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PROJECT NUMBER #18237

NEW RESIDENCE HALL

PREPARED FOR:

NORTHERN KENTUCKY UNIVERSITY

KENTON DRIVE & CARROLL DRIVE
HIGHLAND HEIGHTS, KY 41099







PREPARED BY:

GEOTECHNICAL ENGINEERING

GEOTECHNOLOGY INC
FROM THE GROUND UP

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A KATERRA COMPANY

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MEP ENGINEERING

CMTA

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TECHNOLOGY & SECURITY

J&A ENGINEERING CONSULTANTS

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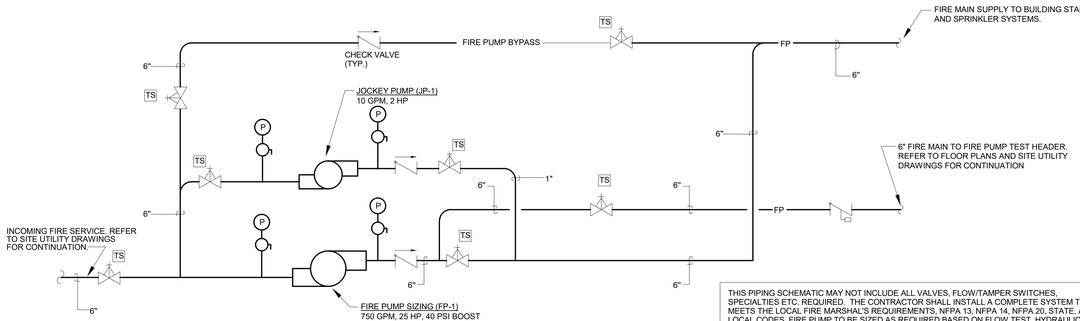
VOLUME 2

BID & PERMIT SUBMITTAL JANUARY 30, 2020

CURTIS J. MOODY — REGISTERED NO. 4996 — COMMONWEALTH OF KENTUCKY — ARCHITECT

PRINT DATE: 8/3/2020 2:17:48 PM
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FIRE PUMP SCHEMATIC DIAGRAM

SCALE: NONE

THIS PIPING SCHEMATIC MAY NOT INCLUDE ALL VALVES, FLOW/TAMPER SWITCHES, SPECIALTIES ETC. REQUIRED. THE CONTRACTOR SHALL INSTALL A COMPLETE SYSTEM THAT MEETS THE LOCAL FIRE MARSHAL'S REQUIREMENTS, NFPA 13, NFPA 14, NFPA 20, STATE, AND LOCAL CODES. FIRE PUMP TO BE SIZED AS REQUIRED BASED ON FLOW TEST, HYDRAULIC CALCULATIONS, AND PRESSURE/FLOW REQUIREMENTS. PROVIDE ALL ACCESSORIES AS NOTED ABOVE & ANY ADDITIONAL ACCESSORIES & SPECIALITIES (PRESSURE GAUGES, CONTROL VALVES, CHECK VALVES, METERS, PUMP CONTROLERS, ETC) CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED ELECTRICAL AND FIRE ALARM CONNECTIONS. COORDINATE INTERCONNECTION WITH RESPECTIVE CONTRACTORS.

EXISTING FIRE HYDRANT FLOW TEST DATA

STATIC PSI: 65

RESIDUAL PSI: 35

FLOW: 1,797 GPM

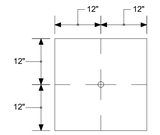
DURATION: CONTINUOUS

DATE & TIME: NOV. 13, 2019

SOURCE OF WATER: CITY SUPPLY

SOURCE OF DATA: CENTRAL CAMPBELL FIRE DISTRICT

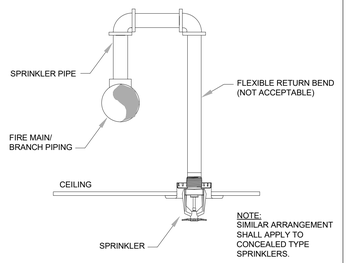
OCCUPANCY OF BUILDING: EDUCATIONAL DORMITORY



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

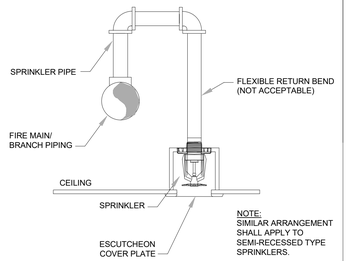
2x2 CEILING TILE DETAIL

SCALE: NONE



RETURN BEND DETAIL

SCALE: NONE



RETURN BEND DETAIL

SCALE: NONE

GENERAL FIRE PROTECTION NOTES:

A. 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.

B. 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).

C. 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.

D. ALL SPRINKLERS LOCATIONS SHALL BE COORDINATED WITH ALL OTHER CEILING RELATED DEVICES. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION RELATED TO CEILING CONSTRUCTION.

E. 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.

F. 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.

G. PROVIDE ALL REQUIRED DRAIN PIPING TO TEST FLOW SWITCHES. DISCHARGE DRAIN PIPING TO OUTDOORS.

H. SIZE ALL FIRE PROTECTION PIPING IN ACCORDANCE WITH NFPA 13. PIPE SIZING SHALL BE ACCOMPLISHED USING HYDRAULIC CALCULATIONS.

I. CONTRACTOR TO PROVIDE UPDATED FLOW TEST. SUBMIT HYDRAULIC CALCULATIONS AND SYSTEMS DESIGN FOR REVIEW TO THE M/E ENGINEER. REFER TO CHART ON THIS SHEET FOR PREVIOUS FLOW INFORMATION. PROVIDE FIRE PUMP SIZING BASED ON FLOW TEST AND HYDRAULIC CALCULATIONS.

J. THE SPARE SPRINKLERS, WRENCH AND CABINET SHALL BE LOCATED IN THE FIRE PUMP ROOM.

K. ONLY CERTIFIED TECHNICIANS APPROVED BY THE LOCAL WATER COMPANY SHALL INSTALL OR TEST BACKFLOW PREVENTERS.

L. CERTIFIED CONTRACTOR SHALL TEST BACKFLOW PREVENTER AFTER INSTALLATION, PROVIDE TEST RESULTS (INCLUDE IN OPERATION AND MAINTENANCE MANUALS).

M. 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.

N. COORDINATE ALL SPRINKLER PIPE ROUTINGS WITH ALL ELECTRICAL EQUIPMENT.

O. THE CONTRACTOR SHALL INSURE THAT ALL PENETRATIONS OF THE AIR BARRIER BE SEALED TO MAINTAIN AN AIR TIGHT BUILDING.

P. 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.

Q. COLOR FINISHES OF ALL SPRINKLERS/ESCUTCHEONS/COVER PLATES SHALL BE COORDINATED WITH ARCHITECT.

R. 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.)

S. 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.

T. 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.

U. ALL SPRINKLERS LOCATED IN IDF/MDF, ELECTRICAL ROOMS, AND KITCHEN SHALL BE HIGH TEMPERATURE SPRINKLERS WITH PROTECTIVE WIRE CAGES.

V. 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.

W. PROVIDE SPRINKLER COVERAGE ABOVE AND BELOW FLOATING CLOUDS 48" OR GREATER IN SIZE. NO EXPOSED PIPING TO BE LOCATED BELOW ANY SUSPENDED CEILING ASSEMBLIES.

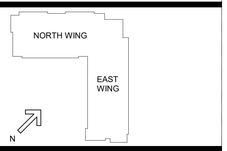
X. PROVIDE HEAVY DUTY SPRINKLER GUARDS FOR ALL SPRINKLERS LOCATED IN STORAGE / MECHANICAL ROOMS.

Y. CONCEALED SPACES WITH COMBUSTIBLE MATERIALS (ABOVE WOOD SPLINE CEILINGS) SHALL BE PROVIDE WITH SPRINKLERS ABOVE & BELOW.

Z. STANDPIPE SYSTEM SHALL BE DESIGNED IN ACCORDANCE WITH ALL APPLICABLE FM GLOBAL AND NFPA-14 GUIDELINES.

AA. 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
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CMTA
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DRAWING TITLE:

FIRE SUPPRESSION LEGEND



JANUARY 30, 2020

DRAWN BY: **JTM** | CHECKED BY: **CMG**

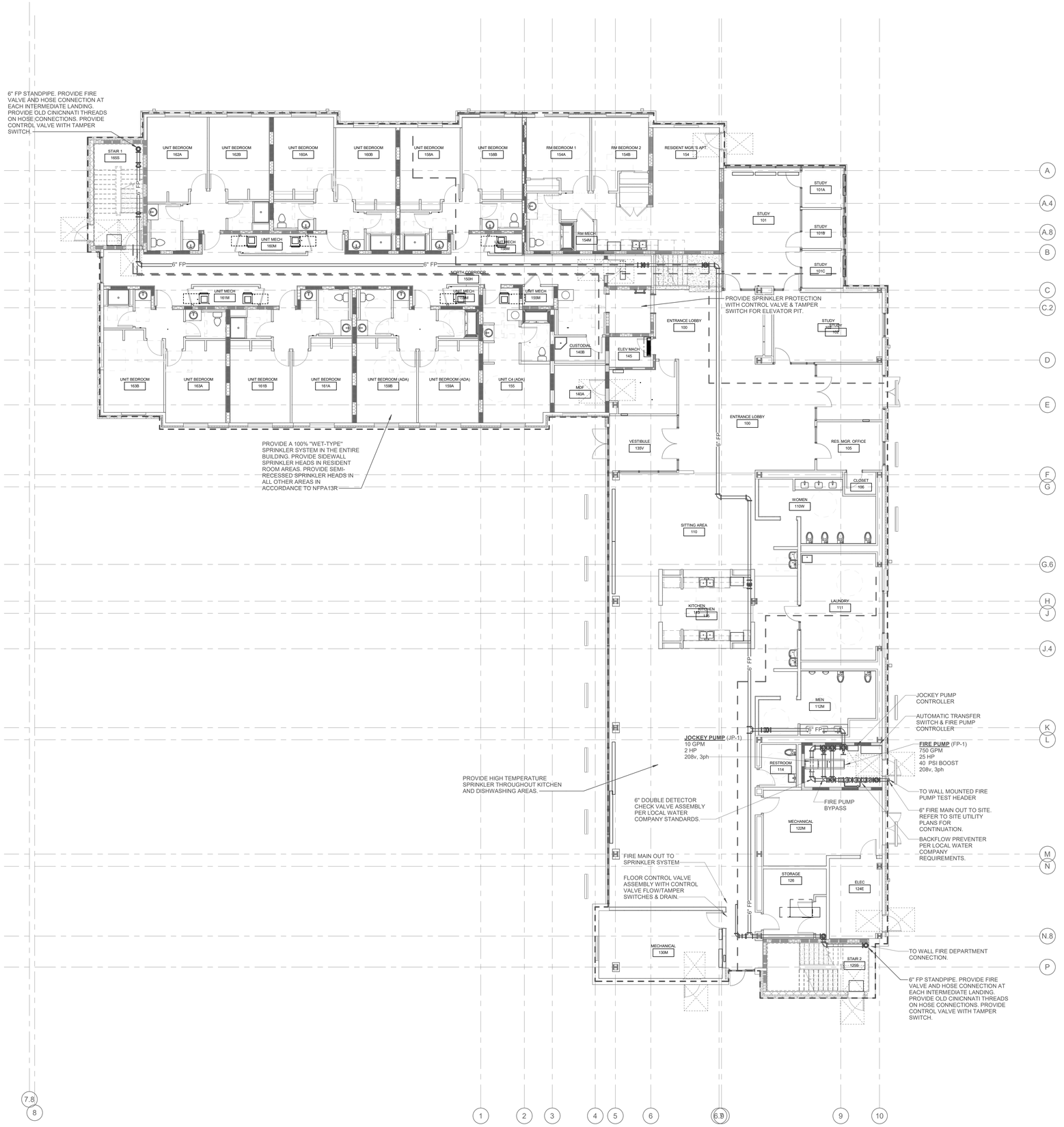
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FP001

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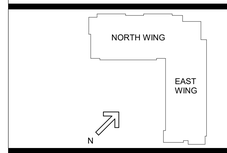


1 FIRE PROTECTION PLAN - LEVEL 01

1/8" = 1'-0"

PRINT DATE: 1/31/2020 3:20:16 PM
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DRAWING TITLE:
LEVEL 01 - FIRST FLOOR PLAN - FIRE PROTECTION

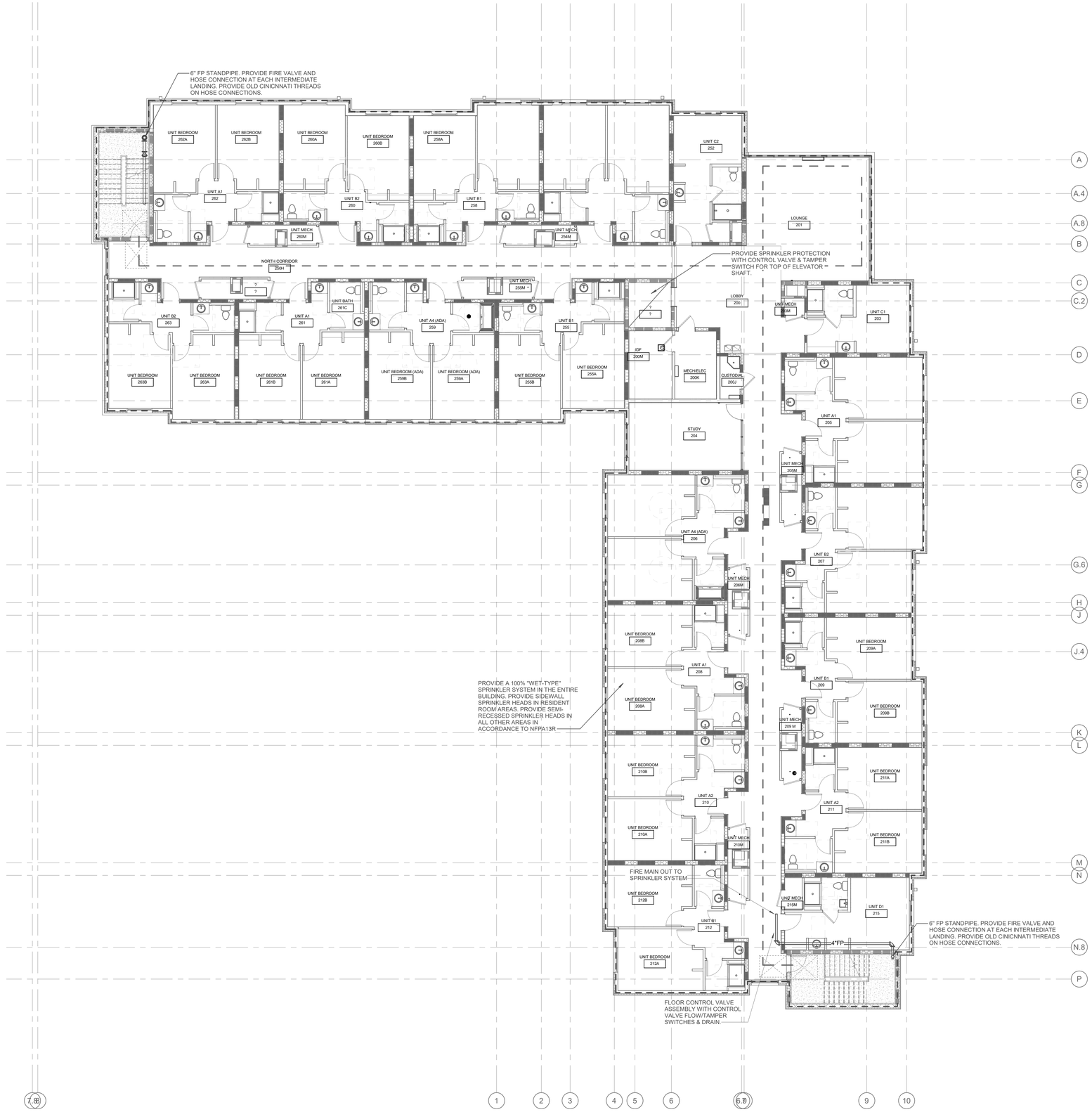
COMMONWEALTH OF KENTUCKY CAROLYN M. GRIMMER 30804 LICENSED PROFESSIONAL ENGINEER

JANUARY 30, 2020
DRAWN BY: **JTM** | CHECKED BY: **CMG**
#18237

FP101

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1 FIRE PROTECTION PLAN - TYPICAL FOR LEVELS 2 THRU 5

1/8" = 1'-0"

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STATE OF KENTUCKY APPROVAL

NORTH WING
EAST WING
N

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NKU NORTHERN KENTUCKY UNIVERSITY

NKU - New Residence Hall
KENTON DRIVE & CARROLL DRIVE
HIGHLAND HEIGHTS, KY 41099
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DRAWING TITLE:
LEVELS 02-05 - TYPICAL FLOOR PLAN - FIRE PROTECTION

STATE OF KENTUCKY CAROLYN MARIE GRIMM 30804 LICENSED PROFESSIONAL ENGINEER

JANUARY 30, 2020
DRAWN BY: **JTM** CHECKED BY: **CMG**
#18237
FP102
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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	1/6
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	1SSV3GC30 - 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.

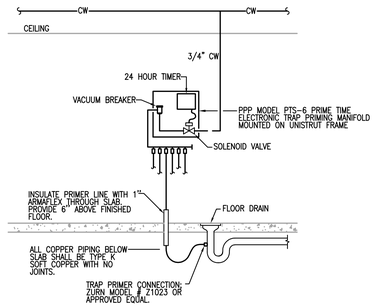
PLUMBING FIXTURE SCHEDULE

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"	-	-

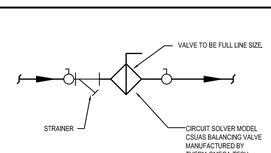
NOTES: ALL PIPE SIZES ARE AS SHOWN UNLESS OTHERWISE NOTED ON DRAWINGS. MINIMUM 2" SANITARY PIPING BELOW SLAB. PROVIDE ALL PIPING AS REQUIRED TO INSTALL ALL FIXTURES INDICATED WITH A "P" DESIGNATION.

PLUMBING LEGEND

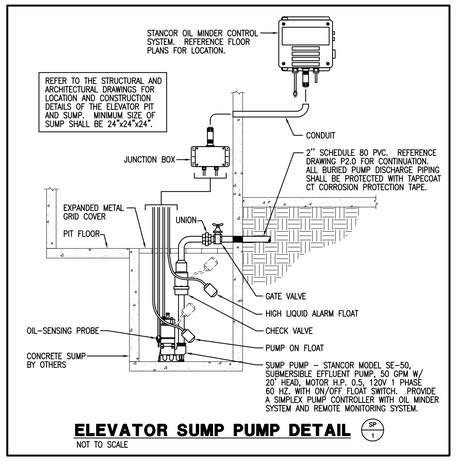
ABOVE FINISHED FLOOR	AFF
BELOW FINISHED FLOOR	BFF
CLEANOUT	CO
COLD WATER	CW
DOMESTIC WATER CIRCULATING PUMP	DP
EXPANSION TANK	ET
EXTERIOR CLEANOUT	ECO
FLOOR DRAIN	FD
FREEZE PROOF WALL HYDRANT	FPWH
FREEZE PROOF ROOF HYDRANT	FPRH
HOSE BIBB	HB
HOT WATER	HW
INVERT ELEVATION	IE
NOT TO SCALE	NTS
OPEN RECEPTACLE	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	
UNION	
DIAL THERMOMETER	
PRESSURE GAUGE	
GATE VALVE	
BALANCING VALVE	
SOLENOID VALVE	
GAS SHUT-OFF VALVE	
CHECK VALVE	
BALL VALVE	



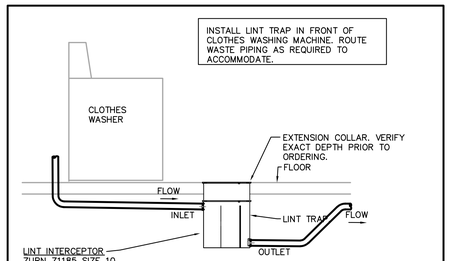
FLOOR DRAIN TRAP PRIMER PIPING SCHEMATIC
NOT TO SCALE



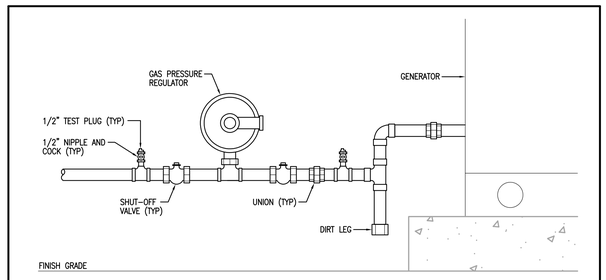
HOT WATER RETURN BALANCING VALVE DETAIL
NOT TO SCALE



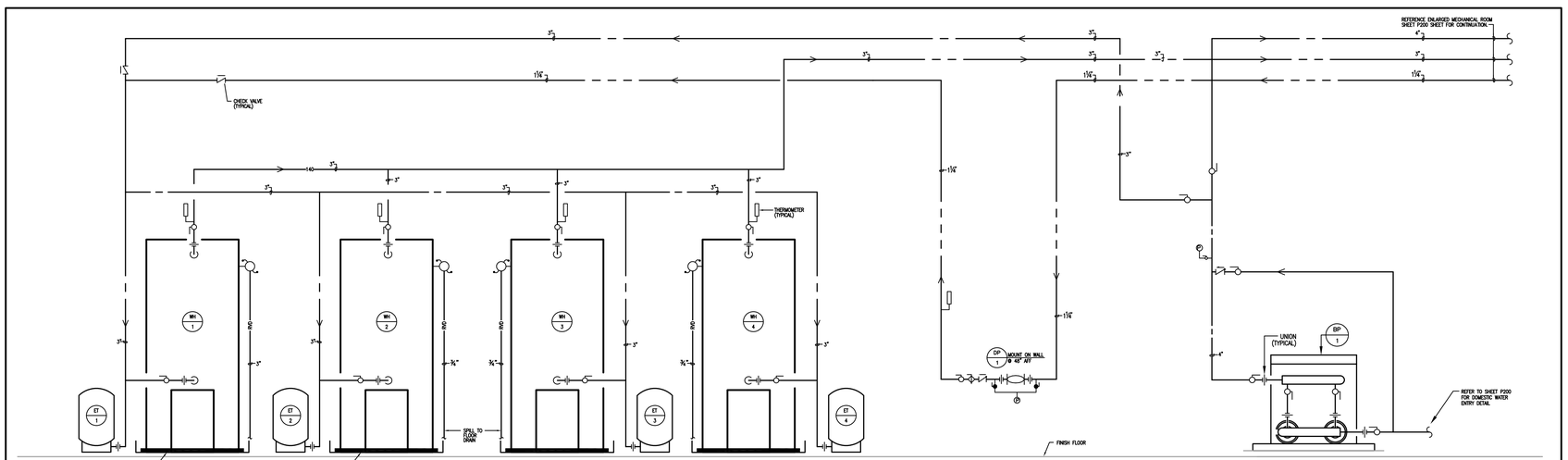
ELEVATOR SUMP PUMP DETAIL (SP 1)
NOT TO SCALE



LINT TRAP DETAIL
NOT TO SCALE



GENERATOR GAS CONNECTION DETAIL
NOT TO SCALE



DOMESTIC WATER HEATER PIPING SCHEMATIC
NO SCALE

PRINT DATE: 01/5/2020 1:43:12 PM
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STATE OF KENTUCKY APPROVAL



#	DATE	CHANGE DESCRIPTION

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

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DRAWING TITLE:
PLUMBING LEGEND AND SCHEMATICS

JANUARY 30, 2020
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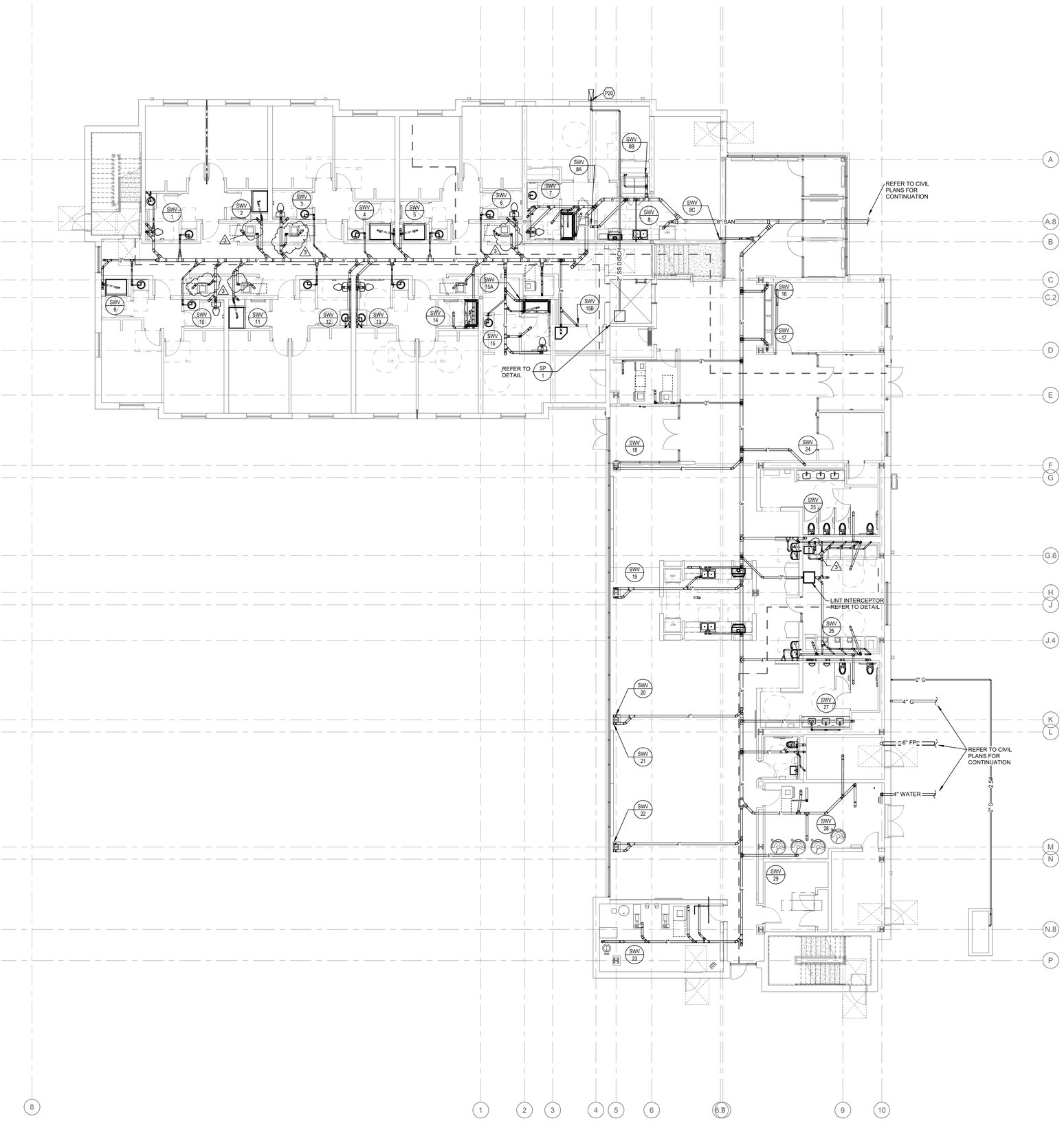
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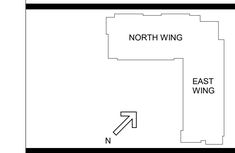
P20	2" ELEVATOR SUMP PUMP DISCHARGE. SPILL TO SPLASHBLOCK



1 PLUMBING PLAN - LEVEL 01 UNDER SLAB

1/8" = 1'-0"

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DRAWING TITLE:
LEVEL 1- FIRST FLOOR PLAN - UNDER SLAB PLUMBING



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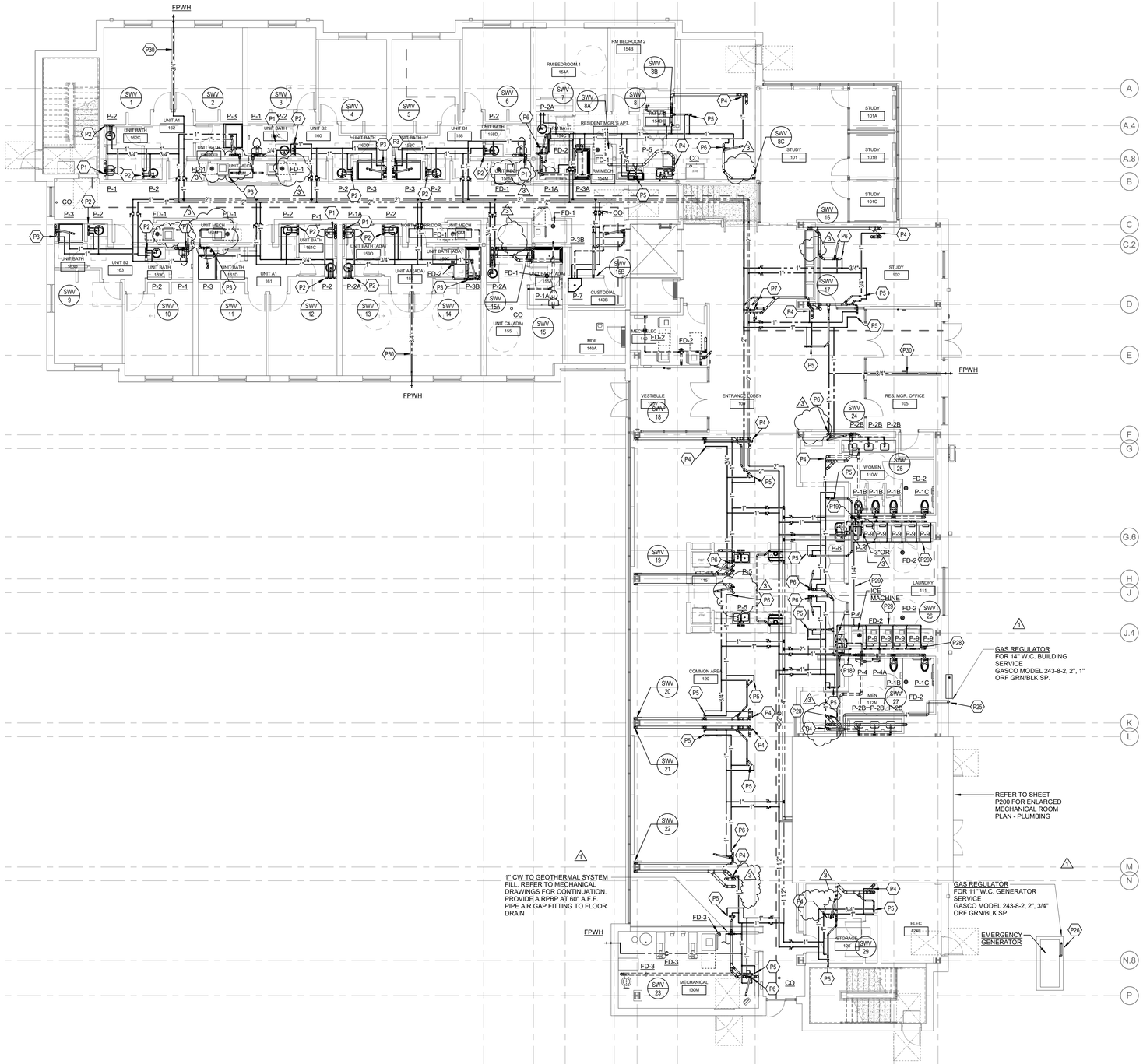
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P100

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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" TO LEVEL 5. PIPE TO EACH WATER CLOSET.
P2	PIPE 1/2" CW & HW DN. TO LAVATORY. 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.
P3	PIPE 1/2" CW & HW DN. TO SHOWER. 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.
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.
P7	EXTEND 3/4" CW & HW RISERS UP TO LEVEL 2 , 3, 4 & 5. PIPE TO EACH MOP SINK AND WATER COOLER. EXTEND 1/2" HWR TO ABOVE CEILING FROM 1/2" HW RISER. REFER TO LEVEL 5 FOR CONTINUATION.
P18	2" CW & 1" HW DN. PROVIDE FULL SIZE HEADER AND CONNECT TO FIXTURES. PIPE 1/2" CW TO ICE MACHINE. PROVIDE A RPBP, MOUNT ON WALL BEHIND ICE MAKER WITH SHUTOFF VALVE. PIPE AIR GAP FITTING TO FLOOR DRAIN. PIPE ICE MACHINE DRAIN TO FLOOR DRAIN. PROVIDE WHA'S ON BOTH HOT AND COLD WATER HEADERS IN COMPLIANCE WITH THE SPECIFICATIONS.
P19	2" CW & 1" HW DN. PROVIDE FULL SIZE HEADER AND CONNECT TO FIXTURES. PROVIDE WHA'S ON BOTH HOT AND COLD WATER HEADERS IN COMPLIANCE WITH THE SPECIFICATIONS.
P25	GAS METER SET. INSTALL IN COMPLIANCE WITH THE LOCAL GAS COMPANY. PROVIDE 14" W.C. TO 4" GAS SERVICE WITHIN THE BUILDING. GAS LOAD AS FOLLOWS: (4) WATER HEATERS AT 500 MBH EACH. (10) RESIDENTIAL GAS DRYERS AT 35 MBH EACH. TOTAL: 2350 MBH. PROVIDE 2.5# GAS SERVICE LINE TO GENERATOR. GAS LOAD FOR GENERATOR: 1797 MBH.
P26	REFER TO EMERGENCY GENERATOR DETAIL SHEET P001.
P28	3/4" G. DN FOR CLOTHES DRYER. PROVIDE WITH EXPOSED SHUT-OFF VALVE FOR CONNECTION. (TYP. OF 10 WITHIN LAUNDRY 111)
P29	1-1/4" GAS HEADER.
P30	ROUTE 3/4" CW FOR FPWH WITHIN WALL.

1 PLUMBING PLAN - LEVEL 01

1/8" = 1'-0"

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NORTH WING
EAST WING
N

#	DATE	CHANGE DESCRIPTION
1	02/18/2020	ADDENDUM #2
3	6/05/2020	BULLETIN #2

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DRAWING TITLE:
LEVEL 1 - FIRST FLOOR PLAN - PLUMBING

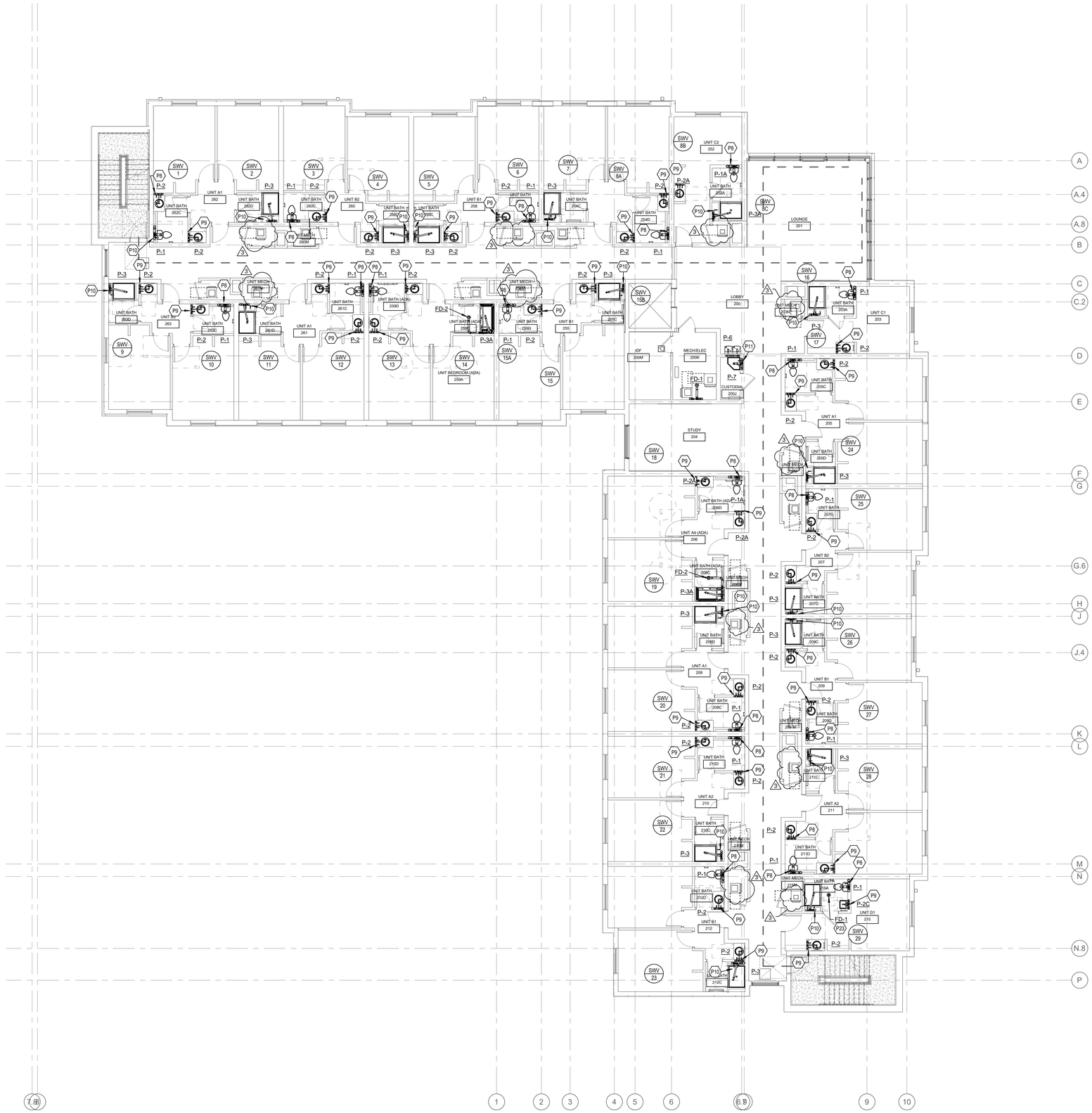
STATE OF KENTUCKY · CAROLYN M. GRIMMER · 30804 · LICENSED PROFESSIONAL ENGINEER

JANUARY 30, 2020
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P101

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TAGGED NOTES

##	
P8	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 EACH WATER CLOSET
P9	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" HWR TO ABOVE CEILING FROM 1/2" HW RISER. REFER 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 LEVELS 5. PIPE TO EACH SHOWER. EXTEND 1/2" HWR 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 LEVELS 3, 4 & 5. PIPE TO EACH MOP SINK AND WATER COOLER. EXTEND 1/2" HWR TO ABOVE CEILING FROM 1/2" HW RISER. REFER TO LEVEL 5 FOR CONTINUATION.
P23	FD-1 IN UNIT BATH 215A ONLY.

1 PLUMBING PLAN - TYPICAL FOR LEVELS 2 THRU 4

1/8" = 1'-0"

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NORTH WING
EAST WING
N

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DRAWING TITLE:
LEVELS 2-4 - TYPICAL FLOOR PLAN - PLUMBING

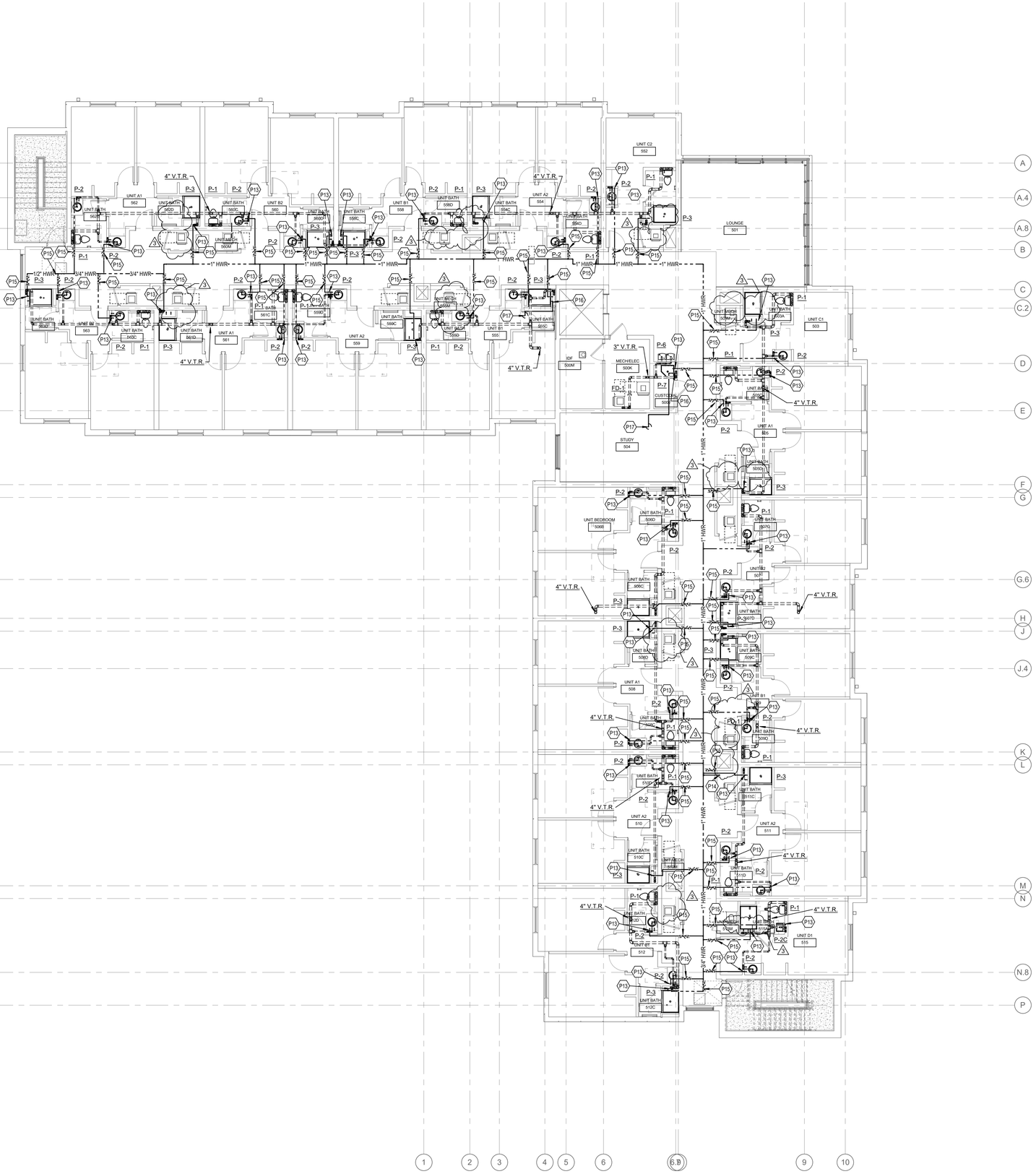
STATE OF KENTUCKY · CAROLYN U. [illegible] · 30804 · LICENSED PROFESSIONAL ENGINEER

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P102

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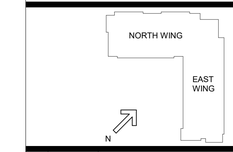


TAGGED NOTES	##
P13	1/2" HWR DN. CONNECT TO 1/2" HW RISER MAIN.
P14	1-1/4" HWR DN. TO MAIN MECHANICAL ROOM.
P15	REFER TO HOT WATER RETURN BALANCING VALVE DETAIL. INSTALL BALANCING VALVE ASSEMBLY IN AN UNOBSTRUCTED, EASILY ACCESSIBLE LOC ATION ABOVE THE COORDIOR CEILING. COORDINATE WITH DUCTWORK.
P16	3/4" CW. CONNECT TO RISER, TO SERVE ROOF HYDRANT
P17	3/4" UP TO ROOF HYDRANT, FPRH

1 PLUMBING PLAN - LEVEL 05
1/8" = 1'-0"

PRINT DATE: 12/2020 10:46:35 AM
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DRAWING TITLE:
LEVEL 5 - FIFTH FLOOR PLAN - PLUMBING

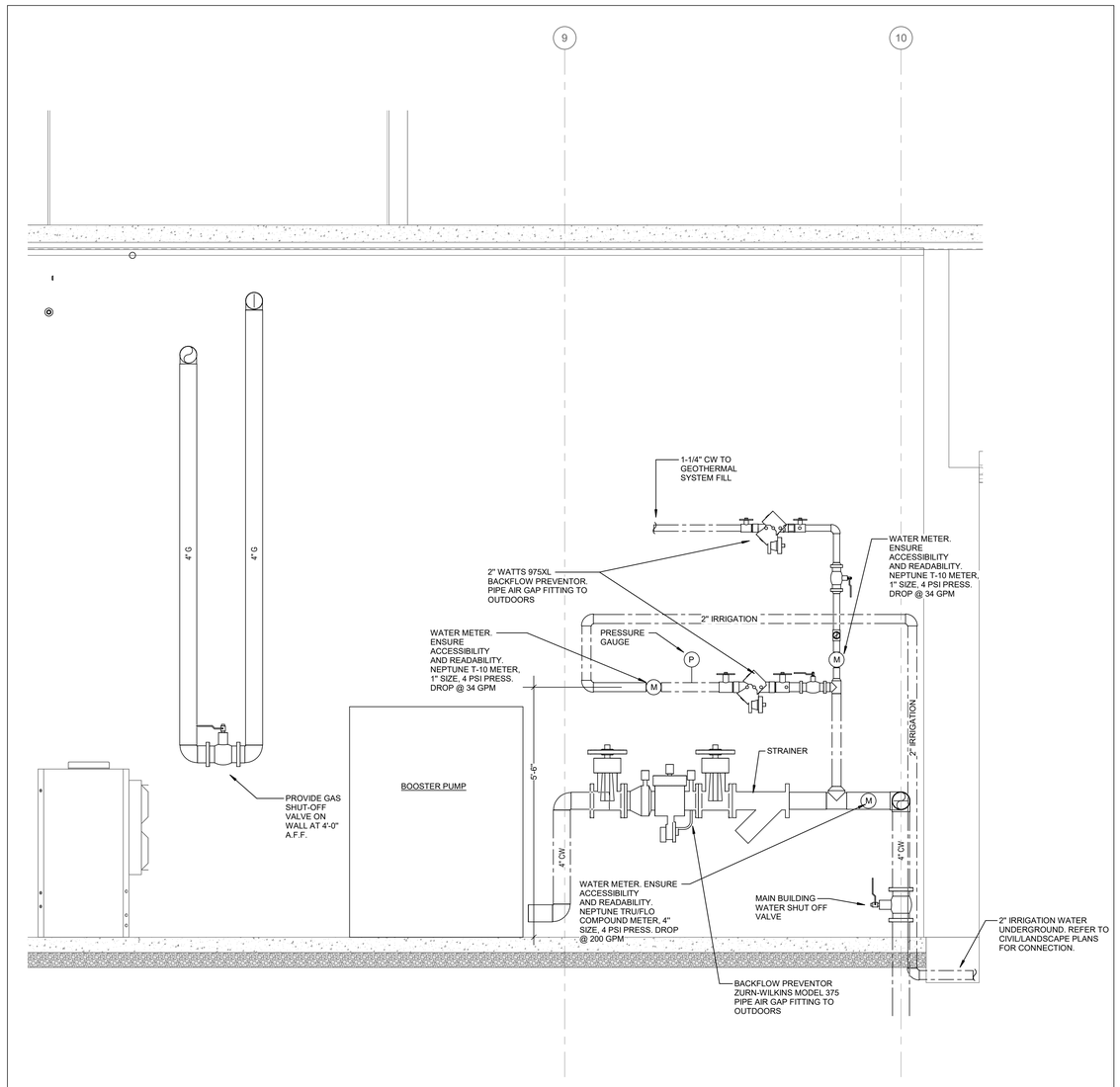
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P103

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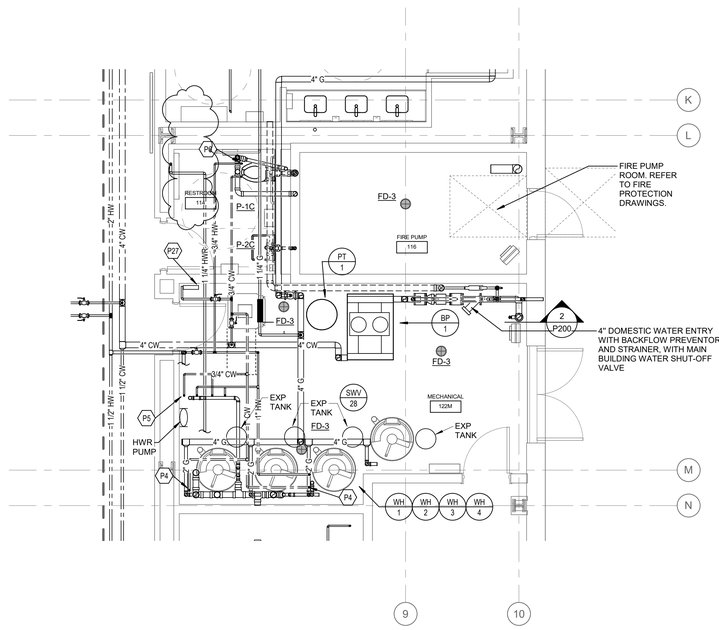
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TAGGED NOTES	##
P4	EXTEND 1" CW RISER UP TO LEVEL 2. EXTEND 3/4" CW RISER UP TO LEVELS 3 & 4. EXTEND 1/2" TO LEVEL 5. PIPE TO EACH WATER CLOSET.
P5	EXTEND 3/4" CW & HW RISERS UP TO LEVEL 2 & 3. EXTEND 1/2" CW & HW RISERS UP TO LEVELS 4 AND 5. PIPE 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.



2 DOMESTIC WATER ENTRY AND GAS MAIN

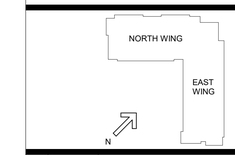
3/4" = 1'-0"



1 ENLARGED MECHANICAL ROOM PLAN - PLUMBING

1/4" = 1'-0"

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ENLARGED MECHANICAL ROOM PLAN - PLUMBING

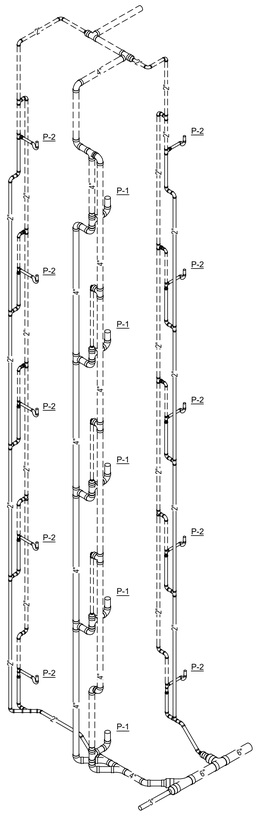
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P200

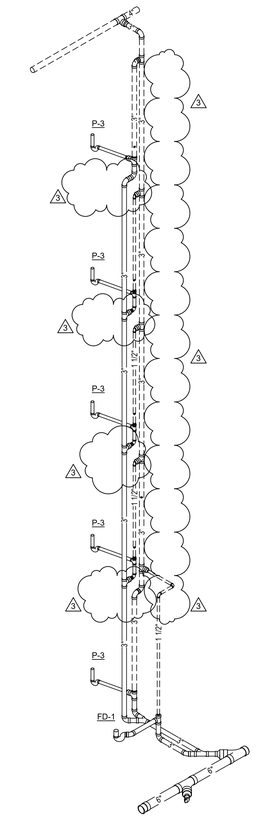
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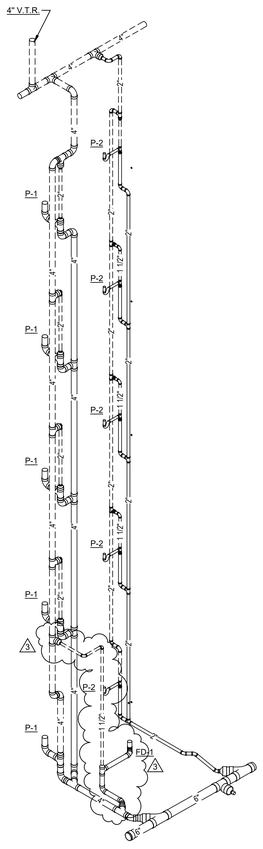
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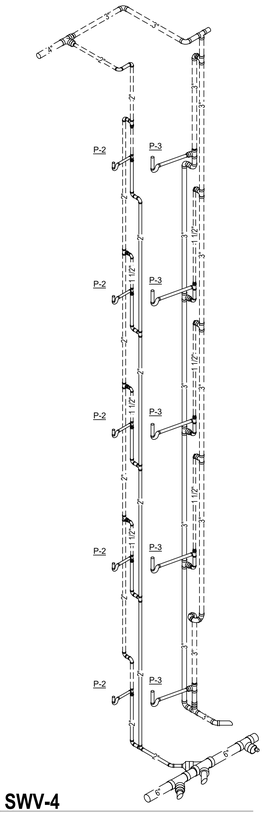
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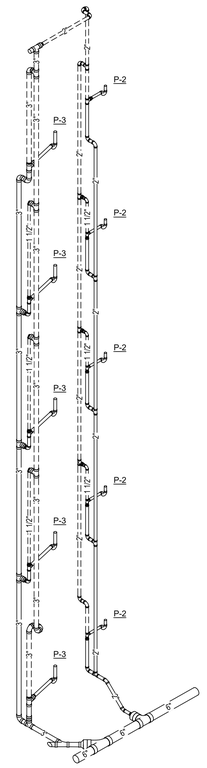
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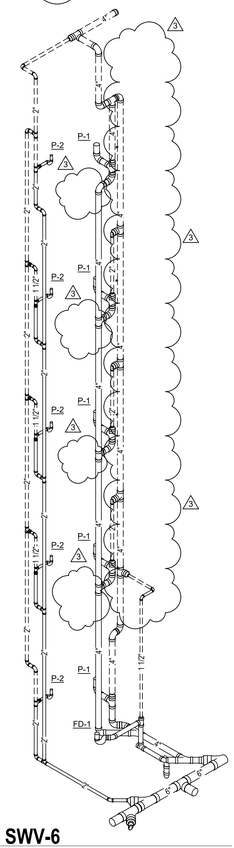
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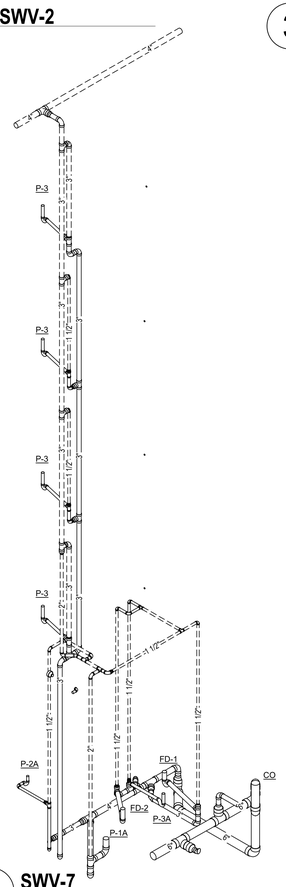
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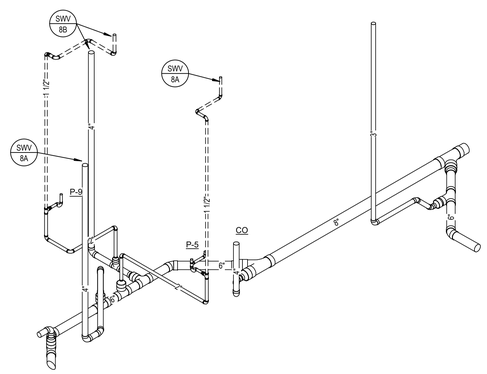
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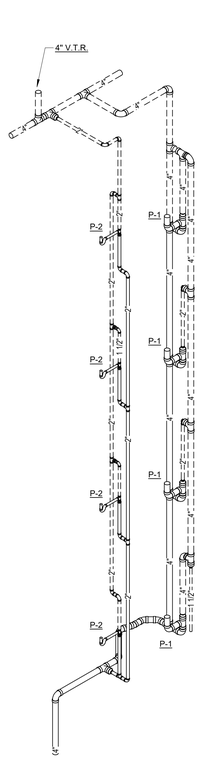
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7 SWV-7



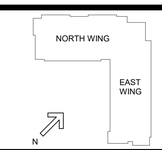
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9 SWV-8A

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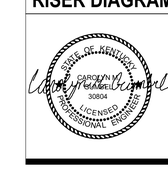
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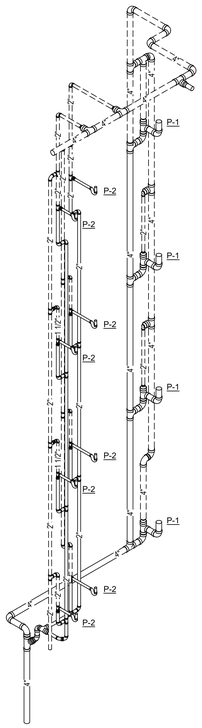
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DRAWING TITLE:
SANITARY WASTE AND VENT RISER DIAGRAMS

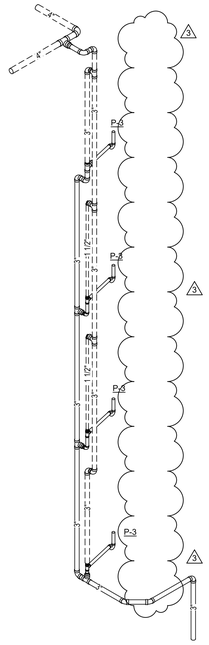


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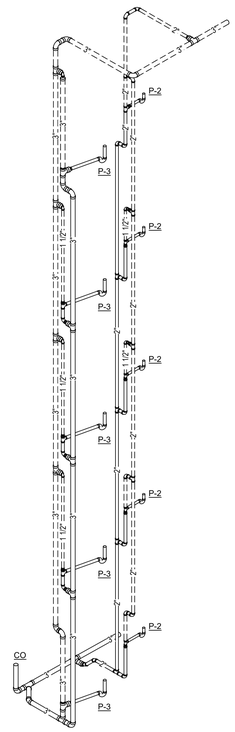
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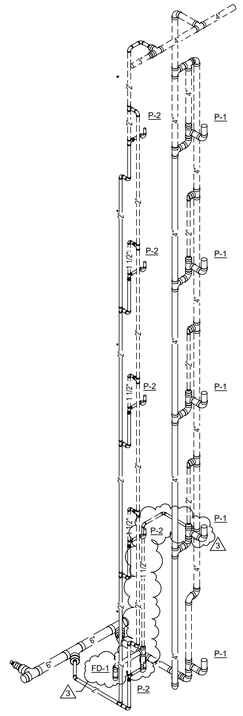
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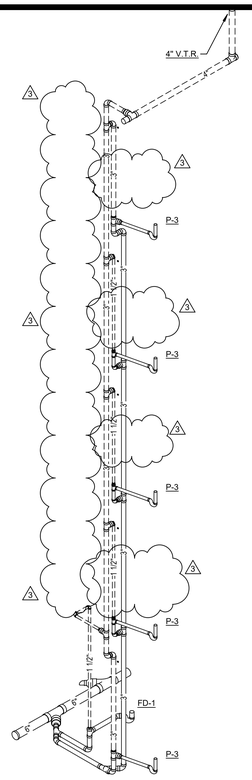
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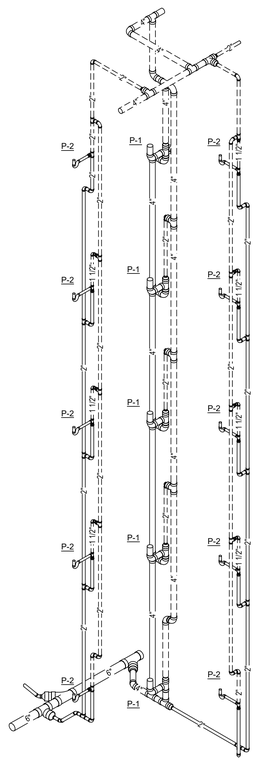
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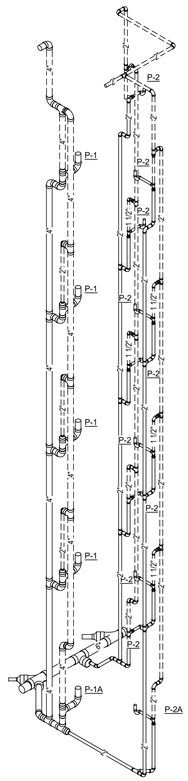
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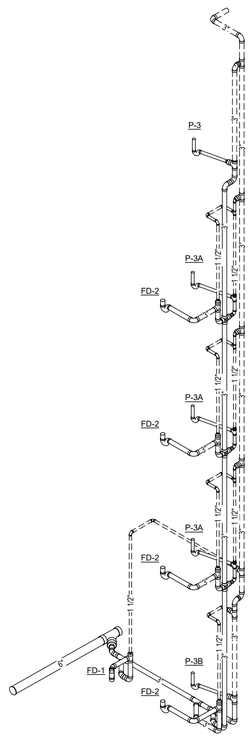
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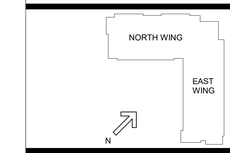
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8 SWV-14

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SANITARY WASTE AND VENT RISER DIAGRAMS

JANUARY 30, 2020

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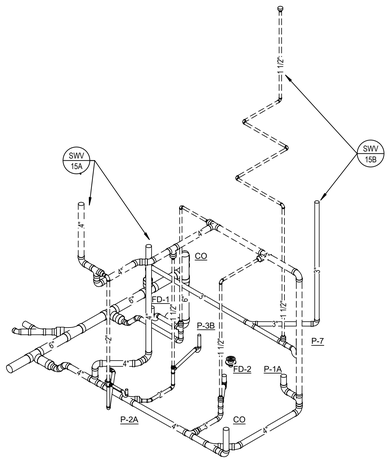
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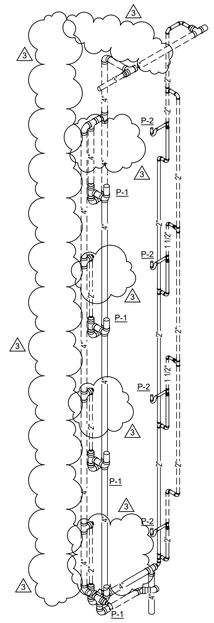
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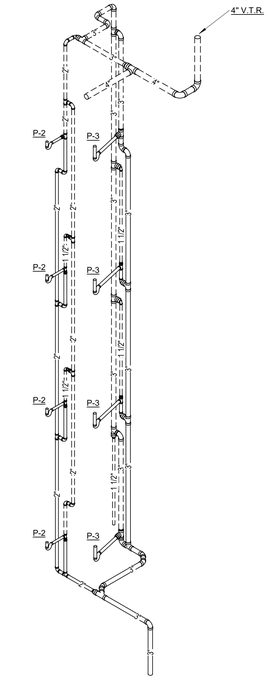
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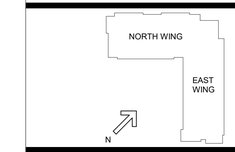


2 SWV-15A



3 SWV-15B

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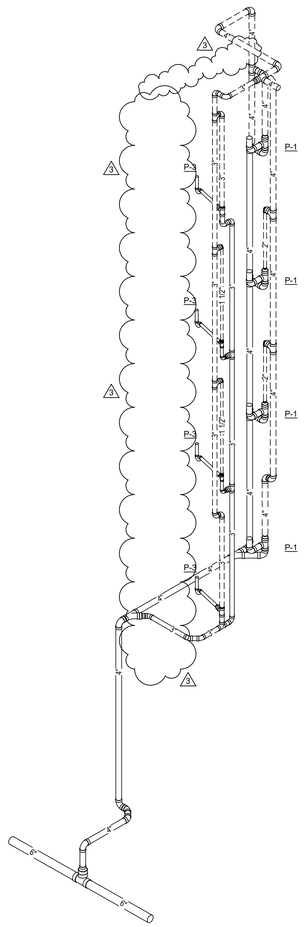
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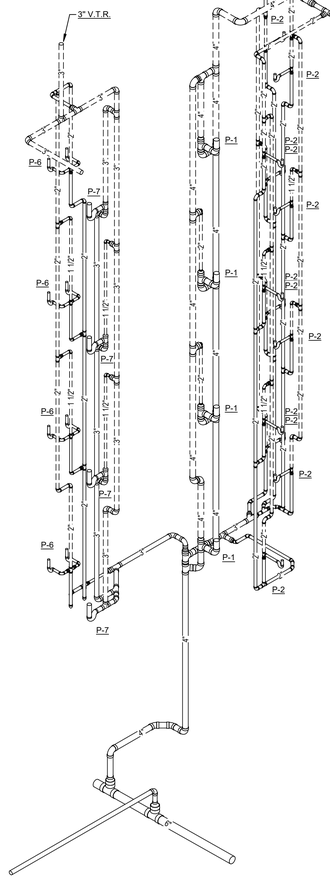
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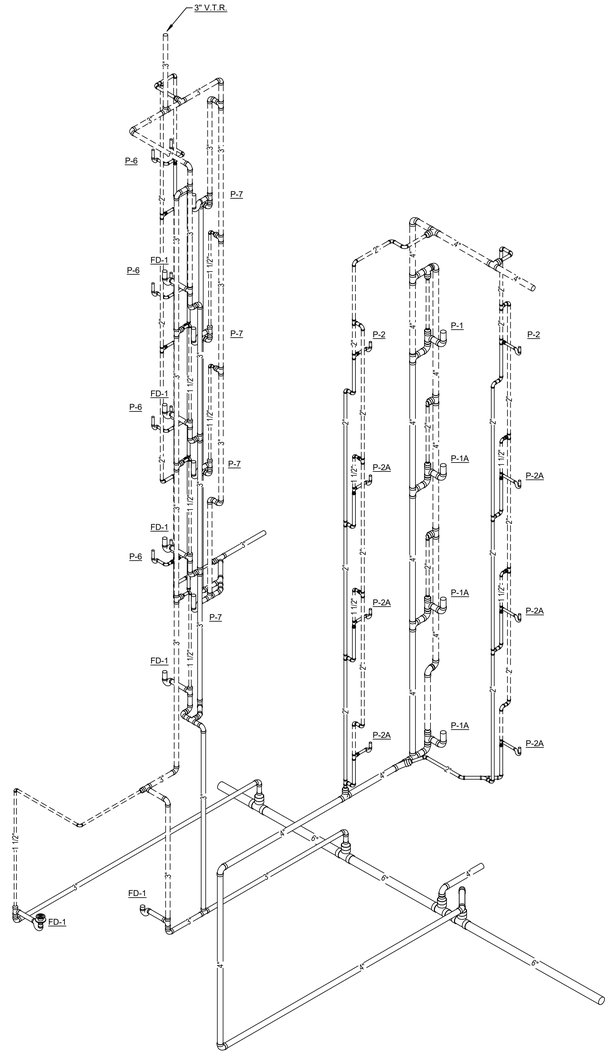
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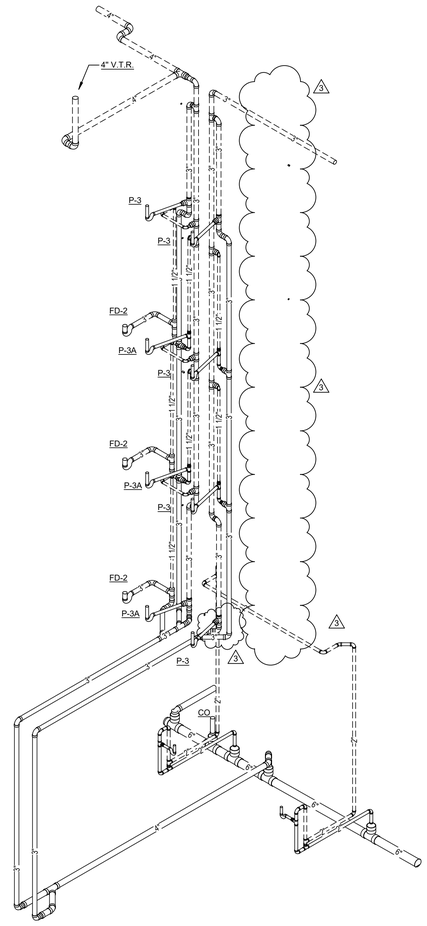
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2 SWV-17



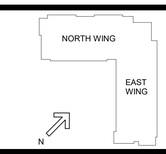
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4 SWV-19

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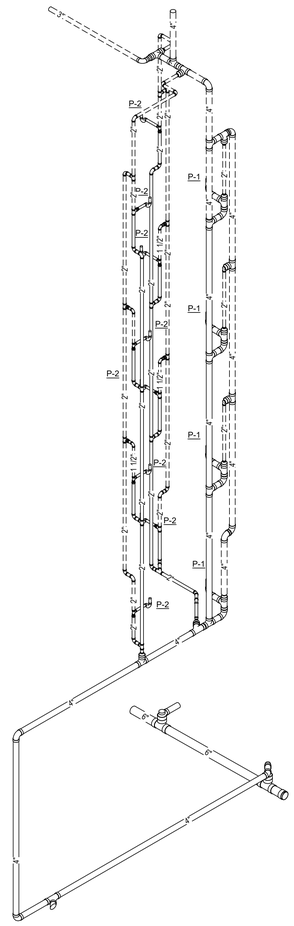
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1 SWV-20

2 SWV-21

3 SWV-22

4 SWV-23

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NORTH WING

EAST WING

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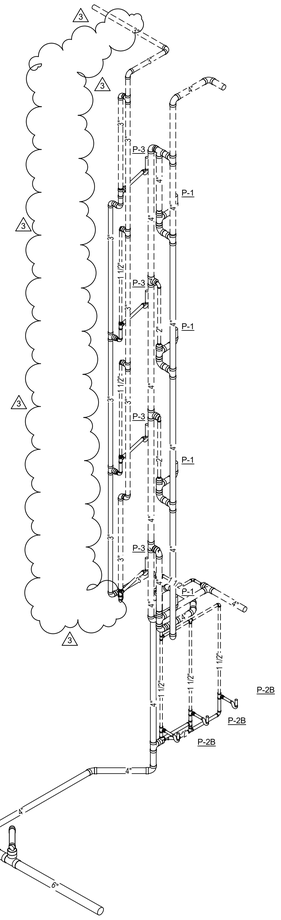
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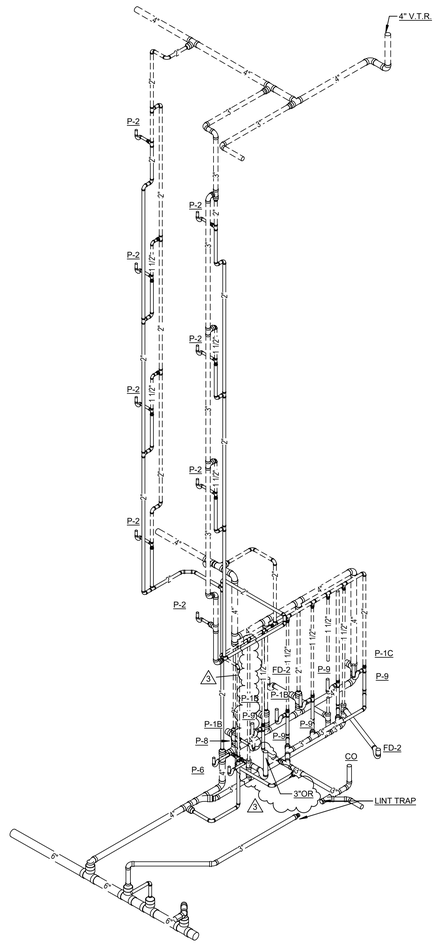
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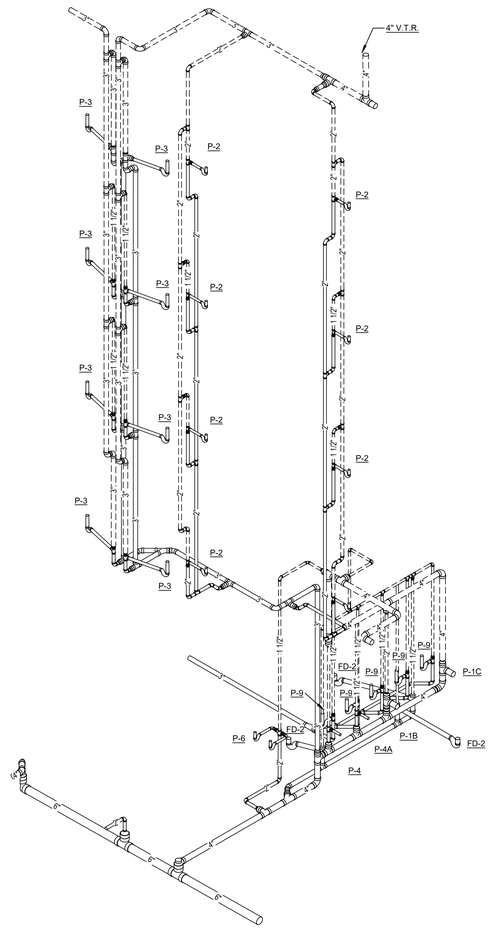
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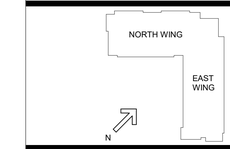
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3 **SWV-26**

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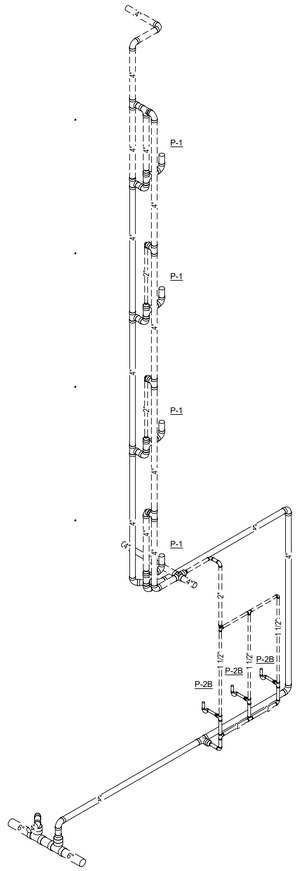
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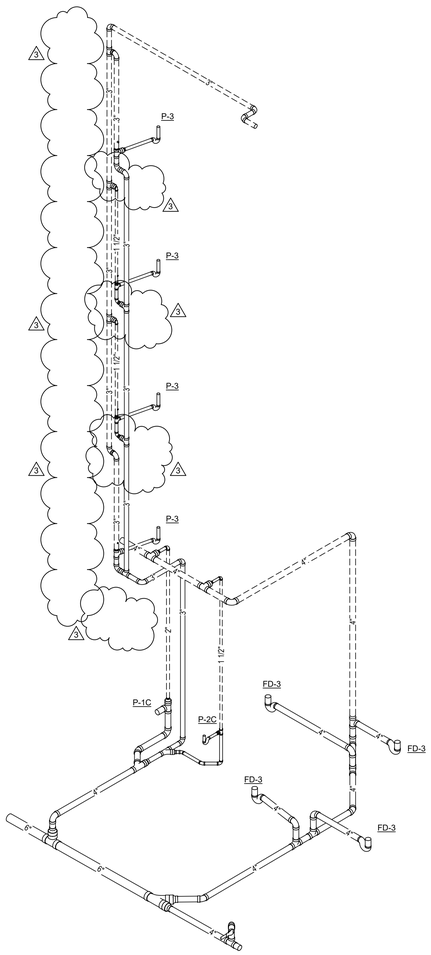
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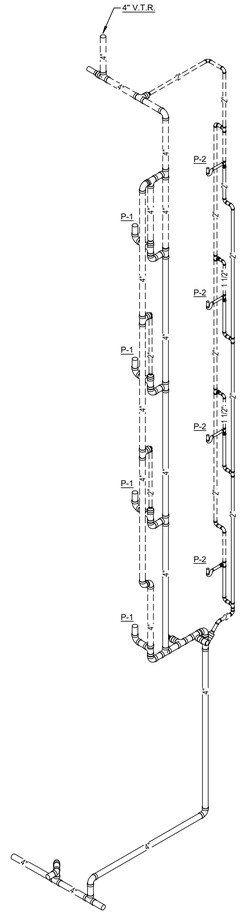
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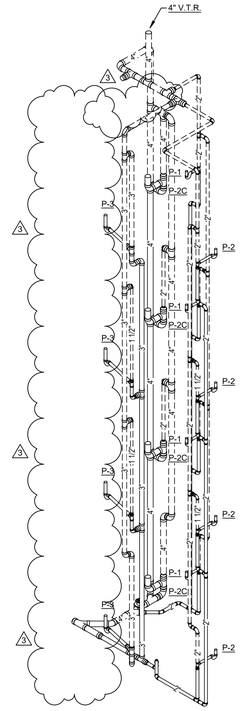
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3 SWV-28



2 SWV-29



4 SWV-29 (CONT)

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NORTH WING
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N

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GENERAL NOTES - MECHANICAL

A. 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.
B. 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 OR 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.
C. ALL NEW WORK SHALL BE HUNG FROM STRUCTURE, NOT FROM THE WORK OF OTHER TRADES, WHETHER EXISTING OR NEW.
D. COORDINATE ALL WORK WITH PROJECT PHASING REQUIREMENTS.
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.)
F. IF AREA OF CONSTRUCTION HAS A POST TENSION FLOOR SLAB, CONTRACTOR SHALL USE ULTRA SOUND OR OTHER APPROVED METHODS TO SURVEY THE FLOOR STRUCTURE BEFORE MAKING ANY AND ALL FLOOR PENETRATIONS.
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.
H. ALL DUCTWORK, PIPING, CONDUITS, ETC. IN ROOMS WITH CEILINGS SHALL BE ABOVE CEILING EXCEPT AS NOTED.
I. INSTALL AIR VENTS AT HIGH POINTS IN PIPING AND DRAINS IN LOW POINTS. USE CARE TO AVOID FREEZING OF EXTERIOR VENTS.
J. LOCATIONS OF PIPING, DUCTS AND EQUIPMENT ARE APPROXIMATE AND SUBJECT TO MINOR ADJUSTMENTS IN THE FIELD. DO NOT SCALE THE DRAWINGS.
K. ALL OFFSETS IN DUCTS AND PIPING ARE NOT NECESSARILY SHOWN. PROVIDE ADDITIONAL OFFSETS WHERE NECESSARY.
L. COORDINATE ALL HVAC WORK WITH ELECTRICAL, PLUMBING AND OTHER TRADES TO AVOID INTERFERENCE WITH PIPING, DUCTS, CONDUIT AND OTHER EQUIPMENT.
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.
N. SEAL AIRTIGHT AROUND ALL DUCTS AND PIPING PENETRATIONS THROUGH WALLS, FLOORS AND ROOF. PROVIDE FIRE STOPPING IN FIRE PARTITION.
O. SEAL ALL NEW DUCTWORK JOINTS WITH UNITED MCGILL, IRONGRIP 601 OR EQUAL WATER BASED SEALANT.
P. ALL MOTOR DRIVEN EQUIPMENT SHALL BE INSTALLED WITH FLEXIBLE CONNECTIONS TO DUCTWORK, PIPING, ETC., UNLESS OTHERWISE NOTED.
Q. WHERE MOUNTING HEIGHTS ARE NOT INDICATED 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.
R. DOUBLE WIDTH TURNING VANES SHALL BE INSTALLED IN ALL SUPPLY, OUTSIDE RETURN, AND EXHAUST DUCTWORK ELBOWS. TURNING VANES NOT REQUIRED FOR KITCHEN EXHAUSTS.
S. ANY VIBRATING, OSCILLATING OR OTHER NOISE OR MOTION PRODUCING EQUIPMENT SHALL BE ISOLATED FROM SURROUNDING SYSTEMS IN AN APPROVED MANNER. NOISY OR STRUCTURALLY DAMAGING 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.
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.
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 ADJUSTMENT. 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.
V. ALL MANHOLES, VAULTS AND SIMILAR UNDERGROUND STRUCTURES SHALL HAVE THE TOP ELEVATION SET FLUSH WITH FINISHED GRADE UNLESS SPECIFICALLY NOTED OTHERWISE.
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 SPECIFICATIONS. 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 OF ALL SIDES OF THE FOOTER. ADDITIONALLY, GREASE TRAPS, MANHOLES, VAULTS AND OTHER UNDERGROUND STRUCTURES SHALL BE HELD AWAY FROM BUILDING WALLS FAR ENOUGH TO BE OUTSIDE OF THE ZONE OF INFLUENCE.
X. WORK IN OCCUPIED AREAS SHALL BE IN ACCORDANCE WITH THE OWNER'S SAFETY POLICY REQUIREMENTS.
Y. DRYER EXHAUST DUCTWORK DOES NOT GET TURNING VANES.

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)
EWT	ENTERING WATER TEMPERATURE
EXP	EXPANSION
EXT	EXTERIOR
FA	FREE AREA
FD	FIRE DAMPER
FL	FLOOR
FLA	FULL LOAD AMPS
FPC	FIRE PROTECTION CONTRACTOR

ABBREVIATIONS (CONTINUED)

FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FT	FEET **OR** 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
MOCP	MAXIMUM OVERCURRENT PROTECTION [AMPS]
MTG	MOUNTING
N/A	NOT APPLICABLE
NC	NOISE CRITERIA **OR** NORMALLY CLOSED
NEBB	NATIONAL ENVIRONMENTAL BALANCING BUREAU
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN **OR** NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DI (-AMETER, -MENSION)
CFCI	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 **OR** FOOT
SQ IN	SQUARE INCH **OR** 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 FEQUENCY 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
℄	CENTERLINE

GENERAL SYMBOLS

#	TAGGED NOTE DESIGNATOR
A	REVISION TRIANGLE
ROOM NAME (SEE A)	ROOM TAG
TAG XXX-# INSTANCE XXXX	EQUIPMENT TAG

HVAC LEGEND

	SUPPLY AIR DIFFUSER
	RETURN AIR DIFFUSER
	EXHAUST AIR DIFFUSER
	TRANSFER AIR DIFFUSER W/ SOUND ATTENUATING BOOT
	SIDEWALL DIFFUSER/GRILLE
	SIDEWALL DIFFUSER/GRILLE
TAG XXX AIRFLOW #,###	AIR DEVICE TAG (REGISTER, GRILLE, DIFFUSER,LOUVER)
##x##	RECTANGULAR DUCT
#ø	ROUND/SPIRAL DUCT
##/##Φ	FLAT OVAL DUCT
SA	SUPPLY AIR DUCT
RA	RETURN AIR DUCT
EA	EXHAUST AIR DUCT
OA	OUTSIDE AIR DUCT
TA	TRANSFER AIR DUCT
CAE	COMBUSTION AIR EXHAUST DUCT
CAI	COMBUSTION AIR INTAKE DUCT
SA	SA AIR DUCT TURNING UP
SA	SA AIR DUCT TURNING DOWN
RA	RA AIR DUCT TURNING UP
RA	RA AIR DUCT TURNING DOWN
EA	EA AIR DUCT TURNING UP
EA	EA AIR DUCT TURNING DOWN
	MITERED ELBOW WITH TURNING VANES
	FLEXIBLE DUCT
T	THERMOSTAT
TS	TEMPERATURE SENSOR
HS	HUMIDITY SENSOR
CS	CARBON DIOXIDE SENSOR
TCS	TEMPERATURE & CARBON DIOXIDE SENSOR
DPS	PIPE DIFFERENTIAL PRESSURE SENSOR
VERT. HORIZ.	MANUAL BALANCING/VOLUME DAMPER
VERT. HORIZ.	MOTORIZED DAMPER
VERT. HORIZ.	FIRE DAMPER
VERT. HORIZ.	SMOKE DAMPER
VERT. HORIZ.	COMBINATION FIRE & SMOKE DAMPER
AD	DUCT ACCESS DOOR
DD	DUCT SMOKE DETECTOR
PRD	PRESSURE RELIEF DOOR

MECHANICAL PIPING LEGEND

	PIPE ELBOW TURNING UP
	PIPE ELBOW TURNING DOWN
	PIPE TEE; CONNECTION ON TOP
	PIPE TEE; CONNECTION ON BOTTOM
	PIPE CAP
CAI/E	COMBUSTION AIR INTAKE/EXHAUST
CD	CONDENSATE DRAIN
GS/R	GEOTHERMAL WATER SUPPLY/RETURN
HPS/R	HEAT PUMP WATER SUPPLY/RETURN
	TWO-WAY CONTROL VALVE
	THREE-WAY CONTROL VALVE
	AUTOMATIC AIR VENT (AAV)
	MANUAL AIR VENT (MAV)
	MANUAL BALANCING VALVE (BV)
	BALL VALVE
	BUTTERFLY VALVE
	TRIPLE DUTY VALVE (TDV)
	STRAINER
	MANUAL ISOLATION VALVE
	GLOBE VALVE
	OS&Y (GATE) VALVE
	PRESSURE REDUCING VALVE (STEAM, GAS, WATER, ETC.)
	AUTO-FLOW CONTROL VALVE
	CHECK VALVE
	DOUBLE CHECK VALVE ASSEMBLY
	FLEXIBLE PIPE CONNECTION
	FLOW METER (VENTURI)
	PIPING UNION
	FLOW SWITCH
	PRESSURE SWTICH
	TAMPER SWITCH
	THERMOMETER
	PETE'S PLUG; TEMPERATURE/PRESSURE PORT

NOTE: NOT ALL SYMBOLS AND ABBREVIATIONS MAY BE USED ON THIS PROJECT

PRINT DATE: 4/20/2020 10:36:57 AM
FILE INFO: BIM 360://NKU - New Residence Hall/CNSH18_M-R19.rvt

STATE OF KENTUCKY APPROVAL

#	DATE	CHANGE DESCRIPTION

NKU NORTHERN KENTUCKY UNIVERSITY

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

MOODY•NOLAN
434 MADISON AVENUE
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CMTA
10411 Meeting Street, Prospect, KY 40059
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DRAWING TITLE:

MECHANICAL LEGEND

COMMONWEALTH OF KENTUCKY 30804 LICENSED PROFESSIONAL ENGINEER

JANUARY 30, 2020

DRAWN BY: **LMA** CHECKED BY: **CMG**

#18237

M001

BID & PERMIT SUBMITTAL

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MECHANICAL NOTES:

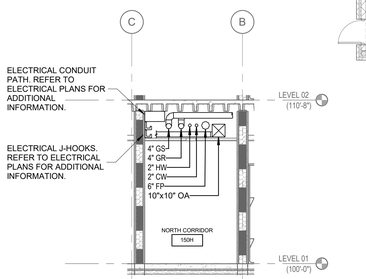
1. REFER TO ENLARGED SUITE PLANS ON SHEET M130 FOR DUCTWORK SIZING, AIRFLOWS, AND GRILLE TYPES.
2. CENTER SUPPLY GRILLE ABOVE DOOR AT EACH UNIT BEDROOM.
3. PROVIDE A HIGH EFFICIENCY TAKE-OFF AT EACH GRILLE, REGISTER, AND DIFFUSER BRANCH RUN-OUT, TYP OF ALL. REFER TO DETAILS ON SHEET M140.
4. REFER TO 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 MAINTINED. COORDIANTE WITH OTHER TRADES.
13. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL DAMPERS AND VALVES IN ACCESSIBBLE 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.

HEAT PUMP INSTANCE SCHEDULE - LEVEL 1

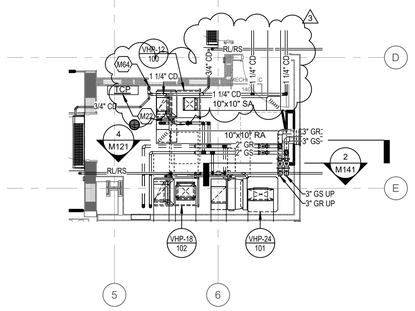
MARK	SUITE SERVED	SUPPLY AIR DUCT RUNOUT	RETURN AIR DUCT RUNOUT	OUTSIDE AIR DUCT RUNOUT	AIRFLOW OA (CFM)	GS/GR PIPE SIZE	CONDENSATE PIPE SIZE
VHP-12	100	10"X10"	10"X10"	N/A	0	1"	3/4"
VHP-24	101	20"X8"	12"X12"	6"X6"	100	1 1/4"	3/4"
VHP-18	102	16"X8"	12"X12"	6"X6"	100	1"	3/4"
VHP-24	105	12"X12"	12"X12"	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"X6"	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

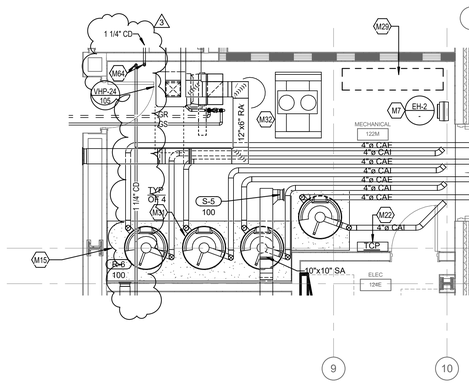
MARK	DUCT BRANCH SIZE
E-1	8"ø
E-2	8"ø
E-3	6X6
E-4	8"ø
R-1	8"ø
R-1A	8"ø
R-2	8"ø
R-3	10"ø
R-4	12"ø
R-5	14"ø
R-6	8X6
R-7	12X6
R-8	12X10
R-9	14X14
R-10	36X20
R-11	12"ø
R-12	10"ø
R-13	14"ø
S-1	6"ø
S-2	8"ø
S-2A	8"ø
S-3	6"ø
S-4	8"ø
S-5	8X6
S-6	12X6
S-7	18X8
S-8	16X6



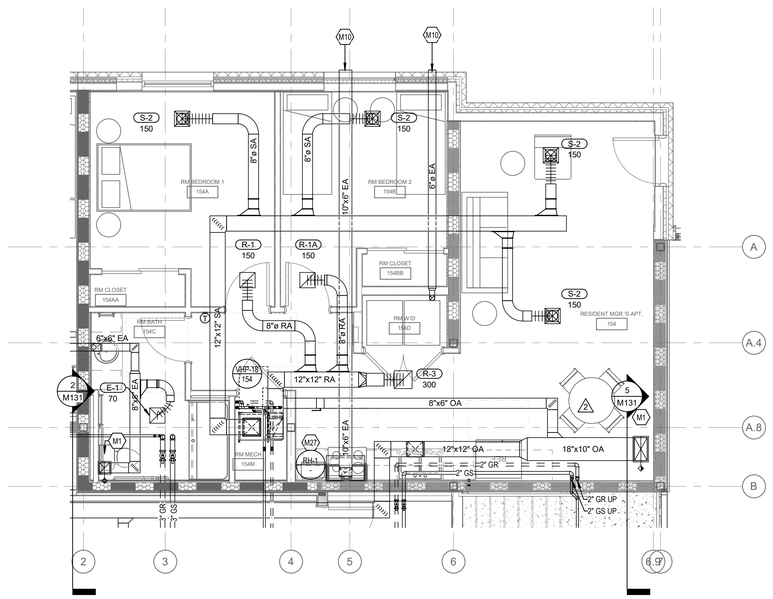
2 NORTH CORRIDOR 150H SECTION
1/4" = 1'-0"



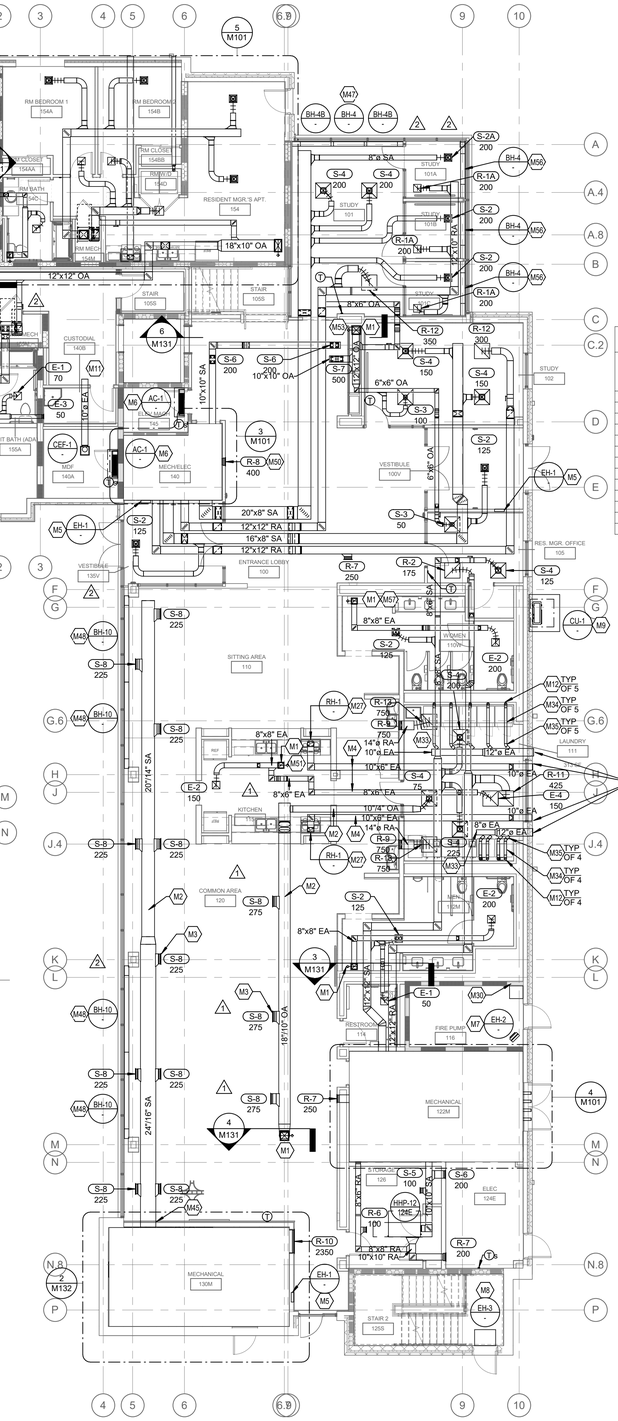
3 ENLARGED PLAN - MECH/ELEC 140
1/4" = 1'-0"



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



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

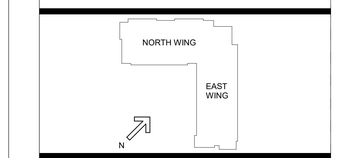


1 LEVEL 0/1 - AIR DISTRIBUTION PLAN
1/8" = 1'-0"

TAGGED NOTES

#	
M1	COMBINATION FIRE/SMOKE DAMPER LOCATED IN SLAB AT 2ND FLOOR. CONTRACTOR TO INSTALL SUCH THAT THE ACTUATOR IS LOCATED ON THE CORRDIOR 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/RANGE HOOD MANUFACTURER. NO CAP OR SCREEN PERMITTED TO BE ON DRYER WEATHER HOOD.
M11	DISCHARGE 10" DUCT ABOVE CEILING.
M12	PROVIDE VERTICAL UPFLOW CONNECTION WITH RECESSED BOX. A 90 DEGREE HORIZONAL 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 COLUMN.
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.
M64	SPILL HEAT PUMP CONDENSATE TO NEAREST FLOOR DRAIN. REFER TO PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.

STATE OF KENTUCKY APPROVAL



#	DATE	CHANGE DESCRIPTION
1	02/18/2020	ADDENDUM #2
2	04/21/2020	BULLETIN #1
3	6/05/2020	BULLETIN #2

NKU NORTHERN KENTUCKY UNIVERSITY

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

MOODY•NOLAN
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CMTA
10411 Meeting Street, Prospect, KY 40059
T:502 326.3085 F:502 326.2691 www.cmtaegrs.com

DRAWING TITLE:
LEVEL 0/1 - AIR DISTRIBUTION PLAN

JANUARY 30, 2020
DRAWN BY: LMA | CHECKED BY: CMG
#18237

STATE OF KENTUCKY · CARROLL MARIE GRIMMER · 30804 · LICENSED PROFESSIONAL ENGINEER

M101

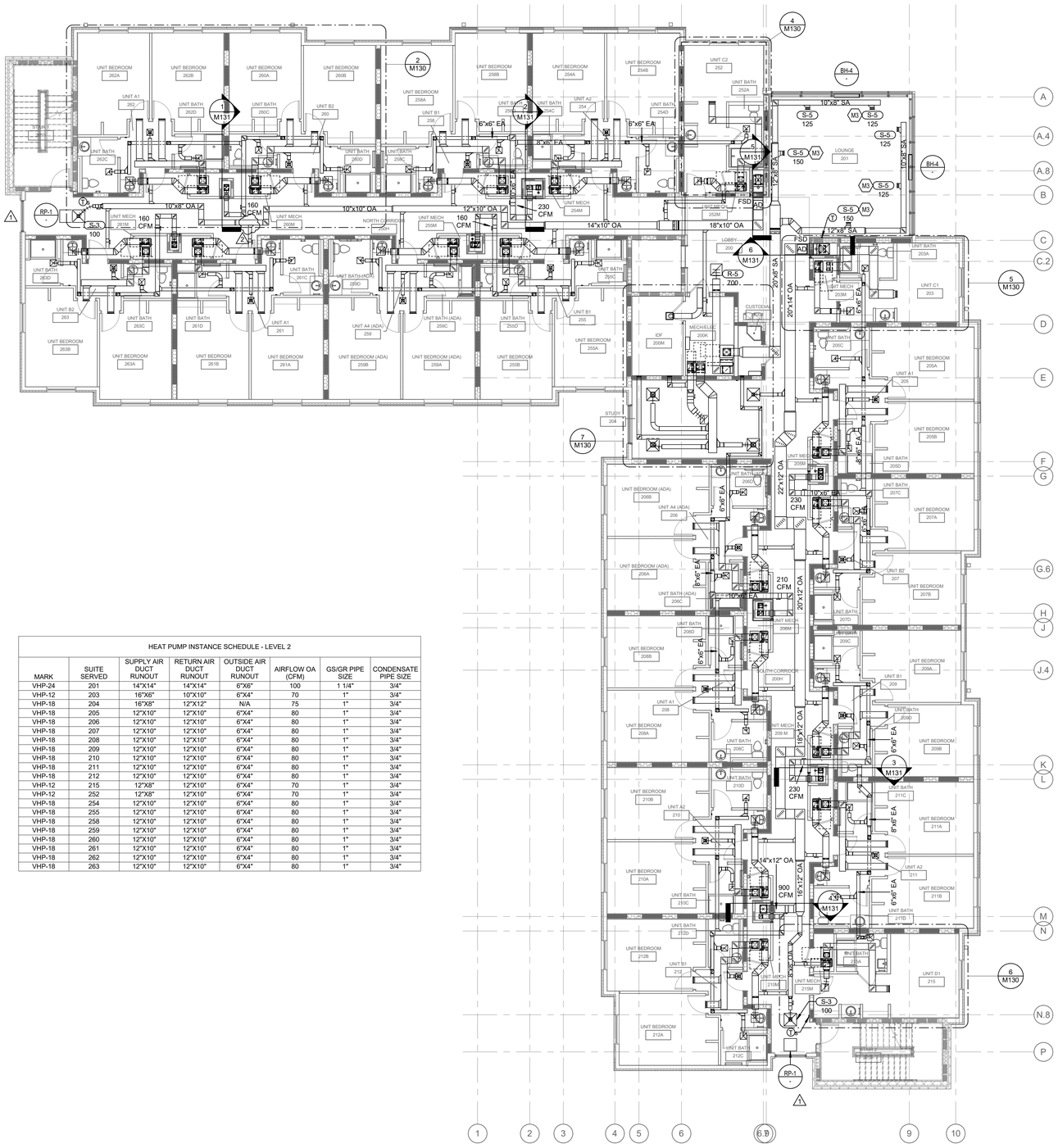
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PRINT DATE: 7/6/2020 12:06:14 PM
FILE INFO: BIM 360:\NKU - New Residence Hall\CNSH18_M-R19.rvt

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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 MAINTINED. COORDIANTE WITH OTHER TRADES.
13. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL DAMPERS AND VALVES IN ACCESSIBBLE 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.



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"

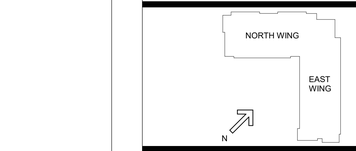
STATE OF KENTUCKY APPROVAL

TAGGED NOTES (##)

M3 : PROVIDE EQUAL SPACING FOR DIFFUSERS IN DUCT RUN.

G,R,D RUNOUT SCHEDULE

MARK	DUCT BRANCH SIZE
E-1	6"ø
E-2	8"ø
E-3	6X6
E-4	8"ø
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
1	02/18/2020	ADDENDUM #2
2	04/21/2020	BULLETIN #1

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 40059
T:502 326.3085 F:502 326.2691 www.cmtaeigrs.com

DRAWING TITLE:
LEVEL 2 - AIR DISTRIBUTION PLAN

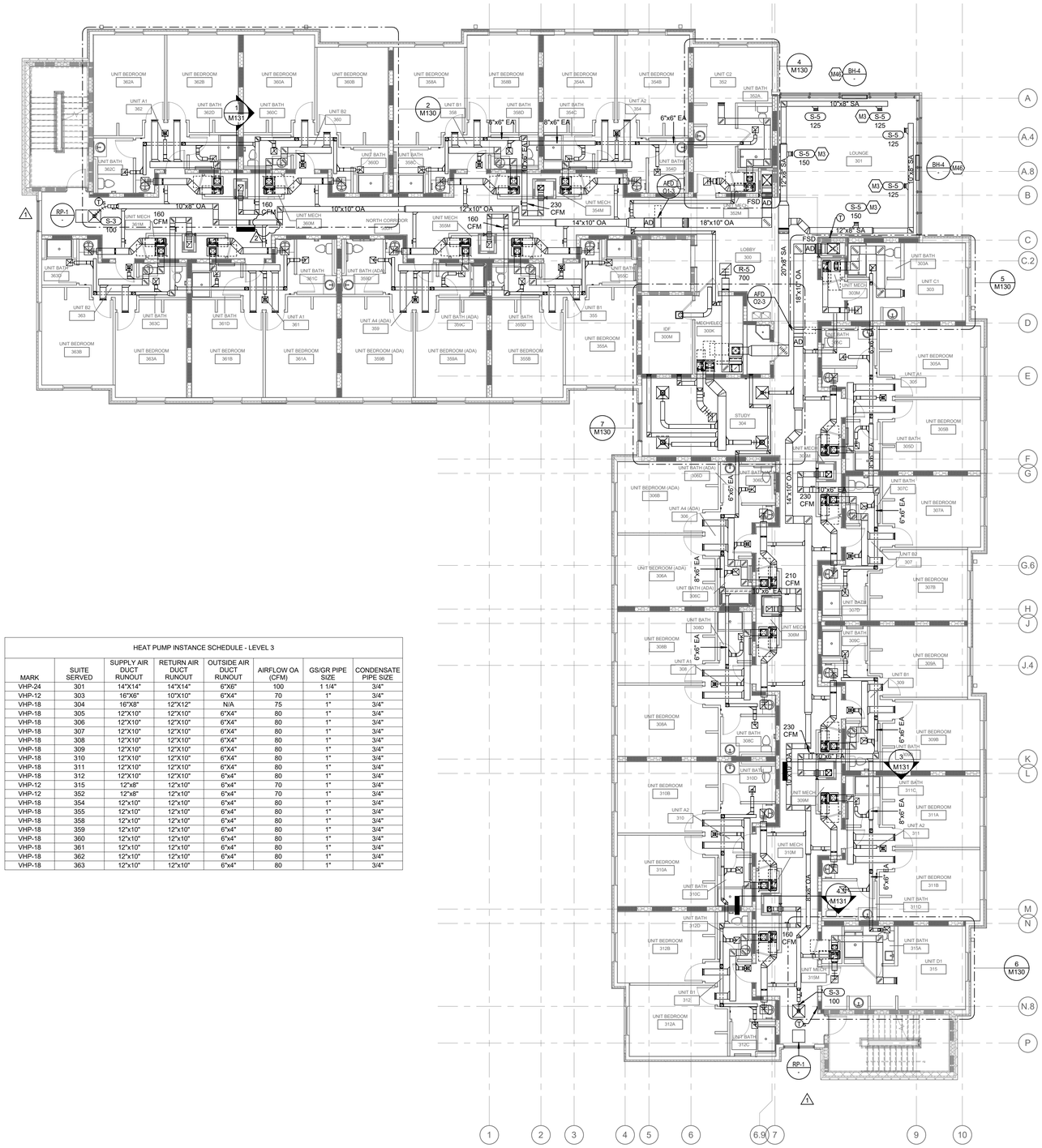
JANUARY 30, 2020
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#18237

M102

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FILE INFO: BIM 360://NKU - New Residence Hall/CNSH16_M-R19.rvt

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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 MAINTINED. COORDIANTE WITH OTHER TRADES.
13. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL DAMPERS AND VALVES IN ACCESSIBBLE 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.

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"

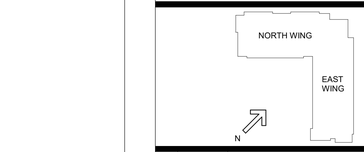
STATE OF KENTUCKY APPROVAL

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"ø
E-2	8"ø
E-3	6X6
E-4	8"ø
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
1	02/18/2020	ADDENDUM #2
2	04/21/2020	BULLETIN #1

NKU NORTHERN KENTUCKY UNIVERSITY

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

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

DRAWING TITLE:
LEVEL 3 - AIR DISTRIBUTION PLAN

STATE OF KENTUCKY CAROLYN M. BRINKLEY 30804 LICENSED PROFESSIONAL ENGINEER

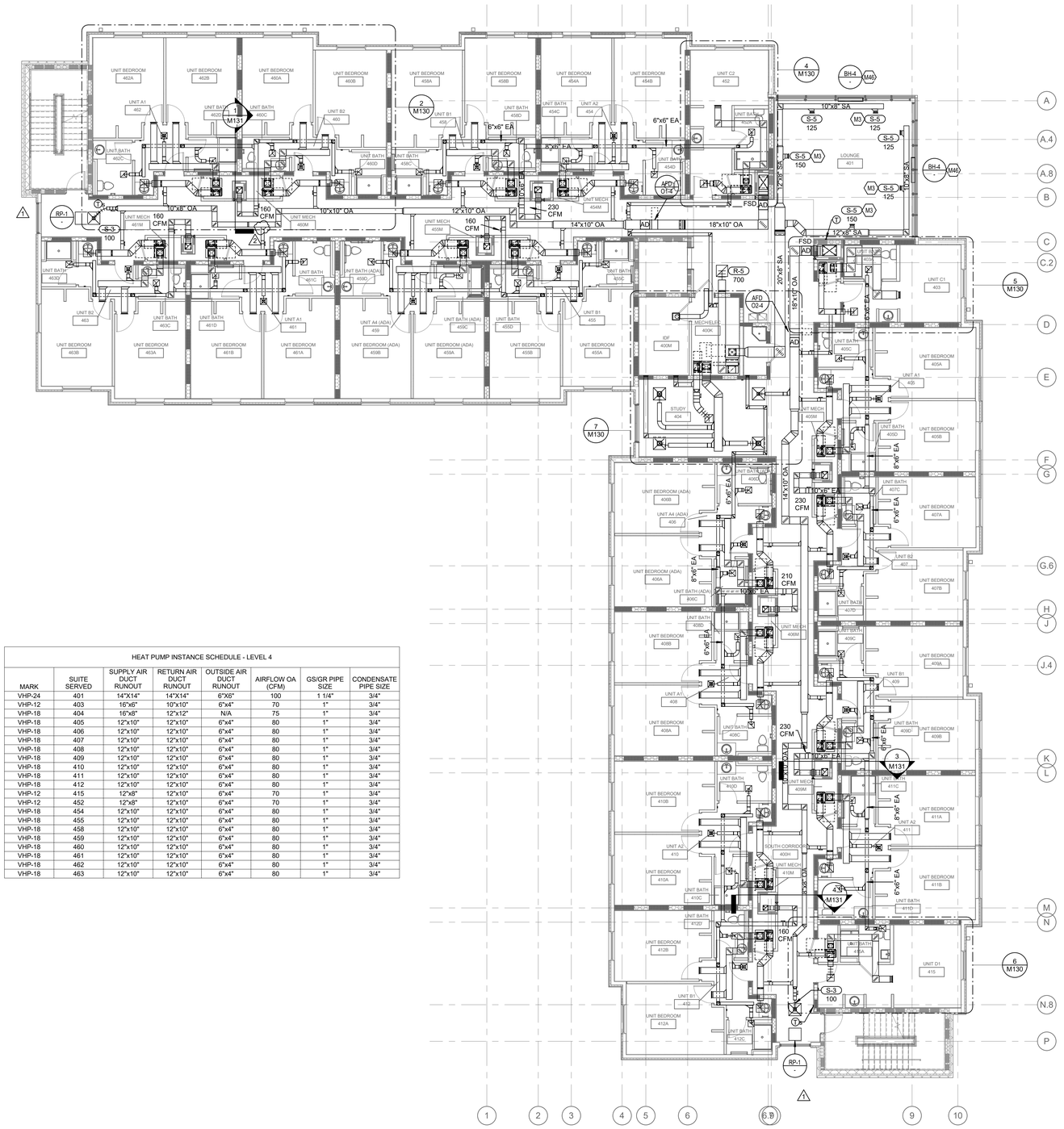
JANUARY 30, 2020
DRAWN BY: **LMA** CHECKED BY: **CMG**
#18237
M103
BID & PERMIT SUBMITTAL

PRINT DATE: 4/20/2020 10:37:13 AM
FILE INFO: BIM 360://NKU - New Residence Hall/ONSH18_M-R19.rvt

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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 REQUIRMENTS.
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 MAINTINED. COORDIANTE WITH OTHER TRADES.
13. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL DAMPERS AND VALVES IN ACCESSIBBLE 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.



HEAT PUMP INSTANCE SCHEDULE - LEVEL 4							
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	401	14"X14"	14"X14"	6"X6"	100	1 1/4"	3/4"
VHP-12	403	16"x6"	10"x10"	6"x4"	70	1"	3/4"
VHP-18	404	16"x8"	12"x12"	N/A	75	1"	3/4"
VHP-18	405	12"x10"	12"x10"	6"x4"	80	1"	3/4"
VHP-18	406	12"x10"	12"x10"	6"x4"	80	1"	3/4"
VHP-18	407	12"x10"	12"x10"	6"x4"	80	1"	3/4"
VHP-18	408	12"x10"	12"x10"	6"x4"	80	1"	3/4"
VHP-18	409	12"x10"	12"x10"	6"x4"	80	1"	3/4"
VHP-18	410	12"x10"	12"x10"	6"x4"	80	1"	3/4"
VHP-18	411	12"x10"	12"x10"	6"x4"	80	1"	3/4"
VHP-18	412	12"x10"	12"x10"	6"x4"	80	1"	3/4"
VHP-12	415	12"x8"	12"x10"	6"x4"	70	1"	3/4"
VHP-12	452	12"x8"	12"x10"	6"x4"	70	1"	3/4"
VHP-18	454	12"x10"	12"x10"	6"x4"	80	1"	3/4"
VHP-18	455	12"x10"	12"x10"	6"x4"	80	1"	3/4"
VHP-18	458	12"x10"	12"x10"	6"x4"	80	1"	3/4"
VHP-18	459	12"x10"	12"x10"	6"x4"	80	1"	3/4"
VHP-18	460	12"x10"	12"x10"	6"x4"	80	1"	3/4"
VHP-18	461	12"x10"	12"x10"	6"x4"	80	1"	3/4"
VHP-18	462	12"x10"	12"x10"	6"x4"	80	1"	3/4"
VHP-18	463	12"x10"	12"x10"	6"x4"	80	1"	3/4"

1 LEVEL 4 - AIR DISTRIBUTION PLAN
1/8" = 1'-0"

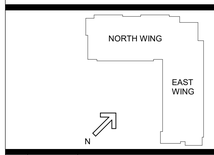
STATE OF KENTUCKY APPROVAL

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"ø
E-2	8"ø
E-3	6X6
E-4	8"ø
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
1	02/18/2020	ADDENDUM #2
2	04/21/2020	BULLETIN #1

NKU - New Residence Hall
KENTON DRIVE & CARROLL DRIVE
HIGHLAND HEIGHTS, KY 41099
FOR
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PHONE: (859) 957-1277
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CMTA
10411 Meeting Street, Prospect, KY 40059
T:502 326.3085 F:502 326.2691 www.cmtaegrs.com

DRAWING TITLE:
LEVEL 4 - AIR DISTRIBUTION PLAN

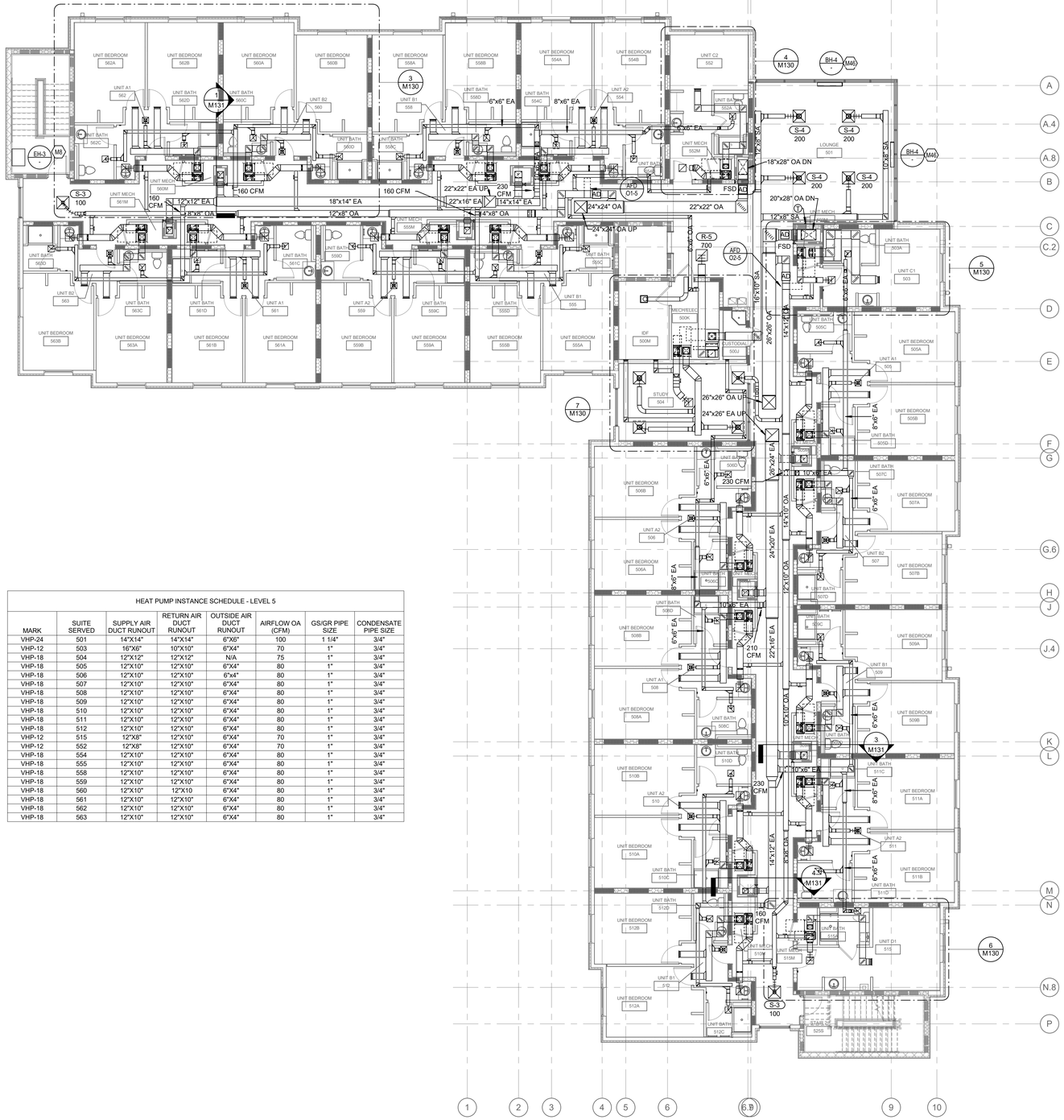
JANUARY 30, 2020
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#18237

M104

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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	CONDENSATE PIPE SIZE
VHP-24	501	14"X14"	14"X14"	6"X6"	100	1 1/4"	3/4"
VHP-12	503	16"X6"	10"X10"	6"X4"	70	1"	3/4"
VHP-18	504	12"X12"	12"X12"	N/A	75	1"	3/4"
VHP-18	505	12"X10"	12"X10"	6"X4"	80	1"	3/4"
VHP-18	506	12"X10"	12"X10"	6"x4"	80	1"	3/4"
VHP-18	507	12"X10"	12"X10"	6"X4"	80	1"	3/4"
VHP-18	508	12"X10"	12"X10"	6"X4"	80	1"	3/4"
VHP-18	509	12"X10"	12"X10"	6"X4"	80	1"	3/4"
VHP-18	510	12"X10"	12"X10"	6"X4"	80	1"	3/4"
VHP-18	511	12"X10"	12"X10"	6"X4"	80	1"	3/4"
VHP-18	512	12"X10"	12"X10"	6"X4"	80	1"	3/4"
VHP-12	515	12"X8"	12"X10"	6"X4"	70	1"	3/4"
VHP-12	552	12"X8"	12"X10"	6"X4"	70	1"	3/4"
VHP-18	554	12"X10"	12"X10"	6"X4"	80	1"	3/4"
VHP-18	555	12"X10"	12"X10"	6"X4"	80	1"	3/4"
VHP-18	558	12"X10"	12"X10"	6"X4"	80	1"	3/4"
VHP-18	559	12"X10"	12"X10"	6"X4"	80	1"	3/4"
VHP-18	560	12"X10"	12"X10	6"X4"	80	1"	3/4"
VHP-18	561	12"X10"	12"X10"	6"X4"	80	1"	3/4"
VHP-18	562	12"X10"	12"X10"	6"X4"	80	1"	3/4"
VHP-18	563	12"X10"	12"X10"	6"X4"	80	1"	3/4"

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 REQUIRMENTS.
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 MAINTINED. COORDIANTE WITH OTHER TRADES.
13. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL DAMPERS AND VALVES IN ACCESSIBBLE 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.

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	8X8
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

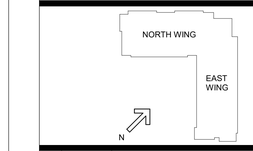
1 LEVEL 5 - AIR DISTRIBUTION PLAN

1/8" = 1'-0"

STATE OF KENTUCKY APPROVAL

TAGGED NOTES

M8	MOUNT EH-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.



#	DATE	CHANGE DESCRIPTION

NKU - New Residence Hall
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DRAWING TITLE:
LEVEL 5 - AIR DISTRIBUTION PLAN

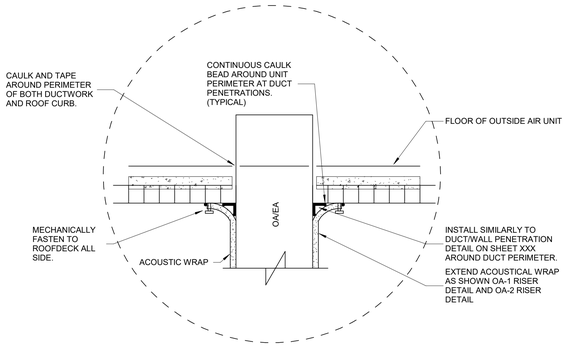
JANUARY 30, 2020
DRAWN BY: LMA | CHECKED BY: CMG
#18237

M105

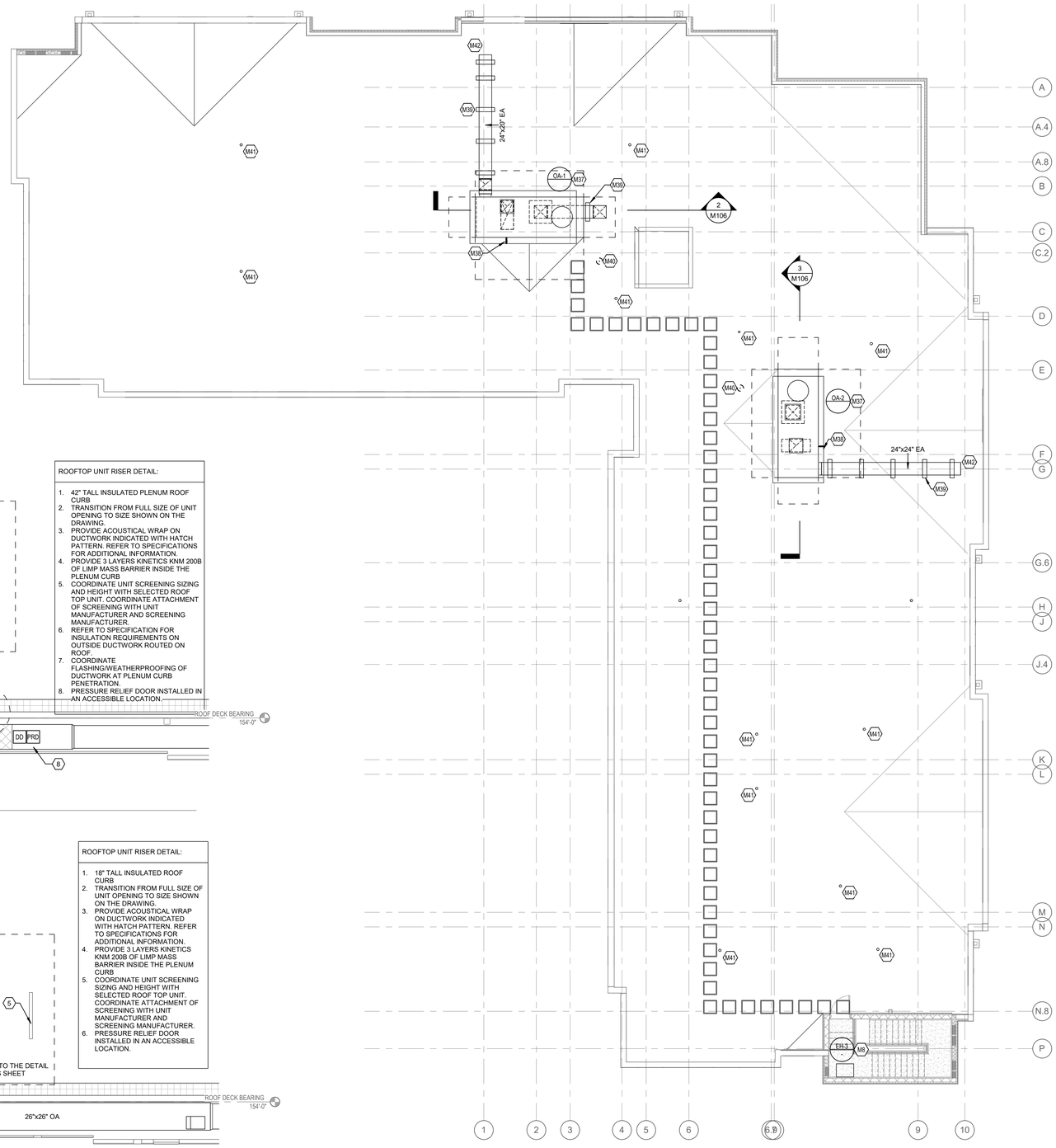
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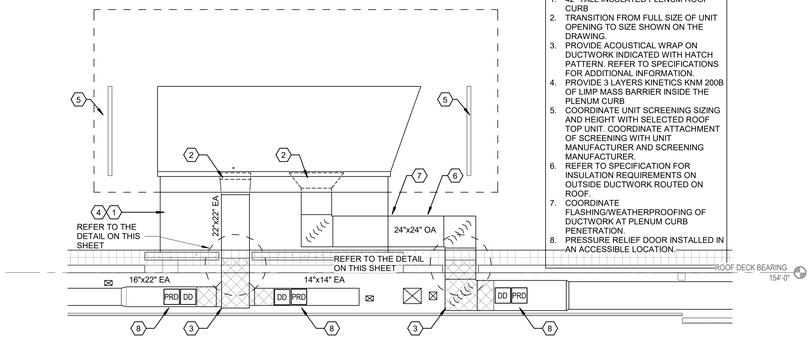
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4 OAU ENLARGED DUCT PENETRATION DETAIL
NOT TO SCALE

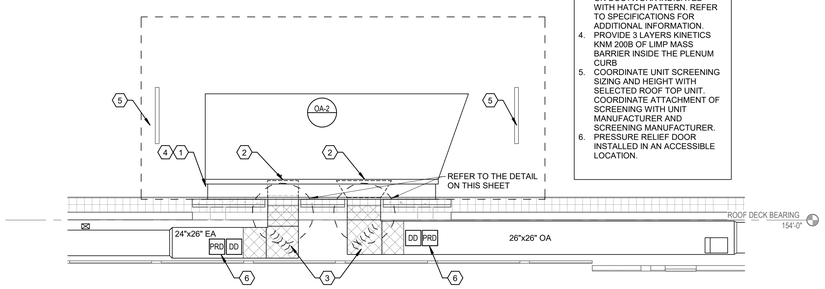




ROOFTOP UNIT RISER DETAIL:

1. 42" TALL INSULATED PLENUM ROOF CURB
2. TRANSITION FROM FULL SIZE OF UNIT OPENING TO SIZE SHOWN ON THE DRAWING.
3. PROVIDE ACOUSTICAL WRAP ON DUCTWORK INDICATED WITH HATCH PATTERN. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
4. PROVIDE 3 LAYERS KINETICS KNM 200B OF LIMP MASS BARRIER INSIDE THE PLENUM CURB
5. COORDINATE UNIT SCREENING SIZING AND HEIGHT WITH SELECTED ROOF TOP UNIT. COORDINATE ATTACHMENT OF SCREENING WITH UNIT MANUFACTURER AND SCREENING MANUFACTURER.
6. REFER TO SPECIFICATION FOR INSULATION REQUIREMENTS ON OUTSIDE DUCTWORK ROUTED ON ROOF.
7. COORDINATE FLASHING/WEATHERPROOFING OF DUCTWORK AT PLENUM CURB PENETRATION.
8. PRESSURE RELIEF DOOR INSTALLED IN AN ACCESSIBLE LOCATION.

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



ROOFTOP UNIT RISER DETAIL:

1. 18" TALL INSULATED ROOF CURB
2. TRANSITION FROM FULL SIZE OF UNIT OPENING TO SIZE SHOWN ON THE DRAWING.
3. PROVIDE ACOUSTICAL WRAP ON DUCTWORK INDICATED WITH HATCH PATTERN. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
4. PROVIDE 3 LAYERS KINETICS KNM 200B OF LIMP MASS BARRIER INSIDE THE PLENUM CURB
5. COORDINATE UNIT SCREENING SIZING AND HEIGHT WITH SELECTED ROOF TOP UNIT. COORDINATE ATTACHMENT OF SCREENING WITH UNIT MANUFACTURER AND SCREENING MANUFACTURER.
6. PRESSURE RELIEF DOOR INSTALLED IN AN ACCESSIBLE LOCATION.

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

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

STATE OF KENTUCKY APPROVAL

TAGGED NOTES

M8	MOUNT EH-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 FLOOR DRAIN IN UNIT MECH ROOM 555M AND 509M RESPECTIVELY. PROVIDE CONENSATE CLEANOUT AT TRAP PER MANUFACTURER'S RECOMMENDATIONS.
M39	PROVIDE DUCT SUPPORTS 5'-0" ON CENTER. DUCT SUPPORTS SHALL BE COOPER, B-LINE, 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	TERMINATE UNIT EXHAUST AT LEAST 25' FROM ANY UNIT OUTSIDE AIR INTAKE. PROVIDE DUCT WITH EPOXY WEATHER COATING AND 1/2" MESH SCREEN. FINAL DUCT SUPPORT SHALL BE THYCURB TEMS-3 RAIL WITH DUCTWORK STRAPPED TO RAIL. COORDINATE RAIL FLASHING WITH ROOFING / GENERAL CONTRACTOR.

#	DATE	CHANGE DESCRIPTION

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

MOODY•NOLAN
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CMTA
10411 Meeting Street, Prospect, KY 40059
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DRAWING TITLE:

ROOF PLAN - MECHANICAL

JANUARY 30, 2020
DRAWN BY: LMA | CHECKED BY: CMG
#18237

M106

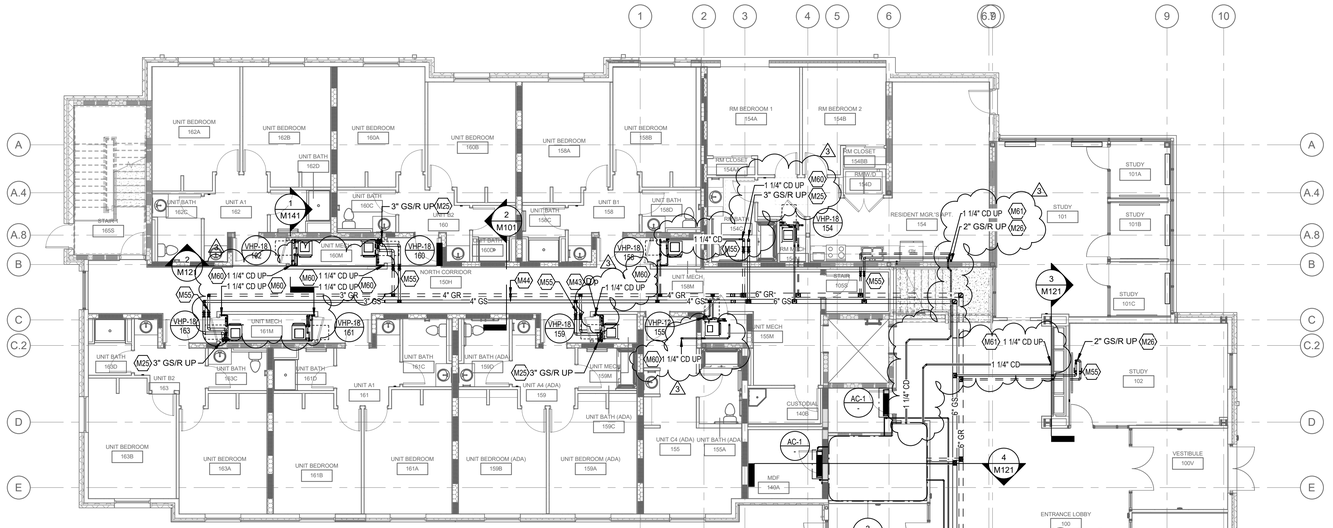
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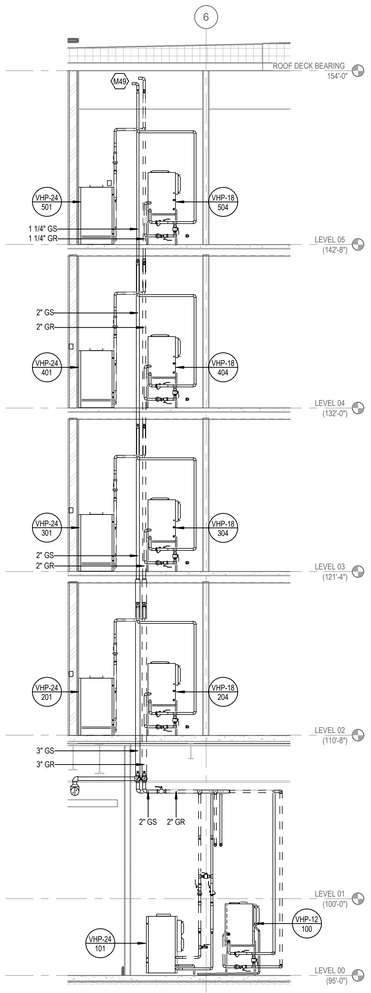
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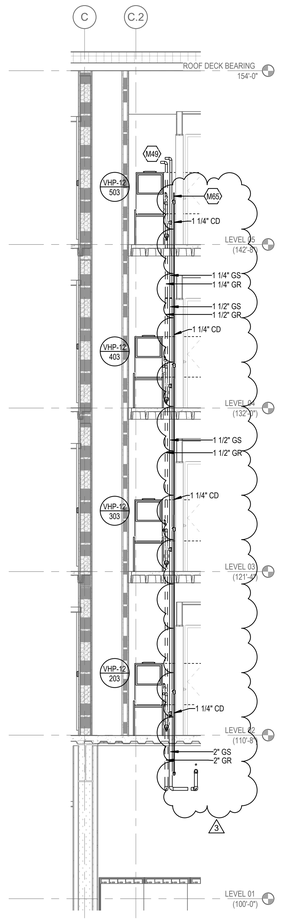
HYDRONIC PIPE RUNOUT SCHEDULE

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"

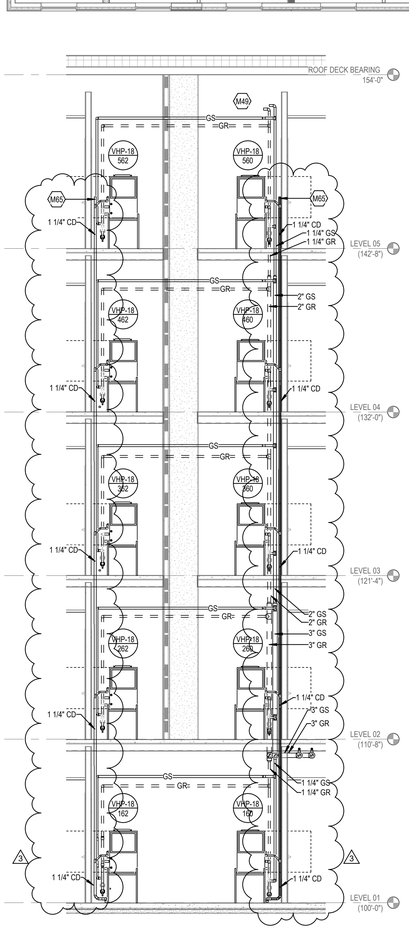




4 DUAL HP CLOSET PIPE RISER #2
1/4" = 1'-0"



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"

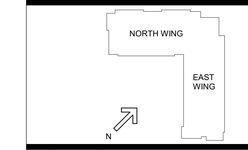
STATE OF KENTUCKY APPROVAL

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 REQUIRMENTS.
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 MAINTINED. COORDIANTE WITH OTHER TRADES.
13. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL DAMPERS AND VALVES IN ACCESSIBBLE 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.

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/RL 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.
M60	1-1/4" HEAT PUMP CONDENSATE RISER. ROUTE AND SPILL CONDENSATE RISER TO NEAREST FLOOR DRAIN IN HEAT PUMP CLOSET ON THE FIRST LEVEL. PROVIDE FULL SIZE CLEANOUT AT THE TOP OF THE RISER.
M61	1-1/4" HEAT PUMP CONDENSATE RISER. ROUTE AND SPILL CONDENSATE RISER TO NEAREST FLOOR DRAIN IN MECHANICAL ROOM ON THE GROUND LEVEL. PROVIDE FULL SIZE CLEANOUT AT THE TOP OF THE RISER.
M62	1-1/4" HEAT PUMP CONDENSATE RISER. ROUTE AND SPILL CONDENSATE RISER TO OPEN RECEPTACLE ON THE GROUND LEVEL. PROVIDE FULL SIZE CLEANOUT AT THE TOP OF THE RISER. REFER TO PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
M63	SPILL HEAT PUMP CONDENSATE TO OPEN RECEPTACLE. REFER TO PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
M65	PROVIDE A FULL SIZED CLEANOUT AT THE TOP OF CONDENSATE RISER. THE ENTIRE RISER SHALL BE FULL SIZE AT 1-1/4". TYPICAL OF ALL.



#	DATE	CHANGE DESCRIPTION
3	6/05/2020	BULLETIN #2

NKU NORTHERN KENTUCKY UNIVERSITY

NKU - New Residence Hall
KENTON DRIVE & CARROLL DRIVE
HIGHLAND HEIGHTS, KY 41099
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CMTA
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DRAWING TITLE:

LEVEL 0/1 - HYDRONICS PLAN

STATE OF KENTUCKY — CAROLYN M. GRIMAL — 30804 — LICENSED PROFESSIONAL ENGINEER

JANUARY 30, 2020

DRAWN BY: **LMA** | CHECKED BY: **CMG**

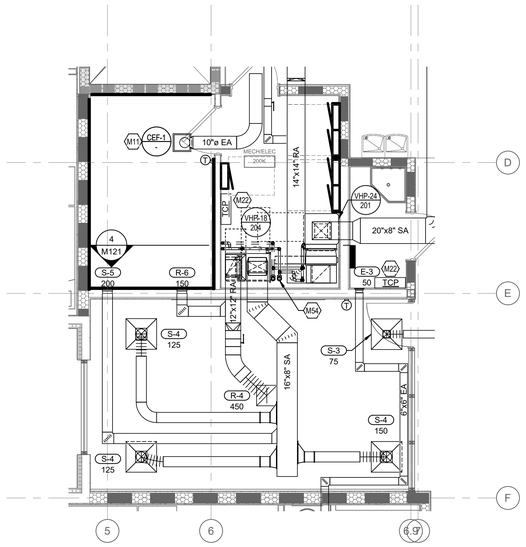
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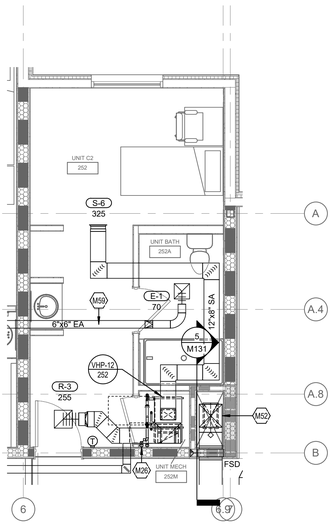
M121

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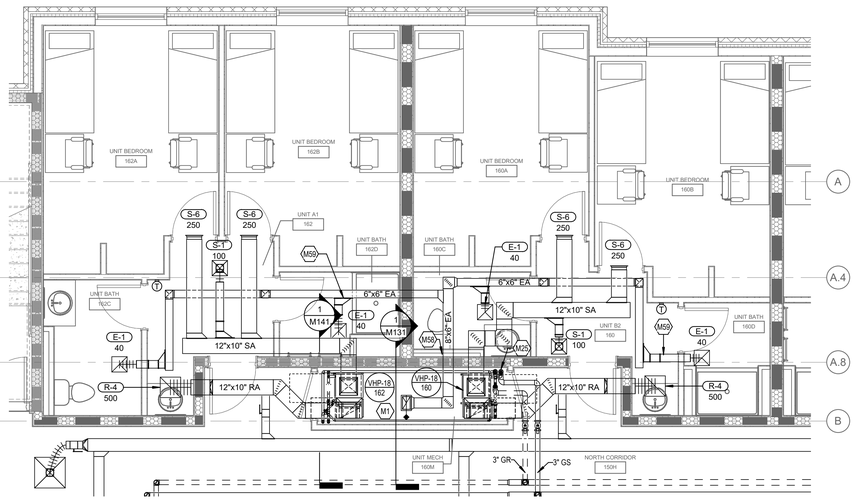
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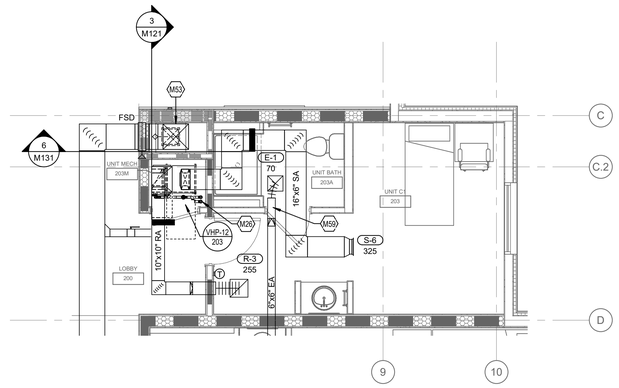


4 ENLARGED MECHANICAL PLAN - 2/3/4/5 TYPICAL UNIT C2
1/4" = 1'-0"

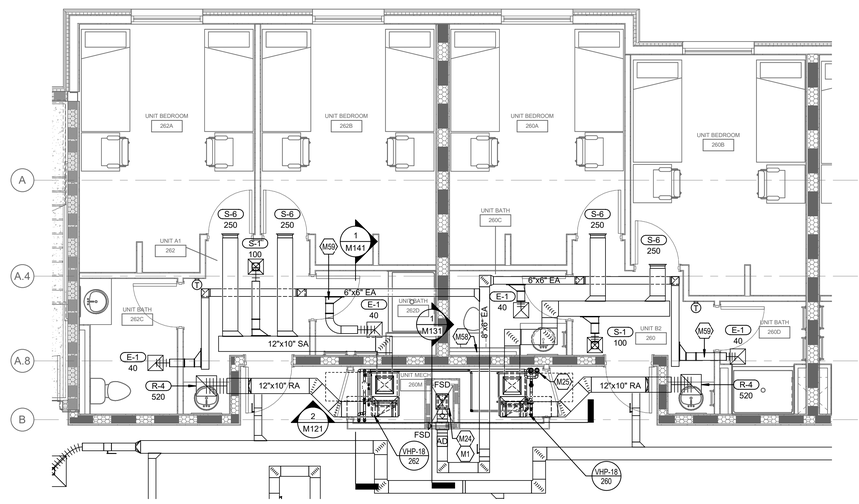


1 ENLARGED MECHANICAL PLAN - LEVEL 1 TYPICAL SUITE UNIT A/B
1/4" = 1'-0"

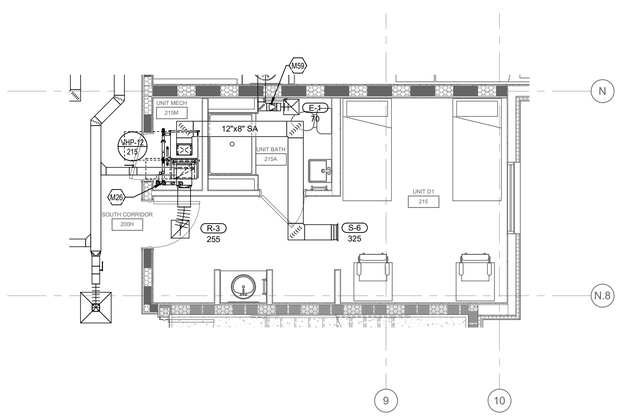
7 ENLARGED MECHANICAL PLAN - 2/3/4/5 TYPICAL MECH/ STUDY/ IT ROOM
1/4" = 1'-0"



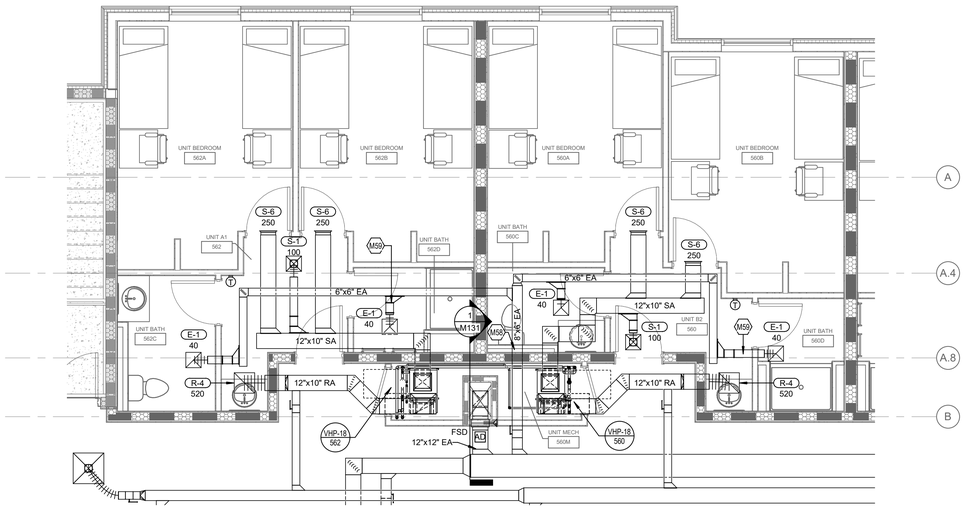
5 ENLARGED MECHANICAL PLAN - 2/3/4/5 TYPICAL UNIT C1
1/4" = 1'-0"



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"

PRINT DATE: 1/31/2020 2:47:40 PM
FILE INFO: BIM 360://NKU - New Residence Hall/CNSH18_M-R19.rvt

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 REQUIRMENTS.
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 MAINTINED. 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.

TAGGED NOTES

M1	COMBINATION FIRE/SMOKE DAMPER LOCATED IN SLAB AT 2ND FLOOR. CONTRACTOR TO INSTALL SUCH THAT THE ACTUATOR IS LOCATED ON THE CORRDIOR 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.
M52	REFER TO DUCT RISER SECTION #5 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.
M54	REFER TO PIPE RISER SECTION #1 ON SHEET M121 FOR PIPE ROUTING AND SIZING.
M58	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

NKU NORTHERN KENTUCKY UNIVERSITY

NKU - New Residence Hall
KENTON DRIVE & CARROLL DRIVE
HIGHLAND HEIGHTS, KY 41099
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CMTA
10411 Meeting Street, Prospect, KY 40059
T:502 326.3085 F:502 326.2691 www.cmtaegrs.com

DRAWING TITLE:

ENLARGED SUITE PLANS

JANUARY 30, 2020

DRAWN BY: **LMA** | CHECKED BY: **CMG**

#18237

M130

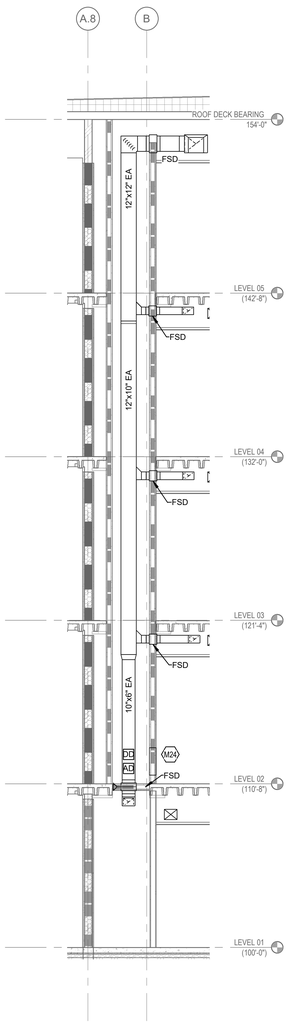
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STATE OF KENTUCKY · CARROLL M. GAMBILL · 30804 · LICENSED PROFESSIONAL ENGINEER

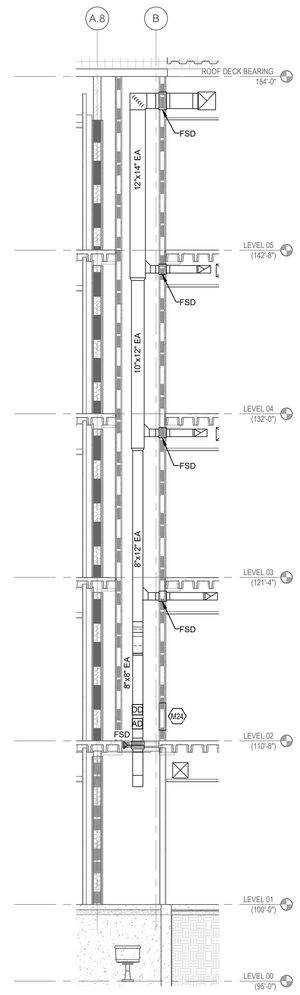
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MECHANICAL NOTES:

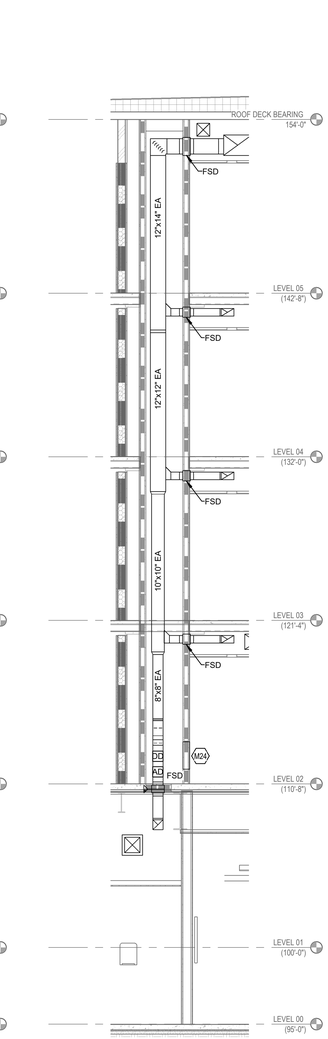
1. REFER TO ENLARGED SUITE PLANS ON SHEET M130 FOR DUCTWORK SIZING, AIRFLOWS, AND GRILLE TYPES.
2. CENTER SUPPLY GRILLE ABOVE DOOR AT EACH UNIT BEDROOM.
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15. PROVIDE A HIGH EFFICIENCY TAKE-OFF AND VOLUME DAMPER AT EACH OUTSIDE AIR BRANCH RUN-OUT.



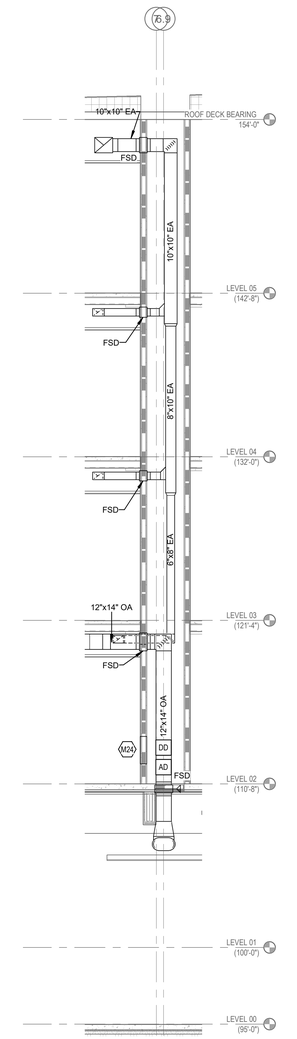
1 TYPICAL EXHAUST RISER #1
1/4" = 1'-0"



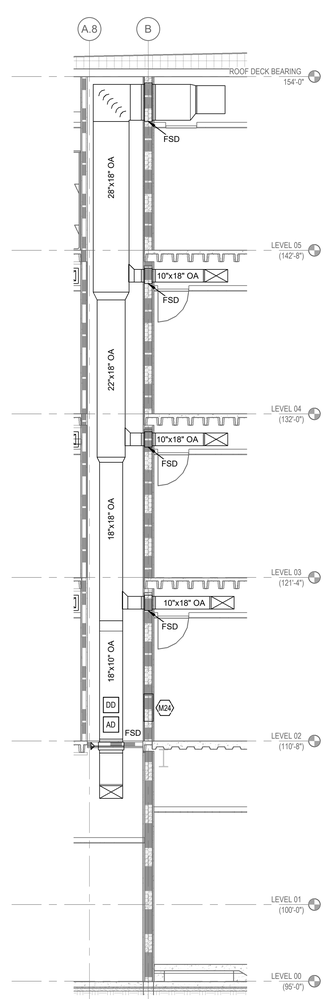
2 EXHAUST RISER #2
1/4" = 1'-0"



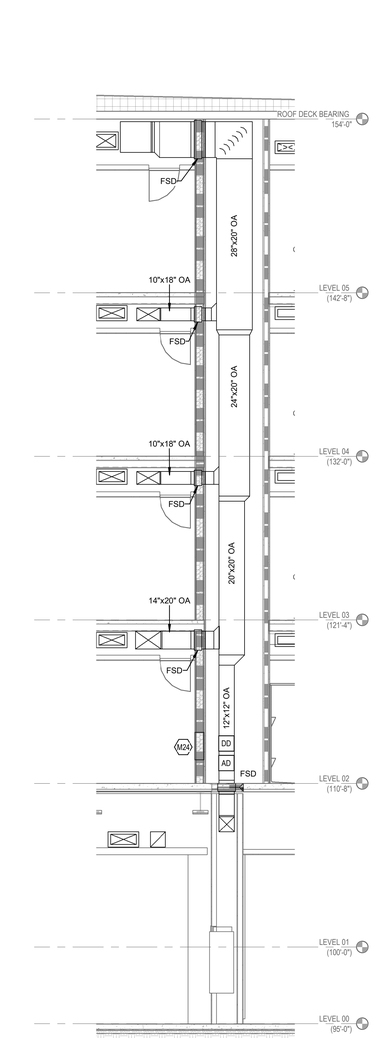
3 EXHAUST RISER #3
1/4" = 1'-0"



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"

STATE OF KENTUCKY APPROVAL

TAGGED NOTES

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.

#	DATE	CHANGE DESCRIPTION

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DRAWING TITLE:
ENLARGED DUCT RISER SECTIONS

JANUARY 30, 2020

DRAWN BY: **LMA** | CHECKED BY: **CMG**

#18237

M131

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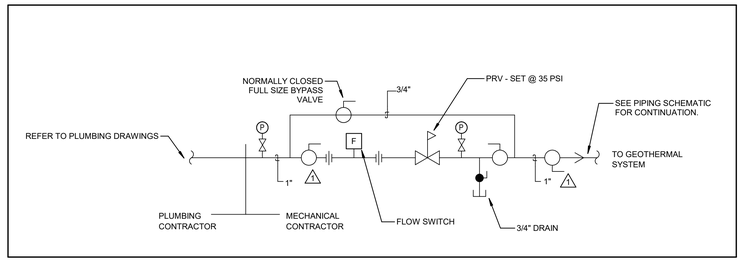
STATE OF KENTUCKY · CARLOS M. GRIMALDI · 30804 · LICENSED PROFESSIONAL ENGINEER

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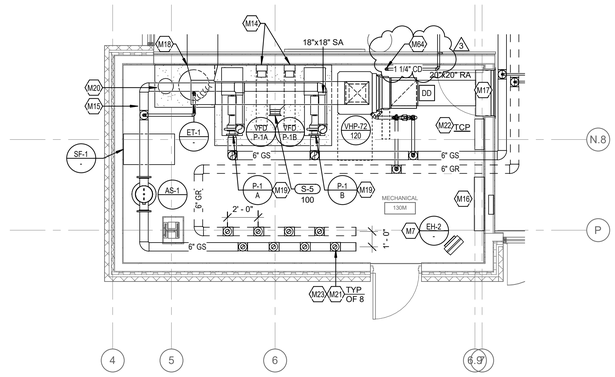
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MECHANICAL NOTES:

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 REQUIRMENTS.
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 MAINTINED. COORDIANTE WITH OTHER TRADES.
13. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL DAMPERS AND VALVES IN ACCESSIBBLE 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.



3 HVAC FILL SYSTEM PIPING SCHEMATIC
NOT TO SCALE



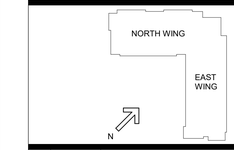
2 ENLARGED MECHANICAL PLAN - MECHANICAL 130M
1/4" = 1'-0"

1 GEOTHERMAL PIPING SCHEMATIC - MECHANICAL ROOM HEADER
NOT TO SCALE

STATE OF KENTUCKY APPROVAL

TAGGED NOTES

M7	MOUNT BOTTOM EH-2 9'-6" AFF.
M14	PROVIDE A VERTICAL UNI-STRUT STAND FOR THE VFD. COORDINATE INSTALLATION WITH ELECTRICAL CONTRACTOR.
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 48" AFF. REFER TO SHEET M132 FOR FURTHER DETAIL.
M17	PROVIDE 12" DEEP PLENUM THE FULL SIZE OF THE GRILLE. CONNECT TO PLENUM WITH EXPANDED 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 ADDITIONAL INFORMATION.
M22	TEMPERATURE CONTROL PANEL. COORDINATE POWER AND DATA CONNECTION WITH ELECTRICAL CONTRACTOR.
M25	PIPING TO GEOTHERMAL WELL FIELD. REFER TO SHEET MU100 FOR CONTINUATION.
M64	SPILL HEAT PUMP CONDENSATE TO NEAREST FLOOR DRAIN. REFER TO PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.



#	DATE	CHANGE DESCRIPTION
1	02/18/2020	ADDENDUM #2
2	04/21/2020	BULLETIN #1
3	6/05/2020	BULLETIN #2

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ENLARGED MECHANICAL PLANS

STATE OF KENTUCKY · CAROLYN MARIE BRUMFIELD · 30804 · LICENSED PROFESSIONAL ENGINEER

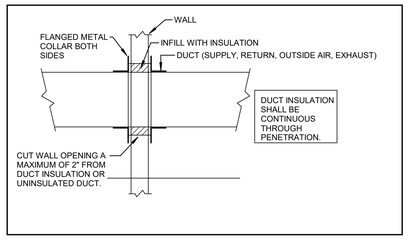
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#18237

M132

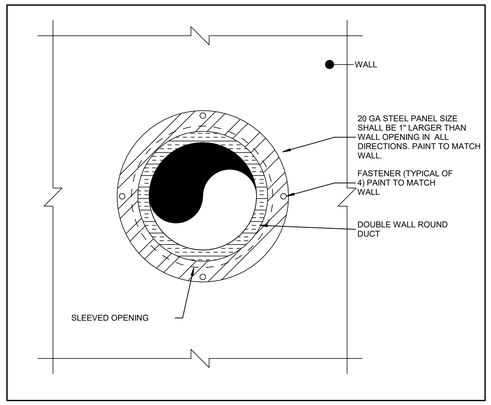
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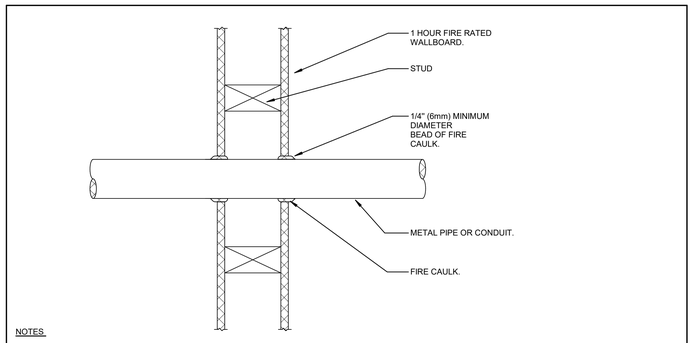
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4 DUCT PENETRATION THROUGH NON-RATED WALL DETAIL
N.T.S.



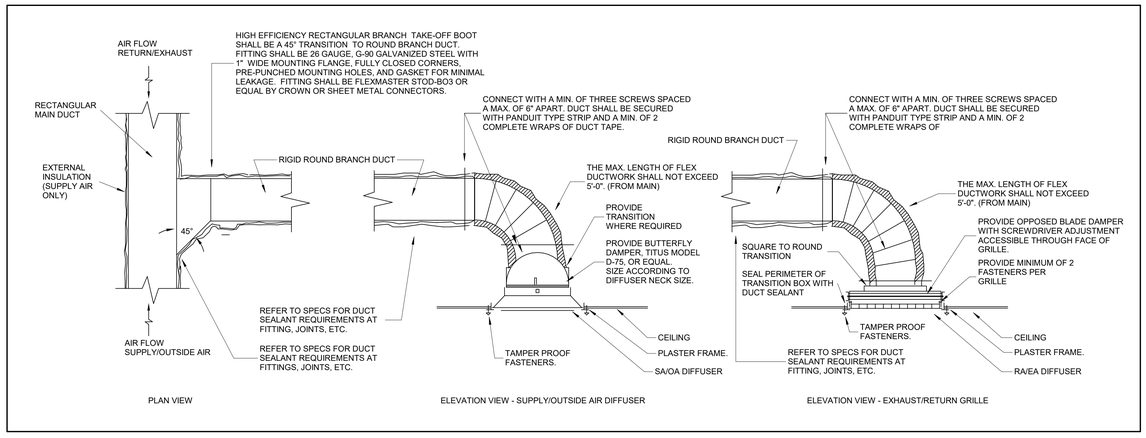
1 EXPOSED DUCT WALL PENETRATION DETAIL
N.T.S.



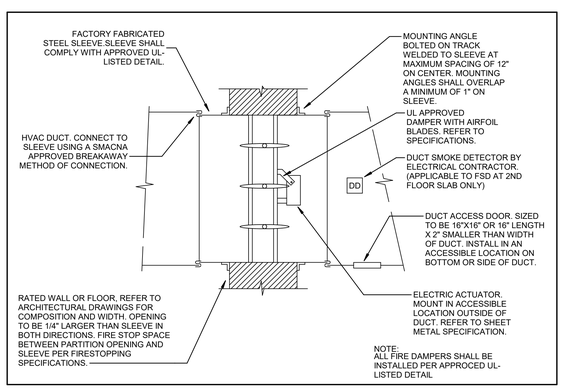
NOTES.

1. FORCE THE CAULK INTO THE ANNULAR SPACE TO THE MAXIMUM EXTENT POSSIBLE, FLUSH WITH THE EXTERIOR OF THE PENETRATION SURFACE.
2. FINISH CAULKING WITH A 1/4" (6mm) MINIMUM BEAD CAULK APPLIED TO THE PERIMETER OF THE CONDUIT/PIPE AT ITS EGRESS FROM THE WALL.
3. THE MAXIMUM ANNULAR SPACE IS NOT TO EXCEED 3/16" (5mm). (IF IT DOES PATCH WALL AND PENETRATE WALL AT ANOTHER LOCATION).
4. INSTALL THE FIRESTOP ON BOTH SIDES OF THE WALL.
5. FIRE STOPPING IS CRITICAL AND MUST BE ACCOMPLISHED. ALL PIPES MUST BE FIRESTOPPED WHERE THEY PENETRATE FIRE RESISTIVE, FIRE RATED, AND SMOKE RESISTIVE WALLS OR FLOORS.
6. ALL PENETRATIONS WILL BE REVIEWED BY THE ENGINEER. PRIOR TO INSPECTION ALL CEILING TILES BENEATH THE PENETRATIONS SHALL BE REMOVED BY THE CONTRACTOR.

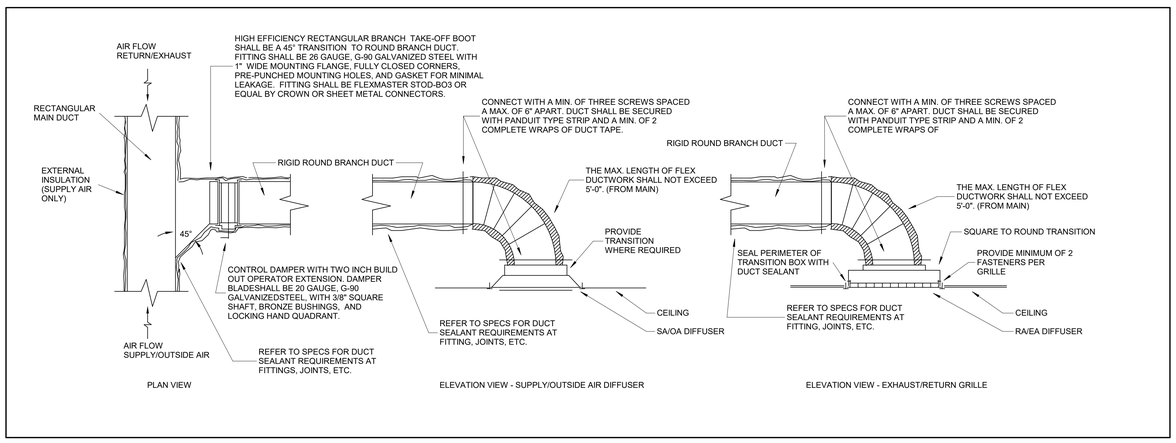
5 PENETRATION FIRESTOP FOR METAL PIPE/CONDUIT THROUGH ONE HOUR WALL
N.T.S.



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



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



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

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MECHANICAL DETAILS

JANUARY 30, 2020

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#18237

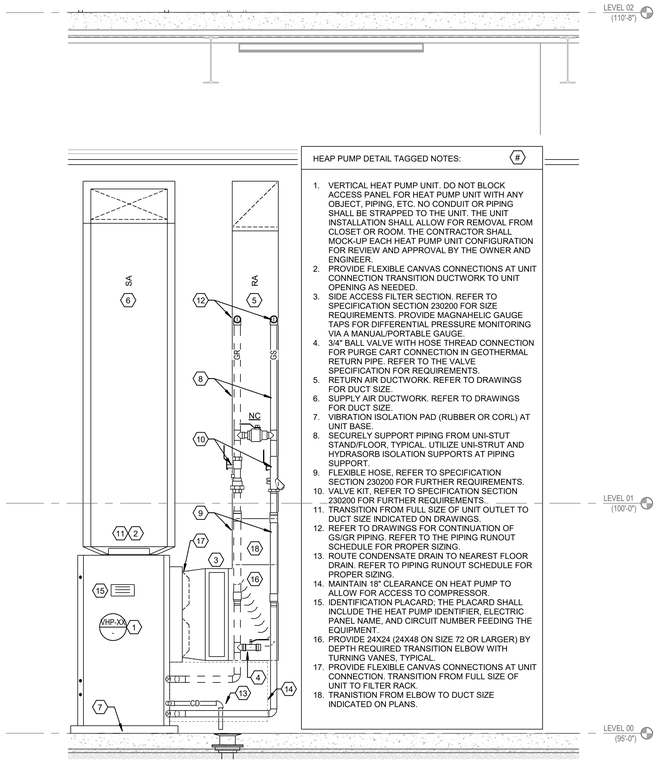
M140

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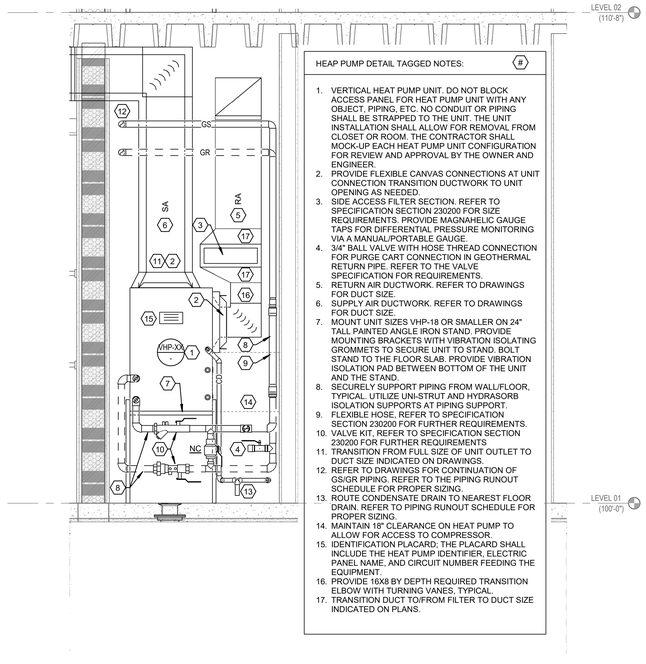
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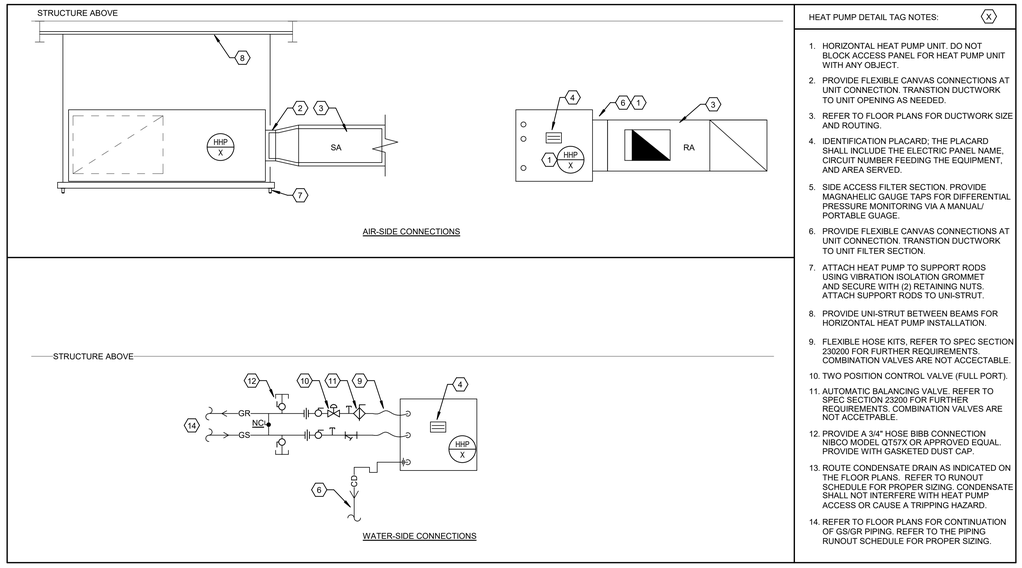
2 VERTICAL HEAT PUMP INSTALLATION DETAIL- VHP-24 / VHP-72

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.

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JANUARY 30, 2020
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#18237

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OUTSIDE AIR UNIT SCHEDULE

MARK	MANUFACTURER	MODEL #	LOCATION	PHYSICAL DATA				UNIT ELECTRICAL INFORMATION						EXHAUST FAN						REMARKS
				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	
OA-1	DAIKIN	DPS018A	ROOF TOP	77	182	71	4143	253 A	265 A	125	208 V	60 Hz	3	3800	ECM	1	1.00	4	4 A	
OA-2	DAIKIN	DPS020A	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

MARK	ENERGY RECOVERY WHEEL PERFORMANCE																			ELECTRIC DATA
	WINTER OPERATION										SUMMER OPERATION									
	OA AIR STREAM				EA AIR STREAM						OA AIR STREAM				EA AIR STREAM							
	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 CAPCITY (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

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

OUTSIDE AIR UNIT SCHEDULE - DX COIL

MARK	DX COIL											
			COOLING PERFORMANCE								HEATING PERFORMANCE		
	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)	APD (IN. WG.)	TOTAL (MBH)	EAT (°F)	LAT (°F)
OA-1	4	15	192.8	132.2	81	68	56	56	265	0.25	181.7	45	78
OA-2	4	15	254.5	167.4	81	68	56	56	280	0.30	227.7	45	80

OUTSIDE AIR UNIT SCHEDULE - HOT GAS RE-HEAT

MARK	HOT GAS RE-HEAT COIL			
	HEATING PERFORMANCE			
	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

MARK	SUPPLY FAN						
	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

MARK	ELECTRIC HEAT SECTION					
	AIRFLOW (CFM)	CAPACITY (MBTU)	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 (IN WG.)	GPM	WATER PD (FT. H20)	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	CONDENSATE PIPE SIZE	REMARKS
											LENGTH	WIDTH	HEIGHT	VOLTAGE	HZ	PHASE	MCA	MOCP	TOTAL HEAT (MBH) PARTIAL	TOTAL HEAT (MBH) FULL	HEAT OF ABSORPTION (BTU/HR) (FULL)	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	22	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-18	FHP	LV-018	VERTICAL	600	0.60	5	8.60	1	1	173	22	22	32	208 V	60	1	10 A	15	0.0	17.1	14.1	3.9	13.3	18.2	21.5	11.2	1"	3/4"	ALL
VHP-24	FHP	LM-024	VERTICAL	800	0.80	6	5.20	1	2	250	27	24	44	208 V	60	3	11 A	15	17.8	21.3	18.9	3.9	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	4.1	52.5	66.2	81.2	14.5	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 PUMP WITH STAINLESS STEEL DRAIN PAN AND CONDENSATE OVERFLOW SWITCH.
4. APPROVED MANUFACTURERS: FHP, DAIKIN, 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-0065-SRV	HTX-0038-TC	GEOTHERMAL 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	MANUFACTURER	MODEL #	SERVICE	MOTOR HP	ELECTRICAL			FUSED AND DISCONNECT	BYPASS STARTER	REDUNDANDT DRIVE	REMARKS
					VOLTAGE	PHASE	HZ				
VFD	ABB	ACH550	P-1A/B	20	208 V	3	60	YES	NO	NO	ALL

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 GRAHM.

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/GR 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 (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 MANUFACTURER'S INSTRUCTIONS. SUBMIT DETAILED PIPING SCHEMATIC WITH SHOP DRAWINGS.
6. PROVIDE WITH LOW AMBIENT CONTROL. INCLUDE A CRANKCASE HEATER TO ALLOW FOR OPERATION TO 0°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	MOCP	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

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DRAWING TITLE:

MECHANICAL SCHEDULES

JANUARY 30, 2020

DRAWN BY: LMA | CHECKED BY: CMG

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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	6"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	600	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	6"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 'A', 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, METALAIRE, 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" PEDESTALS.
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	EXHAUST CFM	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

#	DATE	CHANGE DESCRIPTION

NKU NORTHERN KENTUCKY UNIVERSITY

NKU - New Residence Hall
KENTON DRIVE & CARROLL DRIVE
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DRAWING TITLE:

MECHANICAL SCHEDULES

COMMONWEALTH OF KENTUCKY — CARLOS M. GRIMARD — 30804 — LICENSED PROFESSIONAL ENGINEER

JANUARY 30, 2020

DRAWN BY: **LMA** CHECKED BY: **CMG**

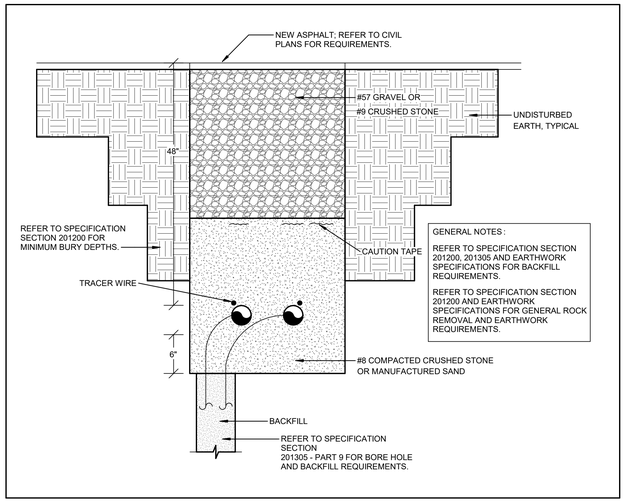
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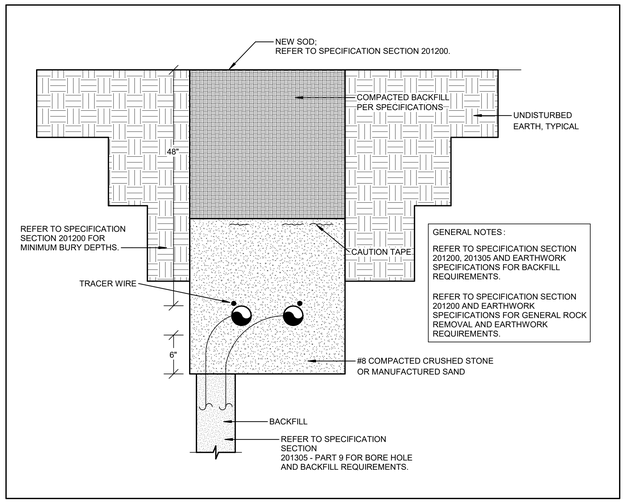
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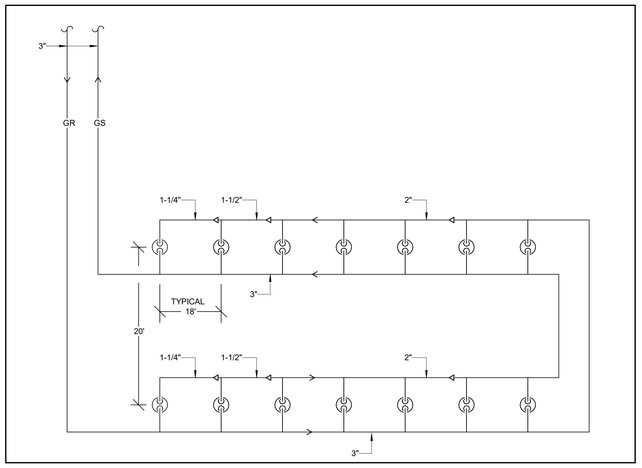
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1 TYPICAL GEOTHERMAL TRENCH DETAIL FOR PAVED AREAS
SCALE: NONE



2 TYPICAL GEOTHERMAL TRENCH DETAIL FOR GRASSY AREAS
SCALE: NONE



3 TYPICAL GEOTHERMAL CIRCUIT (4 TOTAL) - 14 WELLS
SCALE: NONE

MECHANICAL SITE UTILITY NOTES

A. DO NOT SCALE FROM MECHANICAL AND ELECTRICAL DRAWINGS. FIELD VERIFY REQUIRED DIMENSIONS.
B. 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.
C. FEDERAL, STATE, LOCAL, MUNICIPALITY AND UTILITY COMPANY CODES, RULES, REGULATIONS AND REQUIREMENTS APPLY UNLESS EXCEEDED BY THIS DESIGN.
D. 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.
E. 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.
F. LOCATIONS, DEPTHS, MATERIAL TYPES, ELEVATIONS, ETC. OF ALL APPURTENANCES, LINES, BUILDINGS, ETC. INDICATED ON THESE DRAWINGS WERE TAKE 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 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.
G. 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.
H. THE LOCATIONS OF UTILITIES SHOWN WITHIN THESE DRAWINGS ARE APPROXIMATE ONLY.
I. 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.
J. 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.
K. CONTRACTOR SHALL PAY ALL TAP FEES, UTILITY COST, UTILITY CONNECTION COSTS, METER FEES, EXTENSION AND DEVELOPMENT CHARGES. REFER TO THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
L. 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.
M. ALL PIPING TO BE ABANDONED SHALL BE CAPPED WATERTIGHT. NO PIPING SHALL BE LEFT OPEN-ENDED.
N. 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
S S S	SANITARY MANHOLE
	FIRE HYDRANT
	WATER VALVE
ECO D(ECO) ECO	EXTERIOR CLEANOUT
TB D(TB) TB	THRUST BLOCK
——XXX——	NEW PIPING - (XXX) DENOTES SYSTEM
-- D(XXX) --	PIPING TO BE DEMOLISHED - (XXX) DENOTES SYSTEM
—E(XXX)—	EXISTING PIPING - (XXX) DENOTES SYSTEM
—A(XXX)—	ABANDONED IN PLACE PIPING - (XXX) DENOTES SYSTEM
——OP——	OVERHEAD PRIMARY
——OS——	OVERHEAD SECONDARY
——OSL——	OVERHEAD STREET LIGHT
——OTS——	OVERHEAD TRAFFIC SIGNAL
——OT——	OVERHEAD TELECOMMUNICATIONS
——OF——	OVERHEAD FIBER OPTIC
——OTV——	OVERHEAD CATV
——UP——	UNDERGROUND PRIMARY
——US——	UNDERGROUND SECONDARY
——USL——	UNDERGROUND STREET LIGHT
——UTS——	UNDERGROUND TRAFFIC SIGNAL
——UT——	UNDERGROUND TELECOMMUNICATIONS
——UF——	UNDERGROUND FIBER OPTIC
——UTV——	UNDERGROUND CATV
——CHW——	CHILLED WATER
——W——	DOMESTIC WATER
—HPS/R—	HIGH PRESSURE SUPPLY/R
——PD——	PUMPED DISCHARGE RETURN
——SS——	SANITARY SEWER
—STORM—	STORM

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.

STATE OF KENTUCKY APPROVAL

#	DATE	CHANGE DESCRIPTION

NKU NORTHERN KENTUCKY UNIVERSITY

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 40059
T:502 326.3085 F:502 326.2691 www.cmtaegrs.com

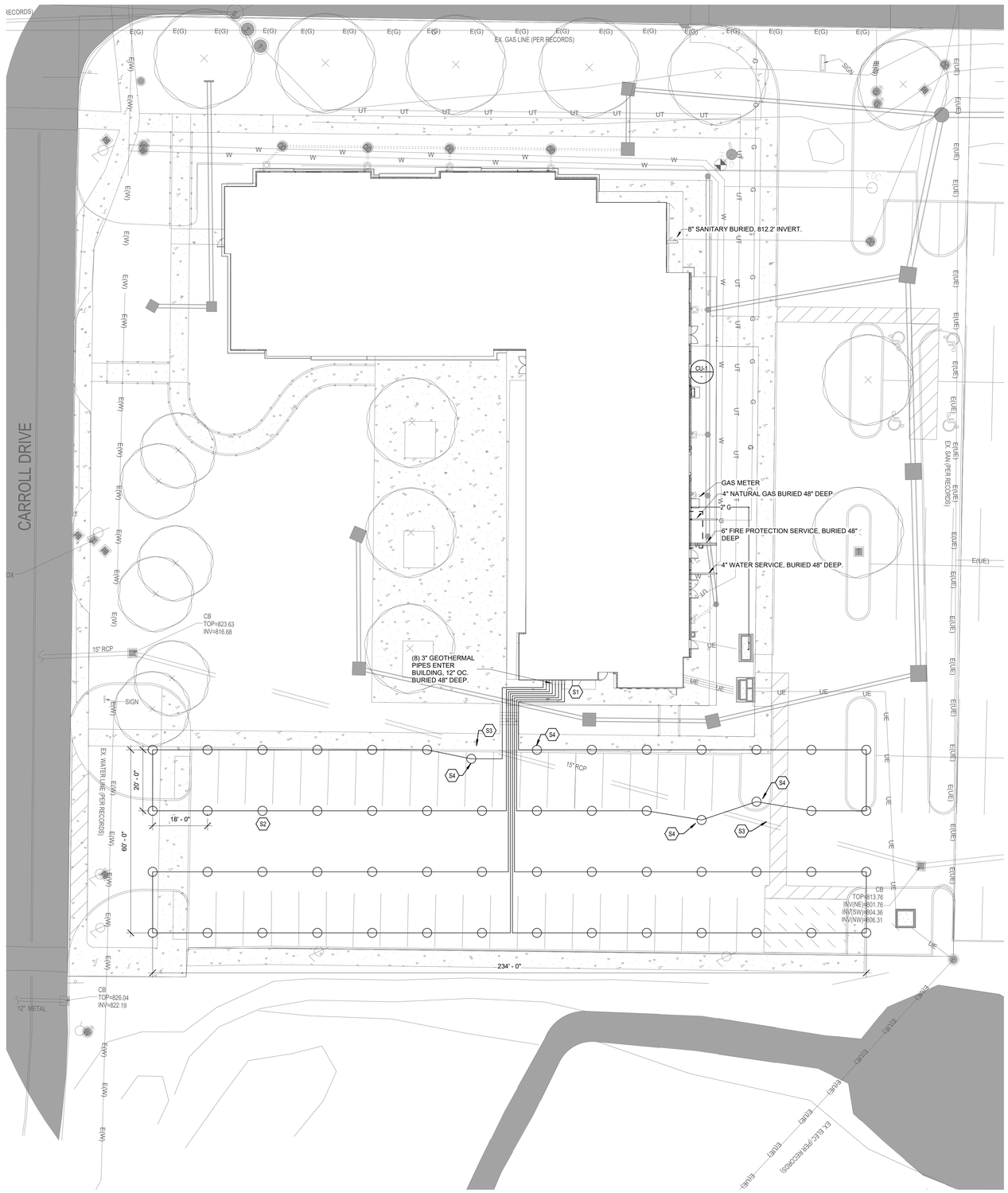
DRAWING TITLE:
MECHANICAL SITE LEGEND AND DETAILS

STATE OF KENTUCKY — CARSON MATTHEW GRIMM — 30804 — LICENSED PROFESSIONAL ENGINEER

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

PRINT DATE: 1/31/2020 2:47:50 PM
FILE INFO: BIM 360:\NKU - New Residence Hall\CNSH18_M-R19.rvt

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1 MECHANICAL SITE PLAN

1/16" = 1'-0"

PRINT DATE: 1/31/2020 2:48:04 PM
FILE INFO: BIM 360://NKU - New Residence Hall/CNSH18_M-R19.rvt

STATE OF KENTUCKY APPROVAL

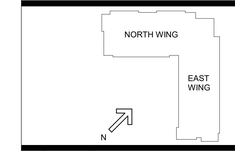
TAGGED NOTES

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.



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DRAWING TITLE:
MECHANICAL SITE UTILITY PLAN

JANUARY 30, 2020
DRAWN BY: **LMA** | CHECKED BY: **CMG**
#18237

MU100

BID & PERMIT SUBMITTAL

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DESCRIPTION	MOUNTING HEIGHT (TO CENTER OF BOX)	DRAWING SYMBOL
SWITCHES		
LIGHT SWITCH:GENERAL PURPOSE	46"	$
NIGHT LIGHT SWITCH WITH CONSTANTLY ILLUMINATED HANDLE	46"	$N
DIMMER SWITCH	46"	$D
DOUBLE POLE SWITCH	46"	$2
THREE-WAY SWITCH	46"	$3
FOUR-WAY SWITCH	46"	$4
KEYED SWITCH	46"	$K
OCCUPANCY OR VACANCY SENSOR SWITCH	46"	$OS, $VS
LIGHT SWITCH FOR UNDER-CABINET LIGHTS	46"	$U
ILLUMINATED HANDLE LIGHT SWITCH (ILLUMINATED WHEN LOAD IS OFF)	46"	$IL
LOW VOLTAGE MOMENTARY SWITCH	46"	$LV
PILOT LIGHT SWITCH (ILLUMINATED WHEN LOAD IS ON)	46"	$PL
NON-REVERSING MOTOR STARTER SNAP SWITCH	AS NOTED	$M
MOMENTARY CONTACT SWITCH	46"	$MC
HAND-OFF-AUTO 3-POSTION SWITCH	46"	$HOA
TIMER SWITCH	46"	$T
OCCUPANCY OR VACANCY SENSOR, CEILING MOUNT	CLG	OS VS
PHOTOCELL AS NOTED (LOCATE EXTERIOR PHOTOCELLS ON NORTHERN BUILDING EXPOSURE)	AS NOTED	PC
EMERGENCY AUTOMATIC TRANSFER SWITCH FOR LIGHTING CONTROLS (REFER TO DETAIL)		ER
LIGHTING CONTACTOR CONTROL CABINET		LCC
NOTE: REFER TO LIGHTING CONTROL DEVICE SCHEDULE FOR OTHER DEVICE CONFIGURATIONS		
POWER OUTLETS		
SIMPLEX RECEPTACLE	1'-6"	
DUPLEX RECEPTACLE-SAFETY TYPE, TAMPER-RESISTANT	1'-6"	
SLASH THROUGH ANY DEVICE INDICATES MOUNTING ABOVE COUNTERTOP 4" ABOVE BACKSPLASH, OR AT 46" WHERE NO COUNTER IS PRESENT		
FILLED CENTER BAR INDICATES INTEGRAL GROUND FAULT PROTECTION (GFCI)	1'-6"	
DEAD FRONT GFCI DEVICE, LABEL AND INSTALL IN READILY ACCESSIBLE LOCATION		
FILLED OUTER BARS INDICATES INTEGRAL, INTEGRAL USB OUTLET IN ADDITION TO POWER RECEPTACLES	1'-6"	
GANG RECEPTACLE IN COMBINATION WITH SWITCH (PROVIDE DIVIDER IF LIGHTING CIRCUIT IS 277V)	46"	C/S
DUPLEX RECEPTACLE, CEILING MOUNTED	CLG	
QUADRUPLEX RECEPTACLE	1'-6"	
JUNCTION BOX, CEILING OR WALL		J, KO
VOLTAGE/1PH RECEPTACLE, AS NOTED	AS NOTED	
VOLTAGE/3PH RECEPTACLE, AS NOTED	AS NOTED	
"DOG-HOUSE" TYPE TWIN DUPLEX RECEPTACLE WITH ONE DUPLEX RECEPTACLE ON BOTH SIDES	ON CNTR.	DP
SS INDICATES SURGE SUPPRESION TYPE OUTLET(S)		SS
GROUND FAULT PROTECTED DUPLEX WITH WEATHER-PROOF "WHILE IN USE" TYPE DIE-CAST METAL COVERPLATE WITH LOCKABLE ENCLOSURE AT OUTLET - SEE SPECIFICATIONS	2'-2"	WP
DUPLEX FOR ELECTRIC WATER COOLER; COORDINATE EXACT LOCATION WITH PLUMBING CONTRACTOR TO CONCEAL OUTLET BEHIND COOLER, PROVIDE READILY ACCESSIBLE GFI DEVICE AT 18" ADJACENT TO WATER COOLER		EWC
FIRE ALARM		
MAIN CONTROL PANEL CENTRAL PROCESSING UNIT (CPU)	6'-6" TO TOP	FACP
PULL STATION : DOUBLE ACTION WITH POLYCARBONATE COVER AND WARNING SOUNDER	46" TO LEVER	F
KEYED, LOCKED PULL STATION : DOUBLE ACTION. STATION SHALL ONLY BE OPERABLE VIA KEY IN POSSESSION OF STAFF.	46" TO LEVER	F K
AUDIO/VISUAL NOTIFICATION APPLIANCE	WALL, CLG	F A V
AUDIO-ONLY NOTIFICATION APPLIANCE	WALL, CLG	A O
VISUAL-ONLY NOTIFICATION APPLIANCE	WALL, CLG	V O
BELL / LIGHT	80"	BL
BELL ONLY	80"	B
PHOTO-ELECTRIC SMOKE DETECTOR	CLG	SD
SMOKE DETECTOR WITH SOUNDER BASE	CLG	SD SB
PROJECTED BEAM SMOKE DETECTOR: EMITTER (BE) AND RECEIVER (BR)		BE , BR
COMBO FIXED TEMP AND RATE OF RISE HEAT DETECTOR	CLG	HD
CARBON MONOXIDE DUCT DETECTOR	CLG	CD
CARBON MONOXIDE ALARM: SINGLE STATION W/SOUNDER BASE	CLG	CM
CARBON MONOXIDE AUDIO/VISUAL NOTIFICATION APPLIANCE	WALL	F CM
DOOR HOLDER : WALL TYPE	WALL	DH
DOOR HOLDER : CLOSURE TYPE	ABV DOOR	DH C
DUCT SMOKE DETECTOR	ABV CLG	DD
CONNECTION TO SPRINKLER FLOW SWITCH WITH ADDRESSABLE MODULE		FS
CONNECTION TO SPRINKLER TAMPER SWITCH WITH ADDRESSABLE MODULE		TS
PRESSURE SWITCH		PS
REMOTE L.C.D. FIRE ALARM ANNUNCIATOR	54"	FAA
REMOTE FIRE ALARM ANNUNCIATOR W/ MICROPHONE	54"	FAAM
POST INDICATOR VALVE		PIV
POWER SUPPLY/CONTROL FOR AUDIO/VISUAL DEVICES	46"	NAC
TRANSPONDER CABINET	46"	TRAN
GRAPHICS DISPLAY TERMINAL		GDT
FIRE ALARM CONTROL EXTENDER		EXT
ISOLATION MODULE		I
ZONE ADDRESSABLE MODULE		Z
H.V.A.C. SMOKE DAMPER CONNECTION		SM
FLUSH MOUNTED REMOTE ALARM INDICATING STATION/TEST SWITCH	7'-6"	RI
FIREMAN'S PHONE JACK	4'-6"	FP
FIREMAN'S KNOX BOX CONNECTION		KB
ADDRESSABLE RELAY MODULE		R
INDICATES VANDAL-PROOF POLYCARBONATE COVER. VANDAL PROOF COVERS SHALL BE UL LISTED FOR USE WITH THE SPECIFIC DEVICE THEY ARE PROTECTING		PC
INDICATES CHIME AUDIBLE NOTIFACTION		CH
DEVICE USED FOR ELEVATOR CONTROL		EL

DESCRIPTION	MOUNTING HEIGHT (TO CENTER OF BOX)	DRAWING SYMBOL
LIGHTING		
SURFACE OR SUSPENDED CEILING FIXTURE (SLASH INDICATES RECESSED)		
POLE MOUNTED AREA LIGHT		
EMERGENCY BATTERY WALL-PACK		
WALL MOUNT FIXTURE		
FLOODLIGHT		
EXIT LIGHT (CEILING, END, WALL MOUNT)		
STRIP FIXTURE		
CROSS-HATCHING INDICATES LIGHT IS POWERED FROM THE EMERGENCY-EQUIPMENT BRANCH		
PARALLEL-HATCHING INDICATES LIGHT IS POWERED FROM THE EMERGENCY-LIFE SAFETY BRANCH		
NOTE: REFER TO LUMINAIRE SCHEDULE FOR EXACT FIXTURE SPECIFICATIONS, MOUNTING HEIGHTS, ETC.		
MISCELLANEOUS		
CONDUIT CONCEALED IN WALLS OR IN CEILING SPACE: ARROW(S) INDICATE(S) HOME RUN & # OF CIRCUITS: HASHMARKS INDICATE # OF CONDUCTORS. DASHED LINE INDICATES CONDUIT UNDER SLAB, BELOW GRADE, OR IN CEILING SPACE OF FLOOR BELOW.		GROUND NEUTRAL PHASE
FLEXIBLE CONNECTION TO EQUIPMENT OR FURNITURE. RACEWAY AND CONDUCTOR TO MATCH BRANCH CIRCUIT OR FEEDER		
CONDUIT SLEEVE THROUGH WALL LOCATED ABOVE CEILING WITH INSULATED BUSHINGS. EXTEND MIN 2" INTO EACH SPACE.		
CONDUIT UP		
CONDUIT DOWN		
DISCONNECT SWITCH, SLASH INDICATES FUSED	5'-0"	
MAGNETIC STARTER WITH H-O-A SWITCH	5'-0"	
MAGNETIC COMBINATION STARTER WITH H-O-A SWITCH	5'-0"	
VARIABLE FREQUENCY DRIVE	5'-0"	
ENCLOSED FLUSH MTD. CIRCUIT BREAKER	5'-0"	
BOX ON ANY DEVICE INDICATES SURFACE MOUNTED BACKBOX/WIREMOLD		
CIRCLE ON ANY DEVICE INDICATES DEVICE FED FROM STUB UP CONDUIT		
WIREWAY WITH REMOVABLE COVER (SIZE AS NOTED)	AS SHOWN	
TRENCH DUCT (SIZE AS NOTED)	AS SHOWN	
BUS DUCT (AMPERAGE AS NOTED)	AS SHOWN	
PANELBOARD, SURFACE OR FLUSH MOUNTED, HATCHING INDICATES EMERGENCY	6'-6" TO TOP	
TRANSFORMER	AS NOTED	
SURGE PROTECTION DEVICE		SPD
GENERATOR ANNUNCIATOR PANEL	46"	GEN-A
WIRE BASKET CABLE TRAY, SIZE AS NOTED	AS SHOWN	
LADDER CABLE TRAY, SIZE AS NOTED	AS SHOWN	
SOLID BOTTOM CABLE TRAY, SIZE AS NOTED	AS SHOWN	
LOW VOLTAGE CABLE PATH		
EQUIPMENT HARDWIRE CONNECTION (SEE DETAIL)		
KITCHEN EQUIPMENT OUTLET COUPLING CONNECTION (SEE DETAIL)		K
MOTOR CONNECTION, REFER TO EQUIPMENT CONNECTION SCHEDULE		M
DOORBELL, PUSHBUTTON STATION, PROVIDE COMPLETE WITH TRANSFORMER (MOUNT ABOVE CEILING IN CORRIDOR NEAR PUSH-BUTTON) AND ALL ACCESSORIES. POWER FROM NEAREST AVAILABLE 120V NORMAL POWER GENERAL RECEPTACLE CIRCUIT, NUTONE OR EQUAL	46"	DB
DOORBELL AUDIO/VISUAL STATION, PROVIDE PROVIDE CONNECTION TO PUSHBUTTON. STATION IN AREA. COORDINATE EXACT AUDIO SOUND (CHIME, BUZZER, ETC.) DESIRED WITH OwNER/ARCHITECT, NUTONE OR EQUAL	7'-6"	DB
PLUMBING FIXTURE SOLENOID VALVE/ELECTRIC EYE SENSOR CONNECTION. COORDINATE EXACT CONNECTION REQUIREMENTS WITH MANUFACTURER.		
PLUMBING FIXTURE ELECTRIC EYE TRANSFORMER CONNECTION. TRANSFORMER SHALL BE 120V-24V. MOUNT ABOVE SUSPENDED ACCESSIBLE CEILING IN J-BOX. PROVIDE ADDITIONAL TRANSFORMERS OF SAME TYPE AS NEEDED		Y
PROVIDE CONNECTION TO HAND DRYER (SEE ARCHITECTURAL SPECIFICATIONS)	VERIFY WITH ARCHITECT	
THERMOSTAT PROVIDED BY MECHANICAL CONTRACTOR, ELECTRICAL CONTRACTOR SHALL PROVIDE BACK-BOX CONDUIT STUB-UP, REFER TO MECHANICAL DRAWINGS FOR LOCATIONS		T
PUSHBUTTON STATION	46"	
GROUND BUS BAR ON INSULATED STANDOFFS	2'-0"	
EQUIPMENT TAG, REFER TO EQUIPMENT SCHEDULE		EQUIP-1
TAGGED NOTE		
REVISION TAG		
INDICATES MOUNTING ABOVE COUNTER,TOP, 2" ABOVE BACKSPLASH, NO HIGHER THAN 48"		C
WIREGUARD - PROVIDE MANUFACTURER'S SPECIFIC GUARD FOR DEVICE NOTED		WG
WEATHERPROOF - NEMA-3R, WET LOCATION LISTED. PROVIDE COVERS, RATINGS, ETC, AS SUITABLE FOR OUTDOORS.		WP
EXPLOSION PROOF - PROVIDE WIRING METHODS, ENCLOSURES, RATINGS, ETC. AS SUITABLE FOR HAZARDOUS LOCATION.		XP
INDICATES EMERGENCY POWER		E,EM
PANEL FURNITURE		
POWER CONNECTION TO PANEL FURNITURE, PROVIDE SEAL-TIGHT CONDUIT CONNECTION FROM RECESSED WALL BOX TO PANEL FURNITURE, PROVIDE FINAL CONNECTIONS TO PANEL FURNITURE AS REQUIRED BY PANEL FURNITURE VENDOR	1'-6"	FP
COMBINATION POWER AND LOW VOLTAGE CONNECTION TO PANEL FURNITURE, PROVIDE SEAL-TIGHT CONDUIT CONNECTION FROM RECESSED WALL BOX TO PANEL FURNITURE, PROVIDE FINAL CONNECTIONS TO PANEL FURNITURE AS REQUIRED BY PANEL FURNITURE VENDOR	1'-6"	FF

DESCRIPTION	MOUNTING HEIGHT (TO CENTER OF BOX)	DRAWING SYMBOL
ABBREVIATIONS		
UNLESS OTHERWISE NOTED		UON
OWNER FURNISHED CONTRACTOR INSTALLED		OFCI
OWNER FURNISHED OWNER INSTALLED		OFOI
CONTRACTOR FURNISHED CONTRACTOR INSTALLED		CFCI
CONTRACTOR FURNISHED OWNER INSTALLED		CFOI
INDICATES EMERGENCY POWER		EM
ALL DEVICES INDICATED WITH "WG" SHALL BE PROVIDED WITH WIREGUARD FOR PROTECTION.		WG
DISH WASHER		DW
GARBAGE DISPOSAL		GD
SPECIAL OUTLETS		
FLOORBOX, POWER ONLY, AS SCHEDULED	FLOOR	
FLOORBOX OR POKE THRU, COMBINATION POWER AND LOW VOLTAGE. COORDINATE FIRE RATING AND COVER REQUIREMENTS WITH ARCHITECTURAL FINISHES. ROUTE CONDUITS FOR POWER AND LOW VOLTAGE UNDER FLOOR SLAB TO NEAREST WALL, UNO.REFER TO DETAILS AND FLOORBOX SCHEDULE	FLOOR	
COMBINATION POWER AND DATA OUTLET	1'-6"	
COMBINATION POWER AND DATA OUTLET WITH GFCI DUPLEX RECEPTACLE.	1'-6"	
POWER POLE AS NOTED		PP
SURFACE PLUG-MOLD		
SURFACE WIREWAY		
NOTE: WHERE PLANS SHOW NEW DEVICES ON EXISTING BLOCK WALLS, CONTRACTOR SHALL PROVIDE RECESSED BOX AND ROUTE CABLING IN CONDUIT INSIDE THE EXISTING WALL. WHERE OBSTRUCTIONS OR FILLED CONCRETE BLOCK ARE PRESENT, CONTRACTOR SHALL PROVIDE METAL SURFACE WIREWAY PAINTED TO MATCH ADJACENT SURFACES. WIREWAY SHALL BE ROUTED IN WALL/CEILING CORNERS AS MUCH AS POSSIBLE AND SECURELY FASTENED WITH TWO HOLE STRAPS. OUTLET BOXES FOR USE WITH SURFACE WIREWAY SHALL BE A MINIMUM OF 1-3/8" DEEP. PROVIDE THE FOLLOWING STEEL WIREWAYS WITH A MAXIMUM OF 40% FILL: • POWER (MAX 3 CIRCUITS): WIREMOLD 700 SERIES • POWER (MAX 9 CIRCUITS): WIREMOLD D 2100 SERIES • DATA (MAX 2 CAT6 CABLES): WIREMOLD 700 SERIES • DATA (MAX 4 CAT6 CABLES): WIREMOLD 2100 SERIES		
TWO-WAY EMERGENCY COMMUNICATIONS		
TWO-WAY COMMUNICATION MASTER STATION		TW M
TWO-WAY COMMUNICATION REMOTE CALL BOX		TW
DATA / VOICE		
DATA OUTLET : NUMBER BESIDE OUTLET INDICATES NUMBER OF DATA JACKS	1'-6"	D
SLASH THROUGH DEVICE INDICATES MOUNTING ABOVE COUNTERTOP 4" ABOVE BACKSPLASH, OR AT 46" WHERE NO COUNTER IS PRESENT		D
WIRELESS ACCESS POINT WITH (2) CAT6A CABLES WITH FIELD 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 LOCATIONS WITH THE OWNER AND ADJUST FINAL LOCATIONS PRIOR TO SUBSTANTIAL COMPLETION DEVICES IN GYP CEILING SHALL USE 55 EXTRA DEEP BACK BOX WITH MUD RING TO MATCH OWNERS WAP MOUNTING BRACKET	WALL CLG	WAP WAP
INDICATES WALL PHONE FACEPLATE		W

SYSTEM RESPONSIBILITY MATRIX

SYSTEM	PATHWAYS	DEVICES - O F O I	DEVICES - O F C I	DEVICES - C F C I	CABLING/CONDUCTORS - O F O I	CABLING/CONDUCTORS - O F C I	CABLING/CONDUCTORS - C F C I	SYSTEM SYMBOL
VOICE/DATA	●			●		●		▽
WIRELESS ACCESS POINTS	●	●				●		▽
FIRE ALARM	●			●		●		□
ACCESS CONTROL	●			●		●		
VIDEO SURVEILLANCE	●			●		●		
EMERGENCY PHONE	●			●		●		
AUDIO/VISUAL	●			●		●		

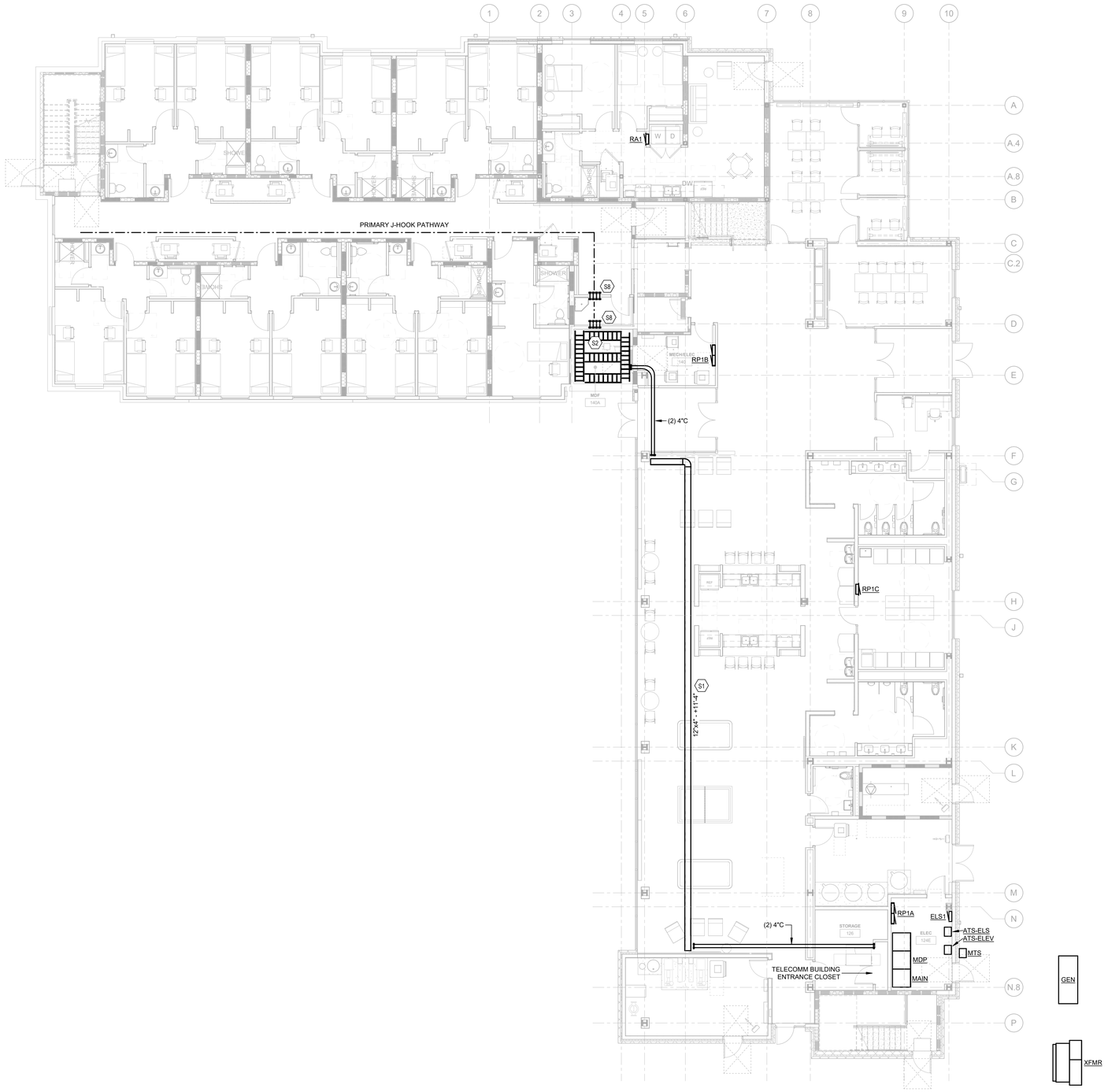
SYSTEM RESPONSIBILITY GENERAL NOTES:

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 INCLUDED BY THE CONTRACTOR.
C. REFER TO ARCHITECTURAL DOOR HARDWARE SPECIFICATIONS FOR ACCESS CONTROL DEVICE SPECIFICATIONS AND FURTHER REQUIREMENTS.
D. PROVIDE BACKBOXES AND CONDUIT WITH PULL-STRINGS FOR ALL SYSTEMS. CONTRACTOR SHALL VERIFY BACKBOX SIZES, CONDUIT, ETC. AND EXACT INSTALLATION LOCATIONS/REQUIREMENTS WITH SUCCESSFUL VENDORS OF ALL SYSTEMS PRIOR TO CONSTRUCTION.
E. AT ALL SYSTEMS EQUIPMENT CABINET/TERMINAL BOARD LOCATIONS, CONTRACTOR SHALL PROVIDE SIZE AND NUMBER OF CONDUIT STUB-OUTS TO CABLE PATHS AS REQUIRED BY SYSTEM VENDORS. TERMINATE CONDUITS AT TERMINATION BACKBOARDS AS REQUIRED. COORDINATE EXACT REQUIREMENTS WITH APPROPRIATE VENDORS PRIOR TO CONSTRUCTION.
F. REFER TO SPECIFICATIONS FOR REQUIREMENTS APPLICABLE TO ALL SYSTEMS INCLUDING CABLING, CABLE MANAGEMENT, INSTALLATION. GROUNDING, TESTING, LABELING, ETC.
G. WHERE INDICATED AS CFCI, THE CONTRACTOR SHALL PROVIDE THE SYSTEM COMPLETE, INCLUDING ALL ROUGH-INS, CABLING, DEVICES, POWER, ETC. THE CONTRACTOR SHALL CONTACT THE LISTED VENDOR FOR PRICING PRIOR TO BID. ALL SYSTEMS SHALL MATCH EXISTING FACILITY STANDARDS AND BE FULLY COMPATIBLE WITH ANY EXISTING SYSTEMS. ALL SYSTEM VENDORS SHALL COORDINATE EXACT SYSTEM REQUIREMENTS WITH OWNER PRIOR TO BID. NEW COMPONENTS SHALL BE INTERCONNECTED WITH EXISTING SYSTEMS WHERE POSSIBLE. ALL NEW SYSTEM DESIGNS AND PROGRAMMING SHALL BE COORDINATED WITH THE OWNER PRIOR TO ORDERING. ALL PROGRAMMING SHALL BE INCLUDED AS REQUIRED BY THE OWNER. PROVIDE MINIMUM 4 HOURS OF TRAINING FOR EACH SYSTEM UNO.

ELECTRICAL GENERAL NOTES:

A. 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, COMPLIANCE WITH SPECIFICATIONS, PROPER VOLTAGE AND CURRENT CHARACTERISTICS TO AVOID CONFLICT WITH ANY OTHER BUILDINGS SYSTEMS. VERIFY SAME WITH SHOP DRAWINGS.
B. ADDITIONAL ELECTRICAL REQUIREMENTS MAY BE SHOWN ON PLANS FROM OTHER DISCIPLINES IN THIS SET. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW ALL PLANS AND SPECIFICATIONS FOR A COMPLETE UNDERSTANDING OF THE PROJECT REQUIREMENTS.
C. WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ALL LOCAL, STATE, AND NATIONAL CODES. INCLUDING BUT NOT LIMITED TO NFPA 70, INTERNATIONAL BUILDING CODES, ETC.
D. CONTRACTOR SHALL FOLLOW SEISMIC RESTRAINT AND DESIGN REQUIREMENTS CONTAINED IN LATEST ADOPTED STATE AND INTERNATIONAL BUILDING CODES, WITH ALL AMENDMENTS AS ADOPTED BY THE CURRENT LEGISLATION. REFER TO ELECTRICAL AND STRUCTURAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.
E. ALL OFFSETS, TURNS, FITTINGS, TRIM, DETAIL, ETC. MAY NOT BE INDICATED, BUT SHALL BE PROVIDED AS REQUIRED. ADDITIONAL ALLOWANCES SHALL BE INCLUDED FOR SAME AT EACH PROPOSER'S DISCRETION.
F. 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.
G. ADVISE THE ENGINEER OF ANY CONFLICTS, ERRORS, OMISSIONS, ETC. AT LEAST TEN DAYS PRIOR TO BID DATE, TO ALLOW CLARIFICATION BY WRITTEN ADDENDUM.
H. WHERE CONFLICTS ARE FOUND BETWEEN DRAWINGS, DETAILS, OR SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT SHALL APPLY. NOTIFY ARCHITECT OF DISCREPANCY IN WRITING.
I. 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.
J. OBSERVE ALL APPLICABLE CODES, RULES AND REGULATIONS THAT MAY APPLY TO THE WORK UNDER THIS CONTRACT. (CITY, COUNTY, LOCAL, STATE, FEDERAL, MUNICIPALITY, UTILITY COMPANY, OSHA, ETC.).
K. MOUNTING HEIGHTS FOR WALL MOUNTED DEVICES INDICATED ABOVE FINISHED FLOOR ARE TO CENTER OF DEVICE UNO. MOUNTING HEIGHTS TO CEILING SUSPENDED DEVICES ARE TO BOTTOM OF DEVICE UNO.
L. INSTALL EQUIPMENT, MATERIALS, ETC. IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND DIRECTIONS. IF IN CONFLICT WITH THE DESIGN INDICATED IN CONTRACT DOCUMENTS, ADVISE THE ENGINEER PRIOR TO INSTALLATION FOR CLARIFICATION.
M. DO NOT RECESS PANELBOARD TUBS OR OTHER FLUSH-MOUNTED EQUIPMENT IN WALLS THAT HAVE A FIRE RATING. NO INSTALLATION SHALL DIMINISH OR VOID FIRE RESISTIVE RATINGS IN ANYWAY.
N. THE PURPOSE AND INTENT OF ALL OF THE DOCUMENTS PERTAINING TO THIS PROJECT IS TO PROVIDE A COMPLETE, FUNCTIONAL, SAFE, LIKE-NEW FACILITY. ANYTHING LESS SHALL BE UNACCEPTABLE.
O. 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 DETERMINATION OF THE ACCEPTABILITY OF THE QUALITY OF WORK RESIDES WITH THE ENGINEER.
P. 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 WARRANTY PERIODS FOR EQUIPMENT ARE SPECIFIED.
Q. UNLESS OTHERWISE SPECIFIED OR INDICATED, ALL EQUIPMENT AND/OR MATERIALS WITHIN OCCUPIED SPACES OR EXPOSED TO VIEW ON THE BUILDING EXTERIOR SHALL BE PRIMED AND FINISHED SO AS TO COMPLEMENT ADJACENT SURFACE, UNLESS OTHERWISE NOTED. COORDINATE WORK AND COLORS WITH ARCHITECT.
R. WHERE PENETRATING ROOFING MEMBRANE OR OTHER MATERIALS USED FOR WEATHERPROOFING THE BUILDING, MAKE SUCH PENETRATION IN A WAY THAT WILL NOT VOID OR DIMINISH THE ROOFING WARRANTY OR INTEGRITY IN ANYWAY. COORDINATE ALL SUCH PENETRATIONS WITH THE ROOFING MANUFACTURER AND ARCHITECT.
S. THE CONTRACTOR IS RESPONSIBLE FOR ALL UTILITY COMPANY FEES, CASH CONTRIBUTIONS OR OTHER COSTS THAT THE UTILITY COMPANY MAY REQUIRE TO COMPLETE THEIR WORK. (ELECTRIC, TELEPHONE, TELEVISION, DATA, ETC.).
T. COORDINATE WITH ARCHITECTURAL FLOOR PLANS, ELEVATIONS AND CASEWORK DETAILS FOR LOCATION OF ADDITIONAL RECEPTACLES, UTILITY OUTLETS, ELECTRICAL DEVICES, ETC.
U. CEILING-MOUNTED ELECTRICAL DEVICES SHALL BE CENTERED IN 2'X2' CEILING TILE AND INSTALLED CENTERED ON 2' DIMENSION OF 2'X4' TILE AND ON CENTERLINE OR A QUARTER POINT ON 4' DIMENSION.
V. ANY VIBRATING, OSCILLATING OR OTHER NOISE OR MOTION PRODUCING EQUIPMENT SHALL BE ISOLATED FROM SURROUNDING SYSTEMS IN AN APPROVED MANNER. NOISY OR STRUCTURALLY DAMAGING INSTALLATIONS SHALL BE SATISFACTORILY REPLACED OR REPAIRED AT THE INSTALLING CONTRACTORS' EXPENSE. THE FINAL DECISION ON THE SUITABILITY OF A PARTICULAR INSTALLATION'S ACCEPTABILITY SHALL BE THAT OF THE ENGINEER.
W. CHECK ALL THREE PHASE MOTORS WITH A PHASE ROTATION METER, PRIOR TO PLACING IN SERVICE.
X. PROVIDE DETAILED SHOP DRAWINGS TO ENGINEER PRIOR TO PURCHASING OR INSTALLING ANY EQUIPMENT
Y. DEVIATIONS IN SIZES, CAPACITIES, FIT, FINISH, ETC. FOR EQUIPMENT FROM THAT PRIME SPECIFIED SHALL BE THE RESPONSIBILITY OF THE PURCHASER OF THAT EQUIPMENT. ANY PROVISIONS REQUIRED TO ACCOMMODATE A DEVIATION, WHETHER APPROVED BY THE ENGINEER OR NOT, SHALL BE THE RESPONSIBILITY OF THE PURCHASER.
Z. THE CONSTRUCTION MANAGER, GENERAL CONTRACTOR, OR WHOMEVER HOLDS THE PRIME CONTRACT(S) FOR THIS CONSTRUCTION IS RESPONSIBLE FOR THE COORDINATION, APPEARANCE, SCHEDULING AND TIMELINESS OF THE WORK OF ALL TRADES, CONTRACTORS, SUPPLIERS, INSTALLERS, ETC. POOR OR UNTIMELY WORK ON THE PART OF ANY SUBCONTRACTOR SHALL BE RESOLVED BY THE PARTY WHO ENGAGED THEM ON THIS PROJECT.
AA. WHERE MOUNTING HEIGHTS ARE NOT INDICATED OR ARE IN CONFLICT WITH ANY OTHER BUILDING SYSTEM, CONTACT THE ENGINEER BEFORE AFFECTING INSTALLATION. REFER ALSO TO ARCHITECTURAL INTERIOR AND EXTERIOR ELEVATIONS, CEILING HEIGHTS AND OTHER DETAILS OF THESE DOCUMENTS, AS APPLICABLE.
BB. WHERE FIRE-RATED CEILING ASSEMBLIES ARE NOTED, PROVIDE UL-LISTED FIRE-RATED GYPSUM BOARD OR PRE-MANUFACTURED ENCLOSURES ABOVE LUMINAIRES, CEILING DEVICES, ETC. IN OR ON CEILING, AS REQUIRED TO MAINTAIN CEILING RATINGS.
CC. COORDINATE THE LOCATION OF DRAINS, ELECTRICAL OUTLETS, GAS OUTLETS, ETC. WITH ALL CASEWORK, KITCHEN EQUIPMENT, MECHANICAL ROOM EQUIPMENT, ETC. PRIOR TO COMMENCING INSTALLATION. WORK NOT SO COORDINATED SHALL BE REMOVED AND PROPERLY INSTALLED AT THE EXPENSE OF THE RESPONSIBLE CONTRACTOR(S).
DD. ALL ELECTRICAL COMPONENTS OR EQUIPMENT SHALL BE LISTED AND LABELED BY UNDERWRITER'S LABORATORIES OR OTHER APPROVED LISTING AGENCY. APPROVAL AND LABELING OF INDIVIDUAL COMPONENTS ON AN ASSEMBLY IS NOT ACCEPTABLE AS MEETING THIS REQUIREMENT, UNLESS WAIVED BY THE ENGINEER IN WRITING.
EE. ALL WIRING SYSTEMS SHALL BE INSTALLED WITH A MINIMUM OF SPLICES. CONDUCTORS, WHETHER SINGLE OR MULTI-PAIR, SHALL BE INSTALLED CONTINUOUS INSOFAR AS POSSIBLE FROM TERMINAL POINT TO TERMINAL POINT.
FF. NO CONDUIT, SUPPORTS, ETC. SHALL BE RUN THROUGH ACCESS CLEARANCES OF EQUIPMENT BY OTHER TRADES (I.E. VAV BOXES). COORDINATE WITH ALL TRADES PRIOR TO CONSTRUCTION.
GG. ALL CONTRACTORS SHALL EXERCISE EXTREME CARE IN THE COURSE OF THEIR WORK SO AS TO ENSURE THAT THEY DO NOT INTERRUPT ANY EXISTING SERVICE OR SUB-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 OR OVERHEAD UTILITY. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL FEDERAL, STATE AND/OR LOCAL RULES, REGULATIONS, STANDARD AND SAFETY REQUIREMENTS. UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE MUNICIPALITY OR UTILITY COMPANY STANDARDS. IN ALL CASES, THE MOST STRINGENT REQUIREMENT SHALL APPLY.
HH. ALL SUPPORTS FOR EQUIPMENT, DEVICES OR FIXTURES SHALL BE UNIQUE, DIRECTLY FROM THE BUILDING STRUCTURE. DO NOT SUPPORT WORK FROM OTHER TRADES EQUIPMENT OR SUPPORTS WITHOUT WRITTEN PERMISSION FROM THE ENGINEER AND CONSENT OF THE OTHER TRADE, IN WRITING.
II. WHERE INTERRUPTING AN EXISTING UTILITY OR SERVICE DELIBERATELY OR ACCIDENTALLY, THE RESPONSIBLE CONTRACTOR SHALL WORK CONTINUOUSLY AS NEEDED TO RESTORE SAME, PROVIDING PREMIUM TIME AS NEEDED.
JJ. REFER TO ARCHITECTURAL WALL ELEVATIONS (WHERE GIVEN) FOR HEIGHTS AND MOUNTING RELATIONSHIP OF OUTLETS AND EQUIPMENT. IF IN DOUBT, CONTACT ENGINEER FOR DIRECTION PRIOR TO ROUGH IN.
KK. FLUSH OR PEDESTAL TYPE FLOOR OUTLETS/BOXES, AS INDICATED ON PLAN, SHALL BE LOCATED BY DIMENSIONS PROVIDED BY THE ARCHITECT, UNLESS OTHERWISE SHOWN ON PLANS. IF IN DOUBT, CONTACT THE ENGINEER PRIOR TO ROUGHING-IN ANY WORK.
LL. AS APPLICABLE, REFER TO ARCHITECTURAL PHASING PLANS AND PHASING BOUNDARIES ON THESE DRAWINGS FOR SEQUENCING OF WORK, FULL EXTENT OF AREAS INVOLVED, EXTENT OF CEILING WORK, ETC. PROVIDE TEMPORARY CONNECTIONS FOR CIRCUITS AND WORK AS REQUIRED TO MAINTAIN SEQUENCE OF THE WORK FROM PHASE TO PHASE.
MM. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED FOR HIS WORK. ALL CUTTING AND PATCHING SHALL BE IN ACCORDANCE WITH THE ARCHITECT'S STANDARDS FOR SUCH WORK.
NN. ALL WORK SHALL BE CONCEALED UNLESS SPECIFICALLY INDICATED TO BE EXPOSED, OR REQ

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1 LEVEL 0/1 - INTERCONNECTION PLAN

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

STATE OF KENTUCKY APPROVAL

GENERAL NOTES (INTERCON):

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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 INFORMANTION.

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-PENTETRABLE 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

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DRAWING TITLE:

LEVEL 0/1 INTERCONNECTION PLAN

STATE OF KENTUCKY
ROBERT ANTHONY HANS
23143
LICENSED PROFESSIONAL ENGINEER

JANUARY 30, 2020

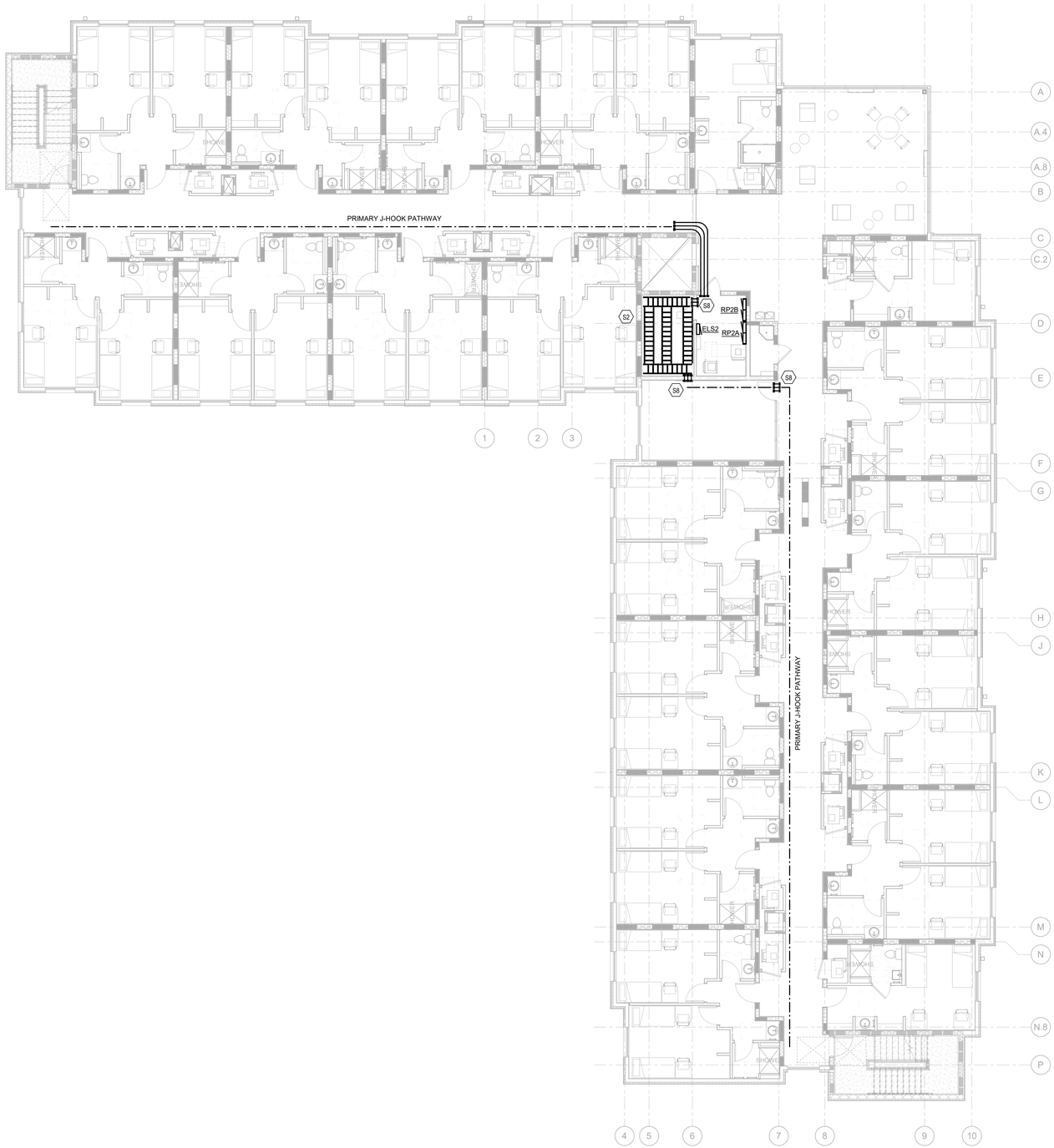
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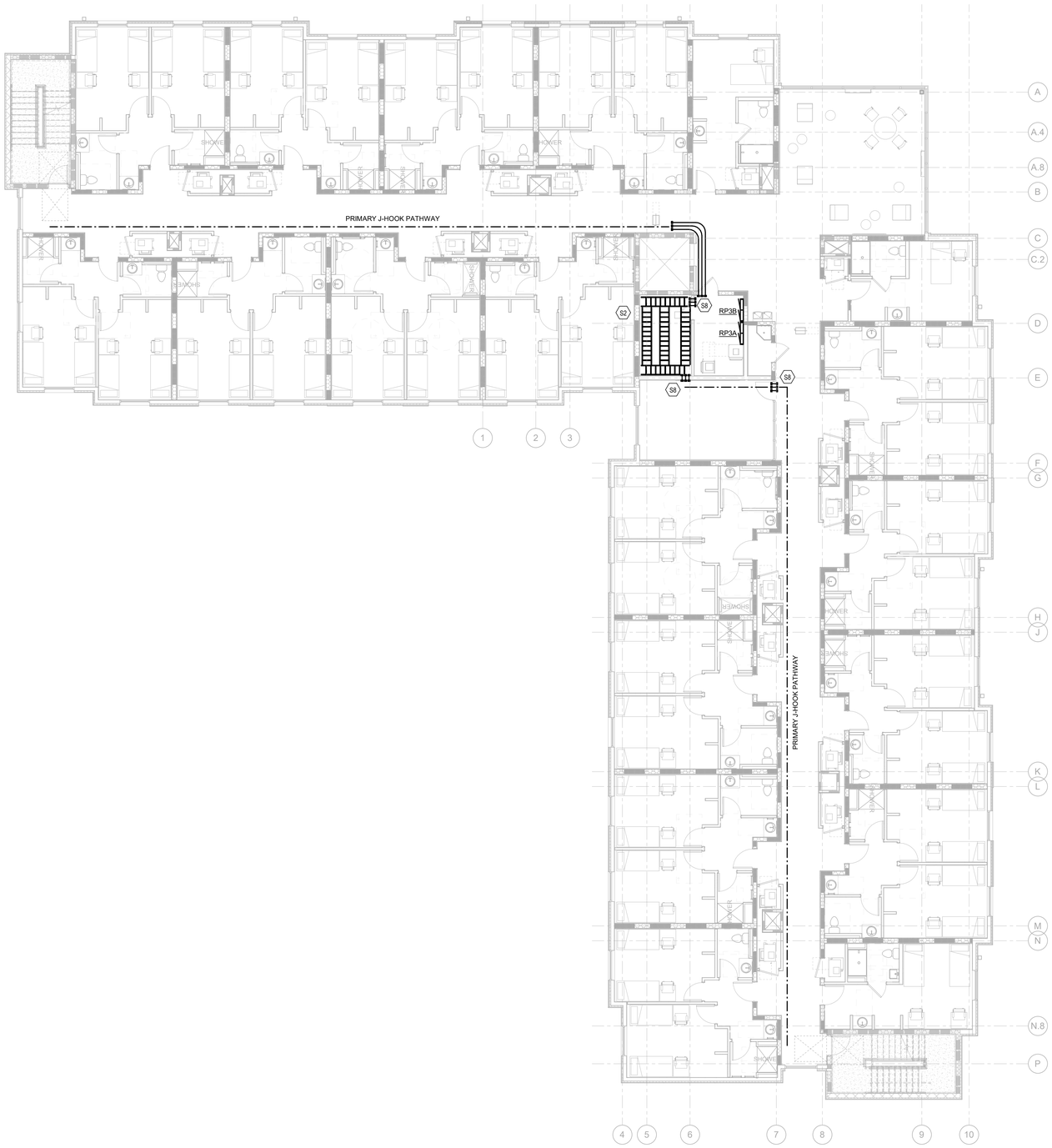
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PRIMARY J-HOOK PATHWAY
PRIMARY J-HOOK PATHWAY
S2
S8
S8
S8
RP2B
ELS2
RP2A
SHOWER
SHOWER
SHOWER

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1 LEVEL 3 - INTERCONNECTION PLAN

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

STATE OF KENTUCKY APPROVAL

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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-PENTETRABLE 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.



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DRAWING TITLE:
LEVEL 03 INTERCONNECTION PLAN

STATE OF KENTUCKY
ROBERT ANTHONY HANS 23143
LICENSED PROFESSIONAL ENGINEER

JANUARY 30, 2020

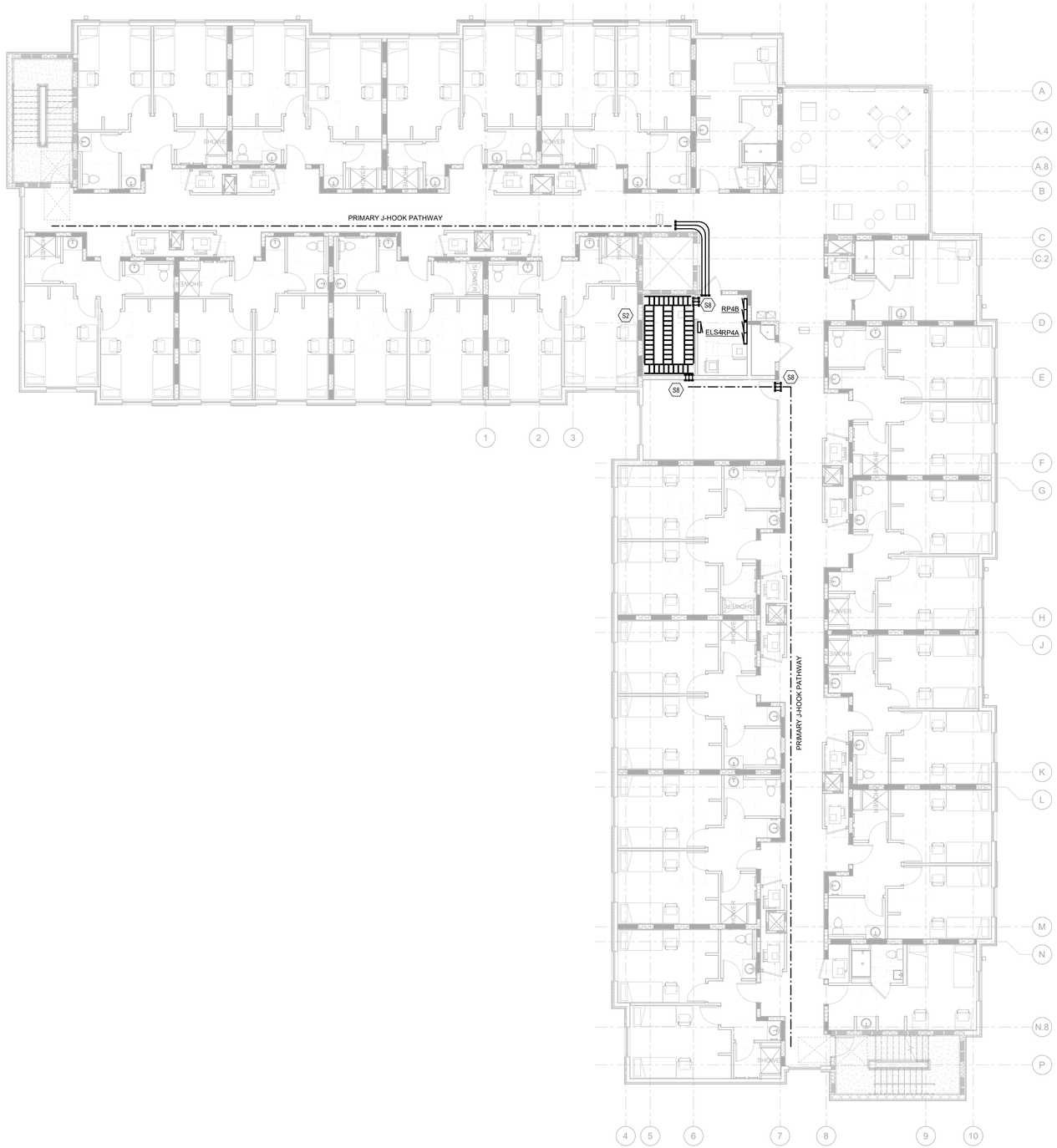
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STATE OF KENTUCKY APPROVAL

GENERAL NOTES (INTERCON):

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DRAWING TITLE:
LEVEL 04 INTERCONNECTION PLAN

STATE OF KENTUCKY
ROBERT ANTHONY HANS
23143
LICENSED PROFESSIONAL ENGINEER

JANUARY 30, 2020

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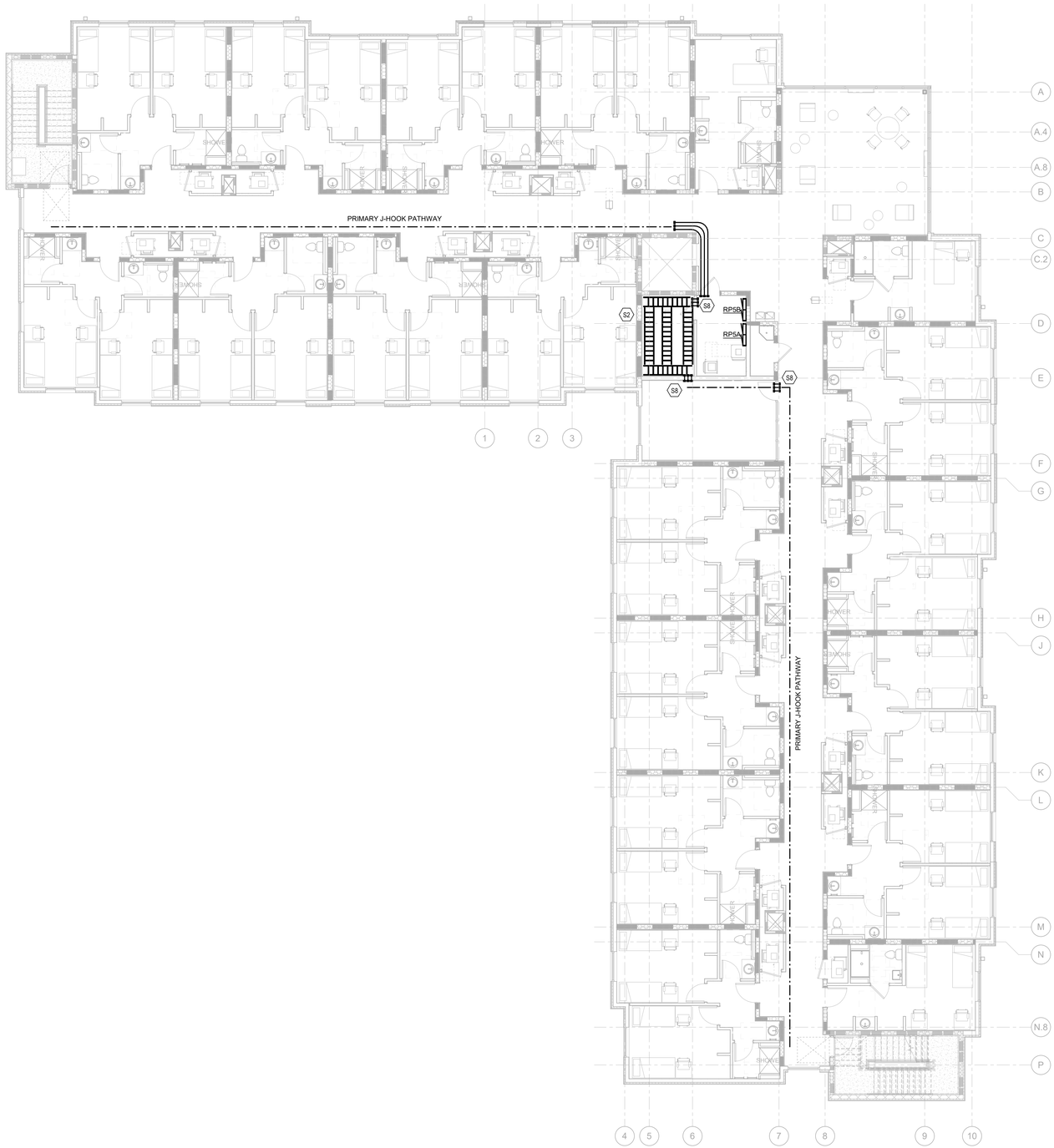
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1 LEVEL 5 - INTERCONNECTION PLAN
SCALE: 1/8" = 1'-0"

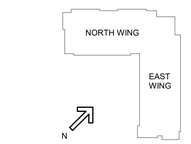
STATE OF KENTUCKY APPROVAL

GENERAL NOTES (INTERCON):

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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.
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DRAWING TITLE:
LEVEL 05 INTERCONNECTION PLAN

STATE OF KENTUCKY
ROBERT ANTHONY HANS
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LICENSED PROFESSIONAL ENGINEER

JANUARY 30, 2020

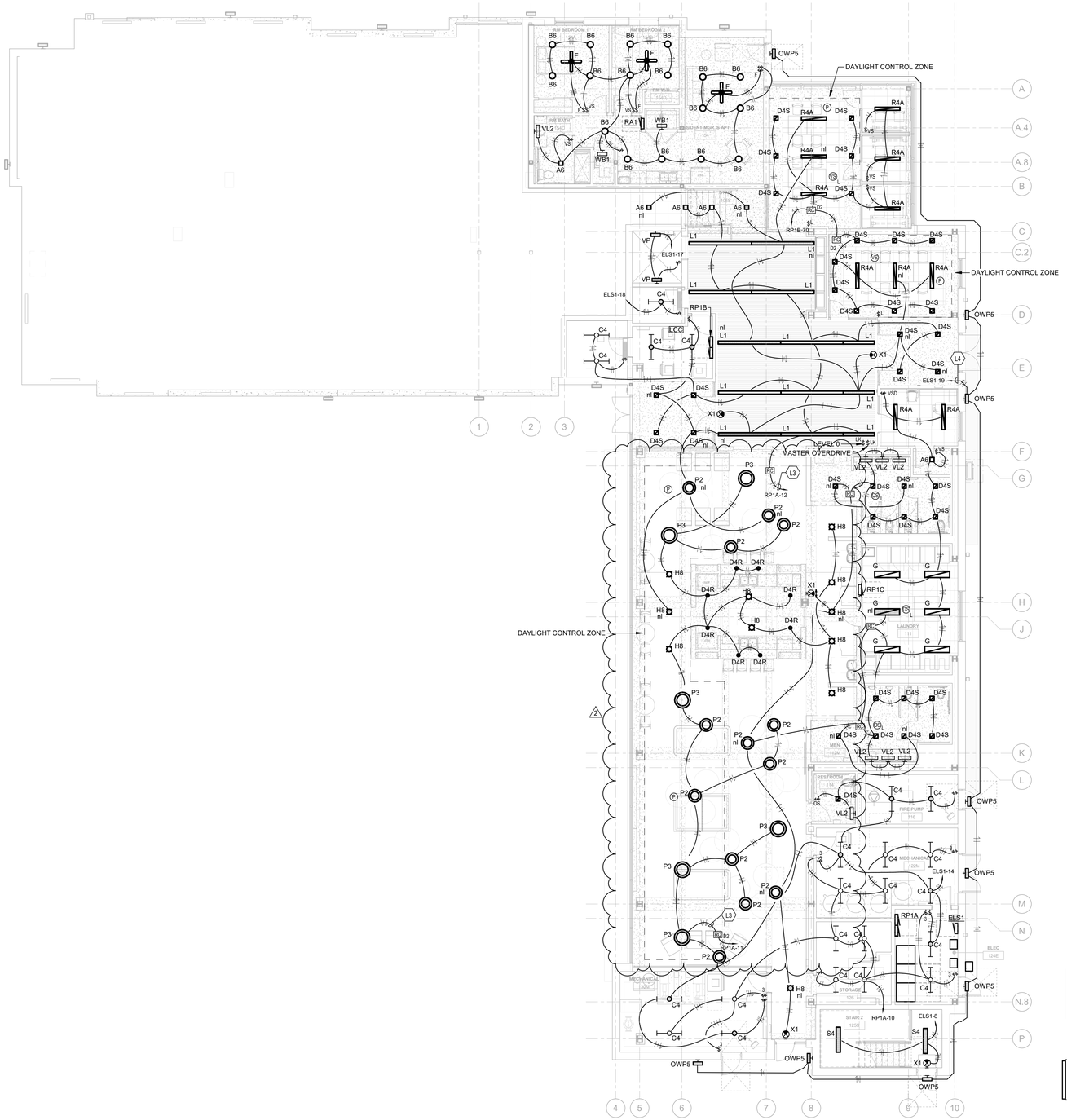
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2 LEVEL 0 - LIGHTING

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

STATE OF KENTUCKY APPROVAL

GENERAL NOTES (LIGHTING):

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 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.
C. 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.
D. 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.
E. 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.
F. WHERE EXIT SIGNS OR EMERGENCY BATTERY PACKS ARE PROVIDED, THEY SHALL BE CONNECTED TO AN UNSWITCHED LINE.
G. LUMINAIRES INDICATED WITH MULTI-LEVEL SWITCHING SHALL HAVE SIMILAR LAMPS CONTROLLED TOGETHER, I.E. INBOARD AND OUTBOARD LAMPS OR RIGHT AND LEFT HAND LAMPS.
H. ALL LIGHTING FIXTURE LENSES, PARABOLIC LOUVERS, DOWNLIGHTING ALZAK CONES AND "PARACUBE" LOUVERS SHALL BE HANDLED WITH COTTON GLOVES DURING INSTALLATION AND LAMPING TO AVOID FINGERPRINTS OR DIRT DEPOSITS. IT IS PREFERRED THAT FIXTURES BE SHIPPED AND INSTALLED WITH CLEAR PLASTIC BAGS TO PROTECT LOUVERS. AT CLOSE OF PROJECT, AND AFTER CONSTRUCTION AIR FILTERS ARE CHANGED, REMOVE BAGS. ANY LOUVER OR CONE SHOWING DIRT OR FINGER PRINTS SHALL BE CLEANED WITH SOLVENT RECOMMENDED BY THE MANUFACTURER, OR REPLACED AS NECESSARY IN ORDER TO TURN OVER TO THE OWNER NEW FIXTURES AT OCCUPANCY.
I. RECESSED LUMINAIRES SHALL BE SECURED SUCH THAT THE FORCE REQUIRED INSERTING LAMPS, TRIMS, LENSES, LOUVERS, OR DOOR FRAMES DOES NOT SHIFT HOUSING. ALL TRIMS SHALL BE COMPLETELY FLUSH WITH FINISHED CEILINGS AT COMPLETION OF CONSTRUCTION.
J. CONTRACTOR SHALL PROVIDE UNSWITCHED CONDUCTOR TO ALL EXIT SIGNS, EMERGENCY INVERTER BATTERY PACKS, AND NIGHT LIGHTS AS REQUIRED.

TAGGED NOTES

L3 PROVIDE BAS INTERFACE TO ALLOW SCHEDULED ON/OFF OF COMMON AREA LIGHTING. PROVIDE 0-10V DIMMING INDEPENDENT CONTROL OF DAYLIGHT ZONES WHERE INDICATED. REFER TO DIGITAL CONTROL DETAIL FOR MORE INFO.

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

NORTH WING
EAST WING
N

#	DATE	CHANGE DESCRIPTION
1	2.18.2020	ADDENDUM #2
2	06/05/2020	BULLETIN #2

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LEVEL 0 - LIGHTING PLAN

JANUARY 30, 2020

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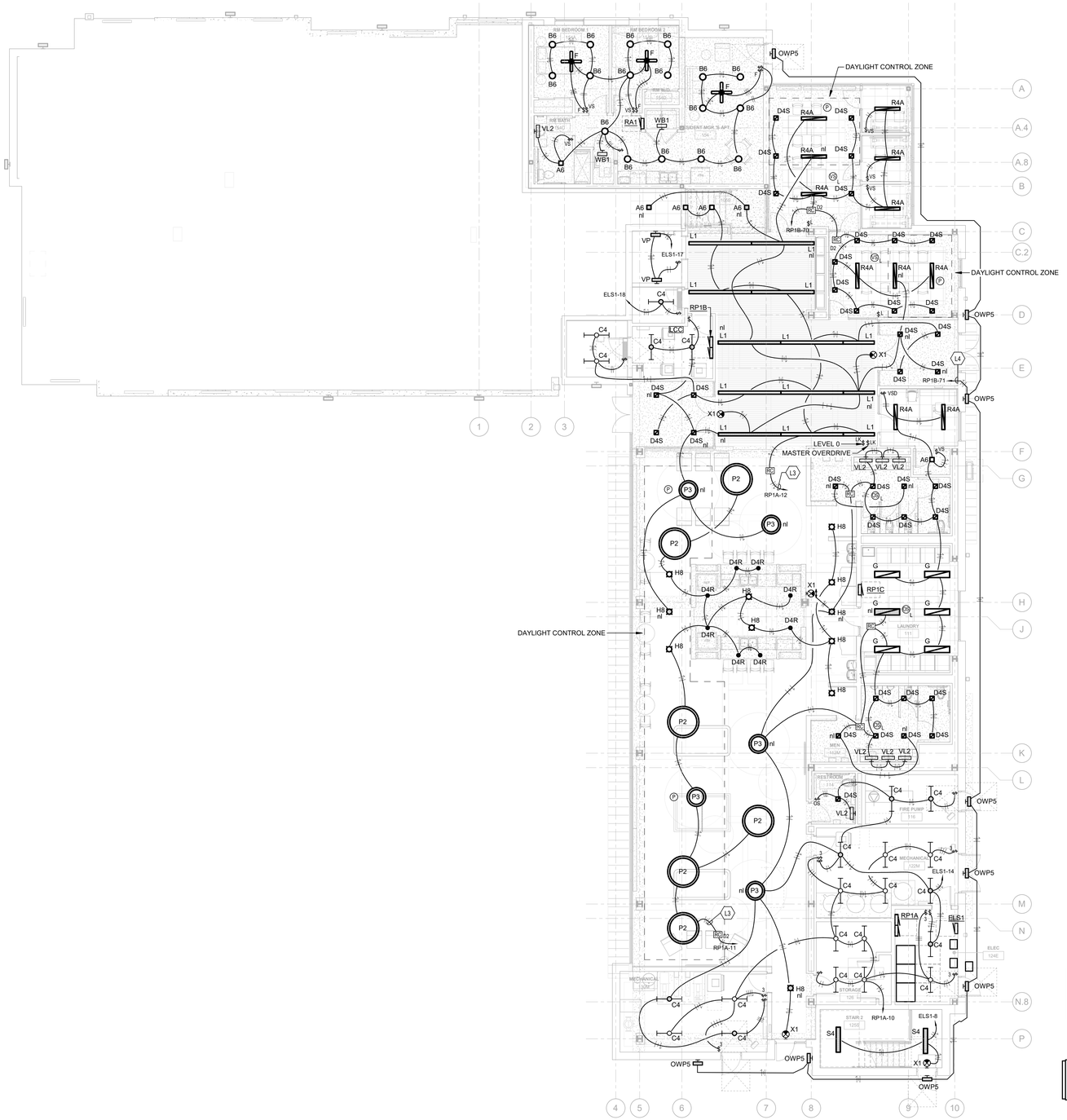
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STATE OF KENTUCKY
ROBERT ANTHONY HANS
23143
LICENSED PROFESSIONAL ENGINEER

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2 LEVEL 0 - LIGHTING

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

STATE OF KENTUCKY APPROVAL

GENERAL NOTES (LIGHTING):

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DRAWING TITLE:

LEVEL 0 - LIGHTING PLAN

JANUARY 30, 2020

DRAWN BY: GCR | CHECKED BY:

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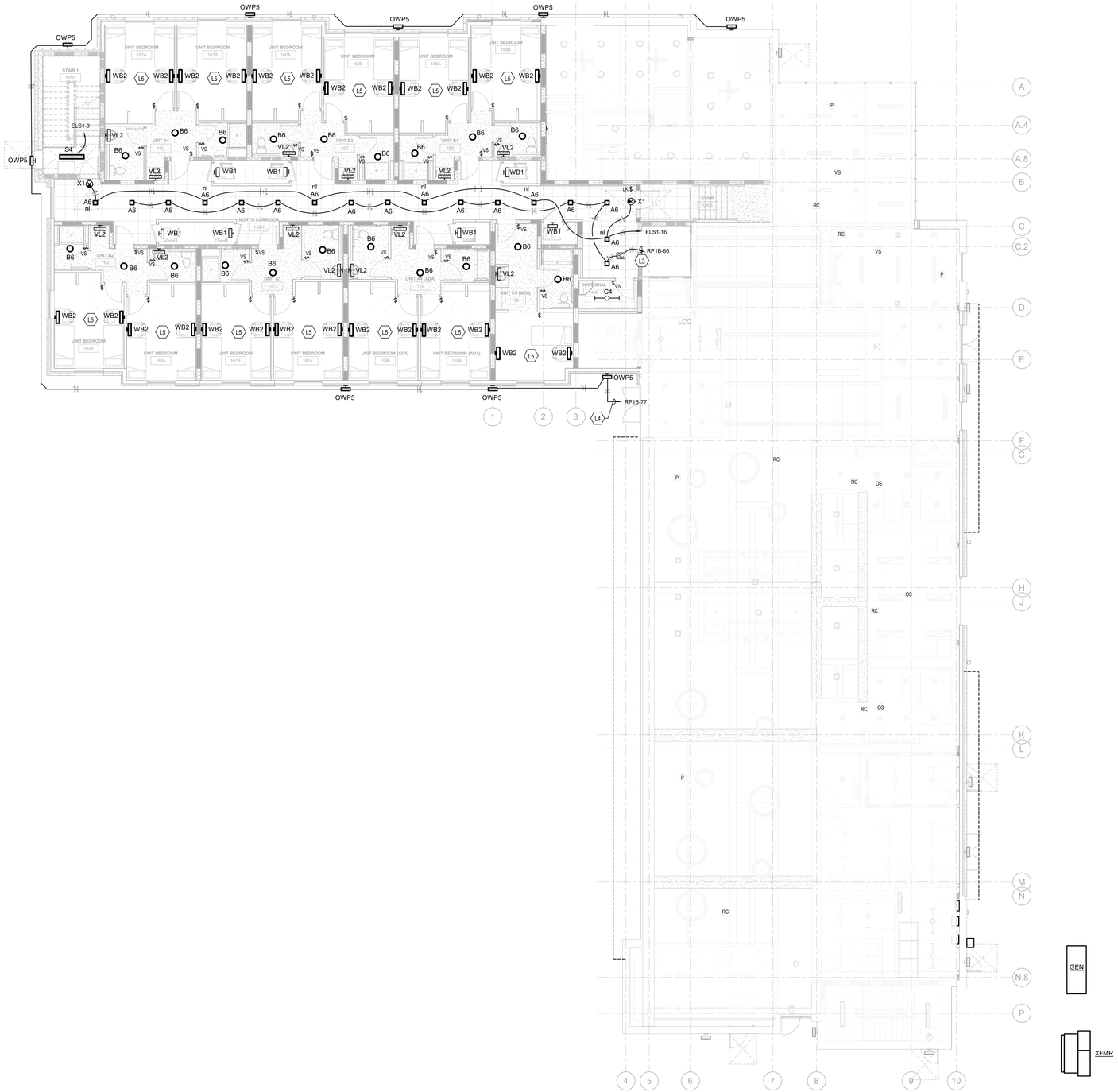
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STATE OF KENTUCKY
ROBERT ANTHONY HANS
23143
LICENSED PROFESSIONAL ENGINEER

PRINT DATE: 10/1/2020 12:51:34 PM
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2 LEVEL 1 - LIGHTING

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

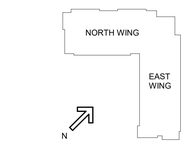
STATE OF KENTUCKY APPROVAL

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DRAWING TITLE:

LEVEL 1 - LIGHTING PLAN

STATE OF KENTUCKY
ROBERT ANTHONY HANS
23143
LICENSED PROFESSIONAL ENGINEER

JANUARY 30, 2020

DRAWN BY: **GCR** | CHECKED BY:

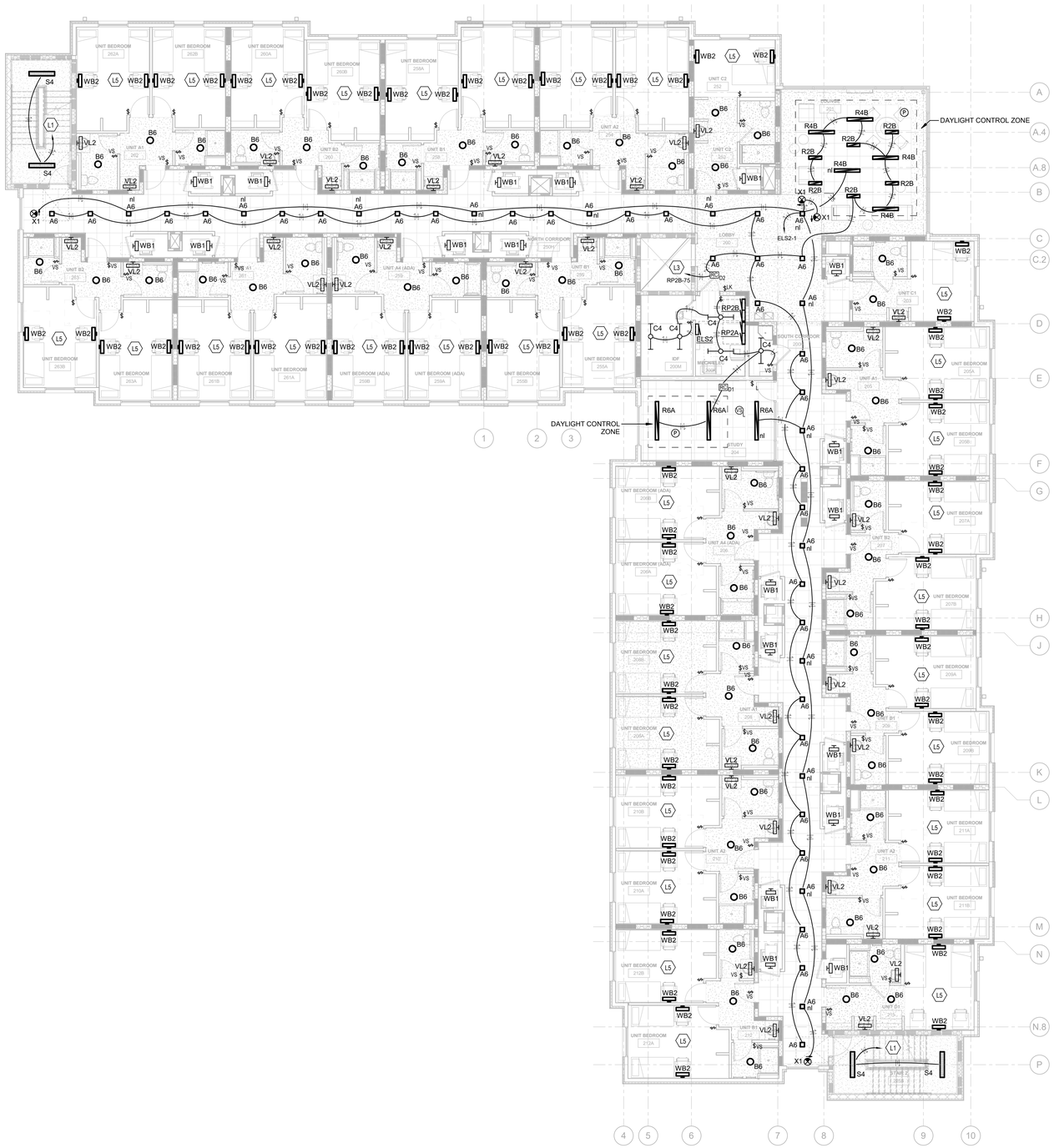
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2 LEVEL 2 - LIGHTING

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

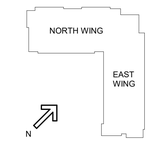
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DRAWING TITLE:

LEVEL 2 - LIGHTING PLAN

STATE OF KENTUCKY
ROBERT ANTHONY HANS
23143
LICENSED PROFESSIONAL ENGINEER

JANUARY 30, 2020

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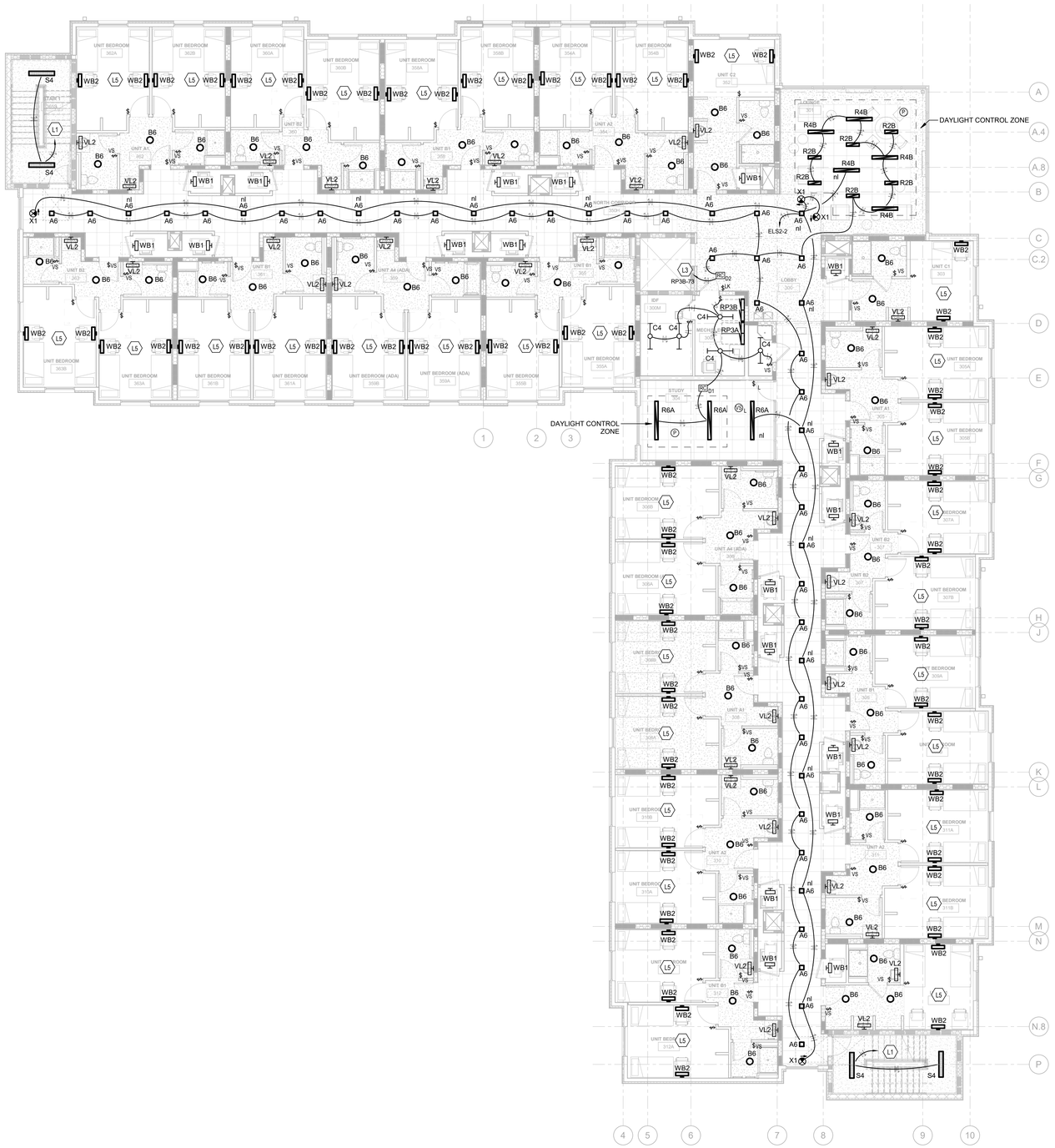
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2 LEVEL 3 - LIGHTING

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

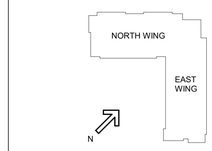
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DRAWING TITLE:

LEVEL 3 - LIGHTING PLAN

STATE OF KENTUCKY
ROBERT ANTHONY HANS 23143
LICENSED PROFESSIONAL ENGINEER

JANUARY 30, 2020

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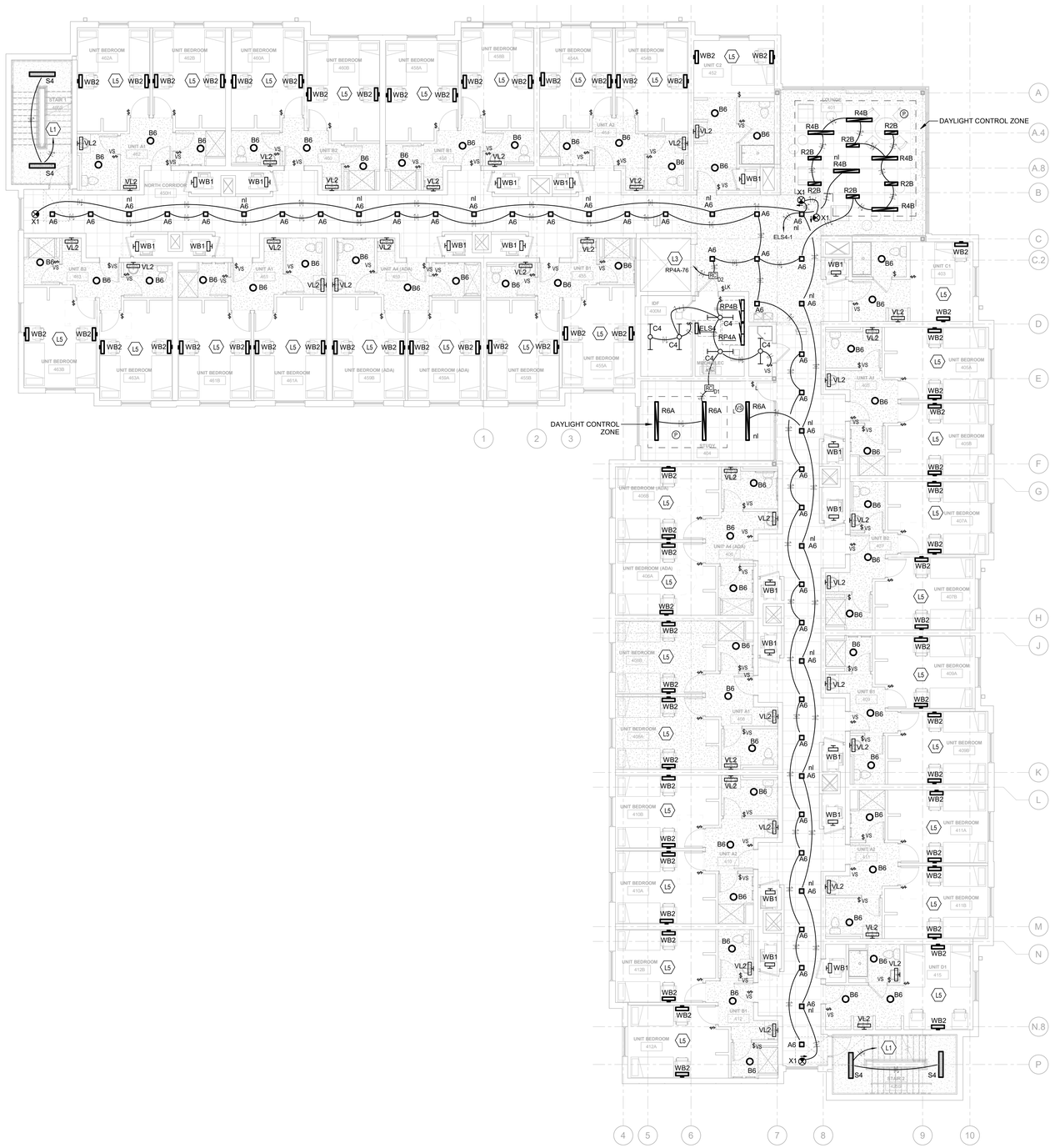
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2 LEVEL 4 - LIGHTING

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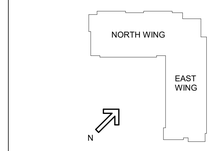
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TAGGED NOTES

L1 TO FIXTURES BELOW.
L3 PROVIDE BAS INTERFACE TO ALLOW SCHEDULED ON/OFF OF COMMON AREA LIGHTING. PROVIDE 0-10V DIMMING INDEPENDENT CONTROL OF DAYLIGHT ZONES WHERE INDICATED. REFER TO DIGITAL CONTROL DETAIL FOR MORE INFO.
L5 REFER TO ENLARGED PLANS FOR TYPICAL CIRCUITING ARRANGEMENTS IN DORM UNITS AND PANEL SCHEDULES FOR PANEL AND CIRCUIT NUMBERS.



#	DATE	CHANGE DESCRIPTION

NKU NORTHERN KENTUCKY UNIVERSITY

NEW STUDENT HOUSING
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DRAWING TITLE:

LEVEL 4 - LIGHTING PLAN

STATE OF KENTUCKY
ROBERT ANTHONY HANS
23143
LICENSED PROFESSIONAL ENGINEER

JANUARY 30, 2020

DRAWN BY: **GCR** | CHECKED BY:

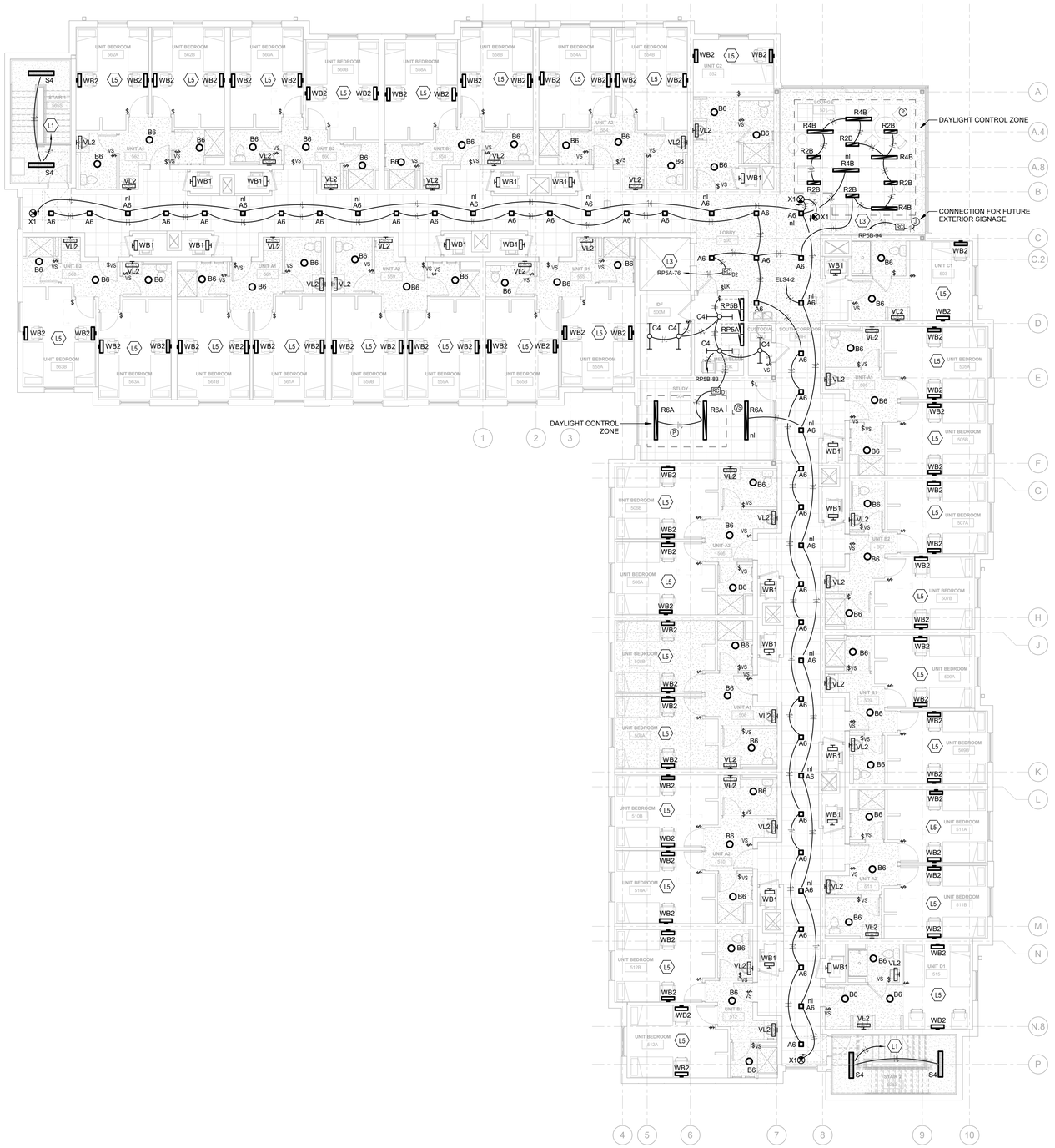
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E104

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PRINT DATE: 1/31/2020 12:52:02 PM
FILE INFO: BIM 360:/NKU - New Residence Hall/ONSH19_ELEC1_R19.rvt

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2 LEVEL 5 - LIGHTING

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

STATE OF KENTUCKY APPROVAL

GENERAL NOTES (LIGHTING):

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 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.
C. 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.
D. 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.
E. 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.
F. WHERE EXIT SIGNS OR EMERGENCY BATTERY PACKS ARE PROVIDED, THEY SHALL BE CONNECTED TO AN UNSWITCHED LINE.
G. LUMINAIRES INDICATED WITH MULTI-LEVEL SWITCHING SHALL HAVE SIMILAR LAMPS CONTROLLED TOGETHER, I.E. INBOARD AND OUTBOARD LAMPS OR RIGHT AND LEFT HAND LAMPS.
H. ALL LIGHTING FIXTURE LENSES, PARABOLIC LOUVERS, DOWNLIGHTING ALZAK CONE'S AND "PARACUBE" LOUVERS SHALL BE HANDLED WITH COTTON GLOVES DURING INSTALLATION AND LAMPING TO AVOID FINGERPRINTS OR DIRT DEPOSITS. IT IS PREFERRED THAT FIXTURES BE SHIPPED AND INSTALLED WITH CLEAR PLASTIC BAGS TO PROTECT LOUVERS. AT CLOSE OF PROJECT, AND AFTER CONSTRUCTION AIR FILTERS ARE CHANGED, REMOVE BAGS. ANY LOUVER OR CONE SHOWING DIRT OR FINGER PRINTS SHALL BE CLEANED WITH SOLVENT RECOMMENDED BY THE MANUFACTURER, OR REPLACED AS NECESSARY IN ORDER TO TURN OVER TO THE OWNER NEW FIXTURES AT OCCUPANCY.
I. RECESSED LUMINAIRES SHALL BE SECURED SUCH THAT THE FORCE REQUIRED INSERTING LAMPS, TRIMS, LENSES, LOUVERS, OR DOOR FRAMES DOES NOT SHIFT HOUSING. ALL TRIMS SHALL BE COMPLETELY FLUSH WITH FINISHED CEILINGS AT COMPLETION OF CONSTRUCTION.
J. CONTRACTOR SHALL PROVIDE UNSWITCHED CONDUCTOR TO ALL EXIT SIGNS, EMERGENCY INVERTER BATTERY PACKS, AND NIGHT LIGHTS AS REQUIRED.

TAGGED NOTES

L1 TO FIXTURES BELOW.
L3 PROVIDE BAS INTERFACE TO ALLOW SCHEDULED ON/OFF OF COMMON AREA LIGHTING. PROVIDE 0-10V DIMMING INDEPENDENT CONTROL OF DAYLIGHT ZONES WHERE INDICATED. REFER TO DIGITAL CONTROL DETAIL FOR MORE INFO.
L5 REFER TO ENLARGED PLANS FOR TYPICAL CIRCUITING ARRANGEMENTS IN DORM UNITS AND PANEL SCHEDULES FOR PANEL AND CIRCUIT NUMBERS.

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DRAWING TITLE:

LEVEL 5 - LIGHTING PLAN

ROBERT ANTHONY HANS 23143 LICENSED PROFESSIONAL ENGINEER STATE OF KENTUCKY

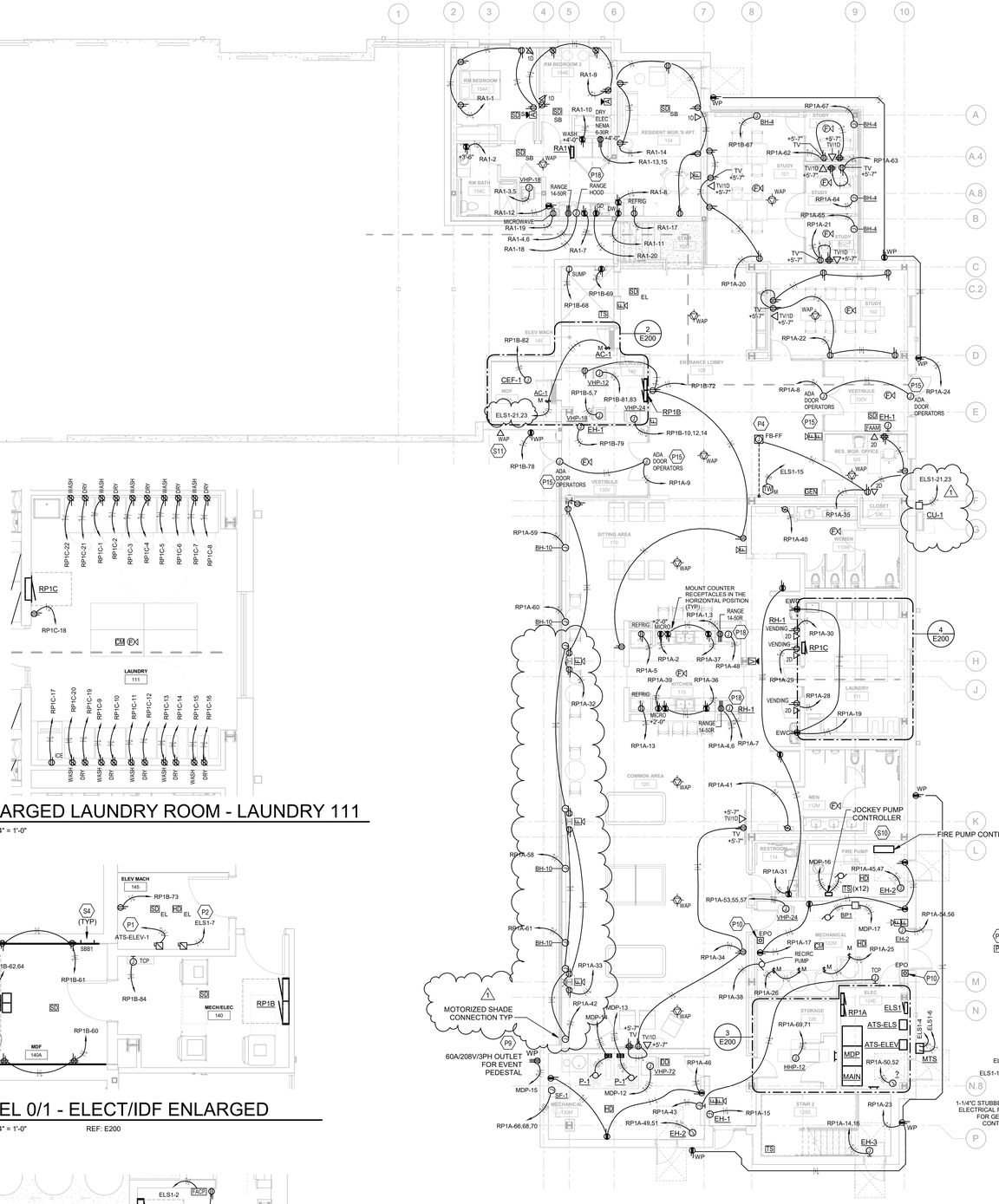
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1 LEVEL 0 - POWER/SYSTEMS

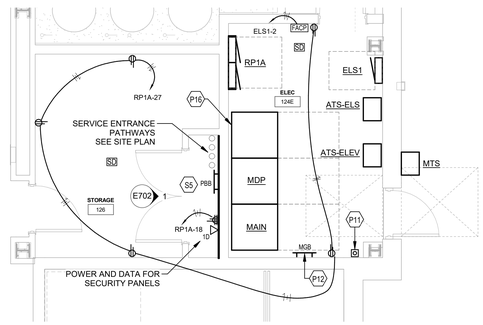
SCALE: 1/8" = 1'-0"

4 ENLARGED LAUNDRY ROOM - LAUNDRY 111

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

2 LEVEL 0/1 - ELECT/IDF ENLARGED

SCALE: 1/4" = 1'-0" REF: E200



3 MAIN ELECTRICAL/MDF ENLARGED

SCALE: 1/4" = 1'-0" REF: E200

TAGGED NOTES

- P1 PROVIDE 208V, 3-PHASE CONNECTION WITH FUSED ELEVATOR SHUNT TRIP DISCONNECT FOR ELEVATOR CONTROLLER. SEE ELEVATOR POWER ONE-LINE DIAGRAM, FOR MORE INFORMATION.
- P2 PROVIDE 120V, 30A FUSED DISCONNECT WIRED TO ELEVATOR CONTROLLER FOR ELEVATOR LIGHTING AND FAN. COORDINATE EXACT REQUIRMENTS WITH ELEVATOR MANUFACTURER.
- P4 PROVIDE 2-GANG DUAL SERVICE METAL FLOOR BOX RATED FOR ON-GRADE CONCRETE CONSTRUCTION WITH ROUND FURNITURE FEED COVER. HUBBELL SYSTEMONE CFB2 OR EQUAL. PROVIDE (1) 1"C FOR POWER AND (1) 2"C FOR DATA CONNECTIONS AND WIRE TO CIRCUIT SHOWN. COORDINATE EXACT LOACATION WITH FURNITURE INSTALLER PRIOR TO INSTALLATION.
- P8 PROVIDE BAS INTERFACE FOR GENERATOR CONTROLLER AND INTEGRATE INTO THE CAMPUS BUILDING AUTOMATION SYSTEM. INTEGRATION SHALL ALLOW THE BAS TO REMOTELY START/STOP AND CHANGE THE TEST SCHEDULE OF THE GENERATOR.
- P9 CONFIRM EXACT OUTLET CONFIGURATION WITH NKU PRIOR TO INSTALLATION.
- P10 PROVIDE EMERGENCY POWER OFF (EPO) PUSHBUTTON, SHUNT TRIP BREAKER AND SOLENOID VALVE FOR BOILER SHUTDOWN.
- P11 PROVIDE REMOTE GENERATOR SHUTDOWN SWITCH IN ACCESSIBLE LOCATION. COORDINATE EXACT LOCATION WITH OWNER AND AHJ PRIOR TO ROUGH-IN.
- P12 SERVICE MAIN GROUNDING BUSBAR (MGB). REFER TO GRONDING ELECTRODE SYSTEM DETAIL FOR MORE INFORMATION.
- P15 PROVIDE PATHWAYS FOR ALL CONTROL DEVICES ASSOCIATED WITH DOOR OPERATORS. REFER TO DOOR HARDWARE SCHEDULES FOR MORE INFORMATION.
- P16 PROVIDE 4" HOUSEKEEPING PAD FOR MAIN SWITCHBOARD.
- P17 SEE SITE PLAN
- P18 PROVIDE ALL NECESSARY CONDUIT AND CONNECTIONS FOR RANGE HOOD ADA CONTROLS.
- S3 PROVIDE 3/4" FIRE RETARDANT PLYWOOD TELECOMM BACKBOARD MOUNTED TO ALL TELECOMM ROOM WALLS 8 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.
- S5 PROVIDE TELECOMMUNICATIONS PRIMARY BONDING BUSBAR (PBB) AT 2'-6" AFF AND REQUIRED BONDING JUMPERS. SEE BONDING DETAILS FOR MORE INFORMATION.
- S10 PROVIDE FIRE ALARM INTERFACE FOR FIRE PUMP CONTROLLER. PROVIDE DEVICES NECESSARY TO MEET OPERATIONAL REQUIRMENTS OUTLINED IN THE SPECIFICATIONS.
- S11 COORDINATE EXACT LOCATION OF EXTERIOR WAP WITH NKU PRIOR TO ROUGH-IN.

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 / 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).

STATE OF KENTUCKY APPROVAL

#	DATE	CHANGE DESCRIPTION
1	06/05/2020	BULLETIN #2

NEW STUDENT HOUSING
KENTON DRIVE & CARROLL DRIVE
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DRAWING TITLE:
LEVEL 0 - POWER/SYSTEMS PLAN

JANUARY 30, 2020
DRAWN BY: GCR | CHECKED BY: -

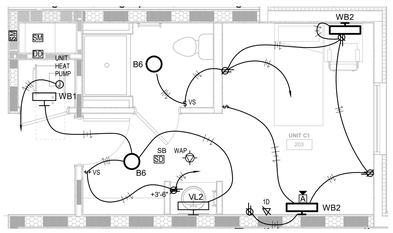
STATE OF KENTUCKY — ROBERT ANTHONY HANS 23143 — LICENSED PROFESSIONAL ENGINEER

E200

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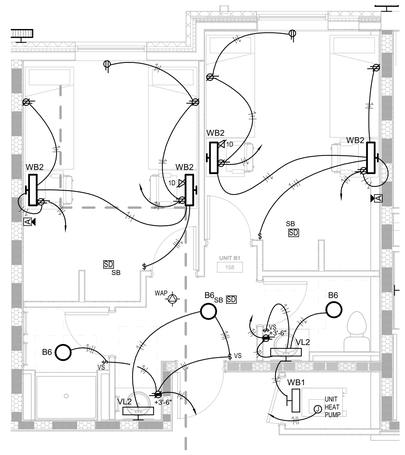
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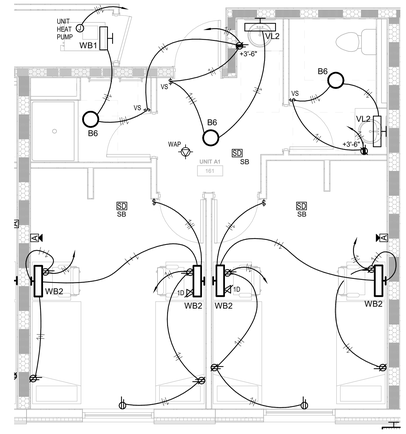
6 UNIT C1 TYPICAL WIRING PLAN

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



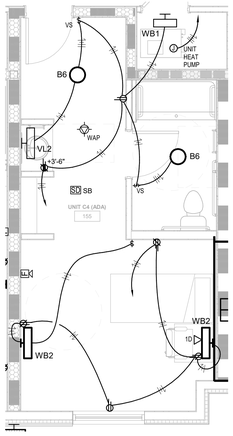
1 UNIT B1 TYPICAL WIRING PLAN

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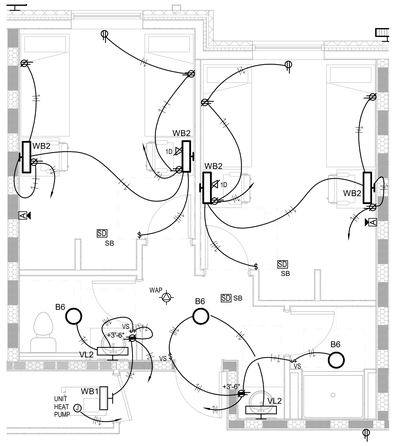
4 UNIT A1 TYPICAL WIRING PLAN

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



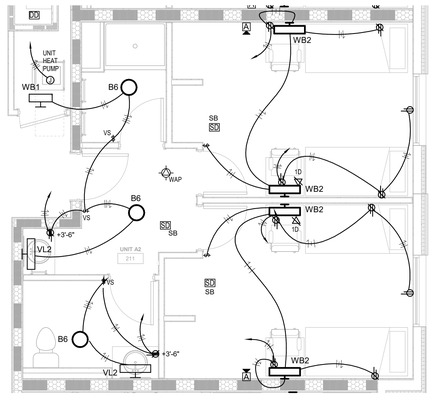
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SCALE: 1/4" = 1'-0"



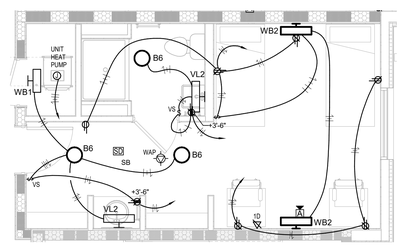
2 UNIT B2 TYPICAL WIRING PLAN

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



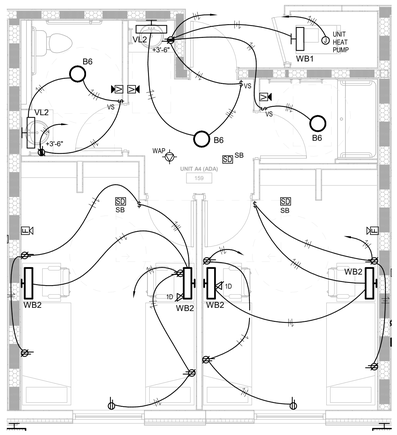
7 UNIT A2 TYPICAL WIRING PLAN

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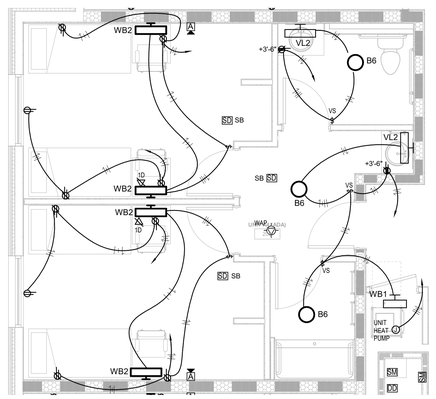
8 UNIT D1 TYPICAL WIRING PLAN

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"

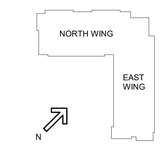
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STATE OF KENTUCKY APPROVAL

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



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NKU NORTHERN KENTUCKY UNIVERSITY

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DRAWING TITLE:
ENLARGED ELECTRICAL PLANS

STATE OF KENTUCKY
ROBERT ANTHONY HANS
23143
LICENSED PROFESSIONAL ENGINEER

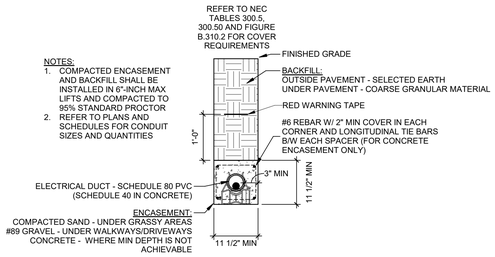
JANUARY 30, 2020

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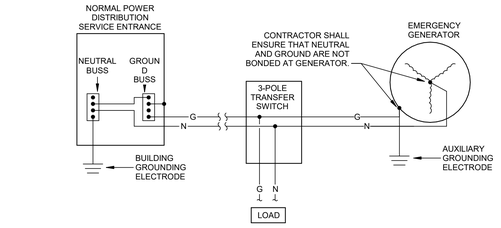
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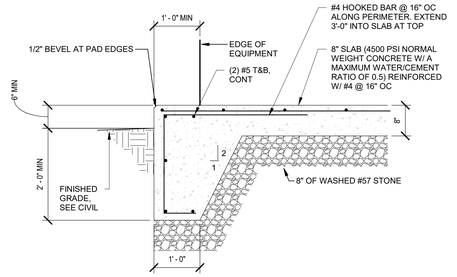
5 TYP ELECT DUCT BANK (UGE)

NO SCALE



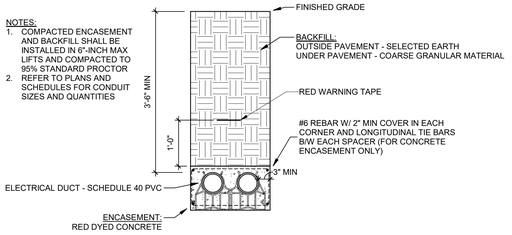
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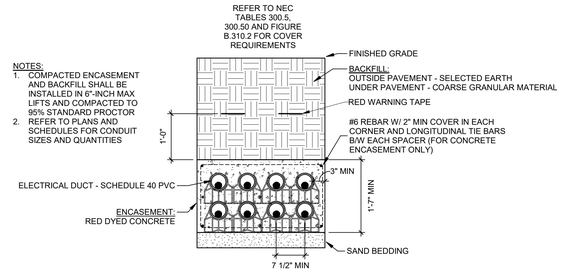
1 TYP PAD FOUNDATION

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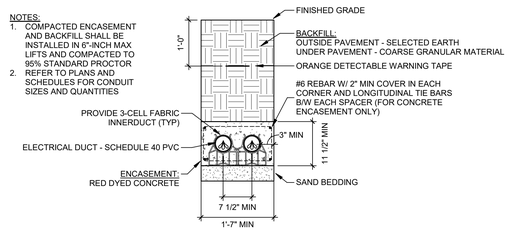
6 TYP PRIMARY DUCTBANK (PRI)

NO SCALE



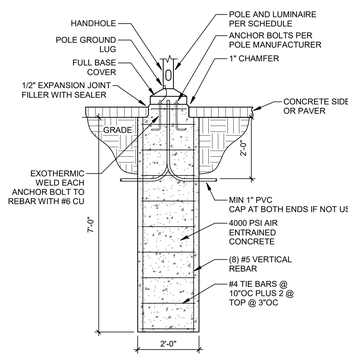
7 TYP SECONDARY DUCTBANK (SEC)

NO SCALE



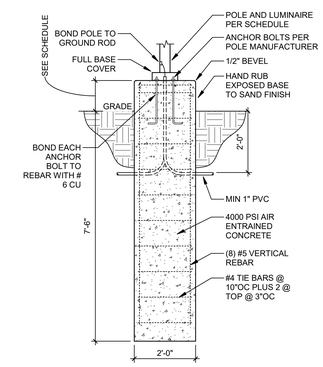
2 TYP TELECOMM DUCT BANK (UGT)

NO SCALE



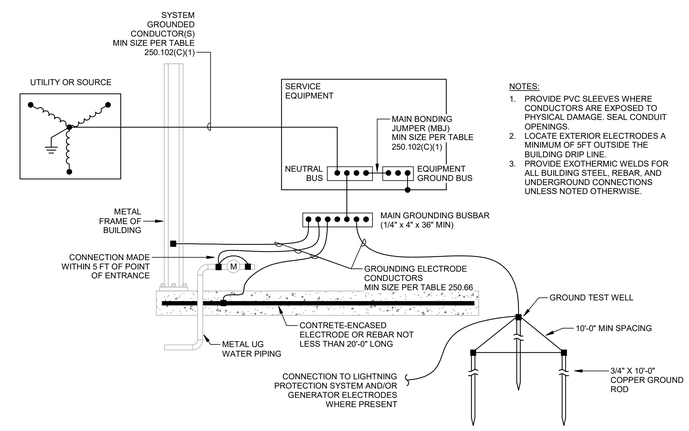
10 TYPICAL PLAZA POLE BASE DETAIL

NO SCALE



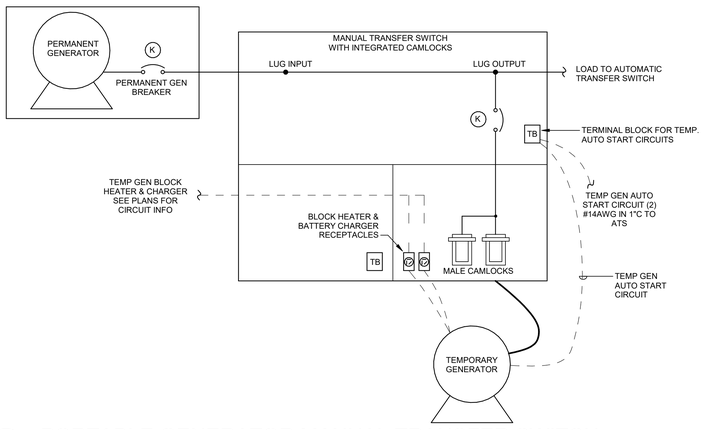
8 TYP LIGHTING POLE BASE

NO SCALE



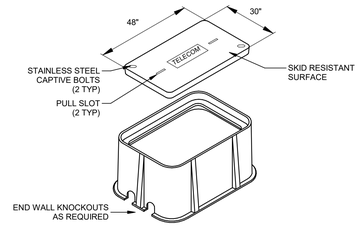
3 GROUNDING ELECTRODE SYSTEM DETAIL

NO SCALE



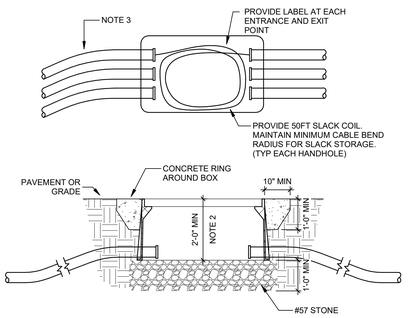
11 PORTABLE GENERATOR MANUAL TRANSFER SWITCH

NO SCALE



9 TELECOMM HANDHOLE - NON TRAFFIC

NO SCALE



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STATE OF KENTUCKY APPROVAL

#	DATE	CHANGE DESCRIPTION

NKU NORTHERN KENTUCKY UNIVERSITY

NEW STUDENT HOUSING
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NORTHERN KENTUCKY UNIVERSITY

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DRAWING TITLE:

ELECTRICAL DETAILS

STATE OF KENTUCKY
ROBERT ANTHONY HANS 23143
LICENSED PROFESSIONAL ENGINEER

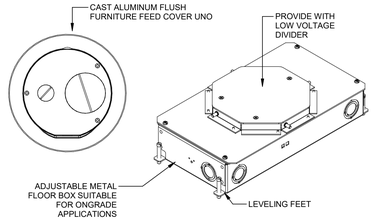
JANUARY 30, 2020

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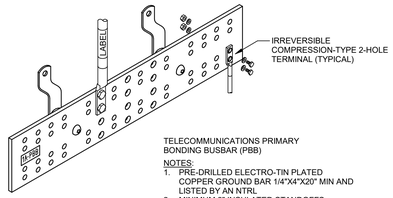
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NOTES:
- FLOOR BOX AND COVER SHALL MEET UL514A TESTS FOR SCRUB WATER EXCLUSION ON SPECIFIED FLOOR SURFACE.
- COVER SHALL INCLUDE 1" THREADED HUB FOR POWER AND 2" THREADED HUB FOR DATA/AV.
- FLOOR BOX SHALL BE RATED FOR ON-GRADE CONSTRUCTION.

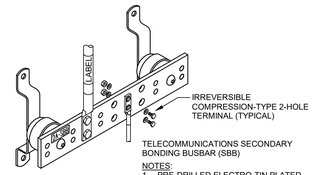
3 FLOOR BOX 2-GANG- FURNITURE FEED (FB-FF)
NO SCALE



TELECOMMUNICATIONS PRIMARY BONDING BUSBAR (PBB)

NOTES:
1. PRE-DRILLED ELECTRO-TIN PLATED COPPER GROUND BAR 1/4"X4"X20" MIN AND LISTED BY AN NTRL
2. MINIMUM 2" INSULATED STANDOFFS
3. BICSI/TIA-607 STYLE HOLE PATTERN
4. CLEAN SURFACE AND APPLY ANTI-OXIDANT PRIOR TO FASTENING OF CONDUCTORS.
5. PROVIDE IDENTIFICATION FOR GROUND BAR AND GROUNDING CONDUCTORS IN ACCORDANCE WITH TIA/EIA-606-B.

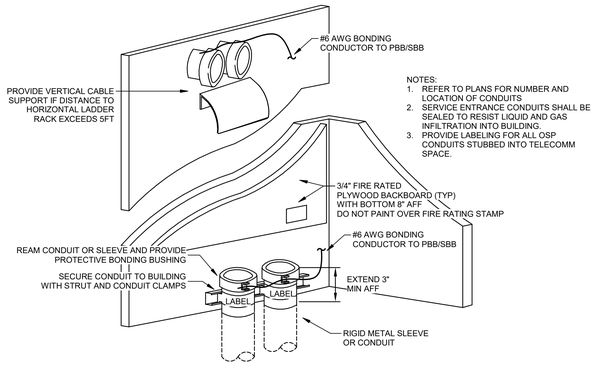
2 TELECOMM BUSBAR - PBB
NO SCALE



TELECOMMUNICATIONS SECONDARY BONDING BUSBAR (SBB)

NOTES:
1. PRE-DRILLED ELECTRO-TIN PLATED COPPER GROUND BAR 1/4"X2"X12" MIN AND LISTED BY AN NTRL
2. MINIMUM 2" INSULATED STANDOFFS
3. BICSI/TIA-607 STYLE HOLE PATTERN
4. CLEAN SURFACE AND APPLY ANTI-OXIDANT PRIOR TO FASTENING OF CONDUCTORS.
5. PROVIDE IDENTIFICATION FOR GROUND BAR AND GROUNDING CONDUCTORS IN ACCORDANCE WITH TIA/EIA-606-B.

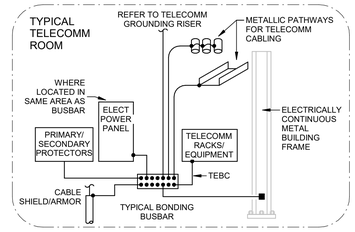
1 TELECOMM BUBAR - SBB
NO SCALE



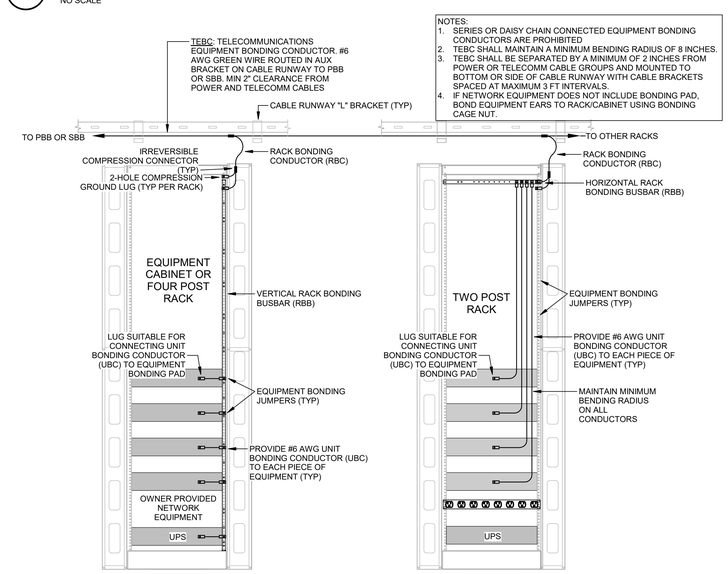
NOTES:
1. REFER TO PLANS FOR NUMBER AND LOCATION OF CONDUITS
2. SERVICE ENTRANCE CONDUITS SHALL BE SEALED TO RESIST LIQUID AND GAS INFILTRATION INTO BUILDING.
3. PROVIDE LABELING FOR ALL OSP CONDUITS STUBBED INTO TELECOMM SPACE.

7 TELECOMM CONDUIT ENTRANCE
NO SCALE

NOTES:
1. ALL WORK TO BE DONE IN ACCORDANCE WITH ANSI/TIA STD-607-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 ANSI/TIA/EIA 606 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 CABLING SHALL BE BONDED TO BUSBAR IF LOCATED IN SAME ROOM OR AREA.
6. WHERE THE OSP OR BACKBONE CABLING 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 1FT SEPARATION FROM ALL TELECOMM CABLING.



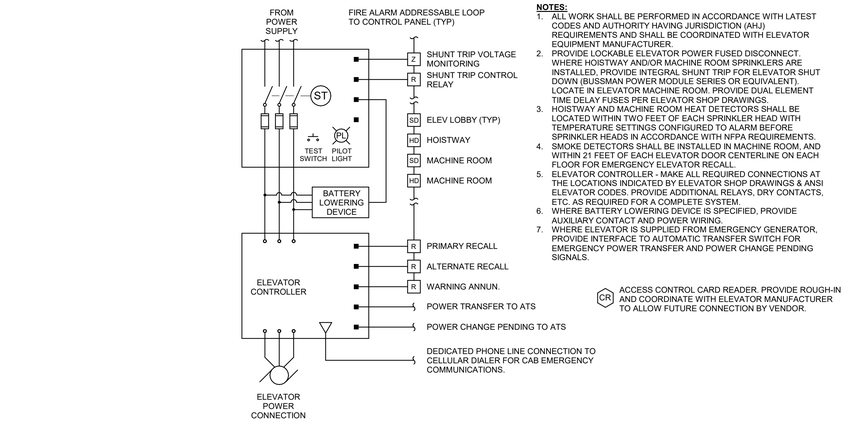
4 TELECOMM BUSBAR CONNECTIONS
NO SCALE



NOTES:
1. SERIES OR DAISY CHAIN CONNECTED EQUIPMENT BONDING CONDUCTORS ARE PROHIBITED
2. TEBC SHALL MAINTAIN A MINIMUM BENDING RADIUS OF 8 INCHES.
3. TEBC SHALL BE SEPARATED BY A MINIMUM OF 2 INCHES FROM POWER OR TELECOMM CABLE GROUPS AND MOUNTED TO BOTTOM OR SIDE OF CABLE RUNWAY WITH CABLE BRACKETS SPACED AT MAXIMUM 3 FT INTERVALS.
4. IF NETWORK EQUIPMENT DOES NOT INCLUDE BONDING PAD, BOND EQUIPMENT EARS TO RACK/CABINET USING BONDING CAGE NUT.

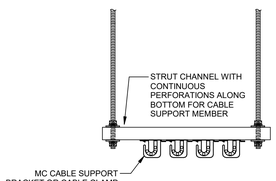
REAR OF RACK OR CABINET

8 RACK GROUNDING AND BONDING DETAIL
NO SCALE



NOTES:
1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST CODES AND AUTHORITY HAVING JURISDICTION (AHJ) REQUIREMENTS AND SHALL BE COORDINATED WITH ELEVATOR EQUIPMENT MANUFACTURER.
2. PROVIDE LOCKABLE ELEVATOR POWER FUSED DISCONNECT. WHERE HOISTWAY AND/OR MACHINE ROOM SPRINKLERS ARE INSTALLED, PROVIDE INTEGRAL SHUNT TRIP FOR ELEVATOR SHUT DOWN (BUSSMAN POWER MODULE SERIES OR EQUIVALENT). LOCATE IN ELEVATOR MACHINE ROOM. PROVIDE DUAL ELEMENT TIME DELAY FUSES PER ELEVATOR SHOP DRAWINGS.
3. HOISTWAY AND MACHINE ROOM HEAT DETECTORS SHALL BE LOCATED WITHIN TWO FEET OF EACH SPRINKLER HEAD WITH TEMPERATURE SETTINGS CONFIGURED TO ALARM BEFORE SPRINKLER HEADS IN ACCORDANCE WITH NFPA REQUIREMENTS.
4. SMOKE DETECTORS SHALL BE INSTALLED IN MACHINE ROOM, AND WITHIN 21 FEET OF EACH ELEVATOR DOOR CENTERLINE ON EACH FLOOR FOR EMERGENCY ELEVATOR RECALL.
5. ELEVATOR CONTROLLER - MAKE ALL REQUIRED CONNECTIONS AT THE LOCATIONS INDICATED BY ELEVATOR SHOP DRAWINGS & ANSI ELEVATOR CODES. PROVIDE ADDITIONAL RELAYS, DRY CONTACTS, ETC. AS REQUIRED FOR A COMPLETE SYSTEM.
6. WHERE BATTERY LOWERING DEVICE IS SPECIFIED, PROVIDE AUXILIARY CONTACT AND POWER WIRING.
7. WHERE ELEVATOR IS SUPPLIED FROM EMERGENCY GENERATOR, PROVIDE INTERFACE TO AUTOMATIC TRANSFER SWITCH FOR EMERGENCY POWER TRANSFER AND POWER CHANGE PENDING SIGNALS.

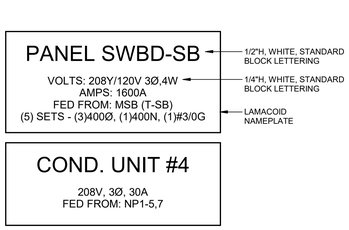
5 ELEVATOR CONNECTION DIAGRAM
NO SCALE



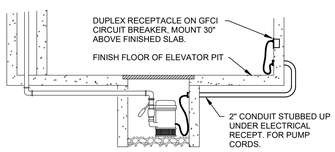
NOTES:
1. ALL MC CABLE MUST BE SUPPORTED IN ACCORDANCE WITH NEC ARTICLE 330.30 AND MINIMUMUM BENDING RADIUS SHALL BE MAITAINED.
2. MC CABLE SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER PARALLEL OR PERPENDICULAR TO WALLS. VERTICAL RUNS SHALL BE PLUMB; HORIZONTAL RUNS LEVEL AND PARALLEL WITH STRUCTURE, AS APPROPRIATE.NO DIAGONAL RUNS SHALL BE PERMITTED. ADDITIONAL SUPPORTS SHALL BE USED WHEN THE CABLE IS EXPOSED.
3. MAIN RUNS OF MC CABLE SHALL BE GROUPED TOGETHER AND MOUNTED TO STRUT SUPPORT SYSTEM USING BRACKETS OR STRAPS. GROUPS SHALL BE NEATLY ORGANIZED WITH BOTH STRAIGHT RUNS AND BENDS PARALLEL AND UNIFORMLY SPACED. PROPER SPACING SHALL BE MAINTAINED TO PREVENT CABLE DERATING.
4. INDIVIDUAL RUNS OF MC CABLE SHALL BE DIRECTLY ATTACHED TO VERTICAL OR HORIZONTAL STRUCTURAL MEMBERS.
5. ATTACHMENT TO SUPPORTS FOR CEILINGS, LIGHT FIXTURES, OR OTHER DEVICES IS NOT ALLOWED.

10 MC CABLE SUPPORT DETAIL
NO SCALE

NOTES:
- NAMEPLATE COLOR SHALL BE BLACK WITH WHITE LETTERS FOR NORMAL POWER AND RED WITH WHITE LETTERS FOR EMERGENCY POWER
- NAMEPLATES SHALL BE PROVIDED ON ALL NEW OR MODIFIED POWER DISTRIBUTION EQUIPMENT INCLUDING PANELBOARDS, SWITCHBOARDS, MOTOR CONTROLLERS, TRANSFORMERS, DISCONNECT SWITCHES, PUSHBUTTON STATIONS, AND SIMILAR DEVICES.



9 POWER DIST EQ NAMEPLATE DETAIL
NO SCALE



6 ELEVATOR SUMP PUMP
NO SCALE

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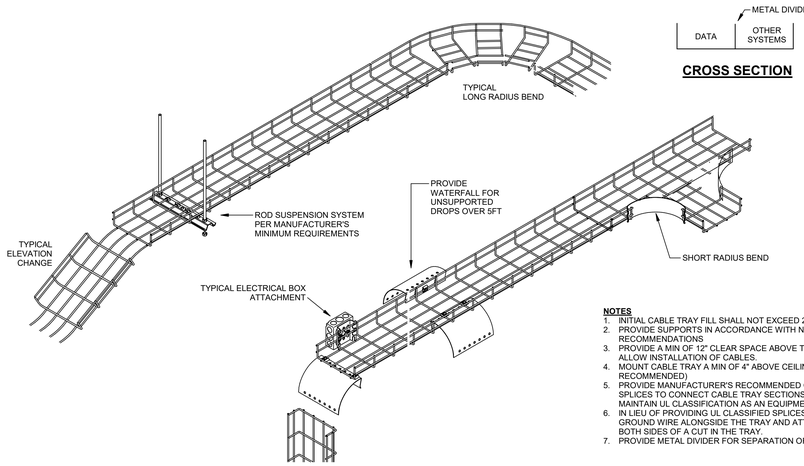
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STATE OF KENTUCKY — ROBERT ANTHONY HANS 23143 — LICENSED PROFESSIONAL ENGINEER

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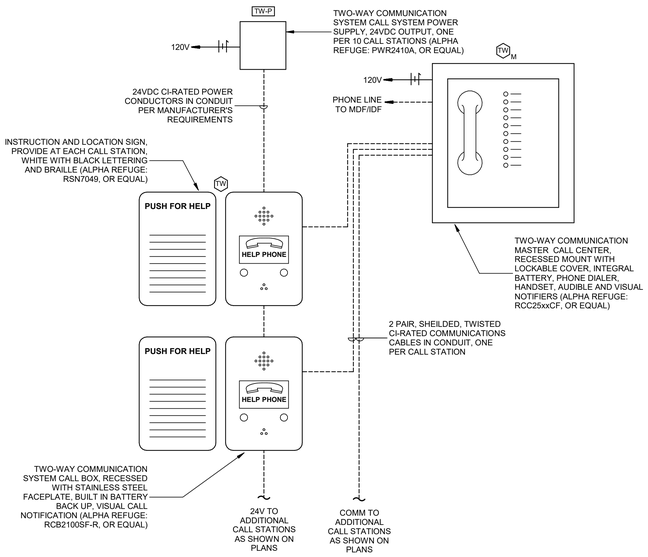
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CROSS SECTION

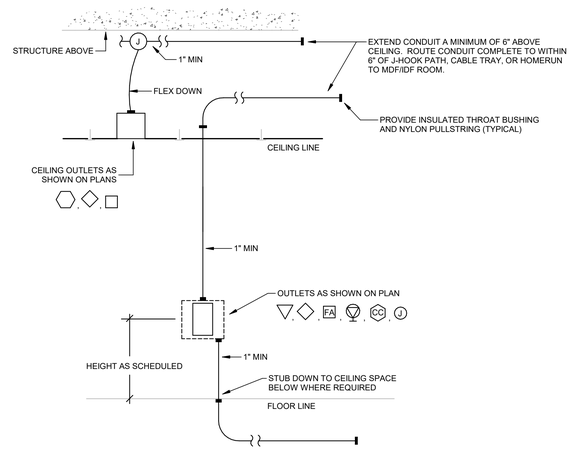
NOTES
1. INITIAL CABLE TRAY FILL SHALL NOT EXCEED 25%.
2. PROVIDE SUPPORTS IN ACCORDANCE WITH NEMA VE2 AND MANUFACTURER'S RECOMMENDATIONS
3. PROVIDE A MIN OF 12" CLEAR SPACE ABOVE THE TOP OF THE CABLE TRAY TO ALLOW INSTALLATION OF CABLES.
4. MOUNT CABLE TRAY A MIN OF 4" ABOVE CEILING TILE AND GRID (6" RECOMMENDED)
5. PROVIDE MANUFACTURER'S RECOMMENDED QUANTITY OF UL CLASSIFIED SPLICES TO CONNECT CABLE TRAY SECTIONS AND FITTINGS IN ORDER TO MAINTAIN UL CLASSIFICATION AS AN EQUIPMENT GROUNDING CONDUCTOR.
6. IN LIEU OF PROVIDING UL CLASSIFIED SPLICES, RUN APPROPRIATELY SIZED GROUND WIRE ALONGSIDE THE TRAY AND ATTACH IT TO EACH TRAY SECTION ON BOTH SIDES OF A CUT IN THE TRAY.
7. PROVIDE METAL DIVIDER FOR SEPARATION OF LOW VOLTAGE CABLES.

3 WIRE BASKET CABLE TRAY DETAILS
NO SCALE



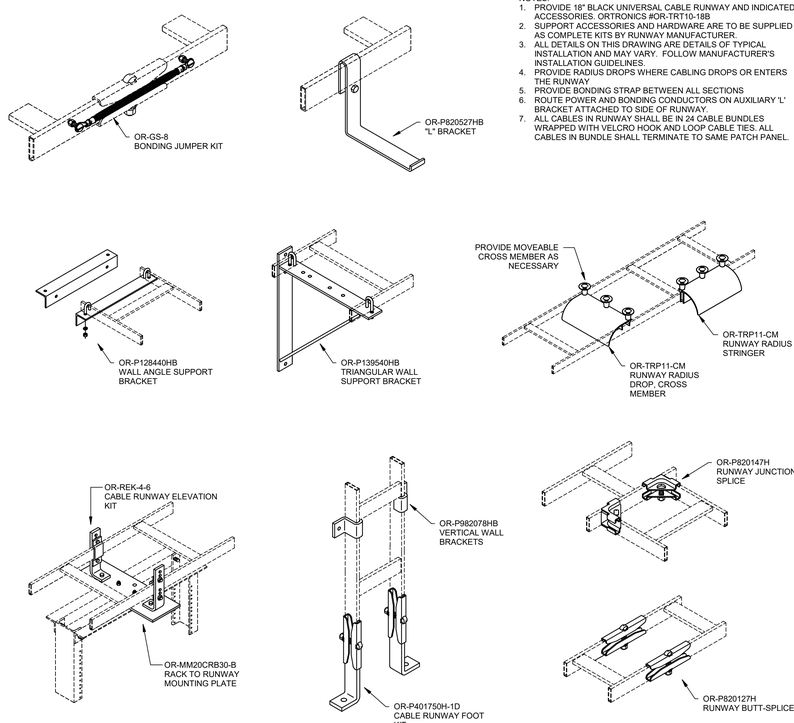
GENERAL NOTES:
1. INSTALLED SYSTEM SHALL COMPLY WITH IBC, NFPA, ADAAG, AND ELEVATOR CODE REQUIREMENTS.
2. COORDINATE EQUIPMENT LOCATIONS WITH ARCHITECTURAL ELEVATIONS AND ELEVATOR CALL STATIONS (WHEN APPLICABLE).
3. PROVIDE SYSTEM CAPACITY FOR NUMBER OF CALL BOXES SHOWN ON PLANS.
4. INSTALL POWER SUPPLY ABOVE ACCESSIBLE CEILING NEAR MASTER STATION. PROVIDE ADDITIONAL REMOTE POWER SUPPLIES WHERE VOLTAGE DROP EXCEEDS MANUFACTURER'S RECOMENDATIONS.
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



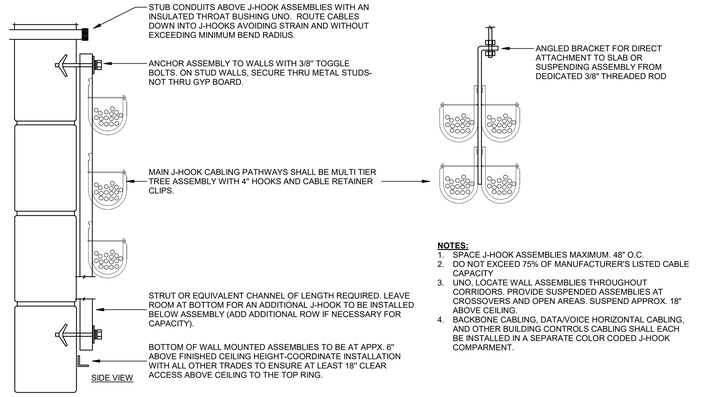
NOTES:
1. EXTEND CONDUIT TO NEAREST LOW VOLTAGE PATHWAY UNLESS CABLING TERMINATES AT ANOTHER OUTLET IN THE SAME ROOM.
2. WHERE OPEN CABLING IS INSTALLED WITHIN ENVIRONMENT AIR PLENUMS, CABLING AND HARDWARE SHALL BE LISTED FOR INSTALLATION IN SUCH LOCATIONS.
3. LABEL BACK OF OUTLET BOXES AND ENDS OF CONDUIT 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



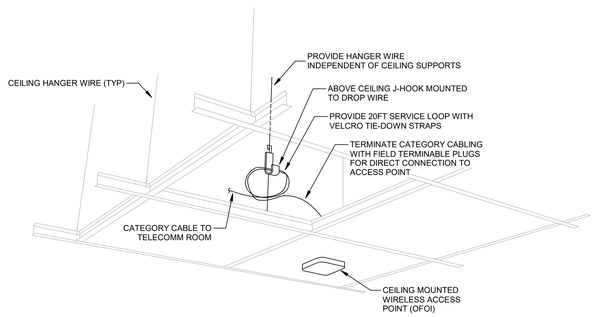
NOTES:
1. PROVIDE 18" BLACK UNIVERSAL CABLE RUNWAY AND INDICATED ACCESSORIES. ORTRONICS #OR-TRT10-18B
2. SUPPORT ACCESSORIES AND HARDWARE ARE TO BE SUPPLIED AS COMPLETE KITS BY RUNWAY MANUFACTURER.
3. ALL DETAILS ON THIS DRAWING ARE DETAILS OF TYPICAL INSTALLATION AND MAY VARY. FOLLOW MANUFACTURER'S 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.

1 CABLE RUNWAY DETAILS
NO SCALE



NOTES:
1. SPACE J-HOOK ASSEMBLIES MAXIMUM. 48" O.C.
2. DO NOT EXCEED 75% OF MANUFACTURER'S LISTED CABLE CAPACITY.
3. UNO, LOCATE WALL ASSEMBLIES THROUGHOUT CORRIDORS. PROVIDE SUSPENDED ASSEMBLIES AT CROSSOVERS AND OPEN AREAS. SUSPEND APPROX. 18" ABOVE CEILING.
4. BACKBONE CABLING, DATA/VOICE HORIZONTAL CABLING, AND OTHER BUILDING CONTROLS CABLING SHALL EACH BE INSTALLED IN A SEPARATE COLOR CODED J-HOOK COMPARMENT.

2 LOW VOLTAGE J-HOOK INSTALLATION DETAIL
NO SCALE



4 WAP - LAY-IN CEILING MOUNTED
NO SCALE

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STATE OF KENTUCKY
ROBERT ANTHONY HANS 23143 LICENSED PROFESSIONAL ENGINEER

JANUARY 30, 2020

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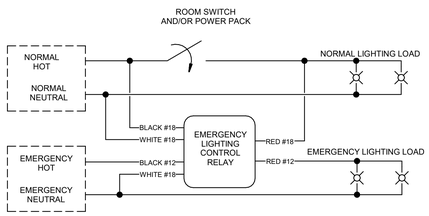
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SEQUENCE	CONTROL TYPE	DESCRIPTION	SEQUENCE OF OPERATION	SPACE TYPES	COMMENTS
A	OCCUPANCY	AUTO ON AUTO OFF	ON: AUTOMATIC ON WHEN OCCUPANCY IS DETECTED OFF: MANUAL OVERIDE TO OFF VIA WALL SWITCH OFF: AUTOMATIC OFF WHEN NO OCCUPANCY IS DETECTED DURING ADJUSTABLE TIME DELAY.	RESTROOMS (PUBLIC) LAUNDRY	
B	VACANCY	MANUAL ON AUTO OFF	ON: MANUAL ON VIA WALL SWITCH OFF: MANUAL OVERIDE 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: OVERIDE TO ON VIA MASTER CONTROL SWITCH FOR PROGRAMMED TIME PERIOD. OFF: OVERIDE TO OFF VIA BUILDING AUTOMATION SYSTEM SCHEDULE.	CIRCULATION/CORRIDOR COMMON AREA	
F	BAS SCHEDULE/ PHOTOCELL	AUTO ON AUTO OFF MANUAL OVERIDE	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.

LIGHTING CONTROL DEVICE SCHEDULE

SYMBOL	MODIFIER	DESCRIPTION	VOLTAGE	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	ALTERNATE MANUFACTURER
$	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
OS	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

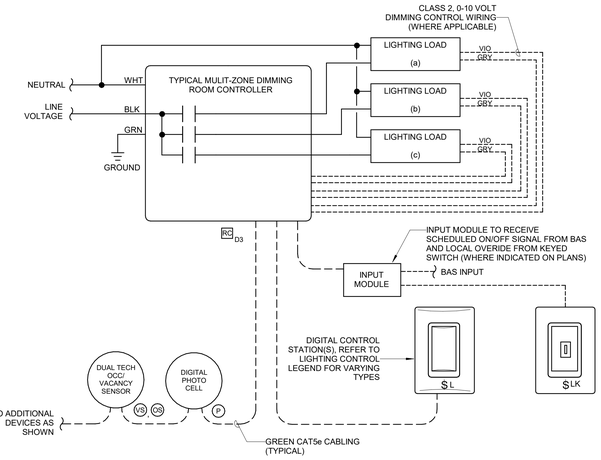


EMERGENCY LIGHTING CONTROL UNIT WITH 20AMP RATING, INTEGRAL TEST SWITCH, THREE LED STATUS LIGHTS THAT INDICATE UNIT POWER MODE. UNITS TO BE UL 924 RATED WITH FIRE RATED HOUSING. UNIT TO HAVE A FIVE YEAR UNCONDITIONAL WARRANTY. UNIT SHALL MONITOR NORMAL POWER AND THE NORMAL POWER LOCAL CONTROL DEVICE (OCCUPANCY SENSOR, PHOTOCELL, SWITCH, ETC.) AND CONTROL THE EMERGENCY LUMINAIRE(S) IN TANDEM, LUMINAIRES SHALL AUTOMATICALLY TURN ON UPON NORMAL POWER LOSS. MANUFACTURED BY WATTSTOPPER: ELCU-200 (OR PRE APPROVED EQUAL).

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

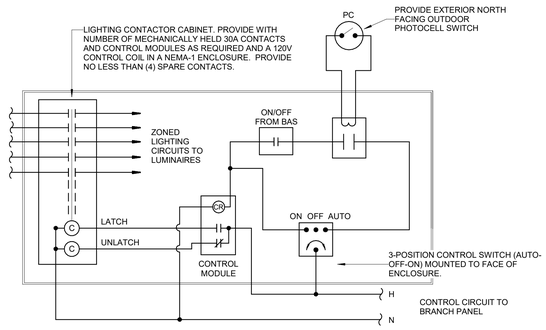
NO SCALE



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 TRANSCEIVER 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

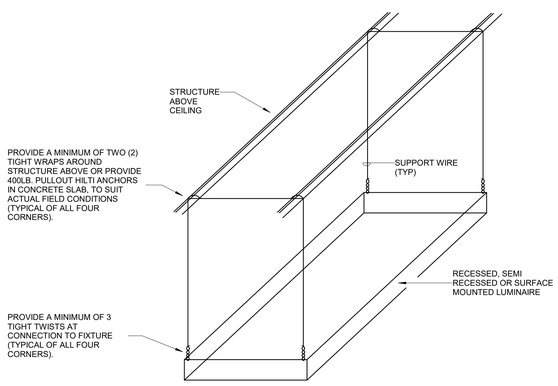
NO SCALE



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



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

STATE OF KENTUCKY APPROVAL

#	DATE	CHANGE DESCRIPTION

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

NORTHERN KENTUCKY UNIVERSITY

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300 SPRUCE STREET
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DRAWING TITLE:
LIGHTING CONTROL DETAILS

STATE OF KENTUCKY
ROBERT ANTHONY HANS
23143
LICENSED PROFESSIONAL ENGINEER

JANUARY 30, 2020
DRAWN BY: GCR | CHECKED BY: -

E504

BID & PERMIT SUBMITTAL

PRINT DATE: 1/31/2020 12:53:15 PM
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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 DISCTRIBUTION ARCYLIC OPTICS, 90CRI	HALO	SMD6S-12-935-WH	JUNO LITHONIA WF6-SQ	SURFACE	3500K LED	1200 LUMENS	16	120	
B6	ROUND SURFACE MOUNT LED FLAT PANEL DOWNLIGHT, NON-CONDUCTIVE DEAD FRONT HOUSING, WIDE DISCTRIBUTION ARCYLIC OPTICS, 90CRI	HALO	SMD6R-12-935-WH	JUNO AFX EDGE LITHONIA WF6	SURFACE	3500K LED	1200 LUMENS	16	120	
C4	4' LED INDUSTRIAL STRIP WITH ROUND DIFFUSE LENS	METALUX	4-SNLED-LD5-41SL-LW-UNV-L835-CD-1	LITHONIA OLX LITHONIA OSL IRC	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 LITHONIA WF4	RECESSED	3500K LED	1000 LUMENS	11	120	
D4S	4" SQUARE RECESSED LED DOWNLIGHT, MEDIUM DISTRIBUTION, FLANGED SEMI-SPECULAR ALUMINUM REFLECTOR	HALO	PRS4-10-D010 & SM4-12-8FS-41S-MD-H	LITHONIA LDN4 CASAMBI AL4RS LITHONIA WF4SQ	RECEESED	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-WC	OXYGEN AS-152	SURFACE	NA	NA	36	120	
G	1'X4' LED FLAT PANEL, LOW PROFILE ALUMINUM BEZEL WITH SEAMLESS CORNERS, ACRYLIC FROSTED LENS, IMPACT RESISTANT	METALUX	14FP30354HE	LITHONIA EPANEL LITELINE LEDP	RECEESED	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" APERATURE. 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 MARK SLOT 2 LED	PENDANT	3500K LED	330 LUMENS/FT		120	SEE PLANS FOR RUN LENGTHS
P2	60" CIRCULAR LED PENDANT, EXTRUDED ALUMINUM HOUSING, 2" APERATURE, CENTRAL CANOPY	SCOTT LIGHTING	S2793-D-L90-35K-BA-L36	BETA CALCO OCL A02	SUSPENDED	3500K LED	5000 LUMENS	90	120	
P3	36" CIRCULAR LED PENDANT, EXTRUDED ALUMINUM HOUISING, 2" APERATURE, CENTRAL CANOPY	SCOTT LIGHTING	S2791-D-L62-35K-BA-L36	BETA CALCO OCL A02	SUSPENDED	3500K LED	3000 LUMENS	62	120	
R2B	RECESSED LED LINEAR FIXTURE, 2" APERATURE, EXTRUDED ALUMINUM HOUSING, DIE CAST ENDCAPS, SATIN ACRYLIC DIFFUSER, WHITE STEEL REFLECTOR	FINELITE	HP2-R-2-S-835-F-120V-SC-FE	AXIS BEAM2 MARK SLOT 2 LED	RECEESED	3500K LED	340 LUMENS/FT	30	120	
R4A	RECESSED LED LINEAR FIXTURE, 4" APERATURE, EXTRUDED ALUMINUM HOUSING, DIE CAST ENDCAPS, SATIN ACRYLIC DIFFUSER, WHITE STEEL REFLECTOR	FINELITE	HP4-R-4-S-835-F-120V-SC-FE	AXIS BEAM4 MARK SLOT 4 LED	RECEESED	3500K LED	625 LUMENS/FT	30	120	
R4B	RECESSED LED LINEAR FIXTURE, 4" APERATURE, EXTRUDED ALUMINUM HOUSING, DIE CAST ENDCAPS, SATIN ACRYLIC DIFFUSER, WHITE STEEL REFLECTOR	FINELITE	HP4-R-4-S-835-F-120V-SC-FE	AXIS BEAM4 MARK SLOT 4 LED	RECEESED	3500K LED	625 LUMENS/FT	30	120	
R6A	RECESSED LED LINEAR FIXTURE, 4" APERATURE, EXTRUDED ALUMINUM HOUSING, DIE CAST ENDCAPS, SATIN ACRYLIC DIFFUSER, WHITE STEEL REFLECTOR	FINELITE	HP4-R-6-S-835-F-120V-SC-FE	AXIS BEAM4 MARK SLOT 4 LED	RECEESED	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-52HL-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	18" WALL MOUNTED LED CLOSET LIGHT	LITHONIA LIGHTING	FMMCL-18-840-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, CONSEALED MOUNTING BRACKET	FINELITE	HP2-WM-ID-X-S-S-835-F-ASYR-120V-FE-SC	AXIS BEAM2 MARK SLOT 2 LED	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	LONESTAR TREELITE TRL3500	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	BEGA CWP5 LITHONIA WDGE1	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
RP-1	RADIANT HEATER		120	1		0.38	
SF-1	SIDESTREAM FILTER		208	3	1.5	2.50	
VHP-12	HEAT PUMP	FURNISHED WITH UNIT	208	2		1.50	7
VHP-18	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

#	DATE	CHANGE DESCRIPTION
1	2.18.2020	ADDENDUM #2
2	04/21/2020	BULLETIN #1

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

MOODY•NOLAN
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CMTA
10411 Meeting Street, Prospect, KY 40059
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DRAWING TITLE:

ELECTRICAL SCHEDULES

JANUARY 30, 2020

DRAWN BY: **GCR** | CHECKED BY:

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E601

BID & PERMIT SUBMITTAL

STATE OF KENTUCKY · ROBERT ANTHONY HANS · 23143 · LICENSED PROFESSIONAL ENGINEER

PRINT DATE: 4/21/2020 2:07:19 PM
FILE INFO: BIM 360://NKU - New Residence Hall/ONSH15_ELECT_R19.rvt

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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 DISCTRIBUTION ARCYLIC OPTICS, 90CRI	HALO	SMD6S-12-935-WH (2)	JUNO LITHONIA WF6-SQ	SURFACE	4000K LED	1200 LUMENS	16	120	
B6	ROUND SURFACE MOUNT LED FLAT PANEL DOWNLIGHT, NON-CONDUCTIVE DEAD FRONT HOUSING, WIDE DISCTRIBUTION ARCYLIC OPTICS, 90CRI	HALO	SMD6R-12-935-WH	JUNO AFX EDGE LITHONIA WF6	SURFACE	4000K LED	1200 LUMENS	16	120	
C4	4' LED INDUSTRIAL STRIP WITH ROUND DIFFUSE LENS	METALUX	4-SNLED-LD5-41SL-LW-UNV-L835-CD-1	LITHONIA CLX LITOPIA SSLED	SUSPENDED	4000K 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 LITHONIA WF4	RECESSED	4000K LED	1000 LUMENS	11	120	
D4S	4" SQUARE RECESSED LED DOWNLIGHT, MEDIUM DISTRIBUTION, FLANGED SEMI-SPECULAR ALUMINUM REFLECTOR	HALO	PRS4-10-D010 & SM4-12-8FS-41S-MD-H	LITHONIA LDN4 CASAMBI AL4RS LITHONIA WF4SQ	RECESSED	4000K 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-WC (2)	OXYGEN #3-102	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	4000K 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	4000K LED	1500 LUMENS	37	120	
L1	SUSPENDED LED LINEAR DIRECT FIXTURE, 2" APERATURE, EXTRUDED ALUMINUM HOUSING, DIE CAST ENDCAPS, SATIN ACRYLIC DIFFUSER, WHITE STEEL REFLECTOR	FINELITE	HP2-D-X-S-835-A-120V-FM-FF-SC	AXIS BEAM2 MARK SLOT 2 LED	PENDANT	4000K LED	330 LUMENS/FT		120	SEE PLANS FOR RUN LENGTHS
P2	24" CIRCULAR LED PENDANT, EXTRUDED ALUMINUM HOUISING, 1.5" APERATURE, CENTRAL CANOPY	TECH LIGHTING	700FIA-24-X-LED940	BETA CALCO OCL A02	SUSPENDED	4000K LED	3000 LUMENS	62	120	
P3	30" CIRCULAR LED PENDANT, EXTRUDED ALUMINUM HOUSING, 1.5" APERATURE, CENTRAL CANOPY	TECH LIGHTING	700FIA-30-X-LED940	BETA CALCO OCL A02	SUSPENDED	4000K LED	5000 LUMENS	90	120	
R2B	RECESSED LED LINEAR FIXTURE, 2" APERATURE, EXTRUDED ALUMINUM HOUSING, DIE CAST ENDCAPS, SATIN ACRYLIC DIFFUSER, WHITE STEEL REFLECTOR	FINELITE	HP2-R-2-S-835-F-120V-SC-FE	AXIS BEAM2 MARK SLOT 2 LED	RECESSED	4000K LED	340 LUMENS/FT	30	120	
R4A	RECESSED LED LINEAR FIXTURE, 4" APERATURE, EXTRUDED ALUMINUM HOUSING, DIE CAST ENDCAPS, SATIN ACRYLIC DIFFUSER, WHITE STEEL REFLECTOR	FINELITE	HP4-R-4-S-835-F-120V-SC-FE	AXIS BEAM4 MARK SLOT 4 LED	RECESSED	4000K LED	625 LUMENS/FT	30	120	
R4B	RECESSED LED LINEAR FIXTURE, 4" APERATURE, EXTRUDED ALUMINUM HOUSING, DIE CAST ENDCAPS, SATIN ACRYLIC DIFFUSER, WHITE STEEL REFLECTOR	FINELITE	HP4-R-4-S-835-F-120V-SC-FE	AXIS BEAM4 MARK SLOT 4 LED	RECESSED	4000K LED	625 LUMENS/FT	30	120	
R6A	RECESSED LED LINEAR FIXTURE, 4" APERATURE, EXTRUDED ALUMINUM HOUSING, DIE CAST ENDCAPS, SATIN ACRYLIC DIFFUSER, WHITE STEEL REFLECTOR	FINELITE	HP4-R-6-S-835-F-120V-SC-FE	AXIS BEAM4 MARK SLOT 4 LED	RECESSED	4000K 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-52HL-LW-UNV-L835-SD-1-SVPD1	LITHONIA WL	SURFACE	4000K 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	4000K 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	18" WALL MOUNTED LED CLOSET LIGHT	LITHONIA LIGHTING	FMMCL-18-840-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, CONSEALED MOUNTING BRACKET	FINELITE	HP2-WM-ID-X-S-S-835-F-ASYR-120V-FE-SC	AXIS BEAM2 MARK SLOT 2 LED	WALL 9'-0"	4000K 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	

(3)

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 TREELITE TRL3500	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	BEGA CWP5 LITHONIA WDGE1	WALL	4000K LED	4000 LUMENS	36	120	FINISH PER ARCHITECT

(2)

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
RP-1	RADIANT HEATER		120	1		0.38	
SF-1	SIDESTREAM FILTER		208	3	1.5	2.50	
VHP-12	HEAT PUMP	FURNISHED WITH UNIT	208	2		1.50	7
VHP-18	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

#	DATE	CHANGE DESCRIPTION
1	2.18.2020	ADDENDUM #2
2	04/21/2020	BULLETIN #1
3	06/05/2020	BULLETIN #2

NKU NORTHERN KENTUCKY UNIVERSITY

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

MOODY•NOLAN
300 SPRUCE STREET
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CMTA
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DRAWING TITLE:

ELECTRICAL SCHEDULES

JANUARY 30, 2020

DRAWN BY: **GCR** | CHECKED BY:

-

E601

BID & PERMIT SUBMITTAL

STATE OF KENTUCKY
ROBERT ANTHONY HANS
23143
LICENSED PROFESSIONAL ENGINEER

PRINT DATE: 6/2/2020 11:51:29 AM
FILE INFO: BIM 360://NKU - New Residence Hall/ONSH15_ELECT_R19.rvt

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PANELBOARD AND WIRING SCHEDULE

PANEL: RA1 — **MAINS TYPE:** MLO — **AVAILABLE FAULT CURRENT:** 2.8 kA
VOLTAGE: 120/208V,1P,3W — **SPD:** No — **kAIC RATING:** 10
AMPERES: 175 A — **MOUNTING:** FLUSH — **LOCATION:** RESIDENT MGR.'S APT.... — **SUPPLY FROM:** RP1B

CIRCUIT DESCRIPTION	WIRE	GND	C	OCP	P	CKT	A	B	CKT	P	OCP	C	GND	WIRE	CIRCUIT DESCRIPTION
REC - BEDROOM 154A				20	1	1	0.7	0.2	2	1	20				REC - VANITY 154
HEAT PUMP - UNIT 154				20	2	3		1.1 4.0	4	2	50				
						5	1.1	4.0	6						KITCH RANGE
REC - COUNTER				20	1	7		0.2 0.2	8	1	20				REC - COUNTER
REC - BEDROOM 154B				20	1	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
						15		2.5 0.3	16	1	20				LTNG
REC - REFRIG - NOTE 2				20	1	17	1.5 0.0		18	1	20				RANGE HOOD
REC - MICROWAVE				20	1	19		1.5 1.5	20	1	20				REC - GARBAGE DISPOSAL
SPARE	--	--	--	20	1	21	0.0 0.0		22	1	20	--	--	--	SPARE
SPARE	--	--	--	20	1	23		0.0 0.0	24	1	20	--	--	--	SPARE
				TOTAL LOAD (kVA):			13.3 kVA	12.9 kVA							
				TOTAL CURRENT (A):			127 A	124 A							

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS
EQUIP	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 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

PANELBOARD AND WIRING SCHEDULE

PANEL: RP1C — **MAINS TYPE:** MLO — **AVAILABLE FAULT CURRENT:** 7.4 kA
VOLTAGE: 208Y/120V,3P,4W — **SPD:** No — **kAIC RATING:** 10
AMPERES: 150 A — **MOUNTING:** FLUSH — **LOCATION:** Space 169 — **SUPPLY FROM:** MDP

CIRCUIT DESCRIPTION	WIRE	GND	C	OCP	P	CKT	A	B	C	CKT	P	OCP	C	GND	WIRE	CIRCUIT DESCRIPTION
EQUIP - WASHER - NOTE 1				20	1	1	1.2 1.0			2	1	20				EQUIP - DRYER - NOTE 1
EQUIP - WASHER - NOTE 1				20	1	3		1.2 1.0		4	1	20				EQUIP - DRYER - NOTE 1
EQUIP - WASHER - NOTE 1				20	1	5			1.2 1.0	6	1	20				EQUIP - DRYER - NOTE 1
EQUIP - WASHER - NOTE 1				20	1	7	1.2 1.0			8	1	20				EQUIP - DRYER - NOTE 1
EQUIP - WASHER - NOTE 1				20	1	9		1.2 1.0		10	1	20				EQUIP - DRYER - NOTE 1
EQUIP - WASHER - NOTE 1				20	1	11			1.2 1.0	12	1	20				EQUIP - DRYER - NOTE 1
EQUIP - WASHER - NOTE 1				20	1	13	1.2 1.0			14	1	20				EQUIP - DRYER - NOTE 1
EQUIP - WASHER - NOTE 1				20	1	15		1.2 1.0		16	1	20				EQUIP - DRYER - NOTE 1
EQUIP - ICE MAKER - NOTE 1				20	1	17			1.4 0.2	18	1	20				REC - LAUNDRY 111
EQUIP - DRYER - NOTE 1				20	1	19	1.0 1.2			20	1	20				EQUIP - WASHER - NOTE 1
EQUIP - DRYER - NOTE 1				20	1	21		1.0 1.2		22	1	20				EQUIP - WASHER - NOTE 1
SPARE	--	--	--	20	1	23			0.0 0.0	24	1	20	--	--	--	SPARE
SPARE	--	--	--	20	1	25	0.0 0.0			26	1	20	--	--	--	SPARE
SPARE	--	--	--	20	1	27		0.0 0.0		28	1	20	--	--	--	SPARE
SPARE	--	--	--	20	1	29			0.0 0.0	30	1	20	--	--	--	SPARE
				TOTAL LOAD (kVA):			8.8 kVA	8.8 kVA	6.0 kVA							
				TOTAL CURRENT (A):			77 A	77 A	50 A							

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS
EQUIP	23400 VA	100.00%	23400 VA	TOTAL CONNECTED LOAD: 23580 VA
REC	180 VA	100.00%	180 VA	TOTAL ESTIMATED DEMAND: 23580 VA
				TOTAL CONNECTED CURRENT: 65 A
				TOTAL ESTIMATED DEMAND CURRENT: 65 A

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

SWITCHBOARD AND WIRING SCHEDULE

SWITCHBOARD: MDP — **MAINS TYPE:** MCB — **AVAILABLE FAULT CURRENT:** 85.9 kA
VOLTAGE: 208Y/120V,3P,4W — **SPD:** Yes — **kAIC RATING:** 100
AMPERES: 2500 A — **MOUNTING:** PAD — **LOCATION:** ELEC 124E — **SUPPLY FROM:** XFMR

CKT	CIRCUIT DESCRIPTION	SETS	WIRE	GND	COND	POLES	FRAME	TRIP	LOAD (kVA)	REMARKS
1	ATS-ELEV (N)	1	(4)3/0	#4	2-1/2"	3	400 A	300 A	16.6	
2	ATS-ELS (N)	1	(4)#3	#8	1-1/4"	3	100 A	100 A	13.5	
3	RP1A	2	(4)250	#1	2-1/2"	3	250 A	400 A	85.9	
4	RP1B	2	(4)250	#1	2-1/2"	3	250 A	400 A	77.5	
5	RP1C	1	(4)#3/0	#4	2"	3	150 A	150 A	23.6	
6	RP2A	2	(4)250	#1	2-1/2"	3	400 A	400 A	99.0	
7	RP3A	2	(4)250	#3	2-1/2"	3	400 A	400 A	98.4	
8	RP4A	2	(4)250	#3	2-1/2"	3	400 A	400 A	98.6	
9	RP5A	2	(4)250	#3	2-1/2"	3	400 A	400 A	105.2	
10	HVAC OA-1	1	(3)350	#4	3"	3	400 A	300 A	91.0	
11	HVAC OA-2	1	(3)350	#4	3"	3	400 A	300 A	96.3	
12	HVAC VHP-12	1	#8	#10	1"	3	100 A	45 A	11.2	
13	HVAC P-1	1	(3)#3	#8	1-1/4"	3	100 A	100 A	22.4	
14	HVAC P-1	1	(3)#3	#8	1-1/4"	3	100 A	100 A	22.4	
15	EXTERIOR EVENT OUTLET	1	(4)#6	#10	1"	2	100 A	60 A	1.5	
16	JOCKEY PUMP	1	(3)#12	#12	1"	3	100 A	20 A	2.7	
17	BP-1	1	(3)#8	#10	1"	3	100 A	50 A	9.1	
18	SPARE	--	--	--	--	3	--	100 A	0.0	
19	SPARE	--	--	--	--	3	--	100 A	0.0	
20	SPARE	--	--	--	--	3	--	100 A	0.0	

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS
EQUIP	91132 VA	100.00%	91132 VA	TOTAL CONN. LOAD: 875 kVA
HVAC	446820 VA	100.00%	446820 VA	TOTAL EST. DEMAND: 776 kVA
KITCH	22840 VA	65.00%	14846 VA	TOTAL CONN. CURRENT: 2429 A
LTNG	29252 VA	125.00%	36565 VA	TOTAL EST. DEMAND CURRENT: 2153 A
REC	207340 VA	52.41%	108670 VA	
ELEVATOR	16632 VA	100.00%	16632 VA	
DRYER - DWELLING	5000 VA	100.00%	5000 VA	
RANGE - DWELLING	8000 VA	100.00%	8000 VA	
APPLIANCE - DWELLING	7500 VA	100.00%	7500 VA	
SPACE HEATING	40400 VA	100.00%	40400 VA	

NOTES:

PANELBOARD AND WIRING SCHEDULE

PANEL: RP1A — **MAINS TYPE:** MLO — **AVAILABLE FAULT CURRENT** 50.1 kA
VOLTAGE: 208Y/120V,3P,4W — **SPD:** No — **kAIC BRACING:** 65
AMPERES: 400 A — **MOUNTING:** SURFACE — **LOCATION:** ELEC 124E — **SUPPLY FROM:** MDP

CIRCUIT DESCRIPTION	NOTE	WIRE	GND	C	OCP	P	CKT	A	B	C	CKT	P	OCP	C	GND	WIRE	NOTE	CIRCUIT DESCRIPTION
KITCH - RANGE					50	2	1	4.8 1.5			2	1	20					KITCH MICRO
							3		4.8 4.8		4							
REC - REFRIG					20	1	5			0.2 4.8	6	2	50					KITCH - RANGE
KITCH RANGE HOOD					20	1	7	0.4 1.0			8	1	20					EQUIP - ADA DOOR...
EQUIP - ADA DOOR...					20	1	9		1.0 0.8		10	1	20					LTNG - BACK OF HOUSE
LTNG - MAIN LOBBY					20	1	11			1.0 0.5	12	1	20					LTNG - LOBBY/ STUDY...
REC - REFRIG	2				20	1	13	0.6 1.6			14	2	20					
EH-1 - CORRIDOR					20	1	15		1.5 1.6		16							EH-3 - STAIR 2
REC - MECHANICAL 122M					20	1	17			1.4 0.4	18	1	20					REC SECURITY PANELS
WATER COOLER					20	1	19	1.0 0.7			20	1	20					REC - STUDY
REC - STUDY 101C					20	1	21		0.6 1.1		22	1	20					REC - STUDY
REC - EXTERIOR					20	1	23			0.5 0.5	24	1	20					REC - EXTERIOR
EQUIP WATER HEAT					20	1	25	2.4 2.4			26	1	20					EQUIP WATER HEAT
REC STORAGE					20	1	27		0.9 0.2		28	1	20					EQUIP VENDING
EQUIP VENDING					20	1	29			0.2 0.2	30	1	20					EQUIP VENDING
REC RESTROOMS					20	1	31	0.9 0.7			32	1	20					REC SITTING AREA
REC - LOBBY					20	1	33		0.7 1.3		34	1	20					REC - MAIN LOBBY
REC OFFICE					20	1	35			0.9 0.4	36	1	20					REC - KITCH COUNTER
REC - KITCH COUNTER					20	1	37	0.4 0.5			38	1	20					RECPTC - MECHANICAL
KITCH MICRO					20	1	39		1.5 1.2		40	1	20					HAND DRYER - WOMENS
HAND DRYER - MENS					20	1	41			1.2 0.4	42	1	20					MOTORIZED SHADES
TCP PANELS					20	1	43	1.0 0.0			44	1	20	--	--	--		SPARE
EH-2 - FIRE PUMP 116					20	2	45		1.6 1.1		46	1	20					REC Room 124E
							47			1.6 0.4	48	1	20					KITCHRANGE #5000
EH-2 - MECHANICAL 130M					20	2	49	1.6 1.6			50	2	20					EH-2 - ELEC 124E
							51		1.6 1.6		52							
							53			1.3 1.6	54	2	20					EH-2 - MECHANICAL 122M
VHP-24 - MECHANICAL 122M					15	3	55	1.3 1.6			56							
							57		1.3 1.5		58	1	20					BH-10 - LOBBY
BH-10 - LOBBY					20	1	59			1.5 1.5	60	1	20					BH-10 - LOBBY
BH-10 - LOBBY					20	1	61	1.5 0.6			62	1	20					REC - STUDY 101A
REC - STUDY 101B					20	1	63		0.6 0.6		64	1	20					BH-4 - STUDY 101B
BH-4 - STUDY 101C					20	1	65			0.6 0.8	66							
BH-4 - STUDY 101A					20	1	67	0.6 0.8			68	3	20					SF-1 - MECHANICAL 130M
HHP-12 - STORAGE 126					15	2	69		0.8 0.8		70							
							71			0.8 0.5	72	1	20					EQUIP
SPARE		--	--	--	20	1	73	0.0 0.0			74	1	20	--	--	--		SPARE
SPARE		--	--	--	20	1	75		0.0 0.0		76	1	20	--	--	--		SPARE
SPARE		--	--	--	20	1	77			0.0 0.0	78	1	20	--	--	--		SPARE
SPARE		--	--	--	20	1	79	0.0 0.0			80	1	20	--	--	--		SPARE
SPARE		--	--	--	20	1	81		0.0 0.0		82	1	20	--	--	--		SPARE
SPARE		--	--	--	20	1	83			0.0 0.0	84	1	20	--	--	--		SPARE
			TOTAL LOAD (kVA):					29.5 kVA	33.3 kVA	23.1 kVA								
			TOTAL CURRENT (A):					254 A	286 A	193 A								

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS
EQUIP	13340 VA	100.00%	13340 VA	TOTAL CONNECTED LOAD: 85936 VA
HVAC	8000 VA	100.00%	8000 VA	TOTAL ESTIMATED DEMAND: 76406 VA
LTNG	2256 VA	125.00%	2820 VA	TOTAL CONNECTED CURRENT: 239 A
REC	14200 VA	85.21%	12100 VA	TOTAL ESTIMATED DEMAND CURRENT: 212 A
KITCH	22840 VA	65.00%	14846 VA	
SPACE HEATING	25300 VA	100.00%	25300 VA	

NOTES: WHERE NOT LISTED, WIRE AND CONDUIT SHALL BE 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 CIRCUIT BREAKER

PANELBOARD AND WIRING SCHEDULE

PANEL: RP1B — **MAINS TYPE:** MLO — **AVAILABLE FAULT CURRENT:** 11.2 kA
VOLTAGE: 208Y/120V,3P,4W — **SPD:** No — **kAIC RATING:** 18
AMPERES: 400 A — **MOUNTING:** SURFACE — **LOCATION:** MECH/ELEC 140 — **SUPPLY FROM:** MDP

CIRCUIT DESCRIPTION	WIRE	GND	C	OCP	P	CKT	A	B	C	CKT	P	OCP	C	GND	WIRE	CIRCUIT DESCRIPTION
RA1	(3)#3/0	#4	2"	175	2	1	13.3 1.1			2	2	15				HEAT PUMP - UNIT 163
						3		12.9 1.1		4						
HEAT PUMP - MECH ROOM				15	2	5			1.1 1.1	6	2	15				HEAT PUMP - UNIT 162
						7	1.1 1.1			8						
HEAT PUMP - UNIT 161				15	2	9		1.1 1.3		10	3	15				HEAT PUMP VHP-24 - MECH/ELEC 140
						11			1.1 1.3	12						
HEAT PUMP - UNIT 160				15	2	13	1.1 1.3			14						
						15		1.1 1.1		16	2	15				HEAT PUMP - UNIT 159
HEAT PUMP - UNIT 155				15	2	17			0.8 1.1	18						
						19	0.8 0.5			20	1	20				REC - BEDROOM 158B
REC - BEDROOM 158B				20	1	21		0.4 0.4		22	1	20				REC - BEDROOM 158A
REC - BEDROOM 158A				20	1	23			0.5 0.2	24	1	20				REC - VANITY 158
REC - VANITY 158				20	1	25	0.2 0.2			26	1	20				REC - VANITY 160
REC - VANITY 160				20	1	27		0.2 0.5		28	1	20				REC - BEDROOM 160A
REC - BEDROOM 160B				20	1	29			0.5 0.4	30	1	20				REC - BEDROOM 160B
REC - BEDROOM 160A				20	1	31	0.4 1.1			32	2	20				HEAT PUMP - UNIT 158
REC - VANITY 162				20	1	33		0.2 1.1		34						
REC - BEDROOM 162A				20	1	35			0.4 0.5	36	1	20				REC - BEDROOM 162A
REC - BEDROOM 162B				20	1	37	0.5 0.4			38	1	20				REC - BEDROOM 162B
REC - VANITY 163				20	1	39		0.2 0.2		40	1	20				REC - VANITY 163
REC - BEDROOM 163B				20	1	41			0.4 0.5	42	1	20				REC - BEDROOM 163B
REC - BEDROOM 163A				20	1	43	0.5 0.4			44	1	20				REC - BEDROOM 163A
REC - VANITY 161				20	1	45		0.2 0.2		46	1	20				REC - VANITY 161
REC - BEDROOM 161B				20	1	47			0.4 0.5	48	1	20				REC - BEDROOM 161B
REC - BEDROOM 161A				20	1	49	0.5 0.4			50	1	20				REC - BEDROOM 161A
REC - VANITY 159				20	1	51		0.2 0.2		52	1	20				REC - VANITY 159
REC - BEDROOM 159A				20	1	53			0.5 0.4	54	1	20				REC - BEDROOM 159A
REC - BEDROOM 159B				20	1	55	0.5 0.4			56	1	20				REC - BEDROOM 159B
REC - VANITY 155				20	1	57		0.4 0.8		58	1	20				REC - BEDROOM 155
REC - CORRIDOR				20	1	59			1.4 0.7	60	1	20				EQUIP IDF
EQUIP IDF				20	1	61	0.7 0.5			62	2	20				EQUIP IDF RACK
EQUIP IDF RACK				20	2	63		0.5 0.5		64						
						65			0.5 0.2	66	1	20				LTNG - LEVEL 1 CORRIDOR
BH-4 - STUDY 101				20	1	67	0.6 0.2			68	1	20				ELEV. PIT SUMP PUMP
REC - ELEV. PIT				20	1	69		0.2 0.4		70	1	20				LTNG - STUDY AREAS
SPARE	--	--	--	20	1	71			0.0 0.7	72	1	20				REC COMMONS
REC ELEV MACH 145				20	1	73	0.2 0.2			74	1	20				REC - PLAZA
REC - PLAZA				20	1	75		0.2 0.2		76	1	20				LTNG
SPARE	--	--	--	20	1	77			0.0 0.2	78	1	20				REC - EXTERIOR BUILDING
EH-1 - VESTIBULE 135V				20	1	79	1.5 0.2			80	1	20				REC - VANITY 162
HEAT PUMP VHP-012 - MECH/ELEC 140				15	2	81		0.8 0.7		82	1	20				CEF - IDF 140A
						83			0.8 0.5	84	1	20				TCP - MECH/ELEC 140
REC - EXTERIOR BUILDING				20	1	85	0.2 1.6			86	2	20				EH-3 - STAIR 1
SPARE	--	--	--	20	1	87		0.0 1.6		88						
SPARE	--	--	--	20	1	89			0.0 0.0	90	1	20	--	--	--	SPARE
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 (kVA):				31.8 kVA	28.9 kVA	16.9 kVA							
			TOTAL CURRENT (A):				280 A	256 A	140 A							

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS
EQUIP	4146 VA	100.00%	4146 VA	TOTAL CONNECTED LOAD: 77489 VA
HVAC	24500 VA	100.00%	24500 VA	TOTAL ESTIMATED DEMAND: 72860 VA
LTNG	2523 VA	125.00%	3154 VA	TOTAL CONNECTED CURRENT: 215 A
REC	20520 VA	74.37%	15260 VA	TOTAL ESTIMATED DEMAND CURRENT: 202 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	
SPACE HEATING	5300 VA	100.00%	5300 VA	

NOTES: WHERE NOT LISTED, WIRE AND CONDUIT SHALL BE 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.

PANELBOARD AND WIRING SCHEDULE

PANEL: RP2A — **MAINS TYPE:** MCB — **AVAILABLE FAULT CURRENT:** 14.5 kA
VOLTAGE: 208Y/120V,3P,4W — **SPD:** No — **kAIC RATING:** 18
AMPERES: 400 A — **MOUNTING:** SURFACE — **LOCATION:** MECH/ELEC 200K — **SUPPLY FROM:** MDP

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			4						
HEAT PUMP - UNIT 215			15	2	5			0.8 1.1		6	2	15				HEAT PUMP - UNIT 211
					7	0.8 1.1				8						
HEAT PUMP - UNIT 209			15	2	9		1.1 1.1			10	2	15				HEAT PUMP - UNIT 208
					11			1.1 1.1		12						
HEAT PUMP - UNIT 206			15	2	13	1.1 1.1				14	2	15				HEAT PUMP - UNIT 207
					15		1.1 1.1			16						
HEAT PUMP - UNIT 205			15	2	17			1.1 0.8		18	2	15				HEAT PUMP - UNIT 203
					19	1.1 0.8				20						
REC - BEDROOM 212B			20	1	21		0.5 0.5			22	1	20				REC - BEDROOM 212A
REC - VANITY 212			20	1	23			0.2 0.4		24	1	20				REC - BEDROOM 212A
REC - VANITY 215			20	1	25	0.2 0.4				26	1	20				REC - BEDROOM 212B
REC - BEDROOM 215			20	1	27		0.5 0.2			28	1	20				REC - VANITY 212
REC - VANITY 211			20	1	29			0.2 0.2		30	1	20				REC - VANITY 215
REC - BEDROOM 211B			20	1	31	0.4 0.6				32	1	20				REC - BEDROOM 215
REC - BEDROOM 211A			20	1	33		0.5 0.2			34	1	20				REC - VANITY 211
REC - VANITY 210			20	1	35			0.2 0.5		36	1	20				REC - BEDROOM 211B
REC - BEDROOM 210A			20	1	37	0.4 0.4				38	1	20				REC - BEDROOM 211A
REC - BEDROOM 210B			20	1	39		0.5 0.2			40	1	20				REC - VANITY 210
REC - BEDROOM 208A			20	1	41			0.6 0.5		42	1	20				REC - BEDROOM 210A
REC - BEDROOM 208B			20	1	43	0.5 0.4				44	1	20				REC - BEDROOM 210B
REC - VANITY 208			20	1	45		0.2 0.4			46	1	20				REC - BEDROOM 208A
REC - VANITY 209			20	1	47			0.2 0.4		48	1	20				REC - BEDROOM 208B
REC - BEDROOM 209B			20	1	49	0.4 0.2				50	1	20				REC - VANITY 208
REC - BEDROOM 209A			20	1	51		0.5 0.2			52	1	20				REC - VANITY 209
REC - VANITY 206			20	1	53			0.2 0.5		54	1	20				REC - BEDROOM 209B
REC - BEDROOM 206A			20	1	55	0.4 0.4				56	1	20				REC - BEDROOM 209A
REC - BEDROOM 206B			20	1	57		0.5 0.2			58	1	20				REC - VANITY 206
REC - VANITY 207			20	1	59			0.2 0.5		60	1	20				REC - BEDROOM 206A
REC - BEDROOM 207B			20	1	61	0.4 0.4				62	1	20				REC - BEDROOM 206B
REC - BEDROOM 207A		

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PANELBOARD AND WIRING SCHEDULE

PANEL: RP3A — **AVAILABLE FAULT CURRENT:** 13.5
VOLTAGE: 208Y/120V,3P,4W — **MAINS TYPE:** MCB — **kAIC RATING:** 18
AMPERES: 400 A — **SPD:** No — **LOCATION:** MECH/ELEC 300K
MOUNTING: SURFACE — **SUPPLY FROM:** MDP

CIRCUIT DESCRIPTION	WIRE	GND	C	OCP	P	CKT	A	B	C	CKT	P	OCP	C	GND	WIRE	CIRCUIT DESCRIPTION
HEAT PUMP - UNIT 303				15	2	1	0.8	1.1		2	2	15				HEAT PUMP - UNIT 305
						3			0.8	1.1	4					
HEAT PUMP - UNIT 307				15	2	5			1.1	1.1	6	2	15			HEAT PUMP - UNIT 306
						7	1.1	1.1			8					
HEAT PUMP - UNIT 306				15	2	9			1.1	1.1	10	2	15			HEAT PUMP - UNIT 309
						11			1.1	1.1	12					
HEAT PUMP - UNIT 311				15	2	13	1.1	1.1			14	2	15			HEAT PUMP - UNIT 310
						15			1.1	1.1	16					
HEAT PUMP - UNIT 312				15	2	17			1.1	0.8	18	2	15			HEAT PUMP - UNIT 315
						19	1.1	0.8			20					
REC - BEDROOM 303				20	1	21		0.8	0.2		22	1	20			REC - VANITY 303
REC - BEDROOM 305A				20	1	23				0.5	0.4	24	1	20		REC - BEDROOM 305A
REC - BEDROOM 305B				20	1	25	0.5	0.4				26	1	20		REC - BEDROOM 305B
REC - VANITY 305				20	1	27		0.2	0.2			28	1	20		REC - VANITY 305
REC - BEDROOM 307A				20	1	29				0.4	0.5	30	1	20		REC - BEDROOM 307A
REC - BEDROOM 307B				20	1	31	0.5	0.4				32	1	20		REC - BEDROOM 307B
REC - VANITY 307				20	1	33		0.2	0.2			34	1	20		REC - VANITY 307
REC - BEDROOM 309A				20	1	35				0.5	0.4	36	1	20		REC - BEDROOM 309A
REC - BEDROOM 309B				20	1	37	0.5	0.4				38	1	20		REC - BEDROOM 309B
REC - VANITY 309				20	1	39		0.2	0.2			40	1	20		REC - VANITY 309
REC - BEDROOM 311A				20	1	41				0.5	0.4	42	1	20		REC - BEDROOM 311A
REC - BEDROOM 311B				20	1	43	0.5	0.4				44	1	20		REC - BEDROOM 311B
REC - VANITY 311				20	1	45		0.2	0.2			46	1	20		REC - VANITY 311
REC - BEDROOM 315				20	1	47				0.5	0.4	48	1	20		REC - BEDROOM 315
REC - VANITY 315				20	1	49	0.4	0.2				50	1	20		REC - VANITY 315
REC - BEDROOM 312A				20	1	51		0.5	0.4			52	1	20		REC - BEDROOM 312A
REC - BEDROOM 312B				20	1	53				0.5	0.4	54	1	20		REC - BEDROOM 312B
REC - VANITY 312				20	1	55	0.2	0.2				56	1	20		REC - VANITY 312
REC - BEDROOM 310A				20	1	57		0.5	0.4			58	1	20		REC - BEDROOM 310A
REC - BEDROOM 310B				20	1	59				0.5	0.4	60	1	20		REC - BEDROOM 310B
REC - VANITY 310				20	1	61	0.2	0.2				62	1	20		REC - VANITY 310
REC - BEDROOM 308A				20	1	63		0.5	0.4			64	1	20		REC - BEDROOM 308A
REC - BEDROOM 308B				20	1	65				0.5	0.4	66	1	20		REC - BEDROOM 308B
REC - VANITY 308				20	1	67	0.2	0.2				68	1	20		REC - VANITY 308
REC - BEDROOM 306A				20	1	69		0.5	0.4			70	1	20		REC - BEDROOM 306A
REC - BEDROOM 306B				20	1	71				0.5	0.4	72	1	20		REC - BEDROOM 306B
REC - VANITY 306				20	1	73	0.2	0.2				74	1	20		REC - VANITY 306
REC - STUDY 304				20	1	75		0.7	0.0			76	1	20		FIRE/ SMOKE DAMPERS
SPARE	--	--	--	20	1	77				0.0	0.0	78	1	20	--	--	--	SPARE
SPARE	--	--	--	20	1	79	0.0	18.0				80						
SPARE	--	--	--	20	1	81		0.0	20.7			82	3	400	2"	#3	(4)#3/0	RP3B
SPARE	--	--	--	20	1	83				0.0	16.7	84						
						TOTAL LOAD (kVA):	32.2 kVA	34.1 kVA	31.4 kVA								
						TOTAL CURRENT (A):	269 A	285 A	262 A								

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS
EQUIP	10300 VA	100.00%	10300 VA	**TOTAL CONNECTED LOAD:** 97661 VA
HVAC	38140 VA	100.00%	38140 VA	**TOTAL ESTIMATED DEMAND:** 82401 VA
LTNG	5001 VA	125.00%	6251 VA	**TOTAL CONNECTED CURRENT:** 271 A
REC	43020 VA	61.62%	26510 VA	**TOTAL ESTIMATED DEMAND CURRENT:** 229 A
SPACE HEATING	1200 VA	100.00%	1200 VA	

NOTES: WHERE NOT LISTED, WIRE AND CONDUIT SHALL BE 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.

PANELBOARD AND WIRING SCHEDULE

PANEL: RP4A — **AVAILABLE FAULT CURRENT:** 12.6
VOLTAGE: 208Y/120V,3P,4W — **MAINS TYPE:** MCB — **kAIC RATING:** 18
AMPERES: 400 A — **SPD:** No — **LOCATION:** MECH/ELEC 400K
MOUNTING: SURFACE — **SUPPLY FROM:** MDP

CIRCUIT DESCRIPTION	WIRE	GND	C	OCP	P	CKT	A	B	C	CKT	P	OCP	C	GND	WIRE	CIRCUIT DESCRIPTION
HEAT PUMP - UNIT 403				15	2	1	0.8	1.1		2	2	15				HEAT PUMP - UNIT 405
						3			0.8	1.1	4					
HEAT PUMP - UNIT 407				15	2	5			1.1	1.1	6	2	15			HEAT PUMP - UNIT 406
						7	1.1	1.1			8					
HEAT PUMP - UNIT 408				15	2	9		1.1	1.1		10	2	15			HEAT PUMP - UNIT 409
						11			1.1	1.1	12					
HEAT PUMP - UNIT 411				15	2	13	1.1	1.1			14	2	15			HEAT PUMP - UNIT 410
						15		1.1	1.1		16					
HEAT PUMP - UNIT 412				15	2	17			1.1	0.8	18	2	15			HEAT PUMP - UNIT 415
						19	1.1	0.8			20					
REC - BEDROOM 403				20	1	21		0.8	0.2		22	1	20			REC - V ANITY 403
REC - BEDROOM 405A				20	1	23				0.5	0.4	24	1	20		REC - BEDROOM 405A
REC - BEDROOM 405B				20	1	25	0.5	0.4				26	1	20		REC - BEDROOM 405B
REC - VANITY 405				20	1	27		0.2	0.2			28	1	20		REC - VANITY 405
REC - BEDROOM 407A				20	1	29				0.5	0.4	30	1	20		REC - BEDROOM 407A
REC - BEDROOM 407B				20	1	31	0.5	0.4				32	1	20		REC - BEDROOM 407B
REC - VANITY 407				20	1	33		0.2	0.2			34	1	20		REC - VANITY 407
REC - BEDROOM 409A				20	1	35				0.5	0.4	36	1	20		REC - BEDROOM 409A
REC - BEDROOM 409B				20	1	37	0.5	0.4				38	1	20		REC - BEDROOM 409B
REC - VANITY 409				20	1	39		0.2	0.2			40	1	20		REC - VANITY 409
REC - BEDROOM 411A				20	1	41				0.5	0.4	42	1	20		REC - BEDROOM 411A
REC - BEDROOM 411B				20	1	43	0.5	0.4				44	1	20		REC - BEDROOM 411B
REC - VANITY 411				20	1	45		0.2	0.2			46	1	20		REC - VANITY 411
REC - BEDROOM 415				20	1	47				0.5	0.4	48	1	20		REC - BEDROOM 415
REC - VANITY 415				20	1	49	0.4	0.2				50	1	20		REC - VANITY 415
REC - BEDROOM 412A				20	1	51		0.5	0.4			52	1	20		REC - BEDROOM 412A
REC - BEDROOM 412B				20	1	53				0.5	0.4	54	1	20		REC - BEDROOM 412B
REC - VANITY 412				20	1	55	0.2	0.2				56	1	20		REC - VANITY 412
REC - BEDROOM 410A				20	1	57		0.5	0.4			58	1	20		REC - BEDROOM 410A
REC - BEDROOM 410B				20	1	59				0.5	0.4	60	1	20		REC - BEDROOM 410B
REC - VANITY 410				20	1	61	0.2	0.2				62	1	20		REC - VANITY 410
REC - BEDROOM 408A				20	1	63		0.5	0.4			64	1	20		REC - BEDROOM 408A
REC - BEDROOM 408B				20	1	65				0.5	0.4	66	1	20		REC - BEDROOM 408B
REC - VANITY 408				20	1	67	0.2	0.2				68	1	20		REC - VANITY 408
REC - BEDROOM 406A				20	1	69		0.5	0.1			70	1	20		REC - BEDROOM 406A
REC - BEDROOM 406A				20	1	71				0.4	0.1	72	1	20		REC - BEDROOM 406B
REC - VANITY 406				20	1	73	0.1	0.0				74	1	20		REC - VANITY 406
REC - STUDY				20	1	75		0.7	0.8			76	1	20		LTNG - CORRIDOR
FIRE/ SMOKE DAMPERS				20	1	77				0.0	0.2	78	1	20		LTNG - LOUNGE/ BACK OF HOUSE
REC - BEDROOM 406B				20	1	79	0.5	0.4				80	1	20		REC - BEDROOM 406B
REC - VANITY 406				20	1	81		0.2	0.2			82	1	20		REC - VANITY 406
SPARE	--	--	--	20	1	83				0.0	0.0	84	1	20	--	--	--	SPARE
SPARE	--	--	--	20	1	85	0.0	0.0				86	1	20	--	--	--	SPARE
SPARE	--	--	--	20	1	87		0.0	0.0			88	1	20	--	--	--	SPARE
SPARE	--	--	--	20	1	89				0.0	0.0	90	1	20	--	--	--	SPARE
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	19.3				104						
SPARE	--	--	--	20	1	105		0.0	19.5			106	3	400	2"	#3	(4)#3/0	RP4B
SPARE	--	--	--	20	1	107			0.0	15.8		108						
						TOTAL LOAD (kVA):	34.0 kVA	33.7 kVA	30.1 kVA								
						TOTAL CURRENT (A):	288 A	286 A	251 A								

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS
EQUIP	10300 VA	100.00%	10300 VA	**TOTAL CONNECTED LOAD:** 97841 VA
HVAC	38140 VA	100.00%	38140 VA	**TOTAL ESTIMATED DEMAND:** 82491 VA
LTNG	5001 VA	125.00%	6251 VA	**TOTAL CONNECTED CURRENT:** 272 A
REC	43200 VA	61.57%	26600 VA	**TOTAL ESTIMATED DEMAND CURRENT:** 229 A
SPACE HEATING	1200 VA	100.00%	1200 VA	

NOTES: WHERE NOT LISTED, WIRE AND CONDUIT SHALL BE 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.

PANELBOARD AND WIRING SCHEDULE

PANEL: RP5A — **AVAILABLE FAULT CURRENT:** 11.8
VOLTAGE: 208Y/120V,3P,4W — **MAINS TYPE:** MCB — **kAIC RATING:** 18
AMPERES: 400 A — **SPD:** No — **LOCATION:** MECH/ELEC 500K
MOUNTING: SURFACE — **SUPPLY FROM:** MDP

CIRCUIT DESCRIPTION	WIRE	GND	C	OCP	P	CKT	A	B	C	CKT	P	OCP	C	GND	WIRE	CIRCUIT DESCRIPTION
HEAT PUMP - UNIT 503				15	2	1	0.8	1.1		2	2	15				HEAT PUMP - UNIT 505
						3			0.8	1.1	4					
HEAT PUMP - UNIT 507				15	2	5			1.1	1.1	6	2	15			HEAT PUMP - UNIT 506
						7	1.1	1.1			8					
HEAT PUMP - UNIT 508				15	2	9		1.1	1.1		10	2	15			HEAT PUMP - UNIT 509
						11			1.1	1.1	12					
HEAT PUMP - UNIT 511				15	2	13	1.1	1.1			14	2	15			HEAT PUMP - UNIT 510
						15		1.1	1.1		16					
HEAT PUMP - UNIT 512				15	2	17			1.1	0.8	18	2	15			HEAT PUMP - UNIT 515
						19	1.1	0.8			20					
REC - BEDROOM 503				20	1	21		0.8	0.2		22	1	20			REC - VANITY 503
REC - BEDROOM 505A				20	1	23				0.5	0.4	24	1	20		REC - BEDROOM 505A
REC - BEDROOM 505B				20	1	25	0.5	0.4				26	1	20		REC - BEDROOM 505B
REC - VANITY 505				20	1	27		0.2	0.2			28	1	20		REC - VANITY 505
REC - BEDROOM 507A				20	1	29				0.5	0.4	30	1	20		REC - BEDROOM 507A
REC - BEDROOM 507B				20	1	31	0.5	0.4				32	1	20		REC - BEDROOM 507B
REC - VANITY 507				20	1	33		0.2	0.2			34	1	20		REC - VANITY 507
REC - BEDROOM 509A				20	1	35				0.5	0.4	36	1	20		REC - BEDROOM 509A
REC - BEDROOM 509B				20	1	37	0.5	0.4				38	1	20		REC - BEDROOM 509B
REC - VANITY 509				20	1	39		0.2	0.2			40	1	20		REC - VANITY 509
REC - BEDROOM 511A				20	1	41				0.5	0.4	42	1	20		REC - BEDROOM 511A
REC - BEDROOM 511B				20	1	43	0.5	0.4				44	1	20		REC - BEDROOM 511B
REC - VANITY 511				20	1	45		0.2	0.2			46	1	20		REC - VANITY 511
REC - BEDROOM 515				20	1	47				0.5	0.4	48	1	20		REC - BEDROOM 515
REC - VANITY				20	1	49	0.2	0.4				50	1	20		REC - VANITY
REC - BEDROOM 512A				20	1	51		0.5	0.4			52	1	20		REC - BEDROOM 512A
REC - BEDROOM 512B				20	1	53				0.5	0.4	54	1	20		REC - BEDROOM 512B
REC - VANITY 512				20	1	55	0.2	0.2				56	1	20		REC - VANITY 512
REC - BEDROOM 510A				20	1	57		0.5	0.4			58	1	20		REC - BEDROOM 510A
REC - BEDROOM 510B				20	1	59				0.5	0.4	60	1	20		REC - BEDROOM 510B
REC - VANITY				20	1	61	0.2	0.2				62	1	20		REC - VANITY
REC - BEDROOM 508A				20	1	63		0.5	0.4			64	1	20		REC - BEDROOM 508A
REC - BEDROOM 508B				20	1	65				0.5	0.4	66	1	20		REC - BEDROOM 508B
REC - VANITY 508				20	1	67	0.2	0.2				68	1	20		REC - VANITY 508
REC - BEDROOM 506A				20	1	69		0.5	0.4			70	1	20		REC - BEDROOM 506A
REC - BEDROOM 506B				20	1	71				0.5	0.4	72	1	20		REC - BEDROOM 506B
REC - VANITY 506				20	1	73	0.2	0.2				74	1	20		REC - VANITY 506
REC - STUDY				20	1	75		0.7	0.8			76	1	20		LTNG - CORRIDOR
EH-3 - STAIR 2				20	2	77			1.6	0.0		78	1	20		FIRE/ SMOKE DAMPERS
						79	1.6	0.0				80	1	20	--	--	--	SPARE
SPARE	--	--	--	20	1	81		0.0	0.0			82	1	20	--	--	--	SPARE
SPARE	--	--	--	20	1	83				0.0	0.0	84	1	20	--	--	--	SPARE
SPARE	--	--	--	20	1	85	0.0	0.0				86	1	20	--	--	--	SPARE
SPARE	--	--	--	20	1	87		0.0	0.0			88	1	20	--	--	--	SPARE
SPARE	--	--	--	20	1	89				0.0	0.0	90	1	20	--	--	--	SPARE
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	19.4				104						
SPARE	--	--	--	20	1	105		0.0	20.8			106	3	400	2"	#3	(4)#3/0	RP5B
SPARE	--	--	--	20	1	107			0.0	18.0		108						
						TOTAL LOAD (kVA):	35.1 kVA	35.0 kVA	34.3 kVA								
						TOTAL CURRENT (A):	294 A	293 A	286 A								

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS
EQUIP	6700 VA	100.00%	6700 VA	**TOTAL CONNECTED LOAD:** 104421 VA
HVAC	44940 VA	100.00%	44940 VA	**TOTAL ESTIMATED DEMAND:** 88981 VA
LTNG	5001 VA	125.00%	6251 VA	**TOTAL CONNECTED CURRENT:** 290 A
REC	43380 VA	61.53%	26690 VA	**TOTAL ESTIMATED DEMAND CURRENT:** 247 A
SPACE HEATING	4400 VA	100.00%	4400 VA	

NOTES: WHERE NOT LISTED, WIRE AND CONDUIT SHALL BE 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.

PANELBOARD AND WIRING SCHEDULE

PANEL: RP3B — **AVAILABLE FAULT CURRENT:** 12.9
VOLTAGE: 208Y/120V,3P,4W — **MAINS TYPE:** MLO — **kAIC RATING:** 18
AMPERES: 400 A — **SPD:** No — **LOCATION:** MECH/ELEC 300K
MOUNTING: SURFACE — **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		2	2	15				HEAT PUMP - UNIT 360
						3			1.1	1.1	4					
HEAT PUMP - UNIT 363				15	2	5			1.1	1.1	6	2	15			HEAT PUMP - UNIT 361
						7	1.1	1.1			8					
HEAT PUMP - UNIT 358				15	2	9			1.1	1.1	10	2	15			HEAT PUMP - UNIT 354
						11			1.1	1.1	12					
HEAT PUMP - UNIT 359				15	2	13	1.1	1.1			14	2	15			HEAT PUMP - UNIT 355
						15			1.1	1.1	16					
HEAT PUMP - UNIT 352				15	2	17			0.8	0.5	18	1	20			REC - BEDROOM 362A
						19	0.8	0.2			20	1	20			REC - VANITY 362
REC - BEDROOM 362A				20	1	21		0.4	0.5			22	1	20		REC - BEDROOM 362B
REC - VANITY 362				20	1	23				0.2	0.5	24	1	20		REC - BEDROOM 360A
REC - BEDROOM 362B				20	1	25	0.4	0.4				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	0.4	0.5				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 - VANITY 354				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 354A
REC - BEDROOM 352				20	1	43	0.8	0.2				44	1	20		REC - VANITY 352
REC - BEDROOM 356A				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/MECH/ELEC				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				
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				
BH-4 - LOUNGE 301				20	1	81		0.6	0.8			82	2	20		EQUIP IDF RACK
						83				1.1	0.2	84	1	20		LTNG - LOUNGE/ BACK OF HOUSE
VHP-18 - MECH/ELEC 300K				15	2	85	1.1	1.3				86				
CEF-1 - IDF 300M				20	1	87		0.7	1.3			88	3	15		VHP-24 - MECH/ELEC 300K
AFDS - CORRIDOR				20	1	89				0.0	1.3	90				
LIGHTING CONTACTOR

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PANELBOARD AND WIRING SCHEDULE

PANEL: ELS1 | **VOLTAGE:** 208Y/120V,3P,4W | **AMPERES:** 100 A
MAINS TYPE: MCB | **SPD:** Yes | **MOUNTING:** SURFACE
AVAILABLE FAULT CURRENT: 10.6 | **kAIC RATING:** 14 | **LOCATION:** ELEC 124E | **SUPPLY FROM:** ATS-ELS

CIRCUIT DESCRIPTION	WIRE	GND	C	OCP	P	CKT	A	B	C	CKT	P	OCP	C	GND	WIRE	CIRCUIT DESCRIPTION
						1	0.6	0.5		2	1	20				FIRE ALARM PANEL
ELS2	(4)#3	#8	1-1/4"	100	3	3		0.6	1.0	4	1	20				MTS RECEP
						5			0.0	0.5	6	1	20				MTS RECEP
ELEVATOR LIGHTS				20	1	7	0.5	0.6		8	1	20				LTNG - STAIRWELL 2
LTNG - STAIRWELL 1				20	1	9			0.5	0.5	10	1	20				GEN LIGHTS/REC
GEN JACKET HEATER				20	2	11				0.3	0.5	12	1	20			GEN BATT CHARGER
						13	0.3	1.0				14	1	20			LTNG - MECH RM/ ELEC RM/ FP RM
TWO WAY COMM				20	1	15			0.0	0.1		16	1	20			LTNG - FLOOR 1 CORRIDOR
LTNG - ELEVATOR PIT				20	1	17					0.1	0.0	18	1	20		ELEV MACH RM
BUILDING LIGHTING				20	1	19	0.3	0.3					20	1	20		BUILDING LIGHTING
CU-1 - OUTDOOR	#10	#10	3/4"	25	2	21			2.7	0.0			22	1	20	-- -- --	SPARE
						23					2.7	0.0	24	1	20	-- -- --	SPARE
						TOTAL LOAD (kVA):	4.2 kVA		5.3 kVA		4.0 kVA						
						TOTAL CURRENT (A):	35 A		44 A		33 A						

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS	
EQUIP	3916 VA	100.00%	3916 VA	**TOTAL CONNECTED LOAD:**	13463 VA
HVAC	4900 VA	100.00%	4900 VA	**TOTAL ESTIMATED DEMAND:**	14625 VA
LTNG	4647 VA	125.00%	5809 VA	**TOTAL CONNECTED CURRENT:**	37 A
				TOTAL ESTIMATED DEMAND CURRENT:	41 A

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

PANELBOARD AND WIRING SCHEDULE

PANEL: ELS2 | **VOLTAGE:** 208Y/120V,3P,4W | **AMPERES:** 100 A
MAINS TYPE: MLO | **SPD:** Yes | **MOUNTING:** SURFACE
AVAILABLE FAULT CURRENT: 2.3 | **kAIC RATING:** 10 | **LOCATION:** MECH/ELEC 200K | **SUPPLY FROM:** ELS1

CIRCUIT DESCRIPTION	WIRE	GND	C	OCP	P	CKT	A	B	C	CKT	P	OCP	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		0.6	0.0	6	1	20	--	--	--	SPARE
						7	0.0	0.0		8	1	20	--	--	--	SPARE
SPARE	--	--	--	20	1	9		0.0	0.0	10	1	20	--	--	--	SPARE
SPARE	--	--	--	20	1	11				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				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

PANEL: ELS4 | **VOLTAGE:** 208Y/120V,3P,4W | **AMPERES:** 100 A
MAINS TYPE: MLO | **SPD:** Yes | **MOUNTING:** SURFACE
AVAILABLE FAULT CURRENT: 2.0 | **kAIC RATING:** 10 | **LOCATION:** MECH/ELEC 400K | **SUPPLY FROM:** ELS2

CIRCUIT DESCRIPTION	WIRE	GND	C	OCP	P	CKT	A	B	C	CKT	P	OCP	C	GND	WIRE	CIRCUIT DESCRIPTION
LTNG -EMER 4TH FLOOR	#3	#8	1-1/4"	100	1	1	0.3	0.3		2	1	20				LTNG - EMER 5TH FLOOR
SPARE	--	--	--	20	1	3		0.0	0.0	4	1	20	--	--	--	SPARE
SPARE	--	--	--	20	1	5				6	1	20	--	--	--	SPARE
SPARE	--	--	--	20	1	7	0.0	0.0		8	1	20	--	--	--	SPARE
SPARE	--	--	--	20	1	9		0.0	0.0	10	1	20	--	--	--	SPARE
SPARE	--	--	--	20	1	11				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				18	1	20	--	--	--	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 DEMAND CURRENT:	2 A

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

PANEL SCHEDULE KEY		
	ELS1	ELS2
		ELS4

PRINT DATE: 6/30/2020 1:05:58 PM
FILE INFO: BIM 360:\NKU - New Residence Hall\CNSH19_ELECT_R19.rvt

STATE OF KENTUCKY APPROVAL

#	DATE	CHANGE DESCRIPTION
1	2.18.2020	ADDENDUM #2
2	06/05/2020	BULLETIN #2

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 40059
T:502.326.3085 F:502.326.2691 www.cmtaegrs.com

DRAWING TITLE:

PANEL SCHEDULES

STATE OF KENTUCKY — ROBERT ANTHONY HANS 23143 — LICENSED PROFESSIONAL ENGINEER

JANUARY 30, 2020

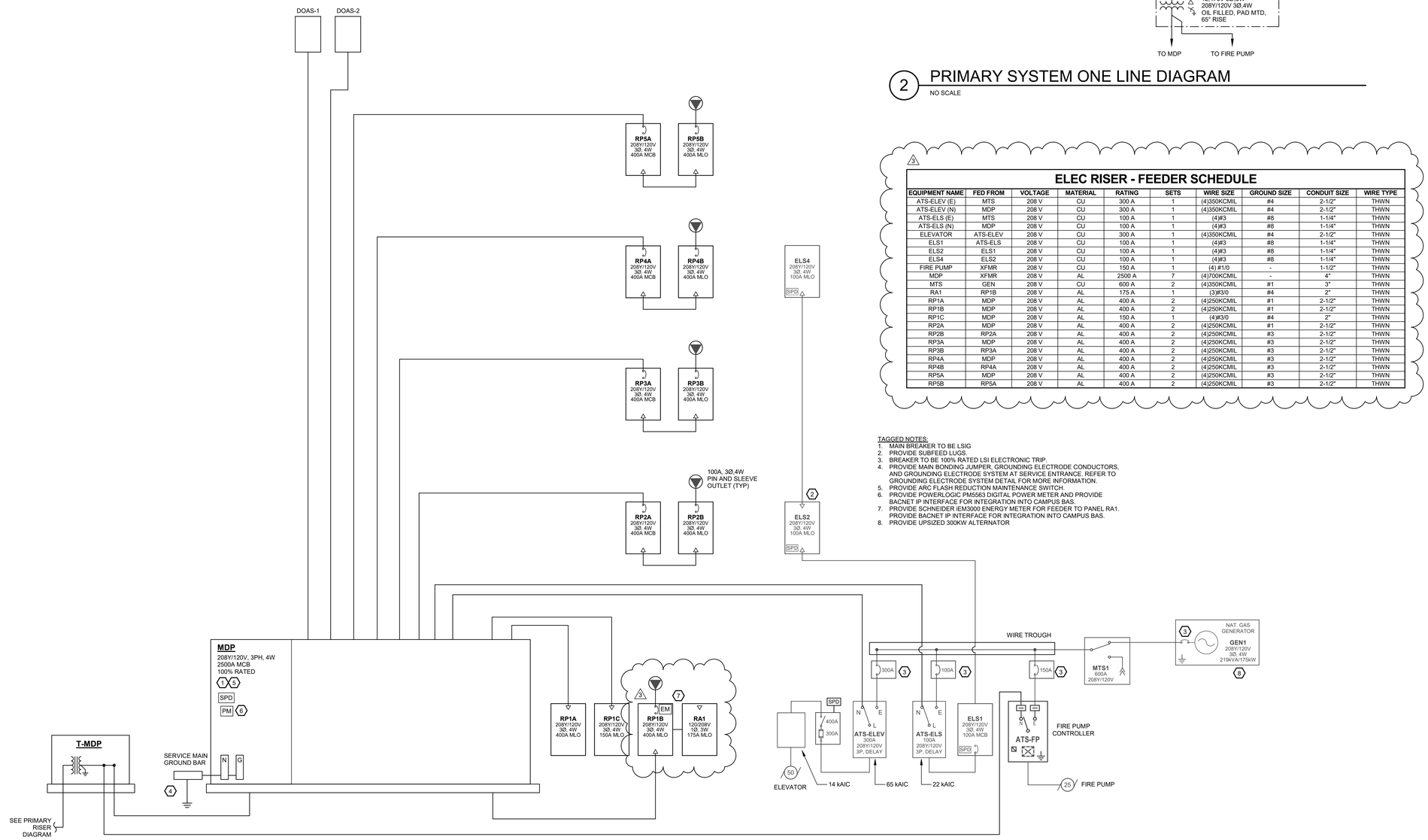
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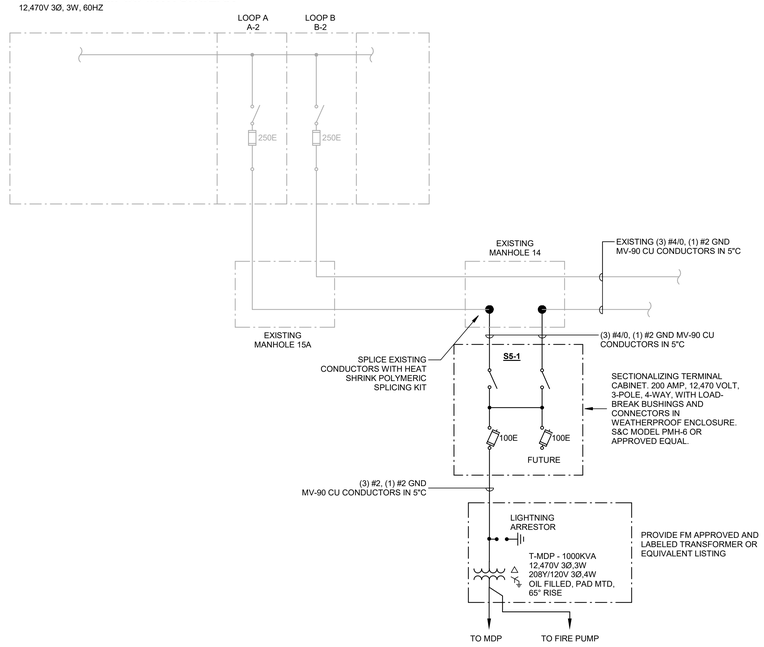
BID & PERMIT SUBMITTAL

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1 ELECTRICAL DISTRIBUTION RISER DIAGRAM

SCALE: 12" = 1'-0"



2 PRIMARY SYSTEM ONE LINE DIAGRAM

NO SCALE

3

ELEC RISER - FEEDER SCHEDULE

EQUIPMENT NAME	FED FROM	VOLTAGE	MATERIAL	RATING	SETS	WIRE SIZE	GROUND SIZE	CONDUIT SIZE	WIRE TYPE
ATS-ELEV (E)	MTS	208 V	CU	300 A	1	(4)350KCMIL	#4	2-1/2"	THWN
ATS-ELEV (N)	MDP	208 V	CU	300 A	1	(4)350KCMIL	#4	2-1/2"	THWN
ATS-ELS (E)	MTS	208 V	CU	100 A	1	(4)#3	#8	1-1/4"	THWN
ATS-ELS (N)	MDP	208 V	CU	100 A	1	(4)#3	#8	1-1/4"	THWN
ELEVATOR	ATS-ELEV	208 V	CU	300 A	1	(4)350KCMIL	#4	2-1/2"	THWN
ELS1	ATS-ELS	208 V	CU	100 A	1	(4)#3	#8	1-1/4"	THWN
ELS2	ELS1	208 V	CU	100 A	1	(4)#3	#8	1-1/4"	THWN
ELS4	ELS2	208 V	CU	100 A	1	(4)#3	#8	1-1/4"	THWN
FIRE PUMP	XFMR	208 V	CU	150 A	1	(4) #1/0	-	1-1/2"	THWN
MDP	XFMR	208 V	AL	2500 A	7	(4)700KCMIL	-	4"	THWN
MTS	GEN	208 V	CU	600 A	2	(4)350KCMIL	#1	3"	THWN
RA1	RP1B	208 V	AL	175 A	1	(3)#3/0	#4	2"	THWN
RP1A	MDP	208 V	AL	400 A	2	(4)250KCMIL	#1	2-1/2"	THWN
RP1B	MDP	208 V	AL	400 A	2	(4)250KCMIL	#1	2-1/2"	THWN
RP1C	MDP	208 V	AL	150 A	1	(4)#3/0	#4	2"	THWN
RP2A	MDP	208 V	AL	400 A	2	(4)250KCMIL	#1	2-1/2"	THWN
RP2B	RP2A	208 V	AL	400 A	2	(4)250KCMIL	#3	2-1/2"	THWN
RP3A	MDP	208 V	AL	400 A	2	(4)250KCMIL	#3	2-1/2"	THWN
RP3B	RP3A	208 V	AL	400 A	2	(4)250KCMIL	#3	2-1/2"	THWN
RP4A	MDP	208 V	AL	400 A	2	(4)250KCMIL	#3	2-1/2"	THWN
RP4B	RP4A	208 V	AL	400 A	2	(4)250KCMIL	#3	2-1/2"	THWN
RP5A	MDP	208 V	AL	400 A	2	(4)250KCMIL	#3	2-1/2"	THWN
RP5B	RP5A	208 V	AL	400 A	2	(4)250KCMIL	#3	2-1/2"	THWN

TAGGED NOTES:
1. MAIN BREAKER TO BE LSIG
2. PROVIDE SUBFEED LUGS.
3. BREAKER TO BE 100% RATED LSI ELECTRONIC TRIP.
4. PROVIDE MAIN BONDING JUMPER, GROUNDING ELECTRODE CONDUCTORS, AND GROUNDING ELECTRODE SYSTEM AT SERVICE ENTRANCE. REFER TO GROUNDING ELECTRODE SYSTEM DETAIL FOR MORE INFORMATION.
5. PROVIDE ARC FLASH REDUCTION MAINTENANCE SWITCH.
6. PROVIDE POWERLOGIC PM5563 DIGITAL POWER METER AND PROVIDE BACNET IP INTERFACE FOR INTEGRATION INTO CAMPUS BAS.
7. PROVIDE SCHNEIDER IEM3000 ENERGY METER FOR FEEDER TO PANEL RA1. PROVIDE BACNET IP INTERFACE FOR INTEGRATION INTO CAMPUS BAS.
8. PROVIDE UPSIZED 300KW ALTERNATOR

STATE OF KENTUCKY APPROVAL

GENERAL NOTES (RISER):

A. PROVIDE ENGRAVED LAMACOID LABELS FOR ALL POWER DISTRIBUTION EQUIPMENT FURNISHED OR MODIFIED IN THIS PROJECT, LABELS PER DETAILS AND SPECIFICATIONS.
B. 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.
C. CONTRACTOR SHALL INSTALL SEPARATE CONDUITS, PULL BOXES, ETC. FOR EACH EMERGENCY POWER BRANCH & NORMAL POWER PER NEC FOR COMPLETE SEPARATION OF POWER SERVICES.
D. 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.
E. REFER TO SPECIFICATIONS FOR ARC FLASH AND RELATED POWER SYSTEM STUDY REQURIEMENTS.
F. ALL DISTRIBUTION PANELBOARDS SHALL BE PROVIDED WITH A MINIMUM 99" BREAKER MOUNTING SPACE UNLESS NOTED OTHERWISE.
G. ALL CONDUCTORS SHALL BE COPPER UNLESS NOTED OTHERWISE.
H. 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.
I. UPSIZE CONDUITS AS REQUIRED WHERE USING PVC FOR UNDERGROUND FEEDERS.
J. ALL UN-USED SPACES WITHIN SWITCHBOARD SHALL BE "PREPARED SPACES" THAT ALLOW EASY INSTALLATION OF A CIRCUIT BREAKER.
K. PROVIDE GROUND LUG FOR EACH DEVICE.
L. PROVIDE LOCK-OUT CIRCUIT BREAKERS FOR ALL SWITCHBOARD CIRCUIT BREAKERS.
M. SWITCHBOARD SHALL BE FRONT ACCESSIBLE ONLY.
N. USE OF ALUMINUM IS LIMITED TO NORMAL POWER SYSTEM CONDUCTORS FOR SERVICE ENTRANCE AND FEEDERS 150A AND OVER FROM THE MAIN SWITCHBOARD TO THE BRANCH PANELS. ALUMINUM CONDUCTORS TO BE AA8000 ALLOY, 75 DEGREE C TYPE XHHW-2. TERMINATIONS SHALL BE DONE ACCORDING TO ALUMINUM ASSOCIATION AND MANUFACTURER'S INSTRUCTIONS USING OXIDE INHIBITING COMPOUND AND PROPER TORQUE VALUES. NO SPLICES ARE ALLOWED IN ALUMINUM CONDUCTORS. ALL LUGS SHOULD BE RATED FOR TERMINATING ALUMINUM CONDUCTORS. ALUMINUM BUSSING IS ALLOWED FOR PANELBOARDS WHERE ALUMINUM FEEDERS HAVE BEEN APPROVED.

#	DATE	CHANGE DESCRIPTION
1	2.18.2020	ADDENDUM #2
2	04/21/2020	BULLETIN #1
3	06/05/2020	BULLETIN #2

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DRAWING TITLE:

ELECTRICAL RISER DIAGRAM

JANUARY 30, 2020

DRAWN BY: **GCR** | CHECKED BY: -

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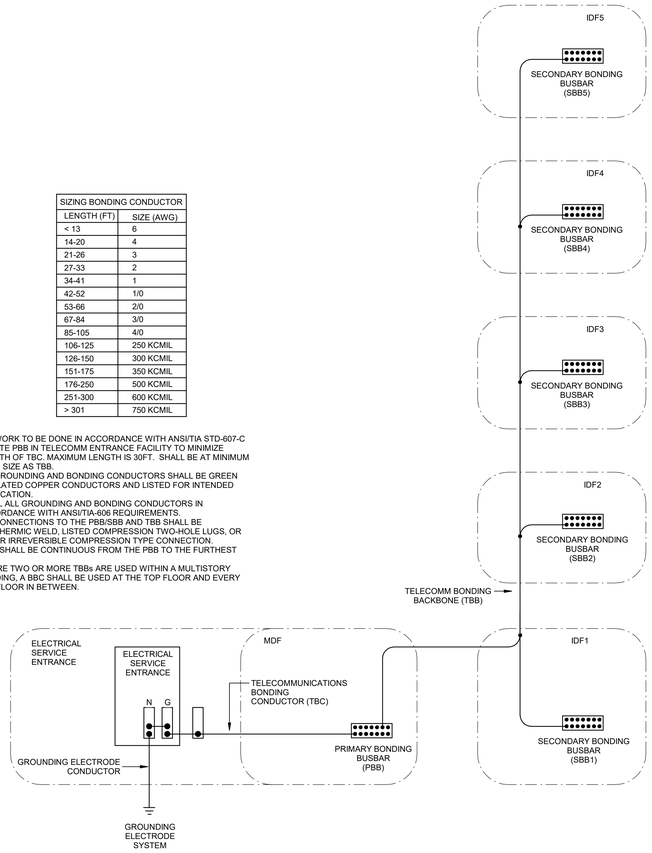
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ROBERT ANTHONY HANS
23143
LICENSED PROFESSIONAL ENGINEER

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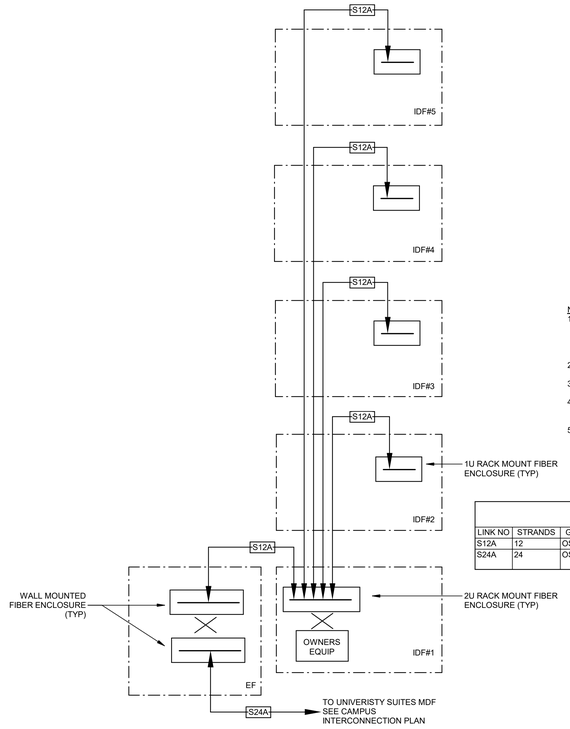
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SIZING BONDING CONDUCTOR	
LENGTH (FT)	SIZE (AWG)
< 13	6
14-20	4
21-26	3
27-33	2
34-41	1
42-52	1/0
53-66	2/0
67-84	3/0
85-105	4/0
106-125	250 KCMIL
126-150	300 KCMIL
151-175	350 KCMIL
176-250	500 KCMIL
251-300	600 KCMIL
> 301	750 KCMIL

NOTES:
1. ALL WORK TO BE DONE IN ACCORDANCE WITH ANSI/TIA STD-607-C
2. LOCATE PBB IN TELECOMM ENTRANCE FACILITY TO MINIMIZE LENGTH OF TBC. MAXIMUM LENGTH IS 30FT. SHALL BE AT MINIMUM SAME SIZE AS TBB.
3. ALL GROUNDING AND BONDING CONDUCTORS SHALL BE GREEN INSULATED COPPER CONDUCTORS AND LISTED FOR INTENDED APPLICATION.
4. LABEL ALL GROUNDING AND BONDING CONDUCTORS IN ACCORDANCE WITH ANSI/TIA-606 REQUIREMENTS.
5. ALL CONNECTIONS TO THE PBB/SBB AND TBB SHALL BE EXOTHERMIC WELD, LISTED COMPRESSION TWO-HOLE LUGS, OR OTHER IRREVERSIBLE COMPRESSION TYPE CONNECTION.
6. TBBs SHALL BE CONTINUOUS FROM THE PBB TO THE FURTHEST SBB.
7. 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

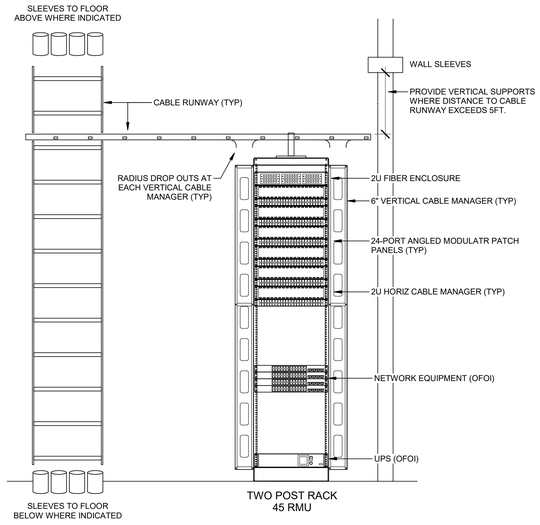


NOTES:
1. ROOM, RACK, AND EQUIPMENT LAYOUTS ARE GENERIC IN NATURE AND ONLY INTENDED TO SHOW THE GENERAL ARRANGEMENT OF COMPONENTS. ACTUAL CONFIGURATIONS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO INSTALLATION. REFER TO SPECIFICATIONS. PROVIDE ALL MISCELLANEIUS MATERIALS AND EQUIPMENT NECESSARY FOR A COMPLETE SYSTEM.
2. REFER TO SITE UTILITIES PLAN FOR CONTINUATION OF ENTRANCE CONDUIT AND CABLES.
3. PROVIDE MINIMUM 30' SERVICE LOOP FOR ALL BACKBONE CABLES. PROVIDE 10' SERVICE LOOP FOR ALL HORIZONTAL CABLES.
4. 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.
5. ALL EMPTY CONDUITS SHALL BE PROVIDED WITH PULL WIRE.

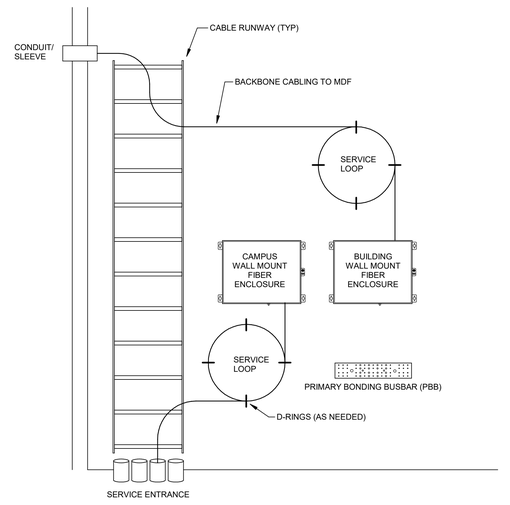
FIBER LINK SCHEDULE						
LINK NO	STRANDS	GRADE	SERIES	MANUFACTURER	PART NUMBER	COMMENT
S12A	12	OS2	TIGHT BUFFER ARMORED INDOOR	CORNING	012E88-33131-A3	
S24A	24	OS2	TIGHT BUFFER ARMORED OSP WITH UV RESISTANT JACKET	CORNING	024ZUC-T4F22D20	

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
JACK/FACEPLATE 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-INFC01U-M4
OS2 LC DUPLEX ADAPTER PANEL	ORTRONICS	OR-HDFP-LCD12AC
OS2 LC FUSION SPLICE-ON CONNECTOR	ORTRONICS	OR-205KNF9SA-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		OFCI



4 TYP IDF RACK ELEVATION
NO SCALE REF: E200



1 TYP ENTRANCE FACILITY ELEVATION
NO SCALE REF: E200

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DRAWING TITLE:
SYSTEMS RISER DIAGRAMS

STATE OF KENTUCKY
ROBERT ANTHONY HANS
23143
LICENSED PROFESSIONAL ENGINEER

JANUARY 30, 2020
DRAWN BY: **GCR** CHECKED BY:
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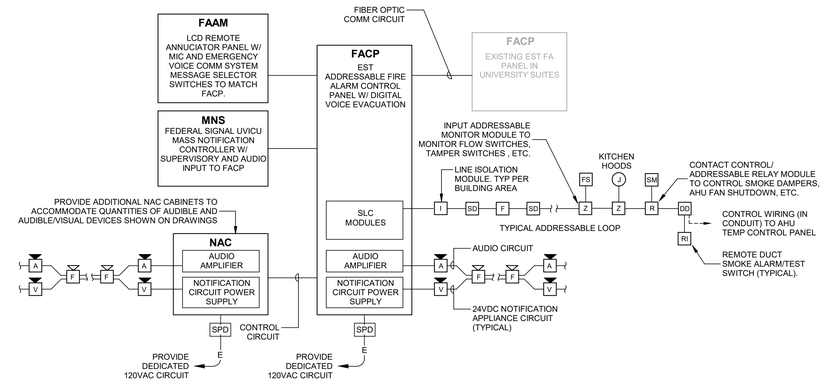
SYSTEM OUTPUT:

SYSTEM INPUT:

SYSTEM INPUT:	CONTROL PANEL FUNCTIONS							NOTIFICATION							CONTROL							
	ACTUATE AUDIBLE AND VISIBLE FIRE ALARM SIGNAL	ACTUATE AUDIBLE AND VISIBLE SUPERVISORY SIGNAL	ACTUATE AUDIBLE AND VISUAL TROUBLE SIGNAL	RECORD EVENT IN SYSTEM MEMORY	IDENTIFY ALARMED DEVICE LOCATION AND ADDRESS	TRANSMIT GENERAL ALARM TO SUPERVISING STATION	TRANSMIT SUPERVISORY TO SUPERVISING STATION	TRANSMIT TROUBLE TO SUPERVISING STATION	ACTIVATE ALL AUDIBLE AND VISUAL DEVICES	ACTIVATE LOCAL AUDIBLE AND VISUAL DEVICE	SHUTDOWN ASSOCIATED SUPPLY FAN	CLOSE ASSOCIATED SMOKE DAMPERS	SILENCE SPEAKERS AND DISABLE STROBES	TEMPORARY OVERRIDE FIRE ALARM MESSAGE AND FA STROBES	RECALL ELEVATOR TO AND FLOOR (ALTERNATE)	RECALL ELEVATOR TO MAIN FLOOR (PRIMARY)	WARNING SIGNAL TO ELEVATOR CAB	INITIATE ELEVATOR POWER SHUT-DOWN (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			●	●	●				●														

GENERAL FIRE ALARM NOTES:

A. RISER DIAGRAM IS SHOWN TO ILLUSTRATE DESIGN INTENT AND DEVICE INTERCONNECTION ONLY. SEE PLANS FOR LOCATION AND QUANTITIES OF DEVICES. FURNISH AND INSTALL ALL EQUIPMENT AND DEVICES TO MEET THE INTENT OF THE SPECIFICATIONS.
B. PROVIDE FOR DOOR RELEASE UPON FIRE ALARM SIGNAL TO DOORS WITH ACCESS CONTROL DEVICES OR MAGNETIC DOOR HOLD OPEN DEVICES.
C. FIRE ALARM WIRING SHALL BE INSTALLED IN MINIMUM 3/4"C. ALL EXPOSED BOXES/PATHWAYS AND PATHWAYS LOCATED ABOVE ACCESSIBLE CEILINGS SHALL BE PAINTED RED.
D. INTERLOCK FIRE ALARM SYSTEM WITH AIR HANDLING UNITS, FIRE DAMPERS AND SMOKE DAMPERS TO PROVIDE FAN SHUTDOWN AND DAMPER CLOSURE AS REQUIRED BY NFPA.
E. LOCATE ADDRESSABLE RELAY MODULES WITHIN 3'-0" OF ASSOCIATED MOTOR STARTER.
F. LOCATE REMOTE ALARM/TEST SWITCH STATION ADJACENT TO ENTRANCE DOORS OF MECHANICAL ROOMS.
G. PROVIDE SEPARATE SIGNALING LINE CIRCUIT (SLC) TO EACH ZONE OR FLOOR.
H. PROVIDE 25% SPARE CAPACITY ON EACH NOTIFICATION APPLIANCE CIRCUIT.
I. ALL FIRE ALARM STROBE LIGHTS SHALL BE SYNCRONIZED TO ACCOMODATE BUILDING STANDARDS.
J. ALL BATTERIES SHALL BE SUPPLIED BY EST. NO 3RD PARTY BATTERIES ARE ALLOWED.



1 FIRE ALARM BLOCK DIAGRAM-ADDRESSABLE

NO SCALE

STATE OF KENTUCKY APPROVAL

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DRAWING TITLE:

FIRE ALARM RISER DIAGRAM

STATE OF KENTUCKY
ROBERT ANTHONY HANS
23143
LICENSED PROFESSIONAL ENGINEER

JANUARY 30, 2020

DRAWN BY: **GCR** | CHECKED BY:

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

STATE OF KENTUCKY APPROVAL

ELECTRICAL DEMOLITION NOTES:

A. DOTTED LINES INDICATE ITEMS FOR REMOVAL (UON) AND THIN SOLID LINES INDICATE EXISTING ITEMS TO REMAIN.
B. THE CONTRACTOR SHALL MAINTAIN THE CONTINUITY OF EXISTING CIRCUITS THAT CONTAIN DEVICES OR EQUIPMENT THAT ARE TO REMAIN. WHEN DEMOLITION OF AN ELECTRICAL DEVICE (OR CIRCUIT) IS INDICATED ON THE DRAWINGS: THE CONTRACTOR SHALL ENSURE THAT OTHER DEVICES OR EQUIPMENT "UPSTREAM" OR "DOWNSTREAM" ON THE CIRCUITS SHALL REMAIN IN "PRE- DEMOLITION" WORKING ORDER. "LEFT-OVER" CIRCUIT BREAKERS SHALL REMAIN, BE SWITCHED TO OFF POSITION, AND BE LABELED AS SPARES IN THEIR PANELS. PROVIDE NEW TYPEWRITTEN DIRECTORIES FOR ALL PANELS AFFECTED.
C. LOCATIONS OF DEVICES, CONNECTIONS, ETC., INDICATED ON THIS DRAWING WERE TAKEN FROM VARIOUS SOURCES. THEY ARE DIAGRAMMATIC ONLY AND ARE SUBJECT TO VARIATION FROM EXISTING CONDITIONS. CERTAIN EXISTING ELEMENTS MAY NOT BE INDICATED AT ALL. THE CONTRACTOR PROPOSING TO DO ANY PART OF THE WORK INDICATED HEREON SHALL VISIT THIS SITE AND DETERMINE TO HIS SATISFACTION THAT THEY MAY COMPLETE ALL WORK REQUIRED FOR THE BID WHICH HE PROPOSES.
D. REMOVE ALL ASSOCIATED BACKBOXES, CONDUIT AND CONDUCTORS FOR DEVICES / FIXTURES / ETC. BEING REMOVED (BACK TO SOURCE), WHETHER INDICATED OR NOT (UON).
E. COORDINATE DISPOSAL OF ALL FIXTURES, DEVICES, ETC. (INDICATED FOR DEMOLITION) WITH OWNER. TURN OVER ITEMS REMOVED TO OWNER AT THEIR OPTION.
F. UNUSED/ABANDONED CONDUCTORS DISCOVERED ABOVE ACCESSIBLE CEILINGS SHALL BE REMOVED IN ACCORDANCE WITH NEC REQUIREMENTS.
G. EXISTING ELECTRICAL SYSTEMS IN CONFLICT WITH CONSTRUCTION SHALL BE RELOCATED TO PERMIT INSTALLATION OF DEVICES AND EQUIPMENT SHOWN ON PLANS.
H. FOR DEVICES INDICATED TO BE RELOCATED, REMOVE, PROTECT, AND REINSTALL IN NEW LOCATION INDICATED ON NEW WORK PLANS. INTERCEPT AND EXTEND ALL EXISTING CABLING TO NEW LOCATION. CLEAN AND RE-LAMP RELOCATED LUMINAIRES.

TAGGED NOTES (#)

#	DATE	CHANGE DESCRIPTION
1	06/05/2020	BULLETIN #2

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DRAWING TITLE:
ELECTRICAL SITE DEMO PLAN

STATE OF KENTUCKY
ROBERT ANTHONY HANS
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LICENSED PROFESSIONAL ENGINEER

JANUARY 30, 2020
DRAWN BY: GCR | CHECKED BY:
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1 PARTIAL CAMPUS ELECTRICAL INTERCONNECTION PLAN

SCALE: 1" = 50'-0"

STATE OF KENTUCKY APPROVAL

GENERAL NOTES (SITE):

A. DO NOT SCALE FROM MECHANICAL AND ELECTRICAL DRAWINGS. FIELD VERIFY REQUIRED DIMENSIONS AND COORDINATE WITH CIVIL DRAWINGS AND SURVEYS.
B. 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 PLAN(S); 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.
C. FEDERAL, STATE, LOCAL, MUNICIPALITY AND UTILITY COMPANY CODES, RULES, REGULATIONS AND REQUIREMENTS APPLY UNLESS EXCEEDED BY THIS DESIGN.
D. 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.
E. 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.
F. PROVIDE LONG RADIUS ELBOWS FOR UNDERGROUND CONDUIT BENDS.
G. 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.
H. PROVIDE GALVANIZED RIGID CONDUIT FOR EXTERIOR UNDERGROUND TRANSITIONS TO ABOVE GRADE; EXTEND CONDUIT A MINIMUM OF 6" ABOVE GRADE.
I. CONTRACTOR SHALL CONTACT ENGINEER FOR INSPECTION OF TRENCHES PRIOR TO INSTALLATION OF CONDUITS OR RACEWAYS. PROVIDE PHOTOS UPON REQUEST.
J. 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



#	DATE	CHANGE DESCRIPTION

NEW STUDENT HOUSING
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DRAWING TITLE:
ELECTRICAL UTILITY CAMPUS INTERCONNECTION PLAN

JANUARY 30, 2020

DRAWN BY: GCR | CHECKED BY:

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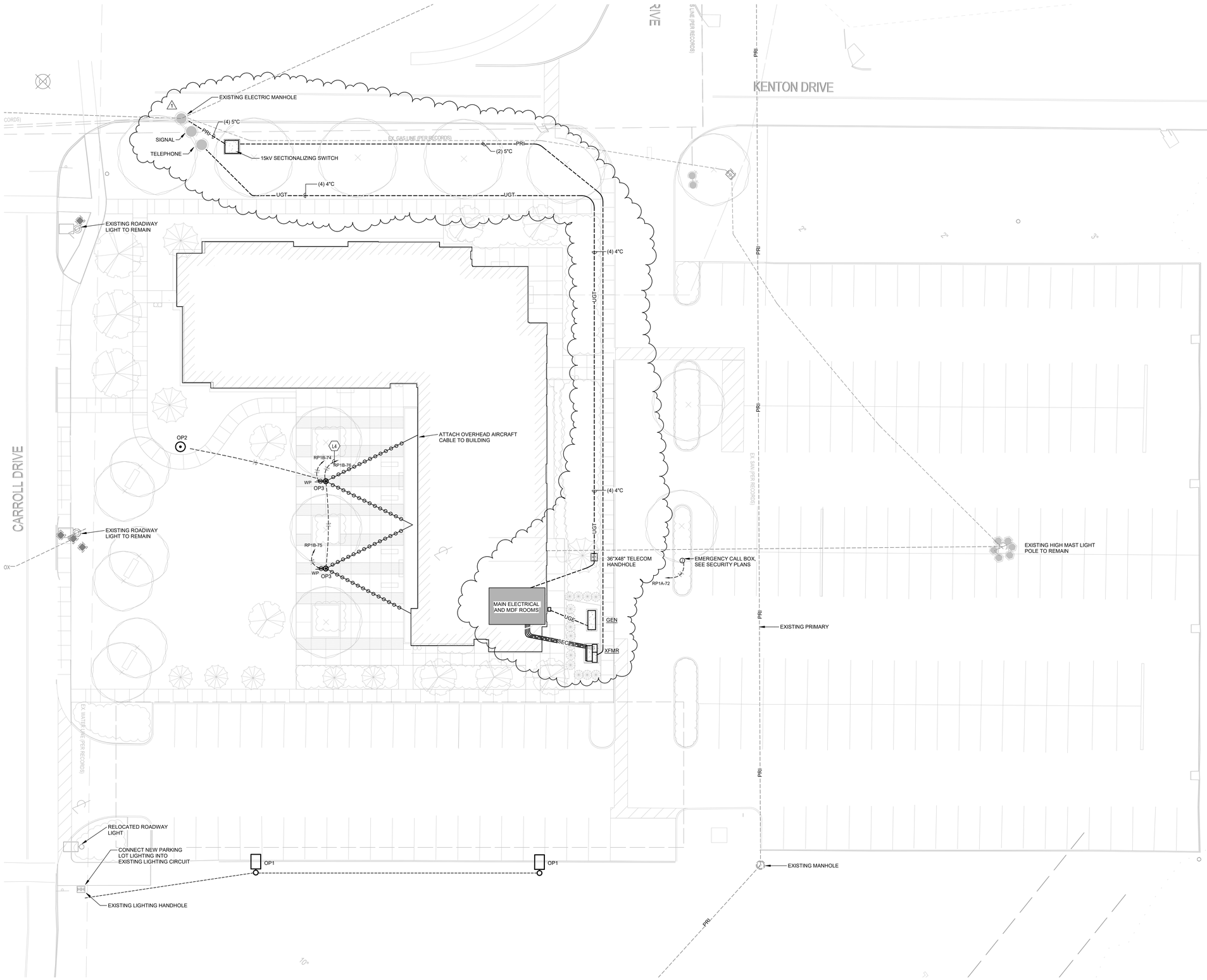
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STATE OF KENTUCKY
ROBERT ANTHONY HANS
23143
LICENSED PROFESSIONAL ENGINEER

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1 ELECTRICAL SITE UTILITY PLAN

SCALE: 1/16" = 1'-0"

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STATE OF KENTUCKY APPROVAL

GENERAL NOTES (SITE):

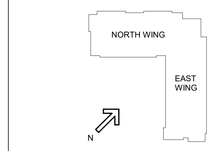
A. DO NOT SCALE FROM MECHANICAL AND ELECTRICAL DRAWINGS. FIELD VERIFY REQUIRED DIMENSIONS AND COORDINATE WITH CIVIL DRAWINGS AND SURVEYS.
B. REFER ALSO TO ALL OTHER PLANS AND THE SPECIFICATION, BUT ESPECIALLY TO: THE SITE SURVEY, THE ARCHITECTURAL SITE PLAN, THE SITE GRADING PLAN, THE PLANTING PLAN (WHERE AVAILABLE), FOUNDATION PLAN(S), 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.
C. FEDERAL, STATE, LOCAL, MUNICIPALITY AND UTILITY COMPANY CODES, RULES, REGULATIONS AND REQUIREMENTS APPLY UNLESS EXCEEDED BY THIS DESIGN.
D. 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.
E. 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.
F. PROVIDE LONG RADIUS ELBOWS FOR UNDERGROUND CONDUIT BENDS.
G. 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.
H. PROVIDE GALVANIZED RIGID CONDUIT FOR EXTERIOR UNDERGROUND TRANSITIONS TO ABOVE GRADE. EXTEND CONDUIT A MINIMUM OF 6" ABOVE GRADE.
I. CONTRACTOR SHALL CONTACT ENGINEER FOR INSPECTION OF TRENCHES PRIOR TO INSTALLATION OF CONDUITS OR RACEWAYS. PROVIDE PHOTOS UPON REQUEST.
J. 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
1	06/05/2020	BULLETIN #2

NKU NORTHERN KENTUCKY UNIVERSITY

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CMTA
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T:502.326.3085 F:502.326.2691 www.cmtaegrs.com

DRAWING TITLE:
ELECTRICAL SITE UTILITIES PLAN

JANUARY 30, 2020

DRAWN BY: GCR | CHECKED BY: -

STATE OF KENTUCKY
ROBERT ANTHONY HANS 23143
LICENSED PROFESSIONAL ENGINEER

EU01

BID & PERMIT SUBMITTAL

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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.

[CR] 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.

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

DS ▽ 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.

[EC] 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.

[AV] INP1 WALL MOUNTED INPUT INTERFACE CONNECTION PLATE. REFERENCE LARGE SCALE PLANS FOR LOCATION.
- #SUBSCRIPT INDICATES MODEL TYPE. REFERENCE DETAILS FOR ADDITIONAL INFORMATION.

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

WP 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.

[CR] 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.

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

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

DS ▽ 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.

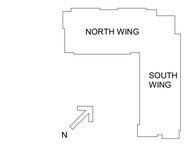
[EC] CALL 24 WIRELESS EMERGENCY CALLBOX MOUNTED ON STANTION. PROVIDE AND INSTALL TWO (2) - 1" SCHEDULE 40 PVC CONDUITS FROM EMERGENCY CALL STATION TO MAIN TELECOM ROOM (MDF). INSTALL PER MANUFACTURER'S SPECIFICATIONS. SEE SITE PLAN FOR FURTHER REQUIREMENTS.

[AV] INP1 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.

[EC] W 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



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DRAWING TITLE:

COVER SHEET & LEGENDS

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EXPIRES 12-31-19
RCDD

JANUARY 30, 2020

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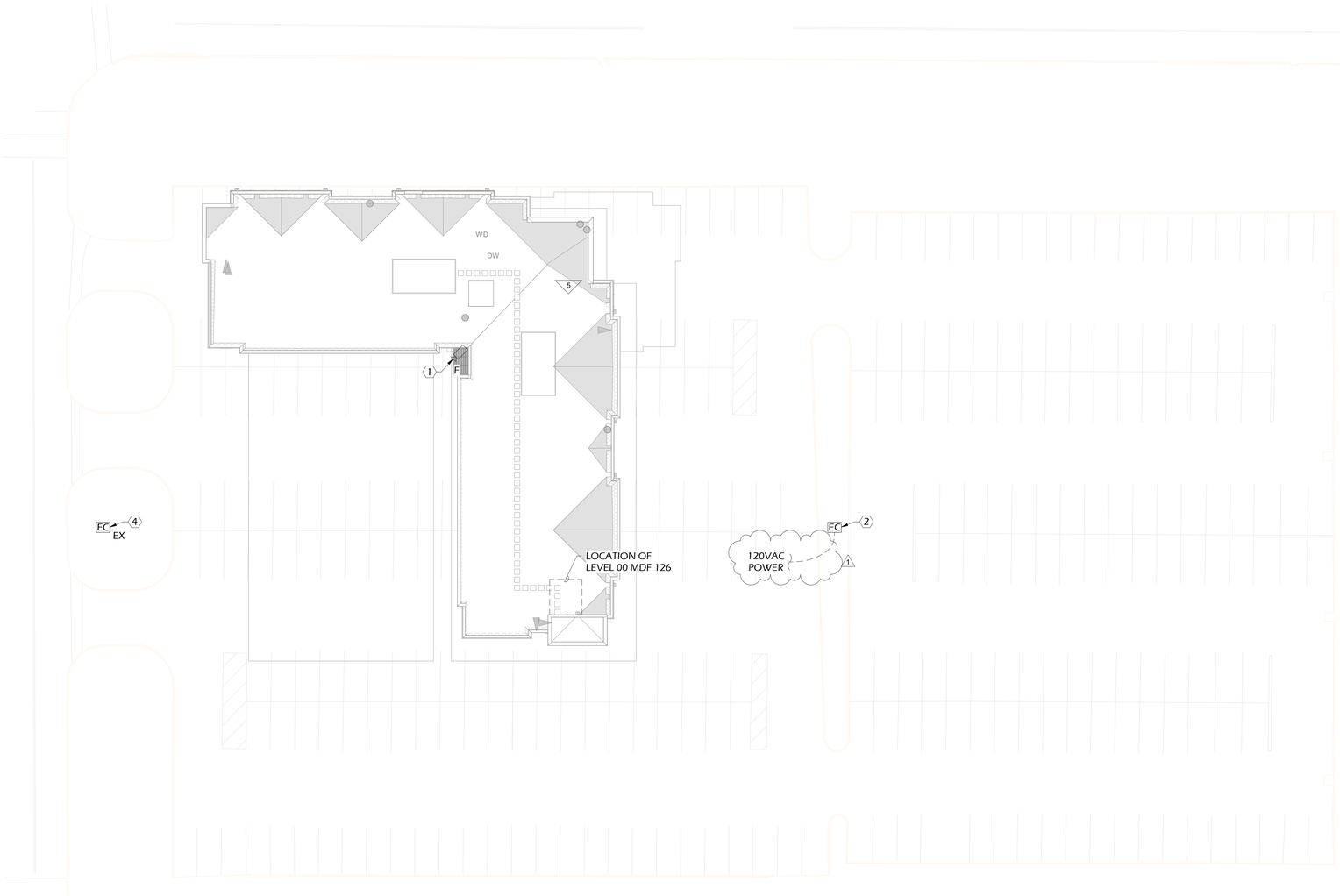
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FLOOR PLAN 1 SITE PLAN
1" = 20'-0"

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.

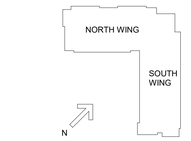
G. ALL LOW VOLTAGE CABLING SHALL BE ROUTED DIRECTLY TO THE CLOSEST TELECOM ROOM WITHOUT SPLICES. JUNCTIONS AND SPLICES IN CABLE ARE NOT ACCEPTABLE.

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) - STANTION 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. STANTION TO BE P/N: C24-14AD/AC, BY CALL 24 WIRELESS CALLBOX SYSTEMS. ELECTRICAL CONTRACTOR TO PROVIDE 120V UN-SWITCHED POWER. COORDINATE WITH EMERGENCY CALL STATION MANUFACTURER FOR INSTALLATION REQUIREMENTS.
3. DELETED.
4. EXISTING EMERGENCY CALL STATION TO REMAIN.



#	DATE	CHANGE DESCRIPTION
1	06/05/2020	BULLETIN #2

NKU NORTHERN KENTUCKY UNIVERSITY

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DRAWING TITLE:

SITE PLAN

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
JORGE E. GOMEZ
REG. No. 10987
EXPIRES 12-31-19
RCDD

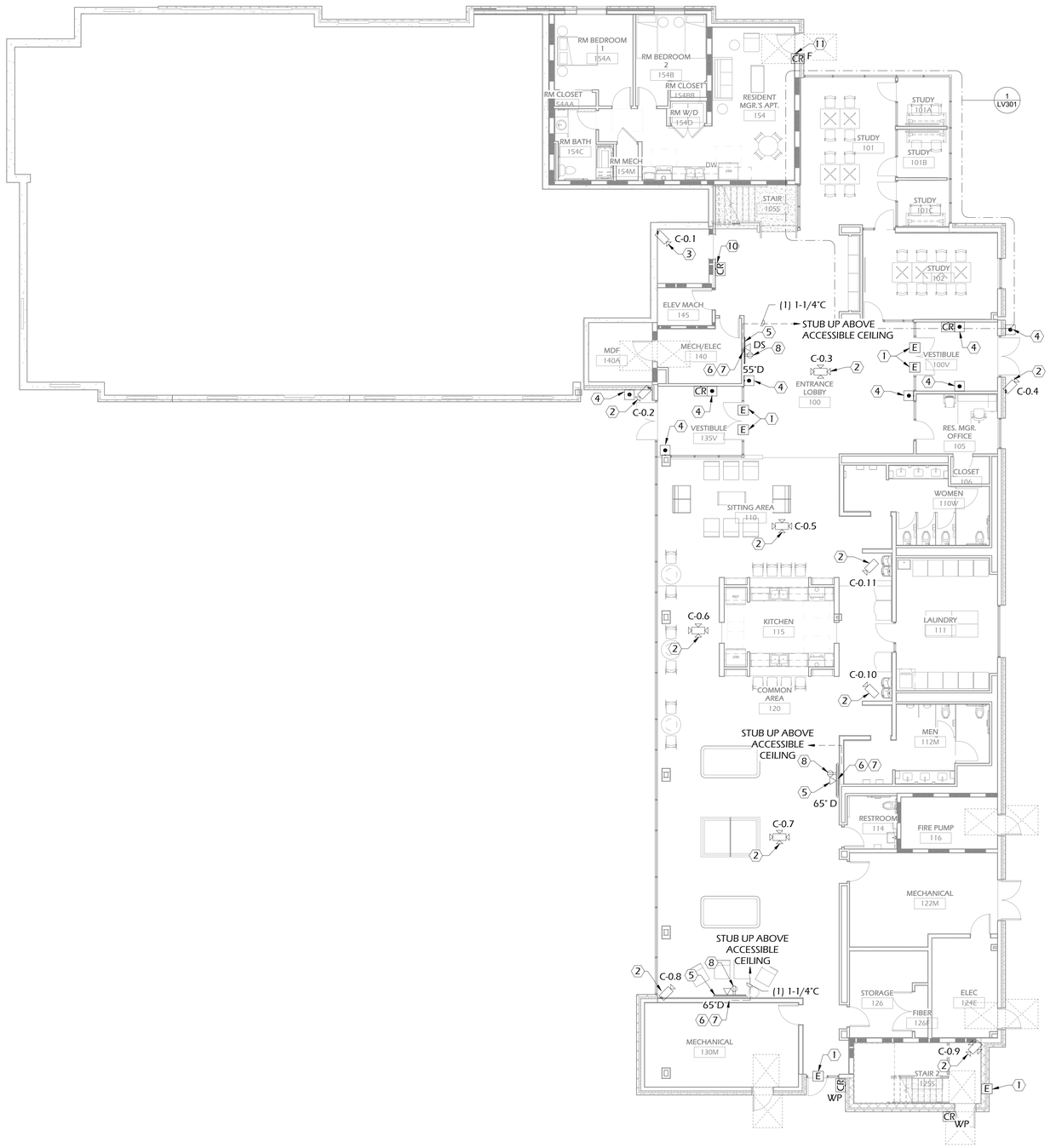
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FLOOR PLAN 1 LEVEL 00
1/8" = 1'-0"

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 PENETRATIONOS 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.

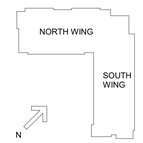
D. ALL SIGNAL AND LOW VOLTAGE POWER CABLES TO BE PLENUM RATED. FOR ALL LOW VOLTAGE SYSTEMS, PROVIDE EMT RACEWAY FROM DEVICE BACKBOX TO ACCESSIBLE CEILING SPACE AND PROVIDE J-HOOK SUPPORT TO CORRIDOR RACEWAY SYSTEM OR TELECOM ROOM. J-HOOKS TO BE INSTALLED ON 4'-0" CENTERS. CABLES ARE NOT PERMITTED TO 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

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DRAWING TITLE:

LEVEL 00 FLOOR PLAN

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
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REG. No. 10987
EXPIRES 12-31-10
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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 PENETRATIONOS 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.

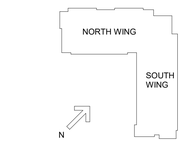
F. ALL TELECOM CABLING TO BE ROUTED IN MOST DIRECT ROUTE TO ENSURE COMPLIANCE WITH CATEGORY CABLING 90 METER RULE.

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

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EXPIRES 12-31-19
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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. PORVIDE JUNCTION BOXES WHERE REQUIRED TO MAINTAIN 180° BEND RULE.

B. ALL SLAB, WALL, AND CMU BLOCK WALL PENETRATIONOS 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.

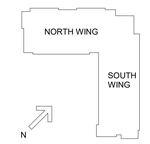
F. ALL TELECOM CABLING TO BE ROUTED IN MOST DIRECT ROUTE TO ENSURE COMPLIANCE WITH CATEGORY CABLING 90 METER RULE.

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

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DRAWING TITLE:

LEVEL 02 FLOOR PLAN

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
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REG. NO. 10987
EXPIRES 12-31-19
RCDD

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FLOOR PLAN 1 LEVEL 03
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 PENETRATIONOS TO BE FIREPROOFED AND SEALED.

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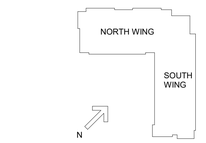
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LEVEL 03 FLOOR PLAN

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

GENERAL NOTES:

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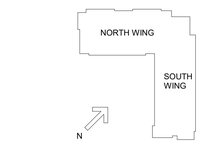
F. ALL TELECOM CABLING TO BE ROUTED IN MOST DIRECT ROUTE TO ENSURE COMPLIANCE WITH CATEGORY CABLING 90 METER RULE.

KEY NOTES:

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FLOOR PLAN 1 LEVEL 05
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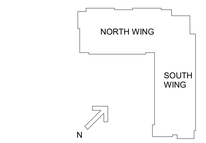
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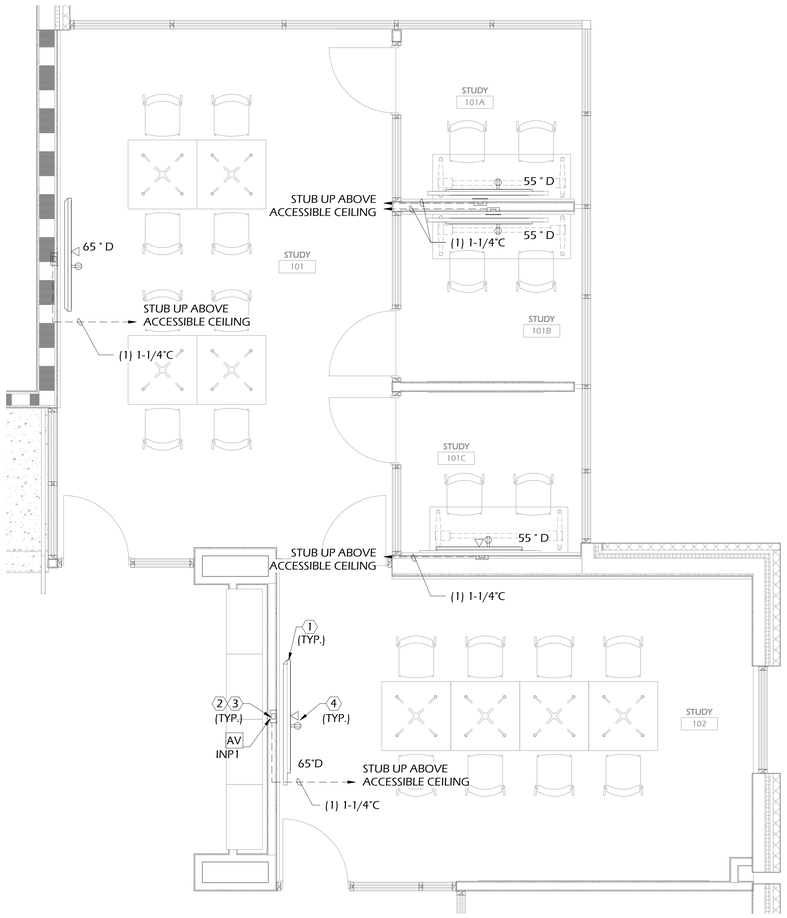
LEVEL 05 FLOOR PLAN

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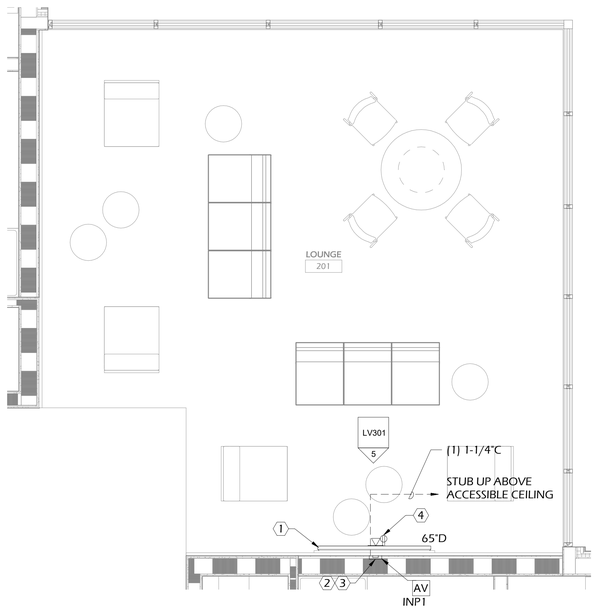
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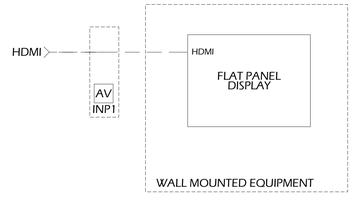
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LARGE SCALES 3/8" = 1'-0" — 1 — LEVEL 00 - STUDY AREAS



LARGE SCALES 3/8" = 1'-0" — 2 — LEVEL 02 - TYPICAL LOUNGE



GENERAL NOTES:

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

KEY NOTES:

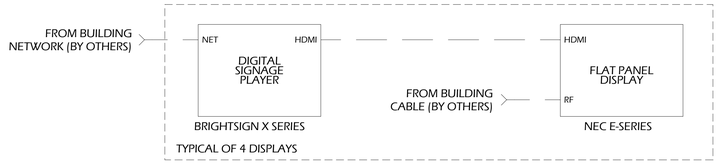
1. WALL MOUNTED FLAT PANEL DISPLAY. GENERAL CONTRACTOR IS TO PROVIDE AND INSTALL BLOCKING AT THIS LOCATION FOR DISPLAY AND MOUNT. BLOCKING MATERIAL AND ATTACHMENT METHOD TO STRUCTURE IS TO ADHERE TO CURRENT INDUSTRY STANDARDS. AUDIO VISUAL CONTRACTOR IS TO PROVIDE AND INSTALL DISPLAY AND MOUNT TO STRUCTURE. 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.

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.

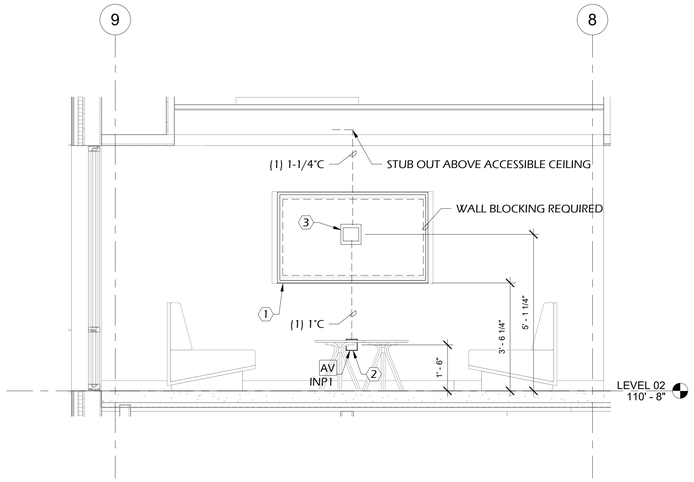
ONE-LINE N.T.S. — 3 — AV ONE-LINE - STUDY, LOUNGE & COMMON AREA



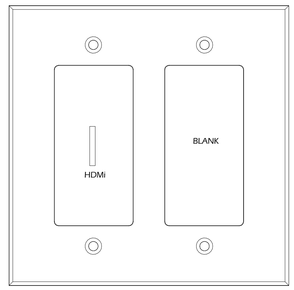
GENERAL NOTES:

A. SEE FLOOR PLANS FOR LOCATIONS, SIZING AND MOUNTING HEIGHTS OF FLAT PANEL DISPLAYS.

ONE-LINE N.T.S. — 4 — AV ONE-LINE - DIGITAL SIGNAGE
APPLIES TO LEVEL 00 LOBBY

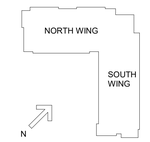


LARGE SCALES 1/2" = 1'-0" — 5 — TYPICAL DISPLAY ELEVATION



AV
INP1

DETAILS N.T.S. — 6 — AV-INP1



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DRAWING TITLE:

AV LARGE SCALES

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
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Reg. No. 10987
EXPIRES 12-31-19
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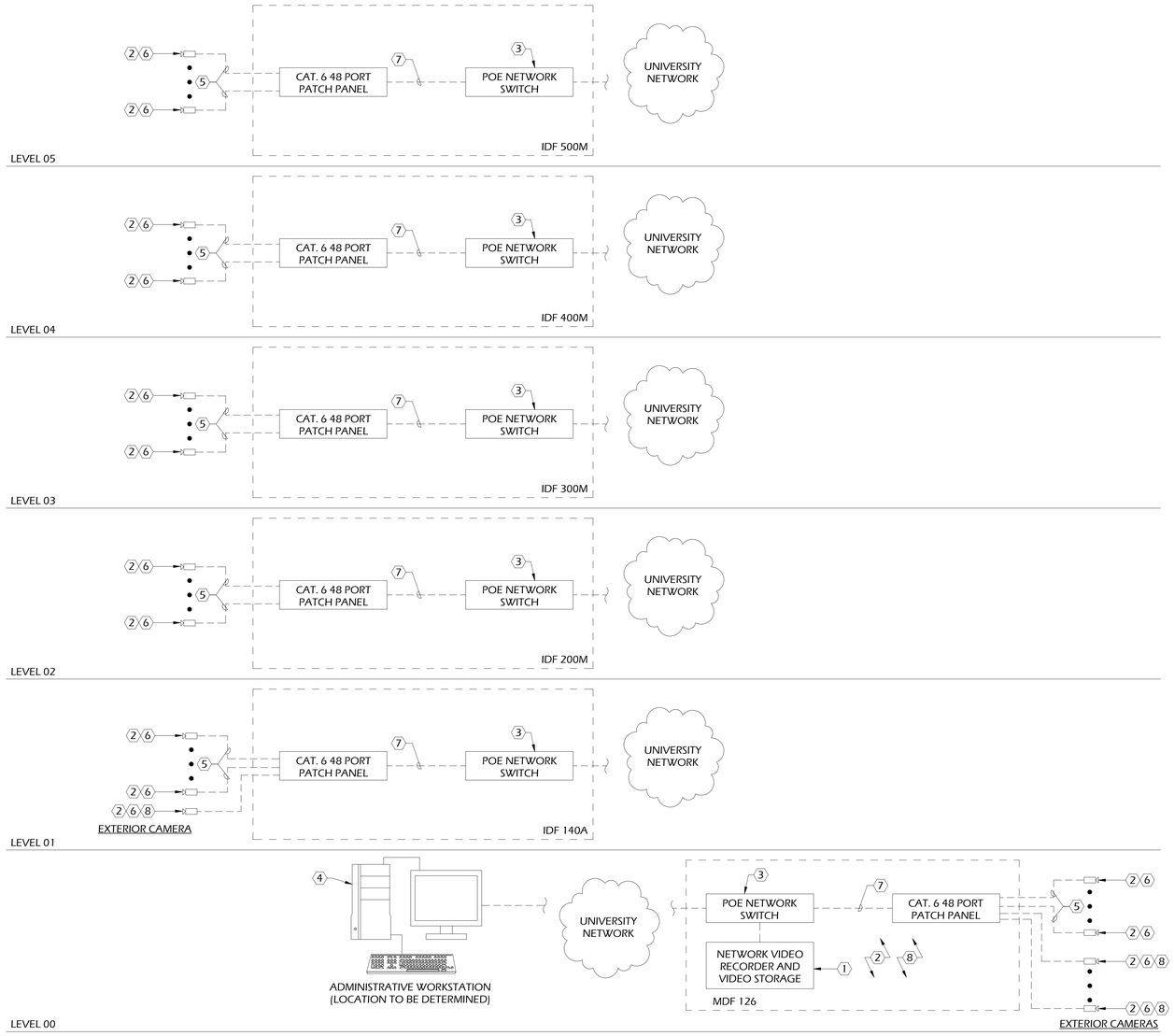
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ONE-LINE
N.T.S.

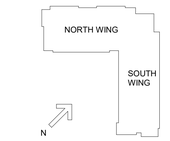
1 VIDEO SURVEILLANCE SYSTEM

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	VARIFOCAL 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	VARIFOCAL 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	VARIFOCAL 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	VARIFOCAL FIXED LENS	LV200	2/LV502	COMMON AREA/KITCHEN
C-0.11	CEILING MOUNT	VARIFOCAL 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	VARIFOCAL FIXED LENS	LV201	1/LV502	CORRIDOR
C-1.3	CEILING MOUNT	VARIFOCAL FIXED LENS	LV201	1/LV502	STAIR/ENTRY DOOR
C-2.1	CEILING MOUNT	VARIFOCAL FIXED LENS	LV202	1/LV502	CORRIDOR
C-2.2	CEILING MOUNT	360 DEGREE	LV202	2/LV502	LOUNGE/ELEV LOBBY
C-2.3	CEILING MOUNT	VARIFOCAL FIXED LENS	LV202	1/LV502	CORRIDOR
C-3.1	CEILING MOUNT	VARIFOCAL FIXED LENS	LV203	1/LV502	CORRIDOR
C-3.2	CEILING MOUNT	360 DEGREE	LV203	2/LV502	LOUNGE/ELEV LOBBY
C-3.3	CEILING MOUNT	VARIFOCAL FIXED LENS	LV203	1/LV502	CORRIDOR
C-4.1	CEILING MOUNT	VARIFOCAL FIXED LENS	LV204	1/LV502	CORRIDOR
C-4.2	CEILING MOUNT	360 DEGREE	LV204	2/LV502	LOUNGE/ELEV LOBBY
C-4.3	CEILING MOUNT	VARIFOCAL FIXED LENS	LV204	1/LV502	CORRIDOR
C-5.1	CEILING MOUNT	VARIFOCAL FIXED LENS	LV205	1/LV502	CORRIDOR
C-5.2	CEILING MOUNT	360 DEGREE	LV205	2/LV502	LOUNGE/ELEV LOBBY
C-5.3	CEILING MOUNT	VARIFOCAL FIXED LENS	LV205	1/LV502	CORRIDOR

KEY NOTES:

1. OWNER SHALL PROVIDE ALL REQUIRED NVR'S FOR SURVEILLANCE VIDEO STORAGE. OWNER SHALL PROVIDE ALL REQUIRED LICENSING FOR REQUIRED SYSTEM.
2. 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.
3. OWNER TO PROVIDE CORE SWITCH AND POWER-OVER-ETHERNET SWITCH MOUNTED IN TELECOM RACK.
4. 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.
5. TELECOM CONTRACTOR TO PROVIDE AND INSTALL ONE(1) CATEGORY 6 CABLE FOR EACH IP DEVICE.
6. 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.
7. TELECOM CONTRACTOR TO PROVIDE AND INSTALL ALL CATEGORY 6 PATCH CABLES.
8. 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

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

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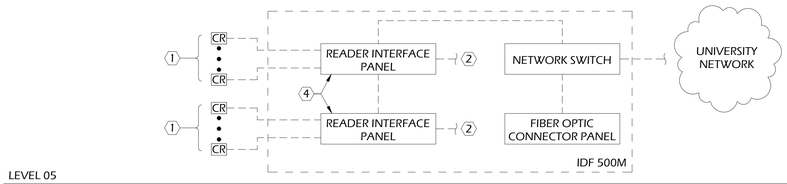
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JANUARY 30, 2020
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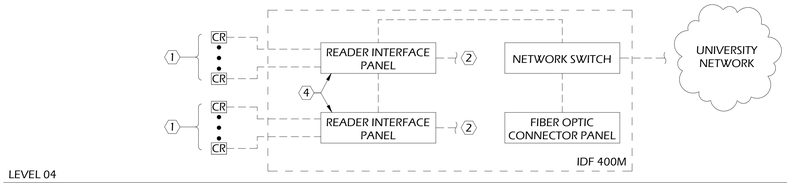
REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
JORGE E. GOMEZ
REG. No. 10987
EXPIRES 12-31-19
RCDD

PRINT DATE: 1/30/2020 2:22:44 PM
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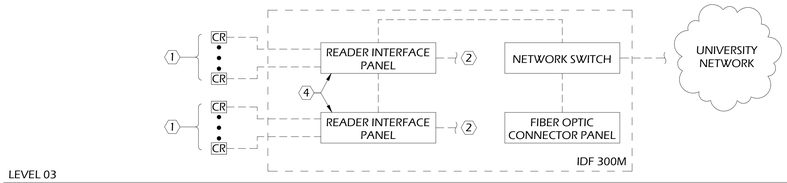
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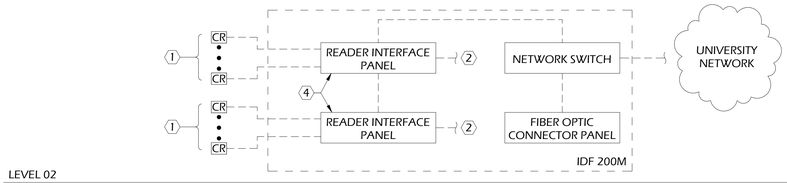
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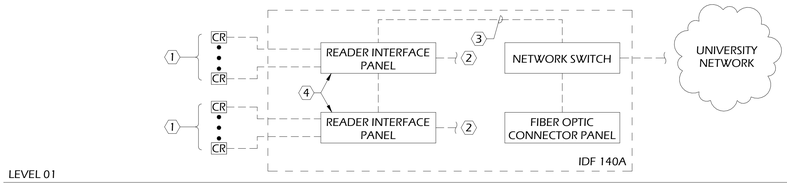
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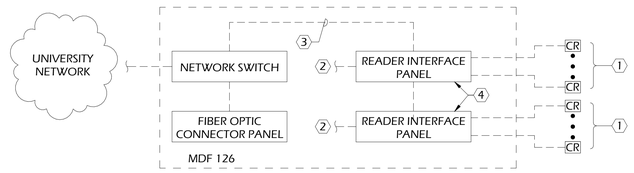
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LEVEL 01



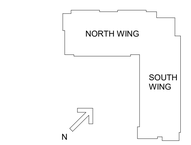
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ONE-LINE
N.T.S.

1 SECURITY & ACCESS CONTROL SYSTEM

KEY NOTES:

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

NKU NORTHERN KENTUCKY UNIVERSITY

NEW RESIDENCE HALL
KENTON DRIVE & CARROLL DRIVE
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DRAWING TITLE:
ONE-LINE DIAGRAM - ACCESS CONTROL

REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
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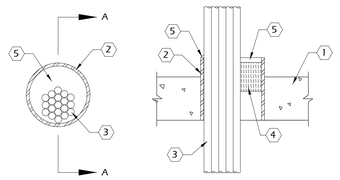
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SECTION A-A

F RATINGS -2, 3 AND 4 HR (SEE ITEM 5)
T RATINGS - 0, 1/2 AND 2-3/4 HR (SEE ITEM 5)

KEY NOTES: (APPLY TO THIS DETAIL ONLY)

1. FLOOR OR WALL ASSEMBLY - MIN 2-1/2 IN. (64 MM) OR 4-1/2 IN. (114 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. FLOOR MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED HOLLOW-CORE PRECAST CONCRETE UNITS*. MAX DIAM OF OPENING IS 6 IN. (152 MM).
SEE CONCRETE BLOCKS (CAZT) AND PRECAST CONCRETE UNITS (CFTV) CATEGORIES IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

2. SLEEVE - (OPTIONAL) - NOM 6 IN. (152 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE SLEEVE. NOM 6 IN. (152 MM) DIAM (OR SMALLER) NO. 26 GA (0.022 IN. OR 0.56 MM THICK) SHEET STEEL SLEEVE WITH SQUARE ANCHOR FLANGE SPOT WELDED TO SLEEVE AT APPROX MID-HEIGHT OR NOM 6 IN. (152 MM) DIAM (OR SMALLER) SCHEDULE 40 POLYVINYL CHLORIDE (PVC) PIPE SLEEVE CAST OR GROUTED INTO FLOOR OR WALL FLUSH WITH FLOOR OR WALL SURFACES. STEEL PIPE SLEEVE MAY BE INSTALLED TO PROJECT A MAX OF 2 IN. (51 MM) BEYOND THE FLOOR OR WALL SURFACES.

3. CABLES - AGGREGATE CROSS-SECTIONAL AREA OF CABLES IN SLEEVE TO BE MAX 45 PERCENT OF THE CROSS-SECTIONAL AREA OF THE SLEEVE. SEE ITEM 5 FOR SPECIFIC CABLE FILL REQUIREMENTS. TIGHT BUNDLE OF CABLES TO BE INSTALLED IN THE STEEL SLEEVE. THE ANNULAR SPACE WITHIN THE FIRESTOP SYSTEM SHALL BE A MIN OF 0 IN. (POINT CONTACT) TO A MAX OF 2 IN. IN 4 HR FIRE RATED ASSEMBLIES, THE ANNULAR SPACE WITHIN THE FIRESTOP SYSTEM SHALL BE A MIN OF 1/4 IN. (6 MM) TO A MAX OF 1 IN. (25 MM). CABLES TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF THE FLOOR OR WALL ASSEMBLY. ANY COMBINATION OF THE FOLLOWING TYPES AND SIZES OF CABLES MAY BE USED:
   - A. MAX 400 PAIR NO. 24 AWG (OR SMALLER) COPPER CONDUCTOR CABLE WITH POLYVINYL CHLORIDE (PVC) JACKETING AND INSULATION.
   - B. MAX 3/C NO. 2/0 AWG (OR SMALLER) ALUMINUM OR COPPER CONDUCTOR SERVICE ENTRANCE CABLE WITH PVC INSULATION AND JACKET.
   - C. MAX 3/C NO. 2/0 AWG (OR SMALLER) COPPER CONDUCTOR PVC JACKETED ALUMINUM CLAD OR STEEL CLAD TECK 90 CABLE.
   - D. MAX 3/C NO. 8 AWG (OR SMALLER) NONMETALLIC SHEATHED (ROMEX) CABLE WITH COPPER CONDUCTORS, PVC INSULATION AND JACKET.
   - E. MAX 1/C 1000 KCMIL (OR SMALLER) COPPER CONDUCTOR POWER CABLE WITH XLPE OR PVC INSULATION AND XLPE OR PVC JACKET.
   - F. MAX RG59/U (OR SMALLER) COAXIAL CABLE WITH FLUORINATED ETHYLENE INSULATION AND JACKETING.
   - G. MAX 62.5/48 FIBER OPTIC CABLE WITH PVC INSULATION AND JACKETING.
   - H. MAX 4 PAIR NO. 24 AWG (OR SMALLER) COPPER CONDUCTOR DATA CABLE WITH PVC INSULATION AND JACKET.

3A. THROUGH PENETRATING PRODUCT* - (NOT SHOWN) - MAX 4/C NO. 2/0 AWG (OR SMALLER) STEEL OR ALUMINUM ARMORED CABLE+ OR METAL CLAD CABLE+ WITH COPPER OR ALUMINUM CONDUCTORS. DIAM OF CABLE BUNDLE (ITEM 3) INCLUDING ARMORED CABLE NOT TO EXCEED 4 IN. THROUGH PENETRATING PRODUCT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF A FLOOR OR WALL ASSEMBLY.

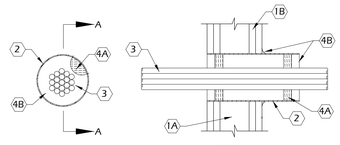
4. AFC CABLE SYSTEMS INC
PACKING MATERIAL - MIN 2, 3 OR 4 IN. (51, 76 OR 102 MM) THICKNESS OF MIN 4 PCF (64 KG/M3) DENSITY MINERAL-WOOL BATT INSULATION TIGHTLY PACKED INTO OPENING AS A PERMANENT FORM FOR 2, 3 OR 4 HR FIRE RATED ASSEMBLIES, RESPECTIVELY . PACKING MATERIAL TO BE RECESSED FROM TOP EDGE OF SLEEVE OR FROM TOP SURFACE OF CONCRETE IN CAST CONCRETE FLOOR ASSEMBLIES TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL. PACKING MATERIAL TO BE RECESSED FROM BOTH EDGES OF SLEEVE OR FROM BOTH SURFACES OF ASSEMBLY IN WALLS AND IN FLOOR CONSTRUCTED WITH HOLLOW-CORE PRECAST CONCRETE UNITS TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.

5. FILL, VOID OR CAVITY MATERIAL* - SEALANT OR PUTTY - MIN 1/2 IN. (13 MM) THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS FOR 2 AND 3 HR F RATINGS. MIN 3/4 IN. (19 MM) THICKNESS OF FILL MATERIAL APPLIED WITH THE ANNULUS FOR 4 HR F RATING. IN FLOORS, FILL MATERIAL TO BE INSTALLED FLUSH WITH TOP EDGE OF SLEEVE OR TOP SURFACE OF FLOOR. IN WALLS AND IN FLOOR CONSTRUCTED OF HOLLOW-CORE PRECAST CONCRETE UNITS, FILL MATERIAL TO BE INSTALLED FLUSH WITH BOTH ENDS OF SLEEVE OR BOTH SURFACES OF ASSEMBLY. F AND T RATINGS OF FIRESTOP SYSTEM ARE DEPENDENT UPON THE THROUGH OPENING SIZE, THICKNESS OF CONCRETE, SLEEVE TYPE AND PERCENT CABLE FILL, AS SHOWN IN THE FOLLOWING TABLE:

MAX OPENING DIAM	MIN CONCRETE THICKNESS	OPTIONAL SLEEVE TYPE	CABLE TYPE	PERCENT CABLE FILL	F RATING	T RATING
6 IN. (152 MM)	2-1/2 IN. (64 MM)	PVC	A TO H, 3A	37	2 HR	0 HR
6 IN. (152 MM)	2-1/2 IN. (64 MM)	PVC	H	45	2 HR	0 HR
6 IN. (152 MM)	2-1/2 IN. (64 MM)	STEEL	A TO H, 3A	37	2 HR	0 HR
6 IN. (152 MM)	2-1/2 IN. (64 MM)	STEEL	H	45	2 HR	0 HR
6 IN. (152 MM)	4-1/2 IN. (114 MM)	STEEL	A TO H, 3A	34	3 HR	1/2 HR
6 IN. (152 MM)	4-1/2 IN. (114 MM)	STEEL	H	45	3 HR	1/2 HR
2 IN. (52 MM)	4-1/2 IN. (114 MM)	STEEL	H	40	3 HR	2-3/4 HR
2 IN. (52 MM)	4-1/2 IN. (114 MM)	STEEL	H	40	4 HR	2-3/4 HR

SPECIFIED TECHNOLOGIES INC - SPECSEAL SERIES SSS SEALANT OR SPECSEAL LCI SEALANT. WHEN MIN FLOOR OR WALL THICKNESS IS 4-1/2 IN. (114 MM) , SPECSEAL PUTTY MAY BE USED.
*BEARING THE UL CLASSIFICATION MARK

DETAIL NOT TO SCALE 1 FIRESTOP SYSTEM - C-AJ-3154



SECTION A-A

F RATINGS -1 AND 2 HR (SEE ITEM 1)
T RATING - 3/4 HR

KEY NOTES: (APPLY TO THIS DETAIL ONLY)

1. WALL ASSEMBLY - THE 1 OR 2 HR FIRE RATED GYPSUM BOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300, U400 OR V400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
   - A. STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM. 2 X 4 IN. (51 X 102MM) LUMBER SPACED 16 IN. (406MM) OC. STEEL STUDS TO BE MIN 3-1/2 IN. (76MM) WIDE AND SPACED MAX 14 IN. (610MM) OC.
   - B. GYPSUM BOARD - THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300, U400 OR V400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIAM. OF OPENING IS 4-1/2 IN. (114MM).

   THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED.

2. STEEL SLEEVE - NOM. 4 IN. (102MM) DIAM. (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING (EMT), STEEL CONDUIT OR SCHEDULE 5 (OR HEAVIER) STEEL PIPE SLEEVE FRICTION-FITTED INTO WALL ASSEMBLY. SLEEVE MAY BE INSTALLED FLUSH WITH OR EXTEND UP TO 18 IN. (46 CM) BEYOND ONE OR BOTH WALL SURFACES.

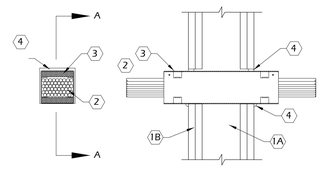
3. CABLES - AGGREGATE CROSS-SECTIONAL AREA OF CABLES IN STEEL SLEEVE TO BE MAX. 48 PERCENT OF THE AGGREGATE CROSS-SECTIONAL AREA OF THE SLEEVE. CABLES TO BE BUNDLED AND RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE ANNULAR SPACE BETWEEN THE CABLES AND THE SLEEVE SHALL BE MIN. 0 IN. (POINT CONTACT) TO MAX. 1-1/2 IN. (38MM). ANY COMBINATION OF THE FOLLOWING TYPES AND SIZES OF COPPER CONDUCTOR CABLE MAY BE USED:
   - A. MAX 200 PAIR NO. AWG (OR SMALLER) COPPER CONDUCTOR CABLE WITH POLYVINYL CHLORIDE (PVC) JACKETING AND INSULATION.
   - B. MAX 3/C NO. 2/0 AWG (OR SMALLER) ALUMINUM OR COPPER CONDUCTOR SERVICE ENTRANCE CABLE WITH PVC INSULATION AND JACKET.
   - C. MAX 3/C NO. 8 AWG (OR SMALLER) NONMETALLIC SHEATHED (ROMEX) CABLE WITH COPPER CONDUCTORS, PVC INSULATION AND JACKET.
   - D. MAX 7/C NO. 2/0 AWG (OR SMALLER) MULTICONDUCTOR POWER AND CONTROL CABLES WITH XLPE OR PVC INSULATION AND XLPE OR PVC JACKET.
   - E. MAX. RG/U (OR SMALLER) COAXIAL CABLE WITH FLOURINATED ETHYLENE INSULATION AND JACKETING.
   - F. MAX. 62.5/48 FIBER OPTIC CABLE WITH PVC INSULATION AND JACKETING.
   - G. MAX 4 PAIR NO. 24 AWG (OR SMALLER) COPPER CONDUCTOR DATA CABLE WITH PVC INSULATION AND JACKET.
   - H. MAX. 4/C NO 2/0 ALUMINUM OR COPPER CONDUCTOR ALUMINUM OR STEEL METAL-CLAD# OR ARMORED-CLAD# CABLE.

4. FIRESTOP SYSTEM - THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:
   - A. PACKING MATERIAL - WHEN REQUIRED (SEE TABLE IN ITEM 3B), MIN. 1 IN. (25MM) THICKNESS OF MIN. 4.0 PCF (64 KG/M3) MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO EACH END OF SLEEVE AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM EACH END OF SLEEVE AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.
   - B. FILL, VOID OR CAVITY MATERIAL* - SEALANT OR PUTTY - FILL MATERIAL APPLIED TO APPROPRIATE THICKNESS WITHIN STEEL SLEEVE, FLUSH WITH EDGES OF STEEL SLEEVE ON BOTH SURFACES OF WALL. MIN. 1/2 IN. (13MM) DIAM. BEAD OF SEALANT OR "ROPE" OF PUTTY SHALL BE APPLIED AROUND THE PERIMETER OF THE SLEEVE ON EACH SIDE OF THE WALL WHEN SLEEVE EXTENDS BEYOND SURFACE OF WALL. SEE TABLE BELOW FOR FILL MATERIAL THICKNESS REQUIREMENTS.

SEALANT OR PUTTY TYPE	THICKNESS	PACKING MATERIAL REQUIRED
SPECSEAL SERIES SSS SEALANT OR LCI SEALANT	1/2 IN. (13 MM)	YES
SPECSEAL SERIES SSS SEALANT OR LCI SEALANT	1 IN. (25 MM)	NO
SPECSEAL PUTTY	1 IN. (25 MM)	NO

SPECIFIED TECHNOLOGIES INC - SPECSEAL SERIES SSS SEALANT OR SPECSEAL LCI SEALANT. WHEN MIN FLOOR OR WALL THICKNESS IS 4-1/2 IN. (114 MM) , SPECSEAL PUTTY MAY BE USED.
*BEARING THE UL CLASSIFICATION MARK

DETAIL NOT TO SCALE 2 FIRESTOP SYSTEM - W-L-3210



SECTION A-A

F RATINGS -1 AND 2 HR (SEE ITEM 1)
T RATING - 3/4 HR (SEE ITEM 2)
L RATING AT AMBIENT - LESS THAN 1, 1.3, 4 OR 7 CFM (SEE ITEM 3)
L RATING AT 400 F - LESS THAN 1, 2 OR 3 CFM (SEE ITEM 3)

KEY NOTES: (APPLY TO THIS DETAIL ONLY)

1. WALL ASSEMBLY - THE 1 OR 2 HR FIRE RATED GYPSUM BOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300, U400 OR V400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
   - A. STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM. 2 X 4 IN. (51 X 102MM) LUMBER SPACED 16 IN. (406MM) OC. STEEL STUDS TO BE MIN 3-1/2 IN. (76MM) WIDE AND SPACED MAX 14 IN. (610MM) OC.
   - B. GYPSUM BOARD - THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300, U400 OR V400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIAM. OF OPENING IS 4-1/2 IN. (114MM).

   THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED.

2. CABLES - WITHIN THE LOADING AREA FOR EACH FIRESTOP DEVICE MODULE, THE CABLES MAY REPRESENT A 0 TO 100 PERCENT VISUAL FILL. CABLE FILL TO BE DISTRIBUTED AT A UNIFORM HEIGHT ACROSS THE WIDTH OF THE FIRESTOP DEVICE MODULE. CABLES TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF THE WALL ASSEMBLY. ANY COMBINATION OF THE FOLLOWING TYPES OF CABLES MAY BE USED:
   - A. MAX. 100 PAIR NO. 24 AWG (OR SMALLER) COPPER CONDUTOR TELECOMMUNICATION CABLE WITH POLYVINYL CHLORIDE (PVC) JACKETING AND INSULATION.
   - B. MAX. 350 KCMIL SINGLE COPPER CONDUCTOR POWER CABLE WITH XLP E JACKET AND INSULATION.
   - C. MAX 7/C NO. 12 AWG COPPER CONDUCTOR CONTROL CABLE WITH PVC OR XLP E JACKET AND INSULATION.
   - D. MAX. 3/C NO. 10 AWG METAL CLAD OR ARMORED CABLE WITH STEEL OR ALUMINUM JACKET.
   - E. MAX. 3/C NO. 8 AWG NM CABLE (ROMEX) WITH PVC INSULATION AND JACKET.
   - F. MAX FOUR PAIR NO. 22 AWG (OR SMALLER) COPPER CONDUCTOR DATA CABLE WITH PVC OR PLENUM RATED JACKETING AND INSULATION.
   - G. MAX RG/U COAXIAL CABLE WITH FLOURINATED ETHYLENE INSULATION AND JACKETING.
   - H. FIBER OPTIC CABLE WITH PVC OR POLYETHYLENE (PE) JACKET AND INSULATION HAVING A MAX. DIAM. OF 5/8 IN.
   - I. (OPTIONAL) FIBER RACEWAY - MAX 1-1/2 IN. (38MM) DIAM. (OR SMALLER) OPTICAL FIBER RACEWAY ("INNERDUCT") FORMED OF EITHER PVC OR POLYVINYLIDENED FLOURIDE (PVDF) WITH OPTICAL FIBER CABLE FILL. RACEWAYS INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NFPA 70).

     WHEN THE HOURLY RATING OF THE WALL ASSEMBLY IS 1 HR, THE T RATING IS 3/4 HR. WHEN THE HOURLY RATING OF THE WALL ASSEMBLY IS 2 HR, THE T RATING IS 3/4 HR. WHEN ITEM 2A, 2B,2C,2D OR 2E IS USED. OTHERWISE THE T RATING IS 1 HR.

   THE L RATING FOR THE EMPTY FIRESTOP DEVICE IS LESS THAN 1CFM AT AMBIENT AND AT 400F.WHEN ITEM 3A IS USED, THE L RATING FOR THE FIRESTOP DEVICE WITH 100 PERCENT VISUAL FILL IS 4 CFM AT AMBIENT AND 3 CFM AT 400F. WHEN ITEM 3F IS USED, THE L RATING FOR THE FIRESTOP DEVICE WITH 100 PERCENT VISUAL FILL IS 1.3 CFM AT AMBIENT AND LESS THAN 1 CFM AT 400F. WHEN ITEM 3G OR 3H IS USED, THE L RATING FOR THE FIRESTOP DEVICE WITH 100 PERCENT VISUAL FILL IS 7 CFM AT AMBIENT AND 2 CFM AT 400F.

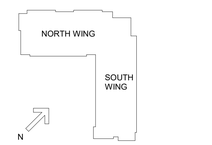
3. FIRESTOP DEVICE - FIRESTOP DEVICE CONSISTS OF A 3 X 3 X 10-1/2 IN. (76 X 76 X 267MM) LONG GALV. STEEL TUBE WITH AN INTUMESCENT MATERIAL LINING. FIRESTOP DEVICE TO BE INSTALLED IN ACCORDANCE WITH THE ACCOMPANYING INSTALLATION INSTRUCTIONS. PRIOR TO INSTALLATION WITHIN WALL, ATTACHMENT SCREWS AND LID REMOVED FROM DEVICE TO CAPTURE GROUPED CABLES. AFTER INSTALLATION OF CABLES, LID REPLACED AND REATTACHED WITH SAME SCREWS. DEVICE SLID ALONG CABLES INTO WALL SUCH TAT LID IS ON TOP AND ENDS PROJECT AN EQUAL DISTANCE FROM THE APPROX. CENTERLINE OF THE WALL ASSEMBLY. THE SPACE BETWEEN THE DEVICE AND THE PERIPHERY OF THE OPENING SHALL BE MIN. 0 IN. (0MM) TO MAX. 1/2 IN. (13MM).

   SPECIFIED TECHNOLOGIES INC - EZ PATH SERIES 33 FIRE RATED PATHWAY

4. FILL, VOID OR CAVITY MATERIAL - SEALANT - MIN. 5/8 IN. (6MM) THICKNESS OF SEALANT TO BE APPLIED IN ANNULAR SPACE BETWEEN FIRESTOP DEVICE AND PERIPHERY OF OPENING ON EACH SIDE OF WALL ASSEMBLY. NOM. 3/8 IN. (10MM) DIAM. BEAD OF FILL MATERIAL APPLIED AT THE FIRESTOP DEVICE/GYPSUM BOARD INTERFACE ON BOTH SIDES OF THE WALL ASSEMBLY.

   SPECIFIED TECHNOLOGIES INC. - SPECSEAL 100,101,102,105,120 OR 129 SEALANT, SPECSEAL LCI SEALANT, SPECSEAL LC150 SEALANT, PENSIL 300 SEALANT OR SPECSEAL SERIES SIL300 SEALANT.

DETAIL NOT TO SCALE 3 FIRESTOP SYSTEM - W-L-3219



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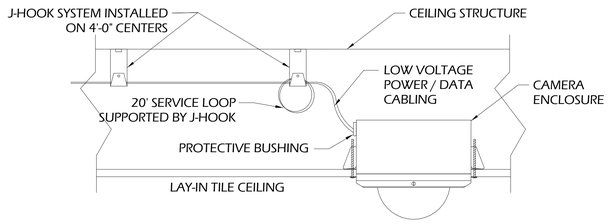
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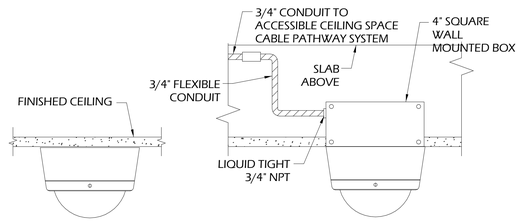
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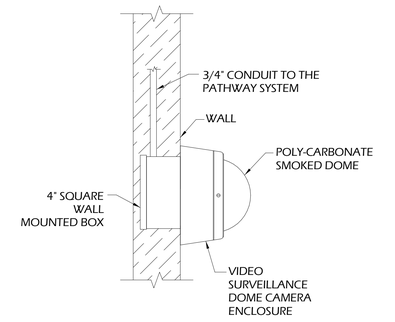
DETAIL NOT TO SCALE 1 — LAY-IN TILE CEILING MOUNT RECESSED DOME CAMERA ENCLOSURE

SURFACE DOME CAMERA ENCLOSURE



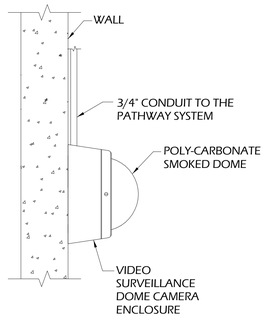
DETAIL NOT TO SCALE 2 — INTERIOR FIXED CEILING MOUNTED ON GYPSUM BOARD/CONCRETE CEILING

SURFACE DOME CAMERA ENCLOSURE



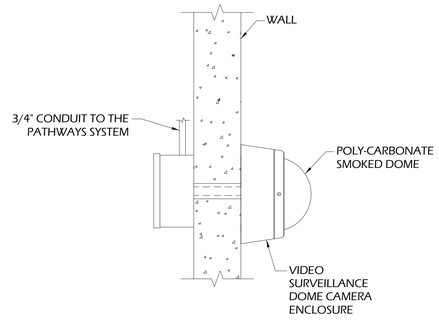
DETAIL NOT TO SCALE 3 — INTERIOR FIXED WALL MOUNTED ON GYBSUM BOARD WALL

RECESSED DOME CAMERA ENCLOSURE



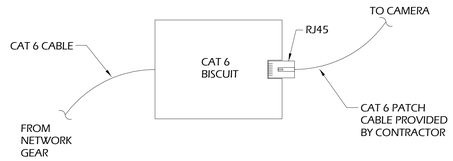
DETAIL NOT TO SCALE 4 — INTERIOR/EXTERIOR FIXED WALL MOUNTED ON CONCRETE WALL

SURFACE DOME CAMERA ENCLOSURE

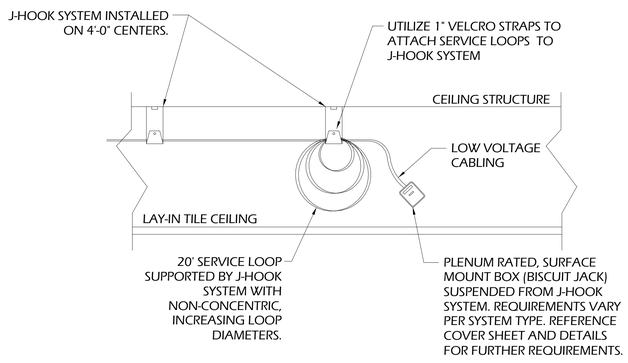


DETAIL NOT TO SCALE 5 — EXTERIOR FIXED WALL MOUNTED

SURFACE DOME CAMERA ENCLOSURE



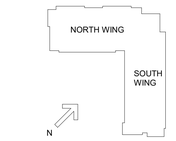
DETAIL NOT TO SCALE 6 — VIDEO SURVEILLANCE CAMERA TYPICAL ETHERNET BISCUIT



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



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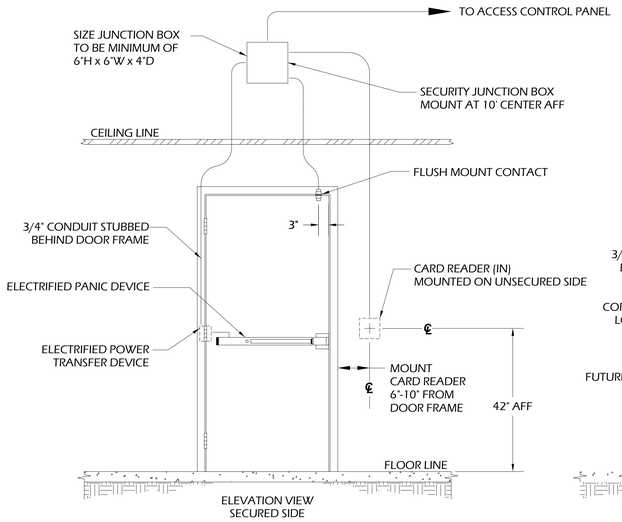
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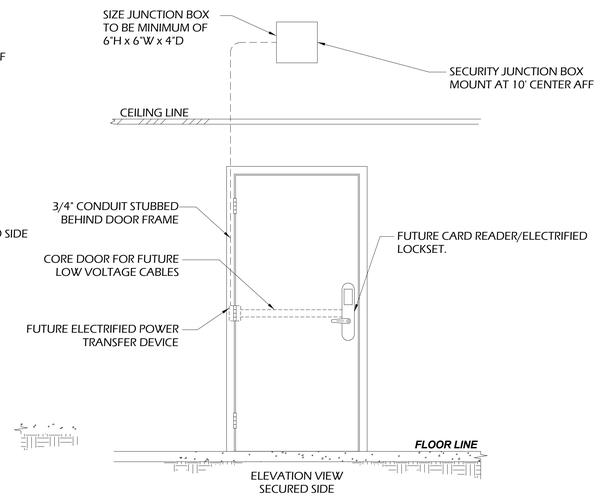
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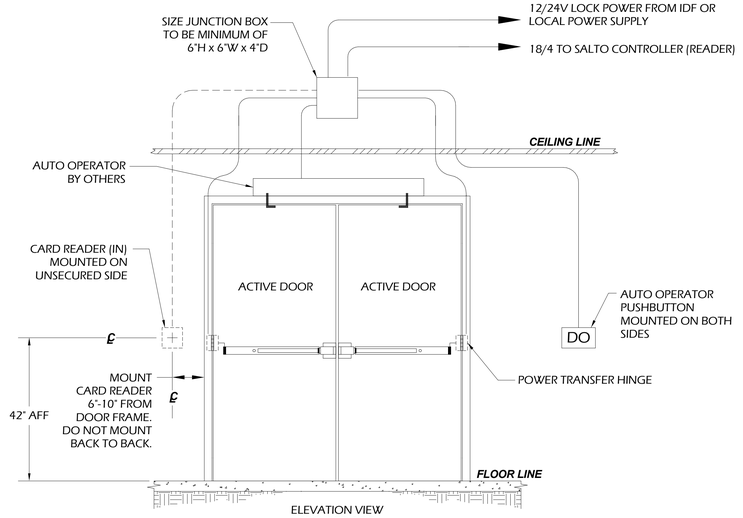
SINGLE DOOR WITH
CARD READER, DOOR CONTACT, ELECTRIFIED PANIC DEVICE,
POWER TRANSFER DEVICE

DETAIL NOT TO SCALE 1 SINGLE DOOR DETAIL



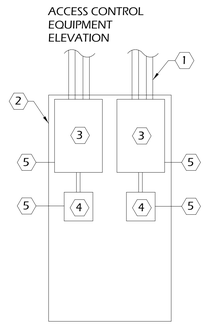
SINGLE DOOR WITH FUTURE CARD READER/ELECTRIFIED
LOCKSET

DETAIL NOT TO SCALE 2 SINGLE DOOR DETAIL



DOUBLE DOOR WITH
CARD READER (IN), AUTO OPERATOR WITH BUILT IN DOOR POSITION
SWITCH, ELECTRIFIED PANIC HARDWARE, AUTO OPERATOR
PUSHBUTTON

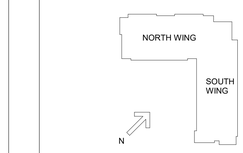
DETAIL NOT TO SCALE 3 DOUBLE DOOR DETAIL
AUTO OPERATATED DOOR



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 NOT TO SCALE 4 ACCESS CONTROL EQUIPMENT ELEVATION



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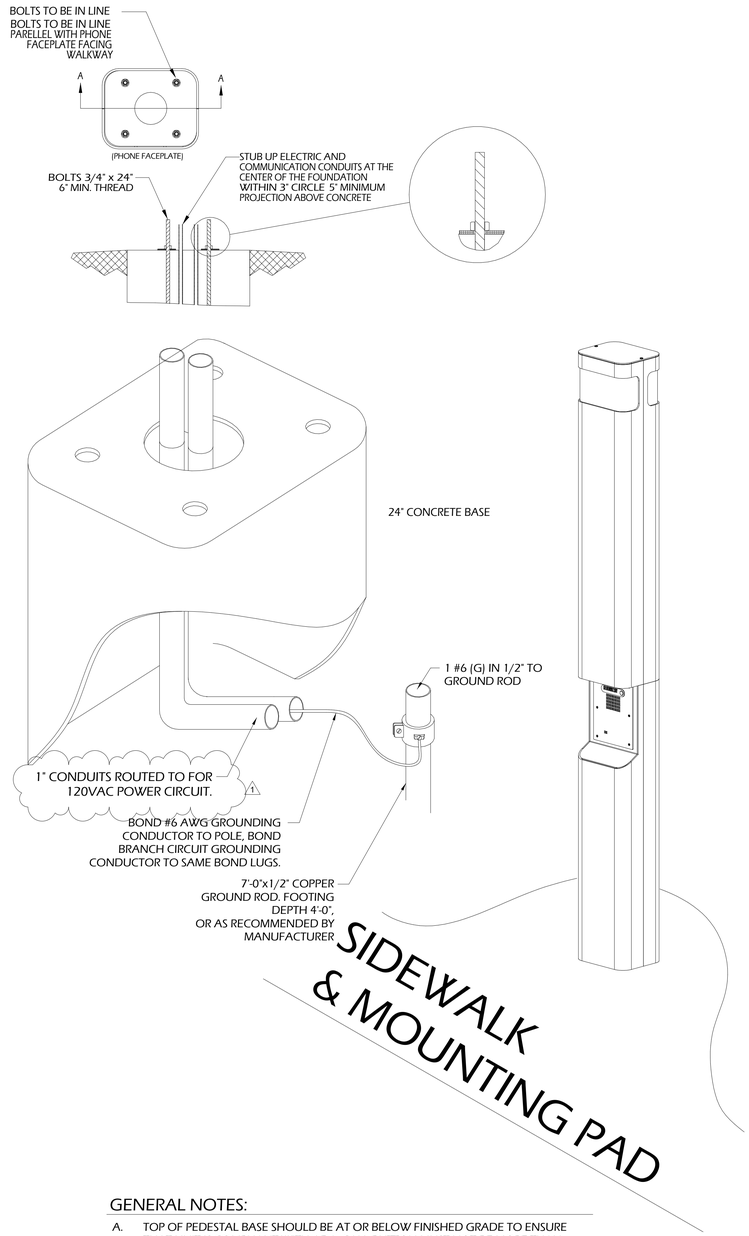
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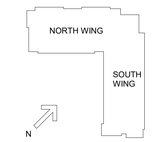
GENERAL NOTES:

A. 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.

B. ALL EQUIPMENT MUST COMPLY WITH THE AMERICAN DISABILITY ACT AND LOCAL AUTHORITY REQUIREMENTS.

1

DETAIL 1 — PEDESTAL MOUNT EMERGENCY INTERCOM STATION
NOT TO SCALE



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1	06/05/2020	BULLETIN #2

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