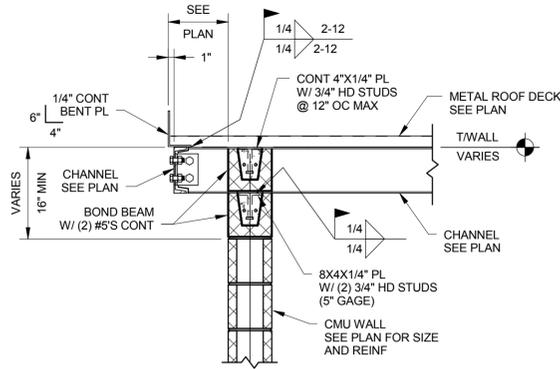
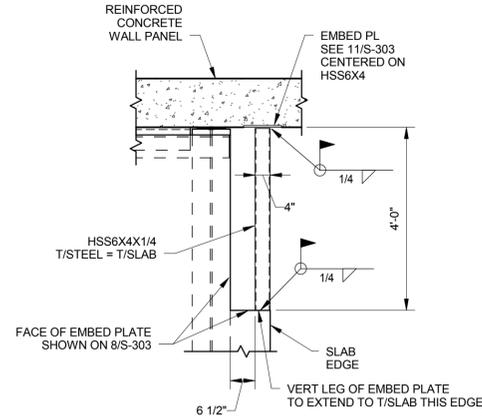


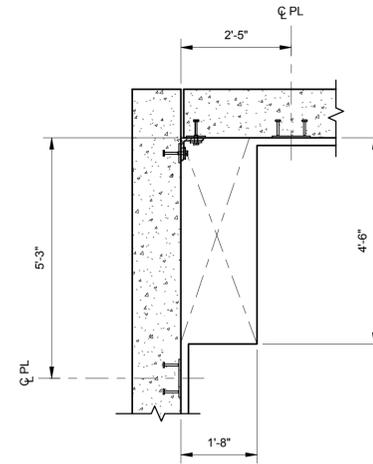
**1 SECTION**  
 S-305 SCALE: 1" = 1'-0"



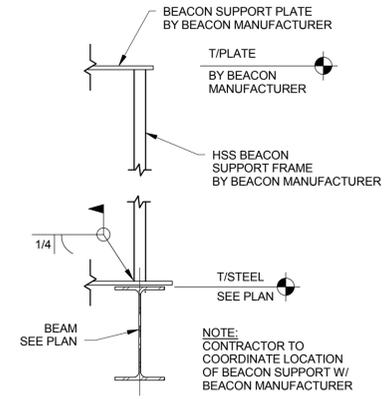
**2 SECTION**  
 S-305 SCALE: 3/4" = 1'-0"



**3 PARTIAL PLAN**  
 S-305 SCALE: 1/2" = 1'-0"



**4 SECTION**  
 S-305 SCALE: 1/2" = 1'-0"



**5 SECTION**  
 S-305 SCALE: 1" = 1'-0"

NOTE: DETAIL SIMILAR AT SINGLE POST LOCATION. SEE A-403 FOR GUARDRAIL POST LOCATIONS.

NOTE: CONTRACTOR TO COORDINATE LOCATION OF BEACON SUPPORT W/ BEACON MANUFACTURER

**REVISIONS**

NO.	DESCRIPTION	DATE

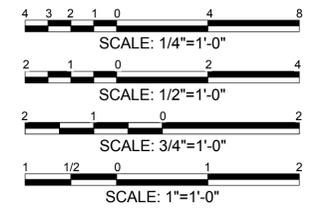
DATE ISSUED: AUGUST 12, 2015  
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 DRAWN BY: ARJ  
 DESIGNED BY: ARJ

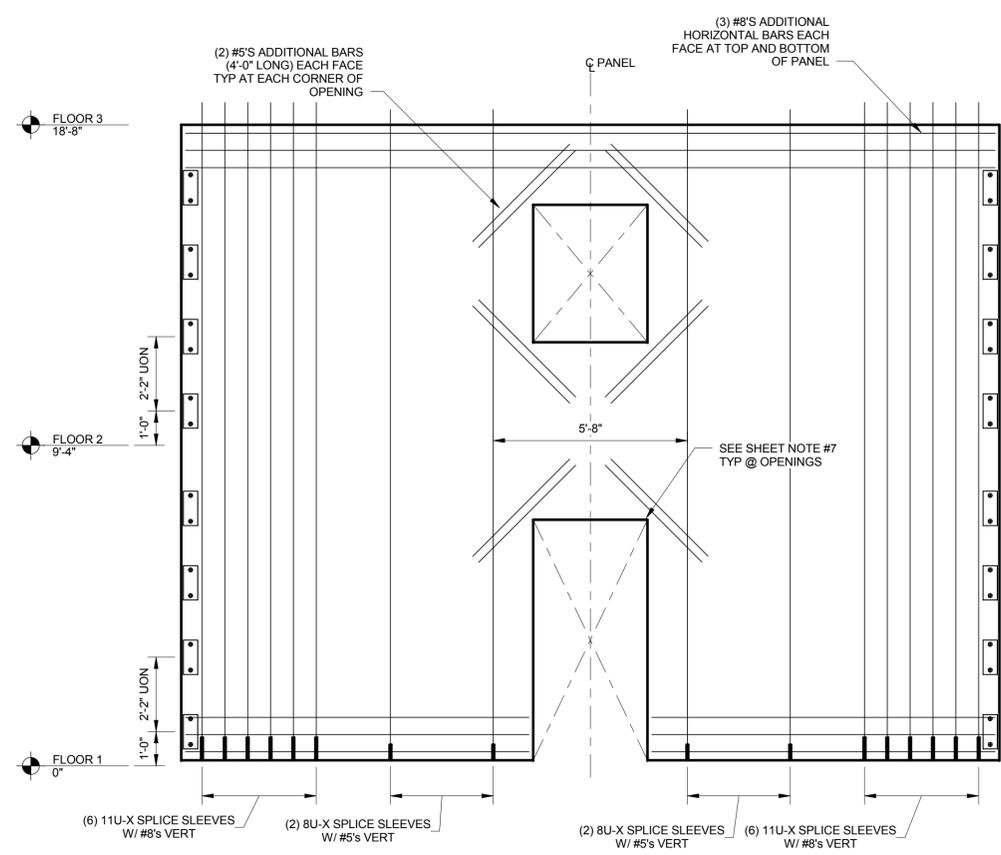
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SHEET TITLE  
**SECTION AND DETAILS**

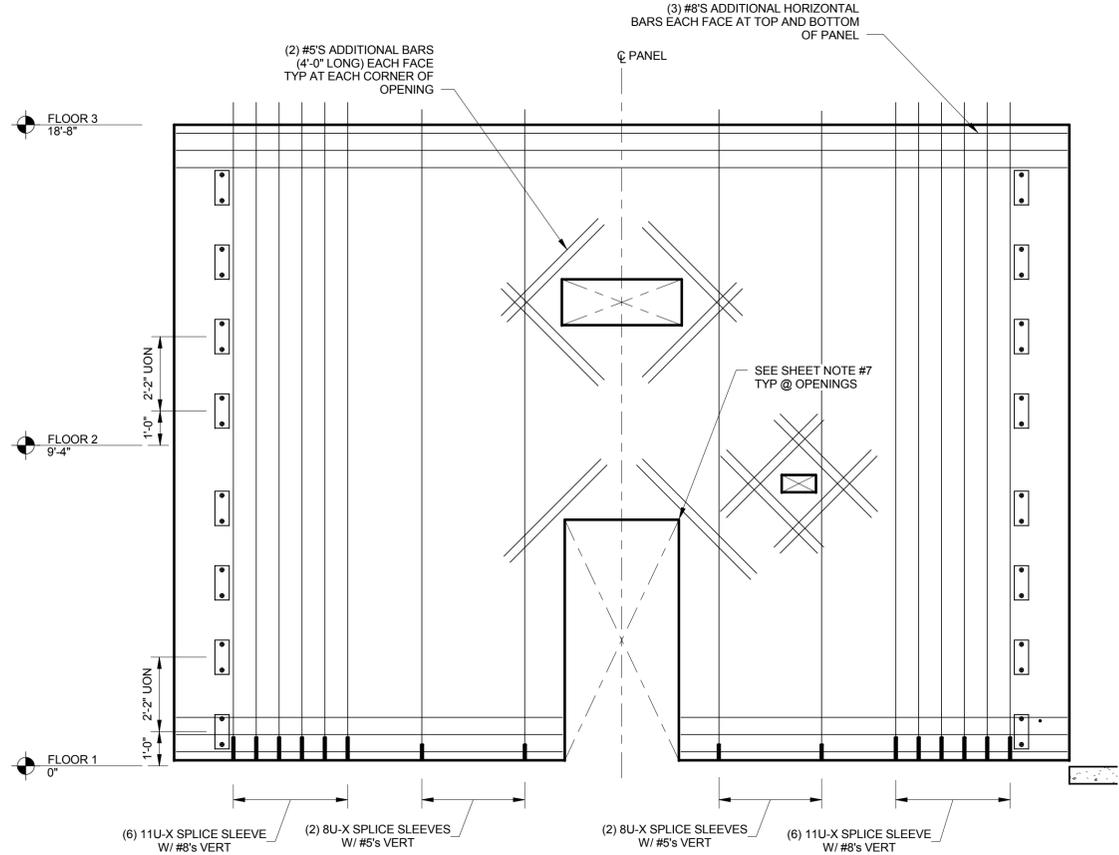
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BID DOCUMENTS

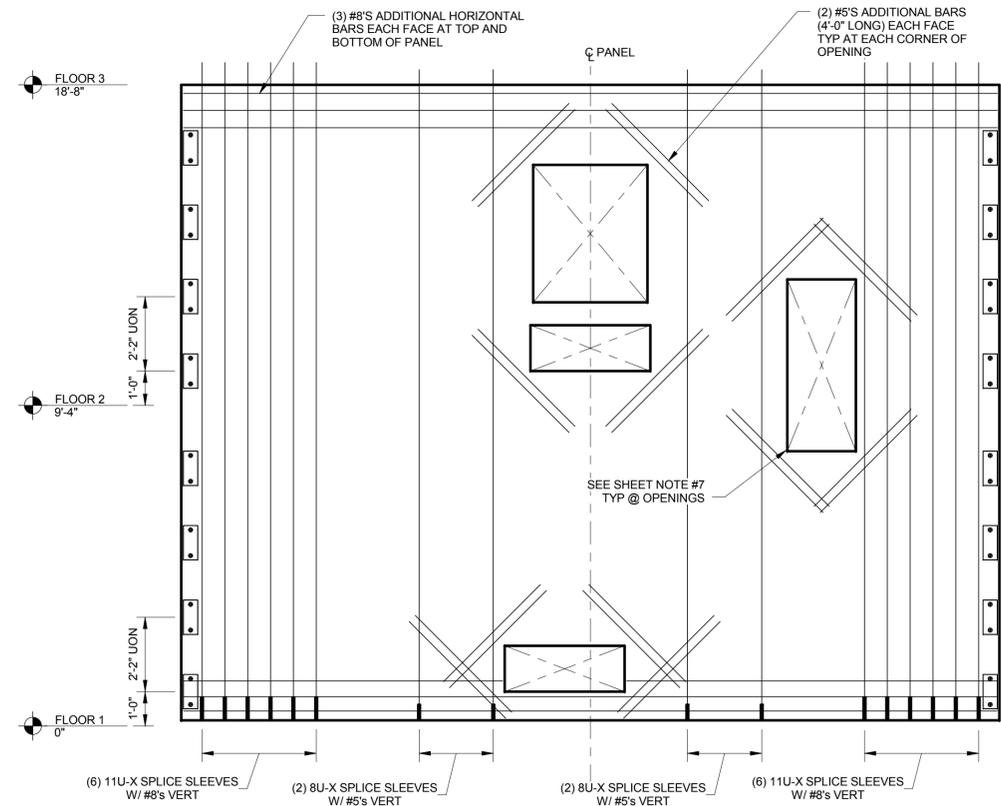




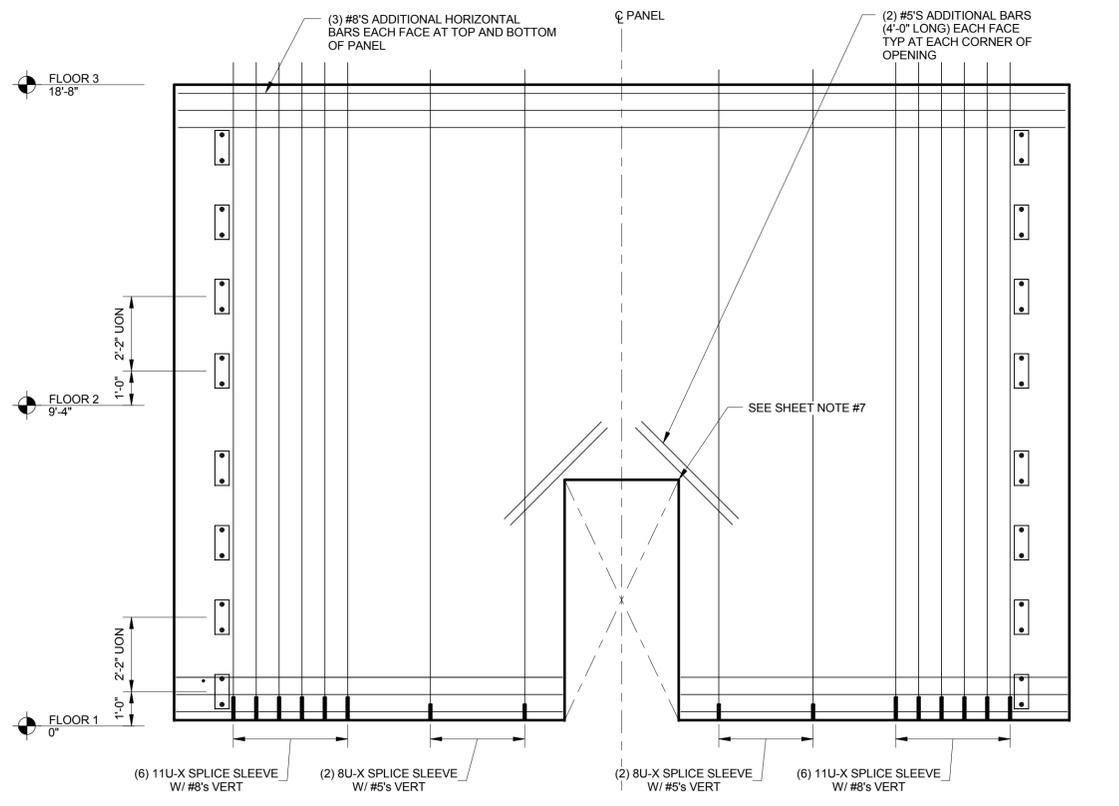
**1 PANEL 1 ELEVATION**  
 S-701 SCALE: 3/8" = 1'-0"



**2 PANEL 2 ELEVATION**  
 S-701 SCALE: 3/8" = 1'-0"



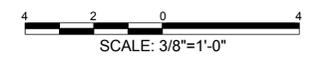
**3 PANEL 3 ELEVATION**  
 S-701 SCALE: 3/8" = 1'-0"



**4 PANEL 4 ELEVATION**  
 S-701 SCALE: 3/8" = 1'-0"

**SHEET NOTES**

- SEE SECTION 13/S-304 FOR TYPICAL REINFORCED CONCRETE WALL PANEL REINFORCEMENT AND ADDITIONAL SPLICE SLEEVE INFORMATION.
- THE CONTRACTOR SHALL VERIFY ALL WALL PANEL OPENINGS, EMBED PLATES, AND ANY OTHER EMBEDDED ITEMS/SLEEVES WITH ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS PRIOR TO CASTING PANELS. ANY DISCREPANCIES SHALL BE REPORTED TO THE STRUCTURAL ENGINEER PRIOR TO CASTING PANELS.
- LOCATION OF VERTICAL REINF AT SPLICE SLEEVES AND SPLICE SLEEVE LOCATIONS ARE CRITICAL AND SHALL HAVE A PLACEMENT TOLERANCE OF 1/16".
- SEE PLAN FOR SPLICE SLEEVE LOCATIONS.
- VERTICAL REINF AT SPLICE SLEEVE SHALL EXTEND A MINIMUM OF 6" HIGHER THAN FINAL END OF BAR. CUT REINFORCING TO REQUIRED EXTENSION LENGTH IN FIELD AFTER CONCRETE HAS REACHED DESIGN STRENGTH.
- ELEVATIONS ARE SHOWN FROM THE INTERIOR.
- (2) ADDITIONAL VERTICAL/HORIZONTAL #5 BARS SHALL BE PLACED EACH FACE OF PANEL AT EACH SIDE OF OPENING WITH 3" CLEAR BETWEEN BAR AND FACE OF ALL OPENINGS. BAR SHALL BE FULL PANEL HEIGHT/ WIDTH.



**REVISIONS**

NO.	DESCRIPTION	DATE

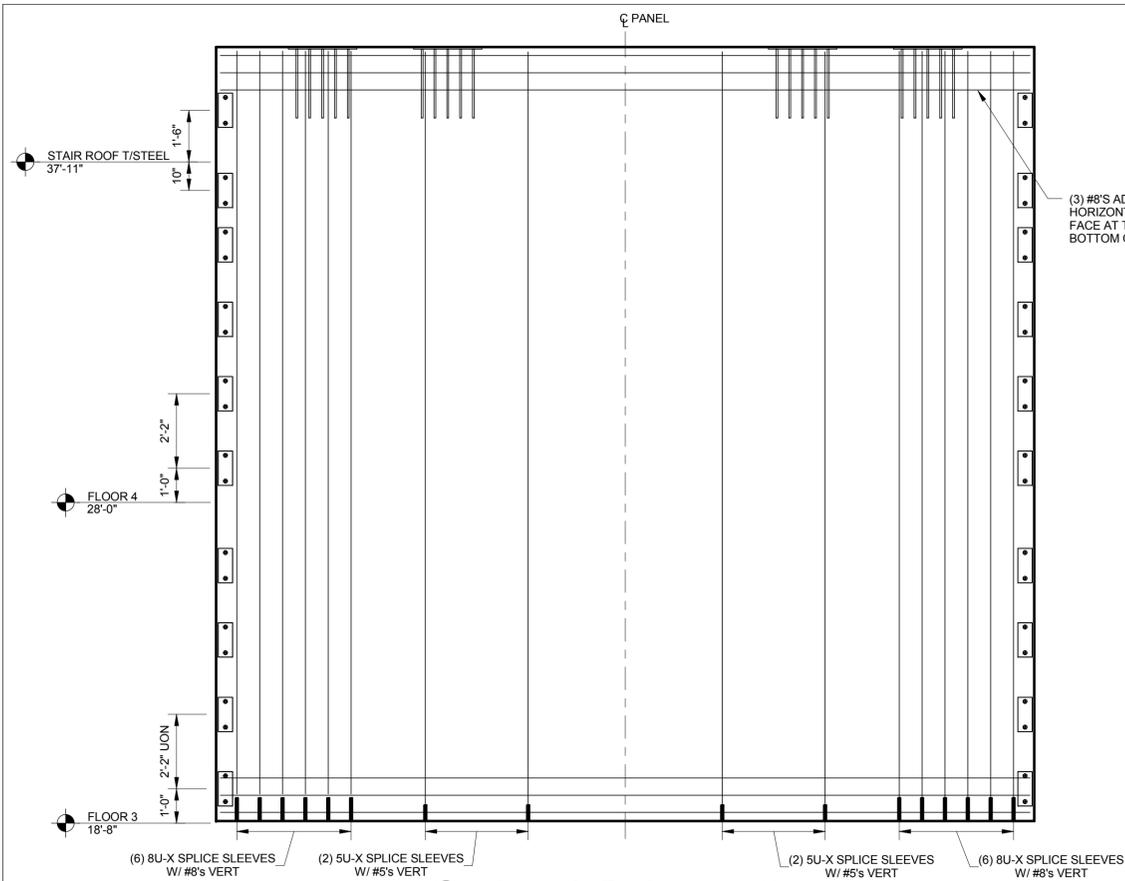
DATE ISSUED: AUGUST 12, 2015  
 REVIEWED BY: RLM  
 DRAWN BY: ARJ  
 DESIGNED BY: ARJ

AEC PROJECT NUMBER  
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SHEET TITLE  
**P1 THRU P4 PANEL ELEVATIONS**

SHEET NUMBER  
**S-701**

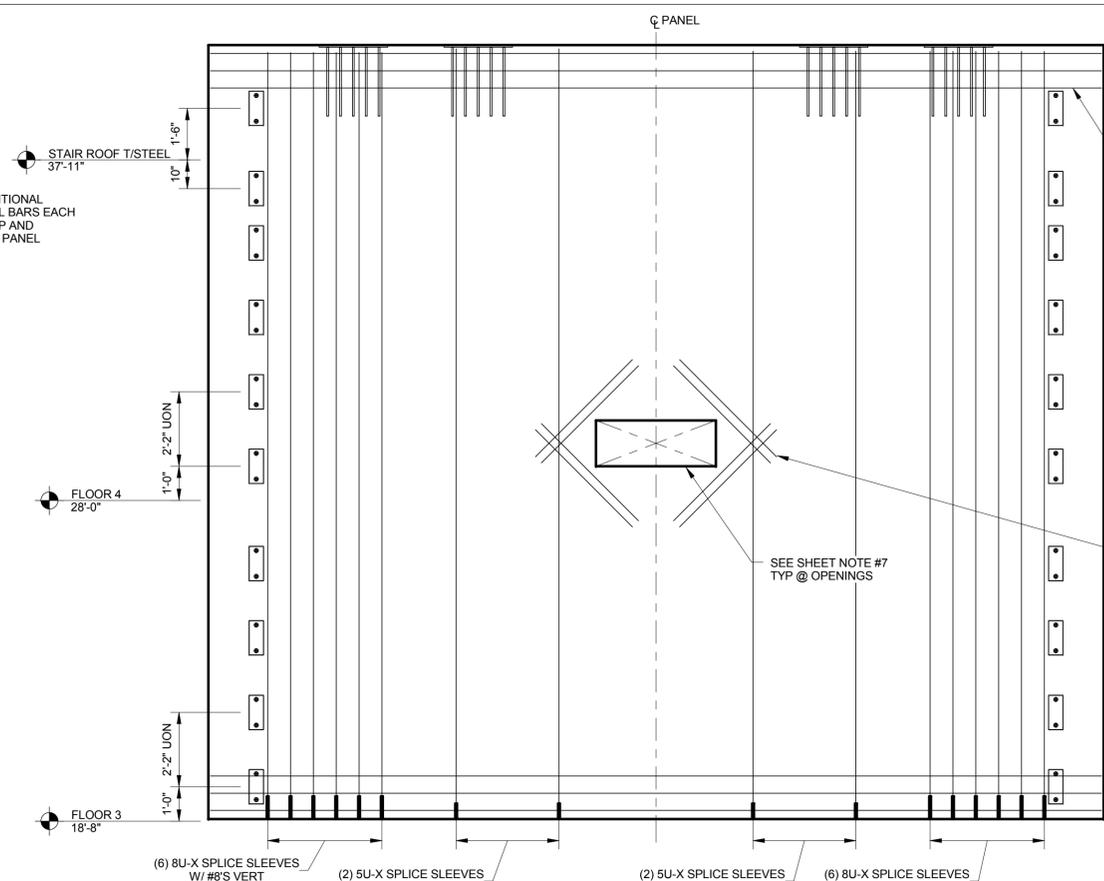
BID DOCUMENTS



**PANEL 5 ELEVATION**

1  
S-702

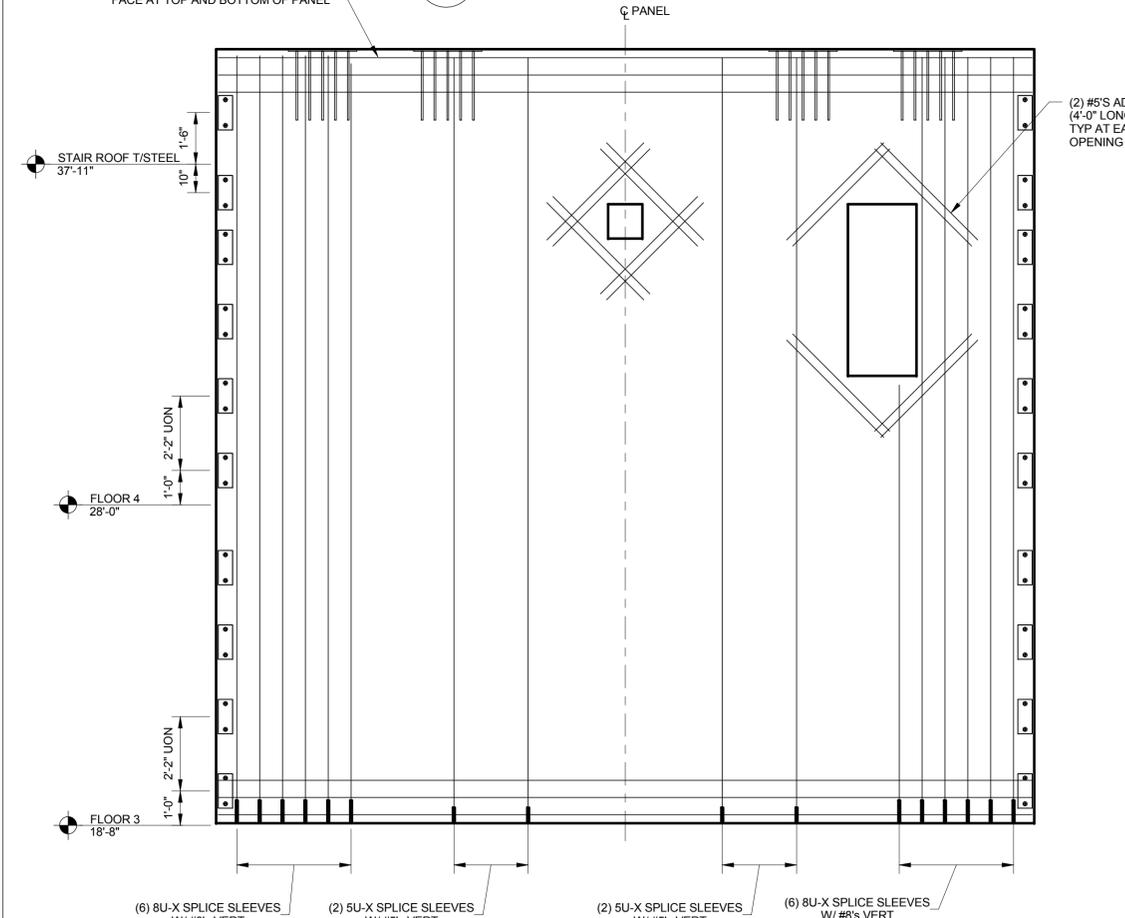
SCALE: 3/8" = 1'-0"



**PANEL 6 ELEVATION**

2  
S-702

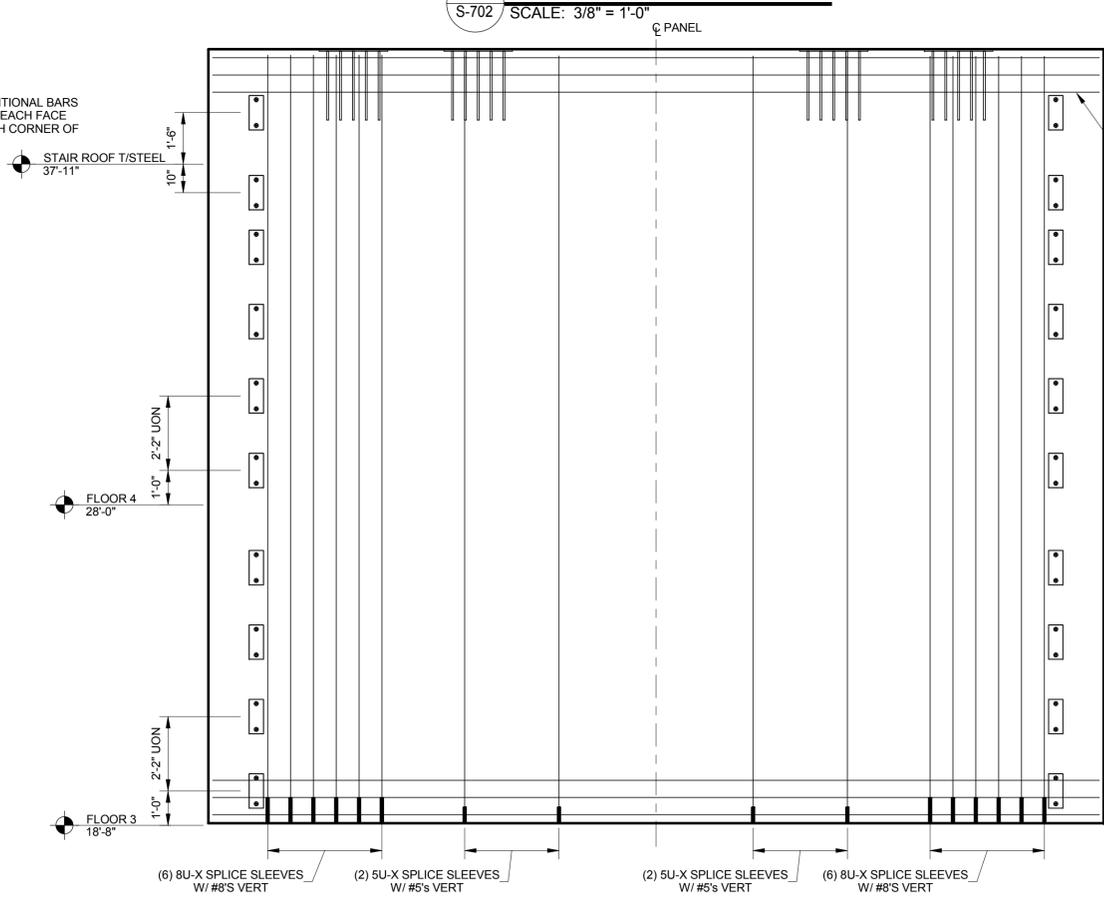
SCALE: 3/8" = 1'-0"



**PANEL 7 ELEVATION**

3  
S-702

SCALE: 3/8" = 1'-0"



**PANEL 8 ELEVATION**

4  
S-702

SCALE: 3/8" = 1'-0"

**SHEET NOTES**

- SEE SECTION 1315-304 FOR TYPICAL REINFORCED CONCRETE WALL PANEL REINFORCEMENT AND ADDITIONAL SPLICE SLEEVE INFORMATION.
- THE CONTRACTOR SHALL VERIFY ALL WALL PANEL OPENINGS, EMBED PLATES, AND ANY OTHER EMBEDDED ITEMS (SLEEVES WITH ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS PRIOR TO CASTING PANELS. ANY DISCREPANCIES SHALL BE REPORTED TO THE STRUCTURAL ENGINEER PRIOR TO CASTING PANELS.
- LOCATION OF VERTICAL REINF AT SPLICE SLEEVES AND SPLICE SLEEVE LOCATIONS ARE CRITICAL AND SHALL HAVE A PLACEMENT TOLERANCE OF 1/16".
- SEE PLAN FOR SPLICE SLEEVE LOCATIONS.
- VERTICAL REINF AT SPLICE SLEEVE SHALL EXTEND A MINIMUM OF 8" HIGHER THAN FINAL END OF BAR. CUT REINFORCING TO REQUIRED EXTENSION LENGTH IN FIELD AFTER CONCRETE HAS REACHED DESIGN STRENGTH.
- ELEVATIONS ARE SHOWN FROM THE INTERIOR.
- (2) ADDITIONAL VERTICAL/HORIZONTAL #5 BARS SHALL BE PLACED EACH FACE OF PANEL AT EACH SIDE OF OPENING WITH 3" CLEAR BETWEEN BAR AND FACE OF ALL OPENINGS. BAR SHALL BE FULL PANEL HEIGHT/WIDTH.



**REVISIONS**

NO.	DESCRIPTION	DATE

DATE ISSUED: AUGUST 12, 2015  
 REVIEWED BY: RLM  
 DRAWN BY: ARJ  
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AEC PROJECT NUMBER  
 222-0264-001

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**P5 THRU P8 PANEL ELEVATIONS**

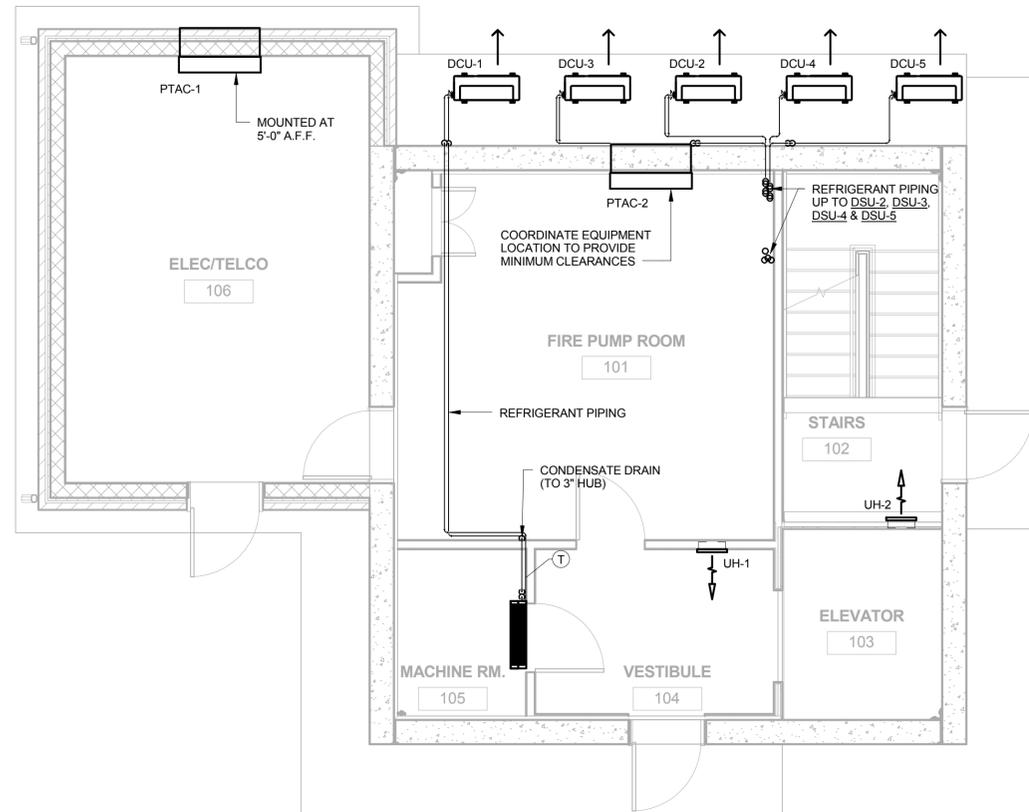
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BID DOCUMENTS

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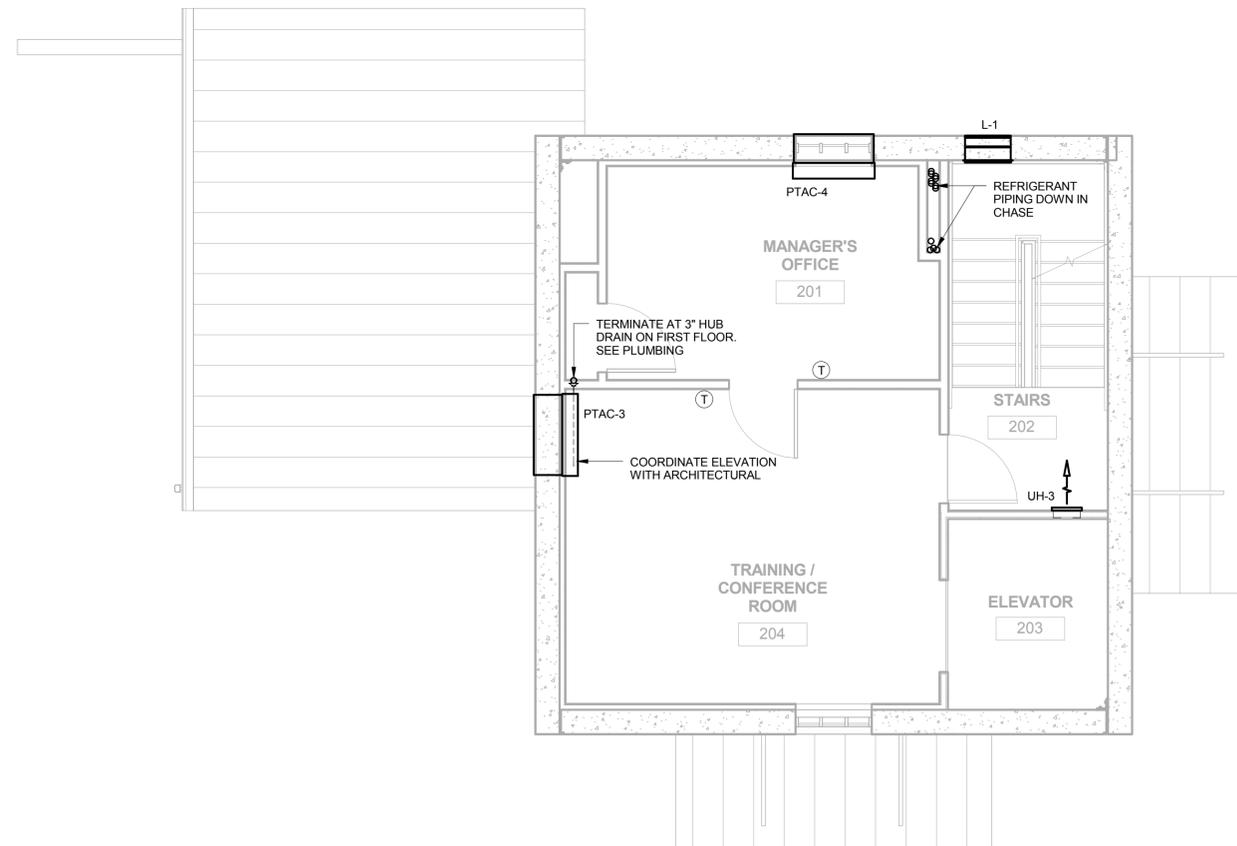




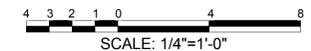


TRUE  
 1  
 M-101  
**FIRST FLOOR PLAN - MECHANICAL**  
 SCALE: 1/4" = 1'-0"

**NOTES:**  
 1. SEE ARCHITECTURAL FOR LOCATION OF EQUIPMENT OPENINGS IN WALL. COORDINATE SIZE BASED ON EQUIPMENT SELECTED.



TRUE  
 2  
 M-101  
**SECOND FLOOR PLAN - MECHANICAL**  
 SCALE: 1/4" = 1'-0"



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 Alexandria VA - Virginia Registration No. 0411-000594



4308 WARDS ROAD  
 SUITE 100  
 LYNCHBURG, VA  
 24502

**AIR  
 TRAFFIC  
 CONTROL  
 TOWER**

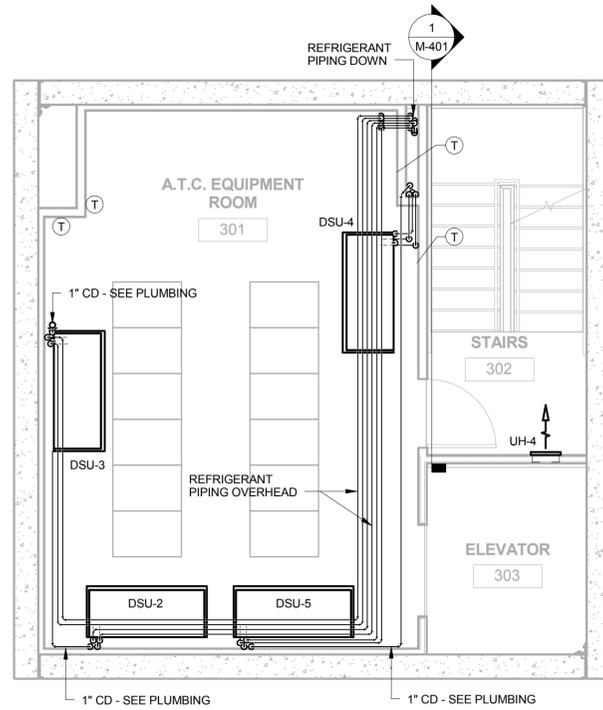
REVISIONS		
NO.	DESCRIPTION	DATE

DATE ISSUED: AUGUST 12, 2015  
 REVIEWED BY: KMN  
 DRAWN BY: MA  
 DESIGNED BY: CCC

AEC PROJECT NUMBER  
 222-0264-001  
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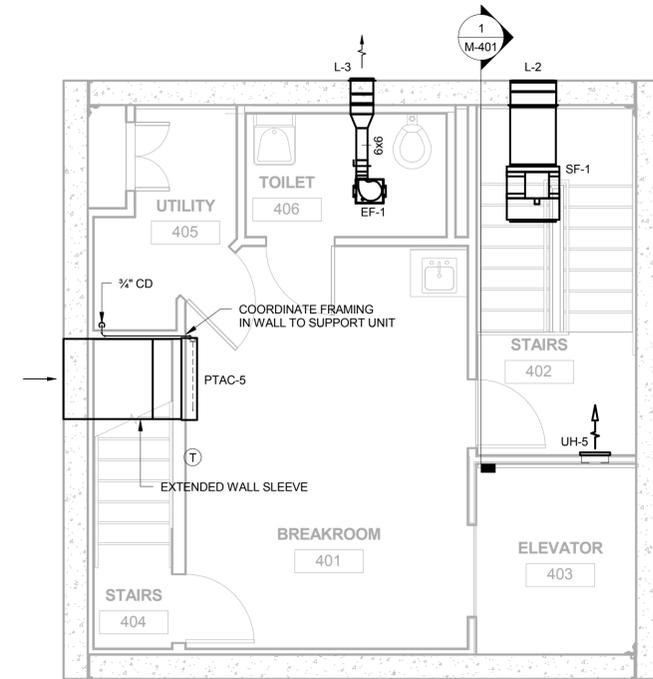
SHEET TITLE  
**FIRST AND SECOND  
 FLOOR PLANS -  
 MECHANICAL**

SHEET NUMBER  
**M-101**  
 BID  
 DOCUMENTS



- NOTES:**
1. SEE STRUCTURAL FOR LOCATION OF BEAMS. COORDINATE LOCATION BASED ON EQUIPMENT SELECTED.
  2. COORDINATE ALL PIPING IN A.T.C. EQUIPMENT ROOM WITH EQUIPMENT AND CABLE TRAY LOCATIONS. NO PIPING MAY PASS OVER ANY EQUIPMENT.

TRUE  
 1  
**THIRD FLOOR PLAN - MECHANICAL**  
 M-102 SCALE: 1/4" = 1'-0"



TRUE  
 2  
**FOURTH FLOOR PLAN - MECHANICAL**  
 M-102 SCALE: 1/4" = 1'-0"

**REVISIONS**

NO.	DESCRIPTION	DATE

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 DRAWN BY: MA  
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AEC PROJECT NUMBER  
 222-0264-001

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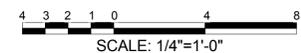
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**THIRD AND FOURTH FLOOR PLANS - MECHANICAL**

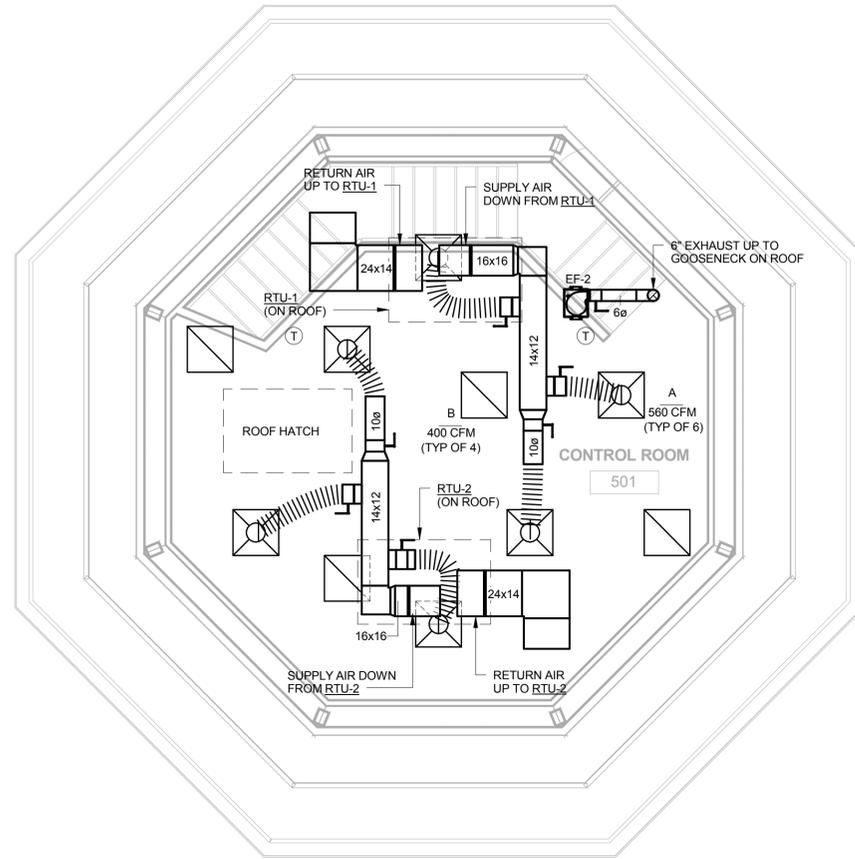
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**M-102**

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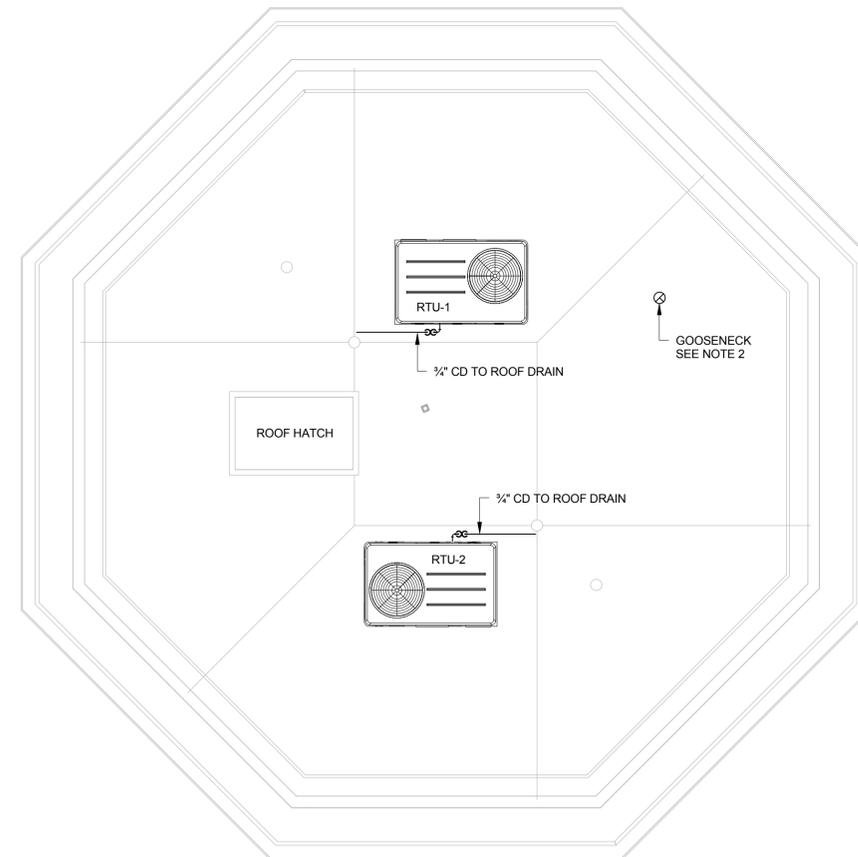


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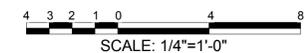


- NOTES:**
1. SEE ARCHITECTURAL/STRUCTURAL FOR LOCATION OF EQUIPMENT OPENINGS IN ROOF AND WALL. COORDINATE SIZE BASED ON EQUIPMENT SELECTED.
  2. DISCHARGE FROM EF-2 SHALL BE LOCATED AT LEAST 10'-0" FROM RTU-1 OR RTU-2 OUTSIDE AIR INTAKES.

TRUE  
 1  
 M-103  
**CONTROL ROOM FLOOR PLAN - MECHANICAL**  
 SCALE: 1/4" = 1'-0"



TRUE  
 2  
 M-103  
**ROOF PLAN - MECHANICAL**  
 SCALE: 1/4" = 1'-0"



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 222-0264-001  
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SHEET TITLE  
**CONTROL ROOM  
 FLOOR AND ROOF  
 PLANS -  
 MECHANICAL**

SHEET NUMBER  
**M-103**  
 BID  
 DOCUMENTS

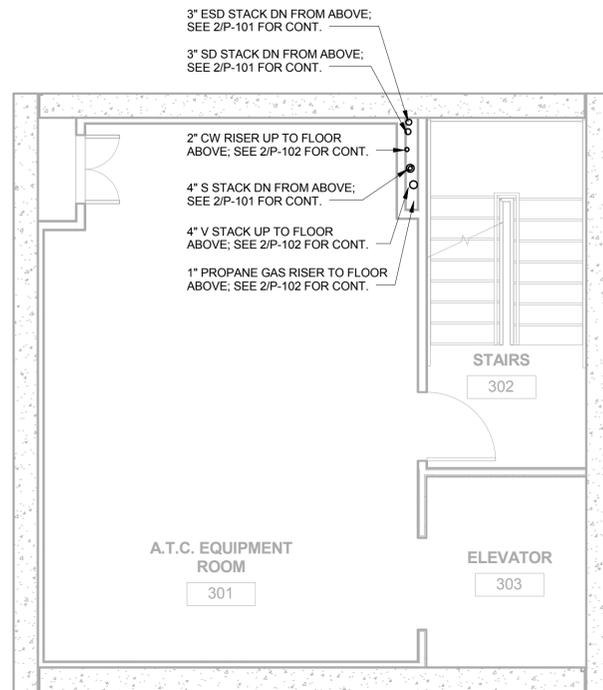




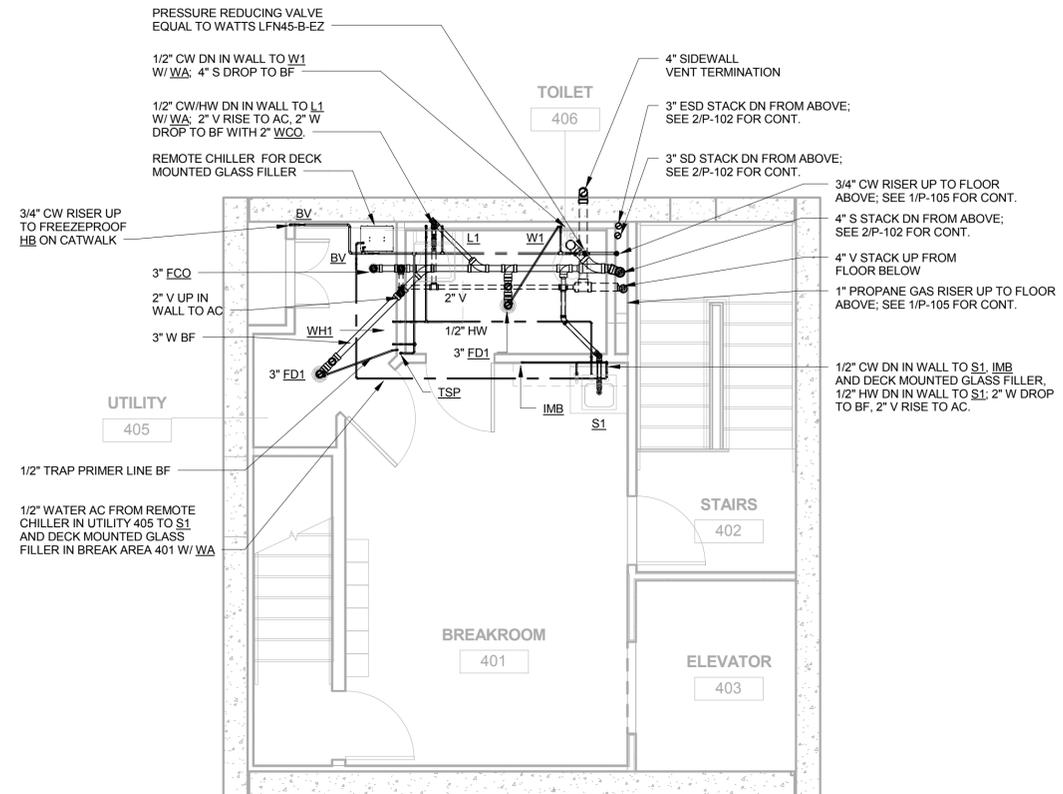








TRUE  
 1  
**THIRD FLOOR PLAN - PLUMBING**  
 P-102 SCALE: 1/4" = 1'-0"



TRUE  
 2  
**FOURTH FLOOR PLAN - PLUMBING**  
 P-102 SCALE: 1/4" = 1'-0"

**REVISIONS**

NO.	DESCRIPTION	DATE

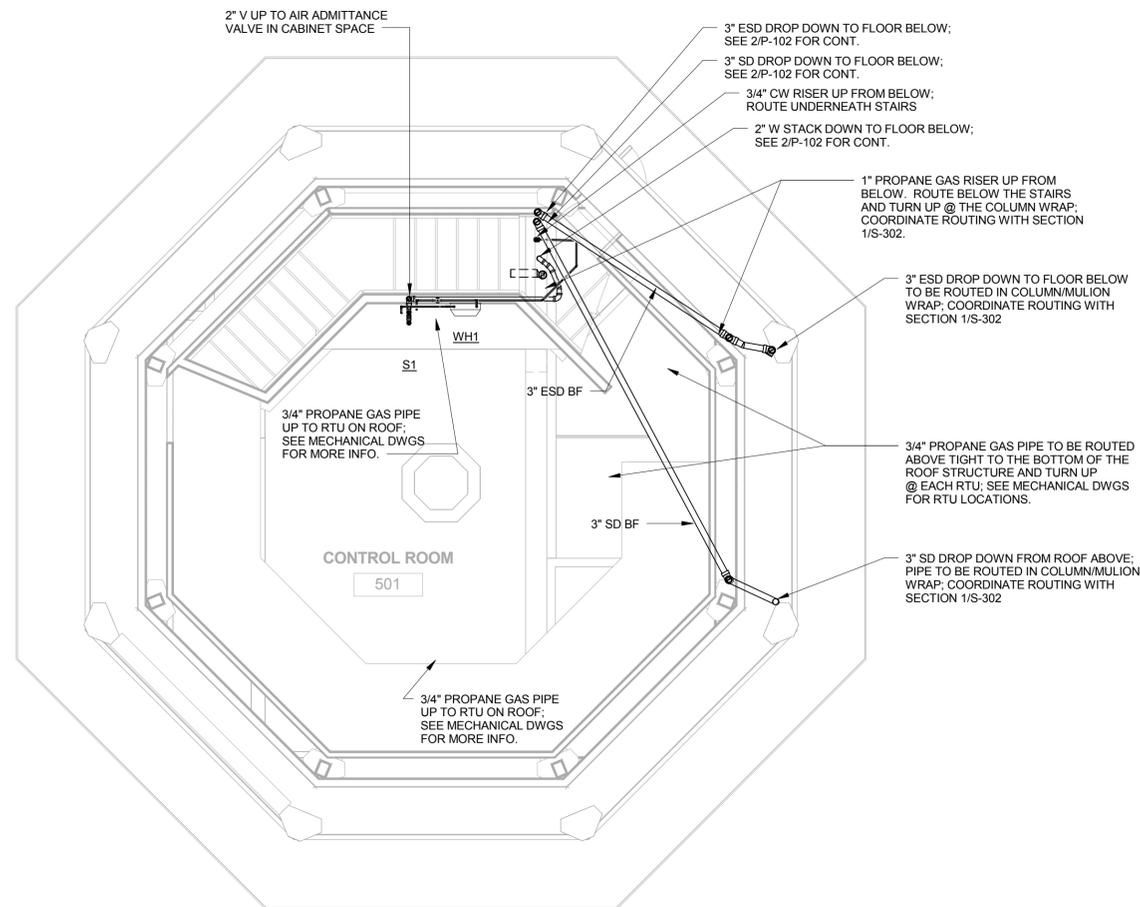
DATE ISSUED: AUGUST 12, 2015  
 REVIEWED BY: KMN  
 DRAWN BY: B.J.L.  
 DESIGNED BY: B.J.L.

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 222-0264-001  
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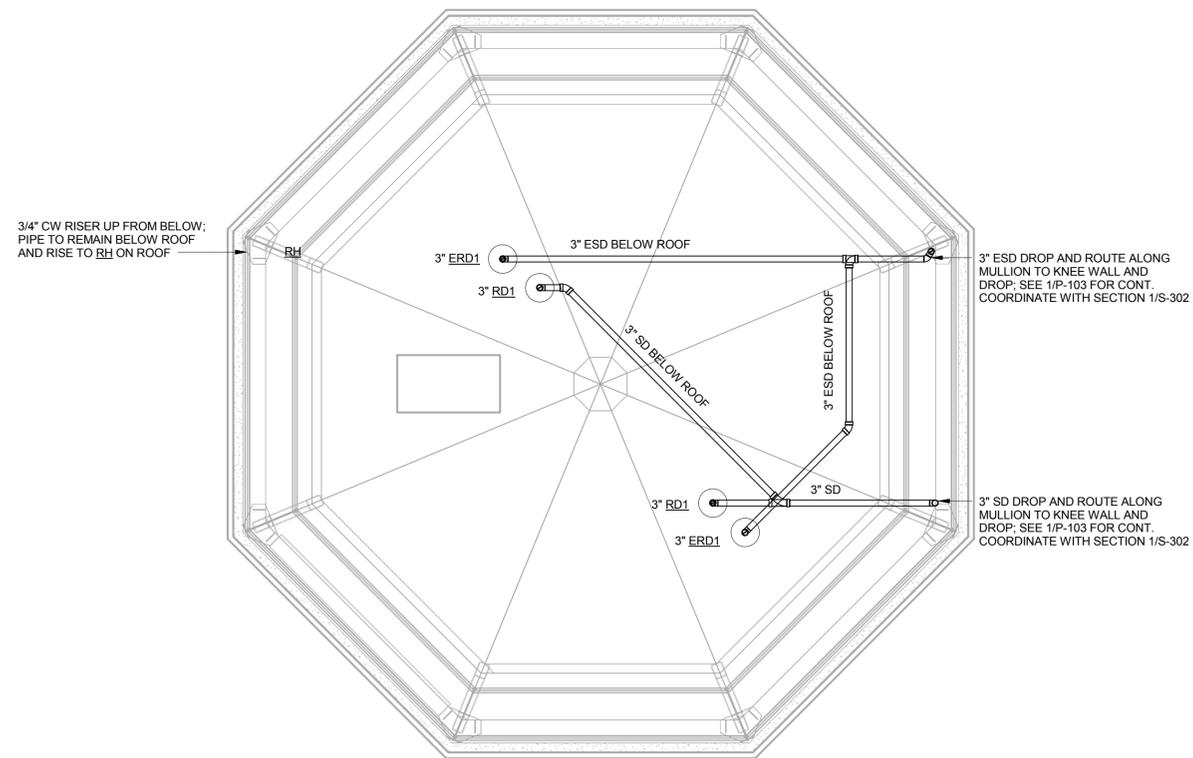
SHEET TITLE  
**THIRD AND FOURTH  
 FLOOR PLANS -  
 PLUMBING**

SHEET NUMBER  
**P-102**

BID  
 DOCUMENTS



TRUE  
 1  
 P-103  
**CONTROL ROOM FLOOR PLAN - PLUMBING**  
 SCALE: 1/4" = 1'-0"



TRUE  
 2  
 P-103  
**ROOF PLAN - PLUMBING**  
 SCALE: 1/4" = 1'-0"

**REVISIONS**

NO.	DESCRIPTION	DATE

DATE ISSUED: AUGUST 12, 2015  
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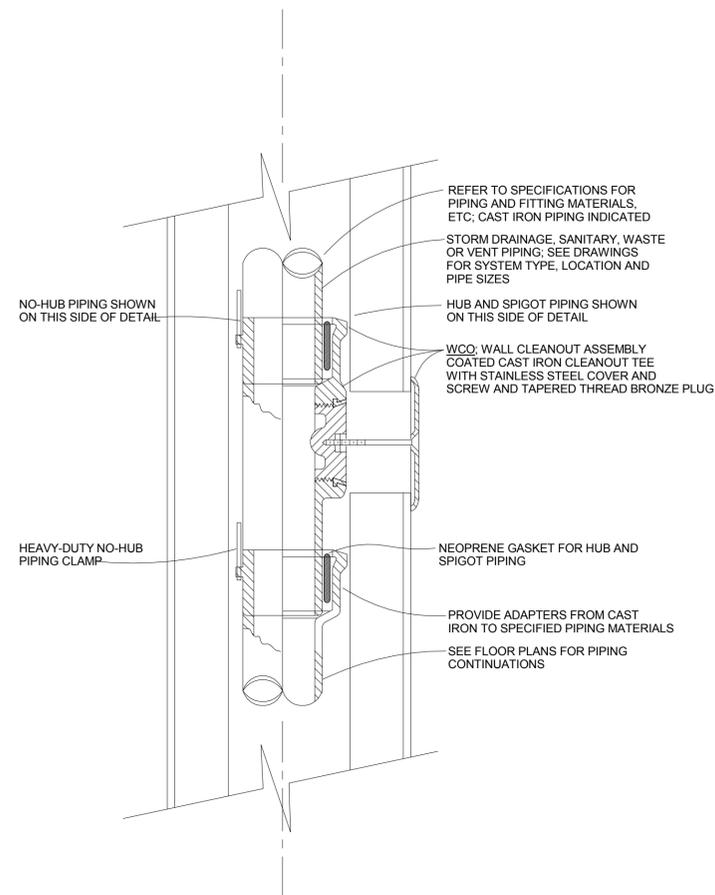
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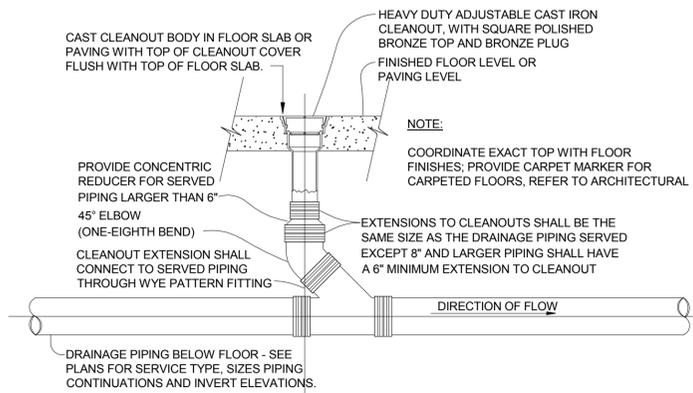
**CONTROL ROOM  
 FLOOR AND ROOF  
 PLANS - PLUMBING**

SHEET NUMBER  
**P-103**

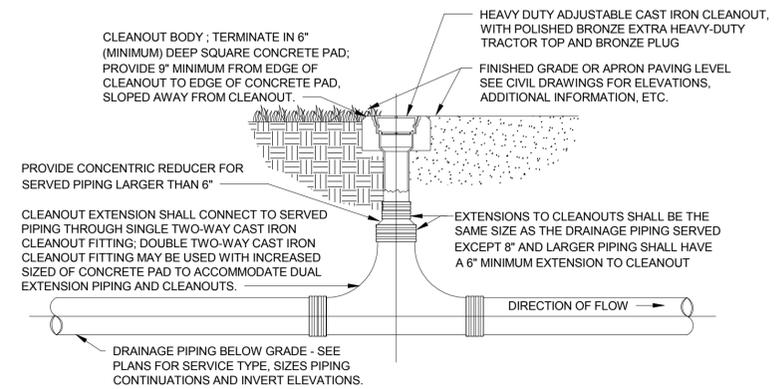
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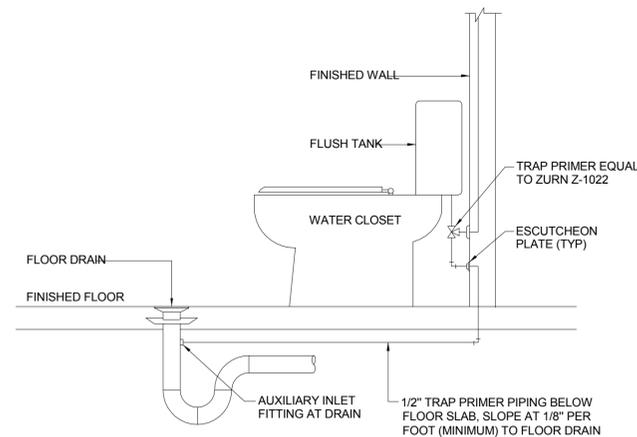
**1 WALL CLEANOUT (WCO) DETAIL**  
 P-501 SCALE: 1/4" = 1'-0"



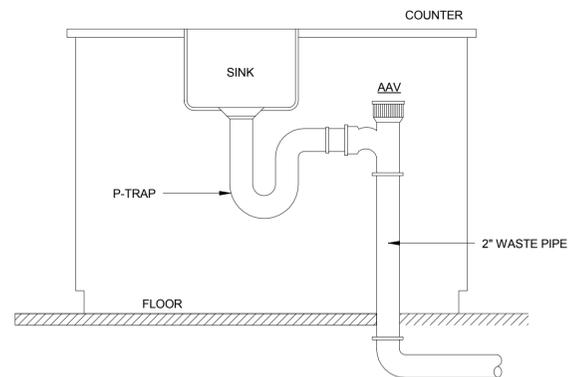
**2 FLOOR CLEANOUT (FCO) DETAIL**  
 P-501 SCALE: 1/4" = 1'-0"



**3 CLEANOUT ON GRADE (COOG) DETAIL**  
 P-501 SCALE: 1/4" = 1'-0"

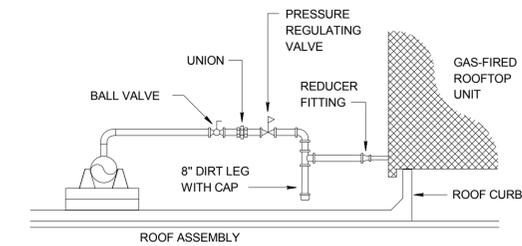


**4 TRAP PRIMER DETAIL**  
 P-501 SCALE: 1/4" = 1'-0"



NOTES:  
 1) THE AIR ADMITTANCE VALVE SHALL BE LOCATED A MINIMUM OF 4" ABOVE THE HORIZONTAL BRANCH DRAIN OR FIXTURE DRAIN BEING VENTED.  
 2) ACCESS SHALL BE PROVIDED AT ALL AIR ADMITTANCE VALVES. THE VALVE SHALL BE LOCATED WITHIN A VENTILATED SPACE THAT ALLOWS AIR TO ENTER THE VALVE.  
 3) THE AIR ADMITTANCE VALVE SHALL BE RATED IN ACCORDANCE WITH THE STANDARD FOR THE SIZE OF THE VENT TO WHICH THE VALVE IS CONNECTED.

**5 AIR ADMITTANCE VALVE (AAV) DETAIL**  
 P-501 SCALE: 1/4" = 1'-0"



**6 RTU GAS CONNECTION DETAIL**  
 P-501 SCALE: 1/4" = 1'-0"

REVISIONS		
NO.	DESCRIPTION	DATE

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 DRAWN BY: BJL  
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 222-0264-001

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 SHEET TITLE  
**PLUMBING DETAILS**

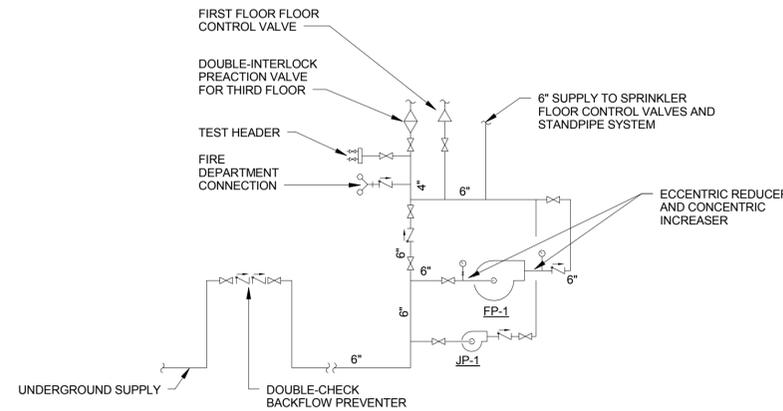
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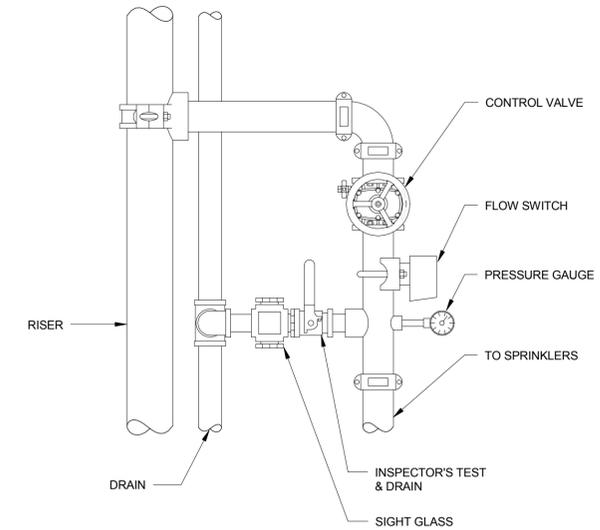


# FIRE PROTECTION NOTES

1. PROVIDE WORKING DRAWINGS FROM THE ENGINEERED CONTRACT DRAWINGS AND SPECIFICATIONS. THE DRAWINGS SHALL MEET ALL OF THE REQUIREMENTS OF WORKING DRAWINGS PER NFPA 13. THE DRAWINGS SHALL BE SUBMITTED TO THE FIRE MARSHAL FOR APPROVAL.
2. PROVIDE WET-PIPE SPRINKLER SYSTEMS, A CLASS I STANDPIPE SYSTEM, AND A FIRE PUMP IN ACCORDANCE WITH 2012 VIRGINIA CONSTRUCTION CODE, 2012 VIRGINIA STATEWIDE FIRE PREVENTION CODE, 2010 NFPA 13, 2010 NFPA 14, 2010 NFPA 20, AND STATE AND LOCAL REQUIREMENTS.
3. ALL PIPING, SPRINKLERS, AND COMPONENTS SHALL BE UL LISTED AND FM APPROVED FOR AUTOMATIC SPRINKLER AND STANDPIPE SYSTEMS.
4. STORAGE ROOMS, EQUIPMENT ROOMS, KITCH, AND UNASSIGNED AREAS ARE ORDINARY HAZARD, GROUP 1; AND OFFICES, STAIRS, CAB, LOBBY, ETC. ARE LIGHT HAZARD. THE SYSTEMS SHALL BE DESIGNED AND HYDRAULICALLY CALCULATED IN ACCORDANCE WITH NFPA 13. THE SYSTEMS SHALL PROVIDE 0.10 AND 0.15 GPM/SQ. FT. FOR LIGHT AND ORDINARY HAZARD, GROUP 1, RESPECTIVELY. ABOVE THE FIRST FLOOR, THE SYSTEMS SHALL BE CALCULATED OVER THE AREA OF AN ENTIRE FLOOR, EXCEPT THAT THE CAB AND FLOOR BELOW SHALL BE CALCULATED TOGETHER. THE FIRST FLOOR SHALL BE CALCULATED OVER THE MOST REMOTE 1,500 SQ. FT., WHICH MAY BE REDUCED FOR CEILING HEIGHTS LESS THAN 20 FT IN ACCORDANCE WITH NFPA 13. THE STANDPIPE SHALL DELIVER 500 GPM AT THE TOP MOST 2 HOSE CONNECTIONS.
5. THE SPRINKLER SPACING SHALL NOT EXCEED 225 SQ. FT. AND 130 SQ. FT. FOR LIGHT AND ORDINARY HAZARD, RESPECTIVELY.
6. PROVIDE FLOOR CONTROL VALVES WITH APPROPRIATE TRIM PER NFPA 13. CONNECT FLOW AND TAMPER SWITCHES (INSTALL ON ALL INTERIOR SYSTEM CONTROL VALVES AND PIVS) AND ALL OTHER DEVICES TO THE FIRE ALARM SYSTEM.
7. COORDINATE ROUTING OF PIPING, TEST CONNECTIONS, ETC. WITH PLUMBING AND MECHANICAL (HVAC) ROUTING. PIPING SHALL NOT BE LOCATED ABOVE ELECTRICAL PANELS, ETC. PER NFPA 70.
8. ALL TEST/DRAIN LINES (MORE THAN 5 GALLONS) SHALL DISCHARGE DIRECTLY TO THE EXTERIOR WITH APPROPRIATE SPLASH PROTECTION. AUXILIARY DRAINS MAY DISCHARGE INTO MECHANICAL ROOM FLOOR DRAINS. WORKING DRAWINGS SHALL INDICATE THE LOCATION OF ALL TEST/DRAIN VALVES AND DISCHARGE POINTS.
9. ALL PIPES SERVING A SINGLE SPRINKLER ARE 1 INCH MINIMUM. PROVIDE ASTM A 53 SCHEDULE 40 STEEL PIPE FOR WELDED, THREADED, AND GROOVED FITTINGS ONLY. PROVIDE ASTM A 135 OR A 795 SCHEDULE 10 STEEL PIPE FOR WELDED OR ROLLED-GROOVE FITTINGS ONLY.
10. PROVIDE 1/2-INCH RECESSED PENDENT SPRINKLERS (ORDINARY TEMPERATURE EXCEPT WHERE OTHERWISE REQUIRED BY NFPA 13) IN INTERIOR SPACES WITH FINISHED CEILINGS, EXCEPT IN THE CAB WHERE CONCEALED SPRINKLERS SHALL BE PROVIDED. SPRINKLERS SHALL BE CENTERED IN THE TILES IN BOTH DIRECTIONS.
11. PROVIDE HANGERS IN ACCORDANCE WITH NFPA 13. HANGERS SHALL BE ATTACHED TO THE TOP CORD OF BEAMS OR JOISTS.
12. THE POINT OF SERVICE OF THE FIRE PROTECTION SYSTEM IS THE 8" WHERE THE 2" DOMESTIC MAIN TEES OFF UPSTREAM OF THE BACKFLOW PREVENTER. THE BACKFLOW IS A DOUBLE-CHECK BACKFLOW PREVENTER WITH A MAXIMUM PRESSURE LOSS OF 7 PSI; REFER TO THE CIVIL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
13. A FLOW TEST WAS PERFORMED ON 5/27/15 AT 9:00 AM BY HURT & PROFFITT. THE FLOW AND PRESSURE HYDRANTS WERE LOCATED EAST OF THE EXISTING CONTROL TOWER APPROXIMATELY 170 FEET SOUTH (NEAR THE OLD FIRE STATION) AND 130 FEET NORTH OF THE BOTTOM OF THE EXISTING STAIR, RESPECTIVELY. THE STATIC PRESSURE WAS 79 PSI AND THE RESIDUAL PRESSURE WAS 56 PSI AT A FLOW OF 1,061 GPM WITH A PITOT OF 40 PSI ON A SINGLE 2.5-INCH BUTT AND A HYDRANT COEFFICIENT OF 0.9. THE ELEVATION OF THE TEST HYDRANT IS APPROXIMATELY 935 FT, WHICH IS 35 FT LOWER THAN THE FIRST FLOOR ELEVATION OF 969.5 FT.
14. A NEW 8" DEAD END MAIN WILL BE EXTENDED FROM THE EXISTING 12" MAIN.
15. PROVIDE A 500 GPM @ 100 PSI VERTICAL IN-LINE FIRE PUMP FOR THE STANDPIPE AND SPRINKLER SYSTEM. PROVIDE A JOCKEY PUMP AND TRIM PER NFPA 20. PUMP DISCHARGE SHALL HAVE A MAXIMUM CHURN PRESSURE OF 175 PSI. PUMP SHALL BE 50 HP MAXIMUM WITH 480V, 3 PHASE.
16. COORDINATE THE LOCATION OF THE FIRE PUMP AND FIRE AND JOCKEY PUMP CONTROLLERS WITH MECHANICAL AND ELECTRICAL PANELS, CONTROLLERS, AND EQUIPMENT.



**1 FIRE PUMP SCHEMATIC**  
SCALE: 1/4" = 1'-0"



TYPICAL FOR SECOND AND FOURTH FLOORS - BECAUSE THE VALVES ARE LOCATED AT INTERMEDIATE STAIR LANDINGS, THE CONTROL VALVES SHALL BE LOCATED APPROXIMATELY 7' ABOVE THE LANDING FLOOR, WITH THE SUPPLY DROPPING DOWN INTO THE ADJACENT CEILING SPACE

**2 TYPICAL FLOOR CONTROL VALVE DETAIL**  
SCALE: 1/4" = 1'-0"



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4308 WARDS ROAD  
SUITE 100  
LYNCHBURG, VA  
24502

## AIR TRAFFIC CONTROL TOWER

REVISIONS		
NO.	DESCRIPTION	DATE

DATE ISSUED: AUGUST 12, 2015  
REVIEWED BY: SD  
DRAWN BY: SD  
DESIGNED BY: SD

AEC PROJECT NUMBER  
222-0264-001  
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### SHEET TITLE FIRE PROTECTION GENERAL NOTES AND DETAILS

SHEET NUMBER  
**FP-001**

BID  
DOCUMENTS

**REVISIONS**

NO.	DESCRIPTION	DATE

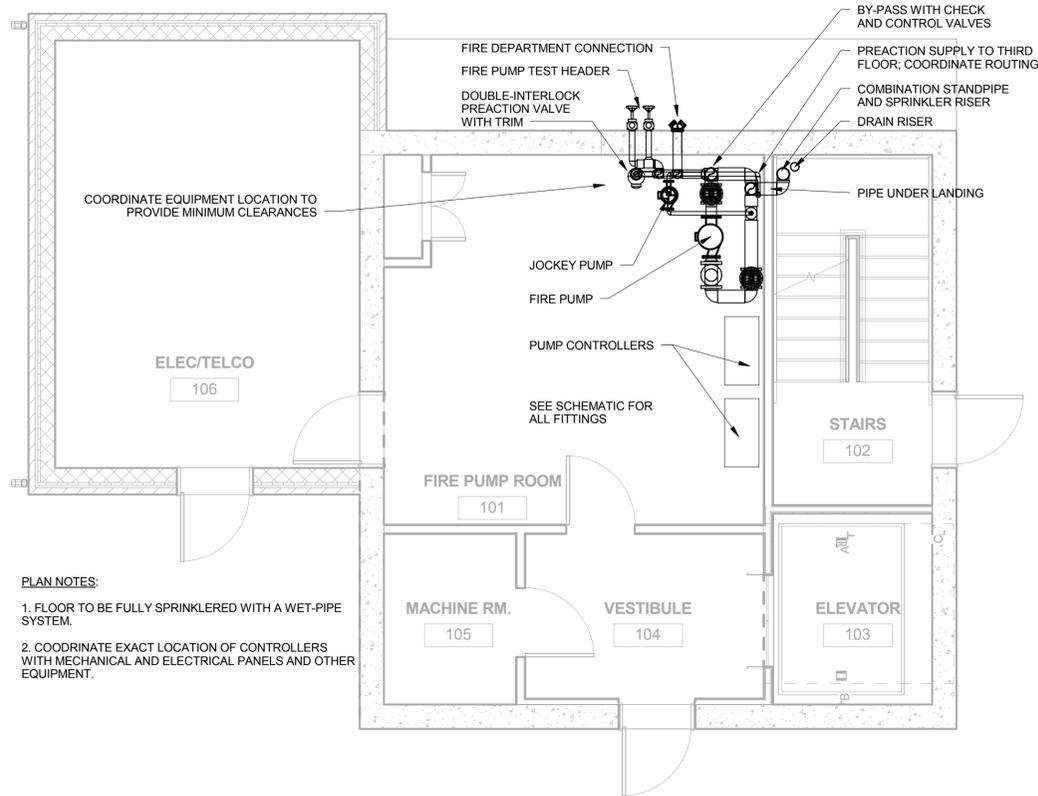
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AEC PROJECT NUMBER  
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SHEET TITLE  
**FIRST THRU THIRD FLOOR PLANS - FIRE PROTECTION**

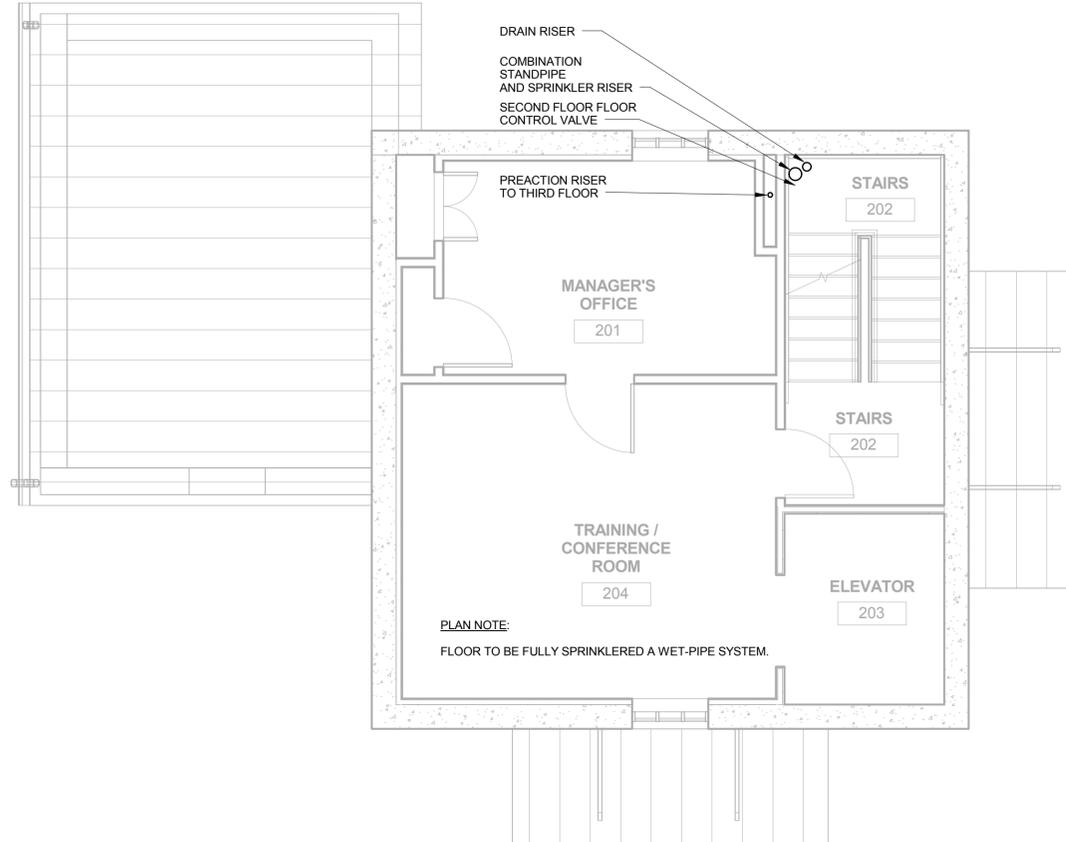
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**FP-101**

BID DOCUMENTS

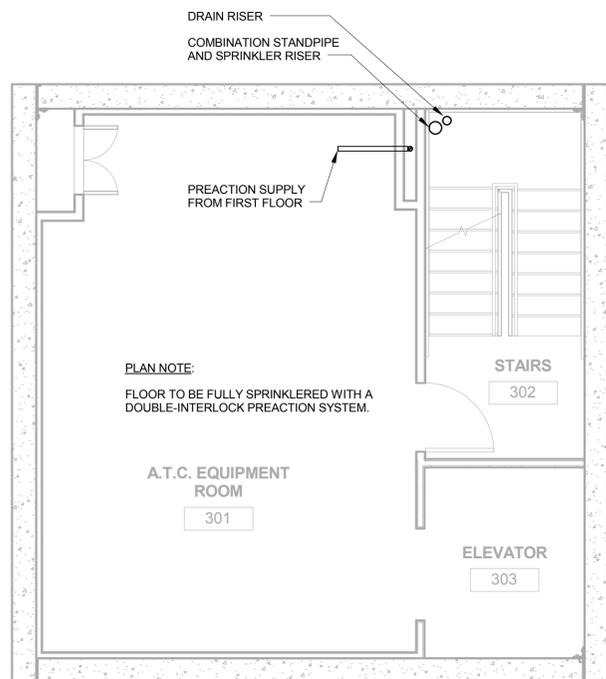


**PLAN NOTES:**  
 1. FLOOR TO BE FULLY SPRINKLERED WITH A WET-PIPE SYSTEM.  
 2. COORDINATE EXACT LOCATION OF CONTROLLERS WITH MECHANICAL AND ELECTRICAL PANELS AND OTHER EQUIPMENT.

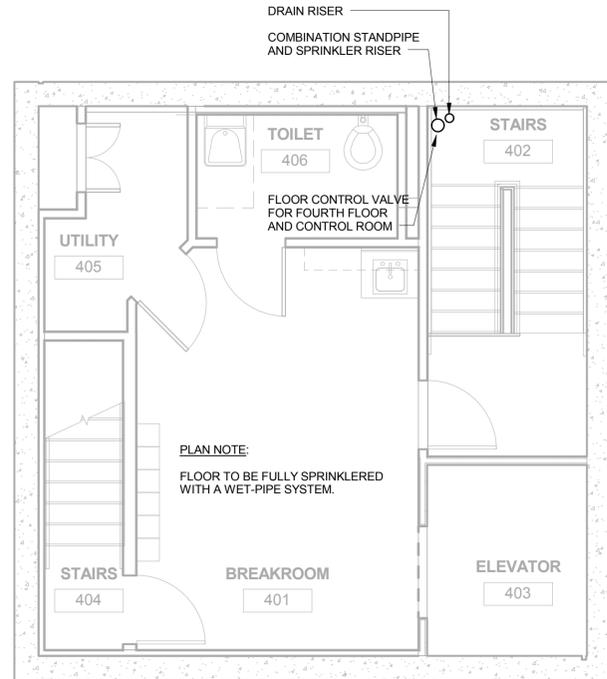
TRUE  
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**FIRST FLOOR PLAN - FIRE PROTECTION**  
 FP-101 SCALE: 1/4" = 1'-0"



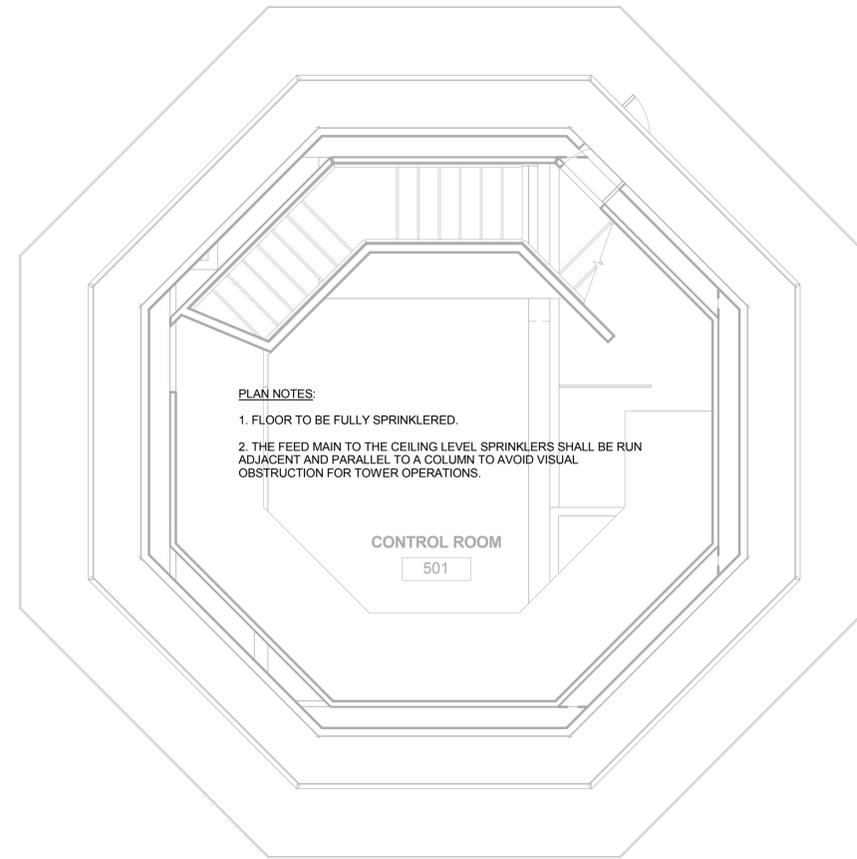
TRUE  
 2  
**SECOND FLOOR PLAN - FIRE PROTECTION**  
 FP-101 SCALE: 1/4" = 1'-0"



TRUE  
 3  
**THIRD FLOOR PLAN - FIRE PROTECTION**  
 FP-101 SCALE: 1/4" = 1'-0"



TRUE  
1  
FP-102  
SCALE: 1/4" = 1'-0"  
**FOURTH FLOOR PLAN - FIRE PROTECTION**



TRUE  
2  
FP-102  
SCALE: 1/4" = 1'-0"  
**CONTROL ROOM FLOOR PLAN - FIRE PROTECTION**

**REVISIONS**

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AEC PROJECT NUMBER  
222-0264-001

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SHEET TITLE

**FOURTH AND  
CONTROL ROOM  
FLOOR PLAN - FIRE  
PROTECTION**

SHEET NUMBER

**FP-102**

BID  
DOCUMENTS

## ELECTRICAL LEGEND

	—	AUTOMATIC TRANSFER SWITCH
	—	CONDUIT RUN EXPOSED.
	—	HOME RUN (PANEL "LA", CIRCUIT "3", ETC.) EQUIPMENT GROUND CONDUCTOR IS NOT SHOWN BUT SHALL BE PROVIDED.
	—	MOUNTING HEIGHT A.F.F. - 18" TO 6", RECEPTACLE, DUPLEX, NEMA 5-20R, WALL MOUNTED.
	—	MOUNTING HEIGHT A.F.F. - 18" TO 6", RECEPTACLE, DUPLEX, GFI, NEMA 5-20R, WALL MOUNTED.
	—	MOUNTING HEIGHT A.F.F. - 18" TO 6", RECEPTACLE, DUPLEX, GFI, WEATHER PROOF, NEMA 5-20R, WALL MOUNTED.
	—	QUAD RECEPTACLE, NEMA 5-20R WALL MOUNTED AT 18" AFF
	—	WALL MOUNTED COMMUNICATION OUTLET - (1) WHITE RJ-45 JACK.
	—	COMMUNICATION OUTLET - (3) RJ-45 JACKS WITH 3 CAT6 CABLES TO COMM BACKBOARD.
	—	COMMUNICATION OUTLET - (4) RJ-45 JACKS
	—	SPECIAL PURPOSE RECEPTACLE FOR APPLIANCE POWER.
	—	MOUNTING HEIGHT A.F.F. - 46" TO 6", FIRE ALARM PULL STATION WITH CLEAR PLASTIC LIFT BOX.
	—	MOUNTING HEIGHT A.F.F. - 80", 15 CD, FIRE ALARM SPEAKER HORN AND STROBE LIGHT.
	—	MOUNTING HEIGHT A.F.F. - PER NEC, PANELBOARD, 480Y/277 VOLT.
	—	MOUNTING HEIGHT A.F.F. - PER NEC, PANELBOARD, 208Y/120 VOLT.
	—	DISCONNECT SWITCH (30A, FUSED 20A, 3 POLE, NEMA 4X)
	—	UTILITY PAD MOUNTED TRANSFORMER.
	—	CLEAN/EMERGENCY POWER RECEPTACLE, SINGLE DUPLEX, 20A, NEMA 5-20R (RED), CLG MOUNTED, CONNECTED TO PANEL R4CA.
	—	UTILITY POWER SERVICE METER.
	—	REMOTE HEAD, WALL MOUNTED IN ELEVATOR SHAFT WITH PROTECTIVE WIRE FRAME
	—	EXIT LIGHT, SHADED AREA INDICATES FACE, ARROW INDICATES DIRECTION, "X" INDICATES FIXTURE TYPE, "X" BELOW INDICATES LIGHTING CONTROL, SEE PLANS AND LUMINAIRE SCHEDULE FOR DETAILS.
	—	RECESSED LIGHTING FIXTURE, "X" INDICATES FIXTURE TYPE, "X" BELOW INDICATES LIGHTING CONTROL, SEE PLANS AND LUMINAIRE SCHEDULE FOR DETAILS.
	—	LIGHTING FIXTURE, "X" INDICATES FIXTURE TYPE, "X" BELOW INDICATES LIGHTING CONTROL, SEE PLANS AND LUMINAIRE SCHEDULE FOR DETAILS.
	—	LIGHTING FIXTURES, WALL MOUNTED, SHADED PORTION INDICATES EMERGENCY CIRCUIT, "X" INDICATES FIXTURE TYPE, "X" BELOW INDICATES LIGHTING CONTROL, SEE PLANS AND LUMINAIRE SCHEDULE FOR DETAILS.
	—	EMERGENCY WALL PACK, "X" INDICATES FIXTURE TYPE, SEE PLANS AND LUMINAIRE SCHEDULE FOR DETAILS.
	—	RECESSED CEILING MOUNTED DOWNLIGHT "X" INDICATES FIXTURE TYPE, "X" BELOW INDICATES LIGHTING CONTROL, SEE PLANS AND LUMINAIRE SCHEDULE FOR DETAILS.
	—	MOUNTING HEIGHT A.F.F. - 46" TO 6", "X" BELOW INDICATES LIGHTING CONTROL
	—	CCTV CAMERA, PROVIDE 2-CAT 6 CABLES FROM EACH CAMERA TO A COM ROOM PATCH PANEL.
	—	SMOKE DETECTOR, SURFACE MOUNTED TO CEILING.
	—	HEAT DETECTOR, SURFACE MOUNTED TO CEILING.
	—	FIRE ALARM MONITOR MODULE
	—	FIRE ALARM CONTROL MODULE
	—	FLOW SWITCH
	—	TAMPER SWITCH
	—	ACCESS CONTROL SYSTEM, ROUGH IN CONDUIT, FURNISHED BY CTP.
	—	LIGHTING CONTROL RELAY
	—	SMOKE DETECTOR, IONIZATION TYPE WITH SAMPLING TUBE (DUCT DETECTOR), LOCATE IN DUCT PER MECH.
	—	FIRE ALARM & ENGINE GENERATOR REMOTE GRAPHIC ANNUNCIATORS
	—	FIRE ALARM STROBE LIGHT (15 CD)
	—	CABLE TRAY
	—	COMBINATION MOTOR STARTER, INTER FACE TO BAS. M = HP
	—	CARD READER

## GENERAL ELECTRICAL NOTES

- ALL ELECTRICAL WORK SHALL COMPLY WITH 2014 NATIONAL ELECTRICAL CODE, THE NATIONAL FIRE CODES, THE AMERICANS WITH DISABILITIES ACT, AND LOCAL CODES.
- THE CONTRACTOR IS REMINDED THAT ELECTRICAL SERVICE TO AND FOR MECHANICAL, KITCHEN AND OTHER EQUIPMENT IS BASED ON EQUIPMENT DESIGN DATA. THE VALUES MAY DIFFER DEPENDING UPON THE ACTUAL EQUIPMENT TO BE FURNISHED. ANY MODIFICATION TO THE ELECTRICAL, BASED UPON ACTUAL EQUIPMENT SELECTION, SHALL RESULT IN NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL THOROUGHLY REVIEW ALL CONTRACT DOCUMENTS TO ASSURE THAT ELECTRICAL SERVICE FOR ALL ITEMS AND/OR EQUIPMENT REQUIRING ELECTRICAL SERVICE IS INCLUDED. ANY ITEM AND/OR EQUIPMENT NOT PROVIDED WITH ELECTRICAL SERVICE, REQUIRING ELECTRICAL SERVICE, SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION BEFORE BIDDING.
- MECHANICAL AND ELECTRICAL EQUIPMENT HAVE BEEN LOCATED AND ARRANGED TO MINIMIZE THE INTERFERENCES OF EQUIPMENT AND STRUCTURE. THE CONTRACTOR SHALL THOROUGHLY FAMILIARIZE HIMSELF/HERSELF WITH THE WORK TO BE PERFORMED BY OTHER TRADES AND THE PHYSICAL CHARACTERISTICS OF THE STRUCTURE IN ORDER TO SCHEDULE AND INSTALL EQUIPMENT AND TO MINIMIZE POSSIBLE INTERFERENCE. FAILURE TO PROPERLY COMMUNICATE AND SCHEDULE WORK WITH OTHER TRADES, RESULTING IN ADDITIONAL WORK AND MATERIAL, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE MODIFICATIONS REQUIRED TO RESOLVE THE CONFLICT SHALL BE DECIDED BY THE ENGINEER.
- ALL PANELBOARDS SHALL BE PROVIDED WITH A TYPEWRITTEN SCHEDULE SHOWING CIRCUIT NUMBERS AND A COMPLETE DESCRIPTION OF EACH CIRCUIT, INCLUDING OFFICIAL ROOM NUMBER.
- MINIMUM TRADE SIZE PERMITTED FOR HOME RUN CONDUIT SHALL BE 3/4 INCH UNLESS NOTED OTHERWISE.
- ALL CONDUCTORS SHALL BE COPPER WITH 600 VOLT INSULATION TYPE THHN/THWN (MINIMUM SIZE SHALL BE #12AWG). CONTRACTOR SHALL ADJUST WIRE AND CONDUIT SIZES IF OTHER INSULATION TYPES ARE USED.
- ALL DUPLEX RECEPTACLES SHALL BE RATED FOR 20 AMPERES AT 120 VOLTS AC. WIRING DEVICES SHALL BE MANUFACTURED BY HUBBELL OR APPROVED EQUAL.
- ALL ELECTRICAL WIRING DEVICES INDICATED TO BE INSTALLED IN MASONRY WALLS OR FLOORS SHALL BE FLUSH TO FACE OF MASONRY, INCLUDING BRANCH CIRCUIT PANELBOARDS, UNLESS OTHERWISE NOTED. THE CONDUITS TO ASSOCIATED ELECTRICAL EQUIPMENT SHALL BE CONCEALED IN WALLS OR FLOOR.
- ALL CONDUIT RUNS SHALL BE CONCEALED UNLESS SPECIFICALLY NOTED OTHERWISE.
- THE ELECTRICAL CONTRACTOR SHALL FURNISH THE MECHANICAL CONTRACTOR AND THE CEILING CONTRACTOR COPIES OF APPROVED LIGHT FIXTURE SHOP DRAWINGS.
- ALL RECESSED LUMINAIRES IN FIRE RATED CEILINGS SHALL BE TENTED TO COMPLY WITH THE APPLICABLE CEILING RATING. THE CONTRACTOR SHALL VERIFY REQUIREMENTS.
- ALL SPECIAL PURPOSE OUTLETS SHALL BE PROVIDED TO MATCH EQUIPMENT SERVED.
- THE PLANS INDICATE THE DESIRED ARRANGEMENT AND GENERAL LOCATIONS OF LUMINAIRES.

## ABBREVIATIONS

AC	—	ABOVE COUNTER	FATC	—	FIRE ALARM TRANSPONDER CABINET
AFF	—	ABOVE FINISHED FLOOR	FAAP	—	FIRE ALARM ANNUNCIATOR PANEL
AFG	—	ABOVE FINISHED GRADE	GFI	—	GROUND FAULT INTERRUPTER
ALCS	—	AIRPORT LIGHTING CONTROL SYSTEM (BY CTP)	GND	—	GROUND
ATS	—	AUTOMATIC TRANSFER SWITCH	HID	—	HIGH INTENSITY DISCHARGE
BLDG	—	BUILDING	HT1	—	HEAT TRACE CABLE TYPE 1
BOT	—	BOTTOM	HT2	—	HEAT TRACE CABLE TYPE 2
BAS	—	BUILDING AUTOMATION SYSTEM	ICTC	—	INTERCOM TERMINAL CABINET
BC	—	BELOW COUNTER	IDF	—	INTERMEDIATE DISTRIBUTION FRAME
BKR	—	BREAKER	KVA	—	KILOVOLT AMPS
C	—	CONDUIT	KW	—	KILOWATT
CCTV	—	CLOSED CIRCUIT TELEVISION (PART OF CTP)	MDF	—	MAIN DISTRIBUTION FRAME
CH	—	COUNTER HEIGHT	MCB	—	MAIN CIRCUIT BREAKER
CKT	—	CIRCUIT	MH	—	MOUNTING HEIGHT
CLG	—	CEILING HEIGHT	NEC	—	PER LATEST NATIONAL ELECTRICAL CODES
CP	—	COMMUNICATIONS PANEL	NIC	—	NOT IN CONTRACT
CPB	—	COMMUNICATIONS PULL BOX	NL	—	NIGHT LIGHT (UNSWITCHED)
CTR	—	CONTACTOR	OHE	—	OVERHEAD ELECTRIC
CTS	—	CLOSED CIRCUIT TV SWITCHING EQUIPMENT	P	—	PUBLIC
CTP	—	COMMUNICATIONS TECHNOLOGY PACKAGE.	PF	—	POWER FACTOR
D/S	—	DISCONNECT SWITCH	PL	—	PILOT LIGHT
DTC	—	DATA TERMINAL CABINET	RM	—	ROOM
E	—	EMERGENCY	SCP	—	SECURITY CONTROL PANEL
EC	—	EMPTY CONDUIT	SSTC	—	SOUND SYSTEM TERMINAL CABINET
ECB	—	ENCLOSED CIRCUIT BREAKER	STR	—	STARTER
EN	—	EXISTING TO BE REPLACED	STC	—	SECURITY TERMINAL CABINET
EPB	—	ELECTRICAL PULL BOX	T	—	TOP
ER	—	EXISTING TO BE REMOVED	TBA	—	TELEPHONE BACKBOARD "A"
ERP	—	EXISTING IN RELOCATED POSITION	TVSS	—	TRANSIENT VOLTAGE SURGE SUPPRESSION
EWC	—	ELECTRIC WATER COOLER	UPS	—	UNINTERRUPTIBLE POWER SUPPLY
EWB	—	ELECTRIC WATER HEATER	UGE	—	UNDERGROUND ELECTRIC
EX	—	EXISTING TO REMAIN	VDB	—	VOICE/DATA/BACKBOARD
EXP	—	EXPLOSION PROOF	V	—	VOLTS
EXR	—	EXISTING TO BE RELOCATED	W	—	WALL
FACP	—	FIRE ALARM CONTROL PANEL	WP	—	WEATHERPROOF

## GENERAL ELECTRICAL NOTES

- ALL CONDUITS SHALL HAVE A SEPARATE GREEN GROUND CONDUCTOR INSTALLED FOR GROUNDING.
- ALL DISCONNECT SWITCHES SHALL BE THE HEAVY DUTY TYPE, PROVIDE FUSED SWITCHES WITH LITTLEFUSE TIME DELAY, TYPE RK5.
- ALL EMPTY CONDUITS SHALL CONTAIN JET LINE #232 POLYOLEFIN 200 LB. TEST.
- EQUIPMENT INSTALLED WITHIN CONCEALED SPACES SHALL HAVE REASONABLE ACCESS PANELS PROVIDED NEARBY FOR INSPECTION, TESTING AND SERVICE CONSIDERATIONS.
- THE FIRE ALARM MANUFACTURER SHALL PROVIDE CERTIFIED TECHNICIAN TO SUPERVISE THE INSTALLATION, FINAL CONNECTIONS AND TESTING OF THE FIRE ALARM SYSTEM. AT THE COMPLETION OF THE PROJECT, THE MANUFACTURER SHALL INSPECT THE SYSTEM AND CERTIFY THAT IT IS INSTALLED IN ACCORDANCE WITH NFPA 72A. ALL FIRE ALARM COMPONENTS SHALL COMPLY WITH ADA REQUIREMENTS.
- WHERE CABLES OR CONDUITS ARE REQUIRED TO PASS THROUGH FIRE RATED WALL, CABLE TRAY CLOSET, FLOOR OR CEILING THEY SHALL BE SEALED WITH 3M FIRE STOP OR APPROVED EQUAL. THE APPROVED FIRE STOP METHOD SHALL COMPLY WITH ARTICLES 300.21 OF NEC AND SHALL BE UL LISTED UNDER "THROUGH-PENETRATION FIRE STOP SYSTEM (XHEZ)" IN UL FIRE RESISTANCE DIRECTORY. ALL INTERIOR CORRIDORS HAVE FIRE RATED WALLS. ANY PENETRATION THROUGH THESE WALLS AND OTHER FIRE RATED WALLS SHALL BE SEALED WITH FIRE STOP. PROVIDE MINIMUM 1" EMT THROUGH WALL PENETRATIONS.
- CONDUITS, WIREWAYS AND CABLE TRAYS SHALL BE SUPPORTED FROM BUILDING STRUCTURE AND NOT FROM OTHER PIPES, DUCTS OR RACKS UNLESS SHOWN ON DRAWINGS.  
FOR 120 VOLT/20AMP BRANCH CIRCUITS, CONTRACTOR MAY USE A COMMON NEUTRAL FOR A MAXIMUM OF THREE DIFFERENT PHASE CONDUCTORS (PHASES A,B, AND C).
- FOR 120 VOLT/20AMP BRANCH CIRCUITS, CONTRACTOR SHALL NOT RUN MORE THAN THREE PHASE CONDUCTORS PLUS THREE NEUTRAL CONDUCTORS IN A SINGLE CONDUIT OR THREE PHASE CONDUCTORS PLUS A #10 NEUTRAL IN A SINGLE CONDUIT.
- ALL CONDUIT BENDS FOR COMMUNICATIONS WIRING SHALL BE SMOOTH LONG RADIUS TYPE, "LB" TYPE FITTINGS SHALL NOT BE USED.
- EXTERIOR BURIED CONDUIT RUNS SHALL BE MINIMUM 24" BELOW FINISHED GRADE. PROVIDE CAUTION TAPE 8" ABOVE CONDUIT.
- POWER CHANGE EXPENSES RESULTING FROM EQUIPMENT SUBSTITUTIONS THAT DIFFER FROM ITEMS CALLED FOR IN DRAWINGS OR SPECIFICATIONS SHALL BE BORNE BY THE CONTRACTOR OR HIS SUB. THESE SHALL INCLUDE CHANGES IN VOLTAGE OR FULL LOAD AMPS RESULTING IN LARGER FEEDERS AND/OR CIRCUIT BREAKERS.
- ROUTE CIRCUITS FOR FIRST FLOOR PUMPS IN CONCRETE SLAB.
- COORDINATE WALL THICKNESS WITH CONDUIT DIAMETERS.
- ALL RECEPTACLES ON UPS CIRCUITS (PANELS R4CA AND R4CB) SHALL BE FURNISHED WITH ORANGE YOKES.

# RS&H

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## LYNCHBURG REGIONAL AIRPORT

4308 WARDS ROAD  
SUITE 100  
LYNCHBURG, VA  
24502

## AIR TRAFFIC CONTROL TOWER

### REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: AUGUST 12, 2015  
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DRAWN BY: VM  
DESIGNED BY: TS

AEC PROJECT NUMBER  
222-0264-001

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SHEET TITLE

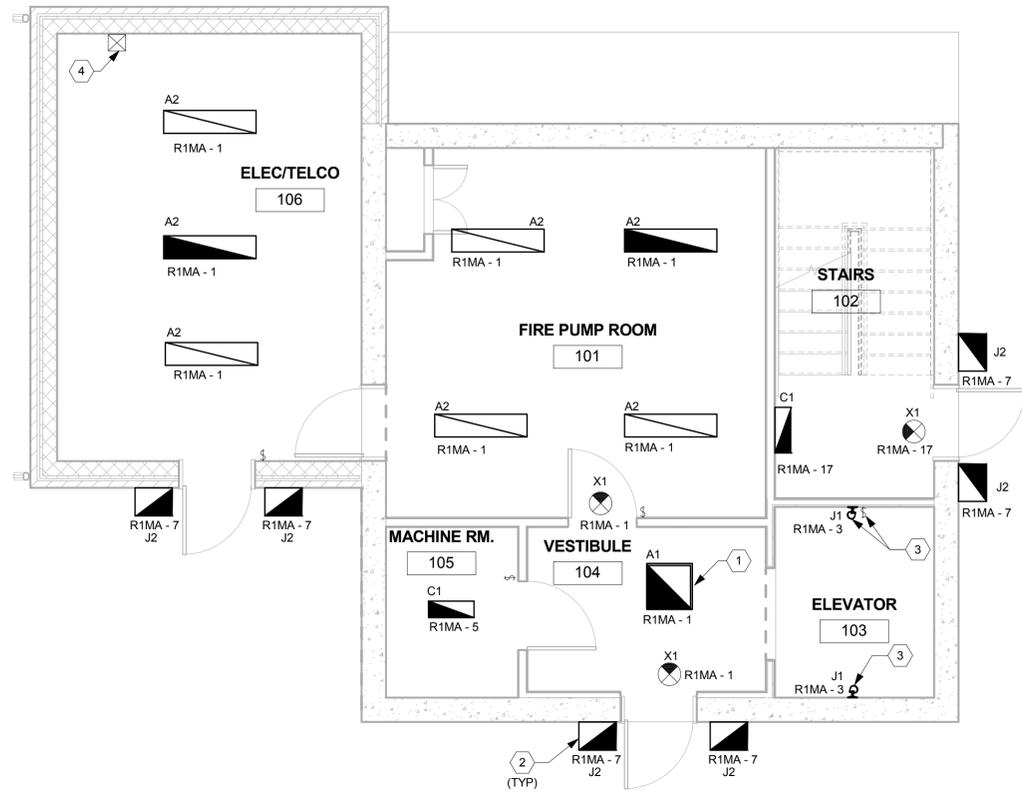
## ELECTRICAL LEGEND AND NOTES

SHEET NUMBER

# E-001

## BID DOCUMENTS

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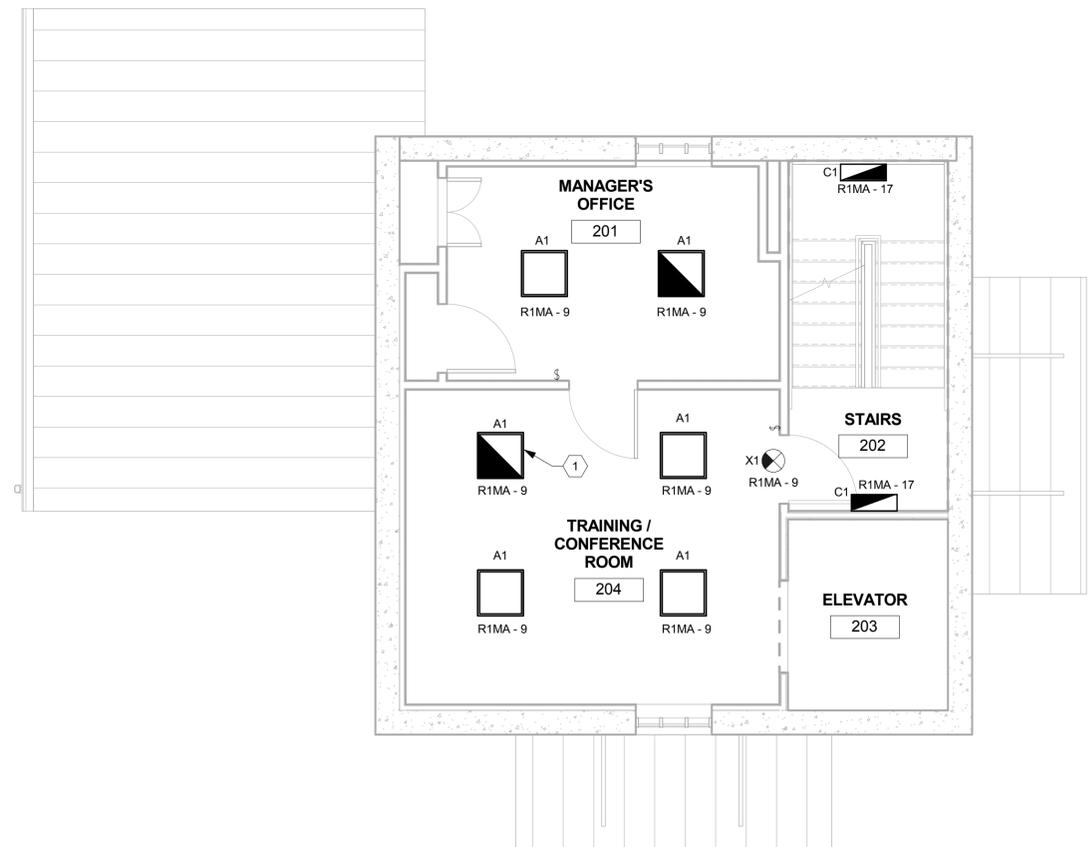
TRUE  
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**FIRST FLOOR PLAN - LIGHTING**  
 SCALE: 1/4" = 1'-0"

**GENERAL NOTES:**

1. WIRE ALL EXIT LIGHTS AND EMERGENCY BALLASTS TO THE SAME CIRCUIT AS LOCAL GENERAL LIGHTS, BUT AHEAD OF ANY SWITCHING, UNLESS NOTED OTHERWISE.

**NOTES:**

- ① WIRE LUMINAIRE AHEAD OF ANY SWITCHED LEG. LUMINAIRE SHALL REMAIN ON AS NIGHT LIGHT.
- ② CONNECT J2 LUMINAIRES TO CIRCUIT INDICATED VIA EXTERIOR LIGHTING CONTACTOR.
- ③ LOCATE LIGHTS AND SWITCH IN ELEVATOR PIT PER NEC 620.24 AND ASME A17.1 [2.2.5]
- ④ PROVIDE AN EXTERIOR LIGHTING CONTACTOR, 6 POLE, 277V, 30A RATED CONTACTS, 277V RATED COIL. CONTACTOR SHALL HAVE A NEMA 12 ENCLOSURE AND BE LOCATED ABOVE PANEL R1MA. CONTROL SIGNAL SHALL BE ROUTED VIA A PHOTOCCELL ON THE ROOF OF CAB. SEE SHEET E-103. PROVIDE 277V, 20A-1P CIRCUIT FOR CONTROL POWER (R1MA-21). WIRING SHALL BE (2) #12, (1) #12 GND IN 3/4"C.



TRUE  
 2  
**SECOND FLOOR PLAN - LIGHTING**  
 SCALE: 1/4" = 1'-0"

REVISIONS		
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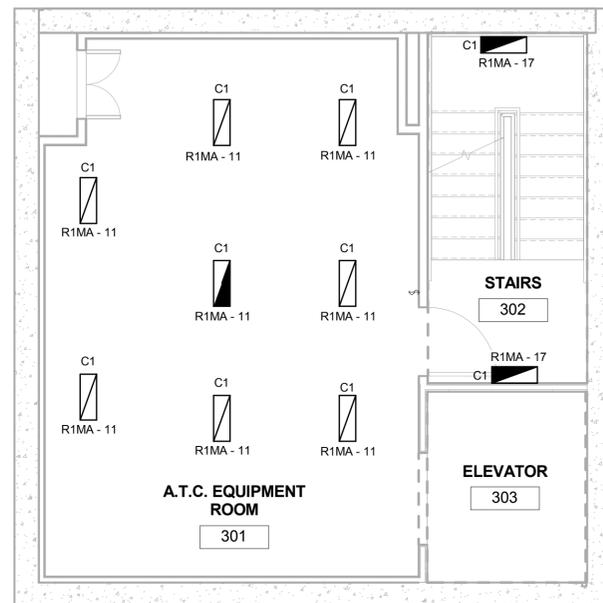
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 SHEET TITLE

**FIRST AND SECOND  
 FLOOR PLANS -  
 LIGHTING**

SHEET NUMBER  
**E-101**

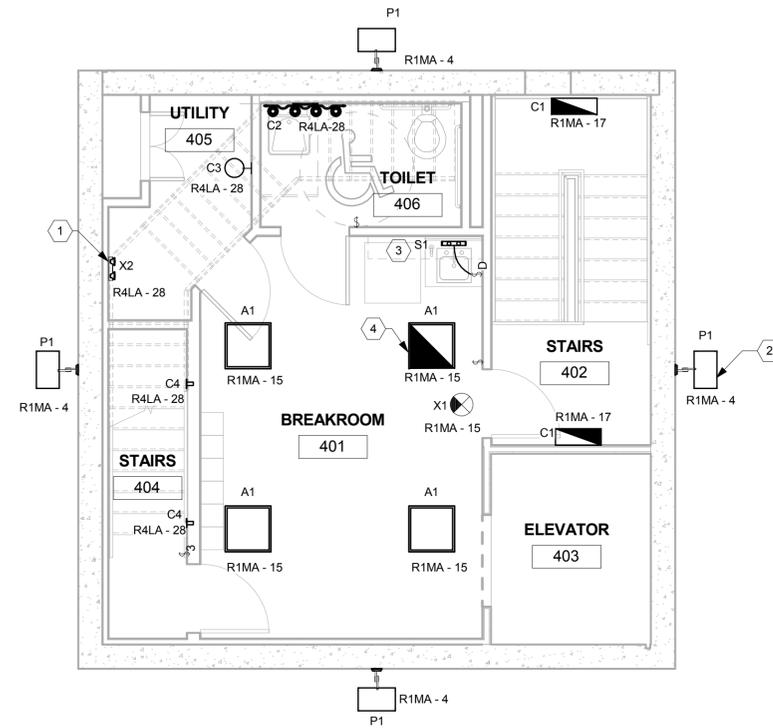
BID  
 DOCUMENTS



TRUE  
 1  
**THIRD FLOOR PLAN - LIGHTING**  
 E-102 SCALE: 1/4" = 1'-0"

**GENERAL NOTES:**

1. WIRE ALL EXIT LIGHTS AND EMERGENCY BALLASTS TO THE SAME CIRCUIT AS LOCAL GENERAL LIGHTS, BUT AHEAD OF ANY SWITCHING, UNLESS NOTED OTHERWISE.



TRUE  
 2  
**FOURTH FLOOR PLAN - LIGHTING**  
 E-102 SCALE: 1/4" = 1'-0"

**GENERAL NOTES:**

1. WIRE ALL EXIT LIGHTS AND EMERGENCY BALLASTS TO THE SAME CIRCUIT AS LOCAL GENERAL LIGHTS, BUT AHEAD OF ANY SWITCHING, UNLESS NOTED OTHERWISE.

**NOTES:**

1. LOCATED IN STAIRS 404 ABOVE.
2. LOCATE BENEATH CATWALK AS WALL WASH (TYPICAL). SEE A-301 AND A-302. FOR ADDITIONAL INFORMATION ON LOCATION, CONNECT P1 LUMINAIRES TO CIRCUIT INDICATED VIA EXTERIOR LIGHT CONTACTOR. SEE SHEET E-101.
3. 12" LUMINAIRE
4. WIRE LUMINAIRE AHEAD OF ANY SWITCHED LEG. LUMINAIRE SHALL REMAIN ON AS A NIGHT LIGHT.

**REVISIONS**

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 222-0264-001

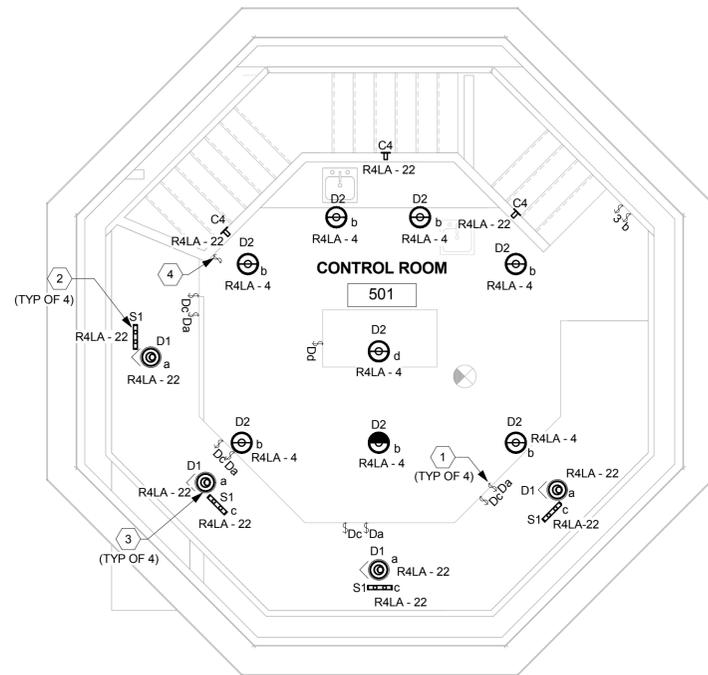
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SHEET TITLE  
**THIRD AND FOURTH  
 FLOOR PLANS -  
 LIGHTING**

SHEET NUMBER  
**E-102**

BID  
 DOCUMENTS

## AIR TRAFFIC CONTROL TOWER



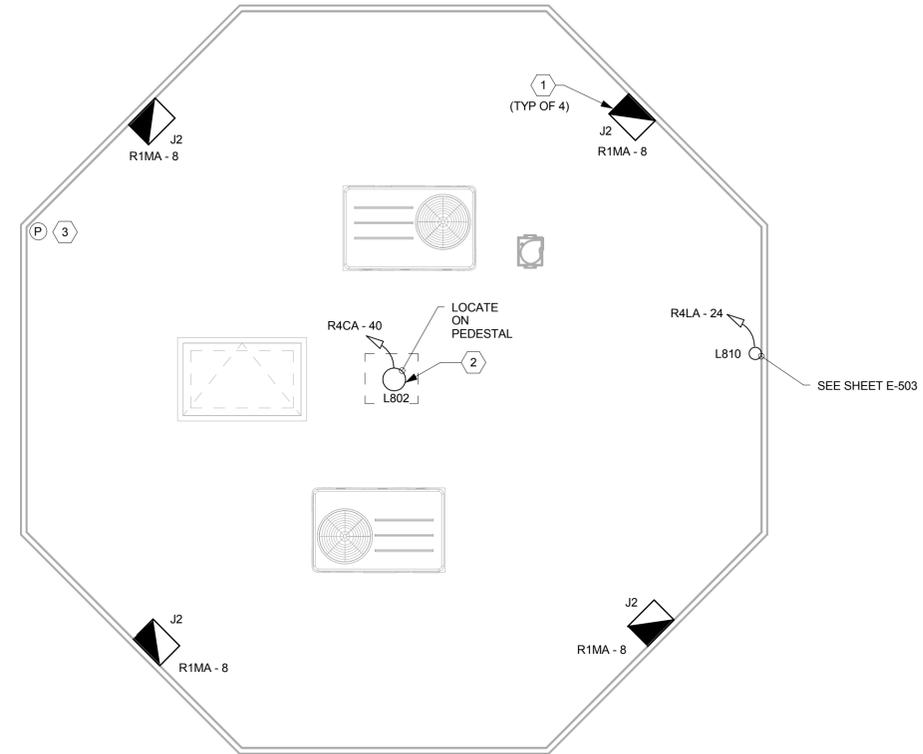
TRUE  
 1  
 E-103  
**CONTROL ROOM FLOOR PLAN - LIGHTING**  
 SCALE: 1/4" = 1'-0"

**GENERAL NOTES:**

1. WIRE ALL EXIT LIGHTS AND EMERGENCY BALLASTS TO THE SAME CIRCUIT AS LOCAL GENERAL LIGHTS, BUT AHEAD OF ANY SWITCHING, UNLESS NOTED OTHERWISE.

**NOTES:**

1. MOUNT DIMMER SWITCHES TO THE UNDERSIDE OF COUNTER, CLOSE TO THE EDGE, TO THE RIGHT OF THE CHAIR. COORDINATE LOCATION WITH CABINETRY TO ACCOUNT FOR DOOR SWINGS.
2. MOUNT TYPE S1 LUMINAIRE TO THE UNDERSIDE OF COUNTER. COORDINATE WITH CABINET MAKER. LUMINAIRE SHALL BE 24" LONG.
3. MOUNT TYPE D1 LUMINAIRE ON CEILING CENTERED ABOVE EACH DESK.
4. PROVIDE TOGGLE SWITCH WITH LABEL INDICATING "ROOF LIGHTS".



TRUE  
 2  
 E-103  
**ROOF PLAN - LIGHTING**  
 SCALE: 1/4" = 1'-0"

**NOTES:**

1. MOUNT LUMINAIRES 7'-6" ABOVE FINISH ROOF. PROVIDE STRUCTURAL SUPPORTS FROM GUARDRAIL. WIRE TO CIRCUIT AS INDICATED VIA SWITCH IN CONTROL ROOM.
2. THE BEACON IS POWERED FROM R4LA WITH NORMAL OPERATION FROM PHOTO CELL CONTROL LOCATED ON ROOF IN ADDITION, PROVIDE BYPASS CONTROL FROM ALCS.
3. PROVIDE PHOTOCELL CONTROL MOUNTED ON A GALVANIZED RIGID STEEL CONDUIT AT 24" ABOVE GUARDRAIL, FACING NORTH. WIRE TO CONTROL COIL OF EXTERIOR LIGHTING CONTACTOR IN ELEC/TELCO ROOM. SEE SHEET E-106.

REVISIONS		
NO.	DESCRIPTION	DATE

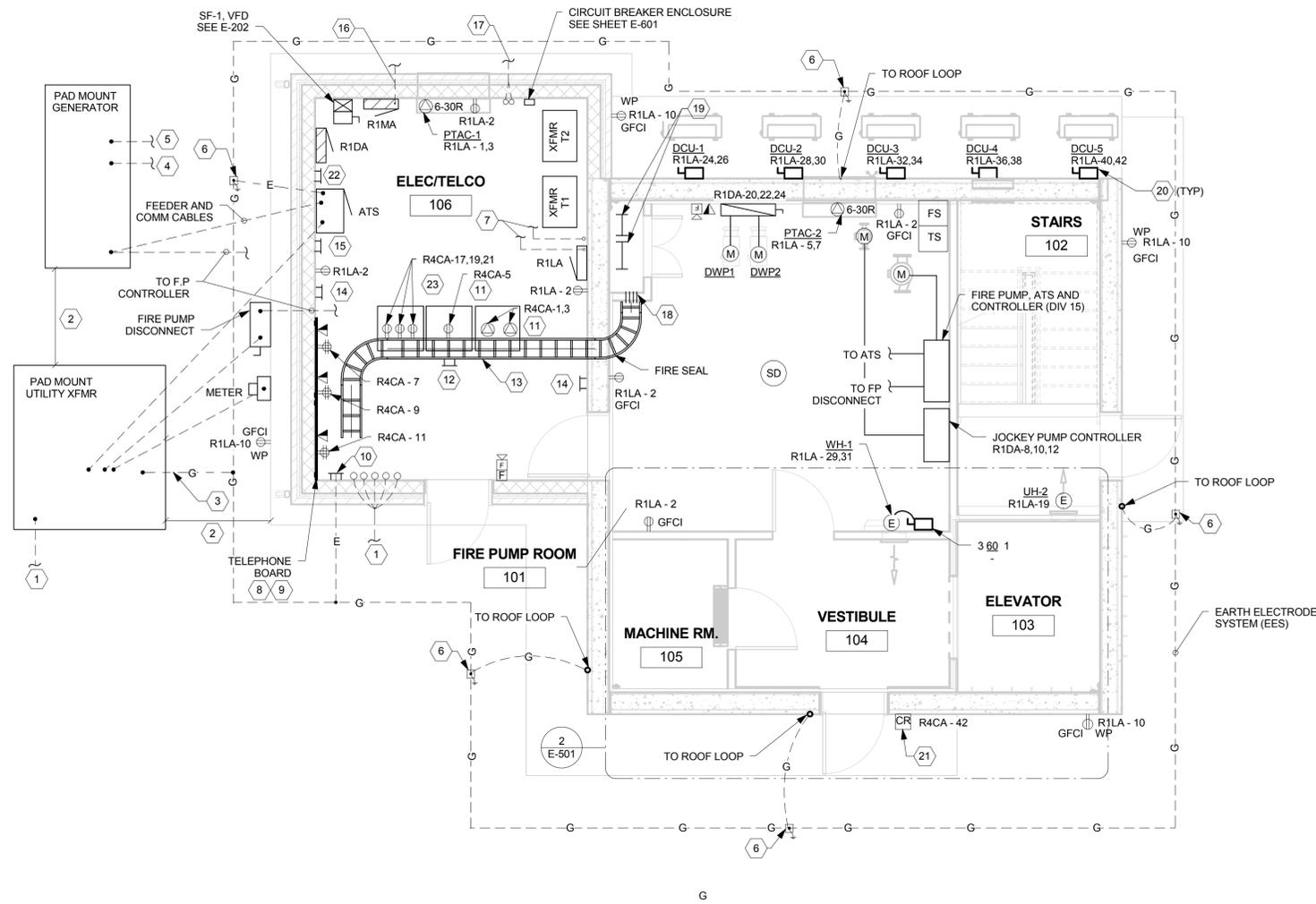
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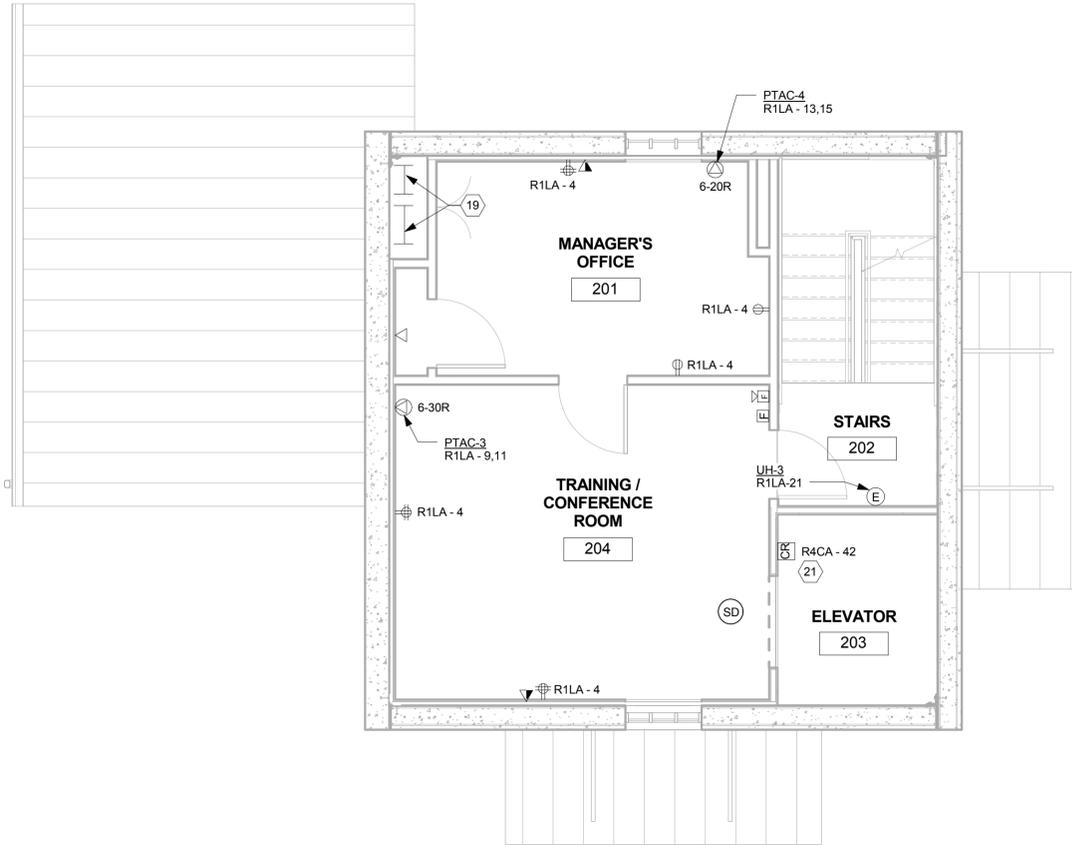
SHEET TITLE  
**CONTROL ROOM  
 FLOOR AND ROOF  
 PLAN - LIGHTING**

SHEET NUMBER  
**E-103**

BID  
 DOCUMENTS



**FIRST FLOOR PLAN - POWER**  
 SCALE: 1/4" = 1'-0"



**SECOND FLOOR PLAN - POWER**  
 SCALE: 1/4" = 1'-0"

**GENERAL NOTES:**

- TYPICAL COMMUNICATION OUTLETS, PROVIDE 1" CONCEALED CONDUIT FROM COMM. OUTLET TO VERTICAL CABLE TRAY (TYPICAL SUPPORT FOR CTP).
- SEE SHEET E-601 FOR ADDITIONAL ELECTRICAL DISTRIBUTION REQUIREMENTS.
- SEE SHEETS E-602 AND E-505 FOR ADDITIONAL GROUNDING AND BONDING REQUIREMENTS.
- ALL CONDUCTORS AND CABLES SHALL ENTER THE FACILITY THROUGH A MINIMUM OF 10' OF FERROUS CONDUIT (GRS). ALL BURIED FERROUS CONDUIT SHALL EXTEND A MINIMUM OF 5' PAST EES.
- PROVIDE 6" PAD FOR FLOOR MOUNTED TRANSFORMERS.

**NOTES:**

- POWER, TELEPHONE, DATA AND COMMUNICATION CONDUITS AND CABLES TO VARIOUS SOURCES. SEE SHEET C-601 FOR ADDITIONAL INFORMATION.
- COORDINATE WITH UTILITY PROVIDER FOR CLEARANCE REQUIREMENTS FROM TRANSFORMER TO OTHER STRUCTURES AND EQUIPMENT.
- COORDINATE WITH UTILITY PROVIDER FOR PAD GROUNDING REQUIREMENTS.
- PROVIDE CONDUIT AND CABLES TO GENERATOR ANNUNCIATOR IN CONTROL ROOM 501.
- FEEDER FROM GENERATOR HOUSING PANEL TO PANEL R1LA.
- TEST POINT FOR LIGHTNING PROTECTION DOWN CONDUCTOR AND ELECTRICAL SERVICE.
- CONDUIT AND WIRE FOR ACCESS GATE POWER AND CONTROL CIRCUIT. SEE SHEETS TE-300 AND C-601 FOR ADDITIONAL INFORMATION AND CONTINUATION.
- FIRE TREATED TELEPHONE BACKBOARD, 2 EACH 4' X 8' X 1/2", WHITE (FIRE RETARDANT PAINT)
- MOUNT POWER OUTLETS ON TOP EDGE OF COMMUNICATION BACKBOARD. MOUNT DATA OUTLETS 6" BELOW POWER OUTLETS.
- PROVIDE A ELECTRICALLY ISOLATED GROUND BAR IN AN ENCLOSURE FOR SIGNAL AND DATA SURGE PROTECTION DEVICES.

- MOUNT ONE DUPLEX RECEPTACLE AND TWO 30A, 120V, SINGLE PHASE RECEPTACLES TO SIDE OF CABLE TRAY ABOVE FAA RACKS. DUPLEX RECEPTACLE WILL BE FOR MISSION SUPPORT EQUIPMENT. TWO 30A RECEPTACLES WILL BE FOR HARRIS FTI EQUIPMENT. COORDINATE WITH FAA EQUIPMENT LOCATIONS IN RACKS PRIOR TO MOUNTING RECEPTACLES.
- MOUNT MULTIPOINT GROUND PLATE TO SIDE OF CABLE TRAY CENTERED ABOVE RACKS.
- HORIZONTAL CABLE TRAY, ALUMINUM 4" X 12" EQUAL TO PW INDUSTRIES #09-4003-12-12-9. INSTALL 90° AFF. PROVIDE CABLE TRAY DIVIDERS TO SEPERATE DATA, TELEPHONE AND FAA INTO SEPERATE GROUPS.
- MULTIPOINT GROUND BAR.
- MAIN GROUND PLATE.
- CIRCUIT FROM PANEL TO EXISTING PARKING LOT LIGHTING VIA EXTERIOR LIGHTING CONTACTOR MOUNTED ABOVE PANEL. SEE SHEET E-101 FOR CONTACTOR INFORMATION. SEE SHEET C-601 FOR CONTINUATION OF CIRCUIT.
- FAA POWER AND AIRPORT CONTROL CABLE. SEE SHEET C-601 FOR CONTINUATION.
- 4 EACH - 3"C SLEEVES WITH GROUNDING BUSHINGS THRU WALL AT CABLE TRAY HEIGHT. BOND CONDUIT SLEEVES TO HORIZONTAL AND VERTICAL CABLE TRAYS. PROVIDE FIRE SEAL AS NEEDED TO MAINTAIN WALL FIRE RATING.

- VERTICAL CABLE TRAY, ALUMINUM 2 - 4"x18". EQUAL TO PW INDUSTRIES #09-4D03-12-18-SL. INSTALL VERTICAL TRAY IN FRONT OF MECH. PIPING. PROVIDE CABLE TRAY DIVIDERS TO SEPERATE DATA, TELEPHONE, AND ANTENNA CABLE INTO SEPERATE GROUPS. PROVIDE FIRE SEAL FOR ALL FLOORS.
- ROUTE CIRCUIT FROM DCU TO CORRESPONDING DSU FOLLOWING SAME ROUTE AS REFRIDGERANT LINES.
- PROVIDE RACEWAY SYSTEM FOR ACCESS CONTROL SYSTEMS AS SHOWN ON SHEET E-504. SEE ALLOWANCE NO. 4 DESCRIPTION FOR PROCURRMNT OF EQUIPMENT. CONCEAL CONDUITS TO CABLE TRAY.
- GROUNDING ELECTRODE GROUND BAR. SEE SHEET E-601.
- MOUNT THREE DUPLEX RECEPTACLES TO SIDE OF CABLE TRAY ABOVE NETWORK/SERVER RACK. SEE SHEET E-603 FOR RACK INFORMATION.

**REVISIONS**

NO.	DESCRIPTION	DATE

DATE ISSUED: AUGUST 12, 2015  
 REVIEWED BY: DV  
 DRAWN BY: VM  
 DESIGNED BY: TS

AEC PROJECT NUMBER  
 222-0264-001  
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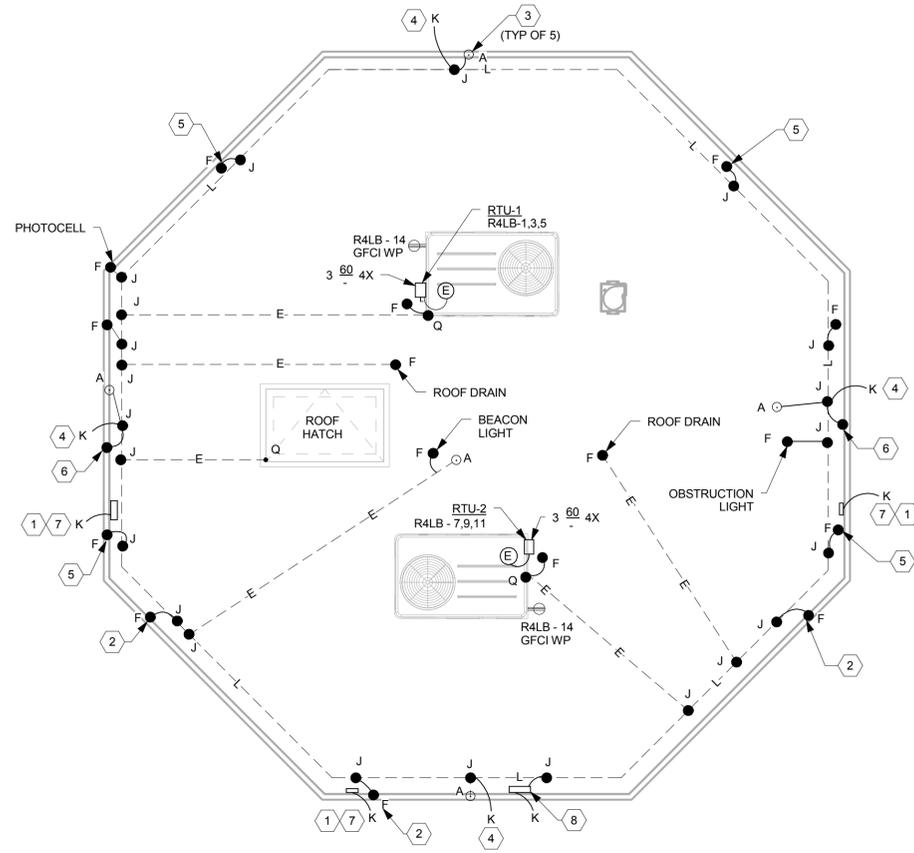
SHEET TITLE  
**FIRST AND SECOND FLOOR PLANS - POWER**

SHEET NUMBER  
**E-201**

BID DOCUMENTS







TRUE  
 1 E-204  
**ROOF PLAN - POWER**  
 SCALE: 1/4" = 1'-0"

**LIGHTNING PROTECTION LEGEND:**

- |       |                                      |     |                   |
|-------|--------------------------------------|-----|-------------------|
| ⊙ A   | AIR TERMINAL                         | TRD | THRU ROOF DEVICE  |
| — E — | BONDING JUMPER                       | Ⓜ   | GROUND TEST POINT |
| ● F   | BOND TO CONDUIT OR PIPE              | TWD | THRU WALL DEVICE  |
| — G — | EARTH ELECTRODE SYSTEM               |     |                   |
| ● H   | BOND TO EXHAUST FAN                  |     |                   |
| ● J   | SPLICE                               |     |                   |
| K     | CABLE DROP (TO OTHER LEVEL)          |     |                   |
| — L — | ROOF GROUND LOOP                     |     |                   |
| ● Q   | BOND TO BARE METAL OF ROOF EQUIPMENT |     |                   |

**GENERAL NOTES:**

- ALL METAL ELEMENTS COMPOSING OF THE ATCT, FLOOR, ROOF AND ITS SUPPORT STRUCTURE, RE-INFORCING BAR (REBAR) IN BOTH HORIZONTAL AND VERTICAL ELEMENTS, BUILDING STEEL AND METAL SHEATHING SHALL BE BONDED TOGETHER WITH 2 AWG COPPER SO AS TO CREATE A "FARADAY CAGE".
- ALL METAL PENETRATIONS INTO THE "FARADAY CAGE" SHALL BE BONDED WITH 2 AWG COPPER AT POINT OF ENTRY.

**NOTES:**

- PROVIDE 3" CONDUIT FROM STRUCTURAL STEEL TUBE THROUGH ROOF AND TERMINATE IN METAL ENCLOSURE. SEE SHEET TE-200. PROVIDE GROMMETS ON OPENINGS OF STEEL TUBE. CABLES SHALL ROUTE THROUGH CONDUIT AND STEEL TUBE TO CABLE TRAY IN CONTROL ROOM FLOOR. SEE SECTION 1 ON S-302.
- METAL WIREWAY AND GROUNDING PLATE ENCLOSURES FOR ATC ANTENNA SYSTEMS SHALL BE BONDED TO CREATE A CONTINUOUS GROUNDING PATH. PROVIDE A BONDING JUMPER FROM ENCLOSURE TO ROOF GROUND LOOP. PROVIDE A BONDING JUMPER FROM METAL WIREWAY AT EACH END OF RUN TO ROOF GROUND LOOP. SEE SHEET TE-200 FOR ADDITIONAL INFORMATION.
- LIGHTNING ROD. SEE DETAIL. BOND ANTENNA NEXT TO ROOF GROUND LOOP. MAINTAIN EQUIVALENT HEIGHT OF 8' ABOVE ROOF DECK OR 12' ABOVE ANTENNA (WHICHEVER IS GREATER).
- DOWN CONDUCTOR TO GROUND TEST WELL.
- METAL WIREWAY AND GROUNDING PLATE ENCLOSURES FOR FAA ANTENNA SYSTEM SHALL BE BONDED TO CREATE A CONTINUOUS GROUNDING PATH. PROVIDE A BONDING JUMPER FROM EACH ENCLOSURE TO ROOF GROUND LOOP. PROVIDE A MINIMUM OF TWO BONDING JUMPERS EVENLY SPACED FROM WIREWAY TO ROOF GROUND LOOP. SEE SHEET TE-200 FOR ADDITIONAL INFORMATION.
- BOND DOWN LEAD TO EXTERIOR GUARD RAILS.
- DOWN CONDUCTOR FROM POLYPHASE GROUND BAR IN JUNCTION BOX TO EARTH ELECTRODE SYSTEM BELOW. SEE SHEET TE-200.
- PROVIDE A MULTIPPOINT GROUND BAR (MPG) WITH ISOLATORS IN A STAINLESS STEEL NEMA 3R ENCLOSURE WITH DOOR. ROUTE TWO #4/0 AWG COPPER CONDUCTOR COLOR CODED GREEN WITH ORANGE TRACER FROM BAR IN RIGID STEEL CONDUIT AND STEEL TUBE TO CONTROL ROOM FLOOR SPACE. SEE SECTION 1 ON S-302 FOR TUBE STEEL. BOND ONE CONDUCTOR TO SRGG AND THE OTHER CONDUCTOR SHALL CONTINUE TO MPG IN ATC EQUIPMENT ROOM. SEE SHEET E-602. BOND BOX AND CONDUIT TO ROOF LOOP GROUND.

**REVISIONS**

NO.	DESCRIPTION	DATE

DATE ISSUED: AUGUST 12, 2015  
 REVIEWED BY: DV  
 DRAWN BY: VM  
 DESIGNED BY: TS

AEC PROJECT NUMBER  
 222-0264-001

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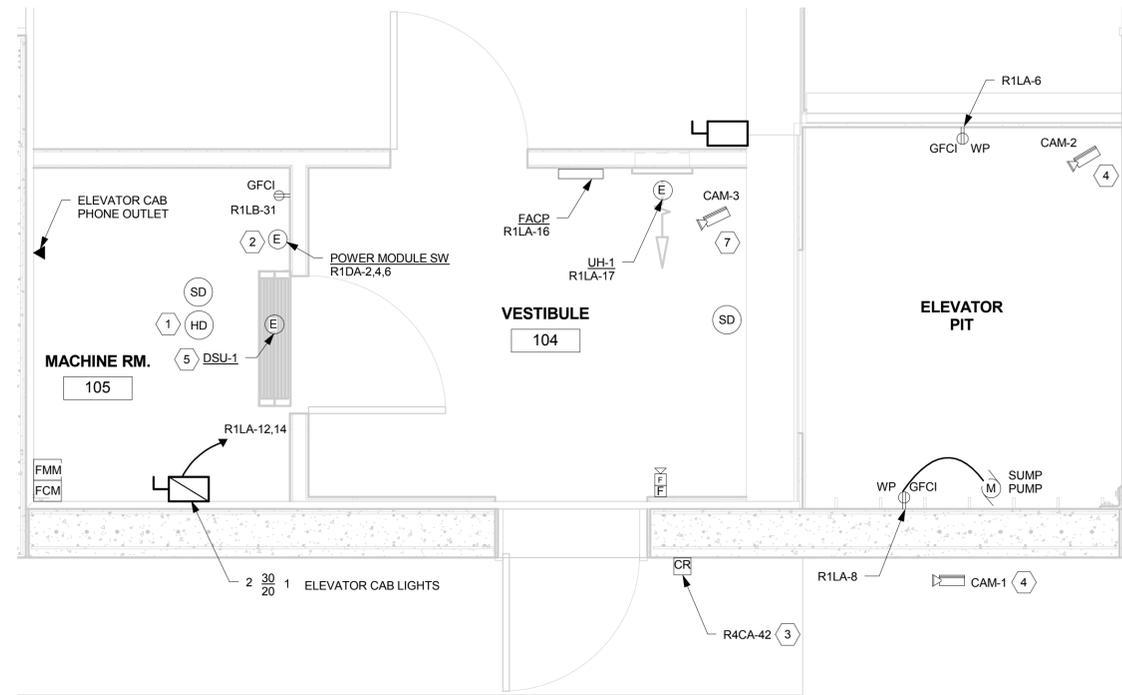
SHEET TITLE

**ROOF PLAN -  
 POWER**

SHEET NUMBER

**E-204**

BID  
 DOCUMENTS



**2 PARTIAL PLAN**  
 E-501 SCALE: 1/2" = 1'-0"

**NOTES:** ⬡

- Ⓚ HEAT DETECTOR LOCATED WITHIN 12" OF SPRINKLER HEAD.
- Ⓛ PROVIDE COOPER BUSSMAN POWER MODULE SWITCH, UNIT SHALL HAVE THE FOLLOWING SPECIFICATIONS:
  - A. BUSSMAN 120V SHUNT TRIP, ACTIVATED BY CLOSING FIRE ALARM SENSOR OR KEY TEST SWITCH.
  - B. COORDINATE SIZE WITH ELEVATOR MANUFACTURER.
  - C. INTERFACE RELAY FOR FIRE ALARM CONTROL PANEL.
  - D. MECHANICAL INTERLOCK AUXILIARY CONTACTS FOR ELEVATOR WITH AUTO RECALL.
  - E. CLASS J FUSSES AS REQUIRED BY MANUFACTURER
  - F. ALL EQUIPMENT AND FEEDERS SHALL BE INSTALLED PER NEC 620 AND ASME A17.1
- Ⓜ PROVIDE ACCESS CONTROL INTERFACE TO ELEVATOR CAB, INCLUDING CARD SWIPE, CABLE FOR KEY PAD, EMERGENCY TELEPHONE, AND ALARM PUSH BUTTON.
- Ⓨ SECURITY CAMERA - REFER TO COMMUNICATION RISER FOR DETAILS.
- Ⓩ UNIT POWER AND CONTROLS FROM DCU-1. ROUTE CONDUIT/WIRE FOLLOWING SAME ROUTE AS REFRIGERANT LINES.

**REVISIONS**

NO.	DESCRIPTION	DATE

DATE ISSUED: AUGUST 12, 2015  
 REVIEWED BY: DV  
 DRAWN BY: VM  
 DESIGNED BY: TS

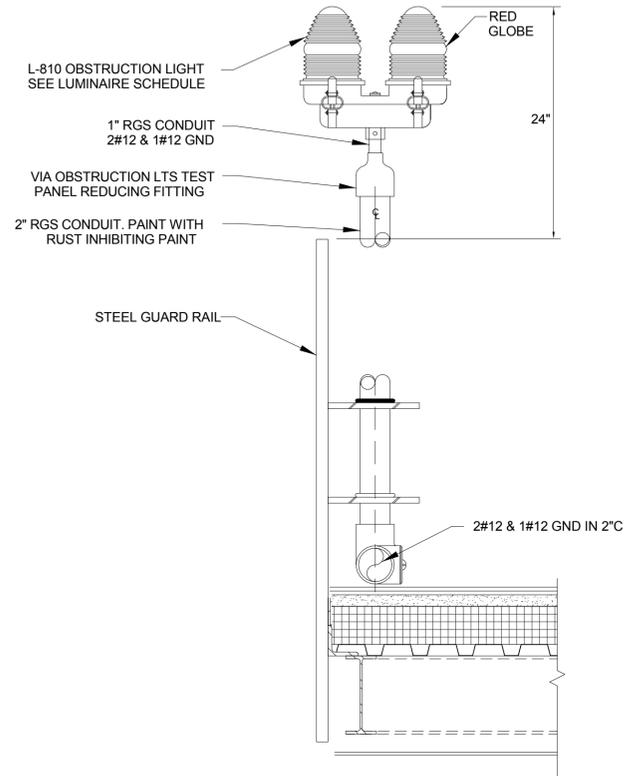
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 222-0264-001  
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SHEET TITLE  
**ENLARGED PARTIAL  
 1ST FLOOR PLAN**

SHEET NUMBER  
**E-501**

BID  
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**1** **OBSTRUCTION LIGHT DETAIL**  
 E-503 SCALE: NTS

**REVISIONS**

NO.	DESCRIPTION	DATE

DATE ISSUED: AUGUST 12, 2015  
 REVIEWED BY: DV  
 DRAWN BY: VM  
 DESIGNED BY: TS

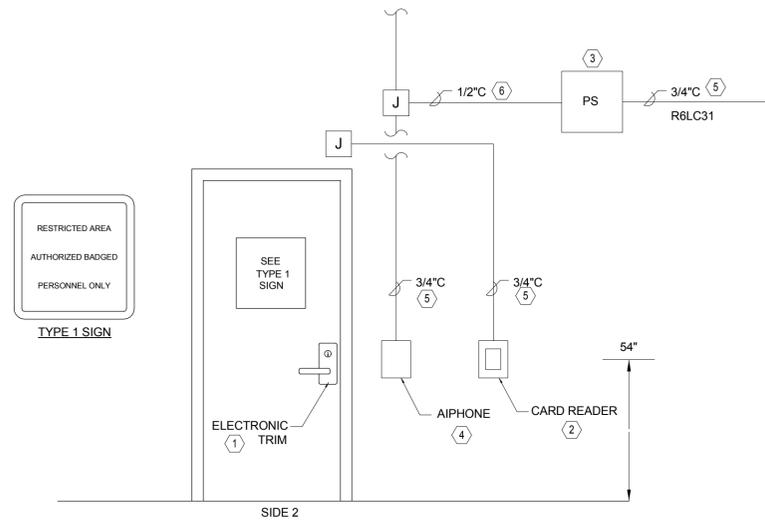
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 222-0264-001  
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SHEET TITLE  
**OBSTRUCTION  
 LIGHT DETAIL**

SHEET NUMBER  
**E-503**

BID  
 DOCUMENTS

**AIR  
 TRAFFIC  
 CONTROL  
 TOWER**



**GENERAL NOTES:**

1. CONTRACTOR SHALL FURNISH AND INSTALL ALL BOXES CONDUIT, WIRING, POWER SUPPLIES AND ACTIVATION STRIKES.
2. COORDINATE WITH HARDWARE SPECIFICATIONS.

**NOTES:**

- ① ELECTRIC DOOR STRIKE
- ② PROXIMITY CARD READER
- ③ POWER SUPPLY
- ④ VIDEO AIPHONE (JK-1HD), MOUNT 54" TO CTR
- ⑤ PROVIDE CONDUIT
- ⑥ TO AC POWER

**1 SECURITY DOOR DETAIL**  
 E-504 SCALE: NTS

**REVISIONS**

NO.	DESCRIPTION	DATE

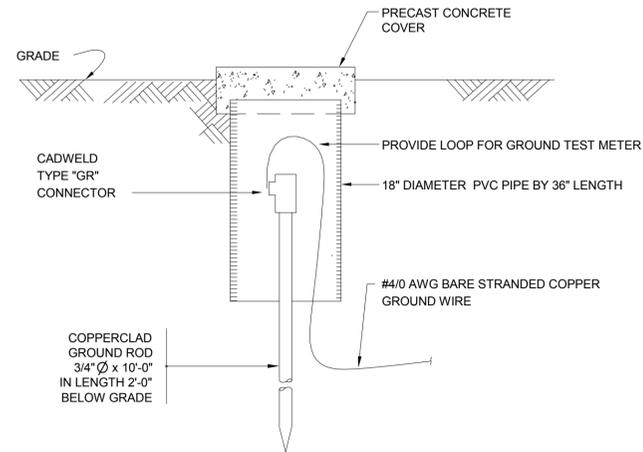
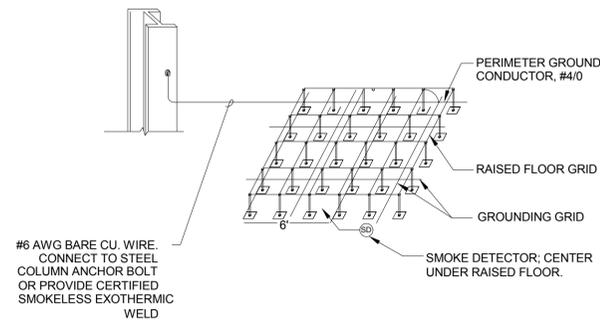
DATE ISSUED: AUGUST 12, 2015  
 REVIEWED BY: DV  
 DRAWN BY: VM  
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AEC PROJECT NUMBER  
 222-0264-001  
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SHEET TITLE  
**SECURITY DOOR  
 DETAIL**

SHEET NUMBER  
**E-504**

BID  
 DOCUMENTS



**GENERAL NOTES**

1. PROVIDE A SIGNAL REFERENCE GROUND GRID (SRGG) UNDER THE ACCESS FLOORING IN THE CONTROL ROOM AS FOLLOWS: A 4/0 AWG BARE STRANDED COPPER GROUND CONDUCTOR SHALL BE RUN ALONG AND UNDERNEATH THE PERIMETER OF THE ACCESS FLOORING WITHIN 6" OF WALL. PROVIDE 2" WIDE, 26 GAUGE (OR THICKER) COPPER STRIPS (OR APPROVED EQUAL) LAID IN A 20" GRID. BOND CONDUCTORS TO EACH OTHER WHERE THEY CROSS AND TO THE PERIMETER GROUND CONDUCTOR.
2. BOND GRID AND ACCESS FLOOR TO EACH OTHER AT LEAST EVERY SIX FEET THROUGHOUT THE GRID.
3. ALL CONDUITS, WIREWAYS, PIPES, CABLE TRAYS OR OTHER METALLIC ELEMENTS PENETRATING THE CONTROL ROOM OR WITHIN SIX FEET OF THE SRS SHALL BE BONDED TO THE SRGG. USE #2 AWG INSULATED COPPER CONDUCTOR FOR CABLE TRAY AND WIREWAYS. USE A MINIMUM #6 AWG INSULATED COPPER CONDUCTOR IN ALL OTHER INSTANCES.
4. BOND ALL STRUCTURAL STEEL WITHIN SIX FEET OF THE SRGG TO THE GRID. ALL CONCRETE ENCASE STEEL SHALL BE EQUIPPED WITH A GROUNDING TERMINAL AND BONDED TO THE SRGG.
5. CONNECT ALL EQUIPMENT TO THE SRGG IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS. USE A MINIMUM #6 AWG INSULATED COPPER CONDUCTOR.

**1**  
**E-505** **GROUNDING DETAILS**  
 SCALE: NTS

**REVISIONS**

NO.	DESCRIPTION	DATE

DATE ISSUED: AUGUST 12, 2015  
 REVIEWED BY: DV  
 DRAWN BY: CLM  
 DESIGNED BY: TS

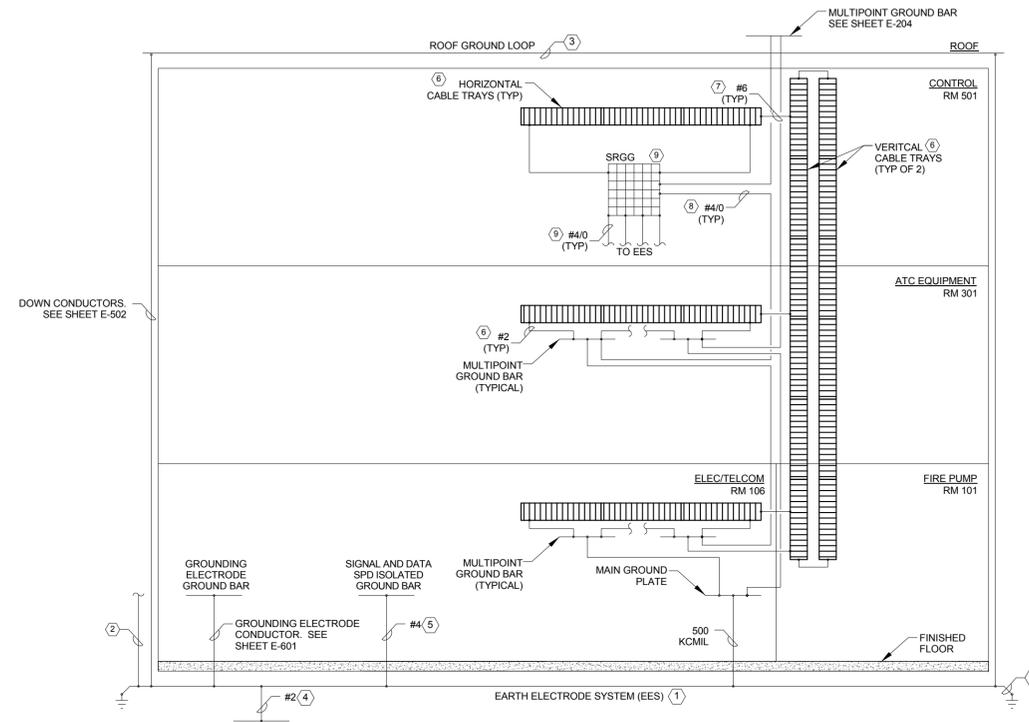
AEC PROJECT NUMBER  
 222-0264-001  
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SHEET TITLE  
**GROUNDING  
 DETAILS**

SHEET NUMBER  
**E-505**

BID  
 DOCUMENTS





**GENERAL NOTES:**

1. ELECTRICAL GROUNDING SYSTEM SHALL BE IN COMPLIANCE WITH FAA-STD-019e, SPEC 16450 AND THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70). SEE SHEETS E-101, E-204 AND E-601 FOR ADDITIONAL INFORMATION.
2. THE SIGNAL REFERENCE STRUCTURE (SRS) SHALL CONSIST OF MULTIPPOINT GROUND (MPG) SYSTEM, SINGLE REFERENCE GROUND GRID (SRGG) AND MAIN GROUND PLATE (MGP) PER FAA-STD-019e, SECTION 4.2.7. ALL INDIVIDUAL AREAS OF THE SRS ON A SINGLE FLOOR SHALL BE BONDED TO ADJACENT AREAS VIA AT LEAST TWO SEPERATE PATHS OF #4/0 AWG INSULATED COPPER CONDUCTOR.
3. ALL METALLIC ELECTRICAL SUPPORT STRUCTURES SHALL BE BONDED TO THE MPG.
4. ALL METAL STRUCTURAL COMPONENTS (REBAR, COLUMNS, JOISTS, ETC.) AND ARCHITECTURAL COMPONENTS (FLOORS, STAIRS, WALKWAYS, GUARDRAILS, ETC.) SHALL BE BONDED TOGETHER AND TO THE EES WITH #2 AWG COPPER CONDUCTOR.
5. MULTIPPOINT GROUND (MPG) BARS SHALL BE A MINIMUM OF 2" WIDE X 1/4" THICK WITH THE REQUIRED LENGTH FOR TERMINATIONS EQUAL TO ERITECH FAA GROUND BAR #B640A139 & A131. MPG BARS SHALL BE IDENTIFIED WITH A PERMANENTLY ATTACHED PLASTIC COVER WITH GREEN SLASHES AROUND A CAPTION "MAIN GROUND PLATE" IN BLACK 3/8" HIGH LETTERS. MPG SHALL BE BONDED TO THE EES WITH A 500 KCMIL GREEN INSULATED COPPER CONDUCTOR.
6. MAIN GROUND PLATE (MGP) SHALL AT LEAST 12" LONG, 6" WIDE AND 1/4" THICK EQUAL TO ERITECH FAA GROUND BAR #B540A139 & A131. MGP SHALL BE IDENTIFIED WITH A PERMANENTLY ATTACHED PLASTIC COVER LABEL THAT IS GREEN WITH DISTINGUISHING BRIGHT ORANGE SLASHES. THE LABEL SHALL BEAR THE CAPTION "ELECTRONIC MULTIPPOINT GROUND SYSTEM" IN BLACK 3/8" HIGH LETTERS.

**NOTES:**

1. PROVIDE A EARTH ELECTRODE SYSTEM (EES) CONSISTING OF 4/0 AWG STRANDED BARE COPPER WIRE LOCATED 2' BELOW FINISH GRADE ROUTED AROUND PERIMETER OF BUILDING. EXOTHERMIC WELD 10' LONG, 3/4" DIAMETER COPPER OR COPPER CLAD STEEL GROUND RODS EVENLY SPACED ALONG THE EES WITH A MINIMUM SPACING OF 10' AND A MAXIMUM SPACING OF 30'. TOP OF GROUND RODS SHALL BE A MINIMUM OF 1' BELOW GRADE.
2. REFER TO SHEET E-601 FOR CONNECTIONS TO EES FROM METER SOCKET, UTILITY TRANSFORMER AND STANDBY-BY GENERATOR.
3. REFER TO SHEET E-204 AND E-502 FOR THE LIGHTNING PROTECTION SYSTEM AND GROUNDING AND BONDING OF EQUIPMENT AT THE ROOF LEVEL.
4. ALL UNDERGROUND FERROUS CONDUITS THAT ENTER THE BUILDING SHALL BE BONDED TO THE EES WITH A BARE COPPER STRANDED CONDUIT. THESE CONDUITS SHALL EXTEND A MINIMUM OF 5' BEYOND THE EES PER FAA-STD-019e, SECTION 4.2.1.2.1
5. PROVIDE A GREEN WITH RED TRACER INSULATED COPPER GROUND CONDUCTOR FROM GROUND BAR FOR SIGNAL, DATA AND CONTROL LINE SPDs TO THE EES PER FAA-STD-019e, SECTION 4.2.2.6.
6. CABLE TRAYS SHALL BE BONDED TOGETHER WITH A MINIMUM OF #6 AWG INSULATED COPPER CONDUCTOR AND FROM EACH END TO A MULTIPPOINT GROUND BAR WITH A MINIMUM OF #2 AWG INSULATED COPPER CONDUCTOR PER FAA-STD-019e, SECTION 4.2.4.2.
7. ALL GALVANIZED RIGID METAL CONDUIT SHALL BE EQUIPPED WITH A BONDING BUSHING AT EACH END. CONDUITS WITH EQUIPMENT GROUNDS SHALL HAVE A BONDING JUMPER FROM THE EQUIPMENT GROUND TO THE GROUNDING BUSHING PER FAA-STD-019e, SECTION 4.2.10.5. WHERE A CONDUIT SLEEVE IS USED BETWEEN TWO CABLE TRAYS, THE BONDING JUMPER BETWEEN TRAYS SHALL BE ROUTED ALONG THE OUTSIDE OF THE CONDUIT SLEEVE AND BONDED TO THE GROUNDING BUSHING WITH A BONDING JUMPER.
8. CONDUCTORS BETWEEN MULTIPPOINT GROUND BARS, SINGLE REFERENCE GROUND GRID (SRGG) AND MAIN GROUND PLATE SHALL BE BONDED WITH A #4/0 AWG COPPER CONDUCTOR, COLOR CODED GREEN WITH ORANGE TRACER.
9. SEE SHEET E-505 FOR REQUIREMENTS OF THE SINGLE REFERENCE GROUND GRID (SRGG) SYSTEM. SRGG SHALL BE BONDED TO THE EES WITH A MINIMUM OF FOUR #4/0 AWG CONDUCTOR SPACED AS WIDELY AS PRACTICAL.

**1**  
**E-602** **ELECTRICAL GROUNDING ONE-LINE DIAGRAM**  
 SCALE: NTS

**REVISIONS**

NO.	DESCRIPTION	DATE

DATE ISSUED: AUGUST 12, 2015  
 REVIEWED BY: DV  
 DRAWN BY: CLM  
 DESIGNED BY: TS

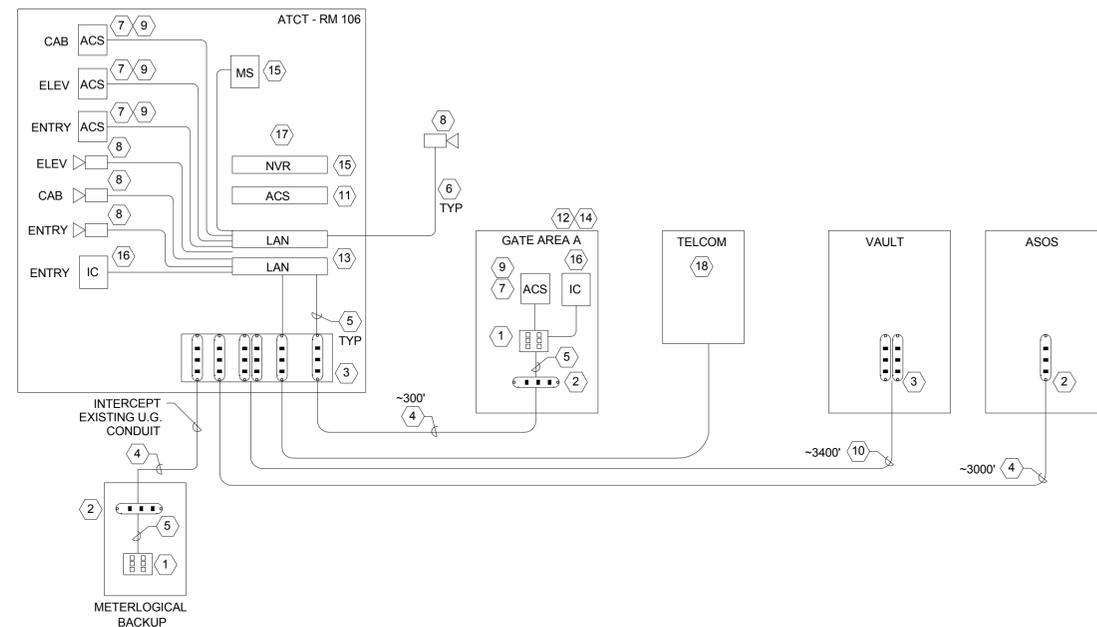
AEC PROJECT NUMBER  
 222-0264-001  
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SHEET TITLE  
**ELECTRICAL  
 GROUNDING  
 ONE-LINE DIAGRAM**

SHEET NUMBER  
**E-602**

BID  
 DOCUMENTS

**AIR  
 TRAFFIC  
 CONTROL  
 TOWER**



**1 TECHNOLOGY RISER DIAGRAM**  
 E-603 SCALE: NTS

**GENERAL NOTES**

- CONTRACTOR SHALL VERIFY EACH OF THE SPECIFIED ITEMS ARE COMPATIBLE AND SUBMIT SHOP DRAWINGS INDICATING FINAL SYSTEM CONFIGURATIONS FOR COMPLETE AND OPERATIONAL SYSTEMS.
- SUBMIT SHOP DRAWINGS AND DATA SHEETS FOR ALL COMPONENTS. SHOP DRAWINGS SHALL INCLUDE CABLE IDENTIFICATION ASSIGNMENTS AND PORT USAGE. DRAWINGS SHALL CLEARLY IDENTIFY POINT TO POINT INFORMATION FOR A COMPLETE SYSTEM.
- ALL RACKS, DEVICES AND CABLES SHALL BE CLEARLY IDENTIFIED BASED UPON SYSTEM TYPE, LOCATION, IDENTIFICATION #, DESTINATION, ETC. REFER TO PREMISE DISTRIBUTION SPECIFICATION FOR ADDITIONAL IDENTIFICATION REQUIREMENTS.
- LABELS SHALL BE CREATED USING AN ELECTRONIC LABEL MAKER, AS SPECIFIED. NO HANDWRITTEN LABELS WILL BE ACCEPTABLE.

**NOTES:**

- 8 PORT 10/100 NETWORK SWITCH WITH 100 BASE FIBER OPTIC UPLINK & POWER SUPPLY. SWITCH SHALL BE MOXA, COMNET, ETHERWAN, IFS OR APPROVED EQUAL.
- SINGLE PANEL HOUSING. SHALL BE CORNING LANDSCAPE SPH OR APPROVED EQUAL. PROVIDE LC PANELS AS REQUIRED.
- 3U, 6 PANEL FIBER OPTIC PATCH PANEL. EACH PANEL SHALL BE LC DUPLEX. FIBER PATCH SHALL BE CORNING LANDSCAPE CCH OR APPROVED EQUAL.
- 6 STRAND OM2 MULTIMODE FIBER OPTIC CABLE. INSTALL IN DUCTBANK AS SHOWN ON C-601. PROVIDE 3M MAX CELL INNERDUCT BASED ON CONDUIT SIZE.
- FIBER OPTIC PATCH CORD. PROVIDE CONNECTORS AS REQUIRED.
- OUTDOOR RATED CAT6 CABLE(S). PROVIDE SURGE PROTECTION IN COMMUNICATIONS CABINET. PROVIDE QUANTITY AS REQUIRED.
- ACCESS CONTROL READER INTERFACE. ACCESS CONTROL READER INTERFACE (NODE). INTERFACE SHALL SUPPORT 2 READERS PER PANEL, 4 INPUTS, 4 OUTPUTS, 20,000 CREDENTIALS, 12VDC, ETHERNET, WEB INTERFACE. ACCESS CONTROL READER INTERFACE SHALL BE S2 NETDOOR MICRONODE OR APPROVED EQUAL.
- 3MP FIXED CCTV CAMERA. CAMERA SHALL BE AXIS, BOSCH, PANASONIC, SONY OR APPROVED EQUAL. CAMERA SHALL SUPPORT WDR, REMOTE FOCUS, 3 YEAR WARRANTY.
- MULTI-TECHNOLOGY OUTDOOR RATED CARD READER AND KEYPAD. READERS SHALL BE HID MULTICLASS SE RPK40 OR APPROVED EQUAL. ACCESS CONTROL READER INTERFACE SHALL BE PROGRAMMED TO ACCEPT BOTH PIN CODES AND AIRPORT PROVIDED CREDENTIALS. INSTALL ON GOOSENECH AT GATE LOCATION.
- 12 STRAND OM2 MULTIMODE FIBER OPTIC CABLE AND 12 STRAND OS2 SINGLEMODE FIBER OPTIC CABLE. SEE E-604 ALCMS RISER DIAGRAM.
- ACCESS CONTROL PANEL (CONTROLLER). ACCESS CONTROL PANEL SHALL SUPPORT 16 PORTALS, 20,000 CREDENTIALS, ETHERNET, WEB INTERFACE, 2U RACK MOUNTED, SOLID STATE, LOW POWER INTEL ATOM. PANEL SHALL BE S2 NETBOX EXTREME OR APPROVED EQUAL. PROVIDE (1) CLIENT WORKSTATION FOR SYSTEM ACCESS AND CONFIGURATION. WORKSTATION SHALL BE INTEL CORE I7, WINDOWS 8.1, 16 GB RAM, 1 TB HDD, (2) 32" LCD MONITORS, KEYBOARD AND MOUSE. WORKSTATION SHALL BE DELL PRECISION SERIES OR APPROVED EQUAL. INSTALL WORKSTATION IN CAB.
- PROVIDE AUDIBLE/VISUAL DEVICE ON EACH ACCESS CONTROL GATE. AUDIBLE/VISUAL DEVICE SHALL BE UTILIZED AS SECONDARY PROTECTION PER UL 325 FOR A CLASS IV LOCATION. ADJUST AND TUNE LOOP DETECTOR AS REQUIRED.
- 24 PORT NETWORK SWITCH WITH 24 10/101/1000 POE PORTS. SWITCH SHALL BE CISCO C2960X-24PS-L WITH LAN BASE SOFTWARE. PROVIDE (2) 100BASE-SX TRANSCEIVERS FOR BACKBONE COMMUNICATION.
- INTERFACE ACCESS CONTROL PANEL WITH GATE OPERATOR. PROVIDE GATE POSITION MONITOR. PROVIDE WIDE GAP BALANCED MAGNETIC SWITCH OR UTILIZE GATE OPERATOR LIMIT SWITCH TO DETERMINE IF GATE IS OPEN OR CLOSED.
- NETWORK VIDEO RECORDER AND VIDEO MANAGEMENT SYSTEM. VIDEO SYSTEM SHALL BE EXACQ PROFESSIONAL OR APPROVED EQUAL. PROVIDE NRV FOR 8 CCTV CAMERAS (EXPANDABLE TO 16). CCTV SHALL RECORD 24X7 AT FULL RESOLUTION AT 15 FRAMES PER SECOND MINIMUM FOR A PERIOD OF 30 DAYS. PROVIDE STORAGE CALCULATIONS FOR APPROVAL.
- IP INTERCOM SYSTEM WITH DOOR CONTROL. SYSTEM SHALL BE AIPHONE 1X-MV WITH POE. DOOR STATION SHALL BE 1X-DA WITH RYIP44 DOOR RELAY. CONNECT DEVICES TO NETWORK SWITCH. PROVIDE CAT6 HORIZONTAL DROP TERMINATED AT PATCH PANEL FOR EACH DEVICE.
- PROVIDE 19" ENCLOSURE NETWORK/SERVER CABINET, 44U, 84". CABINET SHALL BE PANDUIT, ORTHRONICS OR APPROVED EQUAL. PROVIDE WIRE MANAGEMENT, POWER DISTRIBUTION UNITS AND UPS UNITS AS MANUFACTURED BY APC, TRIPPLITE OR APPROVED EQUAL FOR ALL EQUIPMENT INSTALLED IN THE CABINET.
- COORDINATE INSTALLATION OF TELCOM SITE CONNECTION WITH VERIZON.

**REVISIONS**

NO.	DESCRIPTION	DATE

DATE ISSUED: AUGUST 12, 2015  
 REVIEWED BY: AL  
 DRAWN BY: AL  
 DESIGNED BY: TS

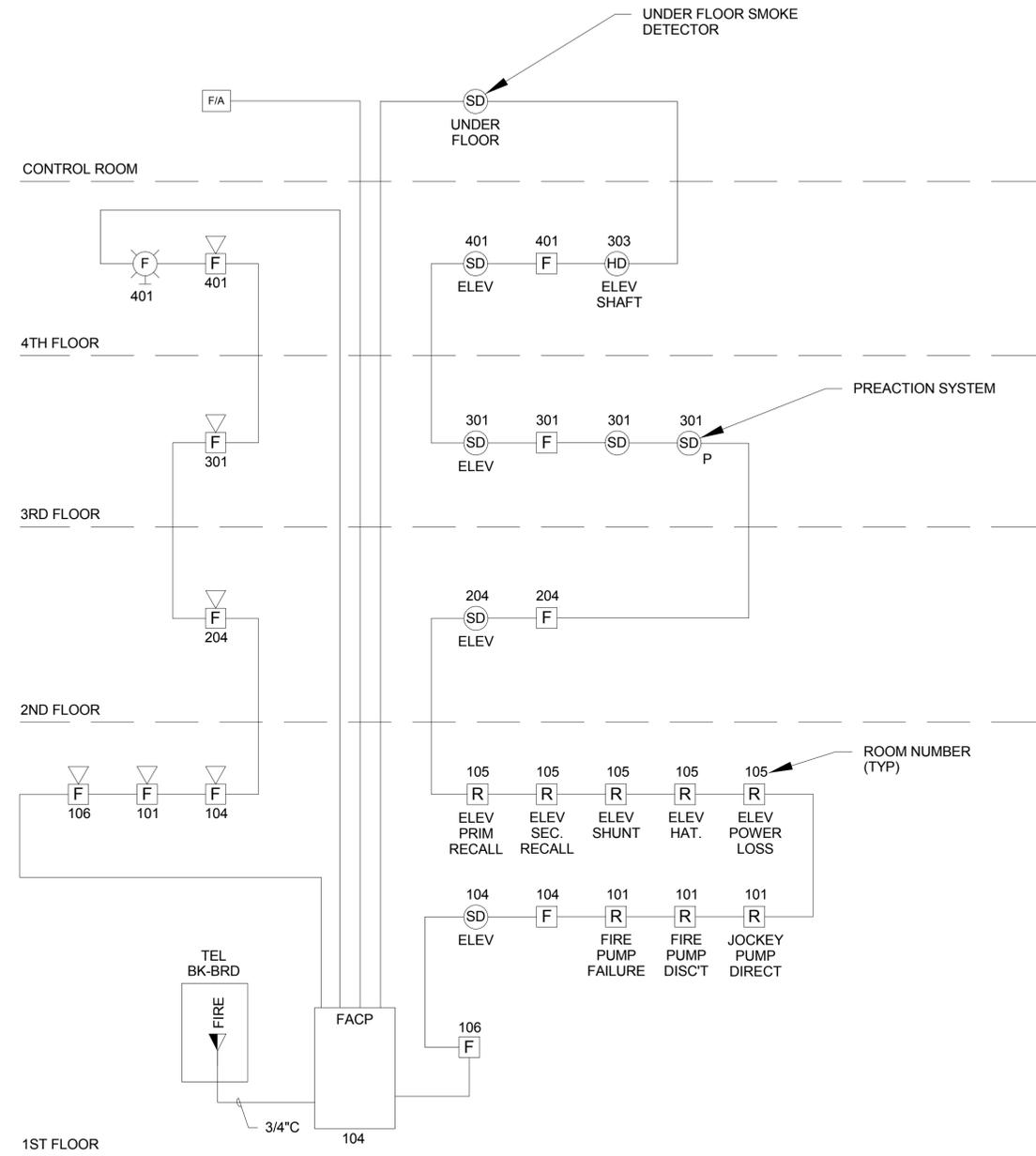
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 222-0264-001  
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SHEET TITLE  
**TECHNOLOGY  
 RISER**

SHEET NUMBER  
**E-603**

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 DOCUMENTS





**GENERAL NOTES:**

1. NEW NETWORKED ADDRESSIBLE FIRE ALARM SYSTEM WITH OCCUPANT NOTIFICATION, TO BE ACTIVATED BY DEVICE ACTIVATION. CONTRACTOR SHALL PROVIDE ALL COMPONENTS TO SUPPORT AN EDWARDS SYSTEM & TECHNOLOGY QS1 CONTROL PANEL (INCLUDING SIGNATURE SERIES INTELLIGENT DEVICES) TO PROVIDE A FULLY OPERATIONAL FIRE ALARM SYSTEM.
2. PROVIDE PHOTOELECTRIC AND INOIZATION SMOKE DETECTORS (PER DIV. 15).
3. PROVIDE REMOTE NOTIFICATION.
4. ALL DEVICES NOT SHOWN; REFER TO FLOOR PLANS FOR QUANTITY.

**1 FIRE ALARM RISER DIAGRAM**  
 E-605 SCALE: NTS

**REVISIONS**

NO.	DESCRIPTION	DATE

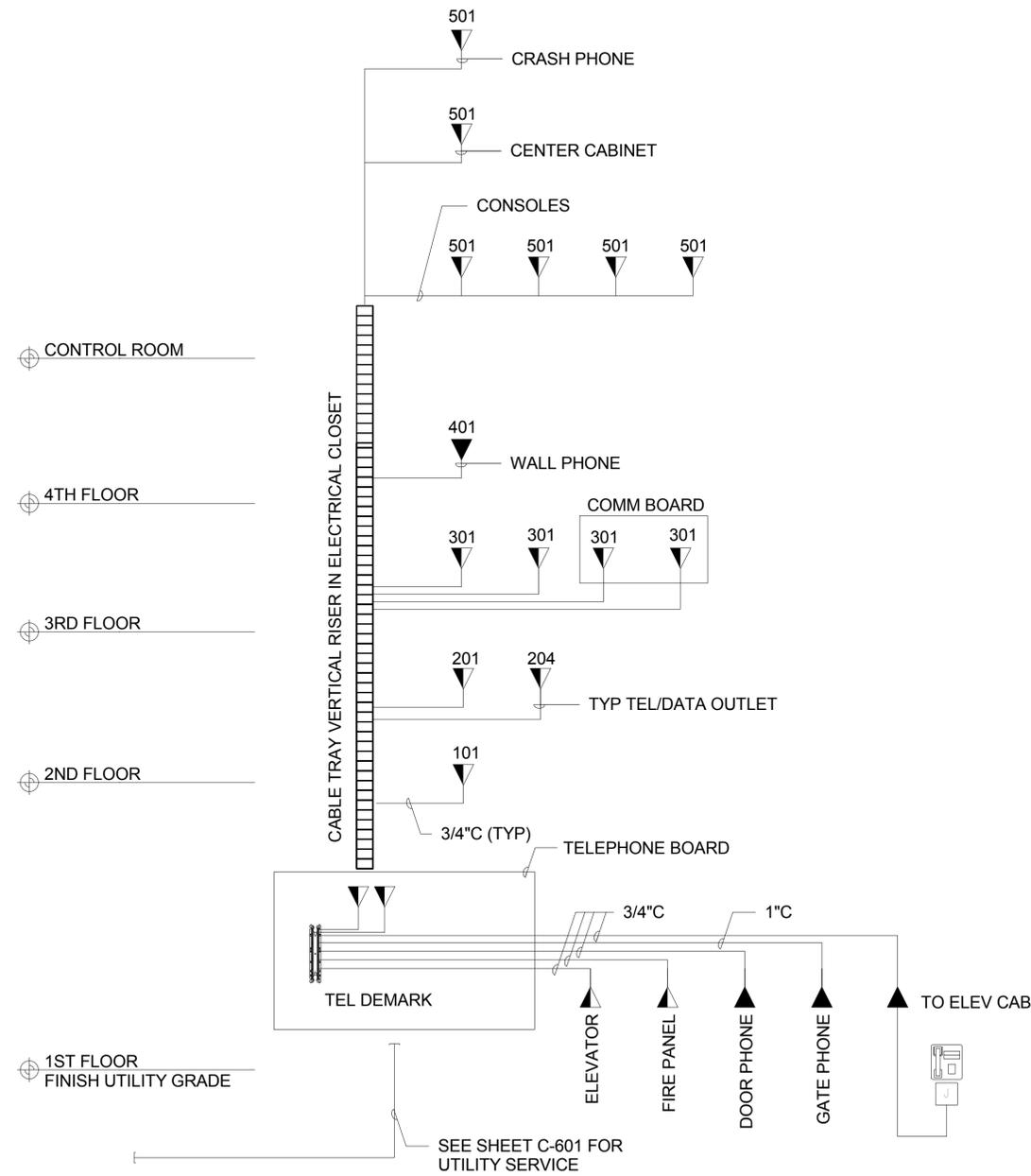
DATE ISSUED: AUGUST 12, 2015  
 REVIEWED BY: DV  
 DRAWN BY: CLM  
 DESIGNED BY: TS

AEC PROJECT NUMBER  
 222-0264-001  
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SHEET TITLE  
**FIRE ALARM RISER  
 DIAGRAM**

SHEET NUMBER  
**E-605**

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**GENERAL NOTES:**

1. THE CONTRACTOR SHALL PROVIDE EMPTY CONDUIT AND BOXES WITH PULL STRING FOR EACH PHONE OUTLET SHOWN. ALL RUNS SHALL BE CONCEALED, WITH 3/4" C MINIMUM CONDUIT.
2. SEE FLOOR PLAN FOR LOCATION OF OUTLETS.

**1 TELEPHONE RISER DIAGRAM**  
 E-606 SCALE: NTS

REVISIONS		
NO.	DESCRIPTION	DATE

DATE ISSUED: AUGUST 12, 2015  
 REVIEWED BY: DV  
 DRAWN BY: CLM  
 DESIGNED BY: TS

AEC PROJECT NUMBER  
 222-0264-001

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 SHEET TITLE  
**TELEPHONE RISER  
 DIAGRAM**

SHEET NUMBER  
**E-606**

BID  
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PNL#: R1DA														LOCATION: ELEC/TELCO RM 106				SYSTEM VOLTAGE : 480/277 WYE			
A.I.C. RATING : 65K														FED FROM: ATS				PHASE-WIRE: 3 PHASE-4 WIRE			
MFG STYLE : SQD TYPE NF																		MAIN : 400 MLO			
BREAKER	CIRCUIT			LOAD			PHASE	CIRCUIT			LOAD			BREAKER							
	CKT	POLE	TRIP	WIRE	GND	COND		DESCRIPTION	KVA	ABC	KVA	WIRE	GND	COND	DESCRIPTION	POLE	TRIP	CKT			
1							SPACE		A	3.9							2				
3	3								B	3.9	4#6	#10	1"	ELEVATOR	3	60	4				
5									C	3.9				(NOTE 1)			6				
7									A	0.9							8				
9	3	125		3#10	#6	1.5"	PNL # R1LA VIA XFMR T1	20.3	A	0.9				JOCKEY PUMP	3	20	10				
11								22.0	B	0.9	3#12	#12	3/4"	RM 101			12				
13								23.4	C	0.9							14				
15	3	100		4#1	#8	1.5"	PNL R1MA	2.8	A					SPARE	3	20	16				
17								0.9	B								18				
19								0.6	C								20				
21	3	125		3#10	#6	1.5"	PNL R4LA VIA XFMR T2	27.1	A	0.9				DWP1, DWP2	3	20	22				
23								29.9	B	0.9	3#12	#12	3/4"	RM 101			24				
25								29.3	C	0.9							26				
27	3						SPACE		A	0.9							28				
29									B	0.9	3#12	#12	3/4"	SF-1	3	20	30				
31									C	0.9				(NOTE 2)	RM 402		32				
33	3						SPACE		A								34				
35									B								36				
37									C								38				
39	3						SPACE		A								40				
41									B								42				
									C								42				

PHASE A, CONNECTED: 57.8 KVA  
PHASE B, CONNECTED: 60.4 KVA  
PHASE C, CONNECTED: 60.9 KVA

PANEL TOTALS

TOTAL CONN. LOADS : 179.1 KVA  
TOTAL CONN. LOADS : 215.5 AMP  
TOTAL EST. DEMAND : 135.9 KVA  
TOTAL EST. DEMAND : 163.5 AMP

**PANEL NOTES**

- SIZE BASED ON ESTIMATE MOTOR SIZE OF 10 HP.  
COORDINATE WITH SHOP DRAWINGS.
- VFD DRIVE, NEMA 12 DIST.

PNL#: R1LA														LOCATION: ELEC/TELCO RM 106				SYSTEM VOLTAGE : 208/120 WYE			
A.I.C. RATING : 10-K														FED FROM: R1DA VIA XFMR T1				PHASE-WIRE: 3 PHASE-4 WIRE			
MFG STYLE : SQD TYPE NQOD																		MAIN : 225 MCB			
BREAKER	CIRCUIT			LOAD			PHASE	CIRCUIT			LOAD			BREAKER							
	CKT	POLE	TRIP	WIRE	GND	COND		DESCRIPTION	KVA	ABC	KVA	WIRE	GND	COND	DESCRIPTION	POLE	TRIP	CKT			
1							PTAC-1 (NOTE 1)	2.0	A	0.9	2#12	#12	3/4"	RCPT	1ST-FL	1	20	2			
3	2	25		2#10	#10	3/4"		2.0	B	1.5	2#12	#12	3/4"	RCPT	2ND-FL	1	20	4			
5							PTAC-2 (NOTE 1)	2.0	C	0.2	2#12	#12	3/4"	RCPT	ELEVATOR PIT	1	20	6			
7	2	25		2#10	#10	3/4"		2.0	A	0.2	2#12	#12	3/4"	SUMP PUMP	ELEVATOR PIT	1	20	8			
9							PTAC-3 (NOTE 1)	2.0	B	0.7	2#12	#12	3/4"	RCPT	EXTERIOR	1	20	10			
11	2	25		2#10	#10	3/4"		2.0	C	0.2	2#12	#12	3/4"	ELEVATOR CAR LTS	1	20	12				
13							PTAC-4 (NOTE 1)	1.5	A	0.2	2#12	#12	3/4"	ELEVATOR CAR HVAC	1	20	14				
15	2	20		2#12	#12	3/4"		1.5	B					SPARE	1	20	16				
17	1	20		2#12	#12	3/4"	UH-1	1.5	C	0.1	2#12	#12	3/4"	FACP	RM 104	1	20	18			
19	1	20		2#12	#12	3/4"	UH-2	1.5	A					SPARE	1	20	20				
21	1	20		2#12	#12	3/4"	UH-3	1.5	B					SPARE	1	20	22				
23	1	20		2#10	#10	1"	ACCESS GATE	0.2	C	1.4							24				
25	1	20					SPARE		A	1.4	2#12	#12	3/4"	DSU-1/DCU-1	RM 105	2	15	26			
27	1	20					SPARE		B	4.1							28				
29							WH-1 (NOTE 2)	2.4	C	4.1	2#8	#10	3/4"	DSU-2/DCU-2	RM 301	2	40	30			
31	2	50		2#6	#10	1"		2.4	A	4.1							32				
33								0.5	B	4.1	2#8	#10	3/4"	DSU-3/DCU-3	RM 301	2	40	34			
35	2	30		2#10	#10	1"	GENERATOR PANEL R1LB	1.1	C	4.1							36				
37							SPD (NOTE 3)	0.0	A	4.1	2#8	#10	3/4"	DSU-4/DCU-4	RM 301	2	40	38			
39	3	30		4#10	#10			0.0	B	4.1							40				
41								0.0	C	4.1	2#8	#10	3/4"	DSU-4/DCU-5	RM 301	2	40	42			

PHASE A, CONNECTED: 20.3 KVA  
PHASE B, CONNECTED: 22.0 KVA  
PHASE C, CONNECTED: 23.4 KVA

PANEL TOTALS

TOTAL CONN. LOADS : 65.7 KVA  
TOTAL CONN. LOADS : 182.5 AMP  
TOTAL EST. DEMAND : 51.7 KVA  
TOTAL EST. DEMAND : 143.6 AMP

**PANEL NOTES**

- DISCT PROVIDED WITH UNIT
- PROVIDE NON-FUSED DISCT FOR WH
- PROVIDE INTEGRAL SPD WITH PANEL

PNL#: R1MA														LOCATION: ELEC/TELCO RM 106				SYSTEM VOLTAGE : 480/277 WYE			
A.I.C. RATING : 65K														FED FROM: R1DA				PHASE-WIRE: 3 PHASE-4 WIRE			
MFG STYLE : SQD TYPE NF																		MAIN : 100 MLO			
BREAKER	CIRCUIT			LOAD			PHASE	CIRCUIT			LOAD			BREAKER							
	CKT	POLE	TRIP	WIRE	GND	COND		DESCRIPTION	KVA	ABC	KVA	WIRE	GND	COND	DESCRIPTION	POLE	TRIP	CKT			
1	1	20		2#12	#12	3/4"	LTG	0.4	A					SPARE	1	20	2				
3	1	20		2#12	#12	3/4"	LTG	0.1	B	0.2	2#12	#12	3/4"	LTS	FACADE	1	20	4			
5	1	20		2#12	#12	3/4"	LTG	0.1	C					SPARE	1	30	6				
7	1	20		2#12	#12	3/4"	LTG	0.3	A	0.1	2#12	#12	3/4"	LTS	ROOF	1	20	8			
9	1	20		2#12	#12	3/4"	LTG	0.3	B					SPARE	1	20	10				
11	1	20		2#12	#12	3/4"	LTG	0.3	C					SPARE	1	20	12				
13	1	20					SPARE		A					SPARE	1	20	14				
15	1	20		2#12	#12	3/4"	LTG	0.2	B					SPARE	1	20	16				
17	1	20		2#12	#12	3/4"	LTG	0.2	C					SPARE	1	20	18				
19	1	20		2#10	#10	1"	LTS	2.0	A					SPARE	1	20	20				
21	1	20		2#12	#12	3/4"	EXTERIOR LIGHTING CONTROL	0.1	B					SPARE	1	20	22				
23	1	20					SPARE		C					SPARE	1	20	24				
25								0.0	A					SPARE	1	20	26				
27	3	30		4#10	#10		SPD (NOTE 3)	0.0	B					SPARE	1	20	28				
29								0.0	C					SPARE	1	20	30				

PHASE A, CONNECTED: 2.8 KVA  
PHASE B, CONNECTED: 0.9 KVA  
PHASE C, CONNECTED: 0.6 KVA

PANEL TOTALS

TOTAL CONN. LOADS : 4.3 KVA  
TOTAL CONN. LOADS : 5.2 AMP  
TOTAL EST. DEMAND : 4.5 KVA  
TOTAL EST. DEMAND : 5.4 AMP

**PANEL NOTES**

- SIZE BASED ON ESTIMATE MOTOR SIZE OF 10 HP.  
COORDINATE WITH SHOP DRAWINGS.
- VFD DRIVE, NEMA 12 DISCT
- PROVIDE INTEGRAL SPD WITH PANEL

PNL#: R1LB														LOCATION: GENERATOR				SYSTEM VOLTAGE : 208/120 WYE			
A.I.C. RATING : 10-K														FED FROM: R1LA				PHASE-WIRE: 1 PHASE-2 WIRE			
MFG STYLE : SQD TYPE QO																		MAIN : 30 MCB			
BREAKER	CIRCUIT			LOAD			PHASE	CIRCUIT			LOAD			BREAKER							
	CKT	POLE	TRIP	WIRE	GND	COND		DESCRIPTION	KVA	ABC	KVA	WIRE	GND	COND	DESCRIPTION	POLE	TRIP	CKT			
1	1	20		2#12	#12	3/4"	GEN. BATTERY CHARGER	0.2	A	0.2	2#12	#12	3/4"	GEN. RCPT	1	20	2				
3	1	20					SPACE		B					SPACE	1	20	4				
5	1	20					SPACE		A	0.1	2#12	#12	3/4"	TANK LVL CTRL ALARM	1	20	6				
7	2	20		2#12	#12	3/4"	GEN. BLK HEATER	1.0	B	0.1	2#12	#12	3/4"	GEN. CONTROLS	1	20	8				

PHASE A, CONNECTED: 0.5 KVA  
PHASE B, CONNECTED: 1.1 KVA

PANEL TOTALS

TOTAL CONN. LOADS : 1.6 KVA  
TOTAL CONN. LOADS : 4.4 AMP  
TOTAL EST. DEMAND : 1.1 KVA  
TOTAL EST. DEMAND : 5.2 AMP



Reynolds, Smith and Hills, Inc.  
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Alexandria VA - Virginia Registration No. 0411-000594



4308 WARDS ROAD  
SUITE 100  
LYNCHBURG, VA  
24502

AIR  
TRAFFIC  
CONTROL  
TOWER

REVISIONS		
NO.	DESCRIPTION	DATE

DATE ISSUED: AUGUST 12, 2015  
REVIEWED BY: DV  
DRAWN BY: VM  
DESIGNED BY: TS

AEC PROJECT NUMBER  
222-0264-001  
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SHEET TITLE  
**PANEL SCHEDULES**

SHEET NUMBER  
**E-701**

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4308 WARDS ROAD  
SUITE 100  
LYNCHBURG, VA  
24502

## AIR TRAFFIC CONTROL TOWER

LOAD CALCULATIONS					
LOAD TYPE	CONN KVA	DEMAND FACTOR	DEMAND KVA	UNITS	LOAD DESCRIPTION
RECEPTACLES	10	100%	10	KVA	FIRST 10 KVA
RECEPTACLES	15.4	50%	7.7	KVA	REMAINING RCPT LOAD
LIGHTING	6.3	100%	6.3	KVA	
MECH (HEATING)	8.5	0%	0.0	KVA	NOTE 1
MECH (COOLING)	69.2	80%	55.4	KVA	NOTE 1
MECH (VENTILATION)	2.7	100%	2.7	KVA	
PLUMBING	27.5	80%	22.0	KVA	
EQUIPMENT	24.8	50%	12.4	KVA	
ELEVATOR (10 HP)	11.7	100%	11.7	KVA	
FIRE PUMP (50 HP)	54	125%	67.5	KVA	LARGEST MOTOR GROWTH
		5%	11.5	KVA	
TOTAL	230.1		207.2	KVA	
TOTAL	276.9		249.3	AMPS	AT 480 VOLTS

**NOTES:**

- ASSUME HEATING AND COOLING WILL NOT HAPPEN AT THE SAME TIME. HEATING LOADS ARE CONSIDERED NON-COINCIDENTAL WITH COOLING LOADS.

STARTER SCHEDULE		
FULL VOLTAGE, NON REVERSING, SINGLE SPEED COMBINATION STARTER SCHEDULE		
PROVIDE COMB. STARTERS BASED ON VOLTAGE AND HP OF THE EQUIPMENT AS FOLLOWS		
MAXIMUM HP @	NEMA SIZE	
230V, 3 PHASE	480V, 3 PHASE	COMB. STARTER
7.5	10	1
15	25	2
30	50	3
60	100	4
100	200	5

**NOTES**

- PROVIDE SOFT START FOR MOTORS 25 HP OR LARGER.
- TERMINATE ALL MOTORS WITH LIQUID TITE FLEX.

PNL#: R4LA																
A.I.C. RATING : 10-K					LOCATION: ATC EQUIPMENT ROOM 301					SYSTEM VOLTAGE : 208/120 WYE						
MFG STYLE : SOD TYPE NQ00					FED FROM: R1LA VIA XFMR T2					PHASE-WIRE: 3 PHASE-4 WIRE						
										MAIN : 225 MCB (NOTE 1)						
BREAKER		CIRCUIT			LOAD		PHASE		CIRCUIT			LOAD		BREAKER		
CKT	POLE	TRIP	WIRE	GND	COND	DESCRIPTION	KVA	ABC	KVA	WIRE	GND	COND	DESCRIPTION	POLE	TRIP	CKT
1						PANEL R4CA	12.9	A					SPARE	1	20	2
3	3	100	4#1	#8	1.5"	VIA UPS	13.3	B	0.2	2#12	#12	3/4"	LTS CAB GENERAL	1	20	4
5							9.5	C					SPARE	1	20	6
7	1	20	2#12	#12	3/4"	RCPT CAB PRINTER	0.8	A	1.2	2#12	#12	3/4"	RCPT CAB MICROWAVE	1	20	8
9	1	20	2#12	#12	3/4"	RCPT CAB COPIER	0.8	B	1.0	2#12	#12	3/4"	RCPT CAB REFRIDGERATOR	1	20	10
11	1	20	2#12	#12	3/4"	RCPT CAB LOCAL CNTL	0.7	C	0.8	2#12	#12	3/4"	RCPT CAB COUNTER	1	20	12
13	1	20	2#12	#12	3/4"	RCPT CAB LOCAL CNTL	0.7	A	1.0	2#12	#12	3/4"	RCPT 4TH FLR REFR.	1	20	14
15	1	20	2#12	#12	3/4"	RCPT CAB FLUDATA	0.7	B	1.2	2#12	#12	3/4"	RCPT 4TH FLR MICRO.	1	20	16
17	1	20	2#12	#12	3/4"	RCPT CAB FLUDATA	0.7	C	0.4	2#12	#12	3/4"	RCPT RMS 405, 406	1	20	18
19	1	20	2#12	#12	3/4"	RCPT CAB GROUND CNTL	0.7	A	0.7	2#12	#12	3/4"	RCPT RM 301	1	20	20
21	1	20	2#12	#12	3/4"	RCPT CAB GROUND CNTL	0.7	B	0.1	2#12	#12	3/4"	LTS CAB COUNTER	1	20	22
23	1	20	2#12	#12	3/4"	RCPT CAB GROUND CNTL	0.7	C	0.8	2#12	#12	3/4"	LTS ROOF OBSTRUCTION	1	20	24
25	1	20				SPARE		A					SPARE	1	20	26
27	1	20				SPARE		B	0.1	2#12	#12	3/4"	LTS RMS 404, 405, 406	1	20	28
29	1	20				SPARE		C					SPARE	1	20	30
31	1	20				SPARE		A					SPARE	1	20	32
33	1	20				SPARE		B					SPARE	1	20	34
35	1	20				SPARE		C					SPARE	1	20	36
37							0.0	A					SPARE	1	20	38
39	3	30	4#10	#10		SPD (NOTE 2)	0.0	B					SPARE	1	100	40
41							0.0	C					SPARE	1	20	42

PHASE A, CONNECTED: 28.1 KVA  
PHASE B, CONNECTED: 30.9 KVA  
PHASE C, CONNECTED: 30.3 KVA

PANEL TOTALS	
TOTAL CONN. LOADS :	89.3 KVA
TOTAL CONN. LOADS :	248.1 AMP
TOTAL EST. DEMAND :	70.6 KVA
TOTAL EST. DEMAND :	196.1 AMP

**PANEL NOTES**

- PROVIDE FEED THROUGH LUGS TO FEED PANEL R4LB
- PROVIDE INTEGRAL SPD WITH PANEL

PNL#: R4CA																
A.I.C. RATING : 10-K					LOCATION: ATC EQUIPMENT RM 301					SYSTEM VOLTAGE : 208/120 WYE						
MFG STYLE : SOD TYPE NQ00					FED FROM: R4LA VIA UPS					PHASE-WIRE: 3 PHASE-4 WIRE						
										MAIN : 100 MCB (NOTE 1)						
BREAKER		CIRCUIT			LOAD		PHASE		CIRCUIT			LOAD		BREAKER		
CKT	POLE	TRIP	WIRE	GND	COND	DESCRIPTION	KVA	ABC	KVA	WIRE	GND	COND	DESCRIPTION	POLE	TRIP	CKT
1	1	30	2#10	#10	3/4"	RCPT 1ST FLR FAA RACK (HARIS)	2.2	A	0.7	2#12	#12	3/4"	RCPT CAB LOCAL CNTL	1	20	2
3	1	30	2#10	#10	3/4"	RCPT 1ST FLR FAA RACK (HARIS)	2.2	B	0.7	2#12	#12	3/4"	RCPT CAB LOCAL CNTL	1	20	4
5	1	20	2#12	#12	3/4"	RCPT 1ST FLR FAA RACK (MISSION)	1.0	C	0.7	2#12	#12	3/4"	RCPT CAB FLUDATA	1	20	6
7	1	20	2#12	#12	3/4"	RCPT 1ST FLR TELE. BRD	0.4	A	0.7	2#12	#12	3/4"	RCPT CAB FLUDATA	1	20	8
9	1	20	2#12	#12	3/4"	RCPT 1ST FLR TELE. BRD	0.4	B	0.7	2#12	#12	3/4"	RCPT CAB GROUND CNTL	1	20	10
11	1	20	2#12	#12	3/4"	RCPT 1ST FLR TELE. BRD	0.4	C	0.7	2#12	#12	3/4"	RCPT CAB GROUND CNTL	1	20	12
13	1	20	2#12	#12	3/4"	RCPT 3RD FLR COMM BRD	0.4	A	0.7	2#12	#12	3/4"	RCPT CAB GROUND CNTL	1	20	14
15	1	20	2#12	#12	3/4"	RCPT 3RD FLR COMM BRD	0.4	B	0.7	2#12	#12	3/4"	RCPT CAB GROUND CNTL	1	20	16
17	1	20	2#12	#12	3/4"	RCPT 1ST FLR NET/SERV RACK	1.0	C	0.2	2#12	#12	3/4"	RCPT CAB SUPERVISOR	1	20	18
19	2	20	2#12	#12	3/4"	RCPT 1ST FLR NET/SERV RACK	1.0	A	0.2	2#12	#12	3/4"	RCPT CAB CEILING	1	20	20
21	1	20	2#12	#12	3/4"	RCPT 1ST FLR NET/SERV RACK	1.0	B					SPARE	1	20	22
23	1	20				SPARE		C					SPARE	1	20	24
25	1	20				SPARE		A					SPARE	1	20	26
27						SPARE		B					SPARE	1	20	28
29	2	30				SPARE		C					SPARE	1	20	30
31	1	20				SPARE		A					SPARE	1	20	32
33	1	20				SPARE		B					SPARE	1	20	34
35	1	20				SPARE		C					SPARE	1	20	36
37							0.0	A					SPARE	1	20	38
39	3	30	4#10	#10		SPD (NOTE 2)	0.0	B	0.6	2#12	#12	3/4"	ROTATING BEACON	1	20	40
41							0.0	C	0.1	2#12	#12	3/4"	SECURITY DOORS	1	20	42

PHASE A, CONNECTED: 12.9 KVA  
PHASE B, CONNECTED: 13.3 KVA  
PHASE C, CONNECTED: 9.5 KVA

PANEL TOTALS	
TOTAL CONN. LOADS :	35.7 KVA
TOTAL CONN. LOADS :	99.2 AMP
TOTAL EST. DEMAND :	23.9 KVA
TOTAL EST. DEMAND :	66.5 AMP

**PANEL NOTES**

- PROVIDE FEED THROUGH LUGS TO FEED PANEL R4CB
- PROVIDE INTEGRAL SPD WITH PANEL

PNL#: R4LB																
A.I.C. RATING : 10-K					LOCATION: ATC EQUIPMENT RM 301					SYSTEM VOLTAGE : 208/120 WYE						
MFG STYLE : SOD TYPE NQ00					FED FROM: R4LA VIA FEED-THRU LUGS					PHASE-WIRE: 3 PHASE-4 WIRE						
										MAIN : 225 MLO						
BREAKER		CIRCUIT			LOAD		PHASE		CIRCUIT			LOAD		BREAKER		
CKT	POLE	TRIP	WIRE	GND	COND	DESCRIPTION	KVA	ABC	KVA	WIRE	GND	COND	DESCRIPTION	POLE	TRIP	CKT
1						RTU-1 (NOTE 1) ROOF	2.4	A					SPARE	1	20	2
3	3	40	3#8	#10	1"		2.4	B					SPARE	1	20	4
5							2.4	C	4.2							6
7						RTU-2 (NOTE 1) ROOF	2.4	A	4.2	2#6	#10	1"	WH-1 (NOTE 2) RM 405	2	50	8
9	3	40	3#8	#10	1"		2.4	B	4.2				WH-2 (NOTE 2) RM 501	2	50	10
11							2.4	C	4.2	2#6	#10	1"	RCPT 3RD FLR FAA RACK (ARMS)	1	20	12
13	1	20				SPARE		A	0.4	2#12	#12	3/4"	RCPT 3RD FLR FAA RACK (ASOS)	1	20	14
15	1	20	2#12	#12	3/4"	CHILLER RM 405	0.3	B					RCPT 3RD FLR FAA RACK (STARS)	1	20	16
17	1	20				SPARE		C					RCPT 3RD FLR MEL RACK	1	20	18
19	1	20				SPARE		A					RCPT 3RD FLR MEL RACK	1	20	20
21	1	20				SPARE		B					RCPT 3RD FLR MEL RACK	1	20	22
23	1	20				SPARE		C					RCPT 3RD FLR MEL RACK	1	20	24
25	1	20				SPARE		A					RCPT 3RD FLR MEL RACK	1	20	26
27	1	20				SPARE		B					RCPT 3RD FLR MEL RACK	1	20	28
29	1	20				SPARE		C					RCPT 3RD FLR MEL RACK	1	20	30
31	1	20				SPARE		A					RCPT 3RD FLR MEL RACK	1	20	32
33	1	20				SPARE		B					RCPT 3RD FLR MEL RACK	1	20	34
35	1	20				SPARE		C					RCPT 3RD FLR MEL RACK	1	20	36
37	1	20				SPARE		A					RCPT 3RD FLR MEL RACK	1	20	38
39	1	20	2#12	#12	3/4"	UH-4 RM 302	1.5	B	2.0				PTAC-5 (NOTE 3) RM 401	2	25	40
41	1	20	2#12	#12	3/4"	UH-5 RM 402	1.5	C	2.0	2#10	#10	3/4"				42

PHASE A, CONNECTED: 9.4 KVA  
PHASE B, CONNECTED: 12.8 KVA  
PHASE C, CONNECTED: 16.7 KVA

PANEL TOTALS	
TOTAL CONN. LOADS :	38.9 KVA



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4308 WARDS ROAD  
 SUITE 100  
 LYNCHBURG, VA  
 24502

## AIR TRAFFIC CONTROL TOWER

### LUMINAIRE SCHEDULE

MARK	DESCRIPTION	INSTALL	LAMPS				APPROVED MANUFACTURER	MODEL/SERIES NUMBER
			QTY	TYPE	WATT	VOLTS		
A1	LED 2x2, LAY-IN TROFFER; STEEL HOUSING, FLUSH STEEL DOOR WITH MECHANICAL SEAL AND POSITIVE ACTION LATCHES; SNAP IN DRIVER COVERS, ACRYLIC LENS, A-12 PATTERN, 0.125" NOMINAL THICKNESS; PAINTED AFTER FABRICATION WITH HIGH REFLECTIVITY BAKED WHITE ENAMEL FINISH; UNIVERSAL VOLTAGE, L70 PERFORMANCE, 50K-HRS, 35K 82 CRI	RECESSED	1	LED	39.6	277	1 LITHONIA	2GTL2 40LLP835
A2	LED 4 FT, SURFACE MOUNT; ACRYLIC WRAP AROUND LENS, PAINTED AFTER FABRICATION WITH HIGH REFLECTIVITY BAKED WHITE ENAMEL FINISH; UNIVERSAL VOLTAGE, L70 PERFORMANCE, 50-HRS, 3500 82 CRI	SURFACE	1	LED	48	277	1 LITHONIA	LBL4 40LLP835
C1	LED 2 FT, PRISMATIC LENS, WHITE FINISH	①	1	LED	32	277	1 LITHONIA	WL2-12L-LP835
C2	VANITY WALL BRACKET, DECORATIVE SWIRLED WHITE GLASS, BLACK BRONZE FINISH ARM.	②	2	CFL	13	120	1 LITHONIA	11790 BZ
C3	18" LED CLOSET LIGHT, WHITE ACRYLIC DIFFUSER, PASSIVE INFARED SENSOR, L70 PERFORMANCE, 50K-HRS 4000K, 85 CRI	7'-6" AFF	1	LED	14	120	1 LITHONIA	FMMCL
C4	WALL MOUNTED, RECESSED COMPACT LED, GLASS LENSE/DIFFUSER, 2700K, 60 LUM (FINISH SELECTED BY OWNER)	③	1	LED	4	120	1 WINONA LIGHTING	STEP11-RECT-INT-LST1A-350mA-WHT35K-MVOLT-DMD
D1	SPECIALTY LOW GLARE FIXTURE, DIMMABLE, 7" INCANDESCANT, ADJUSTABLE (TILT AND ANGLE), BLACK BAFFLE WITH INSULATION DETECTOR	④	1	PAR38 / 5K / LEDG5	20	277	1 COOPER	HA7-DR-7470-BB
D2	FLUORESCENT, DOWN LIGHT, 8" HOUSING, ONE PIECE STEEL, PREWIRED J-BOX WITH SNAP ON COVER, VENTED AT LAMP TIP AND SOCKET. REFRACTOR: HIGH PURITY ALUMINUM ALZAK (VIRTUAL SOURCE) IRIDESCENCE SUPPRESSED REFLECTOR (AMERICAM MATTE); SELF TRIM RING. CLASS "P" ELECTRONIC MULTI-VOLT BALLAST FOR OPERATING ALL TRIPLE TUBE LAMPS.	RECESSED	2	32 PLTT	32	120	1 PRESCOLITE	CFTD-832HEB-STFD802HMF-CB24
J1	WALL MOUNTED VAPOR TIGHT ELEVATOR PIT LIGHT WITH GUARD, CAST ALUMINUM HOUSING, FROSTED DIFFUSER, L70 PERFORMANCE, 50K-HRS, 4000K, 74 CRI	WALL	1	LED	15	120/277	1 LITHONIA	OLVTWM
J2	LED, FULL CUT OFF, OUTDOOR WALL SCENCE, UNIVERSAL VOLTAGE, L70 PERFORMANCE, 100K-HRS, 4000K (SEE GENERAL NOTE 7)	⑤	1	LED	14	120/277	1 PHILIPS STONCO	LPW7-8BZ
S1	LOW PROFILE (1" HIGH MAX) LED CABINET LIGHT, ALUMINUM HOUSING WITH WHITE FINISH, DIRECT WIRED, 120V DIMMABLE DRIVER, L70 RATED, 50K-HRS, 3500K, 83 CRI. PROVIDE CONNECTOR CORDS AND CONNECTORS AS NEEDED FOR A COMPLETE INSTALLATION. REFER TO FLOOR PLANS FOR LUMINAIRE LENGTHS.	UNDER COUNTER/ CABINET	1	LED	VARIES	120	1 LITHONIA	UCLD
X1	LED, SINGLE FACE EXIT LIGHT	UNIVERSAL	1	LED	1.5	120/277	1 DUAL LITE	LES SERIES
X2	EMRGENCY BACKUP LIGHT, LED	WALL 7'-6" AFF	1	LED	5	120	1 LITHONIA	EL-W2
L802	HBM400PS AIRPORT BEACON, HIGH INTENSITY, CLASS 1, 208 VAC INPUT, 60Hz, WITH 400 WATT PULSE START LAMPS, TOWER MTG KIT 12 RPM 24 FLASHER PER MINUTE (SEE GENERAL NOTE 7)	ROOF	2	MH	400	120	1 HALL-BRITE	L802A6116
L810	DOUBLE OBSTRUCTION LIGHT, BOTTOM MOUNT, 120V LED BOTTOM MOUNT, 120V LED (SEE GENERAL NOTE 7)	SEE E-503	2	LED	6.5	120	1 HALL-BRITE	RTO-1R07-002
P1	FACADE DOWNLIGHT, 3500K 30W, LED LAMP, 15 DEGREE OPTICS, 24" EXTENDED ARM, CORROSION RESISTANT FINISH, COLOR SELECTED BY OWNER. (SEE GENERAL NOTE 7)	⑥	1	LED	30	277	1 INSIGHT MASQUE	MQ2-30-40K-15-EX-24-INT-CRF

#### GENERAL NOTES:

- THE MODEL/SERIAL NUMBER INDICATES THE TYPE OF THE FIXTURE AND DOES NOT INCLUDE ALL FEATURES REQUIRED. THE DESCRIPTION COLUMN INDICATES THE REQUIRED FEATURES AND FINISHES. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR THE LUMINAIRES INDICATING ALL REQUIRED FEATURES AS SHOWN ON THE DRAWINGS AND SPECIFICATIONS.
- COORDINATE LIGHTING FIXTURE MOUNTING WITH THE ARCHITECTURAL CEILING PLANS, SECTIONS AND ELEVATIONS. PROVIDE ALL MOUNTING HARDWARE INCLUDING TRIM AND FLANGES TO COMPLETE THE INSTALLATION.
- APPROVED EQUAL MANUFACTURERS:
  - PROVIDE A PRODUCT EQUAL IN PERFORMANCE AND QUALITY INCLUDING PHYSICAL ATTRIBUTES FROM APPROVED MANUFACTURER'S LISTED IN THE FIXTURE SCHEDULE. A PRODUCT FROM MANUFACTURER'S NOT LISTED AS APPROVED EQUAL IN THE SCHEDULE MAY BE SUBMITTED FOR APPROVAL DURING SHOP DRAWINGS PROVIDED THE MANUFACTURER CAN PROVIDE A FIXTURE WHICH MEETS THE QUALITY AND PERFORMANCE REQUIREMENTS. THE A/E'S DETERMINATION FOR THE APPROVAL SHALL GOVERN. PROVIDE COMPLETE DETAIL OF THE EQUAL FIXTURE WITH A COMPARISON TO THE SPECIFIED FIXTURES INCLUDING POINT BY POINT CALCULATIONS, SAMPLES AND ANY ADDITIONAL INFORMATION REQUESTED BY THE A/E. PROTOTYPE PRODUCTS SHALL NOT BE SUBMITTED FOR APPROVAL AS EQUAL TO SPECIFIED PRODUCTS.
- AFTER THE INSTALLATION OF THE LIGHTING FIXTURES IN NON ACCESSABLE CEILING AND PRIOR TO THE INSTALLATION OF THE CEILING, THE CONTRACTOR SHALL DEMONSTRATE TO THE OWNER AND THE A/E THAT THE BALLAST AND OTHER SERVICEABLE COMPONENTS OF THE FIXTURE ARE SERVICEABLE FROM BELOW THROUGH THE FIXTURE OPENING.
- PRIOR TO INSTALLING ALL LAMPS TYPES, VERIFY THAT THE COLOR TEMPERATURE AND CRI OF THE LAMPS ARE IDENTICAL. CONTRACTOR WILL BE REQUIRED TO REPLACE THE LAMPS AT NO COST TO THE OWNER IF LAMPS OF DIFFERENT COLOR TEMPERATURE AND CRI ARE INSTALLED.
- ALL FIXTURES SHALL BE PROVIDED WITH LAMPS, PROVIDE 10% SPARE LAMPS OF EACH TYPE TO TURNED OVER TO OWNER.
- ALL EXTERIOR LIGHTS SHALL BE FURNISHED WITH A NON-REFLECTIVE EXTERIOR FINISH OR PAINTED WITH A FLAT BLACK IN THE FIELD.

#### NOTES:

- STAIRWELL: 7'-6" ABOVE STAIRWELL LANDING RM 301. FIXTURES TO BE CHAIN HUNG AT A HEIGHT LEVEL WITH THE BOTTOM OF THE CABLE TRAY.
- WALL MOUNT FIXTURE CENTERED 6" ABOVE MIRROR.
- WALL MOUNTED LUMINAIRE RECESSED IN WALL 18" ABOVE STAIR.
- RECESS MOUNT LUMINAIRES IN CEILING GRID CENTERED ABOVE EACH WORK STATION.
- WALL MOUNT 8'-6" ABOVE FINISH FLOOR, 3' FROM DOOR FRAME.
- INSTALL BENEATH WALKWAY, SEE ARCHITECTURAL ELEVATIONS FOR LUMINAIRE LOCATIONS.

#### REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: AUGUST 12, 2015  
 REVIEWED BY: DV  
 DRAWN BY: VM  
 DESIGNED BY: TS

AEC PROJECT NUMBER  
 222-0264-001  
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SHEET TITLE  
**LUMINAIRE SCHEDULE**

SHEET NUMBER  
**E-703**

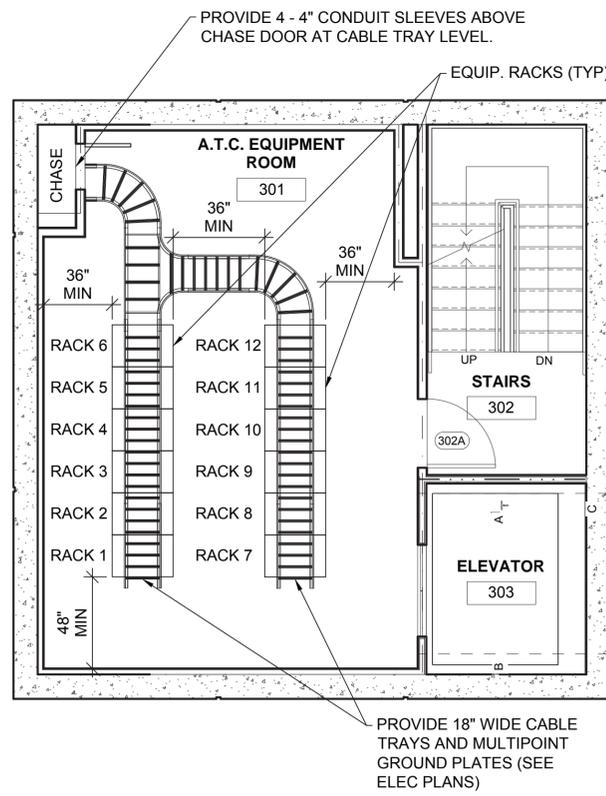
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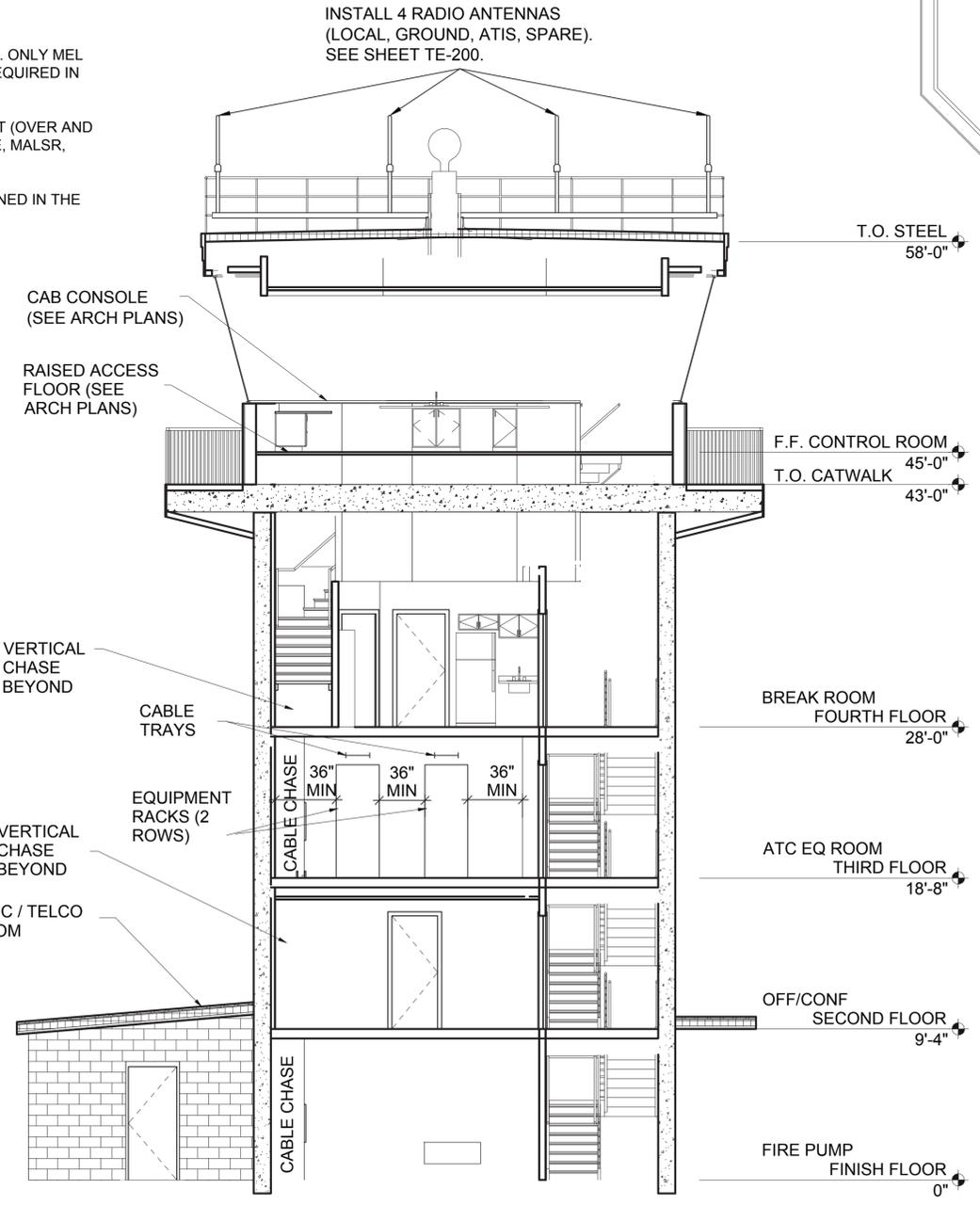
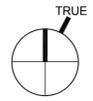
NOTES:

- ALL CABLING ENTERING CONTROL TOWER CAB AREA SHALL TRANSITION FROM CHASE TO RAISED FLOOR GRID. CABLING SHALL BE ROUTED TO EACH CONSOLE AREA AND TO ROOF, AS REQUIRED. ALL CABLES SHALL BE BUNDLED AND TIED FOR EACH PARTICULAR CONSOLE AREA.
- THESE DRAWINGS ARE INTENDED TO SHOW THE GENERAL ARRANGEMENT OF EQUIPMENT ONLY AND DO NOT INDICATE EVERY OFFSET, BEND, FITTING, OR MODIFICATION OF MATERIALS REQUIRED FOR INSTALLATION. ATC EQUIPMENT CONTRACTOR SHALL CONDUCT A SITE SURVEY PRIOR TO INSTALLATION AND COORDINATE WORK WITH THE OWNER AND THE BUILDING GENERAL CONTRACTOR.
- CABLE LENGTHS IN THE EQUIPMENT ROOM SHALL BE LONG ENOUGH TO REACH ANY RACK LOCATION PLUS UP TO EIGHT (8) FEET FOR TERMINATION.
- ALL COPPER DATA CABLE JACKETING SHALL BE BLUE IN COLOR. ALL COPPER VOICE CABLE JACKETING SHALL BE WHITE IN COLOR.
- SEE SHEET E-202 FOR CONDUIT SLEEVES AND CABLE TRAY INFORMATION.
- ATTACH ANTENNAS TO RAILINGS ON ROOF WITH APPROVED MATERIALS. MAINTAIN A MINIMUM OF 8'-0" BETWEEN EACH ANTENNA. ADJUST LOCATIONS AND/OR ADD FILTERS AS REQUIRED FOR CLEAR TRANSMISSION AND RECEPTION.
- ALL OTHER ATC EQUIPMENT AND MATERIALS REQUIREMENTS SHALL BE PROVIDED BY THE ATC EQUIPMENT CONTRACTOR IN ACCORDANCE WITH SECTION 275000 OF THE SPECIFICATIONS.
- BASIS OF EQUIPMENT ROOM LAYOUT:
  - TWO (2) RACKS ARE RESERVED TO HOLD ALL OF THE FCT MEL EQUIPMENT. ONLY MEL FREQUENCIES AND RADIOS WILL BE REQUIRED. NO STANDBY RADIOS ARE REQUIRED IN ACCORDANCE WITH THE FCT MEL. TEN RACK SPACES ARE FOR FAA USE.
  - TEN (10) RACKS OR CABINETS HAVE BEEN ESTIMATED FOR FAA EQUIPMENT (OVER AND ABOVE THE MEL INCLUDING RVR, FDIO, ARTS, MALSR, GS, LOC, ASOS, DBRITE, MALSR, ASR AND NRCS).
  - UHF FREQUENCIES ARE NOT REQUIRED AT LYH AND WILL NOT BE MAINTAINED IN THE NEW ATCT.

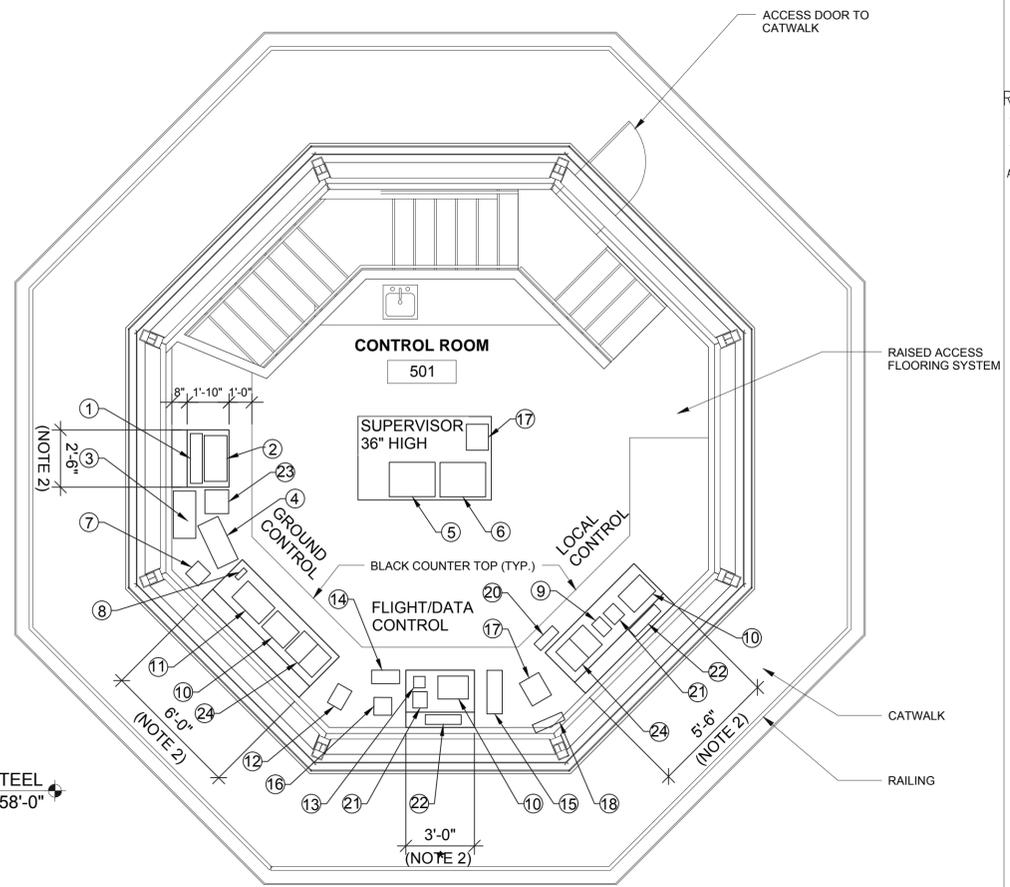
- ALL TRANSMITTERS AND RECEIVERS WILL BE OWNED BY THE AIRPORT SPONSOR IN ACCORDANCE WITH THE MEL. TRANSMITTERS WILL BE LOCATED IN THE ATCT WITH THE RECEIVERS INSTEAD OF USING THE RTR FACILITY.
- TWO ROWS OF RACKS IN THE EQUIPMENT ROOM BASED ON A MINIMUM CLEARANCE OF 36" TO FRONT, BACK AND END OF ROWS.
- 28" IS THE OSHA MINIMUM DIAGONAL CLEARANCE TO A RACK CORNER AND A WALL CORNER.
- RACKS OR CABINETS WILL FIT IN A 22" X 36" FOOTPRINT AND WILL BE APPROXIMATELY 72" TO 84" TALL.
- MOST FAA RACKS WILL BE 84" TALL. VERIFY WITH FAA PRIOR TO INSTALLATION OF CABLE TRAYS AND LIGHTING.
- SEE SPECIFICATION 275000 FOR ALL ATC EQUIPMENT INCLUDING TRANSPARENT WINDOW SHADES, LIGHT GUN, CUTOVER, TRAINING, WARRANTIES, ETC...



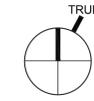
1 THIRD FLOOR PLAN  
ATCT EQUIPMENT ROOM  
SCALE 1/4" = 1'-0"



2 TYPICAL BUILDING SECTION  
N.T.S.



3 CONSOLE EQUIPMENT LAYOUT  
SCALE 1/4" = 1'-0"



EQUIPMENT LEGEND

- MALSR CONTROLS (FAA)
- AIRFIELD LIGHTING CONTROL PANEL
- ASOS DISPLAY (NWS VIA FAA)
- ASOS KEYBOARD (NWS VIA FAA)
- NAIMES COMPUTER TERMINAL (FAA)
- NAIMES PRINTER (FAA)
- ATIS PHONE
- ATIS/ASOS INTERFACE UNIT
- RVR (FAA)
- VCSS TED (3)
- DBRITE CONTROLS (FAA)
- BASE STATION TRANSCEIVER
- ASR CONFLICT ALERT
- ASR KEYPAD AND TRACKBALL (FAA)
- FDIO PRINTER (FAA)
- CARTS PHONE
- ADMIN PHONE (2)
- MAIN GPS CLOCK DISPLAY
- NOT USED
- ASR KEYBOARD AND TRACKBALL (FAA)
- DIGITAL PRESSURE GAUGE (ALTIMETER) (2)
- WIND/TEMP/DEWPT DISPLAY (2)
- IDS-4 (FAA)
- DUAL STRIPBAY (2X10 STRIPS EACH) (2)

NOTES:

- ITEMS DESIGNATED WITH (FAA) WILL BE PROVIDED BY THE FAA. CONTRACTOR SHALL COORDINATE ITS INSTALLATIONS WITH THE FAA THROUGH THE OWNERS REPRESENTATIVE.
- EXACT LIMITS OF TURRETS SHALL BE DETERMINED VIA COORDINATION WITH FAA AND SHOP DRAWING REVIEW DURING CONSTRUCTION.



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REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: AUGUST 12, 2015  
REVIEWED BY: BML  
DRAWN BY: RKC  
DESIGNED BY: BML

AEP PROJECT NUMBER  
222-0264-001  
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SHEET TITLE  
**ATCT  
EQUIPMENT  
INSTALLATION**

SHEET NUMBER  
**TE-100**

BID  
DOCUMENTS

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LEGEND:

(A) PROVIDE VHF ATC RADIO ANTENNA AND 2 1/2" THREADED TOP SS PIPE. SEE SHEET TE-201/ DETAIL 1.

(B) PROVIDE 2 1/2" SS PIPE. (FOR FAA USE) SEE SHEET TE-201/ DETAIL 2.

PROVIDE 4" SQUARE DUCT, NEMA 3R STAINLESS STEEL HOFFMAN OR EQUAL

PROVIDE 4" SQUARE DUCT, NEMA 3R STAINLESS STEEL HOFFMAN OR EQUAL

3" GRS CONDUIT (DN)

3" GRS CONDUIT (DN)

- NOTES:
1. SEE SHEETS E-103 AND E-204 FOR COORDINATION WITH ELECTRICAL AND LIGHTNING PROTECTION SYSTEMS.
  2. COORDINATE WITH DETAILS 1 AND 2 ON SHEET TE-201.
  3. CONTRACTOR SHALL SUBMIT A TOTAL ROOF PLAN SHOWING ANTENNA AND MOUNTS LOCATIONS IN RELATION TO OTHER APPURTENANCES REQ'D ON OTHER CONTRACT DRAWINGS (INC. HVAC, AIR TERMINALS, ELECTRICAL, ETC...)

PROVIDE JB FOR FAA USE. SEE DETAIL 2, THIS SHEET.

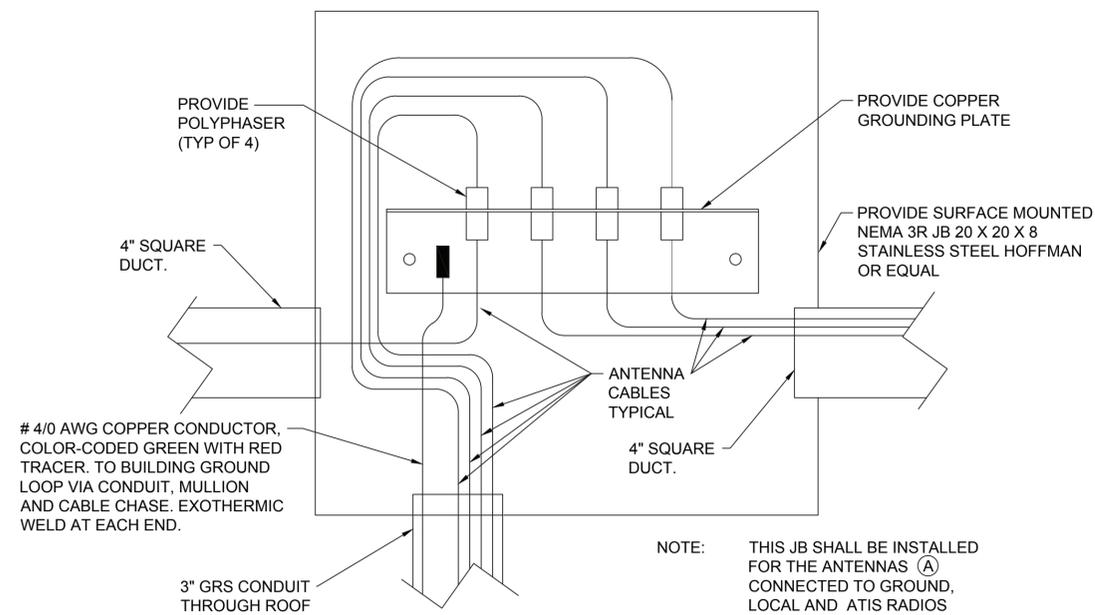
PROVIDE 4" SQUARE DUCT, NEMA 3R STAINLESS STEEL HOFFMAN OR EQUAL

NOTE: SQUARE DUCT SHALL BE A LAY IN WIRE WAY FEATURING AN OPEN DESIGN WITH HINGED COVER ON ONE SIDE SO CABLES CAN BE LAID IN SAFELY ALONG THE ENTIRE RUNS WITHOUT PULLING.

PROVIDE POLYPHASER JB. SEE DETAIL 1, THIS SHEET.

3 ROOF ANTENNAS LAYOUT PLAN

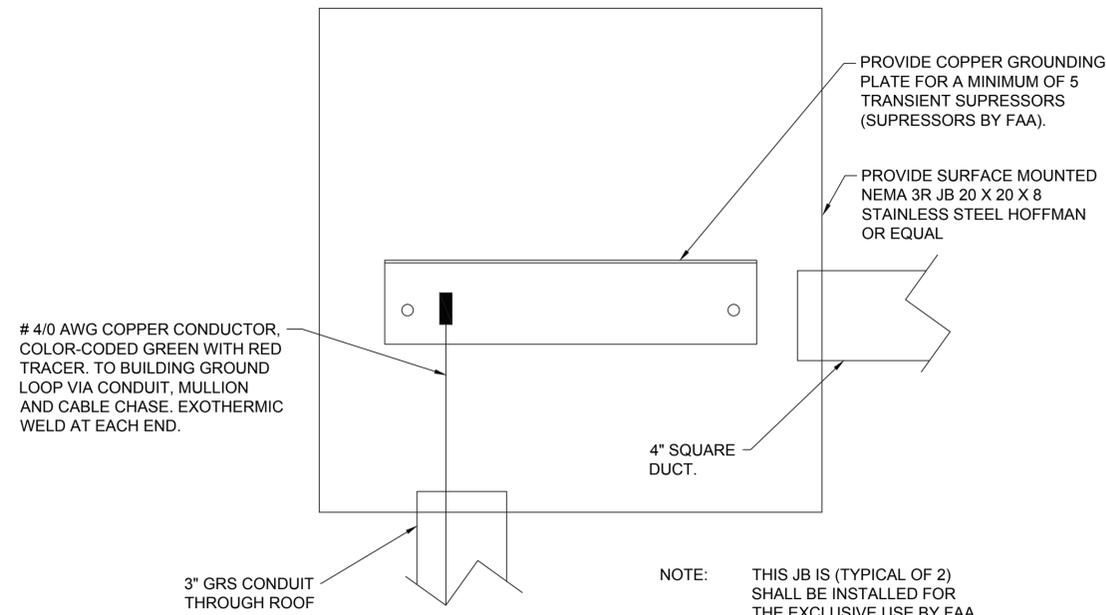
SCALE 1/4" = 1'-0"



NOTE: THIS JB SHALL BE INSTALLED FOR THE ANTENNAS (A) CONNECTED TO GROUND, LOCAL AND ATIS RADIOS ONLY (PLUS ONE SPARE). SECURELY ATTACH TO COLUMN AND / OR RAILING.

1 POLYPHASER JB DETAIL

N.T.S.



NOTE: THIS JB IS (TYPICAL OF 2) SHALL BE INSTALLED FOR THE EXCLUSIVE USE BY FAA. SECURELY ATTACH TO COLUMN AND / OR RAILING.

2 FAA JB DETAIL

N.T.S.

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REVISIONS		
NO.	DESCRIPTION	DATE

DATE ISSUED: AUGUST 12, 2015  
 REVIEWED BY: BML  
 DRAWN BY: RKC  
 DESIGNED BY: BML  
 AEP PROJECT NUMBER  
 222-0264-001  
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 SHEET TITLE

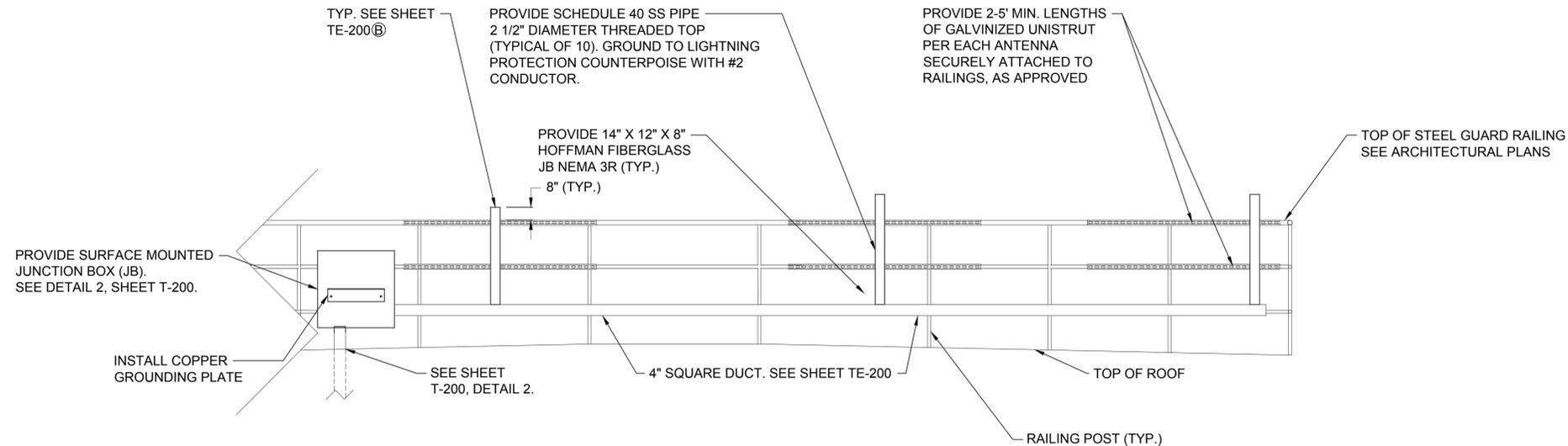
**ANTENNA LAYOUT  
 PLAN AND DETAILS**

SHEET NUMBER  
**TE-200**

BID  
 DOCUMENTS

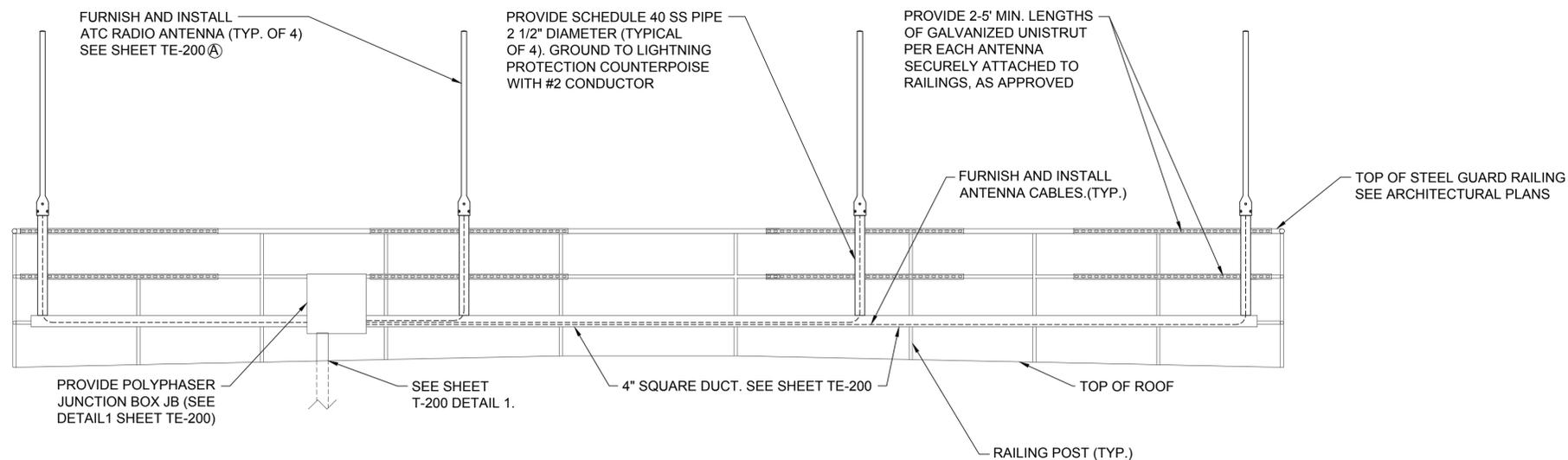
**NOTES:**

1. FAA ANTENNAS AND ASSOCIATED CABLING AND TRANSIENT SUPPRESSORS WILL BE FURNISHED AND INSTALLED BY FAA.
2. CONTRACTOR SHALL PROVIDE ALL SUPPORT EQUIPMENT, JUNCTION BOXES AND PATHWAYS, AS REQUIRED. COORDINATE INSTALLATION AND EXACT LOCATIONS WITH FAA VIA OWNER'S REPRESENTATIVE.



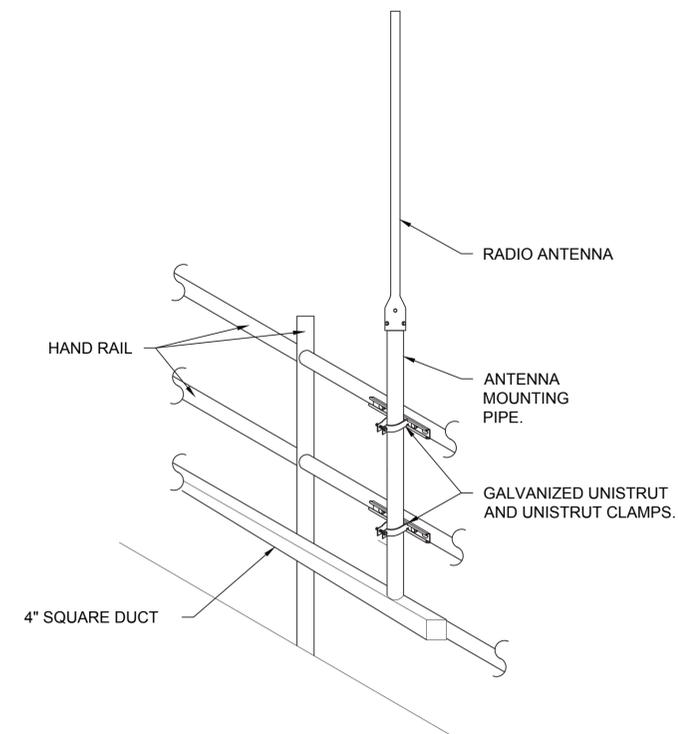
3 FAA ANTENNA MOUNTS - TYPICAL DETAILS

N.T.S.



1 ATC ANTENNAS - TYPICAL DETAILS

N.T.S.



2 ANTENNAS MOUNT DETAIL

N.T.S.

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**REVISIONS**

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 DRAWN BY: RKC  
 DESIGNED BY: BML

AEP PROJECT NUMBER  
 222-0264-001

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SHEET TITLE

**ANTENNA  
 MOUNTING  
 DETAILS**

SHEET NUMBER

**TE-201**

BID  
 DOCUMENTS



CITY OF LYNCHBURG  
VIRGINIA

PRESTON GLENN AIRPORT  
CONTROL TOWER

CONSTRUCTION PLANS - STAGE III - F.A.A. PROJECT NO. 9-44-004-03

FEDERAL AVIATION AGENCY

APPROVED \_\_\_\_\_ CHIEF AIRPORTS DIVISION  
DATE \_\_\_\_\_  
APPROVED \_\_\_\_\_ DISTRICT AIRPORTS ENGINEER  
DATE \_\_\_\_\_

"AS-BUILT" PLANS

I HEREBY CERTIFY THAT ALL CONSTRUCTION REQUIRED BY THESE SHEETS HAS BEEN ACCOMPLISHED AS INDICATED THEREON.

SIGNED BY \_\_\_\_\_ (DATE) \_\_\_\_\_  
ARCHITECT

VIRGINIA STATE CORPORATION COMMISSION  
DIVISION OF AERONAUTICS

APPROVED Alvin Robinson DIRECTOR  
DATE January 24, 1961

CITY OF LYNCHBURG  
VIRGINIA

APPROVED Robert M. M... .. CITY MANAGER  
DATE January 24, 1961

APPROVED Garland M. Gay (ARCHITECT)  
DATE Jan. 16, 1961

CONTROL TOWER  
PRESTON GLENN AIRPORT  
IMPROVEMENTS  
STAGE THREE  
LYNCHBURG VIRGINIA  
DATE DEC 30 1960 COMM. NO. 126013

GARLAND M. GAY & ASSOCIATES  
ARCHITECTS  
LYNCHBURG VIRGINIA

TITLE SHEET  
DRAWN BY CAREY TRACED BY SNEAD CHECKED BY SNEAD  
SHEET NO. COVER

DRWG'S. REVISED TO INDICATE "AS-BUILT" CONDITIONS MARCH 1964 N-70

NOTE:  
THESE AS-BUILT DRAWINGS CONFORM TO CONSTRUCTION RECORDS AND HAVE BEEN PROVIDED FOR INFORMATIONAL PURPOSES ONLY. RS&H HAS NOT VERIFIED THE ACCURACY OR COMPLETENESS OF THESE DRAWINGS OR THE INFORMATION PROVIDED THEREIN, AND MAKES NO WARRANTIES, EXPRESS OR IMPLIED, THAT THEY ARE FIT FOR ANY PURPOSE OR ACCURATE. THE CONTRACTOR SHALL FIELD VERIFY ALL INFORMATION SHOWN ON THESE DRAWINGS PRIOR TO BIDDING AND DEMOLITION, AND FULLY ASSUMES ALL RISKS ASSOCIATED WITH THEIR USE.



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SUITE 100  
LYNCHBURG, VA  
24502

AIR  
TRAFFIC  
CONTROL  
TOWER

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: AUGUST 12, 2015  
REVIEWED BY: RLM  
DRAWN BY: ARJ/WAJ  
DESIGNED BY: ARJ

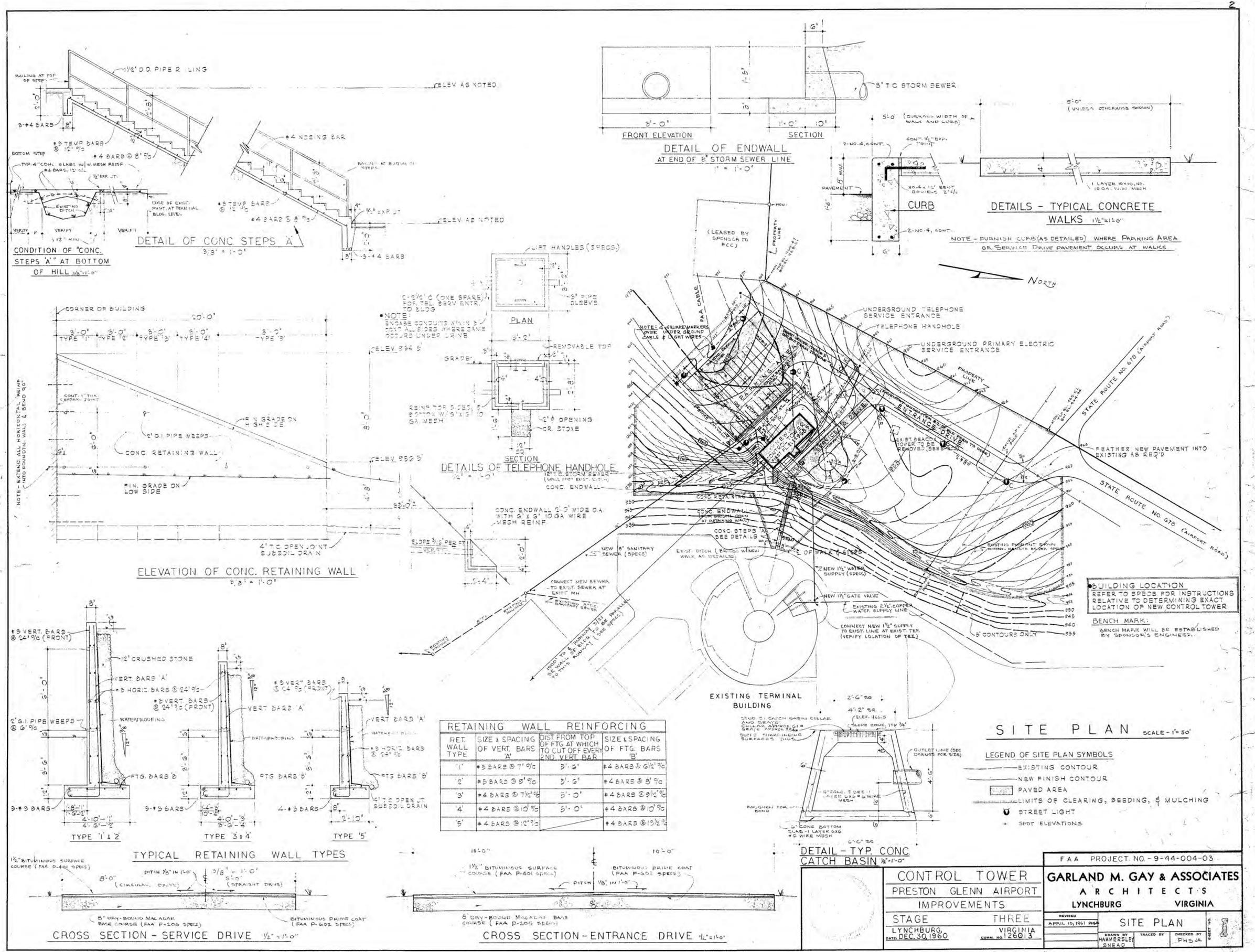
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222-0264-001  
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SHEET TITLE  
AS-BUILTS, COVER,  
TITLE SHEET

SHEET NUMBER  
C-AB-001

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DOCUMENTS

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RET. WALL TYPE	SIZE & SPACING OF VERT. BARS 'A'	DIST FROM TOP OF FTG. TO CUT OFF EVERY END VERT. BAR	SIZE & SPACING OF FTG. BARS 'B'
1'	#3 BARS @ 7' 0"	3' 0"	#4 BARS @ 6 1/2' 0"
2'	#3 BARS @ 8' 0"	3' 0"	#4 BARS @ 8' 0"
3'	#4 BARS @ 7 1/2' 0"	3' 0"	#4 BARS @ 8 1/2' 0"
4'	#4 BARS @ 10' 0"	3' 0"	#4 BARS @ 10' 0"
5'	#4 BARS @ 12' 0"	3' 0"	#4 BARS @ 12 1/2' 0"

CONTROL TOWER PRESTON GLENN AIRPORT IMPROVEMENTS		FAA PROJECT NO. - 9-44-004-03	
STAGE THREE LYNCHBURG, VIRGINIA DATE: DEC. 30, 1960		GARLAND M. GAY & ASSOCIATES ARCHITECTS LYNCHBURG, VIRGINIA	
REVISION APRIL 10, 1961 PHM	SITE PLAN		DATE MARCH 1964
DRAWN BY HAMMERSLEY SNEAD	TRACED BY PHS JR.	CHECKED BY PHS JR.	SCALE AS SHOWN

REVISIONS		
NO.	DESCRIPTION	DATE

DATE ISSUED: AUGUST 12, 2015  
REVIEWED BY: RLM  
DRAWN BY: ARU/WAJ  
DESIGNED BY: ARU

AEC PROJECT NUMBER  
222-0264-001

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SHEET TITLE  
**AS-BUILTS, 1, SITE PLAN**

SHEET NUMBER  
**C-AB-002**

BID DOCUMENTS

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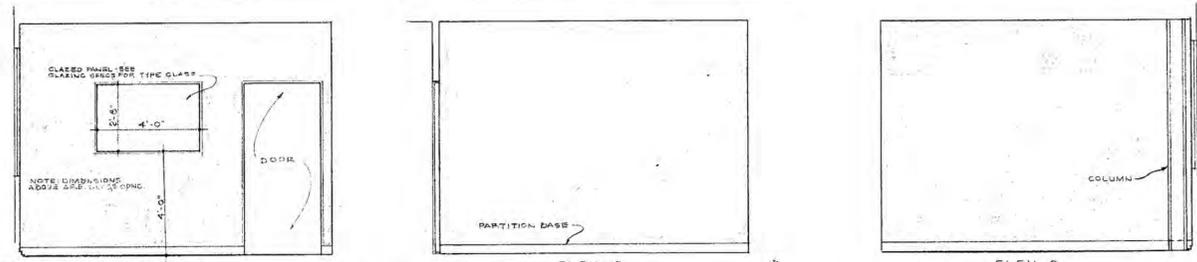






S C H E D U L E O F F I N I S H E S

S P A C E	FLOOR STRUCTURE	FINISH FLOOR	BASE	INTERIOR WALL FINISH	EXTERIOR WALL FINISH	CEILING FINISH	SUSPEND TO:	MISC. / REMARKS
BSMT: TRANSFORMER VAULT	8" MESH REINF. CONC. SLAB ON GRADE	NONE (CONC. HARDENER AS PER SPEC.)	NONE	EXPOSED CONC./RUBBED AS PER SPEC.	EXPOSED CONC./RUBBED AS PER SPEC.	CEMENT PLASTER DIRECTLY ON JOBS		SLOPE FLOOR TO DRAIN. PROVIDE 2 VENTILATION LOUVERS IN WALLS AS SHOWN & SPECIFIED.
UTILITY TUNNEL	4" MESH REINF. CONC. SLAB ON GRADE	NONE	NONE	EXPOSED UNF. CONC.	CMU, AS DETAILED	NONE		SLOPE FL. TO DRAIN. PROVIDE STL. WALL LADDER. SEE DTL. OF EXT. WALL, ETC.
1ST FL: FOYER	4" MESH REINF. CONC. SLAB OVER 1" RIGID INSUL. 4" ST. STONE ON GRADE	COMPOSITION	TYP. PARTITION BASE EXCEPT USE TYP. RUBBER BASE AT MESH WALL	TYP. MOVABLE PARTITIONS & EXP. FACE BRICK	TYP. UNIT WALL PANELS & WINDOWS	TYP. ACoustICAL CEILING	9'-0"	SEE DETAIL & MISC. MTL. SPECS. FOR BULLETIN CASE.
STAIR TOWER	DO	2" TERRAZZO	1/2" PRECAST TERRAZZO	EXP. FACE BRICK	DO	HARD, WHITE PLASTER	8'-0"	SEE STAIR DETAILS.
MAINT. EQUIP. STORAGE	5" MESH REINF. CONC. SLAB OVER 4" RIGID INSUL. 4" ST. STONE ON GRADE	NONE (CONC. HARDENER AS PER SPEC.)	NONE	EXP. FACE BRICK	TYP. UNIT WALL PANELS & WINDOWS	CEMENT PLASTER ON COPPER OF STAIR ABOVE		PLASTER SOFFIT OF STAIR AND LANDING ABOVE AS DIRECTED ON JOB BY ARCHT.
FAA SHAFT	4" MESH REINF. CONC. SLAB OVER 1" RIGID INSUL. 4" ST. STONE ON GRADE	REMOVABLE STEEL GRATING AS SPEC. & DETAILED	NONE	TYP. MOVABLE PARTITIONS (TYPE FW)	NONE	NONE		SEE DETAILS OF SHAFT. STEEL WALL LADDER AS SHOWN & SPEC. (LOCATE AS DIRECTED)
PIPE & DUCT SHAFT	5" MESH REINF. CONC. SLAB OVER 1" RIGID INSUL. 4" ST. STONE ON GRADE	COMPOSITION	TYP. PARTITION BASE	DO	TYP. UNIT WALL PANELS	CEMENT PLASTER DIRECTLY ON FL. JOBS		
WEATHER BUR. STOR. 'A'	DO	DO	TYP. PART. BASE EXCEPT USE TYP. RUBBER BASE AT MESH WALL	TYP. MOVABLE PARTNS & EXP. FACE BRICK	TYP. UNIT WALL PANELS & WINDOWS	TYP. ACoustICAL CEILING	8'-0"	
" " " 'B'	DO	DO	TYP. PARTITION BASE	TYP. MOVABLE PARTITIONS	DO	DO	8'-0"	
" " COMMNTS.	DO	DO	DO	TYP. MOVABLE PARTITIONS (TYPE WF (Acoustic Partn.))	DO	DO	8'-0"	SEE DETAILS FOR GLAZED PARTITION PANEL.
" " OPERATIONS	DO	DO	DO	TYP. MOVABLE PARTITION	DO	DO	8'-0"	
MIC OFFICE	DO	DO	DO	DO	DO	DO	8'-0"	
CORRIDOR	DO	DO	TYP. PART. BASE EXCEPT USE TYP. RUBBER BASE AT MESH WALL	DO	NONE	DO	8'-0"	SEE DTL. OF CONC. STEPS & RAILS (BTWN UPPER & LOWER LEVELS). COVER STEPS WITH CONC. FLOORS AS SPEC.
ENTRANCE PLATFORM	CONC. SLAB AS PER SPEC.	NONE	NONE	DO	NONE	SOFFIT OF ALUMINUM CANOPY		SEE DTL. OF ALUMINUM CANOPY AND ENT. PLATFORM.
WEATHER BUR. TOILET	5" MESH REINF. CONC. SLAB OVER 1" RIGID INSUL. 4" ST. STONE ON GRADE	CERAMIC TILE	TYP. PART. BASE EXCEPT USE TYP. RUBBER BASE AT MESH WALL	TYP. MOVABLE PARTNS & EXP. FACE BRICK	TYP. UNIT WALL PANELS	TYP. ACoustICAL CEILING	8'-0"	FURNISH TOILET COMPARTMENT, URINAL SCREEN, AND TOILET ACCESSORIES AS SHOWN & SPEC.
TELCO & STORAGE	(EXCEPT THAT DO SLAB IS 1/2" THICK)	COMPOSITION	TYP. PART. BASE EXCEPT USE TYP. RUBBER BASE AT MESH WALL	TYP. MOVABLE PARTITIONS	TYP. UNIT WALL PANELS & WINDOWS	DO	8'-0"	LOWER PORTIONS OF EXT. WALL & CERTAIN INT. WALLS TO BE EXPOSED, FINISHED CONC.
EQUIPMENT ROOM	5" MESH REINF. CONC. SLAB OVER 1" RIGID INSUL. 4" ST. STONE ON GRADE	NONE (CONC. HARDENER AS PER SPEC.)	TYP. PART. BASE AT MOVABLE PARTNS (AS PER SPEC.)	DO	TYP. UNIT WALL PANELS	NONE		FINISHED IN LIFT MACHINE RM. TO BE SAME AS EQUIP. RM., EXCEPT THAT LIFT. MACH. RM. IS TO HAVE GLAZ. PART. OF TYP. PART. MATERIAL AT HGT. AS LATER DIRECTED BY ARCHT.
ENGINE GENERATOR RM.	4" MESH REINF. CONC. SLAB ON MTL. FORMS OVER STEEL JOISTS	DO	DO	DO	TYP. UNIT WALL PANELS & WINDOWS	TYP. ACoustICAL CEILING		SEE DETAILS OF ENGINE ROOM PAD & FLOOR EXPANSION JOINT
2ND FL: CORRIDOR	5" CONC. SLAB OVER 1" RIGID INSUL. 4" ST. STONE ON GRADE	COMPOSITION	TYP. PART. BASE EXCEPT USE TYP. RUBBER BASE AT MESH WALL	TYP. MOVABLE PARTNS & EXP. FACE BRICK	NONE	TYP. ACoustICAL CEILING	8'-0"	
STAIR TOWER	2" MESH REINF. CONC. SLAB OVER 1" RIGID INSUL. 4" ST. STONE ON GRADE	2" TERRAZZO	1/2" PRECAST TERRAZZO	EXP. FACE BRICK	TYP. UNIT WALL PANELS & WINDOWS	HARD, WHITE PLASTER	8'-0"	SEE STAIR DETAILS.
ELEC. MAINT. OFFICE	5" CONC. SLAB OVER MESH REINF. MTL. FORMS & STEEL JOISTS	COMPOSITION	TYP. PARTITION BASE	TYP. MOVABLE PARTITIONS	DO	TYP. ACoustICAL CEILING	8'-0"	
OPERATIONS CHIEF OFF.	DO	DO	DO	DO	DO	DO	8'-0"	
OPS. SECRETARY OFFICE	DO	DO	DO	DO	DO	DO	8'-0"	
EQUIPMENT ROOM	DO	NONE (CONC. HARDENER AS PER SPEC.)	NONE	TYP. MOV. PARTITIONS & EXP. FACE BRICK	TYP. UNIT WALL PANELS	NONE		EXTEND INT. PARTITIONS BTWN THIS SPACE AND ELEC. MAINT. OFF. & CORRIDOR TO BOTTOM OF 3RD FL. SLAB AS PER SPEC. & DETAIL.
SUPPLY CLOSET	DO	COMPOSITION	TYP. PARTITION BASE	TYP. MOVABLE PARTITIONS	NONE	TYP. ACoustICAL CEILING	8'-0"	SEE "MOVABLE PARTITION" SPECS. FOR SHELVING AND HOUSING AROUND DUCTWORK.
SECRETARY'S TOILET	(EXCEPT THAT DO SLAB IS 1/2" THICK)	CERAMIC TILE	DO	DO	TYP. UNIT WALL PANELS	DO	8'-0"	FURN. TOILET COMPARTMENT & TOILET ACCESSORIES AS SHOWN & SPEC.
TOILET	(1/2" THICK SLAB)	DO	DO	DO	DO	DO	8'-0"	FURN. TLT. COMPARTMENT, URINAL SCREEN, AND TLT. ACCESSORIES AS SHOWN & SPEC.
FAA SHAFT	NONE	REMOVABLE STEEL GRATING AS SPEC. & DETAILED	NONE	TYP. MOVABLE PARTITIONS (TYPE FW)	NONE	NONE		SEE DTL. OF SHAFT. STEEL WALL LADDER AS SHOWN & SPEC. (LOCATE AS DIRECTED)
PIPE & DUCT SHAFT	5" CONC. SLAB OVER MESH REINF. MTL. FORMS & STEEL JOISTS	COMPOSITION	TYP. PARTITION BASE	DO	TYP. UNIT WALL PANELS	CEMENT PLSTR DIRECTLY ON FL. JOBS		LOCATE FAN IN SHAFT WHERE DIRECTED BY ARCHT.
WEATHER BUR. STOR. 'C'	DO	DO	TYP. PART. BASE EXCEPT USE TYP. RUBBER BASE AT MESH WALL	TYP. MOVABLE PARTITIONS & EXP. FACE BRICK	TYP. UNIT WALL PANELS & WINDOWS	TYP. ACoustICAL CEILING	8'-0"	
ELEC. MAINT. STORAGE	DO	DO	TYP. PARTITION BASE	TYP. MOVABLE PARTITION	DO	DO	8'-0"	
OPERATIONS "	DO	DO	DO	DO	DO	DO	8'-0"	
RECORDER ROOM	DO	DO	DO	DO	DO	DO	8'-0"	
READY ROOM	DO	DO	DO	DO	DO	DO	8'-0"	SEE SPECS. FOR "FOLDING PARTITIONS" AND TRACKS
TRAINING "	DO	DO	DO	DO	DO	DO	8'-0"	DO
3RD FL: CORRIDOR	5" MESH REINF. CONC. SLAB OVER MTL. FORMS & STEEL JOISTS	COMPOSITION	TYP. PART. BASE EXCEPT USE TYP. RUBBER BASE AT MESH WALL	TYP. MOVABLE PARTITION & EXP. FACE BRICK	NONE	TYP. ACoustICAL CEILING	8'-0"	SEE DETAIL OF WALL LADDER TO ROOF ACCESS HATCH.
STAIR TOWER	5" MESH REINF. CONC. SLAB OVER MTL. FORMS & STEEL JOISTS	2" TERRAZZO	1/2" PRECAST TERRAZZO	EXP. FACE BRICK	TYP. UNIT WALL PANELS & WINDOWS	HARD, WHITE PLASTER	8'-0"	SEE STAIR DETAILS.
CAB STAIR HALL	5" MESH REINF. CONC. SLAB OVER MTL. FORMS & STEEL JOISTS	COMPOSITION	TYP. PARTITION BASE	TYP. MOVABLE PARTITION ON	DO	TYP. ACoustICAL CEILING	8'-0"	PLASTER STAIR SOFFIT FOR RETURN PLENUM AS DETAILED.
TOILET	(EXCEPT THAT SLAB IS 1/2" THICK)	CERAMIC TILE	DO	DO	TYP. UNIT WALL PANELS	DO	8'-0"	FURNISH TOILET COMPARTMENT, URINAL SCREEN, & ACCESSORIES AS SHOWN & SPEC.
FAA SHAFT	NONE	REMOVABLE STEEL GRATING AS SPEC. & DETAILED	NONE	TYP. MOVABLE PARTITIONS (TYPE FW)	NONE	CEMENT PLSTR DIRECTLY ON ROOF JOBS		SEE DTL. OF SHAFT. STEEL WALL LADDER AS SHOWN & SPEC. (LOCATE AS DIRECTED)
PIPE & DUCT SHAFT	5" CONC. SLAB OVER MESH REINF. MTL. FORMS & STEEL JOISTS	COMPOSITION	TYP. PARTITION BASE	DO	TYP. UNIT WALL PANELS	DO		
EQUIPMENT ROOM	DO	NONE (CONC. HARDENER AS PER SPEC.)	NONE	TYP. MOVABLE PARTITIONS & EXP. FACE BRICK	DO	NONE		EXTEND INT. PARTITION BTWN THIS SPACE & CORRIDOR & CAB STAIR TO BOTTOM OF ROOF DECK AS PER SPEC. AND DETAIL.
JUNCTION ROOM	DO	COMPOSITION	TYP. PARTITION BASE	TYP. MOVABLE PARTITIONS	TYP. UNIT WALL PANELS & WINDOWS	NONE		EXTEND INT. PARTN. BTWN THIS SPACE AND CAB STAIR & CAB STAIR HALL TO BOTTOM OF ROOF DECK AS PER SPEC. AND DETAIL.
RADIO EQUIP. ROOM	DO	DO	TYP. PART. BASE EXCEPT USE TYP. RUBBER BASE AT MESH WALL	TYP. MOVABLE PARTITIONS & EXP. FACE BRICK	DO	TYP. ACoustICAL CEILING	8'-0"	
MAINT. WORKSHOP	DO	DO	TYP. PARTITION BASE	TYP. MOVABLE PARTITIONS	DO	DO	8'-0"	
MAINT. STORAGE	DO	DO	DO	DO	DO	DO	8'-0"	
CONTROL CAB	5" MESH REINF. CONC. SLAB OVER 1/2" ST. ST. DECK	COMPOSITION	TYP. RUBBER BASE, BUT G. HIGH	NONE	BELOW ST. ST. DECK, PERFORMER MOUNTED ON CONC. IN ACoust. INSUL. BAYETS	TYP. ACoustICAL CEILING	10'-0"	SEE DETL. & SPECS. FOR SPECIAL CAB ITEMS. PROVIDE FLOOR OPENINGS AS SHOWN ON DRAWING.



NOTE: DATE AT ALL EXT. UNIT WALLS SHALL BE ALUM. AS DETAILED, NOT TYP. PARTITION BASE AS SCHEDULED ABOVE.

FAA PROJECT NO. 9-44-004-03

**CONTROL TOWER**  
PRESTON GLENN AIRPORT  
IMPROVEMENTS

STAGE THREE  
LYNCHBURG VIRGINIA  
DATE DEC 30 1960

**GARLAND M. GAY & ASSOCIATES**  
ARCHITECTS  
LYNCHBURG VIRGINIA

REVISION 1 APRIL 10, 1961 FINISH SCHEDULE

DRAWN BY SUEA CAREY CHECKED BY SNEAD

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**REVISIONS**

NO.	DESCRIPTION	DATE

DATE ISSUED: AUGUST 12, 2015  
REVIEWED BY: RLM  
DRAWN BY: ARU/WJ  
DESIGNED BY: ARU

AEC PROJECT NUMBER  
222-0264-001

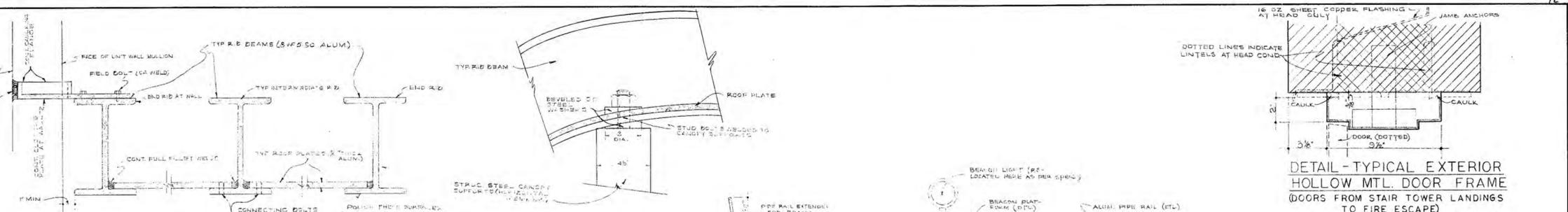
SHEET TITLE  
**AS-BUILTS, 5, FINISH SCHEDULE**

SHEET NUMBER  
**C-AB-006**

BID DOCUMENTS

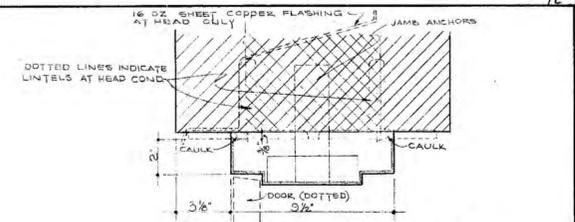
DRWNGS. REVISED TO INDICATE "AS-BUILT" CONDITIONS MARCH 1964 N-70

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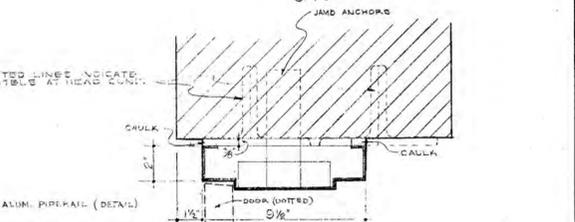


DETAIL SECTIONS - ALUM. ENTRANCE CANOPY  
5'-11'-0"

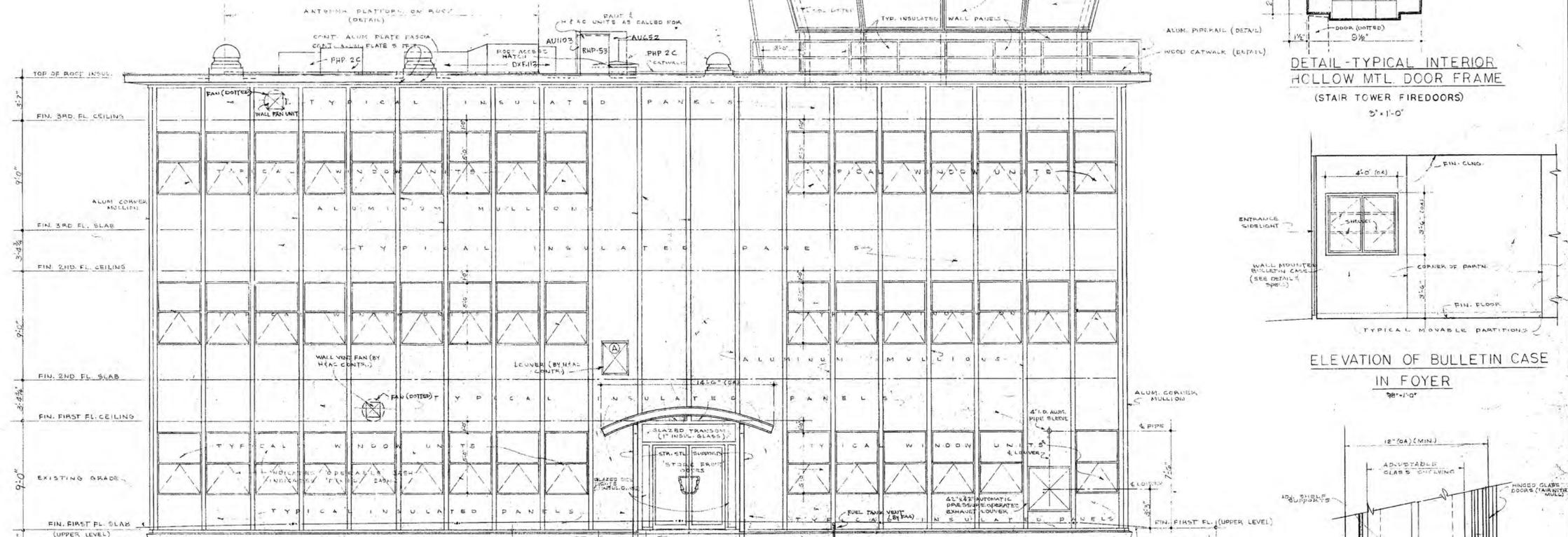
DETAIL OF TYP. CANOPY CONNECTOR  
5'-11'-0"



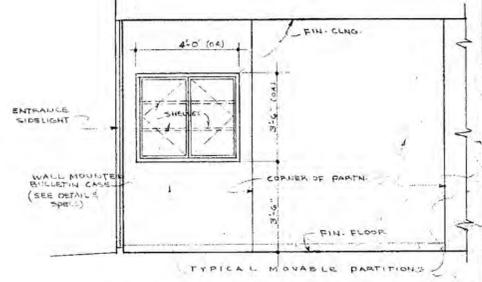
DETAIL - TYPICAL EXTERIOR HOLLOW METAL DOOR FRAME  
(DOORS FROM STAIR TOWER LANDINGS TO FIRE ESCAPE)  
5'-11'-0"



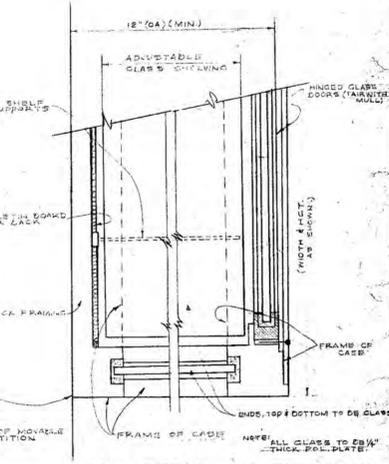
DETAIL - TYPICAL INTERIOR HOLLOW METAL DOOR FRAME  
(STAIR TOWER FIREDOORS)  
5'-11'-0"



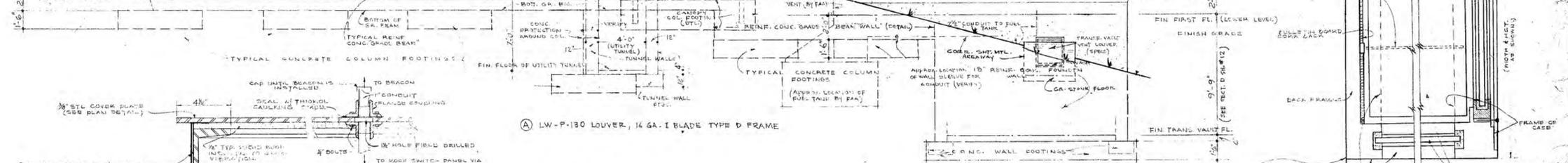
ELEVATION OF BULLETIN CASE IN FOYER  
98'-4'-0"



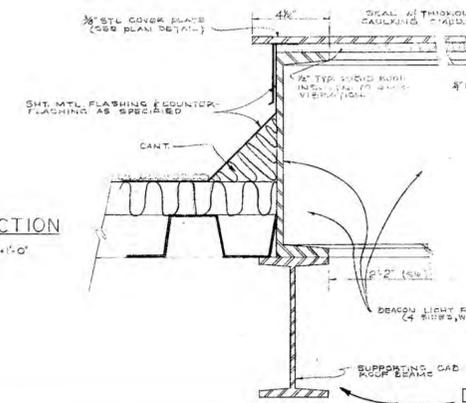
ELEVATION OF BULLETIN CASE IN FOYER  
98'-4'-0"



JAMB DETAIL OF BULLETIN CASE (NO SCALE)  
(DO NOT SCALE THIS DRNG)



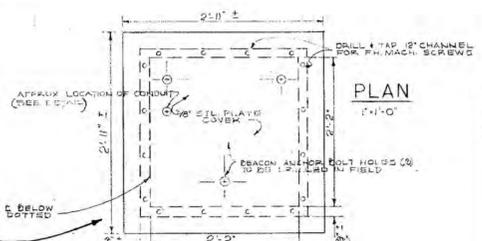
SOUTHWEST ELEVATION 1/4" = 1'-0"



SECTION  
5'-11'-0"

GRADING KEY

(Symbol)	FINISHED GRADE
(Symbol)	EXISTING GRADE



PLAN  
7'-11'-0"

DETAILS OF BEACON LIGHT PLATFORM



**CONTROL TOWER**  
PRESTON GLENN AIRPORT  
IMPROVEMENTS  
STAGE THREE  
LYNCHBURG VIRGINIA  
DATE: DEC. 30 1960

**GARLAND M. GAY & ASSOCIATES**  
ARCHITECTS  
LYNCHBURG VIRGINIA  
REVISED APRIL 10, 1961  
S.W. ELEVATION  
DRAWN BY PHA: J.C.G. TRACED BY PHA: J.C.G. CHECKED BY PHA: J.C.G.  
SHEET NO. 6

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**REVISIONS**

NO.	DESCRIPTION	DATE

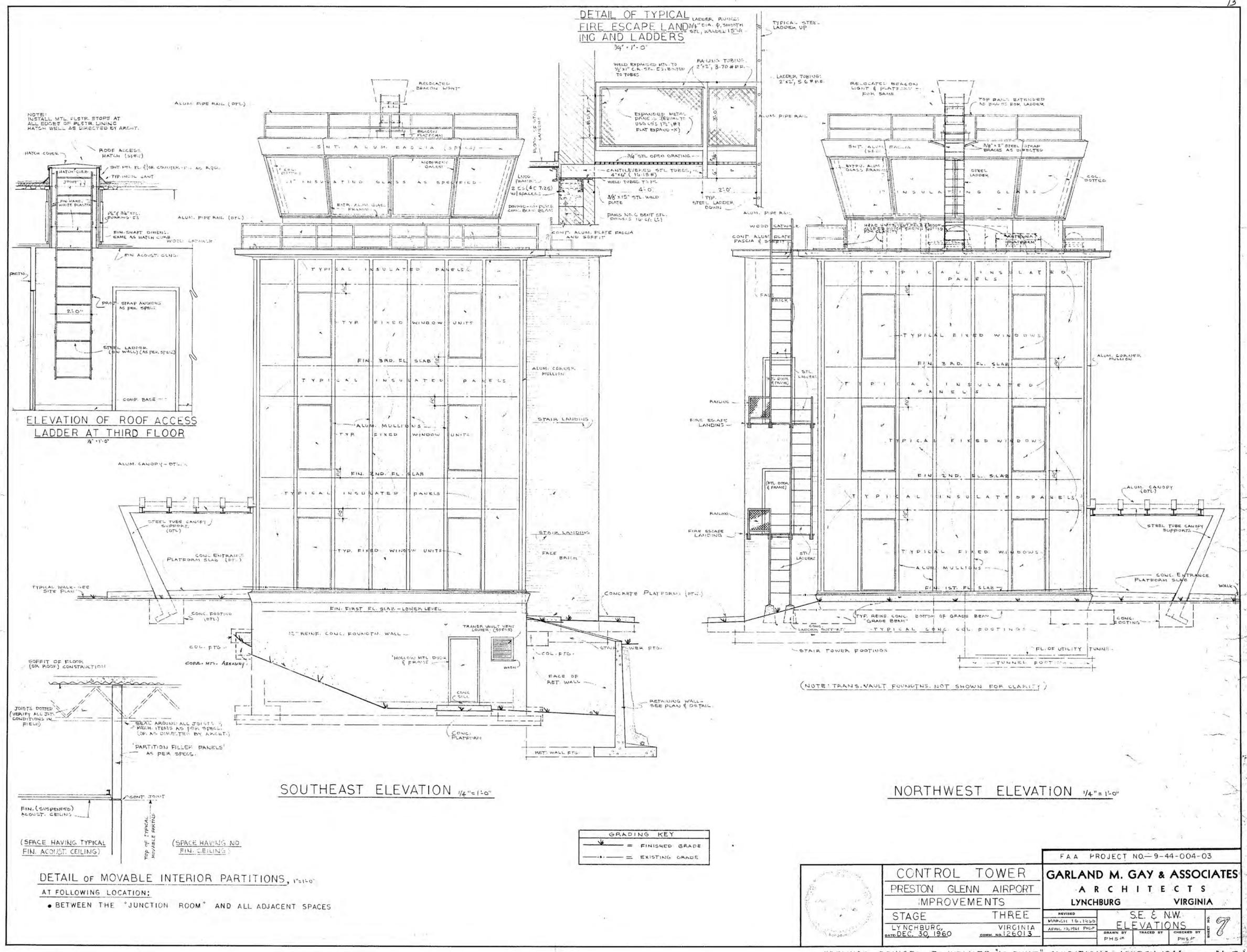
DATE ISSUED: AUGUST 12, 2015  
REVIEWED BY: RLM  
DRAWN BY: ARJ/WAJ  
DESIGNED BY: ARJ

AEC PROJECT NUMBER  
222-0264-001  
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SHEET TITLE  
**AS-BUILTS, 6, SOUTHWEST ELEVATION**

SHEET NUMBER  
**C-AB-007**

BID DOCUMENTS



**REVISIONS**

NO.	DESCRIPTION	DATE

DATE ISSUED: AUGUST 12, 2015  
REVIEWED BY: RLM  
DRAWN BY: ARJ/WAJ  
DESIGNED BY: ARJ

AEC PROJECT NUMBER  
222-0264-001  
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SHEET TITLE

**AS-BUILTS, 7,  
SOUTHEAST &  
NORTHWEST  
ELEVATIONS**

SHEET NUMBER  
**C-AB-008**

BID  
DOCUMENTS

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	CONTROL TOWER	FAA PROJECT NO.-9-44-004-03
	PRESTON GLENN AIRPORT IMPROVEMENTS	<b>GARLAND M. GAY &amp; ASSOCIATES</b> ARCHITECTS LYNCBURG VIRGINIA
	STAGE THREE LYNCBURG, VIRGINIA DATE DEC. 30, 1960 COMM. NO. 126013	REVISIONS MARCH 15, 1962 APRIL 15, 1961 PH-1 S.E. & N.W. ELEVATIONS DRAWN BY PH-1 CHECKED BY PH-1 PHYS. 7

DRWGS. REVISED TO INDICATE "AS-BUILT" CONDITIONS MARCH 1964 N-70

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