# HVAC REPLACEMENT PROJECT AT JUVENILE DETENTION CENTER - REBID

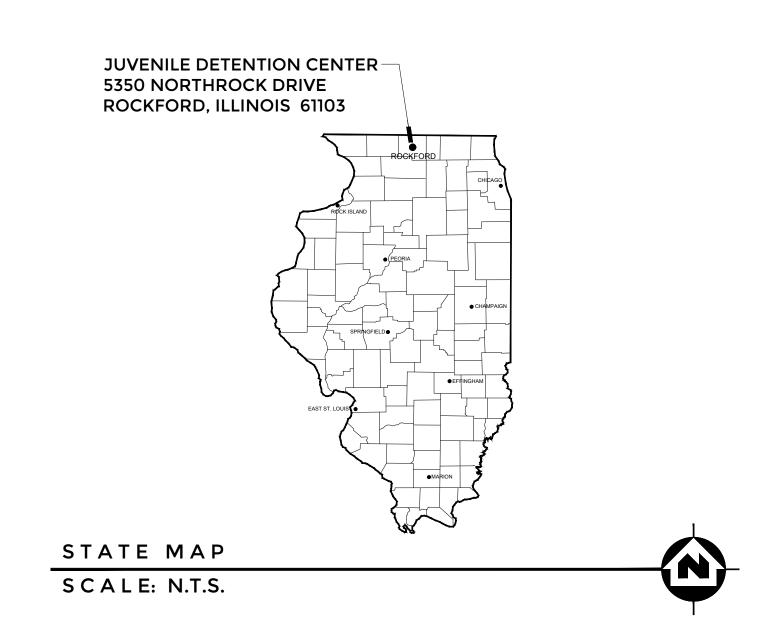
5350 NORTHROCK DRIVE ROCKFORD, ILLINOIS 61103

IFB NO. 23B-2285

**OWNER** 

# WINNEBAGO COUNTY

404 ELM STREET ROCKFORD, ILLINOIS 61101

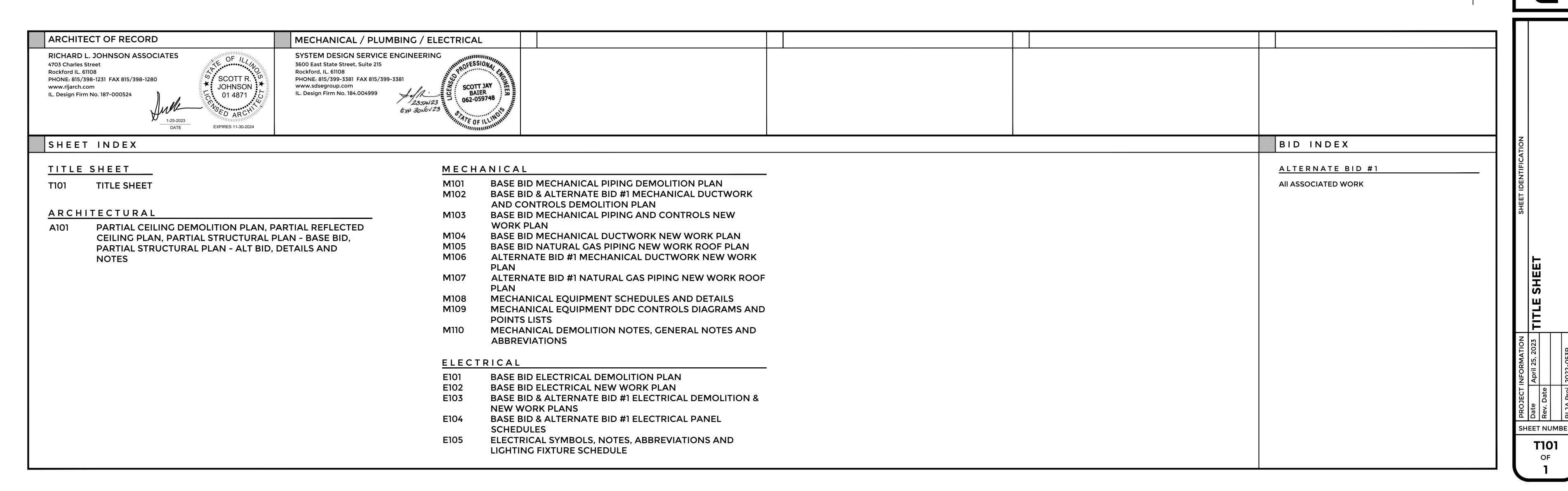


WINNEBAGO COUNTY
JUVENILE DETENTION CENTER——



SITE LOCATION MAP
SCALE: N.T.S.





Ιŏ **M** 4

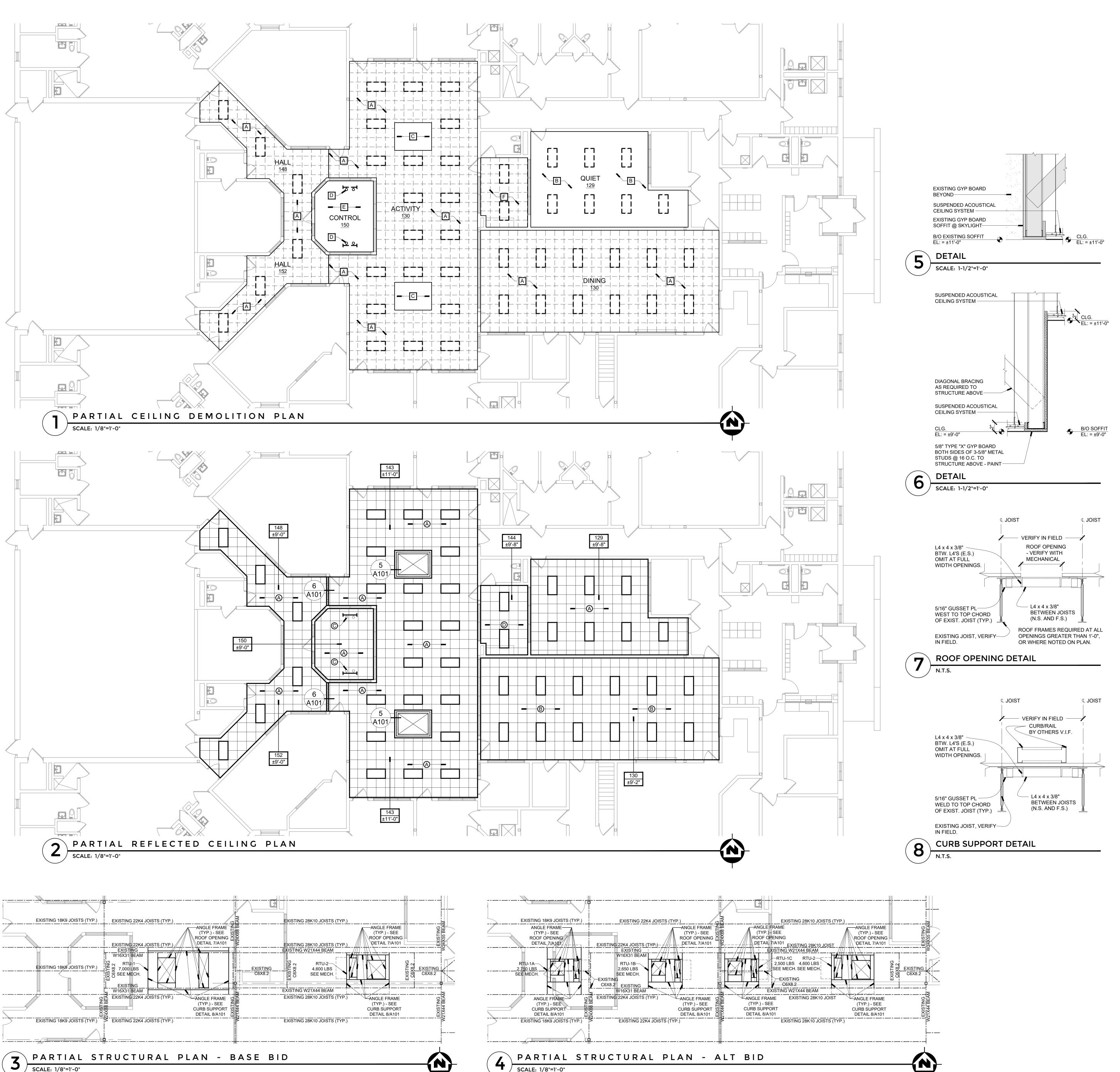
SE BID, PARTIAL IAL CEILING DEN IAL REFLECTED ( IAL STRUCTURAI CTURAL PLAN - /

SHEET NUMBER

**A101** 

SHALL NOT BE DIRECTLY SUPPORTED BY OR DIRECTLY HUNG FROM THE METAL ROOF DECK. GC/CONTRACTOR SHALL PROVIDE

AND INSTALL MISCELLANEOUS MECHANICAL EQUIPMENT SUPPORTS TO THE TOP FLANGE OF JOISTS AND BEAMS.

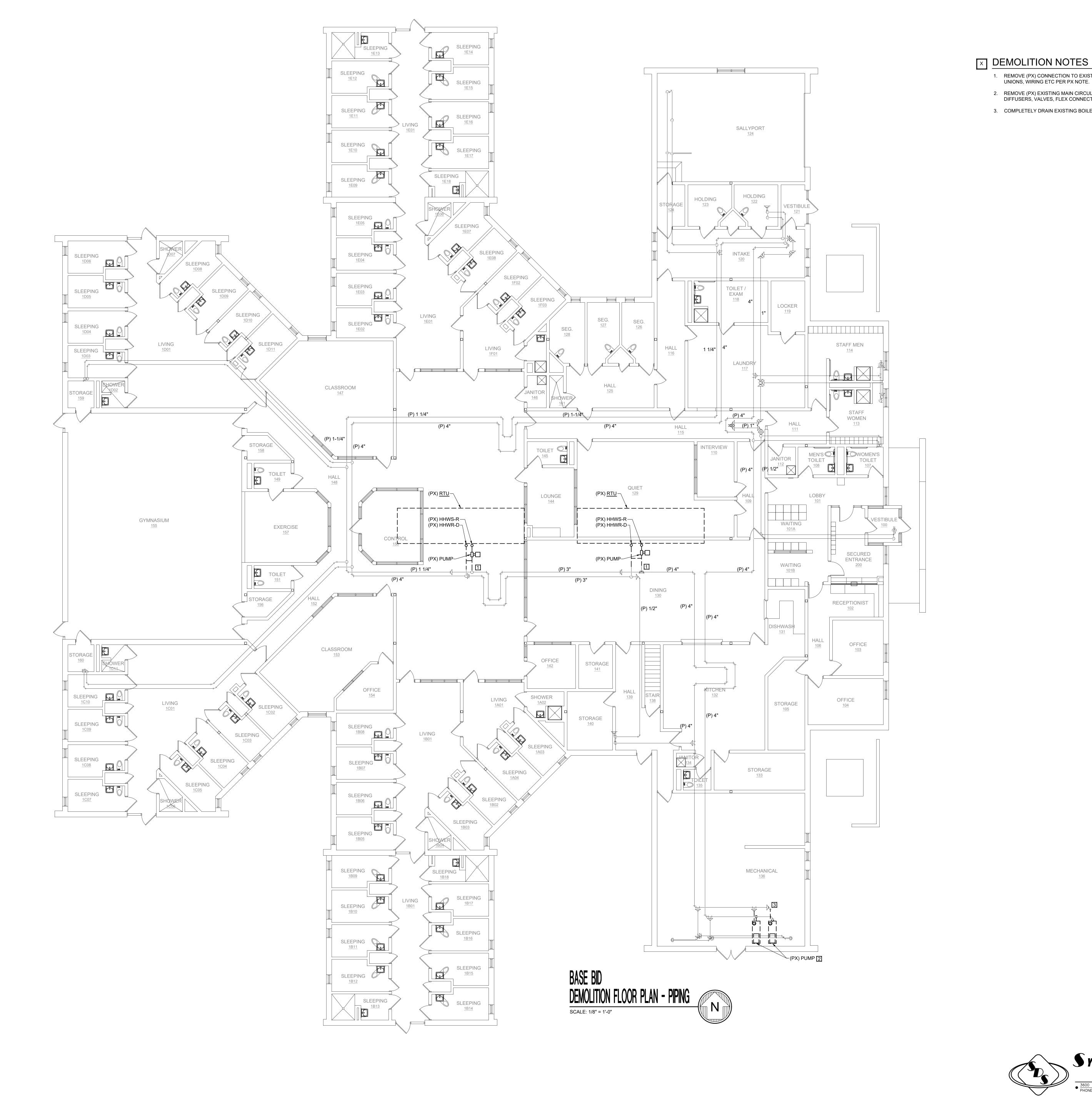




REMOVE (PX) CONNECTION TO EXISTING RTUS, INCLUDING ALL VALVES, PUMPS, UNIONS, WIRING ETC PER PX NOTE. REMOVE PIPING BACK TO LOCATIONS SHOWN.

2. REMOVE (PX) EXISTING MAIN CIRCULATION PUMPS, INCLUDING SUCTION DIFFUSERS, VALVES, FLEX CONNECTIONS, ETC.

3. COMPLETELY DRAIN EXISTING BOILER SYSTEM TO ALLOW FOR NEW WORK.



1. REMOVE (PX) EXISTING RTUS AND DUCT CONNECTIONS AS SHOWN. REMOVE EXISTING CONTROL AND ELECTRICAL WIRING. EXISTING ROOF CURB SHALL

2. DISCONNECT DUCTWORK FROM SUPPLY DIFFUSER AND REMOVE (PX) EXISTING SUPPLY CEILING DIFFUSER WHERE CEILINGS WILL BE REMOVED.

3. REMOVE (PX) EXISTING RETURN CEILING DIFFUSER WHERE CEILINGS WILL BE

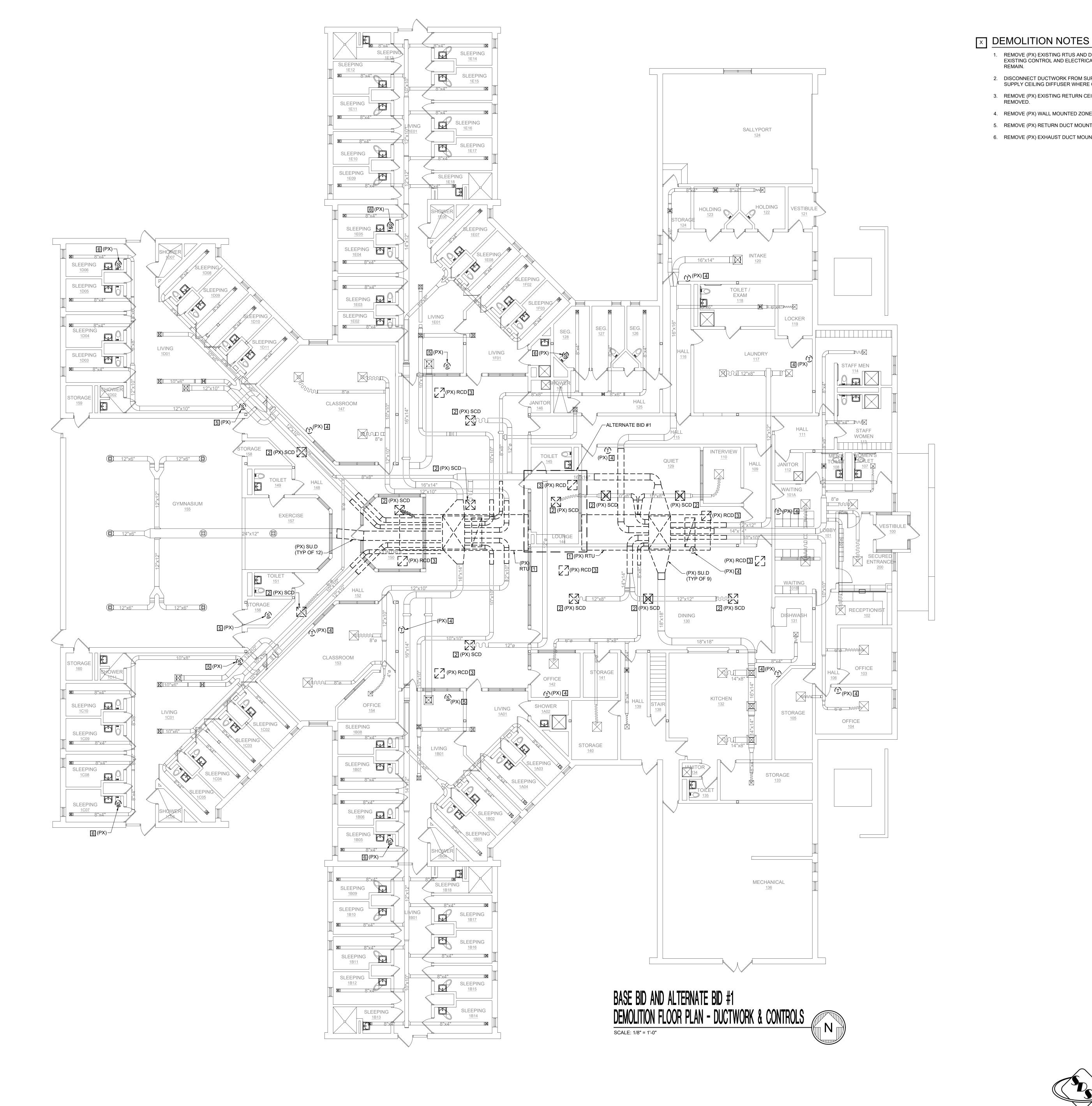
4. REMOVE (PX) WALL MOUNTED ZONE TEMPERATURE SENSOR.

5. REMOVE (PX) RETURN DUCT MOUNTED ZONE TEMPERATURE SENSOR.

6. REMOVE (PX) EXHAUST DUCT MOUNTED ZONE TEMPERATURE SENSOR.

REMOVED.

SHEET NUMBER S YSTEMS DESIGN SERVICE M102 THE STREET SUITE 215 \*ROCKFORD, ILLINOIS \* 61108 PHONE (815) 399-3381 FAX (815) 399-3383 WWW.SDSEGROUP.COM





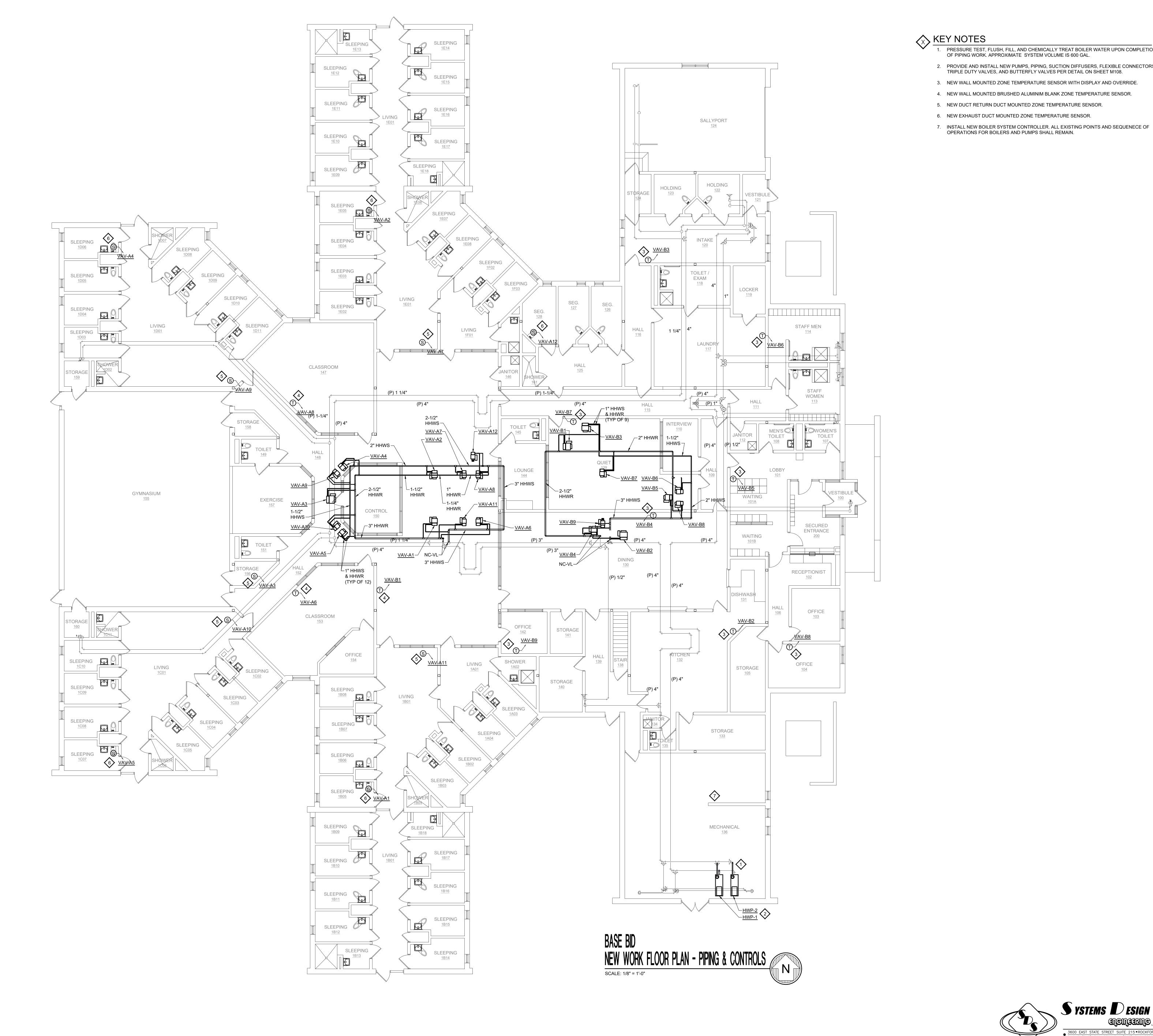
PRESSURE TEST, FLUSH, FILL, AND CHEMICALLY TREAT BOILER WATER UPON COMPLETION

2. PROVIDE AND INSTALL NEW PUMPS, PIPING, SUCTION DIFFUSERS, FLEXIBLE CONNECTORS,

TRIPLE DUTY VALVES, AND BUTTERFLY VALVES PER DETAIL ON SHEET M108.

3. NEW WALL MOUNTED ZONE TEMPERATURE SENSOR WITH DISPLAY AND OVERRIDE.

OF PIPING WORK. APPROXIMATE SYSTEM VOLUME IS 600 GAL.

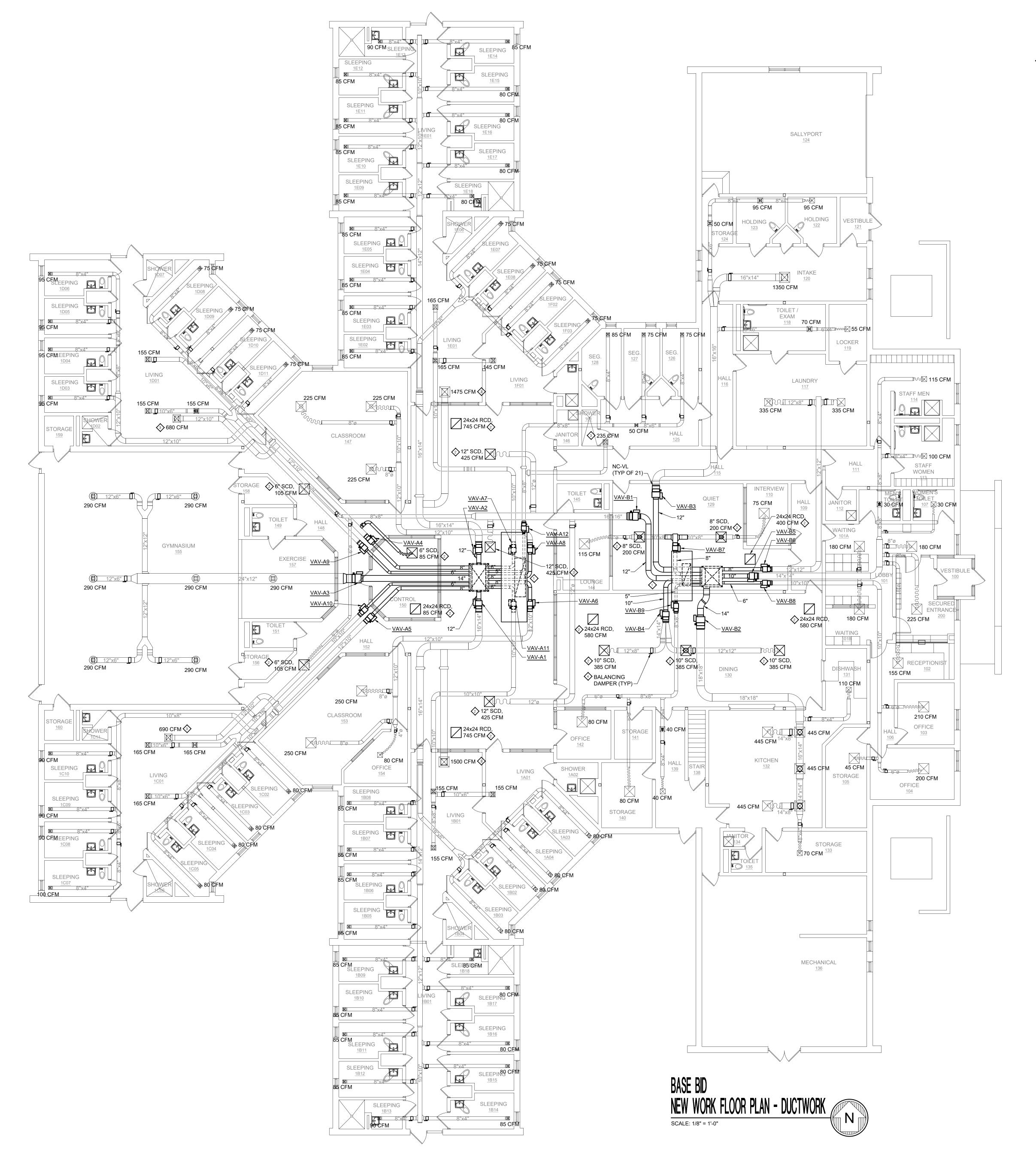


PROJECT INFORMATION
Date April 25, 2023
Rev. Date
Rev. Date
Rev. Date
Rev. Date
Rev. Date

SYSTEMS DESIGN SERVICE

GENGARIO LP

3600 EAST STATE STREET SUITE 215 • ROCKFORD, ILLINOIS • 61108
PHONE (815) 399–3381 FAX (815) 399–3383 WWW.SDSEGROUP.COM



X KEY NOTES

 CONNECT NEW VAV DUCT TO EACH EXISTING ZONE DUCTWORK. RETURN SHALL BE PLENUM, RETURN DUCT SHALL DROP AND HAVE A "T" WITH MINIMUM 5' ON EACH SIDE TO REDUCE FAN NOISE TRANSMISSION. RETURN DUCT SHALL HAVE SECURITY BARS AT OPENINGS ON EACH END.

2. INSTALL NEW DIFFUSER IN NEW CEILING GRID AND RECONNECT EXISTING DUCTWORK

3. DIFFUSER IS USED DURING SMOKE EVACUATION MODE; MOTORIZED DAMPER IN DUCT SUPPLYING THE DIFFUSER SHALL OPEN AND MOTORIZED DAMPER IN DUCT SUPPLYING SLEEPING AREAS SHALL CLOSE. BALANCE DIFFUSER WHEN RTU IS IN SMOKE EVACUATION MODE.

4. ADD BALANCING DAMPER TO EACH BRANCH AS SHOWN TO ALLOW FOR BALANCING OF EACH DIFFUSER. CUT AND PATCH DUCT AS REQUIRED FOR DAMPER INSTALLATION.

**GENERAL NOTES** 

1. BALANCE EXISTING SUPPLY DIFFUSERS AND REGISTERS TO CFM AS SHOWN.



UNION. COORDINATE EXACT LOCATION IN FIELD. VERIFY PRESSURE REQUIREMENT

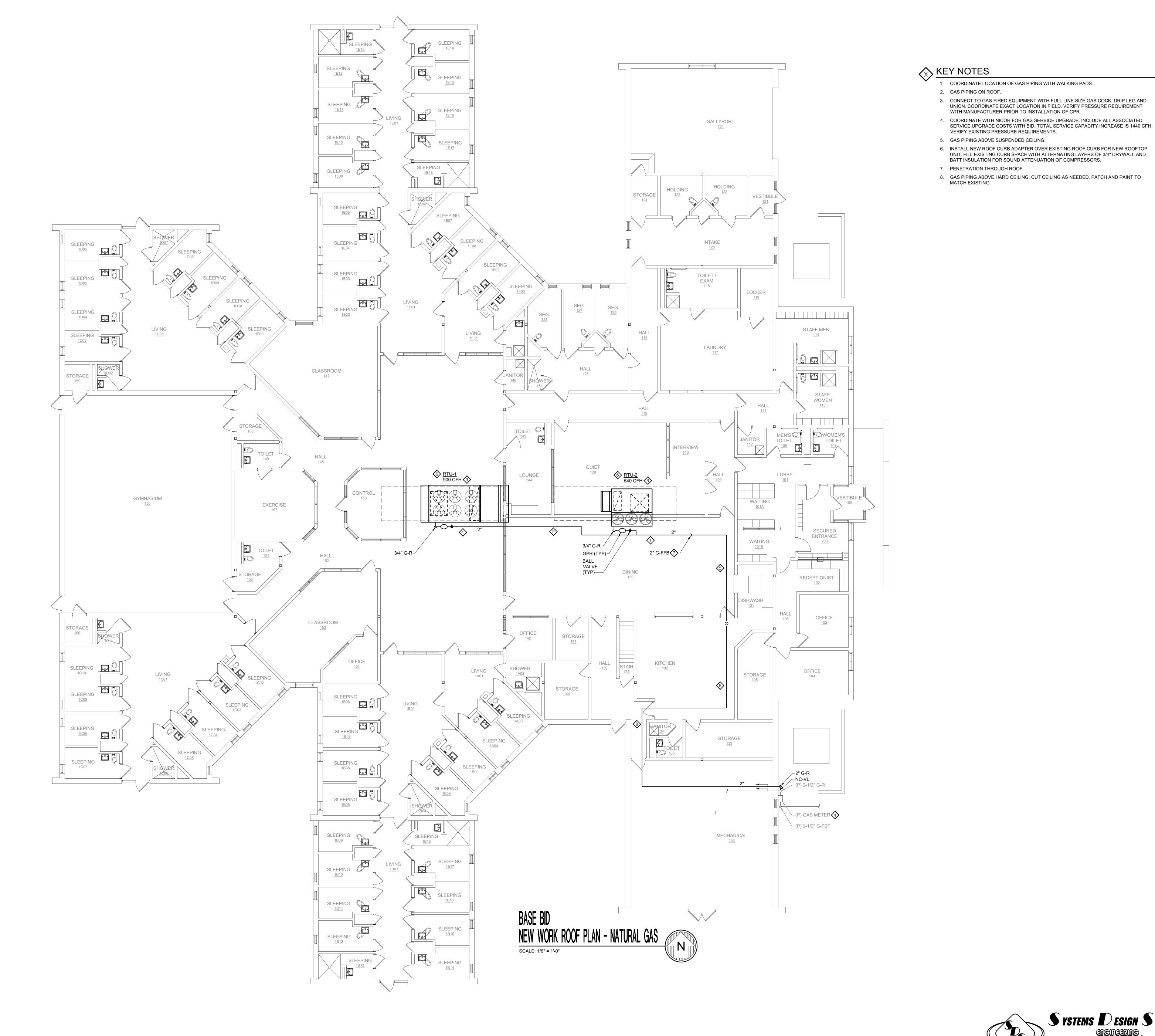
UNIT. FILL EXISTING CURB SPACE WITH ALTERNATING LAYERS OF 3/4" DRYWALL AND

WITH MANUFACTURER PRIOR TO INSTALLATION OF GPR.

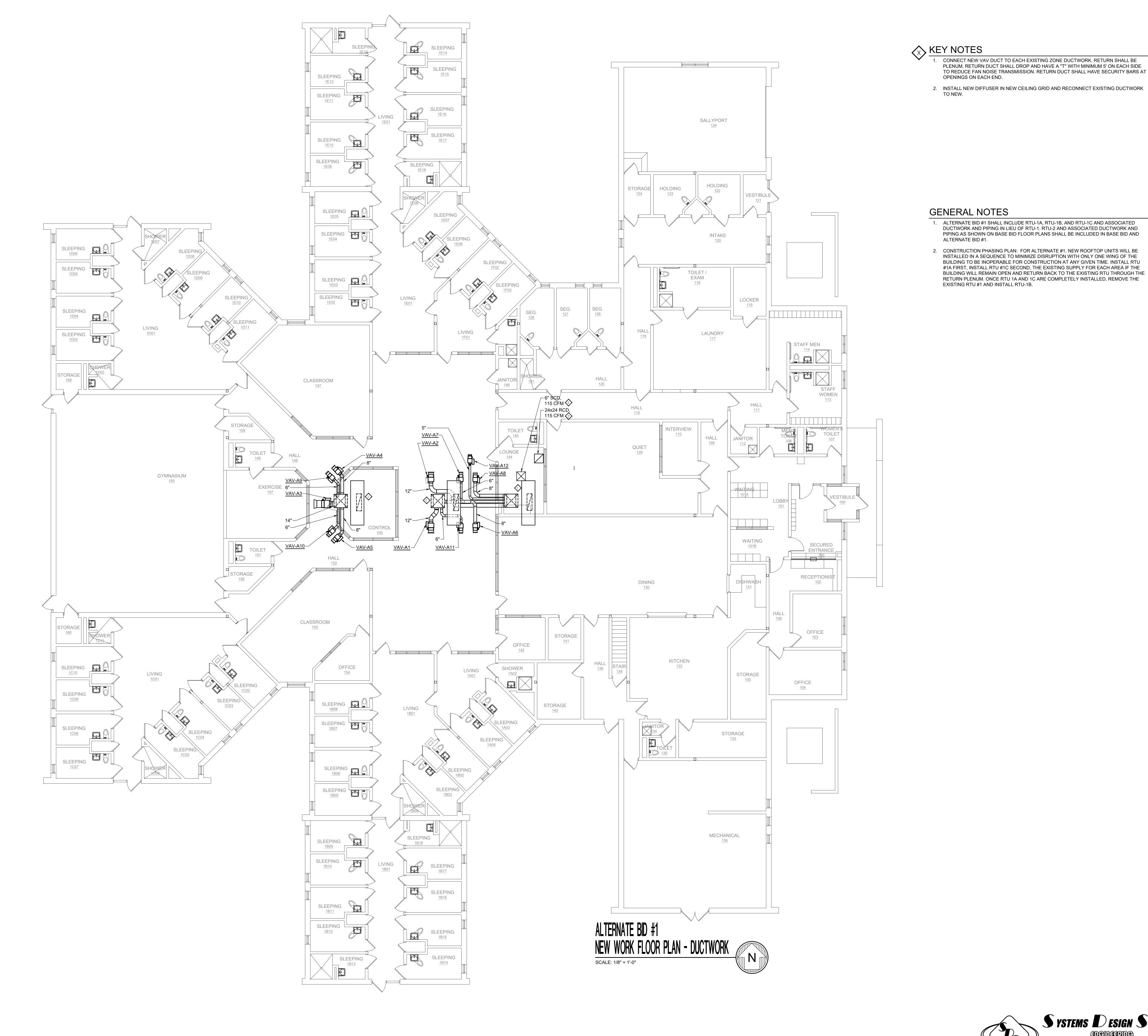
BATT INSULATION FOR SOUND ATTENUATION OF COMPRESSORS.

VERIFY EXISTING PRESSURE REQUIREMENTS.

MATCH EXISTING.





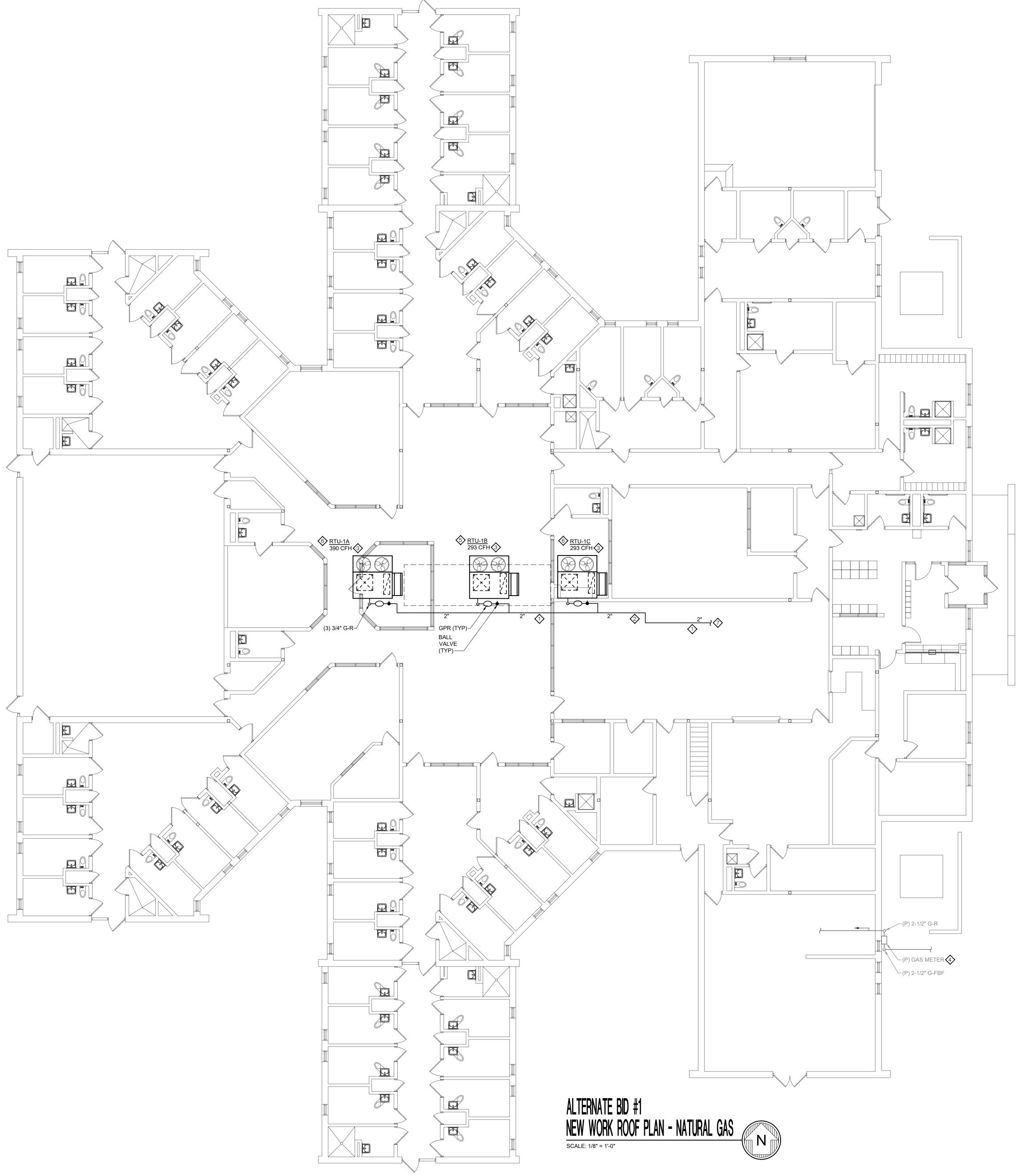


SYSTEMS DESIGN SERVICE

M107

OF

3600 EAST STATE STREET SUITE 215 \*ROCKFORD, ILLINOIS \* 61108
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### KEY NOTES

- COORDINATE LOCATION OF GAS PIPING WITH WALKING PADS.
- 2. GAS PIPING ON ROOF.
- CONNECT TO GAS-FIRED EQUIPMENT WITH FULL LINE SIZE GAS COCK, DRIP LEG AND UNION. COORDINATE EXACT LOCATION IN FIELD. VERIFY PRESSURE REQUIREMENT WITH MANUFACTURER PRIOR TO INSTALLATION OF GPR.
- COORDINATE WITH NICOR FOR GAS SERVICE UPGRADE. INCLUDE ALL ASSOCIATED SERVICE UPGRADE COSTS WITH BID. TOTAL SERVICE CAPACITY INCREASE IS 1516 CFH. VERIFY EXISTING PRESSURE REQUIREMENTS.
- INSTALL NEW ROOF CURB ADAPTER OVER EXISTING ROOF CURB FOR NEW ROOFTOP UNIT. FILL EXISTING CURB SPACE WITH ALTERNATING LAYERS OF 3/4" DRYWALL AND BATT INSULATION FOR SOUND ATTENUATION OF COMPRESSORS.
- 6. INSTALL NEW ROOF CURB FOR NEW ROOFTOP UNIT, CUT AND PATCH ROOF AS
- REQUIRED FOR CURB INSTALLATION.7. SEE SHEET M105 FOR CONTINUATION.

### **GENERAL NOTES**

- ALTERNATE BID #1 SHALL INCLUDE RTU-1A, RTU-1B, AND RTU-1C AND ASSOCIATED DUCTWORK AND PIPING IN LIEU OF RTU-1. RTU-2 AND ASSOCIATED DUCTWORK AND PIPING AS SHOWN ON BASE BID FLOOR PLANS SHALL BE INCLUDED IN BASE BID AND ALTERNATE BID #1.
- 2. CONSTRUCTION PHASING PLAN: FOR ALTERNATE #1, NEW ROOFTOP UNITS WILL BE INSTALLED IN A SEQUENCE TO MINIMIZE DISRUPTION WITH ONLY ONE WING OF THE BUILDING TO BE INOPERABLE FOR CONSTRUCTION AT ANY GIVEN TIME. INSTALL RTU #1A FIRST, INSTALL RTU #1C SECOND, THE EXISTING SUPPLY FOR EACH AREA IF THE BUILDING WILL REMAIN OPEN AND RETURN BACK TO THE EXISTING RTU THROUGH THE RETURN PLENUM. ONCE RTU 1A AND 1C ARE COMPLETELY INSTALLED, REMOVE THE EXISTING RTU #1 AND INSTALL RTU-1B.

RTU-1/RTU-1A RTU-1/RTU-1A RTU-1/RTU-1A RTU-1/RTU-1B Classroom 153 and Office 154 RTU-1/RTU-1C Living 1D101 VAV-A10 Living 1C101 RTU-1/RTU-1B | Living 1A101 and Living 1B10 VAV-A12 0.18 13.05 VAV-B1 Dishwash 131, Kitchen 132, and VAV-B2 Storage 133 Storage 124, Holding 122/123, Intake 120, Toilet/Exam 118, VAV-B3 and Locker 119 1715 0.54 180.0 74.40 RTU-2 VAV-B4 Dining 130 Staff Men 114, Staff Women 113, Men's 108, Women's 107, Lobby/Waiting 110, Secured Entrance 200, Receptionist 102 0.53 VAV-B5 VAV-B6 Laundry 117 0.45 Lounge 144, Quiet 129, and VAV-B7 Interview 110

### NOTES: SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

VAV-B8

VAV-B9

AIR TURNS OR

TURNING VANES

Office 103/104 and Storage 105

Hall 139, Office 142, and

Storage 140

- 1. FLOW CROSS AND CONTROL POWER TRANSFORMER SHALL BE PROVIDED WITH UNIT. CONTROLS CONTRACTOR TO FURNISH AND INSTALL DDC CONTROLS; UNIT CONTROLLER, DAMPER ACTUATOR, THREE WAY
  MODULATING CONTROL VALVE AND ACTUATOR, SUPPLY DISCHARGE AIR TEMPERATURE SENSOR, WALL OR DUCT MOUNTED TEMPERATURE SENSOR (AS SHOWN ON DARWINGS), WIRING, PROGRAMMING, GRAPHICS, ETC.
  AS SHOWN IN SPECIFICATIONS, CONTROLS DIAGRAMS, AND POINTS LIST. UNIT TO BE TIED INTO EXISTING ALPHA CONTROLS BUILDING MANAGEMENT SYSTEM.
- 2. MINIMUM AIRFLOWS SHOWN MAY BE ADJUSTED UPWARD OR DOWNWARD TO GIVE COMFORT LEVEL AS REQUIRED. VAV TO BE PRESSURE INDEPENDENT CONTROL

# ROOFTOP UNIT (RTU) EQUIPMENT SCHEDULE:

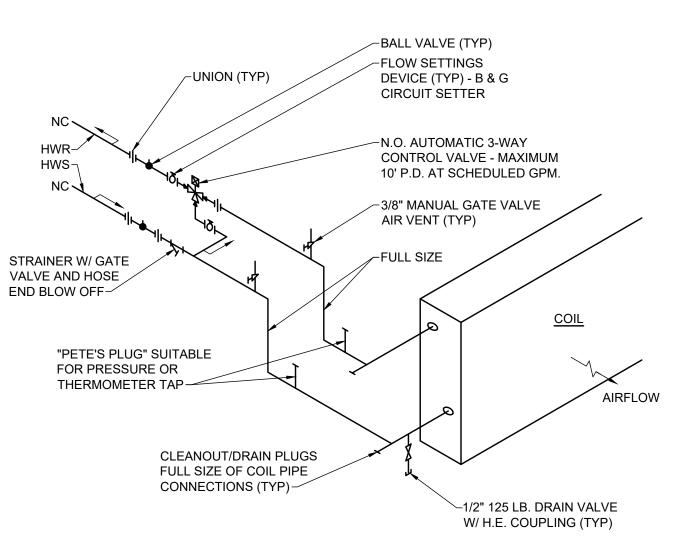
PLAN NO.	RTU-1	RTU-2	RTU-1A	RTU-1B	RTU-1C
RTU MFR	AAON	AAON	AAON	AAON	AAON
RTU MODEL	RNA-040-D-0-3-DAA0A-CB3L0	RN-030-3-0-EB09-3CB	RN-015-3-0-HB09-36B	RN-013-3-0-HA09-3GB	RN-013-3-0-HA09-3G
FUEL	NATURAL GAS	NATURAL GAS	NATURAL GAS	NATURAL GAS	NATURAL GAS
MBH IN/OUT	900/720	540/432	390/315.9	292.5/234	292.5/234
EFFICIENCY	80%	80%	80%	80%	80%
HTG STAGES/TURNDOWN	MODULATING/15:1	MODULATING/18:1	MODULATING/10:1	MODULATING/10:1	MODULATING/10:1
ELECTRIC PRE-HEAT (KW)	N/A	60	N/A	N/A	N/A
ENTERING AIR DB (DEG F)	-10.0	9.0	-10.0	-10.0	-10.0
ENTERING AIR WB (DEG F)	-11.0	5.3	-11.0	-11.0	-11.0
LEAVING AIR DB (DEG F)	57.3	49.2	55.8	75.2	64.5
LEAVING AIR WB (DEG F)	37.3	32.7	36.5	46.4	41.1
VENT MIN / % OUTSIDE AIR	6070/61%	1950/20%	1945/44%	1860/73%	2265/78%
DRIVE	VFD	VFD	VFD	VFD	VFD
SUPPLY CFM/ESP (INCHES)	9900/1.7"	9955/1.8"	4445/1.7"	2545/1.7"	2910/1.7"
SUPPLY FAN HP	10.0	15.0	7.5	2.0	2.0
EXHAUST CFM/ESP (INCHES)	3830/0.1"	8435/0.1"	1860/0.1"	1860/0.1"	2350/0.1"
EXHAUST FAN HP	1.0	7.5	1.0	1.0	1.0
NOM COOL CAP @ 95° F. (TON)	40	30	15	13	13
COOL STAGES	MODULATING	MODULATING	MODULATING	MODULATING	MODULATING
ENTERING AIR DB (DEG F)	87.30	78.92	83.75	89.62	90.57
ENTERING AIR WB (DEG F)	70.60	65.23	68.39	71.96	72.51
LEAVING AIR DB (DEG F)	56.00	53.69	53.95	52.29	55.09
LEAVING AIR WB (DEG F)	55.40	53.29	53.75	52.04	54.79
FILTER QTY	24	24	24	24	24
UNIT VOLTAGE	480-3-60	480-3-60	480-3-60	480-3-60	480-3-60
COOLING FLA	73	57	32	27	27
COOLING MCA	78	63	35	29	29
COOLING MOCP	90	80	45	35	35
HEATING FLA	19	94	14	6	6
HEATING MCA	22	114	17	7	7
HEATING MOCP	35	125	25	15	15
EFFICIENCY RATING	10.0 EER	10.8 EER	11.5 EER	12.2 EER	12.2 EER
REFRIGERANT	R-410A	R-410A	R-410A	R-410A	R-410A
APPROX. WT. IN LBS.	6900	4250	2700	3050	2250
NOTES	1-2,4-10	1-2,4-10	1-3,5-10	1-2,4-10	1-3,5-10

NOTES: SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

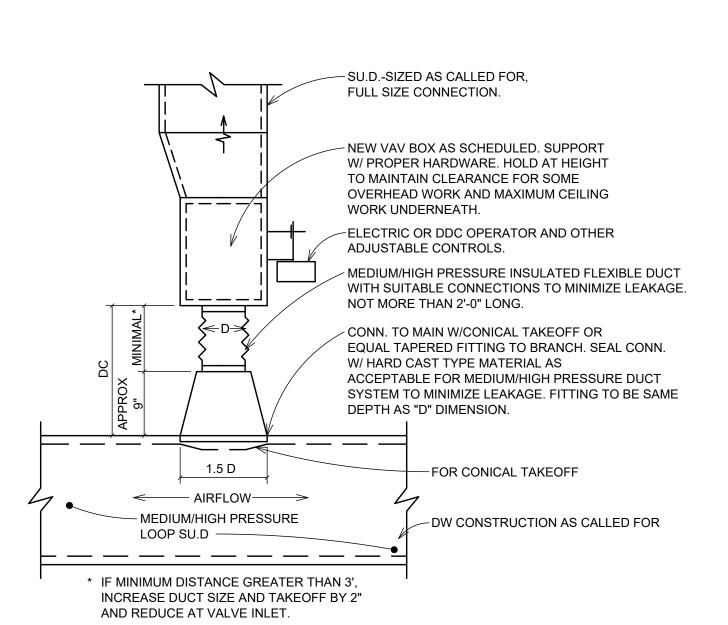
- 1. UNIT SHALL BE EQUIPPED WITH VFD ON SUPPLY AND EXHAUST FANS, FULL MODULATING ULTRA LOW LEAK ECONOMIZER WITH ADJUSTABLE TEMPERATURE/ENTHALPY CONTROLS AND BAROMETRIC RELIEF, POWERED EXHAUST, STAINLESS STEEL HEAT EXCHANGER, MODULATING GAS HEAT, DIGITAL SCROLL COMPRESSORS WITH COMPRESSOR WRAPS, HINGED ACCESS DOORS, DOUBLE WALL CONSTRUCTION WITH R-13 INSULATION, OUTSIDE AIR HOOD, CLOGGED FILTER SWITCH, DAMPER ACTUATORS, AND POWERED CONVENIENCE OUTLET. UNIT SHALL HAVE 65 KAIC SCCR RATING. UNIT SHALL HAVE TWO POWER CONNECTIONS (CIRCUIT 1: COMPRESSORS AND CONDENSERS, CIRCUIT 2: SUPPLY FAN, EXHAUST FAN, COMBUSTION FAN, AND ELECTRIC PRE-HEAT). DISCONNECT SWITCHES SHALL BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
- 2. ALPHA CONTROLS TO FURNISH AND INSTALL ALL DDC CONTROLS; UNIT CONTROLLER, WALL MOUNTED SPACE/DUCT SENSORS SYSTEM SENSORS, RELAYS, TRANSFORMERS, WIRING, PROGRAMMING, GRAPHICS ETC. AS SHOWN IN SPECIFICATIONS, CONTROLS DIAGRAMS, AND POINTS LIST. UNIT TO BE TIED INTO EXISTING ALPHA CONTROLS BUILDING MANAGEMENT SYSTEM.
- 3. PROVIDE MANUFACTURER'S ROOF CURB, MINIMUM 18" TALL.
- 4. PROVIDE ROOF CURB ADAPTER TO BE MATED TO EXISTING CURB (THYBAR OR EQUAL), VERIFY EXISTING CURB DIMENSIONS IN FIELD.
- 5. UNIT TO HAVE MINIMUM VENTILATION QUANTITIES SET AS CALLED FOR DURING OCCUPIED HOURS. SET ECONOMIZER CHANGEOVER CONTROL TO LOWEST DEWPOINT (50 DEG. F.) POSSIBLE TO LIMIT MOISTURE CONTENT OF AIR ENTERING BUILDING.
- 6. PROVIDE DEEP SEAL TRAPPED CONDENSATE FROM DRAIN PAN CONNECTION TO ROOF.
- 7. UNIT TO HAVE FULL SIZE GAS CONNECTION WITH LINE SIZE VALVE, UNION AND DIRT LEG.
- 8. UNIT TO HAVE FULL SIZE FLEXIBLE DUCT CONNECTION AT UNIT WITH FULL SIZE SUPPLY AND RETURN DUCT CONNECTIONS WITH 1" DL AT DROPS.
- EXTERNAL STATIC PRESSURE DOES NOT INCLUDE FILTER, ECONOMIZER, OR UNIT PRESSURE DROPS.
   HVAC CONTRACTOR TO COORDINATE ALL FINAL SIZES WITH MANUFACTURER(S) PRIOR TO ORDERING
- 10. HVAC CONTRACTOR TO COORDINATE ALL FINAL SIZES WITH MANUFACTURER(S) PRIOR TO ORDERING, TO ASSURE PROPER USE AND SELECTION. CONTROL PACKAGES TO INCLUDE ALL NECESSARY RELAYS, DUCT SMOKE DETECTOR (BY E.C.), CONTACTORS, CONTROL CABINET/ PANELS, TRANSFORMERS, WIRING TERMINAL STRIP, WIRING DIAGRAMS, COMPLETE INSTALLATION DETAILS/MATERIAL LISTS/STARTUP AND CHECK OUT PROCEDURE FOR THE SYSTEM BY MANUFACTURER'S REP AND FACTORY CHECK OUT WITH WRITTEN ASSURANCE THAT THE SYSTEM IS OPERATING AND INSTALLED IN CONFORMANCE WITH MANUFACTURER'S REQUIREMENTS/RECOMMENDATIONS.

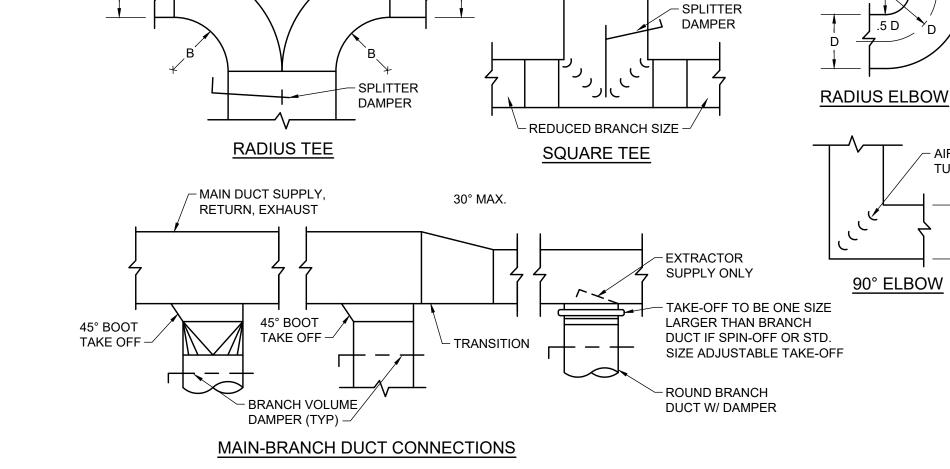
### CIRCULATING PUMP SCHEDULE:

- A. ACCEPTABLE MANUFACTURERS: BELL & GOSSET, GRUNDFOS. CONFIRM/VERIFY SIZE WITH MANUFACTURER FOR PROJECT USAGE/SIZING.
- B. HWP-1: SYSTEM LOOP PUMP, BASE MOUNTED END SUCTION, B & G MODEL 1.5AD SERIES E-1510, VOLTAGE 480-3-60, 1.5 HP, 88 GPM, 30' HD., 2" SUCTION, 1.5" DISCHARGE, 145T FRAME. PROVIDE WITH B&G MODEL 3DS-2S TRIPLE DUTY VALVE AND B&G MODEL DB-3X SUCTION DIFFUSER. MOTOR CONTROLLER BY ELECTRICAL CONTRACTOR. COORDINATE.
- B. HWP-2: SYSTEM LOOP PUMP, BASE MOUNTED END SUCTION, B & G MODEL 1.5AD SERIES E-1510, VOLTAGE 480-3-60, 1.5 HP, 88 GPM, 30' HD., 2" SUCTION, 1.5" DISCHARGE, 145T FRAME. PROVIDE WITH B&G MODEL 3DS-2S TRIPLE DUTY VALVE AND B&G MODEL DB-3X SUCTION DIFFUSER. MOTOR CONTROLLER BY ELECTRICAL CONTRACTOR, COORDINATE.
- C. CONTROLS CONTRACTOR SHALL RE RESPONSIBLE FOR PROVIDING ALL CONTROLS, PROGRAMMING, WIRING, ETC. REQUIRED TO TIE NEW PUMPS INTO EXISTING CONTROL SYSTEM.









BASE-MOUNTED CIRCULATING PUMP PIPING DETAIL

RETURN -

COUPLING

GUARD —

BASE MOUNTED CIRC. PUMP —

4" CONC. BASE

**EXISTING** 

VAV BOX DUCT CONNECTION DETAIL



THERMOMETER

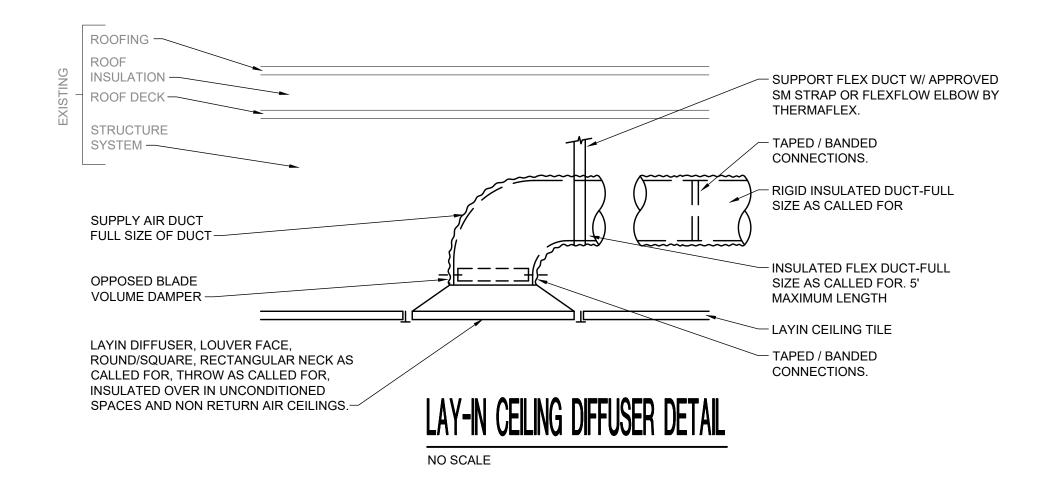
TRIPLE DUTY VALVE

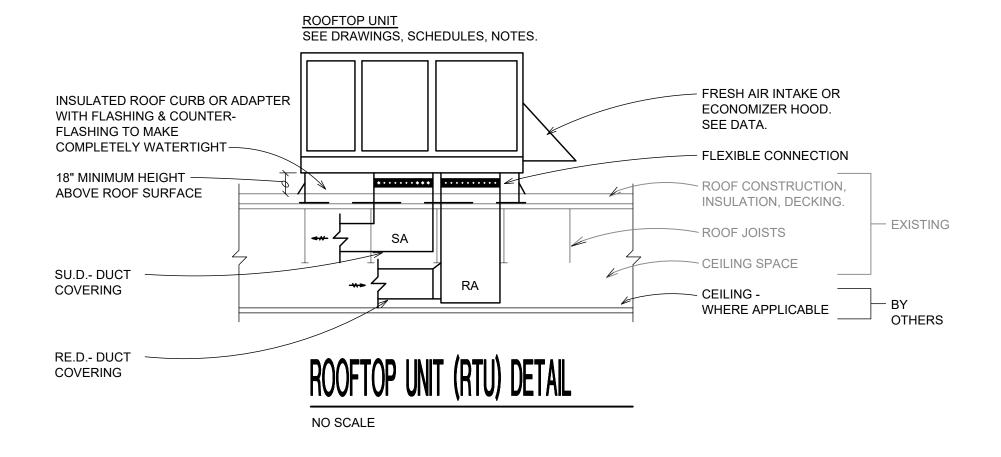
- PRESSURE GAUGE

CONNECTORS

SUCTION DIFFUSER

- MECHANICAL ROOM





HVAC REPLACEMENT PROJECT AT
JUVENILE DETENTION CENTER FOR
WINNEBAGO COUN
ROCKFORD, ILLINOIS

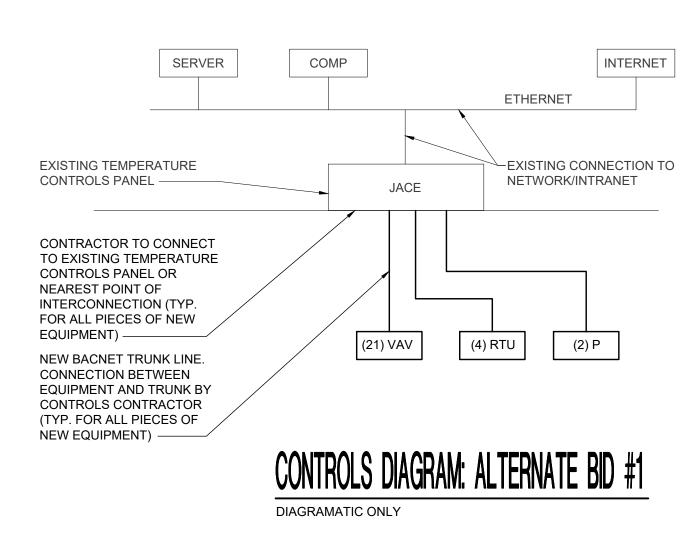
Heating

Coil APD

19.74

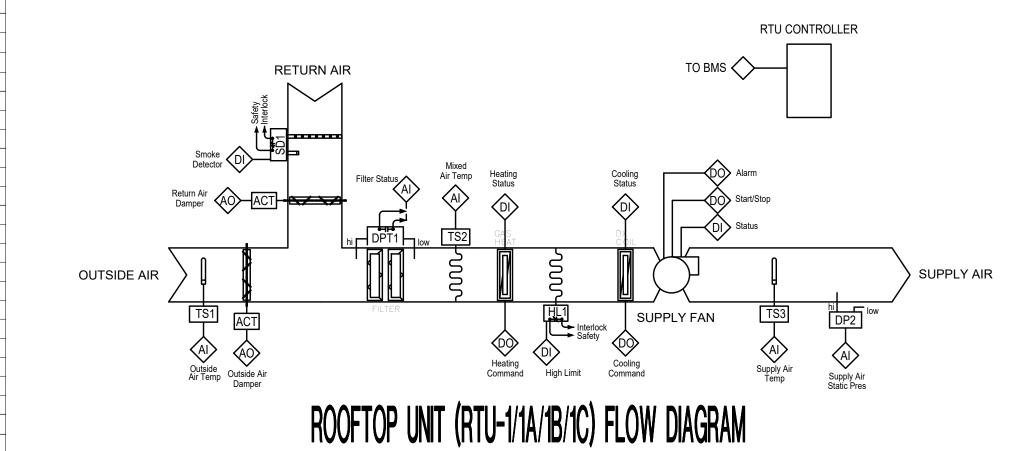
(ft H2O) NOTES

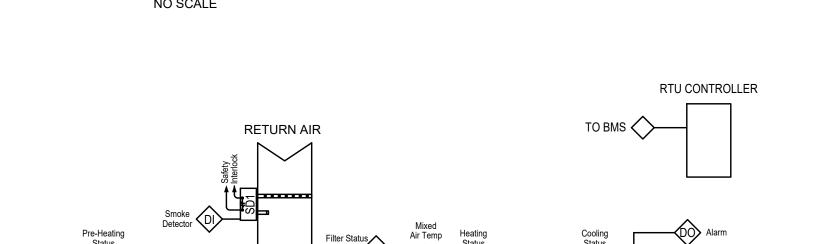
RICHARD L. JC



# MINIMUM CONTROLS POINTS LIST:

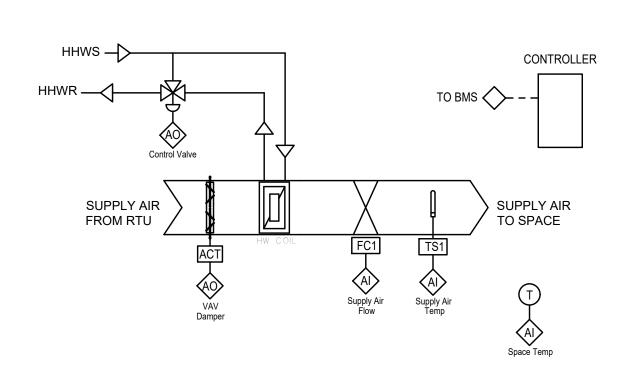
Rooftop Unit (RTU-1/1A/1B/1C) Outside Air Temperature	System Point Names OAT
Outside Air Damper Command	OaDmprCmd
Outside Air Damper Set Point	OaDmprStPt
Outside Air Damper Status	OaDmprSts
Return Air Damper Command	RaDmprCmd
Return Air Damper Set Point	RaDmprStPt
Return Air Damper Status	RaDmprSts
Smoke Alarm	SmkAlm
Filter Pressure Setpoint	FltrStPt
Filter Alarm	FltrAlm
Mixed Air Temperature	MAT
Heating Command	HtgCmd
Heating Status High Limit Alarm	HtgSts HighLimit
Cooling Command	ClgCmd
Cooling Status	ClgSts
Supply Fan Status	SFanSts
Supply Fan Command	SFanCmd
Supply Fan Alarm	SFanAlm
Supply Air Temperature Setpoint	SATStPt
Supply Air Temperature	SAT
Supply Air Static Pressure Setpoint	StaticStPt
Supply Air Static Pressure	Static
Economizer Set Point	EconStPt
Occupied Command	OccCmd
Unoccipied Command	UnOccCmd
Occupied Cooling Set Point	OccClgStPt
UnOccupied Cooling Set Point	UnOccClgStPt
Occupied Heating Set Point	OccHtgStPt
UnOccupied Heating Set Point	UnOccHtgStPt
	-
Rooftop Unit (RTU-2)	System Point Names
Outside Air Temperature	OAT
Outside Air Damper Command	OaDmprCmd
Outside Air Damper Set Point	OaDmprStPt
Outside Air Damper Status	OaDmprSts
Pre-Heating Command	PreHtgCmd
Pre-Heating Status	PreHtgSts
Return Air Damper Command	RaDmprCmd
Return Air Damper Set Point	RaDmprStPt
Return Air Damper Status	RaDmprSts
Smoke Alarm	SmkAlm FltrStPt
Filter Pressure Setpoint Filter Alarm	FltrAlm
Mixed Air Temperature	MAT
Heating Command	HtgCmd
Heating Status	HtgSts
High Limit Alarm	HighLimit
Cooling Command	ClgCmd
Cooling Status	ClgSts
Supply Fan Status	SFanSts
Supply Fan Command	SFanCmd
Supply Fan Alarm	SFanAlm
Supply Air Temperature Setpoint	SATStPt
Supply Air Temperature	SAT
Supply Air Static Pressure Setpoint	StaticStPt
Supply Air Static Pressure	Static
Economizer Set Point	EconStPt
Occupied Command	OccCmd
Unoccipied Command	UnOccCmd
Occupied Cooling Set Point	OccClgStPt
UnOccupied Cooling Set Point	UnOccClgStPt
Occupied Heating Set Point	OccHtgStPt
UnOccupied Heating Set Point	UnOccHtgStPt
Variable Air Volume Box (VAV)	System Point Names
Damper Command	DamperCmd
Damper Set Point	FlowStPt
Heating Command (HW Valve)	HtgCmd
Heating Status (HW Valve)	HtgSts
Supply Air Flow	Flow
Supply Air Temperature	SAT
Space Temperature	SpaceTemp
	OccCmd
Occupied Command	UnOccCmd
Occupied Command Unoccipied Command	Unoccoma
· · · · · · · · · · · · · · · · · · ·	OccHtgStPt
Unoccipied Command	
Unoccipied Command Occupied Heating Set Point	OccHtgStPt





SUPPLY FAN





TYPICAL VAV BOX FLOW DIAGRAM
NO SCALE



JOHNSON

RICHARD ASSOCIATES

April 25, 2023 MECHANICAL EC Diagrams AND DIAGRAMS AND A Proj 2022-053R



DESCRIPTION

MOUNTED

TYPICAL

VENT AIR DUCT

VOLUME DAMPER

VENT THRU ROOF

VENT GRILLE

VTR

NEW CONNECTION

OUTDOOR AIR DAMPER

OUTDOOR AIR

MECHANICAL CONTRACTOR

LPS | LOW PRESSURE STEAM SEE SPECIFICATIONS FOR ADDITIONAL ABBREVIATIONS, PREFIXES, SUFFIXES, ETC.

GENERAL CONTRACTOR

HVAC | HEATING, VENTILATING & AIR CONDITION.

FIRE DAMPER

HGBP HOT GAS BYPASS PIPING

**GAS PIPING** 

UP —

RK DESCRIPTION

ACCESS DOOR

ABOVE FINISH FLOOR

**AUTOMATIC ALUMINUM DAMPERS** 

AIR COOLED CONDENSING UNIT

ADJUSTABLE FLEXIBLE CONNECTION

(SEE SPECIFICATIONS FOR ADDITIONAL NOTES, SYMBOLS, ABBREVIATIONS, ETC.) = SUPPLY DUCT (SU.D.)  $\bigcirc$ = EXHAUST DUCT (EX.D.) = VENT DUCT (VE.D.) = OUTDOOR DUCT (OU.D.) = = SUPPLY CEILING DIFFUSER = SUPPLY REGISTER (SR) = SUFFIX (-W) = WALL MOUNT - CFM TYP. SUFFIX (-C) = CEILING MOUNT = RETURN REGISTER (RR) = SUFFIX (-F) = FLOOR MOUNT SUFFIX (-#) = TYPE AS SCHEDULED = EXHAUST REGISTER (ER) = ✓ = VENT REGISTER (VR) → = RETURN GRILLE (RG) = EXHAUST GRILLE (EG) = DOOR CUT-OFF (DCO); BY OTHERS DOOR VENT (DV); BY OTHERS **→** — = DUCT R=RISE, D=DROP WITH DIRECTION OF AIR FLOW = SUPPLY CEILING DIFFUSER (SCD) ARROW INDICATES DIRECTION OF AIR FLOW U.L. FIRE DAMPER - SHEET METAL SLEEVE AROUND DUCT IN WALL, ADJACENT ACCESS DOOR

ΧØ

= MANUAL VOLUME DAMPER - MUST BE ACCESSIBLE

MOTORIZED VOLUME DAMPER - MUST BE ACCESSIBLE = BRANCH DUCT TAKE-OFF WITH MANUAL VOLUME EXTRACTOR,

MUST BE ACCESSIBLE = ADJUSTABLE FLEXIBLE CONNECTION (AFC) BETWEEN DUCTS = ADJUSTABLE FLEXIBLE CONNECTION TO REGISTER, DIFFUSERS, ETC.

 $\wedge$   $\wedge$ = VANED ELBOW - SMACNA PLATE #22  $\wedge$   $\wedge$ = RADIUS ELBOW - SMACNA PLATE #21 LOW VELOCITY X/Y,  $N \times O$ 

= THERMOSTAT - ARROW INDICATES UNITS CONTROLLED, -G = WITH GUARD, 4'-0" FOR HANDICAP. = DUCT SIZE (1ST FIGURE SIDE SHOWN, 2ND FIGURE SIDE NOT SHOWN) BOTH SIDES REFER TO INSIDE DIMENSION, DIMENSIONS IN INCHES. DIAMETER, DIMENSIONS IN INCHES.

<u>EQUIPMENT</u>, <u>EQUIPMENT</u> = EQUIPMENT NOTE, DESIGNATION, OR ITEM.

# PRESENT EQUIPMENT AND DEMOLITION NOTES

A. THE FOLLOWING REMOVED PRESENT EQUIPMENT AND MATERIALS WHICH ARE IN GOOD OPERATING CONDITION (OR ARE PLACED IN GOOD CONDITION), SUITABLE, MEETING THE REQUIREMENTS OF THESE SPECIFICATIONS, AND ARE APPROVED IN WRITING BY ENGINEER, OR CALLED FOR MAY BE REUSED (PXR, PXN, AND PN). B. REMOVED DUCTWORK MUST NOT BE REUSED.

C. ANY OF ABOVE EQUIPMENT WHICH IS NOT REUSED AND FOLLOWING REMOVED PRESENT EQUIPMENT SHALL BECOME PROPERTY OF CONTRACTOR, AND SHALL BE REMOVED FROM PREMISES (PX). 1. EQUIPMENT SO DESIGNATED ON DRAWINGS.

C. CONTRACTOR SHALL: 1. PROVIDE NEW FLOORS UNDER REMOVED PRESENT EQUIPMENT AND WHERE CALLED FOR 2. REPAIR FLOORS UNDER AND WALLS ADJACENT TO REMOVED EQUIPMENT, TO

MATCH ADJACENT CONSTRUCTION. 3. FILL IN PRESENT CHASES WHICH ARE NO LONGER REQUIRED AND NEATLY PATCH TO MATCH ADJACENT CONSTRUCTION. 4. CUT OPENINGS REQUIRED FOR:

> A. HIS WORK: **B. ADMISSION OF NEW EQUIPMENT** C. REMOVAL OF PRESENT EQUIPMENT;

"PXR", AT NO INCREASE IN CONTRACT PRICE. VERIFY LOCATION.

OTHERWISE SPECIFIED OR DIRECTED BY ENGINEER.

D. NEW CONNECTION TO PRESENT CONSTRUCTION. 5. PATCH AND REPAIR UNUSED PRESENT HOLES AND OPENINGS, AND THOSE LEFT BY THE REMOVAL OF PRESENT EQUIPMENT AND ADMISSION OF NEW

6. PATCH AND REPAIR PRESENT EQUIPMENT, AND BUILDING CONSTRUCTION WHICH HAS NOT BEEN CUT, REMOVED, DISTURBED OR MARRED, AS REQUIRED, TO RESTORE IT TO ORIGINAL CONDITION BEFORE BEING DISTURBED. F. UNUSED OPENINGS IN EQUIPMENT, WALLS, CEILING, FLOOR, ETC. SHALL BE FILLED. G. PRESENT PAINTED CONSTRUCTION WHICH IS MARRED SHALL BE REPAIRED SAME AS NEW CONSTRUCTION.

H. CERTAIN ABBREVIATIONS OR SYMBOLS, WHEN APPLIED TO PRESENT (TO EXISTING) LINE. DEVICE OR EQUIPMENT. SHALL HAVE THE FOLLOWING MEANINGS: NEW CONNECTIONS TO PRESENT DUCTWORK, EQUIPMENT, PIPING, ETC.

INSTALL, TEST, COVER, PAINT, ETC., SAME AS NEW WORK. TO REMAIN UNCHANGED, IF CHANGE CANNOT BE AVOIDED, CHANGE "P" TO

TO BE COMPLETELY REMOVED, INCLUDING UNNEEDED CONNECTIONS, PIPING, DUCTS, WIRING, BASES, ETC., OF EVERY KIND. UNUSED OPENINGS PLUGGED OR CAPPED, TESTED, COVERED, PAINTED SAME AS NEW WORK. OTHER DISTURBED WORK OF EVERY KIND RESTORED, PATCHED, TESTED, COVERED, PAINTED, ETC., TO EQUAL ORIGINAL CONDITION. REMOVED MATERIAL MUST NOT BE REUSED UNLESS

SAME AS "PX", EXCEPT REMOVED, CLEANED AND RESTORED TO GOOD OPERATING CONDITION AND REINSTALLED, SAME AS NEW WORK, IN ORIGINAL POSITION, OR CLOSE TO ORIGINAL LOCATION. IF RECONDITIONING IS IMPRACTICAL, PROVIDE NEW DEVICE, AS APPROVED BY ENGINEER, AT NO INCREASE IN CONTRACT

REMOVED, CLEANED AND RESTORED TO GOOD OPERATING CONDITION AND REINSTALLED SAME AS NEW WORK, IN NEW POSITION MARKED "PN". IF RECONDITIONING IS IMPRACTICAL, PROVIDE NEW DEVICE, AS APPROVED BY ENGINEER, AT NO INCREASE IN CONTRACT PRICE. UNUSED OPENINGS PLUGGED OR CAPPED, TESTED, COVERED, PAINTED SAME AS EXISTING OR NEW WORK. OTHER DISTURBED WORK OF EVERY KIND RESTORED, PATCHED, TESTED, COVERED, PAINTED, ETC., EQUAL TO EXISTING OR NEW WORK.

COMPLETELY REINSTALL DEVICE AT NEW LOCATION TO EXISTING OR NEW DUCTWORK AS SHOWN, SAME AS NEW WORK. PROVIDE ALL NECESSARY DUCT OR PIPE EXTENSIONS AS REQUIRED.

I. WORK OF EVERY DIVISION SHALL BE COORDINATED WITH ALL OTHER WORK AND PRESENT CONDITIONS, SO THAT 1. ELECTRICAL SERVICES TO PRESENT BUILDINGS OR PORTIONS OF BUILDING WILL NOT BE INTERRUPTED DURING PERIODS WHEN THOSE SERVICES ARE NEEDED.

2 SPECIAL SYSTEMS SUCH AS FIRE ALARM, SOUND, ETC., OF EVERY KIND TO

PRESENT BUILDINGS WILL NOT BE INTERRUPTED DURING WORKING AND/OR OCCUPIED HOURS, EXCEPT AS APPROVED BY THE OWNER. J. DUCTWORK SERVING NEW AND/OR PRESENT MECHANICAL DEVICES IN FINISHED PRESENT ROOMS OR SPACES SHALL BE CONCEALED IN FINISHED ROOMS, WHERE POSSIBLE OR SHALL BE RUN IN ADJOINING UNFINISHED ROOMS, SHAFTS, CHAMBERS, CLOAK ROOMS, ETC., EXCEPT WHERE EXPOSED DUCT IS PERMITTED IN FINISHED PRESENT ROOMS BY ARCHITECT IN WRITING, PRESENT DIFFUSERS, GRILLS, REGISTERS, SWITCHES, ETC. SHALL BE REMOVED AS PER NOTE "PX" UNLESS ANOTHER SYMBOL IS SHOWN ON DRAWINGS OR THE DEVICES ARE SERVING OTHER EQUIPMENT. WHERE SPECIFICALLY APPROVED BY ARCHITECT IN WRITING, OPENINGS MAY BE PERMITTED TO REMAIN AND BE PROVIDED WITH NEAT FLUSH COVERS. EXTENDING OVER ENTIRE WALL OPENING.

K. UNNEEDED EQUIPMENT, DUCTWORK, ETC., SHALL BE COMPLETELY REMOVED; AND CONSTRUCTION PATCHED AS PER NOTE "PX". NEW CONNECTIONS TO PRESENT DUCTS/EQUIPMENT, SHALL BE MADE, TESTED, COVERED, PAINTED, ETC., SAME AS NEW EQUIPMENT. PRESENT EQUIPMENT, AND OTHER COVERING DISTURBED BY CONTRACTOR SHALL BE REPAIRED TO EQUAL NEW CONDITION AND PAINTED SAME AS NEW COVERING.

L. WORK SHALL BE COORDINATED SO THAT HEATING. PLUMBING. ELECTRICAL. INTERNET AND TELEPHONE SERVICES TO THE PRESENT BUILDING WILL NOT BE INTERRUPTED, EXCEPT AS APPROVED BY THE OWNER/ARCHITECT.

# MECHANICAL GENERAL NOTES:

DRAWINGS ARE GENERALLY DIAGRAMMATIC. EACH CONTRACTOR SHALL MAKE REQUIRED CHANGES FROM THE GENERAL ROUTING SHOWN ON THESE DRAWINGS SUCH AS OFF SETS, BENDS OR CHANGES IN ELEVATION DUE TO COORDINATION WITH THE WORK OF OTHER TRADES AND THE BUILDING CONSTRUCTION. ALL CHANGES SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER. FOR PRESENT CONSTRUCTION, VERIFY ALL EXISTING CONDITIONS PRIOR TO BIDDING TO AVOID CONFLICT. IT IS INTENDED THAT ALL EQUIPMENT, MATERIAL, DEVICES, ETC., SHALL BE LOCATED SYMMETRICALLY WITH THE ARCHITECTURAL ELEMENTS, NOTWITHSTANDING THE FACT THAT LOCATIONS INDICATED BY THESE DRAWINGS MAY BE DISTORTED FOR CLEARNESS OF PRESENTATION.

CONTRACTOR IS ALLOWED TO MAKE MINOR CHANGES TO THE PIPING TO AVOID FIELD CONFLICTS AT NO ADDITIONAL COST TO THE OWNER AND AS LONG AS THE RELOCATION DOES NOT AFFECT THE PERFORMANCE OF THE SYSTEM.

EACH CONTRACTOR SHALL CHECK DRAWINGS OF THE OTHER CONTRACTORS TO VERIFY SPACES IN WHICH THEIR WORK WILL BE INSTALLED IS CLEAR OF OBSTRUCTIONS. MAINTAIN MAXIMUM HEADROOM AND SPACE CONDITIONS AT ALL POINTS IN THE BUILDING. WHERE HEADROOM OR SPACE CONDITIONS APPEAR INADEQUATE, NOTIFY ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE INSTALLATION.

FURNISH ALL TRADES ADVANCE INFORMATION ON LOCATIONS AND SIZES OF PIPING, DUCTWORK, EQUIPMENT, FRAMES, BOXES, SLEEVES AND OPENINGS NEEDED FOR WORK, AND ALSO FURNISH INFORMATION AND SHOP DRAWINGS TO PERMIT TRADES AFFECTED TO INSTALL THEIR WORK PROPERLY AND WITHOUT DELAY.

WHERE THERE IS EVIDENCE THAT WORK OF ONE TRADE WILL INTERFERE WITH WORK OF OTHER TRADES, ALL TRADES SHALL ASSIST IN WORKING OUT SPACE CONDITIONS TO MAKE SATISFACTORY ADJUSTMENTS.

CONTRACTOR TO REVIEW, PRIOR TO BIDDING, ALL DRAWINGS TO COORDINATE VARIOUS WORK AS CALLED FOR. CONTRACTOR SHALL CAREFULLY CHECK ALL DRAWINGS FOR ALL TRADES, AND ANY LACK OF COORDINATION BETWEEN HIS WORK AND DRAWINGS FOR JOB CONDITIONS SHALL BE IMMEDIATELY REPORTED TO ARCHITECT.

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING, INCLUDING CORE DRILLING, SAW CUTTING, ETC., AS REQUIRED TO ACCOMMODATE HIS WORK. CUTTING AND PATCHING AND PAYMENT OF SAID WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR REQUIRING THE DISTURBANCE BUT SAME SHALL BE DONE BY A GENERAL CONTRACTOR. IT SHALL BE THE RESPONSIBILITY OF THE APPROPRIATE MECHANICAL CONTRACTOR TO GIVE QUANTITIES OF PATCHING REQUIREMENTS TO A GENERAL CONTRACTOR. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND REPLACEMENT OF PRESENT CEILINGS, LIGHT FIXTURES, DIFFUSERS, DUCTWORK, PIPING, CONDUIT, ETC., AS REQUIRED FOR THE INSTALLATION OF HIS WORK. REMOVAL, REPLACEMENT AND PAYMENT FOR MECHANICAL/ELECTRICAL ITEMS SHALL BE THE RESPONSIBILITY OF THE APPLICABLE MECHANICAL CONTRACTOR. REMOVAL AND REPLACEMENT OF PRESENT CEILINGS, ETC., SHALL BE THE RESPONSIBILITY OF CONTRACTOR MAKING THE DISTURBANCE BUT SAME SHALL BE DONE BY A GENERAL CONTRACTOR. IT SHALL BE THE RESPONSIBILITY OF THE APPROPRIATE MECHANICAL CONTRACTOR TO GIVE QUANTITIES OF REMOVAL/REPLACEMENT REQUIREMENTS TO A GENERAL CONTRACTOR.

- HEATING, VENTILATING, AIR CONDITIONING, AND ELECTRICAL DESIGNS ARE BASED ON THE REQUIREMENTS FOR THE SPECIFIED EQUIPMENT MANUFACTURER. BASED ON THE REQUIREMENTS FOR THE SPECIFIED EQUIPMENT MANUFACTURER. CONDUITS, DISCONNECTS, BREAKERS, FUSES, AND WIRE SIZES ARE SELECTED ON THE BASIS OF SPECIFIED EQUIPMENT MANUFACTURER. INCREASED CURRENT REQUIREMENTS NECESSITATING LARGER WIRE, BREAKERS, FUSES, SWITCHES, ETC. TO ACCOMMODATE ANY ALTERNATE OR SUBSTITUTE MANUFACTURER'S EQUIPMENT OTHER THAN AS SHOWN ON DRAWINGS OR SCHEDULES SHALL BE PROVIDED WITHOUT INCREASE IN CONTRACT PRICE BY THE CONTRACTOR FURNISHING EQUIPMENT. WIRE SIZES ARE SELECTED ON THE BASIS OF SPECIFIED EQUIPMENT.
- CONTRACTOR SHALL PROVIDE TRAPPED COOLING COIL CONDENSATE DRAIN LINES FROM ALL ROOFTOP
- 4. CONTRACTOR SHALL COORDINATE WITH GENERAL CONTRACTOR FOR ALL CEILING DIFFUSERS, REGISTERS, AND/OR GRILLES AS TO LOCATION. QUANTITIES AND PROPER TYPES FOR SURFACE MOUNT AND/OR LAY-IN SUSPENDED CEILINGS AND LIGHT PATTERNS. OPENINGS SHALL BE IN CENTER OF TILES OR AS DIRECTED BY
- CONTRACTOR SHALL INCLUDE IN HIS WORK THE RELOCATION OF ALL CROSS BRACING, AS REQUIRED TO FIT DUCTS BETWEEN JOISTS. THIS WORK SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR WITH
- 6. CONTRACTOR SHALL PROVIDE ALL DUCT DROPS AND OFFSETS TO AVOID INTERFERENCES WITH JOISTS, OTHER DUCTS, LIGHTS, PIPES, ETC.
- 7. ALL DUCTWORK TO BE HELD TIGHT TO STRUCTURAL ROOF JOISTS, BEAMS, ETC. AS CLEARANCE IS MINIMAL. COORDINATE WITH OTHER CONTRACTORS TO AVOID CONFLICT. ALL DUCTWORK IS ABOVE SUSPENDED CEILINGS, UNLESS NOTED OTHERWISE.
- SHEETMETAL DUCT SIZES MAY BE ALTERED TO FIT JOB CONDITIONS, BUT NET FREE AREAS MUST BE MAINTAINED. INCREASE SHEETMETAL DUCT SIZE TO ALLOW FOR DUCT LINING. INSULATE DUCTWORK AS
- 9. INSTALL 1" OF NON-SHRINK GROUT AROUND DUCTWORK ON EACH WALL FACE TO SEAL OPENINGS AND ELIMINATE SOUND TRANSFER WITH AIR-TIGHT CONNECTIONS.
- 10. OUTDOOR INTAKE SHEETMETAL DUCTWORK SHALL BE WATER-TIGHT WITH SOLDERED SEAMS. PITCH DUCTWORK TO WALL LOUVER AND SCREEN TO DRAIN ALL MOISTURE TO BUILDING EXTERIOR. INTAKES TO BE INSULATED. CAULK AROUND INTAKE AT EXTERIOR WALL, COORDINATE WITH GENERAL CONTRACTOR.
- 11. CONTRACTOR SHALL INCLUDE IN HIS WORK (1) SET OF FILTERS TO BE USED DURING CONSTRUCTION FOR ALL AIR HANDLING EQUIPMENT, FURNACES, ENERGY RECOVERY VENTILATORS, ROOFTOP UNITS, RETURN FANS, FILTER BOXES, FAN OPERATED VAV BOXES, ETC. CONTRACTOR PRIOR TO AIR BALANCING AND BUILDING OCCUPANCY SHALL INSTALL A COMPLETE SET OF CLEAN FILTERS. PROVIDE TO OWNER (1) COMPLETE SPARE/REPLACEMENT SET OF FILTERS FOR EACH PIECE OF EQUIPMENT. PROVIDE ALSO TO OWNER IN WRITING REPLACEMENT SIZES, TYPE, NUMBER PER EQUIPMENT, LOCATIONS, ETC.
- 12. UPON BALANCING, IF SYSTEM(S) CANNOT BE SUCCESSFULLY BALANCED AS AGREED BY OWNER/ARCHITECT/ENGINEER THEN ADDITIONAL DAMPERS, BELTS, SHEAVES, OR PULLEYS WILL BE INSTALLED TO PROVIDE PROPER AIR QUANTITIES, ACCEPTABLE SOUND LEVELS AND TEMPERATURE/ HUMIDITY REQUIREMENTS BY THE HVAC CONTRACTOR WITHOUT INCREASE IN CONTRACT PRICE WITHIN THE GUARANTEE PERIOD.
- 13. ALL THERMOSTATS LOCATED UP 4'-0" TO MEET ADA REQUIREMENTS WITH PLASTIC OR CAST GUARDS, AS SPECIFIED. ALL THERMOSTATS LOCATED ON EXTERIOR WALLS OR COLUMNS MUST BE MOUNTED ON THERMAL INSULATING BLOCKS.
- 14. PRESENT PAINTED CONSTRUCTION WHICH IS MARRED SHALL BE REPAINTED SAME AS NEW CONSTRUCTION.
- 15. THE USER OF THE DRAWINGS AGREES TO HOLD THE ENGINEER HARMLESS FOR ANY RESPONSIBILITY IN REGARD TO CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES AND FOR ANY SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK AND FURTHER SHALL HOLD THE ENGINEER HARMLESS FOR COST AND PROBLEMS ARISING FROM THE NEGLIGENCE OF THE CONTRACTOR. SUBCONTRACTOR, TRADESMEN OR WORKMEN. THE USE OF THESE DRAWINGS ALSO IMPLIES THAT THE ENGINEER SHALL TAKE NO RESPONSIBILITY FOR THE PLANNED USER'S FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE DRAWINGS OR CONTRACT DOCUMENTS.
- 16. SEE SPECIFICATIONS FOR ADDITIONAL NOTES, SYMBOLS, ABBREVIATIONS, PREFIXES AND SUFFIXES.

S YSTEMS ESIGN SERVICE

NEB.

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BASE

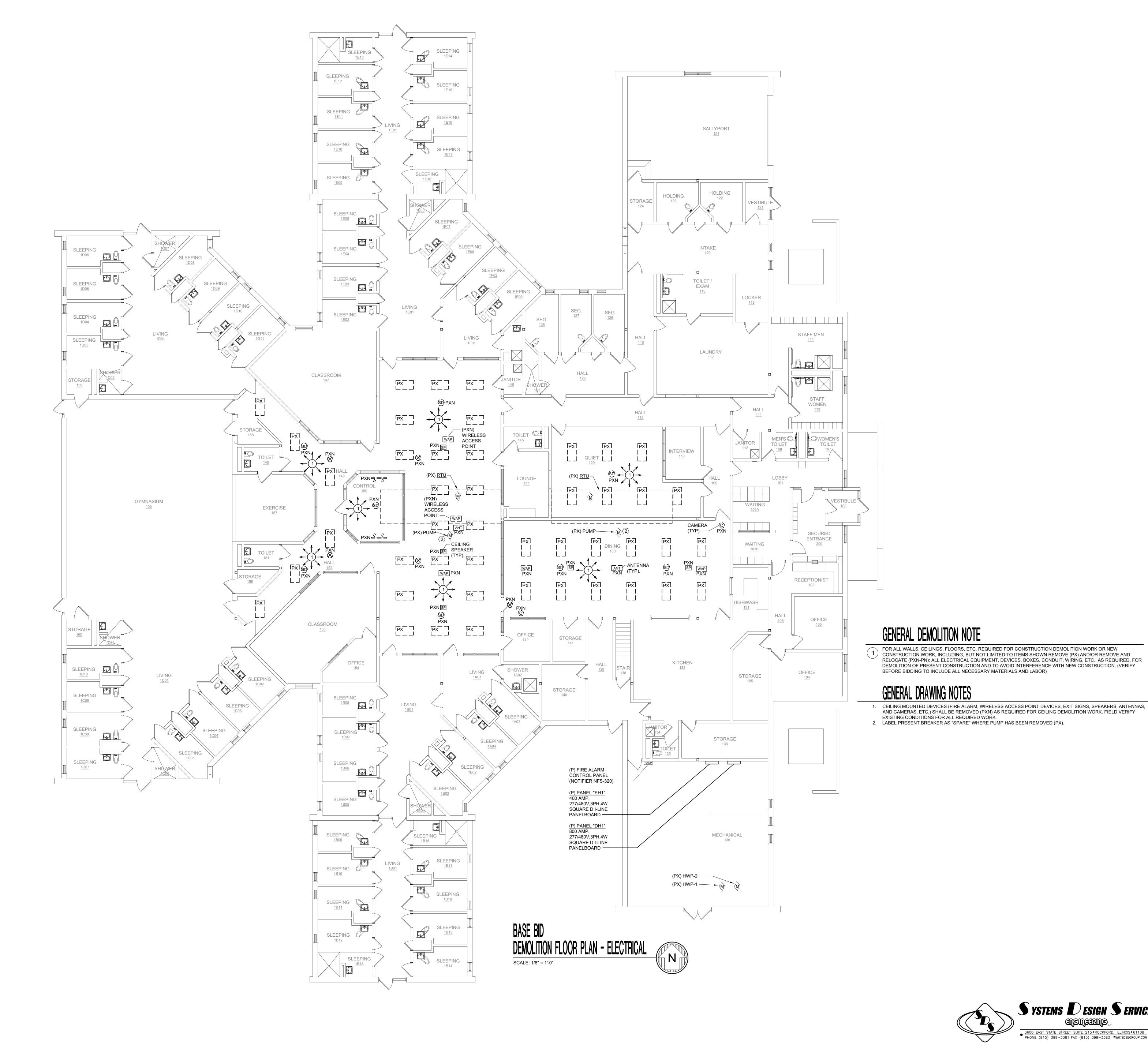
SHEET NUMBER

E101

SYSTEMS DESIGN SERVICE

GENERAL STATE STREET SUITE 215 • ROCKFORD, ILLINOIS • 61108

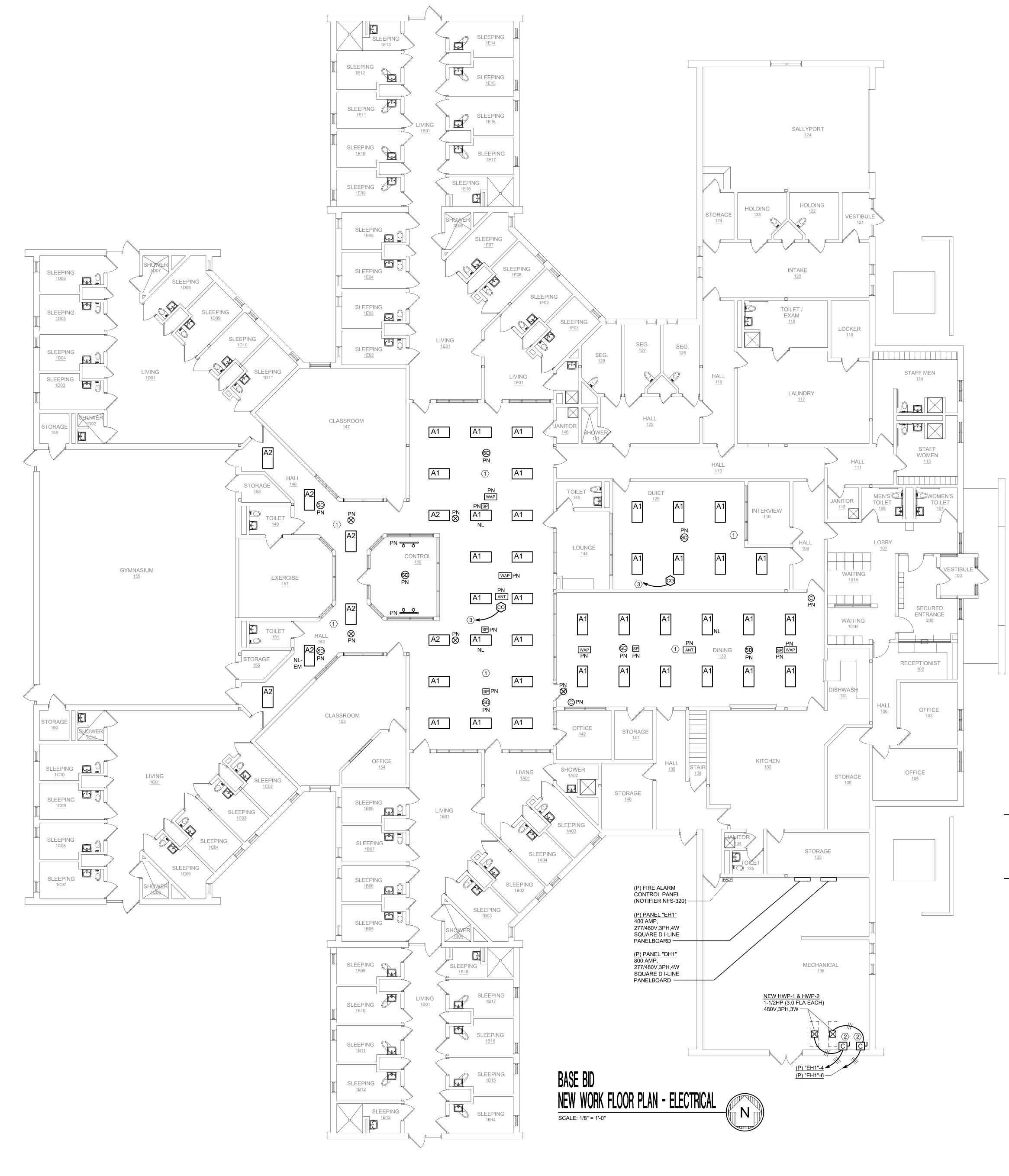
PHONE (815) 399–3381 FAX (815) 399–3383 WWW.SDSEGROUP.COM



SHEET NUMBER E102

SYSTEMS DESIGN SERVICE

GENERAL STREET SUITE 215 \* ROCKFORD, ILLINOIS \* 61108
PHONE (815) 399-3381 FAX (815) 399-3383 WWW.SDSEGROUP.COM



CEILING MOUNTED DEVICES (FIRE ALARM, WIRELESS ACCESS POINT DEVICES, EXIT SIGNS, SPEAKERS, ANTENNAS, AND CAMERAS, ETC.) SHALL BE REINSTALLED (PN) IN SAME LOCATION PRIOR TO CEILING DEMOLITION WORK.

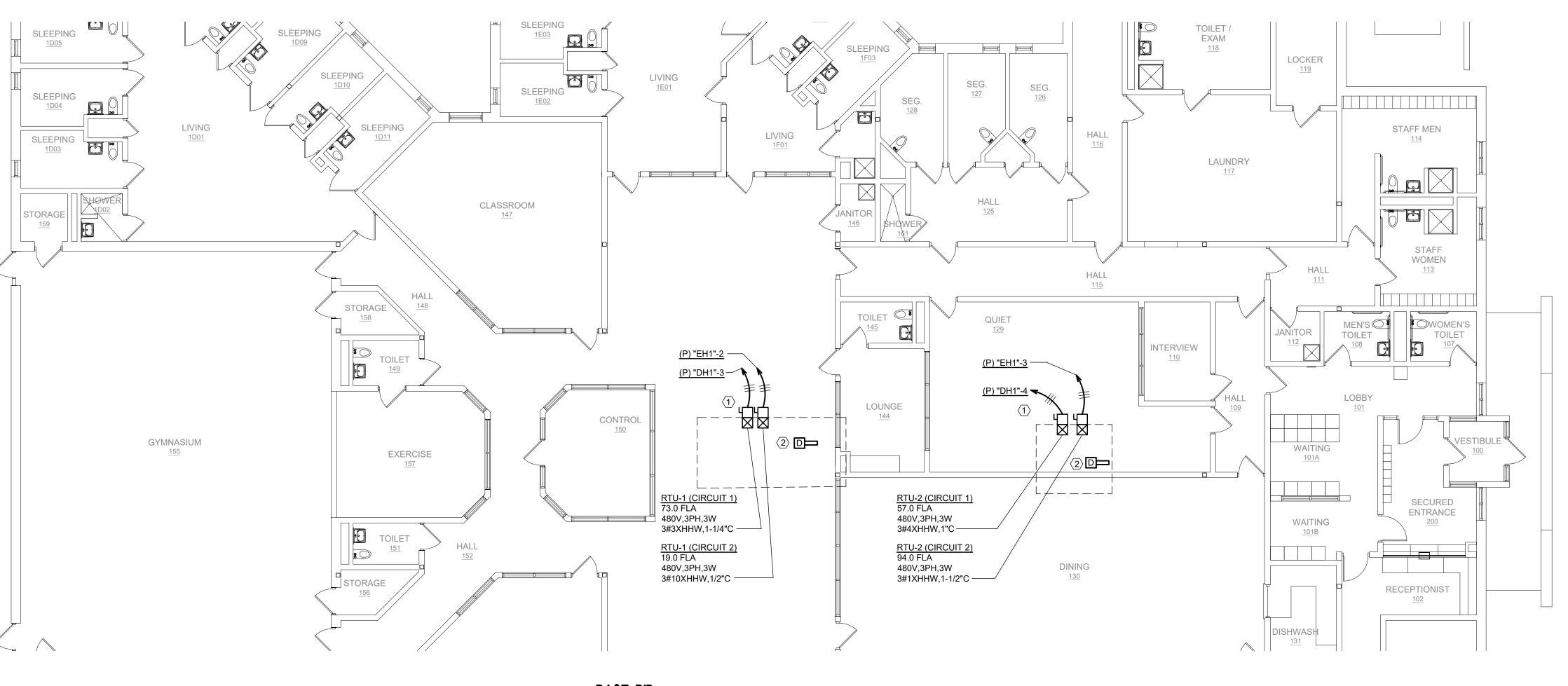
2. REWIRE RELOCATED (PXN-PN) DEVICES AS REQUIRED.

WIRE NEW FIXTURES TO PRESENT NORMAL / EMERGENCY BRANCH CIRCUIT AND LIGHTING CONTROLS CURRENTLY SERVING FIXTURES BEING REMOVED IN THIS AREA. FIELD VERIFY EXISTING CONDITIONS. (TYPICAL FOR ALL NEW FIXTURES).

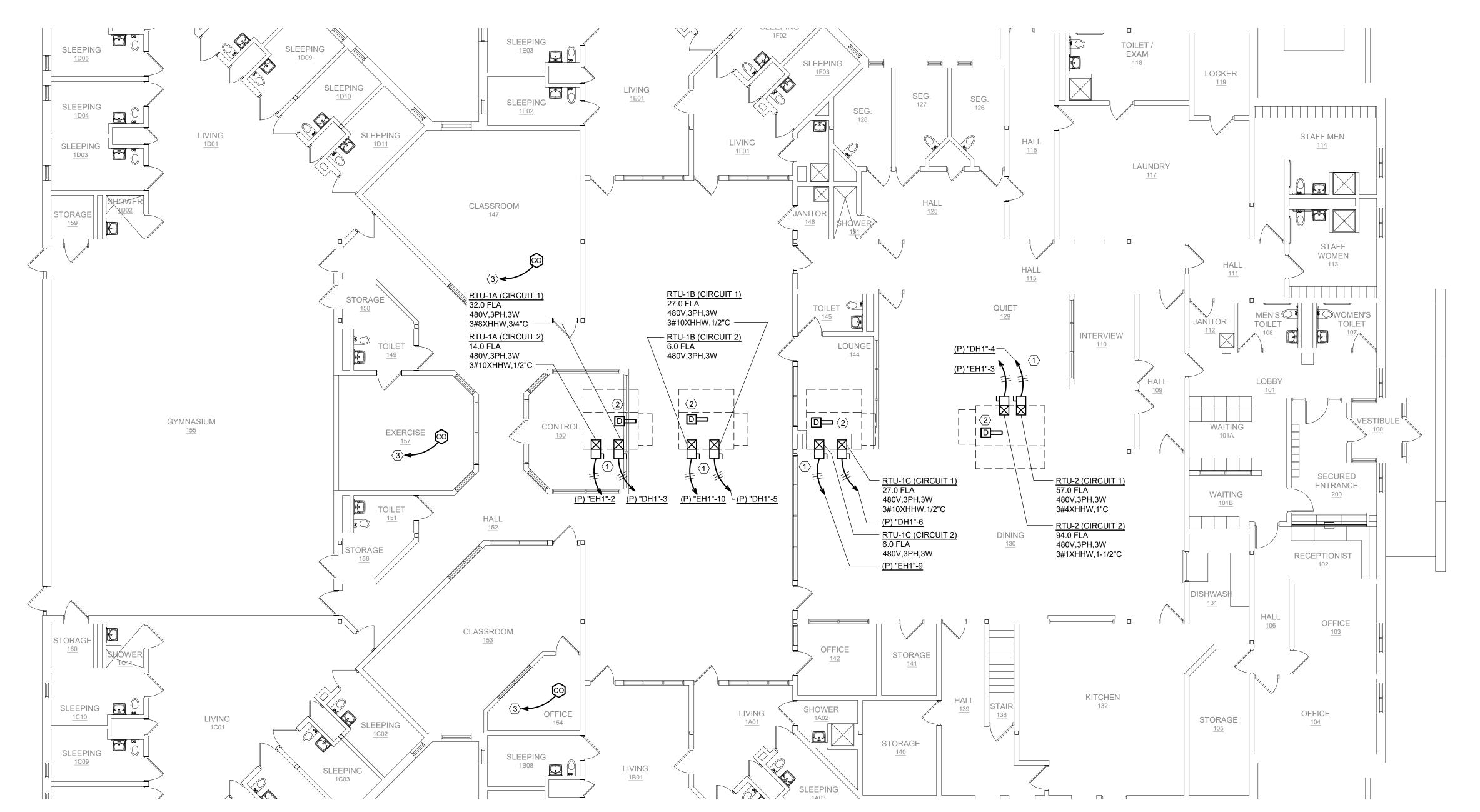
2. PROVIDE NEW MOTOR CONTROLLER (3 POSITION) FOR NEW PUMPS. COORDINATE LOCATION WITH EXISTING

3. WIRE NEW FIRE ALARM DEVICES TO PRESENT FACP. (TYPICAL FOR ALL NEW DEVICES).

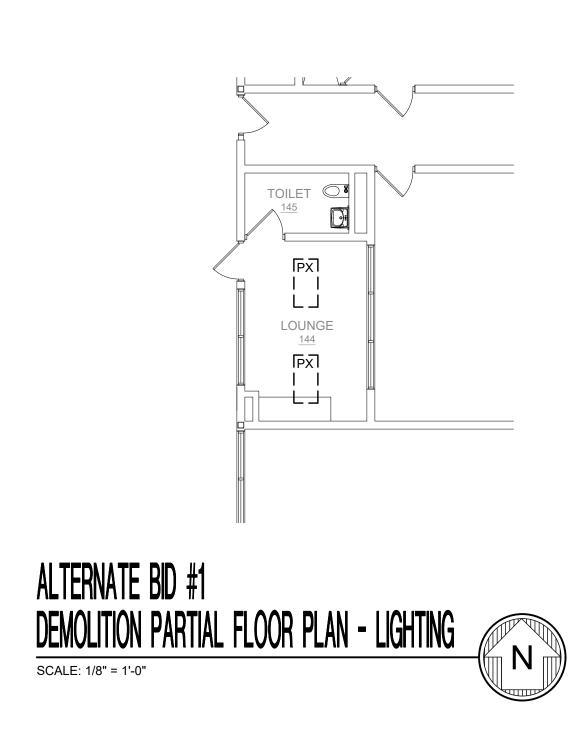
SHEET NUMBER E103

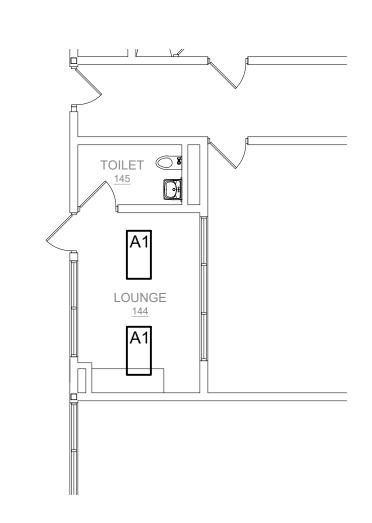












ALTERNATE BID #1 NEW WORK PARTIAL FLOOR PLAN - LIGHTING SCALE: 1/8" = 1'-0"



PROVIDE NEW WIRE FROM MOCP DEVICES IN PRESENT PANELS "DH1" AND "EH1" TO EACH NEW ROOF TOP UNIT. UTILIZE EXISTING CONDUITS IF IN ACCEPTABLE CONDITION.

2. WIRE NEW FIRE ALARM DEVICES TO PRESENT FACP. (TYPICAL FOR ALL NEW DEVICES). LOCATE REMOTE TEST STATIONS AS DIRECTED BY THE OWNER.



# PANEL SCHEDULES - ALTERNATE BID#1 (REVISED FOR NEW WORK)

		: SURFACE			VOLTAGE: PHASE: WIRE:	3	/277 V PH W					MAINS	RATING: IS TYPE: RATING: RATING:	M.BKR 800	A
СКТ	DESCRIPTION		TRIP	POLES	DEMAND	,	4	E	3		<del></del>	DEMAND	POLES	TRIP	DESCRIPTION
					CODE		•					CODE			
1	  (P) PANEL "EH1" (A	IT BID #1)	300	3	G G	54,003	49,138	52,936	47,971			G G	3	300	(P) TRANSFORMER 1
ı	(1)1711422 2111 (7)	L1. 010 #1)	300		G			32,330	77,571	55,269	50,021	G	-	300	(i ) induites entitle
					Н	8,857	15,777			00,200	00,021	Н			
3	NEW RTU-1A (CKT	1 COOL) ALT. #1	NEW	3	Н Н	3,331	10,777	8,857	15,777			Н Н	3	90	NEW RTU-2 (CKT 1 COOL) BASE BID
Ū	BID		45		Н			2,221	,	8,857	15,777	H	1		
					Н Н	7,473	7,473			-,		H			
5	NEW RTU-1B (CKT	1 COOL) ALT. #1	NEW	3	H	, -	, -	7,473	7,473			H	3		NEW RTU-1C (CKT 1 COOL) ALT. #1
	BID		35		H			,	,	7,473	7,473	Н	1	35	BID
7	SPACE												-		SPACE
9	SPACE												-		SPACE
11	SPACE												- -		SPACE
13	SPACE												-		SPACE
15	SPACE														SPACE
	1		I .	1	I	142,721	VA	140,487	VA	144,870	VA		ı	1	1
						1	1		<u> </u>		<u> </u>	1			
LOAD	CLASSIFICATION	DEMAND CODE	CC	ONNECTED	LOAD	DEMAND	FACTOR	DEM	AND						PANEL TOTALS
HVAC/	MECH	Н		118,740	VA	80.	0%	94,992	VA					T	OTAL CONN. LOAD: 428,078 VA
RECE	PTACLES	R		0	VA			0	VA					TO	TAL DEMAND LOAD: 404,330 VA
_IGHT	ING	LL		0	VA	125	.0%	0	VA						
GENE	RAL	G		309,338	VA	100	.0%	309,338	VA					TOTA	AL CONN. CURRENT: 515 A
KITCH	EN	K		0	VA	100	.0%	0	VA					TOTAL	DEMAND CURRENT: 486 A
ARGE	EST MOTOR	1 HP		0	VA	125	.0%	0	VA						

	LOCATION: SUPPLY FROM: MOUNTING: ENCLOSURE:	SURFACE	CAL		BID #1  VOLTAGE: PHASE: WIRE:	3	/277 V PH W					MAINS	RATING: IS TYPE: RATING: RATING:	M. 400	BKR. A	
СКТ	DESCRIPTION		TRIP	POLES	DEMAND	,	<b>A</b>	ı	3		c	DEMAND	POLES	TRIP	DESCRIPTION	
					G	15,503	3,875					Н				
1	(P) TRANSFORMER	T-2	90	3	G			14,436	3,875			Н	3	NEW 25	NEW RTU-1A (CKT 2 HTG) ALT. BID #	
					G					16,769	3,875	Н	1	23		
					Н	26,019	830					Н				
3	NEW RTU-2 (CKT 2 H	HTG)	125	3	Н			26,019	830			Н	3	20	NEW HWP-1	
					Н					26,019	830	Н	<u></u>			
					Н	1,148	830					Н				
5	(P) PMCP-3		20	3	Н			1,148	830			Н	3	20	NEW HWP-2	
					Н					1,148	830	Н				
					Н	1,148	1,330					Н				
7	(P) PMCP-4		20	3	Н			1,148	1,330			Н	3 20 (P) AIR C	(P) AIR COMPRESSOR		
					Н					1,148	1,330	Н				
	NEW RTU-1C (CKT 2 HTG) ALT. BID		NEW		Н	1,660	1,660					Н	1	NEW		
	#1	. 1116) ALI. BID	15	3	Н			1,660	1,660			Н	3 15	15	NEW RTU-1B (CKT 2 HTG) ALT. BID	
					Н					1,660	1,660	Н				
11	SPACE												-		SPACE	
13	SPACE												1		SPACE	
													1			
15	SPACE												4		SPACE	
			]			F4 000	11/4	F0 000	1/4	FF 000	1,70	<del> </del>			<u> </u>	
						54,003	I vA	52,936	VA	55,269	Į VA	1				
	CL ASSIEICATION	DEMAND CODE		NINICATO	21045	DEMAND	EACTOR	DEM	AND	1					DANIEL TOTAL C	
		DEMAND CODE		115,500			FACTOR	92,400	AND	1				-	PANEL TOTALS  OTAL CONN. LOAD: 162,208 VA	
	MECH PTACLES	Н			VA		.0%		VA	1					TAL DEMAND LOAD: 139,108 VA	
LIGHT!		R		0	VA		<u>-</u> 5.0%		VA	1				10	TAL DEMIAND LOAD: 108,100 VA	
GENE		G		46,708	VA		0.0%	46,708		1				TOT /	AL CONN. CURRENT: 196 A	
KITCH		K		0	VA		0.0%		VA	1					DEMAND CURRENT: 196 A  167 A	
	EST MOTOR	1 HP	-	0	VA		5.0%		VA	1				IOIAL	DEMAND CONNENT. 10/ A	

PANEL SCHEDULES	- BASE BID (REVISED	FOR NEW WOF	RK)	
SCALE: # = #RESENT PANEL:	"DH1" - REVISED FOR BASE BID	D		
LOCATION:	MECH/ELECTRICAL	VOLTAGE:	480 /277 V	
SUPPLY FROM:	UTILITY	PHASE:	3 PH	
MOUNTING:	SURFACE	WIRE:	4 W	

CONNECTED LOAD

303,530 VA

DEMAND FACTOR

80.0%

125.0%

100.0%

100.0%

125.0%

100.0%

125.0%

LOAD CLASSIFICATION DEMAND CODE

K

1 HP

HVAC/MECH

LIGHTING

GENERAL

KITCHEN

KITCHEN

LARGEST MOTOR

RECEPTACLES

LARGEST MOTOR

СКТ	DESCRIPTION	TRIP	POLES	DEMAND CODE	A	A	E	3	(		DEMAND CODE	POLES	TRIP	DESCRIPTION	С
				G	52,067	49,138					G				
1	(P) PANEL "EH1" (BASE BID)	300	3	G			51,000	47,971			G	3	300	(P) TRANSFORMER 1	
				G					53,333	50,021	G				퇶
				Н	20,206	15,777					Н				
3	NEW RTU-1 (CKT 1 COOL) BASE BID	90	3	Н			20,206	15,777			Н	3	90	NEW RTU-2 (CKT 1 COOL) BASE BID	
				Н					20,206	15,777	Н				1
_	00105													004.05	
5	SPACE													SPACE	
															$\dagger$
7	SPACE											-		SPACE	
															1
9	SPACE													SPACE	
															1
11	SPACE													SPACE	
															+
40	ODAOF													00405	
13	SPACE													SPACE	ı
															1
15	SPACE													SPACE	
. •															

DEMAND

86,359 VA

0 VA 303,530 VA

0 VA

0 VA 0 VA

A.I.C. RATING: EXST. MAINS TYPE: M.BKR

**PANEL TOTALS** 

TOTAL CONN. CURRENT:

TOTAL DEMAND CURRENT:

TOTAL DEMAND CURRENT:

TOTAL CONN. LOAD: 411,479 VA

TOTAL DEMAND LOAD: 389,889 VA

	LOCATION: MECH/ELI SUPPLY FROM: PANEL DH MOUNTING: SURFACE ENCLOSURE: NEMA 1	11			VOLTAGE: PHASE: WIRE:	3	/277 V PH W					MAIN MAINS I	RATING: S TYPE: RATING: RATING:		BKR. A	
СКТ	DESCRIPTION	т	RIP	POLES	DEMAND		A	ı	В	(	<del></del>	DEMAND	POLES	TRIP	DESCRIPTION	CH
1	(P) TRANSFORMER T-2		90	3	G G	15,503	5,259	14,436	5,259			H	3	NEW	NEW RTU-1 (CKT 2 HTG) BASE BID	
•					G			,	2, 22	16,769	5,259	Н	Ū	35		
					Н	26,019	830					Н				
3	NEW RTU-2 (CKT 2 HTG) BASE	BID	125	3	Н			26,019	830			Н	3	20	NEW HWP-1	
					Н					26,019	830	Н				
					Н	1,148	830					Н				
5	(P) PMCP-3		20	3	Н			1,148	830			Н	3	20	NEW HWP-2	
					Н					1,148	830	Н				
					Н	1,148	1,330					Н				
7	(P) PMCP-4		20	3	Н			1,148	1,330			Н	3	20	(P) AIR COMPRESSOR	
					Н					1,148	1,330	Н				
_																
9	SPACE														SPACE	,
11	SPACE														SPACE	
13	SPACE														SPACE	
																+
15	SPACE														SPACE	
						52,067	VA	51,000	VA	53,333	VA					
	T							ı		ı						
	CLASSIFICATION DEMAND	CODE		NNECTED			FACTOR	ļ	IAND						PANEL TOTALS	
	MECH H		1	109,692		80	.0%	87,754	1	-					OTAL CONN. LOAD: 156,400 VA	
	TACLES R			0	VA		-	<del> </del>	VA	-				ΤΟ	TAL DEMAND LOAD: 134,462 VA	
LIGHT				0 46,708	VA VA		5.0% 0.0%	46,708	VA	1				TOTA	I CONN CURRENT. 490 A	
GENE	RAL G			70,700	VA	100	7.U /0	+0,700	IVA	1				IUIA	AL CONN. CURRENT: 189 A	

0 VA

	ELECTRICAL SYMBOLS	
F1@#a  H  S  S  S  S  S  S  S  S  S  S  S  S	RECESSED CEILING FIXTURE ()=WALL WASHER) SURFACE OR PENDANT CEILING FIXTURE BRACKET FIXTURE RECESSED LED FIXTURE SURFACE OR PENDANT LED FIXTURE WALL LED FIXTURE (VERIFY HEIGHT) BRACKET EXIT LIGHT (VERIFY) CEILING EXIT LIGHT (VERIFY) LIGHT TRACK EXTERIOR POLE FIXTURE BOLLARD FIXTURE	NUMBER=CIRCUIT LETTER=SWITCH F1,F2,F3=FIXTURE SEE SPECIFICATIONS AND FIXTURE SCHEDULE
3 - \$\phi   4 - \$\phi   F - \$\phi   K - \$\phi   OS - \$\phi	BATTERY EMERGENCY FIXTURE (R=REMOTE HEAD SINGLE POLE SWITCH THREE WAY SWITCH FOUR WAY SWITCH SWITCH WITH PILOT LIGHT KEY OPERATED SWITCH OCCUPANCY SENSOR SWITCH (EQUAL TO LEVITON DECORA INFRARED ODS15-ID,UNO)	UP 4'-0", UNLESS NOTED OTHERWISE
	DIMMER CONTROL SWITCH SWITCH WITH GROUNDED DUPLEX RECEPTACLE REMOTE CONTROL SWITCH OR PUSH BUTTON GROUNDED DUPLEX RECEPTACLE GROUNDED DUPLEX RECEPTACLE MOUNTED ABO' GROUNDED DUPLEX GFCI RECEPTACLE GROUNDED DUPLEX GFCI RECEPTACLE MOUNTED GROUNDED CEILING MOUNTED RECEPTACLE SPECIAL GROUNDED RECEPTACLE, SIZE AND TYPE GROUNDED FLUSH FLOOR RECEPTACLE	) ABOVE COUNTER HEIGHT
—wm— PD/T	PLUGMOLD (VERIFY TYPE AND MOUNTING)  POWER, DATA AND TELEPHONE FLUSH FLOOR BOX PROVIDE EMPTY CONDUIT FOR DATA/TELEPHONE CEILING AS REQUIRED. SEE LOW VOLTAGE CONDU OUTLET WITH FINAL CONNECTIONS TO EQUIPMEN' FURNISHED BY OTHERS (FBO). PROVIDE NECESSA SAFETY SWITCH, WIRING ETC. FOR COMPLETE INS VERIFY EXACT LOCATION AND HEIGHT BEFORE RO	TO ABOVE SUSPENDED JIT SIZING TABLE. (VERIFY) T. EQUIPMENT IRY RECEPTACLE, STALLATION
	CEILING JUNCTION BOX WITH FLUSH COVER  WALL JUNCTION BOX  SAFETY SWITCH (F=FUSED)  SURFACE ELECTRICAL PANELBOARD  RECESSED ELECTRICAL PANELBOARD	
M R +T	MOTOR CONTROLLER CONTROL RELAY (LETTER=FLOOR, NUMBER=NO. O TRANSFORMER CONDUIT RUN CONCEALED (OR PARTIALLY	OF RELAY)
— X— — U—— — E——	CONCEALED) IN CEILINGS OR WALLS CONDUIT RUN CONCEALED IN OR UNDER FLOORS CONDUIT RUN EXPOSED, IN STRAIGHT LINES CONDUIT RUN UNDERGROUND EMERGENCY WIRING, IN CONDUIT, CONCEALED HOMERUN TO PANEL, IN CONDUIT, CONCEALED ARROWS INDICATE NUMBER OF CIRCUITS	CHARACTER MARKS= NUMBER OF WIRES, IF NONE ARE SHOWN TWO ARE REQUIRED
_T	TELEPHONE CONDUIT RUN ABOVE CEILINGS OR IN WALLS TELEPHONE CONDUIT RUN IN OR UNDER FLOORS	EMPTY CONDUIT, CONCEALED
<b>₽</b> ▼	SEE TELECOMM DETAILS FOR ADDITIONAL PEOLIPEMENTS	RPLATE AND 1" CONDUIT IN BOX PER SCHEDULE- G - W=WALL PHONE

# ELECTRICAL ABBREVIATIONS

NOTES: ELECTRICAL OUTLET BOXES INSTALLED IN FIRE RATED ASSEMBLIES

ELECTRICAL DEVICES INSTALLED IN ACCORDANCE WITH ADA

SPECIFICATIONS. VERIFY HEIGHTS AND SPECIFIC DIMENSIONS.

SHALL COMPLY WITH LATEST IBC, SECTION 712 (NOT LESS THAN 24" O.C.)

ELECTRICAL CONTRACTOR SHALL PROVIDE ALL NECESSARY LIGHTING

E.C. TO DETERMINE IF WALL OR CEILING OCCUPANCY DEVICE TYPE

IS REQUIRED BASED ON PROJECT DESIGN AND IDEAL USE OF DEVICE.

LOCATIONS OF THE CONTROL DEVICES REQUIRED FOR ENERGY CODE

CONTROLS AS TO COMPLY WITH LOCAL ENERGY CODE REQUIREMENTS.

ENERGY MANGAGEMENT PRODUCTS SHALL BE EQUAL TO SENSORSWITCH.

PROVIDE CONTROL DEVICE WITH SUITABLE FEATURES FOR INSTALLATION

AC	ABOVE COUNTER	JB	JUNCTION BOX
AFF	ABOVE FINISHED FLOOR	KW	KILOWATTS
ASC	ABOVE SUSPENDED CEILING	LTG	LIGHTING
С	CONDUIT	MAX	MAXIMUM
CF	CARPET FLANGE	MFG	MANUFACTURER
CTC	CLOSE TO CEILING	MIN	MINIMUM
CTF	CLOSE TO FLOOR	MOB	MOTOR OUTLET BOX
CTW	CLOSE TO WALL	MTD	MOUNTED
E	EMERGENCY	NEC	NATIONAL ELECTRICAL CODE
EDH	ELECTRIC DUCT HEATER	NL	NIGHT LIGHT
ESUH	ELECTRIC SUSPENDED UNIT	OS	OCCUPANCY SENSING DEVICE
	HEATER	PH	PHASE (Ø)
EWC	ELECTRIC WATER COOLER	PNL	PANEL
EWH	ELECTRIC WATER HEATER	SW	SWITCH
AAP	FIRE ALARM ANNUNCIATOR PANEL	TFA	TO FLOOR ABOVE
FACP	FIRE ALARM CONTROL PANEL	TFB	TO FLOOR BELOW
FBO	FURNISHED BY OTHERS	TTC	TELEPHONE TERMINAL CABINET
FFA	FROM FLOOR ABOVE	UNO	UNLESS NOTED OTHERWISE
FFB	FROM FLOOR BELOW	V	VOLTS
-LA	FULL LOAD AMPS	W	WIRE
GFI	GROUND FAULT INTERRUPTER	WP	WEATHER PROOF
HP	HORSEPOWER	WR	WEATHER RESISTANT
WS	IN WALL SPACE		

### PRESENT EQUIPMENT AND DEMOLITION NOTES

A. FOLLOWING REMOVED PRESENT EQUIPMENT AND MATERIALS WHICH ARE IN GOOD OPERATING CONDITION (OR ARE PLACED IN GOOD CONDITION), SUITABLE, MEET REQUIREMENTS OF THESE SPECIFICATIONS, AND ARE APPROVED IN WRITING BY ENGINEER, OR CALLED FOR MAY BE REUSED (PXN-PN). 1. LIGHTING FIXTURES

B. REMOVED PIPE AND WIRE MUST NOT BE REUSED.

C. ANY OF ABOVE EQUIPMENT WHICH IS NOT REUSED AND FOLLOWING REMOVED PRESENT EQUIPMENT SHALL BECOME PROPERTY OF CONTRACTOR, AND SHALL BE REMOVED FROM PREMISES BY HIM (PX). 1. EQUIPMENT SO DESIGNATED ON DRAWINGS.

D. FOLLOWING PRESENT EQUIPMENT SHALL BE CAREFULLY REMOVED, INTACT, MATCH MARKED, INSOFAR AS IS PRACTICAL, SHALL REMAIN PROPERTY OF OWNER, AND SHALL BE DELIVERED TO OWNER OUTSIDE OF BUILDING WHERE DIRECTED BY THE ENGINEER (PX-DO). 1. EQUIPMENT SO DESIGNATED ON DRAWINGS.

E. CONTRACTOR SHALL: 1. PROVIDE NEW FLOORS UNDER REMOVED PRESENT EQUIPMENT AND WHERE CALLED FOR 2. REPAIR FLOORS UNDER AND WALLS ADJACENT TO REMOVED EQUIPMENT, TO MATCH ADJACENT

3. FILL IN PRESENT CHASES WHICH ARE NO LONGER REQUIRED AND NEATLY PATCH TO MATCH

ADJACENT CONSTRUCTION. 4. CUT OPENINGS REQUIRED FOR:

BEING DISTURBED.

A. HIS WORK; B. ADMISSION OF NEW EQUIPMENT;

C. REMOVAL OF PRESENT EQUIPMENT; D. NEW CONNECTION TO PRESENT CONSTRUCTION.

5. PATCH AND REPAIR UNUSED PRESENT HOLES AND OPENINGS, AND THOSE LEFT BY THE REMOVAL OF PRESENT EQUIPMENT AND ADMISSION OF NEW EQUIPMENT.

6. PATCH AND REPAIR PRESENT EQUIPMENT, AND BUILDING CONSTRUCTION WHICH HAS NOT BEEN CUT. REMOVED, DISTURBED OR MARRED, AS REQUIRED, TO RESTORE IT TO ORIGINAL CONDITION BEFORE

F. UNUSED OPENINGS IN ENCLOSURES, IN CONDUITS, BOXES, CABINETS, AND PANELS SHALL BE FILLED. G. PRESENT PAINTED CONSTRUCTION WHICH IS MARRED SHALL BE REPAIRED SAME AS NEW CONSTRUCTION. H. CERTAIN ABBREVIATIONS OR SYMBOLS, WHEN APPLIED TO PRESENT (TO EXISTING) LINE, DEVICE OR

EQUIPMENT, SHALL HAVE THE FOLLOWING MEANINGS. NEW CONNECTIONS TO PRESENT PIPING, DEVICE WIRING, EQUIPMENT, ETC. INSTALL, TEST, COVER, PAINT, ETC., SAME AS NEW WORK.

TO REMAIN UNCHANGED, IF CHANGE CANNOT BE AVOIDED, CHANGE "P" TO "PXR", AT NO INCREASE IN CONTRACT PRICE. VERIFY LOCATION.

TO BE COMPLETELY REMOVED, INCLUDING UNNEEDED CONNECTIONS, PIPING, DUCTS, WIRING, BASES, ETC., OF EVERY KIND. UNUSED OPENINGS PLUGGED OR CAPPED, TESTED, COVERED, PAINTED SAME AS NEW WORK. OTHER DISTURBED WORK OF EVERY KIND RESTORED, PATCHED, TESTED, COVERED, PAINTED, ETC., TO EQUAL ORIGINAL CONDITION. REMOVED MATERIAL MUST NOT BE REUSED UNLESS OTHERWISE SPECIFIED OR DIRECTED BY ENGINEER.

SAME AS "PX", EXCEPT REMOVED, CLEANED AND RESTORED INTACT, AS FAR AS PRACTICAL, MATCHED MARKED, AND OTHERWISE IDENTIFIED AS REQUIRED AND DELIVERED TO OWNER OUTSIDE OF BUILDING AS DIRECTED BY ENGINEER.

SAME AS "PX", EXCEPT REMOVED, CLEANED AND RESTORED TO GOOD OPERATING CONDITION AND REINSTALLED, SAME AS NEW WORK, IN ORIGINAL POSITION. IF RECONDITIONING IS IMPRACTICAL, PROVIDE NEW DEVICE, AS APPROVED BY ENGINEER, AT NO INCREASE IN CONTRACT PRICE.

SAME AS "PXR" EXCEPT REMOVED, CLEANED AND RESTORED TO GOOD OPERATING CONDITION AND REINSTALLED SAME AS NEW WORK, IN NEW POSITION MARKED "PN". IF RECONDITIONING IS IMPRACTICAL, PROVIDE NEW DEVICE, AS APPROVED BY ENGINEER, AT NO INCREASE IN CONTRACT PRICE.

COMPLETELY REINSTALL DEVICE, LINE OR EQUIPMENT REMOVED, AT NEW LOCATION, SAME.

I. WORK OF EVERY DIVISION SHALL BE COORDINATED WITH ALL OTHER WORK AND PRESENT CONDITIONS, 1. ELECTRICAL SERVICES TO PRESENT BUILDINGS OR PORTIONS OF BUILDING WILL NOT BE INTERRUPTED DURING PERIODS WHEN THOSE SERVICES ARE NEEDED.

2. SPECIAL SYSTEMS SUCH AS FIRE ALARM, SOUND, ETC., OF EVERY KIND TO PRESENT BUILDINGS WILL NOT BE INTERRUPTED DURING WORKING AND/OR OCCUPIED HOURS, EXCEPT AS APPROVED BY

J. NEW CONDUIT SERVING NEW AND/OR PRESENT ELECTRICAL DEVICES IN FINISHED PRESENT ROOMS OR SPACES SHALL BE CONCEALED IN FINISHED ROOMS, WHERE POSSIBLE OR SHALL BE RUN IN ADJOINING UNFINISHED ROOMS, SHAFTS, STORAGE ROOMS, ETC., WHERE EXPOSED CONDUIT IS PERMITTED IN FINISHED PRESENT ROOMS BY ARCHITECT IN WRITING, IT SHALL BE WIREMOLD, WITH MATCHING BOXES RUN INCONSPICUOUSLY AS POSSIBLE, IN STRAIGHT LINES, PARALLEL TO WALLS AND CEILINGS, WITH NEAT BENDS, UNNEEDED BOXES, SWITCHES AND WIRING SHALL BE COMPLETELY REMOVED AND OPENINGS PATCHED. IN PRESENT ROOMS OR LOCATIONS WHERE NEW LIGHTING EQUIPMENT IS SHOWN. PRESENT FIXTURES, BOXES, WIRING, SWITCHES, ETC. SHALL BE REMOVED AS PER NOTE "PX" UNLESS ANOTHER SYMBOL IS SHOWN ON DRAWINGS. WHERE SPECIFICALLY APPROVED BY ARCHITECT IN WRITING, BOXES MAY BE PERMITTED TO REMAIN AND BE PROVIDED WITH NEAT FLUSH COVERS, EXTENDING OVER ENTIRE WALL OPENING.

K. UNNEEDED ELECTRICAL FIXTURES, SWITCHES, STARTERS, DEVICES, ETC., SHALL BE COMPLETELY REMOVED; AND CONSTRUCTION PATCHED AS PER NOTE "PX" NEW CONNECTIONS TO PRESENT EQUIPMENT, SHALL BE MADE, TESTED, COVERED, PAINTED, ETC., SAME AS NEW EQUIPMENT. PRESENT EQUIPMENT, AND OTHER COVERING DISTURBED BY CONTRACTOR SHALL BE REPAIRED TO EQUAL NEW CONDITION AND PAINTED SAME AS NEW COVERING.

L. WHERE DEVICES ARE OMITTED FROM PRESENT BRANCH CIRCUITS, THE REMAINING DEVICES, ON THE SAME CIRCUIT AND/OR CONDUIT RUN, SHALL BE REWIRED, IF NEEDED AND AS REQUIRED, TO REMAIN ON THEIR RESPECTIVE CIRCUITS AND IN OPERATING CONDITION.

M. LIGHTING FIXTURES WHICH ARE REUSED SHALL HAVE LENS AND REFLECTORS CLEANED. ALL FIXTURES SHALL BE PROVIDED WITH NEW LAMPS.

THE PRESENT BUILDING WILL NOT BE INTERRUPTED, EXCEPT AS APPROVED BY THE ARCHITECT.

N. WORK SHALL BE COORDINATED SO THAT HEATING, PLUMBING, ELECTRICAL, AND TELEPHONE SERVICES TO

### GENERAL NOTES APPLY TO ALL SHEETS

SEE DETAILS AND SCHEDULES ON DRAWINGS AND SPECIFICATIONS FOR MEANING OF ABBREVIATIONS AND ADDITIONAL REQUIREMENTS AND INFORMATION. CHECK ARCHITECTURAL, STRUCTURAL, AND OTHER MECHANICAL AND ELECTRICAL DRAWINGS FOR SCALE, SPACE LIMITATIONS, BEAMS, DOOR SWINGS, WINDOWS, COORDINATION, ADDITIONAL INFORMATION, ETC. AND REPORT ANY DESCREPANCIES, CONFLICTS, ETC. TO ARCHITECT PRIOR TO SUBMITTING BID.

ALL EQUIPMENT FURNISHED BY OTHERS (FBO) SHALL BE PROVIDED WITH PROPER MOTOR STARTERS, DISCONNECTS, CONTROLS, ETC. BY THE ELECTRICAL CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE. THE ELECTRICAL CONTRACTOR SHALL INSTALL AND COMPLETELY WIRE ALL ASSOCIATED EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S WIRING DIAGRAMS AND AS REQUIRED FOR A COMPLETE OPERATING INSTALLATION. ELECTRICAL CONTRACTOR SHALL VERIFY AND COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF (FBO) EQUIPMENT PRIOR TO ROUGH-IN OF CONDUIT AND WIRING TO AVOID CONFLICTS.

CONTRACTOR SHALL VERIFY FINAL LOCATIONS AND CEILING TYPES FOR ALL ELECTRICAL EQUIPMENT WITH ARCHITECTURAL REFLECTED CEILING PLAN AND ALL TRADES BEFORE ORDERING OR ROUGH-IN OF EQUIPMENT TO AVOID CONFLICTS.

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING, INCLUDING CORE DRILLING, SAW CUTTING. ETC.. AS REQUIRED TO ACCOMMODATE HIS WORK. CUTTING AND PATCHING AND PAYMENT OF SAID WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR REQUIRING THE DISTURBANCE BUT SAME SHALL BE DONE BY A GENERAL CONTRACTOR. IT SHALL BE THE RESPONSIBILITY OF THE APPROPRIATE ELECTRICAL CONTRACTOR TO GIVE QUANTITIES OF PATCHING REQUIREMENTS TO A GENERAL CONTRACTOR.

CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND REPLACEMENT OF PRESENT CEILINGS. LIGHT FIXTURES, DIFFUSERS, DUCTWORK, PIPING, CONDUIT, ETC., AS REQUIRED FOR THE INSTALLATION OF HIS WORK. REMOVAL, REPLACEMENT AND PAYMENT FOR MECHANICAL/PLUMBING ITEMS SHALL BE THE RESPONSIBILITY OF THE APPLICABLE ELECTRICAL CONTRACTOR. REMOVAL AND REPLACEMENT OF PRESENT CEILINGS, ETC., SHALL BE THE RESPONSIBILITY OF CONTRACTOR MAKING THE DISTURBANCE BUT SAME SHALL BE DONE BY A GENERAL CONTRACTOR. IT SHALL BE THE RESPONSIBILITY OF THE APPROPRIATE ELECTRICAL CONTRACTOR TO GIVE QUANTITIES OF REMOVAL/REPLACEMENT REQUIREMENTS TO A GENERAL CONTRACTOR.

ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR LEGALLY DISPOSING OF ALL FIXTURE BALLASTS AND LAMPS FROM THE OWNER'S PROPERTY. MANAGEMENT AND DISPOSAL OF FLUORESCENT LIGHT BULBS AND OTHER MERCURY-CONTAINING BULBS SHALL COMPLY WITH THE RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) UNIVERSAL WASTE RULE (UWR) AND SUBTITLE C HAZARDOUS WASTE REGULATIONS. REFER TO SPECIFICATIONS SECTION 017419 FOR ADDITIONAL INFORMATION.

# ELECTRICAL COORDINATION NOTE

THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS ASSOCIATED WITH ALL OTHER TRADES THAT INVOLVE THE ELECTRICAL CONTRACTOR TO PROVIDE POWER WIRING FOR DEVICES AND SYSTEMS PROVIDED BY OTHER TRADES. <u>ELECTRICAL CONTRACTOR</u> SHALL COORDINATE ALL ASPECTS OF WORK RELATED TO THESE SYSTEMS AND DEVICES PRIOR TO <u>SUBMITTING FINAL BID.</u> INCLUDE ALL NECESSARY LABOR AND MATERIALS ASSOCIATED WITH OTHER TRADES AS REQUIRED FOR COMPLETE OPERATIONAL SYSTEMS THAT REQUIRE THE ELECTRICAL CONTRACTOR TO WIRE.

FOR ALL WALLS, CEILINGS, FLOORS, ETC. REQUIRED FOR CONSTRUCTION DEMOLITION WORK OR NEW CONSTRUCTION WORK, INCLUDING, BUT NOT LIMITED TO ITEMS SHOWN REMOVE (PX) AND/OR REMOVE AND RELOCATE (PXN-PN): ALL ELECTRICAL EQUIPMENT, DEVICES, BOXES, CONDUIT, WIRING, ETC., AS REQUIRED, FOR DEMOLITION OF PRESENT CONSTRUCTION AND TO AVOID INTERFERENCE WITH NEW CONSTRUCTION. (VERIFY BEFORE BIDDING TO INCLUDE ALL NECESSARY MATERIALS AND

FIXTURE TYPE	LAMP SIZE AND TYPE	MOUNTING	MANUFACTURER'S NUMBER	REMARKS				
A1	80 CRI L.E.D., 4000K,	RECESSED	LITHONIA NO.	2' X 4' LED RECESSED EDGE-LIT FLAT PANEL WITH				
	4800 LUMENS	IN CEILING	EPANL-2X4-4800LM-80CRI-	SATIN WHITE ACRYLIC LENS, MULTI-VOLT, LED				
	(46 WATTS)	(VERIFY)	40K-MIN1-NLIGHT-MVOLT	0-10V DIMMING DRIVER, AND nlight OPTION.				
A2	80 CRI L.E.D., 4000K,	RECESSED	LITHONIA NO.	2' X 4' LED RECESSED EDGE-LIT FLAT PANEL WITH				
	6800 LUMENS	IN CEILING	EPANL-2X4-6800LM-80CRI-	SATIN WHITE ACRYLIC LENS, MULTI-VOLT, LED				
	(59 WATTS)	(VERIFY)	40K-MIN1-NLIGHT-MVOLT	0-10V DIMMING DRIVER, AND nlight OPTION.				

ALL FIXTURES SHALL INCLUDE THE REQUIRED COMPONENTS REQUIRED FOR LIGHTING CONTROLS. ALL RELATED DEVICES SHALL BE INCLUDED AS REQUIRED FOR A COMPLETE SYSTEM. E.C. TO COORDINATE WITH MANUFACTURER AS REQUIRED PRIOR

EMERGENCY BATTERIES SHALL PROVIDE A MINIMUM OF 90 MINUTES ILLUMINATION UPON POWER LOSS. ALL FIXTURE SELECTIONS AND FINISHES MUST BE APPROVED BY THE OWNER PRIOR TO ORDERING FIXTURES SPECIFIED ON

THIS SCHEDULE. ALL RECESSED LUMINAIRES SHALL BE COMPLETE WITH TRIM TYPE REQUIRED FOR CEILING SYSTEM BEING INSTALLED. PRIOR TO ORDERING, CONFIRM CEILING CONSTRUCTION DETAILS AND ARCHITECTURAL FINISH FOR EACH AREA AS REQUIRED FOR PROPER INSTALLATION AND SUPPORT FOR ALL FIXTURES BEING INSTALLED. PROVIDE ADDITIONAL ACCESSORIES/KITS FOR LUMINAIRES AS REQUIRED FOR PROPER INSTALLATION AND SUSPENSION IN CEILING SYSTEM DESIGN. INSTALL RECESSED LUMINAIRES USING ACCESSORIES AND FIRESTOPPING MATERIALS TO MEET REGULATORY REQUIREMENTS

ELECTRICAL CONTRACTOR SHALL KEEP INSULATION A MINIMUM OF 3" FROM ALL RECESSED CAN HOUSINGS AS REQUIRED FOR INSTALLATION. (IF APPLICABLE FOR THIS PROJECT). THE FIXTURE SCHEDULE DOES NOT NECESSARILY LIST ALL ACCESSORIES AND HARDWARE NECESSARY FOR THE COMPLETION OF INSTALLATION, NOR DOES IT DETAIL THE CEILING CONSTRUCTION TO BE ENCOUNTERED FOR THIS PROJECT. IT IS THE ELECTRICAL CONTRACTORS RESPONSIBILITY TO PROPERLY DETERMINE AND PROVIDE THE CORRECT COMPONENTS, ACCESSORIES AND HARDWARE AS REQUIRED FOR THE INSTALLATION. ALL ADDITIONAL HARDWARE FOR MOUNTING FIXTURES

# FIRE ALARM SYSTEM SYMBOLS

SHALL BE PROVIDED AT NO EXTRA COST.

FOR FIRE RATING, IF APPLICABLE FOR THIS PROJECT.

PRESENT FIRE ALARM CONTROL PANEL (NOTIFIER NFS-320)

FIRE ALARM SYSTEM WIRING IN CONDUIT, CONCEALED WHERE POSSIBLE

FIRE ALARM SYSTEM CEILING MOUNTED CARBON MONOXIDE (CO) DETECTOR. COORDINATE LOCATION WITH HVAC CONTRACTOR FOR SUPPLY DUCT LOCATION NEAREST TO ROOFTOP UNIT.

DUCT MOUNTED SMOKE DETECTOR. ALL LOCATIONS SHALL BE COORDINATE WITH HVAC CONTRACTOR. MOUNT TEST SWITCH IN EASILY ACCESSIBLE LOCATION. COORDINATE REMOTE TEST STATION LOCATION WITH THE OWNER.

FIRE ALARM SYSTEM SHALL BE INSTALLED AND WIRED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS AND WIRING DIAGRAMS. CONTRACTOR SHALL PROVIDE IN SHOP DRAWINGS THE FINAL WIRING SCHEMATIC & ZONE SCHEDULE & BATTERY CALC'S AS REQUIRED. E.C. TO VERIFY ALL LOCAL REQUIREMENTS WITH LOCAL AUTHORITY PRIOR TO SUBMITTING FINAL BID TO INCLUDE ALL NECESSARY MATERIALS REQUIRED FOR A COMPLETE SYSTEM. ELECTRICAL CONTRACTOR TO INCLUDE ALL NECESSARY LABOR AND MATERIALS REQUIRED FOR FIRE ALARM SYSTEM WORK. ALL LABOR AND MATERIALS SHALL BE INCLUDED IN FINAL BID . COORDINATE WITH THE LOCAL AUTHORITY PRIOR TO SUBMITTING FINAL BIDS TO INCLUDE ALL MATERIAL AND

ALL CANDELA INTENSITIES SHALL BE FIELD ADJUSTED PER NFPA 72 SECTION 7.5. (TYPICAL).

ALL NEW AND RELOCATED DEVICES SHALL MEET ALL NFPA AND A.D.A OPERATION AND MOUNTING REQUIREMENTS.

ELECTRICAL CONTRACTOR SHALL INCLUDE IN HIS FINAL BID ANY ADDITIONAL COMPONENTS REQUIRED FOR EXISTING AND NEW DEVICES TO BE TIED INTO THE FACP AS REQUIRED. ALL FIRE ALARM SYSTEM WORK SHALL BE FIELD VERIFIED AND ALL LABOR AND MATERIALS SHALL BE INCLUDED IN THE FINAL SUBMITTED BID.

S YSTEMS DESIGN SERVICE