BRANCH CIRCUIT SCHEDULE

NOTES:
1. SITE LIGHTING AND RECEPTACLE BRANCH CIRCUITS SHALL BE RUN IN SAME 1.25" OCNDUIT UNLESS NOTED OTHERWISE ON DRAWINGS.
2. REFER TO THE TYPICAL DUCT BANK SECTION FOR DETAIL REQUIRED IN CONSTRUCTION OF THE DUCT BANK ENVELOPE.
3. ALL CONDUCTORS INSTALLED IN DUCT SHALL BE SUITABLE FOR WET LOCATIONS.
4. PROVIDE ALL CONDUITS WITH NYLON PULL LINE.
5. ELECTRICAL CONTRACTOR MAY UTILIZE SITE LIGHTING #8 GROUND FOR RECEPTACLES WHERE SERVED BY THE SAME PANEL.
6. WIRE VIA NEW WEATHERPROOF MECHANICAL TIME CLOCK (TORK 1109A-1109A-0) AND NEW PHOTOCELL. PROVIDE NEW INDEPENDENT PHOTOCELL TO MATCH EXISTING (INTERMATIC #EK4736S). LABEL TIME CLOCK AS "PATHWAY LIGHTING". SEE TIME CLOCK DETAIL FOR ADDITIONAL INFORMATION.
7. WIRE VIA NEW WEATHERPROOF MECHANICAL TIME CLOCK (TORK 1109A-1109A-0) AND NEW PHOTOCELL. PROVIDE NEW INDEPENDENT PHOTOCELL TO MATCH EXISTING (INTERMATIC #EK4736S). LABEL TIME CLOCK AS "PICKLEBALL LIGHTING". SEE TIME CLOCK DETAIL FOR ADDITIONAL INFORMATION.
8. CONTRACTOR MAY UTILIZE LARGEST RECEPTACLE GROUND FOR RECEPTACLES WHERE SERVED BY THE SAME PANEL.

XXX TAG#	PANEL	CIRCUIT BREAKER	EQUIPMENT/DEVICE NAME	CONDUIT	CONDUCTORS	NOTES
SL1	RP1	20A-1P	PATHWAY LIGHTING	NOTE #1	2#8 + 1#8 G.	1,2,3,4,6
SL2	RP1	20A-1P	PICKLEBALL LIGHTING	1"	2#12 + 1#12 G.	1,2,3,4,7
SR1	RP1/RP2	20A-1P	RECEPTACLE CONDUIT SYSTEM	1"	2#12 + 1#12 G.	2,3,4
R1-1	RP1-15	20A-1P	RECEPTACLES R1 1	NOTE #1	2#12 + 1#12 G.	1,2,3,4,5
R1-2	RP1-15	20A-1P	RECEPTACLES R1 2	NOTE #1	2#12 + 1#12 G.	1,2,3,4,5
R1-3	RP1-15	20A-1P	RECEPTACLES R1 3	NOTE #1	2#12 + 1#12 G.	1,2,3,4,5
R1-4	RP1-12	20A-1P	RECEPTACLES R1 4	NOTE #1	2#12 + 1#12 G.	1,2,3,4,5
R1-5	RP1-12	20A-1P	RECEPTACLES R1 5	NOTE #1	2#12 + 1#12 G.	1,2,3,4,5
R1-6	RP1-14	20A-1P	RECEPTACLES R1 6	NOTE #1	2#10 + 1#10 G.	1,2,3,4,5
R1-7	RP1-14	20A-1P	RECEPTACLES R1 7	NOTE #1	2#10 + 1#10 G.	1,2,3,4,5
R1-8	RP1-14	20A-1P	RECEPTACLES R1 8	NOTE #1	2#10 + 1#10 G.	1,2,3,4,5
R2-1	RP2-7	20A-1P	RECEPTACLES R2 1	NOTE #1	2#12 + 1#12 G.	1,2,3,4
R2-2	RP2-9	20A-1P	RECEPTACLES R2 2	NOTE #1	2#12 + 1#12 G.	1,2,3,4,8
R2-3	RP2-9	20A-1P	RECEPTACLES R2 3	NOTE #1	2#12 + 1#12 G.	1,2,3,4,8
R2-4	RP2-9	20A-1P	RECEPTACLES R2 4	NOTE #1	2#12 + 1#12 G.	1,2,3,4,8
R2-5	RP2-11	20A-1P	RECEPTACLES R2 5	NOTE #1	2#10 + 1#10 G.	1,2,3,4
R2-6	RP2-11	20A-1P	RECEPTACLES R2 6	NOTE #1	2#10 + 1#10 G.	1,2,3,4
R2-7	RP2-8	20A-1P	RECEPTACLES R2 7	1"	2#12 + 1#12 G.	1,2,3,4
R2-8	RP2-10	20A-1P	RECEPTACLES R2 8	1"	2#12 + 1#12 G.	1,2,3,4
R2-9	RP2-10	20A-1P	RECEPTACLES R2 9	1"	2#12 + 1#12 G.	1,2,3,4
R2-10	RP2-12	20A-1P	RECEPTACLES R2 10	1"	2#12 + 1#12 G.	1,2,3,4

LIGHTING FIXTURE SCHEDULE

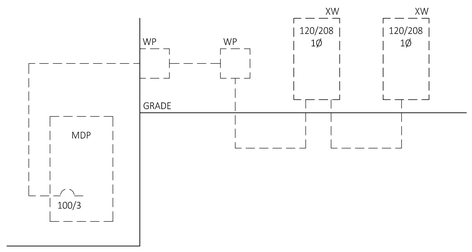
TYPICAL LIGHTING NOTES:
1. MOUNTING ABBREVIATIONS, "G" = RECESSED IN GRID, "F" = RECESSED IN FLANGE, "S" = SURFACE, "W" = WALL, "P" = PENDANT, "GR" = GROUND, "U" = UNIVERSAL, "T" = TRACK.
2. LIGHTING FIXTURES SHALL BE FURNISHED COMPLETE WITH ALL HARDWARE, HANGERS, ACCESSORIES, ETC. FOR A COMPLETE AND PROPER INSTALLATION. VERIFY ROOM SURFACE CONSTRUCTION/FINISH TYPES PRIOR TO THE RELEASE OF ANY LIGHTING FIXTURES TO ENSURE PROPER MOUNTING PROVISIONS AND FIXTURES FITTINGS. REFER TO ARCHITECTURAL DRAWINGS/ELEVATIONS.
3. VERIFY ALL LIGHTING FIXTURE MOUNTING HEIGHTS AND LOCATIONS WITH ARCHITECTURAL DRAWINGS/ELEVATIONS PRIOR TO THE START OF ROUGHING. PENDANT FIXTURES SHALL BE MINIMUM 19" FROM TOP OF FIXTURE TO CEILING UNLESS OTHERWISE NOTED.
4. ALL LED SOURCES, DRIVERS, AND CONTROLS SHALL MEET THE LATEST UTILITY CO. INCENTIVE REQUIREMENTS. REFER TO THE LATEST PROGRAM REQUIREMENTS DOCUMENTATION AND COORDINATE WITH UTILITY CO. TO ENSURE COMPLIANCE.
5. EXIT SIGNS SHALL BE TYPICALLY MOUNTED ON CEILINGS WHERE VISIBLE OR ON WALL WHERE CEILING MOUNTING IS NOT PRACTICAL. PRIOR TO ROUGHING COORDINATE WITH ARCHITECTURAL DRAWINGS/ELEVATIONS FOR SPECIFIC MOUNTING DIRECTION AND FOR LOCATION.
6. WHEN SUBMITTING TO ENGINEER FOR REVIEW THE LIGHTING FIXTURE SUBMITTALS SHALL CONSIST OF THE FOLLOWING: LIGHTING FIXTURE CUT SHEET, LIGHTING FIXTURE DRIVER CUT SHEET, AND LIGHTING FIXTURE LAMP/LED CUT SHEET FOR EACH FIXTURE. GROUPED CUT SHEETS WILL NOT BE ALLOWED. WHEN SUBMITTING LED PRODUCTS PROVIDE LIGHTING FACTS, LM-79, AND LM-80 TEST REPORTS FOR REVIEW.
7. FOR LIGHTING IN MECHANICAL ROOMS AND BACK OF HOUSE AREAS PROVIDE LIGHTING GENERALLY AS SHOWN. LIGHTING SHALL BE SHIFTED AS REQUIRED AT MECHANICAL EQUIPMENT THAT REQUIRES SPACE FOR FILTERS, ETC. MOUNT LIGHTING AT 9'-0" MAXIMUM UNLESS DUCTWORK AND PIPING CANT BE AVOIDED WHERE A FIXTURE IS NEEDED. IN THIS INSTANCE, RAISE OR LOWER THE FIXTURE AS REQUIRED. (NOT LESS THAN 7'-6"). LIGHTING IN THE MECHANICAL ROOM SHALL BE SUSPENDED BY AIRCRAFT CABLE. ALLOW (3') OF SLACK AIRCRAFT CABLE AND FEEDER AT EACH FIXTURE TO PERMIT FUTURE ADJUSTMENT. DO NOT SUPPORT LIGHT FIXTURES FROM DUCT OR PIPING. PROVIDE UNISTRUT BELOW DUCTS WHERE FIXTURE LOCATIONS COINCIDE WITH DUCT RUNS. PROVIDE THREADED RODS FROM STRUCTURAL MEMBERS TO SUPPORT UNISTRUT.
8. LIGHTING FIXTURE PACKAGE SUBMITTALS SHALL BE FULLY COORDINATED BETWEEN THE ELECTRICAL CONTRACTOR, LIGHTING FIXTURE REPRESENTATIVE(S), AND LIGHTING MANUFACTURERS TO ENSURE ALL PRODUCT, INSTALLATION, AND CONTROL REQUIREMENTS ARE MET PRIOR TO SUBMISSION FOR REVIEW. IT IS THE ELECTRICAL CONTRACTORS RESPONSIBILITY TO PROVIDE A PACKAGE MEETING ALL REQUIREMENTS OF THE PROJECT FOR A COMPLETE AND FULLY FUNCTIONAL LIGHTING SYSTEM.
9. PROVIDE ALCS ADDRESSABLE INPUT/OUTPUT (I/O) MODULE FOR EACH FIXTURE UNLESS OTHERWISE NOTED. APPLICATIONS NOT REQUIRING INDIVIDUAL CONTROL (ONLY WHERE SPECIFICALLY NOTED ON PLANS) SHALL BE PROVIDED WITH I/O MODULES ON A FIXTURE GROUPING BASIS. WHERE FIXTURES ARE LOCATED IN HARD CEILING AREAS THE I/O MODULE SHALL BE REMOTE MOUNTED IN ACCESSIBLE AREA MODULE FOR EACH CIRCUIT SHALL BE LOCATED OUTDOORS THE I/O MODULE FOR EACH CIRCUIT SHALL BE LOCATED IN THE MAIN ELECTRICAL ROOM ADJACENT TO THE PANEL SERVING THE LIGHTING. REFER TO "AUTOMATED LIGHTING CONTROL SYSTEM - TYPICAL ONE-LINE DIAGRAM" AND SPECIFICATIONS FOR FURTHER INFORMATION.
10. UNLESS OTHERWISE INDICATED, ALL FINISHES SHALL BE SELECTED BY THE ARCHITECT FROM STANDARD FINISH OPTIONS OR RAL FINISH PALETTE (DENOTED AS *FBA*).
11. ELECTRICAL CONTRACTOR SHALL PROVIDE PROGRAMMING SERVICES TO THE CITY OF EAST PROVIDENCE TO INCORPORATE NEW LIGHTING CONTROL "SITE" ON THE EXISTING UBIVU PLATFORM FOR THE EAST PROVIDENCE SENIOR CENTER.

TYPE	DESCRIPTION	MANUFACTURER	MODEL / SERIES	VOLTAGE	MTG.	SOURCE						DIMMING PROTOCOL	FINISH / MATERIAL	NOTES	ALTERNATE MANUFACTURERS
						TYPE	INPUT WATTAGE	INITIAL LUMENS	LUMEN MAINTENANANCE	CRI	COLOR / TEMP.				
SPL5	COLONIAL STYLE DECORATIVE LIGHT ON 12FT POLE WITH UBICELL MODEL 2.0 SMART STREETLIGHT CONTROLLER. TYPE 5 DISTRIBUTION.	AMERICAN ELECTRIC LIGHTING	247L-P154-MVOLT-30K-R5-AY-BK-SCC-PR7-SS	120	POLE	LED	60	6,050	L70@ 100,000HRS	-	3000K	-	BLACK	POLE: RSAP-12-4R-188-9BC-ND-T2R-SBK-(3430)-GF120A	11
SPL3	COLONIAL STYLE DECORATIVE LIGHT ON 12FT POLE WITH UBICELL MODEL 2.0 SMART STREETLIGHT CONTROLLER. TYPE 3 DISTRIBUTION	AMERICAN ELECTRIC LIGHTING	247L-P154-MVOLT-30K-R3-AY-BK-SCC-PR7-SS	120	POLE	LED	60	5,858	L70@ 100,000HRS	-	3000K	-	BLACK	POLE: RSAP-12-4R-188-9BC-ND-T2R-SBK-(3430)-GF120A	11
SPB	PICKLEBALL COURT LIGHTING WITH UBICELL MODEL 2.0 SMART STREETLIGHT CONTROLLER.	HOLOPHANE	MGLEDM-P6-40K-MVOLT-NR-UN-BKSD-AO -PR7-UN	120	POLE	LED	230	34,676	L70@ 100,000HRS	-	4000K	-	BLACK	POLE: RSAP-16-5R-188-9BC-SGL-SBK-(3430)	11

BRANCH CIRCUIT PANELS SCHEDULE

NOTES:
1. NOTES 2 & 3 APPLY TO ALL PANEL BOARDS.
2. PROVIDE WITH LUGS TO ACCOMMODATE CONDUCTOR SIZES AS IDENTIFIED ON THE RISER DIAGRAM FOR SUPPLY AND ALL LOADS. (THIS NOTE APPLICABLE TO ALL TERMINATIONS.)
3. PANEL SHALL BE FULLY RATED UNLESS NOTE 5 REFERENCED IN THE NOTES SECTION.
4. NOTES 5-10 ARE OPTIONS WHICH SHALL BE SPECIFICALLY INDICATED IN NOTES SECTION FOR INCLUSION.
5. INTERRUPTING CAPABILITY BY UL LISTED SERIES RATED SYSTEM. PROVIDE NAMEPLATES IN ACCORDANCE WITH NEC REQUIREMENTS IDENTIFYING SERIES RATING APPLICATION.
6. PROVIDE WITH 120V SHUNT TRIP MAIN CIRCUIT BREAKER.
7. BRANCH GROUND FAULT CIRCUIT INTERRUPTER BREAKER RATED FOR 4-6 ma FOR PERSONAL PROTECTION; QTY. AND RATING IN PARENTHESIS. I.E.: 7 (4-20/1)
8. BRANCH GROUND FAULT EARTH LEAKAGE BREAKER RATED FOR 30 ma FOR EQUIPMENT PROTECTION; QTY. AND RATING IN PARENTHESIS. I.E.: 8 (2-30/1)
9. BRANCH SHUNT TRIP BREAKER (120V COIL); QTY. AND RATING IN PARENTHESIS. I.E.: 9 (3-60/1)
10. BRANCH ARC FAULT CIRCUIT INTERRUPTER BREAKER; QTY. AND RATING IN PARENTHESIS. I.E.: 10 (8-20/1)

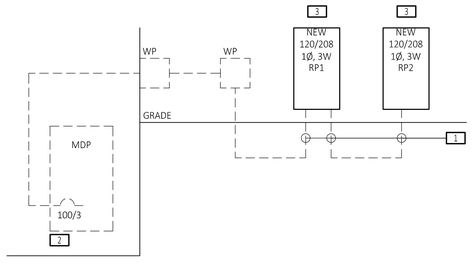
DESIGNATION	LOCATION	MTG.	ELECTRICAL CHARACTERISTICS							200% NEUTRAL BUS	ISOLATED GROUND BUS	FEED THRU LUGS	SURGE PROTECTIVE DEVICE	TOTAL POLES	BRANCH CIRCUIT BREAKERS																		NOTES
			BUS AMPS	MAIN MCB	MAIN MLO	VOLTAGE	PHASE	WIRE	AIC						1 POLE								2 POLE								3 POLE							
															15	20	25	30	35	40	45	50	60	15	20	25	30	35	40	45	50	60	15	20	25	30	35	40	45	50	60	
RP1	OUTSIDE	SURFACE	100	100	-	120/208	1	3	10K	NO	NO	NO	YES	30	-	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1-100A-2P
RP2	OUTSIDE	SURFACE	100	-	100	120/208	1	3	10K	NO	NO	NO	YES	24	-	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



1 EXISTING ONE-LINE POWER DIAGRAM
NOT TO SCALE

KEYED SHEET NOTES

1. PROVIDE NEW CONDUIT EXPANSION FITTINGS AND EXTEND EXISTING CONDUITS TO NEW PANELBOARDS.
2. ONLY 2 POLES OF EXISTING 3 POLE CIRCUIT BREAKER IS UTILIZED.
3. MODIFY PANELBOARD STAND AS REQUIRED TO ACCOMODATE NEW WORK.



2 NEW ONE-LINE POWER DIAGRAM
NOT TO SCALE

Creative
DIVISION OF THE RISE GROUP
HVAC - ELECTRICAL - PLUMBING - FIRE PROTECTION
DIBIA CREATIVE ENVIRONMENT CORP.
195 FRANCES AVE BLDG. #2 CRANSTON RI 02910
OFFICE - 401-438-7733

CONSULTANTS

SEALS 12/14/2022

STEVEN COSTA
No. 7813
REGISTERED PROFESSIONAL ENGINEER (ELECTRICAL)

REVISIONS

Mark	Date	Description
-	-	-

PROJECT

EAST PROVIDENCE SENIOR CENTER
610 WATERMAN AVENUE
EAST PROVIDENCE, RI 02914

SHEET TITLE

SCHEDULES

Project No.	20220065
Designed by	S.C.
Drawn by	D.D.
Checked by	S.C.
Issued on	12/13/2022
Scale	AS NOTED

SHEET

E2.0

ELECTRICAL SPECIFICATIONS:

PART 1 - GENERAL

1.1. GENERAL REQUIREMENTS:
ALL WORK SHALL BE IN ACCORDANCE WITH THE ARRANGEMENT, DETAILS AND LOCATION AS INDICATED ON THE CONTRACT DOCUMENTS, REFERENCE DRAWINGS AND ANY SUPPLEMENTAL ADDENDA, BULLETINS OR DRAWINGS ISSUED BY THE ARCHITECT/ENGINEER. LAYOUTS ARE DIAGRAMMATIC AND FINAL ARRANGEMENT OF EQUIPMENT SHALL SUIT FIELD CONDITIONS. REFER TO ALL DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THIS PROJECT FOR THE EXACT LOCATION OF ALL EQUIPMENT AND REQUIRED MOUNTING HEIGHTS PRIOR TO THE START OF ANY ROUGHING. THE RIGHT IS RESERVED TO MAKE ANY REASONABLE CHANGE IN LOCATION TO OUTLETS AND EQUIPMENT PRIOR TO ROUGHING AT NO ADDITIONAL EXPENSE TO THE OWNER.

1.2. SCOPE OF WORK:
THE SCOPE OF WORK CONSISTS OF THE INSTALLATION OF ALL MATERIALS TO BE FURNISHED UNDER THIS SECTION, AND WITHOUT LIMITING THE GENERALITY THEREOF, CONSISTS OF FURNISHING ALL LABOR, MATERIALS, EQUIPMENT, STORAGE, TRANSPORTATION, RIGGING, STAGING, APPURTENANCES AND SERVICES NECESSARY AND/OR INCIDENTAL TO PROPERLY COMPLETE ALL ELECTRICAL WORK SHOWN ON THE DRAWINGS, AS DESCRIBED IN THE SPECIFICATIONS, OR AS REASONABLY INFERRED FROM EITHER, IN THE OPINION OF THE ARCHITECT/ENGINEER AS BEING REQUIRED.

1.3. SITE VISIT:
BIDDERS ARE ADVISED TO VISIT THE SITE AND INFORM THEMSELVES AS THE TO CONDITIONS UNDER WHICH THIS WORK WILL BE PERFORMED. FAILURE TO DO SO WILL, IN NO WAY, RELIEVE THE SUCCESSFUL BIDDER FROM THE RESPONSIBILITY OF FURNISHING ANY MATERIALS OR PERFORMING ANY WORK IN ACCORDANCE WITH THE TRUE INTENT AND MEANING OF THE DRAWINGS AND SPECIFICATIONS. NO COMPENSATION WILL BE GRANTED FOR ADDITIONAL WORK CAUSED BY UNFAMILIARITY WITH SITE CONDITIONS THAT ARE VISIBLE OR READILY CONSTRUED BY AN EXPERIENCED OBSERVER. FIELD VERIFY MEASUREMENTS AND CIRCUITING ARRANGEMENTS THAT ARE SHOWN ON DRAWINGS. ARRANGEMENTS SHALL BE MADE WITH THE OWNER PRIOR TO THE VISIT FOR INSPECTION OF THE WORK AREA(S).

1.4. RELATED WORK (BY ELECTRICAL CONTRACTOR):
1. THE FOLLOWING RELATED WORK IS INCLUDED UNDER THIS SECTION:

A. CUTTING AND PATCHING.
B. ALLOWANCES.
C. EXCAVATION, BACKFILL, PUMPING, AND SHORING.
D. CONCRETE WORK.
E. HANDHOLES.
F. ACCESS PANELS.
G. FIELD PAINTING.

1.5. DEFINITIONS:
A. "CONCEALED" SHALL BE DEFINED AS AREAS WHERE CONDUIT AND WIRING IS LOCATED IN CHASES, WALLS, PARTITIONS, SHAFTS, AND ABOVE FINISHED CEILINGS.
B. "UNDERGROUND" SHALL MEAN CONDUIT AND WIRING EXTERIOR TO OR WITHIN THE BUILDING THAT IS BURIED. ALL OTHER CONDUIT AND WIRING SHALL BE CONSIDERED "EXPOSED".
C. "EXPOSED" SHALL MEAN CONDUIT AND WIRING RUN ON THE SURFACE OF THE BUILDING CONSTRUCTION.
D. "CONDUIT" SHALL MEAN IN ADDITION TO CONDUIT, ALL FITTINGS, HANGERS AND OTHER ACCESSORIES RELATING TO SUCH CONDUIT SYSTEMS.
E. "WIRING" SHALL MEAN WIRE, RACEWAY, BOXES AND FITTINGS.
F. "PROVIDE" SHALL MEAN "PROVIDED COMPLETE IN PLACE" THAT IS, "FURNISHED AND INSTALLED."

1.6. CODES, REGULATIONS, AND PERMITS:
ALL WORK UNDER THIS SECTION SHALL CONFORM TO THE LATEST EDITIONS OF THE LOCAL STATE BUILDING CODE, THE STATE ELECTRICAL CODE, NFPA, ANSI/NECA INSTALLATION STANDARDS, AND ALL OTHER LOCAL GOVERNING CODES. GIVE NOTICES, FILE PLANS, OBTAIN AND PAY FOR PERMITS AND LICENSES AND OBTAIN NECESSARY APPROVALS FROM AUTHORITIES HAVING JURISDICTION. PERMITS SHALL BE SECURED THROUGH THE CITY. DELIVER CERTIFICATES OF INSPECTIONS TO ARCHITECT/ENGINEER. NO WORK SHALL BE COVERED BEFORE EXAMINATION AND APPROVAL BY ARCHITECT/ENGINEER AND THE AUTHORITIES HAVING JURISDICTION. IMPERFECT OR CONDEMNED WORK SHALL BE REPLACED WITH WORKING CONFORMING TO REQUIREMENTS AT NO ADDITIONAL COST TO THE OWNER, SUBJECT TO APPROVAL OF THE ARCHITECT/ENGINEER. IF WORK IS COVERED BEFORE DUE INSPECTION AND APPROVAL THE ELECTRICAL CONTRACTOR SHALL PAY COSTS OF UNCOVERING THE INSTALLED WORK, WHETHER IT MEETS CONTRACT REQUIREMENTS OR NOT.

1.7. MATERIALS:
ALL MATERIALS AND EQUIPMENT FURNISHED UNDER THIS SECTION SHALL BE NEW AND OF THE BEST GRADE FOR THE SERVICE INTENDED. IT IS NOT INTENDED THAT THESE SPECIFICATIONS OR DRAWINGS SHOW EVERY CONDUIT, FITTING, AND APPURTENANCE. ALL SUCH PARTS NECESSARY FOR THE COMPLETE EXECUTION OF THE WORK, IN ACCORDANCE WITH THE BEST PRACTICES OF THE TRADE AND TO THE SATISFACTION OF THE ARCHITECT/ENGINEER SHALL BE PROVIDED WHETHER THESE PARTS MAY HAVE SPECIFICALLY MENTIONED OR NOT, OR INDICATED ON THE DRAWINGS.

1.8. SHOP DRAWINGS:
WHERE THE DRAWINGS OR SPECIFICATIONS LIST SPECIFIC BRANDS OR CATALOG NUMBERS, ONLY THESE PRODUCTS MAY BE USED UNLESS THE WORDS: "OR APPROVED EQUAL" OR "BUT ARE NOT LIMITED TO" ARE INCLUDED. THE ENGINEER'S REVIEW IS FOR GENERAL CONFORMANCE WITH THE DESIGN INTENT. MARKINGS OR COMMENTS SHALL NOT BE CONSTRUED AS RELIEVING THE ELECTRICAL CONTRACTOR FROM COMPLIANCE WITH DRAWINGS AND SPECIFICATIONS, NOR DEPARTURES THEREOF. THE ELECTRICAL CONTRACTOR REMAINS RESPONSIBLE FOR DETAILS AND ACCURACY, FOR CONFORMING AND CORRECTNESS OF ALL QUANTITIES AND DIMENSIONS, FOR SELECTING FABRICATING PROCESSES, FOR TECHNIQUES OR ASSEMBLY, AND FOR PERFORMING THEIR WORK IN A SAFE MANNER. DEVIATIONS TO SPECIFIED MATERIALS SHALL BE AT THE SOLE RISK OF THE ELECTRICAL CONTRACTOR, WHO SHALL BE RESPONSIBLE FOR ALL ASSOCIATED CHANGES TO THIS AND OTHER TRADES. WITHIN THIRTY (30) DAYS AFTER THE DATE OF NOTICE TO PROCEED, AND BEFORE THE PROCUREMENT OF ANY MATERIALS AND EQUIPMENT, SUBMIT FOR APPROVAL A COMPLETE ITEMIZED LIST OF ALL THE MATERIALS AND EQUIPMENT INCORPORATED UNDER THIS SECTION. ALL SHOP DRAWING SUBMITTALS SHALL BE COMPLETE AND INCLUDE ALL PART 2 PRODUCTS AND VFDS OF THIS SPECIFICATION AND BE CLEARLY IDENTIFIED. NO CONSIDERATION WILL BE GIVEN TO PARTIAL SUBMITTALS, EXCEPT WITH PRIOR APPROVAL.

1.9. OPERATIONS AND MAINTENANCE MANUALS:
1. AT LEAST TWO (2) WEEKS PRIOR TO THE TIME OF TURNING OVER HIS CONTRACT TO THE OWNER FOR USE AND OCCUPANCY OR SUBSTANTIAL COMPLETION, SECURE AND DELIVER TO THE ARCHITECT/ENGINEER THREE (3) COMPLETE INDEXED BOUND FILES CONTAINING APPROVED OPERATING AND MAINTENANCE MANUALS, SHOP DRAWINGS, AND OTHER DATA AS FOLLOWS:
   A. OPERATION DESCRIPTION OF ALL SYSTEMS.
   B. COMPLETE SHOP DRAWINGS OF ALL EQUIPMENT.
   C. PREVENTIVE MAINTENANCE INSTRUCTIONS FOR ALL SYSTEMS.
   D. SPARE PARTS LISTS OF ALL SYSTEM COMPONENTS.
   E. NAMES, ADDRESS AND TELEPHONE NUMBERS OF ALL SUPPLIERS OF THE SYSTEMS.
2. NON-AVAILABILITY OF OPERATING AND MAINTENANCE MANUALS OR INACCURACIES THEREIN MAY BE GROUNDS FOR CANCELLATION AND POSTPONEMENT OF ANY SCHEDULED FINAL INSPECTION BY THE OWNER UNTIL SUCH TIME AS THE DISCREPANCY HAS BEEN CORRECTED AND/OR RETAINAGE OF SUFFICIENT MONIES TO PREPARE SAME.

1.10. RECORD DRAWINGS:
OWNER'S RECORD DRAWINGS SHALL BE UPDATED AS THE PROJECT PROGRESSES. MAINTAIN DOCUMENTS IN SAFE, DRY LOCATION. INDICATE CLEARLY AND ACCURATELY ANY CHANGES NECESSITATED BY FIELD CONDITIONS AND DIMENSION ALL CONCEALED RACEWAYS. THE ELECTRICAL CONTRACTOR SHALL DELIVER THE COMPLETED REPRODUCIBLE RECORD DRAWINGS AND CAD DISKS PROPERLY TITLED AND DATED TO ARCHITECT/ENGINEER. THESE RECORD DRAWINGS SHALL BECOME THE PROPERTY OF THE OWNER.

1.11. CHANGE ORDERS/PROPOSAL REQUEST:
A. DURING THE COURSE OF CONSTRUCTION, CHANGES IN THE WORK MAY OCCUR. WHEN A SIGNIFICANT CHANGE IS TO BE MADE, A PROPOSAL REQUEST WILL BE ISSUED.
B. PROVIDE A COMPLETE COST BREAKDOWN WHEN RESPONDING TO EACH PROPOSAL REQUEST.
C. EACH ITEM OF WORK TO BE PRICED SEPARATELY.
D. EACH LINE ITEM TO BE BROKEN DOWN INCLUDING QUANTITIES AND LISTING SEPARATELY LABOR AND MATERIAL.
E. BOTH CREDITS AND EXTRAS SHALL BE SEPARATELY AND CLEARLY QUANTIFIED.
F. ALLOWANCES FOR OVERHEAD AND PROFIT SHALL BE AS LISTED IN THE SUPPLEMENTARY CONDITIONS.
G. IF YOU BECOME AWARE OF A FIELD CONDITION, CODE REQUIREMENT, ERROR, OR OMISSION THAT YOU FEEL SHOULD RESULT IN A CHANGE TO THE WORK, PLEASE CONTACT THE ENGINEER FOR DISCUSSION. THE ENGINEER MAY BE ABLE TO CLARIFY THE SITUATION AND AVOID UNNECESSARY PAPERWORK.
H. IT IS RECOGNIZED THAT THE OWNER BENEFITS WHEN THE CONSTRUCTION PROCESS IS A COOPERATIVE EFFORT INSTEAD OF AN ADVERSARIAL RELATIONSHIP. REASONABLE GIVE-AND-TAKE ALLOWS THE CONSTRUCTION PROCESS TO MOVE SMOOTHLY. YOUR EFFORTS IN THIS REGARD WILL BE APPRECIATED BY ALL PARTIES.

1.12. GUARANTEE AND SERVICE:
THE ELECTRICAL CONTRACTOR SHALL GUARANTEE THE PERFORMANCE OF THE INSTALLATION AND ALL EQUIPMENT INCLUDED IN THIS SECTION IN WRITING FOR ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE BY THE ENGINEER. SHOULD ANY DEFECTS IN MATERIALS OR WORKMANSHIP APPEAR DURING THIS PERIOD, THEY SHALL BE CORRECTED OR REPLACED BY THE ELECTRICAL CONTRACTOR TO THE SATISFACTION OF THE ARCHITECT/ENGINEER, AT NO ADDITIONAL COST TO THE OWNER.

1.13. COORDINATE WITH OTHER TRADES:
CONFER WITH OTHER TRADES AND FURNISH IN WRITING TO THE ARCHITECT/ENGINEER ANY INFORMATION NECESSARY TO PERMIT THE WORK OF ALL TRADES TO BE INSTALLED SATISFACTORILY AND WITH THE LEAST POSSIBLE INTERFERENCE OR DELAY. WORK INSTALLED THAT CREATED INTERFERENCE OR RESTRICTS ACCESS REQUIRED BY CODE OR TO CONDUCT MAINTENANCE AND/OR ADJUSTMENTS SHALL BE MODIFIED AT NO ADDITIONAL COST TO THE OWNER. FURNISH TO OTHER TRADES ANY INFORMATION REQUIRED FOR THE PURPOSE OF COORDINATING ADJACENT WORK.

1.14. SLEEVES, INSERTS, AND SUPPORTS:
THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL INSERTS, CONDUIT HANGERS, ANCHORS AND STEEL SUPPORTS NECESSARY FOR THE SUPPORT AND INSTALLATION OF ALL ELECTRICAL EQUIPMENT.

1.15. CUTTING AND PATCHING:
INCLUDE ALL CORING, CUTTING, PATCHING AND FIREPROOFING NECESSARY FOR THE EXECUTION OF THIS SECTION. STRUCTURAL ELEMENTS SHALL NOT BE CUT WITHOUT WRITTEN APPROVAL OF THE ARCHITECT/ENGINEER. REPAIR AND PATCH AROUND THE WORK SPECIFIED HEREIN TO MATCH THE EXISTING ADJACENT SURFACES TO THE SATISFACTION OF THE ENGINEER. FILL AND PATCH ALL OPENINGS OR HOLES LEFT IN THE EXISTING STRUCTURES BY THE REMOVAL OF EXISTING EQUIPMENT THAT IS PART OF THIS SECTION OF THE SPECIFICATIONS. APPLY FIRESTOPPING TO CABLE AND RACEWAY SLEEVES AND OTHER PENETRATIONS OF FIRE-RATED FLOOR AND WALL ASSEMBLIES TO RESTORE ORIGINAL UNDISTURBED FIRE-RESISTANCE RATINGS OF ASSEMBLIES.

1.16. HOISTING, SCAFFOLDING AND PLANKING:
INCLUDE THE FURNISHING, SETUP-UP AND MAINTENANCE OF ALL HOISTING MACHINERY, CRANES, SCAFFOLDS, STAGING AND PLANKING AS REQUIRED FOR THE EXECUTION OF WORK FOR THIS SECTION.

1.17. SAFETY REQUIREMENTS:
LIFE SAFETY AND ACCIDENT PREVENTION SHALL BE A PRIMARY CONSIDERATION. COMPLY WITH ALL SAFETY REQUIREMENTS OF THE OWNER AND OSHA THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD OF THE PROJECT. FURNISH, PLACE AND MAINTAIN PROPER GUARDS AND ANY OTHER NECESSARY CONSTRUCTION REQUIRED TO SECURE SAFETY OF LIFE AND PROPERTY.

1.18. ACCESSIBILITY:
ALL WORK PROVIDED UNDER THIS SECTION SHALL BE PROVIDED SO THAT PARTS REQUIRING PERIODIC INSPECTION, MAINTENANCE AND REPAIR ARE READILY ACCESSIBLE, WORK OF THIS TRADE SHALL NOT INFRINGE UPON THE CLEARANCES OF OTHER TRADES.

1.19. PROTECTION OF WORK AND PROPERTY:
THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE CARE AND THE PROTECTION OF ALL WORK INCLUDED UNDER THIS SECTION UNTIL THE COMPLETION AND FINAL ACCEPTANCE OF THIS PROJECT. PROTECT ALL EQUIPMENT AND MATERIALS FROM DAMAGE FROM ALL CAUSES INCLUDING, BUT NOT LIMITED TO, FIRE, VANDALISM, AND THEFT. ALL MATERIALS AND EQUIPMENT DAMAGED OR STOLEN SHALL BE REPAIRED OR REPLACED WITH EQUAL MATERIAL OR EQUIPMENT AT NO ADDITIONAL COST TO THE OWNER. PROTECT ALL EQUIPMENT, OUTLETS AND OPENINGS, WITH TEMPORARY PLUGS, CAPS AND COVERS. PROTECT WORK AND MATERIALS OF OTHER TRADES FROM DAMAGE THAT MIGHT BE CAUSED BY WORK OR WORKMEN UNDER THIS SECTION AND MAKE GOOD ON DAMAGE THUS CAUSED. DAMAGED MATERIALS SHALL BE REMOVED FROM THE SITE; DAMAGE CAUSED BY THE ELECTRICAL CONTRACTOR DURING INSTALLATION SHALL BE REPAIRED AND/OR REPLACED AT THIS CONTRACTOR'S EXPENSE TO THE COMPLETE SATISFACTION OF THE BUILDING OWNER.

1.20. PROJECT CLOSEOUT:
A CERTIFICATE OF COMPLETION SHALL BE ISSUED BY THE ELECTRICAL CONTRACTOR INDICATING THAT THE INSTALLATION IS IN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS AND ALL APPLICABLE LOCAL, STATE AND FEDERAL STATUTES AND CODES. FINAL INSPECTION BY THE ENGINEER SHALL BE CONDUCTED AFTER RECEIPT OF THE CERTIFICATE OF COMPLETION. NO LIFE SAFETY DEFICIENCIES IN THE EGRESS OR EXIT LIGHTING SYSTEMS, FIRE ALARM SYSTEM, OR THE EMERGENCY POWER SYSTEM SHALL BE PRESENT WHEN REQUESTING FINAL INSPECTION. PREMATURE REQUESTS FOR FINAL INSPECTIONS THAT REQUIRE REINSPECTION OF DEFICIENT ITEMS WILL RESULT IN BACK CHARGES OF THE COSTS ASSOCIATED WITH THE REINSPECTION.

1.21. DRAWINGS AND SPECIFICATIONS:
THE DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY EACH TO THE OTHER, AND ANY LABOR OR MATERIAL CALLED FOR BY EITHER, WHETHER OR NOT BY BOTH, OR NECESSARY FOR THE SUCCESSFUL OPERATION OF ANY COMPONENTS SHALL BE PROVIDED. BEFORE INSTALLING ANY WORK, VERIFY THAT IT DOES NOT INTERFERE WITH THE CLEARANCES REQUIRED FOR OTHER WORK. INSTALLED WORK WHICH INTERFERES WITH EXISTING NECESSARY SERVICES SHALL BE MODIFIED AS DIRECTED BY THE ENGINEER, AT NO ADDITIONAL COST TO THE OWNER. BE FAMILIAR WITH THE DRAWINGS AND SPECIFICATIONS OF ALL OTHER TRADES TO PREVENT INTERFERENCES AND ASSURE COMPLETE COORDINATION. IF THERE ARE ANY DISCREPANCIES BETWEEN THE ELECTRICAL DRAWINGS AND SPECIFICATIONS REQUEST CLARIFICATION FROM THE ENGINEER PRIOR TO START AND OR CONTINUATION OF ANY WORK OR THE PROCUREMENT OF ANY MATERIALS AND EQUIPMENT.

PART 2 - PRODUCTS

2.1. WIRE AND CABLE:
WIRING SHALL BE TYPE THHN/THWN OR XHHW, MINIMUM OF #12 AWG SOLID COPPER WITH CONDUCTIVITY OF NOT LESS THAN 98% OF THE ANSI STANDARD FOR ANNEALED COPPER, UL LISTED FOR BUILDING WIRE 90 DEGREES CELSIUS. WET OR DRY LOCATIONS RATED FOR 600V SERVICE. MC AND FAMC CABLING CAN BE USED WHERE CONCEALED. CONDUCTORS LARGER THAN #10 SHALL BE STRANDED. COLOR CODING SHALL BE CONSISTENT THROUGHOUT.

2.2. CONDUIT:
INDOOR ELECTRIC METALLIC TUBING SHALL BE ELECTRO-GALVANIZED SHERARDIZED STEEL. WHERE EXPOSED, ALL WIRING SHALL BE INSTALLED IN CONDUIT. ALL ROUTING OF CONDUIT SHALL BE RUN PERPENDICULAR TO BUILDING WALLS. ALL ELECTRIC METALLIC TUBING SHALL BE UTILIZED WITH STEEL SET SCREW TYPE FITTINGS. CONDUIT SHALL BE SUPPORTED FROM BUILDING STRUCTURE; AND SHALL BE INDEPENDENT OF DUCTS, PIPES, CEILING AND THEIR SUPPORTING MEMBERS.
UNDERGROUND:
PROVIDE SCHEDULE 40 PVC CONDUIT MINIMUM WITH FITTINGS AND EXPANSION FITTINGS FOR A COMPLETE INSTALLATION.
OUTDOOR EXPOSED:
PROVIDE SCHEDULE 80 PVC CONDUIT MINIMUM WITH FITTINGS AND EXPANSION FITTINGS FOR A COMPLETE INSTALLATION.

2.3. MISCELLANEOUS CONDUIT FITTINGS:
PROVIDE WATER-TIGHT GLAND SEALING ASSEMBLIES WITH PRESSURE BUSHINGS EQUAL TO
OZ/GEDNEY TYPE WSK FOR NEW CAST-IN-PLACE INSTALLATIONS OR TYPE CSCM FOR RETROFIT (CORE DRILLING OF EXISTING WALLS) AS REQUIRED FOR BELOW GRADE WALL AND FLOOR PENETRATIONS.

2.4. WIRING DEVICES:
1. LIGHT SWITCHES:
   A. REFER TO DRAWINGS
   B. COLOR OF SWITCHES SHALL BE AS SELECTED BY ARCHITECT.

2. RECEPTACLES:
   A. DUPLEX RECEPTACLES SHALL BE SPECIFICATION GRADE GROUNDING TYPE, RATED 20 AMPERES, 125 VOLTS. RECEPTACLES SHALL BE BACK AND SIDE WIRED WITH SCREW TYPE TERMINALS HAVING SUITABLE CONDUCTOR RELEASE ARRANGEMENT. GFCI RECEPTACLES SHALL BE SPECIFICATION GRADE 20 AMPERES, 125 VOLTS.
   B. COLOR OF RECEPTACLES AND ASSOCIATED BOXES AND WEATHERPROOF "WHILE IN USE" COVERS SHALL MATCH COLOR OF OBJECT/SURFACE IT IS MOUNTED TO.

2.5. LIGHTING FIXTURES:
A. FURNISH ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR A COMPLETE INSTALLATION OF THE LIGHTING EQUIPMENT SPECIFIED ON THE LIGHTING FIXTURE SCHEDULE.
B. WHERE LIGHTING FIXTURES OTHER THAN THE SPECIFIED PRODUCTS ARE PROVIDED, THE CONTRACTOR SHALL PROVIDE LIGHT LEVEL CALCULATIONS IN ACCORDANCE WITH IESNA STANDARDS TO JUSTIFY THAT SUBSTITUTED FIXTURES ARE OR EQUAL PERFORMANCE TO THE SPECIFIED PRODUCTS (APPLIES TO ALL LIGHTING FIXTURES IN ALL SPACES).
C. WHERE SUBMITTING TO ENGINEER FOR REVIEW THE LIGHTING FIXTURE SUBMITTALS SHALL CONSIST OF THE FOLLOWING: LIGHTING FIXTURE CUT SHEET, LIGHTING FIXTURE BALLAST/DRIVER CUT SHEET, AND LIGHTING FIXTURE LAMP/LED CUT SHEET FOR EACH FIXTURE. GROUPED CUT SHEETS WILL NOT BE ALLOWED. WHEN SUBMITTING ON LED PRODUCTS PROVIDE LIGHTING FACTS, LM-79 AND LM-80 TEST REPORTS FOR REVIEW.

2.6. OUTLET BOXES:
PROVIDE OUTLET BOXES AS REQUIRED FOR ALL ELECTRICAL DEVICES AND EQUIPMENT. MINIMUM SIZE OF BOXES SHALL BE 4", 1-1/4" DEEP. ALL OUTLET BOXES SHALL BE CAST ALUMINUM, WP.

2.7. PULL BOXES, JUNCTION BOXES AND WIREWAYS:
A. PULL BOXES AND WIREWAYS SHALL BE OF CODE GAUGE GALVANIZED STEEL WITH SCREW COVERS TO MATCH. PULL BOXES AND WIREWAYS SHALL BE AS SHOWN ON CONTRACT DRAWINGS AND/OR AS REQUIRED BY THE NATIONAL ELECTRICAL CODE AND/OR JOB CONDITIONS, WITH STEEL BARRIERS SEPARATING SYSTEMS.
B. CONDUCTORS PASSING THROUGH PULL BOXES AND WIREWAYS SHALL BE IDENTIFIED TO INDICATE THEIR ORIGIN AND TERMINATION. PROVIDE NAMEPLATES FOR ALL PULL BOXES.
C. WEATHERPROOF JUNCTION BOXES INSTALLED IN GRADE SHALL BE POLYMER CONCRETE WITH GASKETED COVER, MINIMUM 6"x8".

2.8. CIRCUIT BREAKERS FOR EXISTING PANELBOARDS:
A. CIRCUIT BREAKERS SHALL BE EQUAL TO THE EXISTING CIRCUIT BREAKERS AND OF THE SAME MANUFACTURER AS THE EXISTING PANELBOARDS IN WHICH THEY ARE TO BE INSTALLED.
B. PROVIDE UPDATED TYPEWRITTEN CIRCUIT DIRECTORY CARDS INDICATING AREAS AND DEVICES SERVED BY EACH CIRCUIT IN ALL EXISTING PANELBOARDS PANELS AFFECTED BY THE WORK OF THIS PROJECT.

2.9. PANELBOARDS:
A. AT EACH LOCATION INDICATED ON THE PLANS, FURNISH AND INSTALL AN APPROPRIATE PANEL OF THE AMPACITY AND VOLTAGE RATING SHOWN ON THE DRAWINGS.
B. ALL PANELS SHALL BE OF THE SAFETY DEAD FRONT CIRCUIT BREAKER TYPE FOR SERVICE ON THREE PHASES, FOUR WIRE MAINS UNLESS OTHERWISE SPECIFIED.
C. ALL PANELS SHALL BE OF CODE GAUGE STEEL.
D. PANELS SHALL BE SURFACE OR FLUSH MOUNTED, AS INDICATED ON THE PLANS, AND INSTALLED SO THAT THE TOP CIRCUIT BREAKER IS NO MORE THAN 6'-0"ABOVE THE FINISHED FLOOR.
E. THE PANELBOARDS SHALL BEAR THE UNDERWRITERS' LABORATORIES LABEL.
F. ALL BUSES SHALL BE COPPER.
G. ALL PANELBOARDS SHALL HAVE A CIRCUIT DIRECTORY CARD MOUNTED IN A FRAME WITH PLASTIC COVER INSTALLED ON THE INSIDE OF THE DOOR.
H. ALL DIRECTORY CARDS SHALL BE PROPERLY FILLED IN, USING A TYPEWRITER, AND INDICATING AREAS AND DEVICES SERVED BY EACH CIRCUIT.
I. ALL CIRCUIT BREAKERS SHALL BE OF QUICK-MAKE AND QUICK-BREAK TYPE ON MANUAL OPERATION, TRIP-FREE, AND WITH INVERSE TIME CHARACTERISTICS AND SHALL HAVE BOLTED BUS CONNECTIONS; PLUG-IN CIRCUIT BREAKERS WILL NOT BE ALLOWED.
J. PANELBOARD TRIMS SHALL BE DOOR-IN-DOOR DESIGN.
K. TRIMS AND DOORS SHALL BE MADE OF CODE GAUGE, FULL FINISH SHEET STEEL.
L. THE TRIM AND DOORS SHALL BE FACTORY FINISHED ON BOTH SIDES.
M. ALL PANELBOARDS SHALL BE KEYED ALIKE.
N. PANELBOARDS SHALL CONTAIN CIRCUIT BREAKERS INDICATED ON PANELBOARD SCHEDULE ON THE DRAWINGS.
O. TWO AND THREE POLE BREAKERS SHALL BE COMMON TRIP TYPE.
P. ALL PANELBOARDS SHALL BE EQUIPPED WITH A NEUTRAL BAR HAVING ONE SOLDERLESS CONNECTOR FOR EACH CIRCUIT AS INDICATED AND WITH ALL REQUIRED KNOCKOUTS.
Q. NEW PANELBOARDS SHALL BE MANUFACTURED BY SQUARE D COMPANY, EATON/CUTLER-HAMMER, OR SIEMENS.

PART 3 - EXECUTION

3.1. GENERAL:
A. ALL INTERRUPTIONS AND SHUTDOWNS OF EXISTING ELECTRICAL SYSTEMS AND SERVICES SHALL BE AS SHORT AS POSSIBLE AND AT TIME AND DURATION APPROVED BY THE OWNER AND THE ENGINEER. THE ELECTRICAL CONTRACTOR SHALL INCLUDE ALL PREMIUM TIME ASSOCIATED WITH THE SYSTEM AND SERVICE INTERRUPTIONS AND SHUTDOWNS.

3.2. CLEANING, ADJUSTING, AND TESTING:
A. AT THE COMPLETION OF THE WORK, ALL PARTS OF THE INSTALLATION SHALL BE THOROUGHLY CLEANED. ALL DEVICES, EQUIPMENT, CONDUITS, AND FITTINGS SHALL BE COMPLETELY CLEANED OF GREASE, METAL CUTTINGS, DIRT WHICH MAY HAVE ACCUMULATED DURING CONSTRUCTION, AND PROTECTION COVERS.
B. ANY DISCOLORATION OR DAMAGE TO PARTS OF THE BUILDING, ITS FINISH OR FURNISHINGS DUE TO FAILING TO PROPERLY CLEAN THE ELECTRICAL SYSTEM SHALL BE REPAIRED BY THE ELECTRICAL CONTRACTOR WITHOUT COST TO THE OWNER.
C. THE ELECTRICAL CONTRACTOR SHALL TEST ALL WORK AND EQUIPMENT AS DIRECTED BY THE ARCHITECT AND AS REQUIRED BY AUTHORITIES HAVING JURISDICTION, FURNISH ALL EQUIPMENT, NECESSARY PERSONNEL AND THE ELECTRICAL POWER.
D. THE ENTIRE INSTALLATION SHALL BE TESTED FOR SHORTS, GROUNDS AND OPEN CIRCUITS AND ALL DEFECTS SHALL BE CORRECTED BEFORE ACCEPTANCE OF HIS WORK.
E. ALL WORK SHALL BE DEMONSTRATED TO BE IN PROPER OPERATING CONDITION TO THE COMPLETE SATISFACTION OF THE ARCHITECT AND OWNER.

3.3. EQUIPMENT CONNECTIONS:
THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL CONNECTIONS TO ALL EQUIPMENT REQUIRING ELECTRICAL SERVICE, INCLUDING POWER CABLES, BRANCH CIRCUIT EXTENSIONS, LIGHTING FIXTURES AND ALL OTHER EQUIPMENT AND SYSTEMS SPECIFIED OR SHOWN ON THE DRAWINGS.

3.4. GROUNDING AND BONDING:
PROVIDE GROUNDING AND BONDING METHODS IN ACCORDANCE WITH NEC CODE ARTICLE 250 AND LOCAL UTILITY COMPANY REGULATIONS.

3.5. CONDUIT WORK:
1. ALL WIRING SHALL BE INSTALLED IN HEAVY WALL GALVANIZED RIGID STEEL CONDUIT UNLESS OTHERWISE NOTED BELOW AND RUN CONCEALED EXCEPT AS INDICATED ON THE DRAWINGS.
2. BRANCH CIRCUIT WIRING IN HUNG CEILINGS, FURRED SPACES OR EXPOSED AND NOT SUBJECT TO PHYSICAL DAMAGE MAY BE INSTALLED IN ELECTRICAL METALLIC TUBING.
3. ALL EXPOSED CONDUIT WHERE INSTALLED EXPOSED BELOW THE 8' LEVEL AND SUBJECT TO PHYSICAL DAMAGE SHALL BE SCHEDULE 80 CONDUIT.
4. TYPE MC CABLE MAY BE USED WHERE REQUIRED FOR "FISHING" INTO EXISTING WALL AND CEILING CAVITIES.
5. CONDUIT EXTENSIONS IN METAL PARTITIONS MAY BE MADE WITH FLEXIBLE METAL CONDUIT, WITH GROUNDING CONDUCTOR.
6. FLEXIBLE CONNECTIONS SHALL BE A MAXIMUM OF 18" LONG AND WITH GROUNDING CONDUCTOR.
7. FLEXIBLE CONNECTIONS SHALL BE USED PRIOR TO ATTACHMENT TO EQUIPMENT HOUSINGS.
8. CONDUIT ENDS SHALL BE CUT SQUARE, THREADED AND REAMED TO REMOVE BURRS AND SHARP EDGES.
9. FIELD THREADS SHALL BE OF THE SAME TYPE AND HAVE THE SAME EFFECTIVE LENGTH AS FACTORY CUT THREADS.
10. EXCESSIVE EXPOSED THREADS WILL NOT BE ALLOWED.
11. TURNS, WHEREVER REQUIRED IN EXPOSED CONDUIT RUNS SHALL BE MADE BY THE USE OF FACTORY-MADE BENDS, OR FIELD MADE BENDS.
12. OFFSETS AND BENDS FOR CHANGES IN ELEVATION OF EXPOSED CONDUIT RUNS SHALL BE MADE AT WALLS OR BEAMS AND NOT IN OPEN SPACES BETWEEN WALLS OR BEAMS.
13. CONDUITS SHALL BE ROUTED SO AS NOT TO INTERFERE WITH THE OPERATION OF MAINTENANCE OF ANY EQUIPMENT.
14. THE ENTIRE JOB SHALL BE DONE IN A NEAT AND WORKMANLIKE MANNER.
15. STEEL SUPPORTS OR RACKS SHALL BE GALVANIZED STEEL CHANNEL AND FITTINGS, UNISTRUT, KINDORF, HUSKY PRODUCTS COMPANY, OR EQUAL.
16. ALL CONDUIT WORK SHALL BE CAREFULLY CLEANED AND DRIED INSIDE BEFORE THE INSTALLATION OF CONDUCTORS.
17. WIRE SHALL NOT BE PULLED INTO CONDUIT SYSTEM UNTIL CONDUIT SYSTEM IS COMPLETE.
18. PLUG CONDUIT ENDS TO EXCLUDE DUST, MOISTURE, PLASTER OR MORTAR WHILE INSTALLATION IS UNDER CONSTRUCTION.
19. NO LUBRICANTS OR CLEANING AGENTS WHICH MIGHT HAVE A DELETERIOUS EFFECTS ON CONDUCTOR COVERINGS SHALL BE USED FOR DRAWING CONDUCTORS INTO RACEWAYS.
20. DRAWINGS, IN RELATION TO ROUTING OF CONDUITS, ARE DIAGRAMMATIC.
21. THE NUMBER AND SIZE OF CONDUITS AND WIRE SHALL BE FURNISHED AND INSTALLED AS INDICATED BY THE DRAWINGS.
22. CONDUITS SHALL BE ROUTED IN THE FIELD SO AS TO BE COORDINATED WITH THE BUILDING STRUCTURE.
23. CONCEALED CONDUIT SHALL BE AS SHORT AND DIRECT AS POSSIBLE.
24. EXPOSED CONDUIT SHALL BE RUN IN STRAIGHT LINES PARALLEL TO WALLS, BEAMS AND COLUMNS AND WITH RIGHT ANGLE BENDS AND STEEL THREADED CONDUIT FITTINGS.
25. CONDUITS PASSING THROUGH FLOORS, WALLS AND BEAMS SHALL BE OF SUCH SIZE, NUMBER AND IN SUCH LOCATIONS SO AS NOT TO IMPAIR THE STRENGTH OF THE CONSTRUCTION.
26. PARTICULAR ATTENTION SHALL BE GIVEN TO THE INSTALLATION OF CONDUITS AT GROUPED AREAS, SUCH AS PANELBOARD, CABINET AND PULL BOX ENTRANCES.
27. ALL METAL CONDUIT BURIED IN THE EARTH OR FILL SHALL BE COATED WITH TWO COATS OF HEAVY ASPHALT PAINT OVER ITS ENTIRE LENGTH, INCLUDING COUPLINGS.
28. RACEWAYS IN CEILING SPACES SHALL BE ROUTED IN SUCH AN APPROVED MANNER AS TO ELIMINATE OR MINIMIZE THE NUMBER OF JUNCTION BOXES REQUIRED, BUT ALSO SHALL BE ROUTED IN AN ORDERLY AND ORGANIZED MANNER.
29. SUPPORT OF CONDUITS BY USE OF WIRE IS STRICTLY PROHIBITED.
30. CONDUITS SHALL BE SUPPORTED AND SECURED BY CONDUIT SUPPORT DEVICES.
31. WHERE RIGID METAL CONDUIT IS THREADED IN THE FIELD, A STANDARD CONDUIT CUTTING DIE PROVIDING 3/4" TAPER PER FOOT SHALL BE EMPLOYED.
32. THREADLESS COUPLING SHALL NOT BE USED ON RIGID METAL CONDUIT EXCEPT WHERE SPECIFICALLY ALLOWED BY THE ENGINEER.
33. RUNNING THREADS SHALL NOT BE USED ON RIGID METAL CONDUIT.
34. CONDUIT WORK SHALL BE INSTALLED IN SUCH A MANNER TO KEEP EXPOSED THREADS TO AN ABSOLUTE MINIMUM, AND IN NO CASE SHALL MORE THAN THREE THREADS BE LEFT EXPOSED AFTER THE CONDUIT WORK IS MADE UP TIGHT.
35. THIS REQUIREMENT APPLIES TO ALL CONDUIT WORK, INCLUDING CONDUIT BURIED IN EARTH OR FILL OR IN CONCRETE.
36. MINIMUM SIZE CONDUIT SHALL BE 3/4" NOMINAL TRADE SIZE.
37. A MINIMUM 3/16" DIAMETER TWISTED NYLON PLASTIC TYPE FISH CORD SHALL BE FURNISHED AND INSTALLED IN ALL RACEWAYS.
38. PROVIDE A TAG ON EACH END OF FISH CORD INDICATING THE LOCATION OF THE OTHER END.

3.6. FIRE STOPPING:
1. ELECTRICAL INSTALLATIONS IN HOLLOW SPACES, VERTICAL SHAFTS AND VENTILATION OR AIR HANDLING DUCTS SHALL BE SO MADE THAT THE POSSIBLE SPREAD OF FIRE OR PRODUCTS OF COMBUSTION WILL NOT BE SUBSTANTIALLY INCREASED.
2. OPENINGS AROUND ELECTRICAL PENETRATIONS THROUGH FIRE-RESISTANCE RATED WALLS, PARTITIONS, FLOORS OR CEILINGS SHALL BE FIRESTOPPED USING APPROVED METHODS TO MAINTAIN THE FIRE-RESISTANCE RATING.

3.7. IDENTIFICATION:
1. NAMEPLATES SHALL BE FURNISHED AND INSTALLED ON THE PANELBOARDS, , JUNCTION BOXES, CABINETS FOR ALL SPECIAL PURPOSE SWITCHES, AND LIGHTING CONTROLS FURNISHED UNDER THIS CONTRACT, TO DESIGNATE THE EQUIPMENT CONTROLLED AND FUNCTION.
2. NAMEPLATES SHALL BE LAMINATED WHITE BAKELITE WITH 1/4" HIGH BLACK RECESSED LETTERS.
3. NAMEPLATES SHALL BE SECURELY ATTACHED TO THE EQUIPMENT WITH GALVANIZED SCREWS OR RIVETS.
4. ADHESIVES OR CEMENTS WILL NOT BE PERMITTED.
5. ALL PULL BOXES AND JUNCTION BOXES SHALL BE IDENTIFIED AS TO SYSTEM AND FUNCTION BY MEANS OF BLACK FIBRE PEN.

Creative
DIVISION OF THE RISE GROUP
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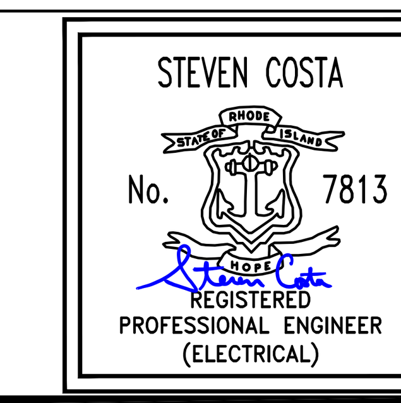
CONSULTANTS

SEALS 12/14/2022



REVISIONS

Mark	Date	Description
-	-	- -

PROJECT

EAST PROVIDENCE SENIOR CENTER
610 WATERMAN AVENUE
EAST PROVIDENCE, RI 02914

SHEET TITLE

SPECIFICATIONS

Project No.	20220065
Designed by	S.C.
Drawn by	D.D.
Checked by	S.C.
Issued on	12/13/2022
Scale	AS NOTED

SHEET

E3.0