

PROJECT NUMBER #18237

# NEW RESIDENCE HALL

PREPARED FOR:



KENTON DRIVE & CARROLL DRIVE  
HIGHLAND HEIGHTS, KY 41099



PREPARED BY:

## GEOTECHNICAL ENGINEERING



1398 COX AVENUE  
ERLANGER, KY 41018  
PHONE: (859) 746-9400  
FAX: (859) 240-2100

## CIVIL ENGINEERING & SURVEYING



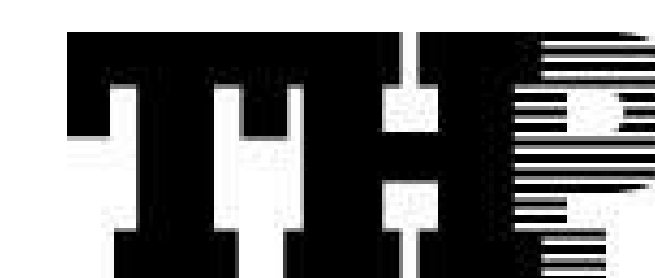
1100 ENVOY CIRCLE  
LOUISVILLE, KY 40299  
PHONE: (502) 365-9950

## DESIGN ARCHITECT



269 WEST MAIN STREET, STE 500  
LEXINGTON, KY 40507  
PHONE: (877) 929-1400  
FAX: (877) 929-1401

## STRUCTURAL ENGINEERING



100 EAST EIGHTH STREET  
CINCINNATI, OH 45202  
PHONE: (513) 338-5430

## MEP ENGINEERING



10411 MEETING STREET  
PROSPECT, KY 40059  
PHONE: (502) 326-3085

## LANDSCAPE ARCHITECT



2312 PARK AVENUE  
CINCINNATI, OH 45206  
PHONE: (513) 559-9444

## ARCHITECT OF RECORD



434 MADISON AVENUE  
COVINGTON, KY 41011  
PHONE: (859) 957-1277  
FAX: (859) 957-1280

## TECHNOLOGY & SECURITY

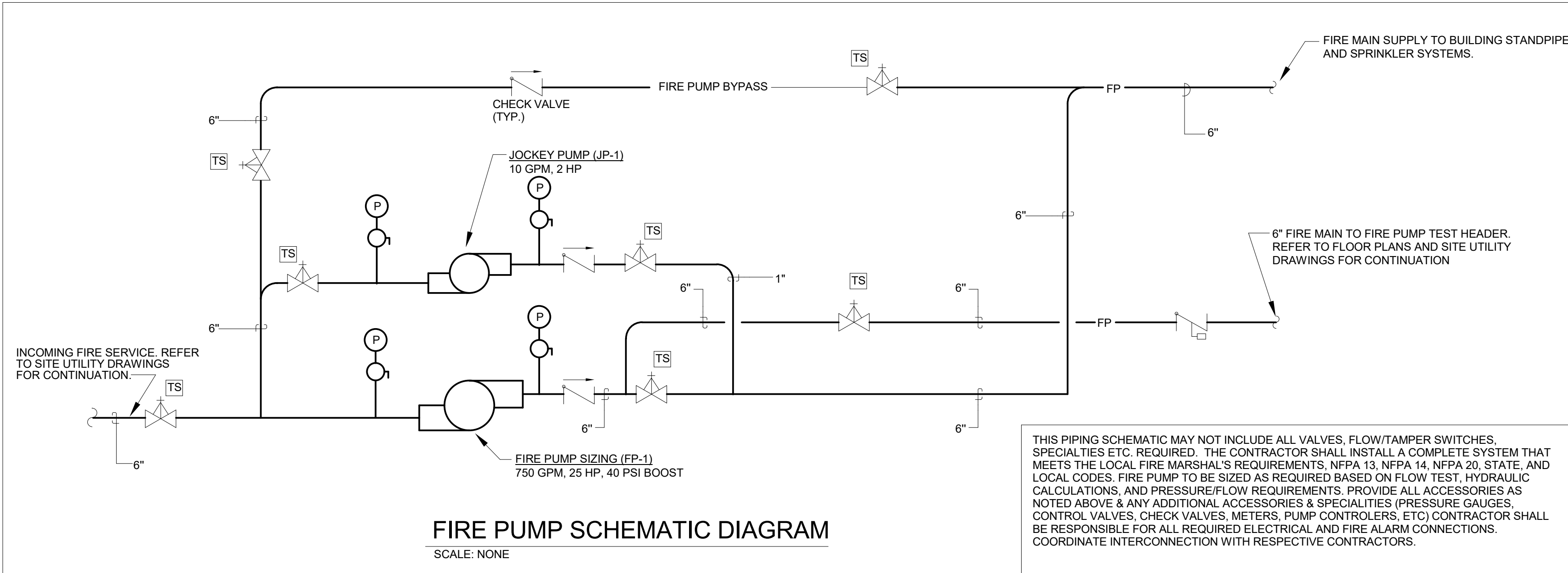


4994 LOWER ROSWELL ROAD, STE ONE  
MARIETTA, GA 30068  
PHONE: (770) 817-4220  
FAX: (404) 545-6867

# VOLUME 2

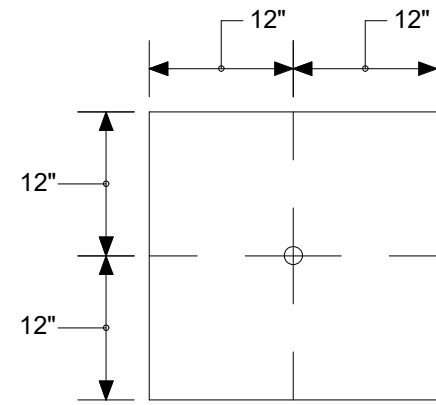
# BID & PERMIT SUBMITTAL JANUARY 30, 2020





### EXISTING FIRE HYDRANT FLOW TEST DATA

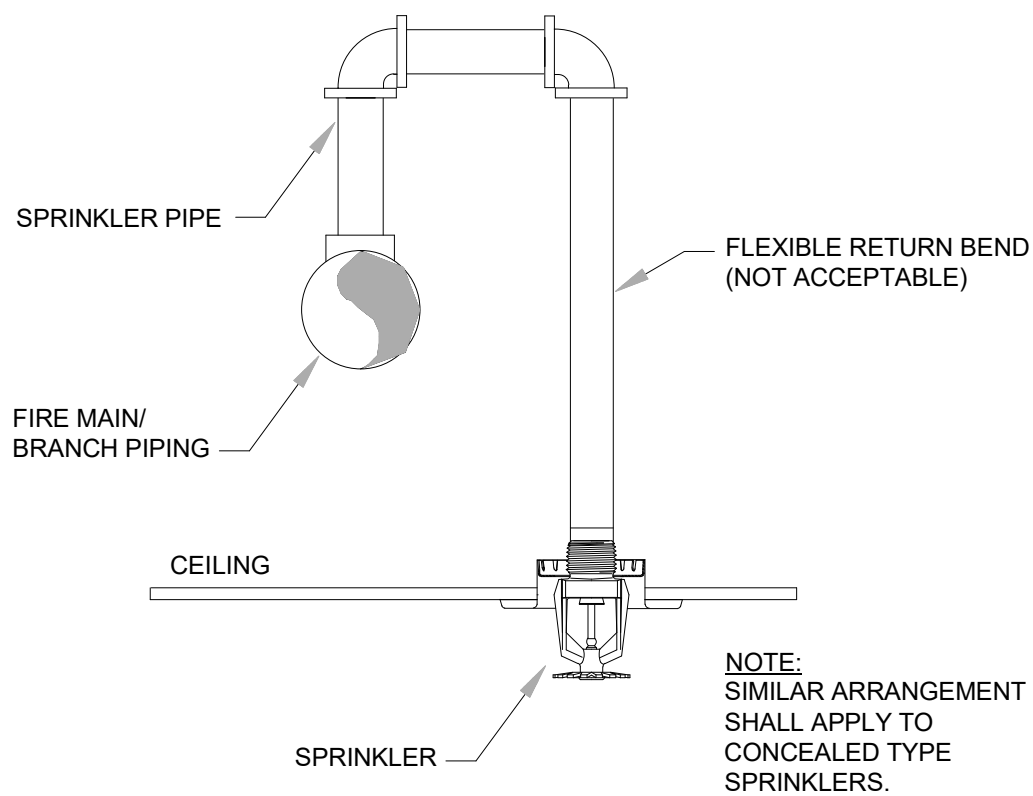
STATIC PSI: 65  
RESIDUAL PSI: 35  
FLOW: 1,797 GPM  
DURATION: CONTINUOUS  
DATE & TIME: NOV. 13, 2019  
SOURCE OF WATER: CITY SUPPLY  
OCCUPANCY OF BUILDING: EDUCATIONAL DORMITORY



SPRINKLERS TO BE INSTALLED IN  
CENTER OF 2x2 CEILING TILES.

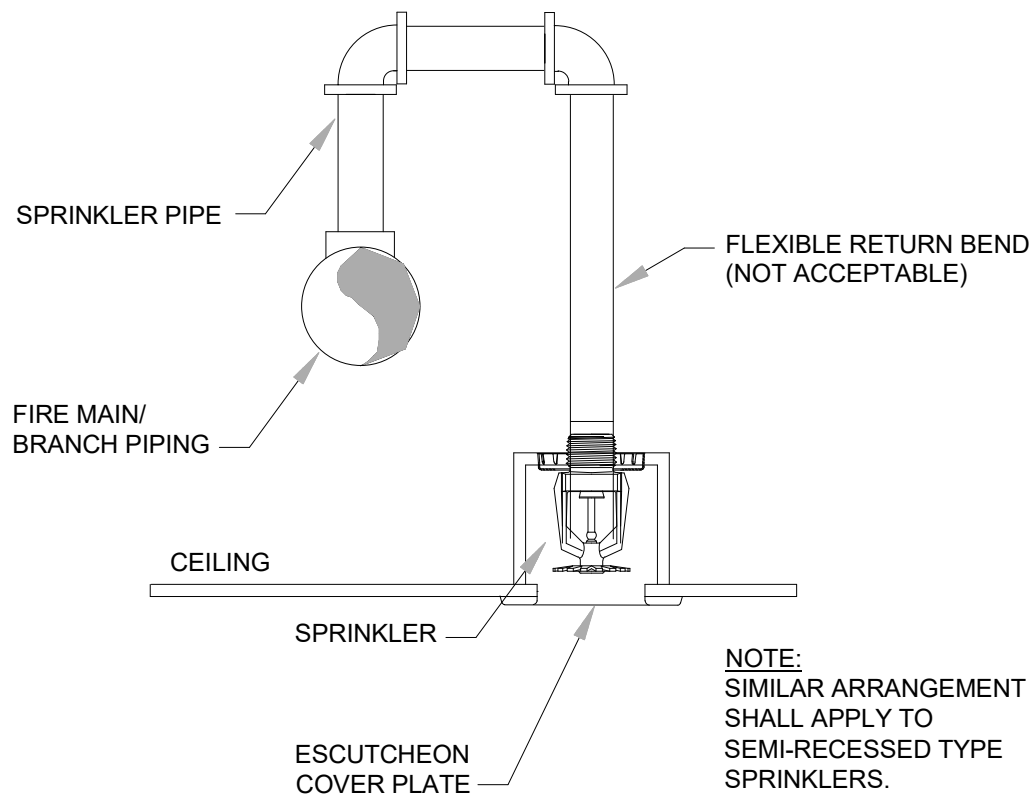
### 2x2 CEILING TILE DETAIL

SCALE: NONE



### RETURN BEND DETAIL

SCALE: NONE



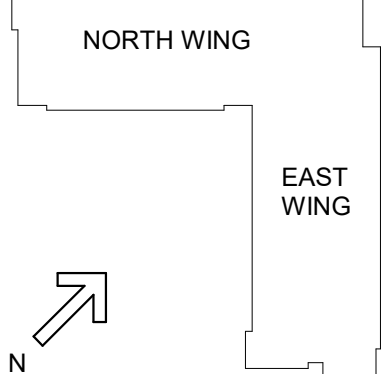
### RETURN BEND DETAIL

SCALE: NONE

### GENERAL FIRE PROTECTION NOTES:

- THE ENTIRE BUILDING SHALL BE 100% PROTECTED WITH A FULLY AUTOMATIC FIRE PROTECTION SYSTEM DESIGNED IN ACCORDANCE WITH NFPA (13, 14, 20, ETC), STATE AND LOCAL CODES.
- THE SUCCESSFUL FIRE PROTECTION CONTRACTOR SHALL OBTAIN AND UTILIZE ALL APPLICABLE ARCHITECTURAL FLOOR PLANS, SECTIONS, AND REFLECTED CEILING PLANS FOR LAYING OUT SPRINKLERS. REFER TO A COMPLETE SET OF DOCUMENTS (ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND ELECTRICAL PLANS AND SPECIFICATIONS FOR COORDINATION OF TRADES, ROOMS, STRUCTURE, AND EQUIPMENT).
- ALL AREAS ARE TO BE PROVIDED WITH QUICK RESPONSE SPRINKLERS (EXCEPTIONS PER NFPA SHALL BE APPLIED, IE MECHANICAL SPACES, ETC.). REFER TO FLOOR PLANS FOR LOCATIONS AND SPECIFICATIONS FOR ACCEPTABLE MANUFACTURERS AND MODELS.
- ALL SPRINKLERS LOCATIONS SHALL BE COORDINATED WITH ALL OTHER CEILING RELATED DEVICES. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION RELATED TO CEILING CONSTRUCTION.
- WHERE CEILINGS ARE INDICATED, ALL SPRINKLER PIPING MUST BE INSTALLED ABOVE CEILINGS. SPRINKLER PIPING MUST BE COORDINATED WITH OTHER TRADES. PIPING MUST OFFSET AS REQUIRED TO AVOID CONFLICTS WITH DUCTWORK, CONDUIT, ALL EQUIPMENT, ETC.
- HVAC DUCTWORK MAINS SHALL BE INSTALLED PRIOR TO FIRE PROTECTION PIPING. PROVIDE DRAIN VALVES IN THE FIRE PROTECTION SYSTEM WHERE NECESSARY TO COMPLETELY DRAIN THE SYSTEM.
- PROVIDE ALL REQUIRED DRAIN PIPING TO TEST FLOW SWITCHES. DISCHARGE DRAIN PIPING TO OUTDOORS.
- SIZE ALL FIRE PROTECTION PIPING IN ACCORDANCE WITH NFPA 13. PIPE SIZING SHALL BE ACCOMPLISHED USING HYDRAULIC CALCULATIONS.
- CONTRACTOR TO PROVIDE UPDATED FLOW TEST. SUBMIT HYDRAULIC CALCULATIONS AND SYSTEMS DESIGN FOR REVIEW TO THE ME ENGINEER. REFER TO CHART ON THIS SHEET FOR PREVIOUS FLOW INFORMATION. PROVIDE FIRE PUMP SIZING BASED ON FLOW TEST AND HYDRAULIC CALCULATIONS.
- THE SPARE SPRINKLERS, WRENCH AND CABINET SHALL BE LOCATED IN THE FIRE PUMP ROOM.
- ONLY CERTIFIED TECHNICIANS APPROVED BY THE LOCAL WATER COMPANY SHALL INSTALL OR TEST BACKFLOW PREVENTERS.
- CERTIFIED CONTRACTOR SHALL TEST BACKFLOW PREVENTER AFTER INSTALLATION, PROVIDE TEST RESULTS (INCLUDE IN OPERATION AND MAINTENANCE MANUALS).
- BUILDING SHALL BE CLASSIFIED AS LIGHT/ORDINARY HAZARD. LIGHT HAZARD AREAS (IE. GENERAL POPULATION, RESIDENT ROOMS, RESTROOM, ETC.) SHALL BE PROVIDED WITH A SPRINKLER DENSITY OF 0.10GPM/1500SQFT. ORDINARY HAZARD GROUP I AREAS (IE STORAGE ROOMS, MECHANICAL ROOMS, ETC.) SHALL BE PROVIDED WITH A SPRINKLER DENSITY OF 0.15GPM/2500SQFT. AREA REDUCTION METHOD SHALL NOT BE APPLIED. COORDINATE ALL REQUIRED SPRINKLER DENSITIES WITH THE OWNERS INSURANCE UNDERWRITER (FM GLOBAL) AND USE THE GREATER. PROVIDE PLACARD AT INCOMING FIRE SERVICE.
- COORDINATE ALL SPRINKLER PIPE ROUTINGS WITH ALL ELECTRICAL EQUIPMENT.
- THE CONTRACTOR SHALL INSURE THAT ALL PENETRATIONS OF THE AIR BARRIER BE SEALED TO MAINTAIN AN AIR TIGHT BUILDING.
- FLOOR CONTROL VALVE ASSEMBLIES FOR EACH FIRE ZONE SHALL CONSIST OF, BUT ARE NOT LIMITED TO THE FOLLOWING: CONTROL VALVE WITH FLOW & TAMPER SWITCH, PRESSURE GAUGES, DRAIN VALVE WITH BYPASS, ETC.
- COLOR FINISHES OF ALL SPRINKLERS/ESCUTCHEONS/COVER PLATES SHALL BE COORDINATED WITH ARCHITECT.
- ARCHITECTURAL REFLECTED CEILING PLANS SHALL BE UTILIZED AS AN AID IN LOCATING SPRINKLERS BUT DOES NOT RELIEVE THE SPRINKLER CONTRACTOR FROM PROVIDING A FULLY PROTECTED BUILDING SPRINKLER LAYOUT. CONTRACTOR SHALL ALSO COORDINATE ALL SPRINKLER LOCATION WITH ALL TRADE DRAWINGS (LIGHTING, FIRE ALARM, SECURITY, HVAC, ETC.)
- COORDINATE LOCATIONS OF THE FOLLOWING FIRE PROTECTION APARATUS' WITH THE LOCAL FIRE DEPARTMENT PRIOR TO INSTALLATION: FIRE DEPARTMENT CONNECTION (F.D.C.), FIRE PUMP TEST HEADER (F.P.T.H.), POST INDICATOR VALVE (P.I.V.), FIRE ALARM BELLS, ETC. COORDINATION SHALL ALSO INCLUDE VERIFICATION OF ALL HOSE CONNECTION SIZES, THREAD TYPES.
- ALL SPRINKLER DRAIN PIPING SHALL BE DISCHARGED TO THE BUILDING EXTERIOR AT AN APPROVED LOCATION OR TO A BUILDING DRAIN CAPABLE OF HANDLING FULL FLOW.
- ALL SPRINKLERS LOCATED IN IDF/MDF, ELECTRICAL ROOMS, AND KITCHEN SHALL BE HIGH TEMPERATURE SPRINKLERS WITH PROTECTIVE WIRE CAGES.
- PROVIDE SPRINKLER COVERAGE BENEATH THE LOWEST LEVEL OF STAIR TREADS WHERE THE AREAS COULD BE UTILIZED FOR POTENTIAL STORAGE. SPRINKLER PIPING SHALL BE CONCEALED INSIDE WALLS AND UTILIZE SIDEWALL STYLE SPRINKLERS.
- PROVIDE SPRINKLER COVERAGE ABOVE AND BELOW FLOATING CLOUDS 48" OR GREATER IN SIZE. NO EXPOSED PIPING TO BE LOCATED BELOW ANY SUSPENDED CEILING ASSEMBLIES.
- PROVIDE HEAVY DUTY SPRINKLER GUARDS FOR ALL SPRINKLERS LOCATED IN STORAGE / MECHANICAL ROOMS.
- CONCEALED SPACES WITH COMBUSTIBLE MATERIALS (ABOVE WOOD SPLINE CEILINGS) SHALL BE PROVIDE WITH SPRINKLERS ABOVE & BELOW.
- STANDPIPE SYSTEM S SHALL BE DESIGNED IN ACCORDANCE WITH ALL APPLICABLE FM GLOBAL AND NFPA-14 GUIDELINES.
- FIRE PUMP SYSTEM SHALL BE DESIGNED IN ACCORDANCE WITH ALL APPLICABLE FM GLOBAL AND NFPA-13, 14, & 20 GUIDELINES.

### STATE OF KENTUCKY APPROVAL



#	DATE	CHANGE DESCRIPTION

**NKU - New Residence Hall**  
KENTON DRIVE & CARROLL DRIVE  
HIGHLAND HEIGHTS, KY 41099  
FOR  
**NORTHERN KENTUCKY UNIVERSITY**

**MOODY•NOLAN**  
434 MADISON AVENUE  
COVINGTON, KY 41011  
PHONE: (859) 957-1277  
FAX: (859) 957-1280

**CMTA**  
10411 Meeting Street, Prospect, KY 40369  
T: 502.326.3085 F: 502.326.2691 www.cmtaengs.com

DRAWING TITLE:

### FIRE SUPPRESSION LEGEND

**JANUARY 30, 2020**  
DRAWN BY: JTM | CHECKED BY: CMG  
#18237  
**FP001**  
BID & PERMIT SUBMITTAL



1 FIRE PROTECTION PLAN - LEVEL 01  
1/8" = 1'-0"

6" FP STANDPIPE. PROVIDE FIRE VALVE AND HOSE CONNECTION AT EACH INTERMEDIATE LANDING. PROVIDE OLD CHINCHNATI THREADS ON HOSE CONNECTIONS. PROVIDE CONTROL VALVE WITH TAMPER SWITCH.

PROVIDE A 100% "WET-TYPE" SPRINKLER SYSTEM IN THE ENTIRE BUILDING. PROVIDE SIDEWALL SPRINKLER HEADS IN RESIDENT ROOM AREAS. PROVIDE SEMI-RECESSED SPRINKLER HEADS IN ALL OTHER AREAS IN ACCORDANCE TO NFPA13R

PROVIDE HIGH TEMPERATURE SPRINKLER THROUGHOUT KITCHEN AND DISHWASHING AREAS.

6" DOUBLE DETECTOR CHECK VALVE ASSEMBLY PER LOCAL WATER COMPANY STANDARDS.

FIRE MAIN OUT TO SPRINKLER SYSTEM

FLOOR CONTROL VALVE ASSEMBLY WITH CONTROL VALVE FLOW/TAMPER SWITCHES & DRAIN.

PROVIDE SPRINKLER PROTECTION WITH CONTROL VALVE & TAMPER SWITCH FOR ELEVATOR PIT.

JOCKEY PUMP CONTROLLER

AUTOMATIC TRANSFER SWITCH & FIRE PUMP CONTROLLER

FIRE PUMP (FP-1)  
750 GPM  
25 HP  
40 PSI BOOST  
208v, 3ph

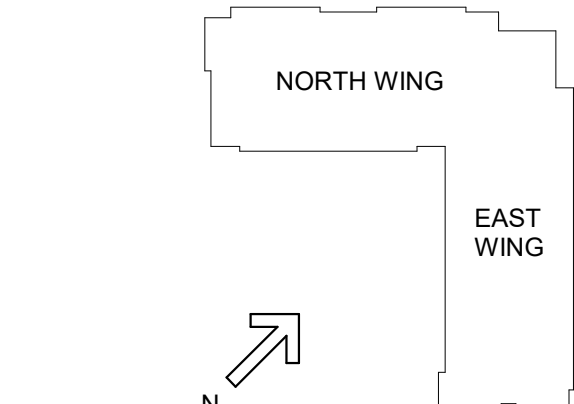
TO WALL MOUNTED FIRE PUMP TEST HEADER

6" FIRE MAIN OUT TO SITE. REFER TO SITE UTILITY PLANS FOR CONTINUATION.

BACKFLOW PREVENTER PER LOCAL WATER COMPANY REQUIREMENTS.

TO WALL FIRE DEPARTMENT CONNECTION.

6" FP STANDPIPE. PROVIDE FIRE VALVE AND HOSE CONNECTION AT EACH INTERMEDIATE LANDING. PROVIDE OLD CHINCHNATI THREADS ON HOSE CONNECTIONS. PROVIDE CONTROL VALVE WITH TAMPER SWITCH.



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DRAWING TITLE:  
**LEVEL 01 - FIRST FLOOR PLAN  
- FIRE PROTECTION**



JANUARY 30, 2020

DRAWN BY: JTM CHECKED BY: CMG

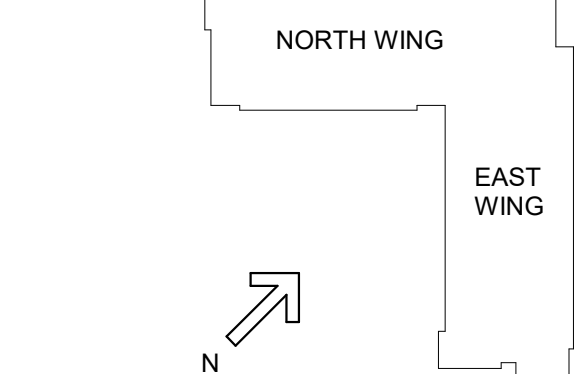
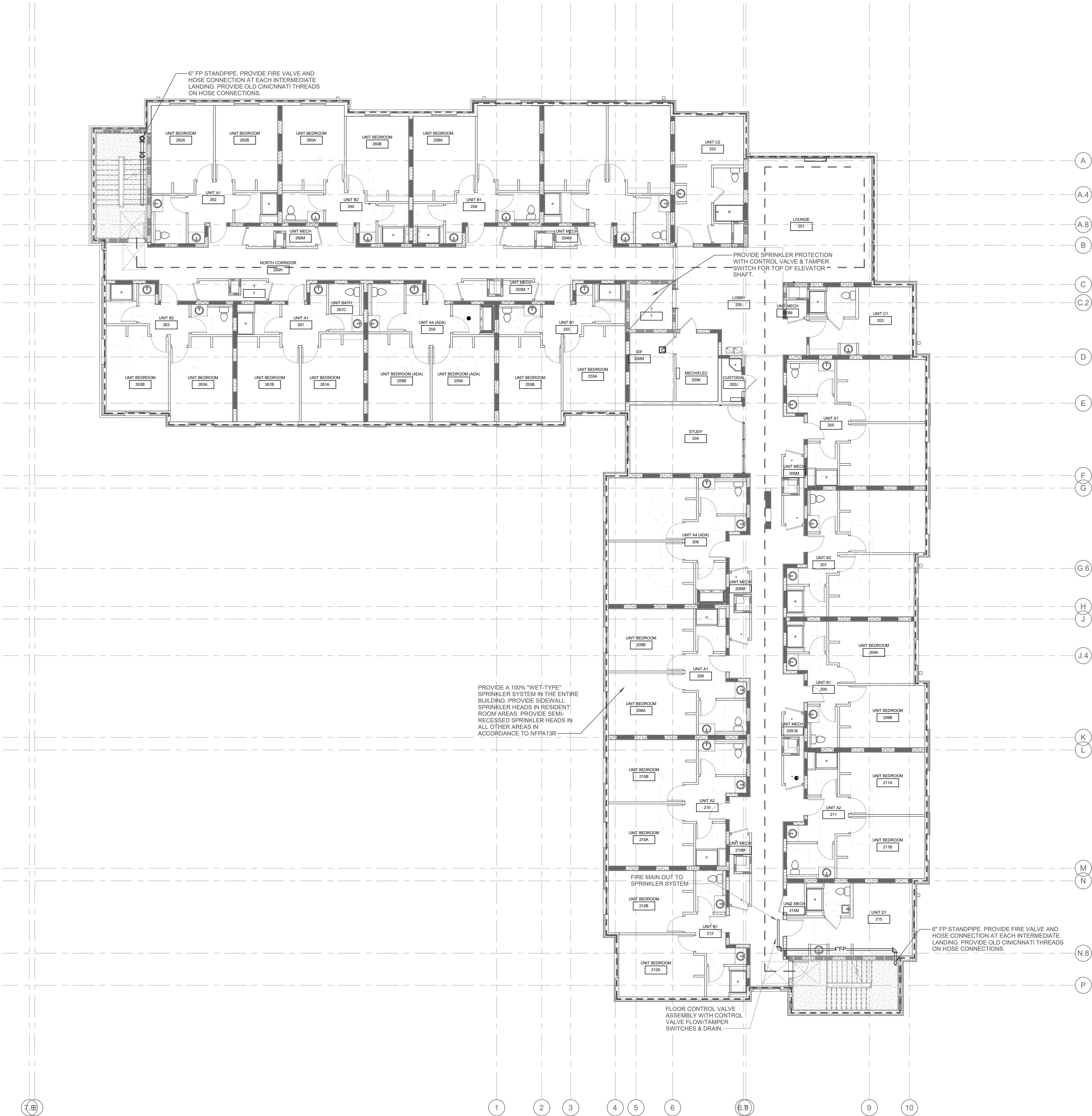
#18237

**FP101**

BID & PERMIT SUBMITTAL



**1 FIRE PROTECTION PLAN - TYPICAL FOR LEVELS 2 THRU 5**  
1/8" = 1'-0"



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DRAWING TITLE:  
**LEVELS 02-05 - TYPICAL FLOOR PLAN - FIRE PROTECTION**

**JANUARY 30, 2020**  
DRAWN BY: JTM CHECKED BY: CMG  
#18237  
**FP102**  
BID & PERMIT SUBMITTAL



WATER HEATER	
TAG	WH-1, WH-2, WH-3 & WH-4
MANUFACTURER	AO SMITH
MODEL	CYCLONE BTH-500
GAS INPUT (BTUH)	500,000
THERMAL EFFICIENCY	94%
GALLONS STORAGE	100
GPH RECOVERY @ 80° F	720
VOLTAGE / MAX FUSE	120V / 15 AMPS
ASME RATED	YES
UL LISTED	YES

\* PROVIDE WITH 2 SPARE IGNITERS PER WATER HEATER. TURN OVER TO OWNER.  
\* EQUAL WATER HEATER BY LOCHINVAR, STATE AND BOCK

RECIRCULATING PUMP	
TAG	DP-1
MANUFACTURER	BELL & GOSSETT
MODEL	ECOCIRC XL 36-45
VOLTAGE / PHASE	115 / 1ø
HP	1/8
FLOW (GPM)	10.0
HEAD (FT.)	30.0
ALL BRONZE BODY	YES
100% LEAD FREE	YES

\* EQUAL PUMPS BY GRUNDFOS AND ARMSTRONG

DOMESTIC WATER BOOSTER PUMP	
SYMBOL	BP-1
MANUFACTURER	BELL & GOSSETT
MODEL	15SV3GC30 - 7.5 HP TEPE
SERVICE	DOMESTIC WATER SERVICE
TYPE	END SUCTION
DRIVE TYPE	CLOSED COUPLED
NO. OF PUMPS	2
PUMP HP / RPM (EA)	7.5 HP / 3,500
VOLT / PHASE / HZ	460 / 3ø / 60
IMPELLER SIZE	5.375"
TOTAL FLOW / TDH	300 GPM / 50 PSI
FLOW / HEAD (EA)	150 GPM / 50 PSI
HEADER SIZE	4"
PRV SIZE	2"
INTEGRAL CONTROL PANEL	YES
SINGLE POINT CONNECTION	YES
INTEGRAL DISCONNECT	YES

EXPANSION TANK	
TAG	ET-1, ET-2, ET-3 & ET-4
MANUFACTURER	WATTS
MODEL	DET-A-42
MAX PRESSURE (PSI)	150
MAX TEMPERATURE	240° F
TANK VOLUME-GAL.	22
TANK ACCEPTANCE-GAL.	15.5

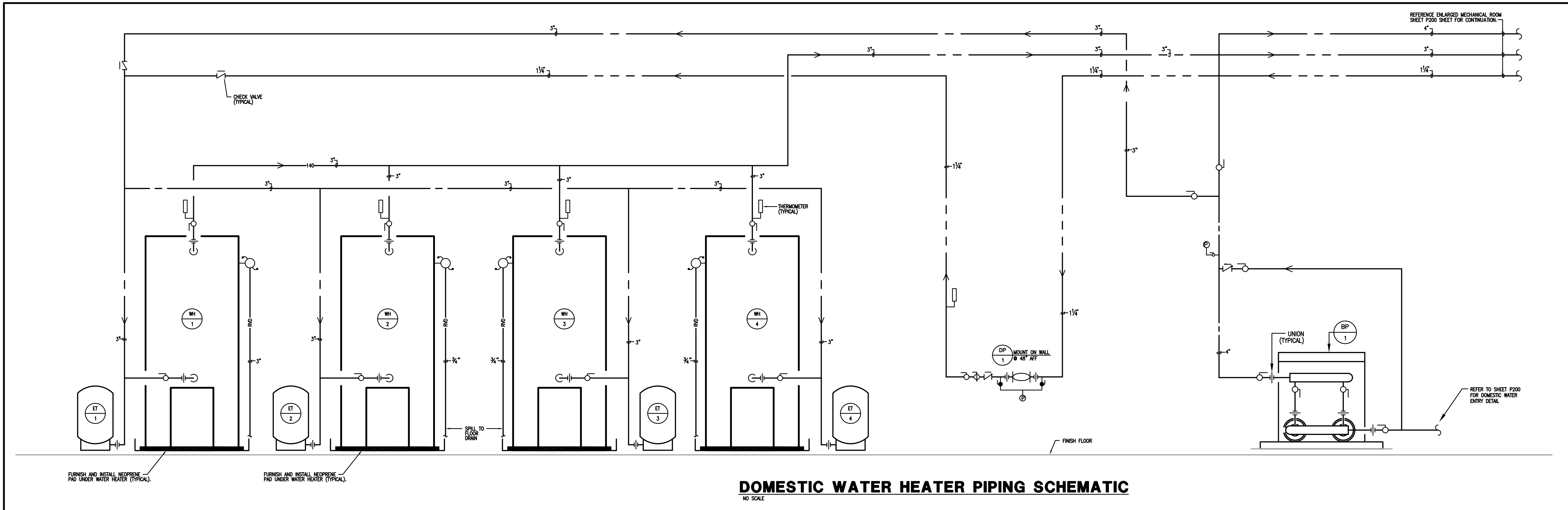
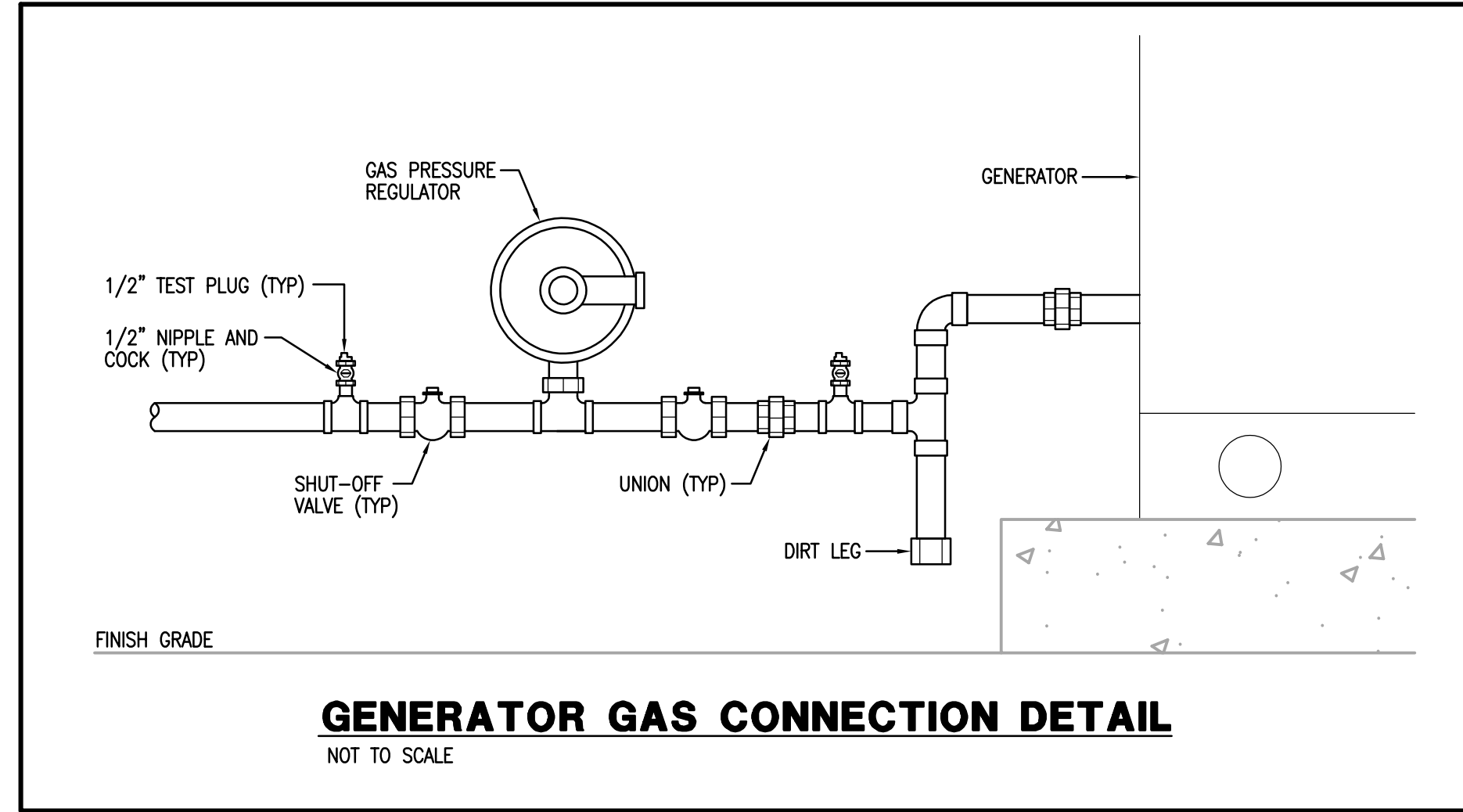
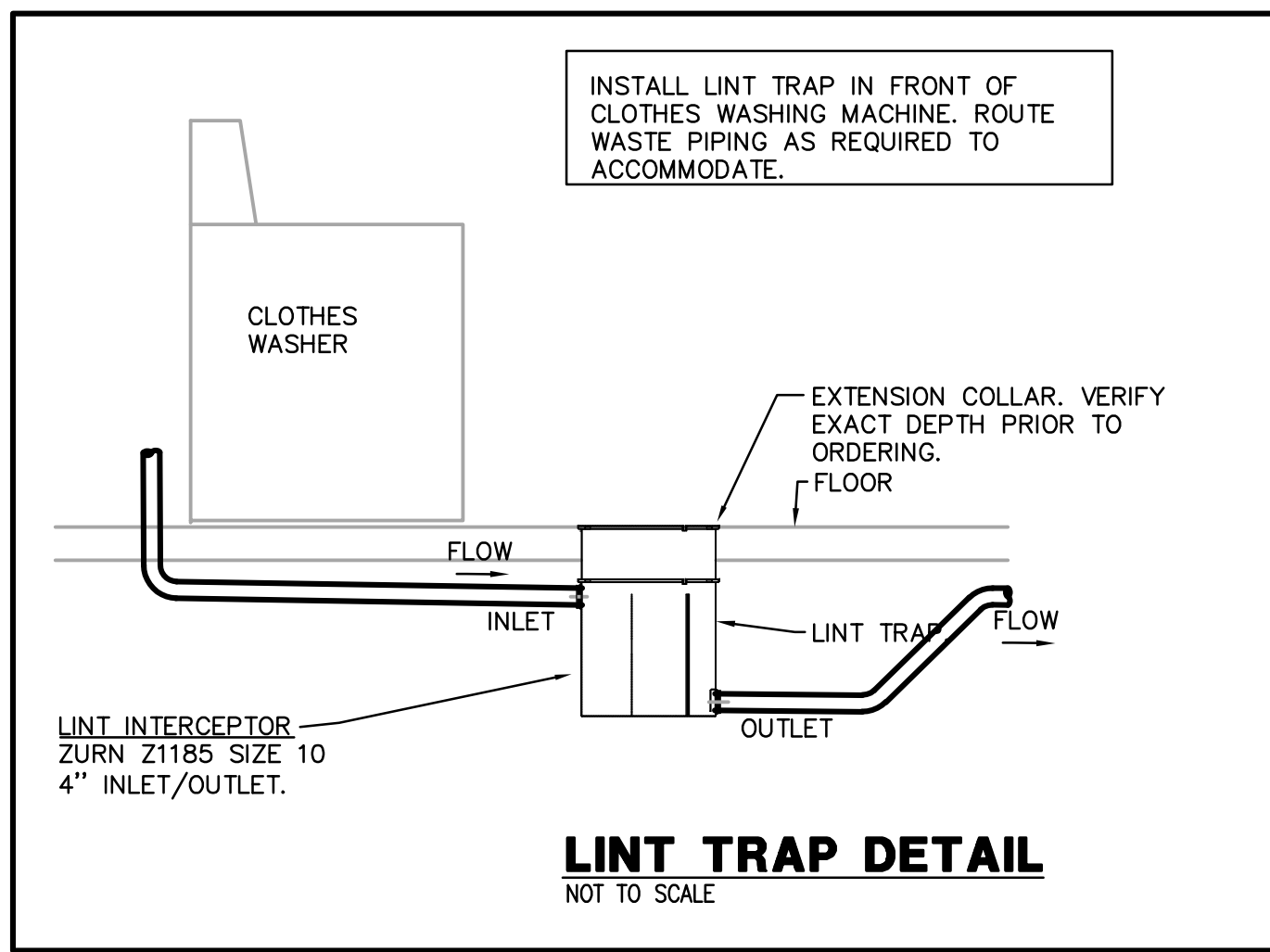
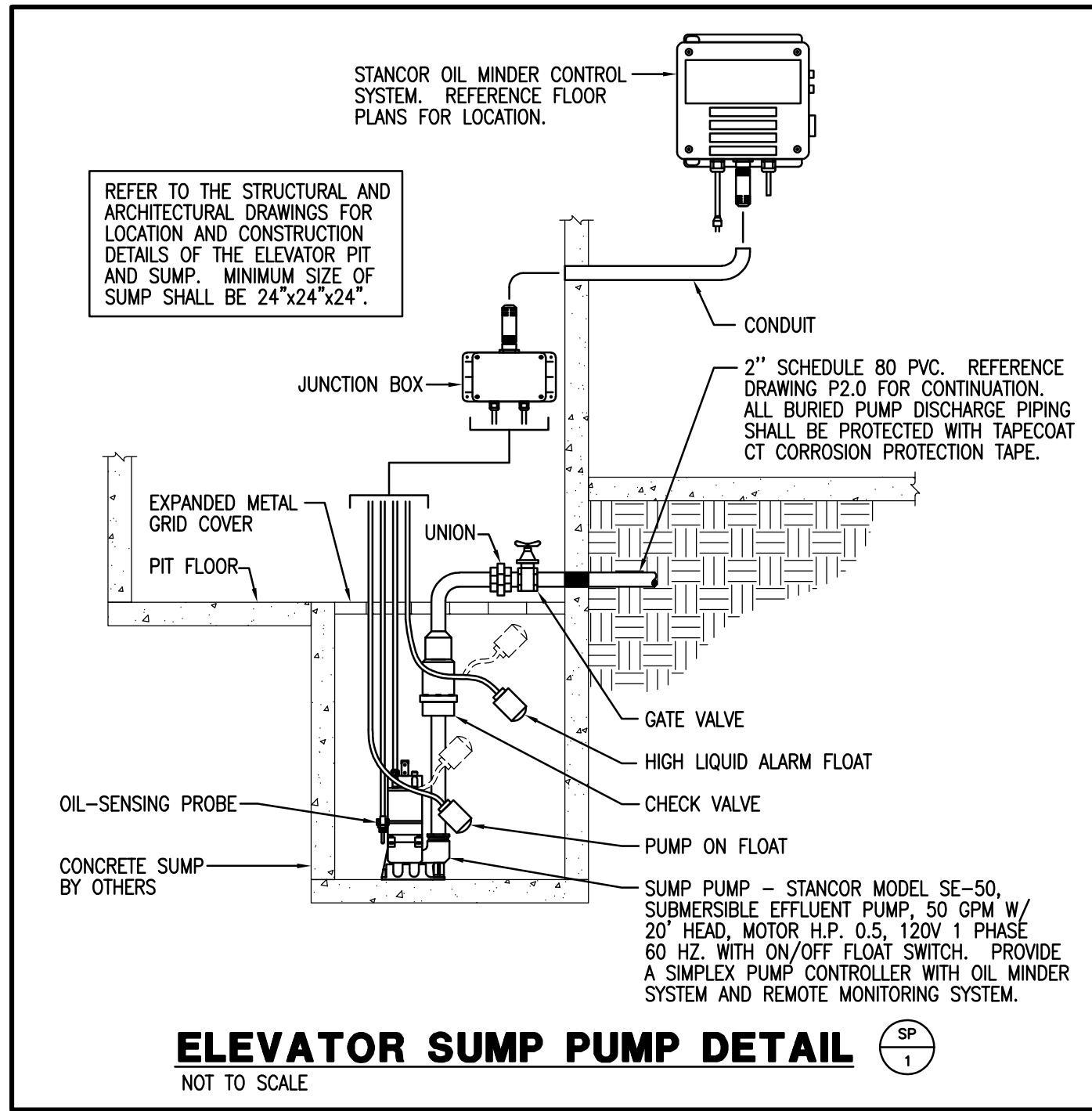
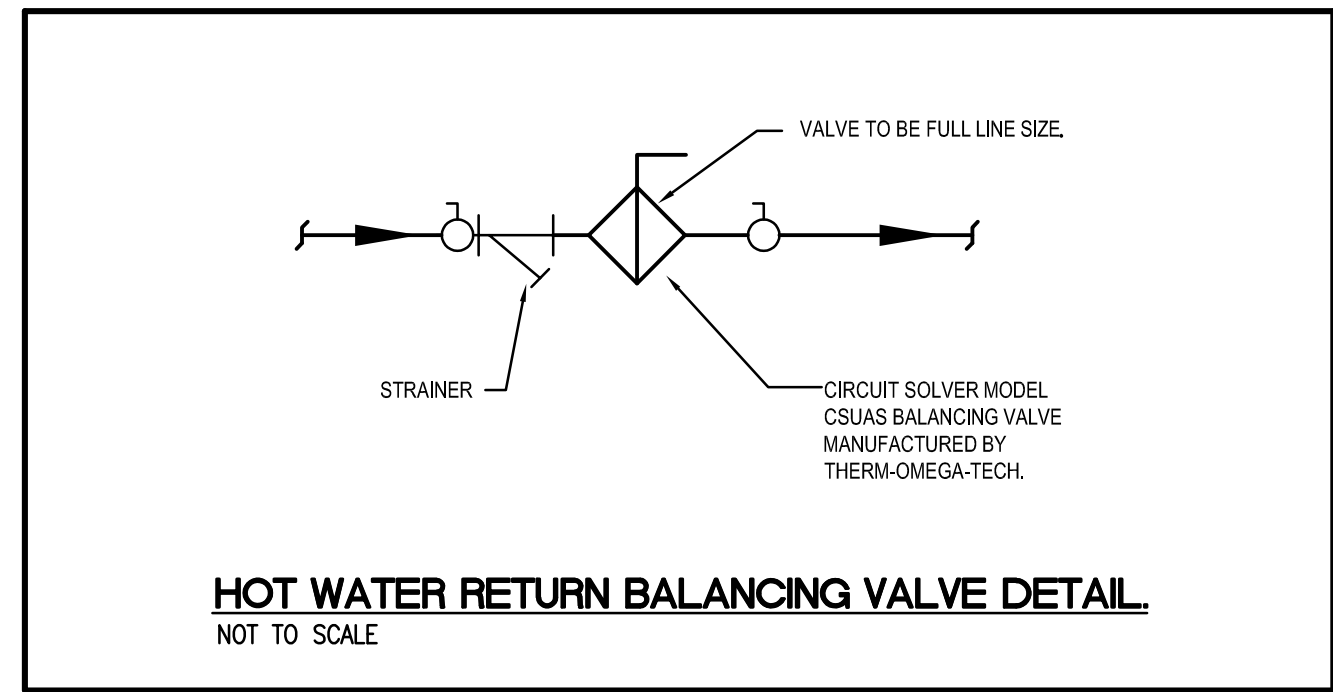
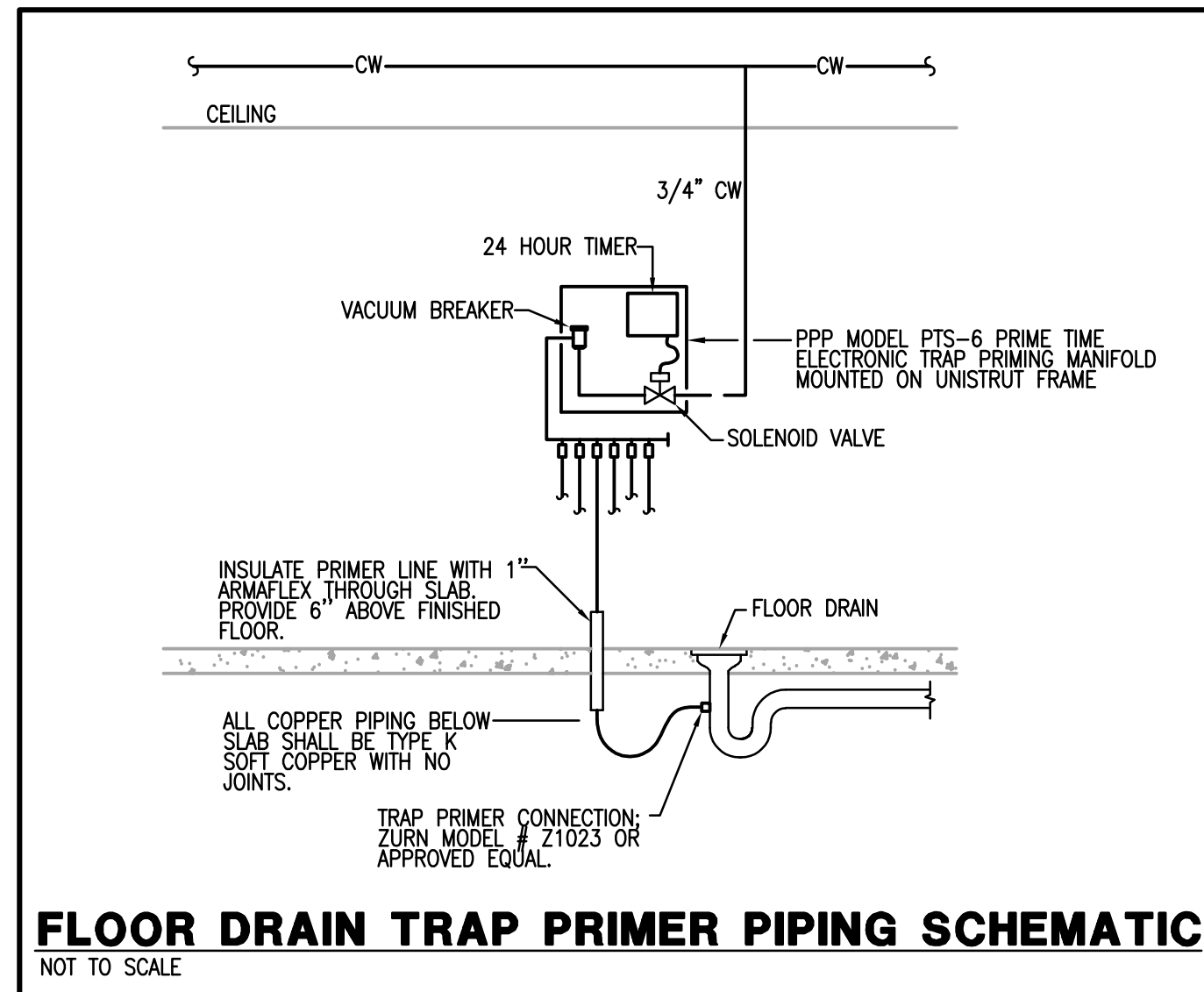
\* EQUAL EXPANSION TANKS BY AMTROL AND WILKINS TANKS TO BE ASME RATED.

PLUMBING FIXTURE SCHEDULE					
P-#	FIXTURE	SAN	VENT	COLD	HOT
P-1	FLOOR SET FLUSH TANK WATER CLOSET - RESIDENCE	4"	2"	1/2"	—
P-1A	FLOOR SET FLUSH TANK WATER CLOSET - RESIDENCE - ADA	4"	2"	1/2"	—
P-1B	FLOOR SET FLUSH VALVE WATER CLOSET - PUBLIC	4"	2"	1-1/4"	—
P-1C	FLOOR SET FLUSH VALVE WATER CLOSET - PUBLIC - ADA	4"	2"	1-1/4"	—
P-2	COUNTERTOP LAVATORY - RESIDENCE	2"	1-1/2"	1/2"	1/2"
P-2A	COUNTERTOP LAVATORY - RESIDENCE - ADA	2"	1-1/2"	1/2"	1/2"
P-2B	COUNTERTOP LAVATORY - PUBLIC - ADA	2"	1-1/2"	1/2"	1/2"
P-2C	WALL HUNG LAVATORY - ADA	2"	1-1/2"	1/2"	1/2"
P-3	SHOWER - RESIDENCE - REFER TO ARCHITECTURAL PLANS FOR CONTROLS LOCATION	2"	1-1/2"	1/2"	1/2"
P-3A	TUB/SHOWER - RESIDENCE - ADA - REFER TO ARCHITECTURAL PLANS FOR CONTROLS LOCATION	2"	1-1/2"	1/2"	1/2"
P-3B	SHOWER - RESIDENCE - ADA - REFER TO ARCHITECTURAL PLANS FOR CONTROLS LOCATION	2"	1-1/2"	1/2"	1/2"
P-4	URINAL	2"	1-1/2"	3/4"	—
P-4A	URINAL - ADA	2"	1-1/2"	3/4"	—
P-5	2-COMP SINK	2"	1-1/2"	1/2"	1/2"
P-6	2 STATION ELECTRIC WATER COOLER WITH BOTTLE FILLER	2"	1-1/2"	1/2"	1/2"
P-7	MOP BASIN 24" x 24"	3"	1-1/2"	3/4"	3/4"
P-8	LAUNDRY SINK	2"	1-1/2"	1/2"	1/2"
P-9	WASHER BOX	2"	1-1/2"	1/2"	1/2"
FD-1	HEAT PUMP CLOSET FLOOR DRAIN	3"	1-1/2"	—	—
FD-2	SHOWER/TOILET ROOM FLOOR DRAIN	3"	1-1/2"	—	—
FD-3	MAIN MECHANICAL ROOM FLOOR DRAIN	4"	2"	—	—

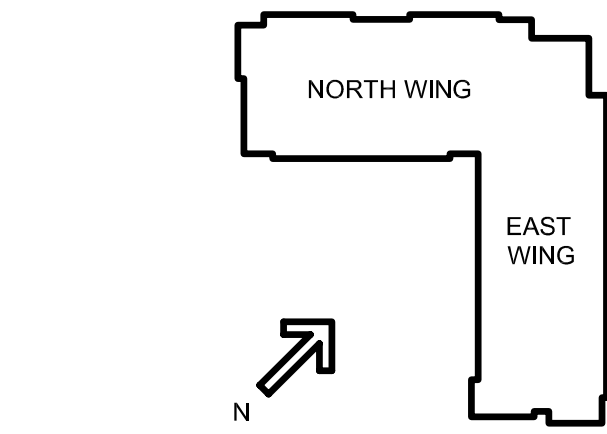
NOTES: ALL PIPE SIZES ARE AS SHOWN UNLESS OTHERWISE NOTED ON DRAWINGS. MINIMUM 2" SANITARY PIPING BELOW SLAB. PROVIDE ALL PIPING AS REQUIRED TO INSTALL ALL FIXTURES INDICATED WITH A "P" DESIGNATION.

## PLUMBING LEGEND

ABOVE FINISHED FLOOR	AFF
BELOW FINISHED FLOOR	BFF
CLEANOUT	CO
COLD WATER	CW
DOMESTIC WATER CIRCULATING PUMP	DP
EXPANSION TANK	ET
EXTERIOR CLEANOUT	EO
FLOOR DRAIN	FD
FREEZE PROOF WALL HYDRANT	FPWH
FREEZE PROOF ROOF HYDRANT	FPRH
HOSE BIBB	HB
HOT WATER	HW
INVERT ELEVATION	IE
NOT TO SCALE	NTS
OPEN RECEPTACLE	OR
ROOF DRAIN	RD
SUMP PUMP	SP
TRAP PRIMER	TP
TRENCH DRAIN	TD
TYPICAL	TYP
VENT THROUGH ROOF	VTR
WATER HAMMER ARRESTOR	WHA
WATER HEATER	WH
SANITARY PIPING	SAN
STORM PIPING	SS
OVERFLOW STORM PIPING	OSS
SANITARY VENT PIPING	V
DOMESTIC COLD WATER PIPING	- - - - -
DOMESTIC HOT WATER PIPING (120° F)	- - - - -
DOMESTIC HOT WATER RETURN PIPING (120° F)	- - - - -
RELIEF VALVE DISCHARGE	RVD
PRESSURE RELIEF VALVE	PRV
UNION	U
DIAL THERMOMETER	DT
PRESSURE GAUGE	PG
GATE VALVE	GV
BALANCING VALVE	BV
SOLENOID VALVE	SV
GAS SHUT-OFF VALVE	GSV
CHECK VALVE	CV
BALL VALVE	BV



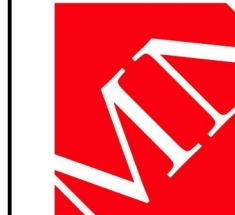
## STATE OF KENTUCKY APPROVAL



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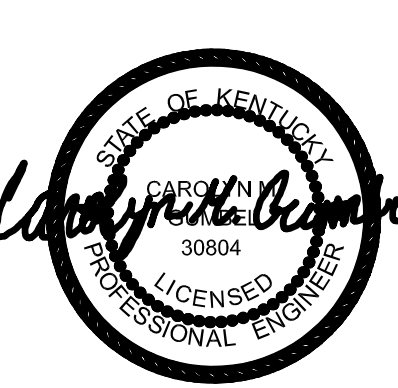


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10411 Meeting Street, Prospect, KY 40059  
1-800-225-3083 / 502-246-2091 www.cmta.org

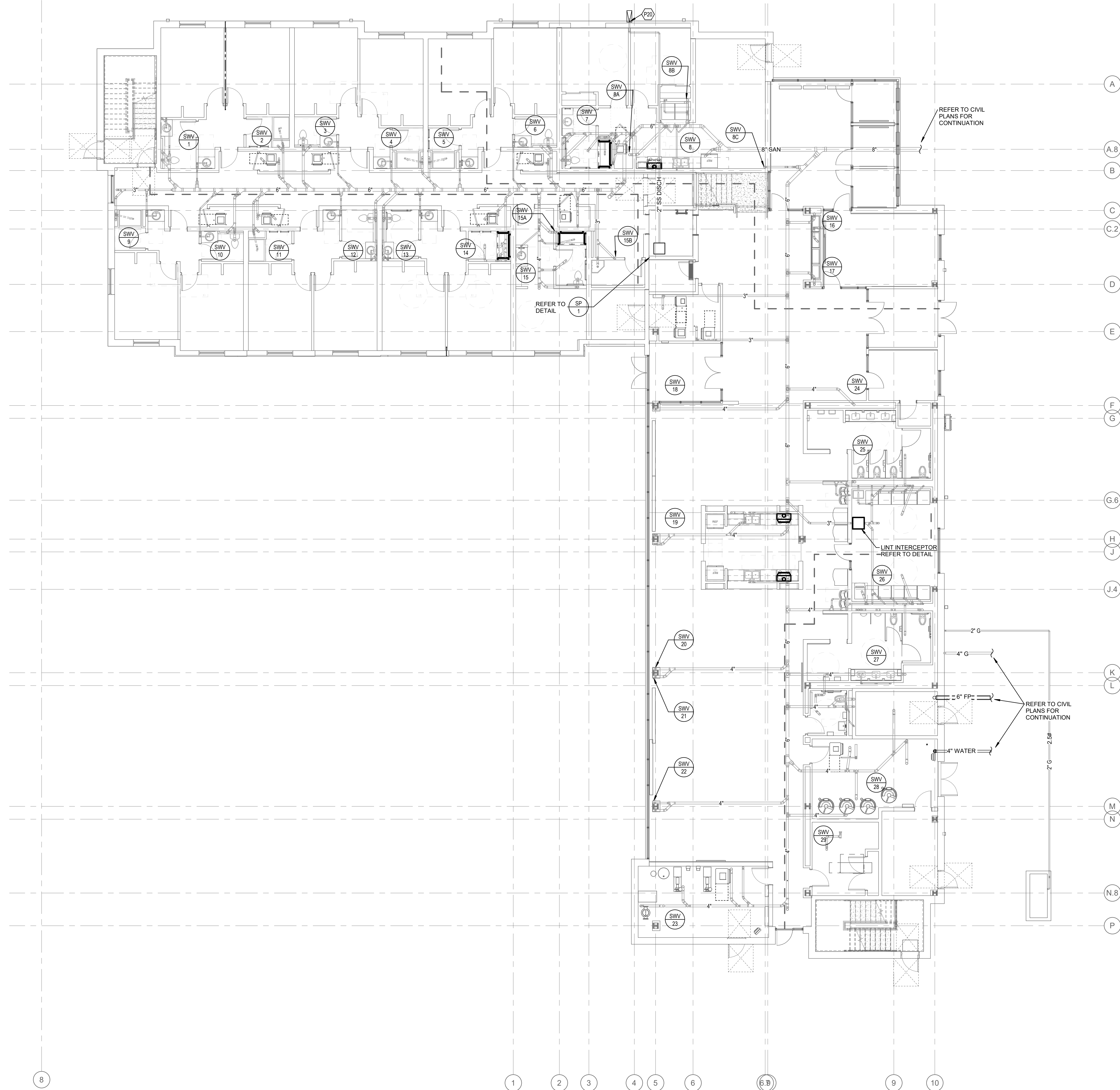
## PLUMBING LEGEND AND SCHEMATICS



**STATE OF KENTUCKY**  
PROFESSIONAL ENGINEER  
30804

**JANUARY 30, 2020**  
DRAWN BY: *Author* CHECKED BY: *Checker*  
#18237  
**P001**  
BID & PERMIT SUBMITTAL

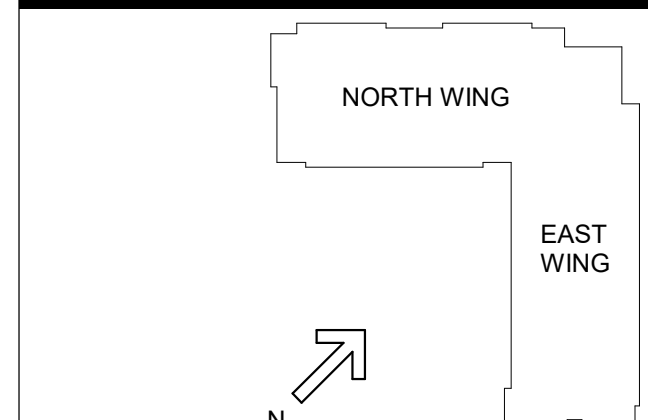




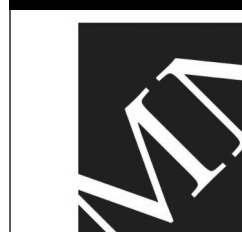
# 1 PLUMBING PLAN - LEVEL 01 UNDER SLAB

TAGGED NOTES	
P20	2" ELEVATOR SUMP PUMP DISCHARGE. SPILL TO SPLASHBLOCK

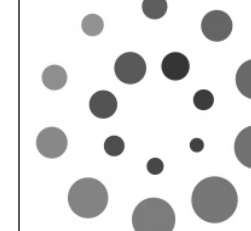
STATE OF KENTUCKY APPROVAL

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DRAWING TITLE:

### LEVEL 1- FIRST FLOOR PLAN - UNDER SLAB PLUMBING



JANUARY 30, 2020

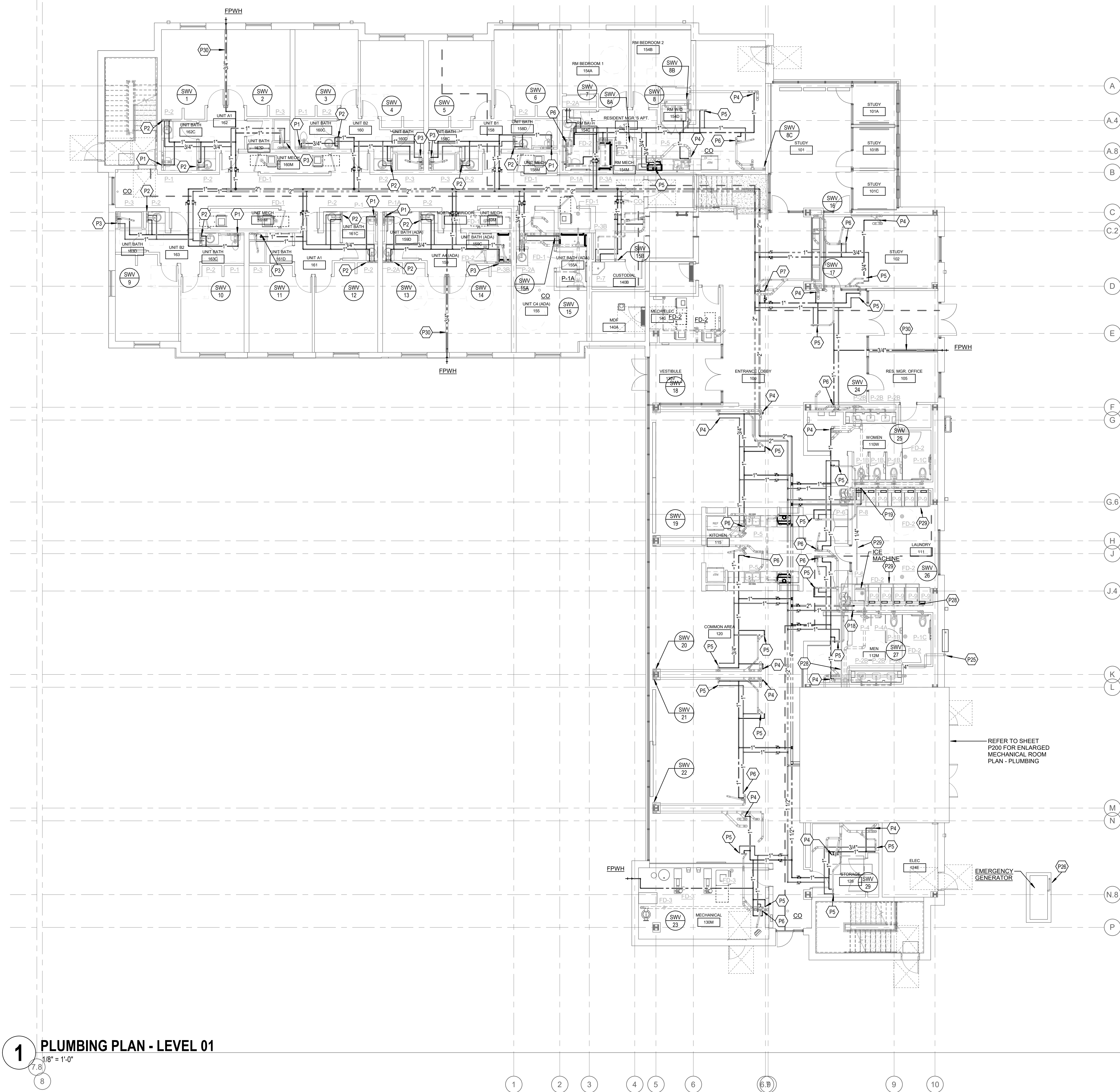
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#18237

# P100

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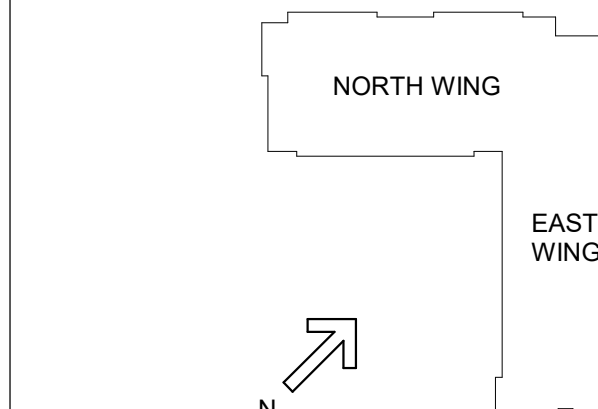




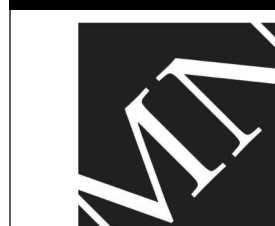
**1 PLUMBING PLAN - LEVEL 01**  
1/8" = 1'-0"

## TAGGED NOTES

- P1 PIPE 1/2" DN. TO WATER CLOSET. EXTEND 1" CW RISER UP TO LEVEL 2. EXTEND 3/4" CW RISER UP TO LEVELS 3 & 4. EXTEND 1/2" CW RISER UP TO LEVEL 5. REFER TO LEVEL 5 FOR CONTINUATION.
- P2 PIPE 1/2" CW & HW DN. TO LAVATORY. EXTEND 3/4" CW & HW RISERS UP TO LEVEL 2. EXTEND 3/4" CW & HW RISERS UP TO LEVELS 3 AND 5. PIPER TO EACH LAVATORY. EXTEND 1/2" HWR TO ABOVE CEILING FROM 1/2" HWR RISER. REFER TO LEVEL 5 FOR CONTINUATION.
- P3 PIPE 1/2" CW & HW DN. TO SHOWER. EXTEND 1" CW & HW RISERS UP TO LEVEL 2. EXTEND 3/4" CW & HW RISERS UP TO LEVELS 4. EXTEND 1/2" CW & HW RISERS UP TO LEVELS 5. PIPE TO EACH SHOWER. EXTEND 1/2" HWR TO ABOVE CEILING FROM 1/2" HWR RISER. REFER TO LEVEL 5 FOR CONTINUATION.
- P4 EXTEND 1" CW RISER UP TO LEVEL 2. EXTEND 3/4" CW RISER UP TO LEVELS 3 & 4. EXTEND 1/2" TO LEVEL 5. PIPE TO EACH W.C. SET.
- P5 EXTEND 3/4" CW & HW RISERS UP TO LEVEL 1. EXTEND 2 & 3. EXTEND 1/2" CW & HW RISERS UP TO LEVELS 4 AND 5. PIPE TO EACH LAVATORY. EXTEND 1/2" HWR TO ABOVE CEILING FROM 1/2" HWR RISER. REFER TO LEVEL 5 FOR CONTINUATION.
- P6 EXTEND 1" CW & HW RISERS UP TO LEVEL 2. EXTEND 3/4" CW & HW RISERS UP TO LEVELS 4. EXTEND 1/2" CW & HW RISERS UP TO LEVEL 5. PIPE TO EACH SHOWER. EXTEND 1/2" HWR TO ABOVE CEILING FROM 1/2" HWR RISER. REFER TO LEVEL 5 FOR CONTINUATION.
- P7 EXTEND 3/4" CW & HW RISERS UP TO LEVEL 2, 3, 4 & 5. PIPE TO EACH W.C. SET. TO EACH COOLER. EXTEND 1/2" HWR TO ABOVE CEILING FROM 1/2" HWR RISER. REFER TO LEVEL 5 FOR CONTINUATION.
- P8 PIPES 1/2" DN. PROVIDE FULL SIZE HEADER AND CONNECT TO FIXTURES. PIPE 1/2" UP TO ICE MACHINE. PROVIDE A PBPB MOUNT ON WALL BEHIND ICE MAKER WITH SHUT OFF VALVE. PROVIDE FITTING TO FITTING TO FITTING TO FITTING TO DRAIN TO FLOOR DRAIN. PROVIDE WH'S ON BOTH HOT AND COLD WATER HEADERS IN COMPLIANCE WITH THE REGULATIONS.
- P9 2" CW & 1" HW DN. PROVIDE FULL SIZE HEADER AND CONNECT TO FIXTURES. PROVIDE WH'S ON BOTH HOT AND COLD WATER HEADERS IN COMPLIANCE WITH THE REGULATIONS.
- P10 GAS METER SET. INSTALL IN COMPLIANCE WITH THE LOCAL GAS COMPANY. PROVIDE 1/4" W. TO 4" GAS SERVICE WITHIN THE BUILDING. GAS LOAD AS FOLLOWS: (4) WATER HEATERS (100 BTU/HOUR EACH) (1) COOK TOP (100 BTU/HOUR) (1) WATER HEATER (100 BTU/HOUR EACH). TOTAL 2350 MBH. PROVIDE 2.58 GAS SERVICE LINE TO GENERATOR. GAS LOAD FOR GENERATOR: 1797 MBH.
- P11 1/2" DN. EMERGENCY SHUT OFF VALVE. PROVIDE 10' TO 101. SHUT OFF ON FOR CLOTHES DRYER. PROVIDE WITH EXPOSED SHUT OFF VALVE FOR CONNECTION. (TYP. OF 10' UNITHAN 1111)
- P12 1/2" DN. COOLER
- P13 ROUTE 3/4" CW FOR FPWH WITHIN WALL

[illegible]

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DRAWING TITLE:

### LEVEL 1 - FIRST FLOOR PLAN - PLUMBING



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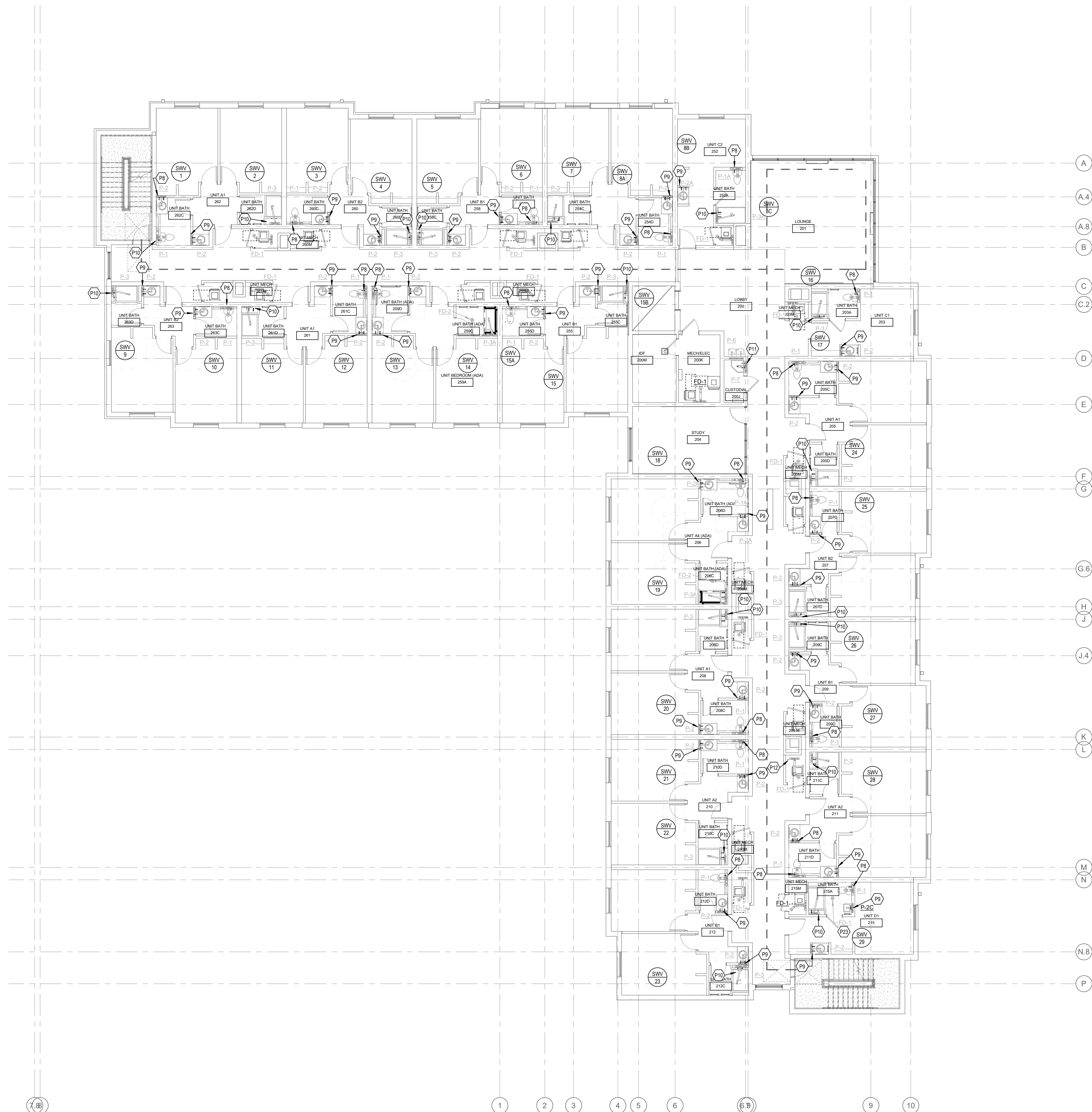
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# P101

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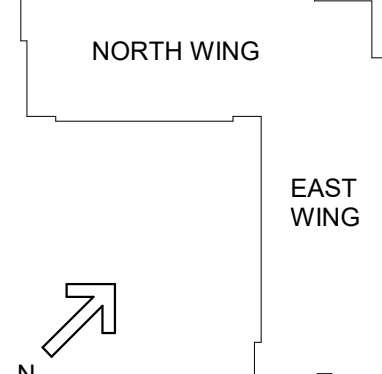


1

$$1/8'' = 1'-0''$$

##

P08	EXTEND 1" CW RISER UP FROM LEVEL 1. EXTEND 3/4" CW RISER UP TO LEVELS 3 & 4. EXTEND 1/2" TO LEVEL 5. PIPE TO MECH. ROOM FOR CONTINUATION.
P09	EXTEND 3/4" CW & HW RISERS UP FROM LEVEL 1, UP TO LEVEL 3. EXTEND 1/2" CW & HW RISERS UP TO LEVELS 4 AND 5. PIPE TO EACH LAVATORY. EXTEND 1/2" HW/R TO ABOVE CEILING. CONTINUE 1/2" HW RISER UP TO LEVEL 5 FOR CONTINUATION.
P10	EXTEND 1" CW & HW RISERS UP FROM LEVEL 1, UP TO LEVEL 3. EXTEND 3/4" CW & HW RISERS UP TO LEVELS 4. EXTEND 1/2" CW & HW RISERS UP TO LEVEL 5. PIPE TO GACHOWNER. EXTEND 1/2" HW/R TO ABOVE CEILING FROM 1/2" HW RISER. REFER TO LEVEL 5 FOR CONTINUATION.
P11	EXTEND 3/4" CW & HW RISERS UP FROM LEVEL 1, AND UP TO LEVEL 5. PIPE TO MECH. ROOM FOR CONTINUATION. WATER COOLER. EXTEND 1/2" HW/R TO ABOVE CEILING FROM 1/2" HW RISER. REFER TO LEVEL 5 FOR CONTINUATION.
P12	1/4" 1/4" HW MAIN FROM ABOVE LEVEL 5 CEILING, DN. TO MECH. ROOM FOR CONTINUATION.
P23	F-01 UNIT BATH 215A ONLY.



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### LEVELS 2-4 - TYPICAL FLOOR PLAN - PLUMBING



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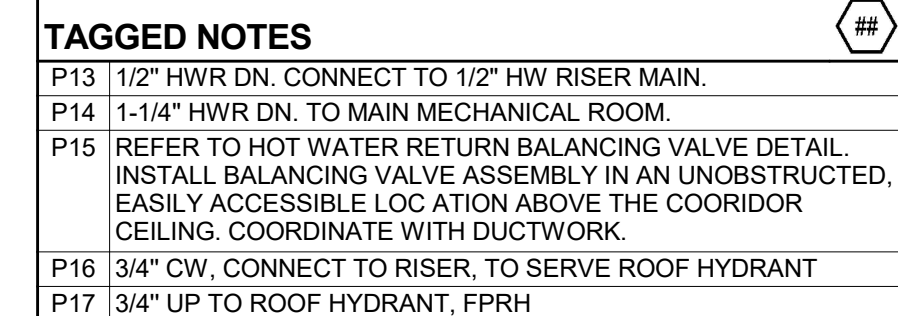
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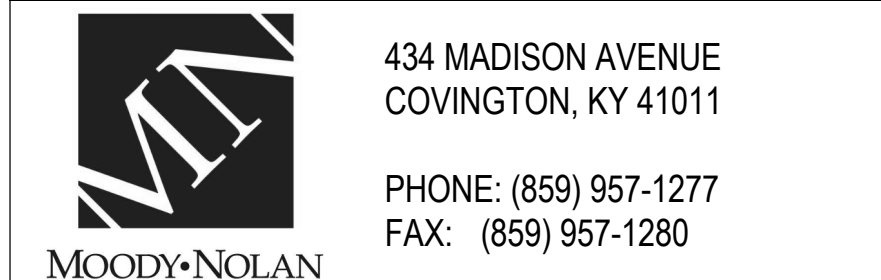
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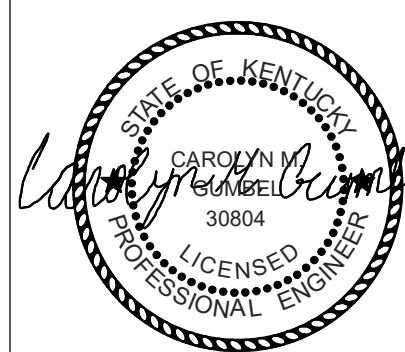




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**LEVEL 5 - FIFTH FLOOR PLAN -  
PLUMBING**



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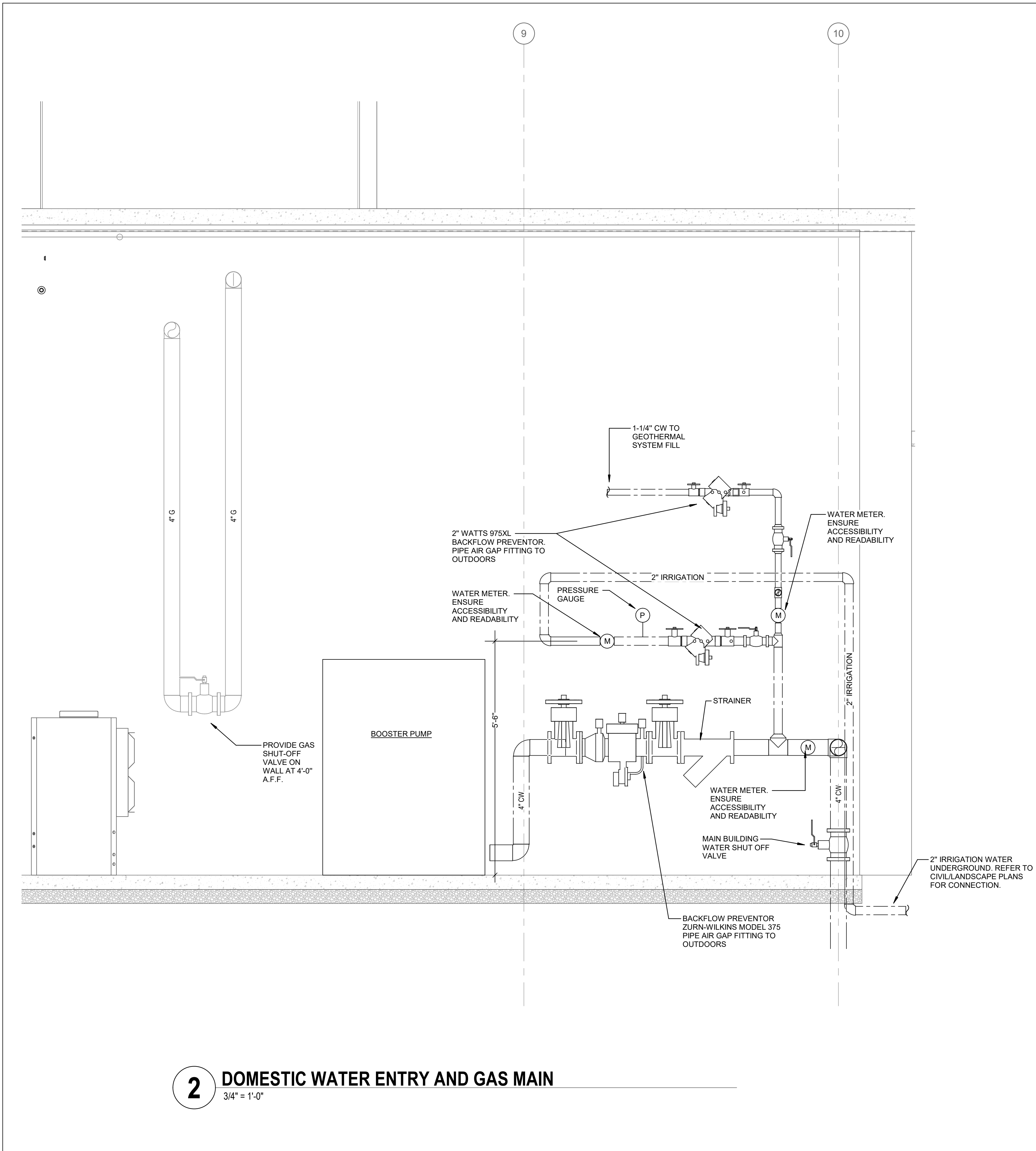
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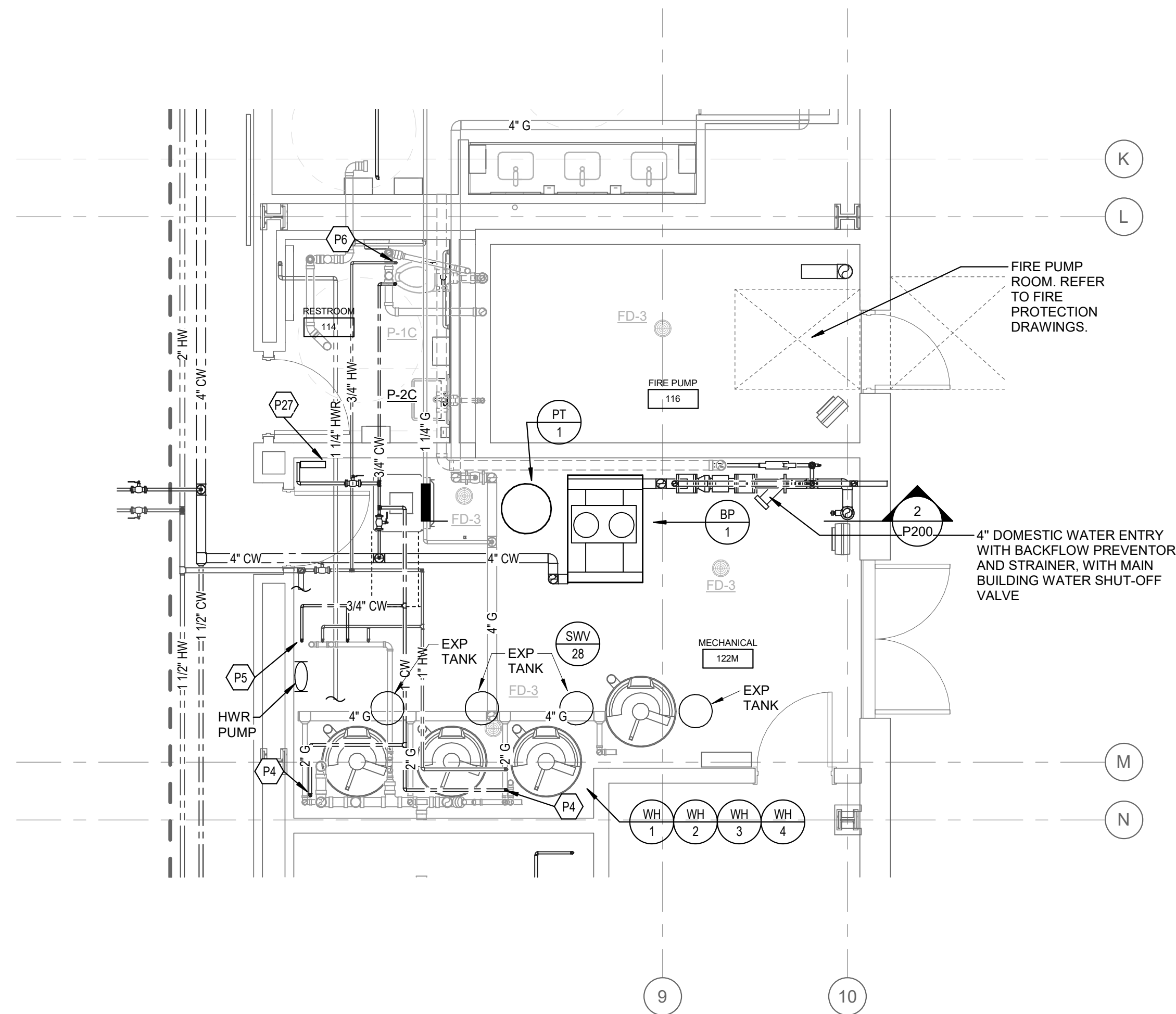
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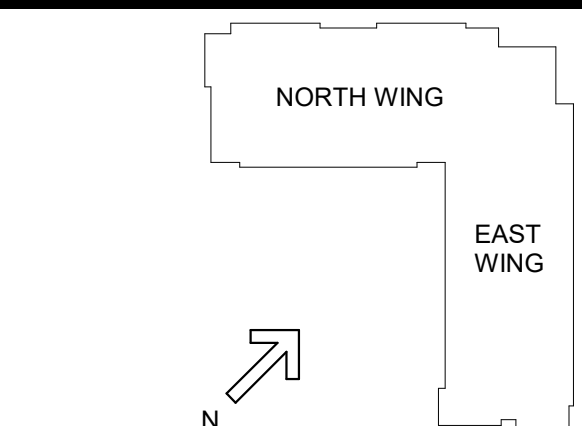


2 DOMESTIC WATER ENTRY AND GAS MAIN  
3/4" = 1'-0"



1 ENLARGED MECHANICAL ROOM PLAN - PLUMBING  
1/4" = 1'-0"

TAGGED NOTES		#
P4	EXTEND 1" CW RISER UP TO LEVEL 2. EXTEND 3/4" CW RISER UP TO LEVELS 3 & 4. EXTEND 1/2" TO LEVEL 5. PIPE TO EACH WATER CLOSET.	
P5	EXTEND 3/4" CW & HW RISERS UP TO LEVEL 2 & 3. EXTEND 1/2" CW & HW RISERS UP TO LEVELS 4 AND 5. PIPE TO EACH LAVATORY. EXTEND 1/2" HWR TO ABOVE CEILING FROM 1/2" HW RISER. REFER TO LEVEL 5 FOR CONTINUATION.	
P6	EXTEND 1" CW & HW RISERS UP TO LEVEL 2 & 3. EXTEND 3/4" CW & HW RISERS UP TO LEVELS 4. EXTEND 1/2" CW & HW RISERS UP TO LEVELS 5. PIPE TO EACH SHOWER. EXTEND 1/2" HWR TO ABOVE CEILING FROM 1/2" HW RISER. REFER TO LEVEL 5 FOR CONTINUATION.	
P27	TRAP PRIMER PANEL. REFER TO DETAIL SHEET P001. PIPE 1/2" CW TO EACH FLOOR DRAIN IN THE MECHANICAL ROOM. TRAP PRIMER CONNECTION.	



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FAX: (859) 957-1280

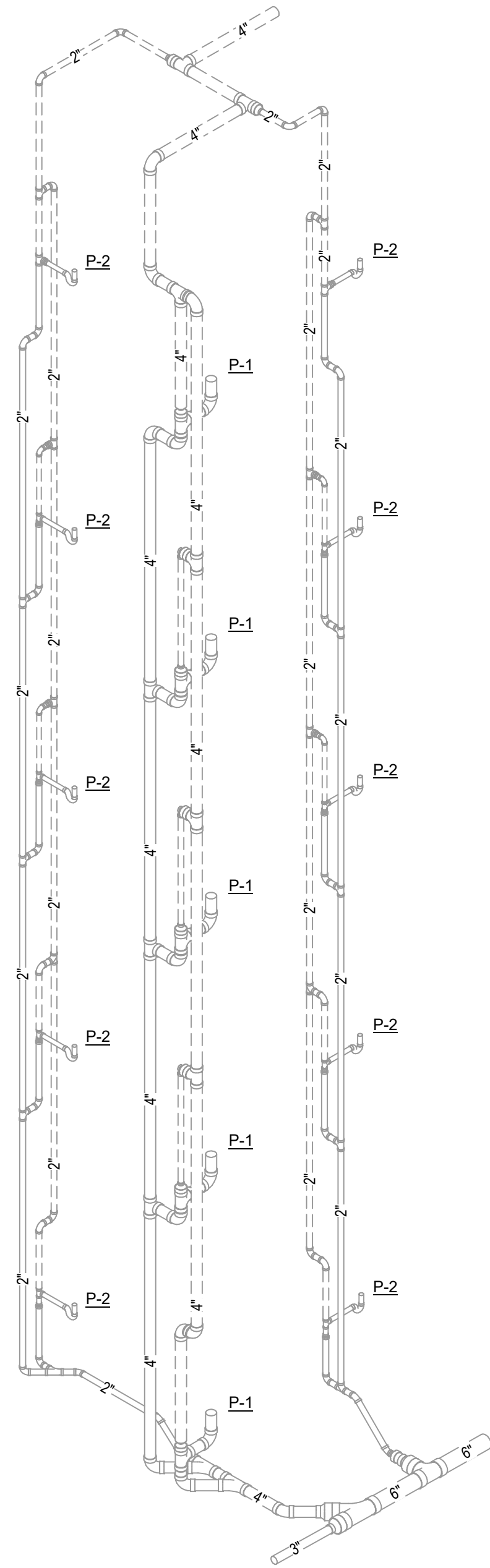
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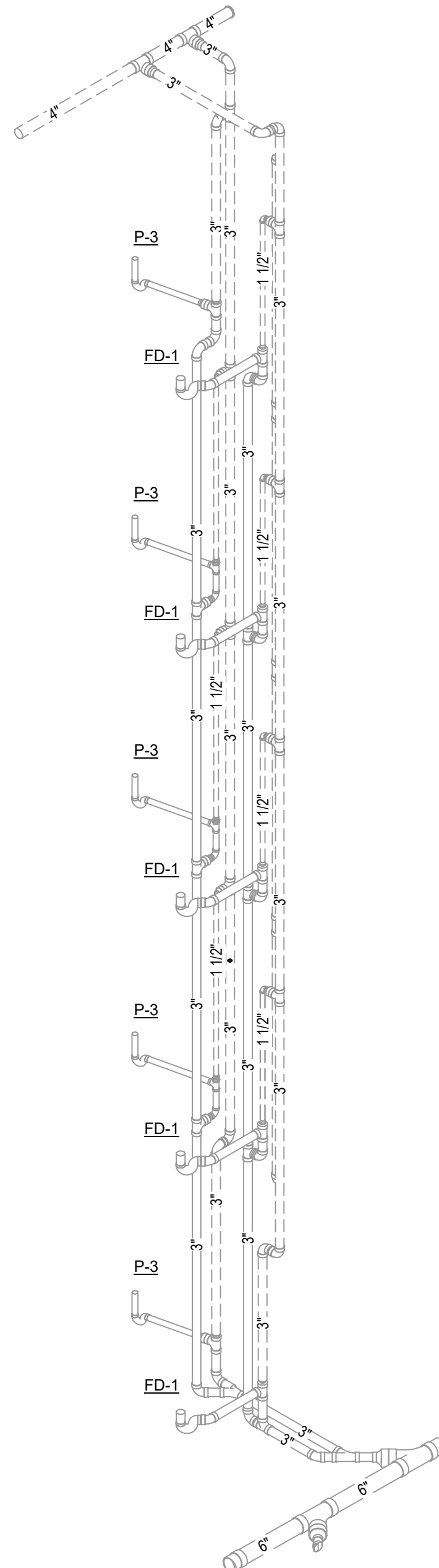
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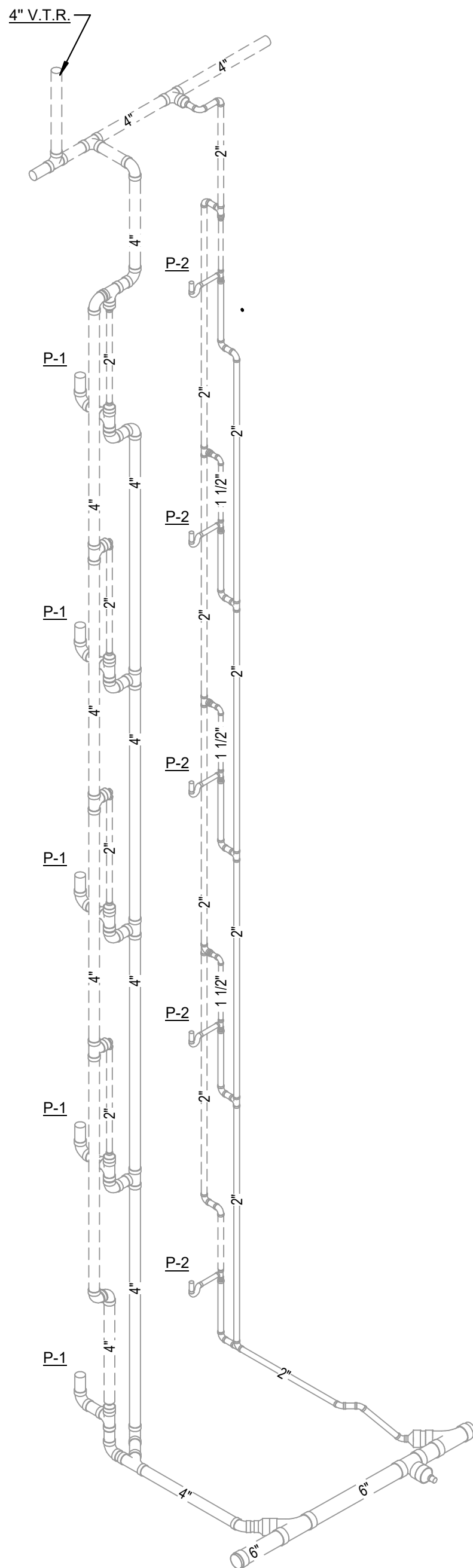




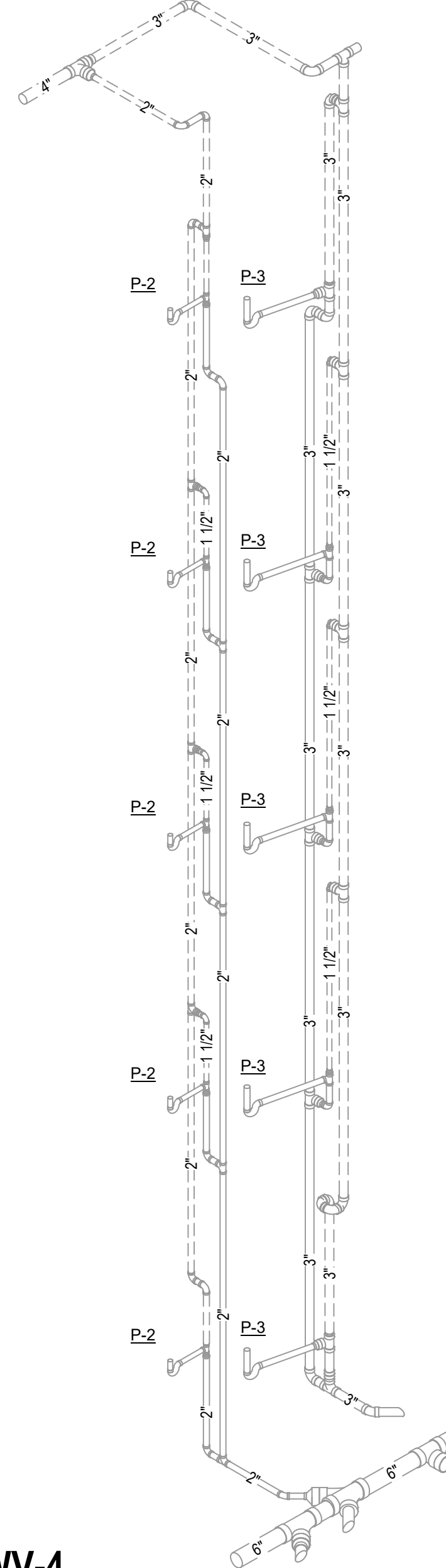
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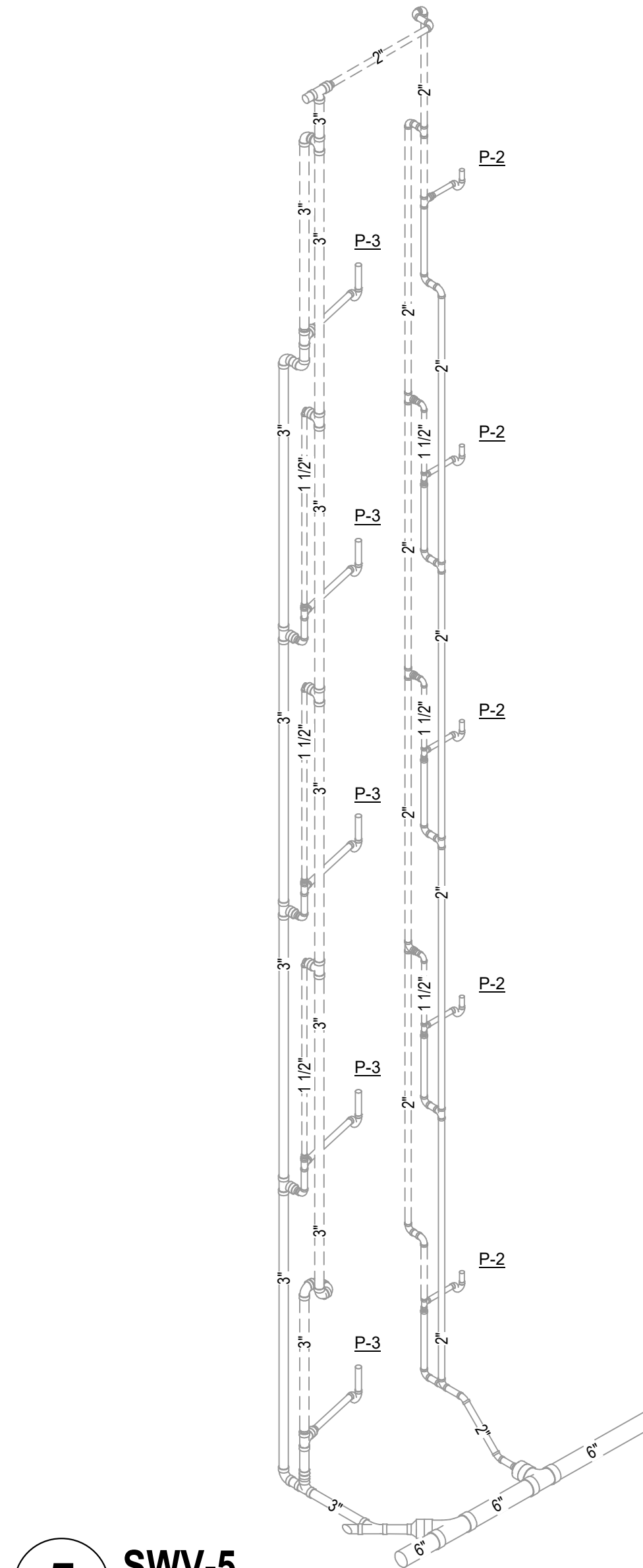
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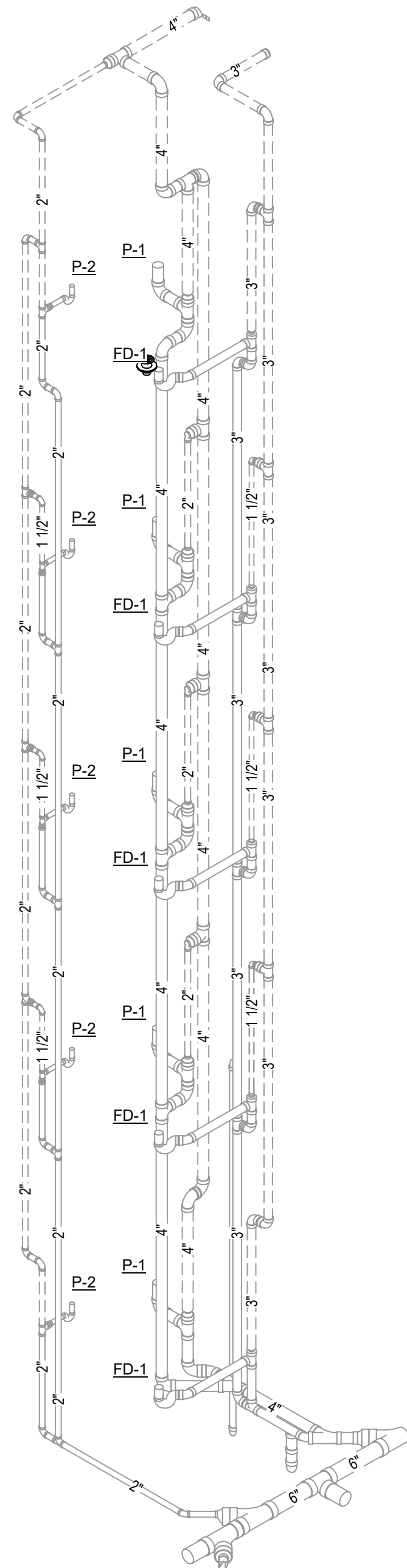
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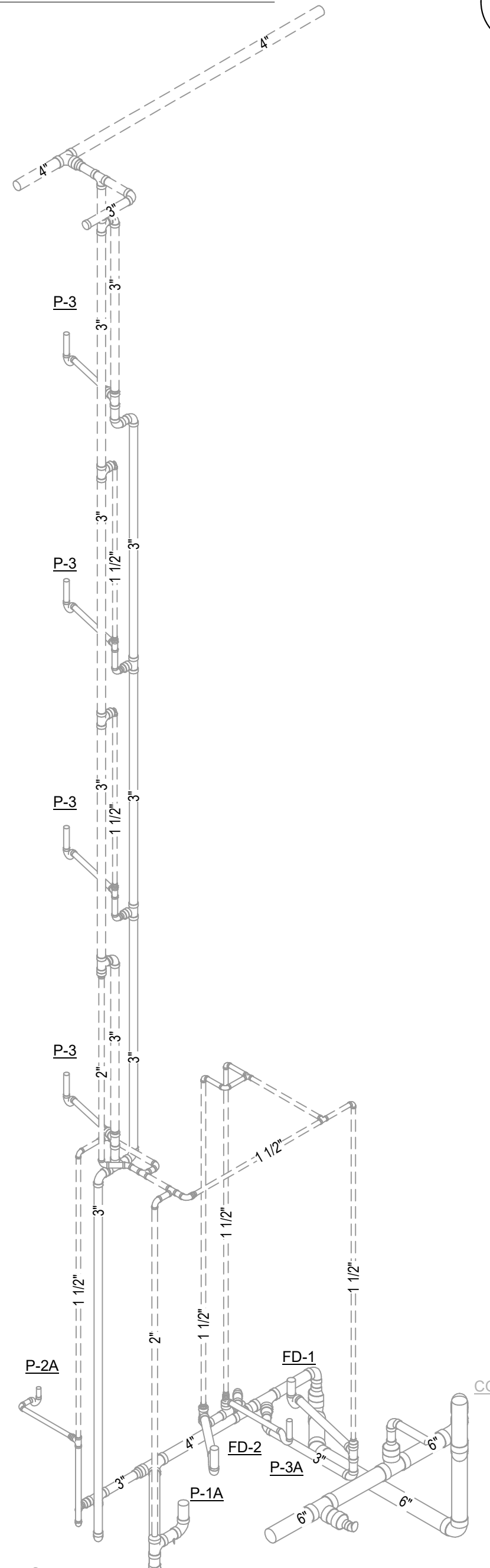
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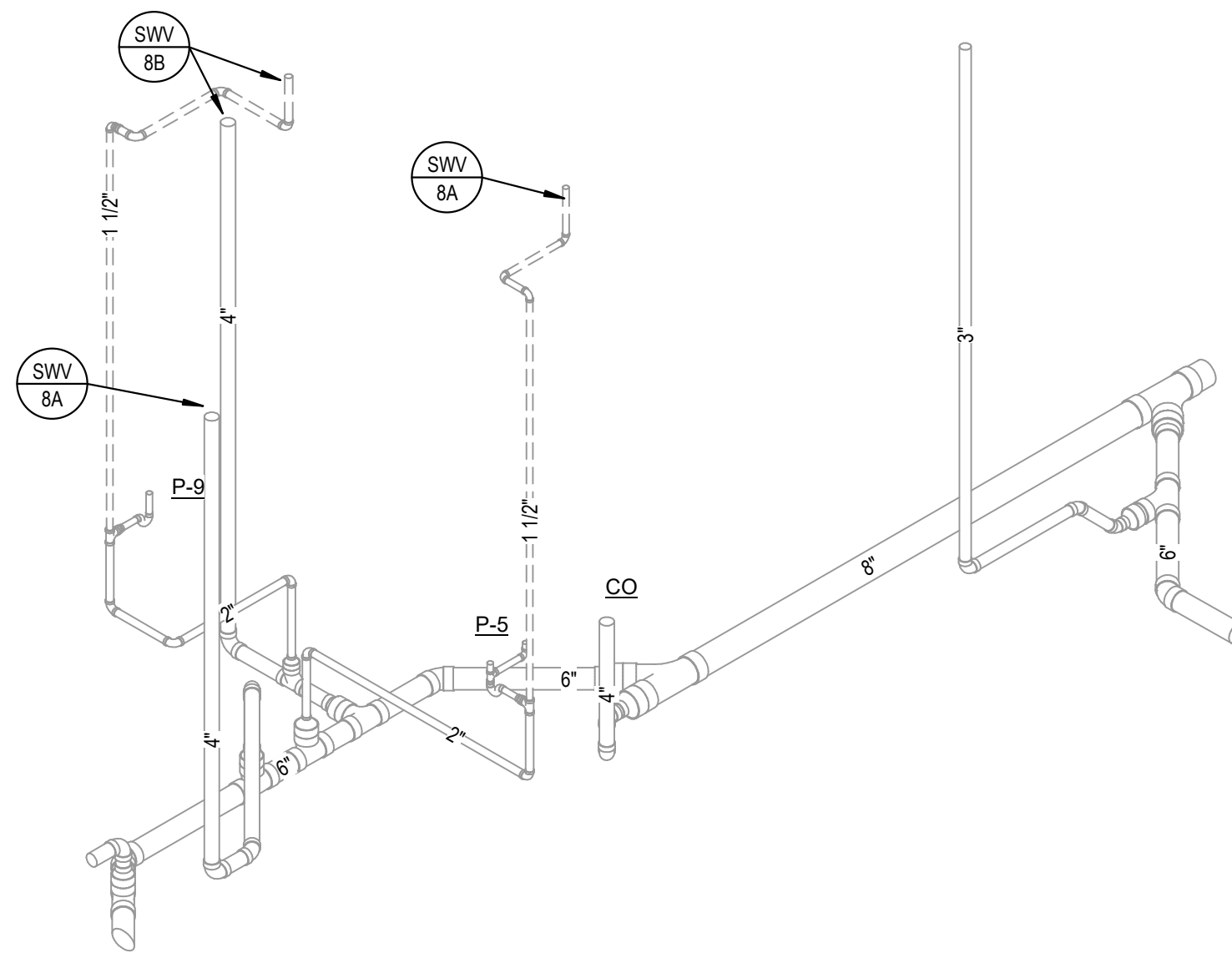
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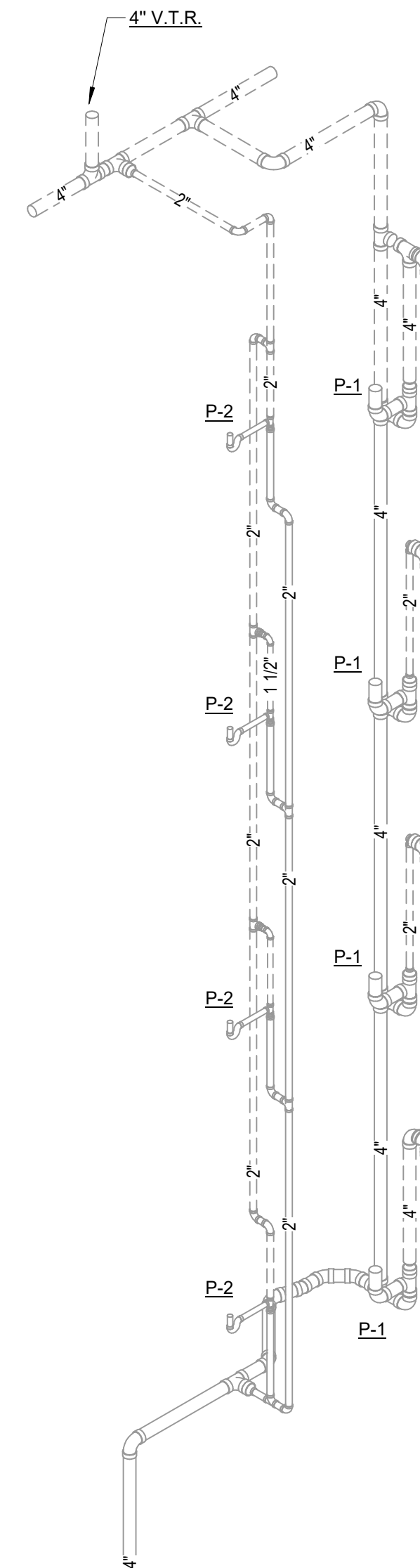
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7 SWV-7

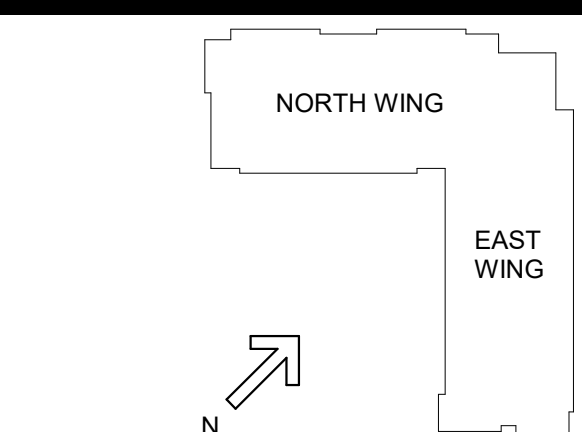


8 SWV-8



9 SWV-8A

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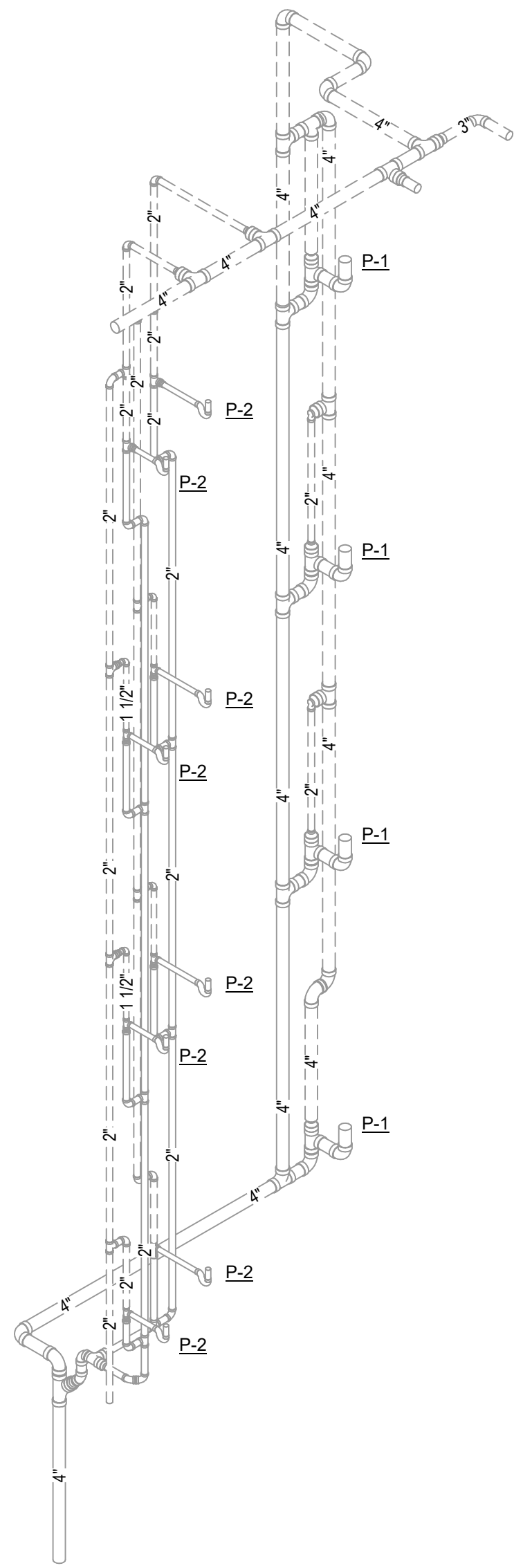
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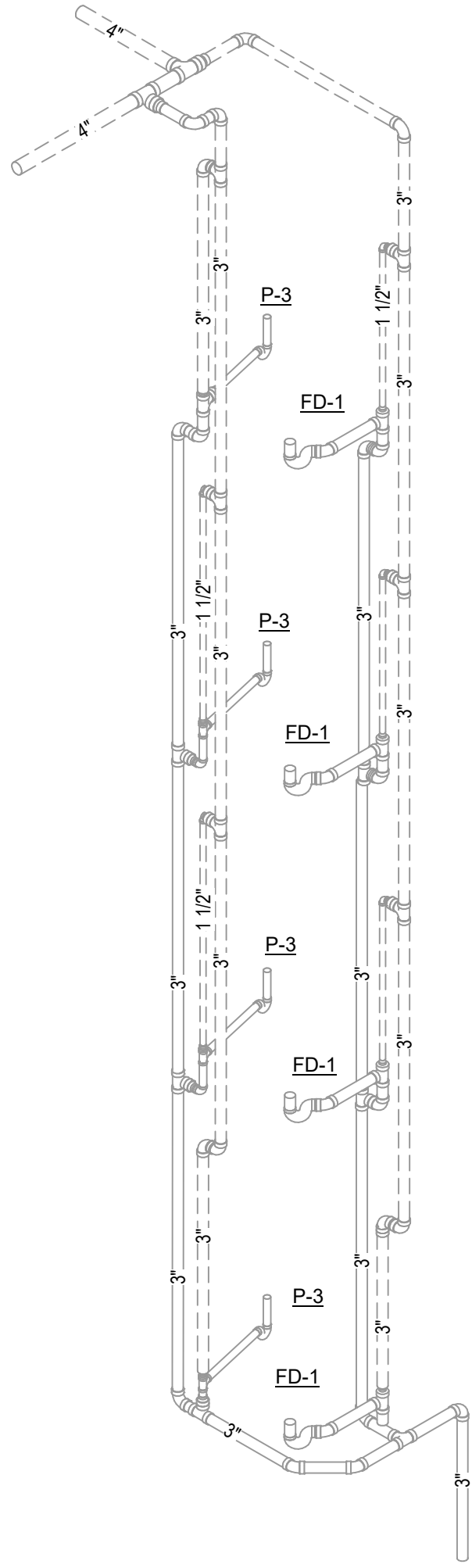
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RISER DIAGRAMS**

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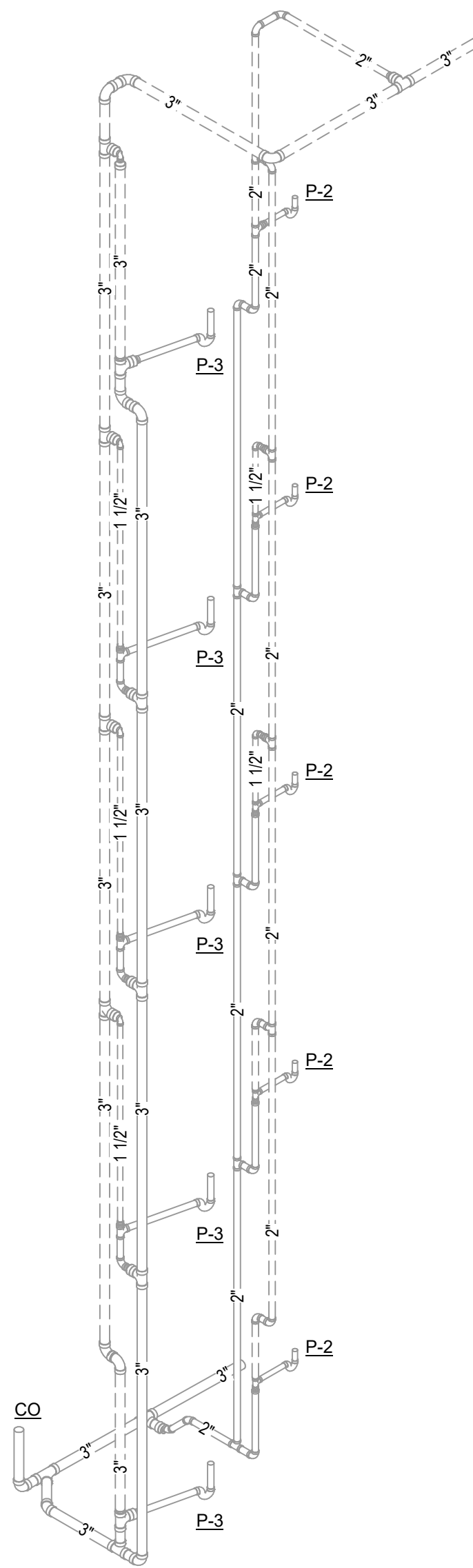




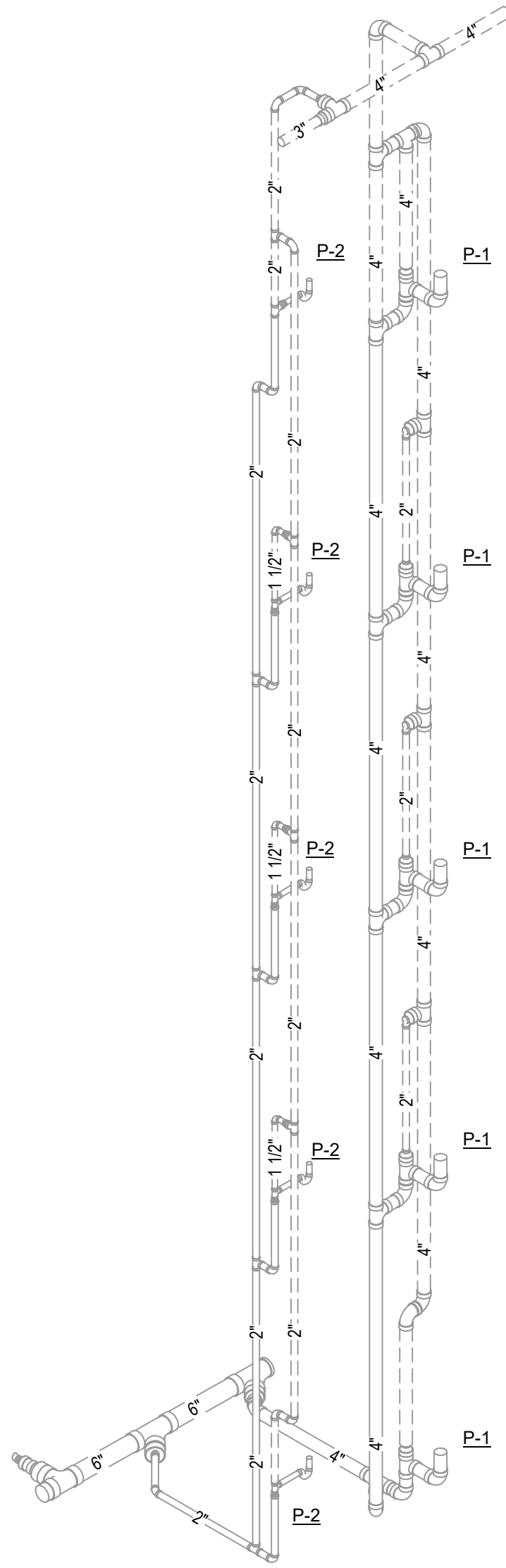
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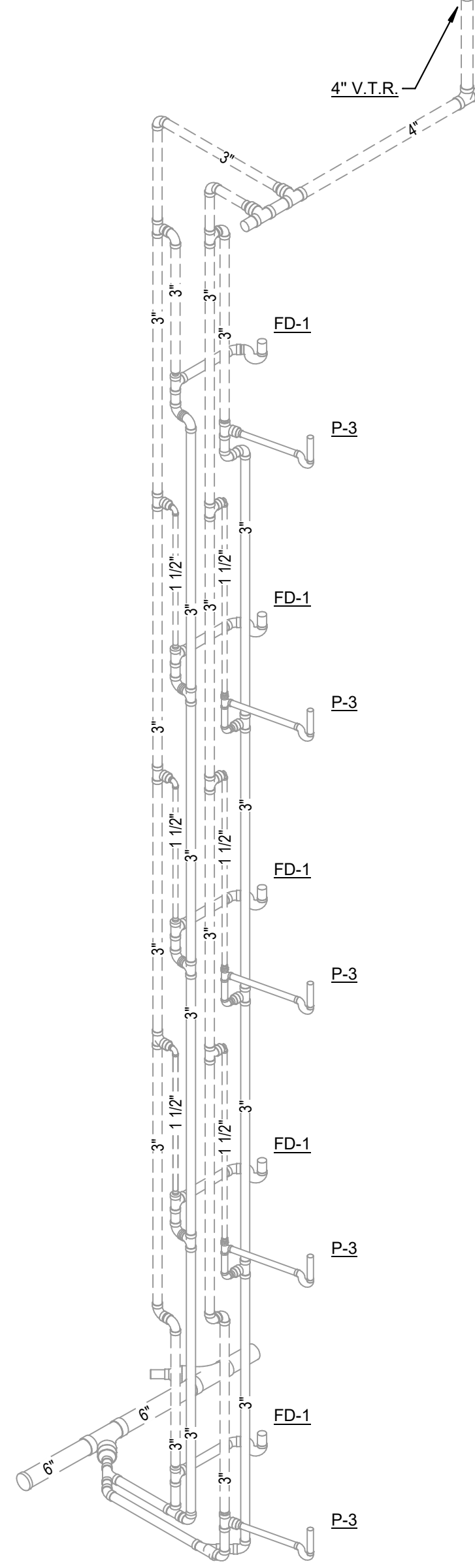
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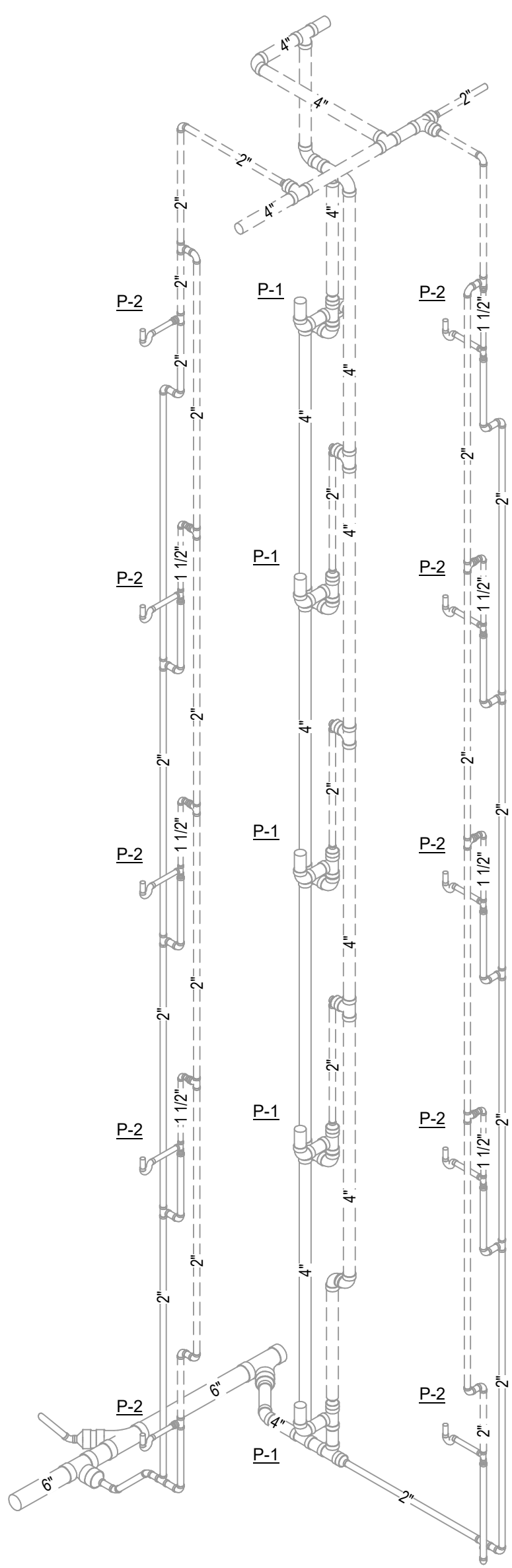
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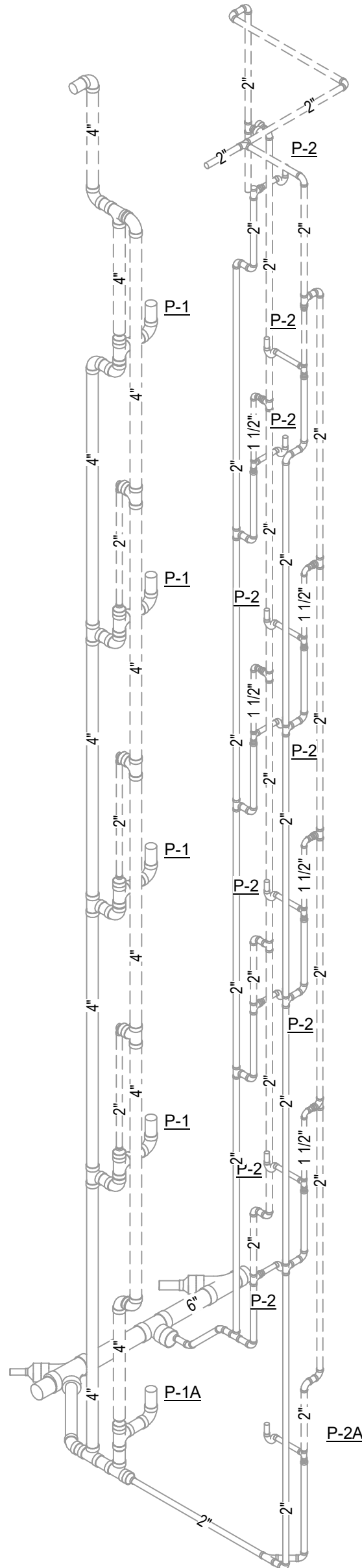
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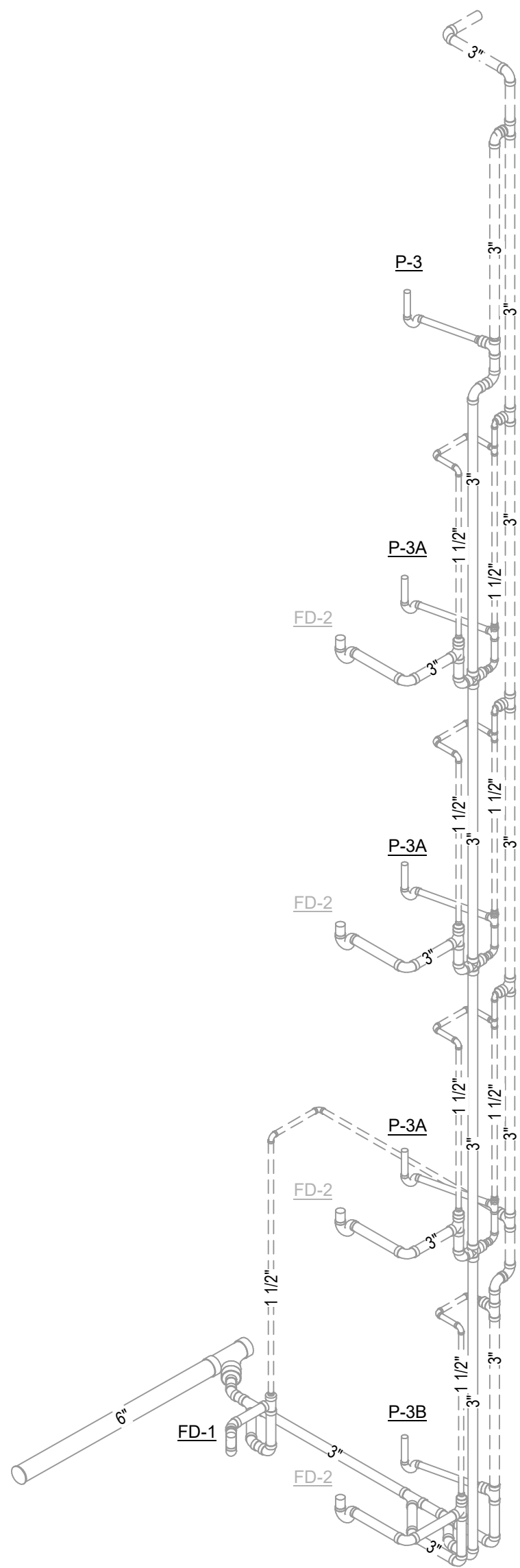
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6 SWV-12

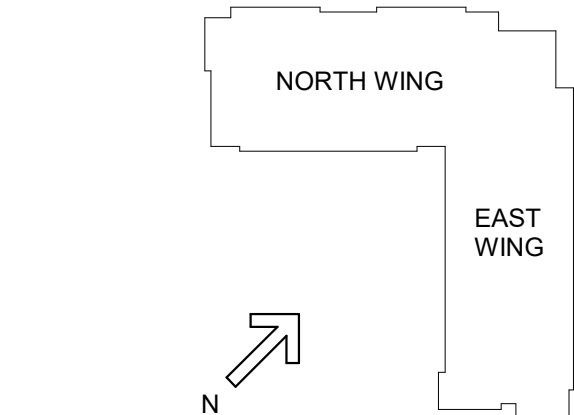


7 SWV-13



8 SWV-14

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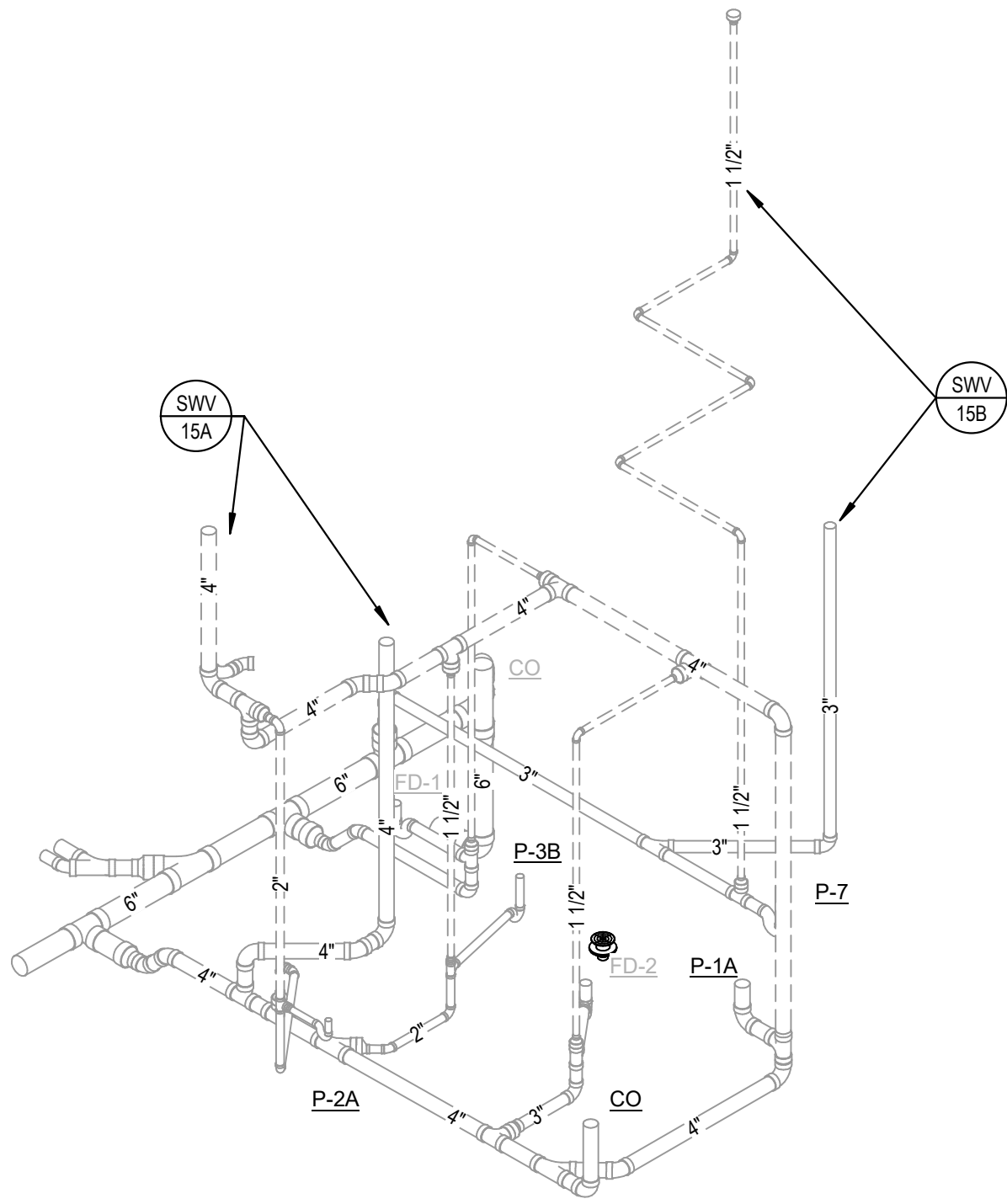
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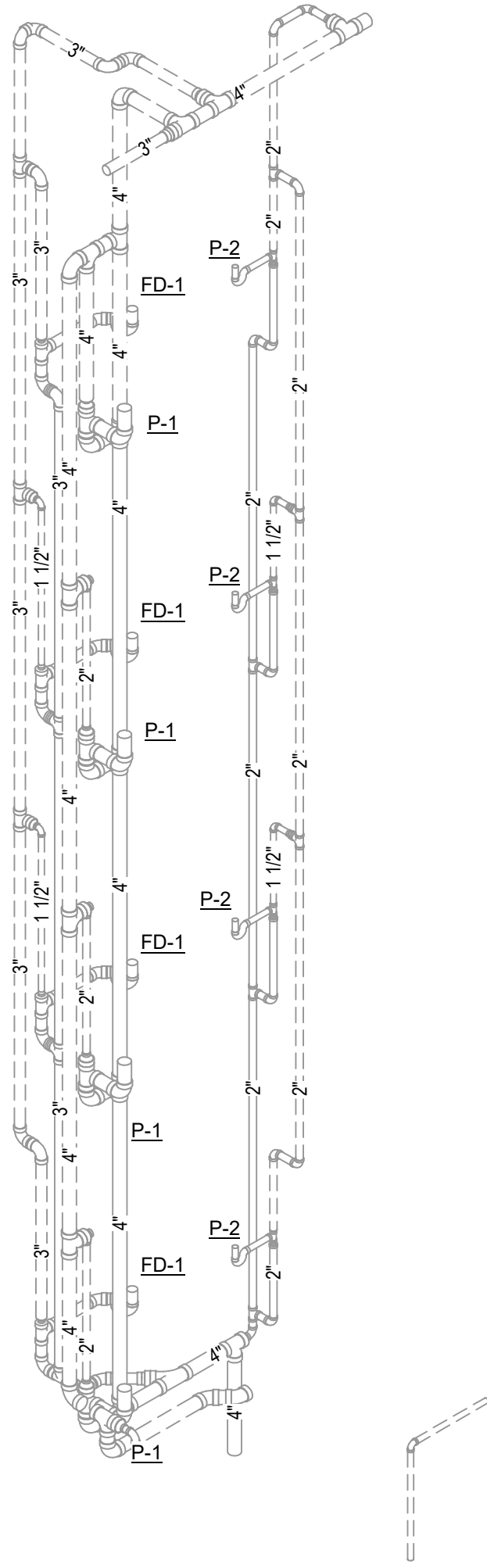
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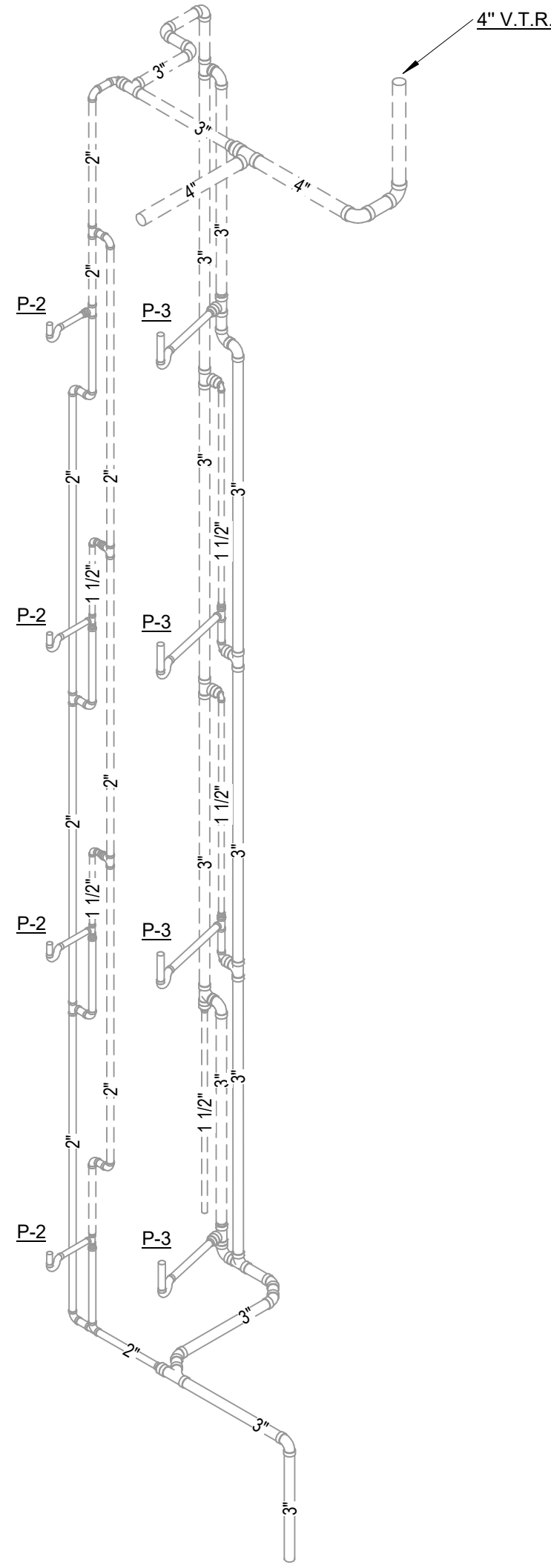




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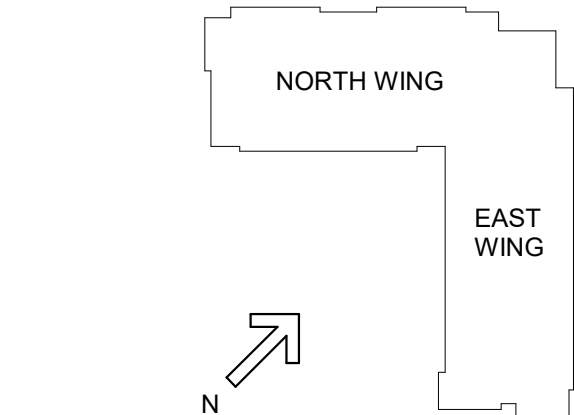


2 SWV-15A



3 SWV-15B

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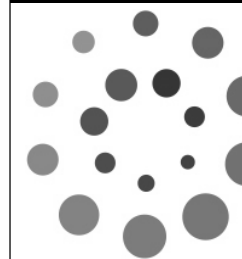
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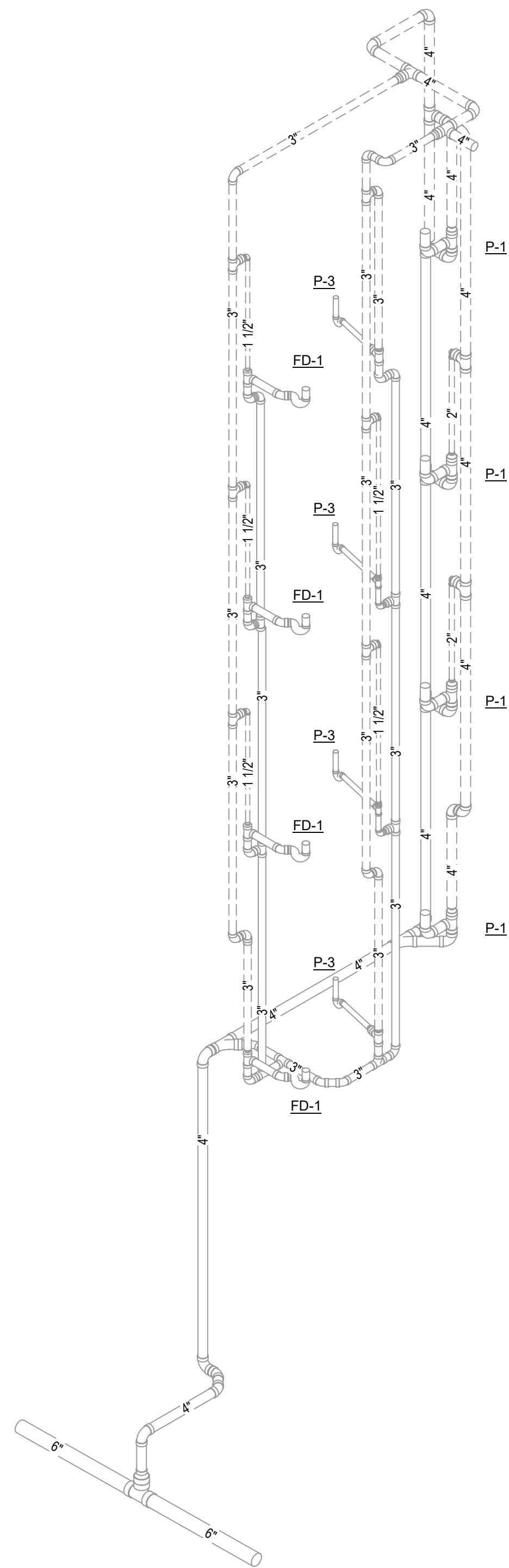
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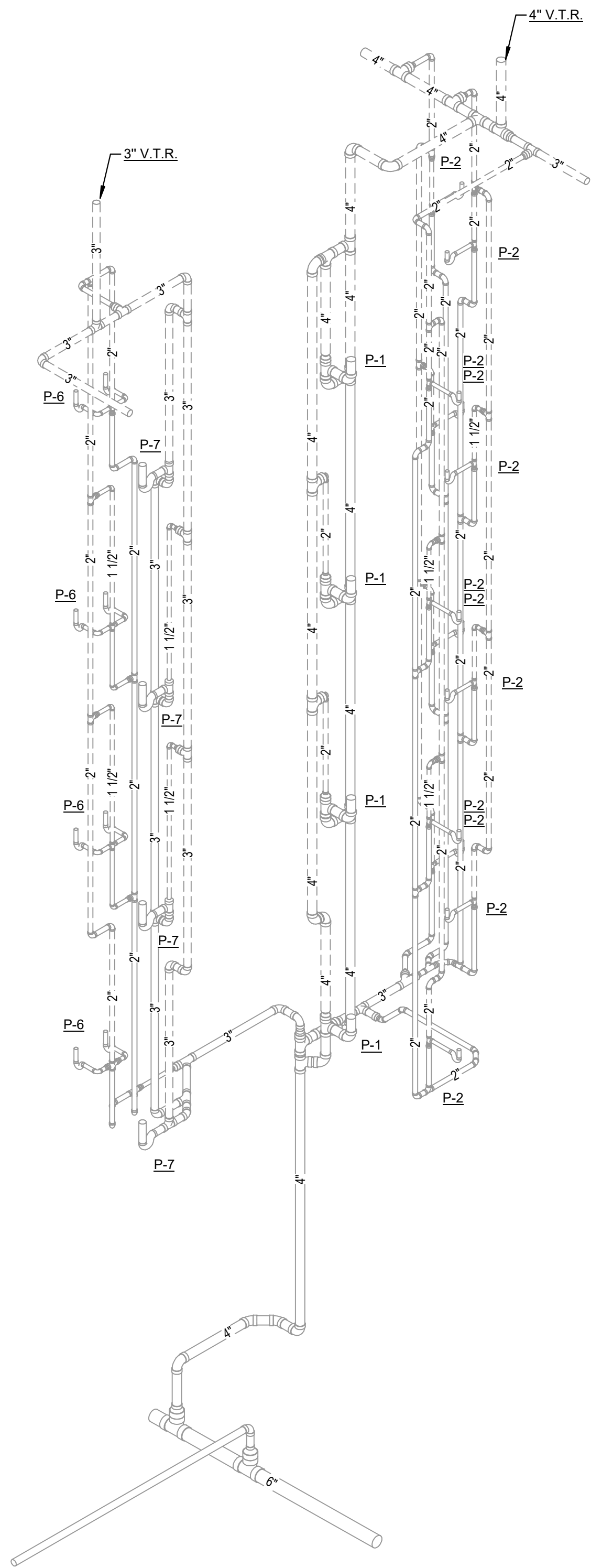
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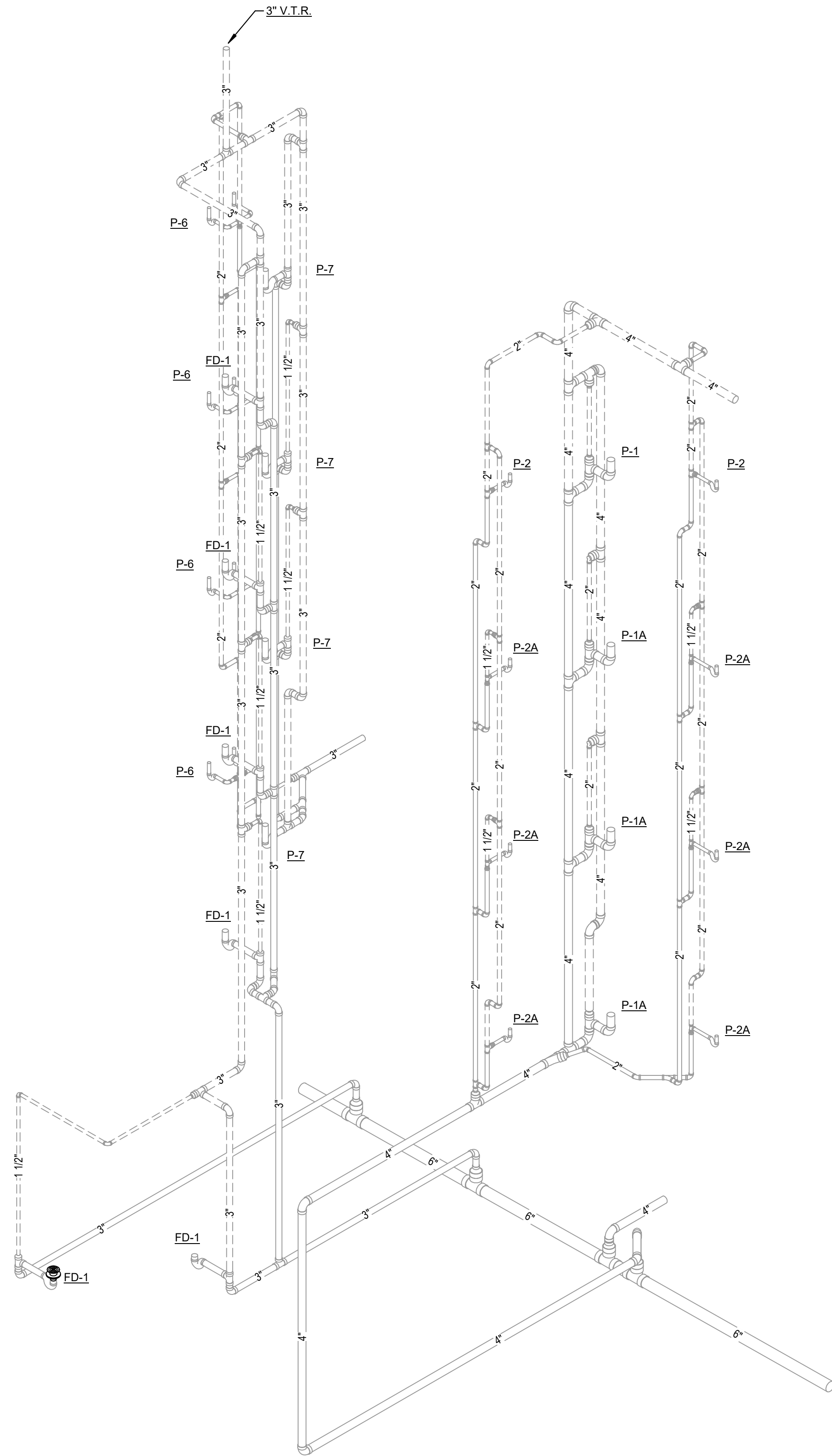




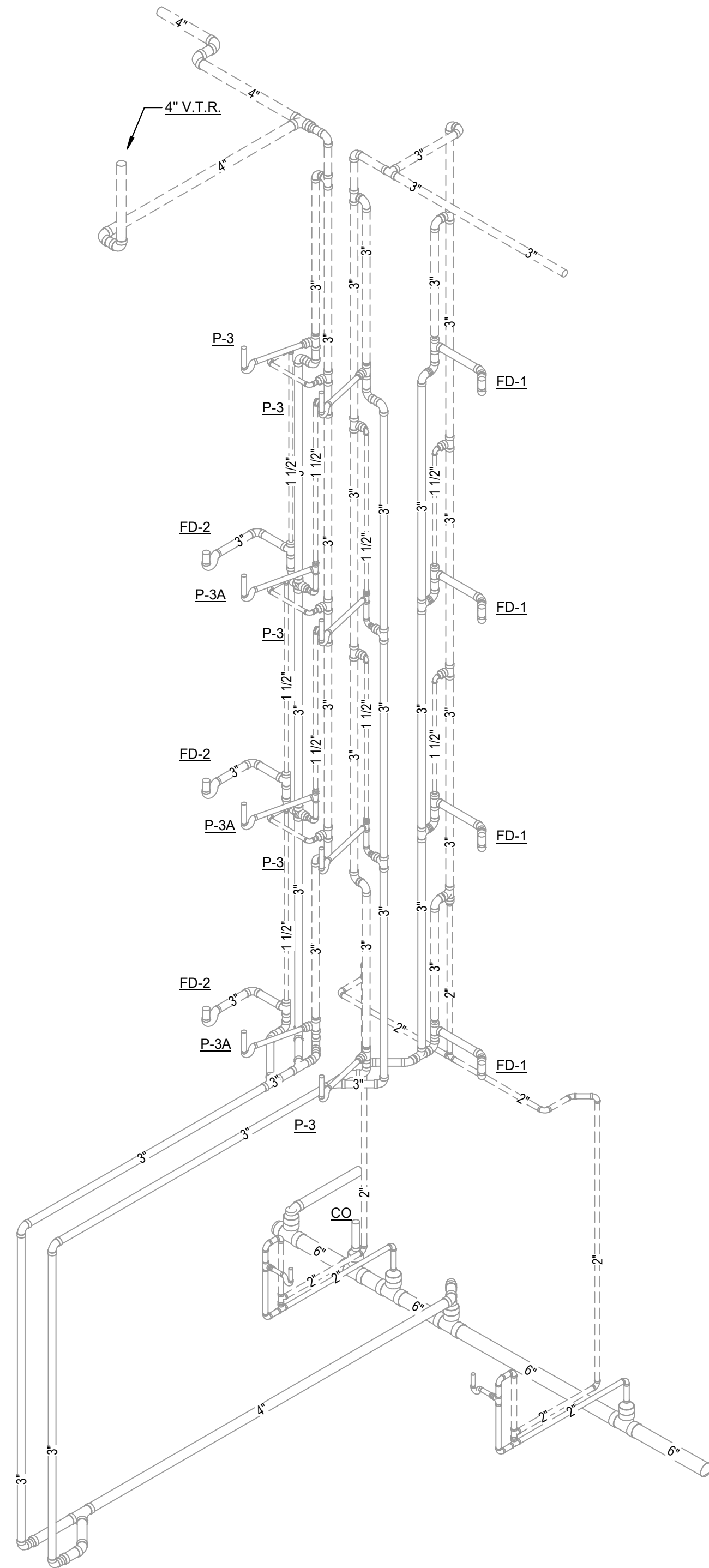
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2 SWV-17

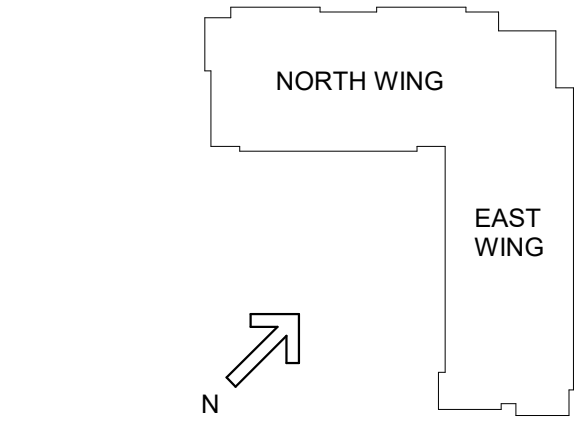


3 SWV-18



4 SWV-19

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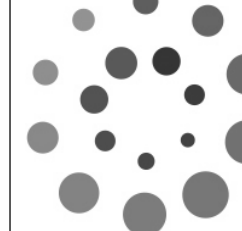
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DRAWING TITLE:

**SANITARY WASTE AND VENT  
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JANUARY 30, 2020

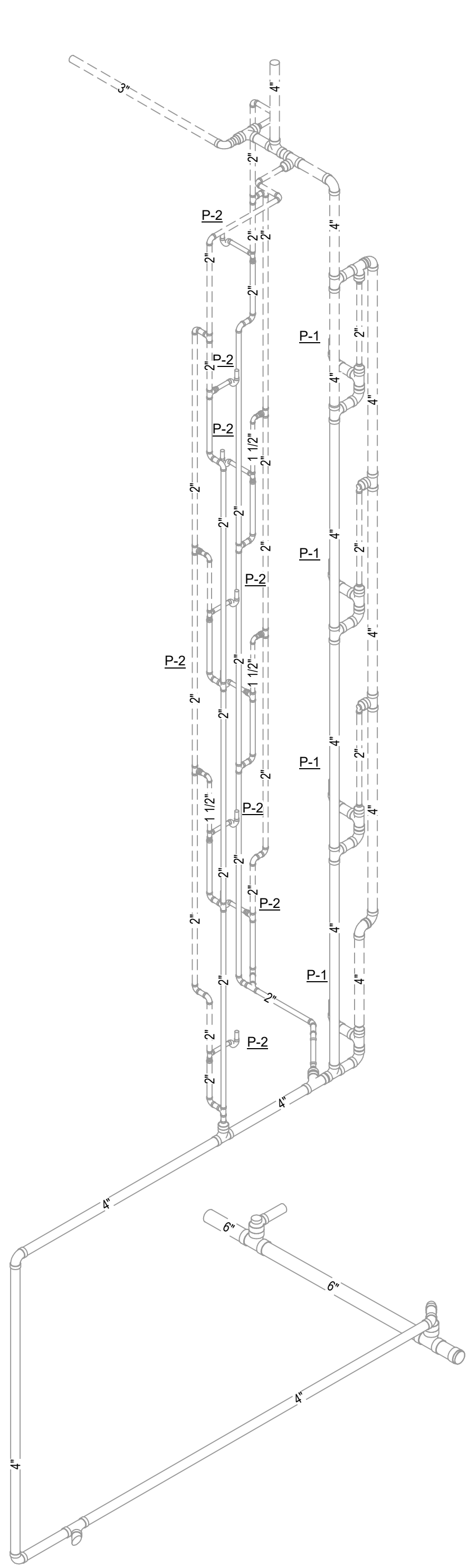
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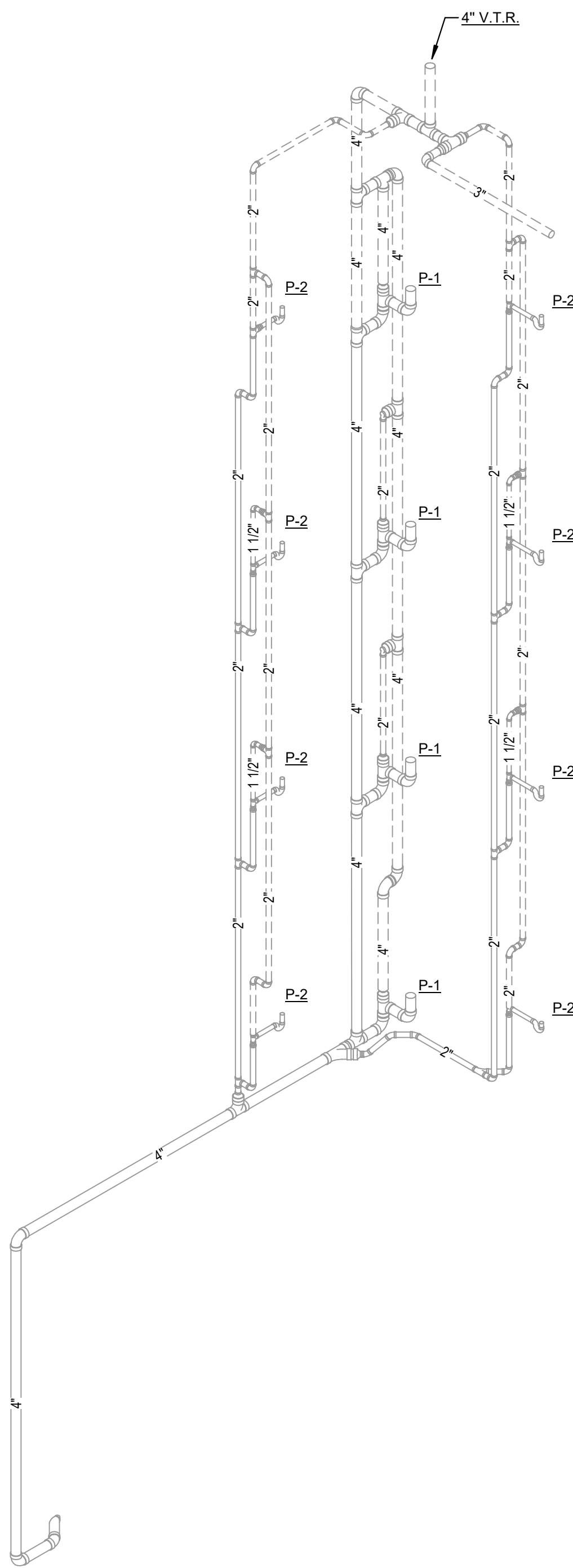
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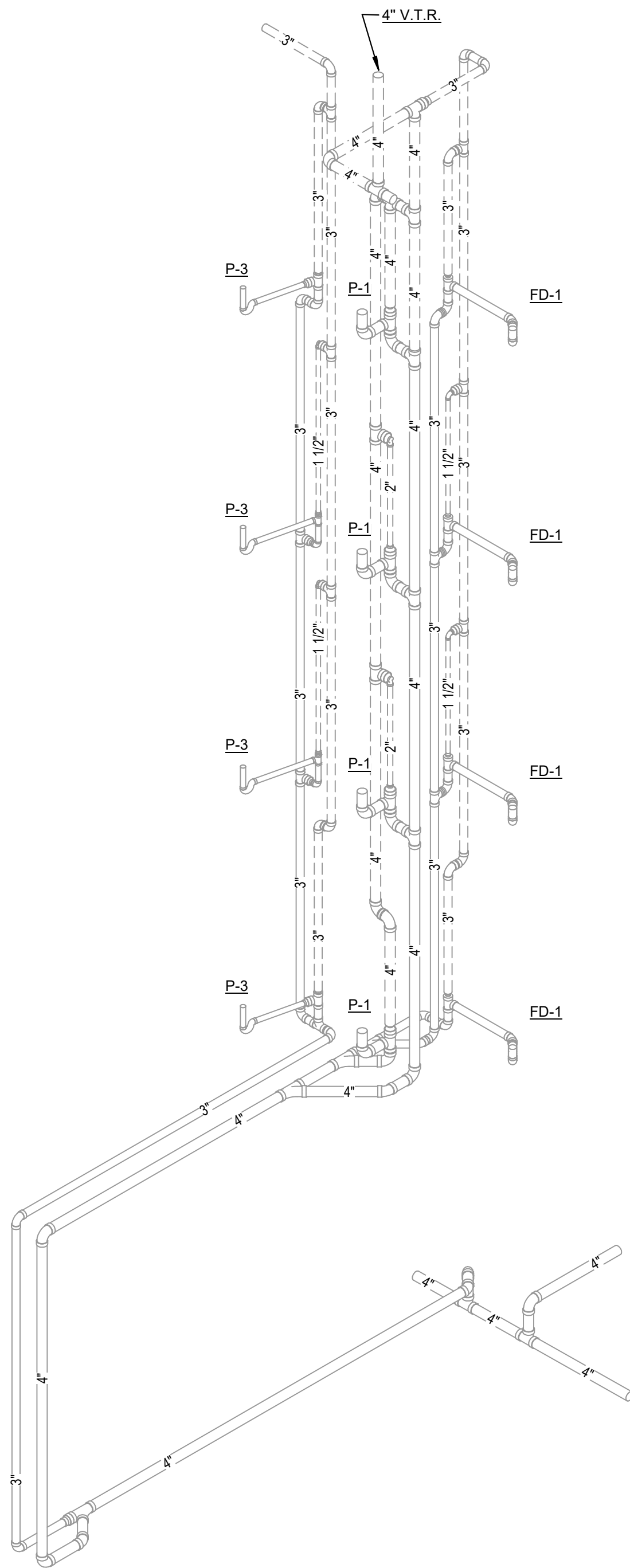




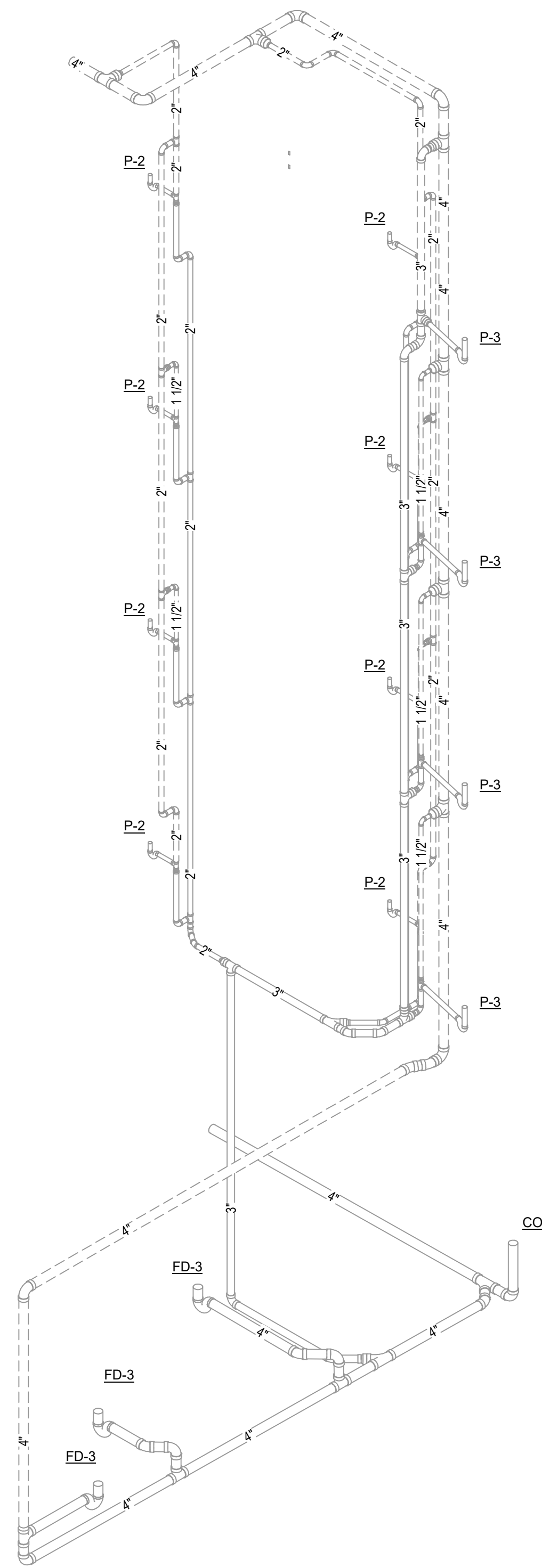
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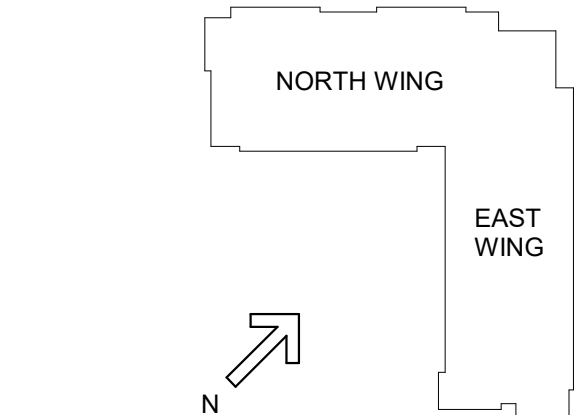


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4 SWV-23

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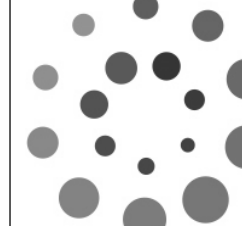
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**SANITARY WASTE AND VENT  
RISER DIAGRAM**



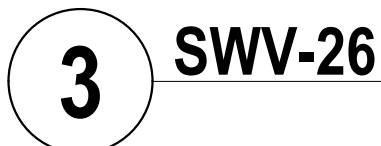
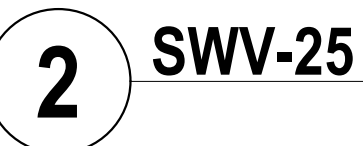
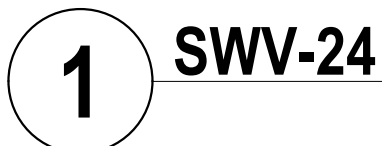
JANUARY 30, 2020

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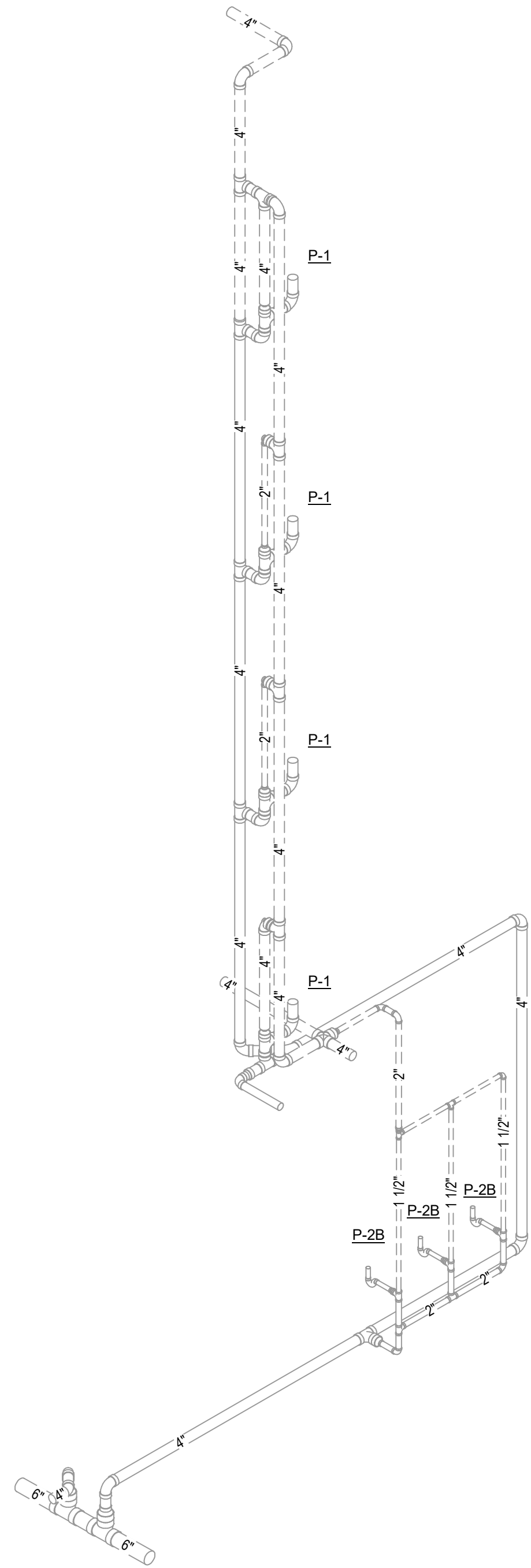
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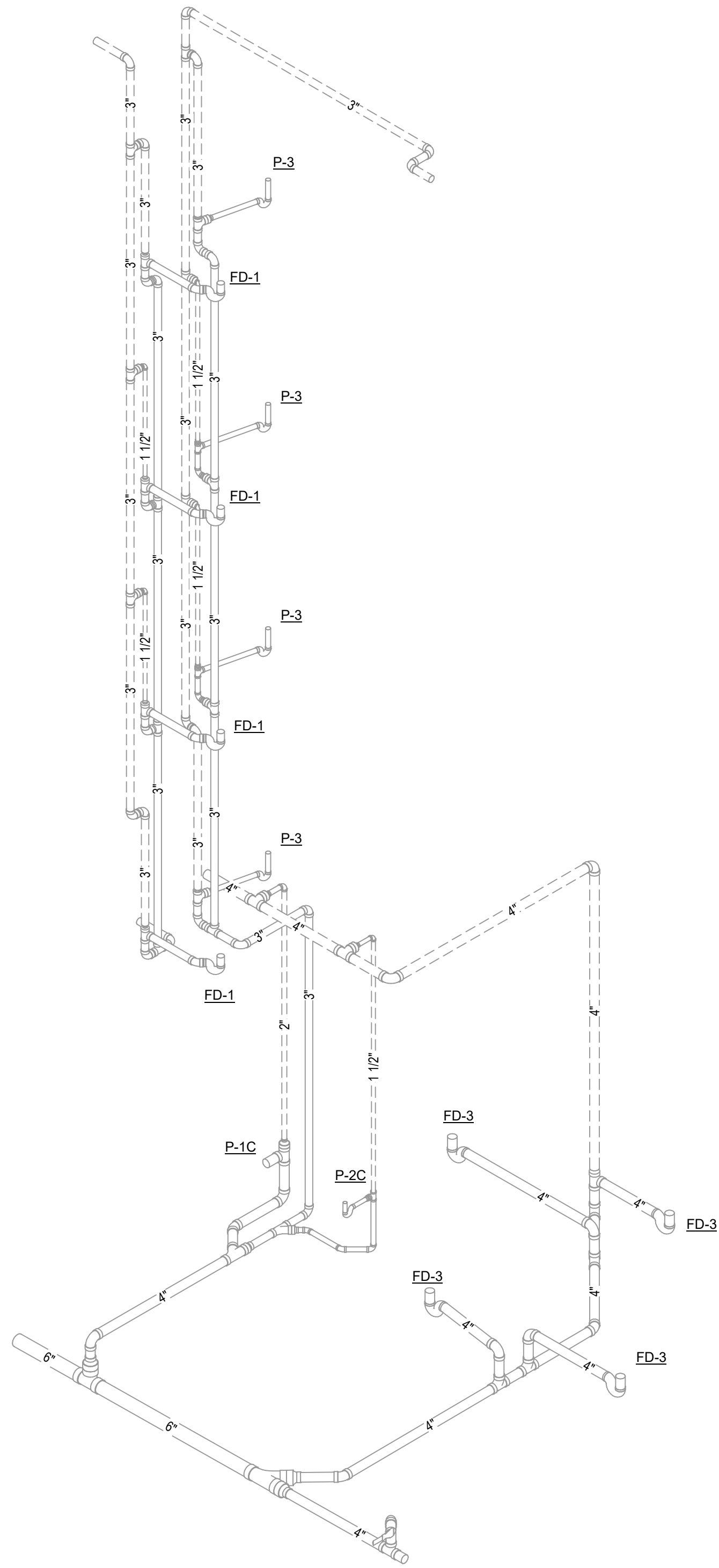
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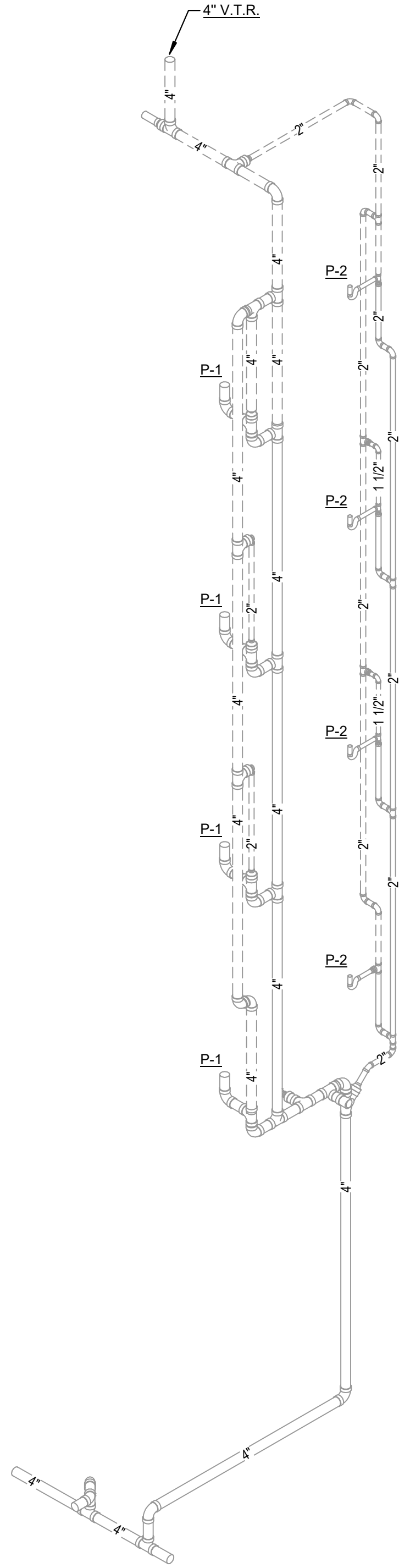




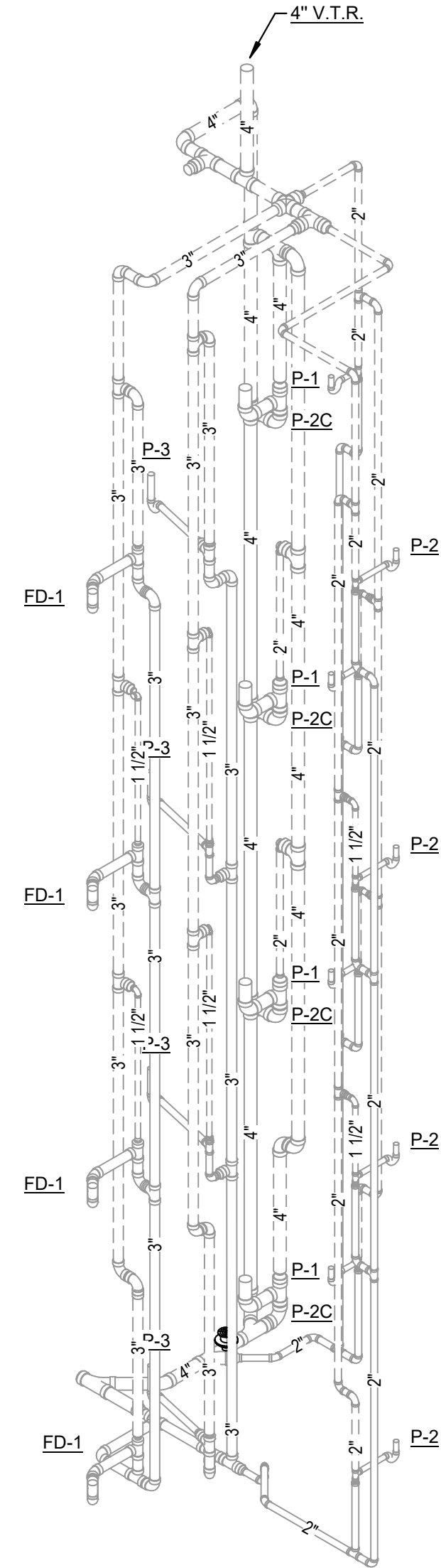
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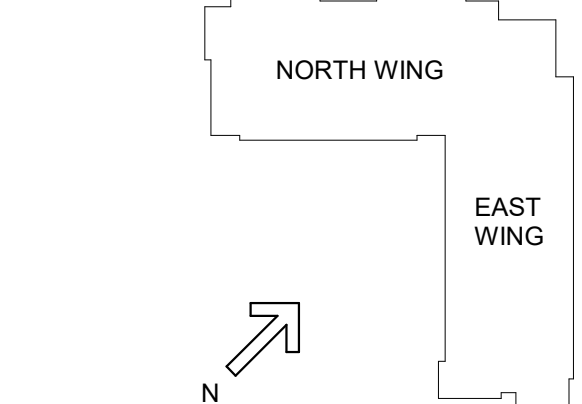


2 SWV-29



4 SWV-29 (CONT)


STATE OF KENTUCKY APPROVAL



#	DATE	CHANGE DESCRIPTION



**NKU - New Residence Hall**  
KENTON DRIVE & CARRILL DRIVE  
HIGHLAND HEIGHTS, KY 41099  
FOR  
**NORTHERN KENTUCKY  
UNIVERSITY**




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DRAWING TITLE:  
**SANITARY WASTE AND VENT  
RISER DIAGRAMS**



**JANUARY 30, 2020**  
DRAWN BY: Author  
CHECKED BY: Checker  
**#18237**  
**P306**  
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### GENERAL NOTES - MECHANICAL

- |    |  |        |  |
|----|--|--------|--|
| B. | COORDINATE THE LOCATION OF DRAINS, THERMOSTATS, GAS OUTLETS, ETC., WITH ALL CASEWORK EQUIPMENT, MECHANICAL ROOM EQUIPMENT, ETC., PRIOR TO COMMENCING INSTALLATION. WORK NOT SO COORDINATED SHALL BE REMOVED AND PROPERLY INSTALLED AT THE EXPENSE OF THE CONTRACTOR.   | AD     | ACCESS DOOR  |
|    | THE CONTRACTOR SHALL EXERCISE EXTREME CARE IN THE COURSE OF THEIR WORK SO AS TO ENSURE THAT THEY DO NOT INTERRUPT ANY EXISTING SERVICE. FOR SAFETY PURPOSES, PAY PARTICULAR ATTENTION TO THIS PRECAUTION RELATIVE TO NATURAL GAS AND ELECTRICAL LINES. VERIFY THE LOCATION, SIZE, TYPE, ETC., OF EACH UNDERGROUND UTILITY OVERHEAD UTILITY. ALL WORK SHALL BE PERFORMED IN ACCORD WITH ALL FEDERAL, STATE AND/OR LOCAL RULES, REGULATIONS, STANDARD AND SAFETY REQUIREMENTS. UTILITIES SHALL BE INSTALLED IN ACCORD WITH THE APPLICABLE MUNICIPALITY OR UTILITY COMPANY STANDARDS. IN ALL CASES, THE MOST STRINGENT REQUIREMENT SHALL APPLY. | ADJ    | ADJUSTABLE   |
| C. | ALL NEW WORK SHALL BE HUNG FROM STRUCTURE, NOT FROM THE WORK OF OTHER TRADES, WHETHER EXISTING OR NEW.   | AF     | ABOVE FINISHED FLOOR   |
| D. | COORDINATE ALL WORK WITH PROJECT PHASING REQUIREMENTS.   | AHJ    | AUTHORITY HAVING JURISDICTION  |
| E. | OBSERVE ALL APPLICABLE CODES, RULES AND REGULATIONS THAT MAY APPLY TO THE WORK UNDER THIS CONTRACT. (CITY, COUNTY, LOCAL, FEDERAL, MUNICIPALITY, UTILITY COMPANY, COMMONWEALTH OF KENTUCKY, ETC.)  | AMP    | AMPERE (AMP, AMPS)   |
| F. | IF AREA OF CONSTRUCTION HAS A TIGHT PENSION FLOOR SLAB, CONTRACTOR SHALL USE ULTRA SOUND OR OTHER APPROVED METHOD TO SURVEY THE FLOOR STRUCTURE BEFORE MAKING ANY AND ALL FLOOR PENETRATIONS.  | ANSI   | AMERICAN NATIONAL STANDARD INSTITUTE                                       |
| G. | ALL PENETRATIONS OF FIRE AND SMOKE RATED ASSEMBLIES SHALL BE APPROPRIATELY FIRE STOPPED PER AN APPROVED U.L. LISTED STANDARD. CONTRACTOR SHALL PAY PARTICULAR ATTENTION TO INSULATED PIPING PENETRATIONS.  | APD    | AIR PRESSURE DROP  |
| H. | ALL DUCTWORK, PIPING, CONDUITS, ETC. IN ROOMS WITH CEILINGS SHALL BE ABOVE CEILING EXCEPT AS NOTED.  | ASHRAE | AMERICAN SOCIETY OF HEATING, REFRIGERATION, AND AIR-CONDITIONING ENGINEERS |
| I. | INSTALL AIR VENTS AT HIGH POINTS IN PIPING AND DRAINS IN LOW POINTS. USE CARE TO AVOID FREEZING OF EXTERIOR VENTS.   | AVG    | AVERAGE  |
| J. | LOCATIONS OF PIPING, DUCTS AND EQUIPMENT ARE APPROXIMATE AND SUBJECT TO MINOR ADJUSTMENTS IN THE FIELD. DO NOT SCALE THE DRAWINGS.   | BAS    | BUILDING AUTOMATION SYSTEM   |
| K. | ALL OFFSETS IN DUCTS AND PIPING ARE NOT NECESSARILY SHOWN. PROVIDE ADDITIONAL OFFSETS WHERE NECESSARY.   | BHP    | BREAK HORSEPOWER   |
| L. | COORDINATE ALL HVAC WORK WITH ELECTRICAL, PLUMBING AND OTHER TRADES TO AVOID INTERFERENCE WITH PIPING, DUCTS, CONDUIT AND OTHER EQUIPMENT.   | BTU    | BRITISH THERMAL UNIT   |
| M. | INSTALL ALL PIPING, DUCTWORK AND EQUIPMENT IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTION. IF IN CONFLICT WITH THE DESIGN INDICATED IN CONTRACT DOCUMENTS, ADVISE THE ENGINEERS PRIOR TO INSTALLATION FOR CLARIFICATION. PROVIDE RECOMMENDED ACCESS AND SERVICE CLEARANCES FOR ALL EQUIPMENT.   | CAP    | CAPACITY   |
| N. | SEAL ALL AIRTIGHT AROUND ALL DUCTS AND PIPING PENETRATIONS THROUGH WALLS, FLOORS AND ROOF. PROVIDE FIRE STOPPING IN FIRE PARTITION.  | CAV    | CONSTANT AIR VOLUME  |
| O. | SEAL ALL NEW DUCTWORK JOINTS WITH UNITED MCGILL, IRONGRIP 601 OR EQUAL WATER BASED SEALANT.  | CD     | CONDENSATE DRAIN   |
| P. | ALL MOTOR DRIVEN EQUIPMENT SHALL BE INSTALLED WITH FLEXIBLE CONNECTIONS TO DUCTWORK, PIPING, ETC., UNLESS OTHERWISE NOTED.   | CFM    | CUBIC FEET PER MINUTE  |
| Q. | BEFORE MOUNTING HEATS ARE NOT LOCATED OR ARE IN CONFLICT WITH ANY OTHER BUILDING SYSTEM, CONTACT THE ENGINEERS BEFORE INSTALLATION. REFER ALSO TO ARCHITECTURAL WALL INTERIOR AND EXTERIOR WALL ELEVATIONS, CEILING HEIGHTS AND OTHER DETAIL OF THESE DOCUMENTS.   | C.I.   | CAST IRON  |
| R. | DOUBLE WIDTH TURNING VANES SHALL BE INSTALLED IN ALL SUPPLY, OUTSIDE RETURN, AND EXHAUST DUCTWORK ELBOWS. TURNING VANES NOT REQUIRED FOR KITCHEN EXHAUSTS.   | CLG    | CEILING  |
| S. | ANY VIBRATING, OSCILLATING OR OTHER NOISE OR MOTION PRODUCING EQUIPMENT SHALL BE NOISED OUT FROM SURROUNDING SYSTEMS IN AN APPROVED MANNER. NOISE OR STRUCTURALLY DAMPING INSTALLATIONS SHALL BE SATISFACTORILY REPLACED OR REPAIRED AT THE INSTALLING CONTRACTOR'S EXPENSE. THE FINAL DECISION ON THE SUITABILITY OF A PARTICULAR INSTALLATION'S ACCEPTABILITY SHALL BE THAT OF THE ENGINEER.   | CLR    | CLEAR  |
| T. | DEVIATIONS IN SIZE, CAPACITIES, FIT, FINISH, ETC. FOR EQUIPMENT FROM THAT USED AS BASIS OF DESIGN SHALL BE THE RESPONSIBILITY OF THE PURCHASER OF THAT EQUIPMENT. ANY PROVISIONS REQUIRED TO ACCOMMODATE A DEVIATION, WHETHER APPROVED BY THE ENGINEERS OR NOT, SHALL BE THE RESPONSIBILITY OF THE PURCHASER.  | CO     | CARBON MONOXIDE  |
| U. | VALVES, BALANCING DAMPERS OR ANY MECHANICAL/ELECTRICAL ITEM REQUIRING ACCESS SHALL NOT BE LOCATED ABOVE A HARD CEILING. IF THIS IS NOT POSSIBLE, THEN AN APPROPRIATELY SIZED ACCESS DOOR SHALL BE PLACED UNDER THE ITEM TO ALLOW EASY MAINTENANCE AND REPAIR. ADDITIONALLY ALL SUCH ITEMS SHALL NOT BE LOCATED AN UNREASONABLE DISTANCE ABOVE THE CEILINGS. IN GENERAL ALL SUCH ITEMS UNLESS INDICATED OTHERWISE SHALL BE MOUNTED SIX TO TWELVE INCHES ABOVE THE CEILING. IF IN DOUBT, CONTACT ENGINEER PRIOR TO INSTALLING.   | CO2    | CARBON DIOXIDE   |
| V. | ALL MANHOLES, VALVES AND SIMILAR UNDERGROUND STRUCTURES SHALL HAVE THE TOP ELEVATION SET FLUSH WITH FINISHED GRADE UNLESS SPECIFICALLY NOTED OTHERWISE.  | COND   | CONDENSE (-ER, -ING, -ATION, -ATE)   |
| W. | WHEN RUNNING ANY TYPE OF PIPING BELOW A FOOTER, OR IN THE ZONE OF INFLUENCE THE PIPING SHALL BE BACKFILLED WITH CEMENTITIOUS FLOWABLE FILL PER SPECIFICATION. WHENEVER POSSIBLE, LOCATE PIPING OUTSIDE OF THE ZONE OF INFLUENCE. THE ZONE OF INFLUENCE IS THE AREA UNDER THE FOOTER WITHIN A 45 DEGREE ANGLE PROJECTING DOWN FROM THE BOTTOM EDGE OF THE FOOTER OR ALL SIDES OF THE FOOTER. ADDITIONALLY, GREASE TRAPS, MANHOLES, VALVES AND OTHER UNDERGROUND STRUCTURES SHALL BE HELD AWAY FROM BUILDING WALLS FAR ENOUGH TO BE OUTSIDE OF THE ZONE OF INFLUENCE.  | CONT   | CONTINU (-ED, -OUS)  |
| X. | WORK IN CONFINED AREAS SHALL BE IN ACCORDANCE WITH THE OWNER'S SAFETY POLICY REQUIREMENTS.   | CU FT  | CUBIC FEET   |
|    |  | CU IN  | CUBIC INCHES   |
|    |  | CV     | VALVE FLOW COEFFICIENT   |
|    |  | dB     | DECIBEL  |
|    |  | DB     | DRY BULB   |
|    |  | DBT    | DRY BULB TEMPERATURE   |
|    |  | DC     | DIRECT CURRENT   |
|    |  | DD     | DIRECT SMOKE DETECTOR  |
|    |  | DDC    | DIRECT DIGITAL CONTROLS  |
|    |  | DEG    | DEGREE (-S)  |
|    |  | DIA    | DIAMETER (-S)  |
|    |  | DN     | DOWN   |
|    |  | DWG    | DRAWING  |
|    |  | EAT    | ENTERING AIR TEMPERATURE   |
|    |  | EC     | ELECTRICAL CONTRACTOR  |
|    |  | ELEV   | ELEVA (-TION, -TOR)  |
|    |  | ENGR   | ENGINEER   |
|    |  | EQ     | EQUAL  |

## ABBREVIATIONS

AD	ACCESS DOOR
ADJ	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
AMP	AMPERE (AMP, AMPS)
ANSI	AMERICAN NATIONAL STANDARD INSTITUTE
APD	AIR PRESSURE DROP
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATION, AND AIR-CONDITIONING ENGINEERS
AVG	AVERAGE
BAS	BUILDING AUTOMATION SYSTEM
BHP	BREAK HORSEPOWER
BTU	BRITISH THERMAL UNIT
CAP	CAPACITY
CAV	CONSTANT AIR VOLUME
CD	CONDENSATE DRAIN
CFM	CUBIC FEET PER MINUTE
C.I.	CAST IRON
CLG	CEILING
CLR	CLEAR
CO	CARBON MONOXIDE
CO2	CARBON DIOXIDE
COND	CONDENS (-ER, -ING, -ATION, -ATE)
CONT	CONTINU (-ED, -OUS)
CU FT	CUBIC FEET
CU IN	CUBIC INCHES
CV	VALVE FLOW COEFFICIENT
dB	DECIBEL
DB	DRY BULB
DBT	DRY BULB TEMPERATURE
DC	DIRECT CURRENT
DD	DUCT SMOKE DETECTOR
DDC	DIRECT DIGITAL CONTROLS
DEG	DEGREE (-S)
DIA	DIAMETER (-S)
DN	DOWN
DWG	DRAWING
EAT	ENTERING AIR TEMPERATURE
EC	ELECTRICAL CONTRACTOR
ELEV	ELEVA (-TION, -TOR)
ENGR	ENGINEER
EQ	EQUAL
ESP	EXTERNAL STATIC PRESSURE
EVAP	EVAPORAT (-E, -ING, -ED, -OR, -ION)
EWI	ENTERING WATER TEMPERATURE
EXP	EXPANSION
EXT	EXTERIOR
FA	FREE AREA
FD	FIRE DAMPER
FL	FLOOR
FLA	FULL LOAD AMPS
FFC	FIRE PROTECTION CONTRACTOR






### ABBREVIATIONS (CONTINUED)

FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FT	FEET <b>OR</b> FOOT
FUT	FUTURE
FV	FACE VELOCITY
GA	GAGE/GAUGE
GAL	GALLON (-S)
GC	GENERAL CONTRACTOR
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	GRAINS
H	HUMIDITY
HD	HEAD
HG	MERCURY
HORIZ	HORIZONTAL
HP	H (-ORSEPOWER, -EAT PUMP)
HR	HOUR (-S)
HVAC	HEATING, VENTILATING, & AIR-CONDITIONING
Hz	HERTZ
ID	I (-DENTIFICATION, -NSIDE DIAMETER, -NSIDE DIMENSION)
IN	INCH (-ES)
INSUL	INSULAT (-ED, -ION)
INT	INTER (-IOR, -ERVAL)
kW	KILOWATT
kWh	KILOWATT HOUR
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LF	LINEAR FEET/FOOT
LRA	LOCKED ROTOR AMPS
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	BTU PER HOUR [THOUSANDS]
MCA	MINIMUM CIRCUIT AMPS
MFG	MANUFACTURER
MIN	MIN (-IMUM, -UTE)
MISC	MISCELLANEOUS
MOPC	MAXIMUM OVERCURRENT PROTECTION [AMPS]
MTG	MOUNTING
N/A	NOT APPLICABLE
NC	NOISE CRITERIA <b>OR</b> NORMALLY CLOSED
NEBB	NATIONAL ENVIRONMENTAL BALANCING BUREAU
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN <b>OR</b> NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DI (-AMETER, -MENSION)
OCFI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED








































### ABBREVIATIONS (CONTINUED)

OR	OPEN RECEPTACLE
OZ	OUNCE (-S)
PC	PLUMBING CONTRACTOR
PD	PRESSURE DROP
PH	PHASE [ELECTRICAL]
PLBG	PLUMBING
PPM	PARTS PER MILLION
PRS	PRESSURE REDUCING STATION
PRV	PRESSURE REDUCING VALVE (STEAM, WATER, GAS)
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIG	PPSI GAUGE
RH	RELATIVE HUMIDITY [%]
RLA	RUNNING LOAD AMPS
RPM	REVOLUTIONS PER MINUTE
SD	SMOKE DAMPER
SP	STATIC PRESSURE
SQ	SQUARE
SQ FT	SQUARE FEET <b>OR</b> FOOT
SQ IN	SQUARE INCH <b>OR</b> INCHES
TAB	TESTING AND BALANCING
TBD	TO BE DETERMINED
TE	TOP ELEVATION
TEMP	TEMPERATURE
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
V	VOLT (-AGE, -S)
VAR	VARI (-ABLE, -IES)
VAV	VARIABLE AIR VOLUME
VEL	VELOCITY
VFD	VARIABLE FREQUENCY DRIVE
W	WATT (-AGE, -S)
WB	WET BULB
WBT	WET BULB TEMPERATURE
WPD	WATER PRESSURE DROP
WT	WEIGHT
W/	WITH
W/O	WITHOUT
%	PERCENT
ΔP	DIFFERENTIAL PRESSURE
ΔT	TEMPERATURE DIFFERENCE
ℓ	CENTERLINE

## GENERAL SYMBOLS

	TAGGED NOTE DESIGNATOR
	REVISION TRIANGLE
ROOM NAME 	ROOM TAG
TAG 	EQUIPMENT TAG
INSTANCE 	

### HVAC LEGEND

	SUPPLY AIR DIFFUSER
	RETURN AIR DIFFUSER
	EXHAUST AIR DIFFUSER
	TRANSFER AIR DIFFUSER W/ SOUND ATTENUATING BOOT
	SIDEWALL DIFFUSER/GRILLE
	SIDEWALL DIFFUSER/GRILLE
	AIR DEVICE TAG (REGISTER, GRILLE, DIFFUSER, LOUVER)
	RECTANGULAR DUCT
	ROUND/SPIRAL DUCT
	FLAT OVAL DUCT
	SUPPLY AIR DUCT
	RETURN AIR DUCT
	EXHAUST AIR DUCT
	OUTSIDE AIR DUCT
	TRANSFER AIR DUCT
	COMBUSTION AIR EXHAUST DUCT
	COMBUSTION AIR INTAKE DUCT
	SA AIR DUCT TURNING UP
	SA AIR DUCT TURNING DOWN
	RA AIR DUCT TURNING UP
	RA AIR DUCT TURNING DOWN
	EA AIR DUCT TURNING UP
	EA AIR DUCT TURNING DOWN
	MITERED ELBOW WITH TURNING VANES
	FLEXIBLE DUCT
	THERMOSTAT
	TEMPERATURE SENSOR
	HUMIDITY SENSOR
	CARBON DIOXIDE SENSOR
	TEMPERATURE & CARBON DIOXIDE SENSOR
	PIPE DIFFERENTIAL PRESSURE SENSOR
	MANUAL BALANCING/VOLUME DAMPER
	MOTORIZED DAMPER
	FIRE DAMPER
	SMOKE DAMPER
	COMBINATION FIRE & SMOKE DAMPER
	DUCT ACCESS DOOR
	DUCT SMOKE DETECTOR
	PRESSURE RELIEF DOOR

### MECHANICAL PIPING LEGEND

[illegible]

**STATE OF KENTUCKY APPROVAL**

#	DATE	CHANGE DESCRIPTION

**NKU • New Residence Hall**  
KENTON DRIVE & CARROLL DRIVE  
HIGHLAND HEIGHTS, KY 41009  
FOR

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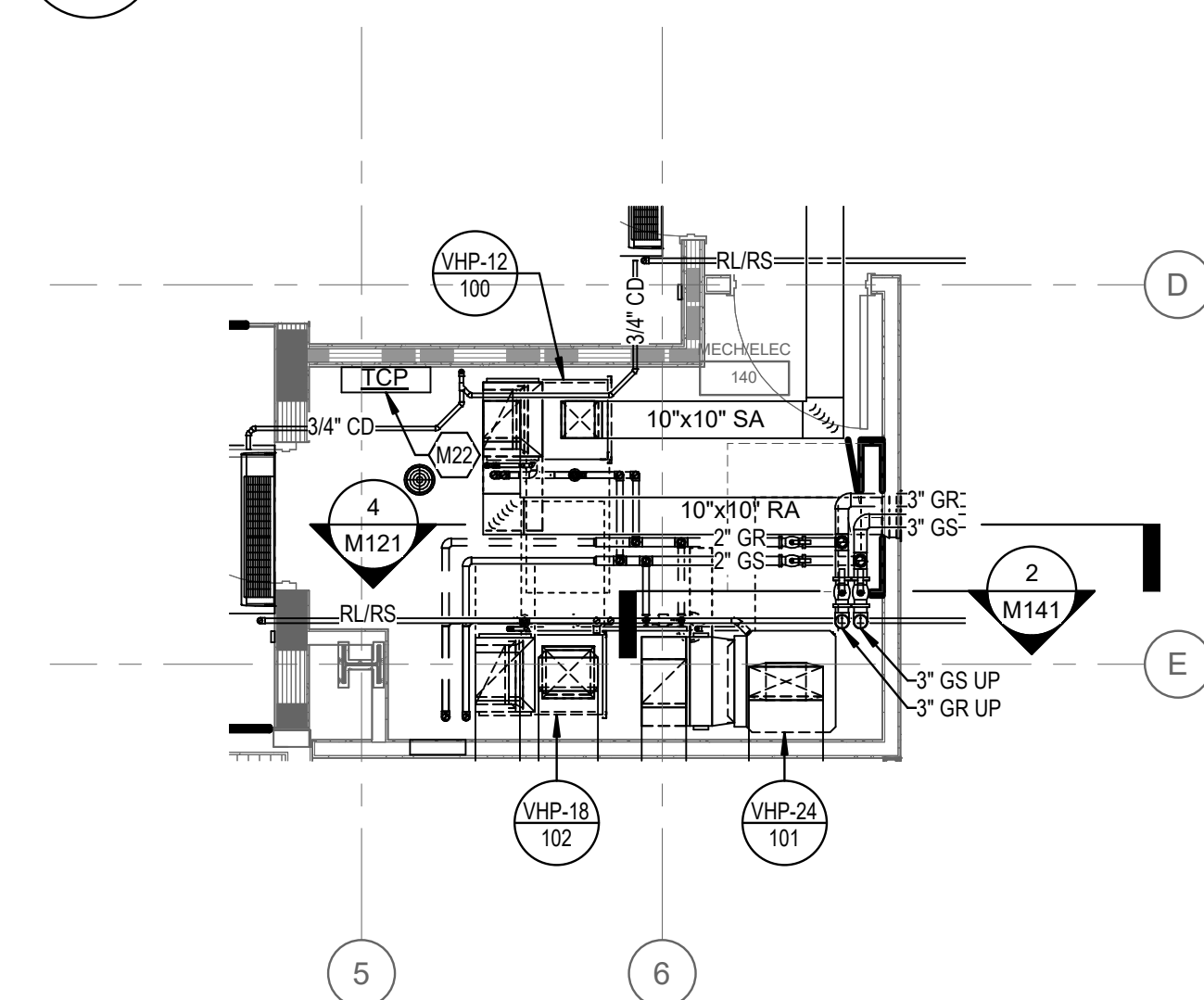
DRAWING TITLE

## MECHANICAL LEGEND

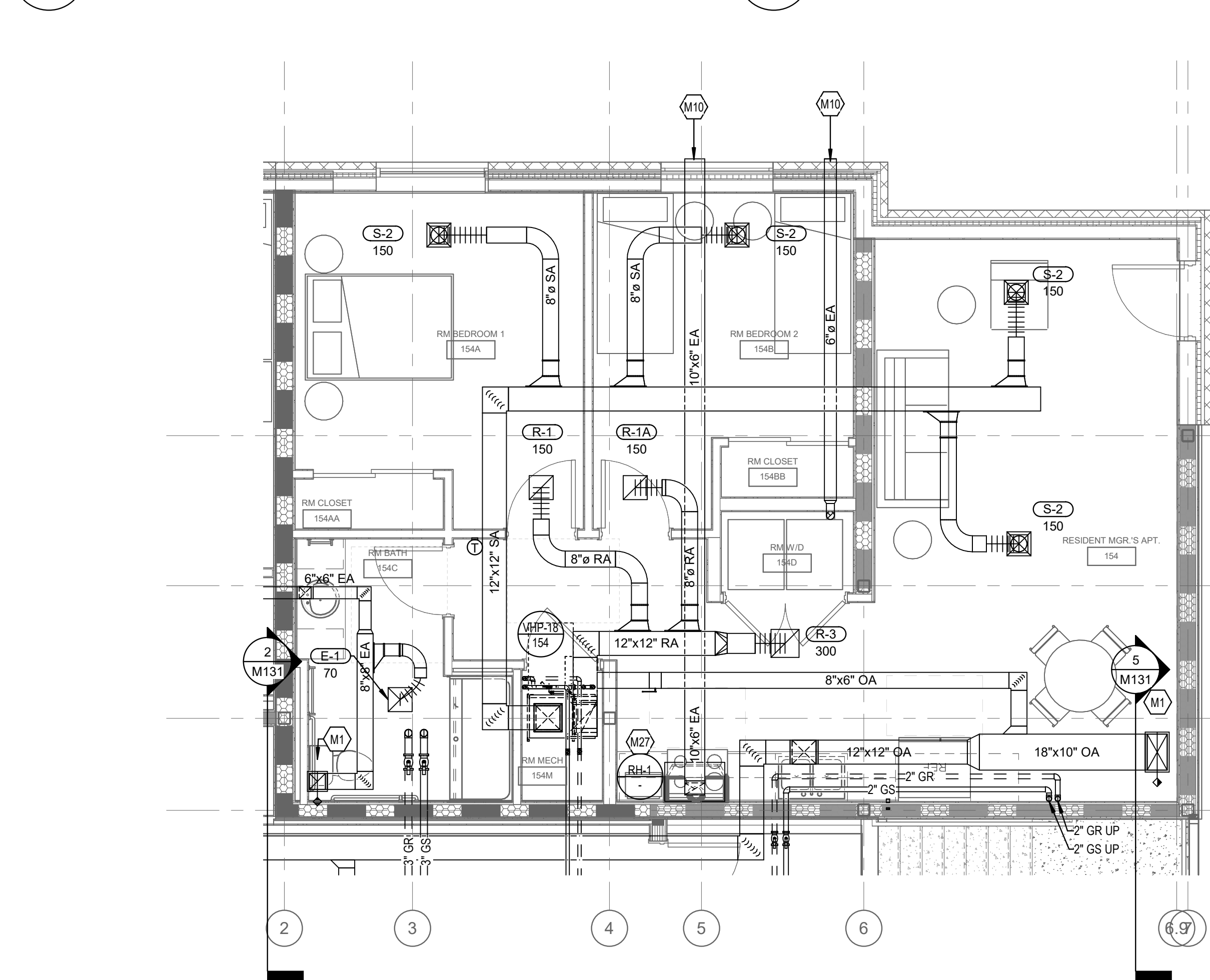
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	M001		
	BID & PERMIT SUBMITTAL		



2 NORTH CORRIDOR 150H SECTION  
1/4" = 1'-0"



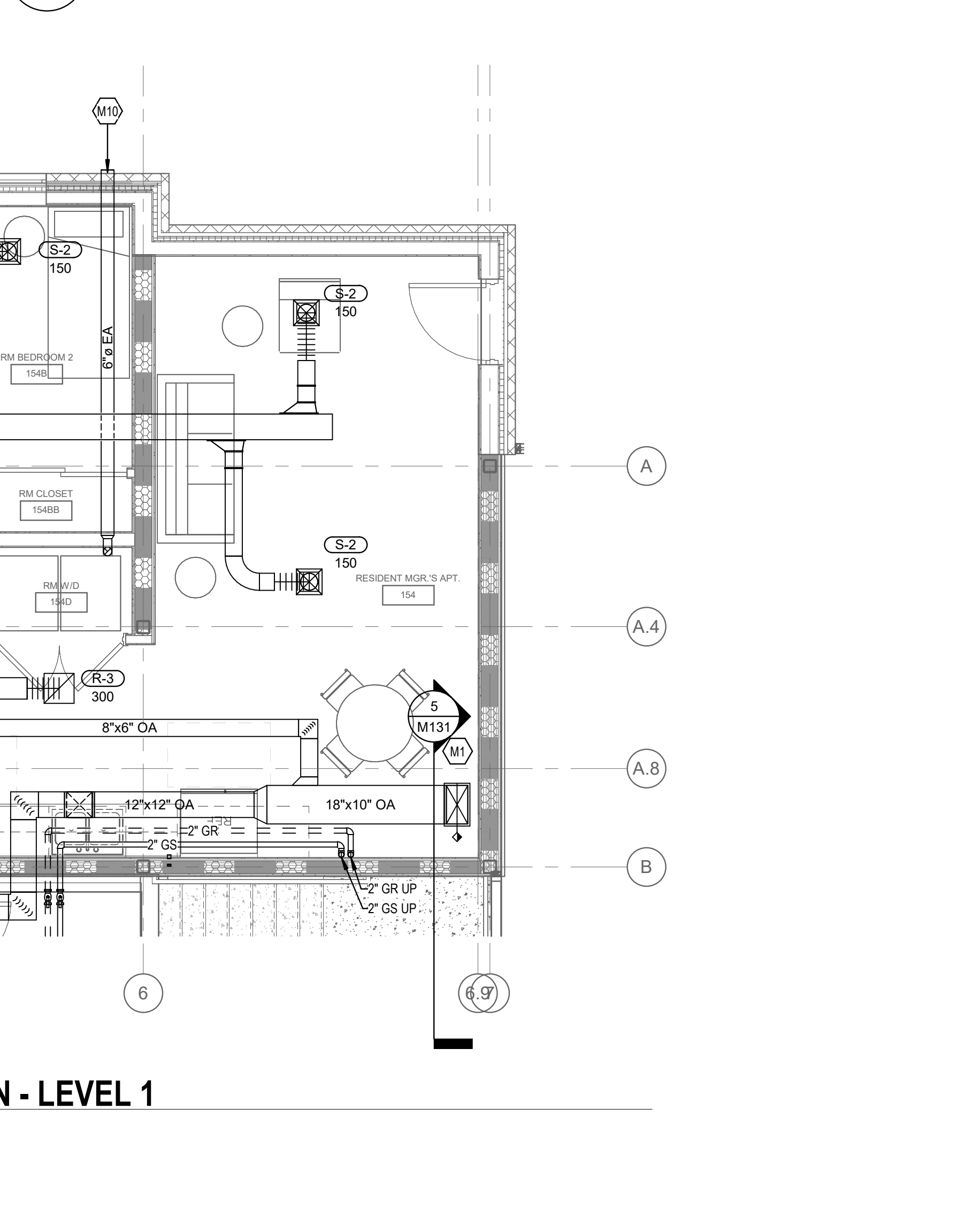
3 ENLARGED PLAN - MECH/ELEC 140  
1/4" = 1'-0"



5 ENLARGED MECHANICAL PLAN - LEVEL 1  
1/4" = 1'-0"



4 ENLARGED PLAN - MECHANICAL 122M  
1/4" = 1'-0"



1 LEVEL 0/1 - AIR DISTRIBUTION PLAN  
1/8" = 1'-0"



MECHANICAL NOTES:

1. REFER TO ENLARGED SUITE PLANS ON SHEET M130 FOR DUCTWORK SIZING, AIRFLOWS, AND GRILLE TYPES.
2. CENTER SUPPLY GRILLE ABOVE DOOR AT EACH UNIT BEDROOM.
3. PROVIDE A HIGH EFFICIENCY TAKE-OFF AT EACH GRILLE, REGISTER, AND DIFFUSER BRANCH RUN-OUT. TYP OF ALL. REFER TO DETAILS ON SHEET M140.
4. REFER TO COMBO FIRE/SMOKE DAMPER DETAIL ON SHEET M140. CONTRACTOR TO INSTALL THE FIRE/SMOKE DAMPER SUCH THAT THE RATING IS MAINTAIN ACROSS THE WALL AND SUCH THAT THE ACTUATOR IS LOCATED OUTSIDE THE PLANE OF THE WALL.
5. PROVIDE DUCT ACCESS DOOR FOR ALL COMBO FIRE/SMOKE DAMPERS AS REQUIRED.
6. PROVIDE ASSOCIATED DUCT MOUNTED SMOKE DETECTOR WITH EACH COMBO FIRE/SMOKE DAMPER SERVING GROUND FLOOR ONLY. COORDINATE INSTALLATION WITH EC.
7. BALANCE ALL EXHAUST DUCTWORK BRANCHES TO CFM INDICATED ON FLOOR PLANS.
8. REFER TO HEAT PUMP INSTANCE SCHEDULE ON EACH FLOOR FOR SPECIFIC REQUIREMENTS.
9. REFER TO HEAT PUMP INSTALLATION DETAILS ON SHEET M141 FOR SPECIFIC REQUIREMENTS.
10. SPILL CONDENSATE TO NEAREST FLOOR DRAIN.
11. NO PIPING/DUCTWORK TO BE ROUTED OVER ELECTRICAL PANELS.
12. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EQUIPMENT SO THAT ALL REQUIRED CLEARANCES ARE MAINTAINED. COORDINATE WITH OTHER TRADES.
13. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL DAMPERS AND VALVES IN ACCESSIBLE LOCATIONS. COORDINATE WITH OTHER TRADES.
14. CONTRACTOR SHALL MOCK UP A TYPICAL SUITE UNIT A/B WITH ALL TRADES IN PLACE FOR OWNER AND CMTA INSPECTION AND APPROVAL PRIOR TO CONTINUING ON TO OTHER TYPICAL SUITES.
15. PROVIDE A HIGH EFFICIENCY TAKE-OFF AND VOLUME DAMPER AT EACH OUTSIDE AIR BRANCH RUN-OUT.

HEAT PUMP INSTANCE SCHEDULE - LEVEL 1									
MARK	SUITE SERVED	SUPPLY AIR DUCT RUNOUT	RETURN AIR DUCT RUNOUT	OUTSIDE AIR DUCT RUNOUT	AIRFLOW OA (CFM)	GS/GR PIPE SIZE	CONDENSAT E PIPE SIZE		
VHP-12	100	10"x10"	10"x10"	N/A	0	1"	3/4"		
VHP-24	101	20"x8"	12"x12"	8"x6"	150	1 1/4"	3/4"		
VHP-18	102	16"x8"	12"x12"	6"x6"	100	1"	3/4"		
VHP-24	105	12"x12"	12"x12"	6"x6"	50	1 1/4"	3/4"		
VHP-72	120	18"x18"	20"x20"	N/A	0	1 1/2"	1"		
VHP-18	154	12"x12"	12"x12"	8"x6"	175	1"	3/4"		
VHP-12	155	12"x8"	10"x10"	8"x4"	100	1"	3/4"		
VHP-18	158	12"x10"	12"x10"	6"x6"	100	1"	3/4"		
VHP-18	159	12"x10"	12"x10"	8"x4"	100	1"	3/4"		
VHP-18	160	12"x10"	12"x10"	6"x6"	100	1"	3/4"		
VHP-18	161	12"x10"	12"x10"	8"x4"	100	1"	3/4"		
VHP-18	162	12"x10"	12"x10"	6"x6"	100	1"	3/4"		
VHP-18	163	12"x10"	12"x10"	6"x6"	100	1"	3/4"		

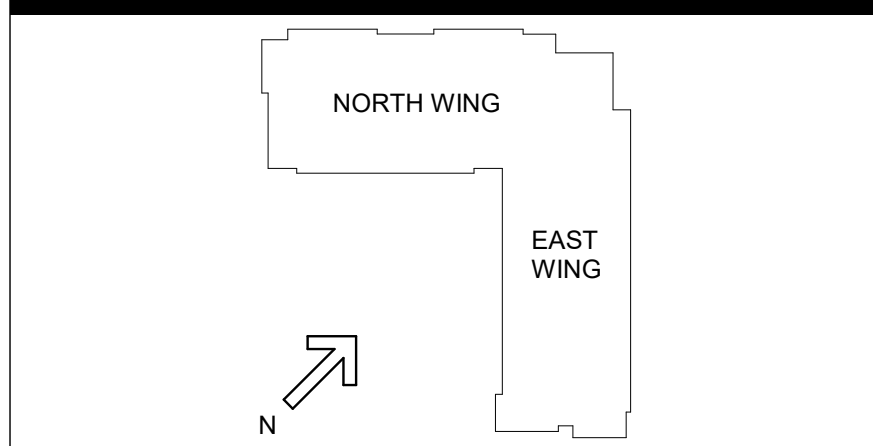
G,R,D RUNOUT SCHEDULE

MARK	DUCT BRANCH SIZE
E-1	6"
E-2	6"
E-3	6"x6"
R-1	6"
R-1A	6"
R-2	6"
R-3	10"
R-4	12"
R-5	14"
R-6	8"x6"
R-7	12"x6"
R-8	12"x10"
R-9	14"x14"
R-10	36"x20"
R-11	12"
R-12	10"
R-13	14"
S-1	6"
S-2	6"
S-2A	6"
S-3	6"
S-4	6"
S-5	8"x6"
S-6	12"x6"
S-7	16"x6"
S-8	16"x6"

STATE OF KENTUCKY APPROVAL

TAGGED NOTES

- M1 COMBINATION FIRE/SMOKE DAMPER LOCATED IN SLAB AT 2ND FLOOR. CONTRACTOR TO INSTALL SUCH THAT THE ACTUATOR IS LOCATED ON THE CORRIDOR SIDE OF THE SHAFT.
- M2 EXPOSED OVAL DUCTWORK TO BE DOUBLE WALL AND PAINTED. ALL ASSOCIATED STRUCTURAL BRACING/HANGERS TO BE PAINTED TO MATCH ADJACENT SURFACES.
- M3 PROVIDE EQUAL SPACING FOR DIFFUSERS IN DUCT RUN.
- M4 PROVIDE PAINT GRIP DUCTWORK TO ALLOW EXPOSED DUCTWORK TO BE PAINTED. ALL ASSOCIATED STRUCTURAL BRACING/HANGERS TO BE PAINTED TO MATCH ADJACENT SURFACES.
- M5 MOUNT BOTTOM OF RECESSED UNIT HEATER 18" AFF.
- M6 MOUNT BOTTOM AC-1 UNIT ABOVE DOOR, 9'-6" AFF.
- M7 MOUNT BOTTOM EH-2 9'-6" AFF.
- M8 MOUNT EH-3 FLUSH WITH CEILING AND WALL.
- M9 PROVIDE NEW 4" CONCRETE PAD FOR CONDENSING UNIT ON GRADE.
- M10 PROVIDE WEATHER HOOD AT EXHAUST DUCT TERMINATION. COORDINATE TERMINATION TYPE WITH DRYER/HOOD MANUFACTURER. NO CAP OR SCREEN PERMITTED TO BE ON DRYER/WEATHER HOOD.
- M11 DISCHARGE 10" DUCT ABOVE CEILING.
- M12 PROVIDE VERTICAL UP-FLOW CONNECTION WITH RECESSED BOX. A 90 DEGREE HORIZONTAL CONNECTION SHALL NOT BE ACCEPTABLE.
- M13 ROUTE THE 4" VENT AND INTAKE TO EXTERIOR AND TERMINATE WITH CONCENTRIC VENT. SLOPE PIPING PER MANUFACTURER'S RECOMMENDATIONS.
- M15 PROVIDE 4" THICK CONCRETE PAD UNDER MECHANICAL EQUIPMENT. PAD SHALL BE 6" LARGER THAN EQUIPMENT IN ALL DIRECTIONS.
- M22 TEMPERATURE CONTROL PANEL. COORDINATE POWER AND DATA CONNECTION WITH ELECTRICAL CONTRACTOR.
- M27 TRANSITION FROM DUCTWORK SIZE INDICATED TO RANGE HOOD INLET SIZE.
- M29 NEW DOMESTIC WATER SERVICE ENTRY. REFER TO PLUMBING DRAWINGS.
- M30 NEW FIRE PROTECTION SERVICE ENTRY. REFER TO FIRE PROTECTION DRAWINGS.
- M31 DOMESTIC WATER HEATER. REFER TO PLUMBING DRAWINGS FOR MORE DETAIL.
- M32 NEW DOMESTIC WATER BOOSTER PUMP. REFER TO PLUMBING DRAWINGS.
- M33 PROVIDE CLEAN OUT COVER AT END OF EXHAUST MANIFOLD.
- M34 PROVIDE MANUFACTURER APPROVED BACKDRAFT DAMPER ON EACH INDIVIDUAL 4" DRYER EXHAUST.
- M35 CONNECT 4" INDIVIDUAL DRYER EXHAUST TO MAIN MANIFOLD AT 30 DEGREE ANGLE PER MANUFACTURER'S RECOMMENDATIONS.
- M45 PROVIDE ESCUTCHEON PLATE AT EXPOSED DUCT WALL PENETRATION. REFER TO DETAIL ON SHEET M140.
- M47 PROVIDE ONE (1) BH-4 CENTERED ON WALL. PROVIDE TWO (2) BLANK BH-4 SECTIONS ON EITHER SIDE TO ACCOMMODATE ELECTRICAL ROUTING FROM ADJACENT WALL. PROVIDE METAL COVERS AS REQUIRED TO ACCOMMODATE ELECTRICAL ROUTING. COORDINATE WITH ELECTRICAL CONTRACTOR.
- M48 CENTER BASEBOARD HEATERS BH-10 (QTY=2) BETWEEN COLUMNS. PROVIDE METAL COVERS AS REQUIRED TO ACCOMMODATE ELECTRICAL ROUTING FROM ADJACENT COLUMNS.
- M50 MOUNT RETURN GRILLE ABOVE WOOD SLAT CEILING. BOTTOM OF GRILLE AT 11'-7" A.F.F.
- M51 REFER TO DUCT RISER SECTION #1 ON SHEET M131 FOR SIZING AND COMBINATION FIRE/SMOKE DAMPER LOCATIONS.
- M53 REFER TO DUCT RISER SECTION #6 ON SHEET M131 FOR SIZING AND COMBINATION FIRE/SMOKE DAMPER LOCATIONS.
- M56 PROVIDE ONE (1) BH-4 CENTERED ON WALL. PROVIDE METAL COVERS AS REQUIRED TO ACCOMMODATE ELECTRICAL ROUTING FROM ADJACENT WALL. COORDINATE WITH ELECTRICAL CONTRACTOR.
- M57 REFER TO DUCT RISER SECTION #3 ON SHEET M131 FOR SIZING AND COMBINATION FIRE/SMOKE DAMPER LOCATIONS.



#	DATE	CHANGE DESCRIPTION

NKU - New Residence Hall  
KENTON DRIVE & CARROLL DRIVE  
HIGHLAND HEIGHTS, KY 41099  
FOR  
NORTHERN KENTUCKY  
UNIVERSITY

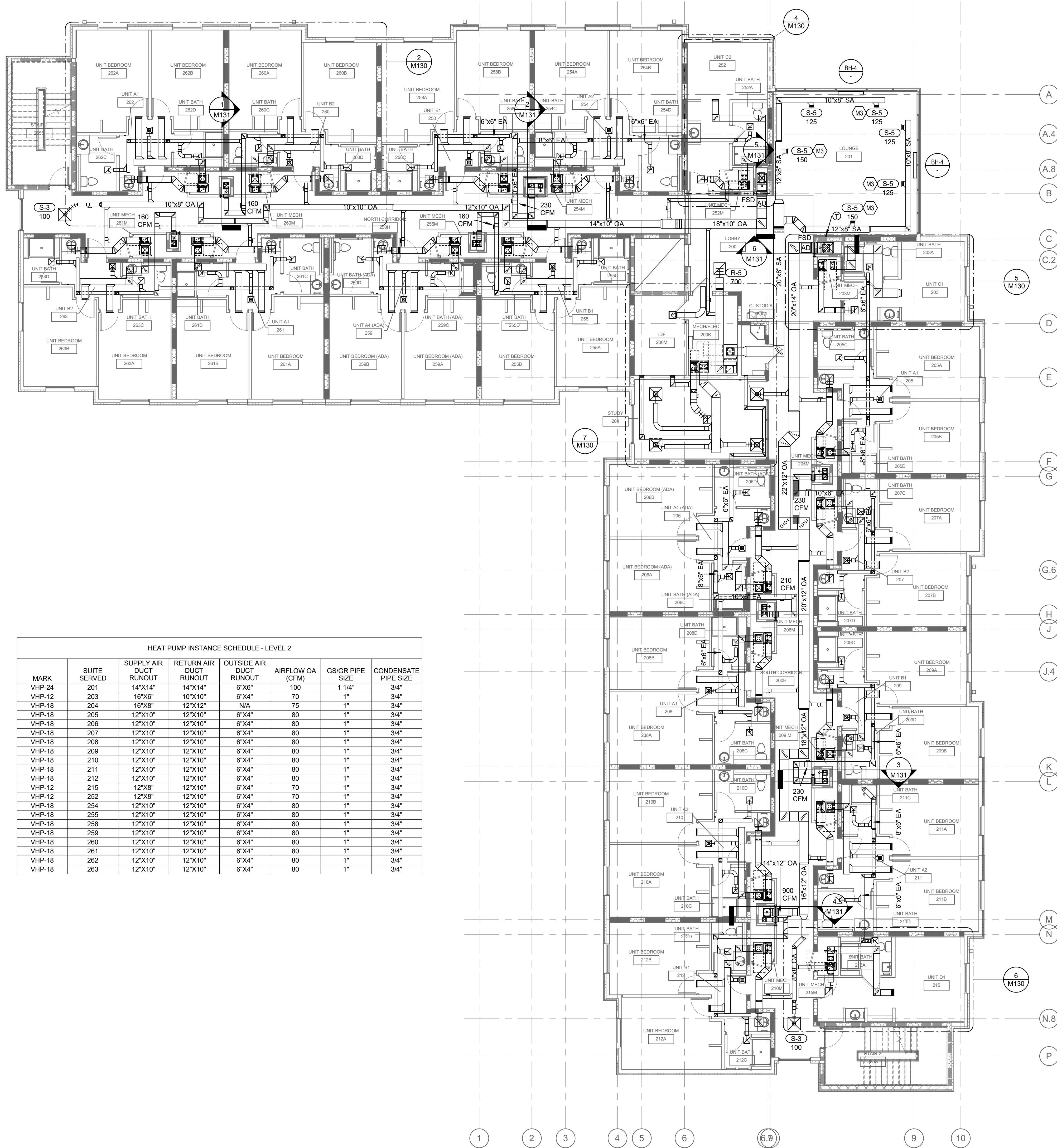
434 MADISON AVENUE  
COVINGTON, KY 41011  
PHONE: (859) 957-1277  
FAX: (859) 957-1280

CMTA  
10411 Meeting Street, Prospect, KY 40369  
T 502 326 3085 F 502 326 2691 www.cmtaeng.com

DRAWING TITLE:  
LEVEL 0/1 - AIR DISTRIBUTION  
PLAN

JANUARY 30, 2020  
DRAWN BY LMA CHECKED BY CMG  
#18237  
M101  
BID & PERMIT SUBMITTAL





HEAT PUMP INSTANCE SCHEDULE - LEVEL 2						
MARK	SUITE SERVED	SUPPLY AIR DUCT RUNOUT	RETURN AIR DUCT RUNOUT	OUTSIDE AIR DUCT RUNOUT	AIRFLOW OA (CFM)	GS/GR PIPE SIZE CONDENSATE PIPE SIZE
VHP-24	201	14"x14"	14"x14"	6"x6"	100	1 1/4" 3/4"
VHP-12	203	16"x6"	10"x10"	6"x4"	70	1" 3/4"
VHP-18	204	16"x8"	12"x12"	N/A	75	1" 3/4"
VHP-18	205	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-18	206	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-18	207	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-18	208	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-18	209	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-18	210	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-18	211	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-18	212	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-12	215	12"x8"	12"x10"	6"x4"	70	1" 3/4"
VHP-12	252	12"x8"	12"x10"	6"x4"	70	1" 3/4"
VHP-18	254	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-18	255	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-18	258	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-18	259	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-18	260	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-18	261	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-18	262	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-18	263	12"x10"	12"x10"	6"x4"	80	1" 3/4"

1 LEVEL 2 - AIR DISTRIBUTION PLAN  
1/8" = 1'-0"

MECHANICAL NOTES:

1. REFER TO ENLARGED SUITE PLANS ON SHEET M130 FOR DUCTWORK SIZING, AIRFLOWS, AND GRILLE TYPES.
2. CENTER SUPPLY GRILLE ABOVE DOOR AT EACH UNIT BEDROOM.
3. PROVIDE A HIGH EFFICIENCY TAKE-OFF AT EACH GRILLE, REGISTER, AND DIFFUSER BRANCH RUN-OUT, TYP OF ALL. REFER TO DETAILS ON SHEET M140.
4. REFER TO COMBO FIRESMOKE DAMPER DETAIL ON SHEET M140. CONTRACTOR TO INSTALL THE FIRESMOKE DAMPER SUCH THAT THE RATING IS MAINTAIN ACROSS THE WALL AND SUCH THAT THE ACTUATOR IS LOCATED OUTSIDE THE PLANE OF THE WALL.
5. PROVIDE DUCT ACCESS DOOR FOR ALL COMBO FIRESMOKE DAMPERS AS REQUIRED.
6. PROVIDE ASSOCIATED DUCT MOUNTED SMOKE DETECTOR WITH EACH COMBO FIRESMOKE DAMPER SERVING GROUND FLOOR ONLY. COORDINATE INSTALLATION WITH EC.
7. BALANCE ALL EXHAUST DUCTWORK BRANCHES TO CFM INDICATED ON FLOOR PLANS.
8. REFER TO HEAT PUMP INSTANCE SCHEDULE ON EACH FLOOR FOR SPECIFIC REQUIREMENTS.
9. REFER TO HEAT PUMP INSTALLATION DETAILS ON SHEET M141 FOR SPECIFIC REQUIREMENTS.
10. SPILL CONDENSATE TO NEAREST FLOOR DRAIN.
11. NO PIPING/DUCTWORK TO BE ROUTED OVER ELECTRICAL PANELS.
12. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EQUIPMENT SO THAT ALL REQUIRED CLEARANCES ARE MAINTAINED. COORDIANTE WITH OTHER TRADES.
13. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL DAMPERS AND VALVES IN ACCESSIBLE LOCATIONS. COORDIANTE WITH OTHER TRADES.
14. CONTRACTOR SHALL MOCK UP A TYPICAL SUITE UNIT A/B WITH ALL TRADES IN PLACE FOR OWNER AND CMTA INSPECTION AND APPROVAL PRIOR TO CONTINUING ON TO OTHER TYPICAL SUITES.
15. PROVIDE A HIGH EFFICIENCY TAKE-OFF AND VOLUME DAMPER AT EACH OUTSIDE AIR BRANCH RUN-OUT.

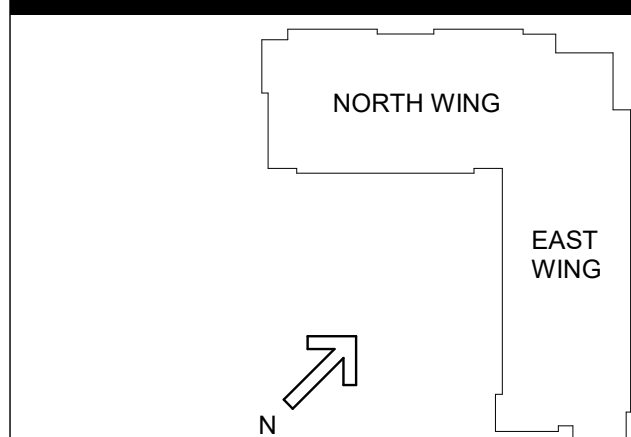
STATE OF KENTUCKY APPROVAL

TAGGED NOTES

M31 PROVIDE EQUAL SPACING FOR DIFFUSERS IN DUCT RUN.

G,R,D RUNOUT SCHEDULE

MARK	DUCT BRANCH SIZE
E-1	8"
E-2	8"
E-3	6X6
R-1	8"
R-1A	8"
R-2	8"
R-3	10"
R-4	12"
R-5	14"
R-6	8X6
R-7	12X6
R-8	12X10
R-9	14X14
R-10	36X20
R-11	12"
R-12	10"
R-13	14"
S-1	6"
S-2	8"
S-2A	8"
S-3	6"
S-4	8"
S-5	8X6
S-6	12X6
S-7	18X6
S-8	16X6



# DATE CHANGE DESCRIPTION

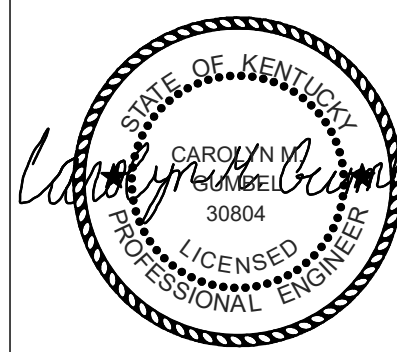
#	DATE	CHANGE DESCRIPTION

**INKU - New Residence Hall**  
KENTON DRIVE & CARROLL DRIVE  
HIGHLAND HEIGHTS, KY 41099  
FOR  
**NORTHERN KENTUCKY UNIVERSITY**

**MOODY-NOLAN**  
434 MADISON AVENUE  
COVINGTON, KY 41011  
PHONE: (859) 957-1277  
FAX: (859) 957-1280

**CMTA**  
10411 Meeting Street, Prospect, KY 40059  
T: 502 326 3085 F: 502 326 2691 www.cmtaegs.com

DRAWING TITLE:  
LEVEL 2 - AIR DISTRIBUTION PLAN



JANUARY 30, 2020

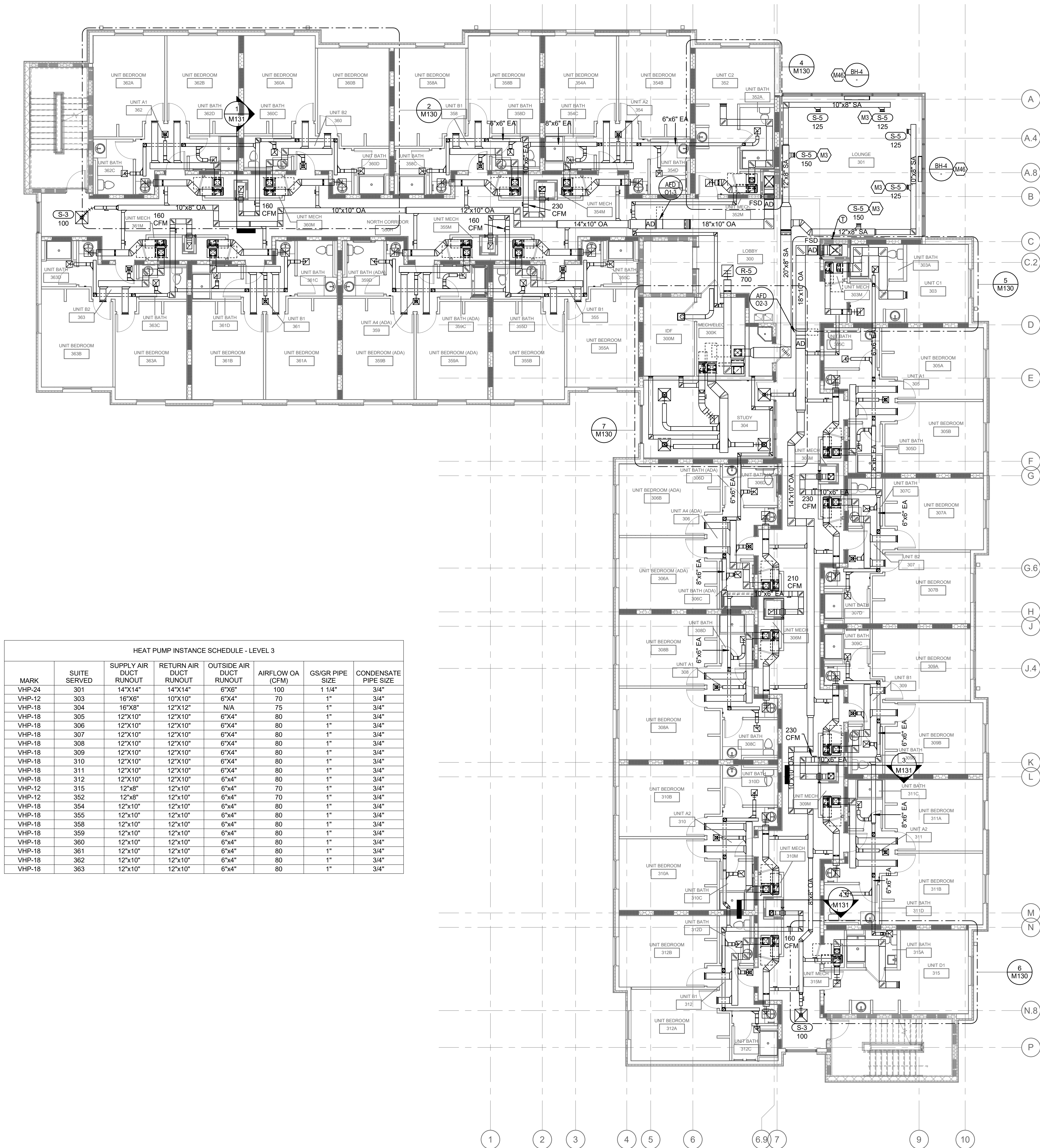
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#18237

M102

BID & PERMIT SUBMITTAL





HEAT PUMP INSTANCE SCHEDULE - LEVEL 3						
MARK	SUITE SERVED	SUPPLY AIR DUCT RUNOUT	RETURN AIR DUCT RUNOUT	OUTSIDE AIR DUCT RUNOUT	AIRFLOW OA (CFM)	GS/GR PIPE SIZE CONDENSATE PIPE SIZE
VHP-24	301	14"x14"	14"x14"	6"x6"	100	1 1/4" 3/4"
VHP-12	303	16"x6"	10"x10"	6"x4"	70	1" 3/4"
VHP-18	304	16"x8"	12"x12"	N/A	75	1" 3/4"
VHP-18	305	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-18	306	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-18	307	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-18	308	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-18	309	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-18	310	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-18	311	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-18	312	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-12	315	12"x8"	12"x10"	6"x4"	70	1" 3/4"
VHP-12	352	12"x8"	12"x10"	6"x4"	70	1" 3/4"
VHP-18	354	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-18	355	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-18	358	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-18	359	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-18	360	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-18	361	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-18	362	12"x10"	12"x10"	6"x4"	80	1" 3/4"
VHP-18	363	12"x10"	12"x10"	6"x4"	80	1" 3/4"

1 LEVEL 3 - AIR DISTRIBUTION PLAN  
1/8" = 1'-0"

MECHANICAL NOTES:

1. REFER TO ENLARGED SUITE PLANS ON SHEET M130 FOR DUCTWORK SIZING, AIRFLOWS, AND GRILLE TYPES.
2. CENTER SUPPLY GRILLE ABOVE DOOR AT EACH UNIT BEDROOM.
3. PROVIDE A HIGH EFFICIENCY TAKE-OFF AT EACH GRILLE, REGISTER, AND DIFFUSER BRANCH RUN-OUT, TYP OF ALL. REFER TO DETAILS ON SHEET M140.
4. REFER TO COMBO FIRE/SMOKE DAMPER DETAIL ON SHEET M140. CONTRACTOR TO INSTALL THE FIRE/SMOKE DAMPER SUCH THAT THE RATING IS MAINTAIN ACROSS THE WALL AND SUCH THAT THE ACTUATOR IS LOCATED OUTSIDE THE PLANE OF THE WALL.
5. PROVIDE DUCT ACCESS DOOR FOR ALL COMBO FIRE/SMOKE DAMPERS AS REQUIRED.
6. PROVIDE ASSOCIATED DUCT MOUNTED SMOKE DETECTOR WITH EACH COMBO FIRE/SMOKE DAMPER SERVING GROUND FLOOR ONLY. COORDINATE INSTALLATION WITH EC.
7. BALANCE ALL EXHAUST DUCTWORK BRANCHES TO CFM INDICATED ON FLOOR PLANS.
8. REFER TO HEAT PUMP INSTANCE SCHEDULE ON EACH FLOOR FOR SPECIFIC REQUIREMENTS.
9. REFER TO HEAT PUMP INSTALLATION DETAILS ON SHEET M141 FOR SPECIFIC REQUIREMENTS.
10. SPILL CONDENSATE TO NEAREST FLOOR DRAIN.
11. NO PIPING/DUCTWORK TO BE ROUTED OVER ELECTRICAL PANELS.
12. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EQUIPMENT SO THAT ALL REQUIRED CLEARANCES ARE MAINTAINED. COORDINATE WITH OTHER TRADES.
13. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL DAMPERS AND VALVES IN ACCESSIBLE LOCATIONS. COORDINATE WITH OTHER TRADES.
14. CONTRACTOR SHALL MOCK UP A TYPICAL SUITE UNIT A/B WITH ALL TRADES IN PLACE FOR OWNER AND CMTA INSPECTION AND APPROVAL PRIOR TO CONTINUING ON TO OTHER TYPICAL SUITES.
15. PROVIDE A HIGH EFFICIENCY TAKE-OFF AND VOLUME DAMPER AT EACH OUTSIDE AIR BRANCH RUN-OUT.

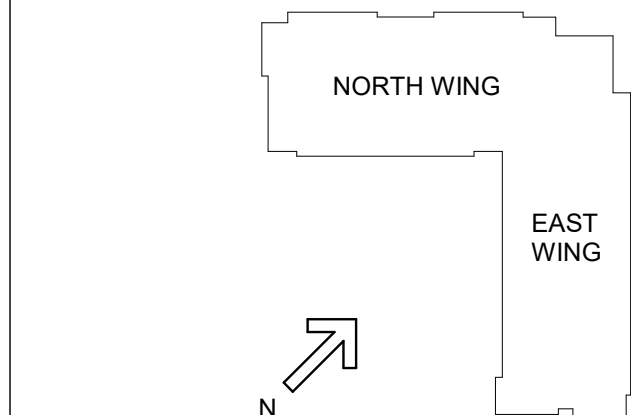
STATE OF KENTUCKY APPROVAL

TAGGED NOTES

- M3 PROVIDE EQUAL SPACING FOR DIFFUSERS IN DUCT RUN.  
M46 CENTER BH-4 ON WALL. PROVIDE METAL COVERS AS REQUIRED TO ACCOMMODATE ELECTRICAL ROUTING. COORDINATE WITH ELECTRICAL CONTRACTOR.

G,R,D RUNOUT SCHEDULE

MARK	DUCT BRANCH SIZE
E-1	6"
E-2	8"
E-3	6X6
R-1	8"
R-1A	8"
R-2	8"
R-3	10"
R-4	12"
R-5	14"
R-6	8X6
R-7	12X6
R-8	12X10
R-9	14X14
R-10	36X20
R-11	12"
R-12	10"
R-13	14"
S-1	6"
S-2	8"
S-2A	8"
S-3	6"
S-4	8"
S-5	8X6
S-6	12X6
S-7	18X8
S-8	16X6



# DATE CHANGE DESCRIPTION

#	DATE	CHANGE DESCRIPTION

**NKU - New Residence Hall**  
KENTON DRIVE & CARROLL DRIVE  
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FOR  
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**MOODY-NOLAN**  
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PHONE: (859) 957-1277  
FAX: (859) 957-1280

**CMTA**  
10411 Meeting Street, Prospect, KY 40069  
T: 502.326.3085 F: 502.326.2691 www.cmta.org

DRAWING TITLE:  
**LEVEL 3 - AIR DISTRIBUTION PLAN**



JANUARY 30, 2020

DRAWN BY LMA CHECKED BY CMG

#18237

**M103**

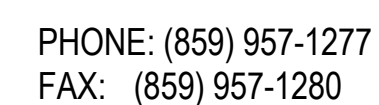
BID & PERMIT SUBMITTAL



1. REFER TO ENLARGED SUEIT PLANS ON SHEET M310 FOR DUCTWORK SIZING, AIRFLOWS, AND GRILLE TYPES.
2. PROVIDE SUPPLY GRILLE IN EACH DOOR AT THE BEDROOM.
3. PROVIDE A HIGH EFFICIENCY TAKE-OFF AT EACH GRILLE.
4. REGISTER, AND DIFFUSER BRANCH RUN-OUT, TYPE OF ALL REFER TO THE SUEIT PLAN.
5. REFER TO COMBO FIRE/SMOKE DAMPER DETAIL ON SHEET M140.
6. CONTRACTOR TO INSTALL THE FIRE/SMOKE DAMPER SUCH THAT THE ACTUATOR IS LOCATED OUTSIDE THE PLANE OF THE WALL.
7. PROVIDE DUCT ACCESS DOOR FOR ALL COMBO FIRE/SMOKE DAMPERS.
8. PROVIDE ASSOCIATED DUCT MOUNTED SMOKE DETECTOR WITH EACH COMBO FIRE/SMOKE DAMPER AND DETECT THE GROUND FLOOR COMMON AREA FOR DETECTION INSTANTATION WITH EC.
9. BALANCE ALL EXHAUST DUCTWORK BRANCHES TO CFM.
10. PROVIDE AN FLOOR DRAIN FOR EACH EXHAUST DUCTWORK.
11. REFER TO HEAT PUMP NSTANCE SCHEDULE ON EACH FLOOR FOR SPECIFIC REQUIREMENTS.
12. PROVIDE THAT PUMP AND INSTALLATION DETAILS ON SHEET M141 FOR SPECIFIC REQUIREMENTS.
13. SPILL CONDENSATE TO NEAREST FLOOR DRAIN.
14. ALL EXHAUST DUCTWORK TO BE ROUTED OVER ELECTRICAL PANELS.
15. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EQUIPMENT AND ALL REQUIREMENTS AND LOCATIONS ARE MAINTAINED COORDINATE WITH OTHER TRADES.
16. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL DAMPERS AND LOCATIONS ARE ACCESSIBLE LOCATIONS. COORDINATE WITH OTHER TRADES.
17. CONTRACTOR SHALL MOCK UP A TYPICAL SUEIT UNIT AB WITH THE SUEIT IN PLACE AND PROVIDE THE SUEIT DETAIL AND APPROVAL PRIOR TO CONTINUING ON TO OTHER TYPICAL SUITES.
18. PROVIDE A HIGH EFFICIENCY TAKE-OFF AND VOLUME DAMPER AT EACH OUTSIDE AIR BRANCH RUN-OUT.

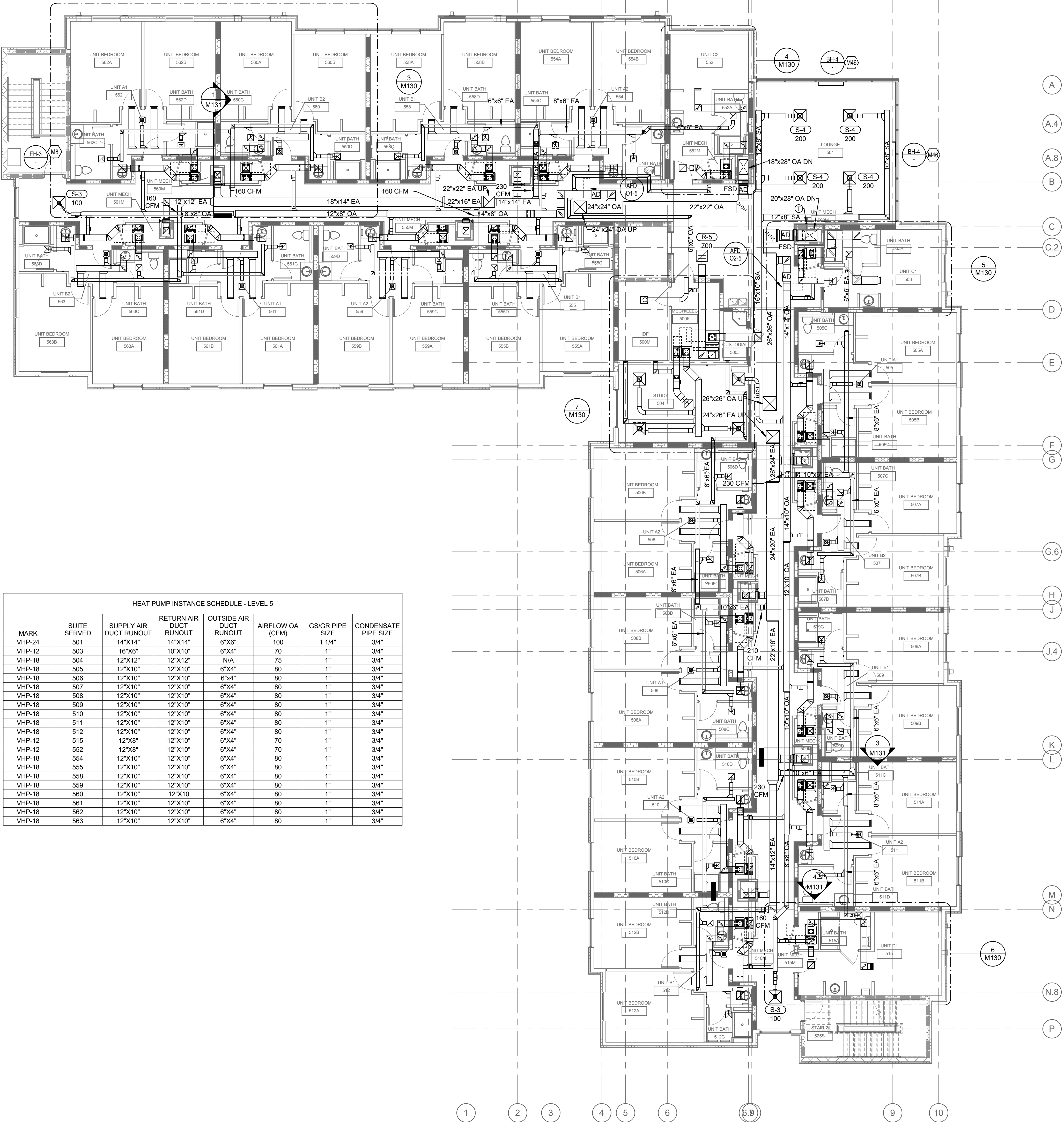
M3	PROVIDE EQUAL SPACING FOR DIFFUSERS IN DUCT RUN.
M46	CENTER BH-4 ON WALL. PROVIDE METAL COVERS AS REQUIRED TO ACCOMMODATE ELECTRICAL ROUTING. COORDINATE WITH ELECTRICAL CONTRACTOR.

MARK	DUCT BRANCH SIZE
E-1	8"
E-2	8"
E-3	8X6
R-1	8"
R-1A	8"
R-2	8"
R-3	10"
R-4	12"
R-5	14"
R-6	8X6
R-7	12X6
R-8	12X10
R-9	14X14
R-10	30X30
R-11	12"
R-12	10"
R-13	14"
S-1	8"
S-2	8"
S-2A	8"
S-3	8"
S-4	8"
S-5	8X6
S-6	12X6
S-7	16X8
S-8	16X6



BID &amp; PERMIT SUBMITTAL





HEAT PUMP INSTANCE SCHEDULE - LEVEL 5						
MARK	SUITE SERVED	SUPPLY AIR DUCT RUNOUT	RETURN AIR DUCT RUNOUT	OUTSIDE AIR DUCT RUNOUT	AIRFLOW OA (CFM)	GS/GR PIPE SIZE
VHP-24	501	14\"X14"	14\"X14"	6\"X6"	100	1 1/4"
VHP-12	503	16\"X8"	10\"X10"	6\"X4"	70	1"
VHP-18	504	12\"X12"	12\"X12"	N/A	75	1"
VHP-18	505	12\"X10"	12\"X10"	6\"X4"	80	1"
VHP-18	506	12\"X10"	12\"X10"	6\"X4"	80	1"
VHP-18	507	12\"X10"	12\"X10"	6\"X4"	80	1"
VHP-18	508	12\"X10"	12\"X10"	6\"X4"	80	1"
VHP-18	509	12\"X10"	12\"X10"	6\"X4"	80	1"
VHP-18	510	12\"X10"	12\"X10"	6\"X4"	80	1"
VHP-18	511	12\"X10"	12\"X10"	6\"X4"	80	1"
VHP-18	512	12\"X10"	12\"X10"	6\"X4"	80	1"
VHP-12	515	12\"X8"	12\"X10"	6\"X4"	70	1"
VHP-12	552	12\"X8"	12\"X10"	6\"X4"	70	1"
VHP-18	554	12\"X10"	12\"X10"	6\"X4"	80	1"
VHP-18	555	12\"X10"	12\"X10"	6\"X4"	80	1"
VHP-18	558	12\"X10"	12\"X10"	6\"X4"	80	1"
VHP-18	559	12\"X10"	12\"X10"	6\"X4"	80	1"
VHP-18	560	12\"X10"	12\"X10"	6\"X4"	80	1"
VHP-18	561	12\"X10"	12\"X10"	6\"X4"	80	1"
VHP-18	562	12\"X10"	12\"X10"	6\"X4"	80	1"
VHP-18	563	12\"X10"	12\"X10"	6\"X4"	80	1"

1 LEVEL 5 - AIR DISTRIBUTION PLAN  
1/8" = 1'-0"

MECHANICAL NOTES:

1. REFER TO ENLARGED SUITE PLANS ON SHEET M130 FOR DUCTWORK SIZING, AIRFLOWS, AND GRILLE TYPES.
2. CENTER SUPPLY GRILLE ABOVE DOOR AT EACH UNIT BEDROOM.
3. PROVIDE A HIGH EFFICIENCY TAKE-OFF AT EACH GRILLE, REGISTER, AND DIFFUSER BRANCH RUN-OUT, TYP OF ALL. REFER TO DETAILS ON SHEET M140.
4. REFER TO COMBO FIRE/SMOKE DAMPER DETAIL ON SHEET M140. CONTRACTOR TO INSTALL THE FIRE/SMOKE DAMPER SUCH THAT THE RATING IS MAINTAIN ACROSS THE WALL AND SUCH THAT THE ACTUATOR IS LOCATED OUTSIDE THE PLANE OF THE WALL.
5. PROVIDE DUCT ACCESS DOOR FOR ALL COMBO FIRE/SMOKE DAMPERS AS REQUIRED.
6. PROVIDE ASSOCIATED DUCT MOUNTED SMOKE DETECTOR WITH EACH COMBO FIRE/SMOKE DAMPER SERVING GROUND FLOOR ONLY. COORDINATE INSTALLATION WITH EC.
7. BALANCE ALL EXHAUST DUCTWORK BRANCHES TO CFM INDICATED ON FLOOR PLANS.
8. REFER TO HEAT PUMP INSTALLATION SCHEDULE ON EACH FLOOR FOR SPECIFIC REQUIREMENTS.
9. REFER TO HEAT PUMP INSTALLATION DETAILS ON SHEET M141 FOR SPECIFIC REQUIREMENTS.
10. SPILL CONDENSATE TO NEAREST FLOOR DRAIN.
11. NO PIPING/DUCTWORK TO BE ROUTED OVER ELECTRICAL PANELS.
12. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EQUIPMENT SO THAT ALL REQUIRED CLEARANCES ARE MAINTAINED. COORDIANTE WITH OTHER TRADES.
13. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL DAMPERS AND VALVES IN ACCESSIBLE LOCATIONS. COORDIANTE WITH OTHER TRADES.
14. CONTRACTOR SHALL MOCK UP A TYPICAL SUITE UNIT A/B WITH ALL TRADES IN PLACE FOR OWNER AND CMTA INSPECTION AND APPROVAL PRIOR TO CONTINUING ON TO OTHER TYPICAL SUITES.
15. PROVIDE A HIGH EFFICIENCY TAKE-OFF AND VOLUME DAMPER AT EACH OUTSIDE AIR BRANCH RUN-OUT.

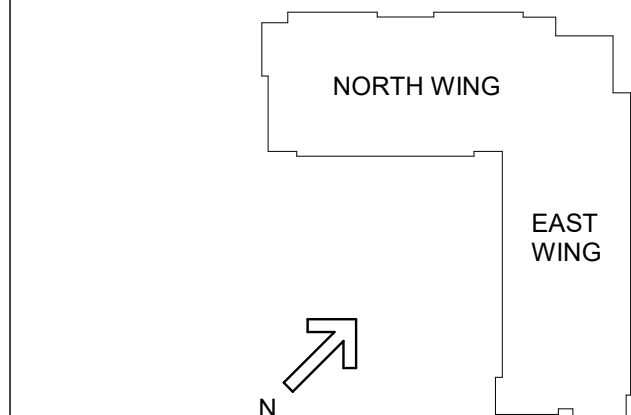
STATE OF KENTUCKY APPROVAL

TAGGED NOTES

M8: MOUNT EA-3 FLUSH WITH CEILING AND WALL  
M46: CENTER BH-4 ON WALL. PROVIDE METAL COVERS AS REQUIRED TO ACCOMMODATE ELECTRICAL ROUTING. COORDINATE WITH ELECTRICAL CONTRACTOR.

G,R,D RUNOUT SCHEDULE

MARK	DUCT BRANCH SIZE
E-1	6"
E-2	8"
E-3	6X6
R-1	8"
R-1A	8"
R-2	8"
R-3	10"
R-4	12"
R-5	14"
R-6	8X6
R-7	12X6
R-8	12X10
R-9	14X14
R-10	36X20
R-11	12"
R-12	10"
R-13	14"
S-1	6"
S-2	8"
S-2A	8"
S-3	6"
S-4	8"
S-5	8X6
S-6	12X6
S-7	18X8
S-8	16X6



# DATE CHANGE DESCRIPTION

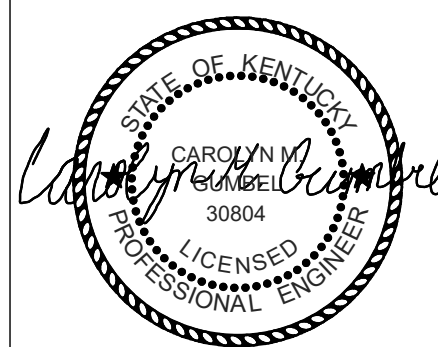
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**NKU - New Residence Hall**  
KENTON DRIVE & CARROLL DRIVE  
HIGHLAND HEIGHTS, KY 41099  
FOR  
**NORTHERN KENTUCKY UNIVERSITY**

**MOODY-NOLAN**  
434 MADISON AVENUE  
COVINGTON, KY 41011  
PHONE: (859) 957-1277  
FAX: (859) 957-1280

**CMTA**  
10411 Meeting Street, Prospect, KY 40069  
T: 502.326.3085 F: 502.326.2691 www.cmta.org

DRAWING TITLE:  
LEVEL 5 - AIR DISTRIBUTION PLAN



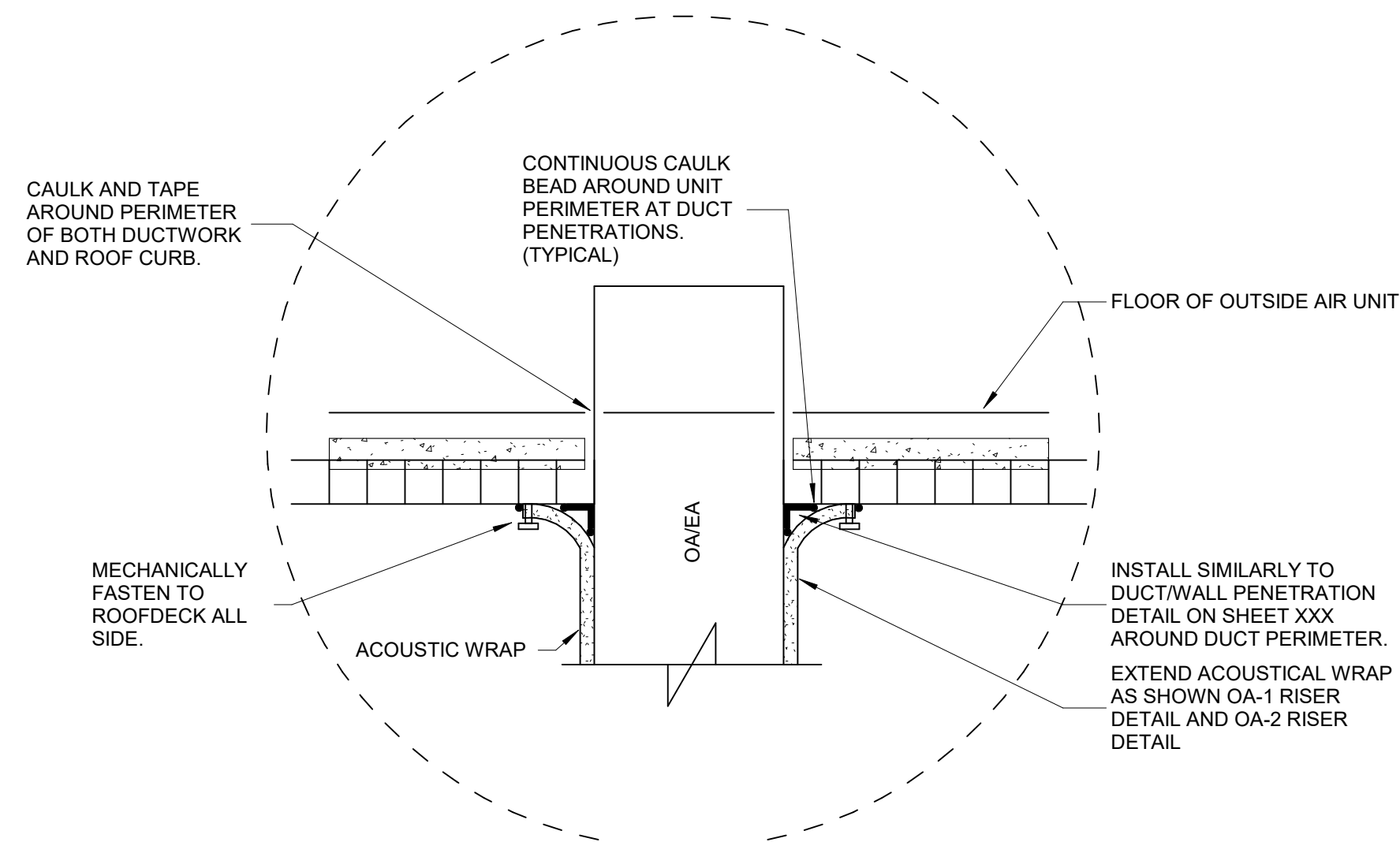
JANUARY 30, 2020

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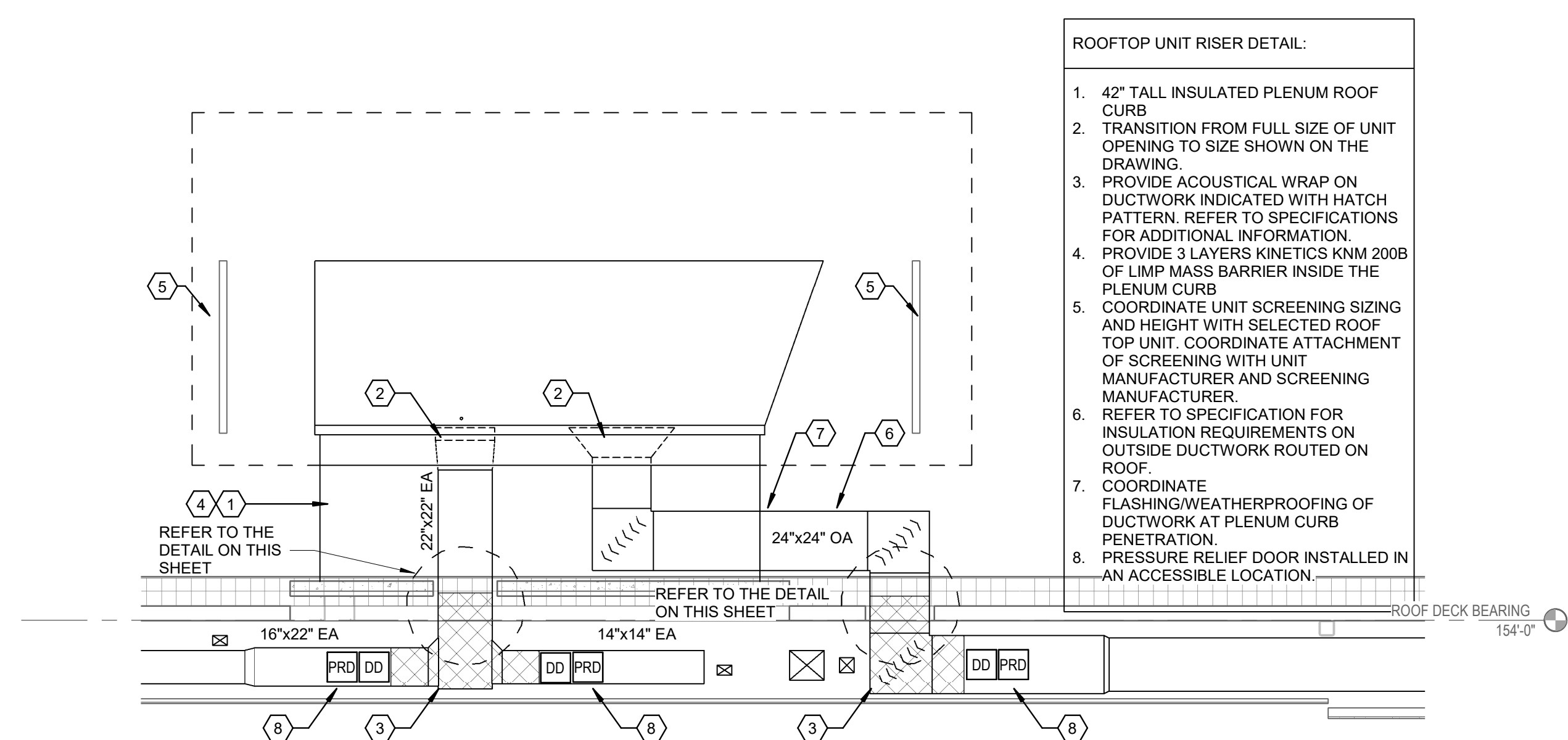
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M105

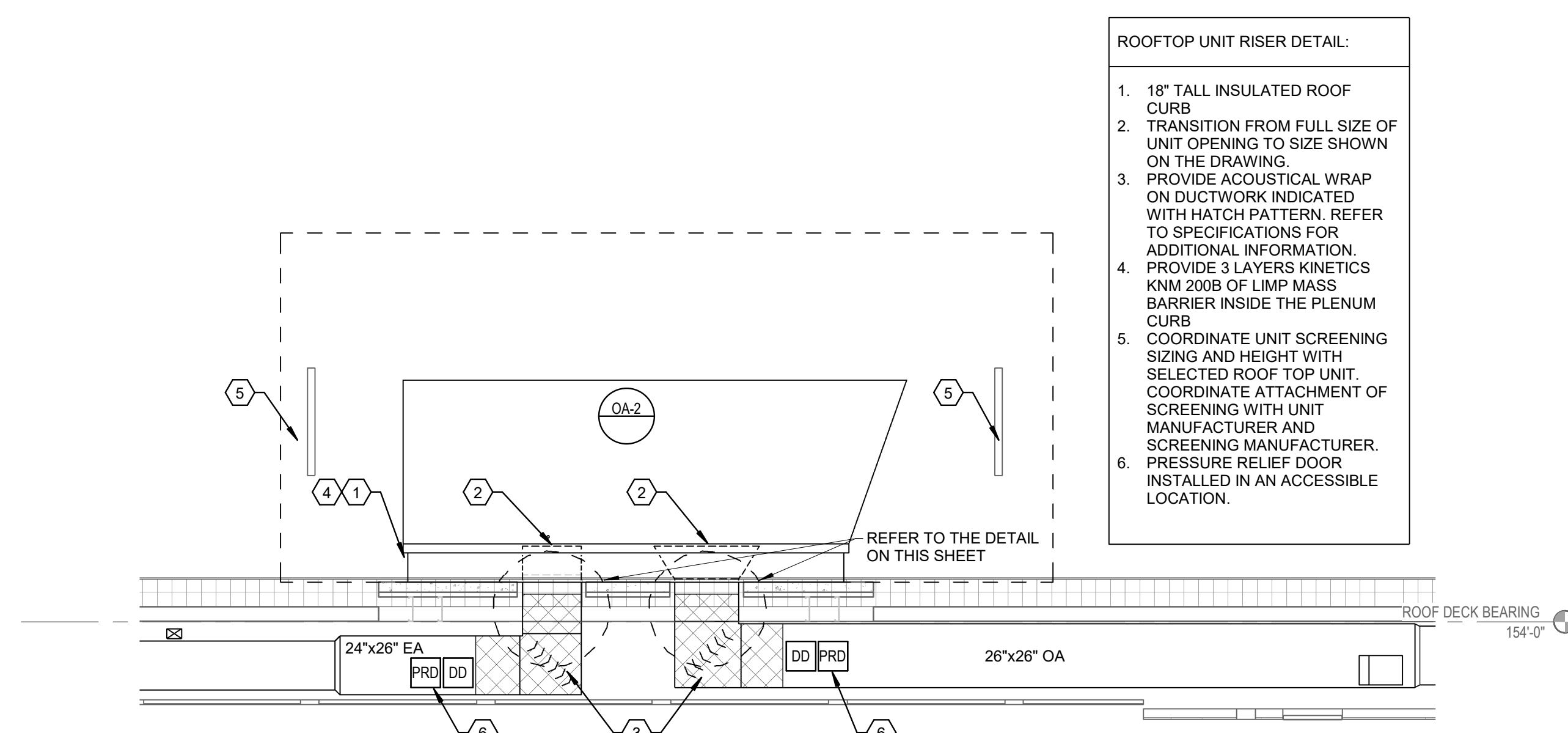
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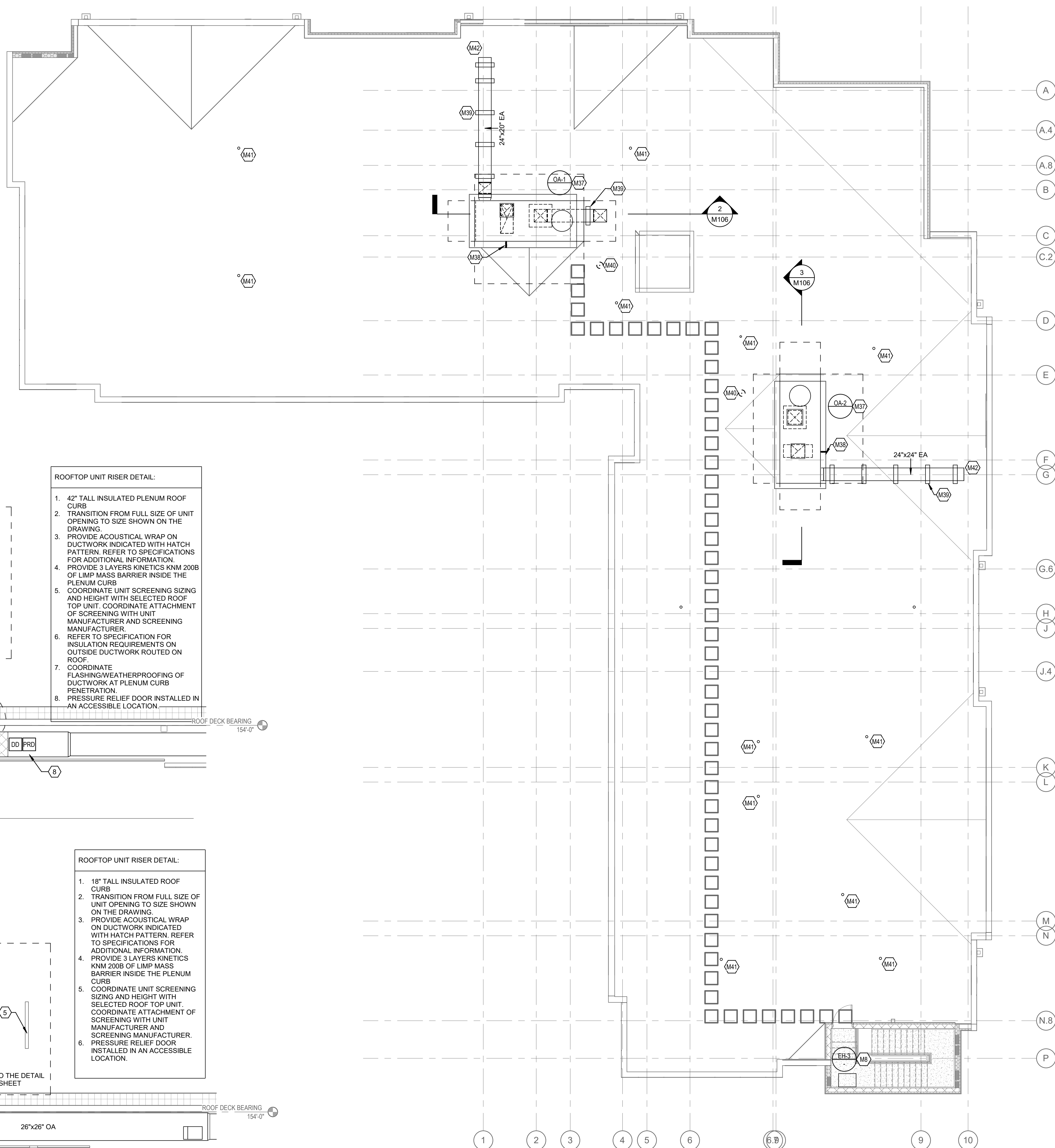
#### 4 OAU ENLARGED DUCT PENETRATION DETAIL



**2** **OA-1 RISER DETAIL**  
1/4" = 1'-0"



### 3 OA-2 RISER DETAIL

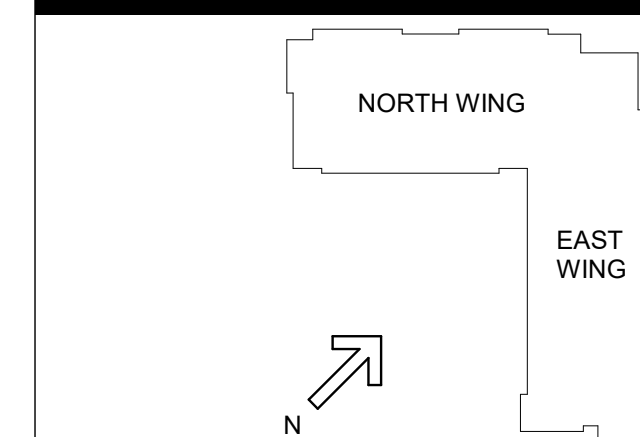


**1 ROOF - MECHANICAL PLAN**  
1/8" = 1'-0"

## STATE OF KENTUCKY APPROVAL

## TAGGED NOTES

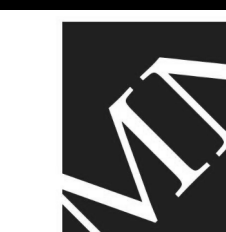
M3	MOUNT E-3 FLUSH WITH CEILING AND WALL
M37	MAINTAIN ALL MANUFACTURER'S CLEARANCES ON ROOFTOP EQUIPMENT
M38	ROUTE 1-1/4" CONDENSATE DOWN THROUGH ROOF AND SPILL TO FLASH IN FLUTE MECH ROOM 5504 AND 5504 RESPECTIVE. PROVIDE CONDENSATE CLEANOUT AT TRAP PER MANUFACTURER'S RECOMMENDATIONS.
M39	PROVIDE DUCT SUPPORTS 5'-0" ON CENTER. DUCT SUPPORTS SHALL BE COPPER PLATE, L-1, MODEL C-SERIES OR EQUAL.
M40	ROOF HYDRANT. REFER TO PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
M41	PLUMBING VENT. REFER TO PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
M42	PLUMBING EXHAUST. PROVIDE AT LEAST 2" FROM ANY UNITS OUTSIDE AIR INTAKE. PROVIDE DUCT WITH EPOXY WEATHER COATING AND 1/2"-MESH SCREEN. FINAL DUCT SUPPORT SHALL BE THYRURS TEMS-3 NAIL WITH DUCTWORK STRAPPING. LOCAL COORDINATE WITH MECHANICAL CONTRACTOR.



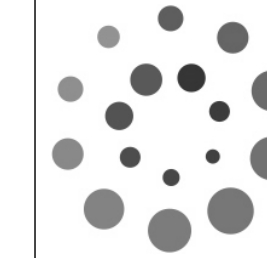
#	DATE	CHANGE DESCRIPTION



**NKU - New Residence Hall**  
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**CMTA**  
10411 Meeting Street, Prospect, KY 40059  
T: 502 326 3085 F: 502 326 2691 [www.cmtaenr.com](http://www.cmtaenr.com)

DRAWING TITLE:

## ROOF PLAN - MECHANICAL



JANUARY 30, 2020

DRAWN BY: LMA	CHECKED BY: C
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#18237

## M106

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HYDRONIC PIPE RUNOUT SCHEDULE

MARK	GS/GR PIPE SIZE	CONDENSATE PIPE SIZE
HHP-12	1"	3/4"
VHP-12	1"	3/4"
VHP-18	1"	3/4"
VHP-24	1 1/4"	3/4"
VHP-72	1 1/2"	1"

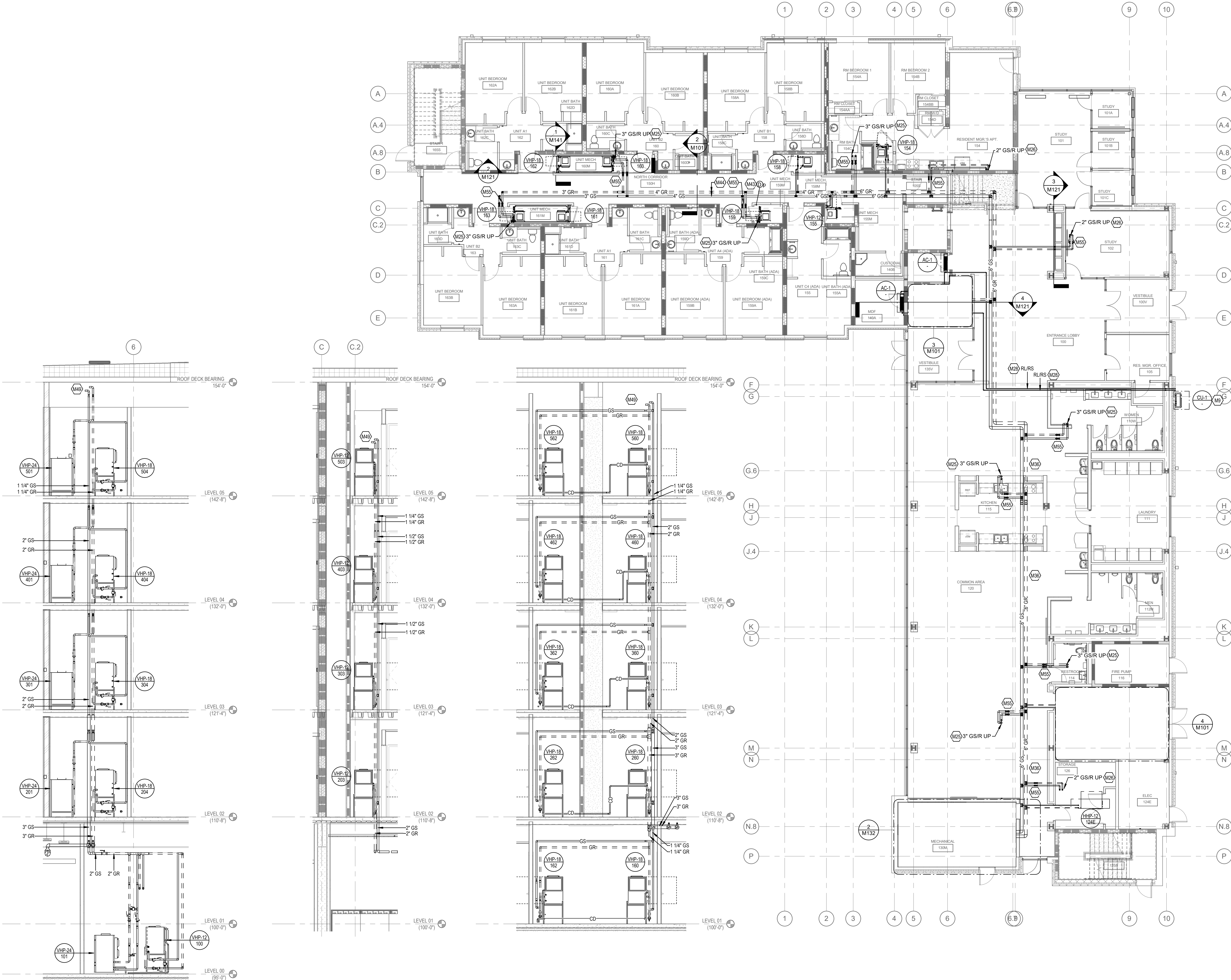
STATE OF KENTUCKY APPROVAL

MECHANICAL NOTES:

- REFER TO ENLARGED SUITE PLANS ON SHEET M130 FOR DUCTWORK SIZING, AIRFLOWS, AND GRILLE TYPES.
- CENTER SUPPLY GRILLE ABOVE DOOR AT EACH UNIT BEDROOM.
- PROVIDE A HIGH EFFICIENCY TAKE-OFF AT EACH GRILLE REGISTER, AND DIFFUSER BRANCH RUN-OUT, TYP OF ALL REFER TO DETAILS ON SHEET M140.
- REFER TO COMBO FIRE/SMOKE DAMPER DETAIL ON SHEET M140. CONTRACTOR TO INSTALL THE FIRE/SMOKE DAMPER SUCH THAT THE RATING IS MAINTAIN ACROSS THE WALL AND SUCH THAT THE ACTUATOR IS LOCATED OUTSIDE THE PLANE OF THE WALL.
- PROVIDE DUCT ACCESS DOOR FOR ALL COMBO FIRE/SMOKE DAMPERS AS REQUIRED.
- PROVIDE ASSOCIATED DUCT MOUNTED SMOKE DETECTOR WITH EACH COMBO FIRE/SMOKE DAMPER SERVING GROUND FLOOR ONLY. COORDINATE INSTALLATION WITH EC.
- BALANCE ALL EXHAUST DUCTWORK BRANCHES TO CFM INDICATED ON FLOOR PLANS.
- REFER TO HEAT PUMP INSTANCE SCHEDULE ON EACH FLOOR FOR SPECIFIC REQUIREMENTS.
- REFER TO HEAT PUMP INSTALLATION DETAILS ON SHEET M141 FOR SPECIFIC REQUIREMENTS.
- SPILL CONDENSATE TO NEAREST FLOOR DRAIN.
- NO PIPING/DUCTWORK TO BE ROUTED OVER ELECTRICAL PANELS.
- CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EQUIPMENT SO THAT ALL REQUIRED CLEARANCES ARE MAINTAINED. COORDINATE WITH OTHER TRADES.
- CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL DAMPERS AND VALVES IN ACCESSIBLE LOCATIONS. COORDINATE WITH OTHER TRADES.
- CONTRACTOR SHALL MOCK UP A TYPICAL SUITE UNIT A1B WITH ALL TRADES IN PLACE FOR OWNER AND CMTA INSPECTION AND APPROVAL PRIOR TO CONTINUING ON TO OTHER TYPICAL SUITES.
- PROVIDE A HIGH EFFICIENCY TAKE-OFF AND VOLUME DAMPER AT EACH OUTSIDE AIR BRANCH RUN-OUT.

TAGGED NOTES

- M9 PROVIDE NEW 4" CONCRETE PAD FOR CONDENSING UNIT ON GRADE.
- M25 REFER TO PIPE RISER SECTION #2 ON SHEET M121 FOR PIPE ROUTING AND SIZING.
- M26 REFER TO PIPE RISER SECTION #3 ON SHEET M121 FOR PIPE ROUTING AND SIZING.
- M28 RS/RP PIPING ROUTED TO OUTDOOR CONDENSING UNIT. SIZE PIPING PER MANUFACTURER'S RECOMMENDATIONS.
- M36 ALL EXPOSED PIPING TO HAVE CANVAS JACKET AND PAINTED. ALL ASSOCIATED HANGERS TO BE PAINTED TO MATCH ADJACENT SURFACES.
- M43 MOUNT THE REMOTE DISPLAY FOR THE PIPE MOUNTED DIFFERENTIAL PRESSURE SENSOR AT 4'-0" AFF.
- M44 INSTALL DIFFERENTIAL PRESSURE SENSOR PROBES IN PIPING. SENSOR SHALL BE MOUNTED REMOTELY IN UNIT MECH 159M.
- M49 PROVIDE AUTOMATIC AIR VENTS AT TOP OF PIPE RISER. PIPE VENT TO FLOOR DRAIN IN HEAT PUMP CLOSET. TYPICAL OF ALL RISERS.
- M55 PROVIDE ISOLATION VALVES WITH 3/4" VALVED DRAIN LINES IN PIPING. PROVIDE THREADED HOSE CONNECTION ON DRAIN LINE.



4 DUAL HP CLOSET PIPE RISER #2  
1/4" = 1'-0"

3 SINGLE HP CLOSET PIPE RISER  
1/4" = 1'-0"

2 DUAL HP CLOSET PIPE RISER  
1/4" = 1'-0"

1 LEVEL 0/1 - HYDRONICS PLAN  
1/8" = 1'-0"

LEVEL 0/1 - HYDRONICS PLAN

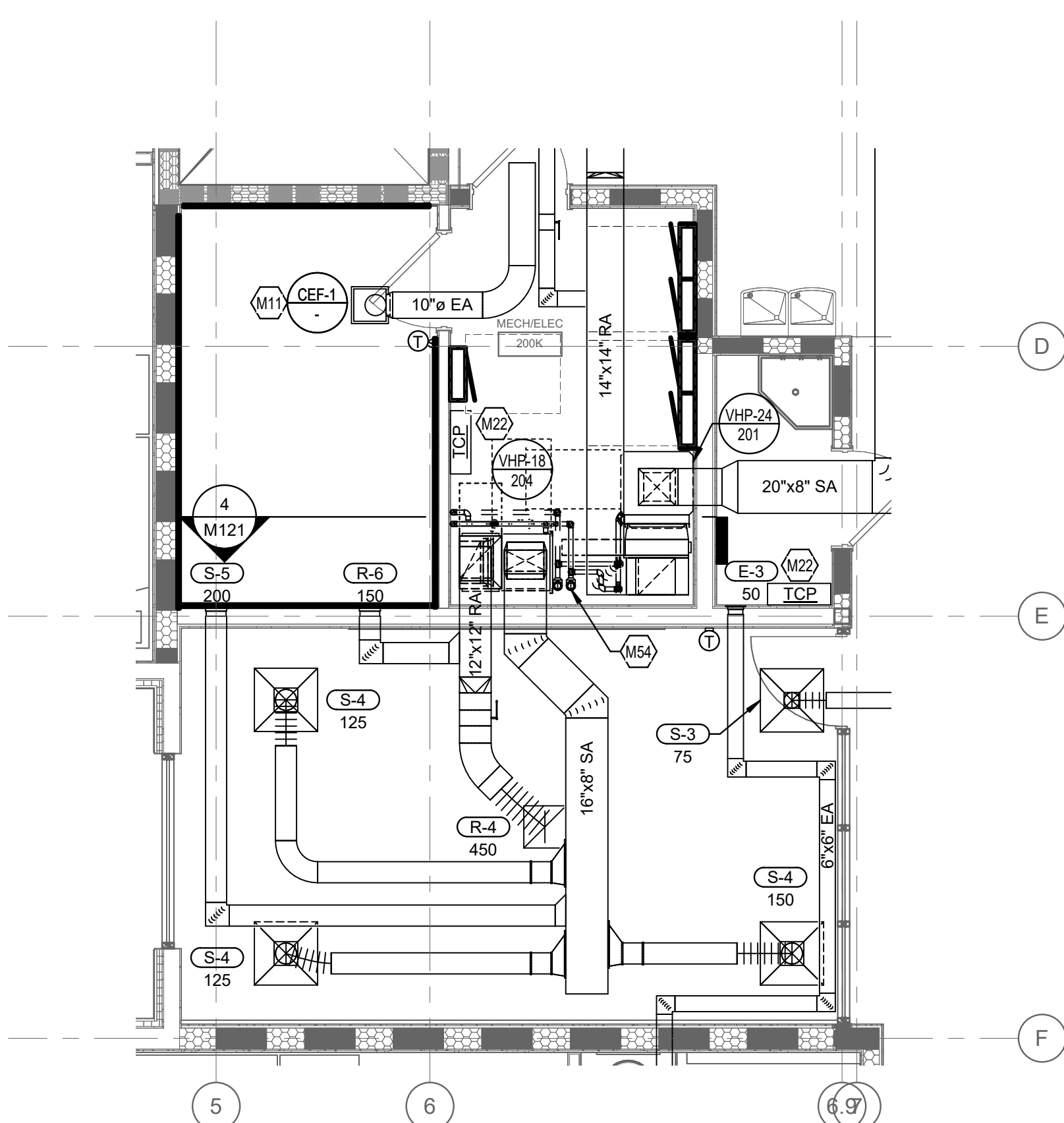
JANUARY 30, 2020

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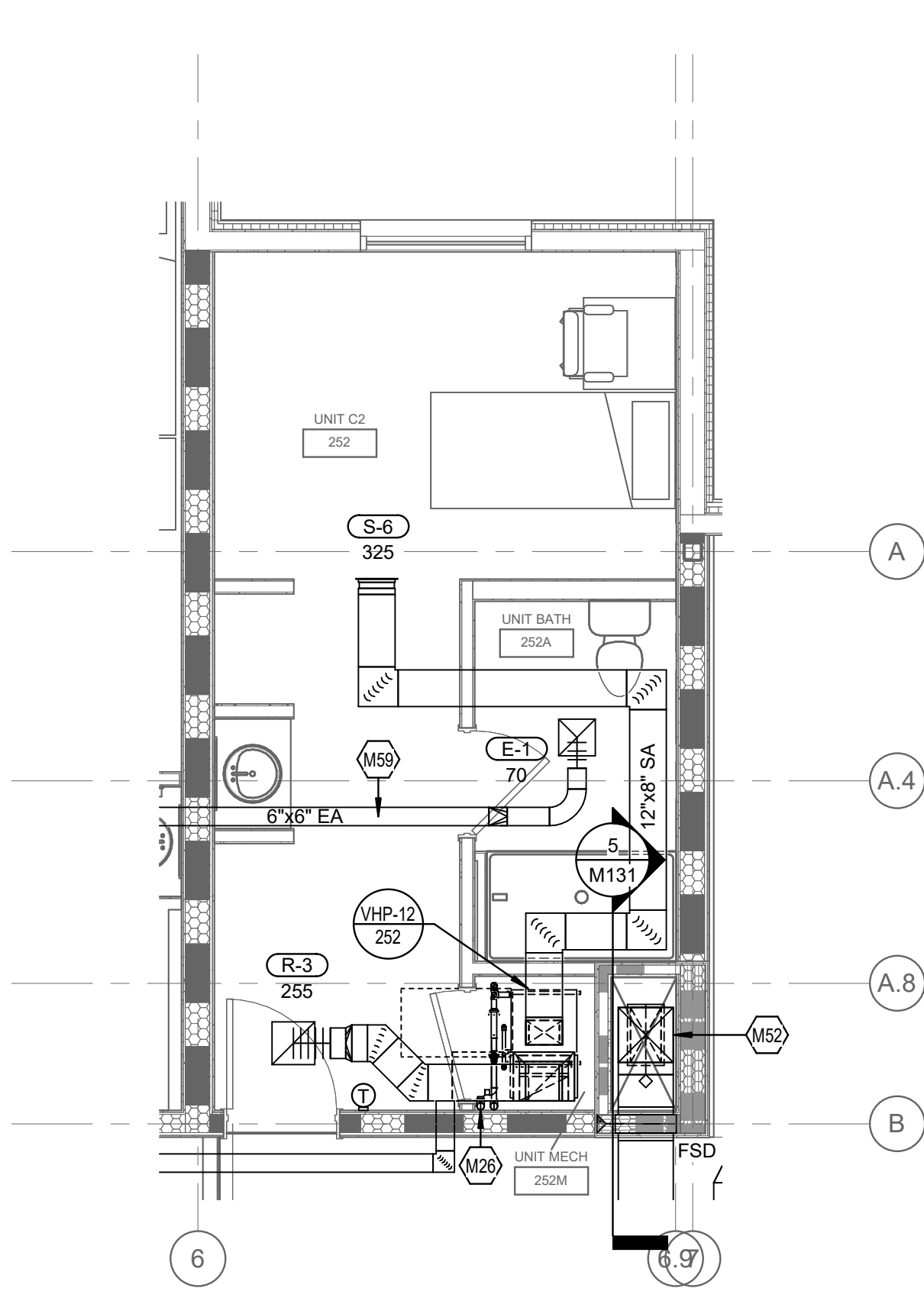
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**M121**

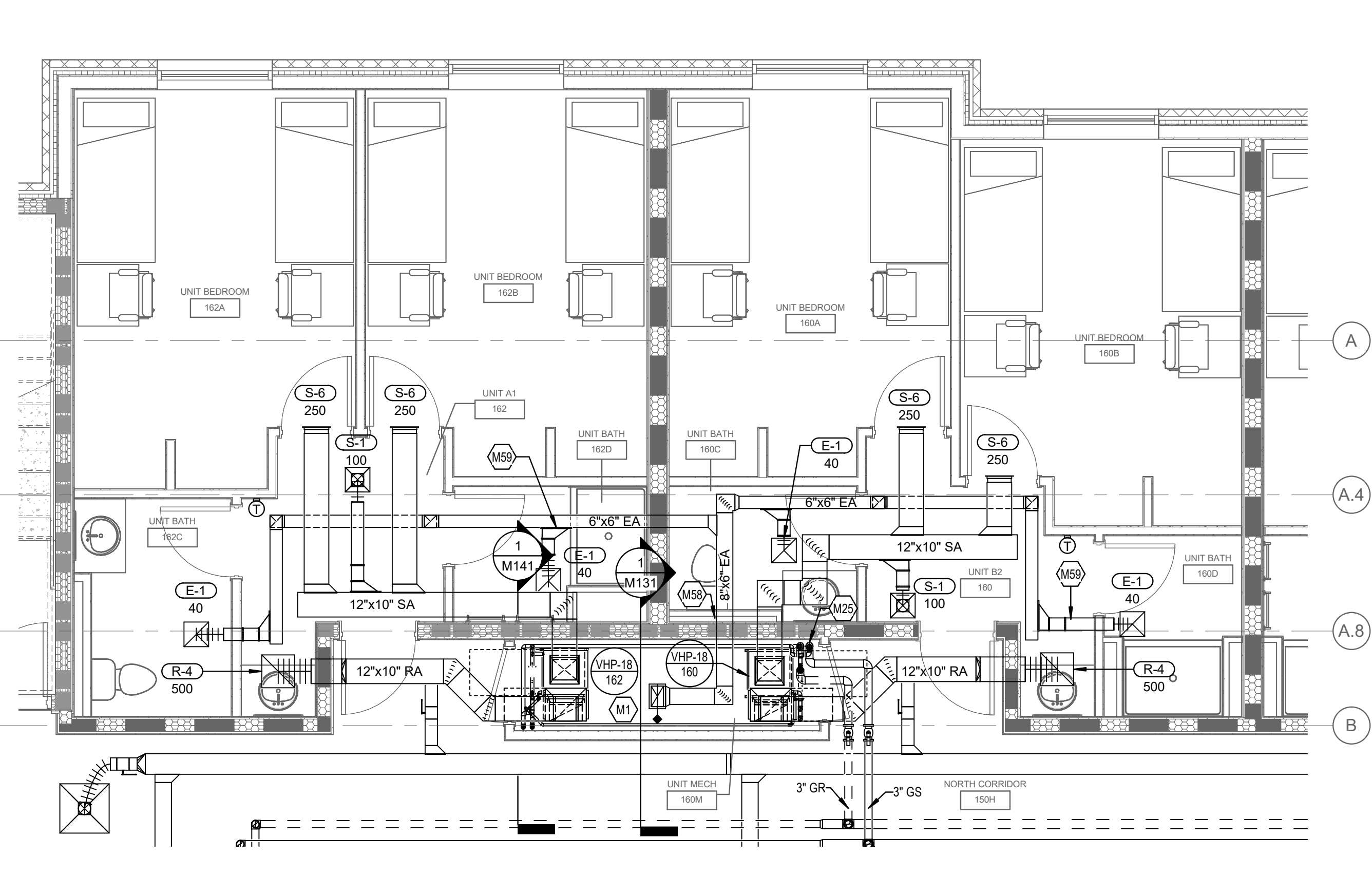
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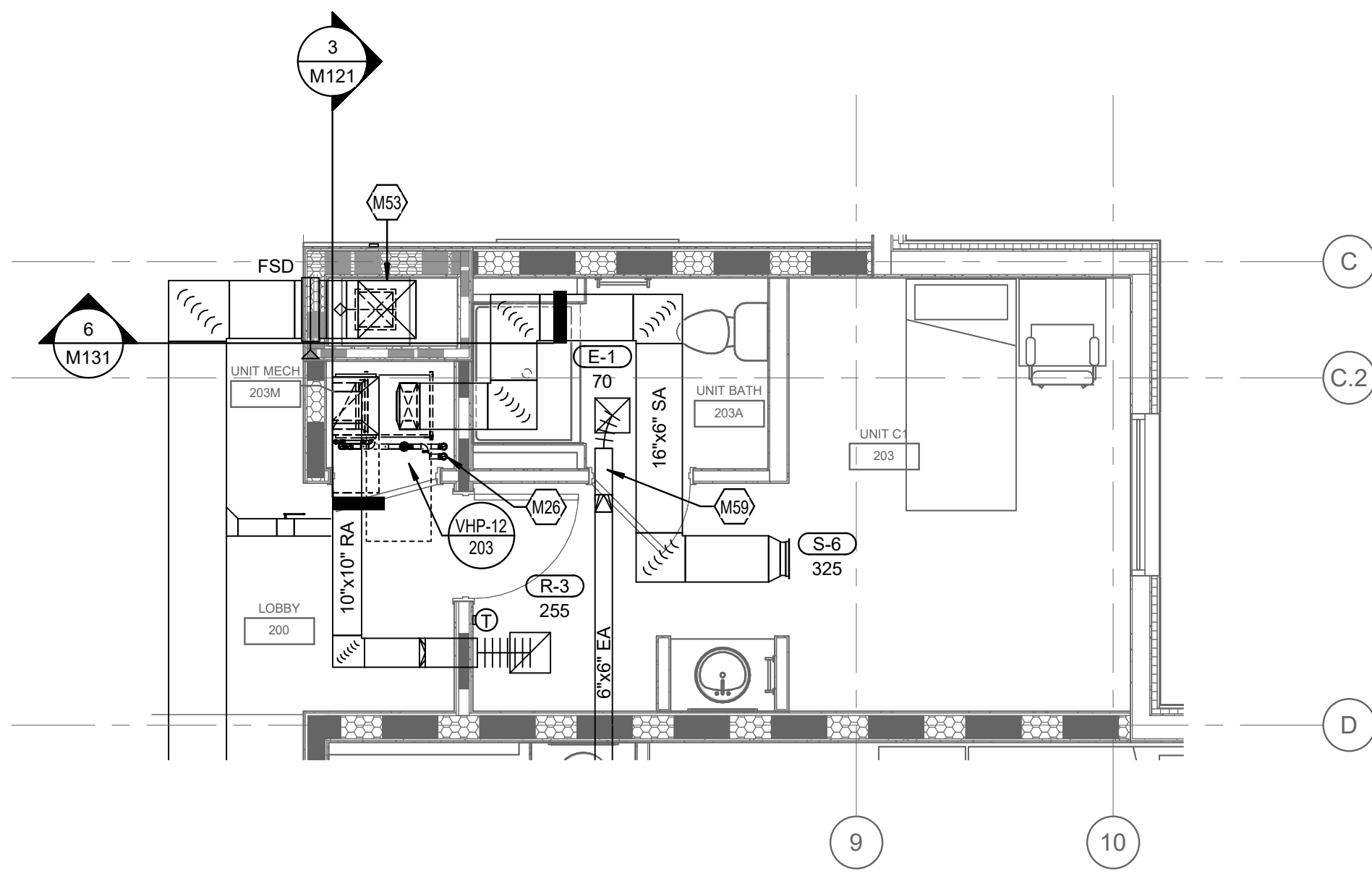
4 ENLARGED MECHANICAL PLAN - 2/3/4/5 TYPICAL UNIT C2  
1/4" = 1'-0"



1 ENLARGED MECHANICAL PLAN - LEVEL 1 TYPICAL SUITE UNIT A/B  
1/4" = 1'-0"

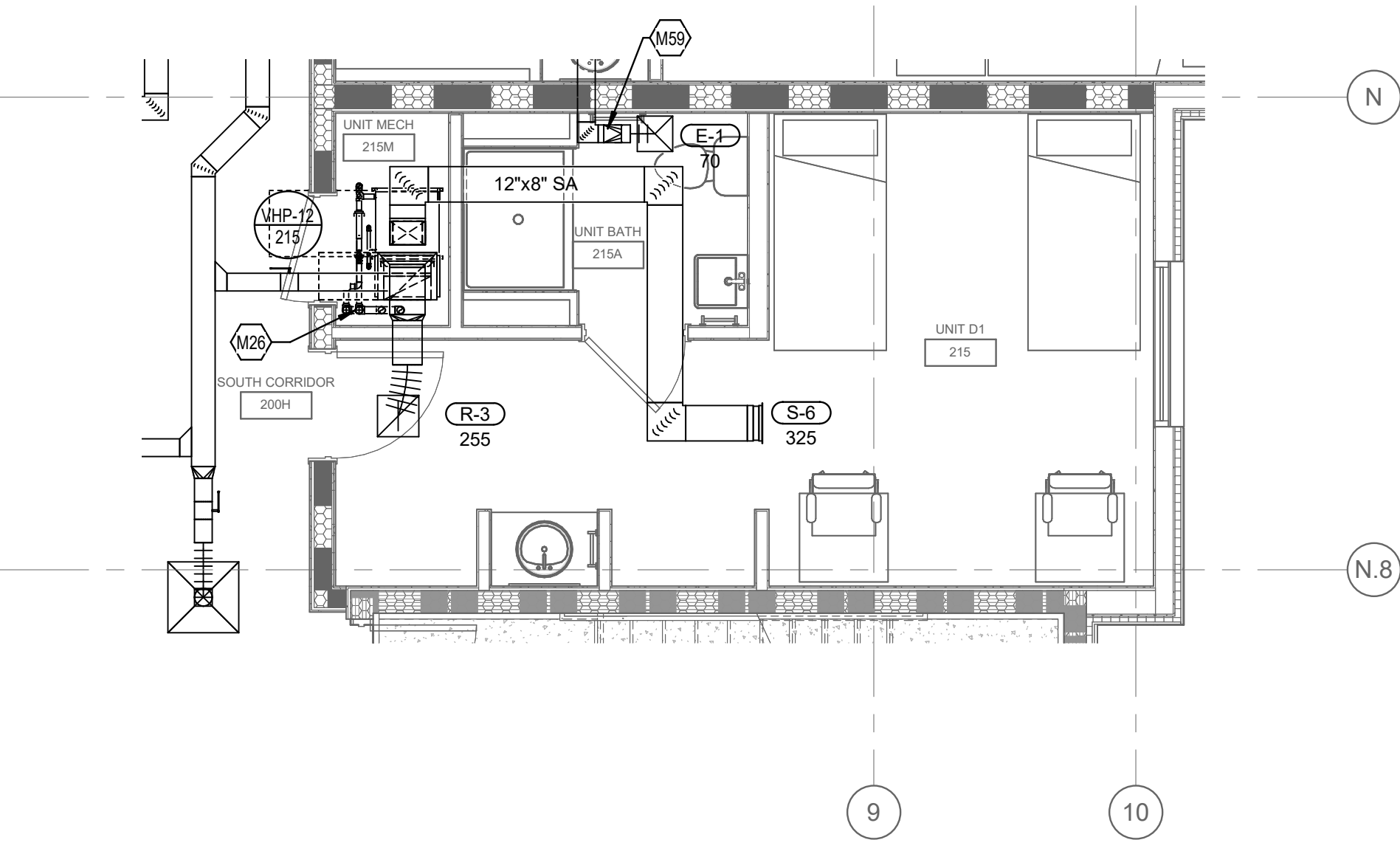
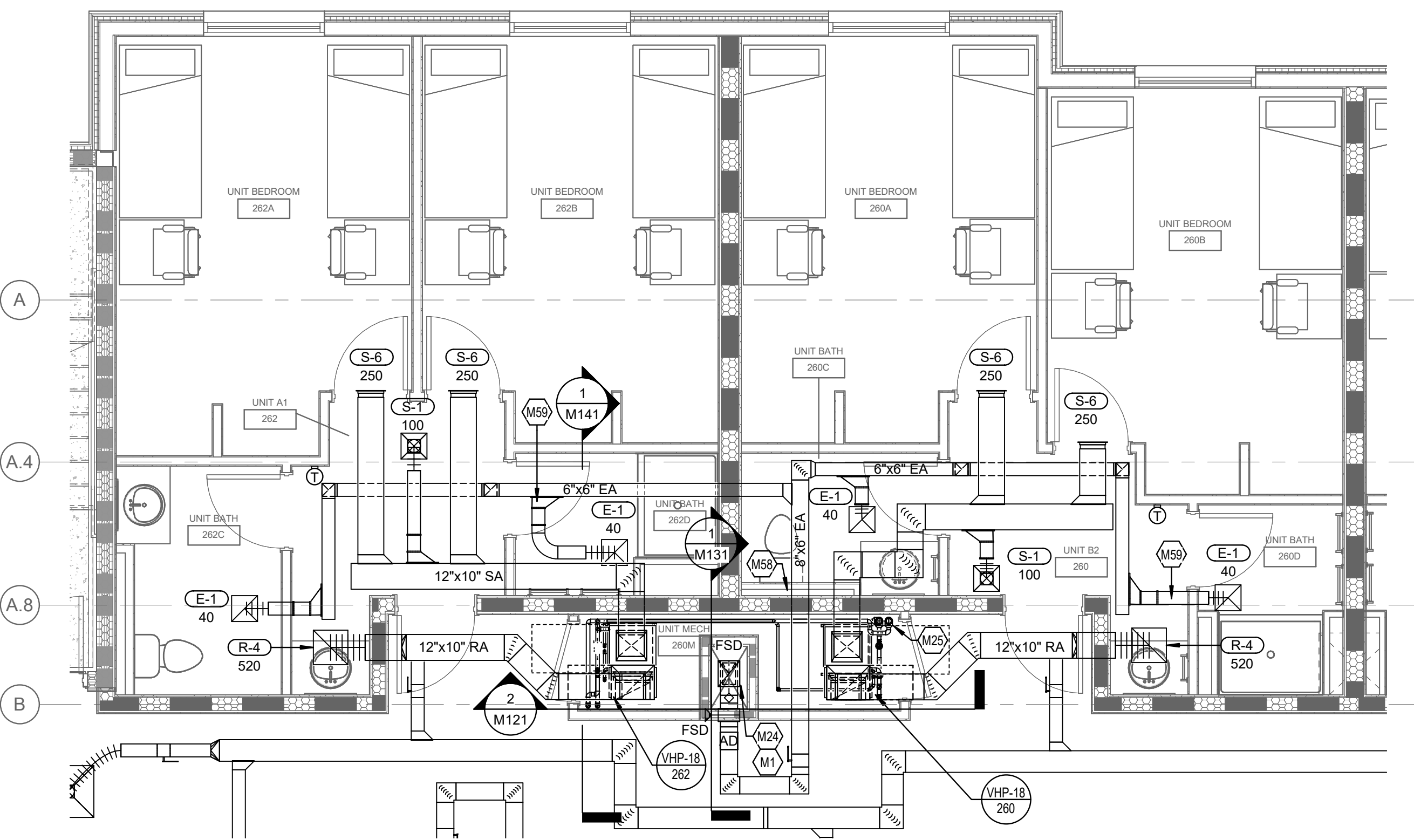


7 ENLARGED MECHANICAL PLAN - 2/3/4/5 TYPICAL MECH/ STUDY/ IT ROOM  
1/4" = 1'-0"

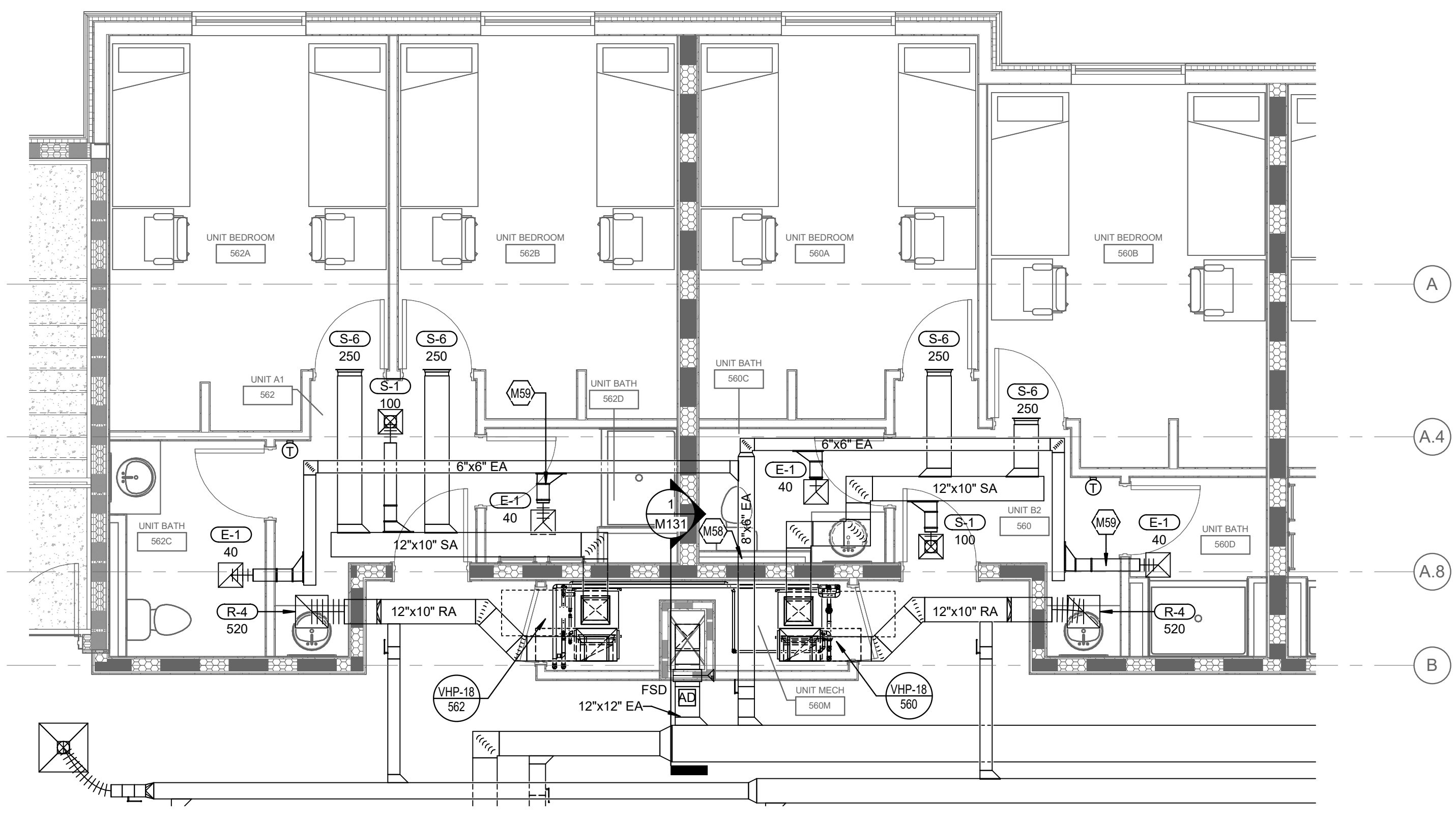


5 ENLARGED MECHANICAL PLAN - 2/3/4/5 TYPICAL UNIT C1  
1/4" = 1'-0"

2 ENLARGED MECHANICAL PLAN - LEVELS 2/3/4 TYPICAL SUITE UNIT A/B  
1/4" = 1'-0"



6 ENLARGED MECHANICAL PLAN - 2/3/4/5 TYPICAL UNIT D1  
1/4" = 1'-0"



3 ENLARGED MECHANICAL PLAN - LEVEL 5 TYPICAL SUITE UNIT A/B  
1/4" = 1'-0"

STATE OF KENTUCKY APPROVAL

MECHANICAL NOTES:

1. REFER TO ENLARGED SUITE PLANS ON SHEET M130 FOR DUCTWORK SIZING, AIRFLOWS, AND GRILLE TYPES.
2. CENTER SUPPLY GRILLE ABOVE DOOR AT EACH UNIT BEDROOM.
3. PROVIDE A HIGH EFFICIENCY TAKE-OFF AT EACH GRILLE, REGISTER, AND DIFFUSER BRANCH RUN-OUT, TYP OF ALL, REFER TO DETAILS ON SHEET M140.
4. REFER TO COMBO FIRE/SMOKE DAMPER DETAIL ON SHEET M140. CONTRACTOR TO INSTALL THE FIRE/SMOKE DAMPER SUCH THAT THE RATING IS MAINTAIN ACROSS THE WALL AND SUCH THAT THE ACTUATOR IS LOCATED OUTSIDE THE PLANE OF THE WALL.
5. PROVIDE DUCT ACCESS DOOR FOR ALL COMBO FIRE/SMOKE DAMPERS AS REQUIRED.
6. PROVIDE ASSOCIATED DUCT MOUNTED SMOKE DETECTOR WITH EACH COMBO FIRE/SMOKE DAMPER SERVING GROUND FLOOR ONLY. COORDINATE INSTALLATION WITH EC.
7. BALANCE ALL EXHAUST DUCTWORK BRANCHES TO CFM INDICATED ON FLOOR PLANS.
8. REFER TO HEAT PUMP INSTANCE SCHEDULE ON EACH FLOOR FOR SPECIFIC REQUIREMENTS.
9. REFER TO HEAT PUMP INSTALLATION DETAILS ON SHEET M141 FOR SPECIFIC REQUIREMENTS.
10. SPILL CONDENSATE TO NEAREST FLOOR DRAIN.
11. NO PIPING/DUCTWORK TO BE ROUTED OVER ELECTRICAL PANELS.
12. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EQUIPMENT SO THAT ALL REQUIRED CLEARANCES ARE MAINTAINED. COORDINATE WITH OTHER TRADES.
13. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL DAMPERS AND VALVES IN ACCESSIBLE LOCATIONS. COORDINATE WITH OTHER TRADES.
14. CONTRACTOR SHALL MOCK UP A TYPICAL SUITE UNIT A/B WITH ALL TRADES IN PLACE FOR OWNER AND CMTA INSPECTION AND APPROVAL PRIOR TO CONTINUING ON TO OTHER TYPICAL SUITES.
15. PROVIDE A HIGH EFFICIENCY TAKE-OFF AND VOLUME DAMPER AT EACH OUTSIDE AIR BRANCH RUN-OUT.

TAGGED NOTES

- M1 COMBINATION FIRE/SMOKE DAMPER LOCATED IN SLAB AT 2ND FLOOR. CONTRACTOR TO INSTALL SUCH THAT THE ACTUATOR IS LOCATED ON THE CORRIDOR SIDE OF THE SHAFT.
- M11 DISCHARGE 10" DUCT ABOVE CEILING.
- M22 TEMPERATURE CONTROL PANEL. COORDINATE POWER AND DATA CONNECTION WITH ELECTRICAL CONTRACTOR.
- M24 PROVIDE 18"x18" FIRE RATED ACCESS DOOR IN FIRE RATED SHAFT WALL TO ACCESS FSD AT FLOOR SLAB AND DUCT DETECTOR IN DUCT RISER. APPLICABLE TO 2ND FLOOR ONLY.
- M25 REFER TO PIPE RISER SECTION #2 ON SHEET M121 FOR PIPE ROUTING AND SIZING.
- M26 REFER TO PIPE RISER SECTION #3 ON SHEET M121 FOR PIPE ROUTING AND SIZING.
- M27 REFER TO DUCT RISER SECTION #5 ON SHEET M131 FOR SIZING AND COMBINATION FIRE/SMOKE DAMPER LOCATIONS.
- M37 REFER TO DUCT RISER SECTION #6 ON SHEET M131 FOR SIZING AND COMBINATION FIRE/SMOKE DAMPER LOCATIONS.
- M54 REFER TO PIPE RISER SECTION #1 ON SHEET M121 FOR PIPE ROUTING AND SIZING.
- M56 COORDINATE EXHAUST DUCTWORK ENTERING SUITE WITH PLUMBING RISERS. TYPICAL.
- M59 EXHAUST DUCTWORK TAKE-OFF AND RUNOUT TO GRILLE IN UNIT BATHS WITH SHOWERS TO BE ALUMINUM CONSTRUCTION. REFER TO SPECIFICATION SECTION 231-200 PART 4. TYPICAL.

G,R,D RUNOUT SCHEDULE

MARK	DUCT BRANCH SIZE
E-1	6"ø
E-2	8"ø
E-3	6X6
R-1	8"ø
R-1A	8"ø
R-2	8"ø
R-3	10"ø
R-4	12"ø
R-5	14"ø
R-6	8X6
R-7	12X6
R-8	12X10
R-9	14X14
R-10	36X20
R-11	12"ø
R-12	10"ø
R-13	14"ø
S-1	6"ø
S-2	8"ø
S-2A	8"ø
S-3	6"ø
S-4	8"ø
S-5	8X6
S-6	12X6
S-7	18X8
S-8	16X6

# DATE CHANGE DESCRIPTION

#	DATE	CHANGE DESCRIPTION

**NKU - New Residence Hall**  
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**CMTA**  
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DRAWING TITLE:

ENLARGED SUITE PLANS



JANUARY 30, 2020

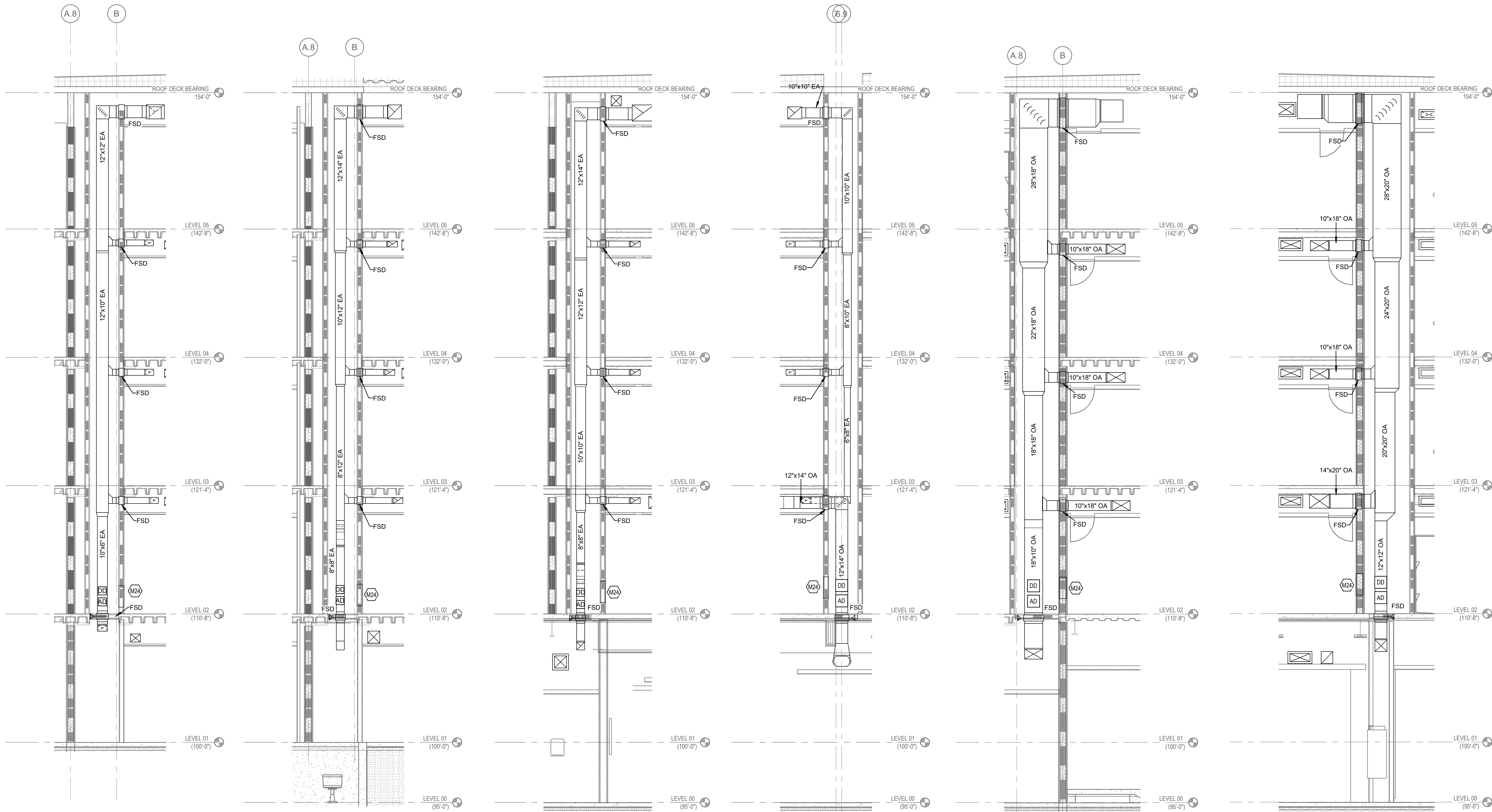
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**M130**

BID & PERMIT SUBMITTAL





**1** TYPICAL EXHAUST RISER #1  
1/4" = 1'-0"

**2** EXHAUST RISER #2  
1/4" = 1'-0"

**3** EXHAUST RISER #3  
1/4" = 1'-0"

**4** EXHAUST RISER #4  
1/4" = 1'-0"

**5** NORTH OA DUCT RISER  
1/4" = 1'-0"

**6** SOUTH OA DUCT RISER  
1/4" = 1'-0"

- MECHANICAL NOTES:**
1. REFER TO ENLARGED SUITE PLANS ON SHEET M130 FOR DUCTWORK SIZING, AIRFLOWS, AND GRILLE TYPES.
  2. CENTER SUPPLY GRILLE ABOVE DOOR AT EACH UNIT BEDROOM.
  3. PROVIDE A HIGH EFFICIENCY TAKE-OFF AT EACH GRILLE, REGISTER, AND DIFFUSER BRANCH RUN-OUT, TYP OF ALL. REFER TO DETAILS ON SHEET M140.
  4. REFER TO COMBO FIRE/SMOKE DAMPER DETAIL ON SHEET M140. CONTRACTOR TO INSTALL THE FIRE/SMOKE DAMPER SUCH THAT THE RATING IS MAINTAIN ACROSS THE WALL AND SUCH THAT THE ACTUATOR IS LOCATED OUTSIDE THE PLANE OF THE WALL.
  5. PROVIDE DUCT ACCESS DOOR FOR ALL COMBO FIRE/SMOKE DAMPERS AS REQUIRED.
  6. PROVIDE ASSOCIATED DUCT MOUNTED SMOKE DETECTOR WITH EACH COMBO FIRE/SMOKE DAMPER SERVING GROUND FLOOR ONLY. COORDINATE INSTALLATION WITH EC.
  7. BALANCE ALL EXHAUST DUCTWORK BRANCHES TO CFM INDICATED ON FLOOR PLANS.
  8. REFER TO HEAT PUMP INSTANCE SCHEDULE ON EACH FLOOR FOR SPECIFIC REQUIREMENTS.
  9. REFER TO HEAT PUMP INSTALLATION DETAILS ON SHEET M141 FOR SPECIFIC REQUIREMENTS.
  10. SPILL CONDENSATE TO NEAREST FLOOR DRAIN.
  11. NO PIPING/DUCTWORK TO BE ROUTED OVER ELECTRICAL PANELS.
  12. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EQUIPMENT SO THAT ALL REQUIRED CLEARANCES ARE MAINTAINED. COORDIANTE WITH OTHER TRADES.
  13. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL DAMPERS AND VALVES IN ACCESSIBLE LOCATIONS. COORDIANTE WITH OTHER TRADES.
  14. CONTRACTOR SHALL MOCK UP A TYPICAL SUITE UNIT A/B WITH ALL TRADES IN PLACE FOR OWNER AND CMTA INSPECTION AND APPROVAL PRIOR TO CONTINUING ON TO OTHER TYPICAL SUITES.
  15. PROVIDE A HIGH EFFICIENCY TAKE-OFF AND VOLUME DAMPER AT EACH OUTSIDE AIR BRANCH RUN-OUT.

STATE OF KENTUCKY APPROVAL

**TAGGED NOTES**  
M241 PROVIDE 18"x18" FIRE RATED ACCESS DOOR IN FIRE RATED SHAFT WALL TO ACCESS FSD AT FLOOR SLAB AND DUCT DETECTOR IN DUCT RISER. APPLICABLE TO 2ND FLOOR ONLY.

#	DATE	CHANGE DESCRIPTION



**NKU - New Residence Hall**  
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HIGHLAND HEIGHTS, KY 41099  
FOR  
**NORTHERN KENTUCKY UNIVERSITY**




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DRAWING TITLE:  
**ENLARGED DUCT RISER SECTIONS**



JANUARY 30, 2020

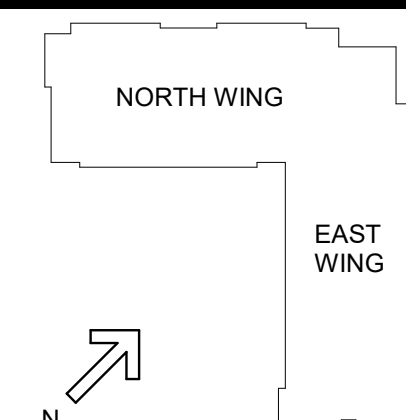
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#18237	
<b>M131</b>	
BID & PERMIT SUBMITTAL	



## TAGGED NOTES

- ## MECHANICAL NOTES:
1. REFER TO ENLARGED SUEIT PLANS ON SHEET M310 FOR DUCTWORK SIZING, AIRFLOWS, AND GRILLE TYPES.
  2. PROVIDE SUPPLY GRILLE AND SUEIT IN EACH BEDROOM.
  3. PROVIDE A HIGH EFFICIENCY TAKE-OFF AT EACH GRILLE. REGISTER, AND DIFFUSER BRANCH RUN-OUT, TYPE OF ALL. REFER TO SUEIT ON SHEET M310.
  4. REFER TO COMBO FIRE/SMOKE DAMPER DETAIL ON SHEET M410. CONTRACTOR TO INSTALL THE FIRE/SMOKE DAMPER SUCH THAT THE ACTUATOR IS LOCATED OUTSIDE THE WALL AND NOT THAT THE ACTUATOR IS LOCATED OUTSIDE THE PLANE OF THE WALL. BRANCH RUN-OUT DOOR FOR ALL COMBO FIRE/SMOKE DAMPERS AS REQUIRED.
  5. PROVIDE ASSOCIATED DETAIL MOUNTED SMOKE DETECTOR WITH DETECTOR, FIRE/SMOKE DAMPER, AND DETECTOR. GROUND FLOOR ONLY. COORDINATE INSTALLATION WITH EC.
  6. BALANCE ALL EXHAUST DUCTWORK BRANCHES TO CFM INDICATED ON FLOOR PLAN.
  7. REFER TO HEAT PUMP INSTALLATION SCHEDULE ON EACH FLOOR.
  8. PROVIDE HEAT PUMP REGISTER DETAIL ON SHEET M310.
  9. REFER TO HEAT PUMP INSTALLATION DETAILS ON SHEET M411 FOR SPECIFIC REQUIREMENTS.
  10. PROVIDE CONDENSATE DRAIN TO FLOOR DRAIN.
  11. NO PIPING/DUCTWORK TO BE ROUTED OVER ELECTRICAL PANELS.
  12. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EQUIPMENT SO THAT ALL REQUIRED CLEARANCES ARE MAINTAINED. COORDINATE WITH OTHER TRADES.
  13. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL DAMPERS AND VALVES IN ACCESSIBLE LOCATIONS. COORDINATE WITH OTHER TRADES.
  14. CONTRACTOR SHALL MOCK UP A TYPICAL SUEIT UNIT A/B WITH ALL TRADES IN PLACE FOR OWNER AND CMTA INSPECTION AND APPROVAL PRIOR TO ANY CONSTRUCTION ON OTHER TYPICAL SUEITS.
  15. PROVIDE A HIGH EFFICIENCY TAKE-OFF AND VOLUME DAMPER DETAIL FOR OUTSIDE AIR BRANCH RUN-OUT.

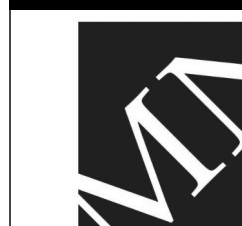
- M15 PROVIDE 4" THICK CONCRETE PAD UNDER MECHANICAL EQUIPMENT. PAD SHALL BE 6" LARGER THAN EQUIPMENT IN ALL DIRECTIONS.
- M16 MAKE-UP WATER FILL STATION. MOUNT 4" AFF. REFER TO SHEET M132 FOR FURTHER DETAIL.
- M17 PROVIDE 12" DEEP PLENUM THE FULL SIZE OF THE GRILLE. PROVIDE 12" DEEP PLENUM COMPANED THROAT TAP.
- M18 TRANSITION TO DOUBLE WALL OVAL DUCTWORK IN MECHANICAL ROOM.
- M19 REFER TO GEOTHERMAL PIPING SCHEMATIC ON THIS SHEET FOR FURTHER DETAIL.
- M20 PROVIDE 5 GALLON POT FEEDER. REFER TO THIS SHEET FOR FURTHER DETAIL.
- M21 COORDINATE GEOTHERMAL PIPE HEADER LOCATIONS WITH STRUCTURAL SLEEVES. REFER TO STRUCTURAL DRAWINGS FOR FURTHER DETAIL.
- M22 TEMPERATURE CONTROL PANEL. COORDINATE POWER AND DATA CONNECTION WITH ELECTRICAL CONTRACTOR.
- M23 WIRING TO GEOTHERMAL WELL FIELD. REFER TO SHEET M100 FOR CONTINUATION.



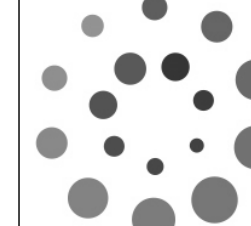
#	DATE	CHANGE DESCRIPTION



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DRAWING TITLE

## ENLARGED MECHANICAL PLANS



JANUARY 30, 2020

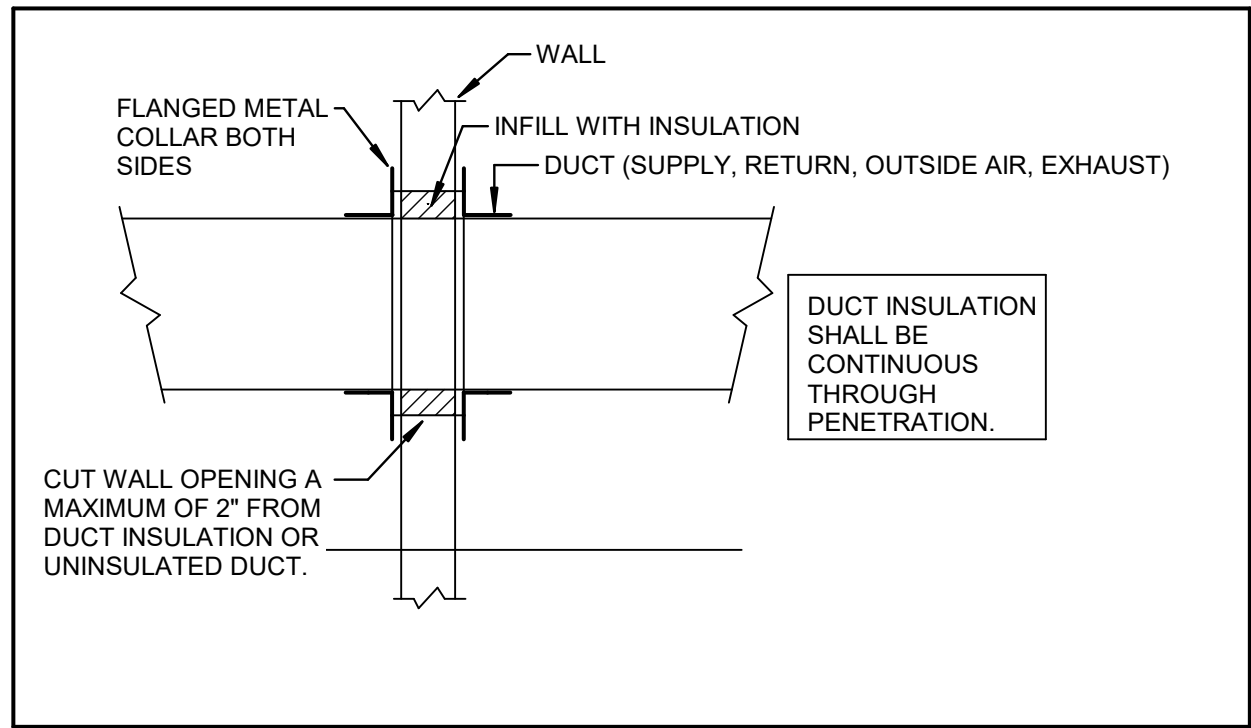
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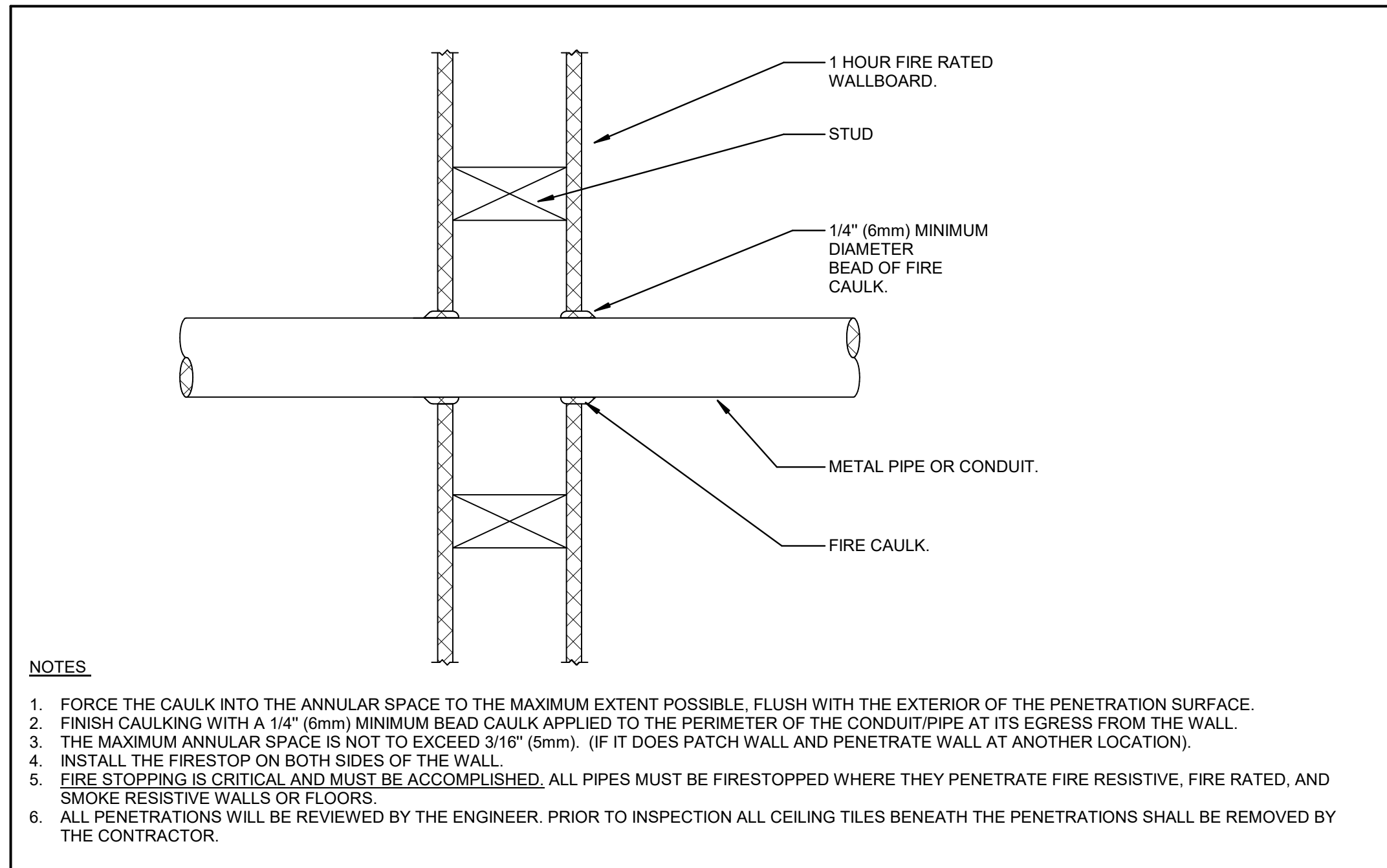
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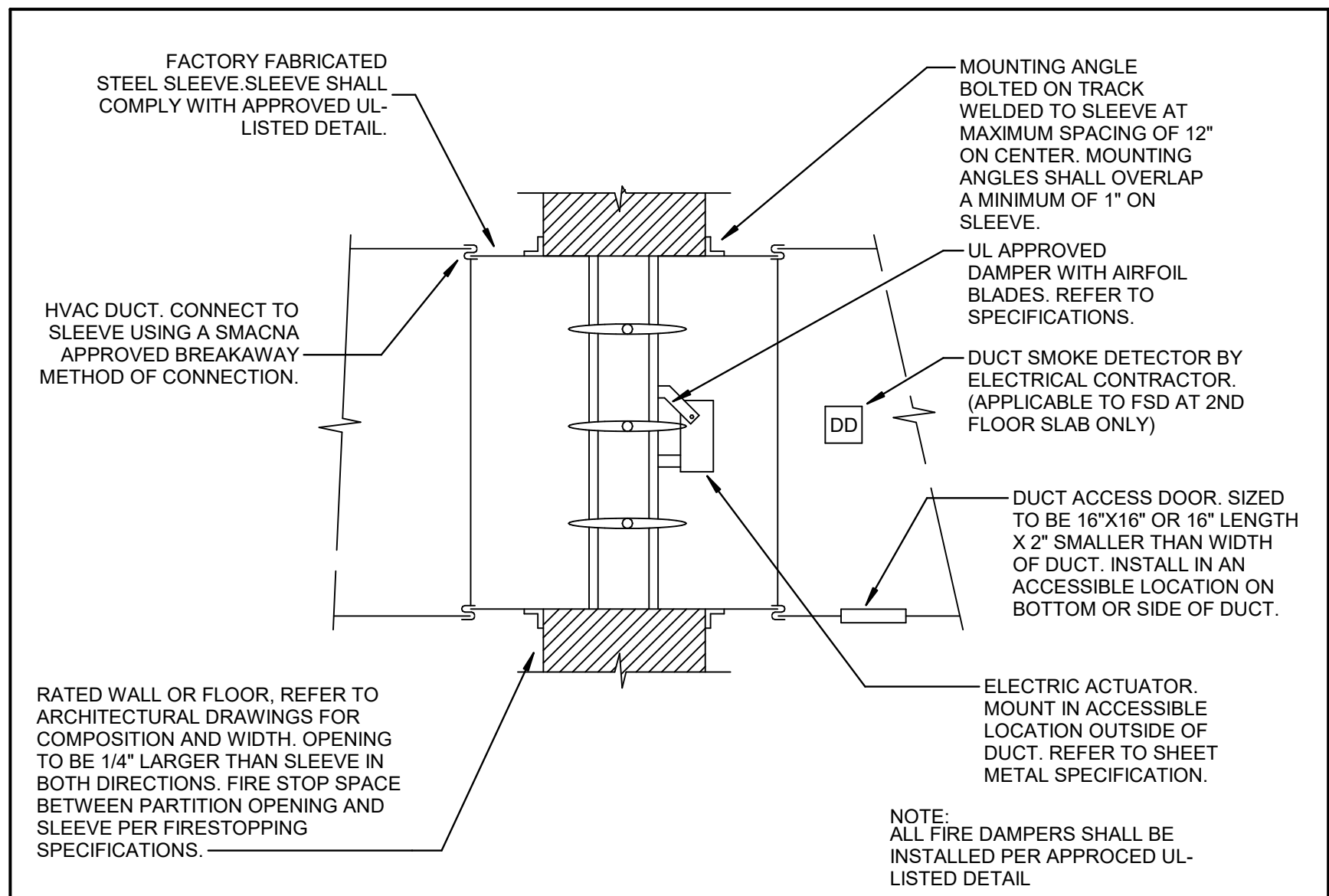




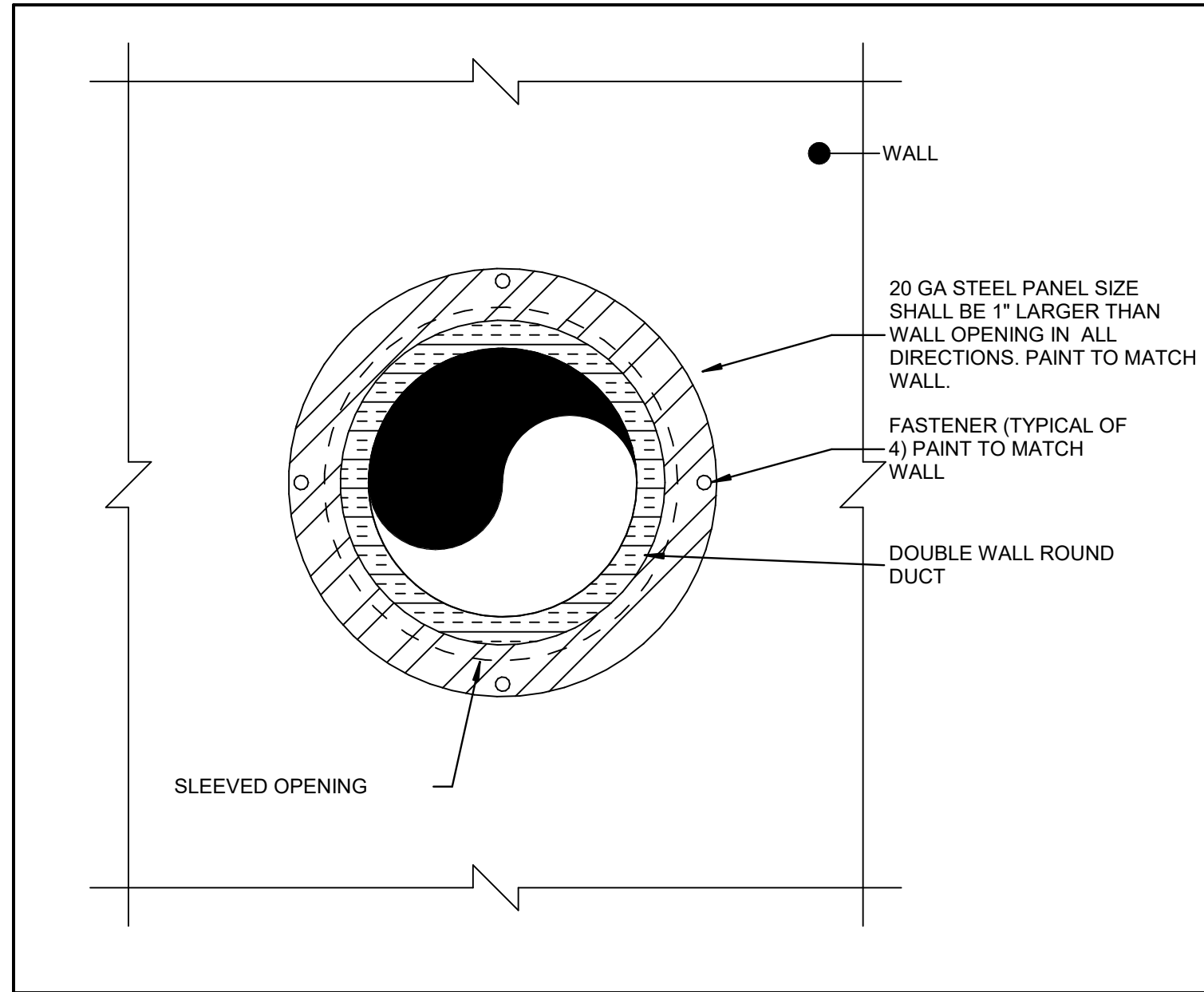
**4 DUCT PENETRATION THROUGH NON-RATED WALL DETAIL**  
N.T.S.



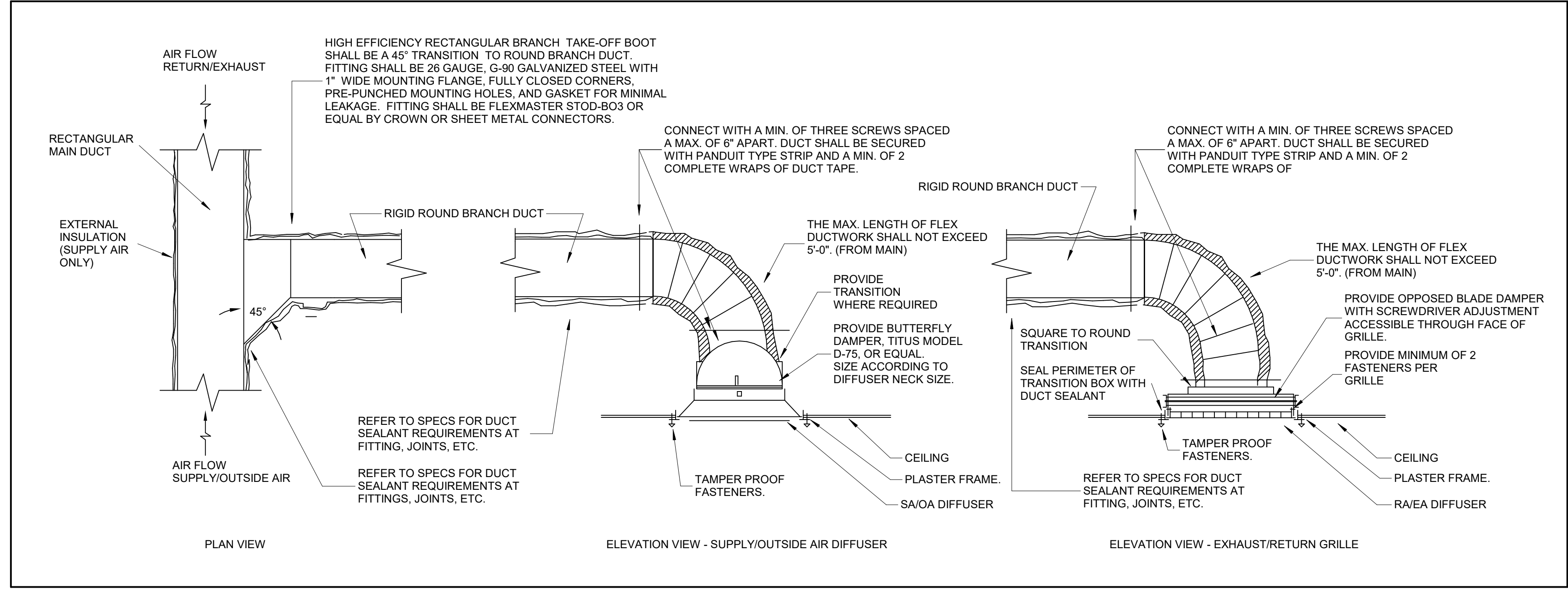
**5 PENETRATION FIRESTOP FOR METAL PIPE/CONDUIT THROUGH ONE HOUR WALL**  
N.T.S.



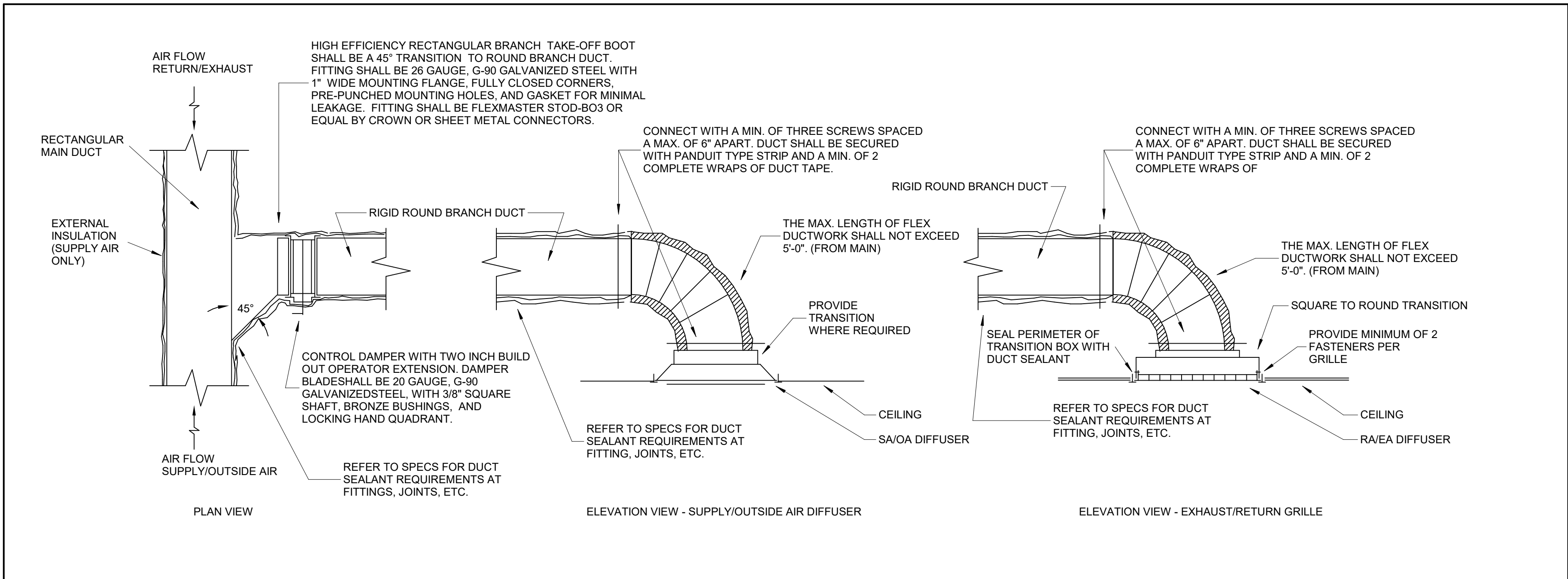
**6 FIRE/SMOKE DAMPER DETAIL**  
N.T.S.



**1 EXPOSED DUCT WALL PENETRATION DETAIL**  
N.T.S.



**2 TYPICAL RECTANGULAR-TO-ROUND BRANCH DUCT DETAIL (GYP BOARD CEILING)**  
N.T.S.



**3 TYPICAL RECTANGULAR-TO-ROUND BRANCH DUCT DETAIL (LAY-IN CEILING)**  
N.T.S.

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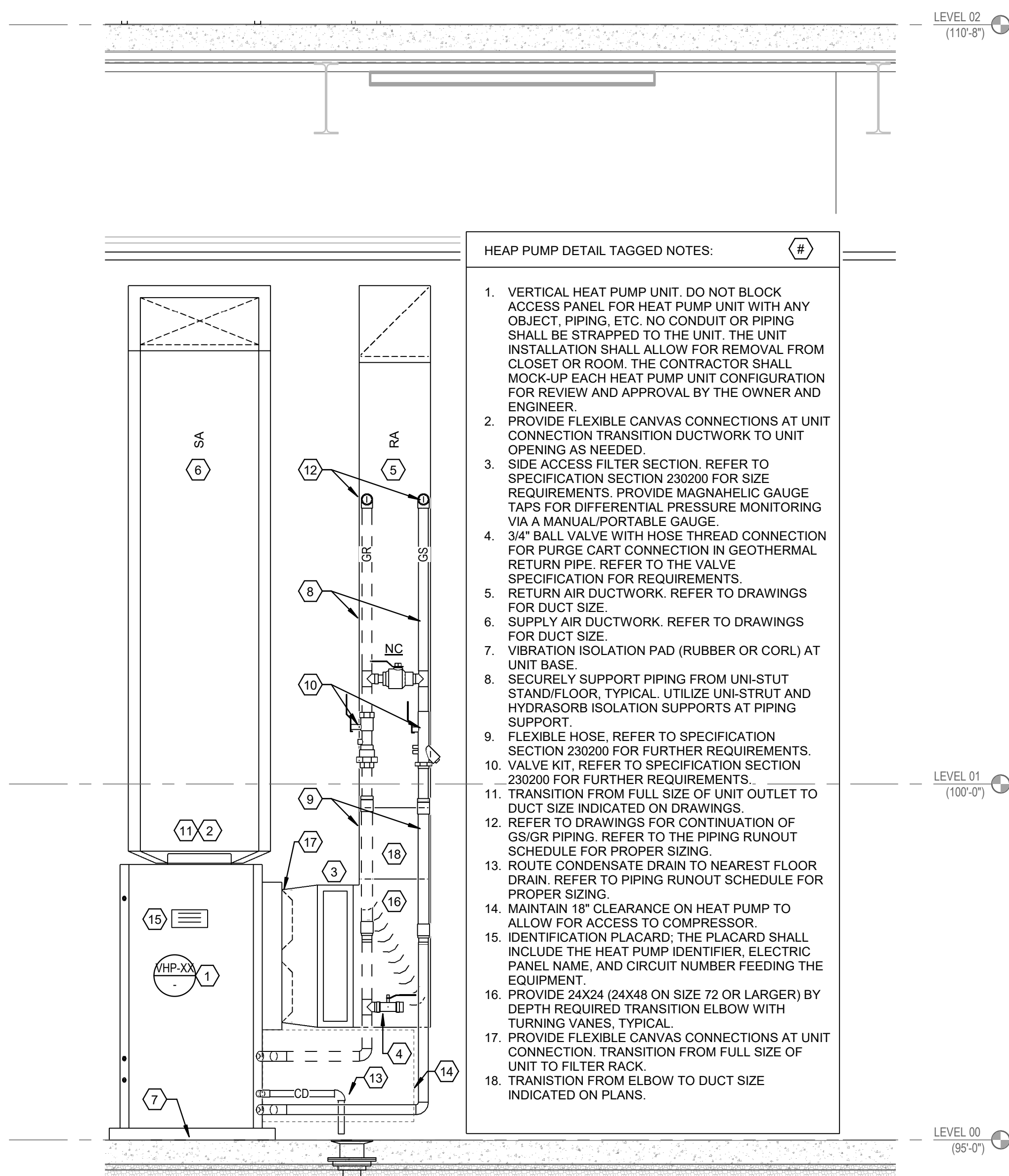
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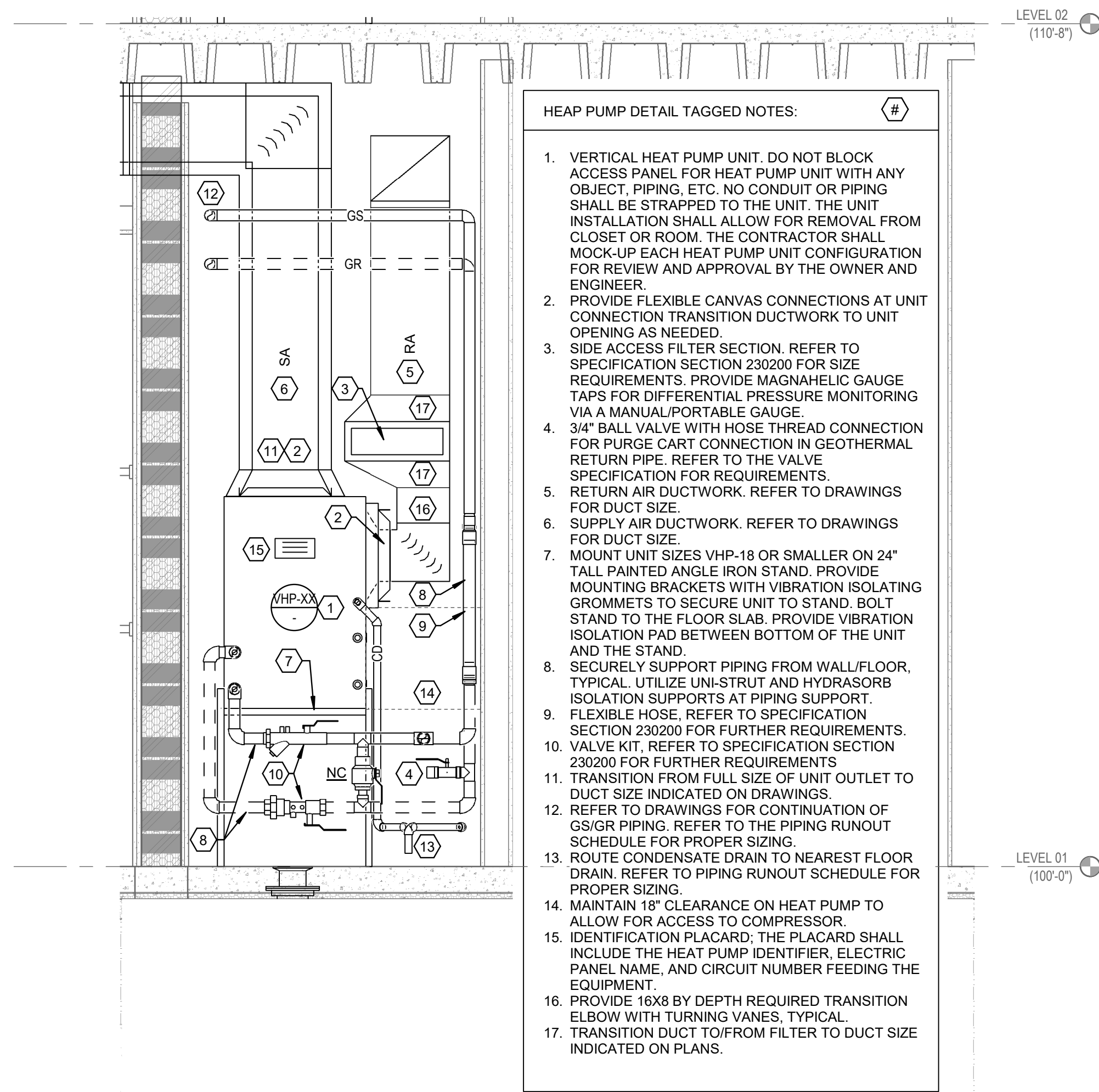
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**MECHANICAL DETAILS**

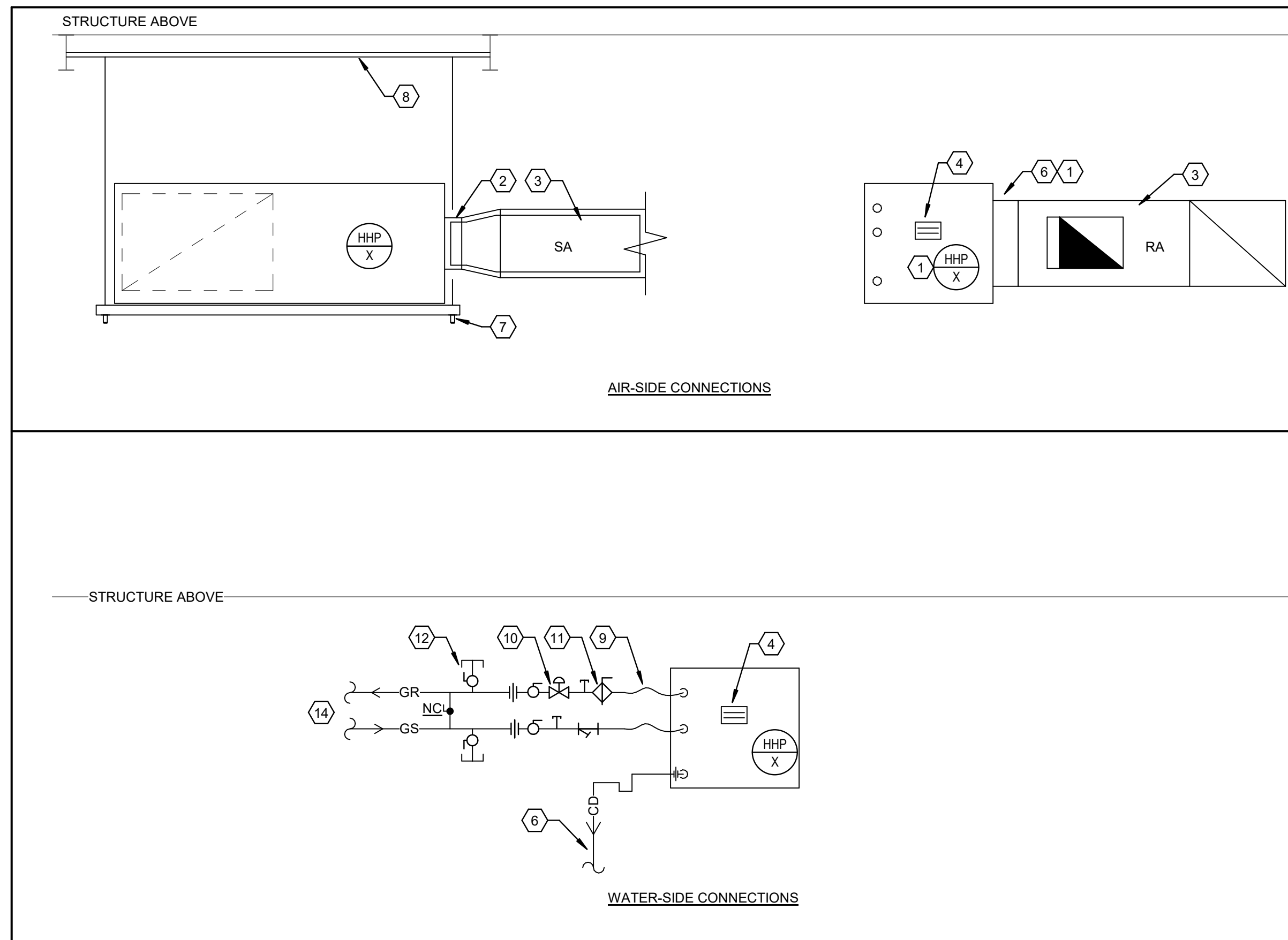
**JANUARY 30, 2020**  
DRAWN BY LMA CHECKED BY CMG  
#18237  
**M140**  
BID & PERMIT SUBMITTAL



2 VERTICAL HEAT PUMP INSTALLATION DETAIL- VHP-24 / VHP-72  
3/4" = 1'-0"



1 VERTICAL HEAT PUMP INSTALLATION DETAIL - VHP-12 / VHP-18  
3/4" = 1'-0"



3 HORIZONTAL WSHP INSTALLATION DETAIL  
N.T.S.

- HEAT PUMP DETAIL TAG NOTES:
1. HORIZONTAL HEAT PUMP UNIT. DO NOT BLOCK ACCESS PANEL FOR HEAT PUMP UNIT WITH ANY OBJECT.
  2. PROVIDE FLEXIBLE CANVAS CONNECTIONS AT UNIT CONNECTION. TRANSITION DUCTWORK TO UNIT OPENING AS NEEDED.
  3. REFER TO FLOOR PLANS FOR DUCTWORK SIZE AND ROUTING.
  4. IDENTIFICATION PLACARD: THE PLACARD SHALL INCLUDE THE HEAT PUMP IDENTIFIER, ELECTRIC PANEL NAME, AND CIRCUIT NUMBER FEEDING THE EQUIPMENT, AND AREA SERVED.
  5. SIDE ACCESS FILTER SECTION. PROVIDE MAGNAHELIC GAUGE TAPS FOR DIFFERENTIAL PRESSURE MONITORING VIA A MANUAL/PORTABLE GAUGE.
  6. PROVIDE FLEXIBLE CANVAS CONNECTIONS AT UNIT CONNECTION. TRANSITION DUCTWORK TO UNIT FILTER SECTION.
  7. ATTACH HEAT PUMP TO SUPPORT RODS USING VIBRATION ISOLATION GROMMET AND SECURE WITH (2) RETAINING NUTS. ATTACH SUPPORT RODS TO UNI-STRUT.
  8. PROVIDE UNI-STRUT BETWEEN BEAMS FOR HORIZONTAL HEAT PUMP INSTALLATION.
  9. FLEXIBLE HOSE KITS. REFER TO SPEC SECTION 230200 FOR FURTHER REQUIREMENTS. COMBINATION VALVES ARE NOT ACCEPTABLE.
  10. TWO POSITION CONTROL VALVE (FULL PORT).
  11. AUTOMATIC BALANCING VALVE. REFER TO SPEC SECTION 23200 FOR FURTHER REQUIREMENTS. COMBINATION VALVES ARE NOT ACCEPTABLE.
  12. PROVIDE A 3/4" HOSE BIBB CONNECTION NIBCO MODEL Q17X OR APPROVED EQUAL. PROVIDE WITH GASKETED DUST CAP.
  13. ROUTE CONDENSATE DRAIN AS INDICATED ON THE FLOOR PLANS. REFER TO RUNOUT SCHEDULE FOR PROPER SIZING. CONDENSATE SHALL NOT INTERFERE WITH HEAT PUMP ACCESS OR CAUSE A TRIPPING HAZARD.
  14. REFER TO FLOOR PLANS FOR CONTINUATION OF GS/GR PIPING. REFER TO THE PIPING RUNOUT SCHEDULE FOR PROPER SIZING.

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MECHANICAL DETAILS



CAROLYN B. BARNETT  
30804  
LICENSED PROFESSIONAL ENGINEER  
KENTUCKY

JANUARY 30, 2020

DRAWN BY: LMA	CHECKED BY: CMG
#18237	
<b>M141</b>	
BID & PERMIT SUBMITTAL	



OUTSIDE AIR UNIT SCHEDULE																					
				PHYSICAL DATA				UNIT ELECTRICAL INFORMATION							EXHAUST FAN						
MARK	MANUFACTURER	MODEL #	LOCATION	WIDTH (IN.)	LENGTH (IN.)	HEIGHT (IN.)	WEIGHT (LBS)	FLA	MCA	MOCp	VOLTAGE	FREQUENCY	PHASE	TOTAL EA CFM	FAN MOTOR TYPE	# OF FANS	E.S.P. (" WC)	RATED H.P. (PER FAN)	FLA	REMARKS	
OA-1	DAIKIN	DP5Q18A	ROOF TOP	77	182		4143	253 A	265 A	125	208 V	60 Hz	3	3800	ECM	1	1.00	4	4 A		
OA-2	DAIKIN	DP5Q20A	ROOF TOP	77	182	71	4143	268 A	283 A	150	208 V	60 Hz	3	4300	ECM	1	1.00	4	4 A		

OUTSIDE AIR UNIT SCHEDULE - ENERGY RECOVERY WHEEL																								
ENERGY RECOVERY WHEEL PERFORMANCE																								
WINTER OPERATION										SUMMER OPERATION												ELECTRIC DATA		
OA AIR STREAM					EA AIR STREAM					OA AIR STREAM					EA AIR STREAM					TOTAL CAPACITY	TOTAL EFFECTIVENESS	APD OA AIR STREAM (IN WG)	APD EA AIR STREAM (IN WG)	HP
MARK	EAT DB (°F)	EAT WB (°F)	LAT DB (°F)	LAT WB (°F)	EAT DB (°F)	EAT WB (°F)	LAT DB (°F)	LAT WB (°F)	TOTAL CAPACITY (MBH)	TOTAL EFFECTIVENESS	EAT DB (°F)	EAT WB (°F)	LAT DB (°F)	LAT WB (°F)	EAT DB (°F)	EAT WB (°F)	LAT DB (°F)	LAT WB (°F)	TOTAL CAPACITY (MBH)	TOTAL EFFECTIVENESS	APD OA AIR STREAM (IN WG)	APD EA AIR STREAM (IN WG)	HP	
OA-1	7	6	44	40	68	56	44	40	276.0	0.75	95	78	81	68	72	60	81	68	189.3	0.74	0.64	0.64	0.17 hp	
OA-2	7	6	41	38	68	56	41	38	306.5	0.74	95	78	81	68	72	60	81	68	210.3	0.72	0.76	0.76	0.17 hp	

OUTSIDE AIR UNIT SCHEDULE - FILTER SECTION									
FILTER SECTION									
OA / EA PREF-FILTER									
MARK	FILTER EFFICIENCY	NO OF FILTERS	WIDTH (IN)	HEIGHT (IN)	FACE VELOCITY (FPM)	PRESSURE DROP (CLEAN) (\"WC)			
OA-1	30% MERV 9	9	18	24	185	0.10			
OA-2	30% MERV 8	9	18	24	220	0.10			

OUTSIDE AIR UNIT SCHEDULE - DX COIL									
DX COIL									
COOLING PERFORMANCE									
MARK	NO. OF ROWS	FIN SPACING (FINS/IN)	TOTAL (MBH)	SENSIBLE (MBH)	EAT DB (°F)	EAT WB (°F)	LAT DB (°F)	LAT WB (°F)	FACE VELOCITY (FPM)
OA-1	4	15	192.8	132.2	81	68	56	56	205
OA-2	4	15	254.5	167.4	81	68	56	56	280

OUTSIDE AIR UNIT SCHEDULE - HOT GAS RE-HEAT									
HOT GAS RE-HEAT COIL									
HEATING PERFORMANCE									
MARK	TOTAL (MBH)	EAT (°F)	LAT (°F)	APD (IN. WG.)					
OA-1	86.2	56	72	0.04					
OA-2	105.3	56	72	0.05					

OUTSIDE AIR UNIT SCHEDULE - OUTSIDE AIR FAN									
SUPPLY FAN									
MARK	OA CFM	FAN MOTOR TYPE	# OF FANS	FAN RPM	T.S.P. (\" WC)	RATED H.P. (PER FAN)	B.H.P. (PER FAN)		
OA-1	5000	ECM	1	2056	3.6	7.5	5.2		
OA-2	6000	ECM	1	2292	4	7.5	7.0		

OUTSIDE AIR UNIT SCHEDULE - ELECTRIC HEAT									
ELECTRIC HEAT SECTION									
MARK	AIRFLOW (CFM)	CAPACITY (Tons)	EAT (°F)	LAT (°F)	AIR PRESSURE DROP (WG)	FLA			
OA-1	5000	204.7	44	82	0.16	75.3			
OA-2	6000	204.7	42.1	72.7	0.20	75.3			

WATER SOURCE HEAT PUMP SCHEDULE																													
MARK	MANUFACTURER	MODEL #	TYPE	NOM. CFM	ESP (N WG)	GPM	WATER PD (FT-H2O)	COMPRESSORS	STAGES	WEIGHT (LB)	DIMENSIONS (IN)				ELECTRICAL				REVERSE HEATING CAPACITY -- 70° F EAT - 50° F EWT				COOLING CAPACITY -- 75° F/63° F EAT - 85° F EWT				GS/GR PIPE SIZE	CONDENS ATE PIPE SIZE	REMARKS
											LENGTH	WIDTH	HEIGHT	VOLTAGE	HZ	PHASE	MCA	MOCP	TOTAL HEAT (MBH) PARTIAL	FULL	HEAT OF ABSORPTION (BTU/HR)	COP @ ARI (FULL)	SENSIBLE CAPACITY (BTU/HR)	TOTAL CAPACITY (BTU/HR)	HEAT OF REJECTION	EER @ ARI (FULL)			
HHP-12	FHP	LV-015	HORIZONTAL	400	0.60	3	8.40	1	1	125	22	43	17	208 V	60	1	7 A	15	0.0	11.6	9.7	3.5	8.9	13.3	15.1	10.3	1"	3/4"	ALL
VHP-12	FHP	LV-015	VERTICAL	400	0.60	3	8.40	1	1	125	22	42	32	208 V	60	1	7 A	15	0.0	11.6	9.7	3.5	8.9	13.3	15.1	10.3	1"	3/4"	ALL
VHP-12	FHP	LV-018	VERTICAL	600	0.60	5	8.60	1	1	173	22	42	32	208 V	60	1	10 A	15	0.0	17.1	14.1	5.9	13.3	18.2	21.5	11.2	1"	3/4"	ALL
VHP-24	FHP	LM-024	VERTICAL	800	0.80	6	2.50	1	2	250	24	27	24	208 V	60	3	20 A	15	2.0	11.4	18.9	15	17.3	25.2	27.4	11.1	1 1/4"	3/4"	ALL
VHP-72	FHP	LM-070	VERTICAL	2350	1.00	18	6.50	1	2	440	33	27	62	208 V	60	3	31 A	45	52.3	68.7	51.8	41	52.5	66.2	81.2	14.1	1 1/2"	1"	ALL

REMARKS:

1. REFER TO SPECIFICATIONS FOR HEAT PUMP ACCESSORIES AND FILTER RACK INFORMATION. PROVIDE WITH FOUR SETS OF FILTERS.
2. HEAT PUMPS HP-60 AND SMALLER SHALL BE PROVIDED WITH INTEGRAL DISCONNECT. IF MANUFACTURER CANNOT ACCOMMODATE, A DISCONNECT SHALL BE PROVIDED AS REQUIRED. HEAT PUMP HP-120 SHALL HAVE A DISCONNECT PROVIDED BY THE ELECTRICAL CONTRACTOR.
3. PROVIDE HEAT PUMPS WITH STAINLESS STEEL DRAIN PAN AND CONDENSATE OVERFLOW SWITCH.
4. APPROVED MANUFACTURERS: FHP, DAKIN, MCQUAY, CLIMATE MASTER, TRANE, WATER FURNACE.
5. THE FOLLOWING HEAT PUMPS SHALL BE PROVIDED WITH HOT GAS REHEAT COIL: .
6. PROVIDE ALL UNITS WITH HIGH STATIC MOTOR.

HYDRONIC PUMP SCHEDULE															
MARK	MANUFACTURER	MODEL	QTY.	TYPE	SERVICE	GPM	PRESSURE (FEET HEAD)	IMPELLER DIAMETER (IN)	RPM	ELECTRICAL DATA				SUCTION DIFFUSER	REMARKS
										HZ	HP	VOLTAGE	PHASE		
P-1	BELL & GOSSETT	SERIES E1510 3EB	2	END SUCTION CENTRIFUGAL BASE MOUNTED	PRIMARY VARIABLE GS/GR LOOP	375	100.00	11	1644	60	20	208 V	3	GE-3 6"x4"	ALL

REMARKS:

1. PUMP EFFICIENCIES LISTED ARE MINIMUM EFFICIENCIES ACCEPTABLE. DO NOT SUBMIT LESS EFFICIENT PUMPS  
2. ACCEPTABLE MANUFACTURERS: BELL & GOSSETT, ARMSTRONG, TACO AND PATTERSON.

SIDESTREAM FILTER SCHEDULE																			
MARK	MANUFACTURER	MODEL	SEPARATOR MODEL #	SERVICE	GPM	MAX PRESSURE (PSI)	MAX TEMP (F)	SIZE (IN)			INLET PIPE SIZE	OUTLET PIPE SIZE	MOTOR HP	RPM	ELECTRICAL				REMARKS
								LENGTH	HEIGHT	WIDTH					FLA	V	ø	HZ	
SF-1	LAKOS	TBX-006S-SRV	HTX-0038-TC	GEO THERMAL LOOP	35	150.00	100	24.0	44.0	40.0	2"	1.5"	1.5	3500	6 A	208 V	3	60 HZ	ALL

VARIABLE FREQUENCY DRIVE SCHEDULE											
MARK VFD	MANUFACTURER ABB	MODEL # ACH550	SERVICE P-1A/B	MOTOR HP 20	ELECTRICAL			FUSED AND DISCONNECT YES	BYPASS STARTER NO	REDUNDANT DRIVE NO	REMARKS ALL
					VOLTAGE 208 V	PHASE 3	HZ 60				

REMARKS:

1. THE VFD SHALL INCLUDE A COMMUNICATIONS PORT FOR LONWORKS OR BACNET COMPATIBLE PROTOCOL. COORDINATE WITH THE TCC CONTRACTOR. PROVIDE INPUT POINTS FOR TWO PRESET SPEEDS. PROVIDE TWO PROGRAMMABLE FORM C RELAYS RATED 2 AMPS TO ACTIVATE AT SPEED.
2. PROVIDE ALL VFD'S WITH A LAMICOID PLATE INDICATING ID#, HP, AND EQUIPMENT SERVED. INCLUDE VFD SPEED FOR REQUIRED FLOW ON PUMP VFD'S.
3. ACCEPTABLE MANUFACTURERS: ABB, DANFOSS GRAHAM.

EXPANSION TANK SCHEDULE										
MARK	MANUFACTURER	MODEL #	TYPE	SERVICE	PHYSICAL SIZE (IN)		CAPACITY			REMARKS
					WIDTH	HEIGHT	TANK VOLUME (GALS)	ACCEPTANCE VOLUME (GALS)	AIR CHARGE PRESSURE	
ET-1	BELL & GOSSETT	D-180V	VERTICAL BLADDER	GS/GIR LOOP	24	57	90.0	34.00	35.00	ALL

REMARKS:

1. ACCEPTABLE MANUFACTURERS: BELL & GOSSETT, TACO, PACO

AIR & DIRT SEPARATOR SCHEDULE								
MARK	MANUFACTURER	MODEL #	SERVICE	INLET PIPE SIZE	OUTLET PIPE SIZE	WATER FLOW RATE (GPM)	WATER PRESSURE DROP (FT HD)	REMARKS
AS-1	WESSLES	WVA-6	GS/GR LOOP	6"	6"	375	1.00	ALL

REMARKS:

1. SEPARATOR MUST UTILIZE A STAINLESS STEEL COALESCING MEDIUM TO AID IN THE SEPARATION OF AIR AND DIRT WITHIN THE ENTRAINED WATER

2. ACCEPTABLE MANUFACTURERS: WESSLES, BELL & GOSSETT, SPIROVENT, AND TACO.

SPLIT SYSTEM INDOOR UNIT SCHEDULE										
MARK	MANUF.	MODEL #	DIMENSIONS (IN.)			WEIGHT (LBS)	AIRFLOW (CFM)	ELECTRICAL		REMARKS
			LENGTH	WIDTH	HEIGHT			VOLTAGE	PHASE	
AC-1	DAIKIN	FAQ18PVJU	10	42	14	31	500	208 V	1	ALL

**REMARKS:**

1. INTERLOCK WITH THE TEMPERATURE SENSOR IN THE ROOM.
2. PROVIDE SINGLE POINT CONNECTION FOR THE INDOOR UNIT.
3. PROVIDE WITH 1/4" SETS OF FILTERS.
4. UNIT SHALL BE UL LISTED.
5. PROVIDE WITH SIGHT GLASS, EXPANSION DEVICE, LINE DRIER, SIZE LINES AND PROVIDE INTERMEDIATE TRAPS PER MANUFACTURERS' INSTRUCTIONS. SUBMIT DETAILED PIPING SCHEMATIC WITH SHOP DRAWINGS.
6. PROVIDE WITH LOW AMBIENT CONTROL, INCLUDE A CRANKCASE HEATER TO ALLOW FOR OPERATION TO 50°F (FACTORY MOUNTED OR INSTALLED BY A FACTORY CERTIFIED TECHNICIAN.)
7. INDOOR UNITS TO BE POWERED BY THE OUTDOOR UNIT.
8. ACCEPTABLE MANUFACTURERS: DAIKIN, TRANE, CARRIER, JCI-YORK.

SPLIT SYSTEM OUTDOOR UNIT SCHEDULE														
MARK	MANUF.	MODEL #	DIMENSIONS (IN.)			WEIGHT (LBS)	TOTAL COOLING (MBH)	SENSIBLE COOLING (MBH)	MINIMUM SEER	ELECTRICAL				REMARKS
			LENGTH	WIDTH	HEIGHT					MCA	MOP	VOLTAGE	PHASE	
CU-1	DAIKIN	4MXS36RMVJU	13	36	31	139	36.0	36.0	17.7	24 A	25	208 V	60	ALL

REMARKS:  
REFER TO INDOOR UNIT FOR REMARKS

STATE OF KENTUCKY APPROVAL

#	DATE	CHANGE DESCRIPTION

**NKU - New Residence Hall**  
KENTON DRIVE & CARROLL DRIVE  
HIGHLAND HEIGHTS, KY 41099  
FOR

**NORTHERN KENTUCKY  
UNIVERSITY**

434 MADISON AVENUE  
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**CMTA**  
10411 Meeting Street, Prospect, KY 40059  
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DRAWING TITLE:

## MECHANICAL SCHEDULES

		JANUARY 30, 2020	
DRAWN BY: LMA		CHECKED BY: CMG	
#18237		M150	
BID & PERMIT SUBMITTAL			

AIRFLOW DAMPER SCHEDULE												
MARK	SERVICE	MANUFACTURER	MODEL #	TYPE	SIZE	MAX. APD	FPM	CFM	ELECTRICAL DATA			REMARKS
									V	ø	HZ	
AFD	O1-3	GREENHECK	AMD-42	OUTSIDE AIR	18"x10"	0.15	728	910	120 V	1	60 HZ	ALL
AFD	O1-4	GREENHECK	AMD-42	OUTSIDE AIR	18"x10"	0.15	728	910	120 V	1	60 HZ	ALL
AFD	O1-5	GREENHECK	AMD-42	OUTSIDE AIR	14"x12"	0.15	780	910	120 V	1	60 HZ	ALL
AFD	O2-3	GREENHECK	AMD-42	OUTSIDE AIR	18"x10"	0.15	764	955	120 V	1	60 HZ	ALL
AFD	O2-4	GREENHECK	AMD-42	OUTSIDE AIR	18"x10"	0.15	764	955	120 V	1	60 HZ	ALL
AFD	O2-5	GREENHECK	AMD-42	OUTSIDE AIR	14"x12"	0.15	819	955	120 V	1	60 HZ	ALL

REMARKS:

1. PROVIDE WITH FACTORY 24 VAC EXTERNALLY MOUNTED ACTUATOR WITH TRANSFORMER.
2. PROVIDE WITH FACTORY PRESSURE TRANSDUCER.
3. CONTROLS CONTRACTOR TO PROVIDE FILED MOUNTED CONTROLLER. REFER TO CONTROLS SPECIFICATION SECTION 250400 FOR DETAIL.
4. PROVIDE ACCESS DOOR IN DUCT PER SPECIFICATIONS UPSTREAM OF UNIT FOR MAINTENANCE ACCESS.
5. AFD'S SHALL BE PROVIDED AS SHOWN ON THE 5TH, 4TH AND 3RD FLOOR OUTSIDE AIR FOR A TOTAL OF 6 AFD'S.

EXHAUST FAN SCHEDULE															
MARK	MANUFACTURER	MODEL #	SERVICE	TYPE	AIRFLOW (CFM)	E.S.P.	SUM OF GRILLES	DRIVE	RPM	FAN HP	ELECTRICAL DATA			SONES	REMARKS
											VOLTAGE	PHASE	HZ		
CEF-1	TWIN CITY	T300V	IDF VENTILATION	CEILING EXHAUST FAN	300	0.125	250	DIRECT	710	0.25	120 V	1	60	1.6	ALL

REMARKS:

1. PROVIDE WITH GRAVITY BACKDRAFT DAMPER.
2. EXHAUST FAN SHALL BE UL LISTED.
3. PROVIDE WITH VIBRATION ISOLATION HANGING/SUPPORT KIT. (NEOPRENE)
4. PROVIDE AN ALUMINUM EXHAUST GRILLE WITH FAN.
5. ACCEPTABLE MANUFACTURERS: TWIN CITY, JENCO, GREENHECK, PENN, ACME, COOK, FANTECH.

GRILLES, REGISTERS AND DIFFUSERS														
MARK	MANUFACTURER	MODEL #	TYPE	MOUNTING	GRILLE SIZE	NECK SIZE	DUCT BRANCH SIZE	MAX CFM	P.D.	NOISE CRITERIA	THROW PATTERN	REMARKS		
E-1	TITUS	50F	EXTRUDED ALUMINUM FRAME W/ 1/2" CUBE CORE	GYP CEILING	12X12	12X12	8"ø	100	0.05	25	-	2, 4, 6, 9, 10		
E-2	TITUS	50F	EXTRUDED ALUMINUM FRAME W/ 1/2" CUBE CORE	GYP CEILING	12X12	12X12	8"ø	225	0.05	25	-	2, 4, 6, 9, 10		
E-3	TITUS	350FL	EXTRUDED ALUMINUM 3/4" BLADE SPACING DOUBLE DEFLECTION	SIDEWALL/DUCT MOUNTED	6X6	8X8	6X6	50	0.10	25	-	2, 5, 9, 10		
R-1	TITUS	50F	EXTRUDED ALUMINUM FRAME W/ 1/2" CUBE CORE	GYP CEILING	14X14	14X14	8"ø	200	0.05	25	-	2, 4, 6, 9, 10		
R-1A	TITUS	50F	EXTRUDED ALUMINUM FRAME W/ 1/2" CUBE CORE	LAY-IN	14X14	14X14	8"ø	200	0.05	25	-	1, 2, 4, 9, 10		
R-2	TITUS	50F	EXTRUDED ALUMINUM FRAME W/ 1/2" CUBE CORE	LAY-IN	24X24	12X12	8"ø	225	0.05	25	-	1, 2, 4, 10		
R-3	TITUS	50F	EXTRUDED ALUMINUM FRAME W/ 1/2" CUBE CORE	GYP CEILING	14X14	14X14	10"ø	255	0.05	25	-	1, 2, 4, 9, 10		
R-4	TITUS	50F	EXTRUDED ALUMINUM FRAME W/ 1/2" CUBE CORE	GYP CEILING	16X16	16X16	12"ø	600	0.05	25	-	1, 2, 4, 9, 10		
R-5	TITUS	50F	EXTRUDED ALUMINUM FRAME W/ 1/2" CUBE CORE	GYP CEILING	20X20	20X20	14"ø	1000	0.05	25	-	1, 2, 4, 9, 10		
R-6	TITUS	350FL	EXTRUDED ALUMINUM 3/4" BLADE SPACING DOUBLE DEFLECTION	SIDEWALL/DUCT MOUNTED	8X6	8X6	8X6	100	0.10	25	-	2, 5, 9, 10		
R-7	TITUS	350FL	EXTRUDED ALUMINUM 3/4" BLADE SPACING DOUBLE DEFLECTION	SIDEWALL/DUCT MOUNTED	12X6	12X6	12X6	250	0.10	25	-	2, 5, 9, 10		
R-8	TITUS	350FL	EXTRUDED ALUMINUM 3/4" BLADE SPACING DOUBLE DEFLECTION	SIDEWALL/DUCT MOUNTED	12X10	12X10	12X10	400	0.10	25	-	2, 5, 9, 10		
R-9	TITUS	350FL	EXTRUDED ALUMINUM 3/4" BLADE SPACING DOUBLE DEFLECTION	SIDEWALL/DUCT MOUNTED	14X14	14X14	14X14	750	0.10	25	-	2, 5, 9, 10		
R-10	TITUS	350FL	EXTRUDED ALUMINUM 3/4" BLADE SPACING DOUBLE DEFLECTION	SIDEWALL/DUCT MOUNTED	36X20	26X20	36X20	2350	0.10	25	-	2, 5, 9, 10		
R-11	TITUS	50F	EXTRUDED ALUMINUM FRAME W/ 1/2" CUBE CORE	LAY-IN	24X24	16X16	12"ø	800	0.05	25	-	1, 2, 4, 10		
R-12	TITUS	50F	EXTRUDED ALUMINUM FRAME W/ 1/2" CUBE CORE	LAY-IN	24X24	14X14	10"ø	255	0.05	25	-	1, 2, 4, 10		
R-13	TITUS	50F	EXTRUDED ALUMINUM FRAME W/ 1/2" CUBE CORE	LAY-IN	24X24	20X20	14"ø	1000	0.05	25	-	1, 2, 4, 10		
S-1	TITUS	OMNI AA	EXTRUDED ALUMINUM SQUARE PLAQUE FACE	GYP CEILING	12X12	14X14	8"ø	100	0.05	25	-	2, 3, 7, 9, 10		
S-2	TITUS	OMNI AA	EXTRUDED ALUMINUM SQUARE PLAQUE FACE	GYP CEILING	12X12	14X14	8"ø	200	0.05	25	-	2, 3, 7, 9, 10		
S-2A	TITUS	OMNI AA	EXTRUDED ALUMINUM SQUARE PLAQUE FACE	LAY-IN	12X12	14X14	8"ø	200	0.05	25	-	1, 2, 3, 9, 10		
S-3	TITUS	OMNI AA	EXTRUDED ALUMINUM SQUARE PLAQUE FACE	LAY-IN	24X24	24X24	6"ø	100	0.05	25	-	1, 2, 3, 10		
S-4	TITUS	OMNI AA	EXTRUDED ALUMINUM SQUARE PLAQUE FACE	LAY-IN	24X24	24X24	8"ø	225	0.05	25	-	1, 2, 3, 10		
S-5	TITUS	300FS	EXTRUDED ALUMINUM 3/4" BLADE SPACING DOUBLE DEFLECTION	SIDEWALL/DUCT MOUNTED	8X6	8X6	8X6	150	0.10	25	-	2, 5, 9, 10		
S-6	TITUS	300FS	EXTRUDED ALUMINUM 3/4" BLADE SPACING DOUBLE DEFLECTION	SIDEWALL/DUCT MOUNTED	12X6	12X6	12X6	325	0.10	25	-	2, 5, 9, 10		
S-7	TITUS	300FS	EXTRUDED ALUMINUM 3/4" BLADE SPACING DOUBLE DEFLECTION	SIDEWALL/DUCT MOUNTED	18X8	18X8	18X8	500	0.10	25	-	2, 5, 9, 10		
S-8	TITUS	S300FL	EXTRUDED ALUMINUM 3/4" BLADE SPACING DOUBLE DEFLECTION	SIDEWALL/DUCT MOUNTED	16X6	16X6	16X6	300	0.10	25	-	2, 5, 8, 9, 10		

REMARKS:

1. CEILING T-BAR MOUNTED IN 24"x24" ALUMINUM PANEL. IF DENOTED WITH AN 'X', CEILING T-BAR MOUNTED 12"x12" ALUMINUM PANEL.
2. PROVIDE WHITE IN COLOR.
3. PROVIDE DIFFUSER WITH MOLDED THERMAL BLANKET.
4. INLET TRANSITION BOX, ROUND TO RECTANGULAR.
5. PROVIDE WITH INTEGRAL VOLUME DAMPER.
6. PROVIDE WITH INTEGRAL OPPOSED BLADE DAMPER WITH SCREWDRIVER ADJUSTMENT ACCESSIBLE THROUGH FACE OF GRILLE.
7. PROVIDE WITH BUTTERFLY DAMPER, TITUS MODEL D-75, OR EQUAL, SIZE ACCORDING TO DIFFUSER NECK SIZE.
8. GRILLES FACING EXTERIOR WALL TO HAVE 45° DEFLECTION AND GRILLES FACING INTERIOR TO HAVE 22ø DEFLECTION.
9. GRILLE SHALL BE PROVIDED WITH 1" BORDER TO BE SURFACE/DUCT MOUNTED. PROVIDE TAMPER PROOF FASTENERS FOR GRILLES MOUNTED IN GYPSUM BOARD CEILINGS.
10. ACCEPTABLE MANUFACTURERS: TITUS, PRICE, METALAIR, CARNES, ANEMOSTAT, KRUEGER, NAILOR, TUTTLE & BAILEY.

ELECTRIC HEATER SCHEDULE													
MARK	MANUFACTURER	MODEL #	TYPE	NOMINAL AIRFLOW (CFM)	DIMENSIONS (IN)			KW	ELECTRICAL DATA			UNIT MOUNTED THERMOSTAT	REMARKS
					LENGTH	WIDTH	HEIGHT		VOLTAGE	PHASE	HZ		
EH-1	MARKEL	3320 SERIES	RECESSED WALL MOUNT	175	15	4	20	1.5	120 V	1	60 Hz	Yes	1,3,5,6,7,8
EH-2	MARKEL	5100 SERIES	VERTICAL MOUNT	400	15	7	18	3.3	208 V	1	60 Hz	Yes	1,2,4,5,6,8
EH-3	MARKEL	6300 SERIES	HORIZONTAL MOUNT	230	33	25	9	3.0	208 V	1	60 Hz	Yes	1,5,6,8

REMARKS:

1. PROVIDE THE INTEGRAL POWER DISCONNECT AND SINGLE POINT CONNECTION.
2. PROVIDE WITH MOUNTING HARDWARE FOR EXPOSED MOUNTING FROM STRUCTURE.
3. RECESSED MOUNTED.
4. WHITE POWDER COATED FINISH ON HEAVY GAUGE STEEL HOUSING.
5. THERMAL OVERHEAT PROTECTION.
6. PROVIDE WITH MANUFACTURER'S FILED INSTALLED IN-UNIT TEMPERATURE CONTROL THERMOSTAT. SET TEMPERATURE AT 65°F. PROVIDE RELAY FOR THE BAS SYSTEM. REFER TO THE CONTROLS SPECIFICATIONS FOR MORE INFORMATION.
7. PROVIDE OPTIONAL WHITE GRILLE.
8. ACCEPTABLE MANUFACTURERS: MARKEL, REZNOR, DAYTON, AND TRANE.

BASEBOARD HEATER SCHEDULE													
MARK	MANUFACTURER	MODEL #	TYPE	DIMENSIONS (IN)			WATTS PER FOOT	ELECTRICAL DATA			UNIT MOUNTED THERMOSTAT	REMARKS	
				LENGTH	WIDTH	HEIGHT		VOLTAGE	PHASE	HZ			
BH-4	MARKEL	RDBT-PD-4	FLOOR MOUNT BASEBOARD	48	7	6	150.0	120 V	1	60 Hz	Yes	1, 2, 4	
BH-4B	MARKEL	RDBT-PD-400BS	FLOOR MOUNT BASEBOARD	48	7	6						2, 3, 4	
BH-10	MARKEL	RDBT-PD-10	FLOOR MOUNT BASEBOARD	120	7	6	150.0	120 V	1	60 Hz	Yes	1, 2, 4	

REMARKS:

1. PROVIDE WITH IN UNIT THERMOSTAT. PROVIDE RELAY FOR THE BAS SYSTEM. REFER TO CONTROLS SPECIFICATIONS FOR MORE INFORMATION.
2. PROVIDE WITH 2" PEDISTALS.
3. BH-4B IS TO BE BLANK SECTIONS.
4. ACCEPTABLE MANUFACTURES: MARKEL, REZNOR, DAYTON, AND TRANE.

ELECTRIC RANGE HOOD												
MARK	MANUFACTURER	MODEL #	SERVICE	PHYSICAL SIZE (IN)		MOUNTING HEIGHT CFM	EXHAUST	ELECTRICAL DATA			AMPS	REMARKS
				DEPTH	LENGTH			V	ø	HZ		
RH-1	BROAN	BCSD130SS	KITCHEN 007	19.5	30.0	6'-6"	210	115	1	60	2	ALL

REMARKS:


1. PROVIDE THE HOOD IN ONE SECTION. ATTACH UNIT TO WALL/UPPER CABINETS PER MANUFACTURER'S REQUIREMENTS.
2. ALL COMPONENTS OF THE HOOD SHALL BE UL LISTED.
3. PROVIDE WITH ADA CONTROLS AND ASSOCIATED WIRING. SWITCHING AND OTHER ITEMS REQUIRED PER THE MANUFACTURER'S REQUIREMENTS FOR MEETING ADA COMPLIANCE. IF REQUIRED, MAKE FIELD MODIFICATIONS PER MANUFACTURER'S DIRECTIONS TO SYSTEM FOR ADA COMPLIANCE.
4. ACCEPTABLE MANUFACTURERS: BROAN, NU TONE, VENMAR.

STATE OF KENTUCKY APPROVAL

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DRAWING TITLE:

MECHANICAL SCHEDULES



JANUARY 30, 2020

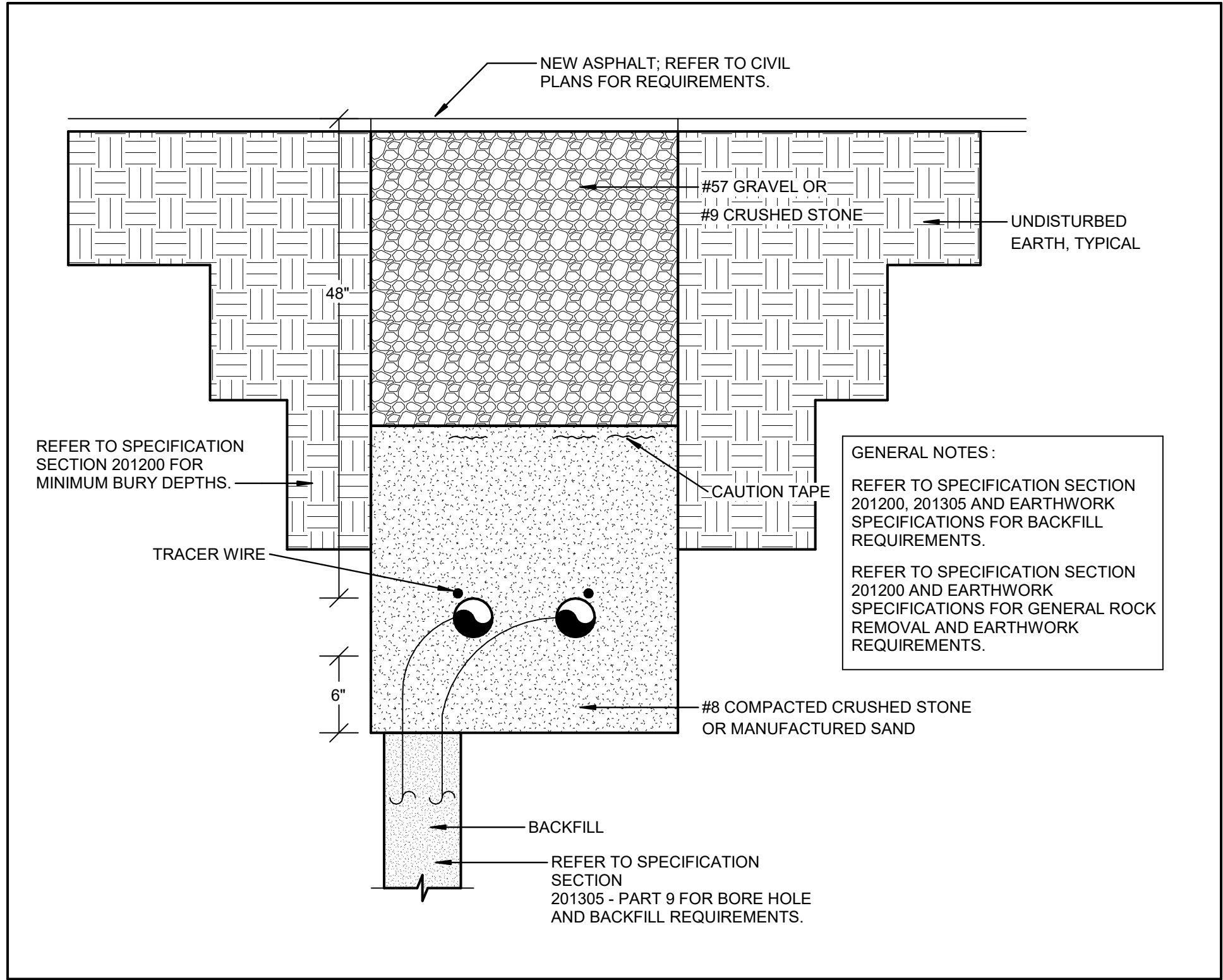
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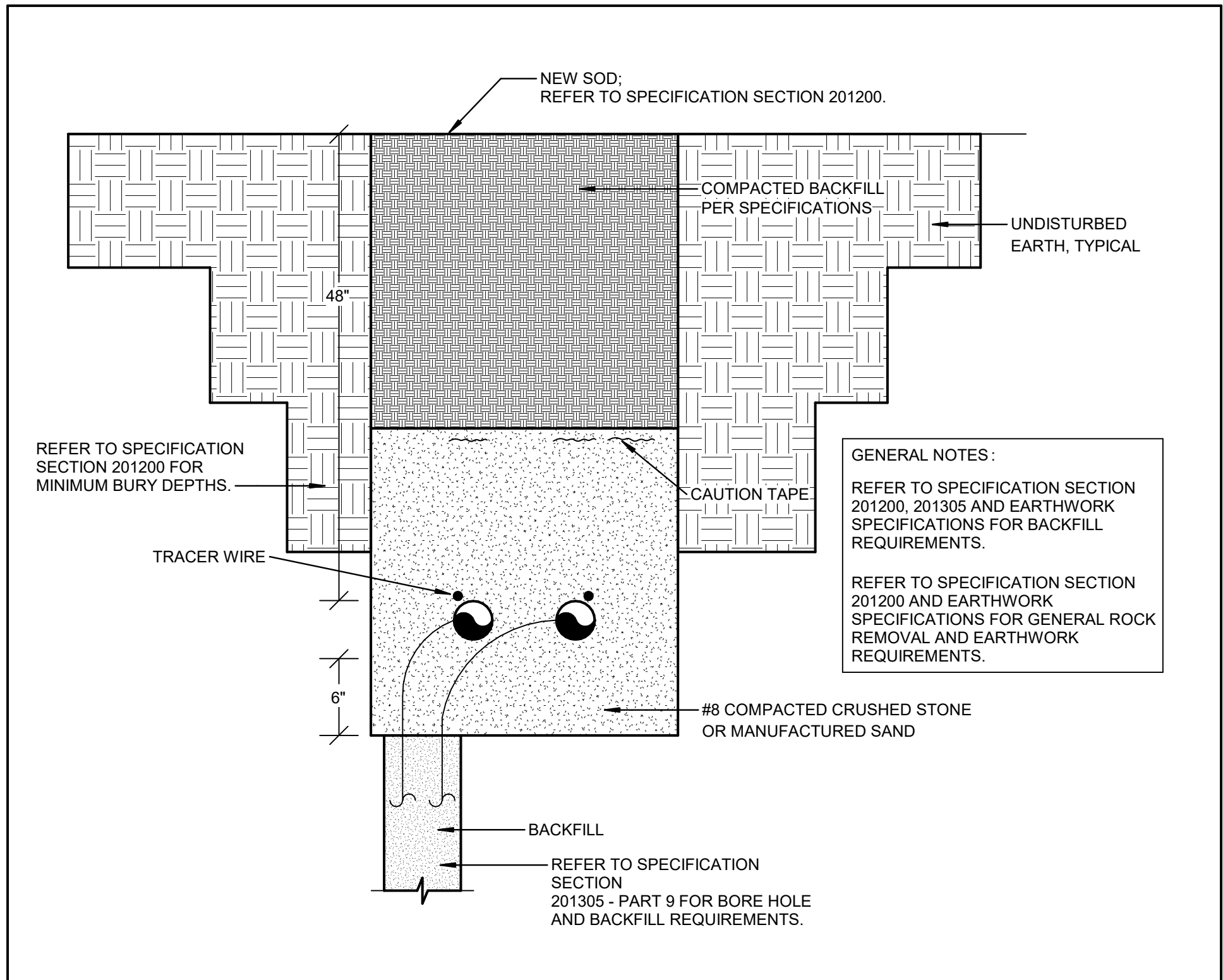
BID & PERMIT SUBMITTAL





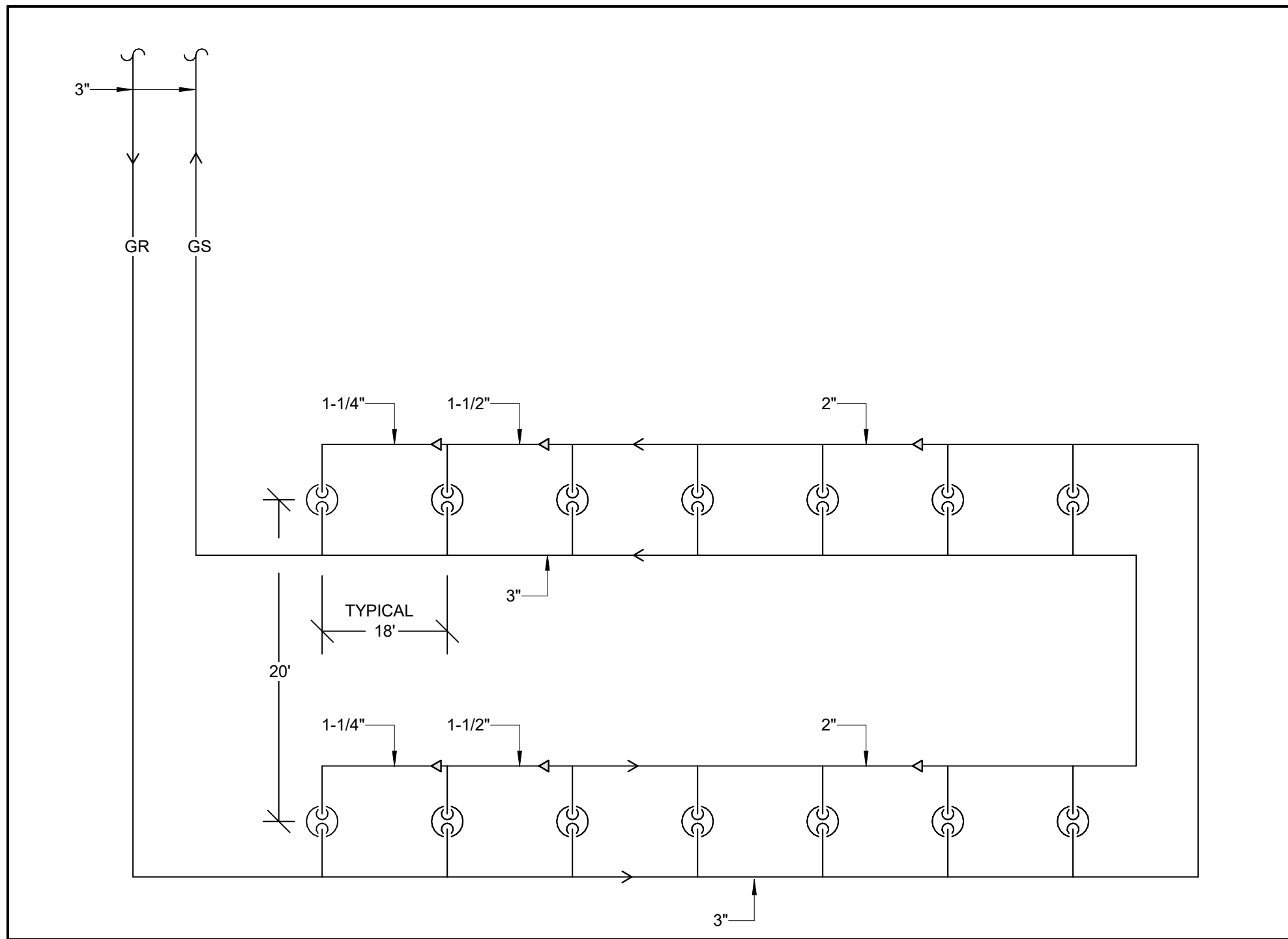
1 TYPICAL GEOTHERMAL TRENCH DETAIL FOR PAVED AREAS

SCALE: NONE



2 TYPICAL GEOTHERMAL TRENCH DETAIL FOR GRASSY AREAS

SCALE: NONE



3 TYPICAL GEOTHERMAL CIRCUIT (4 TOTAL) - 14 WELLS

SCALE: NONE

#### MECHANICAL SITE UTILITY NOTES

- DO NOT SCALE FROM MECHANICAL AND ELECTRICAL DRAWINGS. FIELD VERIFY REQUIRED DIMENSIONS.
- CONTRACTOR SHALL CUT ALL PAVEMENT, CURBING, ETC. AS REQUIRED FOR WORK. CONTRACTOR SHALL REFER TO CM SCOPING DOCUMENTS FOR PATCH AND REPAIR OF CONCRETE/ASPHALT/GRADE. ANY SUCH WORK NOT EXPLICITLY MENTIONED UNDER A SEPARATE CONTRACT IS TO BE INCLUDED IN THE CONTRACTOR'S BID.
- FEDERAL, STATE, LOCAL, MUNICIPALITY AND UTILITY COMPANY CODES, RULES, REGULATIONS AND REQUIREMENTS APPLY UNLESS EXCEEDED BY THIS DESIGN.
- WHEN INTERRUPTION OF AN EXISTING UTILITY OR SERVICES IS PLANNED OR OCCURS ACCIDENTALLY, THE CONTRACTOR(S) SHALL WORK CONTINUOUSLY AS NEEDED TO RESTORE SAME PROVIDING PREMIUM TIME AS NEEDED AT NO INCREASE IN THE CONTRACT PRICE.
- THE PLANNED INTERRUPTION OF ANY SERVICE SHALL BE COORDINATED WITH THE APPROPRIATE MUNICIPALITY OR UTILITY COMPANY, THE ARCHITECT AND THE BUILDING OPERATORS AT LEAST TWO WEEKS IN ADVANCE OF THE ANTICIPATED INTERRUPTION. A SCHEDULE FOR THESE OUTAGES SHALL BE DEVELOPED AND AGREED UPON BETWEEN THE PARTIES MENTIONED TO AVOID UNNECESSARY INCONVENIENCE TO THE OWNER OR ANY AFFECTED PARTY. NOTIFY THE UTILITY COMPANY OF ANY ANTICIPATED SERVICES REQUIRED FROM THEM AT LEAST TWO WEEKS IN ADVANCE IN WRITING AND INSURE THAT THEY DO NOT DELAY WORK.
- LOCATIONS, DEPTHS, MATERIAL TYPES, ELEVATIONS, ETC. OF ALL APPURTENANCES, LINES, BUILDINGS, ETC. INDICATED ON THESE DRAWINGS WERE TAKEN FROM VARIOUS SOURCES, ARE DIAGRAMMATIC ONLY AND ARE SUBJECT TO SUBSTANTIAL VARIATION FROM EXISTING CONDITIONS. EXISTING UTILITIES LOCATIONS MAY VARY (CONSEQUENTLY ALL CONTRACTORS SHALL EXERCISE EXTREME CARE IN THE COURSE OF THEIR WORK SO AS TO INSURE THAT THEY DO NOT INTERRUPT ANY EXISTING SERVICE. FOR SAFETY PURPOSES, PAY PARTICULAR ATTENTION TO THIS PRECAUTION RELATIVE TO NATURAL GAS AND ELECTRICAL LINES. ALL WORK SHALL BE PERFORMED IN ACCORD WITH ALL FEDERAL, STATE, AND/OR LOCAL RULES, REGULATIONS, STANDARDS AND SAFETY REQUIREMENTS. UTILITIES SHALL ALSO BE INSTALLED IN ACCORD WITH THE APPLICABLE MUNICIPALITY OR UTILITY COMPANY STANDARDS. IN ALL CASES, THE MOST STRINGENT REQUIREMENT SHALL APPLY. IF ANY VARIATION OCCURS, CONSULT THE BUILDING ENGINEER AND THE MECHANICAL ENGINEER'S REPRESENTATIVE. CONTRACTOR SHALL VISIT SITE AND FIELD VERIFY THE ROUTING OF ALL UTILITIES NEW AND EXISTING PRIOR TO SUBMISSION OF BIDS. SUBMISSION OF A BID PROPOSAL INDICATES THAT THE CONTRACTOR IS FULLY AWARE OF ALL OBSTRUCTIONS AND WILL INSTALL ALL OF THE NEW UTILITIES WITHOUT REQUESTS FOR ANY ADDITIONAL CHANGES.
- CONTRACTOR SHALL REFER TO CM SCOPING DOCUMENT FOR PATCH AND REPAIR OF LANDSCAPING THAT IS DISTURBED BY WORK OCCURRING IN THIS PROJECT. ANY SUCH PATCH AND REPAIR NOT EXPLICITLY COVERED UNDER A SEPARATE CONTRACT SHALL BE INCLUDED IN THE CONTRACTOR'S BID.
- THE LOCATIONS OF UTILITIES SHOWN WITHIN THESE DRAWINGS ARE APPROXIMATE ONLY.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY EXCAVATION WORK REQUIRED TO LOCATE UNDERGROUND UTILITIES. THE CONTRACTOR IS ALSO REQUIRED TO NOTIFY ANY OTHER AFFECTED UTILITY OWNERS PRIOR TO DIGGING. IN THE EVENT OF ACCIDENTAL INTERRUPTION OF SERVICE, CONTRACTOR WILL IMMEDIATELY NOTIFY THE OTHER UTILITY OWNERS.
- THE CONTRACTOR WILL PROVIDE ALL NECESSARY PROTECTIVE MEASURES TO SAFEGUARD OTHER EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION OF THIS PROJECT. IN THE EVENT THAT SPECIAL EQUIPMENT IS REQUIRED TO WORK OVER AND AROUND THE OTHER UTILITIES, THE UTILITY WILL BE REQUIRED TO FURNISH SUCH EQUIPMENT.
- CONTRACTOR SHALL PAY ALL TAP FEES, UTILITY COST, UTILITY CONNECTION COSTS, METER FEES, EXTENSION AND DEVELOPMENT CHARGES. REFER TO THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- CONTRACTOR SHALL COORDINATE LOCATION OF ALL UNDERGROUND WATER LINES, GAS LINES, SANITARY LINES, SEWER LINES, VAULTS, ETC., WITH ELECTRICAL PULL BOXES, CONDUITS, POLE BASES ETC. SPECIFICALLY COORDINATE PLACEMENT OF CHILLED WATER PIPING IN PARKING LOTS WITH POLE BASE LOCATIONS AND NOTIFY A/E IF CONFLICTS ARISE.
- ALL PIPING TO BE ABANDONED SHALL BE CAPPED WATERTIGHT. NO PIPING SHALL BE LEFT OPEN-ENDED.
- REFER TO SITE DEMOLITION PLAN FOR TREES TO BE REMOVED. IF TREES ARE TO REMAIN, CONTRACTOR SHALL TAKE CARE TO INSTALL PIPING AND LIMIT EXCAVATING ACTIVITIES TO OUTSIDE THE DRIP-LINE OF EXISTING TREES TO REMAIN.

#### SITE UTILITIES LEGEND

	EXISTING, DEMOLITION, NEW WORK
	SANITARY MANHOLE
	FIRE HYDRANT
	WATER VALVE
	EXTERIOR CLEANOUT
	THRUST BLOCK
	NEW PIPING - (xxx) DENOTES SYSTEM
	PIPING TO BE DEMOLISHED - (xxx) DENOTES SYSTEM
	EXISTING PIPING - (xxx) DENOTES SYSTEM
	ABANDONED IN PLACE PIPING - (xxx) DENOTES SYSTEM
	OVERHEAD PRIMARY
	OVERHEAD SECONDARY
	OVERHEAD STREET LIGHT
	OVERHEAD TRAFFIC SIGNAL
	OVERHEAD TELECOMMUNICATIONS
	OVERHEAD FIBER OPTIC
	OVERHEAD CATV
	UNDERGROUND PRIMARY
	UNDERGROUND SECONDARY
	UNDERGROUND STREET LIGHT
	UNDERGROUND TRAFFIC SIGNAL
	UNDERGROUND TELECOMMUNICATIONS
	UNDERGROUND FIBER OPTIC
	UNDERGROUND CATV
	CHILLED WATER
	DOMESTIC WATER
	HIGH PRESSURE SUPPLY/R
	PUMPED DISCHARGE RETURN
	SANITARY SEWER
	STORM

#### STATE OF KENTUCKY APPROVAL

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**NKU - New Residence Hall**  
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FOR  
**NORTHERN KENTUCKY UNIVERSITY**

**MOODY•NOLAN**

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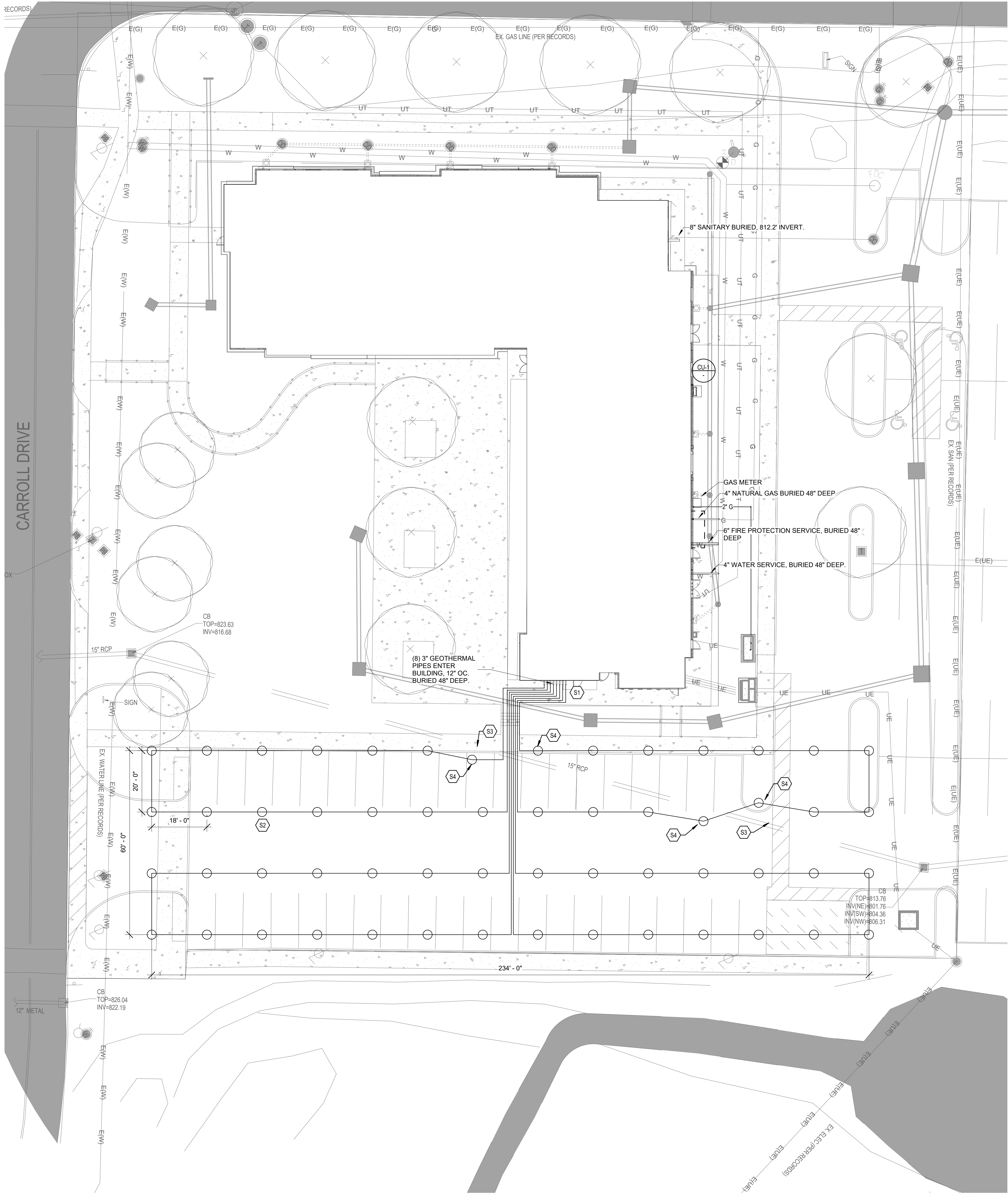
**CMTA**  
10411 Meeting Street, Prospect, KY 40369  
T: 502 326 3085 F: 502 326 2691 www.cmtaegs.com

#### MECHANICAL SITE LEGEND AND DETAILS



**BEFORE YOU DIG**  
THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL CONTACT "BUD (BEFORE YOU DIG)" AT 1-800-752-6007 TO OBTAIN UNDERGROUND UTILITY LOCATIONS PRIOR TO ANY CONSTRUCTION. ANY CONTRACTOR OR SUBCONTRACTOR PERFORMING ANY TYPE OF EXCAVATION ON THIS PROJECT SHALL CALL "BUD" TO OBTAIN AN AUTHORIZATION NUMBER.

**JANUARY 30, 2020**  
DRAWN BY LMA  
CHECKED BY CMG  
#18237  
**MU001**  
BID & PERMIT SUBMITTAL



**1 MECHANICAL SITE PLAN**  
1/16" = 1'-0"

STATE OF KENTUCKY APPROVAL

TAGGED NOTES

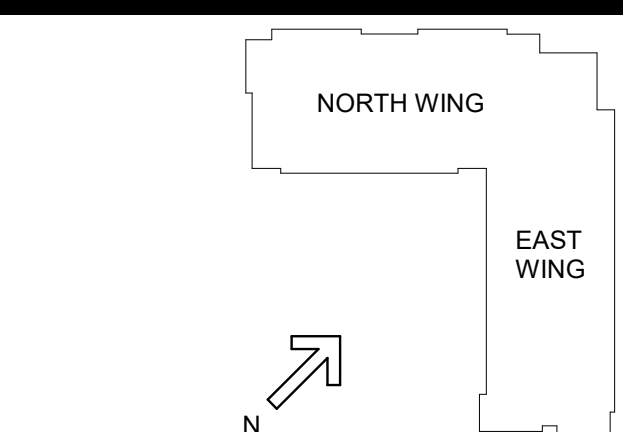
- S1 GEOTHERMAL PIPE ENTRANCE. REFER TO ENLARGED MECHANICAL ROOM PLAN ON SHEET M132 FOR CONTINUATION.
- S2 THE WELL FIELD BORES SHALL BE LOCATED BY A LICENSE SURVEYOR AND ONCE ALL WORK IS COMPLETED, THE LAYOUT SHALL BE SURVEYED AND AS-BUILT DRAWING PROVIDED TO THE OWNER. REFER TO PART 38 OF SECTION 200100.
- S3 COORDINATE NEW GEOTHERMAL MAIN TRENCHING WORK WITH EXISTING STORM PIPING. REFER TO CIVIL DRAWINGS FOR ADDITIONAL INFORMATION.
- S4 LOCATE NEW WELL AS TO NOT INTERFERE WITH EXISTING STORM PIPING.

GEOTHERMAL WELLFIELD

WELLFIELD INFORMATION

NUMBER OF WELLS: 56  
DEPTH OF WELLS: 425'  
NUMBER OF INDEPENDENT CIRCUITS: 4  
NUMBER OF WELLS PER CIRCUIT: 14  
WELL PIPE SIZE: 1-1/4"  
WELL SPACING 18'x20'

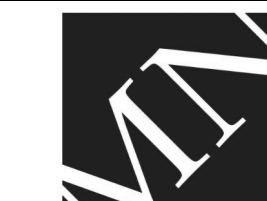
GEOTHERMAL MAIN TO BUILDING:  
48" MINIMUM BURY DEPTH.



#	DATE	CHANGE DESCRIPTION



**NKU - New Residence Hall**  
KENTON DRIVE & CARROLL DRIVE  
HIGHLAND HEIGHTS, KY 41099  
FOR  
**NORTHERN KENTUCKY UNIVERSITY**




434 MADISON AVENUE  
COVINGTON, KY 41011  
PHONE: (859) 957-1277  
FAX: (859) 957-1280



**CMTA**  
10411 Meeting Street, Prospect, KY 40059  
T: 502.326.3085 F: 502.326.2691 www.cmtaengr.com

DRAWING TITLE:  
**MECHANICAL SITE UTILITY PLAN**



JANUARY 30, 2020	
DRAWN BY: LMA	CHECKED BY: CMG
#18237	
<b>MU100</b>	
BID & PERMIT SUBMITTAL	



[illegible]

EACH CONTRACTOR, PROPOSER, SUPPLIER AND/OR MANUFACTURER SHALL REFER TO ALL DOCUMENTS PERTAINING TO THIS PROJECT AND COORDINATE ACCORDINGLY SO AS TO ENSURE ADEQUACY OF FIT AND FUNCTION WITH THE PROJECT REQUIREMENTS. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ALL APPLICABLE BUILDING CODES AND SPECIFICATIONS AND SHALL BE IN CONFLICT WITH ANY OTHER BUILDINGS SYSTEMS. VERIFY SAME WITH SHOP DRAWINGS.

ADDITIONAL ELECTRICAL REQUIREMENTS MAY BE SHOWN ON PLANS FROM OTHER DISCIPLINES IN THIS SET. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN AND UNDERSTAND THE PROJECT REQUIREMENTS.

WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ALL LOCAL, STATE, AND NATIONAL CODES AND STANDARDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INTERNS AND SPECIFICATIONS. THE CONTRACTOR SHALL FOLLOW LATEST SEISMIC RESTRAINT AND DESIGN REQUIREMENTS CONTAINED IN LATEST ADOPTED STATE AND INTERNATIONAL BUILDING CODES, WITH ALL AMENDMENTS AS ADOPTED BY THE CURRENT BUILDING CODES. REFERENCE TO ELECTRICAL AND STRUCTURAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.

ALL OFFSETS, TURNS, FITTINGS, TRIM, DETAIL, ETC. MAY NOT BE INDICATED, BUT SHALL BE PROVIDED AS REQUIRED TO COMPLETE THE PROJECT. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ALL APPLICABLE BUILDING CODES AND SPECIFICATIONS. THE CONTRACTOR SHALL INSTALL NO PIPING, CONDUIT, DUCTWORK, ETC. IN A LOCATION OR IN A MANNER WHICH WILL ALLOW FREEZING OR THE COLLECTION OF CONDENSATION THEREON. IF IN DOUBT, CONTACT THE ENGINEER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, ETC. AT LEAST TEN DAYS PRIOR TO BID DATE, TO ALLOW CLARIFICATION BY WRITTEN ADDENDUM.

WHERE CONFLICTS ARE BETWEEN DRAWINGS, DETAILS, OR SPECIFICATIONS, THE MORE STRINGENT SHALL PREVAIL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, ETC. DEVIATION FROM SPECIFICATIONS OR PLANS REQUIRES PRIOR WRITTEN APPROVAL FROM THE ENGINEERS AND MUST BE SUBMITTED IN WRITING NO LATER THAN TEN DAYS PRIOR TO THE BID DATE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, ETC. WORK UNDER THIS CONTRACT, (CITY, COUNTY, LOCAL, STATE, FEDERAL, MUNICIPALITY, UTILITY COMPANY, OSHA, ETC.). MOUNTING HEIGHTS FOR WALL MOUNTED DEVICES INDICATED ABOVE FINISHED FLOOR ARE TO CENTER OF THE DEVICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, ETC. FOR ALL EQUIPMENT, MATERIALS, ETC. IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND DIRECTIONS. IF IN CONFLICT WITH THE DESIGN INDICATED IN CONTRACT DOCUMENTS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, ETC. TO NOT RECESS PANELBOARDS TUBS OR OTHER FLUSH-MOUNTED EQUIPMENT IN WALLS THAT HAVE A FIRE RATING. NO INSTALLATION SHALL DIMINISH OR VOID FIRE RESISTIVE RATINGS IN ANYWAY.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, ETC. TO PROVIDE A COMPLETE, FUNCTIONAL, SAFE, FIRE-NEW FACILITY. ANYTHING LESS SHALL BE UNACCEPTABLE.

ALL SYSTEMS, EQUIPMENT, AND MATERIALS ARE TO BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. WORK NOT MEETING THIS CRITERION SHALL BE REMOVED AND REINSTALLED SATISFACTORILY. FINAL INSPECTION SHALL BE CONDUCTED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, ETC. FOR ALL WORK, MATERIALS, EQUIPMENT, ETC. SHALL BE FULLY GUARANTEED FOR ONE FULL CALENDAR YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION AS DOCUMENTED BY THE ENGINEER, UNLESS LONGER PERIOD IS INDICATED.

UNLESS OTHERWISE SPECIFIED OR INDICATED, ALL EQUIPMENT AND/OR MATERIALS WITH OCCUPIED SPACES OR EXPOSED TO VIEW ON THE BUILDING EXTERIOR SHALL BE PRIMED AND FINISHED SO AS TO MATCH THE BUILDING EXTERIOR SURFACE, UNLESS OTHERWISE NOTED. COORDINATE WORK AND COLORS WITH ARCHITECT.

A. REFER TO SECURITY AND AV DRAWINGS FOR SCOPE ASSOCIATED WITH THOSE SYSTEMS.

B. REFER TO VENDOR DRAWINGS FOR COMPLETE SCOPE OF WORK RELATING TO VENDOR-FURNISHED EQUIPMENT. ALL WORK INDICATED ON VENDOR DRAWINGS SHALL BE COMPLETED BY THE VENDOR.

C. REFER TO ARCHITECTURAL DOW HARDWARE SPECIFICATIONS FOR ACCESS POINTS, CABLES, AND PATCH PANELS.

D. PROVIDE BACKBOXES AND CONDUIT WITH PULL-STRINGS FOR ALL SYSTEMS. CONTRACTOR SHALL VARY BACKBOX SIZES, CONDUIT, ETC. AND EXACT INSTALLATION TO MEET EACH SYSTEM'S REQUIREMENTS. PROVIDE ALL SYSTEMS PERIOD TO CONSTRUCTION.

E. AT ALL TIMES, THE CONTRACTOR SHALL MAINTAIN BOARD LOCATIONS. CONTRACTOR SHALL PROVIDE SIZE AND NUMBER OF CONDUIT SUB-OUTS TO BE AVAILABLE AS REQUIRED BY SYSTEMS. PERMANENTLY LOCATE ALL CABINETS, PATCH PANELS, AND CONDUIT. PROVIDE ALL SYSTEMS PERIOD WITH APPROPRIATE VENTILATION TO PERIOD TO CONSTRUCTION.

F. PROVIDE ALL SYSTEMS PERIOD WITH ALL NECESSARY CABLE TO ALL SYSTEMS INCLUDING CABLED, CABLE MANAGEMENT, INSTALLATION, GROUNDING, TESTING, AND LABELING.

G. WHERE INDICATED AS C/O, THE CONTRACTOR SHALL PROVIDE THE SYSTEM COMPLETE, INCLUDING ALL ROUGH-INS, CABLING, DEVICES, POWER, ETC. THE CONTRACTOR SHALL PROVIDE THE SYSTEMS PERIOD WITH ALL SYSTEMS PERIOD TO CONSTRUCTION. ALL SYSTEMS SHALL MATCH EXISTING FACILITY STANDARDS AND BE FULLY COMPLIANT WITH ANY AND ALL APPLICABLE STANDARDS.

H. COORDINATE EXIST SYSTEM REQUIREMENTS WITH OWNER PERIOD TO BID. NEW COMPONENTS SHALL BE INTERCONNECTED WITH EXISTING SYSTEMS WHERE POSSIBLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE OWNER PERIOD TO ORDERING, ALL PROGRAMMING SHALL BE COMPLETED AND TESTED BY THE OWNER. PROVIDE MINIMUM 4 HOURS OF TRAINING FOR EACH SYSTEM UPO.

DATA OUTLET : NUMBER BESIDE OUTLET INDICATES  
NUMBER OF DATA JACKS

SLASH THROUGH DEVICE INDICATES MOUNTING ABOVE COUNTERTOP. SLASH ABOVE BACKSPLASH OR AT 46" WHERE NO COUNTER IS PRESENT	
WIRELESS ACCESS POINT WITH (2) CAT6A CABLES WITH FLOOR TERMINATED MODULAR PLUGS. PROVIDE 20' COIL ABOVE ACCESSIBLE CEILING FOR ADJUSTMENT OF FINAL LOCATION. PROVIDE RACEWAY AND JUNCTION BOX TO CONTAIN SLACK COIL IN AREAS WITH NO ACCESSIBLE CEILING. THE CONTRACTOR SHALL COORDINATE EXACT LOCATION WITH THE OTHER TRADES PRIOR TO SUBSTANTIAL COMPLETION. DEVICES IN GYP CEILING SHALL USE 5/8 EXTRA DEEP BACK BOX WITH MUD RING TO MATCH OWNERS WAP MOUNTING BRACKET.	WALL CLG
INDICATES WALL PHONE FACEPLATE	

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#	DATE	CHANGE DESCRIPTION
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 <b>NEW STUDENT HOUSE</b>		

**NKU**  
NORTHERN  
KENTUCKY  
UNIVERSITY

**NORTHERN KENTUCKY  
UNIVERSITY**



500 OF RICE STREET  
SUITE 300  
COLUMBUS, OHIO 43215

**MOODY•NOLAN** PHONE: (614) 461-4664  
FAX: (614) 280-8881



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T:502.326.3085 F:502.326.2691 [www.cmi.com](http://www.cmi.com)

DRAWING TITLE:

**ELECTRICAL LEGEND**

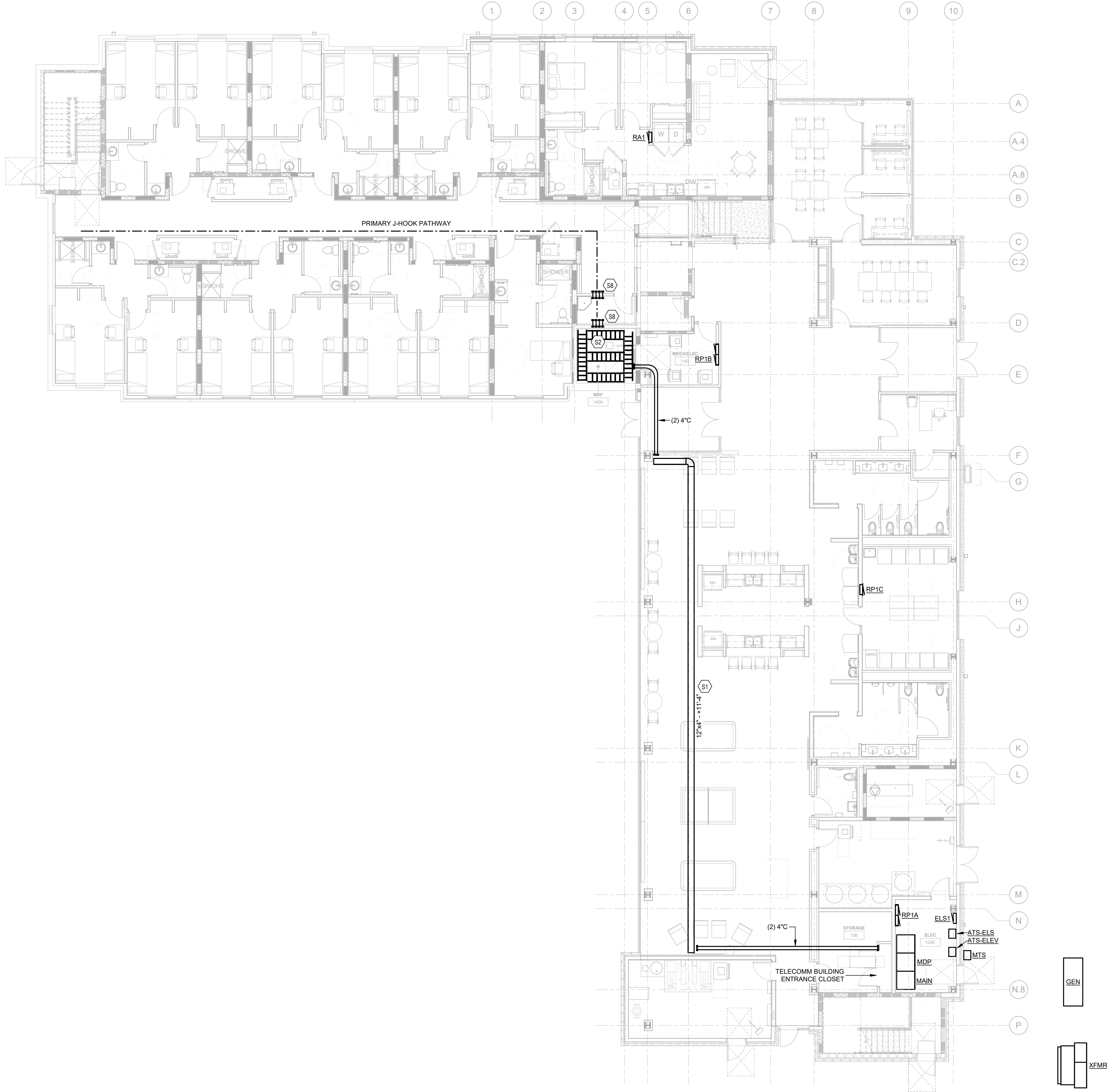
ELECTRICAL LEGEND	
	JANUARY 3

	DRAWN BY: GCR	CHK
		-

ANTHONY  
HANS  
23143  
LICENSED ENGINEER

**E00**

	BID & PERMIT STATEMENT



1 LEVEL 0/1 - INTERCONNECTION PLAN  
SCALE: 1/8" = 1'-0"

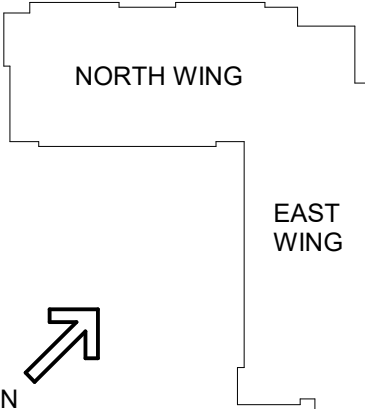
STATE OF KENTUCKY APPROVAL

GENERAL NOTES (INTERCON):

- A. THE CONTRACTOR SHALL VERIFY THAT PULL BOXES AND CONDUITS MAY BE INSTALLED AS INDICATED. IF THERE IS A CONFLICT, CONTRACTOR SHALL NOTIFY ENGINEER 10 DAYS PRIOR TO BID. NO PRICE CHANGE WILL BE GIVEN FOR ANY ALTERNATE ROUTINGS OF CONDUIT AFTER THE CONTRACT HAS BEEN AWARDED.
- B. ALL NEW WORK SHALL BE HUNG FROM STRUCTURE, NOT FROM THE WORK OF OTHER TRADES.
- C. ALL PENETRATIONS SHALL BE UL LISTED TO MATCH RATING OF WALL/FLOOR ASSEMBLY. REFER TO PENETRATION DETAILS FOR ADDITIONAL INFORMATION.
- D. J-HOOKS SHALL BE USED ABOVE ACCESSIBLE CEILINGS. CONTINUOUS CONDUIT PATHWAYS SHALL BE USED ABOVE GYP CEILINGS, IN OPEN CEILINGS TO CABLE TRAY, AND IN MECHANICAL/ELECTRICAL SPACES UNO.

TAGGED NOTES

- S1 PROVIDE WIRE BASKET TYPE CABLE TRAY SUITABLE FOR INDOOR ENVIRONMENT SIZED AS INDICATED ON DRAWINGS. COORDINATE ROUTING WITH ALL TRADES. SEE SPECIFICATIONS AND DETAILS FOR MORE INFORMATION.
- S2 PROVIDE 18" CABLE RUNWAY IN TELECOMMUNICATIONS ROOM MOUNTED AT 7'-6" AFF. SEE RACK ELEVATIONS AND CABLE RUNWAY DETAILS FOR MORE INFORMATION.
- S8 PROVIDE RE-PENETRABLE SLEEVES AT FULL HEIGHT WALLS AND AT FLOORS TO FACILITATE CABLE ROUTING. PROVIDE RATED SLEEVES AT ALL RATED ASSEMBLIES. (STI EZ PATH SERIES 44+) SEE PLANS FOR SLEEVE QUANTITIES.



#	DATE	CHANGE DESCRIPTION

**NEW STUDENT HOUSING**  
KENTON DRIVE & CARROLL DRIVE  
HIGHLAND HEIGHTS, KY 41099  
FOR  
**NORTHERN KENTUCKY UNIVERSITY**

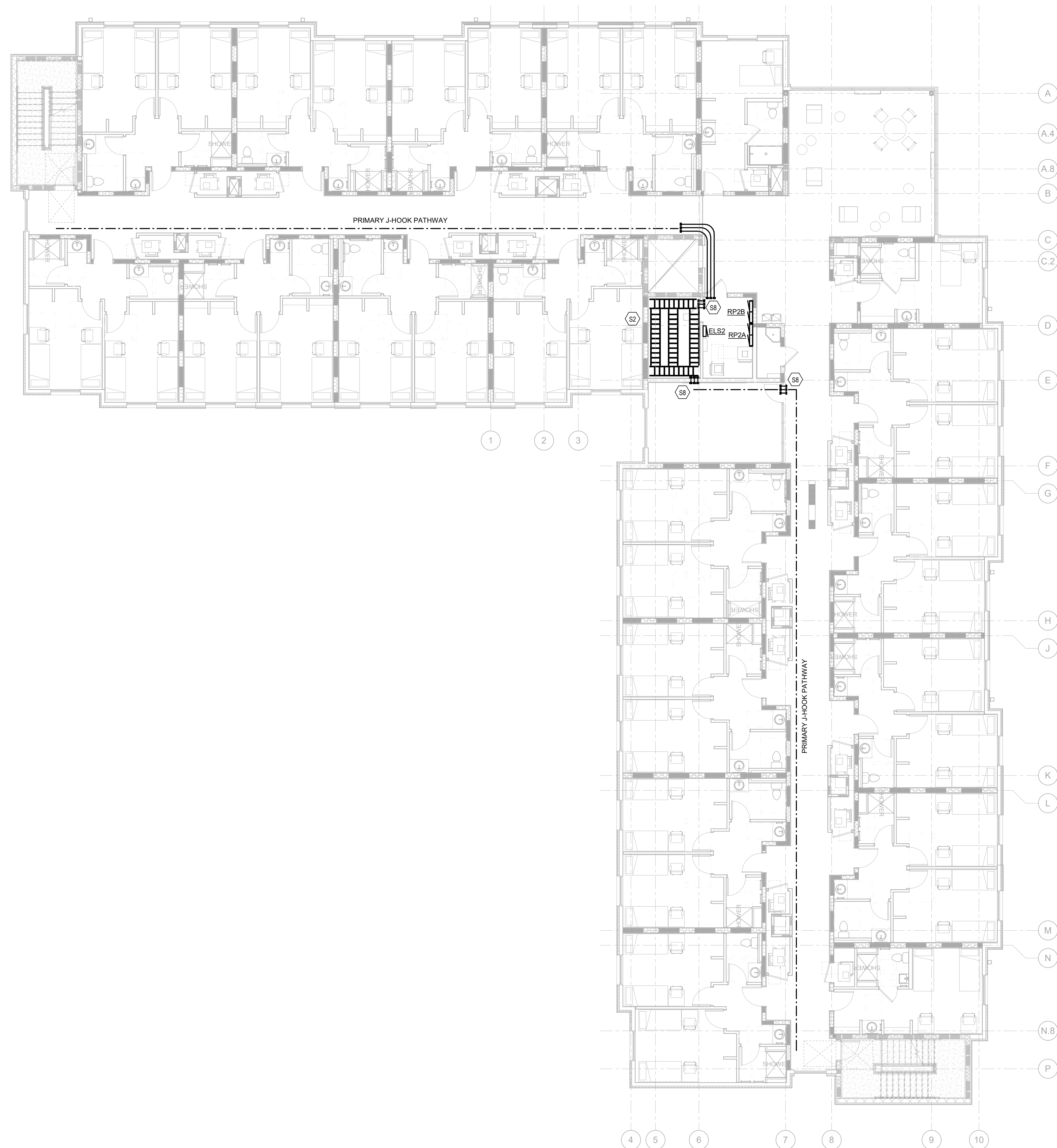
**MOODY•NOLAN**  
300 SPRUCE STREET  
SUITE 300  
COLUMBUS, OHIO 43215  
PHONE: (614) 461-4664  
FAX: (614) 280-8881

**CMTA**  
10411 Meeting Street, Prospect, KY 40369  
T: 502.326.3085 F: 502.326.2691 www.cmtaengs.com

DRAWING TITLE:  
**LEVEL 0/1 INTERCONNECTION PLAN**

**STATE OF KENTUCKY**  
ROBERT ANTHONY HANS  
23143  
Professional Engineer  
JANUARY 30, 2020  
DRAWN BY: GCR  
CHECKED BY:  
**E001**  
BID & PERMIT SUBMITTAL





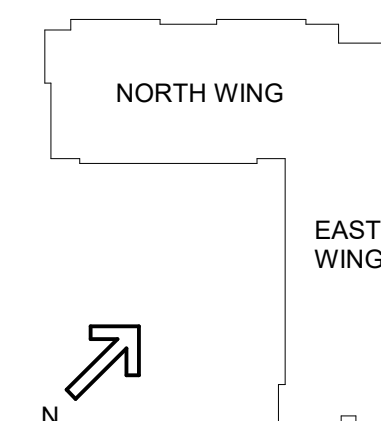
## 1 LEVEL 2 - INTERCONNECTION PLAN

**GENERAL NOTES (INTERCON):**

- A. THE CONTRACTOR SHALL VERIFY THAT PULL BOXES AND CONDUITS MAY BE INSTALLED AS INDICATED. IF THERE IS A CONFLICT, CONTRACTOR SHALL NOTIFY ENGINEER 10 DAYS PRIOR TO BID. NO PRICE CHANGE WILL BE GIVEN FOR ANY OF THE TYPICAL ROUTINGS OF CONDUIT AFTER THE CONTRACT HAS BEEN AWARDED.
- B. ALL NEW WORK SHALL BE HUNG FROM STRUCTURE, NOT FROM THE WORK OF OTHER TRADES.
- C. ALL PENETRATION SHALL BE LISTED TO MATCH RATING OF WALL/FLOOR ASSEMBLY. REFER TO PENETRATION DETAILS FOR ADDITIONAL INFORMATION.
- D. J-HOOKS SHALL BE USED ABOVE ACCESSIBLE CEILINGS. CONTINUOUS CONDUIT PATHWAYS SHALL BE USED ABOVE CEILING IN OPENINGS IN WALLS, FLOORS, AND IN CABINETS AND IN MECHANICAL/ELECTRICAL SPACES UNO.

## TAGGED NOTES

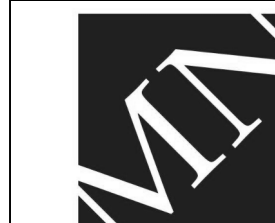
- S2 PROVIDE 18" CABLE RUNWAY IN TELECOMMUNICATIONS ROOM MOUNTED AT 7'-6" AFF. SEE RACK ELEVATIONS AND CABLE RUNWAY DETAILS FOR MORE INFORMATION.
- S8 PROVIDE RE-PENETRABLE SLEEVES AT FULL HEIGHT WALLS AND AT FLOORS TO FACILITATE CABLE ROUTING. PROVIDE RATED SLEEVES AT ALL RATED ASSEMBLIES. (STI EZ PATH SERIES 44+) SEE PLANS FOR SLEEVE QUANTITIES.



#	DATE	CHANGE DESCRIPTION



**NEW STUDENT HOUSING**  
KENTON DRIVE & CARROLL DRIVE  
HIGHLAND HEIGHTS, KY 41099  
FOR  
**NORTHERN KENTUCKY  
UNIVERSITY**



300 SPRUCE STREET  
SUITE 300  
COLUMBUS, OHIO 43215

PHONE: (614) 461-4664  
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**CMTA**  
10411 Meeting Street, Prospect, KY 40059  
T:502.326.3085 F:502.326.2691 [www.cmtaegr.com](http://www.cmtaegr.com)

DRAWING TITLE:

## LEVEL 02 INTERCONNECTION PLAN

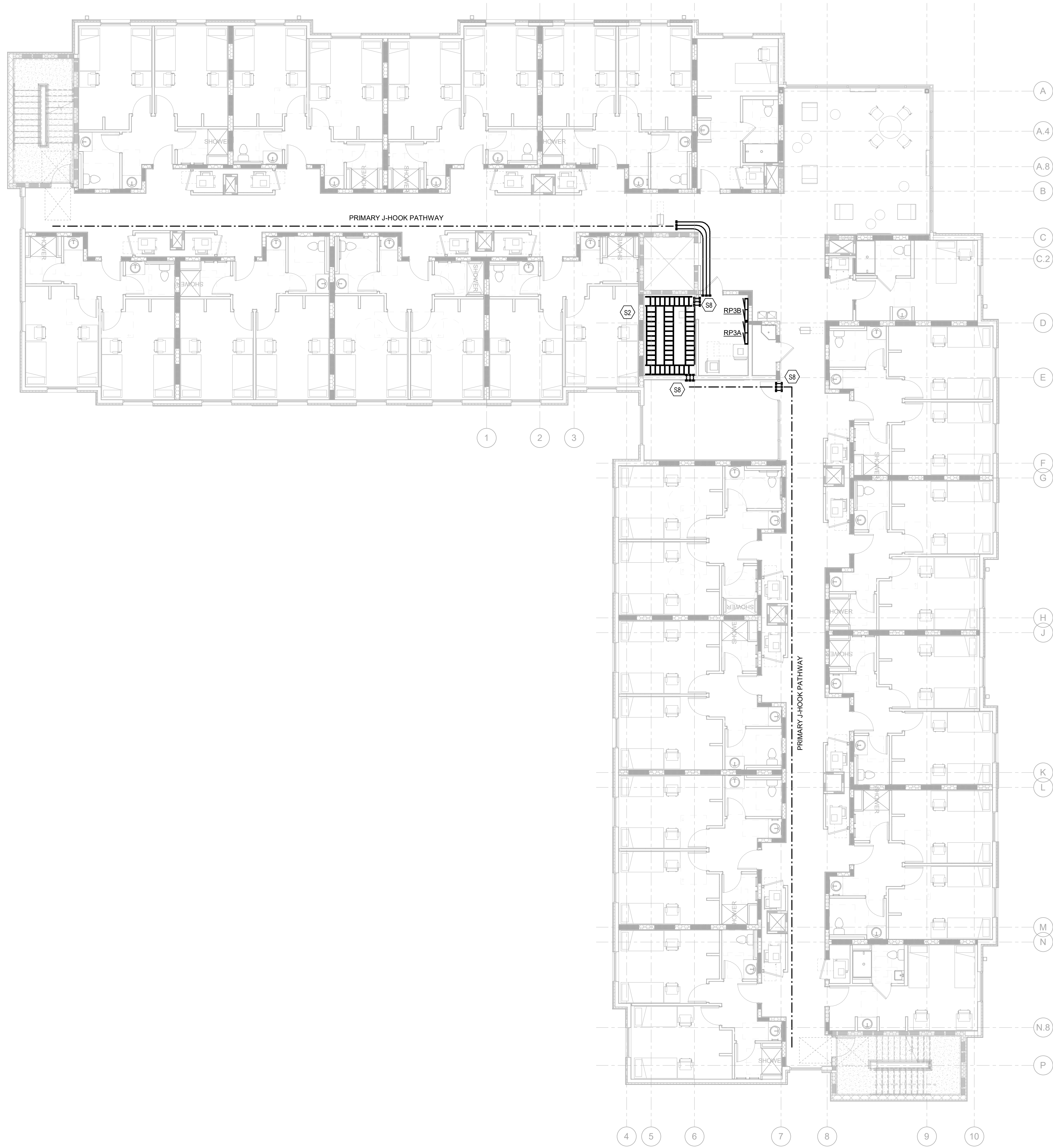


JANUARY 30, 2020

DRAWN BY: GCR	CHECKED BY
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**E002**

BID &amp; PERMIT SUBMITTAL



1 LEVEL 3 - INTERCONNECTION PLAN  
SCALE: 1/8" = 1'-0"

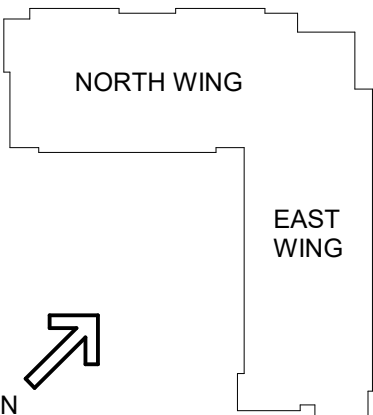
STATE OF KENTUCKY APPROVAL

GENERAL NOTES (INTERCON):

- A. THE CONTRACTOR SHALL VERIFY THAT PULL BOXES AND CONDUITS MAY BE INSTALLED AS INDICATED. IF THERE IS A CONFLICT, CONTRACTOR SHALL NOTIFY ENGINEER 10 DAYS PRIOR TO BID. NO PRICE CHANGE WILL BE GIVEN FOR ANY ALTERNATE ROUTINGS OF CONDUIT AFTER THE CONTRACT HAS BEEN AWARDED.
- B. ALL NEW WORK SHALL BE HUNG FROM STRUCTURE, NOT FROM THE WORK OF OTHER TRADES.
- C. ALL PENETRATIONS SHALL BE UL LISTED TO MATCH RATING OF WALL/FLOOR ASSEMBLY. REFER TO PENETRATION DETAILS FOR ADDITIONAL INFORMATION.
- D. J-HOOKS SHALL BE USED ABOVE ACCESSIBLE CEILINGS. CONTINUOUS CONDUIT PATHWAYS SHALL BE USED ABOVE GYP CEILINGS, IN OPEN CEILINGS TO CABLE TRAY, AND IN MECHANICAL/ELECTRICAL SPACES UNO.

TAGGED NOTES

- S2 PROVIDE 10" CABLE RUNWAY IN TELECOMMUNICATIONS ROOM MOUNTED AT 7'-6" AFF. SEE RACK ELEVATIONS AND CABLE RUNWAY DETAILS FOR MORE INFORMATION.
- S8 PROVIDE RE-PENETRABLE SLEEVES AT FULL HEIGHT WALLS AND AT FLOORS TO FACILITATE CABLE ROUTING. PROVIDE RATED SLEEVES AT ALL RATED ASSEMBLIES. (STI EZ PATH SERIES 44+) SEE PLANS FOR SLEEVE QUANTITIES.



#	DATE	CHANGE DESCRIPTION

**NKU**  
NORTHERN KENTUCKY UNIVERSITY

**NEW STUDENT HOUSING**  
KENTON DRIVE & CARROLL DRIVE  
HIGHLAND HEIGHTS, KY 41099  
FOR  
**NORTHERN KENTUCKY UNIVERSITY**

**MOODY•NOLAN**

300 SPRUCE STREET  
SUITE 300  
COLUMBUS, OHIO 43215

PHONE: (614) 461-4664  
FAX: (614) 280-8881

**CMTA**

10411 Meeting Street, Prospect, KY 40069  
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DRAWING TITLE:  
**LEVEL 03 INTERCONNECTION PLAN**

**STATE OF KENTUCKY**  
ROBERT ANTHONY HANS  
23143  
Professional Engineer

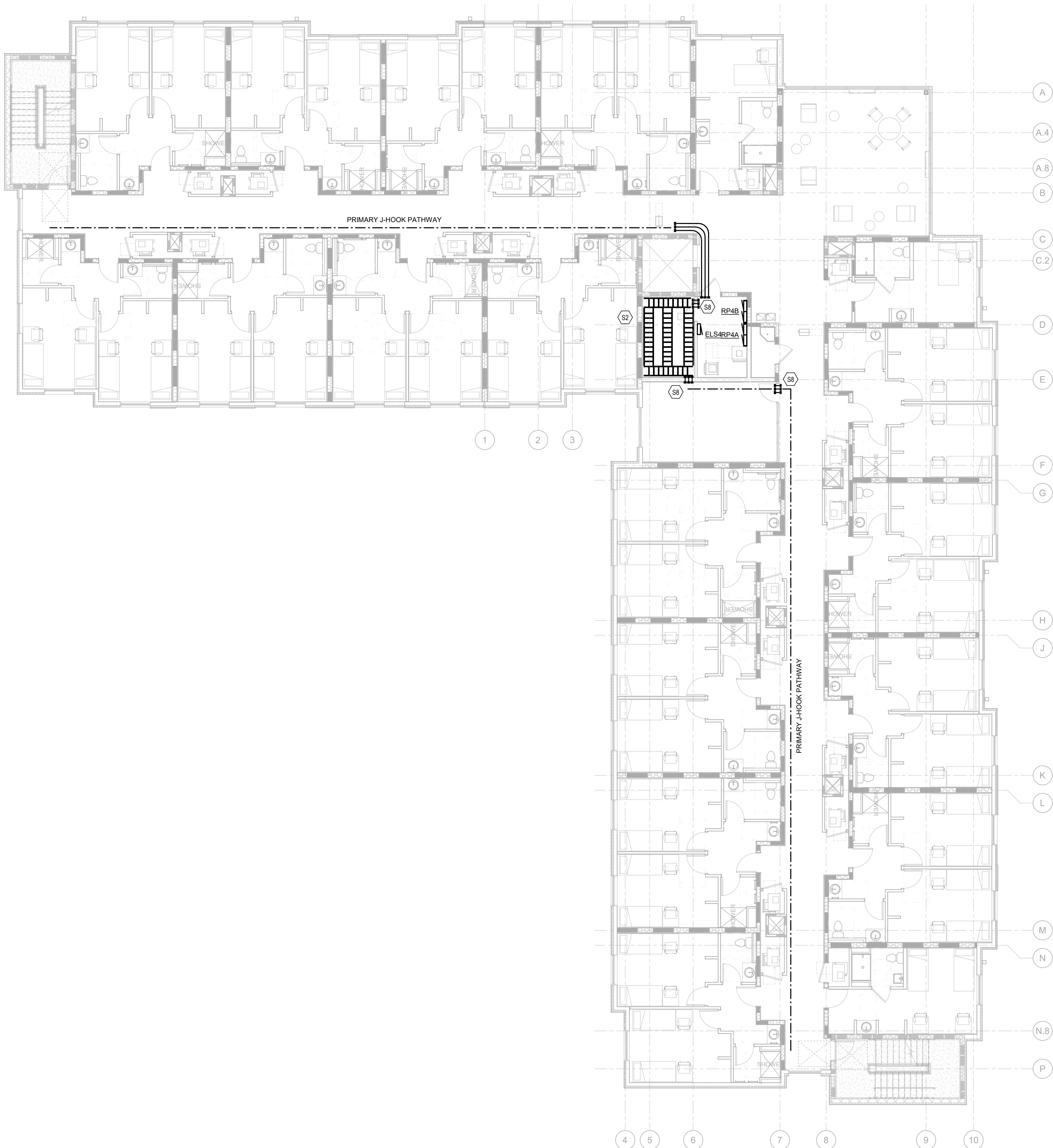
JANUARY 30, 2020

DRAWN BY: GCR CHECKED BY: -

**E003**

BID & PERMIT SUBMITTAL





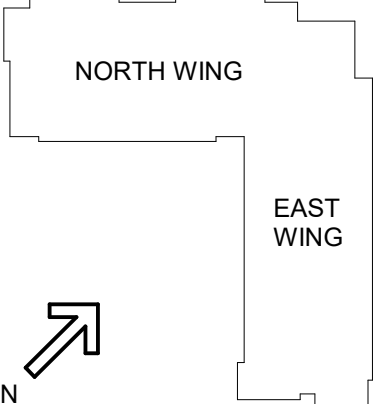
STATE OF KENTUCKY APPROVAL

GENERAL NOTES (INTERCON):

- A. THE CONTRACTOR SHALL VERIFY THAT PULL BOXES AND CONDUITS MAY BE INSTALLED AS INDICATED. IF THERE IS A CONFLICT, CONTRACTOR SHALL NOTIFY ENGINEER 10 DAYS PRIOR TO BID. NO PRICE CHANGE WILL BE GIVEN FOR ANY ALTERNATE ROUTINGS OF CONDUIT AFTER THE CONTRACT HAS BEEN AWARDED.
- B. ALL NEW WORK SHALL BE HUNG FROM STRUCTURE, NOT FROM THE WORK OF OTHER TRADES.
- C. ALL PENETRATIONS SHALL BE UL LISTED TO MATCH RATING OF WALL/FLOOR ASSEMBLY. REFER TO PENETRATION DETAILS FOR ADDITIONAL INFORMATION.
- D. J-HOOKS SHALL BE USED ABOVE ACCESSIBLE CEILINGS. CONTINUOUS CONDUIT PATHWAYS SHALL BE USED ABOVE GYP CEILINGS, IN OPEN CEILINGS TO CABLE TRAY, AND IN MECHANICAL/ELECTRICAL SPACES UNO.

TAGGED NOTES


- S2 PROVIDE 10" CABLE RUNWAY IN TELECOMMUNICATIONS ROOM MOUNTED AT 7'-6" AFF. SEE RACK ELEVATIONS AND CABLE RUNWAY DETAILS FOR MORE INFORMATION.
- S8 PROVIDE RE-PENETRABLE SLEEVES AT FULL HEIGHT WALLS AND AT FLOORS TO FACILITATE CABLE ROUTING. PROVIDE RATED SLEEVES AT ALL RATED ASSEMBLIES. (STI EZ PATH SERIES 44+) SEE PLANS FOR SLEEVE QUANTITIES.



#	DATE	CHANGE DESCRIPTION



**NEW STUDENT HOUSING**  
KENTON DRIVE & CARROLL DRIVE  
HIGHLAND HEIGHTS, KY 41099  
FOR  
**NORTHERN KENTUCKY UNIVERSITY**




300 SPRUCE STREET  
SUITE 300  
COLUMBUS, OHIO 43215  
PHONE: (614) 461-4664  
FAX: (614) 280-8881



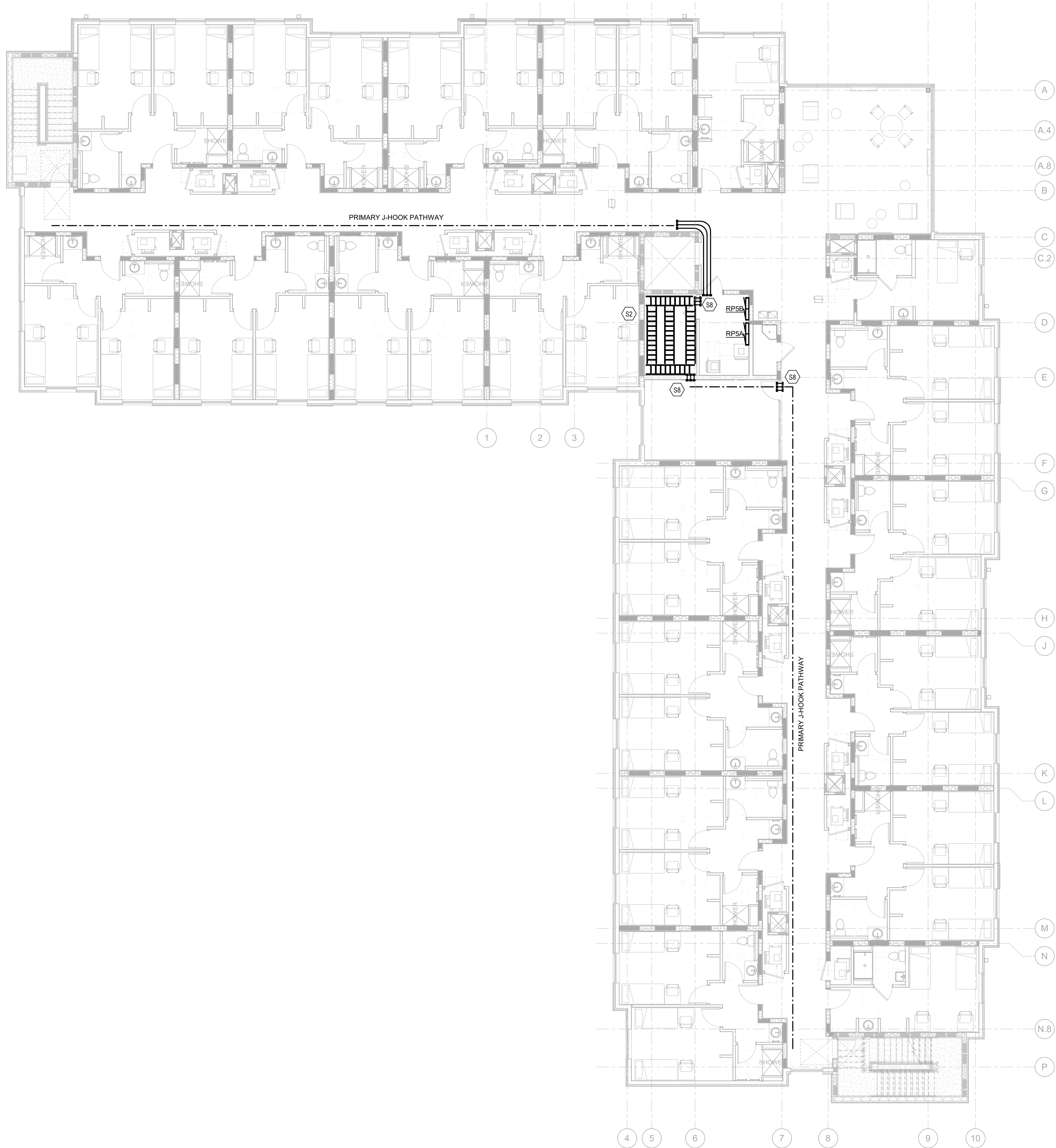
**CMTA**  
10411 Meeting Street, Prospect, KY 40069  
T: 502.326.3085 F: 502.326.2691 www.cmtaengs.com

DRAWING TITLE:  
**LEVEL 04 INTERCONNECTION PLAN**



ROBERT ANTHONY HANS  
23143  
Professional Engineer

JANUARY 30, 2020	
DRAWN BY: GCR	CHECKED BY: -
<b>E004</b>	
BID & PERMIT SUBMITTAL	



1 LEVEL 5 - INTERCONNECTION PLAN  
SCALE: 1/8" = 1'-0"

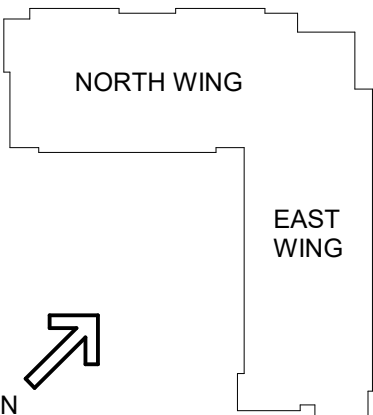
STATE OF KENTUCKY APPROVAL

GENERAL NOTES (INTERCON):

- A. THE CONTRACTOR SHALL VERIFY THAT PULL BOXES AND CONDUITS MAY BE INSTALLED AS INDICATED. IF THERE IS A CONFLICT, CONTRACTOR SHALL NOTIFY ENGINEER 10 DAYS PRIOR TO BID. NO PRICE CHANGE WILL BE GIVEN FOR ANY ALTERNATE ROUTINGS OF CONDUIT AFTER THE CONTRACT HAS BEEN AWARDED.
- B. ALL NEW WORK SHALL BE HUNG FROM STRUCTURE, NOT FROM THE WORK OF OTHER TRADES.
- C. ALL PENETRATIONS SHALL BE UL LISTED TO MATCH RATING OF WALL/FLOOR ASSEMBLY. REFER TO PENETRATION DETAILS FOR ADDITIONAL INFORMATION.
- D. J-HOOKS SHALL BE USED ABOVE ACCESSIBLE CEILINGS. CONTINUOUS CONDUIT PATHWAYS SHALL BE USED ABOVE GYP CEILINGS, IN OPEN CEILINGS TO CABLE TRAY, AND IN MECHANICAL/ELECTRICAL SPACES UNO.

TAGGED NOTES

- S2 PROVIDE 10" CABLE RUNWAY IN TELECOMMUNICATIONS ROOM MOUNTED AT 7'-6" AFF. SEE RACK ELEVATIONS AND CABLE RUNWAY DETAILS FOR MORE INFORMATION.
- S8 PROVIDE RE-PENETRABLE SLEEVES AT FULL HEIGHT WALLS AND AT FLOORS TO FACILITATE CABLE ROUTING. PROVIDE RATED SLEEVES AT ALL RATED ASSEMBLIES. (STI EZ PATH SERIES 44+) SEE PLANS FOR SLEEVE QUANTITIES.



#	DATE	CHANGE DESCRIPTION

**NKU**  
NORTHERN KENTUCKY UNIVERSITY

**NEW STUDENT HOUSING**  
KENTON DRIVE & CARROLL DRIVE  
HIGHLAND HEIGHTS, KY 41099  
FOR  
**NORTHERN KENTUCKY UNIVERSITY**

**MOODY•NOLAN**

300 SPRUCE STREET  
SUITE 300  
COLUMBUS, OHIO 43215

PHONE: (614) 461-4664  
FAX: (614) 280-8881

**CMTA**

10411 Meeting Street, Prospect, KY 40069  
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DRAWING TITLE:  
**LEVEL 05 INTERCONNECTION PLAN**

**STATE OF KENTUCKY**  
ROBERT ANTHONY HANS  
23143  
Professional Engineer

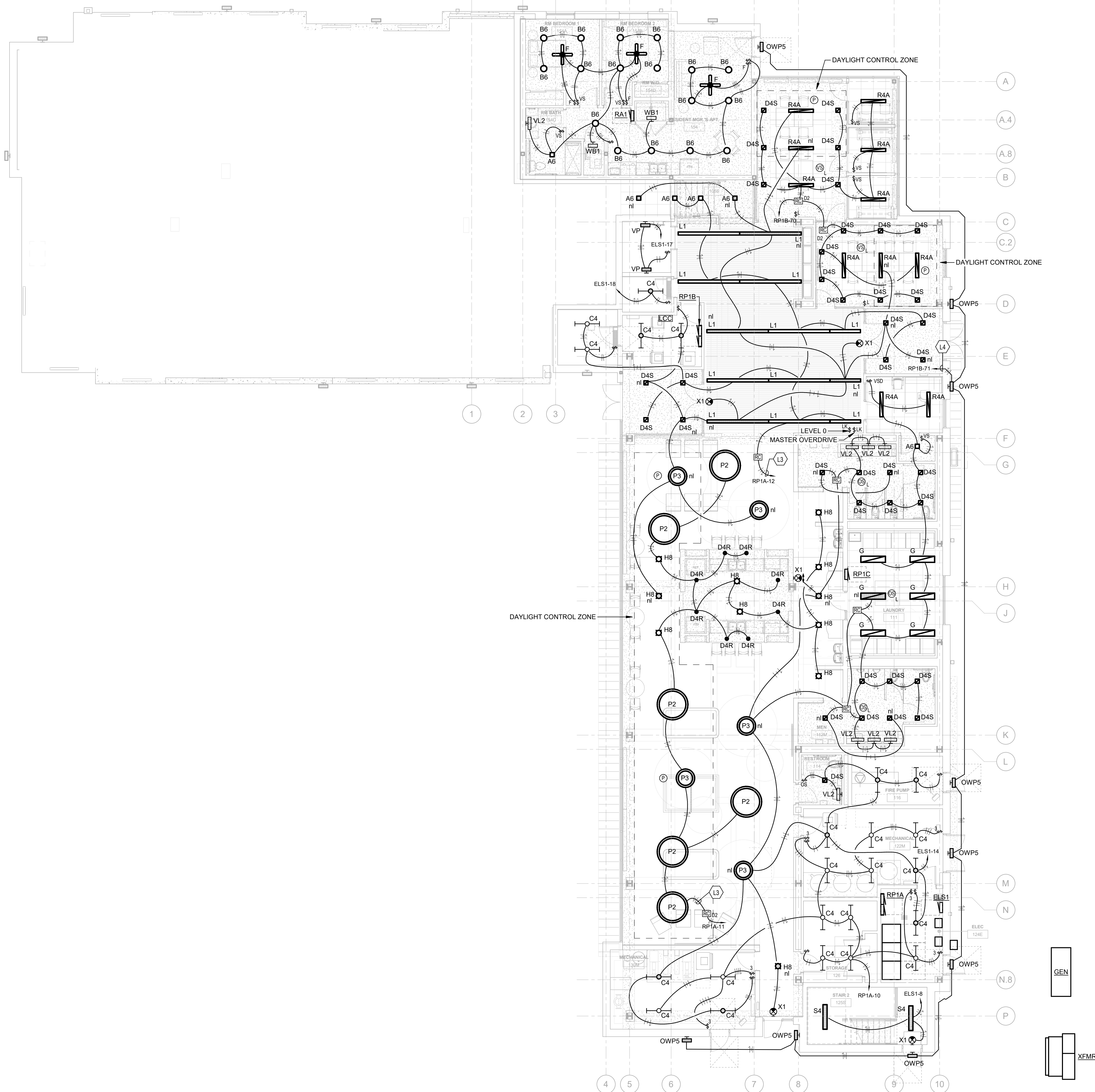
JANUARY 30, 2020

DRAWN BY: GCR CHECKED BY: -

**E005**

BID & PERMIT SUBMITTAL





2 LEVEL 0 - LIGHTING  
SCALE: 1/8" = 1'-0"

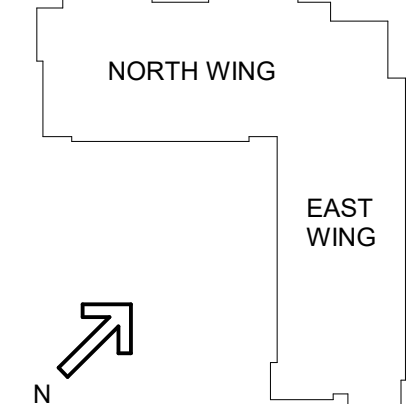
STATE OF KENTUCKY APPROVAL

GENERAL NOTES (LIGHTING):

- REFER TO THE ARCHITECT'S REFLECTED CEILING PLANS, ELEVATIONS, AND CASEWORK DETAILS FOR EXACT LOCATIONS OF ALL WALL AND CEILING MOUNTED ELECTRICAL DEVICES.
- CONTRACTOR SHALL FOLLOW BRANCH CIRCUITING LAY-OUT, AS INDICATED ON THE FLOOR PLANS, WITH A MAXIMUM OF THREE (3) BRANCH CIRCUITS PER HOMERUN. EACH BRANCH CIRCUIT SHALL BE PROVIDED WITH A DEDICATED NEUTRAL CONDUCTOR. DEDICATED NEUTRAL CONDUCTORS SHALL BE CONSIDERED CURRENT CARRYING. IF ADDITIONAL CONDUCTORS ARE RAN IN THE SAME CONDUIT WITH THOSE INDICATED, CONTRACTOR SHALL DERATE ALL CURRENT CARRYING CONDUCTORS PER N.E.C. #310.15(B)(3), AND UPSIZE CONDUIT AS REQUIRED PER N.E.C. #300.17 AND ANNEX C. MULTIWIRE BRANCH CIRCUITS AS DEFINED IN N.E.C. #100 / 210.4 (CIRCUITS SHARING A COMMON NEUTRAL CONDUCTOR) SHALL NOT BE PERMITTED.
- IDENTIFY THE PANEL AND CIRCUIT NUMBER FOR ALL RECEPTACLES, SWITCHES, ETC. IN AREA OF CONSTRUCTION. PROVIDE CLEAR ADHESIVE LABELS WITH BLACK LETTERING. IN HEALTHCARE FACILITIES, ENGRAVE EMERGENCY DEVICE COVERPLATES IN PATIENT CARE AREAS. ALSO, MARK INSIDES OF ALL DEVICE BOXES WITH PANEL AND CIRCUIT NUMBER.
- LOCATE CHAIN-HUNG INDUSTRIAL FIXTURES IN MECHANICAL ROOMS TO AVOID DUCTWORK AND PIPING, TO MAXIMIZE AVAILABLE LIGHT. SPACE AROUND EQUIPMENT, AIR HANDLERS, ETC. TO PROVIDE ADEQUATE LIGHTING TO ALL AREAS OF ROOM. PROVIDE ADDITIONAL FIXTURES OF SAME TYPE AS NEEDED TO FULFILL THIS REQUIREMENT.
- LOCATE EXIT SIGNS FOR MAXIMUM VIEWING AREA TO IDENTIFY EGRESS PATHS AS INDICATED ON PLANS. COORDINATE LOCATIONS SUCH THAT ARCHITECTURAL FEATURES OR EQUIPMENT FROM OTHER TRADES DO NOT OBSTRUCT VIEW.
- WHERE EXIT SIGNS OR EMERGENCY BATTERY PACKS ARE PROVIDED, THEY SHALL BE CONNECTED TO AN UNSWITCHED LINE.
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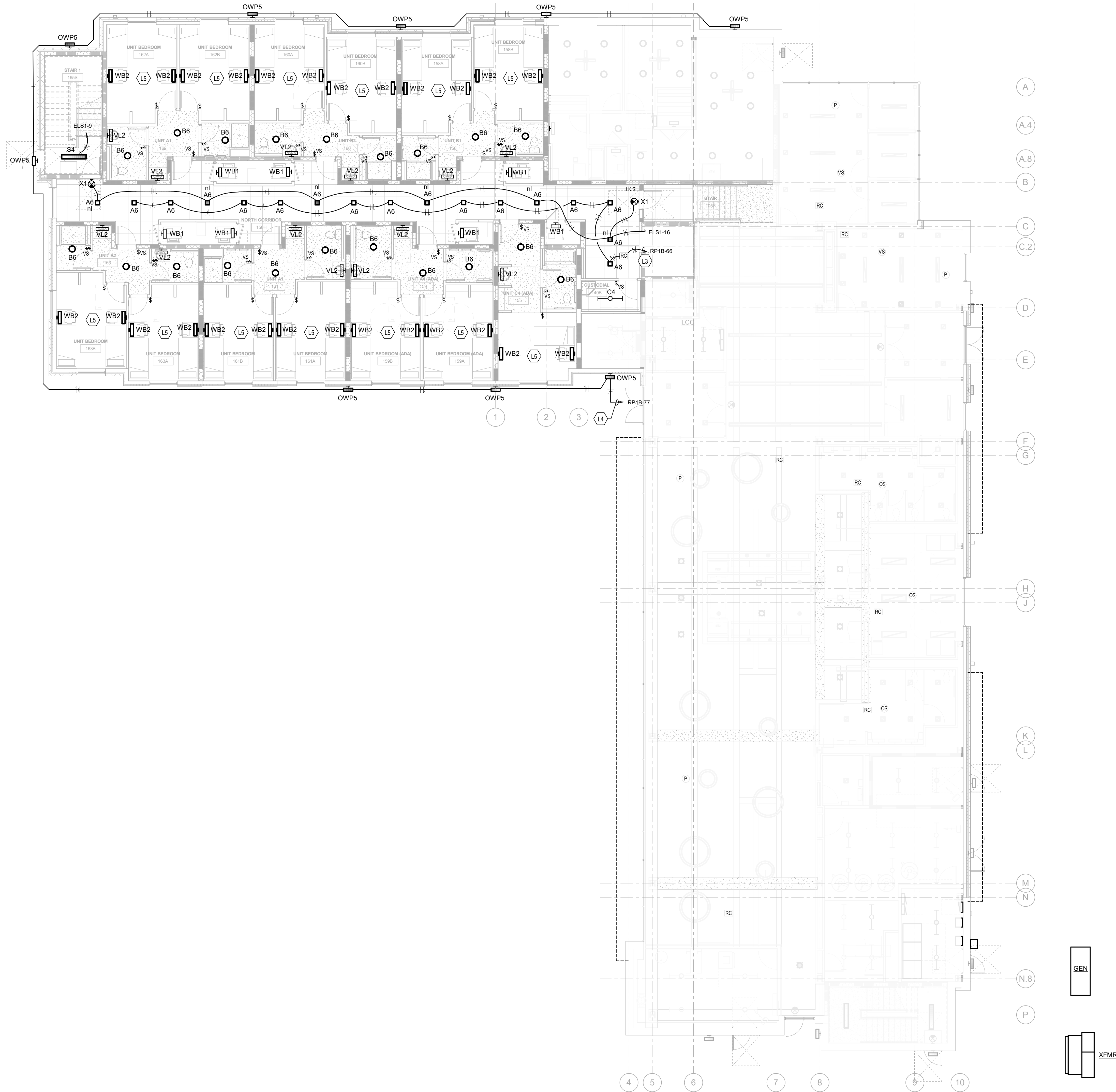
DRAWING TITLE:

LEVEL 0 - LIGHTING PLAN



ROBERT ANTHONY HANS  
23143  
Professional Engineer

JANUARY 30, 2020	
DRAWN BY: GCR	CHECKED BY:
-	
<b>E100</b>	
BID & PERMIT SUBMITTAL	



2 LEVEL 1 - LIGHTING  
SCALE: 1/8" = 1'-0"

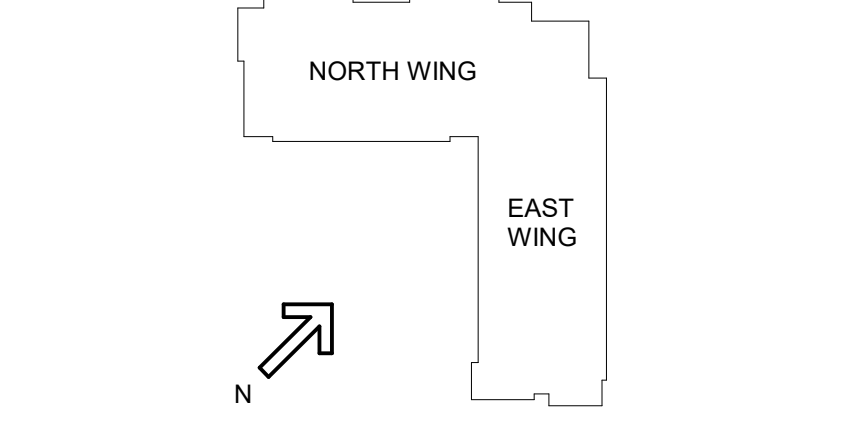
STATE OF KENTUCKY APPROVAL

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DRAWING TITLE:

**LEVEL 1 - LIGHTING PLAN**



ROBERT  
ANTHONY  
HANS  
23143  
Professional Engineer

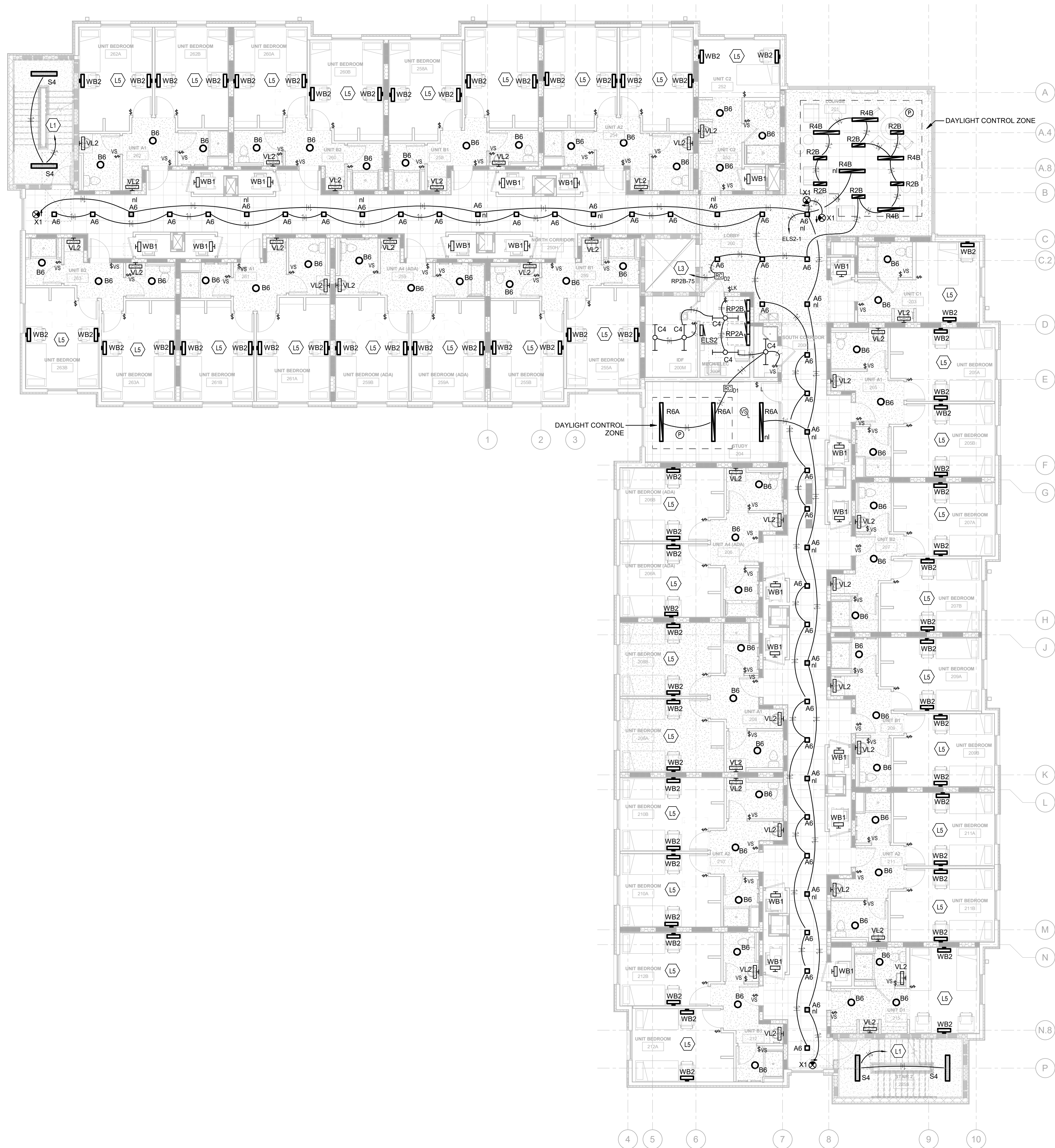
JANUARY 30, 2020

DRAWN BY: GCR	CHECKED BY:

**E101**

BID & PERMIT SUBMITTAL





2 LEVEL 2 - LIGHTING  
SCALE: 1/8" = 1'-0"

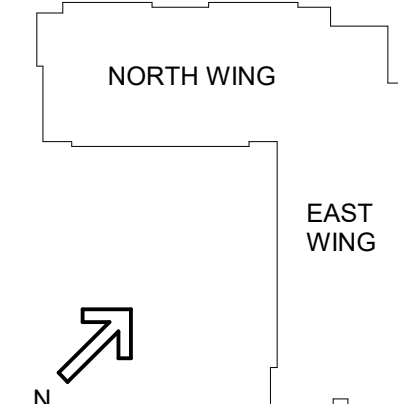
STATE OF KENTUCKY APPROVAL

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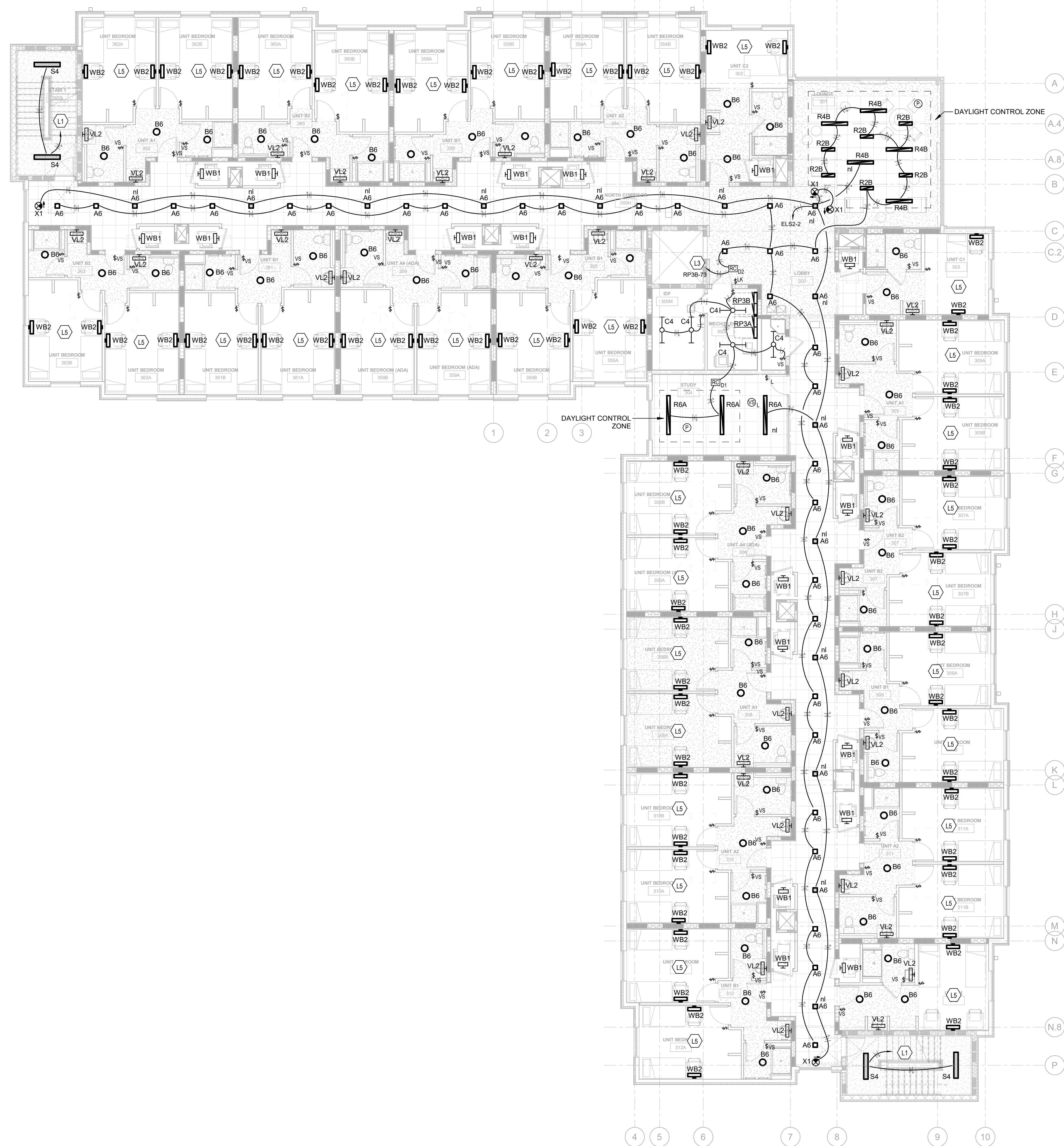
DRAWING TITLE:

LEVEL 2 - LIGHTING PLAN

**STATE OF KENTUCKY**  
ROBERT ANTHONY HANS  
23143  
PROFESSIONAL ENGINEER

JANUARY 30, 2020  
DRAWN BY: GCR CHECKED BY: -  
**E102**  
BID & PERMIT SUBMITTAL





2 LEVEL 3 - LIGHTING  
SCALE: 1/8" = 1'-0"

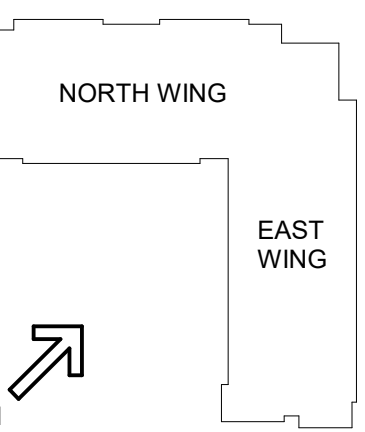
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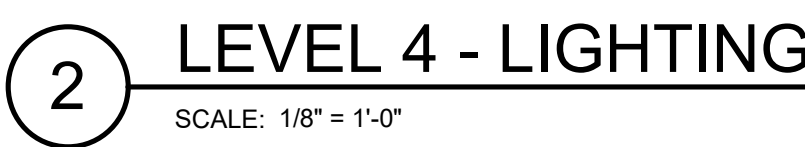
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LEVEL 3 - LIGHTING PLAN



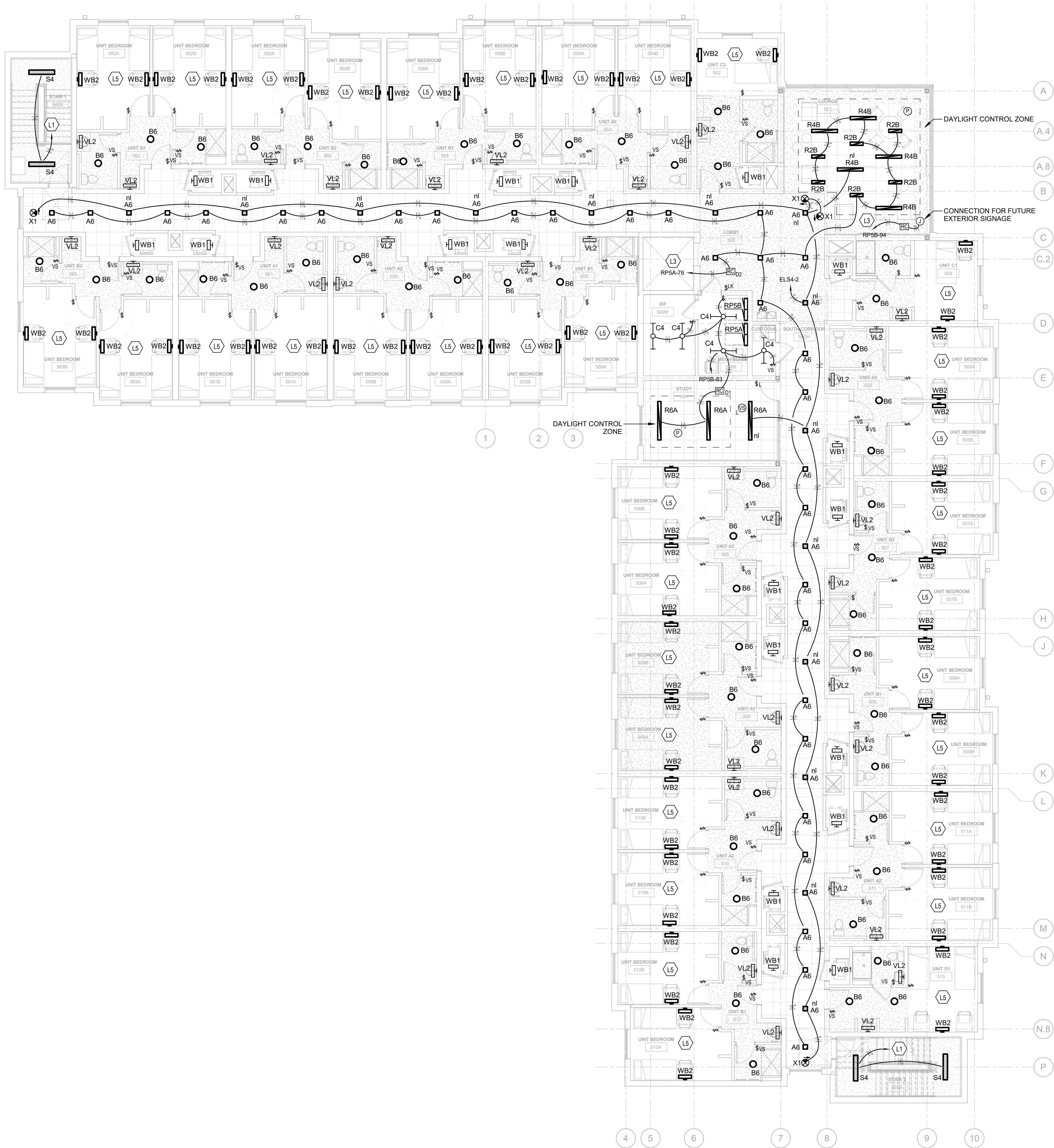
JANUARY 30, 2020	
DRAWN BY: GCR	CHECKED BY:
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<b>E103</b>	
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## BID &amp; PERMIT SUBMITTA





2 LEVEL 5 - LIGHTING

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

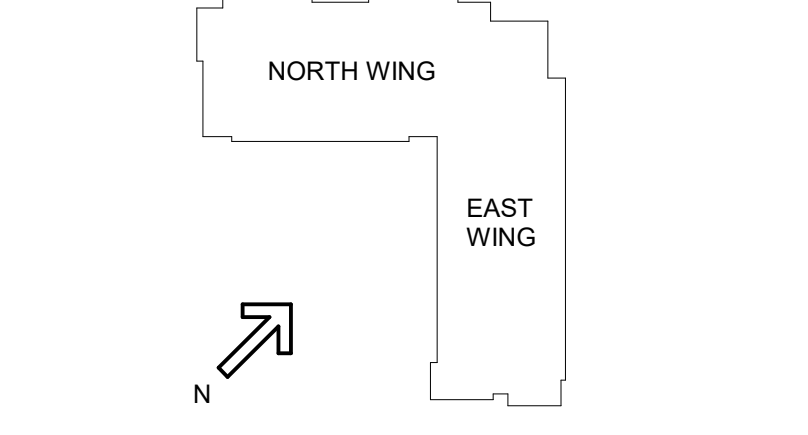
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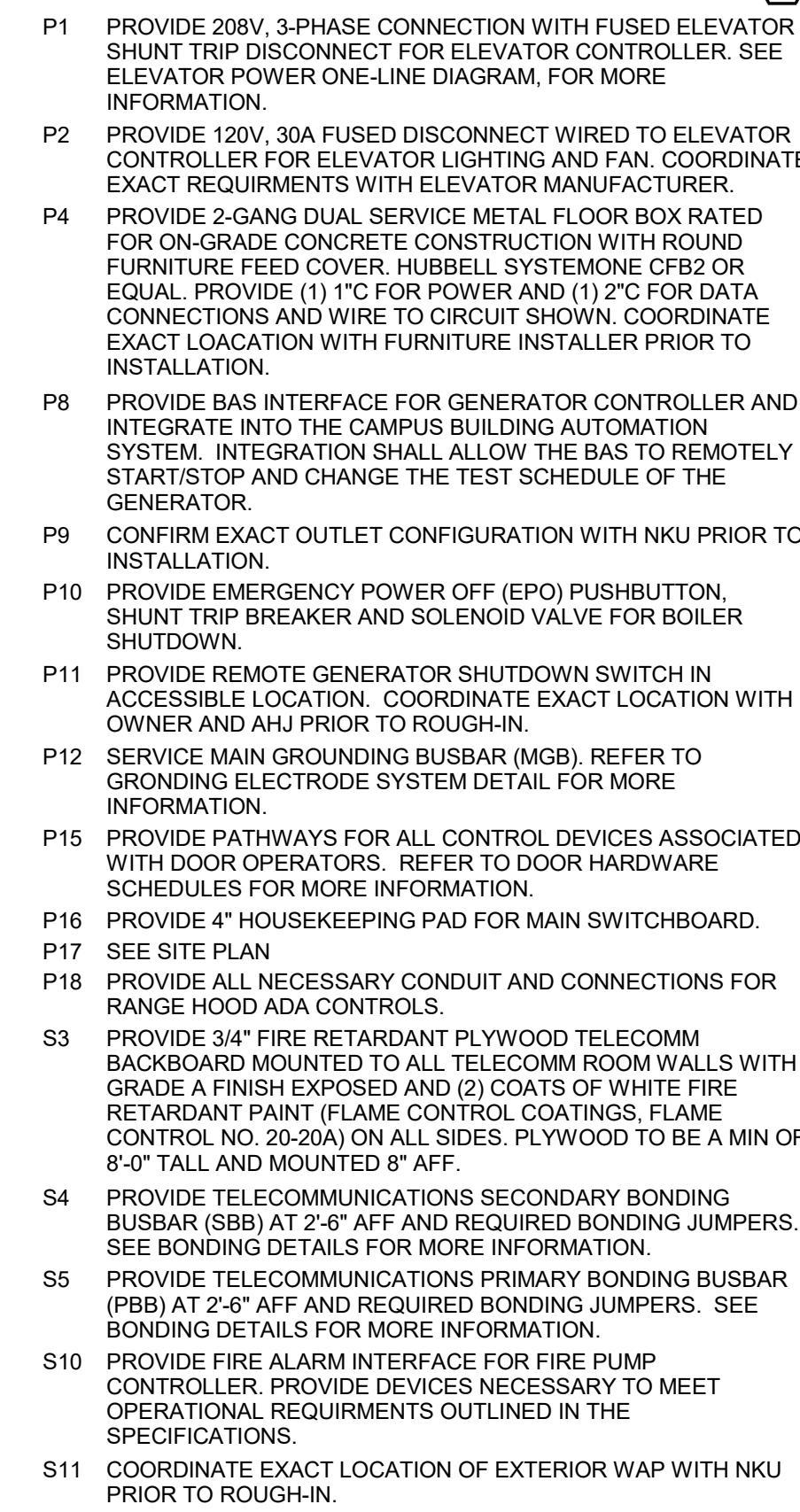
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DRAWING TITLE: LEVEL 5 - LIGHTING PLAN

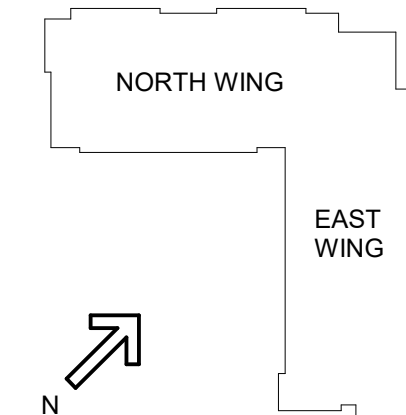
**STATE OF KENTUCKY**  
**ROBERT ANTHONY HANS**  
23143  
**PROFESSIONAL ENGINEER**

**JANUARY 30, 2020**  
DRAWN BY: GCR CHECKED BY: -  
**E105**  
BID & PERMIT SUBMITTAL





REFER TO THE ARCHITECT'S REFLECTED CEILING PLANS, ELEVATIONS, AND CASWORK DETAILS FOR EXACT LOCATIONS OF ALL CEILING AND CASWORK DEVICES. CONTRACTOR SHALL PROVIDE WITH CONTRACTOR SHALL FOLLOW BRANCH CIRCUITING LAYOUT, AS INDICATED ON THE FLOOR PLANS, WITH A MAXIMUM OF THREE (3) BRANCHES PER CIRCUIT. ALL ELECTRICAL DEVICES SHALL BE PROVIDED WITH A DEDICATED NEUTRAL. CONDUCTOR, DEDICATED NEUTRAL CONDUCTORS SHALL BE PROVIDED FOR ALL ELECTRICAL DEVICES. ADDITIONAL CONDUCTORS ARE RUN IN THE SAME CONDUIT WITH THOSE INDICATED. CONTRACTOR SHALL PROVIDE THE FOLLOWING INFORMATION FOR EACH CONDUCTOR PER NEC 310.15(B)(3), AND UPSIZE CONDUIT AS REQUIRED PER NEC 300.17 AND ANNEX C, MULTIWIRE BRANCH CIRCUITS. MULTIWIRE BRANCH CIRCUITS SHALL BE PROVIDED BY A COMMON NEUTRAL CONDUCTOR) SHALL NOT BE PERMITTED. IDENTIFY THE PANEL AND CIRCUIT NUMBER FOR ALL ELECTRICAL DEVICES. CONTRACTOR SHALL PROVIDE INSTRUCTION, PROVIDE CLEAR ADHESIVE LABELS WITH BLACK LETTERING, MARK INSIDES OF ALL DEVICE BOXES WITH PANEL AND CIRCUIT NUMBER. ALL ELECTRICAL DEVICES SHALL BE IDENTIFIED. ALL DISCONNECTS SHALL BE COORDINATED WITH MECHANICAL AND PLUMBING CONTRACTORS. CONTRACTOR SHALL MAINTAIN CLEARANCE IS MAINTAINED PER NEC. NOTIFY OTHER TRADES OF REQUIRED CLEARANCE AREAS TO AVOID ROUTING OF OTHER TRADES. THESE AREAS SHALL BE MAINTAINED CLEAR OF EQUIPMENT OVER MAINTENANCE NAMEPLATES OR ACCESS PANELS OR THROUGH ACCESS/MAINTENANCE CLEARANCES OF EQUIPMENT. CONTRACTOR SHALL PROVIDE A REFERENCE SHEET TO "SYSTEM INSTALLATION MATRIX" (ON SYSTEMS LEGEND SHEET) AND SPECIFICATIONS FOR CONTRACTOR REQUIREMENTS FOR ALL ELECTRICAL DEVICES. THE CONTRACTOR SHALL ROUTE ALL "SYSTEM CONDUIT SUB-ASSEMBLY" IN THE NEAREST CORRIDOR CABLEING PATH (SEE "SUB-UP" DETAILS).



#	DATE	CHANGE DESCRIPTION



**NEW STUDENT HOUSING**

KENTON DRIVE & CARROLL DRIVE  
HIGHLAND HEIGHTS, KY 41099

FOR

**NORTHERN KENTUCKY  
UNIVERSITY**

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COLUMBUS, OHIO 43215

PHONE: (614) 461-4664  
FAX: (614) 280-8881

**MOODY-NOLAN**



**CMTA**  
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JANUARY 30, 2020	
DRAWN BY: GCR	CHECKED BY:
-	
<b>E200</b>	
BID & PERMIT SUBMITTA	

TAGGED NOTES

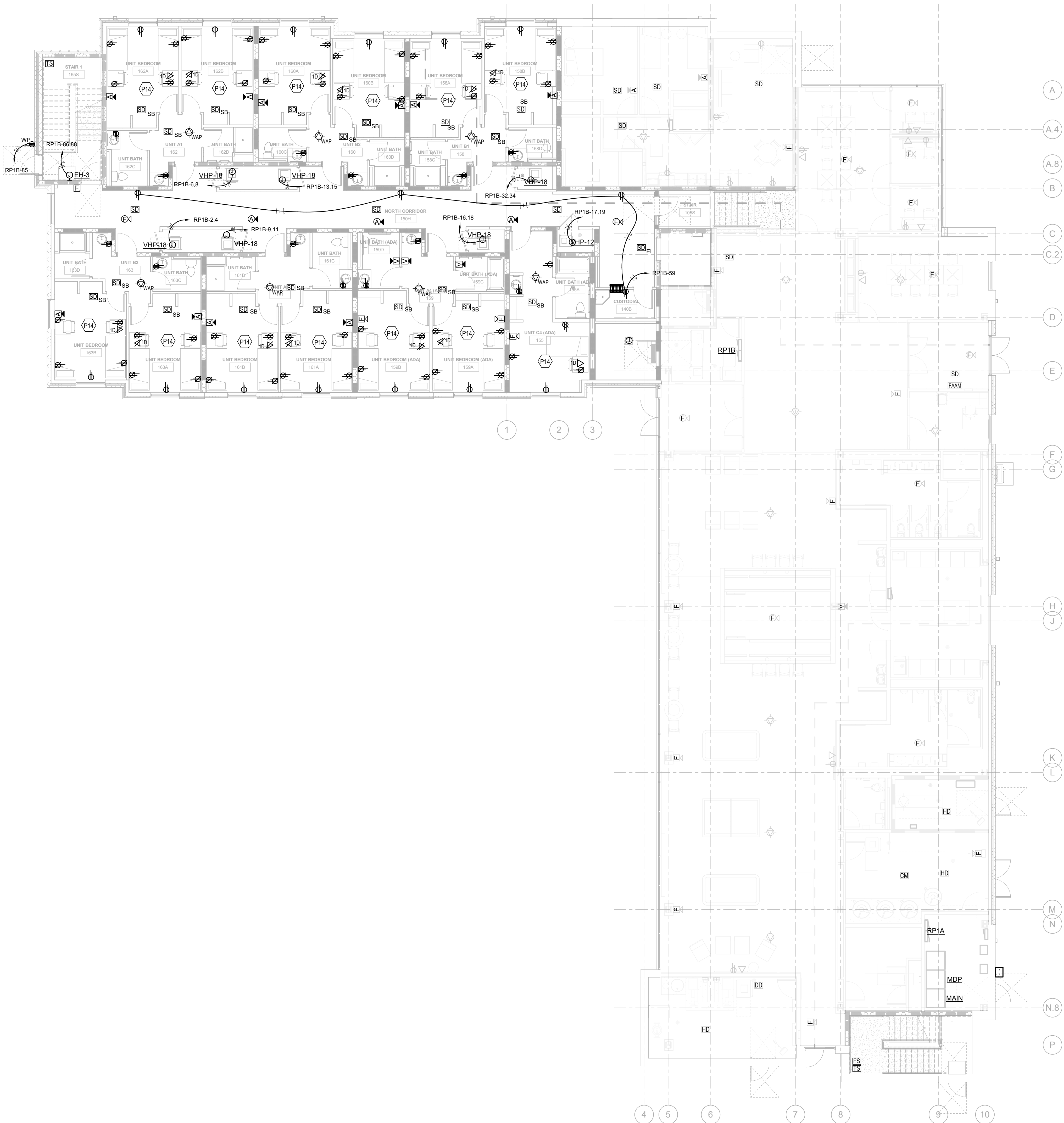
P14 REFER TO ENLARGED PLANS FOR TYPICAL CIRCUITING ARRANGEMENTS IN DORM UNITS AND PANEL SCHEDULES FOR PANEL AND CIRCUIT NUMBERS.



STATE OF KENTUCKY APPROVAL

GENERAL NOTES (POWER):

- A. REFER TO THE ARCHITECT'S REFLECTED CEILING PLANS, ELEVATIONS, AND CASEWORK DETAILS FOR EXACT LOCATIONS OF ALL WALL AND CEILING MOUNTED ELECTRICAL DEVICES.
- B. CONTRACTOR SHALL FOLLOW BRANCH CIRCUITING LAY-OUT, AS INDICATED ON THE FLOOR PLANS, WITH A MAXIMUM OF THREE (3) BRANCH CIRCUITS PER HOMERUN. EACH BRANCH CIRCUIT SHALL BE PROVIDED WITH A DEDICATED NEUTRAL CONDUCTOR. DEDICATED NEUTRAL CONDUCTORS SHALL BE CONSIDERED CURRENT CARRYING. IF ADDITIONAL CONDUCTORS ARE RAN IN THE SAME CONDUIT WITH THOSE INDICATED, CONTRACTOR SHALL DERATE ALL CURRENT CARRYING CONDUCTORS PER NEC 310.15(B)(3). AND UPSIZE CONDUIT AS REQUIRED PER NEC 300.17 AND ANNEX C. MULTIWIRE BRANCH CIRCUITS AS DEFINED IN NEC 100.7(D)(4) (CIRCUITS SHARING A COMMON NEUTRAL CONDUCTOR) SHALL NOT BE PERMITTED.
- C. IDENTIFY THE PANEL AND CIRCUIT NUMBER FOR ALL RECEPTACLES, SWITCHES, ETC. IN AREA OF CONSTRUCTION. PROVIDE CLEAR ADHESIVE LABELS WITH BLACK LETTERING. MARK INSIDES OF ALL DEVICE BOXES WITH PANEL AND CIRCUIT NUMBER.
- D. LOCATIONS OF ELECTRICAL CONNECTIONS AND LOCAL DISCONNECTS SHALL BE COORDINATED WITH MECHANICAL AND PLUMBING CONTRACTORS TO ENSURE ACCESS AND WORKING CLEARANCE IS MAINTAINED PER NEC. NOTIFY OTHER TRADES OF REQUIRED CLEARANCE AREAS TO AVOID ROUTING OF OTHER SYSTEMS IN THESE AREAS. DO NOT INSTALL ELECTRICAL EQUIPMENT OVER EQUIPMENT NAMEPLATES OR ACCESS PANELS OR THROUGH ACCESS/MAINTENANCE CLEARANCES OF EQUIPMENT BY OTHER TRADES.
- E. REFER TO "SYSTEM INSTALLATION MATRIX" (ON SYSTEMS LEGEND SHEET) AND SPECIFICATIONS FOR CONTRACTOR REQUIREMENTS OF EACH SYSTEM.
- F. THE CONTRACTOR SHALL ROUTE ALL "SYSTEM CONDUIT STUB-UPS" TO THE NEAREST CORRIDOR CABLING PATH (SEE "STUB-UP" DETAILS).







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

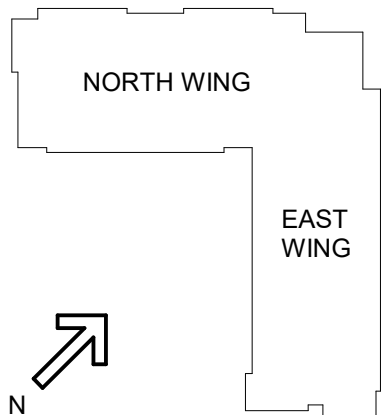
P14 REFER TO ENLARGED PLANS FOR TYPICAL CIRCUITING ARRANGEMENTS IN DORM UNITS AND PANEL SCHEDULES FOR PANEL AND CIRCUIT NUMBERS

S4 PROTECT 24" SQUARE PANELS WITH 1/2" PLYWOOD TELECOMM BACKBOARD MOUNTED TO ALL TELECOMM ROOM WALLS WITH GRADE A FINISH EXPOSED AND (2) COATS OF WHITE FIRE RETARDANT PANEL (FLAME CLASS 1) COATINGS. PLYWOOD TO BE MIN OF 8'-0" TALL AND MOUNTED 8" AFF.

S4 PROVIDE TELECOMMUNICATIONS SECONDARY BONDING BUSBAR (SBB) AT 2'-6" AFF AND REQUIRED BONDING JUMPERS. SEE BONDING DETAIL FOR SBB AND JUMPER CONNECTIONS.

S86 PROVIDE RE-ENTERABLE SLEEVES AT FULL HEIGHT WALLS AND AT FLOORS TO FACILITATE CABLE ROUTING. PROVIDE RE-ENTER SLEEVES AT FULL HEIGHT WALLS. SEE SLEEVES SERIES 100-1 SEE PLANS FOR SLEEVE QUANTITIES.

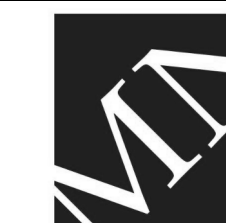
REFER TO THE ARCHITECT'S REFLECTED CEILING PLANS, ELEVATIONS, AND CASEWORK DETAILS FOR EXACT LOCATIONS OF PANELS, CEILING LINE, AND CASEWORK. CONTRACTOR SHALL FOLLOW BRANCH CIRCUITING LAYOUT, AS INDICATED ON THE FLOOR PLANS, WITH A MAXIMUM OF THREE (3) BRANCHES PER CIRCUIT. CONTRACTOR SHALL PROVIDE EACH BRANCH WITH A DEDICATED NEUTRAL CONDUCTOR. DEDICATED NEUTRAL CONDUCTORS SHALL BE PROVIDED FOR EACH BRANCH CIRCUIT. JOINTLY SHARED CONDUCTORS ARE RAN IN THE SAME CONDUIT WITH THOSE INDICATED. CONTRACTOR SHALL DERATE ALL CURRENT CARRYING CAPACITY OF NEUTRAL CONDUCTORS TO 80% OF THE CONDUIT AS REQUIRED PER NEC 300.17 AND ANNEX C. MULTIWIRE BRANCH CIRCUITS SHALL BE INSTALLED IN SEPARATE CONDUITS. JOINTLY SHARED (COMMON NEUTRAL CONDUCTOR) SHALL NOT BE PERMITTED. IDENTIFY THE PANEL AND CIRCUIT NUMBER FOR ALL PANELS AND CIRCUITS. PROVIDE CLEAR ADHESIVE LABELS WITH BLACK LETTERING. MARK INSIDES OF ALL DEVICE BOXES WITH PANEL AND CIRCUIT NUMBER. PROVIDE CLEAR ADHESIVE LABELS WITH BLACK LETTERING. DISCONNECTS SHALL BE COORDINATED WITH MECHANICAL AND PLUMBING CONTRACTORS TO ENSURE ACCESS AND WORKING SPACE FOR MAINTENANCE. PROVIDE CLEAR ADHESIVE LABELS OF REQUIRED CLEARANCE AREAS TO AVOID ROUTING OF OTHER SYSTEMS THROUGH THESE AREAS. PROVIDE CLEAR ADHESIVE LABELS OF EQUIPMENT OVER EQUIPMENT NAMEPLATES OR ACCESS PANELS OR THROUGH ACCESS/MAINTENANCE CLEARANCES OF EQUIPMENT. REFER TO OTHER SYSTEMS' SPECIFICATIONS TO REFER TO "SYSTEM INSTALLATION MATRIX" (ON SYSTEMS LEGEND SHEETS) AND SPECIFICATIONS FOR CONTRACTOR REQUIREMENTS OF EACH SYSTEM. THE CONTRACTOR SHALL ROUTE ALL "SYSTEM CONDUIT STUB-UPS" TO THE NEAREST CORNER CABLING PATH (SEE "STUB-UP" DETAILS).



#	DATE	CHANGE DESCRIPTION



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UNIVERSITY**



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DRAWING TITLE:

## LEVEL 2 - POWER/SYSTEMS PLAN

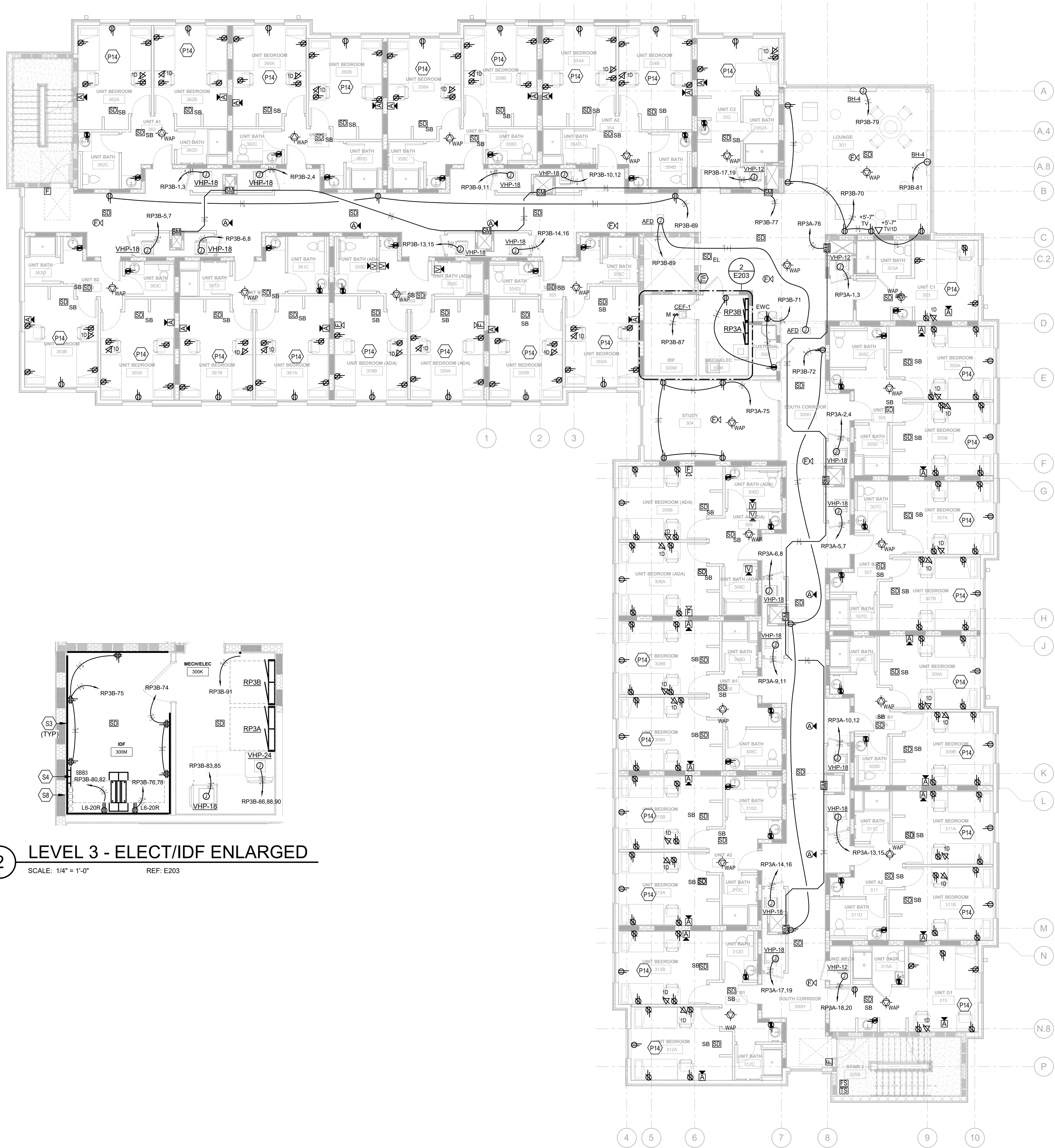


JANUARY 30, 2020

DRAWN BY: GCR	CHECKED BY:
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## E202

BID &amp; PERMIT SUBMITTAL



2 LEVEL 3 - ELECT/IDF ENLARGED  
SCALE: 1/4" = 1'-0" REF: E203

1 LEVEL 3 - POWER/SYSTEMS  
SCALE: 1/8" = 1'-0"

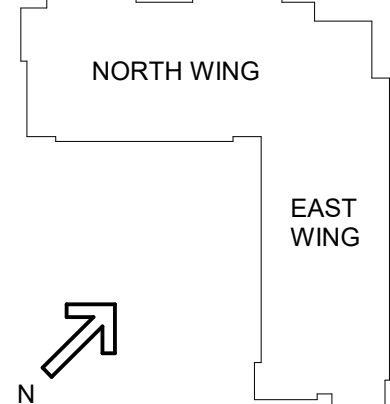
### TAGGED NOTES

- P14 REFER TO ENLARGED PLANS FOR TYPICAL CIRCUITING ARRANGEMENTS IN DORM UNITS AND PANEL SCHEDULES FOR PANEL AND CIRCUIT NUMBERS.
- S3 PROVIDE 3/4" FIRE RETARDANT PLYWOOD TELECOMM BACKBOARD MOUNTED TO ALL TELECOMM ROOM WALLS WITH GRADE A FINISH EXPOSED AND (2) COATS OF WHITE FIRE RETARDANT PAINT (FLAME CONTROL COATINGS, FLAME CONTROL NO. 20-20A) ON ALL SIDES. PLYWOOD TO BE A MIN OF 8'-0" TALL AND MOUNTED 8' AFF.
- S4 PROVIDE TELECOMMUNICATIONS SECONDARY BONDING BUSBAR (SBB) AT 2'-0" AFF AND REQUIRED BONDING JUMPERS. SEE BONDING DETAILS FOR MORE INFORMATION.
- S8 PROVIDE RE-PENTETRABLE SLEEVES AT FULL HEIGHT WALLS AND AT FLOORS TO FACILITATE CABLE ROUTING. PROVIDE RATED SLEEVES AT ALL RATED ASSEMBLIES. (STIEZ PATH SERIES 44+) SEE PLANS FOR SLEEVE QUANTITIES.

### STATE OF KENTUCKY APPROVAL

#### GENERAL NOTES (POWER):

- A. REFER TO THE ARCHITECT'S REFLECTED CEILING PLANS, ELEVATIONS, AND CASEWORK DETAILS FOR EXACT LOCATIONS OF ALL WALL AND CEILING MOUNTED ELECTRICAL DEVICES.
- B. CONTRACTOR SHALL FOLLOW BRANCH CIRCUITING LAY-OUT, AS INDICATED ON THE FLOOR PLANS, WITH A MAXIMUM OF THREE (3) BRANCH CIRCUITS PER HOMERUN. EACH BRANCH CIRCUIT SHALL BE PROVIDED WITH A DEDICATED NEUTRAL CONDUCTOR. DEDICATED NEUTRAL CONDUCTORS SHALL BE CONSIDERED CURRENT CARRYING. IF ADDITIONAL CONDUCTORS ARE RAN IN THE SAME CONDUIT WITH THOSE INDICATED, CONTRACTOR SHALL DERATE ALL CURRENT CARRYING CONDUCTORS PER NEC 310.15(B)(3), AND UPSIZE CONDUIT AS REQUIRED PER NEC 300.17 AND ANNEX C. MULTI-WIRE BRANCH CIRCUITS AS DEFINED IN NEC 100.12(D)(4) (CIRCUITS SHARING A COMMON NEUTRAL CONDUCTOR) SHALL NOT BE PERMITTED.
- C. IDENTIFY THE PANEL AND CIRCUIT NUMBER FOR ALL RECEPTACLES, SWITCHES, ETC. IN AREA OF CONSTRUCTION. PROVIDE CLEAR ADHESIVE LABELS WITH BLACK LETTERING. MARK INSIDES OF ALL DEVICE BOXES WITH PANEL AND CIRCUIT NUMBER.
- D. LOCATIONS OF ELECTRICAL CONNECTIONS AND LOCAL DISCONNECTS SHALL BE COORDINATED WITH MECHANICAL AND PLUMBING CONTRACTORS TO ENSURE ACCESS AND WORKING CLEARANCE IS MAINTAINED PER NEC. NOTIFY OTHER TRADES OF REQUIRED CLEARANCE AREAS TO AVOID ROUTING OF OTHER SYSTEMS IN THESE AREAS. DO NOT INSTALL ELECTRICAL EQUIPMENT OVER EQUIPMENT NAMEPLATES OR ACCESS PANELS OR THROUGH ACCESS/MAINTENANCE CLEARANCES OF EQUIPMENT BY OTHER TRADES.
- E. REFER TO "SYSTEM INSTALLATION MATRIX" (ON SYSTEMS LEGEND SHEET) AND SPECIFICATIONS FOR CONTRACTOR REQUIREMENTS OF EACH SYSTEM.
- F. THE CONTRACTOR SHALL ROUTE ALL "SYSTEM CONDUIT STUB-UPS" TO THE NEAREST CORRIDOR CABLING PATH (SEE "STUB-UP" DETAILS).



#	DATE	CHANGE DESCRIPTION

**NEW STUDENT HOUSING**  
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HIGHLAND HEIGHTS, KY 41099  
FOR  
**NORTHERN KENTUCKY UNIVERSITY**

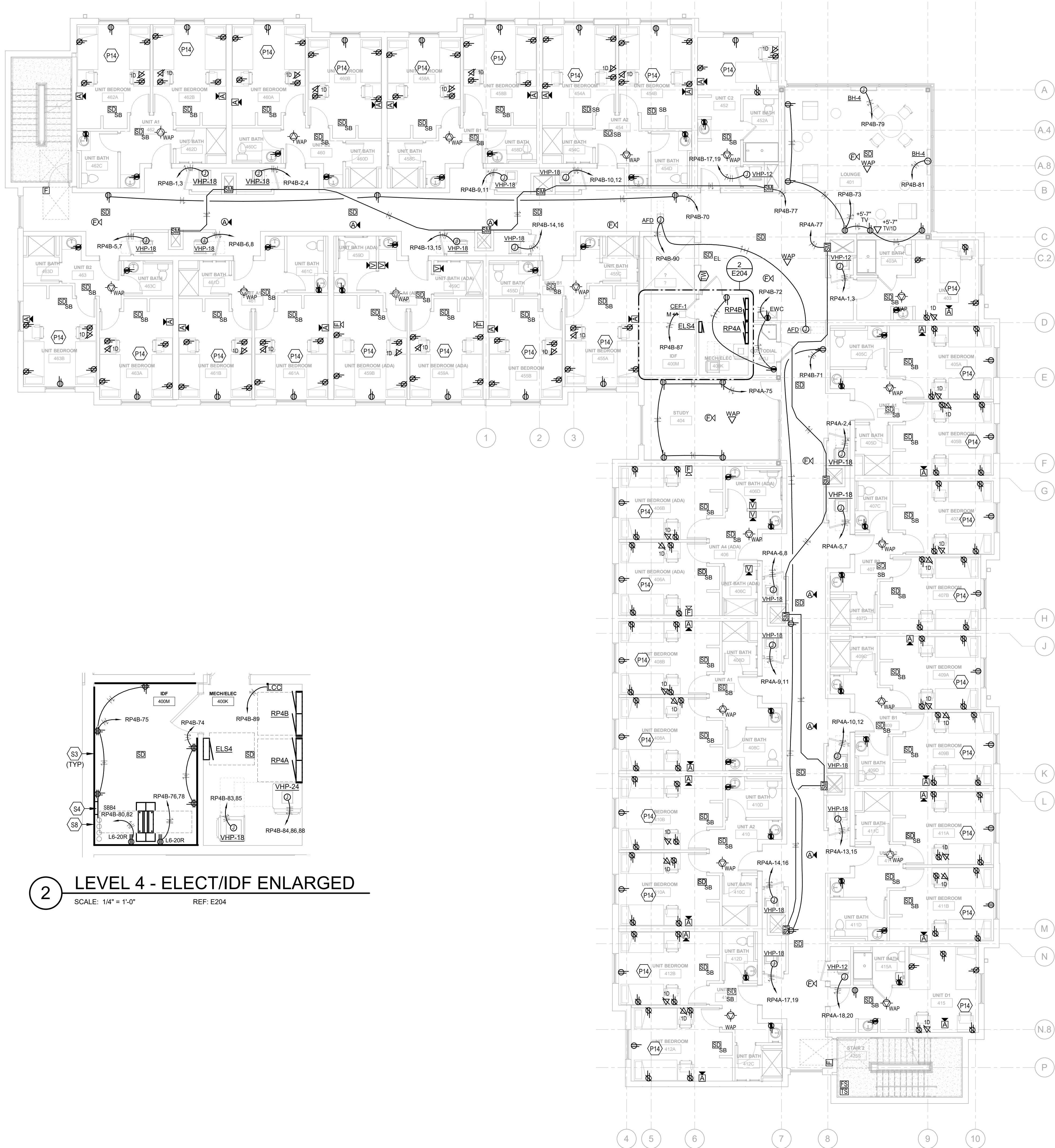
**MOODY-NOLAN**  
300 SPRUCE STREET  
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PHONE: (614) 461-4664  
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### DRAWING TITLE: LEVEL 3 - POWER/SYSTEMS PLAN

**STATE OF KENTUCKY**  
ROBERT ANTHONY HANS  
23143  
Professional Engineer  
JANUARY 30, 2020  
DRAWN BY: GCR CHECKED BY: -  
**E203**  
BID & PERMIT SUBMITTAL





**2 LEVEL 4 - ELECT/IDF ENLARGED**  
SCALE: 1/4" = 1'-0" REF: E204

**1 LEVEL 4 - POWER/SYSTEMS**  
SCALE: 1/8" = 1'-0"

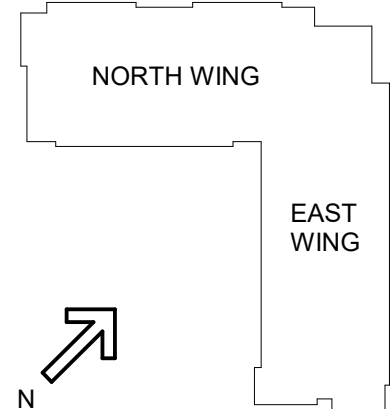
**TAGGED NOTES**

- P14 REFER TO ENLARGED PLANS FOR TYPICAL CIRCUITING ARRANGEMENTS IN DORM UNITS AND PANEL SCHEDULES FOR PANEL AND CIRCUIT NUMBERS.
- S3 PROVIDE 3/4" FIRE RETARDANT PLYWOOD TELECOMM BACKBOARD MOUNTED TO ALL TELECOMM ROOM WALLS WITH GRADE A FINISH EXPOSED AND (2) COATS OF WHITE FIRE RETARDANT PAINT (FLAME CONTROL COATINGS, FLAME CONTROL NO. 20-20A) ON ALL SIDES. PLYWOOD TO BE A MIN OF 8'-0" TALL AND MOUNTED 8' AFF.
- S4 PROVIDE TELECOMMUNICATIONS SECONDARY BONDING BUSBAR (SBB) AT 2'-6" AFF AND REQUIRED BONDING JUMPERS. SEE BONDING DETAILS FOR MORE INFORMATION.
- S8 PROVIDE RE-PENTETRABLE SLEEVES AT FULL HEIGHT WALLS AND AT FLOORS TO FACILITATE CABLE ROUTING. PROVIDE RATED SLEEVES AT ALL RATED ASSEMBLIES. (SEE EZ PATH SERIES 44+) SEE PLANS FOR SLEEVE QUANTITIES.

**STATE OF KENTUCKY APPROVAL**

**GENERAL NOTES (POWER):**

- A. REFER TO THE ARCHITECT'S REFLECTED CEILING PLANS, ELEVATIONS, AND CASEWORK DETAILS FOR EXACT LOCATIONS OF ALL WALL AND CEILING MOUNTED ELECTRICAL DEVICES.
- B. CONTRACTOR SHALL FOLLOW BRANCH CIRCUITING LAY-OUT, AS INDICATED ON THE FLOOR PLANS, WITH A MAXIMUM OF THREE (3) BRANCH CIRCUITS PER HOMERUN. EACH BRANCH CIRCUIT SHALL BE PROVIDED WITH A DEDICATED NEUTRAL CONDUCTOR. DEDICATED NEUTRAL CONDUCTORS SHALL BE CONSIDERED CURRENT CARRYING. IF ADDITIONAL CONDUCTORS ARE RAN IN THE SAME CONDUIT WITH THOSE INDICATED, CONTRACTOR SHALL DERATE ALL CURRENT CARRYING CONDUCTORS PER NEC 310.15(B)(3), AND UPSIZE CONDUIT AS REQUIRED PER NEC 300.17 AND ANNEX C. MULTIWIRED BRANCH CIRCUITS AS DEFINED IN NEC 100.7.210.4 (CIRCUITS SHARING A COMMON NEUTRAL CONDUCTOR) SHALL NOT BE PERMITTED.
- C. IDENTIFY THE PANEL AND CIRCUIT NUMBER FOR ALL RECEPTACLES, SWITCHES, ETC. IN AREA OF CONSTRUCTION. PROVIDE CLEAR ADHESIVE LABELS WITH BLACK LETTERING. MARK INSIDES OF ALL DEVICE BOXES WITH PANEL AND CIRCUIT NUMBER.
- D. LOCATIONS OF ELECTRICAL CONNECTIONS AND LOCAL DISCONNECTS SHALL BE COORDINATED WITH MECHANICAL AND PLUMBING CONTRACTORS TO ENSURE ACCESS AND WORKING CLEARANCE IS MAINTAINED PER NEC. NOTIFY OTHER TRADES OF REQUIRED CLEARANCE AREAS TO AVOID ROUTING OF OTHER SYSTEMS IN THESE AREAS. DO NOT INSTALL ELECTRICAL EQUIPMENT OVER EQUIPMENT NAMEPLATES OR ACCESS PANELS OR THROUGH ACCESS/MAINTENANCE CLEARANCES OF EQUIPMENT BY OTHER TRADES.
- E. REFER TO "SYSTEM INSTALLATION MATRIX" ON SYSTEMS LEGEND SHEET AND SPECIFICATIONS FOR CONTRACTOR REQUIREMENTS OF EACH SYSTEM.
- F. THE CONTRACTOR SHALL ROUTE ALL "SYSTEM CONDUIT STUB-UPS" TO THE NEAREST CORRIDOR CABLING PATH (SEE "STUB-UP" DETAILS).



#	DATE	CHANGE DESCRIPTION

**NEW STUDENT HOUSING**  
KENTON DRIVE & CARROLL DRIVE  
HIGHLAND HEIGHTS, KY 41099  
FOR  
**NORTHERN KENTUCKY UNIVERSITY**

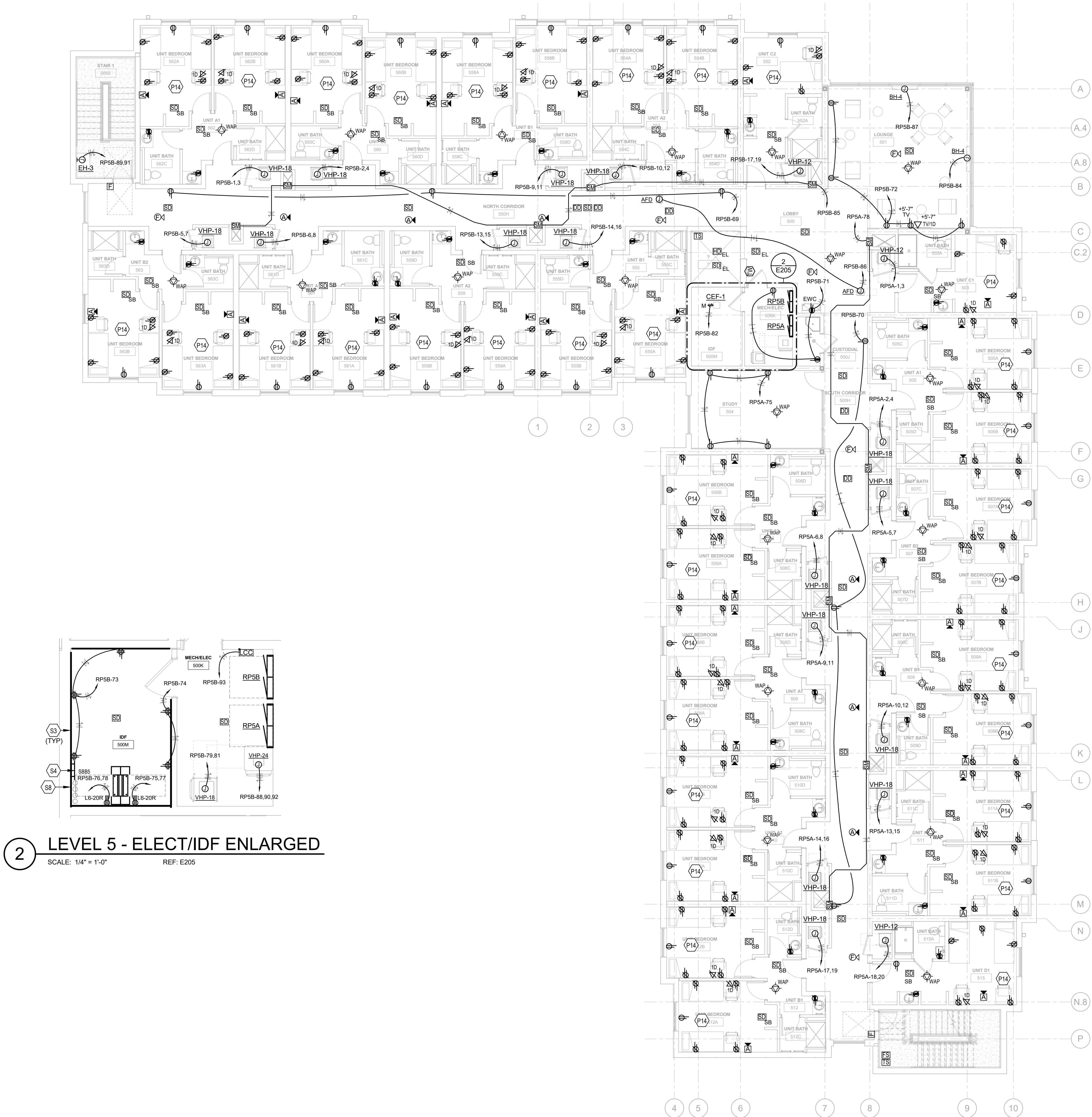
**MOODY•NOLAN**  
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COLUMBUS, OHIO 43215  
PHONE: (614) 461-4664  
FAX: (614) 280-8881

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**DRAWING TITLE:**  
**LEVEL 4 - POWER/SYSTEMS**  
**PLAN**

**STATE OF KENTUCKY**  
**ROBERT ANTHONY HANS**  
**23143**  
**PROFESSIONAL ENGINEER**

**JANUARY 30, 2020**  
DRAWN BY: GCR CHECKED BY: -  
**E204**  
BID & PERMIT SUBMITTAL



**2 LEVEL 5 - ELECT/IDF ENLARGED**  
SCALE: 1/4" = 1'-0" REF: E205

**1 LEVEL 5 - POWER/SYSTEMS**  
SCALE: 1/8" = 1'-0"

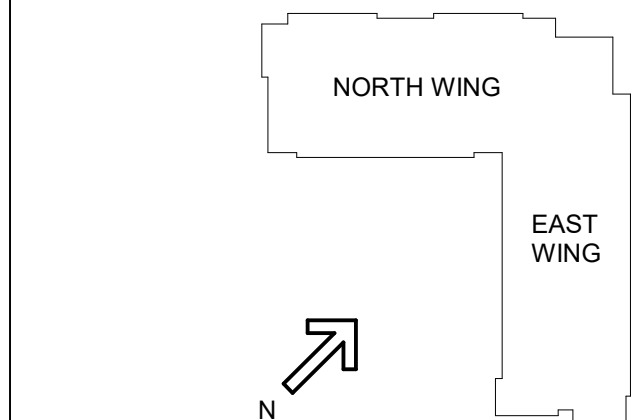
**TAGGED NOTES**

- P14 REFER TO ENLARGED PLANS FOR TYPICAL CIRCUITING ARRANGEMENTS IN DORM UNITS AND PANEL SCHEDULES FOR PANEL AND CIRCUIT NUMBERS.
- S3 PROVIDE 3/4" FIRE RETARDANT PLYWOOD TELECOMM BACKBOARD MOUNTED TO ALL TELECOMM ROOM WALLS WITH GRADE A FINISH EXPOSED AND (2) COATS OF WHITE FIRE RETARDANT PAINT (FLAME CONTROL COATINGS, FLAME CONTROL NO. 20-20A) ON ALL SIDES. PLYWOOD TO BE A MIN OF 8'-0" TALL AND MOUNTED 8' AFF.
- S4 PROVIDE TELECOMMUNICATIONS SECONDARY BONDING BUSBAR (SBB) AT 2'-0" AFF AND REQUIRED BONDING JUMPERS. SEE BONDING DETAILS FOR MORE INFORMATION.
- S8 PROVIDE RE-PENTETRABLE SLEEVES AT FULL HEIGHT WALLS AND AT FLOORS TO FACILITATE CABLE ROUTING. PROVIDE RATED SLEEVES AT ALL RATED ASSEMBLIES (STIEZ PATH SERIES 44+) SEE PLANS FOR SLEEVE QUANTITIES.

**STATE OF KENTUCKY APPROVAL**

**GENERAL NOTES (POWER):**

- A. REFER TO THE ARCHITECT'S REFLECTED CEILING PLANS, ELEVATIONS, AND CASEWORK DETAILS FOR EXACT LOCATIONS OF ALL WALL AND CEILING MOUNTED ELECTRICAL DEVICES.
- B. CONTRACTOR SHALL FOLLOW BRANCH CIRCUITING LAY-OUT, AS INDICATED ON THE FLOOR PLANS, WITH A MAXIMUM OF THREE (3) BRANCH CIRCUITS PER HOMERUN. EACH BRANCH CIRCUIT SHALL BE PROVIDED WITH A DEDICATED NEUTRAL CONDUCTOR. DEDICATED NEUTRAL CONDUCTORS SHALL BE CONSIDERED CURRENT CARRYING. IF ADDITIONAL CONDUCTORS ARE RAN IN THE SAME CONDUIT WITH THOSE INDICATED, CONTRACTOR SHALL DERATE ALL CURRENT CARRYING CONDUCTORS PER NEC 310.15(B)(3), AND UPSIZE CONDUIT AS REQUIRED PER NEC 300.17 AND ANNEX C. MULTI-WIRE BRANCH CIRCUITS AS DEFINED IN NEC 100.7/210.4 (CIRCUITS SHARING A COMMON NEUTRAL CONDUCTOR) SHALL NOT BE PERMITTED.
- C. IDENTIFY THE PANEL AND CIRCUIT NUMBER FOR ALL RECEPTACLES, SWITCHES, ETC. IN AREA OF CONSTRUCTION. PROVIDE CLEAR ADHESIVE LABELS WITH BLACK LETTERING. MARK INSIDES OF ALL DEVICE BOXES WITH PANEL AND CIRCUIT NUMBER.
- D. LOCATIONS OF ELECTRICAL CONNECTIONS AND LOCAL DISCONNECTS SHALL BE COORDINATED WITH MECHANICAL AND PLUMBING CONTRACTORS TO ENSURE ACCESS AND WORKING CLEARANCE IS MAINTAINED PER NEC. NOTIFY OTHER TRADES OF REQUIRED CLEARANCE AREAS TO AVOID ROUTING OF OTHER SYSTEMS IN THESE AREAS. DO NOT INSTALL ELECTRICAL EQUIPMENT OVER EQUIPMENT NAMEPLATES OR ACCESS PANELS OR THROUGH ACCESS/MAINTENANCE CLEARANCES OF EQUIPMENT BY OTHER TRADES.
- E. REFER TO "SYSTEM INSTALLATION MATRIX" (ON SYSTEMS LEGEND SHEET) AND SPECIFICATIONS FOR CONTRACTOR REQUIREMENTS OF EACH SYSTEM.
- F. THE CONTRACTOR SHALL ROUTE ALL "SYSTEM CONDUIT STUB-UPS" TO THE NEAREST CORRIDOR CABLING PATH (SEE "STUB-UP" DETAILS).



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**MOODY•NOLAN**  
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FAX: (614) 280-8881

**CMTA**  
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**DRAWING TITLE:**  
**LEVEL 5 - POWER/SYSTEMS**  
**PLAN**

**STATE OF KENTUCKY**  
ROBERT ANTHONY HANS  
23143  
Professional Engineer  
JANUARY 30, 2020  
DRAWN BY: GCR CHECKED BY: -  
**E205**  
BID & PERMIT SUBMITTAL



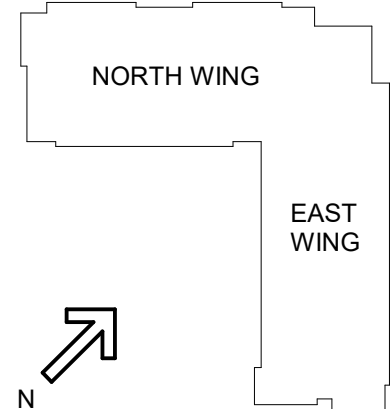
TAGGED NOTES  
L1 TO FIXTURES BELOW.



STATE OF KENTUCKY APPROVAL

GENERAL NOTES (POWER):


- A. REFER TO THE ARCHITECT'S REFLECTED CEILING PLANS, ELEVATIONS, AND CASEWORK DETAILS FOR EXACT LOCATIONS OF ALL WALL AND CEILING MOUNTED ELECTRICAL DEVICES.
- B. CONTRACTOR SHALL FOLLOW BRANCH CIRCUITING LAY-OUT, AS INDICATED ON THE FLOOR PLANS, WITH A MAXIMUM OF THREE (3) BRANCH CIRCUITS PER HOMERUN. EACH BRANCH CIRCUIT SHALL BE PROVIDED WITH A DEDICATED NEUTRAL CONDUCTOR. DEDICATED NEUTRAL CONDUCTORS SHALL BE CONSIDERED CURRENT CARRYING. IF ADDITIONAL CONDUCTORS ARE RAN IN THE SAME CONDUIT WITH THOSE INDICATED, CONTRACTOR SHALL DERATE ALL CURRENT CARRYING CONDUCTORS PER NEC 310.15(B)(3), AND UPSIZE CONDUIT AS REQUIRED PER NEC 300.17 AND ANNEX C. MULTIWIRED BRANCH CIRCUITS AS DEFINED IN NEC 100 / 210.4 (CIRCUITS SHARING A COMMON NEUTRAL CONDUCTOR) SHALL NOT BE PERMITTED.
- C. IDENTIFY THE PANEL AND CIRCUIT NUMBER FOR ALL RECEPTACLES, SWITCHES, ETC. IN AREA OF CONSTRUCTION. PROVIDE CLEAR ADHESIVE LABELS WITH BLACK LETTERING. MARK INSIDES OF ALL DEVICE BOXES WITH PANEL AND CIRCUIT NUMBER.
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- E. REFER TO "SYSTEM INSTALLATION MATRIX" (ON SYSTEMS LEGEND SHEET) AND SPECIFICATIONS FOR CONTRACTOR REQUIREMENTS OF EACH SYSTEM.
- F. THE CONTRACTOR SHALL ROUTE ALL "SYSTEM CONDUIT STUB-UPS" TO THE NEAREST CORRIDOR CABLING PATH (SEE "STUB-UP" DETAILS).



#	DATE	CHANGE DESCRIPTION



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DRAWING TITLE:

ROOF - POWER/SYSTEMS PLAN

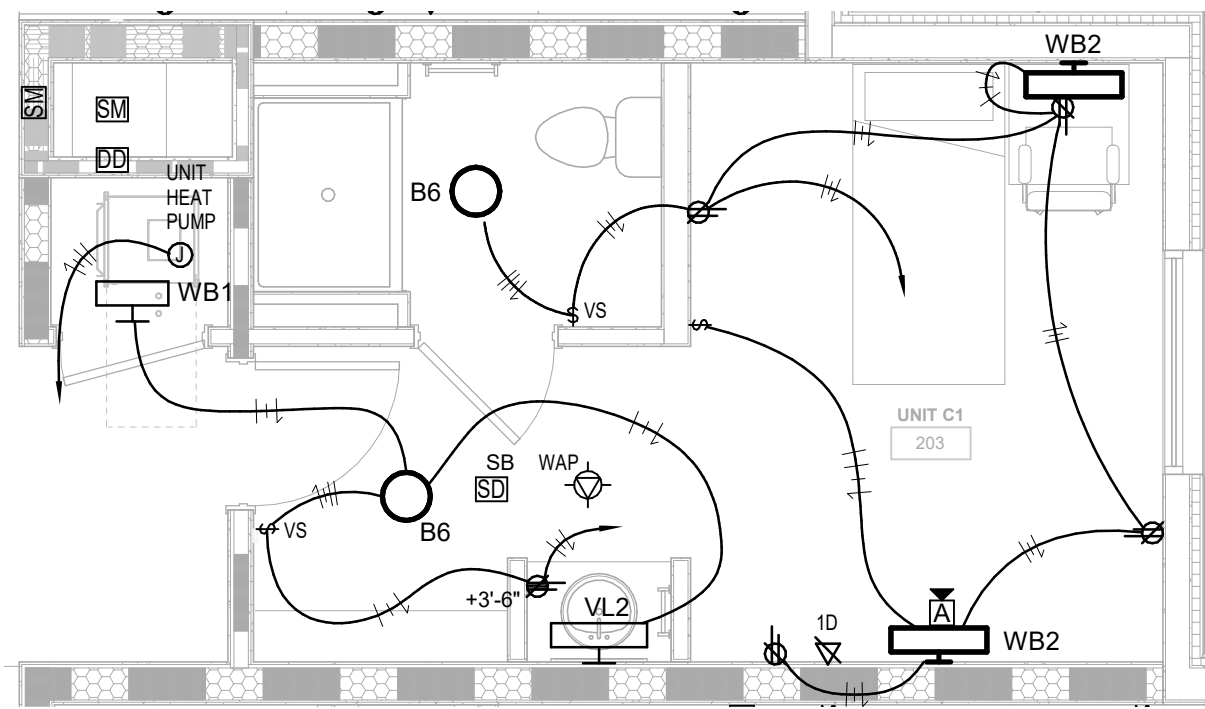


JANUARY 30, 2020	
DRAWN BY: GCR	CHECKED BY:
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<b>E206</b>	
BID & PERMIT SUBMITTAL	

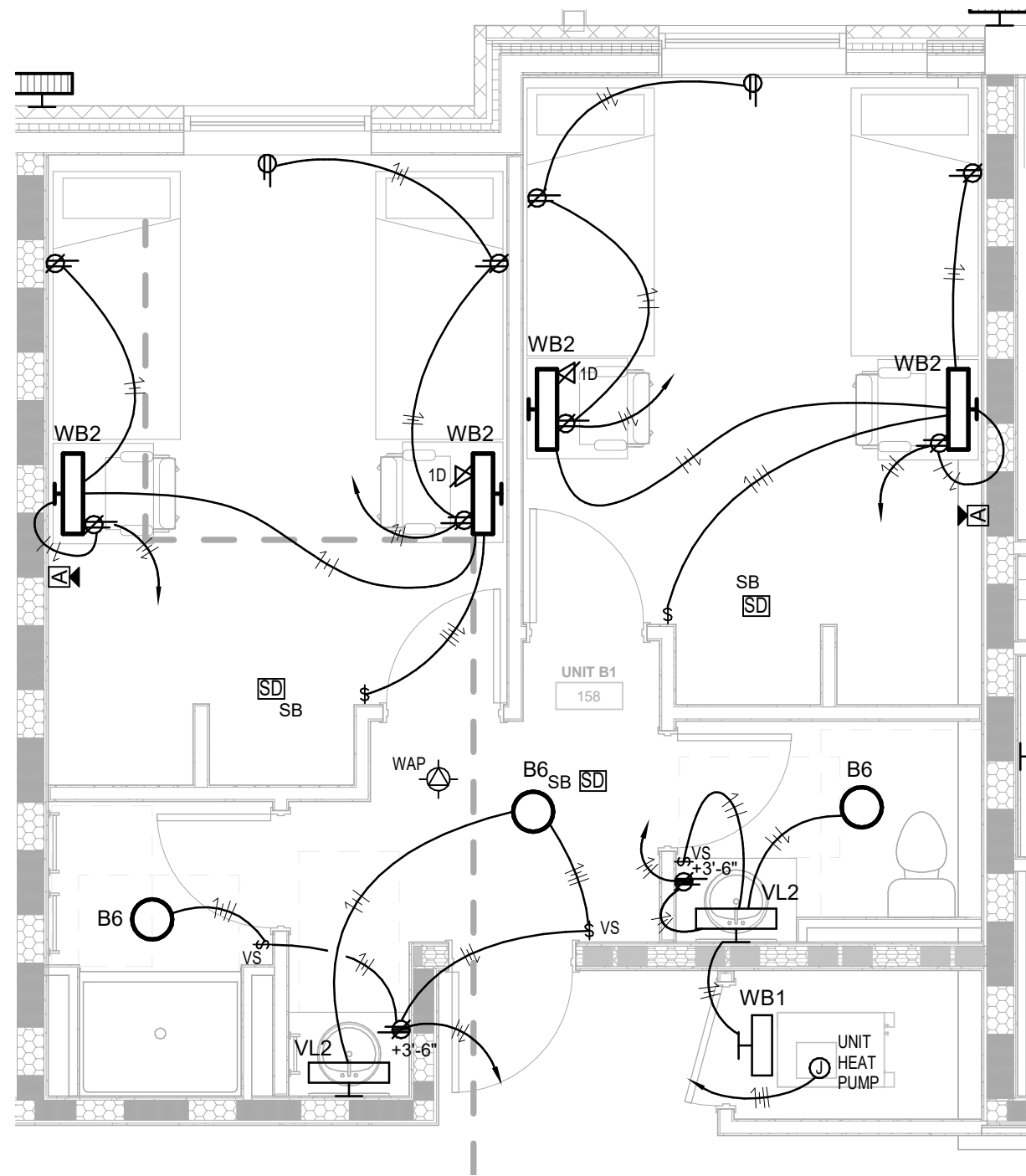
PROVIDE LISTED LIGHTNING PROTECTION SYSTEM IN ACCORDANCE WITH NFPA 780. SEE SPECIFICATIONS FOR MORE INFORMATION.

PROVIDE LISTED LIGHTNING PROTECTION SYSTEM IN ACCORDANCE WITH NFPA 780. SEE SPECIFICATIONS FOR MORE INFORMATION.

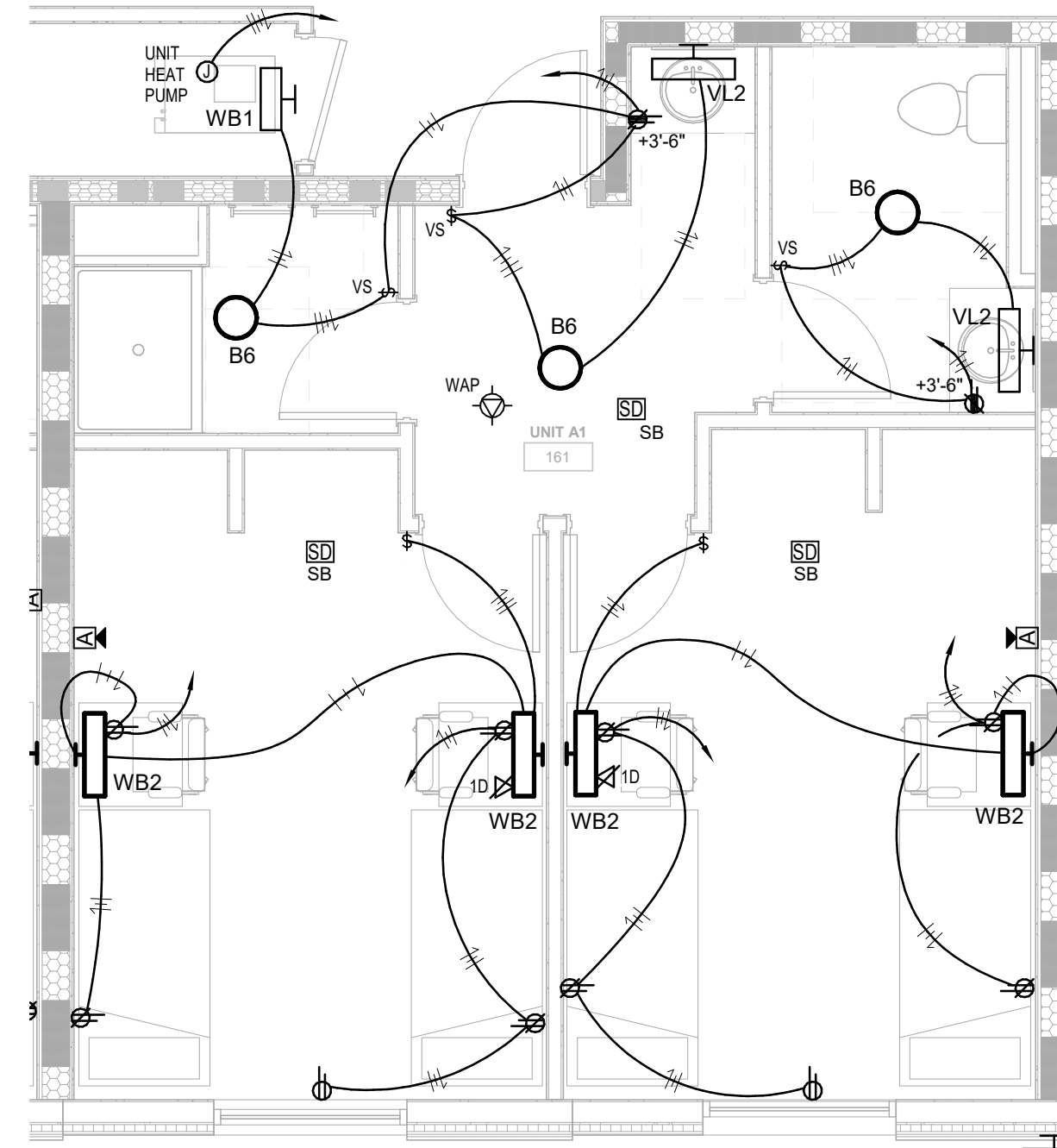
1 ROOF - POWER/SYSTEMS  
SCALE: 1/8" = 1'-0"



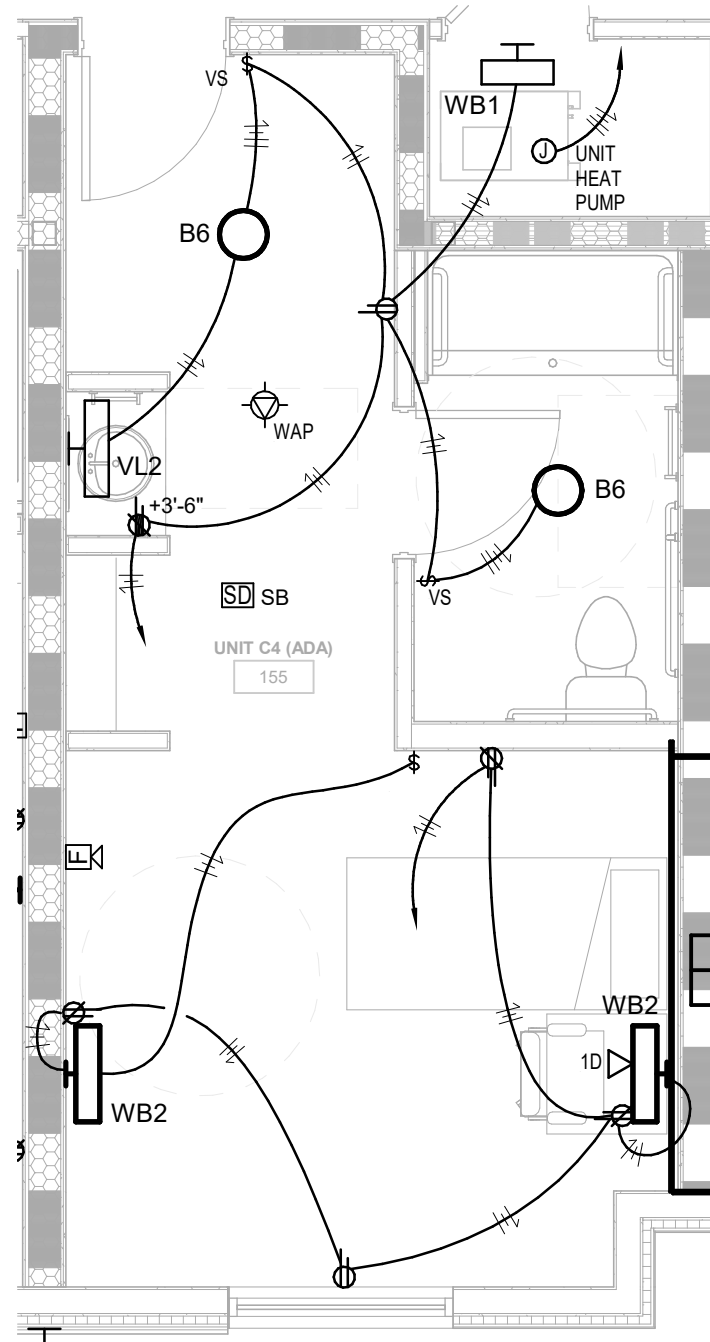
6 UNIT C1 TYPICAL WIRING PLAN  
SCALE: 1/4" = 1'-0"



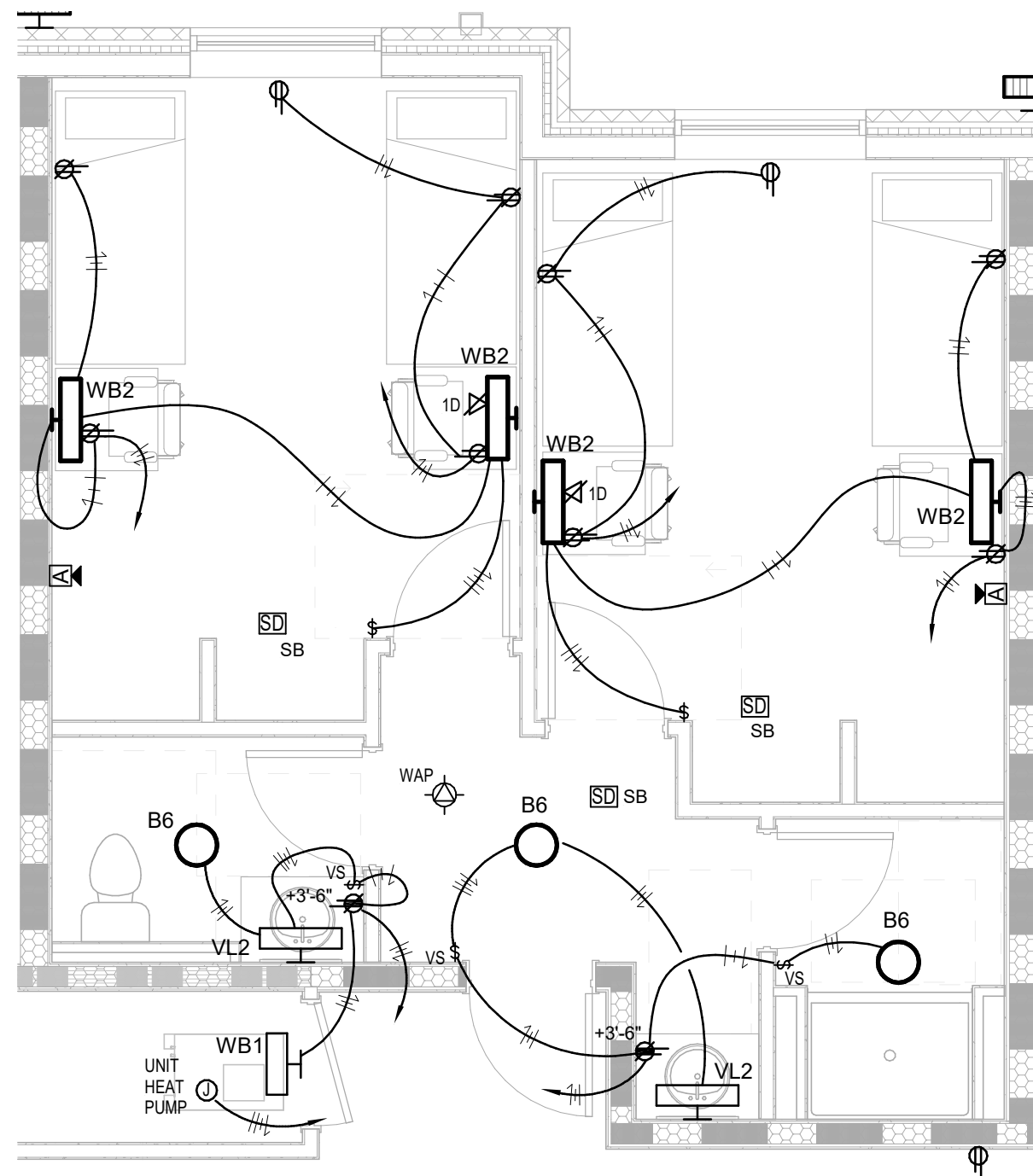
1 UNIT B1 TYPICAL WIRING PLAN  
SCALE: 1/4" = 1'-0"



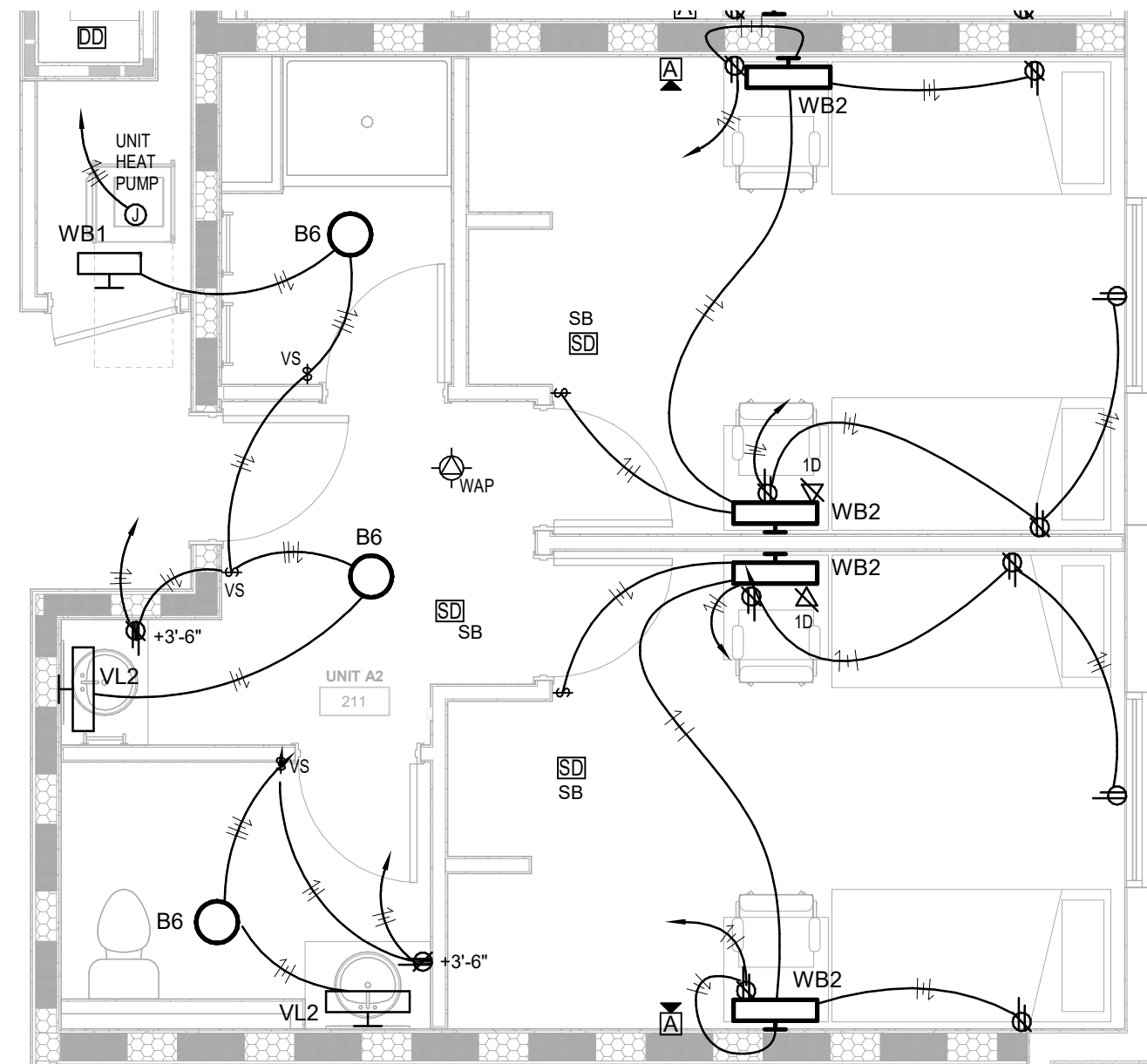
4 UNIT A1 TYPICAL WIRING PLAN  
SCALE: 1/4" = 1'-0"



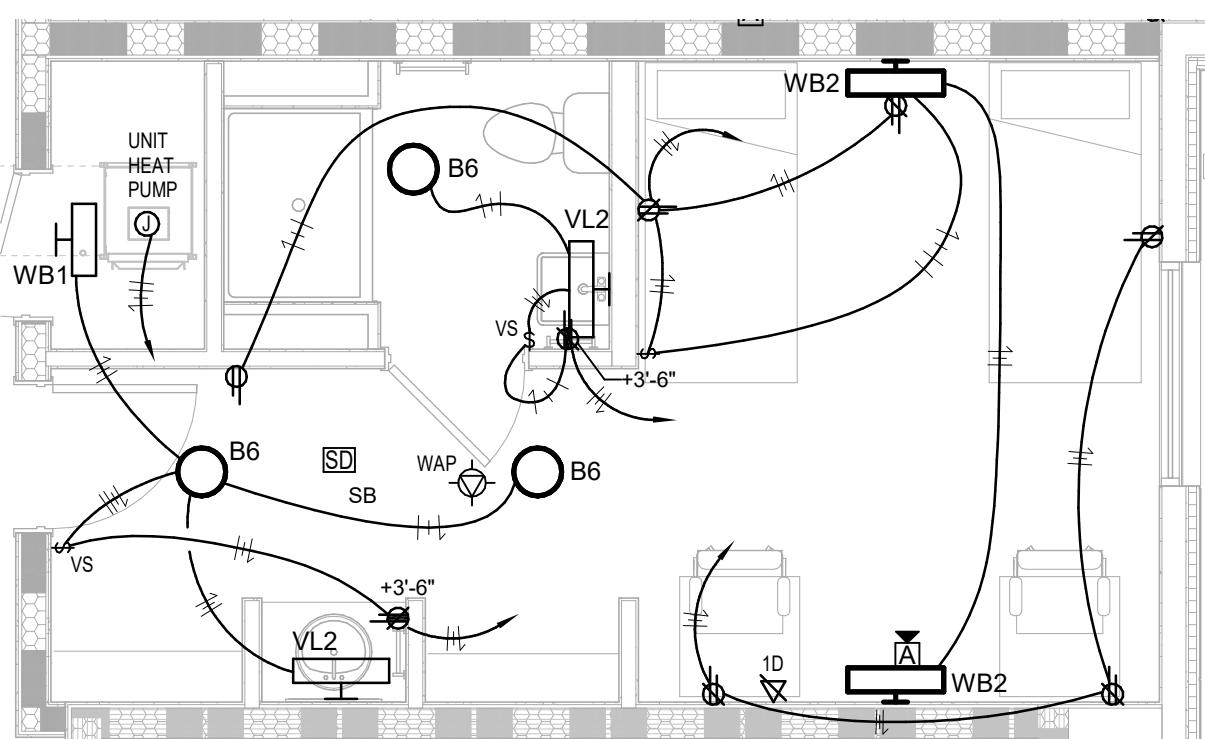
5 UNIT C4 TYPICAL WIRING PLAN  
SCALE: 1/4" = 1'-0"



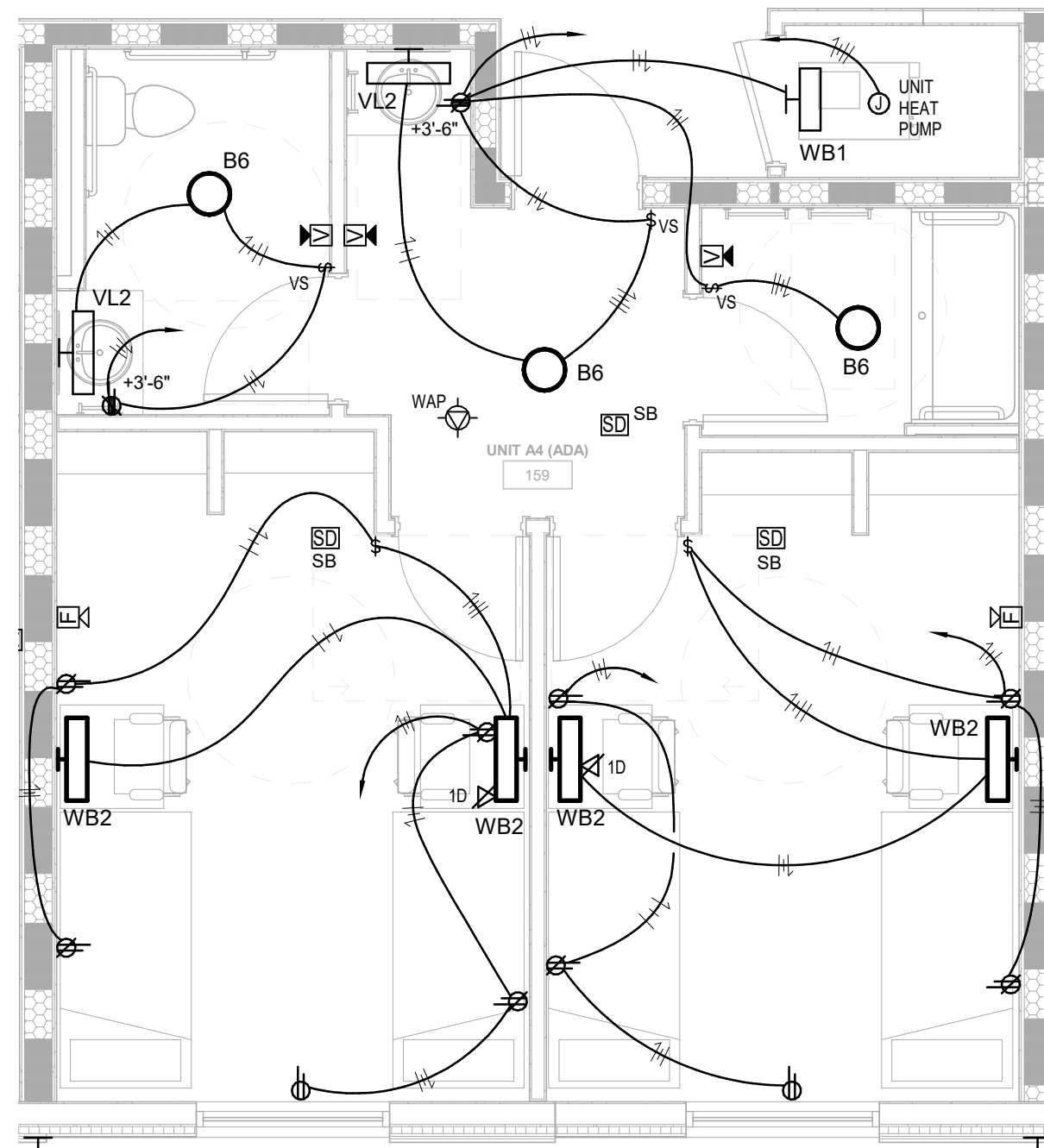
2 UNIT B2 TYPICAL WIRING PLAN  
SCALE: 1/4" = 1'-0"



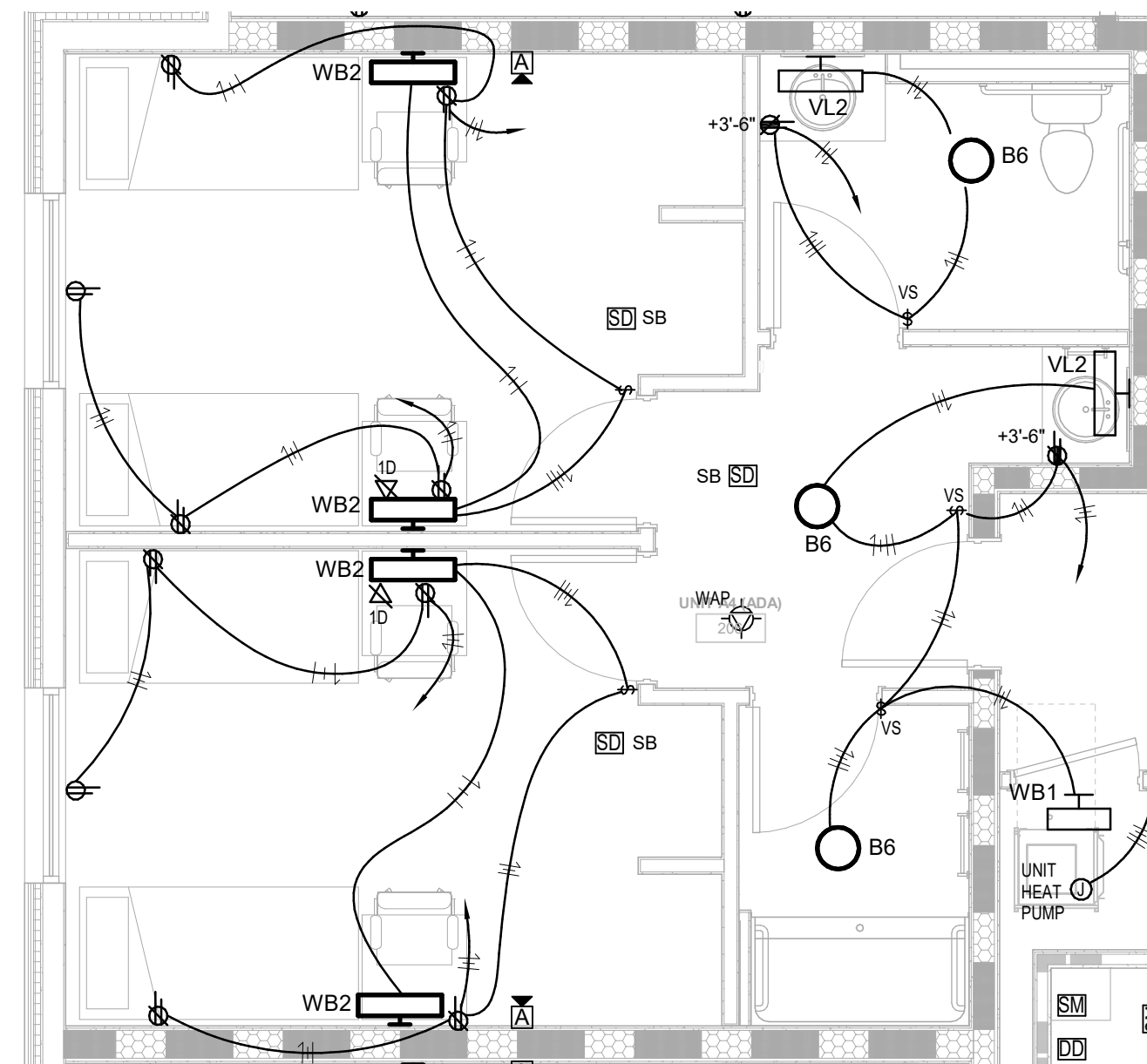
7 UNIT A2 TYPICAL WIRING PLAN  
SCALE: 1/4" = 1'-0"



8 UNIT D1 TYPICAL WIRING PLAN  
SCALE: 1/4" = 1'-0"



3 UNIT A4 TYPICAL WIRING PLAN  
SCALE: 1/4" = 1'-0"



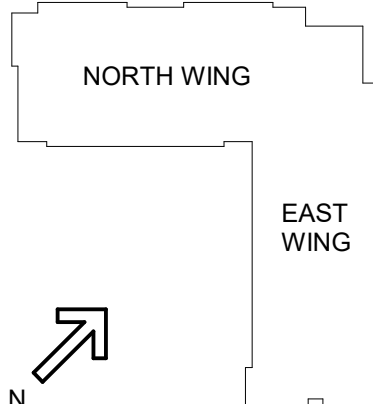
9 UNIT A3 TYPICAL WIRING PLAN  
SCALE: 1/4" = 1'-0"

STATE OF KENTUCKY APPROVAL

GENERAL NOTES (ENLARGED):

- A. ALL ROOM LAYOUTS ARE TYPICAL AND MAY VARY OR MIRROR OTHER ASSOCIATED ROOMS. CONTRACTOR SHALL REFER TO ARCHITECTURAL ELEVATIONS AND COORDINATE EACH ROOM PRIOR TO ROUGH-IN.  
B. REFER TO PANEL SCHEDULES FOR CIRCUITS ASSOCIATED WITH EACH UNIT.

TAGGED NOTES



#	DATE	CHANGE DESCRIPTION

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FOR  
**NORTHERN KENTUCKY UNIVERSITY**

**MOODY-NOLAN**  
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SUITE 300  
COLUMBUS, OHIO 43215  
PHONE: (614) 461-4664  
FAX: (614) 280-8881

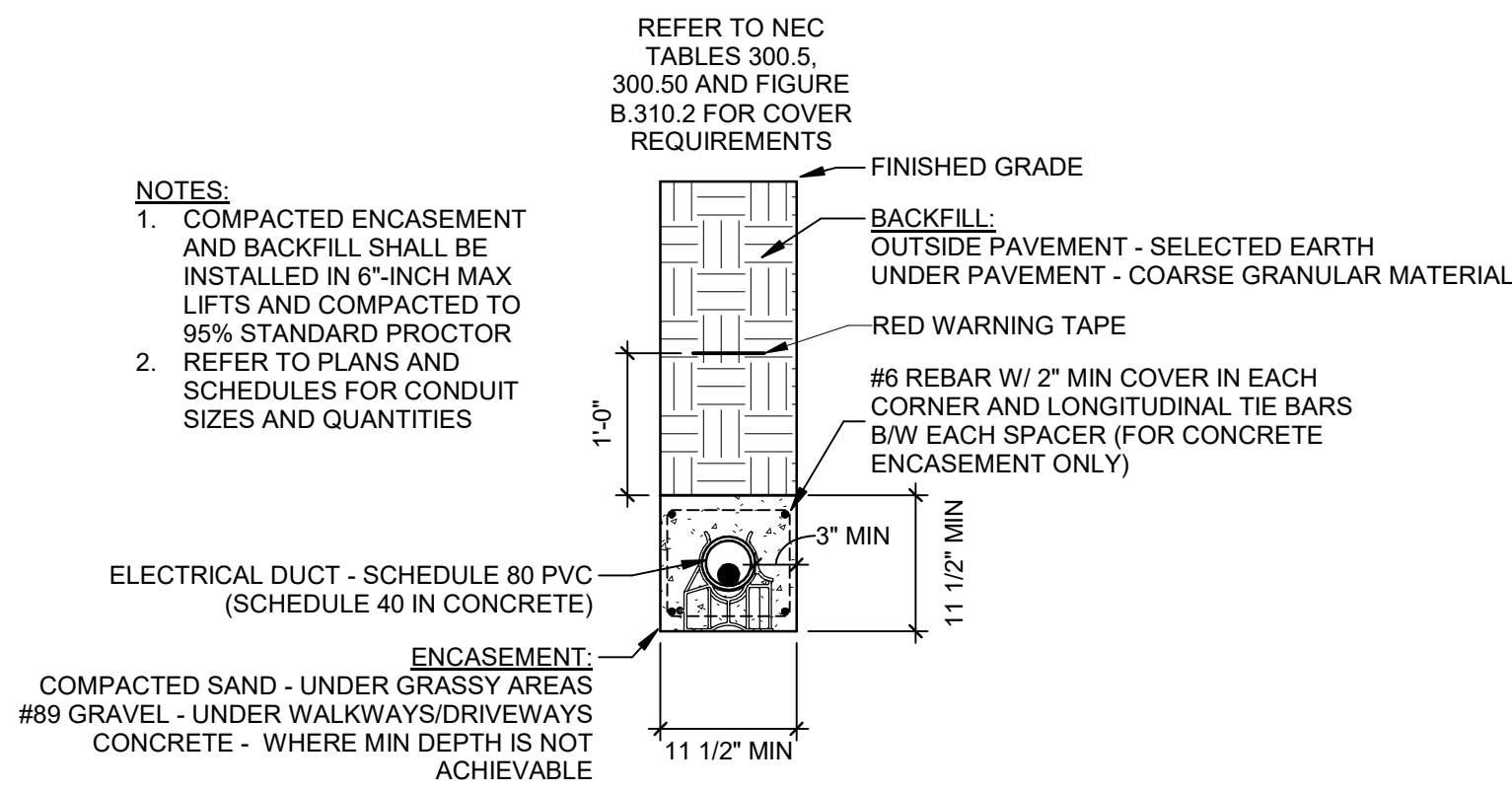
**CMTA**  
10411 Meeting Street, Prospect, KY 40069  
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DRAWING TITLE:  
**ENLARGED ELECTRICAL PLANS**

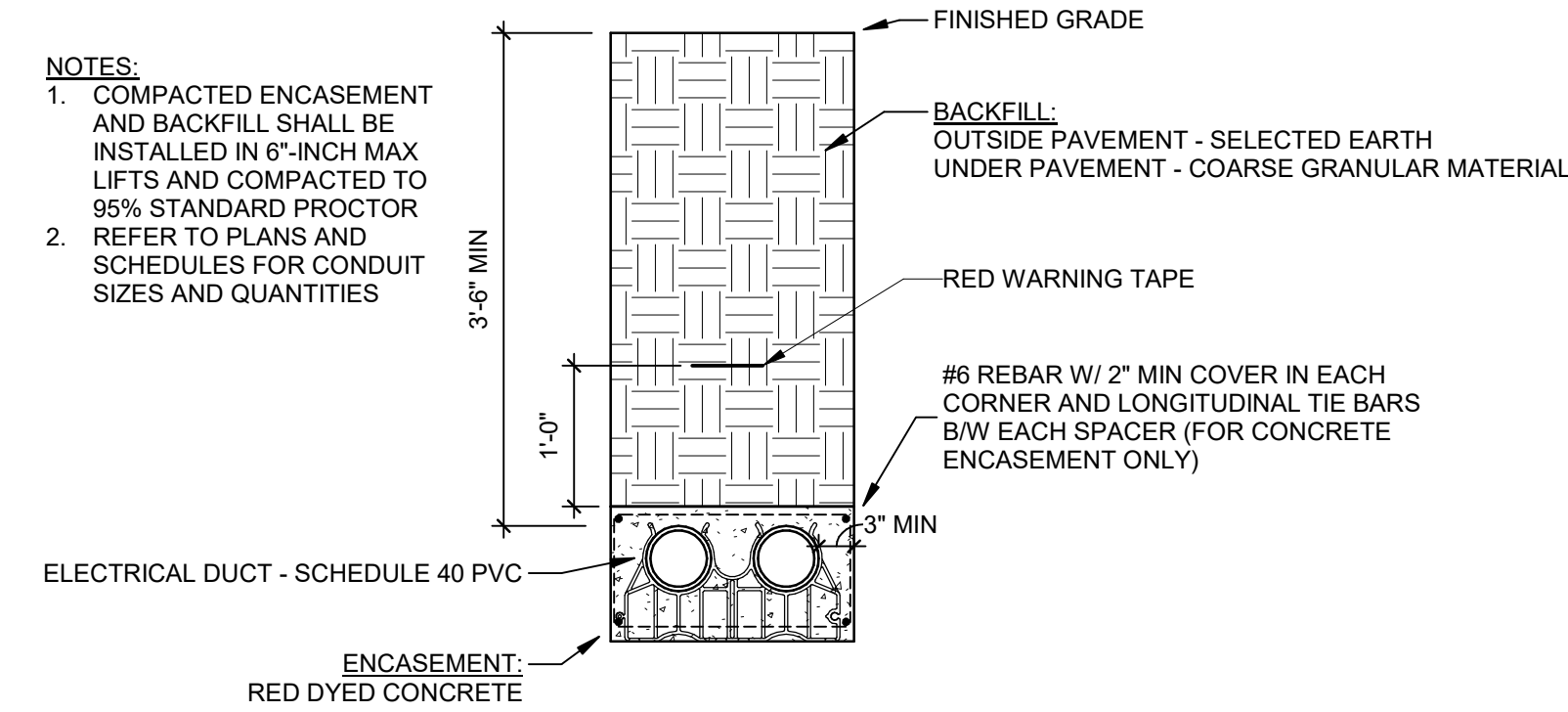
**STATE OF KENTUCKY**  
ROBERT ANTHONY HANS  
23143  
PROFESSIONAL ENGINEER

JANUARY 30, 2020  
DRAWN BY: GCR CHECKED BY: -  
**E401**  
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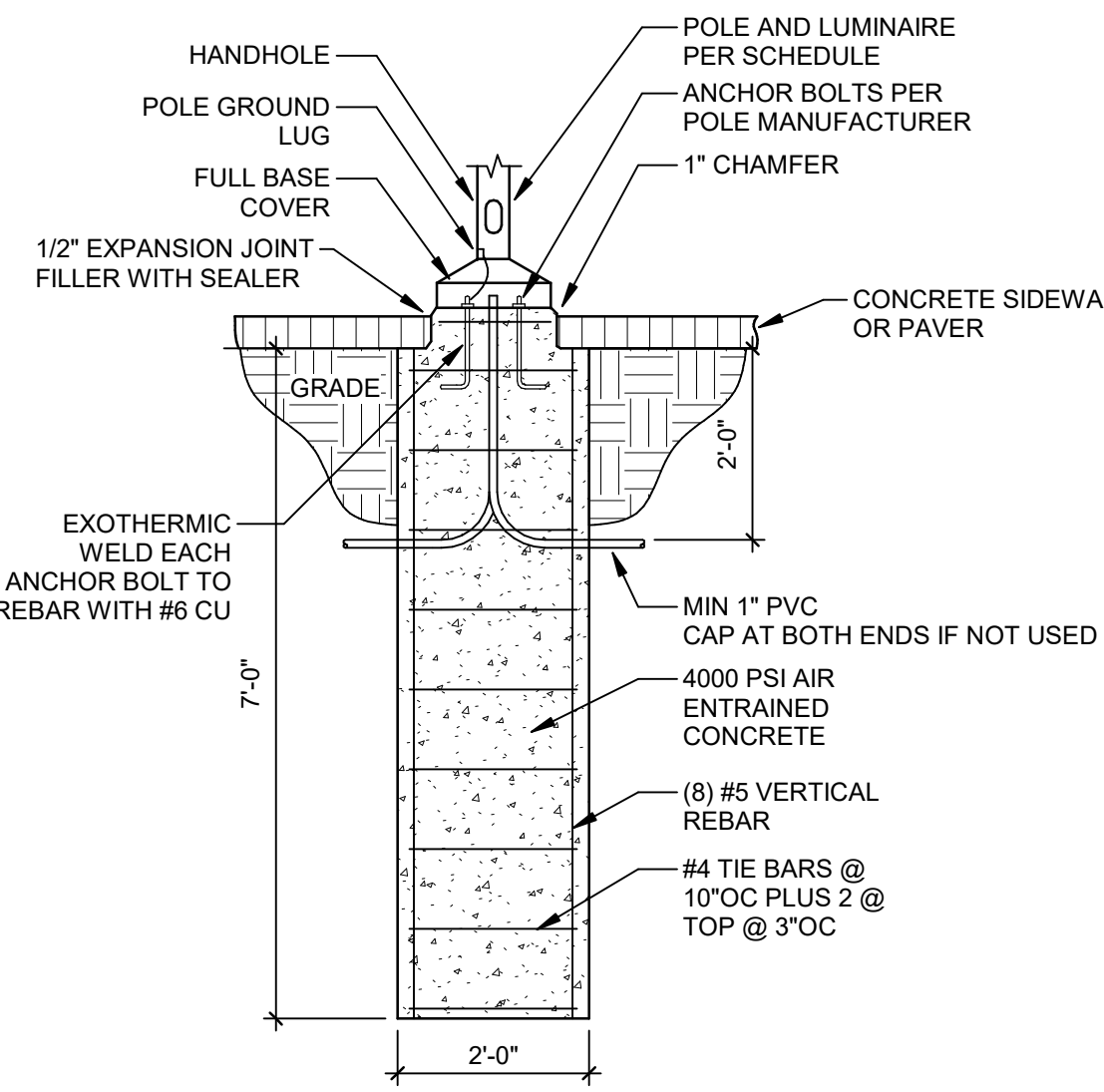




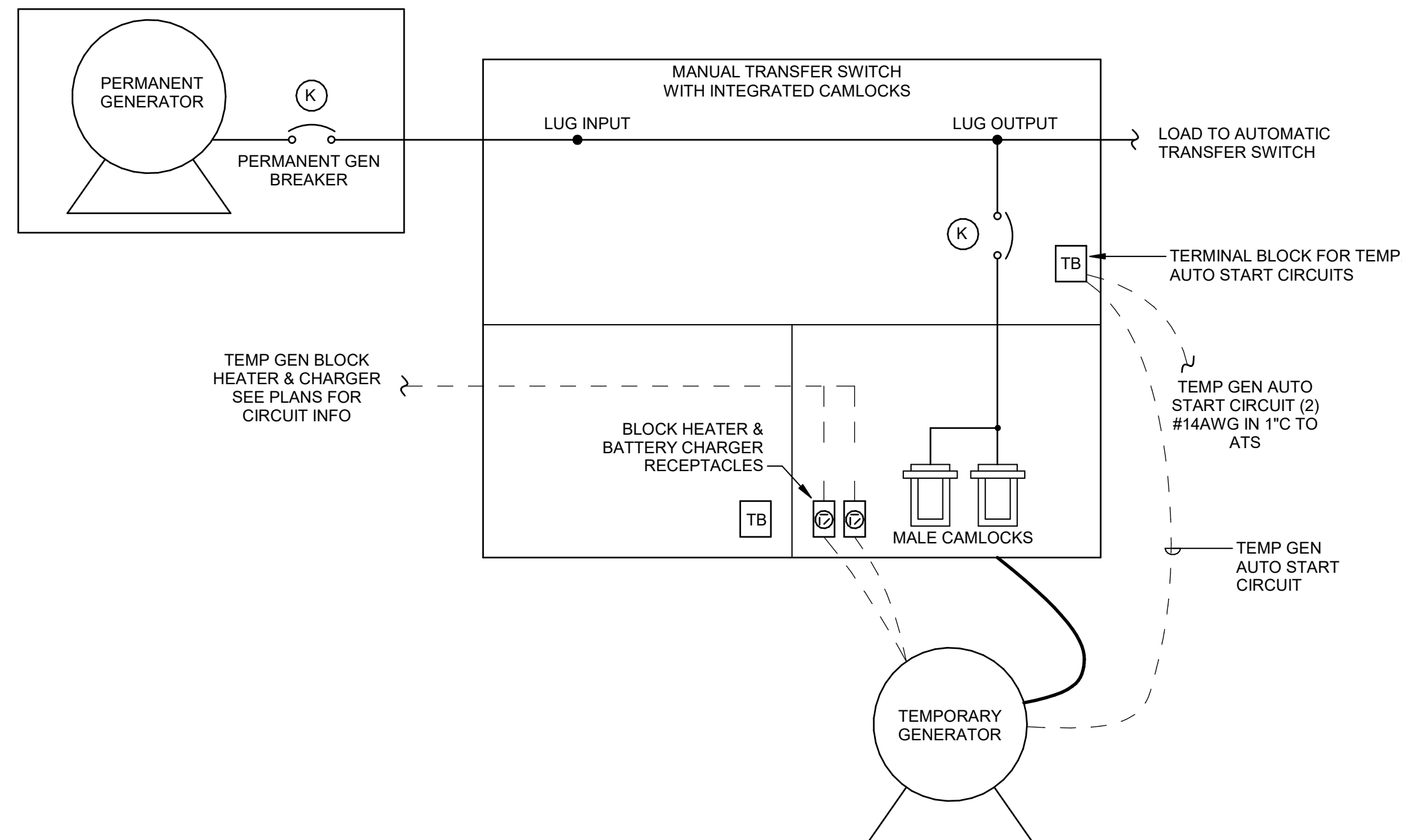
5 TYP ELECT DUCT BANK (UGE)  
NO SCALE



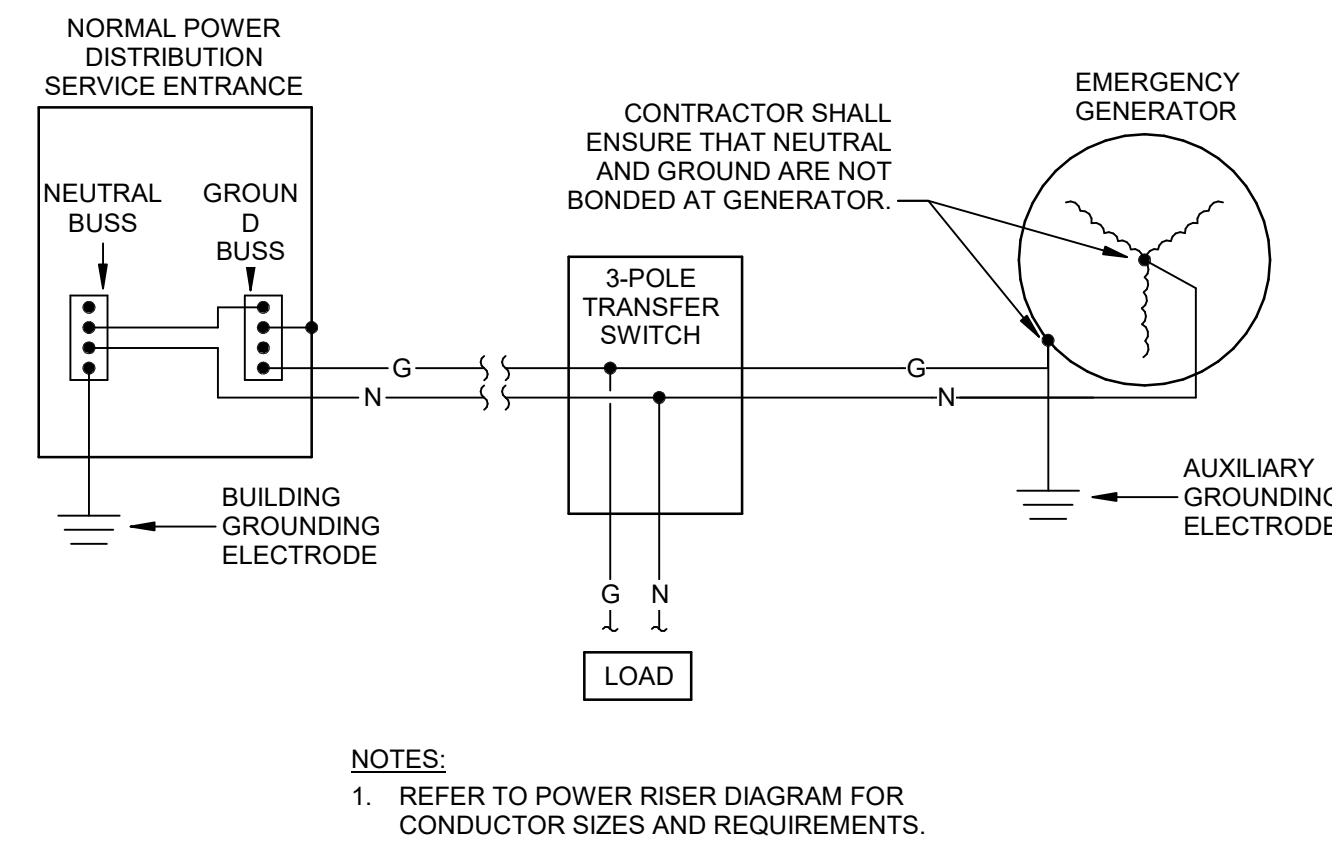
6 TYP PRIMARY DUCTBANK (PRI)  
NO SCALE



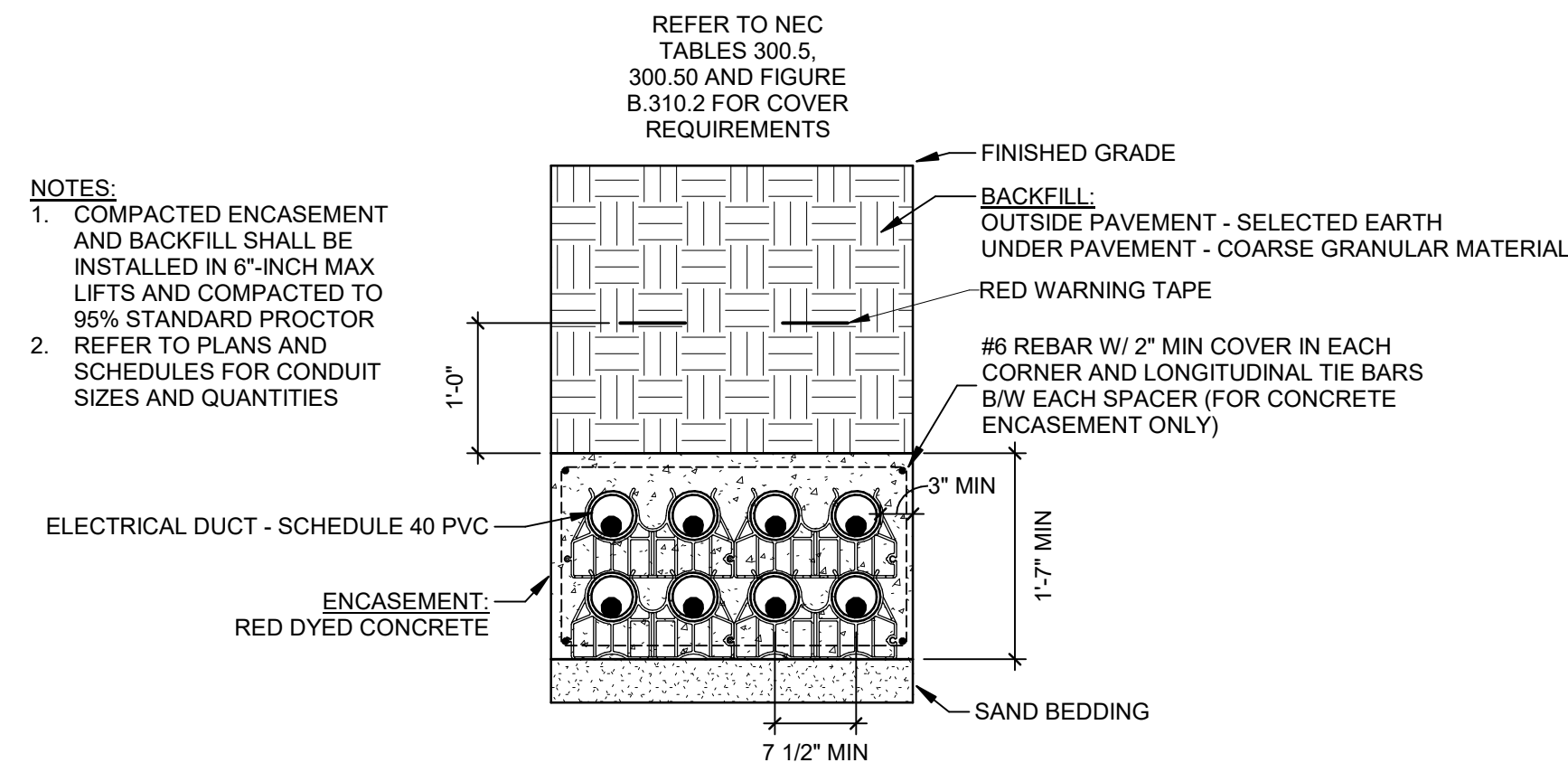
10 TYPICAL PLAZA POLE BASE DETAIL  
NO SCALE



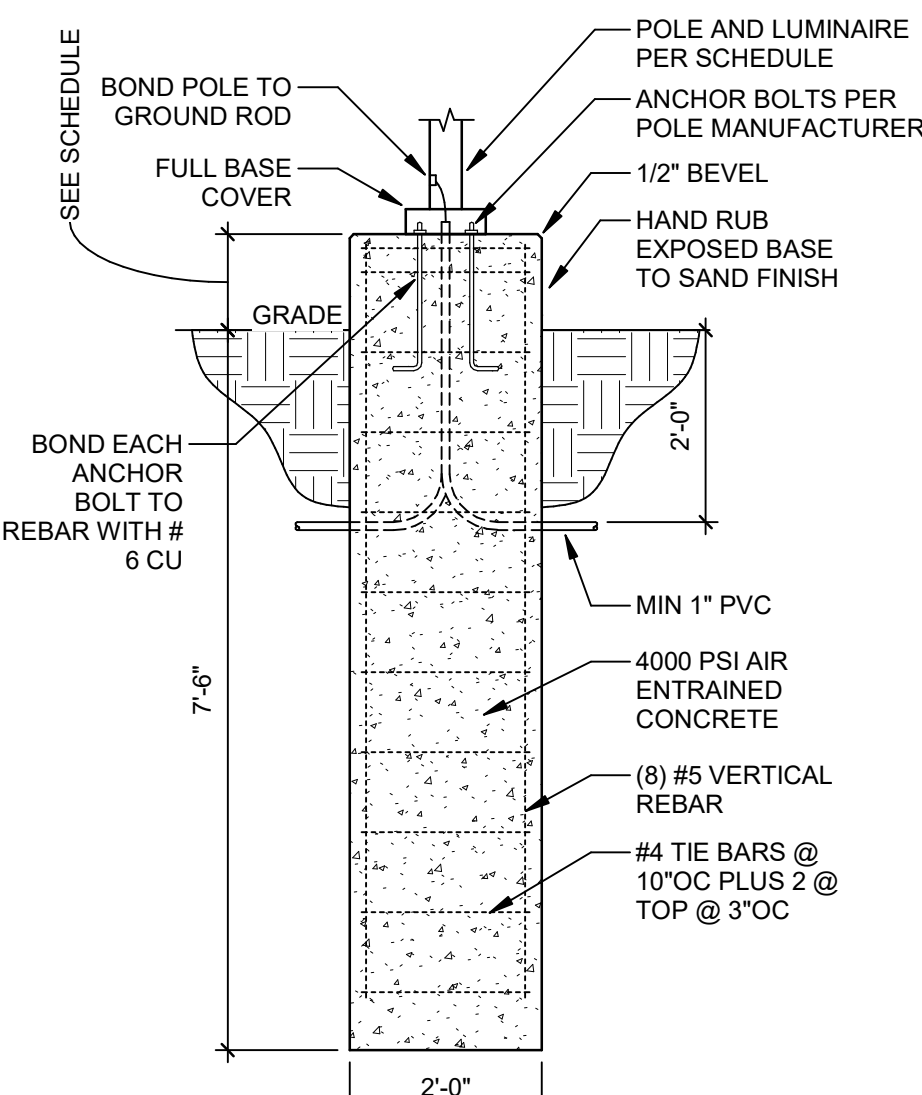
11 PORTABLE GENERATOR MANUAL TRANSFER SWITCH  
NO SCALE



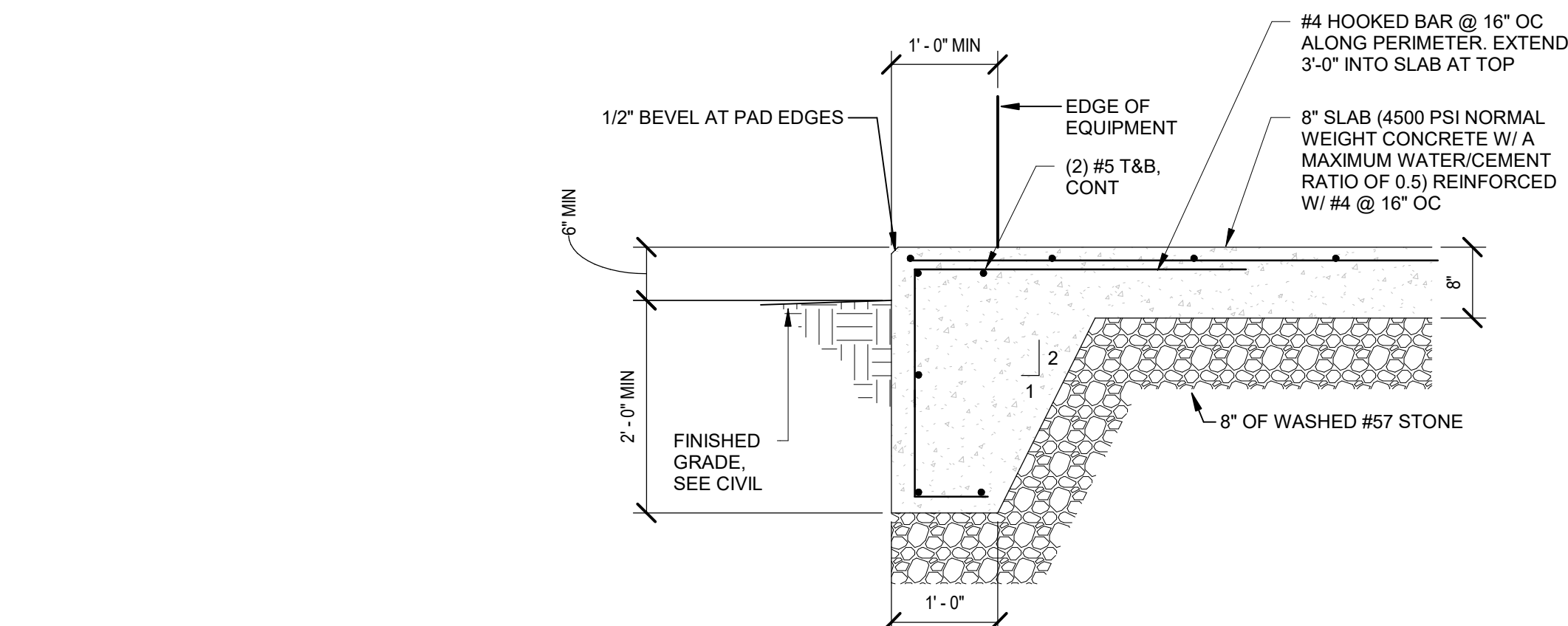
4 GENERATOR GROUNDING DETAIL W/3P ATS  
NO SCALE



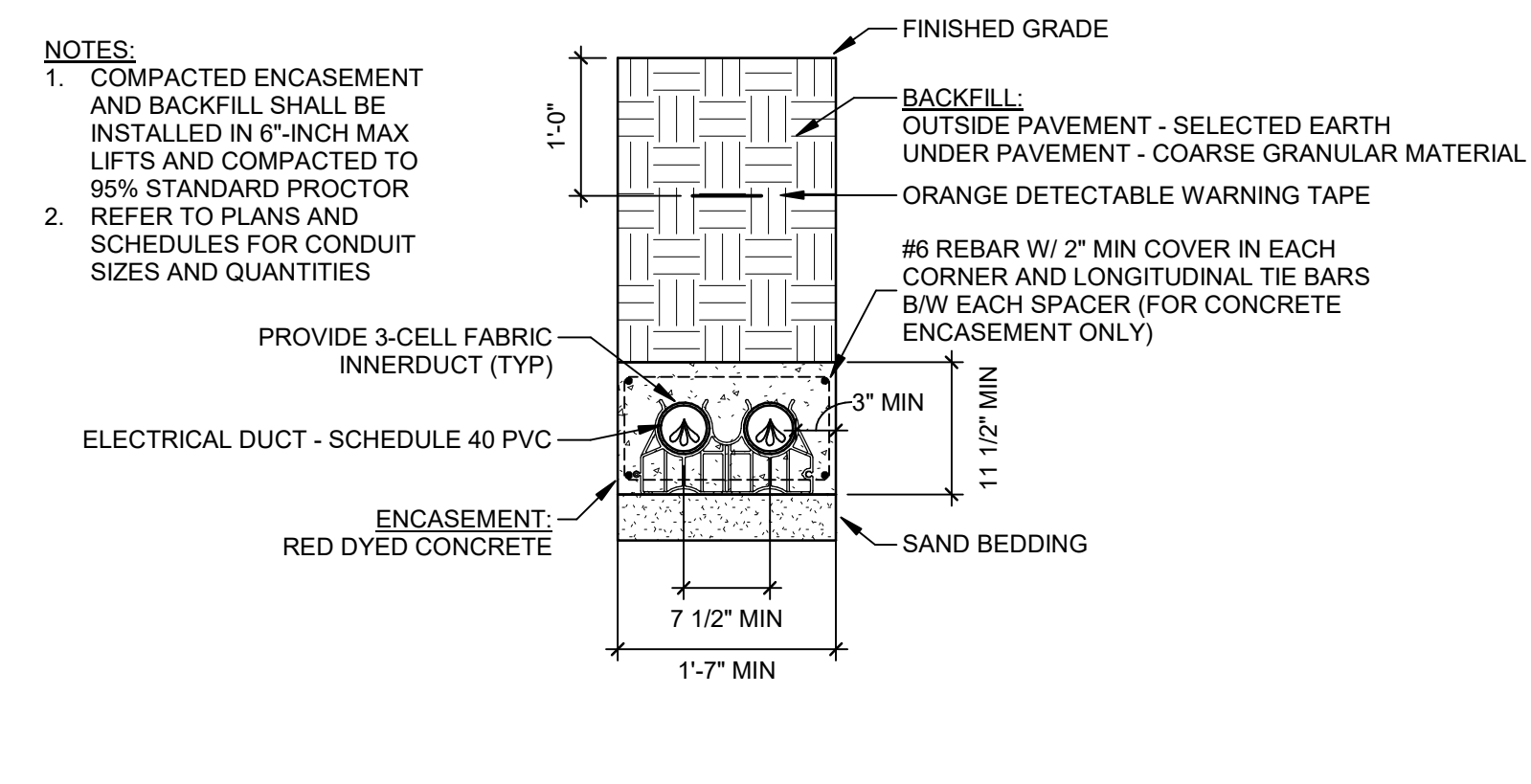
7 TYP SECONDARY DUCTBANK (SEC)  
NO SCALE



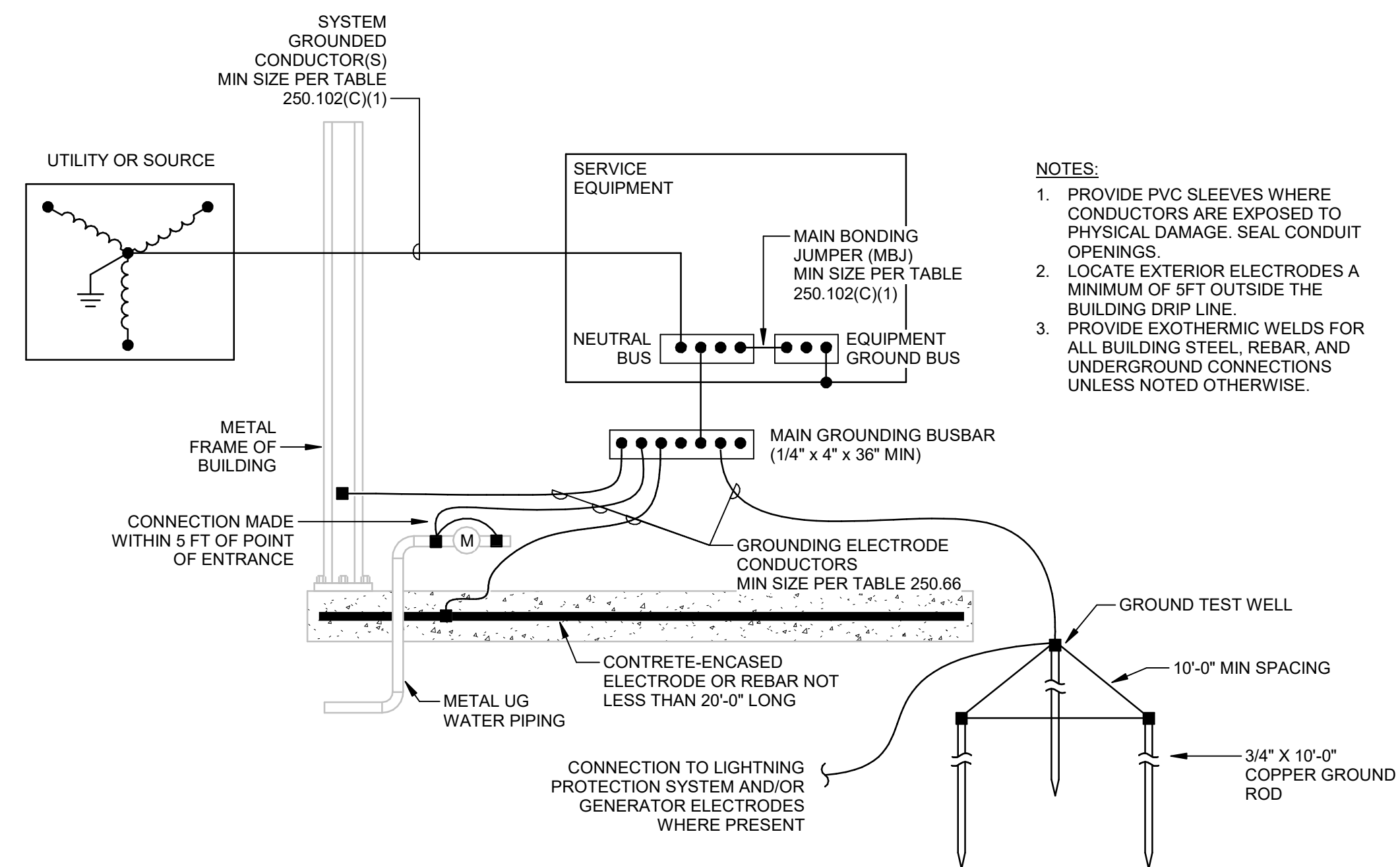
8 TYP LIGHTING POLE BASE  
NO SCALE



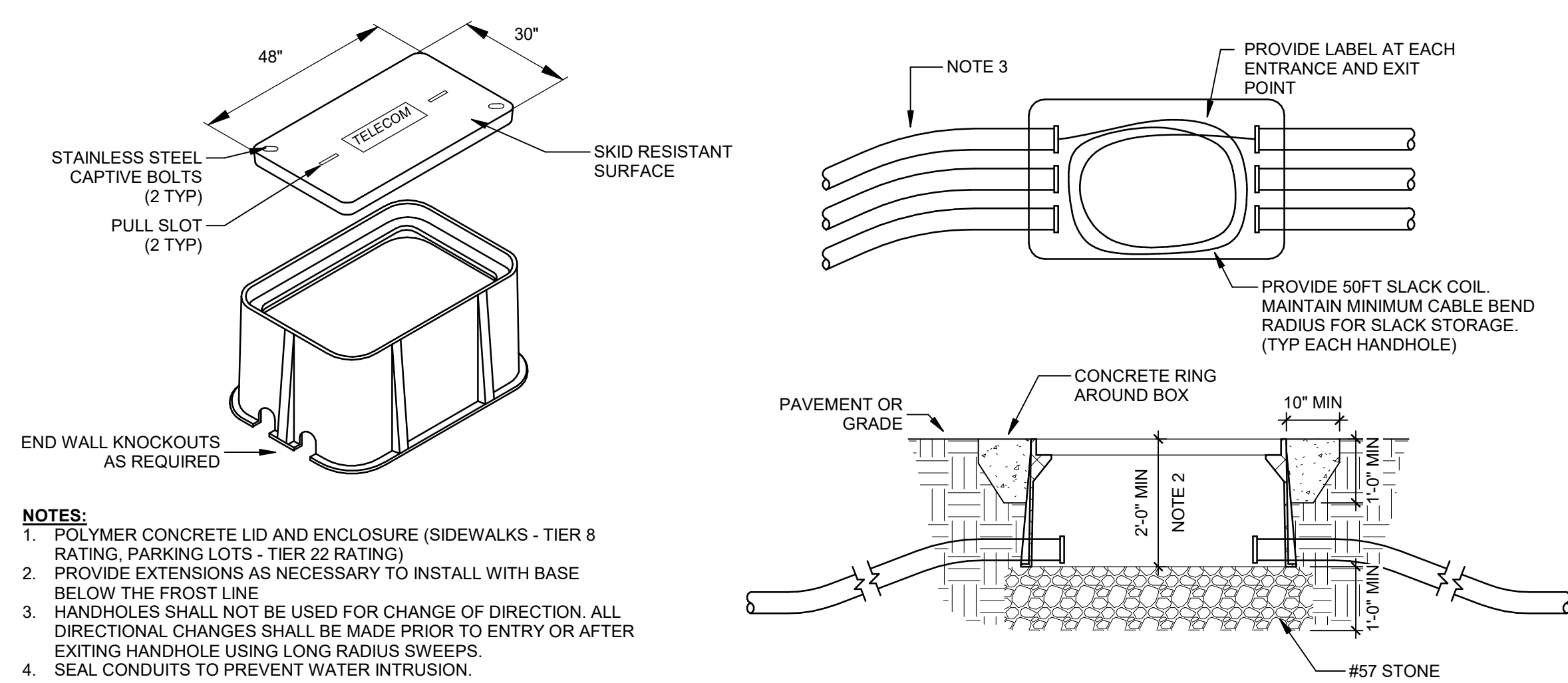
1 TYP PAD FOUNDATION  
NO SCALE



2 TYP TELECOMM DUCT BANK (UGT)  
NO SCALE



3 GROUNDING ELECTRODE SYSTEM DETAIL  
NO SCALE



9 TELECOMM HANDHOLE - NON TRAFFIC  
NO SCALE

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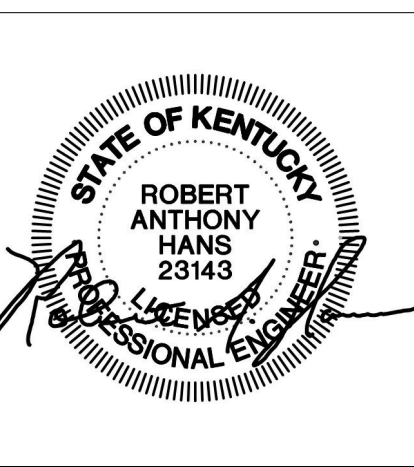


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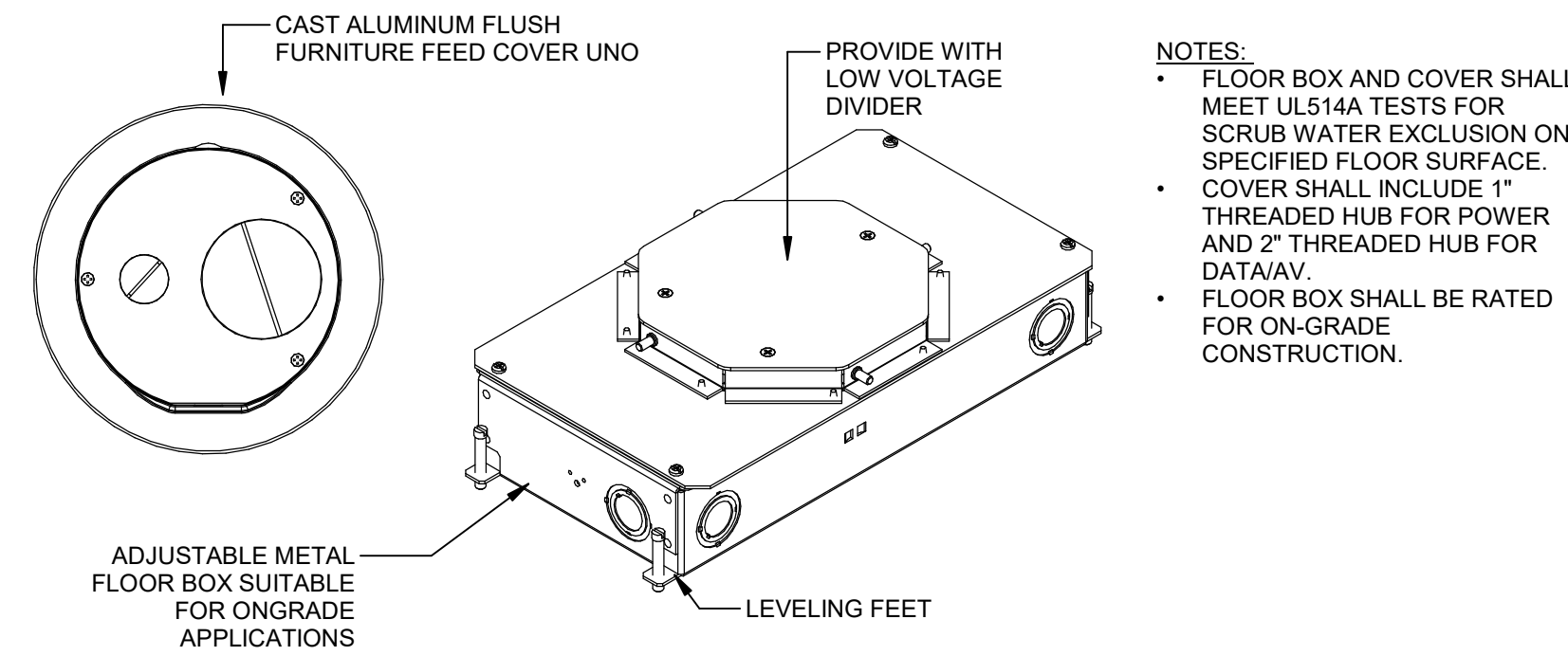
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DRAWING TITLE:  
**ELECTRICAL DETAILS**

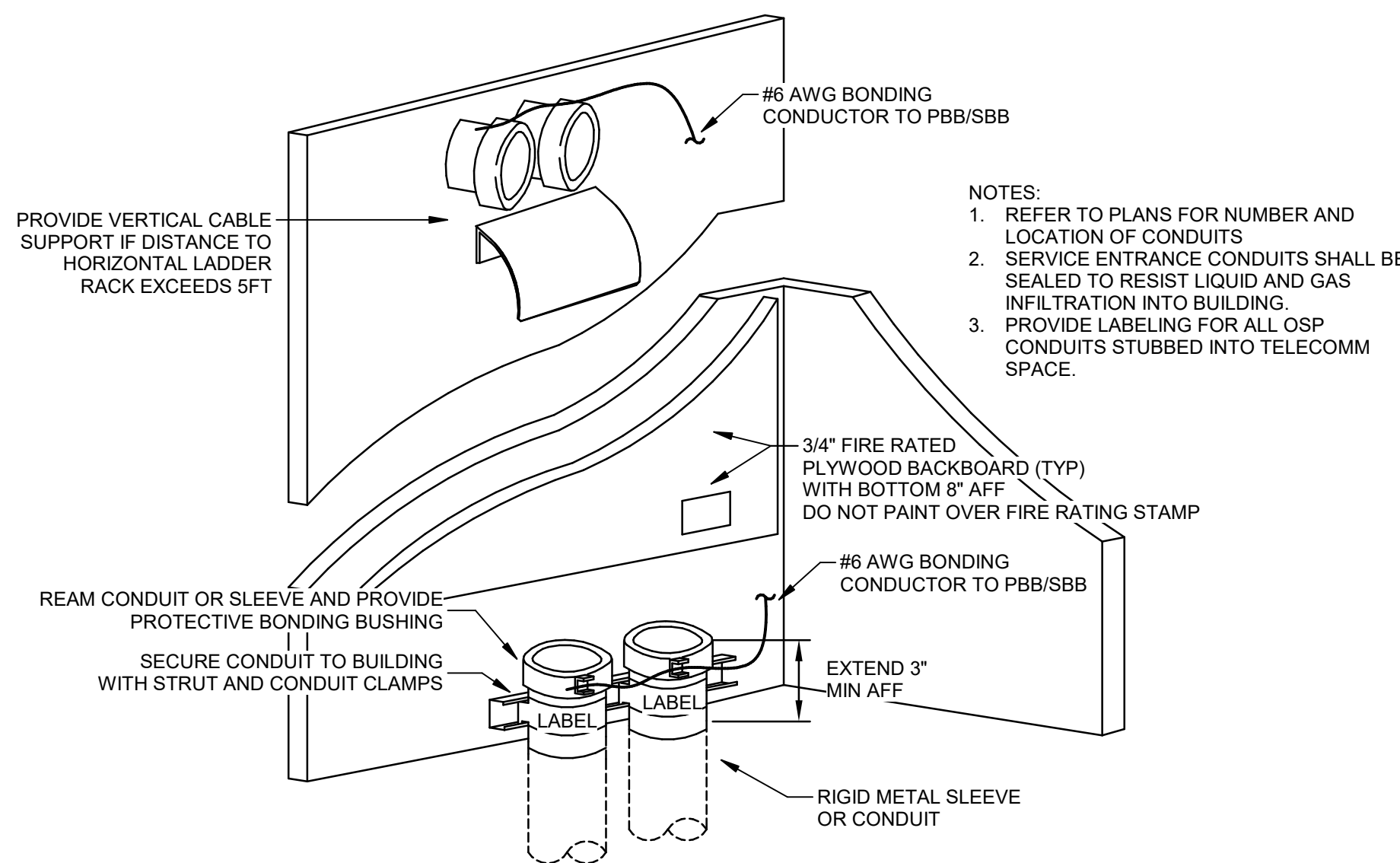


STATE OF KENTUCKY  
ROBERT ANTHONY HANS  
23143  
Professional Engineer

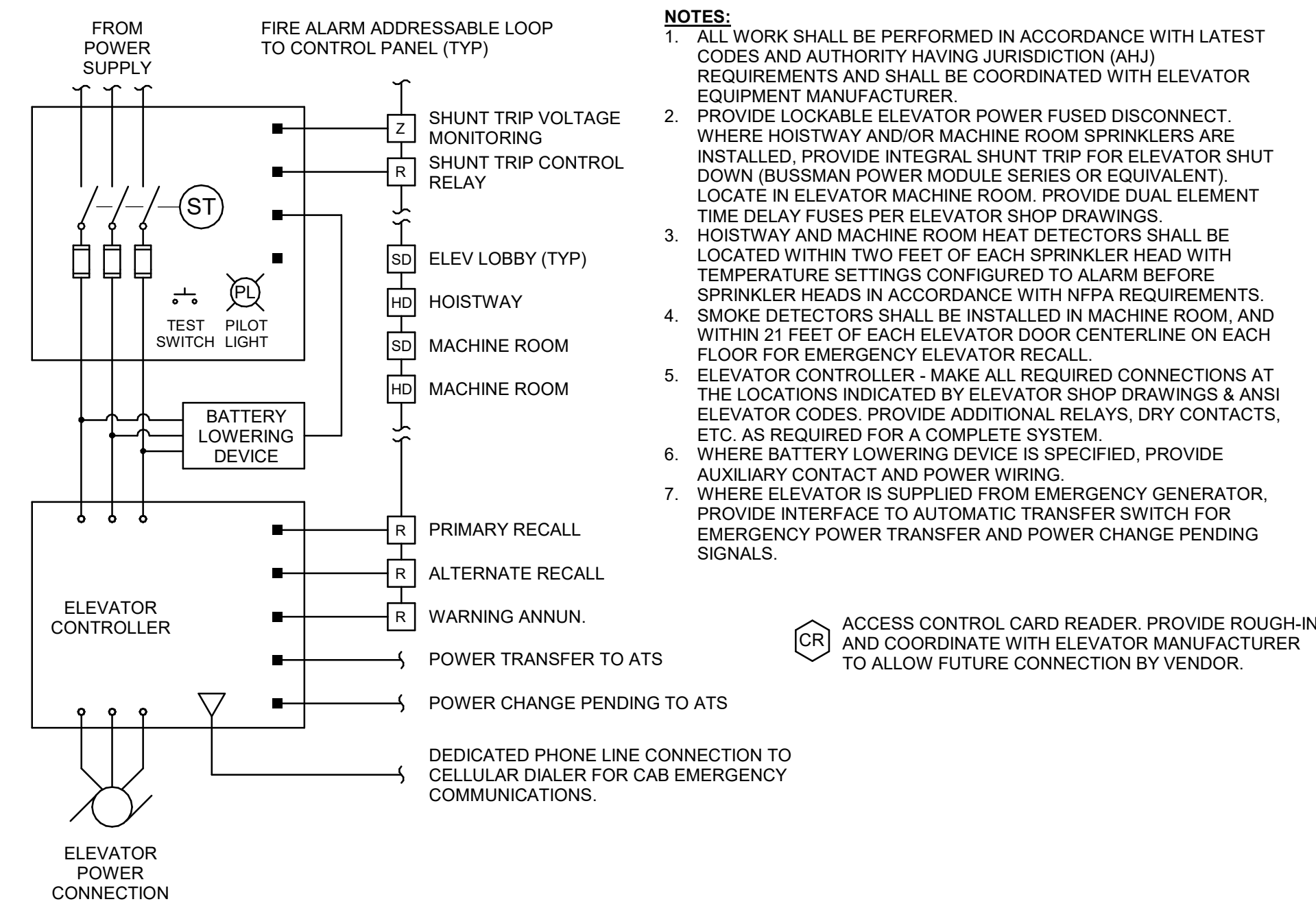
JANUARY 30, 2020  
DRAWN BY: GCR CHECKED BY: -  
**E501**  
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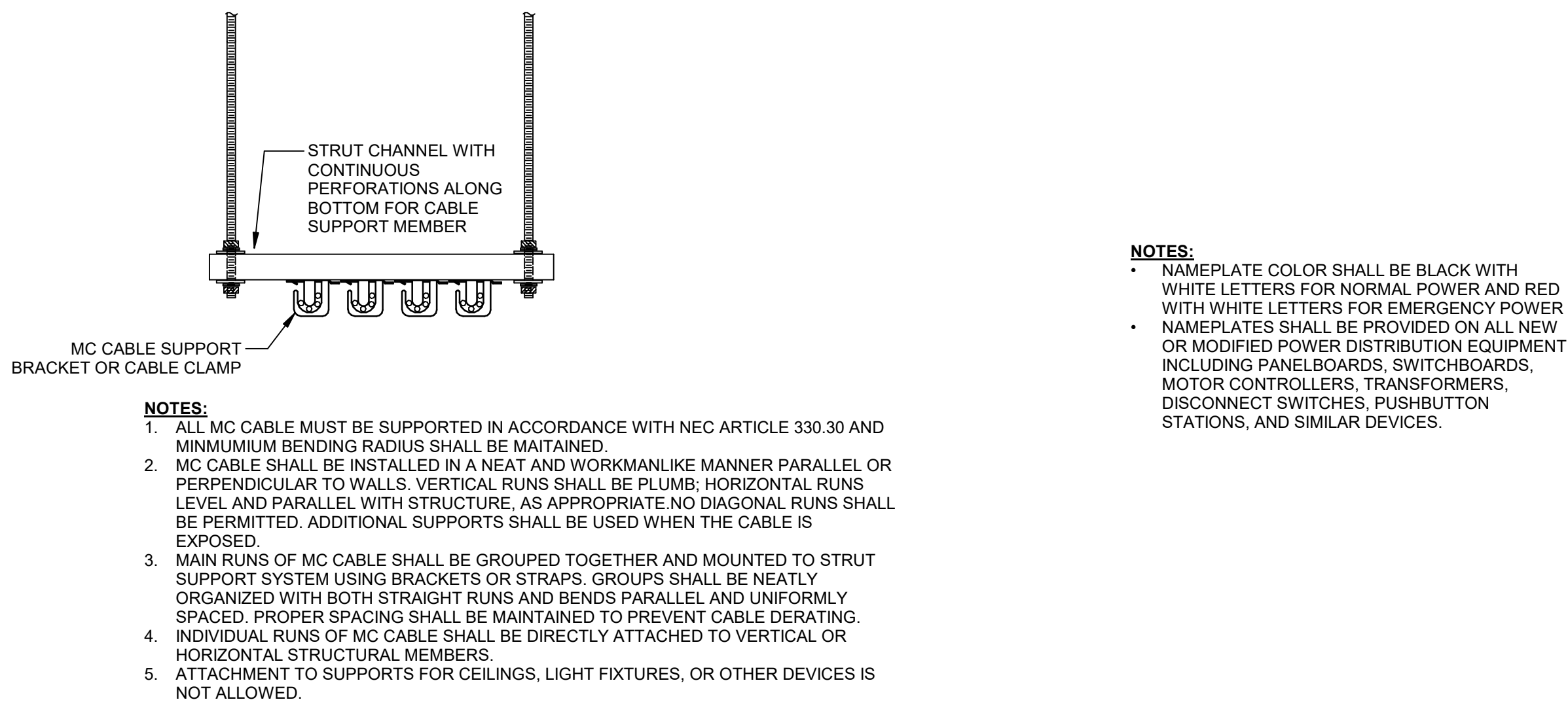
3 FLOOR BOX 2-GANG- FURNITURE FEED (FB-FF)  
NO SCALE



7 TELECOMM CONDUIT ENTRANCE  
NO SCALE

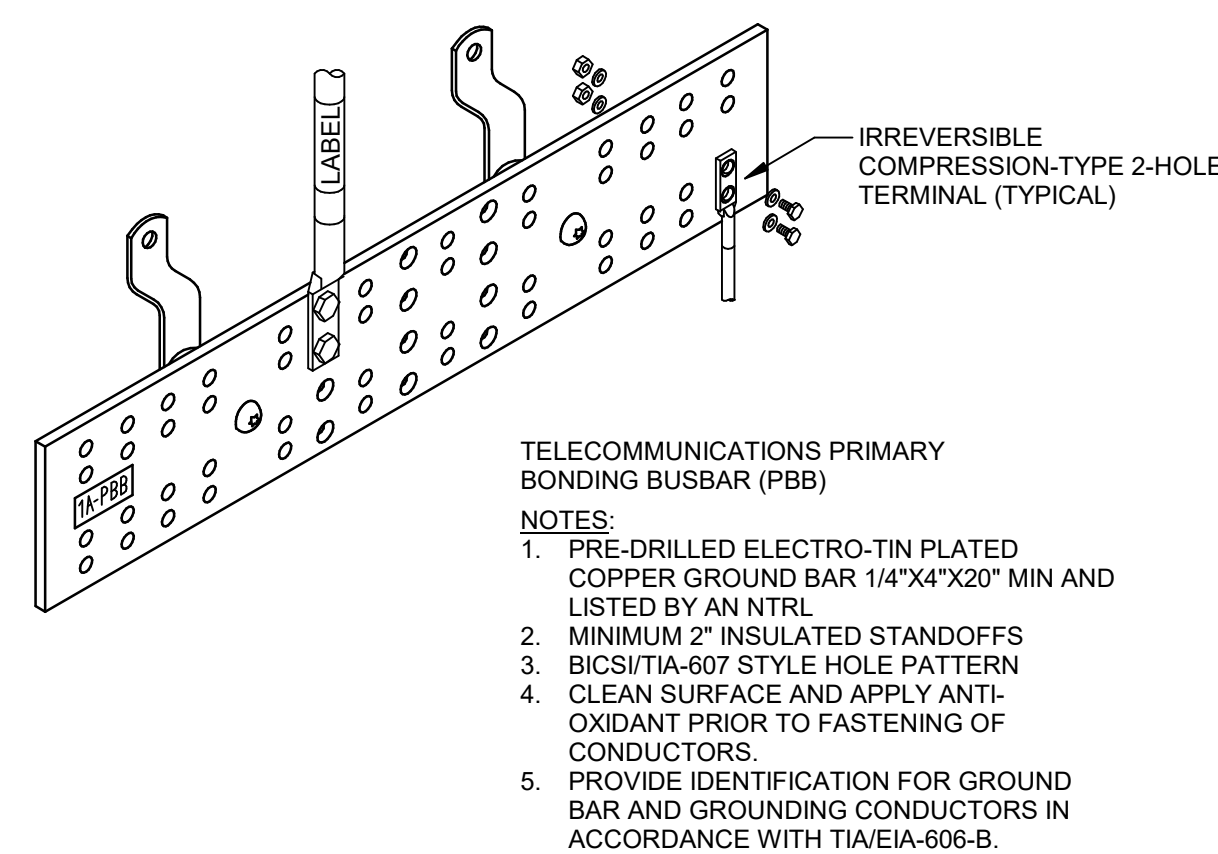


5 ELEVATOR CONNECTION DIAGRAM  
NO SCALE

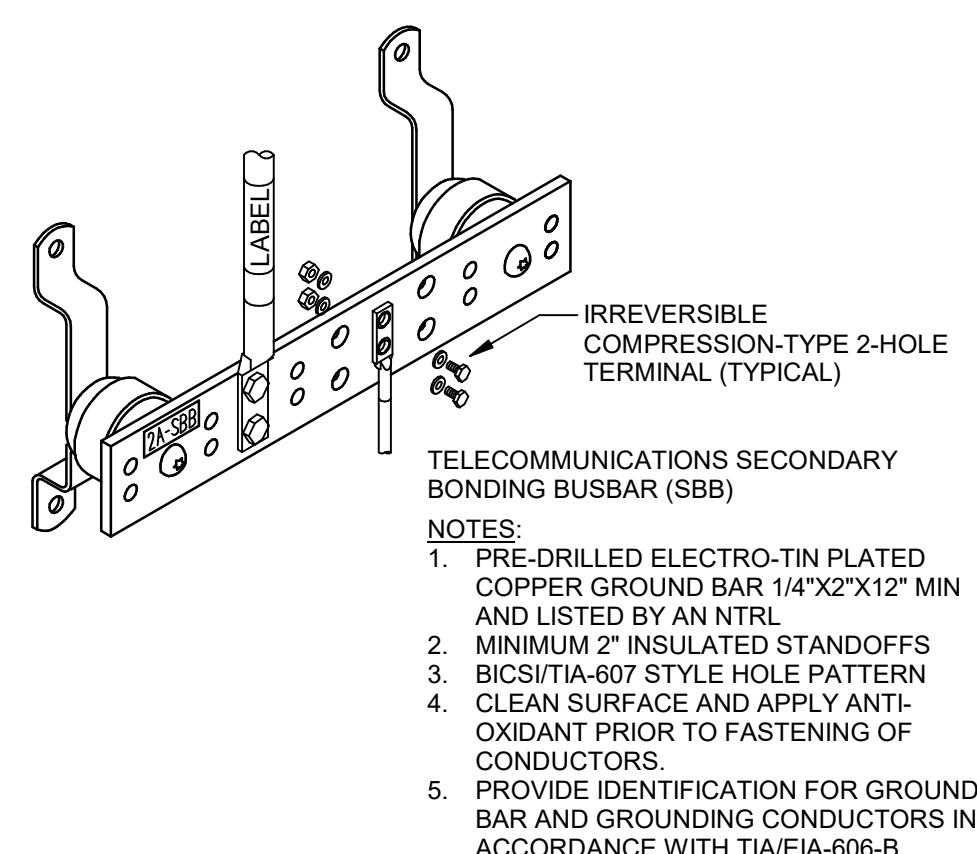


10 MC CABLE SUPPORT DETAIL  
NO SCALE

9 POWER DIST EQ NAMEPLATE DETAIL  
NO SCALE

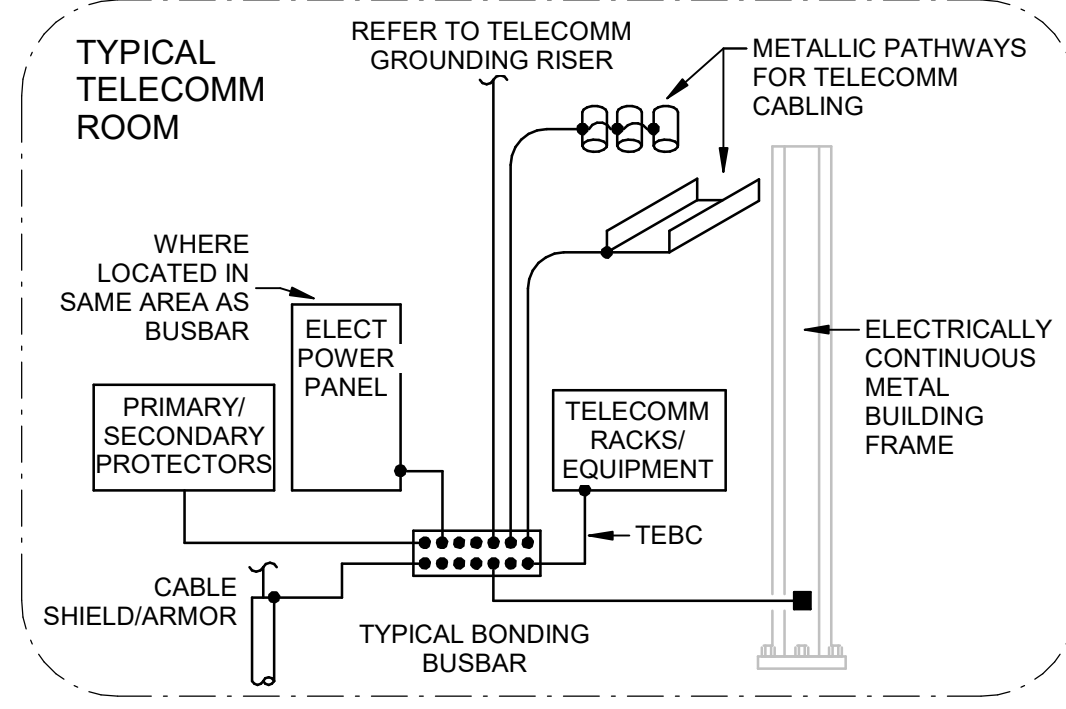


2 TELECOMM BUSBAR - PBB  
NO SCALE

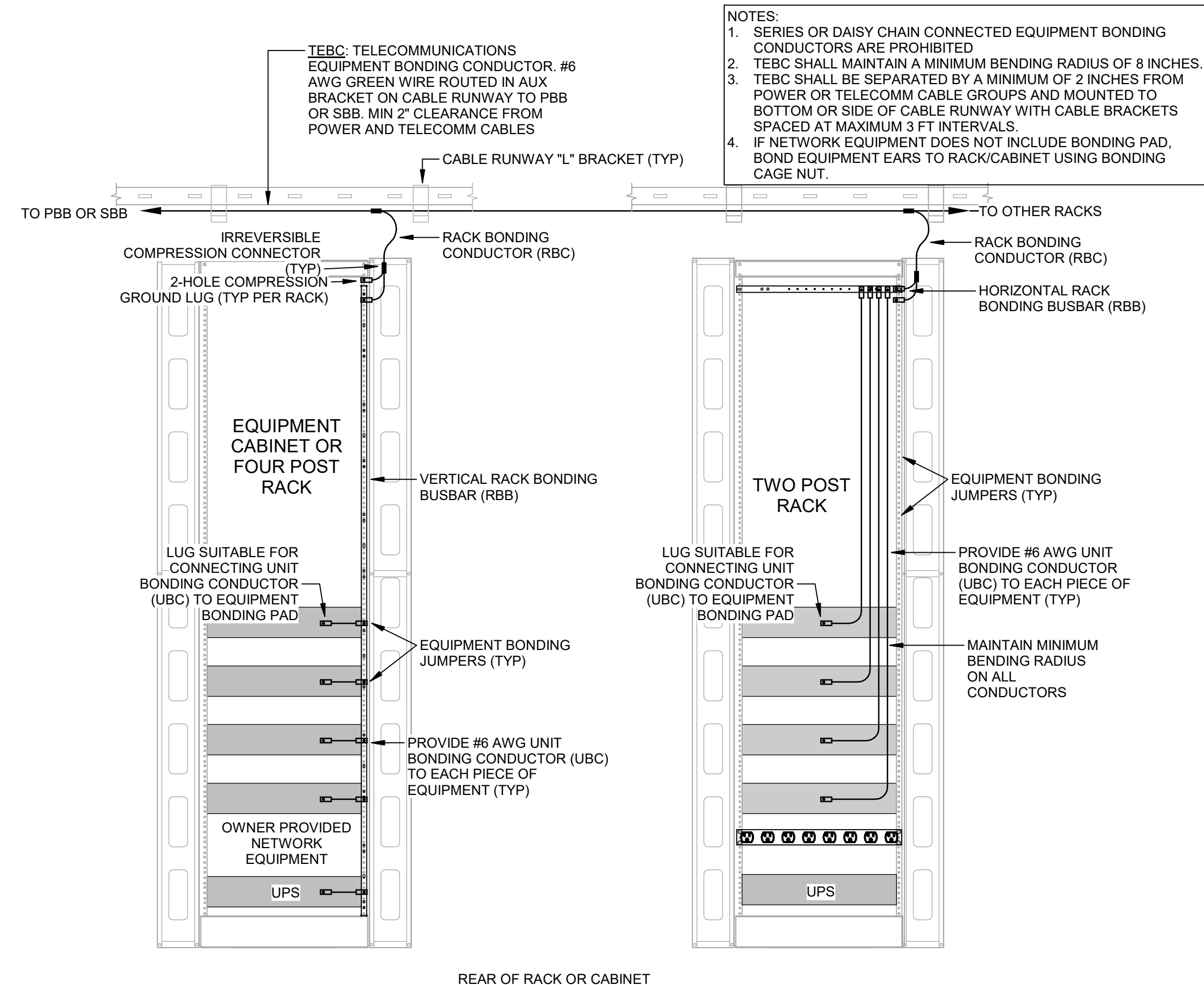


1 TELECOMM BUBAR - SBB  
NO SCALE

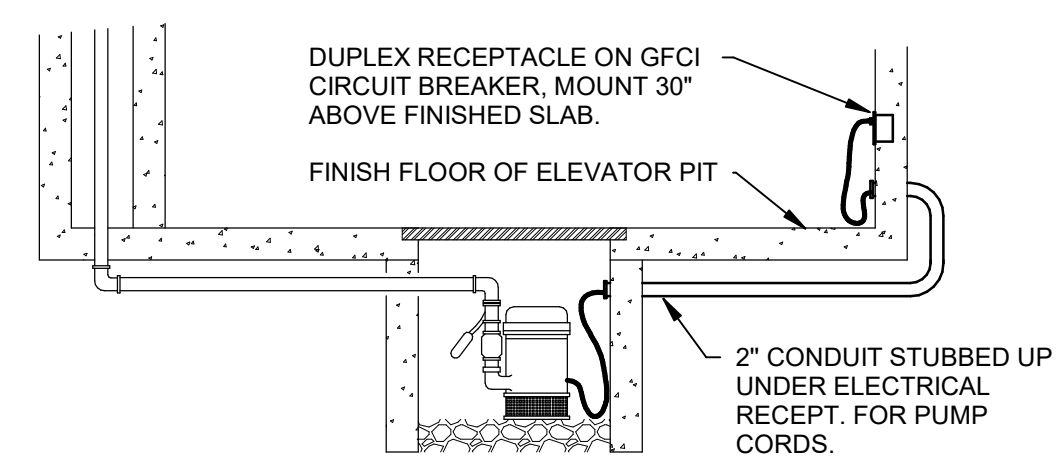
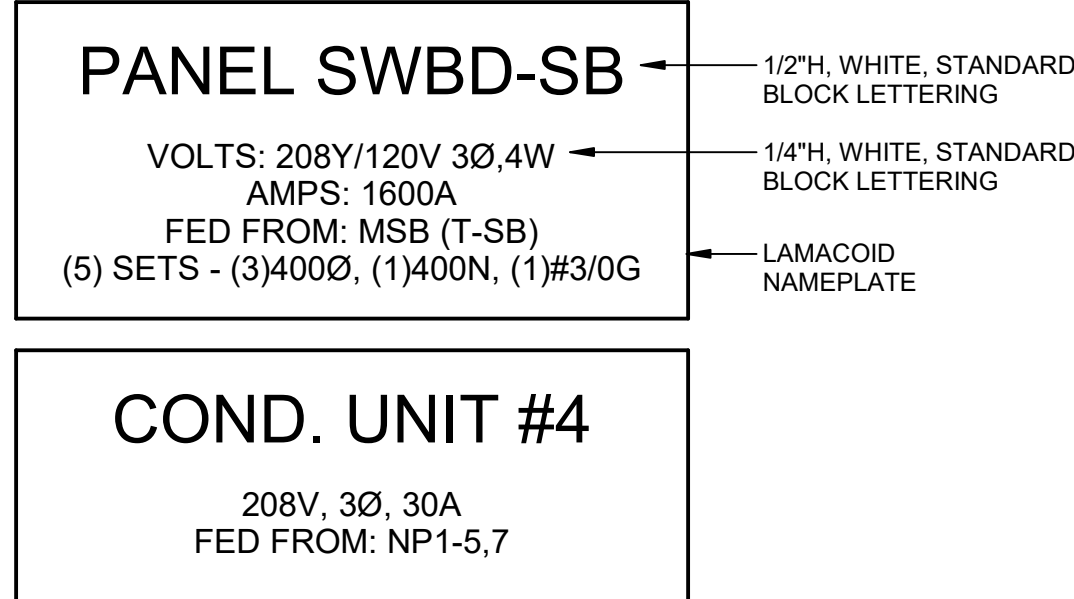
- NOTES:
1. ALL WORK TO BE DONE IN ACCORDANCE WITH ANSITIA STD-807-C
  2. ALL GROUNDING AND BONDING CONDUCTORS SHALL BE GREEN INSULATED COPPER CONDUCTORS AND LISTED FOR INTENDED APPLICATION.
  3. LABEL ALL GROUNDING AND BONDING CONDUCTORS IN ACCORDANCE WITH ANSITIA/IEA 100 REQUIREMENTS.
  4. ALL CONNECTIONS SHALL BE EXOTHERMIC WELD, LISTED COMPRESSION TWO-HOLE LUGS, OR OTHER IRREVERSIBLE COMPRESSION TYPE CONNECTION.
  5. ALL METALLIC RACEWAYS FOR TELECOMM CABLEING SHALL BE BONDED TO BUSBAR IF LOCATED IN SAME ROOM OR AREA.
  6. WHERE THE OSP OR BACKBONE CABLEING INCORPORATES A SHIELD OR METALLIC ARMOR, IT SHALL BE BONDED TO THE BUSBAR WHERE THE CABLES ARE TERMINATED OR WHERE THE PAIRS ARE BROKEN OUT FROM THE CABLE SHEATH.
  7. BONDING CONDUCTOR TO BUILDING STEEL SHALL BE SIZED TO MATCH BACKBONE CONDUCTOR. OTHER BONDING CONDUCTORS SHALL BE A MINIMUM #6 AWG AND INSTALLED WITH A MINIMUM 8-INCH BEND RADIUS.
  8. BONDING CONDUCTORS FOR ENTRANCE PROTECTORS AND CABLE SHIELDING CAPABLE OF CONDUCTING LIGHTNING AND FAULT CURRENTS SHALL MAINTAIN A MINIMUM OF 1 FT SEPARATION FROM ALL TELECOMM CABLEING.



4 TELECOMM BUSBAR CONNECTIONS  
NO SCALE



8 RACK GROUNDING AND BONDING DETAIL  
NO SCALE



6 ELEVATOR SUMP PUMP  
NO SCALE

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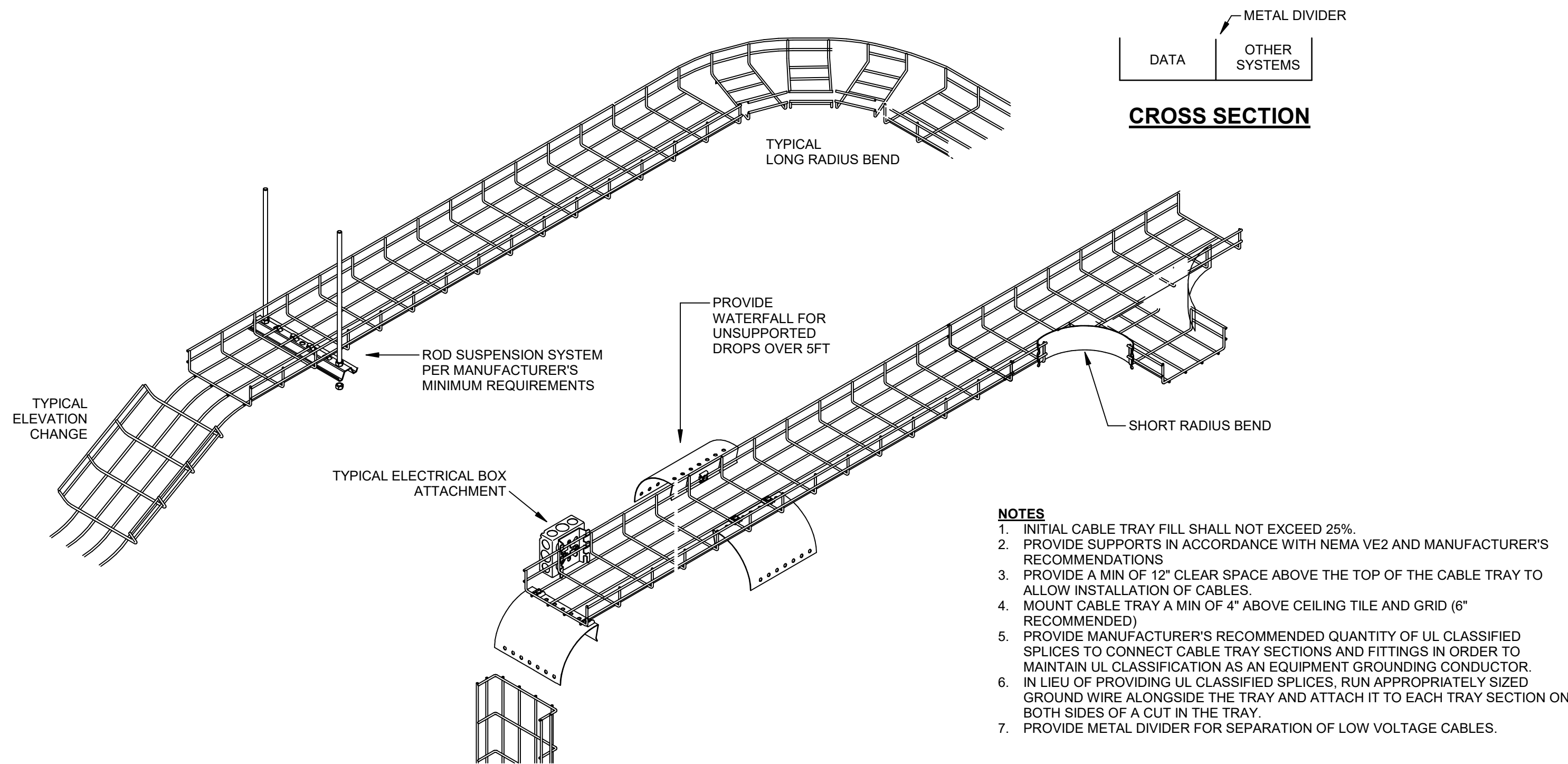
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DRAWING TITLE:  
**ELECTRICAL DETAILS**

**STATE OF KENTUCKY**  
ROBERT ANTHONY HANS  
23143  
Professional Engineer

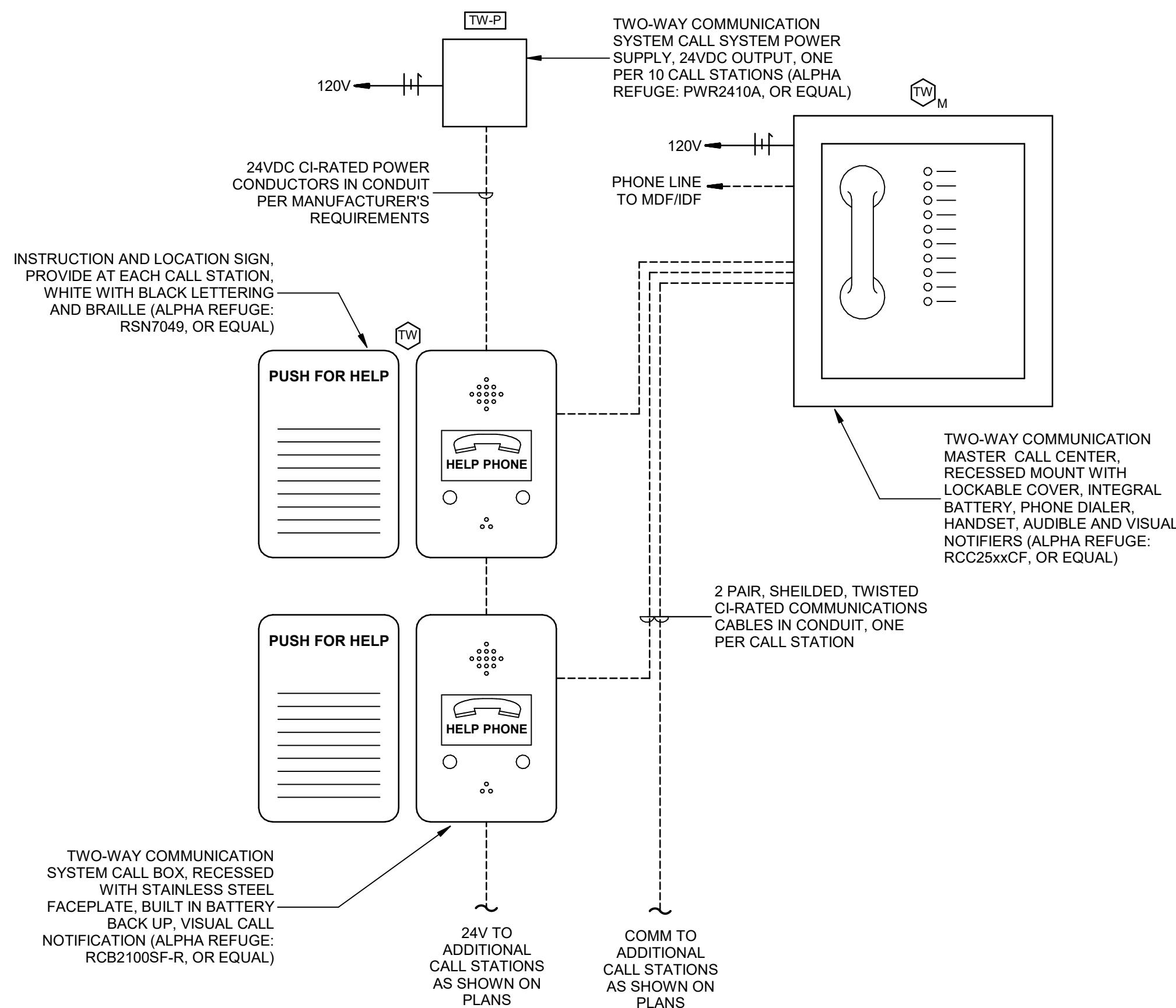
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**E502**  
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### 3 WIRE BASKET CABLE TRAY DETAILS

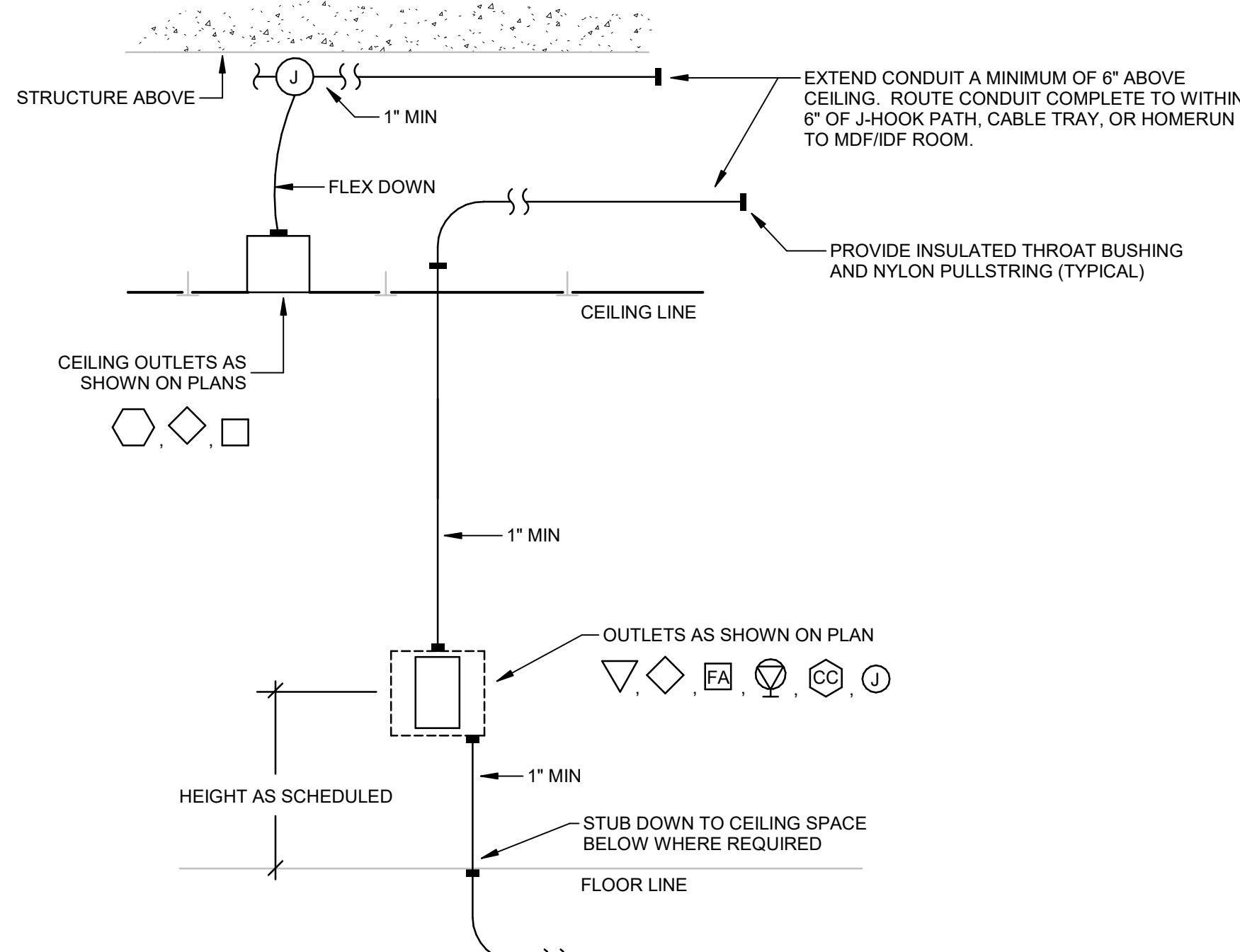
NO SCALE



- GENERAL NOTES:
1. INSTALLED SYSTEM SHALL COMPLY WITH IBC, NFPA, ADAAG, AND ELEVATOR CODE REQUIREMENTS.
  2. COORDINATE EQUIPMENT LOCATIONS WITH ARCHITECTURAL ELEVATIONS AND ELEVATOR CALL STATIONS (WHEN APPLICABLE).
  3. PROVIDE SYSTEM CAPACITY FOR NUMBER OF CALL BOXES SHOWN ON PLANS.
  4. INSTALL POWER SUPPLY ABOVE ACCESSIBLE CEILING NEAR MASTER STATION. PROVIDE ADDITIONAL REMOTE POWER SUPPLIES WHERE VOLTAGE DROP EXCEEDS MANUFACTURER'S RECOMMENDATIONS.
  5. SYSTEM TO HAVE INTEGRAL BATTERY BACKUP.
  6. CALL CENTER CABINET SHALL BE ABLE TO ACCEPT FIREMAN'S LOCK (BY OTHERS).
  7. PROVIDE 'ABL-VOIP' ANALOG TO VOIP ADAPTER WHERE USED WITH VOIP PHONE SYSTEM.
  8. SYSTEM SHALL BE CAPABLE OF DIALING OUT TO FIVE REMOTE PHONE NUMBERS INCLUDING 911.

### 6 TWO-WAY COMMUNICATION DETAIL

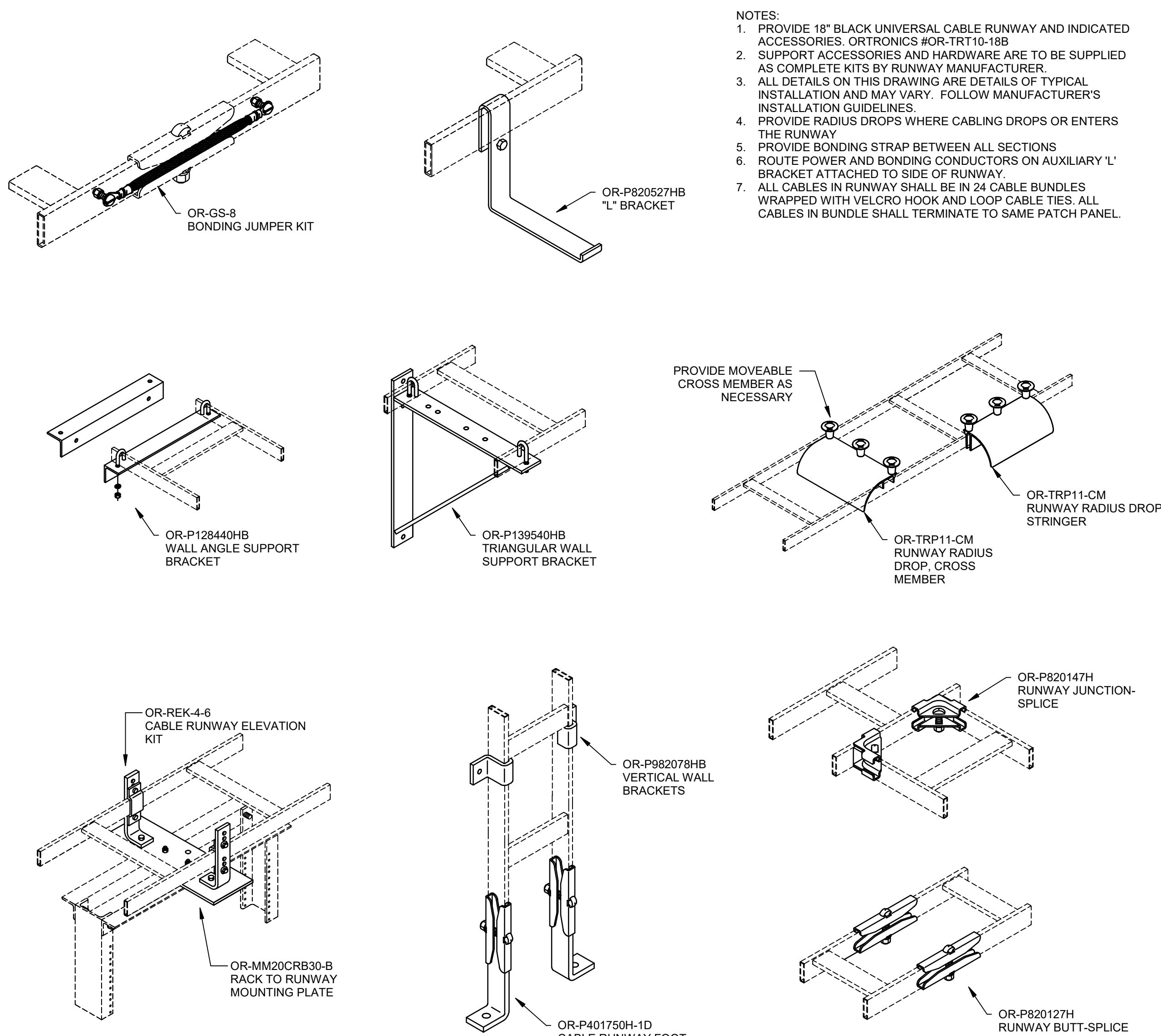
NO SCALE



- NOTES:
1. EXTEND CONDUIT TO NEAREST LOW VOLTAGE PATHWAY UNLESS CABLING TERMINATES AT ANOTHER OUTLET IN THE SAME ROOM.
  2. WHERE OPEN CABLING IS INSTALLED WITHIN ENVIRONMENT AIR PLENUMS, CABLING AND HARDWARE SHALL BE LISTED FOR INSTALLATION IN SUCH LOCATIONS.
  3. LABEL BACK OF OUTLET BOXES AND ENDS OF CONDUIT WITH UNIQUE NUMBER TO IDENTIFY EACH STUB-UP. USE PERMANENT MARKER PEN, 3/4" HIGH LETTERS. MATCH NUMBER ON OUTLET BOX TO END OF CONDUIT.
  4. INSTALL TELECOMMUNICATION AND TV OUTLETS WITHIN 6" OF POWER RECEPTACLE WHERE POWER RECEPTACLE IS SHOWN ON POWER PLANS IN SAME GENERAL LOCATION.

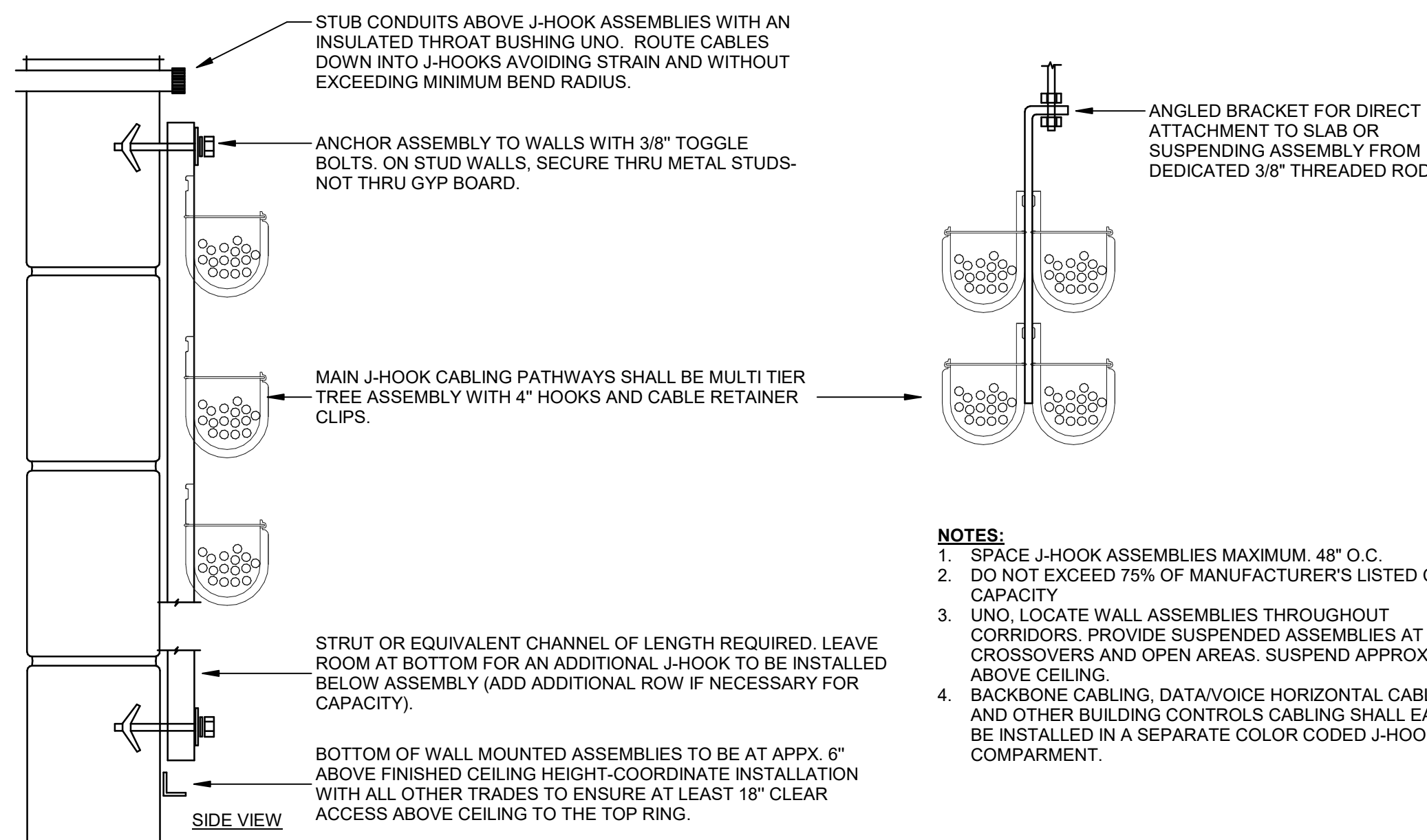
### 5 TELECOMM OUTLET ROUGH-IN DETAIL

NO SCALE



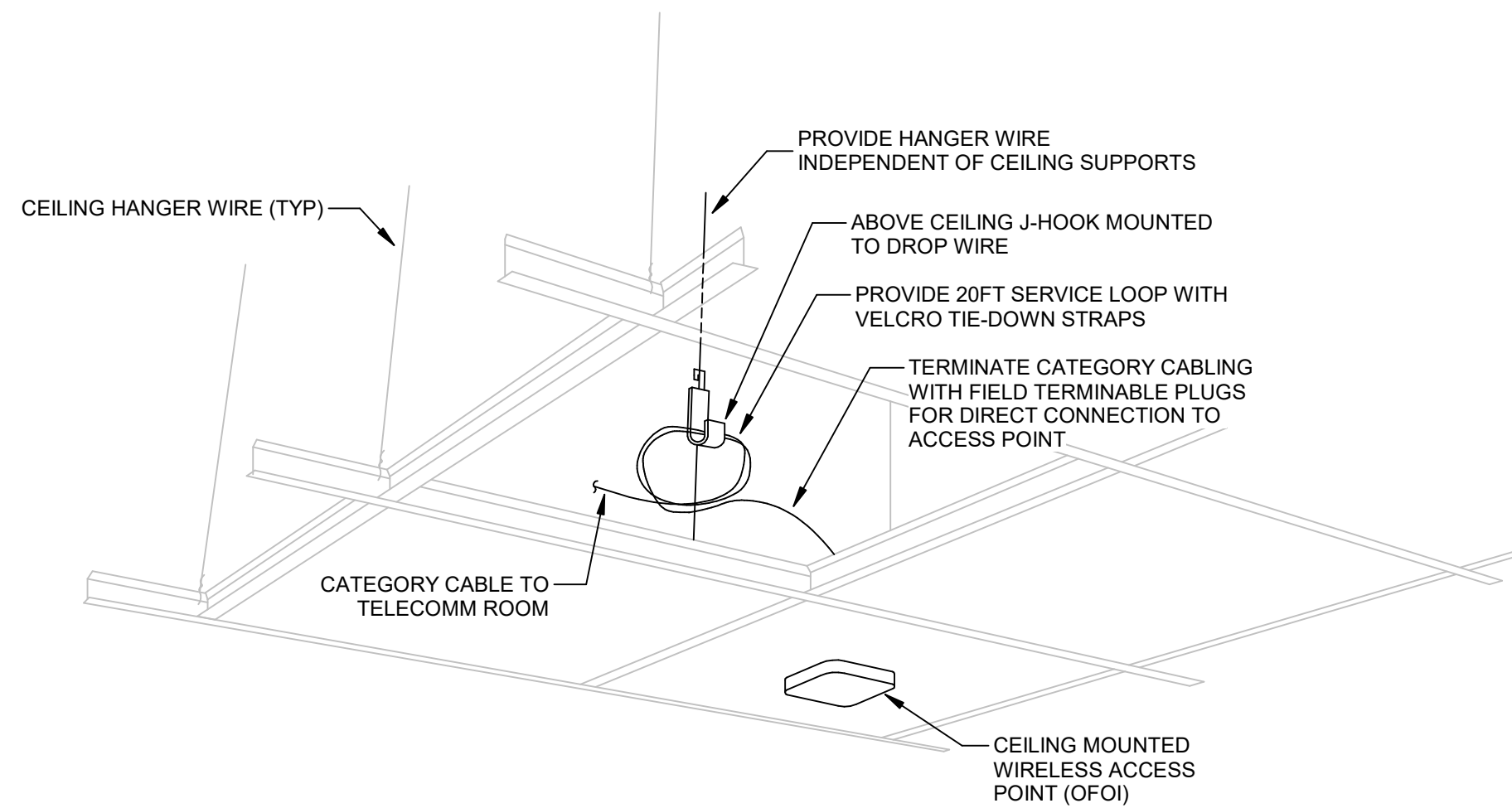
### 1 CABLE RUNWAY DETAILS

NO SCALE



### 2 LOW VOLTAGE J-HOOK INSTALLATION DETAIL

NO SCALE



### 4 WAP - LAY-IN CEILING MOUNTED

NO SCALE

## STATE OF KENTUCKY APPROVAL

NOTES:

1. PROVIDE 18" BLACK UNIVERSAL CABLE RUNWAY AND INDICATED ACCESSORIES. OR-TRONICS: HOR-TRP10-18B
2. SUPPORT ACCESSORIES AND HARDWARE ARE TO BE SUPPLIED AS COMPLETE KITS BY RUNWAY MANUFACTURER
3. ALL DETAILS ON THIS DRAWING ARE DETAILS OF TYPICAL INSTALLATION AND MAY VARY. FOLLOW MANUFACTURER'S INSTALLATION GUIDELINES.
4. PROVIDE RADIUS DROPS WHERE CABLING DROPS OR ENTERS THE RUNWAY
5. PROVIDE BONDING STRAP BETWEEN ALL SECTIONS
6. ROUTE POWER AND BONDING CONDUCTORS ON AUXILIARY 'L' BRACKET ATTACHED TO SIDE OF RUNWAY.
7. ALL CABLES IN RUNWAY SHALL BE IN 24 CABLE BUNDLES WRAPPED WITH VELCRO HOOK AND LOOP CABLE TIES. ALL CABLES IN BUNDLE SHALL TERMINATE TO SAME PATCH PANEL.

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**ELECTRICAL DETAILS**



STATE OF KENTUCKY  
ROBERT ANTHONY HANS  
23143  
Professional Engineer

JANUARY 30, 2020

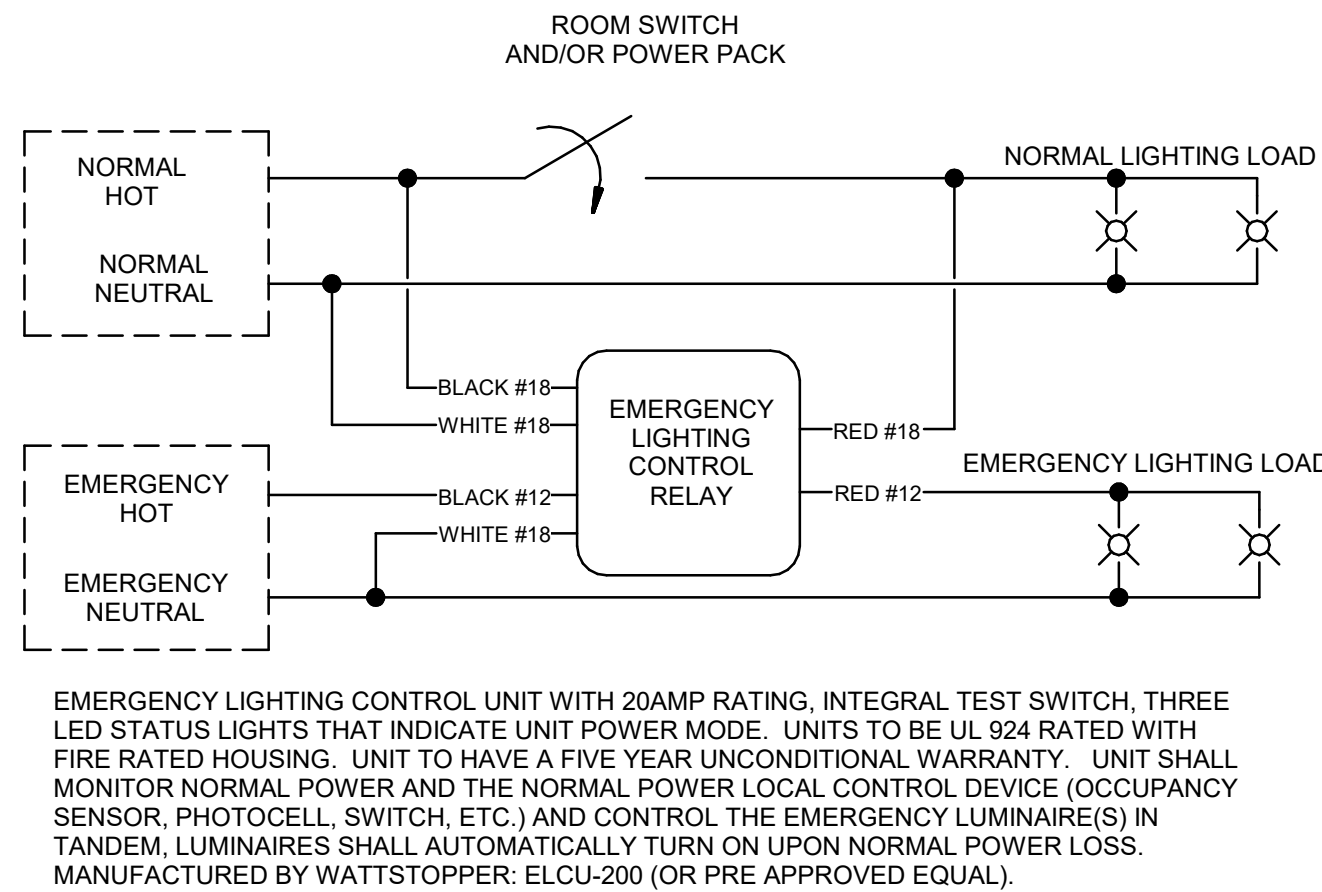
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**E503**

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SEQUENCE	CONTROL TYPE	DESCRIPTION	SEQUENCE OF OPERATION	SPACE TYPES	COMMENTS
A	OCCUPANCY	AUTO ON AUTO OFF	ON: AUTOMATIC ON WHEN OCCUPANCY IS DETECTED OFF: MANUAL OVERRIDE TO OFF VIA WALL SWITCH OFF: AUTOMATIC OFF WHEN NO OCCUPANCY IS DETECTED DURING ADJUSTABLE TIME DELAY.	RESTROOMS (PUBLIC) LAUNDRY	
B	VACANCY	MANUAL ON AUTO OFF	ON: MANUAL ON VIA WALL SWITCH OFF: MANUAL OVERRIDE TO OFF VIA WALL SWITCH OFF: AUTOMATIC OFF WHEN NO OCCUPANCY IS DETECTED DURING ADJUSTABLE TIME DELAY.	STORAGE JANITOR STUDY RESTROOMS (PRIVATE)	
C	MANUAL	MANUAL ON MANUAL OFF	ON: MANUAL ON VIA WALL SWITCH OFF: MANUAL OFF VIA WALL SWITCH	SLEEPING UNIT ELECTRICAL MECHANICAL	
D	VACANCY W/ SINGLE-ZONE CONTINUOUS DIMMING	MANUAL ON CONTINUOUS DIMMING AUTO OFF	ON: MANUAL ON VIA WALL SWITCH(ES) ADJUST 0-100% CONTROL VIA WALL SWITCH(ES) AT ROOM ENTRY OFF: AUTOMATIC OFF WHEN NO OCCUPANCY IS DETECTED DURING ADJUSTABLE TIME DELAY.	PRIVATE OFFICE	
E	BAS SCHEDULE	AUTO ON AUTO OFF	ON: AUTOMATIC ON VIA CONTACTOR AND BUILDING AUTOMATION SYSTEM SCHEDULE ON: OVERRIDE TO ON VIA MASTER CONTROL SWITCH FOR PROGRAMMED TIME PERIOD. OFF: OVERRIDE TO OFF VIA BUILDING AUTOMATION SYSTEM SCHEDULE.	CIRCULATION/CORRIDOR COMMON AREA	
F	BAS SCHEDULE/ PHOTOCELL	AUTO ON AUTO OFF MANUAL OVERRIDE	ON: AUTO ON AT DUSK VIA EXTERIOR PHOTOCELL OFF: AUTO OFF AT DAWN VIA EXTERIOR PHOTOCELL OFF: OVERRIDE TO OFF VIA BAS	EXTERIOR (BUILDING) EXTERIOR (AREA)	
G					
H					
J					
K					
L					

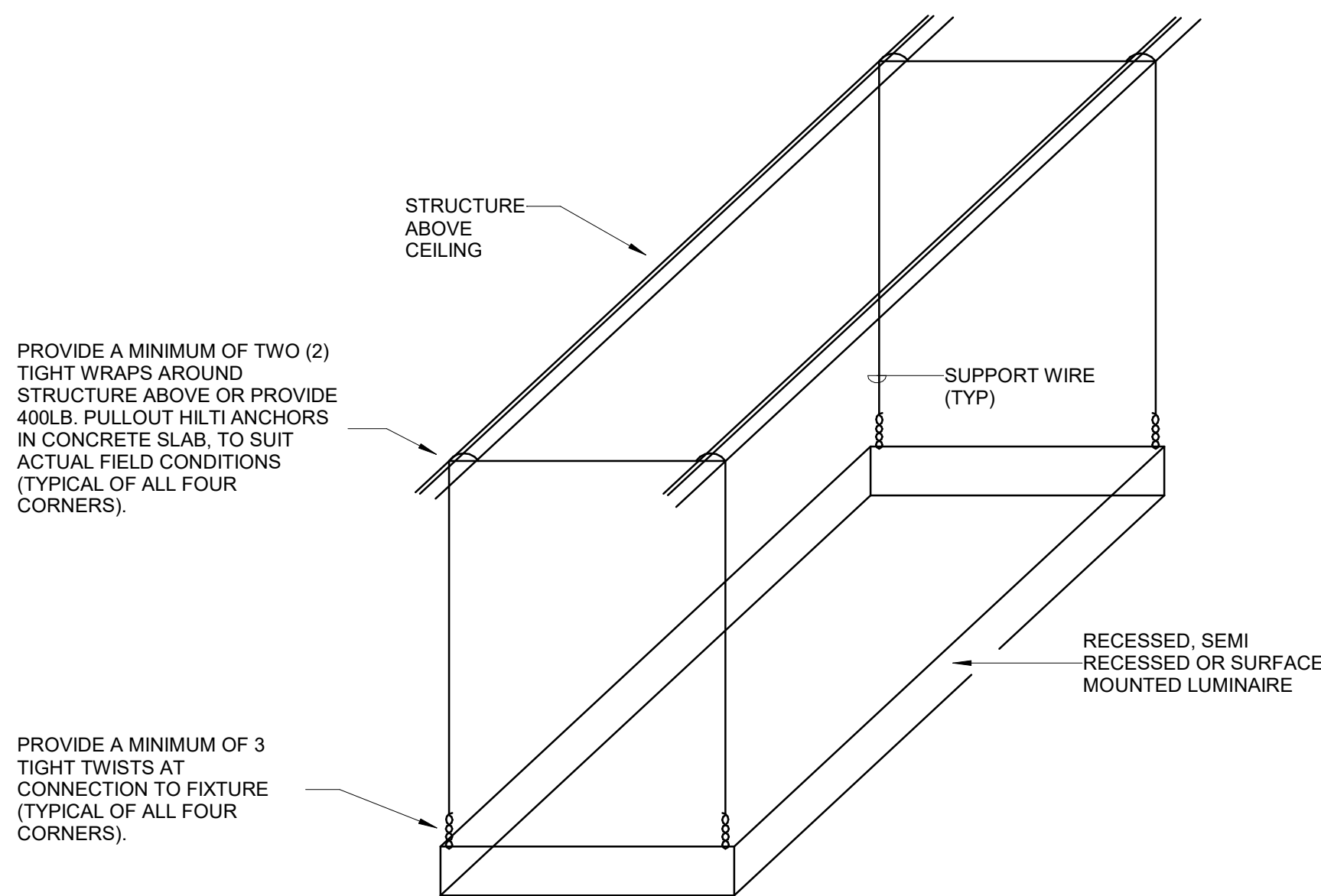
NOTES:  
1. WHERE EMERGENCY FIXTURES ARE SHOWN SWITCHED IN A CONTROL ZONE, PROVIDE A UL924 RATED RELAY TO AUTOMATICALLY OVERRIDE LUMINAIRES TO 100% OUTPUT UPON LOSS OF NORMAL POWER.



- NOTES:
1. INSTALL UNITS ABOVE ACCESSIBLE CEILING NEAR LUMINAIRE(S) TO BE CONTROLLED.
  2. THE CONTRACTOR SHALL PROVIDE CAD DRAWINGS INDICATING EXACT LOCATION OF EMERGENCY LIGHTING CONTROL UNITS AND SUBMIT INFORMATION AS SHOP DRAWINGS FOR APPROVAL BY ENGINEER. LOCATE ALL RELAYS SUCH THAT STATUS INDICATOR LIGHTS ARE IN VIEW FROM BELOW FOR EASE OF INSPECTION.
  3. UNIT SHALL NOT HAVE AUDIBLE INDICATOR.
  4. RELAYS CONTROLLING LIGHTS WITH DIMMING CONTROLS SHALL HAVE EMERGENCY AND NORMAL FEEDS ON SAME PHASE.

## 5 EMERGENCY CONTROL RELAY WIRING DIAGRAM

NO SCALE

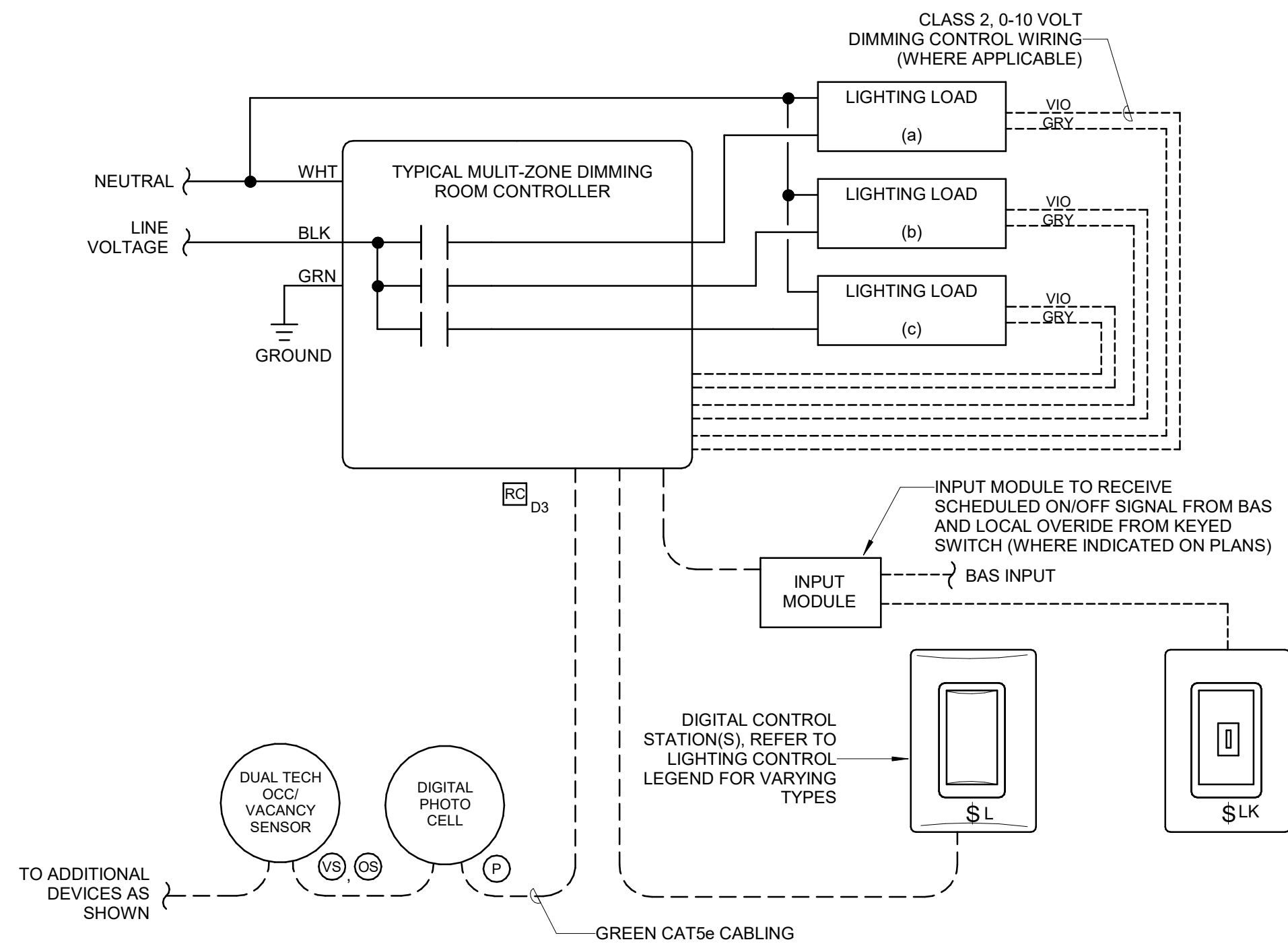


- GENERAL TROFFER SUPPORT DETAIL NOTES:
1. SUPPORT WIRES SHALL BE GALVANIZED REGULAR COATING, SOFT TEMPER, 0.1055 INCHES IN DIAMETER (12 GAGE).
  2. ALTERNATELY, CONTRACTOR MAY SUPPORT FIXTURES WITH SINGLE WIRE FROM ALL FOUR CORNERS OF FIXTURE PER SPECIFICATIONS WITH NUMBER OF TWISTS AT FIXTURE AND NUMBER OF WRAPS AROUND STRUCTURE INDICATED IN THIS DETAIL.

## 1 LUMINAIRE SUPPORT DETAIL

NO SCALE

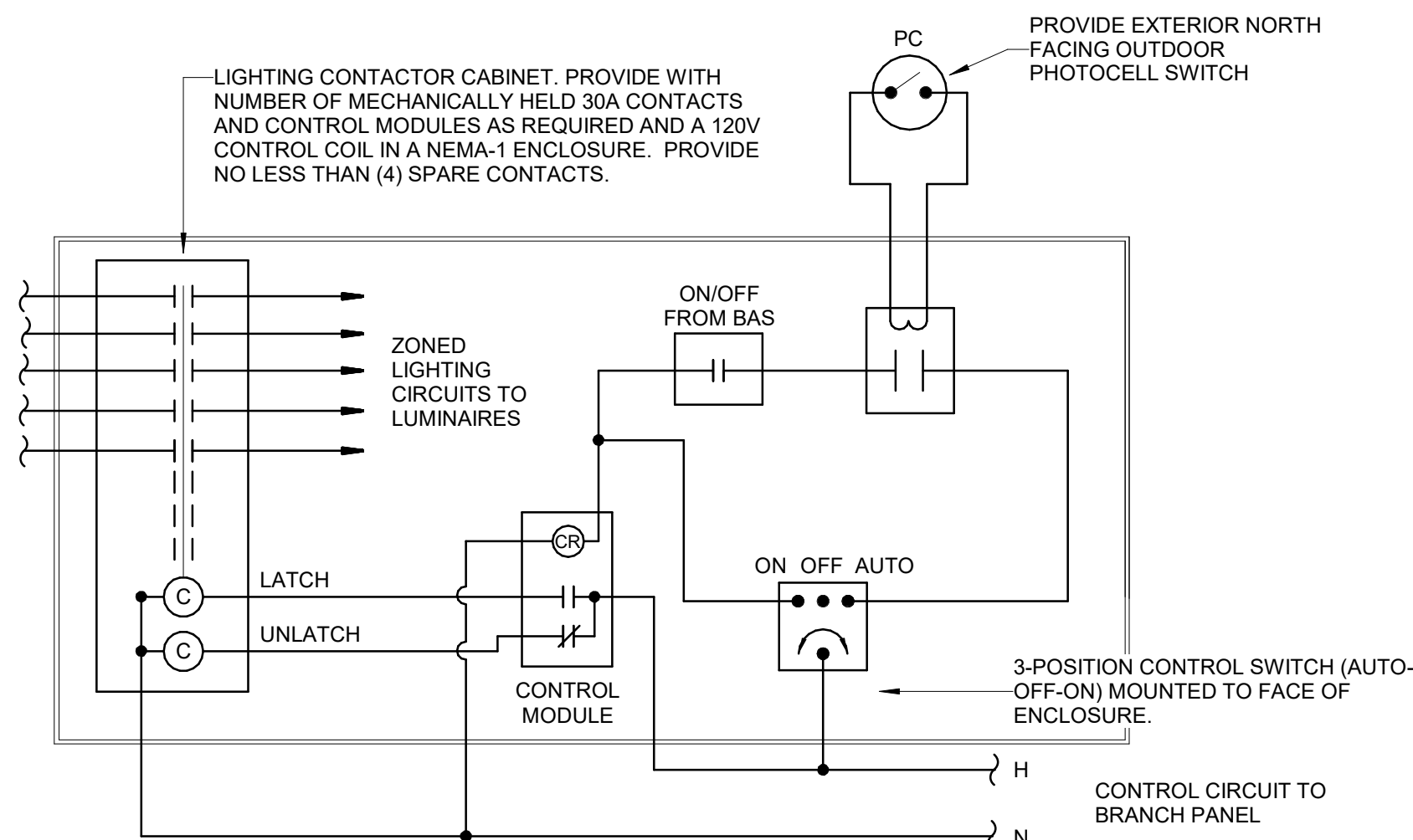
LIGHTING CONTROL DEVICE SCHEDULE						
SYMBOL	MODIFIER	DESCRIPTION	VOLTAGE	BASIS OF DESIGN		ALTERNATE MANUFACTURER
				MANUFACTURER	MODEL	
\$	L	DIGITAL ON/OFF WALL SWITCH, SINGLE ZONE	24 V	WATTSTOPPER	LVSW-101	SENSOR SWITCH
\$	LK	MOMENTARY KEYED SWITCH WITH DIGITAL INPUT INTERFACE	24 V	WATTSTOPPER	HS-150 & LMIN-104	NLIGHT
\$	OS	WALL SWITCH SENSOR, DUAL TECHNOLOGY, SINGLE POLE	120 V	WATTSTOPPER	DSW-301	SENSOR SWITCH
\$	VS	WALL SWITCH SENSOR, DUAL TECHNOLOGY, SINGLE POLE, PROGRAMMED FOR VACANCY MODE		WATTSTOPPER	DSW-301	SENSOR SWITCH
\$	VSD	WALL SWITCH SENSOR, DUAL TECHNOLOGY, SINGLE POLE, PROGRAMMED FOR VACANCY MODE, 0-10V DIMMING	120 V	WATTSTOPPER	DW-311	SENSOR SWITCH
VS	L	DIGITAL CEILING SENSOR, DUAL TECHNOLOGY, STANDARD RANGE, PROGRAMMED FOR VACANCY MODE	24 V	WATTSTOPPER	LMDC-100	NLIGHT
VS	L	DIGITAL CEILING SENSOR, DUAL TECHNOLOGY, STANDARD RANGE, PROGRAMMED FOR OCCUPANCY MODE	24 V	WATTSTOPPER	LMDC-100	NLIGHT
RC		DIGITAL ROOM CONTROLLER, SINGLE ZONE, ON/OFF	120 V	WATTSTOPPER	LMRC-101	NLIGHT
RC	D1	DIGITAL ROOM CONTROLLER, SINGLE ZONE, ON/OFF, 0-10V DIMMING	120 V	WATTSTOPPER	LMRC-211	NLIGHT
RC	D2	DIGITAL ROOM CONTROLLER, DUAL ZONE, ON/OFF, 0-10V DIMMING	120 V	WATTSTOPPER	LMRC-212	NLIGHT
P		DIGITAL PHOTOCELL, CLOSED LOOP	24 V	WATTSTOPPER	LMLS-400	NLIGHT



- NOTES:
1. REFER TO LIGHTING CONTROL LEGEND FOR DEVICE TYPES.
  2. BAS TO PROVIDE SCHEDULED ON/OFF TO SYSTEM CONTROLLER. REFER TO CONTROLS SPECIFICATIONS FOR RELATED INFORMATION.
  3. DIGITAL BUTTON STATIONS TO HAVE IR TRANSCIVER AND LED INDICATORS.
  4. INSTALL CONTROLLERS ABOVE ACCESSIBLE CEILING NEAR LUMINAIRE(S) TO BE CONTROLLED. THE CONTRACTOR SHALL PROVIDE CAD DRAWINGS INDICATING EXACT LOCATION OF CONTROL DEVICES AND SUBMIT INFORMATION AS SHOP DRAWINGS FOR APPROVAL BY ENGINEER.
  5. SET PHOTOCELL LOW TRIM TO 25%.
  6. ALL CONTROL STATIONS WITH MORE THAN TWO BUTTONS SHALL HAVE FACTORY ENGRAVED BUTTON FACES. LABEL NAMES TO BE PER OWNER.
  7. CONTRACTOR TO SUBMIT MANUFACTURER PROVIDED SHOP DRAWINGS SHOWING COMPLETE BILL OF MATERIAL, SYSTEM TOPOLOGY, CONNECTION POINTS TO OTHER SYSTEMS, PROPOSED SETTINGS, PROPOSED LABELS, AND WIRING DIAGRAMS FOR REVIEW BY ENGINEER PRIOR TO RELEASE OF MATERIAL.

## 4 INTERIOR LIGHTING CONTROL WIRING

NO SCALE



- NOTES:
1. MECHANICALLY HELD CONTACTORS SHALL RETAIN CURRENT STATE DURING A BUILDING AUTOMATION SYSTEM FAILURE
  2. PROVIDE EMERGENCY RELAY DEVICE FOR EXTERIOR LUMINAIRES FED FROM EMERGENCY PANEL THAT WILL BYPASS CONTROLS AND FORCE LIGHTS ON IN THE EVENT OF A POWER OUTAGE.
  3. H-O-A SWITCH TO BE LOCATED 48" AFF. REMOTE MOUNT AS NECESSARY.
  4. REFER TO SEQUENCE OF OPERATION FOR TYPICAL CONTROL SCHEDULE.

## 3 EXTERIOR LIGHTING CONTROL DETAIL

NO SCALE

## STATE OF KENTUCKY APPROVAL

#	DATE	CHANGE DESCRIPTION

NORTHERN KENTUCKY UNIVERSITY

**NEW STUDENT HOUSING**  
KENTON DRIVE & CARROLL DRIVE  
HIGHLAND HEIGHTS, KY 41099  
FOR  
**NORTHERN KENTUCKY UNIVERSITY**

MOODY•NOLAN

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DRAWING TITLE:

## LIGHTING CONTROL DETAILS

STATE OF KENTUCKY  
ROBERT ANTHONY HANS  
23143  
Professional Engineer

JANUARY 30, 2020  
DRAWN BY: GCR  
CHECKED BY:  
-  
**E504**  
BID & PERMIT SUBMITTAL



ELEC - INTERIOR LUMINAIRE SCHEDULE										
TYPE	DESCRIPTION	BASIS OF DESIGN		EQUAL MANUFACTURERS	MOUNTING	LAMPS / CCT	MINIMUM LUMENS	MAXIMUM WATTAGE	VOLTAGE	REMARKS
		MANUFACTURER	MODEL							
A6	SQUARE SURFACE MOUNT LED FLAT PANEL DOWNLIGHT, NON-CONDUCTIVE DEAD FRONT HOUSING, WIDE DISTRIBUTION ACRYLIC OPTICS, 90CRI	HALO	SM06S-12-935-WH	JUNO	SURFACE	3500K LED	1200 LUMENS	16	120	
B6	ROUND SURFACE MOUNT LED FLAT PANEL DOWNLIGHT, NON-CONDUCTIVE DEAD FRONT HOUSING, WIDE DISTRIBUTION ACRYLIC OPTICS, 90CRI	HALO	SM06R-12-935-WH	JUNO AFX EDGE	SURFACE	3500K LED	1200 LUMENS	16	120	
C4	4" LED INDUSTRIAL STRIP WITH ROUND DIFFUSE LENS	METALUX	4-SNL-ED-LD5-41SL-LW-UNV-L835-CD-1	LITHONIA CLX UTOPIA SSLED	SUSPENDED	3500K LED	4000 LUMENS	35	120	
D4R	4" ROUND RECESSED LED DOWNLIGHT, MEDIUM DISTRIBUTION, FLANGED SEMI-SPECULAR ALUMINUM REFLECTOR	HALO	HC4-15-D010 & HM4-12-835-41-MD-H	LITHONIA LDN4 CASAMBI AL4R	RECESSED	3500K LED	1000 LUMENS	11	120	
D4S	4" SQUARE RECESSED LED DOWNLIGHT, MEDIUM DISTRIBUTION, FLANGED SEMI-SPECULAR ALUMINUM REFLECTOR	HALO	HC4-10-D010 & SM4-12-8FS-41S-MD-H	LITHONIA LDN4 CASAMBI AL4RS	RECESSED	3500K LED	1000 LUMENS	11	120	
F	MODERN CEILING FAN, DIE CAST ALUMINUM HOUSING, 6-SPEED MOTOR, FAN CONTROLLER	MODERN FAN	CIR-FM-BA-50-AL-NL-WVC		SURFACE	NA	NA	36	120	
G	1'X4" LED FLAT PANEL, LOW PROFILE ALUMINUM BEZEL WITH SEAMLESS CORNERS, ACRYLIC FROSTED LENS, IMPACT RESISTANT	METALUX	14FP3035HE	LITHONIA EPANEL LITELINE LEDP	RECESSED	3500K LED	3000 LUMENS	25	120	
H8	8" SUSPENDED LED CYLINDER, SPUN ALUMINUM HOUSING, WIDE DISTRIBUTION, FLANGED ALUMINUM REFLECTOR	HALO	HCC8S-1500-D010-MB-HCC8P36MB-SPXX & HM8-1520-835-81-WD-H	LITHONIA LDN8	PENDANT	3500K LED	1500 LUMENS	37	120	
L1	SUSPENDED LED LINEAR DIRECT FIXTURE, 2" APERTURE, EXTRUDED ALUMINUM HOUSING, DIE CAST ENDCAPS, SATIN ACRYLIC DIFFUSER, WHITE STEEL REFLECTOR	FINELITE	HP2-D-X-S-835-F-120V-FM-FE-SC	AXIS BEAM2	PENDANT	3500K LED	330 LUMENS/FT	120		SEE PLANS FOR RUN LENGTHS
P2	60" CIRCULAR LED PENDANT, EXTRUDED ALUMINUM HOUSING, 2" APERTURE, CENTRAL CANOPY	SCOTT LIGHTING	S2793-D-L90-39K-BA-L36	BETA CALCO	SUSPENDED	3500K LED	5000 LUMENS	90	120	
P3	36" CIRCULAR LED PENDANT, EXTRUDED ALUMINUM HOUSING, 2" APERTURE, CENTRAL CANOPY	SCOTT LIGHTING	S2791-D-L62-39K-BA-L36	BETA CALCO	SUSPENDED	3500K LED	3000 LUMENS	62	120	
R2B	RECESSED LED LINEAR FIXTURE, 2" APERTURE, EXTRUDED ALUMINUM HOUSING, DIE CAST ENDCAPS, SATIN ACRYLIC DIFFUSER, WHITE STEEL REFLECTOR	FINELITE	HP2-R-2-S-835-F-120V-SC-FE	AXIS BEAM4	RECESSED	3500K LED	340 LUMENS/FT	30	120	
R4A	RECESSED LED LINEAR FIXTURE, 4" APERTURE, EXTRUDED ALUMINUM HOUSING, DIE CAST ENDCAPS, SATIN ACRYLIC DIFFUSER, WHITE STEEL REFLECTOR	FINELITE	HP4-R-4-S-835-F-120V-SC-FE	AXIS BEAM4	RECESSED	3500K LED	625 LUMENS/FT	30	120	
R4B	RECESSED LED LINEAR FIXTURE, 4" APERTURE, EXTRUDED ALUMINUM HOUSING, DIE CAST ENDCAPS, SATIN ACRYLIC DIFFUSER, WHITE STEEL REFLECTOR	FINELITE	HP4-R-4-S-835-F-120V-SC-FE	AXIS BEAM4	RECESSED	3500K LED	625 LUMENS/FT	30	120	
R6A	RECESSED LED LINEAR FIXTURE, 4" APERTURE, EXTRUDED ALUMINUM HOUSING, DIE CAST ENDCAPS, SATIN ACRYLIC DIFFUSER, WHITE STEEL REFLECTOR	FINELITE	HP4-R-6-S-835-F-120V-SC-FE	AXIS BEAM4	RECESSED	3500K LED	380 LUMENS/FT	30	120	
S4	4FT SURFACE MOUNT LINEAR WITH INTEGRAL OCCUPANCY SENSOR AND 10% STEP DIMMING, STEEL HOUSING, FROSTED WIDE DISTRIBUTION LENS	METALUX	4-SWLED-S2HL-LW-UNV-L835-SD-1-SVPD1	LITHONIA WL	SURFACE	3500K LED	5000 LUMENS	54	120	
VL2	LED WALL MOUNT VANITY LIGHT, INTEGRAL POWER SUPPLY, HIGH IMPACT ACRYLIC LENS	TERON LIGHTING	VCY24-L18.0-LT500-120/277-XX-35K	OXYGEN	WALL	3500K LED	2000 LUMENS	18	120	FINISH PER ARCHITECT
VP	2' LED VAPORTIGHT, FIBERGLASS HOUSING, ACRYLIC LENS, GASKETED, STAINLESS STEEL LATCHES	METALUX	2VT3-LD5-4-G-120V-L840-TP	LITHONIA DMW2 ATLAS ILW	WALL	4000K LED	4000 LUMENS	25	120	
WB1	16" WALL MOUNTED LED CLOSET LIGHT	LITHONIA LIGHTING	FMMLCL18-840-S1		WALL	4000K LED	925 LUMENS	14	120	
WB2	LINEAR DIRECT INDIRECT WALL MOUNT, EXTRUDED ALUMINUM HOUSING WITH INTERNAL JOINER, DIE CAST ENDCAPS, ASYMETRIC UPLIGHT, STEEL REFLECTOR, CONCEALED MOUNTING BRACKET	FINELITE	HP2-WM-ID-X-S-S-835-F-ASYR-120V-FE-SC	AXIS BEAM2	WALL 9'-0"	3500K LED	600 LUMENS/FT	32	120	
X1	THERMOPLASTIC EXIT SIGN, UNIVERSAL MOUNT, RED LETTERS, WHITE HOUSING	SURELITES	LPX-6	LITHONIA LQM	UNIVERSAL	LED		2	120	

ELEC - EXTERIOR LUMINAIRE SCHEDULE										
TYPE	DESCRIPTION	BASIS OF DESIGN		EQUAL MANUFACTURERS	MOUNTING	LAMPS / CCT	MINIMUM LUMENS	MAXIMUM WATTAGE	VOLTAGE	REMARKS
		MANUFACTURER	MODEL							
OP1	CAMPUS STANDARD LED ROADWAY AREA LIGHT, STEEL POLE, TYPE 3 DISTRIBUTION, PHOTOCELL	AEL	ATB2-80BLEDE70-MVOLT-R3		18" BASE 30FT POLE	5000K LED	22,000 LUMENS	177		MATCH EXISTING CAMPUS STANDARDS. PROVIDE VIBRATION DAMPENER IN POLE
OP2	CAMPUS STANDARD LED POLE MOUNTED INDIRECT PEDESTRIAN LIGHT, STEEL POLE, TYPE V DISTRIBUTION	BEGA	77210 & 906HR		PLAZA BASE 12FT POLE	4000K LED	4000 LUMENS	55	120	PROVIDE VIBRATION DAMPENER
OP3	LED STRING LIGHTING, MEDIUM BASE LAMPS, FROSTED GLOBE, STAINLESS STEEL AIRCRAFT CABLE MOUNTING	CELESTIAL	HYA-STL-GF-24 RSA-4-T-15-A-A-X-C-V	TOKISTAR	PLAZA BASE 15FT POLE	2700K LED		55	120	
OWP5	LED WALL PACK, DIE CAST ALUMINUM HOUSING, POWDER COAT FINISH, GASKETED, TYPE IV DISTRIBUTION	PERFORMANCE IN LIGHTING	070022		WALL	4000K LED	4000 LUMENS	36	120	FINISH PER ARCHITECT

ELEC - EQUIPMENT CONNECTION SCHEDULE							
EQUIP ID	DESCRIPTION	DISCONNECT MEANS	VOLTAGE	POLES	HP	POWER (KVA)	MCA
AC-1	SPLIT SYSTEM	30A/2P MOTOR RATED SWITCH	208	2		0.21	1
AFD	AIR FLOW DAMPERS	30A/1P MOTOR RATED SWITCH	120	1		0.02	
BH-4	BASE HEATER	FURNISHED WITH UNIT	120	1		0.60	
BH-10	BASE HEATER	FURNISHED WITH UNIT	120	1		1.50	
BP1	DOMESTIC WATER BOOSTER PUMP	60A/3P NON-FUSED DISCONNECT SWITCH	208	3	7.5	9.13	
CEF-1	CEILING EXHAUST FAN	30A/1P MOTOR RATED SWITCH	120	1	1/4	0.70	
CU-1	SPLIT SYSTEM OUTDOOR UNIT	30A/2P NON-FUSED DISCONNECT SWITCH	208	2		4.90	23.9
EH-1	ELECTRIC UNIT HEATER	FURNISHED WITH UNIT	120	1		1.50	
EH-2	ELECTRIC UNIT HEATER	FURNISHED WITH UNIT	208	2		3.20	
EH-3	ELECTRIC UNIT HEATER	FURNISHED WITH UNIT	208	2		3.20	
HHP-12	HEAT PUMP	FURNISHED WITH UNIT	208	2		1.50	7
OA1	ROOFTOP OUTSIDE AIR UNIT - NORTH	FURNISHED WITH UNIT	208	3		91.00	265
OA-2	ROOFTOP OUTSIDE AIR UNIT - SOUTH	FURNISHED WITH UNIT	208	3		96.30	283
P-1	HYDRONIC PUMP	VFD BY MECHANICAL	208	3	20	22.40	
RH-1	RESIDENTIAL RANGE HOOD	WALL SWITCH	120	1		0.42	2
SF-1	SIDESTREAM FILTER		208	3	1.5	2.50	
VHP-12	HEAT PUMP	FURNISHED WITH UNIT	208	2		1.50	7
VHP-16	HEAT PUMP	FURNISHED WITH UNIT	208	2		2.10	10
VHP-24	HEAT PUMP	FURNISHED WITH UNIT	208	3		4.00	11
VHP-72	HEAT PUMP	FURNISHED WITH UNIT	208	3		11.20	31
WH	WATER HEATER	30A/1P MOTOR RATED SWITCH	120	1		1.20	

STATE OF KENTUCKY APPROVAL

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DRAWING TITLE:  
**ELECTRICAL SCHEDULES**



**ROBERT ANTHONY HANS**  
23143  
**PROFESSIONAL ENGINEER**

JANUARY 30, 2020	
DRAWN BY: GCR	CHECKED BY:
-	
<b>E601</b>	
BID & PERMIT SUBMITTAL	

PANEL BOARD AND WIRING SCHEDULE

PANEL RA1

MAINS TYPE: M.O

SFD: NO

SAC RATING: 10

VOLTAGE: 120/208V, 1P/3W

MOUNTING: FLUSH

LOCATION: RESIDENT MGR.'S APT...

AMPERES: 175 A

SUPPLY FROM: RP1B

CIRCUIT DESCRIPTION	WIRE	GND	C	OCF	P	CKT	A	B	CKT	P	OCF	C	GND	WIRE	CIRCUIT DESCRIPTION
REC - BEDROOM 154A			3			1	0.7	0.2		1	20				REC - VENTILY 154
HEAT PUMP - UNIT 154					20	2	1.1	4.0		6	50				KITCH RANGE
REC - COUNTER					20	1	7			8	1	20			REC - COUNTER
REC - BEDROOM 154B			3		9		0.7	1.5		10	1	20			EQUIP - WASHER
REC - DISHWASHER					20	1	11		1.5	0.2	12	1	20		REC - COUNTER
ELEC DRYER			30		2	13	2.5	1.1		14	1	20			REC - LIVING
REC - REFRIG - NOTE 2					20	1	15		2.5	0.3	16	1	20		LTNG
REC - MICROWAVE					20	1	19		1.5	1.5	20	1	20		RANGE HOOD
SPARE	--	--			20	1	21	0.0	0.0		22	1	20	--	REC - GARBAGE DISPOSAL
SPARE	--	--			20	1	23				24	1	20	--	SPARE
TOTAL LOAD (VA):							13.3 kVA	12.9 kVA							
TOTAL CURRENT (A):							127 A	124 A							
LOAD CLASSIFICATION	CONNECTED LOAD			DEMAND FACTOR			ESTIMATED DEMAND			PANEL TOTALS					
COUP	6 VA			100.00%			6 VA			TOTAL CONNECTED LOAD: 26180 VA					
HVAC	2100 VA			100.00%			2100 VA			TOTAL ESTIMATED DEMAND: 26264 VA					
LTNG	334 VA			125.00%			418 VA			TOTAL CONNECTED CURRENT: 126 A					
REC	3240 VA			100.00%			3240 VA			TOTAL ESTIMATED DEMAND CURRENT: 126 A					
DRYER - DWELLING	5000 VA			100.00%			5000 VA								
RANGE - DWELLING	8000 VA			100.00%			8000 VA								
APPLIANCE - DWELLING	7500 VA			100.00%			7500 VA								

NOTES: WHERE NOT LISTED, WIRE AND CONDUIT SHALL BE MINIMUM PER SPECIFICATIONS. SPARE BREAKERS TO BE 20A/1P.

1. ALL CIRCUIT BREAKERS FEEDING OUTLETS AND DEVICES IN DORM UNIT BEDROOMS, BATHROOMS, HALLWAYS, LIVING ROOMS, AND CLOSETS SHALL BE AFCI TYPE.

2. PROVIDE GFCI TYPE CIRCUIT BREAKER

[illegible][illegible]

PANEL: RP1A										AVAILABLE FAULT CURRENT: 50 I									
VOLTAGE: 208Y/120V, 3P, 4W										MISC BRACING: E5									
AMPERS: 400 A										LOCATION: ELEC 124E									
										SUPPLY FROM: MDP									
CIRCUIT DESCRIPTION	NOTE	WIRE	GND	C	OP	C	P	OKT	A	B	C	OKT	P	OP	C	GND	WIRE	NOTE	CIRCUIT DESCRIPTION
KITCH - RANGE				50	2	1		4	8	1.5		2	1		20				KITCH MICRO
REC - REFRIG				20	1			3		4.8	4.8		4		50				KITCH - RANGE
KITCH RANGE HOOD				20	1	5						6							
EQUIP - ADA DOOR...				20	1	9				1.0	0.8		8		20				EQUIP - ADA DOOR...
LTNG - MAIN LOBBY				20	1	11						1.0	0.5		12				LTNG - BACK OF HOUSE...
REC - REFRIG	2			20	1	13		0.6	1.6						14				LTNG - LOBBY STUDY...
EH-1 - CORRIDOR				20	1	15				1.5	1.6				2				EH-3 - STAIR 2
MECHANICAL 122M				20	1	17						1.4	0.4		18				REC SECURITY PANELS
WATER COOLER				20	1	19		1.0	0.7						20				REC - STUDY
REC - STUDY 101C				20	1	21				0.6	1.1				22				REC - STUDY
REC - EXTERIOR				20	1	23						0.5	0.5		24				REC - EXTERIOR
EQUIP WATER HEAT				20	1	25		2.4	2.4						26				EQUIP WATER HEAT
REC STORAGE				20	1	27				0.9	0.2				28				EQUIP VENDING
EQUIP VENDING				20	1	29						0.2	0.2		30				EQUIP VENDING
REC RESTROOMS				20	1	31		0.9	0.7						32				REC SITTING AREA
REC - LOBBY				20	1	33				0.7	1.3				34				REC - MAIN LOBBY
REC OFFICE				20	1	35						0.9	0.4		36				REC - KITCH COUNTER
REC - KITCH COUNTER				20	1	37		0.4	0.5						38				RECIRC - MECHANICAL...
KITCH MICRO				20	1	39				1.5	1.2				40				HAND DRYER - WOMENS
HAND DRYER - MENS				20	1	41						1.2	2.7		42				
TOP PANELS				20	1	43		1.0	2.7					25	34*	#10	#10		CU-1 - OUTDOOR
EH-2 - FIRE PUMP 116				20	2	45				1.6	1.1				46				REC Room 124E
BH-2 - MECHANICAL 130M				20	2	47		1.6	1.6			1.6	0.4		48				KITCH RANGE HOOD
						49									50				EH-2 - ELEC 124E
						51				1.6	1.6				52				
VHP-24 - MECHANICAL 122M				15	3	53						1.3	1.6		54				EH-2 - MECHANICAL 122M
						55		1.3	1.6						56				

PANEL BOARD AND WIRING SCHEDULE														AVAILABLE FAULT CURRENT: 112		
PANEL: RP1B				MANS TYPE: MLO				KIC RATING: 18				LOCATION: MECH/ELEC 140				
VOLTAGE: 209Y/120V, 3P,4W				SPD: NO				SUPPLY FROM: MDP								
AMPERES: 400 A				MOUNTING: SURFACE												
CIRCUIT DESCRIPTION	WIRE	GND	C	OPC	P	CKT	A	B	C	CKT	P	OPC	GND	WIRE	CIRCUIT DESCRIPTION	
RA1	(3/#1)	#6	1-1/4"	150	2	1	13.3	1		2	2	15			HEAT PUMP - UNIT 163	
						3		12.9	1.1		4					
						5				1.1	1.1	6				
HEAT PUMP - MECH ROOM						7	1.1	1.1			8	2	15		HEAT PUMP - UNIT 162	
						9		1.1	1.3							
HEAT PUMP - UNIT 161						11			1.1	1.3	14	3	15		HEAT PUMP VHP-24 - MECH/ELEC 140	
						13	1.1	1.3			10					
HEAT PUMP - UNIT 160						15		1.1	1.1		16	2	15		HEAT PUMP - UNIT 159	
						17			0.8	1.1	18					
HEAT PUMP - UNIT 155						19	0.8	0.5			20	1	20		REC - BEDROOM 158A	
						21			0.4	0.4	22	1	20		REC - BEDROOM 158A	
REC - BEDROOM 158B						23			0.5	0.2	24	1	20		REC - VANITY 158	
REC - BEDROOM 158A						25	0.2	0.2			26	1	20		REC - VANITY 160	
REC - VANITY 158						27			0.2	0.5	28	1	20		REC - BEDROOM 160A	
REC - BEDROOM 160B						29			0.5	0.4	30	1	20		REC - BEDROOM 160B	
REC - BEDROOM 160A						31	0.4	1.1			32	2	20		HEAT PUMP - UNIT 158	
REC - VANITY 162						33		0.2	1.1		34					
REC - BEDROOM 162A						35			0.4	0.5	36	1	20		REC - BEDROOM 162A	
REC - BEDROOM 162B						37	0.5	0.4			38	1	20		REC - BEDROOM 162B	
REC - VANITY 163						39		0.2	0.2		40	1	20		REC - VANITY 163	
REC - BEDROOM 163B						41			0.4	0.5	42	1	20		REC - BEDROOM 163B	
REC - BEDROOM 163A						43	0.5	0.4			44	1	20		REC - BEDROOM 163A	
REC - VANITY 161						45		0.2	0.2		46	1	20		REC - VANITY 161	
REC - BEDROOM 161B						47			0.4	0.5	48	1	20		REC - BEDROOM 161B	
REC - BEDROOM 161A						49	0.5	0.4			50	1	20		REC - BEDROOM 161A	
REC - VANITY 159						51		0.2	0.2		52	1	20		REC - VANITY 159	
REC - BEDROOM 159A						53			0.5	0.4	54	1	20		REC - BEDROOM 159A	
REC - BEDROOM 159B						55	0.5	0.4			56	1	20		REC - BEDROOM 159B	
REC - VANITY 155						57		0.4	0.8		58	1	20		REC - BEDROOM 155A	
REC - CORRIDOR						59			1.4	0.7	60	1	20		EQUIP IDF	
EQUIP IDF						61	0.7	0.5			62	64	20		EQUIP IDF RACK	
						63		0.5	0.5		64					
						65			0.5	0.2	66	1	20		LTNG - LEVEL 1 CORRIDOR	
BH-4 - STUDY 101						67	0.6	0.2			68	1	20		ELEV. PIT SUMP PUMP	
REC - ELEV. PIT						69		0.2	0.4		70	1	20		LTNG - STUDY AREA	
BUILDING LIGHTING						71				0.3	0.7	72	1	20	REC COMMONS	
REC ELEV/MACH 145						73	0.2	0.2			74	1	20		REC - PLAZA	
REC - PLAZA						75			0.2	0.2	76	1	20		LTNG	
BUILDING LIGHTING						77				0.3	0.2	78	1	20	REC - EXTERIOR BUILDING	
BH-1 - VESTIBULE 135V						79	1.5	0.2			80	1	20		REC - VANITY 162	
HEAT PUMP VHP-012 - MECH/ELEC 140						81		0.8	0.7		82	1	20		CEP - ICH 140A	
HEAT PUMP VHP-012 - MECH/ELEC 140						83			0.8	0.5	84	1	20		CEP - MECH/ELEC 140	
REC - EXTERIOR BUILDING						85	0.2	1.6			86	2	20		BH-3 - STAIR 1	
SPARE	--	--	--	--	--	87			0.0	1.6	88			--		
SPARE	--	--	--	--	--	89			0.0	0.0	90	1	20	--	SPARE	
SPARE	--	--	--	--	--	91	0.0	0.0			92	1	20	--	SPARE	
SPARE	--	--	--	--	--	93			0.0	0.0	94	1	20	--	SPARE	
SPARE	--	--	--	--	--	95			0.0	0.0	96	1	20	--	SPARE	
SPARE	--	--	--	--	--	97	0.0	0.0			98	1	20	--	SPARE	
SPARE	--	--	--	--	--	99			0.0	0.0	100	1	20	--	SPARE	
SPARE	--	--	--	--	--	101			0.0	0.0	102	1	20	--	SPARE	
SPARE	--	--	--	--	--	103	0.0	0.0			104	1	20	--	SPARE	
SPARE	--	--	--	--	--	105			0.0	0.0	106	1	20	--	SPARE	
SPARE	--	--	--	--	--	107			0.0	0.0	108	1	20	--	SPARE	
TOTAL LOAD (VA):							31.8 kVA	28.9 kVA	17.5 kVA							
TOTAL CURRENT (A):							279 A	255 A	146 A							
LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND		PANEL TOTALS											
EQUIP	4146 VA		4146 VA		TOTAL CONNECTED LOAD: 78137 VA											
HVAC	24500 VA	100.00%	24500 VA		TOTAL ESTIMATED DEMAND: 78370 VA											
LTNG	3171 VA	125.00%	3964 VA		TOTAL CONNECTED CURRENT: 217 A											
REC	20520 VA	74.37%	15260 VA		TOTAL ESTIMATED DEMAND CURRENT: 204 A											
DRYER - DWELLING	5000 VA	100.00%	5000 VA													
RANGE - DWELLING	5000 VA	100.00%	5000 VA													
APPLIANCE - DWELLING	7500 VA	100.00%	7500 VA													
SPACE HEATING	5300 VA	100.00%	5300 VA													
NOTES: WHERE NOT LISTED, WIRE AND CONDUIT SHALL BE THE MINIMUM PER SPECIFICATIONS. SPARE BREAKERS TO BE 20A/IP.																
1. ALL CIRCUIT BREAKERS FEEDING OUTLETS AND DEVICES IN DORM UNIT BEDROOMS, BATHROOMS, HALLWAYS, LIVING ROOMS, AND CLOSETS SHALL BE AFCI TYPE.																

PANEL BOARD AND WIRING SCHEDULE													AVAILABLE FAULT CURRENT: 14.5			
PANEL RP2A						MANS TYPE: MCB			SAE RATING: 18			LOCATION: MICHELEC 200K				
VOLTAGE: 208Y/120V/3P/4W						SPD: NONE			SUPPLY FROM: MDP			SUPPLY FROM: MDP				
AMPERES: 400 A						UNINTERRUPTED SURFACE										
CIRCUIT DESCRIPTION	WIRE	GND	C	OCP	P	CKT	A	B	C	CKT	P	OCP	C	GND	WIRE	CIRCUIT DESCRIPTION
HEAT PUMP - UNIT 212	15	2	1	1.1	1.1					2	2	15				HEAT PUMP - UNIT 210
			3				1.1	1.1								
			5						0.8	1.1						
HEAT PUMP - UNIT 215	15	2	7	0.8	1.1					8	2	15				HEAT PUMP - UNIT 211
			9				1.1	1.1								
HEAT PUMP - UNIT 209	15	2	11						1.1	1.1		2	15			HEAT PUMP - UNIT 208
			13	1.1	1.1											
HEAT PUMP - UNIT 205	15	2	15				1.1	1.1								HEAT PUMP - UNIT 207
			17						1.1	0.8	1.1	2	15			HEAT PUMP - UNIT 203
			19	1.1	0.8											
REC - BEDROOM 212B	20	1	21				0.5	0.5				22	20			REC - BEDROOM 212A
REC - VANITY 212	20	1	23						0.2	0.4	2.4	21	20			REC - BEDROOM 212A
REC - VANITY 215	20	1	25	0.2	0.4							26	20			REC - BEDROOM 212B
REC - BEDROOM 215	20	1	27				0.5	0.2				28	20			REC - VANITY 212
REC - VANITY 211	20	1	29						0.2	0.2	30	20	1			REC - VANITY 215
REC - BEDROOM 211B	20	1	31	0.4	0.6							32	20			REC - BEDROOM 211B
REC - BEDROOM 211A	20	1	33				0.5	0.2				34	20			REC - VANITY 211
REC - VANITY 210	20	1	35						0.2	0.5	36	20	1			REC - BEDROOM 211B
REC - BEDROOM 210A	20	1	37	0.4	0.4							38	20			REC - BEDROOM 211A
REC - BEDROOM 210B	20	1	39				0.5	0.2				40	20			REC - VANITY 210
REC - BEDROOM 205A	20	1	41						0.6	0.5	42	20	1			REC - BEDROOM 210A
REC - BEDROOM 208B	20	1	43	0.5	0.4							44	20			REC - BEDROOM 210B
REC - VANITY 208	20	1	45				0.2	0.4				46	20			REC - BEDROOM 208A
REC - VANITY 209	20	1	47						0.2	0.4	48	20	1			REC - BEDROOM 208B
REC - BEDROOM 205B	20	1	49	0.4	0.2							50	20			REC - VANITY 208
REC - BEDROOM 209A	20	1	51				0.5	0.2				52	20			REC - VANITY 209
REC - VANITY 206	20	1	53						0.2	0.5	54	20	1			REC - BEDROOM 209B
REC - BEDROOM 205A	20	1	55	0.4	0.4							56	20			REC - BEDROOM 205A
REC - BEDROOM 206B	20	1	57				0.5	0.2				58	20			REC - VANITY 206
REC - VANITY 207	20	1	59						0.2	0.5	60	20	1			REC - BEDROOM 206B
REC - BEDROOM 207B	20	1	61	0.4	0.4							62	20			REC - BEDROOM 205B
REC - BEDROOM 207A	20	1	63				0.5	0.2				64	20			REC - VANITY 207
REC - VANITY 205	20	1	65						0.2	0.5	66	20	1			REC - BEDROOM 207A
REC - BEDROOM 205B	20	1	67	0.6	0.4							68	20			REC - BEDROOM 207B
REC - BEDROOM 205A	20	1	69				0.5	0.2				70	20			REC - VANITY 205
REC - BEDROOM 203	20	1	71						0.8	0.4	72	20	1			REC - BEDROOM 205A
REC - STUDY ROOM	20	1	73	0.7	0.4							74	20			REC - BEDROOM 205B
FIRE SMOKE DAMPERS	20	1	75				0.0	0.2				76	20			REC - VANITY 203
HVAC	20	1	77						0.7	0.2	78	20	1			LTNG - LOUNGE/BAK OF HOUSE TOP - MICHELEC 200K
SPARE	--	--	20	1	79	0.0	1.0					80	20			
SPARE	--	--	20	1	81			0.0	0.0			82	20	--	--	SPARE
SPARE	--	--	20	1	83					0.0	0.0	84	20	--	--	SPARE
SPARE	--	--	20	1	85	0.0	0.0					86	20	--	--	SPARE
SPARE	--	--	20	1	87			0.0	0.0			88	20	--	--	SPARE
SPARE	--	--	20	1	89					0.0	0.0	90	20	--	--	SPARE
SPARE	--	--	20	1	91	0.0	0.0					92	20	--	--	SPARE
SPARE	--	--	20	1	93			0.0	0.0			94	20	--	--	SPARE
SPARE	--	--	20	1	95				0.0	0.0	96	20	--	--	SPARE	
SPARE	--	--	20	1	97	0.0	0.0					98	20	--	--	SPARE
SPARE	--	--	20	1	99			0.0	0.0			100	20	--	--	SPARE
SPARE	--	--	20	1	101					0.0	0.0	102	20	--	--	SPARE
SPARE	--	--	20	1	103		0.0	18.1								
SPARE	--	--	20	1	105				0.0	17.9						
SPARE	--	--	20	1	107					0.0	18.2					
TOTAL LOAD (WVA):						34.9 kVA	31.4 kVA	32.0 kVA								
TOTAL CURRENT (A):						291 A	262 A	261 A								
LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND			PANEL TOTALS										
EQUIP	5700 VA	100.00%	5700 VA			TOTAL CONNECTED LOAD: 98263 VA										
HVAC	44900 VA	100.00%	44900 VA			TOTAL ESTIMATED DEMAND: 83049 VA										
LTNG	4823 VA	125.00%	6029 VA			TOTAL CONNECTED CURRENT: 273 A										
REC	42940 VA	61.67%	26420 VA			TOTAL ESTIMATED DEMAND CURRENT: 231 A										
NOTES: WHERE NOT LISTED, WIRE AND CONDUIT SHALL BE MINIMUM PER SPECIFICATIONS. SPARE BREAKERS TO BE 40A/1P.																
1. ALL CIRCUIT BREAKERS FEEDING OUTLETS AND DEVICES IN DORM STUDY ROOMS, BATHROOMS, HALLWAYS, LIVING ROOMS, AND CLOSETS SHALL BE AFCI TYPE.																

PANELBOARD AND WIRING SCHEDULE

PANEL RP2B

VOLTAGE: 208V/120V/3P/4W

AMPERES: 400 A

MANS TYPE: MLO

SPD: No

MOUNTING: SURFACE

SAF RATINGS: 19

LOCATION: MECHELOC 200K

SUPPLY FROM: RP2C

AVAILABLE FAULT CURRENT: 13.7

SAF RATINGS: 19

LOCATION: MECHELOC 200K

SUPPLY FROM: RP2C

CIRCUIT DESCRIPTION	WIRE	GND	C	P	CKT	A	B	C	CKT	P	OCB	C	GND WIRE	CIRCUIT DESCRIPTION	
HEAT PUMP - UNIT 262	15	2	1	1	1.1	1	1.1	1.1	2	2	15			HEAT PUMP - UNIT 260	
					3										
					5										
HEAT PUMP - UNIT 263	15	2	7	1.1	1.1			1.1	1.1	6	8	15		HEAT PUMP - UNIT 261	
					9										
HEAT PUMP - UNIT 258	15	2	11				1.1	1.1		12	20	15		HEAT PUMP - UNIT 254	
					13				1.1	1.1	14				
HEAT PUMP - UNIT 259	15	2	13	1.1	1.1			1.1	1.1	16	2	15		HEAT PUMP - UNIT 255	
					15										
HEAT PUMP - UNIT 252	15	2	17					0.8	1.1	18	20			VHP-18 - MECHELOC 200K	
					19	0.8	1.1								
REC - BEDROOM 263B	20	1	21			0.4	0.2			22	21	20		REC - VANITY 263	
REC - BEDROOM 263A	20	1	23					0.5	0.2	24	1	20		REC - VANITY 263	
REC - BEDROOM 261B	20	1	25	0.4	0.5					26	20			REC - BEDROOM 263B	
REC - BEDROOM 261A	20	1	27			0.5	0.4			28	1	20		REC - BEDROOM 263A	
REC - VANITY 261	20	1	29					0.2	0.5	30	1	20		REC - BEDROOM 261B	
REC - VANITY 259	20	1	31	0.2	0.4					32	1	20		REC - BEDROOM 261A	
REC - BEDROOM 259B	20	1	33			0.5	0.2			34	20			REC - VANITY 261	
REC - BEDROOM 259A	20	1	35					0.5	0.2	36	1	20		REC - VANITY 259	
REC - VANITY 255	20	1	37	0.2	0.4					38	1	20		REC - BEDROOM 259B	
REC - BEDROOM 255B	20	1	39			0.5	0.4			40	1	20		REC - BEDROOM 259A	
REC - BEDROOM 255A	20	1	41					0.5	0.2	42	1	20		REC - VANITY 255	
REC - VANITY 262	20	1	43	0.2	0.4					44	20			REC - BEDROOM 255B	
REC - BEDROOM 262A	20	1	45			0.5	0.4			46	1	20		REC - BEDROOM 255A	
REC - BEDROOM 262B	20	1	47					0.5	0.2	48	1	20		REC - VANITY 262	
REC - VANITY 260	20	1	49	0.2	0.4					50	1	20		REC - BEDROOM 262A	
REC - BEDROOM 260A	20	1	51			0.4	0.4			52	1	20		REC - BEDROOM 262B	
REC - BEDROOM 260B	20	1	53					0.5	0.2	54	1	20		REC - VANITY 260	
REC - BEDROOM 258A	20	1	55	0.4	0.6					56	1	20		REC - BEDROOM 260A	
REC - BEDROOM 258B	20	1	57			0.5	0.4			58	1	20		REC - BEDROOM 260B	
REC - VANITY 258	20	1	59					0.2	0.5	60	1	20		REC - BEDROOM 258A	
REC - BEDROOM 254A	20	1	61	0.4	0.4					62	1	20		REC - BEDROOM 258B	
REC - BEDROOM 254B	20	1	63			0.5	0.2			64	1	20		REC - VANITY 258	
REC - VANITY 254	20	1	65					0.2	0.5	66	1	20		REC - BEDROOM 254A	
REC - VANITY 262	20	1	67	0.2	0.4					68	1	20		REC - BEDROOM 254B	
WATER COOLER/JAN	20	1	69			1.0	0.2			70	1	20		REC - VANITY 254	
REC - LOUNGE	20	1	71					0.9	0.8	72	1	20		REC - BEDROOM 252	
REC - CORRIDOR	20	1	73	0.5	0.5			0.8	0.7	74	1	20		REC - CORRIDOR	
REC - CORRIDOR	20	1	75							76	1	20		REC - CORRIDOR	
REC - IDF	20	1	77					1.1	0.8	78	2	20		REC - IDF	
EQUIP IDF RACK	20	1	79	0.8	0.8					80	2	20		EQUIP IDF RACK	
						0.8	0.0			82	20			FIRE SMOKE DAMPERS	
BH44 - LOUNGE 201	20	1	83					0.6	0.6	84	1	20		BH44 - LOUNGE 201	
LIGHTING CONTACTOR CABINET	20	1	85	0.0	1.3					86				LIGHTING CONTACTOR CABINET	
SPARE	--	--	20	1	87		0.0	1.3		88	3	15		VHP-24 - MECHELOC 200K	
SPARE	--	--	20	1	89				0.0	1.3	92	1	20	--	SPARE
SPARE	--	--	20	1	91	0.0	0.0			94	1	20	--	SPARE	
SPARE	--	--	20	1	93		0.0	0.0		96	1	20	--	SPARE	
SPARE	--	--	20	1	95				0.0	0.0	98	1	20	--	SPARE
SPARE	--	--	20	1	97	0.0	0.0			100	1	20	--	SPARE	
SPARE	--	--	20	1	99		0.0	0.0		100	1	20	--	SPARE	
SPARE	--	--	20	1	101				0.0	0.0	102	1	20	--	SPARE
SPARE	--	--	20	1	103	0.0	0.0			104	1	20	--	SPARE	
SPARE	--	--	20	1	105		0.0	0.0		106	1	20	--	SPARE	
SPARE	--	--	20	1	107				0.0	0.0	108	1	20	--	SPARE
						</									

**STATE OF KENTUCKY APPROVAL**

#	DATE	CHANGE DESCRIPTION



DRAWING TITLE:

## PANEL SCHEDULES



JANUARY 30, 2020	
DRAWN BY: GCR	CHECKED BY:
-	
<b>E602</b>	
BID & PERMIT SUBMITTAL	



PANELBOARD AND WIRING SCHEDULE

PANEL RP3B

VOLTAGE: 208Y/120V/3P/4W

AMPERES: 400 A

MAINS TYPE: MLO

SPD: NONE

SQUID: SURFACE

SAIC RATING: 18

LOCATION: MECHELEC 300K

SUPPLY FROM: RP3A

CIRCUIT DESCRIPTION

WIRE

GND

C

OCP

P

CKT

A

B

C

CKT

P

OCP

C

GND

WIRE

CIRCUIT DESCRIPTION

HEAT PUMP - UNIT 362

15

2

1

1

1

1

1

1

1

2

2

15

HEAT PUMP - UNIT 360

HEAT PUMP - UNIT 363

15

2

5

7

1

1

1

1

1

6

2

15

HEAT PUMP - UNIT 361

HEAT PUMP - UNIT 358

15

2

1

1

1

1

1

1

2

15

HEAT PUMP - UNIT 354

HEAT PUMP - UNIT 359

15

2

13

1

1

1

1

1

1

12

2

15

HEAT PUMP - UNIT 355

HEAT PUMP - UNIT 352

15

2

17

1

1

1

16

1

20

REC - BEDROOM 362A

REC - BEDROOM 362A

20

1

21

0

4

0.5

20

1

20

REC - VANITY 362

REC - VANITY 362

20

1

23

0

2

0.5

24

1

20

REC - BEDROOM 362B

REC - BEDROOM 362B

20

1

25

0

2

0.5

26

1

20

REC - BEDROOM 360A

REC - BEDROOM 360B

20

1

27

0

5

0.4

28

1

20

REC - BEDROOM 360B

REC - VANITY 360

20

1

29

0

2

0.2

30

1

20

REC - VANITY 360

REC - BEDROOM 358A

20

1

31

0

5

0.4

32

1

20

REC - BEDROOM 358A

REC - BEDROOM 358B

20

1

33

0

5

0.4

34

1

20

REC - BEDROOM 358B

REC - VANITY 358

20

1

35

0

2

0.2

36

1

20

REC - VANITY 358

REC - BEDROOM 354A

20

1

37

0

4

0.4

38

1

20

REC - BEDROOM 354A

REC - BEDROOM 355B

20

1

39

0

2

0.2

40

1

20

REC - VANITY 354

REC - BEDROOM 354B

20

1

41

0

5

0.5

42

1

20

REC - BEDROOM 354B

REC - BEDROOM 352

20

1

43

0

8

0.2

44

1

20

REC - VANITY 352

REC - BEDROOM 355A

20

1

45

0

5

0.4

46

1

20

REC - BEDROOM 355A

REC - BEDROOM 355B

20

1

47

0

5

0.4

48

1

20

REC - BEDROOM 355B

REC - VANITY 355

20

1

49

0

2

0.2

50

1

20

REC - VANITY 355

REC - BEDROOM 359A

20

1

51

0

5

0.4

52

1

20

REC - BEDROOM 359A

REC - BEDROOM 359B

20

1

53

0

5

0.4

54

1

20

REC - BEDROOM 359B

REC - VANITY 359

20

1

55

0

2

0.2

56

1

20

REC - VANITY 359

REC - BEDROOM 361A

20

1

57

0

5

0.4

58

1

20

REC - BEDROOM 361A

REC - BEDROOM 361B

20

1

59

0

5

0.2

60

1

20

REC - BEDROOM 361B

REC - VANITY 361

20

1

61

0

2

0.2

62

1

20

REC - VANITY 361

REC - BEDROOM 363A

20

1

63

0

4

0.5

64

1

20

REC - BEDROOM 363A

REC - BEDROOM 363B

20

1

65

0

5

0.4

66

1

20

REC - BEDROOM 363B

REC - VANITY 363

20

1

67

0

2

0.2

68

1

20

REC - VANITY 363

REC - CORRIDOR

20

1

69

1

1

0.9

70

1

20

REC - LOUNGE

WATERCOOLER/JAN/MECHELEC

20

1

71

0

9

0.5

72

1

20

REC - CORRIDOR

LTNG - CORRIDOR

20

1

73

0

8

0.7

74

1

20

REC IDF

REC

20

1

75

1

1

0.8

76

1

20

REC

FIRE/ SMOKE DAMPERS

20

1

77

0

0

0.8

78

2

20

EQUIP IDF RACK

BH-4 - LOUNGE 301

20

1

79

0

6

0.8

80

1

20

EQUIP IDF RACK

BH-4 - LOUNGE 301

20

1

81

0

6

0.8

82

1

20

EQUIP IDF RACK

VHP-18 - MECHELEC 300K

15

2

83

8

1

1.3

84

1

20

LTNG - LOUNGE/ BACK OF HOUSE

CEF-1 - IDF 300M

20

1

87

0

7

1.3

88

3

15

VHP-24 - MECHELEC 300K

AFPS - CORRIDOR

20

1

89

0

0

1.3

89

1

20

SPARE

LIGHTING CONTACTOR CABINET

--

--

--

20

1

91

0

0

0.0

90

1

20

--

--

SPARE

SPARE

--

--

--

20

1

93

0

0

0.0

94

1

20

--

--

SPARE

SPARE

--

--

--

20

1

95

0

0

0.0

96

1

20

--

--

SPARE

SPARE

--

--

--

20

1

97

0

0

0.0

98

1

20

--

--

SPARE

SPARE

--

--

--

20

1

99

0

0

0.0

100

1

20

--

--

SPARE

SPARE

--

--

--

20

1

101

0

0

0.0

102

1

20

--

--

SPARE

SPARE

--

--

--

20

1

103

0

0

0.0

104

1

20

--

--

SPARE

SPARE

--

--

--

20

1

105

0

0

0.0

106

1

20

--

--

SPARE

SPARE

--

--

--

20

1

107

0

0

0.0

108

1

20

--

--

SPARE

TOTAL LOAD (kVA):

18.0 kVA

20.7 kVA

16.7 kVA

TOTAL CURRENT (A):

15.8 A

17.4 A

13.9 A

LOAD CLASSIFICATION

CONNECTED LOAD

DEMAND FACTOR

ESTIMATED DEMAND

PANEL TOTALS

EQUIP

10300 VA

100.00%

10300 VA

TOTAL CONNECTED LOAD: 56455 VA

HVAC

18340 VA

100.00%

18340 VA

TOTAL ESTIMATED DEMAND: 49649 VA

LTNG

2935 VA

125.00%

3669 VA

TOTAL CONNECTED CURRENT: 154 A

REC

22680 VA

72.05%

16340 VA

TOTAL ESTIMATED DEMAND CURRENT: 138 A

SPACE HEATING

1200 VA

1200 VA

NOTES: WHERE NOT LISTED, WIRE AND CONDUIT SHALL BE THE MINIMUM PER SPECIFICATIONS. SPARE BREAKERS TO BE 20A/1P.



1. ALL CIRCUIT BREAKERS FEEDING OUTLETS AND DEVICES IN OCCUPANT UNIT BEDROOMS, BATHROOMS, HALLWAYS, LIVING ROOMS, AND CLOSETS SHALL BE AFCI TYPE.

PANELBOARD AND WIRING SCHEDULE											AVAILABLE FAULT CURRENT: 12.1					
PANEL RP4B							MAINS TYPE: MLO				SAIC RATING: 18					
VOLTAGE: 208Y/120V/3P/4W							SPD: N/A				LOCATION: MECHELEC 400K					
AMPERES: 400 A							SUNTING: SURFACE				SUPPLY FROM: RP4A					
CIRCUIT DESCRIPTION		WIRE	GND	OCP	P	CKT	A	B	C	CKT	P	OCP	C	GND	WIRE	CIRCUIT DESCRIPTION
HEAT PUMP - UNIT 462				15	2	1	1.1	1.1		2	2					HEAT PUMP - UNIT 460
HEAT PUMP - UNIT 463				15	2	5			1.1	1.1	6	2	15			HEAT PUMP - UNIT 461
HEAT PUMP - UNIT 458				15	2	1.1	1.1		1.1	1.1	10	2	15			HEAT PUMP - UNIT 454
HEAT PUMP - UNIT 459				15	2	11			1.1	1.1	12	2	15			HEAT PUMP - UNIT 455
HEAT PUMP - UNIT 452				15	2	17			0.8	0.5	18	1	20			REC - BEDROOM 462A
REC - BEDROOM 462B				20	1	21		0.5	0.4		22	1	20			REC - BEDROOM 462A
REC - VANTY 462				20	1	23			0.2	0.2	24	1	20			REC - VANTY 462
REC - BEDROOM 460A				20	1	25	0.5	0.4			26	1	20			REC - BEDROOM 460A
REC - BEDROOM 460B				20	1	27		0.5	0.4		28	1	20			REC - BEDROOM 460B
REC - VANTY 460				20	1	29			0.2	0.2	30	1	20			REC - VANTY 460
REC - BEDROOM 458A				20	1	31	0.5	0.4			32	1	20			REC - BEDROOM 458A
REC - BEDROOM 458B				20	1	33		0.5	0.4		34	1	20			REC - BEDROOM 458B
REC - VANTY 458				20	1	35			0.2	0.2	36	1	20			REC - VANTY 458
REC - BEDROOM 454A				20	1	37	0.5	0.4			38	1	20			REC - BEDROOM 454A
REC - BEDROOM 454B				20	1	39		0.5	0.4		40	1	20			REC - BEDROOM 454B
REC - VANTY 454				20	1	41			0.2	0.2	42	1	20			REC - VANTY 454
REC - BEDROOM 452				20	1	43	0.7	0.2			44	1	20			REC - VANTY 452
REC - VANTY 452				20	1	45		0.0	0.5		46	1	20			REC - BEDROOM 455A
REC - BEDROOM 455A				20	1	47			0.4	0.5	48	1	20			REC - BEDROOM 455B
REC - BEDROOM 455B				20	1	49	0.4	0.2			50	1	20			REC - VANTY 455
REC - VANTY 455				20	1	51		0.2	0.5		52	1	20			REC - BEDROOM 459A
REC - BEDROOM 459A				20	1	53			0.4	0.5	54	1	20			REC - BEDROOM 459B
REC - BEDROOM 459B				20	1	55	0.4	0.2			56	1	20			REC - VANTY 459
REC - VANTY 459				20	1	57		0.2	0.5		58	1	20			REC - BEDROOM 461A
REC - BEDROOM 461A				20	1	59			0.4	0.5	60	1	20			REC - BEDROOM 461B
REC - BEDROOM 461B				20	1	61	0.4	0.2			62	1	20			REC - VANTY 461
REC - VANTY 461				20	1	63		0.2	0.5		64	1	20			REC - BEDROOM 463A
REC - BEDROOM 463A				20	1	65			0.4	0.5	66	1	20			REC - BEDROOM 463B
REC - BEDROOM 463B				20	1	67	0.4	0.2			68	1	20			REC - VANTY 463
REC - VANTY 463				20	1	69		0.2	1.1		70	1	20			REC - CORRIDOR
REC - CORRIDOR				20	1	71			0.5	0.9	72	1	20			WATER COOLER/JAN
REC				20	1	73	0.9	0.7			74	1	20			REC IDF
REC				20	1	75		1.1	0.8		76	1	20			REC
FIRE/ SMOKE DAMPERS				20	1	77			0.0	0.8	78	2	20			EQUIP IDF RACK
BH-4 - LOUNGE 401				20	1	79	0.6	0.8			80	2	20			EQUIP IDF RACK
BH-4 - LOUNGE 401				20	1	81		0.6	0.8		82	2	20			EQUIP IDF RACK
VHP-19 - MECHELEC 400K				15	2	83			1.1	1.3	84	3	15			VHP-24 - MECHELEC 400K
CEF-1 - IDF 400M				20	1	87		0.7	1.3		88					
LIGHTING CONTACTOR CABINET				20	1	89			0.0	0.0	90	1	20			AFES - CORRIDOR
SPARE		--	--	20	1	91	0.0	0.0			92	1	20	--	--	SPARE
SPARE		--	--	20	1	93		0.0	0.0		94	1	20	--	--	SPARE
SPARE		--	--	20	1	95			0.0	0.0	96	1	20	--	--	SPARE
SPARE		--	--	20	1	97	0.0	0.0			98	1	20	--	--	SPARE
SPARE		--	--	20	1	99		0.0	0.0		100	1	20	--	--	SPARE
SPARE		--	--	20	1	101			0.0	0.0	102	1	20	--	--	SPARE
SPARE		--	--	20	1	103	0.0	0.0			104	1	20	--	--	SPARE
SPARE		--	--	20	1	105		0.0	0.0		106	1	20	--	--	SPARE
SPARE		--	--	20	1	107			0.0	0.0	108	1	20	--	--	SPARE
TOTAL LOAD (WVA): 19.3 kVA							16.8 A		19.5 kVA		15.8 kVA					
TOTAL CURRENT (A):							16.8 A		10.7 A		13.1 A					
LOAD CLASSIFICATION		CONNECTED LOAD		DEMAND FACTOR		ESTIMATED DEMAND		PANEL TOTALS								
EQUIP		10300 VA		100.00%		10300 VA		TOTAL CONNECTED LOAD: 54620 VA								
HVAC		18340 VA		100.00%		18340 VA		TOTAL ESTIMATED DEMAND: 48670 VA								
LTNG		1920 VA		125.00%		2400 VA		TOTAL CONNECTED CURRENT: 152 A								
REC		22860 VA		71.87%		16430 VA		TOTAL ESTIMATED DEMAND CURRENT: 135 A								
SPACE HEATING		1200 VA		100.00%		1200 VA										

NOTES: WHERE NOT LISTED, WIRE AND CONDUIT SHALL BE THE MINIMUM PER SPECIFICATIONS. SPARE BREAKERS TO BE 20A/1P.

1. ALL CIRCUIT BREAKERS FEEDING OUTLETS AND DEVICES IN DORM UNIT BEDROOMS, BATHROOMS, HALLWAYS, LIVING ROOMS, AND CLOSETS SHALL BE AFCI TYPE.

PANELBOARD AND WIRING SCHEDULE													AVAILABLE FAULT CURRENT: 11.1			
PANEL RP5B						MAINS TYPE: MLO						SAIC RATING: 18				
VOLTAGE: 208Y/120V/3P/4W						SPD: N/A						LOCATION: MECH/ELEC 500K				
AMPERES: 400 A						SUNTING: SURFACE						SUPPLY FROM: RP5A				
CIRCUIT DESCRIPTION	WIRE	GND	C	P	O	C	A	B	C	O	P	C	GND	WIRE	CIRCUIT DESCRIPTION	
HEAT PUMP - UNIT 562	15	2	1	1	1	1	1	1	1	1	2	2	15	HEAT PUMP - UNIT 560		
HEAT PUMP - UNIT 563	15	2	5					1	1	1	6	2	15	HEAT PUMP - UNIT 561		
HEAT PUMP - UNIT 558	15	2	7	1	1	1					8	2	15	HEAT PUMP - UNIT 554		
HEAT PUMP - UNIT 559	15	2	11					1	1	1	12	2	15	HEAT PUMP - UNIT 555		
HEAT PUMP - UNIT 558	15	2	13	1	1	1					14	2	15	HEAT PUMP - UNIT 554		
HEAT PUMP - UNIT 552	15	2	15				1	1	1		16	2	15	REC - BEDROOM 562A		
REC - BEDROOM 562B	20	1	17		0	8	0	4		0.8	0.5	18	2	20	REC - BEDROOM 562A	
REC - VANTITY 562	20	1	19									20	2	20	REC - BEDROOM 562B	
REC - BEDROOM 560A	20	1	21				0	5	0	4		22	2	20	REC - VANTITY 562	
REC - BEDROOM 560B	20	1	23						0.2	0.2	24	2	20	REC - VANTITY 562		
REC - BEDROOM 560AB	20	1	25		0	5	0	4				26	2	20	REC - BEDROOM 560A	
REC - VANTITY 560	20	1	27				0	5	0	4		28	2	20	REC - BEDROOM 560AB	
REC - BEDROOM 558A	20	1	29						0.2	0.1	30	2	20	REC - VANTITY 560		
REC - BEDROOM 558B	20	1	31		0	5	0	4				32	2	20	REC - BEDROOM 558A	
REC - VANTITY 558	20	1	33				0	5	0	4		34	2	20	REC - BEDROOM 558B	
REC - BEDROOM 554A	20	1	35						0.2	0.2	36	2	20	REC - VANTITY 558		
REC - BEDROOM 554B	20	1	37		0	5	0	4				38	2	20	REC - BEDROOM 554A	
REC - VANTITY 554	20	1	39				0	5	0	4		40	2	20	REC - BEDROOM 554B	
REC - BEDROOM 555A	20	1	41						0.2	0.2	42	2	20	REC - VANTITY 554		
REC - BEDROOM 555B	20	1	43		0	8	0	2				44	2	20	REC - VANTITY 552	
REC - BEDROOM 555A	20	1	45				0	5	0	4		46	2	20	REC - BEDROOM 555A	
REC - BEDROOM 555B	20	1	47						0.5	0.4		48	2	20	REC - BEDROOM 555B	
REC - VANTITY 555	20	1	49		0	2	0	2				50	2	20	REC - VANTITY 555	
REC - BEDROOM 559A	20	1	51				0	5	0	4		52	2	20	REC - BEDROOM 559A	
REC - BEDROOM 559B	20	1	53						0.5	0.4		54	2	20	REC - BEDROOM 559B	
REC - VANTITY 559	20	1	55		0	2	0	2				56	2	20	REC - VANTITY 559	
REC - BEDROOM 561A	20	1	57				0	5	0	4		58	2	20	REC - BEDROOM 561A	
REC - BEDROOM 561B	20	1	59						0.5	0.4		60	2	20	REC - BEDROOM 561B	
REC - BEDROOM 563A	20	1	61		0	2	0	2				62	2	20	REC - VANTITY 561	
REC - BEDROOM 563B	20	1	63				0	5	0	4		64	2	20	REC - BEDROOM 563A	
REC - BEDROOM 563B	20	1	65						0.5	0.4		66	2	20	REC - BEDROOM 563B	
REC - VANTITY 563	20	1	67		0	2	0	2				68	2	20	REC - VANTITY 563	
REC - CORRIDOR	20	1	69				1	1	0.5	0.9	0.9	70	2	20	REC - CORRIDOR	
WATER COOLER/JAN	20	1	71							0.9	0.9	72	2	20	REC - LOUNGE	
REC	20	1	73		1	1	0.7					74	2	20	REC IDF	
EQUIP IDF RACK	20	1	75				0	8	0	8		76	2	20	EQUIP IDF RACK	
VHP 18 - MECH/ELEC 500K	15	2	77						0.8	0.8		78	2	20	REC - ROOF	
CEFF - 1 OF 500M	15	2	79		1	1	0.4		1	0.7		80	2	15	CEFF - 1 OF 500M	
BH4 - LUNGE - BACK OF HOUSE / LOUNGE	20	1	83						0.2	0.6		82	2	20	BH4 - LUNGE - BACK OF HOUSE / LOUNGE	
FIRE/ SMOKE DAMPERS	20	1	85		0	0	0	0				86	2	20	FIRE/ SMOKE DAMPERS	
BH4 - LOUNGE 501	20	1	87					0.6	1.3			88	2	20	AFDS - CORRIDOR	
EH-3 - STAIR 2	20	2	89		1	1.6	1.3		1.6	1.3		90	3	15	WHP-24 - MECH/ELEC 500K	
LIGHTING CONTACTOR CABINET	20	1	93				0	0	0	0		94	1	20	EXTERIOR SIGNAGE	
SPARE	--	--	20	1	95				0.0	0.0	96	1	20	--	SPARE	
SPARE	--	--	20	1	97		0	0	0	0	0.0	98	1	20	--	SPARE
SPARE	--	--	20	1	99				0.0	0.0		100	1	20	--	SPARE
SPARE	--	--	20	1	101				0.0	0.0	0.0	102	1	20	--	SPARE
SPARE	--	--	20	1	103		0	0	0	0		104	1	20	--	SPARE
SPARE	--	--	20	1	105							106	1	20	--	SPARE
SPARE	--	--	20	1	107				0.0	0.0	0.0	108	1	20	--	SPARE
TOTAL LOAD (kVA):						19.4 kVA		20.8 kVA		18.0 kVA						
TOTAL CURRENT (A):						163 A		175 A		150 A						
LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND		PANEL TOTALS											
EQUIP	3500 VA	100.00%	3500 VA		TOTAL CONNECTED LOAD: 58235 VA											
HVAC	25140 VA	100.00%	25140 VA		TOTAL ESTIMATED DEMAND: 52254 VA											
LTG	2155 VA	125.00%	2694 VA		TOTAL CONNECTED CURRENT: 162 A											
REC	23540 VA	71.70%	16920 VA		TOTAL ESTIMATED DEMAND CURRENT: 145 A											
SPACE HEATING	4400 VA	100.00%	4400 VA													
NOTES: WHERE NOT LISTED, WIRE AND CONDUIT SHALL BE MINIMUM PER SPECIFICATIONS. SPARE BREAKERS TO BE 20/4P.																
1. ALL CIRCUIT BREAKERS FEEDING OUTLETS AND DEVICES IN DORM UNIT BEDROOMS, BATHROOMS, HALLWAYS, LIVING ROOMS, AND CLOSETS SHALL BE 4P/1 TYPE.																

	<h1 style="margin: 0;">CMTA</h1> <p style="margin: 0;">10411 Meeting Street, Prospect, KY 40059  T: 502.338.3085 F: 502.338.2091 <a href="http://www.cmtaengs.com">www.cmtaengs.com</a></p>								
DRAWING TITLE:									
<h2 style="margin: 0;">PANEL SCHEDULES</h2>									
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center; padding: 10px;"> <b>JANUARY 30, 2020</b> </td> </tr> <tr> <td style="width: 50%; padding: 5px;"> DRAWN BY: <b>GCR</b> </td> <td style="width: 50%; padding: 5px;"> CHECKED BY: </td> </tr> <tr> <td colspan="2" style="height: 100px; text-align: center; vertical-align: middle; padding: 20px;"> <div style="font-size: 48px; font-weight: bold; margin: 0;">E603</div> </td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 10px;"> <b>BID &amp; PERMIT SUBMITTAL</b> </td> </tr> </table>	<b>JANUARY 30, 2020</b>		DRAWN BY: <b>GCR</b>	CHECKED BY:	<div style="font-size: 48px; font-weight: bold; margin: 0;">E603</div>		<b>BID &amp; PERMIT SUBMITTAL</b>	
<b>JANUARY 30, 2020</b>									
DRAWN BY: <b>GCR</b>	CHECKED BY:								
<div style="font-size: 48px; font-weight: bold; margin: 0;">E603</div>									
<b>BID &amp; PERMIT SUBMITTAL</b>									

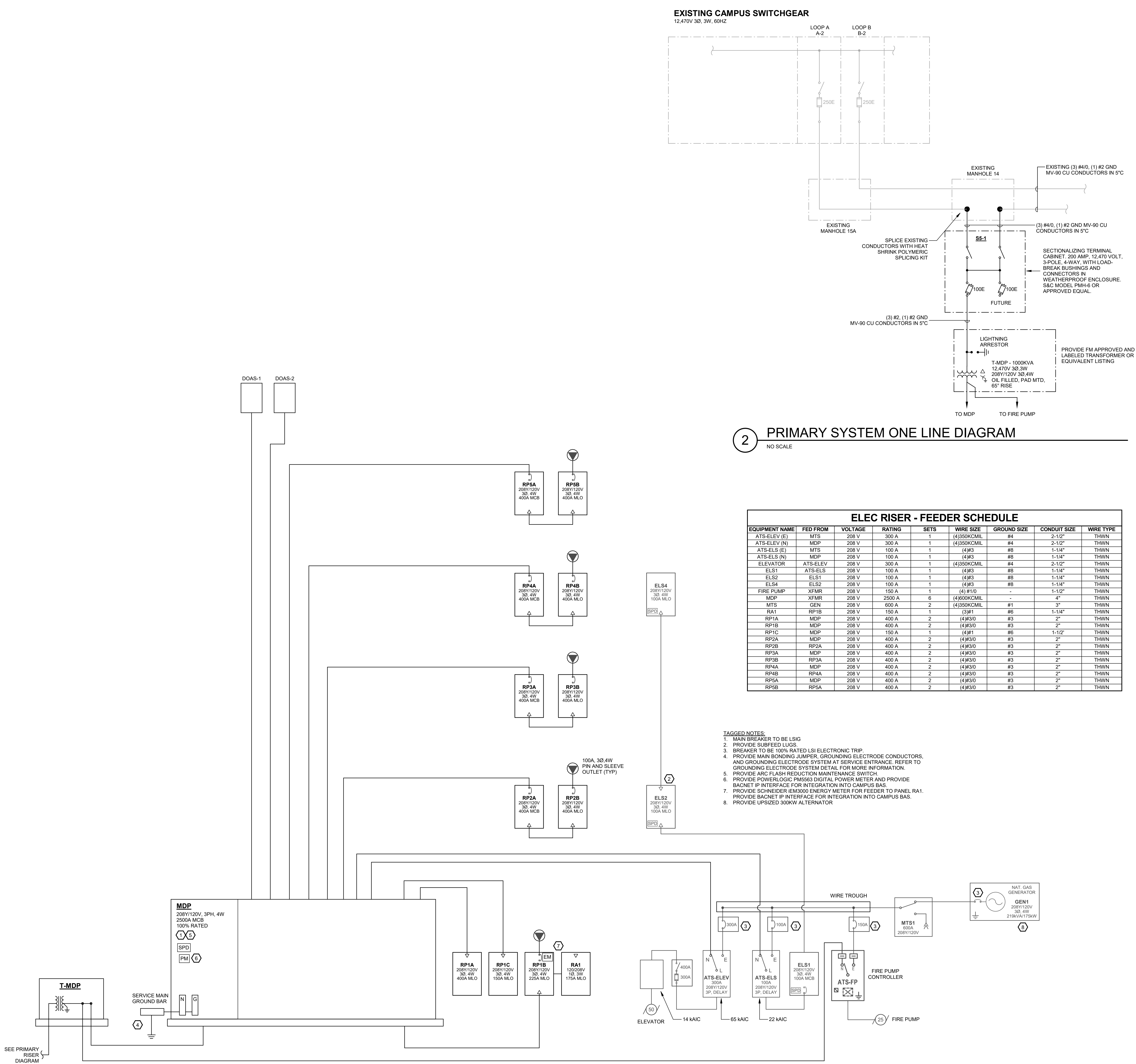
PANEL SCHEDULE KEY		
RP3A	RP4A	RP5A
RP3B	RP4B	RP5B

PANELBOARD AND WIRING SCHEDULE															AVAILABLE FAULT CURRENT: 10.6									
PANEL: ELS1					MAINS TYPE: MCB					KAIC RATING: 14														
VOLTAGE: 208Y/120V, 3P, 4W					SPD: Yes					LOCATION: ELEC 124E														
AMPERES: 100 A					MOUNTING: SURFACE					SUPPLY FROM: ATS-ELS														
CIRCUIT DESCRIPTION		WIRE	GND	C	OCF	P	CKT	A	B	C	CKT	P	OCF	C	GND	WIRE	CIRCUIT DESCRIPTION							
ELS2		(4)#3	#8	1-1/4"	100	3	1	0.6	0.5		2	1	20				FIRE ALARM PANEL							
					5					4	1	20				FIRE ALARM PANEL								
ELEVATOR LIGHTS					20	1	7	0.5	0.6		6	1	20				MTS RECEP							
LTNG - STAIRWELL 1					20	1	9		0.5	0.5		8	1	20			LTNG - STAIRWELL 2							
GEN JACKET HEATER					20	2	11			0.3	0.5		10	1	20		GEN LIGHTS/REC							
TWO WAY COMM					20	1	15			0.0	0.1		12	1	20		GEN BATT CHARGER							
LTNG - ELEVATOR PIT					20	1	17			0.1	0.0		14	1	20		LTNG - MECH RM/ ELEC RM/ FP RM							
SPARE		--	--	--	20	1	19	0.0	0.0				16	1	20		LTNG - FLOOR 1 CORRIDOR							
SPARE		--	--	--	20	1	21						18	1	20		ELEV MACH RM							
SPARE		--	--	--	20	1	23			0.0	0.0		20	1	20	--	SPARE							
TOTAL LOAD (KVA):								3.5 KVA		2.7 KVA		1.3 KVA												
TOTAL CURRENT (A):								31 A		24 A		11 A												
LOAD CLASSIFICATION		CONNECTED LOAD			DEMAND FACTOR			ESTIMATED DEMAND			PANEL TOTALS													
EQUIP		3500 VA			100.00%			3500 VA			TOTAL CONNECTED LOAD: 7499 VA													
LTNG		3999 VA			125.00%			4999 VA			TOTAL ESTIMATED DEMAND: 9499 VA													
											TOTAL CONNECTED CURRENT: 21 A													
											TOTAL ESTIMATED DEMAND CURRENT: 24 A													
NOTES: WHERE NOT LISTED, WIRE AND CONDUIT SHALL BE BE MINIMUM PER SPECIFICATIONS. SPARE BREAKERS TO BE 20A/1P.																								

PANELBOARD AND WIRING SCHEDULE															AVAILABLE FAULT CURRENT: 2.3									
PANEL: ELS2					MAINS TYPE: MLO					KAIC RATING: 10														
VOLTAGE: 208Y/120V, 3P, 4W					SPD: Yes					LOCATION: MECH/ELEC 200K														
AMPERES: 100 A					MOUNTING: SURFACE					SUPPLY FROM: ELS1														
CIRCUIT DESCRIPTION		WIRE	GND	C	OCF	P	CKT	A	B	C	CKT	P	OCF	C	GND	WIRE	CIRCUIT DESCRIPTION							
LTNG - EMRG 2ND FLOOR					20	1	1	0.3	0.3		2	1	20				LTNG - EMRG 3RD FLOOR							
							3					4	1	20	--	--	SPARE							
ELS4		(4)#3	#8	1-1/4"	100	3	5					6	1	20	--	--	SPARE							
							7	0.0	0.0			8	1	20	--	--	SPARE							
SPARE		--	--	--	20	1	9					10	1	20	--	--	SPARE							
SPARE		--	--	--	20	1	11				0.0	0.0	12	1	20	--	SPARE							
SPARE		--	--	--	20	1	13	0.0	0.0			14	1	20	--	--	SPARE							
SPARE		--	--	--	20	1	15			0.0	0.0		16	1	20	--	SPARE							
SPARE		--	--	--	20	1	17				0.0	0.0	18	1	20	--	SPARE							
TOTAL LOAD (KVA):					0.6 KVA					0.6 KVA					0.0 KVA									
TOTAL CURRENT (A):					5 A					5 A					0 A									
LOAD CLASSIFICATION		CONNECTED LOAD		DEMAND FACTOR		ESTIMATED DEMAND		PANEL TOTALS																
LTNG		1136 VA		125.00%		1420 VA		TOTAL CONNECTED LOAD: 1136 VA																
								TOTAL ESTIMATED DEMAND: 1420 VA																
								TOTAL CONNECTED CURRENT: 3 A																
								TOTAL ESTIMATED DEMAND CURRENT: 4 A																
NOTES: WHERE NOT LISTED, WIRE AND CONDUIT SHALL BE BE MINIMUM PER SPECIFICATIONS. SPARE BREAKERS TO BE 20A/1P.																								

PANELBOARD AND WIRING SCHEDULE													AVAILABLE FAULT CURRENT: 2.0									
PANEL: ELS4					MAINS TYPE: MLO					KAIC RATING: 10												
VOLTAGE: 208Y/120V, 3P, 4W					SPD: Yes					LOCATION: MECH/ELEC 400K												
AMPERES: 100 A					MOUNTING: SURFACE					SUPPLY FROM: ELS2												
CIRCUIT DESCRIPTION		WIRE	GND	C	OCF	P	CKT	A	B	C	CKT	P	OCF	C	GND	WIRE	CIRCUIT DESCRIPTION					
LTNG - EMER 4TH FLOOR		#3	#8	1-1/4"	100	1	1	0.3	0.3								LTNG - EMER 5TH FLOOR					
SPARE		--	--	--	20	1	3		0.0	0.0						--	SPARE					
SPARE		--	--	--	20	1	5									--	SPARE					
SPARE		--	--	--	20	1	7	0.0	0.0							--	SPARE					
SPARE		--	--	--	20	1	9		0.0	0.0						--	SPARE					
SPARE		--	--	--	20	1	11									--	SPARE					
SPARE		--	--	--	20	1	13	0.0	0.0							--	SPARE					
SPARE		--	--	--	20	1	15									--	SPARE					
SPARE		--	--	--	20	1	17		0.0	0.0						--	SPARE					
TOTAL LOAD (KVA):					0.6 KVA					0.0 KVA					0.0 KVA							
TOTAL CURRENT (A):					5 A					0 A					0 A							
LOAD CLASSIFICATION		CONNECTED LOAD		DEMAND FACTOR		ESTIMATED DEMAND		PANEL TOTALS														
LTNG		568 VA		125.00%		710 VA		TOTAL CONNECTED LOAD: 568 VA														
								TOTAL ESTIMATED DEMAND: 710 VA														
								TOTAL CONNECTED CURRENT: 2 A														
								TOTAL ESTIMATED CURRENT: 2 A														
NOTES: WHERE NOT LISTED, WIRE AND CONDUIT SHALL BE MINIMUM PER SPECIFICATIONS. SPARE BREAKERS TO BE 20A/1P.																						

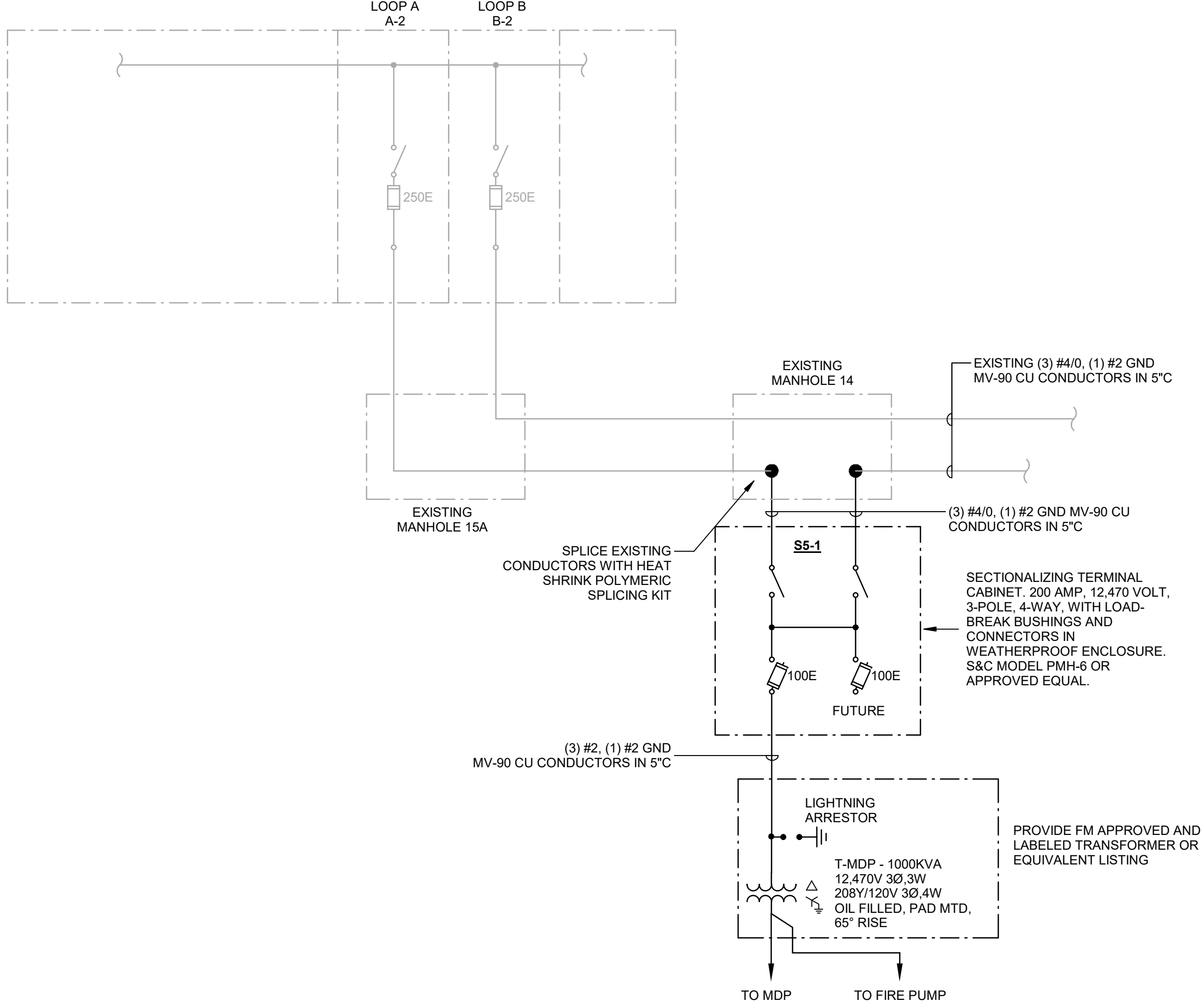




1 ELECTRICAL DISTRIBUTION RISER DIAGRAM  
SCALE: 12" = 1'-0"

2 PRIMARY SYSTEM ONE LINE DIAGRAM  
NO SCALE

EXISTING CAMPUS SWITCHGEAR  
12.470V 3Ø, 3W, 60HZ



STATE OF KENTUCKY APPROVAL

GENERAL NOTES (RISER):

- PROVIDE ENGRAVED LAMACOID LABELS FOR ALL POWER DISTRIBUTION EQUIPMENT FURNISHED OR MODIFIED IN THIS PROJECT. LABELS PER DETAILS AND SPECIFICATIONS.
- SERVICE EQUIPMENT SHALL BE MARKED WITH THE MAXIMUM AVAILABLE FAULT-CURRENT AT THE EQUIPMENT AND THE DATE THE CALCULATION WAS PERFORMED. APPLY A TYPE-WRITTEN ADHESIVE LABEL WITH WHITE BACKGROUND, 1/2" HIGH BLACK LETTERING.
- CONTRACTOR SHALL INSTALL SEPARATE CONDUITS, PULL BOXES, ETC. FOR EACH EMERGENCY POWER BRANCH & NORMAL POWER PER NEC FOR COMPLETE SEPARATION OF POWER SERVICES.
- ALL CIRCUIT BREAKERS AND/OR DISCONNECTS SERVING THE PRIMARY SIDE OF A TRANSFORMER WHICH ARE NOT WITHIN SITE OF THE TRANSFORMER SHALL BE PROVIDED WITH PERMANENTLY INSTALLED MEANS TO LOCK THE BREAKER IN THE OFF POSITION. SUCH TRANSFORMERS SHALL HAVE THE ROOM NAME AND NUMBER OF THE PRIMARY DISCONNECTING MEANS ENGRAVED ON THE EQUIPMENT NAMEPLATE.
- REFER TO SPECIFICATIONS FOR ARC FLASH AND RELATED POWER SYSTEM STUDY REQUIREMENTS.
- ALL DISTRIBUTION PANELBOARDS SHALL BE PROVIDED WITH A MINIMUM 90" BREAKER MOUNTING SPACE UNLESS NOTED OTHERWISE.
- ALL CONDUCTORS SHALL BE COPPER UNLESS NOTED OTHERWISE.
- MAIN SERVICE SWITCHBOARD "MDP" SHALL BE 100% FULLY RATED OVER ITS DISTRIBUTION SECTIONS. DISTRIBUTION END BUS SECTIONS SHALL BE BUILT FOR FUTURE SECTIONS INCLUDING PRE-DILLING BUSS FOR BUSS EXTENSION.
- UPSIZED CONDUITS AS REQUIRED WHERE USING PVC FOR UNDERGROUND FEEDERS.
- ALL UN-USED SPACES WITHIN SWITCHBOARD SHALL BE "PREPARED SPACES" THAT ALLOW EASY INSTALLATION OF A CIRCUIT BREAKER.
- PROVIDE GROUND LUG FOR EACH DEVICE.
- PROVIDE LOCK-OUT CIRCUIT BREAKERS FOR ALL SWITCHBOARD CIRCUIT BREAKERS.
- SWITCHBOARD SHALL BE FRONT ACCESSIBLE ONLY.

#	DATE	CHANGE DESCRIPTION



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DRAWING TITLE:

ELECTRICAL RISER DIAGRAM



STATE OF KENTUCKY  
ROBERT ANTHONY HAYS  
23143  
Professional Engineer

JANUARY 30, 2020

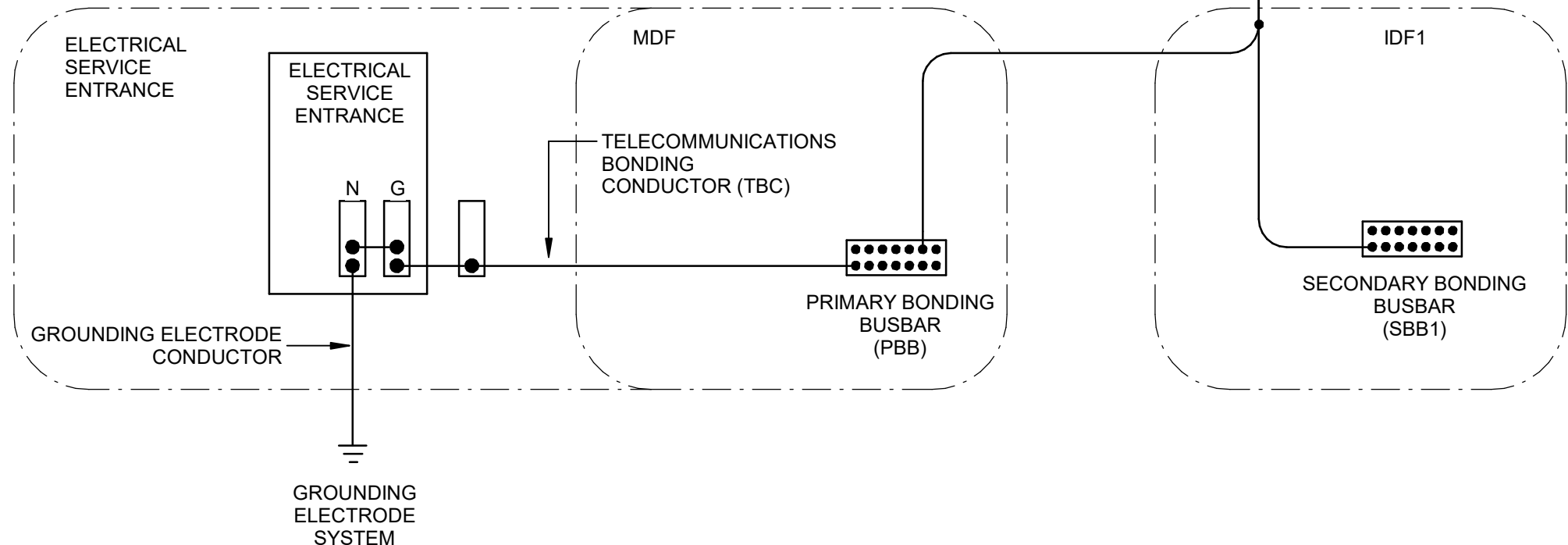
DRAWN BY: GCR CHECKED BY: -

**E701**

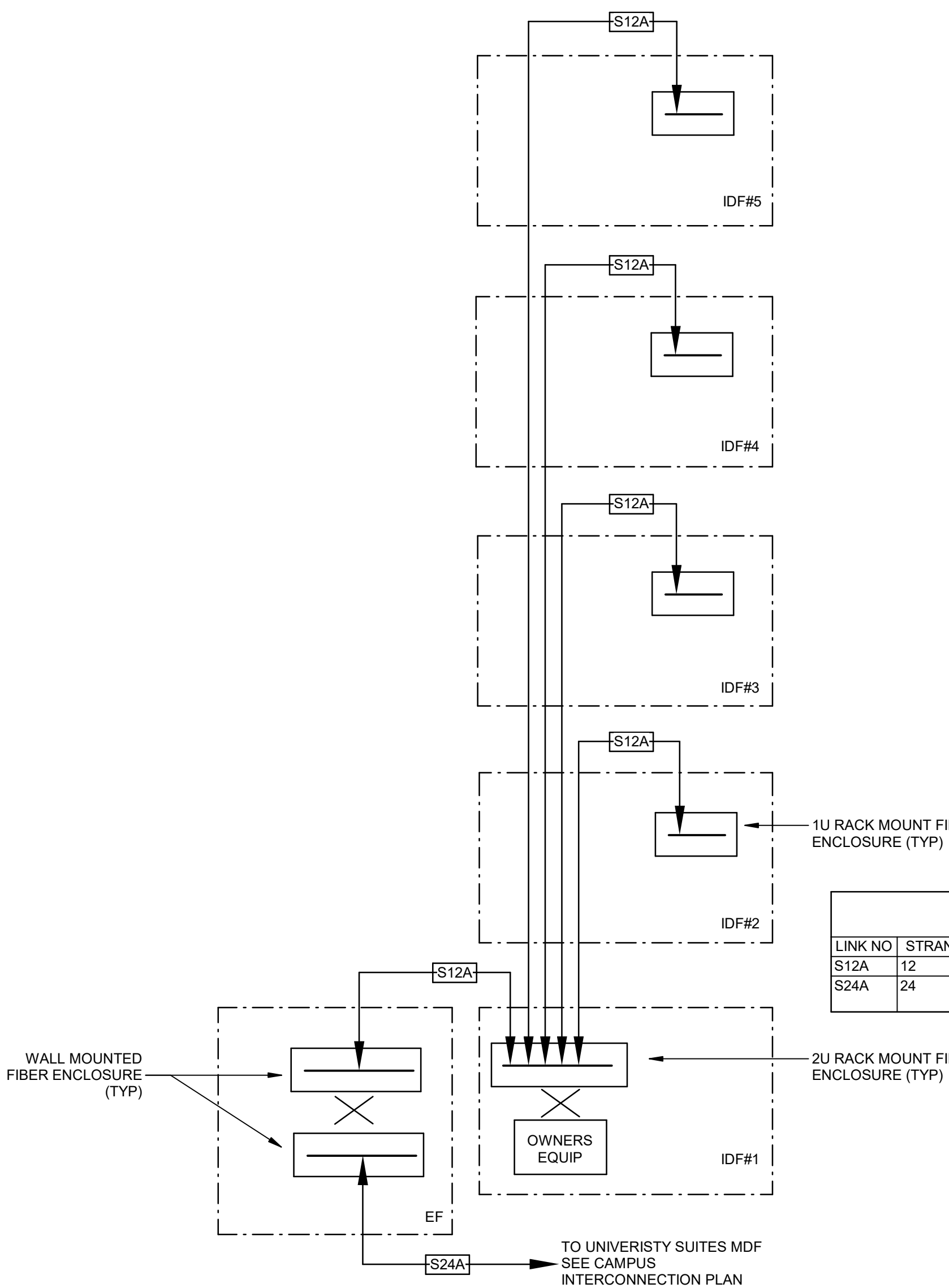
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SIZING BONDING CONDUCTOR		
LENGTH (FT)	SIZE (AWG)	
< 13	6	
14-20	4	
21-26	3	
27-33	2	
34-41	1	
42-52	1/0	
53-66	2/0	
67-84	3/0	
85-105	4/0	
106-125	250 KCMIL	
126-150	300 KCMIL	
151-175	350 KCMIL	
176-250	500 KCMIL	
251-300	600 KCMIL	
> 301	750 KCMIL	

- NOTES:
- ALL WORK TO BE DONE IN ACCORDANCE WITH ANSITIA STD-607-C
  - LOCATE PBB IN TELECOMM ENTRANCE FACILITY TO MINIMIZE LENGTH OF TBC. MAXIMUM LENGTH IS 30FT. SHALL BE AT MINIMUM SAME SIZE AS TBB.
  - ALL GROUNDING AND BONDING CONDUCTORS SHALL BE GREEN INSULATED COPPER CONDUCTORS AND LISTED FOR INTENDED APPLICATION.
  - LABEL ALL GROUNDING AND BONDING CONDUCTORS IN ACCORDANCE WITH ANSITIA-608 REQUIREMENTS.
  - ALL CONNECTIONS TO THE PBB/SBB AND TBB SHALL BE EXOTHERMIC WELD, LISTED COMPRESSION TWO-HOLE LUGS, OR OTHER IRREVERSIBLE COMPRESSION TYPE CONNECTION.
  - TBBs SHALL BE CONTINUOUS FROM THE PBB TO THE FURTHEST SBB.
  - WHERE TWO OR MORE TBBs ARE USED WITHIN A MULTISTORY BUILDING, A BBC SHALL BE USED AT THE TOP FLOOR AND EVERY 3RD FLOOR IN BETWEEN.



2 TELECOMM GROUNDING RISER - MULTI FLOOR  
NO SCALE

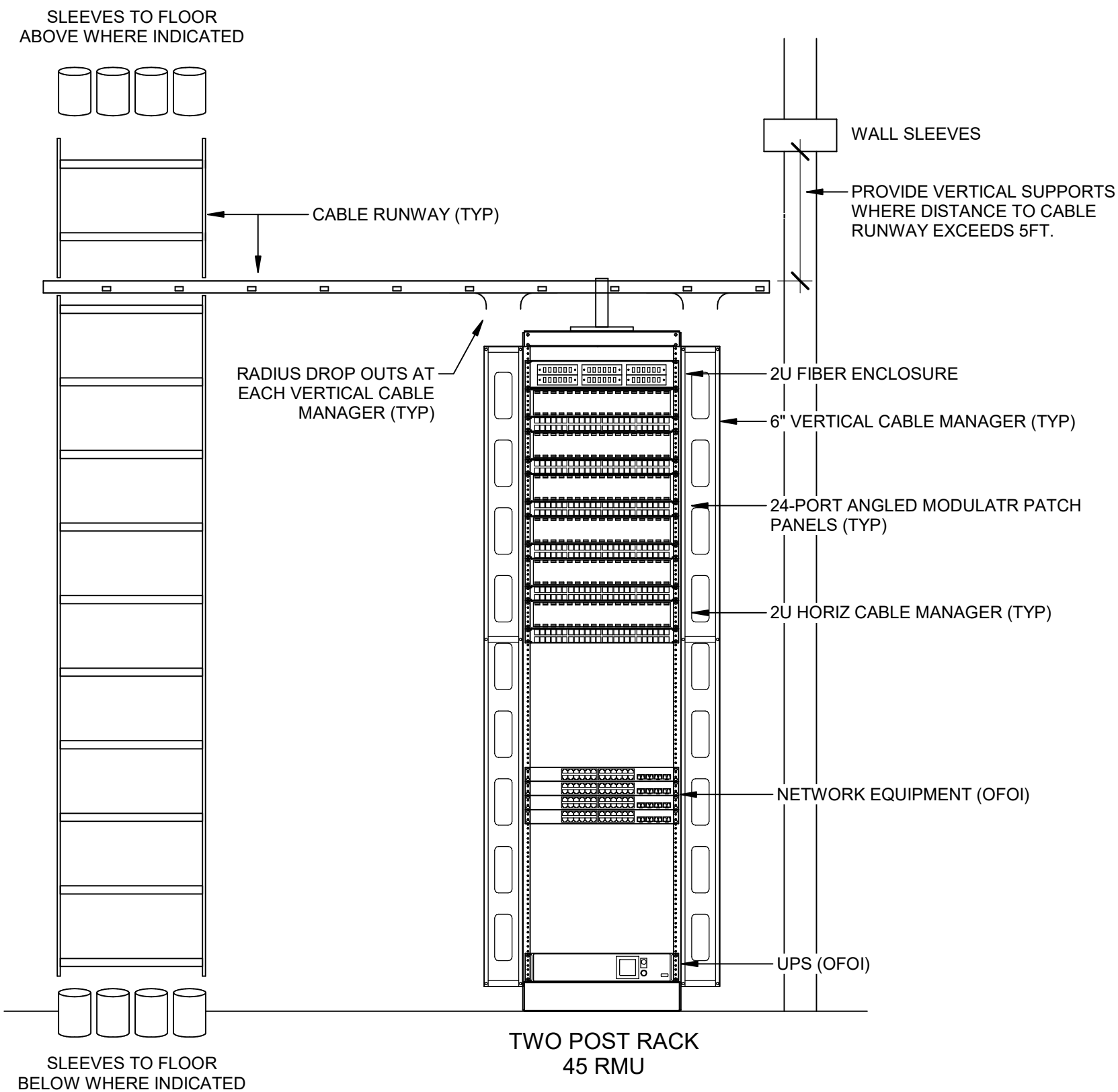


- NOTES:
- ROOM, RACK, AND EQUIPMENT LAYOUTS ARE GENERIC IN NATURE AND ONLY INTENDED TO SHOW THE GENERAL ARRANGEMENT OF COMPONENTS. ACTUAL CONFIGURATIONS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO INSTALLATION. REFER TO SPECIFICATIONS. PROVIDE ALL MISCELLANEOUS MATERIALS AND EQUIPMENT NECESSARY FOR A COMPLETE SYSTEM.
  - REFER TO SITE UTILITIES PLAN FOR CONTINUATION OF ENTRANCE CONDUIT AND CABLES.
  - PROVIDE MINIMUM 30' SERVICE LOOP FOR ALL BACKBONE CABLES. PROVIDE 10' SERVICE LOOP FOR ALL HORIZONTAL CABLES.
  - ALL DATA/VOICE AND CATV CABLING SHALL BE ROUTED IN CONDUIT FROM DEVICE BOX TO CABLE TRAY OR J-HOOK PATHWAY. CONDUIT SHALL BE CLAMPED AND BONDED TO CABLE TRAY WHERE APPLICABLE.
  - ALL EMPTY CONDUITS SHALL BE PROVIDED WITH PULL WIRE.

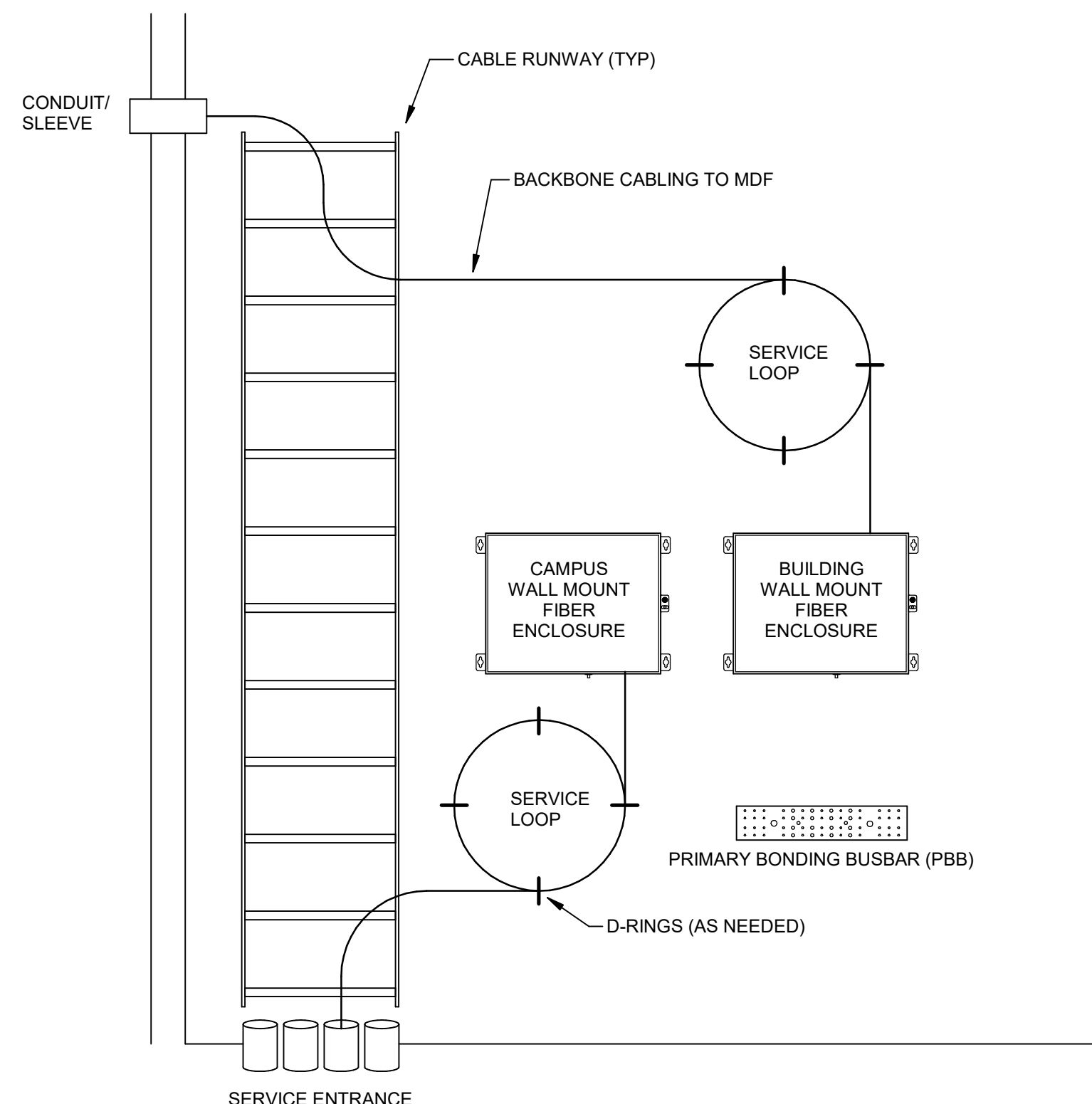
FIBER LINK SCHEDULE						
LINK NO	STRANDS	GRADE	SERIES	MANUFACTURER	PART NUMBER	COMMENT
S12A	12	OS2	TIGHT BUFFER ARMORED INDOOR	CORNING	012E88-33131-A3	
S24A	24	OS2	TIGHT BUFFER ARMORED OSP WITH UV RESISTANT JACKET	CORNING	024ZUC-T4F22D20	

3 TELECOMM NETWORK FIBER OPTIC BACKBONE DIAGRAM  
NO SCALE

TELECOMMUNICATIONS EQUIPMENT SCHEDULE		
EQUIPMENT	MANUFACTURER	PART NUMBER
19" BLACK TWO POST RACK - 45U	ORTRONICS	OR-MM20730-B
RACK MOUNT VERTICAL GROUND BAR	ORTRONICS	OR-GBV72KIT
RACK MOUNT HORIZONTAL GROUND BAR	ORTRONICS	OR-GBH19KIT
6" VERTICAL CABLE MANAGEMENT - DOUBLE SIDED	ORTRONICS	OR-MM20VMD706-B
2U HORIZ CABLE MANAGEMENT	ORTRONICS	OR-MM6HMF2RU
CAT6A 24-PORT MODULAR ANGLED PATCH PANELS	ORTRONICS	OR-PHAPJU24
CAT6A RJ45 MODULAR PANEL JACK - BLUE	ORTRONICS	OR-PJ6A-36
CAT6A FIELD MOUNT PLUG	ORTRONICS	FTPUC6A
SINGLE GANG 4 PORT OUTLET FACEPLATE - FOG WHITE	ORTRONICS	OR-40300158
FACEPLATE JACK MOUNTING MODULE	ORTRONICS	OR-40300656
JACKFACEPLATE BLANKS	ORTRONICS	OR-40300023, OR-42100002
CAT6A RJ45 MODULAR OUTLET JACK - BLUE	ORTRONICS	OR-TJ6A-36
CAT6A UTP HORIZONTAL CABLING - BLUE - PLENUM	GENERAL CABLE	7141849
FIBER ENCLOSURE - RACK MOUNT - 1U	ORTRONICS	OR-INFO1U-M4
OS2 LC DUPLEX ADAPTER PANEL	ORTRONICS	OR-HDFP-LCD12AC
OS2 LC FUSION SPLICE-ON CONNECTOR	ORTRONICS	OR-205KNF98A-09
OS2 FAN OUT KIT	ORTRONICS	OR-61500868
OS2 FIBER OPTIC CABLE	SEE LINK SCHEDULE	
HORIZONTAL POWER DISTRIBUTION UNIT	TRIPP LITE	
RACK MOUNT UNINTERRUPTIBLE POWER SUPPLY W/NIC		OFCl



4 TYP IDF RACK ELEVATION  
NO SCALE REF: E200



1 TYP ENTRANCE FACILITY ELEVATION  
NO SCALE REF: E200

#	DATE	CHANGE DESCRIPTION


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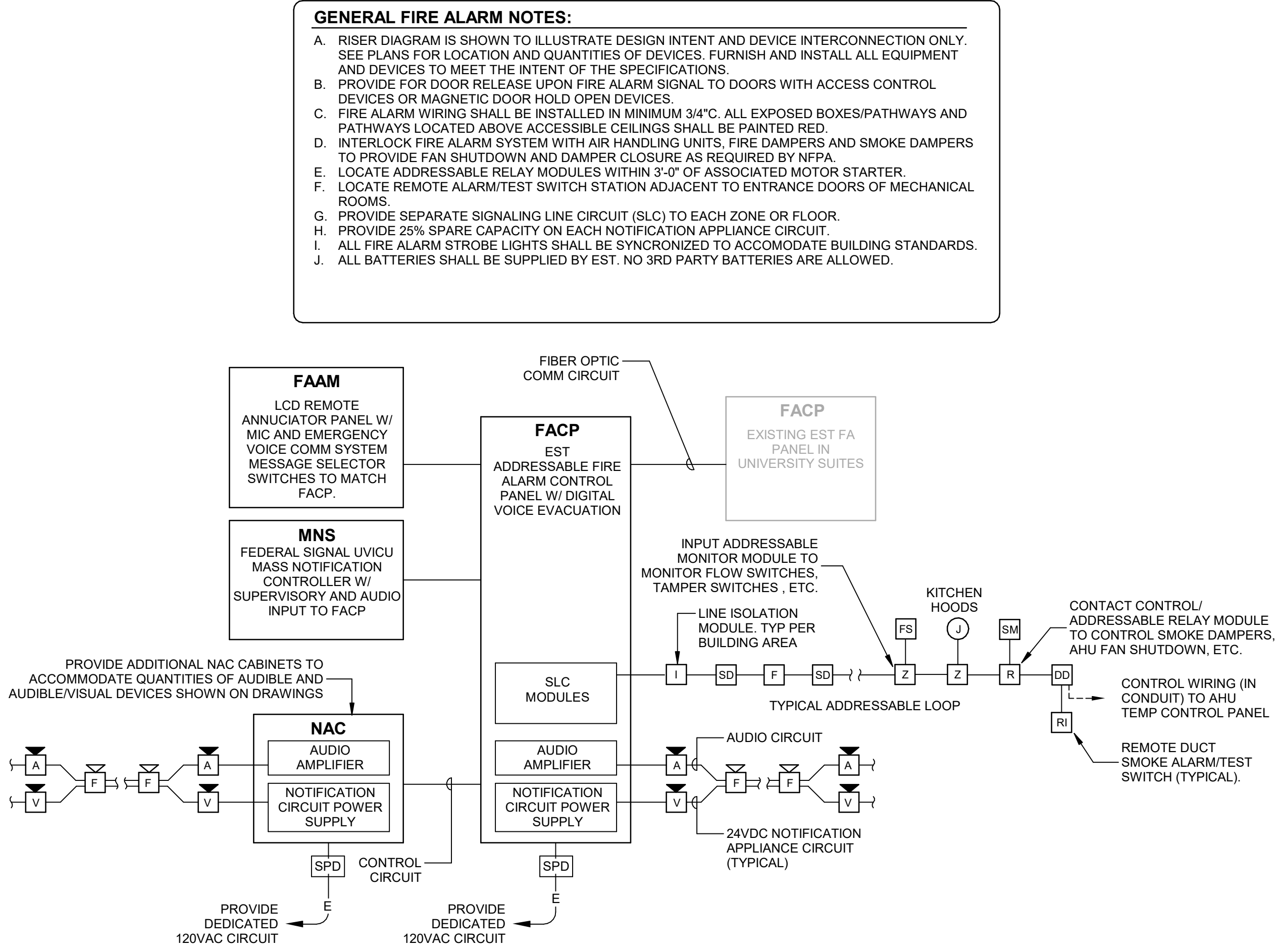
SYSTEMS RISER DIAGRAMS

**ROBERT ANTHONY HANS**  
23143  
PROFESSIONAL ENGINEER

**JANUARY 30, 2020**  
DRAWN BY: GCR  
CHECKED BY:  
**E702**  
BID & PERMIT SUBMITTAL



SYSTEM INPUT:	SYSTEM OUTPUT:																		
	CONTROL PANEL FUNCTIONS				NOTIFICATION				CONTROL										
	ACTIVATE AUDIBLE AND VISIBLE FIRE ALARM SIGNAL	ACTIVATE AUDIBLE AND VISIBLE SUPERVISORY SIGNAL	RECORD EVENT IN SYSTEM MEMORY	IDENTIFY ALARMED DEVICE LOCATION AND ADDRESS	TRANSMIT GENERAL ALARM TO SUPERVISING STATION	TRANSMIT SUPERVISORY TO SUPERVISING STATION	ACTIVATE TROUBLE TO SUPERVISING STATION	ACTIVATE LOCAL AUDIBLE AND VISUAL DEVICES FOR EVACUATION	SHUTDOWN ASSOCIATED SUPPLY FAN	CLOSE ASSOCIATED SMOKE DAMPERS	SILENCE SPEAKERS AND DISABLE STROBES	TEMPORARY OVERRIDE FIRE ALARM MESSAGE AND PA STROBES	RECALL ELEVATOR TO 3RD FLOOR (AT TERMINATED)	RECALL ELEVATOR TO MAIN FLOOR (PRIMARY)	WARNING SIGNAL TO ELEVATOR COB	INITIATE ELEVATOR SHUTDOWN (SHUNT TRIP)	RANGEHOOD SHUTDOWN OF ELECTRIC AND FUEL SUPPLY	RELEASE MAGNETIC DOOR HOLD OPENS	RELEASE ELECTRONICALLY LOCKED SECURITY DOORS
MANUAL PULL STATION	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
SMOKE/HEAT DETECTOR	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
SLEEPING UNIT SMOKE DETECTOR W/SOUNDER BASE	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
SLEEPING UNIT SMOKE DETECTOR (2 OF 3 IN EACH UNIT)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
CO DETECTOR	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
DUCT SMOKE DETECTOR	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
ELEVATOR LOBBY SMOKE DETECTOR - MAIN FLOOR	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
ELEVATOR LOBBY SMOKE DETECTOR - UPPER FLOORS	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
ELEVATOR CONTROL ROOM - SMOKE DETECTOR	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
ELEVATOR HOISTWAY OR CONTROL ROOM - HEAT DETECTOR	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
ELEVATOR SHUNT TRIP VOLTAGE MONITORING	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
KITCHEN RANGEHOOD FIRE SUPPRESSION ACTIVATION	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
SPRINKLER WATERFLOW SWITCH	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
STANDPIPE WATERFLOW SWITCH	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
SPRINKLER TAMPER SWITCH	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
FIRE PUMP RUNNING	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
FIRE PUMP POWER FAILURE/PHASE REVERSAL	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
ALARM SILENCE AT FACP LOCATION	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MANUAL MICROPHONE ACTIVATION	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
FIRE ALARM AC POWER FAILURE	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
FIRE ALARM SYSTEM LOW BATTERY/FAILURE	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
VOICE AMPLIFIER FAILURE	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
OPEN CIRCUIT/GROUND FAULT/SHORT CIRCUIT	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
LOSS OF COMMUNICATION	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
DEVICE TAMPER	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●



1 FIRE ALARM BLOCK DIAGRAM-ADDRESSABLE  
NO SCALE

STATE OF KENTUCKY APPROVAL

#	DATE	CHANGE DESCRIPTION



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FOR  
**NORTHERN KENTUCKY UNIVERSITY**



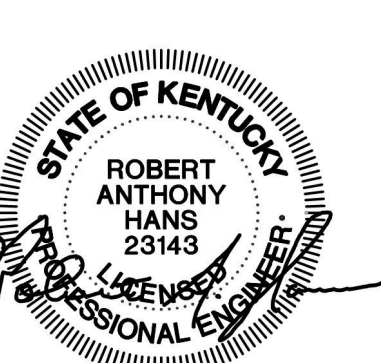
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DRAWING TITLE:

FIRE ALARM RISER DIAGRAM



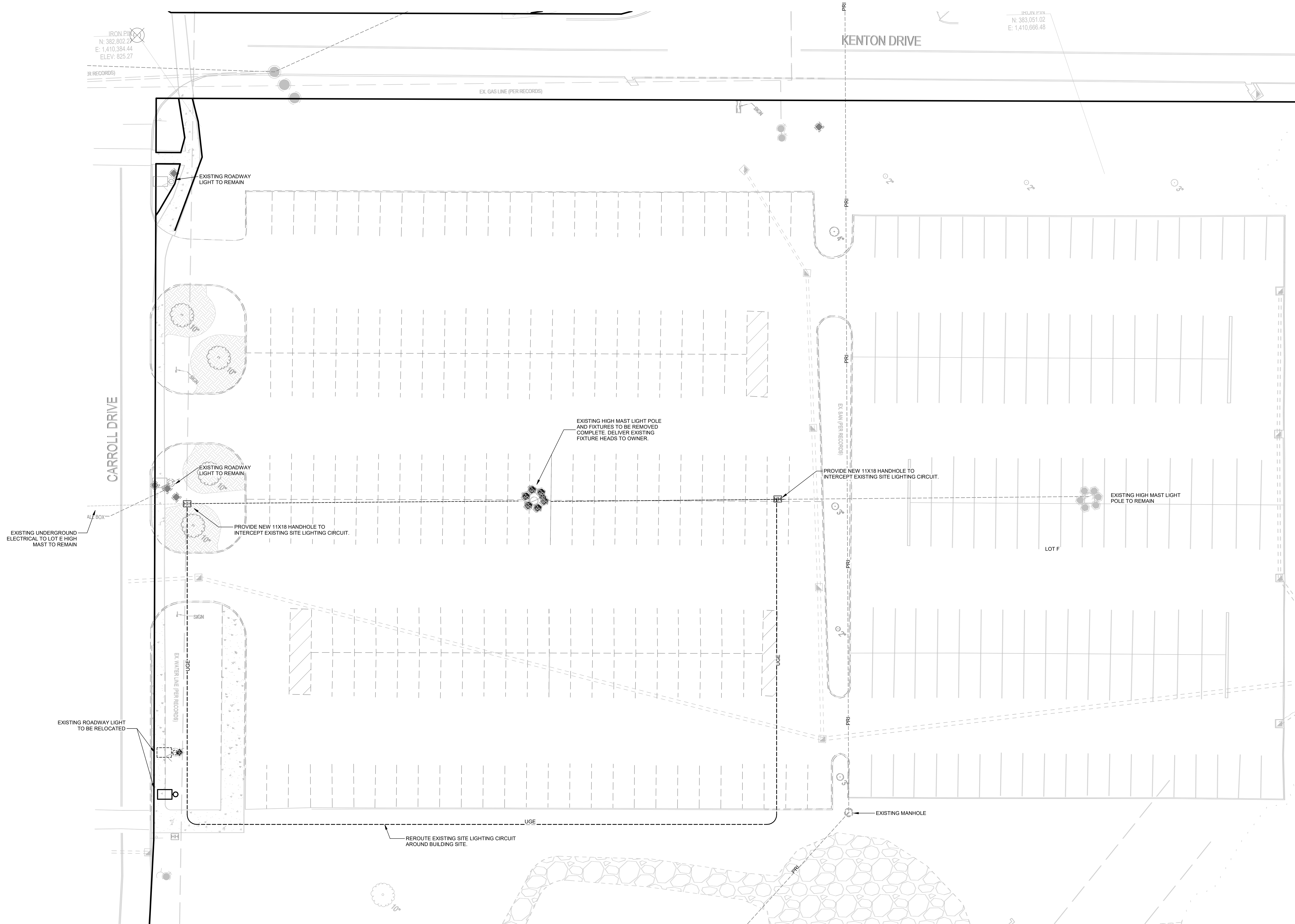
STATE OF KENTUCKY  
ROBERT ANTHONY HANS  
23143  
PROFESSIONAL ENGINEER

JANUARY 30, 2020

DRAWN BY: GCR      CHECKED BY: -

**E703**

BID & PERMIT SUBMITTAL



**1 ELECTRICAL SITE DEMO PLAN**  
SCALE: 1/16" = 1'-0"

#	DATE	CHANGE DESCRIPTION

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DRAWING TITLE

## ELECTRICAL SITE DEMO PLAN

	JANUARY 30, 2020	
	DRAWN BY: GCR	CHECKED BY:
	-	
	<div style="font-size: 48pt; font-weight: bold;">ED01</div>	
<div style="text-align: center;">BID &amp; PERMIT SUBMITTAL</div>		



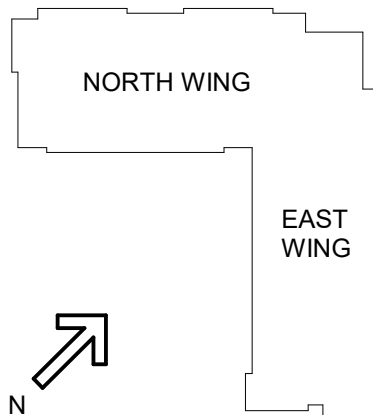


## SCALE: 1" = 50'-0"

**GENERAL NOTES (SITE):**

- DO NOT SCALE FROM MECHANICAL AND ELECTRICAL DRAWINGS. FIELD VERIFY REQUIRED DIMENSIONS AND COORDINATE WITH ALL OTHERS. VERIFY ALL DIMENSIONS AND LOCATIONS. ALL DIMENSIONS REFER ALSO TO ALL OTHER PLANS AND THE SPECIFICATION, BUT ESPECIALLY TO: THE SITE SURVEY, THE ARCHITECTURAL SITE SURVEY, THE MECHANICAL AND ELECTRICAL DRAWINGS (IF NOT AVAILABLE), FOUNDATION PLAN(S), APPROPRIATE MECHANICAL AND ELECTRICAL FLOOR PLANS FOR SERVICE CONTINUATIONS, THE MECHANICAL AND ELECTRICAL DRAWINGS FOR SERVICE CONTINUATIONS, THE MECHANICAL AND ELECTRICAL DRAWINGS FOR SERVICE CONTINUATIONS. THERE ARE CONFLICTS AMONG THESE PLANS AND/OR RELATED SPECIFICATIONS. ADVISE THESE ENGINEERS AT LEAST TEN DAYS BEFORE TO SUBMISSION OF BIDS.
- FEDERAL, STATE, AND/OR MUNICIPALITY AND UTILITY COMPANY CODES, RULES, REGULATIONS AND REQUIREMENTS APPLY UNLESS EXCEEDED BY THIS DESIGN.
- CONTRACTOR SHALL VERIFY ALL UTILITY OR SERVICE IS PLANNED OR OCCURS ACCIDENTALLY. THE CONTRACTOR(S) SHALL WORK CONTINUOUSLY AS NEEDED TO RESTORE SAME TO ORIGINAL CONDITION. CONTRACTOR SHALL VERIFY THE EXISTING CONTRACT PRICE.
- LOCATIONS, DEPTHS, MATERIAL, TYPES, ELEVATIONS, ETC. OF ALL UTILITIES ARE LINES BUILDINGS, ETC. INDICATED ON THESE DRAWINGS WERE TAKEN FROM VARIOUS SOURCES. ARE DIAGRAMMATIC ONLY AND ARE SUBJECT TO SUBSTANTIAL VARIATION FROM EXISTING CONDITIONS. CONTRACTOR(S) LOCATIONS MAY VARY. CONSEQUENTLY ALL CONTRACTORS SHALL EXERCISE EXTREME CARE IN THE COURSE OF THEIR WORK TO AVOID DAMAGE TO EXISTING UTILITIES AND STRUCTURES. FOR SERVICE, FOR SAFETY PURPOSES, PAY PARTICULAR ATTENTION TO THIS PRECAUTION RELATIVE TO NATURAL GAS AND ELECTRICITY. CONTRACTOR(S) SHALL VERIFY ALL UTILITIES IN ACCORDANCE WITH ALL FEDERAL, STATE, AND/OR LOCAL RULES, REGULATIONS, STANDARDS AND SAFETY REQUIREMENTS. PROVIDE LONG RADII ELBOWS FOR UNDERGROUND CONDUIT BENDS.
- CONTRACTOR SHALL VISIT THE SITE AND FIELD VERIFY THE LOCATIONS AND DEPTHS OF ALL UTILITIES. CONTRACTOR(S) SUBMISSION OF BIDS. SUBMISSION OF A BID PROPOSAL INDICATES THAT THE CONTRACTOR IS FULLY AWARE OF ALL UTILITIES AND CONDITIONS OF THE SITE AND ACCEPTS ALL UTILITIES WITHOUT REQUESTS FOR ANY ADDITIONAL CHANGES.
- PROVIDE GALVANIZED RIGID CONDUIT FOR EXTERIOR RANGLING AND LONG RADII ELBOWS FOR UNDERGROUND CONDUIT A MINIMUM OF 6" ABOVE GRADE. EXTEND CONDUIT A MINIMUM OF 6" ABOVE GRADE.
- CONTRACTOR SHALL CONTACT ENGINEER FOR INSPECTION OF ALL UTILITIES AND CONDITIONS OF THE SITE PRIOR TO RACEWAYS. PROVIDE PHOTOS UPON REQUEST.
- CONTRACTOR SHALL CUT AND PATCH ALL PAVEMENT, CURBING, SIDEWALKS, DRIVEWAYS, DRIVEWAYS, DRIVEWAYS, DRIVEWAYS, LANDSCAPING THAT IS DAMAGED FOR WORK. FINISH GRADE, SEED AND STRAW ALL DISTURBED GREEN SPACES. ALL PATCH WORK SHALL BE DONE IN ACCORDANCE WITH BOTH CIVIL AND LANDSCAPE DRAWINGS AND SPECIFICATIONS.

華學



#	DATE	CHANGE DESCRIPTION



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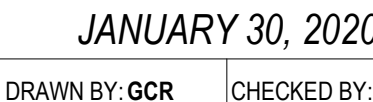
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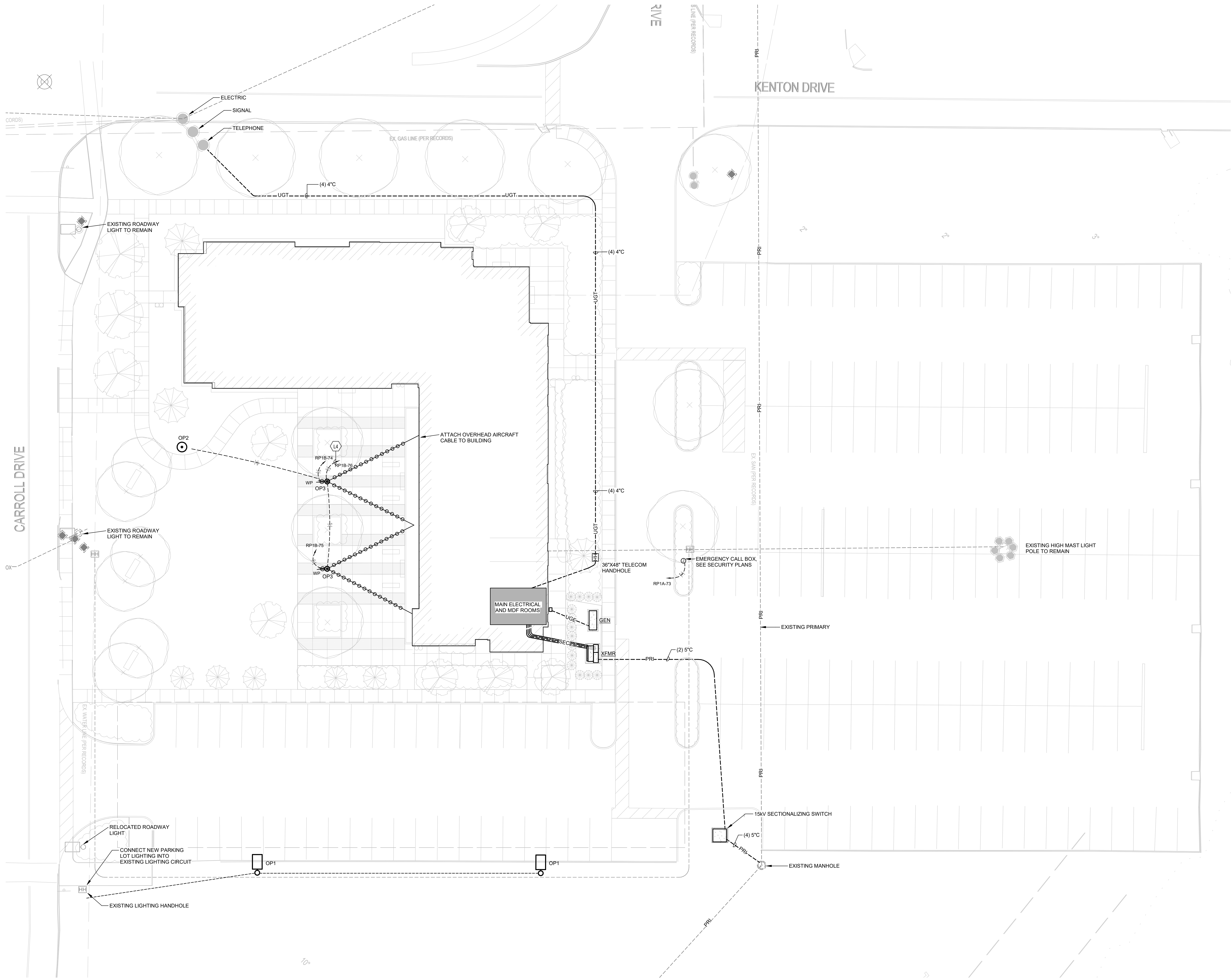
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502.326.3085 F:502.326.2691 [www.cmtaegors.com](http://www.cmtaegors.com)

DRAWING TITLE:  
**ELECTRICAL UTILITY CAMPUS  
INTERCONNECTION PLAN**



# EU00

BID &amp; PERMIT SUBMITTAL



1 ELECTRICAL SITE UTILITY PLAN  
SCALE: 1/16" = 1'-0"

STATE OF KENTUCKY APPROVAL

GENERAL NOTES (SITE):

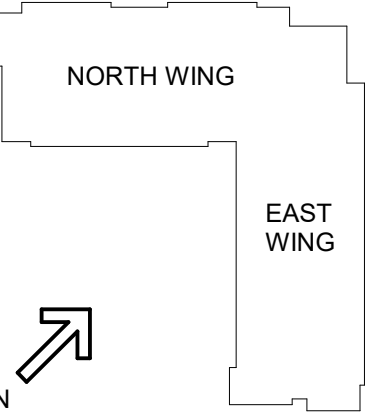
- DO NOT SCALE FROM MECHANICAL AND ELECTRICAL DRAWINGS. FIELD VERIFY REQUIRED DIMENSIONS AND COORDINATE WITH CIVIL DRAWINGS AND SURVEYS.
- REFER ALSO TO ALL OTHER PLANS AND THE SPECIFICATION, BUT ESPECIALLY TO: THE SITE SURVEY, THE ARCHITECTURAL SITE PLAN, THE SITE GRADING PLAN, THE PLANTING PLAN (WHERE AVAILABLE), FOUNDATION PLANS, APPROPRIATE MECHANICAL & ELECTRICAL FLOOR PLANS FOR SERVICE CONTINUATIONS, THE SITE UTILITY PLAN - MECHANICAL & ELECTRICAL. WHERE THERE ARE CONFLICTS AMONG THESE PLANS AND/OR RELATED SPECIFICATIONS, ADVISE THESE ENGINEERS AT LEAST TEN DAYS PRIOR TO SUBMISSION OF BIDS.
- FEDERAL, STATE, LOCAL, MUNICIPALITY AND UTILITY COMPANY CODES, RULES, REGULATIONS AND REQUIREMENTS APPLY UNLESS EXCEEDED BY THIS DESIGN.
- WHEN INTERRUPTION OF AN EXISTING UTILITY OR SERVICE IS PLANNED OR OCCURS ACCIDENTALLY, THE CONTRACTOR(S) SHALL WORK CONTINUOUSLY AS NEEDED TO RESTORE SAME PROVIDING PREMIUM TIME AS NEEDED AT NO INCREASE IN THE CONTRACT PRICE.
- LOCATIONS, DEPTHS, MATERIAL TYPES, ELEVATIONS, ETC. OF ALL APPURTENANCES, LINES, BUILDINGS, ETC. INDICATED ON THESE DRAWINGS WERE TAKEN FROM VARIOUS SOURCES, ARE DIAGRAMMATIC ONLY AND ARE SUBJECT TO SUBSTANTIAL VARIATION FROM EXISTING CONDITIONS. EXISTING UTILITIES LOCATIONS MAY VARY. CONSEQUENTLY ALL CONTRACTORS SHALL EXERCISE EXTREME CARE IN THE COURSE OF THEIR WORK SO AS TO ENSURE THAT THEY DO NOT INTERRUPT ANY EXISTING SERVICE. FOR SAFETY PURPOSES, PAY PARTICULAR ATTENTION TO THIS PRECAUTION RELATIVE TO NATURAL GAS AND ELECTRICAL LINES. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL FEDERAL, STATE, AND/OR LOCAL RULES, REGULATIONS, STANDARDS AND SAFETY REQUIREMENTS.
- PROVIDE LONG RADIUS ELBOWS FOR UNDERGROUND CONDUIT BENDS.
- CONTRACTOR SHALL VISIT THE SITE AND FIELD VERIFY THE ROUTING OF ALL UTILITIES NEW AND EXISTING PRIOR TO SUBMISSION OF BIDS. SUBMISSION OF A BID PROPOSAL INDICATES THAT THE CONTRACTOR IS FULLY AWARE OF ALL OBSTRUCTIONS AND WILL INSTALL ALL OF THE NEW UTILITIES WITHOUT REQUESTS FOR ANY ADDITIONAL CHANGES.
- PROVIDE GALVANIZED RIGID CONDUIT FOR EXTERIOR UNDERGROUND TRANSITIONS TO ABOVE GRADE, EXTEND CONDUIT A MINIMUM OF 6' ABOVE GRADE.
- CONTRACTOR SHALL CONTACT ENGINEER FOR INSPECTION OF TRENCHES PRIOR TO INSTALLATION OF CONDUITS OR RACEWAYS. PROVIDE PHOTOS UPON REQUEST.
- CONTRACTOR SHALL CUT AND PATCH ALL PAVEMENT, CURBING, ETC. AS REQUIRED FOR WORK. CONTRACTOR SHALL REPAIR ALL LANDSCAPING THAT IS DAMAGED FOR WORK. FINISH GRADE, SEED AND STRAW ALL DISTURBED GREEN SPACES. ALL PATCH AND REPAIR WORK SHALL BE IN ACCORDANCE WITH BOTH CIVIL AND LANDSCAPE DRAWINGS AND SPECIFICATIONS.

TAGGED NOTES

- L4 ROUTE CIRCUIT THROUGH EXTERIOR LIGHTING CONTACTOR CABINET. REFER TO EXTERIOR LIGHTING CONTROL DETAIL FOR MORE INFORMATION.

UTILITY LEGEND


- PRI --- UNDERGROUND PRIMARY
- SEC --- UNDERGROUND ELECTRICAL SERVICE SECONDARY
- UGE --- UNDERGROUND ELECTRIC
- UGT --- UNDERGROUND TELECOMMUNICATIONS
- [HH] HANDHOLE



#	DATE	CHANGE DESCRIPTION



**NEW STUDENT HOUSING**  
KENTON DRIVE & CARROLL DRIVE  
HIGHLAND HEIGHTS, KY 41099  
FOR  
**NORTHERN KENTUCKY UNIVERSITY**




300 SPRUCE STREET  
SUITE 300  
COLUMBUS, OHIO 43215  
PHONE: (614) 461-4664  
FAX: (614) 280-8881



**CMTA**  
10411 Meeting Street, Prospect, KY 40369  
T: 502.326.3065 F: 502.326.2691 www.cmtaengr.com

DRAWING TITLE:  
**ELECTRICAL SITE UTILITIES PLAN**



**STATE OF KENTUCKY**  
ROBERT ANTHONY HANS  
23143  
Professional Engineer

JANUARY 30, 2020	
DRAWN BY: GCR	CHECKED BY:
EU01	
BID & PERMIT SUBMITTAL	



AUDIO VISUAL & SECURITY SYSTEMS

NEW RESIDENCE HALL

NORTHERN KENTUCKY UNIVERSITY

HIGHLAND HEIGHTS, KY 41099

SUBMITTED ON: JANUARY 31, 2020

DEVICE LEGEND:

DOOR OPERATOR PUSH BUTTON. PROVIDED BY DOOR HARDWARE CONTRACTOR. WIRED AND INTEGRATED BY SECURITY CONTRACTOR.

MULTI-TECHNOLOGY CARD READER MOUNTED AT 42" AFF. PROVIDED AND INSTALLED BY SECURITY CONTRACTOR. SEE PLAN DETAILS FOR REQUIREMENTS.

"W" SUBSCRIPT DENOTES WIRELESS CARD READER/LOCKSET.

ELECTRIC DOOR HARDWARE AND DOOR POSITION SWITCH. POWER SUPPLY & DOOR POSITION SWITCH PROVIDED & INSTALLED BY THE SECURITY CONTRACTOR. ALL DEVICES WIRED & INTEGRATED BY THE SECURITY CONTRACTOR. ELECTRIC DOOR HARDWARE PROVIDED & INSTALLED BY DOOR HARDWARE CONTRACTOR.

FIXED VIDEO SURVEILLANCE CAMERA. SEE CAMERA SCHEDULE FOR REQUIREMENTS. TELECOM CONTRACTOR TO PROVIDE AND INSTALL ONE (1) CATEGORY 6A/23 AWG/UTP PLENUM CABLE TO LOCATION OF EACH INTERIOR AND EXTERIOR CAMERA. MOUNT OUTLET IN SINGLE PORT SURFACE MOUNT BOX ATTACHED TO STRUCTURAL CEILING. SEE DETAILS FOR TERMINATION REQUIREMENTS.

DIGITAL SIGNAGE DATA OUTLET. COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS. TELECOM CONTRACTOR TO PROVIDE AND INSTALL TWO (2) CATEGORY 6A/23 AWG/UTP PLENUM CABLES FROM STATION OUTLET TO LOCAL TELECOM ROOM AND TERMINATE ON CATEGORY 6A PATCH PANEL. DESIGNATE CABLE FOR DIGITAL SIGNAGE.

CALL 24 WIRELESS EMERGENCY CALLBOX MOUNTED ON STANTION. CALLBOX P/N: C24-14A, STANTION P/N: C24-14AD/AC. PROVIDE ONE (1) - 2-STRAND, SINGLE-MODE OSP FIBER OPTIC CABLE FROM MAIN BUILDING TELECOM ROOM (MDF) TO EMERGENCY CALL BOX.

WALL MOUNTED INPUT INTERFACE CONNECTION PLATE. REFERENCE LARGE SCALE PLANS FOR LOCATION.

- #SUBSCRIPT INDICATES MODEL TYPE. REFERENCE DETAILS FOR ADDITIONAL INFORMATION.

CALL 24 WIRELESS EMERGENCY CALLBOX MOUNTED ON WALL AT 48" AFF TO CENTERLINE, P/N: C24-14A.

DEVICES REQUIRE WEATHER-PROOFING

ELECTRICAL CONDUIT ROUGH-IN LEGEND:

DOOR OPERATOR PUSH BUTTON. PROVIDE WALL MOUNT 4" SQUARE BACKBOX WITH 3/4" EMT CONDUIT ROUTED FROM BACKBOX TO ACCESSIBLE CEILING SPACE.

MULTI-TECHNOLOGY CARD READER. PROVIDE WALL MOUNT 4" SQUARE BACKBOX WITH SINGLE GANG TILE RING AT 42" AFF. PROVIDE ONE (1) - 1" EMT CONDUIT FROM BACKBOX TO SECURITY JUNCTION BOX. SEE INSTALLATION DETAIL.

ELECTRIC DOOR HARDWARE AND DOOR POSITION SWITCH. PROVIDE TWO (2) - 1" EMT CONDUITS ROUTED FROM DOOR FRAME TO SECURITY JUNCTION BOX. SEE INSTALLATION DETAILS.

FIXED VIDEO SURVEILLANCE CAMERA. SEE VIDEO SURVEILLANCE CAMERA SCHEDULE FOR REFERENCE TO MOUNTING DETAIL.

DIGITAL SIGNAGE DATA OUTLET. REFERENCE ARCHITECTURAL ELEVATIONS FOR MOUNTING HEIGHTS. PROVIDE RECESSED SHARED (LV AND ELEC) BACKBOX. PROVIDE ONE (1) - 1" EMT CONDUIT FROM BACKBOX TO ACCESSIBLE CEILING FOR LV USE.

CALL 24 WIRELESS EMERGENCY CALLBOX MOUNTED ON STANTION. PROVIDE AND INSTALL TWO (2) - 1" SCHEDULE 40 PVC CONDUITS FROM EMERGENCY CALL STATION TO MAIN TELECOM ROOM (MDF). INSTALL PER MANUFACTURER'S SPECIFICATIONS. SEE SITE PLAN FOR FURTHER REQUIREMENTS.

WALL MOUNTED INTERFACE CONNECTION PLATE. REFERENCE FLOOR PLANS FOR LOCATION.

- ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL ONE (1) - 2 GANG, 2.5-INCH DEEP BACKBOX. SEE LARGE SCALE PLANS AND DETAILS FOR ADDITIONAL INFORMATION. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL CONDUITS AS SHOWN AND DETAILED.

CALL 24 EMERGENCY CALLBOX FLUSH MOUNTED TO WALL. PROVIDE RECESSED CUSTOM BACKBOX AT 48" AFF TO CENTERLINE. PROVIDE ONE (1) - 3/4" EMT CONDUIT FROM BOX TO ACCESSIBLE CEILING SPACE.

SHEET LEGEND:

LV000 COVER SHEET & LEGENDS

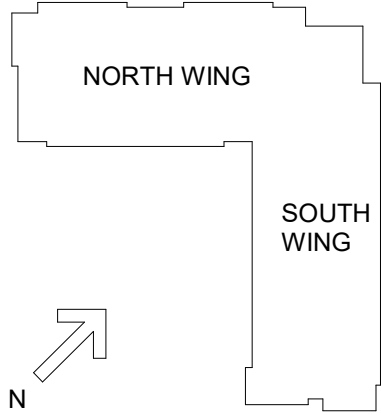
LV101 SITE PLAN

LV200 LEVEL 00 FLOOR PLAN  
LV201 LEVEL 01 FLOOR PLAN  
LV202 LEVEL 02 FLOOR PLAN  
LV203 LEVEL 03 FLOOR PLAN  
LV204 LEVEL 04 FLOOR PLAN  
LV205 LEVEL 05 FLOOR PLAN

LV301 AV LARGE SCALES

LV401 ONE-LINE DIAGRAM - VIDEO SURVEILLANCE  
LV402 ONE-LINE DIAGRAM - ACCESS CONTROL

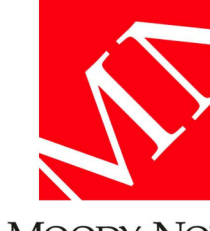
LV501 DETAILS  
LV502 DETAILS  
LV503 DETAILS  
LV504 DETAILS




#	DATE	CHANGE DESCRIPTION



**NEW RESIDENCE HALL**  
KENTON DRIVE & CARROLL DRIVE  
HIGHLAND HEIGHTS, KY 41099  
FOR  
**NORTHERN KENTUCKY UNIVERSITY**




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FAX: (859) 957-1280



**J&A**  
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DRAWING TITLE:

COVER SHEET & LEGENDS



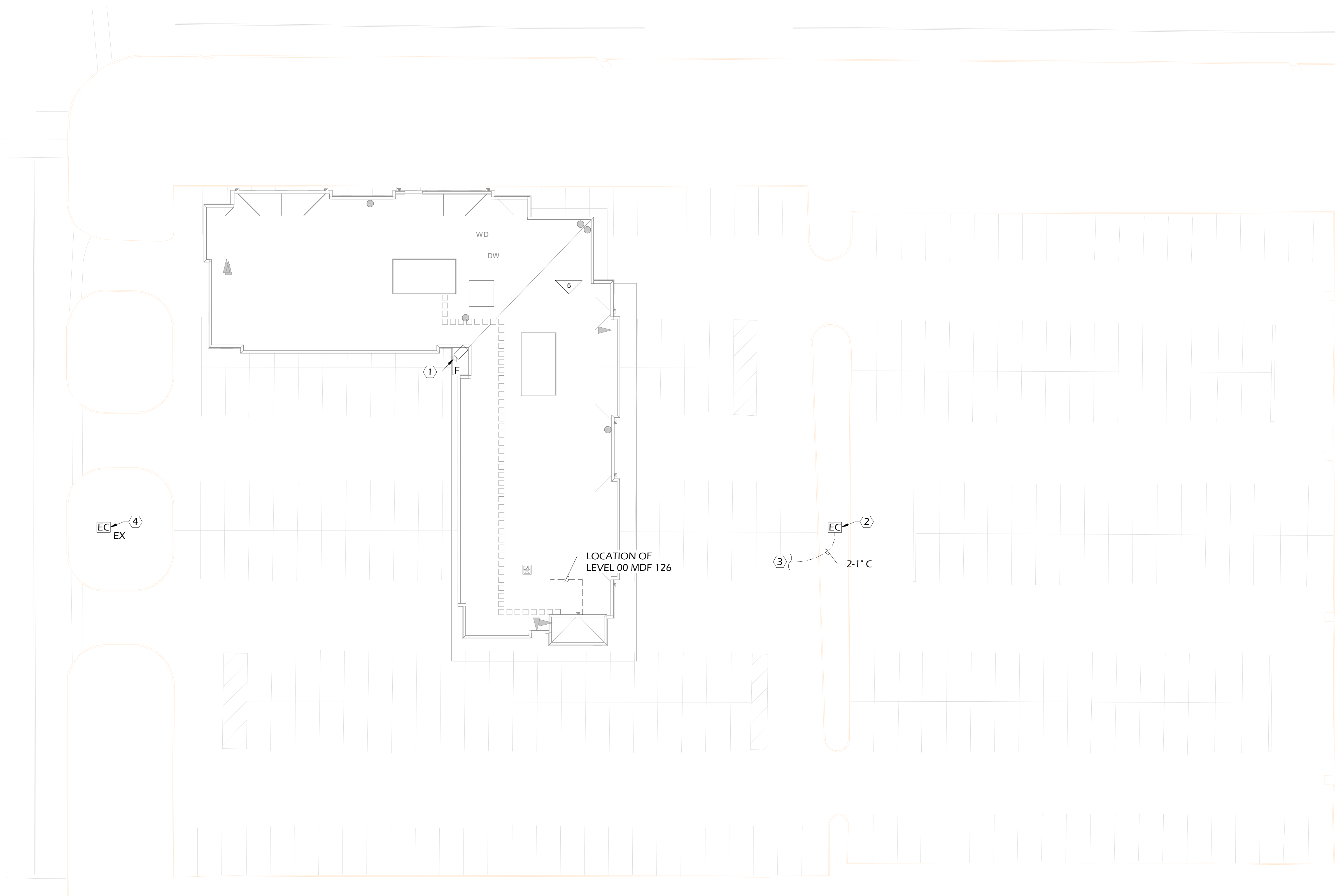
JANUARY 30, 2020

DRAWN BY: BT      CHECKED BY: CO

19041

**LV000**

BID & PERMIT SUBMITTAL



FLOOR PLAN  
1" = 20'-0"

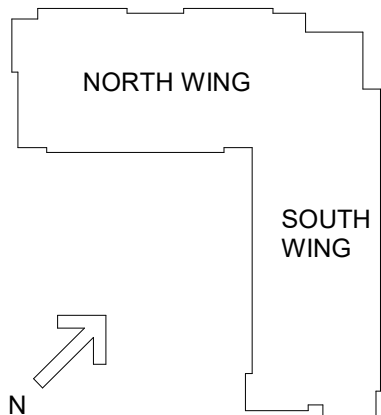
1 SITE PLAN

GENERAL NOTES:

- A. NO CONDUIT RUN TO CONTAIN MORE THAN TWO (2) 90° BENDS BETWEEN PULLING POINTS. PROVIDE JUNCTION BOXES WHERE REQUIRED TO MAINTAIN (2) 90° BEND RULE.
- B. ALL WALL AND FLOOR PENETRATIONS TO BE SEALED AND FIREPROOFED. CONDUIT ROUTING PATHS TO BE COORDINATED WITH ALL OTHER SYSTEMS.
- C. ALL SECURITY CABLES TO BE ROUTED DIRECT TO EQUIPMENT ROOMS WITHOUT SPLICES. NO JUNCTIONS OR SPLICES IN CABLES ARE ACCEPTABLE.
- D. ALL CONDUITS ROUTED BELOW GRADE TO BE SEALED TO PREVENT WATER INFILTRATION INTO EQUIPMENT ROOMS.
- E. ALL CONDUITS ROUTED BELOW GRADE TO BE SCHEDULE 40 PVC. CONDUIT ROUTED ABOVE GRADE TO BE EMT.
- F. NO ELECTRONIC DEVICES ARE ALLOWED TO BE INSTALLED IN HANDHOLE BOXES.
- G. ALL LOW VOLTAGE CABLING SHALL BE ROUTED DIRECTLY TO THE CLOSEST TELECOM ROOM WITHOUT SPLICES. JUNCTIONS AND SPLICES IN CABLE ARE NOT ACCEPTABLE.
- H. ALL CONDUITS ARE TO INCLUDE PULL STRINGS INSTALLED WITHIN. DUCTBANKS TO ONLY BE MARKED WITH DETECTABLE UNDERGROUND UTILITY TAPE. COORDINATE WITH MANUFACTURER'S REQUIREMENTS.
- I. PROVIDE TRANSIENT VOLTAGE SURGE SUPPRESSION FOR EXTERIOR CAMERAS. PROTECT SIGNAL, DATA, AND POWER CONDUCTORS.

KEY NOTES:


- ① SECURITY CONTRACTOR TO PROVIDE AND INSTALL CAT 6 CABLE AS DESCRIBED BY THE SPECIFICATIONS FOR FUTURE CAMERA LOCATION. COORDINATE WITH NOTHERN KENTUCKY I.T. DEPARTMENT FOR EXACT REQUIREMENTS.
- ② PROVIDE ONE (1) - STATION MOUNTED, WIRELESS EMERGENCY CALL STATION. EMERGENCY CALL STATION TO BE S-SERIES MARK III P/N: C24-14A, BY CALL 24 WIRELESS CALLBOX SYSTEMS, AS NOTED IN NKU DESIGN STANDARDS. STATION TO BE P/N: C24-14AD/AC. BY CALL 24 WIRELESS CALLBOX SYSTEMS. PROVIDE 2-STRAND SINGLE-MODE OSP FIBER OPTIC CABLE TO EACH EMERGENCY CALL STATION LOCATION. ELECTRICAL CONTRACTOR TO PROVIDE 120V UN-SWITCHED POWER. COORDINATE WITH EMERGENCY CALL STATION MANUFACTURER FOR INSTALLATION REQUIREMENTS.
- ③ CONTRACTOR TO INSTALL, BELOW GRADE, TWO (2) - 1" SCHEDULE 40 PVC CONDUITS FROM EMERGENCY CALL STATION LOCATION TO MAIN TELECOM ROOM, LEVEL 00 MDF. INSTALL CONDUITS PER NEC CODE REQUIREMENTS. USE LONG RADIUS 90° ELBOWS TO TURN CONDUIT UP INTO TELECOM ROOM. CONDUITS TO TURN-UP ~4" ABOVE GRADE SLAB. ALL CONDUIT OPENINGS ARE TO BE SEALED.
- ④ EXISTING EMERGENCY CALL STATION TO REMAIN.




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DRAWING TITLE:

SITE PLAN



JANUARY 30, 2020

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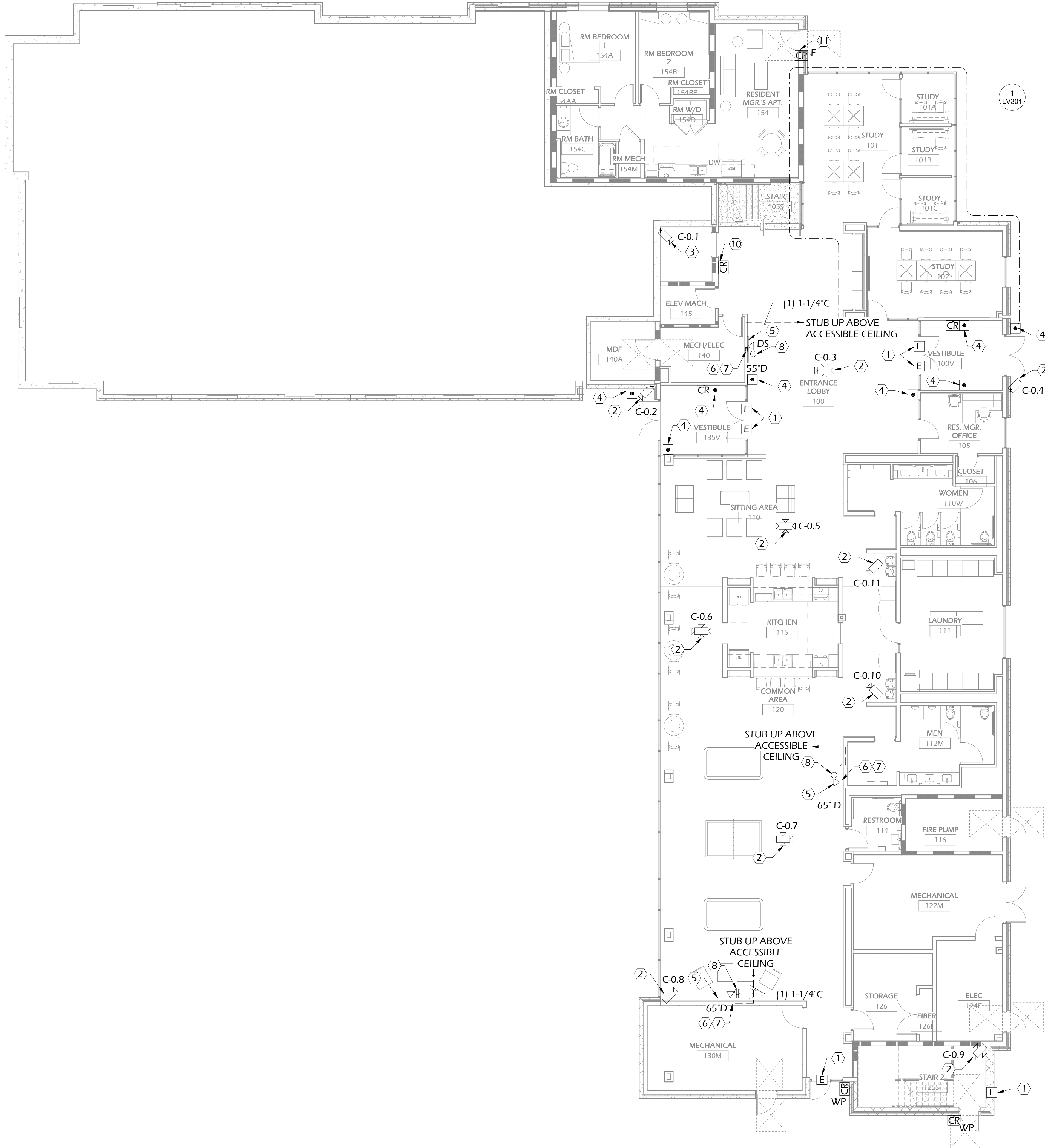
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19041

**LV101**

BID & PERMIT SUBMITTAL





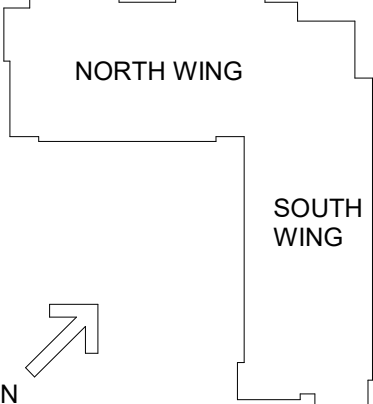
FLOOR PLAN 1 LEVEL 00  
1/8" = 1'-0"

GENERAL NOTES:

- A. NO CONDUIT RUN ROUTED ABOVE GRADE TO CONTAIN MORE THAN 180° OF BENDS BETWEEN PULLING POINTS. PORVIDE JUNCTION BOXES WHERE REQUIRED TO MAINTAIN 180° BEND RULE.
- B. ALL SLAB, WALL, AND CMU BLOCK WALL PENETRATIONS TO BE FIREPROOFED AND SEALED.
- C. ALL SIGNAL AND LOW VOLTAGE POWER CABLES TO BE ROUTED DIRECT TO EQUIPMENT ROOMS WITHOUT SPLICES. NO JUNCTIONS OR SPLICES IN CABLES ARE ACCEPTABLE.
- D. ALL SIGNAL AND LOW VOLTAGE POWER CABLES TO BE PLENUM RATED. FOR ALL LOW VOLTAGE SYSTEMS, PROVIDE EMT RACEWAY FROM DEVICE BACKBOX TO ACCESSIBLE CEILING SPACE AND PROVIDE J-HOOK SUPPORT TO CORRIDOR RACEWAY SYSTEM OR TELECOM ROOM. J-HOOKS TO BE INSTALLED ON 4'-0" CENTERS. CABLES ARE NOT PERMITTED TO LAY UNSUPPORTED ACROSS CEILINGS. STAPLES ARE NOT PERMITTED TO BE USED TO SECURE CABLE.
- E. IN NON-ACCESSIBLE CEILING SPACE, ALL SIGNAL AND LOW VOLTAGE POWER CABLE TO BE ROUTED IN EMT CONDUIT. MINIMUM SIZE SHALL BE 3/4". SIZE PER NEC 40% FILL REQUIREMENT.
- F. ALL TELECOM CABLING TO BE ROUTED IN MOST DIRECT ROUTE TO ENSURE COMPLIANCE WITH CATEGORY CABLING 90 METER RULE.

KEY NOTES:


- 1. INTEGRATE REQUEST TO EXIT SIGNAL AVAILABLE WITH ELECTRIC DOOR HARDWARE INTO SECURITY AND ACCES CONTROL SYSTEM.
- 2. OWNER TO PROVIDE NEW FIXED CAMERA, LENS, HOUSING AS DESCRIBED BY THE SPECIFICATIONS. CONTRACTOR TO INSTALL CAMERA & TERMINATE CATEGORY 6 CABLING. COORDINATE WITH NKU I.T. DEPARTMENT FOR DESIRED FIELD OF VIEW REQUIREMENTS.
- 3. CAMERA TO BE INSTALLED IN ELEVATOR CAB. COORDINATE WITH ELEVATOR CONTRACTOR FOR INSTALLATION AND INTERFACE WITH TRAVELING CABLE IN ELEVATOR MACHINE ROOM.
- 4. ACCESS CONTROL DEVICES TO BE INTEGRATED WITH AUTOMATIC DOOR OPERATORS BY SECURITY CONTRACTOR. WHEN BUILDING IS SECURED, VESTIBULE PUSH-BUTTON TO BE DISABLED UNTIL VALID CARD READ. INTERIOR AND EXTERIOR ADA PUSH-BUTTONS TO BE ENABLED AT ALL TIMES AND INTERFACED WITH ELECTRIC DOOR HARDWARE AND OPERATORS.
- 5. WALL MOUNTED FLAT PANEL DISPLAY. GENERAL CONTRACTOR IS TO PROVIDE AND INSTALL BLOCKING AT THIS LOCATION FOR DISPLAY AND MOUNT. BLOCKING MATERIAL AND ATTACHMENT METHOD TO STRUCTURE IS TO ADHERE TO CURRENT INDUSTRY STANDARDS. AUDIO VISUAL CONTRACTOR IS TO PROVIDE AND INSTALL DISPLAY AND MOUNT TO STRUCTURE. COORDINATE EXACT LOCATION WITH ARCHITECT AND/OR OWNER.
- 6. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL A TWO (2) GANG BACK BOX. FLUSH MOUNTED IN WALL AT 18-INCHES AFF FOR LOCAL AUDIO VISUAL INPUT INTERFACE PLATE (AV INP1). STUB UP ONE (1) 1-INCH CONDUIT FROM INPUT PLATE TO AV BACK BOX ABOVE.
- 7. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL IN-WALL BACK BOX. FLUSH MOUNTED AT 67-INCHES AFF FOR FLAT PANEL DISPLAY CONNECTIVITY. STUB UP ONE (1) 1-1/4-INCH CONDUIT TO ABOVE ACCESSIBLE CEILING.
- 8. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL 120V/1-PHASE DUPLEX RECEPTACLE LOCATED AT 67-INCHES AFF ADJACENT TO AV BACK BOX. TELECOM CONTRACTOR TO PROVIDE AND INSTALL TWO (2) DATA OUTLETS ADJACENT TO AV BACK BOX.
- 9. PROVIDE ONE (1) - WALL MOUNTED, WIRELESS EMERGENCY CALL STATION. EMERGENCY CALL STATION TO BE S-SERIES MARK III P/N: C24-14A. BY CALL 24 WIRELESS CALLBOX SYSTEMS, AS NOTED IN NKU DESIGN STANDARDS. ELECTRICAL CONTRACTOR TO PROVIDE 120V UN-SWITCHED POWER. COORDINATE WITH EMERGENCY CALL STATION MANUFACTURER FOR INSTALLATION REQUIREMENTS.
- 10. COORDINATE WITH ELEVATOR CONTRACTOR FOR CARD READER INSTALLATION AND INTERFACE WITH TRAVELING CABLE IN ELEVATOR MACHINE ROOM.
- 11. SECURITY CONTRACTOR TO PROVIDE MIN. 3/4" CONDUITS STUBBED BETWEEN HINGE SIDE OF UNIT ENTRY DOOR AND NEAREST ACCESSIBLE CEILING. DOORS TO BE CORED FOR FUTURE CARD READER/ELECTRONIC LOCK INSTALLATION. COORDINATE EXACT REQUIREMENTS WITH DOOR HARDWARE VENDOR PRIOR TO ROUGH-IN.




#	DATE	CHANGE DESCRIPTION



**NEW RESIDENCE HALL**  
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HIGHLAND HEIGHTS, KY 41099  
FOR  
**NORTHERN KENTUCKY UNIVERSITY**




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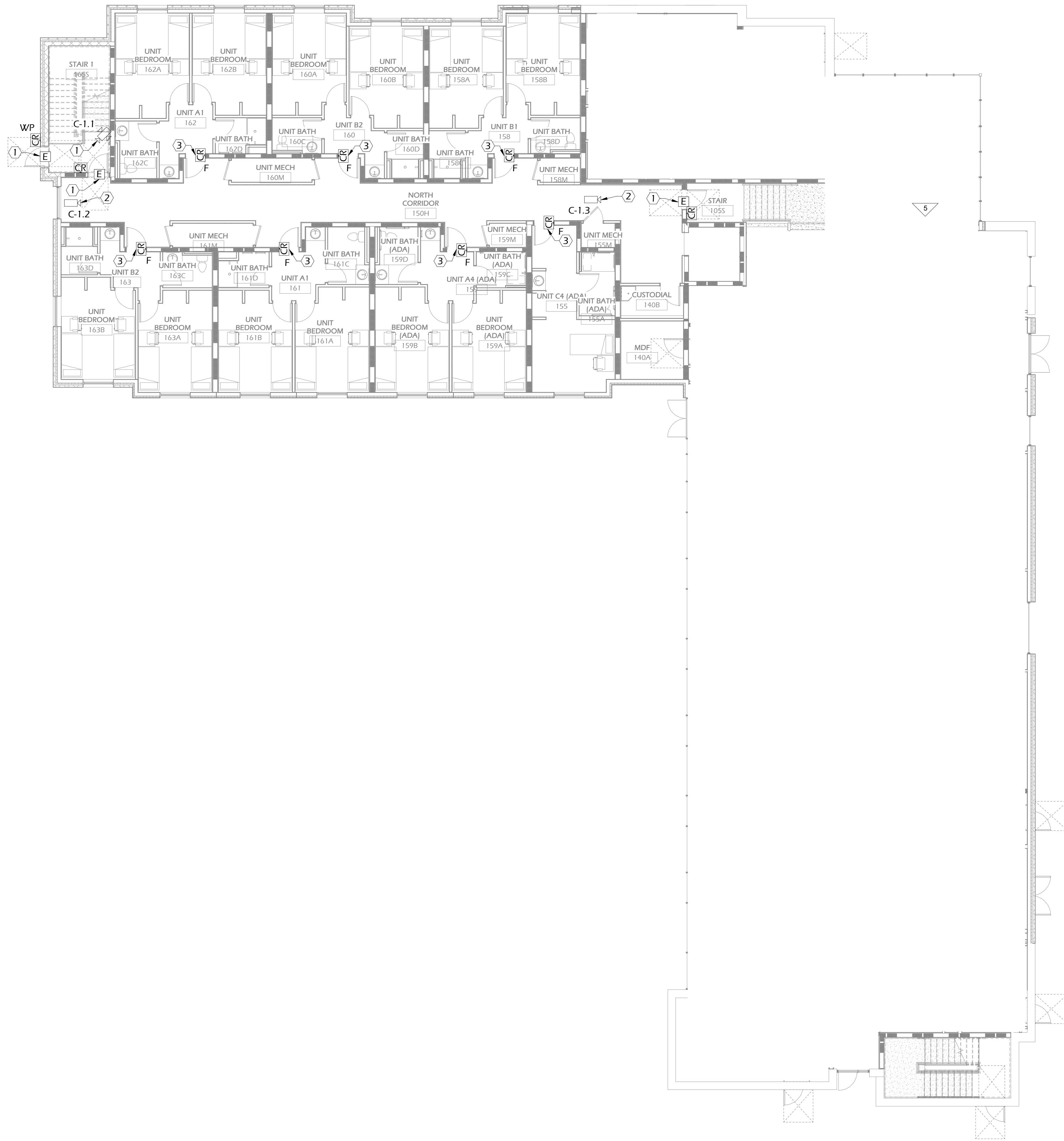
DRAWING TITLE:  
**LEVEL 00 FLOOR PLAN**



**BICSI**  
Jorge E. Gomez  
Reg. No. 10987  
EXPIRES 12-31-19  
RCDD

JANUARY 30, 2020	
DRAWN BY: BT	CHECKED BY: CO
19041	
<b>LV200</b>	
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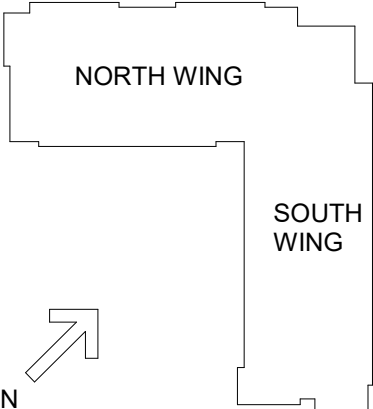
FLOOR PLAN 1 LEVEL 01  
1/8" = 1'-0"

GENERAL NOTES:

- A. NO CONDUIT RUN ROUTED ABOVE GRADE TO CONTAIN MORE THAN 180° OF BENDS BETWEEN PULLING POINTS. PORVIDE JUNCTION BOXES WHERE REQUIRED TO MAINTAIN 180° BEND RULE.
- B. ALL SLAB, WALL, AND CMU BLOCK WALL PENETRATIONS TO BE FIREPROOFED AND SEALED.
- C. ALL SIGNAL AND LOW VOLTAGE POWER CABLES TO BE ROUTED DIRECT TO EQUIPMENT ROOMS WITHOUT SPLICES. NO JUNCTIONS OR SPLICES IN CABLES ARE ACCEPTABLE.
- D. ALL SIGNAL AND LOW VOLTAGE POWER CABLES TO BE PLENUM RATED. FOR ALL LOW VOLTAGE SYSTEMS, PROVIDE EMT RACEWAY FROM DEVICE BACKBOX TO ACCESSIBLE CEILING SPACE AND PROVIDE J-HOOK SUPPORT TO CORRIDOR RACEWAY SYSTEM OR TELECOM ROOM. J-HOOKS TO BE INSTALLED ON 4'-0" CENTERS. CABLES ARE NOT PERMITTED TO LAY UNSUPPORTED ACROSS CEILINGS. STAPLES ARE NOT PERMITTED TO BE USED TO SECURE CABLE.
- E. IN NON-ACCESSIBLE CEILING SPACE, ALL SIGNAL AND LOW VOLTAGE POWER CABLE TO BE ROUTED IN EMT CONDUIT. MINIMUM SIZE SHALL BE 3/4". SIZE PER NEC 40% FILL REQUIREMENT.
- F. ALL TELECOM CABLING TO BE ROUTED IN MOST DIRECT ROUTE TO ENSURE COMPLIANCE WITH CATEGORY CABLING 90 METER RULE.

KEY NOTES:


- ① INTEGRATE REQUEST TO EXIT SIGNAL AVAILABLE WITH ELECTRIC DOOR HARDWARE INTO SECURITY AND ACCES CONTROL SYSTEM.
- ② OWNER TO PROVIDE NEW FIXED CAMERA, LENS, HOUSING AS DESCRIBED BY THE SPECIFICATIONS. CONTRACTOR TO INSTALL CAMERA & TERMINATE CATEGORY 6 CABLING. COORDINATE WITH NKU I.T. DEPARTMENT FOR DESIRED FIELD OF VIEW REQUIREMENTS.
- ③ SECURITY CONTRACTOR TO PROVIDE MIN. 3/4" CONDUITS STUBBED BETWEEN HINGE SIDE OF UNIT ENTRY DOOR AND NEAREST ACCESSIBLE CEILING. DOORS TO BE CORED FOR FUTURE CARD READER/ELECTRONIC LOCK INSTALLATION. COORDINATE EXACT REQUIREMENTS WITH DOOR HARDWARE VENDOR PRIOR TO ROUGH-IN.




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DRAWING TITLE:  
**LEVEL 01 FLOOR PLAN**



**Bicsi**  
Jorge E. Gomez  
Reg. No. 10987  
EXPIRES 12-31-19  
RCDD

JANUARY 30, 2020	
DRAWN BY: BT	CHECKED BY: CO
19041	
<b>LV201</b>	
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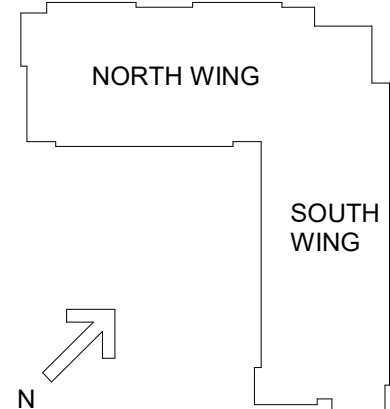




FLOOR PLAN 1 LEVEL 02  
1/8" = 1'-0"

- GENERAL NOTES:
- A. NO CONDUIT RUN ROUTED ABOVE GRADE TO CONTAIN MORE THAN 180° OF BENDS BETWEEN PULLING POINTS. PROVIDE JUNCTION BOXES WHERE REQUIRED TO MAINTAIN 180° BEND RULE.
  - B. ALL SLAB, WALL, AND CMU BLOCK WALL PENETRATIONS TO BE FIREPROOFED AND SEALED.
  - C. ALL SIGNAL AND LOW VOLTAGE POWER CABLES TO BE ROUTED DIRECT TO EQUIPMENT ROOMS WITHOUT SPLICES. NO JUNCTIONS OR SPLICES IN CABLES ARE ACCEPTABLE.
  - D. ALL SIGNAL AND LOW VOLTAGE POWER CABLES TO BE PLENUM RATED. FOR ALL LOW VOLTAGE SYSTEMS, PROVIDE EMT RACEWAY FROM DEVICE BACKBOX TO ACCESSIBLE CEILING SPACE AND PROVIDE J-HOOK SUPPORT TO CORRIDOR RACEWAY SYSTEM OR TELECOM ROOM. J-HOOKS TO BE INSTALLED ON 4'-0" CENTERS. CABLES ARE NOT PERMITTED TO LAY UNSUPPORTED ACROSS CEILINGS. STAPLES ARE NOT PERMITTED TO BE USED TO SECURE CABLE.
  - E. IN NON-ACCESSIBLE CEILING SPACE, ALL SIGNAL AND LOW VOLTAGE POWER CABLE TO BE ROUTED IN EMT CONDUIT. MINIMUM SIZE SHALL BE 3/4". SIZE PER NEC 40% FILL REQUIREMENT.
  - F. ALL TELECOM CABLING TO BE ROUTED IN MOST DIRECT ROUTE TO ENSURE COMPLIANCE WITH CATEGORY CABLING 90 METER RULE.


- KEY NOTES:
- 1. INTEGRATE REQUEST TO EXIT SIGNAL AVAILABLE WITH ELECTRIC DOOR HARDWARE INTO SECURITY AND ACCESS CONTROL SYSTEM.
  - 2. OWNER TO PROVIDE NEW FIXED CAMERA, LENS, HOUSING AS DESCRIBED BY THE SPECIFICATIONS. CONTRACTOR TO INSTALL CAMERA & TERMINATE CATEGORY 6 CABLING. COORDINATE WITH NKU I.T. DEPARTMENT FOR DESIRED FIELD OF VIEW REQUIREMENTS.
  - 3. SECURITY CONTRACTOR TO PROVIDE MIN. 3/4" CONDUITS STUBBED BETWEEN HINGE SIDE OF UNIT ENTRY DOOR AND NEAREST ACCESSIBLE CEILING. DOORS TO BE CORED FOR FUTURE CARD READER/ELECTRONIC LOCK INSTALLATION. COORDINATE EXACT REQUIREMENTS WITH DOOR HARDWARE VENDOR PRIOR TO ROUGH-IN.



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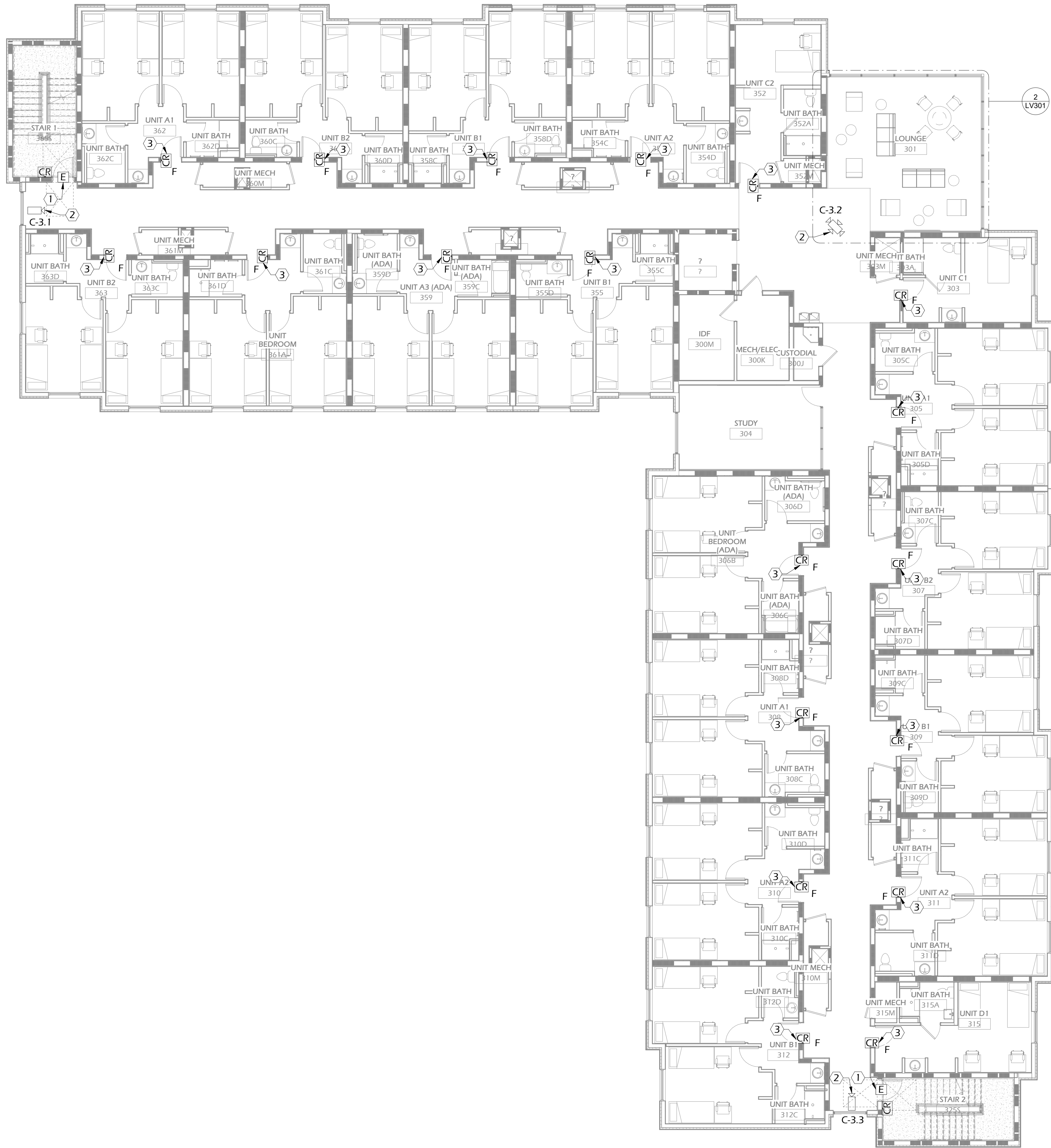
DRAWING TITLE:  
**LEVEL 02 FLOOR PLAN**



**Bicsi**  
Jorge E. Gomez  
Reg. No. 10987  
EXPIRES 12-31-19  
RCDD

JANUARY 30, 2020	
DRAWN BY: BT	CHECKED BY: CO
19041	
<b>LV202</b>	
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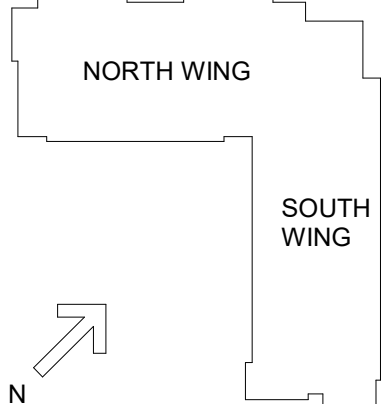


GENERAL NOTES:

- A. NO CONDUIT RUN ROUTED ABOVE GRADE TO CONTAIN MORE THAN 180° OF BENDS BETWEEN PULLING POINTS. PORVIDE JUNCTION BOXES WHERE REQUIRED TO MAINTAIN 180° BEND RULE.
- B. ALL SLAB, WALL, AND CMU BLOCK WALL PENETRATIONS TO BE FIREPROOFED AND SEALED.
- C. ALL SIGNAL AND LOW VOLTAGE POWER CABLES TO BE ROUTED DIRECT TO EQUIPMENT ROOMS WITHOUT SPLICES. NO JUNCTIONS OR SPLICES IN CABLES ARE ACCEPTABLE.
- D. ALL SIGNAL AND LOW VOLTAGE POWER CABLES TO BE PLENUM RATED. FOR ALL LOW VOLTAGE SYSTEMS, PROVIDE EMT RACEWAY FROM DEVICE BACKBOX TO ACCESSIBLE CEILING SPACE AND PROVIDE J-HOOK SUPPORT TO CORRIDOR RACEWAY SYSTEM OR TELECOM ROOM. J-HOOKS TO BE INSTALLED ON 4'-0" CENTERS. CABLES ARE NOT PERMITTED TO LAY UNSUPPORTED ACROSS CEILINGS. STAPLES ARE NOT PERMITTED TO BE USED TO SECURE CABLE.
- E. IN NON-ACCESSIBLE CEILING SPACE, ALL SIGNAL AND LOW VOLTAGE POWER CABLE TO BE ROUTED IN EMT CONDUIT. MINIMUM SIZE SHALL BE 3/4". SIZE PER NEC 40% FILL REQUIREMENT.
- F. ALL TELECOM CABLING TO BE ROUTED IN MOST DIRECT ROUTE TO ENSURE COMPLIANCE WITH CATEGORY CABLING 90 METER RULE.

KEY NOTES:


- 1. INTEGRATE REQUEST TO EXIT SIGNAL AVAILABLE WITH ELECTRIC DOOR HARDWARE INTO SECURITY AND ACCES CONTROL SYSTEM.
- 2. OWNER TO PROVIDE NEW FIXED CAMERA, LENS, HOUSING AS DESCRIBED BY THE SPECIFICATIONS. CONTRACTOR TO INSTALL CAMERA & TERMINATE CATEGORY 6 CABLING. COORDINATE WITH NKU I.T. DEPARTMENT FOR DESIRED FIELD OF VIEW REQUIREMENTS.
- 3. SECURITY CONTRACTOR TO PROVIDE MIN. 3/4" CONDUITS STUBBED BETWEEN HINGE SIDE OF UNIT ENTRY DOOR AND NEAREST ACCESSIBLE CEILING. DOORS TO BE CORED FOR FUTURE CARD READER/ELECTRONIC LOCK INSTALLATION. COORDINATE EXACT REQUIREMENTS WITH DOOR HARDWARE VENDOR PRIOR TO ROUGH-IN.




#	DATE	CHANGE DESCRIPTION



**NEW RESIDENCE HALL**  
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DRAWING TITLE:  
**LEVEL 03 FLOOR PLAN**



JANUARY 30, 2020

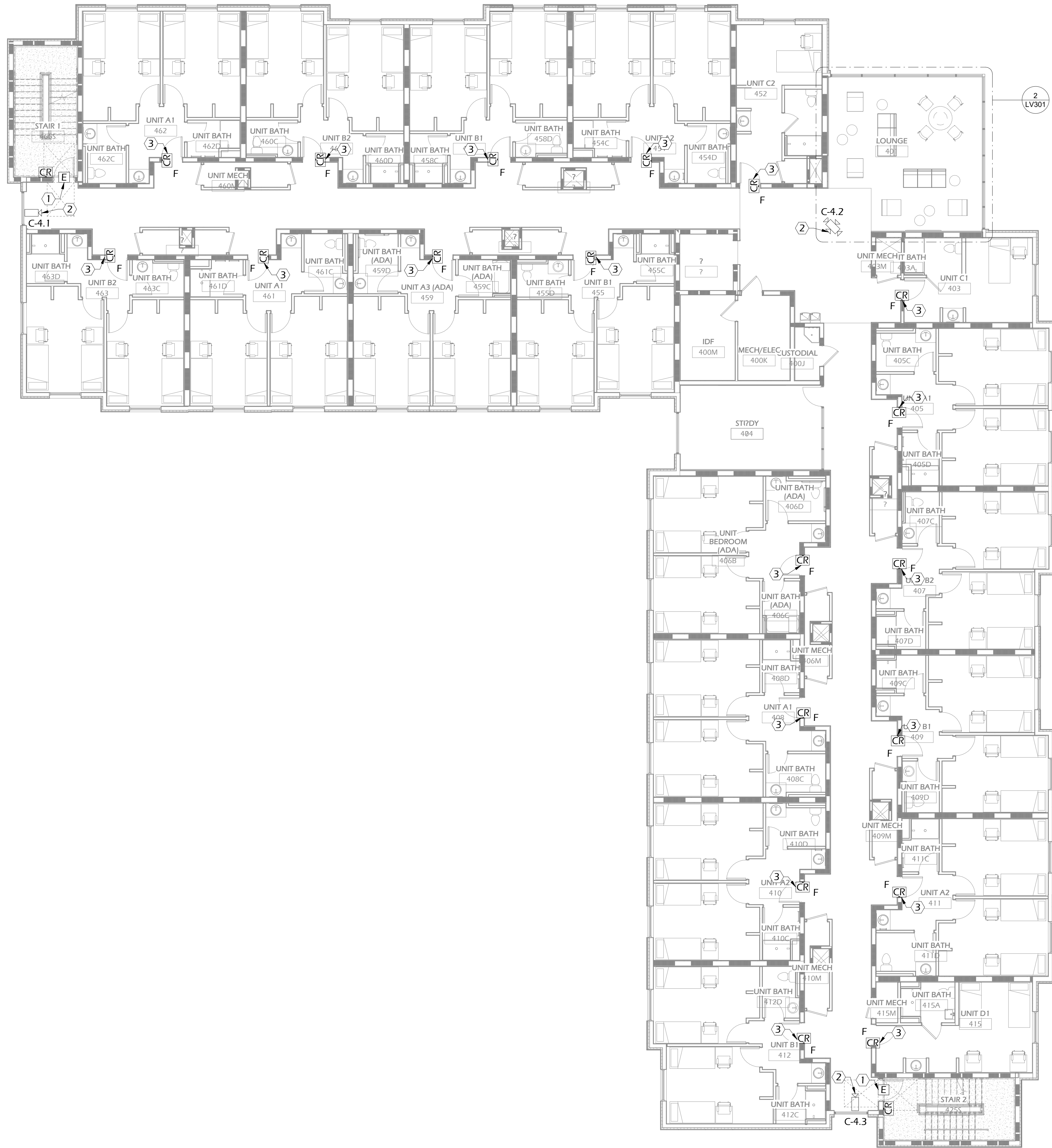
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19041

**LV203**

BID & PERMIT SUBMITTAL





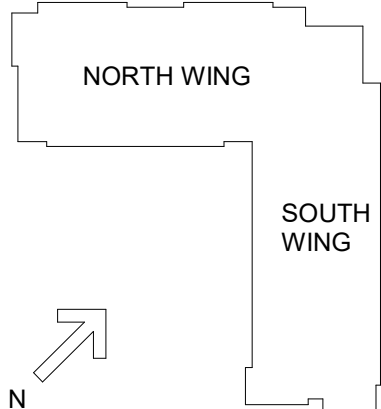
FLOOR PLAN 1 LEVEL 04  
1/8" = 1'-0"

GENERAL NOTES:

- A. NO CONDUIT RUN ROUTED ABOVE GRADE TO CONTAIN MORE THAN 180° OF BENDS BETWEEN PULLING POINTS. PORVIDE JUNCTION BOXES WHERE REQUIRED TO MAINTAIN 180° BEND RULE.
- B. ALL SLAB, WALL, AND CMU BLOCK WALL PENETRATIONS TO BE FIREPROOFED AND SEALED.
- C. ALL SIGNAL AND LOW VOLTAGE POWER CABLES TO BE ROUTED DIRECT TO EQUIPMENT ROOMS WITHOUT SPLICES. NO JUNCTIONS OR SPLICES IN CABLES ARE ACCEPTABLE.
- D. ALL SIGNAL AND LOW VOLTAGE POWER CABLES TO BE PLENUM RATED. FOR ALL LOW VOLTAGE SYSTEMS, PROVIDE EMT RACEWAY FROM DEVICE BACKBOX TO ACCESSIBLE CEILING SPACE AND PROVIDE J-HOOK SUPPORT TO CORRIDOR RACEWAY SYSTEM OR TELECOM ROOM. J-HOOKS TO BE INSTALLED ON 4'-0" CENTERS. CABLES ARE NOT PERMITTED TO LAY UNSUPPORTED ACROSS CEILINGS. STAPLES ARE NOT PERMITTED TO BE USED TO SECURE CABLE.
- E. IN NON-ACCESSIBLE CEILING SPACE, ALL SIGNAL AND LOW VOLTAGE POWER CABLE TO BE ROUTED IN EMT CONDUIT. MINIMUM SIZE SHALL BE 3/4". SIZE PER NEC 40% FILL REQUIREMENT.
- F. ALL TELECOM CABLING TO BE ROUTED IN MOST DIRECT ROUTE TO ENSURE COMPLIANCE WITH CATEGORY CABLING 90 METER RULE.

KEY NOTES:


- 1. INTEGRATE REQUEST TO EXIT SIGNAL AVAILABLE WITH ELECTRIC DOOR HARDWARE INTO SECURITY AND ACCES CONTROL SYSTEM.
- 2. OWNER TO PROVIDE NEW FIXED CAMERA, LENS, HOUSING AS DESCRIBED BY THE SPECIFICATIONS. CONTRACTOR TO INSTALL CAMERA & TERMINATE CATEGORY 6 CABLING. COORDINATE WITH NKU I.T. DEPARTMENT FOR DESIRED FIELD OF VIEW REQUIREMENTS.
- 3. SECURITY CONTRACTOR TO PROVIDE MIN. 3/4" CONDUITS STUBBED BETWEEN HINGE SIDE OF UNIT ENTRY DOOR AND NEAREST ACCESSIBLE CEILING. DOORS TO BE CORED FOR FUTURE CARD READER/ELECTRONIC LOCK INSTALLATION. COORDINATE EXACT REQUIREMENTS WITH DOOR HARDWARE VENDOR PRIOR TO ROUGH-IN.




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DRAWING TITLE:  
**LEVEL 04 FLOOR PLAN**



**January 30, 2020**  
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**19041**  
**LV204**  
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FLOOR PLAN  
1/8" = 1'-0"

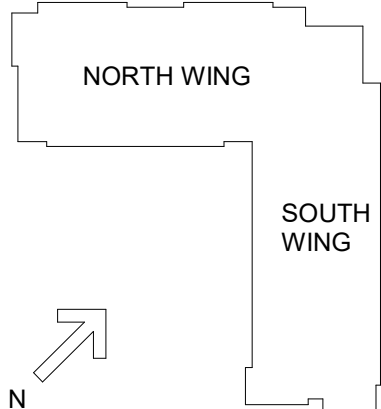
1 LEVEL 05

GENERAL NOTES:

- A. NO CONDUIT RUN ROUTED ABOVE GRADE TO CONTAIN MORE THAN 180° OF BENDS BETWEEN PULLING POINTS. PORVIDE JUNCTION BOXES WHERE REQUIRED TO MAINTAIN 180° BEND RULE.
- B. ALL SLAB, WALL, AND CMU BLOCK WALL PENETRATIONS TO BE FIREPROOFED AND SEALED.
- C. ALL SIGNAL AND LOW VOLTAGE POWER CABLES TO BE ROUTED DIRECT TO EQUIPMENT ROOMS WITHOUT SPLICES. NO JUNCTIONS OR SPLICES IN CABLES ARE ACCEPTABLE.
- D. ALL SIGNAL AND LOW VOLTAGE POWER CABLES TO BE PLENUM RATED. FOR ALL LOW VOLTAGE SYSTEMS, PROVIDE EMT RACEWAY FROM DEVICE BACKBOX TO ACCESSIBLE CEILING SPACE AND PROVIDE J-HOOK SUPPORT TO CORRIDOR RACEWAY SYSTEM OR TELECOM ROOM. J-HOOKS TO BE INSTALLED ON 4'-0" CENTERS. CABLES ARE NOT PERMITTED TO LAY UNSUPPORTED ACROSS CEILINGS. STAPLES ARE NOT PERMITTED TO BE USED TO SECURE CABLE.
- E. IN NON-ACCESSIBLE CEILING SPACE, ALL SIGNAL AND LOW VOLTAGE POWER CABLE TO BE ROUTED IN EMT CONDUIT. MINIMUM SIZE SHALL BE 3/4". SIZE PER NEC 40% FILL REQUIREMENT.
- F. ALL TELECOM CABLING TO BE ROUTED IN MOST DIRECT ROUTE TO ENSURE COMPLIANCE WITH CATEGORY CABLING 90 METER RULE.

KEY NOTES:


- ① INTEGRATE REQUEST TO EXIT SIGNAL AVAILABLE WITH ELECTRIC DOOR HARDWARE INTO SECURITY AND ACCES CONTROL SYSTEM.
- ② OWNER TO PROVIDE NEW FIXED CAMERA, LENS, HOUSING AS DESCRIBED BY THE SPECIFICATIONS. CONTRACTOR TO INSTALL CAMERA & TERMINATE CATEGORY 6 CABLING. COORDINATE WITH NKU I.T. DEPARTMENT FOR DESIRED FIELD OF VIEW REQUIREMENTS.
- ③ SECURITY CONTRACTOR TO PROVIDE MIN. 3/4" CONDUITS STUBBED BETWEEN HINGE SIDE OF UNIT ENTRY DOOR AND NEAREST ACCESSIBLE CEILING. DOORS TO BE CORED FOR FUTURE CARD READER/ELECTRONIC LOCK INSTALLATION. COORDINATE EXACT REQUIREMENTS WITH DOOR HARDWARE VENDOR PRIOR TO ROUGH-IN.




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**NORTHERN KENTUCKY UNIVERSITY**



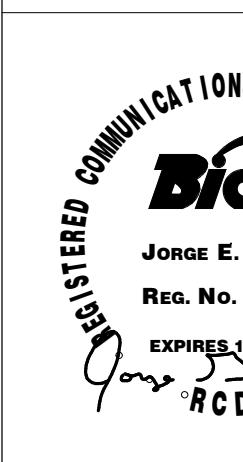
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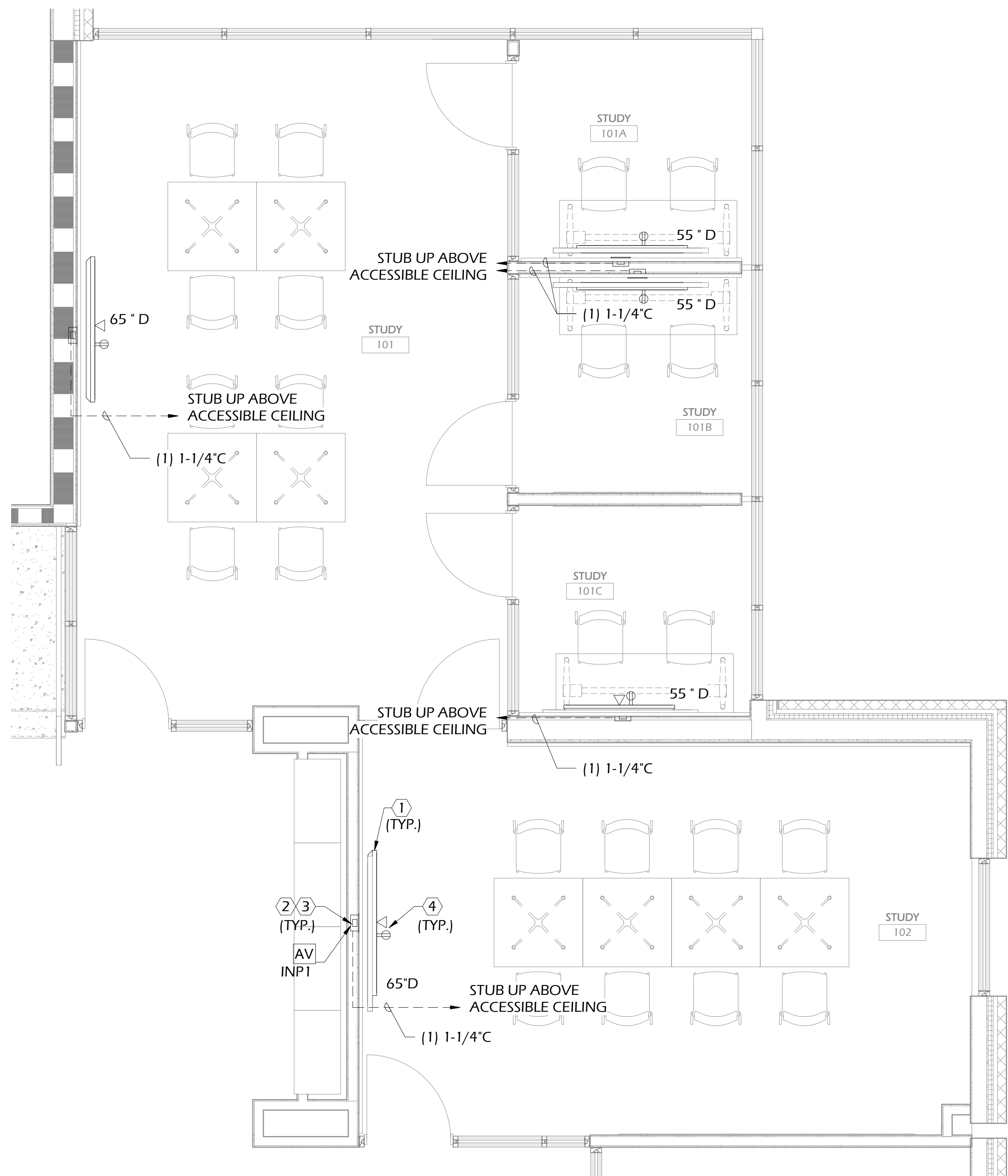
LEVEL 05 FLOOR PLAN



**BICSI**  
Jorge E. Gomez  
Reg. No. 10987  
EXPIRES 12-31-19  
RCDD

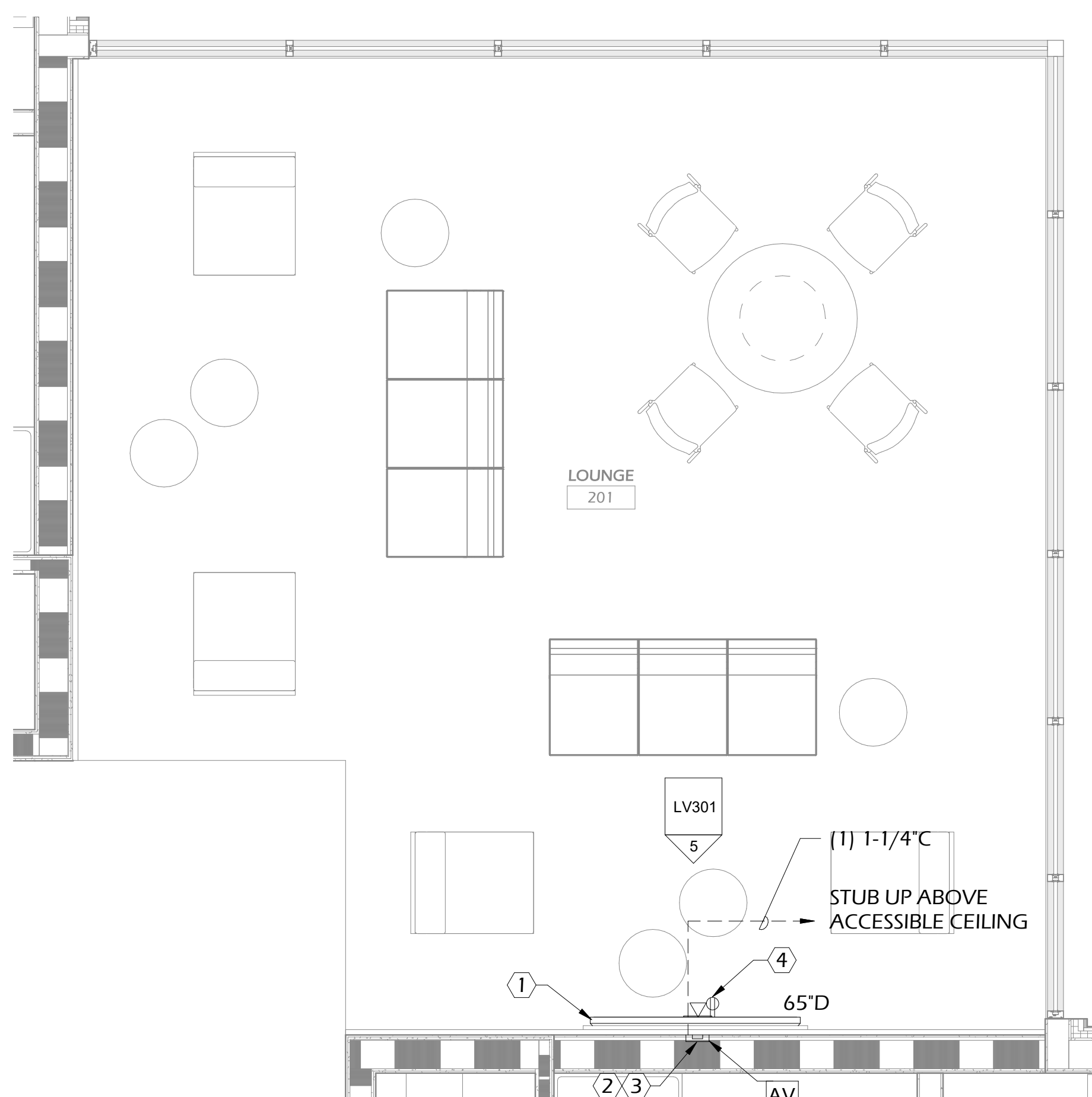
JANUARY 30, 2020	
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19041	
LV205	
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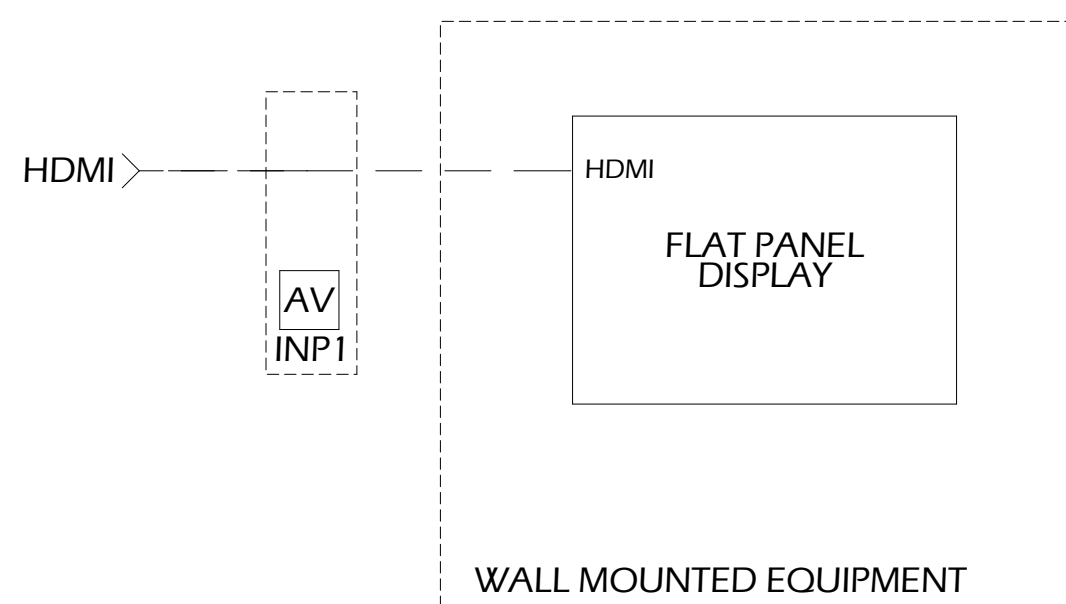
LARGE SCALES  
3/8" = 1'-0"

1 LEVEL 00 - STUDY AREAS



LARGE SCALES  
3/8" = 1'-0"

2 LEVEL 02 - TYPICAL LOUNGE

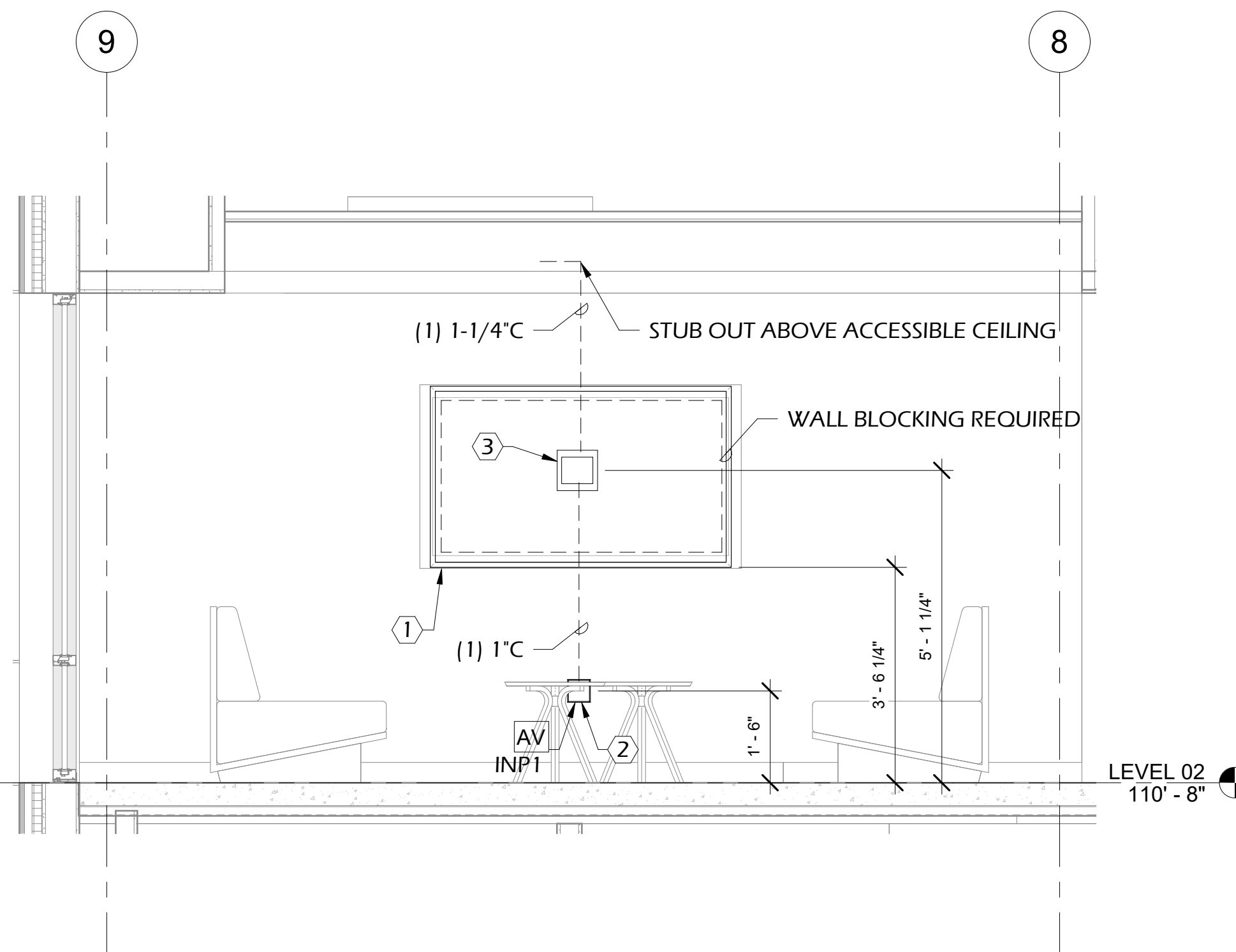


NOTES:

- A. REFERENCE FLOOR PLANS FOR LOCATION, DISPLAY SIZE, MOUNTING HEIGHTS AND QUANTITIES.
- B. AUDIO VISUAL ROUGH-IN FOR EQUIPMENT SHALL BE PROVIDED AND INSTALLED AS DESIGNED.

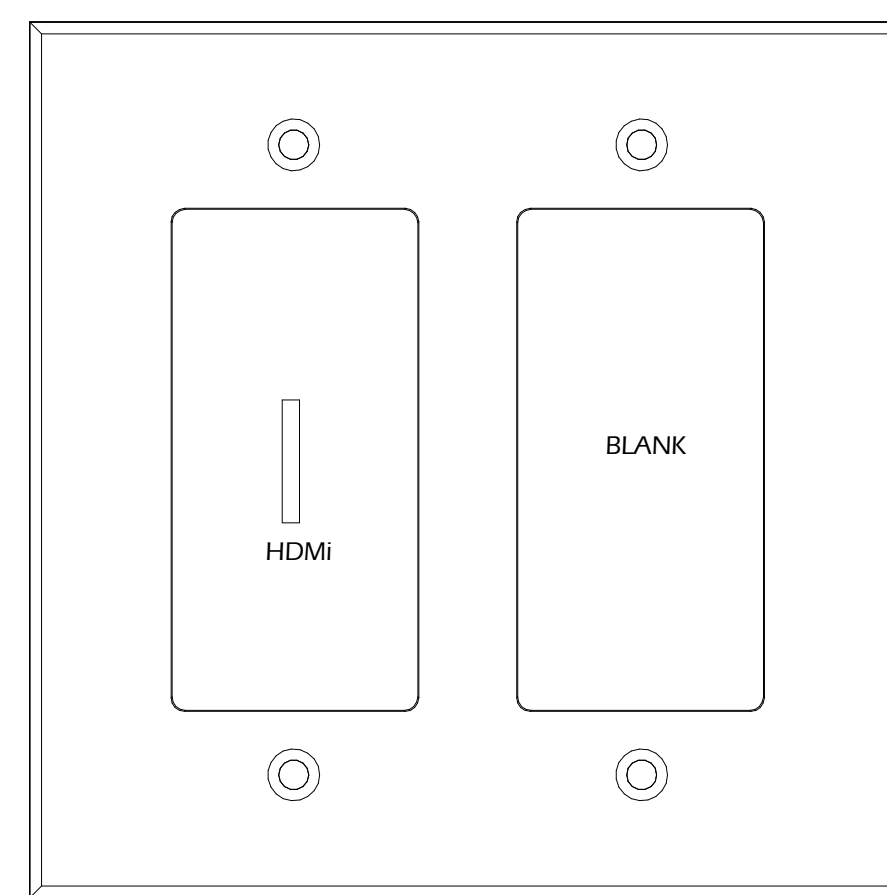
ONE-LINE  
N.T.S.

3 AV ONE-LINE - STUDY, LOUNGE & COMMON AREA



LARGE SCALES  
1/2" = 1'-0"

5 TYPICAL DISPLAY ELEVATION



DETAILS  
N.T.S.

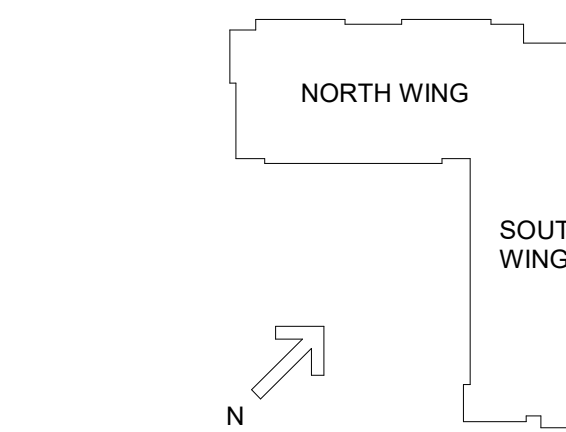
6 AV-INP1

GENERAL NOTES:

- A. GENERAL CONTRACTOR TO PROVIDE WALL BLOCKING AT ALL FLAT PANEL LOCATIONS.

KEY NOTES:

- 1 WALL MOUNTED FLAT PANEL DISPLAY. GENERAL CONTRACTOR IS TO PROVIDE AND INSTALL BLOCKING AT THIS LOCATION FOR DISPLAY AND MOUNT. BLOCKING MATERIAL AND ATTACHMENT METHOD TO STRUCTURE IS TO ADHERE TO CURRENT INDUSTRY STANDARDS. AUDIO VISUAL CONTRACTOR IS TO PROVIDE AND INSTALL DISPLAY AND MOUNT TO STRUCTURE. COORDINATE EXACT LOCATION WITH ARCHITECT AND/OR OWNER.
- 2 ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL A TWO (2) GANG BACK BOX, FLUSH MOUNTED IN WALL AT 18-INCHES AFF FOR LOCAL AUDIO VISUAL INPUT INTERFACE PLATE (AV INP1). STUB UP ONE (1) 1-INCH CONDUIT FROM INPUT PLATE TO AV BACK BOX ABOVE.
- 3 ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL IN-WALL BACK BOX, FLUSH MOUNTED AT 67-INCHES AFF FOR FLAT PANEL DISPLAY CONNECTIVITY. STUB UP ONE (1) 1-1/4-INCH CONDUIT TO ABOVE ACCESSIBLE CEILING.
- 4 ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL 120V/1-PHASE DUPLEX RECEPTACLE LOCATED AT 67-INCHES AFF ADJACENT TO AV BACK BOX. TELECOM CONTRACTOR TO PROVIDE AND INSTALL TWO (2) DATA OUTLETS ADJACENT TO AV BACK BOX.



#	DATE	CHANGE DESCRIPTION

**NKU** **NORTHERN KENTUCKY UNIVERSITY**

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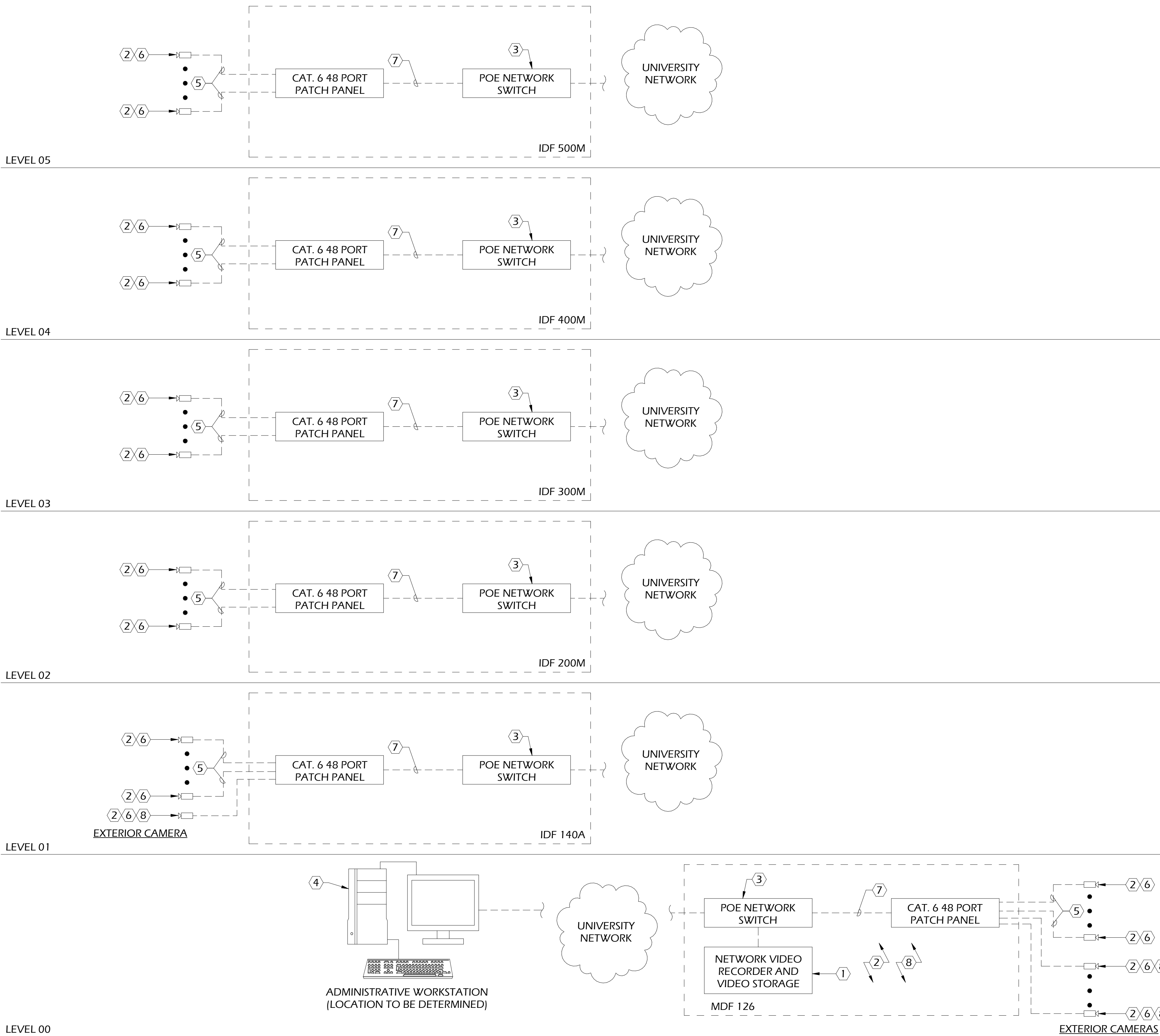
DRAWING TITLE:

AV LARGE SCALES

**BICSI**  
Jorge E. Gomez  
Reg. No. 10987  
EXPIRES 12-31-19  
RCDD

JANUARY 30, 2020  
DRAWN BY: BT  
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19041  
**LV301**  
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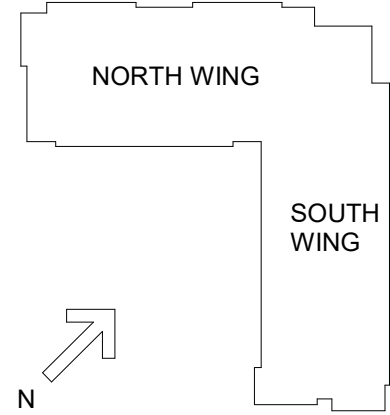


ONE-LINE  
N.T.S. 1 VIDEO SURVEILLANCE SYSTEM

CAMERA SCHEDULE					
CAMERA NUMBER	MOUNTING REQUIREMENTS	LENS TYPE	REFERENCE SHEET	REFERENCE DETAIL	FIELD OF VIEW
C-0.1	ELEVATOR CORNER CAB MOUNT	FIXED LENS	LV200	3/LV502	ELEVATOR CAB
C-0.2	WALL MOUNT AT 9'-0" AFG	VARIFOCAI FIXED LENS	LV200	5/LV502	ENTRY LOBBY EXTERIOR
C-0.3	CEILING MOUNT	360 DEGREE	LV200	2/LV502	ENTRY LOBBY
C-0.4	WALL MOUNT AT 9'-0" AFG	VARIFOCAI FIXED LENS	LV200	5/LV502	ENTRY LOBBY EXTERIOR
C-0.5	CEILING MOUNT	360 DEGREE	LV200	2/LV502	COMMON AREA
C-0.6	CEILING MOUNT	360 DEGREE	LV200	2/LV502	COMMON AREA/KITCHEN
C-0.7	CEILING MOUNT	360 DEGREE	LV200	2/LV502	COMMON AREA
C-0.8	CEILING MOUNT	VARIFOCAI FIXED LENS	LV200	2/LV502	COMMON AREA
C-0.9	WALL MOUNT AT 9'-0" AFG	180 DEGREE	LV200	4/LV502	STAIR/ENTRY DOOR
C-0.10	CEILING MOUNT	VARIFOCAI FIXED LENS	LV200	2/LV502	COMMON AREA/KITCHEN
C-0.11	CEILING MOUNT	VARIFOCAI FIXED LENS	LV200	2/LV502	COMMON AREA/KITCHEN
C-1.1	WALL MOUNT AT 9'-0" AFF	180 DEGREE	LV201	4/LV502	STAIR/ENTRY DOOR
C-1.2	CEILING MOUNT	VARIFOCAI FIXED LENS	LV201	1/LV502	CORRIDOR
C-1.3	CEILING MOUNT	VARIFOCAI FIXED LENS	LV201	1/LV502	STAIR/ENTRY DOOR
C-2.1	CEILING MOUNT	VARIFOCAI FIXED LENS	LV202	1/LV502	CORRIDOR
C-2.2	CEILING MOUNT	360 DEGREE	LV202	2/LV502	LOUNGE/ELEV LOBBY
C-2.3	CEILING MOUNT	VARIFOCAI FIXED LENS	LV202	1/LV502	CORRIDOR
C-3.1	CEILING MOUNT	VARIFOCAI FIXED LENS	LV203	1/LV502	CORRIDOR
C-3.2	CEILING MOUNT	360 DEGREE	LV203	2/LV502	LOUNGE/ELEV LOBBY
C-3.3	CEILING MOUNT	VARIFOCAI FIXED LENS	LV203	1/LV502	CORRIDOR
C-4.1	CEILING MOUNT	VARIFOCAI FIXED LENS	LV204	1/LV502	CORRIDOR
C-4.2	CEILING MOUNT	360 DEGREE	LV204	2/LV502	LOUNGE/ELEV LOBBY
C-4.3	CEILING MOUNT	VARIFOCAI FIXED LENS	LV204	1/LV502	CORRIDOR
C-5.1	CEILING MOUNT	VARIFOCAI FIXED LENS	LV205	1/LV502	CORRIDOR
C-5.2	CEILING MOUNT	360 DEGREE	LV205	2/LV502	LOUNGE/ELEV LOBBY
C-5.3	CEILING MOUNT	VARIFOCAI FIXED LENS	LV205	1/LV502	CORRIDOR

KEY NOTES:


- OWNER SHALL PROVIDE ALL REQUIRED NVR'S FOR SURVEILLANCE VIDEO STORAGE. OWNER SHALL PROVIDE ALL REQUIRED LICENSING FOR REQUIRED SYSTEM.
- SECURITY CONTRACTOR TO CONFIGURE VMS SYSTEM FOR "ACTIVITY DETECTION RECORDING". SEE SPECIFICATIONS FOR REQUIREMENTS. ALL VIDEO TO BE CONFIGURED TO BE MAINTAINED FOR A MINIMUM OF 30 DAYS.
- OWNER TO PROVIDE CORE SWITCH AND POWER-OVER-ETHERNET SWITCH MOUNTED IN TELECOM RACK.
- SECURITY CONTRACTOR TO LOAD AND CONFIGURE OWNER PROVIDED VIDEO SURVEILLANCE SOFTWARE ON UP TO SIX(6) OWNER PROVIDED WORKSTATIONS. ALL CAMERA SETTINGS TO BE PROGRAMMED BY CONTRACTOR TO OWNER'S SATISFACTION.
- TELECOM CONTRACTOR TO PROVIDE AND INSTALL ONE(1) CATEGORY 6 CABLE FOR EACH IP DEVICE.
- SECURITY CONTRACTOR TO PROVIDE AND INSTALL ALL VIDEO SURVEILLANCE CAMERAS, MOUNTS AND WIRING. CONTRACTOR TO ENSURE CLEAR FIELD OF VIEW FOR ALL CAMERAS. SEE FLOOR PLANS FOR LOCATIONS. SEE CAMERA SCHEDULE FOR MOUNTING REQUIREMENTS.
- TELECOM CONTRACTOR TO PROVIDE AND INSTALL ALL CATEGORY 6 PATCH CABLES.
- CONTRACTOR TO PROVIDE AND INSTALL POE SURGE PROTECTOR AT DEVICE AND RACK MOUNTED POE SURGE PROTECTOR IN TELECOM ROOM. BASIS OF DESIGN IS DITEK MODEL #DTK-RM12POE (RACK) AND #DTK-MRJPOE (DEVICE). EACH PROTECTOR PANEL SHALL HAVE A #6 CONDUCTOR BACK TO TELECOM ROOM BUSBAR.




#	DATE	CHANGE DESCRIPTION



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DRAWING TITLE:  
**ONE-LINE DIAGRAM - VIDEO SURVEILLANCE**



**Bicsi**  
Jorge E. Gomez  
Reg. No. 10987  
EXPIRES 12-31-19  
RCDD

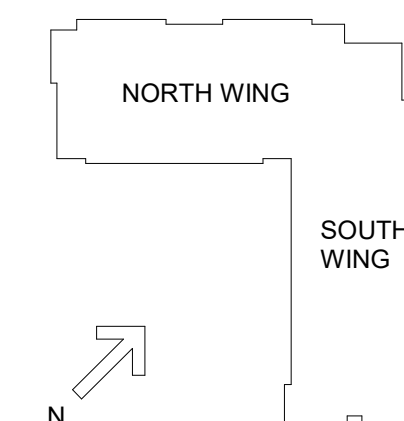
JANUARY 30, 2020

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19041	
<b>LV401</b>	
BID & PERMIT SUBMITTAL	





- ① VERIFY AND PROVIDE EXACT QUANTITY OF CARD READERS, DOOR POSITION SWITCH INPUTS, AND MISCELLANEOUS SIGNAL INPUTS AS SHOWN ON CONTRACT DRAWINGS.
- ② CONTRACTOR TO INTERFACE WITH ELECTRIC LOCKS PER THE CONTRACT SPECIFICATIONS. CONTRACTOR TO INTEGRATE ALL CONTROLLED OUTPUTS INTO ACCESS CONTROL SYSTEM. VERIFY QUANTITY OF ALL CONTROLLED OUTPUTS WITH CONTRACT DRAWINGS.
- ③ SECURITY CONTRACTOR TO INTERFACE WITH BUILDING NETWORK BY PROVIDING CATEGORY 6 DATA CABLES BETWEEN ACCESS CONTROL PANELS AND OWNER PROVIDED NETWORK SWITCH.
- ④ SECURITY PANELS WITH BATTERY BACKUP TO BE PROVIDED BY THE UNIVERSITY FOR INSTALLATION BY THE SECURITY CONTRACTOR. ALL WIRING & TESTING TO BE PERFORMED BY THE SECURITY CONTRACTOR.
- ⑤ SECURITY CONTRACTOR TO LOAD AND CONFIGURE SECURITY & ACCESS CONTROL SOFTWARE ON UP TO THREE (3) OWNER PROVIDED WORKSTATIONS. ALL SECURITY SETTINGS TO BE PROGRAMMED BY THE SECURITY CONTRACTOR TO THE UNIVERSITY'S REQUIREMENTS.



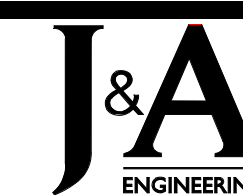
#	DATE	CHANGE DESCRIPTION



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DRAWING TITLE:

## ONE-LINE DIAGRAM - ACCESS CONTROL



JANUARY 30, 2020

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19041

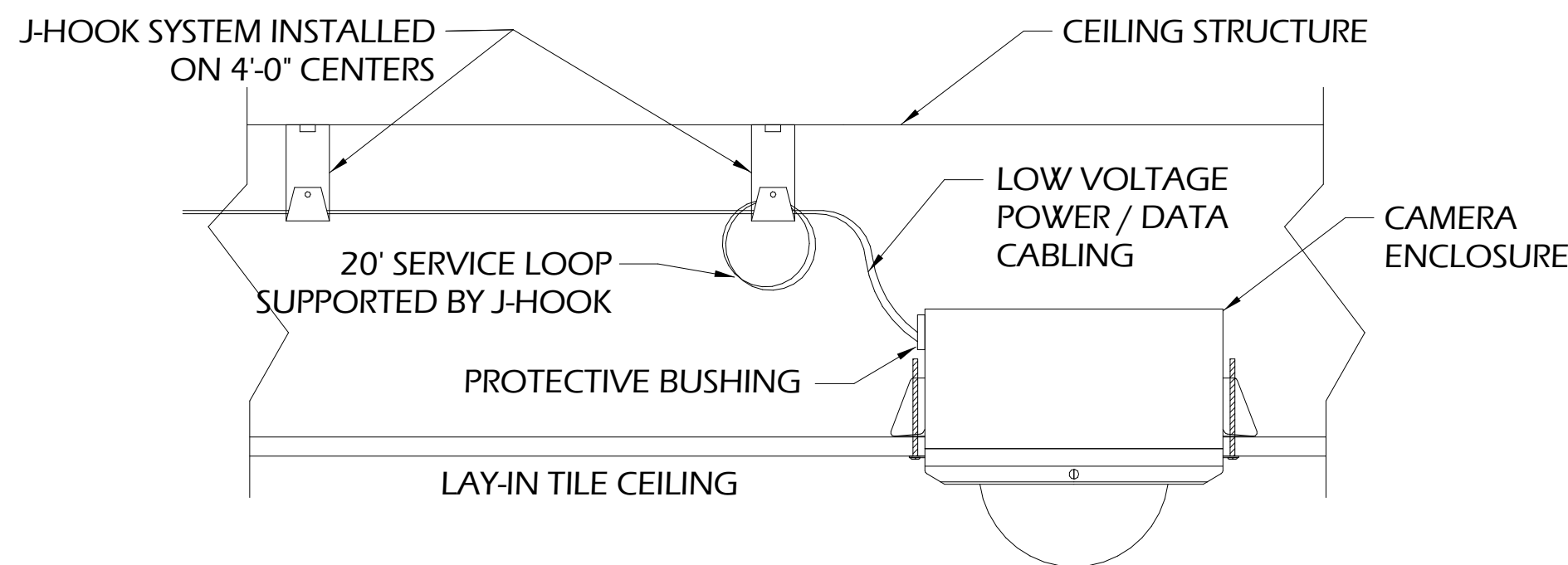
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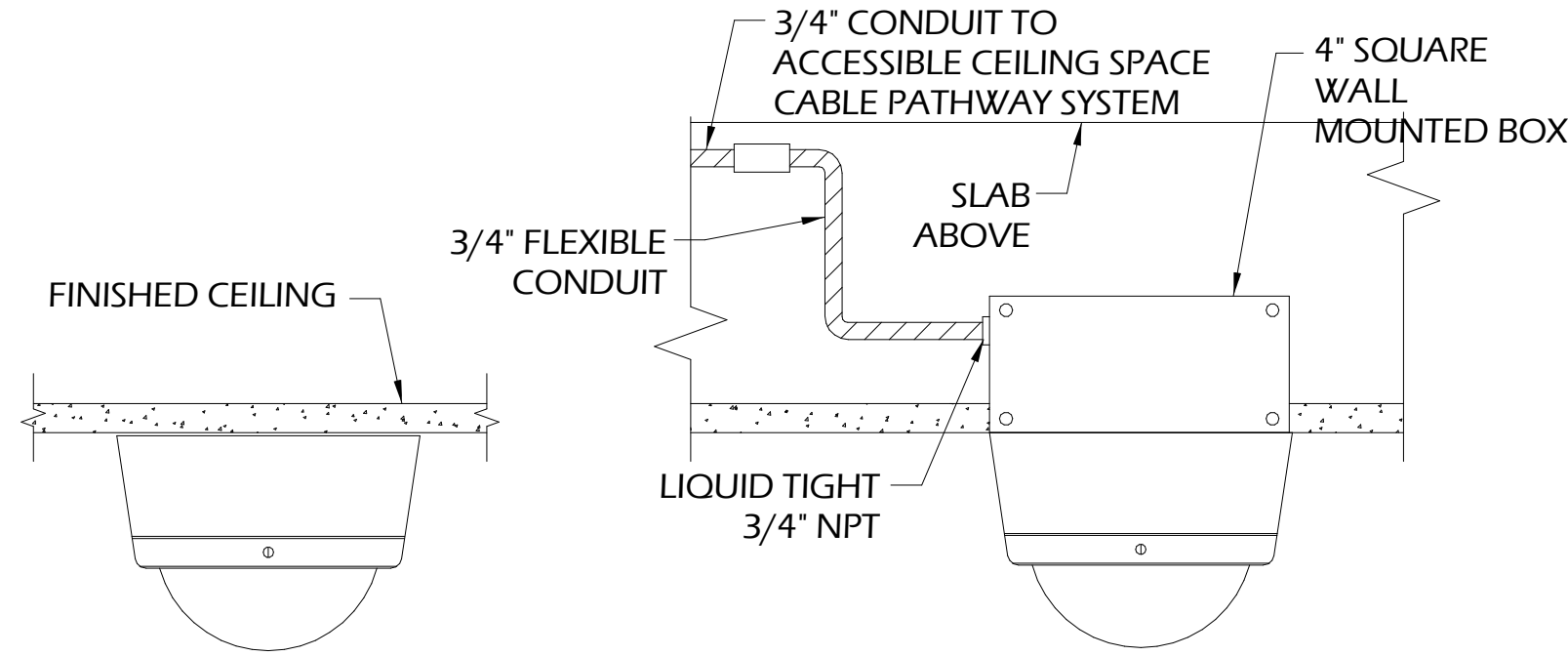






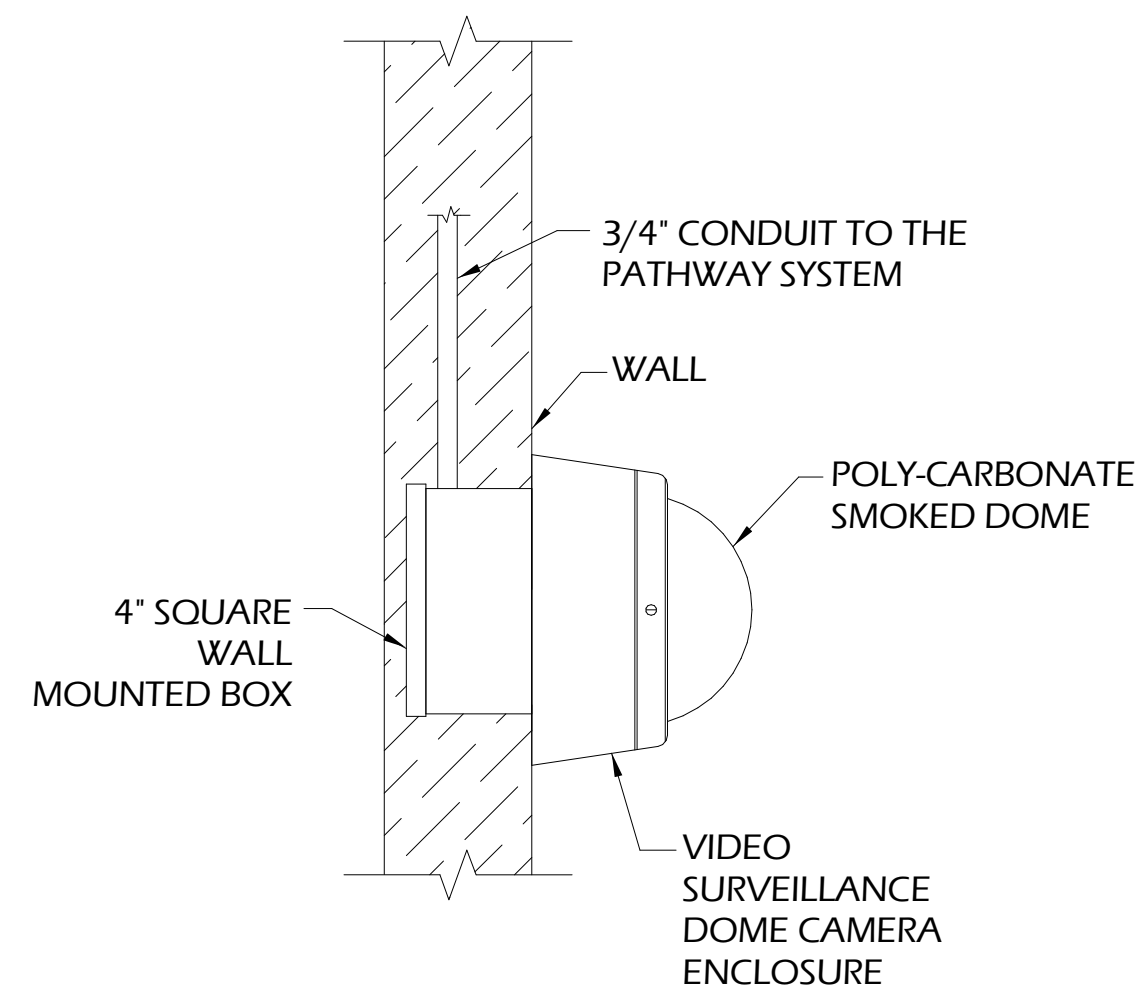
DETAIL  
NOT TO SCALE

1 LAY-IN TILE CEILING MOUNT  
RECESSED DOME CAMERA ENCLOSURE



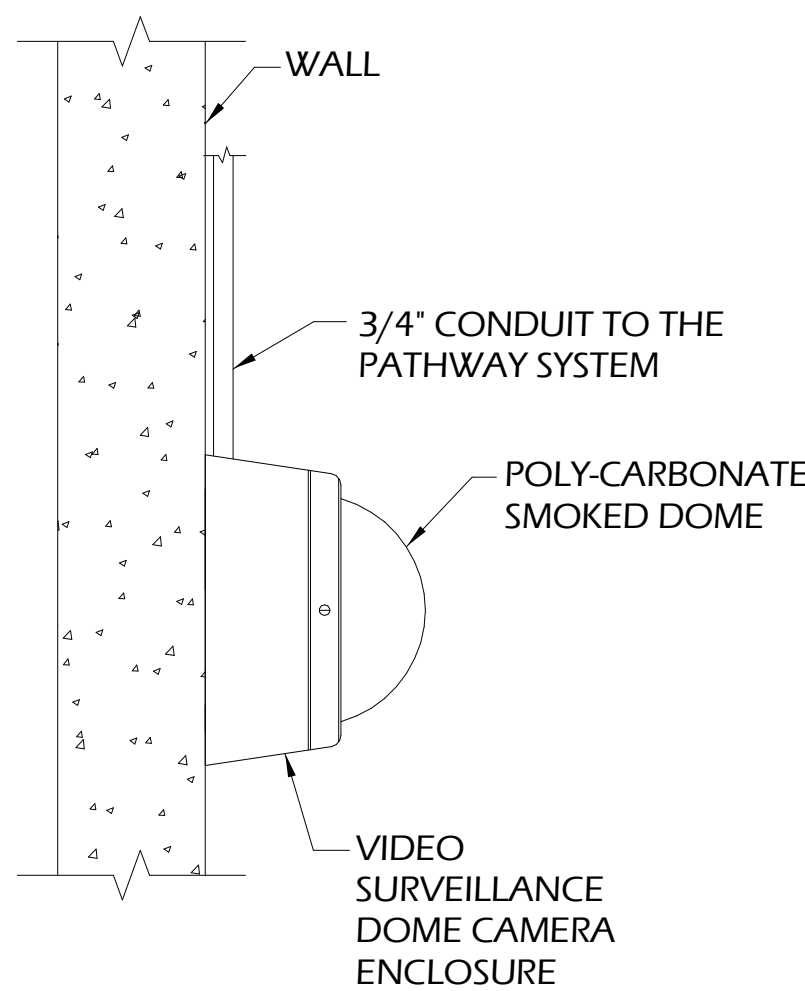
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NOT TO SCALE

2 INTERIOR FIXED CEILING MOUNTED ON  
GYPSUM BOARD/CONCRETE CEILING  
SURFACE DOME CAMERA ENCLOSURE



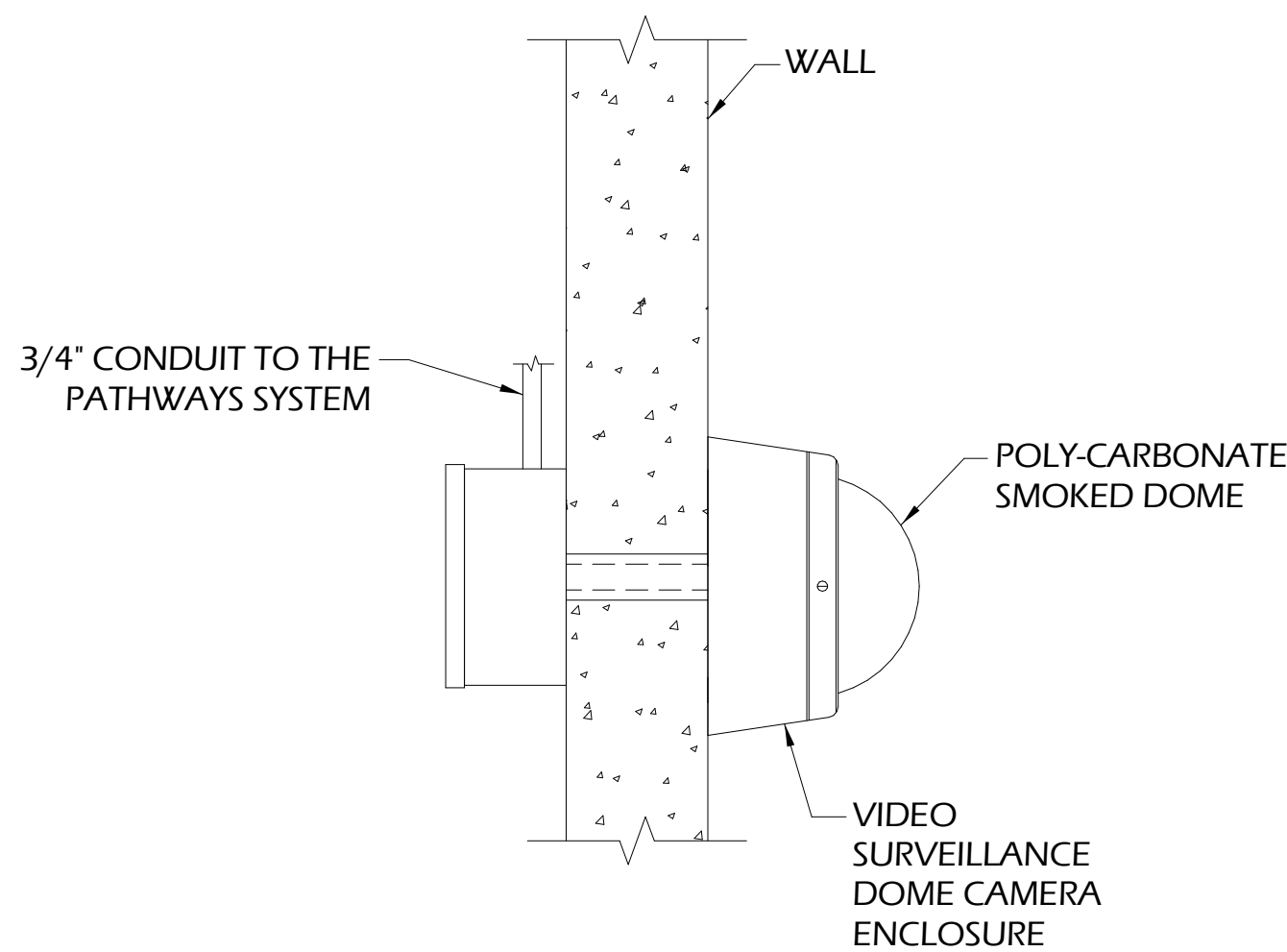
DETAIL  
NOT TO SCALE

3 INTERIOR FIXED WALL  
MOUNTED ON GYPSUM BOARD WALL  
RECESSED DOME CAMERA ENCLOSURE



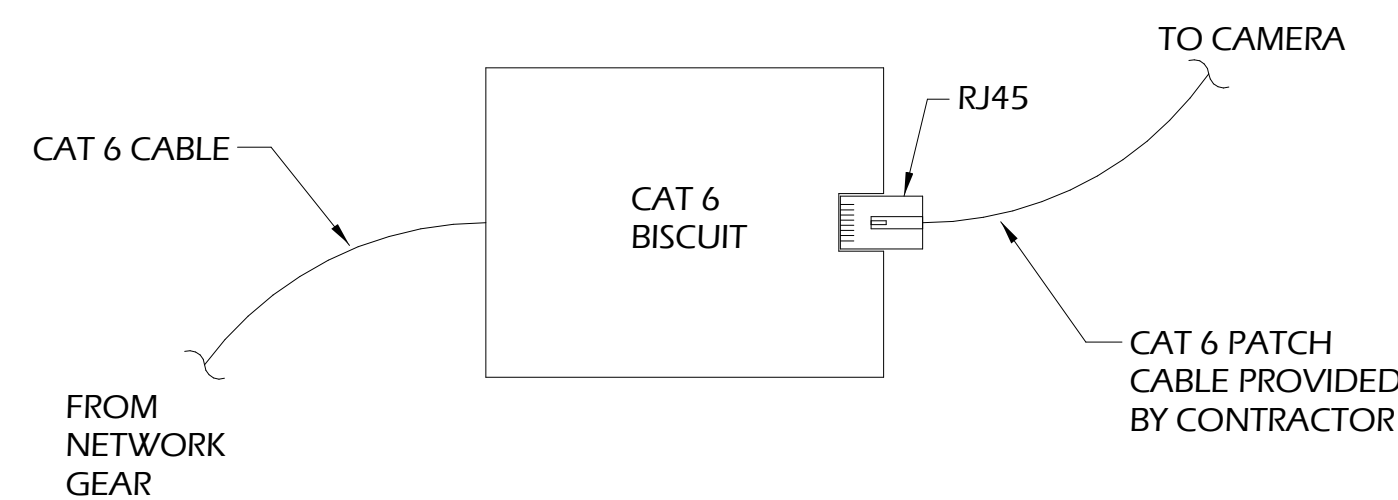
DETAIL  
NOT TO SCALE

4 INTERIOR/EXTERIOR FIXED WALL  
MOUNTED ON CONCRETE WALL  
SURFACE DOME CAMERA ENCLOSURE



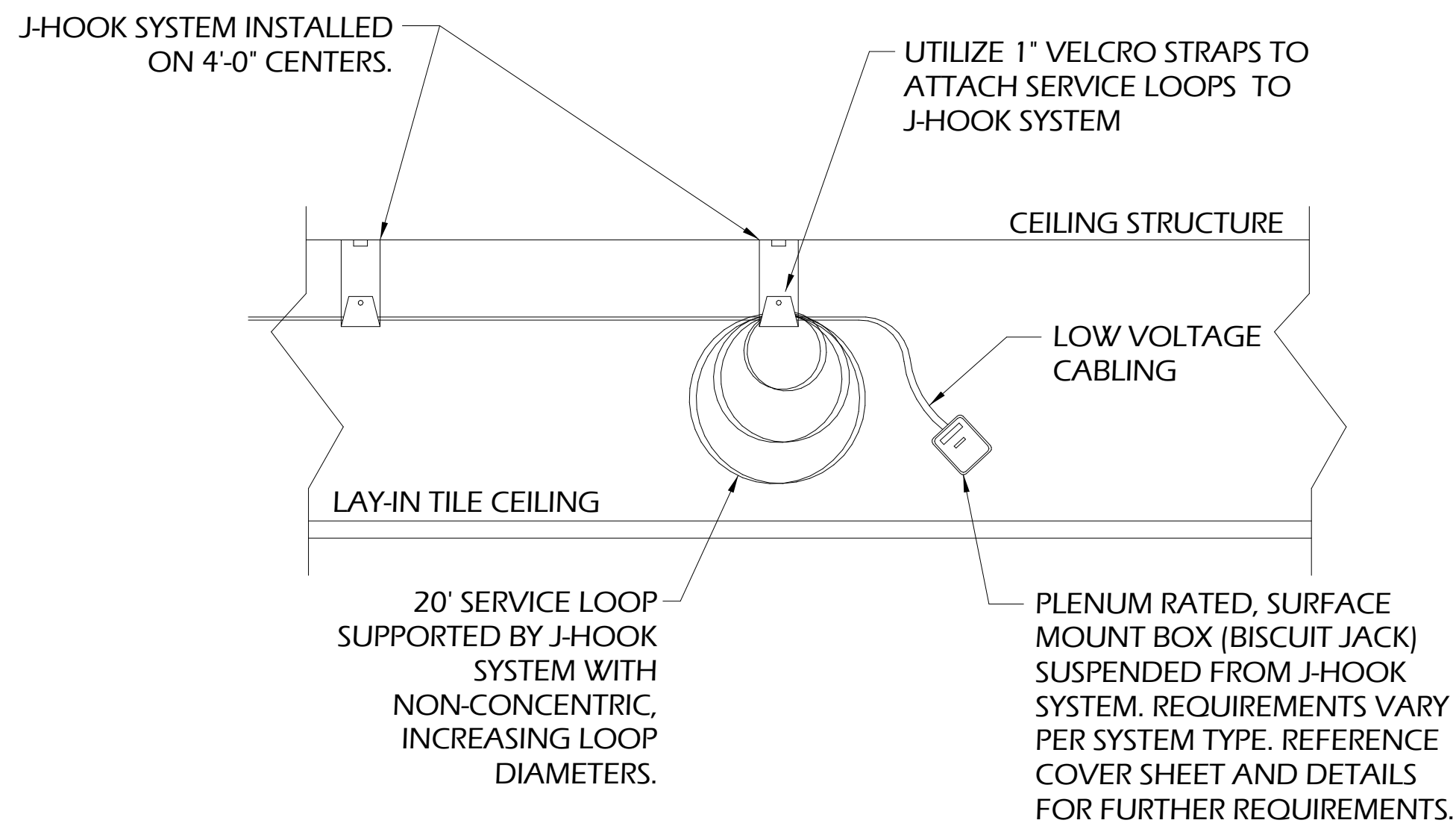
DETAIL  
NOT TO SCALE

5 EXTERIOR FIXED WALL MOUNTED  
SURFACE DOME CAMERA ENCLOSURE



DETAIL  
NOT TO SCALE

6 VIDEO SURVEILLANCE CAMERA  
TYPICAL ETHERNET BISCUIT

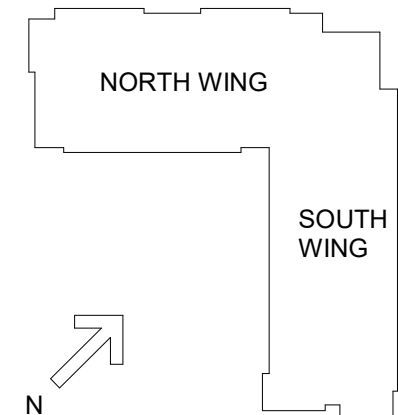


GENERAL NOTES:

- A. BISCUIT JACK SHALL BE PLENUM RATED, SINGLE PORT, CATEGORY 6 TYPE FOR ALL VIDEO SURVEILLANCE CAMERA LOCATIONS.

DETAIL  
NOT TO SCALE

7 SUSPENDED BISCUIT JACK



#	DATE	CHANGE DESCRIPTION

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**NEW RESIDENCE HALL**  
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HIGHLAND HEIGHTS, KY 41099  
FOR  
**NORTHERN KENTUCKY UNIVERSITY**

**MOODY-NOLAN**

434 MADISON AVENUE  
COVINGTON, KY 41011

PHONE: (859) 957-1277  
FAX: (859) 957-1280

**J&A**  
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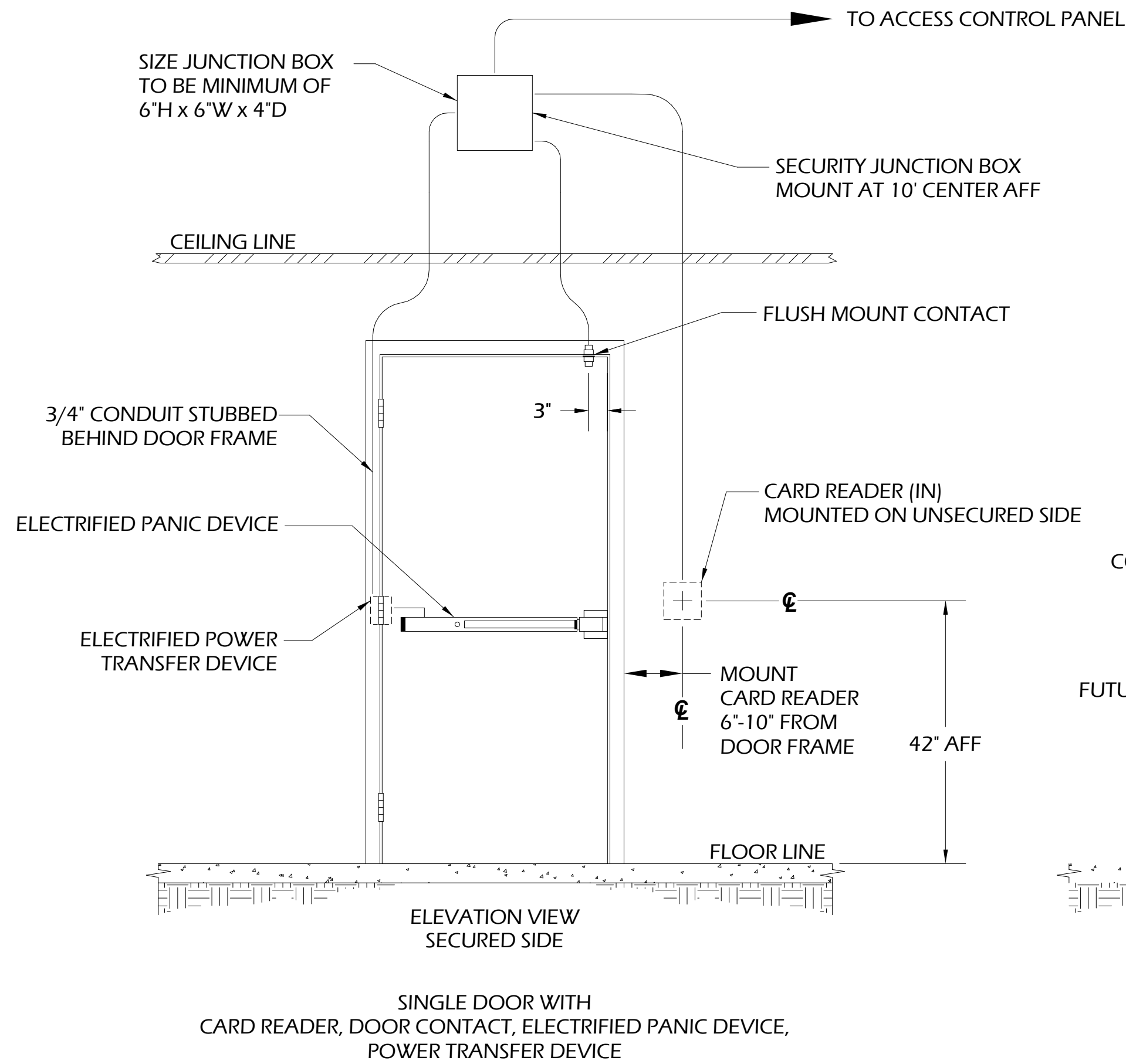
4999 LOWER ROSWELL ROAD, SUITE ONE  
MARIETTA, GEORGIA 30066  
PHONE: (770) 817-4220  
FAX: (770) 234-6878  
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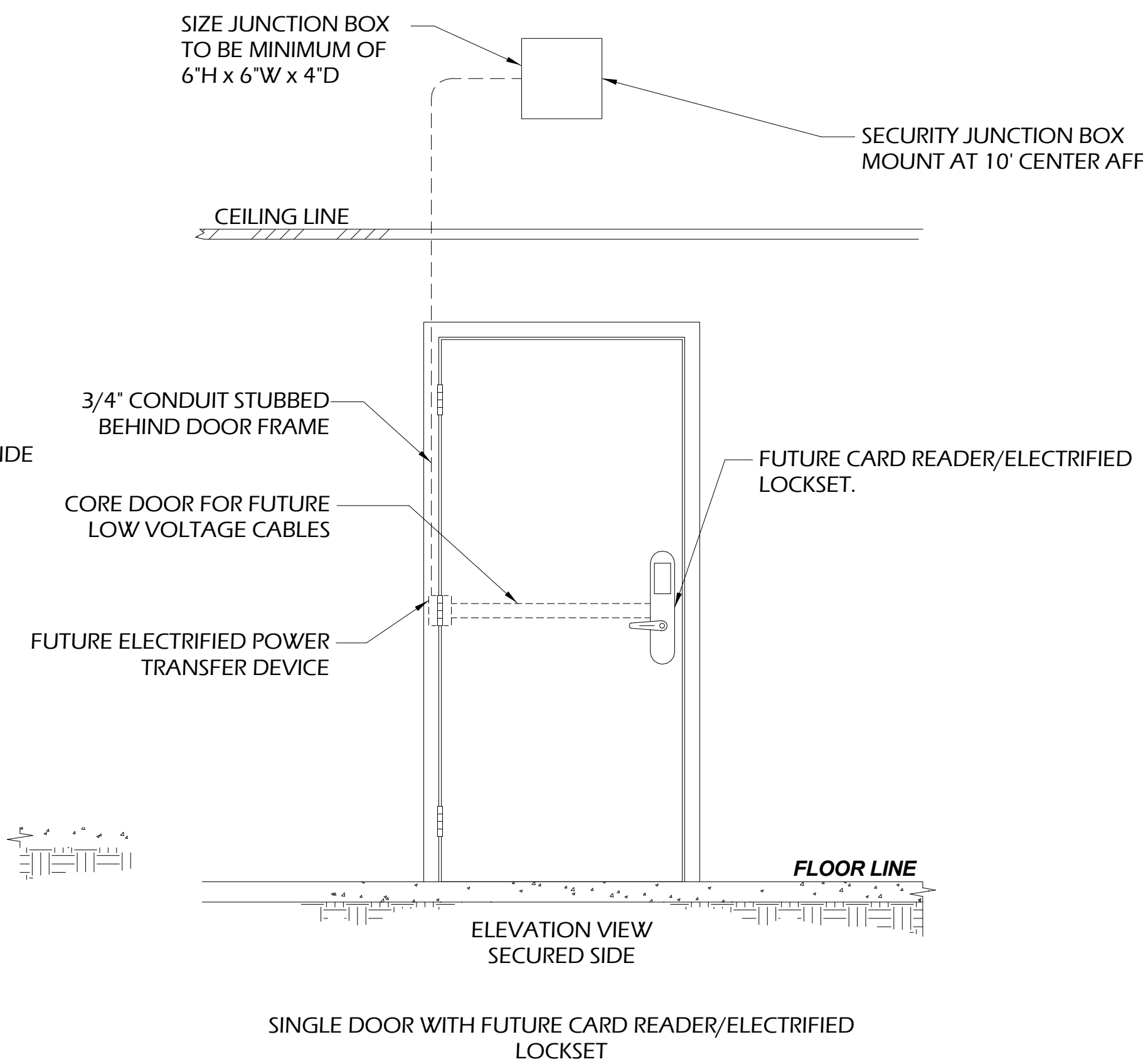
**BICSI**  
Jorge E. Gomez  
Reg. No. 10987  
EXPIRES 12-31-19  
REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER

JANUARY 30, 2020  
DRAWN BY: BT  
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19041  
**LV502**  
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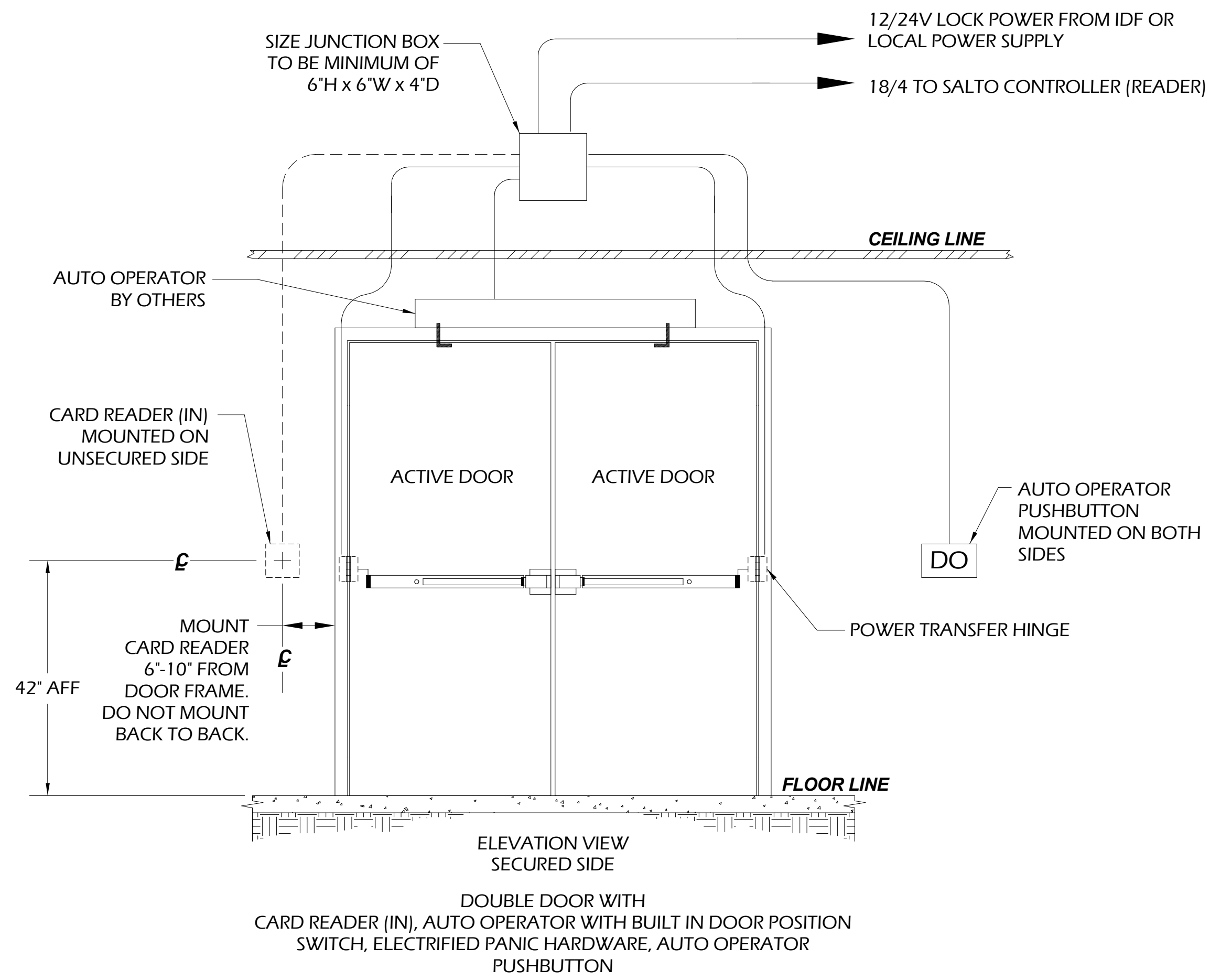
DETAIL  
NOT TO SCALE

**1** SINGLE DOOR DETAIL



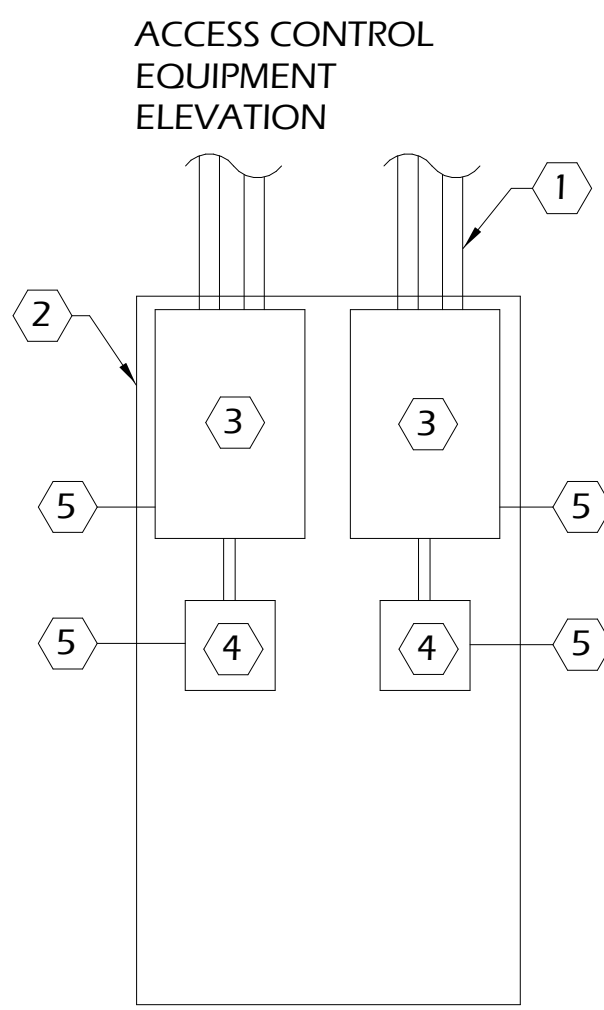
DETAIL  
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**2** SINGLE DOOR DETAIL



DETAIL  
NOT TO SCALE

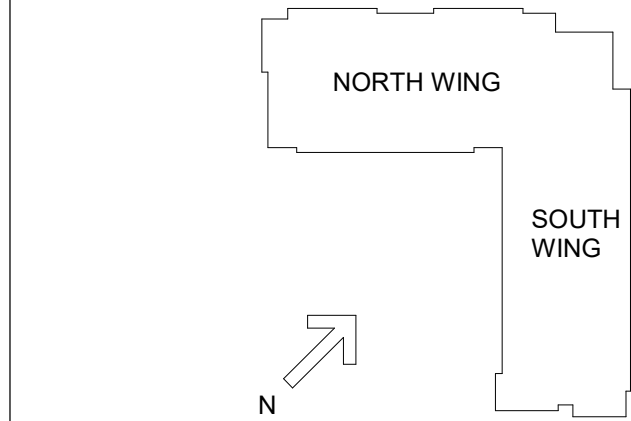
**3** DOUBLE DOOR DETAIL  
AUTO OPERATED DOOR



- KEY NOTES:** (APPLY TO THIS DETAIL ONLY)
- 1 STUB CONDUIT INTO CABLE RUNWAY.
  - 2 SECURITY CONTRACTOR TO PROVIDE AND INSTALL 8'X8' FIRE RATED PLYWOOD.
  - 3 SECURITY CONTRACTOR TO PROVIDE AND INSTALL WALL MOUNTED ACCESS CONTROL PANELS. EACH CONTROL PANEL SHALL HAVE A MINIMUM OF 30 MIN. BACK-UP TIME. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENT.
  - 4 SECURITY CONTRACTOR TO PROVIDE AND INSTALL WALL MOUNTED LOCK POWER SUPPLIES FOR ACCESS CONTROL SYSTEM. EACH POWER SUPPLY SHALL HAVE A MINIMUM OF 30 MIN. BACK-UP TIME. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
  - 5 ELECTRICAL CONTRACTOR TO PROVIDE DEDICATED 120V 20 AMP CIRCUIT HARDWIRED TO ACCESS CONTROL PANELS AND LOCK POWER SUPPLIES.

DETAIL  
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**4** ACCESS CONTROL EQUIPMENT ELEVATION



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Jorge E. Gomez  
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RCDD

**JANUARY 30, 2020**

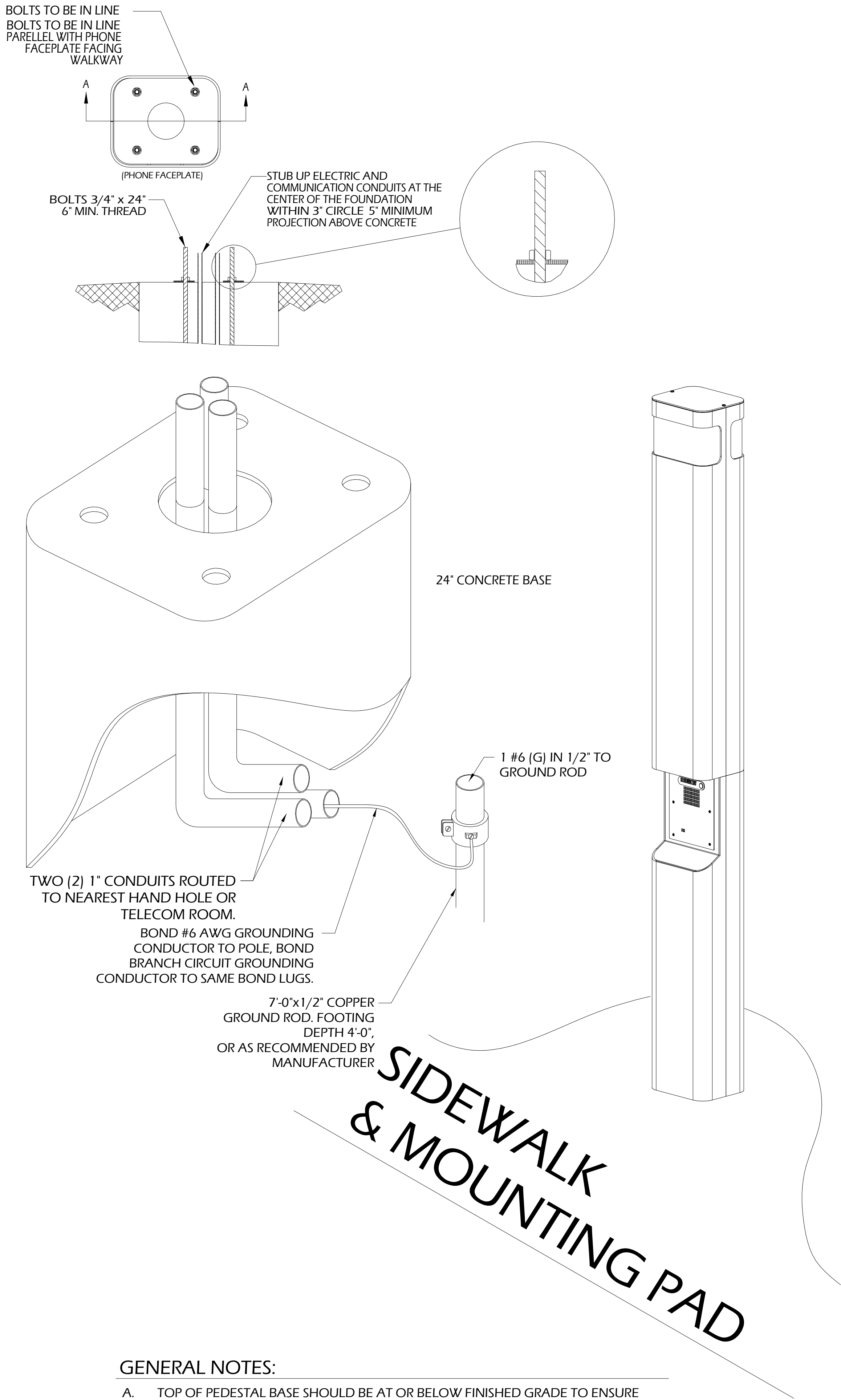
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**LV503**

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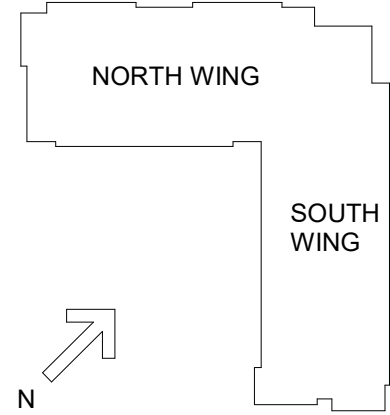




GENERAL NOTES:

- TOP OF PEDESTAL BASE SHOULD BE AT OR BELOW FINISHED GRADE TO ENSURE THAT UNIT IS COMPLIANT WITH ADA. CALL BUTTON MUST NOT BE MORE THAN 48" ABOVE FINISHED GRADE. CALL BUTTON AND SPEAKER MUST FACE SIDEWALK, LANDING, OR PAVED AREA.
- ALL EQUIPMENT MUST COMPLY WITH THE AMERICAN DISABILITY ACT AND LOCAL AUTHORITY REQUIREMENTS.
- INSTALL SURGE PROTECTION ON BOTH ENDS OF UTP CABLE.
- INSTALL ONE (1) 4 PAIR CATEGORY 6, 23 AWG, OSP, UTP CABLE TO NEAREST TELECOM ROOM. PROVIDE SURGE PROTECTION BLOCKS ON BOTH ENDS OF CABLE.


DETAIL 1 PEDESTAL MOUNT  
NOT TO SCALE EMERGENCY INTERCOM STATION




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DRAWING TITLE:

DETAILS

 <p>Jorge E. Gomez Reg. No. 10987 EXPIRES 12-31-19 RCDD</p>	JANUARY 30, 2020	
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	19041	
	LV504	
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