

### POWER SYMBOL LEGEND

POWER RECEPTACLE MOUNTING HEIGHT (INCHES) IF OTHER THAN 18" AFF (BOTTOM OF BOX) - "WP" INDICATES WEATHERPROOF OUTDOOR RECEPTACLE "AW" INDICATES ABOVE WINDOW RECEPTACLE "C" INDICATES ABOVE CEILING "E" INDICATES EXISTING RECEPTACLE TO REMAIN "T" INDICATES TWIST LOCK RECEPTACLE "TV" INDICATES CABLE AND 120V OUTLET MOUNTED AT +60" UNLESS NOTED OTHERWISE

GFI DUPLEX CONVENIENCE OUTLET

208V OUTLET

USB OUTLET EQUAL TO LEVITON #T5832 OR APPROVED EQUAL

QUADPLEX CONVENIENCE OUTLET

DATA / TELEPHONE JACK (MOUNTED @ 18" AFF U.N.O.) OUTLET BOX WITH 1" CONDUIT UP TO CEILING SPACE w/ PULL STRING. PHONE & DATA WIRING BY OWNER'S SUBCONTRACTOR. PHONE / DATA CABLING TO BE PLENUM RATED. DATA CABLING TO BE CAT6.

WIRELESS DATA ACCESS POINT (CEILING MOUNTED)

N FLOOR POWER (WIREMOLD 880 MP FLOOR BOX OR EQUAL)

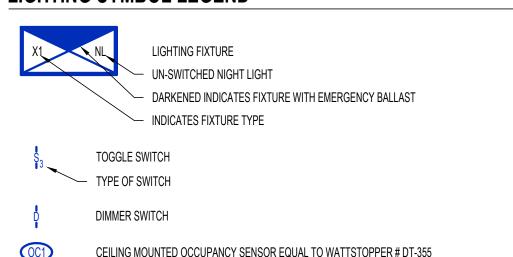
IN FLOOR DATA (WIREMOLD 880 MP FLOOR BOX OR EQUAL)

JUNCTION BOX

DISCONNECT TIE INTO EXISTING

ASTRONOMICAL TIME CLOCK SWITCH EQUAL TO INTERMATIC # ET8215C 120-277V. SET TIMER TO TURN ON LIGHTS FROM DUSK TILL DAWN.

#### LIGHTING SYMBOL LEGEND



#### SECURITY SYMBOL KEY

NOTE: SYMBOLS LEGEND IS COMPREHENSIVE. SOME SYMBOLS OR VARIATIONS THEREOF MAY NOT BE USED ON PLANS. MOUNTING HEIGHTS OF ALL ACCESSIBLE ACCESS CONTROL DEVICES SHALL BE PER ADA REQUIREMENTS LISTED BELOW UNLESS NOTED OTHERWISE. MOUNTING HEIGHTS OF ALL OTHER DEVICES SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.

X	SECURITY SYM	IBOL	
<b>L</b>	INDICATES MO	INTING	
_	C	-	CEILING
1	W	=	WALL
	VV	-	WALL
	INIDIOATEO TVE	·-	
	INDICATES TYP		ALIDIO (MOLIAL INTERCON (MOLINTER MUTIL RUTTON OFNITERED AT 401 AEE)
	AV	=	AUDIO / VISUAL INTERCOM (MOUNTED WITH BUTTON CENTERED AT 48" AFF)
\	C	=	CAMERA
	D	=	DOOR / WINDOW SENSOR
1			MOUNTED ON TOP OF DOOR FRAME / SIDE OF WINDOW FRAME
\	EP	=	ELECTRIFIED PANIC. ROUTE 1/2" CONDUIT FROM ELECTRIFIED PANIC IN DOOR
			FRAME TO ACCESSIBLE POINT ABOVE CEILING OR TO J-BOX AT 12'-0" AFF
	G	=	GLASS BREAK DETECTOR (CEILING MOUNTED U.N.O.)
	K	=	KEYPAD (WALL MOUNTED w/ TOP ROW OF KEYS @ 48" AFF)
	M	=	MOTION DETECTOR
1	MC	=	MICROPHONE (CEILING MOUNTED U.N.O.)
\	0	=	DOOR OPERATOR
\	PB	=	PUSH BUTTON (WALL MOUNTED w/BUTTON CENTERED @ 48" AFF)
	PS	=	POWER SUPPLY FOR ACCESS CONTROLS LOCATED ABOVE CEILING AT AN
\			ACCESSIBLE POINT. CIRCUIT (120V) AS SHOWN.
\	R	=	CARD READER (WALL MOUNTED w/ READER CENTERED @ 48" AFF)
	ST	=	POWERED DOOR STRIKE
			ROUTE $\frac{1}{2}$ " CONDUIT FROM STRIKE IN DOOR FRAME TO ACCESSIBLE POINT
			ABOVE CEILING OR TO JUNCTION BOX @ 12ft AFF IF CEILING IS NOT ACCESSIBLE
\	RL	=	RETRACTABLE LATCH
			ROUTE ½" CONDUIT FROM STRIKE IN DOOR FRAME TO ACCESSIBLE POINT
\			ABOVE CEILING OR TO JUNCTION BOX @ 12FT AFF IF CEILING IS NOT ACCESSIBL
\			Č
	INDICATES CA	MERA VIE	W DIRECTION

	BASED ON THE FOLLOWING CODES								
2018	INTERNATIONAL MECHANICAL CODE								
2018	INTERNATIONAL PLUMBING CODE								
2018	INTERNATIONAL FUEL GAS CODE								
2018	INTERNATIONAL FIRE CODE								
2017	NATIONAL ELECTRIC CODE								
2018	INTERNATIONAL ENERGY CONSERVATION CODE								

	LIGHTING SCHEDULE											
MARK	MANUFACTURER*	MODEL NO.*	TYPE	VOLTS	AMPS	WATTS	LUMENS	CCT (°K)	CRI	LAMPS	MOUNTING	REMARKS
E	SURE-LITES	APCH7 UNV R	EM. LT/EXIT COMBO	120	0.17					LED	WALL/CLG	INDICATES APWR1 REMOTE HEAD OVER EXT. DOORS
F	INVUE	VFS-K-B40-5-LED-E1-MSR-BZ + SF-BZ + ST-BZ	LED FLOOD LIGHT	120	0.56	67	5880	4000	70	LED	STANCHION	SEE 'FLOODLIGHT MOUNTING DETAIL' , WITH #VFS-VS VANDAL SHIELD
* OR FOLIAL			_	·	·				·			

ELECTR	RICAL PANEL SCHEDULE		PANEL NO.	FFL				
VOLTS:	208	MAIN	CAPACITY:	225	MLO		"A" AMPS =	0
PHASE:	1		MOUNTING:	RECESSED		"B" AMPS =		0
WIRE:	SEE RISER	BUSS MATERIAL:		COPPER				
AIR:	SEE RISER	SQUARI	E D MODEL:	NQ				
CKT.	LOCATION/DESC.	BREAKER	AMPS	PH.	AMPS	BREAKER	LOCATION/DESC.	CKT.
1	BOYS TOILET / CUST. CLOSET	20-1		А		20-1	RM. 25	2
3	CORRIDOR SOUTH	20-1		В		20-1	RM. 25	4
5	3RD GRADE NORTH	20-1		А		20-1	PLUG IN OFFICE	6
7	TEACHER LOUNGE	20-1		В		20-1	SECURITY CAMERA	8
9	TEACHER LOUNGE	20-1		А		20-1	OFFICE	10
11	3RD GRADE SOUTH	20-1		В		20-1	CLINIC	12
13	3RD GRADE SOUTH	20-1		А		20-1	LOUNGE REF.	14
15	3RD GRADE SOUTH	20-1		В		20-1	LOUNGE REF.	16
17	4TH GRADE	20-1		А		20-1	LOUNGE REF.	18
19	RM. 25	20-1		В		20-1	SPARE	20
21	RM. 28	20-1		А		20-1	SPARE	22
23	5TH GRADE	20-1		В		20-1	SPARE	24
25	5TH GRADE	20-1		А		20-1	SPARE	26
27	5TH GRADE	20-1		В		20-1	SPARE	28
29	RM. 28	20-1		А		20-1	SPARE	30

NOTE: ELECTRICIAN TO VERIFY ALL EQUIPMENT POWER REQUIREMENTS PRIOR TO ANY EQUIPMENT & BREAKER PURCHASE OR INSTALLATION.

ELECTR	ELECTRICAL PANEL SCHEDULE PANEL NO.									
VOLTS:	208	MAIN	CAPACITY:	225	MLO		"A" AMPS =	11		
PHASE:	1		MOUNTING:	RECESSED		"B" AMF		9.7		
WRE:	SEE RISER	BUSS	MATERIAL:	COPPER						
AIR:	SEE RISER	SQUAR	E D MODEL:	NQ						
CKT.	LOCATION/DESC.	BREAKER	AMPS	PH.	AMPS	BREAKER	LOCATION/DESC.	CKT.		
1	OLD TEACHER LOUNGE RM. 22	20-1		А		20-1	VERIFY	2		
3	2ND GRADE WEST	20-1		В		20-1	VERIFY	4		
5	2ND GRADE WEST	20-1		А		20-1	VERIFY	6		
7	2ND GRADE WEST	20-1		В		20-1	VERIFY	8		
9	OUTSIDE LIGHTS	20-1		А		20-1	VERIFY	10		
11	WEST CORRIDOR	20-1		В		20-1	FIRE ALARM SNAC RM 24	12		
13	RM 25 LEFT	20-1		А		20-1	FIRE ALARM SNAC RM 24	14		
15	RM 25 CENTER LEFT	20-1		В		20-2	PRINCIPAL A/C	16		
17	RM 25 CENTER RIGHT	20-1		А		1	1	18		
19	RM 25 RIGHT	20-1		В		60-2	60 AMP BREAKER	20		
21	TEACHER ROOM	20-1		А		1	1	22		
23	LOBBY LIGHTS	20-1		В	0.7	20-1	STEAM CABINET HEATER CH-1	24		
25	CLOCKS / BELL	20-1		А	1	20-1	STEAM CABINET HEATER CH-2	26		
27	FIRE ALARM	20-1		В	9	20-1	OFFICE RECEPTACLES	28		
29	GIRLS TOILET	20-1		А	10	20-1	DOOR OPERATORS	30		

NOTE: ELECTRICIAN TO VERIFY ALL EQUIPMENT POWER REQUIREMENTS PRIOR TO ANY EQUIPMENT & BREAKER PURCHASE OR INSTALLATION.

# GENERAL MECHANICAL-ELECTRICAL-PLUMBING SPECIFICATIONS

- ALL WORK SHALL BE DONE IN STRICT CONFORMANCE WITH THE LOCAL BUILDING CODES.
- ALL MATERIALS SHALL BE NEW, FIRST CLASS, AND INSTALLED TO MANUFACTURER'S WRITTEN SPECIFICATIONS. ALL SYSTEMS SHALL BE COMPLETE AND OPERABLE IN EVERY WAY.
- 4. DO ALL EXCAVATION, BACK FILLING, CUTTING, PATCHING, OFFSETTING, ADJUSTING, AND BALANCING AS REQUIRED TO
- 5. SPECIFIC MODELS ARE SPECIFIED TO ESTABLISH QUALITY ONLY. SUBSTITUTIONS MAY BE MADE WITH ENGINEER'S
- 6. GUARANTEE ALL WORKMANSHIP AND MATERIALS FOR ONE YEAR FROM FINAL ACCEPTANCE. PROVIDE FIVE YEAR AIR CONDITIONING COMPRESSOR WARRANTY.
- 7. INSPECT JOB SITE PRIOR TO BIDDING TO DETERMINE EXACT JOB REQUIREMENTS. SEE ARCHITECTURAL DRAWINGS FOR CONSTRUCTION DETAILS.
- ARCHITECTURAL DRAWING DIMENSIONS SHALL GOVERN IN ALL CASES. COORDINATE ENGINEERING DRAWINGS WITH ARCHITECTURAL DRAWINGS FOR ALL EQUIPMENT LAYOUTS AND LOCATIONS.
- LAYOUTS AND ROUTINGS SHOWN ON THE PLANS ARE APPROXIMATE AND GENERAL IN NATURE. CONTRACTORS ARE REQUIRED TO INSPECT THE JOBSITE FOR INTERFERENCES, OBSTRUCTIONS, AND CONFLICTS AND NOTIFY THE ENGINEER OF THE SAME, AND INCLUDE IN THEIR BID AND WORK SCOPE ALL ASSOCIATED COSTS TO MODIFY THE LAYOUTS AND ROUTINGS AS NECESSARY TO ACCOMMODATE THE INSTALLATION OF THEIR WORK AROUND SUCH INTERFERENCES, OBSTRUCTIONS. AND CONFLICTS.
- CONTRACTOR IS TO INCLUDE COSTS FOR ALL PERMITS, INSPECTIONS, TAPS, METERS & FUEL ASSOCIATED WITH HIS WORK. CONTRACTOR IS RESPONSIBLE FOR REVIEWING AND UNDERSTANDING ALL DRAWINGS AND ASPECTS OF THE PROJECT SCOPE, AND FOR INCLUDING IN HIS BID ALL WORK ASSOCIATED WITH HIS TRADE, REGARDLESS OF WHICH DRAWING OR SHEET IT IS SHOWN ON.

#### **ELECTRICAL SPECIFICATIONS**

PROVIDED, COLOR SHALL BE DETERMINED BY ARCHITECT.

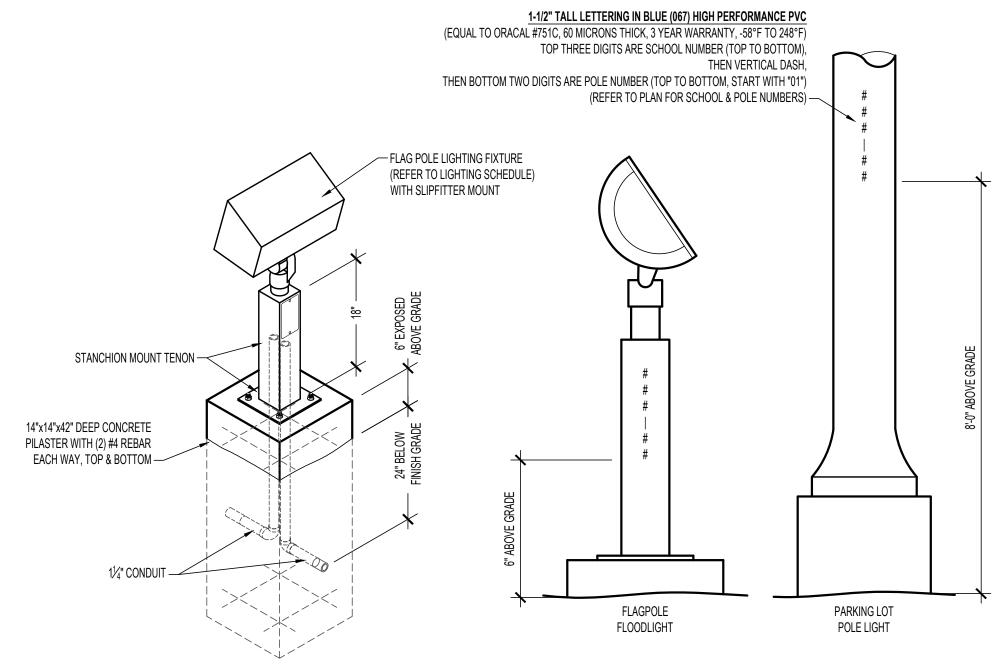
- 1. ALL CONDUCTORS SHALL BE THHN COPPER ABOVE GRADE, XHHW-2 BELOW GRADE, MINIMUM #12 OR LARGER AS REQUIRED
- 2. ALL SERVICE WIRING, EXPOSED TO WEATHER, OR WIRING BELOW GRADE, SHALL BE IN RIGID GALVANIZED CONDUIT OR SCH. 40 PVC.
- 3. ALL OTHER WIRING SHALL BE IN EMT, SCHEDULE 40 PVC, OR MC CABLE, UNLESS PROTECTED AND ENCLOSED WITHIN BUILDING MATERIALS, IN WHICH CASE TYPE NM CABLE MAY BE USED.
- 4. WALL SWITCHES SHALL BE LEVITON #CS120 SERIES, OR APPROVED EQUAL, 20A, COLOR SHALL BE DETERMINED BY ARCHITECT. DIMMER SWITCHES SHALL BE SELECTED BY CONTRACTOR TO BE COMPATIBLE WITH LIGHT FIXTURES
- 5. DUPLEX RECEPTACLES SHALL BE TAMPER RESISTANT LEVITON #T580 SERIES, OR APPROVED EQUAL, 20A, GROUNDING, MATCHING COVER PLATE, COLOR AS DETERMINED BY ARCHITECT. USE SIDE WIRING ONLY.
- 6. ARC-FAULT CIRCUIT INTERRUPTER BREAKERS SHALL BE COMBINATION TYPE BY SQUARE D, AND SHALL HAVE A DEDICATED
- NEUTRAL WIRE THROUGHOUT THE CIRCUIT. 7. THE ENTIRE SYSTEM SHALL BE ELECTRICALLY CONTINUOUS AND PROPERLY GROUNDED. EVERY FEEDER AND BRANCH
- CONDUIT SHALL HAVE CODE SIZED GREEN INSULATED GROUND CONDUCTOR.
- 8. FURNISH AND INSTALL ALL LIGHTING FIXTURES, LAMPS, FUSES, BREAKERS, ETC. TO COMPLETE THE BRANCH CIRCUITS
- 9. ALL 120V, 20A LIGHTING AND RECEPTACLE CIRCUITS REQUIRING MORE THAN 100' OF CONDUCTORS (ONE WAY) SHALL BE #10 CONDUCTORS, MINIMUM.
- 10. PROVIDE TYPEWRITTEN BREAKER SCHEDULE IN EACH PANELBOARD INDICATING ITEMS AND DEVICES SERVED BY ALL
- BREAKERS IN EACH PANEL.
- 11. PERMANENTLY LABEL DISCONNECTS FOR HVAC EQUIPMENT WITH EQUIPMENT SERVED, AND PANEL AND CIRCUIT NUMBER.
- 13. ALL ELECTRICAL PANELS AND DISCONNECTS SHALL HAVE A PERMANENT ARC-FLASH LABEL AFFIXED PER NEC 110.16. 14. ROUGH-IN FOR TEMPERATURE CONTROLS SHALL BE BY ELECTRICAL CONTRACTOR. REFER TO MECHANICAL PLANS AND

12. UNDERGROUND SPLICES TO BE MADE WITH DEVICES RATED FOR THAT APPLICATION.

CABINET HEATER SCHEDULE											
MARK	DESCRIPTION	MFR/MODEL	TYPE	CFM	HEATING		ELECTRICAL		PHYSICAL		NOTES
IWIARK	DESCRIPTION				KBTU	VOLTS	AMPS	MAX CKT	DIM'S (LxW)	WEIGHT	NOIES
CH-1	CABINET HEATER	MODINE CW-002	CEILING RECESSED	250	19.8	120	0.7	20	39x 25	85	1,2,3
CH-2	CABINET HEATER	MODINE CW-004	FLOOR MOUNT	450	42.5	120	1.0	20	49x 25	105	1,2
HVAC NO	TES:										

1.) WITH INTEGRAL DISCONNECT.

- 2.) WITH STEAM CONTROL VALVE, FAN RELAY, RETURN AIR TEMPERATURE SENSOR AND SPACE TEMPERATURE SENSOR CONNECTED TO BAS.
- 3.) WITH RECESSED CEILING FLANGE KIT.



## FLOODLIGHT MOUNTING DETAIL

# **CPS SITE LIGHTING LABELING DETAIL**

READER -

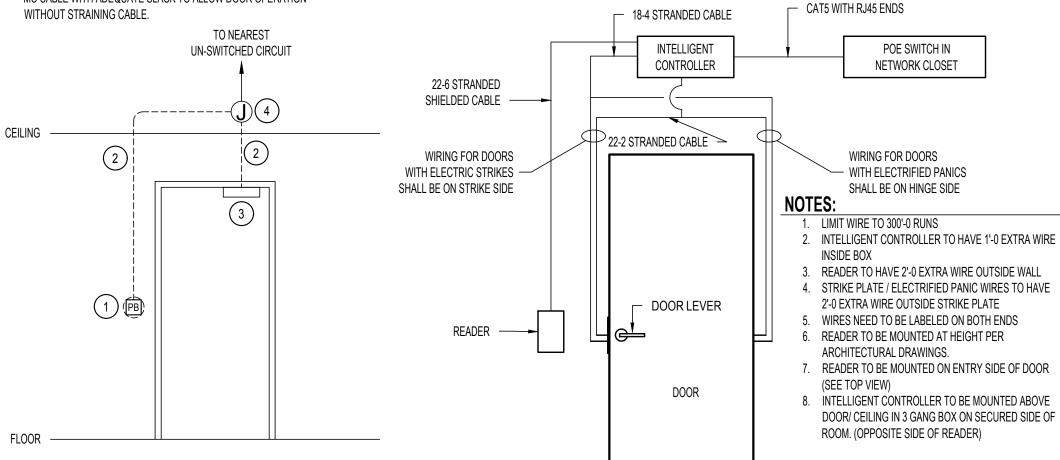
CONTROLLER

**PLAN VIEW** 

3 GANG BOX -

# **KEYED NOTES:**

- 1 J-BOX & ADA PUSH BUTTON MOUNTED @ 42" A.F.F. UNLESS NOTED OTHERWISE ON ARCHITECTURAL PLANS.
- (2) ½" EMT CONDUIT WITH LOW VOLTAGE CONDUCTORS (SIZE PER OPENER MANUFACTURER'S INSTRUCTIONS). TERMINATE AT PUSH BUTTONS AND AT DOOR OPENER/CONTROLLER.
- (3) DOOR OPENER/CONTROLLER LOCATED ON DOOR JAMB OR ON DOOR (CONFIRM WITH ARCHITECT/SUPPLIER).
- (4) J-BOX ABOVE CEILING OR BEHIND DOOR OPENER/CONTROLLER (CONFIRM WITH ARCHITECT/ SUPPLIER). CONNECT TO OPENER/CONTROLLER WITH MC CABLE WITH ADEQUATE SLACK TO ALLOW DOOR OPERATION WITHOUT STRAINING CABLE.



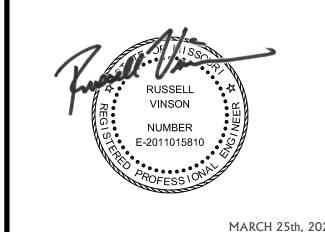
**AUTOMATIC DOOR OPERATOR WIRING SCHEMATIC** 

**ACCESS CONTROL DETAIL** 





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CERTIFICATE OF AUTHORITY #: 000239

COLUMBIA PUBLIC SCHOOLS SECURITY & ADA MAIN ENTRANCE AT WEST BLVD. **ELEMENTARY** 319 WEST BLVD N

Columbia, MO 65203

TE Project Number: 21013 PWA Project Number: 201621.54

Drawing Title: MECHANICAL ELECTRICAL **DETAILS & SCHEDULES** 

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