRICAL

E3.02

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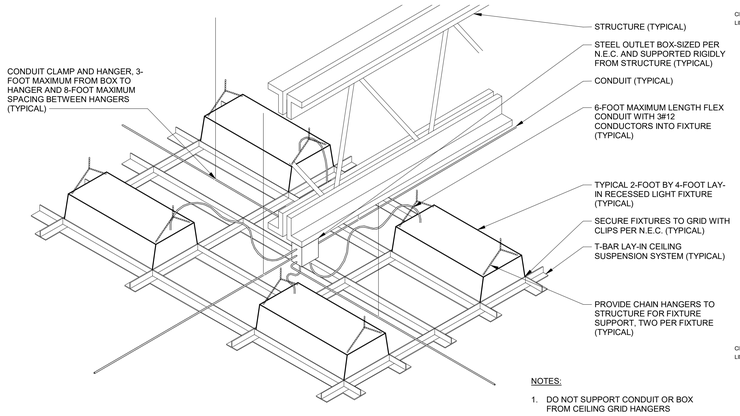


NOTES:

1. DO NOT SUPPORT CONDUIT OR BOX FROM CEILING GRID HANGERS

H TYPICAL RECESSED LIGHTING INSTALLATION

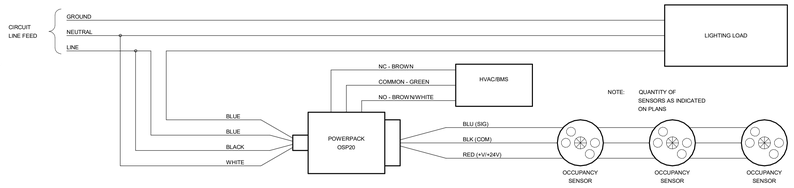
SCALE: NONE

NOTES:

1. DO NOT SUPPORT CONDUIT OR BOX FROM CEILING GRID HANGERS

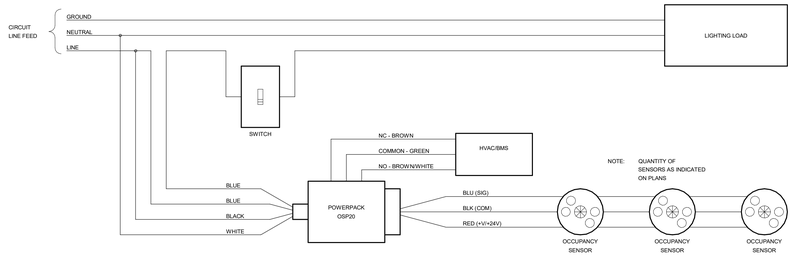
J TYPICAL RECESSED LINEAR LIGHTING INSTALLATION

SCALE: NONE



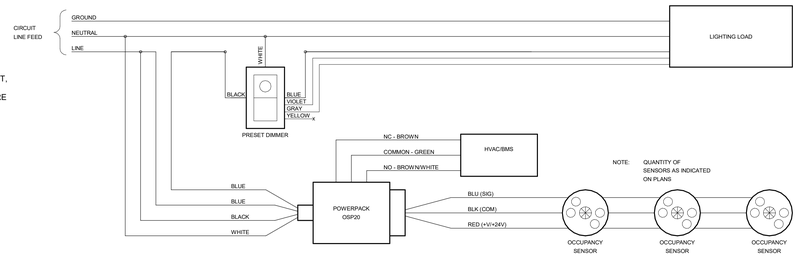
D TYPICAL SINGLE CIRCUIT, SENSORS WITHOUT MANUAL SWITCHING

SCALE: NONE



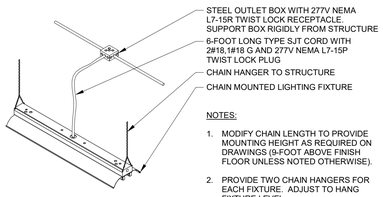
E TYPICAL SINGLE CIRCUIT, SENSORS WITH MANUAL SWITCHING

SCALE: NONE



F TYPICAL SINGLE CIRCUIT, SENSORS WITH MANUAL DIMMING

SCALE: NONE

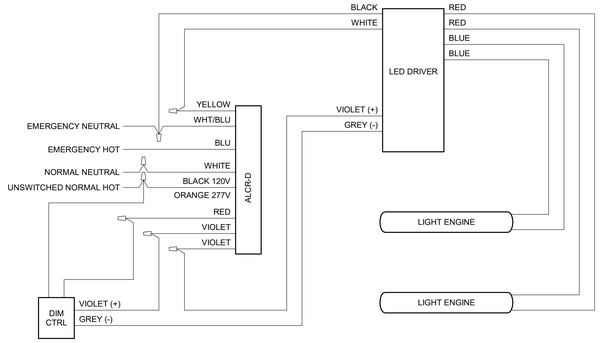


NOTES:

1. MODIFY CHAIN LENGTH TO PROVIDE MOUNTING HEIGHT AS REQUIRED ON DRAWINGS (9-FOOT ABOVE FINISH FLOOR UNLESS NOTED OTHERWISE).
2. PROVIDE TWO CHAIN HANGERS FOR EACH FIXTURE. ADJUST TO HANG FIXTURE LEVEL.

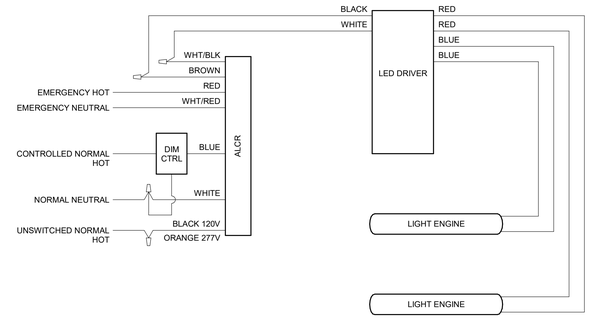
K CHAIN MOUNTED LIGHTING FIXTURE INSTALLATION

SCALE: NONE



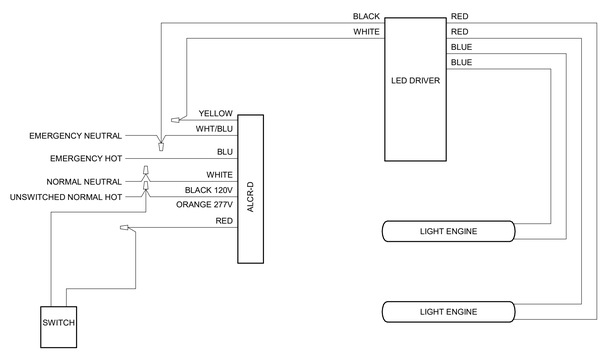
A TYPICAL 0-10V DIMMABLE EMERGENCY LIGHT FIXTURE WIRING

SCALE: NONE



B TYPICAL PHASE-CONTROL-DIMMED EMERGENCY LIGHT FIXTURE WIRING

SCALE: NONE



C TYPICAL NON-DIMMED EMERGENCY LIGHT FIXTURE WIRING

SCALE: NONE

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REVISION SCHEDULE		
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DETAILS - LIGHTING

E4.01

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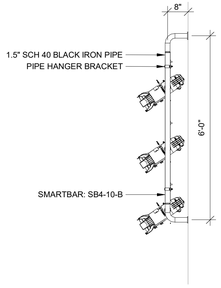
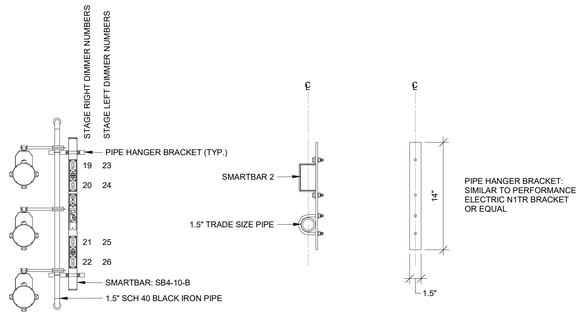


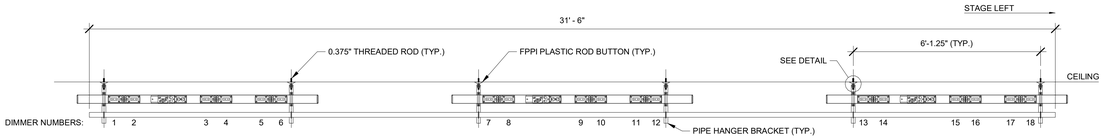


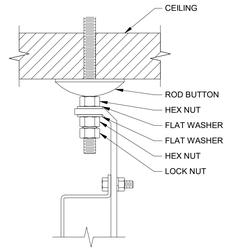
NOTES: (UNLESS SPECIFIED OTHERWISE)

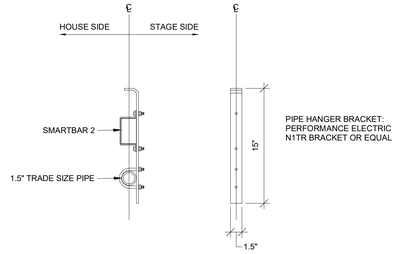
1. FINISH: BLACK
2. MATERIAL: CRS
3. UL LISTED AND LABELED.
4. A LABEL KIT WILL BE SUPPLIED BY MANUFACTURER AND APPLIED IN FIELD BY ELECTRICAL CONTRACTOR.

A THEATRICAL SIDE BOOM

SCALE: NONE





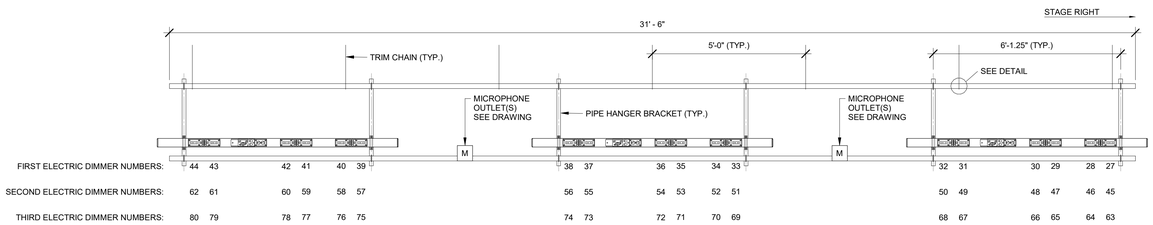


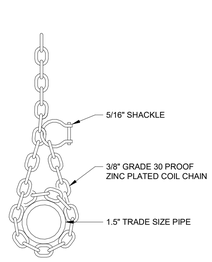
NOTES: (UNLESS SPECIFIED OTHERWISE)

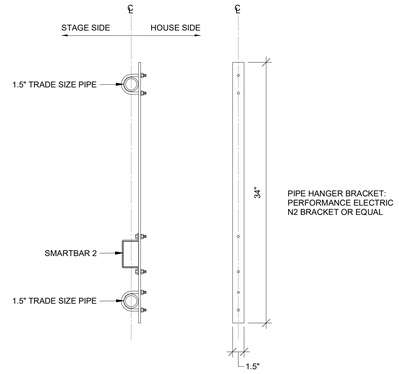
1. 3" CIRCUIT I.D. ON FRONT AND BACK OF SMARTBAR (HIGH DENSITY STRIPS MAY REQUIRE 1" LABELS). A LABEL KIT WILL BE SUPPLIED BY MANUFACTURER AND APPLIED IN FIELD BY ELECTRICAL CONTRACTOR.
2. FINISH: INDUSTRIAL BLACK ENAMEL.
3. PIPE HANGER BRACKET FABRICATED FROM 1.5" x 0.25" STRAP STEEL WITH 1.5" x 0.25" FORMED STEEL HOLD-DOWN BRACKETS FOR THE SMARTBAR.
4. HANGER BRACKET SPACING 6'-0" MAXIMUM ON CENTER FOR SMARTBAR SUPPORT.
5. UL LISTED AND LABELED.
6. PLACE NUMBERING PARALLEL TO FLOOR.
7. THEATRICAL LIGHTING VENDOR SHALL SUBMIT DRAWING OF PROPOSED CONNECTION TO EXISTING STRUCTURE TO ENGINEER FOR REVIEW.

B THEATRICAL BEAM

SCALE: NONE







NOTES: (UNLESS SPECIFIED OTHERWISE)

1. 3" CIRCUIT I.D. ON FRONT AND BACK OF SMARTBAR (HIGH DENSITY STRIPS MAY REQUIRE 1" LABELS). A LABEL KIT WILL BE SUPPLIED BY MANUFACTURER AND APPLIED IN FIELD BY ELECTRICAL CONTRACTOR.
2. FINISH: INDUSTRIAL BLACK ENAMEL.
3. PIPE HANGER BRACKET FABRICATED FROM 1.5" x 0.25" STRAP STEEL WITH 1.5" x 0.25" FORMED STEEL HOLD-DOWN BRACKETS FOR THE SMARTBAR.
4. HANGER BRACKET SPACING 6'-0" MAXIMUM ON CENTER FOR SMARTBAR SUPPORT.
5. SUPPORT CHAIN SPACING 5'-0" MAXIMUM ON CENTER.
6. UL LISTED AND LABELED.
7. PLACE NUMBERING PARALLEL TO FLOOR.
8. THEATRICAL LIGHTING VENDOR SHALL SUBMIT DRAWING OF PROPOSED CONNECTION TO EXISTING STRUCTURE TO ENGINEER FOR REVIEW.

C THEATRICAL ELECTRIC

SCALE: NONE

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DANIEL E. DIMOND REGISTERED No. PE60910351 STATE OF INDIANA PROFESSIONAL ENGINEER

CERTIFICATION 06/05/2020

100% CONSTRUCTION DOCUMENTS

Indiana State University - Dreiser Hall Renovation

221 North 6th Street
Terre Haute, IN 47809

Project No.: 19A052
Drawn By: JPS
Checked By: TEH
Scale: See Drawing
Issue Date: 06/05/2020

REVISION SCHEDULE		
Rev. #	Revision Description	Issue Date

DETAILS - THEATRICAL LIGHTING

E4.02

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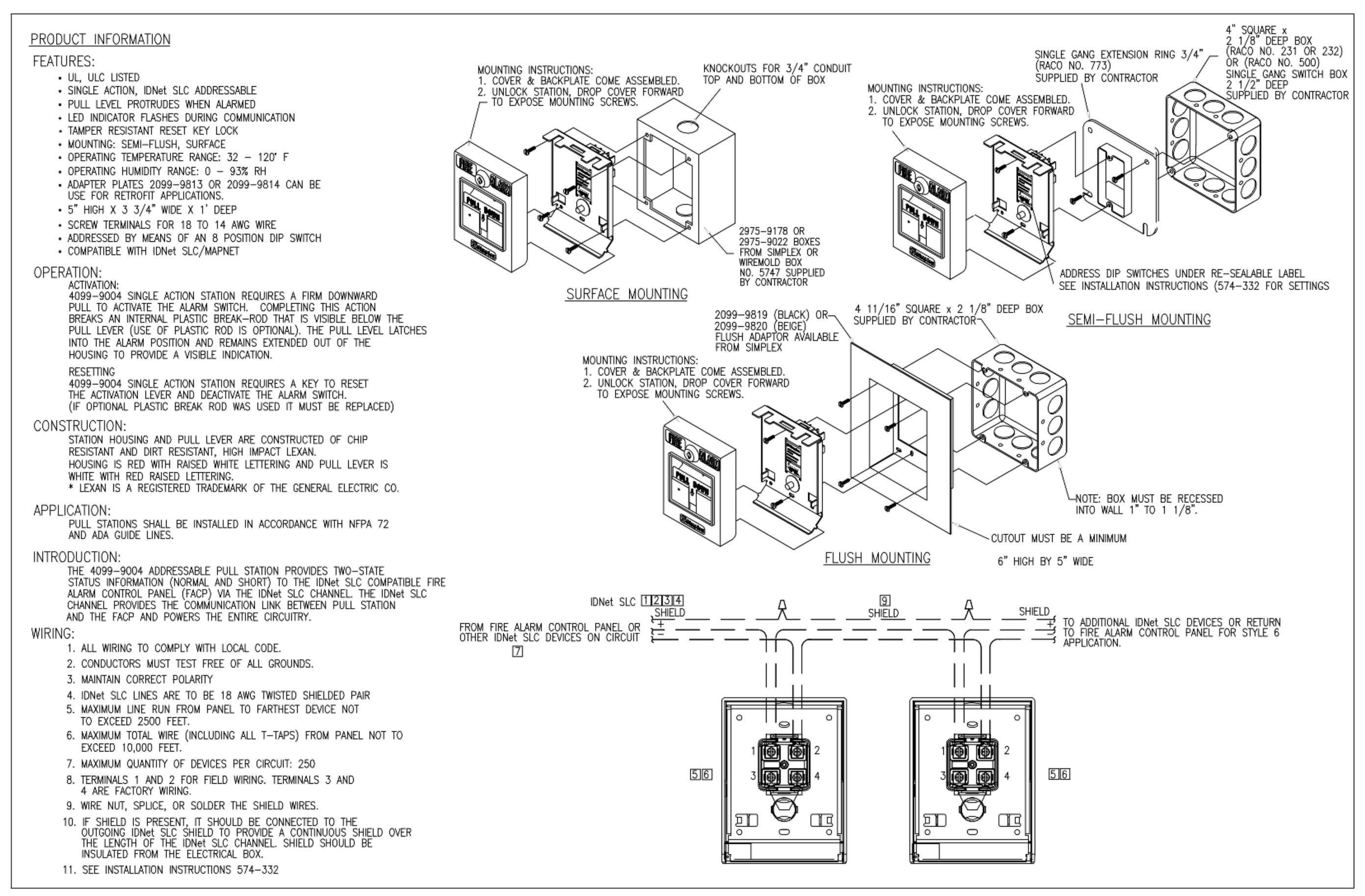
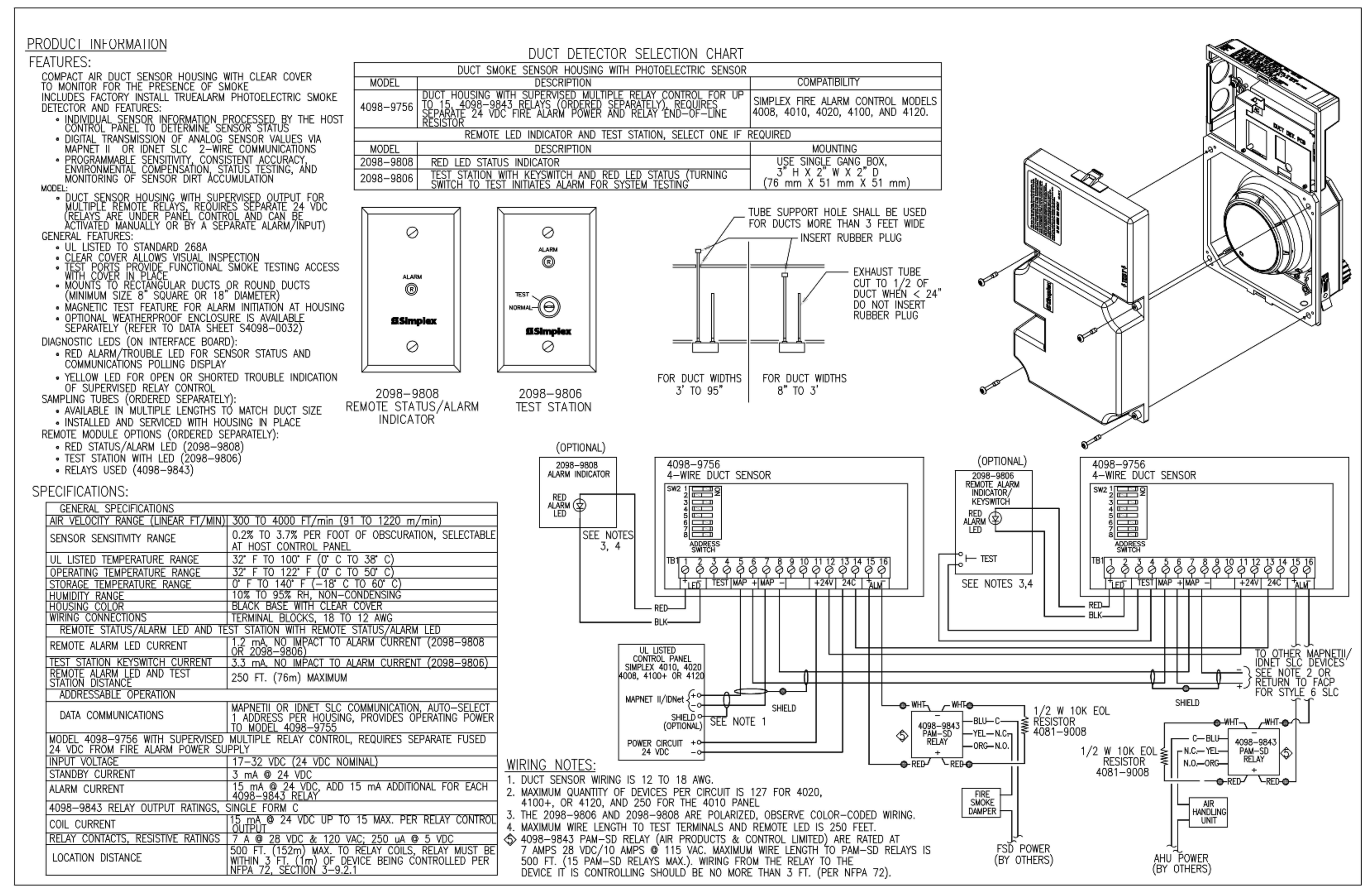


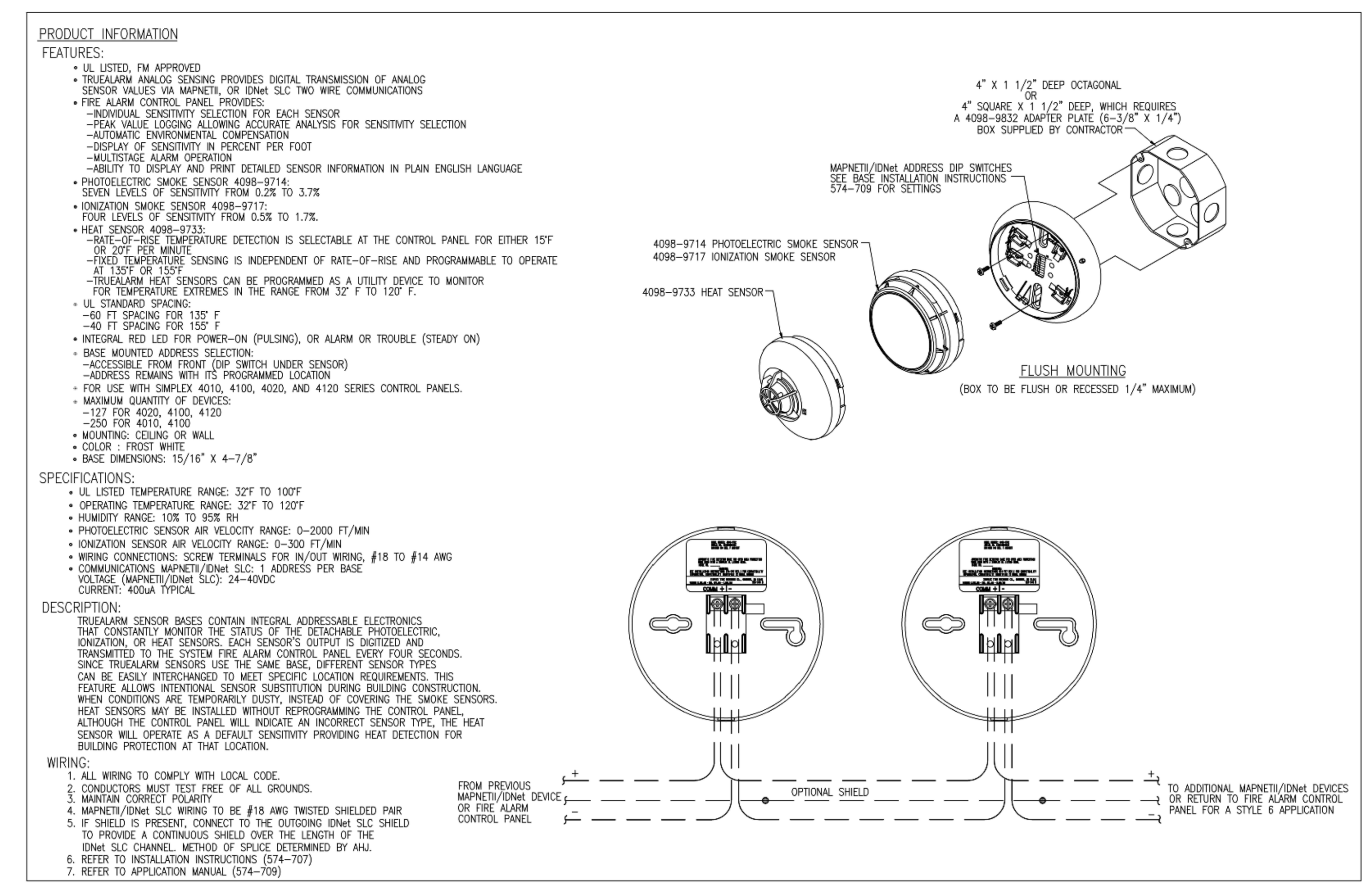
1 4099-9004 SINGLE ACTION IDNET SLC ADDRESSABLE MANUAL STATION

SCALE: NONE



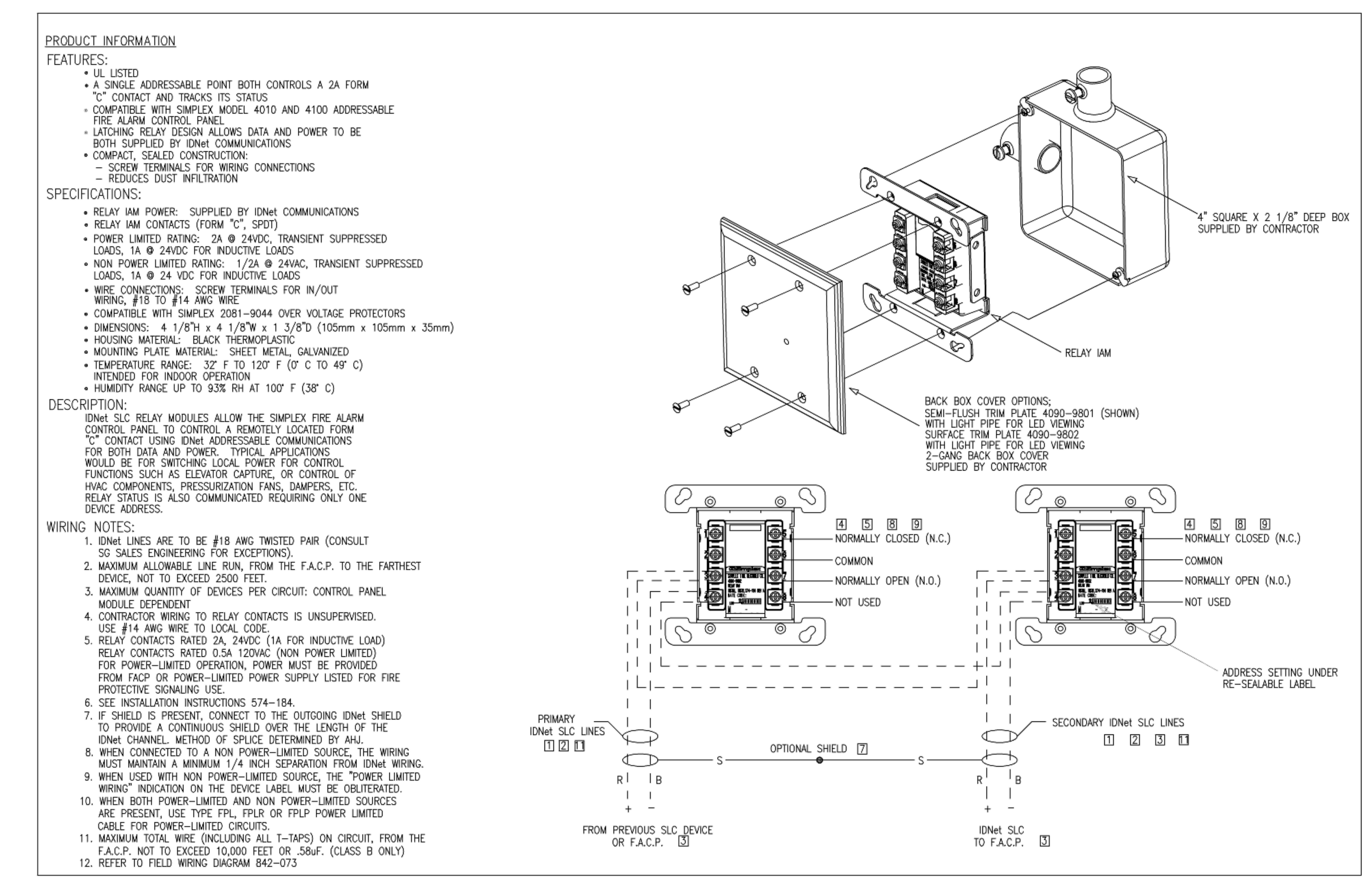
2 4098-9756 ADDRESSABLE ANALOG 4-WIRE DUCT SENSOR MAPNET II / IDNET SLC WITH 24VDC RELAY

SCALE: NONE



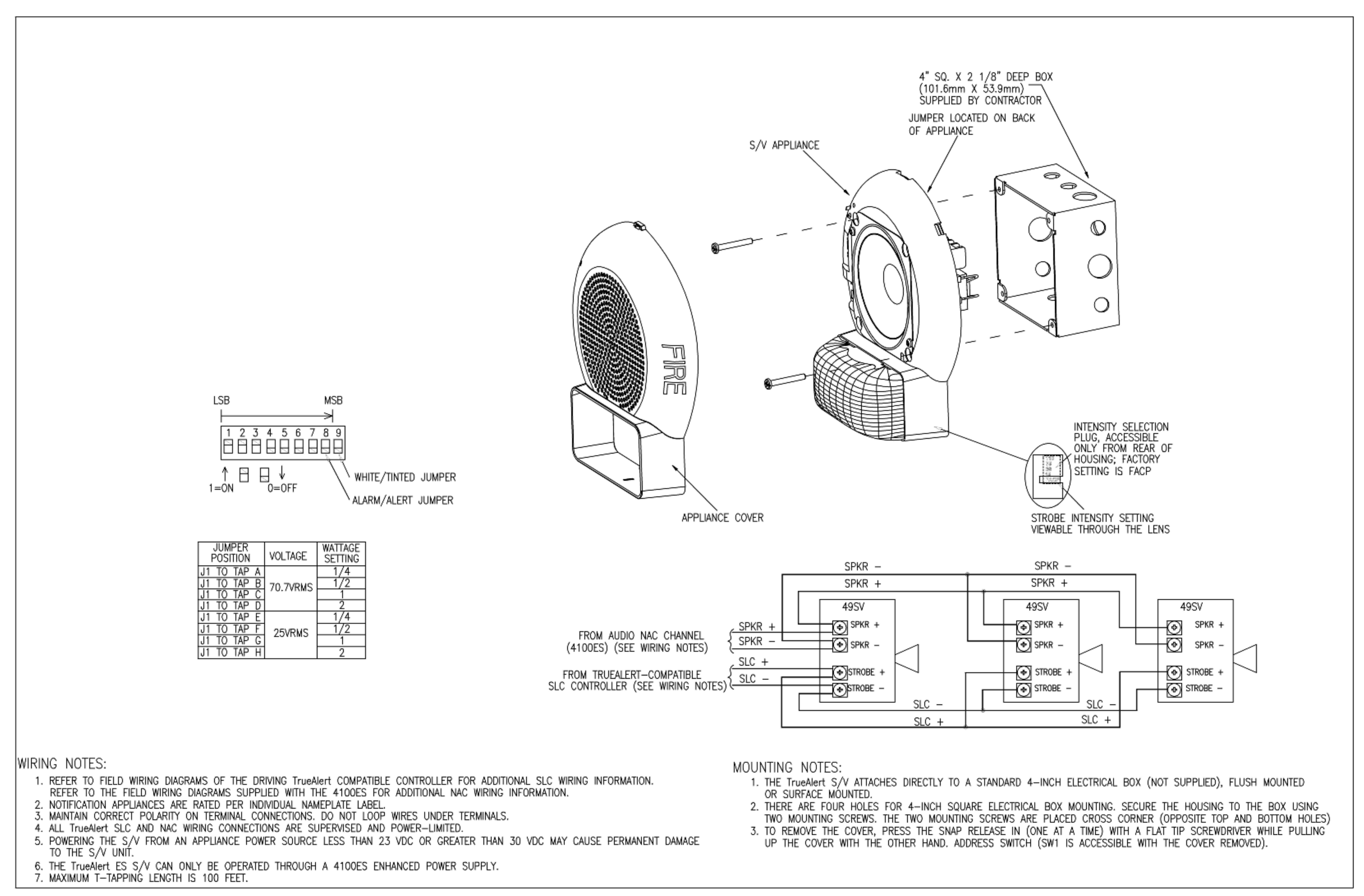
3 4098 - 9792 STANDARD SENSOR BASE

SCALE: NONE



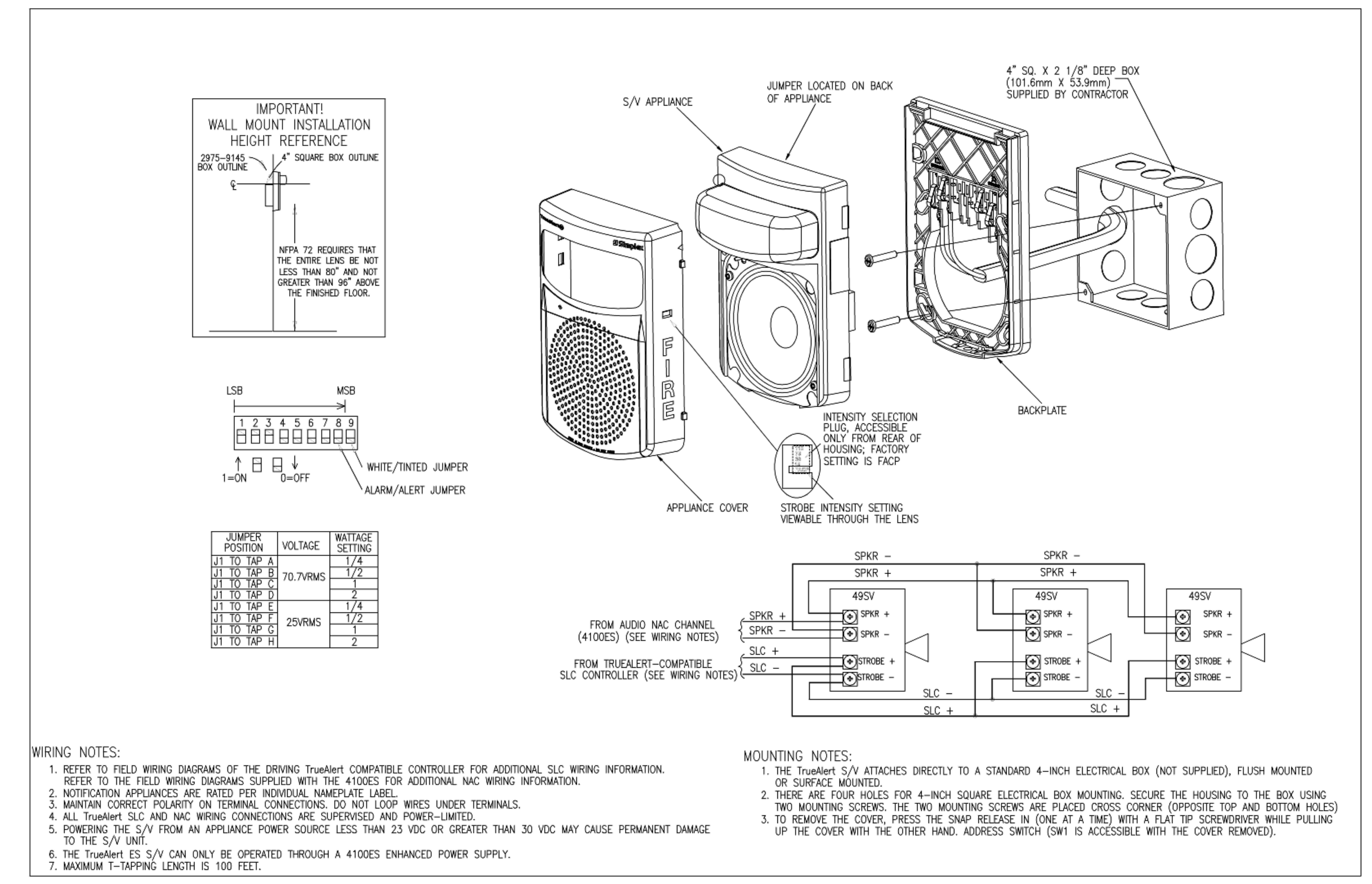
4 4090-9002 IDNeT SLC, INDIVIDUAL ADDRESSABLE OUTPUT MODULE RELAY (AOM)

SCALE: NONE



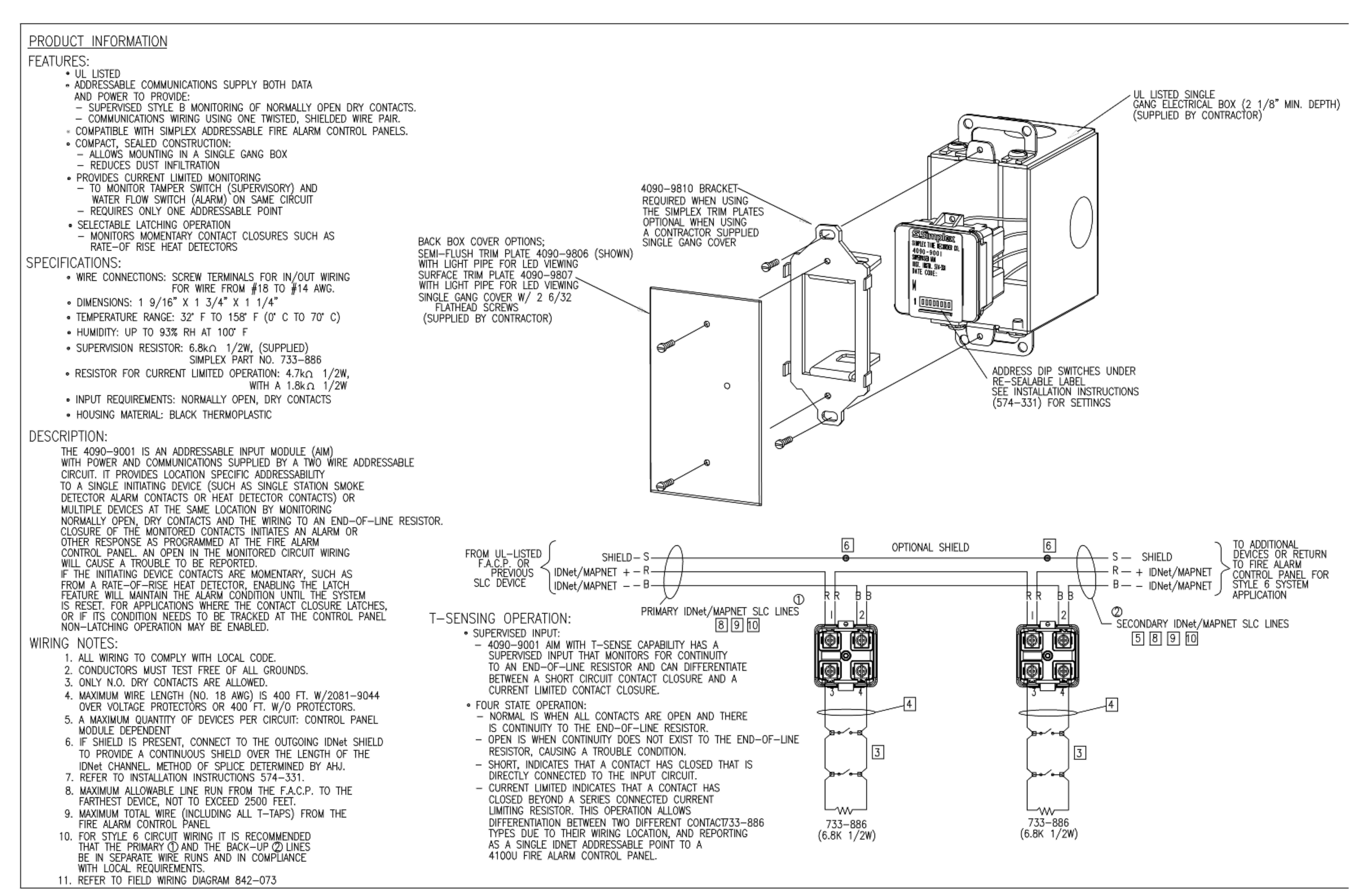
5 TRUEALERT ADDRESSABLE (STYLE 4) SPEAKER / VISIBLE NOTIFICATION APPLIANCES 49SV SERIES (CEILING MOUNT)

SCALE: NONE



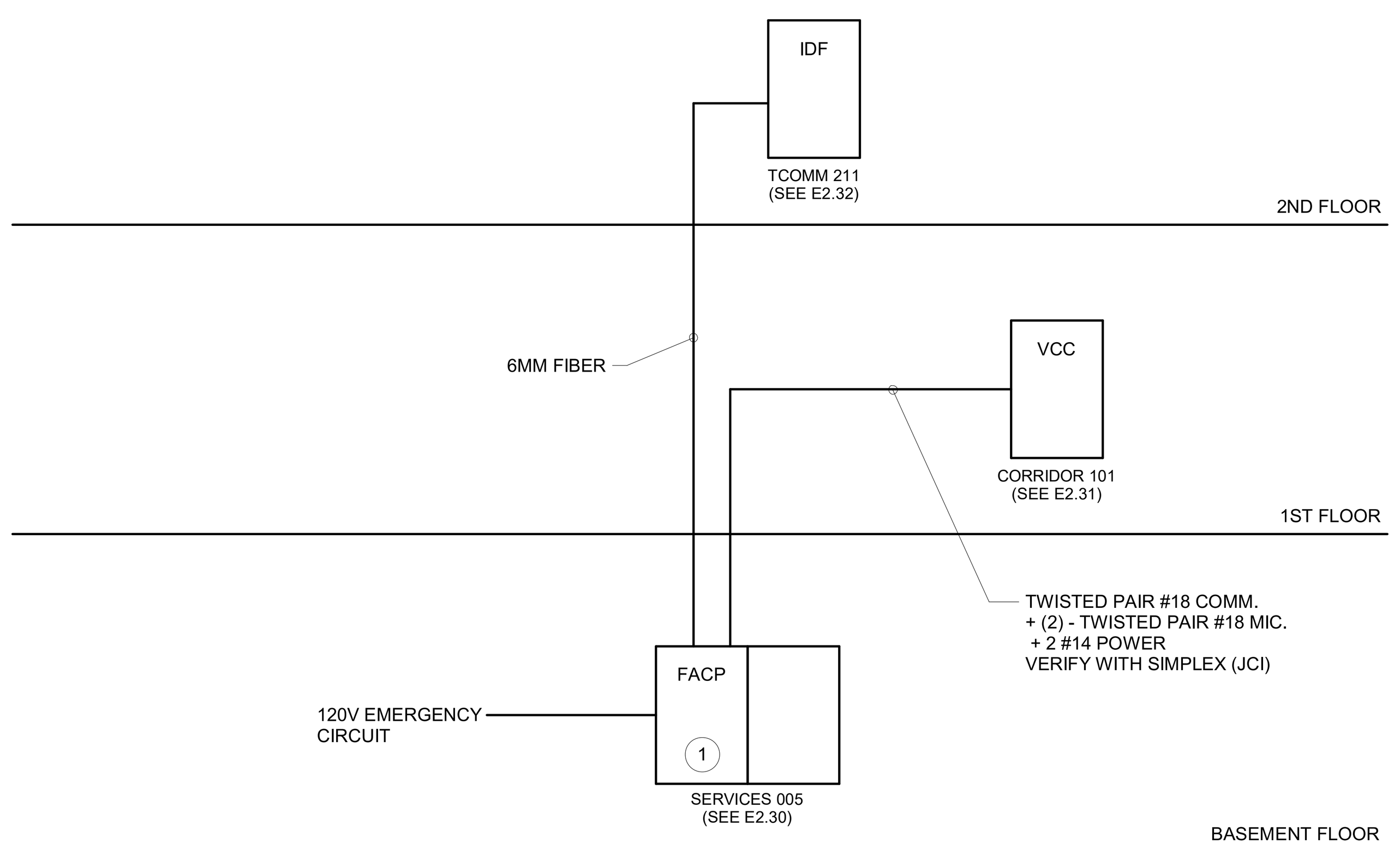
6 TRUEALERT ES ADDRESSABLE (STYLE 4) SPEAKER / VISIBLE NOTIFICATION APPLIANCES 49SV SERIES (WALL MOUNT)

SCALE: NONE



7 4090-9001 IDNET SLC, SUPERVISED ADDRESSABLE INPUT MODULE (AIM)

SCALE: NONE



8 FIRE ALARM SYSTEM RISER SCHEMATIC

SCALE: NONE

NOTES:

(1) PROVIDE (1) VALCOM VE8001AR SIP COMPLIANT NETWORK PAGE ZONE EXTENDER AND (1) VALCOM VMT-2 AUDIO ISOLATION TRANSFORMER IN TCOMM 211. PROVIDE WIRING TO FACP IN SERVICES 005 IN BASEMENT.

GENERAL NOTES:

1. PROVIDE ALL NECESSARY FIRE ALARM DEVICES FOR INTERFACE - SIMPLEX 4100-1240 AUX INPUT MODULE AND 4090-9001 IAM.
2. VERIFY ALL WORK WITH SIMPLEX (JCI), VALCOM, AND OWNER.

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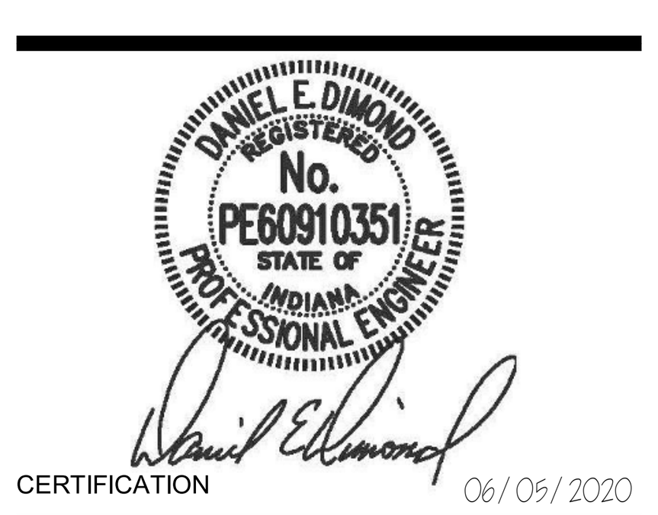

CERTIFICATION 06/05/2020

100% CONSTRUCTION DOCUMENTS

Indiana State University - Dreiser Hall Renovation

221 North 6th Street
Terre Haute, IN 47809

Project No.: 19A052
Drawn By: JPS
Checked By: DEW
Scale: See Drawing
Issue Date: 06/05/2020

REVISION SCHEDULE		
Rev. #	Revision Description	Issue Date

DETAILS - FIRE ALARM

E4.03

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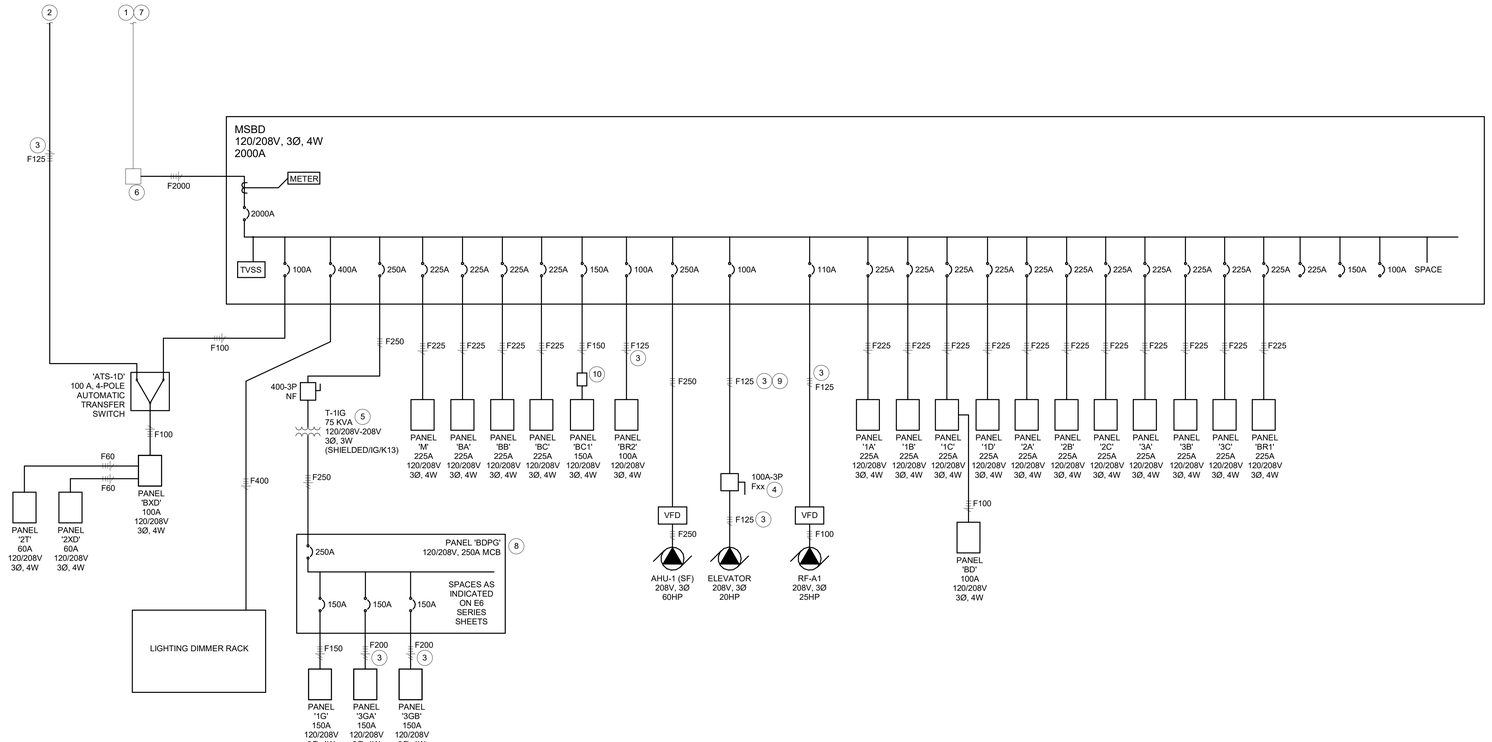

1 NEW ONE-LINE DIAGRAM - ELECTRICAL

SCALE: NONE

GENERAL NOTES:

1. SEE E0.1 FOR GENERAL NOTES.
2. FOR ALL NEW ELECTRICAL TRANSFORMERS, SWITCHBOARDS, DISTRIBUTION PANELS, AND PANELBOARDS, PROVIDE AN ENGRAVED PLATE WITH THE FOLLOWING INFORMATION: EQUIPMENT NAME, VOLTAGE(S), AND FEED ORIGIN PANEL. EMERGENCY AND STANDBY PLATES SHALL BE RED AND WHITE, AND NORMAL POWER PLATES SHALL BE BLACK AND WHITE.
3. CIRCUIT BREAKER POSITIONS SHOWN ON THIS DRAWING ARE FOR REFERENCE ONLY. SEE PANEL SCHEDULES ON E6.1 SERIES DRAWINGS FOR SIZE AND NUMBER OF SPARE CIRCUIT BREAKERS.

(#) PLAN NOTES:

1. EXISTING 2000A, 3-PHASE FEEDER BUS DUCT WITH 4 WIRE + GROUND FROM GILLUM HALL UNIT SUBSTATION TO REMAIN. SEE DRAWING E3.02.
2. PROVIDE 100A FEED TO NEW TRANSFER SWITCH FROM GILLUM HALL EMERGENCY GENERATOR. CONNECT CIRCUIT TO FUSED DISCONNECT INDICATED ON DRAWING E3.02.
3. CONDUCTORS HAVE BEEN UPSIZED TO ACCOUNT FOR VOLTAGE DROP. INCREASE GROUND SIZE TO MATCH PHASE CONDUCTORS.
4. FUSE DISCONNECT PER ELEVATOR MANUFACTURER'S RECOMMENDATIONS.
5. DEDICATED TRANSFORMER. SHIELDED, ISOLATED GROUND.
6. REMOVE EXISTING SIEMENS BUS DUCT CONNECTION TO EXISTING SWITCHBOARD 'MSBD' THATS TO BE REMOVED. SEE ED5.01. PROVIDE A SIEMENS 2000 AMP HORIZONTAL END CABLE TAP BOX AT END OF BUS DUCT AND PROVIDE 2000A CONDUIT AND WIRE CONNECTION TO NEW SWITCHBOARD 'MSBD'.
7. EXISTING BUS DUCT IS FED FROM SIEMENS RL-1600 BREAKER IN GILLUM HALL SUBSTSATION. SEE E3.02.
8. PANEL, FEEDER, AND BRANCH CIRCUITS TO ALL HAVE ISOLATED GROUND AND SAFETY GROUND CONDUCTORS.
9. PROVIDE WIRING INDICATED IN 2" CONDUIT.
10. PROVIDE 150A-3P CONTACTOR FOR EMERGENCY SHUT-OFF. (ASCO #920 OR SIMILAR)

COPPER FEEDER AND BRANCH CIRCUIT SCHEDULE

FEEDER/BRANCH CIRCUIT DESIGNATION	CONDUCTOR SIZE PER CONDUIT		CONDUIT SIZE AND QUANTITY					
	PHASE & NEUTRAL	EQUIPMENT GROUND	1P, 1N, 1G, 2P, 1G	2P, 1N, 1G, 3P, 1G	3P, 1N, 1G	3P, 2N, 1G	3P, 3N, 1G	3P, 1N, 2G
F20	12	12	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
F30	10	10	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
F40-F50	8	10	3/4"	3/4"	3/4"	1"	1"	3/4"
F60	6	10	3/4"	3/4"	1"	1"	1"	1"
F70-F80	4	8	3/4"	1"	1 1/4"	1 1/4"	1 1/4"	1 1/4"
F90-F100	3	8	1"	1"	1 1/4"	1 1/4"	1 1/2"	1 1/2"
F110	2	6	1"	1 1/4"	1 1/4"	1 1/2"	1 1/2"	1 1/2"
F125	1	6	1 1/4"	1 1/4"	1 1/2"	2"	2"	1 1/2"
F150	1/0	6	1 1/4"	1 1/2"	1 1/2"	2"	2"	2"
F175	2/0	6	1 1/4"	1 1/2"	2"	2"	2 1/2"	2"
F200	3/0	6	1 1/2"	2"	2"	2 1/2"	2 1/2"	2"
F225	4/0	4	1 1/2"	2"	2 1/2"	2 1/2"	3"	2 1/2"
F250	250	4	2"	2"	2 1/2"	3"	3"	2 1/2"
F300	350	4	2"	2 1/2"	3"	3"	3 1/2"	3"
F350	500	3	2 1/2"	3"	3 1/2"	3 1/2"	4"	3 1/2"
F400	3/0	3	(2) 1 1/2"	(2) 2"	(2) 2"	(2) 2 1/2"	(2) 2 1/2"	(2) 2"
F450	4/0	2	(2) 1 1/2"	(2) 2"	(2) 2 1/2"	(2) 2 1/2"	(2) 3"	(2) 2 1/2"
F500	250	2	(2) 2"	(2) 2"	(2) 2 1/2"	(2) 3"	(2) 3"	(2) 2 1/2"
F600	350	1	(2) 2"	(2) 2 1/2"	(2) 3"	(2) 3"	(2) 3 1/2"	(2) 3"
F700-800	500	1/0	(2) 2 1/2"	(2) 3"	(2) 3 1/2"	(2) 3 1/2"	(2) 4"	(2) 3 1/2"
F900	350	2/0	(3) 2"	(3) 2 1/2"	(3) 3"	(3) 3"	(3) 3 1/2"	(3) 3"
F1000	500	2/0	(3) 2 1/2"	(3) 3"	(3) 3 1/2"	(3) 3 1/2"	(3) 4"	(3) 3 1/2"
F1200	350	3/0	(4) 2 1/2"	(4) 2 1/2"	(4) 3"	(4) 3"	(4) 3 1/2"	(4) 3"
F1600	500	4/0	(5) 2 1/2"	(5) 3"	(5) 3 1/2"	(5) 3 1/2"	(5) 4"	(5) 3 1/2"
F2000	500	250	(6) 2 1/2"	(6) 3"	(6) 3 1/2"	(6) 4"	(6) 4"	(6) 3 1/2"
F2500	500	350	(7) 3"	(7) 3"	(7) 3 1/2"	(7) 4"	(7) 4"	(7) 3 1/2"
F3000	500	500	(8) 3"	(8) 3"	(8) 3 1/2"	(8) 4"	(8) 4"	(8) 3 1/2"
F4000	500	500	(11) 3"	(11) 3"	(11) 3 1/2"	(11) 4"	(11) 4"	(11) 3 1/2"

NOTES:

1. CONDUCTOR SIZES ARE BASED UPON 75°C AMPACITY. NO DERATING AND NO ADJUSTMENTS FOR VOLTAGE DROP. ADJUST AS REQUIRED BY EACH FIELD CONDITION IN ORDER TO COMPLY WITH UL AND NEC.

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CERTIFICATION 06/05/2020

100% CONSTRUCTION DOCUMENTS

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Project No.: 19A052
Drawn By: JPS
Checked By: DEW
Scale: See Drawing
Issue Date: 06/05/2020

REVISION SCHEDULE		
Rev. #	Revision Description	Issue Date

NEW ONE-LINE DIAGRAM - ELECTRICAL

E5.01

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LIGHT FIXTURE SCHEDULE

MARK	DESCRIPTION	MOUNTING	TOTAL FIXTURE WATTS	CRI	WATTS	COLOR	LUMENS	VOLTS	MANUFACTURER(S)
F01.4	LINEAR 4-INCH WIDE BY LENGTH INDICATED, WHITE DIFFUSER, 0-10V DIMMING TO 10-PERCENT, NON-IC RATED.	RECESSED	28	80	7.1W/FT	3500K	725/FT	120 V	FINELITE HP-4 R SERIES FOCAL POINT FSM4L SERIES PINNACLE E4A SERIES MERCURY MLS4 SERIES
F01.6	LINEAR 4-INCH WIDE BY LENGTH INDICATED, WHITE DIFFUSER, 0-10V DIMMING TO 10-PERCENT, NON-IC RATED.	RECESSED	43	80	7.1W/FT	3500K	725/FT	120 V	FINELITE HP-4 R SERIES FOCAL POINT FSM4L SERIES PINNACLE E4A SERIES MERCURY MLS4 SERIES
F01.14	LINEAR 4-INCH WIDE BY LENGTH INDICATED, WHITE DIFFUSER, 0-10V DIMMING TO 10-PERCENT, NON-IC RATED.	RECESSED	99	80	7.1W/FT	3500K	725/FT	120 V	FINELITE HP-4 R SERIES FOCAL POINT FSM4L SERIES PINNACLE E4A SERIES MERCURY MLS4 SERIES
F01.14E	SAME AS 'F01.14', EXCEPT PROVIDE UL924 AUTOMATIC LOAD CONTROL RELAY (ALCR).	RECESSED	99	80	7.1W/FT	3500K	725/FT	120 V	
F02-x	PERIMETER RECESSED 4-INCH WIDE BY LENGTH INDICATED, FROSTED ACRYLIC LENS, WHITE FINISH, 0-10V DIMMING TO 10-PERCENT, VERIFY LENGTH IN FIELD PRIOR TO ORDERING, NON-IC RATED.	RECESSED	174	80	7.1W/FT	3500K	602.2/FT	120 V	FINELITE HP-WS SERIES NEO-RAY S124 SERIES PINNACLE EVL SERIES MERCURY MLP3 SERIES
F10.4	LINEAR DIRECT 4-INCH WIDE BY LENGTH INDICATED, AIRCRAFT CABLE, WHITE DIFFUSER, 0-10V DIMMING TO 10-PERCENT.	SUSPENDED	28	80	7.1W/FT	3500K	720/FT	120 V	FINELITE HP-4 D SERIES FOCAL POINT FSM4LS SERIES PINNACLE EX4 SERIES MERCURY MLS3-M SERIES
F10.4B	LINEAR DIRECT 4-INCH WIDE BY LENGTH INDICATED, AIRCRAFT CABLE, WHITE DIFFUSER, 0-10V DIMMING TO 10-PERCENT.	SUSPENDED	37	80	9.2W/FT	3000K	920/FT	120 V	FINELITE HP-4 D SERIES FOCAL POINT FSM4LS SERIES PINNACLE EX4 SERIES MERCURY MLS3-M SERIES
F10.4BE	SAME AS 'F01.4B', EXCEPT PROVIDE UL924 AUTOMATIC LOAD CONTROL RELAY (ALCR).	SUSPENDED	28	80	7.1W/FT	3500K	720/FT	120 V	
F10.4E	SAME AS 'F01.4', EXCEPT PROVIDE UL924 AUTOMATIC LOAD CONTROL RELAY (ALCR).	SUSPENDED	28	80	7.1W/FT	3500K	720/FT	120 V	
F10.4X	LINEAR DIRECT 4-INCH WIDE BY LENGTH INDICATED, X-SHAPED AS INDICATED, AIRCRAFT CABLE, WHITE DIFFUSER, 0-10V DIMMING TO 10-PERCENT.	SUSPENDED	28	80	7.1W/FT	3500K	720/FT	120 V	FINELITE HP-4 D SERIES FOCAL POINT FSM4LS SERIES PINNACLE EX4 SERIES MERCURY MLS3-M SERIES
F10.6	LINEAR DIRECT 4-INCH WIDE BY LENGTH INDICATED, AIRCRAFT CABLE, WHITE DIFFUSER, 0-10V DIMMING TO 10-PERCENT.	SUSPENDED	43	80	7.1W/FT	3500K	720/FT	120 V	FINELITE HP-4 D SERIES FOCAL POINT FSM4LS SERIES PINNACLE EX4 SERIES MERCURY MLS3-M SERIES
F10.8	LINEAR DIRECT 4-INCH WIDE BY LENGTH INDICATED, AIRCRAFT CABLE, WHITE DIFFUSER, 0-10V DIMMING TO 10-PERCENT.	SUSPENDED	57	80	7.1W/FT	3500K	720/FT	120 V	FINELITE HP-4 D SERIES FOCAL POINT FSM4LS SERIES PINNACLE EX4 SERIES MERCURY MLS3-M SERIES
F10.8E	SAME AS 'F10.8', EXCEPT PROVIDE UL924 AUTOMATIC LOAD CONTROL RELAY (ALCR).	SUSPENDED	57	80	7.1W/FT	3500K	720/FT	120 V	
F10.10	LINEAR DIRECT 4-INCH WIDE BY LENGTH INDICATED, AIRCRAFT CABLE, WHITE DIFFUSER, 0-10V DIMMING TO 10-PERCENT.	SUSPENDED	71	80	7.1W/FT	3500K	720/FT	120 V	FINELITE HP-4 D SERIES FOCAL POINT FSM4LS SERIES PINNACLE EX4 SERIES MERCURY MLS3-M SERIES
F10.10E	SAME AS 'F10.10', EXCEPT PROVIDE UL924 AUTOMATIC LOAD CONTROL RELAY (ALCR).	SUSPENDED	71	80	7.1W/FT	3500K	720/FT	120 V	
F10.12	LINEAR DIRECT 4-INCH WIDE BY LENGTH INDICATED, AIRCRAFT CABLE, WHITE DIFFUSER, 0-10V DIMMING TO 10-PERCENT.	SUSPENDED	85	80	7.1W/FT	3500K	720/FT	120 V	FINELITE HP-4 D SERIES FOCAL POINT FSM4LS SERIES PINNACLE EX4 SERIES MERCURY MLS3-M SERIES
F10.12E	SAME AS 'F10.12', EXCEPT PROVIDE UL924 AUTOMATIC LOAD CONTROL RELAY (ALCR).	SUSPENDED	85	80	7.1W/FT	3500K	720/FT	120 V	
F11.4	LINEAR DIRECT/INDIRECT 4-INCH WIDE BY LENGTH INDICATED, AIRCRAFT CABLE, WHITE RAISED TOP DIFFUSER, WHITE BOTTOM DIFFUSER, 0-10V DIMMING TO 10-PERCENT.	SUSPENDED	57	80	14.2W/FT	3500K	1533/FT	120 V	FINELITE HP-4 ID SERIES FOCAL POINT FSM4BS SERIES PINNACLE EX4B SERIES MERCURY MLS3-DI
F11.4X	LINEAR DIRECT/INDIRECT 4-INCH WIDE BY LENGTH INDICATED, X-SHAPED AS INDICATED, AIRCRAFT CABLE, WHITE DIFFUSER, 0-10V DIMMING TO 10-PERCENT.	SUSPENDED	57	80	14.2W/FT	3500K	1533/FT	120 V	FINELITE HP-4 ID SERIES FOCAL POINT FSM4BS SERIES PINNACLE EX4B SERIES MERCURY MLS3-DI
F11.8	LINEAR DIRECT/INDIRECT 4-INCH WIDE BY LENGTH INDICATED, AIRCRAFT CABLE, WHITE RAISED TOP DIFFUSER, WHITE BOTTOM DIFFUSER, 0-10V DIMMING TO 10-PERCENT.	SUSPENDED	114	80	14.2W/FT	3500K	1533/FT	120 V	FINELITE HP-4 ID SERIES FOCAL POINT FSM4BS SERIES PINNACLE EX4B SERIES MERCURY MLS3-DI
F24	2 BY 2-FOOT ARCHITECTURAL TROFFER, ANGLED DOOR, DIFFUSE CENTER OPTIC, 0-10V DIMMING TO 10-PERCENT, NON-IC RATED.	RECESSED	37	80	37.1W	3500K	4367	120 V	FINELITE HPR-LED SERIES MARK WHSPR SERIES METALUX RLN SERIES
F24B	2 BY 2-FOOT ARCHITECTURAL TROFFER, ANGLED DOOR, DIFFUSE CENTER OPTIC, 0-10V DIMMING TO 10-PERCENT, NON-IC RATED.	RECESSED	37	80	37.1W	3000K	4367	120 V	FINELITE HPR-LED SERIES MARK WHSPR SERIES METALUX RLN SERIES
F24E	SAME AS 'F24', EXCEPT PROVIDE UL924 AUTOMATIC LOAD CONTROL RELAY (ALCR).	RECESSED	37	80	37.1W	3500K	4367	120 V	
F30	9-INCH DIAMETER PENDENT, SPUN ALUMINUM SHADE, BLACK FINISH, WHITE DIFFUSER, LARGE DIFFUSION DOME, SINGLE STEM, 0-10V DIMMING TO 10-PERCENT.	PENDENT	51	80	51W	3500K	4100	120 V	EUREKA 4272-9 SERIES
F30E	SAME AS 'F30', EXCEPT PROVIDE AUTOMATIC LOAD CONTROL RELAY (ALCR).	PENDENT	51	80	51W	3500K	4100	120 V	
F31	15-INCH DIAMETER SHADE, 7-INCH LUMINOUS GLOBE, SPUN ALUMINUM SHADE, DIE-CAST ALUMINUM HEATSINK, BLACK EXTERNAL FINISH, WHITE INTERNAL FINISH, 0-10V DIMMING TO 10-PERCENT.	CEILING SURFACE	22	80	22W	3500K	1406	120 V	EUREKA 1209-15 SERIES
F32	58-INCH DIAMETER PENDANT, MATTE WHITE FINISH REFLECTOR, BLACK EXTERIOR FINISH, STAINLESS STEEL AIRCRAFT CABLE, 0-10V DIMMING TO 10-PERCENT.	PENDENT	212	80	212W	3500K	22529	120 V	LOUIS POULSEN LP GRAND 1480 SERIES
F33	34-INCH DIAMETER PENDANT, MATTE WHITE FINISH REFLECTOR, BLACK EXTERIOR FINISH, STAINLESS STEEL AIRCRAFT CABLE, 0-10V DIMMING TO 10-PERCENT.	PENDENT	113	80	113W	3500K	11573	120 V	LOUIS POULSEN LP GRAND 880 SERIES
F34	23-INCH DIAMETER PENDANT, MATTE WHITE FINISH REFLECTOR, BLACK EXTERIOR FINISH, STAINLESS STEEL AIRCRAFT CABLE, 0-10V DIMMING TO 10-PERCENT.	PENDENT	59	80	59W	3500K	5659	120 V	LOUIS POULSEN LP GRAND 580 SERIES
F35	OPEN DOWNLIGHT, 4-INCH BY 4-INCH SQUARE APERTURE, CLEAR SEMI-SPECULAR REFLECTOR, SELF FLANGED, 0-10V DIMMING TO 10-PERCENT, NON-IC RATED.	RECESSED	27	80	27W	3500K	2500	120 V	GOTHAM ICO SQ SERIES PORTFOLIO LDSQ4B SERIES PRESCOLITE LTR4SQD SERIES VANTAGE V4 CRS SERIES
F35E	SAME AS 'F35', EXCEPT PROVIDE UL924 AUTOMATIC LOAD CONTROL RELAY (ALCR).	RECESSED	27	80	27W	3500K	2500	120 V	
F35W	OPEN DOWNLIGHT, 4-INCH BY 4-INCH SQUARE APERTURE, CLEAR SEMI-SPECULAR REFLECTOR, SELF FLANGED, 0-10V DIMMING TO 10-PERCENT, WET-LOCATION LISTED, NON-IC RATED.	RECESSED	27	80	27W	3500K	2500	120 V	GOTHAM ICO SQ SERIES PORTFOLIO LDSQ4B SERIES PRESCOLITE LTR4SQD SERIES VANTAGE V4 CRS SERIES
F37	23-INCH DIAMETER PENDANT, DIE-FORMED SPUN ALUMINUM SHADE WITH POWERCOAT FINISH, STAINLESS STEEL AIRCRAFT CABLE SUSPENSION, BLACK FINISH, 0-10V DIMMING.	PENDENT	13	80	14W	3500K	971	120 V	EUREKA OLLO SERIES

LIGHT FIXTURE SCHEDULE

MARK	DESCRIPTION	MOUNTING	TOTAL FIXTURE WATTS	CRI	WATTS	COLOR	LUMENS	VOLTS	MANUFACTURER(S)
F41	WALL BRACKET 4-INCH WIDE LENGTH INDICATED, WHITE DIFFUSER, 0-10V DIMMING TO 10-PERCENT.	SURFACE WALL	28	80	7.1W/FT	3500K	720/FT	120 V	ALW LP3.5WD SERIES FINELITE HP-4 WM-D SERIES FOCAL POINT FSM4LW SERIES PINNACLE EX4 SERIES
F41.6	WALL BRACKET 6-INCH WIDE LENGTH INDICATED, WHITE DIFFUSER, 0-10V DIMMING TO 10-PERCENT.	SURFACE WALL	43	80	7.1W/FT	3500K	720/FT	120 V	ALW LP3.5WD SERIES FINELITE HP-4 WM-D SERIES FOCAL POINT FSM4LW SERIES PINNACLE EX4 SERIES
F42	OPEN DOWNLIGHT, 6-INCH DIAMETER APERTURE, CLEAR SEMI-SPECULAR REFLECTOR, SELF FLANGED, 0-10V DIMMING TO 10-PERCENT, NON-IC RATED.	RECESSED	15	80	14.5W	3500K	1100	120 V	GOTHAM EVO SERIES PORTFOLIO LD6B SERIES PRESCOLITE LTR6RD SERIES VANTAGE V6COR SERIES
F50	8-INCH CYLINDER PENDANT, ALUMINUM HOUSING, BLACK FINISH, SELF FLANGED, 0.062" ALUMINUM REFLECTOR, 80+ CRI, 5-YEAR WARRANTY, DMX DIMMING 1-100%	SUSPENDED	23	80	45W	3000K	4000	120 V	PORTFOLIO LSR8A-ER8-8L SERIES
F51	OPEN DOWNLIGHT, 6-INCH BY 6-INCH SQUARE APERTURE, CLEAR SEMI-SPECULAR REFLECTOR, SELF FLANGED, DMX DIMMING 1-100%, NON-IC RATED.	RECESSED	42	80	42W	3500K	3500	120 V	GOTHAM ICO SQ SERIES PORTFOLIO LDSQ6B SERIES PRESCOLITE LTR6SQD SERIES
F52	4-INCH DIAMETER PENDENT, 0-10V DIMMING TO 10-PERCENT, MEDIUM BEAM SPREAD, FINISH TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S CATALOG OF STANDARD FINISHES..	SURFACE/PENDANT	27	80	27W	3500K	2500	120 V	GOTHAM EVO CYLINDER SERIES PORTFOLIO LSR4B SERIES PRESCOLITE LTC-4RDW SERIES
F52E	SAME AS 'F52', EXCEPT PROVIDE UL924 AUTOMATIC LOAD CONTROL RELAY (ALCR).	SURFACE/PENDANT	27	80	27W	3500K	2500	120 V	
F60	4-FOOT LENSED INDUSTRIAL, FORMED STEEL HOUSING, WHITE FINISH, ACRYLIC DIFFUSER.	SURFACE/ CHAIN HUNG	48	80	48W	3500K	5000	120 V	COLUMBIA MPS SERIES METALUX SNLED SERIES LITHONIA ZL1D SERIES CREE LS4 SERIES
F60E	SAME AS 'F60', EXCEPT PROVIDE UL924 AUTOMATIC LOAD CONTROL RELAY (ALCR).	SURFACE/ CHAIN HUNG	48	80	48W	3500K	5000	120 V	
F61	2-FOOT LENSED INDUSTRIAL, FORMED STEEL HOUSING, WHITE FINISH, ACRYLIC DIFFUSER.	SURFACE/ CHAIN HUNG	32	80	32W	3500K	3265	120 V	COLUMBIA MPS SERIES METALUX SNLED SERIES LITHONIA ZL1D SERIES CREE LS4 SERIES
F62	8-FOOT LENSED INDUSTRIAL, FORMED STEEL HOUSING, WHITE FINISH, ACRYLIC DIFFUSER.	SURFACE/ CHAIN HUNG	48	80	48W	3500K	5000	120 V	COLUMBIA MPS SERIES METALUX SNLED SERIES LITHONIA ZL1D SERIES CREE LS4 SERIES
F62E	SAME AS 'F62', EXCEPT PROVIDE UL924 AUTOMATIC LOAD CONTROL RELAY (ALCR).	SURFACE/ CHAIN HUNG	48	80	48W	3500K	5000	120 V	
F63	9-INCH TALL ENCLOSED GASKETED INDUSTRIAL "JELLY JAR", WET LOCATION LISTED, WIREGUARD.	SURFACE/ SURFACE WALL	12	80	12W	3500K	800	120 V	HUBBELL VBGL SERIES LUMALINE LVB956 SERIES LITHONIA OLVT SERIES DIMMABLE ASC L60 B1 A22, INC
F70	2-FOOT NOMINAL UNDERCOUNTER LIGHT, WHITE DIFFUSER, WITH INTEGRAL CONTROLS, DIMMING TO 10-PERCENT.	SURFACE	18	80	18.3W	3500K	958	120 V	LITHONIA RAZ SERIES AIREY-THOMPSON 13L SERIES EATON UCL SERIES MULE LEDUC-E SERIES
F77.A	LINEAR DIRECT/INDIRECT 4-INCH WIDE BY LENGTH INDICATED RECTANGULAR SHAPED, AIRCRAFT CABLE, WHITE RAISED TOP DIFFUSER, WHITE BOTTOM DIFFUSER, 0-10V DIMMING TO 10-PERCENT.	SUSPENDED	454	80	14.2W/FT	3500K	1533/FT	120 V	FINELITE HP-4 ID SERIES FOCAL POINT FSM4L SERIES PINNACLE E4A SERIES MERCURY MLS3-DI SERIES
F78.A	LINEAR DIRECT 4-INCH WIDE BY LENGTH INDICATED RECTANGULAR SHAPED, AIRCRAFT CABLE, WHITE RAISED TOP DIFFUSER, WHITE BOTTOM DIFFUSER, 0-10V DIMMING TO 10-PERCENT.	SUSPENDED	284	80	7.1W/FT	3500K	720/FT	120 V	FINELITE HP-4 D SERIES FOCAL POINT FSM4L SERIES PINNACLE E4A SERIES MERCURY MLS3-D SERIES
F79	MIRROR LIGHT, MED LAMP SOCKETS 6-INCHES ON CENTER, ROUND WIRE LAMP GUARDS, MITERED CORNERS, EXTRUDED ALUMINUM CHANNEL, METALIC FINISH SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD CATALOG OF AVAILABLE FINISHES. COORDINATE LAMP WITH OWNER - LED 'A' LAMP, 3000K, 60W EQUIVALENT AS DIRECTED BY OWNER.	SURFACE WALL SEE DETAIL	180	LED	60W/FT	2700K	800/FT	120 V	COLE VS-WG SERIES
F80	7-INCH APERATURE SQUARE DOWNLIGHT, 80CRI, WET LOCATION LISTED, 0-10V DIMMING TO 10-PERCENT, FINISH TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S CATALOG OF STANDARD FINISHES.	SURFACE	13	80	13W	3500K	1000	120 V	JUNO JSFSQ 7-IN SERIES
F80E	SAME AS 'F80', EXCEPT PROVIDE UL924 AUTOMATIC LOAD CONTROL RELAY (ALCR)	SURFACE	13	80	13W	3500K	1000	120 V	
F81	6-INCH APERATURE DOWNLIGHT, 80CRI, WET LOCATION LISTED, 0-10V DIMMING TO 10-PERCENT, FINISH TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S CATALOG OF STANDARD FINISHES.	SURFACE	16	80	16.4W	3000K	1032	120 V	PRESCOLITE LBSLEDA10L SERIES HALO SLD612 SERIES JUNO 6RLS SERIES ELITE RL678 SERIES
F82	4-FOOT INDUSTRIAL, WET-LOCATION LISTED, GASKETED, NON-METALLIC HOUSING, RIBBED FROSTED ACRYLIC SHIELDING, STAINLESS STEEL LATCHES.	SURFACE/ SURFACE WALL	47	80	47W	3500K	4850	120 V	COLUMBIA LXEM SERIES METALUX 4VT2 SERIES LITHONIA VAP SERIES MERCURY L501 SERIES
F92	16-INCH DIAMETER SCOOP LIGHT, SPUN STEEL HOUSING, ETCHED ALUMINUM REFLECTOR, BLACK ENAMEL FINISH, TUNGSTEN HALOGEN LAMP.	PENDENT	500	80	500W	3000K	12800	120 V	ALTMAN SCOOP 161 SERIES
X1C	CAST ALUMINUM EXIT SIGN, BRUSHED FACE, BLACK HOUSING, SELF POWERED, SELF DIAGNOSTIC.	SURFACE CEILING	5	80	5W	GREEN	N/A	120 V	DUAL-LITE SE SERIES SURE-LITES CX SERIES LITHONIA LE SERIES MULE MD SERIES
X1E	CAST ALUMINUM EXIT SIGN, BRUSHED FACE, BLACK HOUSING, SELF POWERED, SELF DIAGNOSTIC.	SURFACE WALL END MOUNTED	5	80	5W	GREEN	N/A	120 V	DUAL-LITE SE SERIES SURE-LITES CX SERIES LITHONIA LE SERIES MULE MD SERIES
X1W	CAST ALUMINUM EXIT SIGN, BRUSHED FACE, BLACK HOUSING, SELF POWERED, SELF DIAGNOSTIC.	SURFACE WALL	5	80	5W	GREEN	N/A	120 V	DUAL-LITE SE SERIES SURE-LITES CX SERIES LITHONIA LE SERIES MULE MD SERIES

NOTES:
1. VERIFY FINISH COLORS WITH ARCHITECT.
2. TRIMS FOR RECESSED FIXTURES IN WOOD CEILINGS SHALL BE BLACK. ALL OTHERS SHALL BE WHITE. COORDINATE WITH ARCHITECT.

FLOOR BOX SCHEDULE

MARK (TAG)	CAPACITY	APPLICATION	COVER/FINISH	POWER DEVICES	IT DEVICES	AV DEVICES	CONDUITS	MANUFACTURER MODEL NUMBER
A1	5-GANG	POKE-THROUGH	HUBBELL ROUND FINISH SELECTED BY ARCHITECT	(2) DUPLEX RECEPTACLES	SEE TELECOM DRAWINGS	SEE TELECOM DRAWINGS	(1) 3/4" POWER (1) 1-1/4" IT (1) 1" AV	HUBBELL # S1R8PTFITCHI
A2	3-GANG	POKE-THROUGH	HUBBELL ROUND FINISH SELECTED BY ARCHITECT	(2) DUPLEX RECEPTACLES	SEE TELECOM DRAWINGS	-	(1) 3/4" POWER (1) 2" IT	HUBBELL # S1R6PTFITCHI
A3	2-GANG	POKE-THROUGH	HUBBELL ROUND FINISH SELECTED BY ARCHITECT	(1) DUPLEX RECEPTACLE	-	-	(1) 3/4" POWER (2) 1/2" SPARE	HUBBELL # S1R4PTFITCHI
B1	4-GANG	ON-GRADE	HUBBELL ROUND FINISH SELECTED BY ARCHITECT	(2) DUPLEX RECEPTACLE	SEE TELECOM DRAWINGS	SEE TELECOM DRAWINGS	(1) 3/4" POWER (1) 1-1/4" IT (1) 1-1/4" AV	HUBBELL #CFB4G30RCR

NOTES:

1. NO CONDUIT LARGER THAN 1" SHALL BE INSTALLED IN FLOOR SLAB. ALL CONDUITS LARGER THAN 1" SHALL BE ROUTED BELOW THE FLOOR SLAB.
2. COORDINATE INSTALLATION OF FLOOR BOXES WITH GENERAL TRADES AND FLOOR CONSTRUCTION. IN SOME CASES, THE BOX IS DEEPER THAN THE CONCRETE SLAB.
3. CUT AND PATCH EXISTING FLOOR SLABS AS REQUIRED TO INSTALL BOX AND CONDUITS.
4. BOXES SHALL INCLUDE A FUSION-BONDED EPOXY PAINT FINISH TO PROTECT AGAINST CORROSION AND SHALL BE RATED FOR ON-GRADE USE.
5. COVER FINISH SHALL BE VERIFIED WITH ARCHITECT.
6. FLOOR BOXES SHALL BE UL 514A AND SCRUB WATER COMPLIANT.
7. COVERS SHALL ALLOW 180 DEGREE OPENING WITH TWO LARGE CABLE EGRESS DOORS.
8. PROVIDE NECESSARY DEVICE PLATES INSIDE BOX.
9. FLOOR BOXES SHALL BE HUBBELL "SYSTEM ONE FOR CONCRETE FLOORS" OR EQUAL BY WIREMOLD.
10. VERIFY EXACT LOCATION OF FLOOR BOXES WITH ARCHITECT AND STRUCTURE PRIOR TO ROUGH-IN.
11. VERIFY COVER STYLE - SURFACE OR FLUSH WITH FLOOR FINISH AND ARCHITECT.

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CERTIFICATION 06/06/2020

100% CONSTRUCTION DOCUMENTS

Indiana State University - Dreiser Hall Renovation

221 North 6th Street
Terre Haute, IN 47809

Project No.: 19A052
Drawn By: JPS
Checked By: TEH
Scale: See Drawing
Issue Date: 06/05/2020

REVISION SCHEDULE

Rev. #	Revision Description	Issue Date

SCHEDULES - ELECTRICAL

E6.01

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MSBD — SWITCHBOARD SCHEDULE

AMPS:	2000 A	**LOCATION:**	MACHINE ROOM 010
CONFIGURATION:	120/208 Wye	**ENCLOSURE:**	
MAIN:	2000 A	**TRIM:**	
SCCR (AMPS RMS SYMM.):	65,000 KAIC	**MODIFICATIONS:**	

NO.	LOAD NAME	RATING	POLES	NOTES	PHASE A	PHASE B	PHASE C
1	ATS-1D - PANELBOARD 'BXD'	100 A	3		85 A	94 A	76 A
2	LIGHTING DIMMER RACK	400 A	3		--	--	--
3	TRANSFORMER 'T-IG' - PANEL 'BDPG'	250 A	3		113 A	113 A	77 A
4	PANELBOARD 'M'	225 A	3		142 A	148 A	145 A
5	PANELBOARD 'BA'	225 A	3		49 A	45 A	31 A
6	PANELBOARD 'BB'	225 A	3		47 A	48 A	47 A
7	PANELBOARD 'BC'	225 A	3		93 A	117 A	112 A
8	PANELBOARD 'BC1'	150 A	3		80 A	83 A	70 A
9	PANELBOARD 'BR2'	100 A	3		12 A	12 A	12 A
10	AHU-1 (SF-A1)	250 A	3		120 A	120 A	120 A
11	ELEVATOR	100 A	3		62 A	62 A	62 A
12	RELIEF FAN (RF-A1)	110 A	3		78 A	78 A	78 A
13	PANELBOARD '1A'	225 A	3		54 A	59 A	66 A
14	PANELBOARD '1B'	225 A	3		43 A	63 A	63 A
15	PANELBOARD '1C'	225 A	3		62 A	61 A	84 A
16	PANELBOARD '1D'	225 A	3		38 A	31 A	32 A
17	PANELBOARD '2A'	225 A	3		48 A	36 A	33 A
18	PANELBOARD '2B'	225 A	3		52 A	56 A	55 A
19	PANELBOARD '2C'	225 A	3		145 A	125 A	160 A
20	PANELBOARD '3A'	225 A	3		69 A	90 A	86 A
21	PANELBOARD '3B'	225 A	3		30 A	52 A	29 A
22	PANELBOARD '3C'	225 A	3		71 A	73 A	64 A
23	PANELBOARD 'BR1'	225 A	3		0 A	0 A	0 A
24	SPARE	225 A	3		--	--	--
25	SPARE	150 A	3		--	--	--
26	SPARE	100 A	3		--	--	--
27	SPACE	--	--	--	--	--	--

TOTAL LOAD (VA):	541385 VA	**TOTAL LOAD (A):**	1503 A
DEMAND LOAD (VA):	398443 VA	**DEMAND LOAD (A):**	1106 A

REMARKS:
INTEGRAL CUSTOMER METER, SURGE PROTECTION DEVICE.

NOTES:

2T — PANELBOARD SCHEDULE

LOCATION : TCOMM 211 | **SCCR (AMPS RMS SYMM):** 22,000 | **SERVICE :** 120/208 Wye | **AMP :** 60 A | **MAIN :** MLO | **NEMA:** Type 1 | **MOUNTING :** SURFACE

CKT	DESCRIPTION	NOTE	AMP	POLE	A	B	C	POLE	AMP	NOTE	DESCRIPTION	CKT
1	LIGHTING - TCOMM 211		20 A	1	96 / 180			1	20 A		GEN. RECEPTS - TCOMM 211	2
3	LIGHTING - TCOMM 013		20 A	1		48 / 2000		2	30 A		TELECOM RECEPT #1 - TCOMM 211	4
5	GENERAL RECEPT - TCOMM 013		20 A	1			180 / 2000					6
7	SPARE		20 A	1	0 / 2000			2	30 A		TELECOM RECEPT #2 - TCOMM 211	8
9	SPARE		20 A	1		0 / 2000						10
11	SPARE		20 A	1			0 / 2000	2	30 A		TELECOM RECEPT #3 - TCOMM 211	12
13	SPARE		20 A	1	0 / 2000							14
15	SPARE		20 A	1		0 / 634		2	20 A		SPLIT SYSTEM COOLING (ACCU-A) 208V, 1Ø, 6.1 MCA	16
17	SPARE		20 A	1			0 / 634					18
19	SPARE		20 A	1	0 / 0			2	20 A		SPARE	20
21	SPARE		20 A	1		0 / 0						22
23	SPARE		20 A	1			0 / 0	1	20 A		SPARE	24
25	SPARE		20 A	1	0 / 0			1	20 A		SPARE	26
27	SPARE		20 A	1		0 / 0		1	20 A		SPARE	28
29	SPARE		20 A	1			0 / 0	1	20 A		SPARE	30
					TOTALS :	4276 VA	4682 VA	4814 VA				

TOTAL CONNECTED LOAD (VA) : 13773 VA **TOTAL CONNECTED LOAD (AMPS) :** 38 A

REMARKS:
INTEGRAL SPD.

NOTES:

2XD — PANELBOARD SCHEDULE

LOCATION : SOUTH CORRIDOR 206 | **SCCR (AMPS RMS SYMM):** 22,000 | **SERVICE :** 120/208 Wye | **AMP :** 60 A | **MAIN :** MLO | **NEMA:** Type 1 | **MOUNTING :** Recessed

CKT	DESCRIPTION	NOTE	AMP	POLE	A	B	C	POLE	AMP	NOTE	DESCRIPTION	CKT
1	ELEVATOR REMOTE MONITORING		20 A	1	1200 / 223			1	20 A		EMERG. LIGHTING - RMS. 210, 212, 213, 215, 216...	2
3	ELEVATOR CAB LIGHTING		20 A	1		1200 / 196		1	20 A		EMERG. LIGHTING - RMS. 203, 204, 205, 207	4
5	ELEVATOR RECEPT - TOP OF SHAFT		20 A	1			180 / 508	1	20 A		EMERG. LIGHTING - RM. 208A, 209, 214, S2-02,...	6
7	SPARE		20 A	1	0 / 390			1	20 A		EMERG. LIGHTING - RMS. 201, 202, 218, 221, 222...	8
9	SPARE		20 A	1		0 / 378		1	20 A		EMERG. LIGHTING - RM. 206, 208, 220, S1-02,	10
11	SPARE		20 A	1			0 / 348	1	20 A		EMERG. LIGHTING - RM. 318, 323, 324, 329, 331,...	12
13	SPARE		20 A	1	0 / 472			1	20 A		EMERG. LIGHTING - RM. 301, 333, 334, 335, 336,...	14
15	SPARE		20 A	1		0 / 306		1	20 A		EMERG. LIGHTING - RM. 304, 306, 308, 311, 313	16
17	SPARE		20 A	1			0 / 706	1	20 A		EMERG. LIGHTING S2-03, S3-03, 316, 317A, 338	18
19	SPARE		20 A	1	0 / 94			1	20 A		EMERG. LIGHTING - ELEVATOR TOP OF SHAFT	20
21	SPARE		20 A	1		0 / 577		1	20 A		EMERG. LIGHTING - RM. S1-03, 309, 317, 339	22
23	SPARE		20 A	1			0 / 0	1	20 A		SPARE	24
25	SPARE		20 A	1	0 / 0			1	20 A		SPARE	26
27	SPARE		20 A	1		0 / 0		1	20 A		SPARE	28
29	SPARE		20 A	1			0 / 0	1	20 A		SPARE	30
					TOTALS :	2378 VA	2656 VA	1743 VA				

TOTAL CONNECTED LOAD (VA) : 6777 VA **TOTAL CONNECTED LOAD (AMPS) :** 19 A

REMARKS:
INTEGRAL SPD.

NOTES:

BXD — PANELBOARD SCHEDULE

LOCATION : MACHINE ROOM 010 | **SCCR (AMPS RMS SYMM):** 22,000 | **SERVICE :** 120/208 Wye | **AMP :** 100 A | **MAIN :** MLO | **NEMA:** Type 1 | **MOUNTING :** SURFACE

CKT	DESCRIPTION	NOTE	AMP	POLE	A	B	C	POLE	AMP	NOTE	DESCRIPTION	CKT
1	FIRE ALARM CONTROL PANEL - SERVICES 005		20 A	1	1000 / 360			1	20 A		ADA DOOR OPERATOR - SW ENTRY	2
3	SUMP PUMP - ELEV 168		20 A	1		1260 / 1000		1	20 A		VOICE COMMAND CENTER - SW ENTRY	4
5	EMERG. LIGHTING - 017, 019, 021, 022		20 A	1			447 / 720	1	20 A		ADA DOOR OPERATOR - VESTIBULE 120	6
7	EMERG. LIGHTING - MACHINE ROOM 010		20 A	1	245 / 720			1	20 A		ADA DOOR OPERATOR - VESTIBULE 134	8
9	EMERG. LIGHTING - SCENE SHOP 011		20 A	1		260 / 0		1	20 A		SPARE	10
11	EMERG. LIGHTING - ELEV 168		20 A	1			141 / 0	1	20 A		SPARE	12
13	EMERG. LIGHTING - CORR. 003, 012, STOR. 004,...		20 A	1	251 / 0			1	20 A		SPARE	14
15	EMERG LIGHTING - SPRIKLER 003A, SERV. 005,...		20 A	1		288 / 0		1	20 A		SPARE	16
17	EXTERIOR EMERG. LIGHTING - ENTRANCES		20 A	1			498 / 0	1	20 A		SPARE	18
19	EMERG. LIGHTING - RM. S2-01, 107, 108, 109		20 A	1	338 / 0			1	20 A		SPARE	20
21	EMERG. LIGHTING - RM. S1-01, 113, 114, 119,...		20 A	1		546 / 0		1	20 A		SPARE	22
23	EMERG. LIGHTING - RM. 124, 127, 128, 130, 131,...		20 A	1			688 / 0	1	20 A		SPARE	24
25	EMERG. LIGHTING - S3-01, N. 119, N. 119A, 125,...		20 A	1	416 / 0			1	20 A		SPARE	26
27	EMERG. LIGHTING - SW ENTRY, 101		20 A	1		352 / 0		1	20 A		SPARE	28
29	SPARE		20 A	1			0 / 0	1	20 A		SPARE	30
31	SPARE		20 A	1	0 / 0			1	20 A		SPARE	32
33	SPARE		20 A	1		0 / 0		1	20 A		SPARE	34
35	SPARE		20 A	1			0 / 0	1	20 A		SPARE	36
37	PANELBOARD '2XD'		60 A	3	2378 / 4276							38
39						2656 / 4682		3	60 A		PANELBOARD '2T'	40
41							1743 / 4814					42
					TOTALS :	9984 VA	11045 VA	9051 VA				

TOTAL CONNECTED LOAD (VA) : 30079 VA **TOTAL CONNECTED LOAD (AMPS) :** 83 A

REMARKS:
INTEGRAL SPD.

NOTES:

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CERTIFICATION 06/06/2020

100% CONSTRUCTION DOCUMENTS

Indiana State University - Dreiser Hall Renovation

221 North 6th Street
Terre Haute, IN 47809

Project No.: 19A052
Drawn By: JPS
Checked By: TEH
Scale: See Drawing
Issue Date: 06/05/2020

REVISION SCHEDULE

Rev. #	Revision Description	Issue Date

SCHEDULES - PANELBOARDS

E6.11

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BC PANELBOARD SCHEDULE

LOCATION : SCENE SHOP 011 | **SCCR (AMPS RMS SYMM):** 22,000 | **SERVICE :** 120/208 Wye | **AMP :** 225 A | **MAIN :** MLO | **NEMA:** Type 1 | **MOUNTING :** SURFACE

CKT	DESCRIPTION	NOTE	AMP	POLE	A	B	C	POLE	AMP	NOTE	DESCRIPTION	CKT
1	LIGHTING - SHOP FOREMAN 011A, ROOM 011B		20 A	1	288 / 576			3	20 A		EXHAUST FAN (EF-F) 208V, 3Ø, 1HP SCENE SHOP 011	2
3	LIGHTING - SOUTH SCENE SHOP 011		20 A	1		288 / 576						4
5	LIGHTING - CENTRAL SCENE SHOP 011		20 A	1			384 / 576					6
7	LIGHTING - NORTH SCENE SHOP 011		20 A	1	192 / 3035			3	50 A		AIR COMPRESSOR (AC-A1) 208V, 3Ø, 7.5HP SCENE SHOP 011	8
9	SCOOP LIGHTING - SCENE SHOP 011		20 A	1		1000 / 3035						10
11	RECEPTS - SHOP FOREMAN 014		20 A	1			720 / 3035					12
13	RECEPT - STAIRS 019K		20 A	1	360 / 1319			3	20 A		AHU-2 (RETURN FAN) 208V, 3Ø, 3HP SCENE SHOP 011	14
15	RECEPT TOOL ROOM 011B		20 A	1		360 / 1319						16
17	EMERGENCY (E-STOP) BUTTONS - SCENE SHO...		20 A	1			0 / 1319					18
19	EXHAUST FAN (EF-E) - SCENCE SHOP 011		20 A	1	1176 / 2099			3	35 A		AHU-2 (SUPPLY FAN) 208V, 3Ø, 5HP SCENE SHOP 011	20
21	TCP - AHU-2 - SCENE SHOP 011		20 A	1		0 / 2099						22
23	SPARE		20 A	1			0 / 2099					24
25	SPARE		20 A	1	0 / 2099			3	35 A		STAGE LIFT 208V, 3Ø, 5HP SCENE SHOP 011	26
27	SPARE		20 A	1		0 / 2099						28
29	SPARE		20 A	1			0 / 2099					30
31	SPARE		20 A	1	0 / 0			3	35 A		SPARE	32
33	SPARE		20 A	1		0 / 0						34
35	SPARE		20 A	1			0 / 0					36
37	SPARE		20 A	1	0 / 0			3	50 A		SPARE	38
39	DUST COLLECTOR - SCENE SHOP 011		60 A	2		2912 / 0						40
41							2912 / 0					42

TOTALS : 11144 VA | 13688 VA | 13144 VA

TOTAL CONNECTED LOAD (VA) : 37976 VA **TOTAL CONNECTED LOAD (AMPS) :** 105 A

REMARKS: INTEGRAL SPD.

NOTES:

BC1 PANELBOARD SCHEDULE

LOCATION : SCENE SHOP 011 | **SCCR (AMPS RMS SYMM):** 22,000 | **SERVICE :** 120/208 Wye | **AMP :** 150 A | **MAIN :** MLO | **NEMA:** Type 1 | **MOUNTING :** SURFACE

CKT	DESCRIPTION	NOTE	AMP	POLE	A	B	C	POLE	AMP	NOTE	DESCRIPTION	CKT
1	NORTH WORKBENCH RECEPTS - SCENE SHOP...		20 A	1	540 / 540			1	20 A		NORTHWEST RECEPTS - SCENE SHOP 011	2
3	NORTH WORKBENCH RECEPTS - SCENE SHOP...		20 A	1		360 / 360		1	20 A		WEST RECEPTS - SCENE SHOP 011	4
5	BAND SAW - SCENE SHOP 011		20 A	2			1248 / 360	1	20 A		WEST RECEPTS - SCENE SHOP 011	6
7					1248 / 360			1	20 A		SOUTHWEST RECEPTS - SCENE SHOP 011	8
9	RECEPT TOOL STORAGE 011B		20 A	1		720 / 180		1	20 A		S. COLUMN RECEPT SCENE SHOP 011	10
11	TABLE SAW - SCENE SHOP 011		30 A	2			2028 / 180	1	20 A		S COLUMN RECEPT SCENE SHOP 011	12
13					2028 / 180			1	20 A		S MIDDLE COLUMN RECEPT SCENE SHOP 011	14
15	RADIAL ARM SAW - SCENE SHOP 011		50 A	2		3640 / 180		1	20 A		S. MIDDLE COLUMN RECEPT SCENE SHOP 011	16
17							3640 / 180	1	20 A		MIDDLE COLUMN RECEPT SCENE SHOP 011	18
19	WELDING RECEPTACLE - SCENE SHOP 011		50 A	2	3640 / 180			1	20 A		MIDDLE COLUMN RECEPT SCENE SHOP 011	20
21						3640 / 180		1	20 A		NORTH MIDDLE RECEPT SCENE SHOP 011	22
23	SPARE		20 A	1			0 / 180	1	20 A		NORTH COLUMN SCENE SHOP 011	24
25	SPARE		20 A	1	0 / 180			1	20 A		EAST RECEPTS SCENE SHOP 011	26
27	SPARE		20 A	1		0 / 180		1	20 A		EAST RECEPTS SCENE SHOP 011	28
29	SPARE		20 A	1			0 / 180	1	20 A		EAST RECEPTS SCENE SHOP 011	30
31	SPARE		20 A	1	0 / 180			1	20 A		EAST RECEPTS SCENE SHOP 011	32
33	SPARE		20 A	1		0 / 360		1	20 A		NORTH CORD REEL - SCENE SHOP 011	34
35	SPARE		20 A	1			0 / 360	1	20 A		SOUTH CORD REEL - SCENE SHOP 011	36
37	SPARE		20 A	1	0 / 360			1	20 A		PAINT TABLE CORD REEL - SCENE SHOP 011	38
39	SPARE		20 A	1		0 / 0		1	20 A		SPARE	40
41	SPARE		20 A	1			0 / 0	1	20 A		SPARE	42

TOTALS : 9436 VA | 9800 VA | 8356 VA

TOTAL CONNECTED LOAD (VA) : 27592 VA **TOTAL CONNECTED LOAD (AMPS) :** 77 A

REMARKS: PANELBOARD TO BE CONTROLLED BY CONTACTOR. INTEGRAL SPD.

NOTES:

BD PANELBOARD SCHEDULE

LOCATION : SERVICES 005 | **SCCR (AMPS RMS SYMM):** 22,000 | **SERVICE :** 120/208 Wye | **AMP :** 100 A | **MAIN :** MLO | **NEMA:** Type 1 | **MOUNTING :** SURFACE

CKT	DESCRIPTION	NOTE	AMP	POLE	A	B	C	POLE	AMP	NOTE	DESCRIPTION	CKT
1	SPARE		20 A	1	0 / 0			1	20 A		SPARE	2
3	SPARE		20 A	1		0 / 0		1	20 A		SPARE	4
5	SPARE		20 A	1			0 / 0	1	20 A		SPARE	6
7	SPARE		20 A	1	0 / 0			1	20 A		SPARE	8
9	SPARE		20 A	1		0 / 0		1	20 A		SPARE	10
11	SPARE		20 A	1			0 / 0	1	20 A		SPARE	12
13	SPARE		20 A	1	0 / 0			1	20 A		SPARE	14
15	SPARE		20 A	1		0 / 0		1	20 A		SPARE	16
17	SPARE		20 A	1			0 / 0	1	20 A		SPARE	18
19	SPARE		20 A	1	0 / 0			1	20 A		SPARE	20
21	SPARE		20 A	1		0 / 0		1	20 A		SPARE	22
23	SPARE		20 A	1			0 / 0	1	20 A		SPARE	24
25	SPARE		20 A	1	0 / 0			1	20 A		SPARE	26
27	SPARE		20 A	1		0 / 0		1	20 A		SPARE	28
29	SPARE		20 A	1			0 / 0	1	20 A		SPARE	30

TOTALS : 0 VA | 0 VA | 0 VA

TOTAL CONNECTED LOAD (VA) : 0 VA **TOTAL CONNECTED LOAD (AMPS) :** 0 A

REMARKS: INTEGRAL SPD.

NOTES:

M PANELBOARD SCHEDULE

LOCATION : MACHINE ROOM 010 | **SCCR (AMPS RMS SYMM):** 22,000 | **SERVICE :** 120/208 Wye | **AMP :** 225 A | **MAIN :** MLO | **NEMA:** Type 1 | **MOUNTING :** SURFACE

CKT	DESCRIPTION	NOTE	AMP	POLE	A	B	C	POLE	AMP	NOTE	DESCRIPTION	CKT
1	SPARE		20 A	1	0 / 2099			3	35 A		HOT WATER PUMP (HWP-A1) 208V, 3Ø, 5HP MACHINE ROOM 010	2
3	TCP (AHU) - MACHINE ROOM 010		20 A	1		600 / 2099						4
5	AHU INTERNAL LIGHTING - MACHINE ROOM 010		20 A	1			276 / 2099					6
7	EAST RECEPTS - MACHINE ROOM 010		20 A	1	360 / 2099			3	35 A		HOT WATER PUMP (HWP-A2) 208V, 3Ø, 5HP MACHINE ROOM 010	8
9	TCP (HW PUMPS) - MACHINE ROOM 010		20 A	1		500 / 2099						10
11	CIRCULATION PUMP (CP-A) - MACHINE ROOM 010		20 A	1			600 / 2099					12
13	WEST RECEPTS - MACHINE ROOM 010		20 A	1	360 / 3035			3	50 A		CHILLED WATER PUMP (CHWP-A1) 208V, 3Ø, 7.5HP MACHINE ROOM 010	14
15	WATER SOFTENER - MACHINE ROOM 010		20 A	1		360 / 3035						16
17	TMV-A - MACHINE ROOM 010		20 A	1			180 / 3035					18
19	SPARE		20 A	1	0 / 3035			3	50 A		CHILLED WATER PUMP (CHWP-A2) 208V, 3Ø, 7.5HP MACHINE ROOM 010	20
21	SPARE		20 A	1		0 / 3035						22
23	SPARE		20 A	1			0 / 3035					24
25	SPARE		20 A	1	0 / 6000			3	70 A		WATER HEATER - MACHINE ROOM 010	26
27	SPARE		20 A	1		0 / 6000						28
29	SPARE		20 A	1			0 / 6000					30
31	SPARE		20 A	1	0 / 0			3	35 A		SPARE	32
33	SPARE		20 A	1		0 / 0						34
35	SPARE		20 A	1			0 / 0					36
37	SPARE		20 A	1	0 / 0			3	50 A		SPARE	38
39	SPARE		20 A	1		0 / 0						40
41	SPARE		20 A	1			0 / 0					42

TOTALS : 16987 VA | 17727 VA | 17323 VA

TOTAL CONNECTED LOAD (VA) : 52038 VA **TOTAL CONNECTED LOAD (AMPS) :** 144 A

REMARKS: INTEGRAL SPD.

NOTES:

BB PANELBOARD SCHEDULE

LOCATION : NORTH CORRIDOR 015 | **SCCR (AMPS RMS SYMM):** 22,000 | **SERVICE :** 120/208 Wye | **AMP :** 225 A | **MAIN :** MLO | **NEMA:** Type 1 | **MOUNTING :** Recessed

CKT	DESCRIPTION	NOTE	AMP	POLE	A	B	C	POLE	AMP	NOTE	DESCRIPTION	CKT
1	LIGHTING - STAIR #3, N. CORRIDOR 017		20 A	1	316 / 720			1	20 A		RECEPT - N. CORRIDOR 017, E. CORRIDOR 012	2
3	LIGHTING - MENS 021, WOMENS 022		20 A	1		373 / 720		1	20 A		RECEPT - STAIR #3 S3, WOMEN 022, MEN 021	4
5	LIGHTING - MAKEUP/DRESSING 019		20 A	1			467 / 180	1	20 A		SOUTH COUNTER RECEPT MAKEUP/DRESSING...	6
7	NORTH MAKEUP LIGHTING - MAKEUP / DRESSI...		20 A	1	360 / 180			1	20 A		SOUTH COUNTER RECEPT MAKEUP/DRESSING...	8
9	SOUTH MAKEUP LIGHTING - MAKEUP / DRESSI...		20 A	1		180 / 180		1	20 A		SOUTH COUNTER RECEPT MAKEUP/DRESSING...	10
11	SPARE		20 A	1			0 / 180	1	20 A		SOUTH COUNTER RECEPT MAKEUP/DRESSING...	12
13	SPARE		20 A	1	0 / 180			1	20 A		SOUTH COUNTER RECEPT MAKEUP/DRESSING...	14
15	SPARE		20 A	1		0 / 180		1	20 A		SOUTH COUNTER RECEPT MAKEUP/DRESSING...	16
17	SPARE		20 A	1			0 / 180	1	20 A		NORTH COUNTER RECEPT MAKEUP/DRESSING...	18
19	SPARE		20 A	1	0 / 180			1	20 A		NORTH COUNTER RECEPT MAKEUP/DRESSING...	20
21	SPARE		20 A	1		0 / 180		1	20 A		NORTH COUNTER RECEPT MAKEUP/DRESSING...	22
23	SPARE		20 A	1			0 / 180	1	20 A		NORTH COUNTER RECEPT MAKEUP/DRESSING...	24
25	IRRIGATION CONTROLLER - EXTERIOR		20 A	1	360 / 180			1	20 A		NORTH COUNTER RECEPT MAKEUP/DRESSING...	26
27	TV MONITOR - MAKEUP / DRESSING 019		20 A	1		360 / 180		1	20 A		NORTH COUNTER RECEPT MAKEUP/DRESSING...	28
29	EAST RECEPTS - MAKEUP/DRESSING 019		20 A	1			720 / 180	1	20 A		NORTH COUNTER RECEPT MAKEUP/DRESSING...	30
31	WEST RECEPTS - MAKEUP/DRESSING 019		20 A	1	360 / 180			1	20 A		NORTH COUNTER RECEPT MAKEUP/DRESSING...	32
33	NORTH RECEPTS - MAKEUP/DRESSING 019		20 A	1		360 / 180		1	20 A		NORTH COUNTER RECEPT MAKEUP/DRESSING...	34
35	RECEPT BY SINK - MAKEUP/DRESSING 019		20 A	1			180 / 180	1	20 A		NORTH COUNTER RECEPT MAKEUP/DRESSING...	36
37	WASHING MACHINE - MAKEUP/DRESSING 019		20 A	1	1200 / 480			1	20 A		'LC-1' CONTROL CIRCUIT	38
39	DRYER - MAKEUP/DRESSING 019		30 A	2		2000 / 180		1	20 A		'LC-2' CONTROL CIRCUIT	40
41							2000 / 720	1	30 A		DRYER BOOSTER FAN - MAKEUP / DRESSING 019	42
43	LIGHTING - PERFORMANCE AND TECH LAB 014		20 A	1	209 / 360			1	20 A		VAV CONTROL TRANSFORMER - MAKEUP /...	44
45	TV MONITOR - PERFORMANCE AND TECH LAB...		20 A	1		720 / 0		1	20 A		SPARE	46
47	PROJECTOR/SCREEN - PERFORMANCE AND...		20 A	1			500 / 0	1	20 A		SPARE	48
49	TV MONITOR - NORTH CORRIDOR 015		20 A	1	360 / 0			1	20 A		SPARE	50
51	SPARE		20 A	1		0 / 0		1	20 A		SPARE	52
53	SPARE		20 A	1			0 / 0	1	20 A		SPARE	54
55	SPARE		20 A	1	0 / 0			1	20 A		SPARE	56
57	SPARE		20 A	1		0 / 0		1	20 A		SPARE	58
59	SPARE		20 A	1			0 / 0	1	20 A		SPARE	60

TOTALS : 5625 VA | 5793 VA | 5667 VA

TOTAL CONNECTED LOAD (VA) : 17085 VA **TOTAL CONNECTED LOAD (AMPS) :** 47 A

REMARKS: 28-INCH WIDE ENCLOSURE. INTEGRAL SPD.

NOTES:

BR1 PANELBOARD SCHEDULE

LOCATION : SERVICES 005 | **SCCR (AMPS RMS SYMM):** 22,000 | **SERVICE :** 120/208 Wye | **AMP :** 225 A | **MAIN :** MLO | **NEMA:** Type 1 | **MOUNTING :** SURFACE

CKT	DESCRIPTION	NOTE	AMP	POLE	A	B	C	POLE	AMP	NOTE	DESCRIPTION	CKT
1	SPARE		20 A	1	0 / 0			1	20 A		SPARE	2
3	SPARE		20 A	1		0 / 0		1	20 A		SPARE	4
5	SPARE		20 A	1			0 / 0	1	20 A		SPARE	6
7	SPARE		20 A	1	0 / 0			1	20 A		SPARE	8
9	SPARE		20 A	1		0 / 0		1	20 A		SPARE	10
11	SPARE		20 A	1			0 / 0	1	20 A		SPARE	12
13	SPARE		20 A	1	0 / 0			1	20 A		SPARE	14
15	SPARE		20 A	1		0 / 0		1	20 A		SPARE	16
17	SPARE		20 A	1			0 / 0	1	20 A		SPARE	18
19	SPARE		20 A	1	0 / 0			1	20 A		SPARE	20
21	SPARE		20 A	1		0 / 0		1	20 A		SPARE	22
23	SPARE		20 A	1			0 / 0	1	20 A		SPARE	24
25	SPARE		20 A	1	0 / 0			1	20 A		SPARE	26
27	SPARE		20 A	1		0 / 0		1	20 A		SPARE	28
29	SPARE		20 A	1			0 / 0	1	20 A		SPARE	30
31	SPARE		20 A	1	0 / 0			1	20 A		SPARE	32
33	SPARE		20 A	1		0 / 0		1	20 A		SPARE	34
35	SPARE		20 A	1			0 / 0	1	20 A		SPARE	36
37	SPARE		20 A	1	0 / 0			1	20 A		SPARE	38
39	SPARE		20 A	1		0 / 0		1	20 A		SPARE	40
41	SPARE		20 A	1			0 / 0	1	20 A		SPARE	42
43	SPARE		20 A	1	0 / 0			1	20 A		SPARE	44
45	SPARE		20 A	1		0 / 0		1	20 A		SPARE	46
47	SPARE		20 A	1			0 / 0	1	20 A		SPARE	48

TOTALS : 0 VA | 0 VA | 0 VA

TOTAL CONNECTED LOAD (VA) : 0 VA **TOTAL CONNECTED LOAD (AMPS) :** 0 A

REMARKS: ETC SENSOR IQ48 RELAY PANEL.

NOTES:

BA PANELBOARD SCHEDULE

LOCATION : SERVICES 005 | **SCCR (AMPS RMS SYMM):** 22,000 | **SERVICE :** 120/208 Wye | **AMP :** 225 A | **MAIN :** MLO | **NEMA:** Type 1 | **MOUNTING :** SURFACE

CKT	DESCRIPTION	NOTE	AMP	POLE	A	B	C	POLE	AMP	NOTE	DESCRIPTION	CKT
1	LIGHTING - SOUTH CORRIDOR 003		20 A	1	170 / 900			1	20 A		RECEPT - SOUTH CORRIDOR 003	2
3	LIGHTING EAST CORR. 012, SEATING 012B		20 A	1		218 / 360		1	20 A		RECEPT - E CORRIDOR E012, SEATING 012B	4
5	LIGHTING - STORAGE 001, 002, 009		20 A	1			432 / 180	1	20 A		VENDING RECEPT - SEATING 012B	6
7	LIGHTING - COSTUME STORAGE 004		20 A	1	528 / 900			1	20 A		RECEPT - ELEC/DIMMER 007, STORAGE 009	8
9	LIGHTING - GREEN ROOM 006		20 A	1		745 / 720		1	20 A		RECEPT - STORAGE 001	10
11	SPARE		20 A	1			0 / 720	1	20 A		RECEPT - SERVICES 005	12
13	SPARE		20 A	1	0 / 1440			1	20 A		RECEPT - COSTUME STORAGE 004	14
15	SPARE		20 A	1		0 / 960		1	20 A		REFRIGERATOR - GREEN ROOM 006	16
17	SPARE		20 A	1			0 / 850	1	20 A	1	DISHWASHER - GREEN ROOM 006	18
19	SPARE		20 A	1	0 / 1200			1	20 A		MICROWAVE - GREEN ROOM 006	20
21	SPARE		20 A	1		0 / 720		1	20 A		WEST RECEPTS - GREEN ROOM 006	22
23	SPARE		20 A	1			0 / 180	1	20 A		COUNTERTOP RECEPT - GREEN ROOM 006	24
25	SPARE		20 A	1	0 / 180			1	20 A		COUNTERTOP RECEPT - GREEN ROOM 006	26
27	SPARE		20 A	1		0 / 900		1	20 A		NORTH TV/RECEPTS - GREEN ROOM 006	28
29	SPARE		20 A	1			0 / 900	1	20 A		EAST TV/RECEPTS GREEN ROOM 006	30
31	SPARE		20 A	1	0 / 180			1	20 A		ELEVATOR PIT RECEPT - ELEV 168	32
33	SPARE		20 A	1		0 / 360		1	20 A		VAV CONTROL TRANSFORMER - STORAGE 009	34
35	SPARE		20 A	1			0 / 336	1	20 A		FAN COIL UNIT (FC-B) - COSTUME STORAGE 004	36
37	SPARE		20 A	1	0 / 168			1	20 A		FAN COIL UNIT (FC-A) - COSTUME STORAGE 009	38
39	SPARE		20 A	1		0 / 180		1	20 A		SOUTH VENDING - SEATING/VENDING 012B	40
41	SPARE		20 A	1			0 / 180	1	20 A		NORTH VENDING - SEATING/VENDING 012B	42

TOTALS : 5666 VA | 5163 VA | 3778 VA

TOTAL CONNECTED LOAD (VA) : 14608 VA **TOTAL CONNECTED LOAD (AMPS) :** 41 A

REMARKS: INTEGRAL SPD.

NOTES: 1. PROVIDE 20A-1P GFCI BREAKER.

BDPG PANELBOARD SCHEDULE

LOCATION : SERVICES 005 | **SCCR (AMPS RMS SYMM):** 22,000 | **SERVICE :** 120/208 Wye | **AMP :** 250 A | **MAIN :** MCB | **NEMA:** Type 1 | **MOUNTING :** SURFACE

CKT	DESCRIPTION	NOTE	AMP	POLE	A	B	C	POLE	AMP	NOTE	DESCRIPTION	CKT
1	PANELBOARD '1G'		150 A	3	3780 / 0			3	150 A		SPARE	2
3						3740 / 0						4
5							3420 / 0					6
7	PANELBOARD '3GA'		150 A	3	3420 / 0			--	--	--	SPACE	8
9						4140 / 0		--	--	--	SPACE	10
11							3240 / 0	--	--	--	SPACE	12
13	PANELBOARD '3GB'		150 A	3	5820 / 0			--	--	--	SPACE	14
15						5100 / 0		--	--	--	SPACE	16
17							2520 / 0	--	--	--	SPACE	18
19	SPACE	--	--	--	0 / 0			--	--	--	SPACE	20
21	SPACE	--	--	--		0 / 0		--	--	--	SPACE	22
23	SPACE	--	--	--			0 / 0	--	--	--	SPACE	24

TOTALS : 13020 VA | 12980 VA | 9180 VA

TOTAL CONNECTED LOAD (VA) : 35180 VA **TOTAL CONNECTED LOAD (AMPS) :** 98 A

REMARKS: INTEGRAL SPD. ISOLATED GROUND.

NOTES:

BR2 PANELBOARD SCHEDULE

LOCATION : PERFORMANCE AND TECH LA... | **SCCR (AMPS RMS SYMM):** 22,000 | **SERVICE :** 120/208 Wye | **AMP :** 100 A | **MAIN :** MLO | **NEMA:** Type 1 | **MOUNTING :** SURFACE

CKT	DESCRIPTION	NOTE	AMP	POLE	A	B	C	POLE	AMP	NOTE	DESCRIPTION	CKT
1	GRID BOX #1 - CIRCUIT 1		20 A	1	180 / 180			1	20 A		GRID BOX #1 - CIRCUIT 2	2
3	GRID BOX #2 - CIRCUIT 1		20 A	1		180 / 180		1	20 A		GRID BOX #2 - CIRCUIT 2	4
5	GRID BOX #3 - CIRCUIT 1		20 A	1			180 / 180	1	20 A		GRID BOX #3 - CIRCUIT 2	6
7	GRID BOX #4 - CIRCUIT 1		20 A	1	180 / 180			1	20 A		GRID BOX #4 - CIRCUIT 2	8
9	GRID BOX #5 - CIRCUIT 1		20 A	1		180 / 180		1	20 A		GRID BOX #5 - CIRCUIT 2	10
11	GRID BOX #6 - CIRCUIT 1		20 A	1			180 / 180	1	20 A		GRID BOX #6 - CIRCUIT 2	12
13	GRID BOX #7 - CIRCUIT 1		20 A	1	180 / 180			1	20 A		GRID BOX #8 - CIRCUIT 1	14
15	GRID BOX #8 - CIRCUIT 2		20 A	1		180 / 180		1	20 A		GRID BOX #9 - CIRCUIT 1	16
17	SOUTH RECEPT - TECH LAB 014		20 A	1			180 / 180	1	20 A		SOUTH RECEPT - TECH LAB 014	18
19	WEST RECEPT - TECH LAB 014		20 A	1	180 / 180			1	20 A		WEST RECEPT - TECH LAB 014	20
21	NORTH RECEPT - TECH LAB 014		20 A	1		180 / 180		1	20 A		NORTH RECEPT - TECH LAB 014	22
23	EAST RECEPT - TECH LAB 014		20 A	1			180 / 180	1	20 A		EAST RECEPT - TECH LAB 014	24

TOTALS : 1440 VA | 1440 VA | 1440 VA

TOTAL CONNECTED LOAD (VA) : 4320 VA **TOTAL CONNECTED LOAD (AMPS) :** 12 A

REMARKS: ETC SENSOR IQ24 RELAY PANEL.

NOTES:

BASEMENT PANELBOARDS (NORMAL)

FIRST FLOOR PANELBOARDS (NORMAL)

1B PANELBOARD SCHEDULE

LOCATION : STOR. 126 | **SCCR (AMPS RMS SYMM):** 22,000 | **SERVICE :** 120/208 Wye | **AMP :** 225 A | **MAIN :** MLO | **NEMA:** Type 1 | **MOUNTING :** SURFACE

CKT	DESCRIPTION	NOTE	AMP	POLE	A	B	C	POLE	AMP	NOTE	DESCRIPTION	CKT
1	LIGHTING STUDENT LOUNGE-2 127-2		20 A	1	480 / 720			1	20 A		RECEPT STUDENT LOUNGE-1 127-1	2
3	NORTH LIGHTING - SEATING 119A, CORRIDOR...		20 A	1		479 / 1080		1	20 A		NORTHEAST RECEPTS - STUDENT LOUNGE-1...	4
5	LIGHTING - LOBBY		20 A	1			1190 / 500	1	20 A		ELECTRIC WATER COOLER (EWC) - MENS...	6
7	LIGHTING - MENS 130, WOMENS 131, CON. 133		20 A	1	703 / 360			1	20 A		RECEPTS - MENS 130, WOMENS 131	8
9	LIGHTING - UPPER EXTERIOR CANOPY		20 A	1		371 / 1080		1	20 A		NORTHWEST RECEPTS - STUDENT LOUNGE 127	10
11	SPARE		20 A	1			0 / 1080	1	20 A		NORTHEAST RECEPTS - STUDEN LOUNGE 127	12
13	SPARE		20 A	1	0 / 540			1	20 A		RECEPTS - NORTH CORRIDOR 125	14
15	SPARE		20 A	1		0 / 360		1	20 A		RECEPTS - EAST CORRIDOR 119	16
17	SPARE		20 A	1			0 / 540	1	20 A		USB RECEPTS - SEATING 119A	18
19	SPARE		20 A	1	0 / 360			1	20 A		OUTDOOR RECEPTS - NORTHWEST ENTRANCE	20
21	SPARE		20 A	1		0 / 240		1	20 A		CABINET UNIT HEATER - VESTIBULE 134	22
23	RECEPTS - SITTING AREA - LOBBY		20 A	1			540 / 360	1	20 A		VAV CONTROL TRANSFORMER - STOR. 126	24
25	RECEPTS - SITTING AREA - LOBBY		20 A	1	360 / 864			1	20 A		EXHAUST FAN (EF-D) - LOW ROOF	26
27	REFRIGERATOR - CONCESSIONS 133		20 A	1		1260 / 720		1	20 A		WEST RECEPTS - STOR. 126	28
29	TV MONITOR - CONC. 133		20 A	1			360 / 900	1	20 A		EAST RECEPTS - STOR. 126	30
31	COUNTERTOP RECEPT - CONC. 133		20 A	1	180 / 240			1	20 A		CUH-A - MENS 130	32
33	COUNTERTOP RECEPT - CONC. 133		20 A	1		180 / 240		1	20 A		CUH-A - WOMENS 131	34
35	GENERAL RECEPTS - CONC. 133		20 A	1			540 / 0	1	20 A		SPARE	36
37	SOUTHWEST QUAD - CONC. 133		20 A	1	360 / 0			1	20 A		SPARE	38
39	SPLIT SYSTEM UNIT - ACCU-D 208V, 1Ø, 6.7 MCA		20 A	2		1197 / 0		1	20 A		SPARE	40
41							1197 / 0	1	20 A		SPARE	42

TOTALS : 5167 VA | 7207 VA | 7207 VA

TOTAL CONNECTED LOAD (VA) : 19581 VA **TOTAL CONNECTED LOAD (AMPS) :** 54 A

REMARKS: INTEGRAL SPD.

NOTES:

1D PANELBOARD SCHEDULE

LOCATION : MULTI-MEDIA BOOTH 121 | **SCCR (AMPS RMS SYMM):** 22,000 | **SERVICE :** 120/208 Wye | **AMP :** 225 A | **MAIN :** MLO | **NEMA:** Type 1 | **MOUNTING :** Recessed

CKT	DESCRIPTION	NOTE	AMP	POLE	A	B	C	POLE	AMP	NOTE	DESCRIPTION	CKT
1	LIGHTING - UNIFIED MEDIA LAB 124		20 A	1	718 / 540			1	20 A		WEST RECEPT - MULTI-MEDIA BOOTH 121	2
3	LIGHTING - BOOTH 121, 122, DIRECTOR 123,...		20 A	1		516 / 360		1	20 A		EAST RECEPT - MULTI-MEDIA BOOTH 121	4
5	SPARE		20 A	1			0 / 1080	1	20 A		RECEPTS - MULTI-MEDIA BOOTH 122	6
7	SPARE		20 A	1	0 / 1260			1	20 A		RECEPT PUBLICATIONS DIRECTOR 123	8
9	SPARE		20 A	1		0 / 500		1	20 A		COUNTER PRINTER - UNIFIED MEDIA LAB 124	10
11	NORTHEAST QUAD - UNIFIED MEDIA LAB 124		20 A	1			360 / 180	1	20 A		COUNTERTOP RECEPT - UNIFIED MEDIA LAB 124	12
13	NORTH QUAD - UNIFIED MEDIA LAB 124		20 A	1	360 / 180			1	20 A		COUNTERTOP RECEPT - UNIFIED MEDIA LAB 124	14
15	NORTH QUAD - UNIFIED MEDIA LAB 124		20 A	1		360 / 540		1	20 A		SOUTHEAST QUAD - UNIFIED MEDIA LAB 124	16
17	NORTH QUAD - UNIFIED MEDIA LAB 124		20 A	1			360 / 360	1	20 A		EAST QUAD - UNIFIED MEDIA LAB 124	18
19	NORTH QUAD - UNIFIED MEDIA LAB 124		20 A	1	360 / 360			1	20 A		NORTHEAST QUAD - UNIFIED MEDIA LAB 124	20
21	NORTHWEST QUAD - UNIFIED MEDIA LAB 124		20 A	1		360 / 720		1	20 A		LOWER WEST MONITORS - UNIFIED MEDIA LAB...	22
23	WEST QUAD - UNIFIED MEDIA LAB 124		20 A	1			360 / 720	1	20 A		UPPER WEST MONITORS - UNIFIED MEDIA LAB...	24
25	WEST FLOORBOX - UNIFIED MEDIA LAB 124		20 A	1	360 / 0			1	20 A		SPARE	26
27	CENTER FLOOR BOX - UNIFIED MEDIA LAB 124		20 A	1		360 / 0		1	20 A		SPARE	28
29	EAST FLOOR BOX - UNIFIED MEDIA LAB 124		20 A	1			360 / 0	1	20 A		SPARE	30
31	SOUTHEAST FLOORBOX - UNIFIED MEDIA LAB...		20 A	1	360 / 0			1	20 A		SPARE	32
33	SPARE		20 A	1		0 / 0		1	20 A		SPARE	34
35	SPARE		20 A	1			0 / 0	1	20 A		SPARE	36
37	SPARE		20 A	1	0 / 0			1	20 A		SPARE	38
39	SPARE		20 A	1		0 / 0		1	20 A		SPARE	40
41	SPARE		20 A	1			0 / 0	1	20 A		SPARE	42

TOTALS : 4498 VA | 3716 VA | 3780 VA

TOTAL CONNECTED LOAD (VA) : 11994 VA **TOTAL CONNECTED LOAD (AMPS) :** 33 A

REMARKS: INTEGRAL SPD.

NOTES:

1A PANELBOARD SCHEDULE

LOCATION : WORK ROOM 107 | **SCCR (AMPS RMS SYMM):** 22,000 | **SERVICE :** 120/208 Wye | **AMP :** 225 A | **MAIN :** MLO | **NEMA:** Type 1 | **MOUNTING :** Recessed

CKT	DESCRIPTION	NOTE	AMP	POLE	A	B	C	POLE	AMP	NOTE	DESCRIPTION	CKT
1	LIGHTING - CORRIDOR 114, RESTROOM 102		20 A	1	319 / 540			1	20 A		RECEPT - RESTROOM 102, CORRIDOR 113	2
3	SOUTH LIGHTING - SEATING 119A, CORRIDOR...		20 A	1		695 / 720		1	20 A		SOUTH RECEPTS - E. CORRIDOR 119	4
5	LIGHTING - WORKROOM 107, THEATER OFFICE...		20 A	1			569 / 540	1	20 A		USB RECEPTS - SEATING 119A	6
7	LIGHTING OFFICE 103-106, 110-112		20 A	1	596 / 360			1	20 A		SOUTHWEST RECEPT - WORK ROOM 107	8
9	LIGHTING - VESTIBULE 120		20 A	1		454 / 360		1	20 A		SOUTH COUNTERTOP RECEPTS - WORK ROOM...	10
11	SPARE		20 A	1			0 / 180	1	20 A		N. COUNTERTOP RECEPT WORK ROOM 107	12
13	SPARE		20 A	1	0 / 180			1	20 A		N. COUNTERTOP RECEPT WORK ROOM 107	14
15	SPARE		20 A	1		0 / 1200		1	20 A		MICROWAVE - WORK ROOM 107	16
17	SPARE		20 A	1			0 / 900	1	20 A		REFRIGERATOR - WORK ROOM 107	18
19	SPARE		20 A	1	0 / 360			1	20 A		COUNTERTOP RECEPT - WORK ROOM 107	20
21	SPARE		20 A	1		0 / 360		1	20 A		COUNTERTOP RECEPT - WORK ROOM 107	22
23	SPARE		20 A	1			0 / 1440	1	20 A		120V COPIER RECEPT - WORK ROOM 107	24
25	SPARE		20 A	1	0 / 1440			1	20 A		RECEPTS - THEATER OFFICE 108	26
27	SPARE		20 A	1		0 / 1260		1	20 A		RECEPTS - OFFICE #1 103	28
29	SPARE		20 A	1			0 / 1260	1	20 A		RECEPTS - OFFICE #2 104	30
31	SPARE		20 A	1	0 / 1260			1	20 A		RECEPTS - OFFICE #3 105	32
33	SPARE		20 A	1		0 / 1260		1	20 A		RECEPTS - OFFICE #4 106	34
35	SPARE		20 A	1			0 / 1440	1	20 A		RECEPTS - OFFICE #5 110	36
37	RECEPT SEATING 119A		20 A	1	180 / 1260			1	20 A		RECEPTS - OFFICE #6 111	38
39	VAV CONTROL TRANSFORMER - STOR. 114		20 A	1		360 / 360		1	20 A		RECEPTS - CORRIDOR 109	40
41	CABINET UNIT HEATER - VESTIBULE 120		20 A	1			240 / 1260	1	20 A		RECEPTS - OFFICE #7 112	42

TOTALS : 6495 VA | 7029 VA | 7829 VA

TOTAL CONNECTED LOAD (VA) : 21353 VA **TOTAL CONNECTED LOAD (AMPS) :** 59 A

REMARKS: INTEGRAL SPD.

NOTES:

1C PANELBOARD SCHEDULE

LOCATION : STOR. 114 | **SCCR (AMPS RMS SYMM):** 22,000 | **SERVICE :** 120/208 Wye | **AMP :** 225 A | **MAIN :** MLO | **NEMA:** Type 1 | **MOUNTING :** RECESSED

CKT	DESCRIPTION	NOTE	AMP	POLE	A	B	C	POLE	AMP	NOTE	DESCRIPTION	CKT
1	LIGHTING - CORRIDOR 101		20 A	1	434 / 180			1	20 A		SOUTH RECEPT - CORRIDOR 101	2
3	LIGHTING - STORAGE 114		20 A	1		144 / 180		1	20 A		MIDDLE RECEPT - CORRIDOR 101	4
5	LIGHTING - STORAGE 126		20 A	1			192 / 180	1	20 A		NORTH RECEPT - CORRIDOR 101	6
7	SPARE		20 A	1	0 / 240			1	20 A		CABINET UNIT HEATER - SW ENTRY	8
9	SPARE		20 A	1		0 / 360		1	20 A		RECEPT - NORTH STAGE PROSCENIUM WALL	10
11	SPARE		20 A	1			0 / 360	1	20 A		RECEPT - NORTH STAGE BACK WALL	12
13	SPARE		20 A	1	0 / 360			1	20 A		RECEPT - SOUTH STAGE BACK WALL	14
15	SOUTH RECEPTS - THEATER 115		20 A	1		540 / 360		1	20 A		RECEPT - SOUTH STAGE PROSCENIUM WALL	16
17	NORTH RECEPTS - THEATER 115		20 A	1			540 / 360	1	20 A		NE RECEPTS - NORTH CONTROL ROOM 136	18
19	RECEPTS - STORAGE 114		20 A	1	720 / 360			1	20 A		NW RECEPTS - NORTH CONTROL ROOM 136	20
21	INTEGRAL AISLE LIGHTING - RETRACTABLE...		20 A	1		180 / 180		1	20 A		EAST FOLLOW SPOT RECEPT - CNTRL RM. 136	22
23	SPARE		20 A	1			0 / 360	1	20 A		NORTH QUAD - CONTROL ROOM 136	24
25	SPARE		20 A	1	0 / 360			1	20 A		MIDDLE QUAD - CONTROL ROOM 136	26
27	SPARE		20 A	1		0 / 360		1	20 A		WEST RECEPT - CONTROL ROOM 136	28
29	SPARE		20 A	1			0 / 360	1	20 A		NORTHWEST RECEPT - CONTROL ROOM 135	30
31	SPARE		20 A	1	0 / 180			1	20 A		EAST FOLLOW SPOT RECEPT - CNTRL RM. 135	32
33	SPARE		20 A	1		0 / 360		1	20 A		SW RECEPTS - CONTROL ROOM 135	34
35	SPARE		20 A	1			0 / 540	1	20 A		EAST RECEPTS - CONTROL ROOM 135	36
37	SPARE		20 A	1	0 / 0			1	20 A		SPARE	38
39	SPARE		20 A	1		0 / 0		1	20 A		SPARE	40
41	SPARE		20 A	1			0 / 0	1	20 A		SPARE	42
43	SPARE		20 A	1	0 / 0			1	20 A		SPARE	44
45	SPARE		20 A	1		0 / 0		1	20 A		SPARE	46
47	OUTDOOR UNIT (ACCU-D) 208V, 1Ø, 25.1 MCA		30 A	2			2496 / 0	1	20 A		SPARE	48
49					2496 / 333			3	20 A		CAPSTAN WINCH - STAGE	50
51	OUTDOOR UNIT (ACCU-C) 208V, 1Ø, 25.1 MCA		30 A	2		2610 / 333						52
53							2610 / 333					54
55	PANELBOARD 'BD'		100 A	3	0 / 1767			3	30 A		RETRACTABLE SEATING - THEATER 115	56
57						0 / 1767						58
59							0 / 1767					60

TOTALS : 7430 VA | 7374 VA | 10098 VA

TOTAL CONNECTED LOAD (VA) : 24903 VA **TOTAL CONNECTED LOAD (AMPS) :** 69 A

REMARKS: 28-INCH WIDE ENCLOSURE. INTEGRAL SPD.

NOTES:

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CERTIFICATION 06/05/2020

100% CONSTRUCTION DOCUMENTS

Indiana State University - Dreiser Hall Renovation

221 North 6th Street
Terre Haute, IN 47809

Project No.: 19A052
Drawn By: JPS
Checked By: TEH
Scale: See Drawing
Issue Date: 06/05/2020

REVISION SCHEDULE		
Rev. #	Revision Description	Issue Date

SCHEDULES - PANELBOARDS

E6.12

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1G PANELBOARD SCHEDULE

LOCATION : STOR. 114 | **SCCR (AMPS RMS SYMM):** 22,000 | **SERVICE :** 120/208 Wye | **AMP :** 150 A | **MAIN :** MLO | **NEMA:** Type 1 | **MOUNTING :** RECESSED

CKT	DESCRIPTION	NOTE	AMP	POLE	A	B	C	POLE	AMP	NOTE	DESCRIPTION	CKT
1	AV EQUIPMENT RACK (CIRC #1) - STOR. 114		20 A	1	360 / 360			1	20 A		S QUAD - SOUTH CONTROL ROOM 135	2
3	AV EQUIPMENT RACK (CIRC #2) - STOR. 114		20 A	1		360 / 360		1	20 A		MIDDLE QUAD - SOUTH CONTROL ROOM 135	4
5	AV EQUIPMENT RACK (CIRC #4) - STOR. 114		20 A	1			360 / 360	1	20 A		N. MIDDLE QUAD - SOUTH CONTROL ROOM 135	6
7	AV EQUIPMENT RACK (CIRC #3) - STOR. 114		20 A	1	360 / 360			1	20 A		N. QUAD - SOUTH CONTROL ROOM 135	8
9	MOTORIZED SCREEN - THEATER 115		20 A	1		500 / 360		1	20 A		SOUTH STAGE RECEPT - THEATER 115	10
11	TECHNICAL FACILITIES PANEL - STAGE RIGHT...		20 A	1			180 / 360	1	20 A		NORTH STAGE RECEPT - THEATER 115	12
13	TECHNICAL FACILITIES PANEL - STAGE RIGHT...		20 A	1	180 / 360			1	20 A		MIDDLE QUAD - CONTROL ROOM 136	14
15	TECHNICAL FACILITIES PANEL - STAGE RIGHT...		20 A	1		180 / 360		1	20 A		SOUTH QUAD - CONTROL ROOM 136	16
17	NORTH TECHNICAL FACILITIES PANEL - THEAT...		20 A	1			180 / 360	1	20 A		PROJECTOR QUAD - CONTROL ROOM 136	18
19	NORTH TECHNICAL FACILITIES PANEL - THEAT...		20 A	1	180 / 360			1	20 A		THEATRICAL MONITOR - STUDENT LOUNGE 127	20
21	SOUTH TECHNICAL FACILITIES PANEL - THEAT...		20 A	1		180 / 180		1	20 A		FLOORBOX 'SL3' - CIRCUIT 1	22
23	THEATRICAL MONITOR (STAGE LEFT) - THEATE...		20 A	1			360 / 180	1	20 A		FLOORBOX 'SL3' - CIRCUIT 2	24
25	FLOORBOX 'SR1' - CIRCUIT 1		20 A	1	180 / 180			1	20 A		FLOORBOX 'SL2' - CIRCUIT 1	26
27	FLOORBOX 'SR1' - CIRCUIT 2		20 A	1		180 / 180		1	20 A		FLOORBOX 'SL2' - CIRCUIT 2	28
29	FLOORBOX 'SR2' - CIRCUIT 1		20 A	1			180 / 180	1	20 A		FLOORBOX 'SL1' - CIRCUIT 1	30
31	FLOORBOX 'SR2' - CIRCUIT 2		20 A	1	180 / 180			1	20 A		FLOORBOX 'SL1' - CIRCUIT 2	32
33	FLOORBOX 'SR3' - CIRCUIT 1		20 A	1		180 / 180		1	20 A		FLOORBOX 'HR1' - CIRCUIT 1	34
35	FLOORBOX 'SR3' - CIRCUIT 2		20 A	1			180 / 180	1	20 A		FLOORBOX 'HR1' - CIRCUIT 2	36
37	SPARE		20 A	1	0 / 180			1	20 A		FLOORBOX 'HR2' - CIRCUIT 1	38
39	SPARE		20 A	1		0 / 180		1	20 A		FLOORBOX 'HR2' - CIRCUIT 2	40
41	SPARE		20 A	1			0 / 180	1	20 A		FLOORBOX 'HC' - CIRCUIT 1	42
43	SPARE		20 A	1	0 / 180			1	20 A		FLOORBOX 'HC' - CIRCUIT 2	44
45	SPARE		20 A	1		0 / 180		1	20 A		FLOORBOX 'HL2' - CIRCUIT 1	46
47	SPARE		20 A	1			0 / 180	1	20 A		FLOORBOX 'HL2' - CIRCUIT 2	48
49	SPARE		20 A	1	0 / 180			1	20 A		FLOORBOX 'HL1' - CIRCUIT 1	50
51	SPARE		20 A	1		0 / 180		1	20 A		FLOORBOX 'HL1' - CIRCUIT 2	52
53	SPARE		20 A	1			0 / 0	1	20 A		SPARE	54
				TOTALS :	3780 VA	3740 VA	3420 VA					

TOTAL CONNECTED LOAD (VA) : 10940 VA **TOTAL CONNECTED LOAD (AMPS) :** 30 A

REMARKS: 28-INCH WIDE ENCLOSURE. INTEGRAL SPD. ISOLATED GROUND.

NOTES:

FIRST FLOOR PANELBOARDS (NORMAL)

SECOND FLOOR PANELBOARDS

2C PANELBOARD SCHEDULE

LOCATION : CRAFTS ROOM 222 | **SCCR (AMPS RMS SYMM):** 22,000 | **SERVICE :** 120/208 Wye | **AMP :** 225 A | **MAIN :** MLO | **NEMA:** Type 1 | **MOUNTING :** Recessed

CKT	DESCRIPTION	NOTE	AMP	POLE	A	B	C	POLE	AMP	NOTE	DESCRIPTION	CKT
1	LIGHTING - WEST CORRIDOR 220		20 A	1	142 / 540			1	20 A		RECEPTS - WEST CORRIDOR 220	2
3	LIGHTING - COSTUME SHOP 223		20 A	1		505 / 180		1	20 A		RECEPTS - FITTING ROOM 221, STORAGE 221	4
5	LIGHTING - STORAGE 219, 221, 222, 224		20 A	1			289 / 720	1	20 A		RECEPTS - SHOP MANAGER'S OFFICE 224	6
7	LIGHTING - ACTIING CLASSROOM 218		20 A	1	424 / 680			1	20 A		PROJ/SCREEN/TEACHER STATION - CLASSROO...	8
9	LIGHTING - WEST CORRIDOR 220		20 A	1		148 / 180		1	20 A		SOUTH QUAD RECEPT - DESIGN LAB 218	10
11	DRYER BOOSTER FAN - CRAFTS ROOM 222		30 A	1			720 / 360	1	20 A		SOUTHWEST QUAD RECEPT - DESIGN LAB 218	12
13	WASHER - CRAFTS ROOM 222		20 A	1	1400 / 180			1	20 A		WEST (SOUTH) QUAD - DESIGN LAB 218	14
15	RECEPTS - CRAFTS ROOM 222		20 A	1		360 / 180		1	20 A		WEST (NORTH) QUAD - DESIGN LAB 218	16
17	COUNTERTOP RECEPTS - CRAFTS ROOM 222		20 A	1			180 / 360	1	20 A		NORTH RECEPTS - DESIGN LAB 218	18
19	COUNTERTOP RECEPTS - CRAFTS ROOM 222		20 A	1	360 / 360			1	20 A		SOUTHEAST RECEPTS - DESIGN LAB 218	20
21	COUNTERTOP RECEPTS - CRAFTS ROOM 222		20 A	1		180 / 900		1	20 A		RECEPTS - STORAGE 201, SERVICES 202	22
23	REFRIGERATOR - CRAFTS ROOM 222		20 A	1			1100 / 360	1	20 A		SOUTH COUNTERTOP QUAD - COSTUME SHOP...	24
25	SPARE		20 A	1	0 / 360			1	20 A		SOUTH COUNTERTOP QUAD - COSTUME SHOP...	26
27	SPARE		20 A	1		0 / 360		1	20 A		SOUTH COUNTERTOP QUAD - COSTUME SHOP...	28
29	SPARE		20 A	1			0 / 360	1	20 A		SOUTH COUNTERTOP QUAD - COSTUME SHOP...	30
31	SPARE		20 A	1	0 / 360			1	20 A		SOUTH COUNTERTOP QUAD - COSTUME SHOP...	32
33	SPARE		20 A	1		0 / 540		1	20 A		SOUTH COUNTERTOP QUAD - COSTUME SHOP...	34
35	SPARE		20 A	1			0 / 180	1	20 A		SOUTH CORD REEL - COSTUME SHOP 223	36
37	SPARE		20 A	1	0 / 180			1	20 A		NORTH CORD REEL - COSTUME SHOP 223	38
39	SPARE		20 A	1		0 / 360		1	20 A		NORTH QUAD - COSTUME SHOP 223	40
41	SPARE		20 A	1			0 / 360	1	20 A		NORTH QUAD - COSTUME SHOP 223	42
43	SPARE		30 A	2	0 / 360			1	20 A		NORTH QUAD - COSTUME SHOP 223	44
45						0 / 360		1	20 A		NORTH QUAD - COSTUME SHOP 223	46
47	DRYER - CRAFTS ROOM 222		30 A	2			2340 / 360	1	20 A		WEST RECEPTS - COSTUME SHOP 223	48
49					2340 / 1176			1	20 A		EXHAUST FAN (EF-C) - ROOF	50
51	ELECTRIC 2-BURNER STOVETOP - CRAFTS ROOM 222		30 A	2		2340 / 180		1	20 A		RECEPT CRAFTS ROOM 222	52
53							2340 / 696	1	20 A		EXHAUST FAN (EF-G) - ROOF	54
55	DYE VAT - CRAFTS ROOM 222		90 A	3	8168 / 0			1	20 A		SPARE	56
57						8168 / 0		1	20 A		SPARE	58
59							8168 / 0	1	20 A		SPARE	60
				TOTALS :	17030 VA	14942 VA	18893 VA					

TOTAL CONNECTED LOAD (VA) : 50865 VA **TOTAL CONNECTED LOAD (AMPS) :** 141 A

REMARKS: 28-INCH WIDE ENCLOSURE. INTEGRAL SPD.

NOTES:

2B PANELBOARD SCHEDULE

LOCATION : NORTH CORRIDOR 214 | **SCCR (AMPS RMS SYMM):** 22,000 | **SERVICE :** 120/208 Wye | **AMP :** 225 A | **MAIN :** MLO | **NEMA:** Type 1 | **MOUNTING :** Recessed

CKT	DESCRIPTION	NOTE	AMP	POLE	A	B	C	POLE	AMP	NOTE	DESCRIPTION	CKT
1	LIGHTING - NORTH CORRIDOR 214		20 A	1	463 / 360			1	20 A		RECEPTS - NORTH CORRIDOR 214	2
3	LIGHTING - SEATING 208A, LOUNGE 209		20 A	1		1035 / 180		1	20 A		ELECTRIC WATER COOLER (EWC) - N. CORRID...	4
5	LIGHTING - GENERAL CLASSROOM 217		20 A	1			411 / 540	1	20 A		USB RECEPTS - SEATING 208A	6
7	LIGHTING - GENERAL CLASSROOM 216		20 A	1	297 / 900			1	20 A		NORTHWEST RECEPTS - STUDENT LOUNGE 209	8
9	LIGHTING - GENERAL CLASSROOM 213		20 A	1		408 / 1260		1	20 A		SOUTH RECEPTS - STUDENT LOUNGE 209	10
11	LIGHTING - GENERAL CLASSROOM 212		20 A	1			519 / 720	1	20 A		PROJ/SCREEN/TEACHER STATION - CLASSROO...	12
13	LIGHTING - GENERAL CLASSROOM 210		20 A	1	260 / 540			1	20 A		NORTHWEST RECEPTS - GEN. CLASSROOM 217	14
15	SPARE		20 A	1		0 / 360		1	20 A		SOUTHEAST RECEPTS - GEN. CLASSROOM 217	16
17	SPARE		20 A	1			0 / 720	1	20 A		BACK WALL MONITORS - GEN. CLASSROOM 217	18
19	SPARE		20 A	1	0 / 860			1	20 A		PROJ/SCREEN/TEACHER STATION - GEN....	20
21	SPARE		20 A	1		0 / 720		1	20 A		NORTHWEST RECEPTS - GEN. CLASSROOM 216	22
23	SPARE		20 A	1			0 / 900	1	20 A		SOUTHEAST RECEPTS - GEN. CLASSROOM 216	24
25	SPARE		20 A	1	0 / 860			1	20 A		PROJ/SCREEN/TEACHER STATION - GEN....	26
27	SPARE		20 A	1		0 / 1080		1	20 A		NORTHWEST RECEPTS - GEN. CLASSROOM 213	28
29	SPARE		20 A	1			0 / 900	1	20 A		SOUTHEAST RECEPTS - GEN. CLASSROOM 213	30
31	SPARE		20 A	1	0 / 860			1	20 A		PROJ/SCREEN/TEACHER STATION - GEN....	32
33	SPARE		20 A	1		0 / 720		1	20 A		NORTHWEST RECEPTS - GEN. CLASSROOM 212	34
35	SPARE		20 A	1			0 / 720	1	20 A		SOUTHEAST RECEPTS - GEN. CLASSROOM 212	36
37	SPARE		20 A	1	0 / 860			1	20 A		PROJ/SCREEN/TEACHER STATION - GEN....	38
39	RECEPTS - WOMEN 215		20 A	1		180 / 720		1	20 A		NORTHWEST RECEPTS - GEN. CLASSROOM 210	40
41	VAV CONTROL TRANSFORMERS - CLASSROOM...		20 A	1			360 / 720	1	20 A		SOUTHEAST RECEPTS - GEN. CLASSROOM 210	42
				TOTALS :	6260 VA	6664 VA	6510 VA					

TOTAL CONNECTED LOAD (VA) : 19433 VA **TOTAL CONNECTED LOAD (AMPS) :** 54 A

REMARKS: INTEGRAL SPD.

NOTES:

2A PANELBOARD SCHEDULE

LOCATION : SOUTH CORRIDOR 206 | **SCCR (AMPS RMS SYMM):** 22,000 | **SERVICE :** 120/208 Wye | **AMP :** 225 A | **MAIN :** MLO | **NEMA:** Type 1 | **MOUNTING :** RECESSED

CKT	DESCRIPTION	NOTE	AMP	POLE	A	B	C	POLE	AMP	NOTE	DESCRIPTION	CKT
1	LIGHTING - SOUTH CORRIDOR 206		20 A	1	231 / 360			1	20 A		RECEPTS - S. CORRIDOR 206	2
3	LIGHTING - EAST CORRIDOR 208		20 A	1		506 / 500		1	20 A		ELECTRIC WATER COOLER (EWC) - S CORRIDO...	4
5	LIGHTING - GENERAL CLASSROOM 203		20 A	1			411 / 900	1	20 A		WEST USB RECEPTS - SEATING 208A	6
7	LIGHTING - GENERAL CLASSROOM 205		20 A	1	816 / 540			1	20 A		SOUTHEAST RECEPTS - CORRIDOR 208	8
9	LIGHTING - GENERAL CLASSROOM 207		20 A	1		408 / 180		1	20 A		RECEPTS - MEN 204	10
11	SPARE		20 A	1			0 / 680	1	20 A		PROJ/SCREEN/TEACHER STATION - CLASSROO...	12
13	SPARE		20 A	1	0 / 1080			1	20 A		NORTHEAST RECEPTS - GEN. CLASSROOM 203	14
15	SPARE		20 A	1		0 / 720		1	20 A		SOUTHWEST RECEPTS - GEN. CLASSROOM 203	16
17	SPARE		20 A	1			0 / 860	1	20 A		PROJ/SCREEN/TEACHER STATION - CLASSROO...	18
19	SPARE		20 A	1	0 / 900			1	20 A		NORTHEAST RECEPTS - GEN. CLASSROOM 205	20
21	SPARE		20 A	1		0 / 720		1	20 A		SOUTHWEST RECEPTS - GEN. CLASSROOM 205	22
23	SPARE		20 A	1			0 / 360	1	20 A		VAV CONTROL TRANSFORMER - CLASSROOM...	24
25	SPARE		20 A	1	0 / 1080			1	20 A		TV MONITORS/TEACHER STATION - CLASSROO...	26
27	SPARE		20 A	1		0 / 720		1	20 A		SOUTH RECEPTS - GENERAL CLASSROOM 207	28
29	SPARE		20 A	1			0 / 720	1	20 A		NORTH RECEPTS - GENERAL CLASSROOM 207	30
31	SPARE		20 A	1	0 / 720			1	20 A		CONFIDENCE MONITORS - GENERAL...	32
33	SPARE		20 A	1		0 / 500		1	20 A		PROPELLER UNIT HEATER (PUH-A) - STAIR #1	34
35	SPARE		20 A	1			0 / 0	1	20 A		SPARE	36
37	SPARE		20 A	1	0 / 0			1	20 A		SPARE	38
39	SPARE		20 A	1		0 / 0		1	20 A		SPARE	40
41	SPARE		20 A	1			0 / 0	1	20 A		SPARE	42
				TOTALS :	5727 VA	4254 VA	3931 VA					

TOTAL CONNECTED LOAD (VA) : 13912 VA **TOTAL CONNECTED LOAD (AMPS) :** 39 A

REMARKS: INTEGRAL SPD.

NOTES:

SECOND FLOOR PANELBOARDS (NORMAL)

THIRD FLOOR PANELBOARDS

3C PANELBOARD SCHEDULE

LOCATION : TV STUDIO 333 | **SCCR (AMPS RMS SYMM):** 22,000 | **SERVICE :** 120/208 Wye | **AMP :** 225 A | **MAIN :** MLO | **NEMA:** Type 1 | **MOUNTING :** RECESSED

CKT	DESCRIPTION	NOTE	AMP	POLE	A	B	C	POLE	AMP	NOTE	DESCRIPTION	CKT
1	WEST CONNECTOR STRIP - CIR. #1 - TV STUDIO...		20 A	1	1000 / 360			1	20 A		SOUTHWEST RECEPT - TV STUDIO 333	2
3	WEST CONNECTOR STRIP - CIR. #2 - TV STUDIO...		20 A	1		1000 / 360		1	20 A		WEST RECEPT - TV STUDIO 333	4
5	WEST CONNECTOR STRIP - CIR. #3 - TV STUDIO...		20 A	1			1000 / 360	1	20 A		NORTHWEST RECEPT - TV STUDIO 333	6
7	WEST CONNECTOR STRIP - CIR. #4 - TV STUDIO...		20 A	1	1000 / 360			1	20 A		NORTH QUAD - TV STUDIO 333	8
9	WEST CONNECTOR STRIP - CIR. #5 - TV STUDIO...		20 A	1		1000 / 360		1	20 A		NORTH RECEPTS - TV STUDIO 333	10
11	WEST CONNECTOR STRIP - CIR. #6 - TV STUDIO...		20 A	1			1000 / 360	1	20 A		EAST RECEPTS - TV STUDIO 333	12
13	WEST CONNECTOR STRIP - CIR. #7 - TV STUDIO...		20 A	1	1000 / 360			1	20 A		SOUTHEAST QUAD - TV STUDIO 333	14
15	WEST CONNECTOR STRIP - CIR. #8 - TV STUDIO...		20 A	1		1000 / 360		1	20 A		SOUTH QUAD - TV STUDIO 333	16
17	WEST CONNECTOR STRIP - CIR. #9 - TV STUDIO...		20 A	1			1000 / 360	1	20 A		SOUTHWEST QUAD - TV STUDIO 333	18
19	WEST CONNECTOR STRIP - CIR. #10 - TV STUDI...		20 A	1	1000 / 360			1	20 A		SONY CAMERA - TV STUDIO 333	20
21	E CONNECTOR STRIP - CIR. #1 - TV STUDIO 333		20 A	1		1000 / 582		1	20 A		LIGHTING - TV STUDIO 333	22
23	E CONNECTOR STRIP - CIR. #2 - TV STUDIO 333		20 A	1			1000 / 540	1	20 A		RECEPT - WEST CORRIDOR 339	24
25	E CONNECTOR STRIP - CIR. #3 - TV STUDIO 333		20 A	1	1000 / 0			1	20 A		SPARE	26
27	E CONNECTOR STRIP - CIR. #4 - TV STUDIO 333		20 A	1		1000 / 0		1	20 A		SPARE	28
29	E CONNECTOR STRIP - CIR. #5 - TV STUDIO 333		20 A	1			1000 / 0	1	20 A		SPARE	30
31	E CONNECTOR STRIP - CIR. #6 - TV STUDIO 333		20 A	1	1000 / 0			1	20 A		SPARE	32
33	E CONNECTOR STRIP - CIR. #7 - TV STUDIO 333		20 A	1		1000 / 0		1	20 A		SPARE	34
35	E CONNECTOR STRIP - CIR. #8 - TV STUDIO 333		20 A	1			1000 / 0	1	20 A		SPARE	36
37	E CONNECTOR STRIP - CIR. #9 - TV STUDIO 333		20 A	1	1000 / 0			1	20 A		SPARE	38
39	E CONNECTOR STRIP - CIR. #10 - TV STUDIO 333		20 A	1		1000 / 0		1	20 A		SPARE	40
41	SPARE		20 A	1			0 / 0	1	20 A		SPARE	42
				TOTALS :	8440 VA	8662 VA	7620 VA					

TOTAL CONNECTED LOAD (VA) : 24722 VA **TOTAL CONNECTED LOAD (AMPS) :** 69 A

REMARKS: INTEGRAL SPD.

NOTES:

3B PANELBOARD SCHEDULE

LOCATION : NORTH CORRIDOR 338 | **SCCR (AMPS RMS SYMM):** 22,000 | **SERVICE :** 120/208 Wye | **AMP :** 225 A | **MAIN :** MLO | **NEMA:** Type 1 | **MOUNTING :** Recessed

CKT	DESCRIPTION	NOTE	AMP	POLE	A	B	C	POLE	AMP	NOTE	DESCRIPTION	CKT
1	LIGHTING - NORTH CORRIDOR 338		20 A	1	461 / 360			1	20 A		RECEPTS - NORTH CORRIDOR 338	2
3	LIGHTING - SEATING 317A, LOUNGE 316		20 A	1		984 / 500		1	20 A		ELECTRIC WATER COOLER (EWC) - N. CORRID...	4
5	LIGHTING - MULTIMEDIA SALES 332		20 A	1			284 / 360	1	20 A		RECEPT SEATING 317A	6
7	LIGHTING - PUBS. OFFICE 331, ASSIST. 330,...		20 A	1	250 / 1080			1	20 A		WEST RECEPTS - STUDENT LOUNGE 316	8
9	LIGHTING - AUDIO COMMON AREA 323		20 A	1		812 / 540		1	20 A		EAST RECEPTS - STUDENT LOUNGE 316	10
11	LIGHTING - RADIO STUDIO 318, 319, 321, 325, 32...		20 A	1			679 / 180	1	20 A		RECEPTS - WOMEN 329	12
13	SPARE		20 A	1	0 / 360			1	20 A		WEST QUAD - MULTIMEDIA SALES 332	14
15	SPARE		20 A	1		0 / 360		1	20 A		WEST QUAD - MULTIMEDIA SALES 332	16
17	SPARE		20 A	1			0 / 540	1	20 A		SOUTHEAST RECEPTS - MULTIMEDIA SALES 332	18
19	SPARE		20 A	1	0 / 540			1	20 A		NORTH RECEPTS - MULTIMEDIA SALES 332	20
21	SPARE		20 A	1		0 / 720		1	20 A		RECEPTS - PUBS. OFFICE 331	22
23	SPARE		20 A	1			0 / 900	1	20 A		RECEPTS - PUBS. ASSIST. 330	24
25	SPARE		20 A	1	0 / 180			1	20 A		RECEPT PUBS. ASSIST. 330	26
27	SPARE		20 A	1		0 / 1080		1	20 A		RECEPTS - SALES MANAGER 328	28
29	SPARE		20 A	1			0 / 500	1	20 A		PROPELLER UNIT HEATER (PUH-A) - STAIR #3	30
31	SPARE		20 A	1	0 / 360			1	20 A		VAV CONTROL TRANSFORMERS - PUBS. OFFIC...	32
33	SPARE		20 A	1		0 / 1176		1	20 A		EXHAUST FAN (EF-B) - ROOF	34
35	SPARE		20 A	1			0 / 0	1	20 A		SPARE	36
37	SPARE		20 A	1	0 / 0			1	20 A		SPARE	38
39	SPARE		20 A	1		0 / 0		1	20 A		SPARE	40
41	SPARE		20 A	1			0 / 0	1	20 A		SPARE	42
				TOTALS :	3591 VA	6172 VA	3444 VA					

TOTAL CONNECTED LOAD (VA) : 13207 VA **TOTAL CONNECTED LOAD (AMPS) :** 37 A

REMARKS: INTEGRAL SPD.

NOTES:

3A PANELBOARD SCHEDULE

LOCATION : SOUTH CORRIDOR 309 | **SCCR (AMPS RMS SYMM):** 22,000 | **SERVICE :** 120/208 Wye | **AMP :** 225 A | **MAIN :** MLO | **NEMA:** Type 1 | **MOUNTING :** Recessed

CKT	DESCRIPTION	NOTE	AMP	POLE	A	B	C	POLE	AMP	NOTE	DESCRIPTION	CKT
1	LIGHTING - SOUTH CORRIDOR 309		20 A	1	282 / 360			1	20 A		RECEPT - SOUTH CORRIDOR 309	2
3	SOUTH LIGHTING - EAST CORR. 317, SEATING...		20 A	1		455 / 500		1	20 A		ELECTRIC WATER COOLER (EWC) - S. CORRID...	4
5	LIGHTING - CONF. 308		20 A	1			624 / 540	1	20 A		USB RECEPTS - SEATING 317A	6
7	LIGHTING - STUDENT MEDIA OFFICES 311		20 A	1	555 / 720			1	20 A		USB RECEPTS - SEATING 317A, E. CORRIDOR 317	8
9	LIGHTING - MANAGER 303, 305, 307, 310, 312,...		20 A	1		917 / 180		1	20 A		RECEPTS - MENS 306	10
11	LIGHTING - CONTROL ROOM 334, HALL 337		20 A	1			313 / 540	1	20 A		WEST RECEPTS - WORKRM/ CIRCULATION 304	12
13	LIGHTING - ESPN3 305		20 A	1	221 / 1500			1	20 A		MICROWAVE - WORKRM/ CIRCULATION 304	14
15	LIGHTING - VIDEO EDITING 336		20 A	1		354 / 1320		1	20 A		REFRIGERATOR - WORKRM/ CIRCULATION 304	16
17	LIGHTING - STORAGE 301, 302		20 A	1			148 / 180	1	20 A		COUNTERTOP RECEPT - WORKROOM 304	18
19	LIGHTING WEST CORRIDOR 339		20 A	1	142 / 180			1	20 A		COUNTERTOP RECEPT - WORKROOM 304	20
21	SPARE		20 A	1		0 / 1320		1	20 A		120V COPIER RECEPT - WORKROOM 304	22
23	SPARE		20 A	1			0 / 360	1	20 A		VAV CONTROL TRANSFORMER - CONF. RM. 308	24
25	SPARE		20 A	1	0 / 360			1	20 A		RECEPTS - WORKROOM 304	26
27	SPARE		20 A	1		0 / 720		1	20 A		RECEPTS - STUDENT MEDIA OFFICES 311	28
29	RECEPT SYCAMORE CREATIONS 315		20 A	1			1800 / 360	1	20 A		PROJ/SCREEN/TEACHER STATION - CONF. RM....	30
31	RECEPT - VIDEO EDITING 313, STORAGE 314		20 A	1	1260 / 900			1	20 A		NORTHEAST RECEPTS - CONF. RM. 308	32
33	RECEPT STUDENT MEDIA EXECUTIVE DIRECTO...		20 A	1		1080 / 540		1	20 A		SOUTHWEST RECEPTS - CONF. RM. 308	34
35	RECEPTS - ADMIN. ASSISTANT 310		20 A	1			900 / 1080	1	20 A		RECEPTS - TV MANAGER 303	36
37	PRINTER - ADMIN. ASSISTANT 310		20 A	1	500 / 1080			1	20 A		RECEPTS - SPORTS MANAGER 305	38
39	TEMPORARY POWER - ELEVATOR		30 A	2		2000 / 1080		1	20 A		RECEPTS - SYCAMORE CREATIONS MANAGER...	40
41							2000 / 1176	1	20 A		EXHAUST FAN (EF-A) - ROOF	42
43	PENTHOUSE RECEPT - ROOF		20 A	1	180 / 0			1	20 A		SPARE	44
45	SPARE		20 A	1		0 / 0		1	20 A		SPARE	46
47	SPARE		20 A	1			0 / 0	1	20 A		SPARE	48
49	SPARE		20 A	1	0 / 0			1	20 A		SPARE	50
51	SPARE		20 A	1		0 / 0		1	20 A		SPARE	52
53	SPARE		20 A	1			0 / 0	1	20 A		SPARE	54
55	SPARE		20 A	1	0 / 0			1	20 A		SPARE	56
57	SPARE		20 A	1		0 / 0		1	20 A		SPARE	58
59	SPARE		20 A	1			0 / 0	1	20 A		SPARE	60
				TOTALS :	8239 VA	10466 VA	10022 VA					

TOTAL CONNECTED LOAD (VA) : 28727 VA **TOTAL CONNECTED LOAD (AMPS) :** 80 A

REMARKS: 28-INCH WIDE ENCLOSURE. INTEGRAL SPD.

NOTES:

3GB PANELBOARD SCHEDULE

LOCATION : CORRIDOR 320 | **SCCR (AMPS RMS SYMM):** 22,000 | **SERVICE :** 120/208 Wye | **AMP :** 150 A | **MAIN :** MLO | **NEMA:** Type 1 | **MOUNTING :** Recessed

CKT	DESCRIPTION	NOTE	AMP	POLE	A	B	C	POLE	AMP	NOTE	DESCRIPTION	CKT
1	RECEPT AUDIO STUDIO #1 327		20 A	1	720 / 540			1	20 A		RECEPTS - CORRIDOR 320, 324	2
3	RECEPTS - AUDIO STUDIO #2 326		20 A	1		900 / 540		1	20 A		SOUTHEAST RECEPTS - AUDIO COMMON AREA...	4
5	RECEPTS - AUDIO STUDIO #1 325		20 A	1			720 / 360	1	20 A		NORTH QUAD - AUDIO COMMON AREA 323	6
7	RECEPTS - RADIO STUDIO #3 322		20 A	1	720 / 360			1	20 A		NORTH QUAD - AUDIO COMMON AREA 323	8
9	RACK #1 RECEPT - RADIO STUDIO #3 322		20 A	1		360 / 900		1	20 A		NORTH RECEPTS - AUDIO COMMON AREA 323	10
11	RACK #2 RECEPT - RADIO STUDIO #3 322		20 A	1			360 / 180	1	20 A		COUNTERTOP DUPLEX GFI - AUDIO COMMON...	12
13	RECEPTS - RADIO STUDIO #2 319		20 A	1	720 / 1500			1	20 A		MICROWAVE - AUDIO COMMON AREA 323	14
15	RECEPT RADIO STUDIO #1 318		20 A	1		900 / 1320		1	20 A		REFRIGERATOR - AUDIO COMMON AREA 323	16
17	RECEPT RADIO STUDIO #1 318		20 A	1			720 / 180	1	20 A		RECEPT AUDIO COMMON AREA 323	18
19	RECEPTS - FM RADIO STUDIO MANAGER 321		20 A	1	1080 / 180			1	20 A		RECEPT AUDIO COMMON AREA 323	20
21	SPARE		20 A	1		0 / 180		1	20 A		RECEPT AUDIO COMMON AREA 323	22
23	SPARE		20 A	1			0 / 0	1	20 A		SPARE	24
25	SPARE		20 A	1	0 / 0			1	20 A		SPARE	26
27	SPARE		20 A	1		0 / 0		1	20 A		SPARE	28
29	SPARE		20 A	1			0 / 0	1	20 A		SPARE	30
				TOTALS :	5820 VA	5100 VA	2520 VA					

TOTAL CONNECTED LOAD (VA) : 13440 VA **TOTAL CONNECTED LOAD (AMPS) :** 37 A

REMARKS: INTEGRAL SPD. ISOLATED GROUND.

NOTES:

3GA PANELBOARD SCHEDULE

LOCATION : HALL 337 | **SCCR (AMPS RMS SYMM):** 22,000 | **SERVICE :** 120/208 Wye | **AMP :** 150 A | **MAIN :** MLO | **NEMA:** Type 1 | **MOUNTING :** Recessed

CKT	DESCRIPTION	NOTE	AMP	POLE	A	B	C	POLE	AMP	NOTE	DESCRIPTION	CKT
1	SPARE		20 A	1	0 / 0			1	20 A		SPARE	2
3	SPARE		20 A	1		0 / 720		1	20 A		RECEPT - STORAGE 301, 302, HALL 337	4
5	SPARE		20 A	1			0 / 900	1	20 A		TV MONITORS - CONTROL ROOM 334	6
7	SPARE		20 A	1	0 / 360			1	20 A		RECEPT CONTROL ROOM 334	8
9	SPARE		20 A	1		0 / 360		1	20 A		RECEPT CONTROL ROOM 334	10
11	SPARE		20 A	1			0 / 360	1	20 A		RECEPT CONTROL ROOM 334	12
13	SPARE		20 A	1	0 / 360			1	20 A		RECEPT CONTROL ROOM 334	14
15	SPARE		20 A	1		0 / 900		1	20 A		RECEPT CONTROL ROOM 334	16
17	SPARE		20 A	1			0 / 360	1	20 A		RECEPT VIDEO EDIT. 336	18
19	SPARE		20 A	1	0 / 360			1	20 A		RECEPT VIDEO EDIT. 336	20
21	SPARE		20 A	1		0 / 360		1	20 A		RECEPT VIDEO EDIT. 336	22
23	SPARE		20 A	1			0 / 180	1	20 A		RECEPT - Space 019E	24
25	SPARE		20 A	1	0 / 540			1	20 A		NORTHEAST GENERAL RECEPTS - ESPN3 335	26
27	SPARE		20 A	1		0 / 360		1	20 A		NORTH ROW 1 - CIRCUIT 1 - ESPN3 335	28
29	SPARE		20 A	1			0 / 360	1	20 A		NORTH ROW 1 - CIRCUIT 2 - ESPN3 335	30
31	RACK #1 CIRCUIT 1 - ESPN3 335		20 A	1	360 / 360			1	20 A		NORTH ROW 2 - CIRCUIT 1 - ESPN3 335	32
33	RACK #1 CIRCUIT 2 - ESPN3 335		20 A	1		360 / 360		1	20 A		NORTH ROW 2 - CIRCUIT 2 - ESPN3 335	34
35	RACK #2 CIRCUIT 1 - ESPN3 335		20 A	1			360 / 360	1	20 A		SOUTHWEST GENERAL RECEPTS - ESPN3 335	36
37	RACK #2 CIRCUIT 2 - ESPN3 335		20 A	1	360 / 720			1	20 A		TELEVISION MONITOR - ESPN3 335	38
39	RACK #3 CIRCUIT 1 - ESPN3 335		20 A	1		360 / 360		1	20 A		VAV CONTROL TRANSFORMER - Space 019E	40
41	RACK #3 CIRCUIT 2 - ESPN3 335		20 A	1			360 / 0	1	20 A		SPARE	42
				TOTALS :	3420 VA	4140 VA	3240 VA					

TOTAL CONNECTED LOAD (VA) : 10800 VA **TOTAL CONNECTED LOAD (AMPS) :** 30 A

REMARKS: INTEGRAL SPD. ISOLATED GROUND.

NOTES:

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DANIEL E. DIMOND REGISTERED No. PE60910351 STATE OF INDIANA PROFESSIONAL ENGINEER

CERTIFICATION 06/05/2020

100% CONSTRUCTION DOCUMENTS

Indiana State University - Dreiser Hall Renovation

221 North 6th Street
Terre Haute, IN 47809

Project No.: 19A052
Drawn By: JPS
Checked By: TEH
Scale: See Drawing
Issue Date: 06/05/2020

REVISION SCHEDULE

Rev. #	Revision Description	Issue Date

SCHEDULES - PANELBOARDS

E6.13

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#	SYMBOL	DEFINITION
1	ACC	Administrative Control Console
2	ADA	Americans with Disabilities Act
3	AFF	Above Finished Floor
4	AFG	Above Finished Grade
5	AFSF	Above Finished Stage Floor
6	AM	Amplitude Modulation
7	ANSI	American National Standards Institute
8	ASME	American Society of Mechanical Engineers
9	ASTM	American Society of Testing Materials
10	ATM	Asynchronous Transfer Mode
11	AVR	Audio Visual Rack
12	AWG	American Wire Gauge
13	BFC	Below Finished Ceiling
14	BGP	Border (Boundary) Gateway Protocol
15	BICSI	Building Industry Consulting Services
16	BIT	Binary digit
17	BOM	Bill of Material
18	BPS	Bits per second
19	BRI	Basic Rate Interface (ISDN)
20	CAD	Computer Aided Design
21	CAN	Campus Area Network
22	CATV	Community Antenna Television
23	CCITT	Consultative Committee for International
24	CCTV	Closed Circuit Television
25	CDDI	Copper Distributed Data Interface
26	CH	Counter Height
27	CLEC	Competitive Local Exchange Carrier
28	CPE	Customer Premises Equipment
29	CPU	Central Processing Unit
30	CSA	Canadian Standards Associations
31	CSMA/CA	Carrier-Sense Multiple Access with Collision
32	CSMA/CD	Carrier-Sense Multiple Access/Collision
33	CSU	Channel Service Unit
34	CT	Communications Technology
35	CTC	Communications Technology Contractor
36	db	Decibel
37	DSL	Digital Subscriber Line
38	DSU	Data Service Unit/Digital Service Unit
39	DTE	Data Terminal Equipment
40	DTR	Data/Telecommunications Rack
41	DVR	Digital Video Recorder
42	EC	Electrical Contractor
43	EF	Entrance Facility
44	EGP	Exterior Gateway Protocol
45	EIA	Electronics Industries Association
46	EMI	Electromagnetic Interface
47	ER	Equipment Room
48	ETSI	European Telecommunications Standards
49	FB	Floor Box
50	FCC	Federal Communications Comission
51	FDDI	Fiber Data Distributed Interface
52	GAN	Global Area Network
53	GB	Giga Byte
54	Gb/s	(Gbps) - Gigabits per second
55	GHz	Gigahertz
56	HC	Horizontal Cross-connect
57	IC	Intermediate Cross-connect
58	IDF	Intermediate Distribution Frame (Replaced by
59	IEEE	Institute of Electrical and Electronics
60	IP	Internet Protocol
61	IPX	Internet Packet Exchange
62	ISDN	Integrated Services Digital Network
63	ISO	International Organization for Standardization
64	ISP	Internet Service Provider
65	LAN	Local Area Network
66	LANE	LAN Emulation
67	LASER	Light Amplification by Stimulated Emission of
68	LAT	Local Area Transport
69	LATA	Local Access and Transport Area
70	LEC	Local Exchange Carrier
71	LED	Light Emitting Diode
72	LI	Local (AV) Input
73	LO	Local (AV) Output
74	MAC	Media Access Control
75	MAN	Metropolitan Area Network
76	MB	Mega Bytes
77	Mb/s	Megabits per second
78	MC	Main Cross-connect
79	MDF	Main Distribution Frame (Also see ER)
80	MHz	Megahertz
81	MODEM	Modulator/Demodulator
82	ms	millisecond
83	MTBF	Mean Time Between Failures
84	MPLS	Multi Protocol Label Switching
85	OC	Optical Carrier
86	OFE	Owner Furnished Equipment
87	OFOI	Owner Furnished, Owner Installed
88	OSI	Open Systems Interconnection
89	PAN	Personal Area Network
90	PAR	Public Address Rack
91	PAY	Pay Telephone Location
92	pps	Packets Per Second
93	PRI	Primary Rate Interface
94	PSTN	Public Switched Telephone Network
95	QoS	Quality of Service
96	RAID	Random Array of Inexpensive Disks
97	RAM	Random Access Memory
98	RBOC	Regional Bell Operating Company
99	RF	Radio Frequency
100	RFC	Request For Comment
101	RFI	Request For Information/ Radio Frequency
102	RFP	Request For Proposal
103	RFQ	Request For Quotation
104	RFR	RF Equipment Rack
105	RIP	Routing Information Protocol
106	RMON	Remote Monitor
107	ROM	Read Only Memory
108	SBB	Security system BackBoard
109	SC	Sound Cabinet; screw cover
110	SCR	Security Equipment Rack
111	SJB	Speaker Junction Box
112	SCJB	Security Camera Junction Box
113	SMTP	Simple Main Transfer Protocol
114	SNA	Systems Network Architecture
115	SNMP	Simple Network Management Protocol
116	SONET	Synchronous Optical Network
117	SP	Service Provider (Also Local Service Provider)
118	SR	Strike Release - Door
119	SSR	Sound System Rack
120	TAAC	To Above Accessible Ceiling
121	RFI	Request For Information/ Radio Frequency
122	RFP	Request For Proposal
123	RFQ	Request For Quotation
124	RFR	RF Equipment Rack
125	RIP	Routing Information Protocol
126	RMON	Remote Monitor
127	ROM	Read Only Memory
128	SBB	Security system BackBoard
129	SC	Sound Cabinet; screw cover
130	SCR	Security Equipment Rack
131	SJB	Speaker Junction Box
132	SCJB	Security Camera Junction Box
133	SMTP	Simple Main Transfer Protocol
134	SNA	Systems Network Architecture
135	SNMP	Simple Network Management Protocol
136	SONET	Synchronous Optical Network
137	SP	Service Provider (Also Local Service Provider)
138	SR	Strike Release - Door
139	SSR	Sound System Rack
140	TAAC	To Above Accessible Ceiling
141	TAHC	To Above accessible Hallway Ceiling
142	TB	Tera Byte
143	TBB	Telecommunications BackBoard
144	TCP	Transmission Control Protocol
145	TCP/IP	Transmission Control Protocol/Internet
146	TIA	Telecommunications Industries Association
147	TO	Telecommunications Outlet
148	TR	Telecommunications Room
149	UON	Unless Otherwise Noted
150	VCR	Video Cassette Recorder
151	VoIP	Voice over Internet Protocol
152	W	Wall Mounted Device
153	WAN	Wide Area Network
154	WAP	Wireless Access Point
155	WG	Wire Guard

COMMUNICATION TECHNOLOGY LEGEND

SYMBOL	DESCRIPTION	ROUGH-IN - SEE NOTE (2) BOX	HEIGHT	WIRE WAY	NOTES
	TELECOMMUNICATIONS (VOICE, DATA, AND VIDEO)				
W	VOICE OUTLET, WALL MOUNTED TELEPHONE W = DENOTES WALL TELEPHONE USE. UON ONE 4 PR UTP. EC = EMERGENCY CALL STATION (PHONE)	1-GANG BOX	* 48" AFF	1" CONDUIT	* MOUNTING HEIGHT SUBJECT TO ADA REQUIREMENTS
X	EQUIPMENT OUTLET X = DENOTES INTENDED USE: ELEV/ELEVATOR, FACP/FIRE ALARM CONTROL PANEL, BAS/BUILDING AUTOMATION SYSTEM (HVAC) UON TWO 4 PR UTP.	2-GANG BACK BOX, DEEP	COUNTER HEIGHT	1" CONDUIT	EQUIPMENT CONNECTION; COORDINATE LOCATION WITH ACCESS TO ELECTRICAL POWER OUTLET
X	DATA OUTLET X = DENOTES QUANTITY OF CABLES. MINIMUM 1 CABLE.	2-GANG BACK BOX, DEEP LI OPTION : 3-GANG BACK BOX, 3-1/2" DEEP	18" AFF	(2) 1" CONDUIT OR (1) 1 ¼" CONDUIT	WHEN "LI" SUBSCRIPT IS USED WITH THIS SYMBOL PROVIDE ALL ADDITIONAL CABLING AND CONNECTIVITY AS INDICATED ON DETAILS.
WAP	WIRELESS ACCESS POINT WAP = DENOTES SPECIAL USE. MINIMUM 2 CABLES	1-GANG BACK BOX WHEN WALL MOUNTED CEILING MOUNTED LOCATIONS SHALL INCLUDE A CABLE SUPPORT ; DISCREET CABLES TO ATTACH DIRECTLY TO DEVICE WHEN INSTALLED	SEE NOTES	3/4" CONDUIT	WALL MOUNTED VERSIONS OF THIS DEVICE SHALL BE INSTALLED 84" AFF OR 6" BELOW FINISHED CEILING, WHICHEVER IS HIGHER. PROVIDE 1 WAP PER EACH 25 USERS.
X	SPECIAL SUBSCRIPT DEFINITIONS IN ADDITION TO BASIC SYMBOL REQUIREMENTS: B = BLANK COVER PLATE. NO CONNECTORS OR CABLES LI = LOCAL AV INPUT OPTION (SEE SPECS AND DETAILS) LO = LOCAL OUTPUT; SPECIFIC LOCATION FOR TERMINATION OF LI CABLES (SEE SPECS AND DETAILS) FO = ADD ONE PAIR OF 50/125 MM FIBER OPTIC CABLE (SEE SPECS AND DETAILS)	2-GANG BACK BOX, DEEP LI OPTION : 3-GANG BACK BOX, 3-1/2" DEEP	18" AFF	(2) 1" CONDUIT OR (1) 1 ¼" CONDUIT LI OPTION : (3) 1" CONDUITS	WHEN "LI" SUBSCRIPT IS USED WITH THIS SYMBOL PROVIDE ALL ADDITIONAL CABLING AND CONNECTIVITY AS INDICATED ON DETAILS.
TV	TELEVISION OUTLET - WALL MOUNTED PROVIDE (2) DATA CABLES. LO = SPECIAL LOCAL AV OUTPUT OPTION. SEE SPECS AND DETAILS.	2-GANG BACK BOX, DEEP LO OPTION : 3-GANG DEVICE BOX, 3-1/2" DEEP	84" AFF	(2) 1" CONDUIT OR (1) 1 ¼" CONDUIT LI OPTION : (3) 1" CONDUITS	COORDINATE LOCATION OF THIS DEVICE WITH AC POWER. PROVIDE AC POWER RECEPTACLE ADJACENT TO EACH OF THESE DEVICES. PROVIDE ADDITIONAL CONDUITS TO CONCEAL AUDIO/VIDEO CABLING AS REQUIRED.
TV	TELEVISION OUTLET CEILING HUNG PROVIDE (2) DATA CABLES. LO = SPECIAL LOCAL AV OUTPUT OPTION. SEE SPECS AND DETAILS.	ABOVE CEILING CABLE SUPPORT; DISCREET CABLES TO PASS THROUGH MOUNTING STEM TO ATTACH DIRECTLY TO DEVICE WHEN INSTALLED	84" AFF		COORDINATE LOCATION OF THIS DEVICE WITH AC POWER. PROVIDE AC POWER RECEPTACLE ADJACENT TO EACH OF THESE DEVICES. PROVIDE ADDITIONAL CONDUITS TO CONCEAL AUDIO/VIDEO CABLING AS REQUIRED.
VP	VIDEO PROJECTOR LOCATION - CEILING MOUNTED PROVIDE (2) DATA CABLES MINIMUM UON. LO = SPECIAL LOCAL AV OUTPUT OPTION. SEE SPECS AND DETAILS.	ABOVE CEILING CABLE SUPPORT; DISCREET CABLES TO PASS THROUGH MOUNTING STEM TO ATTACH DIRECTLY TO DEVICE WHEN INSTALLED	84" AFF		COORDINATE LOCATION OF THIS DEVICE WITH AC POWER. PROVIDE AC POWER RECEPTACLE ADJACENT TO EACH OF THESE DEVICES. PROVIDE ADDITIONAL CONDUITS TO CONCEAL AUDIO/VIDEO CABLING AS REQUIRED.
VP	VIDEO PROJECTOR LOCATION - OUTLET (PORTABLE USE) PROVIDE (2) DATA CABLES MINIMUM UON. LO = SPECIAL LOCAL AV OUTPUT OPTION. SEE SPECS AND DETAILS.	2-GANG BACK BOX, DEEP LO OPTION : 3-GANG DEVICE BOX, 3-1/2" DEEP	84" AFF	(2) 1" CONDUIT OR (1) 1 ¼" CONDUIT LI OPTION : (3) 1" CONDUITS	COORDINATE LOCATION OF THIS DEVICE WITH AC POWER. PROVIDE AC POWER RECEPTACLE ADJACENT TO EACH OF THESE DEVICES. PROVIDE ADDITIONAL CONDUITS TO CONCEAL AUDIO/VIDEO CABLING AS REQUIRED.
CEILING MTD ZONE ENCLOSURE	TELECOMMUNICATIONS ACTIVE CEILING ENCLOSURE PROVIDE (2) DATA CABLES MINIMUM UON. LO = SPECIAL LOCAL AV OUTPUT OPTION. SEE SPECS AND DETAILS.	SEE SPECIFICATIONS; MOUNTS IN 2' X 2' ACCESSIBLE CEILING TILE GRID	84" AFF		COORDINATE LOCATION OF THIS DEVICE WITH AC POWER. PROVIDE AC POWER RECEPTACLE ADJACENT TO EACH OF THESE DEVICES.
CEILING MTD ZONE ENCLOSURE XX XXX	SPECIAL USE (VP, WAP, ETC.) ACTIVE CEILING ENCLOSURE PROVIDE (2) DATA CABLES MINIMUM UON. LO = SPECIAL LOCAL AV OUTPUT OPTION. SEE SPECS AND DETAILS.	SEE SPECIFICATIONS; MOUNTS IN 2' X 2' ACCESSIBLE CEILING TILE GRID	84" AFF		COORDINATE LOCATION OF THIS DEVICE WITH AC POWER. PROVIDE AC POWER RECEPTACLE ADJACENT TO EACH OF THESE DEVICES.
X	TELE-POWER POLE X = DENOTES QUANTITY OF CABLE.	SEE NOTES	COORDINATE FOR POWER CONNECTION WITH E.C.	SEE NOTES	
	CONNECTION TO SYSTEM FURNITURE - WALL	MULTI-GANG BACK BOX, MINIMUM 2-1/2" DEEP WITH FURNITURE WHIP ASSEMBLY	18" AFF COORDINATE WITH FURNITURE / CASEWORK	PROPERLY SIZED FOR QUANTITY OF CABLES DESIRED (40% FILL)	PROVIDE FURNITURE WHIP ASSEMBLY TO THE SYSTEM FURNITURE. COORDINATE WITH FURNITURE SYSTEM.
	CONNECTION TO SYSTEM FURNITURE - FLOOR	SEE SPECIFICATIONS AND DETAILS FOR FLOOR BOX TYPE WITH FURNITURE WHIP ASSEMBLY		PROPERLY SIZED FOR QUANTITY OF CABLES DESIRED (40% FILL)	PROVIDE FURNITURE WHIP ASSEMBLY TO THE SYSTEM FURNITURE. COORDINATE WITH FURNITURE SYSTEM.
	FLOOR BOX, MULTI-FUNCTION COMMUNICATIONS BOX X = BOX TYPE	SEE DETAILS FOR ADDITIONAL REQUIREMENTS	FLUSH IN FINISHED FLOOR	(3) 1-1/4" CONDUIT AND (2) 3/4" CONDUIT TAAC	
X	FLOOR OUTLET - POKE THROUGH X = DENOTES QUANTITY OF CABLES.	SEE SPECS AND DETAILS			
	SECURITY				
DS	DOOR STATUS CONTACT(S) CONCEALED MAGNETIC TYPE ALL DOOR CONTACT SWITCHES SHALL BE DPDT UNLESS OTHERWISE NOTED	N/A	TOP OF DOOR FRAME	3/4" CONDUIT	PROVIDE TWO INDEPENDENT CONTACTS ON DOUBLE DOORS. ADJACENT DOORS MAY SHARE THE SAME ROUGH-IN IF CONSTRUCTION ALLOWS.
PR	PROXIMITY READER	1-GANG BOX, 3 ½" DEEP	48" AFF	1" CONDUIT	
DR	ACCESS CONTROL SYSTEM, DOOR RELEASE SWITCH	1-GANG BOX	48" AFF	3/4" CONDUIT	
KP	ACCESS CONTROL SYSTEM, DOOR ENTRY KEYPAD	1-GANG BOX, 3 ½" DEEP	48" AFF	1" CONDUIT	
PS	PANIC (DURESS) SWITCH/STATION	1-GANG DEVICE BOX	48" AFF	3/4" CONDUIT	
	DOOR LOCK, ELECTRIC SHEAR TYPE	AS REQUIRED BY LOCK	TOP OF DOOR FRAME	3/4" CONDUIT	
	ACCESS CONTROL SYSTEM, ELECTRIC DOOR LOCK/STRIKE	N/A	SIDE OF DOOR FRAME	3/4" CONDUIT	
C	SURVEILLANCE CAMERA SEE NOTE	2-GANG BOX, 3 ½" DEEP	10' EXTERIOR AFF	1" CONDUIT	COORDINATE ROUGH-IN WITH CAMERA SUPPLIER. PROVIDE CAMERA MOUNT COMPLETE FOR EXTERIOR CAMERAS. CAMERA BY OTHERS.
C CV	CAMERA, COVERT SEE NOTE	1-GANG DEVICE BOX	CEILING MOUNT	3/4" CONDUIT	COORDINATE ROUGH-IN WITH CAMERA SUPPLIER
CM	MICROPHONE, COVERT SEE NOTE	1-GANG DEVICE BOX	48" AFF	3/4" CONDUIT	COORDINATE ROUGH-IN WITH MICROPHONE SUPPLIER
S	CONTROL STATION	1-GANG BOX, 3 ½" DEEP	48" AFF	3/4" CONDUIT	
M	MOTION SENSOR	1-GANG BOX	96" AFF UON	3/4" CONDUIT	

* ALL 1-Gang and 2-Gang Boxes reference in this legend shall be assembled from 4 11/16th" square boxes with separate trim rings. Depth of composite assembly shall be as indicated.
** Where a mounting height measurement is applied to a rough-in, the measurement shall be referenced to the center of the rough-in device, UON.
*** A Triangle symbol without a subscript designation shall have at least the minimum quantities of cable(s); Soild – one voice, Hollow – one data, and Combination – one voice and one data cable.

Where a telecommunications outlet location is adjacent to an electrical outlet, the mounting height will be the same for each. Where multiple Telecommunications are adjacent (such as Telecommunications and Sound Devices, faceplates shall be coordinated to the same type and color and mounted at the same height.

CONDUIT RUNS SHALL HAVE NO MORE THAN 180 DEGREES OF BENDS WITHOUT AN ADEQUATE PULL BOX.

GENERAL NOTES – DEMOLITION:

1. THE CONTRACT DOCUMENTS DO NOT PROPOSE TO SHOW ALL SYSTEMS, MATERIALS, OR EQUIPMENT EXISTING ON THE PROJECT THAT WILL REQUIRE DEMOLITION. DEMOLITION DRAWINGS ARE BASED ON PARTIAL FIELD OBSERVATION. REPORT DISCREPANCIES TO THE CONSULTANT BEFORE DISTURBING EXISTING INSTALLATION.
2. REMOVE ALL ABANDONED CABLING AS DEFINED BY THE NEC.
3. PROVIDE DEMOLITION REQUIRED FOR REMOVAL OF SYSTEMS AND EQUIPMENT MADE OBSOLETE BY THIS PROJECT AND PAST PROJECTS.
4. IDENTIFY ITEMS TO BE SALVAGED WITH THE OWNER. PROVIDE NON-DESTRUCTIVE REMOVAL OF SYSTEMS, MATERIALS, AND EQUIPMENT FOR REUSE OR SALVAGE AS REQUIRED.
5. REMOVAL ALL COMMUNICATIONS DEBRIS FROM SITE AND LEGALLY DISPOSE OF IT.
6. RELOCATE EXISTING EQUIPMENT TO ACCOMMODATE CONSTRUCTION.
7. CONTRACTOR UNDERSTANDS THAT ADJACENT AREAS NEED TO REMAIN IN OPERATION AND THAT SERVICES TO THESE AREAS NEED TO BE MAINTAINED.
8. PROTECT EXISTING EQUIPMENT AND INSTALLATIONS INDICATED 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.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TELEPHONE, DATA, CENTRAL SOUND, SECURITY CCTV, AND ALARM SYSTEM SERVICES IN ALL EXISTING AREAS FOR DURATION OF PROJECT FOR MULTI-PHASED PROJECTS. CONTRACTOR SHALL COLLABORATE WITH OWNER'S TECHNOLOGY PERSONNEL AS NECESSARY AND PROVIDE TEMPORARY WIRING, CROSS-CONNECTS, TERMINATION DEVICES, AND LABOR TO MAINTAIN OPERATION ACCEPTABLE TO THE OWNER. CONTRACTOR SHALL REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION RELATED TO PHASING.
10. PROVIDE AND MAINTAIN TEMPORARY PARTITIONS OR DUST BARRIERS ADEQUATE TO KEEP DIRT, DUST, NOISE, AND OTHER PARTICLES FROM BEING TRANSFERRED TO ADJACENT AREAS.
11. CONTRACTOR SHALL PROVIDE ALL CUTTING AND PATCHING REQUIRED FOR REMOVAL OR RELOCATION OF EXISTING INSTALLATIONS.
12. SCHEDULE TO REMOVE EXISTING CABLING AFTER OWNER'S SYSTEMS ARE CUT OVER TO THE NEW CABLING SYSTEM.
13. REMOVE, STORE, PROTECT, CLEAN, REINSTALL, RECONNECT, AND MAKE OPERATION COMPONENTS INDICATED FOR RELOCATION/REINSTALLATION.
14. REMOVE DIRT, DUST, DEBRIS, UNSALVAGEABLE AND NON-REUSABLE ITEMS, AND THE LIKE FROM THE PROJECT SITE DAILY. REFUSE SHALL NOT BE ALLOWED TO BLOCK, OR OTHERWISE IMPAIR, CIRCULATION IN CORRIDORS, STAIRS, SIDEWALKS, OR OTHER TRAFFIC AREAS.
15. WHERE A DEVICE IS REMOVED FROM A WALL OR CEILING THAT IS TO REMAIN, PROVIDE A NEW BLANK COVERPLATE ON EXISTING DEVICE BOX. REMOVE ALL SURFACE RACEWAYS AND BOXES.
16. REMOVE ALL EXISTING COMMUNICATIONS PATHWAYS, INCLUDING EXISTING CABLE TRAYS, CONDUITS, RACEWAYS, ETC. UON.

DRAWING LABELING		
DRAWING PREFIX		
	T	TELECOMMUNICATIONS
DRAWING TYPE		
	0	LEGEND-INDEX
	1	FLOORPLANS
	2	ELEVATIONS
	3	SECTIONALS
	4	ENLARGED FLOORPLANS
	5	DETAILS
	6	DIAGRAMS
DISCIPLINE ID		
	0	COMMUNICATIONS
	1	STRUCTURED CABLING
	2	DATA SYSTEMS
	3	TELEPHONE SYSTEM
	4	AV SYSTEMS
	5	DISTRIBUTED COMMUNICATIONS
SEQUENCE #		
	0	RESERVED
	1-9	FIRST-NINTH
	A-Z	10-36

DRAWING PREFIX
DRAWING TYPE
DISCIPLINE ID
SEQUENCE #

T501

DRAWING IDENTIFICATION IS INTENDED TO PROVIDE AN ORDERLY FORMAT TO DELIVER PROJECT INFORMATION

A MAJORITY OF DRAWINGS CONTAIN INFORMATION THAT IS REQUIRED OR WILL BE BENEFICIAL TO MULTIPLE DISCIPLINES AND/OR CONTRACTORS. LIKEWISE, EACH SPECIFICATION SECTION MAY REQUIRE INFORMATION ON MULTIPLE DRAWINGS TO COMPLETE THE SYSTEM(S).

A DRAWING IDENTIFICATION
Scale = NONE

MISCELLANEOUS

SYMBOL	DESCRIPTION
J	JUNCTION BOX - WALL MOUNTED FLUSH MOUNTED IN FINISHED AREAS.
(J)	JUNCTION BOX - CEILING MOUNTED LOCATED ABOVE ACCESSIBLE CEILING, OR HIGH TO STRUCTURE IN UNFINISHED AREAS
P	PULL BOX - WALL MOUNTED FLUSH MOUNTED IN FINISHED AREAS. NO SPLICES/CABLE CONNECTIONS PERMITTED IN THIS BOX.
(P)	PULL BOX - CEILING MOUNTED LOCATED ABOVE ACCESSIBLE CEILING, OR HIGH TO STRUCTURE IN UNFINISHED AREAS. NO SPLICES/CABLE CONNECTIONS PERMITTED IN THIS BOX.
	DEVICE LOCATION MODIFIER PROVIDES CLARIFICATION AS TO THE INTENDED LOCATION OF A DEVICE. GENERALLY USED WHEN DEVICES ARE TO LOCATED IN CLOSE PROXIMITY HORIZONTALLY, OR ARRAYED VERTICALLY, BUT DRAWING SCALE DOES NOT ALLOW THIS TO BE SHOWN WITH VISUAL CLARITY.
XXXX	LOCATION LABEL AN ABBREVIATION USED TO UNIQUELY A LOCATION ON A DRAWING. SPECIFICATIONS, SYSTEM DRAWING AND DETAILS REFER TO THIS LOCATION. ID TEXT VARIES.
XXXX	DEVICE ID LABEL USED TO UNIQUELY IDENTIFY A DEVICE ON A DRAWING. OFTEN USED TO ASSOCIATE THE INSTALLED LOCATION OF A DEVICE (AS DEPICTED ON A PLAN DRAWING) WITH ADDITIONAL INFORMATION ABOUT THE DEVICE AS INDICATED ON THE COMMUNICATION TECHNOLOGY SYSTEM, DETAIL AND ELEVATION DRAWING. ID TEXT VARIES.
XXXX XXXX	ROUTING DESTINATION IDENTIFIERS IDENTIFIES THE DEVICE/LOCATION TO THE WIRE WAY AND CABLING SHALL BE ROUTED. PROVIDE CONDUIT AND CABLING AS LISTED AND AS SPECIFIED.
	CONDUIT SLEEVE 2" DIAMETER UNLESS OTHERWISE NOTED; PROVIDE FIRE STOPPING; ROUTE FROM ACCESSIBLE CEILING TO ACCESSIBLE CEILING
	CONDUIT STUB UP INTO ACCESSIBLE CEILING QUANTITY AND SIZE OF CONDUIT PER LEGEND; AS SPECIFIED; AS NOTED.
	CONDUIT(S) BENEATH FINISHED FLOOR QUANTITY AND SIZE OF CONDUIT AS NOTED AND AS LISTED AND AS SPECIFIED

GENERAL NOTES:

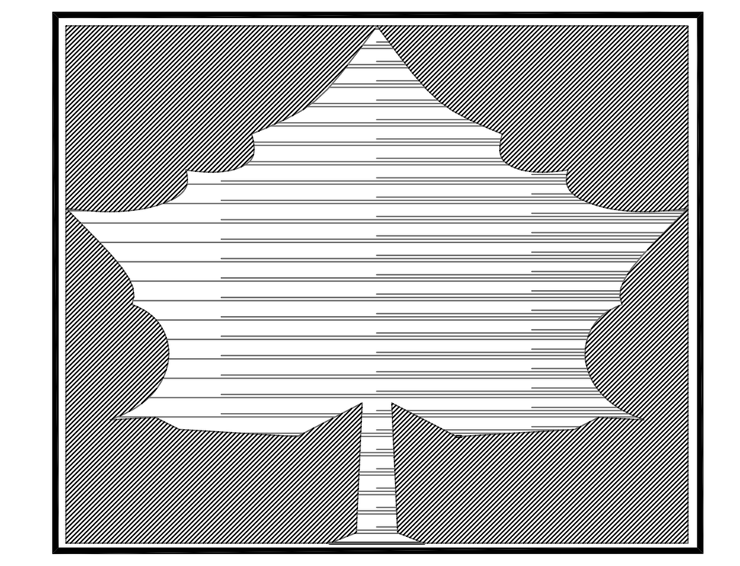
1) NOTHING SET FORTH IN THESE DRAWINGS SHALL RELEASE ANY CONTRACTOR FROM HIS RESPONSIBILITY TO PROVIDE APPROPRIATE QUANTITIES, FIELD MEASUREMENTS, DIMENSIONAL STABILITY, INSTALLATION, ANCHORAGE, AND COORDINATION WITH OTHER TRADES; OR RELEASE HIM FROM HIS RESPONSIBILITY TO IDENTIFY AND RESOLVE DEVIATIONS FROM THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, OR FREE HIM OF HIS RESPONSIBILITY TO ALERT DESIGNER TO ERRORS OR OMISSIONS.
2) CONTRACTOR SHALL USE THESE DRAWINGS IN CONJUNCTION WITH THE SPECIFICATIONS TO DETERMINE THE FULL SCOPE, INTENT AND REQUIREMENTS OF THE PROJECT. SPECIFICATIONS AND DRAWINGS ARE INTENDED TO BE COMPLEMENTARY, NOT MUTUALLY EXCLUSIVE. WORK SHOWN ON THE DRAWINGS BUT NOT LISTED IN THE SPECIFICATIONS, AND WORK DESCRIBED IN THE SPECIFICATIONS BUT NOT SHOWN ON THE DRAWINGS SHALL BE INTERPRETED AS THOUGH WORK WERE FULLY DESCRIBED IN BOTH PLACES. THE HIGHER QUANTITY, HIGHER QUALITY, MORE LABOR INTENSIVE AND OVERALL MORE STRINGENT AND MORE COSTLY REQUIREMENT SHALL APPLY UNLESS OTHERWISE CLARIFIED IN WRITING PRIOR TO BID.
3) EACH CONTRACTOR SHALL VERIFY IN THE FIELD ALL EXISTING APPLICABLE CONDITIONS AND DIMENSIONS SHOWN ON THE DRAWINGS AND AS PERTINENT TO THE INTENT OF THESE DRAWINGS. ANY DISCREPANCY DISCOVERED SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGNER PRIOR TO THE COMMENCEMENT OF ANY WORK AFFECTED BY, OR RELATED TO, SUCH DISCREPANCY. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH, OR CAUSED BY HIS FAILURE TO COMPLY WITH THIS REQUIREMENT.
4) EACH CONTRACTOR SHALL REVIEW ALL PORTIONS OF HIS WORK, BEFORE STARTING THE WORK, TO VERIFY THAT THE WORK WILL NOT PROHIBIT COMPLETION OF THE PROJECT AS INTENDED IN THESE CONSTRUCTION DOCUMENTS. ALL QUESTIONS SHALL BE REFERRED TO THE DESIGNER FOR RESOLUTION.
5) EACH CONTRACTOR SHALL BE RESPONSIBLE FOR JOB CLEANLINESS. PROJECT AREAS SHALL BE THOROUGHLY CLEANED AND TRASH DISPOSED OF AT THE END OF EACH WORK DAY. OWNER'S FACILITIES SHALL NOT BE USED FOR WASTE DISPOSAL.
6) PROVIDE DUST PROTECTION WHEN WORKING IN EXISTING FACILITIES. SEAL OFF ALL WORK AREAS FROM REMAINDER OF THE EXISTING FACILITY TO RETAIN ALL CONSTRUCTION DIRT AND DUST. SEAL EXISTING DOORS WITH TAPE AND PROVIDE DUST-PROOF BARRIERS AS REQUIRED.
7) ALL WORK SHALL BE SEQUENCED TO PROVIDE FOR THE OWNER'S CONTINUED USE OF THE EXISTING FACILITY WHEN REQUIRED. OWNER'S ACCESS, EGRESS AND SAFETY SHALL BE MAINTAINED BY EACH CONTRACTOR. THE SEQUENCE OF WORK SHALL BE AS DETERMINED BY THE CONSTRUCTION MANAGER. REFER TO THE PROJECT MANUAL FOR FURTHER REQUIREMENTS.
8) EACH CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ALL SURFACES AND FINISHES IN THE INTERIOR OR EXTERIOR OF THE FACILITY. DAMAGED SURFACES OR FINISHES RESULTING FROM THE PERFORMANCE OF THE WORK OR NEGLIGENCE SHALL BE REPAIRED AT NO COST TO THE OWNER BY THE RESPONSIBLE CONTRACTOR. FINISHES AND SURFACES SHALL BE MADE TO MATCH THE EXISTING FINISHES OR SURFACES TO THE SATISFACTION OF THE OWNER AND ARCHITECT/CONSTRUCTION MANAGER.
9) EACH CONTRACTOR SHALL COORDINATE HIS RESPECTIVE CUTTING AND PATCHING WORK WITH THE CONSTRUCTION MANAGER.
10) COLORS OF CABLING USED FOR ALL COMMUNICATIONS TECHNOLOGY WORK SHALL BE REVIEWED AND APPROVED PRIOR TO PROCUREMENT AND INSTALLATION.
11) ALL LADDER RACK AND OTHER COMMUNICATION TECHNOLOGY CABLING PATHWAYS DEPICTED ON THE ENLARGED FLOOR PLANS AND OTHERWISE NECESSARY FOR PROFESSIONAL WIRE MANAGEMENT WITHIN THE MAIN EQUIPMENT ROOM (ER) AND ALL TELECOMMUNICATION ROOMS (TR) SHALL BE PROVIDED BY THE COMMUNICATIONS TECHNOLOGY CONTRACTOR. SEE DIVISION 27 SPECIFICATIONS AND DRAWINGS FOR REQUIREMENTS.
12) THE DIVISION 27 CONTRACTOR SHALL THOROUGHLY REVIEW THE SPECIFIED ROUGH -IN TO ENSURE THAT SUPPLIED ROUGH-IN WILL SUPPORT THE CABLING AND DEVICES BEING SUPPLIED. DIVISION 27 CONTRACTOR SHALL THOROUGHLY COORDINATE WITH THE DIVISION 26 ROUGH-IN PROVIDER PRIOR TO ROUGH-IN MATERIAL ACQUISITION AND INSTALLATION.
13) CABLE TRAY SHOWN ON THE 1/8" SCALE FLOORPLAN DRAWINGS SHALL BE FURNISHED BY THE DIVISION 26 CONTRACTOR.
14) CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TELEPHONE, DATA, CENTRAL SOUND, SECURITY CCTV AND ALARM SYSTEM SERVICES IN ALL EXISTING AREAS FOR DURATION OF PROJECT FOR MULTI-PHASED PROJECTS. CONTRACTOR SHALL COLLABORATE WITH OWNER'S TECHNOLOGY PERSONNEL AS NECESSARY AND PROVIDE TEMPORARY WIRING, CROSS-CONNECTS, TERMINATION DEVICES, AND LABOR TO MAINTAIN OPERATION ACCEPTABLE TO THE OWNER. CONTRACTOR SHALL REFER TO THE FRONT END DOCUMENTS OF THE SPECIFICATIONS FOR ADDITIONAL INFORMATION RELATED TO PHASING. ALL PHASING QUESTIONS SHALL BE ADDRESSED PRIOR TO THE CONTRACTOR'S BID SUBMISSION.
15) EACH CONTRACTOR SHALL FIELD VERIFY ALL EXISTING APPLICABLE CONDITIONS AND DIMENSIONS SHOWN ON THE DRAWINGS. AS PERTAINS TO THE INTENT OF THESE DRAWINGS, CONTRACTOR SHALL BRING TO THE ATTENTION OF THE ARCHITECT AND DESIGNER ANY DISCREPANCIES DISCOVERED PRIOR TO THE COMMENCEMENT OF ANY WORK AFFECTED BY OR RELATED TO SUCH DISCREPANCY. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH OR CAUSED BY THAT CONTRACTOR'S FAILURE TO COMPLY WITH THIS REQUIREMENT.
16) EVERY SPACE INCLUDING HALLWAYS, RESTROOMS, CLOSETS, STAIRWELLS, ETC SHALL HAVE A UNIQUE ROOM IDENTIFIER. FINAL ROOM NUMBERS SHALL BE CONFIRMED WITH OWNER BEFORE CONSTRUCTION DOCUMENTS ARE ISSUED. ONCE CONSTRUCTION BEGINS ROOM NUMBERS SHALL NOT CHANGE.
17) THE MAJORITY OF THIS BUILDING WILL HAVE NO CONCEALED ACCESSIBLE CEILING SPACES. PROVIDE COMMUNICATIONS PATHWAYS AS SPECIFIED SECURED TO THE BUILDING STRUCTURE. BUILDING STRUCTURE AND COMMUNICATIONS PATHWAYS WILL BE PAINTED. PROVIDE COMMUNICATIONS PATHWAYS TO CONCEAL ALL COMMUNICATIONS CABLING FROM VIEW AND FROM PAINT.
18) WHERE COMMUNICATIONS CABLING IS LOCATED IN CONCEALED ACCESSIBLE CEILING SPACES, OPEN TOP CABLING SUPPORTS AS SPECIFIED MAY BE USED TO SUPPORT CABLING. PROVIDE SLEEVED PENETRATIONS AS REQUIRED FOR CABLING TO CORRIDOR PRIMARY PATHWAY.

GENERAL CABLING NOTES:

1. PLENUM CABLE REQUIRED. ALL PROVIDED CABLE THAT WILL NOT BE INSTALLED IN A FULLY ENCLOSED CONDUIT SYSTEM SHALL BE RATED FOR INSTALLATION WITHIN A RETURN AIR PLENUM.
2. ALL INSTALLED CABLING SHALL BE CONTINUOUS AND WITHOUT SPLICES, EXCEPT WHERE OTHERWISE NOTED.

PLAN NOTES: APPLIES TO ALL FLOOR PLANS

1. EXISTING CABLE TRAY TO REMAIN.
2. EXISTING TELECOM ROOM. REMOVE ALL EXISTING CABLING EQUIPMENT AND HARDWARE. TURN OVER ALL EQUIPMENT AND HARDWARE TO OWNER.
3. REMOVE EXISTING PATHWAYS AND CABLING COMPLETE.
4. EXISTING 150 PAIR CAMPUS COPPER BACKBONE TERMINATES HERE. REMOVE COMPLETE BACK TO SPLICE CASE LOCATED IN UTILITY TUNNEL.
5. EXISTING CAMPUS FIBER TERMINATES HERE. REMOVE FROM THIS SPACE AND RE-ROUTE TO NEW TELECOM ROOM 013, SHEET T2.00.
6. PROVIDE 12" WIDE CABLE TRAY AS SPECIFIED TO SUPPORT COMMUNICATIONS CABLING. PROVIDE SOLID BOTTOM WHERE EXPOSED TO PUBLIC VIEW.
7. ALIGN WITH EXISTING CABLE TRAY.
8. VERIFY LOCATION WITH OWNER.
9. PROVIDE 4 HORIZONTAL UTP DATA CABLES FROM MASTER CONTROL RACK LOCATED IN RADIO STUDIO #2 TO EACH OF RADIO STUDIO #1 AND #3 FOR AUDIO SERVICES. TERMINATE COMPLETE. COORDINATE WITH OWNER PRIOR TO INSTALLATION.
10. PROVIDE VIKING E-1600-60A ROYAL BLUE EMERGENCY WALL-MOUNT TELEPHONE AND ANALOG CONNECTION, TYPICAL OF EACH 911 OUTLET.
11. PROVIDE A/V EQUIPMENT AS INDICATED ON SHEET 4.04. SEE DETAILS. CONFIRM REQUIREMENTS PRIOR TO ROUGH-IN.
12. FIVE SATELLITE DISHES EXIST ON THE ROOF. TWO HAVE NON-PENETRATING BALLASTED MOUNTS. TWO HAVE PENETRATING MOUNTS. ONE IS WALL-MOUNTED TO THE NORTH STAIRWELL. REMOVE COMPLETE INCLUDING ALL HARDWARE AND CABLING.
13. PROVIDE MONO SYSTEMS RACETRAY OR EQUIVALENT AS SPECIFIED FOR PRIMARY PATHWAYS THROUGH CORRIDORS. COORDINATE INSTALLATION WITH ELECTRICAL, MECHANICAL, PLUMBING, AND OTHER SYSTEMS TO AVOID CONFLICTS. PROVIDE OVERHEAD SUPPORT FROM STRUCTURE ABOVE. LOCATION SHOWN IS APPROXIMATE. PROVIDE COMPLETE SYSTEM AS REQUIRED.
14. PROVIDE 18" x 18" x 6" PULL BOX. ALL COMMUNICATIONS PATHWAYS ON SOUTH SIDE OF BASEMENT TERMINATE HERE. ROUTE HORIZONTAL CABLING TO SECOND FLOOR CORRIDOR PRIMARY PATHWAY VIA THIS CONDUIT.
15. TERMINATE CONDUIT ABOVE PRIMARY PATHWAY IN CORRIDOR.
16. TERMINATE CAMPUS FIBER IN THIS LOCATION. SEE SHEET T3.01. IN ADDITION, PROVIDE J-TRAY AS SPECIFIED BETWEEN THIS RACK LOCATION AND THE RACK LOCATION IN THE NORTHEAST CORNER OF CONTROL ROOM 334. COORDINATE ROUTE WITH OWNER PRIOR TO INSTALLATION. PROVIDE SYSTEM COMPLETE.
17. SEE DRAWING E6.01 FOR FLOOR BOX SCHEDULE.



INDIANA STATE UNIVERSITY
TERRE HAUTE, INDIANA

COMMUNICATIONS STANDARDS

Dreiser Hall Renovation

221 North 6th Street
Terre Haute, IN 47809

Browning Day
Project No. 19A052

R.E. Dimond
Project No. 19082

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James A Darnell
BICSI ID # 101926
Expires 12-31-21
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06/05/2020

06/05/2020 - 100% CONSTRUCTION DOCUMENTS		
MARK	DATE	DESCRIPTION

PROJECT NO.:	
PROJECT DATE:	June 05, 2020
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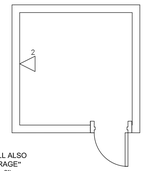
Keyplan

LEGEND

T0.01



M TYPICAL OFFICE ROUGH-INS
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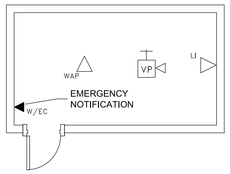

L TYPICAL CONFERENCE ROOM ROUGH-INS
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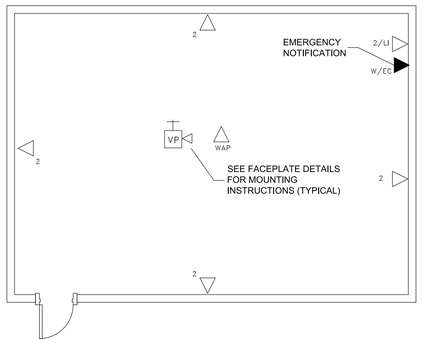

K TYPICAL CLASSROOM AND LAB ROUGH-INS
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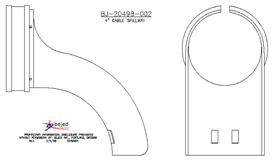

J CONDUIT SPILLWAY "WATERFALL"
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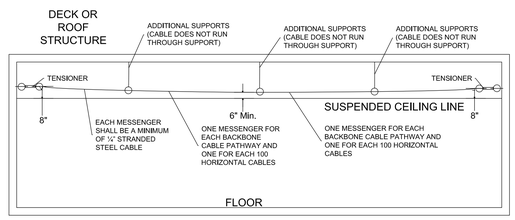

H TYPICAL MESSENGER STRAND ASSEMBLY
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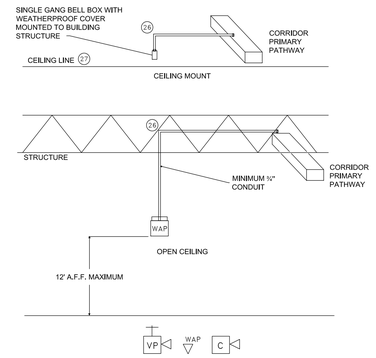

G TYPICAL WAP/VP/CAMERA OUTLET DEVICE POSITIONING
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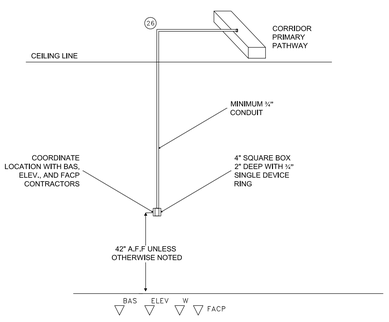

F TYPICAL WALL TELEPHONE OUTLET DEVICE POSITIONING
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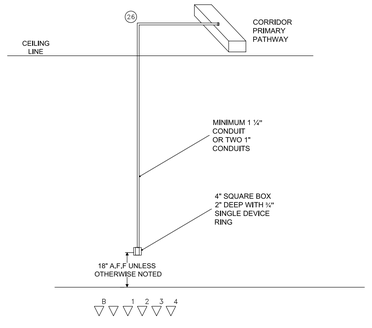

E TYPICAL TELEPHONE/DATA OUTLET DEVICE POSITIONING
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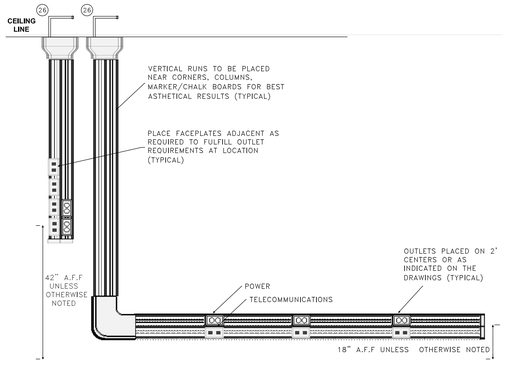

I TYPICAL SURFACE RACEWAY
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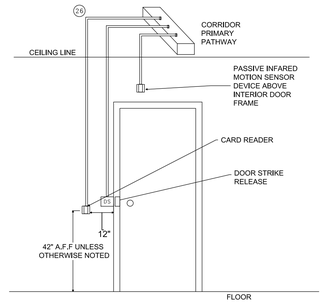

D TYPICAL BUILDING ENTRY CONNECTIVITY
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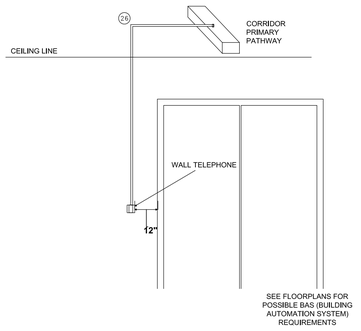

C TYPICAL MECHANICAL ROOM CONNECTIVITY
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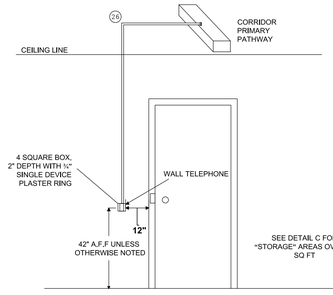

B TYPICAL STORAGE AREA CONNECTIVITY (LESS THAN 64 SQ FT)
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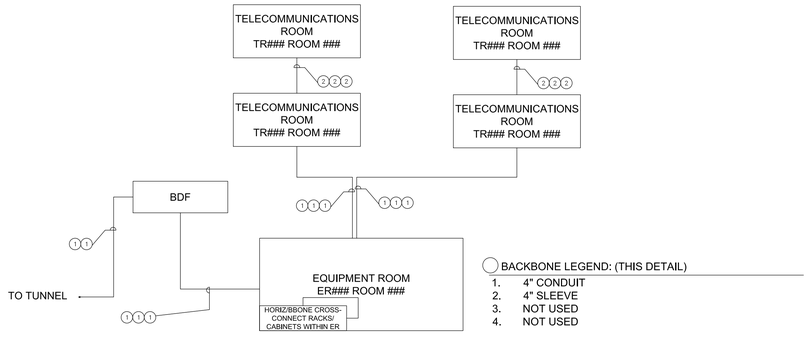

A TELECOMMUNICATIONS BACKBONE CONDUIT RISER DIAGRAM (TYPICAL UON)
Scale = NONE

BACKBONE LEGEND: (THIS DETAIL)
1. 4" CONDUIT
2. 4" SLEEVE
3. NOT USED
4. NOT USED

NOTE: STACKED ROOMS SHALL HAVE SLEEVES THROUGH FLOOR; IF ROOMS OFFSET SUBSTITUTE CONTINUOUS CONDUITS.

GENERAL ROUGH-IN NOTES:

1. WHERE CONDUIT IS SHOWN AND/OR SPECIFIED, CONTRACTOR SHALL PROVIDE ALL PULL BOXES SHOWN, PLUS ADDITIONAL PULL BOXES AS FOLLOWS:
   A) EVERY 180 DEGREES OF CONDUIT BEND;
   B) EVERY 100 FEET OF CONDUIT PATH.
2. PULL BOXES AND JUNCTION BOXES SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS.
3. ALL ROUGH-IN REQUIREMENTS, INCLUDING BUT NOT LIMITED TO MOUNTING HEIGHTS, BACK BOX SIZES, AND CONDUIT PATHS, AS THEY MAY BE INDICATED ON PLANS, DETAILS AND ELEVATIONS SHALL TAKE PRECEDENCE OVER MOUNTING HEIGHTS LISTED ON THE LEGEND. QUANTITIES AND SIZES OF CONDUITS ARE PER LEGEND UNLESS EXPRESSLY LISTED ON THE DRAWINGS.
4. THE DIVISION 26 ELECTRICAL CONTRACTOR SHALL PROVIDE CABLING PATHWAYS AND ROUGH-IN IDENTIFIED ON THE PLANS AND TELECOMMUNICATIONS LEGEND TO SUPPORT COMMUNICATION TECHNOLOGY WORK, UNLESS NOTED OTHERWISE. ALL OTHER PATHWAYS REQUIRED TO SUPPORT DIVISION 27 CABLING THAT IS NOT CLEARLY IDENTIFIED OR CLEARLY TO BE PROVIDED BY OTHERS SHALL BE PROVIDED BY THE DIVISION 27 CONTRACTOR.
5. ROUGH-IN PROVIDER SHALL COORDINATE CLOSELY WITH THE DEVICE AND CABLE PROVIDER(S), PRIOR TO INSTALLATION, TO BE CERTAIN THAT THE TYPE AND LOCATION OF ALL ROUGH-IN AND PATHWAY PROVISIONS ARE COORDINATED AND WILL ADEQUATELY SUPPORT THE SYSTEMS AS THEY ARE TO BE INSTALLED. ANY COSTS INCURRED RESULTING FROM A FAILURE TO ADEQUATELY COORDINATE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
6. ALL 1-GANG AND 2-GANG BOXES REFERENCED ON THE LEGEND SHALL BE ASSEMBLED FROM 4 11/16TH" SQUARE BOXES WITH SEPARATE TRIM RINGS. DEPTH OF COMPOSITE ASSEMBLY SHALL BE AS INDICATED.
7. PROVIDE COVER PLATES FOR ALL DEVICE, JUNCTION AND PULL BOXES. COORDINATE MATERIAL AND FINISH OF ALL BLANK PLATES TO MATCH SURROUNDING PLATES.
8. WHERE DEVICE CONDUITS ARE SPECIFIED "TAAC" (TO ABOVE ACCESSIBLE CEILING) THIS SHALL IMPLY THAT CONDUITS SHALL BE STUBBED OUT INTO AN ACCESSIBLE CONCEALED CEILING CAVITY.
9. PROVIDE PULL STRINGS INSTALLED IN ALL CONDUITS INCLUDING THOSE PROVIDED FOR IMMEDIATE AND FUTURE USE.
10. WHERE A MOUNTING HEIGHT MEASUREMENT IS APPLIED TO A ROUGH-IN, THE MEASUREMENT SHALL BE REFERENCED TO THE CENTER OF THE ROUGH-IN DEVICE.
11. RESERVED
12. RESERVED
13. EXPOSED CONDUIT SHALL NOT BE PERMITTED IN FINISHED AREAS.
14. SURFACE MOUNT BACK BOXES AND MATCHING RACEWAY SHALL BE USED FOR COMMUNICATION TECHNOLOGY DEVICES THAT ARE NOT INSTALLED WITHIN A WALL OR CEILING.
15. WHERE SPECIFICATIONS AND/OR DRAWINGS INDICATE THE USE OF SURFACE RACEWAY AND BOXES IN LIEU OF RECESSED ROUGH-IN, THE BOX SIZE AND USABLE RACEWAY CABLE AREA SHALL SUBSTANTIALLY MATCH THAT OF THE DEFAULT STANDARD ROUGH-IN. IN SOME CIRCUMSTANCES THIS MAY REQUIRE THE CONTRACTOR TO PROCURE MATERIALS ONLY AVAILABLE BY SPECIAL ORDER FROM THE MANUFACTURERS.
16. ROUGH-IN PROVIDER SHALL PROVIDE ALL WALL/FLOOR PENETRATIONS AND FIRE STOPPING REQUIRED FOR COMMUNICATIONS TECHNOLOGY CABLING THAT MUST TRANSITION FROM SURFACE RACEWAY TO ACCESSIBLE CEILING CAVITIES.
17. ALL CONDUIT PROVIDED FOR COMMUNICATION TECHNOLOGY USE SHALL BE PROVIDED WITH NYLON END-BUSHINGS. BUSHINGS SHALL BE INSTALLED AT EACH END OF THE CONDUIT; AT EACH PULL/JUNCTION/DEVICE BOX; ON CONDUIT STUBS; AT EACH LOCATION WHERE PULLING CABLE THROUGH THE CONDUIT MAY CAUSE THE CABLE TO RUB AGAINST THE END OF A CONDUIT OR ITS END FITTING.
18. DEVICES TO BE INSTALLED AT CASEWORK LOCATIONS SHALL BE CLOSELY COORDINATED WITH THE CASEWORK TO ENSURE FUNCTIONAL CONNECTIVITY. COORDINATE WITH ARCHITECT AND EQUIPMENT AND CASEWORK DRAWINGS.
19. ALL COMMUNICATION TECHNOLOGY ROUGH-IN SHALL BE CLOSELY COORDINATED IN THE FIELD TO COMPLEMENT THE INTENDED FURNITURE PLAN AND SAFE AND EFFICIENT CONNECTIVITY OF COMMUNICATION TECHNOLOGY EQUIPMENT.
20. MANY COMMUNICATION TECHNOLOGY DEVICES ARE INTENDED TO HAVE ADJACENT POWER OUTLETS TO SERVE THE SAME EQUIPMENT. CLOSE PROXIMITY OF THESE DEVICES IS CRITICAL TO USABILITY AND AESTHETICS. CONTRACTOR SHALL COORDINATE THESE DEVICES TO BE LOCATED ADJACENT AND AT THE SAME HEIGHT.
21. TELECOMMUNICATION DEVICE MOUNTING HEIGHT SHALL BE CONSISTENT WITH THE ELECTRICAL OUTLET MOUNTING HEIGHTS FOR THE FACILITY (NEW OR EXISTING) UNLESS OTHERWISE INDICATED ON DRAWINGS. CONTRACTOR SHALL SEEK THE DIRECTION OF THE DESIGNER/ARCHITECT/ENGINEER/CONSULTANT SHOULD DISCREPANCIES BE FOUND WITHIN THE DRAWINGS, SPECIFICATIONS AND ACTUAL FIELD CONDITIONS.
22. FOR THE ELEVATOR (ELEV), COORDINATE TERMINATION WITH ELEVATOR CONTRACTOR. PROVIDE CONDUIT FROM ELEVATOR CONTROL PANEL TO THE CORRIDOR CEILING SPACE, UNLESS OTHERWISE NOTED.
23. COORDINATE THE REQUIREMENTS FOR HVAC BUILDING AUTOMATION SYSTEM (BAS), INCLUDING LOCATION, WITH THE MECHANICAL CONTRACTOR.
24. ALL CONDUITS STUBBED INTO THE CEILING CAVITY SHALL BE MARKED WITH AN INDELIBLE MARKER INDICATING THE CONDUIT'S INTENDED USE. MARK SO AS TO BE READABLE FROM BELOW WITHIN 6 INCHES OF THE BUSHING WITH THE FOLLOWING LABELS: "CAMERA," "ICOM," "DOOR," "SPKR," "MIC," "CLOCK," "VOL," "PANEL," "WAP," "DATA," "PHONE," "COM," "RF," "VP," "INPUT," ETC.
25. DIVISION 26 CONTRACTOR SHALL PROVIDE A MINIMUM OF TWO (2) 2-INCH DIAMETER THROUGH-THE-WALL CONDUIT SLEEVES FOR COMMUNICATION TECHNOLOGY PATHWAYS. ROUTE THE CONDUITS FROM ACCESSIBLE CEILING CAVITY TO ACCESSIBLE CEILING CAVITY FROM EACH ROOM TO NEAREST HALLWAY/CORRIDOR. COORDINATE LOCATIONS WITH DIVISION 27 CONTRACTOR.
26. EXTEND CONDUIT TO ABOVE CORRIDOR PRIMARY PATHWAY, UON.
27. THIS DETAIL APPLIES TO CONCEALED ACCESSIBLE CEILING SPACES. WHEN INSTALLING IN A SOLID INACCESSIBLE CEILING SPACE (I.E. GYPSUM BOARD, ETC.), PROVIDE OUTLET BOX AS SPECIFIED FLUSH WITH CEILING SURFACE.

INDIANA STATE UNIVERSITY
TERRE HAUTE, INDIANA

COMMUNICATIONS STANDARDS

Dreiser Hall Renovation

221 North 6th Street
Terre Haute, IN 47809

Browning Day
Project No. 19A052

R.E. Dimond
Project No. 19082

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James A Darnell
BICSI ID # 1019326
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06/06/2020

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Keyplan

LEGEND

T0.02

DEMOLITION LEGEND:

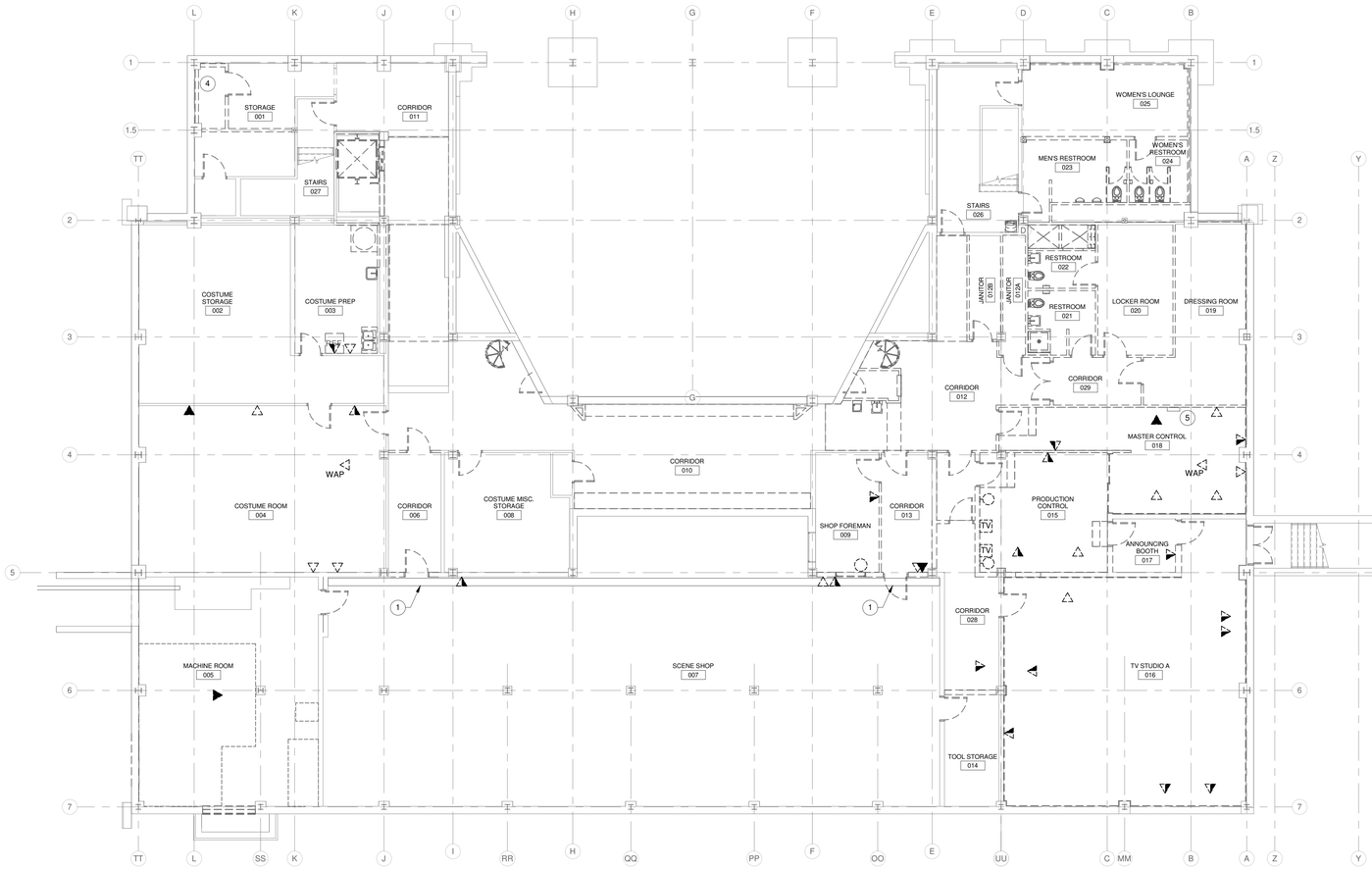
- WORK TO BE REMOVED
- WORK TO REMAIN

GENERAL NOTES:

1. REFER TO SHEET T0.01 FOR ADDITIONAL GENERAL NOTES.
2. REMOVE ALL COMMUNICATIONS INFRASTRUCTURE UNLESS OTHERWISE NOTED.
3. FIELD VERIFY ALL EXISTING CONDITIONS AS TO EXACT SERVICE, LOCATION, TYPE OF MATERIAL, ETC. BEFORE BIDDING AND BEFORE BEGINNING RENOVATION WORK.
4. COORDINATE ALL SHUT-DOWNS, DELIVERY AND STORAGE OF MATERIAL, ETC. WITH OWNER'S REPRESENTATIVE.
5. CONTRACTORS SHALL PROTECT ALL EXISTING OWNER FACILITIES DURING CONSTRUCTION. ANY AND ALL OWNER FACILITIES DAMAGED OR DISCONNECTED BY CONTRACTOR OPERATIONS SHALL BE FULLY RESTORED TO PREVIOUS OPERATING AND APPEARANCE CONDITION BY CONTRACTOR.

(#) PLAN NOTES:

1. SEE T0.01.



BASEMENT PLAN - TELECOMMUNICATIONS DEMOLITION

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

NORTH

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James A Darnell
BICSI ID # 101926
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RCDD

CERTIFICATION 06/05/2020

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Indiana State University - Dreiser Hall Renovation

221 North 6th Street
Terre Haute, IN 47809

Project No.: 19A052
Drawn By: DK
Checked By: JD
Scale: See Drawing
Issue Date: 06/05/2020

REVISION SCHEDULE		
Rev. #	Revision Description	Issue Date

BASEMENT PLAN - TELECOM. DEMOLITION

TD2.00

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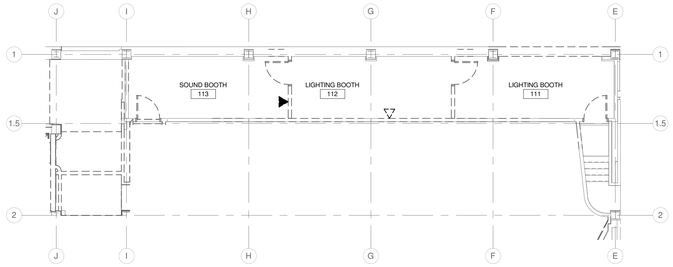
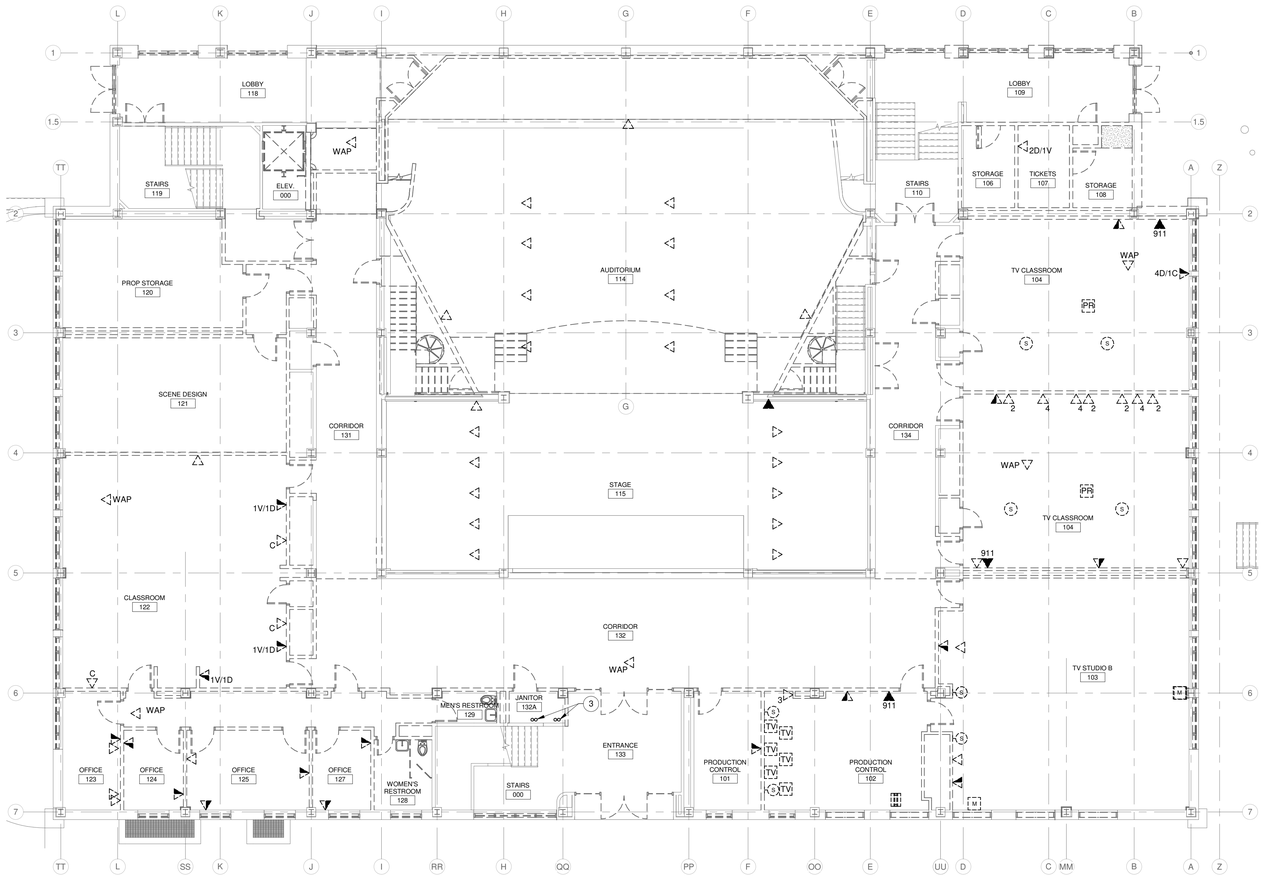


CONTROL ROOM FLOOR PLAN - TELECOMMUNICATIONS DEMOLITION

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

NORTH



FIRST FLOOR PLAN - TELECOMMUNICATIONS DEMOLITION

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

NORTH

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6/4/2020 9:07:46 AM

DEMOLITION LEGEND:

- WORK TO BE REMOVED
- WORK TO REMAIN

GENERAL NOTES:

1. REFER TO SHEET T0.01 FOR ADDITIONAL GENERAL NOTES.
2. REMOVE ALL COMMUNICATIONS INFRASTRUCTURE UNLESS OTHERWISE NOTED.
3. FIELD VERIFY ALL EXISTING CONDITIONS AS TO EXACT SERVICE, LOCATION, TYPE OF MATERIAL, ETC. BEFORE BIDDING AND BEFORE BEGINNING RENOVATION WORK.
4. COORDINATE ALL SHUT-DOWNS, DELIVERY AND STORAGE OF MATERIAL, ETC. WITH OWNER'S REPRESENTATIVE.
5. CONTRACTORS SHALL PROTECT ALL EXISTING OWNER FACILITIES DURING CONSTRUCTION. ANY AND ALL OWNER FACILITIES DAMAGED OR DISCONNECTED BY CONTRACTOR OPERATIONS SHALL BE FULLY RESTORED TO PREVIOUS OPERATING AND APPEARANCE CONDITION BY CONTRACTOR.

(#) PLAN NOTES:

1. SEE T0.01.

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100% CONSTRUCTION DOCUMENTS

Indiana State University -
Dreiser Hall Renovation

221 North 6th Street
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Project No.: 19A052
Drawn By: DK
Checked By: JD
Scale: See Drawing
Issue Date: 06/05/2020

REVISION SCHEDULE		
Rev. #	Revision Description	Issue Date

FIRST FLOOR PLAN - TELECOM. DEMOLITION

TD2.01

DEMOLITION LEGEND:

- WORK TO BE REMOVED
- WORK TO REMAIN

GENERAL NOTES:

1. REFER TO SHEET T0.01 FOR ADDITIONAL GENERAL NOTES.
2. REMOVE ALL COMMUNICATIONS INFRASTRUCTURE UNLESS OTHERWISE NOTED.
3. FIELD VERIFY ALL EXISTING CONDITIONS AS TO EXACT SERVICE, LOCATION, TYPE OF MATERIAL, ETC. BEFORE BIDDING AND BEFORE BEGINNING RENOVATION WORK.
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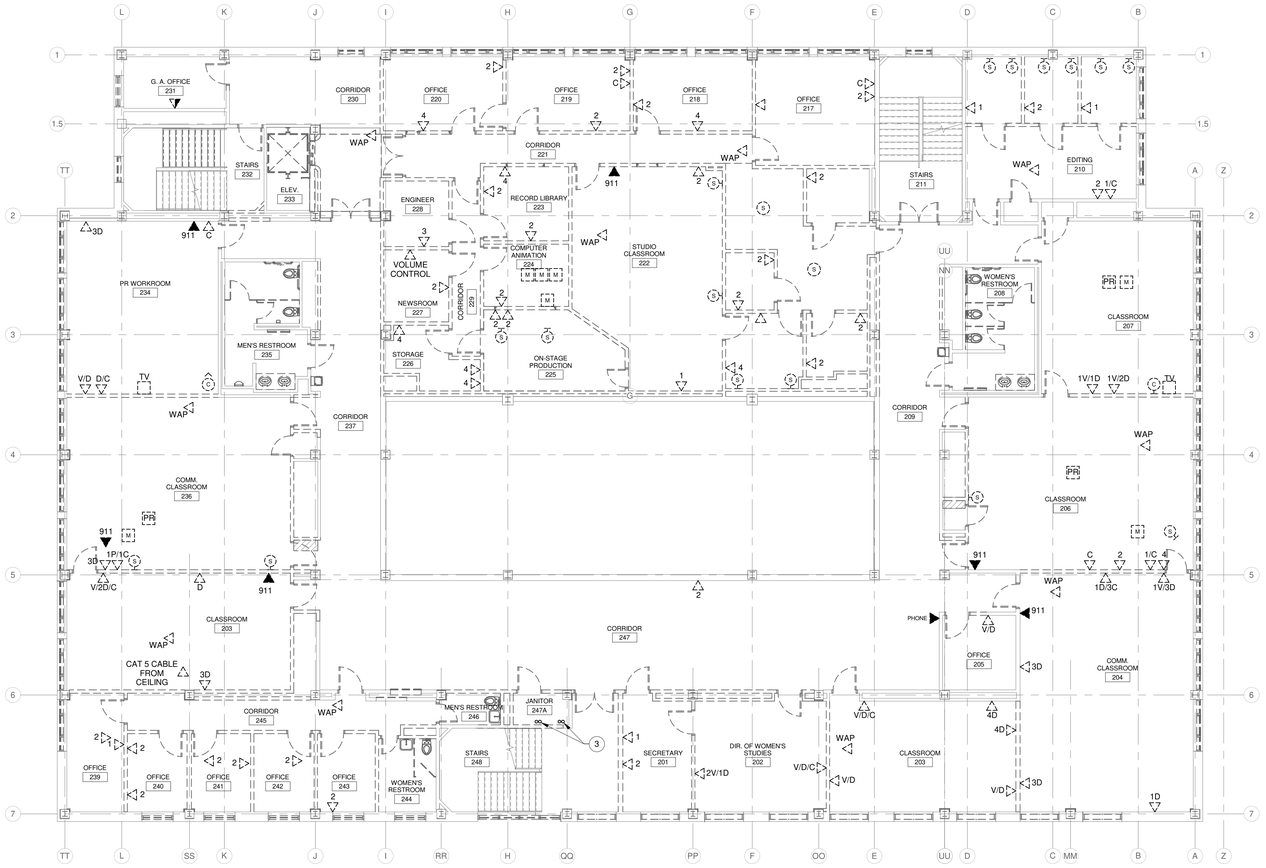
(#) PLAN NOTES:

1. SEE T0.01.



SECOND FLOOR PLAN - TELECOMMUNICATIONS DEMOLITION

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

NORTH

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James A Darnell
BICSI ID # 101926
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Indiana State University -
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REVISION SCHEDULE		
Rev. #	Revision Description	Issue Date

SECOND FLOOR PLAN - TELECOM. DEMOLITION

TD2.02

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DEMOLITION LEGEND:

- WORK TO BE REMOVED (dashed box)
- WORK TO REMAIN (solid box)

GENERAL NOTES:

1. REFER TO SHEET T0.01 FOR ADDITIONAL GENERAL NOTES.
2. REMOVE ALL COMMUNICATIONS INFRASTRUCTURE UNLESS OTHERWISE NOTED.
3. FIELD VERIFY ALL EXISTING CONDITIONS AS TO EXACT SERVICE, LOCATION, TYPE OF MATERIAL, ETC. BEFORE BIDDING AND BEFORE BEGINNING RENOVATION WORK.
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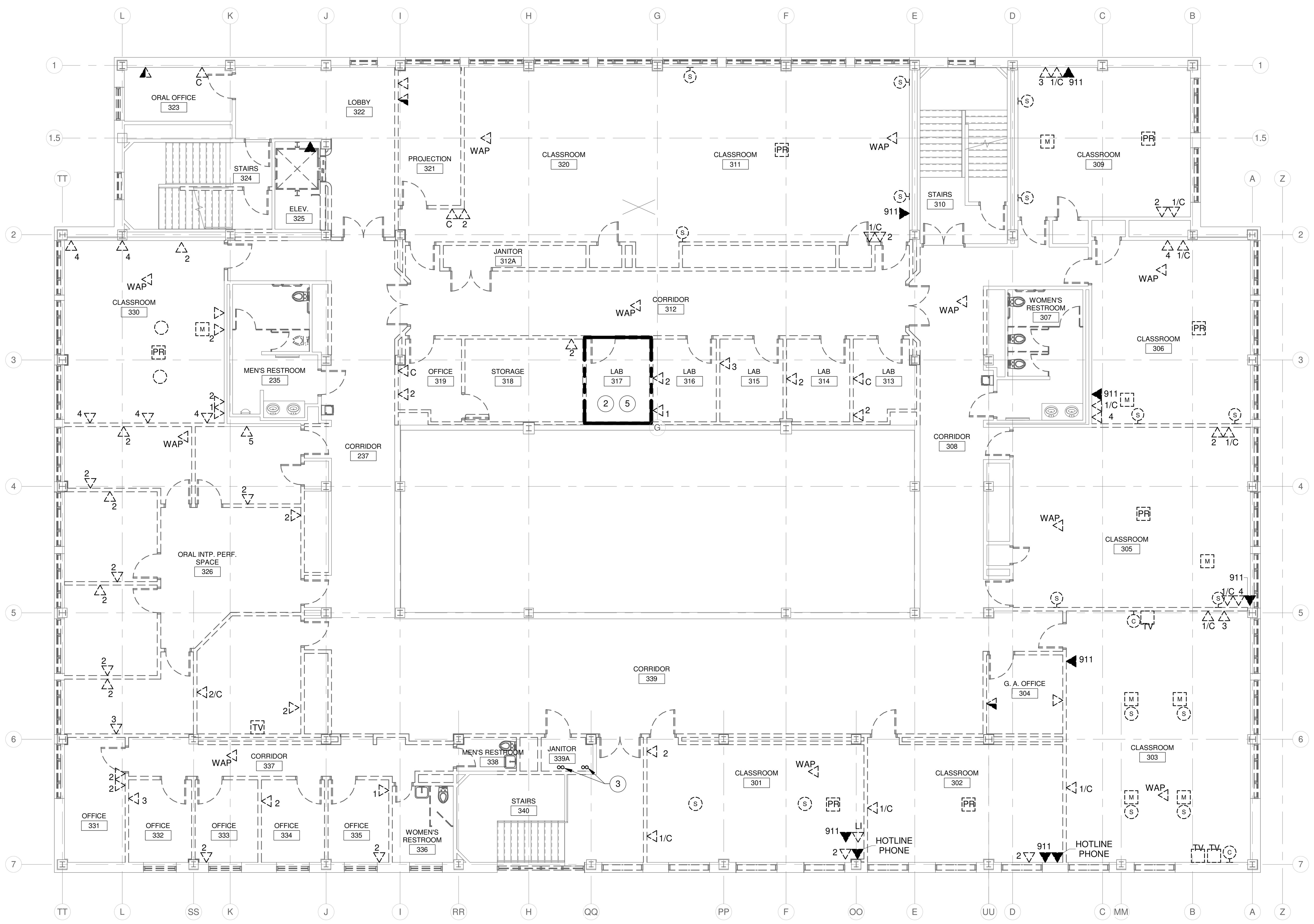
PLAN NOTES:

1. SEE T0.01.



THIRD FLOOR PLAN - TELECOMMUNICATIONS DEMOLITION

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

NORTH

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Project No.: 19A052
Drawn By: DK
Checked By: JD
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Issue Date: 06/05/2020

REVISION SCHEDULE		
Rev. #	Revision Description	Issue Date

THIRD FLOOR PLAN - TELECOM. DEMOLITION

TD2.03

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DEMOLITION LEGEND:

WORK TO BE REMOVED

WORK TO REMAIN

GENERAL NOTES:

1. REFER TO SHEET T0.01 FOR ADDITIONAL GENERAL NOTES.
2. REMOVE ALL COMMUNICATIONS INFRASTRUCTURE UNLESS OTHERWISE NOTED.
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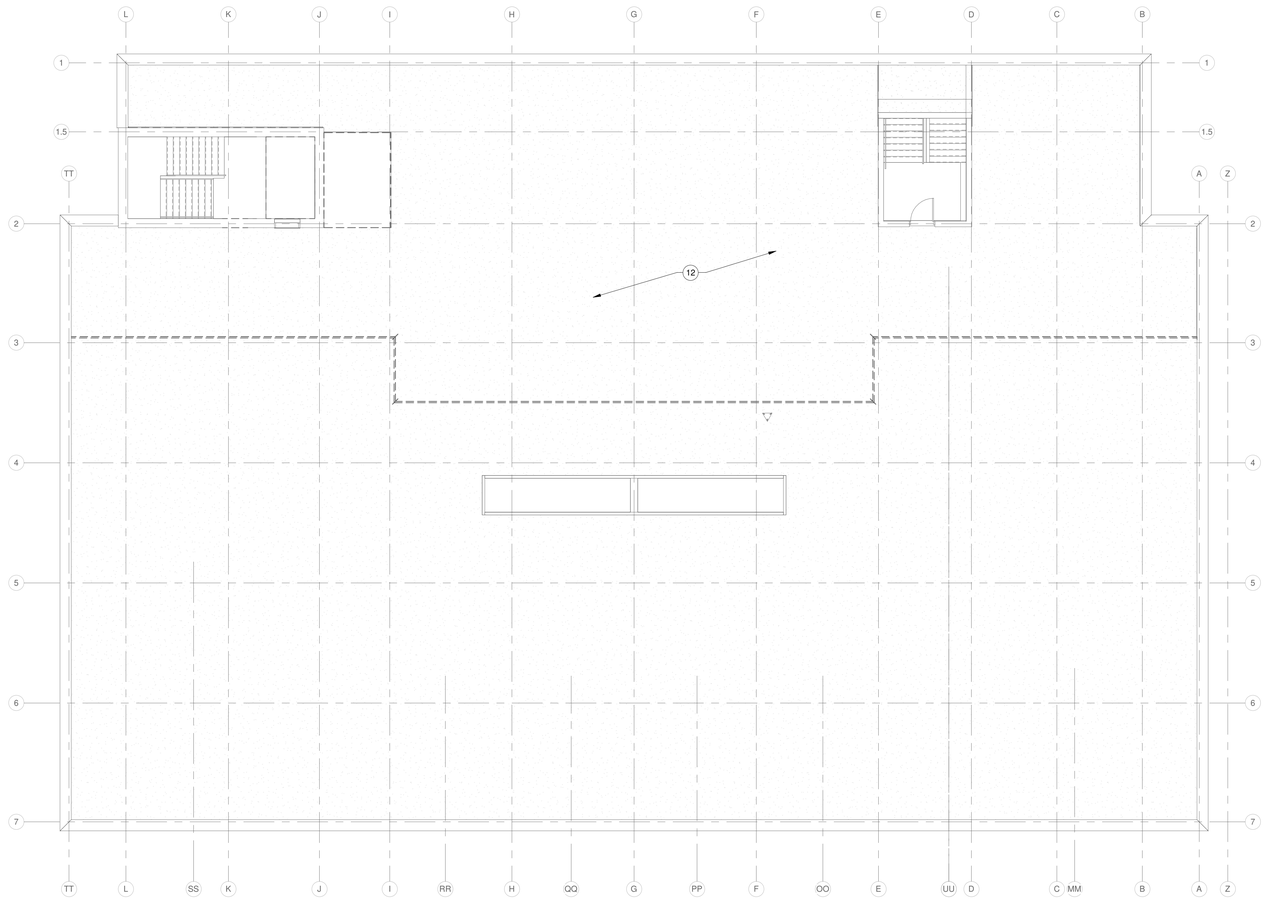
(#) PLAN NOTES:

1. SEE T0.01.



ROOF PLAN - TELECOMMUNICATIONS DEMOLITION

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

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Issue Date: 06/05/2020

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Rev. #	Revision Description	Issue Date

ROOF PLAN - TELECOM. DEMOLITION

TD2.20

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RENOVATION LEGEND:

- WORK TO BE INSTALLED
- WORK TO REMAIN

GENERAL NOTES:

1. REFER TO SHEET T0.01 FOR ADDITIONAL GENERAL NOTES.

PLAN NOTES:

1. SEE T0.01.

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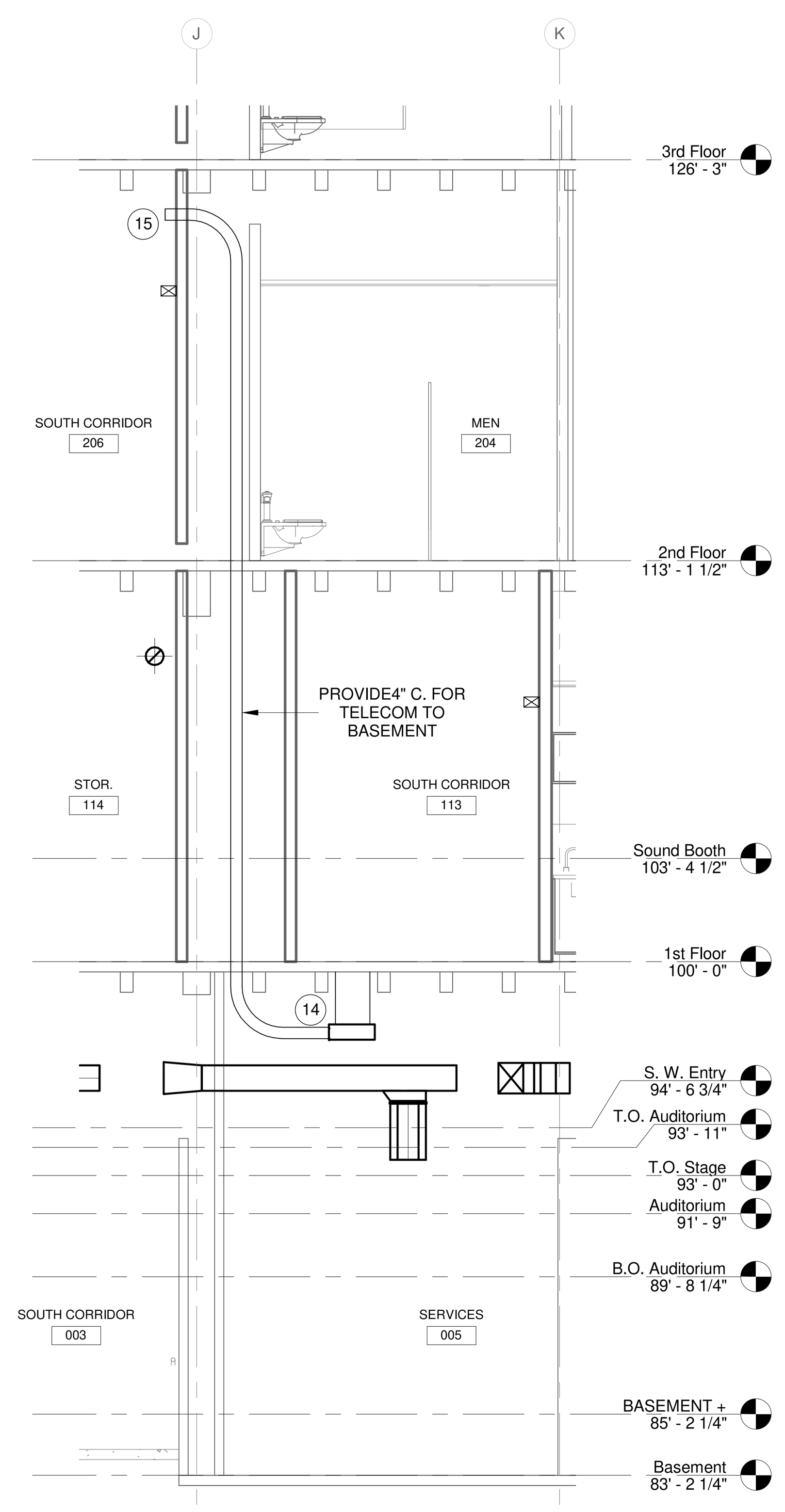
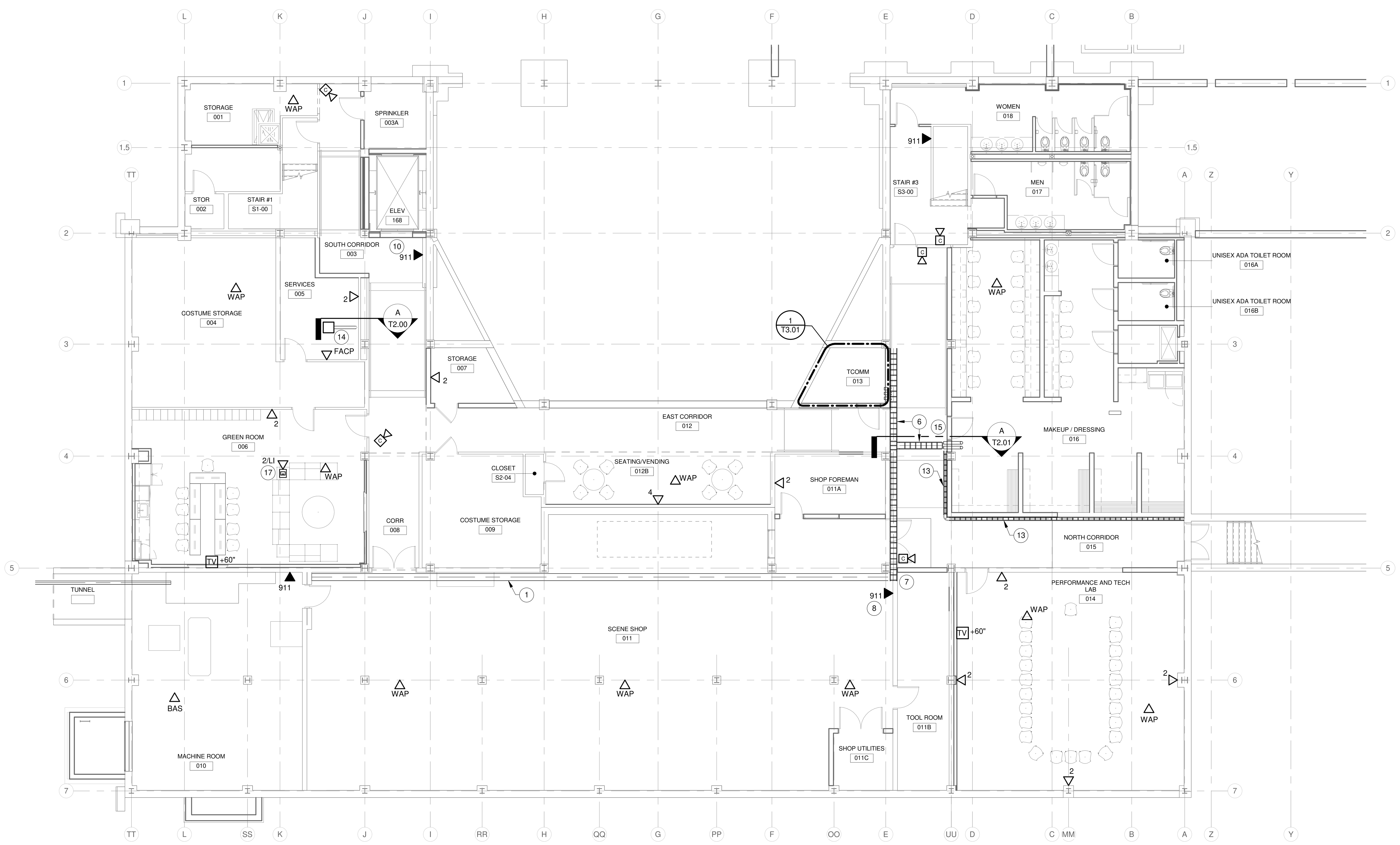


A BASEMENT TO 1ST FLOOR CONDUIT ROUTING - TELECOMMUNICATIONS

SCALE: 1/4" = 1'-0"



BASEMENT PLAN - TELECOMMUNICATIONS

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

NORTH

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06/09/2020

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Indiana State University - Dreiser Hall Renovation

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Issue Date: 06/05/2020

REVISION SCHEDULE		
Rev. #	Revision Description	Issue Date

BASEMENT PLAN - TELECOMMUNICATIONS

T2.00

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RENOVATION LEGEND:

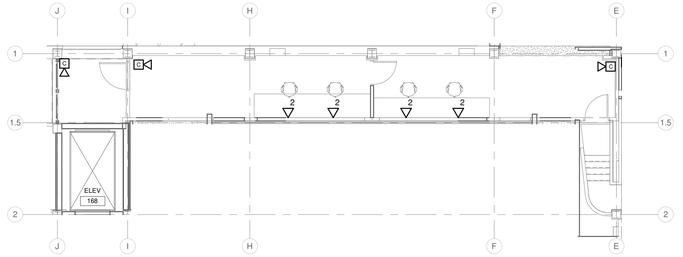
- WORK TO BE INSTALLED
- WORK TO REMAIN

GENERAL NOTES:

1. REFER TO SHEET T0.01 FOR ADDITIONAL GENERAL NOTES.

(#) PLAN NOTES:

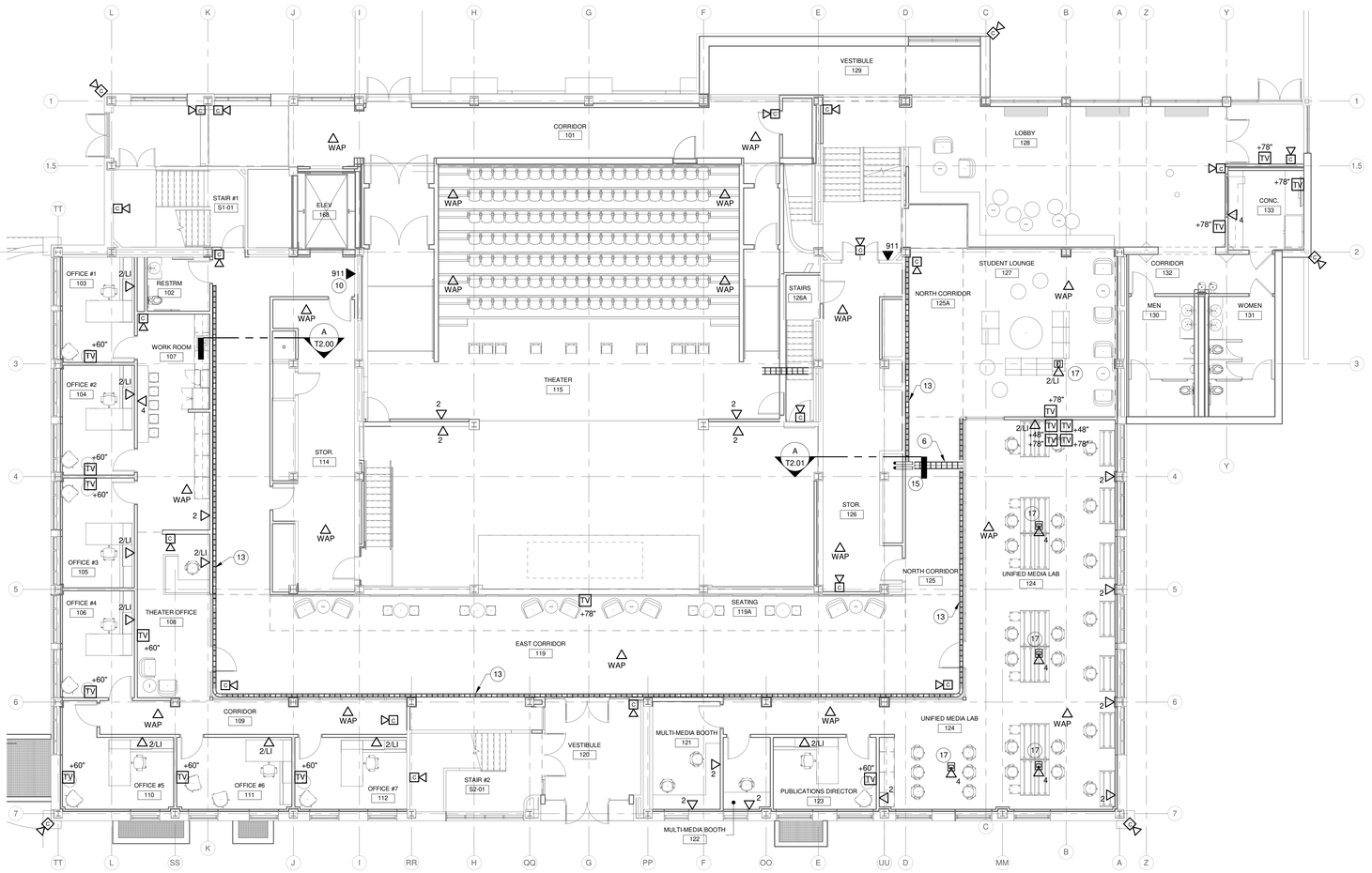
1. SEE T0.01.

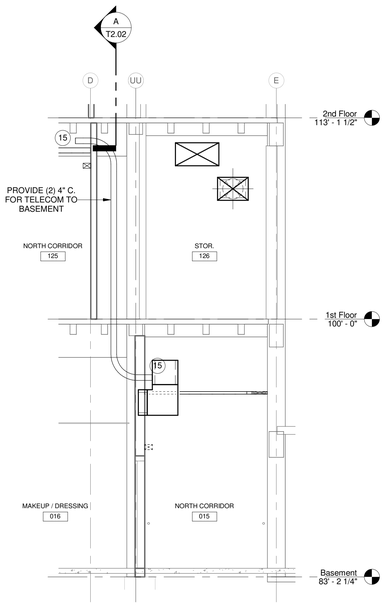


CONTROL ROOM FLOOR PLAN - TELECOMMUNICATIONS

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

NORTH





A BASEMENT TO 1ST FLOOR CONDUIT ROUTING - TELECOMMUNICATIONS

SCALE: 1/4" = 1'-0"

FIRST FLOOR PLAN - TELECOMMUNICATIONS

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

NORTH

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Checked By: JD
Scale: See Drawing
Issue Date: 06/05/2020

REVISION SCHEDULE		
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FIRST FLOOR PLAN - TELECOMMUNICATIONS

T2.01

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RENOVATION LEGEND:

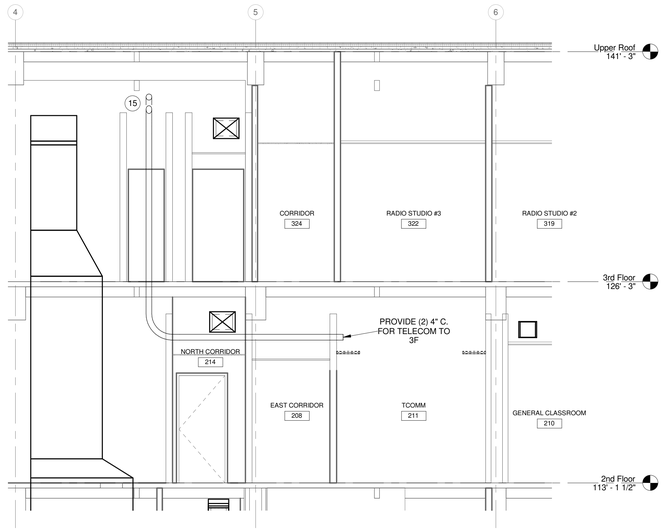
- WORK TO BE INSTALLED
- WORK TO REMAIN

GENERAL NOTES:

1. REFER TO SHEET T0.01 FOR ADDITIONAL GENERAL NOTES.

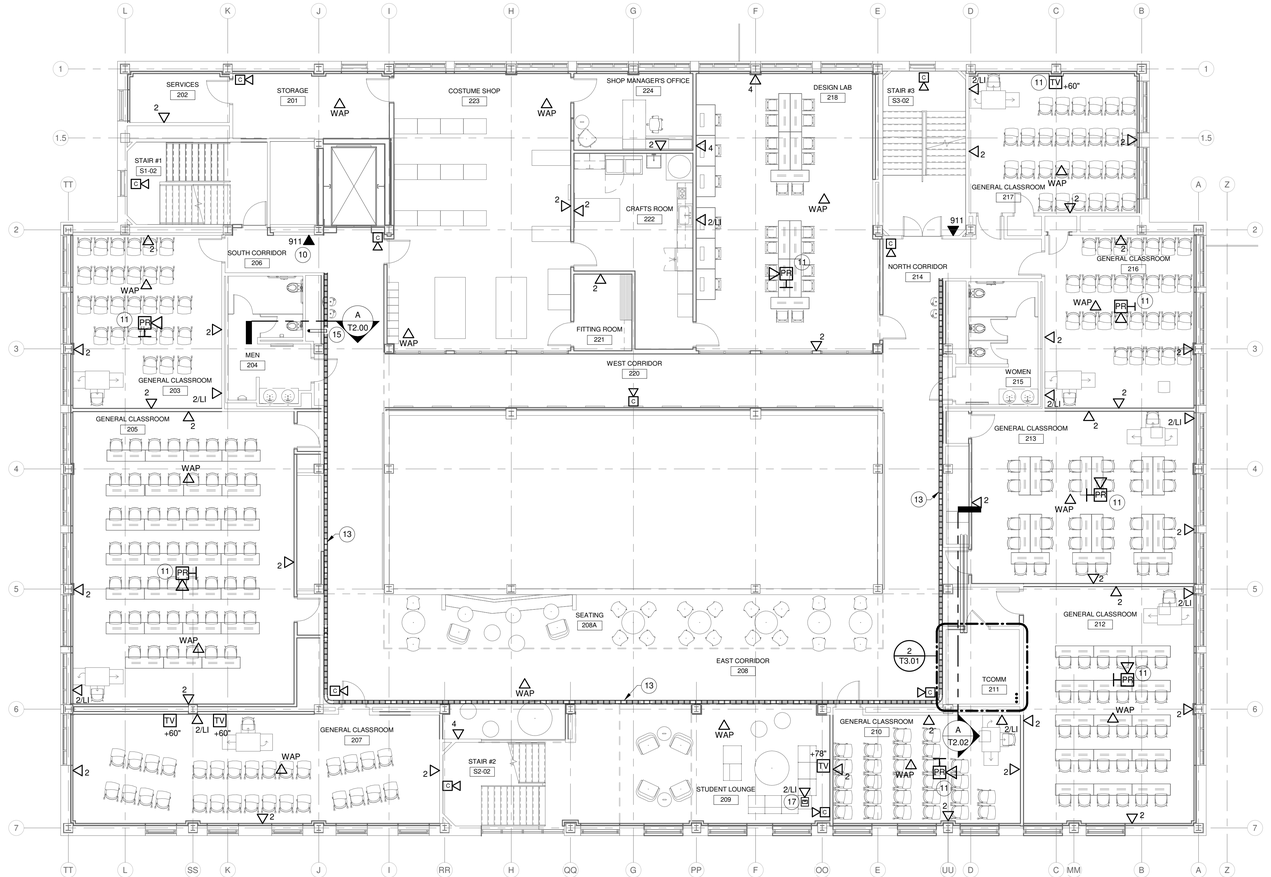
(#) PLAN NOTES:

1. SEE T0.01.



A 2ND TO 3RD FLOOR CONDUIT ROUTING - TELECOMMUNICATIONS

SCALE: 1/4" = 1'-0"



SECOND FLOOR PLAN - TELECOMMUNICATIONS

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

NORTH

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Rev. #	Revision Description	Issue Date

SECOND FLOOR PLAN - TELECOMMUNICATIONS

T2.02

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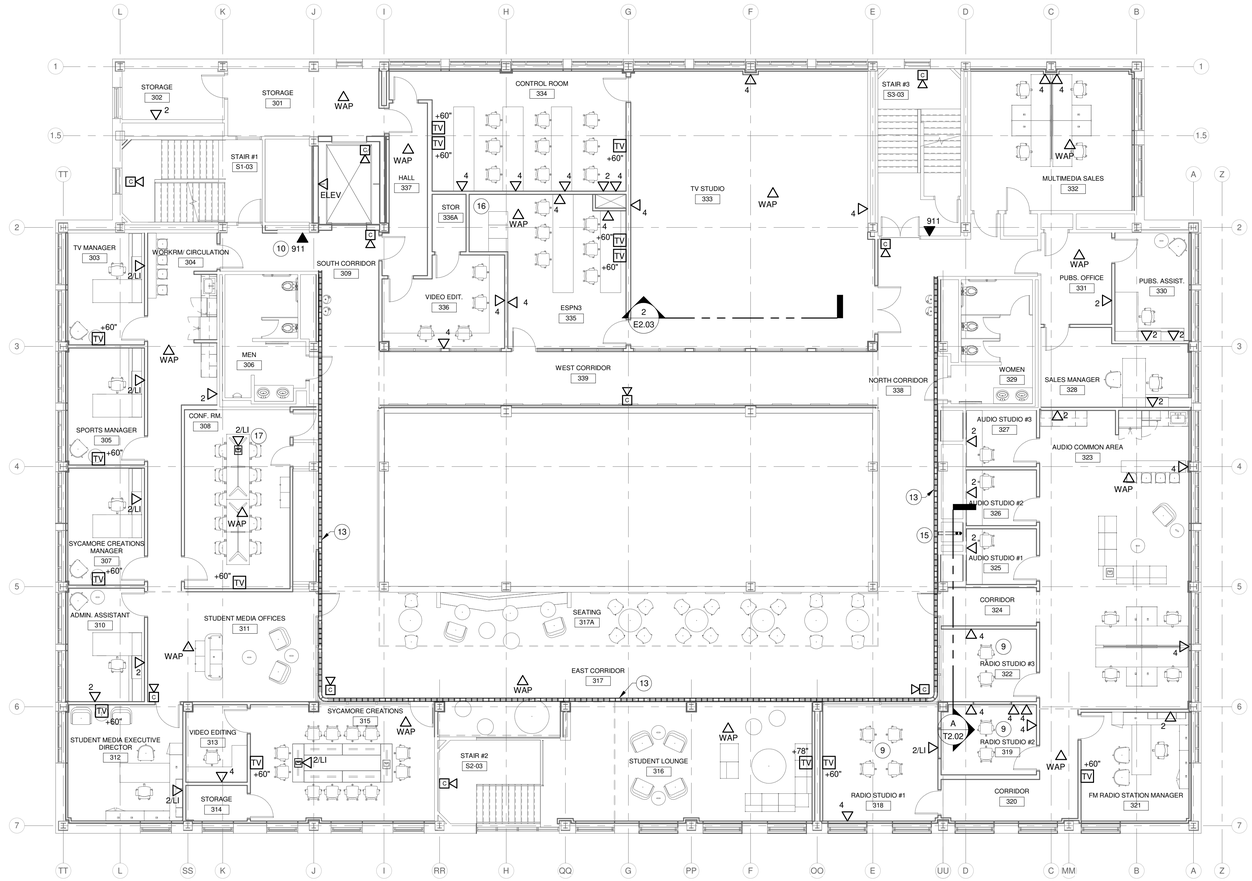

THIRD FLOOR PLAN - TELECOMMUNICATIONS

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

NORTH

RENOVATION LEGEND:

WORK TO BE INSTALLED

WORK TO REMAIN

GENERAL NOTES:

1. REFER TO SHEET T0.01 FOR ADDITIONAL GENERAL NOTES.

(#) PLAN NOTES:

1. SEE T0.01.

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THIRD FLOOR PLAN - TELECOMMUNICATIONS

T2.03

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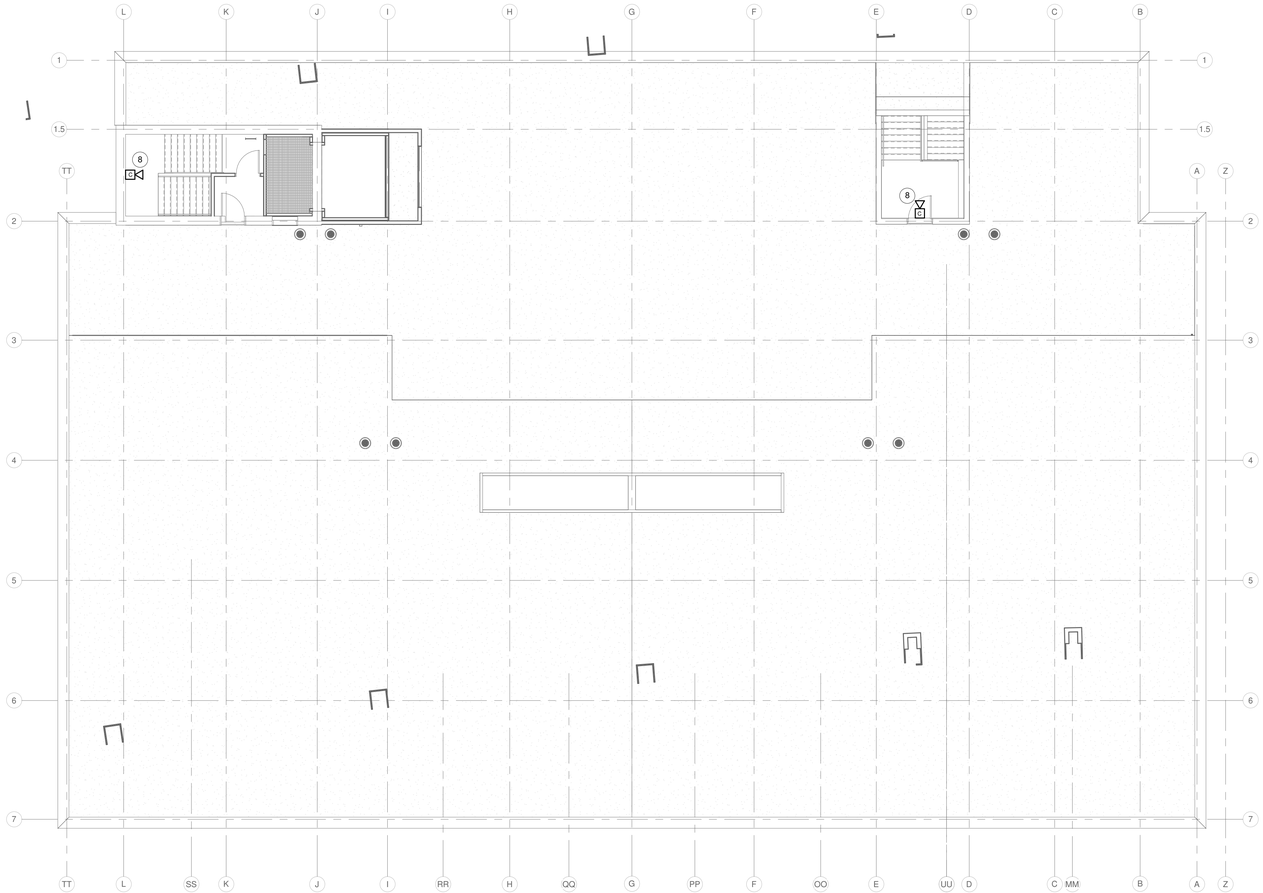

ROOF PLAN - TELECOMMUNICATIONS

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

NORTH

RENOVATION LEGEND:

WORK TO BE INSTALLED

WORK TO REMAIN

GENERAL NOTES:

1. REFER TO SHEET T0.01 FOR ADDITIONAL GENERAL NOTES.

(#) PLAN NOTES:

1. SEE T0.01.

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ROOF PLAN - TELECOMMUNICATIONS

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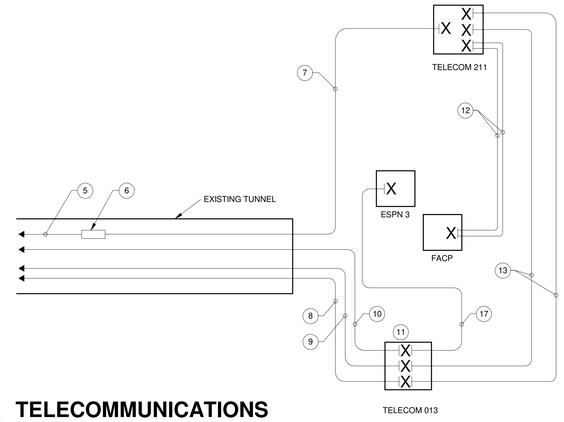


A TELECOMMUNICATIONS BACKBONE DIAGRAM

SCALE: NONE

10. EXISTING 24-STRAND SINGLE MODE FIBER FROM GILLUM HALL. INTERCEPT AND RE-ROUTE TO TCOMM 013.
11. FUSION SPLICE ALL FIBER STRANDS AS INDICATED. PROVIDE SEPARATE SPLICE CASE FOR EACH CABLE.
12. NEW 62.5 MICRON MULTI MODE FIBER TO FACP. PROVIDE COMPLETE.
13. PROVIDE NEW 72-STRAND MULTI MODE, 36-STRAND SINGLE MODE, 12-STRAND SINGLE MODE, AND 12-STRAND SINGLE MODE AS INDICATED.
14. PROVIDE FIBER SPLICING AS INDICATED ON THIS WALL.
15. PROVIDE 12" WIDE LADDER RACK AS SPECIFIED.
16. PROVIDE (3) 4-INCH SLEEVED WALL PENETRATIONS WITH WATERFALL TO HOUSE AND PROTECT CABLING ENTERING TCOMM 013.
17. NEW 24-STRAND SINGLE MODE FIBER TO NEW ESPN LOCATION. PROVIDE COMPLETE.

RENOVATION LEGEND:

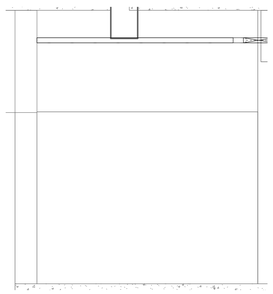
- WORK TO BE INSTALLED
- WORK TO REMAIN

GENERAL NOTES:

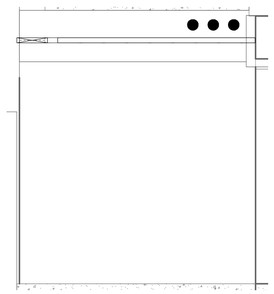
1. REFER TO SHEET T0.01 FOR ADDITIONAL GENERAL NOTES.

(#) PLAN NOTES - THIS SHEET ONLY:

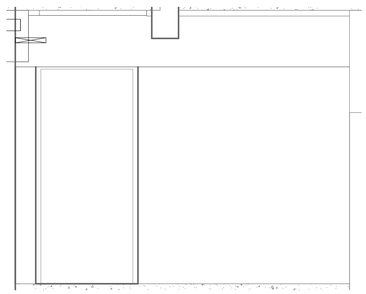
1. PROVIDE 18" LADDER RACK AS SPECIFIED.
2. PROVIDE EQUIPMENT RACK WITH VERTICAL CABLE MANAGEMENT AS SPECIFIED.
3. PROVIDE (3) 4-INCH SLEEVED FLOOR CORES TO HOUSE AND PROTECT CABLING FROM BASEMENT AND FIRST FLOORS.
4. PROVIDE (3) 4-INCH SLEEVED WALL PENETRATIONS WITH WATERFALL TO HOUSE AND PROTECT CABLING ON SECOND FLOOR.
5. EXISTING 150 TWISTED PAIR COPPER TO GILLUM HALL.
6. EXISTING SPLICE CASE.
7. PROVIDE 150 TWISTED PAIR COPPER BACKBONE CABLING FROM EXISTING SPLICE CASE COMPLETE. TERMINATE AND SPLICE AS INDICATED.
8. EXISTING 72-STRAND 50 MICRON MULTI MODE, 12-STRAND 62.5 MICRON MULTI MODE, 36-STRAND SINGLE MODE AND 12-STRAND SINGLE MODE FIBER FROM GILLUM HALL. INTERCEPT FIBER CABLE AND RE-ROUTE TO TELECOM 013.
9. EXISTING 12-STRAND 62.5 MICRON MULTI MODE AND 12-STRAND SINGLE MODE FIBER FROM CAREER CENTER. INTERCEPT FIBER AND RE-ROUTE TO TELECOM 013.



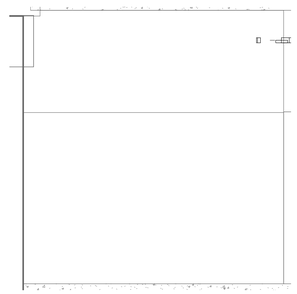
TELECOM 013 WEST



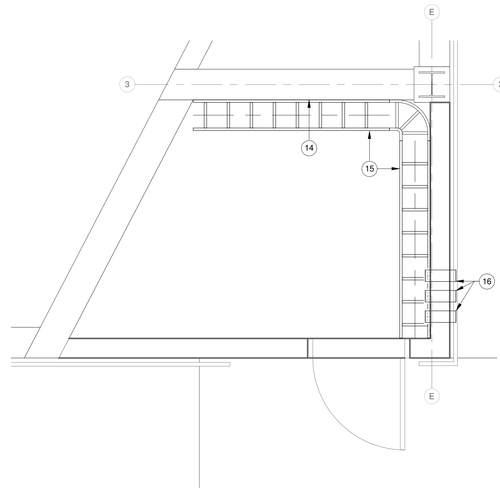
TELECOM 013 NORTH



TELECOM 013 EAST



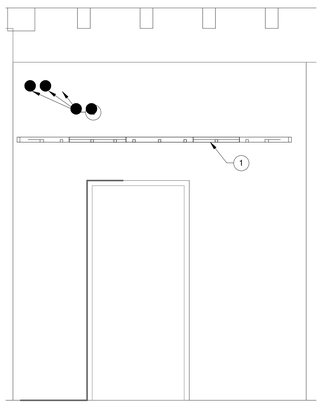
TELECOM 013 SOUTH



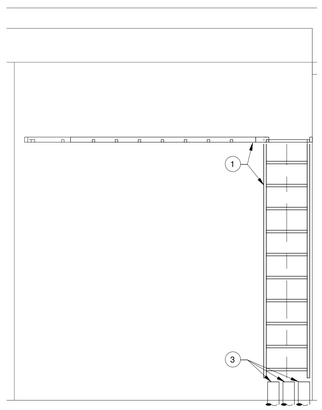
ENLARGED PLAN - TELECOM 013

NORTH

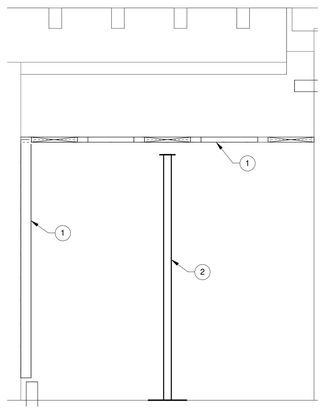
SCALE: 1/2" = 1'-0"



TELECOM 211 WEST



TELECOM 211 NORTH



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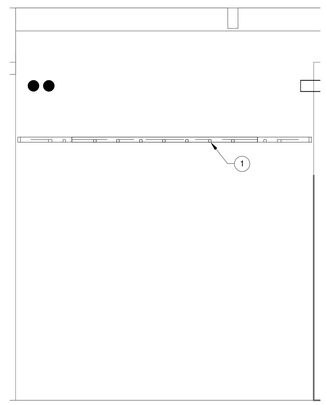
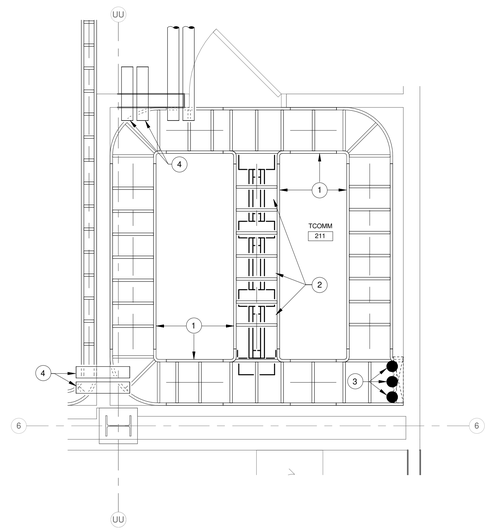


TELECOM 211 SOUTH



ENLARGED PLAN - TELECOM 211

NORTH

SCALE: 1/2" = 1'-0"

browning day

626 North Illinois Street
Indianapolis, Indiana 46204
Phone: (317) 635-5030
Website: www.browningday.com

Indiana State University
Owner

200 North 7th Street
Terre Haute, IN 47809
Phone: (812) 237-3773
Website: www.indstate.edu

VS Engineering
Structural Engineer

4275 North High School Road
Indianapolis, IN 46254
Phone: (317) 293-3542
Website: www.vsengineering.com

RE DIMOND & ASSOCIATES, INC.
MEP Engineer

732 North Capitol Avenue
Indianapolis, IN 46204
Phone: (317) 634-4672
Website: www.redimond.com DA# 19082

Design 27
Acoustical Engineer

1650 East 49th Street
Indianapolis, IN 46205
Phone: (317) 536-8000
Website: www.design27.com

Myers Engineering, Inc.
Civil Engineer

525 West Honey Creek Drive
Terre Haute, IN 47802
Phone: (812) 238-9731
Website: www.MyersEngineering.com

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
Bicsi
James A Darnell
BICSI ID # 101926
EXPIRES 12.09.21
RCDD

CERTIFICATION 06 / 05 / 2020

100% CONSTRUCTION DOCUMENTS

Indiana State University - Dreiser Hall Renovation

221 North 6th Street
Terre Haute, IN 47809

Project No.: 19A052
Drawn By: DK
Checked By: JD
Scale: See Drawing
Issue Date: 06/05/2020

REVISION SCHEDULE		
Rev. #	Revision Description	Issue Date

ENLARGED PLANS - TELECOMMUNICATIONS

T3.01

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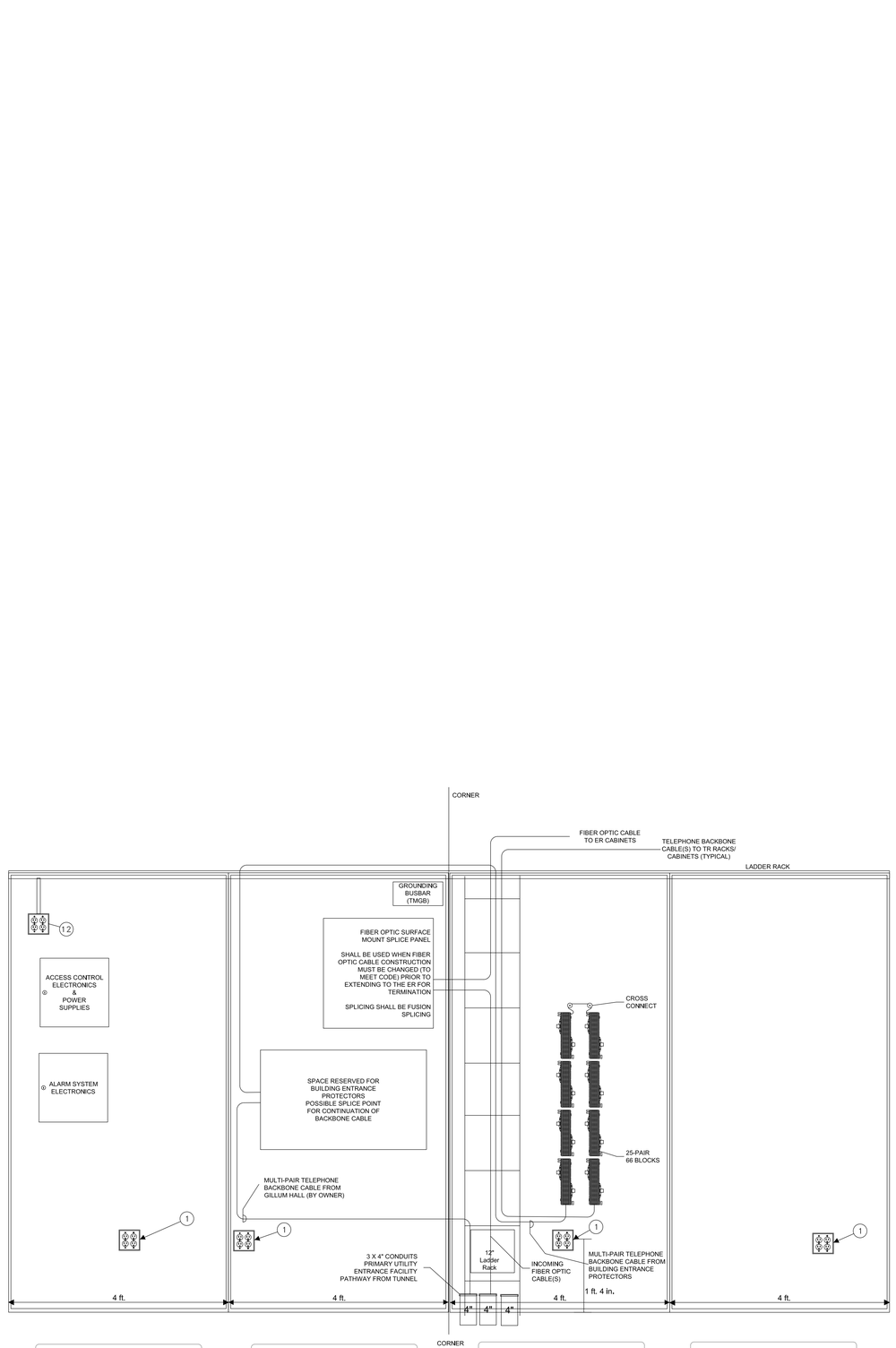
○ KEYED NOTES THIS PAGE:

1. AC POWER RECEPTACLES BY EC. CONTRACTORS SHALL COORDINATE EXACT LOCATION OF RECEPTACLES AND EQUIPMENT PRIOR TO INSTALLATION. (TYPICAL)

NOTES: (THIS SHEET)

1. EACH BACKBOARD SHOWN ON THE ENLARGED FLOORPLAN SHALL BE NUMBERED AND CORRESPOND TO BACKBOARDS SHOWN ON THE DETAIL SHEETS. BACKBOARDS SHOWN ON THE FLOORPLANS BUT NOT DETAILED ON THE DETAIL DRAWINGS HAVE NO EQUIPMENT MOUNTING REQUIREMENTS UNDER THIS CONTRACT.
2. ITEMS SHOWN MOUNTED ON BACKBOARD ARE DIAGRAMMATICAL. ALL LAYOUTS AND EQUIPMENT POSITIONING SHALL BE COORDINATED FOR APPROVAL BY THE OWNER PRIOR TO INSTALLATION. EXACT POSITIONING SHALL BE REFLECTED ON THE AS-BUILT DRAWINGS.



Telecommunications Backboard Identification: TBB-01 (See Enlarged Floorplan for Location)

Telecommunications Backboard Identification: TBB-02 (See Enlarged Floorplan for Location)

Telecommunications Backboard Identification: TBB-03 (See Enlarged Floorplan for Location)

Telecommunications Backboard Identification: TBB-04 (See Enlarged Floorplan for Location)

A BDF/ER AND TELECOMMUNICATIONS ROOM BACKBOARD DETAIL LAYOUTS (ROOM ###)
Scale: 1/2" = 1'

INDIANA STATE UNIVERSITY
TERRE HAUTE, INDIANA

COMMUNICATIONS STANDARDS

Dreiser Hall Renovation

221 North 6th Street
Terre Haute, IN 47809

Browning Day
Project No. 19A052

R.E. Dimond
Project No. 19082

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BICSI (REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER)
James A. Darnell
BICSI ID # 101926
EXPIRES 12-31-21
RCDD
06/05/2020

06/05/2020 – 100% CONSTRUCTION DOCUMENTS		
MARK	DATE	DESCRIPTION

PROJECT NO.:	
PROJECT DATE:	June 05, 2020
DRAWN BY:	
CHECKED BY:	
DWG FILE:	
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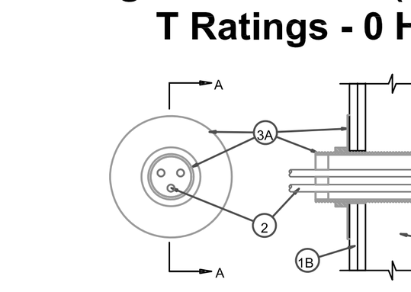
Keyplan

BDF/ER/TR BACKBOARD ELEVATIONS

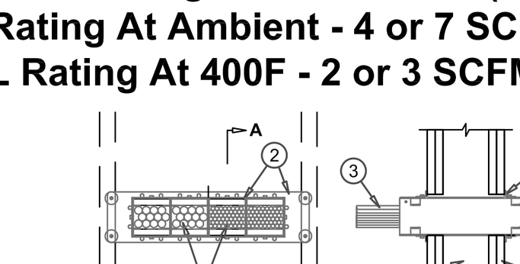
T4.01

Threaded Penetrator - Gypsum
System No. W-L-3138
F Ratings - 1 and 2 Hr (See Item 1)
T Ratings - 0 Hr



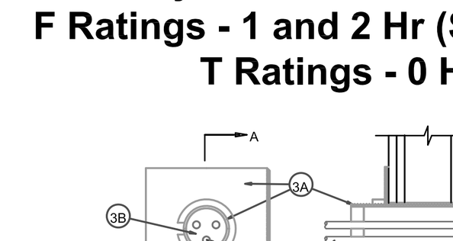
UL SYSTEM NUMBER W-L--3138
F RATING - 1 HOUR OR 2 HOUR
Threaded Penetrator - Gypsum System
1. Wall Assembly - The 1 or 2 hour fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300 or U400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
A. Studs - Wall framing shall consist of either wood studs or steel channel studs. Wood studs to consist of nominal 2" by 4" lumber spaced 16" OC. Steel studs to be minimum 3-5/8" wide and spaced 24" OC.
B. Wallboard, Gypsum* -- 5/8" thick, 4' wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type, and sheet orientation shall be as specified in the individual U300 or U400 Series Designs in the UL Fire Resistance Directory. The Hourly F rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.
2. Cables -- Aggregate cross-sectional area of cables in Threaded Sleeve to be minimum 8 percent to maximum 48 percent of the aggregate cross-sectional area of the Threaded Sleeve. Cables shall be rigidly supported on both sides of the wall assembly.
3. Firestop System -- The firestop system shall consist of the following:
A. Firestop Device * -- Threaded steel sleeve device incorporating flat washers secured by threaded couplers. Device shall be installed in accordance With the accompanying installation instructions and bushings shall be applied to each end. Device provided in nominal 1, 2, and 4" sizes. Maximum diameter of opening in wall for 1, 2, and 4" device sizes are 1 1/4", 2 7/16", and 4 1/2" respectively.
B. Fill void with cavity material * -- Sealant - Minimum of 1" thickness of fill material applied within the Smooth Sleeve, flush with both ends.
*** Bearing the UL classification Marking**

System No. W-L-3218
F Ratings - 1, 2, 3 and 4 Hr (See Item 1)
T Ratings - 3/4 and 1 Hr (See Item 3)
L Rating At Ambient - 4 or 7 SCFM (See Item 3)
L Rating At 400F - 2 or 3 SCFM (See Item 3)



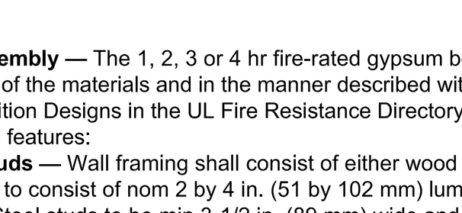
1. **Wall Assembly —** The 1, 2, 3 or 4 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described within the individual U300 or U400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall incorporate the following construction features:
A. **Studs —** Wall framing shall consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced max 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.
B. **Gypsum Board* —** Thickness, type, number of layers and fasteners as specified in the individual Wall and Partition Design. Opening in gypsum board to be max 1/4 in. (6 mm) larger then width and height dimensions of firestop device(s).
The hourly F Rating of the firestop system is dependent upon the hourly rating of the wall in which it is installed.
2. **Firestop Device* —** One, two, three, four or seven firestop device modules ganged together. Each firestop device module consists of a 3 by 3 by 10 -1/2 in. (76 by 76 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device modules to be installed in accordance with the accompanying installation instructions. The space between the firestop device module(s) and the periphery of the opening shall be min 0 in. (0 mm, point contact) to max 1/8 in. (3.2 mm). Firestop device module(s) secured in place by means of steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device by means of steel set screws provided with device. Each four- and seven-gang steel wall plate shall be fastened to the studs with steel screws sized to extend through the gypsum board layers and penetrate 1/2 in. (13 mm) into the framing member Each firestop device module is to be installed with ends projecting an equal distance beyond each surface of the wall assembly.
As an alternate, the four- and seven-gang steel wall plates may be installed directly against the studs for walls having 16 and 24 in. (406 and 610 mm) center-to-center stud spacing, respectively, prior to installation of the gypsum board layers. The steel wall plates shall be secured to the stud by means of steel screws. After installation of the steel wall plates and firestop device modules, the gypsum board shall be installed as specified in the individual U300 or U400 Design with a maximum 1/8 in. (3.2 mm) gap between the firestop device module and the cutout in the gypsum board. Gap between the firestop device module and the cutout in the gypsum board may be filled with gypsum joint compound or fill material (Item 4).
SPECIFIED TECHNOLOGIES INC — EZ PATH
2A. **Firestop Device* — Extension Module —** (Optional, Not Shown) — Module attached to ends of 3 by 3 by 10 -1/2 in. (76 by 76 by 267 mm) long firestop device (Item 3) to increase its length to facilitate installation in thicker walls. Each module consists of a 3 by 3 by 6 in. (76 by 76 by 152 mm) long galv steel tube with an intumescent material lining. Extension module to be installed in accordance with the accompanying installation instructions. When module is used, firestop device (Item 2) and extension module(s) secured in place by means of steel wall plates installed with gasketingmaterial supplied with product. Steel wall plates installed on both sides of wall and secured to each device or extension module(s) by means of steel set screws provided with wall plates. Firestop device and extension module(s) assembly to be installed with ends projecting an equal distance beyond each surface of the wall assembly.
SPECIFIED TECHNOLOGIES INC — EZ PATH Extension
3. **Cables —** Within the loading area for each firestop device module, the cables may represent a 0 to 100 percent visual fill. Cable fill to be distributed at a uniform height across the width of the firestop device module. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types of cables may be used:
A. Max 400 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) jacketing and insulation.
B. Max 350 kcmil single copper conductor power cable with XLPE jacket and insulation.
C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
D. Max 3/C No. 10 AWG metal clad or armored cable with steel or aluminum jacket.
E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket.
F. Max four pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.
G. Max RG/U coaxial cable with fluorinated ethylene insulation and jacketing.
H. Fiber optic cable with PVC or polyethylene (PE) jacket and insulation having a max diam of 5/8 in. (16 mm).
I. **Optical Fiber Raceway+ —** Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either PVC or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with Article 770 of the National Electrical Code (NFPA 70).
When the hourly rating of the wall assembly is 1 hr, the T Rating is 3/4 hr. When the hourly fire rating of the wall assembly is greater than 1 hr, the T Rating is 3/4 hr when Item 3A, 3B, 3C, 3D or 3E is used. Otherwise the T Rating is 1 hr. When Item 3A, 3B, 3C, 3D or 3E is used, the maximum F Rating is 2 hr. When max 200 pair No. 24 AWG telecommunication cable is used or when Item 3F, 3G, 3H or 3I is used, the maximum F Rating is 4 hr. When Item 3A is used, the L Rating for each firestop device module with 100 percent visual fill of cable is 4 cfm at ambient and 3 cfm at 400F. When Item 3F, 3G or 3H is used, the L Rating for each firestop device module with 100 percent visual fill of cable is 7 cfm at ambient and 2 cfm at 400F.
4. **Fill, Void or Cavity Material* — Sealant or Putty —** (Not Shown) — As an alternate to gypsum joint compound, the gap between the firestop device module and the cutout in the gypsum board may be sealed with fill material on each side of the wall assembly when four- and seven-gang steel wall plates are installed directly against the wood or steel studs.
SPECIFIED TECHNOLOGIES INC — SpecSeal 100, 101, 102, 105, 120 or 129 Sealant, SpecSeal LCI Sealant, SpecSeal Putty
*Bearing the UL Classification Mark

Split Sleeve - Gypsum
System No. W-L-3136
F Ratings - 1 and 2 Hr (See Item 1)
T Ratings - 0 Hr



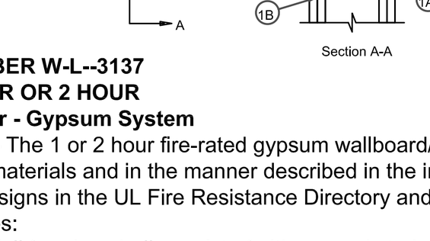
UL SYSTEM NUMBER W-L--3136
F RATING - 1 HOUR OR 2 HOUR
The Split Sleeve System for Retrofitting Gypsum
1. Wall Assembly - The 1 or 2 hour fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300 or U400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
A. Studs - Wall framing shall consist of either wood studs or steel channel studs. Wood studs to consist of nominal 2" by 4" lumber spaced 16" OC. Steel studs to be minimum 3-5/8" wide and spaced 24" OC.
B. Wallboard, Gypsum* -- 5/8" thick, 4' wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type, and sheet orientation shall be as specified in the individual U300 or U400 Series Designs in the UL Fire Resistance Directory. The Hourly F rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.
2. Cables -- Aggregate cross-sectional area of cables in the Split Sleeve to be minimum 8 percent to maximum 48 percent of the aggregate cross-sectional area of the Split Sleeve. Cables shall be rigidly supported on both sides of the wall assembly.
3. Firestop System -- The firestop system shall consist of the following:
A. Firestop Device * -- Threaded Split Sleeve halves incorporating split nuts and split washers sized to fit the specific diameter of the opening. Device shall be installed around cables in accordance with the accompanying installation instructions and bushings shall be applied to each end. Device provide in nominal 1, 2, and 4" sizes. Maximum diameter of opening in wall for 1, 2, and 4" device sizes are 1 1/4", 2 7/16", and 4 1/2" respectively.
B. Fill void with cavity material * -- Sealant - Minimum of 1" thickness of fill material applied within the Smooth Sleeve, flush with both ends.
*** Bearing the UL classification Marking**

System No. W-L-3265
F Ratings - 1, 2, 3 and 4 Hr (See Items 1 and 3)
T Ratings - 3/4, 1 and 1-1/2 Hr (See Item 3)



1. **Wall Assembly —** The 1, 2, 3 or 4 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described within the individual U300 or U400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall incorporate the following construction features:
A. **Studs —** Wall framing shall consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced max 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.
B. **Gypsum Board* —** Thickness, type, number of layers and fasteners as specified in the individual Wall and Partition Design. Max diam of opening to be 4 in. (102 mm). The hourly F Rating of the firestop system is dependent upon the hourly rating of the wall in which it is installed.
2. **Firestop Device* —** Single firestop device module consisting of a 3 by 3 by 10 -1/2 in. (76 by 76 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device module to be installed in accordance with the accompanying installation instructions. The space between the firestop device module(s) and the periphery of the opening shall be min 0 in. (0 mm, point contact) to max 1/2 in. (13 mm). Firestop device module(s) secured in place by means of circular steel wall plates installed with gasketing material supplied with product. Circular steel wall plates installed on both sides of wall and secured to each device by means of steel set screws provided with device. Firestop device module is to be installed with ends projecting an equal distance beyond each surface of the wall assembly.
SPECIFIED TECHNOLOGIES INC — EZ PATH
2A. **Firestop Device* — Extension Module —** (Optional, Not Shown) — Module attached to ends of 3 by 3 by 10 -1/2 in. (76 by 76 by 267 mm) long firestop device (Item 3) to increase its length to facilitate installation in thicker walls. Each module consists of a 3 by 3 by 6 in. (76 by 76 by 152 mm) long galv steel tube with an intumescent material lining. Extension module to be installed in accordance with the accompanying installation instructions. When module is used, firestop device (Item 2) and extension module(s) secured in place by means of steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device or extension module(s) by means of steel set screws provided with wall plates. Firestop device and extension module(s) assembly to be installed with ends projecting an equal distance beyond each surface of the wall assembly.
SPECIFIED TECHNOLOGIES INC — EZ PATH Extension
3. **Cables —** Within the loading area for the firestop device module, the cables may represent a 0 to 100 percent visual fill. Cable fill to be distributed at a uniform height across the width of the firestop device module. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types of cables may be used:
A. Max 400 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) jacketing and insulation.
B. Max 350 kcmil single copper conductor power cable with XLPE jacket and insulation.
C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
D. Max 3/C No. 10 AWG metal clad or armored cable with steel or aluminum jacket.
E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket.
F. Max four pair No. 22 AWG (or smaller) copper conductor data cable with polyvinyl chloride (PVC) jacketing and insulation.
G. Max RG/U coaxial cable with fluorinated ethylene insulation and jacketing.
H. Fiber optic cable with polyvinyl chloride (PVC) or polyethylene (PE) jacket and insulation having a max diam of 5/8 in. (16 mm).
I. Max four pair No. 24 AWG (or smaller) copper conductor data cable with plenum rated jacket and insulation.
J. **Optical Fiber Raceway**+ — Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either polyvinyl chloride (PVC) or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with Article 770 of the National Electrical Code (NFPA 70)
When the hourly rating of the wall assembly is 1 hr, the T Rating is 3/4 hr. When the hourly fire rating of the wall assembly is greater than 1 hr, the T Rating is 3/4 hr when Item 3A, 3B, 3C, 3D or 3E is used. Otherwise the T Rating is 1 hr. When no cables are installed within the device module, the T Rating is 1 hr in 1 hr walls and 1-1/2 hr for 2, 3 and 4 hr walls. When Item 3A, 3B, 3C, 3D or 3E is used, the maximum F Rating is 2 hr. When max 200 pair No. 24 AWG telecommunication cable is used or when Item 3F, 3G, 3H, 3I or 3J is used, the maximum F Rating is 4 hr.
*Bearing the UL Classification Mark

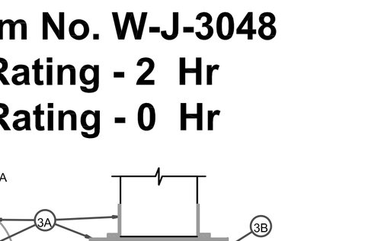
Smooth Penetrator - Gypsum
System No. W-L-3137
F Ratings - 1 and 2 Hr (See Item 1)
T Ratings - 0 Hr



UL SYSTEM NUMBER W-L--3137
F RATING - 1 HOUR OR 2 HOUR
Smooth Penetrator - Gypsum System
1. Wall Assembly - The 1 or 2 hour fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300 or U400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
A. Studs - Wall framing shall consist of either wood studs or steel channel studs. Wood studs to consist of nominal 2" by 4" lumber spaced 16" OC. Steel studs to be minimum 3-5/8" wide and spaced 24" OC.
B. Wallboard, Gypsum* -- 5/8" thick, 4' wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type, and sheet orientation shall be as specified in the individual U300 or U400 Series Designs in the UL Fire Resistance Directory. The Hourly F rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.
2. Cables -- Aggregate cross-sectional area of cables in Smooth Sleeve to be minimum 8 percent to maximum 48 percent of the aggregate cross-sectional area of the Smooth Sleeve. Cables shall be rigidly supported on both sides of the wall assembly.
3. Firestop System -- The firestop system shall consist of the following:
A. Firestop Device * -- Smooth steel sleeve device incorporating flat washers secured by sliding compression couplers. Device shall be installed in accordance with the accompanying installation instructions and bushings shall be applied to each end. Device provided in nominal 1, 2, and 4" sizes. Maximum diameter of opening in wall for 1, 2, and 4" device sizes are 1 1/4", 2 7/16", and 4 1/2" respectively.
B. Fill void with cavity material * -- Sealent - Minimum of 1" thickness of fill material applied within the Smooth Sleeve, flush with both ends.
*** Bearing the UL classification Marking**

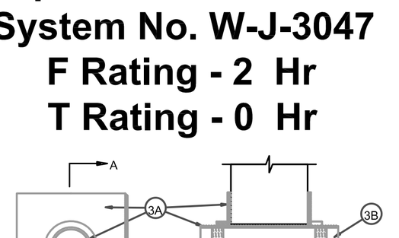
E THROUGH GYPSUM BOARD WALL PENETRATIONS
Scale = NONE

Smooth Penetrator - Block
System No. W-J-3048
F Rating - 2 Hr
T Rating - 0 Hr



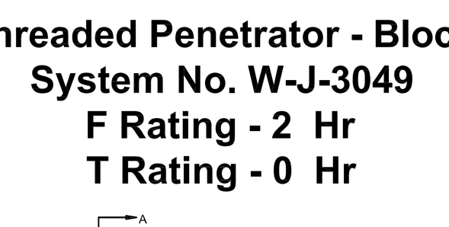
UL SYSTEM NUMBER W-L--3048
F RATING - 2 HOUR
Smooth Penetrator - Block System
1. Wall Assembly - Minimum 6" thick reinforced lightweight or normal weight (100-150pcf) concrete. Wall may also be constructed of any UL classified Concrete Blocks.
2. Cables -- Aggregate cross-sectional area of cables in Smooth Sleeve to be minimum 8 percent to maximum 48 percent of the aggregate cross-sectional area of the Smooth Sleeve. Cables shall be rigidly supported on both sides of the wall assembly.
3. Firestop System -- The firestop system shall consist of the following:
A. Firestop Device * -- Smooth steel sleeve device incorporating flat washers secured by sliding compression couplers. Device shall be installed in accordance with the accompanying installation instructions and bushings shall be applied to each end. Device provided in nominal 1, 2, and 4" sizes. Maximum diameter of opening in wall for 1, 2, and 4" device sizes are 1 1/4", 2 7/16", and 4 1/2" respectively.
B. Fill void with cavity material * -- Sealant - Minimum of 1" thickness of fill material applied within the Smooth Sleeve, flush with both ends.
*** Bearing the UL classification Marking**

Split Sleeve - Block
System No. W-J-3047
F Rating - 2 Hr
T Rating - 0 Hr



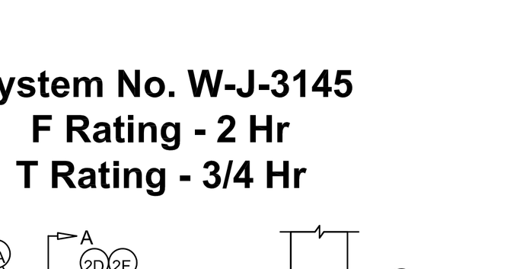
UL SYSTEM NUMBER W-L--3047
F RATING - 2 HOUR
Split Sleeve - Block System
1. Wall Assembly - Minimum 6" thick reinforced lightweight or normal weight (100-150pcf) concrete. Wall may also be consgtructed of any UL classified Concrete Blocks.
2. Cables -- Aggregate cross-sectional area of cables in the Split Sleeve to be minimum 8 percent to maximum 48 percent of the aggregate cross-sectional area of the Split Sleeve. Cables shall be rigidly supported on both sides of the wall assembly.
3. Firestop System -- The firestop system shall consist of the following:
A. Firestop Device * -- Threaded Split Sleeve halves incorporating split nuts and split washers sized to fit the specific diameter of the opening. Device shall be installed around cables in accordance with the accompanying installation instructions and bushings shall be applied to each end. Device provide in nominal 1, 2, and 4" sizes. Maximum diameter of opening in wall for 1, 2, and 4" device sizes are 1 1/4", 2 7/16", and 4 1/2" respectively.
B. Fill void with cavity material * -- Sealant - Minimum of 1" thickness of fill material applied within the Smooth Sleeve, flush with both ends.
*** Bearing the UL classification Marking**

Threaded Penetrator - Block
System No. W-J-3049
F Rating - 2 Hr
T Rating - 0 Hr



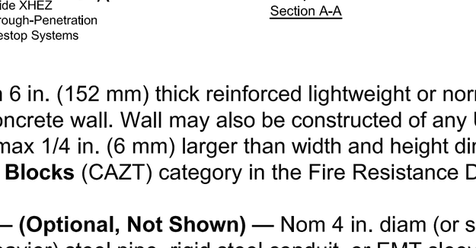
UL SYSTEM NUMBER W-L--3049
F RATING - 2 HOUR
Threaded Penetrator - Block System
1. Wall Assembly - Minimum 6" thick reinforced lightweight or normal weight (100-150pcf) concrete. Wall may also be constructed of any UL classified Concrete Blocks.
2. Cables -- Aggregate cross-sectional area of cables in Threaded Sleeve to be minimum 8 percent to maximum 48 percent of the aggregate cross-sectional area of the Threaded Sleeve. Cables shall be rigidly supported on both sides of the wall assembly.
3. Firestop System -- The firestop system shall consist of the following:
A. Firestop Device * -- Threaded steel sleeve device incorporating flat washers secured by threaded couplers. Device shall be installed in accordance with the accompanying installation instructions and bushings shall be applied to each end. Device provided in nominal 1, 2, and 4" sizes. Maximum diameter of opening in wall for 1, 2, and 4" device sizes are 1 1/4", 2 7/16", and 4 1/2" respectively.
B. Fill void with cavity material * -- Sealent - Minimum of 1" thickness of fill material applied within the Smooth Sleeve, flush with both ends.
*** Bearing the UL classification Marking**

System No. W-J-3145
F Rating - 2 Hr
T Rating - 3/4 Hr



1. **Wall Assembly —** Min 6 in. (152 mm) thick reinforced lightweight or normal weight (100 -150 pcf or 1600 -2400 kg/m3) concrete. Wall may also be constructed of any UL Classified **Concrete Blocks*.** Max area of opening is 192 sq in. (0.12 m2) with max dimensions of 24 in. (610 mm). See **Concrete Blocks** (CAZT) category in the Fire Resistance Directory for names of manufacturers.
2. **Firestop System —** The firestop shall consist of the following:
A. **Fill, Void or Cavity Materials*— Composite Sheet —** Foil-faced sheet with galv steel sheet backer. Sheets may be installed as one solid sheet, cut in two pieces (top and bottom) or split on one side of the penetrant(s). Opening in composite sheet to be max 3/16 in. (5 mm) larger than width and height dimensions of firestop device(s). Sheets cut to lap min of 2 in. (51 mm) on the wall on all sides. Sheets to be installed on each side of wall with foil facing against wall surface and secured with min 3/16 in. (5 mm) diam by 1-1/4 in. (32 mm) long steel concrete screws in conjunction with min 1-1/4 in. (32 mm) diam steel fender washers. Spacing of fasteners not to exceed 6 in. (152 mm) OC.
SPECIFIED TECHNOLOGIES INC — SpecSeal CS Composite Sheet
B. **Fill, Void or Cavity Materials* — Putty or Sealant —** Nom 3/16 in. (5 mm) wide by 3/16 in. (5 mm) thick putty strips or nom 1/4 in. (6 mm) diam bead of sealant applied beneath composite sheet around entire perimeter of through opening on both sides of wall.
SPECIFIED TECHNOLOGIES INC — SpecSeal Putty, SpecSeal 100, 101, 102, 120, 129 or 105 Sealant or SpecSeal LCI Sealant
C. **Steel Cover Strip —** The steel cover strip is required when the sheet is cut/split to accommodate the firestop devices (Item 2D). Min 2 in. (51 mm) wide strip of min 0.020 in. (0.51 mm) thick (26 gauge) galv steel centered over entire length of each butted seam or slit made in the intumescent sheet (Item 2A). Prior to installation of the steel strip, the seam or slit in the intumescent sheet shall be covered with a nom 1/8 by 1/2 in. (3.2 by 13 mm) ribbon of putty or a nom 1/4 in. (6 mm) diam bead of sealant (Item 2C). Steel cover strip secured to galv steel sheet backer of intumescent sheet with steel sheet metal screws or rivets spaced max 3 in. (76 mm) OC on each side of seam or slit.
D. **Firestop Device*—** One, two, three, four or seven firestop device modules ganged together. Each firestop device module consists of a 3 by 3 by 10 -1/2 in. (76 by 76 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device modules to be installed in accordance with the accompanying installation instructions. The space between the firestop device module(s) and the periphery of the opening shall be min 0 in. (0 mm, point contact) to max. 1/8 in. (3.2 mm) for square or rectangular plates and min 0 in. (0 mm, point contact) to max 1/2 in. (13 mm) when circular wall plates are used. Firestop device module(s) secured in place by means of steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device by means of steel set screws provided with wall plates. Four- and seven- gang steel wall plates shall be secured to wall using four steel concrete screws or to composite sheet using four steel sheet metal screws. Each firestop device module is to be installed with ends projecting an equal distance beyond each surface of the wall assembly.
SPECIFIED TECHNOLOGIES INC — EZ PATH.
E. **Firestop Device* — Extension Module —** (Optional, Not Shown) — Module attached to ends of 3 by 3 by 10 -½ in. (76 by 76 by 267 mm) long firestop device (Item 2D) to increase its length to facilitate installations in thicker walls. Each module consists of a 3 by 3 by 6 in. (76 by 76 by 152 mm) long galv steel tube with an intumescent material lining. Extension module to be installed in accordance with the accompanying installation instructions. When module is used, firestop device (Item 2D) and extension module(s) secured in place by means of steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device or extension module(s) by means of steel set screws provided with wall plates. Firestop device and extension module(s) assembly to be installed with ends projecting an equal distance beyond each surface of the wall assembly.
SPECIFIED TECHNOLOGIES INC — EZ PATH Extension
F. **Firestop Device* —** One firestop device module consisting of a 1.4 by 1.4 by 10 -1/2 in. (36 by 36 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device module to be installed in accordance with the accompanying installation instructions. The space between the firestop device module and the periphery of the opening shall be min 0 in. (0 mm, point contact) to max 1/8 in. (3.2 mm). Firestop device module secured in place by means of steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device by means of steel set screws provided with device. The firestop device module is to be installed with ends projecting an equal distance beyond each surface of the wall assembly.
SPECIFIED TECHNOLOGIES INC — EZ PATH Mini
3. **Cables —** The cables may represent a 0 to 100 percent visual fill within the loading area for each firestop device module (Items 2D through 2F). Cable fill to be distributed at a uniform height across the width of the firestop device module. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types of cables may be used:
A. Max 400 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) jacketing and insulation or with plenum rated jacketing and insulation.
B. Max 350 kcmil single copper conductor power cable with XLPE jacket and insulation.
C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
D. Max 3/C No. 10 AWG metal clad or armored cable with steel or aluminum jacket.
E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket.
F. Max four pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.
G. Max four pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.
H. Max RG/U coaxial cable with fluorinated ethylene insulation and jacketing.
I. Fiber optic cable with PVC or polyethylene (PE) jacket and insulation having a max diam of 5/8 in. (16 mm).
J. **Optical Fiber Raceway+ —** Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either PVC or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with the National Electrical Code (NFPA 70).
+Bearing the UL Listing Mark
*Bearing the UL Classification Mark

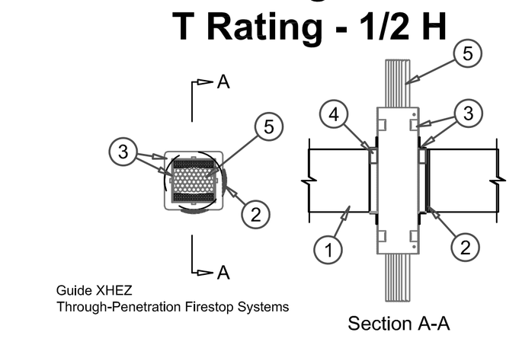
System No. W-J-3138
F Ratings - 2 and 4 Hr (See Item 3)
T Ratings - 3/4, 1 and 1-1/2 Hr (See Item 3)



1. **Wall Assembly —** Min 6 in. (152 mm) thick reinforced lightweight or normal weight (100 -150 pcf or 1600 -2400 kg/m3) concrete wall. Wall may also be constructed of any UL Classified **Concrete Blocks*.** Opening to be max 1/4 in. (6 mm) larger than width and height dimensions of firestop device(s). See **Concrete Blocks** (CAZT) category in the Fire Resistance Directory for names of manufacturers.
1A. **Steel Sleeve — (Optional, Not Shown) —** Nom 4 in. diam (or smaller) Schedule 10 (or heavier) steel pipe, rigid steel conduit, or EMT sleeve cast or grouted into concrete wall flush with wall surfaces.
2. **Firestop Device* —** Single firestop device module consisting of a 3 by 3 by 10 -1/2 in. (76 by 76 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device module to be installed in accordance with the accompanying installation instructions. The space between the firestop device module(s) and the periphery of the opening shall be min 0 in. (0 mm, point contact) to max 1/2 in. (13 mm). Firestop device module(s) secured in place by means of circular steel wall plates installed with gasketing material supplied with product. Circular steel wall plates installed on both sides of wall and secured to each device by means of steel set screws provided with device. Firestop device module is to be installed with ends projecting an equal distance beyond each surface of the wall assembly.
SPECIFIED TECHNOLOGIES INC — EZ PATH
2A. **Firestop Device* — Extension Module —** (Optional, Not Shown) — Module attached to ends of 3 by 3 by 10 -1/2 in. (76 by 76 by 267 mm) long firestop device (Item 3) to increase its length to facilitate installation in thicker walls. Each module consists of a 3 by 3 by 6 in. (76 by 76 by 152 mm) long galv steel tube with an intumescent material lining. Extension module to be installed in accordance with the accompanying installation instructions. When module is used, firestop device (Item 2) and extension module(s) secured in place by means of steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on both sides of wall and secured to each device or extension module(s) by means of steel set screws provided with wall plates. Firestop device and extension module(s) assembly to be installed with ends projecting an equal distance beyond each surface of the wall assembly.
SPECIFIED TECHNOLOGIES INC — EZ PATH Extension
3. **Cables —** Within the loading area for the firestop device module, the cables may represent a 0 to 100 percent visual fill. Cable fill to be distributed at a uniform height across the width of the firestop device module. Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types of cables may be used:
A. Max 400 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) jacketing and insulation.
B. Max 350 kcmil single copper conductor power cable with XLPE jacket and insulation
C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
D. Max 3/C No. 10 AWG metal clad or armored cable with steel or aluminum jacket.
E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket.
F. Max four pair No. 22 AWG (or smaller) copper conductor data cable with polyvinyl chloride (PVC) jacketing and insulation.
G. Max RG/U coaxial cable with fluorinated ethylene insulation and jacketing.
H. Fiber optic cable with polyvinyl chloride (PVC) or polyethylene (PE) jacket and insulation having a max diam of 5/8 in. (16 mm).
I. Max four pair No. 24 AWG (or smaller) copper conductor data cable with plenum ratedj jacket and insulation.
J. **Optical Fiber Raceway+ —** Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either polyvinyl chloride (PVC) or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with the National Electrical Code (NFPA 70).
When Item 3A, 3B, 3C, 3D or 3E is used, the F Rating is 2 hr and the T Rating is 3/4 hr. When max 200 pair No. 24 AWG telecommunication cable is used or when Item 3F, 3G, 3H, 3I or 3J is used, the F Rating is 4 hr and the T Rating is 1 hr.
*Bearing the UL Classification Mark

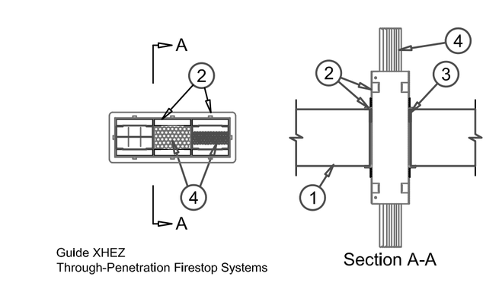
D THROUGH CONCRETE WALL PENETRATIONS
Scale = NONE

System No. C-AJ-3214
F Rating - 4 Hr
T Rating - 1/2 H



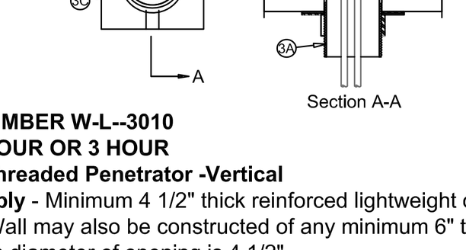
1. **Floor or Wall Assembly —** Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100 -150 pcf or 1600 - 2400 kg/m3) concrete. Wall may also be constructed of any UL Classified **Concrete Blocks*.** Diam of opening to be 4 in. (102 mm).
See **Concrete Blocks** category (CAZT) in the Fire Resistance Directory for names of manufacturers.
2. **Steel Sleeve —** (Optional) — Nom 4 in. (102 mm) diam Schedule 10 to Schedule 40 steel pipe or rigid steel conduit cast or grouted into concrete floor or wall flush with floor or wall surfaces.
3. **Firestop Device* —** One firestop device module centered within the opening. The firestop device module consists of a 3 by 3 by 10 -1/2 in. (76 by 76 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device module to be installed in accordance with the ccompanying installation instructions. The space between the firestop device module and the periphery of the opening shall be min 0 in. (0 mm, point contact) to max 1/2 in. (13 mm). Firestop device module secured in place by means of steel restraint plates sized to accommodate the firestop device module. Steel restraint plates each provided with a closed cell silicone gasket and sized to lap approx 1/2 in. (13 mm) on floor or wall surfaces. Steel restraint plate installed on both sides of floor or wall and secured to firestop device module with steel set screws. The firestop device module is to be installed with its ends projecting an equal distance beyond each surface of the floor or wall assembly. As an option, firestop device may be cast or grouted into wall assembly. When device is cast or grouted in place, the steel restraint plates are optional.
SPECIFIED TECHNOLOGIES INC — EZ PATH
3A. **Firestop Device* — Extension Module —** (Optional, Not Shown) — Module attached to ends of 3 by 3 by 10 -1/2 in. (76 by 76 by 267 mm) long firestop device (Item 3) to increase its length to facilitate installation in thicker floors or walls. Each module consists of a 3 by 3 by 6 in. (76 by 76 by 152 mm) long galv steel tube with an intumescent material lining. Extension module to be installed in accordance with the accompanying installation instructions. When module is used, firestop device (Item 3) and extension module(s) secured in place by means of steel plates installed with gasketing material supplied with product. Steel plates installed on both sides of floor or wall and secured to each device or extension module(s) by means of steel set screws provided with plates. Firestop device and extension module(s) assembly to be Installed with ends projecting an equal distance beyond each surface of the floor or wall assembly.
SPECIFIED TECHNOLOGIES INC — EZ PATH Extension
4. **Fill, Void or Cavity Material* — Sealant or Putty —** Prior to installation of steel restraint plates, min 1 in. (25 mm) thickness of sealant or putty installed in annular space flush with top surface of floor or both surfaces of wall.
SPECIFIED TECHNOLOGIES INC — SpecSeal 100, 101, 102, 105, 120 or 129 Sealant, SpecSeal Putty
5. **Cables —** Within the loading area for each firestop device module, the cables may represent a 0 to 100 percent visual fill. Cable fill to be distributed at a uniform height across the width of the firestop device module. Cables to be rigidly supported on both sides of the floor or wall assembly. Any combination of the following types of cables may be used:
A. Max 400 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) jacketing and insulation.
B. Max 350 kcmil single copper conductor power cable with XLPE jacket and insulation.
C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and insulation.
D. Max 3/C No. 10 AWG metal clad or armored cable with steel or aluminum jacket.
E. Max 3/C No. 8 AWG NM cable (Romex) with PVC insulation and jacket.
F. Max 4 pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.
G. Max RG/U coaxial cable with fluorinated ethylene insulation and jacketing.
H. Optical fiber cable with PVC or polyethylene (PE) jacket and insulation and having a max diam of 5/8 in. (16 mm).
I. **Optical Fiber Raceway+ —** Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either PVC or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with Article 770 of the National Electrical Code (NFPA 70).
When Item 5A, 5B, 5C, 5D or 5E is used, the F Rating is 2 hr and the T Rating is 3/4 hr. When max 200 pair No. 24 AWG telecommunication cable is used or when Item 5F, 5G, 5H or 5I is used, the F Rating is 4 hr and the T Rating is 1 hr.
+Bearing the UL Listing Mark
*Bearing the UL Classification Mark

System No. F-A-3015
F Rating - 4 Hr
T Rating - 1/2 Hr



1. **Floor Assembly —** Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/ m3) concrete floor. Opening to be min 1/4 in. (6 mm) to max 1/2 in. (13 mm) larger than width and height dimensions of firestop device module(s).
2. **Firestop Device* —** One, two, three, four or seven fi restop device modules ganged together. Each firestop device module consists of a 3 by 3 by 10-1/2 in. (76 by 76 by 267 mm) long galv steel tube with an intumescent material lining. Firestop device modules to be installed in accordance with the accompanying installation instructions. The space between the firestop device module(s) and the periphery of the opening shall be min 1/8 in. (3.2 mm) to max 1/4 in. (6 mm). Firestop device module(s) secured in place by means of steel restraint plates sized to accommodate either one, two, three, four or seven modules. Restraint plates provided with a closed cell silicone gasket and sized to lap approx 1/2 in. (13 mm) on fl oor surface. Steel restraint plates installed on both sides of fl oor and secured to firestop device module(s) with steel set screws. Each firestop device module is to be installed with ends projecting an equal distance beyond each surface of the floor. As an option, devices may be cast into fl oor assembly. When device is cast in place, the restraint plates are optional.
SPECIFIED TECHNOLOGIES INC — EZ PATH
3. **Fill, Void or Cavity Material* — Sealant or Putty —** Prior to installation of steel restraint plates, min 1 in. (25 mm) thickness of sealant or putty installed in annular space flush with top surface of floor.
SPECIFIED TECHNOLOGIES INC — SpecSeal 100, 101, 102, 105, 120 or 129 Sealant, SpecSeal Putty
4. **Cables —** Within the loading area for each firestop device module, the cables may represent a 0 to 100 percent visual fi ll. Cable fi ll to be distributed at a uniform height across the width of each firestop device module. Cables to be rigidly supported on both sides of the fl oor or wall assembly. Any combination of the following types of cables may be used:
A. Max 400 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) insulation and jacketing.
B. Max 4 pair No. 22 AWG (or smaller) copper conductor data cable with PVC or plenum rated insulation and jacketing.
C. Max RG/U coaxial cable with fl uorinated ethylene insulation and jacketing.
D. Optical fi ber cable with PVC or polyethylene (PE) jacket and insulation and having a max diam of 5/8 in. (16 mm).
E. **Optical Fiber Raceway+ —** Max 1-1/2 in. (38 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either PVC or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with Article 770 of the National Electrical Code (NFPA 70).
When Item 5A is used, the max size of cable is 200 pair for the 4 hr F Rating. Otherwise, the F Rating is 2 hr.
+Bearing the UL Listing Mark
*Bearing the UL Classification Mark

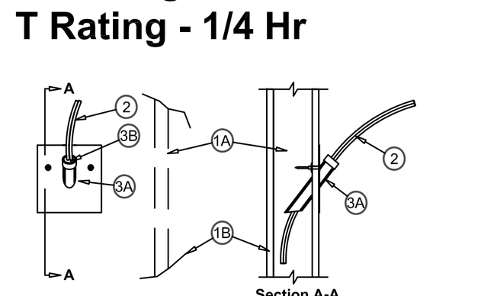
Split Sleeve / Threaded Penetrator - Vertical
System No. F-A-3010
F Rating - 3 Hr
T Rating - 0 Hr



UL SYSTEM NUMBER W-L--3010
F RATING - 2 HOUR OR 3 HOUR
Split Sleeve / Threaded Penetrator -Vertical
1. Floor Assembly - Minimum 4 1/2" thick reinforced lightweight or normal weight (100-150pcf) concrete floor. Wall may also be constructed of any minimum 6" thick hollow-core Precast Concrete Units*. Maximum diameter of opening is 4 1/2".
2. Cables -- Aggregate cross-sectional area of cables in Threraded Sleeve to be minimum 8 percent to maximum 48 percent of the aggregate cross-sectional area of the Threaded Sleeve. Cables shall be rigidly supported on both sides of the wall assembly.
3. Firestop System -- The firestop system shall consist of the following:
A. Firestop Device * -- Threaded Split Sleeve halves incorporating split nuts and split washers sized to fit the specific diameter of the opening. Device shall be installed around cables in accordance with the accompanying installation instructions and bushings shall be applied to each end. Device provide in nominal 1, 2, and 4" sizes. Maximum diameter of opening in wall for 1, 2, and 4" device sizes are 1 1/4", 2 7/16", and 4 1/2" respectively.
A1. Firestop Device * -- (not Shown) as an alternate to item 3A. Threaded steel sleeve device incorporating flat washers secured by threaded couplers. Device shall be installed in accordance with the accompanying installation instructions and bushings shall be applied to each end. Device provided in nominal 1, 2, and 4" sizes. Maximum diameter of opening in wall for 1, 2, and 4" device sizes are 1 1/4", 2 7/16", and 4 1/2" respectively.
B. Packing Material -- Minimum 4 pcf mineral wool batt insulation compressed and tightly packed to fill device to minimum 3" depth with a minimum 2" depth within the confines of the floor thickness. Packing material recessed from the top edge of the device as required to accommodate fill material (item 3C).
C. Fill void with cavity material * -- Sealant or putty - Minimum of 1/2" thickness of fill material applied within annulus, flush with the top edge of the sleeve.
*** Bearing the UL classification Marking**

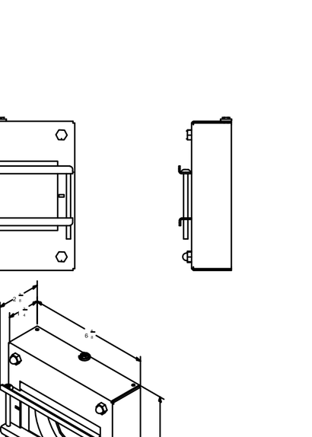
C THROUGH FLOOR PENETRATIONS
Scale = NONE

Membrane Penetrator
System No. W-L-3172
F Rating - 1 Hr
T Rating - 1/4 Hr



1. Wall Assembly - The 1 hour fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300 or U400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
A. Studs - Wall framing shall consist of either wood studs or steel channel studs. Wood studs to consist of nominal 2" by 4" lumber spaced 16" OC. Steel studs to be minimum 3-5/8" wide and spaced 24" OC.
B. Wallboard, Gypsum* -- 5/8" thick, 4' wide with square or tapered edges. The gypsum wallboard type, thickness, number of layers, fastener type, and sheet orientation shall be as specified in the individual U300 or U400 Series Designs in the UL Fire Resistance Directory.
2. Cables -- Aggregate cross-sectional area of cables in the Membrane Penetrator not to exceed .4 square inches. Cables shall be rigidly supported within 24" of the wall assembly.
3. Firestop System -- The firestop system shall consist of the following:
A. Firestop Device * -- Nominal 1" diameter angled steel conduit in a steel mounting plate provided with plastic tipped molly bolts and a plastic bushing. Device shall be driven through gypsum board, above finished ceiling, and secured to the wall assembly in accordance with the accompanying installation instructions.
B. Fill void with cavity material * -- Sealant - Nominal 1/4" diameter continuous bead applied to form gasket between back of firestop device mounting plate and wall surface around perimeter of conduit prior to installation of molly bolts. Minimum of 1" thickness of fill material applied within the steel conduit device, flush end protruding from wall.
*** Bearing the UL classification Marking**

B SINGLE-SIDE FIRE-WALL PENETRATION
Scale = NONE



FS SERIES THRU-WALL FITTING FOR FIRE WALLS

1.1 **SCOPE**
This specification covers firestop devices for use in through-penetration firestop systems, which are used to maintain the fire rating of the wall, as well as to route and protect power and/or communications cable distribution for commercial, institutional, industrial and utility needs.

1.2 **CLASSIFICATION AND USE**
The firestop device for use in through-penetration firestop systems shall have been examined and tested by Underwriters Laboratories Inc. to UL1479 (ASTM E 814) and bear the U.S. and Canadian UL Classification Mark. The device shall be classified for use in one-, two-, three-, and four-hour rated gypsum, concrete and block walls and provide a maximum L rating of six cfm. The devices shall also been tested by Underwriters Laboratories Inc. to UL2043 and determined to be suitable for use in air handling spaces.

2.1 **MANUFACTURER**
The firestop device specified herein shall be the FlameStopper Thru-Wall Fitting as manufactured by The Wiremold Company. Firestop devices of other manufacturers may be considered equal if, in the opinion and the written approval of the engineer, they meet all the performance standards specified herein.

MATERIALS
2.2.1 Box
The firestop device box shall be constructed of 16 gage G90 steel.
2.2.2 Intumescent Block
The firestop device intumescent block shall be constructed of a graphite base material with expansion starting at 375 F and an unrestrained expansion between 6 to 12 times. The intumescent block shall be held securely by the box in order to prevent tampering and damage during installation.
2.2.3 Adjustable Doors
The firestop device shall have doors which can be adjusted to prevent materials from penetrating the device if the device is empty or completely full. The doors shall be constructed of 16 gage G90 steel with No. 10-32 screws use to adjust opening size.

2.3 **SIZES**
The firestop device shall be available for 2" and 4" trade size EMT conduit.

2.4 **FINISH**
The firestop device shall be available in safety yellow powder coat, custom colors and an unpainted galvanized finish.

EXECUTION
3.1 **INSTALLATION**
Prior to and during installation, refer to the system layout or approval drawings containing all elements of the system. Installer shall comply with complete system instruction sheets.
The firestop device shall be installed in accordance with the UL Fire Resistance Directory, as well as any applicable codes and standards for general building, electrical and firestopping installation practices.

A THROUGH WALL [PRESSURIZED FIRE SUPPRESSION SYSTEM]
Scale = NONE

SLEEVE AND FIRE-STOPPING NOTES:
1) ALL PENETRATIONS THROUGH BUILDING STRUCTURE (WALL AND/OR FLOORS) FOR COMMUNICATIONS CABLING SHALL BE SLEEVED.
2) ALL SLEEVES THROUGH WALLS OR FLOORS HOLDING A FIRE RATING SHALL BE INSTALLED UTILIZING ONE OF THE APPROVED METHODS FOR A UL LISTED ASSEMBLY AS SHOWN ON THESE SECTIONAL DIAGRAMS.
3) APPROVED MANUFACTURERS FOR UL LISTED SLEEVES SHALL BE SPECIFIED TECHNOLOGY SYSTEMS, UNIQUE FIRESTOP PRODUCTS, AND WIREMOLD.
4) ALL SLEEVES THROUGH FLOORS SHALL BE FIRESTOPPED TO A RATING EQUAL TO OR HIGHER THAN THE FLOOR RATING.
5) ALL UN-USED SLEEVES THROUGH WALLS OR FLOORS HOLDING A FIRE RATING SHALL BE FIRESTOPPED TO A RATING EQUAL TO OR HIGHER THAN THE WALL OR FLOOR RATING.
6) ALL SLEEVES THROUGH WALLS HOLDING A FIRE RATING SHALL BE FIRESTOPPED TO A RATING EQUAL TO OR HIGHER THAN THE WALL RATING.
7) ALL PENETRATIONS SHALL BE PART OF THE RE-USABLE PATHWAY SYSTEM; FIRESTOPPED PENETRATIONS SHALL EITHER BE AN ASSEMBLY WITH FIRESTOP MATERIALS BUILT INTO THE ASSEMBLY OR FIRESTOPPED WITH REMOVABLE PUTTY OR FIRESTOP BAGS.
8) THE DIAGRAMS SHOWN ON THIS PAGE ARE REPRESENTATIVE OF THE SLEEVING REQUIREMENTS FOR COMMUNICATIONS AND SECURITY CABLING SYSTEMS; ADDITIONAL LISTINGS ARE AVAILABLE FROM EACH MANUFACTURER.

INDIANA STATE UNIVERSITY
TERRE HAUTE, INDIANA

COMMUNICATIONS STANDARDS

Dreiser Hall Renovation

221 North 6th Street
Terre Haute, IN 47809

Browning Day
Project No. 19A052

R.E. Dimond
Project No. 19082

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Keyplan

PENETRATIONS SECTIONAL VIEW

T4.02

DESIGN NOTES: TELECOMMUNICATIONS SPACES – CONSTRUCTION

1) ARCHITECTURAL
   - A] THE MINIMUM ROOM SIZE SHALL BE 10' DEEP AND 10' WIDE FOR THE MAIN EQUIPMENT ROOM (BDF.)
   - B] THE MINIMUM CEILING HEIGHT (IF APPLICABLE) SHALL BE 9 FEET ABOVE FINISHED FLOOR (AFF).
   - C] TO PERMIT MAXIMUM FLEXIBILITY AND ACCESSIBILITY OF CABLING PATHWAYS, FALSE CEILINGS ARE NOT PERMITTED BELOW 10' AFF.
   - D] WALLS SHALL EXTEND TO STRUCTURAL CEILING.
   - E] CEILING, FLOOR, AND WALL FINISH THAT MINIMIZES DUST
   - F] DESIGN TRS TO HAVE FULLY OPENING (TO 180 DEGREES RECOMMENDED), LOCKABLE DOORS THAT ARE AT LEAST 3 FEET WIDE AND 80 INCHES TALL.
   - G] ALL ER'S AND TR'S SHALL HAVE ACCESS DOORS FROM PUBLIC SPACES.
   - H] DOOR SILLS ARE NOT ALLOWED BECAUSE THEY IMPEDE THE MOVEMENT OF EQUIPMENT.
   - I] REMOVABLE CENTER POSTS ARE PERMITTED, IF REQUIRED.
   - J] INSTALL DOORS TO BE REMOVABLE.
   - K] DUST AND STATIC ELECTRICITY: AVOID DUST AND STATIC ELECTRICITY BY:
     - 1] INSTALLING TILE INSTEAD OF CARPET.
     - 2] TREATING FLOORS, WALLS, AND CEILING TO MINIMIZE DUST.
   - L] DOORS SHALL OPEN OUTWARD
   - M] DOORS SHALL HAVE LOCKS WITH CAMPUS MASTER "FM5"
2) ENVIRONMENTAL CONTROL
   - A] PROVIDE HVAC THAT WILL:
     - 1] MAINTAIN CONTINUOUS AND DEDICATED ENVIRONMENTAL CONTROL (24 HOURS PER DAY, 365 DAYS PER YEAR.)
     - 2] IF EMERGENCY POWER IS AVAILABLE, CONSIDER CONNECTING IT TO THE HVAC SYSTEM THAT SERVES THE ER/TR.
     - 3] MAINTAIN POSITIVE PRESSURE WITH A MINIMUM OF ONE AIR CHANGE PER HOUR IN THE TR.
     - 4] DISSIPATE THE HEAT GENERATED BY ACTIVE DEVICES.
     - 5] PROVIDE 300FT CUBED OF 54 DEGREES CONDITIONED AIR PER 20 AMPERE (A) DEDICATED ELECTRICAL OUTLET.
     - 6] THE TEMPERATURE RANGE SHOULD BE 64 DEGREES TO 75 DEGREES.
     - 7] THE HUMIDITY RANGE SHOULD BE 30% TO 55% RELATIVE HUMIDITY.
     - 8] KEEP CHANGES IN TEMPERATURE AND HUMIDITY TO A MINIMUM.
     - 9] TRS SHOULD BE CALCULATED USING 7500 BTU/HR FROM COMMUNICATIONS EQUIPMENT.
     - 10] TYPICALLY THIS SHALL BE A SEPARATE UNIT FROM BUILDING HVAC SYSTEMS.
     - 11] MAIN DATA WIRING CENTER WILL TYPICALLY HAVE A 7,000 WATT HEAT LOAD FROM THE DATA SWITCH GEAR. THIS HEAT LOAD NEEDS TO BE CONSIDERED IN UNIT SIZING.
     - 12] ER AND TR HVAC UNITS SHALL BE CAPABLE OF OPERATION BELOW ZERO DEGREES FAHRENHEIT EXTERNAL TEMPERATURE.
3) FIRE PROTECTION
   - A] IF SPRINKLER HEADS ARE PROVIDED, INSTALL WIRE CAGES TO PREVENT ACCIDENTAL OPERATION.
   - B] FOR WET PIPE SYSTEMS, DRAINAGE TROUGHS ARE REQUIRED TO PROTECT EQUIPMENT FROM ANY LEAKAGE THAT MAY OCCUR.
   - C] TO PREVENT WATER DAMAGE, CONSIDER USING "DRY PIPE" SPRINKLER SYSTEMS.
4) LIGHTING
   - A] PROVIDE A MINIMUM EQUIVALENT OF 500 LUX (50 FOOTCANDLES) MEASURED 3 FEET AFF.
   - B] COORDINATE CLOSELY WITH THE RACK/CABINET PLACEMENTS.
   - C] LOCATE LIGHT FIXTURES A MINIMUM OF 9 FEET AFF.
   - D] LIGHT FIXTURES SHALL BE POSITIONED TO PROVIDE ADEQUATE LIGHT TO FRONT AND REAR OF RACKS AS WELL AS BACK BOARDS.
   - E] EMERGENCY LIGHTING IS RECOMMENDED. PLACE EMERGENCY LIGHTING TO ENSURE THAT THE LOSS OF POWER TO NORMAL LIGHTS WILL NOT HAMPER AN EMERGENCY EXIT FROM THE TR.
5) OTHER USES
   - A] TRS SHOULD BE DEDICATED TO THE TELECOMMUNICATIONS FUNCTION AND RELATED SUPPORT FACILITIES. EQUIPMENT NOT RELATED TO THE SUPPORT OF THE TRS (E.G. PIPING, DUCT WORK, AND DISTRIBUTION OF BUILDING POWER) SHOULD NOT BE LOCATED IN. OR PASS THROUGH. THE TR.
   - B] THE TR MAY NOT BE SHARED WITH BUILDING OR CUSTODIAL SERVICES.
6) POWER
   - A] ALL OUTLETS IN TELECOMMUNICATIONS ROOMS ARE TO BE ON BUILDING EMERGENCY GENERATOR POWER.
   - B] ELECTRICAL PANELS ALLOWED WITHIN BDF OR TRS SHALL FEED IN ROOM CIRCUITS ONLY.
   - C] DISTRIBUTION PANELS THAT SERVE TELECOMMUNICATIONS EQUIPMENT SHOULD BE SEPARATE FROM THOSE THAT SERVE LIGHTING FIXTURES.

THE ER SHOULD HAVE THE SAME CONSIDERATIONS WITH THE FOLLOWING MODIFICATIONS:

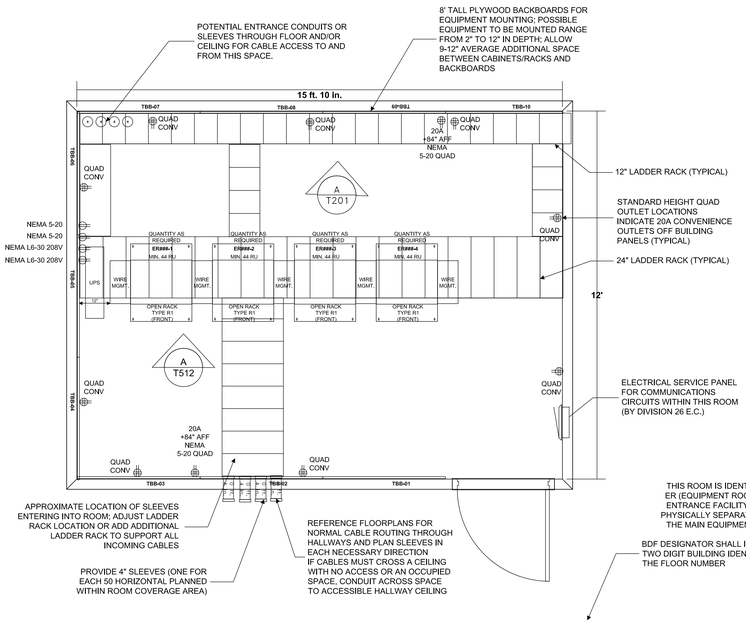
1) ARCHITECTURAL
   - A] RECOMMENDED MINIMUM CEILING HEIGHT OF 10 FEET.
2) ENVIRONMENTAL CONTROL
   - A] HEAT DISSIPATION OF 750 TO 5,000 BTU PER HOUR, PER CABINET (7 ESTIMATED)
   - B] HVAC SENSORS AND CONTROLS MUST BE LOCATED IN THE ER. IDEALLY, THE SENSORS ARE PLACED 5 FEET AFF.
3) POWER
   - A] TWO ELECTRICAL OUTLETS ON EMERGENCY POWER.
   - B] SEPARATE ELECTRICAL SERVICE PANEL FOR COMMUNICATIONS CIRCUITS IN ER ROOM.
   - C] OUTLETS REQUIREMENTS ON BACKBOARDS AS WELL AS RACKS/CABINETS AS SHOWN ON THE ENLARGED FLOORPLANS.

DESIGN NOTES: TELECOMMUNICATIONS SPACES - EQUIPMENT POSITIONING AND IDENTIFICATION

1) EACH TELECOMMUNICATIONS ROOM SHALL HAVE A UNIQUE IDENTIFIER CONSISTING OF A] ROOM TYPE, B] UNIQUE 2 LETTER BUILDING CODE, AND C] FLOOR LOCATION. EXAMPLE: ER-GH-1 FOR THE MAIN EQUIPMENT ROOM ON THE FIRST FLOOR OF GILLUM HALL, OR, TR-UH-304 FOR A TELECOMMUNICATIONS ROOM IN UNIVERSITY HALL ON THE THIRD FLOOR IN ROOM 304. (ROOM NUMBER USED WHEN MULTIPLE ROOMS ARE REQUIRED ON A FLOOR.)
2) TELECOMMUNICATIONS ROOMS SHALL HAVE WALLS LINED WITH TELECOMMUNICATIONS BACKBOARDS. BACKBOARDS SHALL BE IDENTIFIED CONSECUTIVELY FROM LEFT TO RIGHT AROUND THE ROOM FOR EQUIPMENT MOUNTING LOCATION PLANNING.
3) STANDARD TELECOMMUNICATIONS BACKBOARDS SHALL BE 4' WIDE BY 8' TALL. EACH BACKBOARD SHALL BE ¾" A-C GRADE PLYWOOD COATED ON THE EXPOSED FRONT AND ALL EDGES WITH 2 COATS OF WHITE FIRE-RETARDANT PAINT.
4) EACH BACKBOARD SHALL BE MOUNTED VERTICALLY UTILIZING THREE BOLTS (TOP, MIDDLE, AND BOTTOM) OF EACH STUD IN WALL. BACKBOARDS SHALL BE MOUNTED WITH THE BOTTOM EDGE SQUARE AND LEVEL ¼" ABOVE THE BASEBOARD OR 6" ABOVE FINISHED FLOOR (WHICHEVER IS LOWER).
   5)WHERE A FULL SIZE BACKBOARD CANNOT BE UTILIZED, A STANDARD BACKBOARD SHALL BE CUT TO FIT THE SPACE. ALL EDGES SHALL BE RE-PAINTED.
6) WHERE BACKBOARDS ARE MOUNTED OVER DEVICES (SUCH AS SWITCHES AND OUTLETS) THE BACKBOARD SHALL BE CUT TO ALLOW THE ENTIRE DEVICE TO BE REVEALED PLUS ¼" TRIM SPACE ON EACH SIDE.
7) CABINETS/RACKS SHALL BE INSTALLED WITH A SIDE AGAINST THE FARTHEST SIDE WALL FROM THE DOOR OR TO THE LEFT SIDE WALL IF DOOR IS CENTERED.
8) EACH CABINET/RACK SHALL BE GIVEN THE UNIQUE ROOM NUMBER AND BE NUMBERED CONSECUTIVELY FROM THE WALL OUT. EXAMPLE: ERGH1-01 FOR THE FIRST CABINET IN THE ER OF GILLUM HALL ON THE FIRST FLOOR, OR, TRUH304-02 FOR THE SECOND RACK IN THE TR IN ROOM 304 OF UNIVERSITY HALL.
9) CABINETS SHALL HAVE A MINIMUM OF 30" CLEARANCE IN FRONT AND REAR OF EACH CABINET.
10) RACKS SHALL HAVE A MINIMUM OF 40" CLEARANCE IN REAR AND 24" IN FRONT OF EACH RACK.
11) WHERE BACKBOARDS ARE TO BE USED FOR POSSIBLE EQUIPMENT MOUNTING, ALLOW 9 TO 12" AVERAGE ADDITIONAL SPACE BETWEEN CABINETS/RACKS AND BACKBOARDS. TYPICALLY WALL MOUNTED EQUIPMENT RANGE FROM 2" TO 12" IN DEPTH.
12) AT LEAST ONE AISLE WITH A MINIMUM 36" WIDTH SHALL BE LEFT AT THE END OF THE ROW NEAREST THE DOOR TO ALLOW ACCESS TO THE REAR OF THE RACKS/CABINETS AND BACKBOARDS.
13) PROPERLY SIZED LADDER RACK SHALL BE INSTALLED AT A HEIGHT EVEN WITH THE TOP OF THE BACKBOARDS ALONG THE TOP O F THE BACKBOARDS AND ACROSS THE TOP OF THE CABINETS/RACKS.
14) 4" UL LISTED SLEEVES OR PENETRATION DEVICES SHALL BE INSTALLED ABOVE 8'6" (OR 4" ABOVE HALLWAY CEILING HEIGHT) WHICHEVER IS HIGHER. SLEEVES OVER 6" HIGHER THAN THE LADDER RACK SHALL HAVE "WATERFALL" FITTINGS INSTALLED TO PROTECT CABLES INTO LADDER RACK.
15) "WATERFALL" (CABLE DROP-OUT) ATTACHMENTS SHALL BE INSTALLED ON THE LADDER RACK TO PROTECT CABLES DROPPING INTO CABINETS/RACKS AND BACKBOARDS.
16) HORIZONTALLY MOUNTED LADDER RACK SHALL HAVE SIDE POSTS OF AT LEAST 4" AT AT LEAST EVERY 5' ON EACH SIDE OF THE LADDER RACK AND AT EACH INSIDE CORNER.
17) VERTICALLY MOUNTED LADDER RACK SHALL BE MOUNTED (WITH AT LEAST 4 BRACKETS) TO A BACKBOARD FOR CABLE SUPPORT WHERE FLOOR SLEEVES ALLOW CABLE TO ACCESS THE ROOM FROM BELOW.
18) CONVENIENCE OUTLETS SHOWN SHALL BE QUAD 120V OUTLETS ON A 15A CIRCUIT(S) FROM BUILDING DISTRIBUTION PANELS.
19) COMMUNICATIONS (RACK/CABINET/BACKBOARD) SHALL BE FED FROM A SEPARATE PANEL IN THE EQUIPMENT ROOM (ER). ALL TELECOMMUNICATIONS ROOMS (TR) SHALL HAVE THE INDICATED CIRCUITS FROM THE BUILDING DISTRIBUTION PANELS.
20) 15 AMP CIRCUITS SHALL HAVE NEMA 5-15R DUPLEX (DUAL IF QUAD INDICATED) RECEPTACLES. 20 AMP CIRCUITS SHALL BE NEMA 5-20R DUPLEX RECEPTACLES. 30 AMP CIRCUITS SHALL BE NEMA L5-30R (120V) OR L14-30R (120/208V) (AS DIRECTED ON SELECTION OF EQUIPMENT) SINGLE RECEPTACLES.

DESIGN NOTES: TELECOMMUNICATIONS SPACES - LOCATION AND FUNCTION

1) COMMUNICATIONS, AND/OR TELECOMMUNICATIONS ARE INDUSTRY TERMS THAT TYPICALLY ARE USED TO IDENTIFY VOICE (TELEPHONE), DATA, AND VIDEO SERVICES.
2) THE MAIN EQUIPMENT ROOM (ER) FOR A BUILDING HOUSES THE CENTRAL CONTROL OF THE BUILDING'S TELECOMMUNICATIONS SYSTEMS.
3) TELECOMMUNICATIONS ROOMS (TR) ARE SATELLITE ROOMS TO THE ER PROVIDING FLOOR COVERAGE IN AREAS OF THE BUILDING WHERE CABLING WILL NOT REACH THE ER WITHIN THE DISTANCES LIMITED BY THE EIA/TIA STANDARDS FOR COMMERCIAL BUILDINGS.
4) THE BUILDING DISTRIBUTION FRAME (BDF) (ALSO CALLED ENTRANCE FACILITY) HOUSES THE CABLING ENTERING THE BUILDING FROM CAMPUS, PROVIDING VOICE, DATA, AND/OR VIDEO SERVICES.
5) THE ER MAY BE LOCATED WITHIN THE BDF WHERE CABLE ENTRANCE POINT AND ROOM LOCATION ALLOW.
6) EACH BUILDING SHALL, AT A MINIMUM, HAVE A BDF AND AN ER: WHEN POSSIBLE TO COMBINE THE TWO THE BDF DESIGNATION SHALL APPLY AND THE DESIGNATION OF ER WILL NOT BE USED. EACH BUILDING WILL ALSO REQUIRE ANY ADDITIONAL TR(S) NECESSARY TO PROVIDE COMPLETE FLOOR-SPACE COVERAGE.
7) FLOOR COVERAGE REQUIREMENTS AND SPACE AVAILABILITY WILL BE USED TO LOCATE ALL TELECOMMUNICATIONS ROOMS. ALL FLOOR SPACE MUST BE WITHIN 285' (FROM THE OUTLET TERMINATION TO THE PATCH PANEL PORT) FOLLOWING THE PATHWAY ROUTE. ALLOW FOR REQUIRED VERTICAL TRAVEL IN CALCULATIONS.
8) THE ER CONTAINS THE MAIN CROSS-CONNECT (MC) AS WELL AS A HORIZONTAL CROSS-CONNECT (HC) AND EACH TR CONTAINS A HORIZONTAL CROSS-CONNECT (HC). PROVIDE THE SPECIFIED MATERIALS IN EACH ER/TR AND USE THE DRAWINGS AND SKETCHES/DIAGRAMS AS A GUIDE FOR THE REQUIREMENTS FOR SPACE AND POSITION OF ALL EQUIPMENT
9) BUILDING WITH MULTIPLE FLOORS (LEVELS) SHALL HAVE AT LEAST ONE TR ON EACH FLOOR.
10) BUILDINGS WITH MULTIPLE FLOORS SHALL HAVE TR ROOMS "STACKED" TO ALLOW EASE OF ROUTING CABLES INTO AND THROUGH ROOMS.
11) NO LINES THAT DO OR MAY CARRY ANY LIQUID SHALL BE INSTALLED IN OR PASS THROUGH ER'S AND TR'S.



A ENLARGED FLOORPLAN - TYPICAL MAIN EQUIPMENT ROOM (BDF-###) ROOM ###
Scale: 1/2" = 1'

INSTALLATION NOTES: (THIS SHEET)

1) ENLARGED FLOOR PLAN ARE PRESENTED DIAGRAMMATICALLY. ALL DIMENSIONS SHOULD BE VERIFIED IN THE FIELD.
2) CABINETS SHALL HAVE A MINIMUM OF 30" CLEARANCE IN FRONT AND REAR OF EACH CABINET.
3) RACKS SHALL HAVE A MINIMUM OF 40" CLEARANCE IN REAR AND 24" IN FRONT OF EACH RACK.
4) TELECOMMUNICATIONS BACKBOARDS SHALL BE ATTACHED TO THE WALL IN POSITIONS AS SHOWN IN THE ENLARGED FLOORPLAN DETAILS.
5) STANDARD TELECOMMUNICATIONS BACKBOARDS SHALL BE 4' WIDE BY 8' TALL. EACH BACKBOARD SHALL BE ½" A-C GRADE PLYWOOD COATED ON THE EXPOSED FRONT AND ALL EDGES WITH 2 COATS OF WHITE FIRE-RETARDANT PAINT.
6) EACH BACKBOARD SHALL BE MOUNTED VERTICALLY UTILIZING THREE BOLTS (TOP, MIDDLE, AND BOTTOM) OF EACH STUD IN WALL. BACKBOARDS SHALL BE MOUNTED WITH THE BOTTOM EDGE SQUARE AND LEVEL ¼" ABOVE THE BASEBOARD OR 6" ABOVE FINISHED FLOOR (WHICHEVER IS LOWER).
7) WHERE A FULL SIZE BACKBOARD CANNOT BE UTILIZED, A STANDARD BACKBOARD SHALL BE CUT TO FIT THE SPACE. ALL EDGES SHALL BE RE-PAINTED.
8) WHERE BACKBOARDS ARE MOUNTED OVER DEVICES (SUCH AS SWITCHES AND OUTLETS) THE BACKBOARD SHALL BE CUT TO ALLOW THE ENTIRE DEVICE TO BE REVEALED PLUS ¼" TRIM SPACE ON EACH SIDE.
9) EACH BACKBOARD SHOWN ON THE ENLARGED FLOORPLAN SHALL BE NUMBERED AND CORRESPOND TO BACKBOARDS SHOWN ON THE DETAIL SHEETS. BACKBOARDS SHOWN ON THE FLOORPLANS BUT NOT DETAILED ON THE DETAIL DRAWINGS HAVE NO EQUIPMENT MOUNTING REQUIREMENTS UNDER THIS CONTRACT.
10) CONVENIENCE OUTLETS SHOWN SHALL BE QUAD 120V OUTLETS ON A 20A CIRCUIT(S) FROM BUILDING DISTRIBUTION PANELS. (BY DIVISION 26 ELECTRICAL CONTRACTOR).
11) COMMUNICATIONS (RACK/CABINET/BACKBOARD) SHALL BE FED FROM A SEPARATE PANEL IN THE EQUIPMENT ROOM (ER). ALL TELECOMMUNICATIONS ROOMS (TR) SHALL HAVE THE INDICATED CIRCUITS FROM THE BUILDING DISTRIBUTION PANELS. (BY DIVISION 26 ELECTRICAL CONTRACTOR).
12) ALL CIRCUITS IN TELECOMMUNICATIONS ROOMS SHALL BE ON BUILDING EMERGENCY GENERATOR POWER.
13) ITEMS SHOWN MOUNTED ON BACKBOARD ARE DIAGRAMMATICAL. ALL LAYOUTS AND EQUIPMENT POSITIONING SHALL BE SKETCHED AND COORDINATED FOR APPROVAL BY THE OWNER PRIOR TO INSTALLATION. EXACT POSITIONING SHALL BE REFLECTED ON THE AS-BUILT DRAWINGS.
14) ALL FLOORS SHALL BE CLEANED AND SEALED PRIOR TO EQUIPMENT INSTALLATION.

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TERRE HAUTE, INDIANA

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James A Darnell
BICSI ID # 615926
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06/06/2020

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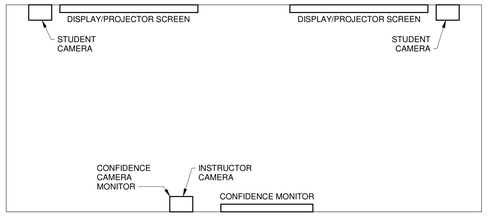
Keyplan

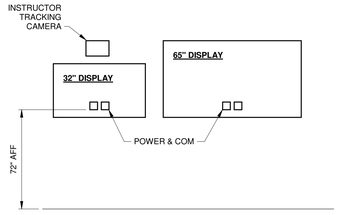
EQUIPMENT ROOM BDF/ER/TR ENLARGED FLOORPLANS

T4.03



G TYPICAL ROOM LAYOUT - DISTANCE EDUCATION DUAL DISPLAY/SCREEN SETUP (CLASSROOM 207)

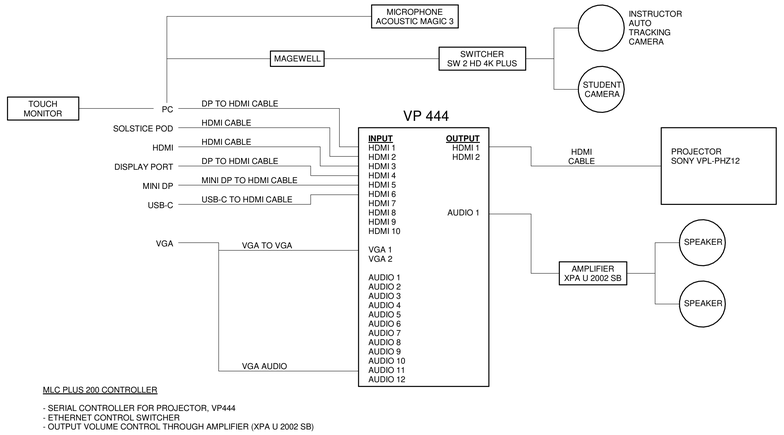
SCALE: NONE



IN DISTANCE EDUCATION CLASSROOMS 207 AND 217, PROVIDE THIS EQUIPMENT ON REAR WALL FACING INSTRUCTOR. IN ADDITION, PROVIDE STUDENT CAMERAS AS SPECIFIED AT FRONT OF CLASSROOM. COORDINATE WITH OWNER PRIOR TO INSTALLATION.

D CONFIDENCE MONITORS AND TRACKING CAMERA FOR DISTANCE EDUCATION

SCALE: NONE

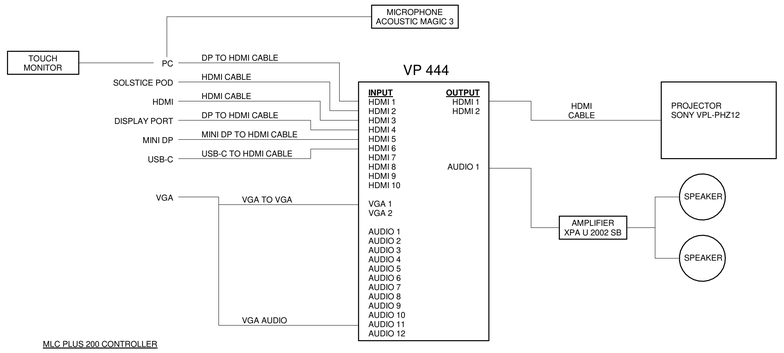


MLC PLUS 200 CONTROLLER

- SERIAL CONTROLLER FOR PROJECTOR, VP444
- ETHERNET CONTROL SWITCHER
- OUTPUT VOLUME CONTROL THROUGH AMPLIFIER (XPA U 2002 SB)

A STANDARD CLASSROOM AV WITH CAMERAS (CLASSROOMS 203, 210, 213, AND 216)

SCALE: NONE

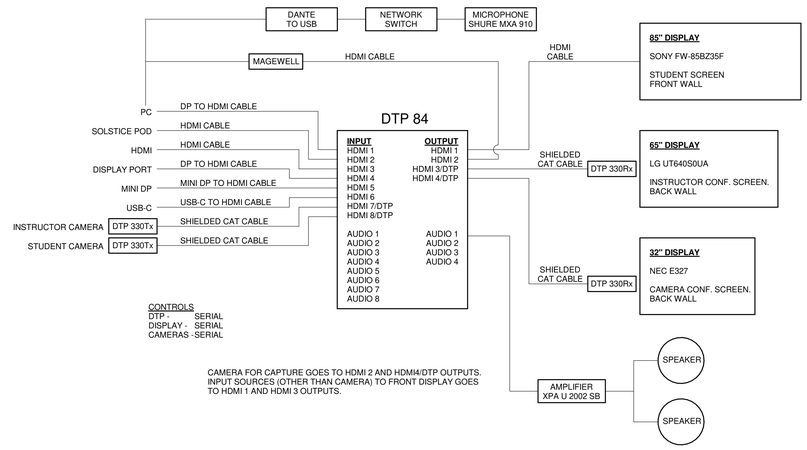


MLC PLUS 200 CONTROLLER

- SERIAL CONTROLLER FOR PROJECTOR, VP444
- OUTPUT VOLUME CONTROL THROUGH AMPLIFIER (XPA U 2002 SB)

B STANDARD CLASSROOM AV WITHOUT CAMERAS (CLASSROOMS 205, 212, AND 218)

SCALE: NONE



CONTROLS
DTP - SERIAL
DISPLAY - SERIAL
CAMERAS - SERIAL

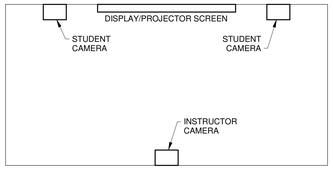
CAMERA FOR CAPTURE GOES TO HDMI 2 AND HDMI4/DTP OUTPUTS. INPUT SOURCES (OTHER THAN CAMERA) TO FRONT DISPLAY GOES TO HDMI 1 AND HDMI 3 OUTPUTS.

C DISTANCE EDUCATION CLASSROOM (CLASSROOMS 207 AND 217)

SCALE: NONE

E TYPICAL ROOM LAYOUT - DISTANCE EDUCATION SINGLE DISPLAY SETUP (CLASSROOM 217)

SCALE: NONE



F TYPICAL ROOM LAYOUT WITH CAMERAS - SINGLE DISPLAY SETUP (CLASSROOMS 203, 210, 213, AND 216)

SCALE: NONE

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BICSI
James A. Durnell
BICSI ID # 101926
EXPIRES 12-31-21
RCDD

CERTIFICATION 06/06/2020

100% CONSTRUCTION DOCUMENTS

Indiana State University - Dreiser Hall Renovation

221 North 6th Street
Terre Haute, IN 47809

Project No.: 19A052
Drawn By: Author
Checked By: Checker
Scale: See Drawing
Issue Date: 06/05/2020

REVISION SCHEDULE		
Rev. #	Revision Description	Issue Date

A/V DETAILS

T4.04

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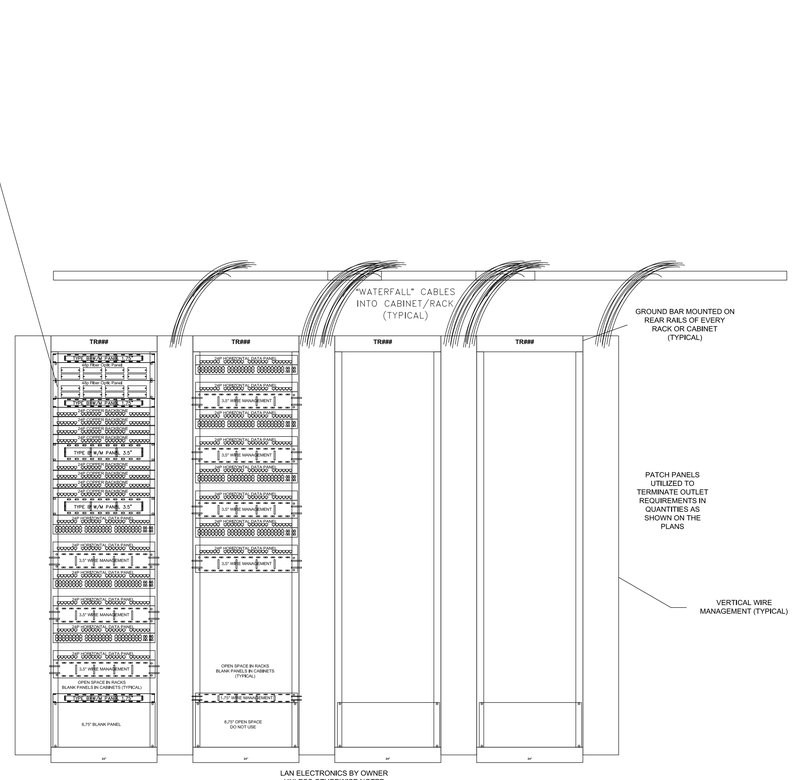
6/4/2020 9:10:16 AM

FIBER OPTIC CABLE DESTINATION				
Panel 1 6 Pack Pos	Fibers	Conn	Type	Destination
1	12	ST	MM	TR ###
2	12	ST	MM	TR ###
3	12	ST	MM	TR ###
4	6	SC	SM	TR ###
5				SPACE
6				SPACE
7				SPACE
8				SPACE
Panel 2 6 Pack Pos	Fibers	Conn	Type	Destination
1	12	ST	MM	TR ###
2	12	ST	MM	TR ###
3	12	ST	MM	TR ###
4	12	ST	MM	TR ###
5	6	SC	SM	TR ###
6				SPACE
7				SPACE
8				SPACE



A BDF/ER/TR RACK/CABINET DETAIL LAYOUTS (ROOM y###)
Scale: 1/2" = 1'

NOTES: (TYPICAL FOR EACH TR)
1) RACKS AND/OR CABINETS MAY BE SHOWN SEPARATED FOR CLARITY. EXACT POSITIONING OF RACKS/CABINETS IS SHOWN ON THE ENLARGED FLOORPLANS.
2) ADJACENT RACKS AND/OR CABINETS SHALL BE GANGED TOGETHER UTILIZING MANUFACTURER'S RECOMMENDATIONS.
3) CABINETS SHALL REQUIRE SIDE PANELS AT THE END OF EACH ROW OR WHERE A CHANGE OF DEPTH EXPOSES A CABINET SIDE.
4) RACKS ARE SHOWN AS 45 RU (AS STANDARD OF QUALITY). WHERE LISTED ALTERNATE RACKS HAVE LESSER RU CAPACITY, RACK LAYOUT SHALL BE ADJUSTED BY REMOVING "OPTIONAL BLANKS" IN THE LAYOUT.

NOTES: (THIS DETAIL)
1) RACKS AND/OR CABINETS MAY BE SHOWN SEPARATED FOR CLARITY. EXACT POSITIONING OF RACKS/CABINETS IS SHOWN ON THE ENLARGED FLOORPLANS.
2) ADJACENT RACKS AND/OR CABINETS SHALL BE GANGED TOGETHER UTILIZING MANUFACTURER'S RECOMMENDATIONS.
3) CABINETS SHALL REQUIRE SIDE PANELS AT THE END OF EACH ROW OR WHERE A CHANGE OF DEPTH EXPOSES A CABINET SIDE.
4) CABINETS SHALL BE PROVIDED WITH ALL ACCESSORIES AS SPECIFIED.
5) CABINETS ARE SHOWN AS 44 RU (AS STANDARD OF QUALITY). WHERE LISTED ALTERNATE CABINETS HAVE LESSER RU CAPACITY, RACK LAYOUT SHALL BE ADJUSTED BY REMOVING "OPTIONAL BLANKS" IN THE LAYOUT.

INDIANA STATE UNIVERSITY
TERRE HAUTE, INDIANA

COMMUNICATIONS STANDARDS

Dreiser Hall Renovation

221 North 6th Street
Terre Haute, IN 47809

Browning Day
Project No. 19A052

R.E. Dimond
Project No. 19082

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BICSI ID # 101926
Expires 12-31-21
RCDD
06/06/2020

06/05/2020 – 100% CONSTRUCTION DOCUMENTS		
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PROJECT NO.:	
PROJECT DATE:	June 05, 2020
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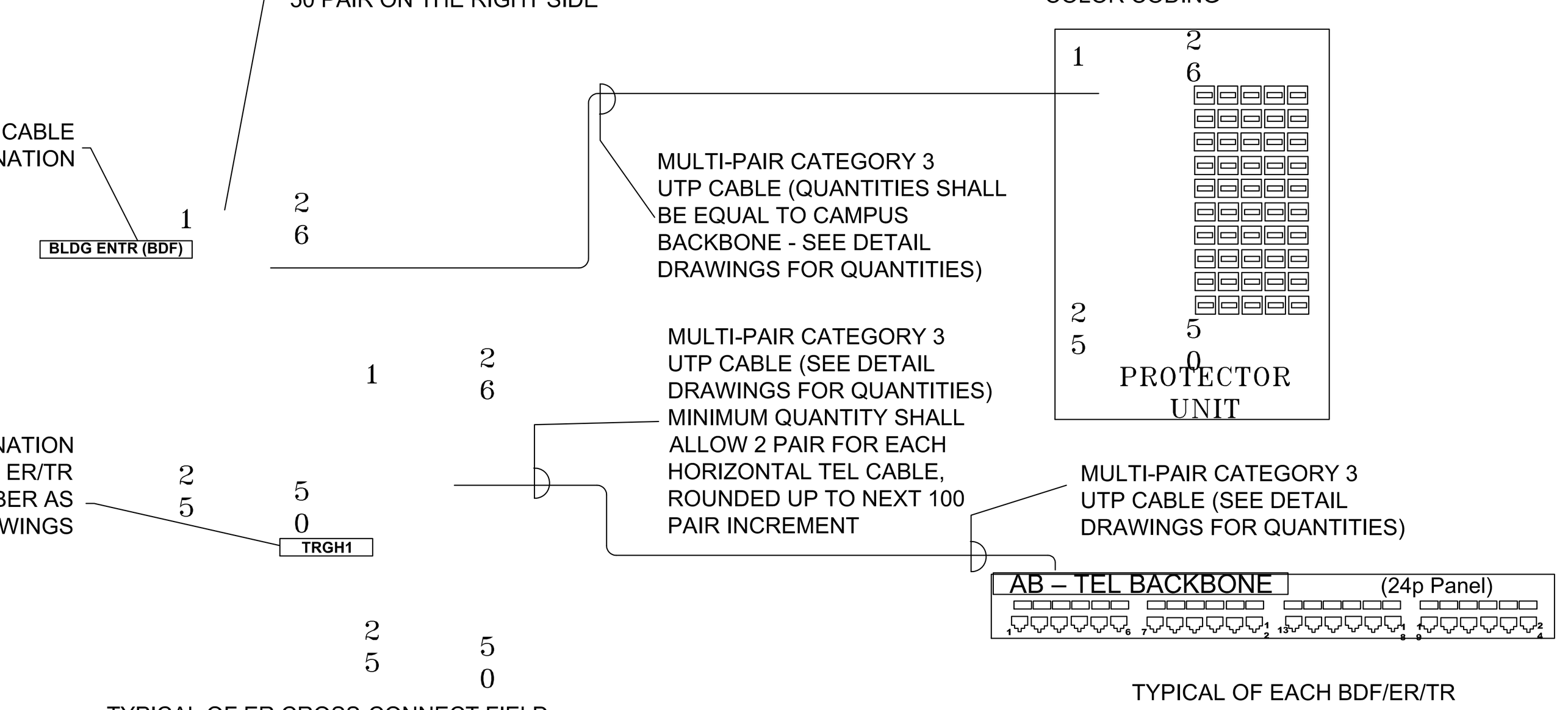
Keyplan

BDF/ER/TR RACK/ CABINET LAYOUT DETAILS

T5.01

COPPER CABLE DESTINATION			(BACKBONE CROSS-CONNECT)						
BLOCK	A	B	C	D	E	F	G	H	I
ROW 1 PR1-50	INCOMING	ER-GH1	TRGH-008	TRGH-121	TRGH-104A	TRGH-220	TRGH-204	TRGH-313B	TRGH-324
ROW 2 PR-1-50	INCOMING	ER-GH1	TRGH-008	TRGH-121	TRGH-104A	TRGH-220	TRGH-204	TRGH-313B	TRGH-324
ROW 3 PR1-50	INCOMING	ER-GH1	TRGH-008	TRGH-121	TRGH-104A	TRGH-220	TRGH-204	TRGH-313B	TRGH-324
ROW 4 PR1-50	INCOMING	ER-GH1	TRGH-008	TRGH-121	FUTURE	TRGH-220	TRGH-204	FUTURE	TRGH-324
ROW 5 PR1-50	INCOMING	FUTURE	TRGH-008	FUTURE	FUTURE	FUTURE	TRGH-204	FUTURE	TRGH-324

UTILIZE THE CABLE DESTINATION CHART (SAMPLE SHOWN) AS WELL AS THE BACKBONE DIAGRAM FOR INFORMATION ABOUT CABLES, QUANTITIES AND DESTINATIONS



TYPICAL OF ER CROSS-CONNECT FIELD

MOUNTED ON BACKBOARDS (AS SHOWN ON DETAIL DRAWINGS)

TERMINATE PAIRS 1-X ON EACH ROW UTILIZING INDUSTRY STANDARD POSITIVE IDENTIFICATION COLOR CODING

TYPICAL OF EACH BDF/ER/TR

MOUNTED IN HORIZONTAL CROSS -CONNECT RACK/CABINET(S) (AS SHOWN ON DETAIL DRAWINGS)

25 PAIR FOR EACH 24 PORTS; 1 PAIR PER PORT SPARE 25TH PAIR IN EACH BUNDLE

TERMINATE TO EIA/TIA T568a WIRING SPECIFICATION UTILIZING PAIR 1 (BLUE)

PATCH PANEL PORT QUANTITIES SHALL EQUAL TWICE THE PLANNED HORIZONTAL TEL CABLE RUNS FROM EACH RESPECTIVE WIRING ROOM

E COPPER BACKBONE TERMINATION AND LABELING

Scale = NONE

TYPICAL OF BUILDING ENTRANCE POINT (LOCATED AT TELEPHONE UTILITY ENTRANCE) MOUNTED ON TELECOMMUNICATIONS BACKBOARD (AS SHOWN ON DETAIL DRAWINGS)

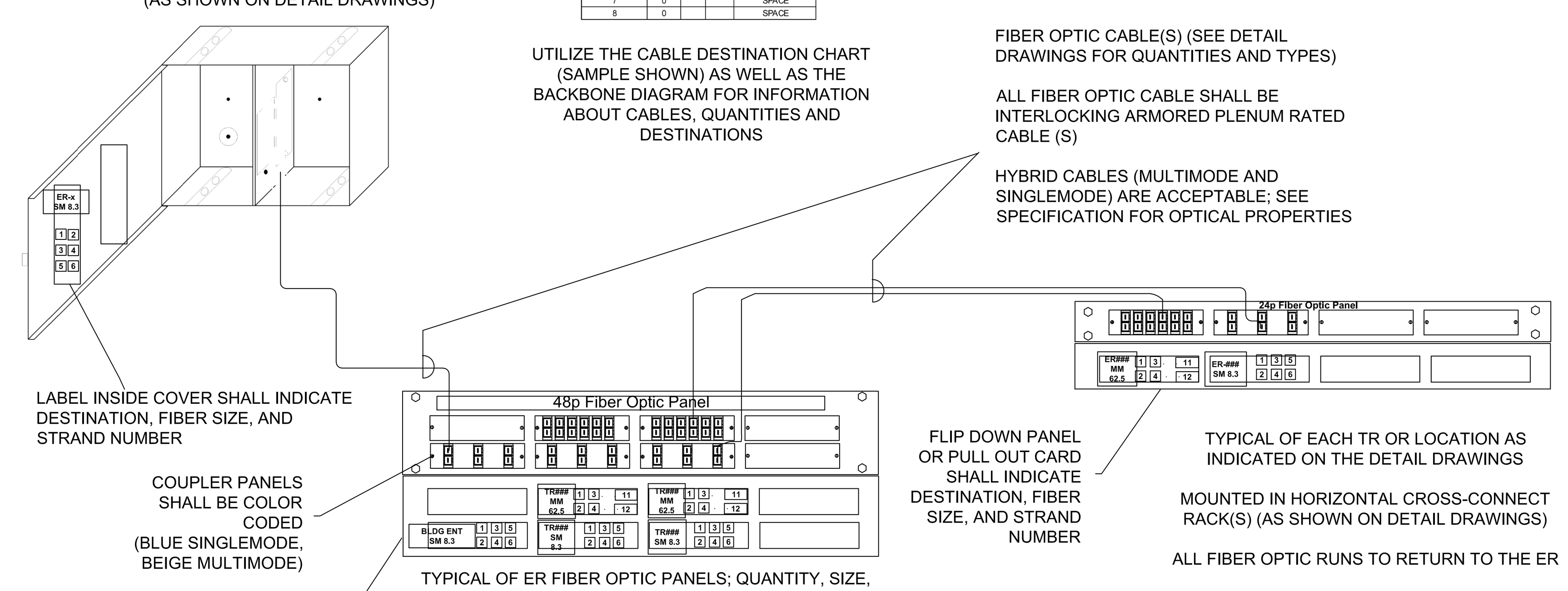
FIBER OPTIC CABLE DESTINATION				
Panel 1 6 Pack Pos	Fibers	Conn	Type	Destination
1	12	SC	SM	ENTRANCE FACILITY
2	0			SPACE
3	0			SPACE
4	0			SPACE
5	12	ST	MM	TR###-02
6	6	SC	SM	TR###-02
7	0			SPACE
8	0			SPACE

UTILIZE THE CABLE DESTINATION CHART (SAMPLE SHOWN) AS WELL AS THE BACKBONE DIAGRAM FOR INFORMATION ABOUT CABLES, QUANTITIES AND DESTINATIONS

FIBER OPTIC CABLE(S) (SEE DETAIL DRAWINGS FOR QUANTITIES AND TYPES)

ALL FIBER OPTIC CABLE SHALL BE INTERLOCKING ARMORED PLENUM RATED CABLE (S)

HYBRID CABLES (MULTIMODE AND SINGLEMODE) ARE ACCEPTABLE; SEE SPECIFICATION FOR OPTICAL PROPERTIES



LABEL INSIDE COVER SHALL INDICATE DESTINATION, FIBER SIZE, AND STRAND NUMBER

COUPLER PANELS SHALL BE COLOR CODED (BLUE SINGLEMODE, BEIGE MULTIMODE)

FLIP DOWN PANEL OR PULL OUT CARD SHALL INDICATE DESTINATION, FIBER SIZE, AND STRAND NUMBER

TYPICAL OF ER FIBER OPTIC PANELS; QUANTITY, SIZE, AND POSITIONING AS SHOWN ON DETAIL DRAWINGS

MOUNTED IN "CORE" CABINET (AS SHOWN ON DETAIL DRAWINGS)

ALL FIBER OPTIC RUNS WITHIN THE FACILITY SHALL BEGIN HERE AND CONTINUE WITHOUT SPLICES TO THE INDICATED DESTINATION

TERMINATE EACH FIBER STRAND USING INDUSTRY STANDARD POSITIVE IDENTIFICATION COLOR CODING; (BLUE STRAND 1 EACH END, ORANGE STRAND 2, ETC.)

FLIP DOWN PANEL OR PULL OUT CARD SHALL INDICATE DESTINATION, FIBER SIZE, AND STRAND NUMBER

TYPICAL OF EACH TR OR LOCATION AS INDICATED ON THE DETAIL DRAWINGS

MOUNTED IN HORIZONTAL CROSS-CONNECT RACK(S) (AS SHOWN ON DETAIL DRAWINGS)

ALL FIBER OPTIC RUNS TO RETURN TO THE ER

TERMINATE EACH FIBER STRAND USING INDUSTRY STANDARD POSITIVE IDENTIFICATION COLOR CODING: (BLUE STRAND 1 EACH END, ORANGE STRAND 2, ETC.)

STANDARD FIBER OPTIC CABLE IS LASER ENHANCED 62.5/125 MULTIMODE AND 8.3/125 SINGLEMODE

BDF TO ER - (WHEN SEPARATE) MINIMUM 12 STRANDS SM

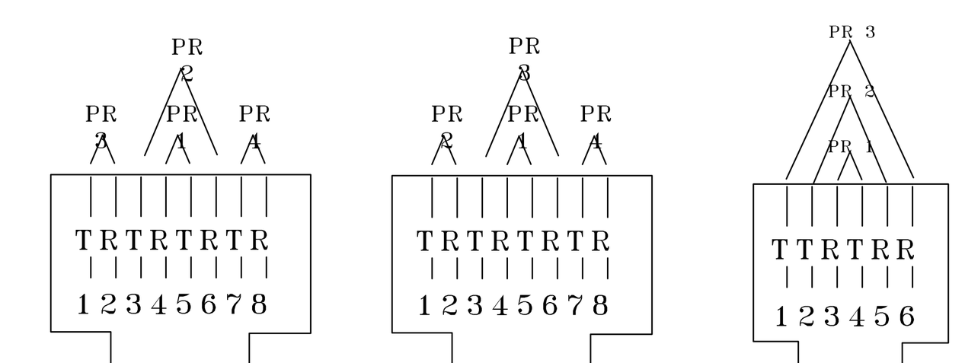
ER TO EACH TR - MINIMUM 12 MM AND 6 SM

MULTIMODE FIBER SHALL BE TERMINATED WITH ST STYLE CONNECTORS: SINGLEMODE FIBER SHALL BE TERMINATED WITH SC STYLE CONNECTORS

C FIBER OPTIC BACKBONE TERMINATION AND LABELING

Scale = NONE

PAIR	LEAD	COLOR	T568A PIN #	T568B PIN #	USOC 6 POS
1	TIP	WHITE-BLUE	5	5	4
1	RING	BLUE-WHITE	4	4	3
2	TIP	WHITE-ORANGE	3	1	2
2	RING	ORANGE-WHITE	6	2	5
3	TIP	WHITE-GREEN	1	3	1
3	RING	GREEN-WHITE	2	6	6
4	TIP	WHITE-BROWN	7	7	
4	RING	BROWN-WHITE	8	8	



T568 A

T568 B

USOC 6 POS 6 COND.

B HORIZONTAL 4 PAIR COPPER PIN-OUTS

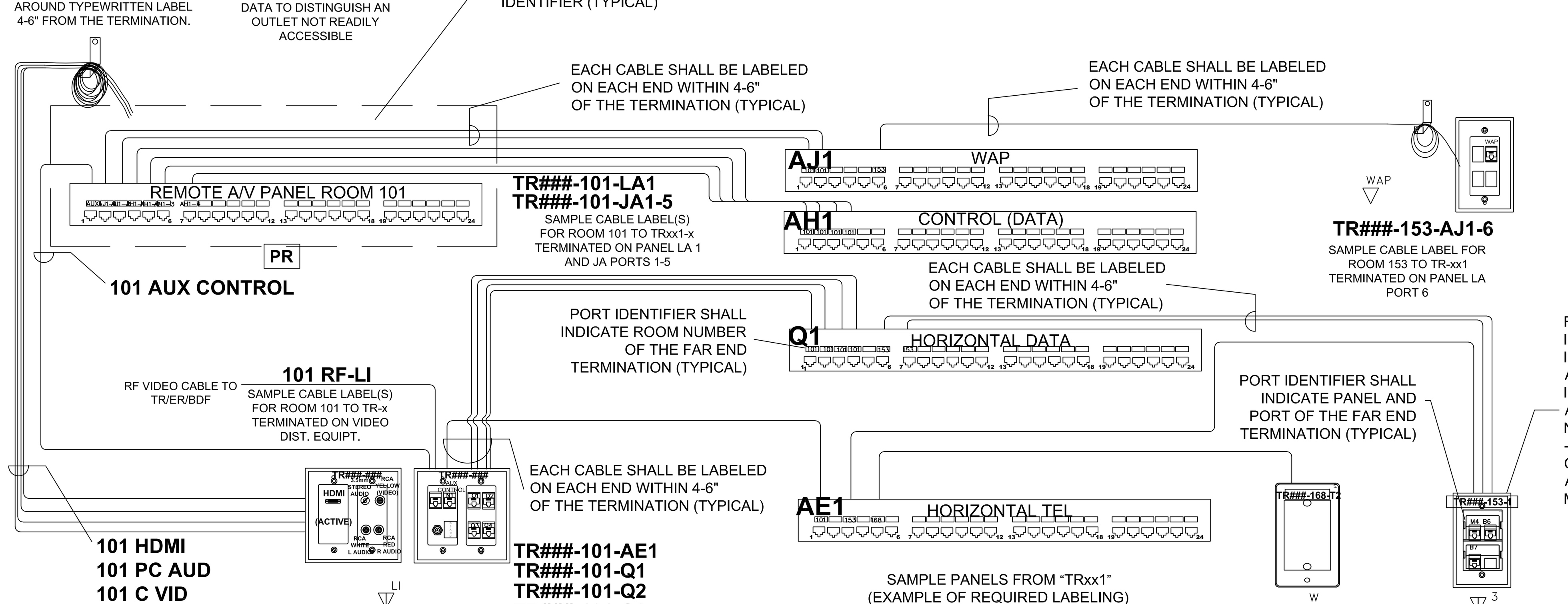
Scale = NONE

CABLE AND TERMINATION SUMMARY (THIS PROJECT)							
CABLE	DESCRIPTION	USE	COLOR	TERMINATION 1	TERMINATION 2	SPECIFICATION TYPE	NAME
1	4 PAIR UTP CAT 6 VOICE	HORIZONTAL VOICE		HORIZ TEL PANEL	BLUE JACK	TYPE UTP 1	4 PAIR UTP CAT 6
2	4 PAIR UTP CAT 6 DATA	HORIZONTAL DATA		HORIZ DATA PANEL	IVORY JACK	TYPE UTP 1	4 PAIR UTP CAT 6
3	4 PAIR UTP CAT 6 CONTROL	HORIZONTAL CTRL (DATA))	YELLOW	CONTROL PANEL	GREEN JACK	TYPE UTP 1	4 PAIR UTP CAT 6
4	4 PAIR UTP CAT 6 WAP	HORIZONTAL WAP	YELLOW	WAP PANEL	ORANGE JACK	TYPE UTP 1	4 PAIR UTP CAT 6
5	4 PAIR UTP CAT 6 LOCAL CTL	CONTROL 1 & 2 (CTL)	YELLOW	YELLOW JACK	YELLOW JACK	TYPE UTP 1	4 PAIR UTP CAT 6
6	MULTI-PAIR PAIR UTP CAT 3	COPPER BACKBONE		110 STYLE BLOCKS	BLOCKS OR PANELS	TYPE UTP 2	MULTI-PAIR UTP
7	SINGLEMODE ARMORED	FIBER OPTIC BACKBONE		SC CONN IN PANEL	SC CONN IN PANEL	TYPE FO 1	SM FIBER OPTIC
8	MULTIMODE ARMORED	FIBER OPTIC BACKBONE		SC CONN IN PANEL	SC CONN IN PANEL	TYPE FO 2	MM FIBER OPTIC
9	RG-6 VIDEO COAX (RF)	HORIZONTAL RF		F STYLE ON DEVICE	F STYLE ON FP COUPLER	TYPE CX1	RG-6
10	RG-11 VIDEO COAX (RF)	RF BACKBONE		F STYLE ON DEVICE	F STYLE ON DEVICE	TYPE CX2	RG-11
11	COMPOSITE VIDEO COAX	LOCAL INPUT C VIDEO		FACEPLATE TERM	FACEPLATE TERM	TYPE SU1	COMP. VIDEO
12	AUDIO CABLE 2 PR SHIELDED	LOCAL INPUT AUDIO		FACEPLATE TERM	FACEPLATE TERM	TYPE SU2	AUDIO
13	SVHS CABLE (DUAL COAX)	LOCAL INPUT S- VIDEO		FACEPLATE TERM	FACEPLATE TERM	TYPE SU3	S-VIDEO
14	AUDIO CABLE 2 PR SHIELDED	LOCAL INPUT S- AUDIO		FACEPLATE TERM	FACEPLATE TERM	TYPE SU2	AUDIO
15	VGA VIDEO CABLE	LOCAL INPUT VGA		FACEPLATE TERM	FACEPLATE TERM	TYPE SU4	VGA
16							
17							
18							
19							
20							

NOTE 1: UNLESS OTHERWISE SPECIFICALLY NOTED, ALL CABLES USED ABOVE CEILING LINE SHALL HAVE A PLENUM RATING

A CABLE AND TERMINATION SUMMARY

Scale = NONE



101 HDMI
101 PC AUD
101 C VID
101 L AUD
101 R AUD

SAMPLE CABLE LABEL(S) FOR ROOM 101 TO BETWEEN LI AND LO OUTLETS; LABEL FACEPLATE AND CABLE JACKET 4-6" FROM TERMINATION POINT

TR###-101-AE1
TR###-101-Q1
TR###-101-Q2
TR###-101-Q3
TR###-101-Q4

SAMPLE CABLE LABEL(S) FOR ROOM 101 TO TR-xxy

SAMPLE PANELS FROM "TRxx1" (EXAMPLE OF REQUIRED LABELING)

TERMINATE ALL HORIZONTAL 4 PAIR UTP DATA CABLES TO EIA/TIA T568a WIRING SPECIFICATION ON BOTH ENDS

TR###-168-AE6

SAMPLE CABLE LABEL FOR ROOM 168 TO TR-### TERMINATED ON PANEL M PORT 7

TR###-153-AE4
TR###-153-Q6
TR###-153-Q7

SAMPLE CABLE LABEL(S) FOR ROOM 153 TO TR-### TERMINATED ON PANEL B PORTS 6-7 AND PANEL M PORT 4

D HORIZONTAL AND LOCAL INPUT TERMINATION AND LABELING

Scale = NONE

LABELING NOTES: (THIS PROJECT)

A. EACH TELECOMMUNICATIONS ROOM SHALL HAVE A UNIQUE IDENTIFIER CONSISTING OF 1] ROOM TYPE, 2] UNIQUE 2 LETTER BUILDING CODE, AND 3] FLOOR LOCATION. EXAMPLE: ER-GH-1 FOR THE MAIN EQUIPMENT ROOM ON THE FIRST FLOOR OF GILLUM HALL, OR, TR-UH-304 FOR A TELECOMMUNICATIONS ROOM IN UNIVERSITY HALL ON THE THIRD FLOOR IN ROOM 304. (ROOM NUMBER USED WHEN MULTIPLE ROOMS ARE REQUIRED ON A FLOOR.)
B. ALL CABLES SHALL HAVE A LABEL AFFIXED TO THE JACKET AT EACH END 4 TO 6" FROM THE TERMINATION POINT. THIS LABEL SHALL IDENTIFY THE SOURCE, DESTINATION, AND PORT IDENTIFIER. EXAMPLE: TR###-101-B6 OR 101-SVID.
C. THESE DETAILS ARE NOT INTENDED TO SHOW EXACT PROJECT REQUIREMENTS FOR RACK/CABINET LAYOUTS, FACEPLATE CONFIGURATION, EXACT CABLE TYPES, CABLE DESTINATIONS OR CABLE QUANTITIES. THESE DETAILS DO DIAGRAMMATICALLY INDICATE PROJECT REQUIREMENTS FOR LABELING, COLOR-CODING, AND TERMINATIONS FOR THIS PROJECT. USE THESE DETAILS AS A GUIDE; SUBMIT ANY QUESTIONS IN WRITING WITH THE PROCEDURE FOUND IN THE SPECIFICATIONS.
D. SEPARATE PATCH PANELS ARE UTILIZED FOR HORIZONTAL DATA, WIRELESS ACCESS POINTS, AND CONTROL. LABEL PANELS AS TO USE AND WITH UNIQUE IDENTIFIER AS SHOWN IN THE DIAGRAM.
E. COORDINATE "FINAL" ROOM NUMBERS OR IDENTIFIERS WITH OWNER PRIOR TO PERFORMING WORK; ALL LABELING SHALL CONFORM TO OPERATIONAL ROOM IDENTIFIERS FOR BUILDING USE.
F. ALL CABLES SHALL BE TERMINATED IN ALPHA-NUMERICAL ORDER ON EACH PATCH PANEL.
G. LABEL ALL FACEPLATES WITH AN OUTLET IDENTIFIER AND LABEL EACH PORT; FOLLOW THE EXAMPLES IN THE DIAGRAM AS A GUIDE.
H. LABEL CROSS-CONNECT FIELDS, BACKBOARDS, RACKS/CABINETS PANELS, FACEPLATES, CABLES ETC. UTILIZING THE EXAMPLES IN THE DIAGRAM AS A GUIDE.
I. FIBER OPTIC PANELS SHALL BE IDENTIFIED WITH SOURCE, DESTINATION, STRAND IDENTIFIER AS WELL AS WITH THE CORE DIAMETERS.
J. ALL CABLES USED FOR DATA SHALL BE TERMINATED ON "HORIZONTAL DATA" PATCH PANELS IN THE ER/TR. ALL CABLES USED FOR VOICE SHALL BE TERMINATED ON 66 STYLE BLOCKS ON A BACKBOARD IN THE ER/TR. ALL CABLES USED FOR CONTROL (CTRL) DATA (RETURNING TO THE ER/TR) SHALL BE TERMINATED ON "CONTROL" PATCH PANELS IN THE ER/TR. ALL WIRELESS ACCESS POINT CABLES WILL BE TERMINATED ON A "WAP" PANEL IN THE ER/TR.
K. SOLID TRIANGLES DENOTE VOICE (TELEPHONE) REQUIREMENTS. HOLLOW TRIANGLES DENOTE DATA REQUIREMENTS. HALF SOLID TRIANGLES DENOTE VOICE AND DATA REQUIREMENTS; UNLESS OTHERWISE NOTED (*), EACH HALF SOLID TRIANGLE WILL RECEIVE ONE VOICE JACK AND THE REMAINDER WILL BE DATA.
(*) NOTATIONS WILL BE SUBSCRIPTS TO THE SYMBOL; xV WHERE x IS THE QUANTITY OF VOICE CABLES AND xD WHERE x IS THE QUANTITY OF DATA CABLES.
L. SEE CABLE AND TERMINATION SUMMARY CHART FOR COLOR CODING OF JACKS AND CABLES ON THIS PROJECT.
M. CABLES SHALL BE GROUPED TOGETHER ON PATCH PANELS BY WORK AREA SPACE.

INDIANA STATE UNIVERSITY
TERRE HAUTE, INDIANA

COMMUNICATIONS STANDARDS

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TERMINATION AND IDENTIFICATION DETAILS

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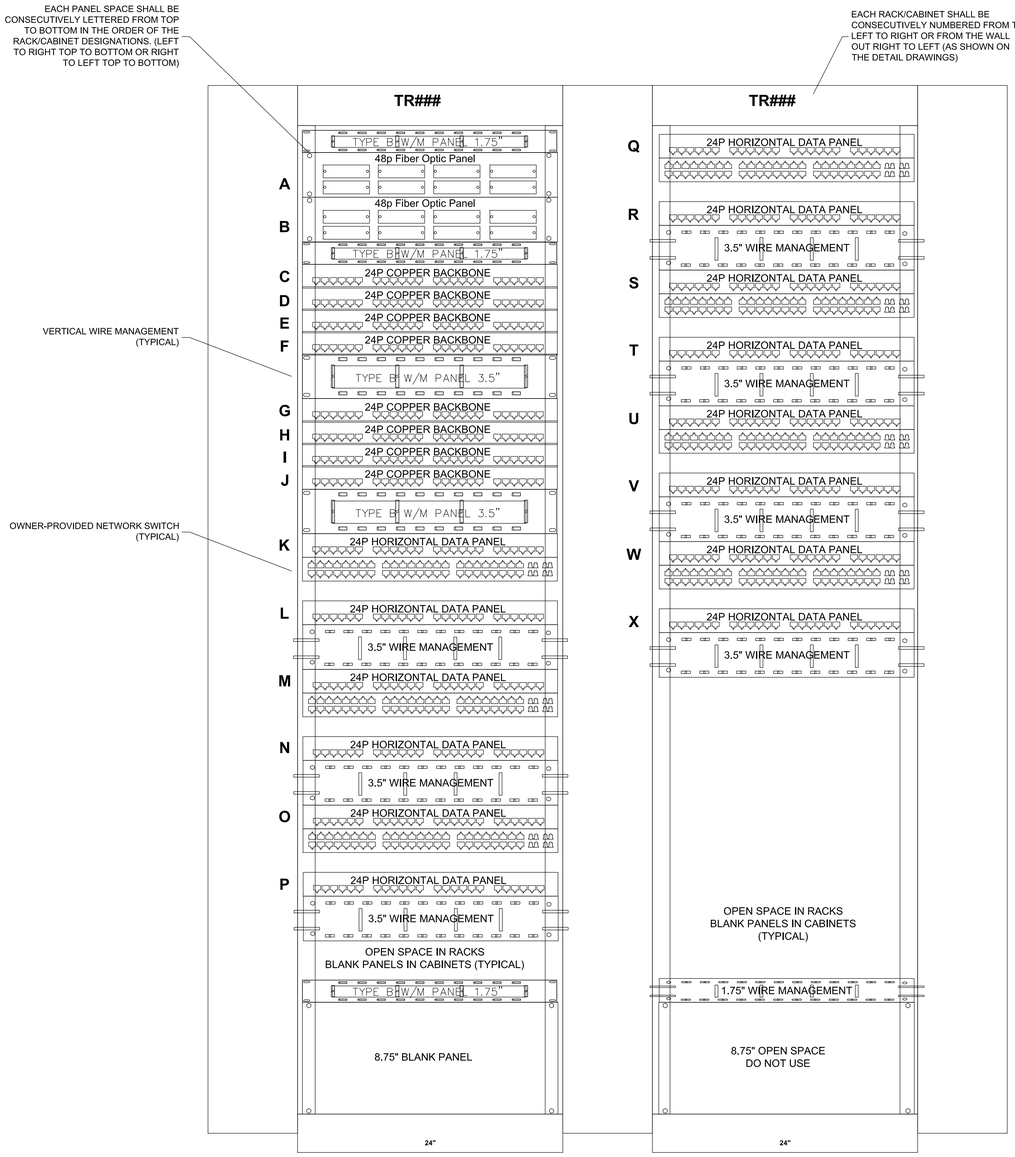

A ER/TR RACK/CABINET IDENTIFICATION
Scale = NONE

TYPICAL ER/TR RACK/CABINET LAYOUT

COMBINATION OF RACKS AND CABINETS SHOWN AS EXAMPLE ONLY

LABELING NOTES: (THIS PROJECT)

A. EACH TELECOMMUNICATIONS ROOM SHALL HAVE A UNIQUE IDENTIFIER CONSISTING OF 1] ROOM TYPE, 2] UNIQUE 2 LETTER BUILDING CODE, AND 3] FLOOR LOCATION. EXAMPLE: ER-GH-1 FOR THE MAIN EQUIPMENT ROOM ON THE FIRST FLOOR OF GILLUM HALL, OR, TR-UH-304 FOR A TELECOMMUNICATIONS ROOM IN UNIVERSITY HALL ON THE THIRD FLOOR IN ROOM 304. (ROOM NUMBER USED WHEN MULTIPLE ROOMS ARE REQUIRED ON A FLOOR.)

B. ALL CABLES SHALL HAVE A LABEL AFFIXED TO THE JACKET AT EACH END 4 TO 6" FROM THE TERMINATION POINT. THIS LABEL SHALL IDENTIFY THE SOURCE, DESTINATION, AND PORT IDENTIFIER. EXAMPLE: TRXX-101-B6 OR 101-SVID.

C. THESE DETAILS ARE NOT INTENDED TO SHOW EXACT PROJECT REQUIREMENTS FOR RACK/CABINET LAYOUTS, FACEPLATE CONFIGURATION, EXACT CABLE TYPES, CABLE DESTINATIONS OR CABLE QUANTITIES. THESE DETAILS DO DIAGRAMMATICALLY INDICATE PROJECT REQUIREMENTS FOR LABELING, COLOR-CODING, AND TERMINATIONS FOR THIS PROJECT. USE THESE DETAILS AS A GUIDE; SUBMIT ANY QUESTIONS IN WRITING WITH THE PROCEDURE FOUND IN THE SPECIFICATIONS.

D. SEPARATE PATCH PANELS ARE UTILIZED FOR HORIZONTAL DATA, WIRELESS ACCESS POINTS, AND CONTROL LABEL PANELS AS TO USE AND WITH UNIQUE IDENTIFIER AS SHOWN IN THE DIAGRAM.

E. COORDINATE "FINAL" ROOM NUMBERS OR IDENTIFIERS WITH OWNER PRIOR TO PERFORMING WORK; ALL LABELING SHALL CONFORM TO OPERATIONAL ROOM IDENTIFIERS FOR BUILDING USE.

F. ALL CABLES SHALL BE TERMINATED IN ALPHA-NUMERICAL ORDER ON EACH PATCH PANEL.

G. LABEL ALL FACEPLATES WITH AN OUTLET IDENTIFIER AND LABEL EACH PORT; FOLLOW THE EXAMPLES IN THE DIAGRAM AS A GUIDE.

H. LABEL CROSS-CONNECT FIELDS, BACKBOARDS, RACKS/CABINETS PANELS, FACEPLATES, CABLES ETC. UTILIZING THE EXAMPLES IN THE DIAGRAM AS A GUIDE.

I. FIBER OPTIC PANELS SHALL BE IDENTIFIED WITH SOURCE, DESTINATION, STRAND IDENTIFIER AS WELL AS WITH THE CORE DIAMETERS.

J. ALL CABLES USED FOR DATA SHALL BE TERMINATED ON "HORIZONTAL DATA" PATCH PANELS IN THE ER/TR. ALL CABLES USED FOR VOICE SHALL BE TERMINATED ON 66 STYLE BLOCKS ON A BACKBOARD IN THE ER/TR. ALL CABLES USED FOR CONTROL (CTRL) DATA (RETURNING TO THE ER/TR) SHALL BE TERMINATED ON "CONTROL" PATCH PANELS IN THE ER/TR. ALL WIRELESS ACCESS POINT CABLES WILL BE TERMINATED ON A "WAP" PANEL IN THE ER/TR.

K. SOLID TRIANGLES DENOTE VOICE (TELEPHONE) REQUIREMENTS. HOLLOW TRIANGLES DENOTE DATA REQUIREMENTS. HALF SOLID TRIANGLES DENOTE VOICE AND DATA REQUIREMENTS; UNLESS OTHERWISE NOTED (*), EACH HALF SOLID TRIANGLE WILL RECEIVE ONE VOICE JACK AND THE REMAINDER WILL BE DATA.
(*) NOTATIONS WILL BE SUBSCRIPTS TO THE SYMBOL; xV WHERE x IS THE QUANTITY OF VOICE CABLES AND xD WHERE x IS THE QUANTITY OF DATA CABLES.

L. SEE CABLE AND TERMINATION SUMMARY CHART FOR COLOR CODING OF JACKS AND CABLES ON THIS PROJECT.

INDIANA STATE UNIVERSITY
TERRE HAUTE, INDIANA

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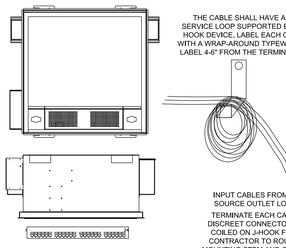
TERMINATION AND IDENTIFICATION DETAILS

T5.12



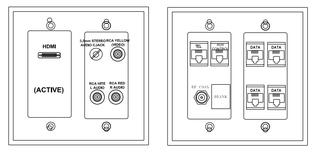
THE CABLE SHALL HAVE A 20' SERVICE LOOP SUPPORTED BY A J-HOOK DEVICE. LABEL EACH CABLE WITH A WRAP-AROUND TYPEWRITTEN LABEL 4-6" FROM THE TERMINATION.

INPUT CABLES FROM LOCAL SOURCE OUTLET LOCATION

TERMINATE EACH CABLE WITH DISCREET CONNECTORS; LEAVE COILED ON J-HOOK FOR VIDEO CONTRACTOR TO ROUTE DOWN MOUNTING STEM AND CONNECT TO DEVICE

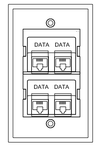
PR

(1) ACTIVE ZONE CABLING CEILING BOX – MOUNT IN SUSPENDED CEILING GRID WITH SUPPORT CABLES TO BUILDING STEEL ABOVE
(1) 24 PORT PATCH PANEL TO TERMINATE THE FOLLOWING:
(4) 4 PAIR CABLE TO TR/ER/BDF SPECIAL USE PANEL (CONTROL)
(2) 4 PAIR CABLES TO TR/ER/BDF SPECIAL USE PANEL (WAP)
(1) 4 PR AUX CONTROL CABLE FROM LOCAL INPUT PLATE
(2) RCA MALE PLUG (R & W); 2 PAIR SHIELDED AUDIO CABLE FROM INPUT PLATE (3,5mm STEREO)
(1) RCA MALE PLUG (Y); COMPOSITE VIDEO CABLE FROM LOCAL INPUT PLATE
(2) RCA MALE PLUG (R & W); 2 PAIR SHIELDED AUDIO CABLE FROM LOCAL INPUT PLATE
(1) HDMI INTERFACE; A/V CABLE FROM LOCAL INPUT PLATE



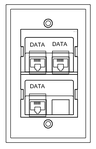
LI

(2) DOUBLE GANG S/S FACEPLATES (DECORA STYLE)
(1) 1 PORT BLANK
(3) 4 PORT JACK FRAMES
(1) HDMI ACTIVE FACEPLATE; CABLE RUNNER AND LEAD ASSEMBLY TO PROJECTOR
(1) F CONNCETOR; RG-6 COAXIAL CABLE TO TR/ER/BDF VIDEO BACKBOARD
(1) RJ45 JACK INSERT; 4 PR CABLE TO TR/ER/BDF HORIZ. TEL PANEL
(4) RJ45 JACK INSERT; 4 PR CABLE TO TR/ER/BDF DATA PATCH PANEL
(1) RJ45 JACK INSERT; 4 PR AUX CONTROL CABLE TO (PR) PROJECTOR OUTLET
(1) 3.5mm STEREO AUDIO JACK; 2 PAIR SHIELDED AUDIO CABLE TO PROJECTOR (STEREO TO RCA R AND W)
(1) RCA (Y); COMPOSITE VIDEO CABLE TO PROJECTOR
(2) RCA (R & W); 2 PAIR SHIELDED AUDIO CABLE TO PROJECTOR



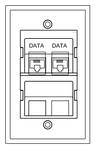
4

(1) SINGLE GANG FACEPLATE
(4) RJ45 UTP JACK INSERT; 4 PR UTP CABLES TO ER/TR RACK MOUNTED PATCH PANEL



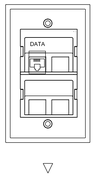
3

(1) SINGLE GANG FACEPLATE
(1) 1 PORT BLANKS
(3) RJ45 UTP JACK INSERT; 4 PR UTP CABLES TO ER/TR RACK MOUNTED PATCH PANEL



2 ELEV FACP BAS

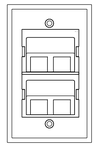
(1) SINGLE GANG FACEPLATE
(2) 1 PORT BLANKS
(2) RJ45 UTP JACK INSERT; 4 PR UTP CABLES TO ER/TR RACK MOUNTED PATCH PANEL



(1) SINGLE GANG FACEPLATE
(3) 1 PORT BLANKS
(1) RJ45 UTP JACK INSERT; 4 PR UTP CABLE TO ER/TR RACK MOUNTED PATCH PANEL
(NOTE: WAP SUBSCRIPT SHALL HAVE CABLE TERMINATED ON WAP PANEL IN ER/TR)

W

(1) SINGLE GANG SS FACEPLATE W/ MTG STUDS
(1) 6P 6C MOD JACK; 4 PAIR CABLE TO ER/TR 66 BLOCK CROSS-CONNECT FIELD



B

(1) SINGLE GANG FACEPLATE
(4) 1 PORT BLANKS

A FACEPLATE DETAILS
Scale = NONE

WORKSTATION OUTLET (FACEPLATE) NOTES: (THIS DETAIL)

A. OUTLET REQUIREMENTS WHERE POWER/COMMUNICATIONS MULTI-COMPARTMENT SURFACE RACEWAY IS REQUIRED SHALL SUBSTITUTE 2 4 PORT JACK FRAMES AND STANDARD "ELECTRICAL OUTLET" OR RACEWAY FACEPLATE(S) IN PLACE OF THE DOUBLE GANG FACEPLATES SHOWN ON THIS DRAWING. ADDITIONAL FACEPLATES SHALL BE CUT-IN ADJACENT TO FULFILL THE OUTLET PORT REQUIREMENT. OUTLET LOCATIONS REQUIRING 4 OR FEWER PORTS SHALL UTILIZE A SINGLE 4 PORT JACK FRAME AND FACEPLATE.
B. ALL CABLES USED FOR DATA SHALL BE TERMINATED ON "HORIZONTAL DATA" PATCH PANELS IN THE ER/TR. ALL WIRELESS ACCESS POINT CABLES WILL BE TERMINATED ON A "WAP" PANEL IN THE ER/TR. ALL CABLES USED FOR VIDEO PROJECTORS SHALL BE TERMINATED ON A "CONTROL DATA" PATCH PANEL IN THE ER/TR.
C. SOLID TRIANGLES DENOTE VOICE (TELEPHONE) REQUIREMENTS. HOLLOW TRIANGLES DENOTE DATA REQUIREMENTS. HALF SOLID TRIANGLES DENOTE VOICE AND DATA REQUIREMENTS; UNLESS OTHERWISE NOTED *. EACH HALF SOLID TRIANGLE WILL RECEIVE ONE VOICE JACK AND THE REMAINDER WILL BE DATA.
* NOTATIONS WILL BE SUBSCRIPTS TO THE SYMBOL; xV WHERE x IS THE QUANTITY OF VOICE CABLES AND xD WHERE x IS THE QUANTITY OF DATA CABLES.
D. NOT USED.
E. JACK COLOR-CODING WILL BE AS LISTED IN CABLE AND TERMINATION CHART ON LABELING AND TERMINATION DETAIL SHEET.
F. CABLE COLOR-CODING WILL BE AS LISTED IN CABLE AND TERMINATION CHART ON LABELING AND TERMINATION DETAIL SHEET.

INDIANA STATE UNIVERSITY
TERRE HAUTE, INDIANA

COMMUNICATIONS STANDARDS

Dreiser Hall Renovation

221 North 6th Street
Terre Haute, IN 47809

Browning Day
Project No. 19A052

R.E. Dimond
Project No. 19082

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Keyplan

STATION OUTLET DETAILS

T5.13

CONDUCTOR SIZING

Recommended Sizing of the Telecommunications Bonding Backbone Conductor (TBBC) and Grounding Equalizer (GE) per J-STD-607-A

The TBBC, BC, and BCT shall be copper conductors. The TBBC shall be sized at 2 kcmil per linear foot of conductor length up to a maximum size of a 3/0 AWG. The TBBC may be insulated. The Bonding conductor for Telecommunications (BCT) and Bonding Conductor (BC) shall be, as a minimum, the same size as the largest TBBC used.(1)

TBBC LENGTH LINEAR M (FT)	TBBC SIZE (AWG)
LESS THAN 4 (13')	6
4-6 (14-20')	4
6-8 (21-26')	3
8-10 (27-33')	2
10-13 (34-41')	1
13-16 (42-52')	1/0
16-20 (53-66')	2/0
GREATER THAN 20 (66')	3/0*

The TEBC minimum conductor size shall be a No. 6 AWG.

*3/0 may not always be available. 4/0 is a more common size that may be substituted.

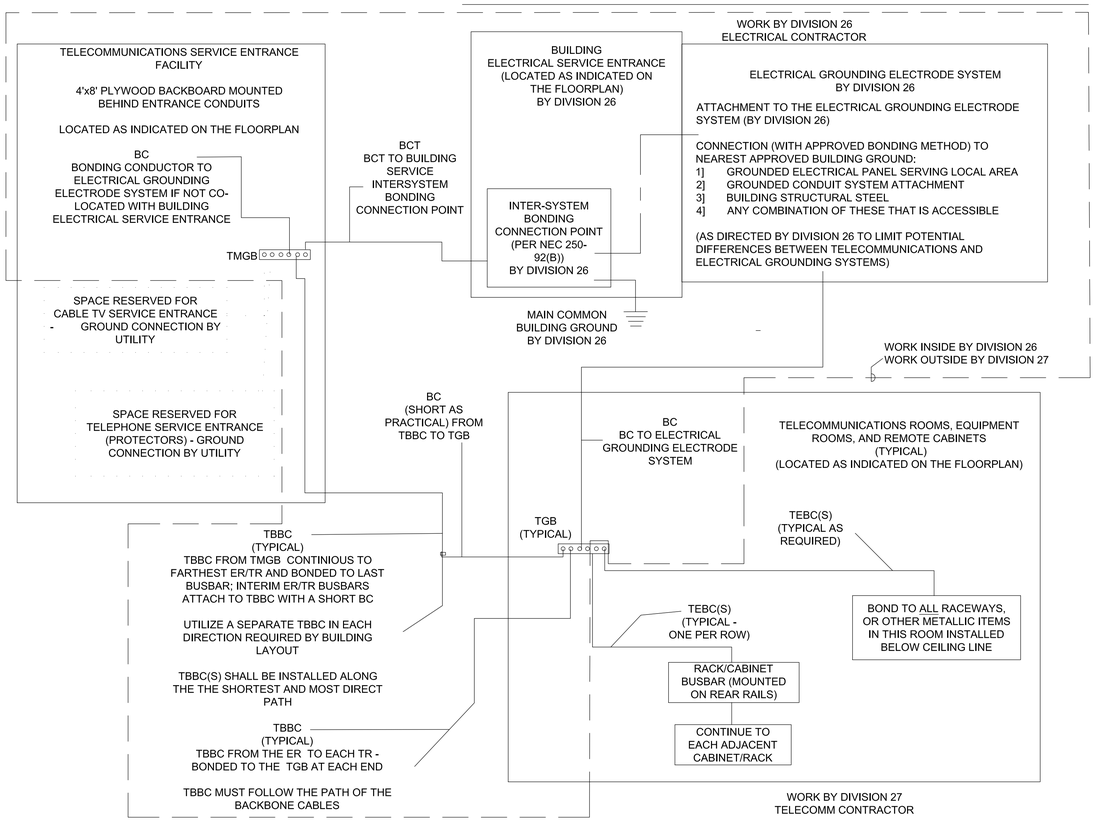
(1). Telecommunications Industry Association, Commercial Building Grounding (Earthing) and Bonding Requirements For Telecommunications, J-STD-607-A, October 2002.

ABBREVIATIONS

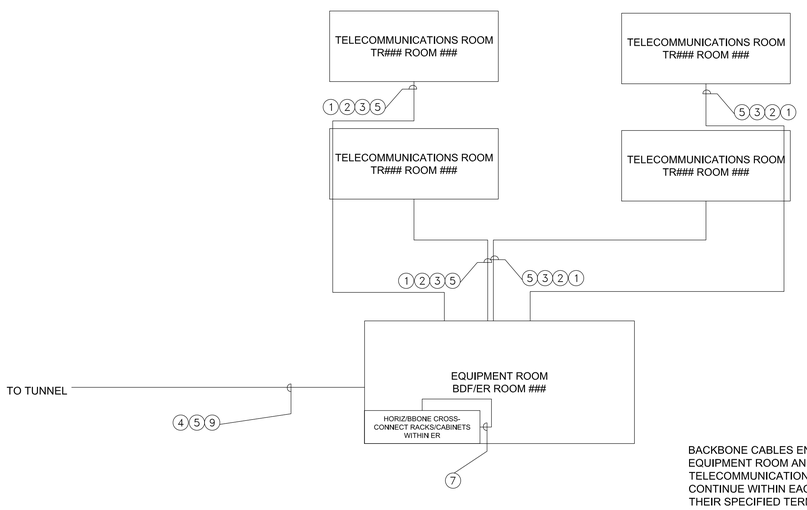
TR = TELECOMMUNICATIONS ROOM
BC = BONDING CONDUCTOR
TBBC = TELECOMMUNICATIONS BONDING BACKBONE CONDUCTOR
TEBC = TELECOMMUNICATIONS EQUIPMENT BONDING CONDUCTOR
TMGB = TELECOMMUNICATIONS MAIN GROUNDING BUSBAR
TGB = TELECOMMUNICATIONS GROUNDING BUSBAR
R/C = RACK AND/OR CABINET GROUNDING BUSBAR
ER = EQUIPMENT ROOM
BCT = BONDING CONDUCTOR FOR TELECOMMUNICATIONS
EF = ENTRANCE FACILITY

GROUNDING SYSTEM NOTES: (THIS DETAIL)

1] TBBC, TEBC, AND BC GROUNDING CONDUCTORS MUST BE INSTALLED IN COMPLIANCE WITH LOCAL CODES; THIS MAY REQUIRE INSTALLATION IN METALLIC CONDUIT IF RUN THROUGH PLENUM CEILING CAVITIES.
2] GROUNDING CONDUCTORS RUN THROUGH A CONDUIT SHALL BE BONDED TO THE CONDUIT AT EACH END.
3] ALL GROUND CONDUCTORS SHALL BE INSTALLED IN THE SHORTEST AND MOST DIRECT PATH PRACTICAL.
4] WHERE THE ENTRANCE FACILITY IS LOCATED IN THE ER, THE TMGB SHALL ALSO SERVE AS A TGB FOR THE ROOM; THE TBBCS REQUIRED FROM THE ER TO EACH TR ALONG THE BACKBONE CABLE PATH WILL ALSO BE USED TO CONNECT THE TGBS TO THE TMGB.
5] REMOTE CABINETS SHALL SUBSTITUTE A R/C BUSBAR IN PLACE OF THE TGB.



B TELECOMMUNICATIONS GROUNDING DIAGRAM
Scale = NONE



A TELECOMMUNICATIONS BACKBONE DIAGRAM
Scale = NONE

BACKBONE CABLES ENTERING THE EQUIPMENT ROOM AND TELECOMMUNICATIONS ROOM(S) SHALL CONTINUE WITHIN EACH ROOM TO THEIR SPECIFIED TERMINATION POINT WITH ADEQUATE SERVICE LOOP (SEE NOTES THIS DETAIL)

BACKBONE LEGEND: (THIS DETAIL)

1. TELECOMMUNICATIONS BACKBONE GROUNDING CONDUCTOR.
2. 12 STRANDS OM4 MULTIMODE FIBER OPTIC CABLE.
3. 12 STRANDS SINGLEMODE FIBER OPTIC CABLE.
4. 62.5 MULTIMODE FOR FIRE ALARM.
5. MULTI-PAIR UNSHIELDED TWISTED PAIR COPPER CABLE FOR ANALOG CIRCUITS.

BACKBONE NOTES (THIS DETAIL)

1) NOT USED.
2) NOT USED.
3) THIS DIAGRAM IS INTENDED TO SHOW BACKBONE CABLES REQUIRED BETWEEN MAJOR TERMINATION POINTS IN THIS PROJECT. THIS DIAGRAM IS NOT INTENDED TO INDICATE CABLE OR CONDUCTOR ROUTING OR TERMINATION METHODS OR LOCATIONS. UTILIZE DETAIL DRAWINGS AND FLOORPLANS FOR ADDITIONAL INFORMATION.
4) UNLESS OTHERWISE NOTED, BACKBONE TERMINATIONS SHALL BE AS FOLLOWS: 1] FIBER OPTIC CABLE WILL TERMINATE IN PATCH PANELS IN THE RACKS/CABINETS AT EACH END; 2] UTP COPPER BACKBONE CABLES SHALL TERMINATE ON PATCH PANEL(S) IN THE RACKS AND ON 66-STYLE BLOCKS ON TBB.

DESIGN NOTES: BACKBONE GROUNDING

1) THE BACKBONE DIAGRAM SHALL INDICATE ALL EQUIPMENT AND TELECOMMUNICATIONS ROOMS AS WELL AS ANY OTHER POINTS OF CONNECTIVITY (EXAMPLE, BUILDING ENTRANCE, REMOTE SOURCES, ETC.
2) THE DIAGRAM SHALL INDICATE THE CABLE(S) AND QUANTITIES BETWEEN EACH WIRING LOCATION.
3) NOT USED.
4) THE GROUNDING DIAGRAM REFLECTS A COMPLETE GROUNDING SYSTEM. DIVISION 27 COMMUNICATIONS CONTRACTOR SHALL BE RESPONSIBLE FOR ONLY A PORTION OF THIS SYSTEM AS INDICATED BY THE DASHED LINE; THE REMAINING PORTION SHALL BE THE RESPONSIBILITY OF DIVISION 26.
5) NOT USED.

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Keyplan

GROUNDING AND BACKBONE DIAGRAMS

T6.01

1 BASEMENT FLOOR AUDIO VISUAL PLAN
1/8" = 1'-0"

TELECOM LEGEND

TFP	TECHNICAL FACILITIES PANEL
P	PROJECTOR LOCATION
MON	MONITOR LOCATION
SPK	SPEAKER - WALL MOUNTED
S	SPEAKER - CEILING PENDANT
A/V RACK	EQUIPMENT RACK LOCATION
MIX	MIXING BOARD LOCATION
IC	INTERCOM CONNECTION LOCATION
IS	INTERCOM SPEAKER STATION LOCATION
WA	WIRELESS MICROPHONE ANTENNA LOCATION
HA	HEARING ASSIST ANTENNA LOCATION
LC	LOUDSPEAKER JUNCTION BOX LOCATION
FB	FLOOR BOX LOCATION
VC	VOLUME CONTROL LOCATION
HM	HOUSE MANAGER LOCATION
AUD	AUDIO INPUT LOCATION
TS	TOUCH SCREEN LOCATION
VC	VIDEO CAMERA LOCATION
AP	WIRELESS ACCESS POINT - WALL MOUNTED

SHEET NOTES

1. JBM-0A1 MICROPHONE/LINE LEVEL JUNCTION BOX. PROVIDE 18" x 18" JUNCTION BOX MOUNTED AT 84" A.F.F. PROVIDE TWO (2) 3" CONDUITS TO JBM-1A1.
2. JBS-0A1 SPEAKER JUNCTION BOX. PROVIDE 18" x 18" JUNCTION BOX MOUNTED AT 84" A.F.F. PROVIDE TWO (2) 3" CONDUITS TO JBS-1A1. PROVIDE ONE (1) 1" CONDUIT TO EACH VOLUME CONTROL LOCATION [VC] ON THIS LEVEL.

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CERTIFICATION

Construction Documents

Indiana State University -
Dreiser Hall Renovation

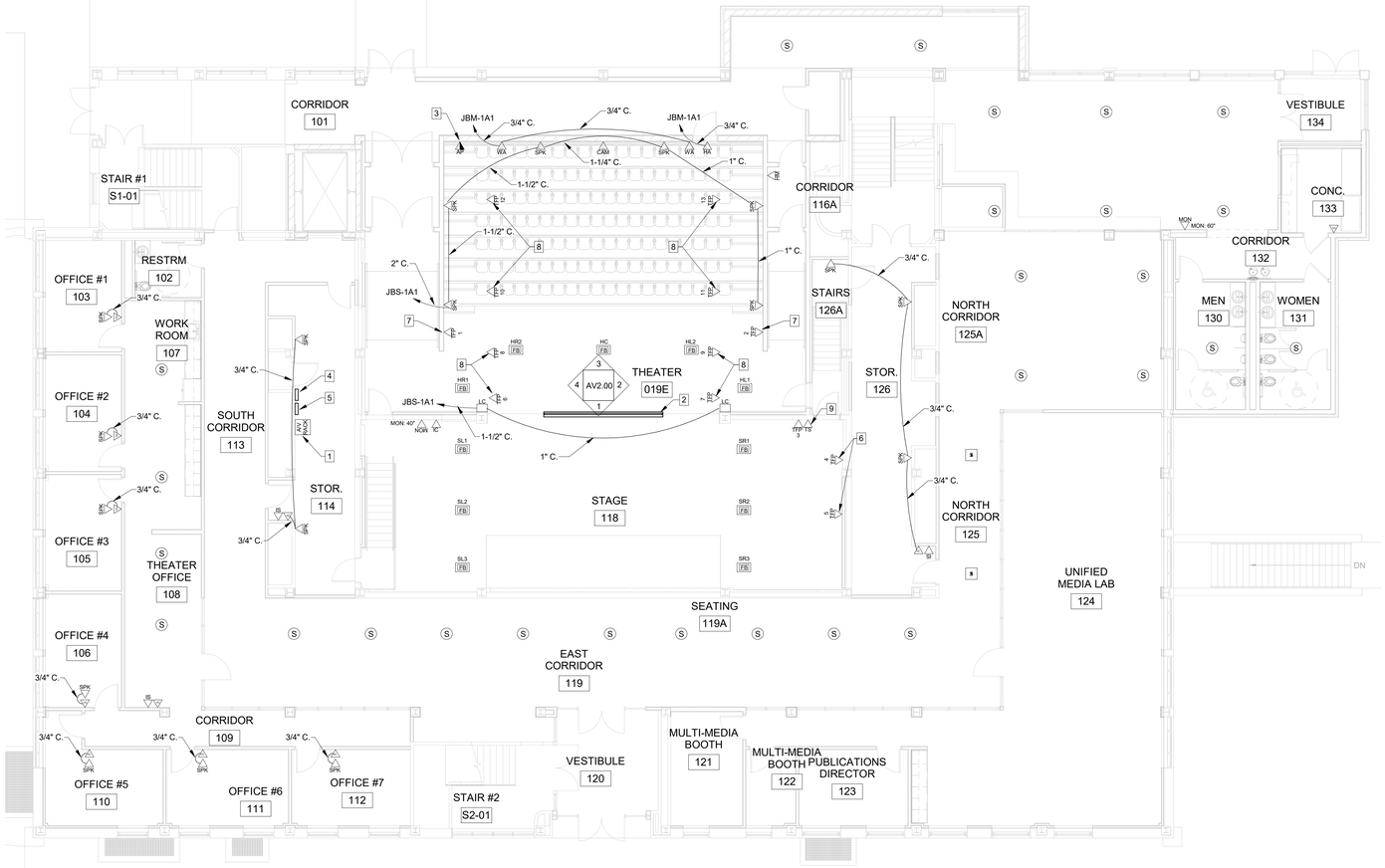
Terre Haute, Indiana 47809

Project No.: 19A052
Drawn By: LAC
Checked By: JJK
Scale: See Drawing
Issue Date: June 5, 2020

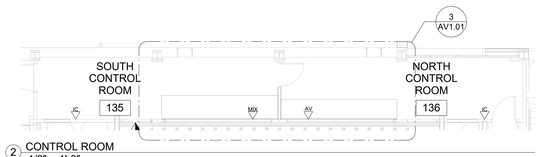
REVISION SCHEDULE		
Rev. #	Revision Description	Issue Date

BASEMENT FLOOR AUDIO VISUAL PLAN

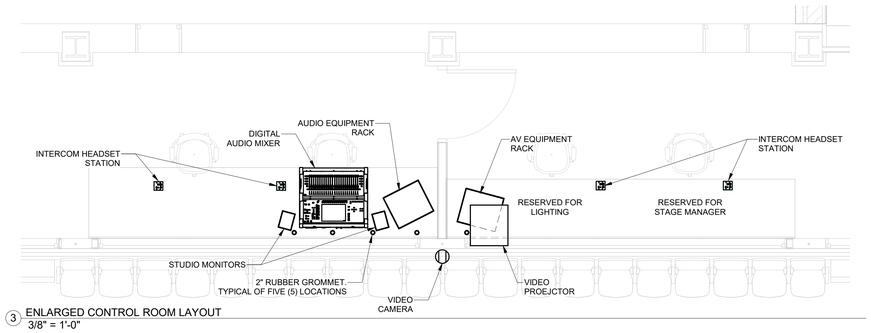
AV1.00



1 1ST FLOOR AUDIO VISUAL PLAN
1/8" = 1'-0"



2 CONTROL ROOM
1/8" = 1'-0"



3 ENLARGED CONTROL ROOM LAYOUT
3/8" = 1'-0"

TELECOM LEGEND

- TFP — TECHNICAL FACILITIES PANEL
- P — PROJECTOR LOCATION
- MON — MONITOR LOCATION
- SPK — SPEAKER - WALL MOUNTED
- S — SPEAKER - CEILING PENDANT
- AV RACK — EQUIPMENT RACK LOCATION
- MIX — MIXING BOARD LOCATION
- IC — INTERCOM CONNECTION LOCATION
- IS — INTERCOM SPEAKER STATION LOCATION
- WA — WIRELESS MICROPHONE ANTENNA LOCATION
- HA — HEARING ASSIST ANTENNA LOCATION
- LC — LOUDSPEAKER JUNCTION BOX LOCATION
- FB — FLOOR BOX LOCATION
- VC — VOLUME CONTROL LOCATION
- HM — HOUSE MANAGER LOCATION
- AIO — AUDIO INPUT LOCATION
- TS — TOUCH SCREEN LOCATION
- VC — VIDEO CAMERA LOCATION
- WAP — WIRELESS ACCESS POINT - WALL MOUNTED

SHEET NOTES

1. THEATER AMPLIFIER EQUIPMENT RACK.
2. 100" H x 160" W RECESSED ELECTRIC PROJECTION SCREEN.
3. WIRELESS ACCESS POINT FOR AUDIO SYSTEM ONLY.
4. JBM-1A1 MICROPHONE/LINE LEVEL JUNCTION BOX. PROVIDE 18" x 18" JUNCTION BOX MOUNTED AT 84" A.F.F. PROVIDE (2) 3" CONDUITS STUBBED WITHIN 6" OF TOP OF AMPLIFIER RACK. COORDINATE FINAL LOCATION IN FIELD.
5. JBS-1A1 SPEAKER JUNCTION BOX. PROVIDE 18" x 18" JUNCTION BOX MOUNTED AT 84" A.F.F. PROVIDE (2) 3" CONDUITS STUBBED WITHIN 6" OF TOP OF AMPLIFIER RACK. PROVIDE (1) 1" CONDUIT TO EACH VOLUME CONTROL [VC] LOCATION ON THIS LEVEL. COORDINATE FINAL LOCATION IN FIELD.
6. AV CONNECTION PLATE FOR THEATER AV CABLING ON FIRST AND SECOND LINE SETS. COORDINATE WITH GENERAL CONTRACTOR, LIGHTING CONTRACTOR, RIGGING CONTRACTOR AND OWNER FOR FINAL LOCATION. TRAVELING CABLING FROM CONNECTION POINT TO LINE SET CABLE MANAGEMENT SYSTEM TO BE PROVIDED AND INSTALLED BY OTHERS.
7. AV CONNECTION PLATE FOR THEATER AV CABLING FOR BOX BOOM LOCATIONS. COORDINATE WITH GENERAL CONTRACTOR, LIGHTING CONTRACTOR, RIGGING CONTRACTOR AND OWNER FOR FINAL LOCATION.
8. AV CONNECTION PLATE FOR THEATER AV CABLING ON FOH LINE SETS MOUNT ON SIDE OF STRUCTURAL BEAM. COORDINATE WITH GENERAL CONTRACTOR, LIGHTING CONTRACTOR, RIGGING CONTRACTOR AND OWNER FOR FINAL LOCATION. TRAVELING CABLING FROM CONNECTION POINT TO LINE SET CABLE MANAGEMENT SYSTEM TO BE PROVIDED AND INSTALLED BY OTHERS.
9. INTEGRATE TOUCHSCREEN INTO STAGE RACK. STAGE RACK PROVIDED AND INSTALLED BY OTHERS. REFERENCE THEATRICAL LIGHTING/RIGGING DRAWINGS FOR ADDITIONAL INFORMATION.

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CERTIFICATION

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Project No.: 19A052
Drawn By: LAC
Checked By: JJK
Scale: See Drawing
Issue Date: June 5, 2020

REVISION SCHEDULE		
Rev. #	Revision Description	Issue Date

1ST FLOOR AUDIO VISUAL PLAN

AV1.01

1 2ND FLOOR AUDIO VISUAL PLAN
1/8" = 1'-0"

TELECOM LEGEND	
TEP	TECHNICAL FACILITIES PANEL
P	PROJECTOR LOCATION
MON	MONITOR LOCATION
SPK	SPEAKER - WALL MOUNTED
S	SPEAKER - CEILING PENDANT
A/V RACK	EQUIPMENT RACK LOCATION
MIX	MIXING BOARD LOCATION
IC	INTERCOM CONNECTION LOCATION
IS	INTERCOM SPEAKER STATION LOCATION
WA	WIRELESS MICROPHONE ANTENNA LOCATION
HA	HEARING ASSIST ANTENNA LOCATION
LC	LOUDSPEAKER JUNCTION BOX LOCATION
FB	FLOOR BOX LOCATION
VC	VOLUME CONTROL LOCATION
HM	HOUSE MANAGER LOCATION
AUD	AUDIO INPUT LOCATION
TS	TOUCH SCREEN LOCATION
CAM	VIDEO CAMERA LOCATION
AP	WIRELESS ACCESS POINT - WALL MOUNTED

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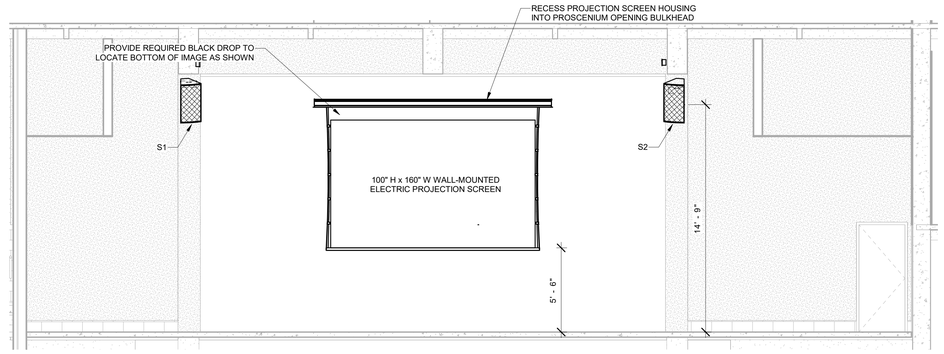
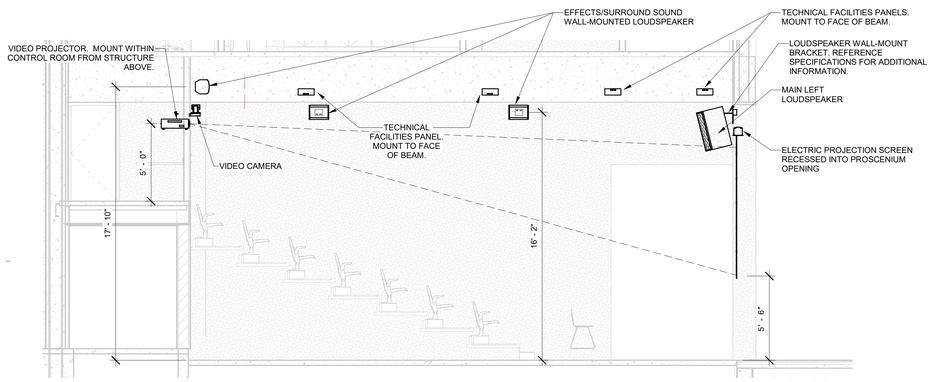
REVISION SCHEDULE		
Rev. #	Revision Description	Issue Date

2ND FLOOR AUDIO VISUAL PLAN

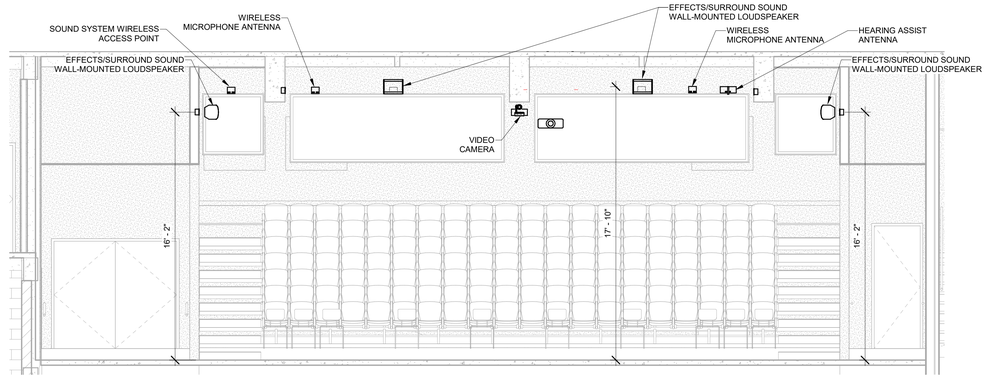
AV1.02



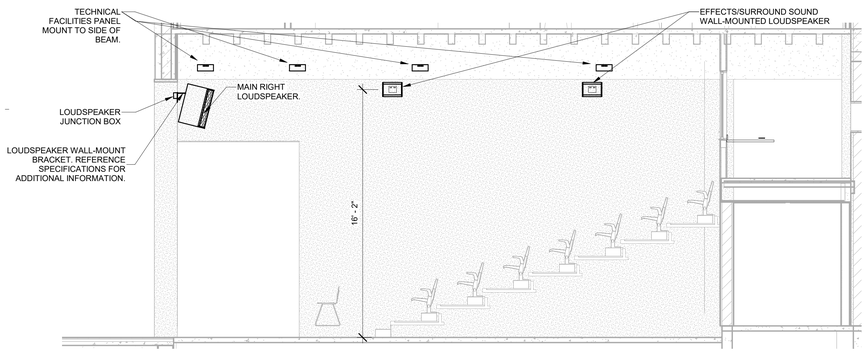
1 THEATRE - EAST ELEVATION
1/4" = 1'-0"



2 THEATRE - NORTH ELEVATION
1/4" = 1'-0"

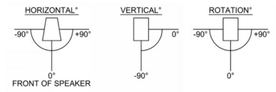


3 THEATRE - WEST ELEVATION
1/4" = 1'-0"



4 THEATRE - SOUTH ELEVATION
1/4" = 1'-0"

SPEAKER AIMING DETAILS			
LOUDSPEAKER	VERTICAL ANGLE	HORIZONTAL ANGLE	ROTATION
S1	-14°	15°	0°
S2	-14°	-15°	0°



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CERTIFICATION

Construction Documents

Indiana State University - Dreiser Hall Renovation

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Project No.: 19A052
Drawn By: LAC
Checked By: JJK
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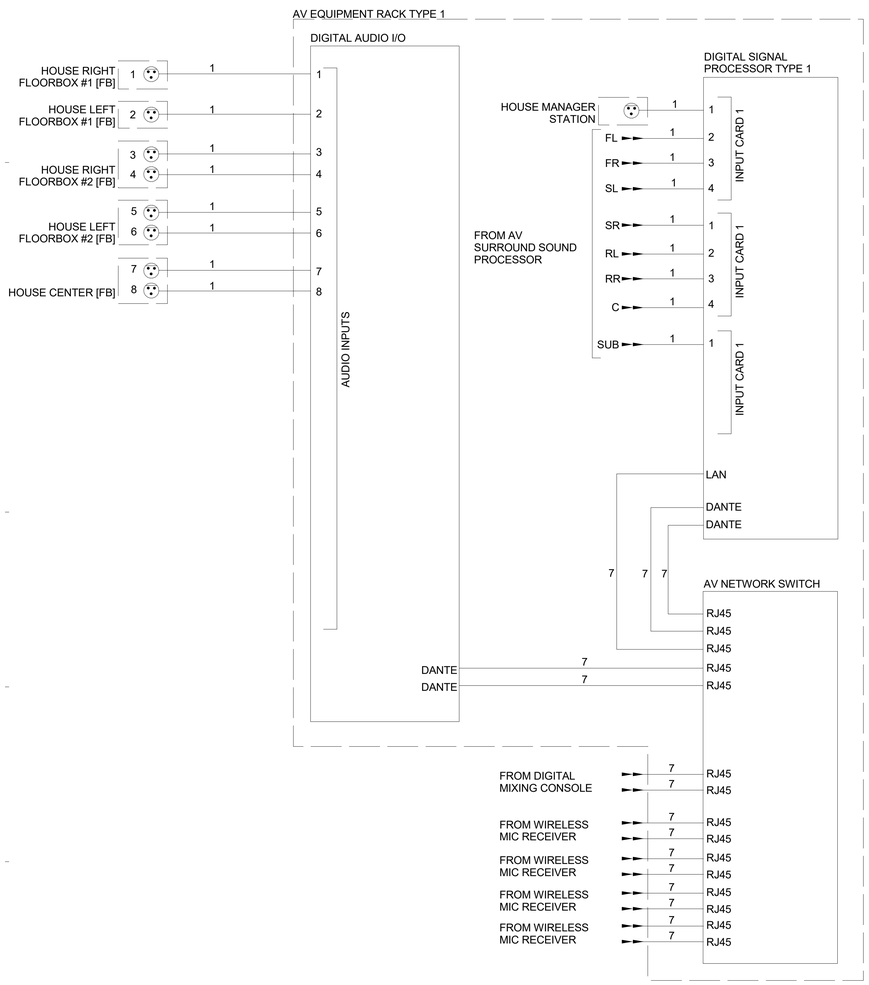
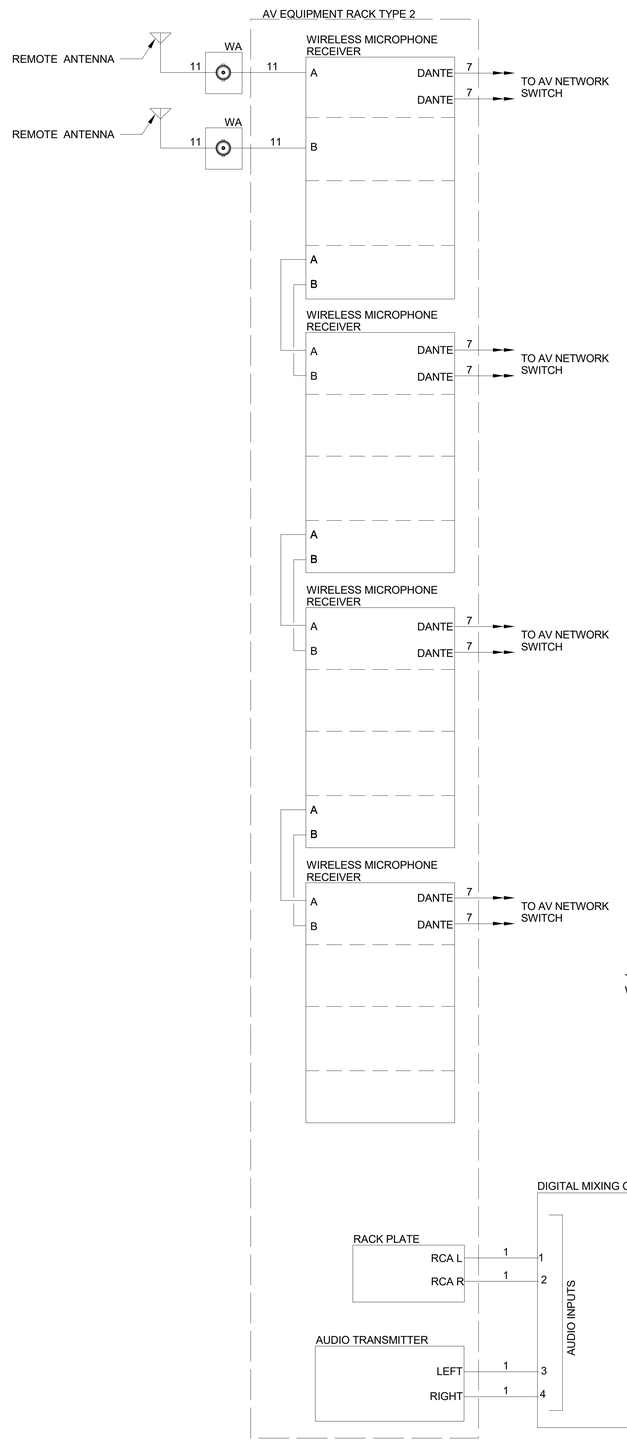
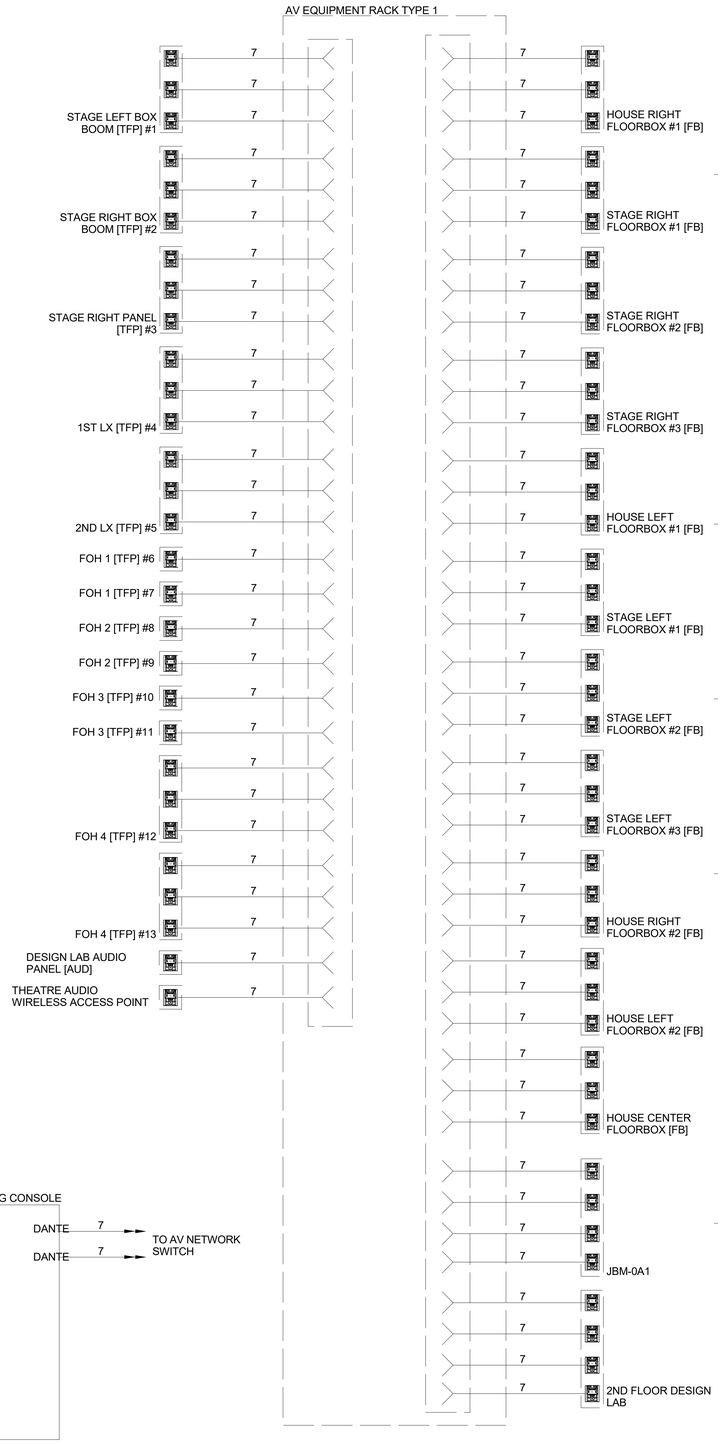
REVISION SCHEDULE		
Rev. #	Revision Description	Issue Date

THEATER ELEVATIONS

AV2.00







CABLING LEGEND

1. BALANCED MICROPHONE / LINE LEVEL CABLING
2. UNBALANCED MICROPHONE / LINE LEVEL CABLING
3. 12AWG LOUDSPEAKER CABLING
4. 16AWG LOUDSPEAKER CABLING
5. HDMI CABLING
6. STP CABLING
7. UTP CABLING
8. MANUFACTURER RECOMMENDED CABLING
9. RS-232 CABLING
10. RELAY CABLING
11. RF CABLING

1 AUDIO HEADEND DIAGRAM
N.T.S.

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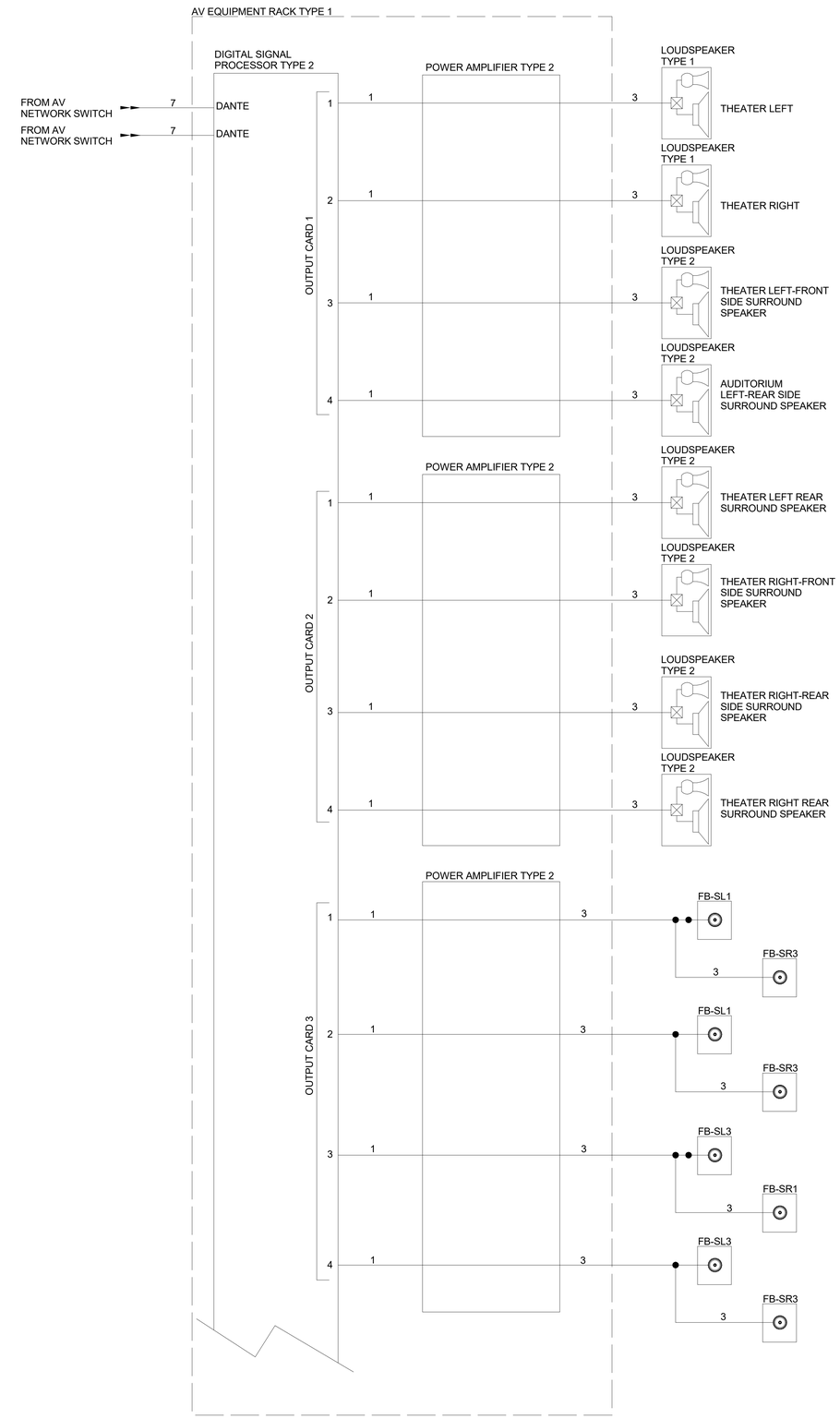
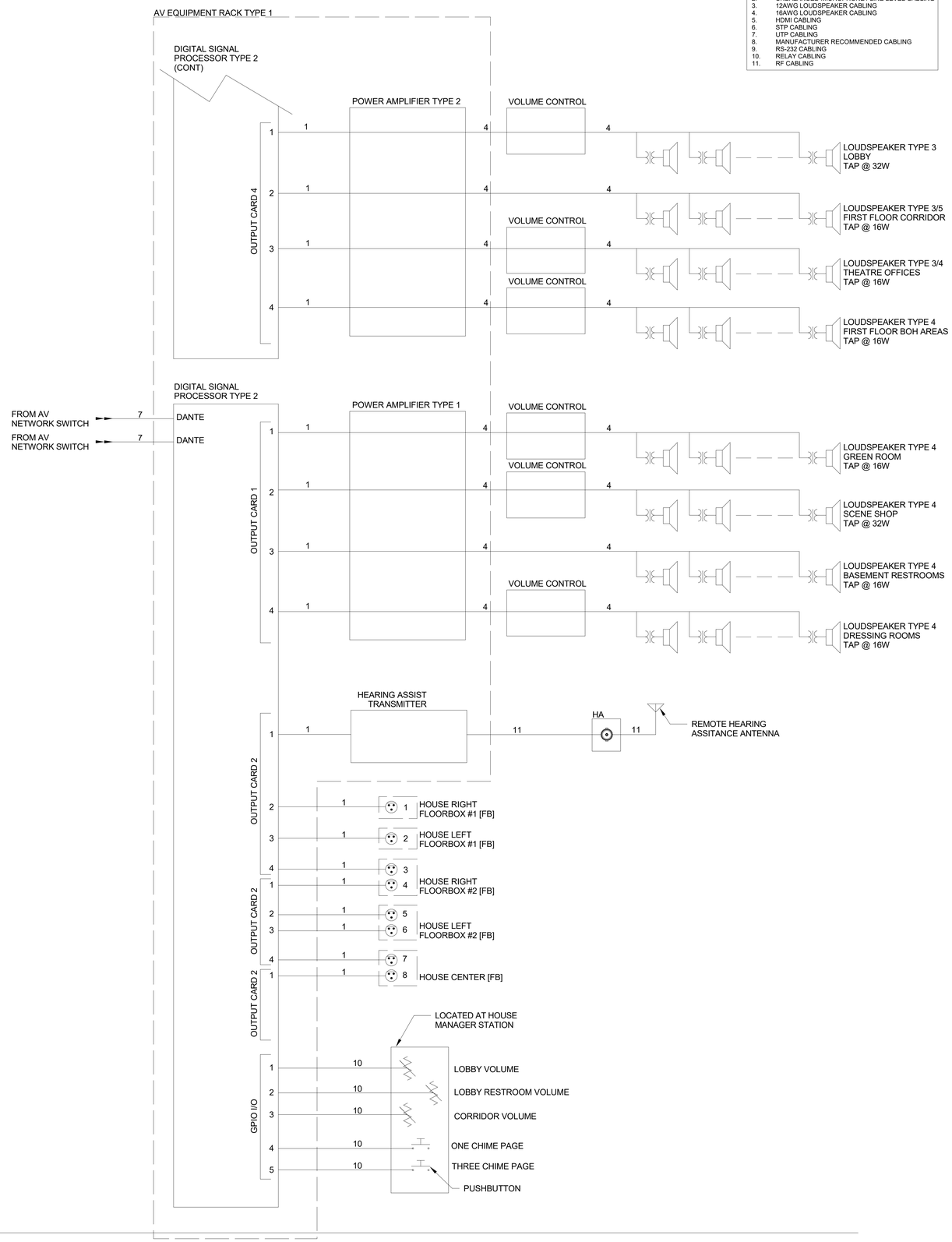
THEATER FUNCTIONAL DIAGRAMS

AV3.00





CABLING LEGEND

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1 LOUDSPEAKER DIAGRAM
N.T.S.

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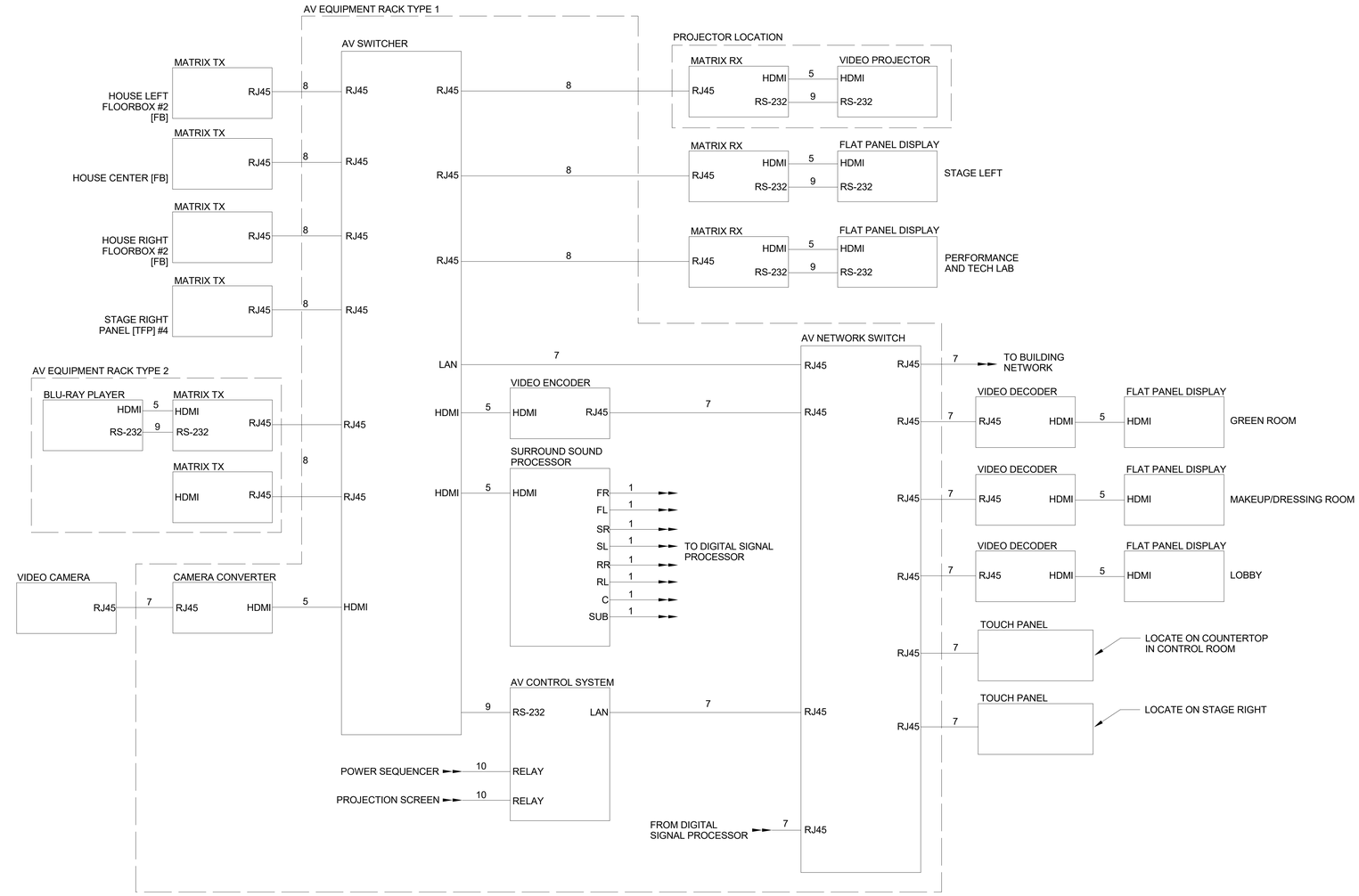
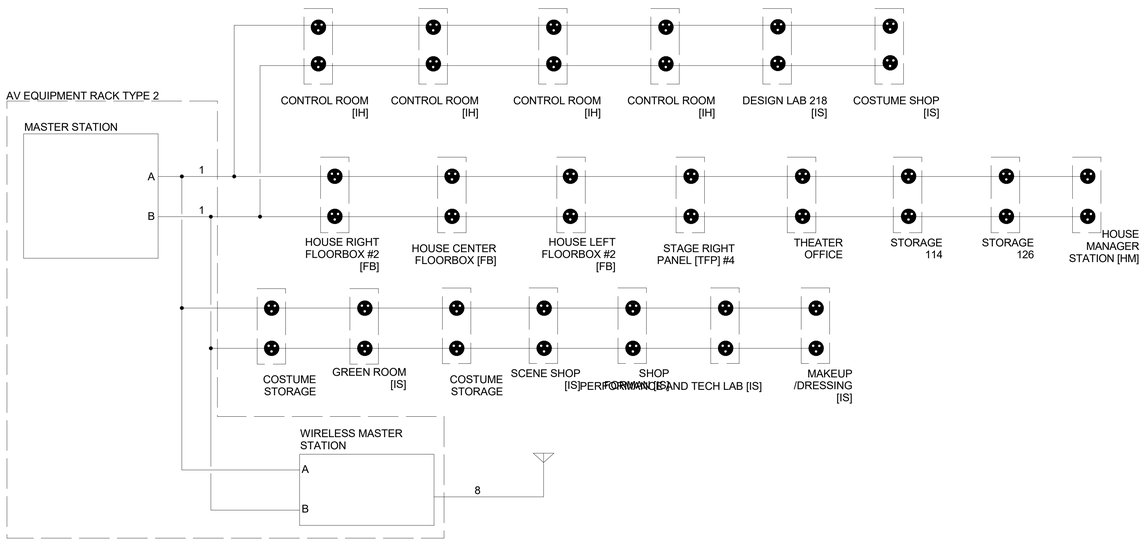
THEATER FUNCTIONAL DIAGRAMS

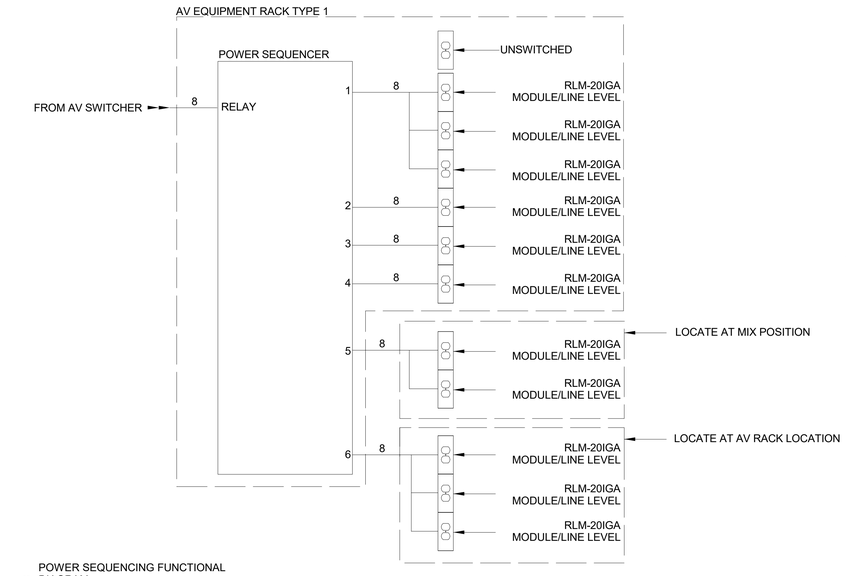
AV3.01



1 AUDIO-VISUAL SYSTEM DIAGRAM
N.T.S.



2 INTERCOM FUNCTIONAL DIAGRAM
N.T.S.



3 POWER SEQUENCING FUNCTIONAL DIAGRAM
N.T.S.

CABLING LEGEND

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2. UNBALANCED MICROPHONE / LINE LEVEL CABLING
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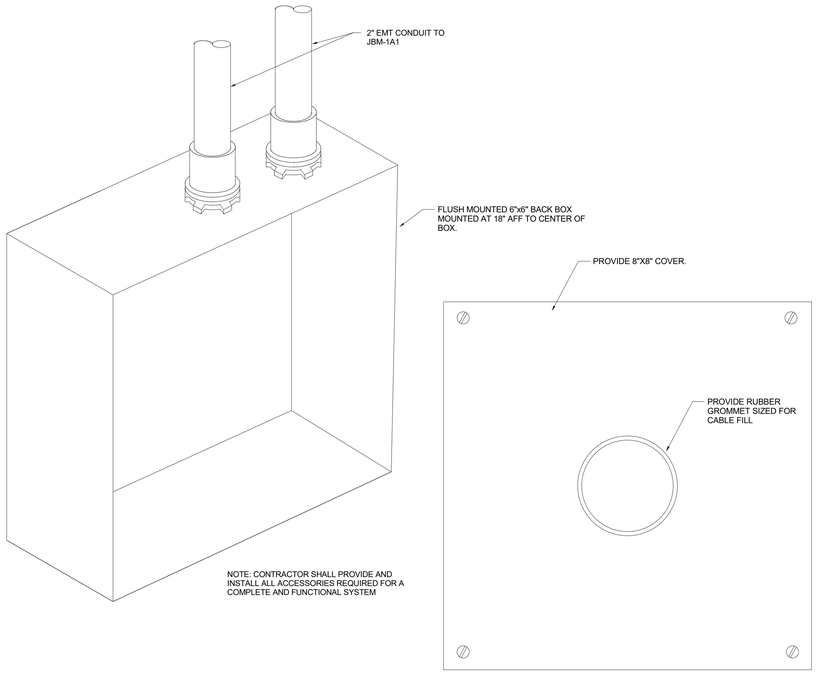
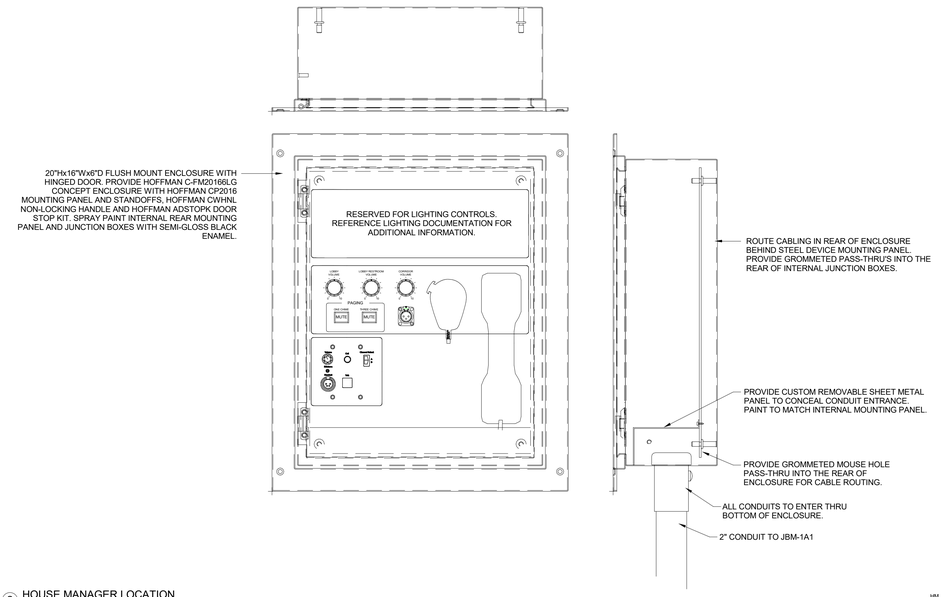
THEATER FUNCTIONAL DIAGRAMS

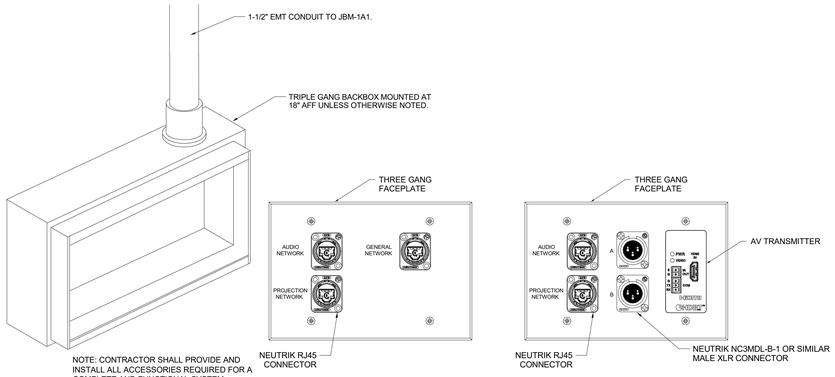
AV3.02



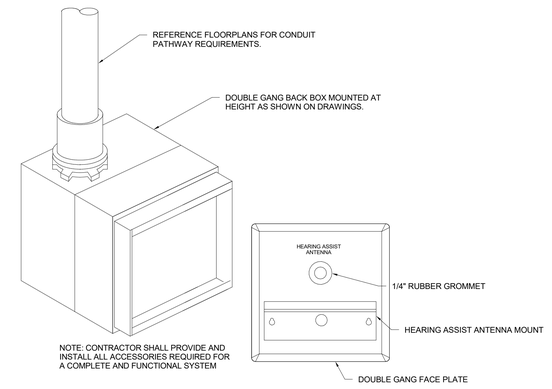
1 MIXING BOARD LOCATION
N.T.S. MIX



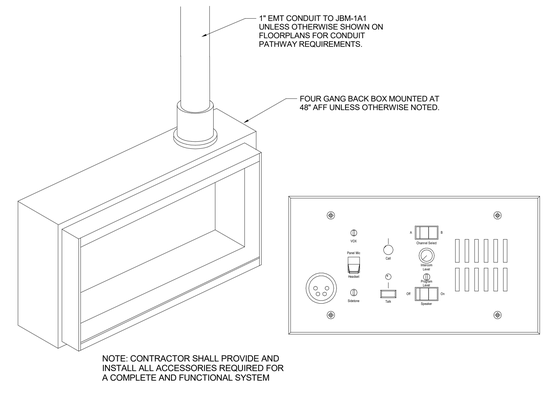
2 HOUSE MANAGER LOCATION
N.T.S. HM



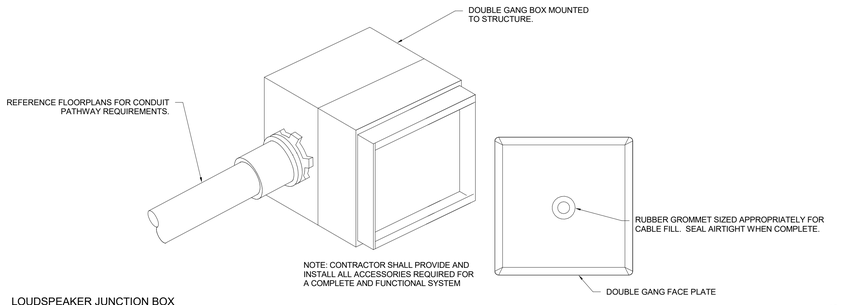
3 TECHNICAL FACILITIES PANEL LOCATION
N.T.S. TFP



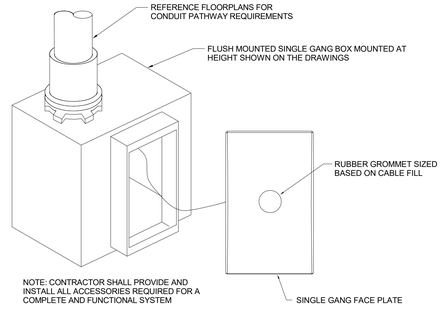
4 HEARING ASSIST ANTENNA LOCATION
N.T.S. HA



5 INTERCOM SPEAKER STATION LOCATION
N.T.S. IS



6 LOUDSPEAKER JUNCTION BOX LOCATION
N.T.S. LC



8 SPEAKER - WALL MOUNTED
N.T.S. SPK

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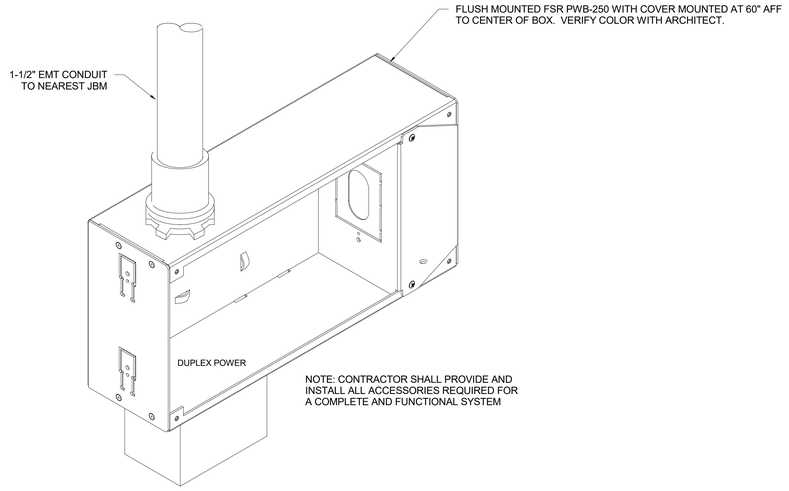
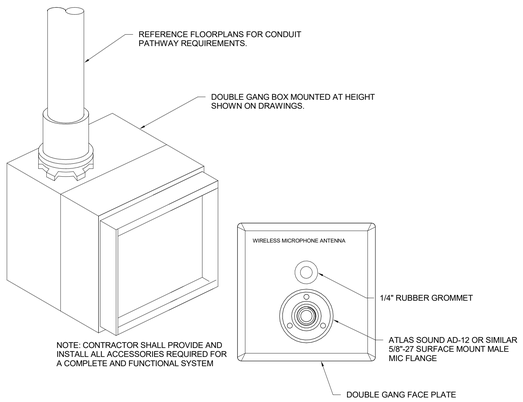
AUDIO VISUAL DETAILS

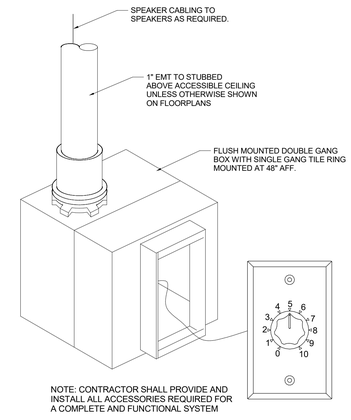
AV4.00



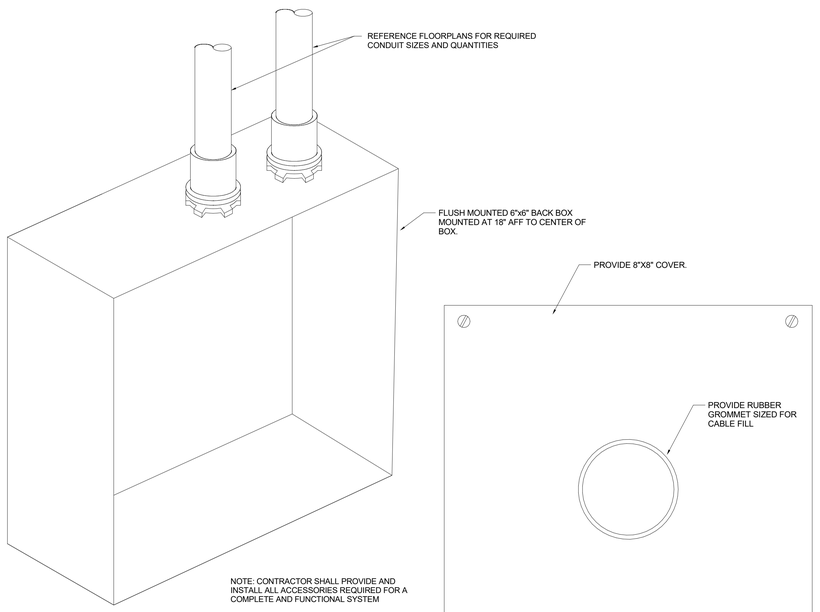
1 MONITOR LOCATION
N.T.S.



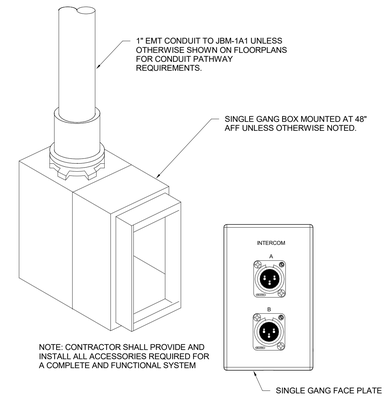
2 WIRELESS MICROPHONE ANTENNA
LOCATION
N.T.S.



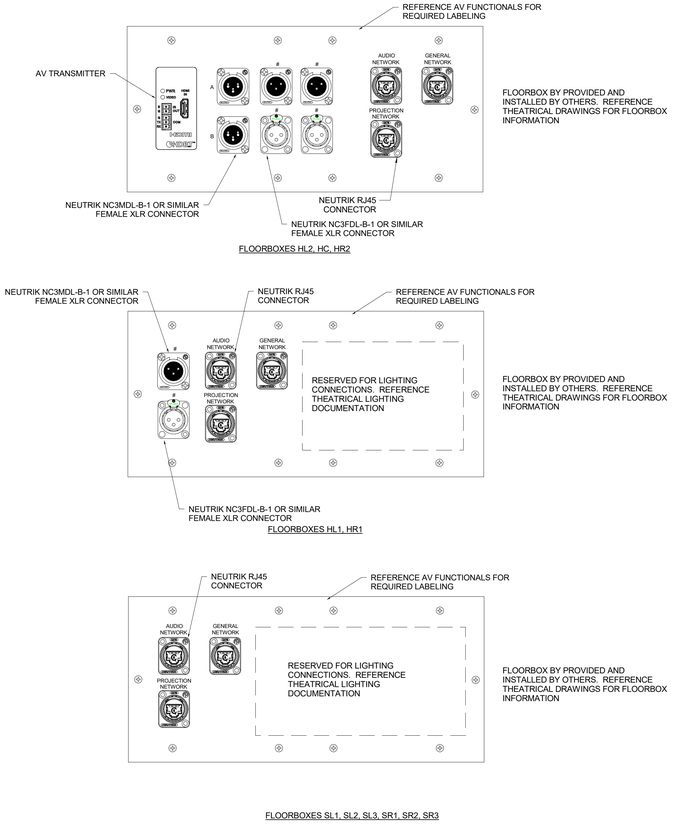
3 VOLUME CONTROL LOCATION
N.T.S.



4 EQUIPMENT RACK LOCATION
N.T.S.



5 INTERCOM CONNECTION LOCATION
N.T.S.



6 FLOOR BOX LOCATION
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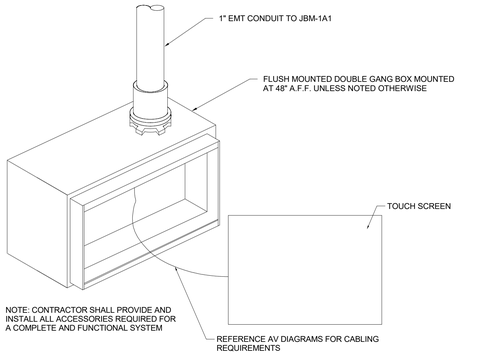
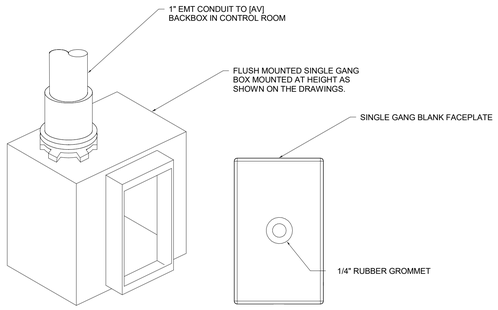
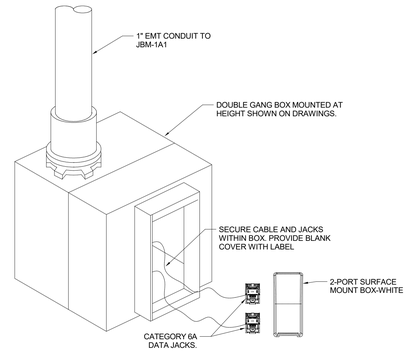


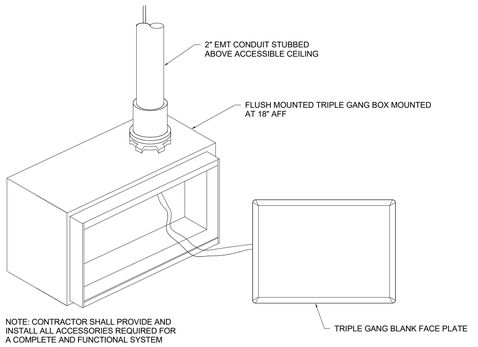
1 TOUCH SCREEN LOCATION
N.T.S.



2 VIDEO CAMERA LOCATION
N.T.S.



3 WIRELESS ACCESS POINT - WALL MOUNTED
N.T.S.



4 AUDIO INPUT LOCATION
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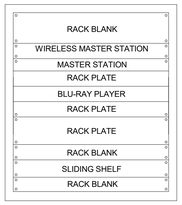
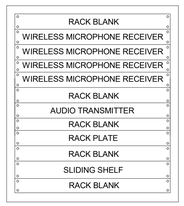
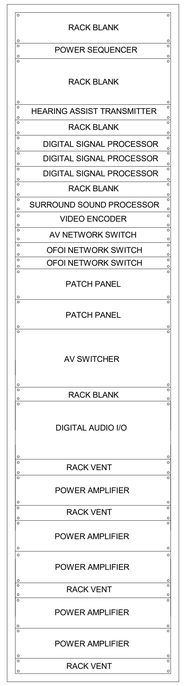


5 NORTH CONTROL ROOM 136 AV EQUIPMENT RACK ELEVATION
N.T.S.



6 SOUTH CONTROL ROOM 135 AUDIO RACK ELEVATION
N.T.S.



7 THEATER AMPLIFIER RACK ELEVATION
N.T.S.

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AUDIO VISUAL DETAILS

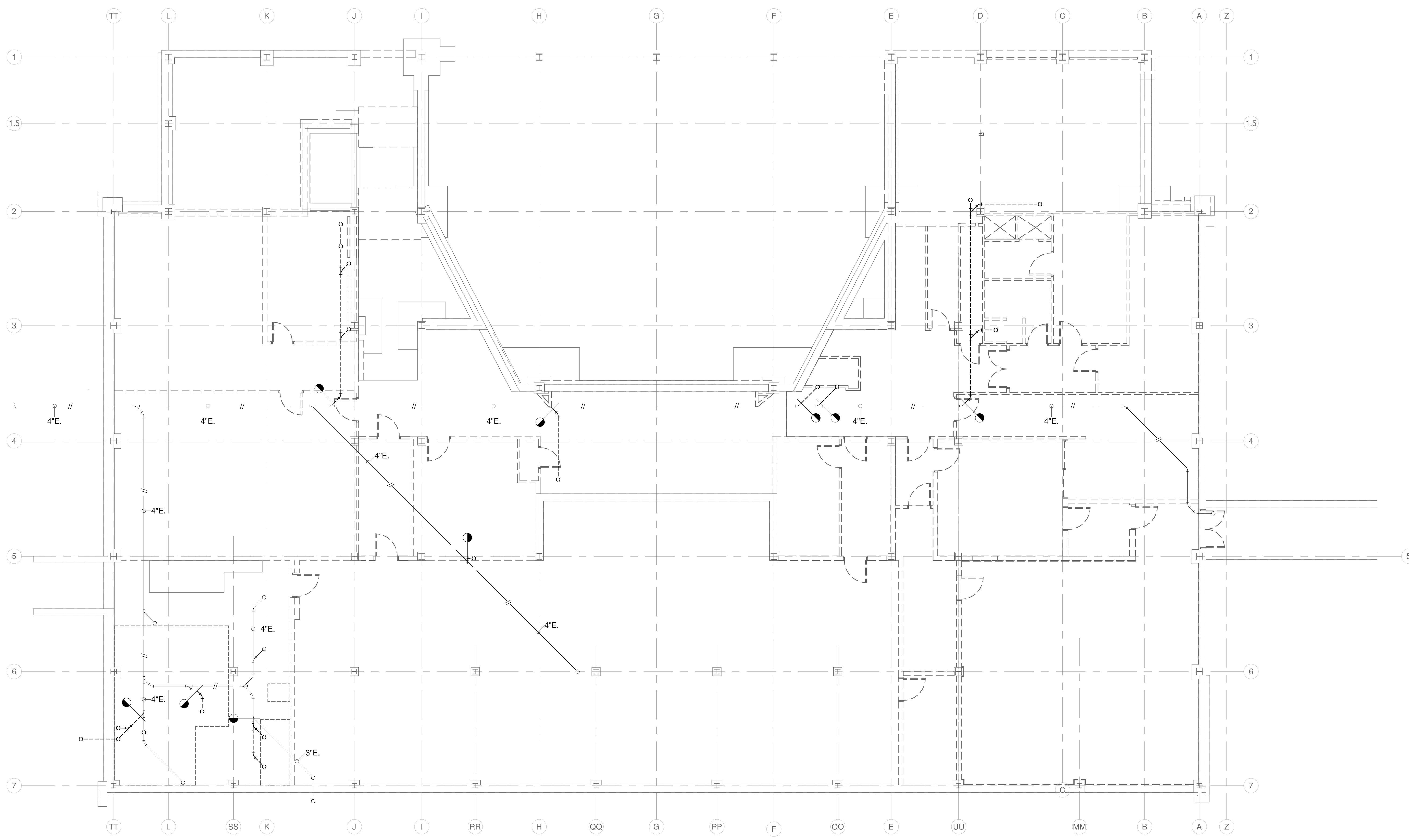
AV4.02

RENOVATION LEGEND:

- WORK TO BE INSTALLED
- WORK TO REMAIN

GENERAL NOTES:

1. THESE NOTES APPLY TO ALL 'P' AND 'PD' SERIES DRAWINGS.
2. ALL UNDERLINED EQUIPMENT IS SCHEDULED. REFER TO DRAWING P-601.
3. REFER TO 'PM' SERIES DRAWINGS FOR SYMBOLS, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.
4. CONTRACTOR SHALL COORDINATE WORK WITH ALL OTHER TRADES PRIOR TO INSTALLATION. CONTACT ENGINEER WITH CONFLICTS OR DISCREPANCIES.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR CORE DRILLING AND CUTTING HOLES THRU WALLS, FLOORS, AND CEILINGS AS REQUIRED TO DEMO OLD WORK, OR INSTALL NEW WORK (WHETHER SHOWN OR NOT).
6. ALL PENETRATIONS THRU RATED CONSTRUCTION TO BE FIRE STOPPED. SEE LIFE SAFETY PLANS.
7. INSULATE ALL PLASTIC PIPING IN RETURN AIR PLENUMS TO MAINTAIN 25/50 FIRE SMOKE RATING AND AS DIRECTED IN SPEC SECTION 200180.
8. ALL PLUMBING SYSTEMS TO BE INSTALLED TO MEET THE REQUIREMENTS OF INDIANA PLUMBING CODE, 2012 (INTERNATIONAL PLUMBING CODE, 2006 WITH INDIANA AMENDMENTS).
9. PIPE ROUTINGS INDICATED ON DRAWINGS ARE DIAGRAMMATIC AND ARE A SUGGESTED METHOD FOR DESIGN. CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL COORDINATION, LAYOUT, CODE COMPLIANCE, AND DESIGN.
10. ALL NEW WORK IS DRAWN DARK. ALL WORK DRAWN LIGHT AND FOLLOWED BY (E.) IS EXISTING.
11. CONTRACTOR SHALL FIELD VERIFY EXISTING PIPE AND EQUIPMENT SIZES, LOCATIONS, ELEVATIONS, MATERIALS, ETC. BEFORE BIDDING OR BEGINNING WORK.
12. CONTRACTOR SHALL COORDINATE SHUT DOWN OF ANY MECHANICAL SYSTEM IN OCCUPIED SPACES WITH THE OWNER, OCCUPANTS OF THE AFFECTED AREA, AND ANY OTHER AUTHORITY HAVING JURISDICTION. COORDINATE WITH PHASING PLANS.
13. PROVIDE TEMPORARY CAPS FOR ALL SERVICES AS REQUIRED SO EXISTING SYSTEMS WILL REMAIN OPERATIONS DURING CONSTRUCTION.
14. CONTRACTORS SHAL LPROTECT ALL EXISTING OWNER FACILITIES DURING CONSTRUCTION. ANY FACILITY DAMAGED OR DISCONNECTED BY CONTRACTOR OPERATIONS SHALL BE FULLY RESTORED TO PREVIOUS OPERATING AND APPEARANCE CONDITION AND AT NO COST TO OWNER.
15. REMOVE ALL PIPE, VALVES, ETC. MADE OBSOLETE AS A RESULT OF NEW CONSTRUCTION.
16. CUT AND PATCH FINISHED SURFACES AS REQUIRED TO COMPLETE DEMOLITION WORK. PATCH SHALL MATCH ADJACENT SURFACES.
17. THOROUGHLY REVIEW ALL DRAWINGS PRIOR TO ANY DEMOLITION WORK. ANY ITEMS REMOVED ACCIDENTALLY SHALL BE REPLACED AT NO ADDITIONAL COST TO OWNER.
18. DISPOSAL OF DEMOLISHED MATERIALS SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
19. PIPING SUPPLIES TO FIXTURES ARE SAME SIZE AS INDICATED IN ROUGH-IN SCHEDULE UNLESS OTHERWISE NOTED IN DRAWINGS.
20. FURNISH AND INSTALL ALL ITEMS NECESSARY TO MEET THE REQUIREMENTS OF UTILITY COMPANY AND LOCAL MUNICIPALITY INSTLLATION INSTRUCTION WHETHER SHOWN ON DRAWINGS AND IN SPECIFICATIONS OR NOT.
21. CONTRACTOR TO PATCH ALL HOLES IN FLOORS AND WALLS (THAT ARE TO REMAIN) LEFT BEHIND FROM DEMOLITION WORK. PATCH TO MATCH EXISTING SURFACES.
22. TO ABANDONED PIPE, VALVES, FITTINGS, ETC. WILL BE ALLOWED TO REMAIN.



FOUNDATION PLAN - PLUMBING DEMOLITION

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

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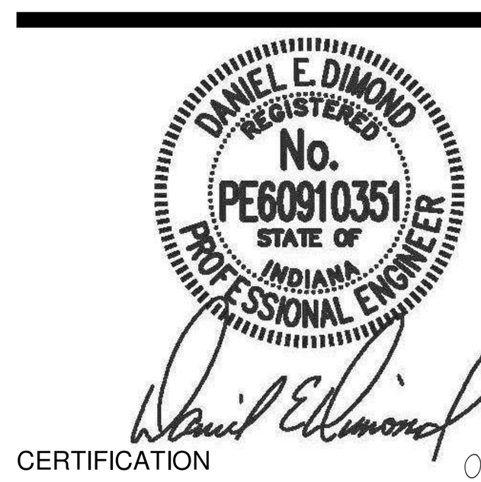

CERTIFICATION 06/05/2020

100% CONSTRUCTION DOCUMENTS

Indiana State University - Dreiser Hall Renovation

221 North 6th Street
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Project No.: 19A052
Drawn By: VLC
Checked By: WAE
Scale: See Drawing
Issue Date: 06/05/2020

REVISION SCHEDULE		
Rev. #	Revision Description	Issue Date

FOUNDATION PLAN - PLUMBING DEMOLITION

PD1.00

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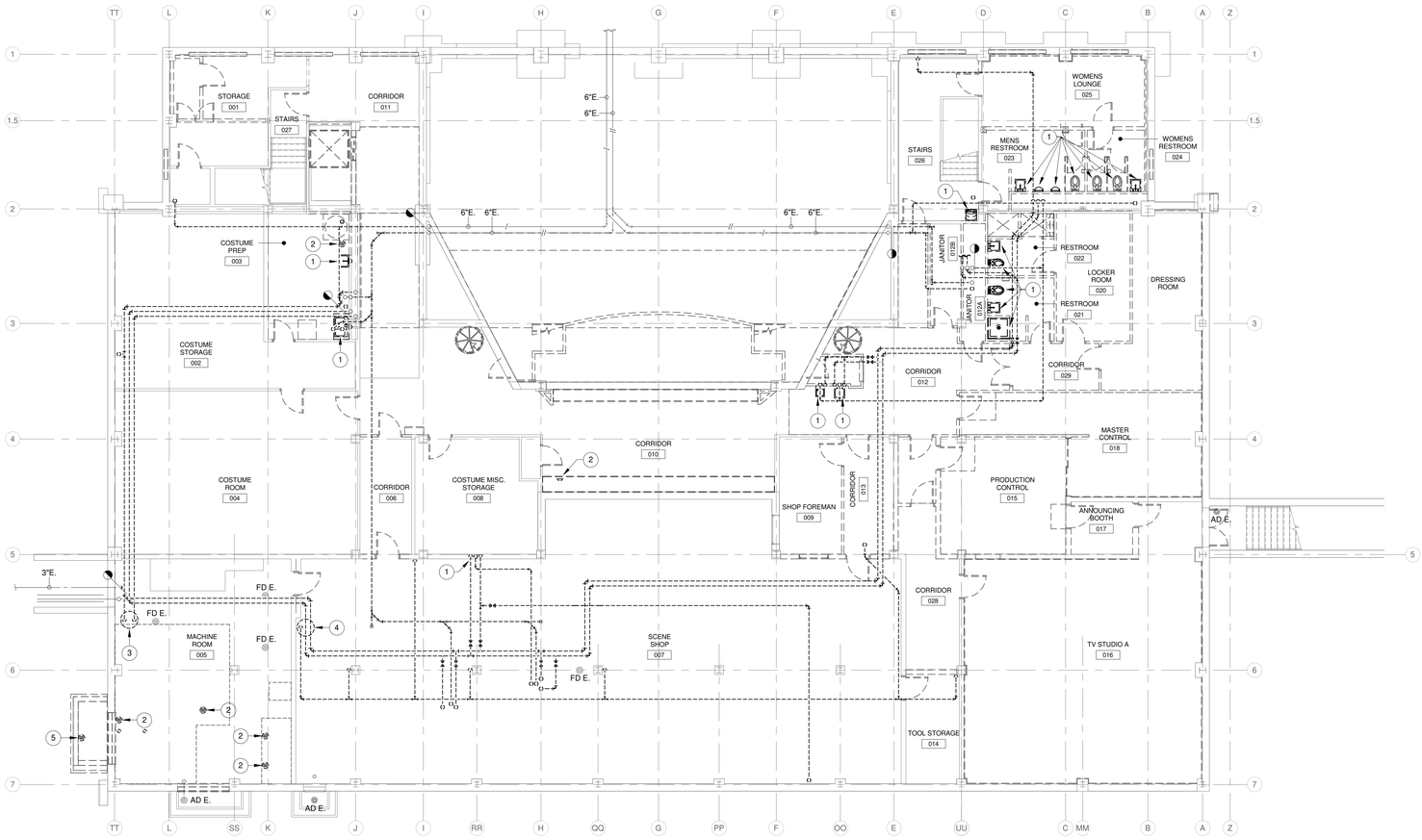

BASEMENT PLAN - PLUMBING DEMOLITION

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

NORTH

RENOVATION LEGEND:

WORK TO BE INSTALLED

WORK TO REMAIN

GENERAL NOTES:

1. REFER TO SHEET PD1.00 FOR GENERAL NOTES.

(#) PLAN NOTES:

1. DISCONNECT AND REMOVE PLUMBING FIXTURE, CARRIER, TRIM, AND ASSOCIATED WATER, WASTE AND VENT PIPING COMPLETE.
2. DISCONNECT AND REMOVE FLOOR DRAIN AND ASSOCIATED WASTE PIPING COMPLETE. CUT AND PATCH FLOOR TO MATCH EXISTING.
3. DISCONNECT AND REMOVE WATER HEATER AND ASSOCIATED WATER PIPING COMPLETE.
4. DISCONNECT AND REMOVE AIR COMPRESSOR AND ASSOCIATED COMPRESSED AIR PIPING COMPLETE.
5. DISCONNECT AND REMOVE AREA DRAIN AND ASSOCIATED STORM PIPING COMPLETE.

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BASEMENT PLAN - PLUMBING DEMOLITION

PD2.00

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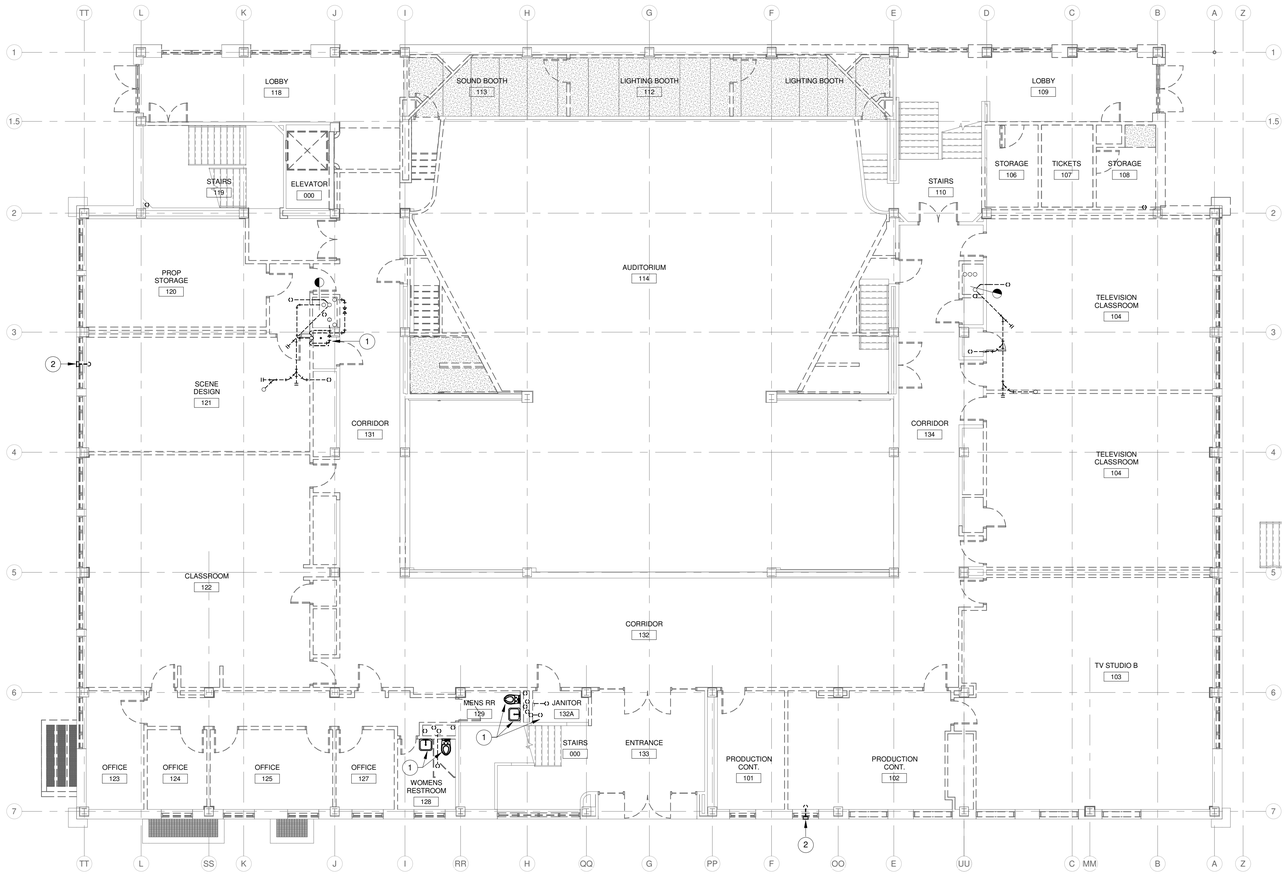

FIRST FLOOR PLAN - PLUMBING DEMOLITION

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

NORTH

RENOVATION LEGEND:

WORK TO BE INSTALLED

WORK TO REMAIN

GENERAL NOTES:

1. REFER TO SHEET PD1.00 FOR GENERAL NOTES.

(#) PLAN NOTES:

1. DISCONNECT AND REMOVE PLUMBING FIXTURE, CARRIER, TRIM, AND ASSOCIATED WATER, WASTE AND VENT PIPING COMPLETE.
2. REMOVE WALL HYDRANT AND ASSOCIATED COLD WATER PIPE COMPLETE. PATCH WALL OPENING TO MATCH EXISTING.

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FIRST FLOOR PLAN - PLUMBING DEMOLITION

PD2.01

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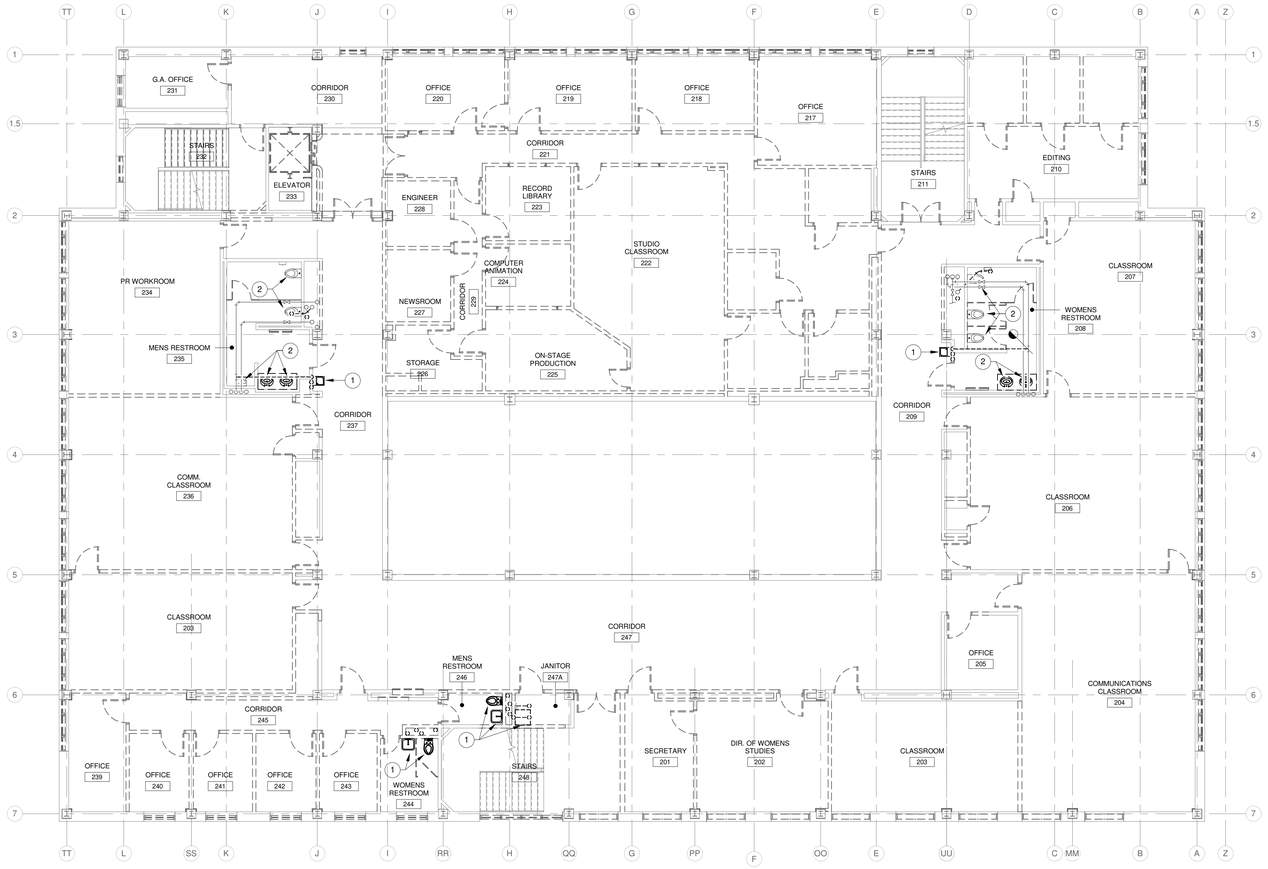

SECOND FLOOR PLAN - PLUMBING DEMOLITION

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

NORTH

RENOVATION LEGEND:

WORK TO BE INSTALLED

WORK TO REMAIN

GENERAL NOTES:

1. REFER TO SHEET PD1.00 FOR GENERAL NOTES.

(#) PLAN NOTES:

1. DISCONNECT AND REMOVE PLUMBING FIXTURE, CARRIER, TRIM, AND ASSOCIATED WATER, WASTE AND VENT PIPING COMPLETE.
2. PLUMBING FIXTURE AND TRIM TO REMAIN.

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SECOND FLOOR PLAN - PLUMBING DEMOLITION

PD2.02

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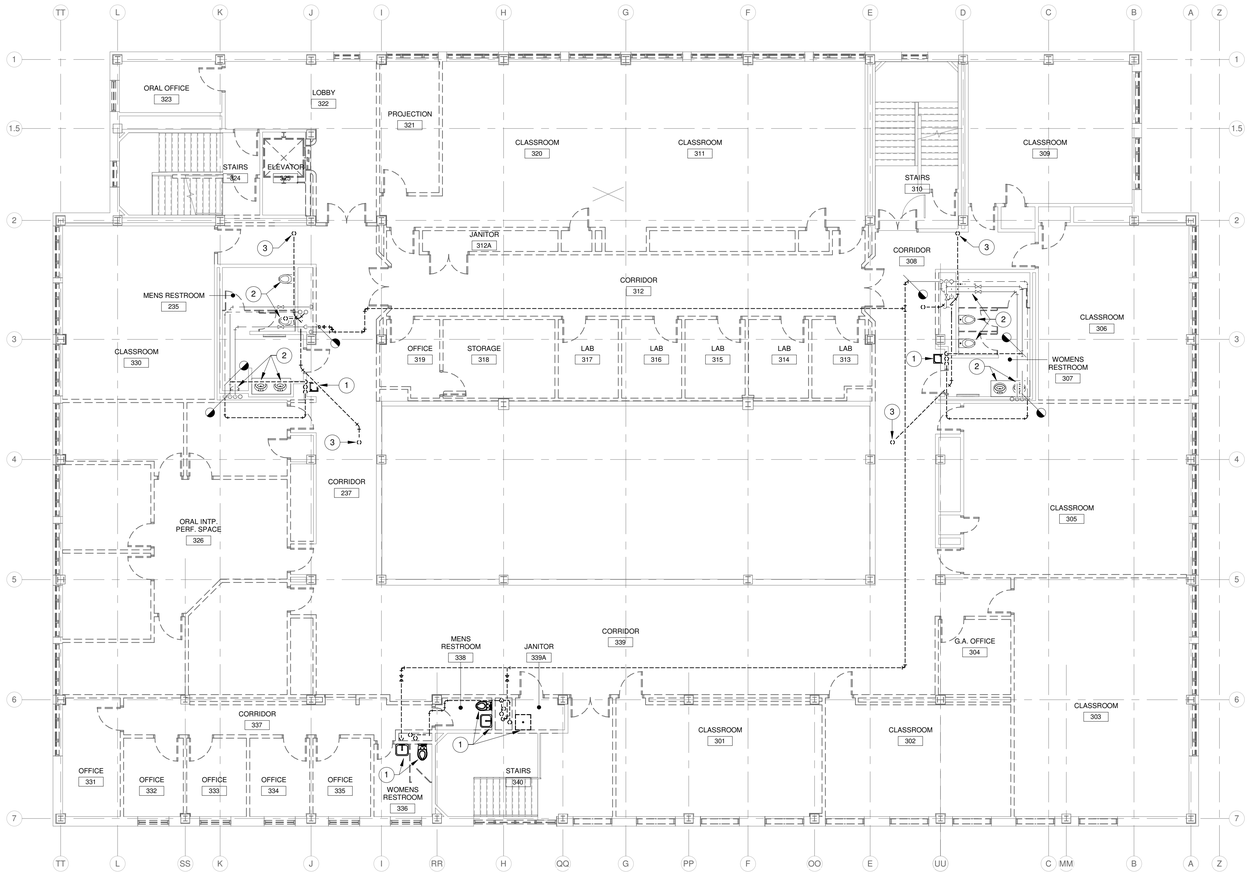

THIRD FLOOR PLAN - PLUMBING DEMOLITION

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

NORTH

RENOVATION LEGEND:

WORK TO BE INSTALLED

WORK TO REMAIN

GENERAL NOTES:

1. REFER TO SHEET PD1.00 FOR GENERAL NOTES.

(#) PLAN NOTES:

1. DISCONNECT AND REMOVE PLUMBING FIXTURE, CARRIER, TRIM, AND ASSOCIATED WATER, WASTE AND VENT PIPING COMPLETE.
2. PLUMBING FIXTURE AND TRIM TO REMAIN.
3. DISCONNECT AND REMOVE ROOF DRAIN AND ASSOCIATED STORM PIPING COMPLETE.

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THIRD FLOOR PLAN - PLUMBING DEMOLITION

PD2.03

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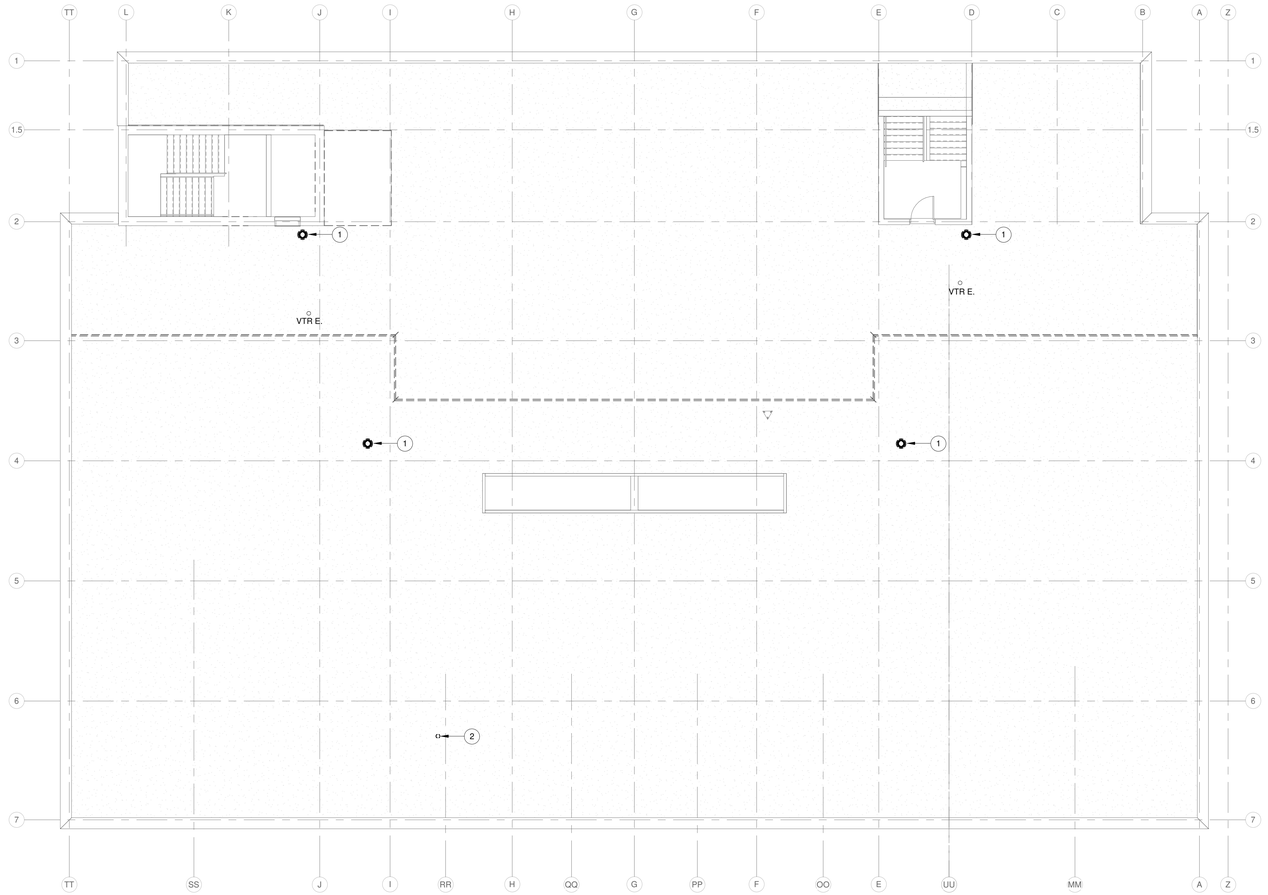

ROOF PLAN - PLUMBING DEMOLITION

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

NORTH

RENOVATION LEGEND:

WORK TO BE INSTALLED

WORK TO REMAIN

GENERAL NOTES:

1. REFER TO SHEET PD1.00 FOR GENERAL NOTES.

(#) PLAN NOTES:

1. DISCONNECT AND REMOVE ROOF DRAIN AND ASSOCIATED STORM PIPING COMPLETE. PATCH ROOF OPENING TO MATCH EXISTING.
2. REMOVE VENT STACK AND ASSOCIATED PIPING COMPLETE. PATCH ROOF OPENING TO MATCH EXISTING.

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ROOF PLAN - PLUMBING DEMOLITION

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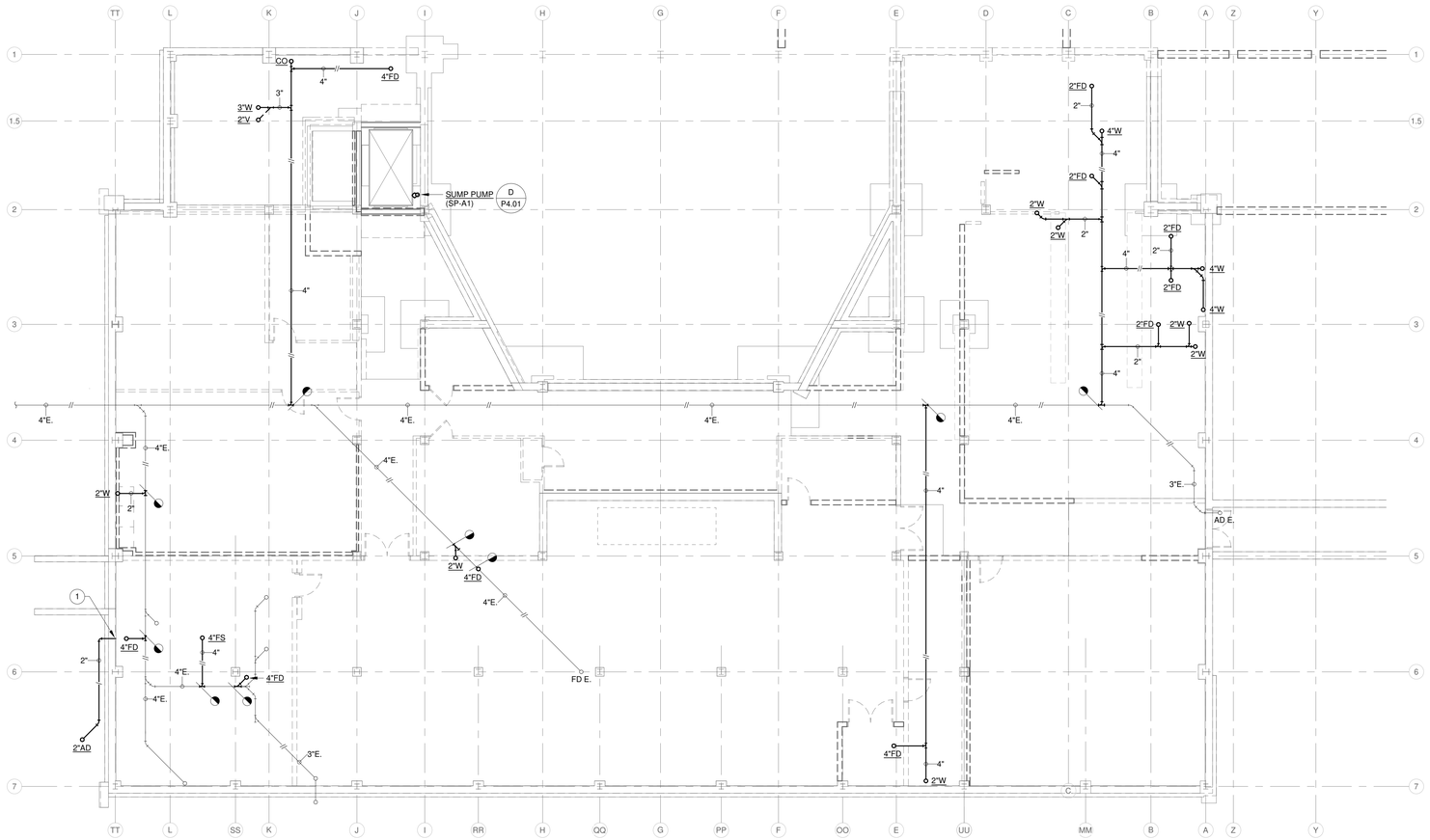

FOUNDATION PLAN - PLUMBING

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

NORTH

RENOVATION LEGEND:

- WORK TO BE INSTALLED
- WORK TO REMAIN

GENERAL NOTES:

1. REFER TO SHEET PD1.00 FOR ADDITIONAL GENERAL NOTES.
2. SAW CUT AND PATCH FLOORS AS REQUIRED TO COMPLETE WORK. PATCH SHALL MATCH ADJACENT SURFACES. (E P4.01)
3. CONTRACTOR SHALL INCLUDE IN THEIR BIDS COSTS TO JET CLEAN ALL EXISTING UNDERSLAB DRAINAGE PIPING THAT IS BEING REUSED. RECORD PROCESS AFTERWARDS TO ENSURE COMPLETE OPENNESS.

(#) PLAN NOTES:

1. ROUTE 2" STORM FROM AREA DRAIN THRU BASEMENT WALL AND TERMINATE INDIRECTLY OVER FLOOR DRAIN. PROVIDE LINK-SEAL AT WALL PENETRATION.

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P1.00

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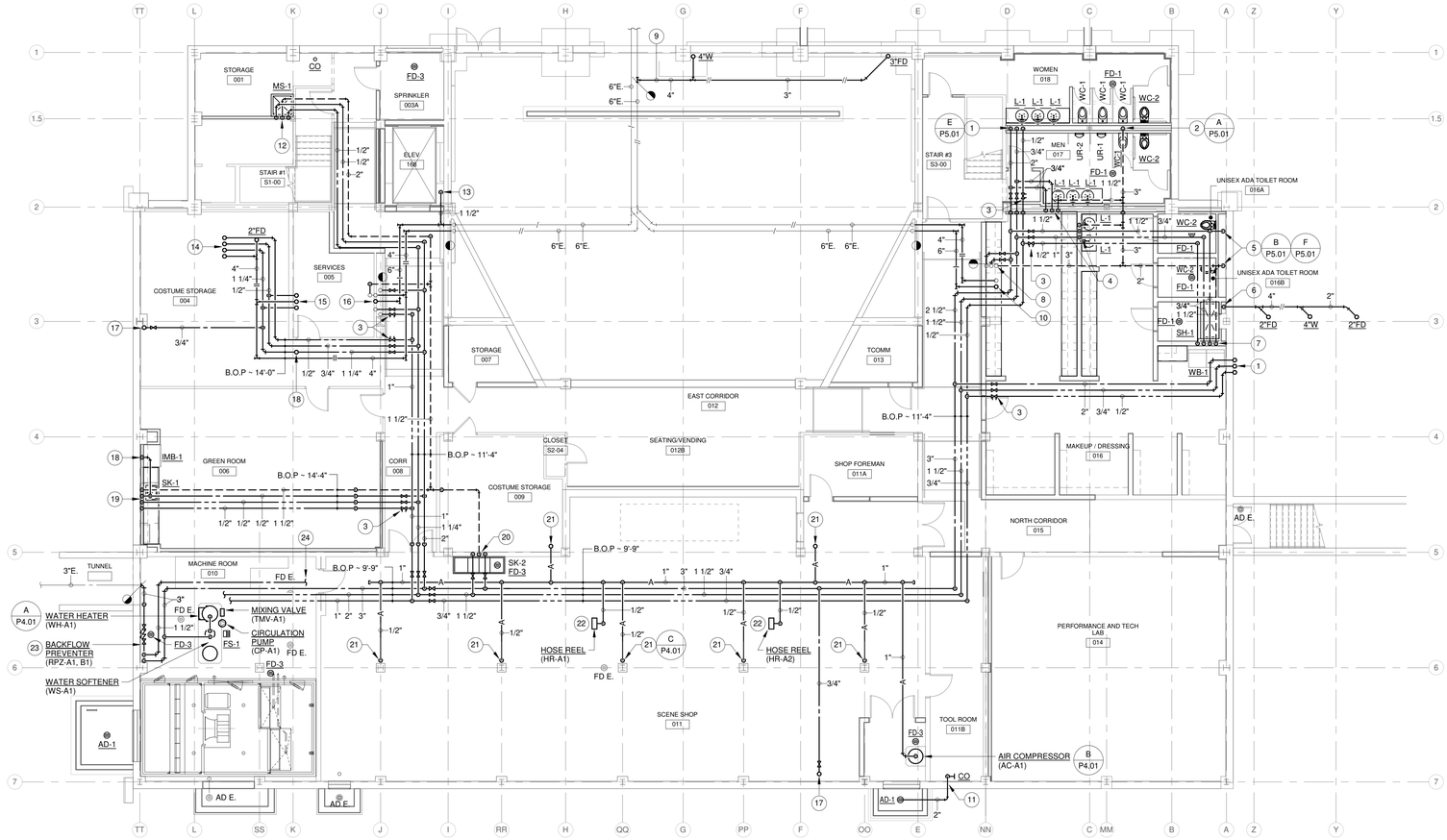

BASEMENT PLAN - PLUMBING

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

NORTH

RENOVATION LEGEND:

- WORK TO BE INSTALLED
- WORK TO REMAIN

GENERAL NOTES:

1. REFER TO SHEET PD1.00 FOR GENERAL NOTES.

(#) PLAN NOTES:

1. 2" COLD WATER, 3/4" HOT WATER, 1/2" HOT WATER RETURN.
2. 4" WASTE, 3" VENT.
3. THERMOSTATIC ZONE VALVE.
4. 3/4" HOT AND COLD WATER, 1 1/2" WASTE, 1 1/2" VENT.
5. 1 1/2" COLD WATER, 4" WASTE, 2" VENT.
6. 4" WASTE. PROVIDE LINK-SEAL AT WALL PENETRATION.
7. 3/4" HOT AND COLD WATER, 1/2" HOT WATER RETURN, 2" WASTE, 1 1/2" VENT. EXTEND 1/2" HOT AND COLD WATER TO SHOWER, 1/2" HOT AND COLD WATER, 2" WASTE, 1 1/2" VENT TO WASHER BOX.
8. CONNECT 2" COLD WATER, 1 1/4" HOT WATER, 3" VENT TO EXISTING RISERS.
9. ALL WASTE PIPING SERVING CRAFTS ROOM 222 FIXTURES TO BE INSTALLED WITH SCHEDULE 40 CPVC AND DWV FITTINGS. SYSTEM SHALL BE EQUAL TO CHARLOTTE CHEMDRAIN.
10. CONNECT 4" WASTE TO EXISTING STACK, 6" STORM CONDUCTOR.
11. ROUTE 2" STORM FROM AREA DRAIN THRU BASEMENT WALL AT APPROXIMATELY 6'-6" ABOVE FLOOR. PROVIDE LINK-SEAL AT WALL PENETRATION.
12. 1/2" HOT AND COLD WATER, 3" WASTE, 2" VENT.
13. 1 1/2" PUMP DISCHARGE FROM ELEVATOR SUMP PUMP.
14. 1 1/4" COLD WATER, 1/2" HOT WATER, 1/2" HOT WATER RETURN, 4" WASTE.
15. 1/2" HOT AND COLD WATER, 1 1/2" WASTE.
16. CONNECT 2" COLD WATER, 1 1/4" HOT WATER, 1" HOT WATER RETURN, 4" WASTE, 2" VENT TO EXISTING STACKS AND RISERS. NEW 6" STORM CONDUCTOR.
17. 3/4" COLD WATER.
18. 1/2" COLD WATER.
19. 1/2" HOT AND COLD WATER, 1/2" HOT WATER RETURN, 1 1/2" WASTE, 1 1/2" VENT.
20. 1/2" HOT AND COLD WATER, 2" WASTE, 1 1/2" VENT. EXTEND 1/2"HOT AND COLD WATER TO EACH FAUCET.
21. 1/2" COMPRESSED AIR.
22. INSTALL HOSE REEL CENTERED OVER OWNER FURNISHED WORK TABLE. ROUGH-IN WITH FILTER REGULATOR.
23. RACK BACKFLOW PREVENTERS ON WALL UNDER STEAM PRV STATION. REFER TO DRAWING M3.01 FOR ADDITIONAL INFORMATION.
24. REFER TO HVAC DRAWINGS FOR CONTINUATION OF 1 1/2" MAKE-UP WATER PIPING.

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CERTIFICATION 06/05/2020

100% CONSTRUCTION DOCUMENTS

Indiana State University - Dreiser Hall Renovation

221 North 6th Street
Terre Haute, IN 47809

Project No.: 19A052
Drawn By: VLC
Checked By: WAE
Scale: See Drawing
Issue Date: 06/05/2020

REVISION SCHEDULE		
Rev. #	Revision Description	Issue Date

BASEMENT PLAN - PLUMBING

P2.00

0 2 4 6 8 16 24 32
1 2 3 4

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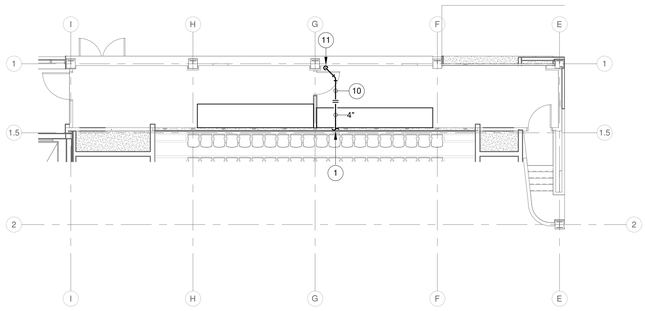
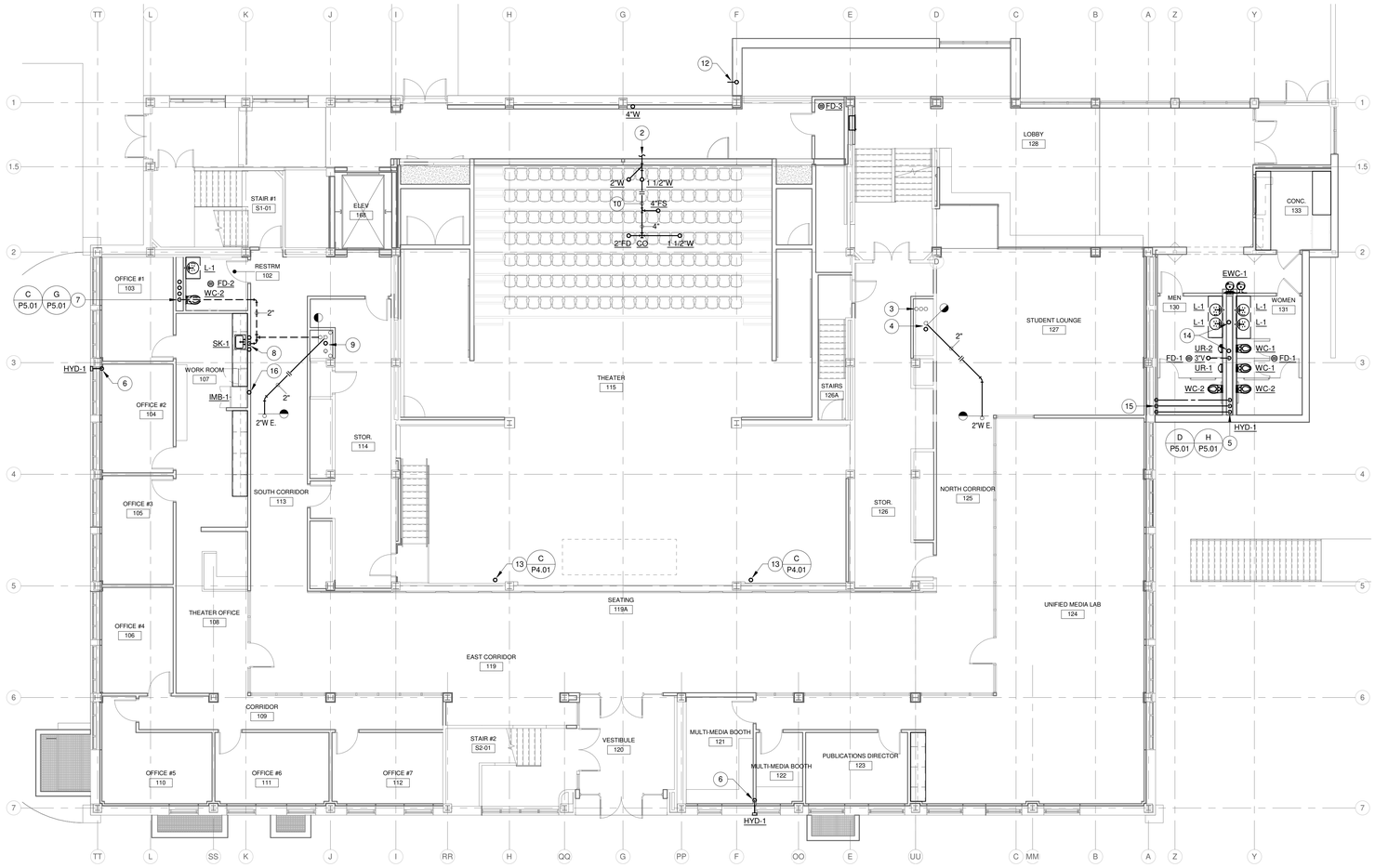


CONTROL ROOM PLAN - PLUMBING

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

NORTH



FIRST FLOOR PLAN - PLUMBING

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

NORTH

RENOVATION LEGEND:

- WORK TO BE INSTALLED
- WORK TO REMAIN

GENERAL NOTES:

1. REFER TO SHEET PD1.00 FOR GENERAL NOTES.

(#) PLAN NOTES:

1. REFER TO FIRST FLOOR PLAN FOR CONTINUATION.
2. REFER TO CONTROL ROOM PLAN FOR CONTINUATION.
3. EXISTING 2" COLD WATER, 1 1/4" HOT WATER RISERS, EXISTING 3" VENT STACK.
4. 6" STORM CONDUCTOR, EXISTING 4" WASTE STACK.
5. 2" COLD WATER, 3/4" HOT WATER, 1/2" HOT WATER RETURN, 4" WASTE, 3" VENT, 3" VENT THRU ROOF.
6. 3/4" COLD WATER.
7. 1 1/4" COLD WATER, 1/2" HOT WATER, 1/2" HOT WATER RETURN, 4" WASTE, 2" VENT.
8. 1/2" HOT AND COLD WATER, 1 1/2" WASTE, 1 1/2" VENT.
9. 6" STORM CONDUCTOR, EXISTING 2" COLD WATER, 1" HOT WATER, 1" HOT WATER RETURN RISERS, EXISTING 4" WASTE, 3" VENT STACKS.
10. ALL WASTE PIPING SERVING CRAFTS ROOM 222 FIXTURES TO BE INSTALLED WITH SCHEDULE 40 CPVC AND DWV FITTINGS. SYSTEM SHALL BE EQUAL TO CHARLOTTE CHEMDRAIN. HORIZONTAL PIPING INSTALLED IN THEATER AND CONTROL ROOM SHALL BE INSULATED WITH 1" FIBERGLASS WITH ASJ.
11. 4" WASTE.
12. 3" ROOF CONDUCTOR. TERMINATE 12" ABOVE ADJACENT GRADE WITH CONDUCTOR NOZZLE.
13. 1/2" COMPRESSED AIR FROM BELOW.
14. 3" STORM FROM ROOF DRAIN AND OVERFLOW DRAIN ABOVE. ROUTE EAST IN PLUMBING CHASE AND EXTEND THRU EAST WALL. TERMINATE 12" ABOVE ADJACENT GRADE WITH CONDUCTOR NOZZLE.
15. 2" COLD WATER, 3/4" HOT WATER, 1/2" HOT WATER RETURN FROM BELOW.
16. 1/2" COLD WATER.

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Project No.: 19A052
Drawn By: VLC
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Scale: See Drawing
Issue Date: 06/05/2020

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FIRST FLOOR PLAN - PLUMBING

P2.01

0 2 4 6 8 16 24 32
1 2 3 4

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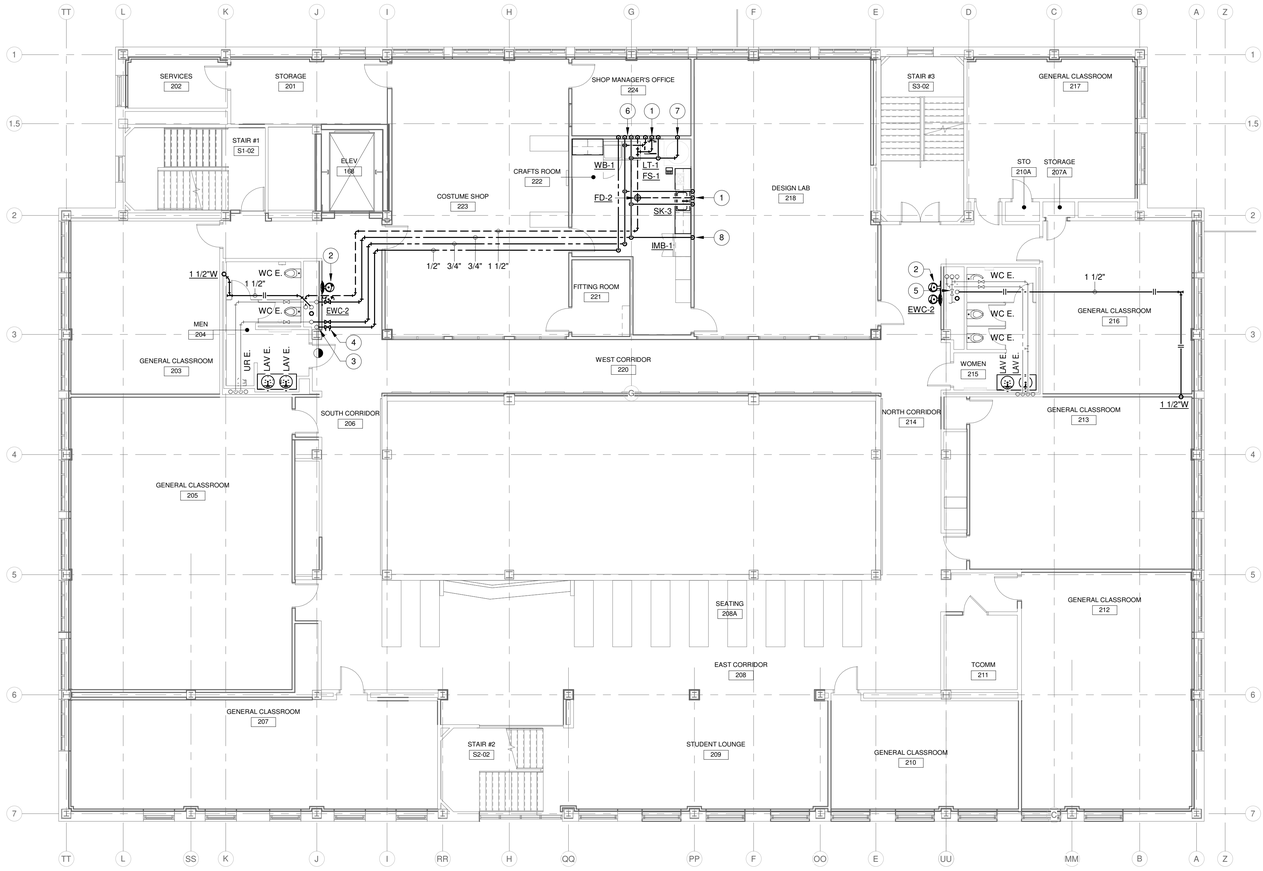

SECOND FLOOR PLAN - PLUMBING

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

NORTH

RENOVATION LEGEND:

WORK TO BE INSTALLED

WORK TO REMAIN

GENERAL NOTES:

1. REFER TO SHEET PD1.00 FOR GENERAL NOTES.

(#) PLAN NOTES:

1. 1/2" HOT AND COLD WATER, 1 1/2" WASTE, 1 1/2" VENT.
2. EXTEND 1/2" COLD WATER, 1 1/2" WASTE, 1 1/2" VENT FROM EXISTING UTILITIES IN CHASE AND MAKE FINAL CONNECTION TO ELECTRIC WATER COOLER. INSTALL REMOTE CHILLER ABOVE ADJACENT RESTROOM CEILING.
3. 6" STORM CONDUCTOR, EXISTING 2" COLD WATER, 1" HOT WATER, 1" HOT WATER RETURN RISERS, EXISTING 4" WASTE, 3" VENT STACKS.
4. THERMOSTATIC ZONE VALVE.
5. 6" STORM CONDUCTOR, EXISTING 2" COLD WATER, 1" HOT WATER, RISERS, EXISTING 4" WASTE, 3" VENT STACKS.
6. 1/2" HOT AND COLD WATER, 2" WASTE STANDPIPE, 1 1/2" VENT.
7. 1/2" COLD WATER. MAKE FINAL CONNECTION TO OWNER FURNISHED DYE VAT FAUCET.
8. 1/2" COLD WATER.

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SECOND FLOOR PLAN - PLUMBING

P2.02

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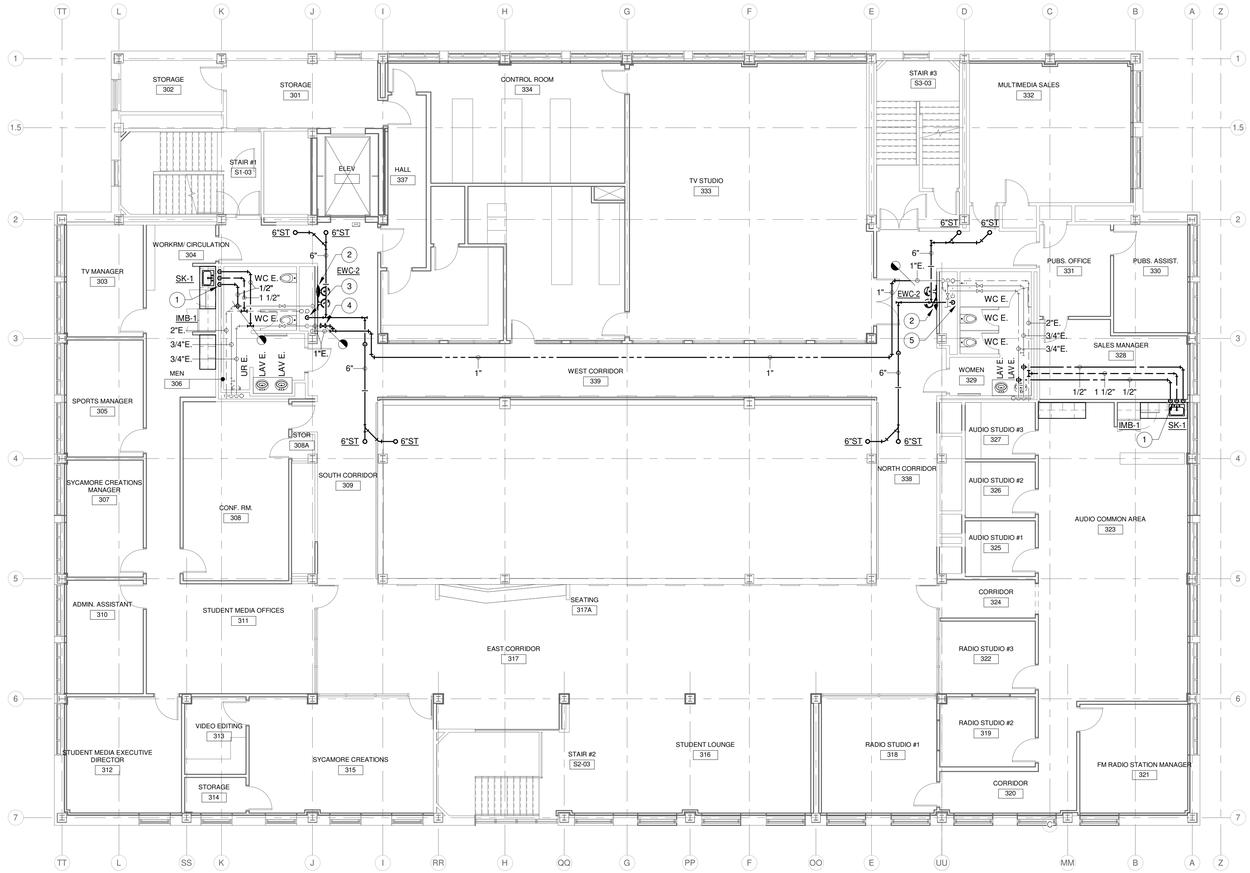

THIRD FLOOR PLAN - PLUMBING

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

NORTH

RENOVATION LEGEND:

WORK TO BE INSTALLED

WORK TO REMAIN

GENERAL NOTES:

1. REFER TO SHEET PD1.00 FOR GENERAL NOTES.

PLAN NOTES:

1. 1/2" HOT AND COLD WATER, 1 1/2" WASTE, 1 1/2" VENT. EXTEND 1/2" COLD WATER HORIZONTALLY IN WALL TO ICE MAKER BOX.
2. EXTEND 1/2" COLD WATER, 1 1/2" WASTE, 1 1/2" VENT FROM EXISTING UTILITIES IN CHASE AND MAKE FINAL CONNECTION TO ELECTRIC WATER COOLER. INSTALL REMOTE CHILLER ABOVE ADJACENT RESTROOM CEILING.
3. 6" STORM CONDUCTOR, EXISTING 2" COLD WATER, 1" HOT WATER, 1" HOT WATER RETURN RISERS, EXISTING 4" WASTE, 3" VENT STACKS.
4. THERMOSTATIC ZONE VALVE.
5. 6" STORM CONDUCTOR, EXISTING 2" COLD WATER, 1" HOT WATER, RISERS, EXISTING 4" WASTE, 3" VENT STACKS.

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THIRD FLOOR PLAN - PLUMBING

P2.03

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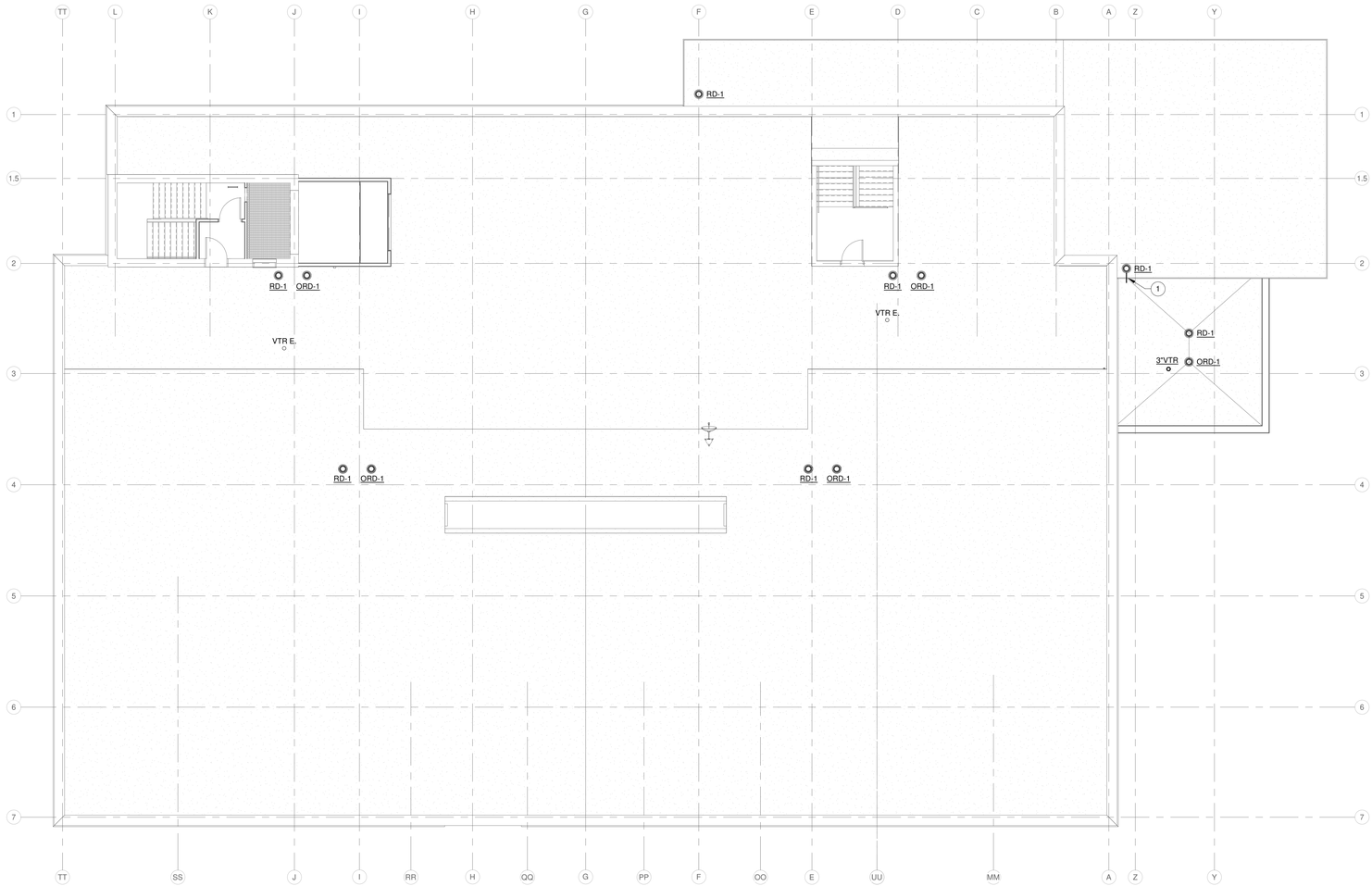

NORTH

ROOF PLAN - PLUMBING

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

RENOVATION LEGEND:

WORK TO BE INSTALLED

WORK TO REMAIN

GENERAL NOTES:

1. REFER TO SHEET PD1.00 FOR GENERAL NOTES.

(#) PLAN NOTES:

1. 3" SCH 40 GALVANIZED STEEL STORM CONDUCTOR. TERMINATE 12" ABOVE LOW ROOF WITH ELBOW.

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ROOF PLAN - PLUMBING

P2.20

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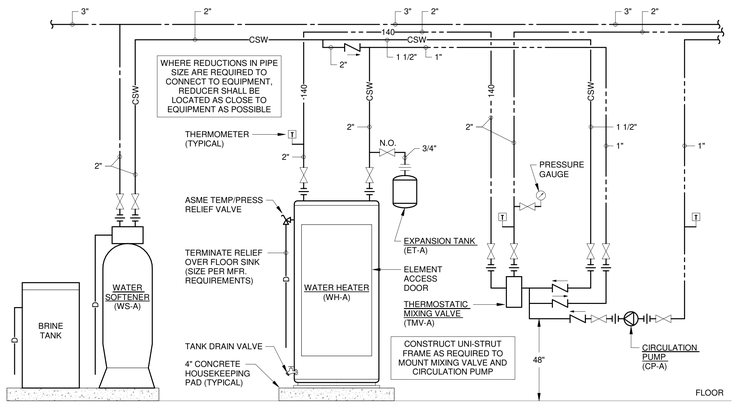

A WATER HEATER PIPING

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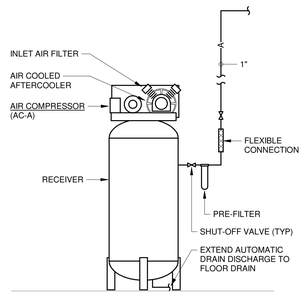
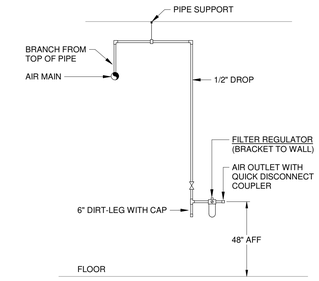


B AIR COMPRESSOR PIPING

SCALE: NONE



C COMPRESSED AIR OUTLET

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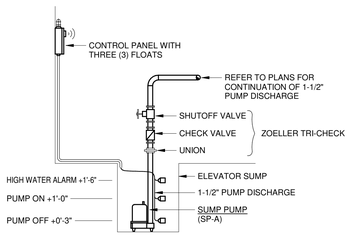
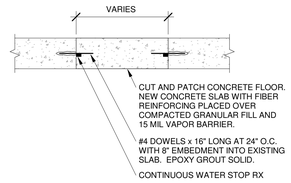


D SUMP PUMP

SCALE: NONE



E SAW CUT AND PATCH

SCALE: NONE

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DETAILS - PLUMBING

P4.01

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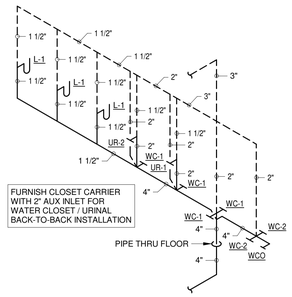

A WASTE AND VENT PIPING

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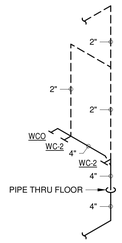

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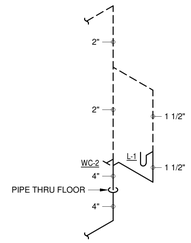
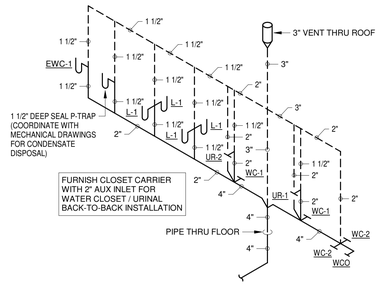


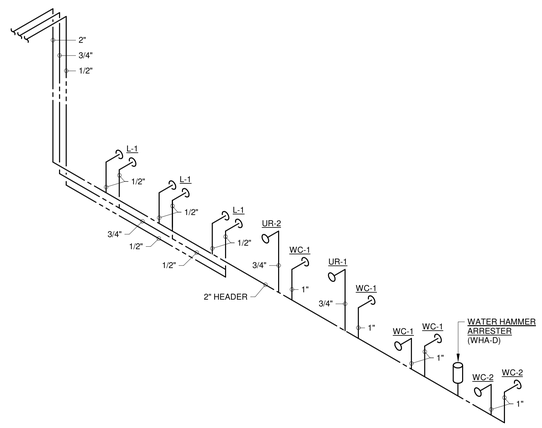
C WASTE AND VENT PIPING

SCALE: NONE



D WASTE AND VENT PIPING

SCALE: NONE



E HOT AND COLD WATER PIPING

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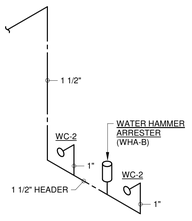
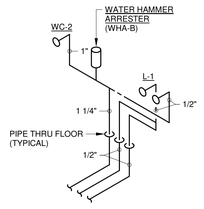


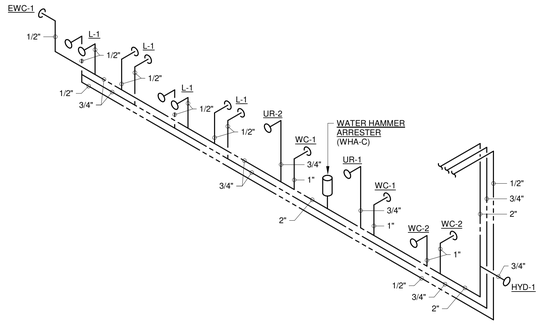
F HOT AND COLD WATER PIPING

SCALE: NONE



G HOT AND COLD WATER PIPING

SCALE: NONE



H HOT AND COLD WATER PIPING

SCALE: NONE

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ISOMETRICS - PLUMBING

P5.01

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PLUMBING EQUIPMENT SCHEDULE

MARK NO.	SPECIFICATION NAME	MANUFACTURER & MODEL NO.	ELECTRICAL DATA			WT.	CAPACITY	REMARKS
			LOAD	VOLTS	PHASE			
WH-A	WATER HEATER	LOCHINVAR HST18080	18 KW	208	3	280	74 GPH RECOVERY AT 100° RISE, 80 GALLONS STORAGE	SET OUTLET TEMPERATURE AT 140°F. TERMINATE TEMP/PRESS RELIEF OVER FLOOR DRAIN.
TMV-A	THERMOSTATIC MIXING VALVE	ARMSTRONG DRV25RBS	-	120	1	7	15 GPM AT 5 PSI MAXIMUM PRESSURE DROP, 1 GPM MINIMUM FLOW	1" 140°F HOT WATER, 1" COLD WATER INLETS, 1" 120° HOT WATER OUTLET.
CP-A	CIRCULATION PUMP	TACO 113-S	1/8 HP	120	1	27	2 GPM AT 17 FEET TOTAL DYNAMIC HEAD	CONSTANT ON (AQUASTAT NOT REQUIRED)
ET-A	EXPANSION TANK	AMTROL ST-12	-	-	-	9	4.4 GALLONS TANK VOLUME	-
RPZ-A	REDUCED PRESSURE BACKFLOW PREVENTER	WATTS 994-OSY-S-2 1/2"	-	-	-	148	94 GPM AT 9 PSI MAXIMUM PRESSURE DROP	PROVIDE WATTS 994-AGK-P AIR GAP AND TERMINATE RELIEF OVER FLOOR DRAIN.
RPZ-B	REDUCED PRESSURE BACKFLOW PREVENTER	WATTS LF909M1-QT-S-1 1/2"	-	-	-	44	45 GPM AT 10 PSI MAXIMUM PRESSURE DROP	PROVIDE WATTS 909-AGK-F AIR GAP AND TERMINATE RELIEF OVER FLOOR DRAIN.
WS-A	WATER SOFTENER	AQUA SYSTEMS 2750-400	-	-	-	-	120,000/80,000 GRAINS EXCHANGE, 20 GPM CONTINUOUS, 27 GPM PEAK	PACKAGED SIMPLEX SOFTENING SYSTEM, 4 CF RESIN TANK, 800# SALT STORAGE.
AC-A	AIR COMPRESSOR	INGERSOLL RAND 2475N7.5	7.5 HP	208	3	611	24.3 CFM @ 90 PSI, 175 PSI MAX, 80 GALLON VERTICAL RECEIVER	PREMIUM PACKAGE: MAGNETIC MOTOR STARTER, AUTO START/STOP WITH PRESSURE SWITCH, ELECTRIC DRAIN, AIR-COOLED AFTERCOOLER, LOW OIL LEVEL SWITCH.
HR-A	HOSE REEL	ARO 614613-25A	-	-	-	-	25' X 3/8" HOSE, 300 PSI MAX	OPEN STYLE REEL, CEILING MOUNT, FURNISH WITH HOSE, COUPLING, AND HOSE STOP.
SP-A	SUMP PUMP	ZOELLER N153	1/2 HP	120	1	-	42 GPM AT 25 FEET TOTAL DYNAMIC HEAD	FURNISH WITH ZOELLER 10-1038 SIMPLEX CONTROL PANEL, ON/OFF FLOATS, HIGH WATER FLOAT, ZOELLER 30-0100 TRI-CHECK VALVE.

NOTE: REDUCERS REQUIRED FOR EQUIPMENT CONNECTIONS SHALL BE LOCATED AS CLOSE AS POSSIBLE TO EQUIPMENT.

FIXTURE ROUGH-IN SCHEDULE & MOUNTING HEIGHTS

MARK NO.	FIXTURE DESCRIPTION	HW	CW	TRAP	W	V	MOUNTING HEIGHT
WC-1	WATER CLOSET - WALL HUNG, FLUSH VALVE	-	1"	INTEGRAL	4"	2"	15" TO SEAT
WC-2	WATER CLOSET - WALL HUNG, FLUSH VALVE, ADA	-	1"	INTEGRAL	4"	2"	17" TO SEAT
UR-1	URINAL - ADA	-	3/4"	INTEGRAL	2"	1-1/2"	17" TO RIM
L-1	LAVATORY - ADA	1/2"	1/2"	1-1/4"	1-1/2"	1-1/2"	34" TO RIM
SK-1	ONE COMPARTMENT SINK	1/2"	1/2"	1-1/2"	1-1/2"	1-1/2"	MOUNT SINK BOWL IN COUNTERTOP
SK-2	PAINT SINK	(2) 1/2"	(2) 1/2"	2"	2"	1-1/2"	36" TO RIM
SK-3	CRAFT SINK	1/2"	1/2"	1 1/2"	1 1/2"	1 1/2"	MOUNT SINK BOWL IN COUNTERTOP
MS-1	MOP SINK	1/2"	1/2"	3"	3"	2"	MOUNT FAUCET 36" ABOVE FINISHED FLOOR
LT-1	LAUNDRY TUB	1/2"	1/2"	1 1/2"	1 1/2"	1 1/2"	34" TO RIM
SH-1	SHOWER - ADA	1/2"	1/2"	-	-	-	VALVE: 42", HANDSPRAY: 60", HEAD: 78"
EWC-1	ELECTRIC WATER COOLER - HI/LO, ADA	-	1/2"	1 1/4"	1 1/2"	1 1/2"	42" (HI), 36" (LO) TO BUBBLER
EWC-2	ELECTRIC WATER COOLER - HI/LO, ADA, REMOTE CHILLER	-	1/2"	1 1/4"	1 1/2"	1 1/2"	42" (HI), 36" (LO) TO BUBBLER
WB-1	CLOTHES WASHER BOX	1/2"	1/2"	2"	2"	1 1/2"	42"
IMB-1	ICE MAKER BOX	-	1/2"	-	-	-	24"
HB-1	HOSE BIBB	-	3/4"	-	-	-	18"
HYD-1	WALL HYDRANT - NON-FREEZE	-	3/4"	-	-	-	24"

WATER HAMMER ARRESTER SCHEDULE

TYPE	I.P.S.	F.U. RATING	J.R. SMITH NO.	WADE NO.	ZURN NO.	REMARK
A	3/4"	1 - 11	5005	W-5	100	P.D.I CERTIFIED
B	1"	12 - 32	5010	W-10	200	P.D.I CERTIFIED
C	1"	33 - 60	5020	W-20	300	P.D.I CERTIFIED
D	1"	61 - 113	5030	W-50	400	P.D.I CERTIFIED

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CERTIFICATION 06/05/2020

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SCHEDULES - PLUMBING

P6.01

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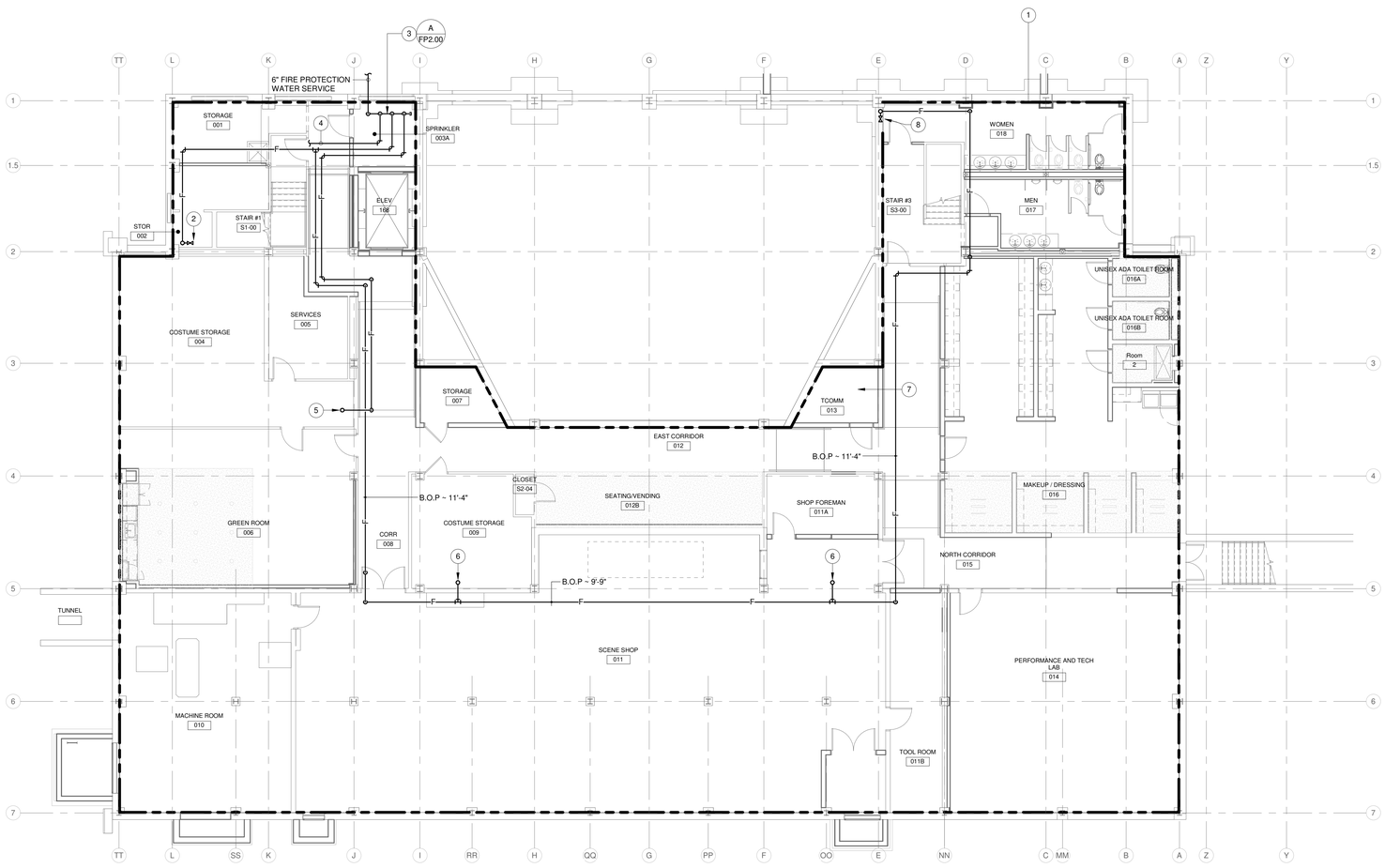
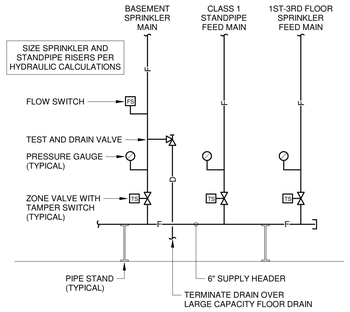


BASEMENT PLAN - FIRE PROTECTION

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

NORTH



A SPRINKLER RISER

SCALE: NONE

RENOVATION LEGEND:

WORK TO BE INSTALLED

WORK TO REMAIN

GENERAL NOTES:

1. THESE NOTES APPLY TO ALL 'FP' SERIES DRAWINGS.
2. SEE 'PM' SERIES DRAWINGS FOR SYMBOLS, ABBREVIATIONS, AND ADDITIONAL GENERAL NOTES.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR CORE DRILLING AND CUTTING HOLES THRU WALLS AND FLOORS AS REQUIRED TO INSTALL WORK, WHETHER SHOWN OR NOT.
4. ALL PENETRATIONS THRU RATED CONSTRUCTION TO BE FIRE STOPPED. REFER TO LIFE SAFETY PLANS.
5. CONTRACTOR SHALL COORDINATE WORK WITH ALL OTHER TRADES PRIOR TO INSTALLATION. CONTACT ENGINEER WITH CONFLICTS OR DISCREPANCIES.
6. SPRINKLER SYSTEMS SHALL BE HYDRAULICALLY CALCULATED, FULLY SUPERVISED, AND INSTALLED ACCORDING TO NFPA 13.
7. CONTRACTOR SHALL OBTAIN FLOW TEST INFORMATION PRIOR TO DESIGN AND HYDRAULIC CALCULATION OF SPRINKLER SYSTEM.
8. ALL SPRINKLER SYSTEM ITEMS REQUIRED BY CODE SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR WHETHER SHOWN ON THE DRAWINGS AND SPECIFICATIONS OR NOT.
9. ALL FIRE PROTECTION SYSTEMS TO BE INSTALLED TO MEET THE REQUIREMENTS OF THE INDIANA FIRE CODE, 2014; THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARD 13, 2010; THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARD 14; AND INDIANA AMENDMENTS (675 IAC-28-1-5).
10. PIPE ROUTINGS INDICATED ON DRAWINGS ARE DIAGRAMMATIC AND ARE A SUGGESTED METHOD FOR DESIGN. CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL COORDINATION, LAYOUT, CODE COMPLIANCE, AND DESIGN.
11. PROVIDE UPRIGHT SPRINKLER HEADS IN UNFINISHED SPACES (I.E. THOSE WITH EXPOSED STRUCTURE), CONCEALED HEADS IN FINISHED SPACES (I.E. THOSE WITH LAY-IN, DRYWALL, OR DECORATIVE CEILINGS), SIDEWALL HEADS WHERE IMPRACTICAL TO INSTALLED CONCEALED OR UPRIGHT TYPE, OR AS INDICATED OTHERWISE ON THE DRAWINGS.
12. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR COORDINATION OF CEILING MOUNTED ITEMS.
13. ALL NEW WORK IS DRAWN DARK. ALL WORK DRAWN LIGHT AND FOLLOWED BY (E.) IS EXISTING.
14. CONTRACTOR SHALL FIELD VERIFY EXISTING PIPE AND EQUIPMENT SIZES, LOCATIONS, ELEVATIONS, MATERIALS, ETC. BEFORE BIDDING OR BEGINNING WORK.
15. CONTRACTOR SHALL COORDINATE SHUT DOWN OF ANY FIRE PROTECTION SYSTEM THAT AFFECTS OCCUPIED SPACES WITH THE OWNER, OCCUPANTS OF THE AFFECTED AREA, AND ANY OTHER AUTHORITY HAVING JURISDICTION.
16. PROVIDE TEMPORARY CAPS AS REQUIRED SO EXISTING SYSTEM WILL REMAIN OPERATIONAL DURING CONSTRUCTION.
17. CONTRACTOR SHALL PROTECT ALL EXISTING OWNER FACILITIES DURING CONSTRUCTION. ANY FACILITY DAMAGED OR DISCONNECTED BY CONTRACTOR OPERATIONS SHALL BE FULLY RESTORED TO PREVIOUS OPERATING AND APPEARANCE CONDITION AND AT NO COST TO OWNER.
18. REMOVE ALL PIPE, VALVES, ETC. MADE OBSOLETE AS A RESULT OF NEW CONSTRUCTION.
19. THOROUGHLY REVIEW ALL DRAWINGS PRIOR TO ANY DEMOLITION WORK. ANY ITEMS REMOVED ACCIDENTALLY MUST BE REPLACED AT NO ADDITIONAL COST TO OWNER.
20. DISPOSAL OF DEMOLISHED MATERIALS SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
21. NO ABANDONED PIPE, VALVES, FITTINGS, ETC. WILL BE ALLOWED TO REMAIN, UNLESS SPECIFICALLY NOTED OTHERWISE IN DRAWINGS.

(#) PLAN NOTES:

1. REMOVE EXISTING FIRE PROTECTION SPRINKLERS AND HOSE CABINETS IN THIS AREA COMPLETE. INSTALL NEW 11,460 SQUARE FOOT WET PIPE SPRINKLER SYSTEM IN BASEMENT AREA. PROVIDE COVERAGE IN ACCORDANCE WITH NFPA 13 ORDINARY GROUP 2 HAZARD OCCUPANCY, 0.20 GPM/SF, 2500 SF REMOTE AREA, 500 GPM HOSE STREAM ALLOWANCE.
2. CLASS 1 MANUAL WET STANDPIPE WITH 2-1/2" HOSE CONNECTION WITH CAP AND CHAIN AT THE INTERMEDIATE LANDING.
3. SPRINKLER RISERS.
4. BASEMENT SPRINKLER MAIN.
5. SPRINKLER SYSTEM FEED MAIN.
6. 1 1/2" SUPPLY UP TO STAGE HOSE CABINET.
7. PROVIDE COVERAGE FOR THIS SPACE USING SIDEWALL HEAD(S) FED FROM OUTSIDE ROOM. SPRINKLER PIPING IS NOT PERMITTED IN THIS ROOM.
8. CLASS 1 MANUAL WET STANDPIPE WITH 2-1/2" HOSE CONNECTION WITH CAP AND CHAIN. INSTALL IN RECESSED VALVE CABINET.

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CERTIFICATION 06 / 05 / 2020

100% CONSTRUCTION DOCUMENTS

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BASEMENT PLAN - FIRE PROTECTION

FP2.00

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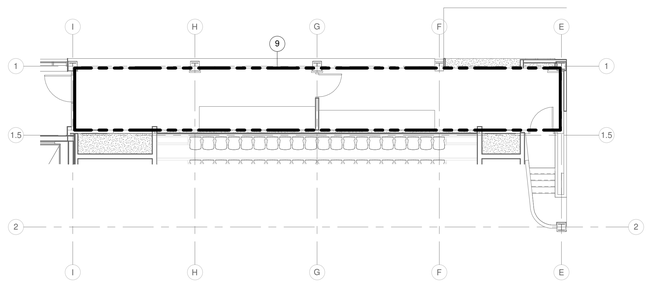
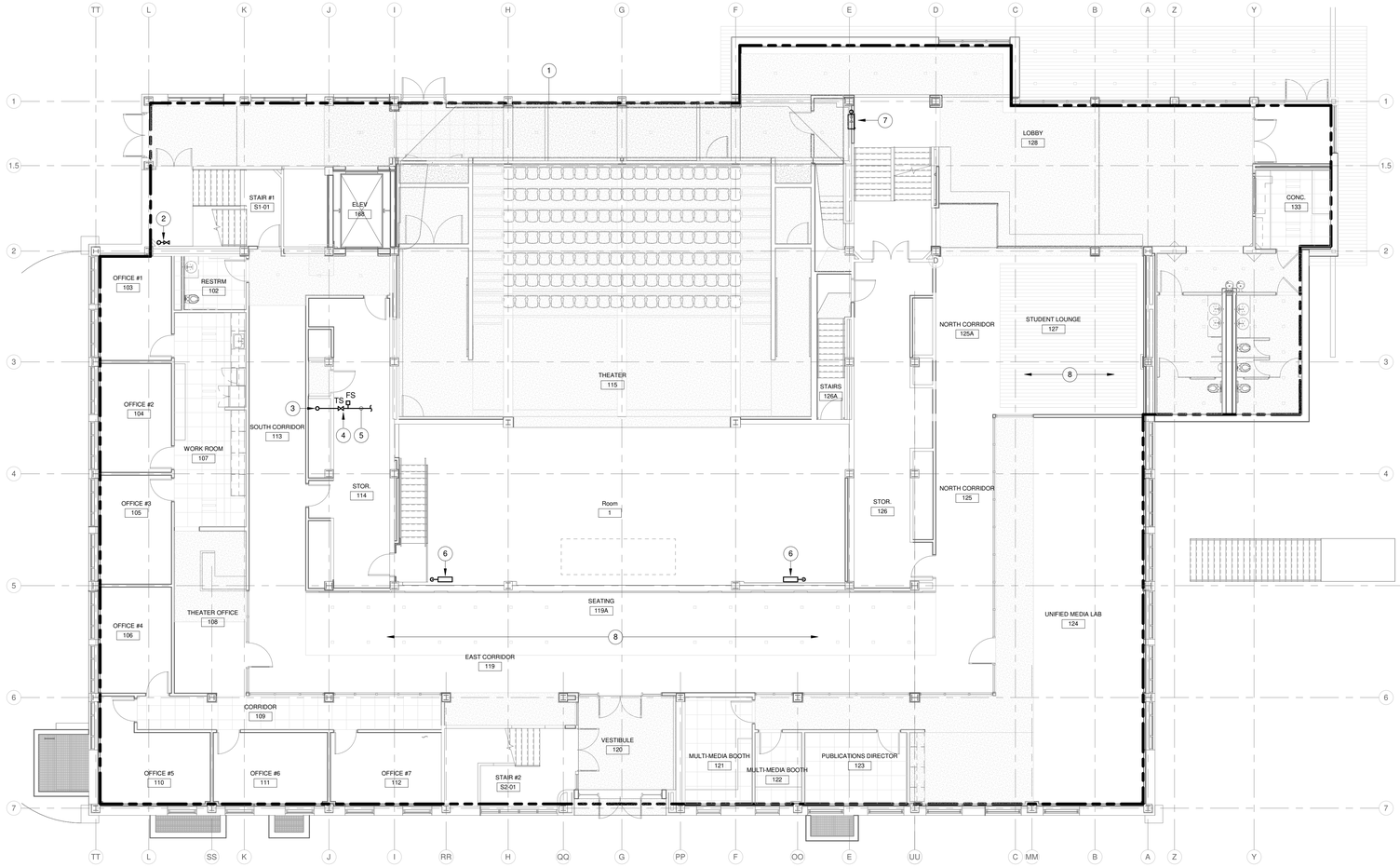


CONTROL ROOM PLAN - FIRE PROTECTION

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

NORTH



FIRST FLOOR PLAN - FIRE PROTECTION

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

NORTH

RENOVATION LEGEND:

- WORK TO BE INSTALLED
- WORK TO REMAIN

GENERAL NOTES:

1. REFER TO SHEET FP2.00 FOR GENERAL NOTES.

(#) PLAN NOTES:

1. 15,600 SQUARE FOOT FIRST FLOOR WET PIPE SPRINKLER AREA. PROVIDE COVERAGE IN ACCORDANCE WITH NFPA 13 LIGHT HAZARD OCCUPANCY, 0.10 GPM/SF, 1500 SF REMOTE AREA, 250 GPM HOSE STREAM ALLOWANCE. STAGE AREA TO BE INSTALLED IN ACCORDANCE WITH NFPA 13 ORDINARY GROUP 2 OCCUPANCY, 0.20 GPM/SF, ENTIRE AREA.
2. CLASS 1 MANUAL WET STANDPIPE WITH 2-1/2" HOSE CONNECTION WITH CAP AND CHAIN AT THE INTERMEDIATE LANDING.
3. SPRINKLER SYSTEM FEED MAIN.
4. ZONE CONTROL VALVE WITH TAMPER SWITCH AND FLOW SWITCH.
5. FIRST FLOOR SPRINKLER MAIN.
6. CLASS 2 MANUAL WET STANDPIPE WITH 1 1/2" HOSE CONNECTION AND HOSE CABINET.
7. CLASS 1 MANUAL WET STANDPIPE WITH 2-1/2" HOSE CONNECTION WITH CAP AND CHAIN. INSTALL IN RECESSED VALVE CABINET.
8. PROVIDE CUSTOM COLOR COVERPLATE FOR THIS CEILING. COORDINATE WITH ARCHITECT.
9. PROVIDE SPRINKLER COVERAGE FOR CONTROL ROOM FROM FIRST FLOOR WET PIPE SYSTEM.

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FIRST FLOOR PLAN - FIRE PROTECTION

FP2.01

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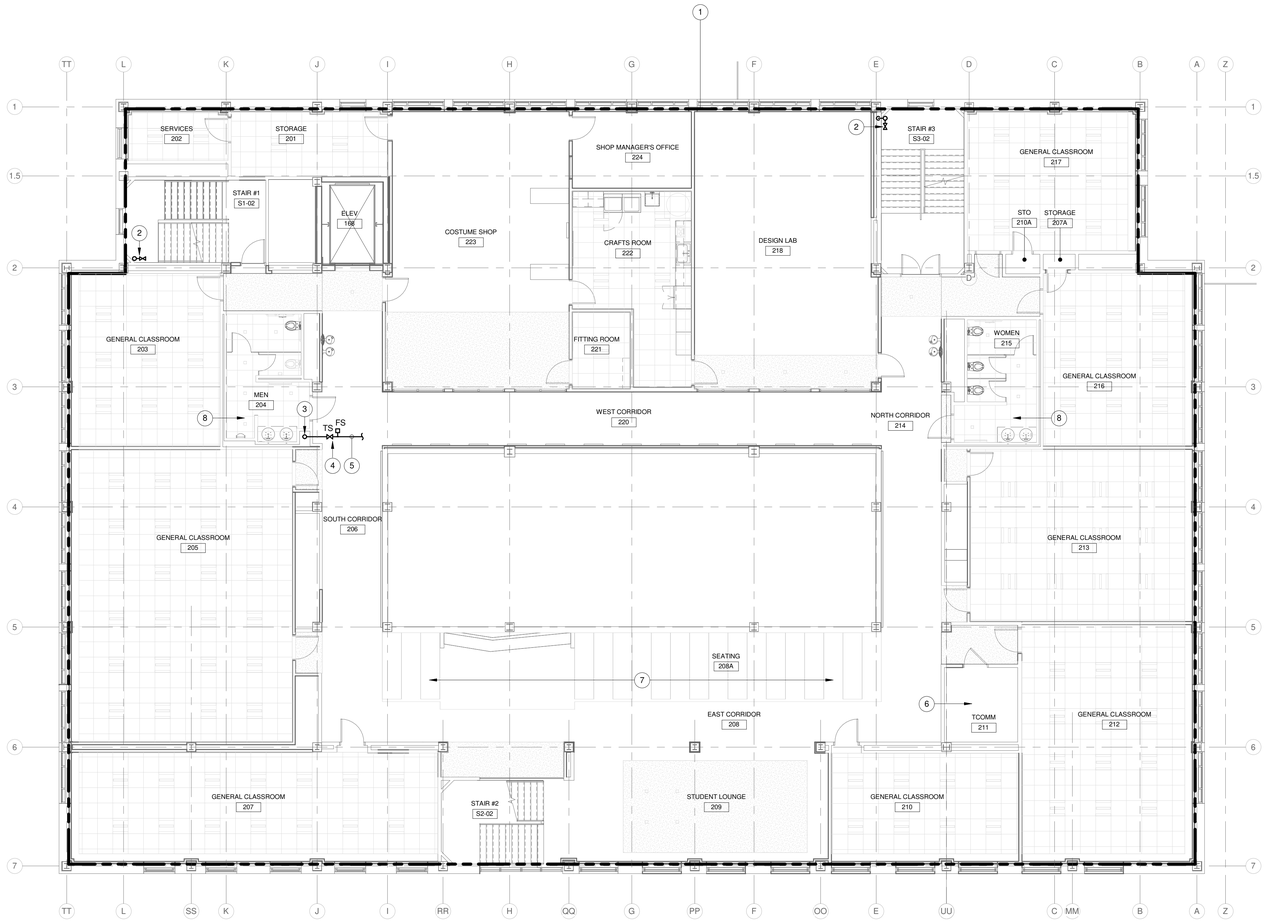

SECOND FLOOR PLAN - FIRE PROTECTION

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

NORTH

RENOVATION LEGEND:

- WORK TO BE INSTALLED
- WORK TO REMAIN

GENERAL NOTES:

1. REFER TO SHEET FP2.00 FOR GENERAL NOTES.

(#) PLAN NOTES:

1. 14,150 SQUARE FOOT SECOND FLOOR WET PIPE SPRINKLER AREA. PROVIDE COVERAGE IN ACCORDANCE WITH NFPA 13 LIGHT HAZARD OCCUPANCY, 0.10 GPM/SF, 1500 SF REMOTE AREA, 250 GPM HOSE STREAM ALLOWANCE.
2. CLASS 1 MANUAL WET STANDPIPE WITH 2-1/2" HOSE CONNECTION WITH CAP AND CHAIN AT THE INTERMEDIATE LANDING.
3. SPRINKLER SYSTEM FEED MAIN.
4. ZONE CONTROL VALVE WITH TAMPER SWITCH AND FLOW SWITCH.
5. SECOND FLOOR SPRINKLER MAIN.
6. PROVIDE COVERAGE FOR THIS SPACE USING SIDEWALL HEAD(S) FED FROM OUTSIDE ROOM. SPRINKLER PIPING IS NOT PERMITTED IN THIS ROOM.
7. PROVIDE CUSTOM COLOR COVERPLATE FOR THIS CEILING. COORDINATE WITH ARCHITECT.
8. REMOVE AND REPLACE EXISTING CEILINGS IN THIS AREA AS REQUIRED TO INSTALL SPRINKLER HEADS AND PIPING.

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SECOND FLOOR PLAN - FIRE PROTECTION

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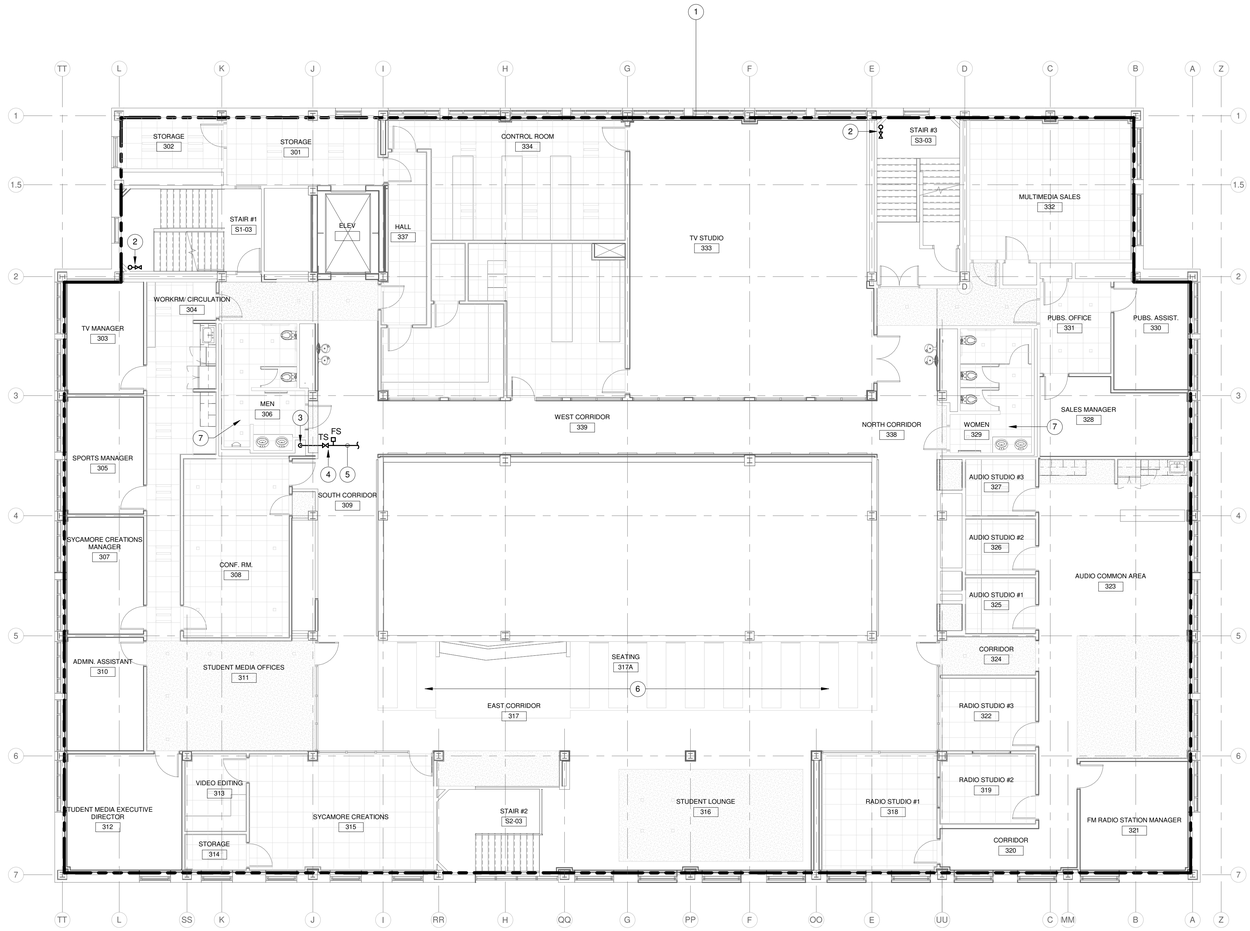

THIRD FLOOR PLAN - FIRE PROTECTION

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

NORTH

RENOVATION LEGEND:

- WORK TO BE INSTALLED
- WORK TO REMAIN

GENERAL NOTES:

1. REFER TO SHEET FP2.00 FOR GENERAL NOTES.

(#) PLAN NOTES:

1. 14,150 SQUARE FOOT THIRD FLOOR WET PIPE SPRINKLER AREA. PROVIDE COVERAGE IN ACCORDANCE WITH NFPA 13 LIGHT HAZARD OCCUPANCY, 0.10 GPM/SF, 1500 SF REMOTE AREA, 250 GPM HOSE STREAM ALLOWANCE.
2. CLASS 1 MANUAL WET STANDPIPE WITH 2-1/2" HOSE CONNECTION WITH CAP AND CHAIN AT THE INTERMEDIATE LANDING.
3. SPRINKLER SYSTEM FEED MAIN.
4. ZONE CONTROL VALVE WITH TAMPER SWITCH AND FLOW SWITCH.
5. THIRD FLOOR SPRINKLER MAIN.
6. PROVIDE CUSTOM COLOR COVERPLATE FOR THIS CEILING. COORDINATE WITH ARCHITECT.
7. REMOVE AND REPLACE EXISTING CEILINGS IN THIS AREA AS REQUIRED TO INSTALL SPRINKLER HEADS AND PIPING.

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THIRD FLOOR PLAN - FIRE PROTECTION

FP2.03

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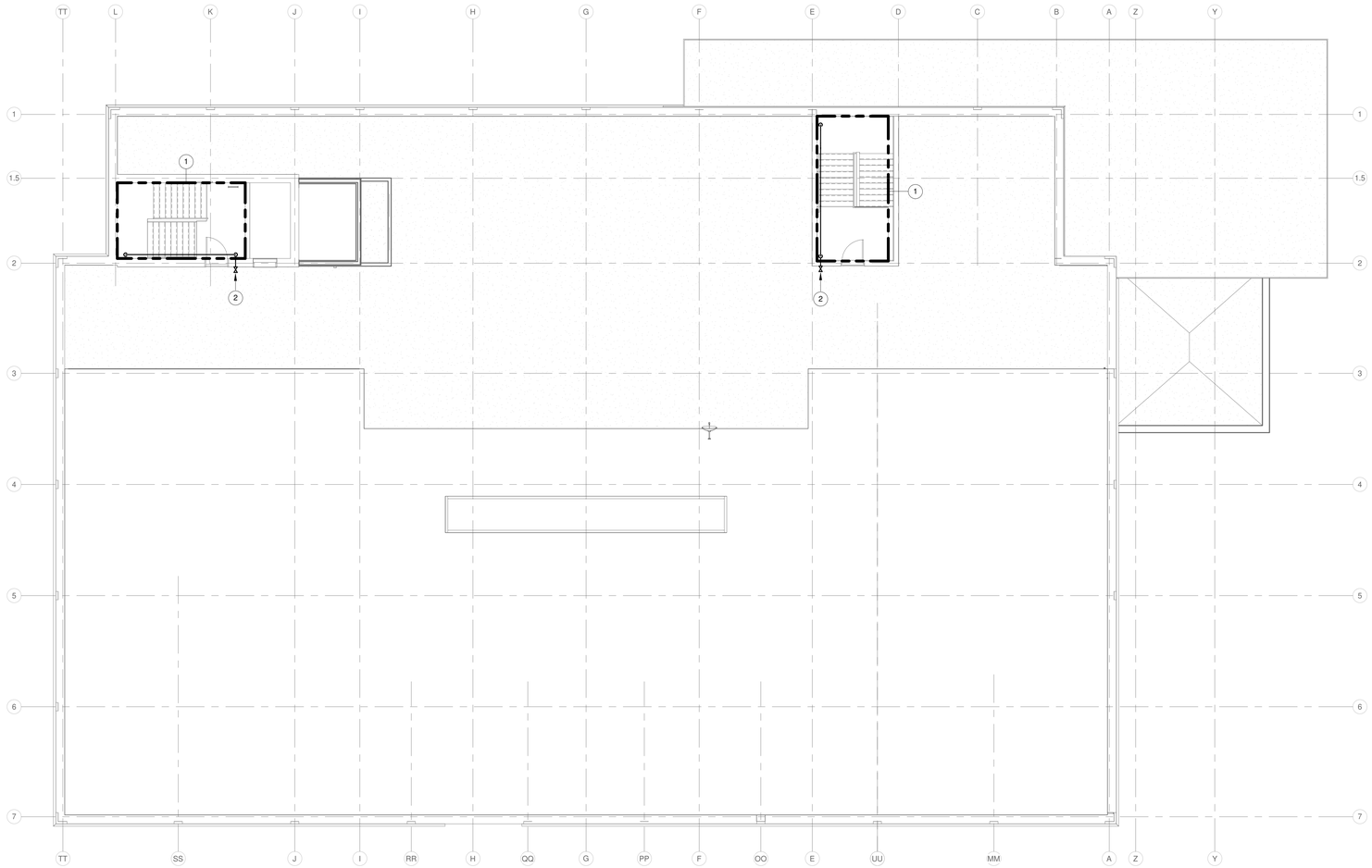

ROOF PLAN - FIRE PROTECTION

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

NORTH

RENOVATION LEGEND:

WORK TO BE INSTALLED

WORK TO REMAIN

GENERAL NOTES:

1. REFER TO SHEET FP2.00 FOR GENERAL NOTES.

(#) PLAN NOTES:

1. EXTEND THIRD FLOOR WET PIPE SPRINKLER SYSTEM TO ROOF LEVEL OF STAIR TOWER. PROVIDE COVERAGE IN ACCORDANCE WITH NFPA 13 LIGHT HAZARD OCCUPANCY, 0.10 GPM/SF, ENTIRE REMOTE AREA, 250 GPM HOSE STREAM ALLOWANCE.
2. EXTEND CLASS 1 MANUAL WET STANDPIPE TO ROOF OUTLET WITH 2-1/2" HOSE CONNECTION WITH CAP AND CHAIN. ALL SYSTEM COMPONENTS EXPOSED TO WEATHER TO BE GALVANIZED COATED.

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ROOF PLAN - FIRE PROTECTION

FP2.20

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