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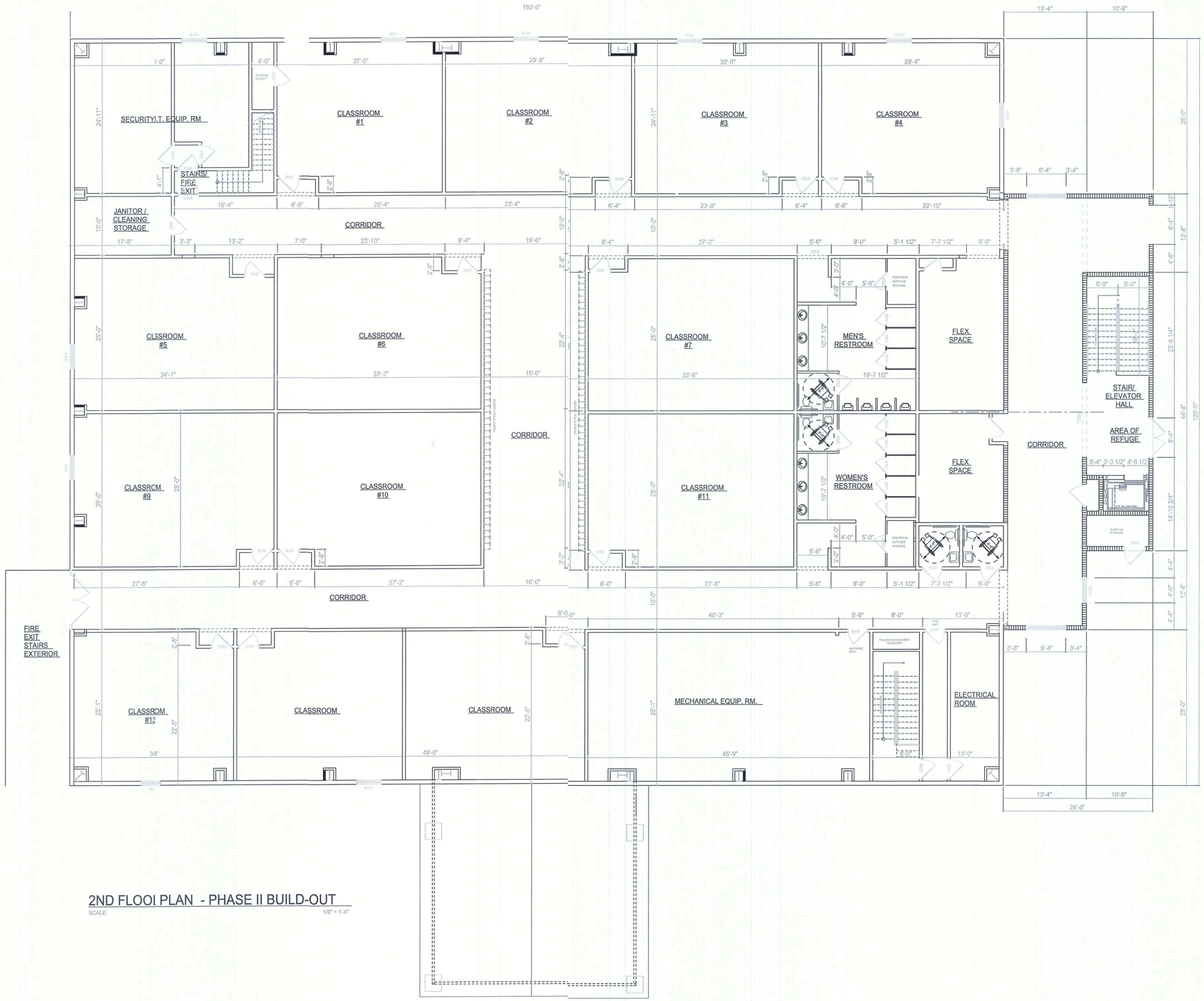

2ND FLOOI PLAN - PHASE II BUILD-OUT

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

REVISIONS
A Sept. 1 2020
A
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BELMONT ACADEMY FDN.
2ND FLOOR EXPANSION FOR
BELMONT ACADEMY CHARTER SCHOOL
1476 SW WALTER AVE, LAKE CITY, FLORIDA 32024

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CEGI PROJECT NO. 12-321

Celebrating 40 Years of Service 1972 - 2012 N.P. Geiser, Architect Emeritus

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SHEET NUMBER
A.4

ABBREVIATIONS

* NOTE: ABBREVIATIONS AND SYMBOLS CONTAINED HERE IT MAY OR MAY NOBE USED ON THIS PROJECT *

A		
	AFF	ABOVE FINISHED FLOOR
	AHU	AIR HANDLING UNIT
	ATMOS	ATOMSPHERE
B		
	BHP	BRAKE HORSEPOWER
	BTU	BRITISH THERMAL UNIT
	BS	BIRD SCREEN
C		
	CHWR	CHILLED WATER RETURN
	CHWS	CHILLED WATER SUPPLY
	COMP	COMPRESSOR
	CONC	CONCRETE
	CFM	CUBIC FEET PER MINUTE
	CEA	CONSULTING ENGINEERING ASSOCIATES
D		
	DET	DETAIL
	DIA	DIAMETER
	DIM	DIMENSION
	DB	DRY BULB
	DISCH	DISCHARGE
E		
	ELEV	ELEVATION
	ENGR	ENGINEER
	EAT	ENTERING AIR TEMPERATURE
	EWT	ENTERING WATER TEMPERATURE
	EQUIP	EQUIPMENT
	EF	EXHAUST FAN
	ESP	EXTERNAL STATIC PRESSURE
F		
	FV	FACE VELOCITY
	FT	FEET
	FPM	FEET PER MINUTE
	FLEX	FLEXIBLE
G		
	GPM	GALLONS PER MINUTE
H		
	HD	HEAD
	HTR	HEATER
	HP	HORSEPOWER
L		
	LAT	LEAVING AIR TEMPERATURE
	LWT	LEAVING WATER TEMPERATURE
M		
	MBH	1000 BTU PER HOUR
	MECH	MECHANICAL
	MEZZ	MEZZANINE
	MTD	MOUNTED
N		
	NTS	NOT TO SCALE
O		
	OA	OUTSIDE AIR
P		
	PVC	POLYVINYL CHLORIDE
	PSI	POUNDS PER SQUARE INCH
	PRESS	PRESSURE
	PD	PRESSURE DROP
Q		
	QTY	QUANTITY
R		
	RM	ROOM
	RA	RETURN AIR
	RPM	REVOLUTIONS PER MINUTE
S		
	SCH	SCHEDULE
	SHT	SHEET
	SPECS	SPECIFICATIONS
	SQ.FT.	SQUARE FEET
	STD	STANDARD
	SP	STATIC PRESSURE
	STR	STRAINER
	STRUCT	STRUCTURAL
	SA	SUPPLY AIR
T		
	TEMP	TEMPERATURE
	TH	THERMOMETER
	T	THERMOSTAT
	TSP	TOTAL STATIC PRESSURE
	TV	TURNING VANE
	TYP	TYPICAL
U		
	UL	UNDERWRITER'S LABORATORIES
V		
	VAV	VARIABLE AIR VOLUME BOX
	VD	VOLUME DAMPER
W		
	WB	WET BULB

SYMBOLS (CONTINUED)

T	TEMP SENSOR INSTALL 48" AFF IF WALL MOUNTED
V	2-WAY VALVE AND ACTUATOR
DO	HVAC CONTROL SYSTEM DIGITAL OUTPUT
DI	HVAC CONTROL SYSTEM DIGITAL INPUT
AO	HVAC CONTROL SYSTEM ANALOG OUTPUT
AI	HVAC CONTROL SYSTEM ANALOG INPUT

SYMBOLS

	NET INSIDE DIMENSION SIZE IN INCHES (PLAN DIM. FIRST)
	RADIUS TYPE ELBOW
	SQUARE TYPE ELBOW WITH TURNING VANES
	FLEXIBLE DUCTWORK
	MANUAL VOLUME DAMPER
	FIRE DAMPER
M	MOTORIZED DAMPER
SD	DUCT MOUNTED SMOKE DETECTOR, PROVIDED BY DIVISION 26, INSTALLED BY DIVISION 23. SEE ELECTRICAL PLANS FOR EXACT QUANTITY.
AM	AIRFLOW MONITORING STATION
VFD	VARIABLE FREQUENCY DRIVE
SP	STATIC PRESSURE SENSOR
DP	DIFFERENTIAL PRESSURE SENSOR
F	WATERFLOW MONITORING STATION
	SUPPLY AIR DEVICE
	RETURN AIR DEVICE
	EXHAUST AIR DEVICE
S-1	DENOTES DEVICE IDENTIFICATION
100	DENOTES CFM
6x6	DENOTES NECK SIZE
	VAV BOX
	ELECTRIC STRIP DUCT HEATER
	1" DOOR UNDERCUT
	SHUTOFF VALVE
	CHECK VALVE
	PRESSURE REDUCING VALVE
	THERMOMETER
	PRESSURE GAUGE
	SIGHT GLASS
	AUTOMATIC AIR VENT
	MANUAL AIR VALVE
	STRAINER
	CAP
	PLUG
	UNION
	GAUGE COCK

GENERAL NOTES

1. PLANS SHALL NOT BE SCALED. PLANS INDICATE THE SCHEMATIC LAYOUT AND LOCATION OF THE MECHANICAL SYSTEM COMPONENTS. UNLESS SPECIFIC DIMENSIONS ARE NOTED, THE ACTUAL LOCATION OF THESE COMPONENTS SHALL BE DETERMINED IN THE FIELD IN COORDINATION WITH THE WORK OF OTHER TRADES. THE USE OF MANUFACTURER'S SHOP DRAWINGS AND SIMILAR CERTIFIED DATA. THE ELEVATION OF EXPOSED DUCTWORK SHALL BE COORDINATED WITH THE ARCHITECT PRIOR TO ORDERING ANY DUCTWORK.

2. NO EXCLUSIONS FROM OR LIMITATIONS IN THE LANGUAGE USED IN THE CONTRACT DOCUMENTS SHALL BE INTERPRETED AS MEANING THAT THE EQUIPMENT, APPURTENANCES, AND/OR ACCESSORIES NECESSARY FOR A COMPLETE AND OPERATIONAL SYSTEM ARE NOT TO BE PROVIDED AS REQUIRED.

   THE CONTRACTOR SHALL HAVE A COMPLETE SET OF THE CONTRACT DOCUMENTS. THE SEPARATE DIVISIONAL DRAWINGS AND SPECIFICATIONS DO NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY TO PROVIDE THE WORK WHICH IS INDICATED ON ANY OF THE DRAWINGS OR DIVISION OF THE SPECIFICATIONS. REVIEW AND COORDINATE THE SCOPE OF WORK TO ASSURE A COMPLETE AND FUNCTIONAL SYSTEM IS INSTALLED.

3. THE DIMENSIONS AND CONDITIONS SHOWN ON THE CONTRACT DOCUMENTS ARE BASED ON AVAILABLE EXISTING INFORMATION. AFTER WALLS, SLABS, AND/OR CEILINGS ARE REMOVED, VERIFY EXISTING CONDITIONS AND DIMENSIONS TO ESTABLISH DUCT, PIPING AND EQUIPMENT CLEARANCES. NOTIFY THE ARCHITECT OF ANY DEVIATIONS FROM THE CONTRACT DOCUMENTS.

4. NOTIFY THE ARCHITECT OR HIS AUTHORIZED REPRESENTATIVE OF ANY DAMAGE TO THE EXISTING INSTALLATION BEFORE PROCEEDING WITH WORK.

5. SUBMIT SHOP DRAWINGS OF ALL EQUIPMENT AND MATERIALS FOR REVIEW. WHERE MANUFACTURERS ARE LISTED IN THE PROJECT MANUAL, ONE OF THOSE MANUFACTURERS SHALL BE PROVIDED UNLESS A REQUEST FOR SUBSTITUTION HAS BEEN SUBMITTED PRIOR TO BID AND THE MANUFACTURER SUBSEQUENTLY IS LISTED AS AN ACCEPTABLE MANUFACTURER IN AN ADDENDUM. PARTIAL SUBMITTALS WILL NOT BE ACCEPTED FOR REVIEW AND APPROVAL. INSTALL AND TEST ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. FOR ALL EQUIPMENT, WHICH HAS BEEN SCHEDULED DIRECTLY ON THE DRAWINGS, PROVIDE WITHIN THE SUBMITTAL, A PERFORMANCE SCHEDULE FOR THE PROPOSED EQUIPMENT IN THE EXACT SAME FORMAT AS INCLUDED ON THE CONTRACT DOCUMENTS. FAILURE TO PROVIDE REQUIRED PERFORMANCE SCHEDULE WILL RESULT IN REJECTION OF THE ENTIRE SUBMITTAL. SUBMIT DRAWINGS AND CUT SHEETS FOR ALL PRODUCTS ALL AT ONE TIME. INDEX ALL ITEMS TO THE PROJECT MANUAL OR DRAWINGS AS APPLICABLE. SHOP DRAWINGS THAT DEVIATE FROM THE REQUIREMENTS OF THE CONTRACT DOCUMENTS SHALL LIST ALL DIFFERENCES IN A COVER LETTER ATTACHED TO FRONT OF THE SUBMITTAL. ANY UNLISTED DEVIATIONS FOUND DURING REVIEW WILL RESULT IN THE REJECTION OF THE ENTIRE SUBMITTAL. FOR ITEMS REVIEWED AND MARKED "REJECTED" OR "REVISE AND RESUBMIT", ONLY ONE ADDITIONAL SUBMITTAL WILL BE REVIEWED TO VERIFY PRODUCT COMPLIANCE WITH THE CONTRACT DOCUMENTS. SHOULD FURTHER SUBMITTALS BE REQUIRED FOR THE DESIGN PROFESSIONAL TO VERIFY THE SUBMITTAL WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, THE HOURLY RATE OF $150.00 PLUS EXPENSES WILL BE BILLED TO THE CONTRACTOR FOR THE PROFESSIONAL(S) TIME IS SPENT ON THE REVIEW.

6. DUCTWORK, AIR DEVICES AND OTHER ITEMS OF THE AIR DISTRIBUTION SYSTEM SHALL BE SUPPORTED DIRECTLY FROM THE BUILDING STRUCTURE AND NOT FROM THE CEILING OR CEILING SUSPENSION SYSTEM. COORDINATE LOCATION OF AIR DEVICES AND LOUVERS WITH ELECTRICAL, ARCHITECTURAL, FIRE PROTECTION AND PLUMBING WORK. AIR DEVICES SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE FROM AT LEAST TWO POINTS.

7. ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF "SMACNA" DUCT CONSTRUCTION STANDARDS AND COMPLY WITH THE LATEST "NFPA" 90A REQUIREMENTS. ALL DUCTWORK SHALL BE LEAK TESTED IN ACCORDANCE WITH SMACNA AND ASHRAE STANDARDS, AND BE COMPLETED BY THE TEST AND BALANCE COMPANY. DUCTS WITH A LEAKAGE RATE MORE THAN 2% WILL BE REJECTED.

   FABRICATE DUCTWORK TO THE FOLLOWING DUCT PRESSURE CLASS:

DUCT PRESSURE CLASS	OPERATING PRESSURE
1/2" W.G.	UP TO 1/2" W.G.
1" W.G.	OVER 1/2" UP TO 1" W.G.
2" W.G.	OVER 1" UP TO 2" W.G.
3" W.G.	OVER 2" UP TO 3" W.G.

   DUCTWORK SHALL BE SEALED TO:

APPLICABLE DUCT PRESSURE CLASS	SEAL CLASS
2" W.G. AND BELOW	A
3" W.G.	A

8. ALL DUCT DIMENSIONS SHOWN ON DRAWINGS ARE CLEAR INSIDE DIMENSIONS.

9. SUPPLY, RETURN, EXHAUST, AND OUTSIDE AIR DUCTWORK SHALL BE GALVANIZED SHEET METAL. SEAL ALL DUCT JOINTS WITH HARDCAST. ALL SUPPLY, RETURN AND OUTSIDE AIR DUCTS SHALL BE INSULATED WITH BLANKET TYPE INSULATION WITH VAPOR BARRIER (MINIMUM INSTALLED R = 6.0). DUCT INSULATION SHALL BE LABELED AND MARKED AT REQUIRED INTERVALS AS REQUIRED BY THE FLORIDA BUILDING CODE. DUCTWORK WITHIN 6 FEET OF THE FLOOR IN MECHANICAL ROOMS SHALL BE INSULATED WITH ONE INCH THICK DUCTBOARD, MINIMUM R- VALUE = 6.0.

10. ALL VOLUME DAMPERS SHALL BE OPPOSED BLADE TYPE. PROVIDE ONE LONG PLASTIC STRIP OF MATERIAL FROM ALL DAMPER HANDLES TO ASSIST TEST AND BALANCE AGENCY IN IDENTIFYING ALL DAMPERS. IN AREAS WHERE THE FINAL DAMPER INSTALLATION PROHIBITS ACCESS FOR TEST AND BALANCE, PROVIDE BE POWER BALANCING DAMPERS AS MANUFACTURED BY UNITED ENERTECH. PROVIDE DAMPER, BATTERY PACK, JACKS AND CAT5 CABLE AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.

11. ALL DUCT ELBOWS SHALL INCLUDE AIR FLOW DIRECTIONAL VANES AS PER "SMACNA" DUCT CONSTRUCTION STANDARDS. SPLITTER VANES SHALL BE PROVIDED IN ALL ELBOWS AND DUCT OFFSETS WITH ANGLES BETWEEN 15 DEGREE AND 90 DEGREES AS PER FIG. 2-5 OF THE SMACNA MANUAL. 90 DEGREE ELBOWS SHALL HAVE TURNING VANES.

12. PROVIDE CONICAL SPIN-IN FITTINGS AT ALL CONNECTIONS OF ROUND SHEET METAL OR FLEXIBLE SUPPLY AIR DUCTS TO RIGID RECTANGULAR DUCT.

13. FLEXIBLE DUCTS SHALL BE FACTORY INSULATED (MINIMUM R-6) AND INCLUDE A VINYL VAPOR JACKET AND HELIX STEEL WIRE. "THERMAFLEX" TYPE M-KE OR APPROVED EQUAL. FLEXIBLE DUCT SHALL BE ATTACHED WITH THERMAFLEX STAINLESS STEEL SNAPLOCK CLAMPS. MAXIMUM LENGTH OF FLEXIBLE DUCT SHALL BE 6'-0". SUPPORT ELBOWS USING THERMAFLEX FLEXFLOW ELBOW.

14. SMOKE AND HIGH TEMPERATURE PROTECTION OF MECHANICAL AIR DISTRIBUTION SYSTEMS.

    a. DUCT MOUNTED SMOKE DETECTORS SHALL BE FURNISHED AND WIRED UNDER DIVISION 26 (ELECTRICAL) AT LOCATIONS INDICATED ON THE PLANS AND AS HEREIN SPECIFIED. DUCT DETECTORS SHALL COMPLY WITH UL 268A.

    b. MECHANICAL PLANS INDICATE THE APPROXIMATE LOCATION OF DUCT DETECTORS. ASSIST THE SMOKE DETECTOR INSTALLER IN LOCATING AND INSTALLING THE DETECTORS IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. WHEN RECOMMENDED CLEARANCES CAN NOT BE MAINTAINED, SIMULATE A SMOKE AIR FLOW TEST OF EACH DEVICE AND PROVIDE A COPY OF THE FIELD TEST TO THE OWNER'S REPRESENTATIVE.

    c. PROVIDE A MINIMUM 12" X 12" INSULATED AND DOUBLE GASKETED DUCT ACCESS DOOR ADJACENT TO EACH DUCT MOUNTED SMOKE DETECTOR TO FACILITATE INSPECTION OF DUCT DETECTOR TUBES. ACCESS DOOR SHALL NOT REQUIRE TOOLS TO BE OPENED.

15. PROVIDE P-TRAPS AS PER DETAIL AT ALL CONDENSATE DRAIN LINE CONNECTIONS. SLOPE DRAIN LINES TOWARD THE POINT OF DISCHARGE (MIN 1/8"/FOOT). INSULATE CONDENSATE DRAIN LINES WITH 3/4" THICK SEAMLESS CLOSED CELL RUBBER PIPE INSULATION. CONDENSATE DRAIN LINES TO BE PVC. LINES SHALL BE ONE DIAMETER LARGER THAN THE UNIT DRAIN CONNECTION, BUT NOT LESS THAN 3/4 INCH. PROVIDE CLEANOUTS AT ALL CHANGES OF DIRECTION. THE FOLLOWING MINIMUM PIPE SIZES SHALL BE USED:

EQUIPMENT CAPACITY	MINIMUM PIPE DIAMETER
UP TO 20 TONS	3/4"

16. PROVIDE FLEXIBLE CONNECTIONS BETWEEN ALL AIR MOVING APPARATUS AND DUCTWORK. RECOMMENDED WIDTH IS 4".

17. WHERE INDICATED ON DRAWINGS AND/OR EQUIPMENT SCHEDULES EXTERNAL STATIC PRESSURE IS DEFINED AS NOT INCLUDING LOSSES DUE TO UNIT MOUNTED FILTER(S), RETURN AIR PLENUM OR MIXING BOXES. THOSE LOSSES SHALL BE PART OF THE EQUIPMENT INTERNAL LOSSES SAME AS THOSE CAUSED BY COILS, CABINET, ETC.

18. ALL NEW EQUIPMENT (FANS, AIR HANDLERS, CONDENSING UNITS, ETC.) SHALL BE LABELED WITH PLASTIC SIGNS, LAMINATED, ENGRAVED: 1/8" THICK BLANKS FOR SIGNS SHALL BE A MINIMUM OF 1 3/4" HIGH, WITH 1" HIGH LETTERS. LENGTH OF THE SIGN SHALL BE THE SUM OF THE LETTERS/NUMBERS PLUS 3/4" EACH END. SIGNS DESIGNATED FOR INSTALLATION ON THE OUTSIDE, IN OPEN AREAS, OR LOCATED IN A PROTECTED AREA THAT IS SUBJECT TO DIRECT SUNLIGHT, SHALL BE UV RATED, DESIGNATED AND MANUFACTURED TO BE EXPOSED TO THE ELEMENTS. SUBMITTAL DATA INDICATING THE ABOVE WILL BE REQUIRED. LABELS SHALL ALSO INCLUDE THE ROOM NUMBER, CORRESPONDING AIR HANDLER LOCATION OR AREA SERVED TO ASSIST IN THE DETERMINATION OF THE SERVICE LOCATION OF SAID EQUIPMENT. PROVIDE ADDITIONAL NAMEPLATE ON CEILING GRID DIRECTLY BELOW EQUIPMENT CONCEALED ABOVE CEILINGS TO AID IN LOCATING THE UNIT. NAMEPLATE DESIGNATION SHALL CONSIST OF UNIT NUMBER.

19. ALL WALL MOUNTED TEMPERATURE AND HUMIDITY SENSORS SHALL BE INSTALLED AT A CENTER LINE ELEVATION OF 4'-0" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED ON DRAWINGS. LOCATION OF THE WALL MOUNTED THERMOSTAT SHALL BE COORDINATED WITH THE OTHER TRADES FOR A NEAT APPEARANCE. FINAL LOCATION OF THERMOSTAT SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT OR HIS REPRESENTATIVE IN THE FIELD. WHEN SENSOR IS INSTALLED ON EXTERIOR WALLS, PROVIDE AN INSULATED SUB-BASE.

20. PROVIDE CLEAR PLASTIC VENTILATED COVERS WITH KEY OPERATED LOCK OVER ALL THERMOSTATS AND HUMIDISTATS. FURNISH TWO SETS OF KEYS TO THE OWNER.

21. RETAIN THE SERVICES OF A NEBB AND/OR AABC CERTIFIED TEST AND BALANCE AGENCY TO PERFORM FINAL TESTING AND BALANCING OF ALL HVAC SYSTEMS. RECORD ALL DATA ON STANDARD "AABC" OR OTHER APPROVED FORMS AND SUBMIT TO THE ARCHITECT FOR REVIEW.

22. EQUIPMENT SERVICE ACCESS

    PROVIDE ADEQUATE SERVICE SPACE AROUND AIR HANDLING UNITS, VARIABLE VOLUME BOXES, ELECTRIC DUCT HEATERS AND THE PULL SIDE OF FILTERS, OR AS REQUIRED BY THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

    SERVICE AREA SHALL BE CLEAR OF DUCTS, PIPES, CONDUITS, WALL STUDS, CEILING HANGERS, AND ANY OTHER CONSTRUCTION APPURTENANCE.

23. PROVIDE A MANUAL AND A MOTORIZED DAMPER (120 VOLT) IN ALL OUTDOOR AIR INTAKE DUCTS. MOTORIZED DAMPER SHALL BE WIRED TO OPEN AFTER A ONE HOUR DELAY (ADJUSTABLE) WHEN AIR HANDLER IS ENERGIZED AND TO CLOSE WHENEVER AIR HANDLER IS DE-ENERGIZED, OR AS DETAILED IN THE CONTROLS DRAWINGS AND SEQUENCE OF OPERATION. ALL EXHAUST AIR FANS IN THE SAME ZONE AS THE AIR HANDLER SHALL BE INTERLOCKED WITH THE MOTORIZED DAMPER SUCH THAT THE EXHAUST FAN'S OPERATION IS PROHIBITED IF THE OUTSIDE AIR DAMPER IS CLOSED. REFER TO CONTROL SECTIONS FOR FURTHER REQUIREMENTS AND SCHEDULING. THE MANUAL DAMPER IN THE OUTSIDE AIR INTAKE DUCT SHALL BE USED FOR BALANCING THE OUTDOOR AIR FLOW. 120 VOLT POWER FOR MOTORIZED DAMPER TO BE PROVIDED BY DIVISION 26.

24. ADEQUATE MEANS OF PROTECTION FOR ALL UTILITIES SHALL BE PROVIDED AND, IF UTILITIES ARE DAMAGED DURING WORKING OPERATIONS, SUCH SHALL BE REPAIRED TO THE SATISFACTION OF THE OWNER, AT NO COST TO THE CONTRACT.

25. ACCESS PANELS THAT MAY BE REQUIRED FOR INSPECTION OF DUCTWORK, PIPING, DUCT MOUNTED DEVICES OR PIPE MOUNTED DEVICES SHALL BE PROVIDED AND ADEQUATELY SIZED. REFER TO THE ARCHITECTURAL CONTRACT DOCUMENTS FOR DOOR SPECIFICATIONS.

26. ALL DUCTWORK SHALL BE STORED IN CLEAN AREAS. PROTECT ALL DUCTWORK FROM DUST AND DEBRIS WHILE IT IS STORED ON SITE. WHILE UNDER CONSTRUCTION, ALL INSTALLED DUCTWORK SHALL BE TEMPORARILY SEALED WITH VISQUEEN PRIOR TO TEST AND BALANCE IN ORDER TO LIMIT ACCUMULATION OF CONSTRUCTION DUST INSIDE THE DUCTWORK SYSTEM. IF EITHER OF THESE PROCEDURES IS NOT CONDUCTED, THE ENTIRE ASSOCIATED DUCTWORK SYSTEM AND MECHANICAL EQUIPMENT SHALL BE CLEANED TO THE OWNER'S SATISFACTION.

27. SYSTEMS SHALL BE MAINTAINED IN ACCORDANCE WITH ASHRAE STANDARD 180-2018 - STANDARD PRACTICE FOR INSPECTION AND MAINTENANCE OF COMMERCIAL BUILDING HVAC SYSTEMS.

CODE CRITERIA

NOTE:
ALL CODES AND STANDARDS SHALL COMPLY WITH THE FLORIDA STATUES 69A-3.012 AND THE STATE FIRE MARSHALL'S RULE. THIS LIST IS NOT INCLUSIVE OF ALL CODES AND STANDARDS THAT MAY OR MAY NOT APPLY TO THIS PROJECT.

*FLORIDA BUILDING CODE (FBC), FIFTH EDITION (2017) - ALL SECTIONS
*FLORIDA BUILDING CODE (FBC), FIFTH EDITION (2017) ENERGY CONSERVATION SOFTWARE: ENERGY GAUGE SUMMIT VERSION 6.00
*FLORIDA FIRE PREVENTION CODE 2017
*FLORIDA BUILDING CODE (FBC), FIFTH EDITION (2017) ACCESSIBILITY - 2012 FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION
*AMERICANS WITH DISABILITIES ACT (ADA) STANDARDS FOR ACCESSIBLE DESIGN (2010)

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA):
*NFPA-70 (2014) NATIONAL ELECTRICAL CODE
*NFPA-72 (2013) NATIONAL FIRE ALARM CODE
*NFPA-90A (2015) STANDARD FOR THE INSTALLATION OF AIR-CONDITIONING AND VENTILATING SYSTEMS
*NFPA-90B (2015) STANDARD FOR THE INSTALLATION OF WARM AIR HEATING AND AIR-CONDITIONING SYSTEMS

AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS, INC. (ASHRAE):
*ASHRAE GUIDELINE 4-2008 - PREPARATION OF OPERATING AND MAINTENANCE DOCUMENTATION FOR BUILDING SYSTEMS
*ASHRAE STANDARD 62.1-2019 AND APPROVED ADDENDA - VENTILATION FOR ACCEPTABLE INDOOR AIR QUALITY
*ASHRAE STANDARD 90.1-2013 - ENERGY STANDARD FOR BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS
*ASHRAE STANDARD 126-2016 - METHOD OF TESTING HVAC AIR DUCTS
*ASHRAE STANDARD 180-2012 - STANDARD PRACTICE FOR INSPECTION AND MAINTENANCE OF COMMERCIAL BUILDING HVAC SYSTEMS

HVAC DESIGN CRITERIA

LOCATION:	OUTDOOR °F TEMP DB/WB		SUMMER INDOOR TEMP °F DB/WB	WINTER INDOOR TEMP °F DB
	SUMMER	WINTER		
LAKE CITY, FLORIDA	94/79	29	75/63	70

LOAD CRITERIA (OVERALL VALUES)	
FLOOR INSULATION	R-0
WALL INSULATION	R-13
ROOF INSULATION	R-25
WINDOW TYPE	U-0.5, SC=0.5

COORDINATION DRAWINGS

PRIOR TO INSTALLATION AND FABRICATION OF HVAC WORK, CONTRACTOR SHALL SUBMIT DETAILED COORDINATION DRAWINGS AT 1/4" = 1'-0" SCALE. DRAWINGS ARE TO INCLUDE, BUT NOT NECESSARILY BE LIMITED TO, THE FOLLOWING ITEMS:

1. DETAILED SHEET METAL DRAWINGS INDICATING ALL DUCTWORK, VOLUME DAMPERS, ACCESS DOORS, GRILLES, REGISTERS AND DIFFUSERS, AIR HANDLING EQUIPMENT, PENETRATIONS THROUGH WALLS, ETC.

2. DETAILED STRUCTURAL, LIGHTING, AND PLUMBING DRAWINGS INDICATING ALL PIPING (SANITARY, VENT, DOMESTIC WATER) LOCATIONS OF PLUMBING EQUIPMENT (INCLUDING EQUIPMENT FURNISHED BY OWNER), VENTS THROUGH ROOF, ACCESS DOORS, CLEANOUTS, ETC.

3. THESE DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO COMMENCEMENT OF WORK FOR CHECKING FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS. THESE DRAWINGS ARE NOT TO BE CONFUSED WITH SHOP DRAWINGS. THEY ARE NOT SHOP DRAWINGS. THEY ARE A TOOL TO AIDE THE CONTRACTORS IN THE INSTALLATION OF THEIR SYSTEMS.

4. AFTER COORDINATION DRAWINGS ARE COMPLETED AND REVIEWED BY A/E, ANY ADDITIONAL WORK REQUIRED IN ANY OF THESE TRADES TO PROVIDE SYSTEMS THAT DO NOT CONFLICT WITH EACH OTHER OR WITH ARCHITECTURAL AND STRUCTURAL WORK SHALL BE PROVIDED BY THE CONTRACTOR AT NO COST TO THE OWNER.

NOTES

1. THE NOTES SHOWN ON THIS SHEET APPLY TO GENERAL CONDITIONS OF HEATING, VENTILATING AND AIR CONDITIONING WORK REQUIRED FOR THIS PROJECT.

2. SPECIFICATIONS, PROJECT MANUALS AND DRAWINGS, REFER TO THIS SHEET FOR APPLICABLE REFERENCES.

3. THE DESIGN DRAWINGS OF ALL CATEGORIES AND TRADES (ARCHITECTURAL, STRUCTURAL, PLUMBING, MECHANICAL, HEATING, VENTILATING AND AIR CONDITIONING AND ELECTRICAL) AND ALL SPECIFICATIONS AND SHOP DRAWINGS MUST BE COORDINATED AND BE VIEWED IN CONNECTION AND CONJUNCTION WITH EACH OTHER TO INSURE THE PROPER LOCATION OF ALL DEVICES AND EQUIPMENT. MAKE PARTICULAR NOTE OF LOCATIONS AND DIMENSIONS SHOWN ON THE ARCHITECTURAL FLOOR PLANS AND ELEVATIONS.

4. TO THE BEST OF THE ENGINEER'S KNOWLEDGE, THE PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE MINIMUM BUILDING CODES AND THE APPLICABLE FIRE-SAFETY STANDARDS AS DETERMINED BY THE LOCAL AUTHORITY IN ACCORDANCE WITH SECTION 105.13.4.4 OF THE FLORIDA BUILDING CODE AND 633 FLORIDA STATUTES.

DRAWING INDEX

REVISIONS

BELMONT ACADEMY FOR:
2ND FLOOR EXPANSION FOR
BELMONT ACADEMY CHARTER SCHOOL
1476 SW WALTER AVE, LAKE CITY, FLORIDA 32024

John W. Wells, III, Florida Professional Engineer, License No. 49347. This item as been electronically signed and sealed by John W. Wells, III, PE o the date indicated in the Certificate using a Digital Signature. Printed copies of its document are not considered signedand sealed and the signature must beverified on any electronic copies.

SIGNATURE DATE
JOHN WELLS, III, PE
PE 0049347

John Willam Wells, III
2020.10.02 12:40:
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Celebrating 40 Years of Service
1972 - 2012
N.P. Gesler, Architect AR0007005

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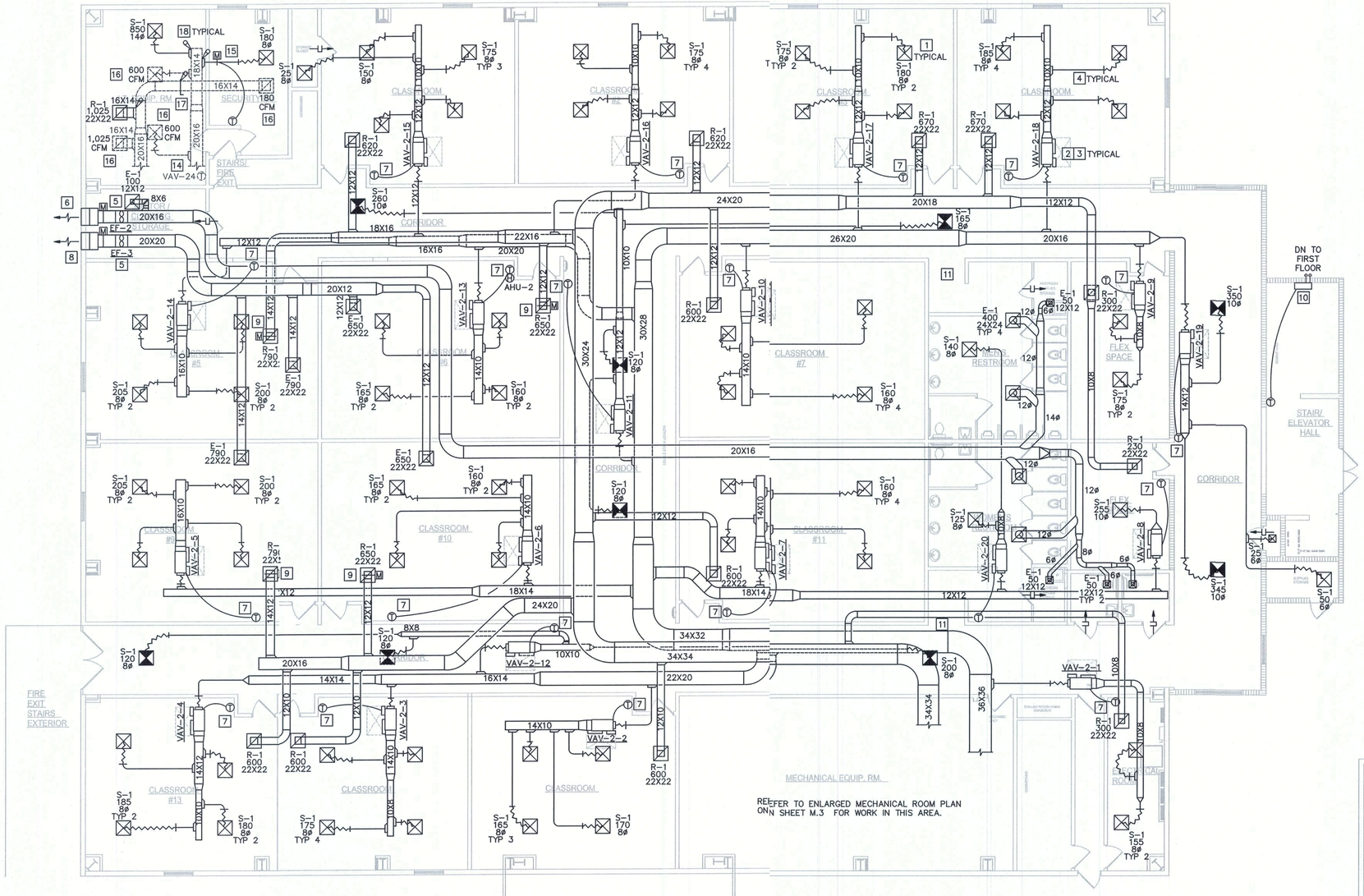
REGISTRY 3982
PROJECT NUMBER: 20031

JOB NUMBER
2K1403a
DATE:
28 SEP 2020

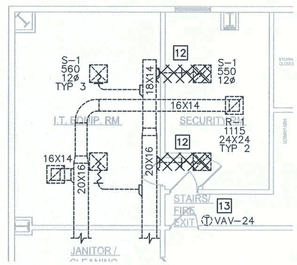
SHEET NUMBER
M.1



HVAC SECOND FLOOR PLAN

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

NORTH



PARTIAL SECOND FLOOR DEMO PLAN

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

NORTH

HVAC CODED NOTES:

1. DIFFUSER RUNOUT DUCT SIZE TO MATCH DIFFUSER NECK SIZE.
2. REFER TO VAV BOX SCHEDULE FOR INLET DUCT SIZE.
3. REFER TO HVAC DETAILS FOR SUPPORT OF VAV BOX.
4. PROVIDE OPPOSED BLADE DAMPER AT ALL SUPPLY, RETURN AND EXHAUST DUCT BRANCHES. SEE HVAC DETAILS. DAMPERS ARE NOT TO BE INCLUDED ON THE MEDIUM PRESSURE DUCTS UPSTREAM OF VAV BOXES.
5. REFER TO HVAC DETAILS FOR SUPPORT OF INLINE FAN.
6. PROVIDE 30X36 HURRICANE WIND RATED LOUVER EQUAL TO GREENHECK MODEL EHV-901D WITH BIRD SCREEN. LOUVER COLOR AS SELECTED BY ARCHITECT. PROVIDE 12 INCH DEEP EXTERNALLY INSULATED SHEET METAL PLENUM BOX ON BACK SIDE OF LOUVER FOR DUCT CONNECTION.
7. PROVIDE LOCKABLE VENTILATED METAL COVER OVER TEMPERATURE AND HUMIDITY SENSORS.
8. PROVIDE 40X36 HURRICANE WIND RATED LOUVER EQUAL TO GREENHECK MODEL EHV-901D WITH BIRD SCREEN. LOUVER COLOR AS SELECTED BY ARCHITECT. PROVIDE 12 INCH DEEP EXTERNALLY INSULATED SHEET METAL PLENUM BOX ON BACK SIDE OF LOUVER FOR DUCT CONNECTION.
9. PROVIDE MOTORIZED DAMPER IN RETURN DUCT ON BACK SIDE OF RETURN GRILLE, REFER TO EF-3 HVAC CONTROL DIAGRAM ON SHEET M.6 FOR MORE INFORMATION.
10. PROVIDE WALL MOUNTED SPLIT SYSTEM HEAT PUMP EQUAL TO MITSUBISHI MODEL MSZ-GL09NA (INDOOR UNIT) / MUZ-GL09NA (OUTDOOR CONDENSER) WITH 9,000 BTU COOLING, 10,900 BTU HEATING, 24.6 SEER, AND BACKUP ELECTRIC HEAT. PROVIDE SINGLE POINT POWER CONNECTION AT OUTDOOR CONDENSER, 208/1/60, 9 MCA, 15 MOCP. PROVIDE REFRIGERANT PIPING TO CONNECT UNITS AND ROUTE AS SHOWN, SIZE PER MANUFACTURER'S RECOMMENDATIONS. ROUTE CONDENSATE PIPING TO SPLASH BLOCK ON GRADE.
11. BATHROOM DOES NOT HAVE A DOOR AT ITS ENTRY, MAKE-UP AIR PASSES FREELY THROUGH BATHROOM OPENING.
12. REMOVE AND DISPOSE EXISTING DUCTWORK AND AIR DEVICE AS SHOWN. REPAIR AND SEAL MAIN DUCT PENETRATION AND INSULATE TO MATCH EXISTING.
13. PROTECT EXISTING THERMOSTAT FOR RE-USE.
14. RELOCATE EXISTING THERMOSTAT TO NEW LOCATION SHOWN. RE-CALIBRATE TO ENSURE PROPER FUNCTIONALITY.
15. INSTALL NEW MOTORIZED DAMPER. MOTORIZED DAMPER TO BE INTERLOCKED WITH NEW WALL MOUNTED THERMOSTAT.
16. RE-BALANCE EXISTING AIR DEVICE TO NEW AIR FLOW SHOWN.
17. PROVIDE NEW VOLUME DAMPER IN EXISTING RETURN AIR DUCT.
18. CONNECT NEW DUCTWORK TO EXISTING DUCTWORK. COORDINATE EXACT DUCT ROUTE WITH EXISTING CONDITIONS AND PROVIDE ALL OFFSETS NECESSARY.

REVISIONS

BELMONT ACADEMY FOR:
2ND FLOOR EXPANSION FOR
BELMONT ACADEMY CHARTER SCHOOL
1476 SW WALTER AVE, LAKE CITY, FLORIDA 32024

SIGNATURE
JOHN W. WELLS, III, PE
PE 0049347
DATE

Celebrating 40 Years of Service
1972 - 2012
N.P. Geisler, Architect
AR0007005

NICHOLAS PAUL GEISLER ARCHITECT
N.C.A.R.B. Certified
1758 NW Brown Rd.
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COISULTING ENGINEERING ASSOCIATES, INC.
8365 GUNN HIGHWAY
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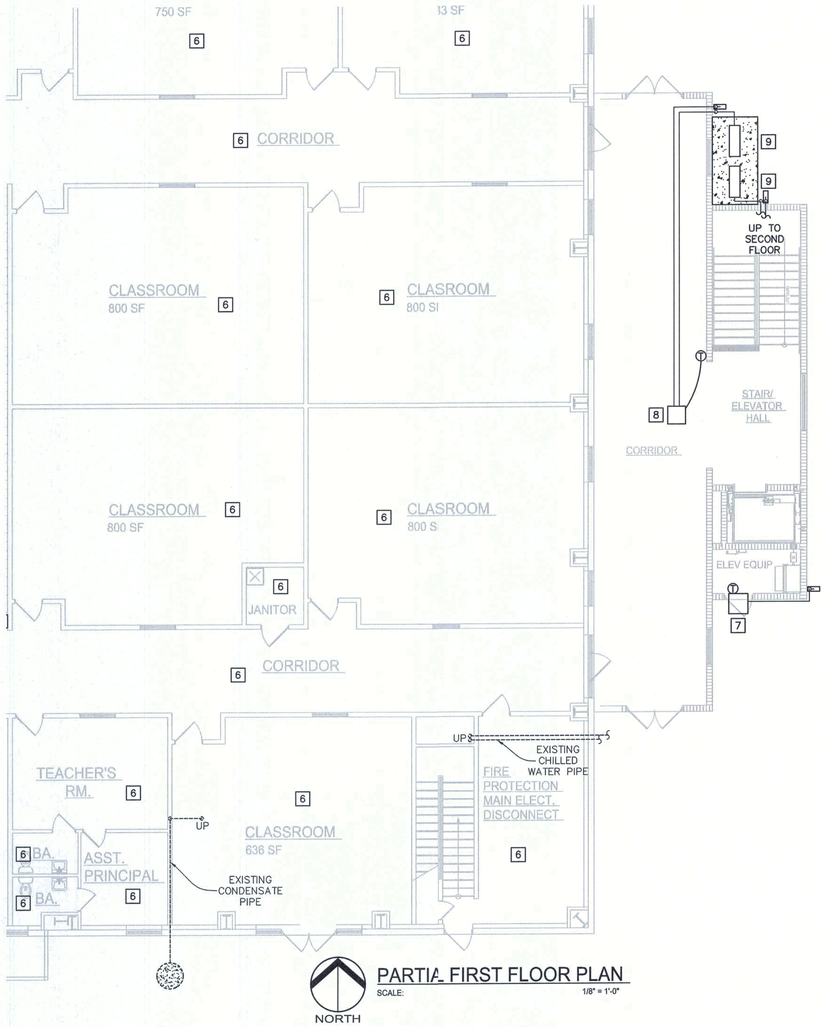
PHONE: (813) 449-0225
REGISTRY 3962
PROJECT NUMBER: 20031

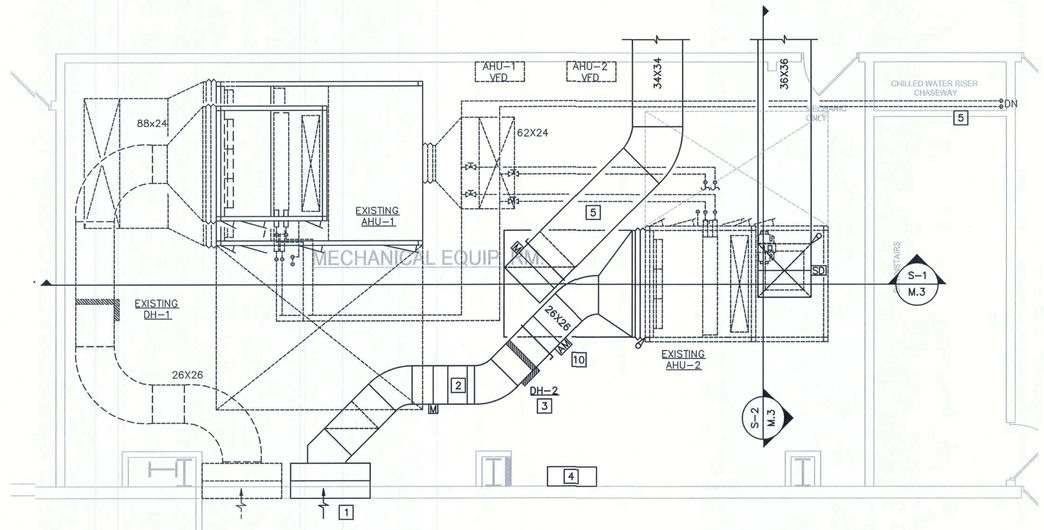
JOB NUMBER
2K1403a
DATE:
28 SEP 2020

SHEET NUMBER
M.2



PARTIAL FIRST FLOOR PLAN

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



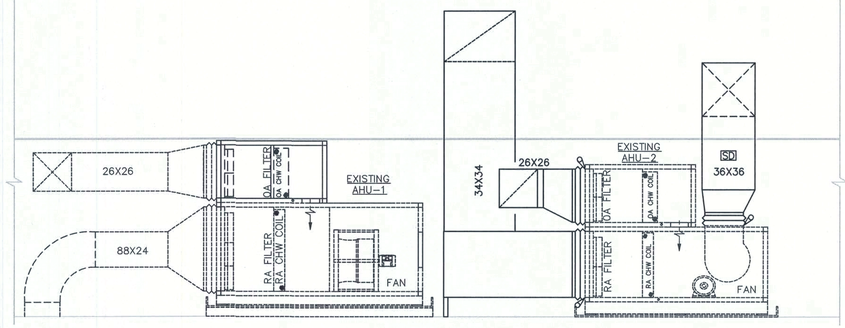
HVAC ENLARGED MECHANICAL ROOM FLOOR PLAN

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

NORTH

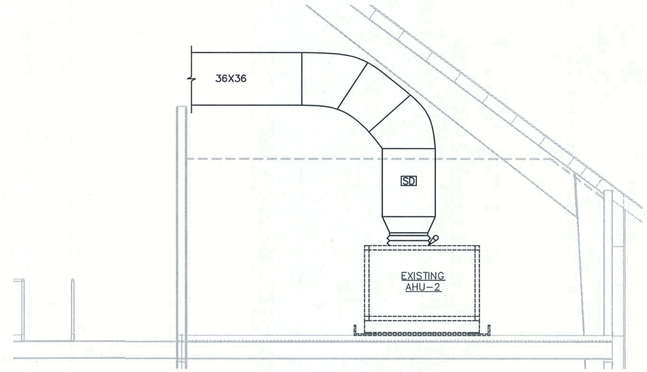
HVAC CODED NOTES:

1. PROVIDE 58X54 HURRICANE WIND RATED LOUVER EQUAL TO GREENHECK MODEL EHV-901D WITH BIRD SCREEN. LOUVER COLOR AS SELECTED BY ARCHITECT. PROVIDE 12 INCH DEEP EXTERNALLY INSULATED SHEET METAL PLENUM BOX ON BACK SIDE OF LOUVER : FOR DUCT CONNECTION.
2. PROVIDE MERV 12 DUCT MOUNTED FILTER BOX AND FILTERS EQUAL TO AAF.
3. REFER TO HVAC DETAILS FOR DUCT MOUNTED ELECTRIC STRIP HEATER.
4. SPACE FOR HVAC CONTROL PANELS. COORDINATE WITH DIVISION 26 TO PROVIDE 120 VOLT POWER TO THIS LOCATION..
5. EXISTING CHILLED WATER PIPING TO REMAIN.
6. NO NEW WORK IN THIS AREA.
7. PROVIDE THROUGH WALL PACKAGED HEAT PUMP EQUAL TO FRIEDRICH MODEL YM18L34, 18,000 BTU COOLING, 16,400 BTU HEATING, 9.5 EER, 208/1/60, WITH PLUG-IN CORD. MOUNT AS HIGH AS POSSIBLE OVER DOOR. ROUTE CONDENSATE PIPING TO SPLASH BLOCK ON GRADE.
8. PROVIDE CEILING CASSETTE SPLIT SYSTEM HEAT PUMP EQUAL TO MITSUBISHI MODEL PLA-A18BA6 (INDOOR UNIT) / PUZ-A18NHA6 (OUTDOOR CONDENSER) WITH 18,000 BTU COOLING, 19,000 BTU HEATING, 14.2 SEER, AND BACKUP ELECTRIC HEAT. PROVIDE SINGLE POINT POWER CONNECTION AT OUTDOOR CONDENSER, 208/1/60, 13 MCA, 20 MOCP. PROVIDE REFRIGERANT PIPING TO CONNECT UNITS AND ROUTE AS SHOWN, SIZE PER MANUFACTURER'S RECOMMENDATIONS. ROUTE CONDENSATE PIPING TO SPLASH BLOCK ON GRADE.
9. REFER TO DETAIL ON SHEET M.5 FOR SUPPORT OF CONDENSER.
10. NEW AIRFLOW MONITORING STATION EQUAL TO EBTRON GOLD.



S-1 / M.3 HVAC SECTION

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



S-2 / M.3 HVAC SECTION

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

REVISIONS

BELMONT ACADEMY FOR:
2ND FLOOR EXPANSION FOR
BELMONT ACADEMY CHARTER SCHOOL
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PHONE: (813) 445-0225
REGISTRY 3982
PROJECT NUMBER: 20031

JOB NUMBER
2K1403a
DATE:
23 SEP 2020

SHEET NUMBER
M.3

FAN SCHEDULE			
MARK	---	EF-2	EF-3
SERVICE	---	EXHAUST AIR	EXHAUST AIR
AIR QUANTITY	CFM	1,900	2,880
EXT. STATIC PRESSURE	IN WG	1.25	0.5
FAN TYPE	---	INLINE	INLINE
DRIVE	---	BELT	BELT
SONES	---	11.8	7.9
MOTOR	HP	1	3/4
FAN SPEED	RPM	1146	761
ELECTRICAL	V/PH/HZ	120/1/60	120/1/60
MANUFACTURER	---	COOK	COOK
MODEL	---	195SQN-HP	225SQN-HP
NOTES	---	ALL	ALL

NOTES:
1. DISCONNECT AND STARTER PROVIDED BY DIVISION 26.
2. PROVIDE BACKDRAFT DAMPER.
3. PROVIDE MOTOR / BELT GUARDS.
4. FAN TO BE CONTROLLED BY BUILDING MANAGEMENT SYSTEM, REFER TO CONTROL DIAGRAM ON SHEET M.6.

AIR DEVICE SCHEDULE	
MARK	S1
SERVICE	SUPPY AIR
DESCRIPTION	SQUARE PLAQUE CEILING DIFFUSER WITH ROUD NECK
MATERIAL	ALUMUM
FINISH	WHITE BAKO ENAMEL
DAMPER	RAIAL
MANUFACTURER	PRE
MODEL	ASD
MARK	R-1/ E-1
SERVICE	RETURN / EHAUST AIR
DESCRIPTION	LOUVERED FACE REGISTR, SINGLE DEFLECTION WITH 3/4" BIDE SPACING
MATERIAL	ALUMUM
FINISH	WHITE BAKO ENAMEL
DAMPER	OPPOSE BLADE
MANUFACTURER	PRE
MODEL	6J

GENERAL NOTE:
PROVIDE FRAMES AS REQUIRED BY CEILIG CONSTRUCTION SHOWN ON ROOM FINISH CHEDULE.
SEE ARCHITECTURAL PLANS.

VARIABLE AIR VOULME BOX WITH ELECTRIC HEAT SCHEDULE									
MARK	---	VAV-2-1	VAV-2-2	VAV-2-3	VAV-2-4	VAV-2-5	VAV-2-6	VAV-2-7	VAV-2-8	VAV-2-9	VAV-2-10
MAX COOLING	CFM	310	665	700	730	810	650	640	255	350	640
MIN COOLING	CFM	95	235	245	255	285	230	225	90	125	225
HEATING	CFM	155	335	350	365	405	325	320	130	175	320
ADP AT MAX COOLING	IN WG	0.03	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
MAX DIS NC	NC	25	25	25	25	25	25	25	25	25	25
MAX RAD NC	NC	25	25	25	25	25	25	25	25	25	25
INLET DUCT CONNECTION SIZE	IN X IN	7	10	10	10	10	10	10	6	8	10
ELECTRIC STRIP HEAT	KW/STEPS	2/1	3/1	4/1	4/1	4/1	3/1	3/1	2/1	3/1	3/1
ELECTRICAL	V/PH/HZ	277/1/60	277/1/60	277/1/60	277/1/60	277/1/60	277/1/60	277/1/60	277/1/60	277/1/60	277/1/60
MANUFACTURER	---	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE
MODEL	---	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5
NOTES	---	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL

MARK	---	VAV-2-11	VAV-2-12	VAV-2-13	VAV-2-14	VAV-2-15	VAV-2-16	VAV-2-17	VAV-2-18	VAV-2-19	VAV-2-20
MAX COOLING	CFM	665	440	650	810	700	700	710	740	770	265
MIN COOLING	CFM	235	155	230	285	210	210	210	225	270	95
HEATING	CFM	335	220	325	405	350	350	355	370	335	135
ADP AT MAX COOLING	IN WG	0.01	0.14	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02
MAX DIS NC	NC	25	25	25	25	25	25	25	25	25	25
MAX RAD NC	NC	25	25	25	25	25	25	25	25	25	25
INLET DUCT CONNECTION SIZE	IN X IN	10	8	10	10	10	10	10	10	10	7
ELECTRIC STRIP HEAT	KW/STEPS	3/1	2/1	3/1	4/1	4/1	4/1	4/1	4/1	4/1	2/1
ELECTRICAL	V/PH/HZ	277/1/60	277/1/60	277/1/60	277/1/60	277/1/60	277/1/60	277/1/60	277/1/60	277/1/60	277/1/60
MANUFACTURER	---	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE
MODEL	---	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5	SDV5
NOTES	---	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL

NOTES:
1. ALL VAV BOXES TO BE SELECTED AT A MAXIMUM INLET STATIC PRESSURE OF 1.50 IN WG.
2. ALL VAV BOXES TO BE PRESSURE INDEPENDENT.
3. NOISE CRITERIA (NC) ESTIMATE CALCULATED USING THE FOLLOWING TRANSFER FUNCTIONS:
   DISCHARGE: ARI 885-98;
   RADIATED: ARI 885-98 MINERAL FIBER.
4. EACH VAV BOX TO BE FEED A SEPARATE 120V POWER CONNECTION FOR CONTROLS. FEED TO BE PROVIDED AND INSTALLED BY DIVISION 26. CONTROLS PROVIDED AND INSTALLED BY DIVISION 23.
5. PROVIDE FIBER FREE FOAM INSULATION

SECOND FLOOR AIR BALANCE SUMMARY (WHEN CO2 LEVELS DO NOT EXCEED LIMITS)		
MARK	OUTSIDE AIR FLOW CFM	EXHAUST AIR FLOW CFM
AHU-2	2,910	---
EF-2	---	1,900
EF-3	---	---
	1,010 CFM POSITIVE	

SECOND FLOOR AIR BALANCE SUMMARY (WHEN CO2 LEVELS EXCEED LIMITS)		
MARK	OUTSIDE AIR FLOW CFM	EXHAUST AIR FLOW CFM
AHU-2	6,090	---
EF-2	---	1,900
EF-3	---	2,880
	1,310 CFM POSITIVE	

ELECTRIC DUCT HEATER SCHEDULE		
MARK	---	DH-2
SERVICE	---	OUTSIDE AIR DUCT
TOTAL AIR FLOW	KW/STEPS	75 / SCR
TOTAL AIR FLOW	CFM	6,090 MAX / 2,910 MIN
ENT. AIR TEMP (DB)	DEG F	28.9
LVG. AIR TEMP (DB)	DEG F	70.0
DUCT SIZE (WXH)	INCHES	26X26
ELECTRICAL	V/PH/HZ	480/3/60
MANUFACTURER	---	THERMOLEC
MODEL	---	SC
NOTES	---	ALL

NOTES:
1. DISCONNECT PROVIDED BY DIVISION 26.
2. PROVIDE AIR PRESSURE DIFFERENTIAL PRESSURE SWITCH AND CONTACTOR.
3. HEATERS SHALL BE UL LISTED FOR SERVICE.

EXISTING DUAL PATH CHILLED WATER AIR HANDLING UNIT SCHEDULE		
MARK	---	AHU-2
FAN SECTION		
TOTAL SUPPLY AIR FLOW	CFM	12,200
EXTERNAL STATIC PRESSURE	IN WG	2.0
TOTAL STATIC PRESSURE	IN WG	4.30
DRIVE	---	BELT
FAN TYPE	---	AF / VARIABLE
FAN SPEED	RPM	2050
FAN MOTOR	HP/BHP	15 / 12.3
FAN FLA	AMPS	17.9
FAN MCA	AMPS	22.4
FAN MOCP	AMPS	30
FAN ELECTRICAL	V/PH/HZ	480/3/60
RETURN AIR COOLING COIL		
TOTAL CAPACITY	BTUH	272,600
SENSIBLE CAPACITY	BTUH	202,600
AIR FLOW	CFM	9,290 MAX / 6,110 MIN
ENT. AIR TEMP (DB/WB)	DEG F/DEG F	75.0/63.0
LVG. AIR TEMP (DB/WB)	DEG F/DEG F	54.9 / 52.8
COOLING COIL (MIN/MAX)	ROWS/FINS PER INCH	4/11
COOLING COIL MAX FACE VEL.	FPM	476
COOLING COIL MAX PRESS. DROP	IN WG	0.52
CHILLED WATER FLOW	GPM	58.0
CHILLED WATER TEMP (ENT./LVG.)	DEG F/DEG F	44.0/53.4
MAX WATER PRESS. DROP	FT WG	11.1
RETURN AIR PATH FILTER		
FILTER	MERV	12
OUTSIDE AIR COOLING COIL		
TOTAL CAPACITY	BTUH	512,100
SENSIBLE CAPACITY	BTUH	251,600
AIR FLOW	CFM	6,090 MAX / 2,910 MIN
ENT. AIR TEMP (DB/WB)	DEG F/DEG F	93.5/78.9
LVG. AIR TEMP (DB/WB)	DEG F/DEG F	54.9/54.0
COOLING COIL (MIN/MAX)	ROWS/FINS PER INCH	6/8
COOLING COIL MAX FACE VEL.	FPM	409
COOLING COIL MAX PRESS. DROP	IN WG	0.41
CHILLED WATER FLOW	GPM	118
CHILLED WATER TEMP (ENT./LVG.)	DEG F/DEG F	44/52.6
MAX WATER PRESS. DROP	FT WG	11.1
OUTSIDE AIR PATH FILTER		
PREFILTER	MERV	8
FILTER	MERV	12
TOTAL UNIT WEIGHT	LBS	4799
MANUFACTURER	---	JOHNSON-YORK
MODEL	---	XTI-51x78,42x78
NOTES	---	ALL

NOTES:
THE AIR HANDLING UNIT IS EXISTING TO REMAIN. THE SCHEDULE ABOVE HAS BEEN REPRODUCED FROM RECORD DOCUMENTS BY CONSULTING ENGINEERING ASSOCIATES, INC. DATED JANUARY 31, 2014, FOR REFERENCE ONLY. THE SYSTEM IS TO BE BALANCED TO VALUES SHOWN ABOVE.

OUTSIDE AIR CALCULATIONS PER ASHRAE STANDARD 62.1 – 2019

Building:		Beiont Academy			
System Tag/Name:		AH-2			
Operating Condition Description:		COLING MODE			
Units (select from pull-down list)		IP			
		w/o diversity			w/ diversity
Inputs for System	Nne Units	System		Diversity	System
Floor area served by system	As sf	15,770			
Population of area served by system	Ps P	391	D	93%	364
Design primary supply fan airflow rate	Vpl cfm	12,200		100%	12,200
OA req'd per unit area for system (Weighted average)	Ra cfm/sf	0.10			
OA req'd per person for system area (Weighted average)	Rp cfm/p	9.7			
Percent increase in Vbz over minimum required		0%			

Inputs for Potentially Critical zones													
Zone Name		Classroom 1	Classroom 2	Classroom 3	Classroom 4	Janitor/ Cleaning Storage	Corridor	Classroom 5	Classroom 6	Classroom 10	Corridor	Classroom 13	
Zone Tag		1	2	3	4	5	6	7	8	10	11	12	
Occupancy Category		Classrooms (age 9 plus)	Classrooms (age 9 plus)	Classrooms (age 9 plus)	Classrooms (age 9 plus)	Occupiable storage rooms for liquids or gels	Corridors	Classrooms (age 9 plus)	Classrooms (age 9 plus)	Classrooms (age 9 plus)	Corridors	Classrooms (age 9 plus)	
Floor Area of zone	Az sf	622	678	697	666	155	1,418	782	783	783	800	611	
Design population of zone	Pz P	28	28	28	28	0	0	28	28	28	0	28	
Design total supply to zone (primary plus local recirculated)	Vdl cfm	700	700	710	740	120	380	810	650	650	240	730	
Induction Terminal Unit, Dual Fan Dual Duct or Transfer Fan?													
Frac. of local recirc. air that is representative of system RA	Er	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	
Inputs for Operating Condition Analyzed													
Percent of total design airflow rate at conditioned analyzed	Ds %	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Air distribution type at conditioned analyzed		CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS
Zone air distribution effectiveness at conditioned analyzed	Ez	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Primary air fraction of supply air at conditioned analyzed	Ep												

Inputs for Potentially Critical zones													
Zone Name		Classroom	Classroom	Corridor	Classroom 7	Classroom 11	Men's Restroom	Women's Restroom	Flex Space	Flex Space	Restroom	Restroom	
Zone Tag		13	14	15	16	17	18	19	20	21	22	23	
Occupancy Category		Classrooms (age 9 plus)	Classrooms (age 9 plus)	Corridors	Classrooms (age 9 plus)	Classrooms (age 9 plus)	Office space	Office space	Conference/meeting	Conference/meeting	Office space	Office space	
Floor Area of zone	Az sf	618	656	618	795	793	468	469	322	226	43	43	
Design population of zone	Pz P	28	28	0	28	28	0	0	16	11	0	0	
Design total supply to zone (primary plus local recirculated)	Vdl cfm	700	665	165	640	640	140	125	350	255	15	15	
Induction Terminal Unit, Dual Fan Dual Duct or Transfer Fan?													
Frac. of local recirc. air that is representative of system RA	Er	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	
Inputs for Operating Condition Analyzed													
Percent of total design airflow rate at conditioned analyzed	Ds %	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Air distribution type at conditioned analyzed		CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS
Zone air distribution effectiveness at conditioned analyzed	Ez	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Primary air fraction of supply air at conditioned analyzed	Ep												

Inputs for Potentially Critical zones							
Zone Name		Corridor	Coridor	Stair/ E	Elevator Hall	Electrical Room	
Zone Tag		24	25		26	27	
Occupancy Category		Corridors	Corridors	Co	Corridors	Office space	
Floor Area of zone	Az sf	815	631		326	169	
Design population of zone	Pz P	0	0		0	0	
Design total supply to zone (primary plus local recirculated)	Vdl cfm	540	170		230	310	
Induction Terminal Unit, Dual Fan Dual Duct or Transfer Fan?							
Frac. of local recirc. air that is representative of system RA	Er	0.80	0.80		0.80	0.80	
Inputs for Operating Condition Analyzed							
Percent of total design airflow rate at conditioned analyzed	Ds %	100%	100%	1	100%	100%	
Air distribution type at conditioned analyzed		CS	CS		CS	CS	
Zone air distribution effectiveness at conditioned analyzed	Ez	1.00	1.00		1.00	1.00	
Primary air fraction of supply air at conditioned analyzed	Ep						

Results			
System Ventilation Efficiency	Ev		0.83
Outdoor air intake required for system	Vol cfm		6087 6,090 CFM PROVIDED
Outdoor air per unit floor area	VoAs cfm/sf		0.39
Outdoor air per person served by system (including diversity)	VoPs cfm/p		16.7
Outdoor air as a % of design primary supply air	Yp %		50%

REVISIONS

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REGISTRY 3962
ROJECT NUMBER: 20031

JOB NUMBER
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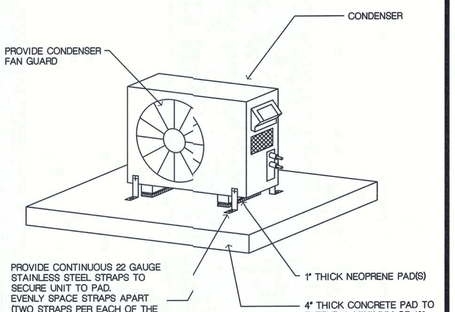
DATE:
28 SEP 2020

SHEET NUMBER
M.4

CONDENSER SUPPORT



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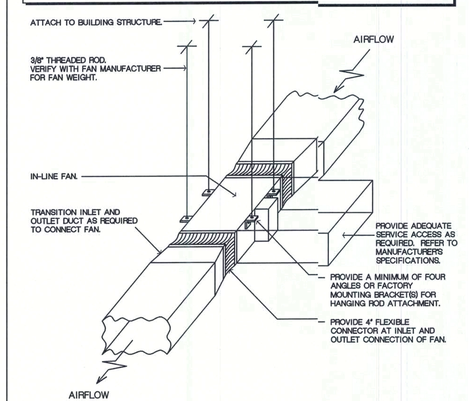
IN-LINE FAN - CEILING MOUNTED

NOTE:
FAN TO BE DIRECTLY SUPPORTED BY BUILDING STRUCTURE AND NOT CONNECTING DUCTWORK OR CEILING.



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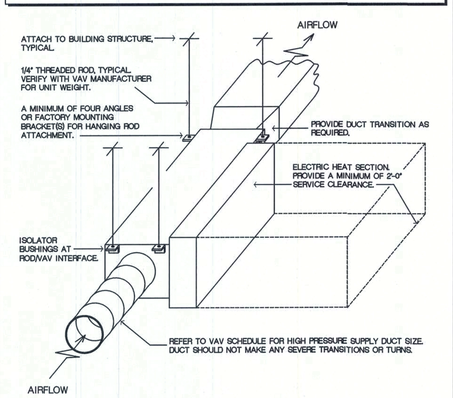
SINGLE DUCT VAV BOX W/ ELEC HEAT SUPPORT

NOTE:
VAV BOX TO BE DIRECTLY SUPPORTED BY BUILDING STRUCTURE AND NOT CONNECTING DUCTWORK OR CEILING.



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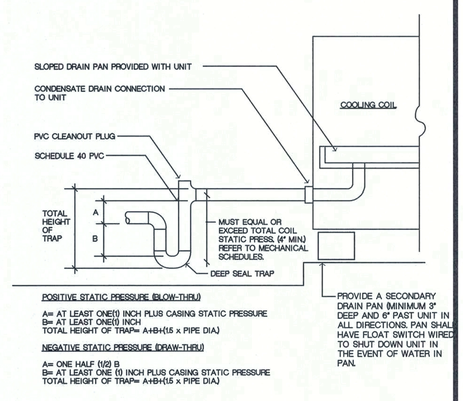
CONDENSATE DRAIN PIPING



POSITIVE STATIC PRESSURE (BLOW-THRU)

A= AT LEAST ONE(1) INCH PLUS CASING STATIC PRESSURE
B= AT LEAST ONE(1) INCH
TOTAL HEIGHT OF TRAP= A+B+(1.5 x PIPE DIA.)

NEGATIVE STATIC PRESSURE (DRAW-THRU)

A= ONE HALF (1/2) B
B= AT LEAST ONE (1) INCH PLUS CASING STATIC PRESSURE
TOTAL HEIGHT OF TRAP= A+B+(1.5 x PIPE DIA.)

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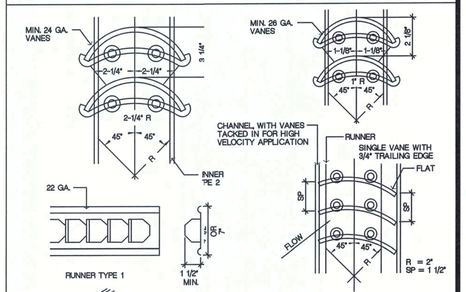
TURNING VANES AND 'ANE RUNNERS



SIILE VANE SCHEDULE

SI	R	SP	GA.
SNLL	2"	1-1/2"	24
LGE	4-1/2"	3-1/4"	22

GENERAL NOTES:
DOUBLE VANE FODUCTS GREATER THAN 18" x 18"
SINGLE VANE FORUCTS UP TO 18" x 18"

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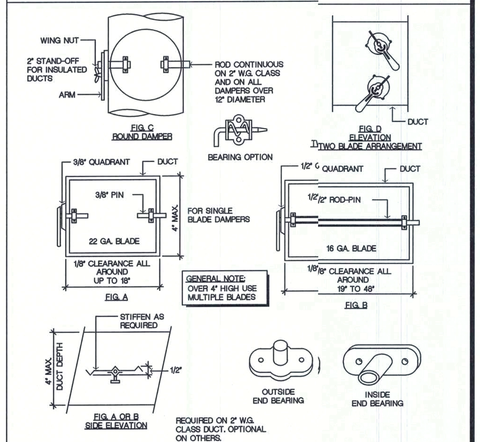
VOLUME DAMPERS FOR DUCTWORK



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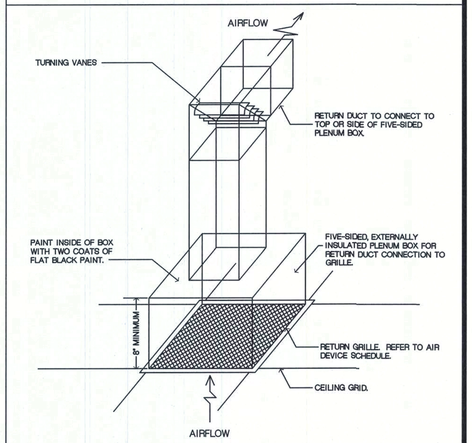
FIVE SIDED RETURN GRILLE PLENUM BOX



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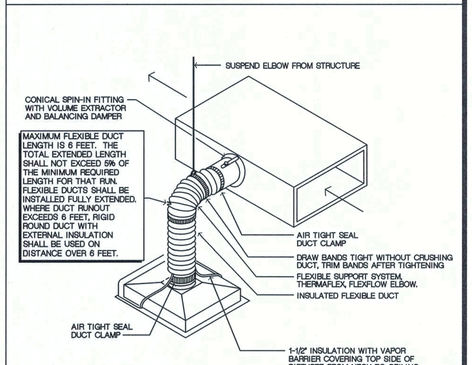
FLEXIBLE DUCTWORK



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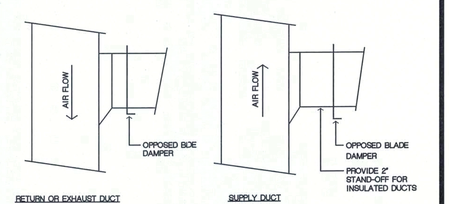
TYPICAL BRANCH DUCTS



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RECTANGULAR DUCT HANGERS MINIMUM SIZES

MAXIMUM HALF OF DUCT PERIMETER	PAIR AT 10 FT. SPACING		PAIR AT 8 FT. SPACING		PAIR AT 5 FT. SPACING		PAIR AT 4 FT. SPACING	
	STRAP	ROD	STRAP	ROD	STRAP	ROD	STRAP	ROD
P/2 = 72"	1" x 22 GA.	1/4"	1" x 22 GA.	1/4"	1" x 22 GA.	1/4"	1" x 22 GA.	1/4"
P/2 = 96"	1" x 18 GA.	3/8"	1" x 20 GA.	1/4"	1" x 22 GA.	1/4"	1" x 22 GA.	1/4"
P/2 = 120"	1" x 16 GA.	3/8"	1" x 18 GA.	3/8"	1" x 22 GA.	1/4"	1" x 22 GA.	1/4"
P/2 = 168"	1.5" x 16 GA.	1/2"	1" x 16 GA.	3/8"	1" x 18 GA.	3/8"	1" x 18 GA.	3/8"
P/2 = 192"		1/2"	1.5" x 16 GA.	1/2"	1" x 16 GA.	3/8"	1" x 16 GA.	3/8"
P/2 = 193" UP	SPECIAL ANALYSIS REQUIRED							

WHEN STRAPS ARE LAP JOINED USE THESE MINIMUM FASTENERS:
1" x 18, 20, 22 GA. – TWO #10
1" x 16 GA. – TWO 1/4" DIA.
1.5" x 16 GA. – TWO 3/8" DIA.
PLACE FASTENERS IN SERIES, NOT SIDE BY SIDE.

SINGLE HANGER MAXIMUM ALLOW. LOAD
1" x 22 GA. – 260 LBS. 1/4 DIA. 270 LBS.
1" x 20 GA. – 320 LBS. 3/8 DIA. 680 LBS.
1" x 18 GA. – 420 LBS. 1/2 DIA. 1250 LBS.
1" x 16 GA. – 700 LBS. 5/8 DIA. 2000 LBS.
1.5" x 16 GA. – 1100 LBS. 3/4 DIA. 3000 LBS.

NOTES:
1. DIMENSIONS OTHER THAN GAGE ARE IN INCHES.
2. TABLES ALLOW FOR DUCT WEIGHT, 0.5 LB/SF INSULATION WEIGHT & N NORMAL REINFORCEMENT AND TRAPEZE WEIGHT, BUT NO EXTERNAL LOADS!
3. CONSULT AISI LIGHT GAGE STEEL DESIGN MANUAL AND AISC STEEL CO CONSTRUCTION MANUAL FOR CRITERIA FOR DESIGN OF OTHER HANGERS.
4. STRAPS ARE GALVANIZED STEEL; OTHER MATERIALS ARE UNCOATED S STEEL.
5. ALLOWABLE LOADS LISTED ASSUME THAT DUCTS ARE 16 GA. MAXIMUM.

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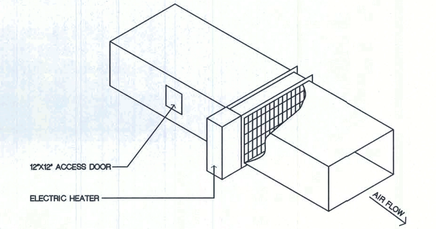
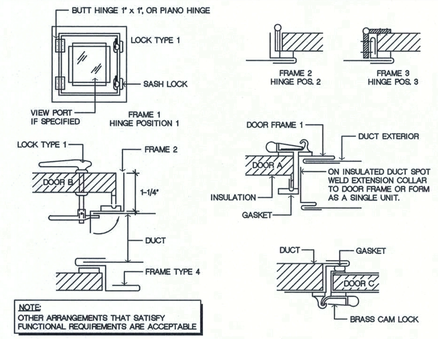
ELECTRIC DUCT HEATER



CONSULTING ENGINEERING ASSOCIATES, INC. | REV: 08-07-01 | MD-0517

DUCT ACCESS DOORS



NOTE:
OTHER ARRANGEMENTS THAT SATISFY FUNCTIONAL REQUIREMENTS ARE ACCEPTABLE

MAX. DIM.	NO. HINGES	NO. HANDLES	GAUGE		
			DOOR	BACK	FRAME
12x12	2	1	26	26	24
16x20	2	2	24	26	22
24x24	3	2	22	26	22

GENERAL NOTES:
TYPE OF LOCKS SHALL BE DETERMINED BY CLEARANCE REQUIRED FOR REMOVAL OF DOOR. USE HINGED DOORS WHEREVER DOORS CAN BE FULLY OPENED AND DOOR SWING DOES NOT INTERFERE WITH ADJACENT OBSTRUCTIONS.

CONSULTING ENGINEERING ASSOCIATES, INC. | REV: 01-08-08 | MD-0108

REVISIONS

BELMONT ACADEMY FOR:
2ND FLOOR EXPANSION FOR
BELMONT ACADEMY CHARTER SCHOOL
1476 SW WALTER AVE, LAKE CITY, FLORIDA 32024

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PE 0049347
DATE

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AA0001705

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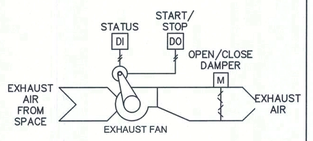
PROJECT NUMBER: 20031

JOB NUMBER
2K1403a
DATE:
28 SEP 2020

SHEET NUMBER
M.5

EF CONTROL DIAGRAM

TYPICAL FOR EF-2



SEQUENCE OF OPERATIONS:

EXHAUST FAN TO BE TIED INTO EXISTING KMC CONTROLS BUILDING MANAGEMENT SYSTEM ANETO BE CONTROLLED GLOBALLY BY OCCUPIED/UNOCCUPIED SCHEDULE. COORDINATE WITH OWNER FOR INITIAL SCHEDULING. PROVIDE ALL WIRING AND PROGRAMMING AS REQUIRED TO ACCOMMODATE THE FOLLOWING SEQUENCE:

ALARMS: 1. EXHAUST FAN FAILURE

OCCUPIED MODE:

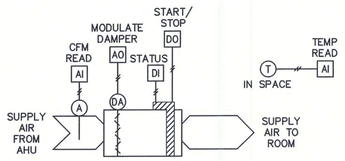
FAN SHALL RUN CONTINUOUSLY.

UNOCCUPIED MODE:

FAN SHALL BE DE-ENERGIZED.

VAV CONTROL DIAGRAM

TYPICAL FOR ALL VAV BOXES



SEQUENCE OF OPERATIONS:

VAV BOX TO BE TIED INTO EXISTING KMC CONTROLS BUILDING MANAGEMENT SYSTEM AND SHALL BE INTERLOCKED TO START/STOP AND CHANGE OVER TO COOLING OR HEATING MODE WITH ASSOCIATED AIR HANDLING UNIT SUPPLY FAN AS NOTED BELOW:

VAV-2-1 THRU VAV-2-19 AHU-2

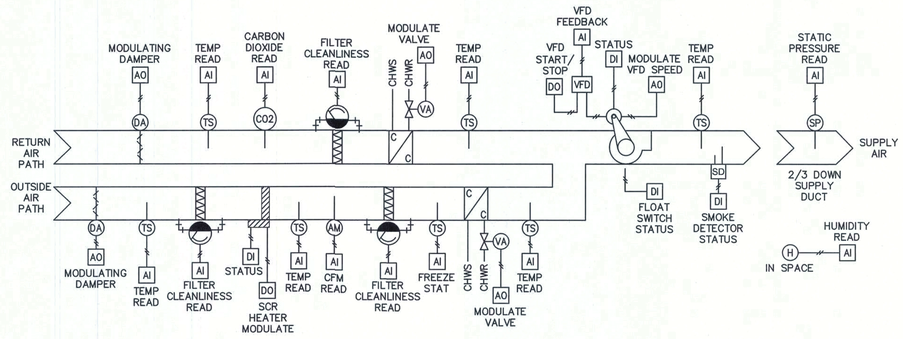
COORDINATE WITH OWNER FOR INITIAL SCHEDULING. PROVIDE ALL WIRING AND PROGRAMMING AS REQUIRED TO ACCOMMODATE THE FOLLOWING SEQUENCE:

ALARMS: 1. ELECTRIC STRIP HEATER FAILURE

IN THE COOLING MODE, THE DAMPER ACTUATOR SHALL MODULATE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT OF 75 DEGREES F AS SENSED BY THE SPACE THERMOSTAT. IN THE HEATING MODE, THE DAMPER ACTUATOR SHALL MODULATE AND ELECTRIC STRIP HEATER SHALL ENERGIZE TO MAINTAIN THE SPACE TEMPERATURE SETPOINT OF 70 DEGREES F. THE THERMOSTATS SHALL BE ADJUSTABLE BY THE OCCUPANTS BY 5 DEGREES F ABOVE AND BELOW SETPOINT.

AHU CONTROL DIAGRAM

TYPICAL FOR (E) AHU-2



SEQUENCE OF OPERATIONS:

AIR HANDLING UNIT TO BE PROVIDED WITH NEW CONTROLS WHICH ARE TO BE TIED INTO THE EXISTING KMC CONTROLS BUILDING MANAGEMENT SYSTEM. AIR HANDLING UNIT TO BE CONTROLLED GLOBALLY BY OCCUPIED/UNOCCUPIED SCHEDULE AND COOLING/HEATING MODES. SYSTEM SHALL BE AN EXTENSION OF AND BE FULLY COMPATIBLE WITH THE EXISTING ENERGY MANAGEMENT SYSTEM. COORDINATE WITH FACILITIES FOR INITIAL SCHEDULING. PROVIDE ALL WIRING AND PROGRAMMING AS REQUIRED TO ACCOMMODATE THE FOLLOWING SEQUENCE:

ALARMS:
1. DIRTY FILTER (VERIFY WITH TEST AND BALANCE AGENCY FOR STATIC PRESSURE SETPOINT)
2. SUPPLY FAN FAILURE
3. VFD FAILURE
4. ELECTRIC STRIP HEATER FAILURE
5. FLOAT SWITCH TRIP
6. SMOKE DETECTOR(S) ACTIVATED

OCCUPIED MODE:

STARTUP:
ALL ASSOCIATED VAV BOXES SHALL ENERGIZE. THE MOTORIZED OUTSIDE AIR DAMPER SHALL REMAIN CLOSED. THE MOTORIZED RETURN AIR DAMPER SHALL BE FULLY OPEN. THE VFD SHALL THEN SLOWLY RAMP THE SUPPLY FAN UP TO THE DESIGN DUCT STATIC PRESSURE (VERIFY WITH TEST AND BALANCE AGENCY.) IN THE COOLING MODE, THE RETURN AIR CHILLED WATER COIL VALVE ACTUATOR SHALL THEN BEGIN TO MODULATE TO MAINTAIN SUPPLY AIR TEMPERATURE. IN THE HEATING MODE, THE VALVE SHALL REMAIN CLOSED. AFTER A ONE HOUR DELAY, THE MOTORIZED OUTSIDE AIR DAMPER SHALL OPEN AND BEGIN TO MODULATE IN CONJUNCTION WITH THE RETURN AIR DAMPER TO MAINTAIN REQURIED OUTSIDE AIR FLOW.

SUPPLY FAN:
THE SUPPLY FAN SHALL BE MODULATED BY THE VFD TO MAINTAIN THE DESIGN DUCT STATIC PRESSURE.

RETURN AIR CHILLED WATER COIL:
IN THE COOLING MODE, THE RETURN AIR CHILLED WATER COOLING COIL VALVE ACTUATOR SHALL BE MODULATED TO MAINTAIN A 55 DEGREE F LEAVING AIR TEMPERATURE AS SENSED BY THE TEMPERATURE SENSOR IMMEDIATELY DOWNSTREAM OF THE COIL. IN THE HEATING MODE, THE VALVE SHALL REMAIN CLOSED.

OUTSIDE AIR CHILLED WATER COIL:
IN THE COOLING MODE, THE OUTSIDE AIR CHILLED WATER COOLING COIL VALVE ACTUATOR SHALL BE MODULATED TO MAINTAIN A 55 DEGREE F LEAVING AIR TEMPERATURE AS SENSED BY THE TEMPERATURE SENSOR IMMEDIATELY DOWNSTREAM OF THE COIL. IN THE HEATING MODE, THE VALVE SHALL REMAIN CLOSED.

OUTSIDE AIR ELECTRIC STRIP DUCT HEATER:
IN THE COOLING MODE, THE ELECTRIC STRIP DUCT HEATER SHALL BE DE-ENERGIZED. IN THE HEATING MODE, THE SCR ELECTRIC STRIP HEATER SHALL ENERGIZE AND MODULATE TO MAINTAIN A 70 DEGREE F LEAVING AIR TEMPERATURE AS SENSED BY THE TEMPERATURE SENSOR IMMEDIATELY DOWNSTREAM OF THE HEATER.

OUTSIDE AIR FLOW MONITORING STATION AND CO2 CONTROL:
THE MOTORIZED OUTSIDE AIR DAMPER AND MOTORIZED RETURN AIR DAMPER SHALL BE CONTINUOUSLY MODULATED TO PROVIDE THE REQUIRED OUTSIDE AIR FLOW AS MEASURED BY THE OUTSIDE AIR FLOW MONITORING STATION. WHEN CO2 LEVELS ARE BELOW 800 PPM, THE REQUIRED OUTSIDE AIR FLOW SHALL BE SET TO THE MINIMUM AIR FLOW SETTING. WHEN CO2 LEVELS ARE ABOVE 1,000 PPM, THE REQUIRED OUTSIDE AIR FLOW SHALL BE SET TO THE MAXIMUM AIR FLOW SETTING. REFER TO AIR BALANCE SUMMARY SCHEDULE ON SHEET M.4 FOR MINIMUM AND MAXIMUM AIR FLOW SETTINGS (VERIFY WITH TEST AND BALANCE AGENCY).

SHUTDOWN:
THE OUTSIDE AIR ELECTRIC STRIP DUCT HEATER SHALL DE-ENERGIZE. THE VFD SHALL SLOWLY RAMP THE SUPPLY FAN DOWN AND SHALL DE-ENERGIZE. THE RETURN AIR AND OUTSIDE AIR CHILLED WATER COIL VALVE ACTUATORS SHALL CLOSE. THE MOTORIZED OUTSIDE AIR DAMPER SHALL THEN CLOSE. THE RETURN AIR DAMPER SHALL FULLY OPEN. ALL ASSOCIATED VAV BOXES SHALL THEN DE-ENERGIZE.

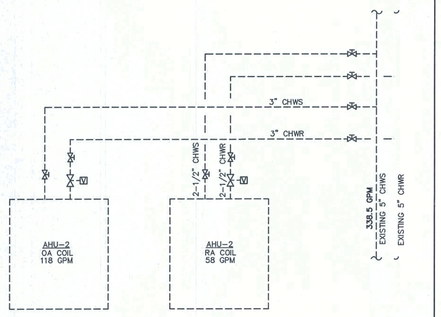
SAFETY MODE: IF WATER IS DETECTED IN THE SECONDARY DRAIN PAN AS DETECTED BY THE FLOAT SWITCH, THE SUPPLY FAN SHALL DE-ENERGIZE, RETURN AIR AND OUTSIDE AIR CHILLED WATER COIL VALVE ACTUATORS SHALL CLOSE, AND THE OUTSIDE AIR MOTORIZED DAMPER SHALL CLOSE. IF THE OUTSIDE AIR TEMPERATURE FALLS BELOW 40 DEGREES F, THE OUTSIDE AIR HEATER SHALL ENERGIZE TO MAINTAIN A MINIMUM 40 DEGREE F OUTSIDE AIR COIL ENTERING TEMPERATURE. SHOULD THE OUTSIDE AIR HEATER FAIL AND THE TEMPERATURE FALL BELOW 38 DEGREES F, CLOSE OUTSIDE AIR DAMPER AND DE-ENERGIZE ELECTRIC DUCT HEATER.

UNOCCUPIED MODE:

AIR HANDLING UNIT SUPPLY FAN SHALL BE DE-ENERGIZED. THE RETURN AIR AND OUTSIDE AIR CHILLED WATER COIL VALVE ACTUATORS SHALL BE CLOSED. THE MOTORIZED OUTSIDE AIR DAMPER SHALL BE CLOSED. THE RETURN AIR DAMPER SHALL BE FULLY OPEN. THE OUTSIDE AIR ELECTRIC STRIP DUCT HEATER SHALL BE DE-ENERGIZED. ALL ASSOCIATED VAV BOXES SHALL BE DE-ENERGIZED.

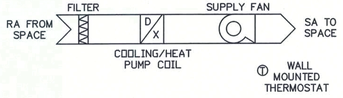
HUMIDITY CONTROL MODE: DURING UNOCCUPIED MODE, IF THE HUMIDITY RISES ABOVE 65% RH, AS SENSED BY THE SPACE HUMIDISTAT, THE AIR HANDLING UNIT SHALL REVERT TO THE OCCUPIED MODE. REVERT BACK TO UNOCCUPIED MODE SEQUENCE WHEN HUMIDITY FALLS BELOW 58% RH.

EXISTING CHILLED WATER FLOW DIAGRAM



HVAC CONTROL DIAGRAM

FOR MINI-SPLITS



SEQUENCE OF OPERATIONS:

UNIT TO BE TIED INTO EXISTING KMC CONTROLS BUILDING MANAGEMENT SYSTEM. THE UNIT SHALL BE PROVIDED WITH FACTORY MOUNTED THERMOSTATS TO PROVIDE THE FOLLOWING SEQUENCE OF OPERATIONS:

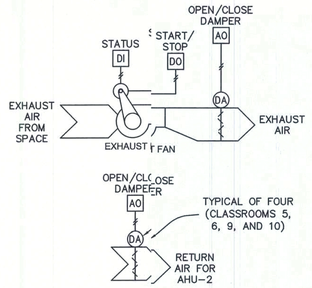
A. THE UNITS SHALL RUN CONTINUOUSLY 24 HOURS A DAY, 7 DAYS A WEEK. THE SUPPLY FANS SHALL RUN ONLY ON A CALL FOR COOLING OR HEATING. THE UNIT SHALL MAINTAIN A CONSTANT SPACE TEMPERATURE OF 75 DEGREES F (ADJUSTABLE BY THE OCCUPANTS BETWEEN 72 AND 78 DEGREES F ONLY) 24 HOURS A DAY, 7 DAYS A WEEK.

B. UPON A CALL FOR COOLING, THE COMPRESSOR(S) SHALL BE CYCLED AND CONDENSER FAN(S) SHALL BE ENERGIZED AS REQUIRED TO MAINTAIN SPACE TEMPERATURE.

C. UPON A CALL FOR HEATING, THE HEAT PUMP SHALL BE CYCLED AS REQUIRED TO MAINTAIN SPACE TEMPERATURE. UNIT SHALL HAVE LOW AMBIENT CONTROLS AND A DEFROST HEATER.

EF CONTROL DIAGRAM

TYPICAL FOR EF-3



SEQUENCE OF OPERATIONS:

EXHAUST FAN TO BE TIED INTO EXISTING KMC CONTROL BUILDING MANAGEMENT SYSTEM AND TO BE CONTROLLED GLOBALLY BY OCCUPIED/UNOCCUPIED SCHEDULE. COORDINATE WITH OWNER FOR INITIAL SCHEDULING. PROVIDE ALL WIRING AND PROGRAMMING AS REQUIRED TO ACCOMMODATE THE FOLLOWING SEQUENCE:

ALARMS: 1. EXHAUST FAN FAILURE

OCCUPIED MODE:

FAN IS PROVIDED TO CONTROL THE OVER-PRESSURIZATION OF THE SECOND FLOOR. FAN SHALL RUN AND EXHAUST AIR MOTORIZED DAMPER SHALL OPEN ONLY WHEN THE OUTSIDE AIR MOTORIZED DAMPER ASSOCIATED WITH AHU-2 IS AT ITS MAXIMUM OPENED SETPOINT (CO2 LEVELS EXCEED LIMITS). WHENEVER FAN IS ENERGIZED, THE FOUR RETURN AIR MOTORIZED DAMPERS IN CLASSROOMS 5, 6, 9, AND 10 SHALL CLOSE.

WHEN THE OUTSIDE AIR MOTORIZED DAMPER ASSOCIATED WITH AHU-2 IS AT ITS MINIMUM OPENED SETTING (CO2 LEVELS ARE BELOW LIMITS), THE EXHAUST FAN SHALL BE DE-ENERGIZED, EXHAUST AIR DAMPER SHALL BE CLOSED, AND RETURN AIR DAMPERS SHALL BE OPEN.

UNOCCUPIED MODE:

THE EXHAUST FAN SHALL BE DE-ENERGIZED, EXHAUST AIR DAMPER SHALL BE CLOSED, AND RETURN AIR DAMPERS SHALL BE OPEN.

REVISIONS

BELMONT ACADEMY FOR:
2ND FLOOR EXPANSION FOR
BELMONT ACADEMY CHARTER SCHOOL
1476 SW WALTER AVE, LAKE CITY, FLORIDA 32024

SIGNATURE
JOHN W. WELLS, III, PE
PE 0049347
DATE

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N.P. Geisler, Architect
AR0007005

NICHOLAS PAUL GEISLER ARCHITECT
N.C.A.R.B. Certified
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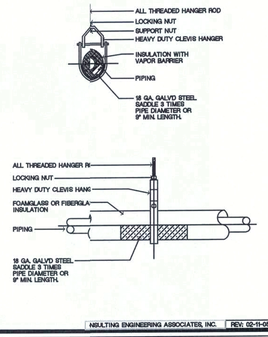
PHONE: (813) 448-0225
REGISTRY 3962
PROJECT NUMBER: 20031

JOB NUMBER
2K1403a
DATE:
28 SEP 2020

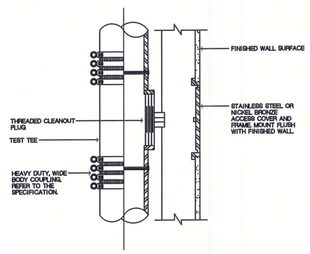
SHEET NUMBER
M.6

PIPE HANGERS



NBULTING ENGINEERING ASSOCIATES, INC. | REV: 02-11-08 | PD-0905

CO-1 WALL CLEANOUT HUBLESS CAST IRON PIPE W/ACCESS COVER



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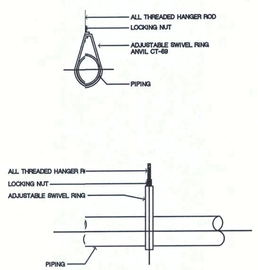
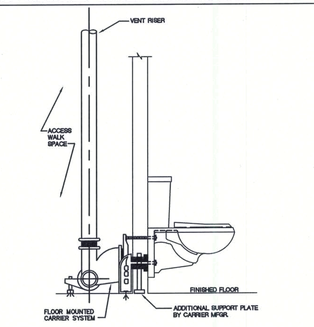
PIPE HANGER FOF COPPER TUBE



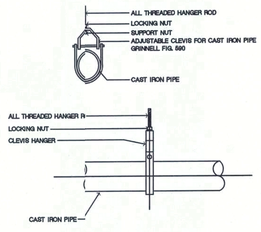
NBULTING ENGINEERING ASSOCIATES, INC. | REV: 10-20-11 | PD-0911

WALL MOUNTED WATER CLOSET/FLUSH VALVE



CONSULTING ENGINEERING ASSOCIATES, INC. | REV: 05-01-10 | PD-0402

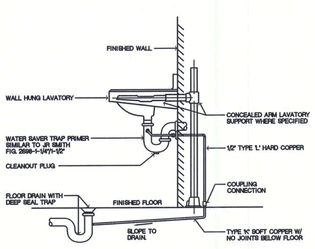
CLEVIS HANGER DR CAST IRON PIPE



SIZE RANGE: 4 THROUGH INCH CAST IRON PIPE.

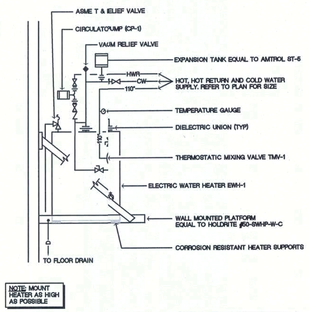
NBULTING ENGINEERING ASSOCIATES, INC. | REV: 02-11-08 | PD-0910

TP-1 WATER SAVER TRAP PRIMER



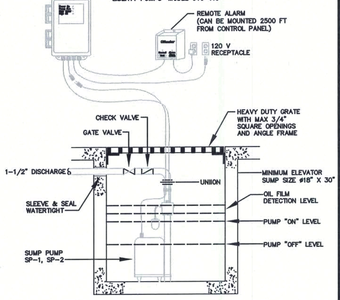
CONSULTING ENGINEERING ASSOCIATES, INC. | REV: 02-09-05 | PD-0406

WATER HEATER /SHELF MOUNTED



NBULTING ENGINEERING ASSOCIATES, INC. | REV: 02-12-07 | PD-0802A

SUMP PUMP



CONSULTING ENGINEERING ASSOCIATES, INC. | REV: 07-07-10 | PD-1103A

PLUMBING GENERAL NOTES

1. ALL WORK UNDER THIS DIVISION SHALL COMPLY WITH THE CODES AND STANDARDS AS LISTED ON THE PROJECT DRAWINGS AND TO OTHER PERTINENT CODES MADE A PART OF SUCH CODE BY REFERENCE.
2. PLANS INDICATE THE SCHEMATIC LAYOUT AND LOCATION OF THE PLUMBING SYSTEM COMPONENTS. UNLESS SPECIFIC DIMENSIONS ARE NOTED, THE ACTUAL LOCATION OF THESE COMPONENTS SHALL BE DETERMINED IN THE FIELD IN COORDINATION WITH THE WORK OF OTHER TRADES, THE USE OF MANUFACTURER'S SHOP DRAWINGS AND SIMILAR CERTIFIED DATA. PLANS SHALL NOT BE SCALED.
3. NO EXCLUSIONS FROM OR LIMITATIONS IN THE LANGUAGE USED IN THE CONTRACT DOCUMENTS SHALL BE INTERPRETED AS MEANING THAT EQUIPMENT, APPURTENANCES, AND/OR ACCESSORIES NECESSARY FOR A COMPLETE AND OPERATIONAL SYSTEM ARE NOT TO BE PROVIDED AS REQUIRED. THE SEPARATE DIVISIONAL DRAWINGS AND SPECIFICATIONS DO NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY TO PROVIDE THE WORK WHICH IS INDICATED ON ANY OF THE DRAWINGS OR DIVISION OF THE SPECIFICATIONS. REVIEW AND COORDINATE THE SCOPE OF WORK WITH ALL SECTIONS TO ASSURE A COMPLETE AND FUNCTIONAL SYSTEM IS INSTALLED.
4. SUBMIT SHOP DRAWINGS OF ALL FIXTURE, EQUIPMENT, AND MATERIALS FOR REVIEW. INSTALL AND TEST ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. FOR ALL EQUIPMENT, WHICH HAS BEEN SCHEDULED DIRECTLY ON THE DRAWINGS, PROVIDE WITHIN THE SUBMITTAL, A PERFORMANCE SCHEDULE FOR THE PROPOSED EQUIPMENT IN THE SAME FORMAT AS INCLUDED ON THE CONTRACT DOCUMENT. FAILURE TO PROVIDE REQUIRED PERFORMANCE SCHEDULE WILL RESULT IN REJECTION OF THE ENTIRE SUBMITTAL. BIND SHOP DRAWINGS/CATALOG-CUTS IN THREE RING BINDERS WITH A TITLE SHEET AND IDENTIFICATION ON FRONT AND SIDE OF THE BINDER. SUBMIT DRAWINGS AND CUT SHEETS FOR ALL PRODUCTS ALL AT ONE TIME. INDEX ALL ITEMS TO THE PROJECT MANUAL OR DRAWINGS AS APPLICABLE. SHOP DRAWINGS THAT DEVIATE FROM THE REQUIREMENTS OF THE CONTRACT DOCUMENTS SHALL LIST ALL DIFFERENCES IN A COVER LETTER ATTACHED TO TOP OF THE SUBMITTAL. ANY UNLISTED DEVIATIONS FOUND DURING REVIEW WILL RESULT IN THE REJECTION OF THE ENTIRE SUBMITTAL. FOR ITEMS REVIEWED AND MARKED "REJECTED" OR "REVISE AND RESUBMIT", ONLY ONE ADDITIONAL SUBMITTAL WILL BE REVIEWED TO VERIFY PRODUCT COMPLIANCE WITH THE CONTRACT DOCUMENTS. SHOULD FURTHER SUBMITTALS BE REQUIRED FOR THE DESIGN PROFESSIONAL TO VERIFY THE SUBMITTAL WITH THE REQUIREMENTS OR THE CONTRACT DOCUMENTS. THE HOURLY RATE OF $150.00 WILL BE BILLED TO THE CONTRACTOR FOR THE PROFESSIONAL(S) TIME SPENT ON THE REVIEW.
5. PIPING AND OTHER ITEMS OF THE PLUMBING SYSTEM SHALL BE SUPPORTED DIRECTLY FROM THE BUILDING STRUCTURE AND NOT FROM THE CEILING, CEILING SUSPENSION SYSTEM, DUCTWORK, PIPING, OR ELECTRICAL SYSTEMS.
6. PIPING SHALL BE RUN A MINIMUM OF 6" ADJACENT TO RATED WALLS SO THAT WALLS CAN BE INSPECTED. (RELOCATE ANY EXISTING PIPING AS REQUIRED.)
7. FOR SEALING OF PIPE PENETRATIONS THROUGH FIRE RATED WALLS, REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS. ALL PIPE PENETRATIONS SHALL BE SEALED USING DETAILS APPROVED BY UL.
8. PROVIDE ADDITIONAL PIPING SUPPORTS ON BOTH SIDES AND WITHIN 18" OF FIRE RATED WALLS. PIPING SHALL NOT BE SUPPORTED FROM ANY RATED WALL. SLEEVE AND/OR FIRESTOP ALL PENETRATIONS THROUGH RATED WALL, CEILINGS, AND FLOOR WITH UL LISTED ASSEMBLIES. FIRESTOP ASSEMBLIES SHALL BE EQUAL TO OR EXCEED THE RATING OF THE WALL, CEILING, OR FLOOR. SEE ARCHITECTURAL DRAWINGS FOR FINAL FINISHES.
9. HANGERS, ANCHORS AND SUPPORTS SHALL SUPPORT THE PIPING AND THE CONTENTS OF THE PIPING. HANGERS AND STRAPING MATERIALS SHALL BE OF APPROVED MATERIALS THAT WILL NOT PROMOTE GALVANIC ACTION. PROVIDE PIPE SADDLES BELOW INSULATED PIPES.
10. HANGERS AND ANCHORS SHALL BE ATTACHED TO THE BUILDING CONSTRUCTION IN AN APPROVED MANNER.
11. RIGID SUPPORT SWAY BRACING SHALL BE PROVIDED AT CHANGES IN DIRECTION GREATER THAN 45° FOR PIPE SIZES 4" AND LARGER.
12. ANCHORAGE SHALL BE PROVIDED TO RESTRAIN DRAINAGE PIPING FROM AXIAL MOVEMENT. FOR PIPE SIZES GREATER THAN 4", RESTRAINTS SHALL BE PROVIDED FOR DRAIN PIPES AT ALL CHANGES IN DIRECTION AND AT ALL CHANGES IN DIAMETER GREATER THAN TWO PIPE SIZES. BRACES, BLOCKS, RODDING AND OTHER SUITABLE METHODS AS SPECIFIED BY THE COUPLING MANUFACTURER SHALL BE UTILIZED.
13. CONCEAL PIPING ABOVE CEILING, WITHIN WALL OR CHASES EXCEPT IN MECHANICAL ROOMS OR AS SPECIFICALLY NOTED.
14. PROVIDE ACCESS PANELS (EQUAL TO MIFAB PRODUCTS) FOR ALL VALVES CONCEALED IN WALLS OR ABOVE NON-ACCESSIBLE CEILINGS. COORDINATE FINISH WITH THE ARCHITECT.
15. PROVIDE A PERMANENT 1/2" ROUND RED DOT ON THE CEILING GRID BELOW ALL VALVES.
16. PROVIDE CLEANOUTS IN ACCORDANCE WITH THE FLORIDA BUILDING CODE – PLUMBING. INSTALL CLEANOUT WITH COVER FLUSH TO FINISH SURFACE.
17. COORDINATE PIPING WITH ALL ELECTRICAL EQUIPMENT (PANELS, TRANSFORMERS, ETC.) PRIOR TO ANY INSTALLATION. DO NOT ROUTE ANY PIPING OVER ANY ELECTRICAL DEVICES.
18. ALL WALL MOUNTED LAVATORIES SHALL BE ATTACHED TO FLOOR MOUNTED CARRIERS DESIGNED TO WITHSTAND A VERTICAL LOAD OF 250 POUNDS ON THE FRONT OF FIXTURE.
19. PROVIDE SANITARY WASTE, VENT, DOMESTIC WATER, ETC. ROUGH-IN AND MAKE FINAL CONNECTIONS (TO INCLUDE PROVIDING ALL NECESSARY RELATED STOPS, VALVES, TRAPS, ETC. AND MAKE READY TO USE) TO ALL EQUIPMENT, WHETHER FURNISHED BY THIS CONTRACTOR OR FURNISHED BY OTHERS.
20. SECURE THE BASE OF ALL WATER COOLERS TO THE WALL. CAULK ALONG TOP OF WATER COOLER TO WALL.
21. FOLLOW ADA GUIDELINES FOR ACCESSIBILITY TO PLACES OF PUBLIC ACCOMMODATION AND COMMERCIAL FACILITIES BY INDIVIDUALS WITH DISABILITIES. THESE GUIDELINES ARE TO BE APPLIED DURING DESIGN, CONSTRUCTION AND ALTERATION OF SUCH BUILDING AND FACILITIES TO THE EXTENT REQUIRED BY REGULATIONS ISSUED BY FEDERAL AGENCIES, INCLUDING THE DEPARTMENT OF JUSTICE, UNDER THE AMERICANS WITH DISABILITIES ACT (ADA) OF 2010.
22. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND ROUGHING DIMENSIONS OF ALL PLUMBING FIXTURES, DRAINS, ETC.
23. ALL HOSE BIBBS AND HOSE END CONNECTIONS SHALL BE EQUIPPED WITH AN APPROVED INTEGRAL VACUUM BREAKER AND SHUT OFF VALVE LOCATED ABOVE THE CEILING. UNLESS OTHERWISE NOTED, ALL HOSE BIBBS SHALL BE INSTALLED 24" ABOVE FINISHED FLOOR.
24. DIELECTRIC UNIONS SHALL BE INSTALLED AT ALL CONNECTIONS OF DISSIMILAR METALS (SUCH AS COPPER TO GALVANIZED STEEL).
25. SOIL, WASTE AND VENT PIPING SHALL BE SOLID CORE PVC TYPE DWV AND SHALL CONFORM TO ONE OF THE FOLLOWING STANDARDS: ASTM D2665, ASTM F891, ASTM F1488, OR CSA B181.2. FITTINGS SHALL BE PVC AND SHALL CONFORM TO ONE OF THE FOLLOWING STANDARDS: ASTM D 2665, OR ASTM F 1866. JOINTS SHALL BE SOLVENT CEMENTING. A PURPLE PRIMER THAT CONFORMS TO ASTM F656 SHALL BE APPLIED TO JOINT SURFACES (CLEAN AND FREE FROM MOISTURE). SOLVENT CEMENT NOT PURPLE IN COLOR AND CONFORMING TO ASTM D2564, CSA B137.3, CSA B181.2 OR CSA B182.1 SHALL BE APPLIED TO ALL JOINT SURFACES. THE JOINT SHALL BE MADE WHILE THE CEMENT IS WET AND SHALL BE IN ACCORDANCE WITH ASTM D2855.
26. HOT AND COLD WATER PIPING SHALL BE CPVC AND SHALL CONFORM TO NSF 61 AND ASTM D 2846, ASTM F 441, ASTM F 442 OR CSA B137.6. FITTINGS SHALL BE CPVC AND SHALL CONFORM TO NSF 61 AND ASTM F 437, ASTM F 438, ASTM F 439 OR CSA B137.6. JOINTS SHALL BE SOLVENT CEMENTING. JOINT SURFACES SHALL BE CLEAN AND FREE FROM MOISTURE, AND AN APPROVED PRIMER SHALL BE APPLIED. SOLVENT CEMENT, ORANGE IN COLOR AND CONFORMING TO ASTM F 493, SHALL BE APPLIED TO ALL JOINT SURFACES. THE JOINT SHALL BE IN ACCORDANCE WITH ASTM D 2846 OR ASTM F 493.
27. PROVIDE VALVES WHERE INDICATED ON PLAN AND NECESSARY FOR PROPER SYSTEM OPERATION AND COMPONENT ISOLATION. PROVIDE VALVES RATED FOR 125 PSI OR GREATER WORKING PRESSURE IN WATER PIPING.

    BALL VALVES: NIBCO S-585-70
    CHECK VALVES: NIBCO S-413
    BALANCING VALVES: NIBCO S1710
28. INSULATE ALL DOMESTIC HOT AND COLD WATER PIPING WITH 1" THICK FOAMGLASS OR FIBERGLASS WITH "ASJ" VAPOR BARRIER JACKET AND 25/50 FIRE/SMOKE RATING.
29. VERIFY SIZES, LOCATION, INVERTS AND ELEVATIONS PRIOR TO INSTALLING ANY PIPING.
30. SLOPE ALL SANITARY PIPING 3" TO 6" AT A MINIMUM SLOPE OF 1/8" PER FOOT. ALL SANITARY PIPING 2-½" AND SMALLER SHALL BE SLOPED AT A MINIMUM OF 1/4" PER FOOT.
31. ALL EXPOSED PIPING UNDER ACCESSIBLE LAVATORIES SHALL BE INSULATED WITH PROTECTIVE UNDER-SINK PIPE COVERS AND PLUMBING ENCLOSURES AS MANUFACTURED BY TRUEBRO.
32. ALL SANITARY, VENT AND WATER PIPING SHALL BE TESTED BEFORE BEING CONCEALED IN ANY WAY. ALL JOINTS SHALL BE MADE DRIP TIGHT BEFORE BEING CONCEALED. DOMESTIC WATER PIPING SHALL BE TESTED AT 1-1/2 TIMES OPERATING PRESSURE OR 100 PSI, WHICHEVER IS GREATER.
33. DISINFECT POTABLE WATER SYSTEM PER THE FLORIDA BUILDING CODE. PROVIDE DOCUMENTATION IN THE CLOSE OUT DOCUMENTS.

PLUMBING LEGEND & SYMBOLS

SANITARY SOIL & WASTE (BELOW FLOOR)	SAN	
EXISTING SANITARY SOIL & WASTE (BELOW FLOOR)	(E)SAN	
SANITARY VENT	V	
DOMESTIC COLD WATER	CW	
DOMESTIC HOT WATER	HW	
DOMESTIC HOT WATER RETURN	HWR	
EXISTING DOMESTIC COLD WATER	(E)CW	
EXISTING DOMESTIC HOT WATER	(E)HW	
PIPE DROP		
PIPE RISE		
PIPE CONNECTION (TOP)		
PIPE CONNECTION (BOTTOM)		
HOSE BIBB		
WALL CLEANOUT		
FLOOR DRAIN		
SHUTOFF VALVE		
CHECK VALVE (SWING)		
BALANCING VALVE (CALIBRATED)		
WATER HAMMER ARRESTOR		A OR A
CONNECT TO EXISTING		

ABBREVIATIONS

SYMBOL	DESCRIPTION
CO	CLEANOUT
CW	DOMESTIC COLD WATER
DFU	DRAINAGE FIXTURE UNIT
°F	DEGREE FAHRENHEIT
FD	FLOOR DRAIN
GPM	GALLONS PER MINUTE
HB	HOSE BIBB
HW	DOMESTIC HOT WATER
HWR	DOMESTIC HOT WATER RETURN
PSI	POUNDS PER SQUARE INCH
SAN	SANITARY
SFU	SUPPLY FIXTURE UNIT

CODE CRITERIA

NOTE:
ALL CODES AND STANDARDS SHALL COMPLY WITH THE FLORIDA STATUES 69A-3.012 AND THE STATE FIRE MARSHALL'S RULE. THIS LIST IS NOT INCLUSIVE OF ALL CODES AND STANDARDS THAT MAY OR MAY NOT APPLY TO THIS PROJECT.

*FLORIDA BUILDING CODE (FBC), SIXTH EDITION (2017) – ALL SECTIONS
*FLORIDA FIRE PREVENTION CODE 2017
*FLORIDA BUILDING CODE (FBC), SIXTH EDITION (2017) ACCESSIBILITY – 2012 FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA):
*NFPA-70 (2014) NATIONAL ELECTRICAL CODE

AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS, INC. (ASHRAE):
*ASHRAE GUIDELINE 4-2008 – PREPARATION OF OPERATING AND MAINTENANCE DOCUMENTATION FOR BUILDING SYSTEMS

NOTES

1. THE NOTES SHOWN ON THIS SHEET APPLY TO GENERAL CONDITIONS OF PLUMBING WORK REQUIRED FOR THIS PROJECT.
2. SPECIFICATIONS, PROJECT MANUALS AND DRAWINGS, REFER TO THIS SHEET FOR APPLICABLE REFERENCES.
3. THE DESIGN DRAWINGS OF ALL CATEGORIES AND TRADES (ARCHITECTURAL, STRUCTURAL, PLUMBING, MECHANICAL, HEATING, VENTILATING AND AIR CONDITIONING AND ELECTRICAL) AND ALL SPECIFICATIONS AND SHOP DRAWINGS MUST BE COORDINATED AND BE VIEWED IN CONNECTION AND CONJUNCTION WITH EACH OTHER TO INSURE THE PROPER LOCATION OF ALL DEVICES AND EQUIPMENT. MAKE PARTICULAR NOTE OF LOCATIONS AND DIMENSIONS SHOWN ON THE ARCHITECTURAL FLOOR PLANS AND ELEVATIONS.
4. TO THE BEST OF THE ENGINEER'S KNOWLEDGE, THE PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE MINIMUM BUILDING CODES AND THE APPLICABLE FIRE-SAFETY STANDARDS AS DETERMINED BY THE LOCAL AUTHORITY IN ACCORDANCE WITH SECTION 110.8.4.4 OF THE FLORIDA BUILDING CODE AND 633 FLORIDA STATUTES.

DRAWING INDEX

REVISIONS

BELMONT ACADEMY FOR:
2ND FLOOR EXPANSION FOR
BELMONT ACADEMY CHARTER SCHOOL
1476 SW WALTER AVE, LAKE CITY, FLORIDA 32024

John W. Wells III, Stamp Inside
Professional Engineer, License No: 49347. This item has been electronically signed andsealed by John W. Wells, III, PE on the site included on the Certificate using a Dital Signature. Printed copies of this document are not considered signed and sailed and this signature must be verifid on any electronic copies.

JOHN W. WELLS, III, PE
PE 0049347
SIGNATURE
DATE

John William Wells, III
2020.10.02 12:47:41 -04'00'
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Celebrating 40 Years of Service
1972 - 2012
N.P. Geisler, Architect
AR0009065

NICHOLAS PAUL GEISLER ARCHITECT
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CEA

CONSULTING ENGINEERING ASSOCIATES, INC.
8353 GUNN HIGHWAY
TAMPA, FLORIDA 33626
PHONE: (813) 448-0225
REGISTRY 3962
PROJECT NUMBER: 20031

JOB NUMBER
2K1403a
DATE:
23 SEP 2020

SHEET NUMBER
P.1

PLUMBING FIXTURE SCHEDULE

	MINIMUM CONNECTIONS				FIXTURE	FAUCET / FLUSH VALVE	SEAT	DRAIN	TRAP	SUPPLY	CARRIER	INSULATION
	WASTE	VENT	CW	HW								
WC–1	4"	2"	1/2"	–	WATER CLOSET/ADA WHITE, VITREOUS CHINA, ELONGATED 16¼/2" HIGH BOWL RIM, FLOOR MOUNTED, PRESURE ASSISTED SIPHON JET FLUSH ACTION, 1. GALLONS PER FLUSH, FULLY GLAZED 2-/8" TRAPWAY, TWO BOLT CAPS. AMERICAN STANDARD "CADET RIGHT HEIGHT" 2467.016	--	OPEN FRONT LESS COVER, ELONGATED, HEAVY–DUTY, SOLID PLASTIC, FOUR MOLDED–IN BUMPERS, SELF SUSTAINING CHECK HINGES WITH STAINLESS STEEL POSTS AND PINTLES, WHITE. OLSONITE 95SSCT	--	INTEGRAL	--	--	--
WC–2	4"	2"	1/2"	–	WATER CLOSET WHITE, VITREOUS CHINA, ELONGATED 15'HIGH BOWL RIM, WALL HUNG, BACK OUTLET GRAVITY FLUSH. COMBINATION BOWL AN TANK LESS SEAT. SIPHON JET ACTION. 28 GPF. AMERICAN STANDARD "GLENWALL VORMAX" 2882107	--	OPEN FRONT LESS COVER, ELONGATED, HEAVY–DUTY, SOLID PLASTIC, FOUR MOLDED–IN BUMPERS, SELF SUSTAINING CHECK HINGES WITH STAINLESS STEEL POSTS AND PINTLES, WHITE. OLSONITE 95SSCT	--	INTEGRAL	--	SIPHON JET TOILET CARRIER. 4" NO HUB CONNECTIONS AND 2" VENT. CORROSION RESISTANT. ADJUSTABLE COUPLING. ZURN ZN1201–N_4 ZURN ZN1202–N4	--
U–1	2"	1–1/2"	3/4"	–	URINAL/ADA WHITE, VITREOUS CHINA, 0.5 GPF, FLUSNG RIM, WASHOUT FLUSH ACTION, 3/4" INLT SPUD, TOP SPUD. AMERICAN STANDARD "WASHBROOK" 699.001	FLUSH VALVE CHROME PLATED CAST BRASS CONSTRUCTION, NON–HOLD OPEN HANDLE, ADJUSTABLE TAILPIECE, 0.5 GPF, FOR 3/4" TOP SPUD URINALS. AMERICAN STANDARD 6045.051	--	--	INTEGRAL	--	--	--
U–2	2"	1–1/2"	3/4"	–	URINAL WHITE, VITREOUS CHINA, 0.5 GPF, FLUSNG RIM, WASHOUT FLUSH ACTION, 3/4" INLT SPUD, TOP SPUD. AMERICAN STANDARD "WASHBROOK" 699.001	FLUSH VALVE CHROME PLATED CAST BRASS CONSTRUCTION, NON–HOLD OPEN HANDLE, ADJUSTABLE TAILPIECE, 0.5 GPF, FOR 3/4" TOP SPUD URINALS. AMERICAN STANDARD 6045.051	--	--	INTEGRAL	--	--	--
L–1	1–1/2"	1–1/2"	1/2"	1/2"	LAVATORY/ADA WHITE, WALL HUNG, VITREOUS CHINA, 20–3/4" X 18–1/4", FAUCET HOLES C 4" CENTERS, FRONT OVERFLOW, FOR CONCEALED ARMS SUPPORT. AMERICAN STANDARD "LUCERNE" 035512	CHROME FINISH, 4" CENTERSET, ALL METAL FABRICATED BODY, VANDAL RESISTANT AERATOR, VANDAL RESISTANT LEVER HANDLE, DIAMOND EMBEDDED CERAMIC DISC CARTRIDGE, 0.5 GPM. DELTA 501LF–HGMHDF	--	1–1/4", 17 GAUGE, CHROME PLATED OPEN GRID P.O. PLUG AND BRASS 1–1/4" TAILPIECE. MCGUIRE 155A	1–1/4" X 1–1/2", 17 GAUGE, ADJUSTABLE TRAP WITH CLEANOUT AND WALL FLANGE, CHROME FINISH. MCGUIRE 8902	1/2" NOMINAL X 3/8" O.D. ANGLE SUPPLY, LOOSE KEY STOP, WALL FLANGE, CHROME PLATED. MCGUIRE 2165CCLK	ADJUSTABLE FLOOR SUPPORT WITH CONCEALED ARMS. JAR R SMITH 700 SERIES	WHITE, SINGLE PIECE CONSTRUCTION, RIGID HIGH IMPACT STAIN RESISTANT PVC TRUEBRO "LAV–SHIELD"
L–2	1–1/2"	1–1/2"	1/2"	1/2"	LAVATORY WHITE, VITREOUS CHINA, OVAL, UNDERMOUNT, 19–1/4" X 16–1/4", FRNT OVERFLOW. AMERICAN STANDARD "OVALYN" 0496.30	CHROME FINISH, 4" CENTERSET, ALL METAL FABRICATED BODY, VANDAL RESISTANT AERATOR, VANDAL RESISTANT LEVER HANDLE, DIAMOND EMBEDDED CERAMIC DISC CARTRIDGE, 1.5 GPM. DELTA 501LF–HGMHDF	--	1–1/4", 17 GAUGE, CHROME PLATED OPEN GRID P.O. PLUG AND BRASS 1–1/4" TAILPIECE. MCGUIRE 155A	1–1/4" X 1–1/2", 17 GAUGE, ADJUSTABLE TRAP WITH CLEANOUT AND WALL FLANGE, CHROME FINISH. MCGUIRE 8902	1/2" NOMINAL X 3/8" O.D. ANGLE SUPPLY, LOOSE KEY STOP, WALL FLANGE, CHROME PLATED. MCGUIRE 2165CCLK	ADJUSTABLE FLOOR SUPPORT WITH CONCEALED ARMS. JAR R SMITH 700 SERIES	WHITE, SINGLE PIECE CONSTRUCTION, RIGID HIGH IMPACT STAIN RESISTANT PVC TRUEBRO "LAV–SHIELD"
BFS–1	1–1/2"	1–1/2"	1/2"	–	BOTTLE FILLER STATION/ADA SURFACE MOUNT, NON–FILTERED NON–REFRIGERATED STAINLESS. LAMINA FLOW, ANTIMICROBIAL, REAR DRAIN. MECHANICAL BOTTLE FILLER BUTTON ACTIVATION. LEAD FREE DESIGN. REFERTO ARCHITECTURAL DRAWINGS FOR MOUNTG HEIGHT. ELKAY EMASM	--	--	--	1–1/4" X 1–1/2", 17 GAUGE, ADJUSTABLE TRAP WITH CLEANOUT, CHROME FINISH. MCGUIRE 8902	CHROME PLATED SUPPLY WITH LOOSE KEY STRAIGHT STOP AND WALL FLANGE. MCGUIRE 158LK	--	--
MB–1	3"	2"	1/2"	1/2"	MOP BASIN WHITE, MOLDED STONE, 24"x24"x10" HH, STAINLESS STEEL DRAIN BODY, COMBINTION DOME STRAINER AND STAINLESS STEELINT BASKET, 3" CONNECTION. FIAT MSB–2424 FIAT 889 CC (MOP BRACKET) FIAT 1453 BB (STAINLESS STEEL STRAER) FIAT 832 AA (HOSE AND BRACKET) FIAT MSG 2424 (STAINLESS STEEL WAL GUARDS). NOTE: INSTALL WALL GUARDS ONLY IF WALLS ARE NOT TILED.	POLISHED CHROME, COMBINATION FITTING WITH VACUUM BREAKER, 3/4" HOSE END THREADED SPOUT, WALL BRACE, PAIL HOOK, INTEGRAL STOPS, ADJUSTABLE SUPPLY ARMS. CHICAGO 897	--	--	--	--	--	--

PLUMBING SPECIALTIES SCHEDULE

MARK	DESCRIPTION	MODEL
CO–1	WALL CLEANOUT ROUND SECURED STAINLESS STEEL ACCESS COVER AND FRAME, COATED, CAST IRON CLEANOUT TEE, NO HUB CONNECTION, WATERTIGHT ABS TAPERED THREAD PLUG.	ZURN ZN–1446–VP
CO–2	FLOOR CLEANOUT ADJUSTABLE LEVELING FLOOR CLEANOUT, DURA–COATED CAST IRON BODY, WITH GAS AND WATERTIGHT ABS TAPERED THREAD PLUG, AND ROUND SCORIATED SECURED LIGHT–DUTY POLISHED NICKEL BRONZE TOP WITH ADDITIONAL LEVELING ADJUSTMENT TO FINISHED FLOOR. VANDAL–PROOF SCREWS.	ZURN ZN1400–BZ–VP
FD–1	FLOOR DRAIN DURA–COATED CAST IRON BODY WITH BOTTOM OUTLET, COMBINATION INVERTIBLE MEMBRANE CLAMP AND ADJUSTABLE COLLAR WITH SEEPAGE SLOTS AND "TYPE B" POLISHED NICKEL BRONZE STRAINER, 1/2" TRAP PRIMER CONNECTION, BACKWATER VALVE, VANDAL PROOF SECURED TOP, SEDIMENT BUCKET.	ZURN Z415B–P–V–VP–Y
TP–1	TRAP PRIMER 17 GAUGE CAST BRASS ADJUSTABLE P–TRAP WITH CLEANOUT AND 1/2" C.P. COPPER TRAP PRIMER TUBE WITH ESCUTCHEON.	JAY R. SMITH 2698
HB–1	HOSE BIBB CHROMEPLATED BRASS BODY, LOOSE KEY, BRASS VALVE, VACUUM BREAKER AND 3/4" MALE HOSE THREAD.	WOODFORD 24P
TMV–1	THERMOSTATIC MIXING VALVE LEAD FREE BRASS BODY CONSTRUCTION. ADVANCED THERMAL ACTUATOR. ADJUSTABLE TEMPERATURE SELECTION WITH LOCK DOWN. INTEGRAL CHECKS AND SCREEN. 1" SWEAT UNION CONNECTIONS. CSA B125 CERTIFIED. LISTED T ASSE 1017. TEMPERATURE SET POINT AT 110F.	POWERS "HYDROGUARD" LFLM492–102

SHOCK ARRESTOR SCHEDULE

REF. PDI STANDARD	FIXTURE UNITS	SIZE	MANUFACTURER	MODEL
A	1–11	1/2"	WATTS	LF15M2–A
B	12–32	3/4"	WATTS	LF15M2–B
C	33–60	1"	WATTS	LF15M2–C

ALL UNITS SHALL BE LEAD FREE, ASSE 1010 APPROVED AND PDI RATED.
ALL UNITS SHALL BE APPROVED FOR INSTALLATION WITH NO ACCESS PANEL, AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

HANGER SPACING

PIPING MATERIAL	MAXIMUM HORIZONTAL SPACING (FEET)	MAXIMUM VERTICAL SPACING (FEET)
CPVC PIPE OR TUBING, 1" OR SMALLER	3	10[a]
CPVC PIPE OR TUBING, 1–1/4" OR LARGER	4	10[a]
PVC PIPE	4	10[a]

a. MIDSTORY GUIDE FOR SIZES 2" AND SMALLER.

WATER HEATER SCHEDULE

MARK	EWH–1
MANUFACTURER	A.O. SMITH
MODEL NUMBER	DEL–50
TYPE	ELECTRIC
VOLTS/PHASE/HERTZ	480/3/60
KW INPUT	10
LEAVING WATER TEMP.	120°F
STORAGE CAPACITY (GAL)	50
GAL PER HR RECOVERY @ 60°F RISE	68
DIMENSIONS	32–1/4" x 26–1/2"ø
THERMAL EXPANSION TANK	AMTROL ST–5–C

NOTES:

1. UNIT SHALL BE COMPLETE PACKAGE WITH INSULATED TANK, HEATING ELEMENT(S), TEMPERATURE PRESSURE RELIEF VALVE AND ALL REQUIRED VALVES, TRAPS, AND PIPING.
2. UNIT SHALL BE MOUNTED AS HIGH AS POSSIBLE ON A WALL MOUNTED PLATFORM EQUAL TO HOLDRITE #50–SWHP–W–C.
3. CONTRACTOR SHALL PROVIDE ELECTRIC TIME SWITCH EQUAL TO INTERMATIC WH40.

RECIRCULATION PUMP SCHEDULE

MARK	RP–1
MANUFACTURER	BELL & GOSSETT
MODEL NUMBER	NBF–10S/LW
GALLONS PER MINUTE (GPM)	1
HEAD IN FT. OF WATER	14
CONNECTIONS	1/2" SWEAT
WATTS	52
VOLTS/PHASE/HERTZ	115/1/60
RPM	2800
TIMER KIT	TC–1
AQUASTAT	AQS–1/2

NOTES:

1. MAINTENANCE FREE, IN–LINE, LEAD FREE BRONZE, WET ROTOR CIRCULATOR.
2. PROVIDE 24 HOUR/7 DAY DIGITAL PROGRAMMABLE TIME CLOCK. PROGRAM TO RUN DURING OCCUPIED PERIODS ONLY.

SUMP PUMP SCHEDULE

MARK	SP–1
MANUFACTURER	LIBERTY PUMPS
MODEL NUMBER	ELV280
FLOW (GPM)	50
HEAD (FT.)	14
DISCHARGE SIZE (IN)	1–1/2
SOLIDS HANDLING SIZE (IN)	1/2
MOTOR HP	1/2
VOLT/PHASE/HERTZ	115/1/60
FULL LOAD AMPS	8.5
MINIMUM SUMP SIZE	18"ø X 30"

NOTES:

1. PUMP SHALL BE SUPPLIED WITH A 25 FEET OF MULTICONDUCTOR POWER CORD.
2. PUMP SHALL BE SUPPLIED WITH AN OIL DETECTOR CONTROL AND APPROVED ALARM.

REVISIONS

BELMONT ACADEMY FOR:
2ND FLOOR EXPANSION FOR
BELMONT ACADEMY CHARTER SCHOOL
1476 SW WALTER AVE, LAKE CITY, FLORIDA 32024

SIGNATURE
JOHN W. WELLS, III, PE
PE 0049347
DATE

Celebrating 40 Years of Service
1972 - 2012
N.P. Geisler, Architect
AR0007005

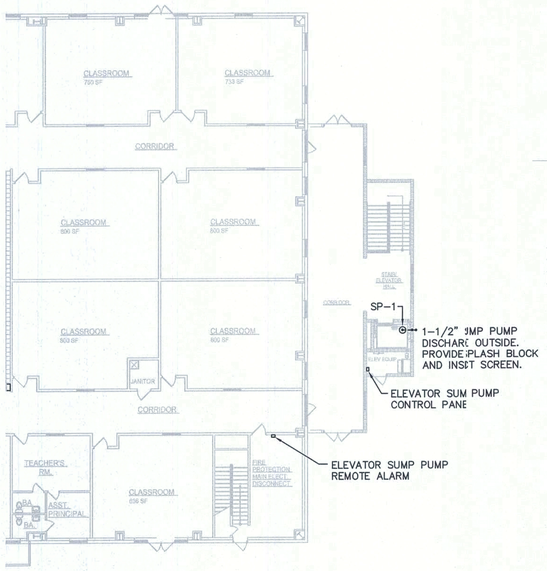
NICHOLAS PAUL GEISLER ARCHITECT
N.C.A.R.B. Certified
1758 NW Brown Rd.
Lake City, FL 32055
(386) 755-9021

CEA

CONSULTING ENGINEERING ASSOCIATES, INC.
865 GUNN HIGHWAY
TAMPA, FLORIDA 33626
PHONE: (813) 448-0225
REGISTRY 3962
PROJECT NUMBER: 20031

JOB NUMBER
2K1403a
DATE:
28 SEP 2020

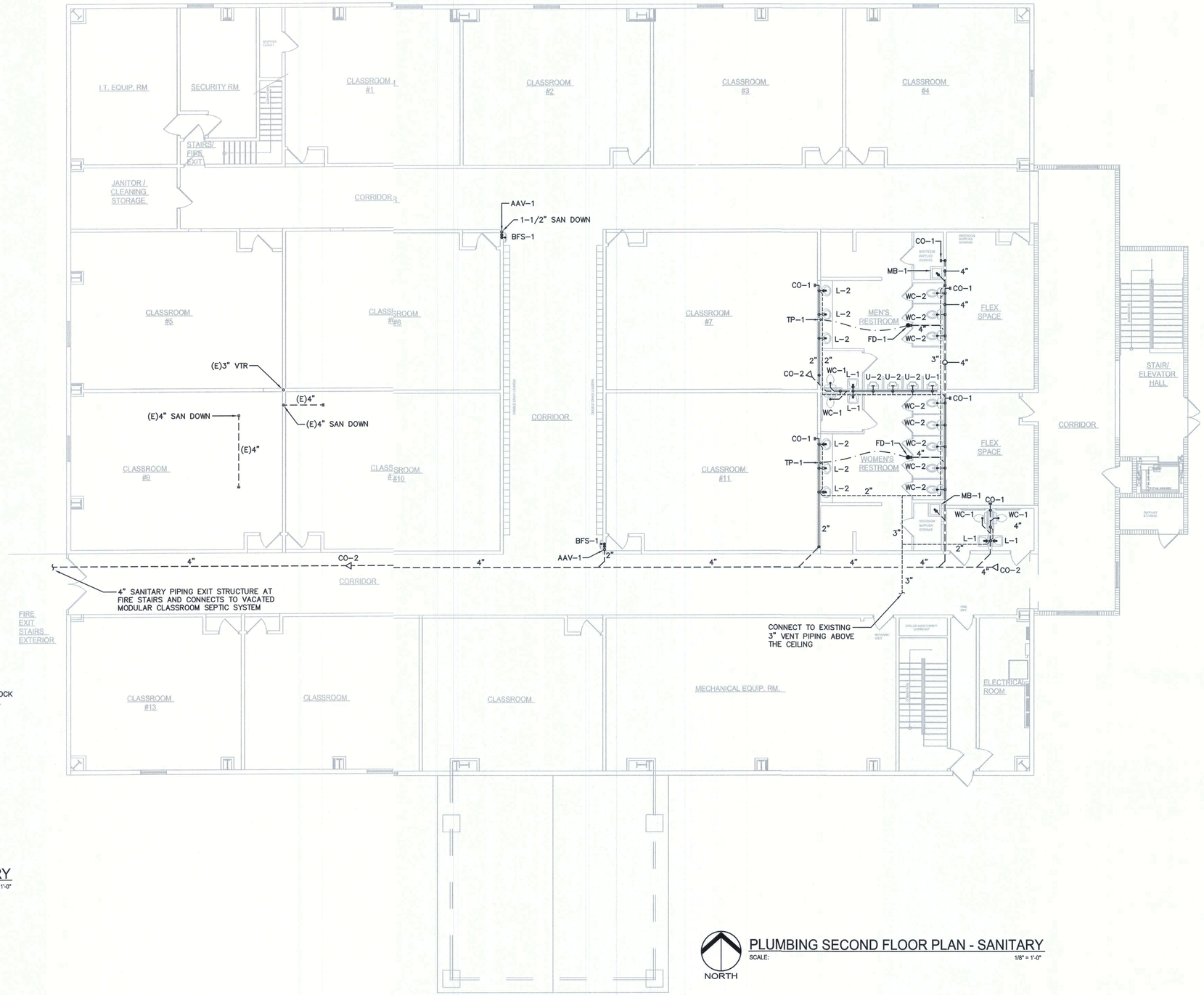
SHEET NUMBER
P.2



NORTH

PLUMBING FIRST FLOOR PARTIAL PLAN - S.NITARY

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



NORTH

PLUMBING SECOND FLOOR PLAN - SANITARY

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

REVISIONS

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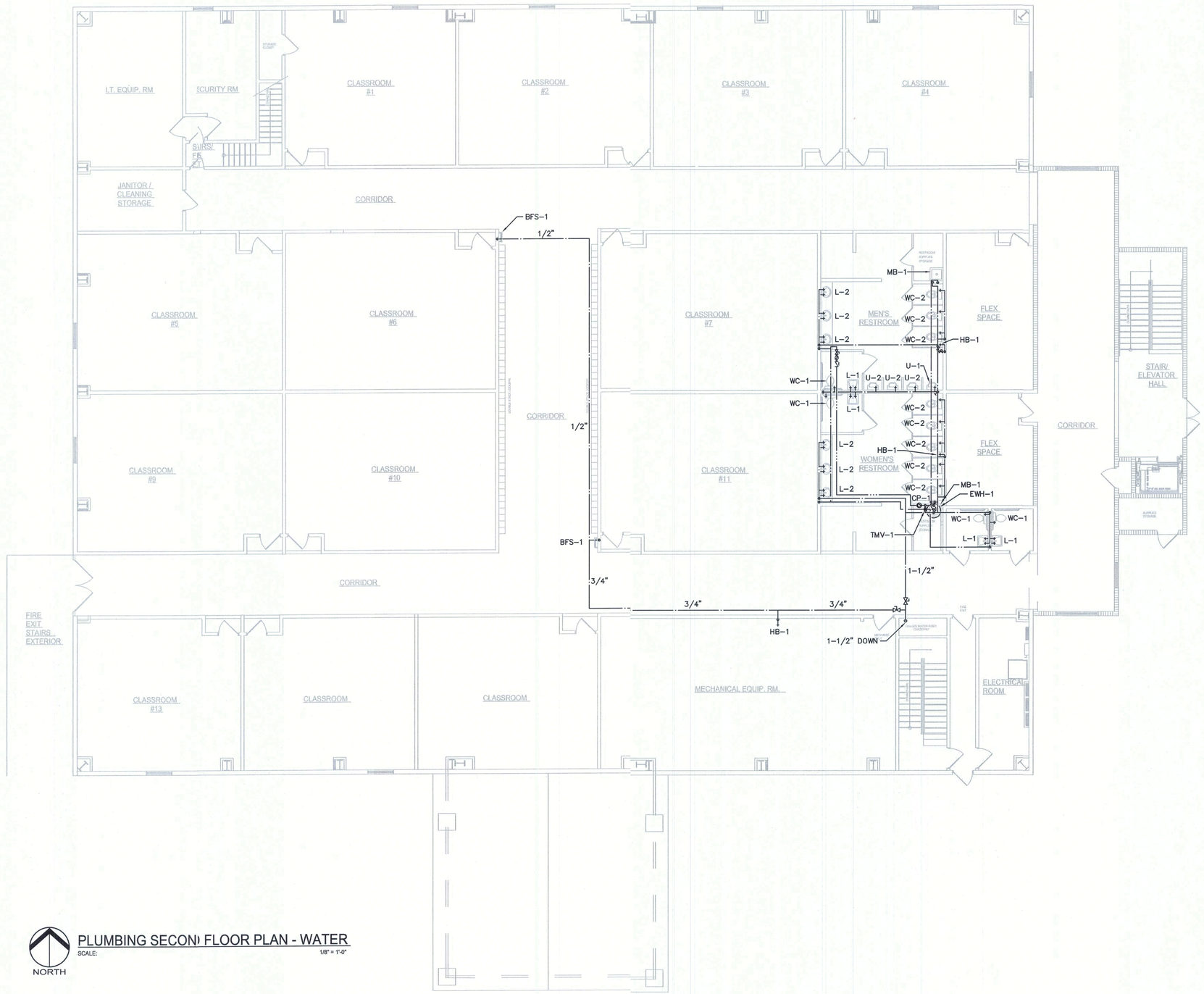

NORTH

PLUMBING SECOND FLOOR PLAN - WATER

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

REVISIONS

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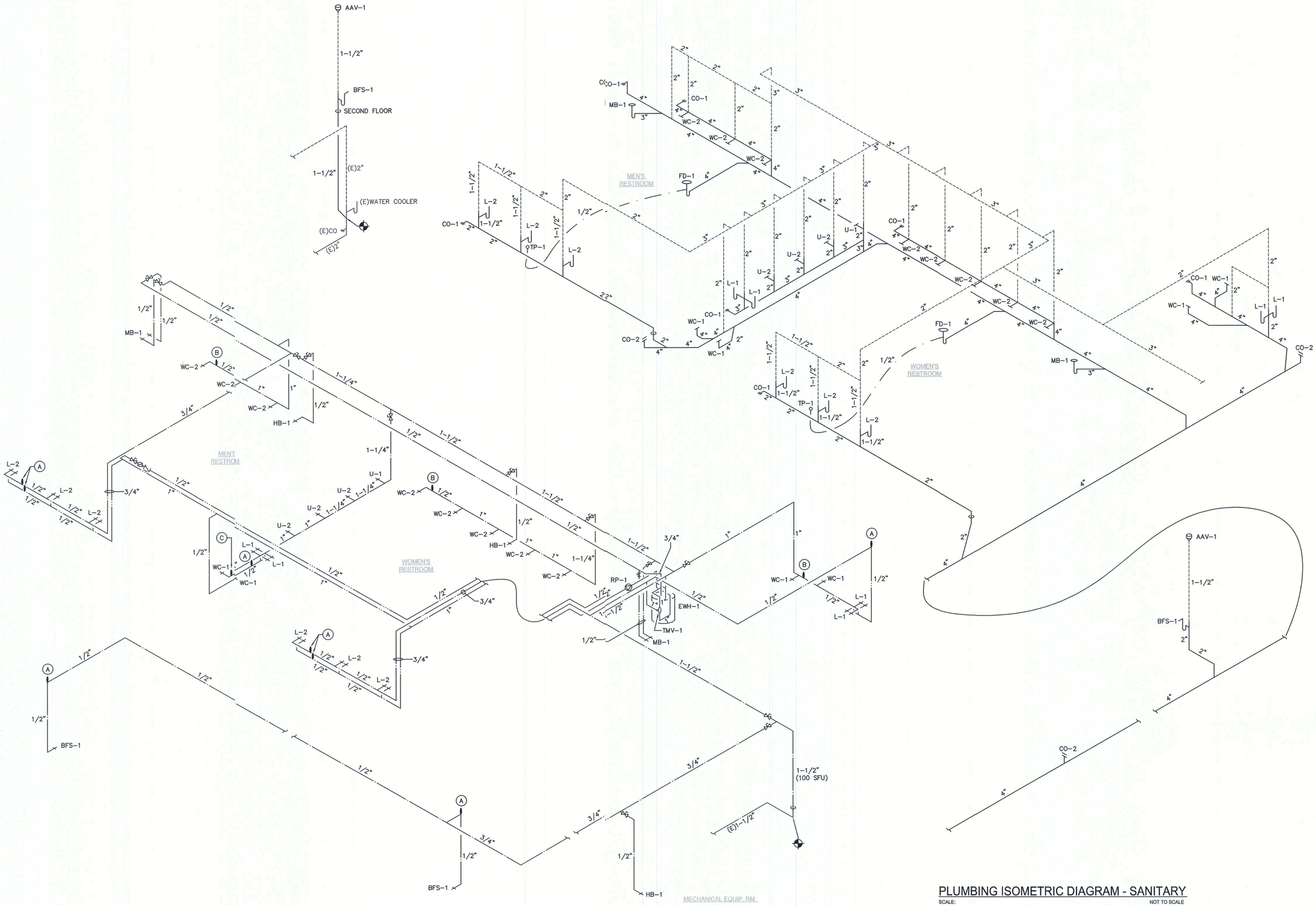

PLUMBING ISOMETRIC DIAGRAM - WATER

SCALE: NOT TO SCALE

PLUMBING ISOMETRIC DIAGRAM - SANITARY

SCALE: NOT TO SCALE

REVISIONS

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PROJECT NUMBER: 20031

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SHEET NUMBER
P.5

1. GENERAL

A. WORK REQUIRED IN THIS SECTION SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NEC), LOCAL, AND STATE CODES. SEE CODE TABLE – THIS SHEET.

2. SCOPE

A. WORK UNDER THIS DIVISION SHALL INCLUDE THE FURNISHING OF ALL LABOR AND THE FURNISHING OF ALL CONDUCTORS, CONDUITS, WIRING, LIGHTING FIXTURES, SAFETY SWITCHES, AND ALL OTHER APPARATUS AND ACCESSORIES INDICATED, SPECIFIED OR REQUIRED FOR A COMPLETE POWER AND LIGHTING SYSTEM, INCLUDING ELECTRICAL WORK REQUIRED IN OTHER DIVISIONS AND PROVISIONS FOR TELEPHONES AS INDICATED.

B. "PROVIDE" IN ELECTRICAL NOTES SHALL MEAN "PROVIDE AND INSTALL" UNLESS SPECIFICALLY NOTED OTHERWISE.

3. GENERAL REQUIREMENTS

A. THIS CONTRACTOR, PRIOR TO SUBMITTING HIS BID, WILL BE HELD TO HAVE VISITED THE SITE OF THE WORK, TO HAVE EXAMINED THE DRAWINGS, SPECIFICATIONS, AND OTHER DOCUMENTS RELATIVE TO THE ENTIRE WORK; TO HAVE FAMILIARIZED HIMSELF WITH THE EXISTING CONDITIONS AND THE MANNER IN WHICH THEY WILL AFFECT HIS WORK; TO HAVE FAMILIARIZED HIMSELF WITH THE GENERAL TYPE OF CONSTRUCTION AND ITS RELATION TO HIS WORK, AS WELL AS THE RELATION OF HIS WORK TO THAT OF ALL OTHER TRADES.

4. MATERIALS AND WORKMANSHIP

A. ALL MATERIALS SHALL BE NEW AND SHALL CONFORM TO THE STANDARDS OF I.E.E.E., AND NEMA, WHERE SUCH STANDARD HAS BEEN ESTABLISHED FOR THE PARTICULAR TYPE OF MATERIAL IN QUESTION. ALL ELECTRICAL EQUIPMENT INSTALLED SHALL BE LISTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL) PER NEC ARTICLE 110.3.

B. ALL WORK SHALL BE DONE IN A WORKMANLIKE MANNER AND SHALL PRESENT A NEAT AND MECHANICAL APPEARANCE WHEN COMPLETED.

C. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY POWER AND TEMPORARY LIGHTING DURING CONSTRUCTION. TEMPORARY POWER SHALL PROVIDE ADEQUATE POWER FOR NORMAL CONSTRUCTION USE. TEMPORARY LIGHTING SHALL PROVIDE ADEQUATE LIGHT SO THAT THE INDIVIDUAL TRADES WORK CAN BE COMPLETED SAFELY.

5. CODES, PERMITS, AND INSPECTIONS

A. THE INSTALLATION SHALL COMPLY WITH ALL LAWS IN EFFECT APPLYING TO ELECTRICAL INSTALLATIONS, THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE, THE NATIONAL ELECTRICAL SAFETY CODE, AND ALL LOCAL CODES.

B. ANY PERMITS REQUIRED SHALL BE OBTAINED AND AFTER COMPLETION OF THE WORK, THE OWNER SHALL BE FURNISHED A CERTIFICATE OF FINAL INSPECTION AND APPROVAL FROM THE INSPECTION AUTHORITIES.

C. ALL PERMITS FOR INSTALLATION, INSPECTION, CONNECTIONS, ETC., SHALL BE TAKEN OUT AND PAID FOR BY THE ELECTRICAL CONTRACTOR AS A PART OF THE WORK UNDER THIS DIVISION OF THE SPECIFICATIONS.

6. DRAWINGS AND SCHEDULES

A. DRAWINGS: THE ELECTRICAL DRAWINGS ARE PARTLY DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT AND EXTENT OF THE ELECTRICAL WORK, BUT EXACT LOCATION AND ARRANGEMENT OF PARTS SHALL BE DETERMINED AS THE WORK PROGRESSES TO CONFORM IN THE BEST POSSIBLE MANNER, WITH THE SURROUNDINGS.

B. THE DRAWINGS ARE DESIGNED AS PER THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ADVISE THE ARCHITECT OF ANY CONFLICTS BETWEEN THE NATIONAL ELECTRICAL CODE AND LOCAL CODES. FAILURE TO DO SO DOES NOT RELIEVE THE CONTRACTOR'S OBLIGATION UNDER THIS CONTRACT AND WORK RQUIRED TO COMPLY WITH THE APPLICABLE CODES SHALL BE INSTALLED AT NO ADDITIONAL COST.

7. DISCREPANCIES

A. IN CASE OF ANY DIFFERENCE BETWEEN THE DRAWINGS AND SPECIFICATIONS, OR WHERE THE DRAWINGS AND SPECIFICATIONS ARE NOT CLEAR OR DEFINITE, THE SUBJECT SHALL BE REFERRED TO THE PROJECT ENGINEER FOR DECISION AND WRITTEN INSTRUCTIONS.

8. CONDUITS

A. RIGID GALVANIZED STEEL CONDUIT SHALL BE USED FOR ALL EXPOSED WIRING LOCATED LESS THAN 8 FEET ABOVE THE FINISHED FLOOR LEVEL, WHERE SUBJECT TO SEVERE MECHANICAL INJURY AND ALL WIRING EXPOSED TO THE ELEMENTS.

B. ALL EXPOSED CONDUIT SHALL BE RUN PARALLEL WITH WALLS OR CEILINGS.

C. ALL CONDUITS CUT SHALL BE REAMED TO REMOVE ANY SHARP EDGES THAT MAY DAMAGE THE WIRES TO BE PULLED IN.

D. BRANCH CIRCUIT WIRING RUN CONCEALED IN WALLS AND CEILINGS MAY BE INSTALLED IN UNDERWRITER'S APPROVED GALVANIZED THIN WALL CONDUIT WITH COMPRESSION OR SET–SCREW TYPE FITTINGS. SPRING OR CRIMP TYPE OR NON–FERROUS FITTINGS WILL NOT BE APPROVED.

E. ALL WIRING UNDERGROUND OR IN THE SLAB SHALL BE RUN IN RIGID THICK WALL GALVANIZED STEEL CONDUIT. P.V.C. SCHEDULE 40 CONDUIT SHALL BE PERMITTED FOR UNDERGROUND USE ONLY. USE THICK WALL 90° STEEL ELBOWS TO PIERCE SLAB.

F. CONDUIT CONNECTIONS FROM OUTLET BOXES, JUNCTION BOXES, CONDUIT, SWITCH BOXES, OR MOTOR CONTROLLER TO ROTATING OR VIBRATING MACHINERY OR EQUIPMENT SHALL BE MADE WITH FLEXIBLE METALLIC CONDUIT WHICH SHALL BE AS SHORT AS POSSIBLE WITH A MAXIMUM LENGTH OF THIRTY–SIX INCHES. FLEXIBLE CONDUIT EXPOSED TO THE WEATHER SHALL BE WEATHER–PROOF TYPE.

G. CONDUIT CONNECTIONS FROM OUTLET BOXES TO RECESSED LIGHTING FIXTURES SHALL BE MADE WITH 3/8" FLEXIBLE CONDUIT WHICH SHALL HAVE A MAXIMUM LENGTH OF 72 INCHES, UNLESS OTHERWISE NOTED.

H. PACK ALL SLEEVES FOR CONDUITS PASSING THROUGH FIRE RATED WALLS AND FLOOR SLABS WITH FIRE RESISTANT MATERIALS. ALL PENETRATIONS SHALL BE U.L. RATED.

I. CONDUITS SHALL BE A MINIMUM 3/4" CONDUIT UNLESS NOTED OTHERWISE ON PLANS. ALL EMPTY CONDUITS SHALL BE PROVIDED WITH NYLON PULL–WIRES.

J. A GREEN INSULATED COPPER GROUND CONDUCTOR SHALL BE INSTALLED IN ALL RACEWAYS.

9. WIRE AND CABLE

A. ALL CONDUCTORS SHALL BE COPPER WITH THHN INSULATION (THWN INSULATION FOR WEATHER–PROOF APPLICATIONS).

B. ALL CONDUCTORS #10 AND SMALLER SHALL BE SOLID COPPER, AND ALL CONDUCTORS #8 AND LARGER SHALL BE COPPER USING BOLTED LUGS AT TERMINALS. ALL WIRING FOR 120–VOLT, 20–AMP CIRCUITS EXCEEDING 80 FEET IN LENGTH SHALL BE #10 AWG ENTIRE CIRCUIT MINIMUM. MINIMUM WIRE SIZE SHALL BE #12 AWG UNLESS NOTED OTHERWISE.

10. OUTLET BOXES

A. CEILING OUTLET BOXES SHALL BE FOUR INCH OCTAGON TYPE OF GALVANIZED STEEL WITH A MINIMUM DEPTH OF 1 1/2". OUTLET BOXES FOR SWITCHES OR WALL RECEPTACLES SHALL BE 4" SQUARE, OF GALVANIZED STEEL, WITH A MINIMUM DEPTH OF 1 1/2". TELEPHONE OUTLET BOXES SHALL BE 4 11/16" SQUARE. WALL SWITCH OUTLETS SHALL BE MOUNTED 48" ABOVE THE FLOOR; WALL RECEPTACLES SHALL GENERALLY BE MOUNTED 18" ABOVE THE FLOOR UNLESS NOTED OTHERWISE ON DRAWINGS. OUTLET BOXES FOR EXPOSED WALL MOUNTING SHALL BE CAST METAL TYPE. OUTLET BOXES FOR CEILING FANS SHALL BE LISTED FOR SUCH USE.

11. WIRING DEVICES

A. SWITCHES: 20–AMP, 120/277 VOLT RATING, SPECIFICATION GRADE, OFFICE–WHITE IN COLOR. SWITCHES SHALL BE FLUSH, QUIET TOGGLE TYPE (HUBBELL #1221 OR EQUAL).

B. WALL RECEPTACLES: DUPLEX RECEPTACLES SHALL BE FLUSH TYPE, 15 AMPERES, 125 VOLTS RATING, WITH PARALLEL SLOTS AND DOUBLE SIDE CONTACTS. RECEPTACLES SHALL BE GROUNDING TYPE "OFFICE–WHITE" IN COLOR, SPECIFICATION GRADE (HUBBELL #5262 OR EQUAL).

C. WALL PLATES SHALL BE "OFFICE–WHITE" BAKELITE IN OFFICE AREAS, AND GALVANIZED STEEL IN SHOP AREAS.

12. SAFETY SWITCHES

A. SAFETY SWITCHES SHALL BE HEAVY OR GENERAL DUTY, FUSIBLE TYPE OR NON–FUSIBLE TYPE AS INDICATED ON DRAWINGS (SQUARE D CO. OR EQUAL).

13. PANELBOARDS

A. PANELBOARDS SHALL BE OF THE DEAD–FRONT TYPE INCORPORATING SWITCHING AND PROTECTIVE DEVICES OF THE NUMBER, RATING AND TYPE SPECIFIED HERE IN OR SHOWN ON THE DRAWINGS. PANELBOARDS SHALL HAVE GENERAL PURPOSE ENCLOSURES AND SHALL BE SUITABLE FOR FLUSH OR SURFACE MOUNTING AS INDICATED. ALL PANELBOARDS SHALL BE RATED FOR THE INTENDED VOLTAGE AND SHALL BE IN ACCORDANCE WITH THE UNDERWRITERS' LABORATORIES, INC. "STANDARD FOR PANELBOARDS" AND "STANDARD FOR CABINETS AND BOXES" AND SHALL BE SO LABELED WHERE PROCEDURES EXIST. PANELBOARDS SHALL ALSO COMPLY WITH NEMA STANDARD FOR PANELBOARDS AND THE NATIONAL ELECTRICAL CODE. THE BRANCH CIRCUIT BREAKER ARRANGEMENT IN EACH PANEL SHALL BE AS INDICATED IN THE PANEL SCHEDULES. PANELS SHALL BE AS MANUFACTURED BY SQUARE "D", CUTLER–HAMMER, OR APPROVED EQUAL.

B. THE POWER COMPANY SHALL BE CONTACTED BY THE CONTRACTOR WITHIN 10 DAYS OF THE AWARD OF THE CONTRACT TO VERIFY THE ACTUAL AVAILABLE SHORT CIRCUIT FAULT CURRENT AT THE TRANSFORMER SECONDARY BUSHINGS. THE CONTRACTOR SHALL PROVIDE ELECTRICAL DISTRIBUTION AND UTILIZATION EQUIPMENT AND PANELBOARDS WHICH HAVE A.I.C. WITHSTAND RATINGS GREATER THAN THE AVAILABLE FAULT CURRENT.

C. ALL CIRCUIT BREAKERS SHALL BE "FULL SIZE". NO TANDEM, PIGGY–BACK, TWIN OR HALF–SIZE BREAKERS WILL BE ACCEPTED. BREAKER MUST BE APPROVED PRIOR TO INSTALLATION.

D. COORDINATE THE REQUIRED SIZE OF ALL CIRCUIT BREAKERS FEEDING EQUIPMENT (MOTORS, HVAC, KITCHEN EQUIPMENT, SPECIAL PURPOSE OUTLETS, ELEVATORS, OWNER–FURNISHED EQUIPMENT, ETC.) WITH APPROVED EQUIPMENT SHOP DRAWINGS AND OWNER REPRESENTATIVES PRIOR TO ORDERING PANELBOARDS. BREAKERS SHALL BE SIZED PER THE N.E.C., THE EQUIPMENT NAME PLATE AND MANUFACTURER'S RECOMMENDATIONS. SERIES RATING OF CIRCUIT BREAKERS MUST BE APPROVED BY ENGINEER, AND MUST COMPLY WITH ALL THE REQUIREMENTS OF NEC 110.22 AND 240.86.

E. UPON COMPLETION OF INSTALLATION, INSPECT INTERIOR AND EXTERIOR OF PANELBOARDS. PROTECT INTERIORS FROM PAINT SPLATTER DURING CONSTRUCTION AND REMOVE PAINT SPLATTERS AND OTHER SPOTS, DIRT, AND DEBRIS. TOUCH–UP SCRATCHES AND MARS OF FINISH TO MATCH ORIGINAL FINISH.

14. LIGHTING FIXTURES

A. LIGHTING FIXTURES SHALL BE FURNISHED AND INSTALLED COMPLETED IN ALL RESPECTS, INCLUDING LAMPS AS LISTED IN THE FIXTURE SCHEDULE ON THE DRAWINGS. ALL FIXTURES SHALL BE PROPERLY AND CAREFULLY SUPPORTED AND ALIGNED; THIS CONTRACTOR SHALL FURNISH ALL NECESSARY SUPPORTS FOR FIXTURES.

B. LED–SOURCE LIGHT FIXTURES SHALL BE AS SPECIFIED ON PLANS. SUBSTITUTIONS REQUIRE WRITTEN APPROVAL BY ENGINEER–OF–RECORD.

C. TIME CLOCKS SHALL BE 24–HOUR, 7–DAY WITH BATTERY BACKUP. EACH DAY SHALL HAVE A MINIMUM OF 2 ON AND 2 OFF PERIODS. TIME CLOCK SHALL HAVE A MANUAL OVERIDE SWITCH. TIME CLOCK SHALL BE ENCLOSED IN NEMA ENCLOSURE SUITABLE FOR THE ENVIRONMENT. TIME CLOCK SHALL BE TORK, INTERMATIC, OR EQUAL.

D. LIGHTING CONTROLS SHALL BE AS SPECIFIED ON PLANS. CONTRACTOR SHALL PROVIDE DOCUMENTATION TO OWNER THAT THE INSTALLED LIGHTING CONTROLS MEET DOCUMENTED PERFORMANCE CRITERIA OF SECTION C.4012 OF FLORIDA ENERGY CODE. THIS DOCUMENTATION SHALL BE PROVIDED WITHIN 90 DAYS OF RECEIPT OF THE CERTIFICATE OF OCCUPANCY.

15. FUSES

A. FUSES SHALL BE AS MANUFACTURED BY BUSSMAN, GOULD–SHAWMUT, OR LITTLEFUSE AND SHALL BE DUAL–ELEMENT, TIME DELAY OR CURRENT–LIMITING U.L. CLASS RK5 AS SPECIFIED ON THE DRAWINGS.

B. MAIN SWITCHES AND CIRCUITS EXCEEDING 600 AMPERES CAPACITY SHALL BE FUSED WITH BUSSMAN TYPE KRP–C HI–CAP CURRENT LIMITING FUSES U.L. CLASS L. THE EXACT TYPE SHALL BE AS RECOMMENDED BY THE MANUFACTURER CONSIDERING INTERRUPTING AND COORDINATION REQUIREMENTS.

16. MISCELLANEOUS EQUIPMENT WIRING

A. THE ELECTRICAL CONTRACTOR SHALL CONNECT ALL EQUIPMENT FURNISHED BY OTHERS AS INDICATED ON THE DRAWINGS.

17. TELEPHONE RACEWAYS

A. FURNISH AND INSTALL THE OUTLET AND RACEWAY SYSTEM FOR TELEPHONES AS INDICATED ON THE DRAWINGS. RACEWAYS SHALL BE OF THE SAME SPECIFICATIONS AS FOR POWER RACEWAYS AND SHALL BE PROVIDED WITH #12 GALVANIZED PULL–WIRE. NO TELEPHONE RACEWAY SHALL CONTAIN MORE THAN TWO 90° BENDS OR EQUIVALENT.

18. TESTING AND DRAWINGS

A. ALL WIRING AND EQUIPMENT FURNISHED AND INSTALLED BY THIS CONTRACTOR SHALL BE COMPLETELY TESTED AND LEFT IN PERFECT WORKING ORDER.

B. TYPEWRITTEN BRANCH CIRCUIT INDEXES SHALL BE INSTALLED IN ALL PANELS.

C. IDENTIFYING NAME PLATES WITH WHITE LETTERS ON A BLACK BACKGROUND SHALL BE INSTALLED ON ALL SAFETY SWITCHES.

D. CHANGES IN THE LOCATIONS OF CONDUITS, CONNECTIONS OR CIRCUITS AND ANY OTHER DATA DIFFERENT FROM THE CONTRACT DRAWINGS SHALL BE NOTED BY THE CONTRACTOR ON A SET OF PRINTS TO BE FURNISHED BY AND RETURNED TO THE PROJECT ENGINEER AFTER COMPLETION OF THE INSTALLATION. A COPY OF THESE AS–BUILT DOCUMENTS SHALL ALSO BE PROVIDED TO THE BUILDING OWNER.

E. CONTRACTOR SHALL PROVIDE TO THE BUILDING OWNER, AN OPERATING MANUAL FOR ALL ELECTRICAL EQUIPMENT AND A MAINTENANCE MANUAL FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED. FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE, CONTRACTOR SHALL PROVIDE AT LEAST ONE NAME AND ADDRESS OF A QUALIFIED SERVICE AGENCY.

19. GUARANTEE

A. ALL ELECTRICAL WORK DONE UNDER THIS CONTRACT SHALL BE GUARANTEED FOR ONE YEAR BY THE ELECTRICAL CONTRACTOR, IN WRITING.

20. FINAL REVIEW

A. AT A TIME DESIGNATED BY THE ARCHITECT/ENGINEER, THE ENTIRE SYSTEM SHALL BE REVIEWED. THE CONTRACTOR SHALL BE PRESENT AT THIS REVIEW.

B. PRIOR NOTICE OF FIVE WORKING DAYS SHALL BE GIVEN FOR FINAL REVIEW. IF WORK IS NOT COMPLETED AT THE TIME FINAL REVIEW IS PERFORMED AND ADDITIONAL REVIEW(S) ARE REQUIRED. THE COST OF THE REVIEW AND ANY SUBSEQUENT REVIEW SHALL BE BORN BY THE CONTRACTOR.

END OF SECTION.

CODE CRITERIA:

NOTE:
ALL CODES SHALL COMPLY WITH THE FLORIDA STATUTES 69A-3.012 AND THE STATE FIRE MARSHAL'S RULE. THIS LIST IS NOT INCLUSIVE OF ALL CODES AND STANDARDS THAT MAY OR MAY NOT APPLY TO THIS PROJECT.

*FLORIDA BUILDING CODE (FBC) - 2017 - 6TH EDITION
*FLORIDA ENERGY EFFICIENCY CODE (2017) - 6TH EDITION
*FLORIDA FIRE PREVENTION CODE (2017) - 6TH EDITION
*FLORIDA ACCESSIBILITY CODE (2017) - 6TH EDITION

~~NATIONAL FIRE PROTECTION ASSOCIATION (NFPA):~~
*NFPA-70 (2014) NATIONAL ELECTRICAL CODE
*NFPA-72 (2013) NATIONAL FIRE ALARM CODE

DRAWING SCHEDULE:

ELECTRICAL LEGEND

- RECESS MOUNTED LIGHT FIXTURE
- WALL MOUNTED LIGHT FIXTURE
- WALL MOUNTED UPLIGHT
- MOTOR
- LIGHTED EXIT SIGN
- L–30 "A" — RECESSED FLUORESCENT FIXTURE (LETTER INDICATES FIXTURE TYPE – SEE SCHEDULE) (L–30 INDICATES PANEL AND CIRCUIT NUMBER)
- HOME RUN TO PANEL (ONE PHASE CONDUCTOR, ONE NEUTRAL CONDUCTOR ONE EQUIPMENT GROUND CONDUCTOR)
- HOME RUN TO PANEL (THREE PHASE CONDUCTORS, ONE NEUTRAL CONDUCTOR ONE EQUIPMENT GROUND CONDUCTOR)
- # POLES, DISCONNECT SIZE, 200 / 150 FUSE SIZE, 3R NEMA ENCLOSURE CLASS — ELECTRICAL SAFETY SWITCH (SQUARE D, G.E., SEIMENS)
- SIMPLEX RECEPTACLE 20–AMP, 125V (MOUNT AT 18" AFF U.N.O.)
- DUPLEX RECEPTACLE 20–AMP, 125V (MOUNT AT 18" AFF U.N.O.)
- QUADRAPLEX RECEPTACLE 20–AMP, 125V (MOUNT AT 18" AFF U.N.O.)
- GFI GRND. FAULT INT. DPLX. RECEP. 125V (MOUNT AT 18" AFF U.N.O.)
- DUPLEX RECEPTACLE 20–AMP, 125V (MOUNTED ABOVE COUNTER BACKSPLASH)
- WP WEATHERPROOF/GFI DUPLEX RECEP. 125V (MOUNT AT 18" AFF U.N.O.)
- CLG CEILING RECEPTACLE 120V
- 250V RECEPTACLE(MOUNT AT 18" AFF U.N.O.)
- FL RECESSED QUAD FLOOR RECEPTACLE
- $ SINGLE POLE SWITCH
- $3 THREE WAY SWITCH
- $4 FOUR WAY SWITCH
- $D DIMMER SWITCH
- $M MOTOR–RATED SWITCH (WITH OVERLOADS)
- J JUNCTION BOX
- OSW 20A RCPT. SWITCHED BY CLG. SENSOR (MOUNT AT 18" AFF U.N.O.)
- PHONE OUTLET (18" AFF U.N.O.)
- DATA OUTLET (18" AFF U.N.O.)
- TV CABLE TV OUTLET (18" AFF U.N.O.)

ABBREVIATIONS

CU.	COPPER	AFF	ABOVE FINISHED FLOOR
E.G.	EQUIPMENT GROUND	UNO	UNLESS NOTED OTHERWISE
AC	ABOVE COUNTER	GFI	GROUND FAULT CIRCUIT INTERRUPTER
NF	NON–FUSED	AIC	AMP INTERRUPTING CAPACITY
ABG	ABOVE GRADE	AFC	AVAILABLE FAULT CURRENT
		GFP	GROUND FAULT PROTECTION

FIRE ALARM SYSTEM GENERAL NOTES

1. ALL EQUIPMENT AND INSTALLATION PROCEDURES SHALL COMPLY WITH NFPA 70, NFPA 72, NFPA 72E, NEC CHAPTER 7 (ARTICLE 760), NFPA – LIFE SAFETY 101 (2000 EDITION), RULES AND REGULATIONS OF THE STATE FIRE MARSHALS' OFFICE, AND ALL LOCAL CODES.
2. PROVIDE BATTERY CALCULATIONS WITH SUBMITTALS.
3. EACH MANUAL FIRE ALARM BOX SHALL BE SECURELY MOUNTED. THE OPERABLE PART SHALL BE NOT LESS THAN 3 1/2 FT. AND NOT MORE THAN 4 1/2 FT. ABOVE FLOOR LEVEL. WALL–MTD. APPLIANCES SHALL HAVE THEIR BOTTOMS AT HEIGHTS ABOVE THE FINISHED FLOOR OF NOT LESS THAN 80 IN. AND NO GREATER THAN 96 IN. TOPS OF DEVICES SHALL NOT BE WITHIN 6 IN. OF CEILING.
4. PROVIDE DEVICES AND WIRING WHICH REFLECT U.L. LISTING (RATED FOR FIRE SERVICE), AND FORM A COMPLETE, OPERABLE SYSTEM. SYSTEM SHALL BE NON–CODED AND ELECTRICALLY SUPERVISED.
5. CIRCUIT WIRING SHALL BE CLASS "B".
6. ALL FIRE ALARM WIRING SHALL BE IN CONDUIT (1/2" E.M.T. MINIMUM). CONDUCTOR TYPE SHALL BE:
   - DETECTION CIRCUITS: #16 THHN MINIMUM
   - NOTIFICATION CIRCUITS: #14 THHN STRANDED MINIMUM
   - RELEASE/AUXILIARY CIRCUITS: #14 THHN STRANDED MINIMUM

   ALL WIRING SHALL BE LABELED AND IDENTIFIED BY CIRCUIT AT ALL TERMINATIONS.
7. FIRE ALARM SYSTEM SHALL HAVE U.L. LISTED TRANSIENT VOLTAGE SURGE SUPPRESSION (TVSS) DEVICES INSTALLED IN ALL CONDUCTORS (AC POWER WIRING, TELEPHONE LINES, AND ALL WIRING ENTERING OR LEAVING THE BUILDING). ALL SURGE SUPPRESSION DEVICES SHALL BE INSTALLED EXTERNAL TO THE FIRE ALARM CONTROL PANEL (FACP) REGARDLESS OF ADDITIONAL PROTECTION INSIDE PANEL. TVSS DEVICES FOR COMMUNICATION WIRING SHALL BE INSTALLED WITH A MINIMUM OF 3' OF WIRING BETWEEN THE DEVICE AND FACP. ALL PROTECTIVE DEVICES SHALL BE CERTIFIED TO THE FOLLOWING STANDARDS:
   - (A) TELEPHONE LINES: UL497A
   - (B) SIGNALING LINE LOOPS: UL497B
   - (C) INITIATION OR NOTIFICATION CIRCUITS: UL497B
   - (D) AC POWER: UL1449 (2ND EDITION)
8. PROVIDE VOLTAGE DROP CALCULATIONS FOR FINAL NOTIFICATION CIRCUIT LAYOUTS. OBSERVE MANUFACTURERS' "MAXIMUM LOOP RESISTANCES" FOR INITIATING DEVICE AND SIGNALING LINE CIRCUITS.
9. PROVIDE WEATHERPROOF, AUDIBLE/VISIBLE NOTIFICATION DEVICE ON EXTERIOR OF BUILDING (LOCATION TO BE APPROVED BY THE FIRE DEPARTMENT).
10. PROVIDE SMOKE DETECTOR AT LOCATION OF FIRE ALARM CONTROL PANEL.

NOTE: ALL DRAWINGS NOT TO BE SCALED, WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS

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REVISIONS
January 27, 2014

SOFTPLAN ARCHITECTURAL DESIGN SOFTWARE

BELMONT ACADEMY PHASE II ADDITION FOR:
BELMONT ACADEMY, INC.
NOTES & DETAILS
1476 SW WALTER AVE, LAKE CITY, FLORIDA 32024

DAVID D. PATTON JR. LICENSE No. 52909 STATE OF FLORIDA PROFESSIONAL ENGINEER

Celebrating 40 Years of Service 1972 – 2013
N.P. Geisler, Architect AR0007005

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JOB NUMBER
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21 JAN 2014

SHEET NUMBER
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LIGHTING PLAN GENERAL NOTES

1. SWITCHES SHALL CONTROL ALL "SWITCHED" LIGHT FIXTURES IN ROOM TYPICAL UNLESS NOTED OTHERWISE. SEE KEYNOTES FOR EXCEPTIONS. DIMMER SWITCHES SHALL BE COMPATIBLE WITH THE LIGHT FIXTURE CONTROLLED, AND SHALL BE APPROVED BY LIGHT FIXTURE MANUFACTURER.
2. CONTRACTOR SHALL INSTALL A GREEN EQUIPMENT GROUNDING WIRE IN ALL CONDUITS AND SHALL BOND THE GROUND WIRE TO ALL DEVICES AND ELECTRICALLY WIRED EQUIPMENT. GROUNDING AND BONDING SHALL BE INSTALLED IN ACCORDANCE WITH NATIONAL ELECTRIC CODE, ARTICLE 250.
3. CONTRACTOR SHALL REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR LOCATIONS OF ALL LIGHT FIXTURES. REFER TO ARCHITECTURAL LIFE SAFETY PLAN FOR ALL EXIT SIGNS.
4. LIGHT FIXTURES ARE SELECTED FOR PHOTOMETRIC PERFORMANCE, QUALITY, AND AESTHETICS. SUBSTITUTIONS REQUIRE FIXTURE SAMPLES AND PHOTOMETRIC DATA AT LEAST 10 DAYS PRIOR TO BID DATE. WRITTEN APPROVAL IS REQUIRED BY THE ENGINEER PRIOR TO BID DATE. CONTACT DAN SROKA (ENVISION LIGHTING) 941-243-0608 FOR PRICING.
5. PRIOR TO ORDERING MATERIALS AND EQUIPMENT, CONTRACTOR SHALL PROVIDE SUBMITTALS FOR ALL LIGHT FIXTURES, SWITCHES, AND CONTROL EQUIPMENT. SUBMITTALS SHALL INCLUDE SPECIFICATIONS SHEETS FOR ALL EQUIPMENT AND PHOTOMETRIC PERFORMANCE INFORMATION (INCLUDING ELECTRONIC IES FILES). WRITTEN APPROVAL BY THE ENGINEER-OF-RECORD IS REQUIRED PRIOR TO ORDERING EQUIPMENT.
6. SEE RECESSED LAY-IN FIXTURE DETAIL (SHEET E0) FOR TROFFER INSTALLATION.

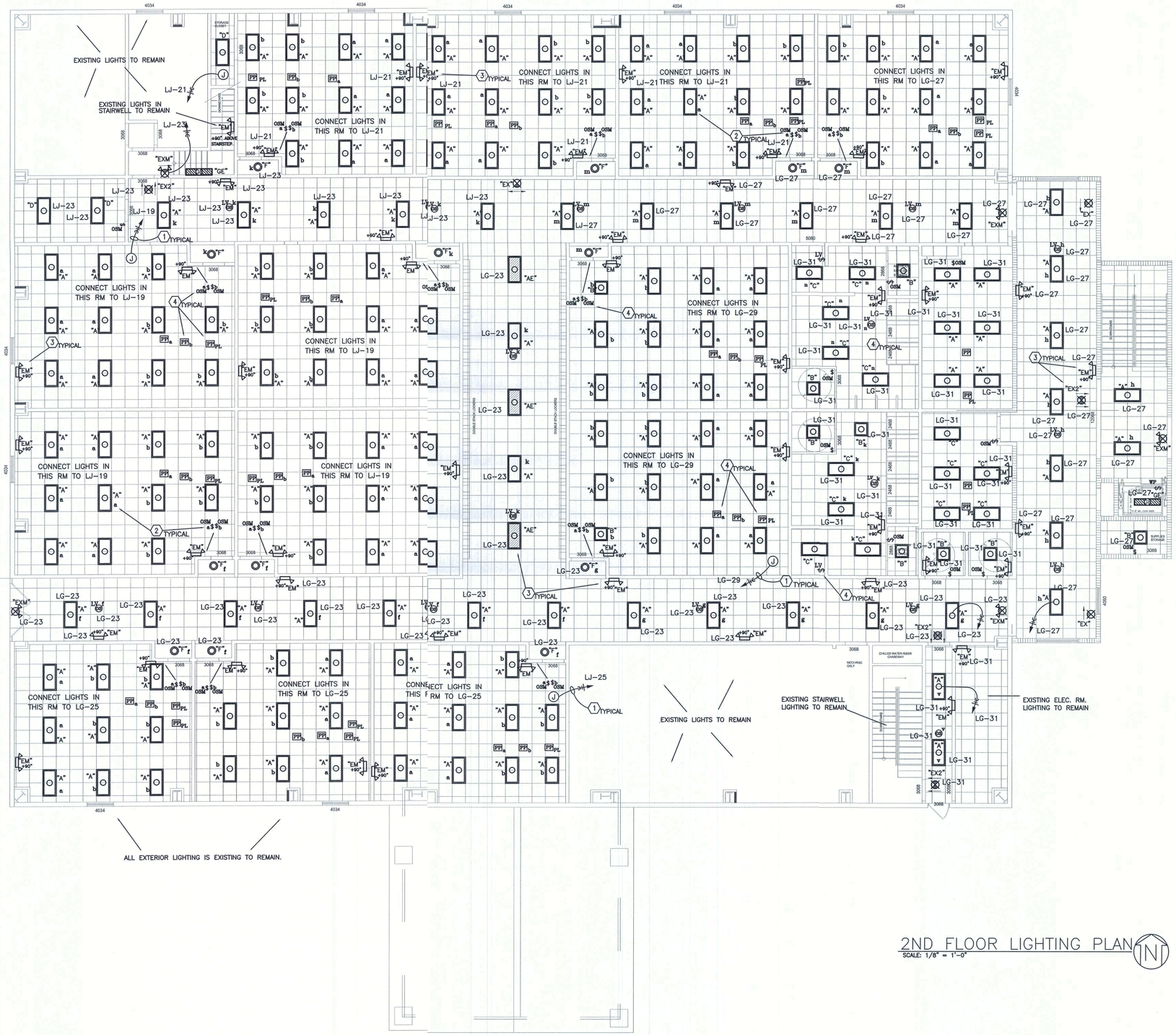
LIGHTING PLAN KEY NOTES

1. 2#12 COPPER, 1#12 COPPER EQUIPMENT GROUND, 3/4" CONDUIT TO NEW CIRCUIT BREAKER IN PANEL INDICATED, TYPICAL ALL CIRCUITS UNLESS NOTED OTHERWISE.
2. LOWER-CASE LETTER AT SWITCH INDICATES CONTROL OF ALL LIGHT FIXTURES IN ROOM WITH MATCHING LOWER-CASE DESIGNATION, TYPICAL. SWITCHES SHALL CONTROL ALL SWITCHED LIGHT FIXTURES IN ROOM UNLESS NOTED OTHERWISE.
3. EXIT SIGNS AND EMERGENCY "TWIN-HEAD" LIGHT FIXTURES SHALL BE PROVIDED WITH EMERGENCY BATTERY BACKUP, AND SHALL BE CONNECTED TO THE LOCAL LIGHTING CIRCUIT, WIRED AHEAD OF ANY SWITCHES IN CIRCUIT.
4. SEE OCCUPANCY SENSOR TABLE FOR DETAILS.
5. "NL" DESIGNATION INDICATES UNSWITCHED NIGHT LIGHT.

OCCUPANCY SENSOR TABLE

^{OS}	SWITCH WITH "OS" SUPERSCRIPT SHALL BE COMBINATION WALL SWITCH/OCCUPANCY SENSOR PASSIVE-INFRARED "ACUITY" #WSX-PDT-WH
$_{LT_k}$	CEILING-MOUNTED, LOW VOLTAGE, STANDARD RANGE, DUAL-TECHNOLOGY 360° OCCUPANCY SENSOR (ACUITY #CM-PDT-9, POWERPACK MP20) LOWER-CASE LETTER IDENTIFIES LIGHT FIXTURES W/ MATCHING LETTERS TO BE SWITCHED.
$_{LT_k}$ $_{LT_k}$	CEILING-MOUNTED, LOW VOLTAGE, DUAL-TECHNOLOGY OCCUPANCY SENSOR (ACUITY #CM-PDT-10/CM-PDT-9, POWERPACK MP20). ACTIVATION OF ANY SENSOR WITH MATCHING LOWER-CASE DESIGNATION SHALL CAUSE ALL LIGHTS WITH SAME DESIGNATION TO TURN ON.
$_{LVL_k}$	LARGE AREA, LOW VOLTAGE, CEILING-MOUNTED, DUAL-TECHNOLOGY OCCUPANCY SENSOR (ACUITY #CM-PDT-10, POWERPACK MP20) LOWER-CASE LETTER IDENTIFIES LIGHT FIXTURES W/ MATCHING LETTERS TO BE SWITCHED.
^{OSM}	OCCUPANCY SENSOR WITH "OSM" SUPERSCRIPT INDICATES "ACUITY" #WSX-PDT-D-WH WITH "MANUAL-ON" REQUIREMENT.
$^{OSM}_{\$^{b}}$	TWO SWITCH WALL SENSOR WITH MANUAL-ON REQUIREMENT EQUAL TO "ACUITY #WSX-PDT-2P-WH
$_{k}$	CEILING-MOUNTED, LINE VOLTAGE, STANDARD RANGE, DUAL-TECHNOLOGY 360° OCCUPANCY SENSOR (ACUITY #CMR-PDT-9) LOWER-CASE LETTER IDENTIFIES LIGHT FIXTURES W/ MATCHING LETTERS TO BE SWITCHED.
PP_{PL}	ACUITY #nPP20 PL. ROUTE SELECTED RECEPTACLES IN ROOM THRU DEVICE.
PP_{b}	ACUITY #nPP16-D-EFP PL. ROUTE LIGHTS IN ROOM WITH THE SAME LOWER-CASE DESIGNATION THRU DEVICE.
^{LV}	ACUITY #nPODMA.

NOTE: ALL DEVICES MAY OR MAY NOT BE USED IN THIS PROJECT.



2ND FLOOR LIGHTING PLAN

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

NOTE: ALL DRAWINGS NOT TO BE SCALED, WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS

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REVISIONS
January 27, 2014

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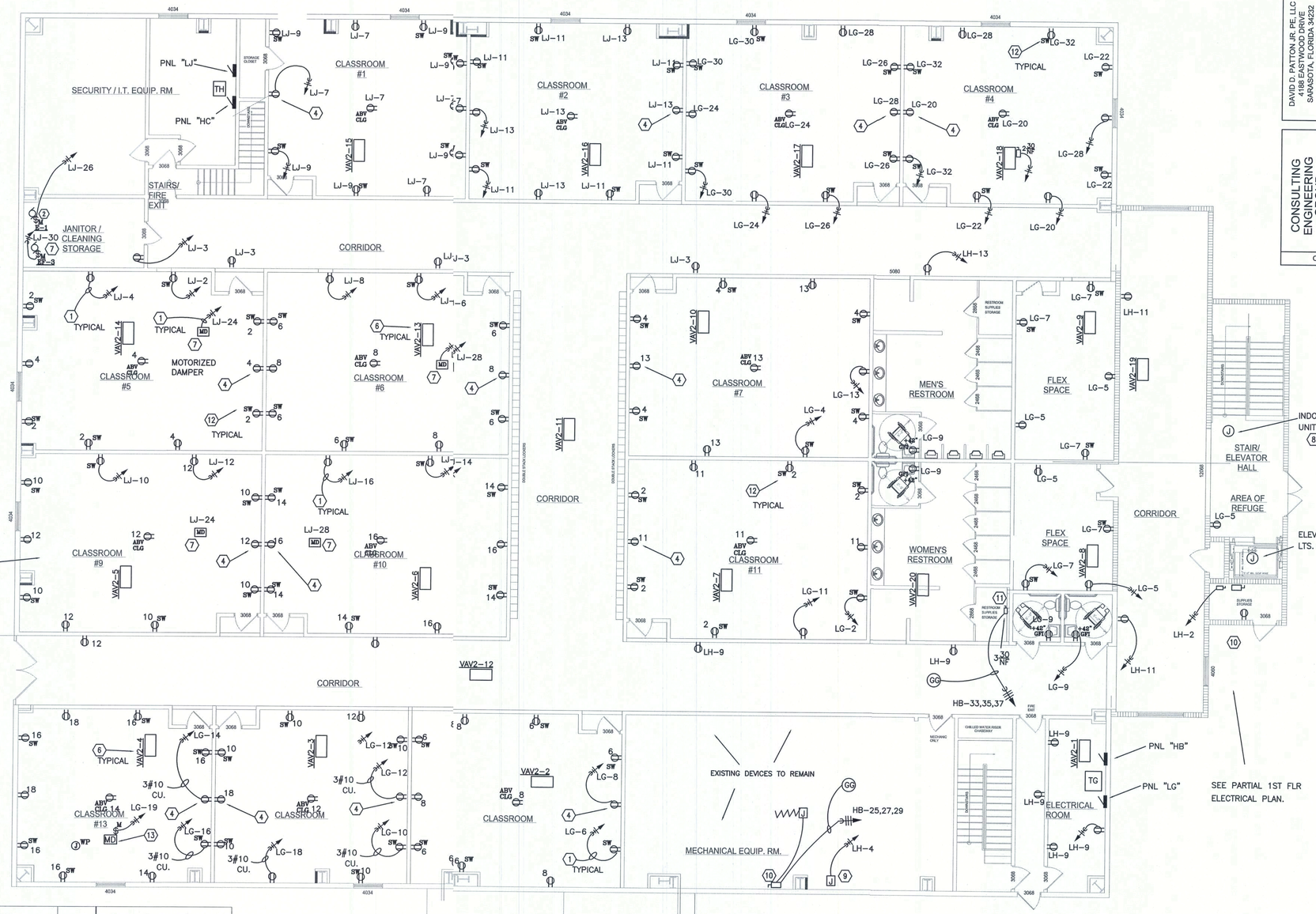
POWER PLAN KEY NOTES

1. 2#12 COPPER, 1#12 COPPER EQUIPMENT GROUND, 3/4" CONDUIT TO NEW CIRCUIT BREAKER IN PANEL INDICATED, TYPICAL ALL CIRCUITS UNLESS NOTED OTHERWISE.
2. SWITCH EXHAUST FAN WITH LIGHT SWITCH.
3. INSTALL RECEPTACLES INSIDE WATER COOLER ENCLOSURE. CIRCUIT SHALL BE PROTECTED WITH A GFI BREAKER.
4. COORDINATE RECEPTACLE MTG. HT. WITH OWNER AND ARCHITECT PRIOR TO ROUGH-IN.
5. SWITCHED RECEPTACLES CONTROLLED BY POWER PACK SHOWN ON LIGHTING PLAN.
6. COORDINATE ELECTRICAL CONNECTIONS TO VAV EQUIPMENT WITH MECHANICA CONTRACTOR PRIOR TO ROUGH-IN. SEE VAV ELECTRICAL SCHEDULE
7. WIRING BY MECH. SEE MECHANICAL DETAIL "EF CONTROL DIAGRAM (TYPICA FOR EF-3)".
8. COORDINATE INDOOR UNIT LOCATION. POWER COMES FROM OUTDOOR UNIT. COORDINATE WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
9. COORDINATE HVAC CONTROL PANEL LOCATION WITH MECHANICAL PRIOR TO ROUGH-IN.
10. COORDINATE DUCT HTR. DISCONNECT LOCATION WITH MECHANICAL PRIOR TO ROUGH-IN.
11. COORDINATE 10 KW EWH LOCATION WITH MECHANICAL PRIOR TO ROUGH-IN.
12. LABEL SENSOR-SWITCHED RECEPTACLES PER N.E.C. 2014.
13. MOTORIZED DAMPER VOLTAGE IS ASSUMED 120V. PROVIDE TRANSFORMER CIRCUIT IF LOW VOLTAGE.

ALL ACCESSIBLE RECEPTACLES SHALL BE TAMPER-RESISTANT



FEEDER SCHEDULE

TYPE	FEEDER SIZE (SILE PHASE)	TYPE	FEEDER SIZE (THREE PHASE)
A	TWO #10 COPPERNE #10 COPPER EQ. GND., 3/4" CDUIT	AA	THREE #12 COPPER, ONE #12 COPPER EQ. GND., 3/4" CONDUIT
B	TWO #8 COPPER, IE #10 COPPER EQ. GND., 3/4" CDUIT	BB	THREE #10 COPPER, ONE #10 COPPER EQ. GND., 3/4" CONDUIT
C	TWO #6 COPPER, IE #10 COPPER EQ. GND., 1" CONIT	CC	THREE #8 COPPER, ONE #10 COPPER EQ. GND., 1" CONDUIT
D	TWO #4 COPPER, IE #8 COPPER EQ. GND., 1" CONIT	DD	THREE #6 COPPER, ONE #10 COPPER EQ. GND., 1" CONDUIT
E	TWO #3 COPPER, 'E #8 COPPER EQ. GND., 1 1/4" NDUIT	EE	THREE #4 COPPER, ONE #8 COPPER EQ. GND., 1 1/4" CONDUIT
F	TWO #1 COPPER, E #6 COPPER EQ. GND., 1 1/4" NDUIT	FF	THREE #3 COPPER, ONE #8 COPPER EQ. GND., 1 1/4" CONDUIT
G	TWO #1/0 COPPERONE #6 COPPER EQ. GND., 1 1/4" NDUIT	GG	THREE #1 COPPER, ONE #6 COPPER EQ. GND., 1 1/2" CONDUIT
		HH	THREE #1/0 COPPER, ONE #6 COPPER EQ. GND., 1 1/2" CONDUIT

POWER PLAN INT
SCALE: 1/8" = 1'-0"

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COMMUNICATION PLAN KEY NOTES

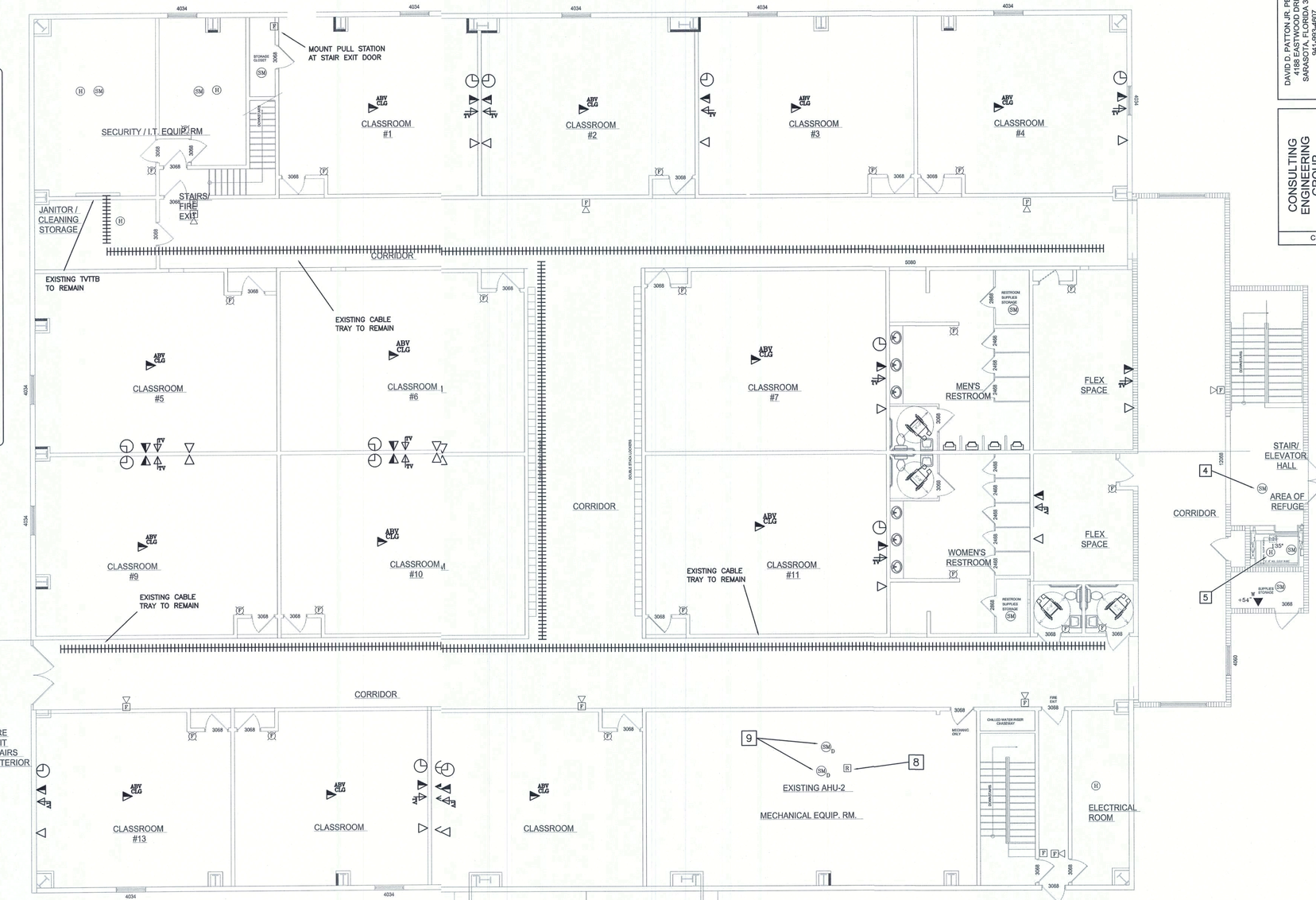
1. VERIFY MOUNTING HEIGHT WITH ARCHITECT / OWNER. TYPICAL ALL LOCATIONS.
2. TYPICAL 3/4" CONDUIT STUBBED ABOVE CEILING WITH PULL STRING FOR FUTURE OWNER WIRING. TYPICAL ALL LOCATIONS.
3. TYPICAL OUTLET FOR MONITOR VERIFY WALL HEIGHT WITH OWNER/ARCHITECT
4. ACTIVATION OF THIS SMOKE DETECTOR SHALL CAUSE THE ELEVATOR TO MOVE TO AN ALTERNATE LEVEL.
5. ACTIVATION OF THIS HEAT DETECTOR SHALL CAUSE THE SHUNT-TRIP BREAKER PROTECTING THE ELEVATOR MOTOR TO OPEN, CAUSING THE ELEVATOR TO BECOME DE-ENERGIZED. MOUNT DETECTOR ADJACENT TO SPRINKLER HEAD.
6. HVAC UNITS AND EXHAUST FANS ARE TO SHUT DOWN WHENEVER THE FIRE ALARM SYSTEM GOES INTO ALARM. RELAYS AT UNITS ARE TO BE INTERCONNECTED WITH FIRE ALARM SYSTEM SO THAT THEY OPEN WHEN FIRE ALARM SYSTEM GOES INTO ALARM. RELAYS ARE TO BE WIRED INTO THE START-STOP CIRCUIT OF HVAC UNITS AND IN LINE WITH EXHAUST FANS. WIRE RELAYS FOR "FAIL-SAFE" OPERATION.
7. ACTIVATION OF THIS SMOKE DETECTOR SHALL CAUSE THE ELEVATOR TO MOVE TO AN ALTERNATE LEVEL AND THE FIRE ALARM WARNING LIGHT TO FLASH.
8. HVAC UNITS AND EXHAUST FANS ARE TO SHUT DOWN WHENEVER 'E FIRE ALARM SYSTEM GOES INTO ALARM. RELAYS AT UNITS ARE TO BE INTERCONNECTED WITH FIR E ALARM SYSTEM SO THAT THEY OPEN/HEN FIRE ALARM SYSTEM GOES INTO ALARM. RELAYS ARE TO BE WIRE INTO THE START-STOP CIRCUIT OF HVAC UNITS AND IN LINE WITH EXHAST FANS. WIRE RELAYS FOR "FAIL-SAFE" OPERATION.
9. DUCT MOUNTED SMOKE DETECTORS SHALL BE MOUNTED IN THE SUPPLY AND RETURDUCTS OF THE HVAC SYSTEM. LOCATION SHALL BE DETERMINED BY THE MECHANICAL ENGINEI CONTRACTOR TO FURNISH, INSTALL, AND WIRE TO FIRE ALARM SYSTEM. PROVIDE REMOTE TEST-RESET SWITCH WITH PILOT LIGHT IN ACCESSIBLE AREA ON CEILING. SEE DUCJETECTOR DETAIL - THIS SHEET.

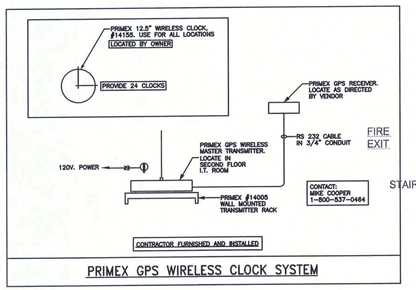
NOTE:
CONTRACTOR SHALL CONTACT OWNERS SECURITY AND DATA PROVIDERS FOR CABLE ROUGH-IN PRIOR TO DRY WALL INSTALLATION.

FIRE ALARM GENERAL NOTE:
DEVICES SHALL BE COMPATIBLE WITH EXISTING FACP.
FOR A COMPLETE FIRE ALARM SYSTEM.
SUBMIT SIGN AND SEALED SHOP DRAWINGS TO LOCAL FIRE MARSHAL WITH FULL WIRING DIAGRAMS, BATTERY CALCULATIONS AND CUT SHEETS FOR APPROVAL PRIOR TO INSTALLATION.

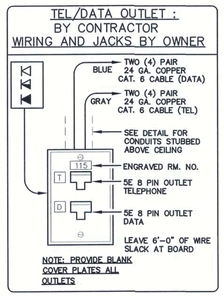
FIRE ALARM SYSTEM LEGEND

- (H) *FIRE ALARM HEAT DETECTOR* PROVIDE REQUIRED WIRING AND ¾" CONDUIT FROM DEVICE TO FACP.
- FIRE ALARM SYSTEM VISIBLE-ONLY DEVICE MOUNTED AT 7'-6" AFF. MINIMUM CANDELA RATING SHALL BE 75. PROVIDE REQUIRED WIRING AND ¾" CONDUIT FROM DEVICE TO FACP.
- (SM) FIRE ALARM SYSTEM PHOTOELECTRIC SMOKE DETECTOR. DO NOT INSTALL DETECTOR WITHIN 3' OF SUPPLY AIR DUCT. PROVIDE REQUIRED WIRING AND ¾" CONDUIT FROM DEVICE TO FACP. SMOKE DETECTOR SHALL BE LISTED BY MANUFACTURER FOR SPACINGS AT LEAST 30'.
- (F) FIRE ALARM SYSTEM AUDIBLE/VISIBLE DEVICE MOUNTED AT 7'-6" AFF. MINIMUM CANDELA RATING SHALL BE 75. PROVIDE REQUIRED WIRING AND 3/4" CONDUIT FROM DEVICE TO FACP.
- (F) FIRE ALARM SYSTEM MANUAL PULL STATION MOUNTED AT 4'-0" AFF. PROVIDE REQUIRED WIRING AND ¾" CONDUIT FROM DEVICE TO FACP.
- (R) FIRE ALARM SYSTEM RELAY
- (SM)DD DUCT-MOUNTED SMOKE DETECTOR





PRIMEX GPS WIRELESS CLOCK SYSTEM



SYSTEM PLAN (N)
SCALE: 1/8" = 1'-0"

NOTE: ALL DRAWINGS NOT TO BE SCALED, WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS

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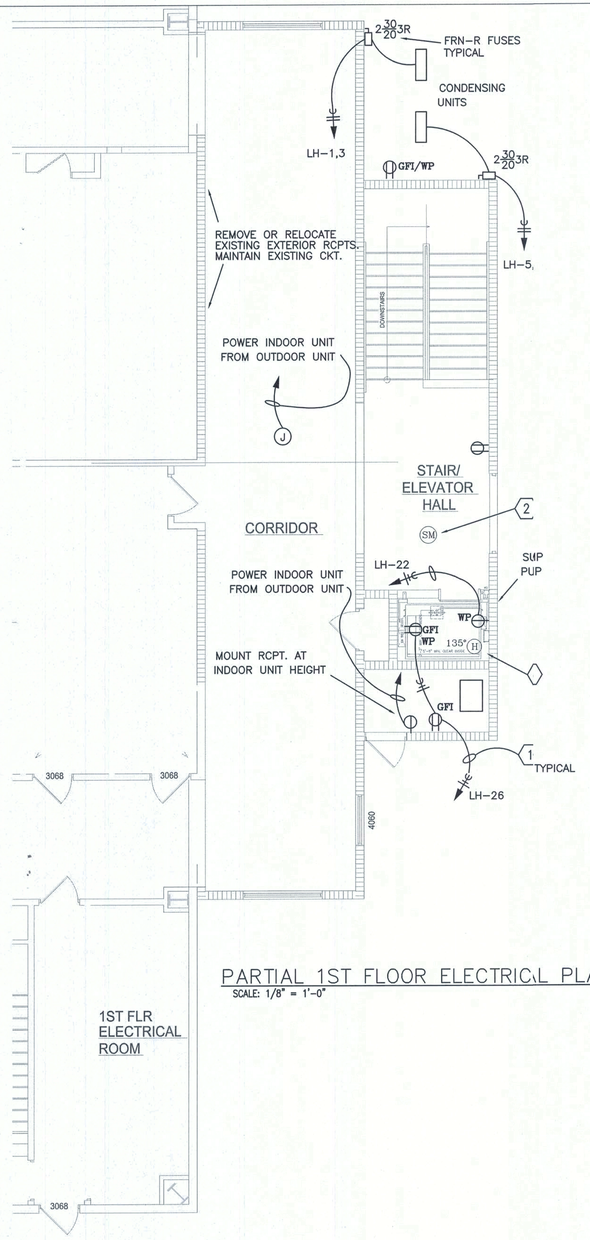


PARTIAL 1ST FLOOR ELECTRICAL PLAN

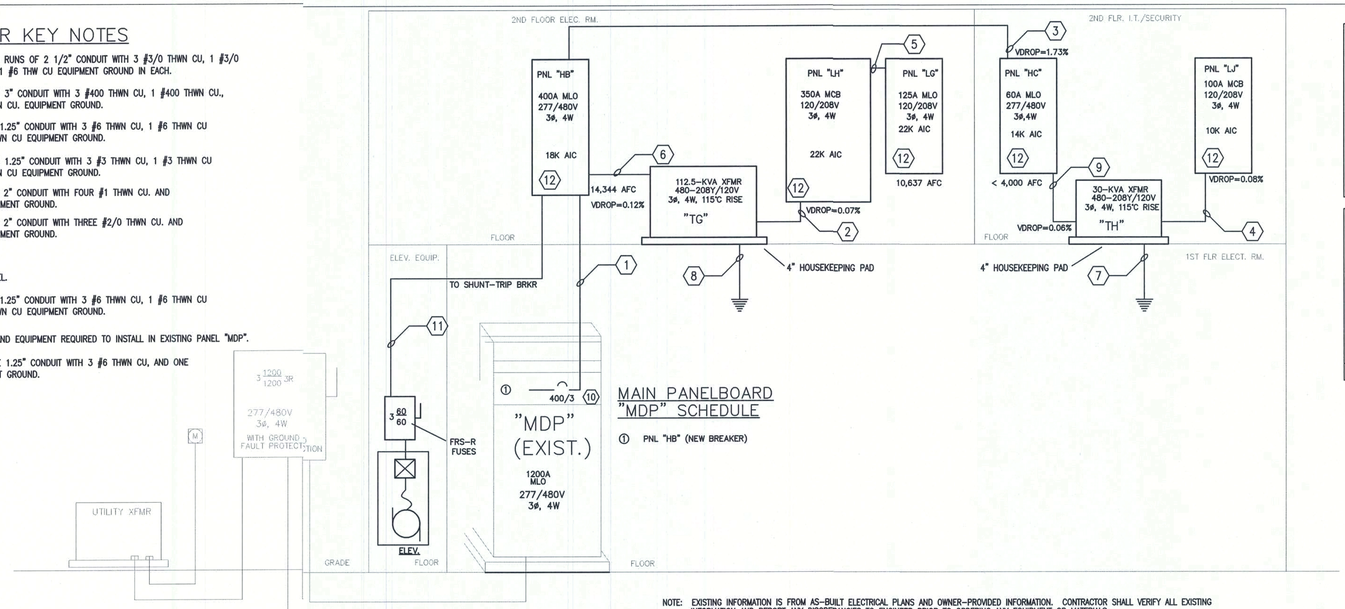
SCALE: 1/8" = 1'-0"

POWER PLAN KEY NOTES

1. 2#12 COPPER, 1#12 COPPER EQUIPMENT GROUND, 3/4" CONDUIT TO NEW CIRCUIT BREAKER IN PANEL INDICATED, TYPICAL ALL CIRCUITS UNLESS NOTED OTHERWISE.
2. ACTIVATION OF THIS SMOKE DETECTOR SHALL CAUSE THE ELEVATOR TO MOVE TO AN ALTERNATE LEVEL.
3. ACTIVATION OF THIS HEAT DETECTOR SHALL CAUSE THE SHUNT-TRIP BREAKER PROTECTING THE ELEVATOR MOTOR TO OPEN, CAUSING THE ELEVATOR TO BECOME DE-ENERGIZED. MOUNT DETECTOR ADJACENT TO SPRINKLER HEAD.

POWER RISER KEY NOTES

1. 400 AMP FEEDER – TWO RUNS OF 2 1/2" CONDUIT WITH 3 #3/0 THWN CU, 1 #3/0 THWN CU NEUTRAL AND 1 #6 THW CU EQUIPMENT GROUND IN EACH.
2. 350 AMP FEEDER – ONE 3" CONDUIT WITH 3 #400 THWN CU, 1 #400 THWN CU., NEUTRAL AND 1 #3 THWN CU. EQUIPMENT GROUND.
3. 60 AMP FEEDER – ONE 1.25" CONDUIT WITH 3 #6 THWN CU, 1 #6 THWN CU NEUTRAL AND 1 #10 THWN CU EQUIPMENT GROUND.
4. 100 AMP FEEDER – ONE 1.25" CONDUIT WITH 3 #3 THWN CU, 1 #3 THWN CU NEUTRAL AND 1 #8 THWN CU EQUIPMENT GROUND.
5. 125 AMP FEEDER – ONE 2" CONDUIT WITH FOUR #1 THWN CU. AND ONE #6 THWN CU. EQUIPMENT GROUND.
6. 175 AMP FEEDER – ONE 2" CONDUIT WITH THREE #2/0 THWN CU. AND ONE #6 THWN CU. EQUIPMENT GROUND.
7. #8 CU. TO BLDG. STEEL.
8. #1/0 CU. TO BLDG. STEEL.
9. 50 AMP FEEDER – ONE 1.25" CONDUIT WITH 3 #6 THWN CU, 1 #6 THWN CU NEUTRAL AND 1 #10 THWN CU EQUIPMENT GROUND.
10. PROVIDE NEW BREAKER AND EQUIPMENT REQUIRED TO INSTALL IN EXISTING PANEL "MDP".
11. ELEVATOR FEEDER – ONE 1.25" CONDUIT WITH 3 #6 THWN CU, AND ONE #10 THWN CU EQUIPMENT GROUND.
12. SEE PANEL SCHEDULES.



MAIN PANELBOARD "MDP" SCHEDULE

① PNL "HB" (NEW BREAKER)

NOTE: EXISTING INFORMATION IS FROM AS-BUILT ELECTRICAL PLANS AND OWNER-PROVIDED INFORMATION. CONTRACTOR SHALL VERIFY ALL EXISTING INFORMATION AND REPORT ANY DISCREPANCIES TO ENGINEER PRIOR TO ORDERING ANY EQUIPMENT OR MATERIALS.

EXISTING PARTIAL POWER RISER DIAGRAM

NOT TO SCALE

FIXTURE SCHEDULE

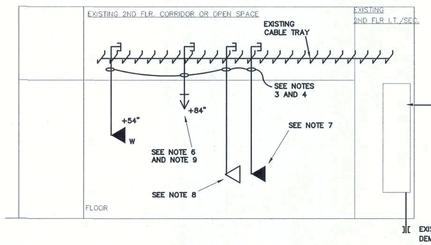
NOT ALL FIXTURES USED THIS PROJECT
ALL LAMPS 120.0 VOLTS UNLESS OTHERWISE NOTED.
ALL LAMPS 350,00K, UNLESS OTHERWISE NOTED.

A	RECESSED TROFFER 2 X 4, DIRECT / INDIRECT / LED 4000 LUMENS, 3500K, 0-10V DIMMING DRIVER LITHONIA CAT. NO. 2BLT4 40L ADSM GZ1 10 LP835	34 WATTS
AE	RECESSED TROFFER 2 X 4, DIRECT / INDIRECT / LED 4000 LUMENS, 3500K, 0-10V DIMMING DRIVER EMERGENCY DRIVER LITHONIA CAT. NO. 2BLT4 40L ADSM GZ1 10 LP835 EL 14L	34 WATTS
C	RECESSED TROFFER 2 X 4, DIRECT / INDIRECT / LED 3300 LUMENS, 3500K, 0-10V DIMMING DRIVER LITHONIA CAT. NO. 2BLT4 40L ADSM GZ1 10 LP835	29 WATTS
CE	RECESSED TROFFER 2 X 4, DIRECT / INDIRECT / LED 3300 LUMENS, 3500K, 0-10V DIMMING DRIVER EMERGENCY DRIVER LITHONIA CAT. NO. 2BLT4 40L ADSM GZ1 10 LP835 EL 14L	29 WATTS
F	RECESSED 6" DOWN LIGHT / LED 1000 LUMENS, 3500K, 0-10V DIMMING DRIVER ACUITY #LDN6-35-10-LO6-AR-LSS-MVOL LT-EZ10-TRW	11 WATTS
B	RECESSED TROFFER 2 X 4, DIRECT / INDIRECT / LED 2000 LUMENS, 3500K, 0-10V DIMMING DRIVER LITHONIA CAT. NO. 2BLT2 20L ADSM GZ1 10 LP835	20 WATTS
EB	SURFACE VAPORTIGHT 1 X 4 / LED 4000 LUMENS, 3500K, 0-10V DIMMING DRIVER SEE PLANS FOR WALL MOUNTED NULITE LIGHTING CAT. NO. INT 4 50 L35 1 120 DIM-EM EMERGENCY BATTERY BACKUP	29 WATTS
EX	SURFACE MOUNTED BATTERY EXIT LIGHT / LED T-BAR HANGER RAILS / SEE PLANS FOR ARROWS EMERGENCY DRIVER LITHONIA CAT. NO. EXR LED EL M6 (SINGLE FACE)	10 WATTS
EX2	SURFACE MOUNTED BATTERY EXIT LIGHT / LED T-BAR HANGER RAILS / SEE PLANS FOR ARROWS EMERGENCY DRIVER LITHONIA CAT. NO. EXR LED EL M6 (DUAL FACE)	10 WATTS
EM	BATTERY EMERGENCY LIGHT, 120 VOLTS CEILING MOUNTED WHITE ENCLOSURE, RED LETTERS (MAINTAIN POWER TO FIXTURE AT ALL TIMES) LITHONIA CAT. NO. EU2L	10 WATTS
EX/M	EXIT / BATTERY EMERGENCY LIGHT, 120/20 VOLTS CEILING MOUNTED WHITE ENCLOSURE, RED LETTERS (MAINTAIN POWER TO FIXTURE AT ALL TIMES) LITHONIA CAT. NO. LHQM-LED-R	10 WATTS

BOX	kW	VOLT	PHASE	FEEDER	CIRCUIT
VAV-2-1	2	277	1	2#12, 1#12 E.G.,3/4"C.	HB-1
VAV-2-2	3	277	1	2#12, 1#12 E.G.,3/4"C.	HB-3
VAV-2-3	4	277	1	2#12, 1#12 E.G.,3/4"C.	HB-5
VAV-2-4	4	277	1	2#12, 1#12 E.G.,3/4"C.	HB-7
VAV-2-5	4	277	1	2#12, 1#12 E.G.,3/4"C.	HC-9
VAV-2-6	3	277	1	2#12, 1#12 E.G.,3/4"C.	HC-11
VAV-2-7	3	277	1	2#12, 1#12 E.G.,3/4"C.	HB-13
VAV-2-8	2	277	1	2#12, 1#12 E.G.,3/4"C.	HB-15
VAV-2-9	3	277	1	2#12, 1#12 E.G.,3/4"C.	HB-17
VAV-2-10	3	277	1	2#12, 1#12 E.G.,3/4"C.	HB-19
VAV-2-11	3	277	1	2#12, 1#12 E.G.,3/4"C.	HB-21
VAV-2-12	2	277	1	2#12, 1#12 E.G.,3/4"C.	HB-2
VAV-2-13	3	277	1	2#12, 1#12 E.G.,3/4"C.	HC-4
VAV-2-14	4	277	1	2#12, 1#12 E.G.,3/4"C.	HC-6
VAV-2-15	4	277	1	2#12, 1#12 E.G.,3/4"C.	HC-8
VAV-2-16	4	277	1	2#12, 1#12 E.G.,3/4"C.	HB-10
VAV-2-17	4	277	1	2#12, 1#12 E.G.,3/4"C.	HB-12
VAV-2-18	4	277	1	2#12, 1#12 E.G.,3/4"C.	HB-14
VAV-2-19	4	277	1	2#12, 1#12 E.G.,3/4"C.	HB-16
VAV-2-20	2	277	1	2#12, 1#12 E.G.,3/4"C.	HB-18

VAV ELECTRICAL SCHEDULE

NOT TO SCALE



NOTES:

1. SEE PLANS FOR QUANTITIES AND LOCATIONS OF TELEPHONE, COMPUTER, AND CATV DEVICES.
2. ALL WIRING ABOVE CEILING NOT IN CONDUIT SHALL BE PLENUM-RATED.
3. IF ACCEPTABLE TO OWNER'S DATA REPRESENTATIVE, ADJACENT PHONE/DATA RECEPTACLES MAY USE ONE CONDUIT STUBBED INTO ACCESSIBLE CEILING SPACE BY INCREASING CONDUIT CONDUIT SIZE TO 1".
4. 3/4" CONDUIT STUBBED FROM BOX INTO ACCESSIBLE CEILING SPACE WITH PLASTIC BUSHING. PROVIDE CABLING AS INDICATED BY THIS RISER DIAGRAM FROM RECEPTACLE TO SERVICE POINT. FOR CABLE SUPPORT, PROVIDE CADDY SLEEVES ON 5' CENTERS, MOUNTED AS HIGH AS POSSIBLE FROM CONDUIT STUB-UP TO SERVER LOCATION. USE CABLE TRAY IN OPEN CORRIDORS.
5. SEE PLANS FOR QUANTITIES AND LOCATIONS OF TELEPHONE, COMPUTER, AND CATV DEVICES.
6. PROVIDE F-CONNECTOR, FACEPLATE, AND RG-6U CATV CABLE BACK TO CATV SERVICE POINT.
7. TYPICAL TELEPHONE OUTLET SHALL BE A STANDARD RJ-11 JACK IN A 4" SQUARE BY 2 1/8" DEEP BOX WITH A RAISED SINGLE-GANG RING. BOXES SHALL BE 18" AFF U.N.O. PROVIDE 3/4" CONDUIT AND 4-WIRE, 24 AWG TELEPHONE CABLE FROM OUTLET TO TELEPHONE SERVICE POINT. EACH OUTLET SHALL BE WIRED INDIVIDUALLY BACK TO SERVICE POINT. DO NOT SPLICE AND DO NOT T-TAP. COORDINATE ALL REQUIREMENTS WITH TELEPHONE CONTRACTOR PRIOR TO ORDERING EQUIPMENT.
8. TYPICAL DATA OUTLET SHALL BE A STANDARD RJ-45 JACK IN A 4" SQUARE BY 2 1/8" DEEP BOX WITH A RAISED SINGLE-GANG RING. BOXES SHALL BE 18" AFF U.N.O. PROVIDE 3/4" CONDUIT AND CATEGORY 6 CABLE FROM OUTLET TO SERVICE POINT. EACH OUTLET SHALL BE WIRE INDIVIDUALLY BACK TO SERVICE POINT. DO NOT SPLICE AND DO NOT T-TAP. COORDINATE ALL REQUIREMENTS WITH DATA CONTRACTOR PRIOR TO ORDERING EQUIPMENT.
9. TYPICAL CATV OUTLET SHALL BE WIRED TO THE CATV TERMINAL BOARD LOCATED IN THE NEAREST ELECTRICAL ROOM WITH RG-6/U COAXIAL CABLE. ALL OUTLETS SHALL BE SEPARATELY WIRED; DAISY-CHAINING IS NOT ACCEPTABLE. PROVIDE APPROPRIATE F-CONNECTOR TYPE TERMINATIONS, SPLITTERS, ETC. TO PROPERLY TERMINATE ALL WIRE. PROVIDE SIGNAL AMPLIFIER NECESSARY TO BOOST SIGNAL TO OUTLETS. COMPLETED SYSTEM SHALL BE FULLY OPERATIONAL.

COMMUNICATION RISER DIAGRAM

NOT TO SCALE

NOTE: ALL DRAWINGS NOT TO BE SCALED, WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS

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CEG # 20-429

REVISIONS
January 27, 2014

SOFTPLAN ARCHITECTURAL DESIGN SOFTWARE

BELMONT ACADEMY PHASE II ADDITION FOR:
BELMONT ACADEMY CHARTER SCHOOL
1476 SW WALTER AVE, LAKE CITY, FLORIDA 32024

DAVID D. PATTON JR. P.E. LICENSE No. 52909 STATE OF FLORIDA PROFESSIONAL ENGINEER

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N.P. Geisler, Architect
AR0007005

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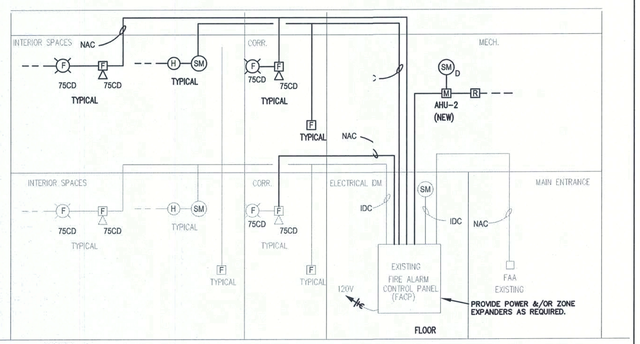


LEGEND

IDC INITIATING DEVICE CIRCUIT
NAC NOTIFICATION APPLIANCE CIRCUIT

NOTES:
1. PROVIDE POWER EXPANDERS AS REQUIRED
2. CIRCUIT WIRING SHALL BE CLASS "B".
3. ALL FIRE ALARM WIRING IN CONDUIT SHALL BE 1/2" E.M.T. MINIMUM. CONDUCTOR TYPE SHALLE:
   - DETECTIC CIRCUITS: #16 FPL MINIMUM
   - NOTIFICAN CIRCUITS: #14 FPL MINIMUM
   - RELEASE/UXILIARY CIRCUITS: #14 FPL MINIMUM
4. ALL WIRING IALL BE LABELED AND IDENTIFIED BY CIRCUIT AT ALL TERMINATIONS.

FIRE ALARM RISER DIAGRAM

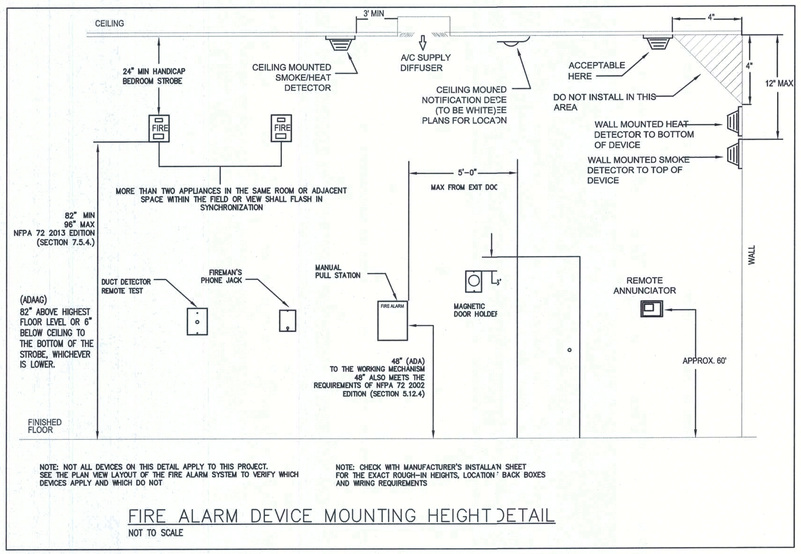
NOT TO SCALE

VOLTAGE: 277/480V, 3P, 4W
PANEL TYPE: GE
MOUNTING: SURFACE
NOTE: ALL SPACES SHALL BE WITH BUS
PANEL: HB
MAINS: 400 AMPS
MLO OR MCB: MLO
A.I.C. RATING: 18,000 AMPS

CKT #	CIRCUIT IDENTIFICATION	BRKR	POLE	Ø "A"	Ø "B"	Ø "C"	POLE	BRKR	CIRCUIT IDENTIFICATION	CKT #
1	VAV-2-1	20	1	A	XXXX	XXXX	1	20	VAV-2-12	2
3	VAV-2-2	20	1	XXXX	B	XXXX	1	20		4
5	VAV-2-3	20	1	XXXX	XXXX	C	1	20		6
7	VAV-2-4	20	1	A	XXXX	XXXX	1	20		8
9		20	1	XXXX	B	XXXX	1	20	VAV-2-16	10
11		20	1	XXXX	XXXX	C	1	20	VAV-2-17	12
13	VAV-2-7	20	1	A	XXXX	XXXX	1	20	VAV-2-18	14
15	VAV-2-8	20	1	XXXX	B	XXXX	1	20	VAV-2-19	16
17	VAV-2-9	20	1	XXXX	XXXX	C	1	20	VAV-2-20	18
19	VAV-2-10	20	1	A	XXXX	XXXX	1			20
21	VAV-2-11	20	1	XXXX	B	XXXX	1			22
23			1	XXXX	XXXX	C	3	100	15 HP ELEVATOR	24
25	DH-2	125	3	A	XXXX	XXXX		100	(SHUNT-TRIP BRKR)	26
27		125		XXXX	B	XXXX		100		28
29		125		XXXX	XXXX	C	1			30
31			1	A	XXXX	XXXX	1			32
33	10 kW EWH	20	3	XXXX	B	XXXX	1			34
35		20		XXXX	XXXX	C	1			36
37		20		A	XXXX	XXXX	3		TVSS	38
39			1	XXXX	B	XXXX				40
41			1	XXXX	XXXX	C				42

VOLTAGE: 277/480V, 3P, 4W
PANEL TYPE: GE
MOUNTING: SURFACE
NOTE: ALL SPACES SHALL BE WITH BUS
PANEL: HC
MAINS: 100 AMPS
MLO OR MCB: MLO
A.I.C. RATING: 14,000 AMPS

CKT #	CIRCUIT IDENTIFICATION	BRKR	POLE	Ø "A"	Ø "B"	Ø "C"	POLE	BRKR	CIRCUIT IDENTIFICATION	CKT #
1	TRANSFORMER 30 kVA	50	3	A	XXXX	XXXX	1			2
3		50		XXXX	B	XXXX	1	20	VAV-2-13	4
5		50		XXXX	XXXX	C	1	20	VAV-2-14	6
7		20	1	A	XXXX	XXXX	1	20	VAV-2-15	8
9	VAV-2-5	20	1	XXXX	B	XXXX	1			10
11	VAV-2-6	20	1	XXXX	XXXX	C	1			12
13			1	A	XXXX	XXXX	1			14
15			1	XXXX	B	XXXX	1			16
17			1	XXXX	XXXX	C	1			18
19			1	A	XXXX	XXXX	1			20
21			1	XXXX	B	XXXX	1			22
23			1	XXXX	XXXX	C	1			24
25			1	A	XXXX	XXXX	3		TVSS	26
27			1	XXXX	B	XXXX				28
29			1	XXXX	XXXX	C				30



NOTE: NOT ALL DEVICES ON THIS DETAIL APPLY TO THIS PROJECT. SEE THE PLAN VIEW LAYOUT OF THE FIRE ALARM SYSTEM TO VERIFY WHICH DEVICES APPLY AND WHICH DO NOT

NOTE: CHECK WITH MANUFACTURER'S INSTALLAN SHEET FOR THE EXACT ROUGH-IN HEIGHTS, LOCATION' BACK BOXES AND WIRING REQUIREMENTS

FIRE ALARM DEVICE MOUNTING HEIGHT DETAIL

NOT TO SCALE

VOLTAGE: 120/208V, 3P, 4W
PANEL TYPE: GE
MOUNTING: SURFACE
NOTES: 1. ALL SPACES SHALL BE W/ BUS. 2. HVAC SYSTEM BREAKERS SHALL BE HACR TYPE.
PANEL: LH
MAINS: 350 AMPS
MLO OR MCB: MCB
A.I.C. RATING: 22,000 AMPS

CKT #	CIRCUIT IDENTIFICATION	BRKR	POLE	Ø "A"	Ø "B"	Ø "C"	POLE	BRKR	CIRCUIT IDENTIFICATION	CKT #
1	COND. UNIT	20	1	A	-	-	1	20	ELEVATOR LTS (GFI BRKR)	2
3		20	1	-	B	-	1	20	HVAC CONTROL	4
5	COND. UNIT	20	1	-	-	C	1	20	RCPTS.	6
7		20	1	A	-	-	1	20	RCPTS.	8
9	RCPTS.	20	1	-	B	-	1	20	RCPTS.	10
11	RCPTS.	20	1	-	-	C	1	20	RCPTS.	12
13	RCPTS.	20	1	A	-	-	1	20	RCPTS.	14
15			1	-	B	-	1	20	RCPTS.	16
17			1	-	-	C	1	20		18
19	MOTORIZED DAMPER	15	1	A	-	-	1	20	ELEV. PIT LIGHTS(GFI BRKR)	20
21			1	-	B	-	1	20	SUMP PUMP	22
23			1	-	-	C	1			24
25	PANEL "LG"	125	3	A	-	-	1	20	ELEV. RCPTS.	26
27		125		-	B	-	1			28
29		125		-	-	C	1			30
31			1	A	-	-	1			32
33			1	-	B	-	1			34
35			1	-	-	C	1			36
37			1	A	-	-	3	40	TVSS (APT #TE XCS)	38
39			1	-	B	-		40		40
41			1	-	-	C		40		42

VOLTAGE: 120/208V, 3P, 4W
PANEL TYPE: GE
MOUNTING: SURFACE
NOTES: 1. ALL SPACES SHALL BE W/ BUS. 2. HVAC SYSTEM BREAKERS SHALL BE HACR TYPE.
PANEL: LG
MAINS: 125 AMPS
MLO OR MCB: MLO
A.I.C. RATING: 22,000 AMPS

CKT #	CIRCUIT IDENTIFICATION	BRKR	POLE	Ø "A"	Ø "B"	Ø "C"	POLE	BRKR	CIRCUIT IDENTIFICATION	CKT #
1	RCPTS.	20	1	A	-	-	1	20	RCPTS.	2
3	RCPTS.	20	1	-	B	-	1	20	RCPTS.	4
5	RCPTS.	20	1	-	-	C	1	20	RCPTS.	6
7	RCPTS.	20	1	A	-	-	1	20	RCPTS.	8
9	RCPTS.	20	1	-	B	-	1	20	RCPTS.	10
11	RCPTS.	20	1	-	-	C	1	20	RCPTS.	12
13	RCPTS.	20	1	A	-	-	1	20	RCPTS.	14
15			1	-	B	-	1	20	RCPTS.	16
17			1	-	-	C	1	20	RCPTS.	18
19	MOTORIZED DAMPER	15	1	A	-	-	1	20	RCPTS.	20
21			1	-	B	-	1	20	RCPTS.	22
23	LIGHTS	20	1	-	-	C	1	20	RCPTS.	24
25	LIGHTS	20	1	A	-	-	1	20	RCPTS.	26
27	LIGHTS	20	1	-	B	-	1	20	RCPTS.	28
29	LIGHTS	20	1	-	-	C	1	20	RCPTS.	30
31	LIGHTS	20	1	A	-	-	1	20	RCPTS.	32
33			1	-	B	-	1			34
35			1	-	-	C	1			36
37			1	A	-	-	3	40	TVSS (APT #TE XCS)	38
39			1	-	B	-		40		40
41			1	-	-	C		40		42

VOLTAGE: 120/208V, 3P, 4W
PANEL TYPE: GE
MOUNTING: SURFACE
NOTES: 1. ALL SPACES SHALL BE W/ BUS. 2. HVAC SYSTEM BREAKERS SHALL BE HACR TYPE.
PANEL: LJ
MAINS: 100 AMPS
MLO OR MCB: MCB
A.I.C. RATING: 10,000 AMPS

CKT #	CIRCUIT IDENTIFICATION	BRKR	POLE	Ø "A"	Ø "B"	Ø "C"	POLE	BRKR	CIRCUIT IDENTIFICATION	CKT #
1	RCPTS.	20	1	A	-	-	1	20	RCPTS	2
3	RCPTS.	20	1	-	B	-	1	20	RCPTS	4
5	RCPTS.	20	1	-	-	C	1	20	RCPTS	6
7	RCPTS.	20	1	A	-	-	1	20	RCPTS	8
9	RCPTS.	20	1	-	B	-	1	20	RCPTS	10
11	RCPTS.	20	1	-	-	C	1	20	RCPTS	12
13	RCPTS.	20	1	A	-	-	1	20	RCPTS	14
15			1	-	B	-	1	20	RCPTS	16
17			1	-	-	C	1			18
19	LIGHTS	20	1	A	-	-	1			20
21	LIGHTS	20	1	-	B	-	1			22
23	LIGHTS	20	1	-	-	C	1	15	MOTORIZED DAMPER	24
25			1	A	-	-	1	20	E-1	26
27			1	-	B	-	1	15	MOTORIZED DAMPER	28
29			1	-	-	C	1	20	EF-3	30
31			1	A	-	-	1			32
33			1	-	B	-	1			34
35			1	-	-	C	1			36
37			1	A	-	-	3	40	TVSS (APT #TE XCS)	38
39			1	-	B	-		40		40
41			1	-	-	C		40		42

FIRE ALARM MATRIX

DEVICE – SYSTEM INITIATING DEVICES	FUNCTION	ACTUATE COMMON ALARM SIGNAL INDICATOR	ACTUATE AUDIBLE ALARM SIGNAL	ACTUATE COMMON SUPERVISORY SIGNAL INDICATOR	ACTUATE AUDIBLE SUPERVISORY SIGNAL	ACTUATE COMMON TROUBLE SIGNAL INDICATOR	ACTUATE AUDIBLE COMMON TROUBLE SIGNAL	ACTUATE ENUNCIATION SIGNALS	DISPLAY/PRINT CHANGE OF STATUS	TRANSMIT FIRE ALARM SIGNAL TO SUPERVISING STATION	TRANSMIT SUPERVISORY SIGNAL TO SUPERVISING STATION	TRANSMIT TROUBLE SIGNAL TO SUPERVISING STATION	RELEASE MAGNETICALLY HELD SMOKE DOORS	CLOSE SMOKE/FIRE DAMPERS IN RATED WALLS	UNLOCK EXITS	ENERGIZE RELEASING SOLENOIDS	UPDATE GRAPHIC DISPLAY	ACTUATE EXTERIOR STROBE AT F.D. RESPONSE POINT
MANUAL PULL STATION		•	•				•	•	•		•		•		•	•	•	
HEAT DETECTOR		•	•				•	•	•		•		•		•	•	•	
SMOKE DETECTOR – GENERAL		•	•				•	•	•		•		•		•	•	•	
DUCT SMOKE DETECTOR		•	•					•	•		•		•		•	•	•	
SPRINKLER FLOW SWITCH		•	•					•	•		•		•		•	•	•	
VALVE TAMPER SWITCH		•	•					•		•						•	•	
FIRE ALARM AC POWER FAILURE				•	•					•						•	•	
FIRE ALARM SYSTEM LOW BATTERY						•	•				•							
OPEN CIRCUIT						•	•				•							
GROUND FAULT						•	•				•							
NAC SHORT						•	•				•							

NOTE: REFERENCE FROM NFPA 72, ANNEX "FIGURE A.10.6.2.3(9)"

NOTE: ALL DRAWINGS NOT TO BE SCALED, WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS

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CEG # 20-429

REVISIONS
January 27, 2014

SOFTPLAN ARCHITECTURAL DESIGN SOFTWARE

BELMONT ACADEMY PHASE II ADDITION FOR:
BELMONT ACADEMY, INC.
1476 SW WALTER AVE, LAKE CITY, FLORIDA 32024

DAVID D. PATTON JR. LICENSE No. 52909 STATE OF FLORIDA REGISTERED PROFESSIONAL ENGINEER

Celebrating 40 Years of Service
1972 - 2013
N.P. Geisler Architect
AR0007005

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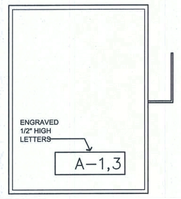
JOB NUMBER
20140121
DATE:
21 JAN 2014

SHEET NUMBER
E5

ENGRAVING APPLIES TO ALL DISCONNECTS ON PROJECT HVAC EQUIPMENT, PLUMBING EQUIPMENT, STARTERS, PUMPS, PANELS, TIME CLOCKS, FIRE ALARM, SECURITY, TELEPHONE AND TELEVISION PANELS



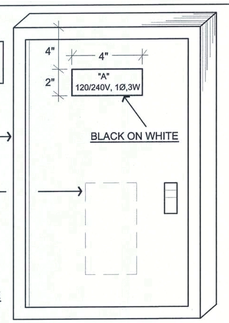
DISCONNECT ENGRAVING

PANEL BOARD DETAIL

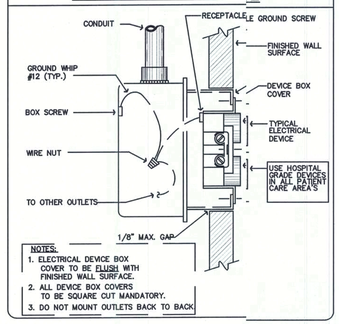
ENGRAVING OR ALL PANEL BOARDS, SWITCHBOARDS AND DISCONNECTS

PANEL BOARD

NEW INTERNAL PANEL BOARD IDENTIFICATIO CARDS SHALL BE TYPED WITH EXACT ROOM NAME AND NUMBER OR DEVICE OR EQUIPMEN SERVED
HAND WRITTEN IS NOT ACCEPTABLE

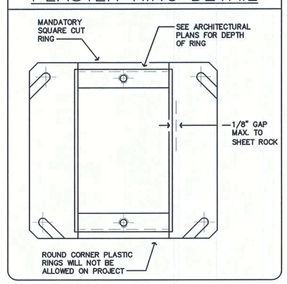


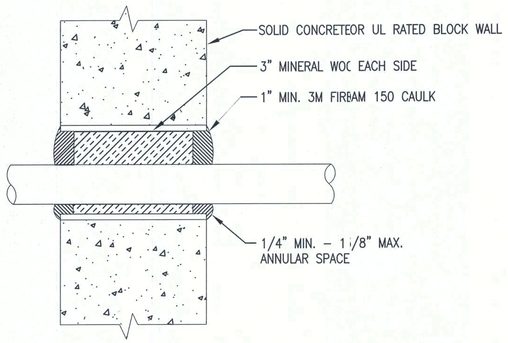
GROUNDING DETAIL



NOTES:
1. ELECTRICAL DEVICE BOX COVER TO BE FLUSH WITH FINISHED WALL SURFACE.
2. ALL DEVICE BOX COVERS TO BE SQUARE CUT MANDATORY.
3. DO NOT MOUNT OUTLETS BACK TO BACK

PLASTER RING DETAIL

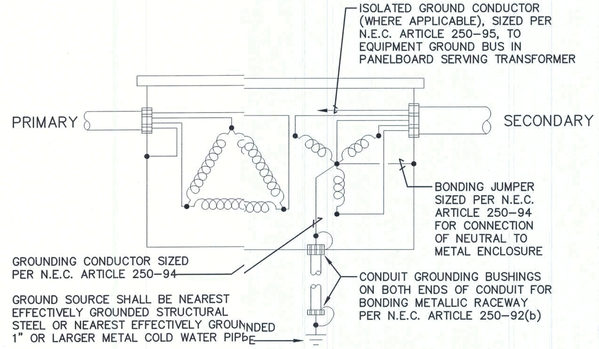




UL SYSTEM #161

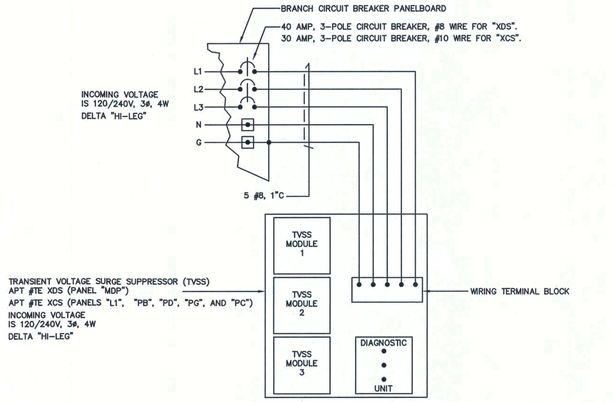
CONDUIT PENETRATION THROUGH FLOOR AND FIREWALLS

SCALE: NOT TO SCALE



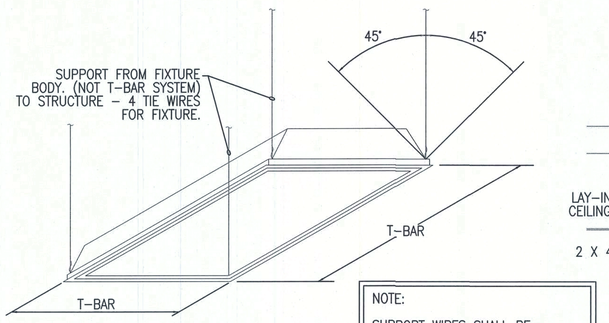
TYPICAL TRANSFORMER GROUNDING DETAIL

N.T.S.

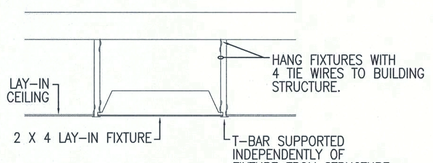


TRANSIENT VOLTAGE SURGE SUPPRESSOR (TVSS) WIRING DIAGRAM

N.T.S.



NOTE:
SUPPORT WIRES SHALL BE INSTALLED NOT TO EXCEED 45° IN OPPOSING DIRECTIONS



RECESSED LAY–IN FIXTURE DETAIL

SCALE: NOT TO SCALE

NOTE: ALL DRAWINGS NOT TO BE SCALED, WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS

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CEG # 20-429

REVISIONS
January 27, 2014

SOFTPLAN ARCHITECTURAL DESIGN SOFTWARE

BELMONT ACADEMY PHASE II ADDITION FOR:
BELMONT ACADEMY, INC.
1476 SW WALTER AVE, LAKE CITY, FLORIDA 32024

DAVID D. PATTON JR. No. 52909 STATE OF FLORIDA PROFESSIONAL ENGINEER

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DATE:
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