

City of Fayetteville Staff Review Form

2021-0036

Legistar File ID

2/2/2021

City Council Meeting Date - Agenda Item Only
N/A for Non-Agenda Item

Ted Jack

1/14/2021

PARKS & RECREATION (520)

Submitted By

Submitted Date

Division / Department

Action Recommendation:

Approval of a contract with Electrical Resources Inc for installation of night sky friendly LED lighting at the Grinders Skatepark in Walker Park for \$87,920.84 with a project contingency of \$4,579.16 for a total cost of \$92,500.

Budget Impact:

2250.520.9255-5806.00	Parks Develoment
Account Number	Fund
13001.2001	Walker Park Skateboard Park Lights
Project Number	Project Title
Budgeted Item? <u>Yes</u>	Current Budget \$ 98,000.00
	Funds Obligated \$ 4,500.00
	Current Balance \$ 93,500.00
Does item have a cost? <u>Yes</u>	Item Cost \$ 87,920.84
Budget Adjustment Attached? <u>No</u>	Budget Adjustment \$ -
	Remaining Budget \$ 5,579.16

V20180321

Purchase Order Number: _____

Previous Ordinance or Resolution # _____

Change Order Number: _____

Approval Date: _____

Original Contract Number: _____

Comments:



MEETING OF FEBRUARY 2, 2021

TO: Mayor and City Council

THRU: Susan Norton, Chief of Staff
Connie Edmonston, Parks and Recreation Director

FROM: Ted Jack, Park Planning Superintendent

DATE: January 14, 2021

SUBJECT: **Approval of a contract with Electrical Resources Inc installation of night sky friendly LED lighting at the Grinders Skatepark in Walker Park for \$87,920.84 and a project contingency of \$4,579.16 for a total cost of \$92,500.**

RECOMMENDATION:

Approval of a contract with Electrical Resources Inc installation of night sky friendly LED lighting at the Grinders Skatepark in Walker Park for \$87,920.84 with a project contingency of \$4,579.16 for a total cost of \$92,500.

BACKGROUND:

The popular skateboard park has been used primarily by area youth who have frequently requested lighting. This contract will install the lighting which will be turned on by push button and turned off by timer.

DISCUSSION:

Engineering Elements PLLC, of Fayetteville, was the design consultant for this project, selected from RFQ 20-01, Selection #16. The project bid was within the initial staff estimates.

BUDGET/STAFF IMPACT:

Total project funding for this project in the CIP was \$98,000. The construction bid and all other costs have come in within budget allowing for the \$4,579.16 contingency. The LED lighting will cause a minor increase to electrical usage at Walker Park.

Attachments:

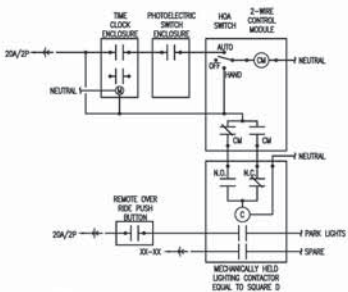
Staff Review Form
Electrical Resources, Inc. Contract/Bid Documents

GENERAL NOTES

- ELECTRICAL DRAWINGS (POWER AND LIGHTING) ARE DIAGNOSTIC AND SCHEMATIC IN NATURE. USE JUDGMENT AND CARE TO INSTALL ELECTRICAL WORK TO FUNCTION PROPERLY AND FIT WITHIN CONDUIT AND FITTINGS. ALL CONDUITS, CONDUIT AND MATERIALS NOT SPECIFICALLY SHOWN OR SPECIFIED, WHICH ARE REQUIRED FOR A COMPLETE OPERATING DEVICE OR SYSTEM ARE REQUIRED TO BE PERFORMED AND INSTALLED BY THE CONTRACTOR.
- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE (NFPA 70, CURRENT EDITION), LIFE SAFETY CODE (NFPA 101A CURRENT EDITION), UNDERGROUND FACILITIES DAMAGE PREVENTION ACT (317-28-101 ET SEQ.), AND LOCAL ELECTRICAL CODE.
- THE CONTRACTOR SHALL NOT ENGAGE IN EXCAVATION OR DEMOLITION ACTIVITIES WITHOUT HAVING FIRST NOTIFIED THE ARKANSAS ONE CALL CENTER IN ACCORDANCE WITH UNDERGROUND FACILITIES DAMAGE PREVENTION ACT. NOT ALL UTILITY COMPANIES ARE MEMBERS OF THE ARKANSAS ONE CALL SYSTEM. THE CONTRACTOR IS ASSIGNED TO CONTACT ALL NON-MEMBER UTILITIES AS WELL AS THE ONE CALL CENTER.
- UNDERGROUND UTILITIES EXIST WITHIN AND ADJACENT TO THE LIMITS OF CONSTRUCTION. SOME UTILITIES MAY HAVE BEEN RELOCATED SINCE THE TIME OF DESIGN AND THE CONTRACTOR'S NOTICE TO PROCEED. THE CONTRACTOR SHALL CONTACT THE UTILITY COMPANIES INVOLVED AND VERIFY THE LOCATION OF UNDERGROUND UTILITIES. THE CONTRACTOR SHALL MARK THE UTILITY LOCATION MARKINGS UNTIL IT IS NO LONGER NECESSARY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS OF REPAIR OR REPLACEMENT OF EXISTING UTILITIES DAMAGED DURING CONSTRUCTION.
- CONDUIT INSTALLED UNDER PAVED OR CONCRETE SURFACES SHALL BE INSTALLED BY A PUSHING OR BORING METHOD AS DIRECTED BY INSURER. PVC OR HDPE CONDUIT SHALL BE USED. PVC CONDUIT SHALL BE MARKED "FOR BURNING" OR "TRIGGER-LAMP" AS PER NEC.
- PULL BOX LIDS SHALL CLOSE FLUSH WITH OUT FINISHING ANY CONDUITS. CONDUIT LENGTHS IN PULL BOXES SHALL BE SET ACCORDINGLY. ANY CONDUITS THAT HAVE BEEN DAMAGED BY FINISHING SHALL BE COMPLETELY REPLACED AT CONTRACTOR'S EXPENSE.
- ELECTRICAL CONTRACTOR SHALL VERIFY LOCATION OF ALL ROUGH-IN AT THE PROJECT SITE. DO NOT SCALE DRAWINGS FOR EXACT LOCATION OF BOXES. FIELD VERIFY PARK MARKING LOCATIONS AS REQUIRED BY PROJECT CONDITIONS PRIOR TO ROUGH-IN.
- ALL DEVICES TO BE INSTALLED BY THIS TRADE SHALL BE COORDINATED WITH ALL TRADES DURING CONSTRUCTION TO AVOID CONFLICT AND TO PROVIDE A QUALITY PROJECT. IF YOU NOTICE ANY DISCREPANCY BETWEEN THIS WORK AND A SEPARATE TRADE, NOTIFY THE ENGINEER IMMEDIATELY FOR CORRECTION. ANY COORDINATION WORK THAT OCCURS WITHOUT APPROVAL FROM THE ENGINEER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ALL MOUNTING LOCATIONS SHALL BE CONFIRMED WITH ONES CALL AT EACH SITE.
- LIGHTING SHALL CONSIST OF POLE-MOUNTED "COUNTRY" FIXTURES MOUNTED ON POLES WITH BASE COVER. PROVIDE CONCRETE BASE WITH SUPPLEMENTAL GROUND ROD FOR LIGHTING UNIT. THE LIGHT SHALL PROVIDE MINIMUM MAINTAINED LIGHT LEVELS OF 30 FC MAXIMUM 2 FT. PROVIDE ADJUSTMENT TO PROPERTY LINES SHALL USE INTERNAL HOUSE SIDE SHELLS TO CONTROL LIGHT SPILL INTO ADJACENT PROPERTIES. THE ELECTRICAL CONTRACTOR SHALL COMPLY WITH ALL LIGHTING ORDINANCES.
- ELECTRICAL CONTRACTOR SHALL COORDINATE ALL ELECTRICAL SERVICE AND METERING REQUIREMENTS WITH THE UTILITY POWER COMPANY (CONDUITS, GROUNDING, CONCRETE PADS, TRENCHING, ETC.). PAY ALL SERVICE FEES AS NECESSARY. ARRANGE TO PROVIDE TEMPORARY CONSTRUCTION SERVICE AS NECESSARY.
- ALL ELECTRICAL COMPONENTS SHALL BE UL-LISTED.
- ALL LUMINAIRE ASSEMBLIES SHALL HAVE BUG BATING OF LID.
- ALL UNDERGROUND CONDUIT SHALL HAVE MINIMUM 24" COVER.
- UNTIL ALL CONDUIT FILL TO A MAXIMUM OF 40%.
- EQUIPMENT GROUNDING CONDUCTOR SHALL BE BONDED TO EACH POLE, GROUND ROD, LUMINAIRE AND SERVICE POINT PER NEC. SEE ARTICLES 250 AND 410.
- ALL CONCRETE PULL BOXES SHALL BE TYPE 2 HD UNLESS OTHERWISE INDICATED ON THE PLANS. PROVIDE A TYPE 2 HD CONCRETE PULL BOX WITHIN 5' OF EVERY P1 POLE LIGHT FOUNDATION.
- DEGREE OF TILT ON LUMINAIRES SHALL BE ZERO.
- ALL SPLICES SHALL BE WATERPROOF AND UL-LISTED FOR CONTINUOUS USE IN SUBVERSIBLE INSTALLATION.
- SLACK CABLES IN PULL BOXES SHALL BE 3 FEET.

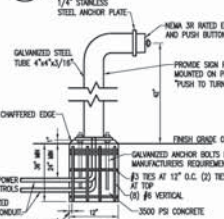
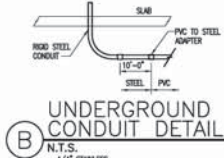
KEYED ELECTRICAL NOTES

- PROVIDE 20A/25P CIRCUIT BREAKER IN EXISTING LOADCENTER FOR NEW LIGHTS. PROVIDE 1" AND #10 IRW FROM PANEL TO NEW POLE LIGHTS.
- PROVIDE PUSH-BUTTON "ON" CONTROLLER TO TURN POLE LIGHTS ON FOR TWO HOUR PERIOD. CONTROLLER SHALL ALERT SKATE PARK OCCUPANTS 5 MINUTES PRIOR TO TURNING LIGHTS OFF WITH BLANKING OF POLE LIGHTS. REFER TO DETAIL "C" THIS SHEET.

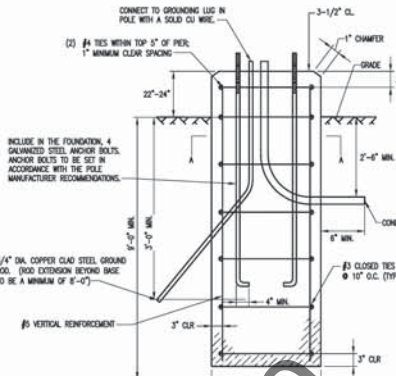


- NOTES:**
- LIGHTS SHALL ONLY ILLUMINATE WHEN PHOTO CELL IS ACTIVATED, REMOTE PUSH BUTTON IS ACTIVATED, AND IS BETWEEN THE TIMES OF 5PM AND 11PM (PROGRAMMABLE).
 - ONCE REMOTE PUSH BUTTON IS ACTIVATED, LIGHTS SHALL REMAIN ON FOR A DURATION OF TWO HOURS. FIVE MINUTES PRIOR TO LIGHTS SHIFTING OFF, LIGHTS SHALL BLINK THREE TIMES.

(D) TIME CLOCK CONTROLLED LIGHTING CONTACTOR CT1
N.T.S.

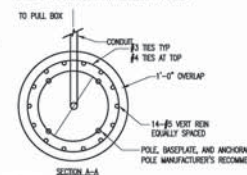


(E) LIGHTING OVERRIDE PUSH BUTTON PEDESTAL
N.T.S.



(C) POLE BASE DETAIL
N.T.S.

- FOUNDATION NOTES**
- CONCRETE FOR LIGHT POLE STRUCTURE FOUNDATION SHALL HAVE A MINIMUM OF 4000 PSI. ALL REINFORCEMENT SHALL BE DEFORMED STEEL BARS AND CONFORM TO ASTM A618 OR A615, GRADE 60.
 - CONTRACTOR SHALL PROVIDE PRE-CAST OR CAST-IN-PLACE FOUNDATIONS.
 - PROVIDE WATERPROOF CAPS FOR ANY UNUSED CONDUITS.
 - CONTRACTOR TO COORDINATE THE APPROPRIATE DIMENSION TO ASSURE THE MINIMUM CONDUIT DEPTH IS 2'-0" WHEN LEAVING FILLSIDE.
 - ALL HARDWARE SHALL BE CORROSION RESISTANT, GALVANIZED ROD STEEL.
 - CONTRACT FOUNDATION IN ACCORDANCE WITH POLE MANUFACTURER'S GUIDELINES, INCLUDING BOLT TEMPLATE LEVELING UNIT, ANCHOR BOLTS, PULL BASE-PLATE BOX COVER, AND ACCESSORIES FOR A COMPLETE INSTALLATION.
 - ELECTRICAL CONTRACTOR TO PROVIDE ALL ELECTRICAL DESIGN FOR INSTALLATION.
 - FURNISH LIGHT POLE WITH VIBRATION DAMPENER.

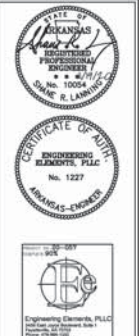


(A) ELECTRICAL SITE LIGHTING PLAN
SCALE: 1" = 10'-0"

LIGHT FIXTURE SCHEDULE

ID	DESCRIPTION	LAMP WATTS	VOLTS	LOAD (VA)	LAMP TEMP	MANU.	MODEL	MOUNTING
P1	3 HEAD SITE LIGHT	445	240	445	5700	INFCO	REAR: 20-SPD-440-57-24N-02 POLE: VS-RTM-40-9030-40	40' POLE
P1A	3 HEAD SITE LIGHT	470	240	470	5000	WESCOUGH LIGHTING LAB	REAR: NF-4-HEC-470-57-44N-54 POLE: VS-RTM-40-0001-SP-40-02	40' POLE
P2	4 HEAD SITE LIGHT	445	240	445	5700	INFCO	REAR: 20-SPD-440-57-24N-02 POLE: VS-RTM-40-9030-40	40' POLE
P2A	4 HEAD SITE LIGHT	470	240	470	5000	WESCOUGH LIGHTING LAB	REAR: NF-4-HEC-470-57-44N-54 POLE: VS-RTM-40-0001-SP-40-02	40' POLE

- NOTES:**
- P1A & P2A ARE ALTERNATE LIGHTING SELECTIONS.
 - PROVIDE ONE POLE PER GROUP OF LIGHT FIXTURES.
 - PROVIDE ALL NECESSARY HARDWARE, ELECTRICAL GEAR, AND MATERIALS TO INSTALL A FULLY FUNCTIONAL SYSTEM.
 - PROVIDE A CONTROLLER WITH BASE SYSTEM + CELL PHONE APP CONTROL TO GIVE THE CITY THE ABILITY TO REMOTELY CONTROL THE POLE LIGHTS.
 - COORDINATE WITH MANUFACTURE ON OPTIMAL LIGHTING CONFIGURATION FOR EACH POLE.



FAYETTEVILLE SKATE PARK
CITY OF FAYETTEVILLE
113 WEST MOUNTAIN STREET
FAYETTEVILLE, ARKANSAS 72701

Engineering Elements
2458 East Joyce Boulevard, Suite 1
Fayetteville, AR 72703
Phone: 479-965-1033

MECHANICAL
ELECTRICAL
PLUMBING
DESIGN CONSULTANTS

REVISIONS:

PROJECT: 20-057
DATE: 11-03-2020

ESL1.1

RACKS AND BOXES FOR ELECTRICAL SYSTEMS/2000.1 - SECTION 26050 - RACKS AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

- 1.1 SUMMARY
- A. SECTION INCLUDES:
 - 1. METAL CONDUITS AND FITTINGS
 - 2. NONMETALLIC CONDUITS AND FITTINGS
 - 3. BOXES, ENCLOSURES, AND CABINETS
 - 4. HANDHOLES AND BOXES FOR EXTERIOR UNDERGROUND CABLES
- 1.2 ACTION SUBMITTALS
- A. PRODUCT DATA FOR EACH TYPE OF PRODUCT:
 - 1. COMPLY WITH NECA 101
 - 2. COINTEGRATED THICKNESS 0.040 INCH MINIMUM
- 1.3 MATERIALS
- A. GENERAL REQUIREMENTS FOR BOXES, ENCLOSURES, AND CABINETS:
 - 1. LISTING AND LABELING: LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION.
 - 2. FITTINGS, GENERAL: LISTED AND LABELED FOR TYPE OF CONDUIT, LOCATION, AND USE.
 - 3. EXPANSION FITTINGS: PVC OR STEEL TO MATCH CONDUIT TYPE, COMPLYING WITH UL 601, RATED FOR EMPLOYMENT, CONDITIONS WHERE INSTALLED, AND INCLUDING FLEXIBLE EXTENSION BENDING JAMPER.
 - 4. COATING FOR FITTINGS FOR PVC-COATED CONDUIT: MINIMUM THICKNESS OF ZINC RICH WITH UNDERLAY SLIDES PROVIDING THREADED JOINTS.
 - 5. JOINT COMPOUND FOR GRC APPROX. AS DEFINED IN NFPA 70, BY AUTHORIZED TESTING AGENCY FOR USE IN CONDUIT ASSEMBLY, AND COMPAUNDED FOR USE TO LUBRICATE AND PROTECT THREADED JOINTS FROM CORROSION AND TO ENHANCE THEIR CONDUCTIVITY.
- 2.2 BOXES, ENCLOSURES, AND CABINETS
- A. GENERAL REQUIREMENTS FOR BOXES, ENCLOSURES, AND CABINETS:
 - 1. LISTING AND LABELING: LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION.
 - 2. SHEET METAL: OUTLET AND DEVICE BOXES: COMPLY WITH NFPA 70 1 AND UL 514.
 - 3. CAST-METAL: OUTLET AND DEVICE BOXES: COMPLY WITH NFPA 70 1, ALUMINUM TYPE 70, WITH GASKETS COVER.
 - 4. NONMETALLIC: OUTLET AND DEVICE BOXES: COMPLY WITH NFPA 70 2 AND UL 514.
- E. CABINETS:
 - 1. NECA 250, TYPE 1 OR TYPE 3R GALVANIZED-STEEL BOX WITH REMOVABLE INTERIOR PANEL AND REMOVABLE FRONT, FINISHED INSIDE AND OUT WITH MANUFACTURER'S STANDARD PAINT.
 - 2. HINGED DOOR IN FRONT COVER WITH FLUSH LATCH AND CONCEALED HINGE.
 - 3. KEY LATCH TO MATCH PANEL/DOORS.
 - 4. METAL BARRIERS TO SEPARATE WIRING OF DIFFERENT SYSTEMS AND VOLTAGE.
 - 5. ACCESSORY FEET WHERE REQUIRED FOR PRESTRAINING EQUIPMENT.
- 6. NONMETALLIC CABINETS SHALL BE LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION.

PART 3 - EXECUTION

- 3.1 FACTORY APPLICATION
- 1. REPAIR DAMAGE TO GALVANIZED FINISHES WITH ZINC-RICH PAINT RECOMMENDED BY MANUFACTURER.
- 2. REPAIR DAMAGE TO PVC COATINGS OR PAINT FINISHES WITH MATCHING TOUCHUP COATING RECOMMENDED BY MANUFACTURER.

END OF SECTION 26053

SECTION 26055 - LOW-VOLTAGE ELECTRICAL POWER CONDUIT AND SPLICES

DES.

TO VIEW NON-FIRMING EDITOR'S NOTES THAT PROVIDE GUIDANCE FOR EDITING, CLICK ON WATERMARKS/SHIELD-FILE FORMATTING/TOOLBAR/EDITOR'S NOTES. TO READ DETAILED REQUIRED TECHNICAL INFORMATION ABOUT PRODUCTS AND MATERIALS, AND COORDINATION CHECKLISTS, CLICK ON INTERLINKS/SUPPORTING INFORMATION.

REUSE THIS SECTION BY DELETING AND INSERTING TEXT TO MEET PROJECT-SPECIFIC REQUIREMENTS.

VERIFY THAT SECTION TITLES REFERENCED IN THIS SECTION ARE CORRECT FOR THE PROJECT'S SPECIFICATIONS; SECTION TITLES MAY HAVE CHANGED.

SEE "SUSTAINABLE DESIGN CONSIDERATIONS" ARTICLE IN THE EVALUATIONS FOR A DISCUSSION OF SUSTAINABLE DESIGN REQUIREMENTS THAT MAY IMPACT EDITING OF THIS SECTION.

PART 1 - GENERAL

DOUBLE-CLICK HERE TO SUMM QUESTION, COMMENT, OR SUGGESTION (Goes to the Section.)

1.1 SUMMARY

- A. SECTION INCLUDES:
 - 1. COPPER BUILDING WIRE RATED 600 V OR LESS.
 - 2. CONNECTORS, SPLICES, AND TERMINATIONS RATED 600 V AND LESS.
- B. ACTION SUBMITTALS
- A. PRODUCT DATA FOR EACH TYPE OF PRODUCT.
- B. PRODUCT SCHEDULE: IDENTIFY TYPE, USE, LOCATION, AND TERMINATION LOCATIONS.

PART 2 - PRODUCTS

- 2.1 COPPER BUILDING WIRE
- A. RETAIN THIS ARTICLE TO SPECIFY ALLOWABLE TYPES OF COPPER BUILDING WIRE; SEPARATE ARTICLES ARE INCLUDED IN THE SPECIFICATION FOR ALUMINUM BUILDING WIRE AND TYPE MC CABLE (COPPER AND ALUMINUM).
- A. DESCRIPTION: FLEXIBLE, INSULATED AND UNINSULATED, DRUM COPPER CURRENT-CARRYING CONDUCTOR WITH AN OVERALL INSULATOR LAYER OF JACKET, OR BOTH, RATED 600 V OR LESS.
- B. STANDARDS:
 - 1. LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND USE.
 - 2. HOUS COMPOSITE.
- C. CONDUCTOR AND CABLE MARKING: COMPLY WITH WIRE AND CABLE MARKING ACCORDING TO UL'S TYPE AND CABLE MARKING AND APPLICATION GUIDE.

2.2 CONDUIT INSULATION

- A. TYPE: MC-COMPLY WITH UL 83 AND UL 718.
- 2. TYPE: THIN AND TYPE THIN-2: COMPLY WITH UL 83.
- 3. TYPE: THIN AND TYPE THIN-2: COMPLY WITH NFPA 70-70.6.5.1.5-10-100 AND UL 83.

GROUNDING AND BONDING INTERNATIONAL PROFESSIONAL SOCIETY - SECTION 26055 - GROUNDING AND BONDING SYSTEMS AND EQUIPMENT

- 1.2 ACTION SUBMITTALS
- A. PRODUCT DATA FOR EACH TYPE OF PRODUCT.
- 1.3 QUALITY ASSURANCE
- A. TESTING AGENCY QUALIFICATIONS: CERTIFIED IN NECA.

PART 2 - PRODUCTS

- 2.1 SYSTEM DESCRIPTIONS
- A. ELECTRICAL COMPONENTS, MATERIALS AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION.
- B. COMPLY WITH UL 467 FOR GROUNDING AND BONDING MATERIALS AND EQUIPMENT.

2.2 CONDUCTORS

- A. INSULATED CONDUCTORS: COPPER WIRE OR CABLE INSULATED FOR 600 V UNLESS OTHERWISE REQUIRED BY APPLICABLE CODE OR AUTHORITY HAVING JURISDICTION.
- B. BARE COPPER CONDUCTORS:
 - 1. SOLID CONDUCTORS: ASTM B 3.
 - 2. STRANDED CONDUCTORS: ASTM B 3.

2.3 CONNECTORS

- A. LISTED AND LABELED BY AN AUTHORITY HAVING JURISDICTION FOR APPLICATIONS IN WHICH USED, AND FOR SPECIFIC TYPES, SIZES, AND CONFIGURATIONS OF CONDUIT AND OTHER ITEMS CONNECTED.

END OF SECTION 26055

GENERAL ELECTRICAL REQUIREMENTS 2000.1

PART 1 - GENERAL

- 1.1 SUMMARY
- A. SECTION INCLUDES:
 - 1. GROUT.
 - 2. GENERAL ELECTRICAL INSTALLATION REQUIREMENTS.
- 1.2 PRE-CONSTRUCTION SUBMITTALS
- A. SUBMIT FOR APPROVAL MANUFACTURER'S TECHNICAL DATA SHEETS INCLUDING PERFORMANCE SPECIFICATIONS FOR ALL EQUIPMENT, WIRING MATERIALS AND OTHER MANUFACTURED ITEMS. OBTAIN APPROVAL ON PRODUCT MANUFACTURER'S NOT SPECIALLY NAMED PRIOR TO MAKING SUBMITTALS.
- B. BID SUBMITTALS IN DURABLE COVERS WITH CONTENTS COMPREHENSIVELY ORGANIZED AND PROPERLY FILED.
- C. MAKE SUBMITTALS ON ALL WORK IN SECTION 26 AT ONE TIME, EXCEPT BY SPECIAL PERMISSION.
- 1.3 INTENT
- A. IT IS INTENDED THAT THE CONTRACTOR PROVIDE A COMPLETE AND OPERATING ELECTRICAL SYSTEM INCLUDING ALL INCIDENTAL ITEMS AND CONDITIONS NECESSARY FOR PROPER OPERATION OR CUSTOMARILY INCLUDED EVEN THOUGH EACH AND EVERY ITEM MAY NOT BE INDICATED.
- B. THE DRAWINGS INDICATE THE GENERAL LAYOUT REQUIREMENTS FOR EQUIPMENT, FITURES, COOLING DEVICES, ETC. FINAL LAYOUT WILL BE GOVERNED BY ACTUAL FIELD CONDITIONS AND ALL MEASUREMENTS VERIFIED AT THE SITE.
- C. CONDUIT AND WIRING SHOWN ON THE DRAWINGS IS SHOWN AS MINIMUM; EXCESSIVE CONDUIT, IS AND IS INTENDED TO INDICATE SWITCHING AND BRANCH CIRCUIT ARRANGEMENTS, PULSE BURNING, AND GENERAL WIRING CONNECTION REQUIREMENTS.
- D. IT IS INTENDED THAT THE ELECTRICAL SYSTEM BE SAFE, RELIABLE, ENERGY EFFICIENT AND EASILY MAINTAINED WITH ADEQUATE PROVISIONS FOR ACCESS TO EQUIPMENT.
- E. IT IS INTENDED THAT THE ELECTRICAL SYSTEM OPERATE WITH NOISE LEVELS BELOW THE CRITERIA RECOMMENDED BY NECA. PROMOTE COOPERATION TO REDUCE UNDESIRABLE NOISE OR VIBRATION.
- 1.4 COORDINATION
- A. THE CONTRACTOR IS OBLIGATED TO EXAMINE ALL DRAWINGS AND SPECIFICATIONS RELATING TO OTHER TRADES OF WORK, AND HE SHALL MAKE PROPER PROVISIONS TO PREVENT ALL OTHER WORK.

PART 2 - PRODUCTS

- 2.1 PRODUCT REQUIREMENTS
- A. ALL MATERIALS AND EQUIPMENT USED IN CARRYING OUT THESE SPECIFICATIONS SHALL BE APPROVED UNLESS OTHERWISE SPECIFIED BY THE CONTRACTOR TO BE NECA OR LISTING OR LISTING BY OTHER RECOGNIZED TESTING LABORATORY WHEN SUCH LISTINGS ARE AVAILABLE. SPECIFICATIONS AND SHOWN IN THESE DRAWINGS, TYPE OR GRADE, MANUFACTURER OF MATERIALS AND EQUIPMENT TO BE USED AS PROVIDED. SUBSTITUTIONS SHALL BE BASED ON THESE STANDARDS. MANUFACTURERS MAY USE MATERIALS AND EQUIPMENT EQUIVALENT TO THOSE SPECIFIED SUBJECT TO ENGINEER APPROVAL. PRIOR APPROVAL OF EQUIVALENT EQUIVALENT LISTINGS IS REQUIRED PRIOR TO SUBSTITUTION.
- B. FURNISH ONLY NEW STANDARD PRODUCTS OF A MANUFACTURER REGULARLY ENGAGED IN THE PRODUCTION OF SAID PRODUCTS.
- C. SUPPORT ALL PRODUCTS BY STRAP OR ORGANIZATIONS WITH SPARE PARTS INVENTORY AND PERSONNEL LOCATED REASONABLY CLOSE TO THE SITE.
- D. WHERE MULTIPLE UNITS OF THE SAME TYPE OR CLASS ARE REQUIRED, PROVIDE ALL LINES OF THE SAME MANUFACTURER.

2.2 PRODUCT LABELING

- A. STORE PRODUCTS IN THEIR ORIGINAL CONTAINERS AND SHELTER IN A SUITABLE ENVIRONMENT.
- B. MAKE PRODUCTS READILY AVAILABLE FOR INSPECTIONS AND INVENTORY.
- 2.3 SUBSTITUTIONS
- A. FOR PRODUCTS SPECIFIED BY GENERIC REFERENCE, SELECT ANY PRODUCT MEETING SUCH STANDARD.
- B. FOR PRODUCTS SPECIFIED BY NAME, ONE OR MORE PRODUCTS OR MANUFACTURERS, SELECT ANY NAME. SUBMIT REQUEST IN WRITING FOR SUBSTITUTION OF ANY MANUFACTURER NOT SPECIALLY NAMED AND OBTAIN APPROVAL AT LEAST 5 DAYS PRIOR TO BIDDING.
- C. PROVIDE ALL INFORMATION REQUIRED TO SUPPORT CLAIM OF EQUIVALENT OF PRODUCT PROPOSED FOR SUBSTITUTION. SUBSTITUTIONS WILL BE CONSIDERED ONLY IF EQUIVALENT IN QUALITY, EFFICIENCY, PERFORMANCE, SIZE, WEIGHT, RELIABILITY, APPEARANCE AND EASE OF MAINTENANCE TO SPECIFIED PRODUCT.
- D. WHERE APPROVED SUBSTITUTIONS ALTER THE DESIGN SPACE REQUIREMENTS, ELECTRICAL REQUIREMENTS, CONNECTIONS, COOLING LOADS, ETC. INCLUDE ALL WORK NECESSARY TO PROVIDE A COMPLETE INSTALLATION OF QUALITY EQUAL TO OR BETTER THAN THAT ORIGINATED WITH PRODUCT OR MANUFACTURER SPECIFIED.

2.4 GROUT

- A. NONMETALLIC, SHRINKAGE-RESISTIVE GROUT: ASTM C 1107, FACTORY-FABRICATED, NONMETALLIC, NONSEGREGATING GROUT, NONCORROSION MONITORING, MIXED WITH WATER TO CONSISTENCY SUITABLE FOR APPLICATION AND A 30-MINUTE WORKING TIME.

PART 3 - EXECUTION

- 3.1 COMMON REQUIREMENTS FOR ELECTRICAL INSTALLATION
- A. COMPLY WITH NECA 1.
- B. EQUIPMENT: INSTALL TO FACILITATE SERVICE, MAINTENANCE, AND REPAIR OR REPLACEMENT OF COMPONENTS OF BOTH ELECTRICAL EQUIPMENT AND OTHER NEARBY INSTALLATIONS. CONNECT IN SUCH A MANNER AS TO AVOID INTERFERENCE WITH NEARBY INSTALLATIONS WITH MINIMUM INTERFERENCE WITH OTHER ITEMS IN THE MOUNT.
- 3.2 MANUFACTURER'S DIRECTIONS
- A. HANDLE, INSTALL, CONDUIT, TEST AND OPERATE ALL PRODUCTS AND SYSTEMS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. IN CASE OF CONFLICTING REQUIREMENTS BETWEEN MANUFACTURER'S DIRECTIONS AND CONTRACT DOCUMENTS, OBTAIN INSTRUCTIONS BEFORE PROCEEDING WITH WORK.
- 3.3 CLEANING
- A. KEEP PREMISES FREE AND CLEAN OF DIRT, DEBRIS, ETC. UPON COMPLETION OF WORK. CLEAN AND POLISH ALL FITURES, EQUIPMENT, ETC.
- 3.4 WORKMANSHIP
- A. NO PERSON SHALL PERFORM ELECTRICAL WORK WITHOUT POSSESSING A LICENSE OR JOURNEMENTAL LICENSE FROM THE STATE ELECTRICAL EXAMINER'S BOARD. ALL ELECTRICAL WORK AND APPRENTICES SHALL BE SUPERVISED BY A MASTER JOURNEMENTAL ELECTRICIAN.
- B. CAREFULLY PROTECT ALL CUTTING, DRILLING, BURNING, ETC. AND PATCH OR REPAIR DISTURBED AREA TO THE CONDITION OF ORIGINAL OR SIMILAR SURFACES. DO NOT CUT ANY STRUCTURAL MEMBERS.
- C. CONICAL CONDUIT IN CEILING, FURNISH OR ABOVE CEILING UNLESS OTHERWISE NOTICED. FLUSH MOUNT EQUIPMENT IN FINISHED WALLS WHERE POSSIBLE.
- 3.5 COORDINATION
- A. COORDINATE THE ELECTRICAL WORK WITH THE WORK OF ALL OTHER TRADES. PIPING OR EQUIPMENT REQUIRING SLOPE OR SPECIFIC DRAINAGE SHALL HAVE SLOPE OF ANY OTHER CONDUIT AND OTHER EQUIPMENT WHOSE ELEVATION CAN BE CHANGED.
- 3.6 ELECTRICAL CONNECTIONS
- A. MAKE ALL REQUIRED ELECTRICAL CONNECTIONS TO EACH ITEM OF EQUIPMENT SHOWN OR SPECIFIED INCLUDING EQUIPMENT FURNISHED BY OWNER, AND MAKE OPERATIONAL.
- 3.7 PROTECTION REQUIREMENTS
- A. LOCATE EXISTING UTILITY LINES AND IDENTIFY AND PROTECT DURING INSTALLATION.
- B. PROTECT ALL WORK INCLUDING BUILDING FINISHES AGAINST DAMAGE DUE TO DIRT, WHEEL, CHOCKS, AND VIBRATION FROM INSTALLATION.
- C. PROVIDE WARNING DEVICES AROUND ALL EXPOSED LIVE PARTS OR HIGH TEMPERATURE SURFACES.
- 3.8 POST CONSTRUCTION SUBMITTALS
- A. DELIVER ALL SPECIAL TOOLS AND SPARE PARTS NECESSARY FOR PROPER OPERATION AND MAINTENANCE AND AS CALLED FOR IN OTHER ELECTRICAL CONTRACTS.
- B. SUBMIT OPERATIONS AND MAINTENANCE (O&M) MANUALS COVERING ALL TYPES OF EQUIPMENT AND SYSTEMS PROVIDED. INCLUDE COMPLETE SPARE PARTS DATA AND COPY OF MANUFACTURER DATA SHEETS AND SHOP DRAWINGS REQUIRED IN PRE-CONSTRUCTION SUBMITTALS.
- C. SUBMIT EXTENDED WARRANTIES REQUIRED IN EXCESS OF THE YEAR.
- D. ASSEMBLE ALL GLOSSARY DOCUMENTS FOR ELECTRICAL SYSTEM. SUBMIT THE NUMBER OF SETS AS REQUIRED BY THE ARCHITECT.
- 3.9 INSTRUCTIONS TO OWNER
- A. PROVIDE COMPETENT INSTRUCTION TO THE OWNER'S PERSONNEL CONCERNING OPERATION AND MAINTENANCE OF ALL ELECTRICAL SYSTEMS. PROVIDE SPECIALIZED INSTRUCTION BY MANUFACTURER'S TECHNICAL REPRESENTATIVE WHEN REQUIRED.
- 3.10 USE OF EQUIPMENT
- A. THE CONTRACTOR SHALL NOT USE THE PERMANENT ELECTRICAL SYSTEM FOR CONSTRUCTION ACTIVITY EXCEPT BY SPECIAL PERMISSION. IF PERMITTED, THE CONTRACTOR'S USE OF ANY EQUIPMENT SHALL NOT REDUCE THE WARRANTY TIME SPECIFIED FOR ANY EQUIPMENT.
- 3.11 GENERAL WARRANTY
- A. WARRANT THE ELECTRICAL INSTALLATION AGAINST DEFECTS FOR A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION IN ACCORDANCE WITH ARCHITECT'S SPECIFICATIONS. PROVIDE ALL LABOR, REPLACEMENT PARTS, SERVICES, TRANSPORTATION AND INCIDENTAL COSTS NECESSARY FOR PROPER OPERATION OF ELECTRICAL SYSTEMS DURING THE WARRANTY PERIOD. MAKE GOOD ANY DAMAGE TO THE BUILDING OR DEVICES OR OTHER EQUIPMENT RESULTING FROM DEFECTS IN PRODUCTS AND/OR WORKMANSHIP DURING THE WARRANTY PERIOD.
- B. SPECIAL WARRANTY MANUFACTURER AGREES TO REPAIR OR REPLACE COMPONENTS OF [PROJECT] (AND LAMINATE-LEADING DEVICES) THAT FAIL IN MATERIALS OR WORKMANSHIP THAT CORRODE OR THAT FAIL, SPLIT, PERFORATE, ERODE, OR CRACK DUE TO DEFECTS OF MATERIAL OR SOLAR RADIATION WITHIN A SPECIFIED WARRANTY PERIOD. MANUFACTURER MAY EXCLUDE LIGHTNING DAMAGE, HAIL DAMAGE, VIBRATION, ABUSE, OR UNAUTHORIZED REPAIRS FROM SPECIAL WARRANTY PERIOD.
- C. WARRANTY PERIOD: FIVE YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

END OF SECTION 26050





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ELECTRICAL
PLUMBING
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REVISIONS:

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