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LOA HATCHERY PROJECT

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GENERAL PROJECT NOTES

1. DIVISION 2600 CONTRACTOR IS RESPONSIBLE FOR READING AND APPLYING WHAT IS IN THE SPECIFICATIONS TO THIS PROJECT. ANYTHING THAT IS NOT INCLUDED ON THE PROJECT THAT IS CALLED OUT IN THE SPECIFICATION SHALL BE LISTED ON THE SUBSTANTIAL COMPLETION PUNCHLIST. THE CONTRACTOR WILL BE REQUIRED TO REMEDY THESE DEFICIENCIES WITHOUT ADDITIONAL COSTS TO OWNER. THERE WILL BE NO EXCEPTIONS.
2. THE CONTRACTOR MAY SCHEDULE A PRE-CONSTRUCTION MEETING. AT THEIR DISCRETION, WITH THE ELECTRICAL ENGINEER TO REVIEW THE DRAWINGS AND SPECIFICATIONS. THE MEETING SHALL BE A MAXIMUM OF ONE HOUR AND SHALL TAKE PLACE AT THE ENGINEER'S OFFICE.
3. THE FOLLOWING ITEMS ARE SOME OF THE REQUIREMENTS THAT ARE LISTED IN THE SPECIFICATIONS. THESE ITEMS ARE NOT ALL INCLUSIVE AND THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE TO ALL REQUIREMENTS OF THE SPECIFICATIONS:

A. INSULATED THROAT CONNECTORS OR PLASTIC BUSHINGS SHALL BE UTILIZED FOR ALL CONDUIT SIZED USED ON THIS PROJECT.

B. THE CONTRACTOR IS RESPONSIBLE FOR UPSIZING CONDUCTORS FOR VOLTAGE DROP PER THE NEC REGARDLESS OF WHETHER IT IS SHOWN ON THE PLANS OR NOT.

C. THE CONTRACTOR SHALL LABEL ALL ELECTRICAL EQUIPMENT AS IT IS CALLED OUT IN THE SPECIFICATIONS.

D. THE CONTRACTOR SHALL PROVIDE SEISMIC SUPPORT AND BRACING FOR ALL LIGHT FIXTURES AND ELECTRICAL EQUIPMENT AS REQUIRED BY APPLICABLE LOCAL AND NATIONAL CODES.

4. THE CONTRACTOR SHALL FOLLOW THE PANELBOARD SCHEDULES AS NOTED IN THE DRAWINGS. EACH CIRCUIT BREAKER HAS BEEN ASSIGNED TO SPECIFIC AREA OF THE BUILDING. NO DEVIATION WILL BE ALLOWED WITHOUT WRITTEN APPROVAL FROM THE ELECTRICAL ENGINEER.

5. THE CONTRACTOR SHALL INSTALL THE WIRE SIZES AS CALLED OUT ON THE ONE-LINE DIAGRAM, EQUIPMENT SCHEDULES, VOLTAGE DROP TABLES, AND ELECTRICAL SPECIFICATIONS. HOWEVER, THE CONTRACTOR IS RESPONSIBLE TO ENSURE THE WIRE IS SIZED LARGE ENOUGH TO ALLOW FOR VOLTAGE DROP.

6. THE CONTRACTOR SHALL VERIFY ALL MECHANICAL OVERCURRENT DEVICES FOR THE ACTUAL MECHANICAL EQUIPMENT SUPPLIED ON THE JOB, PRIOR TO RELEASE OF ANY ELECTRICAL DISTRIBUTION EQUIPMENT. CONTACT THE ELECTRICAL ENGINEER WITH ANY DISCREPANCIES.

7. THE CONTRACTOR SHALL VISIT THE SITE BEFORE SUBMITTING THE BID, AND SHALL EXAMINE ALL PHYSICAL CONDITIONS WHICH MAY BE MATERIAL TO THE PERFORMANCE OF HIS WORK. NO ADDITIONAL PAYMENTS WILL BE ALLOWED TO THE CONTRACTOR AS A RESULT OF EXTRA WORK MADE NECESSARY BY HIS FAILURE TO DO SO. ANY CASE OF DISCREPANCY OR LACK OF CLARITY SHALL BE PROMPTLY IDENTIFIED TO THE OWNERS REPRESENTATIVE AND THE ENGINEER FOR CLARIFICATION.
- | VOLTAGE DROP UPSIZING CHART FOR 20AMP, SINGLE PHASE BRANCH CIRCUITS | | |
|---|----------------|--------------|
| LENGTH (FT) | CONDUCTOR SIZE | CONDUIT SIZE |
| 0-75 | (10) #12 | 3/4" |
| 75-125 | (10) #10 | 3/4" |
| 125-150 | (10) #8 | 3/4" |
| 150-300 | (10) #6 | 1" |
| 300-450 | (10) #4 | 1-1/2" |
| NOTES:
PROVIDE BRANCH CIRCUIT CONDUCTORS IN SIZES SUCH THAT VOLTAGE DROP FOR BRANCH CIRCUITS DO NOT EXCEED 3% PERCENT AT THE FARTHEST OUTLET. INCREASE CONDUCTOR SIZES AND CONDUITS WHERE TO COMPLY WITH NEC CIRCUIT FULL REQUIREMENTS AS NECESSARY TO ACCOMMODATE THIS REQUIREMENT. | | |
- | VOLTAGE DROP UPSIZING CHART FOR OVERHEAD DOORS | | |
|---|----------------|--------------|
| LENGTH (FT) | CONDUCTOR SIZE | CONDUIT SIZE |
| 0-75 | (10) #12 | 3/4" |
| 75-125 | (10) #10 | 3/4" |
| 125-150 | (10) #8 | 3/4" |
| 150-300 | (10) #6 | 1" |
| 300-450 | (10) #4 | 1-1/2" |
| NOTES:
PROVIDE BRANCH CIRCUIT CONDUCTORS IN SIZES SUCH THAT VOLTAGE DROP FOR BRANCH CIRCUITS DO NOT EXCEED 3% PERCENT AT THE FARTHEST OUTLET. INCREASE CONDUCTOR SIZES AND CONDUITS WHERE TO COMPLY WITH NEC CIRCUIT FULL REQUIREMENTS AS NECESSARY TO ACCOMMODATE THIS REQUIREMENT. | | |
- | WIRING DEVICE SYMBOLS | | | |
|-----------------------|--|----------------------|---|
| SYMBOL | DESCRIPTION | MOUNTING | REMARKS |
| | DUPLEX RECEPTACLE | +18" | |
| | FOURPLEX RECEPTACLE | +18" | |
| | GROUND FAULT CIRCUIT INTERRUPTER DUPLEX RECEPTACLE | +18" | |
| | CORD REEL | REFER TO FLOOR PLANS | REFER TO DETAIL. REFER TO PLANS. |
| | SPECIAL PURPOSE OUTLET | +18" | SUBSCRIPT IN PARENTHESIS INDICATES NEMA CONFIGURATION IF SHOWN. REFER TO DRAWINGS AND/OR EQUIPMENT SCHEDULES. CONFIRM EXACT CONFIGURATION WITH OWNER PRIOR TO INSTALLATION. |
- | LIGHTING CONTROLS | | | |
|-------------------|-------------------------------|----------|--|
| SYMBOL | DESCRIPTION | MOUNTING | REMARKS |
| | SINGLE-POLE TOGGLE SWITCH | +48" | |
| | SINGLE-POLE TOGGLE SWITCH | +48" | SUBSCRIPT KEYS SWITCH TO FIXTURES CONTROLLED. |
| | DOUBLE-POLE TOGGLE SWITCH | +48" | |
| | THREE-WAY TOGGLE SWITCH | +48" | |
| | TIMER SWITCH | +48" | |
| | (2) SINGLE-POLE TOGGLE SWITCH | +48" | DUAL LEVEL SWITCH OUTBOARD LAMPS SEPARATELY FROM INBOARD LAMPS. |
| | LOW VOLTAGE SWITCH | +48" | REFER TO LOW VOLTAGE SWITCH SCHEDULE FOR MORE INFORMATION. "W" SPECIFIES TYPE. |
| | OCCUPANCY SENSOR | CEILING | "1" LOWER CASE SPECIFIES ZONE. "W" SPECIFIES TYPE. |
- | TELEPHONE / DATA SYMBOLS | | | |
|--------------------------|--------------------------|------------|---------|
| SYMBOL | DESCRIPTION | MOUNTING | REMARKS |
| | DATA OUTLET | +18" | |
| | TELEPHONE TERMINAL BOARD | TOP AT 72" | |
| | WIRELESS ACCESS POINT | CEILING | |
- | FIRE ALARM SYMBOLS | | | |
|--------------------|------------------------------------|---|---|
| SYMBOL | DESCRIPTION | MOUNTING | REMARKS |
| | HEAT DETECTOR | CEILING | SUBSCRIPT INDICATES SPECIFIC REQUIREMENTS/OPTIONS: |
| | CARBON MONOXIDE DETECTOR | | "SB" DEVICE WITH SOUNDER BASE |
| | SMOKE DETECTOR | | "R" DEVICE WITH ADDRESSABLE RELAY |
| | HEAT DETECTOR | WALL MOUNTED: MAX 12" FROM BOTTOM OF CEILING | "RES" DEVICE HAS 120V, SMOKE ALARM W/ BATTERY BACKUP |
| | CARBON MONOXIDE DETECTOR | | |
| | SMOKE DETECTOR | | |
| | FIRE ALARM MANUAL STATION | | |
| | CONTROL MODULE | AT DEVICES) TO BE CONTROLLED | |
| | MONITOR MODULE | AT DEVICES) TO MONITOR | |
| | FAN SHUT-DOWN RELAY | AT CONTROL PANEL | |
| | FIRE ALARM VISUAL STROBE | INDOOR - 96" FROM FINISH FLOOR TO TOP OF DEVICE. OUTDOOR - 120" FROM FINISH FLOOR TO TOP OF DEVICE. | SUBSCRIPT "WIP" INDICATES THAT A WEATHER PROOF BACK BOX IS REQ. |
| | FIRE ALARM AUDIOVISUAL HORN/STROBE | | NUMERIC SUBSCRIPT INDICATES CANDELA RATING OF STROBE (I.E. - 15, 75, 110) |
| | FIRE ALARM CONTROL PANEL | | |
1. LIGHT FIXTURE SYMBOLS ARE GENERAL IN NATURE AND MAY BE SHOWN ON THE DRAWINGS IN VARIOUS SIZES AND SHAPES. REFER TO THE LIGHT FIXTURE SCHEDULE FOR SPECIFICATION INFORMATION.

2. ARROWS INDICATE AIMING DIRECTION.
- | SYMBOL | DESCRIPTION | MOUNTING | REMARKS |
|--------|---|------------------------|---|
| | RECESSED WALL FIXTURE OR STEP LIGHT | AS SPECIFIED OR DETAIL | REFER TO ARCHITECTURAL EXTERIOR ELEVATIONS FOR MOUNTING HEIGHT |
| | LIGHT FIXTURES | AS SPECIFIED OR DETAIL | |
| | WALL-MOUNTED LINEAR LIGHT FIXTURE | AS SPECIFIED OR DETAIL | |
| | LINEAR WALL WASHER | AS SPECIFIED OR DETAIL | |
| | RECESSED DOWN LIGHT | AS SPECIFIED OR DETAIL | |
| | RECESSED WALL-WASHER OR DIRECTIONAL DOWNLIGHT | AS SPECIFIED OR DETAIL | |
| | SURFACE OR PENDANT-MOUNTED LIGHT FIXTURE | AS SPECIFIED OR DETAIL | |
| | TRACK OR MONO-POINT LIGHT FIXTURE | AS SPECIFIED OR DETAIL | |
| | WALL SCONCE | AS SPECIFIED OR DETAIL | |
| | LINEAR PENDANT LIGHT FIXTURE | CEILING | |
| | EGRESS LIGHT FIXTURE | AS SPECIFIED OR DETAIL | THIS IS AN EXAMPLE OF AN EGRESS LIGHT FIXTURE. EGRESS LIGHT FIXTURES ARE HALF-SHADED DIAGONALLY. |
| | EMERGENCY (NON-EGRESS) LIGHT FIXTURE | AS SPECIFIED OR DETAIL | THIS IS AN EXAMPLE OF AN EMERGENCY (NON-EGRESS) LIGHT FIXTURE. EMERGENCY FIXTURES ARE FULLY-SHADED. |
| | CEILING MOUNTED EXIT SIGN | CEILING | DARKENED PORTION OF SIGN INDICATES |
| | WALL-MOUNTED EXIT SIGN | WALL ABOVE DOOR | FACE(S); ARROW(S) INDICATE CHEVRON DIRECTION(S) |
| | WALL-MOUNTED EXIT SIGN W/ EMERGENCY LIGHT FIXTURE | WALL ABOVE DOOR | |
| | CEILING MOUNTED IN USE SIGN | CEILING | |
| | WALL-MOUNTED IN USE SIGN | WALL ABOVE DOOR | |
| | TIME CLOCK | | |
| | EMERGENCY LIGHT FIXTURE | AS NOTED | |
| | ELECTRIC PHOTOCCELL | N/A | MOUNT ON ROOF FACING NORTH SKY |
| | LIGHT FIXTURE CALLOUT (LETTER DENOTES FIXTURE TYPE) | | |
- | GENERAL SYMBOLS | | |
|-----------------|---|--|
| SYMBOL | DESCRIPTION | REMARKS |
| | KEYED NOTE | |
| | DETAIL REFERENCE | TOP NUMBER INDICATES DETAIL NUMBER, BOTTOM LETTER/NUMBER INDICATES DRAWING SHEET WHERE DETAIL IS SHOWN; WHERE NOT SPECIFICALLY REFERENCED, DETAIL IS GENERAL IN NATURE AND SHALL APPLY WHERE APPLICABLE. |
| | ELEVATION REFERENCE | TOP NUMBER INDICATES ELEVATION NUMBER, BOTTOM LETTER/NUMBER INDICATES WHERE ELEVATION IS SHOWN. |
| | SECTION REFERENCE | TOP NUMBER INDICATES ELEVATION NUMBER, BOTTOM LETTER/NUMBER INDICATES WHERE ELEVATION IS SHOWN. |
| | ARCHITECTURAL ROOM NUMBER | |
| | EQUIPMENT NAME / NUMBER | TOP NUMBER ABBREVIATES EQUIPMENT NAME OR TYPE; BOTTOM NUMBER INDICATES EQUIPMENT NUMBER. REFER TO EQUIPMENT SCHEDULE. |
| | REVISION NUMBER | USED TO DENOTE CHANGES EITHER ISSUED BY ADDENDUM OR DURING CONSTRUCTION AND TO DENOTE RECORD DRAWING CHANGES. |
| | REVISION CLOUD | USED TO DENOTE AREAS, DEVICES, EQUIPMENT DETAILS, ETC. AFFECTED BY THE REVISION. |
| | BREAKLINE | USED TO BREAK DRAWINGS. |
| | LIGHTING CONTROL WIRING DIAGRAM CALLOUT | |
- | BRANCH CIRCUITING SYMBOLS | | |
|---------------------------|---|---|
| SYMBOL | DESCRIPTION | REMARKS |
| | BRANCH CIRCUIT HOME RUN TO PANEL | ARROWS: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS REQUIRED. |
| | BRANCH CIRCUITING (I.N.Q.) CONTINUATION | |
| | CONDUIT STUB-IN | CAP AND MARK |
| | INCOMING SERVICE | |
| | UNDERGROUND FEEDER | |
| | JUNCTION BOX | MOUNT AS NOTED. SUBSCRIPT "F" INDICATES TO PROVIDE A FLOOR BOX WITH BLANK COVERPLATE. |
| | BRANCH CIRCUITING (I.N.Q.) TURNED UP OR TOWARDS OBSERVER. | |
| | BRANCH CIRCUITING (I.N.Q.) TURNED DOWN OR AWAY FROM OBSERVER. | |
| | 2 CIRCUIT, BRANCH CIRCUIT HOME RUN TO PANEL | ARROWS: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS REQUIRED. |
| | 3 CIRCUIT, 4 WIRE BRANCH CIRCUIT HOME RUN TO PANEL | ARROWS: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS REQUIRED. |
- | ELECTRONIC SYSTEM GENERAL SYMBOLS | | | |
|-----------------------------------|--|------------|---|
| SYMBOL | DESCRIPTION | MOUNTING | REMARKS |
| | ELECTRONIC SYSTEM PANELBOARD (SURFACE MOUNT) | TOP AT 72" | ELECTRONIC SYSTEMS MAY INCLUDE BUT ARE NOT SPECIFICALLY LIMITED TO: TELEPHONE, DATA, TELEVISION, LIGHTING CONTROL, CLOCKS, FIRE ALARM, ACCESS CONTROL, SECURITY, CCTV, SOUND SYSTEM, NURSE CALL, OR INTERCOM. |
| | ELECTRONIC SYSTEM PANELBOARD (FLUSH MOUNT) | TOP AT 72" | |
| | ELECTRONIC SYSTEM TERMINAL BOARD | TOP AT 72" | |
| | TWO POST DATA RACK | | |
| | FOUR POST DATA RACK | | |
| | FLOOR MOUNTED DATA CABINET | | |
| | LARGE DATA CABINET | | |
| | WALL MOUNTED DATA CABINET | | |
- | EQUIPMENT AND CONTROL SYMBOLS | | | |
|-------------------------------|--|----------------------|---|
| SYMBOL | DESCRIPTION | MOUNTING | REMARKS |
| | MANUAL STARTER WITH THERMAL OVERLOAD(S) | AT EQUIPMENT | |
| | ELECTRIC MOTOR | | |
| | NON-FUSED DISCONNECT SWITCH | +60" | |
| | FUSED DISCONNECT SWITCH | +60" | |
| | CIRCUIT BREAKER AND ENCLOSURE | +60" | |
| | MAGNETIC STARTER | +60" | |
| | COMBINATION MAGNETIC STARTER / FUSED DISCONNECT | +60" | |
| | COMBINATION MAGNETIC STARTER / NON-FUSED DISCONNECT | +60" | |
| | COMBINATION MAGNETIC STARTER / MOTOR CIRCUIT PROTECTOR (MCP) | +60" | |
| | COMBINATION VARIABLE FREQUENCY DRIVE / MOTOR CIRCUIT PROTECTOR (MCP) | FLOOR OR WALL | TOP AT +72" IF WALL MOUNTED |
| | LOAD CENTER (SURFACE-MOUNTED) | TOP AT +72" | 14"W X 3"D |
| | LOAD CENTER (FLUSH-MOUNTED) | TOP AT +72" | 14"W X 3"D |
| | LIGHTING AND APPLIANCE PANELBOARD (SURFACE-MOUNTED) | TOP AT +72" | 20"W X 6"D |
| | LIGHTING AND APPLIANCE PANELBOARD (FLUSH-MOUNTED) | TOP AT +72" | 20"W X 6"D |
| | POWER DISTRIBUTION PANELBOARD | WALL OR RACK MOUNTED | THESE SYMBOLS ARE GENERAL IN NATURE AND MAY VARY IN SIZE AND SHAPE TO SUIT APPLICATION. CROSS HATCHING INDICATES "MAIN PANELBOARD OR SWITCHBOARD" NAME IS INDICATED IN SEMI-QUOTES (I.E. 12A", MCP) |
| | SWITCHBOARD | PAD MOUNTED | |
| | WET TYPE TRANSFORMER | PAD MOUNT | |
| | DRY TYPE TRANSFORMER | PAD MOUNT | |
| | DRY TYPE TRANSFORMER | WALL MOUNT | |
| | METER BASE | TOP AT +72" | |
| | PULL BOX | | |
| | UTILITY POLE | | |
| | OPEN - STOP - CLOSE SWITCH | +60" | FURNISH SWITCH UNLESS FURNISHED BY ANOTHER DIVISION. INSTALL AND CONNECT COMPLETE. REFER TO RELATED SPECIFICATION SECTIONS. |
1. MOUNT ALL OUTLETS, DEVICES, AND EQUIPMENT AT HEIGHTS INDICATED BELOW, UNLESS NOTED OTHERWISE ON THE DRAWINGS. UNLESS NOTED OTHERWISE, HEIGHTS ARE GIVEN FROM FINISHED FLOOR TO CENTER OF OUTLET BOX.

2. WHERE OUTLETS, DEVICES, AND EQUIPMENT ARE NOTED BY SUBSCRIPTS, REFER TO ABBREVIATION SCHEDULE FOR DEFINED REQUIREMENTS.

3. WHERE OUTLETS, DEVICES AND EQUIPMENT ARE NOTED BY THE SUBSCRIPT 'A', MOUNT AT 4" ABOVE COUNTER. IF COUNTER HAS A BACK SPLASH, MOUNT AT 4" ABOVE BACK SPLASH. REFER TO ARCHITECTURAL INTERIOR ELEVATIONS AND COORDINATE WITH CASWORK SUPPLIER.

4. NOT ALL ELECTRICAL SYMBOLS MAY BE USED.
- | ABBREVIATION SCHEDULE | | | |
|--|-------------------------------------|-----------------|--|
| NOTE: NOT ALL ABBREVIATIONS MAY BE USED. | | | |
| A | ABOVE COUNTER | LSI | LONG-TIME, SHORT-TIME INSTANTANEOUS |
| AMP | AMP OR AMPS | LSIG | LONG-TIME, SHORT-TIME INSTANTANEOUS GROUND FAULT |
| ACC | ACCESS CONTROL | LTD | LIGHTING |
| ADJ | ADJUNCT | MSJ | MAIN BONDING JUMPER |
| AFF | ABOVE FINISHED FLOOR | MCA | MINIMUM CIRCUIT AMPS |
| AHJ | AUTHORITY HAVING JURISDICTION | MCB | MAIN CIRCUIT BREAKER |
| AL | ALUMINUM | MLO | MAIN LUGS ONLY |
| ATS | AUTOMATIC TRANSFER SWITCH | MV | MEDIUM VOLTAGE |
| AUX | AUXILIARY | MW | MICROWAVE |
| AWG | AMERICAN WIRE GAUGE | NC | NORMALLY CLOSED |
| BAS | BUILDING AUTOMATION SYSTEM | NEC | NATIONAL ELECTRIC CODE |
| BUDG | BUDGET | NOT IN CONTRACT | |
| C | CONDUIT | NL | NIGHT LIGHT |
| CB | CIRCUIT BREAKER | NO | NORMALLY OPEN |
| CCT | CIRCUIT | ON CENTER(S) | |
| CLG | CEILING | OC | OVER CURRENT PROTECTION |
| CO | CONVENIENCE OUTLETS | OC | OVER CURRENT PROTECTION DEVICE |
| COMM | COMMUNICATIONS | PA | PUBLIC ADDRESS |
| CU | COPPER | PH | PHASE |
| DAS | DISTRIBUTED ANTENNA SYSTEM | PV | PHOTOVOLTAIC |
| E | EXISTING | PWR | POWER |
| EA | EACH | QTY | QUANTITY |
| EG | EQUIPMENT GROUND | R | REMOVE |
| EQUIP | EQUIPMENT GROUNDING CONDUCTOR | REF | REFRIGERATOR |
| ELEC | ELECTRICAL | REQ | REQUIREMENTS |
| EM | EMERGENCY | RIG | RIGID GALVANIZED METALLIC CONDUIT |
| EMT | ELECTRIC METALLIC TUBING | RMC | RIGID METAL CONDUIT |
| ENT | ELECTRIC NONMETALLIC TUBING | RMP | ROCKY MOUNTAIN POWER |
| EQUIP | EQUIPMENT | RNC | RIGID NONMETALLIC CONDUIT |
| ENC | ELECTRIC WATER COOLER | RE | RENAME AND RELOCATE |
| EXP | EXPLOSION PROOF | S | SURFACE MOUNTED |
| FA | FIRE ALARM | SEJ | SYSTEM BONDING JUMPER |
| FACP | FIRE ALARM CONTROL PANEL | SCP | SECURITY CONTROL PANEL |
| FLA | FULL LOAD AMPS | SFL | SUB-FEED LUGS |
| FMC | FLEXIBLE METAL CONDUIT | SPD | SURGE PROTECTIVE DEVICE |
| FO | FIBER OPTIC | SS | SURGE SUPPRESSION |
| FOB | FREIGHT ON BOARD | SSBJ | SUPPLY SIDE BONDING JUMPER |
| FTL | FEED-THROUGH LUGS | TBL | TELECOMMUNICATION GROUNDING BUS BAR |
| GEC | GROUNDING ELECTRODE CONDUCTOR | TGB | TELECOMMUNICATION MAIN GROUNDING BUS BAR |
| GND | GROUND CONDUCTOR | TR | TAMPER RESISTANT |
| GP | GARAGE POWER | TTB | TELEPHONE TERMINAL BOARD |
| HQA | HAND-OFF-AUTO | TYP | TYPICAL |
| HP | HORSE POWER | UF | UNDER FLOOR |
| HZ | HORIZONTALLY MOUNTED | UG | UNDERGROUND |
| IBT | INTERSYSTEM BONDING TERMINATION BAR | UNO | UNLESS NOTED OTHERWISE |
| IDS | INTRUSION DETECTION | USB | UNIVERSAL SERIAL BUS |
| IS | ISOLATED GROUND | VSS | VIDEO SURVEILLANCE SYSTEM |
| IMC | INTERMEDIATE METAL CONDUIT | W | WITH |
| INS | INSULATED | WO | WITHOUT |
| ISO | ISOLATED | WP | WEATHER PROOF |
| KCMIL | KILO CIRCULAR MIL | WR | WEATHER RESISTANT |
| KVA | KILO VOLT AMPERES | XFMR | TRANSFORMER |
| KV | KILOVOLTS | | |
| LFC | LIQUID-TIGHT NONMETAL CONDUIT | | |
| LS | LONG-TIME, SHORT-TIME | | |
- | SHEET INDEX | |
|-------------|--|
| EG001 | GENERAL NOTES AND SYMBOLS LISTS |
| EG001 | DETAILS |
| EG002 | DETAILS |
| EG003 | DETAILS |
| EG004 | LIGHTING CONTROL WIRING DIAGRAMS |
| EG005 | ONE-LINE DIAGRAM SYMBOLS AND SCHEDULES |
| EG006 | ONE-LINE DIAGRAM - POWER |
| EG007 | TELECOM AND FIRE ALARM RISER DIAGRAM |
| EG008 | FEED SYSTEM TELECOM & CONTROLS |
| EG009 | |
| EST101 | ELECTRICAL SITE PLAN |
| EST102 | TELECOM AND LIGHTING SITE PLAN |
| ED101 | FLOOR PLANS - LIGHTING, POWER, AND SYSTEMS |
| ED000 | ELECTRICAL SCHEDULES |
| EF101 | FLOOR PLAN - LIGHTING |
| EF201 | FLOOR PLAN - POWER AND TELECOM |
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| EF000 | ELECTRICAL SCHEDULES |
| EH101 | FLOOR PLAN - LIGHTING |
| EH201 | FLOOR PLAN - POWER AND TELECOM |
| EH000 | ELECTRICAL SCHEDULES |
| EO101 | FLOOR PLAN - LIGHTING |
| EO201 | FLOOR PLAN - POWER AND TELECOM |
| EO202 | ROOF PLAN - LIGHTNING PROTECTION |
| EO301 | FLOOR PLAN - SYSTEMS |
| EO000 | ELECTRICAL SCHEDULES |
| EG001 | ELECTRICAL SCHEDULES |
| ER101A | FLOOR PLAN - LIGHTING - AREA A |
| ER101B | FLOOR PLAN - LIGHTING - AREA B |
| ER201A | FLOOR PLAN - POWER - AREA A |
| ER201B | FLOOR PLAN - POWER - AREA B |
| ER000 | ELECTRICAL SCHEDULES |
| ES201 | FIRST FLOOR - ELECTRICAL PLANS AND SCHEDULES |
- State of Utah
Department of Administrative Services



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ENV-2023-231
- PROJECT NAME:

UTAH DIVISION OF
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RESOURCES
LOA HATCHERY
PROJECT

SEAL



PROFESSIONAL ENGINEER
ALEKSANDAR RAITKOVIC
06/20/2025

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JASON VAN ARMAN
06/16/2025

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GENERAL NOTES
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LISTS

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- EG001

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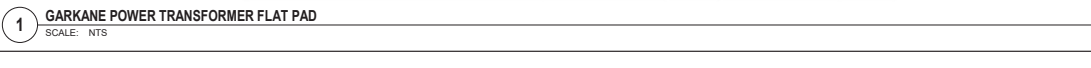
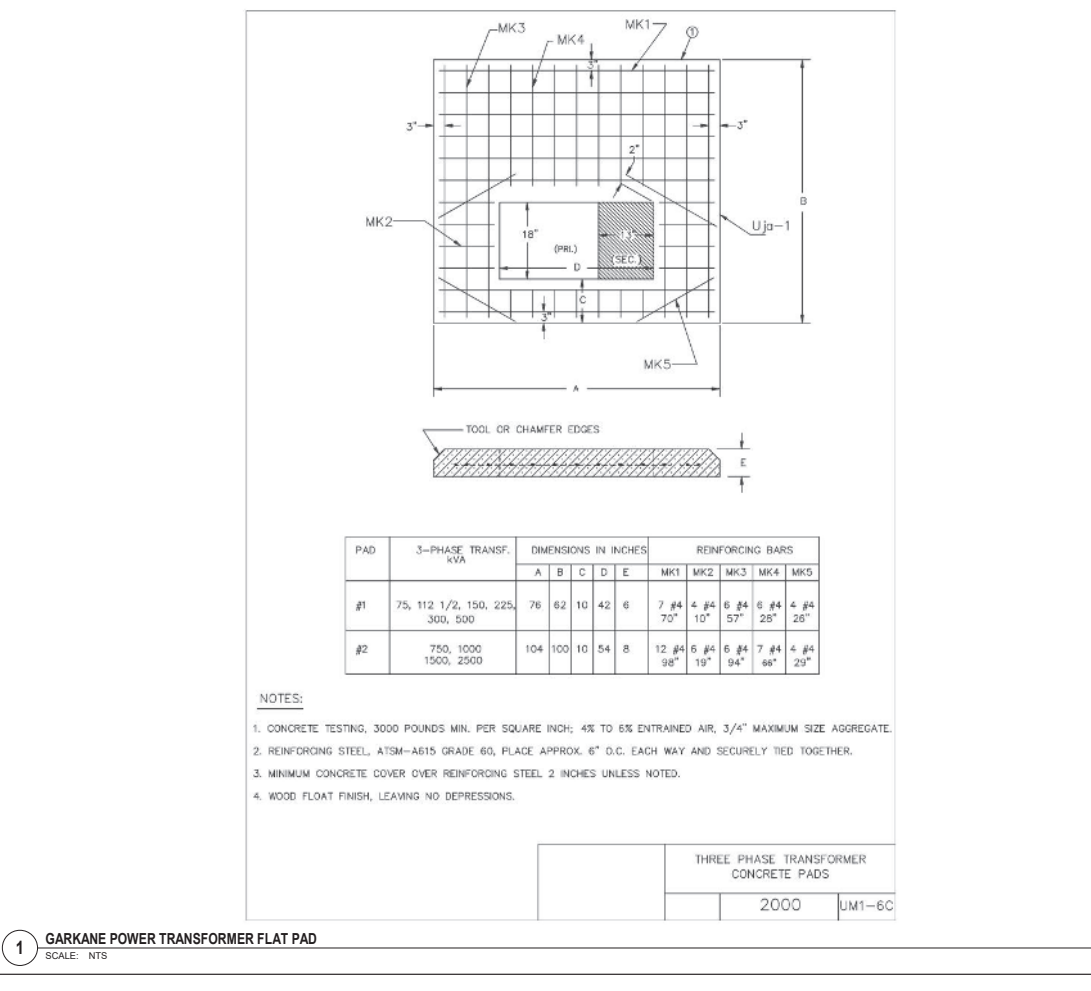
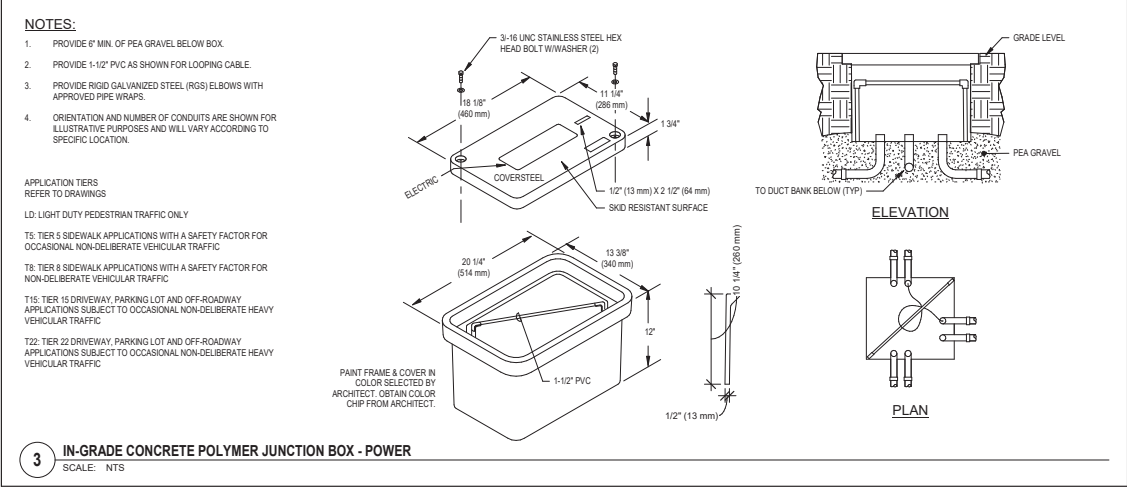
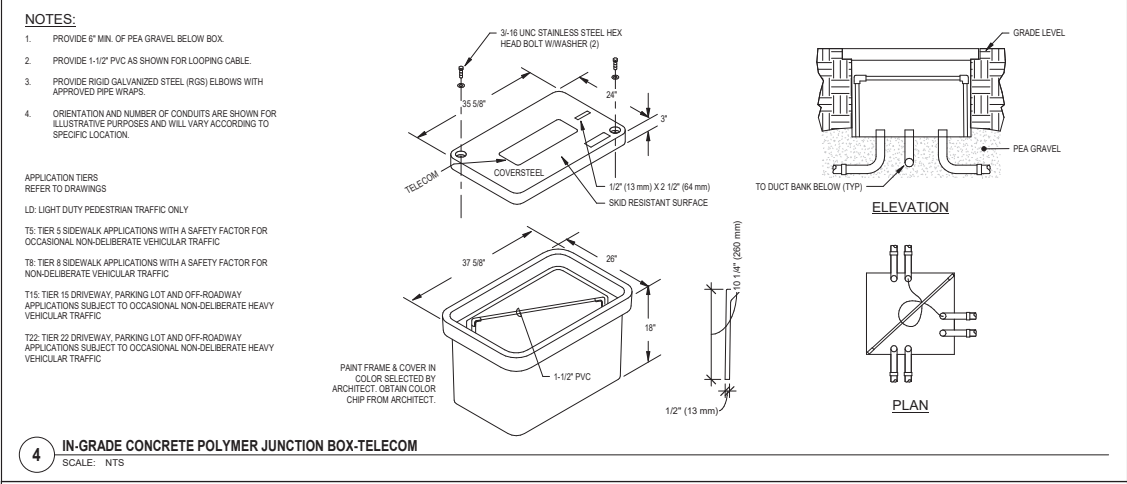
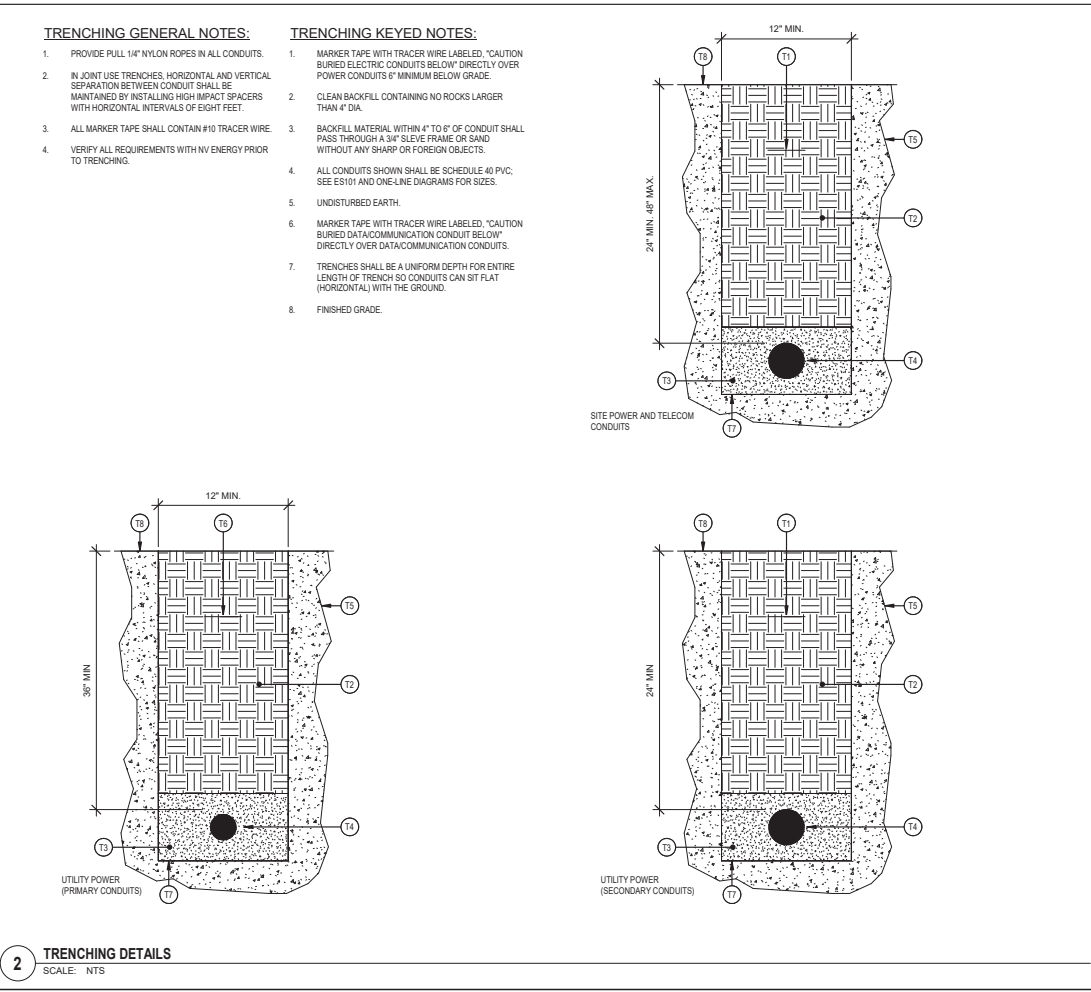
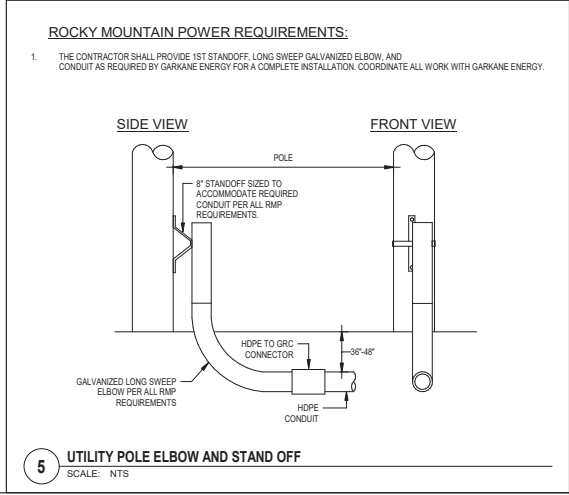
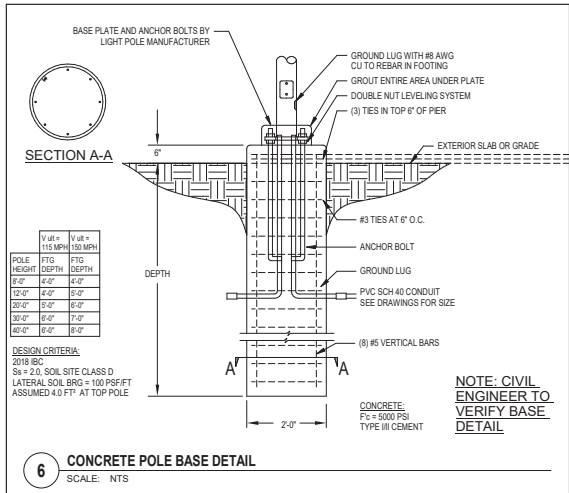
A

B

C

D

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ALEKSANDAR RANKOVIC
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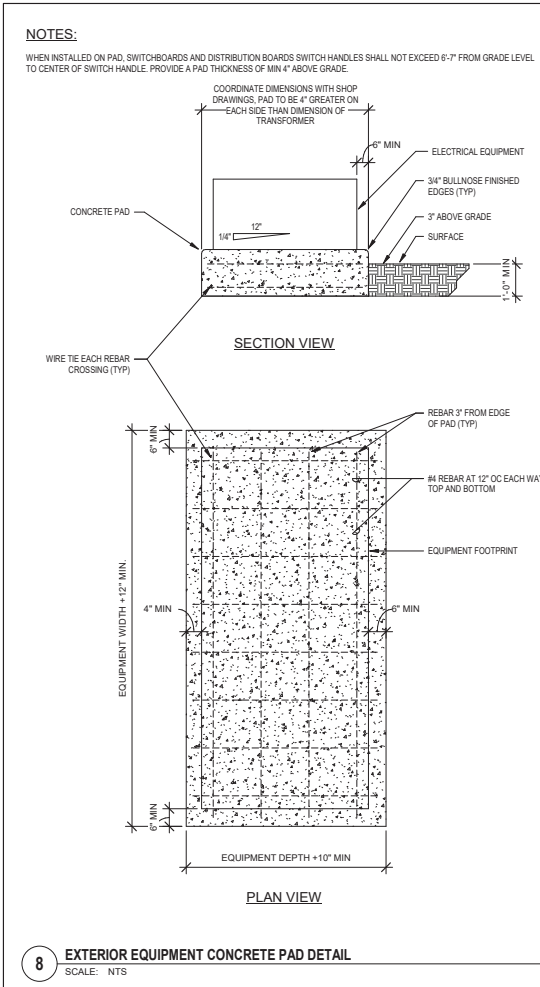
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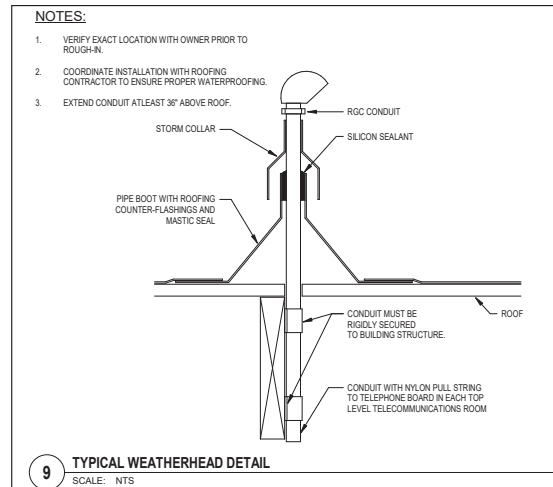
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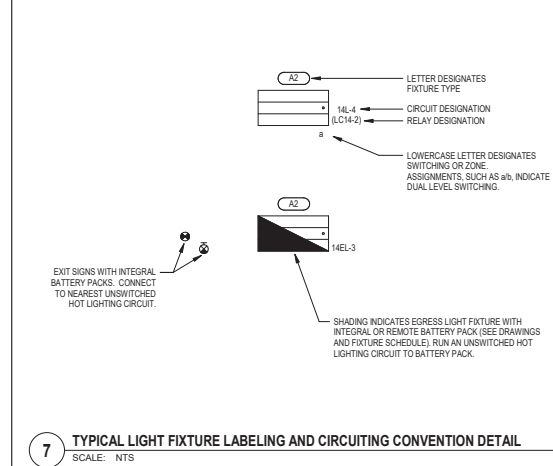
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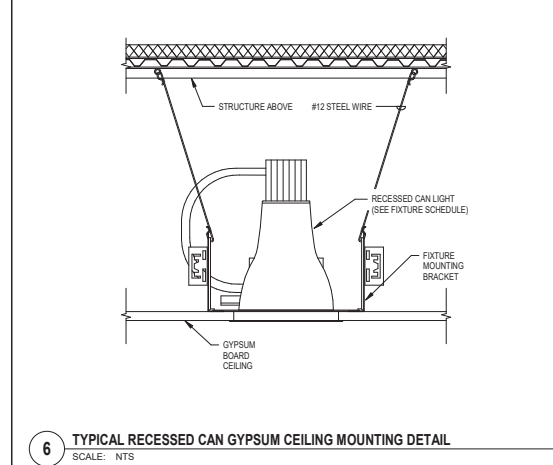
8 EXTERIOR EQUIPMENT CONCRETE PAD DETAIL
SCALE: NTS



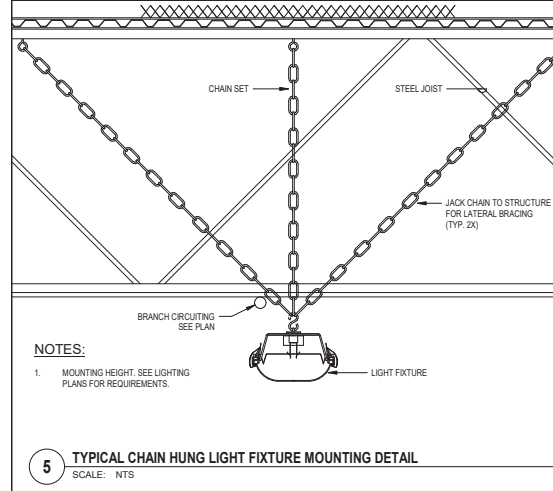
9 TYPICAL WEATHERHEAD DETAIL
SCALE: NTS



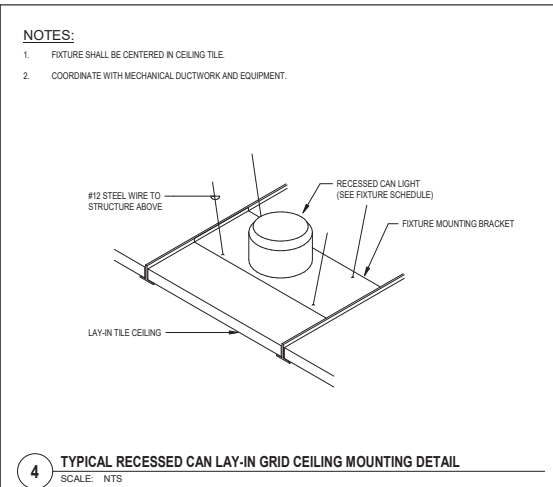
7 TYPICAL LIGHT FIXTURE LABELING AND CIRCUITING CONVENTION DETAIL
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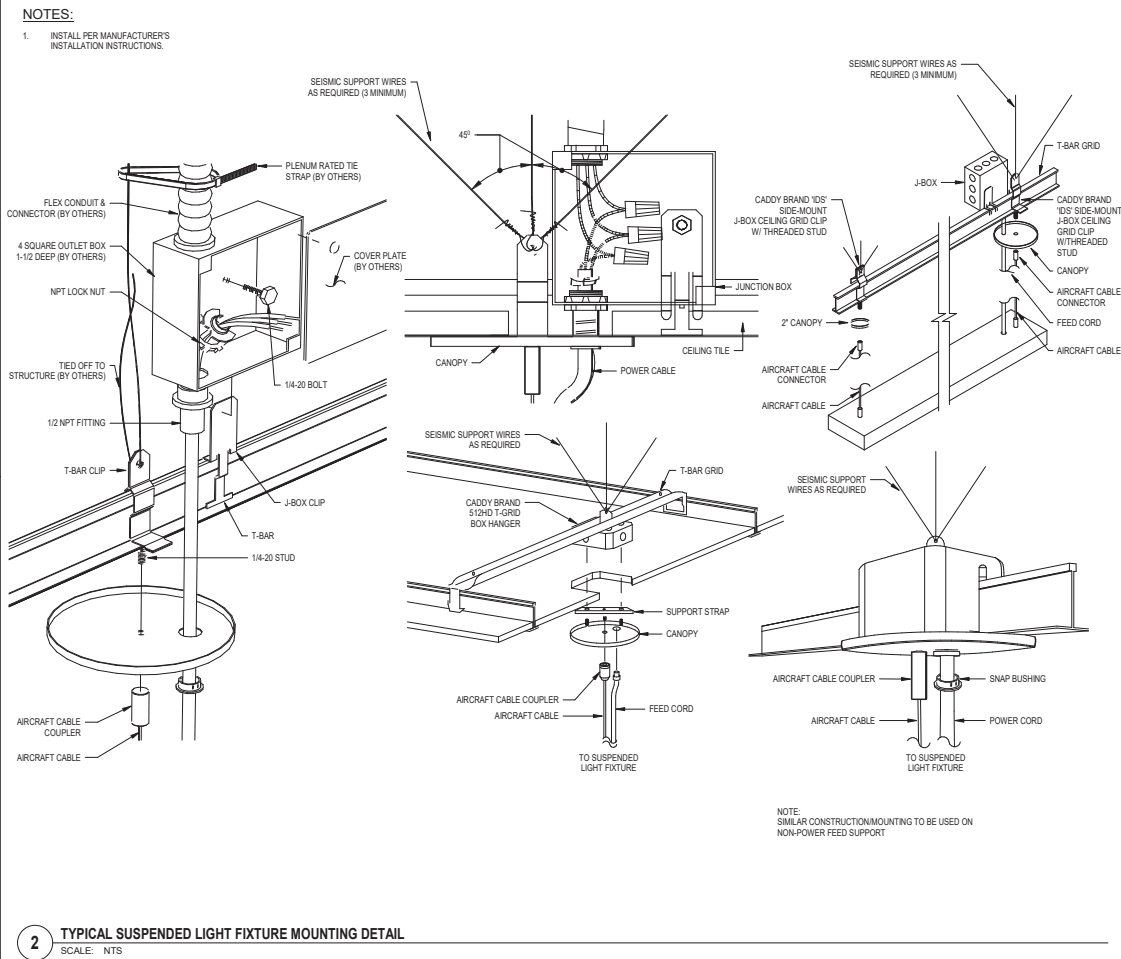
6 TYPICAL RECESSED CAN GYPSUM CEILING MOUNTING DETAIL
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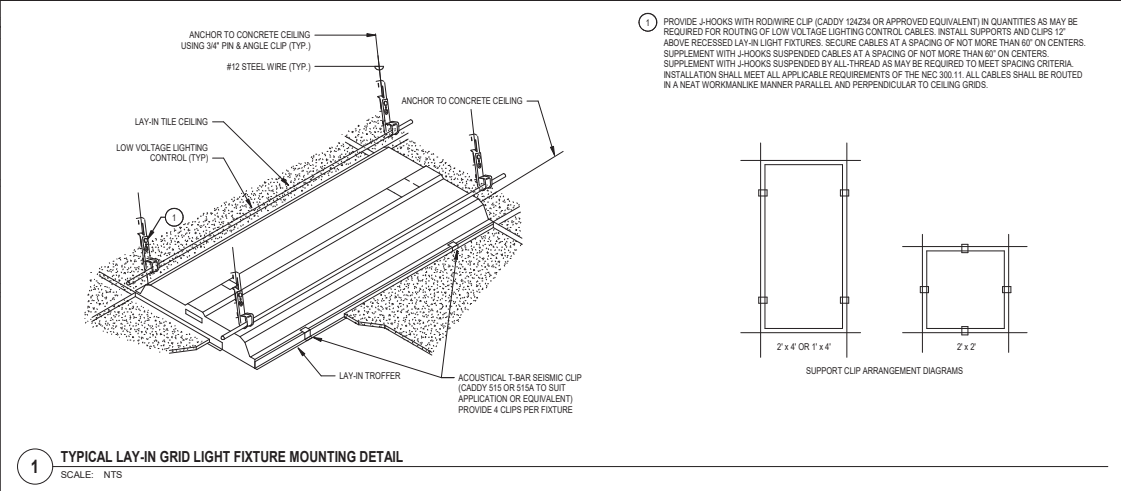
5 TYPICAL CHAIN HUNG LIGHT FIXTURE MOUNTING DETAIL
SCALE: NTS



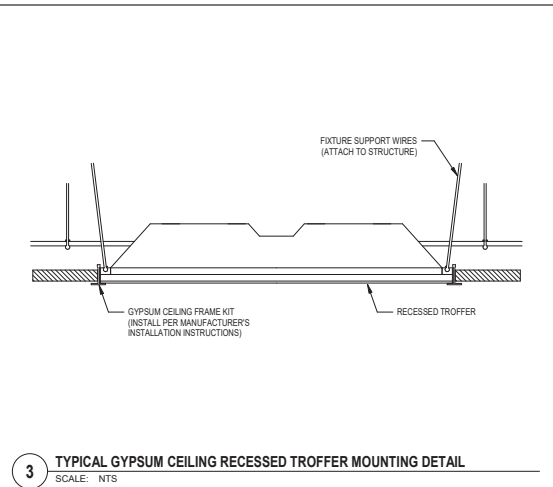
4 TYPICAL RECESSED CAN LAY-IN GRID CEILING MOUNTING DETAIL
SCALE: NTS



2 TYPICAL SUSPENDED LIGHT FIXTURE MOUNTING DETAIL
SCALE: NTS



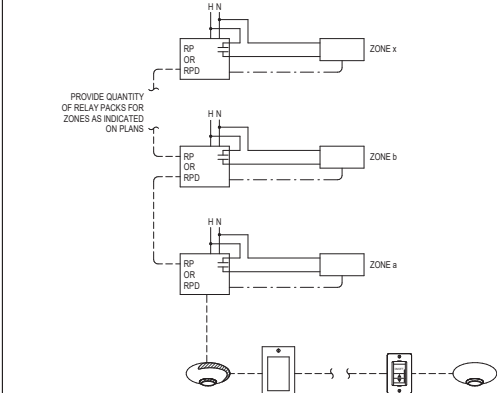
1 TYPICAL LAY-IN GRID LIGHT FIXTURE MOUNTING DETAIL
SCALE: NTS



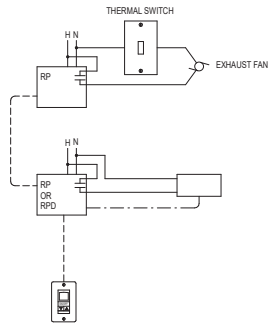
3 TYPICAL GYPSUM CEILING RECESSED TROFFER MOUNTING DETAIL
SCALE: NTS



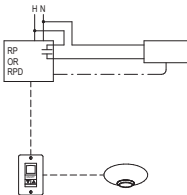
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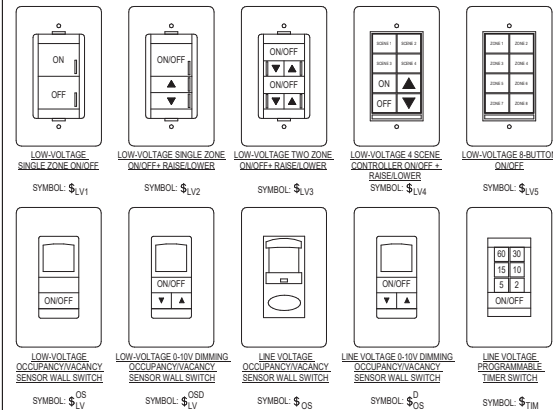
4 LOW VOLTAGE WIRING DIAGRAM 3
SCALE: NTS



3 LOW VOLTAGE WIRING DIAGRAM 2
SCALE: NTS



2 LOW VOLTAGE WIRING DIAGRAM
SCALE: NTS



1 LIGHTING CONTROL WALL SWITCH DETAILS
SCALE: NTS

LIGHTING WIRING DIAGRAMS			
SYMBOL	DESCRIPTION	MOUNTING	REMARKS
	LINE VOLTAGE LIGHT SWITCH	+48"	
	LINE VOLTAGE LIGHT SWITCH	+48"	
	LOW VOLTAGE LIGHT SWITCH (REFER TO LOW VOLTAGE LIGHTING CONTROL WALL SWITCH DETAILS AND FLOOR PLANS)	+48"	
	WALL MOUNT GRAPHIC TOUCH PAD CONTROLLER	+48"	
	OCCUPANCY SENSOR	CEILING	
	DAYLIGHT SENSOR	CEILING	
	NORMAL POWER LIGHTING LOAD	CEILING	"6" LOWER CASE LETTER SPECIFIES ZONE
	EMERGENCY POWER LIGHTING LOAD	CEILING	"6" LOWER CASE LETTER SPECIFIES ZONE
	RP: RELAY PACK RPD: DIMMING RELAY PACK RC: RECEPTACLE LOAD CONTROLLER	ABOVE ACCESSIBLE CEILING	RELAYS MAY BE COMBINED IN ROOM CONTROLLER OR POWER PACKS.
	ER: EMERGENCY RELAY PACK ERD: EMERGENCY DIMMING RELAY PACK	ABOVE ACCESSIBLE CEILING	RELAYS MAY BE COMBINED IN ROOM CONTROLLER OR POWER PACKS. MUST BE UL Q/A RATED FOR EMERGENCY LOADS.
	34°C WITH LIGHTING BRANCH CIRCUIT WIRING		
	34°C WITH 0-10V DIMMING WIRING		
	34°C WITH CAT 5 CABLEING		

- LIGHTING CONTROL NOTES
- PROGRAMMING SHALL BE COMPLETED PRIOR TO SUBSTANTIAL COMPLETION.
 - MODIFY PROGRAMMING AND PRESET SCENES AS REQUESTED BY OWNER.
 - PROVIDE FINE TUNING PROGRAMMING MODIFICATIONS AS REQUESTED BY OWNER WITHIN 6 MONTHS AFTER BUILDING OCCUPANCY.
 - IN ADDITION TO PRESET SCENES PROVIDE INDIVIDUAL CONTROL FOR EACH ZONE.
 - ALL WIRING DIAGRAMS ARE GENERAL IN NATURE. SPECIFIC CONFIGURATION AND QUANTITIES DUE TO MANUFACTURER AVAILABILITY WILL VARY. PROVIDE ALL REQUIRED PARTS OF THE SYSTEM TO PERFORM AS INTENDED.
 - NOT ALL DEVICES SHOWN ON WIRING DIAGRAMS MIGHT BE REQUIRED. REFER TO FLOOR PLANS FOR DEVICE QUANTITY AND DEVICE TYPES.
 - PROVIDE SEPARATE RELAYS FOR DAYLIGHT ZONES SHOWN ON DRAWINGS.
 - ROOM CONTROLLERS OR POWER PACKS WITH MULTIPLE RELAYS INCLUDED MAY BE PROVIDED IN LIEU OF SEPARATE RELAYS SHOWN.
 - LIGHTING CONTROL DIAGRAMS AS SHOWN ARE FOR BASIC CONCEPT AND LAYOUT. LIGHTING CONTROLS SYSTEM SUPPLIER TO PROVIDE INSTALLATION DRAWINGS THAT REFLECT THE ACTUAL INSTALLATION REQUIREMENTS, WIRING DIAGRAMS, AND ALL REQUIRED DEVICES.



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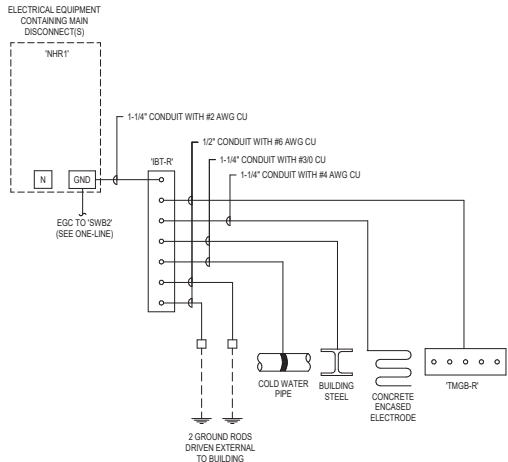
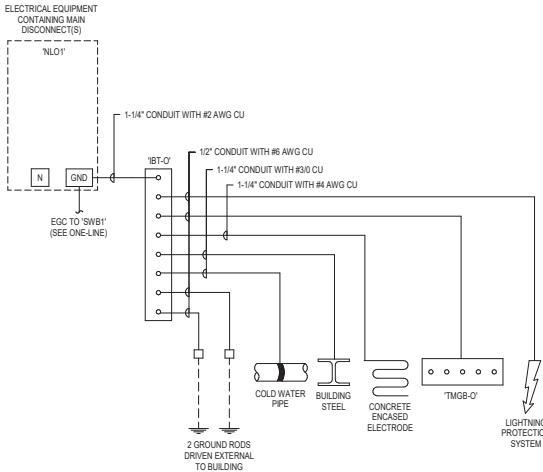
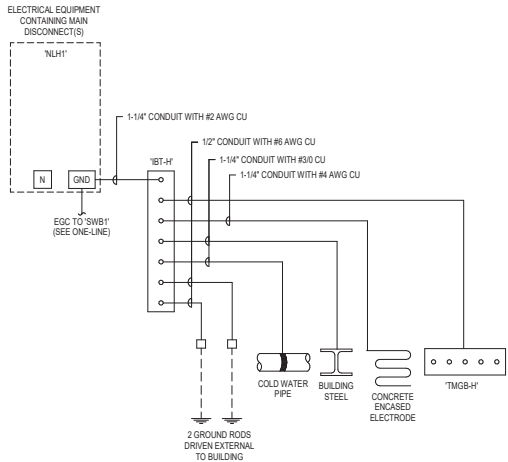
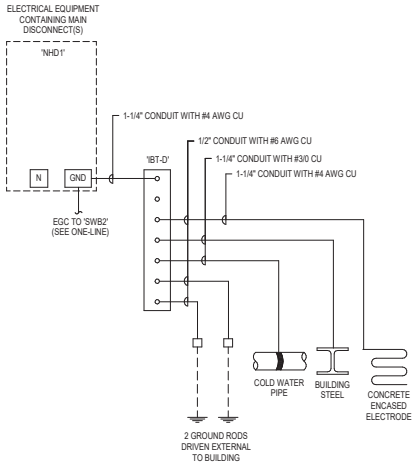
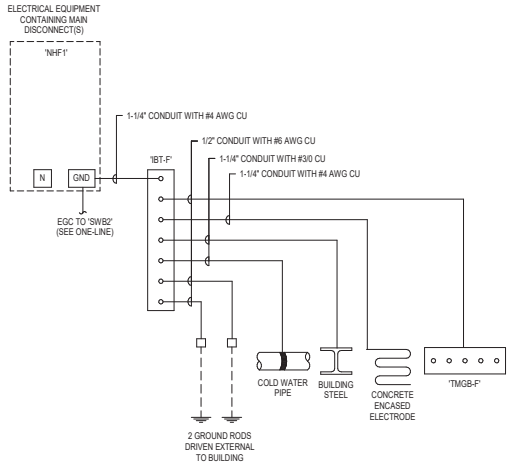
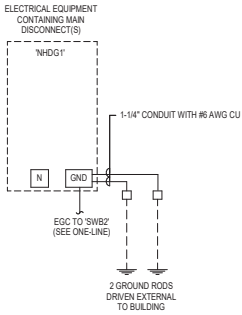
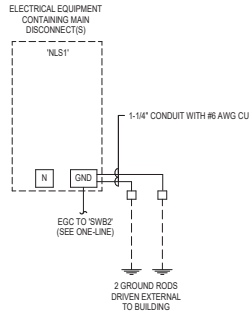
LIGHTING CONTROL
WIRING DIAGRAMS

Original drawing is 36" x 42". Do not scale contents of this drawing.

DRAWING NUMBER

EG504
59 OF 268

ONE-LINE SYMBOLS					
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	LIGHTING AND APPLIANCE PANEL BOARD		DISTRIBUTION PANEL		LOAD CENTER
	CIRCUIT BREAKER		CIRCUIT BREAKER ENCLOSED		SPARE
	NORMALLY OPEN CONTACT		NORMALLY CLOSED CONTACT		THERMAL OVERLOAD
	MOTOR		KEY INTERLOCK		RELAY COIL
	DISCONNECT SWITCH		DISCONNECT SWITCH FUSED		SURGE SUPPRESSION DEVICE
	FUSED SWITCH		COMBINATION MCP STARTER WITH THERMAL OVERLOAD		COMBINATION FUSIBLE STARTER WITH THERMAL OVERLOAD
	MUSHROOM PUSH BUTTON		PHASE FAILURE RELAY		METER
	AUTOMATIC TRANSFER SWITCH		GROUND		CURRENT TRANSFORMER
	TRANSFORMER		GUTTER		GENERATOR
	GROUND AND NEUTRAL		STANDARD SWITCHED WAY		GROUND RODS
	POWER FACTOR CORRECTION CAPACITOR & ENCLOSURE		CT CABINET		PULLING SECTION
	CAM LOCK MALE		CAM LOCK FEMALE		LIGHTNING PROTECTION
	COLD WATER PIPE		BUILDING STEEL		CONCRETE ENCASED ELECTRODE
	ISOLATION AUTOMATIC TRANSFER SWITCH				MAIN SWITCHBOARD
	BUS BAR				GROUND SLEEVE



2 GROUNDING RISER DIAGRAMS
SCALE: NTS

- GENERAL ONE-LINE NOTES:**
- THE ELECTRICAL CONTRACTOR SHALL VERIFY THE AVAILABLE FAULT CURRENT WITH THE OWNER PRIOR TO BIDDING AND PROVIDE EQUIPMENT RATING ACCORDINGLY. SUBMIT FAULT CURRENT CALCULATIONS WITH SHOP DRAWINGS SUBMITTAL.
 - PROVIDE FULL LENGTH VERTICAL BUSSING IN ALL SWITCHBOARDS, DISTRIBUTION PANELBOARDS, AND PANELBOARDS.
 - COORDINATE SPACE WITH ALL OTHER TRADES TO MAINTAIN ALL CODE-REQUIRED CLEARANCES.
- FEEDER GENERAL NOTES:**
- CONTRACTOR SHALL REVIEW ONE-LINE DIAGRAM AND CONFIRM FEEDER WIRE SIZES. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER PRIOR TO BID. IF DISCREPANCIES EXIST, CONTRACTOR SHALL PROVIDE CORRECT WIRE SIZE BASED ON ACTUAL BREAKER SIZE AND ANY VOLTAGE DROP ADJUSTMENTS. SEE NEC 210.19, 215.2, 250.112, AND 310.15.
 - ALL GROUNDING WIRES SHOWN IN FEEDER SCHEDULE ARE COPPER WIRES.
 - ALL SYSTEM BONDING JUMPER CONDUCTORS SHOWN ARE TO BE RUN IN EACH PARALLEL FEEDER SET

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ENV-2023-231

PROJECT NAME:

UTAH DIVISION OF
WILDLIFE
RESOURCES
LOA HATCHERY
PROJECT

SEAL

DFCM APPROVAL

REVISIONS
CONTRACTOR TO VERIFY DRAWINGS IN FIELD USE REFLECT
NO. DATE DESCRIPTION

ISSUE TYPE: CONST. DOCUMENTS

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ONE LINE DIAGRAM
SYMBOLS AND
SCHEDULES
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DRAWING NUMBER

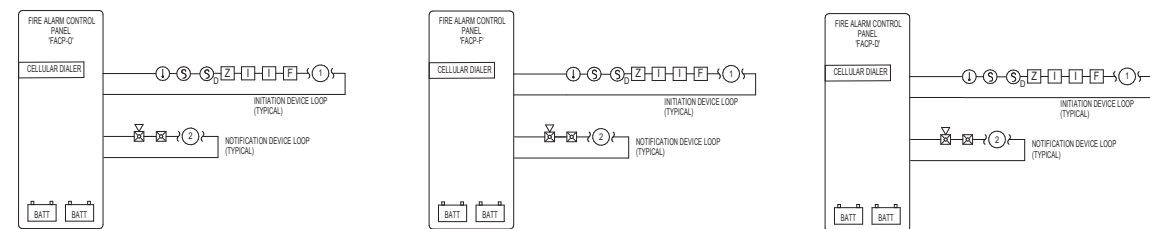
EG700
60 OF 268

FIRE ALARM KEYED NOTES:

- EXTEND A 3/4" CONDUIT WITH INITIATION DEVICE CABLE TO ADDRESSABLE FIRE ALARM DEVICES INCLUDING SMOKE DETECTORS, DUCT SMOKE DETECTORS, HEAT DETECTORS, PULL STATIONS, MONITOR MODULES, AND CONTROL MODULES. REFER TO AUXILIARY PLANS FOR QUANTITIES AND DEVICE TYPES. INCLUDE POWER WIRING AS REQUIRED FOR CONTROL MODULES AND DUCT SMOKE DETECTORS.
- EXTEND A 3/4" CONDUIT NOTIFICATION DEVICE CABLE TO FIRE ALARM HORNS/STROBES, HORNS AND STROBES. REFER TO AUXILIARY PLANS FOR QUANTITIES AND DEVICE TYPES. SYNCHRONIZE ALL STROBES.
- PROVIDE NOTIFICATION APPLIANCE CIRCUIT PANEL (NACP) INCLUDING STROBE AND HORN CIRCUIT MODULES, POWER SUPPLIES, AND BATTERIES.
- EXTEND 1" CONDUIT WITH CABLE PER ALL MANUFACTURERS RECOMMENDATIONS.
- PROVIDE PLASTIC LAMINATE LABEL WITH NAME AS CALLED OUT ON THE DRAWINGS. LABEL TO BE RED WITH 1/4" HIGH WHITE LETTERS.

FIRE ALARM SYSTEM NOTES:

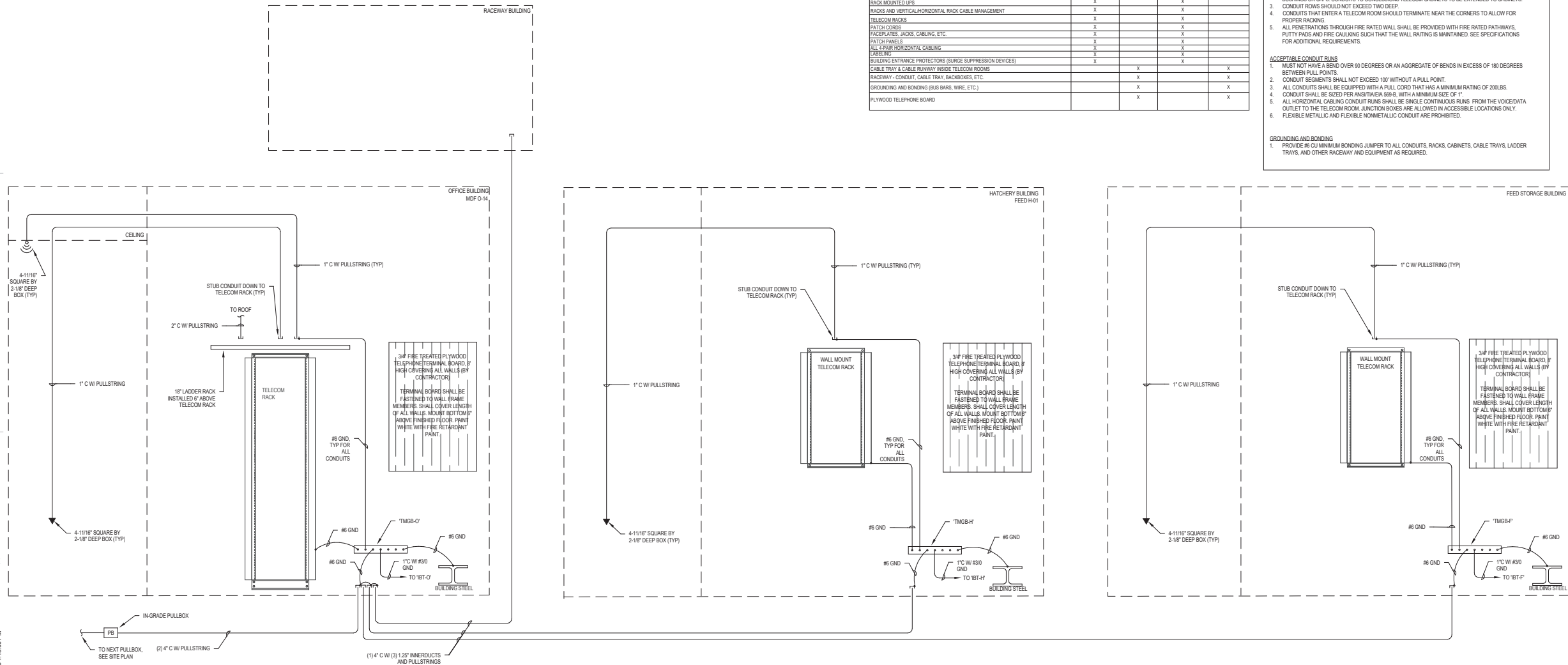
- PROVIDE ADDRESSABLE FIRE ALARM SYSTEM. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- CONFIRM ALL WIRING REQUIREMENTS WITH FIRE ALARM SYSTEM SUPPLIER AND PROVIDE IN ACCORDANCE THEREWITH.
- THE SYSTEM SHALL BE PROGRAMMED SO THAT IF ANY INITIATION DEVICE IS ACTIVATED, AN ALARM SIGNAL, WHICH IS AUDIBLE THROUGHOUT THE BUILDING WILL BE ACTIVATED.
- WIRING SHALL BE CONTINUOUS FROM ONE DEVICE TO ANOTHER. NO SPLICING IS ALLOWED.
- PROVIDE FIRE ALARM MAP OF THE BUILDING SHOWING ALL FIRE ALARM SYSTEM DEVICES. LOCATE MAP AT REMOTE ANNUNCIATOR. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- ALL FIRE ALARM CABLEING SHALL BE RUN IN CONDUIT. MINIMUM CONDUIT SIZE SHALL BE 3/4". CONTRACTOR SHALL SPRAY PAINT ALL JUNCTION BOXES ASSOCIATED WITH THE FIRE ALARM SYSTEM RED.
- THE FIRE ALARM SYSTEM SUPPLIER SHALL PROVIDE COMPUTER DRAFTED SHOP DRAWINGS OF THE ENTIRE FIRE ALARM SYSTEM USING FLOOR PLANS PROVIDED BY THE ENGINEER. SHOP DRAWINGS TO INCLUDE BATTERY CALCULATIONS, VOLTAGE DROP CALCULATIONS, PLANS, SECTIONS, ELEVATIONS, FINAL DEVICE LOCATIONS AND ADDRESS, CONDUIT SIZE AND ROUTING AND ALL CONDUCTOR SIZES. TYPICAL RISERS AND CALCULATIONS WILL NOT BE ACCEPTED. ALL SHOP DRAWINGS SHALL BE PREPARED AND APPROVED BY A NICET CERTIFIED FIRE ALARM TECHNICIAN LEVEL II OR GREATER.
- ALL NOTIFICATION DEVICE CIRCUIT VOLTAGE DROP CALCULATIONS SHALL BE DONE IN COMPLIANCE WITH NFPA 72. THE FIRE ALARM SYSTEM SUPPLIER TO DETERMINE THE NUMBER OF NOTIFICATION DEVICE CIRCUITS THAT ARE REQUIRED BASED ON THE NUMBER OF NOTIFICATION DEVICES SHOWN ON THE DRAWINGS. THE FIRE ALARM SUPPLIER SHALL DETERMINE THE NUMBER OF NACP PANELS THAT WILL BE REQUIRED BASED ON THE QUANTITY OF NOTIFICATION DEVICE CIRCUITS.
- THE FIRE ALARM SYSTEM SUPPLIER SHALL SUBMIT THE FIRE ALARM SHOP DRAWINGS AND MANUFACTURERS CUTSHEETS TO THE LOCAL AUTHORITY HAVING JURISDICTION (LAHJ) FOR REVIEW AND APPROVAL. PRIOR TO THE ROUGH-IN OF THE SYSTEM. PROVIDE A MINIMUM OF TWO (2) SETS OF DRAWINGS, CUTSHEETS, AND CALCULATIONS TO LAHJ.
- VERIFY AND COMPLY WITH ALL STATE, LOCAL, AND NATIONAL CODES.
- UPON CLOSE OUT OF THE PROJECT THE FIRE ALARM SYSTEM SUPPLIER TO PROVIDE A CD(S) WITH CAD AND PDF DRAWINGS OF THE BUILDING FIRE ALARM MAP, CAD AND PDF AS-BUILT DRAWINGS, GENERAL PROGRAMMING, SITE SPECIFIC PROGRAMMING, OMM MANUALS FOR THE FIRE ALARM SYSTEM AND NACP PANELS AND A TUTORIAL ON PROGRAMMING THE SYSTEM. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.



2 FIRE ALARM RISER DIAGRAM
SCALE: NTS

TELECOMMUNICATIONS RESPONSIBILITY MATRIX				
ITEM	FURNISHED BY		INSTALLED AND TESTED BY	
	OTS	PROJECT CONTRACTOR	OTS	PROJECT CONTRACTOR
WIRELESS ACCESS POINT EQUIPMENT		X	X	
SERVERS, SWITCHES, ACTIVE EQUIPMENT	X		X	
RACK FOUR POWER DISTRIBUTION UNITS	X		X	
RACK MOUNTED UPS	X		X	
RACKS AND VERTICAL/HORIZONTAL RACK CABLE MANAGEMENT	X		X	
TELECOM RACKS	X		X	
PATCH CORDS	X		X	
FACEPLATES (JACKS, CABLEING, ETC.)	X		X	
PATCH PANELS	X		X	
ALL 4-PAIR HORIZONTAL CABLEING	X		X	
FIBER	X		X	
BUILDING ENTRANCE PROTECTORS (SURGE SUPPRESSION DEVICES)	X		X	
CABLE TRAY & CABLE RUNWAY INSIDE TELECOM ROOMS		X		X
RACEWAY - CONDUIT, CABLE TRAY, BACKBOXES, ETC.		X		X
GROUNDING AND BONDING (BUS BARS, WIRE, ETC.)		X		X
PLYWOOD TELEPHONE BOARD		X		X

- TELECOMMUNICATIONS GENERAL NOTES AND GUIDELINES:
- GENERAL
- ALL TELECOM ROOMS SHALL BE LINED WITH 1/2" A/C OR BETTER PLYWOOD EXTENDING FROM 6" AFF TO 6'-6" AFF.
 - ALL OUTLETS SHALL BE FLUSH WITH THE SURFACE OF THE WOOD AND INSTALLED AT 18" AFF.
 - ALL BACKBONE AND/OR RISER CONDUITS SHOULD EXTEND 3' FROM THE FLOOR OR CEILING AND NO MORE THAN 2' OFF ANY WALL. CONDUITS SHALL BE THREADED FOR COLLARS AND SPACE ALLOWED FOR BUSBARS OR COPS. CONDUITS TO CONCESSING TELECOM CABINETS TO BE EXTENDED TO CABINETS.
 - CONDUIT ROWS SHOULD NOT EXCEED TWO DEEP.
 - CONDUITS THAT ENTER A TELECOM ROOM SHOULD TERMINATE NEAR THE CORNERS TO ALLOW FOR PROPER RACKING.
 - ALL PENETRATIONS THROUGH FIRE RATED WALL SHALL BE PROVIDED WITH FIRE RATED PATHWAYS, PUTTY PADS AND FIRE CALKING SUCH THAT THE WALL RATING IS MAINTAINED. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- ACCEPTABLE CONDUIT RUNS
- MUST NOT HAVE A BEND OVER 90 DEGREES OR AN AGGREGATE OF BENDS IN EXCESS OF 180 DEGREES BETWEEN PULL POINTS.
 - CONDUIT SEGMENTS SHALL NOT EXCEED 100' WITHOUT A PULL POINT.
 - ALL CONDUITS SHALL BE EQUIPPED WITH A PULL CORD THAT HAS A MINIMUM RATING OF 200LB.
 - CONDUIT SHALL BE SIZED PER ANSI/TIA/EIA 569-B, WITH A MINIMUM SIZE OF 1".
 - ALL HORIZONTAL CABLEING CONDUIT RUNS SHALL BE SINGLE CONTINUOUS RUNS FROM THE VOICE/DATA OUTLET TO THE TELECOM ROOM. JUNCTION BOXES ARE ALLOWED IN ACCESSIBLE LOCATIONS ONLY.
 - FLEXIBLE METALLIC AND FLEXIBLE NONMETALLIC CONDUIT ARE PROHIBITED.
- GROUNDING AND BONDING
- PROVIDE #6 CU MINIMUM BONDING JUMPER TO ALL CONDUITS, RACKS, CABINETS, CABLE TRAYS, LADDER TRAYS, AND OTHER RACEWAY AND EQUIPMENT AS REQUIRED.



1 TELECOM RISER DIAGRAM
SCALE: NTS

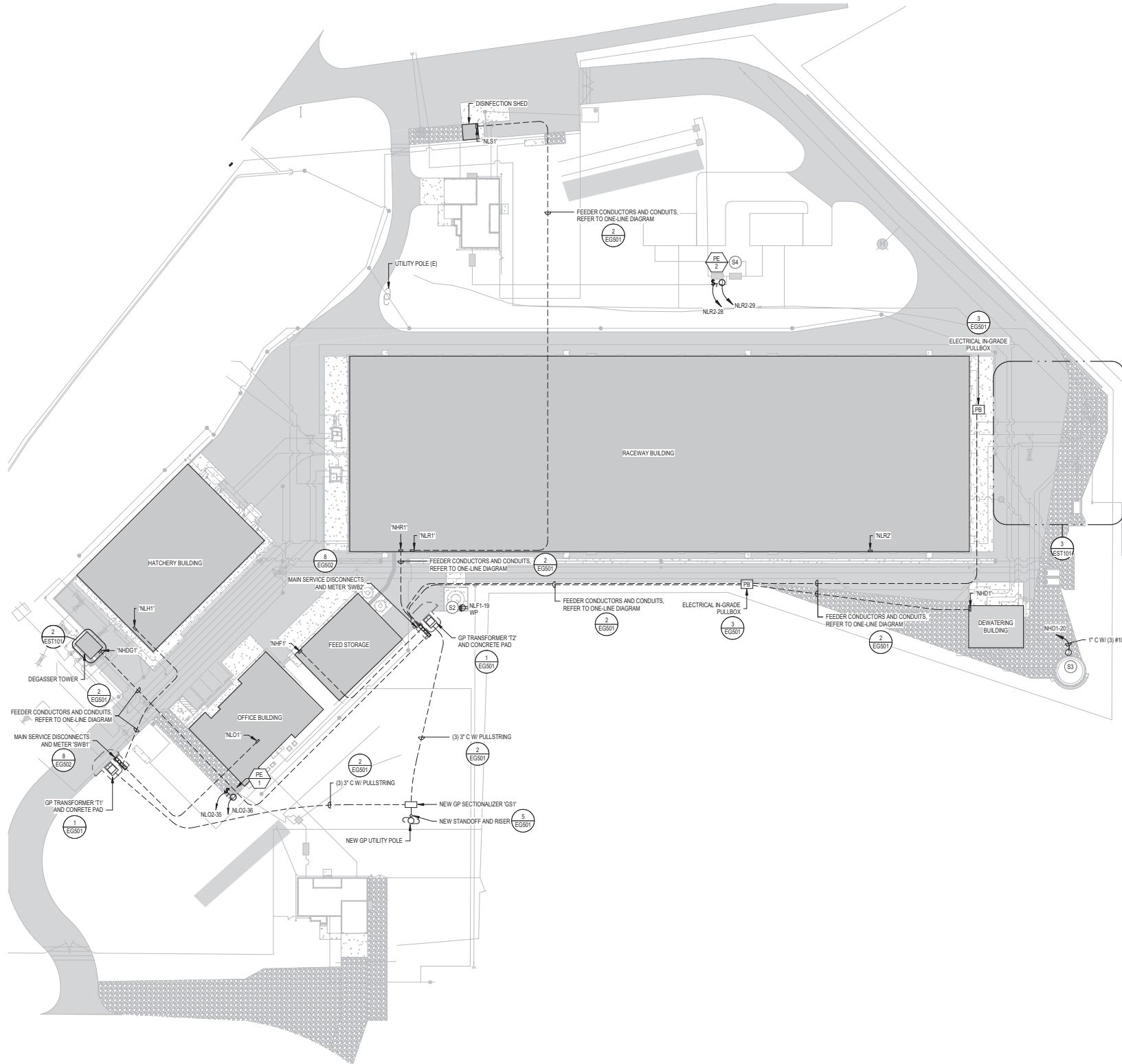
1
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E

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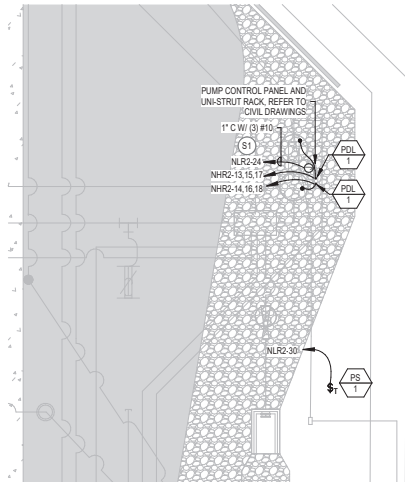
SCADA CONTROL CONDUITS AND WIRING
DIVISION 26 CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUITS, BOXES, AND WIRING FOR SCADA CONTROL SYSTEM. REFER TO SCADA DRAWINGS AND SCHEDULES ON SHEETS XXXX. PROVIDE ALL INTERIOR AND EXTERIOR UNDERGROUND CONDUITS. PROVIDE INTERMEDIATE PULL BOXES WHERE REQUIRED TO LIMIT CONDUIT BENDS TO NO MORE THAN THREE 90° BENDS BETWEEN THE PULL POINTS. THE WIRING SHALL BE PULLED BETWEEN EQUIPMENT AND DEVICES AS INDICATED ON THE SCADA PLANS AND SCHEDULES. PROVIDE A MINIMUM OF 6" SLACK OF WIRES AT EACH END. THE FINAL WIRING CONNECTIONS SHALL BE MADE BY THE SCADA INSTALLER. COORDINATE ALL WORK WITH THE SCADA INSTALLER PRIOR TO ROUGH-IN.

- SITE GENERAL NOTES:**
1. PROVIDE ALL REQUIRED BACKFILLING, ETC. FOR ALL CONDUITS. PROVIDE REQUIRED BACKFILL MATERIAL AS DIRECTED BY EACH UTILITY.
 2. COORDINATE ALL LOCATIONS AND ROUTING WORK IN THE FIELD.
 3. ROUTE CONDUITS A MINIMUM OF 2' BELOW THE BUILDING FLOOR SLAB.
 4. MINIMUM CONDUIT FOR SITE WORK SHALL BE 1".
 5. CONDUIT ROUTING SHOWN IS SCHEMATIC AND FOR CLARIFICATION. COORDINATE LOCATION WITH ALL AFFECTED TRADES.
 6. PROVIDE A MINIMUM OF 12" SEPARATION BETWEEN POWER AND COMMUNICATION CONDUITS.
 7. ALL CONDUITS THAT EXTEND THROUGH CONCRETE SHALL BE GALVANIZED RIGID CONDUIT AND WRAPPED WITH TWO (2) LAYERS OF PVC TAPE.
 8. ALL ELBOWS THAT ARE UNDER THE FINISHED GRADE SHALL BE GALVANIZED RIGID CONDUIT AND WRAPPED WITH TWO (2) LAYERS OF PVC TAPE.
- KEYED NOTES:**
- S1 POWER FOR SCADA CONTROL PANEL. COORDINATE EXACT LOCATION WITH SCADA SYSTEM INSTALLER.
 - S2 LOCATE POWER OUTLET ON THE LIGHT POLE. REFER TO LIGHTING SITE PLAN FOR LOCATION.
 - S3 POWER FOR HEAT TRACE CONTROL PANEL. REFER TO CIVIL DRAWINGS FOR MORE INFORMATION.
 - S4 LOCATE POWER FOR PUMP AND PUMP CONTROL PANEL ON A UNI-STRUT RACK. COORDINATE EXACT LOCATION OF RACK WITH PUMP SYSTEM INSTALLER.
 - S5 PUMPS COME WITH FACTORY INSTALLED POWER CABLES. DIV 26 CONTRACTOR SHALL MAKE THE FINAL TERMINATIONS ON SITE. ALL CONDUIT AND CABLE PENETRATIONS SHALL HAPPEN ABOVE THE LIQUID LEVEL. COORDINATE WITH CIVIL ENGINEER IN RECORD PRIOR TO PERFORMING ANY WORK.

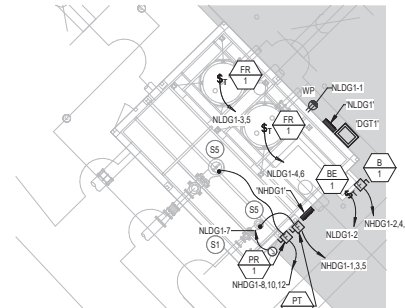
UTILITY COORDINATION REQUIREMENTS
THE ELECTRICAL CONTRACTOR SHALL COORDINATE AND VERIFY ALL REQUIREMENTS AND LOCATIONS TO EXTEND CONDUITS FOR UTILITY USE WITHIN 2 WEEKS OF THE CONTRACT AWARD. THE CONTRACTOR SHALL NOT ROUGH-IN ANY CONDUITS UNTIL THE UTILITY COORDINATION IS COMPLETE AND ALL THE LOCATIONS ARE KNOWN. THE CONTRACTOR SHALL PROVIDE THE ARCHITECT AND ENGINEER A WRITTEN, SIGNED STATEMENT, INCLUDING A SKETCH OF LOCATIONS, FROM THE UTILITY COMPANY NOTIFYING THEM THAT THEY HAVE COORDINATED AND VERIFIED ALL REQUIREMENTS. IF THE CONTRACTOR DOES NOT COORDINATE AND VERIFY THE REQUIREMENTS WITH THE UTILITIES OR PROVIDE A WRITTEN STATEMENT FROM THE UTILITY COMPANY TO THE ARCHITECT AND ENGINEER, ALL CHANGES DUE TO LACK OF COORDINATION WILL BE PROVIDED AT NO ADDITIONAL EXPENSE TO THE OWNER.



1 ELECTRICAL SITE PLAN
SCALE: 1" = 40'-0"



3 ENLARGED LIFT STATION PLAN
SCALE: 1" = 20'-0"



2 ENLARGED DEGASSER TOWER PLAN
SCALE: 1/8" = 1'-0"

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ENV-2023-231

PROJECT NAME:
**UTAH DIVISION OF WILDLIFE RESOURCES
LOA HATCHERY PROJECT**

SEAL
PROFESSIONAL ENGINEER
#000039-2002
ALEXANDAR RANKOVIC
06/20/2025

DFCM APPROVAL
REVIEWED FOR COMPLIANCE
JASON VAN ARMAN
08/14/2025

REVISIONS:
CONTRACTOR TO VERIFY DRAWINGS IN FIELD USE REFLECT
DATE REVISION DESCRIPTION

ISSUE TYPE: CONST. DOCUMENTS

ISSUE DATE: JUNE 20, 2025

DFCM PROJECT NO: 24204520

PROJECT NO: 2023562

BIM FILE:

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DRAWING TITLE
ELECTRICAL SITE PLAN

DRAWING NUMBER
EST101
114 OF 268



DEWATERING BUILDING EQUIPMENT SCHEDULE																								
UNIT NAME		ELECTRICAL INPUT					FEEDER					NOTE	STARTER/DISCONNECT/CONNECTION TO UNIT					ENCLOSURE	REMARKS					
TYPE	No.	DESCRIPTION	LOAD	TYPE	VOLTS	PHASE	AMPS	QTY	CONDUIT SIZE	WIRE	SIZE		TYPE	EQPT GND	STARTER SIZE	OCB	POLE			SIZE	POLE			
EF	1	EXHAUST FAN	7.2	FLA	120 V	1	7.2A	1	3/4"	2	12	12	1A	1HP	1HP	1	1HP	1	NEMA 3R					
ELH	3	ELECTRIC UNIT HEATER	25	KVA	480 V	3	30.1 A	1	1"	3	8	8	9A	NA	40	3	60	3	NEMA 3R					
OH	1	OVERHEAD DOOR	0.75	HP	120 V	1	13.8 A	1	3/4"	2	10	10	1A	1HP	1HP	1	1HP	1	NEMA 3R					
POC	1	SLUDGE PROGRESSIVE CAVITY FEED PUMP	7.5	HP	480 V	3	11 A	1	3/4"	3	12	12	9A	NA	1HP	3	30	3	NEMA 3R	ROUTE POWER FOR THE PUMP THROUGH PUMP CONTROL PANEL. REFER TO FLOOR PLANS FOR LOCATION.				
POM	1	SLUDGE MIXER PUMP	7.5	HP	480 V	3	11 A	1	3/4"	3	12	12	9A	NA	1HP	3	30	3	NEMA 3R	ROUTE POWER FOR THE PUMP THROUGH PUMP CONTROL PANEL. REFER TO FLOOR PLANS FOR LOCATION.				
PDP	1	POLYMER FEED PUMP	0.25	HP	120 V	1	5.8 A	1	3/4"	2	12	12	1A	1HP	1HP	1	1HP	1	NEMA 3R	ROUTE POWER FOR THE PUMP THROUGH PUMP CONTROL PANEL. REFER TO FLOOR PLANS FOR LOCATION.				
STARTER/DISCONNECT/CONNECTION AT UNIT NOTES:										1. DIRECT CONNECTION 2. DUPLEX RECEPTACLE OUTLET 3. SPECIAL PURPOSE OUTLET 4. TOGGLE SWITCH 5. MAGNETIC STARTER 6. PILOT SWITCH 7. FUSED ELEVATOR SWITCH 8. CONTROL PANEL										A. FURNISHED, INSTALLED & CONNECTED UNDER DIVISION 26. B. FURNISHED & INSTALLED UNDER ANOTHER DIVISION REQUIRING CONNECTIONS UNDER DIVISION 26 C. FURNISHED UNDER ANOTHER DIVISION BUT INSTALLED AND CONNECTED UNDER DIVISION 26 D. FURNISHED, INSTALLED & CONNECTED UNDER ANOTHER DIVISION E. FURNISHED BY OWNER, INSTALLED & CONNECTED BY DIVISION 26				
GENERAL NOTES:										1. CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE AND SIZE FEEDER, STARTER, DISCONNECT AND OVERCURRENT PROTECTION IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OF ACTUAL EQUIPMENT SUPPLIED. 2. ALL CONDUCTORS USED SHALL BE COPPER. 3. ELECTRICAL CONTRACTOR SHALL REVIEW MECHANICAL DRAWINGS FOR ANY ADDITIONAL REQUIREMENTS PRIOR TO BID. 4. ELECTRICAL CONTRACTOR SHALL REVIEW OTHER TRADE SUBMITTALS FOR ANY EQUIPMENT REQUIRING CONNECTION BY ELECTRICAL CONTRACTOR AND COORDINATE ALL REQUIREMENTS PRIOR TO ROUGH-IN. 5. SIZE ALL FUSES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.														

DEWATERING BUILDING LIGHT FIXTURE SCHEDULE									
TYPE	DESCRIPTION	SOURCE	ELECTRICAL		APPROVED MANUFACTURERS	CATALOG INFORMATION		COMMENTS / NOTES	
			VOLTAGE	LOAD		CATALOG NUMBER / SERIES			
VTD	4" LINEAR LED VAPOR TIGHT FIXTURE WITH INTEGRAL BATTERY PACK (WHERE SHOWN ON DRAWINGS)	LED 5000 LUMENS 4000K	120 V	12	COOPER (OR APPROVED EQUAL)	4V13-LD5-6-W-120V-(C)EL10W-L840		*- PROVIDE WITH INTEGRAL BATTERY PACK WHERE SHOWN ON DRAWINGS	
WTD	LED EXTERIOR WALLPACK WITH INTEGRAL BATTERY PACK AND DAYLIGHT/OCCUPANCY SENSOR	LED 1800 LUMENS 4000K	120 V	14	COOPER (OR APPROVED EQUAL)	AXCS1A * WPS20X CBP		*- ARCHITECT TO SELECT STANDARD COLOR FINISH	
W2D	LED EXTERIOR WALLPACK WITH INTEGRAL DAYLIGHT/OCCUPANCY SENSOR	LED 3500 LUMENS 4000K	120 V	27	COOPER (OR APPROVED EQUAL)	AXCS1A * WPS40X		*- ARCHITECT TO SELECT STANDARD COLOR FINISH	
X1D	LED WALL MOUNTED EXIT SIGN WITH INTEGRAL BATTERY PACK AND GREEN LETTERS	LED	120 V	2	COOPER (OR APPROVED EQUAL)	PNL G U			
<u>LIGHT FIXTURE GENERAL NOTES</u>									
1. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS FOR LOCATIONS OF LIGHT FIXTURES. BRING ALL DISCREPANCIES OF LOCATIONS AND QUANTITIES TO THE ATTENTION OF THE ARCHITECT PRIOR TO BIDDING.									
2. CONFIRM MOUNTING HEIGHTS AND LOCATIONS OF ALL LIGHT FIXTURES WITH ARCHITECTURAL ELEVATIONS AND / OR ARCHITECT.									
3. REFER TO THE SPECIFICATIONS FOR OTHER LIGHT FIXTURE REQUIREMENTS.									
4. CONFIRM AVAILABLE MOUNTING DEPTHS OF ALL LIGHT FIXTURES AND COMPARE WITH DEPTHS SHOWN ON SHOP DRAWINGS. BRING ALL POTENTIAL CONFLICT AREAS TO THE ATTENTION OF THE ARCHITECT AND ELECTRICAL ENGINEER PRIOR TO RELEASE.									
5. ALL LIGHT FIXTURES ARE TO BE 3000K FOR INTERIOR APPLICATIONS AND 4000K FOR EXTERIOR APPLICATIONS, UNLESS OTHERWISE NOTED IN THE FIXTURE DESCRIPTION.									
6. ALL LIGHT FIXTURES ARE TO BE A MINIMUM OF 80 CRI UNLESS OTHERWISE NOTED IN THE FIXTURE DESCRIPTION.									
7. ALL LED SOURCES MUST MEET L80 AT 50,000 HRS MINIMUM UNLESS OTHERWISE NOTED.									
8. CONFIRM ALL MOUNTING REQUIREMENTS WITH ARCHITECT PRIOR TO RELEASE.									
9. ALL LIGHT FIXTURES ARE TO HAVE AN EFFICACY OF 80 LUMENS PER WATT MINIMUM.									
<u>BIDDING REQUIREMENTS</u>									
1. BID ONLY PRODUCTS THAT ARE SPECIFIED OR APPROVED BY ADDENDUM.									
2. PACKAGING OF LIGHT FIXTURES WITH OTHER SYSTEMS IS NOT ALLOWED AND MUST BE BID SEPARATELY. I.E. LIGHT FIXTURES, THEATRICAL LIGHTING, SPORTS LIGHTING AND ALL LIGHTING CONTROLS.									
3. WHEN ONLY ONE PRODUCT IS APPROVED FOR BIDDING, THE PRICE FOR THAT ITEM SHALL BE BROKEN OUT SEPARATELY WHEN SUBMITTING PRICING TO VARIOUS DISTRIBUTORS AND / OR CONTRACTOR.									
4. WHEN A CONTRADICTION EXISTS BETWEEN A SPECIFIC MODEL NUMBER AND THE DESCRIPTION, THE DESCRIPTION SHALL GOVERN.									
<u>LIGHT FIXTURE PRIOR APPROVAL REQUIREMENTS</u>									
1. PRIOR APPROVAL IS REQUIRED BEFORE BIDDING THIS PROJECT.									
2. PRIOR APPROVALS SHALL BE SUBMITTED TO THE ELECTRICAL ENGINEER'S OFFICE AT LEAST (8) WORKING DAYS BEFORE BID TIME. PRIOR APPROVALS RECEIVED AFTER THIS TIME PERIOD SHALL BE REJECTED.									
3. ITEMS THAT ARE SUBMITTED AND HAVE BEEN APPROVED WILL BE LISTED IN THE ADDENDUM(S). VERBAL APPROVALS WILL NOT BE GIVEN ON ANY ITEM.									
4. IT IS NOT THE RESPONSIBILITY OF THE ELECTRICAL ENGINEER TO NOTIFY THE SUBMITTING PARTY OF ERRORS IN THE SUBMITTAL. NOTIFICATION OF ERRORS BY THE ELECTRICAL ENGINEER PRIOR TO ISSUANCE OF THE ADDENDUM(S) MAY NOT BE GIVEN.									
5. PRIOR APPROVALS SHALL CONSIST OF CUT SHEETS DESCRIBING THE PRODUCTS BEING SUBMITTED AS EQUIVALENTS. ALL SPECIFICATION INFORMATION SHALL BE CLEARLY MARKED. PRODUCTS WITHOUT PHOTOMETRIC DATA WILL NOT BE APPROVED.									
6. LIGHTING PACKAGES WILL BE REVIEWED FOR GENERAL PROJECT COMPLIANCE ONLY. AN IN-DEPTH REVIEW OF ANY ALTERNATE FIXTURES WILL BE DONE DURING THE SUBMITTAL REVIEW PROCESS. ANY FIXTURES THAT ARE NOT TRULY EQUAL, AND / OR DO NOT COMPLY WITH ALL OF THE REQUIREMENTS CONTAINED IN THE CONTRACT DOCUMENTS, WILL NOT BE APPROVED. IF EQUIPMENT IS DISAPPROVED FOR BIDDING, CONTRACTOR SHALL SUPPLY SPECIFIED EQUIPMENT AT NO EXTRA COST TO THE OWNER.									

PANELBOARD SCHEDULE															
PANEL NAME: NHD1						LOCATION: DEWATERING DW-01						FEED FROM: SPD: CAT A			
MOUNTING: SURFACE				VOLTAGE: 480/277 Wye				MAIN TYPE: MCB				NEUTRAL RATING: 100%			
ENCLOSURE: NEMA 1				PHASE: 3				BUS RATING: 225 A				ISOLATED GROUND: NO			
DOOR TYPE: DOOR-IN-DOOR				WIRES: 4				MCB RATING: 200 A							
Min. A.I.C. RATING: 22,000A						BUS MATERIAL: COPPER									
BRANCH BREAKERS															
KEYED NOTE	CIRCUIT DESCRIPTION	AMP	POLE	LOAD TYPE	CKT #	A	B	C	CKT #	LOAD TYPE	POLE	AMP	CIRCUIT DESCRIPTION	KEYED NOTE	
--	PDC-1	20 A	3	M	1	3048 VA	3048 VA		2	M	3	20 A	PDM-1	--	
--	--	--	--	--	3		3048 VA	3048 VA	4	--	--	--	--	--	
--	--	--	--	--	5			3048 VA	3048 VA	6	--	--	--	--	
--	EUH-3	40 A	3	M	7	8333 VA	0 VA		8	--	3	20 A	-SPARE-	--	
--	--	--	--	--	9		8333 VA	0 VA	10	--	--	--	--	--	
--	--	--	--	--	11			8333 VA	0 VA	12	--	--	--	--	
--	-SPARE-	20 A	3	--	13	0 VA	0 VA		14	--	3	60 A	FUTURE PUMP	--	
--	--	--	--	--	15			0 VA	16	--	--	--	--	--	
--	--	--	--	--	17			0 VA	18	--	--	--	--	--	
--	FUTURE PUMP	60 A	3	--	19	0 VA	0 VA		20	--	1	20 A	E-WASTE WTR TANK HT TRACE	--	
--	--	--	--	--	21		0 VA	--	22	--	1	--	-SPACE ONLY-	--	
--	--	--	--	--	23			0 VA	24	--	1	--	-SPACE ONLY-	--	
--	-SPACE ONLY-	--	1	--	25	--	--		26	--	1	--	-SPACE ONLY-	--	
--	-SPACE ONLY-	--	1	--	27	--	--	--	28	--	1	--	-SPACE ONLY-	--	
--	-SPACE ONLY-	--	1	--	29	--		--	30	--	1	--	-SPACE ONLY-	--	
--	-SPACE ONLY-	--	1	--	31	--	0 VA	--	32	--	3	40 A	SPD	--	
--	-SPACE ONLY-	--	1	--	33	--		0 VA	34	--	--	--	--	--	
--	-SPACE ONLY-	--	1	--	35	--		0 VA	36	--	--	--	--	--	
--	-SPACE ONLY-	--	1	--	37	--	3093 VA		38	M...	3	50 A	DT1	--	
--	-SPACE ONLY-	--	1	--	39	--		3660 VA	40	--	--	--	--	--	
--	-SPACE ONLY-	--	1	--	41	--			42	--	--	--	--	--	
TOTAL CONNECTED LOAD PER PHASE (VA)						17523 VA	18090 VA	17502 VA							
TOTAL CONNECTED CURRENT PER PHASE (AMPS)						63 A	65 A	63 A							
LOAD CLASSIFICATION		CONNECTED LOAD		DEMAND FACTOR		ESTIMATED DEMAND		PANEL TOTALS							
EQUIPMENT		1100 VA		100.00%		1100 VA		Total Conn. Load: 53115 VA							
LIGHTING		577 VA		125.00%		721 VA		25% OF LARGEST MOTOR:							
Motor		49818 VA		112.55%		56068 VA		Total Est. Demand: 59510 VA							
RECEPTACLE		1620 VA		100.00%		1620 VA		Total Conn. Current: 64 A							
								Total Est. Demand Current: 72 A							

PANELBOARD SCHEDULE																	
PANEL NAME: NLD1						LOCATION: DEWATERING DW-01				FEED FROM: DT1							
MOUNTING: SURFACE ENCLOSURE: NEMA 1 DOOR TYPE: DOOR-IN-DOOR						VOLTAGE: 120/208 Wye				MAIN TYPE: MCB				SPD: CAT A			
						PHASE: 3				BUS RATING: 100 A				NEUTRAL RATING: 100%			
						WIRES: 4				MCB RATING: 100 A				ISOLATED GROUND: NO			
Min. A.I.C. RATING: 10,000A						BUS MATERIAL: COPPER											
BRANCH BREAKERS																	
KEYED NOTE	CIRCUIT DESCRIPTION	AMP	POLE	LOAD TYPE	CKT #	A	B	C	CKT #	LOAD TYPE	POLE	AMP	CIRCUIT DESCRIPTION	KEYED NOTE			
--	LTG-EXTERIOR	20 A	1	L	1	95 VA	360 VA		2	CO	1	20 A	RC-CONV OUTLETS	--			
--	RC-CONV OUTLETS	20 A	1	CO	3		540 VA	864 VA	4	M	1	20 A	EF-1	--			
--	PDP-1	20 A	1	M	5			696 VA	720 VA	6	CO	1	20 A	RC-CONV OUTLETS	--		
--	LTG-INTERIOR	20 A	1	L	7	482 VA	500 VA		8	E	1	20 A	FACP-D	--			
--	E-CH DOOR	25 A	1	M	9		1656 VA	600 VA	10	E	1	20 A	E-RTU PANEL	--			
--	E-CH DOOR	25 A	1	M	11			1656 VA	0 VA	12	--	1	20 A	-SPARE-	--		
--	-SPARE-	20 A	1	--	13	1656 VA	0 VA		14	--	1	20 A	-SPARE-	--			
--	-SPARE-	20 A	1	--	15		0 VA	0 VA	16	--	1	20 A	-SPARE-	--			
--	-SPARE-	20 A	1	--	17			0 VA	18	--	1	20 A	-SPARE-	--			
--	-SPARE-	20 A	1	--	19	0 VA	0 VA		20	--	1	20 A	-SPARE-	--			
--	-SPARE-	20 A	1	--	21		0 VA	0 VA	22	--	1	20 A	-SPARE-	--			
--	-SPARE-	20 A	1	--	23			0 VA	24	--	1	20 A	-SPARE-	--			
--	-SPARE-	20 A	1	--	25	0 VA	0 VA		26	--	1	20 A	-SPARE-	--			
--	-SPARE-	20 A	1	--	27			0 VA	28	--	1	20 A	-SPARE-	--			
--	-SPARE-	20 A	1	--	29				30	--	1	20 A	-SPARE-	--			
--	-SPARE-	20 A	1	--	31	0 VA	0 VA		32	--	1	20 A	-SPARE-	--			
--	-SPARE-	20 A	1	--	33		0 VA	0 VA	34	--	1	20 A	-SPARE-	--			
--	-SPARE-	20 A	1	--	35			0 VA	36	--	1	20 A	-SPARE-	--			
--	-SPACE ONLY-	--	1	--	37	--	0 VA	--	38	--	3	40 A	SPD	--			
--	-SPACE ONLY-	--	1	--	39	--		0 VA	40	--	--	--	--	--			
--	-SPACE ONLY-	--	1	--	41	--		--	42	--	--	--	--	--			
TOTAL CONNECTED LOAD PER PHASE (VA)						3093 VA	3660 VA	3072 VA									
TOTAL CONNECTED CURRENT PER PHASE (AMPS)						26 A	31 A	26 A									
LOAD CLASSIFICATION		CONNECTED LOAD		DEMAND FACTOR		ESTIMATED DEMAND		PANEL TOTALS									
EQUIPMENT		1100 VA		100.00%		1100 VA		Total Conn. Load: 9825 VA									
LIGHTING		577 VA		125.00%		721 VA		25% OF LARGEST MOTOR:									
Motor		6828 VA		106.34%		6942 VA		Total Est. Demand: 10383 VA									
RECEPTACLE		1600 VA		100.00%		1620 VA		Total Conn. Current: 27 A									
								Total Est. Demand Current: 29 A									
PANELBOARD SCHEDULE KEYED NOTE:																	
1. PROVIDE CLASS A GROUND FAULT INTERRUPTER TYPE CIRCUIT BREAKER.																	
2. PROVIDE ARC FAULT CIRCUIT INTERRUPTER TYPE CIRCUIT BREAKER.																	
3. PROVIDE MILLIAMPERE EQUIPMENT GROUND FAULT PROTECTOR TYPE CIRCUIT BREAKER.																	
4. PROVIDE SHUNT TRIP CIRCUIT BREAKER WITH 120 V COIL.																	
5. PROVIDE HACR RATED CIRCUIT BREAKER.																	
6. PROVIDE HANDLE CLAMP FOR HOLDING CIRCUIT BREAKER IN THE "ON" OR "OFF" POSITION.																	
7. PROVIDE SWITCHING RATED CIRCUIT BREAKER.																	
8. PROVIDE NEW CIRCUIT BREAKER IN EXISTING PANELBOARD (WHERE PANEL IS LABELED AS EXISTING) OF SAME MANUFACTURER AND A.I.C. RATING AS EXISTING.																	
9. EXISTING LOAD.																	

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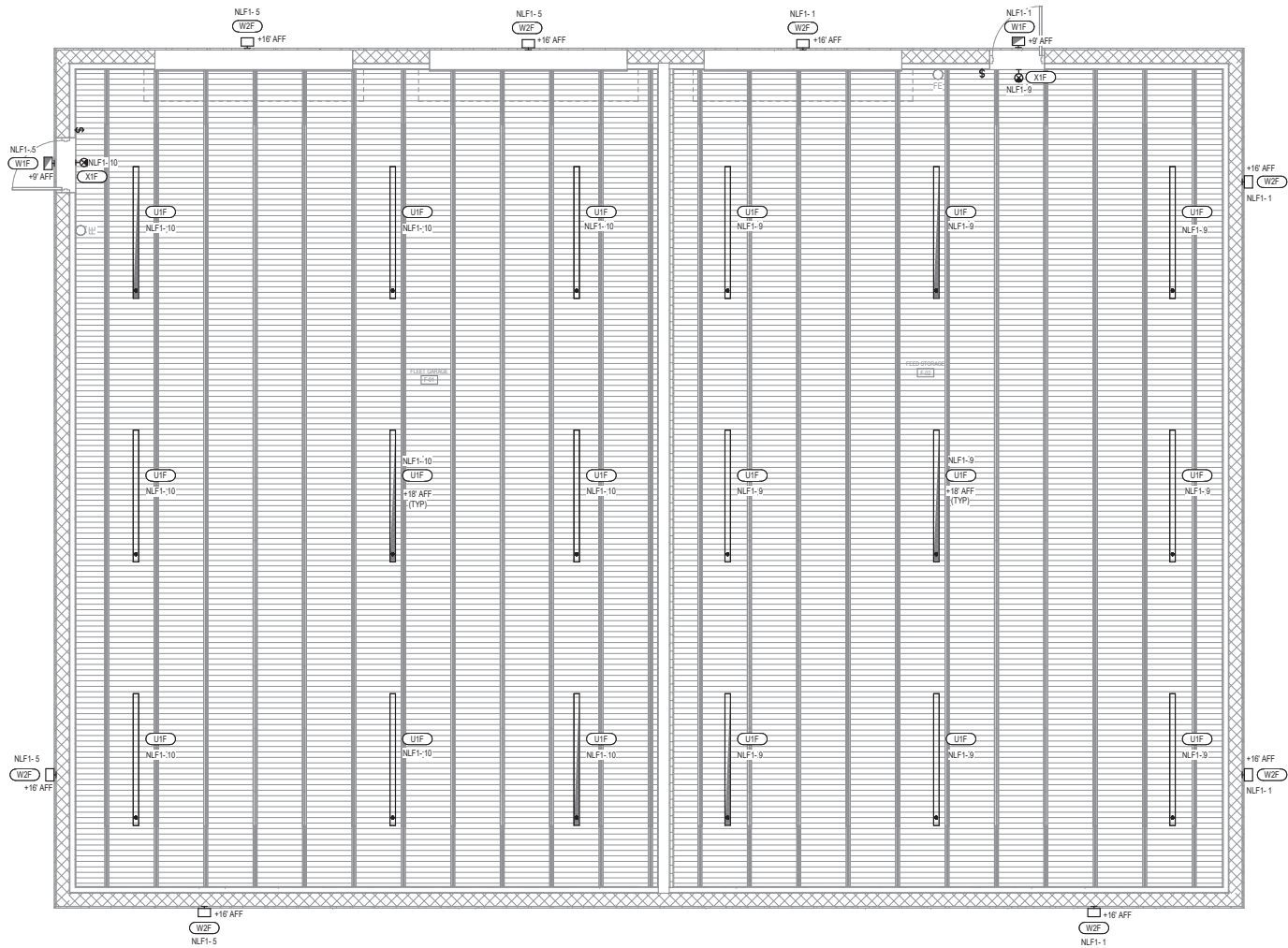
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1 FLOOR PLAN - LIGHTING
SCALE: 1/4" = 1'-0"

LIGHTING GENERAL NOTES:

1. REFER TO LIGHTING DETAILS SHEETS FOR TYPICAL CONTROL WIRING DIAGRAMS. PROVIDE COMPLETE SYSTEM WITH ALL REQUIRED CONDUIT, WIRING, SWITCHES, SENSORS, POWER PACK, ETC.
2. LOCATE POWER PACKS AND ROOM CONTROLLERS ABOVE ACCESSIBLE CEILING NEAR ROOM ENTRANCES.
3. CONFIRM ALL LOCATIONS OF LIGHT FIXTURES WITH ARCHITECT PRIOR TO INSTALLATION.
4. PROVIDE UNSWITCHED HOT FOR ALL EMERGENCY LIGHTS AND BATTERY PACKS.

KEYED NOTES (7)

State of Utah
Department of Administrative Services

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ENV-2023-231

PROJECT NAME:

UTAH DIVISION OF
WILDLIFE
RESOURCES
LOA HATCHERY
PROJECT

SEAL


06/30/2025

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REVISIONS	
CONTRACTOR TO VERIFY DRAWINGS IN FIELD USE REFLECT	
DATE	DESCRIPTION

ISSUE TYPE: CONST. DOCUMENTS

ISSUE DATE: JUNE 20, 2025

DFCM PROJECT NO: 24204520

PROJECT NO: 2023562

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DRAWING TITLE

FLOOR PLAN -
LIGHTING

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DRAWING NUMBER

EF101
146 OF 268

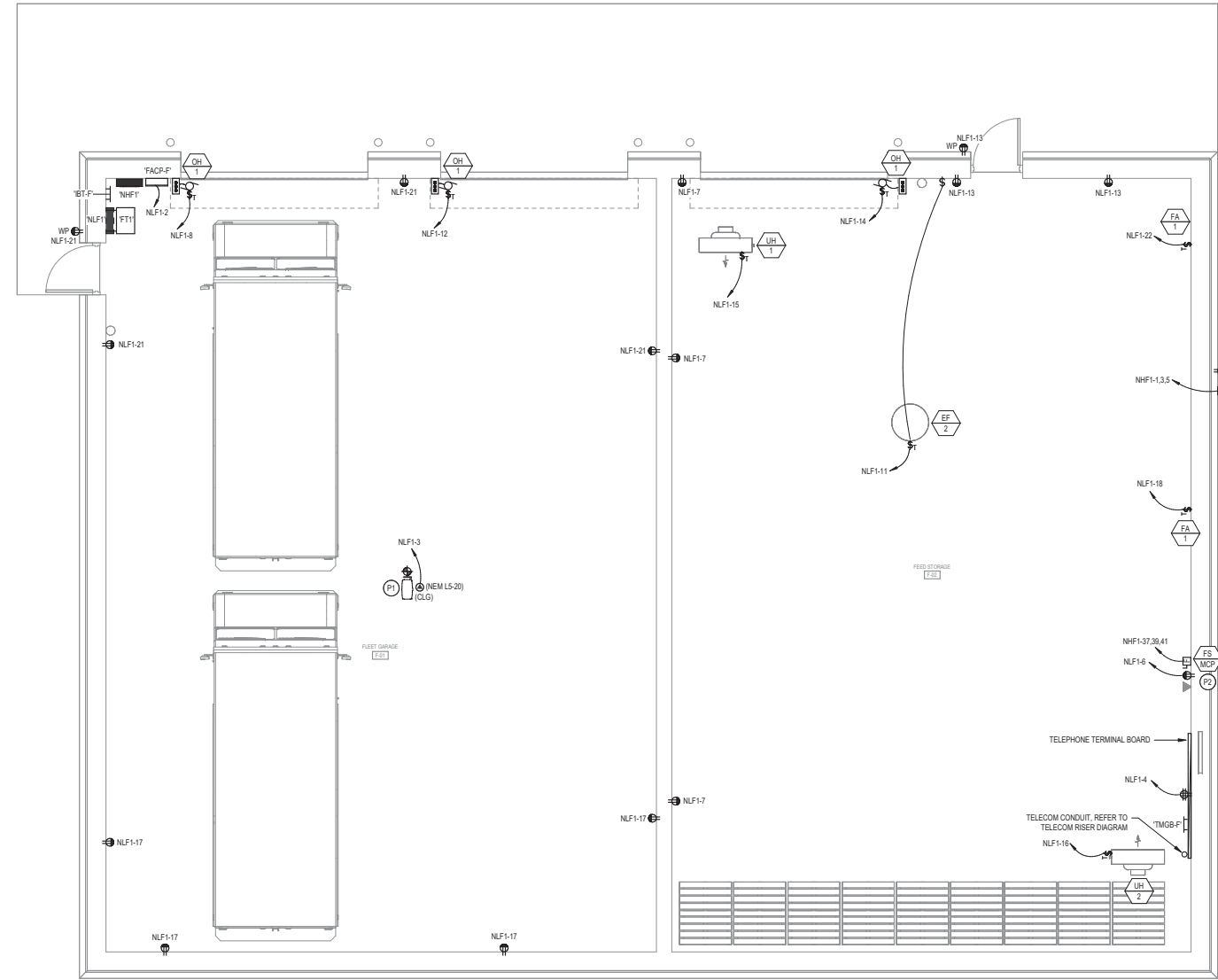
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1 FLOOR PLAN - POWER AND TELECOM
SCALE: 1/4" = 1'-0"

POWER GENERAL NOTES:

1. ALL 120V, 20AMP OUTLETS THAT ARE WITHIN 6' OF ANY SINK SHALL BE GFCI.
2. THE DIVISION 26 CONTRACTOR SHALL DETERMINE THE EXACT ROUTING OF ALL CONDUITS IN THE FIELD. THIS PLAN REPRESENTS A SCHEMATIC REPRESENTATION OF DEVICE LOCATIONS AND CONDUIT RUNS.

KEYED NOTES (2)

- P1 PROVIDE HUBBELL HBL125123R20M1Y (OR APPROVED EQUAL) CORD REEL WITH 25FT RETRACTABLE CORD AND (1) DUPLEX RECEPTACLE AT THE END.
- P2 POWER AND DATA FOR FEED SYSTEM CONTROL PANEL. COORDINATE EXACT LOCATION WITH FEED SYSTEM INSTALLER.

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PROJECT NAME:

UTAH DIVISION OF
WILDLIFE
RESOURCES
LOA HATCHERY
PROJECT

SEAL

PROFESSIONAL ENGINEER
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ALEKSANDAR RANKOVIC
06/20/2025

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REVIEWED FOR CODE COMPLIANCE
06/20/2025
James Van Arsdale
Professional Engineer

REVISIONS		
CONTRACTOR TO VERIFY DRAWINGS IN FIELD USE REFLECT		
LAST REVISION DATE		
NO.	DATE	DESCRIPTION

ISSUE TYPE: CONST. DOCUMENTS

ISSUE DATE: JUNE 20, 2025

DFCM PROJECT NO: 24204520

PROJECT NO: 2023562

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FLOOR PLAN -
POWER AND
TELECOM

DRAWING NUMBER

EF201
147 OF 268

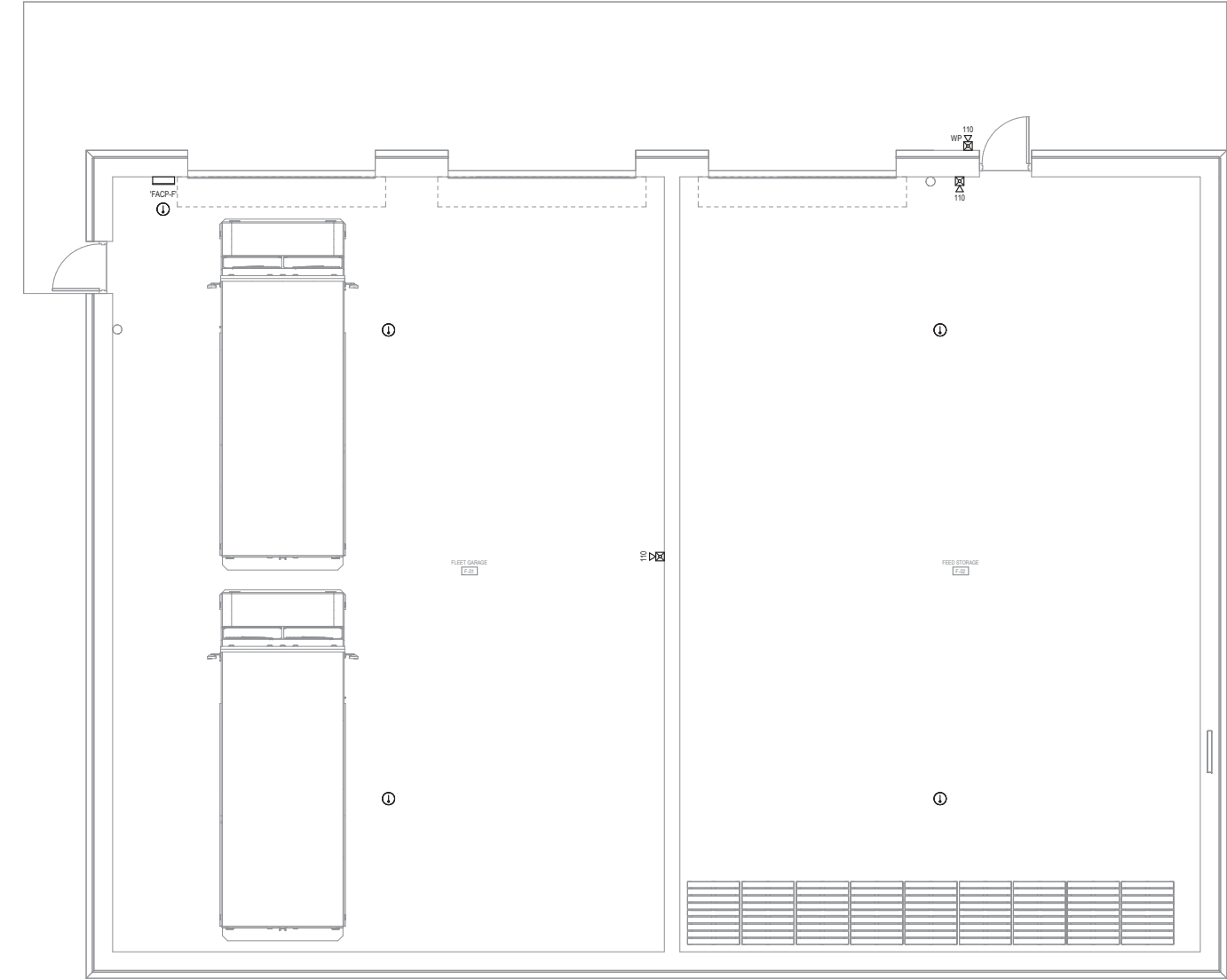
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FLOOR PLAN - SYSTEMS
SCALE: 1/4" = 1'-0"

SYSTEMS GENERAL NOTES:

- COORDINATE ALL WALL MOUNTED LOCATIONS WITH THE ARCHITECT.
- DO NOT LOCATE ANY FIRE ALARM DEVICES BEHIND DOORS OR SHELVING. REFER TO THE ARCHITECTURAL DRAWINGS FOR SHELVING LOCATIONS.
- THE DIVISION 28 CONTRACTOR SHALL DETERMINE THE EXACT ROUTING OF ALL CONDUITS IN THE FIELD. THIS PLAN REPRESENTS A SCHEMATIC REPRESENTATION OF DEVICE LOCATIONS, AND CONDUIT RUNS.
- ALL CONDUITS THAT TERMINATE ABOVE THE CEILING SHALL TERMINATE WITH NYLON BUSHING.
- CONTRACTOR SHALL COORDINATE ALL CEILING MOUNTED DEVICES WITH THE LIGHTING PLANS. RELOCATE DEVICES AS NECESSARY. RELOCATED DEVICES SHALL COMPLY WITH ALL NFPA SPACING REQUIREMENTS.
- ALL FIRE ALARM DEVICE LOCATIONS, EQUIPMENT LOCATIONS, RISER DIAGRAM, ETC., ARE SCHEMATIC IN NATURE AND ARE SHOWN TO PROVIDE INTENT OF THE FIRE ALARM SYSTEM TO BE PROVIDED. FIRE ALARM SYSTEM SUPPLIER SHALL PROVIDE BID AND SHOP DRAWINGS THAT INCLUDE A FULL CODE COMPLIANT DESIGN INCLUDING ALL NOTIFICATION AND INITIATION DEVICES REQUIRED WHETHER SHOWN OR NOT.

KEYED NOTES ①

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Department of Administrative Services

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**UTAH DIVISION OF WILDLIFE RESOURCES
LOA HATCHERY PROJECT**

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REVISIONS CONTRACTOR TO VERIFY DRAWINGS IN FIELD USE REFLECT DATE REVISION DATE	
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ISSUE TYPE: CONST. DOCUMENTS

ISSUE DATE: JUNE 20, 2025

DFCM PROJECT NO: 24204520
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**FLOOR PLAN -
SYSTEMS**

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DRAWING NUMBER

EF301
148 OF 268

TYPE	DESCRIPTION	SOURCE	ELECTRICAL		APPROVED MANUFACTURERS	CATALOG INFORMATION CATALOG NUMBER / SERIES	COMMENTS / NOTES
			VOLTAGE	LOAD			
WIF	* IF LINEAR SUSPECTED UTILITY STRIP LIGHT WITH INTEGRAL OCCUPANCY SENSOR AND BATTERY PACK (WHERE SHOWN ON DRAWINGS)	LED #154 (LUMENS 8000K)	120 V	6	COOPER (OR APPROVED EQUAL)	RSLN-DC-RSLN-UINV-LV-1449-BUS-CRM30-LED	* - PROVIDE WITH INTEGRAL BATTERY PACK WHERE SHOWN ON DRAWINGS
W1F	LED EXTERIOR WALLPACK WITH INTEGRAL BATTERY PACK AND DAYLIGHT/OCCUPANCY SENSOR	LED 1800 LUMENS 8000K	120 V	14	COOPER (OR APPROVED EQUAL)	AXCISIA * WPSX2XX.CBP	* - ARCHITECT TO SELECT STANDARD COLOR FINISH
W2F	LED EXTERIOR WALLPACK WITH INTEGRAL DAYLIGHT/OCCUPANCY SENSOR	LED 1600 LUMENS 8000K	120 V	27	COOPER (OR APPROVED EQUAL)	AXCISIA * WPS4XX	* - ARCHITECT TO SELECT STANDARD COLOR FINISH
X1F	WALL MOUNTED EXIT SIGN WITH INTEGRAL BATTERY PACK AND GREEN LETTERS	LED	120 V	2	COOPER (OR APPROVED EQUAL)	PIL G U	

1. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS FOR LOCATIONS OF LIGHT FIXTURES. BRING ALL DISCREPANCIES OF LOCATIONS AND QUANTITIES TO THE ATTENTION OF THE ARCHITECT PRIOR TO BIDDING.
2. CONFIRM MOUNTING HEIGHTS AND LOCATIONS OF ALL LIGHT FIXTURES WITH ARCHITECTURAL ELEVATIONS AND / OR ARCHITECT.
3. REFER TO THE SPECIFICATIONS FOR OTHER LIGHT FIXTURE REQUIREMENTS.
4. CONFIRM AVAILABLE MOUNTING DEPTHS OF ALL LIGHT FIXTURES AND COMPARE WITH DEPTHS SHOWN ON SHOP DRAWINGS. BRING ALL POTENTIAL CONFLICT AREAS TO THE ATTENTION OF THE ARCHITECT AND ELECTRICAL ENGINEER PRIOR TO RELEASE.
5. ALL LIGHT FIXTURES ARE TO BE 3500K FOR INTERIOR APPLICATIONS AND 4000K FOR EXTERIOR APPLICATIONS, UNLESS OTHERWISE NOTED IN THE FIXTURE DESCRIPTION.
6. ALL LIGHT FIXTURES ARE TO BE A MINIMUM OF 90 CRI UNLESS OTHERWISE NOTED IN THE FIXTURE DESCRIPTION.
7. ALL LED SDRS MUST MEET L90 AT 50,000 HRS MINIMUM UNLESS OTHERWISE NOTED.
8. CONFIRM ALL MOUNTING REQUIREMENTS WITH ARCHITECT PRIOR TO RELEASE.
9. ALL LIGHT FIXTURES ARE TO HAVE AN EFFICACY OF 80 LUMENS PER WATT MINIMUM.

1. BID ONLY PRODUCTS THAT ARE SPECIFIED OR APPROVED BY ADDENDUM.
2. PACKAGING OF LIGHT FIXTURES WITH OTHER SYSTEMS IS NOT ALLOWED AND MUST BE BID SEPARATELY. I.E. LIGHT FIXTURES, THEATRICAL LIGHTING, SPORTS LIGHTING AND ALL LIGHTING CONTROLS.
3. WHEN ONLY ONE PRODUCT IS APPROVED FOR BIDDING, THE PRICE FOR THAT ITEM SHALL BE BROKEN OUT SEPARATELY WHEN SUBMITTING PRICING TO VARIOUS DISTRIBUTORS AND / OR CONTRACTOR.
4. WHEN A CONTRADICTION EXISTS BETWEEN A SPECIFIC MODEL NUMBER AND THE DESCRIPTION, THE DESCRIPTION SHALL GOVERN.

1. PRIOR APPROVAL IS REQUIRED BEFORE BIDDING THIS PROJECT.

2. PRIOR APPROVALS SHALL BE SUBMITTED TO THE ELECTRICAL ENGINEER'S OFFICE AT LEAST (8) WORKING DAYS BEFORE BID TIME. PRIOR APPROVALS RECEIVED AFTER THIS TIME PERIOD SHALL BE REJECTED.

3. ITEMS THAT ARE SUBMITTED AND HAVE BEEN APPROVED WILL BE LISTED IN THE ADDENDUM(S). VERBAL APPROVALS WILL NOT BE GIVEN ON ANY ITEM.

4. IT IS NOT THE RESPONSIBILITY OF THE ELECTRICAL ENGINEER TO NOTIFY THE SUBMITTING PARTY OF ERRORS IN THE SUBMITTAL. NOTIFICATION OF ERRORS BY THE ELECTRICAL ENGINEER PRIOR TO ISSUANCE OF THE ADDENDUM(S) MAY NOT BE GIVEN.

5. PRIOR APPROVALS SHALL CONSIST OF CUT SHEETS DESCRIBING THE PRODUCTS BEING SUBMITTED AS EQUIVALENTS. ALL SPECIFICATION INFORMATION SHALL BE CLEARLY MARKED. PRODUCTS WITHOUT PHOTOMETRIC DATA WILL NOT BE APPROVED.

6. LIGHTING PACKAGES WILL BE REVIEWED FOR GENERAL PROJECT COMPLIANCE ONLY. AN IN-DEPTH REVIEW OF ANY ALTERNATE FIXTURES WILL BE DONE DURING THE SUBMITTAL REVIEW PROCESS. ANY FIXTURES THAT ARE NOT TRULY EQUAL, AND/OR DO NOT COMPLY WITH ANY OF THE REQUIREMENTS CONTAINED IN THE CONTRACT DOCUMENTS, WILL NOT BE APPROVED. IF EQUIPMENT IS DISAPPROVED FOR BIDDING, CONTRACTOR SHALL SUPPLY SPECIFIED EQUIPMENT AT NO EXTRA COST TO THE OWNER.

UNIT NAME		ELECTRICAL INPUT					FEEDER					STARTER/DISCONNECT/CONNECTION TO UNIT					ENCLOSURE	REMARKS	
TYPE	No.	LOAD		VOLTS PHASE		AMPS	QTY	CONDUIT SIZE	WIRE		NOTE	OCP		DISCONNECT					
									QTY	SIZE			STARTER	SIZE	POLE	SIZE	POLE		
EF	2	EXHAUST FAN	7.2	FLA	120V	1	7.2 A	1	3/4"	2	12	12	1A	-	-	-	1HP	1	NEMA 1
FA	1	FEED AIR	0.15	HP	120V	1	13.5 A	1	3/4"	2	12	12	1A	-	-	-	1HP	1	NEMA 1
FS	2	PORTABLE FEED SYSTEM	3	FLA	480V	3	4.8 A	1	3/4"	3	12	12	10A	-	8	3	30	3	NEMA 3R
FAS	MCP	FEED SYSTEM MAIN CONTROL PANEL	80	FLA	480V	3	80 A	1	2"	3	1	8	10B	-	NA	NA	100	3	NEMA 1
OH	1	OVERHEAD DOOR	0.15	HP	120V	1	13.5 A	1	3/4"	2	12	12	1A	-	-	-	1HP	1	NEMA 1
UH	1	ELECTRIC UNIT HEATER	3.9	FLA	120V	1	3.9 A	1	3/4"	2	12	12	1A	-	-	-	1HP	1	NEMA 1
UH	2	ELECTRIC UNIT HEATER	3.9	FLA	120V	1	3.9 A	1	3/4"	2	12	12	1A	-	-	-	1HP	1	NEMA 1

1. MANUAL STARTER WITH THERMAL OVERLOAD	11. ENCLOSED CIRCUIT BREAKER	A. FURNISHED, INSTALLED & CONNECTED UNDER DIVISION 26.
2. MANUAL STARTER WITH THERMAL OVERLOAD PROTECTION & LOW VOLTAGE RELAY / CONTACTOR	12. DIRECT CONNECTION	B. FURNISHED & INSTALLED UNDER ANOTHER DIVISION REQUIRING CONNECTIONS UNDER DIVISION 26
3. COMBINATION MAGNETIC STARTER / FUSED DISCONNECT	13. DUPLEX RECEPTACLE OUTLET	C. FURNISHED UNDER ANOTHER DIVISION BUT INSTALLED AND CONNECTED UNDER DIVISION 26
4. FTO CONTROL	14. SPECIAL PURPOSE OUTLET	
5. COMBINATION MAGNETIC STARTER / MOTOR CIRCUIT PROTECTOR (MCP)	15. TOGGLE SWITCH	
6. COMBINATION MAGNETIC STARTER / NON-FUSED DISCONNECT	16. PILOT SWITCH	D. FURNISHED, INSTALLED & CONNECTED UNDER ANOTHER DIVISION
7. COMBINATION VARIABLE FREQUENCY DRIVE / MOTOR CIRCUIT PROTECTOR (MCP)	17. FUSED ELEVATOR SWITCH	E. FURNISHED BY OWNER, INSTALLED & CONNECTED BY DIVISION 26
8. MAGNETIC STARTER	18. MOTOR RATED SWITCH	
9. REDUCED VOLTAGE STARTER	19. CONTROL PANEL	
10. NON-FUSED DISCONNECT SWITCH		

1. CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE AND SIZE FEEDER, STARTER, DISCONNECT AND OVERCURRENT PROTECTION IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OF ACTUAL EQUIPMENT SUPPLIED.
2. ALL CONDUCTORS USED SHALL BE COPPER.
3. ELECTRICAL CONTRACTOR SHALL REVIEW MECHANICAL DRAWINGS FOR ANY ADDITIONAL REQUIREMENTS PRIOR TO BID.
4. CONTRACTOR SHALL SUBMIT NEW OTHER TRADE SUBMITTALS FOR ANY EQUIPMENT REQUIRING CONNECTION BY ELECTRICAL CONTRACTOR AND COORDINATE ALL REQUIREMENTS PRIOR TO ROUGH-IN.
5. SIZE ALL FUSES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

PANEL NAME: NHF1			LOCATION: FLEET GARAGE F-01	FEED FROM:
MOUNTING: SURFACE	VOLTAGE: 480/277 Vye	MAIN TYPE: MCB	SPD: CAT A	
ENCLOSURE: NEMA 1	PHASE: 3	BUS RATING: 225 A	NEUTRAL RATING: 100%	
DOOR TYPE: DOOR-IN-DOOR	WIRES: 4	MCB RATING: 200 A	ISOLATED GROUND: NO	
Min. A.I.C. RATING: 22,000A			BUS MATERIAL: COPPER	

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS
EQUIPMENT	500 VA	100.00%	500 VA	
KITCHEN	180 VA	100.00%	180 VA	Total Conn. Load: 85613 VA
LIGHTING	1112 VA	125.00%	1390 VA	25% OF LARGEST MOTOR:
Motor	8568 VA	120.63%	9729 VA	Total Est. Demand: 102519 VA
RECEPTACLE	3240 VA	100.00%	3240 VA	Total Conn. Current: 103 A
				Total Est. Demand Current: 123 A

PANEL NAME: NLF1			LOCATION: FLEET GARAGE F-01	FEED FROM: FT1
MOUNTING: SURFACE	VOLTAGE: 120/208 Wye	MAIN TYPE: MCB	SPD: CAT A	
ENCLOSURE: NEMA 1	PHASE: 3	BUS RATING: 100 A	NEUTRAL RATING: 100%	
DOOR TYPE: DOOR-IN-DOOR	WIRES: 4	MCB RATING: 100 A	ISOLATED GROUND: NO	
Min. A.I.C. RATING: 10,000A			BUS MATERIAL: COPPER	

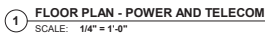
LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	ESTIMATED DEMAND	PANEL TOTALS
EQUIPMENT	500 VA	100.00%	500 VA	
KITCHEN	180 VA	100.00%	180 VA	Total Conn. Load: 15112 VA
LIGHTING	1112 VA	125.00%	1390 VA	25% OF LARGEST MOTOR:
				Total Est. Demand: 5804 VA
	10080 VA	100.00%	10080 VA	Total Conn. Current: 42 A
RECEPTACLE	3240 VA	100.00%	3240 VA	Total Est. Demand Current: 44 A

1. PROVIDE CLASS A GROUND FAULT INTERRUPTER TYPE CIRCUIT BREAKER.
2. PROVIDE ARC FAULT CIRCUIT INTERRUPTER TYPE CIRCUIT BREAKER.
3. PROVIDE 30 MILLIAMPERE EQUIPMENT GROUND FAULT PROTECTOR TYPE CIRCUIT BREAKER.
4. PROVIDE SHUNT TRIP CIRCUIT BREAKER WITH 120 V COIL.
5. PROVIDE HACH RATED CIRCUIT BREAKER.
6. PROVIDE HANDLE CLAMP FOR HOLDING CIRCUIT BREAKER IN THE "ON" OR "OFF" POSITION.
7. PROVIDE SWITCHING RATED CIRCUIT BREAKER.
8. PROVIDE NEW CIRCUIT BREAKER IN EXISTING PANELBOARD (WHERE PANEL IS LABELED AS EXISTING) OF SAME MANUFACTURER AND A.I.C. RATING AS EXISTING.
9. EXISTING LOAD.

HATCHERY BUILDING LIGHT FIXTURE SCHEDULE									
TYPE	DESCRIPTION	SOURCE	ELECTRICAL		APPROVED MANUFACTURERS	CATALOG INFORMATION CATALOG NUMBER / SERIES		COMMENTS / NOTES	
			VOLTAGE	LOAD					
AQH	CIRCULAR AQUACULTURE LIGHT FIXTURE SUSPENSION MOUNTING	LED 1710 LUMENS DYNAMIC SPECTRUM VARYING COLOR TEMPERATURE	120 V	12	ONCE LIGHTING (SUBSTITUTIONS NOT ACCEPTED)	NO-DOME RGB			REFER TO FLOOR PLANS FOR SUSPENSION HEIGHT. PROVIDE ALL REQUIRED WIRELESS CONTROLS FOR A FULL OPERATING SYSTEM. MANF. REF. TO PROVIDE A MIN OF 2HR TRAINING TO OWNER AND OWNER REPRESENTATIVES. PROVIDE ADDITIONAL ACCESSORIES AS REQUIRED FOR A COMPLETE INSTALLATION.
UIH	4 LINEAR LED STRIP LIGHT WITH ROUND LENS AND INTEGRAL EMERGENCY BATTERY PACK (WHERE SHOWN ON DRAWINGS)	LED 2300 LUMENS 4000K	120 V	5	COOPER (OR APPROVED EQUAL)	4S/NLED-LD5-23SL-UH-UNV-Y-EL10W-HB-ERMS30-LMD-CD-U			*- PROVIDE WITH INTEGRAL BATTERY PACK WHERE SHOWN ON DRAWINGS
U2H	4 LINEAR LED STRIP LIGHT WITH ROUND LENS AND INTEGRAL EMERGENCY BATTERY PACK (WHERE SHOWN ON DRAWINGS)	LED 3500 LUMENS 4000K	120 V	7	COOPER (OR APPROVED EQUAL)	4S/NLED-LD5-35SL-UH-UNV-Y-EL10W-HB-ERMS30-LMD-CD-U			*- PROVIDE WITH INTEGRAL BATTERY PACK WHERE SHOWN ON DRAWINGS
VTH	4 LINEAR LED VAPOR TIGHT FIXTURE WITH INTEGRAL BATTERY PACK (WHERE SHOWN ON DRAWINGS)	LED 6000 LUMENS 4000K	120 V	12	COOPER (OR APPROVED EQUAL)	4V13-LD5-6-W-120V-Y-EL10W-L840			*- PROVIDE WITH INTEGRAL BATTERY PACK WHERE SHOWN ON DRAWINGS
WH	LED EXTERIOR WALLPACK WITH INTEGRAL BATTERY PACK AND DAYLIGHT OCCUPANCY SENSOR	LED 1800 LUMENS 4000K	120 V	14	COOPER (OR APPROVED EQUAL)	4XCS1A-WPS20X CBP			*-ARCHITECT TO SELECT STANDARD COLOR FINISH
W2H	LED EXTERIOR WALLPACK WITH INTEGRAL DAYLIGHT OCCUPANCY SENSOR	LED 3500 LUMENS 4000K	120 V	27	COOPER (OR APPROVED EQUAL)	4XCS3A-WPS20X			*-ARCHITECT TO SELECT STANDARD COLOR FINISH
X1H	LED WALL MOUNTED EXIT SIGN WITH INTEGRAL BATTERY PACK AND GREEN LETTERS	LED	120 V	2	COOPER (OR APPROVED EQUAL)	PNL G U			
X2H	LED CEILING MOUNTED EXIT SIGN WITH EMERGENCY LIGHT AND INTEGRAL BATTERY PACK	LED	120 V	2	COOPER (OR APPROVED EQUAL)	PC3 G U			
X3H	LED WALL MOUNTED EXIT SIGN WITH EMERGENCY LIGHT AND INTEGRAL BATTERY PACK	LED	120 V	2	COOPER (OR APPROVED EQUAL)	PC3 G U			
LIGHT FIXTURE GENERAL NOTES									
1. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS FOR LOCATIONS OF LIGHT FIXTURES. BRING ALL DISCREPANCIES OF LOCATIONS AND QUANTITIES TO THE ATTENTION OF THE ARCHITECT PRIOR TO BIDDING. 2. CONFIRM MOUNTING HEIGHTS AND LOCATIONS OF ALL LIGHT FIXTURES WITH ARCHITECTURAL ELEVATIONS AND / OR ARCHITECT. 3. REFER TO THE SPECIFICATIONS FOR OTHER LIGHT FIXTURE REQUIREMENTS. 4. CONFIRM AVAILABLE MOUNTING DEPTHS OF ALL LIGHT FIXTURES AND COMPARE WITH DEPTHS SHOWN ON SHOP DRAWINGS. BRING ALL POTENTIAL CONFLICT AREAS TO THE ATTENTION OF THE ARCHITECT AND ELECTRICAL ENGINEER PRIOR TO RELEASE. 5. ALL LIGHT FIXTURES ARE TO BE 3500K FOR INTERIOR APPLICATIONS AND 4000K FOR EXTERIOR APPLICATIONS, UNLESS OTHERWISE NOTED IN THE FIXTURE DESCRIPTION. 6. ALL LIGHT FIXTURES ARE TO BE A MINIMUM OF 80 CRI UNLESS OTHERWISE NOTED IN THE FIXTURE DESCRIPTION. 7. ALL LED SOURCES MUST MEET L80 AT 50,000 HRS MINIMUM UNLESS OTHERWISE NOTED. 8. CONFIRM ALL MOUNTING REQUIREMENTS WITH ARCHITECT PRIOR TO RELEASE. 9. ALL LIGHT FIXTURES ARE TO HAVE AN EFFICACY OF 80 LUMENS PER WATT MINIMUM.									
BIDDING REQUIREMENTS									
1. BID ONLY PRODUCTS THAT ARE SPECIFIED OR APPROVED BY ADDENDUM. 2. PACKAGING OF LIGHT FIXTURES WITH OTHER SYSTEMS IS NOT ALLOWED AND MUST BE BID SEPARATELY. I.E. LIGHT FIXTURES, THEATRICAL LIGHTING, SPORTS LIGHTING AND ALL LIGHTING CONTROLS. 3. WHEN ONLY ONE PRODUCT IS APPROVED FOR BIDDING, THE PRICE FOR THAT ITEM SHALL BE BROKEN OUT SEPARATELY WHEN SUBMITTING PRICING TO VARIOUS DISTRIBUTORS AND / OR CONTRACTOR. 4. WHEN A CONTRADICTION EXISTS BETWEEN A SPECIFIC MODEL NUMBER AND THE DESCRIPTION, THE DESCRIPTION SHALL GOVERN.									
LIGHT FIXTURE PRIOR APPROVAL REQUIREMENTS									
1. PRIOR APPROVAL IS REQUIRED BEFORE BIDDING THIS PROJECT. 2. PRIOR APPROVALS SHALL BE SUBMITTED TO THE ELECTRICAL ENGINEER'S OFFICE AT LEAST 60 WORKING DAYS BEFORE BID TIME. PRIOR APPROVALS RECEIVED AFTER THIS TIME PERIOD SHALL BE REJECTED. 3. ITEMS THAT ARE SUBMITTED AND HAVE BEEN APPROVED WILL BE LISTED IN THE ADDENDUM(S). VERBAL APPROVALS WILL NOT BE GIVEN ON ANY ITEM. 4. IT IS NOT THE RESPONSIBILITY OF THE ELECTRICAL ENGINEER TO NOTIFY THE SUBMITTING PARTY OF ERRORS IN THE SUBMITTAL. NOTIFICATION OF ERRORS BY THE ELECTRICAL ENGINEER PRIOR TO ISSUANCE OF THE ADDENDUM(S) MAY NOT BE GIVEN. 5. PRIOR APPROVALS SHALL CONSIST OF CUT SHEETS DESCRIBING THE PRODUCTS BEING SUBMITTED AS EQUIVALENTS. ALL SPECIFICATION INFORMATION SHALL BE CLEARLY MARKED. PRODUCTS WITHOUT PHOTOMETRIC DATA WILL NOT BE APPROVED. 6. LIGHTING PACKAGES WILL BE REVIEWED FOR GENERAL PROJECT COMPLIANCE ONLY. AN IN-DEPTH REVIEW OF ANY ALTERNATE FIXTURES WILL BE DONE DURING THE SUBMITTAL REVIEW PROCESS. ANY FIXTURES THAT ARE NOT TRULY EQUAL AND / OR DO NOT COMPLY WITH ALL OF THE REQUIREMENTS CONTAINED IN THE CONTRACT DOCUMENTS, WILL NOT BE APPROVED. IF EQUIPMENT IS DISAPPROVED FOR BIDDING, CONTRACTOR SHALL SUPPLY SPECIFIED EQUIPMENT AT NO EXTRA COST TO THE OWNER.									

HATCHERY BUILDING MECHANICAL EQUIPMENT SCHEDULE																				
UNIT NAME		ELECTRICAL INPUT					FEEDER					NOTE	STARTER/DISCONNECT/CONNECTION TO UNIT				ENCLOSURE	REMARKS		
TYPE	No.	DESCRIPTION	LOAD	TYPE	VOLTS	PHASE	AMPS	QTY	CONDUIT SIZE	WIRE			STARTER SIZE	OCP		DISCONNECT				
ADI	1	SPLIT SYSTEM INDOOR UNIT	1	MCA	208 V	1	1A	1	3/4"	2	12	12	1A	-	-	1HP	1	NEMA 1	ROUTE POWER FOR EXHAUST FAN THRU SCADA CONTROL SYSTEM JUNCTION BOX. COORDINATE EXACT LOCATION WITH SCADA SYSTEM INSTALLER.	
ADO	1	SPLIT SYSTEM OUTDOOR UNIT	25	MCA	208 V	1	25A	1	3/4"	2	8	10	10A	-	-	1HP	2	NEMA 3R		
EF	3	EXHAUST FAN	0.5	HP	120 V	1	9.8A	1	3/4"	2	12	12	1A	-	-	1HP	1	NEMA 1		
EF	4	EXHAUST FAN	0.25	HP	120 V	1	5.8 A	1	3/4"	2	12	12	1A	-	-	1HP	1	NEMA 1		
EF	5	EXHAUST FAN	0.25	HP	120 V	1	5.8 A	1	3/4"	2	12	12	1A	-	-	1HP	1	NEMA 1		
EF	6	EXHAUST FAN	1	HP	208 V	3	4.6 A	1	3/4"	3	12	12	4A	-	8	3	30	2	NEMA 1	
EF	7	EXHAUST FAN	1	HP	208 V	3	4.6 A	1	3/4"	3	12	12	4A	-	8	3	30	3	NEMA 1	
EUH	1	ELECTRIC UNIT HEATER	4	KVA	208 V	1	19.2 A	1	3/4"	2	10	10	10A	-	25	2	30	2	NEMA 1	
PH	1	RADON EXHAUST FAN	0.15	KVA	120 V	1	1.3 A	1	3/4"	2	12	12	1A	-	-	-	1HP	1	NEMA 1	
ICM	1	ICE MAKER	14.5	FLA	208 V	1	14.5 A	1	3/4"	2	10	10	10A	-	20	2	30	2	NEMA 1	
OH	1	OVERHEAD DOOR	0.75	HP	120 V	1	13.8 A	1	3/4"	2	8	8	1A	-	-	-	1HP	1	NEMA 1	
PH	1	SPRING WATER HOSE BIB PUMP	2	HP	208 V	1	13.2 A	1	3/4"	2	10	10	10A	-	20	2	30	2	NEMA 1	
PH	2	FISH PUMP	12	FLA	208 V	3	12 A	1	3/4"	3	10	10	10A	-	-	-	1HP	1	NEMA 18-20 RECEPTACLE	
PH	3	PERISTALTIC PUMP	5	FLA	120 V	1	5 A	1	3/4"	2	12	12	12A	-	-	-	-	1HP	1	NEMA 1
UH	3	UNIT HEATER	2.4	FLA	120 V	1	2.4 A	1	3/4"	2	12	12	1A	-	-	-	1HP	1	NEMA 1	
UH	4	UNIT HEATER	3.9	FLA	120 V	1	3.9 A	1	3/4"	2	12	12	1A	-	-	-	1HP	1	NEMA 1	
UH	5	UNIT HEATER	1.9	FLA	120 V	1	1.9 A	1	3/4"	2	12	12	1A	-	-	-	1HP	1	NEMA 1	
UH	6	UNIT HEATER	1.9	FLA	120 V	1	1.9 A	1	3/4"	2	12	12	1A	-	-	-	1HP	1	NEMA 1	
UH	7	UNIT HEATER	7.5	FLA	120 V	1	7.5 A	1	3/4"	2	12	12	1A	-	-	-	1HP	1	NEMA 1	
UH	8	UNIT HEATER	7.5	FLA	120 V	1	7.5 A	1	3/4"	2	12	12	1A	-	-	-	1HP	1	NEMA 1	
UH	9	UNIT HEATER	7.5	FLA	120 V	1	7.5 A	1	3/4"	2	12	12	1A	-	-	-	1HP	1	NEMA 1	
UH	10	UNIT HEATER	7.5	FLA	120 V	1	7.5 A	1	3/4"	2	10	10	1A	-	-	-	1HP	1	NEMA 1	
STARTER/DISCONNECT/CONNECTION AT UNIT NOTES:																				
1. MANUAL STARTER WITH THERMAL OVERLOAD 2. MANUAL STARTER WITH THERMAL OVERLOAD PROTECTION & LOW VOLTAGE RELAY / CONTACTOR FOR ATC CONTROL 3. COMBINATION MAGNETIC STARTER / FUSED DISCONNECT 4. COMBINATION MAGNETIC STARTER / MOTOR CIRCUIT PROTECTOR (MCP) 5. COMBINATION MAGNETIC STARTER / NON-FUSED DISCONNECT 6. COMBINATION VARIABLE FREQUENCY DRIVE / MOTOR CIRCUIT PROTECTOR (MCP) 7. REDUCED VOLTAGE STARTER 8. NON-FUSED DISCONNECT SWITCH 9. FUSED DISCONNECT SWITCH 10. ENCLOSED CIRCUIT BREAKER										11. DIRECT CONNECTION 12. DUPLEX RECEPTACLE OUTLET 13. SPECIAL PURPOSE OUTLET 14. TOGGLE SWITCH 15. MAGNETIC STARTER 16. PILOT SWITCH 17. FUSED ELEVATOR SWITCH 18. CONTROL PANEL				A. FURNISHED, INSTALLED & CONNECTED UNDER DIVISION 26. B. FURNISHED & INSTALLED UNDER ANOTHER DIVISION REQUIRING CONNECTIONS UNDER DIVISION 26. C. FURNISHED UNDER ANOTHER DIVISION BUT INSTALLED AND CONNECTED UNDER DIVISION 26. D. FURNISHED, INSTALLED & CONNECTED UNDER ANOTHER DIVISION E. FURNISHED BY OWNER, INSTALLED & CONNECTED BY DIVISION 26						
GENERAL NOTES:																				
1. CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE AND SIZE FEEDER, STARTER, DISCONNECT AND OVERCURRENT PROTECTION IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OF ACTUAL EQUIPMENT SUPPLIED. 2. ALL CONDUCTORS USED SHALL BE COPPER. 3. ELECTRICAL CONTRACTOR SHALL REVIEW MECHANICAL DRAWINGS FOR ANY ADDITIONAL REQUIREMENTS PRIOR TO BID. 4. ELECTRICAL CONTRACTOR SHALL REVIEW OTHER TRADE SUBMITTALS FOR ANY EQUIPMENT REQUIRING CONNECTION BY ELECTRICAL CONTRACTOR AND COORDINATE ALL REQUIREMENTS PRIOR TO ROUGH-IN. 5. SIZE ALL FUSES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.																				

PANELBOARD SCHEDULE															
PANEL NAME: NLH1															
MOUNTING: SURFACE				LOCATION: MECH. H-02				FEED FROM: SPD, CAT A							
ENCLOSURE: NEMA 1				VOLTAGE: 120/208 Wye				MAIN TYPE: MCB, FEED-THRU							
DOOR TYPE: DOOR-IN-DOOR				PHASE: 3				BUS RATING: 300 A							
				WIRES: 4				NEUTRAL RATING: 100%							
				Min. A.I.C. RATING: 22,000A				ISOLATED GROUND: NO							
								BUS MATERIAL: COPPER							
BRANCH BREAKERS															
KEYED NOTE	CIRCUIT DESCRIPTION	AMP	POLE	LOAD TYPE	CKT #	A	B	C	CKT #	LOAD TYPE	POLE	AMP	CIRCUIT DESCRIPTION	KEYED NOTE	
	RECEPTACLE MECH. H-02	20 A	1	CO	1	180 VA	380 VA		2	E	1	20 A	E: CORD REEL FEED H-01		
	REC.TROUGHS H-08	20 A	1	CO	3		540 VA	1080 VA	4	CO	1	20 A	REC.TROUGHS H-08		
	E: CORD REELS TROUGHS	20 A	1	E	5			720 VA	900 VA	6	CO	1	20 A	RECEPTACLE INCUBATION...	
	E: FUTURE DATA RACK	20 A	1	CO	7	360 VA	540 VA		8	CO	1	20 A	REC.TROUGHS H-08		
	REC.COV RECP	20 A	1	CO	9		720 VA	720 VA	10	E	1	20 A	E: CORD REELS TROUGHS		
	REC.TROUGHS H-08	20 A	1	CO	11			720 VA	720 VA	12	E	1	20 A	E: CORD REELS TROUGHS	
	REC. FEED H-01	20 A	1	CO	13	720 VA	720 VA		14	E	1	20 A	E: CORD REELS TROUGHS		
	LTG. UTILITY ROOMS	20 A	1	L	15		562 VA	68 VA	16	L	1	20 A	LTG.EXT WALLPACKS		
	LTG.EXT WALLPACKS	20 A	1	L	17			83 VA	736 VA	18	L	1	20 A	LTG. TROUGHS	
	LTG. TROUGHS	20 A	1	L	19	760 VA	736 VA		20	L	1	20 A	LTG. TROUGHS		
	-SPARE-	20 A	1	--	21		0 VA	764 VA	22	L	1	20 A	LTG. TROUGHS		
	-SPARE-	20 A	1	--	23			0 VA	0 VA	24	--	1	20 A -SPARE-		
	-SPARE-	20 A	1	--	25	0 VA	0 VA		26	--	1	20 A -SPARE-			
	-SPARE-	20 A	1	--	27		0 VA	0 VA	28	--	1	20 A -SPARE-			
	-SPARE-	20 A	1	--	29			0 VA	0 VA	30	--	1	20 A -SPARE-		
	-SPARE-	20 A	1	--	31	0 VA	--		32	--	1	--	SPACE ONLY-		
	-SPARE-	20 A	1	--	33		0 VA	--	34	--	1	--	SPACE ONLY-		
	-SPARE-	20 A	1	--	35			0 VA	--	36	--	1	--	SPACE ONLY-	
	-SPACE ONLY-	--	1	--	37	--	0 VA		38	--	3	40 A	SPD		
	-SPACE ONLY-	--	1	--	39		--	0 VA	--	40	--	--	--	--	
	-SPACE ONLY-	--	1	--	41		--	0 VA	--	42	--	--	--	--	
TOTAL CONNECTED LOAD PER PHASE (VA)						16819 VA	16898 VA	16340 VA							
TOTAL CONNECTED CURRENT PER PHASE (AMPS)						141 A	141 A	136 A							
LOAD CLASSIFICATION		CONNECTED LOAD		DEMAND FACTOR		ESTIMATED DEMAND		PANEL TOTALS							
EQUIPMENT		3840 VA		100.00%		3840 VA									
LIGHTING		3709 VA		75.00%		4636 VA									
Motor		36747 VA		103.54%		38047 VA		Total Conn. Load: 50556 VA							
RECEPTACLE		5760 VA		100.00%		5760 VA		25% OF LARGEST MOTOR: 52284 VA							
								Total Est. Demand: 139 A							
								Total Conn. Current: 139 A							
								Total Est. Demand Current: 145 A							
PANELBOARD SCHEDULE KEYED NOTE:															
1. PROVIDE CLASS A GROUND FAULT INTERRUPTER TYPE CIRCUIT BREAKER.															
2. PROVIDE ARC FAULT CIRCUIT INTERRUPTER TYPE CIRCUIT BREAKER.															
3. PROVIDE 100 AMP 120/208V 3P4W GROUND FAULT PROTECTOR TYPE CIRCUIT BREAKER.															
4. PROVIDE SHUNT TRIP CIRCUIT BREAKER WITH 120 V COIL.															
5. PROVIDE HACR RATED CIRCUIT BREAKER.															
6. PROVIDE HANDLE CLAMP FOR HOLDING CIRCUIT BREAKER IN THE "ON" OR "OFF" POSITION.															
7. PROVIDE SWITCHING RATED CIRCUIT BREAKER.															
8. PROVIDE NEW CIRCUIT BREAKER IN EXISTING PANELBOARD (WHERE PANEL IS LABELED AS EXISTING) OF SAME MANUFACTURER AND A.I.C. RATING AS EXISTING.															
9. EXISTING LOAD.															



- KEYED NOTES** 

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UTAH DIVISION OF
WILDLIFE
RESOURCES
LOA HATCHERY
PROJECT

DFCM APPROVAL

[illegible]

ISSUE DATE: JUNE 20, 2025

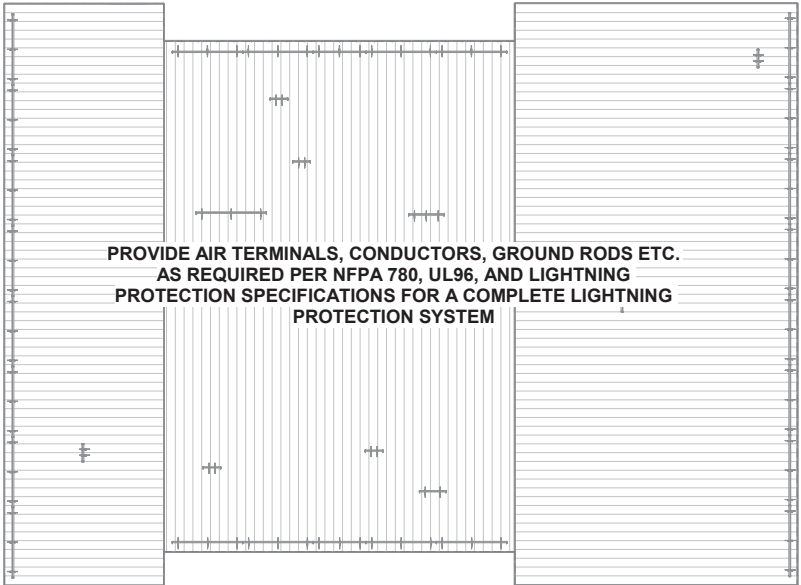
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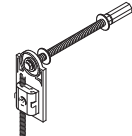
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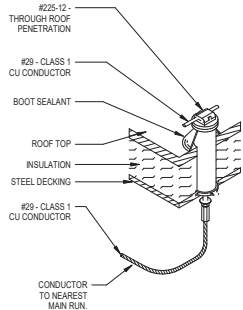
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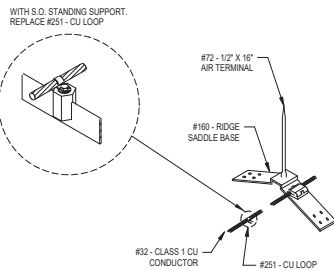
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SCALE: 1/8" = 1'-0"



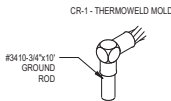
5 PENETRATION DETAIL
SCALE: NTS



6 THROUGH ROOF DETAIL
SCALE: NTS



3 AIR TERMINAL DETAIL
SCALE: NTS



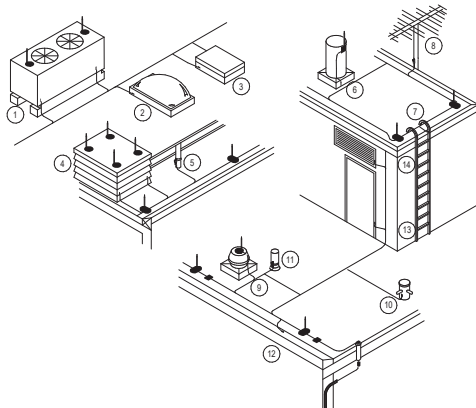
4 GROUND ROD DETAIL
SCALE: NTS

GENERAL & INSTALLATION NOTES:

- LOCATE AIR TERMINALS AS SHOWN. TAKE CARE TO INSURE THAT ALL POINTS ARE WITHIN 2'-0" OF OUTSIDE BUILDING EDGE, OUTSIDE CORNERS, & RIDGE ENDS, AND THAT MAXIMUM SPACE DOES NOT EXCEED 20'-0", AND THAT MINIMUM PROJECTION ABOVE OBJECT PROTECTED IS 10", (POINTS PROJECTING 24" MAY BE SPACED @ 25 MAX).
- MAINTAIN HORIZONTAL OR DOWNWARD COURSING OF MAIN CONDUCTOR AND INSURE THAT ALL BENDS HAVE AT LEAST AN 8" RADIUS AND DO NOT EXCEED 90 DEGREES.
- ATTACH ALL EXPOSED ROOD, DOWNLEAD AND BONDING CABLES AT 3'-0" ON CENTER MAXIMUM. VERIFY COMPATIBILITY OF ADHESIVE ON MEMBRANE ROOF APPLICATION PRIOR TO INSTALLATION.
- GROUND ELECTRODES SHALL BE INSTALLED AS SHOWN BUT IN NO INSTANCE SHALL THEY BE LESS THAN 1'-0" BELOW GRADE AND 2'-0" FROM FOUNDATION WALL. DRIVEN RODS SHALL PENETRATE EARTH AT LEAST 10'-0".
- BOND TO WATER SERVICE AND OTHER PIPING SYSTEMS AS SHOWN AND AS REQUIRED BY CODES.
- INTERCONNECT LIGHTNING PROTECTION GROUND TO ELECTRIC, TELEPHONE, AND OTHER BUILDING GROUND SYSTEMS AS SHOWN OR AS REQUIRED BY CODE.
- SYSTEM SHALL BE INSTALLED AS SHOWN TO INSURE PROPER CODE COMPLIANCE AND SYSTEM CERTIFICATION. ANY MAJOR VARIANCE SHALL ENTAL RESUBMITTAL AND NEW APPROVAL.
- AS BUILT DRAWINGS SHALL BE SUBMITTED IN ACCORDANCE WITH CERTIFICATION PROCEDURES.
- ALL MATERIALS TO BE UNDERWRITERS LABORATORIES APPROVED WITH "A" LABELS ON CONDUCTORS @ 10'-0" INTERVALS AND "B" LABELS ON ALL AIR TERMINALS.
- COMPLETED INSTALLATION AS SHOWN SHALL BEAR U.L. MASTER LABEL "C" TO BE SECURED BY SYSTEM INSTALLER PER UL96A.
- ALL MATERIALS SHOWN AND INTENDED FOR USE ARE TO BE SUPPLIED BY VFC LIGHTNING PROTECTION INC., 1400 SOUTH 800 WEST UNIT A, WOODS CROSS UTAH 84087-0077. ALL PART #'S ARE VFC PART #'S.
- INSTALLATION SHALL COMPLY IN ALL RESPECTS TO L.P.I. CODE 175. INSTALLATION SHALL BE MADE OR UNDER THE SUPERVISION OF AN L.P.I. CERTIFIED MASTER INSTALLER.

BONDING NOTES:

- ITEMS 1-10 ARE TYPICAL BODIES OF CONDUCTANCE AS NOTED BELOW. USE FULL SIZE CONDUCTOR & APPROPRIATE FITTING SHOWN FOR CONNECTION.
- ITEM 11 (PLUMBING STACK) REQUIRES BONDING WITH MAIN SIZE CABLE ONLY IF WITH 6'-0" OF SYSTEM.
- ITEMS 12-14 ARE TYPICAL BODIES OF INDUCTANCE AS NOTED BELOW. USE SECONDARY SIZE SMALLER CONDUCTOR & APPROPRIATE FITTING SHOWN FOR CONNECTION. (ITEM 12 TYPICALLY OCCURS AT EACH DOWN-LEAD AND ROOF LEVEL CHANGE AS SHOWN).
- BONDING CONNECTIONS AND FITTINGS SHOWN ARE TYPICAL. EXAMPLES HAVE ALL CONNECTIONS REQUIRED TO MEET CODE AS NOTED BELOW. ADJUST FITTING TYPE AS REQUIRED TO SUIT FIELD CONDITIONS.



2 LIGHTNING PROTECTION
SCALE: NTS



DESIGNED BY:

**SUNRISE
ENGINEERING**
PREPARED BY:
SUNRISE ENGINEERING, LLC
635 N. MAIN, SUITE 675
RICHFIELD, UTAH 84701
TEL. (435) 896-8857
FAX (435) 743-7900



ENV-2023-231

PROJECT NAME:

UTAH DIVISION OF
WILDLIFE
RESOURCES
LOA HATCHERY
PROJECT

SEAL



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DFCM APPROVAL



REVISIONS:
CONTRACTOR TO VERIFY DRAWINGS IN FIELD USE REFLECT
DATE REVISION DATE

NO.	DATE	DESCRIPTION

ISSUE TYPE: CONST. DOCUMENTS

ISSUE DATE: JUNE 20, 2025

DFCM PROJECT NO: 24204520

PROJECT NO: 2023562

BIM FILE:

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DRAWING TITLE

ROOF PLAN -
LIGHTNING
PROTECTION

DRAWING NUMBER

EO202
214 OF 268

UNIT NAME		ELECTRICAL INPUT					FEEDER					NOTE	STARTER/DISCONNECT/CONNECTION TO UNIT				ENCLOSURE	REMARKS		
ACTI	No.	DESCRIPTION	LOAD	TYPE	VOLTS	PHASE	AMPS	QTY	CONDUIT SIZE	WIRE SIZE	ECP		GND	STARTER SIZE	DISCONNECT SIZE	POLE			DISCONNECT SIZE	POLE
ACI	2	SPLIT SYSTEM INDOOR UNIT	1	MCA	208 V	1	1A	1	3/4"	2	12	12	1A	-	-	-	1HP	2	NEMA 1	INDOOR UNIT FED FROM OUTDOOR UNIT
ACI	3	SPLIT SYSTEM INDOOR UNIT	1	MCA	208 V	1	1A	1	3/4"	2	12	12	1A	-	-	-	1HP	2	NEMA 1	INDOOR UNIT FED FROM OUTDOOR UNIT
ACO	2	SPLIT SYSTEM OUTDOOR UNIT	18	MCA	208 V	1	18A	1	3/4"	2	10	10	10A	-	25	2	30	2	NEMA 3R	
ACO	3	SPLIT SYSTEM OUTDOOR UNIT	18	MCA	208 V	1	18A	1	3/4"	2	10	10	10A	-	25	2	30	2	NEMA 3R	
B	1	BUBBLE BLOWER MOTOR	5	HP	480 V	3	7.6A	1	3/4"	3	12	12	10A	-	15	3	30	3	NEMA 3R	
BE	1	BLOWER ENCLOSURE	5	FLA	120 V	1	5A	1	3/4"	2	12	12	1A	-	-	-	1HP	1	NEMA 3R	
CU	1	CONDENSING UNIT	32.8	MCA	208 V	1	32.8A	1	3/4"	2	6	10	10A	-	45	2	60	2	NEMA 3R	
CU	2	CONDENSING UNIT	32.8	MCA	208 V	1	32.8A	1	3/4"	2	6	10	10A	-	45	2	60	2	NEMA 3R	
EF	8	EXHAUST FAN	0.25	HP	120 V	1	5.8A	1	3/4"	2	12	12	1A	-	-	-	1HP	1	NEMA 1	
EF	9	EXHAUST FAN	0.25	HP	120 V	1	5.8A	1	3/4"	2	12	12	1A	-	-	-	1HP	1	NEMA 1	
EF	10	EXHAUST FAN	0.25	HP	120 V	1	5.8A	1	3/4"	2	12	12	1A	-	-	-	1HP	1	NEMA 1	
EF	11	EXHAUST FAN	7.2	FLA	120 V	1	7.2A	1	3/4"	2	12	12	1A	-	-	-	1HP	1	NEMA 1	
EF	12	EXHAUST FAN	7.2	FLA	120 V	1	7.2A	1	3/4"	2	12	12	1A	-	-	-	1HP	1	NEMA 1	
EUH	2	ELECTRIC UNIT HEATER	4	KVA	208 V	1	19.2A	1	3/4"	2	10	10	10A	-	25	2	30	2	NEMA 1	
EWH	1	ELECTRIC WATER HEATER	12.3	KVA	208 V	1	55.1A	1	1"	2	3	8	10A	-	80	2	100	2	NEMA 1	
F	1	FURNACE	19.6	MCA	120 V	1	19.6A	1	3/4"	2	10	10	10A	-	25	1	30	1	NEMA 1	
F	2	FURNACE	19.6	MCA	120 V	1	19.6A	1	3/4"	2	10	10	10A	-	25	1	30	1	NEMA 1	
FR	1	RADON DEGASSING FAN	0.75	HP	208 V	1	7.6A	1	3/4"	2	12	12	1A	-	-	-	1HP	2	NEMA 3R	ROUTE POWER FOR EXHAUST FAN THRU SCAFF CONTROL SYSTEM JUNCTION BOX. COORDINATE EXACT LOCATION WITH SCAFFA SYSTEM INSTALLER
OH	1	OVERHEAD DOOR	0.75	HP	120 V	1	13.8A	1	3/4"	2	10	10	1A	-	-	-	1HP	1	NEMA 1	
POL	1	WASTEWATER REMOVABLE LIFT PUMP	25	HP	480 V	3	34A	1	1 1/4"	3	4	6	12A	-	-	-	1	6	NEMA 3R	
PE	1	EFFLUENT WASTE WATER PUMP	0.5	HP	120 V	1	9.8A	1	3/4"	2	12	12	1A	-	-	-	1HP	1	NEMA 3R	
PE	2	EFFLUENT WASTE WATER PUMP	0.5	HP	120 V	1	9.8A	1	1"	2	6	6	1A	-	-	-	1HP	1	NEMA 3R	
PR																				

TYPE	DESCRIPTION	SOURCE	ELECTRICAL		APPROVED MANUFACTURERS	CATALOG INFORMATION		COMMENTS / NOTES
			VOLTAGE	LOAD		CATALOG NUMBER / SERIES		
A1	LED AREA LIGHT WITH TYPE 4 DISTRIBUTION INTEGRAL OCCUPANCY AND DAYLIGHT SENSOR 15' TALL POLE	LED 4610 LUMENS 4000K	277 V	33	COOPER (OR APPROVED EQUAL)	GALN-SA1A-840-4-TF47-WPS0X		*-ARCHITECT TO SELECT STANDARD COLOR FINISH
D10	6" LED ROUND DOWNLIGHT WITH INTEGRAL BATTERY PACK (WHERE SHOWN ON DRAWINGS)	LED 1000 LUMENS 4000K	120 V	10	COOPER (OR APPROVED EQUAL)	HCR 10 D010 (REM7) H060525 840 61 MD H		*- PROVIDE INTEGRAL BATTERY PACK WHERE SHOWN ON DRAWINGS
D20	6" LED ROUND DOWNLIGHT WITH NON-CONDUCTIVE REFLECTOR SHOWER RATED AND INTEGRAL BATTERY PACK	LED 1000 LUMENS 4000K	120 V	10	COOPER (OR APPROVED EQUAL)	HCR 10 H06 0525 840 61PS MD W REM7		
L80	4" LINEAR LOW BAY LED LIGHT WITH INTEGRAL BATTERY PACK (WHERE SHOWN ON DRAWINGS)	LED 14000 LUMENS 4000K	120 V	12	COOPER (OR APPROVED EQUAL)	RLBED-LD4-14-SYMF-LINV-(CFL1MW)LB40-CD-1-U		*- PROVIDE INTEGRAL BATTERY PACK WHERE SHOWN ON DRAWINGS
P10	4" LINEAR ARCHITECTURAL PENDANT MOUNT LIGHT 20% UPLIGHT 80% DOWNLIGHT WITH INTEGRAL BATTERY PACK (WHERE SHOWN ON DRAWINGS)	LED 250 LUMENS/FT UP 1000 LUMENS/FT DOWN 4000K	120 V	11	COOPER (OR APPROVED EQUAL)	SQ2-F-025U-100D-840-1-D-LIN-V-2(10")**AC120-JB-4		*-PROVIDE INTEGRAL BATTERY PACK WHERE SHOWN ON DRAWINGS *-ARCHITECT TO SELECT STANDARD COLOR FINISH
P20	6" LINEAR ARCHITECTURAL PENDANT MOUNT LIGHT 20% UPLIGHT 80% DOWNLIGHT WITH INTEGRAL BATTERY PACK (WHERE SHOWN ON DRAWINGS)	LED 250 LUMENS/FT UP 1000 LUMENS/FT DOWN 4000K	120 V	11	COOPER (OR APPROVED EQUAL)	SQ2-F-025U-100D-840-1-D-LIN-V-2(10")**AC120-JB-6		*-PROVIDE INTEGRAL BATTERY PACK WHERE SHOWN ON DRAWINGS *-ARCHITECT TO SELECT STANDARD COLOR FINISH
U10	4" LINEAR LED STRIP LIGHT WITH ROUND LENS AND INTEGRAL EMERGENCY BATTERY PACK (WHERE SHOWN ON DRAWINGS)	LED 2300 LUMENS 4000K	120 V	5	COOPER (OR APPROVED EQUAL)	4SLNED-LD5-23SL-U-LINV-(CFL7W)HB-LB40-CD-1-U		*- PROVIDE INTEGRAL BATTERY PACK WHERE SHOWN ON DRAWINGS
U20	4" LINEAR LED STRIP LIGHT WITH ROUND LENS AND INTEGRAL EMERGENCY BATTERY PACK (WHERE SHOWN ON DRAWINGS)	LED 3300 LUMENS 4000K	120 V	7	COOPER (OR APPROVED EQUAL)	4SLNED-LD5-33SL-U-LINV-(CFL7W)HB-LB40-CD-1-U		*- PROVIDE INTEGRAL BATTERY PACK WHERE SHOWN ON DRAWINGS
V10	4" LINEAR LED VAPOR TIGHT FIXTURE WITH INTEGRAL BATTERY PACK (WHERE SHOWN ON DRAWINGS)	LED 6000 LUMENS 4000K	120 V	12	COOPER (OR APPROVED EQUAL)	4V73-LD5-6-W-120V-(CFL10W)-L840		*- PROVIDE INTEGRAL BATTERY PACK WHERE SHOWN ON DRAWINGS
W10	LED EXTERIOR WALLPACK WITH INTEGRAL BATTERY PACK AND DAYLIGHT/OCCUPANCY SENSOR	LED 1800 LUMENS 4000K	120 V	14	COOPER (OR APPROVED EQUAL)	AXCS1A1WPS20X CBP		*-ARCHITECT TO SELECT STANDARD COLOR FINISH
W20	LED EXTERIOR WALLPACK WITH INTEGRAL DAYLIGHT/OCCUPANCY SENSOR	LED 3300 LUMENS 4000K	120 V	27	COOPER (OR APPROVED EQUAL)	AXCS3A1WPS40X		*-ARCHITECT TO SELECT STANDARD COLOR FINISH
X10	LED WALL MOUNTED EXIT SIGN WITH INTEGRAL BATTERY PACK AND GREEN LETTERS	LED	120 V	2	COOPER (OR APPROVED EQUAL)	PNL G U		
X20	LED CEILING MOUNTED EXIT SIGN WITH INTEGRAL BATTERY PACK AND GREEN LETTERS	LED	120 V	2	COOPER (OR APPROVED EQUAL)	PNL G U		

1. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS FOR LOCATIONS OF LIGHT FIXTURES. BRING ALL DISCREPANCIES OF LOCATIONS AND QUANTITIES TO THE ATTENTION OF THE ARCHITECT PRIOR TO BIDDING.
2. CONFIRM MOUNTING HEIGHTS AND LOCATIONS OF ALL LIGHT FIXTURES WITH ARCHITECTURAL ELEVATIONS AND / OR ARCHITECT.
3. REFER TO THE SPECIFICATIONS FOR OTHER LIGHT FIXTURE REQUIREMENTS.
4. CONFIRM AVAILABLE MOUNTING DEPTHS OF ALL LIGHT FIXTURES AND COMPARE WITH DEPTHS SHOWN ON SHOP DRAWINGS. BRING ALL POTENTIAL CONFLICT AREAS TO THE ATTENTION OF THE ARCHITECT AND ELECTRICAL ENGINEER PRIOR TO RELEASE.
5. ALL LIGHT FIXTURES ARE TO BE 3500K FOR INTERIOR APPLICATIONS AND 4000K FOR EXTERIOR APPLICATIONS, UNLESS OTHERWISE NOTED IN THE FIXTURE DESCRIPTION.
6. ALL LIGHT FIXTURES ARE TO BE A MINIMUM OF 80 CRI UNLESS OTHERWISE NOTED IN THE FIXTURE DESCRIPTION.
7. ALL LED SODIUM MUST MEET L80 AT 50,000 HRS MINIMUM UNLESS OTHERWISE NOTED.
8. CONFIRM ALL MOUNTING REQUIREMENTS WITH ARCHITECT PRIOR TO RELEASE.
9. ALL LIGHT FIXTURES ARE TO HAVE AN EFFICACY OF 80 LUMENS PER WATT MINIMUM.

1. BID ONLY PRODUCTS THAT ARE SPECIFIED OR APPROVED BY ADDENDUM.

2. PACKAGING OF LIGHT FIXTURES WITH OTHER SYSTEMS IS NOT ALLOWED AND MUST BE BID SEPARATELY. I.E. LIGHT FIXTURES, THEATRICAL LIGHTING, SPORTS LIGHTING AND ALL LIGHTING CONTROLS.

3. WHEN ONLY ONE PRODUCT IS APPROVED FOR BIDDING, THE PRICE FOR THAT ITEM SHALL BE BROKEN OUT SEPARATELY WHEN SUBMITTING PRICING TO VARIOUS DISTRIBUTORS AND / OR CONTRACTOR

4. WHEN A CONTRADICTION EXISTS BETWEEN A SPECIFIC MODEL NUMBER AND THE DESCRIPTION, THE DESCRIPTION SHALL GOVERN.

1. **PRIOR APPROVAL IS REQUIRED BEFORE BIDDING THIS PROJECT.**

2. **ALL SUBMITTALS TO THE ELECTRICAL ENGINEER'S OFFICE AT LEAST 10 WORKING DAYS BEFORE BID TIME. PRIOR APPROVALS RECEIVED AFTER THIS TIME PERIOD SHALL BE REJECTED.**

3. **ITEMS THAT ARE SUBMITTED TO THE ELECTRICAL ENGINEER AND HAVE BEEN APPROVED WILL BE LISTED IN THE ADDENDUM(S). WORKING APPROVALS WILL NOT BE GIVEN ON ANY ITEM.**

4. **IT IS NOT THE RESPONSIBILITY OF THE ELECTRICAL ENGINEER TO NOTIFY THE SUBMITTING PARTY OF ERRORS IN THE SUBMITTAL. NOTIFICATION OF ERRORS BY THE ELECTRICAL ENGINEER PRIOR TO ISSUANCE OF THE ADDENDUM(S) MAY NOT BE GIVEN.**

5. **PRIOR APPROVALS SHALL CONSIST OF CUT SHEETS DESCRIBING THE PRODUCTS BEING SUBMITTED AS EQUIVALENTS. ALL SPECIFICATION INFORMATION SHALL BE CLEARLY MARKED. PRODUCTS WITHOUT PHOTOMETRIC DATA WILL NOT BE APPROVED.**

6. **THE REVIEW SHALL BE REVIEWED FOR GENERAL PROJECT COMPLIANCE ONLY. AN IN-DEPTH REVIEW OF ANY ALTERNATE FIXTURES WILL BE DONE DURING THE SUBMITTAL REVIEW PROCESS. ANY FIXTURES THAT ARE NOT TRULY EQUAL AND/OR DO NOT COMPLY WITH ALL OF THE REQUIREMENTS CONTAINED IN THE CONTRACT DOCUMENTS, WILL NOT BE APPROVED. IF EQUIPMENT IS DISAPPROVED FOR BIDDING, CONTRACTOR SHALL SUPPLY SPECIFIED EQUIPMENT AT NO EXTRA COST TO THE OWNER.**

ENV:2023-231

UTAH DIVISION OF
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RESOURCES
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PROJECT

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	REVISIONS
CONTRACTOR TO VERIFY DRAWINGS IN FIELD USE REFLECTED	
LATEST REVISION DATE:	
No.	DATE DESCRIPTION

original drawing is 30 x 42. Do not scale contents of this drawing

DRAWING NUMBER

EQ600

EO600

216 OF 268

A

B

C

D

Autodesk Docs/202562562/Loa File Hatchery/2023-231_LoA OFFICE & SHOP BUILDING_ELEC_CENTRAL_V23.mtl
7/7/2025 11:00:07 AM

PANELBOARD SCHEDULE															
PANEL NAME: NLDG1										FEED FROM: DGT1					
MOUNTING: SURFACE				VOLTAGE: 120/208 Wye				LOCATION: MAIN TYPE: MCB				SPD: CAT A			
ENCLOSURE: NEMA 3R				PHASE: 3				BUS RATING: 100 A				NEUTRAL RATING: 100%			
DOOR TYPE: DOOR-IN-DOOR				WIRES: 4				MCB RATING: 100 A				ISOLATED GROUND: NO			
				Min. A.I.C. RATING: 10,000A				BUS MATERIAL: COPPER							
BRANCH BREAKERS															
KEYED NOTE	CIRCUIT DESCRIPTION	AMP	POLE	LOAD TYPE	CKT #	A	B	C	CKT #	LOAD TYPE	POLE	AMP	CIRCUIT DESCRIPTION	KEYED NOTE	
	REC-CONV OUTLETS	20 A	1	CO	1	180 VA	600 VA		2	M	1	20 A	BLOWER ENCLOSURE		
	FR-1	20 A	2	M	3		790 VA	790 VA	4	M	2	20 A	FR-1		
--	--	--	--	--	5			790 VA	790 VA	6	--	--	--	--	
	ERTU PANEL	20 A	1	E	7	100 VA	0 VA		8	--	1	20 A	-SPARE-		
	-SPARE-	20 A	1	--	9		0 VA	0 VA	10	--	1	20 A	-SPARE-		
	-SPARE-	20 A	1	--	11			0 VA	0 VA	12	--	1	20 A	-SPARE-	
	-SPARE-	20 A	1	--	13	0 VA	0 VA		14	--	1	20 A	-SPARE-		
	-SPARE-	20 A	1	--	15		0 VA	0 VA	16	--	1	20 A	-SPARE-		
	-SPARE-	20 A	1	--	17			0 VA	0 VA	18	--	1	20 A	-SPARE-	
	-SPARE-	20 A	1	--	19	0 VA	0 VA		20	--	1	20 A	-SPARE-		
	-SPARE-	20 A	1	--	21		0 VA	0 VA	22	--	1	20 A	-SPARE-		
	-SPARE-	20 A	1	--	23			0 VA	0 VA	24	--	1	20 A	-SPARE-	
	-SPARE-	20 A	1	--	25	0 VA	0 VA		26	--	1	20 A	-SPARE-		
	-SPARE-	20 A	1	--	27		0 VA	0 VA	28	--	1	20 A	-SPARE-		
	-SPARE-	20 A	1	--	29			0 VA	0 VA	30	--	1	20 A	-SPARE-	
	-SPARE-	20 A	1	--	31	0 VA	0 VA		32	--	1	20 A	-SPARE-		
	-SPARE-	20 A	1	--	33		0 VA	0 VA	34	--	1	20 A	-SPARE-		
	-SPARE-	20 A	1	--	35			0 VA	0 VA	36	--	1	20 A	-SPARE-	
	-SPACE ONLY-	--	1	--	37	--	0 VA		38	--	3	40 A	SPD		
	-SPACE ONLY-	--	1	--	39		--	0 VA		40	--	--	--		
	-SPACE ONLY-	--	1	--	41			--	0 VA	42	--	--	--		
TOTAL CONNECTED LOAD PER PHASE (VA)						880 VA	1581 VA	1581 VA							
TOTAL CONNECTED CURRENT PER PHASE (AMPS)						7 A	14 A	14 A							
LOAD CLASSIFICATION		CONNECTED LOAD		DEMAND FACTOR		ESTIMATED DEMAND		PANEL TOTALS							
EQUIPMENT		100 VA		100.00%		100 VA									
Motor		3762 VA		110.51%		4157 VA		Total Conn. Load: 4042 VA							
RECEPTACLE		180 VA		100.00%		180 VA		25% OF LARGEST MOTOR: 4437 VA							
								Total Conn. Current: 11 A							
								Total Est. Demand Current: 12 A							

PANELBOARD SCHEDULE																					
PANEL NAME: NLO2						LOCATION: ELECT O-13						FEED FROM: NLO1									
MOUNTING: SURFACE						VOLTAGE: 120/208 Wye						MAIN TYPE: MLO				SPD: NO					
ENCLOSURE: NEMA 1						PHASE: 3						BUS RATING: 400 A						NEUTRAL RATING: 100%			
DOOR TYPE: DOOR-IN-DOOR						WIRES: 4						MCB RATING: NONE						ISOLATED GROUND: NO			
Min. A.I.C. RATING: 22,000A						BUS MATERIAL: COPPER															
BRANCH BREAKERS																					
KEYED NOTE	CIRCUIT DESCRIPTION	AMP	POLE	LOAD TYPE	CKT #	A	B	C	CKT #	LOAD TYPE	POLE	AMP	CIRCUIT DESCRIPTION	KEYED NOTE							
	REC- MDF RACK	20 A	1	CO	1	360 VA	396 VA		2	M	1	20 A	UH-13-UNIT HEATER								
	REC- MDF RACK	20 A	1	CO	3		360 VA	528 VA	4	M	1	20 A	RSP-1-RE-CIRC PUMP								
	UH-11-UNIT HEATER	20 A	1	M	5			396 VA	600 VA	6	E	1	20 A	EQUIPMENT ELECT O-13							
	WS-1-WATER SOFTENER	20 A	1	M	7	600 VA	864 VA		8	M	1	20 A	EF-12-EXHAUST FAN								
	EF-10-EXHAUST FAN	15 A	1	M	9		696 VA	1080 VA	10	CO	1	20 A	REC- TT8 FOURPLEXES								
	EF-11-EXHAUST FAN	20 A	1	M	11			864 VA	1656 VA	12	M	1	25 A	OH-1-OVERHEAD DOOR							
	EF-9-EXHAUST FAN	15 A	1	M CO	13	1752 VA	100 VA		14	E	1	20 A	EATC PANEL								
	F-2-FURNACE	25 A	1	M	15		2352 VA	2000 VA	16	M	2	25 A	EUH-2-ELECTRIC UNIT HEATER								
	F-1-FURNACE	25 A	1	M	17			2352 VA	2000 VA	18	--	--	--	--							
	ACO-2- OUTDOOR UNIT	25 A	2	M	19	1872 VA	1872 VA		20	M	2	25 A	ACO-3- OUTDOOR UNIT								
--	--	--	--	--	21		1872 VA	1872 VA	22	--	--	--	--	--							
	CU-1-CONDENSING UNIT	45 A	2	M	23			3411 VA	3411 VA	24	M	2	45 A	CU-2-CONDENSING UNIT							
--	--	--	--	--	25	3411 VA	3411 VA		26	--	--	--	--	--							
	EW-1-ELECTRIC WATER HTR	80 A	2	M	27		6150 VA	0 VA	28	--	2	25 A	-SPARE-								
--	--	--	--	--	29			6150 VA	0 VA	30	--	--	--	--							
	-SPARE-	25 A	2	--	31	0 VA	4000 VA		32	E	2	50 A	WELDER OUTLET								
--	--	--	--	--	33		0 VA	4000 VA	34	--	--	--	--	--							
	PE-1	20 A	1	M	35			1176 VA	600 VA	36	M	1	20 A	MOTOR							
	-SPARE-	20 A	1	--	37	0 VA	0 VA		38	--	1	20 A	-SPARE-								
	-SPARE-	20 A	1	--	39		0 VA	0 VA	40	--	1	20 A	-SPARE-								
	-SPARE-	20 A	1	--	41			0 VA	0 VA	42	--	1	20 A	-SPARE-							
	-SPARE-	20 A	1	--	43	0 VA	0 VA		44	--	1	20 A	-SPARE-								
	-SPARE-	20 A	1	--	45		0 VA	0 VA	46	--	1	20 A	-SPARE-								
	-SPARE-	20 A	1	--	47			0 VA	0 VA	48	--	1	20 A	-SPARE-							
	-SPACE ONLY-	--	1	--	49	--	--		50	--	1	--	-SPACE ONLY-								
	-SPACE ONLY-	--	1	--	51	--	--	--	52	--	1	--	-SPACE ONLY-								
	-SPACE ONLY-	--	1	--	53	--	--	--	54	--	1	--	-SPACE ONLY-								
TOTAL CONNECTED LOAD PER PHASE (VA)						18638 VA	20910 VA	22616 VA													
TOTAL CONNECTED CURRENT PER PHASE (AMPS)						155 A	177 A	191 A													
PANEL TOTALS																					
LOAD CLASSIFICATION		CONNECTED LOAD		DEMAND FACTOR		ESTIMATED DEMAND		PANEL TOTALS													
EQUIPMENT		8700 VA		100.00%		8700 VA															
Motor		51305 VA		105.99%		54380 VA		Total Conn. Load: 62165 VA													
RECEPTACLE		2160 VA		100.00%		2160 VA		25% OF LARGEST MOTOR: 65240 VA													
								Total Est. Demand: 65240 VA													
								Total Conn. Current: 173 A													
								Total Est. Demand Current: 181 A													

PANELBOARD SCHEDULE																	
PANEL NAME: NHDG1																	
MOUNTING: SURFACE				VOLTAGE: 480/277 Wye				LOCATION: MCB				FEED FROM: SPD: CAT A					
ENCLOSURE: NEMA 3R				PHASE: 3				BUS RATING: 100 A				NEUTRAL RATING: 100%					
DOOR TYPE: DOOR-IN-DOOR				WIRES: 4				MCB RATING: 100 A				ISOLATED GROUND: NO					
				Min. A.I.C. RATING: 10,000A				BUS MATERIAL: COPPER									
BRANCH BREAKERS																	
KEYED NOTE	CIRCUIT DESCRIPTION	AMP	POLE	LOAD TYPE	CKT #	A		B		C		CKT #	LOAD TYPE	POLE	AMP	CIRCUIT DESCRIPTION	KEYED NOTE
--	TRUCK FILL PUMP	20 A	3	M	1	2106 VA	2106 VA					2	M	3	20 A	BLOWER MOTOR	--
--		--	--	--	3			2106 VA	2106 VA			4	--	--	--		--
--		--	--	--	5					2106 VA	2106 VA	6	--	--	--		--
--	SPARE FOR FUTURE UV	30 A	3	--	7	0 VA	5820 VA					8	M	3	40 A	RADON DEGASSER PUMP	--
--		--	--	--	9			0 VA	5820 VA			10	--	--	--		--
--		--	--	--	11					0 VA	5820 VA	12	--	--	--		--
--	-SPACE ONLY-	--	1	--	13	--	--	--	--	--	--	14	--	1	--	-SPACE ONLY-	--
--	-SPACE ONLY-	--	1	--	15	--	--	--	--	--	--	16	--	1	--	-SPACE ONLY-	--
--	-SPACE ONLY-	--	1	--	17	--	--	--	--	--	--	18	--	1	--	-SPACE ONLY-	--
--	-SPACE ONLY-	--	1	--	19	--	--	--	--	--	--	20	--	1	--	-SPACE ONLY-	--
--	-SPACE ONLY-	--	1	--	21	--	--	--	--	--	--	22	--	1	--	-SPACE ONLY-	--
--	-SPACE ONLY-	--	1	--	23	--	--	--	--	--	--	24	--	1	--	-SPACE ONLY-	--
--	-SPACE ONLY-	--	1	--	25	--	--	--	--	--	--	26	--	1	--	-SPACE ONLY-	--
--	-SPACE ONLY-	--	1	--	27	--	--	--	--	--	--	28	--	1	--	-SPACE ONLY-	--
--	-SPACE ONLY-	--	1	--	29	--	--	--	--	--	--	30	--	1	--	-SPACE ONLY-	--
--	-SPACE ONLY-	--	1	--	31	--	--	--	--	--	--	32	--	1	--	-SPACE ONLY-	--
--	-SPACE ONLY-	--	1	--	33	--	--	--	--	--	--	34	--	1	--	-SPACE ONLY-	--
--	-SPACE ONLY-	--	1	--	35	--	--	--	--	--	--	36	--	1	--	-SPACE ONLY-	--
--	SPD	40 A	3	--	37	0 VA	880 VA					38	M.	3	50 A	DG11	--
--		--	--	--	39			0 VA	1581 VA			40	--	--	--		--
--		--	--	--	41					0 VA	1581 VA	42	--	--	--		--
TOTAL CONNECTED LOAD PER PHASE (VA)						10912 VA		11613 VA		11613 VA							
TOTAL CONNECTED CURRENT PER PHASE (AMPS)						39 A		42 A		42 A							
LOAD CLASSIFICATION		CONNECTED LOAD		DEMAND FACTOR		ESTIMATED DEMAND		PANEL TOTALS									
EQUIPMENT		100 VA		100.00%		100 VA											
Motor		33585 VA		112.80%		38222 VA		Total Conn. Load: 34138 VA									
RECEPTACLE		180 VA		100.00%		180 VA		25% OF LARGEST MOTOR: 38502 VA									
								Total Est. Demand: 34138 VA									
								Total Conn. Current: 41 A									
								Total Est. Demand Current: 46 A									

A

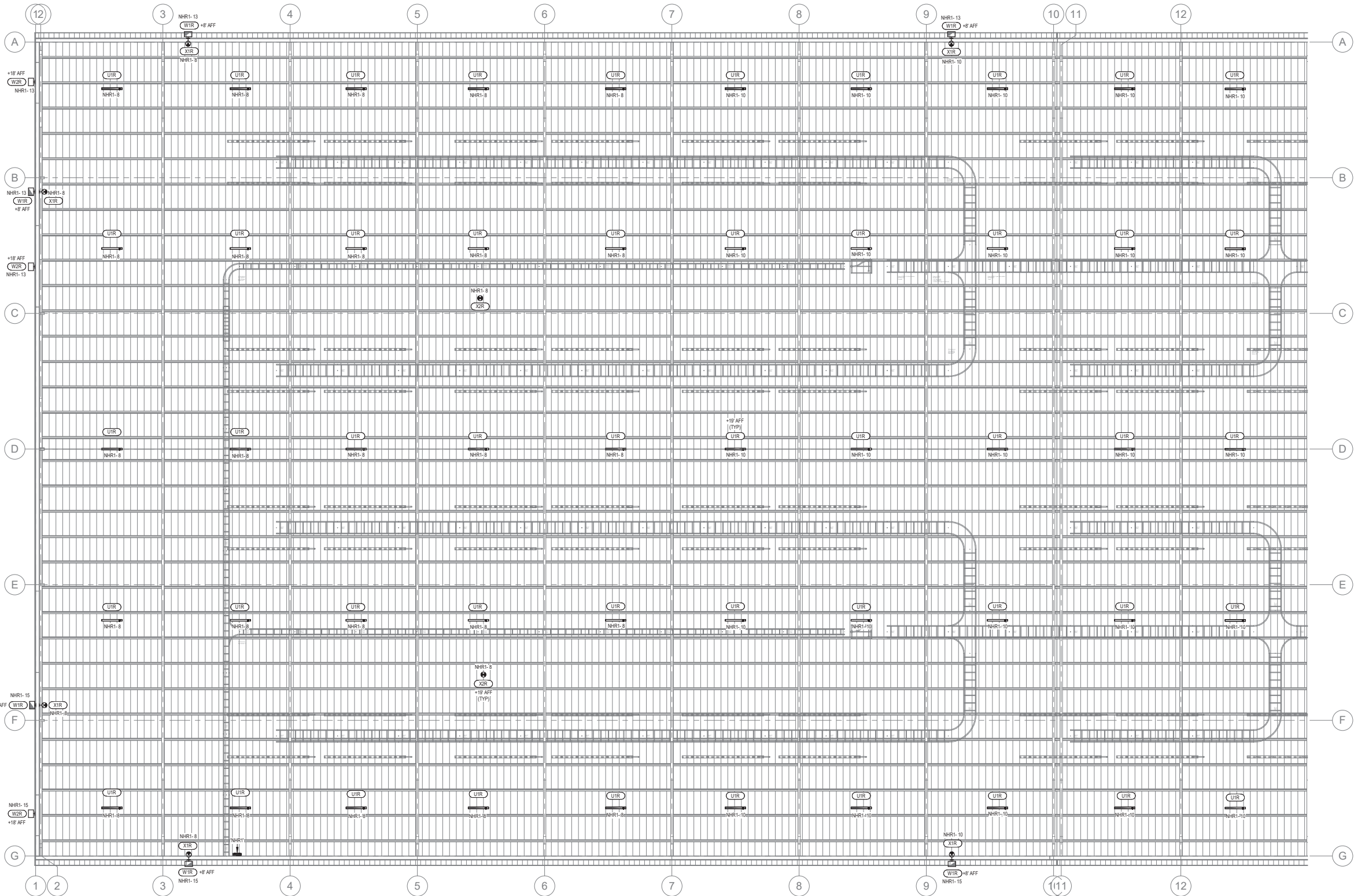
B

C

D

E

1 FLOOR PLAN - LIGHTING - AREA A
SCALE: 1/8" = 1'-0"



- LIGHTING GENERAL NOTES:**
1. REFER TO LIGHTING DETAILS SHEETS FOR TYPICAL CONTROL WIRING DIAGRAMS. PROVIDE COMPLETE SYSTEM WITH ALL REQUIRED CONDUIT, WIRING, SWITCHES, SENSORS, POWER PACK, ETC.
 2. LOCATE POWER PACKS AND ROOM CONTROLLERS ABOVE ACCESSIBLE CEILING NEAR ROOM ENTRANCES.
 3. CONFIRM ALL LOCATIONS OF LIGHT FIXTURES WITH ARCHITECT PRIOR TO INSTALLATION.
 4. PROVIDE UNSWITCHED HOT FOR ALL EMERGENCY LIGHTS AND BATTERY PACKS.
- KEYED NOTES** ⑦

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1 FLOOR PLAN - LIGHTING - AREA A
SCALE: 1/8" = 1'-0"

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1 FLOOR PLAN - LIGHTING - AREA A
SCALE: 1/8" = 1'-0"

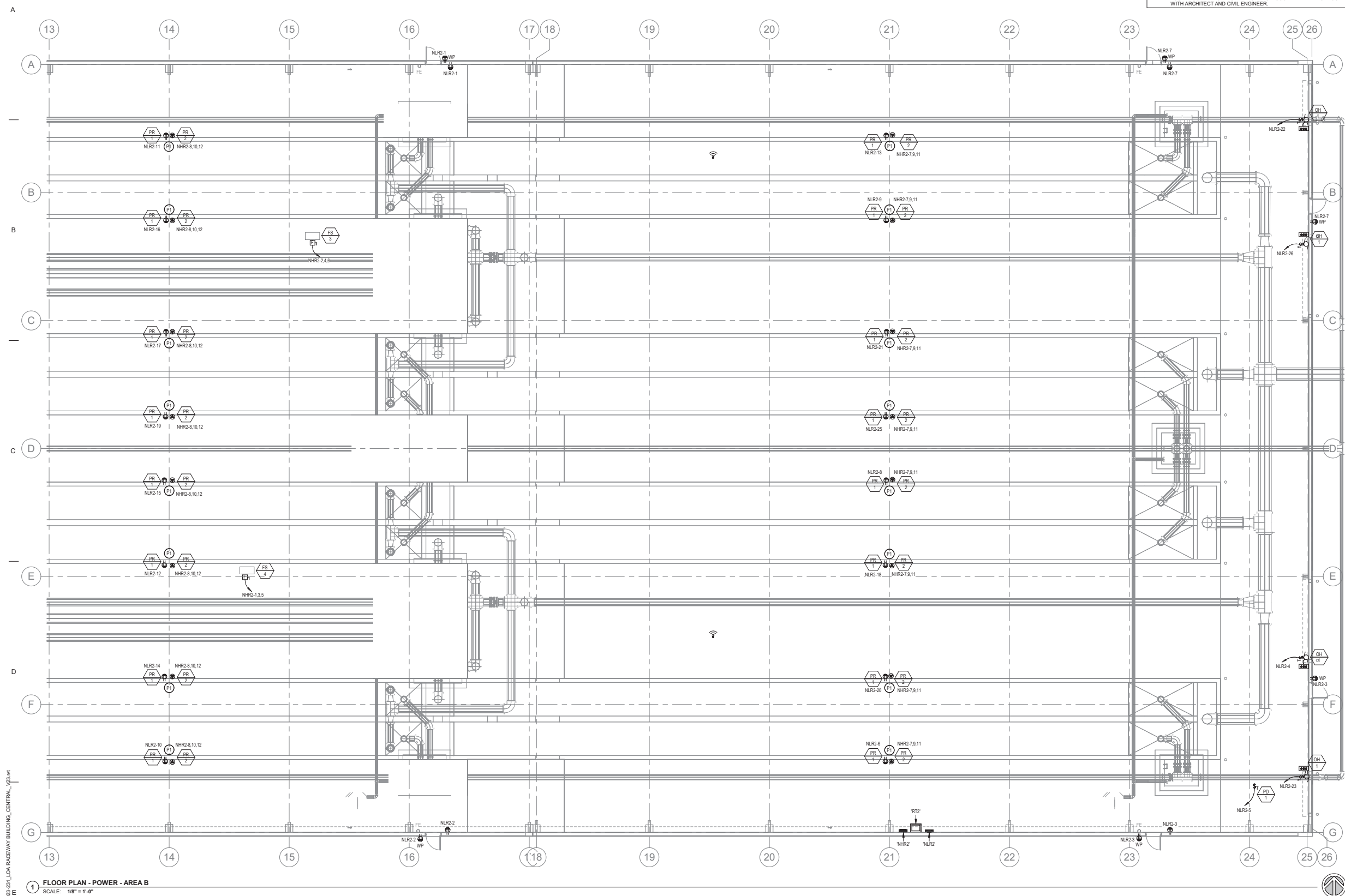
1

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- | | |
|------------------------------------|--|
| <u>POWER GENERAL NOTES:</u> | |
| 1. | ALL 120V, 20AMP OUTLETS THAT ARE WITHIN 6" OF ANY SINK SHALL BE GFCI. |
| 2. | THE DIVISION 26 CONTRACTOR SHALL DETERMINE THE EXACT ROUTING OF ALL CONDUITS IN THE FIELD. THIS PLAN REPRESENTS A SCHEMATIC REPRESENTATION OF DEVICE LOCATIONS AND CONDUIT RUNS. |
| <u>KEYED NOTES</u> | |
| P1 | POWER OUTLETS FOR PORTABLE FISH PUMP AND OXYGEN SPIKE PUMP. LOCATE OUTLETS ON A UNIT-STRIK RACK, COORDINATE EXACT LOCATION WITH ARCHITECT AND CIVIL ENGINEER. |

RACEWAY BUILDING LIGHT FIXTURE SCHEDULE									
TYPE	DESCRIPTION	SOURCE	ELECTRICAL		APPROVED MANUFACTURERS	CATALOG INFORMATION		COMMENTS / NOTES	
			VOLTAGE	LOAD		CATALOG NUMBER / SERIES			
UIR	4' LINEAR LED STRIP LIGHT WITH ROUND LENS AND INTEGRAL OCCUPANCY BATTERY PACK (WHERE SHOWN ON DRAWINGS)	LED 3500 LUMENS 4000K	277V	7	COOPER (OR APPROVED EQUAL)	4SILED-D5-35SL-LW-UNV-(FL14WV)-H8-ERM360-L840-CD1-U		*- PROVIDE WITH INTEGRAL BATTERY PACK WHERE SHOWN ON DRAWINGS	
WIR	LED EXTERIOR WALLPACK WITH INTEGRAL BATTERY PACK AND DAYLIGHT/OCCUPANCY SENSOR	LED 1800 LUMENS 4000K	277V	14	COOPER (OR APPROVED EQUAL)	4XCSA1WPSDXX CSP		*- ARCHITECT TO SELECT STANDARD COLOR FINISH	
WGR	LED EXTERIOR WALLPACK WITH INTEGRAL DAYLIGHT/OCCUPANCY SENSOR	LED 3500 LUMENS 4000K	277V	27	COOPER (OR APPROVED EQUAL)	4XCSA1WPSDXX		*- ARCHITECT TO SELECT STANDARD COLOR FINISH	
XIR	LED WALL MOUNTED EXIT SIGN WITH INTEGRAL BATTERY PACK AND GREEN LETTERS	LED	277V	2	COOPER (OR APPROVED EQUAL)	PHL G U			
XGR	LED CEILING MOUNTED EXIT SIGN WITH INTEGRAL BATTERY PACK AND GREEN LETTERS	LED	277V	2	COOPER (OR APPROVED EQUAL)	PHL G U			
LIGHT FIXTURE GENERAL NOTES									
1. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS FOR LOCATIONS OF LIGHT FIXTURES. BRING ALL DISCREPANCIES OF LOCATIONS AND QUANTITIES TO THE ATTENTION OF THE ARCHITECT PRIOR TO BIDDING.									
2. CONFIRM MOUNTING HEIGHTS AND LOCATIONS OF ALL LIGHT FIXTURES WITH ARCHITECTURAL ELEVATIONS AND / OR ARCHITECT.									
3. REFER TO THE SPECIFICATIONS FOR OTHER LIGHT FIXTURE REQUIREMENTS.									
4. CONFIRM AVAILABLE MOUNTING DEPTHS OF ALL LIGHT FIXTURES AND COMPARE WITH DEPTHS SHOWN ON SHOP DRAWINGS. BRING ALL POTENTIAL CONFLICT AREAS TO THE ATTENTION OF THE ARCHITECT AND ELECTRICAL ENGINEER PRIOR TO RELEASE.									
5. ALL LIGHT FIXTURES ARE TO BE 3500K FOR INTERIOR APPLICATIONS AND 4000K FOR EXTERIOR APPLICATIONS, UNLESS OTHERWISE NOTED IN THE FIXTURE DESCRIPTION.									
6. ALL LIGHT FIXTURES ARE TO BE A MINIMUM OF 80 CRI UNLESS OTHERWISE NOTED IN THE FIXTURE DESCRIPTION.									
7. ALL LED SOURCES MUST MEET L80 AT 50,000 HRS MINIMUM UNLESS OTHERWISE NOTED.									
8. CONFIRM ALL MOUNTING REQUIREMENTS WITH ARCHITECT PRIOR TO RELEASE.									
9. ALL LIGHT FIXTURES ARE TO HAVE AN EFFICACY OF 80 LUMENS PER WATT MINIMUM.									
BIDDING REQUIREMENTS									
1. BID ONLY PRODUCTS THAT ARE SPECIFIED OR APPROVED BY ADDENDUM.									
2. PACKAGING OF LIGHT FIXTURES WITH OTHER SYSTEMS IS NOT ALLOWED AND MUST BE BID SEPARATELY. I.E. LIGHT FIXTURES, THEATRICAL LIGHTING, SPORTS LIGHTING AND ALL LIGHTING CONTROLS.									
3. WHEN ONLY ONE PRODUCT IS APPROVED FOR BIDDING, THE PRICE FOR THAT ITEM SHALL BE BROKEN OUT SEPARATELY WHEN SUBMITTING PRICING TO VARIOUS DISTRIBUTORS AND / OR CONTRACTOR.									
4. WHEN A CONTRADICTION EXISTS BETWEEN A SPECIFIC MODEL NUMBER AND THE DESCRIPTION, THE DESCRIPTION SHALL GOVERN.									
LIGHT FIXTURE PRIOR APPROVAL REQUIREMENTS									
1. PRIOR APPROVAL IS REQUIRED BEFORE BIDDING THIS PROJECT.									
2. PRIOR APPROVALS SHALL BE SUBMITTED TO THE ELECTRICAL ENGINEER'S OFFICE AT LEAST (8) WORKING DAYS BEFORE BID TIME. PRIOR APPROVALS RECEIVED AFTER THIS TIME PERIOD SHALL BE REJECTED.									
3. ITEMS THAT ARE SUBMITTED AND HAVE BEEN APPROVED WILL BE LISTED IN THE ADDENDUM(S). VERBAL APPROVALS WILL NOT BE GIVEN ON ANY ITEM.									
4. IT IS NOT THE RESPONSIBILITY OF THE ELECTRICAL ENGINEER TO NOTIFY THE SUBMITTING PARTY OF ERRORS IN THE SUBMITTAL. NOTIFICATION OF ERRORS BY THE ELECTRICAL ENGINEER PRIOR TO ISSUANCE OF THE ADDENDUM(S) MAY NOT BE GIVEN.									
5. PRIOR APPROVALS SHALL CONSIST OF CUT SHEETS DESCRIBING THE PRODUCTS BEING SUBMITTED AS EQUIVALENTS. ALL SPECIFICATION INFORMATION SHALL BE CLEARLY MARKED. PRODUCTS WITHOUT PHOTOMETRIC DATA WILL NOT BE APPROVED.									
6. LIGHTING PACKAGES WILL BE REVIEWED FOR GENERAL PROJECT COMPLIANCE ONLY. AN IN-DEPTH REVIEW OF ANY ALTERNATE FIXTURES WILL BE DONE DURING THE SUBMITTAL REVIEW PROCESS. ANY FIXTURES THAT ARE NOT TRULY EQUAL AND / OR DO NOT COMPLY WITH ALL OF THE REQUIREMENTS CONTAINED IN THE CONTRACT DOCUMENTS, WILL NOT BE APPROVED. IF EQUIPMENT IS DISAPPROVED FOR BIDDING, CONTRACTOR SHALL SUPPLY SPECIFIED EQUIPMENT AT NO EXTRA COST TO THE OWNER.									

RACEWAY BUILDING EQUIPMENT SCHEDULE																									
UNIT NAME		DESCRIPTION	ELECTRICAL INPUT				FEEDER						NOTE	STARTER/DISCONNECT/CONNECTION TO UNIT				ENCLOSURE	REMARKS						
			LOAD	TYPE	VOLTS	PHASE	AMPS	QTY	CONDUIT SIZE	QTY	WIRE SIZE	EQPT GND		STARTER SIZE	OCP		DISCONNECT								
FS	No.																								
FS	1	FEED SYSTEM MOTOR	1.1	FLA	480 V	3	11.6 A	1	3/4"	3	12	12	10A	-	20	3	30	3	NEMA 1						
FS	2	FEED SYSTEM MOTOR	1.1	FLA	480 V	3	11.6 A	1	3/4"	3	12	12	10A	-	20	3	30	3	NEMA 1						
FS	3	FEED SYSTEM MOTOR	1.1	FLA	480 V	3	11.6 A	1	3/4"	3	12	12	10A	-	20	3	30	3	NEMA 1						
FS	4	FEED SYSTEM MOTOR	1.1	FLA	480 V	3	11.6 A	1	3/4"	3	12	12	10A	-	20	3	30	3	NEMA 1						
OH	1	OVERHEAD DOOR	0.75	HP	120 V	1	13.8A	-	-	2	-	-	1A	1HP	-	-	1HP	1	NEMA 1						
PD	1	DRAIN PUMP	1	HP	120 V	1	16.6 A	1	3/4"	2	10	10	1A	-	-	-	1HP	1	NEMA 1						
PR	1	OXYGEN SPIKE PUMP	7.2	FLA	120 V	1	7.2 A	1	3/4"	2	12	12	13A	-	-	-	-	-	-						
PR	2	FISH PUMP	25	FLA	480 V	3	25 A	1	3/4"	3	8	10	14A	-	-	-	-	-	NEMA 1 (2-30)						
STARTER/DISCONNECT/CONNECTION AT UNIT NOTES:																									
1. MANUAL STARTER WITH THERMAL OVERLOAD 2. MANUAL STARTER WITH THERMAL OVERLOAD PROTECTION & LOW VOLTAGE RELAY / CONTACTOR FOR ATC CONTROL 3. COMBINATION MAGNETIC STARTER / FUSED DISCONNECT 4. COMBINATION MAGNETIC STARTER / MOTOR CIRCUIT PROTECTOR (MCP) 5. COMBINATION MAGNETIC STARTER / NON-FUSED DISCONNECT 6. COMBINATION VARIABLE FREQUENCY DRIVE / MOTOR CIRCUIT PROTECTOR (MCP) 7. MAGNETIC STARTER 8. REDUCED VOLTAGE STARTER 9. NON-FUSED DISCONNECT SWITCH 10. FUSED DISCONNECT SWITCH														11. ENCLOSED CIRCUIT BREAKER 12. DIRECT CONNECTION 13. DUPLEX RECEPTACLE OUTLET 14. SPECIAL PURPOSE OUTLET 15. TOGGLE SWITCH 16. PILOT SWITCH 17. FUSED ELEVATOR SWITCH 18. MOTOR RATED SWITCH 19. CONTROL PANEL						A. FURNISHED, INSTALLED & CONNECTED UNDER DIVISION 26 B. FURNISHED & INSTALLED UNDER ANOTHER DIVISION REQUIRING CONNECTIONS UNDER DIVISION 26 C. FURNISHED UNDER ANOTHER DIVISION BUT INSTALLED AND CONNECTED UNDER DIVISION 26 D. FURNISHED, INSTALLED & CONNECTED UNDER ANOTHER DIVISION E. FURNISHED BY OWNER, INSTALLED & CONNECTED BY DIVISION 26					
GENERAL NOTES:																									
1. CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE AND SIZE FEEDER, STARTER, DISCONNECT AND OVERCURRENT PROTECTION IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OF ACTUAL EQUIPMENT 2. ALL CONDUCTORS USED SHALL BE COPPER. 3. ELECTRICAL CONTRACTOR SHALL REVIEW MECHANICAL DRAWINGS FOR ANY ADDITIONAL REQUIREMENTS PRIOR TO BID. 4. ELECTRICAL CONTRACTOR SHALL REVIEW OTHER TRADE SUBMITTALS FOR ANY EQUIPMENT REQUIRING CONNECTION BY ELECTRICAL CONTRACTOR AND COORDINATE ALL REQUIREMENTS PRIOR TO ROUGH-IN. 5. SIZE ALL FUSES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.																									

PANELBOARD SCHEDULE																		
PANEL NAME: NHR1																		
MOUNTING: SURFACE				VOLTAGE: 480/277 Wye				LOCATION: MAIN TYPE: MCB; FEED THRU				FEED FROM: SPD: CAT A						
ENCLOSURE: NEMA 1				PHASE: 3				BUS RATING: 400 A				NEUTRAL RATING: 100%						
DOOR TYPE: DOOR-IN-DOOR				WIRES: 4				MCB RATING: 400 A				ISOLATED GROUND: NO						
				Min. A.I.C. RATING: 35,000A				BUS MATERIAL: COPPER										
BRANCH BREAKERS																		
KEYED NOTE	CIRCUIT DESCRIPTION	AMP	POLE	LOAD TYPE	CKT #	A	B	C	CKT #	LOAD TYPE	POLE	AMP	CIRCUIT DESCRIPTION	KEYED NOTE				
--	FEED SYSTEM MOTOR	20 A	3	M	1	305 VA	305 VA		2	M	3	20 A	FEED SYSTEM MOTOR	--				
--	--	--	--	--	3		305 VA	305 VA	4	--	--	--	--	--				
--	--	--	--	--	5			305 VA	305 VA	6	--	--	--	--				
--	FISH PUMP OUTLETS	30 A	3	M	7	6928 VA	712 VA		8	L	1	20 A	LTG-HATCHERY	--				
--	--	--	--	--	9		6928 VA	704 VA	10	L	1	20 A	LTG-HATCHERY	--				
--	--	--	--	--	11			6928 VA	0 VA	12	--	3	20 A -SPARE-	--				
--	LTG-EXT WALLPACKS	20 A	1	L	13	96 VA	0 VA		14	--	--	--	--	--				
--	LTG-EXT WALLPACKS	20 A	1	L	15		69 VA	0 VA	16	--	--	--	--	--				
--	-SPARE-	20 A	3	--	17			0 VA	0 VA	18	--	1	20 A -SPARE-	--				
--	--	--	--	--	19	0 VA	0 VA		20	--	1	20 A -SPARE-	--					
--	-SPARE-	20 A	1	--	21		0 VA	0 VA	22	--	1	20 A -SPARE-	--					
--	-SPARE-	20 A	1	--	23			0 VA	0 VA	24	--	1	20 A -SPARE-	--				
--	-SPARE-	20 A	1	--	25	0 VA	0 VA		26	--	1	20 A -SPARE-	--					
--	-SPARE-	20 A	1	--	27		0 VA	0 VA	28	--	1	20 A -SPARE-	--					
--	-SPARE-	20 A	1	--	29			0 VA	0 VA	30	--	1	20 A -SPARE-	--				
--	-SPARE-	20 A	1	--	31	0 VA	--		32	--	1	--	-SPACE ONLY-	--				
--	-SPARE-	20 A	1	--	33		0 VA	--	34	--	1	--	-SPACE ONLY-	--				
--	-SPARE-	20 A	1	--	35			0 VA	--	36	--	1	--	-SPACE ONLY-	--			
--	SPD	40 A	3	--	37	0 VA	5661 VA		38	M	3	70 A	RT1	--				
--	--	--	--	--	39		0 VA	5661 VA	40	--	--	--	--	--				
--	--	--	--	--	41			0 VA	5733 VA	42	--	--	--	--				
TOTAL CONNECTED LOAD PER PHASE (VA)						56208 VA	58321 VA	54478 VA										
TOTAL CONNECTED CURRENT PER PHASE (AMPS)						204 A	212 A	197 A										
LOAD CLASSIFICATION		CONNECTED LOAD		DEMAND FACTOR		ESTIMATED DEMAND		PANEL TOTALS										
EQUIPMENT		1000 VA		100.00%		1000 VA												
LIGHTING		3317 VA		125.00%		4146 VA												
Motor		160370 VA		104.41%		167437 VA												
RECEPTACLE		4320 VA		100.00%		4320 VA												
								Total Conn. Load: 169607 VA										
								25% OF LARGEST MOTOR:										
								Total Est. Demand: 176903 VA										
								Total Conn. Current: 203 A										
								Total Est. Demand Current: 213 A										

PANELBOARD SCHEDULE																	
PANEL NAME: NHR2																	
MOUNTING: SURFACE			VOLTAGE: 480/277 Wye			LOCATION: MAIN TYPE: MLD			FEED FROM: NHR1								
ENCLOSURE: NEMA 1			PHASE: 3			BUS RATING: 400 A			SPD: NONE								
DOOR TYPE: DOOR-IN-DOOR			WIRES: 4			MCB RATING: NONE			NEUTRAL RATING: 100%								
			Min. A.L.C. RATING: 35,000A			BUS MATERIAL: COPPER			ISOLATED GROUND: NO								
BRANCH BREAKERS																	
KEYED NOTE	CIRCUIT DESCRIPTION	AMP	POLE	LOAD TYPE	CKT #	A	B	C	CKT #	LOAD TYPE	POLE	AMP	CIRCUIT DESCRIPTION	KEYED NOTE			
--	FEED SYSTEM MOTOR	20 A	3	M	1	305 VA				2	M	3	20 A	FEED SYSTEM MOTOR	--		
--	--	--	--	--	3		305 VA	305 VA		4	--	--	--	--	--		
--	--	--	--	--	5			305 VA	305 VA	6	--	--	--	--	--		
--	FISH PUMP OUTLETS	20 A	3	M	7	6928 VA	6928 VA			8	M	3	30 A	FISH PUMP OUTLETS	--		
--	--	--	--	--	9		6928 VA	6928 VA		10	--	--	--	--	--		
--	--	--	--	--	11			6928 VA	6928 VA	12	--	--	--	--	--		
--	PDL-1	70 A	3	M	13	9422 VA	9422 VA			14	M	3	70 A	PDL-1	--		
--	--	--	--	--	15		9422 VA	9422 VA		16	--	--	--	--	--		
--	--	--	--	--	17			9422 VA	9422 VA	18	--	--	--	--	--		
--	LTG:HATCHERY	20 A	1	L	19	708 VA	82 VA			20	L	1	20 A	LTG:EXT WALLPACKS	--		
--	LTG:HATCHERY	20 A	1	L	21		850 VA	96 VA		22	L	1	20 A	LTG:EXT WALLPACKS	--		
--	-SPARE-	30 A	3	--	23				0 VA	0 VA	--	3	20 A	-SPARE-	--		
--	--	--	--	--	25	0 VA	0 VA			26	--	--	--	--	--		
--	--	--	--	--	27		0 VA	0 VA		28	--	--	--	--	--		
--	-SPARE-	20 A	1	--	29				0 VA	0 VA	30	--	1	20 A	-SPARE-		
--	-SPARE-	20 A	1	--	31	0 VA	0 VA			32	--	--	1	20 A	-SPARE-		
--	-SPARE-	20 A	1	--	33		0 VA	0 VA		34	--	--	1	20 A	-SPARE-		
--	-SPARE-	20 A	1	--	35				0 VA	0 VA	36	--	1	20 A	-SPARE-		
--	-SPACE ONLY-	--	1	--	37	--	8100 VA			38	M	--	3	70 A	RT2		
--	-SPACE ONLY-	--	1	--	39		--	10092	--	7896 VA	40	--	--	--	--		
--	-SPACE ONLY-	--	1	--	41				--	4127 VA	42	--	--	--	--		
TOTAL CONNECTED LOAD PER PHASE (VA)						42201 VA	44349 VA			41207 VA							
TOTAL CONNECTED CURRENT PER PHASE (AMPS)						153 A	161 A			149 A							
LOAD CLASSIFICATION		CONNECTED LOAD		DEMAND FACTOR		ESTIMATED DEMAND		PANEL TOTALS									
LIGHTING		1736 VA		125.00%		2170 VA											
Motor		124220 VA		105.69%		131287 VA		Total Conn. Load: 127756 VA									
RECEPTACLE		1800 VA		100.00%		1800 VA		25% OF LARGEST MOTOR: Total Est. Demand: 135257 VA									
								Total Conn. Current: 1545 A									
								Total Est. Demand Current: 163 A									

