EF 1	Exhaust	1	150	BHP	0.03	None used	
						Calculated Adjustment (in H_2O)	

Total System Design Supply Airflow (CFM):	150	Total System Design (B)HP:	0.03	**Maximum System Fan Power (B)HP:**	

System Name:	EF 2	**Economizer:**[1]	NA: ≤ 54 kBtu/h cooling	**Economizer Controls:**		**System Fan Type:**	Constant Volume

01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B	
						Device	Design Airflow through Device (CFM)
EF 2	Exhaust	1	250	BHP	0.03	None used	
						Calculated Adjustment (in H_2O)	

Total System Design Supply Airflow (CFM):	250	Total System Design (B)HP:	0.03	**Maximum System Fan Power (B)HP:**	

System Name:	EF 3	**Economizer:**[1]	NA: ≤ 54 kBtu/h cooling	**Economizer Controls:**		**System Fan Type:**	Constant Volume

01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B	
						Device	Design Airflow through Device (CFM)
EF 3	Exhaust	1	175	BHP	0.03	None used	
						Calculated Adjustment (in H_2O)	

Total System Design Supply Airflow (CFM):	175	Total System Design (B)HP:	0.03	**Maximum System Fan Power (B)HP:**	

System Name:	EF 4	**Economizer:**[1]	NA: ≤ 54 kBtu/h cooling	**Economizer Controls:**		**System Fan Type:**	Constant Volume

Table Continued

01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B	
						Device	Design Airflow through Device (CFM)
EF 4	Exhaust	1	125	BHP	0.03	None used	
						Calculated Adjustment (in H_2O)	

Total System Design Supply Airflow (CFM):	125	Total System Design (B)HP:	0.03	**Maximum System Fan Power (B)HP:**	

System Name:	DOAS 1	**Economizer:**[1]	NA: System operates @ 100% OSA	**Economizer Controls:**		**System Fan Type:**	Constant Volume

01	02	03	04	05	06	07	08
Fan Name or Item Tag	Fan Function	Qty	Maximum Design Supply Airflow (CFM)	HP Unit[2]	Design HP	Fan Power Pressure Drop Adjustment - Table 140.4-B	
						Device	Design Airflow through Device (CFM)
DOAS 1	Supply	1	1,575	Nameplate HP	2.3		
						Calculated Adjustment (in H_2O)	

Total System Design Supply Airflow (CFM):	1,575	Total System Design (B)HP:	2.3	**Maximum System Fan Power (B)HP:**	

[1] FOOTNOTE: Computer room economizers must meet requirements of §140.9(a) and will be documented on the NRCC-PRC-E document.
[2] The unit used for HP must be consistent for all fans within a system.

I. SYSTEM CONTROLS

Table Instructions: Complete the following Table to demonstrate compliance with mandatory controls in §110.2 and §120.2 and prescriptive controls in §140.4(f) and (n) or requirements in §141.0(b)2E for altered space conditioning systems.

Table Continued

01	02	03	04	05	06	07	08	09
System Name	System Zoning	Conditioned Floor Area Being Served (ft²)	Thermostats §110.2(b) & (c)[1], §120.2(a) or §141.0(b)2E	Shut-Off Controls §120.2(e)	Isolation Zone Controls §120.2(g)	Demand Response §110.12 and §120.2(b)	Supply Air Temp. Reset §140.4(f)	Window Interlocks per §140.4(n)
CU 1	multi-zone w/ DDC to zone	≤ 25,000 ft²	Setback + DR Tstat per §110.12	Auto Timeswitch	Auto Timeswitch	DR Tstat per §110.12	Included	Provided
DOAS 1	multi-zone	≤ 25,000 ft²	NA: Eq. type per §110.2(c) exception[1]	Other*	NA: Serves < 25k ft²	Other*	Included	NA: No thermostatic control

[1] FOOTNOTES: Gravity gas wall heaters, gravity floor heaters, gravity room heaters, non-central electric heaters, fireplaces or decorative gas appliances, wood stoves are not required to have setback thermostats.
** NOTES: Controls with a * require a note in the space below explaining how compliance is achieved.*
EX: System 1: SA Temp Reset: Exempt because zones compliant with §140.4(d); EXCEPTION 1 to §140.4(f)

DOAS 1	100% Outside Air Unit providing ventilation to multiple zones

J. VENTILATION AND INDOOR AIR QUALITY

Table Instructions: Complete the following Table to demonstrate compliance with mandatory ventilation requirements in §120.1 and §120.2(e)3B for all nonresidential, high-rise residential and hotel/motel occupancies. For alterations, only ventilation systems being altered within the scope of the permit application need to be documented in this table. In lieu of this table, the required outdoor ventilation rates and airflows may be shown on the plans or the calculations can be presented in a spreadsheet.

01	☑	Check the box if the project is showing ventilation calculations on the plans, or attaching the calculations instead of completing this table.
02	☐	Check this box if the project includes Nonresidential or Hotel/Motel spaces
	☐	Check this box if the project includes new or altered high-rise residential dwelling units
03	☐	Check the box if the project is using natural ventilation in any spaces to meet required ventilation rates per §120.1(c)2.

[1] FOOTNOTES: System CFM should include both mechanical and natural ventilation for the zone/system.
[2] Air filtration requirements apply to the following three system types per §120.1(c)1A: space conditioning systems utilizing ducts to supply air to occupiable space; supply-only ventilation systems providing outside air to occupiable space; supply side of balanced ventilation systems including heat recovery and energy recovery ventilation systems providing outside air to occupiable space.
[3] Uniform Mechanical Code may have more stringent ventilation requirements; the most stringent code requirement takes precedence.
[4] See Standards Tables 120.1-A and 120.1-B
[5] For lecture halls with fixed seating, the expected number of occupants shall be determined in accordance with the California Building Code.
[6] §120.2(e)3 requires systems serving rooms that are required by §130.1(c) to have lighting occupancy sensing controls to also have occupancy sensing zone controls for ventilation. Examples of spaces which require lighting occupancy sensors include offices 250ft² or smaller, multipurpose rooms less than 1,000ft², classrooms, conference rooms, restrooms, aisles and open areas in warehouses, library book stack aisles, corridors, stairwells, parking garages, and loading and unloading zones, unless excepted by §130.1(c).

K. TERMINAL BOX CONTROLS

This Section Does Not Apply

L. DISTRIBUTION (DUCTWORK AND PIPING)

Table Instructions: Complete the following tables to show compliance with mandatory pipe insulation requirements found in §120.3 and prescriptive requirements found in §140.4(l) for duct leakage testing.

Duct Leakage Sealing

The answers to the questions below apply to the following duct system(s):		DOAS 1	Duct leakage testing triggered for these systems?	No
11	No	The scope of the project includes only duct systems serving healthcare facilites.		
12	No	Duct system provides conditioned air to an occupiable space for a constant volume, single zone, space-conditioning system.		
13	No	The space conditioning system serves less than 5,000 ft² of conditioned floor area.		
14	No	The combined surface area of the ducts in the following locations is more than 25% of the total surface area of the entire duct system:		
		☐ Outdoors		
		☐ In a space directly under a roof that has a U-factor greater than the U-factor of the ceiling, or if the roof does not meet the requirements of §140.3(a)1B or if the roof has fixed vents or openings to the outside/ unconditioned spaces		
		☐ In an unconditioned crawlspace		
		☐ In other unconditioned spaces		
15	No	The scope of the project includes extending an existing duct system, which is constructed, insulated or sealed with asbestos.		
16	No	The scope of the project includes an existing duct system that is documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in the Reference Nonresidential Appendix NA2.		

Table Continued

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Table Continued

17		Duct system shall be sealed in accordance with the California Mechanical Code.

M. COOLING TOWERS

This Section Does Not Apply

N. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

YES	NO	Form/Title	Systems To Be Field Verified	Field Inspector	
				Pass	Fail
◉		NRCI-MCH-01-E - Must be submitted for all buildings.	CU 1, DOAS 1, EF 1 THRU 4	☐	☐

O. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCA/

YES	NO	Form/Title	Systems To Be Field Verified	Field Inspector	
				Pass	Fail
◉	○	NRCA-MCH-02-A Outdoor Air must be submitted for all newly installed HVAC units. *Note: MCH02-A can be performed in conjunction with MCH-07-A Supply Fan VFD Acceptance (if applicable) since testing activities overlap.*	DOAS 1	☐	☐
○	◉	NRCA-MCH-03-A Constant Volume Single Zone HVAC *NOTE: This form does not automatically move to "Yes". If Constant Volume Single Zone HVAC Systems are included in the scope, permit applicant should move this form to "Yes".*	FCU 1 THRU 9	☐	☐
○	◉	NRCA-MCH-04-A Air Distribution Duct Leakage	DOAS 1, EF 1 THRU 4	☐	☐
○	◉	NRCA-MCH-05-A Air Economizer Controls		☐	☐
○	◉	NRCA-MCH-06-A Demand Control Ventilation Systems Acceptance must be submitted for all systems required to employ demand controlled ventilation (refer to §120.1(c)3) can vary outside ventilation flow rates based on maintaining interior carbon dioxide (CO2) concentration setpoints.		☐	☐
○	◉	NRCA-MCH-07-A Supply Fan Variable Flow Controls		☐	☐
○	◉	NRCA-MCH-08-A Valve Leakage Test		☐	☐
○	◉	NRCA-MCH-09-A Supply Water Temperature Reset Controls		☐	☐
○	◉	NRCA-MCH-10-A Hydronic System Variable Flow Controls		☐	☐
◉	○	NRCA-MCH-11-A Automatic Demand Shed Controls	CU 1	☐	☐

○	◉	NRCA-MCH-12-A FDD for Packaged Direct Expansion Units		☐	☐
○	◉	NRCA-MCH-13-A Automatic FDD for Air Handling Units and Zone Terminal Units Acceptance		☐	☐
○	◉	NRCA-MCH-14-A Distributed Energy Storage DX AC Systems Acceptance *NOTE: This form does not automatically move to "Yes". If Distributed Energy Storage DX AC Systems are included in the scope, permit applicant should move this form to "Yes".*		☐	☐
○	◉	NRCA-MCH-15-A Thermal Energy Storage (TES) System Acceptance *NOTE: This form does not automatically move to "Yes". If Chilled Water Storage, Ice-on-Coil Internal Melt, Ice-on-Coil External Melt, Ice Harvester, Brine, Ice-Slurry, Eutectic Salt, Clathrate Hydrate Slurry (CHS), Cryogenic or Encapulated (Ice Ball) Systems are included in the scope, permit applicant should move this form to "Yes".*		☐	☐
◉	○	NRCA-MCH-16-A Supply Air Temperature Reset Controls	DOAS 1	☐	☐
○	◉	NRCA-MCH-17-A Condenser Water Temperature Reset Controls		☐	☐
○	◉	NRCA-MCH-18 Energy Management Control Systems		☐	☐
○	◉	NRCA-MCH-19 Occupancy Sensor Controls		☐	☐
○	◉	NRCA-MCH-20 Multi-Family Ventilation		☐	☐
○	◉	NRCA-MCH-21 Multi-Family Envelope Leakage		☐	☐

P. DECLARATION OF REQUIRED CERTIFICATES OF VERIFICATION

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be completed by a HERS Rater and provided to the building inspector during construction. The final documents must be created by a HERS Providers registry, but drafts can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCV/

YES	NO	Form/Title	Field Inspector	
			Pass	Fail
○	◉	NRCV-MCH-04-H Duct Leakage Test *NOTE: Must be completed by a HERS Rater*	☐	☐
○	◉	NRCV-MCH-24 Enclosure Air Leakage Worksheet *NOTE: Must be completed by a HERS Rater*	☐	☐
○	◉	NRCV-MCH-27 High-rise Residential *NOTE: Must be completed by a HERS Rater*	☐	☐
○	◉	NRCV-MCH-32 Local Mechanical Exhaust *NOTE: Must be completed by a HERS Rater*	☐	☐

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STATE OF CALIFORNIA
Mechanical Systems
NRCC-MCH-E (Created 09/2020) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: Fire Station 163	Report Page:	Page 13 of 14
Project Address: 6320 Pine Avenue, Bell, CA 90201	Date Prepared:	2022-05-24

Q. MANDATORY MEASURES DOCUMENTATION LOCATION

Table Instructions: Indicate where mandatory measures are documented in the plan set or construction documentation. For any mandatory measures that do not apply, mark the plan sheet or construction document location as "N/A", any active cells that are left blank will result in non-compliance in Table C.

01		02
		Plan sheet or construction document location
Compliance with Mandatory Measures documented through MCH Mandatory Measures Note Block:	Yes	M7.XX SERIES SHEETS

STATE OF CALIFORNIA
Mechanical Systems
NRCC-MCH-E (Created) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-MCH-E
Project Name: Fire Station 163	Report Page:	Page 14 of 14
Project Address: 6320 Pine Avenue, Bell, CA 90201	Date Prepared:	2022-05-24

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	Tyler Bensen	Documentation Author Signature:	Tyler J Bensen (Digitally signed by Tyler J Bensen Date: 2022.05.24 21:52:14 -05'00')
Company:	Henderson Engineers	Signature Date:	5/24/2022
Address:	510 W 6th St Ste. #800	CEA/ HERS Certification Identification (if applicable):	
City/State/Zip:	Los Angeles, CA 90014	Phone:	(213) 254-4741

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. **The information provided on this Certificate of Compliance is true and correct.**
2. **I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)**
3. **The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.**
4. **The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.**
5. **I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.**

Responsible Designer Name:	Bryan Jimenez	Responsible Designer Signature:	
Company :	Henderson Engineers	Date Signed:	5/24/2022
Address:	510 W 6th St Ste. #800	License:	38619
City/State/Zip:	Los Angeles, CA 90014	Phone:	(213) 254-4741

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FIRE PROTECTION GENERAL NOTES:

1. PRIOR TO SUBMITTING BID, VISIT THE JOB SITE AND BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS OF THE PROJECT. REVIEW THE GENERAL NOTES, SPECIFICATIONS AND OTHER DRAWINGS FOR ADDITIONAL REQUIREMENTS WHICH MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT, ENGINEER AND/OR OWNER OF CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.
2. SYSTEM DESIGN, INSTALLATION AND MATERIALS SHALL BE IN ACCORDANCE WITH APPLICABLE NFPA STANDARDS. SYSTEM SHALL ALSO MEET ALL APPLICABLE BUILDING CODES, FIRE CODES AND THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION AND INSURANCE CARRIER. VERIFY REQUIREMENTS PRIOR TO BID SUBMITTAL.
3. INFORMATION ON CONTRACT DOCUMENTS IS GENERAL INFORMATION AND FOR BID PURPOSES ONLY. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE FINAL SYSTEM DESIGN AND LAYOUT OF ALL COMPONENTS, COORDINATION WITH ALL OTHER TRADES, AND SYSTEM CALCULATIONS REQUIRED FOR APPROVAL BY THE AUTHORITY HAVING JURISDICTION, ENGINEER, AND OWNER'S INSURER.
4. THE CONTRACTOR SHALL FOLLOW THE ENGINEER OF RECORD'S SYSTEM DESIGN AND LAYOUT OF ALL COMPONENTS EXCEPT WHERE MODIFICATION TO THE DESIGN IS NECESSARY. MODIFICATIONS SHALL BE REFLECTED IN THE CONTRACTOR'S SHOP DRAWINGS AND CALCULATIONS.
5. DEVIATIONS FROM ENGINEER'S DESIGN WILL NOT BE CONSIDERED UNLESS A FORMALLY SUBMITTED RFI IS RECEIVED AND APPROVED.
6. THE CONTRACTOR SHALL PROVIDE ALL EQUIPMENT AND LABOR REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM AS INDICATED IN THE DRAWINGS AND SPECIFICATIONS.
7. WHERE EXISTING SYSTEMS ARE PRESENT, CONTRACTOR SHALL MODIFY, RELOCATE AND/OR PROVIDE ADDITIONAL EQUIPMENT AS REQUIRED FOR SCOPE OF WORK AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. COORDINATE WITH WALLS, CEILINGS, LIGHTS, DIFFUSERS, STRUCTURE, OBSTRUCTIONS, ETC. IN AREAS AFFECTED BY SCOPE OF WORK. NEW EQUIPMENT SHALL BE COMPATIBLE WITH EXISTING SYSTEMS. CONTRACTOR SHALL REMOVE ALL ABANDONED EQUIPMENT, COORDINATE SYSTEM MODIFICATIONS TO MINIMIZE SYSTEM IMPAIRMENT, AND PROVIDE FIRE WATCH AND/OR INTERIM FIRE PROTECTION MEASURES WHERE REQUIRED BY THE AUTHORITY HAVING JURISDICTION, INSURANCE CARRIER OR OWNER.
8. PROVIDE ADDITIONAL MATERIALS AND LABOR REQUIRED DUE TO LACK OF COORDINATION OR TO MEET AUTHORITY HAVING JURISDICTION AND INSURANCE CARRIER REQUIREMENTS AT NO ADDITIONAL COST TO THE OWNER.
9. FORWARD COMPLETED CERTIFICATE OF COMPLETION AND CONTRACTOR MATERIAL TEST CERTIFICATES TO THE OWNER.
10. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

WATER SUPPLY INFORMATION:

OBTAINED FROM:	COUNTY OF LOS ANGELES FIRE DEPARTMENT
TEST DATE AND TIME:	11/18/22 AT 9:26 AM
HYDRANT NUMBER/DESIGNATION:	723
HYDRANT LOCATION:	PINE AVE., 85 FT NORTH OF MINNEWA LN.
STATIC PRESSURE:	54 PSI
RESIDUAL PRESSURE:	40 PSI
WATER FLOW:	3118 GPM

FIRE PROTECTION SYMBOLS

THIS IS A MASTER LEGEND AND NOT ALL SYMBOLS OR ABBREVIATIONS ARE USED. V2.02

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	NIC	NOT IN CONTRACT
AFG	ABOVE FINISHED GRADE	OC	ON CENTER
CD	CANDELA	PIV	POST INDICATOR VALVE
DI	DUCTILE IRON	PROVIDE	FURNISH AND INSTALL
ESFR	EARLY SUPPRESSION FAST RESPONSE	PRV	PRESSURE REDUCING VALVE
ETR	EXISTING TO REMAIN	RD	RETURN DUCT
FHC	FIRE HOSE CABINET	REV	REVISION
FP	FIRE PROTECTION	SD	SUPPLY DUCT
GC	CONTRACTOR	SF	SQUARE FEET
GPM	GALLONS PER MINUTE	TYP	TYPICAL
JBU-BOX	JUNCTION BOX	UNO	UNLESS NOTES OTHERWISE
MAX	MAXIMUM	V	VOLT(S)
MIN	MINIMUM	W	WATTS
N/A	NOT APPLICABLE	WP	WEATHERPROOF

ANNOTATION

- FIRE PROTECTION PLAN NOTE CALLOUT
- CONNECTION POINT OF NEW WORK TO EXISTING
- DETAIL REFERENCE UPPER NUMBER INDICATES DETAIL NUMBER LOWER NUMBER INDICATES SHEET NUMBER
- SECTION CUT DESIGNATION
- DEDICATED EQUIPMENT ACCESS TILE
- ACCESS PANEL

FIRE SPRINKLERS

- UPRIGHT SPRINKLER
- PENDENT SPRINKLER
- CONCEALED SPRINKLER
- DRY PENDENT SPRINKLER
- DRY SIDEWALL SPRINKLER
- SIDEWALL SPRINKLER

FIRE SPRINKLER PIPING

- FIRE PROTECTION (FP)
- SHUTOFF VALVE
- CHECK VALVE
- BACKFLOW PREVENTER
- CAP
- ELBOW UP
- ELBOW DOWN
- TEE UP
- TEE DOWN
- FIRE DEPARTMENT CONNECTION
- FIRE PUMP TEST HEADER
- INSPECTOR'S TEST CONNECTION / AUXILIARY DRAIN
- SPRINKLER RISER
- TOP BEAM CLAMP
- TRAPEZE HANGER

STANDARD MOUNTING HEIGHTS

AUDIBLE APPLIANCE (TOP OF APPLIANCE)	90"
FIRE ALARM ANNUNCIATOR PANEL (TOP OF DISPLAY)	60"
FIRE ALARM BELL (EXTERIOR) (CENTERLINE)	120"
FIRE ALARM CONTROL PANEL/UNIT (TOP OF DISPLAY)	60"
PULL STATION (TOP OF DEVICE)	48"
VISIBLE APPLIANCE (CENTERLINE)	84"

INSTALL DEVICES AT THE MOUNTING HEIGHTS SHOWN ABOVE UNO IN THE CONSTRUCTION DOCUMENTS. MOUNTING HEIGHTS LISTED ABOVE, OR ELSEWHERE IN THE CONSTRUCTION DOCUMENTS, ARE AFF OR AFG, UNO. ALL DEVICES SHALL BE INSTALLED IN COMPLIANCE WITH CURRENT ADA AND LOCAL REQUIREMENTS.

FIRE ALARM

- FIRE ALARM CONTROL PANEL/UNIT
- RECESSED FIRE ALARM CONTROL PANEL/UNIT
- FIRE ALARM ANNUNCIATOR PANEL
- RECESSED FIRE ALARM ANNUNCIATOR PANEL
- AMPLIFIER PANEL
- REMOTE POWER SUPPLY
- REMOTE TEST STATION WITH INDICATING LIGHT
- REMOTE INDICATING LIGHT
- PRESSURE SWITCH LOW/HIGH
- WATERFLOW ALARM SWITCH
- CONTROL VALVE TAMPER SWITCH
- MAGNETIC DOOR HOLD OPEN DEVICE
- CONTROL MODULE
- MONITOR MODULE
- FIRE DEPARTMENT KEY BOX
- PULL STATION
- FIREFIGHTER'S PHONE JACK
- HEAT DETECTOR (E INDICATES ELEVATOR RECALL)
- SMOKE DETECTOR (E INDICATES ELEVATOR RECALL/SB INDICATES SOUNDER BASE)
- SINGLE STATION SMOKE DETECTOR
- PROJECTED BEAM SMOKE DETECTOR
- DUCT MOUNTED SMOKE DETECTOR (SD=SUPPLY/RD=RETURN)
- CARBON MONOXIDE DETECTOR
- AREA OF REFUGE 2-WAY COMMUNICATION SYSTEM
- WALL MOUNTED AUDIBLE NOTIFICATION APPLIANCE #W INDICATES WATTAGE (VOICE EVACUATION SYSTEMS ONLY)
- WALL MOUNTED VISIBLE NOTIFICATION APPLIANCE ## INDICATES CANDELA
- WALL MOUNTED AUDIBLE/VISIBLE NOTIFICATION APPLIANCE ## INDICATES CANDELA #W INDICATES WATTAGE (VOICE EVACUATION SYSTEMS ONLY)
- CEILING MOUNTED AUDIBLE NOTIFICATION APPLIANCE #W INDICATES WATTAGE (VOICE EVACUATION SYSTEMS ONLY)
- CEILING MOUNTED VISIBLE NOTIFICATION APPLIANCE ## INDICATES CANDELA
- CEILING MOUNTED AUDIBLE/VISIBLE NOTIFICATION APPLIANCE ## INDICATES CANDELA #W INDICATES WATTAGE (VOICE EVACUATION SYSTEMS ONLY)
- END OF LINE RESISTOR
- ABORT SWITCH
- BELL

CALL OUTS

ENLARGED PLAN CALLOUT

NOT IN SCOPE

LINETYPE LEGEND

THROUGHOUT THE DRAWINGS DIFFERENT LINETYPES ARE USED IN COMBINATION WITH THE SYMBOLS TO INDICATE THE STATUS OF ITEMS AS EXISTING, TO BE DEMOLISHED, TO BE INCLUDED AS PART OF NEW WORK AND/OR ITEMS WHICH ARE ANTICIPATED TO BE PROVIDED IN THE FUTURE. THE STATUS OF ITEMS USING THESE LINETYPES ARE RELATIVE TO THE VIEW IN WHICH THEY APPEAR. PHASING SHOWN IN DRAWINGS IS NOT INTENDED TO FULLY DESCRIBE ALL NECESSARY CONSTRUCTION PHASING, WHICH IS DETERMINED BY THE CONTRACTOR AS PART OF THEIR RESPONSIBILITIES. ANY SUCH PHASES DESCRIBED IN THE CONSTRUCTION DOCUMENTS ARE GENERAL AND ONLY INTENDED TO INDICATE A BROAD ORDER FOR THE SAKE OF DESCRIBING THE PROJECT. THE FOLLOWING LINETYPES MAY BE USED ON ANY DEVICE, EQUIPMENT, NOTE, LINE, SHAPE, ETC.

EXISTING

DEMOLISH

NEW

FUTURE

Sheet List - Fire Protection

Sheet Number	Sheet Name	Sheet Order
FP0.00	FIRE PROTECTION GENERAL NOTES AND LEGEND	
FP1.01	FIRE PROTECTION PLAN	
FP4.00	FIRE PROTECTION DETAILS	
G3.40	FIRE PROTECTION SPECIFICATIONS	
G3.41	FIRE PROTECTION SPECIFICATIONS	

Grand total: 5

AHJ STAMP APPROVAL

BIDDING SET

REVISIONS

ISSUED FOR PERMIT

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER J. CULP
No. F-1743
EXPIRES: 09/30/2024
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STATE OF CALIFORNIA
04/14/2023

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FIRE STATION 163

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NAC ARCHITECTURE
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1203 WEST RIVERSIDE AVE
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NAC NO	161-21001
DRAWN	CPQ
CHECKED	BAC
DATE	10/05/2026

FIRE PROTECTION GENERAL NOTES AND LEGEND

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FP0.00

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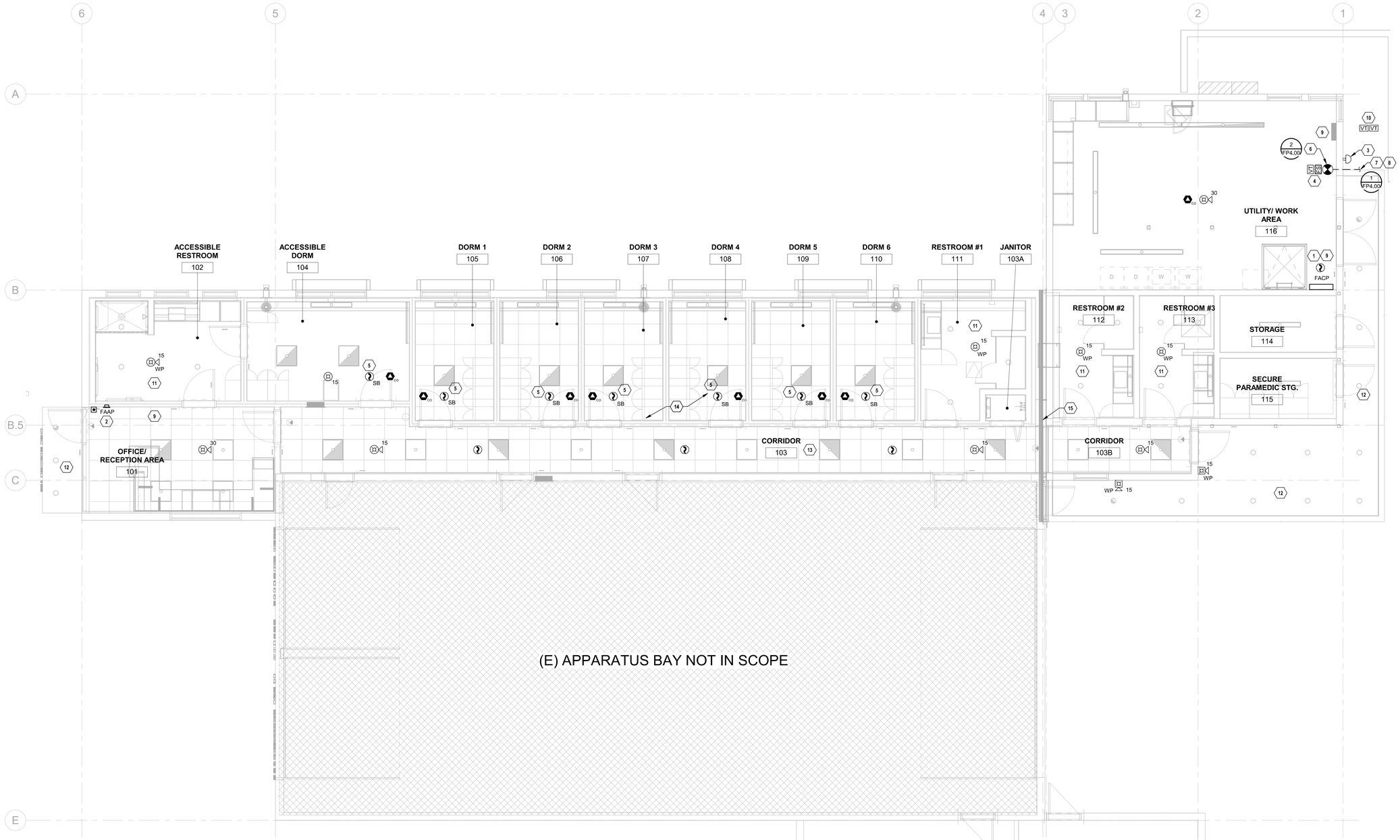
CHRISTOPHER J. CULP

FIRE PROTECTION PLAN NOTES:

1. PROVIDE NEW FIRE ALARM CONTROL PANEL. PROVIDE A SMOKE DETECTOR ABOVE THE PANEL IN ACCORDANCE WITH NFPA 72.
2. PROVIDE NEW REMOTE FIRE ALARM ANNUNCIATOR PANEL.
3. CONNECT EXTERIOR WATERFLOW ALARM TO FIRE ALARM SYSTEM.
4. CONNECT FIRE SPRINKLER MONITORING DEVICES TO FIRE ALARM SYSTEM. COORDINATE QUANTITY AND LOCATION OF DEVICES WITH FIRE PROTECTION SYSTEMS.
5. PROVIDE A SYSTEM SMOKE DETECTOR WITH A SOUNDER BASE IN THE SLEEPING UNIT. ACTIVATION OF A DETECTOR SHALL CAUSE THE SOUNDER BASE FOR ALL DEVICES IN THE SLEEPING UNIT TO ACTIVATE. IN ACCESSIBLE UNITS, ACTIVATION OF A DETECTOR SHALL ALSO ACTIVATE VISIBLE ALARM SIGNALS IN THE UNIT. DETECTORS IN THE SLEEPING UNITS SHALL CAUSE A SUPERVISORY SIGNAL AT THE MAIN FIRE ALARM CONTROL PANEL.
6. EXISTING TENANT DEDICATED CONTROL VALVE AND SPRINKLER MAIN SERVING TENANT SPACE PROVIDED BY LANDLORD
7. FIRE PROTECTION SERVICE ENTRANCE. REFER TO CIVIL FOR CONTINUATION.

FIRE PROTECTION PLAN NOTES:

8. TO REMOTE FIRE DEPARTMENT CONNECTION AND BACKFLOW PREVENTER PROVIDED BY CIVIL.
9. DO NOT ROUTE SPRINKLER PIPING ABOVE ELECTRICAL DISTRIBUTION EQUIPMENT.
10. CONNECT FIRE SPRINKLER MONITORING DEVICES FOR REMOTE BACKFLOW PREVENTER TO FIRE ALARM SYSTEM. MINIMUM 3/4" CONDUIT REQUIRED. DEVICES SHOWN HERE FOR REFERENCE ONLY. REFER TO CIVIL PLANS FOR EXACT LOCATION.
11. PROVIDE CORROSION RESISTANT PIPING AND POLY COATED SPRINKLERS THROUGHOUT ALL WET AREAS INCLUDING ACCESSIBLE RESTROOM.
12. SPRINKLER PROTECTION NOT REQUIRED BELOW NONCOMBUSTIBLE CANOPY PER NFPA 13.
13. FIRE SPRINKLER MAIN SHALL BE LOCATED IN CORRIDOR 103. COORDINATE EXACT ROUTING WITH ARCHITECT AND ALL OTHER DISCIPLINES.
14. PROVIDE SIDEWALL SPRINKLERS IN DORM ROOMS AND RESTROOM AREAS PER COORDINATION WITH ARCHITECT AND OTHER DISCIPLINES.
15. COORDINATE SPRINKLER PIPE WITH EXPANSION JOINT IN THIS AREA. REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION.



PLAN NORTH / TRUE NORTH

1 FIRE PROTECTION PLAN
Scale: 1/4" = 1'-0"

0 2' 4' 6'
SCALE: 1/4"=1'-0"

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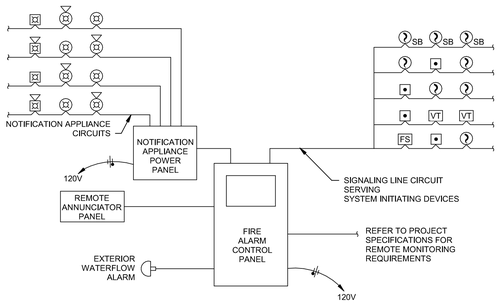
FIRE PROTECTION PLAN

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RISER DIAGRAM IS SCHEMATIC IN NATURE. NOT ALL DEVICES ARE SHOWN. REFER TO PLANS FOR EQUIPMENT QUANTITIES AND LOCATIONS.

DUCT DETECTORS MAY HAVE INTEGRAL RELAYS FOR AIR HANDLING UNIT SHUT-DOWN AND FIRE/SMOKE DAMPER CONTROL. WIRING FOR THIS FUNCTION HAS NOT BEEN SHOWN. COORDINATE WITH MECHANICAL SYSTEM INSTALLER.

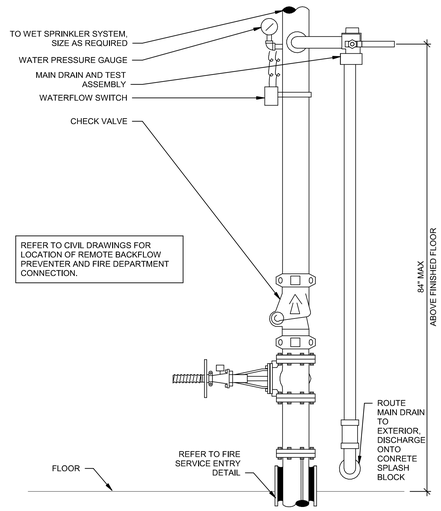
REFER TO PLANS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.

④ FIRE ALARM RISER DIAGRAM - ADDRESSABLE SYSTEM (NON-VOICE)
NTS

SYSTEM INPUTS	ALARM	SUPERVISORY	TROUBLE	REPORT TO FIRE ALARM CONTROL PANEL	SIGNAL SUPERVISING STATION	ACTIVATE GENERAL FIRE ALARM AUDIBLE/VISIBLE NOTIFICATION APPLIANCES	ACTIVATE FGC NOTIFICATION APPLIANCE	SHUTDOWN ALL FAN POWERED MECHANICAL AIR HANDLING EQUIPMENT	ACTIVATE ALL SMOKE DETECTOR SOUNDER BASES	ACTIVATE VISIBLE NOTIFICATION APPLIANCE(S) IN THE AFFECTED ADA ACCESSIBLE DWELLING UNIT	ACTIVATE SOUNDER BASE(S) IN THE AFFECTED DWELLING UNIT	ACTIVATE LOCAL NOTIFICATION OF CARBON MONOXIDE DETECTION
SIGNALING LINE OR NOTIFICATION APPLIANCE CIRCUIT - OPEN			●	●	●							
SIGNALING LINE OR NOTIFICATION APPLIANCE CIRCUIT - SHORT			●	●	●							
SIGNALING LINE OR NOTIFICATION APPLIANCE CIRCUIT - GROUND			●	●	●							
FIRE ALARM CONTROL PANEL LOSS OF POWER			●		●							
MANUAL PULL STATION	●			●	●	●		●				
SMOKE DETECTOR - SPOT TYPE	●			●	●	●		●				
WATERFLOW ALARM SWITCH	●			●	●	●	●	●				
VALVE TAMPER SWITCH		●		●	●							
RESIDENTIAL - ACTUATION OF ONE (1) SYSTEM SMOKE DETECTOR IN SLEEPING UNIT		●		●	●					●	●	
RESIDENTIAL - ACTUATION OF MULTIPLE SYSTEM SMOKE DETECTORS IN SLEEPING UNIT	●			●	●				●			
CARBON MONOXIDE (CO) DETECTOR - CO DETECTED	●			●	●							●
CARBON MONOXIDE (CO) DETECTOR - TROUBLE/FAULT			●	●	●							

CONTRACTOR TO PROVIDE ALL NECESSARY EQUIPMENT AND CONNECTIONS REQUIRED TO ACCOMPLISH THE FUNCTIONS INDICATED, AT MINIMUM. SEQUENCE OF OPERATIONS INDICATED IS SCHEMATIC. MODIFY TO SUIT CONDITIONS AND MEET APPLICABLE CODE REQUIREMENTS.

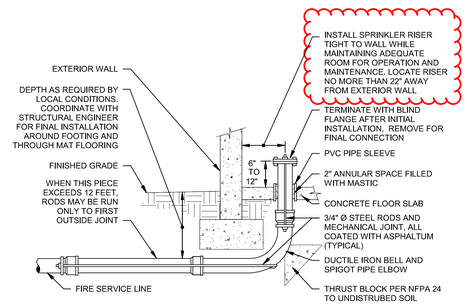
FIRE ALARM
SEQUENCE OF OPERATIONS
③ NTS



ARRANGEMENT SHOWN IS SCHEMATIC. MODIFY TO SUIT CONDITIONS AND MEET APPLICABLE CODE REQUIREMENTS. COORDINATE INSTALLATION OF ALARM DEVICES WITH OTHER TRADES.

ELEVATION VIEW

② FIRE PROTECTION WET PIPE
NTS



ARRANGEMENT SHOWN IS SCHEMATIC. MODIFY TO SUIT FIELD CONDITIONS AND MEET APPLICABLE CODE REQUIREMENTS. VERIFY FOUNDATION WITH ARCHITECTURAL DRAWINGS. COORDINATE WHO IS TO PROVIDE THE FIRE SERVICE ENTRY WITH THE GENERAL CONTRACTOR OR CONSTRUCTION MANAGER PRIOR TO SUBMITTING BID.

① FIRE SERVICE ENTRY
NTS

AHJ STAMP APPROVAL

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FIRE PROTECTION DETAILS

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CHRISTOPHER J. CULP

ELECTRICAL SYMBOLS

THIS IS A MASTER LEGEND AND NOT ALL SYMBOLS OR ABBREVIATIONS ARE USED. V3.00

STANDARD MOUNTING HEIGHTS

AUDIBLE APPLIANCES (CENTERLINE)	84"
ALARMS	48"
ANNUNCIATOR PANELS (DISPLAY)	60"
CONTROLS (TOP OF DEVICE)	48"
EXIT SIGNS (WALL MOUNTED)	80"
FIRE ALARM ANNUNCIATOR PANEL (DISPLAY)	60"
FIRE ALARM BELL (EXTERIOR) (CENTERLINE)	120"
FIRE ALARM CONTROL PANEL/UNIT (DISPLAY)	60"
INTERCOM (AFEA ONLY)	36"
INTERCOMS (TOP OF DEVICE)	48"
PULL STATIONS (TOP OF DEVICE)	48"
PHOTOCELLS	144"
RECEPTACLES	16"
RECEPTACLES (EXTERIOR)	24"
RECEPTACLES (GARAGES)	24"
RECEPTACLES (POOLS)	27"
RECEPTACLES (ABOVE COUNTER) +6" ABOVE BACKSPLASH/COUNTER, 40" MAX	
RECEPTACLES IN EQUIPMENT ROOMS	44"
REMOTE INDICATING LIGHT (EQUIPMENT ROOMS)	48"
REMOTE INDICATING LIGHT (FINISHED AREAS)	CEILING
SAFETY SWITCHES (TOP OF DEVICE)	48"
STARTERS (TOP OF DEVICE)	48"
SWITCHES (TOP OF DEVICE)	44"
TELEPHONE, DATA OUTLETS	SAME AS ADJACENT DEVICE, UNO
TELEPHONE TERMINAL BOARD (BOTTOM)	6"
TELEVISION OUTLETS	REFER TO ARCH DRAWINGS
VISIBLE APPLIANCES (CENTERLINE)	84"

INSTALL OUTLET BOXES AT THE MOUNTING HEIGHTS SHOWN ABOVE UNO IN THE CONSTRUCTION DOCUMENTS. MOUNTING HEIGHTS LISTED ABOVE, OR ELSEWHERE IN THE CONSTRUCTION DOCUMENTS, ARE AFF OR AFG TO BOTTOM OF OUTLET BOX, UNO, ALL DEVICES SHALL BE INSTALLED IN COMPLIANCE WITH CURRENT ADA AND LOCAL REQUIREMENTS.

ABBREVIATIONS

AF	AMPERE FUSE SIZE	MCC	MOTOR CONTROL CENTER
AFC	ABOVE FINISHED CEILING	MFR	MANUFACTURER
AFF	ABOVE FINISHED FLOOR	MIN	MINIMUM
AFG	ABOVE FINISHED GRADE	MLO	MAIN LUGS ONLY
AHJ	AUTHORITY HAVING JURISDICTION	MLV	MAGNETIC LOW-VOLTAGE
AHU	AIR HANDLING UNIT	MOCP	MAXIMUM OVERCURRENT PROTECTION
AIC	AMPERE INTERRUPTING CAPACITY	MTD	MOUNTED
AS	AMPERE SWITCH SIZE	N/A	NOT APPLICABLE
AT	AMPERE TRIP SETTING	NF	NON-FUSED
ATS	AUTOMATIC TRANSFER SWITCH	NL	NIGHT LIGHT (24HR ON)
AV	AUDIO VISUAL	NRTL	NATIONALLY RECOGNIZED TESTING LABORATORY (CSA, ETL, NSF, UL)
BAS	BUILDING AUTOMATION SYSTEM	NTS	NOT TO SCALE
BKR	BREAKER	OS	OCCUPANCY SENSOR
CO	CONDUIT ONLY	P	POLE
CAT	CATEGORY	PART	PARTIAL CIRCUIT
CATV	CABLE TELEVISION SYSTEM	PHB	PHASE
CCTV	CLOSED CIRCUIT TELEVISION	PNL	PANEL
CD	CANDELA	PNLBD	PANELBOARD
CKT	CIRCUIT	PROVIDE	FURNISH AND INSTALL
CODE	APPLICABLE CODE ADOPTED BY JURISDICTION	PT	POTENTIAL TRANSFORMER
CT	CURRENT TRANSFORMER	QTY	QUANTITY
CTR	CENTER	R/REL	RELOCATE
CVD	CUMULATIVE VOLTAGE DROP	RCPT	RECEPTACLE
D/DEMO	DEMOLITION	RLA	RUNNING LOAD AMPS
DPDT	DOUBLE-POLE, DOUBLE-THROW	RTU	ROOFTOP UNIT
DPST	DOUBLE-POLE, SINGLE-THROW	SCCR	SHORT-CIRCUIT CURRENT RATING
E/ETR/EX	EXISTING TO REMAIN	SD	SMOKE DUCT DETECTOR
EC	ELECTRICAL CONTRACTOR	SF	SQUARE FEET
EF	EXHAUST FAN	SPDT	SINGLE-POLE, DOUBLE-THROW
EM	EMERGENCY	SPST	SINGLE-POLE, SINGLE-THROW
EMS	ENERGY MANAGEMENT SYSTEM	SSBJ	SUPPLY-SIDE BONDING JUMPER
ELV	ELECTRONIC LOW-VOLTAGE	ST	SHUNT TRIP
EWC	ELECTRIC WATER COOLER	SWBD	SWITCHBOARD
FAAP	FIRE ALARM ANNUNCIATOR PANEL	SWGR	SWITCHGEAR
FACP	FIRE ALARM CONTROL PANEL	TBB	TELECOMMUNICATIONS BONDING BACKBONE
FCA	FAULT CURRENT AMPS AVAILABLE	TBD	TO BE DETERMINED
FCU	FAN COIL UNIT	TGB	TELECOMMUNICATIONS GROUND BUS BAR
FF	FINISHED FLOOR	TL	TWISTLOCK
FLA	FULL LOAD AMPS	TMGB	TELECOMMUNICATIONS MAIN GROUND BUS BAR
FLR	FLOOR	TX/XFMR	TRANSFORMER
GC	GENERAL CONTRACTOR	TYP	TYPICAL
GEC	GROUNDING ELECTRODE CONDUCTOR	U/F	UNDERFLOOR
GES	GROUNDING ELECTRODE SYSTEM	U/G	UNDERGROUND
GFR	GROUND FAULT RELAY	U/S	UNDERSLAB
G	GROUND	UH	UNIT HEATER
IG	ISOLATED GROUND	UNO	UNLESS NOTED OTHERWISE
ISC	SHORT CIRCUIT CURRENT	UPS	UNINTERRUPTIBLE POWER SUPPLY
JB/J-BOX	JUNCTION BOX	VD	VOLTAGE DROP
LF	LINEAR FEET	VFD	VARIABLE FREQUENCY DRIVE
LRA	LOCKED ROTOR AMPS	VS	VACANCY SENSOR
LTG/LTS	LIGHTING/LIGHTS	W	WIRE
MAU	MAKE-UP AIR UNIT	W/	WITH
MAX	MAXIMUM	WP	WEATHER PROOF
MCA	MINIMUM CIRCUIT AMPACITY	WR	WEATHER RESISTANT
MCB	MAIN CIRCUIT BREAKER	WT	WATERTIGHT
		XP	EXPLOSION PROOF

LINETYPE LEGEND

THROUGHOUT THE DRAWINGS DIFFERENT LINETYPES ARE USED IN COMBINATION WITH THE SYMBOLS TO INDICATE THE STATUS OF ITEMS AS EXISTING, TO BE DEMOLISHED, TO BE INCLUDED AS PART OF NEW WORK AND/OR ITEMS WHICH ARE ANTICIPATED TO BE PROVIDED IN THE FUTURE. THE STATUS OF ITEMS USING THESE LINETYPES ARE RELATIVE TO THE VIEW IN WHICH THEY APPEAR. PHASING SHOWN IN DRAWINGS IS NOT INTENDED TO FULLY DESCRIBE ALL NECESSARY CONSTRUCTION PHASING, WHICH IS DETERMINED BY THE CONTRACTOR AS PART OF THEIR RESPONSIBILITIES. ANY SUCH PHASES DESCRIBED IN THE CONSTRUCTION DOCUMENTS ARE GENERAL AND ONLY INTENDED TO INDICATE A BROAD ORDER FOR THE SAKE OF DESCRIBING THE PROJECT. THE FOLLOWING LINETYPES MAY BE USED ON ANY DEVICE, EQUIPMENT, NOTE, LINE, SHAPE, ETC.

EXISTING

DEMOLISH

NEW

FUTURE

ANNOTATION

- MECHANICAL OR FIRE PROTECTION PLAN NOTE CALLOUT
- PLUMBING PLAN NOTE CALLOUT
- ELECTRICAL OR FIRE ALARM PLAN NOTE CALLOUT
- TECHNOLOGY PLAN CALLOUT
- PLUMBING EQUIPMENT DESIGNATION. (CONTRACTOR FURNISHED AND INSTALLED). REFER TO PLUMBING FIXTURE OR EQUIPMENT SCHEDULES
- EQUIPMENT DESIGNATION (OWNER FURNISHED, CONTRACTOR INSTALLED)
- MECHANICAL EQUIPMENT DESIGNATION (CONTRACTOR FURNISHED AND INSTALLED UNLESS NOTED OTHERWISE)
- CONNECTION POINT OF NEW WORK TO EXISTING
- DETAIL REFERENCE UPPER NUMBER INDICATES DETAIL NUMBER LOWER NUMBER INDICATES SHEET NUMBER
- SECTION CUT DESIGNATION
- DEDICATED EQUIPMENT ACCESS TILE
- ACCESS PANEL

CIRCUITING & WIRING

HOMERUN TO PANELBOARD. INFORMATION AT ARROWS ARE CIRCUIT NUMBERS AND PANELBOARD FOR TERMINATION. REFER TO PANELBOARD SCHEDULES FOR BRANCH CIRCUIT CONDUCTOR SIZES.

- INDICATES RELAY NUMBER
- CIRCUIT CONTINUATION OR PARTIAL CIRCUIT
- CONDUIT CONCEALED
- CONDUIT CONCEALED (EMERGENCY)
- CONDUIT IN/UNDER FLOOR/GROUND CONSTRUCTION
- EXPOSED CONDUIT
- EXPOSED CONDUIT (EMERGENCY)
- FLEXIBLE CONDUIT
- LOW VOLTAGE CABLE (NOT ROUTED IN CONDUIT)
- CONDUIT TURNING DOWN
- CONDUIT TURNING UP
- CONNECTION POINT OR EQUIPMENT TERMINATION
- EQUIPMENT TERMINATION

CONDUCTOR TICK MARK LEGEND

WHERE TICK MARKS ARE SHOWN, THE FOLLOWING SHALL GOVERN:

- SWITCHED HOT (PHASE) CONDUCTORS (SHOWN TRAILING NEUTRAL)
- NEUTRAL (GROUNDED) CONDUCTOR
- UNSWITCHED HOT (PHASE) CONDUCTORS (SHOWN LEADING NEUTRAL)

NOTE: HASH MARKS INDICATE QUANTITY OF CONDUCTORS

- EQUIPMENT GROUNDING CONDUCTOR IN CONDUIT (GREEN INSULATION OR BARE)
- ISOLATED GROUNDING CONDUCTOR IN CONDUIT (GREEN INSULATION WITH YELLOW TRACER)

BRANCH CIRCUIT CONDUCTOR TABLE

WHERE TICK MARKS ARE NOT SHOWN, THE FOLLOWING SHALL GOVERN:

# OF POLES	HOT (PHASE)*	NEUTRAL (GROUNDED)**	GROUNDING***
1P	(1)	(1) UNO	(1)
2P	(2)	(1) UNO	(1)
3P	(3)	(1) UNO	(1)

* PROVIDE ADDITIONAL CONDUCTORS THROUGH ENTIRE CIRCUIT (SWITCHED, UNSWITCHED/EM, ETC.) AS INDICATED THROUGHOUT CONSTRUCTION DOCUMENTS AND AS REQUIRED FOR A COMPLETE AND WORKING SYSTEM.

** REFER TO SPECIFICATIONS FOR LIMITATIONS ON SHARING NEUTRAL (GROUNDED) CONDUCTORS. DO NOT CIRCUIT AS A MULTI-WIRE BRANCH CIRCUIT, UNO.

*** PROVIDE ADDITIONAL ISOLATED GROUNDING CONDUCTORS WHERE INDICATED.

REFER TO SPECIFICATIONS, PLANS, NOTES, WIRING AND CONTROL DIAGRAMS FOR ADDITIONAL CIRCUITING REQUIREMENTS.

SIGNALING

- SIGNALING BELL
- SIGNALING BUZZER
- LV TRANSFORMER

LIGHTING

- LIGHT FIXTURE
- a = LOWER CASE LETTER IS SWITCH IDENTIFIER
- A = UPPER CASE LETTER INDICATES LIGHT FIXTURE TYPE
- = WALL MOUNT
- = ARROW INDICATED AIMING DIRECTION
- LIGHT FIXTURE CIRCUITED AS A NIGHT LIGHT (NL)
- EMERGENCY LIGHT FIXTURE WITH EMERGENCY LIGHTING BATTERY PACK OR CONNECTED TO EMERGENCY SOURCE
- NIGHT LIGHT/EMERGENCY LIGHT FIXTURE WITH EMERGENCY BATTERY PACK OR CONNECTED TO EMERGENCY SOURCE
- LIGHT FIXTURE WITH DUAL BALLASTS CIRCUITED SEPARATELY (SHADING IMPLIES EMERGENCY LIGHT FIXTURE)
- LIGHTING TRACK (# INDICATES RELAY NUMBER)
- MIRROR LIGHTS
- EXTERIOR PARKING LOT LIGHT FIXTURE
- EXTERIOR PEDESTRIAN POST TOP LIGHT FIXTURE
- EXTERIOR LIT BOLLARD LIGHT
- EXIT SIGN - CEILING / WALL MOUNTED, ARROWS AS INDICATED, FACE HATCHED
- EMERGENCY LIGHTING UNIT EQUIPMENT WITH BATTERY PACK - CEILING/WALL MOUNTED
- AFEA (AREA FOR EVACUATION ASSISTANCE) SIGN - CEILING/WALL MOUNTED, ARROWS AS INDICATED

REFER TO LIGHT FIXTURE SCHEDULE FOR MORE INFORMATION

POWER EQUIPMENT & DEVICES

- ELECTRICAL PANELBOARD (SURFACE OR FLUSH MOUNT)
- ELECTRICAL CABINET (SURFACE OR FLUSH MOUNT), TYP. NOT AS NOTED
- PLYWOOD TERMINAL BOARD FOR TELEPHONE SYSTEM, UNO. SIZE AS NOTED
- SWITCHBOARD OR MOTOR CONTROL CENTER ON HOUSEKEEPING PAD
- ELECTRICAL DISTRIBUTION PANELBOARD
- TRANSFORMER
- DISCONNECT SWITCH - "200/3/150/3R" DENOTES AMPERES/POLE/FUSE/NEMA ENCLOSURE RATING, NF= NON-FUSED, CB= CIRCUIT BREAKER (200/3/CB), NO VALUE (200/3/150) FOR NEMA ENCLOSURE MEANS STANDARD NEMA 1 RATING
- COMBINATION DISCONNECT (SAFETY) SWITCH AND MOTOR STARTER "30/3/15/1/3R" DENOTES AMPERES/POLE/FUSE/NEMA STARTER SIZE/NEMA ENCLOSURE RATING, NF= NON-FUSED, CB= CIRCUIT BREAKER (30/3/CB/1), NO VALUE (200/3/150/1) FOR NEMA ENCLOSURE MEANS STANDARD NEMA 1 ENCLOSURE RATING
- MAGNETIC MOTOR STARTER, NEMA SIZE AS NOTED. 3-POLE, UNO
- VARIABLE FREQUENCY DRIVE
- INDICATING LIGHT
- EMERGENCY POWER OFF BUTTON
- STOP-START PUSH BUTTON CONTROL STATION
- HAND-OFF-AUTO PUSH BUTTON CONTROL STATION
- MUSHROOM-TYPE PUSH BUTTON
- OVERHEAD PADDLE FAN

AUDIO-VISUAL IP END-POINT DEVICES

- TELEVISION WALL OUTLET

BOXES, LIGHTING CONTROL & WIRING DEVICES

SWITCH LETTER DESIGNATIONS AS FOLLOWS:
BLANK = SINGLE
2 = TWO POLE
3 = THREE-WAY
4 = FOUR-WAY
D = DIMMER
F = FAN SPEED CONTROL
FH = FRACTIONAL HORSEPOWER MANUAL CONTROLLER
IH = INTEGRAL HORSEPOWER MANUAL CONTROLLER
K = KEYED
LV# = LOW VOLTAGE / DIGITAL
M = MANUAL MOTOR STARTER DISCONNECT
OS# = OCCUPANCY SENSOR
P = SPST PILOT LIGHT
WP = WEATHER PROOF
# = REFER TO LIGHTING CONTROL DEVICE SCHEDULE

- MULTI-OUTLET ASSEMBLY
- BRANCH CIRCUIT TRANSFER SWITCH
- CEILING / WALL MOUNTED OCCUPANCY SENSOR (# INDICATES TYPE PER SCHEDULE)
  - CORNER 90 DEGREE SENSING
  - ONE-DIRECTION SENSING, CEILING/WALL MOUNT
  - CEILING MOUNT, TWO DIRECTION SENSING
  - CEILING MOUNT, FOUR DIRECTION SENSING
- CONTACTOR (SIZE, COIL VOLTAGE AND NUMBER OF POLES AS INDICATED)
- TRACK-MOUNTED CURRENT LIMITER (## INDICATES AMPERAGE)
- DAYLIGHT SENSOR (# INDICATES TYPE PER SCHEDULE)
- LIGHTING CONTROLS PROCESSOR AND/OR EQUIPMENT
- POWER PACK (# INDICATES TYPE PER SCHEDULE)
- PHOTOELECTRIC SWITCH
- ROOM CONTROLLER (# INDICATES TYPE PER SCHEDULE)
- TIME SWITCH
- SIMPLEX RECEPTACLE - NEMA 5-20R, UNO
- DUPLEX RECEPTACLE - NEMA 5-20R, UNO
- DOUBLE DUPLEX RECEPTACLE - NEMA 5-20R, UNO
- SPECIAL RECEPTACLE - NEMA TYPE AS NOTED
- TWIST-LOCK TYPE RECEPTACLE
- BLANK FACE GFCI FED THROUGH DEVICE
- GFCI FED OR IG
- GFCI TYPE RECEPTACLE*
- ISOLATED GROUND TYPE RECEPTACLE* FED OR IG
- EMERGENCY RECEPTACLE* FED OR EM
- RECEPTACLE INSTALLED ABOVE COUNTER OR BACKSPLASH*
- RECEPTACLE INSTALLED IN CEILING*
- RECEPTACLE INSTALLED IN FLOOR*
- RECEPTACLE INSTALLED VIA DROP CORD*

RECEPTACLE LETTER DESIGNATIONS AS FOLLOWS:
C = AUTOMATICALLY CONTROLLED
CH = CLOCK HANGER TYPE
G=RCPT PROTECTED BY GFCI CIRCUIT BREAKER OR UPSTREAM GFCI DEVICE
H = HORIZONTALLY MOUNTED
S = MANUALLY CONTROLLED
SP / TVSS = SURGE PROTECTION
TR = TAMPER RESISTANT
TV = TELEVISION
USB = USB/DUPLEX
WP = WEATHER PROOF COVER
WR = WEATHER RESISTANT

- MULTI-OUTLET ASSEMBLY
- TELEPHONE OUTLET
- DATA OUTLET
- MULTI-SERVICE OUTLET; TELEPHONE AND DATA
  - ABOVE COUNTER, TYP
  - WALL, TYP
  - FLOOR, TYP
- MULTI-SERVICE POWER POLE WITH TELEPHONE, DATA AND POWER OUTLETS A = TYPE, REFER TO PLANS, SCHEDULES AND SPECIFICATIONS
- MULTI-SERVICE FLOOR BOX WITH TELEPHONE, DATA AND POWER OUTLETS A = TYPE, REFER TO PLANS, SCHEDULES AND SPECIFICATIONS
- POKE THROUGH, A = TYPE, REFER TO PLANS, SCHEDULES AND SPECIFICATIONS
- THERMOSTAT
- CEILING/FLOOR MOUNT JUNCTION/OUTLET BOX
- WALL MOUNT JUNCTION/OUTLET BOX

* SYMBOL DEMONSTRATED WITH DUPLEX RECEPTACLE, WHEN USED IN COMBINATION WITH OTHER DEVICES MEANING IS SIMILAR FOR THOSE DEVICE TYPES.

REFER TO LIGHTING CONTROL DEVICE SCHEDULE FOR MORE INFORMATION.

ELECTRICAL ONE-LINE & RISER DIAGRAM

- SWITCH (RATING AS INDICATED)
- DRAWOUT CIRCUIT BREAKER (RATINGS AS INDICATED)
- FUSED SWITCH (RATING, POLES AND FUSE TYPE AS INDICATED)
- COMBINATION FUSED SWITCH/STARTER AND STARTER SIZE
- CIRCUIT BREAKER (RATINGS AS INDICATED)
- COMBINATION CIRCUIT BREAKER/STARTER AND STARTER SIZE
- PANELBOARD, SINGLE OR MULTI-SECTION (REFER TO SCHEDULES)
- ISOLATED POWER PANELBOARD W/ INTEGRAL TRANSFORMER (REFER TO SCHEDULES)
- TRANSFORMER (TYPE AND RATINGS AS INDICATED)
- SHIELDED TRANSFORMER (TYPE AND RATINGS AS INDICATED)
- AUTOMATIC TRANSFER SWITCH (RATINGS AS INDICATED)
- AUTOMATIC TRANSFER SWITCH WITH BYPASS (RATINGS AS INDICATED)
- GENERATOR (RATINGS AS INDICATED)
  - NON-SEPARATELY DERIVED SOURCE OR SEPARATELY DERIVED SOURCE
- SWITCHGEAR, SWITCHBOARD AND/OR DISTRIBUTION PANELBOARD (TYPE, RATING, DEVICES AND ACCESSORIES AS INDICATED)
- COMBINATION DIGITAL VOLT METER/AMMETER
- CIRCUIT IDENTIFICATION (REFER TO CIRCUIT SCHEDULE)
- GROUND FAULT RELAY
- PHASE FAILURE RELAY
- KIRK-KEY INTERLOCK (# INDICATES KEY PAIR)
- SHUNT TRIP
- AMMETER (RANGE AS SPECIFIED OR REQUIRED)
- VOLTMETER (RANGE AS SPECIFIED OR REQUIRED)
- UTILITY METER (AS REQUIRED BY UTILITY)
- AMMETER SWITCH
- VOLTMETER SWITCH
- WATT-HOUR METER, "D" DENOTES DEMAND REGISTER, "15" DENOTES MINUTES OF DEMAND INTERVAL
- CURRENT TRANSFORMER RATING AS SPECIFIED OR REQUIRED
- POTENTIAL TRANSFORMER RATING AS SPECIFIED OR REQUIRED
- SURGE-PROTECTIVE DEVICE
- GROUND CONNECTION
- GROUND CONNECTION WITH TEST WELL
- GROUND ROD
- LIGHTNING ARRESTER
- CAPACITOR
- CONTACT (OPEN OR CLOSED)
- HEATER
- MOTOR
- BLOCK LOAD KW OR KVA
- FAULT POINT REFERENCED IN SHORT CIRCUIT CURRENT AND VOLTAGE DROP SPREADSHEET

CALL OUTS

- ENLARGED PLAN CALLOUT
- NOT IN SCOPE

APPLICABLE CODES:

2019 CALIFORNIA BUILDING CODE (BASED ON THE 2018 INTERNATIONAL BUILDING CODE) WITH 2020 EDITION COUNTY OF LOS ANGELES BUILDING CODE AMENDMENTS

2019 CALIFORNIA RESIDENTIAL CODE (BASED ON THE 2018 INTERNATIONAL RESIDENTIAL CODE) WITH 2020 EDITION COUNTY OF LOS ANGELES RESIDENTIAL CODE AMENDMENTS

2019 CALIFORNIA GREEN BUILDING STANDARDS CODE WITH 2020 EDITION COUNTY OF LOS ANGELES GREEN BUILDING STANDARDS AMENDMENTS

2019 CALIFORNIA EXISTING BUILDING CODE (BASED ON THE 2018 INTERNATIONAL EXISTING BUILDING CODE) WITH 2020 EDITION COUNTY OF LOS ANGELES EXISTING BUILDING CODE AMENDMENTS

2019 CALIFORNIA MECHANICAL CODE (BASED ON THE 2018 UNIFORM MECHANICAL CODE)

2019 CALIFORNIA ELECTRICAL CODE (BASED ON THE 2017 NATIONAL ELECTRICAL CODE)

2019 CALIFORNIA PLUMBING CODE (BASED ON 2018 UNIFORM PLUMBING CODE)

2019 CALIFORNIA ENERGY CODE

Sheet List - Electrical

Sheet Number	Sheet Name	Sheet Order
E0.00	ELECTRICAL GENERAL NOTES AND LEGEND	
E1.01	ELECTRICAL SITE PLAN	
E2.01	ELECTRICAL LIGHTING PLAN	
E2.02	EGRESS PHOTOMETRICS	
E3.01	ELECTRICAL POWER PLAN	
E3.02	POWER ROOF PLAN	
E4.01	ELECTRICAL ONE-LINE DIAGRAM	
E4.02	ELECTRICAL PANEL SCHEDULES	
E5.01	ELECTRICAL LIGHTING CONTROLS & SCHEDULES	
E5.02	ELECTRICAL DETAILS	
E6.01	TITLE 24 ENERGY COMPLIANCE FORMS	
E6.02	TITLE 24 ENERGY COMPLIANCE FORMS	
G3.50	ELECTRICAL SPECIFICATIONS	
G3.51	ELECTRICAL SPECIFICATIONS	
G3.52	ELECTRICAL SPECIFICATIONS	

Grand total: 15

SCOPE OF WORK:

RENOVATION AND EXPANSION OF EXISTING FIRE STATION 163 INCLUDING THE CONSOLIDATION OF TWO SEPARATE EXISTING ELECTRICAL SYSTEMS SERVING THE PROPERTY TO A SINGLE NEW 400 AMP 208Y/120V, 3 PHASE, 4 WIRE SERVICE, NEW POWER AND LIGHTING FOR FIREFIGHTER'S DORMS AND UTILITY ROOM, TITLE 24 COMPLIANCE AND EGRESS PHOTOMETRICS.

ELECTRICAL GENERAL NOTES:

1. CONTRACTOR'S BID SHALL INCLUDE PROVISIONS TO PROVIDE ALL SERVICES RELATED TO THE CODE REQUIRED BUILDING SYSTEMS COMMISSIONING INCLUDING A COMMISSIONING PLAN, FUNCTIONAL PERFORMANCE AND ACCEPTANCE TESTING, AND RELATED DOCUMENTATION, REPORTS AND OWNER TRAINING. THIS INCLUDES RETAINING THE SERVICES OF A 3RD PARTY REGISTERED DESIGN PROFESSIONAL OR APPROVED AGENCY AND CERTIFIED LIGHTING CONTROLS ACCEPTANCE TEST TECHNICIAN (CLCATT), AS REQUIRED. REFER TO THE LATEST ADOPTED EDITION OF THE CALIFORNIA TITLE 24 PART 6 AND PART 11 FOR MORE INFORMATION. CONTRACTOR SHALL COMPLETE ALL RELATED COMMISSIONING REQUIREMENTS PRIOR TO FINAL INSPECTIONS IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS, CODE AND MANUFACTURER'S INSTRUCTIONS.
2. ALL APPLICABLE LIGHT FIXTURES, EXIT SIGNS AND LIGHTING CONTROL DEVICES AS INSTALLED SHALL COMPLY WITH THE LATEST ADOPTED EDITION OF CALIFORNIA TITLE 24 PART 6 SECTION 110.0, AND ANY OTHER STATE AND LOCAL REQUIREMENTS.
3. OUTDOOR LIGHTING SYSTEMS SHALL COMPLY WITH THE LATEST ADOPTED EDITION OF THE CALIFORNIA GREEN BUILDING STANDARDS CODE, TITLE 24 PART 11, (CALGREEN), SECTION 5.106.8 LIGHT POLLUTION REDUCTION AND OTHER APPLICABLE CODE REQUIREMENTS.

ELECTRICAL SUPPLEMENTAL SPECIFICATIONS:

1. PRIOR TO SUBMITTING BID, VISIT THE JOB SITE AND BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS, AS APPLICABLE. REVIEW THEOWNER CRITERIA, GENERAL NOTES, OTHER TRADE DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS THAT MAY NOT BE CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT AND ENGINEER OF ANY CONFLICTS OR DISCREPANCIES PRIOR TO SUBMITTING BID.
2. ALL WORK SHALL CONFORM TO ALL LOCAL CODES AND ORDINANCES AS WELL AS APPLICABLE INDUSTRY STANDARDS. ALL EQUIPMENT SHALL BEAR LABELS FOR THE USE INTENDED BY AN AHJ ACCEPTED NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL), SUCH AS UL OR ETL. THE FINAL ELECTRICAL INSTALLATION OF THE FACILITY OCCUPIED BY OWNER SHALL BE FREE FROM ELECTRICAL DEFECTS TO THE SATISFACTION OF THE AHJ, OWNER, ARCHITECT AND ENGINEER.
3. COORDINATE FINAL LOCATION AND INSTALLATION REQUIREMENTS OF ALL LIGHT FIXTURES, ELECTRICAL EQUIPMENT AND ELECTRICAL DEVICES WITH ARCHITECTURAL DRAWINGS, EXISTING CONDITIONS AND OTHER TRADES PRIOR TO ROUGH-IN. PROVIDE ALL NECESSARY DEVICES, CONDUITS, PLUGS, DISCONNECTS AND FINAL CONNECTIONS TO ELECTRICAL EQUIPMENT FOR PROPER OPERATION IN ACCORDANCE WITH CODE, OWNER AND MANUFACTURER REQUIREMENTS.
4. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC/SCHEMATIC IN NATURE AND REPRESENT THE GENERAL SCOPE OF WORK. IT IS NOT WITHIN THE SCOPE OF THE ELECTRICAL DRAWINGS TO SHOW ALL NECESSARY RACEWAY ROUTING, BENDS, OFFSETS, PULL BOXES AND OBSTRUCTIONS. CONTRACTOR SHALL COORDINATE THE FINAL LOCATION OF EQUIPMENT AND WIRING DEVICES WITH OTHER TRADES PRIOR TO INSTALLATION AND INSTALL ALL WORK TO CONFORM TO THE OWNER REQUIREMENTS.
5. ALL CONDUCTOR AND CONDUIT LENGTHS SHOWN IN THESE DESIGN DOCUMENTS ARE INTENDED SOLELY FOR USE IN THE DESIGN CALCULATIONS BY THE DESIGN PROFESSIONAL, UNLESS NOTED OTHERWISE. LENGTHS SHOWN SHALL NOT BE USED TO ASSIST IN THE BIDDING OR TAKEOFF PROCESS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE MATERIAL QUANTITIES REQUIRED TO BID AND CONSTRUCT THE COMPLETE PROJECT.
6. PROVIDE PROPER FIRE PROOFING AND SEALANT FOR PENETRATIONS THROUGH FIRE RATED ASSEMBLIES. THE FIRE STOPPING METHOD, MATERIAL AND ITS APPLICATION SHALL BE NRTL LISTED, CODE COMPLIANT AND APPROVED BY AHJ.
7. FOR CAST-IN-PLACE CONCRETE, TILT-UP WALLS, PRECAST OR SIMILAR PRE-ENGINEERED WALL SYSTEMS, COORDINATE THE FINAL LOCATION OF ALL ELECTRICAL DEVICES, RACEWAYS, LIGHT FIXTURES AND PENETRATIONS WITH ARCHITECT, WALL SUPPLIER AND OTHER TRADES PRIOR TO WALL CONSTRUCTION. CONDUIT/RACEWAY IMBEDDED IN CONCRETE WALLS SHALL BE SCHEDULE 80 PVC OR LFMC. OTHER TYPES MAY BE ALLOWED IF APPROVED BY WALL SYSTEM MANUFACTURER AND ENGINEER.
8. WHEN CONCRETE TRENCHING/CORING IS REQUIRED, THE METHODS, DEPTHS, AND LOCATIONS SHALL BE PRE-APPROVED BY OWNER, ARCHITECT, AND STRUCTURAL ENGINEER PRIOR TO THE START OF WORK. X-RAY SLAB AS NECESSARY TO AVOID DAMAGING ANY UNDER-SLAB UTILITIES OR STRUCTURE. SLAB REPLACEMENT SHALL BE INSTALLED WITH DOWELLING AND REINFORCED CONCRETE AS DIRECTED BY THE STRUCTURAL ENGINEER. WHERE SLAB ON GRADE IS SAW-CUT AND REMOVED FOR TRENCHING THE CONTRACTOR SHALL INSTALL MOISTURE BARRIER PER OWNER'S REQUIREMENTS. PROVIDE 3/4" MINIMUM CONDUITS ROUTED THROUGH SLAB AND STUBBED UP INTO DEVICES. FOR SLAB ON DECK, THE FLOOR SHALL BE SLEEVED AND EQUIPPED WITH THE APPROPRIATE LISTED ASSEMBLY. PROVIDE 3/4" MINIMUM CONDUITS ROUTED BELOW SLAB, TIGHT TO STRUCTURE, AND STUBBED UP INTO DEVICES.
9. ALL APPLICABLE SWITCHES, RECEPTACLES, OUTLETS, AND CONTROLS SHALL BE PLACED AT HEIGHTS THAT ARE IN ACCORDANCE WITH ADA ACCESSIBILITY GUIDELINES.
10. COORDINATE FLOOR MOUNTED BOX, RECEPTACLE, AND COVER PLATE TYPES WITH ARCHITECT AND OWNER PRIOR TO ORDER.
11. WIRING DEVICES ADJACENT TO EACH OTHER SHALL BE INSTALLED UNDER A SINGLE COVER PLATE, UNO.
12. WIRING DEVICES SHOWN BACK-TO-BACK ON A COMMON WALL SHALL BE OFFSET A MINIMUM OF 12" HORIZONTALLY TO REDUCE SOUND TRANSMISSION BETWEEN ROOMS, UNO.
13. ALL WP OUTLET BOX HOODS SHALL BE "EXTRA-DUTY" AND "WHILE-IN-USE COVER" TYPE. OUTLET BOX HOODS SHALL BE LOW PROFILE WHEREVER PRACTICABLE, UNLESS NOTED OTHERWISE. THE USE OF LARGE BUBBLE COVERS SHALL BE AVOIDED ON THE EXTERIOR OF THE BUILDING OR BEHIND EQUIPMENT IN ORDER TO PREVENT DAMAGE TO THE COVER AND TO ALLOW THE EQUIPMENT TO BE LOCATED CLOSE TO THE WALL.
14. ALL RECEPTACLES AND APPLIANCES SHALL BE GFCI PROTECTED IN LOCATIONS REQUIRED BY CODE; THIS INCLUDES BATHROOMS, KITCHENS/FOOD PREP AREAS, EXTERIOR LOCATIONS AND RECEPTACLES WITHIN 6 FEET OF A SINK. GFCI DEVICES SHALL BE READILY ACCESSIBLE AND SHALL NOT BE LOCATED BEHIND OBSTACLES. LABEL WIRING DEVICES PROTECTED BY AN UPSTREAM GFCI DEVICE.
15. PROVIDE TAMPER-RESISTANT (TR) TYPE RECEPTACLES AT ALL CODE REQUIRED LOCATIONS AND AT LOCATIONS WHERE RECEPTACLES ARE MOUNTED LESS THAN 5'-6" AFF AND ARE EASILY ACCESSIBLE BY CHILDREN, UNLESS NOTED OTHERWISE.
16. FLEXIBLE CONDUIT IS ONLY PERMITTED WHERE SPECIFICALLY ALLOWED IN THE CONSTRUCTION DOCUMENTS. WHERE CONCEALED FROM VIEW OR EXPOSED FINAL CONNECTIONS TO LIGHT FIXTURES AND EQUIPMENT IN LENGTHS OF 6'-0" OR LESS.
17. ALL EMPTY CONDUIT/RACEWAY SHALL BE INSTALLED WITH PULL STRINGS. TERMINATE CONDUIT STUB-UP WITH A NYLON BUSHING.
18. EXPOSED CONDUIT/RACEWAY SHALL BE PAINTED TO MATCH ADJACENT SURFACE, UNLESS NOTED OTHERWISE. COORDINATE REQUIREMENTS WITH ARCHITECT AND OWNER PRIOR TO INSTALLATION.
19. CONDUITS/RACEWAYS SHALL BE CONCEALED FROM VIEW WHEREVER PRACTICABLE, UNLESS NOTED OTHERWISE. ROUTE CONDUITS SERVING ROOFTOP EQUIPMENT CONCEALED INSIDE EQUIPMENT CURB AND MINIMIZE ROOF PENETRATIONS AND EXTERIOR CONDUIT RUNS WHERE PRACTICABLE. SUPPORT RACEWAY FROM STRUCTURE, NOT ROOF DECK. MAINTAIN 2" MIN SPAC

SITE ELECTRICAL GENERAL NOTES:

1. REFER TO CIVIL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION, COORDINATE THE FINAL LOCATION OF ALL SITE LIGHTING POLES, SIGNAGE, UNDERGROUND UTILITIES, CONDUITS, CIRCUITRY, TRANSFORMERS AND OTHER EQUIPMENT WITH CIVIL DRAWINGS, LANDSCAPING DRAWINGS AND OWNER PRIOR TO INSTALLATION.
2. COORDINATE ALL SITE ELECTRICAL REQUIREMENTS WITH EQUIPMENT MANUFACTURER INFORMATION AND OTHER TRADES AND ADJUST ELECTRICAL PROVISIONS AS REQUIRED TO MEET REQUIREMENTS.
3. SITE ELECTRICAL CONDUITS SHALL BE 1" MINIMUM, UNLESS NOTED OTHERWISE. WHERE PRACTICABLE, ALL SITE ELECTRICAL CONDUITS SHALL BE INSTALLED A MINIMUM OF 24" BELOW GRADE, UNLESS NOTED OTHERWISE. COORDINATE FINAL CONDUIT ROUTING WITH EXISTING OBSTRUCTIONS AND OTHER TRADES AND ADJUST AS NECESSARY.
4. CAP AND MARK ALL UNDERGROUND CONDUITS PROVIDED FOR FUTURE USE AND INCLUDE PULL STRINGS. PROVIDE DIMENSIONED LOCATIONS OF TERMINATION POINTS ON AS-BUILT DRAWINGS AND SUBMIT TO OWNER.
5. MINIMUM WIRE SIZE FOR SITE ELECTRICAL CIRCUITS SHALL BE #10 AWG CU, UNLESS NOTED OTHERWISE. ALL SITE ELECTRICAL BRANCH CIRCUIT WIRING SHALL BE SIZED SUCH THAT THE MAXIMUM BRANCH CIRCUIT VOLTAGE DROP IS LESS THAN 3 PERCENT.
6. PROVIDE SPLICE AND PULL BOXES FOR SITE LIGHTING AND SITE ELECTRICAL POWER TO LIMIT MAXIMUM CONDUIT RUN TO 300'. PLACE BOXES IN A PLANTER AREA CLEAR OF VEGETATION WHEREVER PRACTICABLE; (COORDINATE FINAL LOCATION WITH CIVIL, LANDSCAPE CONTRACTOR AND OWNER). BOXES SHALL BE SUITABLE FOR LOCATION AND PROPERLY SIZED FOR QUANTITY AND SIZE OF CONDUITS IN AND OUT AND SHALL BE MARKED "ELECTRICAL", NOT ALL OF THESE BOXES ARE SHOWN ON SITE ELECTRICAL DRAWINGS; CONTRACTOR SHALL PROVIDE LOCATION ON AS-BUILT DRAWINGS AND SUBMIT TO OWNER. SPLICE BOX SHALL BE APPROPRIATE FOR LOCATION AND SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. SPLICE BOX SHALL HAVE A MINIMUM NOMINAL SIZE OF 12"X12"X12", SHALL BE AN OPEN BOTTOM NRTL LISTED UNDERGROUND ENCLOSURE, AND SHALL AT A MINIMUM BE TIER 15 TRAFFIC RATED.
7. ALL EXTERIOR SITE LIGHTING EXISTING TO REMAIN UNLESS NOTED OTHERWISE.

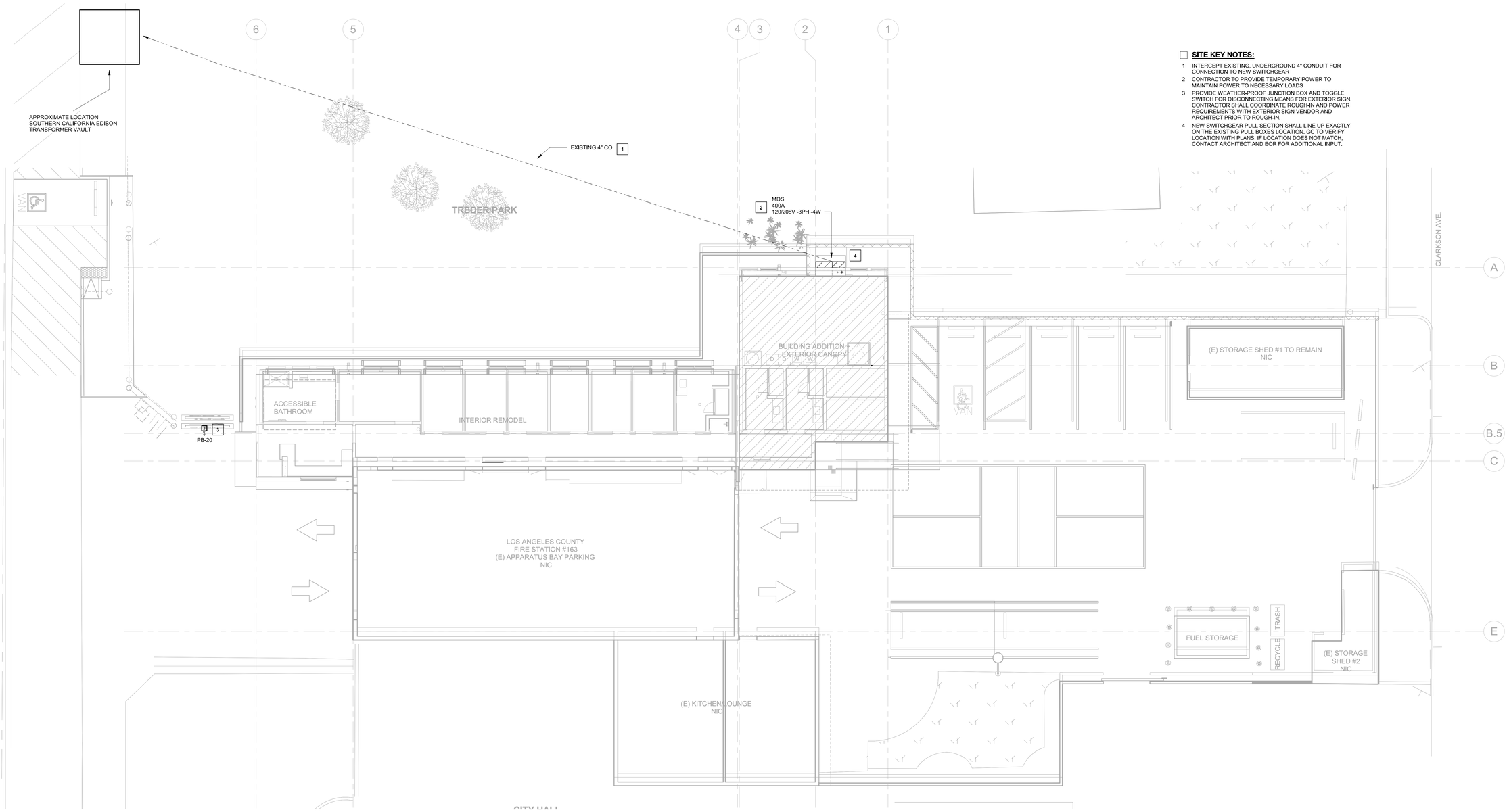
SITE KEY NOTES:

1 INTERCEPT EXISTING, UNDERGROUND 4" CONDUIT FOR CONNECTION TO NEW SWITCHGEAR

2 CONTRACTOR TO PROVIDE TEMPORARY POWER TO MAINTAIN POWER TO NECESSARY LOADS

3 PROVIDE WEATHER-PROOF JUNCTION BOX AND TOGGLE SWITCH FOR DISCONNECTING MEANS FOR EXTERIOR SIGN. CONTRACTOR SHALL COORDINATE ROUGH-IN AND POWER REQUIREMENTS WITH EXTERIOR SIGN VENDOR AND ARCHITECT PRIOR TO ROUGH-IN.

4 NEW SWITCHGEAR PULL SECTION SHALL LINE UP EXACTLY ON THE EXISTING PULL BOXES LOCATION. GC TO VERIFY LOCATION WITH PLANS. IF LOCATION DOES NOT MATCH, CONTACT ARCHITECT AND EOR FOR ADDITIONAL INPUT.



PLAN NORTH TRUE NORTH

1 ELECTRICAL SITE PLAN

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

AHJ STAMP APPROVAL

BUILDING AND SAFETY APPROVED

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OMID MOTTAHED No. E-18488 REGISTERED PROFESSIONAL ENGINEER ELECTRICAL STATE OF CALIFORNIA EXPIRES: 06/30/2024

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NAC NO	161-21001
DRAWN	GARREN BUI
CHECKED	CURTIS OLDS
DATE	10/05/2026

ELECTRICAL SITE PLAN

CD

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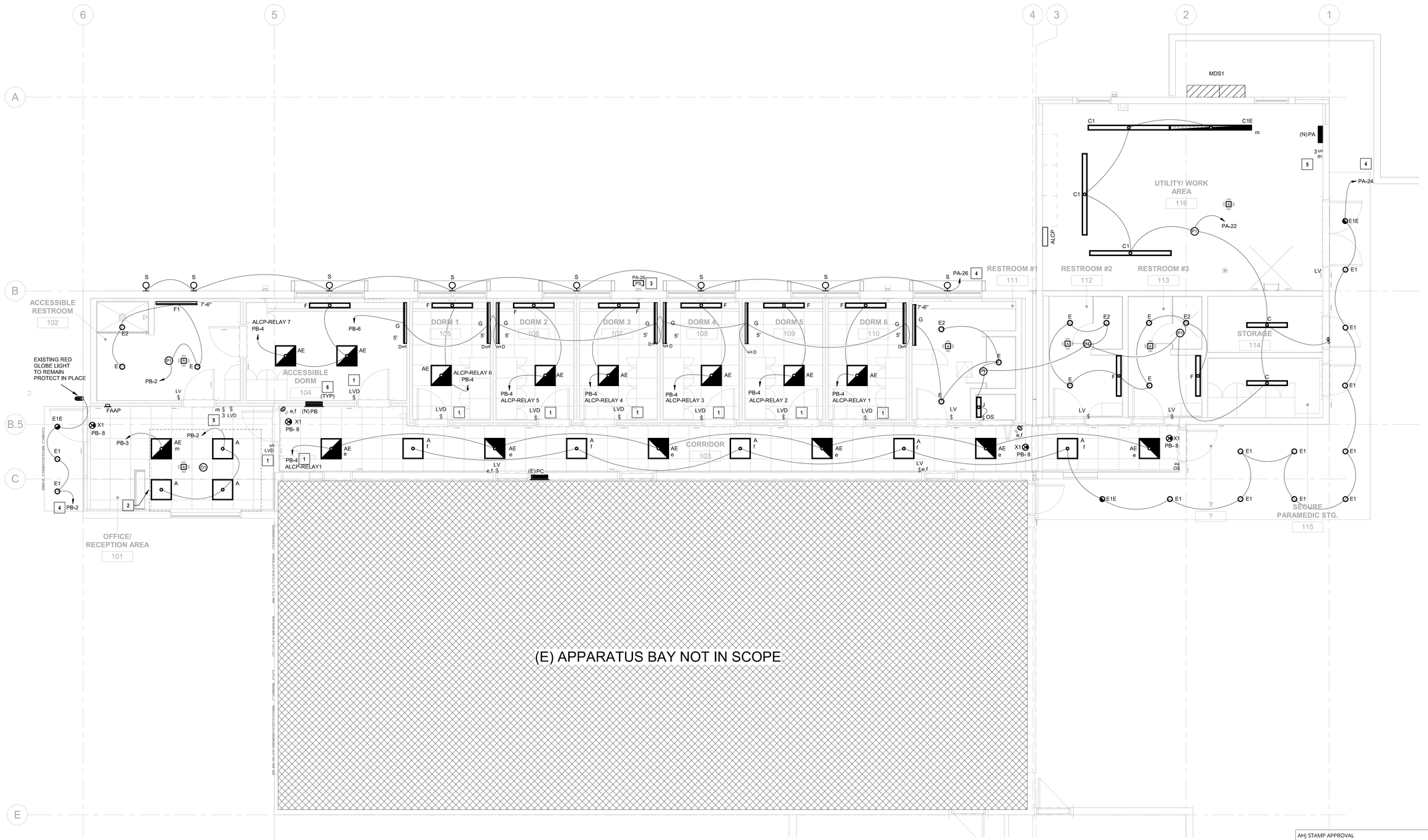
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LIGHTING GENERAL NOTES:

1. THE EMERGENCY LIGHTING SYSTEM HAS BEEN DESIGNED TO PROVIDE AN INITIAL FLOOR ILLUMINANCE LEVEL OF 1 FC AVERAGE, 0.1 FC MINIMUM AND NO MORE THAN A 40:1 MAX/MIN RATIO ALONG THE EMERGENCY EGRESS PATHS.
2. WALL MOUNTED EXITS SIGNS SHALL BE MOUNTED 12" ABOVE DOOR FRAME AND CENTERED ABOVE DOOR OPENING, UNLESS NOTED OTHERWISE. EXIT SIGNS SHALL BE READILY VISIBLE FROM DIRECTION OF EGRESS TRAVEL. COORDINATE FINAL EXIT SIGN LOCATIONS WITH AHJ AND OWNER.
3. PROVIDE LABEL AT EACH MANUAL LIGHT SWITCH INDICATING THE LIGHT FIXTURE(S) THAT THE SWITCH CONTROLS AND THE RESPECTIVE "PNLBD-CKT#" DESIGNATION. A SINGLE LIGHT SWITCH FOR A SMALL ROOM DOES NOT NEED TO INDICATE THE SPACE CONTROLLED SINCE IT IS INTUITIVELY OBVIOUS. COORDINATE LABEL REQUIREMENTS WITH THE OWNER PRIOR TO INSTALLATION. REFER TO THE SPECIFICATIONS FOR MORE INFORMATION.
4. ALL REMOTELY LOCATED LIGHT FIXTURE POWER SUPPLIES SHALL BE LOCATED IN AN ACCESSIBLE LOCATION WITH PROPER VENTILATION IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. CONCEAL DEVICES AND RELATED WIRING FROM CUSTOMER/PUBLIC VIEW. PROVIDE ENCLOSURE IF REQUIRED. COORDINATE LOCATION AND ENCLOSURE TYPE WITH ARCHITECT AND OWNER PRIOR TO INSTALLATION.

LIGHTING KEY NOTES:

1. CIRCUIT HOT & PURPLE 0-10V DIMMING LEG VIA ALCP. REFER TO DETAIL 1/E5.02
2. DASHED LINED REPRESENTS DAYLIGHT ZONE.
3. EXTERIOR LINE-VOLTAGE PHOTOELECTRIC SWITCH, FACE SENSOR NORTH AND ORIENT VERTICALLY. 0-15 FC. 30 SECOND DELAY
4. ROUTE THROUGH ALCP & REFER TO SEQUENCE OF OPERATIONS FOR ADDITIONAL REQUIREMENTS.
5. PROVIDE A 3-WAY ELECTRICAL MAINTENANCE OVERRIDE SWITCH TO BYPASS THE AUTOMATIC LIGHTING CONTROLS WHILE WORKING ON ELECTRICAL PANELS (PER NEC 110.26D). LABEL SWITCH "ELECTRICAL MAINTENANCE OVERRIDE SWITCH". SWITCH POSITIONS: "NORMAL OPERATION" AND "MAINTENANCE OVERRIDE". INSTALL SWITCH POSITION TO BE UP FOR NORMAL. UNDER NORMAL OPERATION, SWITCH SHALL BE WIRED FOR OCCUPANCY SENSORS FOR CONTROL LIGHTING. DURING ELECTRICAL MAINTENANCE, SWITCH SHALL BE WIRED TO BYPASS OCCUPANCY SENSOR TO "ON".
6. LIGHT FIXTURES NOTED IN THIS ROOM ARE EXEMPT LIGHTING POWER DENSITY PER 140.6(A)3.M "LIGHTING IN DWELLING UNITS".



PLAN NORTH TRUE NORTH

1 LIGHTING LEVEL 1 RCP
Scale: 1/4" = 1'-0"

AHJ STAMP APPROVAL

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OMID M. MOTTAHED
REGISTERED PROFESSIONAL ENGINEER
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04/14/2023

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DRAWN	GARREN BUI
CHECKED	CURTIS OLDS
DATE	10/05/2026

ELECTRICAL LIGHTING PLAN

CD

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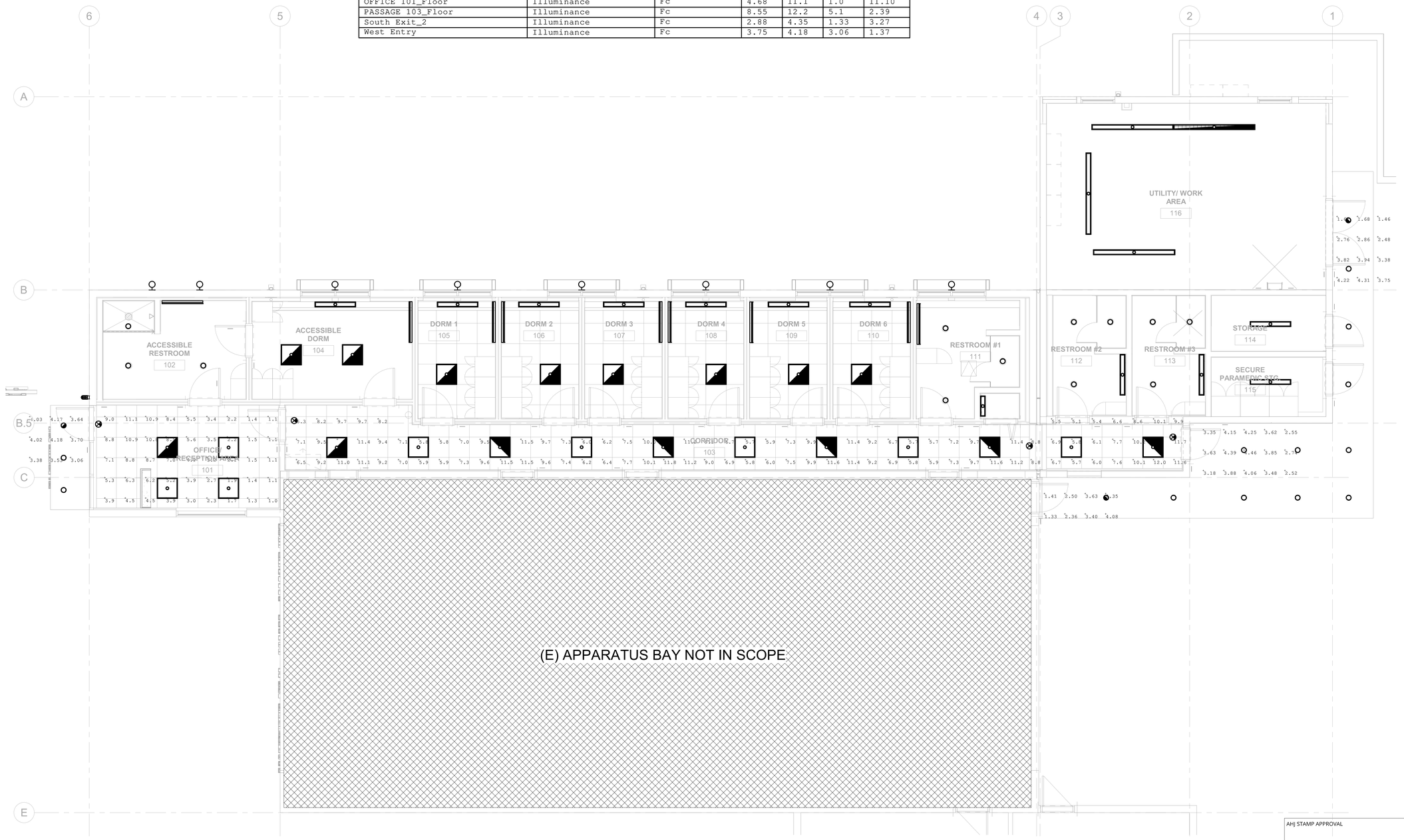
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☐ **ELECTRICAL PLAN NOTES:**

Luminaire Schedule						
Symbol	Qty	Label	Arrangement	Total Lamp Lumens	LLF	Description
	7	22CZ2-39-UNV-L840-CD1-U	SINGLE	N.A.	0.380	22CZ2-39-UNV-L840-CD1-U
	4	SP-00602_6 ~ SGE6LEDFX-30L35K	SINGLE	N.A.	0.252	SGx6LEDFX-30L35KDX-AR6223FX-MW-SO

Calculation Summary						
Label	CalcType	Units	Avg	Max	Min	Max/Min
Middle Exit_1	Illuminance	Fc	3.61	4.46	2.52	1.77
North Exit	Illuminance	Fc	3.02	4.31	1.46	2.95
OFFICE 101_Floor	Illuminance	Fc	4.68	11.1	1.0	11.10
PASSAGE 103_Floor	Illuminance	Fc	8.55	12.2	5.1	2.39
South Exit_2	Illuminance	Fc	2.88	4.35	1.33	3.27
West Entry	Illuminance	Fc	3.75	4.18	3.06	1.37



PLAN NORTH / TRUE NORTH

1 LIGHTING LEVEL 1 RCP PHOTOMETRICS

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

AHJ STAMP APPROVAL

BUILDING AND SAFETY APPROVED

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CHECKED	CURTIS OLDS
DATE	10/05/2026

EGRESS PHOTOMETRICS

CD

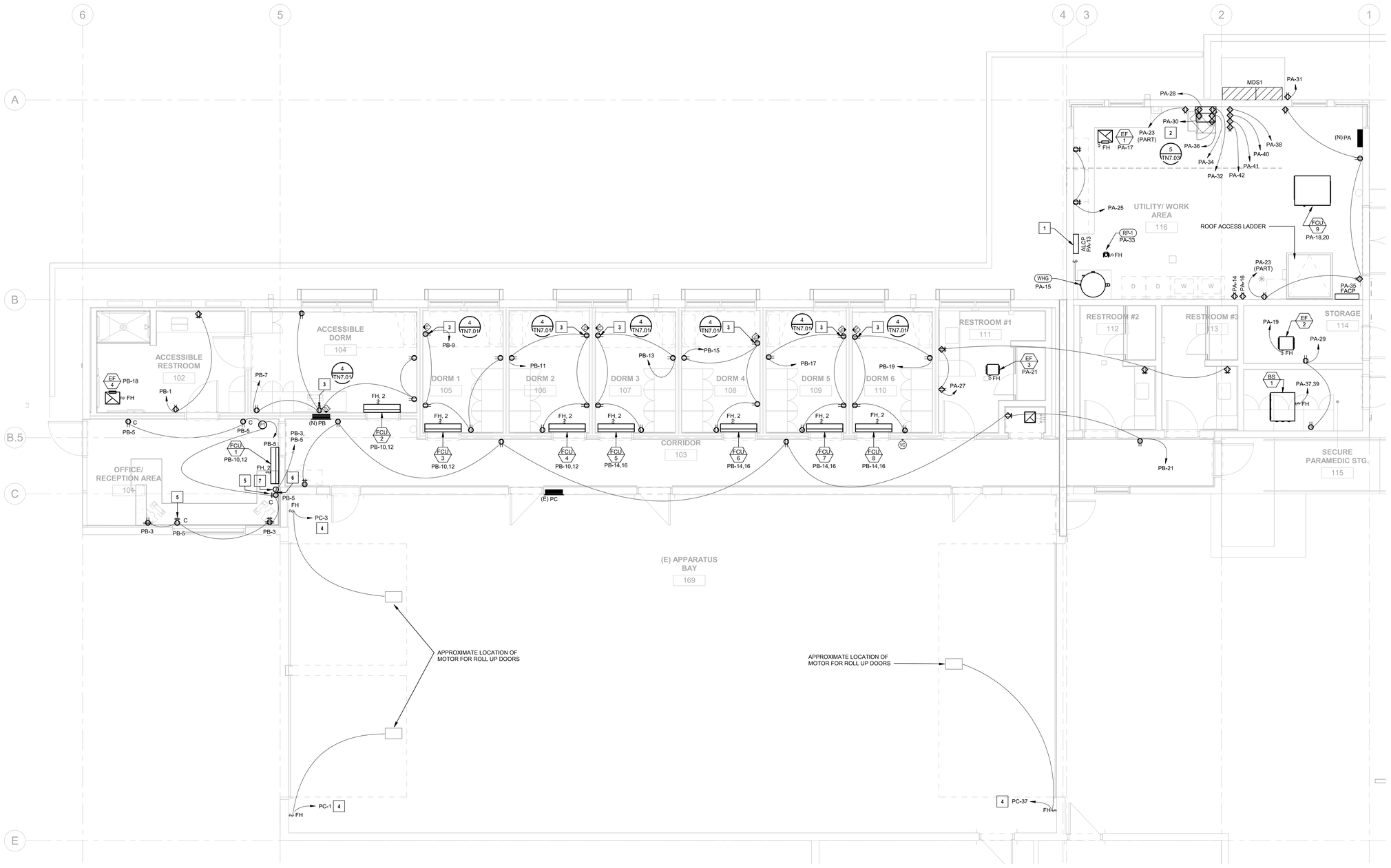
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☐ ELECTRICAL PLAN NOTES:

1. PLYWOOD BACKBOARD "URB". PLYWOOD SHALL BE TREATED WITH FIRE RETARDANT CHEMICAL AND BE PAINTED WITH TWO COATS OF FLAT WHITE PAINT FRONT, BACK AND ALL EDGES.
2. FINAL LOCATION AND REQUIREMENTS TO BE VERIFIED WITH VENDOR PRIOR TO ROUGH-IN.
3. TO BE INSTALLED WITHIN AV BOX. REFER TO DIVISION 27 SHEETS.
4. VERIFY AND RECONNECT TO EXISTING CIRCUIT FOR ROLL UP DOORS. VERIFY EXISTING CIRCUIT BREAKER IS 20A. NOTIFY EOR IF NOT.
5. PROVIDE MOCKETT PCSIA/HW ON DESK TOP. CIRCUIT AS SHOWN.
6. ROUTE POWER TO DESK USING AC CABLE.
7. PROVIDE JUNCTION BOX TO CONNECT POWER TO FURNITURE.



PLAN NORTH TRUE NORTH

1 POWER LEVEL 1 PLAN

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

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BIDDING SET

REVISIONS

ISSUED FOR PERMIT

OMID MOTTAHED No. E-18488 EXPIRES: 06/30/2024 ELECTRICAL STATE OF CALIFORNIA REGISTERED PROFESSIONAL ENGINEER

04/14/2023

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FIRE STATION 163

6320 PINE AVENUE, BELL, CA 90201

NAC ARCHITECTURE
nacarchitecture.com
1203 WEST RIVERSIDE AVE
SPOKANE WA 99201
P:509.838.8240

NAC NO	161-21001
DRAWN	GARREN BUI
CHECKED	CURTIS OLDS
DATE	10/05/2026

ELECTRICAL POWER PLAN

CD

E3.01

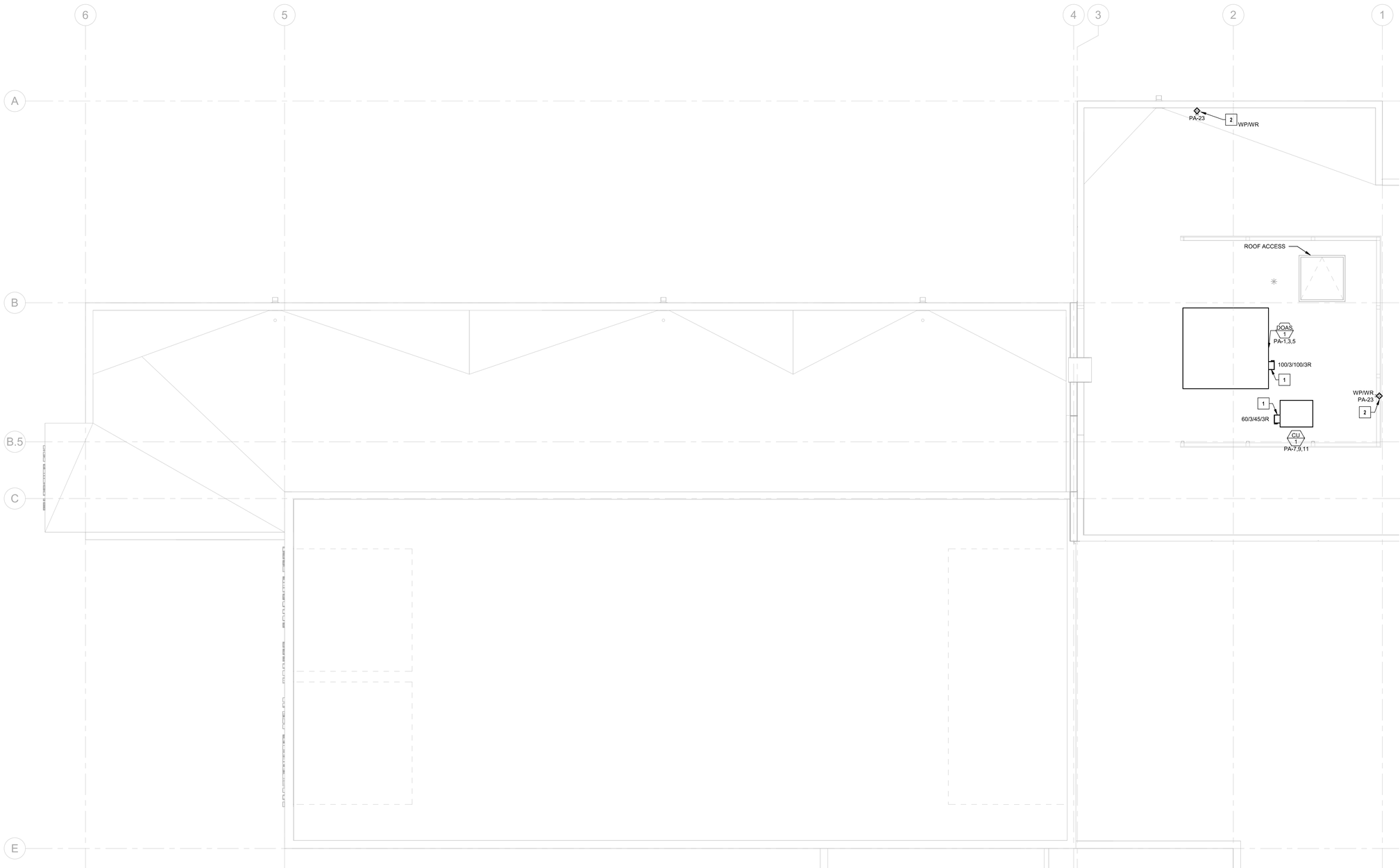
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ELECTRICAL PLAN NOTES:

1 MOUNT DISCONNECT SWITCH TO EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. WHERE EQUIPMENT MOUNTING IS NOT ALLOWED, PROVIDE CHANNEL-STRUT (UNISTRUT) SECURED TO STRUCTURE ADJACENT TO EQUIPMENT IN ACCORDANCE WITH OWNER REQUIREMENTS. COORDINATE REQUIREMENTS WITH OTHER TRADES PRIOR TO INSTALLATION

2 PROVIDE CONNECTION TO WEATHER-RESISTANT (WR), GFCI DUPLEX MAINTENANCE RECEPTACLE WITH WEATHER PROOF (WP) "IN-USE" EXTRA DUTY OUTLET BOX HOOD.



PLAN NORTH TRUE NORTH

1 POWER ROOF PLAN
Scale: 1/4" = 1'-0"

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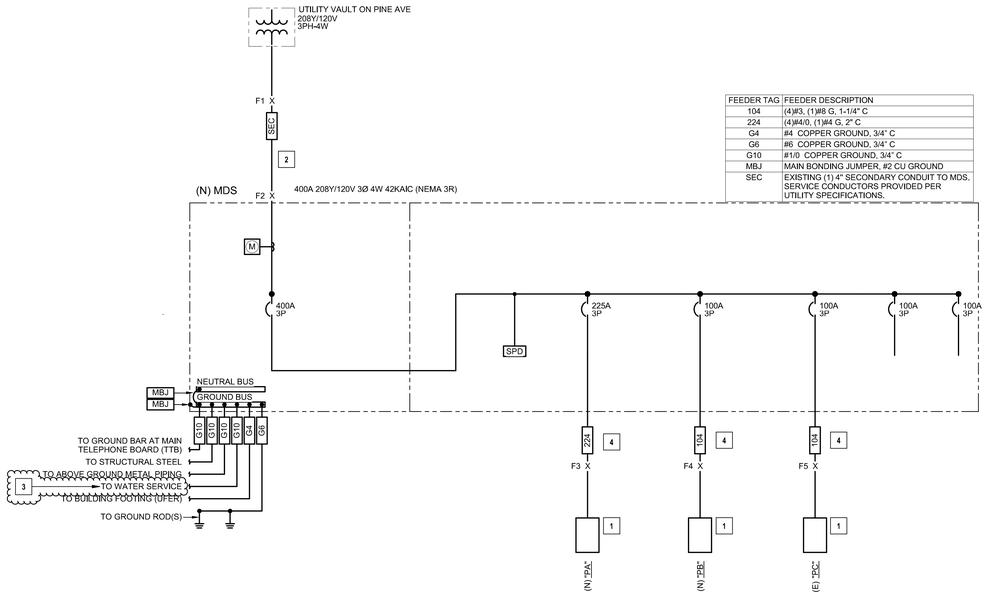
POWER ROOF PLAN

CD

E3.02

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FEEDER TAG	FEEDER DESCRIPTION
104	(4)#3, (1)#8 G, 1-1/4" C
224	(4)#4/0, (1)#4 G, 2" C
G4	#4 COPPER GROUND, 3/4" C
G6	#6 COPPER GROUND, 3/4" C
G10	#1/0 COPPER GROUND, 3/4" C
MBJ	MAIN BONDING JUMPER, #2 CU GROUND
SEC	EXISTING (1) 4" SECONDARY CONDUIT TO MDS. SERVICE CONDUCTORS PROVIDED PER UTILITY SPECIFICATIONS.

LOAD SUMMARY: MDS1

PANEL VOLTAGE: 208Y/120 V

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	12127 VA	0%	0 VA
HEATING (H)	23702 VA	100%	23702 VA
LIGHTING (L)	3559 VA	125%	4449 VA
RECEPTACLES (R)	11700 VA	93%	10850 VA
MOTORS (M)	771 VA	100%	771 VA
SUPPLEMENTAL HEAT (U)	5 VA	100%	5 VA
MISC EQUIP (Z)	12200 VA	100%	12200 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGN/DISPLAY (D)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	2879 VA	125%	3599 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA
TOTAL LOAD	66943	VA	55576
TOTAL AMPACITY	186	AMPS	154
PANEL AMPACITY		AMPS	400
SPARE CAPACITY		AMPS	246

FAULT CURRENT GENERAL NOTE (UTILITY VALUE):
THE MAXIMUM AVAILABLE 3-PHASE SYMMETRICAL FAULT CURRENT VALUE AT THE UTILITY TRANSFORMER SECONDARY/POINT OF SERVICE IS 42,000A BASED ON PRELIMINARY INFORMATION PROVIDED BY THE UTILITY'S ELECTRIC SERVICE REQUIREMENTS (ESR), ESR-1, PAGE 1-27, TABLE 1-5. CONTRACTOR SHALL VERIFY ACTUAL AVAILABLE FAULT CURRENT VALUE WITH UTILITY PRIOR TO BEGINNING CONSTRUCTION. NOTIFY ENGINEER IF ACTUAL VALUE EXCEEDS DESIGN VALUE.

ELECTRICAL ONE-LINE KEYED NOTES:

1 PROVIDE PANELBOARD WITH INDIVIDUAL BRANCH CIRCUIT METERING AND MONITORING CAPABILITIES THAT CAN BE INDEPENDENTLY MEASURED IN AGGREGATE PER CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS TITLE 24, PART 6, SECTION 130.5(B). (PROVIDE CODE COMPLIANT SIMILAR TO [SQUARE D POWERLINK MVP SERIES, EATON POW-R-COMMAND INTELLIGENT PANELBOARD SERIES] OR NRTL LISTED APPROVED ALTERNATE).

2 INTERCEPT EXISTING, UNDERGROUND 4" CONDUIT FOR CONNECTION TO NEW SWITCHGEAR.

3 CONNECTION TO INTERIOR METAL WATER PIPING SHALL BE MADE WITHIN 5 FT FROM THE POINT OF ENTRANCE TO THE BUILDING.

4 PROVIDE GALVANIZED RIGID STEEL FOR OVERHEAD CONDUIT OUT OF MDS UNTIL INSIDE BUILDING TO ENSURE VANDAL-PROOF CONDUITS AND ENCLOSURE.

ONE-LINE DIAGRAM GENERAL NOTES:
1. THE INFORMATION SHOWN IN THE SHORT-CIRCUIT AND VOLTAGE DROP CALCULATION SCHEDULE(S) ARE SHOWN FOR CALCULATION PURPOSES ONLY. CONTRACTOR SHALL NOT USE THE CONDUIT TYPES, CONDUCTOR TYPES, SIZES, QUANTITIES OR LENGTHS FOR TAKEOFFS OR BIDDING PURPOSES. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY CONFLICTS BETWEEN THIS SCHEDULE AND OTHER PORTIONS OF THE CONSTRUCTION DOCUMENTS. CONTRACTOR SHALL NOTIFY ENGINEER OF AS-BUILT CONDITIONS THAT CONSTITUTE A CHANGE FROM WHAT IS SHOWN BELOW; THIS INCLUDES CONDUCTOR LENGTHS DIFFERING BY MORE THAN 10%.
2. REFER TO THE SHORT-CIRCUIT AND VOLTAGE DROP CALCULATIONS TABLE ON THIS SHEET. AVAILABLE FAULT CURRENT INFORMATION IS LISTED UNDER THE "FAULT CURRENT" COLUMN. VOLTAGE DROP VALUES ARE LISTED UNDER THE "CUMULATIVE VOLTAGE DROP" COLUMN. THE AIC/SCCR RATING OF THE EQUIPMENT SHALL NOT BE LESS THAN THE AVAILABLE 3-PHASE SYMMETRICAL FAULT CURRENT. ALL SERIES RATED EQUIPMENT SHALL BE PROPERLY LISTED AND LABELED PER CODE.
3. FEEDER SIZES ARE BASED ON COPPER (CU) THHN/THWN-2 INSULATION, UNLESS NOTED OTHERWISE. NUMBER DESIGNATIONS PRECEDED BY "A" INDICATE THAT THE SIZE IS BASED ON ALUMINUM (AL) WIRE. AL CONDUCTOR SIZES ARE BASED ON XHHW-2 INSULATION, UNLESS NOTED OTHERWISE. AL WIRE MAY BE SUBSTITUTED FOR CU FEEDERS AS ALLOWED BY CODE, SPECIFICATIONS AND OWNER, UNLESS NOTED OTHERWISE. AT CONTRACTOR'S OPTION, CU WIRE MAY BE SUBSTITUTED FOR AL, UNLESS NOTED OTHERWISE. ALL CONDUCTOR SIZES ARE BASED ON 75 DEG C RATED TERMINATIONS, UNLESS NOTED OTHERWISE. CONDUIT SIZES SHOWN ARE APPROPRIATE FOR SCHEDULE 40 PVC, EMT, GRS, IMC AND RMC; ADJUST SIZE AS NEEDED FOR OTHER RACEWAY TYPES. FOR ANY OTHER CONDITIONS MODIFY SIZES PER CODE. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
4. BRANCH CIRCUIT SIZES ARE BASED ON COPPER (CU) THHN/THWN-2 INSULATION, UNLESS NOTED OTHERWISE. CONDUIT SIZES SHOWN ARE APPROPRIATE FOR SCHEDULE 40 PVC, EMT, GRS, IMC AND RMC; ADJUST SIZE AS NEEDED FOR OTHER RACEWAY TYPES. ALL CONDUCTOR SIZES ARE BASED ON 60 DEG C RATED TERMINATIONS, UNLESS NOTED OTHERWISE. FOR ANY OTHER CONDITIONS MODIFY SIZES PER CODE. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. INSTALL FEEDERS OVERHEAD AS HIGH AS PRACTICABLE AND ORTHOGONALLY ALONG BUILDING STRUCTURE, UNLESS NOTED OTHERWISE. COORDINATE FINAL ROUTING WITH OTHER TRADES.
6. PROVIDE A PERMANENT LABEL ON FRONT OF EQUIPMENT ENCLOSURE; REFER TO SPECIFICATIONS FOR LABEL REQUIREMENTS. LABEL SHALL READ AS FOLLOWS (INCLUDE RESPECTIVE NAMES IN BLANKS):
   SERVICE EQUIPMENT LABEL:
   LINE 1: NOMINAL VOLTAGE AND FREQUENCY IN HERTZ
   LINE 2: SERVICE EQUIPMENT BUS RATING IN AMPS
   LINE 3: SCCR OF SERVICE EQUIPMENT IN AMPS
   LINE 4: MAXIMUM AVAILABLE FAULT CURRENT IN AMPS
   LINE 5: DATE CALCULATED
   EXAMPLE:
   208Y/120V, 60HZ
   400A
   SCCR = 65,000A
   MAX AVAILABLE FAULT CURRENT = 58,815A
   CALCULATED: 01/01/2022
   PANELBOARD/SWITCHBOARD LABEL:
   LINE 1: PANELBOARD "_____" SUPPLIED BY UPSTREAM
   LINE 2: PANELBOARD/SWITCHBOARD "_____"
   LINE 3: LOCATED IN "_____"
   LINE 4: PANELBOARD "_____" SUPPLIES DOWNSTREAM
   LINE 5: PANELBOARD(S) "_____"
7. ALL NEW PANELBOARDS SHALL BE CAPABLE OF HAVING INTERNAL CT'S ADDED TO INDIVIDUAL OR GROUPS OF CIRCUITS IN THE FUTURE TO MEASURE LOAD TYPES AS DEFINED IN THE LATEST ADOPTED EDITION OF CALIFORNIA TITLE 24 PART 6 SECTION 130.5, LOAD CENTER CONSTRUCTION IS NOT ACCEPTABLE, UNLESS NOTED OTHERWISE.

ONE-LINE DIAGRAM GENERAL NOTES REMODEL PROJECT:
1. COORDINATE WORK WITH ARCHITECTURAL PHASING DRAWINGS TO PROPERLY STAGE TRANSITION TO PROVIDE POWER TO EXISTING, NEW AND TEMPORARY LOADS. MONITOR LOADS ON DISTRIBUTION SYSTEM TO MAKE SURE SHIFTING OF LOADS DOES NOT OVERLOAD ELECTRICAL EQUIPMENT.
2. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE EXISTING AIC/SCCR RATING OF EACH PANELBOARD/SWITCHBOARD. ALL NEW AND EXISTING OVER-CURRENT PROTECTION DEVICES (CIRCUIT BREAKERS AND FUSES) MUST HAVE AN AIC/SCCR RATING EXCEEDING THE AVAILABLE FAULT CURRENT AT THAT POINT IN THE SYSTEM. NOTIFY THE OWNER AND THE ENGINEER IF THE EXISTING EQUIPMENT DOES NOT COMPLY WITH THIS REQUIREMENT.

ONE-LINE DIAGRAM SUPPLEMENTAL SPECIFICATIONS:
1. GROUNDING ELECTRODE SYSTEM SHALL BE PER LOCAL REQUIREMENTS AND SHALL NOT BE LESS STRINGENT THAN THAT SPECIFIED IN THE CONSTRUCTION DOCUMENTS.
2. PROVIDE PROPERLY SIZED LUGS FOR ALL EQUIPMENT, CIRCUIT BREAKERS, AND OTHER ELECTRICAL DEVICES TO ACCOMMODATE INSTALLED CONDUCTORS. A LARGER FRAME, OVERSIZED LUGS OR NON-STANDARD PRODUCT MAY BE REQUIRED IN SOME INSTANCES, UTILIZE PIN ADAPTERS ONLY IF NECESSARY AND ONLY AS ALLOWED BY MANUFACTURER AND AHJ.
3. PROVIDE ANY AVAILABLE SPACE IN SWITCHBOARDS/PANELBOARDS WITH BUSSING.
4. PROVIDE (4) EMPTY 1" CONDUITS WITH PULL STRINGS FROM EACH RECESSED PANELBOARD UP TO ACCESSIBLE CEILING SPACE. CAP AND LABEL CONDUITS FOR FUTURE USE.
5. PROVIDE TYPED FINAL CIRCUIT DIRECTORY FOR ALL PANELBOARDS TO REFLECT ACTUAL AS-BUILT CONDITIONS. COORDINATE FINAL ROOM NAMES, NUMBERS AND DESCRIPTIONS WITH OWNER PRIOR TO COMPLETION. CIRCUIT DESCRIPTIONS SHALL BE PER CODE AND SHALL BE DISTINGUISHABLE FROM ALL OTHERS.

① ONE-LINE DIAGRAM
NTS

Short-Circuit and Voltage Drop Calculations

Version 2.11

Distances are for calculation purposes only and shall not be used for contractor takeoffs nor bidding - Contractor shall notify Engineer of any field condition that results in a change of 10% or greater circuit distance

The following calculations are based on the "Point-by-Point" method where:
ISC (2) = ISC(1) x M(1) M= 1/(1+f)
ISC (1) = short circuit current at fault point 1
ISC (2) = short circuit current at fault point 2

Feeder: f (3Ø) = 1.732 x L x Isc / C x E
Feeder: f (1Ø)= 2 x L x Isc / C x E
XFMR: f (3Ø) = IP(sca)x Vp x 1.73 x %Z / 100,000 x KVA
XFMR: f (1Ø)= IP(sca)x Vp x %Z / 100,000 x KVA
IS(sca)= Vp x M x IP(sca) / Vs

VOLTAGE DROP (3Ø):
%VD= ((R x cos(arccos(pf)) + X x sin (arccos(pf))) x L/# x I x 1.73) / E
VOLTAGE DROP (1Ø):
%VD= ((R x cos(arccos(pf)) + X x sin(arccos(pf))) x 2 x L/# x I) / E

IP = Primary short circuit current
Vp = Primary voltage
IS= Secondary short circuit current
Vs= Secondary voltage
L = Length of circuit
E = Line to line volts
C = "C" Factor from Bussman table where "C" = 1 / impedance per linear foot
Feeder Types: NM - Non Magnetic Conduit, M -...

%VD CUM= Cumulative Voltage Drop from Fault Point 1 to Fault Point #
R= resistance in ohms per LF
X= reactances in ohms per LF

System Voltage: 208Y/120V - 3 phase

Fault Point (F#)	Bus/Feeder Description	Source (Fault Point)	Phase	Source Isc (amps)	Feeder: Conduit Type/ TX	Feeder: Material	Feeder: Quantity of Parallel Sets and Bus/ Phase & Neutral Size	Conductor 'C' Value	Busway 'C' Value	L-L Voltage (E)	Circuit Length (L)	Load Power Factor (pf)	Circuit Load (Amperage)	Conductor: Resistance (R)	Conductor: Reactance (X)	Conductor: Arccos (pf) (Radians)	Transformer: Type	Transformer: Degree Rise	Transformer: kVA	Transformer: New Xfmr Z	Transformer: Existing Xfmr Z	Transformer: Secondary Voltage	Transformer: Tap Setting	f	M	Fault Current (amps)	Voltage Drop (%VD)	Cumulative Voltage Drop (%VD)	Fault Point (F#)
1	Utility Service Point			42,000	at the secondary of the utility transformer																							Source Isc + 6X Motor Contribution =	43,920			1
	Motor Contribution			320	The connected full load motor amps (includes compressors) on the system																										
2	TO MDS	1	3	43,920	M	CU	2 Set(s) of 3/0 AWG	12844	--	208	25	0.9	360	0.000079	0.000052	0.451027								0.356	0.74	32,391	-0.35%	-0.35%	2
3	TO PA	2	3	32,391	M	CU	1 Set(s) of 4/0 AWG	15082	--	208	20	0.9	180	0.000063	0.000051	0.451027								0.358	0.74	23,858	-0.24%	-0.59%	3
4	TO PB	2	3	32,391	M	CU	1 Set(s) of 3 AWG	4774	--	208	140	0.9	80	0.000250	0.000059	0.451027								7.910	0.11	3,635	-2.34%	-2.69%	4
5	TO PC	2	3	32,391	M	CU	1 Set(s) of 3 AWG	4774	--	208	100	0.9	80	0.000250	0.000059	0.451027								5.650	0.15	4,871	-1.67%	-2.02%	5
6	TO DOAS 1	3	3	23,858	M	CU	1 Set(s) of 3 AWG	4774	--	208	40	0.85	60	0.000250	0.000059	0.554811								1.665	0.38	8,954	-0.49%	-1.07%	6
7	TO CU 1	3	3	23,858	M	CU	1 Set(s) of 8 AWG	1557	--	208	45	0.85	17	0.000780	0.000065	0.554811								5.742	0.15	3,539	-0.44%	-1.03%	7
8	TO ALCP	3	1	23,858	M	CU	1 Set(s) of 10 AWG	981	--	120	55	0.95	16	0.001200	0.000063	0.317560								22.293	0.04	1.024	-1.70%	-2.29%	8

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DATE 10/05/2026

ELECTRICAL
ONE-LINE DIAGRAM

CD

E4.01

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PANELBOARD: PA (NEW)

FAULT CURRENT: REFER TO FAULT CURRENT CALCULATIONS
AIC RATED: FULLY RATED
AIC RATING: 10,000
SERVES:
MOUNTING: SURFACE
LOCATION: UTILITY/ WORK AREA 116

EQUIPMENT GROUND BUS

BUS AMPS: 225A
MAIN SIZE/TYPE: 225A MCB
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: MDS1

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1							6957 1167									2
3	DOAS-1	H C M		3	100	3		6957 1167		3	20	12	GF	Z	DRYER	4
5									6957 1167							6
7							1820 1167									8
9	CU-1	H C		6	45	3		1820 1167		3	20	12	GF	Z	DRYER	10
11									1820 1167							12
13	ALCP PANEL	Z	VD/LCK	10	20	1	500 1500			1	20	12		Z	WASHER	14
15	WHG	U	GF	12	20	1		5 1500		1	20	12		Z	WASHER	16
17	EF-01	M		12	15	1			20 165	2	15	12		M	FCU-09	18
19	EF-02	Z M		12	15	1	20 165									20
21	EF-03	M		12	15	1		20 630		1	20	12		L	LTG - UTILITY AREA	22
23	RCPT-UTILITY UPPER & ROOF	R		12	20	1			1080 588	1	20	12		L	LTG - EXTERIOR PASSAGE	24
25	RCPT-UTILITY LOWER	R		12	20	1	360 900			1	20	12		L	LTG - EXTERIOR DORM WINDOWS	26
27	RCPT-RESTROOMS	R		12	20	1		720 180		1	20	12		R	RCPT-CABINET	28
29	RCPT-STORAGE	R		12	20	1			360 180	1	20	12		R	RCPT-CABINET	30
31	RCPT-EXTERIOR SWITCHGEAR	R		12	20	1	180 180			1	20	12		R	RCPT-CABINET	32
33	RP-01	M		12	20	1		48 180		1	20	12		R	RCPT-CABINET	34
35	FACP	Z	FA	12	20	1			200 180	1	20	12		R	RCPT-CABINET	36
37	BS-1	M		12	15	2	83 250			1	20	12		R	RCPT-TV PROVIDER EQUIPMENT	38
39								83 150		1	20	12		R	RCPT-DOOR BELL POWER SUPPLY	40
41	RCPT-NVR	R		12	20	1			250 250	1	20	12		R	RCPT-CARD ACCESS SYSTEM	42
			TOTAL LOAD (VA):				15249 VA	14626 VA	14383 VA							
			TOTAL AMPS:				127 A	122 A	120 A							

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	11817 VA	0%	0 VA
HEATING (H)	23452 VA	100%	23452 VA
LIGHTING (L)	2118 VA	125%	2648 VA
RECEPTACLES (R)	4500 VA	100%	4500 VA
MOTORS (M)	605 VA	100%	605 VA
SUPPLEMENTAL HEAT (U)	5 VA	100%	5 VA
MISC EQUIP (Z)	10700 VA	100%	10700 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGNAGE (S)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	2879 VA	125%	3599 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	56076 VA
TOTAL NEC LOAD	45508 VA
TOTAL CONNECTED CURRENT	156 A
TOTAL NEC DEMAND CURRENT	126 A

PANELBOARD: PB (NEW)

FAULT CURRENT: REFER TO FAULT CURRENT CALCULATIONS
AIC RATED: FULLY RATED
AIC RATING: 10,000
SERVES:
MOUNTING: SURFACE
LOCATION: CORRIDOR 103

EQUIPMENT GROUND BUS

BUS AMPS: 100A
MAIN SIZE/TYPE: 100A MCB
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: MDS1

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	RCPT-ACCESSIBLE RESTROOM	R		12	20	1	360 369			1	20	12		L	LTG - RESTROOM/OFFICE AREA	2
3	RCPT-OFFICE AREA 1	L R		12	20	1		754 615		1	20	12	EM	L	LTG - CORRIDOR AND DORM EM	4
5	RCPT-OFFICE AREA 2	L R Z		12	20	1			1580 448	1	20	12		L	LTG - DORM WALL	6
7	RCPT-DORM 104	R		12	20	1	900 20			1	20	12	EM	L	LTG - EXIT SIGNS	8
9	RCPT-DORM 105	R		12	20	1		720 104		2	15	12		H C M	FCU-01 THRU FCU-04	10
11	RCPT-DORM 106	R		12	20	1			720 104							12
13	RCPT-DORM 107	R		12	20	1	720 128			2	15	12		H C M	FCU-05 THRU FCU-08	14
15	RCPT-DORM 108	R		12	20	1		720 128								16
17	RCPT-DORM 109	R		12	20	1			720 22	1	15	12		M	EF-04	18
19	RCPT-DORM 110	R		12	20	1	720 1500			1	20	12		S	EXTERIOR SIGNAGE	20
21	RCPT-CORRIDOR	R		12	20	1		1080 0		1					EQUIPPED SPACE	22
23	SPARE				20	1			0 0	1					EQUIPPED SPACE	24
25	SPARE				20	1	0 0			1					EQUIPPED SPACE	26
27	SPARE				20	1		0 0		1					EQUIPPED SPACE	28
29	SPARE				20	1			0 0	1					EQUIPPED SPACE	30
31	SPARE				20	1	0 0			1					EQUIPPED SPACE	32
33	EQUIPPED SPACE					1		0 0		1					EQUIPPED SPACE	34
35	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	36
37	EQUIPPED SPACE					1	0 0			1					EQUIPPED SPACE	38
39	EQUIPPED SPACE					1		0 0		1					EQUIPPED SPACE	40
41	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	42
			TOTAL LOAD (VA):				4717 VA	4121 VA	3594 VA							
			TOTAL AMPS:				40 A	35 A	30 A							

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	310 VA	100%	310 VA
HEATING (H)	250 VA	0%	0 VA
LIGHTING (L)	1486 VA	125%	1858 VA
RECEPTACLES (R)	8460 VA	100%	8460 VA
MOTORS (M)	142 VA	100%	142 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	500 VA	100%	500 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGNAGE (S)	1500 VA	125%	1875 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	24 VA	125%	30 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	12672 VA
TOTAL NEC LOAD	13175 VA
TOTAL CONNECTED CURRENT	35 A
TOTAL NEC DEMAND CURRENT	37 A

PANELBOARD: PC (EXISTING)

FAULT CURRENT: REFER TO FAULT CURRENT CALCULATIONS
AIC RATED: FULLY RATED
AIC RATING: 10,000
SERVES:
MOUNTING: SURFACE
LOCATION: (E) APPARATUS BAY 169

EQUIPMENT GROUND BUS

BUS AMPS: 100A
MAIN SIZE/TYPE: 100A MCB
VOLTS/PHASE: 208Y/120 V 3P/4W
SUPPLIED BY: MDS1

LINE-SIDE LUGS: MECHANICAL

CKT NO.	DESCRIPTION	LOAD TYPE	NOTES	WIRE SIZE	BKR AMP	P	PHASE A	PHASE B	PHASE C	P	BKR AMP	WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1	ROLL UP DOOR NORTHWEST	Z	EX	EX	20	1	0 0			1						2
3	ROLL UP DOOR SOUTHWEST	Z	EX	EX	20	1		0 0		1					EQUIPPED SPACE	4
5	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	6
7	EQUIPPED SPACE					1	0 0			1					EQUIPPED SPACE	8
9	EQUIPPED SPACE					1		0 0		1					EQUIPPED SPACE	10
11	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	12
13	EQUIPPED SPACE					1	0 0			1					EQUIPPED SPACE	14
15	EQUIPPED SPACE					1		0 0		1					EQUIPPED SPACE	16
17	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	18
19	EQUIPPED SPACE					1	0 0			1					EQUIPPED SPACE	20
21	EQUIPPED SPACE					1		0 0		1					EQUIPPED SPACE	22
23	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	24
25	EQUIPPED SPACE					1	0 0			1					EQUIPPED SPACE	26
27	SPARE				20	1		0 0		1					EQUIPPED SPACE	28
29	SPARE				20	1			0 0	1					EQUIPPED SPACE	30
31	SPARE				20	1	0 0			1					EQUIPPED SPACE	32
33	SPARE				20	1		0 0		1					EQUIPPED SPACE	34
35	SPARE				20	1			0 0	1					EQUIPPED SPACE	36
37	ROLL UP DOOR EAST	Z	EX	EX	20	1	0 0			1					EQUIPPED SPACE	38
39	EQUIPPED SPACE					1		0 0		1					EQUIPPED SPACE	40
41	EQUIPPED SPACE					1			0 0	1					EQUIPPED SPACE	42
			TOTAL LOAD (VA):				0 VA	0 VA	0 VA							
			TOTAL AMPS:				0 A	0 A	0 A							

LOAD TYPE	CONNECTED LOAD	DEMAND FACTOR	NEC DEMAND
EXISTING LOAD (E)	0 VA	100%	0 VA
COOLING (C)	0 VA	0%	0 VA
HEATING (H)	0 VA	100%	0 VA
LIGHTING (L)	0 VA	125%	0 VA
RECEPTACLES (R)	0 VA	0%	0 VA
MOTORS (M)	0 VA	100%	0 VA
SUPPLEMENTAL HEAT (U)	0 VA	100%	0 VA
MISC EQUIP (Z)	0 VA	100%	0 VA
REFRIGERATION (F)	0 VA	100%	0 VA
SIGNAGE (S)	0 VA	125%	0 VA
KITCHEN (K)	0 VA	100%	0 VA
LARGEST MOTOR	0 VA	125%	0 VA
SHOW WINDOW (W)	0 VA	125%	0 VA
TRACK LIGHTING	0 VA	100%	0 VA

PANELBOARD NOTES

PANELBOARD TOTALS	
TOTAL CONNECTED LOAD	0 VA
TOTAL NEC LOAD	0 VA
TOTAL CONNECTED CURRENT	NaN A
TOTAL NEC DEMAND CURRENT	NaN A

PANELBOARD LEGEND

ABBREVIATIONS V1.01

AF	ARC FAULT CIRCUIT INTERRUPTER.
C#	CIRCUIT VIA CONTACTOR #.
CL	CIRCUIT VIA CURRENT LIMITING DEVICE.
D	DISCONNECT CIRCUITRY FOR REMOVED LOAD, UPDATE CIRCUIT DIRECTORY TO SPARE AND TURN OFF.
EM	EMERGENCY LIGHTING HANDLE-ON CLAMP.
EX	EXISTING.
F	FUTURE LOAD; NOTE AS SPARE AND TURN OFF.
FA	RED/HANDLE-ON CLAMP.
GF	GROUND-FAULT CIRCUIT INTERRUPTER TYPE CIRCUIT BREAKER (5 mA).
GFEP	GROUND FAULT EQUIPMENT PROTECTION BREAKER (30 mA).
HT	PROVIDE HANDLE-TIE FOR MULTI-WIRE BRANCH CIRCUIT PER CODE.
IG	ISOLATED GROUND CIRCUIT.
L#	LIGHTING CONTROL SCHEME NUMBER.
LCK	HANDLE PADLOCKABLE-OFF DEVICE.
LO	HANDLE-ON CLAMP.
N	PROVIDE NEW CIRCUIT BREAKER.
OL	REFER TO ELECTRICAL ONE-LINE/RISER DIAGRAM.
PS	POWER-SWITCHING CIRCUIT BREAKER.
PSE	EMERGENCY POWER-SWITCHING CIRCUIT BREAKER.
R	REUSE EXISTING CIRCUIT BREAKER FOR NEW/REVISED LOAD.
RP	CIRCUIT VIA RELAY PANEL.
ST	SHUNT TRIP CIRCUIT BREAKER.
V	VERIFY EXISTING LOAD AND UPDATE DIRECTORY, IF UNUSED, NOTE AS SPARE AND TURN OFF.
VD	BRANCH CIRCUITRY HAS BEEN UPSIZED TO REDUCE VOLTAGE DROP. ADJUST GROUND WIRE SIZE PER CODE. PROVIDE LUG ADAPTORS IF REQUIRED.
Z	CORRECT/REPAIR EXISTING HAZARD TO MAKE CODE COMPLIANT INSTALLATION.

NOT ALL ABBREVIATIONS ARE USED.

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REVISIONS

ISSUED FOR PERMIT

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REGISTERED PROFESSIONAL ENGINEER
No. E-18488
EXPIRES: 06/30/2024
ELECTRICAL
STATE OF CALIFORNIA

04/14/2023

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ELECTRICAL PANEL SCHEDULES

CD

E4.02

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OMID M. MOTTAHED

LIGHTING CONTROL PANEL SCHEDULE

PANEL NAME: ALCP — MOUNTING: SURFACE
LOCATION: UTILITY AREA — VOLTAGE: 120V

RELAY	CIRCUIT	LOAD CONTROLLED	MODULE
1	PB-2	EXTERIOR OFFICE	0-10 V DIM
2	PB-4	DORMS 6 RM 110	0-10 V DIM
3	PB-4	DORMS 5 RM 109	0-10 V DIM
4	PB-4	DORMS 4 RM 108	0-10 V DIM
5	PB-4	DORMS 3 RM 107	0-10 V DIM
6	PB-4	DORMS 2 RM 106	0-10 V DIM
7	PB-4	DORMS 1 RM 105	0-10 V DIM
8	PB-4	ACCESSIBLE DORM RM 104	0-10 V DIM
9	PB-4	CORRIDOR 103	NO DIM
10	PA-28	EXTERIOR PASSAGE	NO DIM
11	PA-30	EXTERIOR DORM WINDOWS	NO DIM
12	LV	DORM 6 RM 110 DIMMING WIRE	NO DIM
13	LV	DORM 5 RM 109 DIMMING WIRE	NO DIM
14	LV	DORM 4 RM 108 DIMMING WIRE	NO DIM
15	LV	DORM 3 RM 107 DIMMING WIRE	NO DIM
16	LV	DORM 2 RM 106 DIMMING WIRE	NO DIM
17	LV	DORM 1 RM 105 DIMMING WIRE	NO DIM
18	LV	ACCESSIBLE DORM RM 104 DIMMING WIRE	NO DIM
19	LV	CORRIDOR 103 DIMMING WIRE	NO DIM
20			
21			
22			
23			
24			

NOTE: RELAY NUMBERING ON SCHEDULE IS INTENDED TO COMMUNICATE DESIGN INTENT AND IS FOR INFORMATIONAL PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING FINAL RELAY CONFIGURATION WITH LIGHTING CONTROL VENDOR AND FIELD CONDITIONS.

LIGHTING CONTROL PANEL NOTES

LIGHT FIXTURE SCHEDULE

TYPE	MANUFACTURER	SERIES / MODEL	SOURCE TYPE	CRI	CCT	SOURCE LUMENS	DIMMING TYPE	VOLTAGE	INPUT WATTS	INPUT VA	DESCRIPTION	NOTES
A/AE	METALUX	22FP4240C 22FP4240C-EL14W	LED	80	4000K	4465	0-10V	UNV	38	42	2x2 FLAT PANEL LED FIXTURE WITH WHITE FROSTED LENS SCRATCH AND IMPACT RESISTANT. "AE" SAME BUT WITH 14W 90 MINUTE EM BATTERY BALLAST.	
C	METALUX	4SNLED-LD5-27SL-LW-UNV L840-CD1-U	LED	80	4000K	2748	0-10V	UNV	21	23	4 FT SURFACE MOUNTED LED STRIP WITH FROSTED ACRYLIC LENS	
C1/C1E	METALUX	8SNLED-LD5-54SL-LW-UNV L840-CD1-U	LED	80	4000K	5028	0-10V	UNV	43	48	8 FT SURFACE MOUNTED LED STRIP WITH FROSTED ACRYLIC LENS. "C1E" SAME AS "C1" BUT WITH 14W 90 MINUTE EM BATTERY BALLAST.	
E	SPECTRUM	SG6LEDFX-30L-40K-DX- BH27-AR6160DFFXMW-FAF	LED	80	4000K	2191	0-10V	UNV	25	28	6" RECESSED LED DOWNLIGHT WITH MICROPRISM SOLITE LENS	
E1/E1E	SPECTRUM	SG6LEDFX-30L-40K-DX- BH27-AR6160DFFXMW-FAF	LED	80	4000K	2191	0-10V	UNV	25	28	SIMILAR TO TYPE E EXCEPT WET LOCATION FOR EXTERIOR APPLICATION. "E1E" SAME AS "E1" BUT WITH 14W 90 MINUTE EM BATTERY BALLAST.	
E2	SPECTRUM	SG6LEDFX-30L-40K-DX- BH27-AR6160DFFXMW-FAF	LED	80	4000K	2191	0-10V	UNV	25	28	SIMILIAR TO TYPE E. 6" RECESSED LED DOWNLIGHT WITH DEAD FRONT TRIM FOR SHOWER	
J	METALUX	2SWLED-24HL-LC-UNV- L840-CD-1	LED	80	4000K	2475	0-10V	UNV	24	24	2' WALL/SURFACE LED STRIP	
F	NEORAY	S124DRP-S-575D-8-40 4FO-1-U-DD-F-W	LED	80	4000K	2300	0-10V	UNV	18.8	20	4' RECESSED LED PERIMETER FIXTURE WITH SATIN FLUSH ACRYLIC LENS	
F1	NEORAY	S124DW-C-575D-8-40-GYP 4FO-1-U-DD-F-W	LED	80	4000K	2300	0-10V	UNV	18.8	20	4' WALL MOUNT LED DIRECT WITH STANDARD FLUSH LENS	
G	DAY-O-LITE	MEDL-PL-DI-40-LO-4'-WM- U-DIM10	LED	80	4000K	4800	0-10V	UNV	64	64	4 FT WALL MOUNTED DIRECT/INDIRECT LED BED LIGHT	
S	PERFORMANCE IN LIGHTING	QUASAR 30 70205	LED	80	4000K	1505	NONE	UNV	22	22	WALL MOUNTED LED SCONCE	
X1	SURELITE	EUX6	LED	-	-	-	N/A	UNV	1.3	1.3	UNIVERSAL MOUNT SELF POWERED LED EXIT WITH SELF DIAGNOSIS SINGLE / DOUBLE FACE	

NOTES: **REFER TO LIGHT FIXTURE SCHEDULE GENERAL NOTES AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.**

LIGHTING CONTROL DEVICE SCHEDULE

LINE-VOLTAGE DIMMING WALL SWITCH

SYMBOL TAG	MANUFACTURER MODEL/SERIES	ALTERNATE MANUFACTURER	DEVICE DESCRIPTION	VOLTAGE	NOTES
D	LEGRAND RADIANT TRU-UNIVERSAL	LEVITON LUTRON	ON/OFF DECORATOR SWITCH WITH SEPARATE SLIDER FOR DIMMING CONTROL. LED LIGHT ILLUMINATES WHEN LOAD IS OFF. FORWARD PHASE DIMMING UP TO 700W. REVERSE PHASE DIMMING UP TO 450W. SINGLE POLE OR 3-WAY.	120	

LINE-VOLTAGE WALL SWITCH OCCUPANCY SENSORS

SYMBOL TAG	MANUFACTURER MODEL/SERIES	ALTERNATE MANUFACTURER	DEVICE DESCRIPTION	COVERAGE (W X D)	VOLTAGE	NOTES
OS	LEGRAND PW-100	ACUITY, COOPER HUBBELL, LEVITON LUTRON	WALL MOUNT PASSIVE INFRARED OCCUPANCY SENSOR. INTEGRAL MANUAL OVERRIDE SWITCH. SINGLE RELAY. LINE-VOLTAGE. LOAD: 120V=800W, 277V=1200W.	MAJOR 30' x 35' MINOR 15' x 20'	120/ 277	
PS#	LEGRAND EM-24-A2		LOW VOLTAGE PHOTCELLS FOR EXTERIOR LIGHTING		24	

STAND-ALONE LOW-VOLTAGE LIGHTING CONTROL SYSTEMS

STAND-ALONE LOW-VOLTAGE OCCUPANCY SENSORS

SYMBOL TAG	MANUFACTURER MODEL/SERIES	ALTERNATE MANUFACTURER	DEVICE DESCRIPTION	COVERAGE (W X D)	VOLTAGE	NOTES
A	LEGRAND DT-300	ACUITY, COOPER HUBBELL, LEVITON	CEILING MOUNT DUAL TECHNOLOGY OCCUPANCY SENSOR. 360 DEGREE COVERAGE. LOW-VOLTAGE. ISOLATED RELAY.	PIR MAJOR 36' Ø PIR MINOR 25' Ø ULT 36' x 36'	24	
B	LEGRAND DT-200	ACUITY, COOPER HUBBELL, LEVITON	CEILING/WALL MOUNT DUAL TECHNOLOGY OCCUPANCY SENSOR. 90 DEGREE COVERAGE. LOW-VOLTAGE.	PIR MAJOR 55' Ø PIR MINOR 25' Ø ULT 38' Ø	24	

STAND-ALONE LOW-VOLTAGE PHOTOELECTRIC SWITCHES

SYMBOL TAG	MANUFACTURER MODEL/SERIES	ALTERNATE MANUFACTURER	DEVICE DESCRIPTION	VOLTAGE	NOTES
D1	LEGRAND LS-102	ACUITY HUBBELL LEVITON	INTERIOR LOW-VOLTAGE PHOTOELECTRIC SWITCH. CLOSED LOOP. 1-1400 FC. 24VDC OUTPUT.	24	

STAND-ALONE LOW-VOLTAGE POWER PACKS

SYMBOL TAG	MANUFACTURER MODEL/SERIES	ALTERNATE MANUFACTURER	DEVICE DESCRIPTION	VOLTAGE	NOTES
P1	LEGRAND BZ-150	ACUITY, COOPER HUBBELL, LEVITON	POWER PACK FOR LOW-VOLTAGE OCCUPANCY SENSORS. 20A LOAD. (1) RELAY. MANUAL- AND AUTO-ON MODES. HOLD-ON AND -OFF INPUTS. LOAD: 16A AT 120V OR 277V. OUTPUT: 225mA AT 24V. PLENUM RATED.	120/ 277	

STAND-ALONE LOW-VOLTAGE SWITCHES

SYMBOL TAG	MANUFACTURER MODEL/SERIES	ALTERNATE MANUFACTURER	DEVICE DESCRIPTION	VOLTAGE	NOTES
LV	LEGRAND LVSW-10X-X	ACUITY, COOPER HUBBELL, LEVITON	MOMENTARY X-BUTTON DECORATOR SWITCH FOR MANUAL ON/OFF CONTROL OF STAND-ALONE LOW-VOLTAGE OCCUPANCY SENSORS. INTEGRAL LED ILLUMINATES WHEN LOAD IS ON. COORDINATE PLATE COVER WITH ARCHITECT. COORDINATE BUTTON AMOUNT WITH PLANS.	24	
LVD	LEGRAND DCLV2	ACUITY, COOPER HUBBELL, LEVITON	LOW VOLTAGE DIMMING WALL SWTICH. 0-10V DIMMING. 24VDC. TO WORK WITH BZ TYPE POWER PACK.	24	
P2	LEGRAND LMRC-212 (0-10V)	ACUITY, CRESTRON ETC, HUBBELL	DIGITAL ROOM CONTROLLER FOR ON/OFF/0-10V DIMMING CONTROL OF LIGHTING LOADS. (1) 20A LOAD INPUT, (2) RELAY OUTPUTS. 100mA SINK PER RELAY. MANUAL-, PARTIAL-, AND AUTO-ON MODES.	120/ 277	

GENERAL NOTES:

A. OCCUPANCY SENSOR LAYOUT DESIGNED FROM BASIS-OF-DESIGN COVERAGE PATTERNS. IF SUBMITTING ALTERNATE PER 'EQUIVALENT MANUFACTURER' COLUMN, ADJUST SENSOR QUANTITIES AND LOCATIONS PER MANUFACTURER-SPECIFIC SPACING CRITERIA.
B. PROVIDE SHOP DRAWINGS FOR ENGINEER AND ARCHITECT REVIEW THAT INCLUDE PRODUCT CUTSHEETS AND PROJECT-SPECIFIC LAYOUTS. LAYOUTS MUST INCLUDE SENSOR LOCATIONS, HEIGHTS, ORIENTATION, AND COVERAGE AREAS. SHOW COORDINATION WITH ALL OTHER CEILING DEVICES INCLUDING BUT NOT LIMITED TO HVAC SUPPLY AND RETURN GRILLES, SPRINKLERS, LIGHT FIXTURES, AND OTHER OWNER-PROVIDED CEILING MOUNTED DEVICES SUCH AS SPEAKERS, SECURITY CAMERAS, PROJECTORS, ETC. (SENSORS MAY BE ADVERSELY AFFECTED IF LOCATED TOO CLOSE TO OTHER CEILING MOUNTED DEVICES). ALSO PROVIDE SCHEMATICS AND SCHEDULES WHEN APPLICABLE.
C. LIGHTING CONTROLS PRICING SHALL BE COMPLETELY SEPARATE OF ANY LIGHT FIXTURE PRICING.
D. VERIFY COLOR(S) FOR ALL WALL AND CEILING MOUNTED DEVICES WITH THE ARCHITECT.
E. ALL WALL SWITCH AND CEILING SENSORS SHALL HAVE AN ADJUSTABLE TIME DELAY RANGE OF 0-30 MIN, UNO. CONFIRM SENSOR SETTINGS WITH SEQUENCE OF OPERATIONS AND OWNER PRIOR TO SYSTEM COMMISSIONING.
F. PROVIDE COPIES OF OPERATION AND MAINTENANCE INSTRUCTIONS FOR ALL DEVICES TO OWNER.
G. PROVIDE A NEUTRAL CONDUCTOR TO ALL WALL SWITCH LOCATIONS PER NEC REQUIREMENTS.
H. DO NOT SHARE NEUTRAL CONDUCTOR ON LOAD SIDE OF DIMMERS.

VERSION: 4.05

TITLE 24 COMPLIANT SEQUENCE OF OPERATIONS:

130.0(B) FUNCTIONAL AREAS WHERE COMPLIANCE WITH THE RESIDENTIAL LIGHTING STANDARDS IS REQUIRED.
THE DESIGN AND INSTALLATION OF ALL LIGHTING SYSTEMS, LIGHTING CONTROLS, AND EQUIPMENT IN THE **FIRE STATION DWELLING** ACCOMODATION AREAS SHALL COMPLY WITH THE APPLICABLE RESIDENTIAL LIGHTING REQUIREMENTS OF SECTION 150.0(K). IN BUILDINGS CONTAINING THIS FUNCTIONAL AREA, ALL OTHER FUNCTIONAL AREAS, SUCH AS COMMON AREAS, SHALL COMPLY WITH THE APPLICABLE NONRESIDENTIAL LIGHTING AND CONTROLLED RECEPTACLE REQUIREMENTS.

PUBLIC RESTROOMS
1. OCCUPANCY SENSOR PROVIDES AUTOMATIC ON/OFF OF LIGHTS/LOAD BASED ON ROOM OCCUPANCY.
2. SWITCH PROVIDES MANUAL OVERRIDE OF THE LIGHTS: ON/OFF/RAISE/LOWER.

PUBLIC RESTROOMS
1. MANUAL CONTROL: OCCUPANT CAN MANUALLY CONTROL LIGHTS VIA LOCAL SWITCH(ES)/DIMMER(S).
2. THIRD PARTY INTERFACE: WHEN CALL SYSTEM IS RECEIVED ALL LIGHTS SHALL TURN ON TO FULL BRIGHTNESS. WHEN CALL SYSTEM IS DEACTIVATED, ALL LIGHTS SHALL RETURN TO LOCAL MANUAL CONTROLS.

CORRIDORS
1. LIGHTS SHALL AUTOMATICALLY GO TO 100% FULL BRIGHT WHEN SENSED BY ANY OCCUPANCY SENSOR IN THE ENCLOSED SPACE.
2. AFTER 1ST TIME OUT EXPIRES DUE TO VACANCY, LIGHTS SHALL GO TO DIMMED LOW LEVEL.
3. AFTER 2ND TIME OUT EXPIRES DUE TO VACANCY, LIGHTS SHALL GO FROM DIMMED LOW LEVEL TO OFF.
4. SWITCH PROVIDES MANUAL OVERRIDE OF THE LIGHTS: ON/OFF/RAISE/LOWER.

STORAGE/MDF/CLOSETS/ROOMS UNDER 100 SQFT SEQUENCE OF OPERATION
1. ALL LIGHTS ARE SWITCHED ON/OFF
2. FIXTURES MUST BE TURNED ON MANUALLY
3. LIGHTS AUTOMATICALLY TURN OFF WHEN ROOM BECOMES VACANT

OFFICE<250 SEQUENCE OF OPERATION
1. ALL LIGHTS ARE DIMMABLE AND CONTROLLED TOGETHER
2. PARTIAL-ON OCCUPANCY SENSOR AUTOMATICALLY ACTIVATE BETWEEN 50-70 PERCENT OF CONTROLLED LIGHTING POWER OR FIXTURES MUST BE TURNED ON MANUALLY
3. PLUG-LOAD TURNS ON AUTOMATICALLY
4. LIGHTS AND PLUG-LOAD AUTOMATICALLY TURN OFF WHEN SPACE BECOMES VACANT
5. DAYLIGHT CONTROL REQUIRED UNLESS ROOM LIGHTING LOAD > 120W, IN THE SKYLIT/SIDELIT DAYLIT ZONE
6. SWITCH PROVIDES MASTER ON/OFF & RAISE/LOWER CONTROL OF ENTIRE ROOM.

WORK AREA SEQUENCE OF OPERATION
1. ALL LIGHTS ARE DIMMABLE AND CONTROLLED TOGETHER
2. LIGHTS AUTOMATICALLY TURN ON TO FULL WHEN OCCUPANT ENTERS
4. LIGHTS AUTOMATICALLY TURN OFF WHEN SPACE BECOMES VACANT
5. DAYLIGHT CONTROL NOT REQUIRED UNLESS ROOM LIGHTING LOAD > 120W, IN THE SKYLIT/SIDELIT DAYLIT ZONE
6. SWITCH PROVIDES MASTER ON/OFF & RAISE/LOWER CONTROL OF ENTIRE ROOM.

EXTERIOR SEQUENCE OF OPERATION
1. ALL EXTERIOR LIGHTS ARE NOT DIMMABLE
2. EXTERIOR LIGHTS AUTOMATICALLY TURN ON VIA PHOTOCELL
3. EXTERIOR LIGHTS NON-POLE MOUNTED GREATER THAN 40W ARE EQUIPPED WITH INTEGRAL DIMMING MOTION SENSORS. THESE EXTERIOR LIGHTS AUTOMATICALLY DROP TO 50% WHEN SPACE BECOMES VACANT
4. EXTERIOR LIGHTS AUTOMATICALLY TURNOFF VIA ASTRONOMICAL TIME CLOCK CONTROLS

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2050003751

LOS ANGELES COUNTY FIRE DEPARTMENT
FIRE STATION 163
6320 PINE AVENUE, BELL, CA 90201

NAC ARCHITECTURE
nacarchitecture.com
1203 WEST RIVERSIDE AVE
SPOKANE WA 99201
P:509.838.8240

NAC NO	161-21001
DRAWN	GARREN BUI
CHECKED	CURTIS OLDS
DATE	10/05/2026

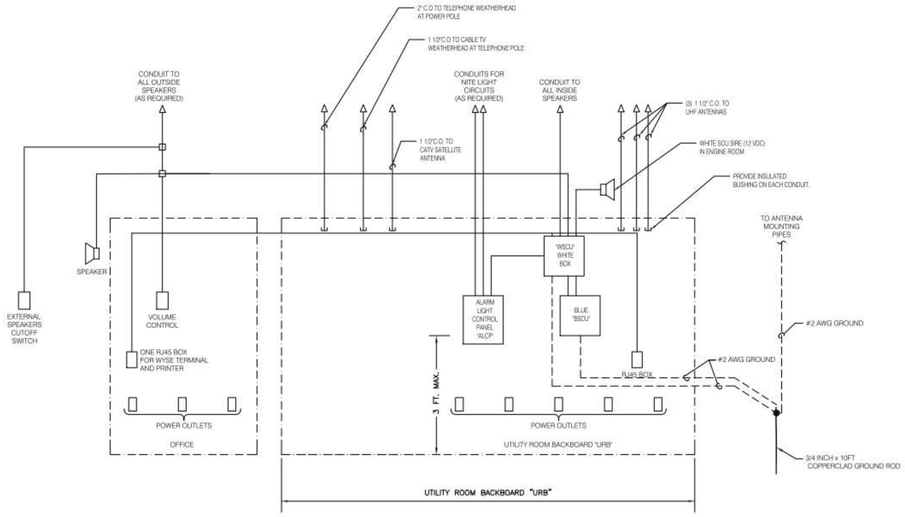
ELECTRICAL LIGHTING CONTROLS & SCHEDULES

CD

E5.01

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OMID M. MOTTAHED



SCOPE OF WORK FOR CONTRACTOR ON SCU

DEFINITION

A - BLUE SCU: (BLUE SELECTIVE CALL UNIT). IT IS ALSO KNOWN AS BLUE COMMUNICATION CABINET. LOCATED AT THE UTILITY ROOM. SEE SHEET E3.3 FOR EXACT LOCATION.

B - WHITE SCU: (WHITE SELECTIVE CALL UNIT). IT IS ALSO KNOWN AS WHITE COMMUNICATION CABINET. LOCATED AT THE UTILITY ROOM. CHECK DRAWING FOR EXACT LOCATION.

C - SCU WALL BOX: (JUNCTION BOX FOR BLUE AND WHITE SCU) IS A 24 INCH X 24 INCH X 6 INCH STEEL, WALL-MOUNTABLE BOX WITH 24 INCH X 24 INCH WOODEN BOARD INSIDE. LOCATED IN THE UTILITY ROOM. CHECK DRAWINGS FOR EXACT LOCATION.

D - ALARM LIGHT CONTROL PANEL: 24 INCH X 24 INCH X 6 INCH STEEL, WALL-MOUNTABLE BOX WITH 24 INCH X 24 INCH WOODEN BOARD INSIDE. LOCATED IN THE UTILITY ROOM. CHECK DRAWINGS FOR EXACT LOCATION.

E - ANTENNA MAST: STEEL POLES INSTALLED ON THE ROOF FOR ANTENNA MOUNTING.

F - SPEAKER CUTOFF SWITCH: A SWITCH(ES) TO CUT OFF OUTSIDE SPEAKERS OF THE FIRE STATION (TYPICAL).

G - CONDUIT: ALL CONDUIT USED SHOULD BE OF GALVANIZED STEEL.

AT THE LOCATION OF THE SCU WALL BOX (UTILITY ROOM, CHECK DRAWINGS FOR LOCATION)

1 - PROVIDE AND INSTALL SCU WALL BOX. IT SHOULD BE A 24 INCH X 24 INCH X 6 INCH STEEL, WALL-MOUNTABLE BOX WITH 1 - 24 INCH X 24 INCH WOODEN BOARD INSIDE.

2 - PROVIDE AND INSTALL AN 8 FOOT GROUND ROD AT THE UTILITY ROOM.

3 - PROVIDE AND INSTALL A 1 INCH CONDUIT FROM THE GROUND ROD TO THE ANTENNA MAST ON THE ROOF. PROVIDE AND INSTALL #2 AWG GROUND WIRE IN THE CONDUIT, CONNECTING THE GROUND ROD AND THREE ANTENNA MASTS. LEAVE PULL-CORD IN.

4 - PROVIDE AND INSTALL #2 AWG GROUND WIRES FROM THE ROD TO THE SCU WALL BOX.

5 - PROVIDE AND INSTALL 2 (TWO) #2 AWG GROUND WIRES FROM THE ROD TO BLUE SCU AND WHITE SCU, SEPARATELY.

6 - PROVIDE AND INSTALL A DEDICATED DUPLEX POWER OUTLET/RECEPTACLE WITH ITS OWN CIRCUIT BREAKER NEAR THE BLUE SCU PANEL LOCATION.

7 - ELECTRICAL ROOM: PROVIDE AND INSTALL ALARM LIGHT CONTROL PANEL (ALCP). LOCATED LOCATED IN UTILITY ROOM. CHECK DRAWINGS FOR EXACT LOCATION.

THROUGHOUT THE FIRE STATION

1 - PROVIDE AND INSTALL ALL INSIDE SPEAKER ENCLOSURES AND MOUNTING ACCESSORIES, (MODEL # BOGEN S86T72SPGBWVK, RE84, MR8, TB8) AND ALL INSIDE SPEAKERS (MODEL # BOGEN S86T72SPGBW) FOR A 70 VOLT PUBLIC ADDRESSING SYSTEM AS INSTRUCTED BY THE DRAWINGS. THE INSTALLATION AND TAPPING OF THE SPEAKERS SHOULD BE DONE IN CLOSE COOPERATION WITH ISD PERSONNEL.

2 - PROVIDE AND INSTALL ALL OUTSIDE SPEAKER MOUNTS AND OUTSIDE SPEAKERS, MODEL # SPT5A FOR A 70 VOLT SYSTEM AS INSTRUCTED BY THE DRAWINGS. THE INSTALLATION AND TAPPING OF THE SPEAKERS SHOULD BE DONE IN CLOSE COOPERATION WITH ISD PERSONNEL.

3 - PROVIDE AND INSTALL, AND HOME RUN 1 INCH CONDUITS FROM THE SCU WALL BOX TO EVERY OUTSIDE SPEAKER. CLEARLY LABEL EACH CONDUIT ON THE WALL BOX END OF THE CONDUIT WITH SPEAKER LOCATIONS (ROOM NAMES) CONNECTED TO THE CONDUIT. CONTRACTOR SHOULD PROVIDE AND INSTALL PULL-ROPES FOR THE CONDUITS AND A PAIR OF 16 GAUGE SPEAKER WIRE (8677) WITH 5 FEET EXTRA ON BOTH ENDS OF EVERY CONDUIT.

4 - PROVIDE AND INSTALL, AND HOME RUN 1 INCH CONDUITS FROM THE SCU WALL BOX TO EVERY INSIDE SPEAKER, OR DAISY-CHAIN UP TO 6 (SIX) SPEAKERS PER HOME RUN. CLEARLY LABEL EACH CONDUIT ON THE WALL BOX END OF THE CONDUIT WITH SPEAKER LOCATIONS (ROOM NAMES) CONNECTED TO THE CONDUIT. CONTRACTOR SHOULD PROVIDE AND INSTALL PULL-ROPES FOR THE CONDUITS AND A PAIR OF 16 GAUGE SPEAKER WIRE (8677) WITH 5 FEET EXTRA ON BOTH ENDS OF EVERY CONDUIT.

5 - PROVIDE AND INSTALL 1 INCH CONDUIT FROM THE SCU WALL BOX TO SPEAKER CUTOFF SWITCH (CHECK DRAWINGS FOR LOCATION AT STATION OFFICE). PROVIDE AND INSTALL PULL-ROPE FOR THE CONDUIT AND A PAIR OF 16 GAUGE WIRE (8677) WITH 5 FEET EXTRA ON BOTH ENDS OF THE CONDUIT.

6 - PROVIDE AND INSTALL 1 INCH CONDUIT FROM SCU WALL BOX TO THE SPEAKERS, WALL-MOUNTED IN THE APPARATUS ROOM. CONTRACTOR SHOULD INSTALL PULL-ROPE FOR THE CONDUIT AND A PAIR OF 16 GAUGE WIRE (8677) WITH 5 FEET EXTRA ON BOTH ENDS OF THE CONDUIT.

7 - PROVIDE AND INSTALL 1 INCH CONDUIT FROM SCU WALL BOX TO ALARM LIGHT CONTROL PANEL 'ALCP' (CHECK DRAWINGS FOR LOCATION AT UTILITY ROOM). PROVIDE AND INSTALL PULL-ROPE FOR THE CONDUIT AND 2 (TWO) PAIRS OF 12 GAUGE WIRE WITH 5 FEET EXTRA ON BOTH ENDS OF THE CONDUIT. LABEL EACH PAIR WITH DIFFERENT COLOR (BLUE, WHITE).

8 - PROVIDE AND INSTALL 1 1/2" INCH CONDUIT HOME RUN FROM ANTENNA MAST TO THE LOCATION OF BLUE SCU CABINET (LOCATED AT THE UTILITY ROOM) FOR UHF VOICE ANTENNA. MINIMUM BENDING RADIUS FOR THE CONDUIT SHOULD BE NO LESS THAN 8 INCHES. AT THE MAST, THE CONDUIT SHOULD BE RIGID, WITH WEATHER HEAD. CONDUIT STUBS INTO COMMUNICATIONS ROOM ABOVE SCU CABINET, ABOUT 1-1/2 FEET BELOW CEILING. MAXIMUM OF 3 BENDS/SWEEPS ARE ALLOWED. LEAVE PULL-ROPE IN THE CONDUIT.

9 - PROVIDE AND INSTALL 1 1/2" INCH CONDUIT HOME RUN FROM ANTENNA MAST TO THE LOCATION OF BLUE SCU CABINET FOR UHF DATA ANTENNA. MINIMUM BENDING RADIUS FOR THE CONDUIT SHOULD BE NO LESS THAN 8 INCHES. AT THE MAST, THE CONDUIT SHOULD BE RIGID, WITH WEATHER HEAD. CONDUIT STUBS INTO UTILITY ROOM ABOVE SCU CABINET, ABOUT 1-1/2 FEET BELOW CEILING. MAXIMUM OF 3 BENDS/SWEEPS ARE ALLOWED. LEAVE PULL-ROPE IN THE CONDUIT.

10 - PROVIDE AND INSTALL 1 1/2" INCH CONDUIT HOME RUN FROM ANTENNA MAST TO THE LOCATION OF WHITE SCU CABINET FOR VHF VOICE ANTENNA. MINIMUM BENDING RADIUS FOR THE CONDUIT SHOULD BE NO LESS THAN 8 INCHES. AT THE MAST, THE CONDUIT SHOULD BE RIGID, WITH WEATHER HEAD. CONDUIT STUBS INTO UTILITY ROOM ABOVE SCU CABINET, ABOUT 1-1/2 FEET BELOW CEILING. MAXIMUM OF 3 BENDS/SWEEPS ARE ALLOWED. LEAVE PULL-ROPE IN THE CONDUIT.

11 - PROVIDE AND INSTALL 1 INCH CONDUIT FOR THE ALARM LIGHT CONTROL PANEL 'ALCP' TO NIGHT LIGHTS/CALL LIGHTS.

12 - PROVIDE AND INSTALL 1 INCH CONDUITS AND PULL-ROPES FROM SCU WALL BOX TO THE PRINTER AND MONITOR LOCATIONS. CHECK DRAWINGS FOR EXACT LOCATIONS (LOCATED AT STATION OFFICE).

ROOF ANTENNA MOUNT

1 - PROVIDE AND INSTALL ROOF ANTENNA MOUNTS PER REQUIREMENTS ON THE DRAWINGS.

2 - EACH ANTENNA MOUNT SHOULD BE SEPARATED BY 10 FEET.

3 - PROVIDE AND INSTALL #2 AWG GROUND WIRE FOR EACH MOUNT TO THE UTILITY ROOM GROUND ROD.

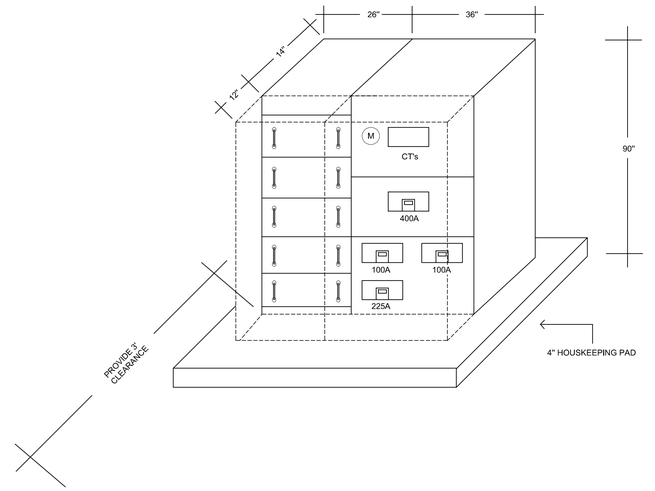
4 - ANTENNA MOUNT SHOULD BE 8 FEET ABOVE FINISHED ROOF AND SHOULD BE INVISIBLE FROM THE STREET.

5 - PROVIDE BRACING BELOW ROOF PER CEC REQUIREMENT.

6 - THE ANTENNA MOUNT SHOULD BE OF 1-1/2 INCH RIGID, GALVANIZED STEEL PIPE AND CAPPED.

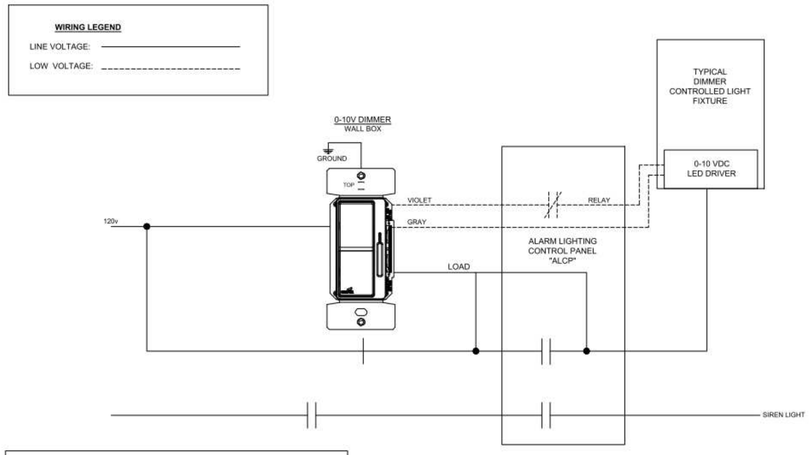
7 - THE ANTENNA MOUNT SHOULD BE 4 FEET IN HEIGHT ABOVE THE ROOF.

(2) Typical Radio Selective Call System
NTS



SWITCHBOARD LAYOUT, DIMENSIONS (LENGTH, WIDTH, HEIGHT) AND CONFIGURATIONS ARE BASED ON EATON/CUTLER-HAMMER INSTANT SWITCHBOARD.
OTHER MANUFACTURERS MAY DIFFER IN SIZE AND CONFIGURATION.
CONTRACTOR SHALL REVIEW AND CONFIRM DIMENSIONS AND LAYOUT REMAIN ADEQUATE IF DIFFERENT MANUFACTURERS IS SELECTED, PRIOR TO SHOP SRAWING SUBMITTAL.

(3) SWITCHBOARD AND CONCRETE PAD DETAIL
NTS



(1) Wall Box Dimmer Detail
NTS

AHJ STAMP APPROVAL

BUILDING AND SAFETY APPROVED
REVIEWED FOR SUBSTANTIAL COMPLIANCE ONLY. SUBJECT TO FURTHER REVIEW AND CORRECTIONS. **VIOLATION OF APPLICABLE CODES, LAWS OR ORDINANCES IS STRICTLY PROHIBITED DESPITE CONTENTS OF THESE PLANS. ALL REVISIONS OR DEVIATIONS FROM THESE PLANS REQUIRE PRIOR BUILDING OFFICIAL APPROVAL.**

4/23/2023, 11:47:02 AM
BELL-EE55540

BIDDING SET

REVISIONS

ISSUED FOR PERMIT

OMID MOTTAHED
No. E-18488
EXPIRES: 06/30/2024
ELECTRICAL
STATE OF CALIFORNIA
REGISTERED PROFESSIONAL ENGINEER

04/14/2023

HENDERSON ENGINEERS
5343 N. 16TH STREET, SUITE 460
PHOENIX, AZ 85016
TEL 602.388.0200 FAX 602.388.5201
WWW.HENDERSONENGINEERS.COM
2050003751

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ELECTRICAL DETAILS

CD

E5.02

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OMID M. MOTTAHED

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 04/21) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LT

This document is used to demonstrate compliance with requirements in §110.9, §110.12(c), §130.0, §130.1, §140.6, and §141.0(b)2 for indoor lighting scopes using the prescriptive path.

Project Name: FIRE STATION 163 — Report Page: Page 1 o
Project Address: 6320 PINE AVE, BELL, CA 90201 — Date Prepared: 07/21/2

A. GENERAL INFORMATION

01	Project Location (city)	BELL	04	Total Conditioned Floor Area (ft²)	1,844
02	Climate Zone	8	05	Total Unconditioned Floor Area (ft²)	0
03	Occupancy Types Within Project (select all that apply):		06	# of Stories (Habitable Above Grade)	1

☐ Office ☐ Retail ☐ Warehouse ☐ Hotel/Motel ☐ School ☐ Support Areas
☐ Parking Garage ☐ High-Rise Residential ☐ Relocatable ☐ Healthcare ☑ Other (write in): FIRE STATION

B. PROJECT SCOPE

Table Instructions: Include any lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.6 or §141.0(b)2 for alterations. WARNING: Changing the Calculation Method in this table will result in the deletion of data previously input. If you need to change the calculation method, please open a new form or use "Save As".

Scope of Work	Conditioned Spaces		Unconditioned Spaces	
01	02	03	04	05
My Project Consists of (check all that apply):	Calculation Method	Area (ft²)	Calculation Method	Area (ft²)
☑ New Lighting System	Area Category	1,844		
☐ Altered Lighting System				
Total Area of Work (ft²)	1,844			

C. COMPLIANCE RESULTS

Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

Lighting in conditioned and unconditioned spaces must not be combined for compliance per §140.6(b)1.	Allowed Lighting Power per §140.6(b) (Watts)						Adjusted Lighting Power per §140.6(a) (Watts)				Compliance Result
	01	02	03	04		05	06	07		08	09
	Complete Building §140.6(c)1	Area Category §140.6(c)2	Area Category Additional §140.6(c)2(+)	Tailored §140.6(c)3 (+)	+	Total Allowed (Watts)	Total Designed (Watts)	Adjustments PAF Control Credits §140.6(a)2 (-)	=	Total Adjusted (Watts) *Includes Adjustments	05 Must be ≥ 08 §140.6
	(See Table I)	(See Table I)	(See Table J)	(See Table K)			(See Table F)	(See Table P)			
Conditioned:		1,304.9			=	1,304.9	1,233.6		=	1,233.6	COMPLIES
Unconditioned:					=				=		

Table Continued

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 04/21) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LT
Project Name: FIRE STATION 163 — Report Page: Page 2 c
Project Address: 6320 PINE AVE, BELL, CA 90201 — Date Prepared: 07/21/2

Controls Compliance (See Table H for Details)	
Rated Power Reduction Compliance (See Table Q for Details)	Not Applicable

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

Selections made in Table U have been changed by the permit applicant. See Table E. Additional Remarks for permit applicant's explanation.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. INDOOR LIGHTING FIXTURE SCHEDULE

Table Instructions: Include all permanent designed lighting and all portable lighting in offices.

Designed Wattage: Conditioned Spaces

01	02	03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description	Modular (Track) Fixture	Small Aperture & Color Change[1]	Watts per luminaire[2]	How Wattage is determined	Total number luminaires	Exempt per §140.6(a)3	Design Watts	Field Inspect Pass	Fai
A/AE	2X2 FLAT PANEL LED FIXTURE WITH	☐	☐	38	Mfr. Spec²	15	☐	570	☐	☐
C	4 FT SURFACE MOUNTED LED STIP	☐	☐	21	Mfr. Spec²	2	☐	42	☐	☐
C1/C1E	8 FT SURFACE MOUNTED LED STRIP	☐	☐	43	Mfr. Spec²	4	☐	172	☐	☐
E	6" RECESSED LED DOWNLIGHT WIT	☐	☐	25	Mfr. Spec²	8	☐	200	☐	☐
E2	SIMILAR TO TYPE E. 6" RECESSED LE	☐	☐	25	Mfr. Spec²	4	☐	100	☐	☐
F	4' RECESSED LED PERIMETER FIXTU	☐	☐	18.8	Mfr. Spec²	2	☐	37.6	☐	☐
F1	4' WALL MOUNT LED DIRECT WITH	☐	☐	18.8	Mfr. Spec²	1	☐	18.8	☐	☐
J	2' WALL/SURFACE LED STRIP	☐	☐	24	Mfr. Spec²	1	☐	24	☐	☐
X1	UNIVERSAL MOUNT SELF POWERE	☐	☐	1.3	Mfr. Spec²	4	☐	5.2	☐	☐
G	4 FT WALL MOUNTED DIRECT/IND	☐	☐	64	Mfr. Spec²	1	☐	64	☐	☐
AE	SAME AS ABOVE FIXTURE IN DORMS	☐	☐	38	Mfr. Spec²	8	☑		☐	☐
F	SAME AS ABOVE FIXTURE IN DORMS	☐	☐	18.8	Mfr. Spec²	7	☑		☐	☐
G	SAME AS ABOVE FIXTURE IN DORMS	☐	☐	64	Mfr. Spec²	7	☑		☐	☐

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 04/21) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTI-E
Project Name: FIRE STATION 163 — Report Page: Page 3 of 6
Project Address: 6320 PINE AVE, BELL, CA 90201 — Date Prepared: 07/21/2022

01	02	03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description	Modular (Track) Fixture	Small Aperture & Color Change[1]	Watts per luminaire[2]	How Wattage is determined	Total number luminaires	Exempt per §140.6(a)3	Design Watts	Field Inspector Pass	Fail
						Total Designed Watts CONDITIONED SPACES:		1,233.6		

[1] *FOOTNOTE: Design Watts for small aperture and color changing luminaires which qualify per §140.6(a)4B is adjusted to be 75% of their rated wattage. Table F automatically makes this adjustment, the permit applicant should enter full rated wattage in column 05.*
[2] *Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per §130.0(c) Wattage used must be the maximum rated for the luminaire, not the lamp.*

G. MODULAR LIGHTING SYSTEMS

This Section Does Not Apply

H. INDOOR LIGHTING CONTROLS (Not Including PAFs)

This Section Does Not Apply

I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS

Table Instructions: Complete the table for each area complying using the Complete Building or Area Category Methods per §140.6(b) Indicate if additional lighting power allowances per §140.6(c) or adjustments per §140.6(a) are being used.

Conditioned Spaces

01	02	03	04	05	06	
Area Description	Complete Building or Area Category Primary Function Area	Allowed Density (W/ft²)	Area (ft²)	Allowed Wattage (Watts)	Additional Allowances / Adjustment Area Category	PAF
RECEPTION AREA	Main Entry Lobby	0.85	187	158.95	☐	☐
RESTROOMS	Restroom	0.65	485	315.25	☐	☐
STORAGE	Commercial and Industrial Storage	0.6	113	67.8	☐	☐
UTILITY WORK AREA	Convention, Conference, Multipurpose, and Meeting Center	0.85	510	433.5	☐	☐
CORRIDOR	Corridor	0.6	549	329.4	☐	☐
		TOTAL:	1,844	1,304.9	See Tables J or P for detail	

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 04/21) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTI-E
Project Name: FIRE STATION 163 — Report Page: Page 4 of 6
Project Address: 6320 PINE AVE, BELL, CA 90201 — Date Prepared: 07/21/2022

J. ADDITIONAL LIGHTING ALLOWANCE: AREA CATEGORY METHOD QUALIFYING LIGHTING SYSTEM

This Section Does Not Apply

K. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE

This Section Does Not Apply

L. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY

This Section Does Not Apply

M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING

This Section Does Not Apply

N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED ORNAMENTAL/SPECIAL EFFECTS

This Section Does Not Apply

O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE

This Section Does Not Apply

P. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (POWER ADJUSTMENT FACTOR (PAF))

This Section Does Not Apply

Q. RATED POWER REDUCTION COMPLIANCE FOR ALTERATIONS

This Section Does Not Apply

R. 80% LIGHTING POWER FOR ALTERATIONS - CONTROLS EXCEPTIONS

This Section Does Not Apply

S. DAYLIGHT DESIGN POWER ADJUSTMENT FACTOR (PAF)

This Section Does Not Apply

T. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

STATE OF CALIFORNIA
Indoor Lighting
NRCC-LTI-E (Created 04/21) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTI-E
Project Name: FIRE STATION 163 — Report Page: Page 5 of 6
Project Address: 6320 PINE AVE, BELL, CA 90201 — Date Prepared: 07/21/2022

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://ww2.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

YES	NO	Form/Title	Field Inspector Pass	Fail
◉	○	NRCI-LTI-01-E - Must be submitted for all buildings	☐	☐
○	◉	NRCI-LTI-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-04-E - Must be submitted for two interlocked systems serving an auditorium, a convention center, a conference room, a multipurpose room, or a theater to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-05-E - Must be submitted for a Power Adjustment Factor (PAF) to be recognized for compliance.	☐	☐
○	◉	NRCI-LTI-06-E - Must be submitted for additional wattage installed in a video conferencing studio to be recognized for compliance.	☐	☐

U. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and any with "-A" in the form name must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

YES	NO	Form/Title	Field Inspector Pass	Fail
◉	○	NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	☐	☐
◉	○	NRCA-LTI-03-A - Must be submitted for automatic daylight controls.	☐	☐
○	◉	NRCA-LTI-04-A - Must be submitted for demand responsive lighting controls.	☐	☐
○	◉	NRCA-LTI-05-A - Must be submitted for institutional tuning power adjustment factor (PAF).	☐	☐
○	◉	NRCA-ENV-03-F - Must be submitted for daylighting design power adjustment factors (PAF).	☐	☐

STATE OF CALIFORNIA
Indoor Lighting
NRCI-LTI-E (Created 04/21) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTI-E
Project Name: FIRE STATION 163 — Report Page: Page 6 of 6
Project Address: 6320 PINE AVE, BELL, CA 90201 — Date Prepared: 07/21/2022

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete

Documentation Author Name:	GARREN BUI	Documentation Author Signature:	GARREN BUI
Company:	HENDERSON ENGINEERS	Signature Date:	07/28/2022
Address:	510 W 6TH ST #800, LOS ANGELES, CA 90014	CEA/ HERS Certification Identification (if applicable):	
City/State/Zip:	LOS ANGELES/CA/90014	Phone:	661-305-0071

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	OMID MOTTAHED	Responsible Designer Signature:	
Company :	HENDERSON ENGINEERS	Date Signed:	
Address:	5343 N. 16TH ST #460	License:	18488
City/State/Zip:	PHOENIX/AZ/85016	Phone:	602-336-5225

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E (Created 01/21) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTO-E
This document is used to demonstrate compliance with requirements in §110.9, §130.0, §130.2, §140.7, and §141.0(b)2L for outdoor lighting scopes using the prescriptive path.
Project Name: FIRE STATION 163 — Report Page: Page 1 of 6
Project Address: 6320 PINE AVE, BELL, CA 90201 — Date Prepared: 07/21/2022

A. GENERAL INFORMATION

01	Project Location (city)	BELL	04	Total Illuminated Hardscape Area (ft²) 1,000
02	Climate Zone	8		
03	Outdoor Lighting Zone per Title 24, Part 1 §10-114 or as designated by Authority Having Jurisdiction (AHJ):			

☐ LZ-0: Very Low - Undeveloped Parkland ☑ LZ-2: Moderate - Rural Areas ☐ LZ-4: High - Must be reviewed by CA Energy Commission for Approval
☐ LZ-1: Low - Developed Parkland ☐ LZ-3: Moderately High - Urban Areas

B. PROJECT SCOPE

Table Instructions: Include any outdoor lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in §140.7 or §141.0(b)2L for alterations.

My project consists of:

01	02
☑ New Lighting System	Must Comply with Allowances from §140.7.
☐ Altered Lighting System	Is your alteration increasing the connected lighting load (Watts)? ○ Yes ○ No
03	04 / 05
% of Existing Luminaires Being Altered[1]	Sum Total of Luminaires Being Added or Altered / Calculation Method

[1] *FOOTNOTES: % of Existing Luminaires Being Altered = (Sum Total of Luminaires Being Added or Altered / Existing Luminaires within the Scope of the Permit Application) x 100*

C. COMPLIANCE RESULTS

Table Instructions: If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

Calculation of Total Allowed Lighting Power (Watts) §140.7 or §141.0(b)2L									Compliance Results		
01		02		03		04		05	06	07	08	09
General Hardscape Allowance §140.7(d)1	+	Per Application §140.7(d)2	+	Sales Frontage §140.7(d)2	+	Ornamental §140.7(d)2	+	Per Specific Area §140.7(d)2 OR	Existing Power §141.0(b)2L =	Total Allowed (Watts)	≥	Total Actual (Watts)	07 Must be ≥ 08
(See Table I)		(See Table J)		(See Table K)		(See Table L)		(See Table M)	(See Table N)			(See Table F)	
	+		+		+		+	OR	=		≥	551	
Cutoff Compliance (See Table G for Details)												Not Applicable	
Controls Compliance (See Table H for Details)												COMPLIES with Exceptional Conditions	

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E (Created 01/21) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTO-E
Project Name: FIRE STATION 163 — Report Page: Page 2 of 6
Project Address: 6320 PINE AVE, BELL, CA 90201 — Date Prepared: 07/21/2022

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

Table H. Outdoor Lighting Controls Permit Applicant Notes:
EXTERIOR RECEPTION AREA: LIGHT FIXTURE WATTAGE UNDER 100W.
EXTERIOR DORM WINDOWS: LIGHT FIXTURE WATTAGE UNDER 100W.
EXTERIOR PASSAGE: LIGHT FIXTURE WATTAGE UNDER 100W.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. OUTDOOR LIGHTING FIXTURE SCHEDULE

Table Instructions: For new or altered lighting systems demonstrating compliance with §140.7 (ie Table I has expanded for input), include all luminaires being installed and any existing luminaires remaining or being moved within the spaces covered by the permit application in the Table below. For altered lighting systems using the Existing Power method per §141.0(b)2L (ie Table N has expanded for input), include only new luminaires being installed and replacement luminaires being installed as part of the project scope (ie, do not include existing luminaires remaining or existing luminaires being moved).

Designed Wattage:

01	02	03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description	Watts per luminaire[1,2]	How Wattage is determined	Total number luminaires[2]	Luminaire Status[3]	Excluded per §140.7(a)1	Design Watts	Cutoff Req. ≥ 6,200 initial lumen output §130.2(b)[4]	Field Inspector Pass	Fail
E1/E1E	6" RECESSED LED DOWN	☑ Linear	25	Mfr. Spec[2]	15	New	☐	375	NA: <6,200 lumens	☐	☐
S	WALL MOUNTED LED S	☑ Linear	22	Mfr. Spec[2]	8	New	☐	176	NA: <6,200 lumens	☐	☐
						Total Designed Watts		551			

* NOTES: Selections with a * require a note in the space below explaining how compliance is achieved.
EX: Luminaire is lighting a statue; EXCEPTION 2 to §130.2(b).

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E (Created 01/21) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE — NRCC-LTO-E
Project Name: FIRE STATION 163 — Report Page: Page 3 of 6
Project Address: 6320 PINE AVE, BELL, CA 90201 — Date Prepared: 07/21/2022

[1] *FOOTNOTES: Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per §130.0(c)*
[2] *For linear luminaires, wattage should be indicated as W/lf instead of Watts/luminaire. Total linear feet for the luminaire should be indicated in column 05 instead of number of luminaires.*
[3] *Select "New" for new luminaires in a new outdoor lighting project or for added luminaires in an alteration. Select "Altered" for replacement luminaires in an alteration. Select "Existing to Remain" for existing luminaires within the project scope that are not being altered and are remaining. Select "Existing Reinstalled" for existing luminaires which are being removed and reinstalled as part of the project scope*
[4] *Compliance with mandatory cutoff requirements is required for luminaires with initial lumen output ≥ 6,200 unless exempted by §130.2(b).*

G. CUTOFF REQUIREMENTS (BUG)

This Section Does Not Apply

H. OUTDOOR LIGHTING CONTROLS

Table Instructions: Complete this table demonstrating compliance with controls requirements for all new or altered luminaires installed as part of the permit application. For alteration projects, luminaires which are existing to remain (ie untouched) and luminaires which are removed and reinstalled (wiring only) do not need to be included in this table even if they are within the spaces covered by the permit application.
*When an option having a * is selected, the notes section of this table must be completed. The lighting controls section of the Compliance Summary Table on the first page will show "DOES NOT COMPLY" if the notes are left blank. For each requirement in columns 02 through 04, do not leave the field blank, instead select NA or Exempt* from the dropdown list to indicate not applicable or an exemption.*

Mandatory Controls

01	02	03	04	05	
Area Description	Shut-Off §130.2(c)1	Auto-Schedule §130.2(c)2	Motion Sensor §130.2(c)3	Field Inspector Pass	Fail
EXTERIOR RECEPTION AREA	Astronomical Timer	Yes	Exempt *	☐	☐
EXTERIOR DORM WINDOWS	Astronomical Timer	Yes	Exempt *	☐	☐
EXTERIOR PASSAGE	Astronomical Timer	Yes	Exempt *	☐	☐

*NOTES: Controls with a * require a note in the space below explaining how compliance is achieved.
EX: Not permitted by health & safety to be turned off; EXCEPTION 1 to §130.2(c).

EXTERIOR RECEPTION AREA	LIGHT FIXTURE WATTAGE UNDER 100W.
EXTERIOR DORM WINDOWS	LIGHT FIXTURE WATTAGE UNDER 100W.
EXTERIOR PASSAGE	LIGHT FIXTURE WATTAGE UNDER 100W.

I. LIGHTING POWER ALLOWANCE (per §140.7)

Table Continued

REVISIONS

ISSUED FOR PERMIT

OMID MOTTAHED
No. E-18488
EXPIRES: 06/30/2024
ELECTRICAL
STATE OF CALIFORNIA

04/14/2023

HENDERSON ENGINEERS
5343 N. 16TH STREET, SUITE 460
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2050003751

LOS ANGELES COUNTY FIRE DEPARTMENT
FIRE STATION 163
6320 PINE AVENUE, BELL, CA. 90201

NAC ARCHITECTURE
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1203 WEST RIVERSIDE AVE
SPOKANE WA 99201
P:509.838.8240

NAC NO 161-21001
DRAWN GARREN BUI
CHECKED CURTIS OLDS
DATE 10/05/2026

TITLE 24 ENERGY COMPLIANCE FORMS

CD

E6.01

AHJ STAMP APPROVAL

BUILDING AND SAFETY APPROVED
REVIEWED FOR SUBSTANTIAL COMPLIANCE ONLY. SUBJECT TO FURTHER REVIEW AND CORRECTIONS.
VIOLATION OF APPLICABLE CODES, LAWS OR ORDINANCES IS STRICTLY PROHIBITED DESPITE CONTENTS OF THESE PLANS. ALL REVISIONS OR DEVIATIONS FROM THESE PLANS REQUIRE PRIOR BUILDING OFFICIAL APPROVAL.
4/23/2023, 11:47:02 AM
BELL-EE55540

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OMID M. MOTTAHED

4/14/2023 10:04:40 AM Autodesk Docs://161-21001 FS 163/2050003751 FIRE STATION BELL MEPF_V22.rvt

BIDDING SET

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E (Created 01/21) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E
Project Name: FIRE STATION 163	Report Page:	Page 4 of 6
Project Address: 6320 PINE AVE, BELL, CA 90201	Date Prepared:	07/21/2022

Table Continued

Table Instructions: Please complete this table for areas using the allowance calculations per §140.7. General Hardscape Allowance is per Table 140.7-A while "Use it or lost it" Allowances are per Table 140.7-B. Indicate which allowances are being used to expand sections for user input. Luminaires that qualify for one of the "Use it or lose it" allowances shall not qualify for another "Use it or lose it" allowance.

	01				
	"Use it or lose it" Allowances (select all that apply)				
☐ General Hardscape Allowance	☐ Per Application	☐ Sales Frontage	☐ Ornamental	☐ Per Specific Area	
Table I (below)	Taole J	Table K	Table L	Table M	

J. LIGHTING ALLOWANCE: PER APPLICATION
This Section Does Not Apply

K. LIGHTING ALLOWANCE: SALES FRONTAGE
This Section Does Not Apply

L. LIGHTING ALLOWANCE: ORNAMENTAL
This Section Does Not Apply

M. LIGHTING ALLOWANCE: PER SPECIFIC AREA
This Section Does Not Apply

N. EXISTING CONDITIONS POWER ALLOWANCE (alterations only)
This Section Does Not Apply

O. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION
Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://www.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

YES	NO	Form/Title	Field Inspector Pass	Fail
◉	○	NRCI-LTO-01-E - Must be submitted for all buildings.	☐	☐
◉	○	NRCI-LTO-02-E - Must be submitted for a lighting control system; or for an Energy Management Control System (EMCS), to be recognized for compliance.	☐	☐

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E (Created 01/21) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E
Project Name: FIRE STATION 163	Report Page:	Page 5 of 6
Project Address: 6320 PINE AVE, BELL, CA 90201	Date Prepared:	07/21/2022

P. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE
Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

YES	NO	Form/Title	Field Inspector Pass	Fail
◉	○	NRCA-LTO-02-A - Must be submitted for all outdoor lighting controls except for alterations where controls area added to ≤ 20 luminaires.	☐	☐

STATE OF CALIFORNIA
Outdoor Lighting
NRCC-LTO-E (Created 01/21) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E
Project Name: FIRE STATION 163	Report Page:	Page 6 of 6
Project Address: 6320 PINE AVE, BELL, CA 90201	Date Prepared:	07/21/2022

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
I certify that this Certificate of Compliance documentation is accurate and complete

Documentation Author Name:	GARREN BUI	Documentation Author Signature:	GARREN BUI (Digitally signed by GARREN BUI Date: 2022.07.28 16:23:15 -07'00')
Company:	HENDERSON ENGINEERS	Signature Date:	07/28/2022
Address:	510 W 6TH ST #800, LOS ANGELES, CA 90014	CEA/ HERS Certification Identification (if applicable):	
City/State/Zip:	LOS ANGELES/CA/90014	Phone:	661-305-0071

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. **The information provided on this Certificate of Compliance is true and correct.**
2. **I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)**
3. **The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.**
4. **The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.**
5. **I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.**

Responsible Designer Name:	OMID MOTTAHED	Responsible Designer Signature:	
Company :	HENDERSON ENGINEERS	Date Signed:	
Address:	5343 N. 16TH ST #460	License:	18488
City/State/Zip:	PHOENIX/AZ/85016	Phone:	602-336-5225

STATE OF CALIFORNIA
Electrical Power Distribution
NRCC-ELC-E (Created 01/20) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-ELC-E
This document is used to demonstrate compliance with mandatory requirements in §130.5 for electrical systems in newly constructed nonresidential, high-rise residential and hotel/motel occupancies. Additions and alterations to electrical service systems in these occupancies will also use this document to demonstrate compliance per §141.0(a) or §141.0(b)2F for alterations.		
Project Name: FIRE STATION 163	Report Page:	Page 1 of 5
Project Address: 6320 PINE AVE, BELL, CA 90201	Date Prepared:	07/21/2022

A. GENERAL INFORMATION

01 Project Location (city)	BELL	02 Occupancy Types Within Project:		
☐ Office	☐ Retail	☐ Warehouse	☐ Hotel/ Motel	☐ School	☐ Support Areas
☐ Parking Garage	☐ High-Rise Residential	☐ Relocatable	☐ Healthcare Facilities	☑ Other (Write In):	FIRE STATION

B. PROJECT SCOPE
Table Instructions: Include any electrical service systems that are within the scope of the permit application.

01 Electrical Service Designation/ Description	02 Scope of Work[1]	03 Rating (kVA)	04 Utility Provided Metering System Exception to §130.5(a)[2]	05 System subject to CA Elec Code Article 517 Exception to §130.5(a)&(b)	06 Demand Response Controls
EXTERIOR WINDOW UTILITY WORK	New electrical service equipment & meter	150	☐	☐	Where required, demand response controls must be specified which are capable of receiving and automatically responding to at least one standards based messaging protocol which enables demand response after receiving a demand response signal. Sections §120.2, §130.1 and §130.3 and compliance documents NRCC-MCH, NRCC-LTI and NRCC-LTS will indicate when demand response controls are required.

[1] *FOOTNOTES: Adding only new feeders and branch circuits triggers Voltage Drop 130.5(c), no other requirements from 130.5 are required.*
[2] *Applicable if the utility company is providing a metering system that indicates instantaneous kW demand and kWh for a utility-defined period.*

C. COMPLIANCE RESULTS
Table Instructions: If this table says "DOES NOT COMPLY" refer to Table D. for guidance and review the Table that indicates "No".

01		02		03		04	05
Service Electrical Metering §130.5(a)	AND	Separation for Monitoring §130.5(b)	AND	Voltage Drop §130.5(c)	AND	Controlled Receptacles §130.5(d)	**Compliance Results**
(See Table F)		(See Table G)		(See Table H)		(See Table I)	
Yes	AND	Yes	AND	Yes	AND	Yes	**COMPLIES**

STATE OF CALIFORNIA
Electrical Power Distribution
NRCC-ELC-E (Created 01/20) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-ELC-E
Project Name: FIRE STATION 163	Report Page:	Page 2 of 5
Project Address: 6320 PINE AVE, BELL, CA 90201	Date Prepared:	07/21/2022

D. EXCEPTIONAL CONDITIONS
This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

No exceptional conditions apply to this project.

E. ADDITIONAL REMARKS
This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

F. SERVICE ELECTRICAL METERING
Table Instructions: Complete the table below for new or replacement electrical service systems OR equipment to demonstrate compliance with §130.5(a).

01	02	03 Required Metering Capabilities per Table 130.5-A				04	05 Field Inspector	
Electrical Service Designation/ Description	Rating (kVA)	Instantaneous Demand (kW)	Historical Peak Demand (kW)	Tracking kWh for user-defined period	kWh per rate period	Location of Requirements in Construction Documents	Pass	Fail
	150	☑	☐	☑	☐	E4.01	☐	☐

G. SEPARATION OF ELECTRICAL CIRCUITS FOR ENERGY MONITORING
Table Instructions: Complete this table for entirely new or complete replacement electrical power distribution systems to demonstrate compliance with §130.5(b). Using the dropdown choices in column 01, indicate the load types included for each service. Any load types that are not included in the service do not need to be shown.

Electrical Service Designation/Description:

01 Load Type per Table 130.5-B[1]	02 Minimum Required Separation of Load per Table 130.5-B	03 Compliance Method[2]	04 Location of Requirements in Construction Documents	05 Field Inspector Pass	Fail
Lighting including exit, egress and exterior	All lighting in aggregate	Method 3	E4.01	☐	☐
HVAC systems and components		Method 3	E4.01	☐	☐
Plug Loads and appliances < 25kVA		Method 3	E4.01	☐	☐

** NOTES: If "Other*" is selected under Compliance Method above, please indicate how compliance has been achieved in the space provided below.*
Table Continued

STATE OF CALIFORNIA
Electrical Power Distribution
NRCC-ELC-E (Created 01/20) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-ELC-E
Project Name: FIRE STATION 163	Report Page:	Page 3 of 5
Project Address: 6320 PINE AVE, BELL, CA 90201	Date Prepared:	07/21/2022

01 Load Type per Table 130.5-B[1]	02 Minimum Required Separation of Load per Table 130.5-B	03 Compliance Method[2]	04 Location of Requirements in Construction Documents	05 Field Inspector Pass	Fail

[1] *FOOTNOTES: For each separate load type, up to 10% of the connected load may be of any type.*
[2] *Method 1: Switchboards/ motor control centers/ panelboard loads disaggregated for each load type*
Method 2: Switchboards/ motor control centers/ panelboard supply other distribution equipment with loads disaggregated for each load type
Method 3: Branch circuits serve load types individually & provisions for adding future branch curcuit monitoring
Method 4: Complete metering system measures and reports loads by type
See Chapter 8 of the Nonresidential Compliance Manual for more detail on Compliance Methods.

H. VOLTAGE DROP
Table Instructions: Please complete this table for entirely new or complete replacement electrical power distribution systems, or alterations that add, modify or replace both feeders and branch circuits to demonstrate compliance with §130.5(c). For alterations, only the altered circuits must demonstrate compliance per §141.0(b)2Piii.

01 Electrical Service Designation/ Description	02 Combined Voltage Drop on Installed Feeder/Branch Circuit Conductors Compliance Method		03 Location of Voltage Drop Calculations[1]	04 Sheet Number for Voltage Drop Calculations in Construction Documents	05 Field Inspector Pass	Fail
	☑ Voltage drop < 5%	☐ Permitted by CA Elec Code (Exception to §130.5(c))*	In construction documents	E4.01	☐	☐

**NOTES If "Permitted by CA Elec Code*" is selected under Compliance Method above, please indicate where the exception applies in the space provided below.*
[1] *FOOTNOTES: Voltage drop calculations may be attached to the permit application outside the construction documents if allowed by the Authority Having Jurisdiction. Select "attached" if applicable. If calculations will be the responsibility of the installing contractor, select "Contractor Responsible".*

I. CIRCUIT CONTROLS FOR 120-VOLT RECEPTACLES AND CONTROLLED RECEPTACLES
Table Instructions: Please complete this table for entirely new or complete replacement electrical power distribution systems to demonstrate compliance with §130.5(d). Both controlled and uncontrolled receptacles must be provided in office areas, lobbies, conference rooms, kitchen areas in office spaces, copy rooms and hotel/motel guest rooms.

01 Room Name or Description	02 Location/ Type of Controlled Receptacles	03 Shut-Off Controls	04 Permanent Durable Marking Will be Used	05 Location of Requirements in Construction Documents	06 Field Inspector Pass	Fail

Table Continued

STATE OF CALIFORNIA
Electrical Power Distribution
NRCC-ELC-E (Created 01/20) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-ELC-E
Project Name: FIRE STATION 163	Report Page:	Page 4 of 5
Project Address: 6320 PINE AVE, BELL, CA 90201	Date Prepared:	07/21/2022

01 Room Name or Description	02 Location/ Type of Controlled Receptacles	03 Shut-Off Controls	04 Permanent Durable Marking Will be Used	05 Location of Requirements in Construction Documents	06 Field Inspector Pass	Fail
RECEPTION AREA	Within 6ft of uncontrolled receptacles	Occupancy Sensor	☑	E3.01	☐	☐
				Add Row	Remove Last	

** If "Other*" is selected under Compliance Method above, please indicate how compliance has been achieved in the space provided below.*

J. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION
Table Instructions: Selections have been made based on information provided in previous tables of this document. If any selection needs to be changed, please explain why in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online at https://ww2.energy.ca.gov/title24/2019standards/2019_compliance_documents/Nonresidential_Documents/NRCI/

YES	NO	Form/Title	Field Inspector Pass	Fail
◉	○	NRCI-ELC-01-E - Must be submitted for all buildings.	☐	☐

K. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE
There are no Certificates of Acceptance applicable to electrical power distribution requirements.

STATE OF CALIFORNIA
Electrical Power Distribution
NRCC-ELC-E (Created 01/20) — CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF COMPLIANCE		NRCC-ELC-E
Project Name: FIRE STATION 163	Report Page:	Page 5 of 5
Project Address: 6320 PINE AVE, BELL, CA 90201	Date Prepared:	07/21/2022

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT
I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	GARREN BUI	Documentation Author Signature:	GARREN BUI (Digitally signed by GARREN BUI Date: 2022.07.28 16:49:12 -07'00')
Company:	HENDERSON ENGINEERS	Signature Date:	07/28/2022
Address:	510 W 6TH ST #800, LOS ANGELES, CA 90014	CEA/ HERS Certification Identification (if applicable):	
City/State/Zip:	LOS ANGELES/CA/90014	Phone:	661-305-0071

RESPONSIBLE PERSON'S DECLARATION STATEMENT
I certify the following under penalty of perjury, under the laws of the State of California:
1. **The information provided on this Certificate of Compliance is true and correct.**
2. **I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)**
3. **The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.**
4. **The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.**
5. **I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.**

Responsible Designer Name:	OMID MOTTAHED	Responsible Designer Signature:	
Company :	HENDERSON ENGINEERS	Date Signed:	
Address:	5343 N. 16TH ST #460	License:	18488
City/State/Zip:	PHOENIX/AZ/85016	Phone:	602-336-5225

REVISIONS

ISSUED FOR PERMIT

REGISTERED PROFESSIONAL ENGINEER — OMID MOTTAHED No. E-18488 — EXPIRES: 06/30/2024 — ELECTRICAL — STATE OF CALIFORNIA

04/14/2023

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P:509.838.8240

NAC NO	161-21001
DRAWN	GARREN BUI
CHECKED	CURTIS OLDS
DATE	10/05/2026

TITLE 24 ENERGY COMPLIANCE FORMS

CD

E6.02

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BUILDING AND SAFETY APPROVED
REVIEWED FOR SUBSTANTIAL COMPLIANCE ONLY. SUBJECT TO FURTHER REVIEW AND CORRECTIONS. **VIOLATION OF APPLICABLE CODES, LAWS OR ORDINANCES IS STRICTLY PROHIBITED DESPITE CONTENTS OF THESE PLANS. ALL REVISIONS OR DEVIATIONS FROM THESE PLANS REQUIRE PRIOR BUILDING OFFICIAL APPROVAL.**
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OMID M. MOTTAHED