

- PLUMBING KEY NOTES
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2" COLD WATER PIPE BELOW FINISHED GRADE. PLUMBING CONTRACTOR'S WORK BEGINS 5'-0" OUTSIDE BUILDING. SEE SITE PLAN FOR CONTINUATION AND LOCATION OF WATER METER AND BACKFLOW PREVENTOR.

MAIN SHUT OFF VALVE IN VALVE BOX.

1 1/4" COLD WATER RISER UP TO SECOND FLOOR. 1" COLD WATER RISER UP TO THIRD FLOOR.

STUB AND CAP 1" COLD WATER PIPE AT CEILING FOR FUTURE USE

WATER PIPING ABOVE FINISHED CEILING. COORDINATE LOCATION WITH MECHANICAL AND ELECTRICAL CONTRACTORS.

4" SANITARY SEWER PIPE BELOW FINISHED GRADE. PLUMBING CONTRACTOR'S WORK EXTENDS 5'-0" OUTSIDE BUILDING. SEE SITE PLAN FOR CONTINUATION.

INVERT ELEVATION IS TO BE 35' BELOW FINISHED FLOOR.

4" WASTE STACK DOWN FROM SECOND FLOOR.

3" VENT STACK UP TO SECOND FLOOR.

2" CONDENSATE STACK DOWN FROM SECOND FLOOR.

SANITARY SEWER PIPING BELOW FINISHED FLOOR.

CONDENSATE PIPING ROUTED UP HIGH AT STRUCTURE. COORDINATE LOCATION WITH MECHANICAL AND ELECTRICAL CONTRACTORS.

DROP DOWN IN WALL AND SPILL ON GRADE.

4" ROOF DRAIN LEADER DOWN FROM SECOND FLOOR.

ROOF DRAIN LEADER ROUTED UP HIGH AT STRUCTURE. COORDINATE LOCATION WITH MECHANICAL AND ELECTRICAL CONTRACTORS.

DROP DOWN IN WALL AND SPILL ON GRADE.

6" OVERFLOW DRAIN LEADER DOWN FROM SECOND FLOOR.

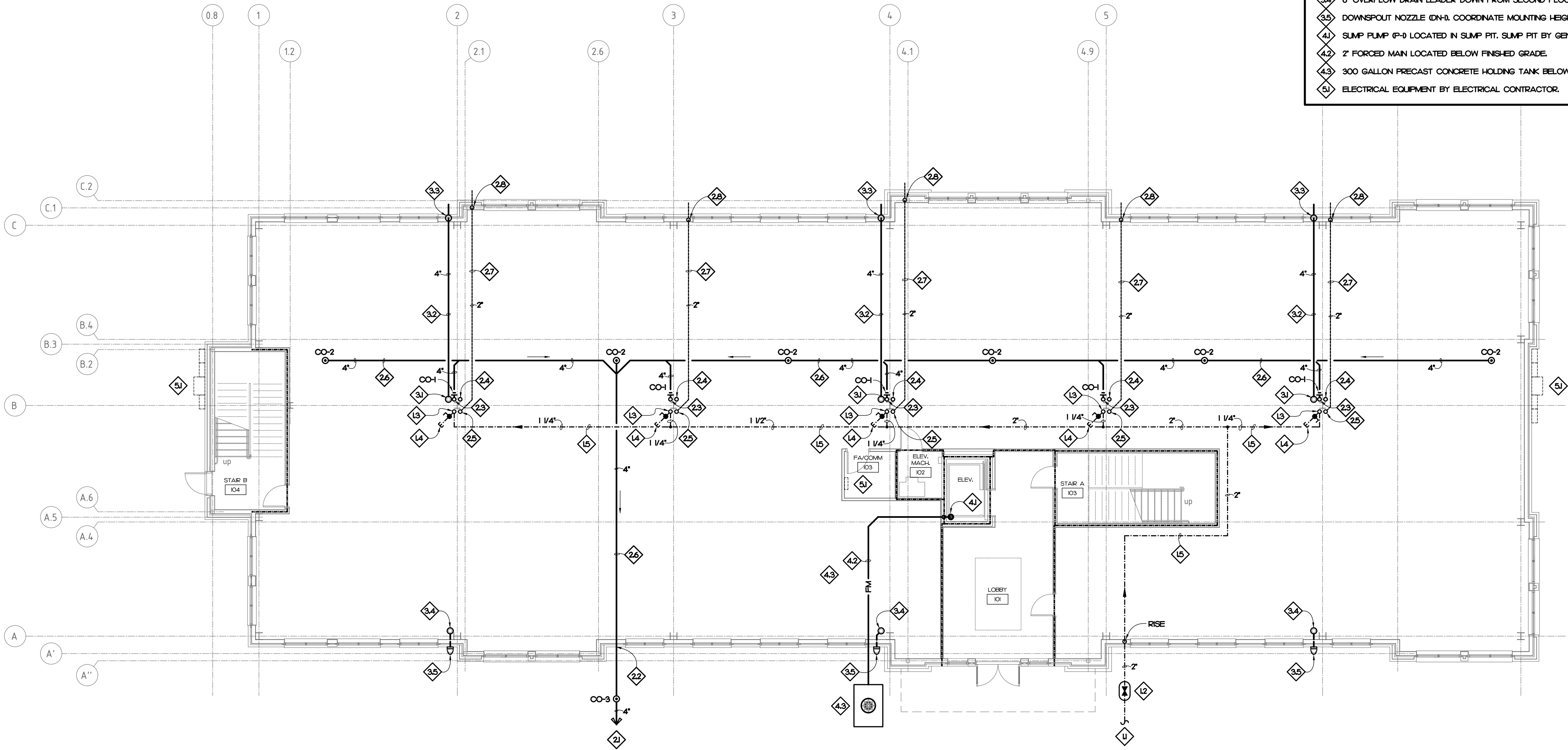
DOWNSPOUT NOZZLE (DN-), COORDINATE MOUNTING HEIGHT WITH ARCHITECT.

SUMP PUMP (P-1) LOCATED IN SUMP PIT. SUMP PIT BY GENERAL CONTRACTOR.

2" FORCED MAIN LOCATED BELOW FINISHED GRADE.

300 GALLON PRECAST CONCRETE HOLDING TANK BELOW FINISHED GRADE.

ELECTRICAL EQUIPMENT BY ELECTRICAL CONTRACTOR.



1

IST FLOOR PLUMBING PLAN

PLU

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

New Shell Building

Heritage Park West

3125 Rogers Road

Wake Forest, North Carolina

ATLANTEC ENGINEERS, PA
3322 BLUE RIDGE ROAD, SUITE 113
DURHAM, NC 27622
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Professional Engineer
JAMES B. DELPAPA, P.E.
No. 22055
7/6/2017

MAURER ARCHITECTURE

115.5 EAST HARGETT STREET, SUITE 300
RALEIGH, NC 27601

TEL. 919-829-4969 FAX. 919-829-0860

DATE	07.06.17
DR.	DRD
CH.	JBD
PROJ. #	16096
REVISIONS	DATE

PLUMBING PLAN

1ST FLOOR

PLUMBING KEY NOTES

1

1 1/4" COLD WATER RISER UP FROM FIRST FLOOR. 1" COLD WATER RISER UP TO THIRD FLOOR.

12

STUB AND CAP 1" COLD WATER PIPE AT CEILING FOR FUTURE USE

21

4" WASTE STACK DOWN FROM THIRD FLOOR. 4" WASTE STACK DOWN TO FIRST FLOOR.

22

3" VENT STACK UP FROM FIRST FLOOR. 3" VENT STACK UP TO THIRD FLOOR.

23

2" CONDENSATE STACK DOWN FROM THIRD FLOOR. 2" CONDENSATE STACK DOWN TO FIRST FLOOR.

31

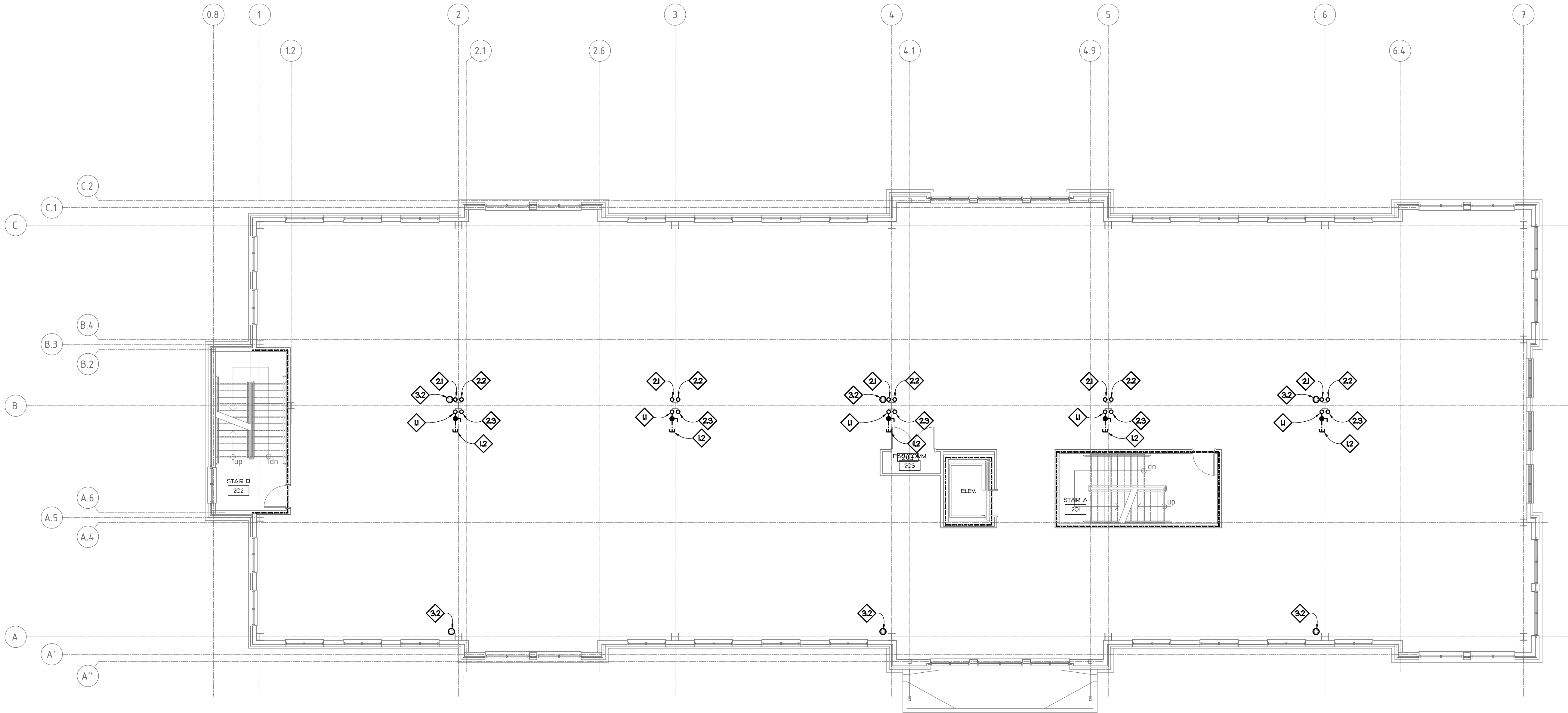
4" ROOF DRAIN LEADER DOWN FROM THIRD FLOOR. 4" ROOF DRAIN LEADER DOWN TO FIRST FLOOR.

32

6" OVERFLOW DRAIN LEADER DOWN FROM THIRD FLOOR. 6" OVERFLOW DRAIN LEADER DOWN TO FIRST FLOOR.

41

ELECTRICAL EQUIPMENT BY ELECTRICAL CONTRACTOR.



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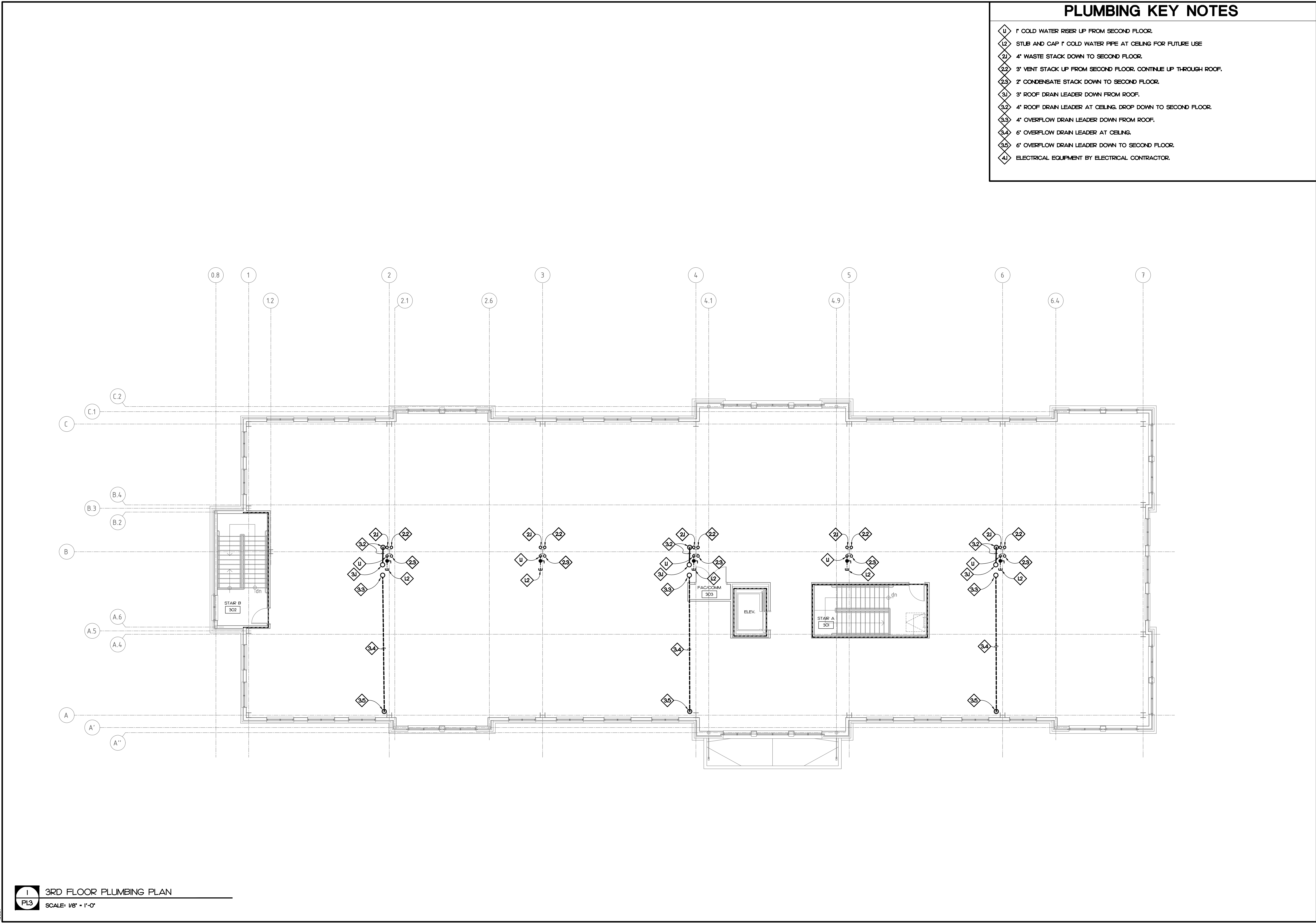
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PLUMBING PLAN
2ND FLOOR

P1.2



- ### PLUMBING KEY NOTES
- 1 1" COLD WATER RISER UP FROM SECOND FLOOR.
 - 1.2 STUB AND CAP 1" COLD WATER PIPE AT CEILING FOR FUTURE USE
 - 2 4" WASTE STACK DOWN TO SECOND FLOOR.
 - 2.2 3" VENT STACK UP FROM SECOND FLOOR, CONTINUE UP THROUGH ROOF.
 - 2.3 2" CONDENSATE STACK DOWN TO SECOND FLOOR.
 - 3 3" ROOF DRAIN LEADER DOWN FROM ROOF.
 - 3.2 4" ROOF DRAIN LEADER AT CEILING, DROP DOWN TO SECOND FLOOR.
 - 3.3 4" OVERFLOW DRAIN LEADER DOWN FROM ROOF.
 - 3.4 6" OVERFLOW DRAIN LEADER AT CEILING.
 - 3.5 6" OVERFLOW DRAIN LEADER DOWN TO SECOND FLOOR.
 - 4 ELECTRICAL EQUIPMENT BY ELECTRICAL CONTRACTOR.

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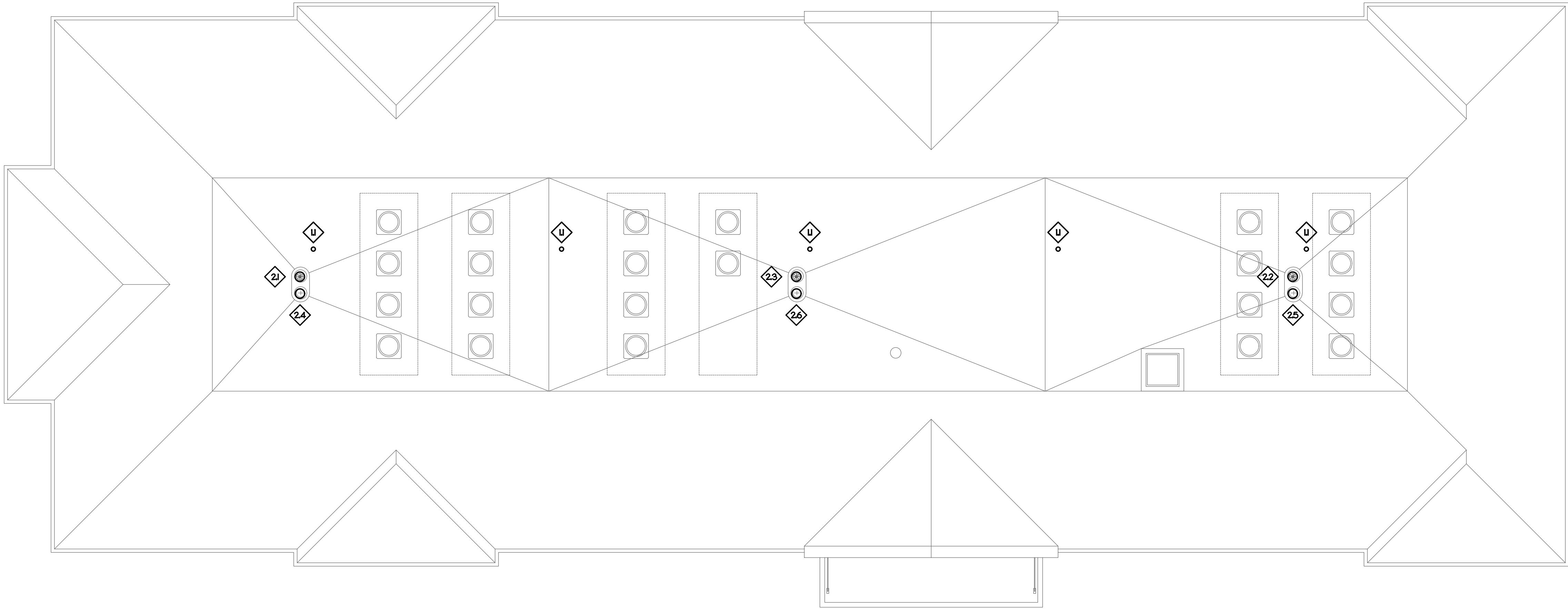
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JAMES B. DELPAPA
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PLUMBING PLAN
3RD FLOOR

16227



PLUMBING KEY NOTES

- 1 3" VENT THROUGH ROOF UP FROM THIRD FLOOR.
- 21 ROOF DRAIN (RD-1) 1369 SQUARE FEET. ROUTE 3" ROOF DRAIN LEADER DOWN TO THIRD FLOOR.
- 22 ROOF DRAIN (RD-1) 1467 SQUARE FEET. ROUTE 3" ROOF DRAIN LEADER DOWN TO THIRD FLOOR.
- 23 ROOF DRAIN (RD-1) 1726 SQUARE FEET. ROUTE 3" ROOF DRAIN LEADER DOWN TO THIRD FLOOR.
- 24 OVERFLOW DRAIN (OD-1) 1369 SQUARE FEET. ROUTE 4" OVERFLOW DRAIN LEADER DOWN TO THIRD FLOOR.
- 25 OVERFLOW DRAIN (OD-1) 1467 SQUARE FEET. ROUTE 4" OVERFLOW DRAIN LEADER DOWN TO THIRD FLOOR.
- 26 OVERFLOW DRAIN (OD-1) 1726 SQUARE FEET. ROUTE 4" OVERFLOW DRAIN LEADER DOWN TO THIRD FLOOR.

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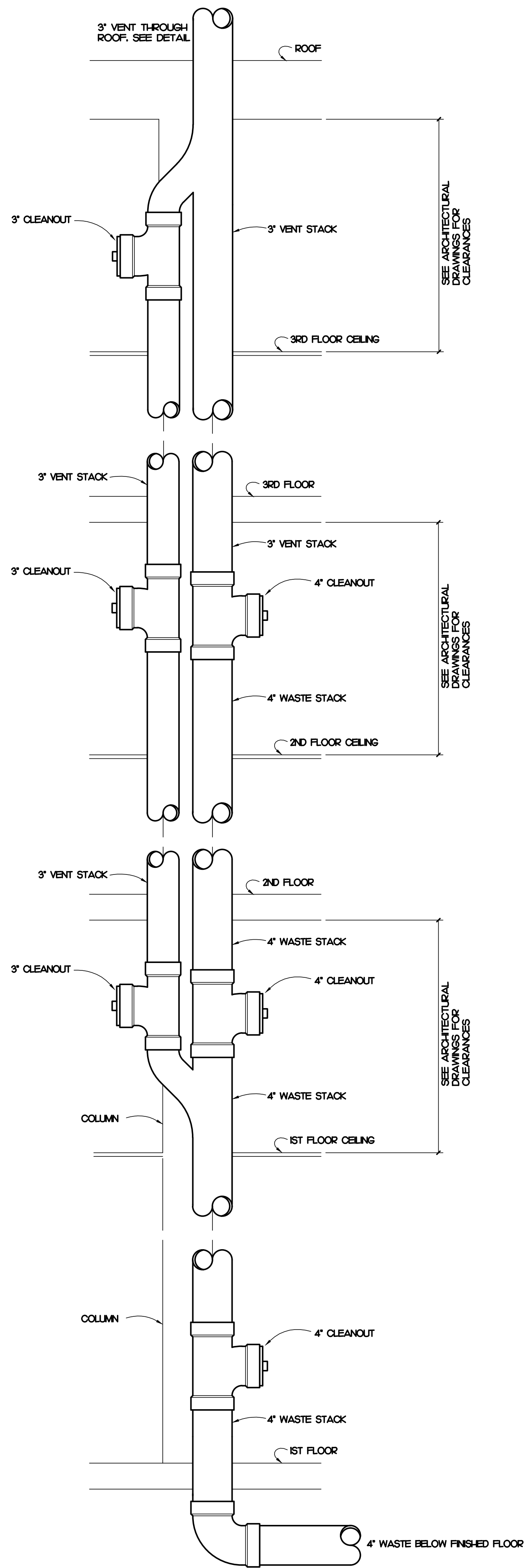
7/6/2017

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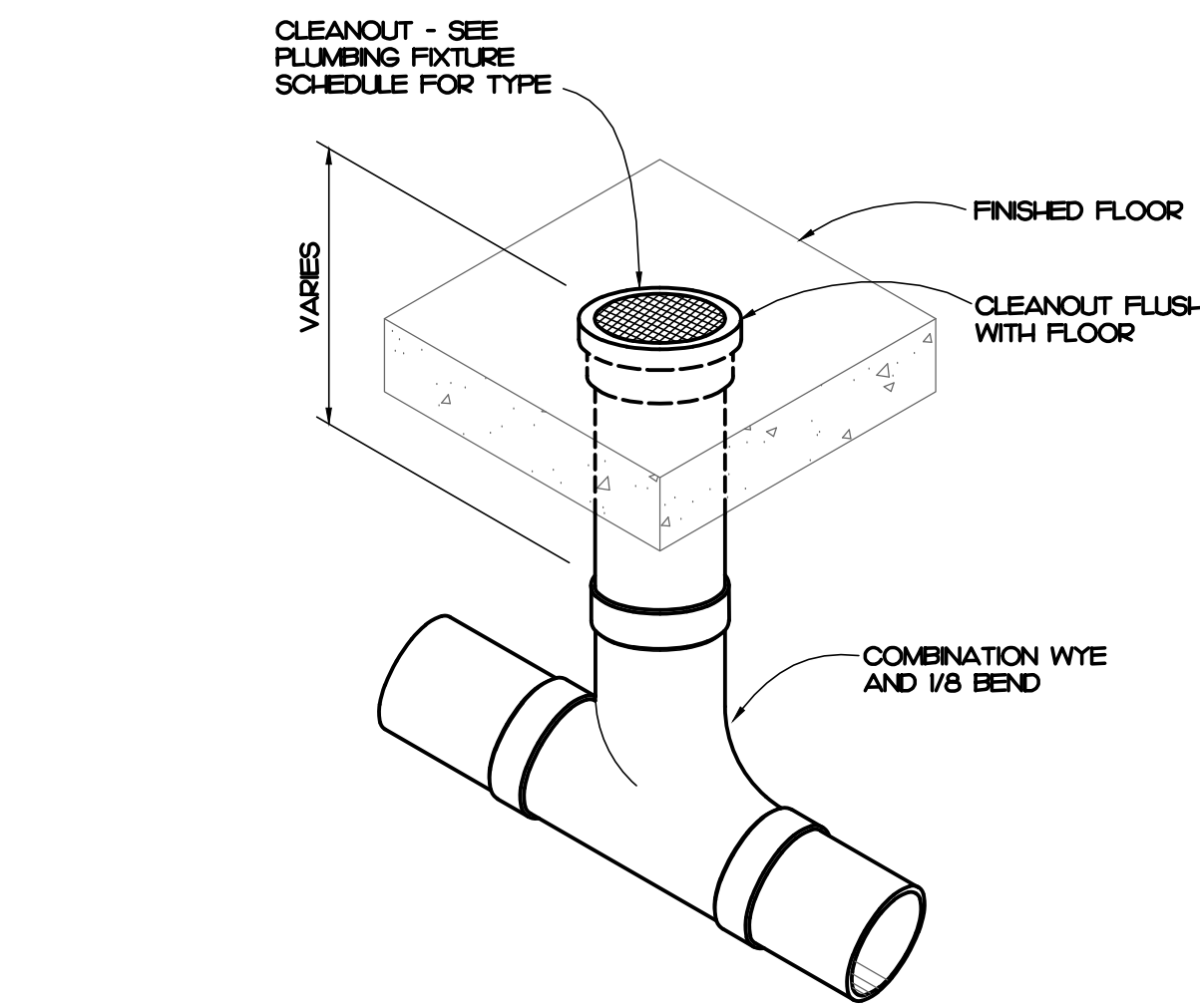
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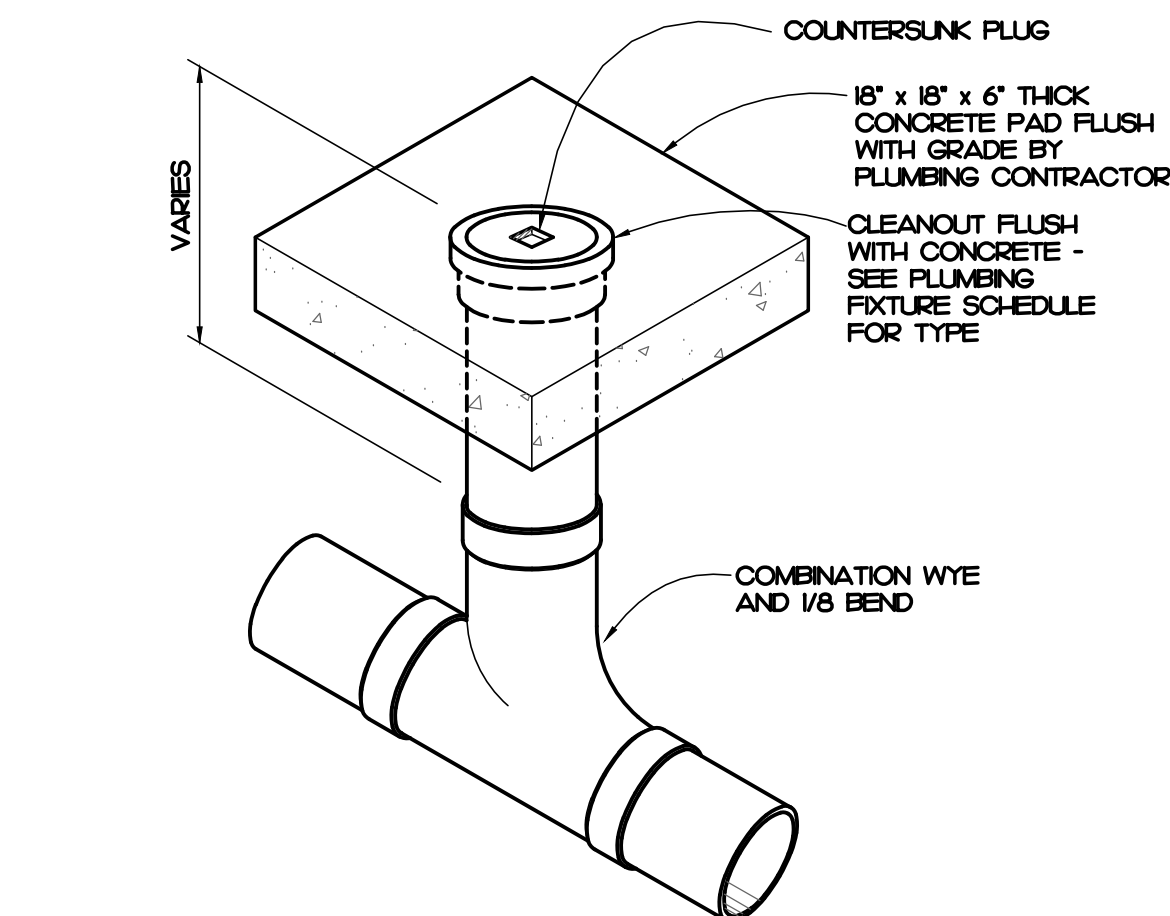
PLUMBING PLAN
ROOFTOP



7 WASTE/VENT STACK DETAIL
P21 NOT TO SCALE

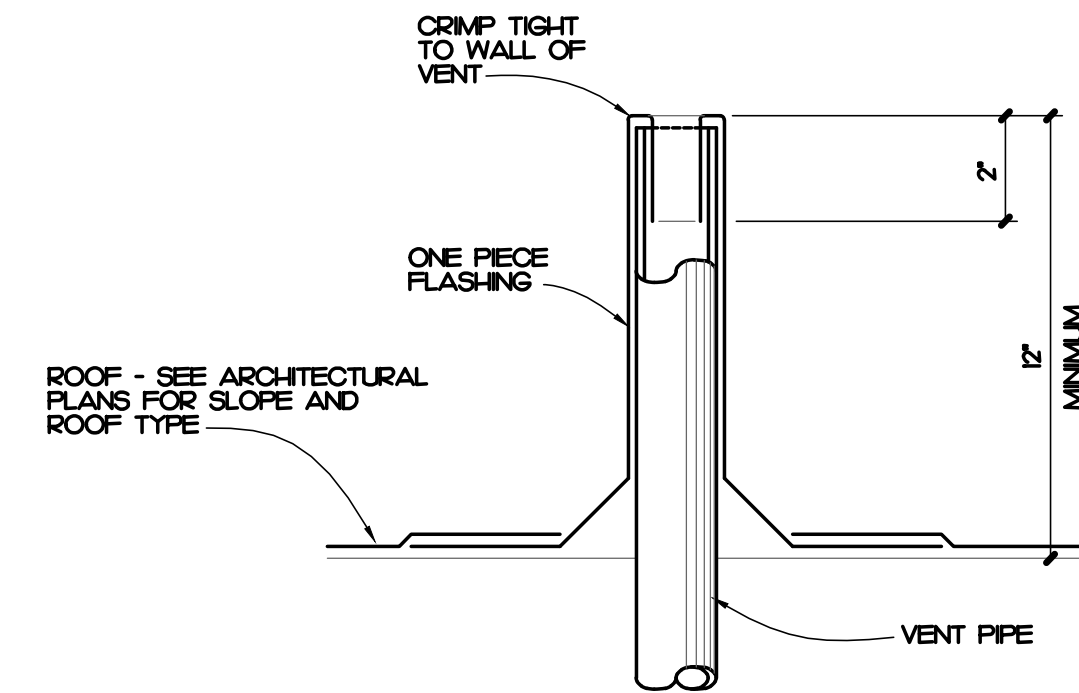


4 FLOOR CLEANOUT DETAIL
P21 NOT TO SCALE

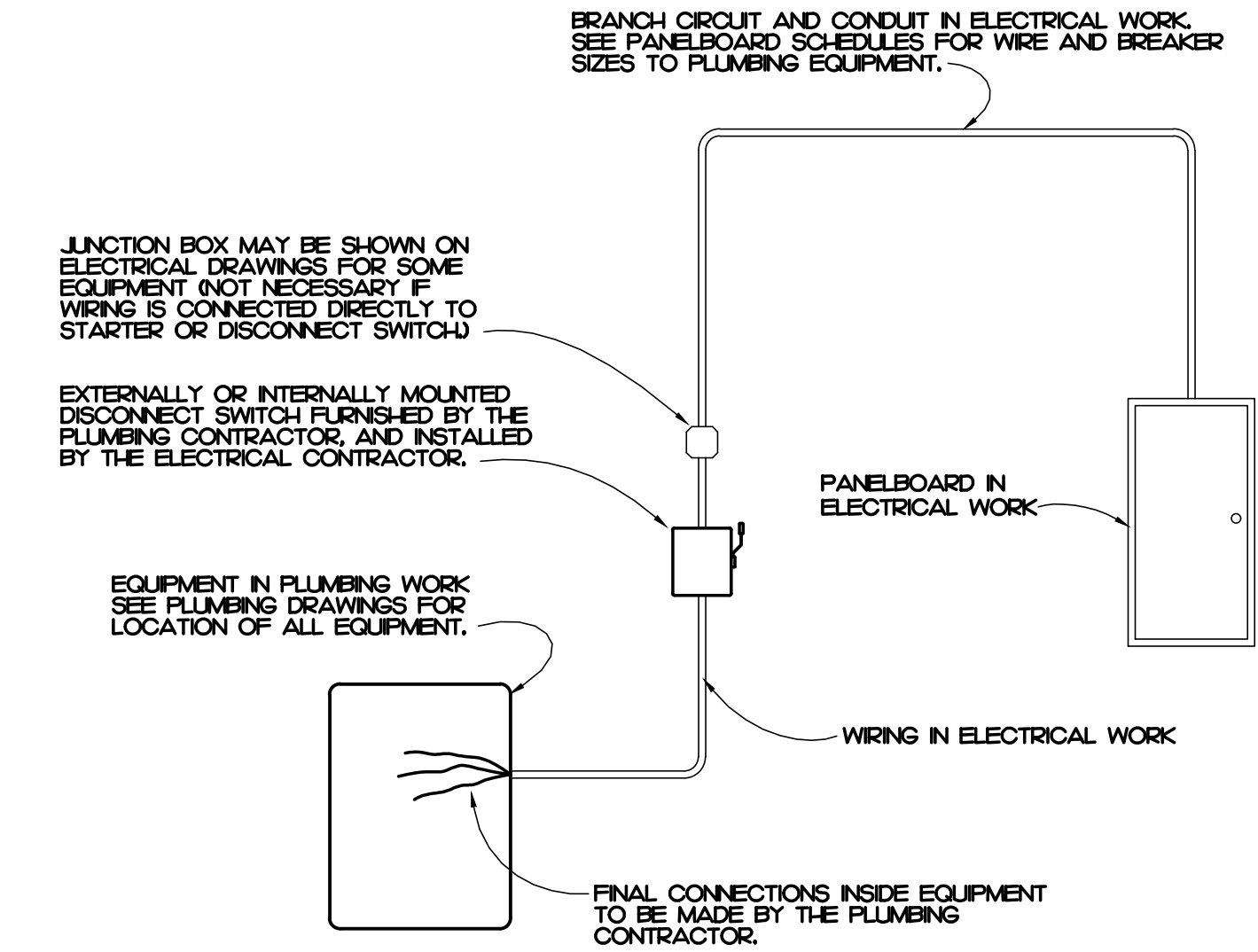


NOTE: SEE SITE AND/OR UTILITY PLAN FOR LOCATION AND FINISH GRADE ELEVATION

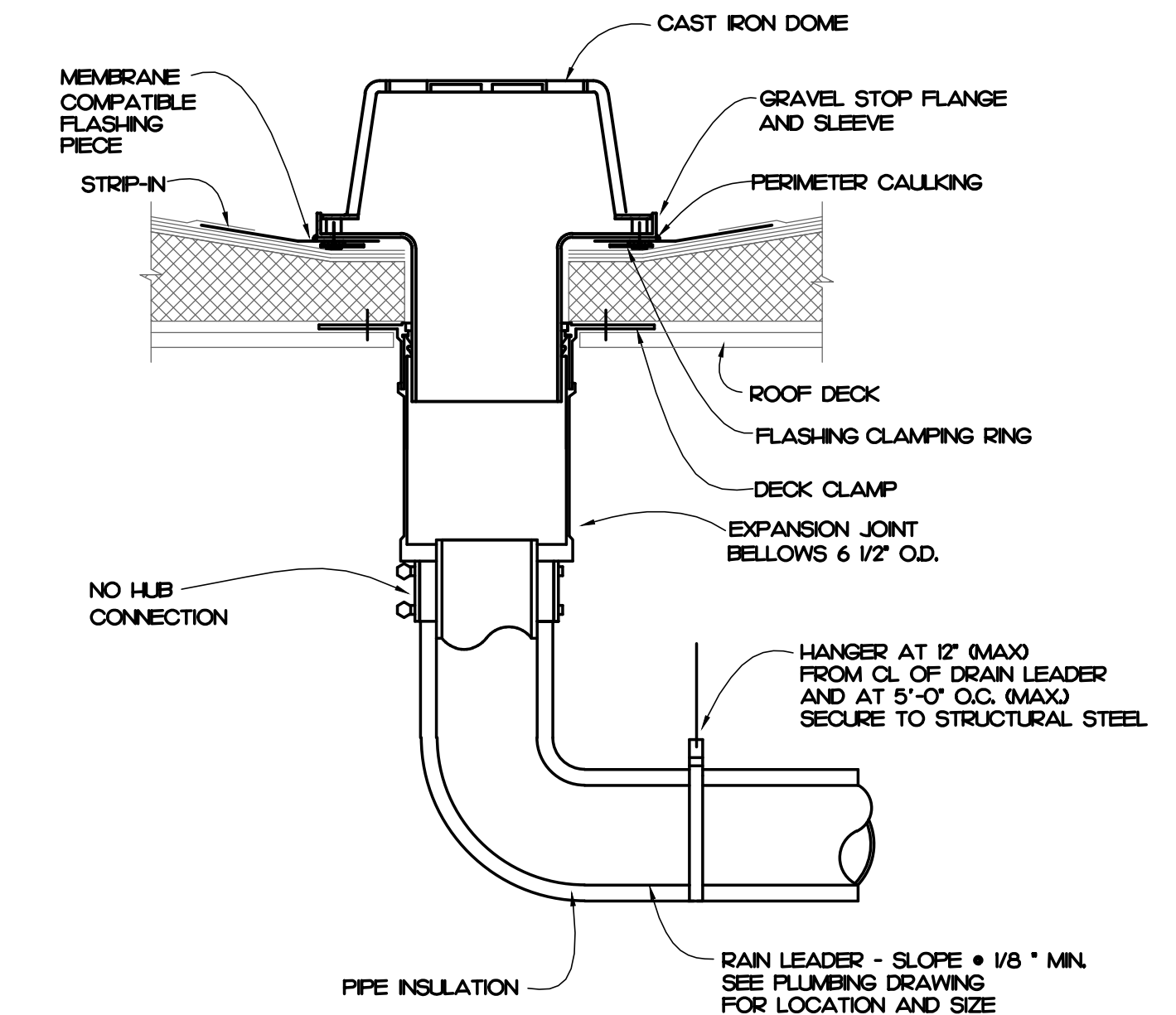
5 EXTERIOR CLEANOUT DETAIL
P21 NOT TO SCALE



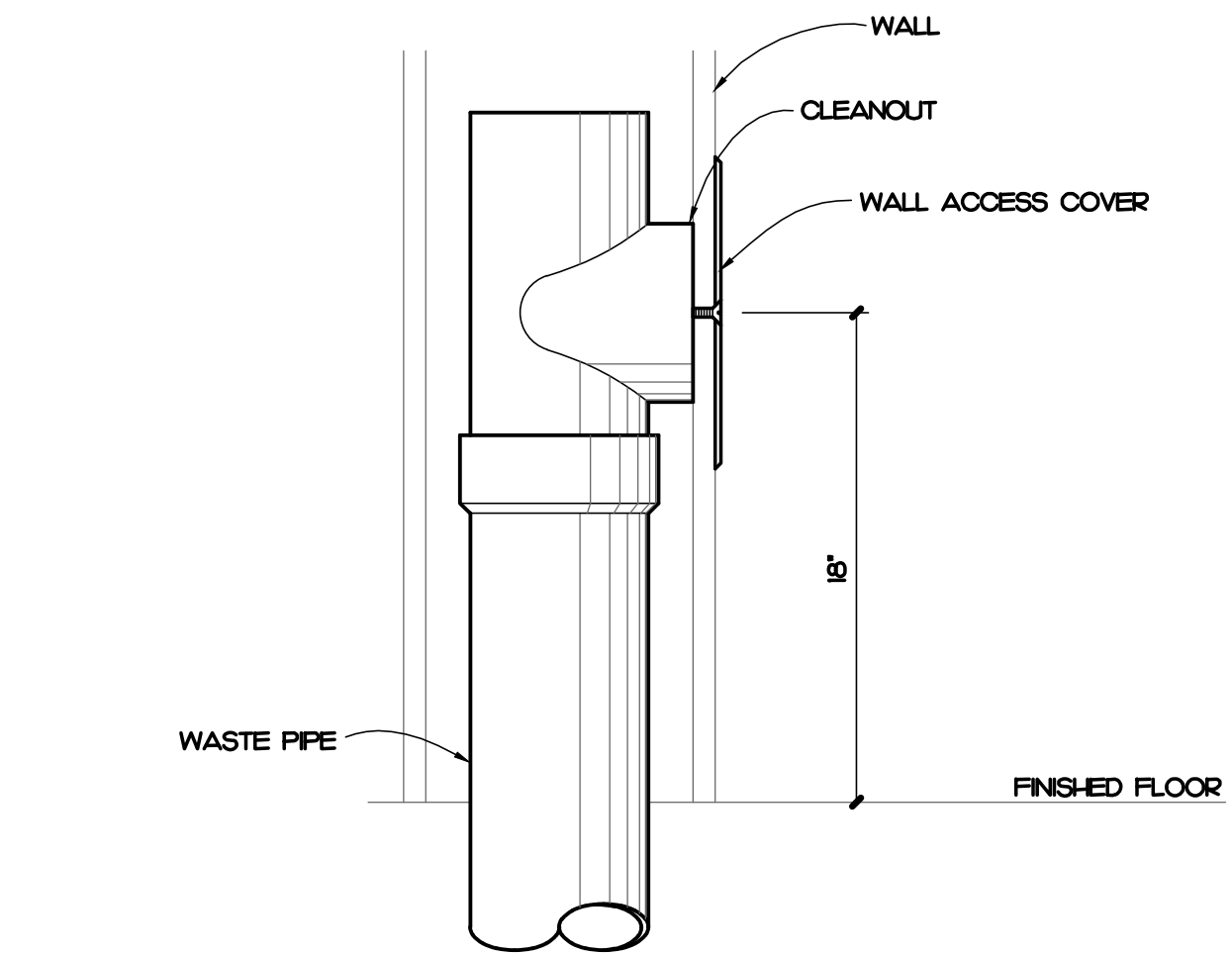
6 VENT THROUGH ROOF DETAIL
P21 NOT TO SCALE



1 ELECTRICAL WIRING DETAIL
P21 NOT TO SCALE

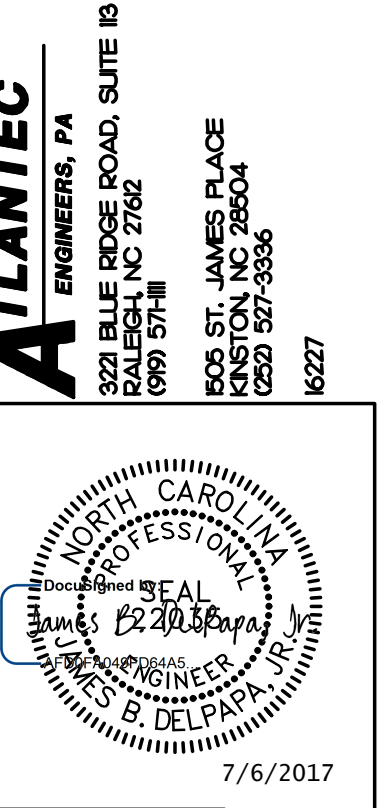


2 ROOF DRAIN DETAIL
P21 NOT TO SCALE



3 WALL CLEANOUT DETAIL
P21 NOT TO SCALE

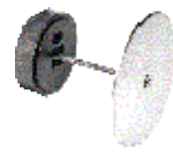








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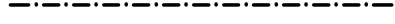


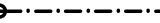



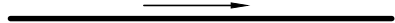




PLUMBING DETAILS

PLUMBING FIXTURE SCHEDULE										
SYMBOL / IMAGE	DESCRIPTION	3 - EQUALS						PIPING CONNECTIONS		
		MANUFACTURER	MODEL NUMBER	MANUFACTURER	MODEL NUMBER	MANUFACTURER	MODEL NUMBER	COLD WATER	HOT WATER	SANITARY SEWER
CO-1	WALL CLEANOUT	ZURN	CO24B-PVC	MFAB		JR SMITH		-	-	SEE PLUMB DRAWINGS
	ACCESS COVER	ZURN	CO2530-SS7	MFAB		JR SMITH				
	PVC CLEANOUT BODY AND PLUG TO BE GAS AND WATER TIGHT. PLUG TO HAVE A BRASS THREADED INSERT TO RECEIVE SECURING SCREW FOR STAINLESS STEEL ROUND ACCESS COVER.									
CO-2	FLOOR CLEANOUT	ZURN	CO2449	MFAB		JR SMITH		-	-	SEE PLUMB DRAWINGS
	PVC CLEANOUT WITH AND ADJUSTABLE PVC RISER, NICKEL BRONZE FRAME AND COVER, AND AN ABS TAPER THREADED PLUG. CLEANOUT TO BE GAS AND WATERTIGHT.									
CO-3	EXTERIOR CLEANOUT	ZURN	Z-1449-BP	MFAB	CO220	JR SMITH	4283	-	-	SEE PLUMB DRAWINGS
	CLEANOUT FERRULE WITH CAST IRON BODY, WITH GAS AND WATERTIGHT ABS COUNTERSUNK PLUG, MOUNT IN CONCRETE.									
	SUMP PUMP	ZOELLER	940-0007					-	-	-
	ZOELLER OIL SMART SYSTEM INCLUDES: SUMP PUMP, PUMP SWITCH, SENSOR, AND ALARM. SUMP PUMP, 1/2 HP, 120 VOLT, SINGLE PHASE, 52 GPM @ 20' HEAD. PROVIDE WITH CHECK VALVE AND DISCONNECT, WIRING BY LICENSED ELECTRICAL CONTRACTOR. PROVIDE WITH ZOELLER OIL SMART PUMP SWITCH, ALARM, AND SENSOR.									
RD-1	ROOF DRAIN	ZURN	ZC-100-C	MFAB	R1200-U	JR SMITH		-	-	-
	15" DIAMETER ROOF DRAIN WITH CAST IRON BODY, UNDER DECK CLAMP, GRAVEL GUARD AND LOW SILHOUETTE POLYDOME. SIZE AS NOTED ON DRAWINGS.									
OD-1	OVERFLOW DRAIN	ZURN	Z-122-C	MFAB	R1220-U	JR SMITH		-	-	-
	12" DIAMETER DECK RECEPTOR DRAIN WITH CAST IRON BODY CLAMP/DECK RECEPTOR FRAME AND INTERNAL DOME STRAINER. SIZE OUTLET AS NOTED ON DRAWINGS.									
DN-1	DOWNSPOUT NOZZLE	ZURN	Z-199-SS	MFAB	R1940-B3			-	-	-
	PROVIDE WITH STAINLESS STEEL SCREEN. SIZE AS NOTED ON DRAWINGS.									
PLUMBING SCHEDULE NOTES AND LEGEND:										
1. THE PLUMBING CONTRACTOR MAY SUBSTITUTE FIXTURES WITH OWNERS' APPROVAL.										
2. SUBMIT CUT SHEETS FOR ALL PROPOSED FIXTURES TO ARCHITECT PRIOR TO BIDDING.										
3. PROVIDE VACUUM BREAKER ON ALL EQUIPMENT REQUIRING PLUMBING.										
4. REFER TO MANUFACTURERS WEB SITE FOR CUT SHEETS AND DATA ON THE FIXTURES AND APPURTENANCES USED IN THIS SCHEDULE.										
	ELECTRICAL POWER									

PLUMBING GENERAL NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE CODE, ALL LOCAL AND OTHER APPLICABLE CODES.
2. ANY PERMITS AND INSPECTION FEES SHALL BE SECURED AND PAID FOR BY THE PLUMBING CONTRACTOR.
3. ALL WORK SHALL BE PERFORMED BY EXPERIENCED AND SKILLED CRAFTSMAN. THE PLUMBING CONTRACTOR SHALL COORDINATE ALL OF HIS WORK WITH ALL OTHER CONTRACTORS.
4. THE PLUMBING PLANS AND SPECIFICATIONS SHALL BE THOROUGHLY REVIEWED PRIOR TO PURCHASING MATERIALS AND INSTALLATION. ALL DISCREPANCIES OR INTERFERENCE'S SHALL BE BROUGHT TO THE ENGINEERS ATTENTIONS.
5. THESE PLANS ARE DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. FOR DIMENSIONS, REFER TO THE ARCHITECTURAL PLANS.
6. THE PLUMBING CONTRACTOR SHALL PROVIDE ALL OPENINGS REQUIRED FOR THE PLUMBING WORK. THE PATCHING SHALL BE BY THE PLUMBING CONTRACTOR AND FINISHING BY GENERAL CONTRACTOR.
7. WATER PIPING BELOW GRADE SHALL BE TYPE 1" COPPER (NO JOINTS BELOW GRADE) AND ABOVE GRADE TYPE 1" COPPER. SUPPORTED AS REQUIRED AND SHALL BE HYDROSTATICALLY TESTED FOR ONE HOUR AT 150 PSI. TEST TO COMPLY WITH ALL EPA STANDARDS. THE ENTIRE WATER DISTRIBUTION SYSTEM SHALL BE DISINFECTED PRIOR TO PLACING IN SERVICE.
8. WATER PIPING LOCATED ABOVE CEILINGS AND IN EXTERIOR WALLS SHALL BE ROUTED ON HEATED SIDE OF CEILING INSULATION (UNDERSIDE) AND WALL INSULATION (INSIDE).
9. ALL COLD AND HOT WATER PIPING SHALL BE INSULATED. INSULATE WASTE PIPING AS DESIGNATED ON PLUMBING DRAWINGS. INSULATION SHALL BE 1" FIBERGLASS. EXPOSED PIPING TO BE WRAPPED WITH ALUMINUM JACKET.
10. DO NOT SUPPORT PIPING FROM BAR JOIST BRIDGING AND/OR ROOF DECK.
11. WATER SHUT - OFF VALVES ABOVE FINISHED CEILING ARE TO BE FREE FROM OBSTRUCTIONS SUCH AS DUCTWORK, LIGHTS, WIRING AND OTHER PIPING SO AS TO PROVIDE EASY ACCESS. MOUNT NO MORE THAN 2'-0" ABOVE FINISHED CEILING.
12. IF THE WATER PRESSURE EXCEEDS 80 PSI A PRESSURE REDUCING VALVE SHALL BE INSTALLED WHERE THE WATER ENTERS THE BUILDING.
13. PLUMBING CONTRACTOR SHALL PROVIDE A DIELECTRIC UNION WHEN CONNECTING DISSIMILAR MATERIAL.
14. THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ELECTRICAL AND CONTROL CONNECTIONS TO THE EQUIPMENT FURNISHED UNDER HIS CONTRACT.
15. SANITARY SEWER AND VENT PIPING SHALL BE SCHEDULE 40 PVC. CELLULAR CORE (FOAM CORE) IS NOT ALLOWED. SANITARY SEWER AND VENT PIPING SHALL BE GAS AND AIR TIGHT.
16. THE PLUMBING CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO INSTALLATION OF ANY WORK.
17. THE PLUMBING CONTRACTOR SHALL REVIEW ALL UTILITY SITE PLANS FOR WORK BY OTHERS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE HIS WORK WITH WORK BY OTHERS AND AVOID ALL CONFLICTS.
18. LOCATIONS OF UTILITIES (WASTE AND WATER PIPING, ETC.) PROVIDED BY OTHERS, THAT ARE TO BE CONNECTED TO ARE ASSUMED. IT SHALL BE THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR TO VERIFY THESE LOCATIONS AND MAKE FINAL CONNECTIONS AS REQUIRED.
19. VERIFY THE LOCATION OF ALL EQUIPMENT SUPPLIED BY OTHERS.
20. ROOF DRAIN LEADERS SHALL BE SCHEDULE 40 PVC. HORIZONTAL PIPING IS TO SLOPE AT 1/8" PER FOOT.
21. ALL EQUIPMENT DIRECTLY CONNECTED TO THE WATER SYSTEM SHALL BE PROVIDED WITH A DOUBLE CHECK VALVE AS APPROVED BY THE CITY OF RALEIGH.
22. ALL VENT PIPING THROUGH THE ROOF SHALL BE A MINIMUM OF 15'-0" FROM ALL MAKE-UP AIR INLETS OR A MINIMUM OF 2'-0" ABOVE THE TOP OF ALL MAKE-UP AIR INLETS. VENTS THROUGH ROOF ARE TO BE ON REAR OF BUILDING.
23. THE PLUMBING CONTRACTOR SHALL VERIFY BUILDING FLOOR ELEVATION IS ABOVE MAN-HOLE RIM ELEVATION OR PROVIDE A BACKWATER VALVE AS REQUIRED.
24. THE PLUMBING CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A SET OF AS-BUILT DRAWINGS UPON COMPLETION OF PROJECT.

PLUMBING SYMBOL LEGEND

SYMBOL	DESCRIPTION
	COLD WATER PIPING
	WATER PIPING DIRECTION OF FLOW
	BALL VALVE
	WATER PIPING TURNED DOWN
	WATER PIPING TURNED UP
	PIPING SIDE CONNECTION
	SANITARY SEWER / WASTE PIPING
	SANITARY SEWER / WASTE PIPING DIRECTION OF FLOW
	VENT PIPING
	VENT PIPE UP
	PLUMBING FIXTURE PROVIDED AND INSTALLED BY PLUMBING CONTRACTOR
	PLUMBING FIXTURE PROVIDED BY OTHERS AND INSTALLED BY PLUMBING CONTRACTOR

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PLUMBING NOTES,
LEGEND, AND
FIXTURE SCHEDULE

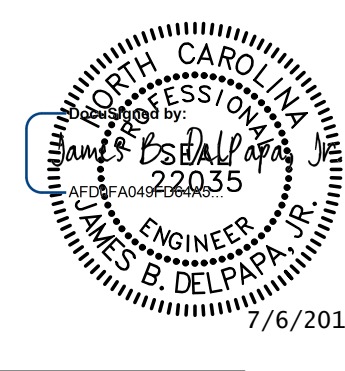
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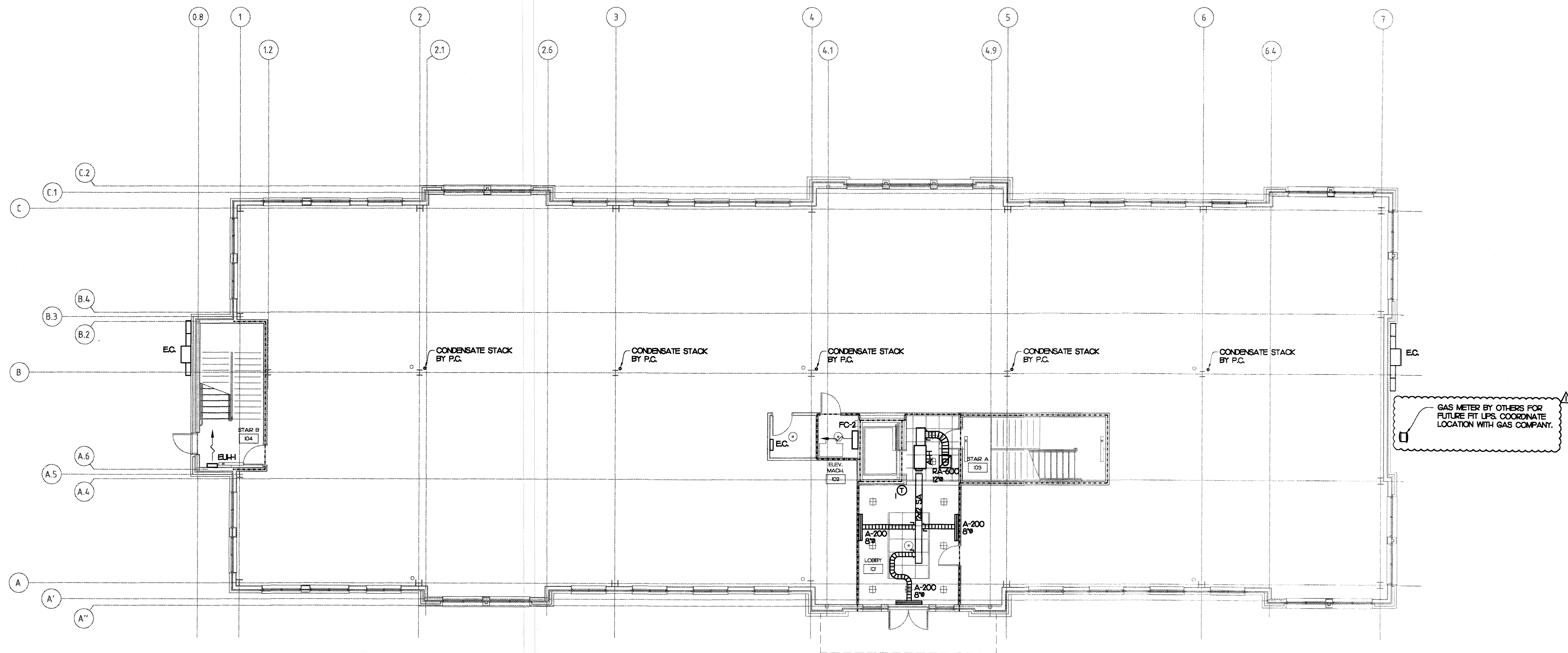
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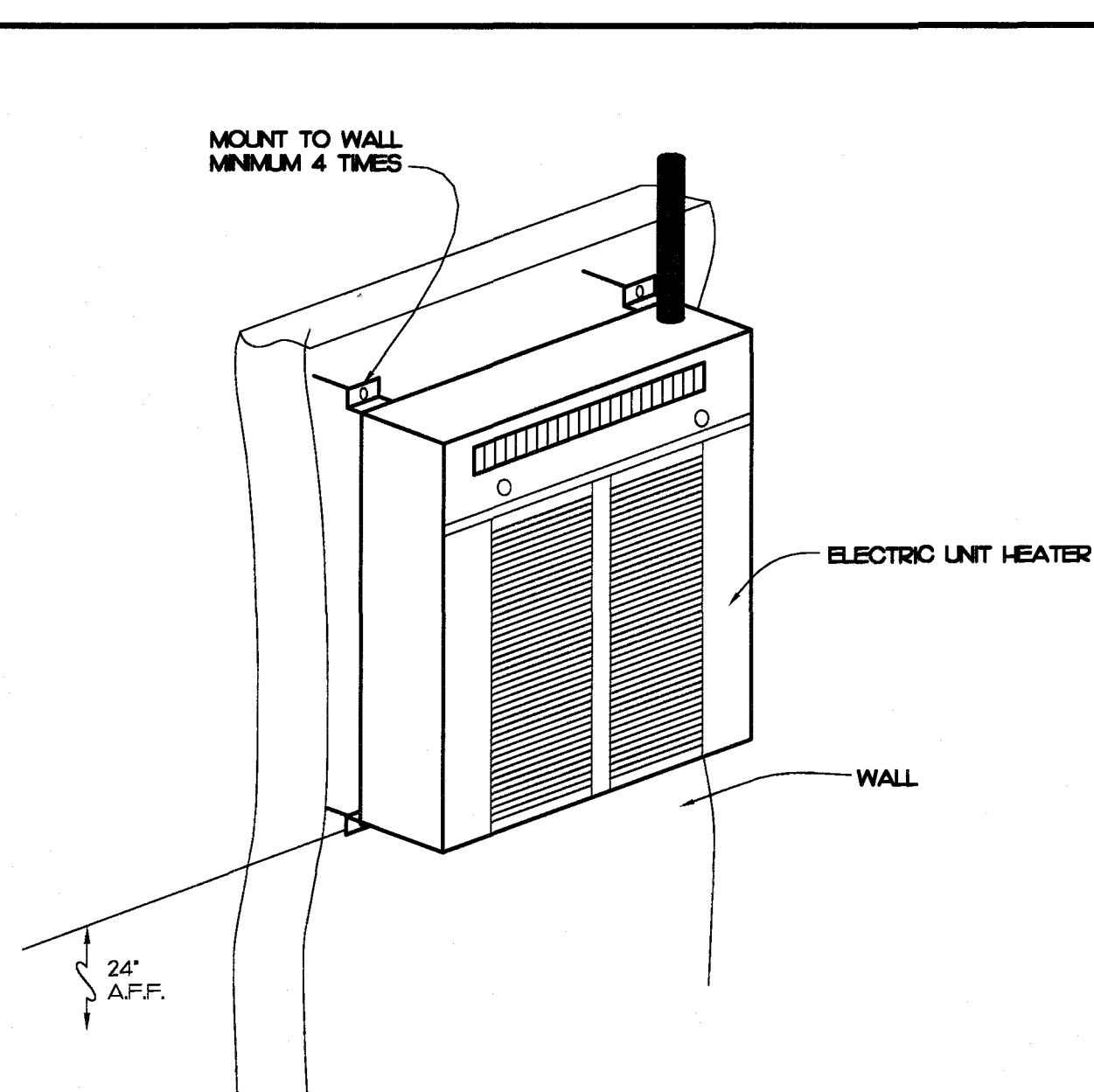
6/27



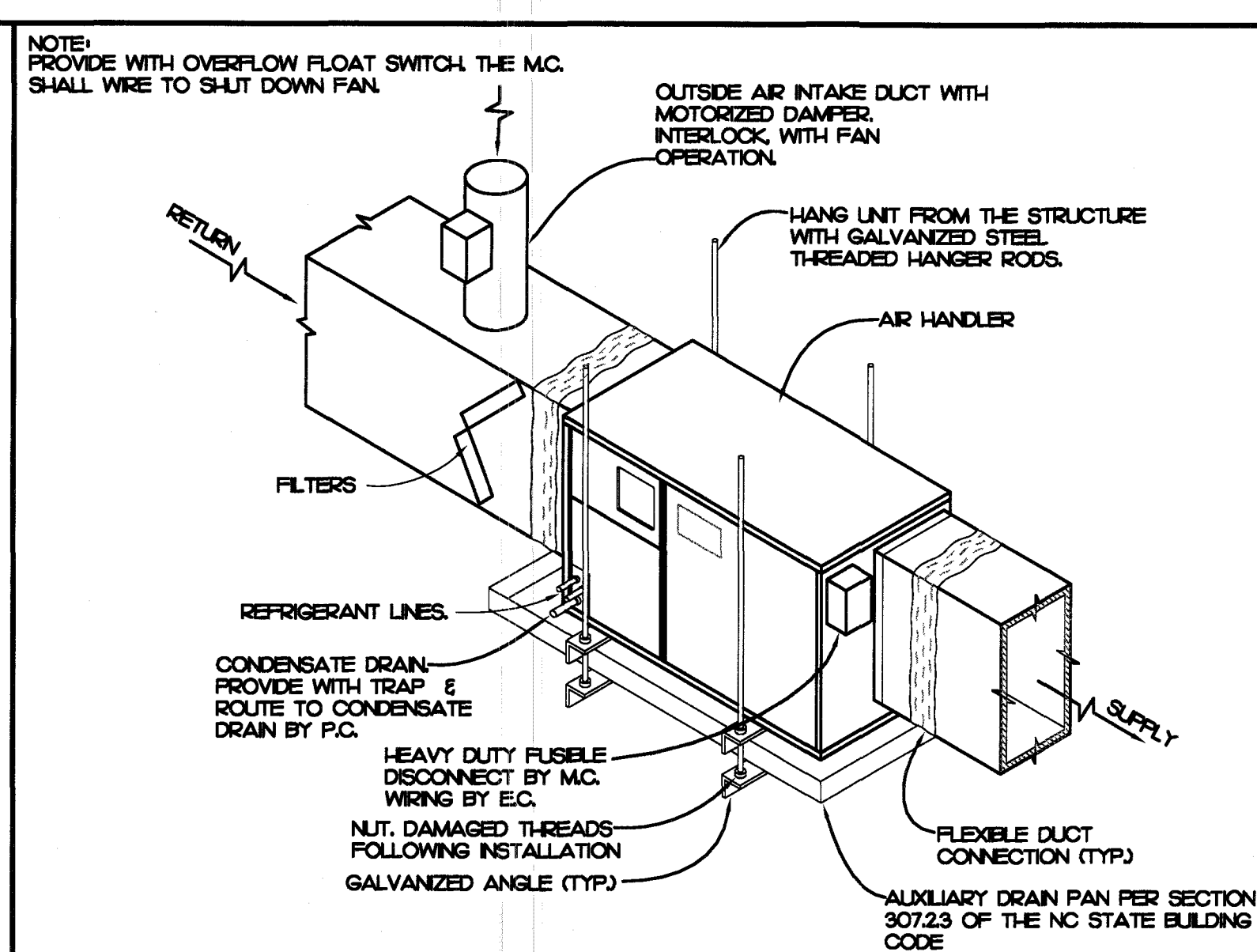


— GAS METER BY OTHERS FOR FUTURE FIT UPS. COORDINATE LOCATION WITH GAS COMPANY.

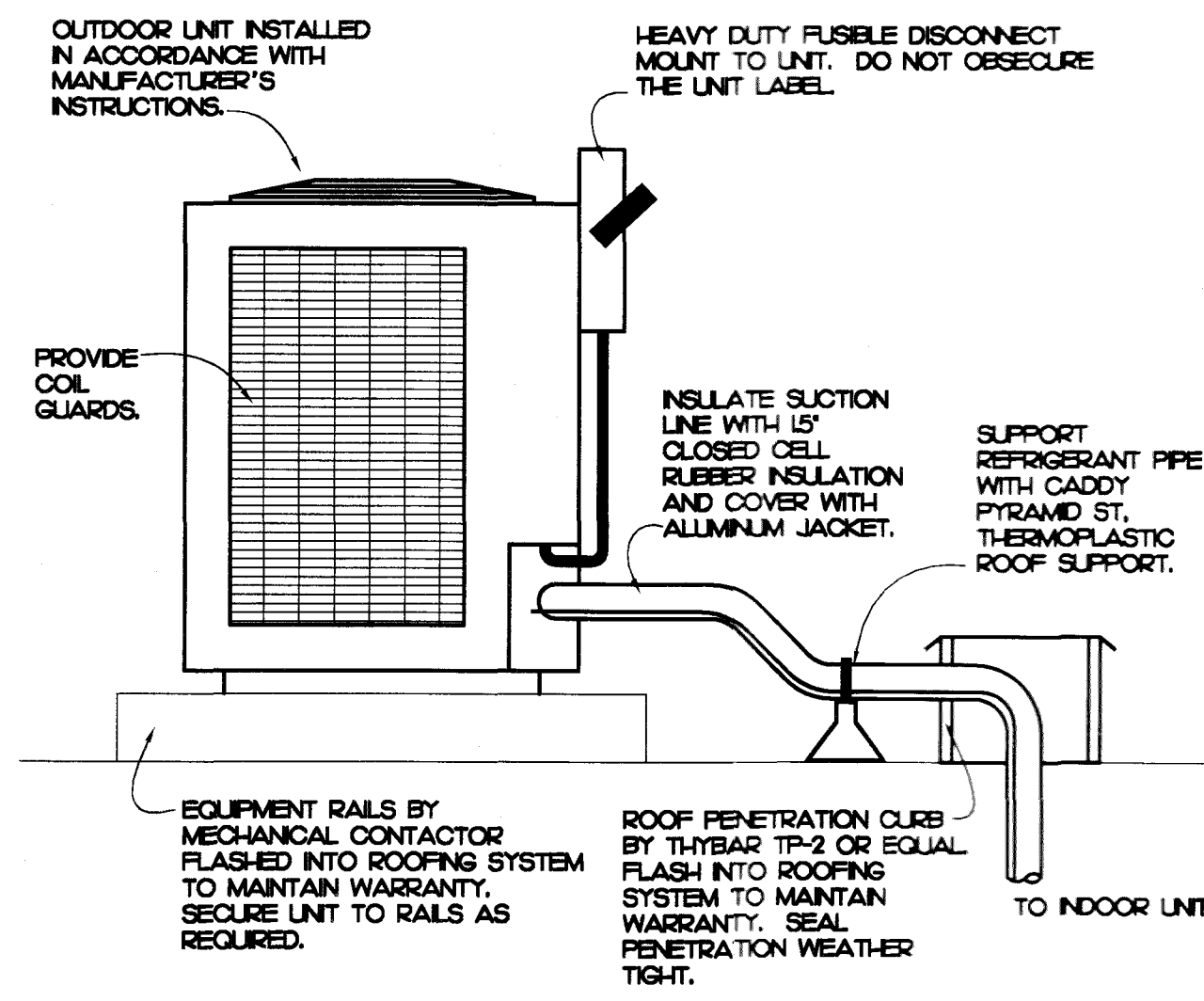
MECHANICAL PLAN
SCALE: 1/8" = 1'-0"



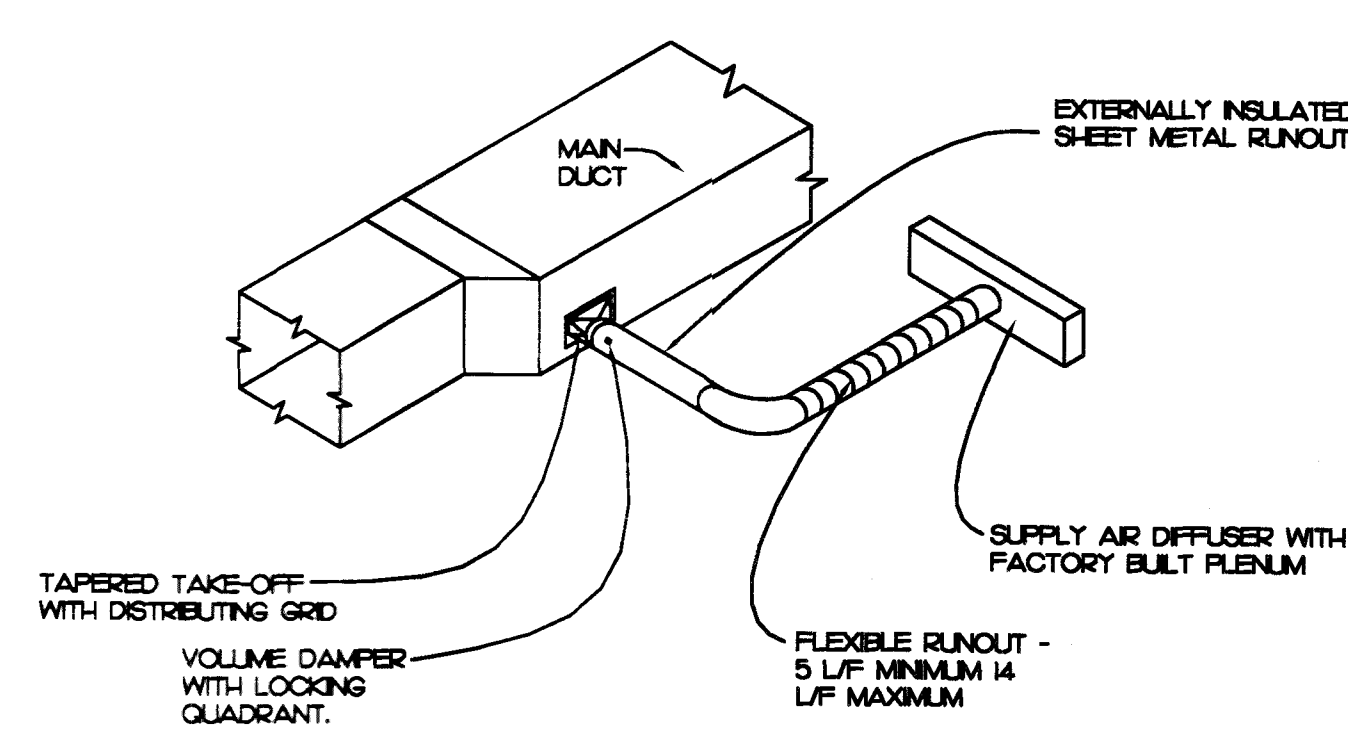
6227  ELECTRIC WALL HEATER DETAIL
SCALE: NTS



2 AIR HANDLING UNIT DETAIL
MLI SCALE: NTS



3 OUTDOOR UNIT DETAIL
M.I. SCALE: NTS



4	DIFFUSER DETAIL
MLI	SCALE: NTS

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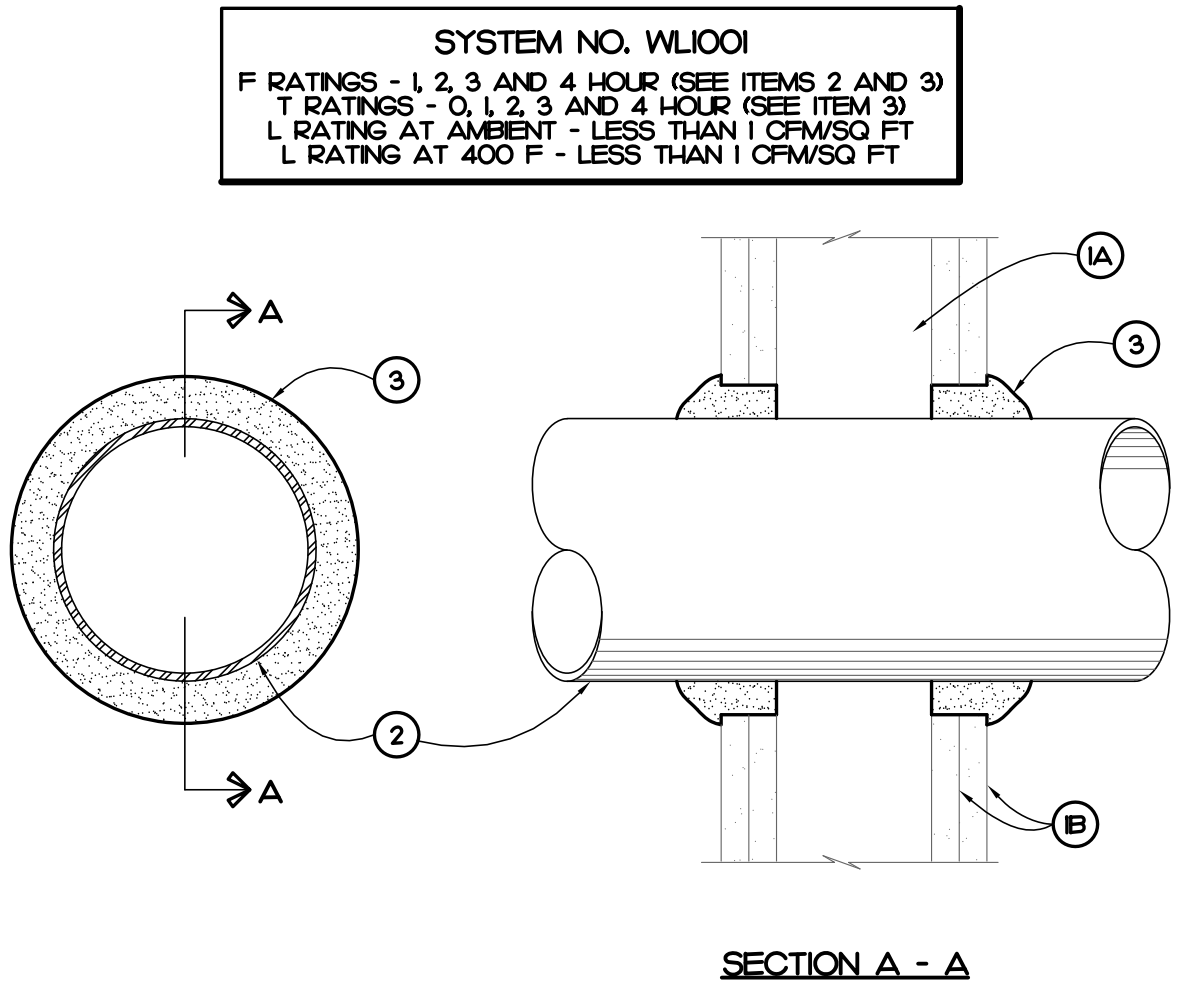
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MECHANICAL
PLAN

M1.1



1. WALL ASSEMBLY - THE 1, 2, 3 OR 4 HOUR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U300 OR U400 SERIES WALL OR PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
- A. STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS (MAXIMUM 2 HOUR FIRE RATED ASSEMBLY) OR STEEL CHANNEL, STUDS, WOOD STUDS TO CONSIST OF NOMINAL 2" x 4" LUMBER SPACED 16" ON CENTER WITH NOMINAL 2" x 4" LUMBER END PLATES AND CROSS BRACES. STEEL STUDS TO BE MINIMUM 3 5/8" WIDE x 1 3/8" DEEP CHANNELS SPACED MAXIMUM 24" ON CENTER.
- B. GYPSUM BOARD* - NOMINAL 1/2" OR 5/8" THICK, 4' WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAXIMUM DIAMETER OF OPENING IS 26".
2. THROUGH PENETRANT - ONE METALLIC PIPE, CONDUIT OR TUBING INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN PIPE, CONDUIT OR TUBING AND PERIPHERY OF OPENING SHALL BE MINIMUM OF 0" (POINT CONTACT) TO MAXIMUM 2" PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:
- A. STEEL PIPE - NOMINAL 24" DIAMETER (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
- B. IRON PIPE - NOMINAL 24" DIAMETER (OR SMALLER) SERVICE WEIGHT (OR HEAVIER) CAST IRON SOIL PIPE, NOMINAL 12" DIAMETER (OR SMALLER) OR CLASS 50 (OR HEAVIER) DUCTILE IRON PRESSURE PIPE.
- C. CONDUIT - NOMINAL 6" DIAMETER (OR SMALLER) STEEL CONDUIT OR NOMINAL 4" DIAMETER (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING.
- D. COPPER TUBING - NOMINAL 6" DIAMETER (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
- E. COPPER PIPE - NOMINAL 6" DIAMETER (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.
- F. THROUGH PENETRATING PRODUCT* - FLEXIBLE METAL PIPING - THE FOLLOWING TYPES OF STEEL FLEXIBLE METAL GAS PIPING MAY BE USED:
1. NOMINAL 2" DIAMETER (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. OMEGA FLEX INC.
2. NOMINAL 1" DIAMETER (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. TITIFLEX CORP. A BUNDY CO.
3. NOMINAL 1" DIAMETER (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. WARD MFG INC.
3. FILL VOID OR CAVITY MATERIAL* - CALK OR SEALANT - MINIMUM 5/8", 1 1/4", 1 7/8" AND 2 1/2" THICKNESS OF CALK FOR 1, 2, 3 AND 4 HOUR RATED ASSEMBLIES, RESPECTIVELY. APPLIED WITHIN ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. MINIMUM 1/4" DIAMETER BEAD OF CALK APPLIED TO GYPSUM BOARD/PENETRANT INTERFACE AT POINT CONTACT LOCATION ON BOTH SIDES OF WALL. THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS DEPENDENT UPON THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS SHOWN IN THE FOLLOWING TABLE. THE HOURLY T RATING OF THE FIRESTOP SYSTEM IS DEPENDENT UPON THE TYPE OR SIZE OF THE PIPE OR CONDUIT AND THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS TABULATED BELOW:
- | MAXIMUM PIPE OR CONDUIT DIAMETER INCHES | F RATING HOUR | T RATING HOUR |
|---|---------------|---------------|
| 1 | 1 OR 2 | 0, 1 OR 2 |
| 3 | 3 OR 4 | 3 OR 4 |
| 4 | 1 OR 2 | 0 |
| 6 | 3 OR 4 | 0 |
| 12 | 1 OR 2 | 0 |
- *WHEN COPPER PIPE IS USED, T RATING IS 0 HOUR.
3M COMPANY - CP 25MB* CALK OR FB-3000 WT SEALANT.
*BEARING THE UL CLASSIFICATION MARKING

ELECTRIC UNIT HEATER SCHEDULE

MARK	BASIS OF DESIGN	LOCATION	CFM	CAPACITY (Btu/h)	ELECTRICAL			NOTES
					(A)	(W)	POWER	
ELJ-H	QMARK AMH	STAIRS	100	13650	19.2	4	208/1	12

- NOTES:
1. MOUNT 24" AFF.
 2. PROVIDE WITH WALL HANGING KIT.

GRILLE & DIFFUSER SCHEDULE

MARK	BASIS OF DESIGN	SERVICE	TYPE	MAX. CFM	FACE SIZE	NECK SIZE	NOTES
A	PRICE TB03 48" LONG	SUPPLY	LINEAR SLOT	200	(2) - 1" SLOTS	8"	12.4
RA	PRICE B30	RETURN	LOUVERED LAY-IN	1000	24X24	SEE DWG	H-3

- NOTES:
1. PROVIDE WITH WHITE FINISH.
 2. PROVIDE WITH INSULATED SHEET METAL PLENUM.
 3. GRILLE/DIFFUSER TO HAVE FULL LOUVERED FACE.
 4. PROVIDE WITH FRAME FOR SURFACE MOUNTING.

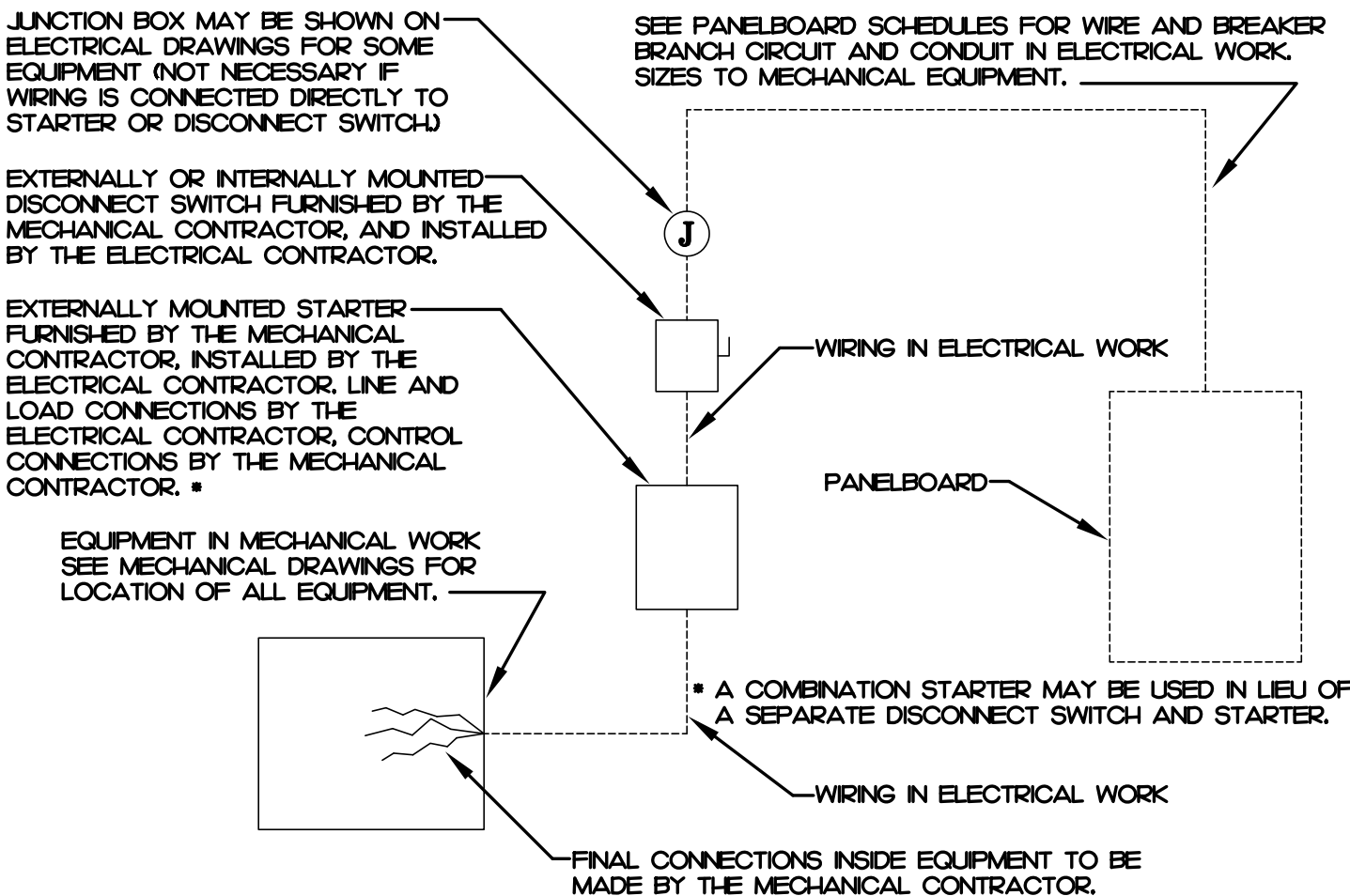
SPLIT-SYSTEM HEAT PUMP SCHEDULE

INSIDE UNIT							OUTSIDE UNIT												
MARK	BASIS OF DESIGN	FAN			SUPP. HEAT	ELECTRICAL			MARK	BASIS OF DESIGN	CAPACITY		HEATING CAPACITY	ELECTRICAL			EFFICIENCY		NOTES
		CFM	SP.	LP		POWER	FLA	MOOP			TOTAL	SENSIBLE		POWER	FLA	MOOP	COOLING	HEATING	
AHJ-H	CARRIER F34C03B	600	0.5	1/3	3.8 kW	208/1	20.9	30	HP-1	CARRIER 25-EC318	17.2 MBH	13.0 MBH	18.0 MBH	208/1	9.5	20	13 SEER	7.7 HSPF	H-7

- NOTES:
1. PROVIDE WITH FUSIBLE DISCONNECT ON INDOOR AND OUTDOOR UNITS.
 2. PROVIDE WITH SINGLE POINT ELECTRICAL CONNECTION.
 3. PROVIDE WITH PROGRAMMABLE THERMOSTAT WITH 10 HR BATTERY BACKUP AND 2 HOUR OVERRIDE.
 4. SEE OUTSIDE AIR SUMMARY FOR OUTSIDE AIR INTAKE FLOW SETTINGS.
 5. ROUTE CONDENSATE TO CONDENSATE DRAIN.
 6. PROVIDE WITH 2" PLEATED FILTER RACK AND FILTER AT UNIT.
 7. PROVIDE WITH OUTDOOR THERMOSTAT WIRED TO PREVENT THE OPERATION OF ELECTRIC HEAT WHEN HEAT PUMP IS CAPABLE OF SATISFYING THE LOAD.

SYMBOL LEGEND

	NEW SHEET METAL DUCT
	NEW FLEXIBLE DUCT
	SUPPLY DIFFUSER - LETTER & NUMBER INDICATES TYPE & CFM
	RETURN GRILLE - LETTER & NUMBER INDICATES TYPE & CFM
	THERMOSTAT - MOUNTED 48" ABOVE FINISHED FLOOR
	BALANCING DAMPER
	1 HOUR FIRE RATED WALL



TYPICAL WIRING DETAIL

SCALE: NTS

DUCTLESS SPLIT SYSTEM SCHEDULE

INSIDE UNIT				OUTSIDE UNIT						
MARK	BASIS OF DESIGN	CFM	FAN FLA	MARK	COOLING CAPACITY	ELECTRICAL			EFFICIENCY	EFFICIENCY
						POWER	MCA	MOCP	COOLING	HEATING
FC-2	MITSUBISHI MSZMU1-GE09NA	300	0.76	CU-2	9.0 MBH	208/1	12	15	26 SEER	10 HSPF

- NOTES:
1. PROVIDE FUSIBLE DISCONNECT ON OUTDOOR UNIT.
 2. PROVIDE MOTOR RATED SWITCH FOR INDOOR UNIT.
 3. PROVIDE WITH CONDENSATE PUMP AND ROUTE DISCHARGE TO EXTERIOR.
 4. PROVIDE WITH WIRED THERMOSTAT.

GENERAL NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE CODE, ALL LOCAL AND OTHER APPLICABLE CODES.
2. ANY PERMITS AND INSPECTION FEES SHALL BE SECURED AND PAID FOR BY THE MECHANICAL CONTRACTOR (M.C.).
3. ALL WORK SHALL BE PERFORMED BY EXPERIENCED AND SKILLED CRAFTSMAN. THE M.C. SHALL COORDINATE ALL OF HIS WORK WITH ALL OTHER CONTRACTORS.
4. THE MECHANICAL PLANS AND SPECIFICATIONS SHALL BE THOROUGHLY REVIEWED PRIOR TO PURCHASING MATERIALS AND INSTALLATION. ALL DISCREPANCIES OR INTERFERENCES SHALL BE BROUGHT TO THE ENGINEERS' ATTENTION.
5. THESE PLANS ARE DIAGRAMMATIC AND MAY NOT SHOW MINOR DETAILS AND LOCATIONS. FOR DIMENSIONS, REFER TO THE ARCHITECTURAL PLANS.
6. THE M.C. SHALL BE RESPONSIBLE FOR ALL ELECTRICAL STARTERS, INTERLOCKS, CONTROL WIRING. THE ELECTRICAL CONTRACTOR SHALL PROVIDE POWER WIRING, CONDUIT FROM THE DISCONNECT TO M.C. EQUIPMENT. THE M.C. SHALL BE RESPONSIBLE FOR ALL FINAL CONNECTION TO HIS EQUIPMENT.
7. INSTALL FLEXIBLE CONNECTORS ON SUPPLY AND RETURN DUCTWORK AT ALL AIR HANDLING UNITS.
8. INSTALL TURNING VANES IN SUPPLY DUCTS AT ELBOWS. PROVIDE BALANCING AND SPLITTER DAMPERS WHERE SHOWN AND AS REQUIRED FOR SYSTEM BALANCING.
9. ALL THERMOSTATS, WIRING AND CONDUIT ARE TO BE FURNISHED BY THE M.C. MOUNT THERMOSTATS 4'-0" ABOVE THE FLOOR, UNLESS OTHERWISE NOTED.
10. THE M.C. SHALL INSURE THAT ALL MECHANICAL EQUIPMENT INSTALLED UNDER HIS CONTRACT SHALL OPERATE FREE OF OBJECTIONABLE NOISE AND VIBRATION.
11. THE M.C. SHALL KEEP THE PREMISES CLEAR OF DEBRIS FROM HIS WORK DURING CONSTRUCTION AND LEAVE THE AREA AND BUILDING CLEAN AT THE COMPLETION OF HIS WORK. HE SHALL ALSO LEAVE CLEAN ALL EXPOSED EQUIPMENT IN HIS CONTRACT.
12. FLEXIBLE DUCT RUNOUTS SHALL BE A MAXIMUM OF 14'-0".
13. ALL FLEXIBLE DUCT RUNOUTS SHALL INCLUDE INSULATED DAMPERED BOOTS AT THE POINT OF CONNECTION WITH RECTANGULAR DUCT. PROVIDE ALL FLEXIBLE DUCTWORK WITH FOIL-BACKED, EXTERNALLY WRAPPED INSULATION FOR A MINIMUM OF R-8.
14. ALL DUCTWORK SIZES SHOWN ARE ACTUAL SHEET METAL DIMENSIONS. EXTERNALLY WRAP ALL DUCT WITH 3" FOIL-BACKED INSULATION FOR A MINIMUM OF R-8.
15. THE AIR HANDLING UNIT SHALL OPERATE AT ALL TIMES DURING OCCUPIED HOURS.
16. THE MECHANICAL CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A SET OF AS-BUILT DRAWINGS UPON COMPLETION OF JOB.
17. THE MECHANICAL CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A SET OF DUCT SHOP DRAWINGS FOR APPROVAL.
18. THE MECHANICAL CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A BALANCE REPORT BY A CERTIFIED TEST AND BALANCE COMPANY.

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT METHOD OF COMPLIANCE

PREScriptive ☐ ENERGY COST BUDGET ☐

THERMAL ZONE: 4

EXTERIOR DESIGN CONDITIONS

winter dry bulb: 16°F
summer dry bulb: 93°F
relative humidity: 46%

INTERIOR DESIGN CONDITIONS

winter dry bulb: 70°F
summer dry bulb: 74°F
relative humidity: 50%

BUILDING HEATING LOAD: BLOCK LOAD = 10 MBH

BUILDING COOLING LOAD: BLOCK LOAD = 14.4 MBH (12 TONS)

MECHANICAL SPACING CONDITIONING SYSTEM

Unitary:

description of unit:
heating efficiency:
cooling efficiency:
heat output of unit:
cooling output of unit:

SEE SCHEDULES ON SHEET(S) THIS SHEET

Boiler: NA
total boiler capacity, If oversized state reason.

Chiller: NA
total chiller capacity, If oversized state reason.

LIST EQUIPMENT EFFICIENCIES: SEE SCHEDULES ON SHEET(S) THIS SHEET

EQUIPMENT SCHEDULES WITH MOTORS (MECHANICAL SYSTEMS)

motor horsepower:
number of phases:
minimum efficiency:
motor type:
of poles:

SEE SCHEDULES ON SHEET(S) THIS SHEET

DESIGNER STATEMENT

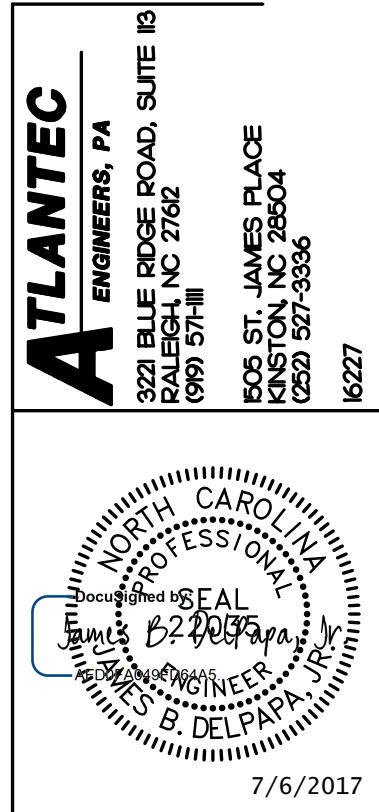
To the best of my knowledge and belief, the design of this building complies with the mechanical systems, service systems and equipment requirements of the North Carolina State Energy Code.

SIGNED: James B. Delapapa, Jr.
ATTEST: James B. Delapapa, Jr., PE

NAME: James B. Delapapa, Jr., PE

TITLE: Professional Engineer

New Shell Building
Heritage Park West
3125 Rogers Road
Wake Forest, North Carolina



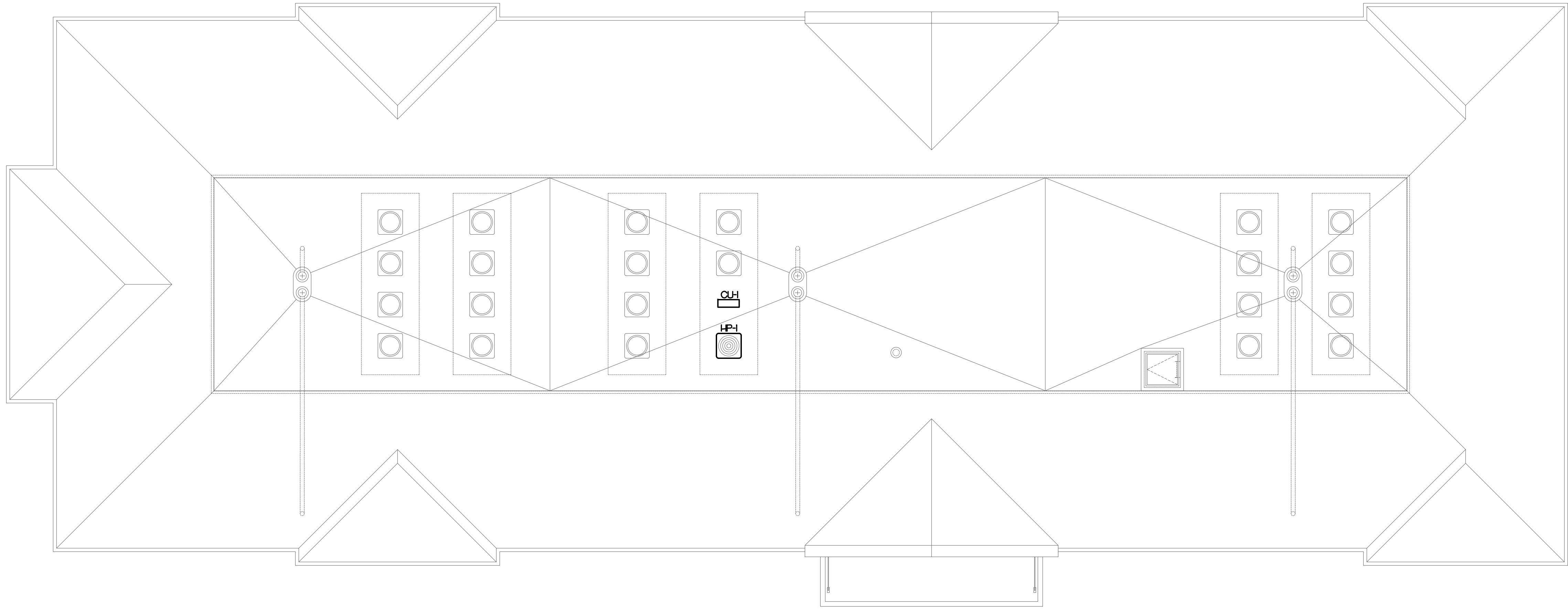
MAURER ARCHITECTURE

115.5 EAST HARGETT STREET, SUITE 300
RALEIGH, NC 27601
TEL. 919-829-4969 FAX. 919-829-0860

DATE 12.02.16
DR. WSM
CH. JBD
PROJ. # 16096
REVISIONS DATE

MECHANICAL
NOTES, LEGENDS,
AND SCHEDULES

M2.1



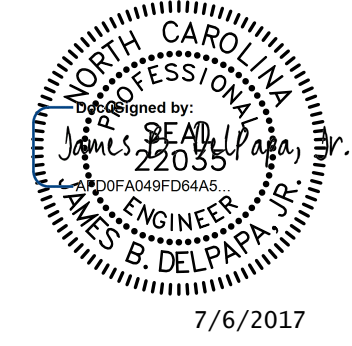
I
MJ MECHANICAL ROOF PLAN
SCALE: 1/8" = 1'-0"

MAURER ARCHITECTURE
115.5 EAST HARGETT STREET, SUITE 300
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DATE	12.02.16
DR.	WSM
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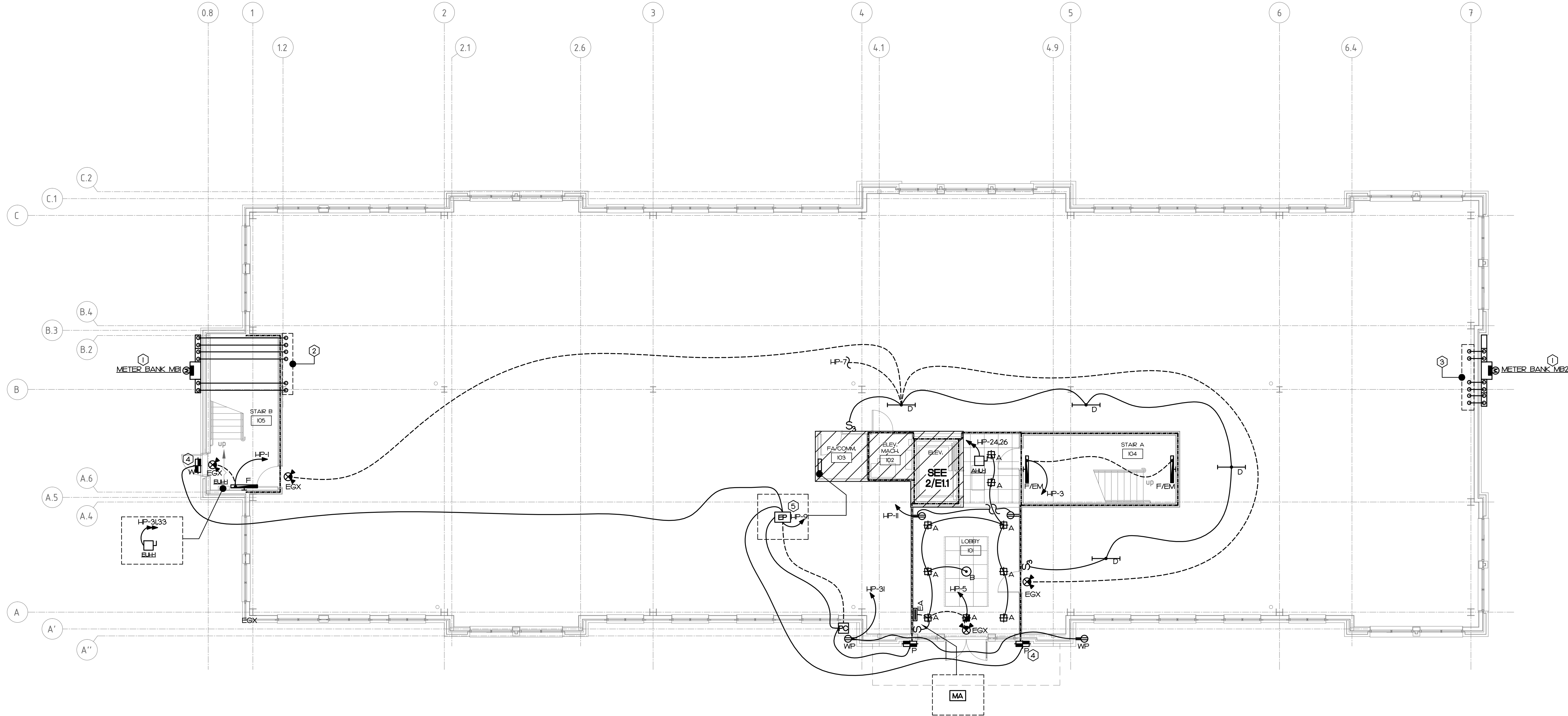
MECHANICAL
ROOF PLAN

M2.2



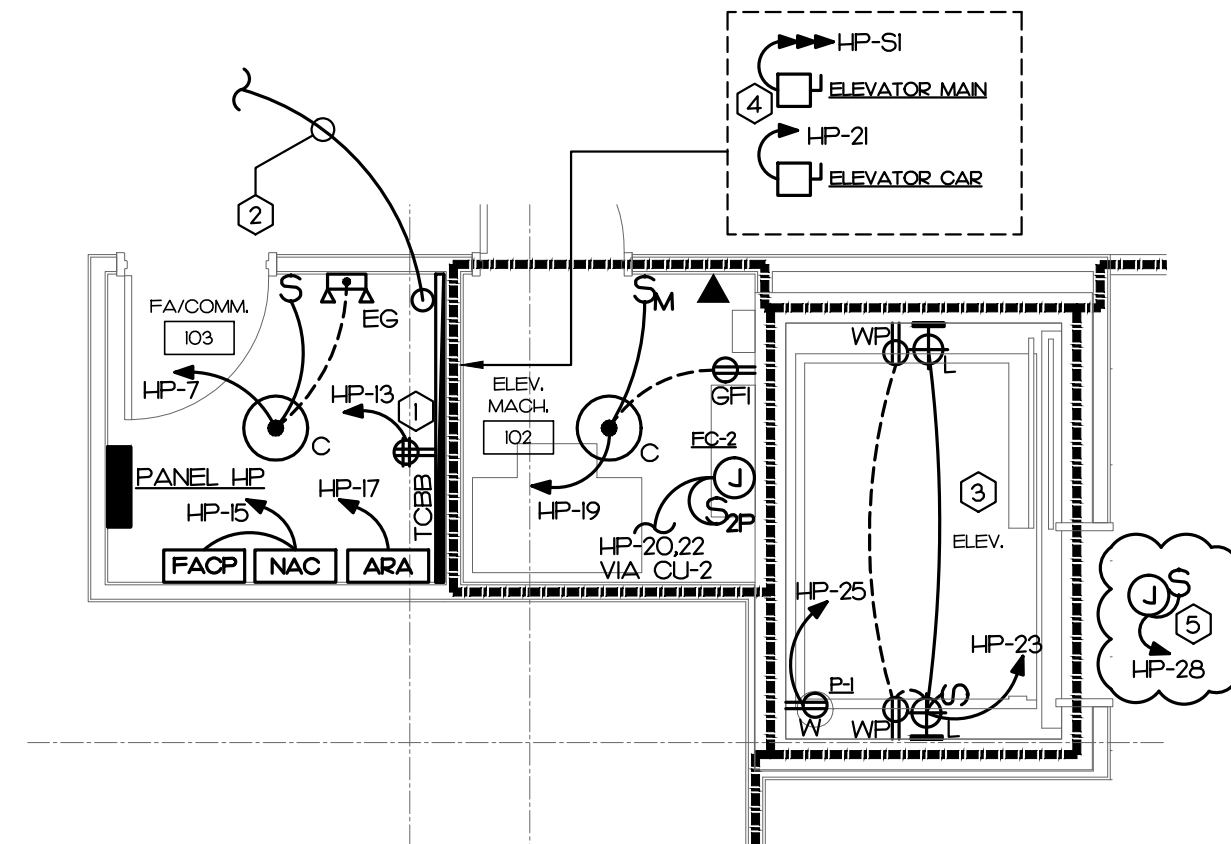
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806 ST. JAMES PLACE
RALEIGH, NC 27604
(919) 571-3333
16227

New Shell Building
Heritage Park West
3125 Rogers Road
Wake Forest, North Carolina



KEY NOTES

- ① SERVICE METER BANK.
SEE POWER RISER DIAGRAM FOR DETAIL.
- ② 3 1/2" CONDUITS FROM METER BANK 1 FOR FUTURE TENANTS.
• RUN UNDER SLAB TO OTHER SIDE OF STAIR B TOWER WALL AND STUB 12" FROM 1ST FLOOR CEILING DECK. DO NOT PENETRATE STAIR B TOWER WALL.
• FIELD VERIFY TERMINATED LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
• TOTAL OF 6.
• SEE POWER RISER DIAGRAM FOR DETAIL.
- ③ 3 1/2" CONDUITS FROM METER BANK 2 FOR FUTURE TENANTS.
• RUN UNDER SLAB TO INSIDE BUILDING WALL AND STUB 12" FROM 1ST FLOOR CEILING DECK. FIELD VERIFY TERMINATED LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
• TOTAL OF 6.
• SEE POWER RISER DIAGRAM FOR DETAIL.
- ④ EXTERIOR FIXTURE TO BE USED AS EXTERIOR EMERGENCY LIGHT. CONTROLLED BY EMERGENCY POWER UNIT PER KEY NOTE # 5.
- ⑤ EMERGENCY POWER UNIT FOR EXTERIOR EMERGENCY LIGHT.
• CONNECT EMERGENCY CIRCUIT UNSWITCHED TO HOME RUN CIRCUIT.
• CONNECT NORMAL CIRCUIT VIA PHOTOCELL.
• LOCATE UNIT NEAR PANEL HP.



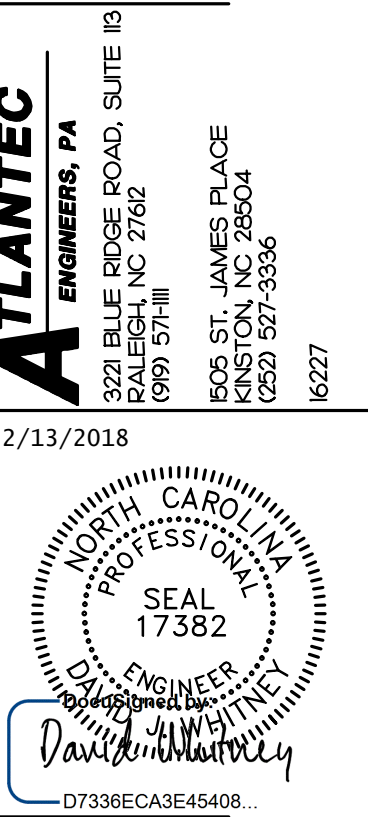
KEY NOTES

- ① BUILDING COMMUNICATION SERVICE BOARD (DEMARC)
• PROVIDE 3/4" THICK FIRE PROOF PLYWOOD TO COVER THIS WALL.
• PROVIDE GROUND BAR AND H-KG CU IN 1/2" TO MAIN GROUNDING AT METER BANK MB2.
• MOUNT RECEPTACLE ON BOARD TO ACCOMMODATE EQUIPMENT.
- ② COMMUNICATION SERVICE CONDUITS:
• PROVIDE 2-4" EMPTY CONDUITS RUN UNDER SLAB AND GROUND TO PROPERTY LINE PER COMMUNICATION SERVICE COMPANY. PROVIDE WITH PULL WIRE.
• PROVIDE CONDUIT SEALING AFTER UTILITY HAS INSTALLED THE SERVICE CABLES AS REQUIRED.
- ③ ELEVATOR PIT NOTES:
• LOCATE SWITCH FOR PIT LIGHTS AND RECEPTACLES ADJACENT TO PIT ACCESS LADDER.
• FIELD COORDINATE LOCATION OF SLUMP PUMP RECEPTACLE WITH F.C.
• MOUNT PIT LIGHT AND RECEPTACLE 18" ABOVE PIT FLOOR.
- ④ 200A, 240VAC, 3P NEMA 1 FUSEBLE DISCONNECT WITH LOCK CAPABILITY.
- ⑤ POWER FOR FIRE SHUTTER. FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS WITH ARCHITECT.

1 1ST FLOOR ELECTRICAL PLAN
E11 SCALE: 1/8" = 1'-0"

2 ENLARGED ELECTRICAL PLAN
E11 SCALE: 1/4" = 1'-0"

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Heritage Park West
3125 Rogers Road
Wake Forest, North Carolina



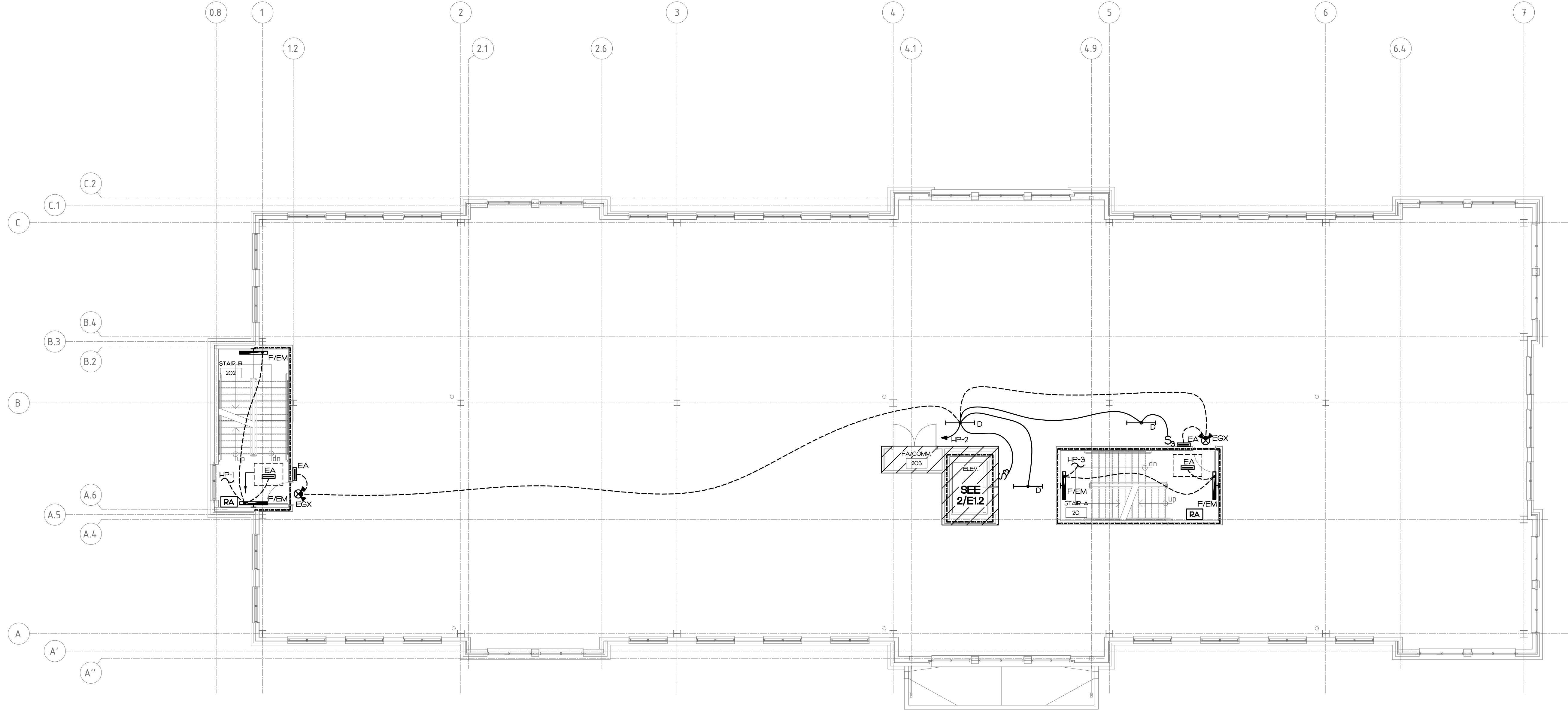
MAURER ARCHITECTURE
115.5 EAST HARGETT STREET, SUITE 300
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DATE	07.06.17
DR.	SP
CH.	DJW
PROJ. #	16096
REVISIONS	DATE
Permit Comments	02.08.18

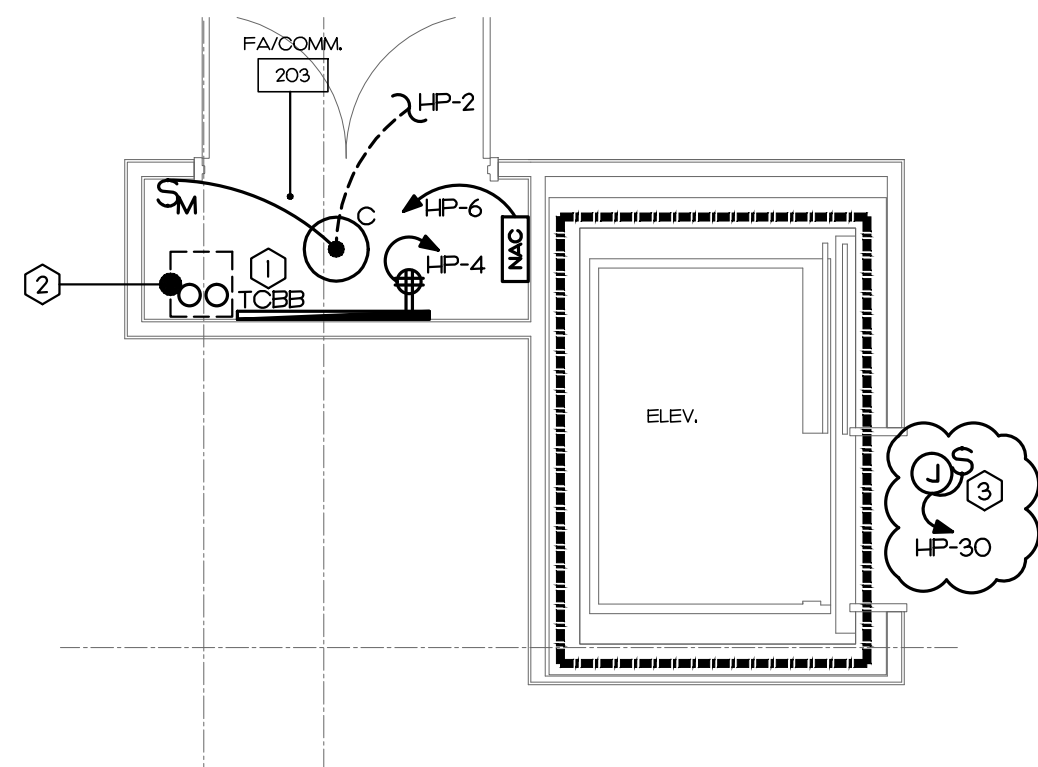
1ST FLOOR
ELECTRICAL PLAN

E1.1

1 2ND FLOOR ELECTRICAL PLAN
E1.2 SCALE: 1/8" = 1'-0"



2 ENLARGED ELECTRICAL PLAN
E1.2 SCALE: 1/4" = 1'-0"



- KEY NOTES**
- 1 FLOOR COMMUNICATION SERVICE BOARD.
 - PROVIDE 48" X 96" 3/4" THICK FIRE PROOF PLYWOOD.
 - PROVIDE GROUND BAR AND 1-#6G CU IN 1/2" TO GROUND BAR AT BUILDING COMMUNICATION SERVICE BOARD IN FA/COMM. #103.
 - MOUNT RECEPTACLE ON BOARD TO ACCOMMODATE EQUIPMENT.
 - 2 COMMUNICATION SLEEVES:
 - AT FLOOR, PROVIDE 2 - 4" SLEEVES TO ABOVE BUILDING COMMUNICATION SERVICE BOARD IN FA/COMM. #103.
 - SEALING BY OTHERS.
 - 3 POWER FOR FIRE SHUTTER, FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS WITH ARCHITECT.

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2/13/2018
NORTH CAROLINA
PROFESSIONAL
SEAL 17382
DAVID M. MAURER
D7336ECA3E45408

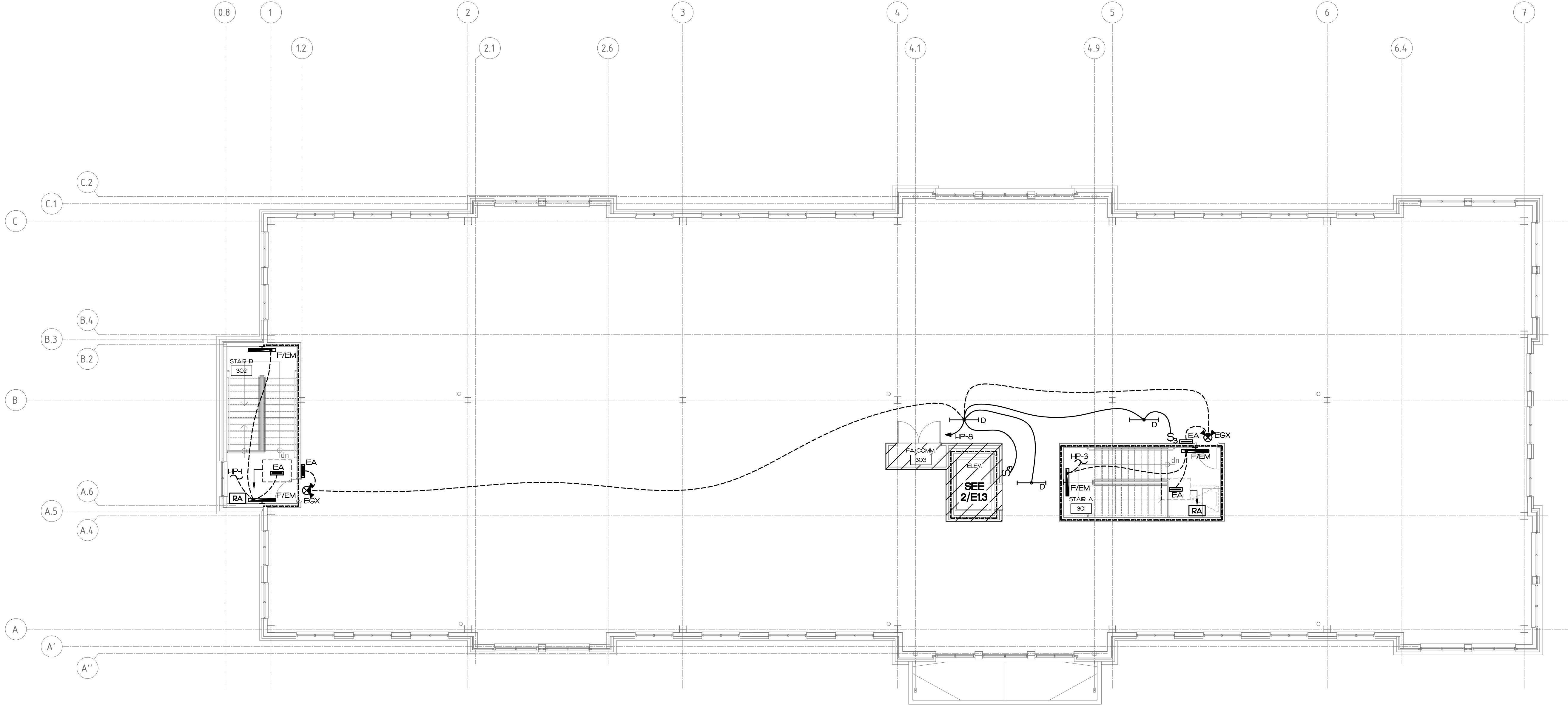
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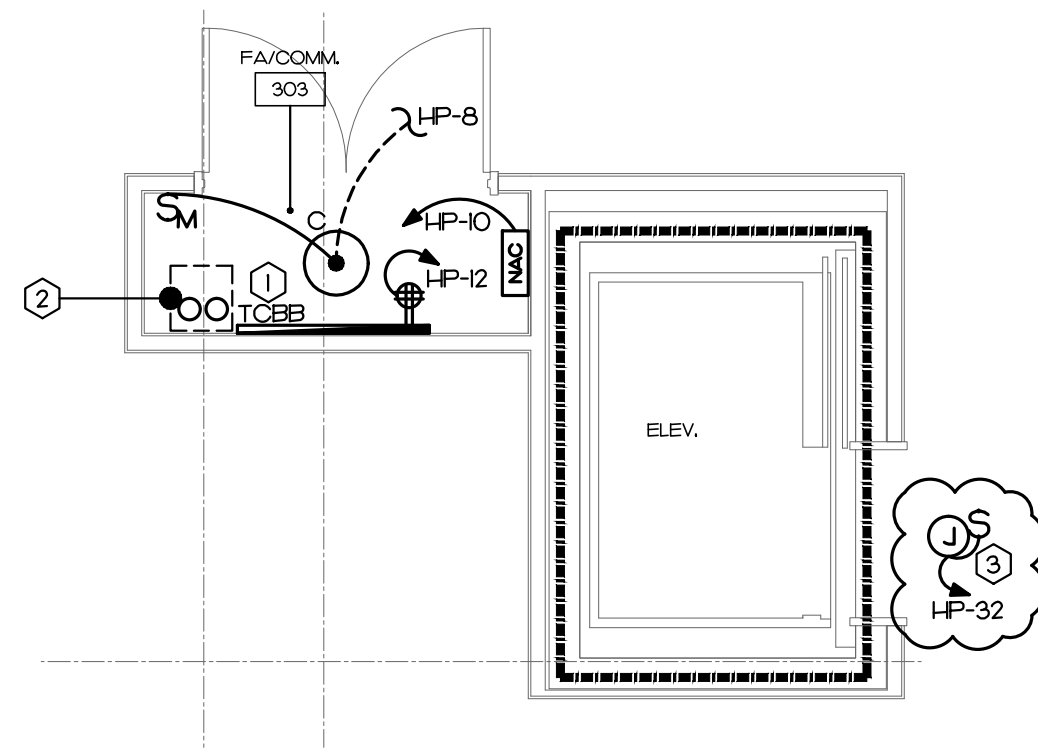
2ND FLOOR
ELECTRICAL PLAN

E1.2

1 3RD FLOOR ELECTRICAL PLAN
E1.3 SCALE: 1/8" = 1'-0"



2 ENLARGED ELECTRICAL PLAN
E1.3 SCALE: 1/4" = 1'-0"



KEY NOTES

- FLOOR COMMUNICATION SERVICE BOARD.
 - PROVIDE 48" X 96" 3/4" THICK FIRE PROOF PLYWOOD.
 - PROVIDE GROUND BAR AND 1-866 CU IN 1/2" TO GROUND BAR AT FLOOR COMMUNICATION SERVICE BOARD IN FA/COMM. #203.
 - MOUNT RECEPTACLE ON BOARD TO ACCOMMODATE EQUIPMENT.
- COMMUNICATION SLEEVE:
 - AT FLOOR, PROVIDE 2 - 4" SLEEVES TO ABOVE FLOOR COMMUNICATION SERVICE BOARD IN FA/COMM. #203.
 - SEALING BY OTHERS.
- POWER FOR FIRE SHUTTER, FIELD COORDINATE EXACT LOCATION AND REQUIREMENTS WITH ARCHITECT.

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2/13/2018

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SEAL
17382
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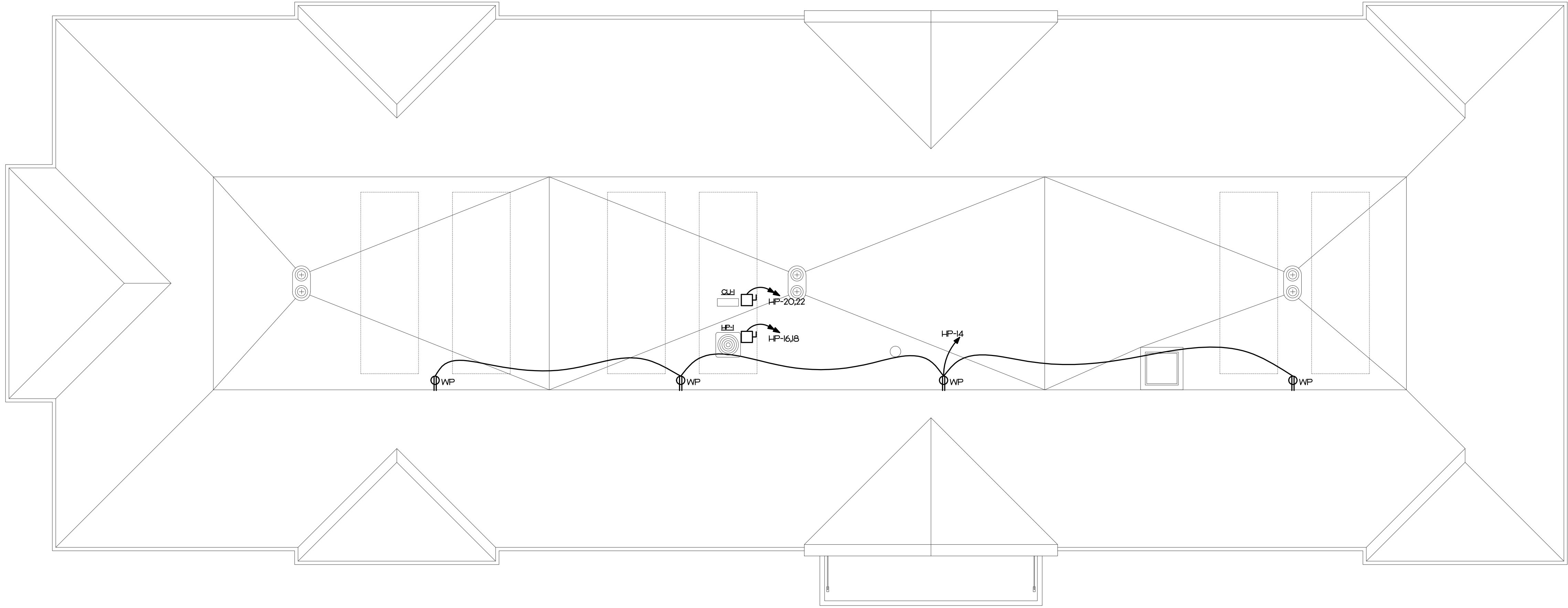
MAURER ARCHITECTURE

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DATE	07.06.17
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Permit Comments	02.08.18

3RD FLOOR
ELECTRICAL PLAN

E1.3

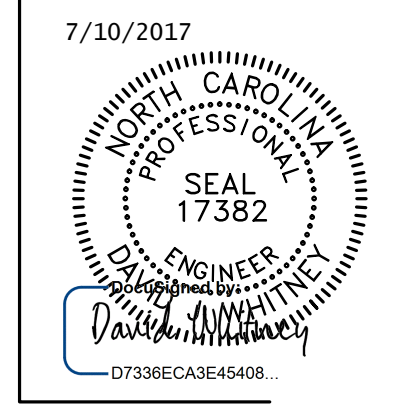


DATE	07.06.17
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CH.	DJW
PROJ. #	16096
REVISIONS	DATE

ROOFTOP
ELECTRICAL PLAN

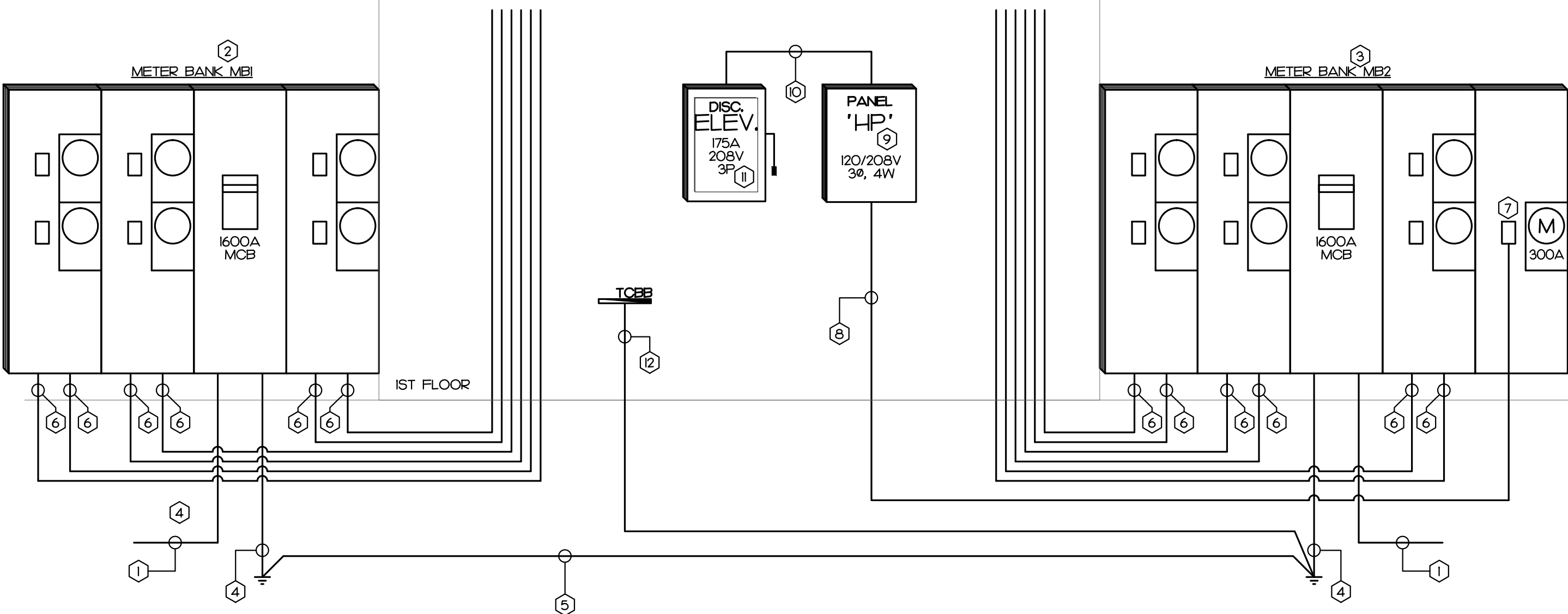
E1.4

MAURER ARCHITECTURE
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New Shell Building
Heritage Park West
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Wake Forest, North Carolina



KEY NOTES

- 120/208V 3P, 4W UNDERGROUND SERVICE BY UTILITY. E.C. SHALL TRENCH GROUND PER UTILITY INSTRUCTION.
- SERVICE METER BANK MB1
 - 1600A MCB. PROVIDE WITH UTILITY CONNECTION TERMINAL KIT.
 - NEMA 3R ENCLOSURE.
 - MIN. AIC RATING OF 69KA.
 - 6 - 400A, 3 PHASE METER/BREAKER UNITS.
 - UL LISTED FOR USED AS SERVICE EQUIPMENT.
 - LABEL "SERVICE #1 OF 2"
 - E.C. SHALL FIELD VERIFY AVAILABLE MAXIMUM FAULT CURRENT WITH UTILITY AND PROVIDE LABEL INDICATING THE CURRENT ON METER BANK PER NEC 10.24(A).
- SERVICE METER BANK MB2
 - 1600A MCB. PROVIDE WITH UTILITY CONNECTION TERMINAL KIT.
 - NEMA 3R ENCLOSURE.
 - MIN. AIC RATING OF 69KA.
 - 7 - 400A, 3 PHASE METER/BREAKER UNITS.
 - UL LISTED FOR USED AS SERVICE EQUIPMENT.
 - LABEL "SERVICE #2 OF 2"
 - E.C. SHALL FIELD VERIFY AVAILABLE MAXIMUM FAULT CURRENT WITH UTILITY AND PROVIDE LABEL INDICATING THE CURRENT ON METER BANK PER NEC 10.24(A).
- GROUNDING ELECTRODE CONDUCTORS PER NEC 250.
 - #3/0G CU IN 3" TO BUILDING STEEL AND C.W. MAIN.
 - #4G CU IN 1" TO REINFORCE STEEL AT CONCRETE FOOTING.
 - #6S CU IN 3" TO 2 DRIVEN RODS.
- PROVIDE #3/0G CU TIE BETWEEN 2 SERVICES PER NEC 250.
- FUTURE TENANT FEEDER CONDUIT.
 - 3 1/2" RUN UNDER SLAB FROM METER BANK TO INSIDE BUILDING AND STUB 12" FROM 1ST FLOOR CEILING DECK.
- METER/BREAKER UNIT FOR HOUSE LOAD. PROVIDE 300A/3P BREAKER. MIN. AIC RATING OF 69KA.
- 4-#350KCMIL, 1-#4G IN 3 1/2".
- HOUSE PANEL BOARD. SEE PANEL SCHEDULE FOR DETAIL.
- ELEVATOR FEEDER. SEE PANEL SCHEDULE FOR DETAIL.
- ELEVATOR DISCONNECT. SEE PLAN FOR DETAIL.
- #6G CU IN 1/2" TO GROUND BAR AT DEMARC LOCATED IN FA/COMM. #103.

METER BANK MB1 LOAD STATEMENT

FUTURE TENANT (6 TENANTS)	398.36	KVA
CURRENT AT 208V 3P	1107	AMPS.

METER BANK MB2 LOAD STATEMENT

FUTURE TENANT (6 TENANTS)	398.36	KVA
PANEL HP	58.47	KVA
TOTAL DEMAND LOAD	456.83	KVA
CURRENT AT 208V 3P	1269	AMPS

TENANT LOAD ESTIMATION

APPROX. AREA	2650	SQ. FT.
GENERAL LIGHTING PER NEC 220.12	3.5	VA/SQ.FT.
GENERAL LIGHTING WITH CONTINUOUS FACTOR	11.59	KVA
RECEPTACLE	2.65	KVA
MISC.	2.65	KVA
HVAC (HEAT PUMP , 300 SQ.FT./TON)	45	KVA
WATER HEATER	4.5	KVA
TOTAL	66.39	KVA
CURRENT AT 208V 3P	184	AMPS

PANEL HP														120/208V, 3 PHASE, 4 WIRE											
CKT	DESCRIPTION		KVA	C	G	V	CB	CKT	CKT	CB	V	G	C	KVA	DESCRIPTION		CKT								
1	LIGHTS	STAIR B	0.0	1/2	12	12	20	1	2	20	12	12	1/2	0.0	203	LIGHTS	2								
3	LIGHTS	STAIR A	0.0	1/2	12	12	20	3	4	20	12	12	1/2	0.0	203	COMMUNICATION	4								
5	LIGHTS	LOBBY	0.0	1/2	12	12	20	5	6	20	12	12	1/2	0.0	203	NAC	6								
7	LIGHTS	103	0.0	1/2	12	12	20	7	8	20	12	12	1/2	0.0	303	LIGHTS	8								
9	LIGHTS	EXTERIOR	0.0	1/2	12	12	20	9	10	20	12	12	1/2	0.0	303	NAC	10								
11	REC	103	0.4	1/2	12	12	20	11	12	20	12	12	1/2	0.0	303	COMMUNICATION	12								
13	COMMUNICATION		0.5	1/2	12	12	20	13	14	20	12	12	1/2	0.0	ROOFTOP	REC	14								
15	FACP		0.5	1/2	12	12	20	15	16	20	12	12	1/2	1.0	ROOFTOP	HP-1	16								
17	AREA OF RESCUE		0.4	1/2	12	12	20	17	18	2P	12	--	--	1.0			18								
19	LTS/REC	102	0.2	1/2	12	12	20	19	20	15	12	12	1/2	1.2	ROOFTOP	CU-2	20								
21	ELEV. CAR	102	0.5	1/2	12	12	20	21	22	2P	12	--	--	1.2			22								
23	LTS/REC	ELEV. PIT	0.4	1/2	12	12	20	23	24	30	10	3/4	2.2		AHU-1	24									
25	P-1	ELEV. PIT	1.2	1/2	12	12	20	25	26	2P	10	--	--	2.6			26								
27	EUH-1	STAIR A	2.0	3/4	10	10	25	27	28	20	12	12	1/2	0.5		FIRE SHUTTER	28								
29			2.0	--	--	10	2P	29	30	20	12	12	1/2	0.5		FIRE SHUTTER	30								
31	REC	EXTERIOR	0.4	1/2	12	12	20	31	32	20	12	12	1/2	0.5		FIRE SHUTTER	32								
33	SPACE ONLY		0.0	--	--	--	--	33	34	--	--	--	--	0.0		SPACE ONLY	34								
35	SPACE ONLY		0.0	--	--	--	--	35	36	--	--	--	--	0.0		SPACE ONLY	36								
S1	ELEVATOR		10.6	2	6	2/0	17S	S1	S2	--	--	--	--	0.0		SPACE ONLY	S2								
	30 HP		10.6	--	--	2/0	3P			--	--	--	--	0.0											
			10.6	--	--	2/0	--			--	--	--	--	0.0											
DESCRIPTION				CONNECTED KVA	DEMAND FACTOR	DEMAND KVA	400 A MINIMUM BUS SIZE MAIN LUGS ONLY 22 K MINIMUM AIC RATING										SURFACE MOUNTING NEAR 1 ENCLOSURE GROUND BAR								
CONT. LOAD				0.60	125%	0.75																			
RECEPTACLE				1.26	100%/50%	1.26																			
MTRS/COILS				37.88	100%	37.88																			
HEATS				7.80	100%	7.80																			
WATER HEATER				0.00	100%	0.00	NOTES																		
EQUIPMENT				2.86	100%	2.86	1. SQUARE D NO SUBFEED BREAKER S1 AND SUBFEED SPACE S2.										CONNECTED LOADS								
KITCHEN EQUIP.				0.00	65%	0.00											PHASE A: 16.7 KVA								
SPECIAL EQ.				0.00	100%	0.00											PHASE B: 16.3 KVA								
25% OF LARGEST HVAC/MOTOR						7.92											PHASE C: 17.4 KVA								
TOTAL DEMAND						58.47											TOTAL: 50.4 KVA								
						5.											DEMAND 162 AMP								

LIGHT FIXTURE SCHEDULE

TYPE	DESCRIPTION	CATALOG	ELECTRICAL DATA	NOTES
A	6" SQUARE RECESSED LED CAN 5000 LUMEN	LITHONIA ¹ LDN6SQ-40/15-L56-AR-MVOLT-E2IO	1500 LUMEN 4000K LED ELECTRONIC DRIVER 191 WATTS - 25 VA, 120-277V	
B	DECORATIVE PENDANT	TO BE SELECTED BY ARCHITECT	300W MAX. 300 WATTS - 300 VA, 120V	
C	18" SURFACE LED FIXTURE 1900 LUMEN	LITHONIA ¹ FMML-18-9-40	1900 LUMEN 4000K LED ELECTRONIC DRIVER 28 WATTS - 35 VA, 120V	
D (1)	4 FT. FL. STRIP LIGHT 2 - 32W 18	LITHONIA ¹ C-2-32-MVOLT-GEBOIS	(2) 32W ELECTRONIC BALLAST 64 WATTS - 65 VA, 120/277V	
F	4 FT. WALL MOUNTED LED FIXTURE 4000 LUMEN	LITHONIA ¹ WL4-40L-EZH-IP840	4000 LUMEN 4000K LED ELECTRONIC DRIVER 395 WATTS - 45 VA, 120-277V	
F/EM	4 FT. WALL MOUNTED LED FIXTURE WITH BATTERY BACKUP	LITHONIA ¹ WL4-40L-EZH-IP840-ELI4	4000 LUMEN 4000K LED ELECTRONIC DRIVER 395 WATTS - 45 VA, 120-277V	
L	WALL MOUNTED VAPOR TIGHT LED 1700 LUMEN	RAB ¹ VXBELED26NDG	1700 LUMEN 4000K LED ELECTRONIC DRIVER 26 WATTS - 30 VA, 120-277V	
P	DECORATIVE EXTERIOR WALL SCONCE 2000 LUMEN LISTED FOR WET LOCATION AND OF	SCOTT ¹ S3858-**-L16-35	2000 LUMEN 3500K LED ELECTRONIC DRIVER 16 WATTS - 20 VA, 120-277V	** FINISHED PER ARCHITECT INSTRUCTION. FIELD VERIFY MOUNTING HEIGHT WITH ARCHITECT.
W	EXTERIOR WALL MOUNT FIXTURE CUT-OFF, WIDE DISTRIBUTION LISTED FOR WET LOCATION AND OF 2 SETS OF LED MODULES.	LITHONIA ¹ WST-LED-P2-40K-VW-MVOLT-**-	3000 LUMEN 4000K LED ELECTRONIC DRIVER 25 WATTS - 26 VA, 120-277V	** FINISHED COLOR PER ARCHITECT INSTRUCTION. FIELD VERIFY MOUNTING HEIGHT WITH ARCHITECT.
EG	EMERGENCY LIGHT	LITHONIA ¹ ELMT-W-LP06VS	1000 LUMEN TOTAL LED 14.2 WATTS - 15 VA, 120/277V	
EGX	EMERGENCY LIGHT WITH EXIT	LITHONIA ¹ LHOM-LED-R	(2) 15W LED 9.6V, LED FOR EXIT. 5 WATTS - 5 VA, 120/277V	
EA	"AREA OF RESCUE" ILLUMINATED SIGN WITH BATTERY BACKUP	LITHONIA ¹ LQMP-W-H-G-120/277-EL-N-SW03	LED FOR SIGN 5 WATTS - 5 VA, 120/277V	

KEY NOTES

- ① PROVIDE WITH QUICK DISCONNECT PER NEC 410.130 (GX).

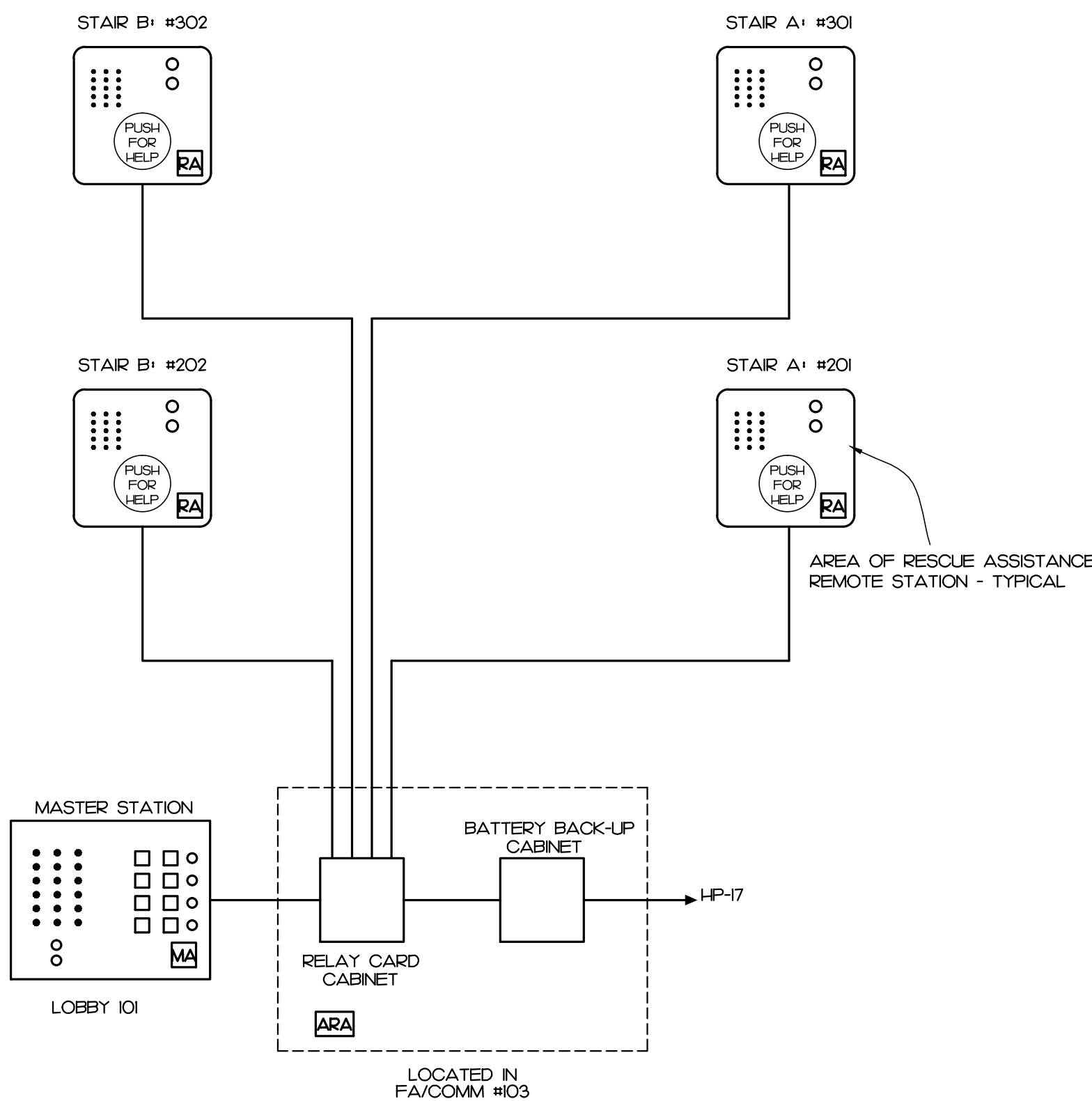
NOTES:

- SEE ARCHITECTURAL PLAN FOR MOUNTING LOCATION AND HEIGHT.
FIELD COORDINATE MOUNTING HEIGHT WITH ARCHITECT. IF NOT SHOWN ON ARCHITECTURAL PLAN.
- E.C. SHALL SUBMIT CATALOG TO ARCHITECT FOR APPROVAL PRIOR PURCHASE ANY.
FINISH COLOR/TIM SUBJECT TO BE CHANGED PER ARCHITECT.
- FIELD VERIFY FLUORESCENT LAMP COLOR WITH ARCHITECT PRIOR PURCHASE ANY.

1 E2.2

FIXTURE SCHEDULE

SCALE: NO SCALE



2 E2.2

AREA OF RESCUE ASSISTANCE DIAGRAM

SCALE: NOT TO SCALE

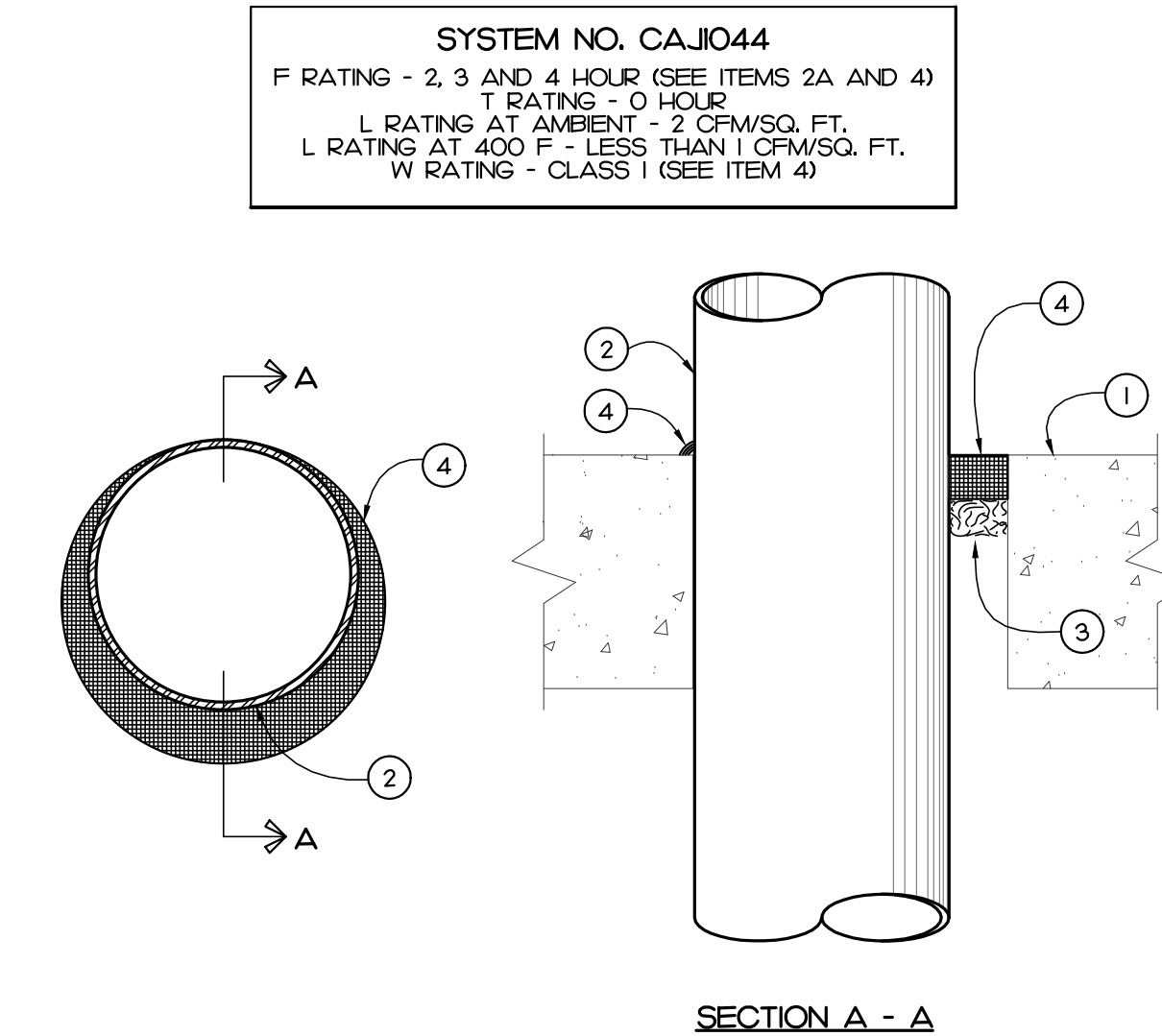
NOTES:

- SEE FLOOR PLANS FOR QUANTITY AND LOCATION OF ALL EQUIPMENT.
- ALL WIRING SHALL BE PER MANUFACTURERS SPECIFICATIONS.
- THE SYSTEM SHALL COMPLY WITH SECTIONS 4.3.1.4 AND 4.3.1.5 OF THE AMERICANS WITH DISABILITIES ACT.
- ALL WIRING SHALL BE IN CONDUIT.
- AREA OF RESCUE ASSISTANCE SYSTEM SHALL BE UL LISTED FOR USE AS AN AREA OF RESCUE ASSISTANCE SYSTEM.
- AREA OF RESCUE ASSISTANCE SYSTEM INSTALLATION SHALL BE BY A LICENSED CONTRACTOR.
- SYSTEM WIRING SHALL BE IN ACCORDANCE WITH GOOD ENGINEERING PRACTICES AS ESTABLISHED BY EIA AND NEC. WIRING SHALL MEET ALL ESTABLISHED STATE AND LOCAL ELECTRICAL CODES. ALL WIRING SHALL TEST FREE FROM SHORTS AND GROUNDED AS SPECIFIED.
- MASTER STATION AND AREA STATION MOUNTING SHALL BE IN ACCORDANCE WITH ADA RECOMMENDATIONS AND SPECIFICATIONS.
- AN ILLUMINATED SIGN DESIGNATED AREA RESCUE STATION SHALL BE INSTALLED AT ABOVE EACH LOCATION WITH MASTER OR REMOTE STATION AS SHOWN IN THE DRAWINGS.
- MANUFACTURER CONTACT INFORMATION:
HOUSING DEVICES, INC.
407 R. MYSTIC AVE., MEDFORD, MA 0255
TEL. (800) 392-5200
- THE SYSTEM SHALL BE AN "ADA-100-ECS" BY HOUSING DEVICES, INC.
- ALL PARTS AND ACCESSORIES SHALL BE MANUFACTURED OR SPECIFIED BY HOUSING DEVICES, INC. TO BE USED WITH "ADA-100-ECS" SYSTEM.
EQUIVALENT SYSTEMS ARE ACCEPTABLE.
- REMOTE STATION AT STAIR 1: #203 AND STAIR 3: #204 SHALL BE WEATHERPROOF TYPE.

3 E2.2

FIRE PENETRATION (TYPICAL)

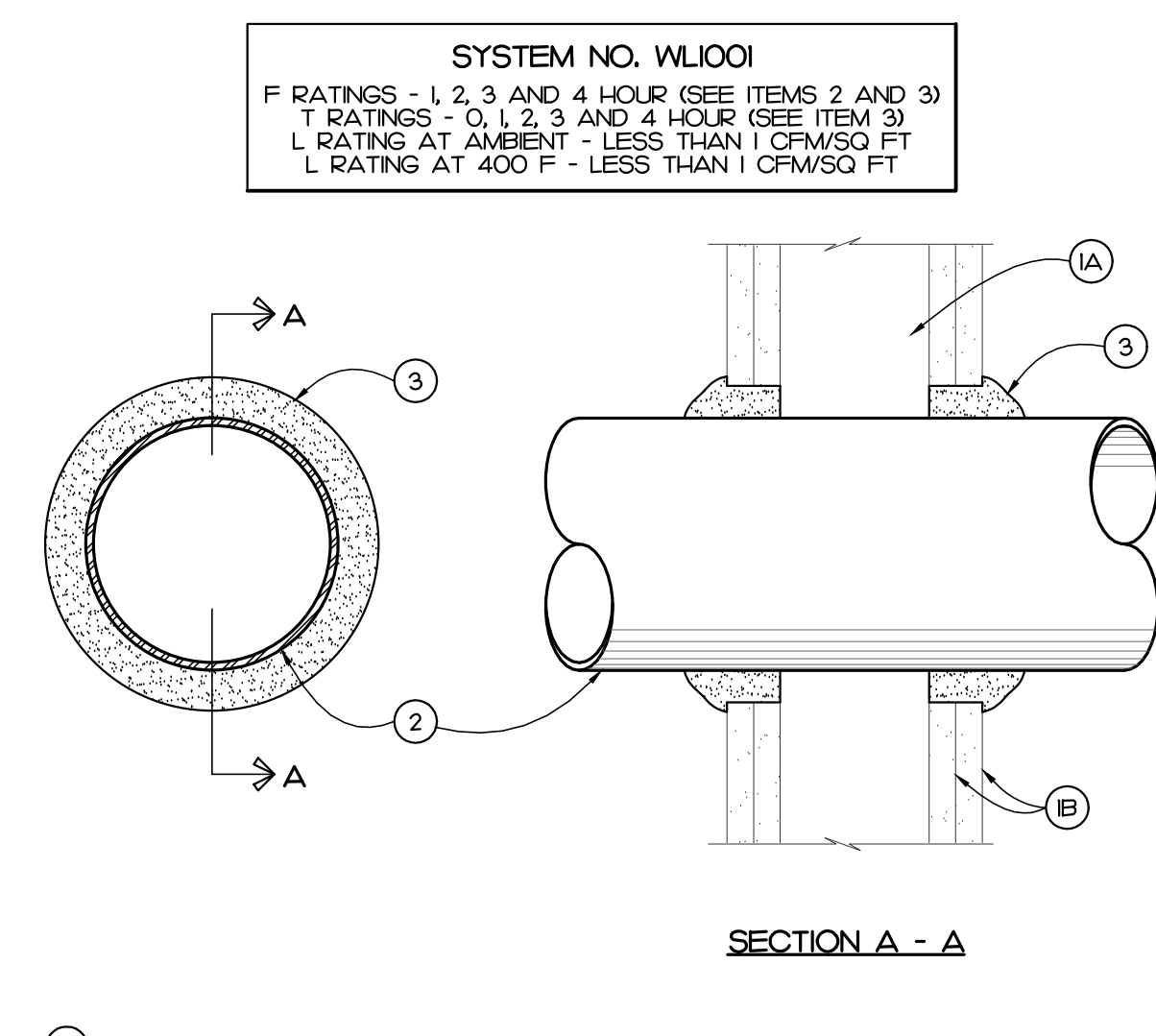
SCALE: NOT TO SCALE



- FLOOR OR WALL ASSEMBLY** - LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE, EXCEPT AS NOTED IN TABLE UNDER ITEM 4, MINIMUM THICKNESS OF SOLID CONCRETE FLOOR OR WALL ASSEMBLY IS 4 1/2" FLOOR MAY ALSO BE CONSTRUCTED OF ANY MINIMUM 6" THICK UL CLASSIFIED HOLLOW CORE PRECAST CONCRETE UNITS*. WHEN FLOOR IS CONSTRUCTED OF HOLLOW CORE PRECAST CONCRETE UNITS, PACKING MATERIAL (ITEM 3) AND CALK FILL MATERIAL (ITEM 4) TO BE INSTALLED SYMMETRICALLY ON BOTH SIDES OF FLOOR, FLUSH WITH FLOOR SURFACE. WALL ASSEMBLY MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAXIMUM DIAMETER OF OPENING IS IN SOLID LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR IS 32" MAXIMUM DIAMETER OF OPENING IN FLOOR CONSTRUCTED OF HOLLOW-CORE PRECAST CONCRETE UNITS IS 7". SEE CONCRETE BLOCKS (CAZT) AND PRECAST CONCRETE UNITS (OFTV) CATEGORIES IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
- STEEL SLEEVE** (OPTIONAL, NOT SHOWN) - MAXIMUM 16" ID (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL SLEEVE CAST OR GROUTED INTO FLOOR OR WALL ASSEMBLY. SLEEVE MAY EXTEND A MAXIMUM OF 2" ABOVE TOP OF FLOOR OR BEYOND EITHER SURFACE OF WALL, MAXIMUM 16" ID (OR SMALLER) MINIMUM 0.028 WALL THICKNESS (OR HEAVIER) GALVANIZED STEEL SLEEVE CAST OR GROUTED INTO FLOOR OR WALL ASSEMBLY. SLEEVE MAY EXTEND A MAXIMUM OF 1/2" BEYOND EITHER SURFACE OF FLOOR OR WALL.
- THROUGH PENETRANTS** - ONE METALLIC PIPE, CONDUIT OR TUBING TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. MAXIMUM ANNULAR SPACE BETWEEN PIPE, CONDUIT OR TUBING AND EDGE OF THROUGH OPENING OR SLEEVE IS DEPENDENT ON THE PARAMETERS SHOWN IN ITEM 4. MINIMUM ANNULAR SPACE BETWEEN PIPE OR CONDUIT AND EDGE OF THROUGH OPENING IS 0" (POINT CONTACT). PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:
 - STEEL PIPE** - NOMINAL 30" DIAMETER (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
 - IRON PIPE** - NOMINAL 30" DIAMETER (OR SMALLER) CAST OR DUCTILE IRON PIPE.
 - CONDUIT** - NOMINAL 6" DIAMETER (OR SMALLER) RIGID STEEL CONDUIT.
 - CONDUIT** - NOMINAL 4" DIAMETER (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING.
 - COPPER** - TUBING NOMINAL 6" DIAMETER (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBE.
 - COPPER PIPE** - NOMINAL 6" DIAMETER (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.
- PACKING MATERIAL** - POLYETHYLENE BACKER ROD OR NOMINAL 1" THICKNESS OF TIGHTLY-PACKED MINERAL WOOL BATT OR GLASS FIBER INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF CALK FILL MATERIAL (ITEM 4).
- FILL, VOID OR CAVITY MATERIAL*** - CALK OR SEALANT - APPLIED TO FILL THE ANNULAR SPACE FLUSH WITH TOP SURFACE OF FLOOR. IN WALL ASSEMBLIES, REQUIRED CALK THICKNESS TO BE INSTALLED SYMMETRICALLY ON BOTH SIDES OF WALL, FLUSH WITH WALL SURFACE. AT POINT CONTACT LOCATION BETWEEN PENETRANT AND SLEEVE OR BETWEEN PENETRANT AND CONCRETE, A MINIMUM 1/4" DIAMETER BEAD OF CALK SHALL BE APPLIED AT TOP SURFACE OF FLOOR AND AT BOTH SURFACES OF WALL. THE HOURLY F RATINGS AND THE MINIMUM REQUIRED CALK THICKNESSES ARE DEPENDENT UPON A NUMBER OF PARAMETERS, AS SHOWN IN THE FOLLOWING TABLE:

MINIMUM FLOOR OR WALL THICKNESS INCHES	NOMINAL PIPE, TUBE OR CONDUIT DIAMETER INCHES	MAXIMUM ANNULAR SPACE INCHES	MINIMUM CALK THICKNESS INCHES	F RATING
2 1/2	1/2 - 1/2	3/8	1/2	2
2 1/2	1/2 - 1/2	3 1/4	1	2
4 1/2	1/2 - 6	1 3/8	1/4(a)	2
4 1/2	1/2 - 1/2	1 1/4	1/2	3
4 1/2	1/2 - 20	2	1	3
4 1/2	1/2 - 20	2	1	3
4 1/2	1/2 - 1/2	3 1/4	1	3
4 1/2	22 - 30	2	2	3
5 1/2	1/2 - 6	1 3/8	1 (b)	4

- (a) MINIMUM 2" THICKNESS OF MINERAL WOOL BATT INSULATION REQUIRED IN ANNULAR SPACE.
(b) MINIMUM 1" THICKNESS OF MINERAL WOOL BATT INSULATION REQUIRED IN ANNULAR SPACE ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. MINIMUM 1" THICKNESS OF CALK TO BE INSTALLED FLUSH WITH EACH SURFACE OF FLOOR OR WALL ASSEMBLY.
3M COMPANY - CP 25WB + CALK OR FB-3000 WT SEALANT. (THE W RATING APPLIES ONLY WHEN FB-3000 WT SEALANT IS USED).
*BEARING THE UL CLASSIFICATION MARKING



- WALL ASSEMBLY** - THE 1, 2, 3 OR 4 HOUR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U300 OR U400 SERIES WALL OR PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
 - STUDS** - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS (MAXIMUM 2 HOUR FIRE RATED ASSEMBLIES) OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOMINAL 2" x 4" LUMBER SPACED 16" ON CENTER WITH NOMINAL 2" x 4" LUMBER END PLATES AND CROSS BRACES. STEEL STUDS TO BE MINIMUM 3 5/8" WIDE x 1 3/8" DEEP CHANNELS SPACED MAXIMUM 24" ON CENTER.
 - GYPSUM BOARD*** - NOMINAL 1/2" OR 5/8" THICK, 4" WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAXIMUM DIAMETER OF OPENING IS 26".
- THROUGH PENETRANT** - ONE METALLIC PIPE, CONDUIT OR TUBING INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN PIPE, CONDUIT OR TUBING AND PERIPHERY OF OPENING SHALL BE MINIMUM OF 0" (POINT CONTACT) TO MAXIMUM 2" PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:
 - STEEL PIPE** - NOMINAL 24" DIAMETER (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
 - IRON PIPE** - NOMINAL 24" DIAMETER (OR SMALLER) SERVICE WEIGHT (OR HEAVIER) CAST IRON SOL. PIPE, NOMINAL 12" DIAMETER (OR SMALLER) OR CLASS 50 (OR HEAVIER) DUCTILE IRON PRESSURE PIPE.
 - CONDUIT** - NOMINAL 6" DIAMETER (OR SMALLER) STEEL CONDUIT OR NOMINAL 4" DIAMETER (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING.
 - COPPER TUBING** - NOMINAL 6" DIAMETER (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
 - COPPER PIPE** - NOMINAL 6" DIAMETER (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.
 - THROUGH PENETRATING PRODUCTS* - FLEXIBLE METAL PIPING** - THE FOLLOWING TYPES OF STEEL FLEXIBLE METAL GAS PIPING MAY BE USED:
 - NOMINAL 2" DIAMETER (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.
OMEGA FLEX INC
 - NOMINAL 1" DIAMETER (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.
TITEX CORP
A BUNDY CO
 - NOMINAL 1" DIAMETER (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.
WARD MFG INC
- FILL, VOID OR CAVITY MATERIAL*** - CALK OR SEALANT - MINIMUM 5/8", 1 1/4", 1 7/8" AND 2 1/2" THICKNESS OF CALK FOR 1, 2, 3 AND 4 HOUR RATED ASSEMBLIES, RESPECTIVELY, APPLIED WITHIN ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. MINIMUM 1/4" DIAMETER BEAD OF CALK* APPLIED TO GYPSUM BOARD/PENETRANT INTERFACE AT POINT CONTACT LOCATION ON BOTH SIDES OF WALL. THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS DEPENDENT UPON THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS SHOWN IN THE FOLLOWING TABLE. THE HOURLY T RATING OF THE FIRESTOP SYSTEM IS DEPENDENT UPON THE TYPE OR SIZE OF THE PIPE OR CONDUIT AND THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS TABULATED BELOW:

MAXIMUM PIPE OR CONDUIT DIAMETER INCHES	F RATING HOUR	T RATING HOUR
1	1 OR 2	0, 1 OR 2
1	3 OR 4	3 OR 4
4	1 OR 2	0
6	3 OR 4	0
12	1 OR 2	0

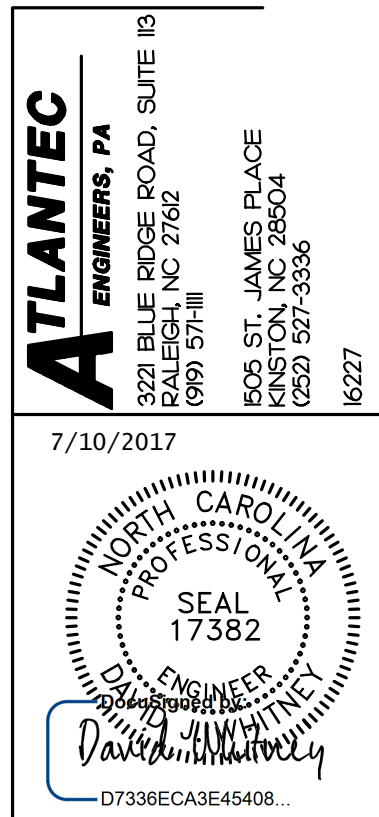
- *WHEN COPPER PIPE IS USED, T RATING IS 0 HOUR.
3M COMPANY - CP 25WB + CALK OR FB-3000 WT SEALANT.
*BEARING THE UL CLASSIFICATION MARKING

4 E2.2

FIRE PENETRATION (TYPICAL)

SCALE: NOT TO SCALE

New Shell Building
Heritage Park West
3125 Rogers Road
Wake Forest, North Carolina



MAURER ARCHITECTURE

115.5 EAST HARGETT STREET, SUITE 300
RALEIGH, NC 27601
TEL. 919-829-4969 FAX. 919-829-0860

DATE 07.06.17
DR. SP
CH. DJW
PROJ. # 16096
REVISIONS DATE

FIXTURE SCHEDULE
DETAILS

E2.2

SYMBOL LEGEND		
SYMBOL	DESCRIPTION	REMARKS
	SQUARE RECESSED CAN LIGHT FIXTURE - LETTER DESIGNATES TYPE	SEE FIXTURE SCHEDULE
	PENDANT/SURFACE MOUNT FIXTURE - LETTER DESIGNATES TYPE	SEE FIXTURE SCHEDULE
	LINEAR WALL MOUNT FIXTURE - LETTER DESIGNATES TYPE	SEE FIXTURE SCHEDULE
	LINEAR STRIP FIXTURE - LETTER DESIGNATES TYPE	SEE FIXTURE SCHEDULE
	WALL MOUNT LIGHT FIXTURE - LETTER DESIGNATES TYPE	SEE FIXTURE SCHEDULE
	EXTERIOR WALL LIGHT FIXTURE - LETTER DESIGNATES TYPE	SEE FIXTURE SCHEDULE
	SPECIAL SIGN - CONNECT UNSWITCHED	SEE FIXTURE SCHEDULE
	EMERGENCY WITH EXIT LIGHT - CONNECT UNSWITCHED	SEE FIXTURE SCHEDULE
	BATTERY BACKUP EMERGENCY LIGHT - CONNECT UNSWITCHED	SEE FIXTURE SCHEDULE
	PHOTOCELL, 120/277VAC, 1800VA BALLAST LOAD	TORQ ¹ 207
	EMERGENCY POWER UNIT (INVERTER) FOR EXTERIOR EMERGENCY LIGHT, 120V INPUT, 120V OUTPUT, 100W WITH 90 MIN. BACKUP TIME.	EELP ¹ PS-1004P
	LIGHT FIXTURE ON UNSWITCHED CIRCUIT FOR NIGHT LIGHT, THE SHADE DESIGNATED THE NIGHT LIGHT.	SEE FIXTURE SCHEDULE
	SINGLE POLE TOGGLE SWITCH, MOUNT 42" AFF., UNLESS NOTED OTHERWISE.	HUBBELL CS221-** WITH NPJ1 COVER PLATE
	THREE WAY TOGGLE SWITCH, MOUNT 42" AFF., UNLESS NOTED OTHERWISE.	HUBBELL CS223-** WITH NPJ1 COVER PLATE
	WALL MOUNTED OCCUPANCY SENSOR SWITCH, PASSIVE INFRARED, MOUNT 42" AFF., UNLESS NOTED OTHERWISE. 800W/120VAC OR 1200W/277VAC	WATTSTOPPER PW100-** NPJ26 COVER PLATE
	SPECIFICATION GRADE DUPLEX RECEPTACLE, MOUNT 16" AFF., UNLESS OTHERWISE NOTED.	HUBBELL CR5362-** WITH NPJ8 COVER PLATE
	SPECIFICATION GRADE TAMPER RESISTANT GFI DUPLEX RECEPTACLE, RECEPTACLE - MOUNT 16" AFF., UNLESS NOTED OTHERWISE.	HUBBELL GFTR20-** WITH NPJ26 COVER PLATE
	SPECIFICATION GRADE TAMPER RESISTANT, WEATHER RESISTANT AND GFI DUPLEX RECEPTACLE WITH INUSE WEATHER PROOF COVER, MOUNT 16" AFF., UNLESS OTHERWISE NOTED.	HUBBELL GFTR20-** WITH WP26M COVER PLATE
	SPECIFICATION GRADE DUPLEX RECEPTACLE, WITH INUSE WEATHER PROOF COVER, MOUNT 16" AFF., UNLESS OTHERWISE NOTED.	HUBBELL CR5362-** WITH WP26M COVER PLATE
	JUNCTION BOX SIZED PER NEC.	
	DISCONNECT SWITCH SEE PLANS FOR SIZE AND TYPE	SQUARE D HEAVY DUTY
	NEW CONCEALED WIRING	PER NEC.
	UNSWITCHED LIGHTING CONDUCTOR	PER NEC.
	HOME RUN TO PANEL BOARD, NUMBERS OF ARROW INDICATE CIRCUITS	PER NEC.
	120/208V 3Ø, 4W PANEL BOARD - SEE PANEL SCHEDULES	SQUARE D NQ
	METER BANK	SEE POWER RISER
	COMMUNICATION OUTLET - MOUNT 16" AFF., UNLESS OTHERWISE NOTED, STUB 3/4" CONDUIT TO COMMUNICATION BOARD, OUTLET, COVER PLATE AND WIRING BY OTHERS.	SINGLE GANG BOX, HUBBELL NPJ33 COVER PLATE
	COMMUNICATION BACKBOARD ¹ 3/4" THICK FIREPROOFED PLYBOARD MOUNTED TO WALL, SEE NOTE ON PLAN.	
	AREA OF RESCUE ASSISTANCE ¹ MASTER UNIT, MOUNT 42" AFF., UNLESS NOTED OTHERWISE.	SEE DETAIL 2/E22
	AREA OF RESCUE ASSISTANCE ¹ REMOTE STATION UNIT, MOUNT 42" AFF., UNLESS NOTED OTHERWISE.	SEE DETAIL 2/E22
	AREA OF RESCUE ASSISTANCE ¹ CONTROL UNIT	SEE DETAIL 2/E22
	FIRE ALARM CONTROL PANEL, SURFACE MOUNTED, ADDRESSABLE.	SEE FIRE ALARM PLAN
	FIRE ALARM NOTIFICATION APPLIANCE POWER CABINET, SURFACE MOUNTED.	SEE FIRE ALARM PLAN
	1 HOUR WALL.	
A.F.C.	ABOVE FINISHED CEILING	
A.F.F.	ABOVE FINISHED FLOOR - NOTE ALL MOUNTING DIMENSIONS GIVEN ARE TO THE BOTTOM OF THE OUTLET BOX	
B.F.F.	BELOW FINISHED FLOOR	
B.F.G.	BELOW FINISHED GRADE	
NOTE: 1. E.C. SHALL SUBMIT CATALOG SHEETS FOR COLOR AND MATERIAL APPROVAL OF ALL SWITCH, RECEPTACLE AND WALL PLATE TO ARCHITECT PRIOR PURCHASING ANY.		

- ### GENERAL NOTES
- THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR FLOOR PLAN DIMENSIONS. DO NOT SCALE THESE DRAWINGS.
 - THE ELECTRICAL CONTRACTOR SHALL COORDINATE ANY AND ALL WORK WITH OTHER TRADES INVOLVED IN THE PROJECT, PRIOR TO THE INSTALLATION OF HIS EQUIPMENT SO AS TO AVOID CONFLICTS DURING CONSTRUCTION AND TO ALLOW FOR OPTIMUM MAINTENANCE AND WORKING SPACE.
 - USE OF THE CONDUIT SYSTEM FOR EQUIPMENT GROUNDING SHALL NOT BE ACCEPTABLE. A SEPARATE GREEN GROUND WIRE SHALL BE RUN WITH THE CIRCUIT CONDUCTORS IN EACH CONDUIT.
 - ALL BREAKER SIZES, SHOWN FOR MECHANICAL EQUIPMENT, SHALL BE VERIFIED BEFORE THE PURCHASE OR INSTALLATION OF SAID EQUIPMENT, WITH THE EQUIPMENT SUPPLIER AND THE MECHANICAL CONTRACTOR.
 - ALL WORK AND MATERIAL SHALL BE PROVIDED IN ACCORDANCE WITH THE STATE, LOCAL AND NATIONAL CODES AND ORDINANCES.
 - EACH CONTRACTOR SHALL PROVIDE HIS OWN SUPPORT OF ALL DEVICES AND EQUIPMENT PROVIDED BY HIM AND SHALL SUPPORT SUCH EQUIPMENT PER APPROVED GOVERNING CODES OR PER APPROVAL OF THE ENGINEER. UNACCEPTABLE WORKMANSHIP OR MATERIALS SHALL BE REPLACED AT THE REQUEST OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
 - THE MOUNTING HEIGHTS AND LOCATIONS OF ALL WALL MOUNTED OUTLETS AND JUNCTION BOXES SHALL BE REVIEWED AND COORDINATED WITH THE ARCHITECT, PRIOR TO INSTALLATION FOR USE WITH THE ACTUAL EQUIPMENT, CASEWORK, AND MILLWORK TO BE FURNISHED.
 - THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL NECESSARY DISCONNECTS, SWITCHES, AND RECEPTACLES UNDER THE ELECTRICAL BID AND SHALL INCLUDE ALL NECESSARY CIRCUITS TO AND FINAL CONNECTIONS TO THE EQUIPMENT PROVIDED BY ALL SUPPLIERS. SEE DETAILS FOR CONNECTION TO EQUIPMENT PROVIDED BY MECHANICAL AND PLUMBING CONTRACTORS.
 - PENETRATION:
- WHERE ELECTRICAL EQUIPMENT PENETRATES RATED WALLS AND CEILINGS, EXTERIOR WALLS, THEY SHALL BE PROPERLY SEALED PER APPROVED UL METHODS.
- WHERE ELECTRICAL EQUIPMENT PENETRATES EXTERIOR WALLS, THEY SHALL BE PROPERLY SEALED WITH METHODS APPROVED BY THE ENGINEER. SUBMIT DETAIL OF PROPOSED SEALING METHODS.
 - ALL PERMITS AND INSPECTION FEES SHALL BE SECURED AND PAID BY THE ELECTRICAL CONTRACTOR.
 - ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR.
 - THE CONTRACTOR SHALL PROVIDE COMPLETE UPDATED TYPEWRITTEN PANEL SCHEDULES FOR ALL PANELBOARDS.
 - AS BUILT DRAWINGS SHALL BE GIVEN TO THE OWNER AT THE COMPLETION OF THE PROJECT.
 - THE CONTRACTOR SHALL VERIFY THE CEILING TYPES WITH THE GENERAL CONTRACTOR PRIOR TO THE PURCHASE OF ANY LIGHT FIXTURES SO THAT THE PROPER TRIM WILL BE PROVIDED FOR ALL FIXTURES. ANY DIFFERENCES WILL BE THE RESPONSIBILITY OF THIS CONTRACTOR.
 - ALL WIRE SIZES INDICATED ON THE PANEL SCHEDULES ARE BASED ON 75 DEGREE COPPER THHN/THWN WIRE. ALL WIRE TERMINALS AND EQUIPMENT SHALL BE LISTED AND APPROVED FOR 75°C. ONLY THHN-2 WIRE SHALL BE INSTALLED IN WET AND EXTERIOR LOCATION.
 - MINIMUM CONDUIT SIZE SHALL BE 1/2" AND MINIMUM WIRE SIZE SHALL BE #12 AWG.
 - METAL-CLAD CABLE (TYPE MC) AND ARMORED CABLE (TYPE AC) ARE ACCEPTABLE WIRING METHOD SUBJECT TO RESTRICTIONS OF THE NEC. TYPES "MC" OR "AC" CABLE SHALL NOT BE USED WHEN PENETRATING RATED WALLS.
 - THE MAXIMUM NUMBER OF HOMERUNS IN A CONDUIT SHALL NOT EXCEED THREE (3). ~~BREAKERS FEEDING CIRCUITS WITH SHARED NEUTRAL SHALL BE SWITCHED TOGETHER.~~
 - WHERE OUTLETS ARE SHOWN BACK TO BACK ON RATED WALLS, STAGGER OUTLETS SO THAT THEY ARE SEPARATED BY A MINIMUM OF 24".
 - ALL DISCONNECTS SHALL HAVE SEPARATE NEUTRAL AND GROUND BARS.
 - ALL PANELS SHALL BE THREE PHASE, FOUR WIRE UNLESS OTHERWISE NOTED.
 - BOXES AND CONDUITS SHALL NOT BE INSTALLED RECESSED IN A 3-HOUR OR HIGHER RATED WALL, WHEN OUTLETS ARE INDICATED ON THESE WALLS, FIELD COORDINATE CONDUIT AND BOX INSTALLATION.
 - FOR ALL RECEPTACLES LOCATED ABOVE COUNTER TOP, MOUNTING HEIGHT SHALL COMPLY WITH ANSI A117.1, SECTION 308. E.C. SHALL FIELD VERIFY CASEWORK DETAIL WITH ARCHITECT PRIOR TO ROUGH-IN.
 - THE ELECTRICAL CONTRACTOR SHALL FIELD COORDINATE THE INSTALLATION OF THE NEW UNDERGROUND ELECTRICAL SERVICE WITH THE LOCAL UTILITY. THE OWNER SHALL PAY ALL CHARGES FOR THE INSTALLATION OF THE NEW UNDERGROUND UTILITY SERVICE.
 - THE ELECTRICAL CONTRACTOR SHALL FIELD COORDINATE THE LOCATION OF HIS TELEPHONE CONDUIT STUB OUTS WITH THE LOCAL TELEPHONE COMPANY PRIOR TO HIS INSTALLING ANY CONDUITS.

2012 NORTH CAROLINA ENERGY CODE

LAMP TYPE REQUIRED¹

NUMBER OF LAMPS¹

BALLAST TYPE USED¹

NUMBER OF BALLASTS¹

TOTAL WATTAGE PER FIXTURE¹

ELECTRICAL SYSTEM AND EQUIPMENT METHOD OF COMPLIANCE ¹ - PRESCRIPTIVE			
LIGHTING SCHEDULE ¹			
FLUORESCENT T8/T5	LED	CFL	INCAN
2	MODULE	N/A	N/A
ELECTRONIC	ELECTRONIC	N/A	N/A
1	1	N/A	N/A
64	75 / 47 / 24 / 19 / 14	N/A	N/A

	SPECIFIED	ALLOWED BY CODE
INTERIOR WATTAGE		
LOBBY		219
STAIRS		983
ELECT/MECH		228
TOTAL	1070	1287 **
EXTERIOR WATTAGE	ZONE 3	
ALLOWANCE	57	600

NOTES:

- ** PER SECTION 506.2.2, THE WHOLE AREA ALLOWED BY CODE IS REQUIRED TO BE 10% LOWER THAN THOSE IN TABLE 506.5.2.
- VALUE PER TABLE 506.5.2¹ 1430 WATTS
- VALUE PER SECTION 506.2.2¹ 1287 WATTS
TYPE "D" FIXTURES ARE USED IN UNFURNISHED SPACE FOR TEMPORARY USED AND ARE NOT INCLUDED IN THIS CALCULATION.
- ALL EXTERIOR LIGHTS:
 - CONTROLLED BY PHOTOCELL THAT WILL NOT INTENDED TO BE ON FOR 24 HOUR OPERATION.

DESIGNER STATEMENT¹

TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE ELECTRICAL SYSTEM AND EQUIPMENT REQUIREMENTS OF THE NORTH CAROLINA STATE BUILDING CODE, 2012 - ENERGY.

Designed by:

SIGNED:

NAME¹: DAVID J. WHITNEY, P.E.

TITLE¹: ENGINEER

ATLANTEC

ENGINEERS, PA

3221 BLUE RIDGE ROAD, SUITE 103
RALEIGH, NC 27602
(919) 571-1111

5005 ST. JAMES PLACE
KINSTON, NC 28504
(252) 527-3536

16/227

7/10/2017

D7338ECA3E45408

MAURER ARCHITECTURE

115.5 EAST HARGETT STREET, SUITE 300
RALEIGH, NC 27601

TEL. 919-829-4969 FAX. 919-829-0860

DATE	07.06.17
DR.	SP
CH.	DJW
PROJ. #	16096
REVISIONS	DATE

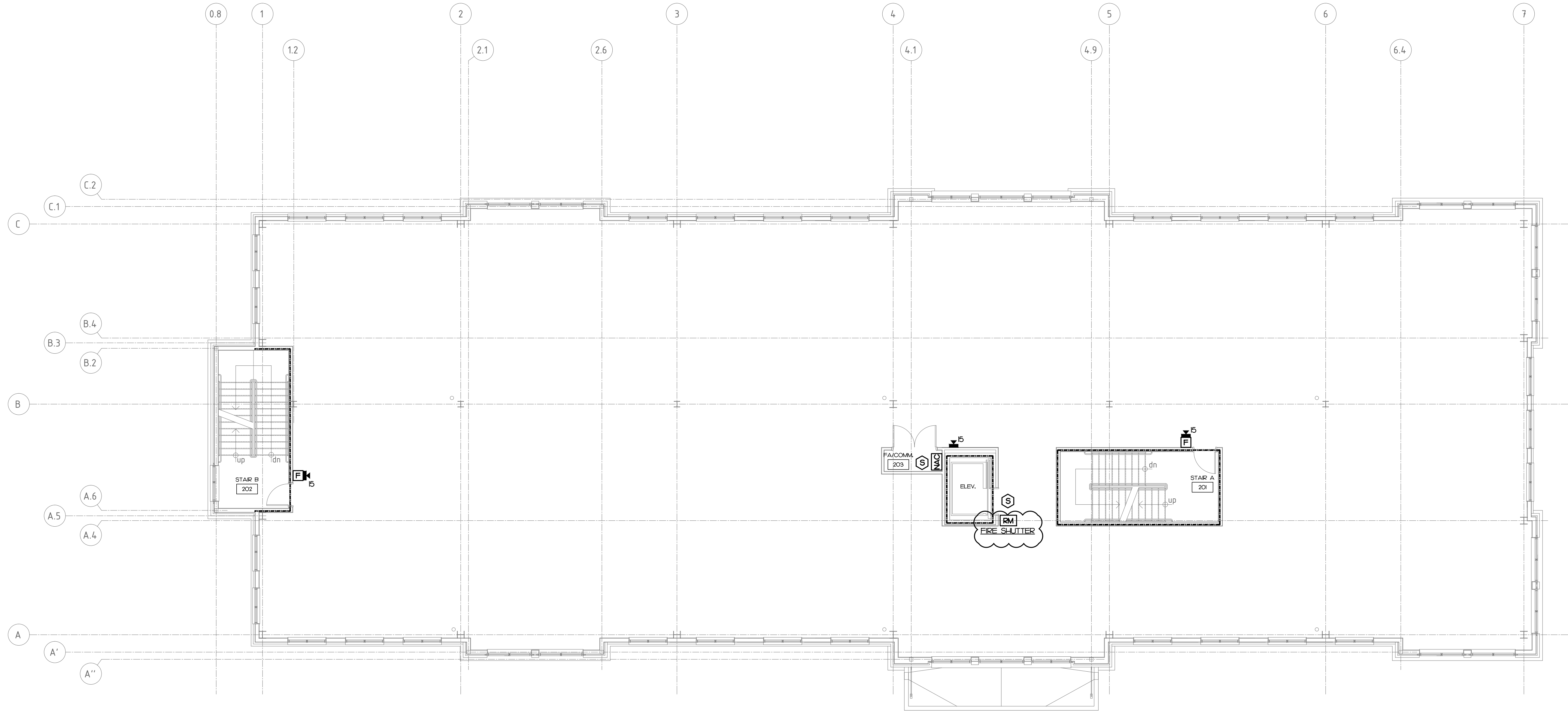
LEGEND
NOTES

E3.1

16/227



FA1.1



DATE	07.06.17
DR.	SP
CH.	DJW
PROJ. #	16096
REVISIONS	DATE
Permit Comments	02.08.18

2ND FLOOR
FIRE ALARM PLAN

FA1.2

MAURER ARCHITECTURE
115.5 EAST HARGETT STREET, SUITE 300
RALEIGH, NC 27601
TEL. 919-829-4969 FAX. 919-829-0860

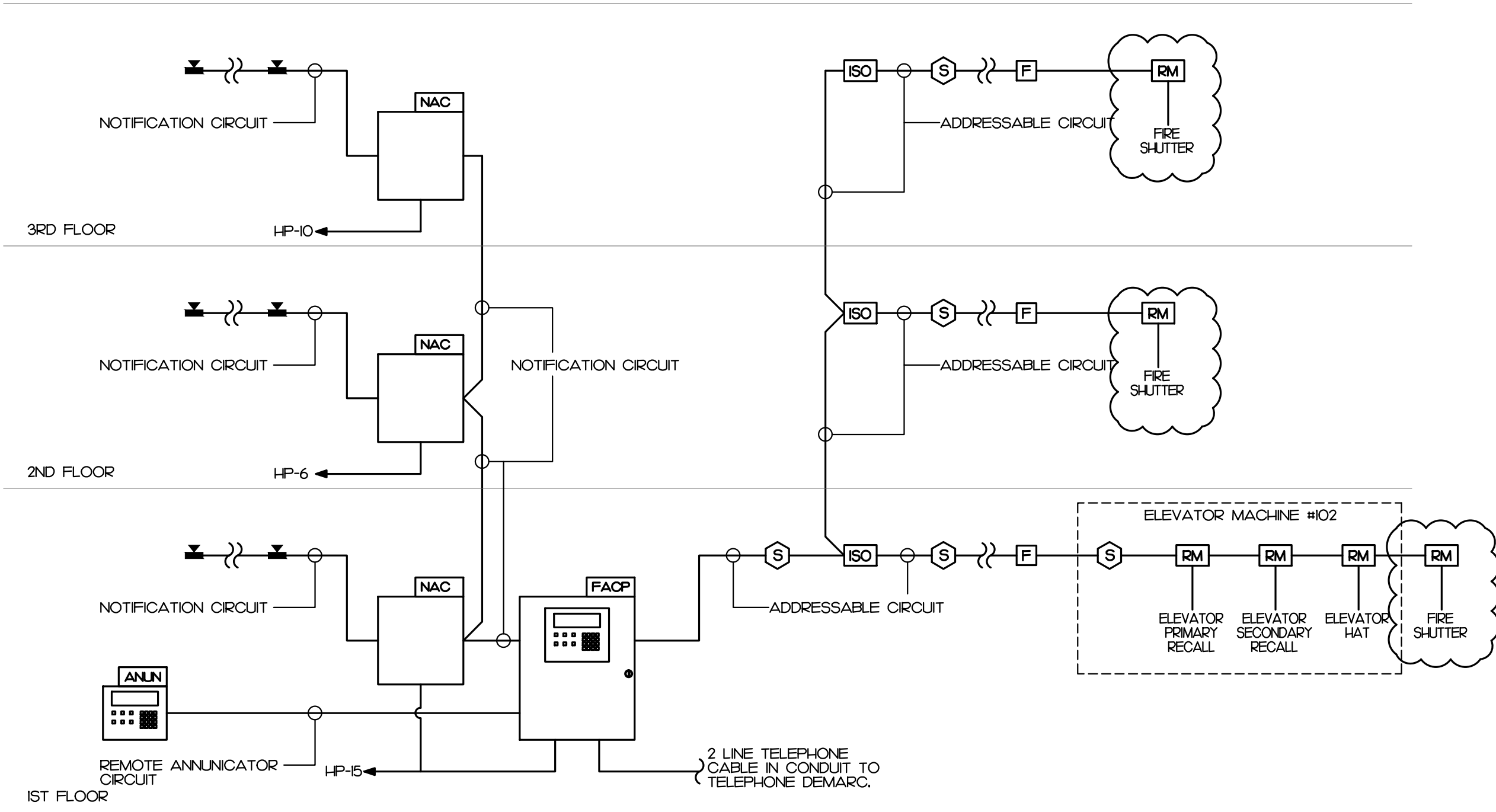
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2/13/2018
NORTH CAROLINA
PROFESSIONAL
SEAL
17382
JULIAN W. WHITELEY
REGISTERED PROFESSIONAL ENGINEER
D7338ECAGE45408

NEW SHELL BUILDING
HERITAGE PARK WEST
3125 ROGERS ROAD
WAKE FOREST, NORTH CAROLINA



FA1.3



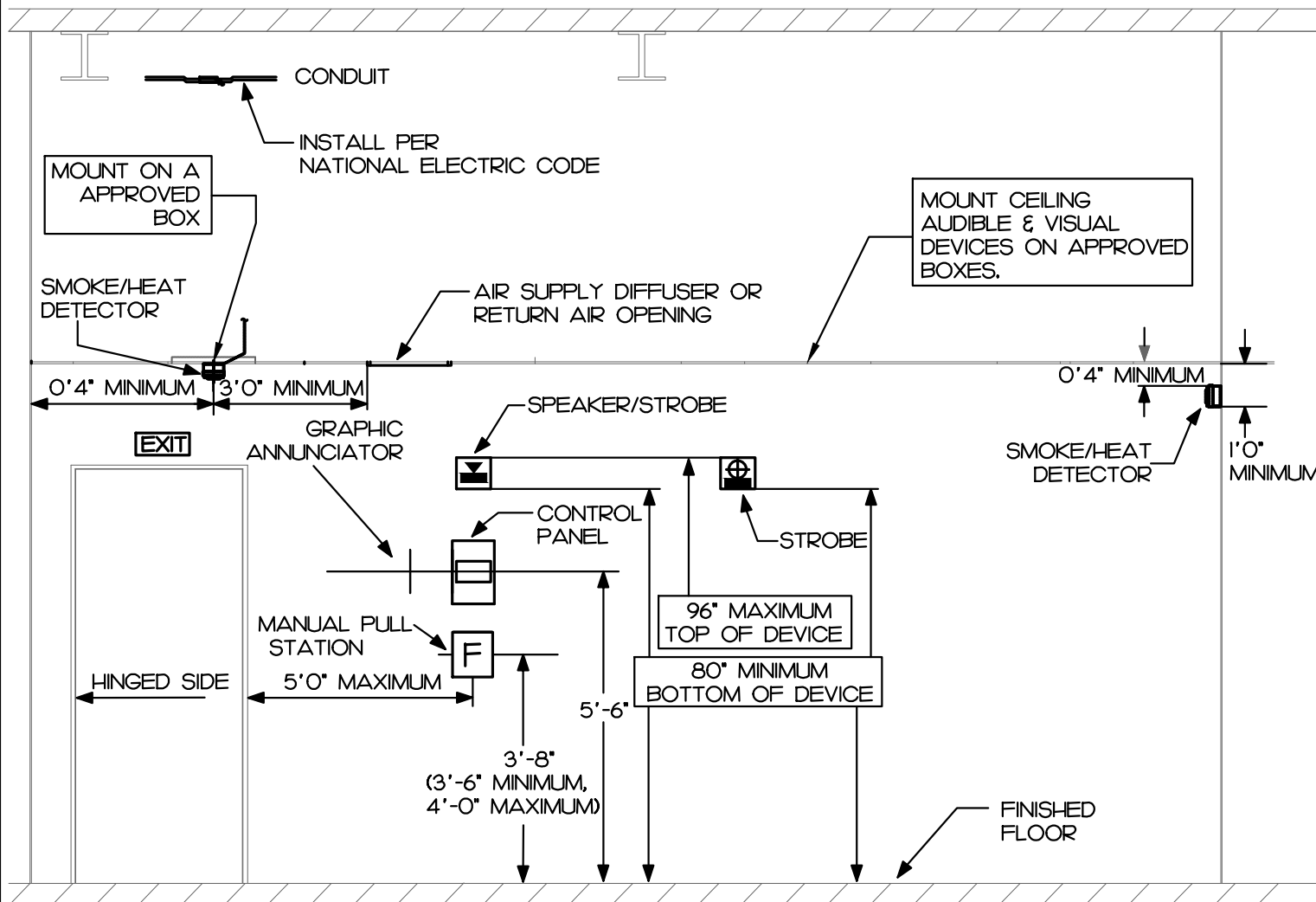
FIRE ALARM NOTES

- SEE PLANS FOR QUANTITY AND LOCATION OF ALL EQUIPMENT
- CONTRACTOR SHALL PROVIDE COMPLETE DOCUMENT PER 2012 FIRE CODE SECTION 907.11 AND 907.12 TO TO ENGINEER FOR APPROVAL PRIOR TO SUBMIT TO AND TESTING BY LOCAL FIRE MARSHAL'S OFFICE.
- PLACARD THE ENTIRE FIRE ALARM SYSTEM. PROVIDE PANEL AND CIRCUIT NUMBERS ON A NAME PLATE AFFIXED TO THE FACE OF THE FIRE ALARM CONTROL PANEL.
- CONTRACTOR SHALL PROVIDE ZONE MAPS COMPLETE WITH ADDRESSES FOR EACH FIRE ALARM DEVICE IN WOODEN FRAME ADJACENT TO THE NEW FIRE ALARM CONTROL PANEL.
- ELECTRICAL CONTRACTOR SHALL PROVIDE BATTERY CALCULATIONS AND OUT SHEETS FOR FIRE ALARM SYSTEM TO ENGINEER FOR APPROVAL.
- ALL WIRING SHALL BE SUPERVISED.
- ALL WIRING SHALL BE PER MANUFACTURER'S SPECIFICATIONS.
- ADDRESSABLE ANALOG CIRCUIT SHALL BE:
 - WIRING SHALL BE "CLASS A".
 - MINIMUM CAPACITY OF ANALOG SENSORS PER LOOP SHALL BE 96.
 - MINIMUM CAPACITY OF ADDRESSABLE MONITORING DEVICES PER LOOP SHALL BE 48.
 - MINIMUM CAPACITY OF ADDRESSABLE CONTROL RELAY MODULES PER LOOP SHALL BE 48.
- ALL WIRING IN WALLS OR FURRED SPACES SHALL BE IN CONDUIT.
- WHERE PERMITTED BY CODE, WIRING ABOVE ACCESSIBLE CEILINGS MAY BE RUN EXPOSED AND THE FOLLOWING REQUIREMENTS SHALL BE MET:
 - WIRING SHALL BE PLENUM RATED WHERE APPLICABLE.
 - PROVIDE BRIDLE RINGS FOR INDEPENDENT FIRE ALARM CABLE SUPPORT UNLESS SPECIFICALLY NOTED OTHERWISE. ANALOG LOOP WIRING INCOMING AND OUTGOING SHALL NOT BE SUPPORTED IN THE SAME BRIDLE RING.
- ALL NOTIFICATION CIRCUIT WIRING SHALL BE "CLASS B".
- PROVIDE WITH "SYNC MODULE" AS REQUIRED PER NFPA 72.
- FURNISH NOTIFICATION CIRCUITS AS REQUIRED TO ACCOMMODATE CIRCUIT LOADING. NO NOTIFICATION CIRCUIT SHALL BE LOADED TO MORE THAN 80% CAPACITY.
- PROVIDE SOUND (dB) AND CANDELA (cd) RATINGS FOR ALL HORN/STROBE DEVICES PER NFPA 72, ALL VISIBLE NOTIFICATION APPLIANCES SHALL BE SYNCHRONIZED PER NFPA 72, 18.5.5.7 AND 18.5.3.6.
- A DECIBEL LEVEL OF (5 dB ABOVE AMBIENT ON NFPA 72, TABLE A.8.4.3) SHALL BE MAINTAINED IN ALL GENERAL AREAS AND 100 dB (15 dB ABOVE AN AMBIENT OF 85 dB IN NFPA 72, 8.4.3.1) SHALL BE MAINTAINED IN ALL MECHANICAL EQUIPMENT ROOMS PER NFPA 72 AND THE 2012 NORTH CAROLINA STATE BUILDING CODE (SECTION 907.6.2).
- PROVIDE ELEVATOR CAPTURE SIGNALS PER N.C. DEPARTMENT OF LABOR REQUIREMENTS.
- PROVIDE ELEVATOR SHUNT TRIP ACTIVATION PER N.C. DEPARTMENT OF LABOR REQUIREMENTS. PROVIDE RELAYS AND MODULES AS REQUIRED TO OPERATE SHUNT TRIP BREAKER.
- NO OTHER DEVICES SHALL AFFECT ELEVATOR OPERATIONS.
- PROVIDE WITH DIGITAL ALARM COMMUNICATOR (DACT). DACT SHALL HAVE CAPABILITY TO HANDLE 2 PHONE LINES AND CELLULAR BACK-UP. FIELD COORDINATE TYPE MATCH MONITORING COMPANY.
- PROVIDE RELAYS TO RELEASE FIRE SHUTTER UPON ALARM FROM ONLY THE DETECTORS LOCATED IN THE ELEVATOR LOBBY. DETECTORS WILL RELEASE THIS DOOR.

FIRE ALARM SYSTEM INPUT/OUTPUT MATRIX

SYSTEM INPUTS	SYSTEM OUTPUTS																			
	FACP ANNUNCIATION					NOTIFICATION					REQUIRED FIRE SAFETY CONTROL									
1. FIRE ALARM SYSTEM AC POWER FAILURE																				
2. FIRE ALARM SYSTEM LOW BATTERY																				
3. OPEN CIRCUIT																				
4. GROUND FAULT																				
5. NOTIFICATION APPLIANCE CIRCUIT SHORT																				
6. BUILDING MANUAL PULL STATIONS																				
7. CORRIDOR SMOKE DETECTORS																				
8. AREA SMOKE DETECTORS																				
9. ELEV EQUIP RM AREA SMOKE DETECTOR																				
10. ELEV LOBBY SMOKE DETECTORS - UPPER FLOORS																				
11. ELEV LOBBY SMOKE DETECTOR - RECALL FLOOR																				

NFPA 72 AND ADA DEVICE INSTALLATION REQUIREMENTS



2 FIRE ALARM DEVICE INSTALLATION DETAIL
SCALE: NOT TO SCALE

SYMBOL	DESCRIPTION	REMARKS
[S]	SMOKE DETECTOR, PHOTOELECTRIC INTELLIGENT, ADDRESSABLE	FIRELITE, EST GAMEWELL
[F]	FIRE ALARM PULLSTATION, MOUNT 42" AFF. ADDRESSABLE	FIRELITE, EST GAMEWELL
[RM]	RELAY CONTROL MODULE ADDRESSABLE	FIRELITE, EST GAMEWELL
[ISO]	ISOLATOR MODULE	FIRELITE, EST GAMEWELL
"XX"	FIRE ALARM STROBE/HORN, MOUNT 80" AFF., 75 dBA SOUND LEVEL, "XX" INDICATES CANDELA RATING.	FIRELITE, EST GAMEWELL
"WP"XX"	FIRE ALARM STROBE/HORN, MOUNT 80" AFF., 75 dBA SOUND LEVEL, "XX" INDICATES CANDELA RATING.	FIRELITE, EST GAMEWELL
[FACP]	FIRE ALARM CONTROL PANEL, SURFACE MOUNTED, ADDRESSABLE	FIRELITE, EST GAMEWELL
[ANLN]	FIRE ALARM REMOTE ANNUNCIATOR, FLUSH MOUNTED, ADDRESSABLE	FIRELITE, EST GAMEWELL
[NAC]	FIRE ALARM NOTIFICATION APPLIANCE POWER CABINET SURFACE MOUNTED.	FIRELITE, EST GAMEWELL
=====	1 HOUR WALL	
A.F.C.	ABOVE FINISHED CEILING	
A.F.F.	ABOVE FINISHED FLOOR - NOTE ALL MOUNTING DIMENSIONS GIVEN ARE TO THE BOTTOM OF THE OUTLET BOX	

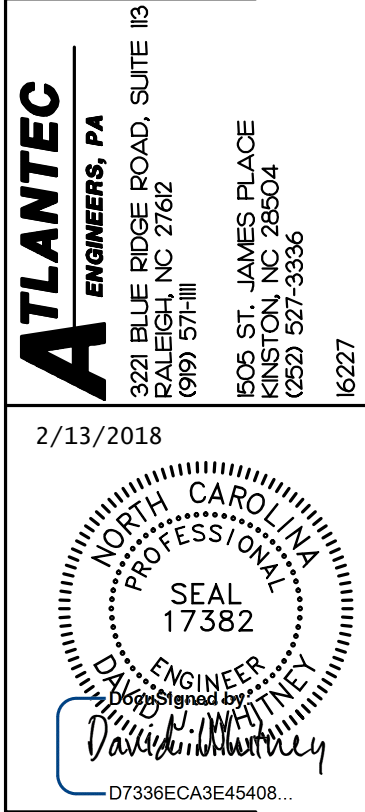
NFPA 72 AUDIBLE AND VISIBLE NOTIFICATION MATRIX						
MAXIMUM dB: 110		MINIMUM dB: 70		AVERAGE AMBIENT dB: 55		
ROOM NAME	FLOOR	AUDIBLE NOTIFICATION		FIELD MEASURED	VISIBLE NOTIFICATION	
		PROVIDED	NOT PROVIDED		dB LEVEL	PROVIDED
LOBBY	101	■	□		■	□
ELEV. MACH.	102	■	□		□	■
FA/COMM.	103	■	□		□	■
STAR A	104	□	■		□	■
STAR B	105	□	■		□	■
1ST FLOOR SHELL SPACE		■	□		■	□
STAR A	201	□	■		□	■
STAR B	202	□	■		□	■
FA/COMM.	203	■	□		□	■
2ND FLOOR SHELL SPACE		■	□		■	□
STAR A	301	□	■		□	■
STAR B	302	□	■		□	■
FA/COMM.	303	■	□		□	■
3RD FLOOR SHELL SPACE		■	□		■	□

VISUAL RATING IS NOT PROVIDED FOR FULL AREA COVERAGE.

3 FIRE ALARM NOTIFICATION MATRIX
SCALE: NOT SCALE

1 FIRE ALARM RISER AND NOTES
SCALE: NOT TO SCALE

New Shell Building
Heritage Park West
3125 Rogers Road
Wake Forest, North Carolina



MAURER ARCHITECTURE
115.5 EAST HARGETT STREET, SUITE 300
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FIRE ALARM RISER
NOTES
DETAILS
LEGEND

FA2.1