COMcheck Software Version 4.1.5.1

Interior Lighting Compliance Certificate

Project Information

Energy Code:	2017 Florida Building Code, Energy Conservation
Project Title:	Lake City Rail
Project Type:	Addition

Construction Site:
211 Mccloskey Ave
Lake City, FL 32055

Owner/Agent:
O'Conner Construction Group
173 County Rd 3850
Poolville, TX 76487

Designer/Contractor:
Sutton Eldridge Engineering, LLC
5600 Tennyson Pkwy
Suite 290
Plano, TX 75024

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts (B X C)
1-Rail Loading Dock (Warehouse)	7776	0.66	5132
		Total Allowed Watts =	5132

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
1-Rail Loading Dock (Warehouse)				
LED 1: Other:	1	38	77	2926
			Total Proposed Watts =	2926

Interior Lighting PASSES: Design 43% better than code

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2017 Florida Building Code, Energy Conservation requirements in COM*check* Version 4.1.5.1 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Martin R. Torres, P.E.		05/21/21
Name - Title	Signature	Date

COM*check* Software Version 4.1.5.1

Exterior Lighting Compliance Certificate

Project Information

Energy Code:	2017 Florida Building Code, Energy Conservation
Project Title:	Lake City Rail
Project Type:	Addition
Exterior Lighting Zone	2 (Light industrial area with limited nighttime use)

Construction Site:
211 Mccloskey Ave
Lake City, FL 32055

Owner/Agent:
O'Conner Construction Group
173 County Rd 3850
Poolville, TX 76487

Designer/Contractor:
Sutton Eldridge Engineering, LLC
5600 Tennyson Pkwy
Suite 290
Plano, TX 75024

Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts / Unit	D Tradable Wattage	E Allowed Watts (B X C)
Loading Dock (Emergency services, loading area)	5500 ft2	0.5	No	2750
			Total Tradable Watts (a) =	0
			Total Allowed Watts =	2750
			Total Allowed Supplemental Watts (b) =	600

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.
(b) A supplemental allowance equal to 600 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Proposed Exterior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Loading Dock (Emergency services, loading area 5500 ft2): Non-tradable Wattage				
Fixture B: B: Exterior LED Wallpack: Other:	1	4	72	288
			Total Tradable Proposed Watts =	0

Exterior Lighting PASSES: Design 0.0% better than code

Exterior Lighting Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 2017 Florida Building Code, Energy Conservation requirements in COM*check* Version 4.1.5.1 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Martin R. Torres, P.E.		05/21/21
Name - Title	Signature	Date

COMcheck Software Version 4.1.5.1

Inspection Checklist

Energy Code: 2017 Florida Building Code, Energy Conservation

Requirements: 0.0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C405.6 [PR17][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the electrical systems and equipment and document where exceptions are claimed. Provisions are made for metering individual tenant units. Feeder connectors (for feeder and branch circuits) sized in accordance with approved plans with maximum drop of 5% voltage drop total.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C103.2 [PR4][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C103.2 [PR8][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the exterior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include exterior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C406 [PR9][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.1 [EL15][1]	Lighting controls installed to uniformly reduce the lighting load by at least 50%.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.1 [EL18][1]	Occupancy sensors installed in required spaces.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.1, C405.2.3 [EL23][2]	Independent lighting controls installed per approved lighting plans and all manual controls readily accessible and visible to occupants.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.2.1 [EL22][2]	Automatic controls to shut off all building lighting installed in all buildings.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.3 [EL16][2]	Daylight zones provided with individual controls that control the lights independent of general area lighting.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.3, C405.2.3.1, C405.2.3.2 [EL20][1]	Primary sidelighted areas are equipped with required lighting controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.3, C405.2.3.1, C405.2.3.3 [EL21][1]	Enclosed spaces with daylight area under skylights and rooftop monitors are equipped with required lighting controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.4 [EL4][1]	Separate lighting control devices for specific uses installed per approved lighting plans.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.4 [EL8][1]	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.5 [EL25][null]	Automatic lighting controls for exterior lighting installed. Controls will be daylight controlled, set based on business operation time-of-day, or reduce connected lighting > 30%.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.3 [EL6][1]	Exit signs do not exceed 5 watts per face.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C303.3, C408.2.5.2 [FI17][3]	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.4.1 [FI18][1]	Interior installed lamp and fixture lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Interior Lighting fixture schedule for values.*
C405.5.1 [FI19][1]	Exterior lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Exterior Lighting fixture schedule for values.*
C408.2.5.1 [FI16][3]	Furnished as-built drawings for electric power systems within 90 days of system acceptance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C408.3 [FI33][1]	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

LIGHTING SEQUENCE OF OPERATIONS IECC 2015

CORRIDORS

1. LIGHTING SHALL BE CONTROLLED WITH MULTI-ZONE OPERATION WITH 0-10V DIMMING CAPABILITY AND TIME-CLOCK FUNCTIONALITY.
2. CONTROL STATIONS SHALL BE PRESET STATION FOR SCENE CONTROL. KEYPAD OR TOUCH-SCREEN.
3. DAYLIGHT SENSORS AND DIMMING SHALL BE USED AS REQUIRED FOR SPACES WITH MORE THAN 150W OF LIGHTING IN DAYLIGHT ZONES WITHIN SPACE. PER IECC 2015.
4. REFER TO DRAWINGS FOR COORDINATION OF SWITCH LEG AND ZONE CONTROL.
5. LIGHTS TO TURN ON AND OFF BASED OFF BUSINESS HOURS TIME CLOCK, WITH OVERRIDE STATION LOCKED OUT DURING BUSINESS HOURS.
6. AFTER HOURS LIGHTS CAN BE TURNED ON VIA OVERRIDE STATION OR CEILING MOUNTED OCCUPANCY SENSORS.

SITE LIGHTING

1. SITE LIGHTING SHALL BE CONTROLLED WITH NETWORKED AND TIME CLOCK CONTROL THROUGH LIGHTING RELAY CABINET.
2. LIGHTING SHALL DIM DOWN AFTER MIDNIGHT BY 30% PER IECC 2015.

TIME-CLOCK SCHEDULING

1. SHALL INCLUDE ASTRONOMICAL TIME-CLOCK INTEGRAL TO PROCESSOR.
2. SCHEDULES SHALL ALLOW FOR:
3. WEEKDAY OPEN
4. WEEKDAY CLOSE
5. WEEKEND OPEN
6. WEEKEND CLOSE
7. SCHEDULE OF BUSINESS HOURS TO BE COORDINATED WITH OWNER PRIOR TO START UP.

OCCUPANCY / VACANCY SENSORS

1. TIME-DELAYS SHALL BE VERIFIED WITH OWNER PRIOR TO START UP. NO MORE THAN 30 MINUTES AS REQUIRED.
2. OCCUPANCY SENSORS SHALL BE AUTO ON/ AUTO OFF.
3. VACANCY SENSORS SHALL BE MANUAL ON/ AUTO OFF.

EMERGENCY EGRESS LIGHTING

1. ALL EMERGENCY LIGHTING SHALL MEET THE UL 924 STANDARDS FOR EMERGENCY LIGHTING AND CONTROLS,
   - THE ELECTRICAL SUPPLY MUST PROVIDE POWER WITHIN 10 SECONDS OF THE LOSS OF NORMAL POWER.
   - PERFORMANCE REQUIREMENTS FOR UNIT EQUIPMENT, AT LEAST 60% OF INITIAL ILLUMINATION MUST BE MAINTAINED FOR 90 MINUTES. THE BATTERY VOLTAGE SHALL REMAIN AT NO LESS THAN 87,5% OF ITS NOMINAL VOLTAGE DURING THE ENTIRE 90-MINUTE PERIOD.
   - UNDER NORMAL CONDITIONS, EGRESS LIGHTING MUST BE SERVED BY THE BUILDING'S PRIMARY ELECTRICAL SUPPLY. WHEN NORMAL SUPPLY FAILS, THE EMERGENCY POWER SUPPLY MUST ILLUMINATE PATHWAYS THAT LEAD TO EXITS. THE EXITS THEMSELVES. EXIT DISCHARGES, ELECTRICAL ROOMS, FIRE COMMAND CENTERS, FIRE PUMP ROOMS, AND GENERATOR ROOMS.
2. ALL EMERGENCY LUMINAIRES WITHIN AN AREA ARE TO FUNCTION THE SAME AS NONEMERGENCY LUMINAIRES (SWITCHED OR DIMMING) WITHIN GIVEN AREA DURING NORMAL MODE UNLESS NOTED OTHERWISE.
3. CLOSED AREAS (CLASSROOMS / OFFICES) DURING AFTERHOURS MODE THE EMERGENCY LIGHTING SHALL TURN OFF AND FUNCTION WITH THE LOCAL ROOM CONTROLS.
4. RESTROOMS AND LOBBIES, DURING AFTERHOURS THE EMERGENCY LIGHTING SHALL DIM DOWN TO 30%, AND THEN FUNCTION WITH THE LOCAL ROOM CONTROLS TO TURN BACK ON 100%.
5. LUMINAIRES DENOTED 'NL' ARE TO BE UNSWITCHED AND REMAIN ON AT ALL TIMES.

GENERAL LIGHTING NOTES

1. BRANCH CIRCUITS SHOWN ARE TO BE FIELD VERIFIED FOR AVAILABILITY PRIOR TO CONSTRUCTION. IF THERE IS A DISCREPANCY IN THE NUMBER OF AVAILABLE CIRCUITS THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO CONSTRUCTION. CONTRACTOR SHALL UPDATE THE PANEL DIRECTORY OF THE EXISTING PANEL BOARD(S) USED FOR THIS SCOPE OF WORK. UPDATED DIRECTORY SHALL BE TYPEWRITTEN.
2. ALL WIRE AND CONDUIT TO BE ABANDONED SHALL BE REMOVED FROM ITS' POINT OF ORIGIN TO ITS' POINT OF TERMINATION.
3. ALL EXISTING JUNCTION BOXES, AND OTHER ELECTRICAL, TELE/DATA AND LIFE SAFETY DEVICES WHICH ARE IN CONFLICT WITH NEW ARCHITECTURAL OR ARE NOW LOCATED IN AN ACCESSIBLE SPACE DUE TO STRUCTURAL, HVAC OR ACOUSTICAL REVISIONS AS A RESULT FROM THIS BUILD-OUT, ARE TO BE RELOCATED TO AN ACCESSIBLE LOCATION. EXTEND CONDUIT AND WIRING REQUIRED FOR SUCH RELOCATION.
4. THE CONTRACTOR VERIFY EXACT LIGHTING FIXTURES VOLTAGE AND FINISH PRIOR TO PROCUREMENT.
5. NEW EXIT FIXTURES SHALL MATCH BUILDING STANDARD UNLESS NOTED OTHERWISE.
6. REFER TO ARCHITECTURAL PLANS AND DETAILS FOR EXACT LOCATION AND MOUNTING REQUIREMENTS FOR ALL DIMMERS, SWITCHES AND LIGHT FIXTURES. DISCREPANCY BETWEEN THE ARCHITECTURAL PLAN AND ELECTRICAL PLAN SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT IMMEDIATELY.
7. CONTRACTOR TO COORDINATE WITH ARCHITECTURAL REFLECTED CEILING PLANS FOR LIGHTING FIXTURES TYPES AND QUANTITY.
8. VERIFY THE TYPE OF CEILING SYSTEM WITH GENERAL CONTRACTOR OR CEILING CONTRACTOR. PROVIDE FIXTURES WHICH ARE COMPATIBLE WITH THE CEILING SYSTEM AND INCLUDE ALL REQUIRED MOUNTING ACCESSORIES AND HARDWARE.
9. NO EQUIPMENT JUNCTION BOXES, ETC. REQUIRING ACCESS SHALL BE LOCATED IN HARD CEILING AREAS (UNLESS ACCESS PANEL IS PROVIDED, COORDINATE WITH ARCHITECT). LOCATE ANY EXISTING EQUIPMENT, JUNCTION BOXES, ETC., TO ACCESSIBLE CEILING AREAS.
10. DRAWING SHOWS CIRCUITING AND SWITCHING/DIMMING REQUIREMENTS AND FIXTURE TYPES ONLY, VERIFY EXACT LIGHTING FIXTURES AND STANDARD SWITCHING WITH ARCHITECT AND OWNER'S PRIOR TO INSTALLATION. ALSO VERIFY EXACT LIGHTING FIXTURES VOLTAGE AND FINISH PRIOR TO INSTALLATION.
11. ANY FIXTURE SUBSTITUTION MUST BE APPROVED BY THE ARCHITECT AND/OR LIGHTING DESIGNER PRIOR TO BID. CONTRACTOR MUST BE PREPARED TO SUPPLY A SAMPLE AND/OR PHOTOMETRIC DATA IF REQUIRED. IF SUBSTITUTION IS REJECTED, CONTRACTOR MUST BE PREPARED TO PROVIDE SPECIFIED PRODUCT WITHOUT DELAY.
12. WHERE MULTIPLE SWITCHING DEVICES ARE SHOWN IN ONE LOCATION THESE DEVICES SHALL BE MOUNTED UNDER A COMMON COVER PLATE UNLESS OTHERWISE SPECIFIED BY THE ARCHITECT. VERIFY WITH ARCHITECT PRIOR TO ROUGH-IN.
13. ALL EXPOSED CONDUITS SHALL BE EMT AND SHALL BE RUN 90 DEGREES PERPENDICULAR AND PARALLEL TO CEILING STRUCTURE AND HUG TO UNDERSIDE OF SLAB.
14. SUPPORT CEILING MOUNTED LIGHTING FIXTURES DIRECTLY FROM THE BUILDING STRUCTURE. DO NOT SUPPORT FIXTURES FROM PIPING, DUCTWORK OR ANY OTHER EQUIPMENT, OR SOLELY FROM THE SUSPENDED CEILING.
15. ALL PENDANT FIXTURES SHALL BE PROVIDED WITH SUFFICIENT STEM OR SUSPENSION CABLE LENGTH PRIOR TO INSTALLATION. VERIFY LENGTHS WITH ARCHITECT.
16. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY HARDWARE, ELECTRICAL CABLE, TIMERS, TRANSFORMERS, ETC., AS REQUIRED FOR COMPLETION OF INSTALLATION AND PROVIDE A COMPLETE WORKABLE SYSTEM MEETING DESIGN INTENT. WHERE LOW VOLTAGE FIXTURES ARE NOT EQUIPPED WITH STEP DOWN TRANSFORMER, PROVIDE TRANSFORMER OF REQUIRED SIZE AND RATING TO ACCOMMODATE CONNECTED LIGHTING LOAD.
17. PROVIDE AND INSTALL #10 WIRES FOR 120V CIRCUIT HOMERUNS MORE THAN 100'-0".
18. WHERE PHASE CONDUCTORS ARE INCREASED, EQUIPMENT GROUNDING CONDUCTOR SHALL BE INCREASED IN SIZE PROPORTIONATELY, ACCORDING TO THE CIRCULAR MIL AREA OF THE PHASE CONDUCTOR.
19. CROSS HATCHED LIGHT FIXTURES TO BE SERVED FROM NON-SWITCHED NIGHT LIGHT BRANCH CIRCUIT AND BE PROVIDED WITH 90 MINUTE BATTERY PACK EMERGENCY LIGHTING. REFERENCE LIGHTING SEQUENCE OF OPERATION FOR METHOD OF CONTROL FOR EACH AREA.
20. ALL EXIT SIGNS SHALL BE READILY VISIBLE FROM ANY DIRECTION OF EGRESS TRAVEL AND SHALL MATCH BUILDING STANDARD.
21. CONTRACTOR SHALL PROVIDE ADDITIONAL EXIT SIGN(S) IF REQUIRED BY THE CITY FIRE MARSHALL INSPECTOR AT NO ADDITIONAL COST TO THE OWNER.
22. ALL BOXES AND ENCLOSURES FOR EMERGENCY CIRCUITS SHALL BE PERMANENTLY MARKED. EMERGENCY CIRCUIT WIRING SHALL COMPLY WITH ARTICLE 700.9(D).
23. CONTRACTOR TO COORDINATE ALL CONTROL DEVICES REQUIREMENTS WITH MANUFACTURER AND INSTALL PER MANUFACTURER RECOMMENDATION, PRIOR TO ROUGH IN.
24. CONTRACTOR TO INSTALL LIGHTING CONTROLLERS IN ACCESSIBLE CEILING SPACE, PROVIDE 3 FEET MINIMUM ACCESS PER NEC SECTION 110.26 TABLE A1. FIELD COORDINATE WITH OTHER TRADES.
25. CONTRACTOR TO PROVIDE SHOP DRAWINGS, SHOWING MANUFACTURER RECOMMENDED DEVICE LOCATION AND COMPLETE BILL OF MATERIAL.

GENERAL ELECTRICAL NOTES

1. REFER TO ARCHITECTURAL PLANS AND DETAILS FOR EXACT LOCATION AND MOUNTING REQUIREMENTS FOR ALL OUTLETS. DISCREPANCY BETWEEN THE ARCHITECTURAL PLAN AND ELECTRICAL PLAN SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT IMMEDIATELY.
2. BRANCH CIRCUITS SHOWN ARE THE BE FIELD VERIFIED FOR AVAILABILITY PRIOR TO CONSTRUCTION. IF THERE IS A DISCREPANCY IN THE NUMBER OF AVAILABLE CIRCUITS THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO CONSTRUCTION. CONTRACTOR SHALL UPDATE THE PANEL DIRECTOR OF THE EXISTING PANEL BOARD(S) USED FOR THIS SCOPE OF WORK. UPDATED DIRECTORY SHALL BE TYPEWRITTEN.
3. ALL BRANCH CIRCUITS SHALL BE PROVIDED WITH NEC REQUIRED NEUTRAL CONDUCTORS.
4. ALL GROUNDING AND PHASE CONDUCTORS SHALL BE IDENTIFIED AND BUNDLED.
5. ALL WIRE AND CONDUIT TO BE ABANDONED SHALL BE REMOVED FROM ITS POINT OF SERVICE TO ITS POINT OF TERMINATION.
6. WHERE MULTIPLE WIRING DEVICES ARE SHOWN IN ONE LOCATION, THESE DEVICES SHALL BE MOUNTED UNDER A COMMON COVER PLATE UNLESS OTHERWISE SPECIFIED BY THE ARCHITECT. VERIFY WITH ARCHITECT PRIOR TO ROUGH-IN.
7. BRANCH CIRCUITS UTILIZING MULTI-WIRE BRANCH CIRCUITS SHALL BE PROVIDED WITH A FACTORY APPROVED COMMON TRIPPING MEANS. REFER TO NEC 210.4(B), 605.6 AND 605.7.
8. THE CONTRACTOR SHALL MAKE FINAL CONNECTION TO ALL OWNER/TENANT FURNISHED FURNITURE AND EQUIPMENT PER RESPECTIVE MANUFACTURERS SPECIFICATIONS UNLESS NOTED OTHERWISE.
9. ALL ABANDONED FLOOR OUTLET PENETRATIONS SHALL BE RE-POURED AND FIRE SAFE SEALED.
10. ISOLATED GROUND BRANCH CIRCUITS SHALL HAVE A DEDICATED NEUTRAL CONDUCTOR FOR EACH PHASE CONDUCTOR AND A SEPARATE EQUIPMENT GROUND CONDUCTOR. CONDUIT MAY NOT BE USED AS GROUND.
11. PROVIDE TYPE WRITTEN, SELF ADHESIVE STRIP WITH BRANCH CIRCUIT INFORMATION ON COVER PLATE OF EACH POWER RECEPTACLE.
12. THE CONTRACTOR SHALL PROVIDE A FLUSH WALL BOX WITH RING AND PULL WIRE TO GINCHES ABOVE CEILING AT ALL WALL TELEPHONE AND DATA LOCATIONS.
13. WALL/CEILING MOUNTED AUDIO/VISUAL FIRE ALARM ANNUNCIATION DEVICES SHALL BE DESIGNED BY LICENSED INDIVIDUAL IN FIRE ALARM SYSTEM DESIGN.
14. PROVIDE GFCI RECEPTACLES WHERE REQUIRED, VERIFY ON SITE.
15. SOME EQUIPMENT MAY NEED RECEPTACLES, ELECTRICAL CONTRACTOR TO INSTALL RECEPTACLES WHERE REQUIRED, VERIFY WITH EQUIPMENT MANUFACTURER PRIOR TO ROUGH-IN. DO NOT HARDWIRE.

GENERAL FIRE ALARM NOTES

1. THE FIRE ALARM SYSTEM IS PERFORMANCE BASED. A COMPLETE FIRE ALARM SYSTEM SHALL BE DESIGNED BY A NICET LEVEL IV CERTIFIED DESIGNER. THE EXACT DEVICE LOCATIONS, NUMBER OF DEVICES, DEVICE TYPES, WIRING, POWER SUPPLIES, VOLTAGE DROP CALCULATIONS ETC. SHALL BE PROVIDED WITH SHOP DRAWINGS PREPARED BY THE LICENSED FIRE ALARM DESIGNER.
2. THE FIRE ALARM DESIGNER SHALL SUBMIT DRAWINGS TO THE STATE FIRE MARSHAL'S OFFICE AND/OR AUTHORITY HAVING JURISDICTION FOR APPROVAL.
3. COORDINATE THE LOCATION AND INSTALLATION OF THE ELECTRICAL POWER FOR ALL FIRE ALARM CONTROL PANELS. PROVIDE A COMPLETE OPERATING SYSTEM.
4. MODIFY ANY EXISTING CONDITIONS TO ACCOMMODATE NEW WORK.
5. REPAIR OR REWORK EXISTING SYSTEMS TO REMAIN SO THEY COMPLY WITH CODE REQUIREMENTS.
6. PREVENT DAMAGE TO EXISTING EQUIPMENT TO BE RELOCATED OR REUSED. REPAIR DAMAGED AREAS TO MATCH THE ADJACENT UNAFFECTED AREAS.
7. FOR EXISTING SYSTEMS, MAINTAIN THE FIRE ALARM PROTECTION FOR ALL AREAS DURING DEMOLITION AS REQUIRED BY THE AHJ.

ELECTRICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
———	CONDUIT		MOTOR CONTROL SWITCH	HM	WALL MICROPHONE OUTLET
– – – –	CONDUIT IN OR UNDERFLOOR		DUPLEX RECEPTACLE - STANDARD MOUNTING HEIGHT (18" AFF UNO)	HV	WALL VOLUME CONTROL OUTLET
——o	CONDUIT STUBBED UP	$_{A}$	DUPLEX RECEPTACLE ABOVE COUNTER (HEIGHT SPECIFIED BY ARCHIRECT)	HTV	RECESSED WALL TV OUTLET EQUIPPED WITH DUPLEX, (2) DATA, (2) HDMI
——⊸	CONDUIT STUBBED DOWN	$_{GFCI}$	GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE MOUNTING HEIGHT (18"AFF UNO)		PROGRAM CLOCK
———	TELEPHONE SYSTEM CONDUIT	$_{IG}$	ISOLATED GROUND DUPLEX RECEPTACLE MOUNTING HEIGHT (18" AFF UNO)		PROGRAM BELL
	LED LIGHTING FIXTURE	$_{USB}$	USB CHARGING DUPLEX RECEPTACLE COMBO (1) TYPE A PORT, AND (1) TYPE C PORT		CARD READER
	LED 2X2 LIGHT FIXTURE		QUADRUPLEX RECEPTACLE MOUNTINGHEIGHT (18" AFF UNO)		PUSHBUTTON STATION
	WALL MOUNTED STRIP LIGHT FIXTURE		CEILING MOUNTED DUPLEX RECEPTACLE		BUZZER
	CELING LIGHTING FIXTURE		SIMPLEX RECEPTACLE	EPO	EMERGENCY POWER OFF PUSHBUTTON
	WALL LIGHTING FIXTURE		SPECIAL RECEPTACLE AS NOTED		MOTOR CONNECTION
	CEILING LIGHTING FIXTURE - WALL WASHER		COMMUNICATION WALL OUTLET		DISCONNECT SWITCH
	EMERGENCY LIGHTING FIXTURE	$_{xx}$	FLOOR BOX POWER ONLY ("X" DENOTE TYPE REFERANCE FLOOR BOX SCHEDULE)		FUSED DISCONNECT SWITCH
					MAGNETIC MOTOR STARTER
	WALL MOUNTED EXTERIOR LIGHT FIXTURE	$_{xx}$	FLOOR BOX COMBINATION ("X" DENOTE TYPE REFERANCE FLOOR BOX SCHEDULE)		COMBINATION MAGNETIC STARTER / DISCONNECT SWITCH
	CEILING LIGHTING FIXTURE - EMERGENCY		POWER POLE		TRANSFORMER
	EXIT LIGHT FIXTURE - SINGLE FACE		WALL SPEAKER ASSEMBLY		GROUND CONNECTION
	WALL EXIT LIGHT FIXTURE - SINGLE FACE		CEILING SPEAKER ASSEMBLY		PANELBOARD
	EXIT LIGHT FIXTURE - DOUBLE FACE	M	FLOOR MICROPHONE OUTLET		PANELBOARD FLUSH MOUNTED
	EMERGENCY BATTERY PACK LIGHT		JUNCTION BOX		DISTRIBUTION PANEL / SWITCHBOARD
	LIGHTING TRACK WITH TRACK FIXTURES		WALL JUNCTION BOX		HOME RUN
$	SINGLE POLE TOGGLE SWITCH			H - 1,3,5	THREE (3) ONE-POLE CIRCUITS
$_{P}$	TOGGLE SWITCH WITH PILOT LIGHT			H - 1/3/5	ONE (1) THREE-POLE CIRCUIT
$_{3}$	THREE-WAY TOGGLE SWITCH			M	ELECTRICAL METER
$_{4}$	FOUR-WAY TOGGLE SWITCH				
$_{R}$	RELAY CONTROL SWITCH				
$_{MC}$	MOMENTARY CONTROL SWITCH				
$_{M}$	TOGGLE SWITCH W/THERMAL OVERLOAD				
$_{K}$	KEY OPERATED SWITCH				
^{OC}	WALL MOUNTED VACANCY SENSOR (DUAL TECHNOLOGY)				
^{OCD}	WALL MOUNTED VACANCY SENSOR (DUAL TECHNOLOGY) (WITH DIMMING)				
^{LV}	LOW VOLTAGE PUSH-BUTTON SWITCH				
$^{LV}_{xP}$	LOW VOLTAGE PUSH-BUTTON SWITCH "X" INDICATED NUMBER OF SWITCH LEGS				
^{DV}	LOW VOLTAGE PUSH-BUTTON SWITCH (WITH DIMMING)				
$^{DV}_{xP}$	LOW VOLTAGE PUSH-BUTTON SWITCH (WITH DIMMING)"X" INDICATED NUMBER OF SWITCH LEGS				
OC	CEILING OCCUPANCY SENSOR (DUAL TECHNOLOGY)				
PC	PHOTOCELL SENSOR				

NOTE: NOT ALL SYMBOLS USED

PHOENIX
QORE Engineering
UNITED STATES COLD STORAGE

O'CONNOR CONSTRUCTION GROUP
173 COUNTY RD 3850
POOLVILLE, TEXAS 76487

ELECTRICAL COVER SHEET
LAKE CITY RAIL
211 MCCLOSKEY AVE LAKE CITY, FL 32055

NO.	DESCRIPTION	DATE

JOB NO: FTS11001
ISSUE DATE: 06/04/2021
PROJECT STATUS: ISSUED FOR PERMIT
SHEET NO.: **E0.01**
REVISION

CHRISTOPHER SUTTON PE No. 90588 STATE OF FLORIDA PROFESSIONAL ENGINEER 6/4/21

SUTTON ELDRIDGE ENGINEERING, LLC
5600 Tennyson Parkway Suite 290
Plano, Texas 75024
214.763.7300
Florida Registered Engineering Firm # 34293

ELECTRICAL SPECIFICATIONS

PART 1 - GENERAL

1.1 CAREFULLY READ THE SPECIFICATIONS AND COMPLY WITH ALL REQUIREMENTS. THESE GENERAL NOTES ARE INTENDED TO ASSIST THE CONTRACTOR DURING EXECUTION OF THE WORK. HOWEVER, THEY DO NOT COVER ALL OF THE SPECIFICATION REQUIREMENTS. ALL BIDDERS MUST BID PER PLANS AND SPECIFICATIONS.

1.2 THE TERM "PROVIDE" IN THESE SPECIFICATIONS AND ON THE DRAWINGS MEANS; FURNISH, TRANSPORT, INSTALL, CONNECT, WARRANTY AND START-UP, INCLUSIVELY.

1.3 THE SCOPE OF THE WORK SHALL INCLUDE THE FURNISHING AND INSTALLATION OF THE NECESSARY MATERIAL AND LABOR TO ACCOMPLISH THE WORK INDICATED BY THE DRAWINGS AND HEREIN SPECIFIED. ALL WORK BY CONTRACTOR SHALL CONFORM TO ALL APPLICABLE, FEDERAL, STATE AND LOCAL BUILDING CODES.

1.4 CONTRACTOR BEFORE SUBMITTING HIS BID, SHALL VISIT THE SITE, REVIEW THE EXISTING CONDITIONS AND ALLOW FOR ALL CHANGES THAT ARE NECESSARY TO COMPLETE INSTALLATION OF NEW ELECTRICAL WORK. SUBMISSION OF PROPOSALS SHALL BE TAKEN AS EVIDENCE THAT SUCH INSPECTIONS HAVE BEEN MADE. CLAIMS FOR EXTRA COMPENSATION FOR WORK THAT COULD HAVE BEEN FORESEEN BY SUCH INSPECTIONS, WHETHER SHOWN ON THE CONTRACT DOCUMENTS OR NOT SHALL NOT BE ACCEPTED NOR PAID.

1.5 COORDINATION: COORDINATE WORK WITH OTHER TRADES TO AVOID CONFLICT AND TO PROVIDE CORRECT ROUGH-IN AND CONNECTION FOR EQUIPMENT FURNISHED UNDER OTHER TRADES. REPORT NECESSARY CHANGES IN TIME TO PREVENT NEEDLESS RE-WORK.

1.6 DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF EQUIPMENT, DUCTWORK AND CIRCUITS. CONTRACTOR SHALL CHECK ALL INFORMATION AND REPORT ANY APPARENT DISCREPANCIES BEFORE SUBMITTING BID.

1.7 CONTRACTOR SHALL SECURE AND PAY FOR ALL CONSTRUCTION PERMITS AND LICENSES AND SHALL PAY ALL GOVERNMENTAL AND PUBLIC UTILITY CHARGES AND INSPECTION FEES NECESSARY FOR THE EXECUTION OF THE WORK.

1.8 SUBMITTALS

A. PROVIDE PRODUCT DATA FOR ALL EQUIPMENT AND MATERIALS DESIGNATED ON THE DRAWINGS OR LISTED IN A SCHEDULE. THE SUBMITTALS SHALL INCLUDE WIRING DIAGRAMS, PRODUCT CERTIFICATION, MAINTENANCE DATA, AND WARRANTIES.

B. IF REQUIRED PROVIDE SHOP DRAWINGS/COORDINATION DRAWINGS WITH DIMENSIONED PLANS AND SECTIONS OR ELEVATION LAYOUTS OF ELECTRICAL EQUIPMENT

C. DEVIATIONS: THE APPROVAL OF SUBMITTAL DRAWINGS BY THE ARCHITECT/ENGINEER, OR HIS REPRESENTATIVE, SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR DEVIATION FROM DRAWINGS OR THE SPECIFICATIONS UNLESS HE HAS CALLED ATTENTION IN WRITING TO SUCH DEVIATIONS AT THE TIME OF SUBMISSION AND HAS OBTAINED WRITTEN APPROVAL FROM THE ARCHITECT/ENGINEER, OR HIS REPRESENTATIVE, OF SUCH DEVIATIONS.

1.9 DEMOLITION

A. PROTECT THE EXISTING EQUIPMENT AND SYSTEMS TO REMAIN OPERATIONAL. IF DAMAGED OR DISTURBED IN THE COURSE OF THE DEMOLITION WORK, IT IS THE CONTRACTOR'S RESPONSIBILITY TO REPAIR OR REPLACE WITH NEW PRODUCT OF EQUAL CAPACITY, QUALITY AND FUNCTIONALITY.

B. CONTRACTOR SHALL COORDINATE WITH THE OWNER TO ARRANGE THE SHUT OFF OF UTILITIES.

C. CONTRACTOR SHALL BOX AND/OR PALLETIZE ALL DEMOLISHED EQUIPMENT AND PROTECT IT ON SITE. REMOVE THESE ITEMS FROM THE SITE AT THE DIRECTION OF THE OWNER.

D. CONTRACTOR SHALL NOT CONSIDER DEMOLITION AND ALTERATION NOTES TO BE ALL-INCLUSIVE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT AND ASSESS EACH AREA TO FULFILL THE INTENT OF THE COMPLETE DESIGN. REFER TO ARCHITECTURAL DOCUMENTS FOR DEFINITION OF SCOPE FOR DEMOLITION AREAS AND ADDITIONAL REQUIREMENTS. IT IS THE CONTRACTORS RESPONSIBILITY TO VISIT THE SITE TO CONFIRM THE EXTENT OF DEMOLITION AND RESOLVE ANY DISCREPANCIES WITH OWNER'S/LANDLORD'S CONSTRUCTION MANAGER.

E. FOR DEMOLITION AREAS, THE CONTRACTOR SHALL REVIEW THE MECHANICAL, PLUMBING, AND FIRE SUPPRESSION DEMOLITION DRAWINGS AND REMOVE WIRING, RACEWAYS, AND ELECTRICAL EQUIPMENT ASSOCIATED WITH THE MECHANICAL, PLUMBING AND FIRE SUPPRESSION DEMOLITION.

F. ENSURE THAT ALL LIFE SAFETY SYSTEMS REMAIN OPERATIONAL AND MEET LIFE SAFETY CODE REQUIREMENTS FOR ALL OCCUPIED AREAS THAT REMAIN OPERATIONAL DURING/AFTER DEMOLITION. THIS INCLUDES BUT IS NOT LIMITED TO EGRESS PATHS, FIRE ALARM SYSTEMS, EGRESS LIGHTING AND OTHER LIFE SAFETY SYSTEMS.

G. PROTECT EXISTING EQUIPMENT AND SYSTEMS INTENDED TO REMAIN OPERATIONAL. IF DAMAGED OR DISTURBED IN THE COURSE OF THE DEMOLITION WORK, IT IS THE CONTRACTOR'S RESPONSIBILITY TO REPAIR OR REPLACE WITH NEW PRODUCT OF EQUAL CAPACITY, QUALITY AND FUNCTIONALITY.

H. RE-ROUTE AND RE-CONNECT ANY CIRCUIT(S) THAT ARE TO REMAIN IN USE BUT INTERFERES WITH THE NEW CONSTRUCTION.

I. WORK REQUIRING INTERRUPTION OF ELECTRICAL POWER, WHICH WOULD ADVERSELY AFFECT THE NORMAL OPERATION OF THE OWNER/LANDLORD 'S PROPERTY OR OTHER BUILDING TENANTS, SHALL BE DONE AT A TIME OTHER THAN NORMAL WORKING HOURS. SCHEDULE ALL OUTAGES WITH OWNER/LANDLORD PRIOR TO SHUTDOWN.

J. OWNER/LANDLORD RESERVES THE RIGHTS TO ALL DEMOLISHED MATERIALS. COORDINATE AND VERIFY EQUIPMENT INTENDED TO BE SALVAGED PRIOR TO DEMOLITION. MATERIALS THAT OWNER/LANDLORD REQUESTS TO BE RE-USED OR SALVAGED, THE MATERIALS SHALL BE REMOVED IN A NEAT WORKMAN LIKE METHOD TO ALLOW THEIR RE-USE. PROTECT THE SALVAGE MATERIALS FOR REUSE BY PROPERLY PACKAGING THE MATERIALS TO PROTECT SALVAGED MATERIALS FROM DAMAGE; SECURELY PACKAGE ALL SALVAGE MATERIALS' INSTALLATION HARDWARE AND PARTS TO SALVAGED MATERIALS.

K. REMOVE UNUSED BRANCH CIRCUITS BACK TO BRANCH PANELBOARD OF ORIGIN, MARK BREAKER AS 'SPARE' AND MAKE ELECTRICALLY SAFE. REMOVE ALL ABANDONED CONDUITS ABOVE LAY-IN CEILING, EXPOSED CONDUITS, FLEXIBLE CONDUITS, SURFACE RACEWAY, SURFACE MOUNTED OUTLET/JUNCTION BOXES AND EQUIPMENT UNLESS NOTED OTHERWISE.

L. REMOVE DEMOLISHED MATERIAL FROM PROJECT SITE IN ACCORDANCE WITH ALL APPLICABLE CODES, STANDARDS AND REGULATIONS. FOLLOW ALL STATE AND LOCAL REGULATIONS AND CODES FOR PROPER DISPOSAL.

1.10 WITHIN 30 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE, PROJECT RECORD DOCUMENTATION (DRAWINGS) AND MANUALS SHALL BE PROVIDE TO THE BUILDING OWNER AND SHALL INCLUDE:

A. OPERATIONS & MAINTENANCE MANUALS: INCLUDE, AS APPROPRIATE TO EACH ITEM, SUFFICIENT INFORMATION TO PROVIDE FOR THE OWNER'S OPERATION AND MAINTENANCE OF EQUIPMENT FURNISHED. THE MANUALS SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING.

1. SUBMITTAL DATA STATING EQUIPMENT RATING AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE.
2. OPERATION MANUALS AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED.
3. NAMES AND ADDRESSES OF AT LEAST ONE QUALIFIED SERVICE AGENCY.

B. AS-BUILTS/RECORD DRAWINGS: PROVIDE PDF SET OF THE FOLLOWING:

1. ELECTRONIC DRAWINGS FILES, IN AUTOCAD ".DWG" FORMAT, OF ALL DOCUMENTS ON CD DISKS OR FLASH DRIVES, CORRECTED WITH "AS INSTALLED" WORK.
2. ELECTRONIC DRAWINGS FILES, IN "PDF" FORMAT, OF ALL DOCUMENTS ON CD DISKS OR FLASH DRIVES, CORRECTED WITH "AS INSTALLED" WORK.
3. FULL-SIZE HARD COPIES OF ALL DOCUMENTS CORRECTED WITH "AS INSTALLED" WORK.
4. AS-BUILT/RECORD DRAWINGS SHALL INDICATE THE ACTUAL INSTALLATION AND INCLUDE THE FOLLOWING:
   a. A SINGLE-LINE DIAGRAM OF THE BUILDING ELECTRICAL DISTRIBUTION SYSTEM
   b. FLOOR PLANS INDICATING LOCATION AND AREAS SERVED FOR ALL DISTRIBUTION.

C. CONTACTS: INCLUDE WITH EACH PRODUCT, NAME, ADDRESS, AND TELEPHONE NUMBERS, OF INSTALLING CONTRACTOR, FACTORY AND LOCAL SERVICE REPRESENTATIVE.

D. INSTRUCTIONS OF OWNER'S PERSONNEL: PRIOR TO FINAL INSPECTION AND ACCEPTANCE, FULLY INSTRUCT THE OWNER'S DESIGNATED OPERATING AND MAINTENANCE PERSONNEL IN THE OPERATING AND PERFORMANCE OF THE EQUIPMENT FURNISHED.

E. WARRANTIES: INCLUDE WARRANTY INFORMATION PROPERLY EXECUTED BY RESPECTIVE MANUFACTURERS, SUPPLIERS, OR SUB-CONTRACTORS FOR THE EQUIPMENT AND SYSTEM FURNISHED.

1.11 IN ADDITION TO THE ABOVE, CONTRACTOR SHALL ACCUMULATE DURING THE JOB'S PROGRESS, THE FOLLOWING DATA, IN PDF FORMATE, PREPARED IN A NEAT BROCHURE OR PACKET FOLDER AND TURNED OVER TO THE ARCHITECT FOR REVIEW AND SUBSEQUENT DELIVERY TO THE OWNER.

A. ALL WARRANTIES AND GUARENTEES AND MANUFACTURER'S DIRECTIONS ON EQUIPMENT AND MATERIAL COVERED IN THE CONTRACT INCLUDING THE NAMES, ADDRESSES AND TELEPHONE NUMBERS OF THE MANUFACTURER'S REPRESENTATIVE.

B. APPROVED FIXTURE BROCHURES, WIRING DIAGRAMS AND CONTROL DIAGRAMS (ORIGINAL DATA, NO COPIES).

C. COPIES OF APPROVED SHOP DRAWINGS.

1.12 ALL OF THE ABOVE DATA SHALL BE SUBMITTED TO THE ARCHITECT FOR HIS REVIEW AT SUCH TIME AS THE CONTRACTOR SUBMITS HIS LAST ESTIMATE PRIOR TO HIS FINAL PAYMENT, BUT IN NO CASE, LESS THAN TWO WEEKS BEFORE FINAL INSPECTION.

1.13 ALL PANEL DIRECTORIES SHALL BE TYPEWRITTEN AND UPDATED TO SHOW THE NEW WORK.

1.14 OWNER FURNISHED EQUIPMENT

A. CONTRACTOR SHALL REQUEST A COPY OF THE PRE-PURCHASED EQUIPMENT PROCUREMENT BID INSTRUCTIONS AND SPECIFICATIONS.

B. WHERE THE OWNER HAS ELECTED TO PROCURE SOME EQUIPMENT FOR THE PROJECT, IT IS THE INTENT OF THESE SPECIFICATIONS THAT THE CONTRACTOR SHALL ACCEPT RESPONSIBILITY OF THIS EQUIPMENT AND PROVIDE THE FOLLOWING:

1. COORDINATE SHOP DRAWING PREPARATION.
2. PROVIDE SUPERVISION TO COORDINATE SHIPPING AND ACCEPT DELIVERY.
3. INSTALL AND SET IN PLACE.
4. PROVIDE POWER AND CONTROL WIRING TO PROVIDE FUNCTIONS IN ACCORDANCE WITH THESE SPECIFICATIONS.
5. DELIVER THE EQUIPMENT TO THE OWNER IN A WORKABLE, OPERATING, AND TESTED CONDITION.
6. PROVIDE SUPERVISION TO COORDINATE FACTORY AND ON-SITE TESTING, START-UP, AND COMMISSIONING IN ACCORDANCE WITH THESE SPECIFICATIONS.
7. PROVIDE SUPERVISION TO COORDINATE OWNER TRAINING AND PREPARATION OF O&M MANUALS.

C. COORDINATE LIST OF EQUIPMENT PROVIDED BY OWNER WITH OWNER AND GENERAL CONTRACTOR.

D. THE CONTRACTOR SHALL REPLACE ANY OWNER EQUIPMENT/SYSTEMS UNDER HIS CONTROL OR SUPERVISION IF DAMAGED.

PART 2 - PRODUCTS

2.1 MATERIAL APPROVAL: ALL MATERIALS MUST BE NEW AND BEAR A UL LABEL. MATERIALS THAT ARE NOT COVERED BY UL TESTING STANDARDS SHALL BE TESTED AND APPROVED BY AN INDEPENDENT TESTING LABORATORY OR A GOVERNING AGENCY.

2.2 HOMERUNS TO PANEL BOARDS SHALL BE ELECTRICAL METALLIC TUBING (EMT) EQUAL TO ALLIED TUBE AND CONDUIT.

2.3 WHERE ALLOWED BY LOCAL CODES, TYPE 'MC' CABLE MAY BE USED. 'MC' CABLE MUST BE PROVIDED WITH ALL REQUIRED SUPPORTS. TYPE 'BX' OR 'AC' CABLE SHALL NOT BE UTILIZED ON THIS PROJECT.

2.4 ALL FUSES SHALL BE CURRENT-LIMITING TYPE AND BE U.L. LISTED. ACCEPTABLE MANUFACTURERS: LITTELFUSE, BUSSMAN

2.5 NEW SWITCHGEAR REQUIREMENTS SHALL UTILIZE EQUIPMENT OF THE SAME BRAND AND TYPE AS THE BASE BUILDING. IN NO CASE SHALL SAID EQUIPMENT BE OF LESS QUALITY THAN THE FOLLOWING:

A. DRY TYPE TRANSFORMER SHALL BE ENERGY EFFICIENT, EQUAL TO SQUARE D GENERAL PURPOSE; FOR 3KVA TO 15KVA PROVIDE 115ºC TEMPERATURE RISE RATED AND FOR 30KVA AND ABOVE 150ºC TEMPERATURE RISE RATED.

B. LIGHTING AND APPLIANCE PANEL BOARDS SHALL BE SQUARE D -'NQOD' FOR 120/208V. SERVICE, 'NF' FOR 277/480V. SERVICE. ALL PANEL BOARDS TO HAVE BOLT-ON CIRCUIT BREAKERS.

C. SAFETY SWITCHES SHALL BE SQUARE D TYPE 'HD'. PROVIDE WEATHERPROOF DEVICE WHEN INSTALLED OUTDOOR

D. PROTECTIVE DEVICE SHORT CIRCUIT RATING: FULLY RATED TO INTERRUPT SYMMETRICAL SHORT CIRCUIT CURRENT AVAILABLE AT TERMINALS.

2.6 RACEWAYS:

A. ELECTRIC METALLIC TUBING EXPOSED USE: FITTINGS SHALL BE OF WATERTIGHT STEEL COMPRESSION TYPE COUPLINGS FOR POWER, LIGHTING OR CONTROL WIRING.

B. ELECTRIC METALLIC TUBING CONCEALED USE: IN WALLS AND ABOVE CEILINGS, IN DRYWALLS, COMPRESSION OR SET SCREW TYPE FITTINGS.

C. ALL RACEWAY EXPOSED TO PHYSICAL DAMAGE SHALL BE RIGID STEEL, HOT DIPPED GALVANIZED AND SHALL BE ROUTED AT RIGHT ANGLES TO, OR PARALLEL WITH THE STRUCTURE. CONDUITS SHALL BE SECURED AT 8'-0" MAXIMUM INTERVALS AND WITHIN 36" OF EACH TERMINATION.

D. MINIMUM SIZE FOR ALL CONDUITS SHALL BE 3/4".

E. PROVIDE HANGER SUPPORTS FOR 'EMT' AT INTERVALS NOT OVER 10' AND PROVIDE ONE SUPPORT NOT OVER 1' FROM EACH CHANGE IN DIRECTION.

F. PROVIDE PULL BOXES AS REQUIRED.

G. RIGID METALS CONDUIT: USE IN CONCRETE WALLS OR UNDER CONCRETE FLOOR SLABS, THROUGH AND ON THE ROOF.

H. FLEXIBLE METAL CONDUIT: GALVANIZED STEEL, INTERLOCKING, AND SINGLE STRIP TYPE. USE FOR FINAL CONNECTIONS TO TRANSFORMERS, MOTORS AND LIGHTING FIXTURES. CLAMP OR ANGLE WEDGE TYPE CONNECTORS.

I. FITTINGS FOR COMMUNICATION SYSTEM RACEWAYS SHALL BE INDENTER OR SET SCREW TYPE COUPLINGS.

J. PROVIDE PULL WIRE IN ALL RACEWAYS WITHOUT CONDUCTORS.

2.7 WIRES AND CABLES:

A. CONNECTORS SHALL BE U.L. APPROVED FOR THE APPLICATION IN WHICH THEY ARE USED. INSULATION SHALL BE TYPE THHN/ THWN.

B. ALL CONDUCTORS SHALL BE 98% CONDUCTIVITY SOFT DRAWN ANNEALED COPPER 600 VOLT WIRE.

C. CONDUCTORS SHALL BE NO. 12 AWG MINIMUM EXCEPT AS PERMITTED FOR CONTROL CIRCUITS.

D. CONDUCTORS NO. 8 AND LARGER SHALL BE STRANDED, CONDUCTORS NO. 10 AND SMALLER SHALL BE SOLID.

E. MAKE ALL CONNECTIONS WITH SOLDERLESS INSULATED CONNECTORS EQUAL TO SCOTCHLOCK FOR NO. 8 AWG AND SMALLER.

F. CONDUCTORS NO. 6 AWG AND LARGER SHALL BE SPLICED UTILIZING COPPER BOLT CLAMP-TYPE CONNECTOR OR HYDRAULICALLY CRIMPED COPPER CRIMP CONNECTORS.

2.8 GROUNDING:

A. ALL GROUNDING CONNECTIONS SHALL BE WITH GROUNDING CLAMPS OR EXOTHERMIC WELDS.

B. WHERE FLEXIBLE CONDUIT IS USED, PROVIDE A CONTINUOUS COPPER BONDING CONDUCTOR.

C. ALL CONDUITS SUPPLYING FEEDERS AND BRANCH CIRCUITS SHALL BE PROVIDED WITH GROUNDING CONDUCTOR.

D. PROVIDE GREEN GROUNDING PIGTAIL FOR EACH RECEPTACLE AND PIECE OF EQUIPMENT RATED FOR THE AMPERAGE OF THE CIRCUIT BEING CONNECTED.

E. BOND ALL NON-CURRENT CARRYING METAL PARTS OF EACH:

1. BRANCH CIRCUIT
2. DISTRIBUTION PANELS
3. SWITCHBOARDS
4. TRANSFORMERS
5. CONTROLLER ENCLOSURES
6. MOTOR FRAMES
7. RACEWAYS
8. DEVICES AND DEVICE PLATES.

2.9 FURRED OUT WALLS:

A. 1-1/2" DEEP, USED FOR FLUSH MOUNTED RECEPTACLES AND LIGHT SWITCHES.

B. 4"X4"X1-1/2" DEEP WITH ½" RAISED SINGLE DEVICE COVER, USED FOR FLUSH MOUNTED COMMUNICATION/DATA ROUGH-IN.

2.10 OUTLET, JUNCTION AND PULL BOXES:

A. OUTLET BOXES - HOT DIPPED GALVANIZED:

1. 3-1/2" DEEP, USED FOR FLUSH MOUNTED RECEPTACLES AND LIGHT SWITCHES.
2. 4"X4"X2-1/8" DEEP WITH ½" RAISED SINGLE DEVICE COVER, USED FOR FLUSH MOUNTED COMMUNICATION/DATA ROUGH-IN.

B. JUNCTION AND PULL BOXES: USE OUTLET BOXES WITH APPROPRIATE COVERS AS JUNCTION BOXES WHERE POSSIBLE. LARGER JUNCTION AND PULL BOXES SHALL BE FABRICATED FROM SHEET STEEL, SIZED ACCORDING TO CODE, WITH SCREW-ON COVERS, FINISH: GRAY BAKED ENAMEL.

2.11 WIRING DEVICES:

A. CONVENIENCE RECEPTACLES: 2-POLE, 3-WIRE, GROUNDING TYPE NEMA 5-20R. STANDARD RECEPTACLE: LEVITON #5362-1; GFI RECEPTACLE LEVITON #6599-1, OR EQUAL.

B. WALL SWITCHES SHALL BE PREMIUM INDUSTRIAL SPECIFICATION GRADE, TOGGLE, QUIET TYPE, 20 AMP, 120/277V. STANDARD SWITCH: LEVITON 122-1; THREE-WAY SWITCH: LEVITON 1223-1 OR EQUAL.

C. DEVICE PLATES: STAINLESS STEEL FOR FLUSH AND ALL SURFACE MOUNTED DEVICES, EXCEPT PLENUM AREA MAY REQUIRE STAIN FINISH STAINLESS STEEL PLATES. CONFIRM FINISHES WITH ENGINEER BEFORE ORDERING.

D. RECEPTACLES - HUBBELL #2162, IG-#2162, OR GF-8300 SERIES.

E. DIMMER SWITCHES - LUTRON NOVA "N" SERIES OR EQUAL FOR INCANDESCENT LIGHTING AND LUTRON NOVA "NLV" SERIES OR EQUAL FOR LOW VOLTAGE INCANDESCENT LIGHTING. 3-WAY DIMMERS SHALL BE EQUAL TO NOVA N-XXO3 SERIES. WHERE SPST SWITCHES OCCUR ADJACENT TO DIMMERS, SWITCHES SHALL MATCH DIMMER(S) IN APPEARANCE. REFER TO PLANS FOR MINIMUM DIMMER WATTAGE REQUIREMENTS.

F. FLOOR OUTLETS (PEDESTAL) - LEGRAND WIREMOLD FIT-200 SERIES OR EQUAL.

G. FLOOR OUTLETS (FLUSH) - LEGRAND WIREMOLD RC4 OR 6ATC SERIES OR EQUAL UNLESS OTHERWISE SPECIFIED BY THE ARCHITECT.

H. FLOOR OUTLET CONCRETE ENCASED: LEGRAND WIREMOLD RPNFP SERIES OR EQUAL WITH ACTIVATION DEVICES AS DIRECTED BY ARCHITECT.

I. WALL OUTLETS TO BE INSTALLED WITH A CADDY "H" SERIES SUPPORT BRACKET.

J. CEILING MOUNTED OCCUPANCY SENSOR SHALL BE DUAL TECHNOLOGY, INFRARED AND ULTRAPHONIC AS MANUFACTURED BY SENSORSWITCH #CM-PDT WHITE FINISH WITH (1) ONE #PP20 POWER PACK PER CONTROL CIRCUIT. CONTRACTOR SHALL VERIFY SENSOR TIME SETTING IS (20) TWENTY MINUTES MINIMUM. SUBSCRIPT '10' INDICATES #CM-PDT-10 SENSOR OF SAME FINISH AND TIME SETTING.

K. WALL MOUNTED OCCUPANCY SENSOR SHALL BE DUAL TECHNOLOGY, INFRARED AND ULTRAPHONIC, AS MANUFACTURED BY SENSORSWITCH #WSD-PDT, WHITE FINISH. CONTRACTOR SHALL VERIFY SENSOR TIME SETTING IS (20) TWENTY MINUTES MINIMUM.

2.12 MOUNTING HEIGHTS FROM FINISHED FLOOR TO CENTER OF DEVICE:

A. 18" FOR RECEPTACLES, TELEPHONE AND DATA OUTLETS UNLESS OTHERWISE INDICATED ON PLANS.

B. +10" RECEPTACLES AT WORK BENCH (ABOVE WORK SURFACE) UNLESS OTHERWISE INDICATED BY THE ARCHITECT.

C. +48" WALL SWITCHES

2.13 LIGHT FIXTURES:

A. ALL FIXTURES SHALL BE UL-LISTED AND SUITABLE FOR THEIR ENVIRONMENT.

B. PROVIDE FIXTURES AS LISTED IN THE LIGHTING FIXTURE SCHEDULE ON THE DRAWINGS.

C. PROVIDE HIGH POWER FACTOR BALLASTS FOR COMPACT FLUORESCENT LAMPS.

D. BALLAST VOLTAGE TO BE COMPATIBLE WITH CIRCUIT SOURCE VOLTAGE.

E. EMERGENCY FIXTURES SHALL BE PROVIDED WITH BATTERY BACK-UP SYSTEM UNLESS NOTED OTHERWISE- REFER TO LIGHTING FIXTURE SCHEDULE.

F. LINEAR EMERGENCY FIXTURES SHALL BURN STEADY PROVIDING NOT LESS THAN 1300LUMEN OUTPUT FOR A MINIMUM OF 90 MINUTES ON BATTERY POWER FOR EMERGENCY EGRESS.

PART 3 - EXECUTION

3.1 GENERAL

A. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF ALL LIGHTING FIXTURES. VERIFY CEILING TYPES OF ALL ROOMS WITH ARCHITECT'S ROOM FINISH SCHEDULE PRIOR TO ORDERING LIGHT FIXTURES.

B. LOCATION OF OUTLETS SHOWN IS APPROXIMATE ONLY. OUTLETS MAY BE MOVED TO SUIT CONFLICTING EQUIPMENT.

C. EXACT LOCATION OF SWITCHES, FLOOR OUTLETS AND CONDUIT STUBS SHALL BE VERIFIED WITH THE ARCHITECT PRIOR TO INSTALLATION.

D. RECESSED FIXTURES IN SUSPENDED CEILINGS SHALL BE SUPPORTED FROM OVERHEAD STRUCTURES BY CEILING GRID WIRE.

E. PROVIDE NECESSARY BACKING REQUIRED TO INSURE RIGID MOUNTING OF OUTLET BOXES.

F. CONDUIT ROUTES SHOWN ARE APPROXIMATE ONLY AND MUST BE ADJUSTED IN THE FIELD TO CLEAR OTHER FACILITIES. ALL CONDUIT ROUTING SHALL BE OVERHEAD, CONCEALED IN WALL OR CEILING, UNLESS NOTED OTHERWISE.

G. ALL HOME RUNS ARE INDICATED AS STARTING FROM THE OUTLET NEAREST THE PANEL AND CONTINUE IN THE GENERAL DIRECTION OF THAT PANEL. CONTINUE SUCH CIRCUITS TO THE PANEL AS THOUGH THE ROUTES WERE COMPLETELY INDICATED. HOME RUNS TO PANELS SHALL BE IN INDIVIDUAL CONDUITS WITH CIRCUITS AS SHOWN, EXCEPT FOR SINGLE PHASE 120V CIRCUITS.

H. ALL EXPOSED RACEWAY RUNS ABOVE GRADE SHALL BE RIGID STEEL, HOT DIPPED GALVANIZED AND SHALL BE ROUTED AT RIGHT ANGLES TO, OR PARALLEL WITH THE STRUCTURE. CONDUITS SHALL BE SECURED AT 8'-0" MAXIMUM INTERVALS AND WITHIN 36" OF EACH TERMINATION.

I. JUNCTION AND PULL BOXES GENERALLY SHALL NOT BE EXPOSED IN FINISH PLACES. PROVIDE PULL BOXES AS INDICATED AND WHEREVER NECESSARY TO FACILITATE PULLING OF WIRES. COORDINATE THE LOCATIONS WITH OTHER TRADES. ALL JUNCTION AND PULL BOXES SHALL BE ACCESSIBLE. PROVIDE PULL BOXES FOR EVERY THREE 90-DEGREE BENDS AND AS INDICATED ON THE DRAWINGS.

J. RUN LOW VOLTAGE CABLES ABOVE DROPPED CEILING PARALLEL OR PERPENDICULAR TO COLUMN LINES. SECURE LOW VOLTAGE CABLES ON 48" CENTERS TO UNISTRUT CHANNEL OR OTHER SUPPORTS FASTENED TO CONCRETE CEILING. "THOMAS AND BETTS TY-RAP" CABLE TIES, OR EQUAL, SHALL BE USED TO HANG CABLES.

K. SECURELY FASTEN ALL EQUIPMENT BY MEANS OF RODS, HANGER SUPPORTS, GUIDES, ANCHORS AND SWAY BRACES TO MAINTAIN ALIGNMENT AND TO PREVENT EQUIPMENT MOVEMENT.

L. INSTALLATION OF CONDUITS: USE RIGID STEEL IN WET LOCATIONS, WHERE SUBJECT TO MECHANICAL DAMAGE, IN CONCRETE OR BLOCK WALLS. USE EMT IN OTHER LOCATIONS WHERE PERMITTED BY CODE.

3.2 INSTALL MECHANICAL AND ELECTRICAL SYSTEMS TO FACILITATE SERVICING, MAINTENANCE, REPAIR OR REPLACEMENT OF EQUIPMENT COMPONENTS. AS MUCH AS PRACTICAL, CONNECT EQUIPMENT FOR EASE OF DISCONNECTING WITH MINIMUM OF INTERFERENCE WITH OTHER INSTALLATIONS.

3.3 RUN LOW VOLTAGE CABLES ABOVE DROPPED CEILING PARALLEL OR PERPENDICULAR TO COLUMN LINES. SECURE LOW VOLTAGE CABLES ON 48" CENTERS TO UNISTRUT CHANNEL OR OTHER SUPPORTS FASTENED TO CONCRETE CEILING. "THOMAS AND BETTS TY-RAP" CABLE TIES, OR EQUAL, SHALL BE USED TO HANG CABLES.

3.4 ALL EXPOSED CONDUIT PENETRATIONS IN FINISHED CEILING AND WALL AREAS SHALL HAVE AN ESCUTCHEON PLATE.

3.5 ALL CEILING AND WALL CONDUIT PENETRATIONS AT FIRE RATED AREAS SHALL BE SEALED TO KEEP FIRE RATING INTEGRITY. PROVIDE GYPSUM BOARD BOXES FOR RECESSED LIGHT FIXTURES IN FIRE RATED LOCATIONS.

3.6 DO NOT CUT OR REMOVE ANY EXISTING STRUCTURAL MEMBER WITHOUT PRIOR WRITTEN APPROVAL FROM ARCHITECT.

3.7 CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ELECTRICAL CONNECTIONS TO MECHANICAL EQUIPMENT, UNLESS NOTED OTHERWISE. VERIFY EXACT EQUIPMENT LOCATION PRIOR TO INSTALLATION OF CONDUIT.

3.8 INSTALLATION OF WIRES:

A. INSTALL ALL WIRES CONTINUOUS FROM OUTLET TO OUTLET, OR TERMINAL TO TERMINAL. SPLICES IN CABLES, WHEN REQUIRED, SHALL BE MADE IN PULL OR JUNCTION BOXES. MAKE BRANCH CIRCUIT SPLICES IN OUTLET BOXES WITH 8" OF CORRECTLY COLOR-CODED TAILS LEFT IN THE BOX.

B. TERMINATE ALL GROUNDING, GROUNDED AND LINE CONNECTORS TO RECEPTACLES AND WIRING DEVICES TERMINALS AS RECOMMENDED BY MANUFACTURER.

C. PROVIDE SEPARATE GROUNDED WIRE FOR EACH 120/208V BRANCH CIRCUIT AND DIMMING CIRCUIT.

D. COLOR CODE WIRES AS FOLLOWS:

Conductors	120/208V	277/480V
Phase A	Black	Brown
Phase B	Red	Orange
Phase C	Blue	Yellow
Neutral	White	Gray
Ground	Green	Green

3.9 TRANSFORMER INSTALLATION:

A. INSTALL AND ANCHOR THE TRANSFORMER ON A 4" THICK HOUSEKEEPING PAD.

B. PROVIDE NEOPRENE WAFFLE PAD FOR VIBRATION ISOLATION, MASON TYPE WF OR EQUAL.

3.10 CONNECTIONS TO EQUIPMENT:

A. FURNISH AND INSTALL REQUIRED POWER SUPPLY CONDUIT AND WIRING TO ALL OWNER FURNISHED EQUIPMENT.

B. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ELECTRICAL CONNECTIONS TO MECHANICAL EQUIPMENT, UNLESS NOTED OTHERWISE. VERIFY EXACT EQUIPMENT LOCATION PRIOR TO INSTALLATION OF CONDUIT.

C. FURNISH AND INSTALL A DISCONNECT SWITCH IMMEDIATELY AHEAD OF, AND ADJACENT TO EACH MAGNETIC MOTOR STARTER OR APPLIANCE, UNLESS THE MOTOR OR APPLIANCE IS LOCATED WITHIN SIGHT OF THE SERVICING PANEL BOARD, CIRCUIT BREAKER OR SWITCH. VERIFY ALL EQUIPMENT NAMEPLATE CURRENT RATINGS PRIOR TO INSTALLATION.

D. FURNISH AND INSTALL MANUAL THERMAL PROTECTION FOR ALL FRACTIONAL HORSEPOWER MOTORS, NOT INTEGRALLY EQUIPPED WITH THERMAL PROTECTION.

E. FURNISH 120V POWER TO EACH CONTROL PANEL AND TIME SWITCH REQUIRING POWER TO OPERATE.

3.11 IDENTIFICATION:

A. PROVIDE LABELS, NAME PLATES, DIRECTORIES AND CODING INFORMATION.

B. PROVIDE NAME PLATES CONSTRUCTED OF 1/16" THICK PLASTIC (BLACK OR WHITE) LAMINATED MATERIAL, ENGRAVED THROUGH BLACK SURFACE MATERIAL TO EXPOSE WHITE SUB-LAYER.

C. IDENTIFICATION BANDING TAPE: BRADY "PERMA-CODE," OR WESTLINE "TEL-A-PIPE," WITH NAME OF THE SYSTEM PRINTED ON THE COLORED TAPE.

D. PROVIDE LABELS TO PANELBOARDS, SWITCHBOARDS, STARTERS, DISCONNECT SWITCHES AND PULL BOXES.

E. MARK THE COVERS OF ALL JUNCTION AND PULL BOXES WITH A BLACK FELT MARKER. INDICATE THE PANEL DESIGNATION AND CIRCUIT NUMBERS OF ALL WIRES PASSING THROUGH SAID BOX.

3.12 CLEANING

A. AFTER COMPLETING SYSTEM INSTALLATION, INCLUDING OUTLET FITTINGS AND DEVICES, INSPECT EXPOSED FINISH. REMOVE BURRS, DIRT, AND CONSTRUCTION DEBRIS, AND REPAIR DAMAGED FINISHES.

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**ELECTRIC

GENERAL NOTES:

A. REFER TO SEQUENCE OF OPERATION FOR LIGHTING CONTROL.

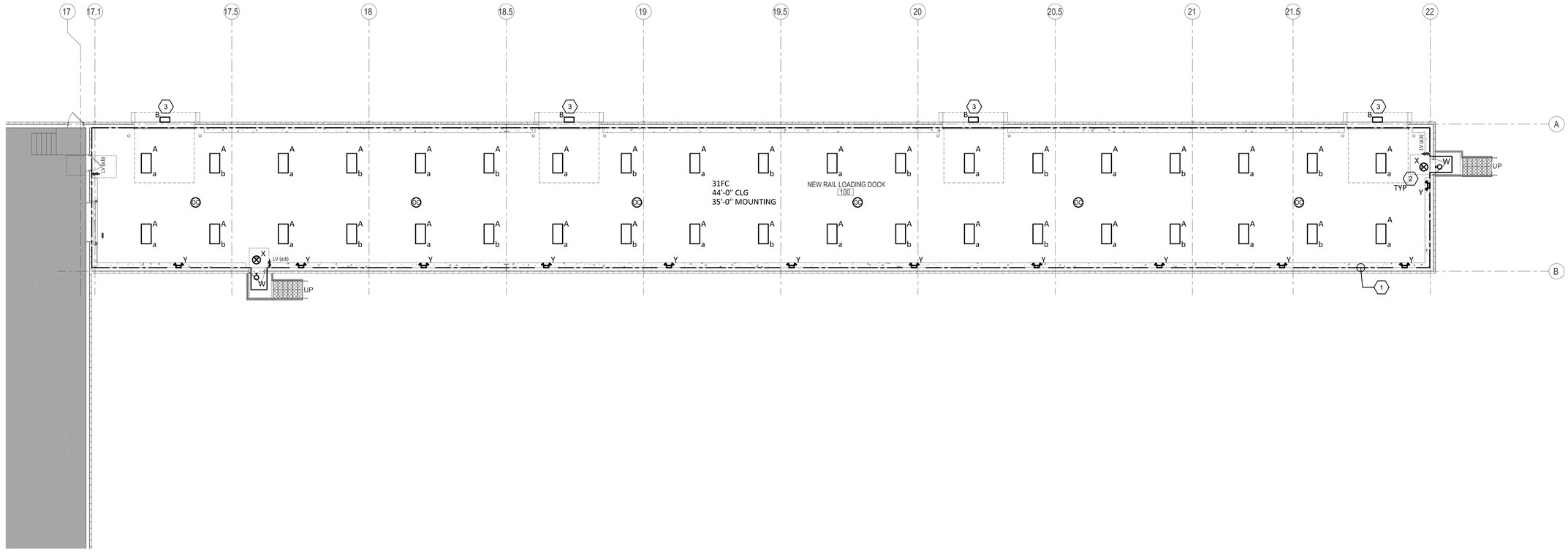
B. REFER TO ARCHITECTURAL PLANS AND DETAILS FOR EXACT LOCATION AND MOUNTING REQUIREMENTS FOR ALL DIMMERS, SWITCHES AND LIGHT FIXTURES. DISCREPANCY BETWEEN THE ARCHITECTURAL PLAN AND ELECTRICAL PLAN SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT IMMEDIATELY.

C. FOR ALL AUTOMATIC LIGHTING CONTROLS, RELAYS, POWER PACKS, OCCUPANCY/VACANCY SENSORS AND PHOTOCELLS, CONTACT THE MANUFACTURER SELECTED DURING THE BIDDING PROCESS FOR SPECIFIC PRODUCT REQUIREMENTS, SHOP DRAWINGS AND WIRING DIAGRAMS.

D. PROVIDE 15'-0" WHIPS ON HIGH-BAY LIGHTING FIXTURES FOR FUTURE RELOCATION.

NOTES BY SYMBOL (THIS SHEET ONLY) ' (X) '

1. CONTRACTOR SHALL PROVIDE NEW 277V, 20A CIRCUIT FROM NEAREST LIGHTING PANELBOARD WITH AVAILABLE SPARE BREAKER CAPACITY. PROVIDE NEW 20A BREAKER AND 2#10, #10G IN 3/4"C (VERIFY DISTANCE FOR VOLTAGE DROP PRIOR TO CONSTRUCTION). COORDINATE EXACT LOCATION OF SWITCHING WITH OWNER PRIOR TO INSTALLATION.
2. EMERGENCY FIXTURES & EXIT LIGHT SIGNS FIXTURES SERVED BY UN-SWITCHED CIRCUIT WITH 2#10, 1#10G, 3/4"C, FROM EXISTING BUILDING LIFE SAFETY CIRCUIT.
3. CONTRACTOR SHALL CONNECT NEW EXTERIOR LED WALLPACK TO EXISTING EXTERIOR CIRCUITRY. COORDINATE EXACT MOUNTING HEIGHT, LOCATION, & REQUIREMENTS PRIOR TO CONSTRUCTION.



01 FLOOR PLAN - LIGHTING
SCALE : 3/32" = 1'-0"

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O'CONNOR CONSTRUCTION GROUP
173 COUNTY RD 3850
POOLVILLE, TEXAS 76487

FLOOR PLAN - LIGHTING

LAKE CITY RAIL
211 MCCLOSKEY AVE LAKE CITY, FL 32055

NO.	DESCRIPTION	DATE

JOB NO: FTS11001
ISSUE DATE: 06/04/2021
PROJECT STATUS: ISSUED FOR PERMIT
SHEET NO.: E2.01
REVISION

CHRISTOPHER SUTTON No. 73688 STATE OF FLORIDA PROFESSIONAL ENGINEER 6/4/21

SUTTON ELDRIDGE ENGINEERING, LLC
5600 Tennyson Parkway
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214.763.7300
Florida Registered Engineering Firm # 34293

NOTES BY SYMBOL (THIS SHEET ONLY) ' (EX) '

1. LOADING DOCK TURBO-ES FAN (OR APPROVED EQUAL). COORDINATE WITH ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND MOUNTING HEIGHT.
2. APS&GO-LED COMMUNICATION SYSTEM (OR APPROVED EQUAL). COORDINATE WITH ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND MOUNTING HEIGHT.
3. CONTRACTOR SHALL PROVIDE NEW 120V, 20A CIRCUIT FROM NEAREST POWER PANELBOARD WITH AVAILABLE SPARE BREAKER CAPACITY. PROVIDE NEW 20A BREAKER AND 2#10, #10G IN 3/4"C (VERIFY DISTANCE FOR VOLTAGE DROP PRIOR TO CONSTRUCTION).
4. J-BOX PROVIDED FOR CONNECTION TO FREEZER DOOR ACCESSORIES.
5. GFCI SERVICE RECEPTACLE MOUNTED AT +48"AFF.
6. FOR EVAPORATOR FAN MOTORS CIRCUIT PROVIDE NEW 480V, 20A/3P CIRCUIT FROM NEAREST POWER PANELBOARD WITH AVAILABLE SPARE LOAD AND SPARE BREAKER CAPACITY. PROVIDE NEW 20A/3P BREAKER AND 3#10, 1#10G IN 3/4"C (VERIFY DISTANCE FOR VOLTAGE DROP PRIOR TO CONSTRUCTION). COORDINATE EXACT MOUNTING LOCATION AND REQUIREMENTS PRIOR TO CONSTRUCTION.
7. FOR EVAPORATOR DEFROST CIRCUIT PROVIDE NEW 480V, 70A/3P CIRCUIT FROM NEAREST AVAILABLE POWER PANELBOARD WITH AVAILABLE SPARE LOAD AND SPARE BREAKER CAPACITY. PROVIDE NEW 70A/3P BREAKER WITH 3#4, 1#8G IN 1 1/4"C (VERIFY DISTANCE FOR VOLTAGE DROP PRIOR TO CONSTRUCTION). COORDINATE EXACT MOUNTING LOCATION AND REQUIREMENTS PRIOR TO CONSTRUCTION.

GENERAL NOTES:

A. REFER TO ARCHITECTURAL PLANS, ELEVATIONS AND DETAILS FOR EXACT LOCATION AND MOUNTING REQUIREMENTS FOR ALL RECEPTACLES. DISCREPANCY BETWEEN THE ARCHITECTURAL PLANS AND ELECTRICAL PLAN SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT IMMEDIATELY.

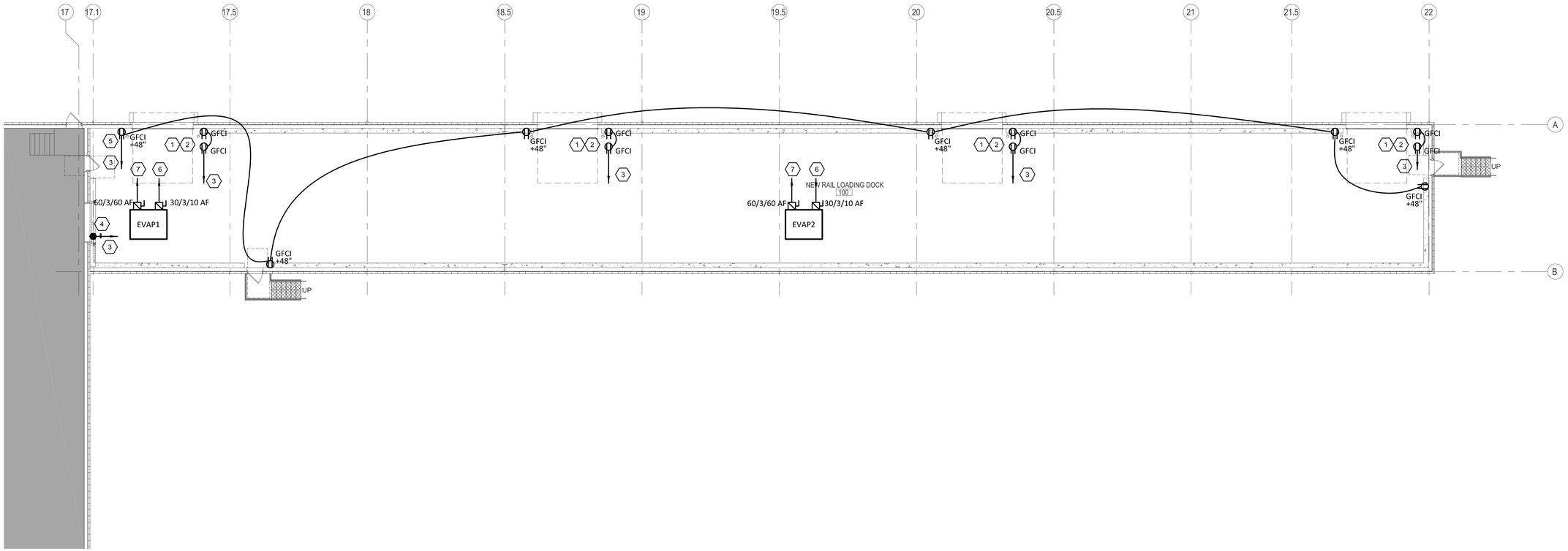
B. PRIOR TO INSTALLATION CONTRACTOR SHALL COORDINATE FINAL CONNECTIONS AND LOCATION TO ALL OWNER FURNISHED EQUIPMENT AND EQUIPMENT FURNISHED UNDER OTHER DIVISIONS OF THE WORK IN ACCORDANCE WITH THE MANUFACTURES SPECIFICATIONS AND INSTALLATION REQUIREMENTS.

C. CONTRACTOR TO VERIFY VOLTAGE DROP ONCE FINAL BRANCH CIRCUIT LENGTH HAS BEEN DETERMINED.

D. CONTRACTOR SHALL MAKE FINAL CONNECTIONS TO EQUIPMENT. PROVIDE ALL NECESSARY MATERIALS AND LABOR FOR COMPLETE INSTALLATION. COORDINATE EXACT CONNECTION REQUIREMENTS WITH EQUIPMENT MANUFACTURER / PROVIDER PRIOR TO INSTALLATION.

E. RECEPTACLES LABELED “WP” SHALL BE WEATHER RESISTANT AND PROVIDED WITH A WEATHER PROOF “WHILE-IN-USE” COVER.

F. IN EXPOSED STRUCTURE AREAS, CONDUIT RUNNING PERPENDICULAR TO BAR JOIST SHALL BE ROUTED ALONG PERIMETER WALLS, CONDUITS RUNNING PARALLEL TO BAR JOIST SHALL BE ROUTED TIGHT TO BOTTOM OF BAR JOIST. CONSULT ARCHITECT AND OWNER FOR CONDUIT PAINT REQUIREMENTS.



01 FLOOR PLAN - POWER
SCALE : 3/32" = 1'-0"

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QORE Engineering
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POOLVILLE, TEXAS 76487

FLOOR PLAN - POWER
LAKE CITY RAIL
211 MCCLOSKEY AVE LAKE CITY, FL 32055

NO.	DESCRIPTION	DATE

JOB NO: FTS11001
ISSUE DATE: 06/04/2021
PROJECT STATUS: ISSUED FOR PERMIT
SHEET NO.: E2.02
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LUMINAIRE SCHEDULE

MARK	DESCRIPTION	LAMPS NO. AND TYPE	BALLASTS NO. AND TYPE	VOLTAGE	MANUFACTURER MODEL NUMBER	WATTAGE
A	LED HIGH-BAY FIXTURE	LED	INTEGRAL DRIVER	UNV	LITHONIA IBG 12000LM SEF AFL GND 40K 80CRI	77
B	EXTERIOR LED WALLPACK	LED	INTEGRAL DRIVER	UNV	LITHONIA TWH LED 20C 1000 40K T3M MVOLT DWHXD	72
W	EXTERIOR EGRESS LIGHT	LED	INTEGRAL DRIVER	UNV	LITHONIA AFB OEL DWHGXD UBOLT N WT	3
X	EXIT SIGN	LED	INTEGRAL DRIVER	UNV	LITHONIA ECR LED M6	-
Y	EMERGENCY LIGHT	LED	INTEGRAL DRIVER	UNV	LITHONIA ELM2 LED	-

GENERAL NOTES:

1. CONFIRM ALL LIGHT FIXTURES WITH ARCHITECT AND INTERIOR DESIGNER.
2. ARCHITECT TO VERIFY ALL FINISHES AND FIXTURES PRIOR TO PURCHASE.
3. FIXTURES WITH AN "E" DESIGNATES EMERGENCY LIGHT, PROVIDE REQUIRED EMERGENCY BATTERY PACK. REFER TO ELECTRICAL NOTES.
4. EXTERIOR LIGHTING IS TO BE PHOTOCELL ON, TIME CLOCK OFF

CONTACT FOR LIGHTING FIXTURES AND CONTROLS SPECIFICATION AND INFORMATION

TOM HALVERSON
(469) 916-1933 THALVERSON@ALATX.COM

CHRIS SEARS, HORTON CONTROLS
(214) 658-9030 CSEARS@HORTONCONTROLSGROUP.COM

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O'CONNOR construction group

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ELECTRICAL DETAILS & SCHEDULES

LAKE CITY RAIL

211 MCCLOSKEY AVE LAKE CITY, FL 32055

NO.	DESCRIPTION	DATE

JOB NO: FTS11001
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PLUMBING SPECIFICATIONS

I. GENERAL CONDITIONS

A. THE SCOPE OF THE WORK SHALL INCLUDE THE FURNISHING AND INSTALLATION OF THE NECESSARY MATERIAL AND LABOR TO ACCOMPLISH THE WORK INDICATED BY THE DRAWINGS AND HEREIN SPECIFIED. ALL WORK BY THIS CONTRACTOR SHALL CONFIRM TO ALL APPLICABLE, FEDERAL, STATE AND LOCAL BUILDING CODES.

B. MATERIALS AND EQUIPMENT FURNISHED UNDER THIS CONTRACT SHALL BE NEW AND SHALL BEAR THE U.L. LABEL WHERE APPLICABLE UNLESS NOTED OTHERWISE. ALL WORK SHALL BE GUARANTEED AGAINST DEFECTIVE MATERIALS AND WORKMANSHIP FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR AFTER COMPLETION AND ACCEPTANCE BY THE OWNER.

C. CONTRACTOR SHALL INSTALL PLUMBING SYSTEMS WITHOUT INTERFERENCE AND IN STRICT COORDINATION WITH OTHER TRADES.

D. MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE CONTRACT DOCUMENTS AND APPLICABLE CODES AND STANDARDS. IN CASE OF DIFFERENCE BETWEEN APPLICABLE CODES AND STANDARDS AND THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL PROMPTLY NOTIFY THE ARCHITECT/ENGINEER AND THE OWNER IN WRITING OF SUCH DIFFERENCE. SHOULD THE CONTRACTOR PERFORM ANY WORK THAT DOES NOT COMPLY WITH THE REQUIREMENTS OF APPLICABLE CODES AND STANDARDS, CONTRACTOR SHALL BEAR ALL COSTS ARISING IN CORRECTING SUCH DEFECTS. APPLICABLE CODES AND STANDARDS SHALL INCLUDE ALL ORDINANCES, UTILITY COMPANY REGULATIONS, AND APPLICABLE REQUIREMENTS OF NATIONALLY ACCEPTED CODES AND STANDARDS. SHOULD THE CONTRACTOR SUPPLY EQUIPMENT DIFFERING FROM THE SPECIFIED ITEMS IN THE CONTRACT DOCUMENTS WITHOUT NOTIFICATION TO THE ENGINEER, CONTRACTOR SHALL BEAR ALL COSTS TO UPGRADE DEFICIENCIES ARISING FROM SUCH.

E. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION AND DEPTH OF ALL PIPING BELOW SLAB PRIOR TO SAW CUTTING. SAW CUT ONLY WHERE NECESSARY TO INSTALL NEW PIPING AND DOWEL REPAIRED SECTION INTO ADJACENT EXISTING SLAB AND MAKE FLUSH WITH FINISHED FLOOR.

II. PRODUCT AND EXECUTION

A. SANITARY DRAIN LINES (SOIL, WASTE AND VENT) SHALL BE SERVICE WEIGHT CAST IRON OR DWV COPPER PIPE. JOINTS SHALL BE FABRICATED BY THE USE OF COMPRESSION JOINTS SIMILAR TO TYLER PIPE AND FOUNDRY'S "TY-SEAL" FOR CAST IRON PIPE OR SOLDER FOR DWV COPPER PIPE. NO-HUB CAST IRON PIPE ASSEMBLED WITH STAINLESS STEEL/NEOPRENE HUBLESS COUPLINGS SHALL BE LIMITED TO ABOVE GROUND INSTALLATIONS, OR AT THE CONTRACTORS OPTION, UNDERGROUND WASTE PIPING MAY BE, IF CODE APPROVED, AMERICAN MANUFACTURED ASTM D-2665 SCHEDULE 40 PVC PIPE, MANUFACTURED WITH VIRGIN RESINS, AND ASSEMBLED WITH CHEMICALLY WELDED PVC JOINTS IN STRICT ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATION.

B. DOMESTIC WATER PIPING ABOVE GROUND SHALL BE AMERICAN MANUFACTURED TYPE "L" HARD DRAWN COPPER ASSEMBLED WITH 95/5 SOLDER JOINT FITTINGS.

C. DOMESTIC WATER PIPING BELOW GROUND SHALL BE AMERICAN MANUFACTURED TYPE "K" COMMERCIALLY PURE SOFT COPPER. AVOID USING JOINTS UNDER SLAB - SHOULD JOINTS BE REQUIRED, ASSEMBLED WITH 95/5 SOLDER JOINT FITTINGS.

D. FURNISH AND INSTALL ALL REQUIRED WATER, WASTE, SOIL, AND VENT CONNECTIONS TO ALL PLUMBING FIXTURES AND EQUIPMENT, TOGETHER WITH ALL FITTINGS, SUPPORTS, FASTENING DEVICES, COCKS, VALVES, TRAPS, ETC., LEAVING ALL IN COMPLETE WORKING ORDER.

E. PIPE, EQUIPMENT, ETC., SHALL BE PROPERLY SUPPORTED FROM STRUCTURE WITH THE USE OF APPROVED TYPE CLEVIS, TRAPEZE HANGERS OR FLOOR STANDS WITH SPACING AS FOLLOWS. COORDINATE WITH STRUCTURAL REQUIREMENTS:

1. STEEL PIPE - 8 FOOT INTERVALS.
2. COPPER TUBING - 1-1/4" OR LESS, 6 FOOT INTERVALS.
3. CAST IRON - ONE (1) HANGER PER LENGTH OF PIPE AND NOT EXCEEDING 10'-0" O.C.
4. FITTINGS - WITHIN 2'-0" OF EACH CHANGE OF DIRECTION.

F. INSULATION SHALL BE PROTECTED AT HANGERS.

G. PROVIDE AND INSTALL UNIONS AT PROPER POINTS TO PERMIT REMOVAL OF A PIPE, EQUIPMENT, ETC., WITHOUT INJURY TO OTHER PARTS OF THE SYSTEM AND TO PREVENT CORROSION DUE TO ELECTROLYSIS. ALL EQUIPMENT SHALL BE INSTALLED IN A MANNER TO PERMIT ACCESS FOR SERVICE WITHOUT DISASSEMBLY. UNIONS SHALL BE DIELECTRIC WHERE DISSIMILAR MATERIALS OCCUR. PRESSURE RATINGS SAME AS FITTINGS.

SPECIFICATIONS CONTINUED:

H. ISOLATION VALVES FOR DOMESTIC WATER SYSTEMS SHALL BE EQUAL TO TWO PIECE COPPER-ALLOY BALL VALVES.

I. INSULATION, JACKETS, ADHESIVE, ETC., SHALL HAVE A COMPOSITE FLAME SPREAD RATING NOT OVER 25 AND A SMOKE DEVELOPED RATING NOT OVER 50.

J. ALL DOMESTIC COLD WATER AND HOT WATER PIPE AND FITTINGS SHALL BE INSULATED WITH, 1/2" THICK FOR COLD WATER PIPE AND 1" THICK FOR HOT WATER PIPE, OWENS-CORNING FIBERGLASS 25 ASJ/SSL OR APPROVED EQUAL EXCEPT HORIZONTAL BRANCH PIPING WITHIN THE PIPE CHASE WILL NOT REQUIRE INSULATION EXCEPT THAT PIPING ADJACENT TO AN EXTERIOR WALL SHALL BE INSULATED INCLUDING THE AIR CHAMBERS AND HYDRAULIC SHOCK ABSORBERS. COLD WATER PIPE/FITTINGS TO HAVE VAPOR BARRIER.

K. CONDENSATE DRAIN SHALL BE INSULATED WITH 1/2" THICK OWENS-CORNING FIBERGLASS 25 ASJ/SSL OR EQUAL. AUXILIARY DRAIN PAN SHALL BE INSULATED WITH 3/8" THICK ARMAFLEX "AP" 25/50 SHEET INSULATION.

L. FITTINGS AND PIPING CONNECTED WITH PLUMBING FIXTURES SHALL BE BRASS AND, WHEREVER EXPOSED, SHALL BE POLISHED CHROME-PLATED.

III. RECORDS FOR THE OWNER

A. CONTRACTOR SHALL KEEP A CLEAN SET OF DRAWINGS ON THE JOB, NOTING DAILY ALL CHANGES MADE IN THESE DRAWINGS IN CONNECTION WITH THE FINAL INSTALLATION INCLUDING EXACT DIMENSIONED LOCATIONS OF ALL NEW AND UNCOVERED EXISTING UTILITIES AND SHALL TURN OVER A CLEAN, NEATLY MARKED SET OF REPRODUCIBLES SHOWING "AS INSTALLED" WORK TO THE ARCHITECT FOR SUBSEQUENT REVIEW AND TRANSMITTAL TO THE OWNER. CONTRACTOR SHALL NOTE ALL CONSTRUCTION CHANGES, DATE EACH SHEET AND LABEL "AS-BUILTS" IN THE REVISION BLOCK ON THE DRAWINGS. CONTRACTOR SHALL ALSO FURNISH ONE (1) SET OF BLUELINE PRINTS FROM THE "AS-BUILTS" REPRODUCIBLE DRAWINGS.

B. IN ADDITION TO THE ABOVE, CONTRACTOR SHALL ACCUMULATE DURING THE JOB'S PROGRESS, THE FOLLOWING DATA, IN TRIPLICATE, PREPARED IN A NEAT BROCHURE OR PACKET FOLDER AND TURNED OVER TO THE ARCHITECT FOR REVIEW AND SUBSEQUENT DELIVERY TO THE OWNER.

1. ALL WARRANTIES AND GUARANTEES AND MANUFACTURER'S DIRECTIONS ON EQUIPMENT AND MATERIAL COVERED BY THE CONTRACT INCLUDING THE NAMES, ADDRESSES, AND TELEPHONE NUMBERS OF THE MANUFACTURER'S REPRESENTATIVE.
2. APPROVED FIXTURE BROCHURES, WIRING DIAGRAMS AND CONTROL DIAGRAMS (ORIGINAL DATA, NO COPIES).
3. COPIES OF APPROVED SHOP DRAWINGS.
4. TEST AND BALANCE REPORTS REQUIRED BY THESE SPECIFICATIONS.
5. ANY AND ALL OTHER DATA AND/OR DRAWINGS REQUIRED DURING CONSTRUCTION.
6. REPAIR PARTS LISTS OF ALL MAJOR ITEMS AND EQUIPMENT INCLUDING NAME ADDRESS AND TELEPHONE NUMBERS OF LOCAL SUPPLIER OR AGENT.

C. ALL OF THE ABOVE DATA SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW LESS THAN TWO WEEKS BEFORE FINAL INSPECTION.

PLUMBING SYMBOL LEGEND

SYMBOL	DESCRIPTION
⊡	FLOOR DRAIN
—— · ——	COLD DOMESTIC WATER
—— · · ——	HOT DOMESTIC WATER
—— · · · ——	HOT DOMESTIC WATER RECIRC.
—— HP · ——	HIGH PRESSURE DOMESTIC WATER
—— D ——	DRAIN LINE
——┼——	STORM DRAIN or DOWN SPOUT
——‖——	SANITARY SEWER
— — — — —	SANITARY VENT
——G——	GAS LINE (LOW PRESSURE)
——IHP——	INTERMEDIATE HIGH PRESSURE GAS
——F——	FIRE LINE (WATER)
——PW——	PURE WATER
—— O ——	OXYGEN
——NO——	NITROUS OXIDE
——FW——	FILTERED WATER
——FOS——	FUEL OIL SUPPLY
——FOR——	FUEL OIL RETURN
——A——	MEDICAL AIR
——DI——	DEIONIZED WATER
——G——	GAS PIPING
——MPG——	MEDIUM PRESSURE GAS PIPING
——TP——	TRAP PRIMER
——FDC——	FIRE DEPARTMENT CONNECTION PIPING
—— TH ——	TEST HEADER PIPING
— — — — —	EXISTING TO BE REMOVED
———	EXISTING TO REMAIN
◕	CONNECT TO EXISTING
⋈	GATE VALVE
⋈	GLOBE VALVE
⋈	BALL VALVE
⋈	CHECK VALVE
⋈	PLUG VALVE
⋈	PRESSURE REDUCING VALVE
⋈	BUTTERFLY VALVE
⋈	BALL VALVE
⋈	VALVE IN DROP
⋈	SOLENOID VALVE
⋈	OS&Y VALVE
⋈	UNION

NOTE: NOT ALL SYMBOLS USED

PLUMBING ABBREVIATIONS

ABBREVIATION	DESCRIPTION
AD	AREA DRAIN
BH	BOX HYDRANT
CB	CATCH BASIN
CO	CLEANOUT
CW	COLD DOMESTIC WATER
DCO	DOUBLE CLEANOUT
DF	DRINKING FOUNTAIN
DS	DOWNSPOUT
DSN	DOWNSPOUT NOZZLE
ESFR	EARLY SUPPRESSION / FAST RESPONSE
EWC	ELECTRIC WATER COOLER
FD	FIRE DEPARTMENT
FDC	FIRE DEPARTMENT CONNECTION
FHR	FIRE HOSE RACK
FHV	FIRE HOSE VALVE
FLEL	FLOW LINE ELEVATION
FS	FLOOR SINK
HB	HOSE BIBB
HD	HUB DRAIN
HSA	HYDRAULIC SHOCK ABSORBER
HW	HOT DOMESTIC WATER
L	LAVATORY
MB	MOP BASIN
MPG	MEDIUM PRESSURE GAS
MS	MOP SINK
NF	NON - FREEZE
OFD	OVERFLOW DRAIN
OS & Y	OUTSIDE SCREW & YOKE
RD	ROOF DRAIN
SK	SINK
SD	SHOWER DRAIN
SH	SHOWER HEAD / VALVE
SS	SERVICE SINK
TD	TRENCH DRAIN
TP	TRAP PRIMER
U	URINAL
V	SANITARY VENT
VTR	VENT THRU ROOF
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WALL HYDRANT
YH	YARD HYDRANT

NOTE: NOT ALL SYMBOLS USED

MISCELLANEOUS PLUMBING NOTES:

1. PROVIDE INDIRECT WASTE PIPING FOR APPLIANCES WITH DRAIN CONNECTIONS AND ROUTE TO INDIRECT WASTE RECEPTOR.
2. ALL OVERHEAD PIPING IS TO BE HUNG PROPERLY TO STRUCTURE.
3. ALL FLOOR DRAINS, FLOOR SINKS AND HUB DRAINS ARE TO BE PROVIDED WITH AN APPROVED TRAP GUARD.

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PLUMBING COVER SHEET
LAKE CITY RAIL
211 MCCLOSKEY AVE LAKE CITY, FL 32055

NO.	DESCRIPTION	DATE

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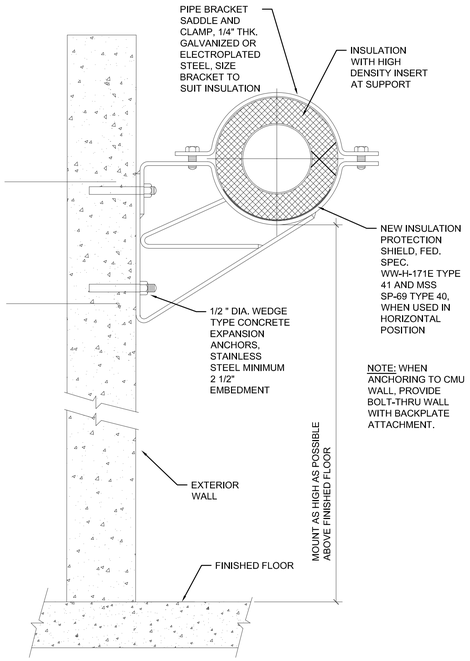
NOTES BY SYMBOL (THIS SHEET ONLY) ' (PX) '

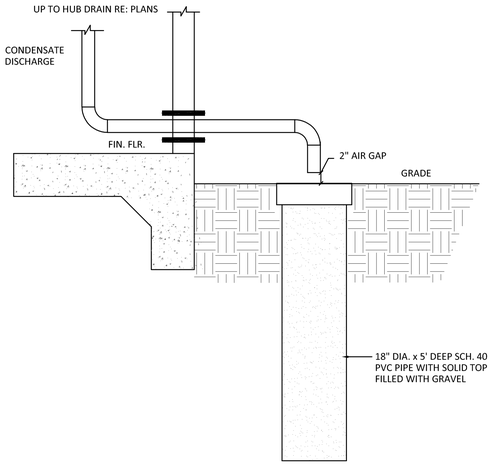
1. TRUCK DOCK EVAPORATOR UNITS. SPILL 3/4" CONDENSATE DRAIN FROM UNIT INTO HUB DRAIN WITH OPEN-SITE CONNECTION. VERIFY EXACT LOCATION OF EVAPORATIVE UNITS ON SITE.
2. 2" HUB DRAIN (HD). PROVIDE A 2" TO 4" INCREASER ON DRAIN TO ACCEPT CONDENSATE DRAIN PIPING. EXTEND DRAIN PIPING DOWN INTERIOR WALL TO UNDER FLOOR. ROUTE DRAIN AT 1/4"/FT AND DISCHARGE THRU EXTERIOR GRADE BEAM. SPILL DRAIN INTO DRY WELL WITH AN OPEN-SITE CONNECTION.
3. DRY WELL LOCATED ON EXTERIOR OF BUILDING. REFER TO 04/P2.1 FOR DETAIL.
4. SUPPORT PIPING FROM WALL. REFER TO DETAIL 05/P2.1 FRO DETAIL.

PLUMBING FIXTURE SCHEDULE

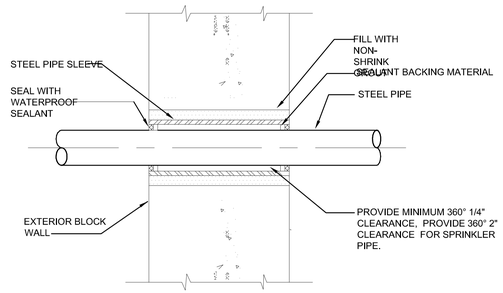
SYMBOL	FIXTURE TYPE	MANUFACTURER AND MODEL #	MIN.SIZE OF CONNECTIONS				DESCRIPTION
			CW	HW	SAN	VENT	
HD	HUB DRAIN	—	-	-	2"	-	OPEN CAST IRON DRAINAGE HUB WITH LOOSE-SET GRATE



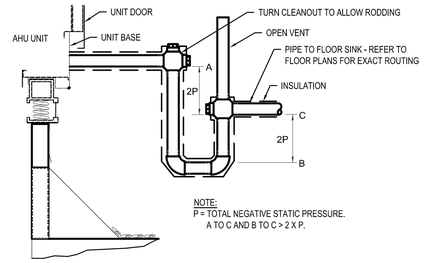
05 WALL HUNG PIPE SUPPORT DETAIL
SCALE : N/A



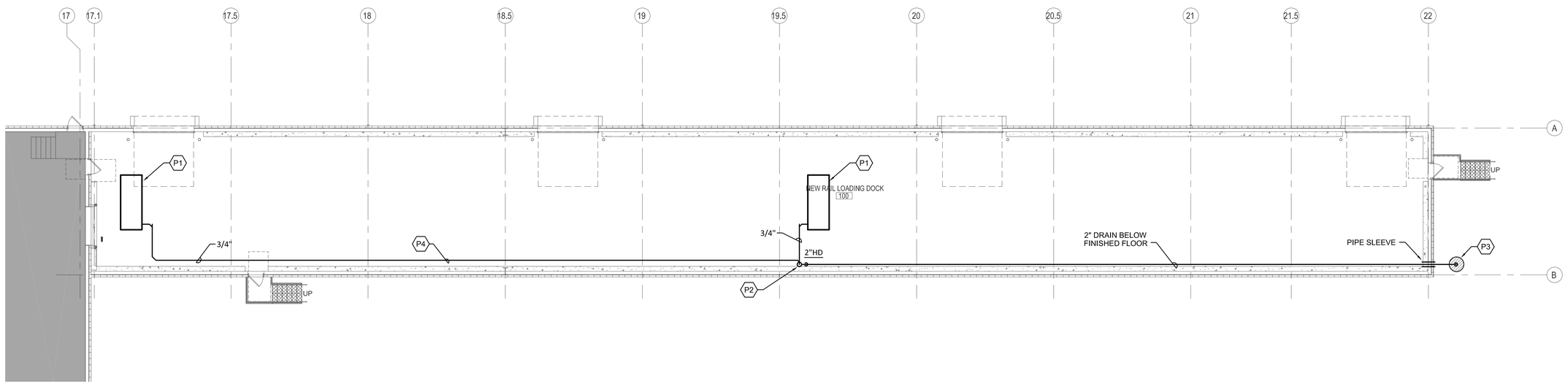
04 DRY WELL DETAIL
SCALE : N/A



03 PIPE SLEEVE THRU EXTERIOR WALL DETAIL
SCALE : N/A



02 AHU/RTU CONDENSATE DRAIN DETAIL
NO SCALE



01 FLOOR PLAN - PLUMBING
SCALE : 3/32" = 1'-0"

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O'CONNOR CONSTRUCTION GROUP
173 COUNTY RD 3850
POOLVILLE, TEXAS 76487

FLOOR PLAN - PLUMBING

LAKE CITY RAIL
211 MCCLOSKEY AVE LAKE CITY, FL 32055

NO.	DESCRIPTION	DATE

JOB NO: FTS11001
ISSUE DATE: 06/04/2021
PROJECT STATUS: ISSUED FOR PERMIT
REVISION
SHEET NO.: **P2.01**