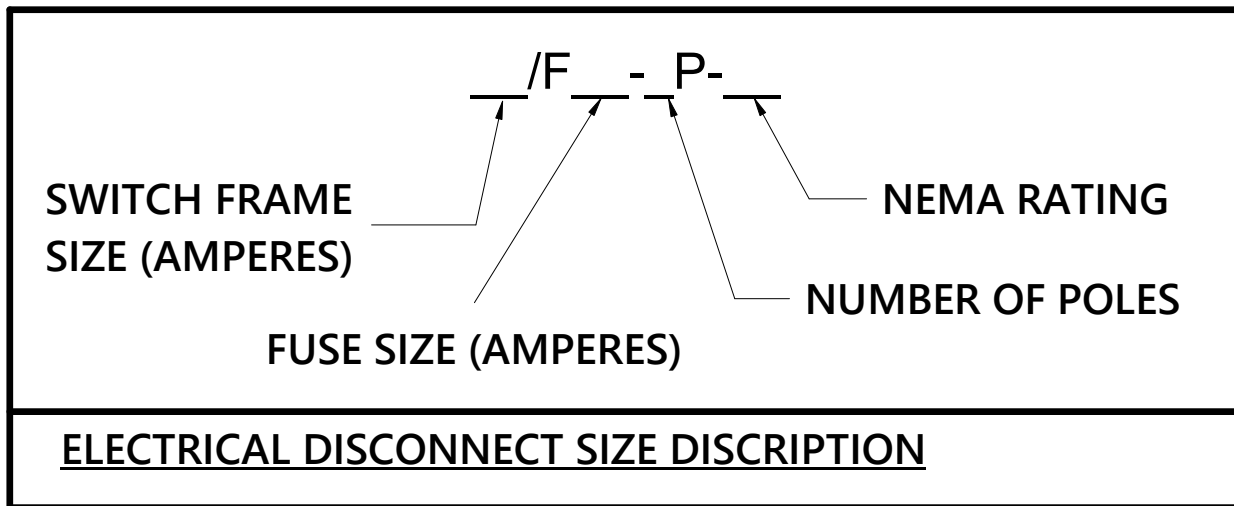


2018 NORTH CAROLINA ENERGY CONSERVATION CODE

COMMERCIAL ENERGY EFFICIENCY - ELECTRICAL SUMMARY

C401 METHOD OF COMPLIANCE	
<input checked="" type="checkbox"/> 2018 NCECC CHAPTER 4	<input type="checkbox"/> NC SPECIFIC COMCHECK PROVIDED
<input type="checkbox"/> N/A BASED ON PROJECT SCOPE	<input type="checkbox"/> ASHRAE 90.1-2013
C406 ADDITIONAL EFFICIENCY PACKAGE OPTIONS	
<input type="checkbox"/> C406.1.1 EFFICIENT MECH EQUIPMENT	<input type="checkbox"/> C406.1.4 ON-SITE RENEWABLE ENERGY
<input checked="" type="checkbox"/> C406.1.2 REDUCED LTG DENSITY	<input type="checkbox"/> C406.1.5 DEDICATED OA SYSTEM
<input type="checkbox"/> C406.1.3 ENHANCED DIGITAL LTG CNTLS	<input type="checkbox"/> C406.1.6 HI-EFF SERVICE WTR HTG
<input type="checkbox"/> NOT APPLICABLE BASED ON PROJECT SCOPE	
C405.2 - LIGHTING CONTROLS (MANDATORY REQUIREMENTS):	
<input checked="" type="checkbox"/> LIGHTING SYSTEMS ARE PROVIDED WITH CONTROLS AS REQUIRED PER SECTION C405.2, EXCEPT WHERE EXEMPT. <input type="checkbox"/> NOT APPLICABLE	
C405.3 - EXIT SIGNS (MANDATORY REQUIREMENTS):	
<input checked="" type="checkbox"/> INTERNALLY ILLUMINATED EXIT SIGNS DO NOT EXCEED 5 WATTS PER SIDE. <input type="checkbox"/> NOT APPLICABLE	
C405.4 - INTERIOR LIGHTING POWER REQUIREMENTS (PRESCRIPTIVE) (NON-EXEMPT):	
<input type="checkbox"/> NOT APPLICABLE PER 2018 NCECC C503.1, EXCEPTION 2.G. C405.4.1 - TOTAL CONNECTED INTERIOR LIGHTING POWER: _____ 7,600 WATTS SPECIFIED _____ 49 % REDUCTION OF SPECIFIED VS. ALLOWED (APPLICABLE IF C406.1.2 IS SELECTED) C405.4.2 - TOTAL ALLOWABLE INTERIOR LIGHTING POWER: _____ 15,140 WATTS ALLOWED METHOD OF COMPLIANCE: <input checked="" type="checkbox"/> BUILDING AREA METHOD <input type="checkbox"/> SPACE-BY-SPACE METHOD _____ 15,140 WATTS ALLOWED	
C405.5.1 - EXTERIOR BUILDING LIGHTING POWER (NON-EXEMPT):	
<input type="checkbox"/> NOT APPLICABLE TOTAL CONNECTED EXTERIOR LIGHTING POWER: _____ 800 WATTS SPECIFIED TOTAL ALLOWABLE EXTERIOR LIGHTING POWER: _____ 860 WATTS ALLOWED	
C405.6 - ELECTRICAL ENERGY CONSUMPTION (DWELLING UNITS):	
<input type="checkbox"/> SEPARATE ELECTRICAL METERING HAS BEEN PROVIDED FOR EACH DWELLING UNIT IN GROUP R-2 BUILDINGS. <input checked="" type="checkbox"/> NOT APPLICABLE	
C405.7 - ELECTRICAL TRANSFORMERS (MANDATORY REQUIREMENTS):	
<input type="checkbox"/> ELECTRICAL TRANSFORMERS HAVE BEEN SPECIFIED TO MEET MINIMUM EFFICIENCY REQUIREMENTS PER C405.7, EXCEPT WHERE EXEMPT. <input checked="" type="checkbox"/> NOT APPLICABLE	
C405.8 - ELECTRICAL MOTORS (MANDATORY REQUIREMENTS):	
<input checked="" type="checkbox"/> ELECTRICAL MOTORS HAVE BEEN SPECIFIED TO MEET MINIMUM EFFICIENCY REQUIREMENTS PER C405.8, EXCEPT WHERE EXEMPT. <input type="checkbox"/> NOT APPLICABLE	
C408 - SYSTEM COMMISSIONING:	
<input type="checkbox"/> PROJECT AREA IS LESS THAN 10,000 SQUARE FEET AND IS EXEMPT FROM THE SYSTEM COMMISSIONING REQUIREMENTS OF SECTION C408. <input type="checkbox"/> PROJECT AREA IS GREATER THAN 10,000 SQUARE FEET AND REQUIRES SYSTEM COMMISSIONING PER SECTION C408.	



ELECTRICAL ABBREVIATIONS			
1P	1 POLE (2P, 3P, 4P, ETC.)	DCP	DOMESTIC WATER CIRCULATING PUMP
A	AMPERE	DEPT	DEPARTMENT
AC	ABOVE COUNTER OR AIR CONDITIONER	DET	DETAIL
ACLG	ABOVE CEILING	DIA	DIAMETER
ADO	AUTOMATIC DOOR OPENER	DISC	DISCONNECT
AD	AMP FRAME	DIST	DISTRIBUTION
AFF	ABOVE FINISHED FLOOR	DN	DOWN
AFG	ABOVE FINISHED GRADE	DPR	DAMPERS
AFI	ARC FAULT CIRCUIT INTERRUPTER	DS	SAFETY DISCONNECT SWITCH
AHU	AIR HANDLING UNIT	DT	DOUBLE THROW
ALUM	ALUMINUM	DWG	DRAWING
ALT	ALTERNATE	EC	ELECTRICAL CONTRACTOR
AMP	AMPERE	ELEC	ELECTRIC, ELECTRICAL
AMPL	AMPLIFIER	ELEV	ELEVATOR
ARCH	ARCHITECT, ARCHITECTURAL	EM	EMERGENCY
AS	AMP SWITCH	EMS	ENERGY MANAGEMENT SYSTEM
AT	AMP TRIP	EMT	ELECTRICAL METALLIC TUBING
ATS	AUTOMATIC TRANSFER SWITCH	EP	ELECTRIC PNEUMATIC
AUTO	AUTOMATIC	EQUIP	EQUIPMENT
AUX	AUXILIARY	EWC	ELECTRIC WATER COOLER
AV	AUDIO VISUAL	EXIST	EXISTING
AWG	AMERICAN WIRE GAUGE	EXH	EXHAUST
		EXP	EXPLOSION PROOF
BATT	BATTERY	FA	FIRE ALARM
BD	BOARD	FABP	FIRE ALARM BOOSTER POWER SUPPLY PANEL
BLDG	BUILDING	FACP	FIRE ALARM CONTROL PANEL
BMS	BUILDING MANAGEMENT SYSTEM	FCU	FAN COIL UNIT
		FIKT	FIXTURE
C	CONDUIT	FLR	FLOOR
CAB	CABINET	FLUOR	FLUORESCENT
CAT	CATALOG	FU	FUSE
CATV	CABLE TELEVISION	GALV	GALVANIZED
CB	CIRCUIT BREAKER	GC	GENERAL CONTRACTOR
CCTV	CLOSED CIRCUIT TELEVISION	GEN	GENERATOR
CKT	CIRCUIT	GFI	GROUND FAULT CIRCUIT INTERRUPTER
CLG	CEILING	GFP	GROUND FAULT PROTECTOR
COMB	COMBINATION	G	GROUND
CMPR	COMPRESSOR	GND	GROUND
CONN	CONNECTION	GRS	GALVANIZED RIGID STEEL (CONDUIT)
CONST	CONSTRUCTION	GYP BD	GYPSUM BOARD
CONT	CONTINUATION OR CONTINUOUS	HT	HEIGHT
CONTR	CONTRACTOR	HTG	HEATING
CONV	CONVERTOR	HTR	HEATER
CP	CIRCULATING PUMP	HV	HIGH VOLTAGE
CRT	CATHODE-RAY TUBE	HVC	HEATING, VENTILATING AND AIR CONDITIONING
CTR	CENTER	HWP	HYDRONIC WATER PUMP
CU	COPPER	IC	INTERRUPTING CAPACITY
		IG	ISOLATED GROUND
		IMC	INTERMEDIATE METAL CONDUIT
		IR	INFRARED
		I/W	INTERLOCK WITH
		J-BOX	JUNCTION BOX
		KA	KILOAMP
		KV	KILOVOLT
		KVA	KILOVOLT-AMPERE
		KVAR	KILOVOLT-AMPERE REACTIVE
		KW	KILOWATT
		KWH	KILOWATT HOUR
		LOC	LOCATE OR LOCATION
		LT	LIGHT
		LTG	LIGHTING
		LTNG	LIGHTNING
		LV	LOW VOLTAGE
		MAX	MAXIMUM
		MAG.S	MAGNETIC STARTER
		M/C	MOMENTARY CONTACT
		MC	MECHANICAL CONTRACTOR
		MCB	MAIN CIRCUIT BREAKER
		MCC	MOTOR CONTROL CENTER
		MDC	MAIN DISTRIBUTION CENTER
		MDF	MAIN DISTRIBUTION PANEL
		MFR	MANUFACTURER
		MFS	MAIN FUSED DISCONNECT
		MT	MOUNT
		MTR	MOTOR, MOTORIZED
		MISC	MISCELLANEOUS
		MLO	MAIN LUGS ONLY
		MMS	MANUAL MOTOR STARTER
		MOA	MULTIOUTLET ASSEMBLY
		MSP	MOTOR STARTER PANELBOARD (CONDUIT)
		MSBD	MAIN SWITCHBOARD
		MT	MOUNT
		MT.C	EMPTY CONDUIT
		MTS	MANUAL TRANSFER SWITCH
		MTR	MOTOR, MOTORIZED
		N.C.	NORMALLY CLOSED
		HPF	HIGH POWER FACTOR
		NEC	NATIONAL ELECTRICAL CODE
		NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
		NFDS	NON-FUSED SAFETY DISCONNECT SWITCH
		NIC	NOT IN CONTRACT
		NL	NIGHT LIGHT
		N.O.	NORMALLY OPEN
		NPF	NORMAL POWER FACTOR
		NTS	NOT TO SCALE
		OH	OVERHEAD
		OL	OVERLOADS
		PA	PUBLIC ADDRESS
		PB	PULL BOX OR PUSHBUTTON
		PE	PNEUMATIC ELECTRIC
		PED	PEDESTAL
		PF	POWER FACTOR
		PH	PHASE
		PIV	POST INDICATING VALVE
		PNL	PANEL
		PP	POWER POLE
		PR	PAIR
		PRI	PRIMARY
		PROJ	PROJECTION
		PRV	POWER ROOF VENTILATOR
		PT	POTENTIAL TRANSFORMER
		PVC	POLYVINYL CHLORIDE (CONDUIT)
		PWR	POWER
		QUANT	QUANTITY
		RCP	RECEPTACLE
		REQD	REQUIRED
		RM	ROOM
		RSC	RIGID STEEL CONDUIT
		RTU	ROOF TOP UNIT
		SC	SURFACE CONDUIT SECONDARY
		SHT	SHEET
		SIM	SIMILAR
		S/N	SOLID NEUTRAL
		SPEC	SPECIFICATION
		SPKR	SPEAKER
		SR	SPARE
		SS	STAINLESS STEEL
		SSW	SELECTOR SWITCH
		S/S	STOP/START PUSHBUTTONS
		STA	STATION
		STD	STANDARD
		SURF	SURFACE MOUNTED
		SW	SWITCH
		SWB	SWITCHBOARD
		SYM	SYMMETRICAL
		SYS	SYSTEM
		TEL	TELEPHONE
		TERM	TERMINAL
		TR	TWIST LOCK
		TR	TAMPER RESISTANT THERMOSTAT
		TTC	TELEPHONE TERMINAL CABINET
		TV	TELEVISION
		TVTC	TELEVISION TERMINAL CABINET
		TVTC	TYPICAL
		UC	UNDER COUNTER
		UE	UNDERGROUND ELECTRICAL
		UG	UNDERGROUND
		UH	UNIT HEATER
		UT	UNDERGROUND TELEPHONE
		UTL	UTILITY
		UVF	UNIT VENTILATOR OR ULTRAVIOLET
		V	VOLT
		VA	VOLT-AMPERES
		VDT	VIDEO DISPLAY TERMINAL
		VERT	VERTICAL
		VOL	VARIABLE FREQUENCY DRIVE
		W	WATT
		W	WITH
		WG	WIRE GUARD
		WH	WATER HEATER
		W/O	WITHOUT
		W/P	WEATHERPROOF
		XFMR	TRANSFORMER
		XFR	TRANSFER

SYMBOL SCHEDULE POWER	
SYMBOL	DESCRIPTION
	WIRING SYSTEM CONCEALED IN WALL OR CEILING. WHEN SHOWN, CROSS LINES INDICATE NUMBER OF WIRES. (GROUND WIRES ARE NOT SHOWN)
	WIRING SYSTEM, UNSWITCHED LEG OF LIGHTING CIRCUIT.
	WIRING SYSTEM LOW VOLTAGE.
	CONDUIT TURNED UP TO FLOOR ABOVE.
	CONDUIT TURNED DOWN TO FLOOR BELOW.
	BRANCH CIRCUIT HOMERUN TO PANEL.

SYMBOL SCHEDULE POWER LEGEND	
SYMBOL	DESCRIPTION
	JUNCTION BOX WITH CONNECTION TO EQUIPMENT SERVED. 4" SQUARE BOX WITH A SINGLE-GANG OPENING AND PLASTER RING.
	208Y/120V THREE PHASE PANELBOARD. SEE SCHEDULE FOR MOUNTING. TOP OF PANEL AT 6'-6" AFF.
	480Y/277V THREE PHASE PANELBOARD. SEE SCHEDULE FOR MOUNTING. TOP OF PANEL AT 6'-6" AFF.
	480-208Y/120V TRANSFORMER. SEE RISER FOR SIZE. PROVIDE 4" HOUSEKEEPING PAD.
	SURGE PROTECTION DEVICE (SPD); SEE DETAIL.
	JUNCTION BOX FOR HAND DRYER CONNECTION; SEE DETAIL B/ SHEET E1-501.
	CONNECTION TO MOTOR. STARTER PROVIDED BY OTHERS UNLESS OTHERWISE NOTED. NUMBER INDICATES HORSEPOWER.
	FRACTIONAL HORSEPOWER MANUAL MOTOR STARTER, WITH OVERLOAD PROTECTION

ELECTRICAL FIXTURES LEGEND - COMMERCIAL	
SYMBOL	DESCRIPTION
	TAMPER RESISTANT DUPLEX RECEPTACLE, 20 AMP, 120 VOLT
	TAMPER RESISTANT GROUND FAULT RECEPTACLE. NEMA 5-20R DUPLEX. ALL RECEPTACLES INSTALLED OUTSIDE, WITHIN 6' OF A SINK OR IN A KITCHEN SHALL BE GFCI.
	TAMPER RESISTANT GROUND FAULT DUPLEX RECEPTACLE. NEMA 5-20R MOUNTED ABOVE COUNTER BACKSPLASH, COORDINATE MOUNTING HEIGHTS WITH ARCHITECTURAL ELEVATIONS PRIOR TO RUGH-IN.
	WEATHERPROOF RECEPTACLE. NEMA 5-20R DUPLEX, CORROSION RESISTANT COVER.
	TAMPER RESISTANT QUAD RECEPTACLE. TWO NEMA 5-20R DUPLEX RECEPTACLES. CORROSION RESISTANT COVER.
	TAMPER RESISTANT GFI NEMA 5-20R QUAD RECEPTACLE FOR ELECTRIC WATER COOLER. COORDINATE LOCATION WITH PLUMBING CONTRACTOR.

TELECOM LEGEND - ELECTRICAL	
SYMBOL	DESCRIPTION
	PLYWOOD TELEPHONE BACKBOARD. SIZE AS INDICATED ON RISER.
	DATA OUTLET ABOVE COUNTER OR HEIGHT SPECIFIED. MINIMUM 1 1/4" CONDUIT TO ABOVE NEAREST ACCESSIBLE CEILING FOR J-HOOK SYSTEM OR TO LOCAL CABLE TRAY (WITHIN 6") AS APPLICABLE WITH PULL STRING. 4" SQUARE BOX WITH A SINGLE-GANG OPENING AND PLASTER RING. COORDINATE MOUNTING HEIGHTS WITH ARCHITECT. CABLING TO BE PROVIDED BY STRUCTURED CABLING CONTRACTOR.
	DATA OUTLET MOUNTED AT 18" AFF OR HEIGHT SPECIFIED. MINIMUM 1 1/4" CONDUIT TO ABOVE NEAREST ACCESSIBLE CEILING FOR J-HOOK SYSTEM OR TO LOCAL CABLE TRAY (WITHIN 6") AS APPLICABLE WITH PULL STRING. 4" SQUARE BOX WITH A SINGLE-GANG OPENING AND PLASTER RING. CABLING TO BE PROVIDED BY STRUCTURED CABLING CONTRACTOR.
	STRUCTURE MOUNTED JUNCTION BOX FOR WIRELESS ACCESS POINT IN OPEN CEILING APPLICATIONS. 4" SQUARE BOX WITH A TWO-GANG OPENING. STUB 1" EC FROM BOX TO J-HOOKS OR CABLE TRAY ABOVE ACCESSIBLE CEILING. CABLING TO BE PROVIDED BY STRUCTURED CABLING CONTRACTOR.
	CONDUIT SLEEVE, 4" SLEEVE UNLESS OTHERWISE NOTED. PROVIDED BY ELECTRICAL CONTRACTOR.
	CABLE TRAY - WIRE MESH 12" WIDE X 4" DEEP (8" RUNG SPACING) SUSPENDED FROM CEILING STRUCTURE UNLESS OTHERWISE NOTED. CABLE TRAY SHALL BE COORDINATED WITH MECHANICAL DUCTWORK IN FIELD PRIOR TO INSTALLATION; CONTRACTOR SHALL PRODUCE COORDINATION DRAWINGS AND FIELD ADJUST AS REQUIRED TO MEET INTENT OF DRAWINGS. TELECOMMUNICATIONS MAIN GROUND BAR.
	SUBSCRIPT 'C' INDICATES CLASSROOM INTERACTIVE LED TV. SEE DETAIL 15/ SHEET E1-501 FOR REQUIREMENTS. PROVIDE PULL STRING FOR LOW VOLTAGE CABLING TO ACCESSIBLE CEILING.
	TEACHER'S DESK AUDIO/VISUAL CONNECTION LOCATION. PROVIDE SINGLE GANG JUNCTION BOX WITH 3/4" C" ROUTED ABOVE NEAREST ACCESSIBLE CEILING. SEE DETAIL 95/ SHEET E-603. CABLING BY OTHERS.

EM./LS LIGHTING FIXTURE SYMBOLS AND DEVICES	
SYMBOL	DESCRIPTION
	FLUORESCENT OR LED FIXTURE WITH EMERGENCY BATTERY DRIVER. PROVIDE 1100 LUMEN INVERTER RATED FOR 90 MINUTE OPERATION. SEE FIXTURE SCHEDULE FOR FIXTURE TYPE. EMERGENCY DEVICE SHALL SUPPLEMENT FIXTURE.

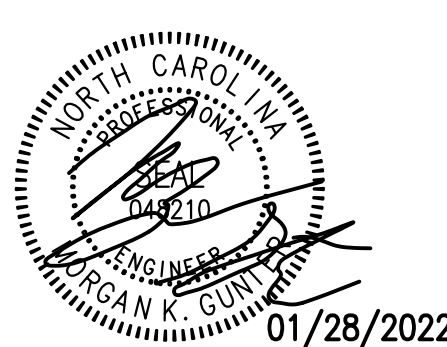
LIGHTING FIXTURES SYMBOLS AND DEVICES LEGEND	
SYMBOL	DESCRIPTION
	LED LIGHTING FIXTURE. SEE FIXTURE SCHEDULE. SUSPEND FOUR CORNERS WITH WIRE TO STRUCTURE. DO NOT ALLOW GRID ALONE TO SUPPORT FIXTURE.
	LED STRIP LIGHT FIXTURE
	RECESSED LED OR H.I.D. LIGHTING FIXTURE.
	THREE WAY SWITCH, 20 AMP, 120/277 VOLT, COOPER 1223, THREE WAY SWITCH, 20 AMP, 120/277 VOLT, COOPER 1223, OR EQUAL BY HUBBELL, LEVITON AND PASS & SEYMOUR.
	KEY OPERATED SWITCH
	CEILING MOUNTED OCCUPANCY SENSOR, DUAL TECHNOLOGY. SENSOR SWITCH CM PDT 10, WATT STOPPER PDT-300, COOPER OAC-DT OR EQUAL.
	CORNER MOUNT ADDRESSABLE OCCUPANCY SENSOR, DUAL TECHNOLOGY. HUBBELL NXOS-LODT OR EQUAL BY ACUTY NLIGHT, WATT STOPPER DLM, OR GREENGATE CONICAL PATTERN, MOUNT AS CLOSE TO CORNER OF ROOM AS POSSIBLE. MOUNT 10' AFF OR 6' BELOW CEILING (IF LOWER THAN 10') PROVIDE WITH RJ45 ADAPTER TO CONNECT TO ROOM CONTROLLER
	WALL MOUNTED OCCUPANCY SENSOR AND SWITCH. INFRARED TECHNOLOGY WITH NEUTRAL, 120/277V RATED. WATT STOPPER #WS-250, OR EQUAL BY SENSOR SWITCH, AND LEVITON.
	WALL MOUNTED LOW VOLTAGE ADDRESSABLE LIGHT CONTROL WALL SWITCH ON/OFF FOR 1 ZONE OF LIGHTING. HUBBELL NXSW SERIES OR EQUAL BY ACUTY NLIGHT OR WATTSTOPPER DLM. PROVIDE ON/OFF LABELS FOR EACH BUTTON.
	WALL MOUNTED LOW VOLTAGE ADDRESSABLE LIGHT CONTROL WALL SWITCH ON/OFF FOR 2 ZONES OF LIGHTING. HUBBELL NXSW SERIES OR EQUAL BY ACUTY NLIGHT OR WATTSTOPPER DLM. PROVIDE ON/OFF LABELS FOR EACH BUTTON.
	WALL MOUNTED LOW VOLTAGE ADDRESSABLE LIGHT CONTROL WALL SWITCH ON/OFF WITH DIMMING CONTROL FOR 3 ZONES OF LIGHTING. HUBBELL NXSW SERIES OR EQUAL BY ACUTY NLIGHT OR WATTSTOPPER DLM. PROVIDE ON/OFF LABELS FOR EACH BUTTON.
	CEILING MOUNTED OCCUPANCY SENSOR POWER PACK. SENSOR SWITCH PP-20, WATT STOPPER #BZ-100, COOPER SP-20, OR EQUAL.
	ADDRESSABLE ROOM CONTROLLER HUBBELL NXRC OR EQUAL BY ACUTY NLIGHT, WATTSTOPPER DLM.
	ADDRESSABLE ROOM CONTROLLER W/ 0-10V DIMMING, HUBBELL NXRC OR EQUAL BY ACUTY NLIGHT, WATTSTOPPER DLM.

SECURITY DEVICES SYMBOL LEGEND - ELECTRICAL	
SYMBOL	DESCRIPTION
	CEILING MOUNTED SECURITY CAMERA LOCATION. CAMERA PROVIDED AND INSTALLED BY OTHERS. CABLING TO BE PROVIDED BY STRUCTURED CABLING CONTRACTOR.
	X-WP EXTERIOR WALL MOUNTED CAMERA. REFER TO DETAIL 2 & 3/ SHEET E1-503 FOR REQUIREMENTS.
	DOOR CONTACT, MINIMUM 1/2" CONDUIT. PROVIDE SINGLE GANG JUNCTION BOX AND PULL STRING. COORDINATE WITH SECURITY VENDOR; SEE DETAIL 13/ SHEET E1-501.
	SECURITY MOTION DETECTOR. CEILING MOUNTED. PROVIDE 1-GANG JUNCTION BOX, ROUTE (1) 1/2" C. FROM JUNCTION BOX TO NEAREST J-HOOK SYSTEM. PROVIDE PULL STRING.

EXISTING/DEMOLITION LEGEND	
SYMBOL	DESCRIPTION
	HALFTONE SYMBOL INDICATES EXISTING
	DASHED SYMBOL INDICATES REMOVED

SPECIAL SYSTEMS LEGEND	
SYMBOL	DESCRIPTION
	FLUSH-MOUNTED CEILING SPEAKER
	WALL-MOUNTED SPEAKER, 3/4" CONDUIT TO LOCAL ACCESSIBLE CEILING
	EXTERIOR WEATHERPROOF SPEAKER; SEE DETAIL 1/ SHEET E1-503.

ELECTRICAL SHEET INDEX		
SHEET NUMBER		SHEET NAME
E1-001		ELECTRICAL LEGEND AND NOTES
E1-002		ELECTRICAL NOTES
E1-011		OVERALL FIRST FLOOR POWER PLAN - DEMOLITION
E1-012		OVERALL FIRST FLOOR POWER PLAN - NEW WORK
E1-111		



CONSTRUCTION DOCUMENTS



Hamett County Schools Johnsonville Elementary School Addition/Renovation Phase 2 18495 NC-27, Cameron, NC 28526



Table with 3 columns: No., Date, Description. Contains a list of revision entries.

ISSUE DATE: 01/28/2022 PROJECT #: 02103.000 DRAWN BY: JSD CHECKED BY: MKG © 2021 Sfi+a Architects, PA All Rights Reserved

ELECTRICAL NOTES

16. ELECTRICAL COORDINATION WITH OTHER TRADES: A. THE ELECTRICAL CONTRACTOR SHALL CONNECT AND/OR PROVIDE FINAL CONNECTIONS TO ALL EQUIPMENT SUPPLIED BY OTHERS APPLICABLE TO THE PROJECT, INCLUDING BUT NOT LIMITED TO, MECHANICAL, PLUMBING, FIRE PROTECTION AND SUPPRESSION, OWNER FURNISHED, KITCHEN, LABORATORY, ETC. UNLESS OTHERWISE NOTED.

14. FIRE STOPPING: A. ALL PENETRATIONS OF RATED ASSEMBLIES SHALL BE SEALED WITH RATED MATERIALS MEETING ASTM E-814. B. PROVIDE FIRESTOPPING DEVICES (OR SYSTEMS) WHICH HAVE BEEN TESTED AND LISTED AS COMPLYING WITH ASTM E-814. INSTALL THE DEVICES (OR SYSTEMS) IN ACCORDANCE WITH THE CONDITIONS OF THEIR LISTING. PROVIDE THE APPROPRIATE DEVICES (OR SYSTEMS) WITH AN 'F' RATING FOR ALL PENETRATIONS THROUGH FIRE RATED WALLS AND CEILING PENETRATIONS.

9. LIGHTING FIXTURES: A. TYPES AND MANUFACTURERS ARE SCHEDULED ON THE PLANS. EQUIVALENT FIXTURES BY OTHERS MAY BE SUBMITTED ONLY AS INDICATED ON THE PLANS AND ARE SUBJECT TO THE APPROVAL OF THE OWNER AND ENGINEER. B. ALL FIXTURES SHALL BE U.L. LISTED AND LABELED.

4. CONDUCTORS: A. CONDUCTORS SHALL BE MANUFACTURED BY SOUTHWIRE (SIMPULL), ENCORE (SUPERSLUCK), UNITED COPPER (SAL), FERRO (SP), OR APPROVED EQUAL. "PBE LUBRICATED" BY THE MANUFACTURER. B. ALL CONDUCTORS SHALL BE COPPER, RATED 75° C WET/DRY EXCEPT WHERE OTHERWISE NOTED OR REQUIRED BY U.L. OR OTHER CODES.

1. GENERAL: A. THE WORK COVERED BY THESE SPECIFICATIONS CONSISTS OF FURNISHING ALL LABOR, EQUIPMENT, MATERIALS, AND SUPPLIES NECESSARY TO COMPLETE AND SATISFACTORY OPERATING ELECTRICAL SYSTEMS AS SHOWN ON THE PLANS. B. ALL WORK SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, NFPA, STATE BUILDING CODE, AND ANY OTHER LOCAL REQUIREMENTS THAT MAY APPLY.

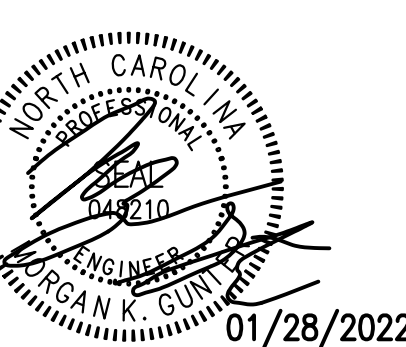
GENERAL NOTES

- A. SWITCHBOARDS, PANELBOARDS, METER SOCKET ENCLOSURES AND MOTOR CONTROL CENTERS SHALL BE FIELD MARKED TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS. THE MARKING SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE OF THE EQUIPMENT.
- B. FOR ALL RELOCATED MECHANICAL EQUIPMENT, RELOCATE ASSOCIATED ELECTRICAL CONNECTIONS AND EXTEND FEEDERS AS REQUIRED TO NEW EQUIPMENT LOCATIONS. SEE NEW WORK PLAN FOR NEW LOCATIONS.
- C. DASHED ARCHITECTURAL LINES INDICATE DEMOLITION. DISCONNECT AND REMOVE EXISTING ELECTRICAL DEVICES IN WALLS AND CEILING. TYPICAL IN ALL AREAS UNLESS OTHERWISE NOTED. COORDINATE WITH OTHER TRADES AS REQUIRED TO FACILITATE COMPLETE DEMOLITION.
- D. CONTRACTOR SHALL MAKE SURE TO MAINTAIN CONTINUITY OF ELECTRICAL DEVICES THAT ARE OUTSIDE AREA OF WORK THAT ARE INTENDED TO REMAIN ENERGIZED.
- E. MAINTAIN CONTINUITY OF BRANCH CIRCUITRY ASSOCIATED WITH ALL EXISTING LIGHT FIXTURES TO REMAIN.
- F. MAINTAIN CONTINUITY OF BRANCH CIRCUITRY ASSOCIATED WITH ALL FIRE ALARM DEVICES TO REMAIN.
- G. MAINTAIN CONTINUITY OF BRANCH CIRCUITRY ASSOCIATED WITH ALL EXISTING POWER DEVICES TO REMAIN.
- H. HATCHED AREAS ARE NOT IN SCOPE OF WORK.

...Becoming the
Leading Designer of
High Performance Facilities
in the Nation with a
Specialty in Alternative
Delivery Methods

333 Fayetteville St., Ste 225
Raleigh, NC 27601
P: 919-573-4350
F: 919-573-4355
www.sfl+a.biz

sfl+a
ARCHITECTS



CONSTRUCTION DOCUMENTS

optima
engineering

150 Fayetteville St., Suite 520, Raleigh, NC 27601
1827 South Tryon St., Suite 300, Charlotte, NC 28203
Phone: 919-928-2200 | www.optimaengineering.com
North Carolina License Number C-0914

Hamnett County Schools
**Johnsonville Elementary School
Addition/Renovation Phase 2**
18495 NC-27, Cameron, NC 28326

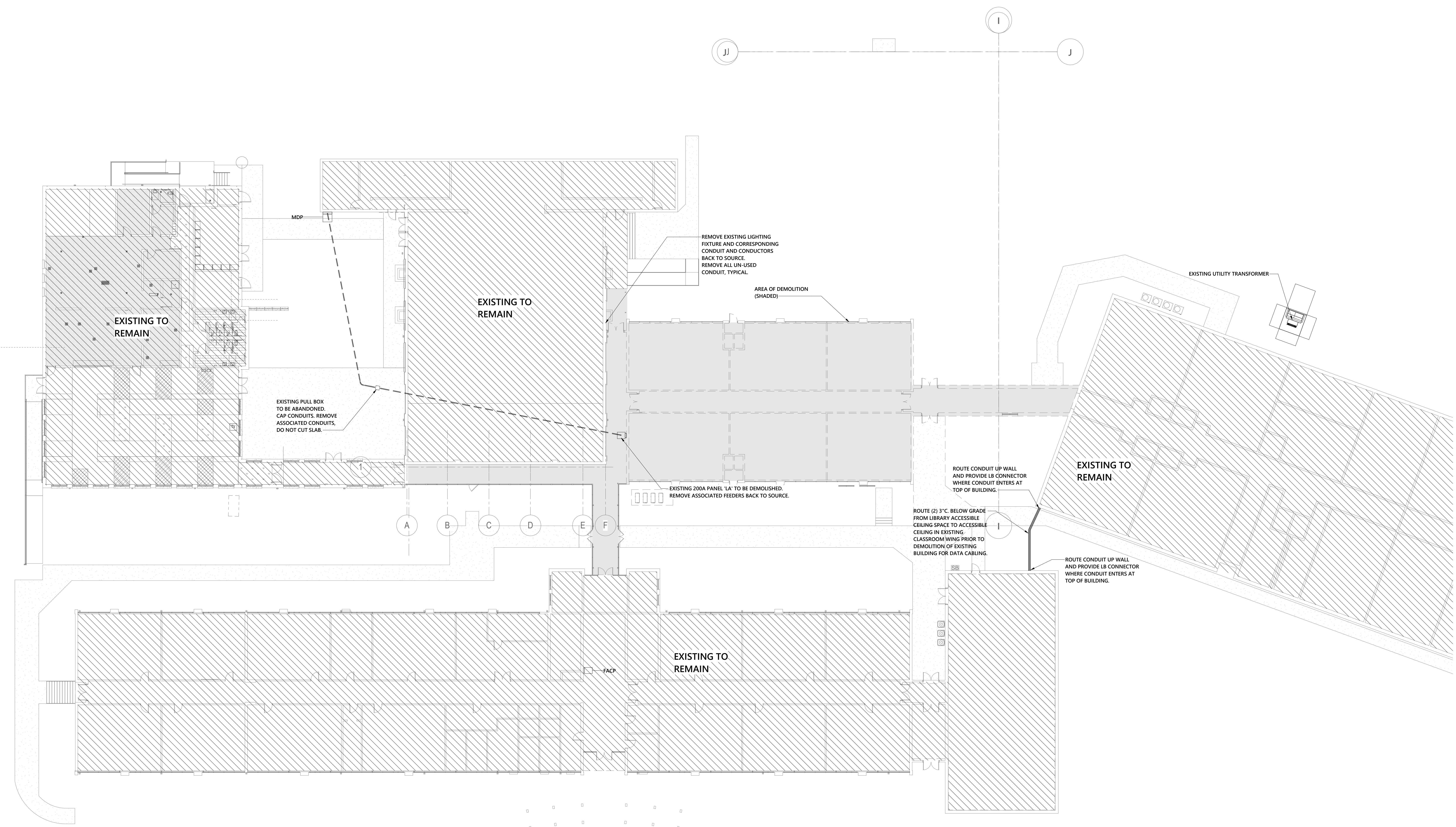


No.	Date	Description

ISSUE DATE: 01/28/2022
PROJECT #: 02103.000
DRAWN BY: JSD
CHECKED BY: MKG
© 2021 SFL+a Architects, PA
All Rights Reserved

OVERALL FIRST FLOOR POWER PLAN - DEMOLITION

E1-011
Sheet No. 3 of 15



1 OVERALL ELECTRICAL PLAN - DEMOLITION - PHASE 2
1/16" = 1'-0"

1/28/2022 3:01:08 PM Autodesk Docs://Johnsonville ES Addition Renovation/21-0266R_Johnsonville Classroom Addition_MEPPP_1022.rvt

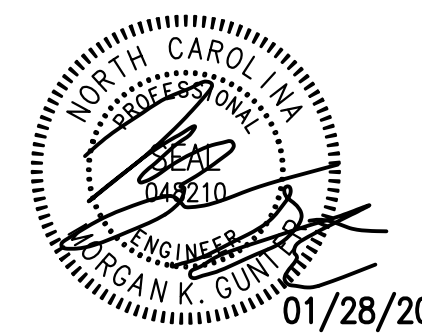
GENERAL NOTES

- A. SWITCHBOARDS, PANELBOARDS, METER SOCKET ENCLOSURES AND MOTOR CONTROL CENTERS SHALL BE FIELD MARKED TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS. THE MARKING SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE OF THE EQUIPMENT.
- B. FOR ALL RELOCATED MECHANICAL EQUIPMENT, RELOCATE ASSOCIATED ELECTRICAL CONNECTIONS AND EXTEND FEEDERS AS REQUIRED TO NEW EQUIPMENT LOCATIONS. SEE NEW WORK PLAN FOR NEW LOCATIONS.
- C. DASHED ARCHITECTURAL LINES INDICATE DEMOLITION. DISCONNECT AND REMOVE EXISTING ELECTRICAL DEVICES IN WALLS AND CEILING. TYPICAL IN ALL AREAS UNLESS OTHERWISE NOTED. COORDINATE WITH OTHER TRADES AS REQUIRED TO FACILITATE COMPLETE DEMOLITION.
- D. CONTRACTOR SHALL MAKE SURE TO MAINTAIN CONTINUITY OF ELECTRICAL DEVICES THAT ARE OUTSIDE AREA OF WORK THAT ARE INTENDED TO REMAIN ENERGIZED.
- E. MAINTAIN CONTINUITY OF BRANCH CIRCUITRY ASSOCIATED WITH ALL EXISTING LIGHT FIXTURES TO REMAIN.
- F. MAINTAIN CONTINUITY OF BRANCH CIRCUITRY ASSOCIATED WITH ALL FIRE ALARM DEVICES TO REMAIN.
- G. MAINTAIN CONTINUITY OF BRANCH CIRCUITRY ASSOCIATED WITH ALL EXISTING POWER DEVICES TO REMAIN.
- H. HATCHED AREAS ARE NOT IN SCOPE OF WORK.

...Becoming the
Leading Designer of
High Performance Facilities
in the Nation with a
Specialty in Alternative
Delivery Methods

333 Fayetteville St., Ste 225
Raleigh, NC 27601
P: 919-573-8399
F: 919-573-8395
www.sfi+a.com

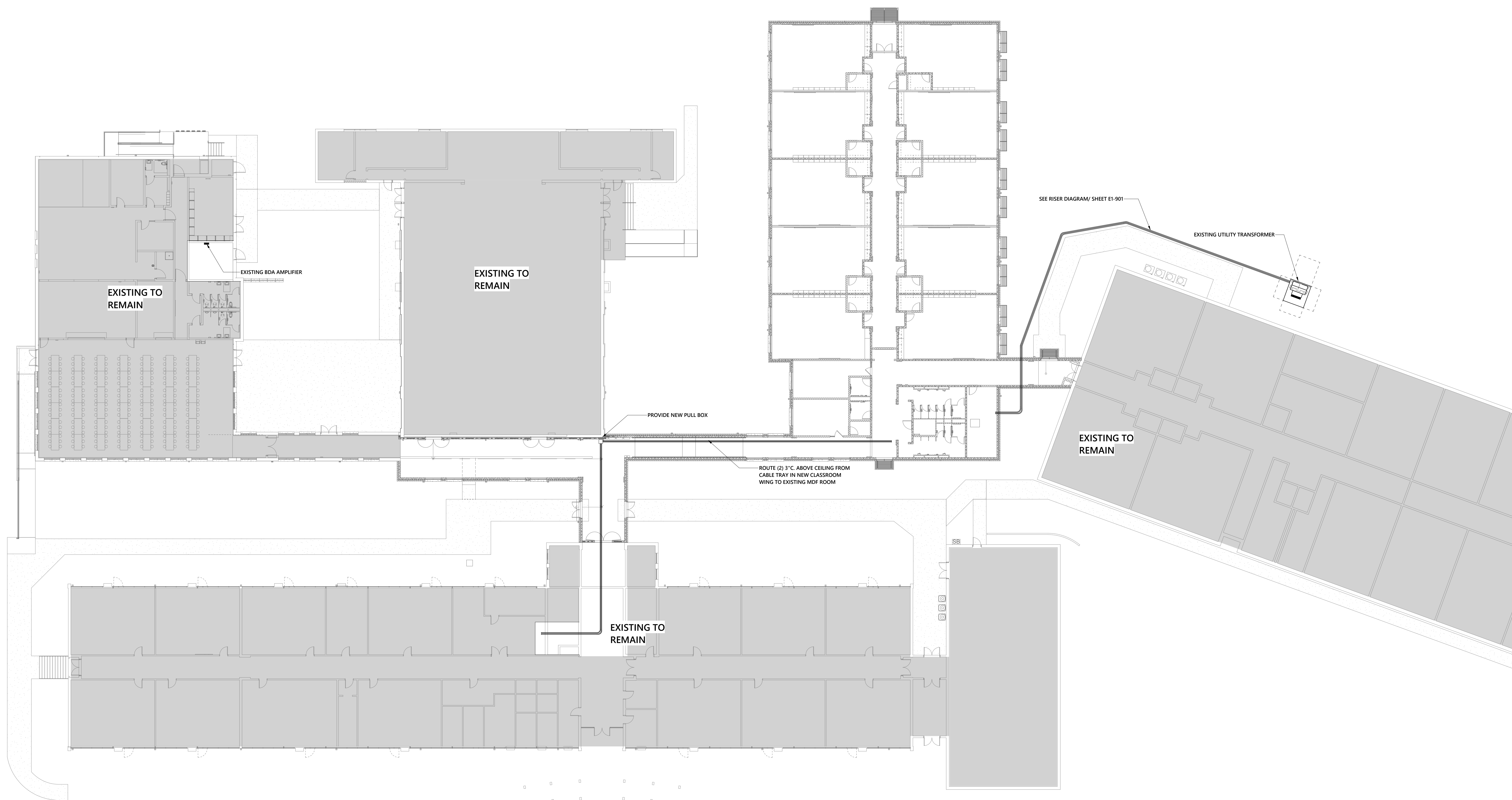
sfi+a
ARCHITECTS



CONSTRUCTION
DOCUMENTS

optima
engineering

150 Fayetteville St., Suite 520, Raleigh, NC 27601
1927 South Tryon St., Suite 300, Charlotte, NC 28203
Phone: 919-828-2200 www.optimaengineering.com
North Carolina License Number C-0914



1 OVERALL ELECTRICAL PLAN - PHASE 2
1/16" = 1'-0"



No.	Date	Description

ISSUE DATE: 01/28/2022
PROJECT #: 02103.000
DRAWN BY: JSD
CHECKED BY: MKG
© 2021 Sfi+a Architects, PA
All Rights Reserved

OVERALL FIRST
FLOOR POWER
PLAN - NEW WORK

E1-012

1/28/2022 3:01:26 PM Autodesk Docs://Johnsonville ES Addition Renovation/21-0266R_Johnsonville Classroom Addition_MEPPP_022.rvt

GENERAL NOTES

- A. RECEPTACLES AND DATA OUTLETS SHALL NOT BE MOUNTED IN TRIM OF WINDOWS. LOCATE IN WHERE FULL WALL IS AVAILABLE.
- B. COORDINATE LOCATION OF ALL FLOOR BOXES IN THE SAME AREA SHALL BE NEATLY ALIGNED AND PARALLEL TO BUILDING LINES.
- C. CIRCUIT NUMBERS ARE DIAGNOSTIC. EXACT NUMBERS SHALL BE DETERMINED IN THE FIELD AND REFLECTED ON AS-BUILT DOCUMENTATION BY THE ELECTRICAL CONTRACTOR. THE ASSOCIATED CIRCUIT NUMBERS THAT ARE APPLIED TO EACH DEVICE AND PIECE OF EQUIPMENT INFERS INTERCONNECTING BRANCH CIRCUITRY.
- D. WHERE CONNECTED TO A 20A BRANCH CIRCUIT SUPPLYING AN INDIVIDUAL RECEPTACLE (SIMPLEX OR DUPLEX), THE RECEPTACLE SHALL BE RATED AT 20A.
- E. PROVIDE HOUSEKEEPING PADS FOR ALL FLOOR MOUNTED AND GRADE MOUNTED ELECTRICAL EQUIPMENT. MINIMUM REQUIREMENTS: 4" HIGH, 4% AIR ENTRAINED, POLYFIBER REINFORCED CONCRETE, 4" WIDER AND 4" LONGER THAN EQUIPMENT TO BE PLACED ON IT. REFER TO ELECTRICAL DETAIL DRAWINGS FOR TRANSFORMER OR SWITCHGEAR PADS THAT MAY EXCEED THESE REQUIREMENTS.
- F. REFER TO SECTION 26 0519 FOR MINIMUM CONDUCTOR SIZE ADJUSTMENTS FOR VOLTAGE DROP.
- G. WIRE COUNTS FOR CIRCUIT CONDUCTORS ARE NOT SHOWN. PROVIDE PROPER NUMBER OF CONDUCTORS TO ACHIEVE CIRCUIT AND SWITCHING CONNECTIONS SHOWN.
- H. MODIFICATIONS TO NUMBER OF CONDUCTORS IN HOME RUNS IN ADDITION TO CIRCUIT INDICATED ON THIS DRAWING ARE PROHIBITED.
- I. COORDINATE EXACT LOCATION OF ALL FLOOR BOXES WITH ARCHITECT AND FURNITURE VENDOR.

...Becoming the
Leading Designer of
High Performance Facilities
in the Nation with a
Specialty in Alternative
Delivery Methods

333 Fayetteville St, Ste 325
Raleigh, NC 27601
P: 919-573-4350
F: 919-573-4355
www.sfa.biz

sfa
ARCHITECTS

STATE OF NORTH CAROLINA
PLUMBING CONTRACTOR
No. 10000
MICHAEL K. ...
01/28/2022

CONSTRUCTION DOCUMENTS

optima
engineering

150 Fayetteville St., Suite 520, Raleigh, NC 27601
1927 South Tryon St., Suite 300, Charlotte NC 28203
Phone: 919-628-2200 www.optimaengineering.com
North Carolina License Number C-0914

Harnett County Schools
**Johnsonville Elementary School
Addition/Renovation Phase 2**
18495 NC-27, Cameron, NC 28526

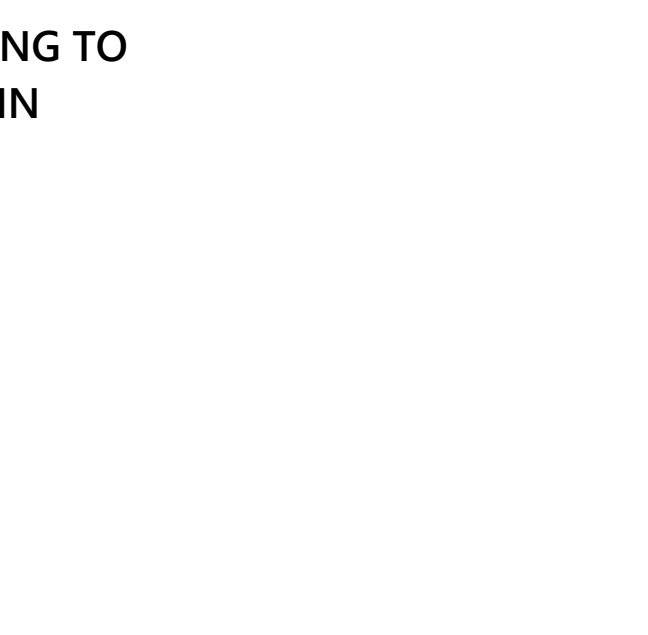
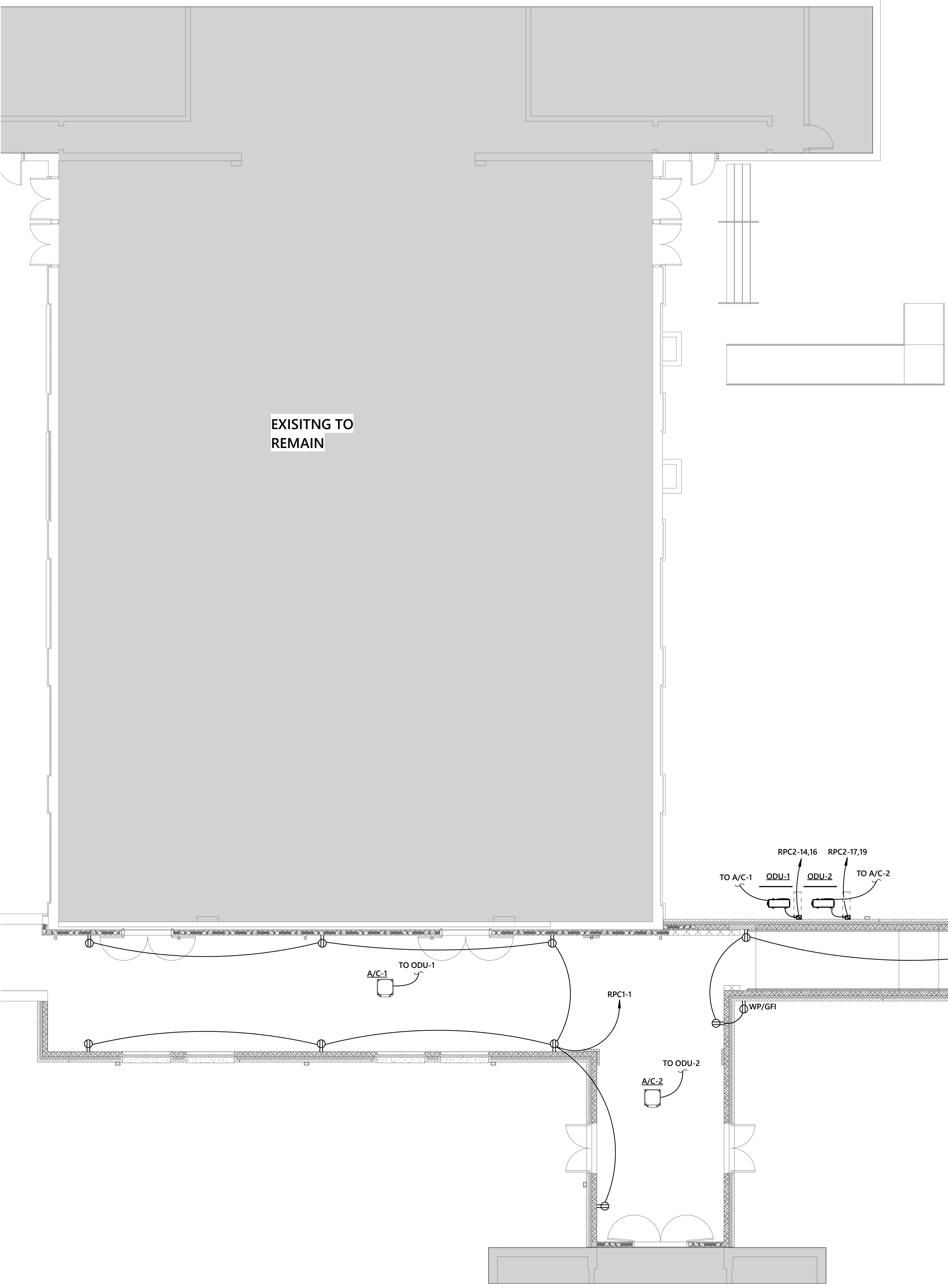
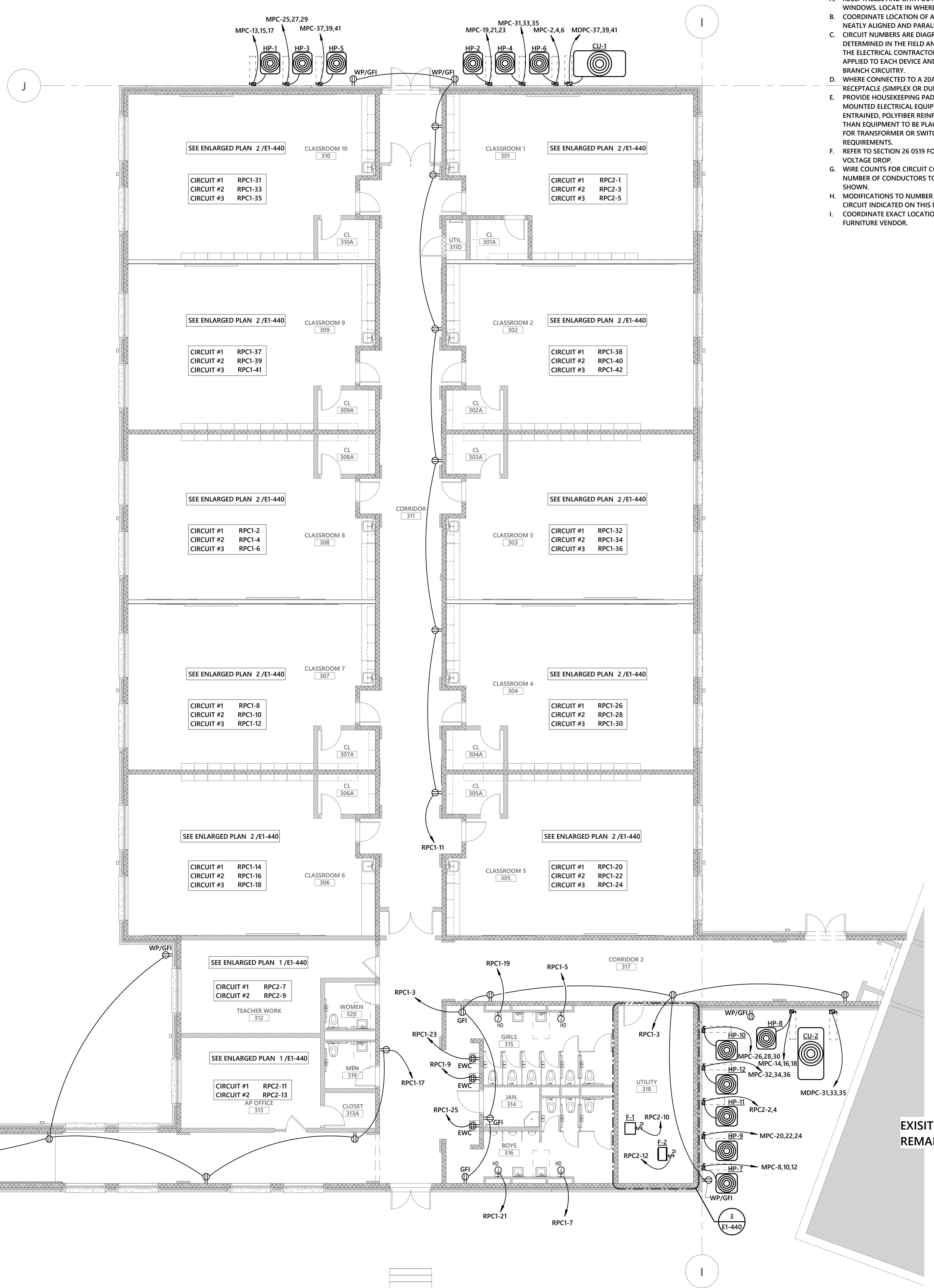
ENERGY STAR PARTNER

No.	Date	Description

ISSUE DATE: 01/28/2022
PROJECT #: 02103.000
DRAWN BY: JSD
CHECKED BY: MKG
© 2021 SFA+ Architects, PA
All Rights Reserved

FIRST FLOOR
POWER PLAN - NEW WORK

E1-111
Sheet No. 5 of 15



1 FIRST FLOOR POWER PLAN - PHASE 2
1/8" = 1'-0"

1/28/2022 3:01:28 PM Autodesk Docs://Johnsonville ES Addition Renovation/21-0266R_Johnsonville Classroom Addition_MEPPP_022.rvt

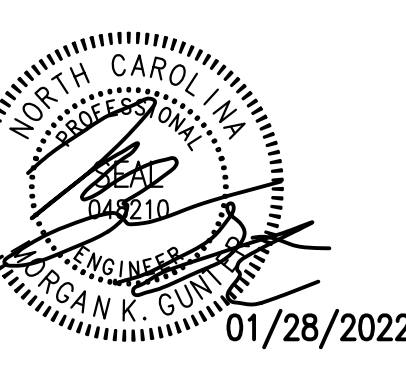
GENERAL NOTES

- A. RECEPTACLES AND DATA OUTLETS SHALL NOT BE MOUNTED IN TRIM OF WINDOWS. LOCATE IN WHERE FULL WALL IS AVAILABLE.
- B. COORDINATE LOCATION OF ALL FLOOR BOXES IN THE SAME AREA SHALL BE NEATLY ALIGNED AND PARALLEL TO BUILDING LINES.
- C. CIRCUIT NUMBERS ARE DIAGRAMMATIC. EXACT NUMBERS SHALL BE DETERMINED IN THE FIELD AND REFLECTED ON AS-BUILT DOCUMENTATION BY THE ELECTRICAL CONTRACTOR. THE ASSOCIATED CIRCUIT NUMBERS THAT ARE APPLIED TO EACH DEVICE AND PIECE OF EQUIPMENT INFERS INTERCONNECTING BRANCH CIRCUITRY.
- D. WHERE CONNECTED TO A 20A BRANCH CIRCUIT SUPPLYING AN INDIVIDUAL RECEPTACLE (SIMPLEX OR DUPLEX), THE RECEPTACLE SHALL BE RATED AT 20A.
- E. PROVIDE HOUSEKEEPING PADS FOR ALL FLOOR MOUNTED AND GRADE MOUNTED ELECTRICAL EQUIPMENT. MINIMUM REQUIREMENTS: 4" HIGH, 4% AIR ENTRAINED, POLYFIBER REINFORCED CONCRETE, 4" WIDER AND 4" LONGER THAN EQUIPMENT TO BE PLACED ON IT. REFER TO ELECTRICAL DETAIL DRAWINGS FOR TRANSFORMER OR SWITCHGEAR PADS THAT MAY EXCEED THESE REQUIREMENTS.
- F. REFER TO SECTION 26 0519 FOR MINIMUM CONDUCTOR SIZE ADJUSTMENTS FOR VOLTAGE DROP.
- G. WIRE COUNTS FOR CIRCUIT CONDUCTORS ARE NOT SHOWN. PROVIDE PROPER NUMBER OF CONDUCTORS TO ACHIEVE CIRCUIT AND SWITCHING CONNECTIONS SHOWN.
- H. MODIFICATIONS TO NUMBER OF CONDUCTORS IN HOME RUNS IN ADDITION TO CIRCUIT INDICATED ON THIS DRAWING ARE PROHIBITED.
- I. COORDINATE EXACT LOCATION OF ALL FLOOR BOXES WITH ARCHITECT AND FURNITURE VENDOR.

...Becoming the
Leading Designer of
High Performance Facilities
in the Nation with a
Specialty in Alternative
Delivery Methods

333 Fayetteville St., Ste 225
Raleigh, NC 27601
P: 919-573-4350
F: 919-573-4355
www.sfl+a.biz

sfl+a
ARCHITECTS



CONSTRUCTION
DOCUMENTS

optima
engineering

150 Fayetteville St., Suite 520, Raleigh, NC 27601
1927 South Tryon St., Suite 300, Charlotte, NC 28203
Phone: 919-828-2200 www.optimaengineering.com
North Carolina License Number C-0914

Harnett County Schools
**Johnsonville Elementary School
Addition/Renovation Phase 2**
18495 NC-27, Cameron, NC 28326



No.	Date	Description

ISSUE DATE: 01/28/2022

PROJECT #: 02103.000

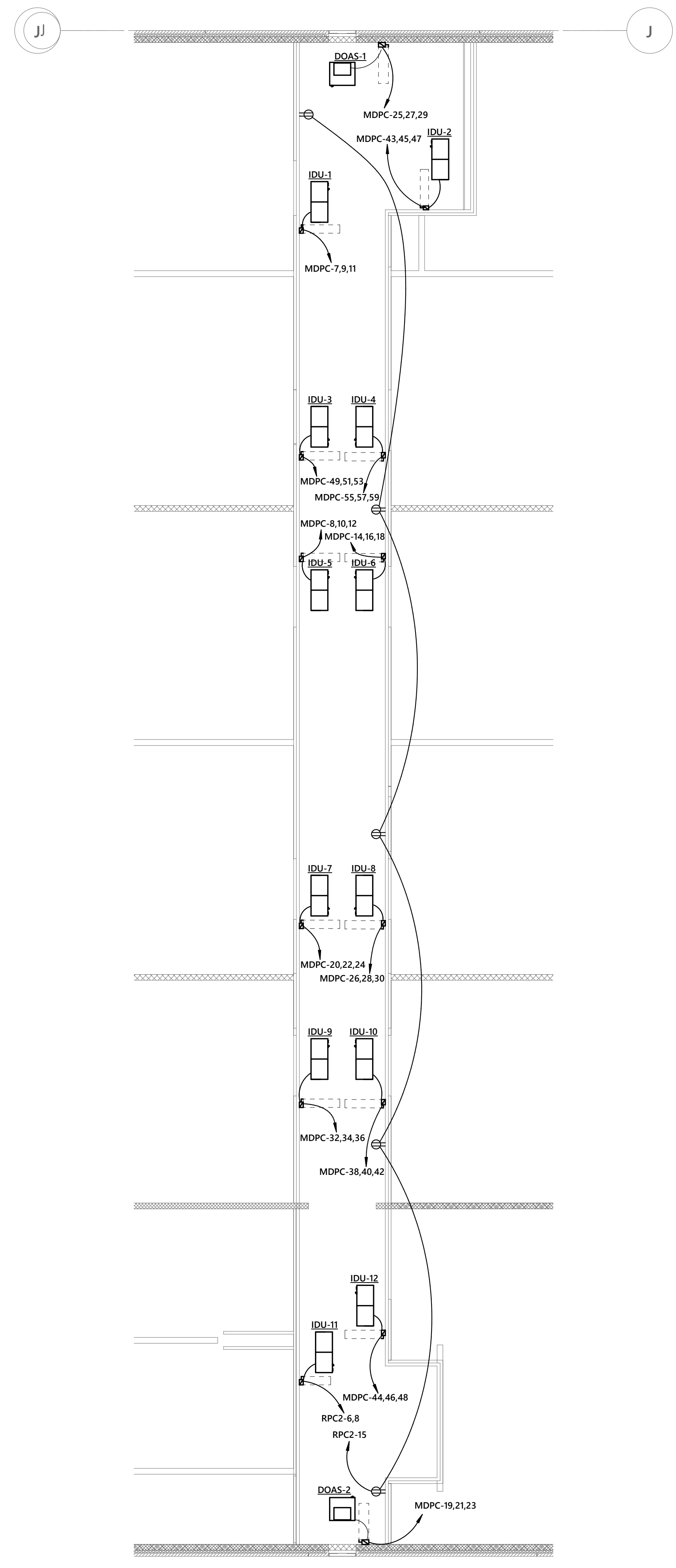
DRAWN BY: JSD

CHECKED BY: MKG

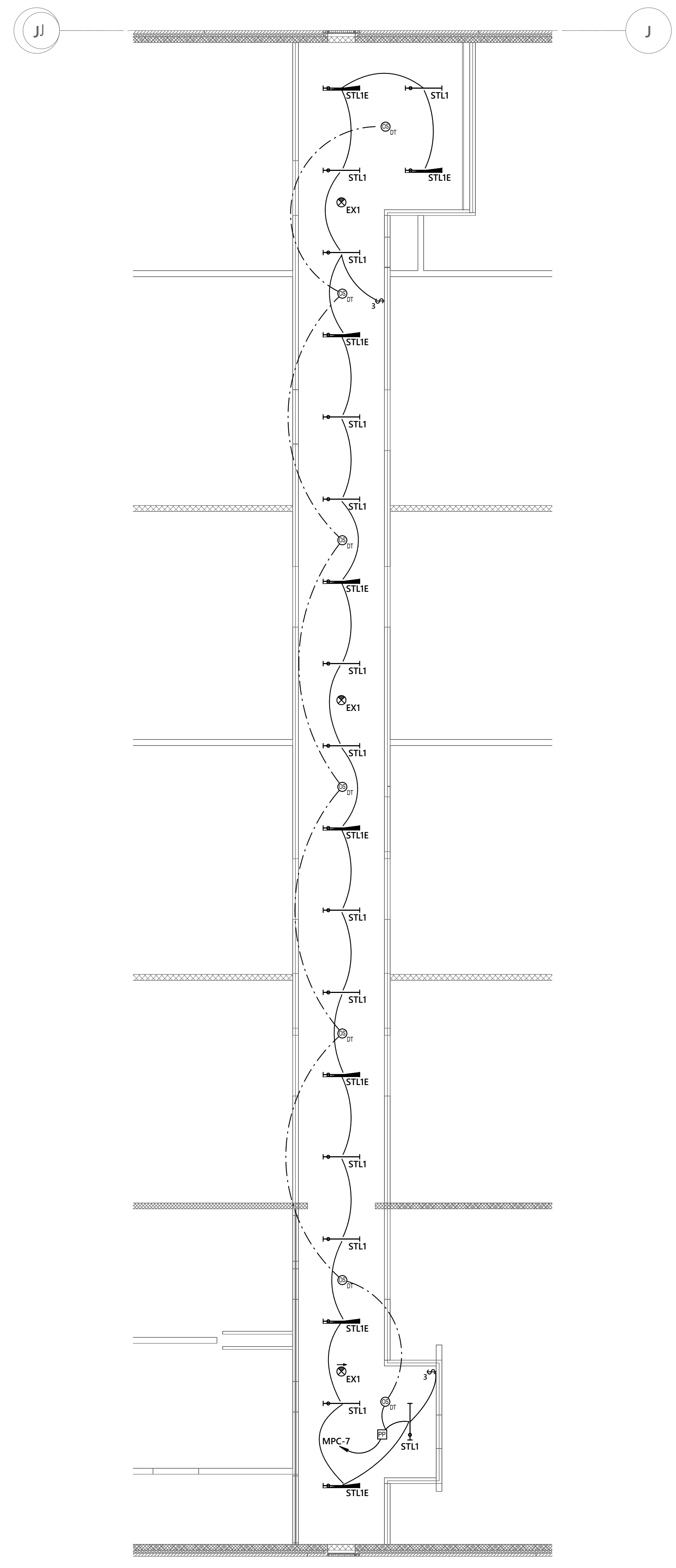
© 2021 Sfl+a Architects, PA
All Rights Reserved

MECHANICAL LOFT
ELECTRICAL PLANS
- NEW WORK

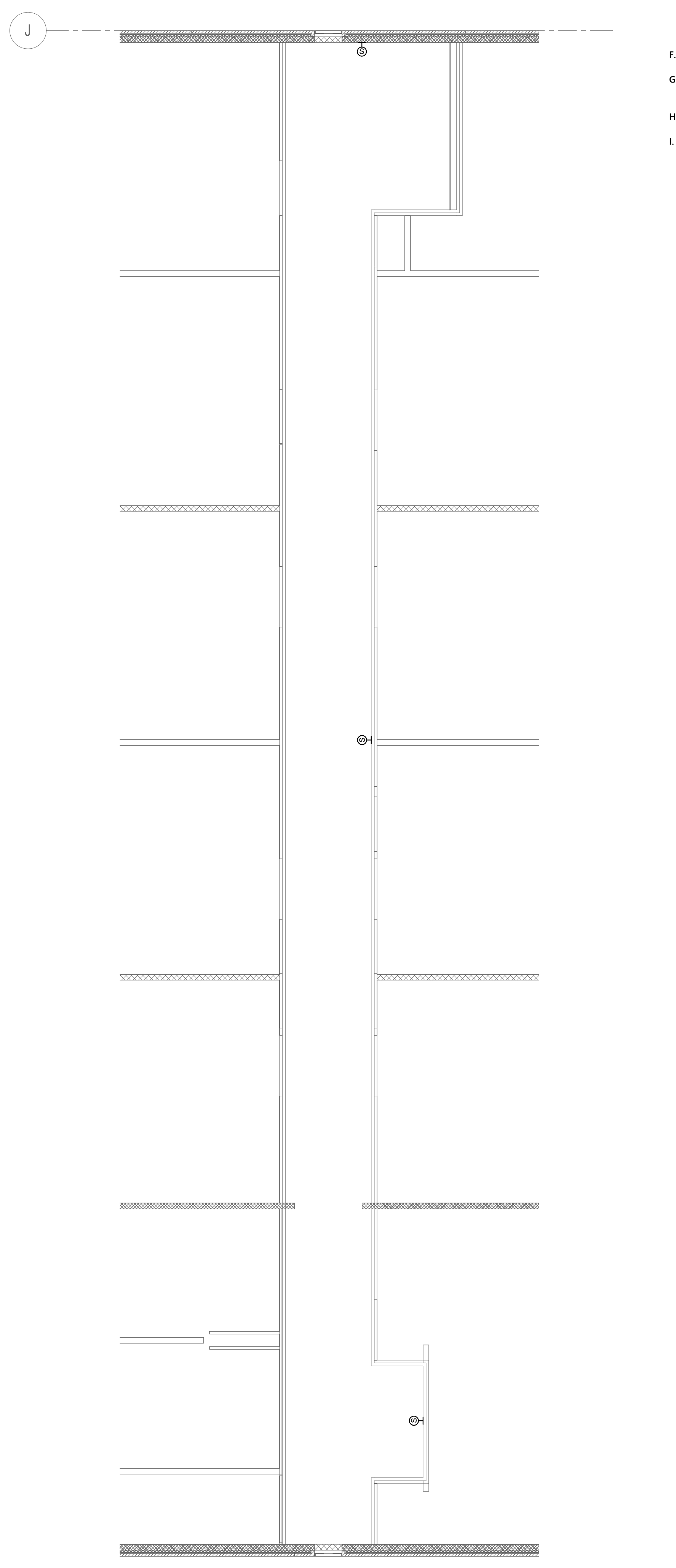
E1-112
Sheet No. 6 of 15



1 MECHANICAL LOFT POWER PLAN - PHASE 2
1/8" = 1'-0"

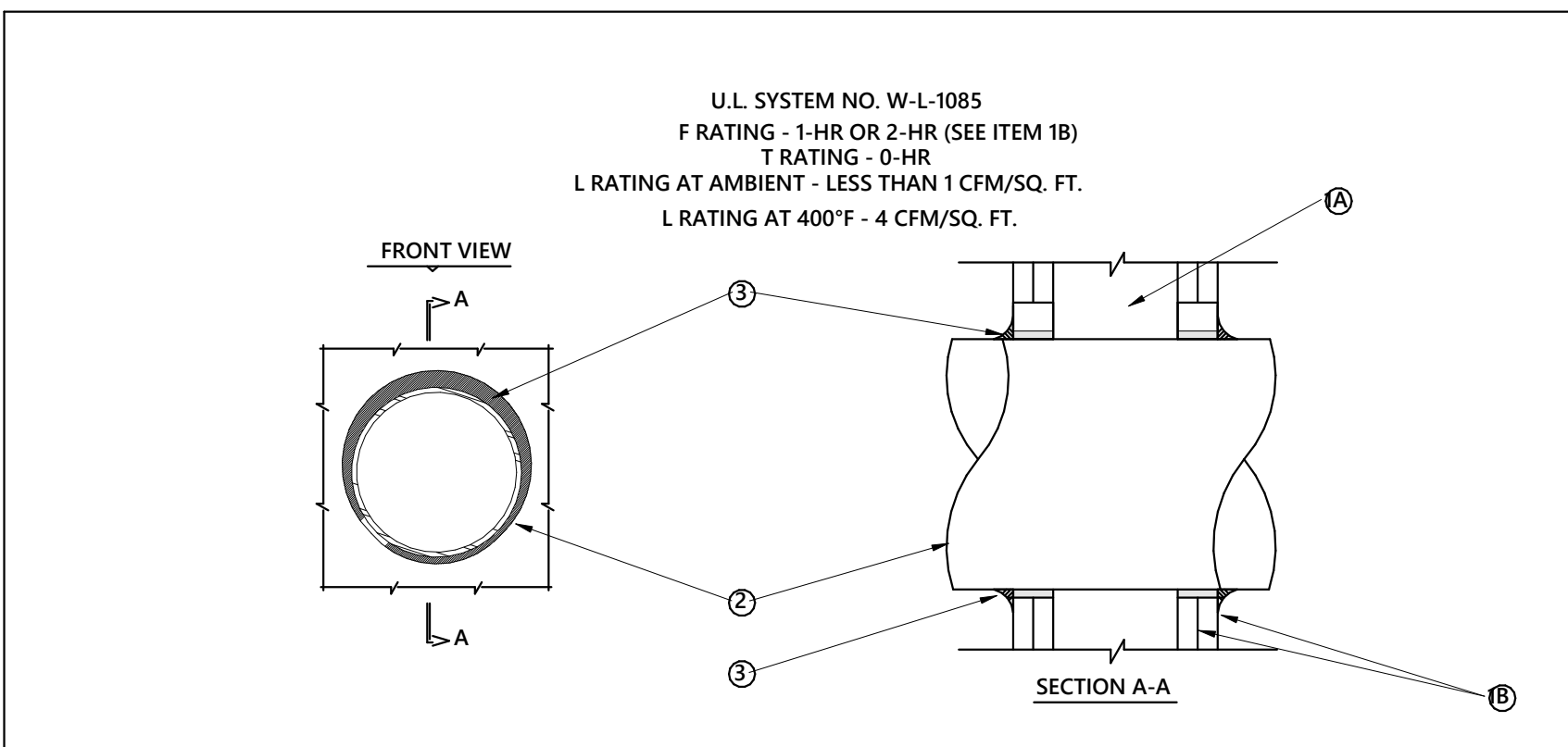


2 MECHANICAL LOFT LIGHTING PLAN - PHASE 2
1/8" = 1'-0"



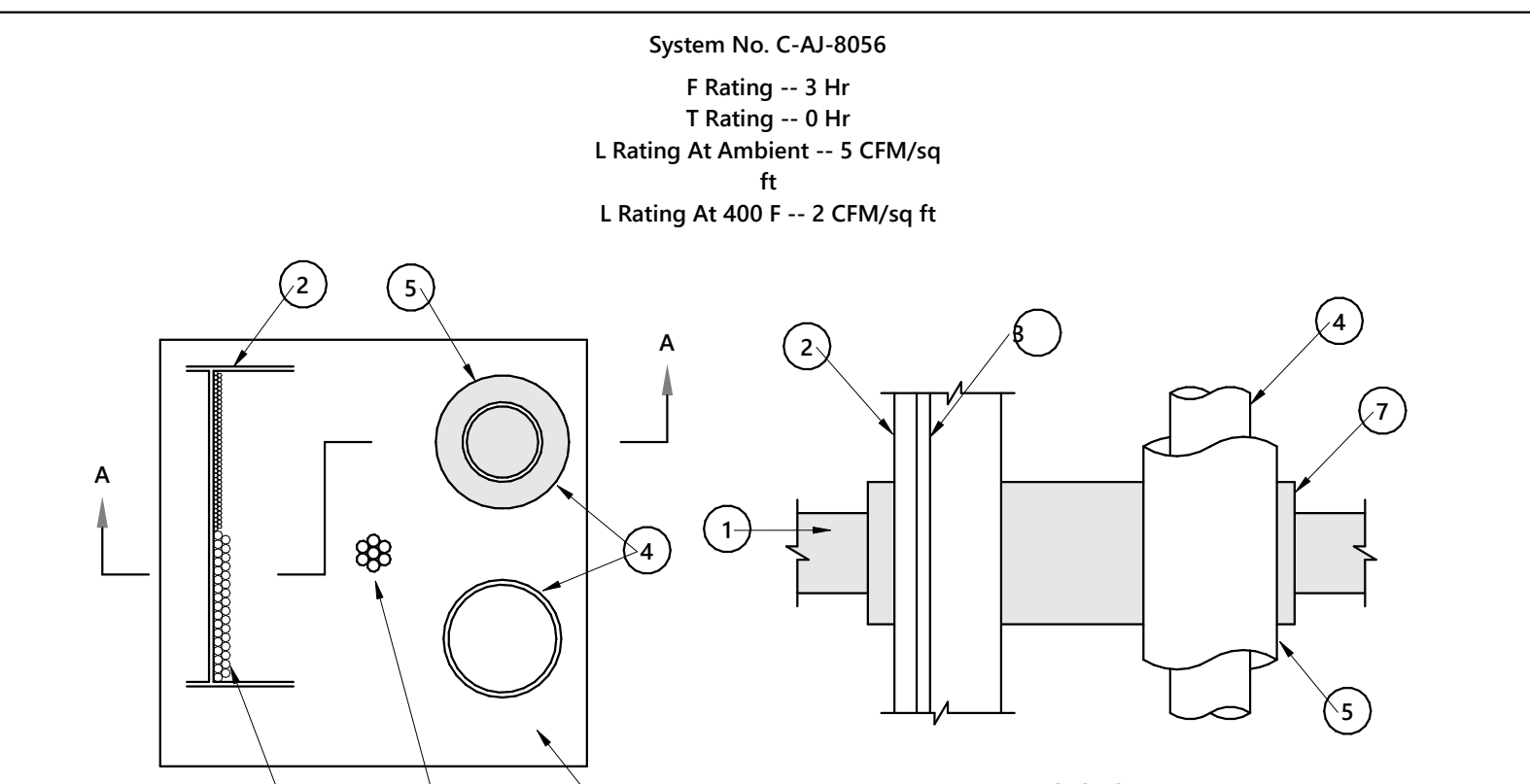
3 MECHANICAL LOFT SYSTEMS PLAN - PHASE 2
1/8" = 1'-0"

1/28/2022 3:01:28 PM Autodesk Docs://Johnsonville ES Addition Renovation/21-0266R_Johnsonville Classroom Addition_MEPPP_022.rvt



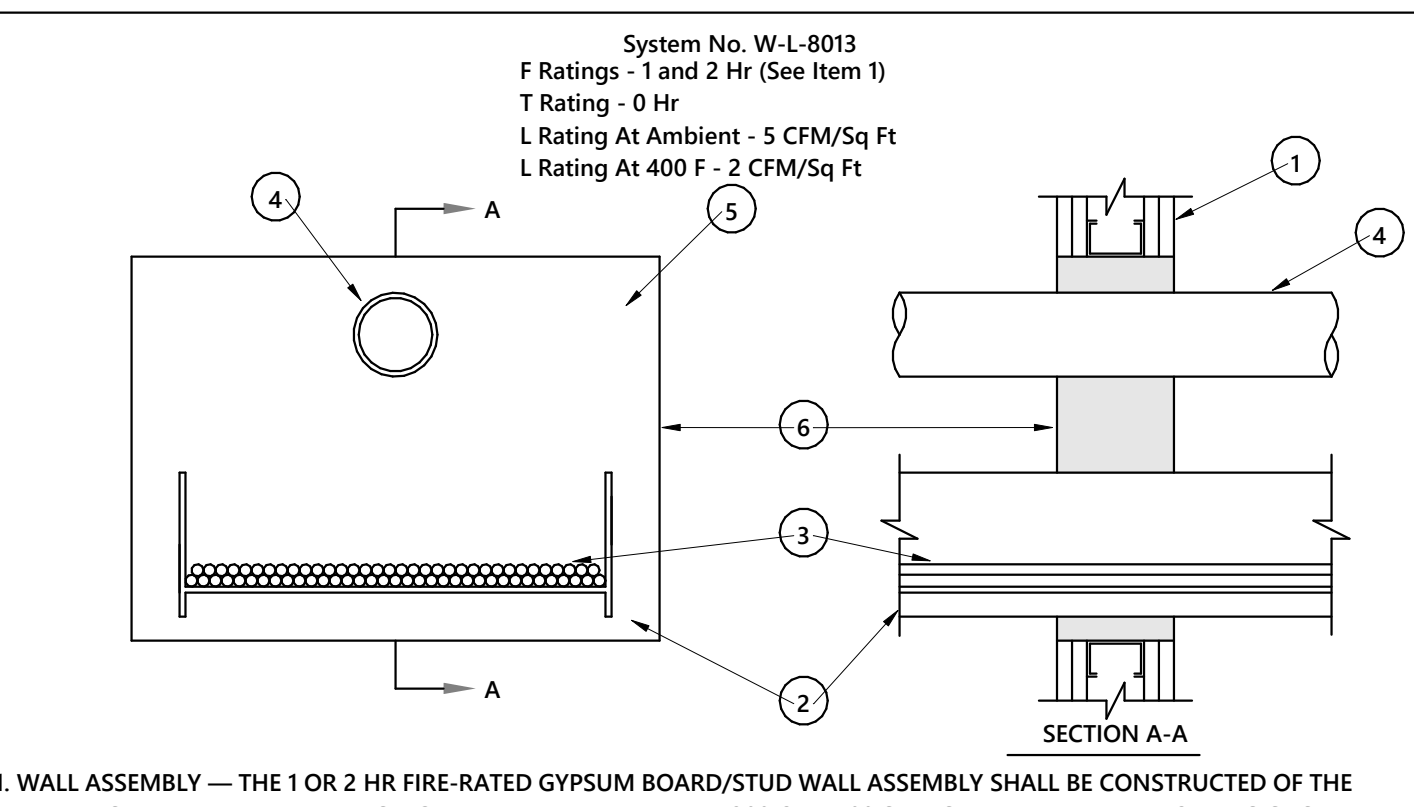
1. WALL ASSEMBLY - THE 1 OR 2 HR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. LUMBER SPACED 16 IN. OC. STEEL STUDS TO BE MIN 2-1/2 IN. WIDE AND SPACED MAX 24 IN. OC.



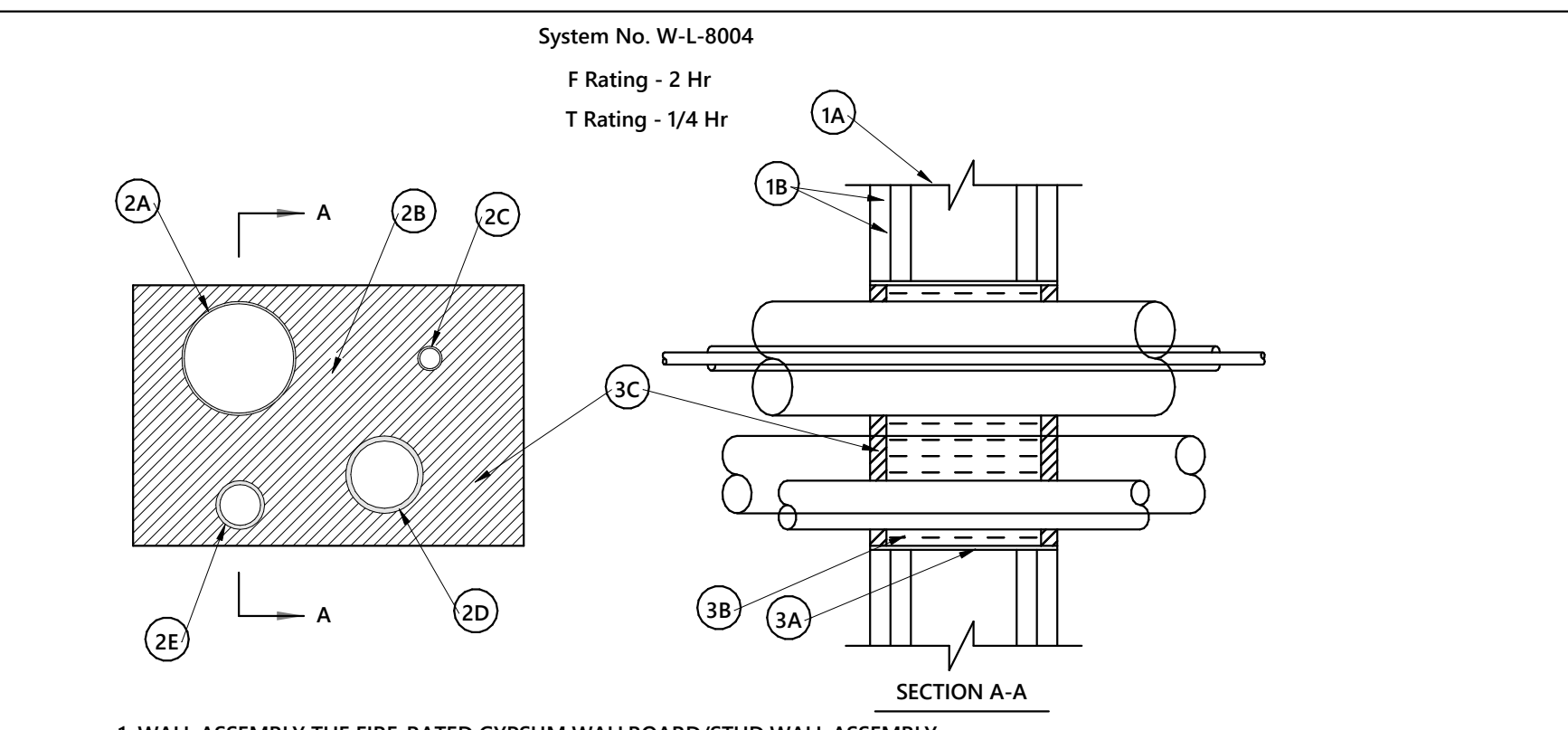
1. FLOOR OR WALL ASSEMBLY - 4-1/2 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS. MAX AREA OF OPENING IS 296 IN. SQ WITH MAX DIMENSION OF 36 IN.

A. 7/C NO. 12 AWG WITH POLYVINYL CHLORIDE (PVC) INSULATION AND PVC JACKET. B. 300 PAIR - NO. 24 AWG CABLE WITH PVC INSULATION AND JACKET. C. 1/C, 500 KCMIL WITH THERMO PLASTIC INSULATION AND POLYVINYL CHLORIDE (PVC) JACKET.



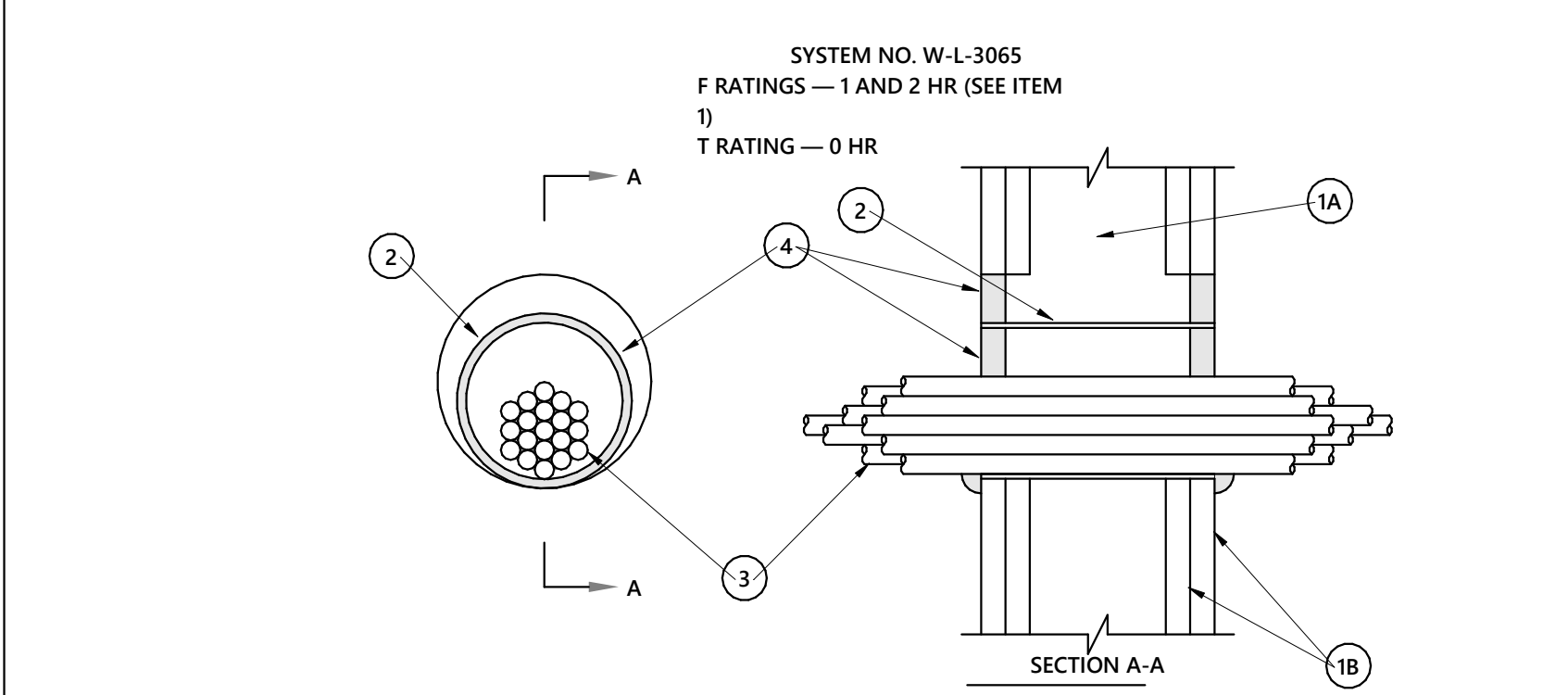
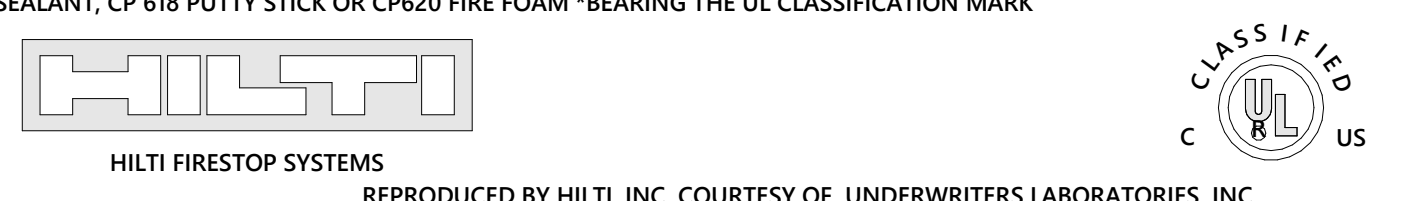
1. WALL ASSEMBLY - THE 1 OR 2 HR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. STEEL PIPE - NOM 12 IN. DIA. (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE. B. IRON PIPE - NOM 12 IN. DIA. (OR SMALLER) CAST OR DUCTILE IRON PIPE. C. CONDUIT - NOM 6 IN. DIA. (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR STEEL CONDUIT.



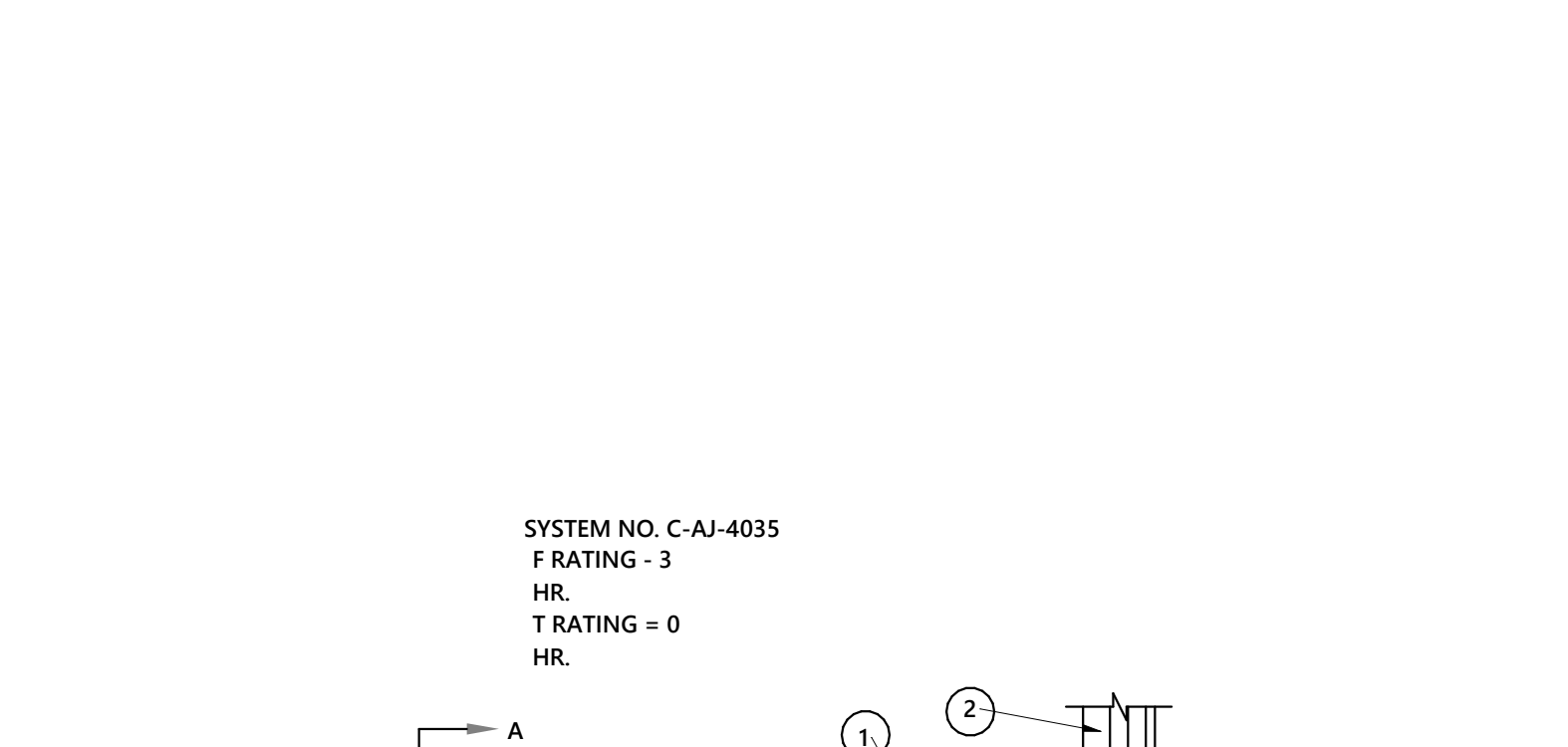
1. WALL ASSEMBLY THE FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. STEEL PIPE - NOM 12 IN. DIA. (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE. B. IRON PIPE - NOM 12 IN. DIA. (OR SMALLER) CAST OR DUCTILE IRON PIPE. C. CONDUIT - NOM 6 IN. DIA. (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR STEEL CONDUIT.



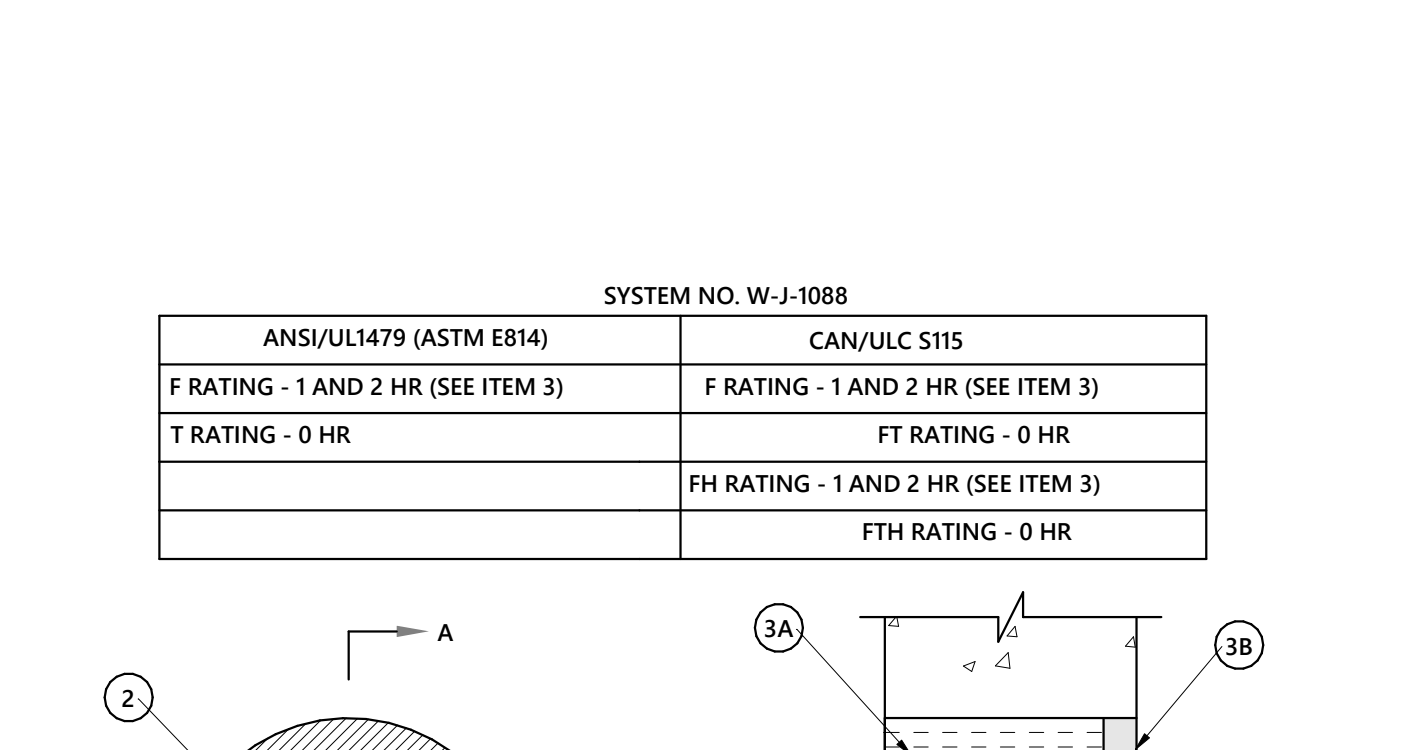
1. WALL ASSEMBLY - THE 1 OR 2 FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. (51 BY 102 MM) LUMBER SPACED 16 IN. (406 MM) OC. STEEL STUDS TO BE MIN 2-1/2 IN. (64 MM) WIDE AND SPACED MAX 24 IN. (610 MM) OC.



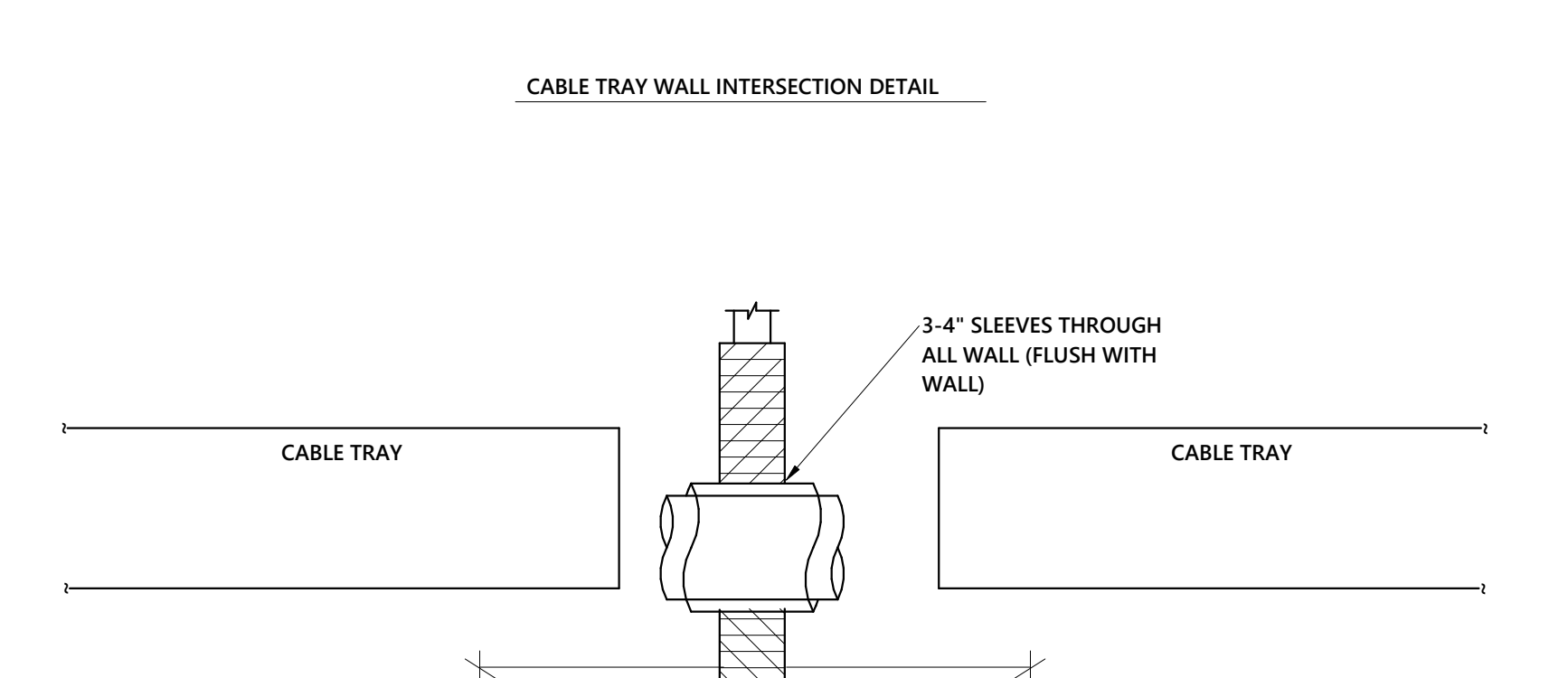
1. FLOOR OR WALL ASSEMBLY MIN 4-1/2 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS.

A. 7/C NO. 12 AWG WITH POLYVINYL CHLORIDE (PVC) INSULATION AND JACKET. B. 300 PAIR - NO. 24 AWG CABLE WITH PVC INSULATION AND JACKET. C. 1/C, 500 KCMIL WITH THERMOPLASTIC INSULATION AND PVC JACKET.



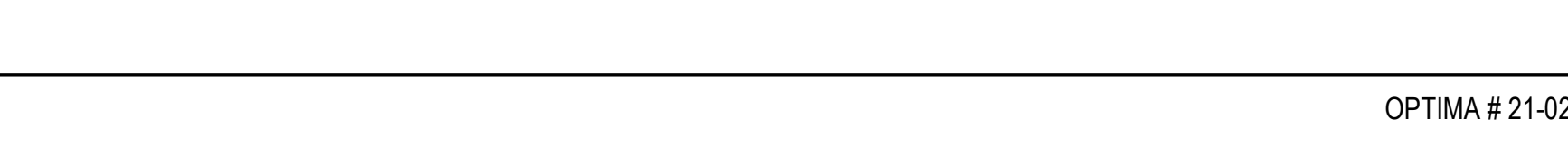
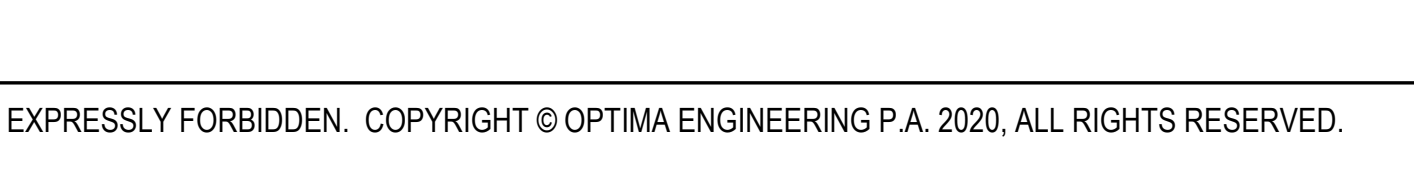
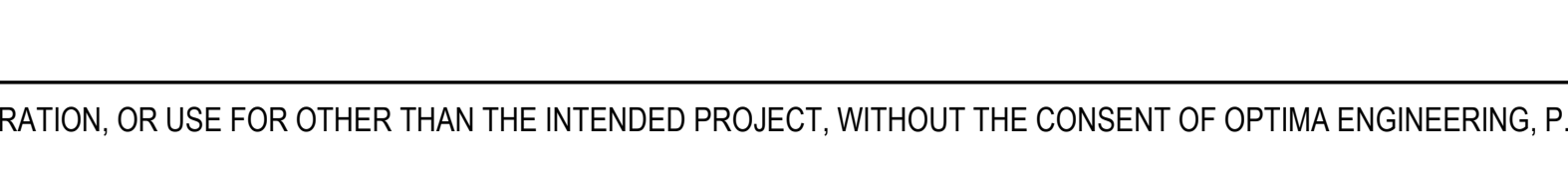
1. WALL ASSEMBLY - MIN 3-3/4 IN. (95 MM) THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS.

A. STEEL PIPE - NOM 8 IN. (203 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE. B. IRON PIPE - NOM 8 IN. (203 MM) DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.



1. WALL ASSEMBLY - THE 1 OR 2 HR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

A. STEEL PIPE - NOM 8 IN. (203 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE. B. IRON PIPE - NOM 8 IN. (203 MM) DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.



...Becoming the Leading Designer of Performance Facilities in the Nation with a Specialty in Alternative Delivery Methods. 333 Fayetteville St., Ste 225 Raleigh, NC 27601. Phone: 919.273.4390 www.sfa.biz

CONSTRUCTION DOCUMENTS. optima engineering. 150 Fayetteville St., Suite 520, Raleigh, NC 27601. Phone: 919.288.2200 www.optimaengineering.com North Carolina License Number C-0914

Harnett County Schools. Johnsonville Elementary School Addition/Renovation Phase 2. 18495 NC-27, Cameron, NC 28526.

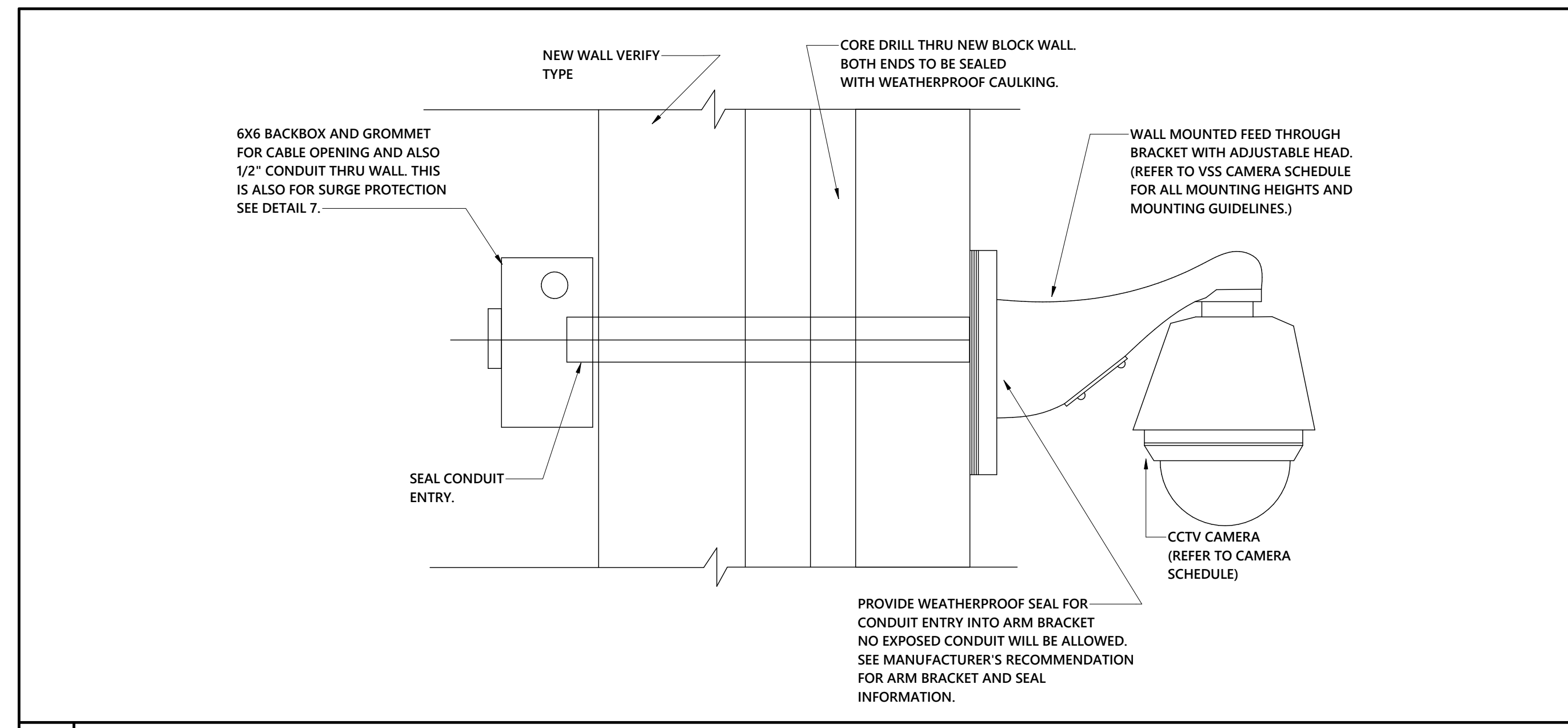
ENERGY STAR PARTNER logo and text.

Table with 3 columns: No., Date, Description. Contains project information.

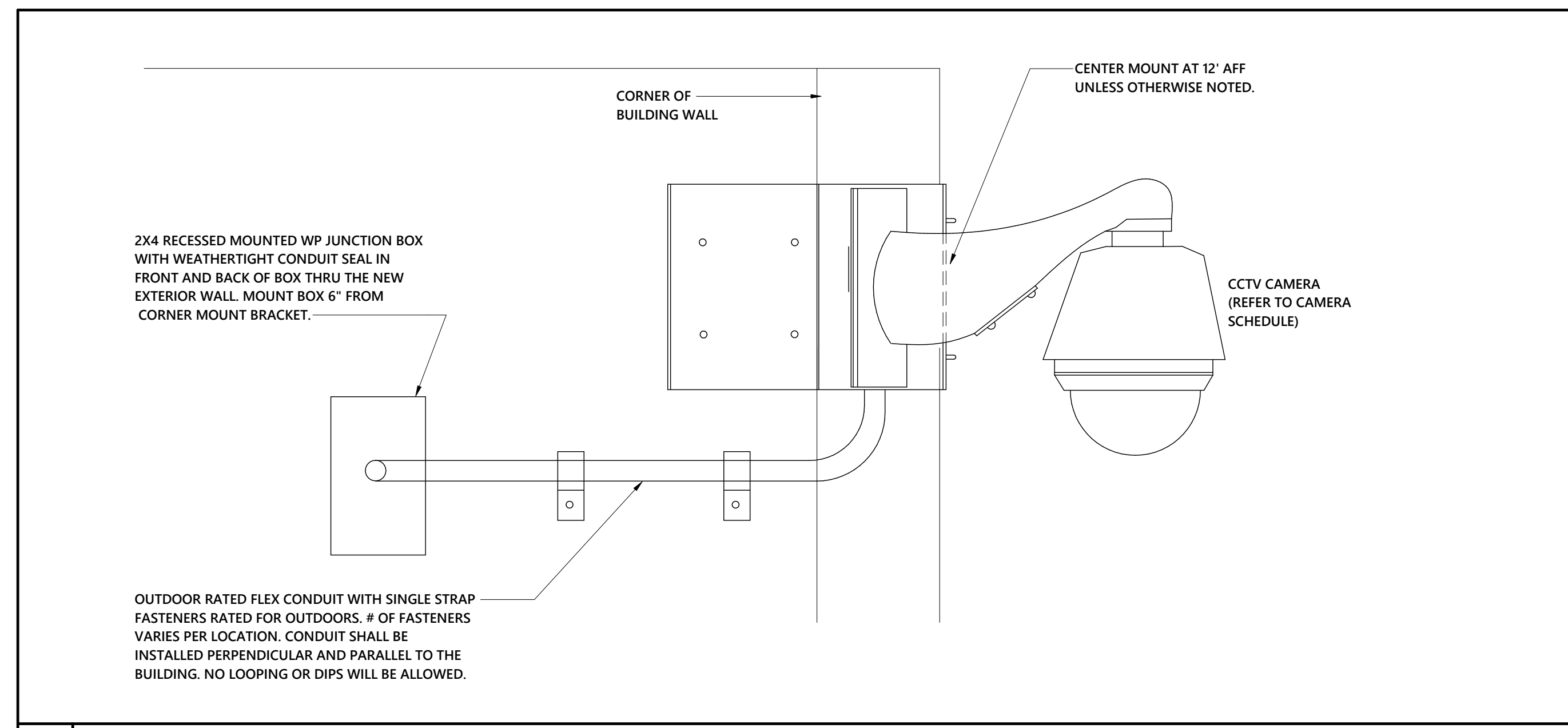
ISSUE DATE: 01/28/2022. PROJECT #: 02103.000. DRAWN BY: JSD. CHECKED BY: MKG.

ELECTRICAL DETAILS. E1-502. Sheet No. 11 of 15.

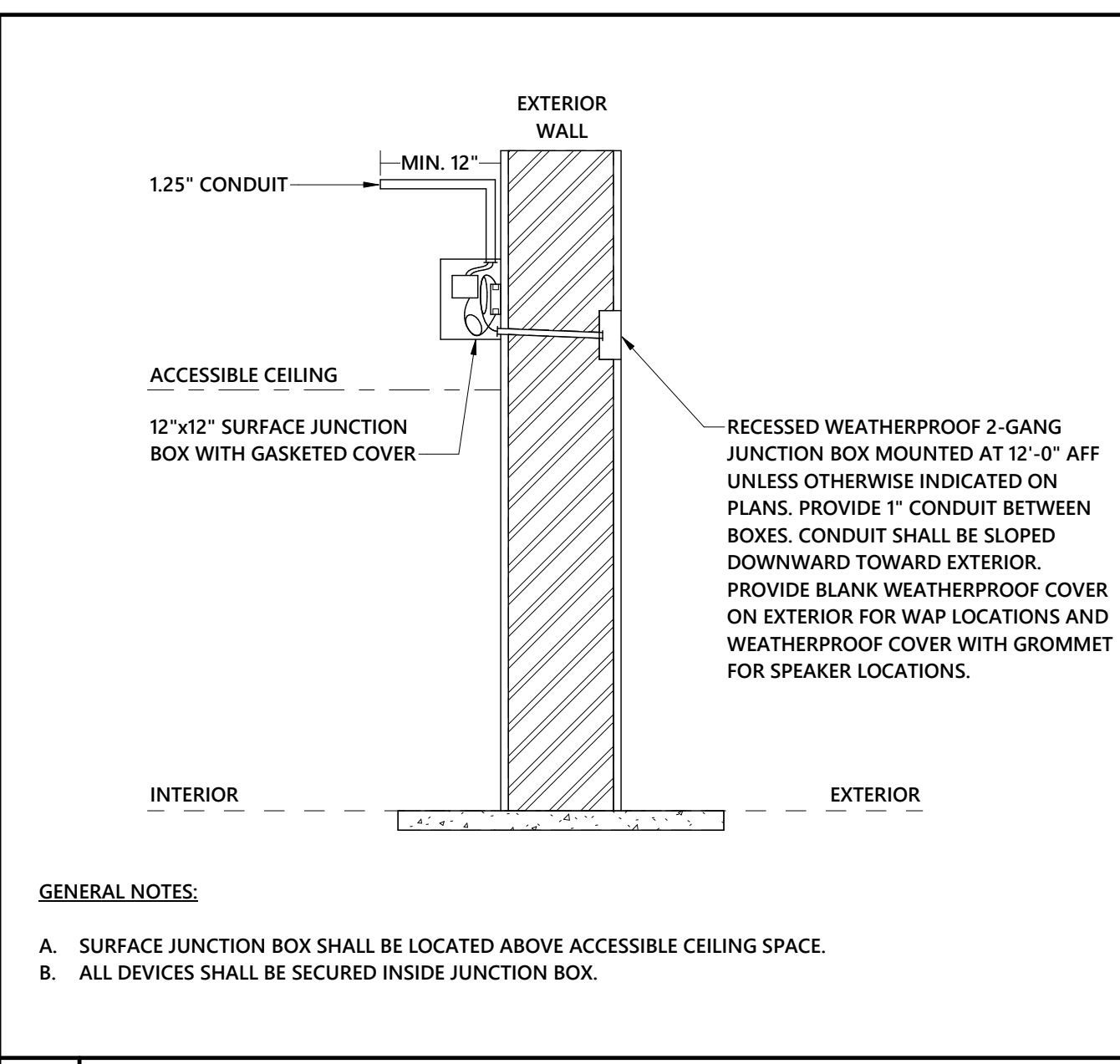
1/28/2022 3:01:37 PM Autodesk Docs://Johnsonville Addition Renovation/21-0266R_Johnsonville Classroom Addition_MEPP_P_022.rvt



3 CAMERA MOUNT EXTERIOR WALL
NO SCALE



2 CAMERA MOUNTING FOR EXTERIOR CORNER MOUNT
NO SCALE



1 EXTERIOR NETWORK DEVICE DETAIL (ACCESSIBLE CEILING)
NOT TO SCALE

GENERAL NOTES:
 A. SURFACE JUNCTION BOX SHALL BE LOCATED ABOVE ACCESSIBLE CEILING SPACE.
 B. ALL DEVICES SHALL BE SECURED INSIDE JUNCTION BOX.

...Becoming the
 Leading Designer of
 High Performance Facilities
 in the Nation with a
 Specialty in Alternative
 Delivery Methods

333 Fayetteville St., Ste 225
 Raleigh, NC 27601
 P: 919-573-4350
 F: 919-573-4355
 www.sfl+a.biz

sfl+a
 ARCHITECTS

STATE OF NORTH CAROLINA
 PROFESSIONAL SEAL
 ARCHITECT
 JOHN K. ...
 01/28/2022

CONSTRUCTION DOCUMENTS

optima
 engineering

150 Fayetteville St., Suite 520, Raleigh, NC 27601
 1827 South Tryon St., Suite 300, Charlotte, NC 28203
 Phone: 919-828-2200 www.optimaengineering.com
 North Carolina License Number C-0914

Harnett County Schools
**Johnsonville Elementary School
 Addition/Renovation Phase 2**
 18495 NC-27, Cameron, NC 28326



No.	Date	Description

ISSUE DATE: 01/28/2022
 PROJECT #: 02103.000
 DRAWN BY: JSD
 CHECKED BY: MKG
 © 2021 Sfl+a Architects, PA
 All Rights Reserved

ELECTRICAL
 DETAILS

E1-503
 Sheet No. 12 of 15

1/28/2022 3:01:37 PM Autodesk Docs://Johnsonville ES Addition Renovation/21-0266R_Johnsonville Classroom Addition_MEPP_P_022.rvt

VOLTAGE: 480Y/277 3Ø		PANEL: MDPC		FED FROM: MDPC										
MOUNTING: SURFACE		MAIN TYPE: MCB		MFR: SQUARE D										
ENCLOSURE: NEMA1		PHASE: 3		TYPE: F LINE										
MAIN: 600 A		WIRE: 4		AIC: 42 KAIC										
LC Abbr	Load Served	Wire	Tripp	Ckt No	Pole	A	B	C	Pole	Ckt No	Tripp	Wire	Load Served	LC Abbr
F	PANEL 'LPC'	NOTE 9	100 A	3	3	22.55	27.14			2			TRANSFORMER T2'	F
H	IDU-1	NOTE 10	25 A	9	3	5.27	5.27			3	10	25 A	NOTE 10	IDU-5
WH	WATER HEATER WH1	NOTE 10	30 A	15	3	5.00	6.16			3	16	25 A	NOTE 10	IDU-6
H	DOAS-2	NOTE 10	40 A	21	3	7.95	5.27			3	22	25 A	NOTE 10	IDU-7
H	DOAS-1	NOTE 10	50 A	27	3	10.45	5.27			3	28	25 A	NOTE 10	IDU-8
C	CU-2	NOTE 10	25 A	33	3	4.71	5.27			3	34	25 A	NOTE 10	IDU-9
C	CU-1	NOTE 10	35 A	39	3	6.65	5.27			3	40	25 A	NOTE 10	IDU-10
H	IDU-2	NOTE 10	25 A	45	3	5.27	5.27			3	46	25 A	NOTE 10	IDU-12
H	IDU-3	NOTE 10	25 A	51	3	5.27	--			3	52	--	--	SPACE ONLY
H	IDU-4	NOTE 10	25 A	57	3	6.16	--			3	58	--	--	SPACE ONLY
	SPACE ONLY	--	--	61	1	--	--			1	62	--	--	SPACE ONLY
	SPACE ONLY	--	--	63	1	--	--			1	64	--	--	SPACE ONLY
LOAD		Connected Load	Demand Factor	Estimated Demand	NOTES:									
L	LIGHTS	7.8 kVA	125.00%	9.7 kVA	1	BREAKER FRAME SHALL BE AS REQ'D PER PANEL AIC RATING.								
LE	LIGHTING - EXTERIOR	0.9 kVA	125.00%	1.1 kVA	2	SHALL BE FULLY RATED - SERIES RATINGS NOT ALLOWED.								
H	HEATING	313.5 kVA	100.00%	313.5 kVA	3	ALL BUSSING, INCL GND AND NEUTRAL, SHALL BE COPPER.								
C	COOLING	39.2 kVA	100.00%	39.2 kVA	4	ALL INCOMING PANEL & BRKR LUGS SHALL MATCH FEEDERS.								
V	VENTILATION	0.0 kVA	0.00%	0.0 kVA	5	PROVIDE HINGED DOOR-IN-DOOR WITH OUTER DOOR LOCK.								
M	MOTORS	2.1 kVA	113.65%	2.4 kVA	6	PROVIDE METAL DIRECTORY FRAME.								
K	KITCHEN	0.0 kVA	0.00%	0.0 kVA	7	THIS PANEL SHALL BE U.L. LISTED FOR USE AS S.E. EQUIP.								
R	RECEPTACLES	34.2 kVA	64.62%	22.1 kVA	8	PROVIDE "ALL MODES" SPD (40A / MODE, 80A / PHASE).								
WH	WATER HEATER	15.0 kVA	100.00%	15.0 kVA	9	SEE RISER DIAGRAM SHEET E1-901 FOR FEEDER SIZE.								
MS	MISC.	6.0 kVA	100.00%	6.0 kVA	10	REFER TO MECHANICAL SCHEDULE SHEET E1.602 FOR WIRE SIZE.								
S	Spare	0.0 kVA	0.00%	0.0 kVA										
E	ELEVATOR	0.0 kVA	0.00%	0.0 kVA										
LD	LAUNDRY	0.0 kVA	0.00%	0.0 kVA										
TOTAL KVA...		418.61 kVA	TOTAL PER PHASE: (CONNECTED)		LOAD CLASSIFICATION ABBREVIATIONS (CONT.)									
TOTAL KVA (DEMAND):		408.96 kVA	523.4 A	486.1 A	507.3 A	F - FEEDER FOR DOWN STREAM PANEL LOADS ARE INCLUDED IN THE PANEL LOAD SUMMARY.								
TOTAL AMP...		504 A												
TOTAL AMP (DEMAND):		492 A												

VOLTAGE: 480Y/277 3Ø		PANEL: MPC		FED FROM: MDPC										
MOUNTING: SURFACE		MAIN TYPE: MLO		MFR: SQUARE D										
ENCLOSURE: NEMA1		PHASE: 3		TYPE: NF										
MAIN: 400 A		WIRE: 4		AIC: 42 KAIC										
LC Abbr	Load Served	Wire	Tripp	Ckt No	Pole	A	B	C	Pole	Ckt No	Tripp	Wire	Load Served	LC Abbr
L	CLASSROOM LIGHTS	12	20 A	1	1	1.77	1.99			3	4	20 A	NOTE 7	HP-6
L	CLASSROOM/WORKROOM LIGHTS	12	20 A	3	1			2.25	1.99					
LE	EXTERIOR LIGHTS	12	20 A	5	1			0.87	1.99					
L	MECHANICAL PLATFORM LTS	12	20 A	7	1	0.87	1.77							
L	CORRIDOR LIGHTS	12	20 A	9	1			2.08	1.77			3	10	20 A
L	CORRIDOR 311 LIGHTS	12	20 A	11	1			0.80	1.77					
H	HP-1	NOTE 7	20 A	13	3	1.77	1.77					3	18	20 A
H	HP-2	NOTE 7	20 A	21	3	1.77	1.77					3	22	20 A
H	HP-3	NOTE 7	20 A	27	3	1.77	1.77					3	28	20 A
H	HP-4	NOTE 7	20 A	33	3	1.99	1.77					3	34	20 A
H	HP-5	NOTE 7	20 A	39	3	1.77	--					3	40	--
				41				1.77	--				42	
LOAD		Connected Load	Demand Factor	Estimated Demand	NOTES:									
L	LIGHTS	7.8 kVA	125.00%	9.7 kVA	1	BREAKER FRAME SHALL BE AS REQ'D PER PANEL AIC RATING.								
LE	LIGHTING - EXTERIOR	0.9 kVA	125.00%	1.1 kVA	2	SHALL BE FULLY RATED - SERIES RATINGS NOT ALLOWED.								
H	HEATING	59.7 kVA	100.00%	59.7 kVA	3	ALL BUSSING, INCL GND AND NEUTRAL, SHALL BE COPPER.								
C	COOLING	0.0 kVA	0.00%	0.0 kVA	4	ALL INCOMING PANEL & BRKR LUGS SHALL MATCH FEEDERS.								
V	VENTILATION	0.0 kVA	0.00%	0.0 kVA	5	PROVIDE HINGED DOOR-IN-DOOR WITH OUTER DOOR LOCK.								
M	MOTORS	0.0 kVA	0.00%	0.0 kVA	6	PROVIDE METAL DIRECTORY FRAME.								
K	KITCHEN	0.0 kVA	0.00%	0.0 kVA	7	REFER TO MECHANICAL SCHEDULE SHEET E1.602 FOR WIRE SIZE.								
R	RECEPTACLES	0.0 kVA	0.00%	0.0 kVA										
WH	WATER HEATER	0.0 kVA	0.00%	0.0 kVA										
MS	MISC.	0.0 kVA	0.00%	0.0 kVA										
S	Spare	0.0 kVA	0.00%	0.0 kVA										
E	ELEVATOR	0.0 kVA	0.00%	0.0 kVA										
LD	LAUNDRY	0.0 kVA	0.00%	0.0 kVA										
TOTAL KVA...		68.37 kVA	TOTAL PER PHASE: (CONNECTED)		LOAD CLASSIFICATION ABBREVIATIONS (CONT.)									
TOTAL KVA (DEMAND):		54.89 kVA	81.9 A	88.1 A	77.9 A	F - FEEDER FOR DOWN STREAM PANEL LOADS ARE INCLUDED IN THE PANEL LOAD SUMMARY.								
TOTAL AMP...		82 A												
TOTAL AMP (DEMAND):		85 A												

VOLTAGE: 208Y/120 3Ø		PANEL: RPC1		FED FROM: T1										
MOUNTING: SURFACE		MAIN TYPE: MCB		MFR: SQUARE D										
ENCLOSURE: NEMA1		PHASE: 3		TYPE: NOOD										
MAIN: 225 A		WIRE: 4		AIC: 10 KAIC										
LC Abbr	Load Served	Wire	Tripp	Ckt No	Pole	A	B	C	Pole	Ckt No	Tripp	Wire	Load Served	LC Abbr
R	CORRIDOR REC.	12	20 A	1	1	1.26	0.90			1	2	20 A	12	CLASSROOM 8 REC.
R	CORRIDOR EXT. REC.	12	20 A	3	1			1.26	0.54			1	4	20 A
MS	HAND DRYER GRILS 315 (NOTE 7)	12	20 A	5	1			1.00	0.90			1	6	20 A
MS	HAND DRYER BOYS 316 (NOTE 7)	12	20 A	7	1	1.00	0.90					1	8	20 A
MS	EWIC CORRIDOR 317 (NOTE 7)	12	20 A	9	1			0.50	0.54			1	10	20 A
R	CORRIDOR 311 REC.	12	20 A	11	1			1.44	0.90			1	12	20 A
R	TBB REC.	12	20 A	13	1	0.18	0.90					1	14	20 A
MS	BAS CONTROL PANEL	12	20 A	15	1			0.50	0.54			1	16	20 A
R	CORRIDOR EXT. REC.	12	20 A	17	1			1.26	0.90			1	18	20 A
MS	HAND DRYER GRILS 315 (NOTE 7)	12	20 A	19	1	1.00	0.90					1	20	20 A
MS	HAND DRYER BOYS 316 (NOTE 7)	12	20 A	21	1			1.00	0.54			1	22	20 A
MS	EWIC CORRIDOR 317 (NOTE 7)	12	20 A	23	1			0.50	0.90			1	24	20 A
MS	EWIC CORRIDOR 317 (NOTE 7)	12	20 A	25	1	0.50	0.90					1	26	20 A
R	UTILITY RM REC.	12	20 A	27	1			0.36	0.54			1	28	20 A
R	TBB REC.	12	20 A	29	1			0.18	0.90			1	30	20 A
R	CLASSROOM 10 REC.	12	20 A	31	1	0.90	0.90					1	32	20 A
R	CLASSROOM 10 REC.	12	20 A	33	1			0.54	0.54			1	34	20 A
R	CLASSROOM 10 REC.	12	20 A	35	1			0.90	0.90			1	36	20 A
R	CLASSROOM 9 REC.	12	20 A	37	1	0.90	0.90					1	38	20 A
R	CLASSROOM 9 REC.	12	20 A	39	1			0.54	0.54			1	40	20 A
R	CLASSROOM 9 REC.	12	20 A	41	1			0.90	0.90			1	42	20 A
LOAD		Connected Load	Demand Factor	Estimated Demand	NOTES:									
L	LIGHTS	0.0 kVA	0.00%	0.0 kVA	1	BREAKER FRAME SHALL BE AS REQ'D PER PANEL AIC RATING.								
LE	LIGHTING - EXTERIOR	0.0 kVA	0.00%	0.0 kVA	2	SHALL BE FULLY RATED - SERIES RATINGS NOT ALLOWED.								
H	HEATING	19.3 kVA	100.00%	19.3 kVA	3	ALL BUSSING, INCL GND AND NEUTRAL, SHALL BE COPPER.								
C	COOLING	5.2 kVA	100.00%	5.2 kVA	4	ALL INCOMING PANEL & BRKR LUGS SHALL MATCH FEEDERS.								
V	VENTILATION	0.0 kVA	0.00%	0.0 kVA	5	PROVIDE HINGED DOOR-IN-DOOR WITH OUTER DOOR LOCK.								
M	MOTORS	2.1 kVA	113.65%	2.4 kVA	6	PROVIDE METAL DIRECTORY FRAME.								
K	KITCHEN	0.0 kVA	0.00%	0.0 kVA	7	PROVIDE CLASS A GFI (60A PERSONNEL) BRKR (250' MAX).								
R	RECEPTACLES	34.2 kVA	64.62%	22.1 kVA	8	PROVIDE FEED-THRU LUGS.								
WH	WATER HEATER	0.0 kVA	0.00%	0.0 kVA	9	LOAD TOTAL INCLUDES FEED-THRU SECTIONS.								
MS	MISC.	6.0 kVA	100.00%	6.0 kVA										
S	Spare	0.0 kVA	0.00%	0.0 kVA										
E	ELEVATOR	0.0 kVA	0.00%	0.0 kVA										
LD	LAUNDRY	0.0 kVA	0.00%	0.0 kVA										
TOTAL KVA...		66.71 kVA	TOTAL PER PHASE: (CONNECTED)		LOAD CLASSIFICATION ABBREVIATIONS (CONT.)									
TOTAL KVA (DEMAND):		54.89 kVA	236.1 A	132.6 A	207.1 A	F - FEEDER FOR DOWN STREAM PANEL LOADS ARE INCLUDED IN THE PANEL LOAD SUMMARY.								
TOTAL AMP...		185 A												
TOTAL AMP (DEMAND):		152 A												

VOLTAGE: 208Y/120 3Ø		PANEL: RPC2		FED FROM: RPC1										
MOUNTING: SURFACE		MAIN TYPE: MLO		MFR: SQUARE D										
ENCLOSURE: NEMA1		PHASE: 3		TYPE: NO										
MAIN: 225 A		WIRE: 4		AIC: 10 KAIC										
LC Abbr	Load Served	Wire	Tripp	Ckt No	Pole	A	B	C	Pole	Ckt No	Tripp	Wire	Load Served	LC Abbr
R	CLASSROOM 1 REC.	12	20 A	1	1	0.90	1.99			2	2	25 A	NOTE 8	HP-11
R	CLASSROOM 1 REC.	12	20 A	3	1			0.54	1.99			4		
R	CLASSROOM 1 REC.	12	20 A	5	1			0.90	5.65			6	50 A	NOTE 8
R	TEACHER WORK REC.	12	20 A	7	1	0.90	5.65					8		IDU-11
R	TEACHER WORK REC.	12	20 A	9	1			1.08	1.13			1	10	15 A
R	TEACHER WORK REC.	12	20 A	11	1			0.90	0.44			1	12	15 A
R	TEACHER WORK REC.	12	20 A	13	1	1.08	1.29					1	14	NOTE 8
R	MECHANICAL PLATFORM REC.	12	20 A	15	1			0.90	1.29			1	16	30 A
C	ODU-2	NOTE 8	30 A	17	2			1.29	2.00			2	18	25 A
S...	SPARE	12	20 A	21	1			0.00	0.50			1	22	15 A
S...	SPARE	12	20 A	23	1			0.00	0.00			1	24	20 A
S...	SPARE	12	20 A	25	1	0.00	0.00					1</		

LIGHTING FIXTURE SCHEDULE

Table with columns: TYPE, DESCRIPTION, LAMP, BALLAST/DRIVER, WATTAGE, VOLTAGE, MFR, CATALOG SERIES, NOTE. Includes rows for recessed LED downlights, wall-mounted exterior wedge lights, and edge-lit exit signs.

LIGHTING FIXTURE SCHEDULE - PREFERRED BRAND ALT.

Table with columns: TYPE, DESCRIPTION, LAMP, BALLAST/DRIVER, WATTAGE, VOLTAGE, MFR, CATALOG SERIES, NOTE. Lists alternative brands for lighting fixtures like CPX 2x4 4000LM MIN10 and CPX 2x2 3200LM MIN10.

LIGHTING FIXTURE NOTES

- 1. LIGHTING FIXTURES, AS SPECIFIED, HAVE BEEN SO SELECTED TO ACHIEVE REQUIRED/DESIRED FOOT CANDLE LEVELS OF ILLUMINATION IN THEIR RESPECTIVE AREA, HENCE SPECIFIC FIXTURE CHARACTERISTICS WHICH MAY CREATE PARTICULAR ILLUMINATION RESULTS ARE ESSENTIAL. ANY DEVIATIONS FROM SPECIFIED FIXTURES SHALL BE THE RESPONSIBILITY OF THE SUBMITTING AGENT AND CONTRACTOR RESPONSIBLE IN PROVING SUCH DEVIATION WILL PROVIDE THE EXACT LIGHTING RESULT IN DUPLICATION TO THE DESIGN HERIN.

LIGHTING SEQUENCE OF OPERATION

A COMPLETE AND OPERATIONAL LIGHTING CONTROL SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE SPECIFICATIONS (SECTION 260923 AND 260943) AND AS INTENDED ON THESE PLANS. ALL CONTROL POINTS AND EQUIPMENT SEQUENCES OF OPERATION LISTED IN SPECIFICATION SECTION 260923 SHALL BE CONSIDERED IN ADDITION TO THOSE LISTED HERE. IN THE EVENT THAT THE VERBIAGE IS IN CONFLICT OR CONTRADICTS THE REQUIREMENTS LISTED HERE, THE QUESTION SHALL BE ASKED PRIOR TO BIDDING OR THE MORE STRINGENT SHALL APPLY.

- SYSTEM DESCRIPTION: LIGHTING CONTROLS ARE BASED ON ETHERNET CONNECTED DEVICES THAT HAVE INDIVIDUAL ADDRESS LOCATIONS FOR PROGRAMMING AND CONTROL. INDEPENDENT OF THE ETHERNET BASED CONTROLS ARE STAND ALONE OCCUPANCY SENSORS. THESE SHALL BE INDEPENDENT AND NOT TIED INTO THE BAS/SYSTEM SOFTWARE.

- TIMER SETTINGS: A. WALL SWITCH PASSIVE INFRARED: 2 MINUTES FOR INDIVIDUAL RESTROOMS AND STORAGE ROOMS. B. CLASSROOMS VACANCY: 15 MINUTES. C. WALL SWITCH VACANCY SENSORS OFFICES: 5 MINUTES.

- COMMISSIONING AND COORDINATION OF BAS: 1. BAS CONTROL SHALL BE THE PRIORITY SYSTEM WITH LOCAL OVERRIDES. 2. LIGHTING SYSTEM SHALL ALSO BE INDEPENDENTLY CONTROLLED BY A SOFTWARE BASED SYSTEM.

- LIGHTING COORDINATION AND QUALITY CONTROL: 1. ELECTRICAL CONTRACTOR SHALL HAVE A PRE-CONSTRUCTION MEETING WITH CONTROLS SUPPLIER PRIOR TO CONDUIT ROUGH-IN TO VERIFY BOXES, CONDUIT PATHS, AND GENERAL LIGHTING CONTROL STRATEGY FOR INSTALLATION.

- EXTERIOR LIGHTING CONTROL: A. EXTERIOR LIGHTING CONTROL IS VIA SCHEDULED TIME CONTROL AND PHOTOCELL.

- OTHER SYSTEM INTEGRATION: 1. UPON A FIRE ALARM EVENT, ALL CORRIDOR ZONES SHALL SWEEP ON.

- FIXTURE NOTES: A. ARCHITECT TO APPROVE ALL EXTERIOR FIXTURE LOCATIONS. E.C. TO MARK OFF LOCATIONS WITH TEMPORARY "CHALK" OUTLINE AND PLAN FOR ARCHITECT ON-SITE APPROVAL OF LOCATIONS BEFORE INSTALLATION.

...Becoming the Leading Designer of High Performance Facilities in the Nation with a Specialty in Alternative Delivery Methods

333 Fayetteville St, Ste 225 Raleigh, NC 27601 P: 919.573.4350 F: 919.573.4355 www.sfi+a.com



CONSTRUCTION DOCUMENTS



150 Fayetteville St., Suite 520, Raleigh, NC 27601 707 South Tryon St., Suite 300, Charlotte NC 28203 Phone: 919.926.2200 www.optimaengineering.com North Carolina License Number C-0914

Harnett County Schools Johnsonville Elementary School Addition/Renovation Phase 2 18495 NC-27, Cameron, NC 28326



Table with columns: No., Date, Description. Empty rows for schedule tracking.

ISSUE DATE: 01/28/2022

PROJECT #: 02103.000 DRAWN BY: JSD CHECKED BY: MKG

© 2021 SFI+A Architects, PA All Rights Reserved

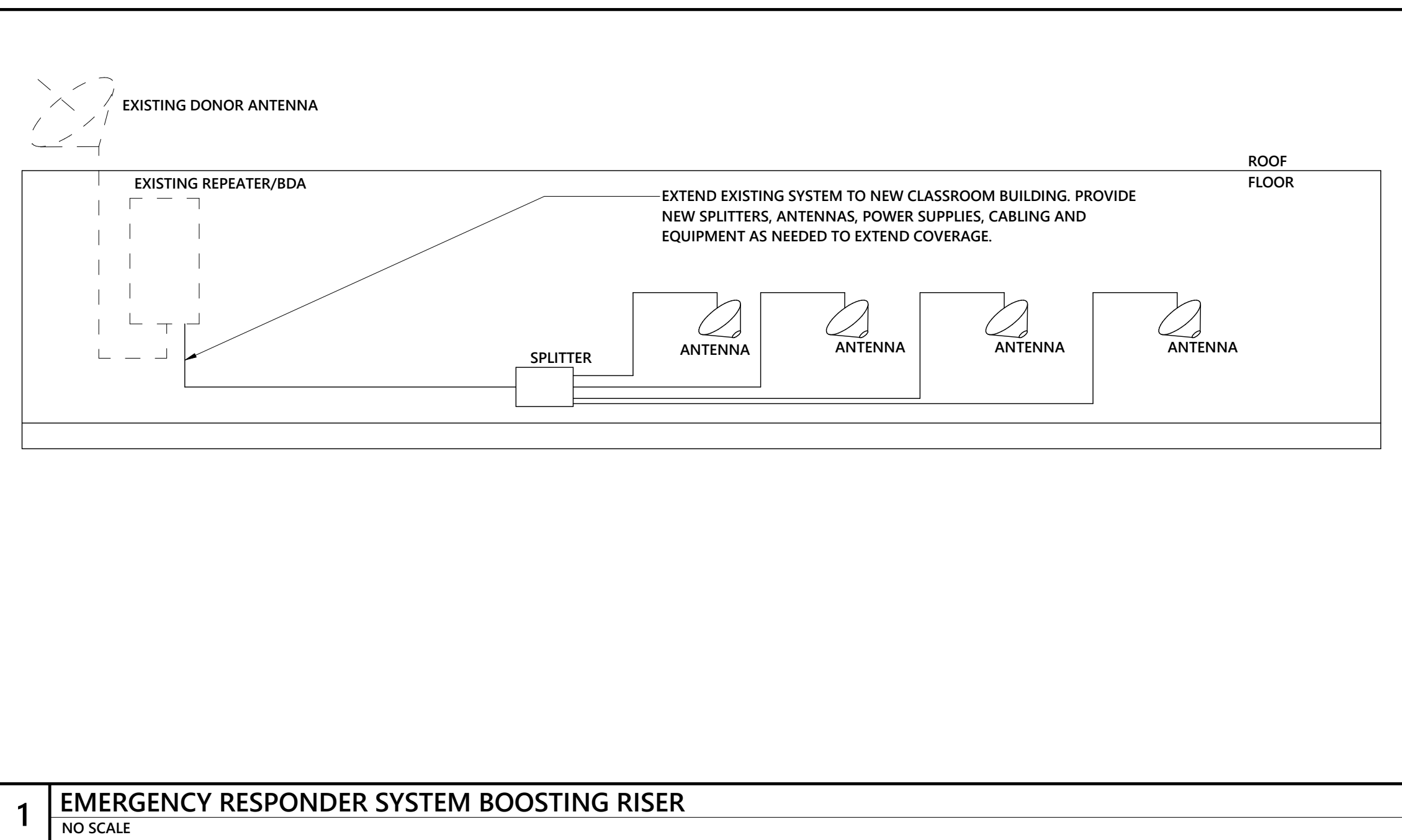
ELECTRICAL SCHEDULES AND LIGHTING SEQUENCE OF OPERATIONS

E1-602

Sheet No. 14 of 15

Autodesk Docs://Johnsonville ES Addition Renovation/21-0266R_ Johnsonville Classroom Addition_MEPPP_022.rvt

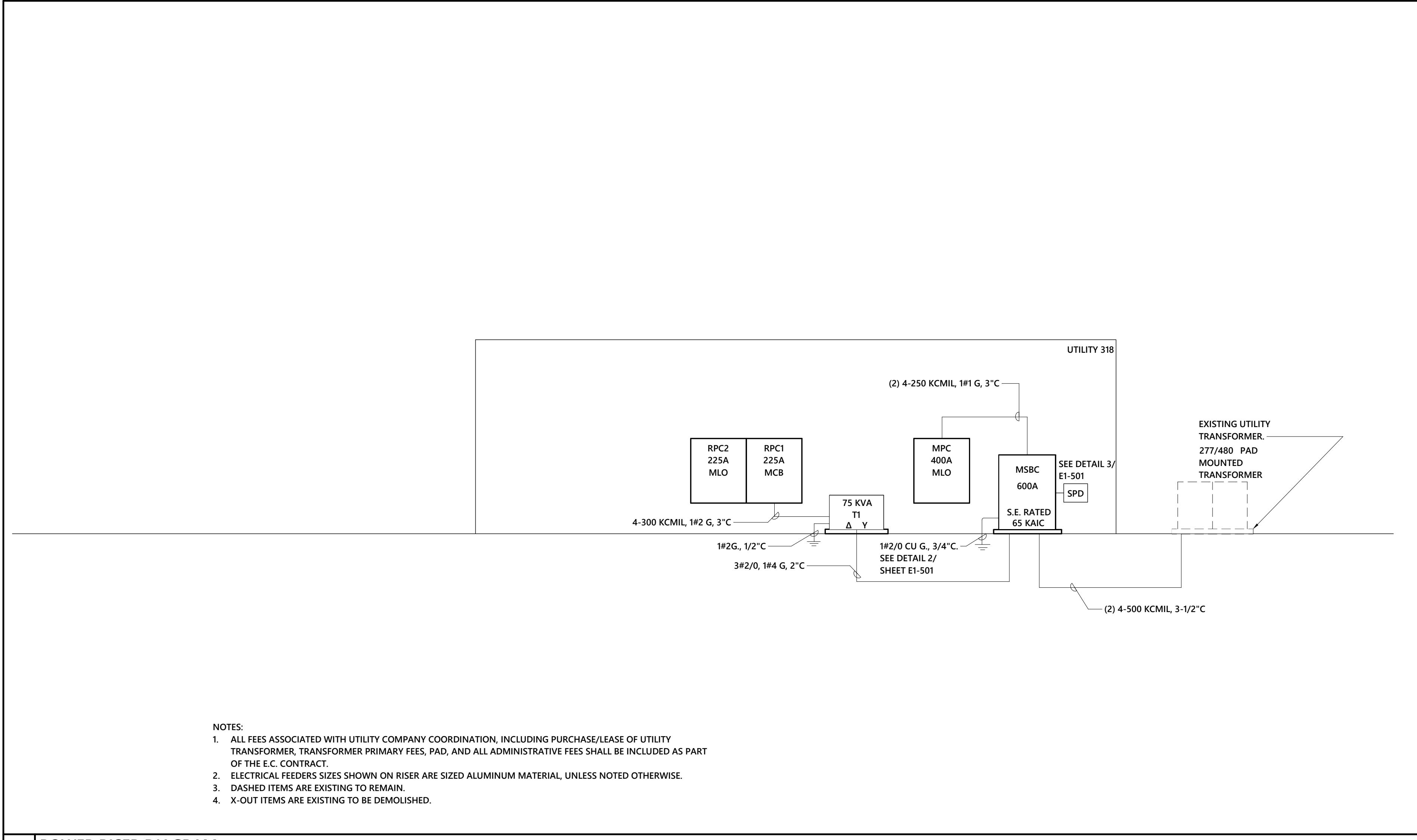
1/28/2022 3:01:38 PM



1 EMERGENCY RESPONDER SYSTEM BOOSTING RISER
NO SCALE

SYSTEM NOTES

- NOTES:
1. SYSTEM IS BASED ON 800MHz. COORDINATE WITH LOCAL EMERGENCY RESPONDERS FOR NECESSARY FREQUENCY REQUIRED.
 2. SEE SPECIFICATIONS FOR ALL EQUIPMENT AND CABLING REQUIREMENTS.
 3. ALL CABLING TO BE INSTALLED IN 1 1/2" CONDUIT.
 4. SYSTEM SUPPLIER SHALL PROVIDE A SYSTEM SURVEY REPORT PRIOR TO PROVIDING THE SYSTEM. THIS SHALL BE CONSIDERED BASE BID FOR THE PROJECT. SIGNAL SURVEY REPORT SHALL BE TAKEN TO THE LOCAL FIRE CODE OFFICIAL AND THE LOCAL FIRE CODE OFFICIAL SHALL DETERMINE IF THE SYSTEM NEEDS TO BE INSTALLED. SIGNAL STRENGTH MEASUREMENTS SHALL BE MEASURED IN 95% OF ALL AREAS ON EACH FLOOR (100% OF ALL EGRESS AND CRITICAL AREAS). A MINIMUM SIGNAL STRENGTH OF -95dBm IS REQUIRED.
 5. PROVIDE A DEDUCTIVE ALTERNATE FOR THE EMERGENCY RESPONDER SYSTEM INCLUDING ALL DEVICES, CABLING, CONDUIT, AND EQUIPMENT. SUBMITTAL AND SURVEY REPORT SHALL BE CONSIDERED BASE BID.
 6. BASED ON SURVEY REPORT, DEVICES SHALL BE LOCATED TO MAXIMIZE BOOSTING SIGNAL. LOCATIONS SHALL BE COORDINATED WITH GENERAL CONTRACTOR.
 7. DASHED ITEMS ARE EXISTING.

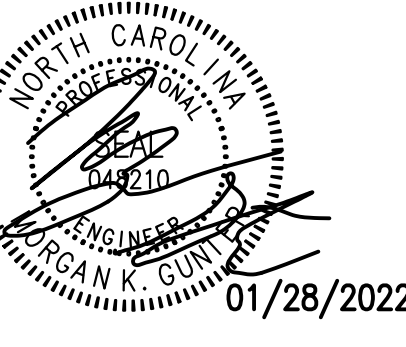


- NOTES:
1. ALL FEES ASSOCIATED WITH UTILITY COMPANY COORDINATION, INCLUDING PURCHASE/LEASE OF UTILITY TRANSFORMER, TRANSFORMER PRIMARY FEES, PAD, AND ALL ADMINISTRATIVE FEES SHALL BE INCLUDED AS PART OF THE S.C. CONTRACT.
 2. ELECTRICAL FEEDERS SIZES SHOWN ON RISER ARE SIZED ALUMINUM MATERIAL, UNLESS NOTED OTHERWISE.
 3. DASHED ITEMS ARE EXISTING TO REMAIN.
 4. X-OUT ITEMS ARE EXISTING TO BE DEMOLISHED.

2 POWER RISER DIAGRAM
NOT TO SCALE

...Becoming the
Leading Designer of
High Performance Facilities
in the Nation with a
Specialty in Alternative
Delivery Methods

333 Fayetteville St., Ste 225
Raleigh, NC 27601
P: 919-573-4350
F: 919-573-4355
www.sfl+a.com



CONSTRUCTION DOCUMENTS

optima engineering
150 Fayetteville St., Suite 520, Raleigh, NC 27601
1827 South Tryon St., Suite 300, Charlotte, NC 28203
Phone: 919-928-2200 www.optimaengineering.com
North Carolina License Number C-0914

Harnett County Schools
**Johnsonville Elementary School
Addition/Renovation Phase 2**
18495 NC-27, Cameron, NC 28526



No.	Date	Description

ISSUE DATE: 01/28/2022
PROJECT #: 02103.000
DRAWN BY: JSD
CHECKED BY: MKG
© 2021 SFL+a Architects, PA
All Rights Reserved

ELECTRICAL DIAGRAMS

E1-901
Sheet No. 15 of 15